SUZUKI

SERVICE MANUAL

MODEL

GT750

ENGINE

FOREWORD

This service manual has been published as the guidance of Suzuki GT750 engine for proper service in the workshop.

This manual is constructed in sequence of Description, Specification, Operation, Trouble shooting, Removal, Inspection, Repair, Adjustment and Assembly for every chapter. In addition to these items, this manual also refers complementarily to a foundermental principle, reason for an adoption of the mechanism and its function as many as possible in order to have GT750 engine comprehended by all the mechanics.

Suzuki will be happy if this manual assists in providing prompt and well done repair work so that GT750 customers will receive reliable service.

Prepared by

SUZUKI MOTOR CO.,LTD.

Export Service Section

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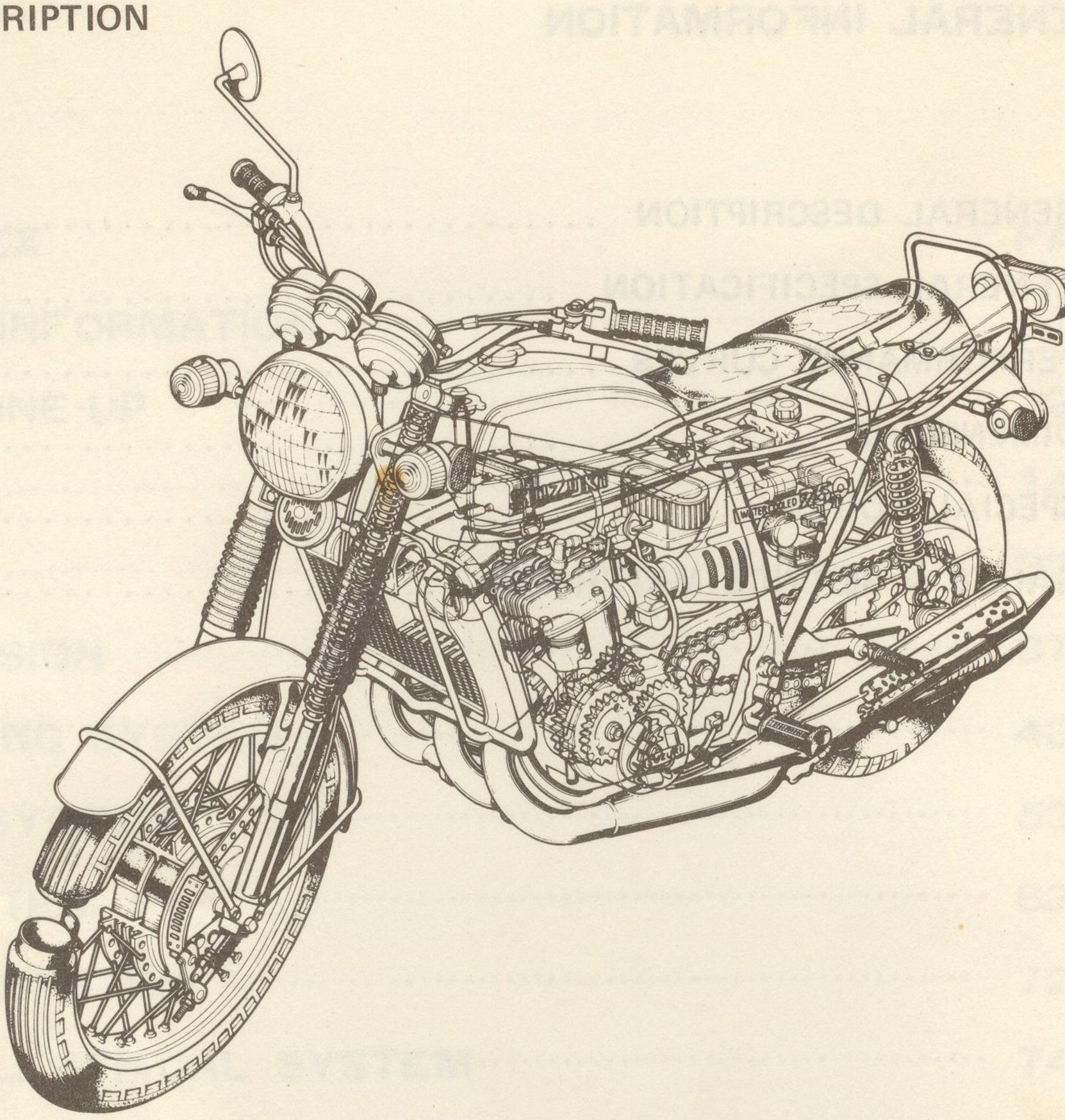
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GENERAL DESCRIPTION



SUZUKI GT750 is a high performance and large size sporty type motorcycle equipped with advanced new mechanisms which are to be described below.

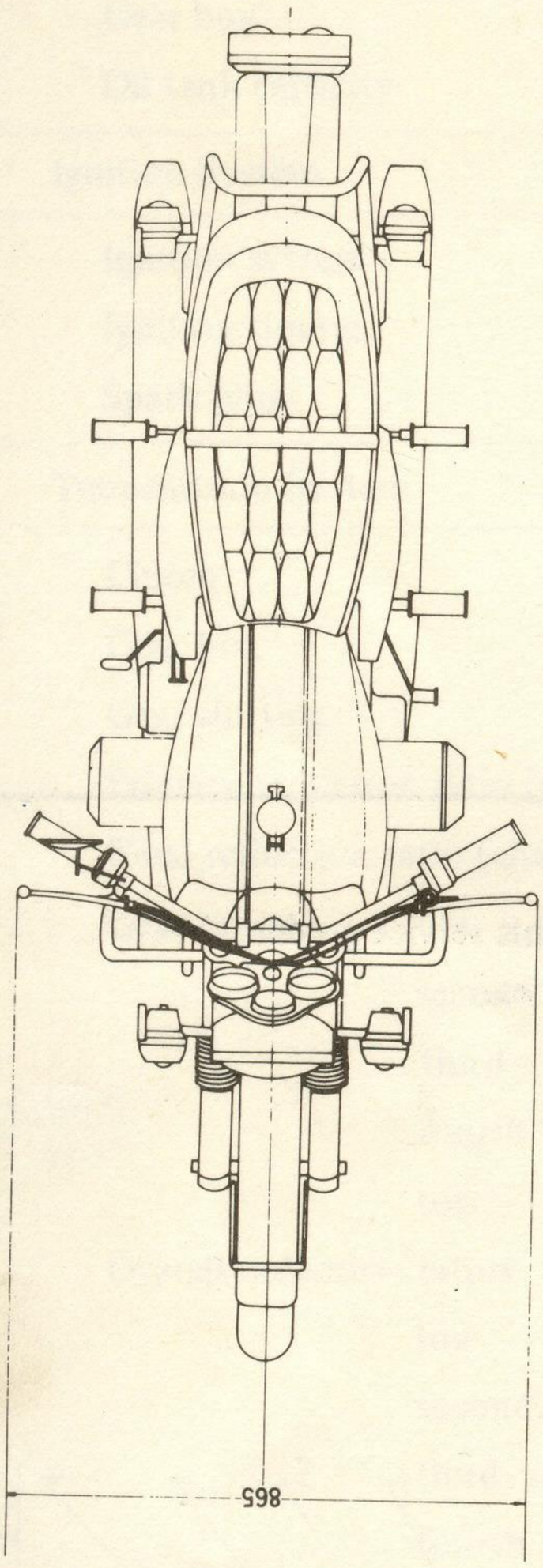
This two-cycle engine has a three-cylinder construction of piston valve type having the total displacement of 738cm^3 (45.0 cu in). In order to improve the cooling efficiency and at the same time to display its full power, the engine adopts a water cooling system. On the other hand, to reduce the weight of engine for motorcycle application, the material for main components, such as cylinder block, cylinder head uses aluminum alloys.

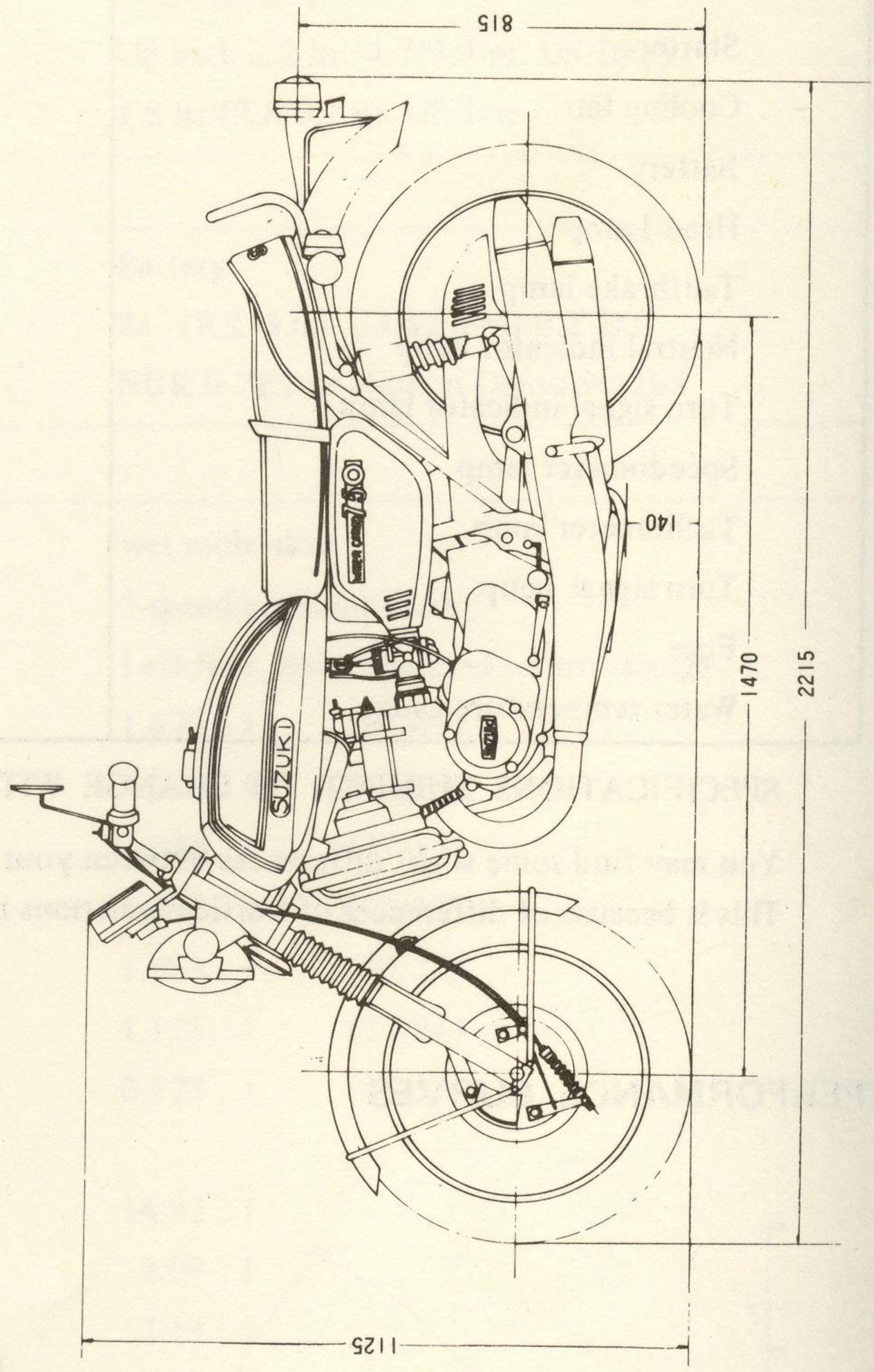
A three big bore carburetor system (VM32 SC) is adopted, with each carburetor being used for each cylinder. This arrangement has made it possible to feed always an optimal mixture gas to combustion chambers over a wide range of engine speed, from low to high speed ranges. The exhaust pipe connects three exhaust mufflers with exhaust coupler tubes. Such a newly developed intake and exhaust gas system has given the engine a well balanced highly tuned performance.

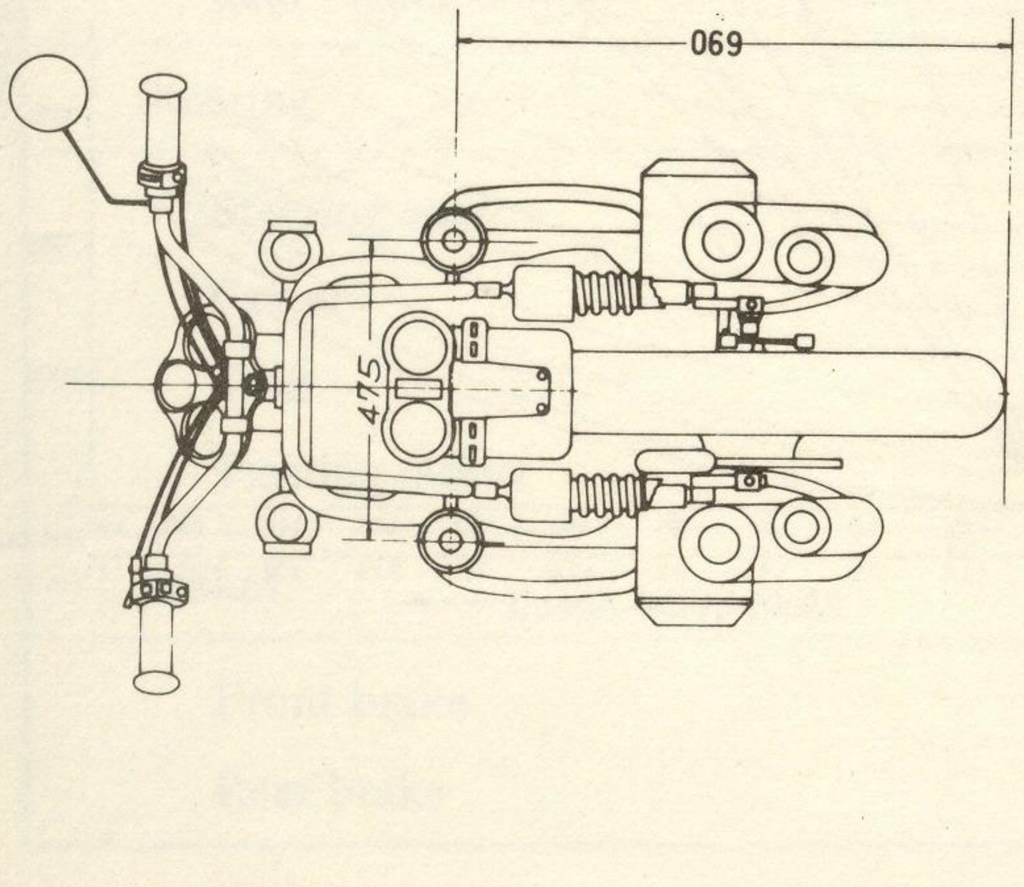
The engine driven metering oil pump supplies oil to required locations of cylinders and crank shaft, as is so often the case as in SUZUKI CCI System. In the past, oil supplied returned to crank chamber was exhausting white smoke from exhaust muffler. To avoid this, a new mechanism called SRIS (SUZUKI Recycle Injection System) has been adopted in this machine.

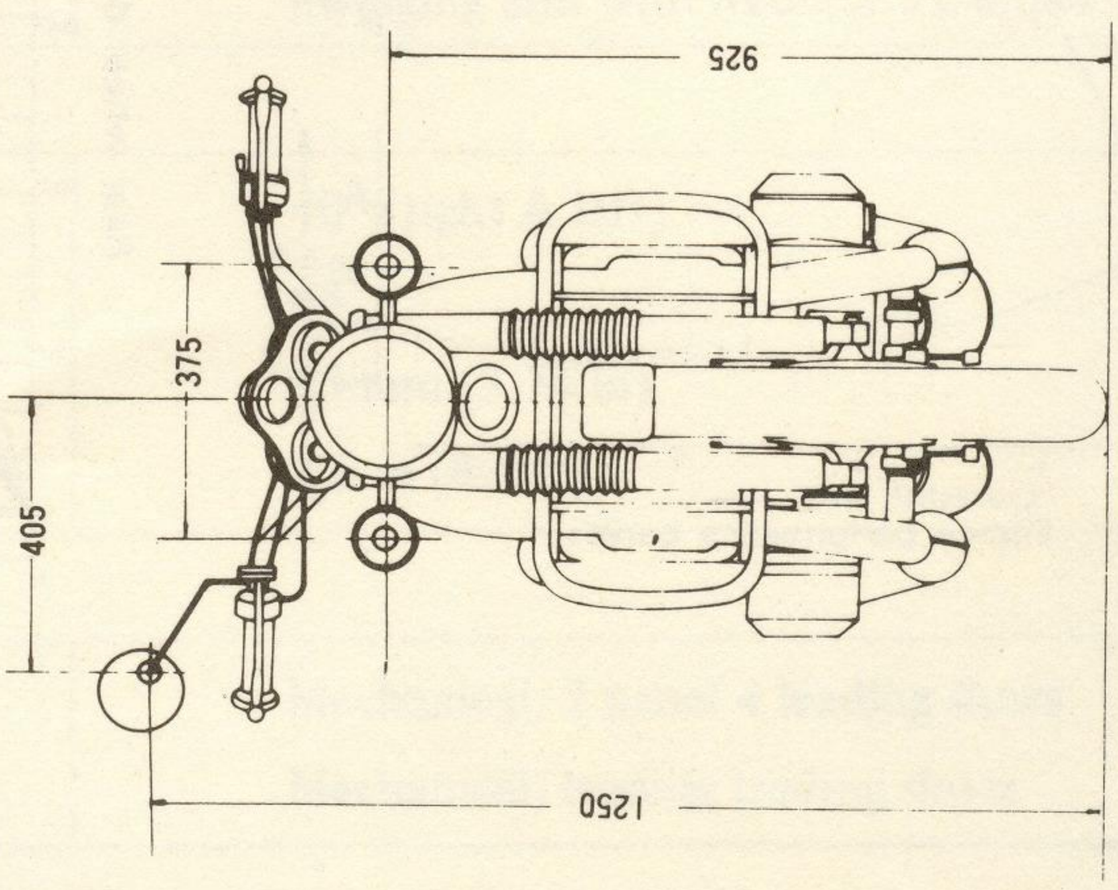
An aluminum corrugated type radiator is adopted in the cooling system for weight reduction. The system is of the sealed pressure type. Combined with the use of "year's round anti-freeze & summer coolant", this system needs no additional supply of water except in the case of unusual leak. A motor driven cooling fan is installed, which operates whenever the water temperature rises due to unusually severe operation conditions of engine.

DIMENSIONS









GENERAL SPECIFICATION

Dimensions and Weight	
Overall length	2215 mm (87.2 in)
Overall width	865 mm (34.0 in)
Overall height	1125 mm (44.3 in)
Wheelbase	1470 mm (57.8 in)
Ground clearance	140 mm (5.5 in)
Tires front	3.25–19 in 4PR
rear	4.00–18 in 4PR
Dry weight	214 kg (482 lb)
Performance	
Maximum speed	184–192 kph (115–120 mph)
Acceleration (0–400 m)	12.6 sec.
Braking distance	1.4 m (46.0 ft) @ 50 kph (30.0 mph)
Engine	
Type	2-cycle, water cooled, piston valve engine
Dimensions (L x W x H)	607 x 499 x 445 mm (26.3 x 19.7 x 17.5 in)
Weight	84 kg (38.2 lb)
Cylinder	Sleeved, aluminum, three
Bore x stroke	70 x 64 mm (2.76 x 2.52 in)
Piston displacement	738cc (45.0 cu-in)
Corrected compression ratio	6.7 : 1
Maximum horse power	67 hp/6,500 rpm
Maximum torque	7.7 kgm/(55.7 lb-ft)/5,500 rpm
Starter	Electric and kick
Cooling System	
Type	Water cooled, pressure forced circulation
Radiator	Corrugated fin and tube pressure type
Water pump	6 brade impeller centrifugal type
Thermostat	Wax pellet element type
Cooling solution capacity	4.5 ltr (1.2/1.0 gal, US/Imp)
Fuel System	
Carburetor	VM32SC, three
Air cleaner	Resin-processed, paper filter
Fuel tank capacity	17 ltr (4.5/3.7 gal, US/Imp)

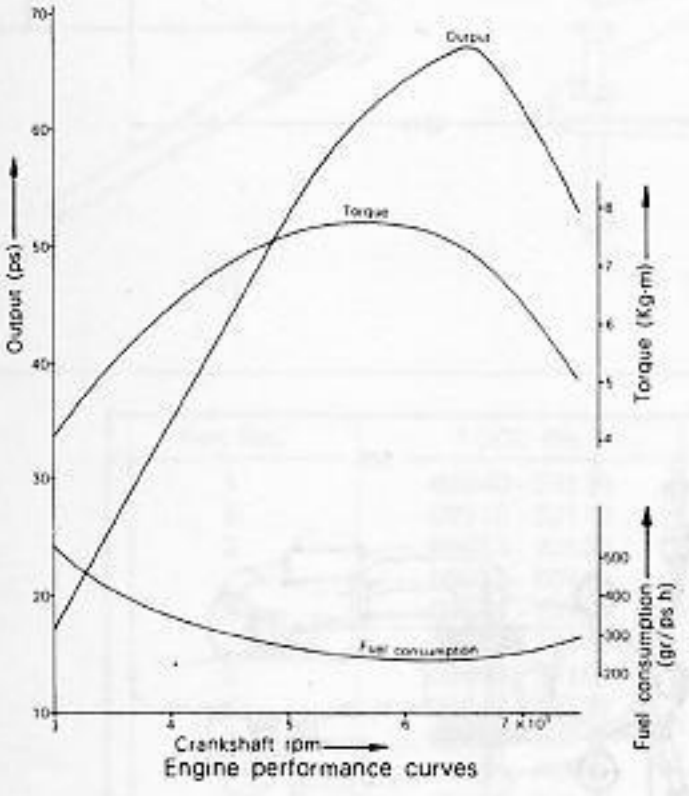
Lubrication System	
Engine	SUZUKI CCI
Gear box	Oil bath 2.2 ltr (4.7/3.9 pt, US/Imp)
Oil tank capacity	1.8 ltr (3.8/3.2 pt, US/Imp)
Ignition System	
Ignition system	Battery
Ignition timing	24° (R.L 3.63, C3.42 mm) B.T.D.C.
Spark plugs	NGK B-7ES or Nippon Denso W22ES
Transmission System	
Clutch	wet multi-disc
Gear box	5-speed constant mesh
Gear shifting	Left foot, lever operated return change
Primary reduction ratio (gear)	1.673 : 1 (82/49)
Final reduction ratio (chain)	3.133 : 1 (47/15)
Gear ratios low	2.846 : 1 (37/13)
second	1.736 : 1 (33/19)
third	1.363 : 1 (30/22)
fourth	1.125 : 1 (27/24)
top	0.923 : 1 (24/26)
Overall reduction ratios	
low	14.92 : 1
second	9.09 : 1
third	7.14 : 1
fourth	5.89 : 1
top	4.48 : 1
Suspension	
Front suspension	Telescopic fork with hydraulic damper
Rear suspension	Swinging arm with hydraulic damper
Steering	
Steering angle	40° (right & left)
Caster	63°
Trail	95 mm (3.74 in)
Turning radius	2.6 m (8.5 ft)
Brakes	
Front brake	Mechanical, 2 panel 4 leading shoes
Rear brake	Mechanical, leading trading shoes

Electrical Equipment	
Generator	Alternator 12V 280W
Starter	12V 500W
Cooling fan	12V 27.6W
Battery	12V 14AH
Head Lamp	12V 50/40W
Tail/brake lamp	12V 8/23W
Neutral indicator lamp	12V 1.5W
Turn signal indicator lamp	12V 1.5W
Speedometer lamp	12V 3W
Tachometer lamp	12V 3W
Turn signal lamp	12V 23W
Fuse	20A
Water temperature gauge	12V 2W

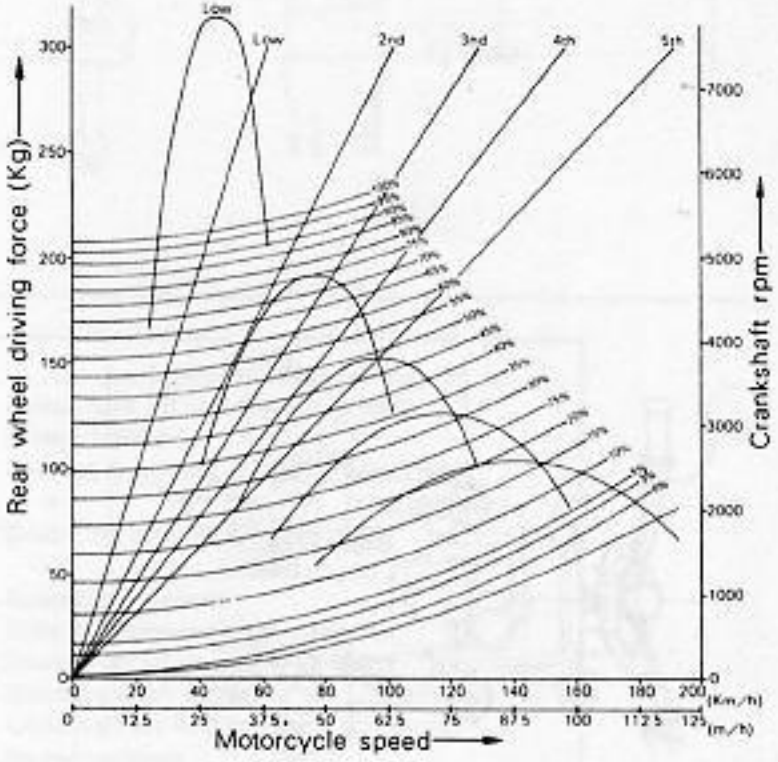
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

You may find some slight differences between your motorcycle and this service guide.
This is because of differences of traffic regulations in different countries.

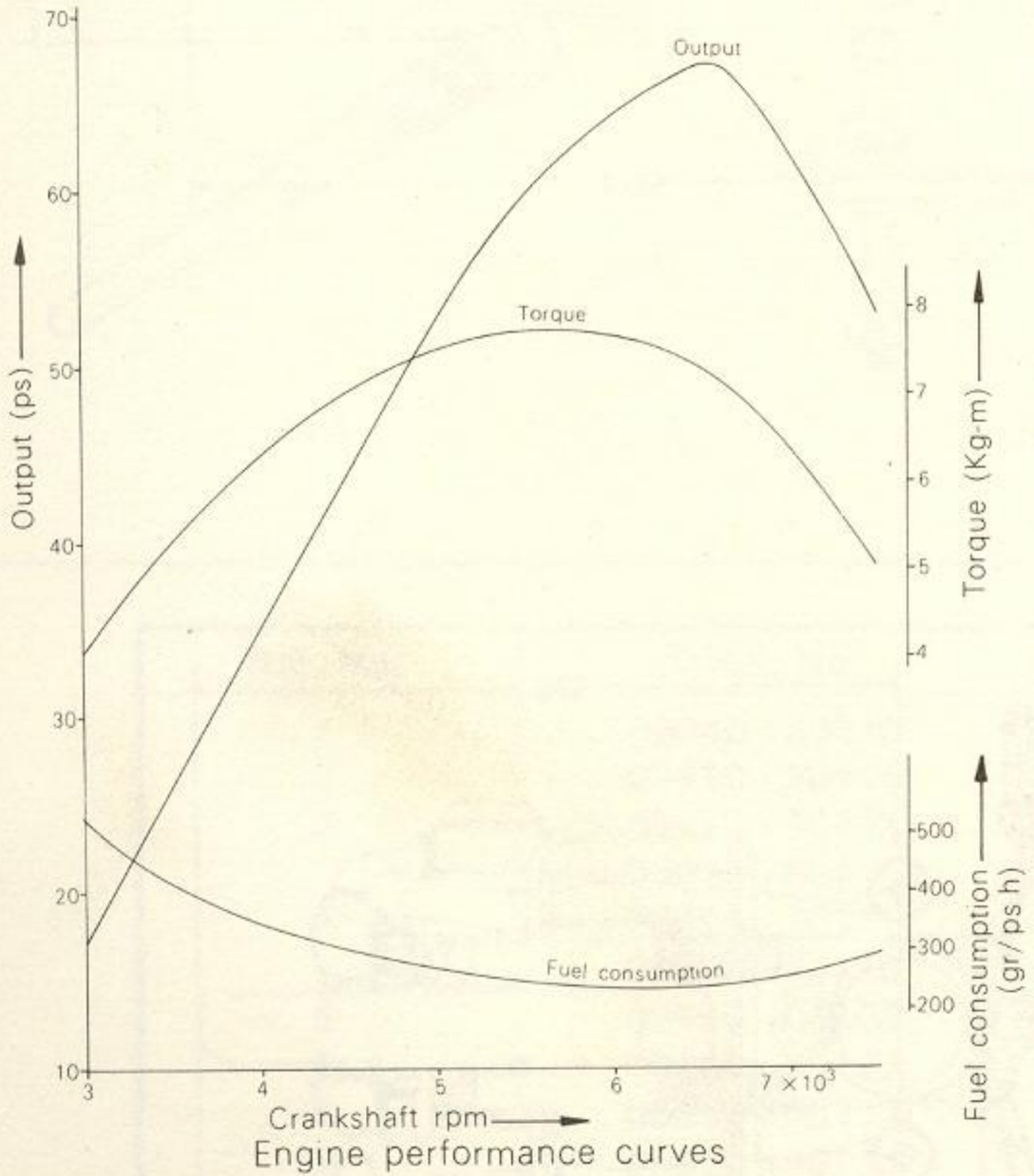
PERFORMANCE CURVES



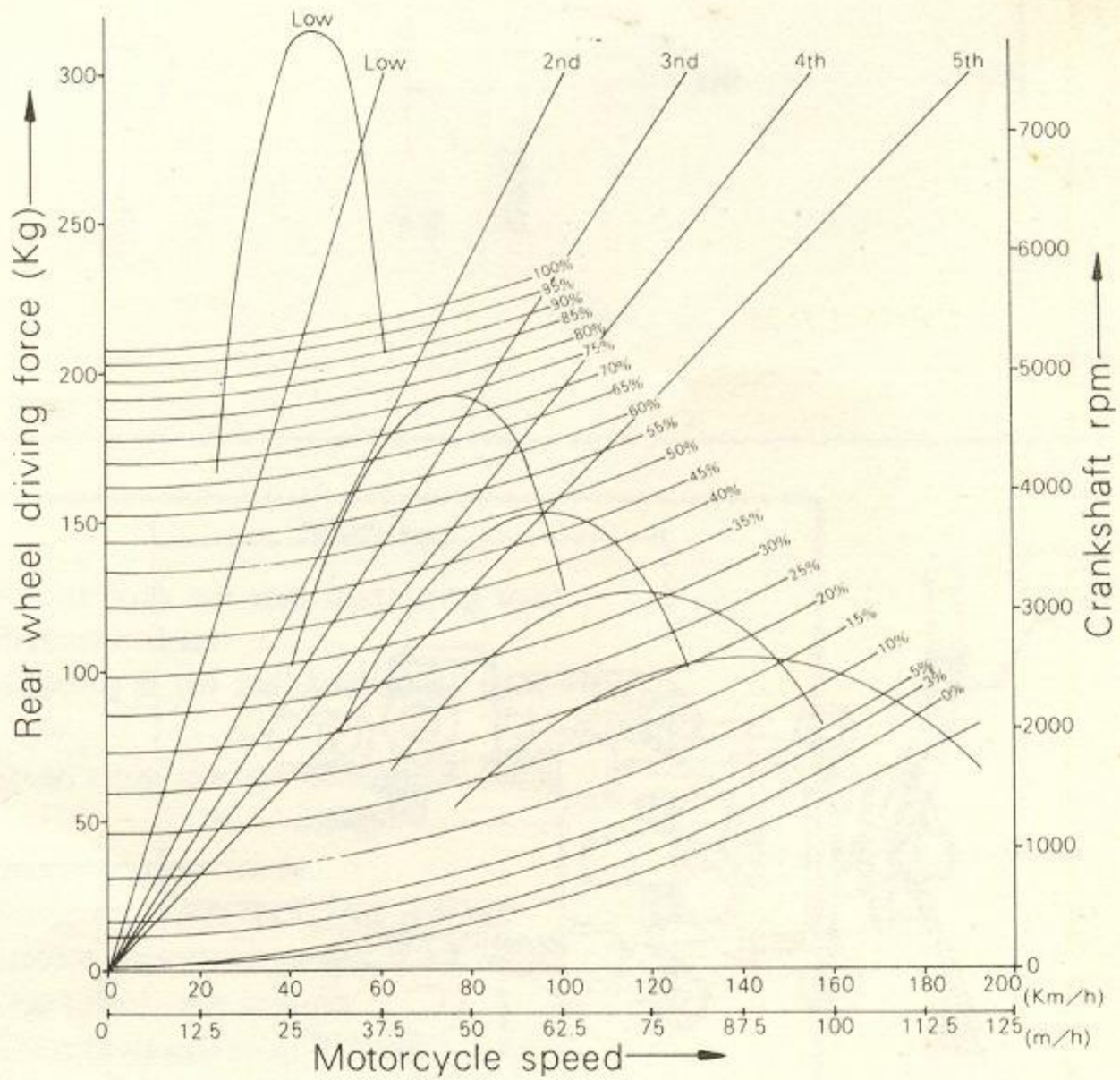
Engine performance curves



PERFORMANCE CURVES



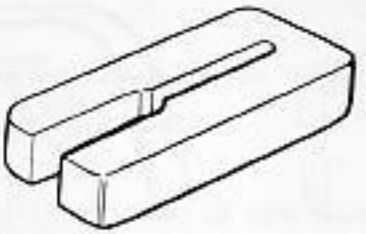
Engine performance curves



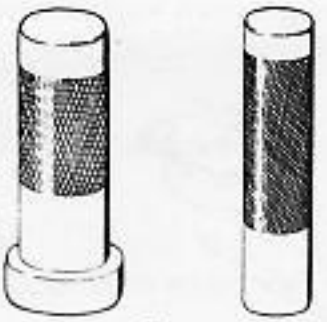
SPECIAL TOOLS



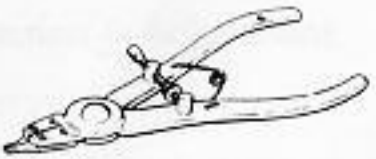
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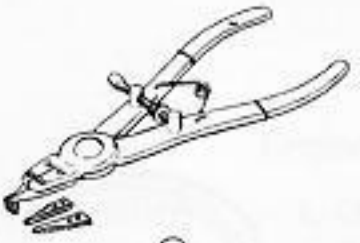
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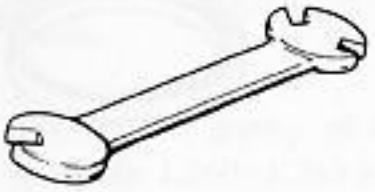
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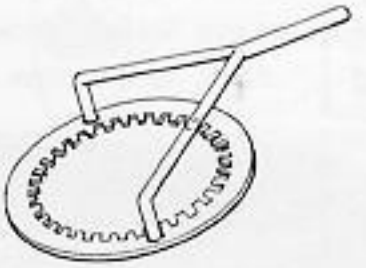
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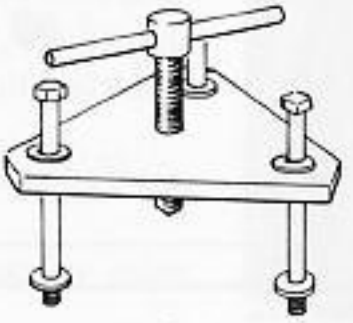
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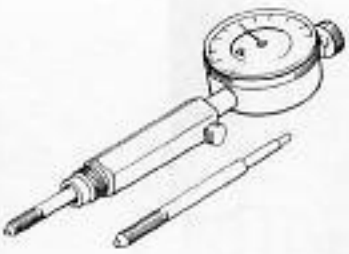
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Ref. No.	TOOL No.	Name
1	09940 - 53110	Front fork oil seal installing tool
2	09910 - 20113	Piston holder
3	09913 - 70122	Bearing & oil seal installing tool (Big)
	09913 - 80110	" " " (Small)
4	09920 - 70111	Snap ring opener (Small)
	09920 - 70120	" " (Big)
5	09900 - 06103	Snap ring remover
6	09940 - 10122	Steering stem lock nut wrench
7	09940 - 60112	Spoke nipple wrench
8	09920 - 40111	Starter clutch holder
9	09920 - 53110	Clutch sleeve hub holder
10	09930 - 33110	Rotor remover
11	09920 - 13110	Starter clutch remover
12	09900 - 21802	Chain joint tool

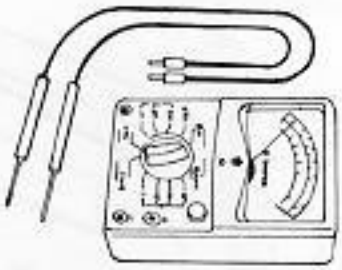
GAUGE & SERVICE MATERIALS



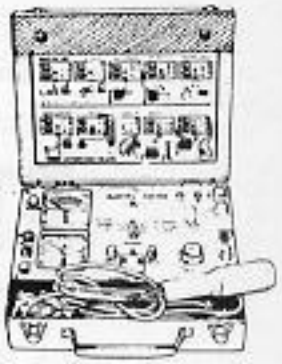
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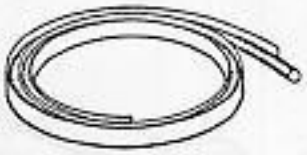
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Ref. No.	Part No.	Name	Applied for
1	09931 - 00111	Timing gauge	
2	09900 - 27002	Timing tester	
3	09900 - 25001	Pocket tester	
4	09900 - 28101	Electro tester	
5	99000 - 32040	Thread lock cement	1. Starter clutch hub set screw 2. Gear shifting cam guide set 3. Paul lifter set screw 4. Kick starter guide set screw 5. Gear shifting cam stopper plate set screw 6. Gear shifting arm stopper 7. Starter clutch nut
6	99000 - 32030	Suzuki lock super 103Q	Second drive gear
7	99000 - 25020	Suzuki super grease C	
8	14219 - 31000	Exhaust coupler seal	Exhaust coupler tube
9	99000 - 24130	Suzuki 7 on Bar's Leaks	Cooling system
10	99000 - 31030	Suzuki bond No.4	Crankcase

2. ENGINE TUNE-UP

Periodical inspection and maintenance are essential to maintain the best performance from engine as originally designed.

If any deficiency is encountered during operation of the motorcycle, it must be diagnosed immediately, and proper care should be taken by tuning up the engine.

The engine of GT750 incorporates a great number of new system and equipments which can only be taken care with special knowledge and proper care.
The procedures described in the following orders should be carefully studied to accomplish the correct engine tune-up.

Inspection & Adjustment

Battery

1. Check level of the electrolyte in the battery cells. The electrolyte should be at the level line on the battery case.
   If necessary, replenish the battery with distilled water.

2. The specific gravity of a full charged battery should be 1.260–1.280 at 20°C (68°F).
   When the battery specific gravity decreases less than 1.220, the battery should be changed. If the difference between each cell is more than 0.025 reading after fully charged, the battery should be inspected and replaced if necessary.

3. Check the battery terminals, clean and tighten if necessary.
   Check the battery case for cracks or other damages, and replace if necessary.

4. Check the battery breather pipe if its end is opened or clogged.

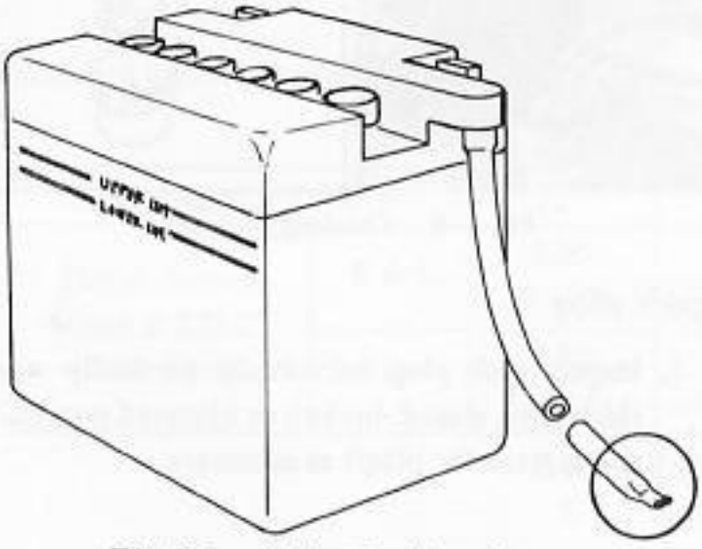


Fig. 2–1 Battery breather pipe

Engine oil (CCI oil) & Oil pump

1. Check the engine oil level in the oil tank. If the oil level is found below the oil level inspection eye, replenish SUZUKI CCI OIL or non-diluent (non-self mixing type) Two Stroke Oil with around SAE 30 wt.



Fig. 2–2 Oil level inspection eye

2. Check to see if air is present in the oil pump and pipe. Expel air if it is.
   For expelling air in the oil pump and pipe, refer to "Inspection & Repair" of OIL PUMP on page 50.

3. Adjust the oil pump lever ① with the cable adjuster ② so that the aligning marks ③ align when the punch mark ④ on the throttle valve comes on upper end of the hole on the carburetor body as the throttle grip gradually winds up. See Fig. 2–3.

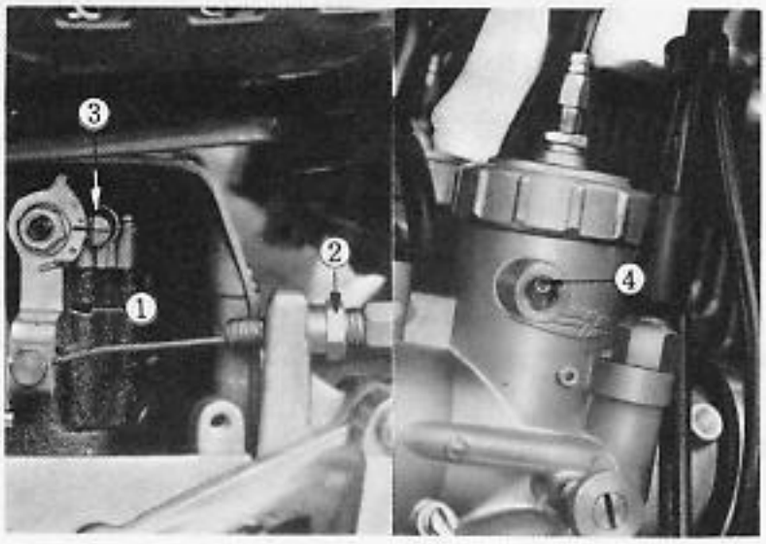


Fig. 2–3 Adjusting oil pump lever

Cooling System

1. Check the cooling system for leaks, weak hoses, loose hose clamps and correct coolant level. If the cooling solution level is under the level plate inside the inlet pipe when cool, replenish with distilled water.

2. Check the coolant for deterioration. Check if the transmission oil or gasoline is present in the coolant.

3. When refilling, use GOLDEN CRUISER 1200 Anti-freeze & Summer Coolant tested and guaranteed by Suzuki or equivalents in the market.
   GOLDEN CRUISER 1200 Anti-freeze & Summer Coolant is "year around" Ethylene-Glycol solution and serves approximately 2 years or 3,500 km (2,000 miles).
   See page 60 for details.

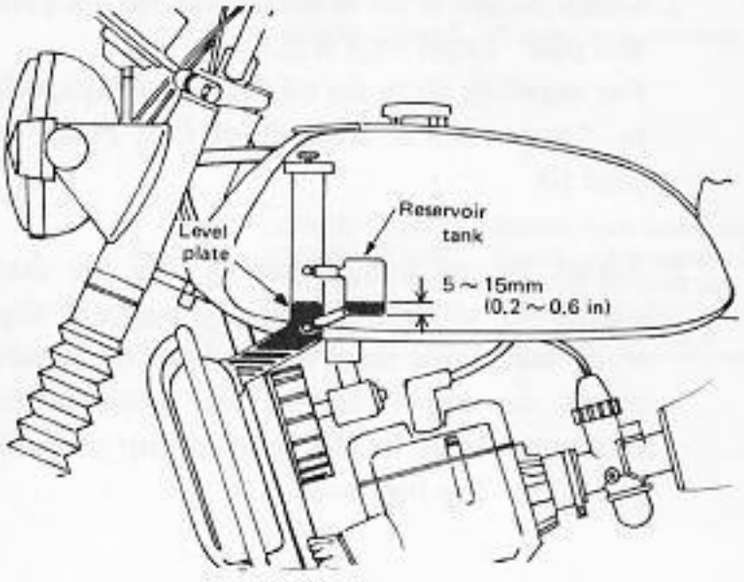


Fig. 2–4 Cooling solution level

Air cleaner

1. Clean the cleaner element with compressed air. Replace the element if damaged or excessively dirty.

2. Check to see if the cleaner is assembled properly after servicing.



Fig. 2–5 Cleaning air cleaner

Fuel cock

1. Check the fuel cock for clogging, and check to see if the diaphregm ① works properly.

2. Clean the fuel cock filter ②, and replace if necessary.

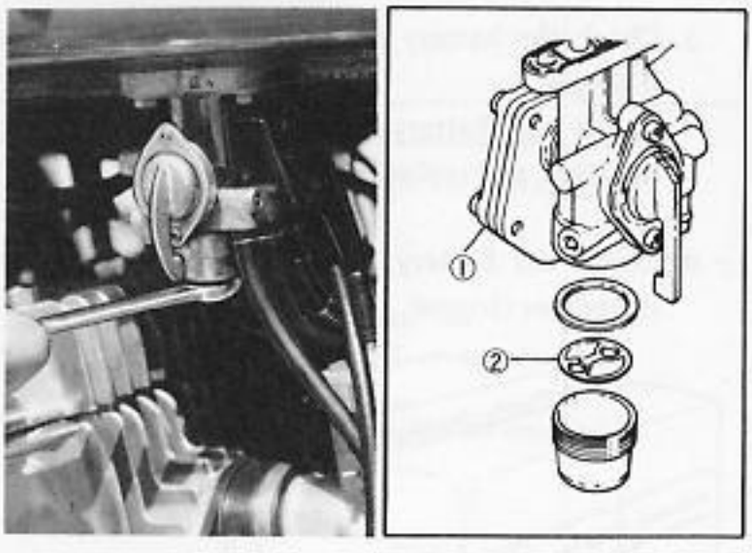


Fig. 2–6 Checking fuel cock

Spark plug

1. Inspect each plug individually for badly worn electrodes, glazed, broken or blistered porcelain, and replace the plug/s as necessary.

2. Clean the spark plugs throughly using a sand blast cleaner.

3. Inspect each plug for heat range. If excessive carbon deposits are observed on the insulator tip, replace with a hot range type spark plugs. If the plugs show burning white or rapid electrode wear, replace with a cold range type spark plugs.

4. Check the spark plug gap. The specified gap is 0.7–0.8 mm (0.027–0.031 in) for NGK and 0.6–0.7 mm (0.024–0.027 in) for ND makes.

Ignition timing

1. Adjust ignition timing with the timing gauge in accordance with the following table keeping in mind that the gauge stroke is not uniform because of the difference in inclination of spark plug hole at each cylinder.

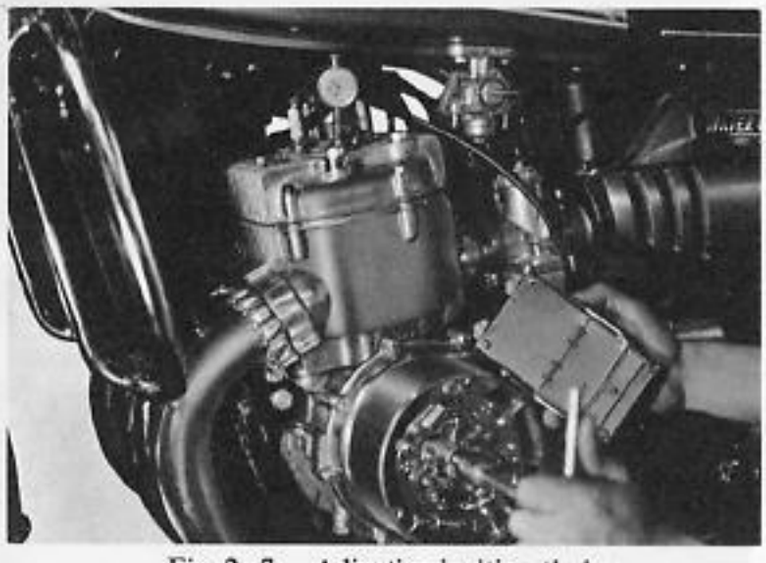


Fig. 2–7 Adjusting ignition timing

Standard ignition timing : 24°±2 (B T.D.C.)

2. Adjust also contact point gap to have 0.35 mm (0.014 in) at maximum opening.

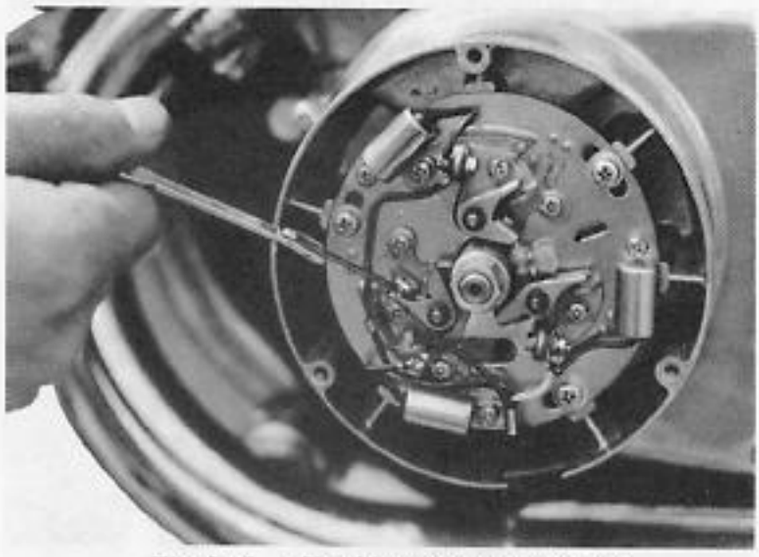


Fig. 2–8 Checking contact point gap

3. Check the contact points for wear or flatness of points surface.
Check for defective condenser.

Carburetor

Adjust the carburetor in the following methods.

1. Turn the cable adjuster ① on the top of the carburetor to have a play of 2–3 mm (0.08–0.09 in) between the cable and cable adjuster.



Fig. 2–9 Adjusting cable play

Crank angle (B.T.D.C.)		22°	23°	24°	25°	26°
Piston distance from B.T.D.C. mm (in)	R & L	3.20 (0.126)	3.35 (0.134)	3.64 (0.143)	3.94 (0.155)	4.25 (0.167)
	C	2.88 (0.113)	3.15 (0.124)	3.42 (0.136)	3.72 (0.146)	3.99 (0.157)

R & L : Right and left cylinder
C : Center cylinder

2. Removing aligning hole plug ① from mixing chamber body of each carburetor, then adjust three carburetors by turning the cable adjuster so that a punch mark ② on the side of throttle valve comes on upper surface of the hole with the throttle grip gradually wound up.

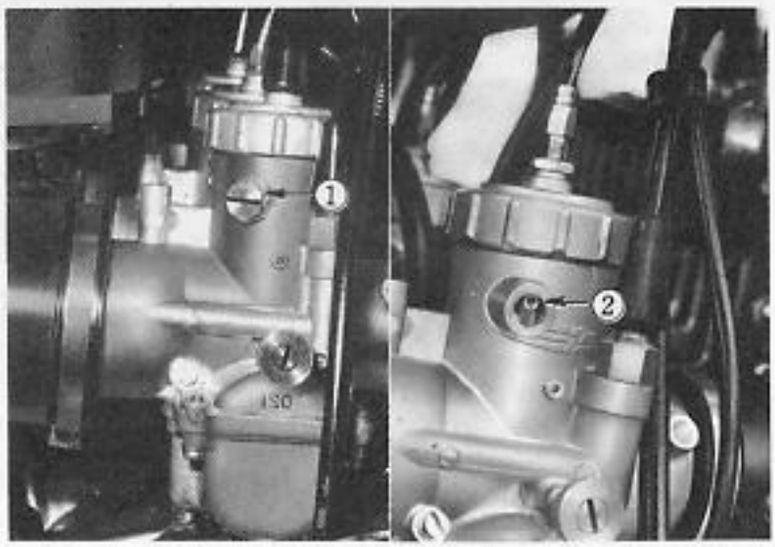


Fig. 2–10 Coordinating three carburetor

3. Screw pilot air adjusting screw of each carburetor all the way in and back it out 1½ turns.

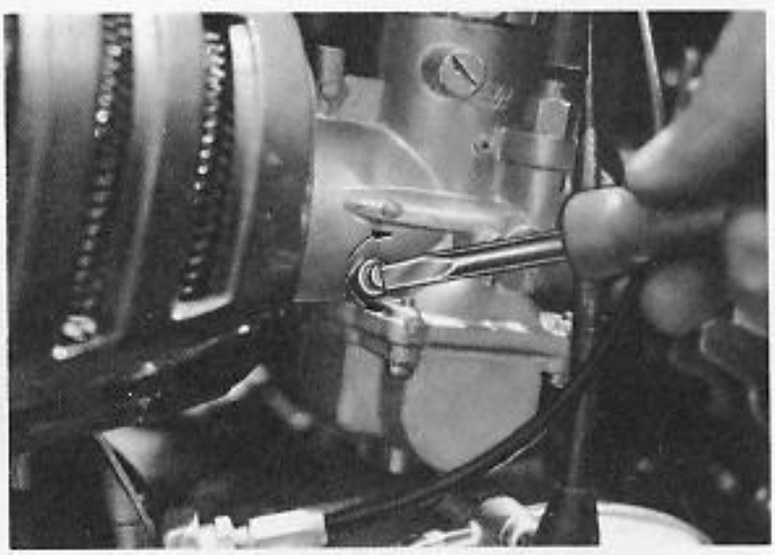


Fig. 2–11 Adjusting pilot air adjusting screw

4. Start the engine and after sufficient warm-up adjust idling speed with the throttle stop screw. Idling adjustment is made with each cylinder actuated one by one by so turning the related throttle valve stop screw as to have a tachometer reading of 1,000 rpm in each case.

Caution: In the case one cylinder firing, the related throttle valve stop screw should be screwed into a considerable extent to keep running.

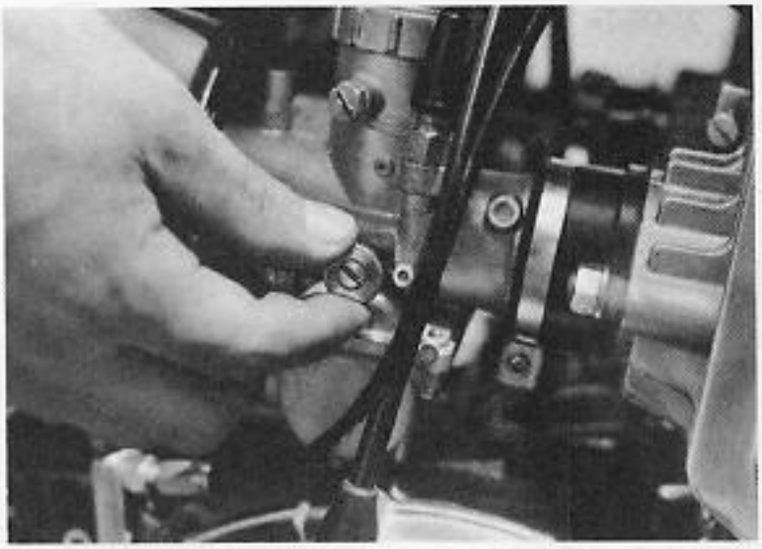


Fig. 2–12 Adjusting throttle valve stop screw

5. After adjusting the carburetor so that each cylinder has a speed of 1,000 rpm independently, equally turn the throttle stop screw of three carburetors backward to set an idling speed at 1,000 rpm with three cylinders firing.

6. Finally turn the throttle cable adjuster under throttle grip to have a play of 0.5–1 mm (0.02–0.04 in) on the throttle cable.

Transmission oil

1. Check for transmission oil level by removing the oil level screw ①.

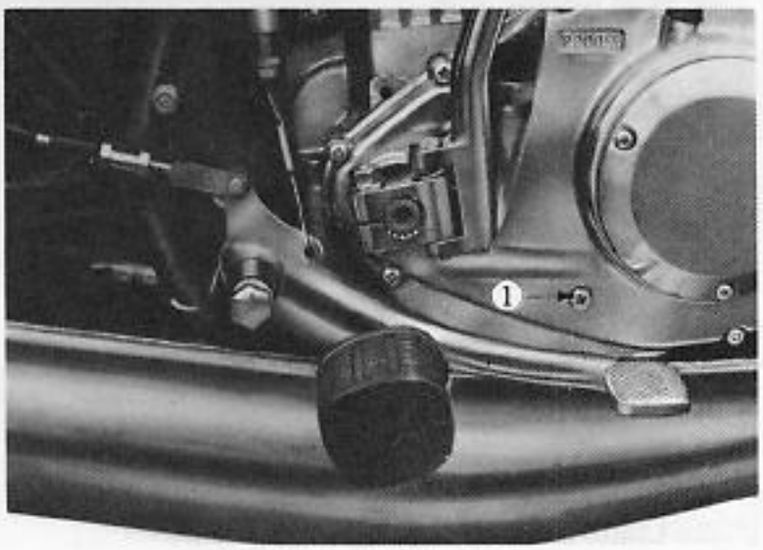


Fig. 2–13 Oil level screw

2. Replenish 20W/40 oil of superior quality if oil does not come out of the level screw hole when standing the motorcycle on its center stand.

3. Pour 2200 cc (0.58/0.48 gal US/Imp.) of transmission oil when changing oil.

Clutch

Check the clutch system for play by the following sequence.

1. Remove the clutch adjusting cap and the gasket from the clutch cover. Check for axial play of clutch release shaft ① when the release arm ② is at the lowest position, and adjust the play by loosening the release shaft double nuts ③ to be approximately 0.2 mm and tighten it again firmly.

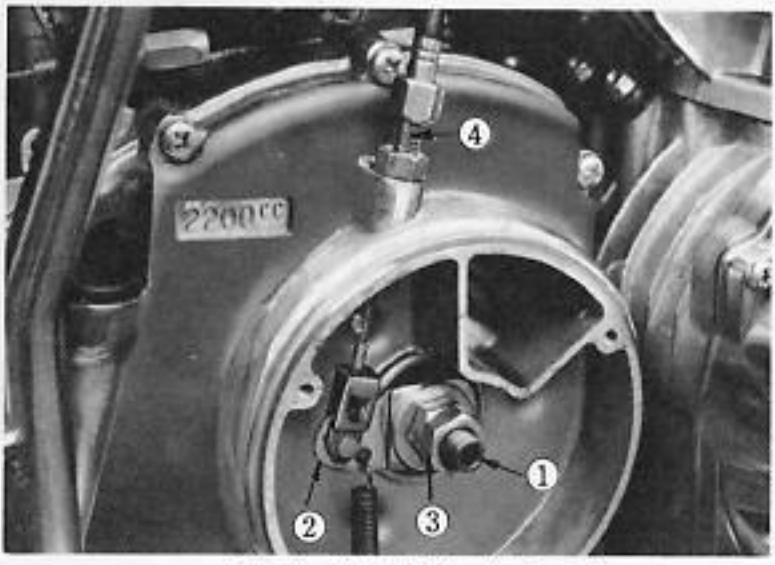


Fig. 2–14 Adjusting clutch

2. Adjust the clutch cable adjusters ④, ⑤ both at the clutch cover and the clutch lever to have ample play in the clutch cable.

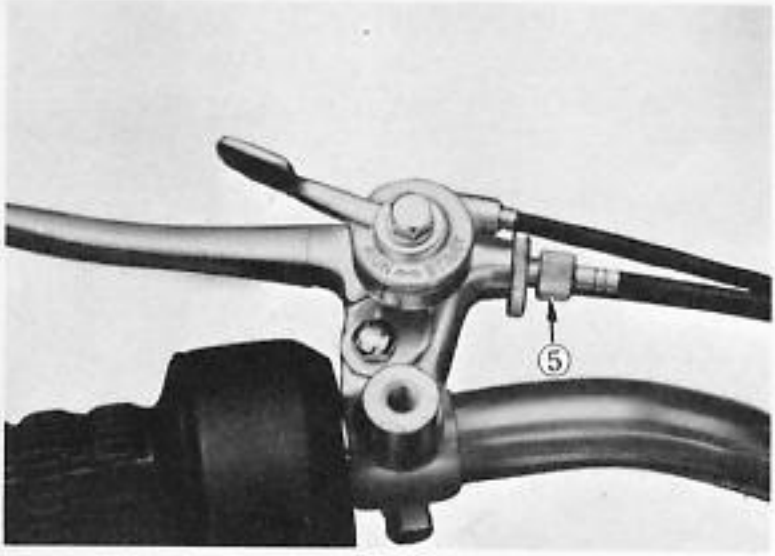


Fig. 2–15 Adjusting clutch cable adjuster

3. ENGINE

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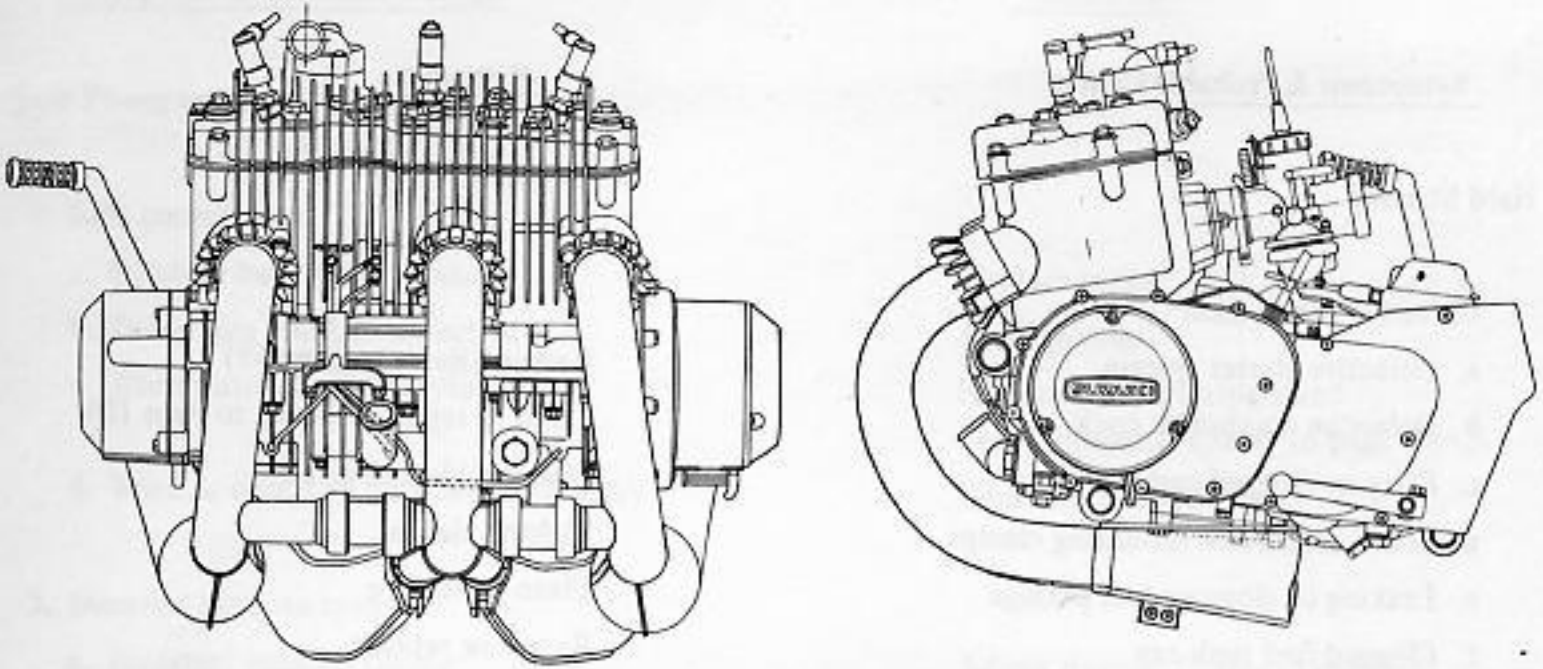


Fig. 3–1 Front and side view of GT750 engine

GT750 Engine is a water cooled, two cycle engine, and has a three-cylinder structure having piston valves. The cylinder head, made of aluminum alloy for weight reduction and high rate of heat radiation, has a dome type combustion chamber. The cylinder block is a one-piece cast structure with the coolant passages used for the cooling over the entire length of cylinder, and the block is made of an aluminum alloy with cast-in cylinder liners.

A fully counter-balanced 120° crankshaft is supported with four main bearings. Piston is also made of a light alloy and two keystone rings are fitted.

TROUBLE SHOOTING

Symptoms & Probable Causes	Remedies
Hard Starting	
1. Defective fuel system	
a. Defective starter system	Repair (Refer to page 65)
b. Defective diaphragm cock	Clean or replace (Refer to page 10)
c. Dirty or clogged carburetor	Disassemble and clean
d. Loose carburetor mounting clamps	Tighten clamps
e. Leaking or clogging fuel passage	Clean or replace
f. Clogged fuel tank cap	Repair or replace
2. Incorrect ignition system	
a. Burnt contact point/s	Replace point/s
b. Incorrect point gap	Adjust gap (Refer to page 92)
c. Incorrect spark plug gap	Adjust gap (Refer to page 93)
d. Incorrect ignition timing	Adjust timing (Refer to page 94)
e. Loose or defective spark plug/s and high tension cord/s	Tighten or replace
f. Defective ignition coil	Replace coil
g. Defective condenser/s	Replace condenser/s
h. Wet spark plug/s	Clean or replace plug/s (Refer to page 93)
3. Engine	
a. Worn pistons, piston rings & cylinders	Replace pistons, piston rings, and bore cylinders (Refer to page 26)
b. Worn crankshaft oil seal	Replace oil seal
c. Loose cylinder head	Tighten nuts (Refer to page 32)
4. Defective electric system	
a. Defective starter motor	Repair (Refer to page 80)
b. Discharged battery	Charge battery
c. Defective battery	Replace
d. Defective starter clutch	Repair or replace (Refer to page 78)

Symptoms & Probable Causes	Remedies
Low Power or Loss of Power	
1. Low compression	
a. Cylinder head gasket leaking	Replace gasket
b. Piston ring stuck or defective	Replace ring/s
c. Worn piston ring/s or cylinder/s	Replace piston/s, ring/s and bore cylinder/s (Refer to page 26~29)
d. Worn or defective crankshaft oil seal/s	Replace oil seal/s
2. Incorrect ignition system	
a. Incorrect ignition timing	Adjust timing (Refer to page 94)
b. Defective spark plug/s	Clean or replace
c. Defective contact point/s	Repair or replace
d. Defective condenser/s	Replace condenser/s
3. Insufficient fuel	
a. Clogged or maladjusted carburetor	Disassemble, clean & adjust (Refer to page 68
b. Clogged diaphragm cock	Repair or replace (Refer to page 71)
c. Clogged fuel pipe/s	Clean pipe/s
4. Insufficient air intake	
a. Restricted air cleaner	Clean or replace element (Refer to page 10)
5. Overheating	
a. Insufficient cooling solution	Replenish (Refer to page 61)
b. Defective thermostat	Replace thermostat (Refer to page 57)
c. Worn or damaged water pump	Replace pump
d. Clogged or leaky radiator	Flush, repair or replace (Refer to page 55)
e. Incorrect ignition timing	Adjust timing (Refer to page 94)
f. Faulty cooling fan	Repair or replace
g. Clogged cooling system passage	Clean
h. Low grade engine oil	Change with proper oil
i. Clogged or obstructed radiator fins	Clean

Symptoms & Probable Causes	Remedies
Popping, Spitting & Detonation	
1. Ignition system	
a. Incorrect ignition timing	Adjust timing (Refer to page 94)
b. Loose wire and high tension cord	Check connection
c. Defective spark plug	Clean or replace
d. Incorrect heat range spark plug	Clean or replace (Refer to page 95)
e. Defective ignition coil and condenser	Replace
f. Burnt contact points	Dress or replace (Refer to page 92)
2. Air-fuel mixture	
a. Lean mixture	Clean and adjust carburetor (Refer to page 68)
b. Dirty carburetor	Clean carburetor
c. Clogged fuel pipe and cock	Clean or replace
d. Incorrect float level	Adjust (Refer to page 70)
e. Water in carburetor	Clean and check fuel tank
f. Loose carburetor mounting nut	Tighten
3. Cylinder head	
a. Excessive carbon deposit	Remove carbon
b. Clogged water passage in cylinder head	Clean water passage
c. Defective cylinder head gasket	Replace gasket
Rough Engine Idling	
1. Fuel system	
a. Unbalanced carburetor idling adjustment	Adjust and synchronize each carburetor (Refer to page 69)
b. Incorrect float level	Adjust (Refer to page 70)
c. Incorrect throttle wire play	Adjust wire play (Refer to page 70)
2. Engine	
a. Worn crankshaft oil seal	Overhaul engine and replace
b. Incorrect ignition timing	Adjust (Refer to page 94)
c. Defective cylinder gasket	Replace
d. Wet spark plug	Clean or replace

Symptoms & Probable Causes	Remedies
Engine Misfires at Accelerating	
1. Fuel system	
a. Water in fuel or clogged carburetor jets	Disassemble and clean carburetor
b. Clogged fuel pipe or cock	Clean or replace
c. Defective fuel cock diaphragm	Replace fuel cock
2. Ignition system	
a. Defective spark plug & incorrect gap	Replace & adjust (Refer to page 93)
b. Defective high tension cord	Replace
c. Burnt or defective contact point & condenser	Replace
d. Defective ignition coil	Replace
e. Incorrect ignition timing	Adjust (Refer to page 94)
3. Engine	
a. Worn crankshaft oil seal	Overhaul engine and replace
b. Defective cylinder head gasket	Replace

Engine Noise

Tracing the noise source of engine is a very difficult matter even for a skilled engineer. Naturally it seems impossible to specify the procedure to trace the source of engine noise. The best way would be to rely upon the judgement of a skilled man.
In the following we will describe a tracing procedure through which you might be able to trace the noise source more systematically to some extent.

In case of glinding and dragging noise:

1. When the clutch is off, the character of noise changes.	
a. Defective clutch system or too much play in clutch system	Adjust or replace (Refer to page 36)
b. Defective transmission gear system	Check or replace
c. Defective transmission bearing	Check or replace

Symptoms & Probable Causes	Remedies
2. The character of noise never changes whether clutch is on and off.	
a. Defective crankshaft bearing	Replace
b. Defective pump system	Check or replace
c. Defective starter clutch	Check or replace
d. Faulty ignition system	Check or replace
e. Failure in power train except clutch system	Check and repair
In case of knocking or slopping noise:	
1. Noise is generated over all the speed range.	
a. Scored piston onto cylinder	Hone cylinder and replace piston
b. Worn piston pin	Replace
2. Noise is generated during the engine deceleration from high speed range.	
a. Excessively worn piston	Replace
b. Worn connecting rod bearing	Replace
In case of rustling noise during idling:	
1. Insufficient oil in transmission case	Check
2. Insufficient lubrication for contact breaker cam etc.	Check
3. Check if the noise comes from the water pump located under engine case.	
Irregular clicking noise:	
1. Markedly worn piston ring	Replace
2. Broken piston rings	Replace
3. Piston ring caught at cylinder port	Glind off edge of port
Excessive Oil Consumption	
1. Oil leak	
a. Loose oil pipe & connector	Repair or tight
b. Loose check valve gasket	Tight or replace
c. Loose oil pump fitting screw	Tight
2. Oil pump	
a. Incorrect oil pump adjustment	Adjust control lever
b. Clogged check valve	Replace (Refer to page 10)

ON FRAME SERVICE

The following maintenance procedure can be performed without dismounting engine from the frame.

Cylinder Head

Removal

1. Drain cooling system by loosening the water drain plug ①.

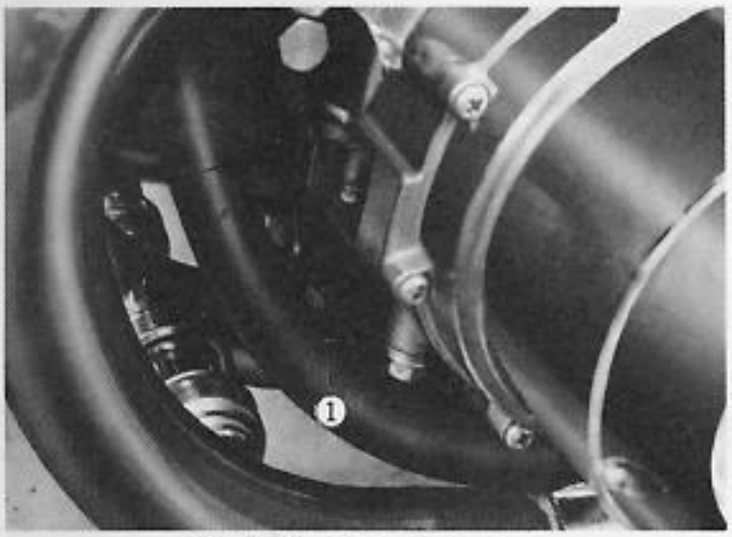


Fig. 3–2 Water drain plug

2. Disconnect fuel hose and fuel cock, and then fuel tank can be removed.

3. Disconnect radiator inlet hose.

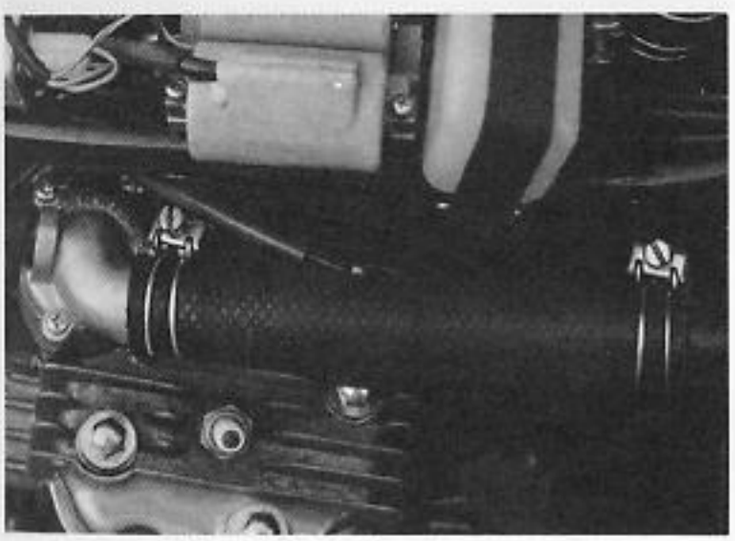


Fig. 3–3 Radiator inlet hose

4. Loosen water by-pass hose clamp.

5. Loosen cylinder head fitting bolts diagonally as shown in illustration to dismount the cylinder head.

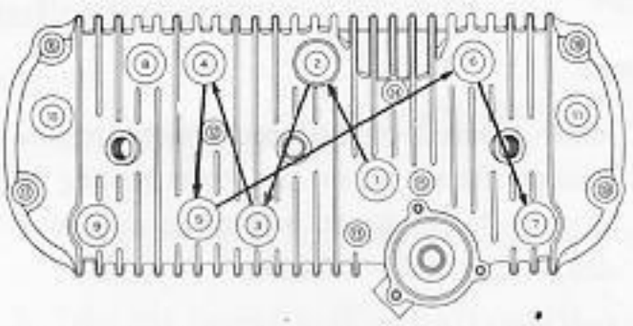


Fig. 3–4 Tightening order of cylinder head bolts

Cylinder

Removal

1. After removing cylinder head, loosen exhaust pipe clamps.

2. Loosen the carburetor fitting clamps and then remove carburetors.

3. Remove SRIS (SUZUKI Recycle Injection System) pipes ① from cylinder.

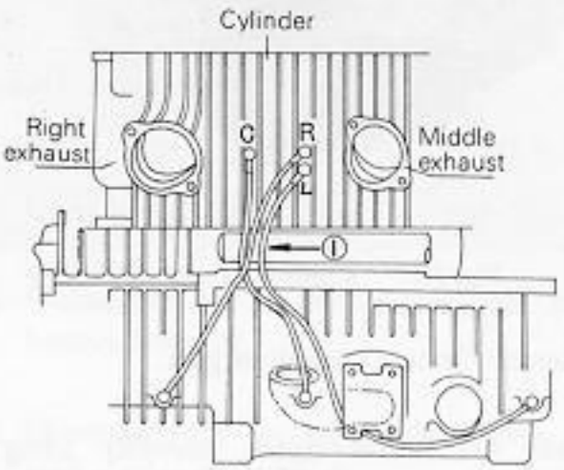


Fig. 3–5 SRIS pipes

4. Lift up cylinder after loosening cylinder set nut.

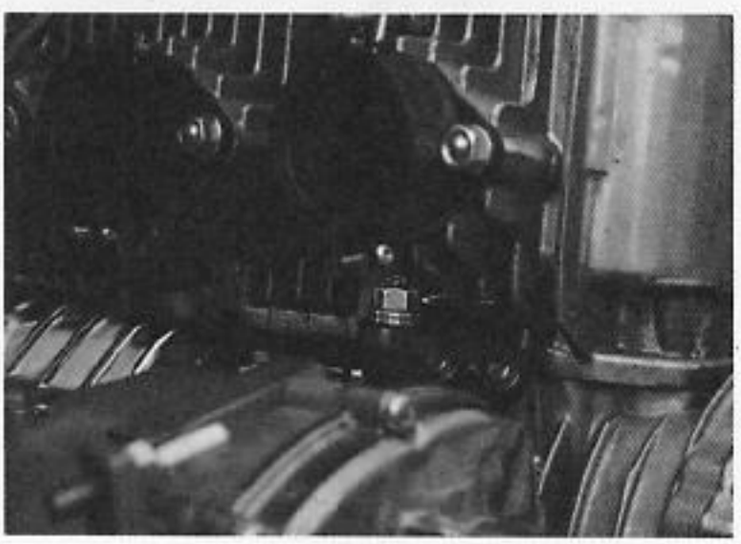


Fig. 3–6 Cylinder set nut

Piston

Removal

1. After removal of cylinder, remove piston pin circlips from piston pin hole placing waste cloth over crankcase preventing circlips from dropping into crankchamber.

2. Pull out piston pin, and then take off piston.

Starter Clutch

Removal

1. Remove starter clutch cover ①.

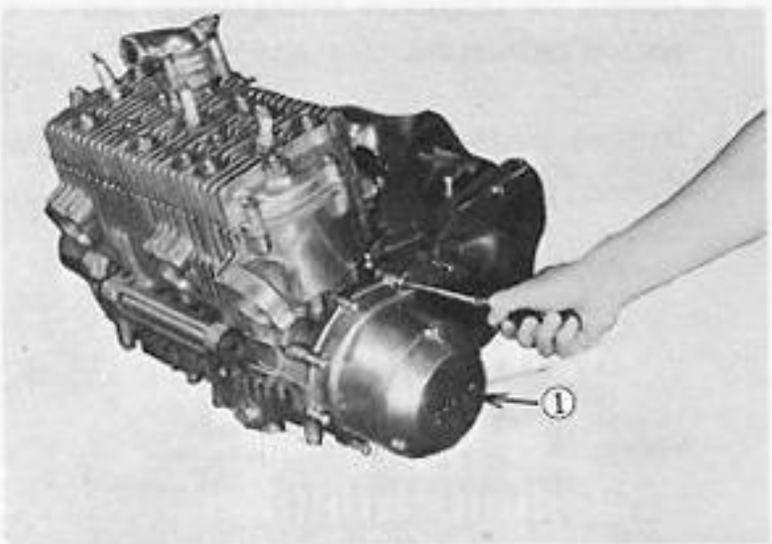


Fig. 3–7 Removing clutch cover

2. Remove water pump drive gear.

3. Take off starter clutch assembly using the Starter Clutch Remover ① (09920–53110) and Starter Clutch Holder ② (09920–40111).

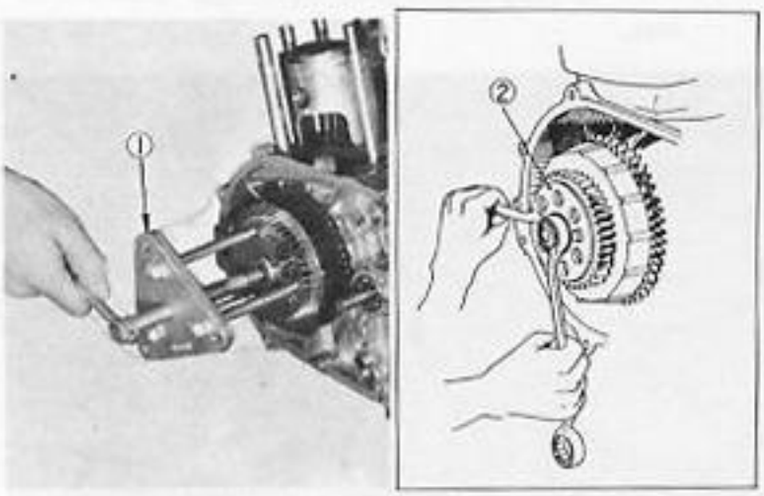


Fig. 3–8 Taking off starter clutch

Alternator

Removal

1. Remove alternator cover.

2. Take off brush holder ① holding it firmly with hands, keeping in mind that brushes may jump out of holder and accordingly wires may be cut off.

3. Remove starter ②.

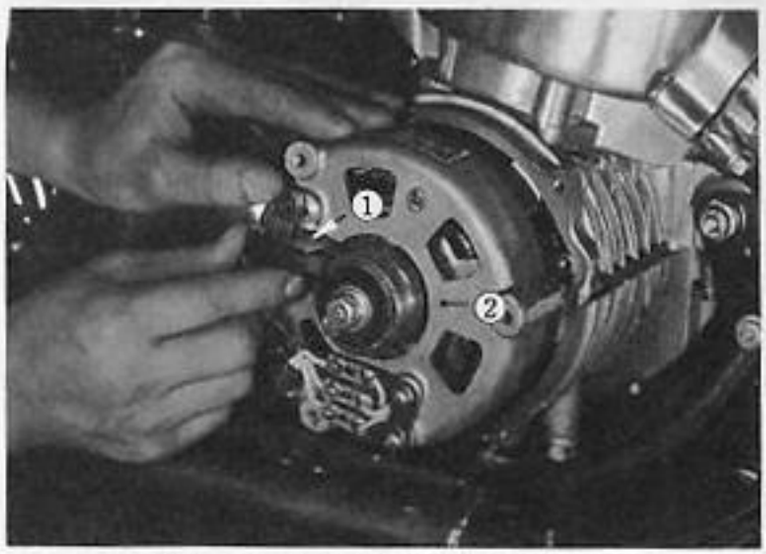


Fig. 3–9 Removing alternator brush

4. Remove rotor ① by using Rotor Remover ② (09930–33110).

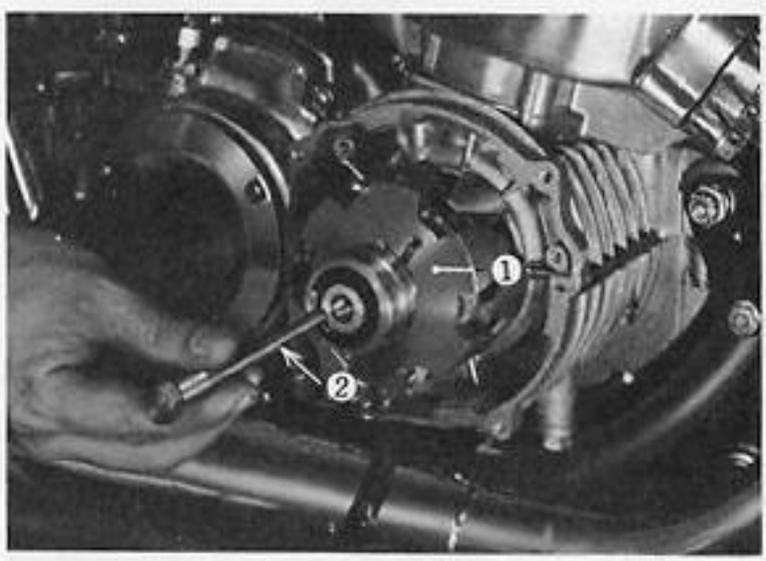


Fig. 3–10 Removing alternator rotor

Clutch

Removal

1. Remove clutch inspection cap and loosen clutch release shaft nuts ①, and then take off clutch lever ②.

2. Remove clutch cover ③.

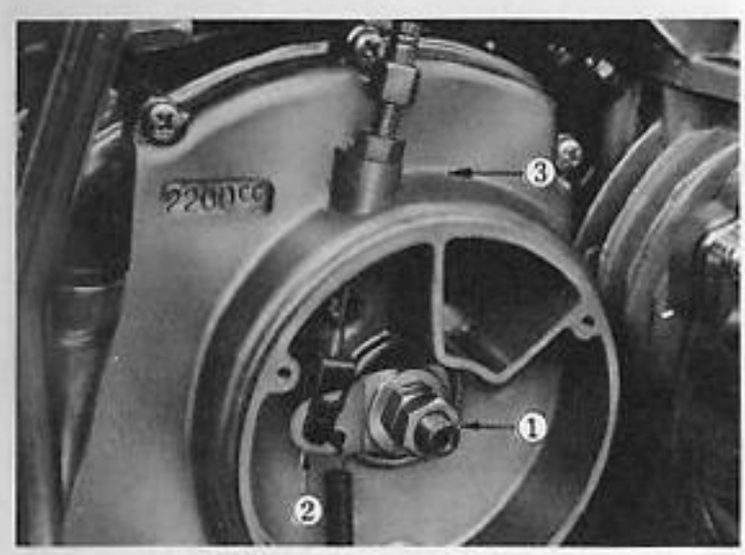


Fig. 3–11 Removing clutch cover

3. Remove clutch pressure disk ① and release shaft ②.

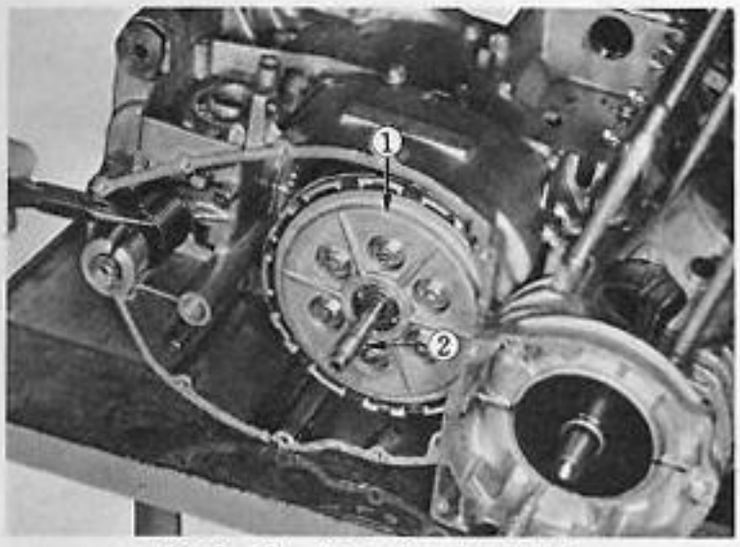


Fig. 3–12 Removing clutch disk

4. Remove clutch sleeve hub nut using Clutch Sleeve Hub Holder (09920–53110). Subsequent to the removal of clutch plates and sleeve hub, take off primary driven gear spacer ① and bushing ② by drawing with bolts ③, then remove the primary driven gear by sliding it backward.

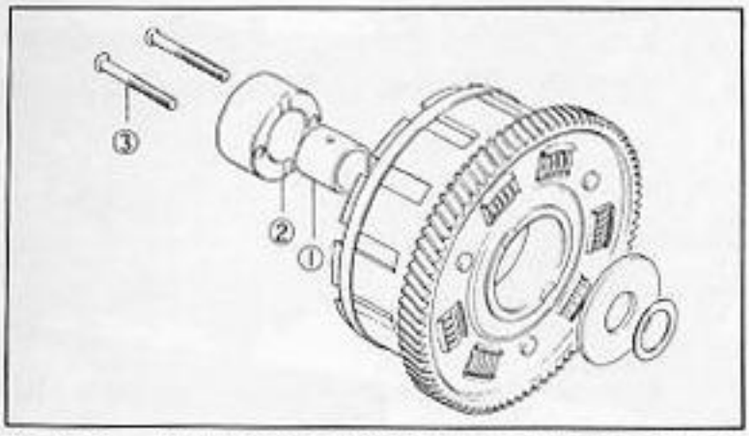


Fig. 3–13 Removing primary driven gear spacer and bushing

Starting Motor

Removal

1. Remove cylinder block.

2. Remove by-pass hose and starting motor cover.

3. Take off by-pass hose union ① and then draw starter motor backward.

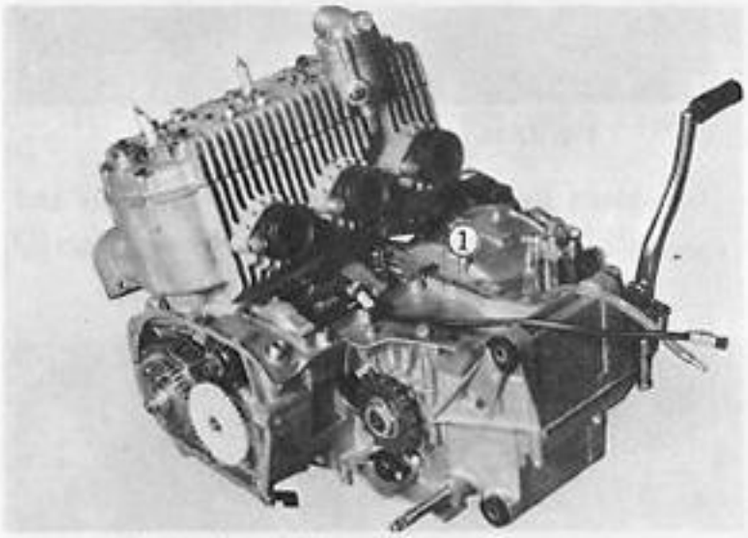


Fig. 3–14 Taking off by-pass hose union

MAJOR SERVICE

Removal

1. Drain the cooling system. See page 20.

2. Disconnect the starting motor wire from the battery terminal.

3. Disconnect the fuel pipes and unhook the fuel tank setting band ①, then remove the fuel tank by sliding it backward.

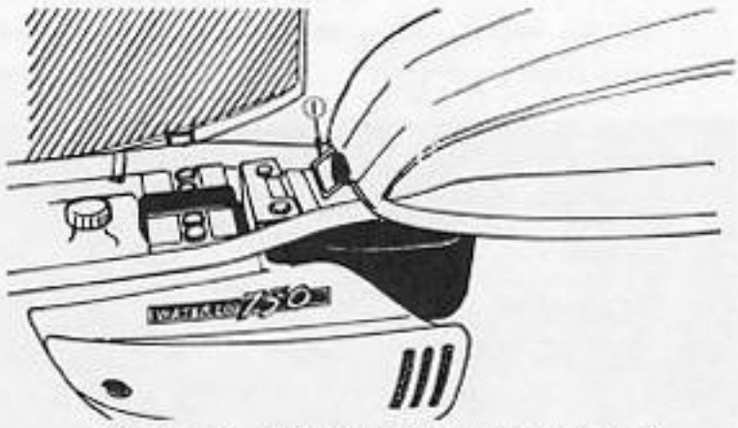


Fig. 3–15 Unhooking fuel tank setting band

4. Disconnect the radiator inlet hose. See Fig. 3–3.

5. Remove the cooling fan with its bracket.

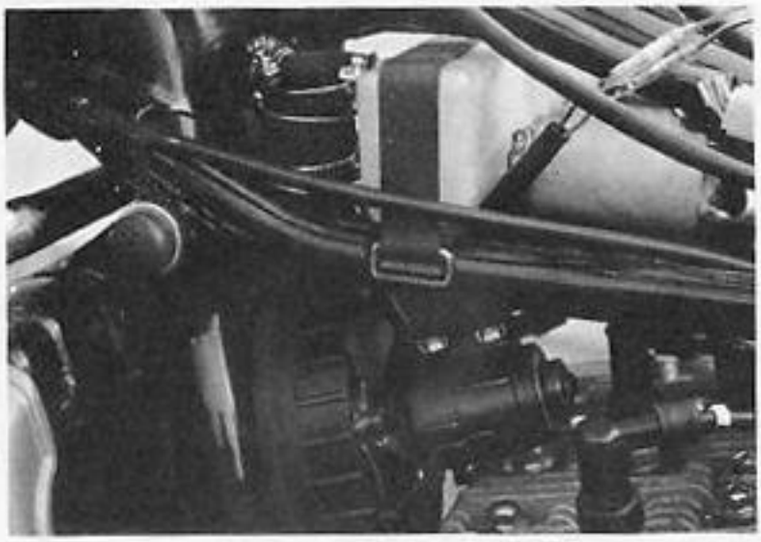


Fig. 3–16 Removing cooling fan

6. Loosen the exhaust pipe clamp set bolts and rear foot rests, then remove the mufflers ① and coupler tubes ②.

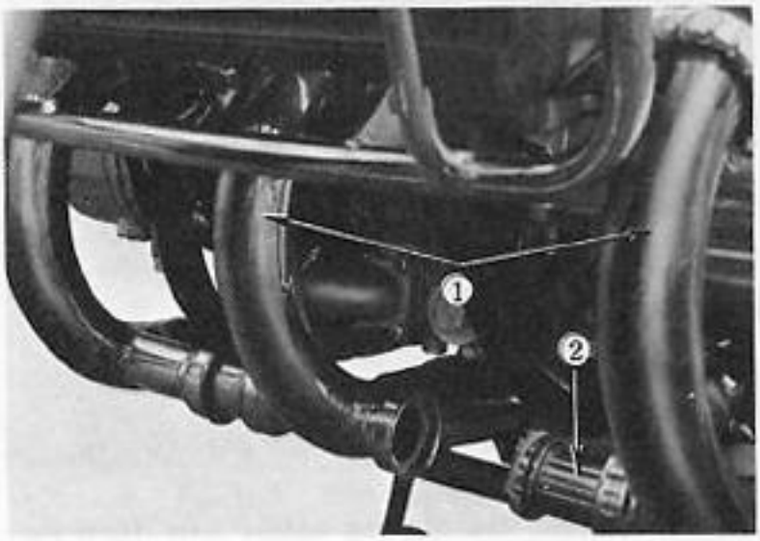


Fig. 3–17 Exhaust pipes & coupler tubes

7. Remove the frame left cover, and disconnect the alternator and the contact breaker couplers ①, ② from the coupler bracket, and also disconnect the starting motor lead ③ from the starter switch relay and the engine ground wire from the frame.

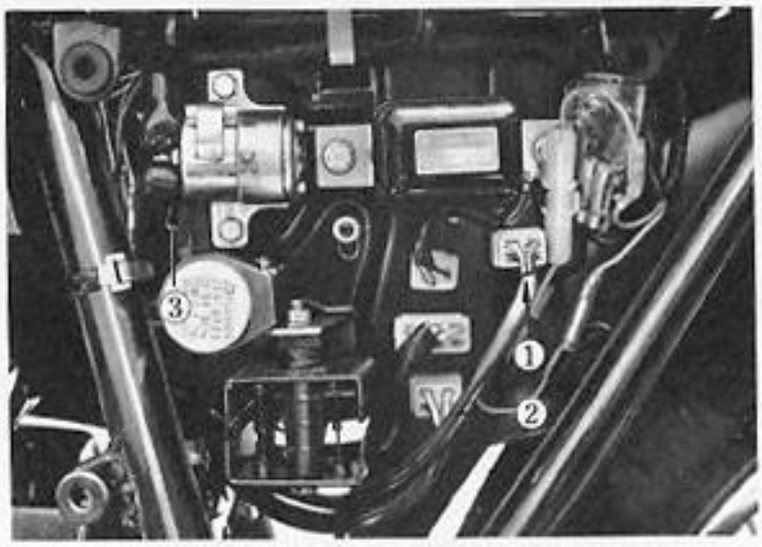


Fig. 3–18 Electric parts holder

8. Remove the air cleaner by loosening set bolts ① and carburetor clamps.

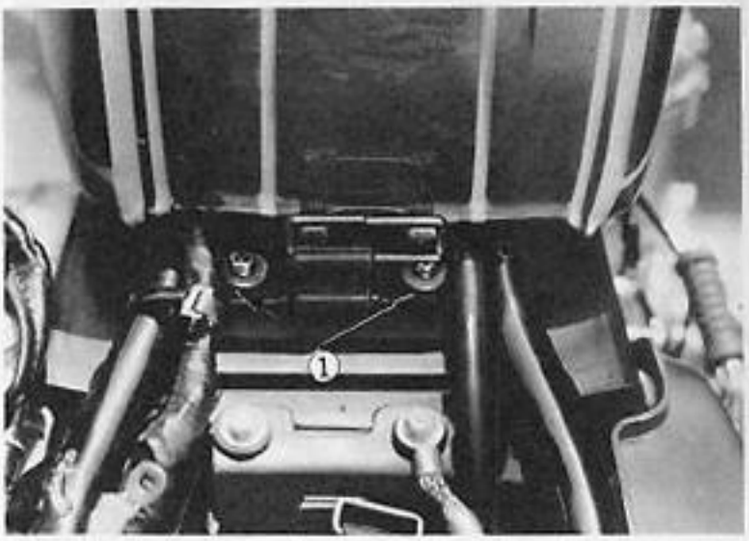


Fig. 3–19 Loosening air cleaner set bolts

9. Remove the left foot rest and gear shifting lever, and then remove the engine sprocket ① with the drive chain on it.

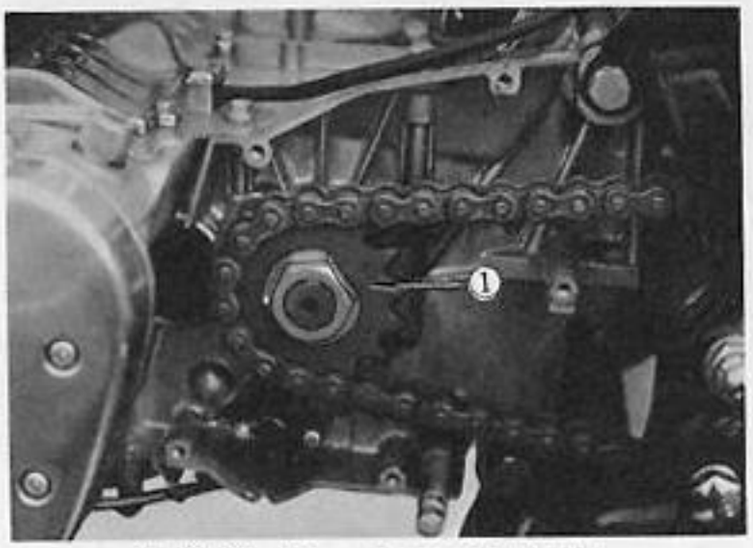


Fig. 3–20 Removing engine sprocket

10. Disconnect the clutch, oil pump, carburetor and tachometer cable.

11. Remove the right foot rest and brake pedal.

12. Remove the engine mounting bolts and mounting plates, then remove the engine from frame.

Disassembly

1. Drain the transmission oil.

2. Remove the contact breaker assembly by unscrewing three set screws.

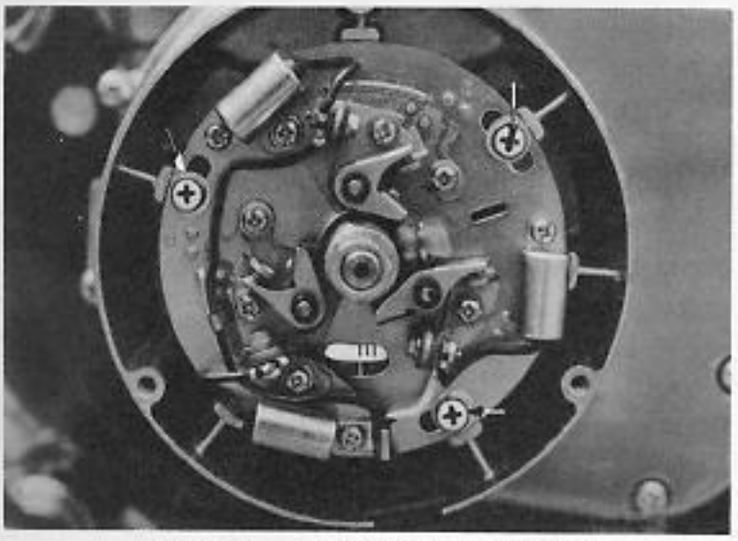


Fig. 3–21 Contact breaker assembly

3. Remove the starter clutch cover, and the water pump drive gear ① and starter idle gear ②, then remove the starter clutch with the Starter Clutch Remover (09920–53110). See page 21.

4. Extract the tachometer driven gear ③ with the sleeve on it, after loosening the set bolt ④.

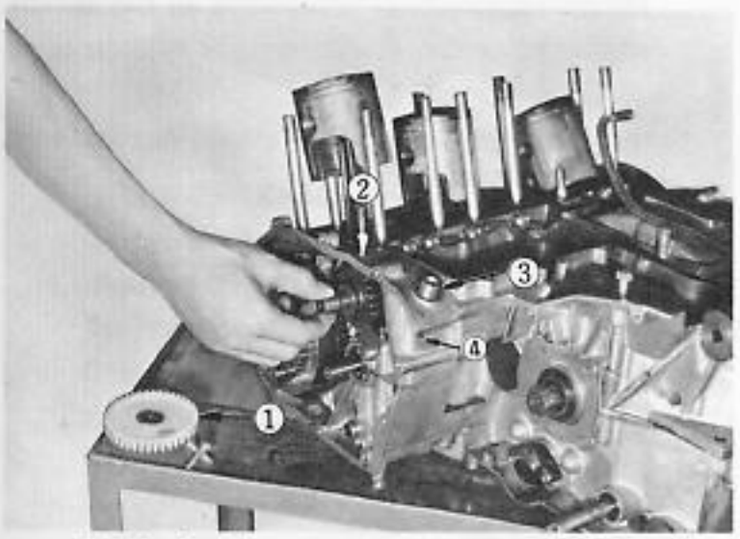


Fig. 3–22 Removing water pump driving parts

5. Remove the gear shifting switch ① and drive shaft oil seal retainer ②.

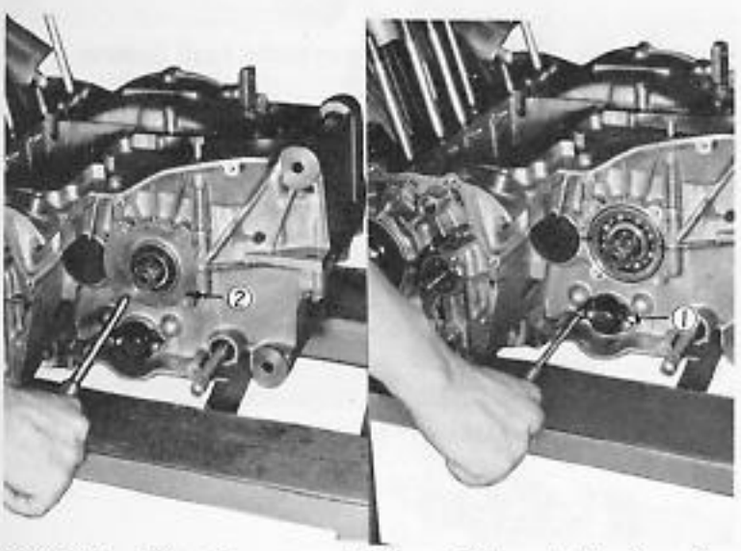


Fig. 3–23 Removing gear shifting switch and oil seal retainer

6. Remove the alternator housing assembly, and the rotor with the Rotor Remover (09930–33110). See Fig. 3–10.

7. Remove the by-pass hose from cylinder head, and loosen the cylinder head bolts in criss-cross style, and remove the cylinder head.
See page 20.

8. Remove the SRIS (SUZUKI Recycle Injection System) oil hoses from the cylinder and crankcase, and remove the cylinder by loosening the cylinder fitting nut at the lower part of cylinder block. See page 20.

9. Remove the piston pin circlips, and piston pins and remove pistons.

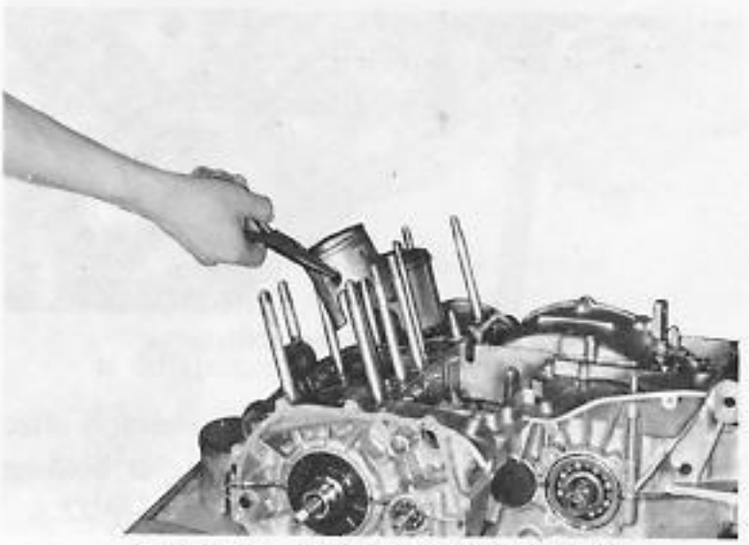


Fig. 3–24 Removing piston pin circlip

10. Remove the starting motor cover ①, and the water pump by-pass hose union (Fig.3–14), and slide the starting motor backwards to remove it.

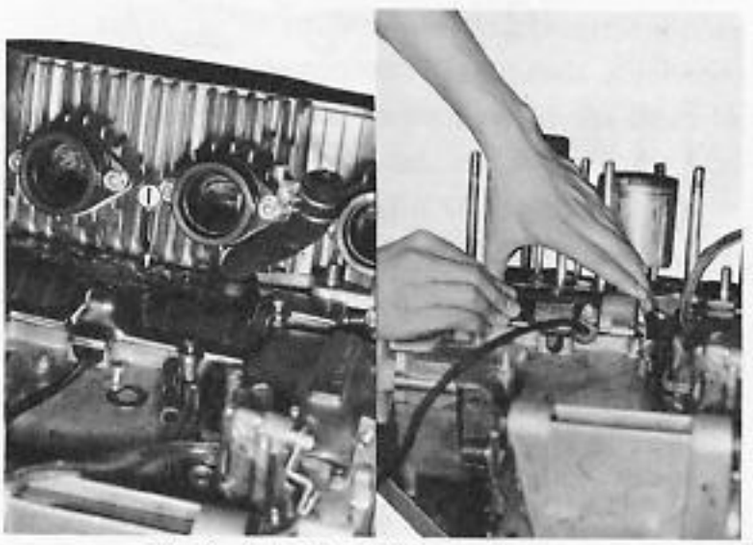


Fig. 3–25 Removing starting motor

11. Remove the oil pump cover, the oil pump and oil pipe comp..

12. Remove the clutch adjusting cap, then loosen and remove the clutch release shaft fitting nuts to take off the clutch release arm.
Remove the clutch cover, and the clutch pressure disk by removing six bolts, then take out the drive and driven plates.
Remove the clutch sleeve hub with the Clutch Sleeve Hub Holder (09920–53110).
See page 21.

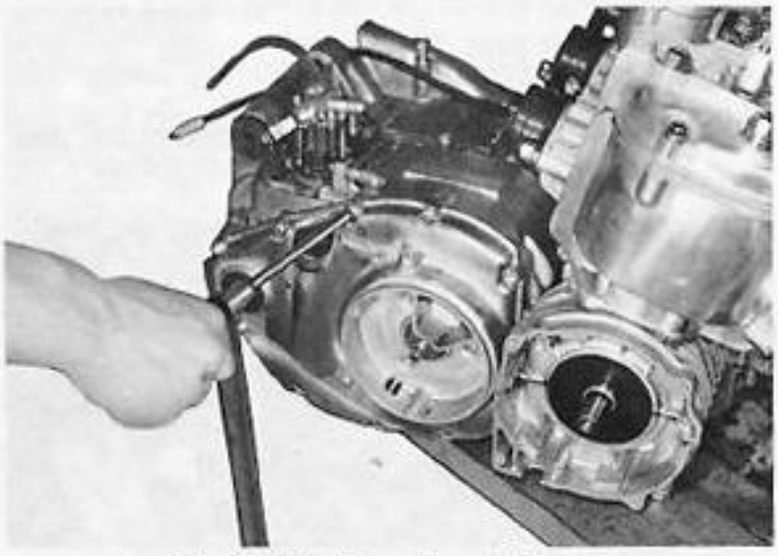


Fig. 3–26 Removing clutch cover

Remove the primary driven gear assembly after pulling out the primary driven gear bushing with two bolts screwed into it. See page 22.
Remove the transmission oil reservoir plate which is located on crankcase inside the clutch chamber.

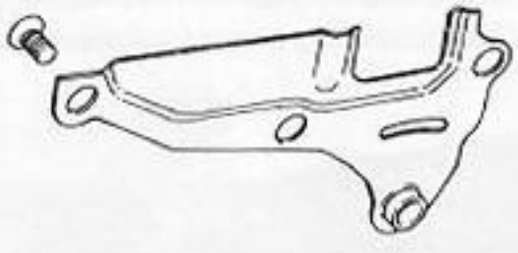


Fig. 3–27 Transmission oil reservoir

13. Remove the kick starter shaft spring guide, and the spring and its holder.

14. Loosen the crankcase fitting bolts in the reverse order of relieved (casted) numbers on the crankcase, and remove them all to open the crankcase.

15. Remove the shafts and gears.

Inspection & Repair

Clean out all disassembled engine parts completely, before starting the inspection and repair work. All locations with water leakage and defects should be checked carefully beforehand. Don't mix or change the originally mated parts of the pistons, piston rings and bearings.

Cylinder Head

1. Remove carbon deposists in combustion chamber with scraper or wire brush. Due care should be taken not to scratch the parting surface of cylinder head.

2. Check for any cracks in the head casting, also check for scratches or nicks on the parting surface. Replace the head, if necessary.

3. Check the flatness of parting surface using a feeler gauge ①. If warpage or distortion exceeding 0.04 mm (0.001") is found on the surface, repair the surface, or replace the cylinder head.

Note: When mesuring the flatness, mesure in six directions.

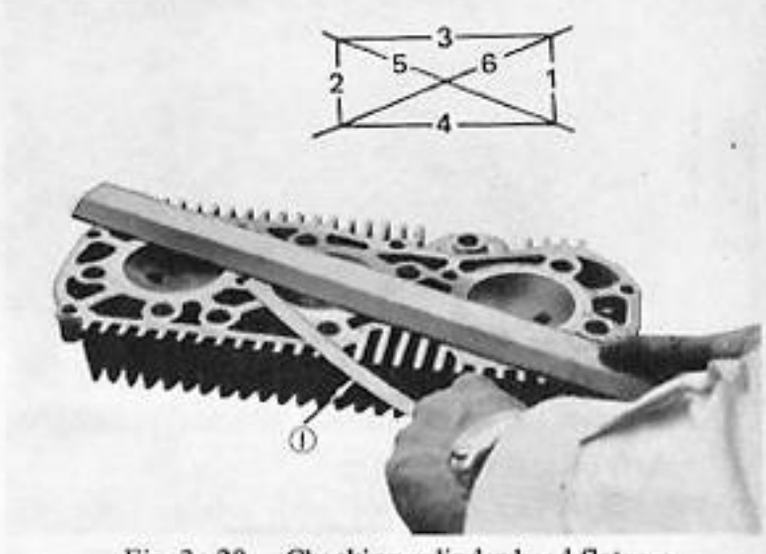


Fig. 3–28 Checking cylinder head flatness

Cylinder & Piston

1. Remove the carbon deposit in exhaust port, but ample care should be taken not to scratch the inner wall of cylinder.

2. Check any cracks in cylinder block, and then check any burrs and nicks on the parting gasket surface. Use special apparatus observe the minor defects, since they may not be found visually. The block should be pneumatically tested with the air pressure of 3 kg/cm^2, and it is acceptable if no leakage is found out.

3. Measure the cylinder block surface flatness on the gasket side in the same way as the cylinder head. If its warpage exceeds 0.05 mm (0.002″) in magnitude, scrape off the surface or replace the block itself.

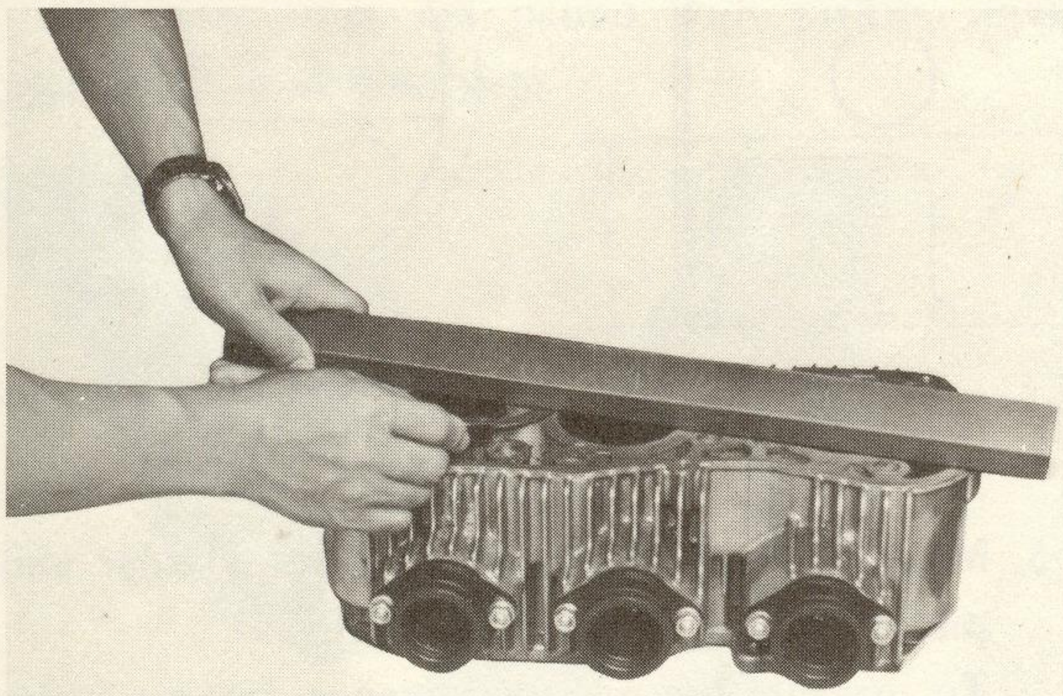


Fig. 3–29 Checking cylinder block flatness

4. Measure the out of roundness and taper wear of the cylinder bore with the cylinder gauge. Cylinder bore should be measured at upper, middle and lower points of the bore surface in both lateral and transverse directions with respect to the cylinder block center line as shown in the figure.

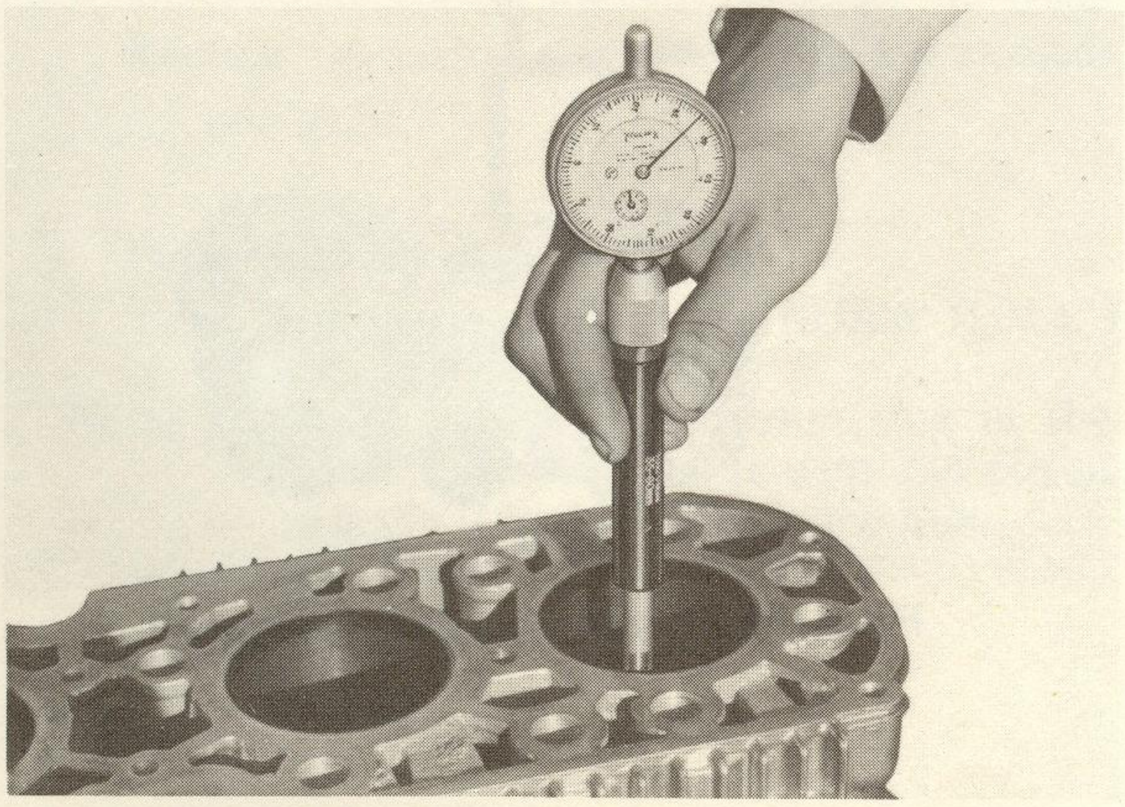


Fig. 3–30 Measuring cylinder bore for wear

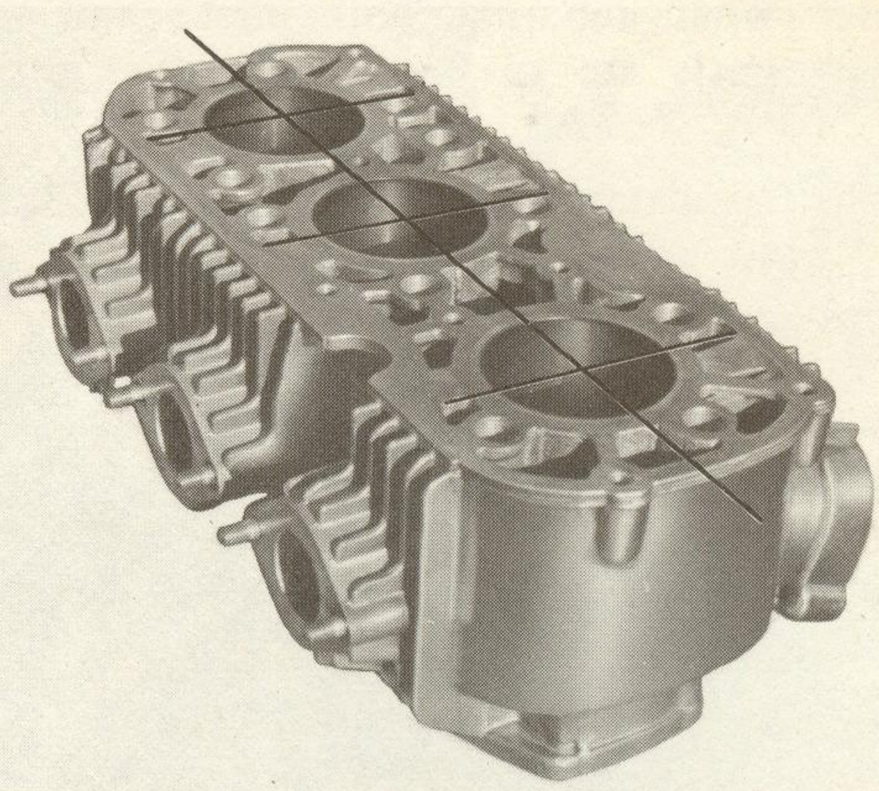


Fig. 3–31 Directions to be measured

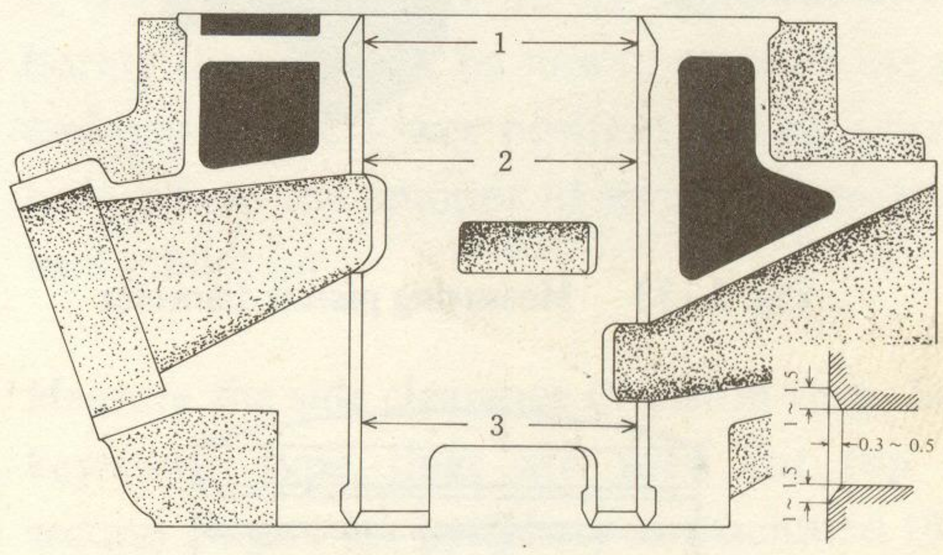


Fig. 3–32 Positions to be measured

If differences between the maximum and minimum bore diameters measured exceed 0.07 mm (0.0018″), rebore and polish off the cylinder by honing.

Cylinder bore (Standard):
70.000~70.015 mm (2.7559~2.7565″)
Wear & taper limit: 0.07 mm (0.0018″)

If reboring is needed, measure the bore diameter at the location of maximum wear, and then select oversize pistons. The amount of reboring needed should be determined by the diameter of oversize pistons used, and the cylinder bore clearance.

Piston diameter:
STD: 69.950~69.965 mm (2.7539~2.7545″)
O/S 0.5:
70.450~70.465 mm (2.7736~2.7742″)
O/S 1.0:
70.950~70.965 mm (2.7933~2.7939″)
Piston bore clearance (Standard):
0.045~0.055 mm (0.0018~0.0022″)

Note: When reboring, both intake and exhaust ports are to be chamfered as shown in Fig. 3–32.

Piston diameter should be measured always normal to the piston pin center line and at 32 mm (1.26″) above the lowest end.

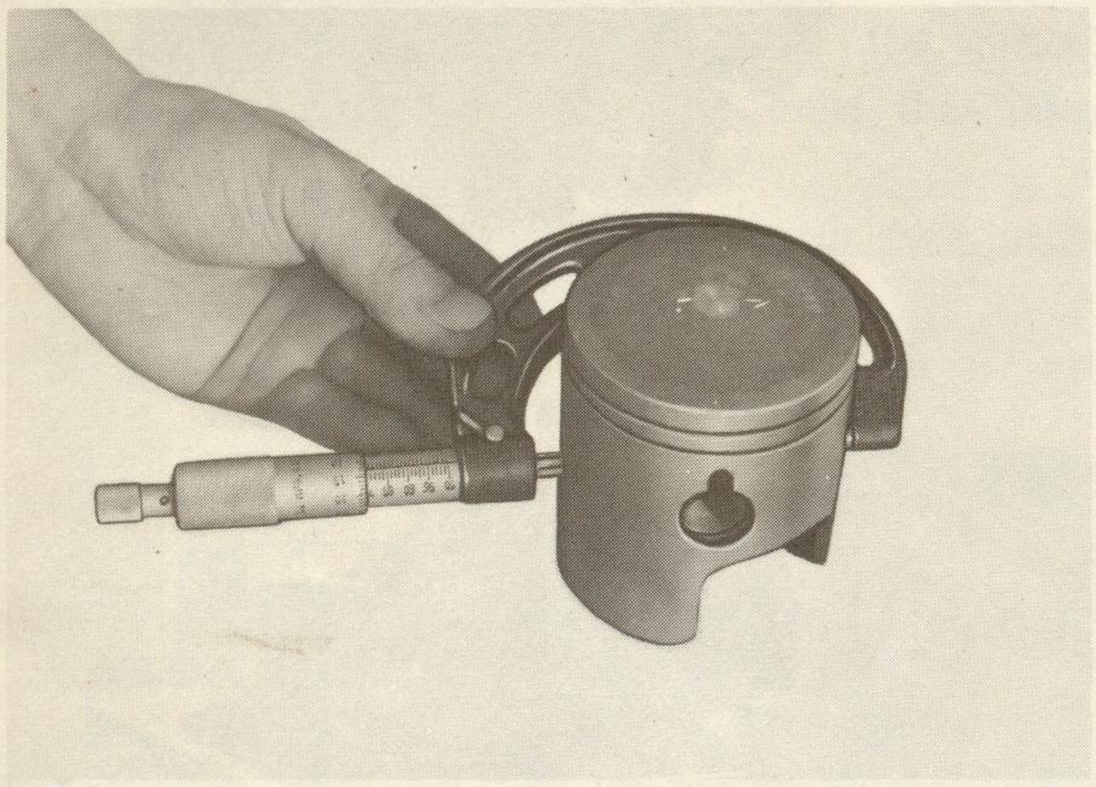


Fig. 3–33 Measuring piston diameter

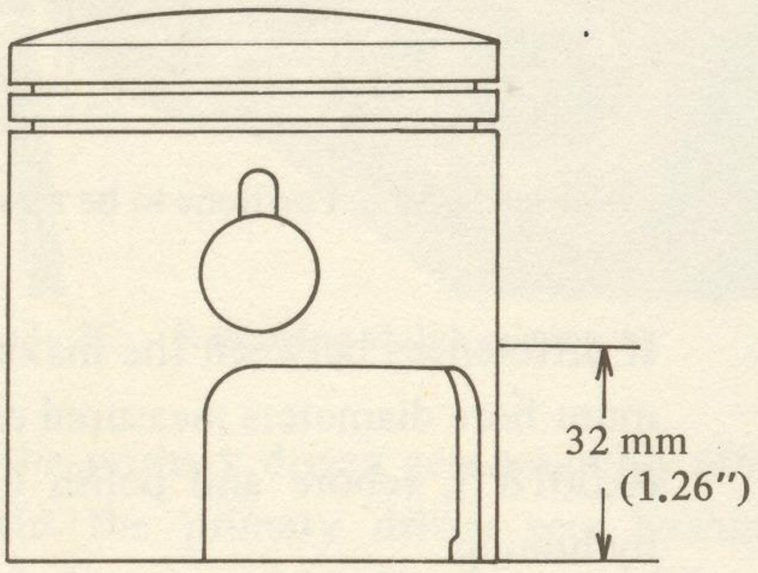


Fig. 3–34 Measuring point

*Necessity of determining measuring points of piston and cylinder bore diameters *

Reasons for having measuring points of both piston and cylinder bore diameters fixed are as follows:

(1) As shown in Fig. 3–32, the cylinder has inlet, scavenging, and exhaust ports bored on the cylinder surface. When a piston is subjected to reciprocating motion cylinder wall, amount of wear of cylinder is always larger in the neighborhood of the port, resulting in a kettle type elliptic shape when magnified. On the other hand, near the top position, the wall is exposed to higher temperatures and pressures from combustion gas which contribute to accelerated wear of the cylinder. Naturally, the roundness and cylindricalness of the cylinder become needed and are to be measured at the top, middle, and bottom positions in both parallel and normal directions to the cylinder axis. This is needed to represent the shape of piston cylinder correctly.

(2) As shown in Fig. 3–35, piston has a taper in longitudinal direction and has an elliptic cross section. During engine operation, the piston is heated and expands. As the wall thickness increases, so does the expansion rate of piston. This taper is needed to obtain a true cylindrical form with roundness during engine operation, by machining as shown in the drawing.

I: Distance from the skirt bottom 32 mm (1.26″)
II: Diameter at 90 to the pin boss
III: Diameter parallel with pin boss

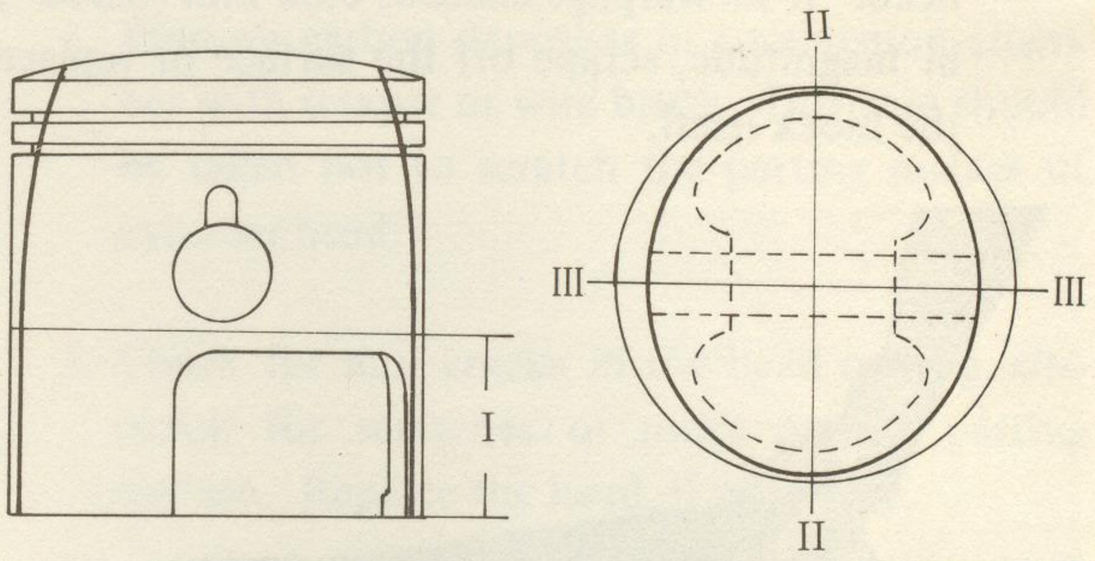


Fig. 3–35 Piston's out-of-round & tapering

5. Measure the clearance between cylinder and piston using piston feeler gauge.

To measure the piston clearance, insert a feeler gauge into the cylinder bore, then insert the piston top into the bore with the feeler gauge fixed at 90° to the piston pin axis. Then pull out the gauge: this can be done more accurately using a spring scale. The allowable limit of tension force should be between 1 and 2 kg (2.2~4.4 lb).

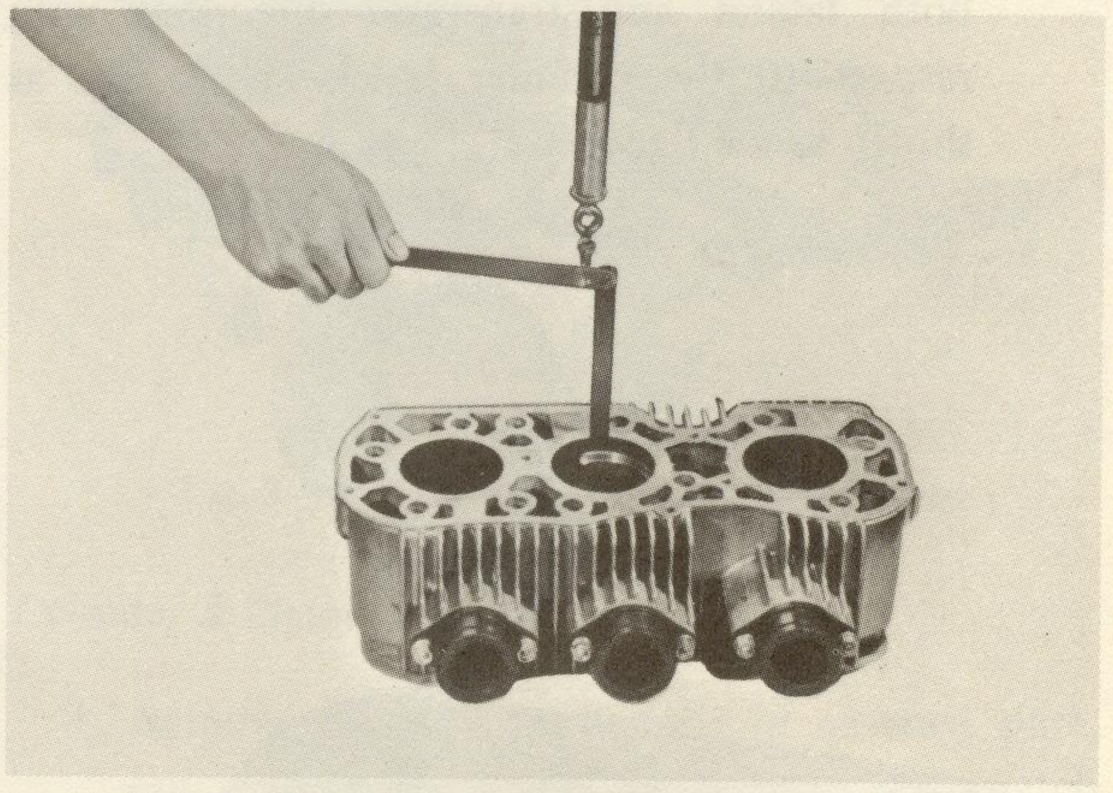


Fig. 3–36 Measuring cylinder clearance

If the piston clearance exceeds 0.070 mm (0.0018"), the cylinder should be rebored, or else the piston must be replaced.

Note: Two kinds of piston are available: Be carefull not to confuse each piston. (Refer to "Assembly" item.)

6. Examine piston pin boss and piston ring groove carefully for any abnormal wear, burrs or cracks. Check the piston side wall for any trace of sticking or scratches. If damaged excessively, replace the piston. If the damage is slight, polish it with #400 emery sand paper. As piston rings are paired with piston, replace both, if necessary.



Fig. 3–37 Polishing piston surface

Piston Ring

1. Check piston ring for any defects such as abnormal wear, etc.. To check the ring wear, insert piston ring into the cylinder bore from bottom to check the end gap of the ring. Replace the piston ring if the ring gap exceeds 0.7 mm (0.027").

   Piston ring end gap (Standard):
   0.15~0.35 mm (0.006~0.014")

Note: When checking the piston ring in the cylinder bore, insert it with the piston to settle it horizontally in the bore.

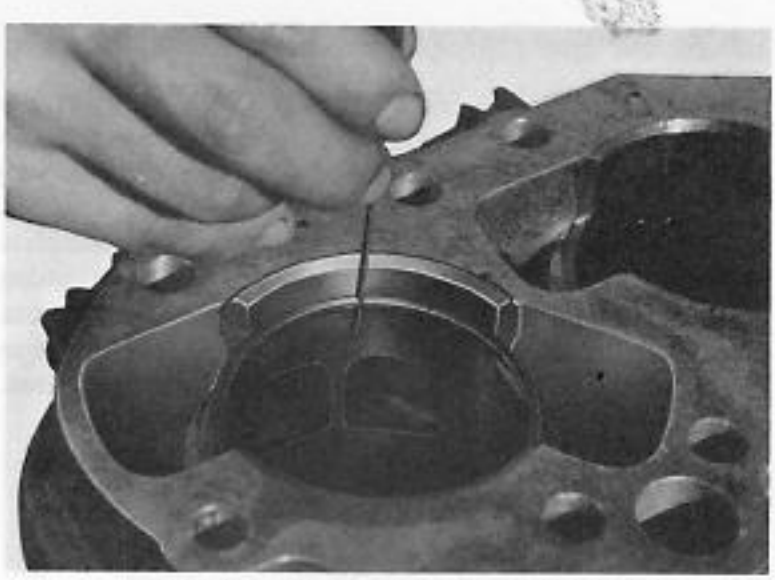


Fig. 3–38 Checking piston ring end gap

If only the rings are to be replaced without boring the cylinder, be sure to measure the ring end gap at the lower position of the cylinder bore where the amount of wear is expected to be a minimum.

2. Measure the side clearance of piston ring. Same key-stone type rings are used for top and second rings. Its periphery is machined like a barrel shape. Consequently, any piston ring trouble is quite rare. Piston groove wear may occur, which must be spotted.

   Standard value of ring side clearance:
   0.030~0.095 mm (0.001~0.004")



Fig. 3–39 Measuring piston ring side clearance

The benefits of the key stone type rings

The function of piston ring is to seal off the explosive gas preventing it blowing through cylinder and piston. To do this, the rings should be adhered onto the cylinder wall tightly, floating on the piston. But after long hours of operation, the carbon deposit as the product of incomplete combustion tends to accumulate in ring grooves, causing sticking of ring, resulting in poor sealing. The keystone ring in effect clears off the carbon deposit in grooves due to the tapered surface during reciprocating motion of piston.

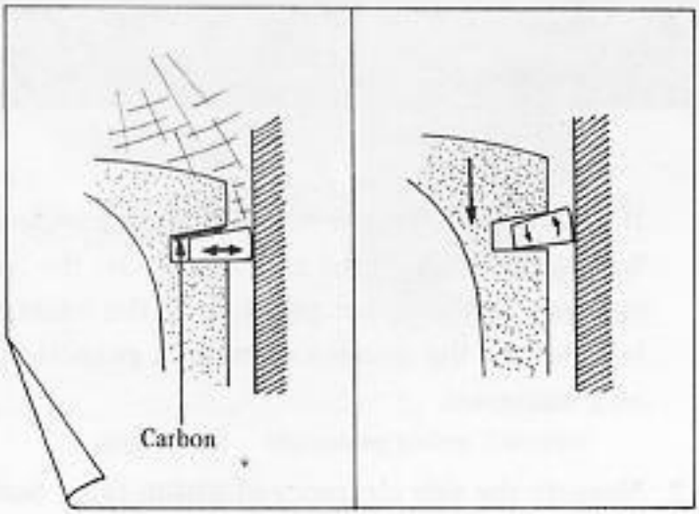


Fig. 3–40 Function of piston ring

The external barrel-like shape of the ring is effective for preventing the ring edge from contacting the cylinder wall or cylinder port edge, thus ring noise, oil film breakage, piston seizure, and excessive wear can be avoided. Very thin and wide rings are used, which is effective in reducing the tension. So it now becomes possible to prevent cylinder wall scuffing, and at the same time to reduce the friction power.

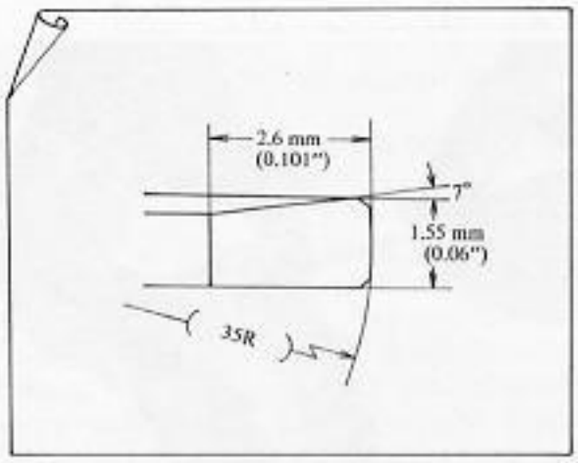


Fig. 3–41 Piston ring dimension

Crankshaft, Connecting Rod & Bearing

Crankshaft is assembled by press fitting. It is supported to crankcase by four main bearings. Both big and small end bearings in the connecting rod are of needle roller type having cages, resulting in extended engine life and reduced power loss.

1. Check the amount of bend and twist of connecting rod; the bent or twisted rod may cause abnormal wear in piston or cylinder or result in piston seizure.

2. Check the wear amount of small end bearing of connecting rod. Insert the bearing and piston pin in the small end and examine the play. If the play exceeds 0.05 mm (0.002"), replace the rod.

3. Check the amount of wear in connecting rod big end bearing. Measure the play at the end of connecting rod as shown in the figure. Replace the rod when the play exceed 3 mm (0.018"). Standard value of play at the end of connecting rod: 0.5~0.8 mm (0.02~0.03") Standard value of play for connecting rod big end thrust: 0.2~0.6 mm (0.008~0.023")

(Note) Check for abnormal wear or burn in connecting rod big end thrust washer.

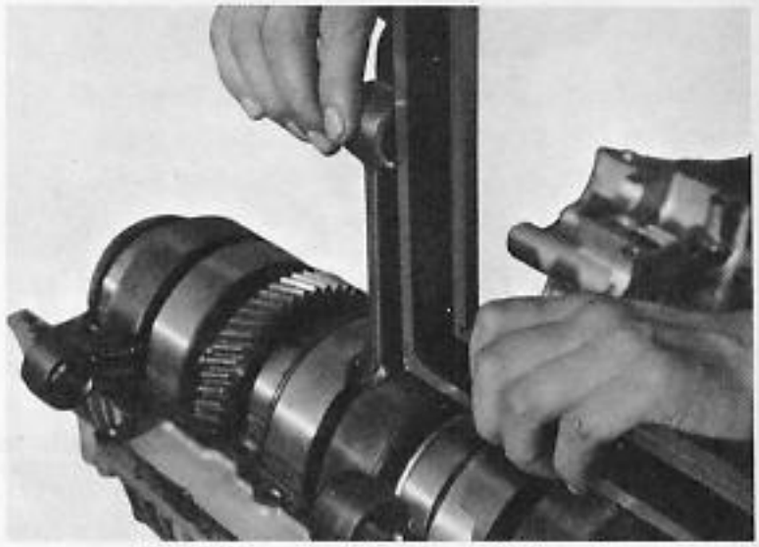


Fig. 3–42 Checking con-rod big end wear

4. Check for wear or creep of big end bearing. Turn bearing outer race, and check if the turning is smooth or if clicking noise is generated. Then check for the axial play of each bearing.

5. Check the bending of crankshaft. Mount crankshaft at both ends on V block, measure the run-out at crank web section or bearing with dial indicator. Half of this D.I.R. value is the bend of crankshaft. If the D.I.R. exceeds 0.08 mm (0.003"), replace or repair the shaft. Depending on the reading of indicator, correct the shaft hammering on the protruded side of the shaft to reduce the amount of bend using a copper hammer.

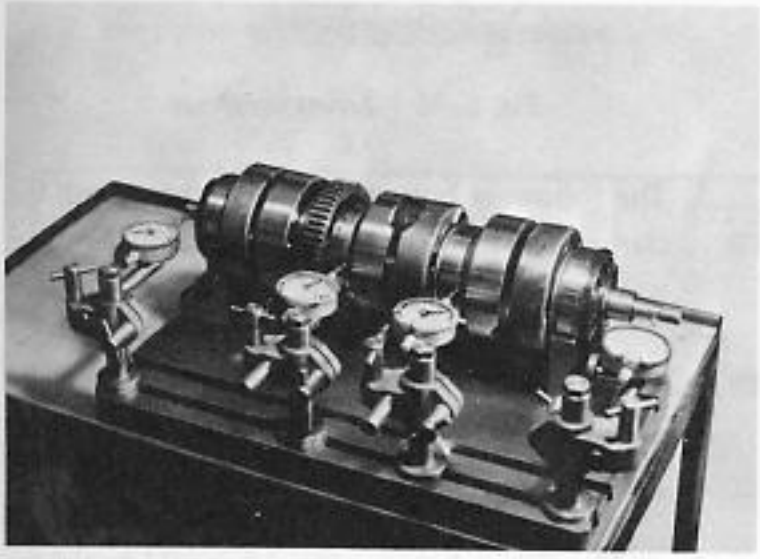


Fig. 3–43 Checking crankshaft bending

6. Check for the wear of oil seals and the damage of seal lips.
   If the sealing of oil lips is defective, fresh mixture may not be fully compressed resulting in hard starting and reduced power.

Note: Even when only one of the main bearing or oil seals is damaged, replace all of them as a set. Use always genuine parts, especially for bearings, because they are of special order-made.

Assembly

All rotating or sliding parts should be washed with solvent and then lubricated with engine oil before assembling. All gaskets, packings, oil seals, cottor pins and lock washers should be replaced upon assembly.
The special liquid gaskets and the adhessive cements are used to prevent the oil from leaking or to prevent the bolts and nuts from loosening.

1. Install the crankshaft assembly into the crankcase, with all the punch marks ① on the outside of crankshaft bearing aligning with the mating surface.

Note: Be careful that only the outermost right side bearing should be aligned at the backside of crankshaft, while others at the frontside.

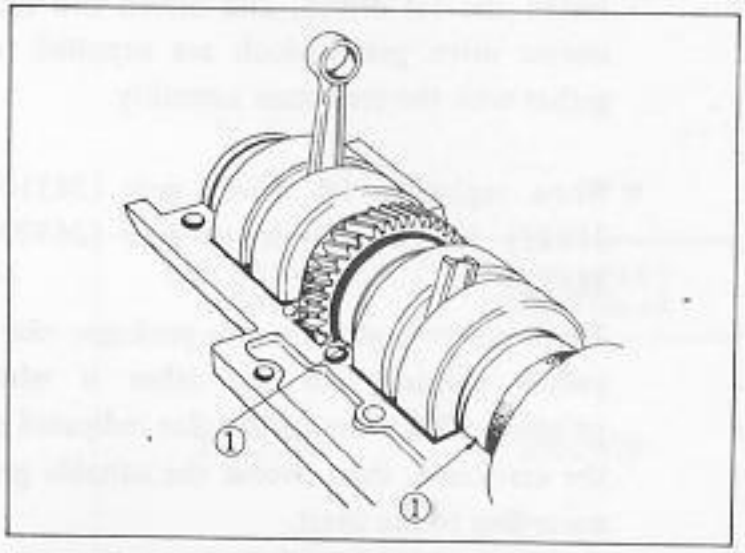


Fig. 3–44 Aligning mark on crankshaft bearing

2. Be sure to force the oil seals toward each bearing tightly except one placed between the primary gear and right crankshaft, so as not to come into contact with the crankshaft webs while running.

3. After installing the transmission gears, gear shifting mechanism and kick starter gear assembly into the lower crankcase, assemble the upper and lower crankcases with SUZUKI BOND No. 4 (99000–31030) applied on the upper mating surface.

Caution : The special attention should be paid to the following two points when assembling the crankcase.

a. Use exclusively the SUZUKI BOND No. 4 as a liquid gasket when reassembling in the market. Spread it on the upper surface thinly after cleaning the surface from dust, oil, water and other materials by swabbing with waste cloth. Wait at least 10 minutes before assembling.

b. The crankcase, 1st driven, 2nd driven and kick starter drive gears should be selection-assembled to get a optimum backlash for less noise from the transmission. Follow the instruction when replacing these parts.
Refer to chart at page 32.

* When replacing crankcase assembly (11304–31802)

Install the 1st driven, 2nd driven and kick starter drive gears which are supplied together with the crankcase assembly.

* When replacing 1st driven gear (24310–31821) and/or 2nd driven gear (24320–31822)

There are two gears in the package, one is yellow painted and the other is white painted. Check the paint color indicated on the crankcase, then choose the suitable gear according to the chart.

* When replacing kick starter drive gear (26240–31823)

There are two gears in the package, one is brown painted and the other is yellow painted. Check the paint color indicated on the crankcase, then choose the suitable gear according to the chart.

4. Tighten the crankcase fitting bolts in the order casted upon the crankcase outside, with specified tightening torque.
Standard specified tightening torque:
6mm bolt 60~100 kg-cm(4.34~ 7.23 lb-ft)
8mm bolt 130~230 kg-cm(9.38~16.65 lb-ft)
10mm bolt 250~400 kg-cm(18.08~28.90 lb-ft)

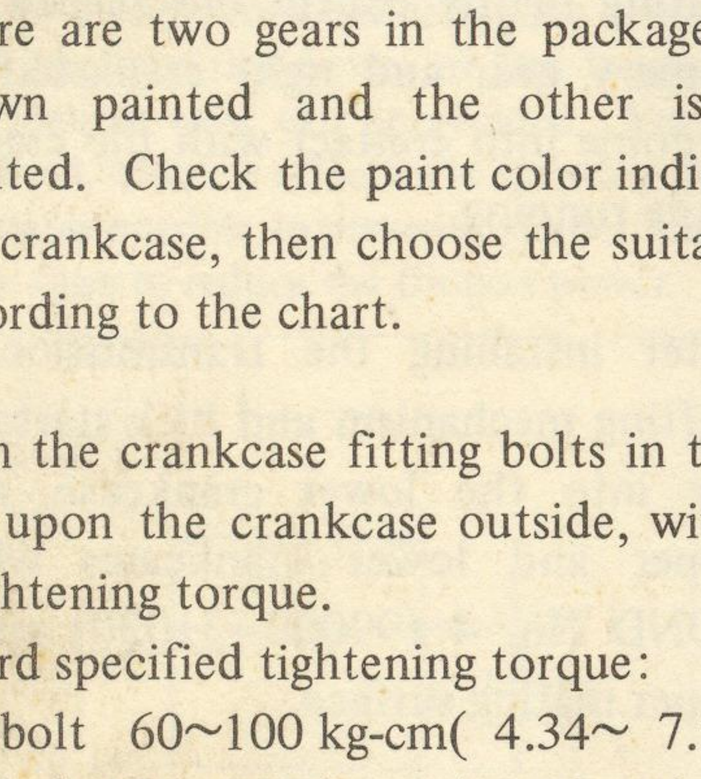


Fig. 3–45 Upper crankcase

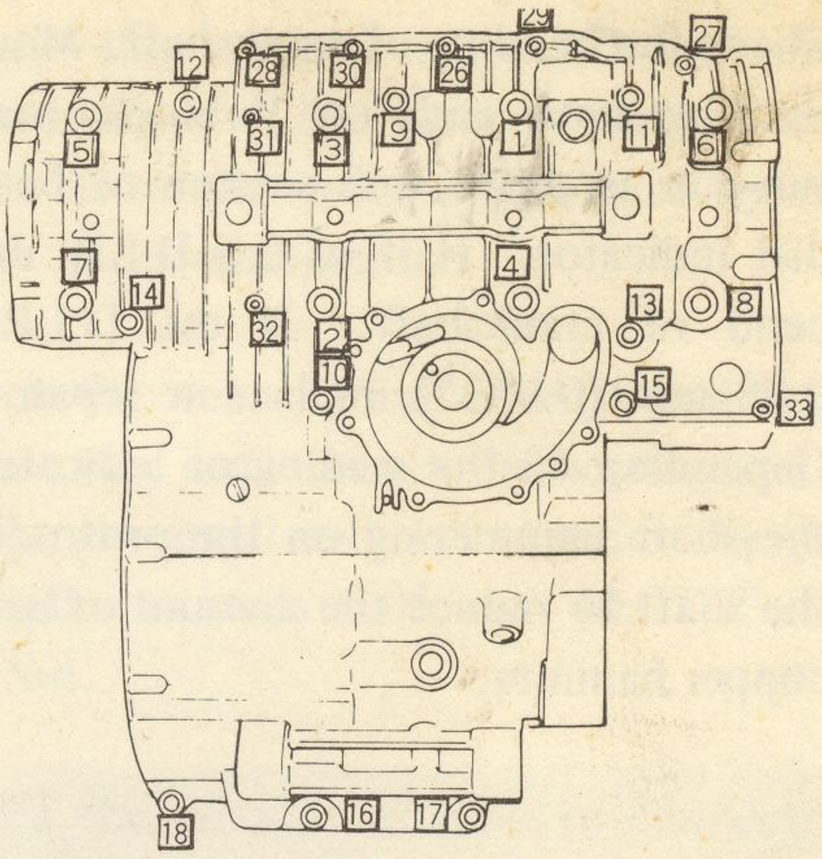


Fig. 3–46 Lower crankcase

5. The following bolts should be tighten with the clamps or special washers instead of the plane washers.

* The fitting bolts for No. 8, 10, 14 should be tighten with the clamps for the alternator and contact breaker cords.

* The fitting bolt for No. 13 should be tighten with the copper washer.

* The fitting bolt for No. 22 should be tighten with the engine ground lead wire clamp.

* The clamps connecting the alternator and contact breaker cords should be fixed with No. 6 bolt.

6. Assemble the pistons onto the connecting rod with the arrow marks on its head toward front.

Note: **There are two kinds of pistons marked "R" and "L" on the head, the piston with "R" is to be right, and that with "L" is to be left and center cylinders.**

7. Install the piston rings into the piston.

Caution: In case that the piston rings are not replaced with the new one when reassembling, install them in the same position as they were originally assembled.

8. Install three "0" rings in place on the front end of upper crankcase.

9. Place the new cylinder gasket on the upper crankcase, and install the cylinder block.

Caution: Make sure that the piston ring end gap has aligned with the knock pin on the piston groove.

10. Tighten the cylinder set nut.

11. Place the cylinder head on the cylinder block and tighten the bolts in the order illustrated in the figure with the specified torques.

Standard specified torque:

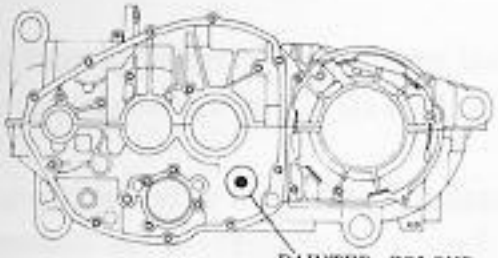
8 mm bolts and nuts

180~220 kg-cm (13.0~15.9 lb-ft)

10 mm bolt

300~400 kg-cm (21.7~29.0 lb-ft)

12. Connect the SRIS pipes to the check valves both on the crankcase and cylinder block.

CRANKCASE COLOUR	1ST DRIVEN GEAR	2ND DRIVEN GEAR	KICK START DRIVE GEAR
B R O W N	YELLOW	YELLOW	BROWN
B L A C K			
R E D			
Y E L L O W			
B L U E	WHITE	WHITE	YELLOW
G R E E N			
W H I T E			
 PAINTED COLOUR	 PAINTED COLOUR	 PAINTED COLOUR	 PAINTED COLOUR

4. CLUTCH

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SPECIFICATIONS	34
TROUBLE SHOOTING	34
Removal & Disassembly	35
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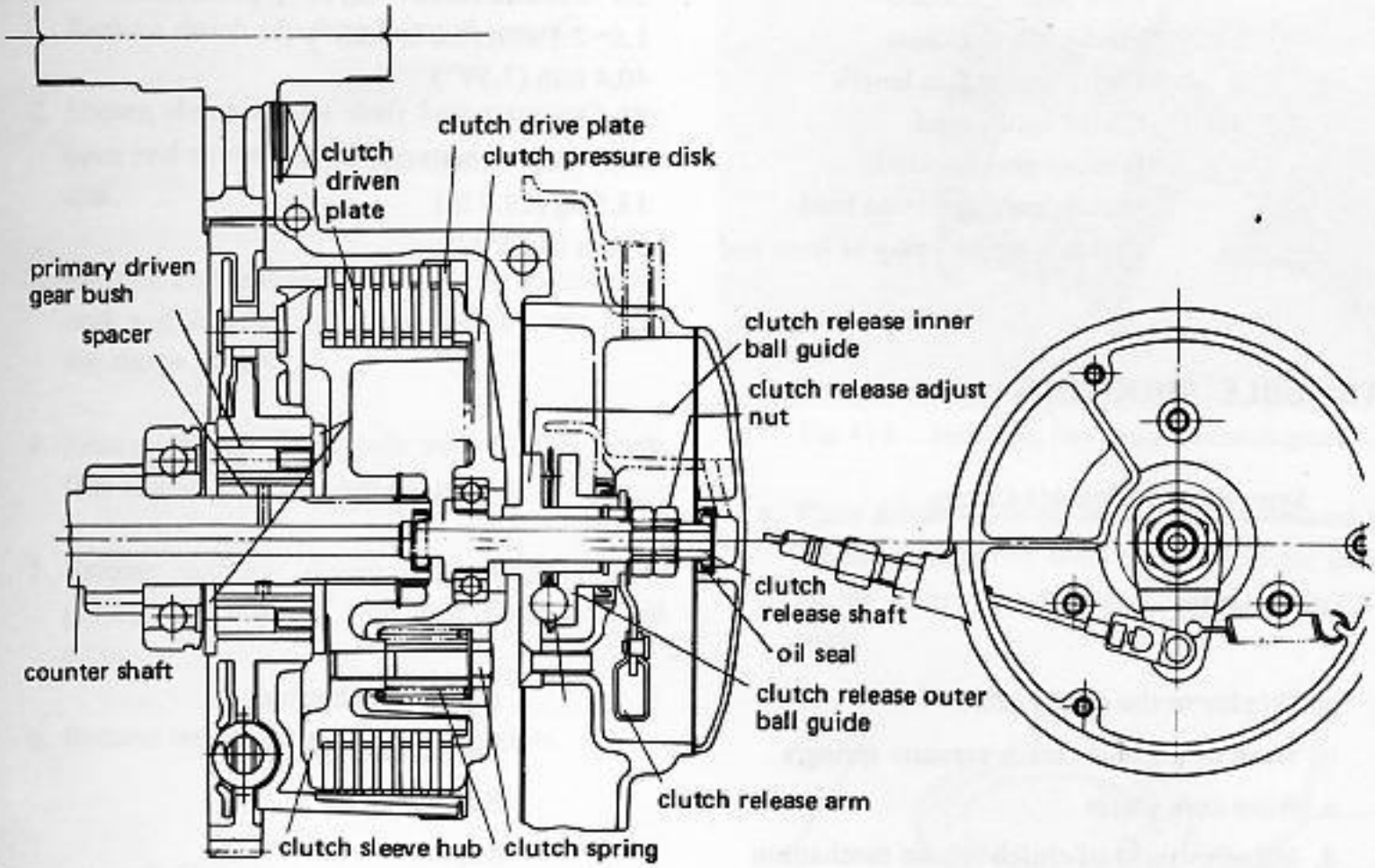


Fig. 4–1 Cross-sectional view of clutch

Large capacity multi plate wet type clutch is used in the vehicle consisting of eight large clutch cork plates, seven clutch steel plates, and six loading springs.

By operating clutch lever, clutch release mounting on the right side clutch cover moves release rod. Thus engagement or disengagement of cork with steel plate can be obtained, which lead to power on off to transmission. In the release mechanism, three balls are used to reduce the operating force of clutch lever.

The transmission oil splashed up by clutch, is sent to the inside of counter shaft through release rod, thus the lubrication of sleeve hub and bushings is attained.

Two kinds of clutch damper springs are installed in primary driven gear. They absorb abnormal driving shock torque and prevent damages of engine parts, leading to more comfortable drivability.

SPECIFICATIONS

Cork plate thickness	2.9~3.1 mm (0.114~0.122")
Steel plate thickness	1.9~2.1 mm (0.07~0.08")
Clutch spring free length	40.4 mm (1.59")
Clutch spring load	23.5 kg (51.7 lb)
Primary gear backlash	0.02~0.07 mm (0.001~0.003")
Clutch lever operation load	13.5 kg (29.7 lb)
Clutch lever free play at lever end	3 mm (0.12")

TROUBLE SHOOTING

Symptoms & Probable Causes	Remedies
Clutch slippage	
a. No play in the clutch cable	Adjust clutch cable
b. Weak or unequal clutch pressure spring/s	Replace spring/s
c. Worn cork plates	Replace plates
d. Maladjustment of clutch release mechanism	Adjust
e. Warped cork or steel plates	Replace plates
Excessive noise	
a. Excessive primary gear backlash	Replace gear
b. Worn or defective dumper spring	Replace primary driven gear
c. Excessive play in countershaft	Repair or replace
Irregular operation	
a. Worn clutch sleeve hub	Repair or replace
b. Worn or oilless clutch wire/s	Lubricate or replace
c. Defective clutch release mechanism	Repair

Removal & Disassembly

Refer to "Disassembly of Engine" at page 25.

1. Remove clutch adjusting cap and gasket.
2. Loosen clutch release shaft lock nuts with two open end wrenches and remove nuts and release arm.
3. Remove clutch cover, and take out clutch drive cork and driven steel plates one by one from the clutch housing.
4. Remove clutch sleeve hub with Clutch Sleeve Hub Holder (09920–53110).
5. Remove primary driven gear assembly after pulling out bushing with two bolts installed on it.
6. Remove transmission oil reservoir plate.

Inspection & Repair

a. Measure the wear amount of clutch drive plate.
STD thickness: 2.9~3.1 mm (0.011~0.012")
Wear limit: 0.2 mm (0.008")

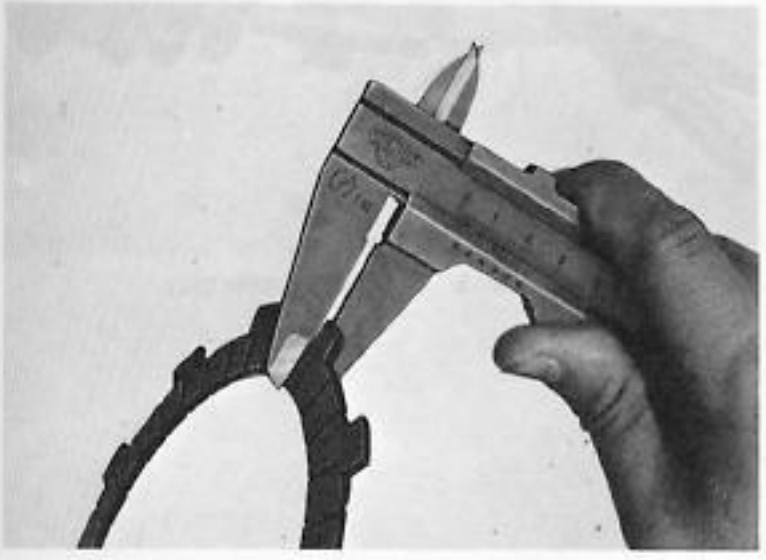


Fig. 4–2 Checking clutch drive plate for wear

b. Measure the free length of clutch spring.
STD length: 40.4 mm (1.59")
Spring setting limit: 1.4 mm (0.055")

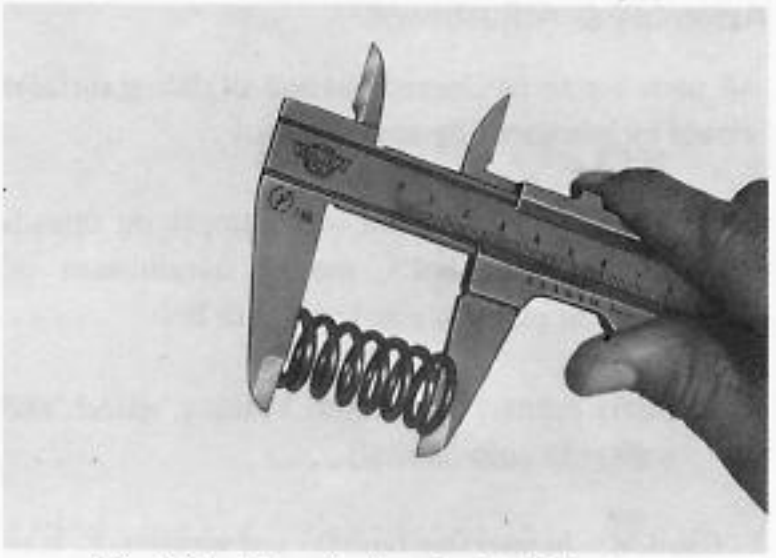


Fig. 4–3 Measuring free length of clutch spring

c. Place driven plate on surface plate, measure the clearance between them with thickness gauge. If the clearance exceeds 0.3 mm, replace the plate.

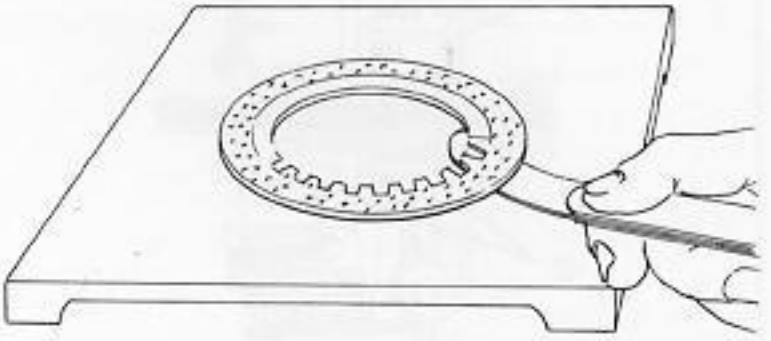


Fig. 4–4 Checking warpage of clutch driven plate

d. Check the tooth flank of sleeve hub for any crack, scratch, or uneven wear. If the amount of wear is small, repair it. If too large, replace it.

e. Check the wear amount of bearings installed in clutch pressure disk. Turn the bearing. If smooth rotation is not obtained, replace it, even if no noise is generated.

f. Check the outer and inner ball guide of clutch release mechanism for any crack or uneven wear, etc.

All parts are to be cleaned out and all sliding surfaces should be lubricated by applying oil.

a. After applying thread lock cement on threads of tightening bolts, mount transmission oil reservoir plate on crankcase with bolts.

b. Insert primary driven gear bushing, spacer, and washer to counter shaft.

Caution: In inserting bush ① and washers ②, take care in aligning their direction. Some motor oil is to be applied to the inside of bushing and the outside of spacer.

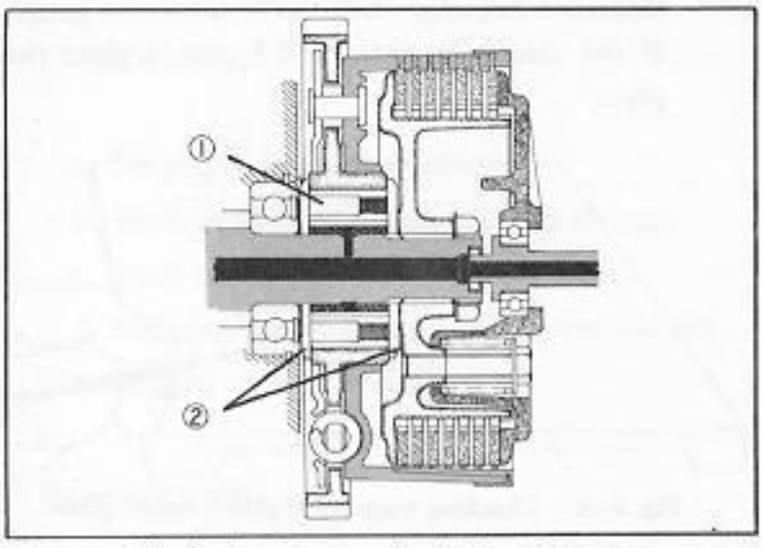


Fig. 4–5 Cross sectional view of clutch

c. Tighten clutch sleeve hub nut at specified torque of 400~550 Kg.-cm (29~40 lb.-ft).

d. Supply motor oil into the hole of clutch sleeve shaft.

e. To assemble clutch release ball guide, tighten set screw after setting the outer ball guide into the specified position as shown in Fig. 4–6.

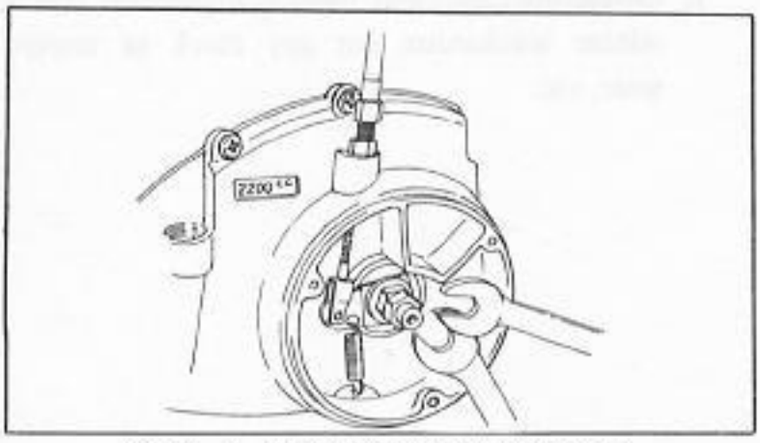


Fig. 4–6 Tightening release shaft nuts

f. Clutch should be adjusted as follows. Loosen cable adjuster Ⓐ until an ample play of clutch cable ① can be obtained. Tighten the double nuts ② by insuring an axial play of the release shaft ③ to be approximately 0.2 mm. Then, adjust the play of lever to be 3 mm at the root by adjusting the cable adjuster Ⓐ Ⓑ

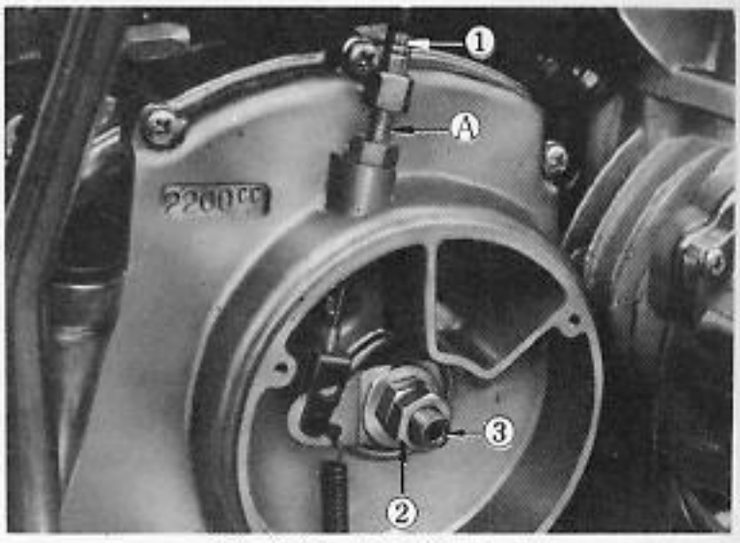


Fig. 4–7 Adjusting clutch

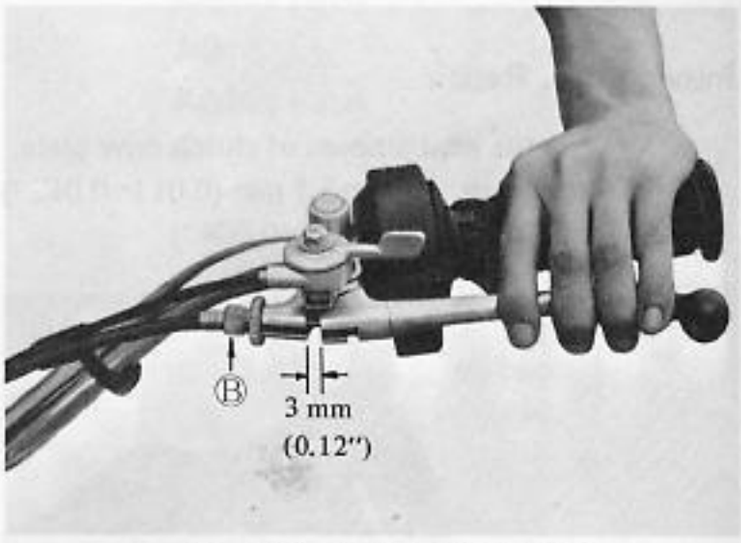


Fig. 4–8 Adjusting cable play

5. TRANSMISSION

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DESCRIPTION

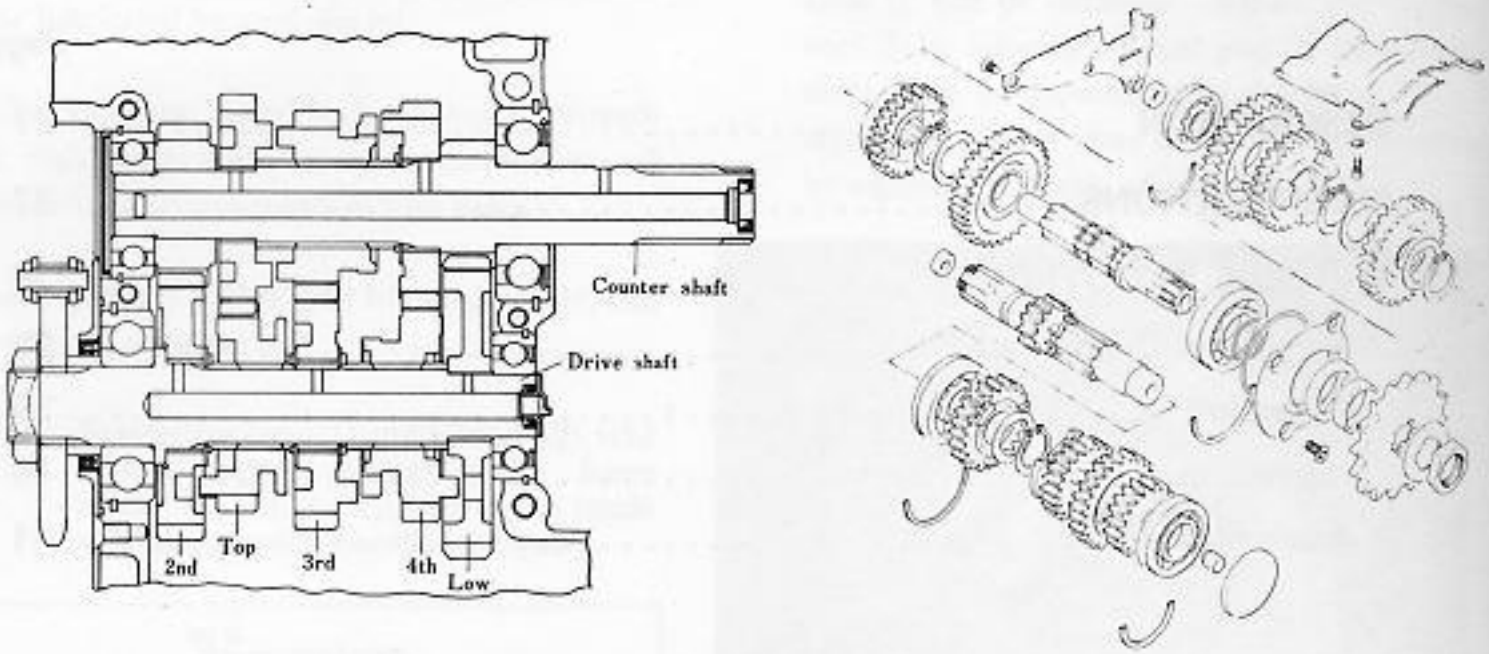


Fig. 5–1 GT750 Transmission gears

Five speed, constant mesh transmission is adopted. Gears can be shifted by select-fitting-gears through gear shifting cam and shifting fork fitted on it.

SPECIFICATIONS

Gear ratios		
	1st (low)	2.846 : 1 (37/13)
	2nd	1.736 : 1 (33/19)
	3rd	1.363 : 1 (30/20)
	4th	1.125 : 1 (27/24)
	5th (top)	0.923 : 1 (24/26)
Primary reduction ratio (gear)		1.673 : 1 (82/49)
Final reduction ratio (chain)		3.133 : 1 (47/15)
Overall reduction ratios		
	1st (low)	14.92 : 1
	2nd	9.09 : 1
	3rd	7.14 : 1
	4th	5.89 : 1
	5th (top)	4.48 : 1
Kick gear reduction ratio		4.24 : 1

Symptoms & Probable Causes	Remedies
Difficult gear shifting	
a. Improper clutch disengagement	Adjust clutch
b. Foreign objects on gear teeth	Repair
c. Defective or damaged gear/s	Replace gear/s
d. Inoperative gear shifting fork/s	Repair or replace
e. Improper operation of gear shifting mechanism	Repair
f. Excensive high oil viscocity	Change oil (Refer to page 12)
Gear slipping out	
a. Worn gear dog and dog hole	Replace
b. Worn yokes on gear shifting fork/s	Replace
c. Worn spline on shaft/s	Replace
Excessive gear noise	
a. Excessive gear backlash	Replace gear/s
b. Worn bearing/s	Replace bearing/s
c. Worn spline on shaft/s	Replace shaft/s
d. Improper gear oil	Change oil (Refer to page 12)

Removal & Disassembly

1. After opening crankcase, lift up both ends of counter shaft assembly and drive shaft assembly, which now enables us to remove the assembly from lower crankcase.

2. Disassembling gear shift mechanism: After pulling out gear shifting shaft ① from crankcase lower cover, remove shifting pawl lifter ② and cam guide ③. Remove shifting cam driven gear ④. Pull out neutral stopper spring holder ⑤ from the rear side of low crankcase. Take out shifting cam ⑥ and shifting fork shafts ⑦ from casing.

3. Disassembly of counter shaft: Pull out press fit 2nd driven gear by using an arbour press, then 4th driven gear can be pulled out after removal of circlip as shown in Fig.

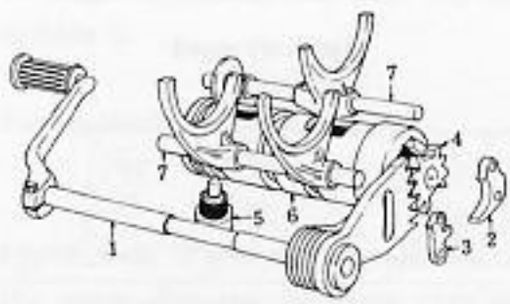


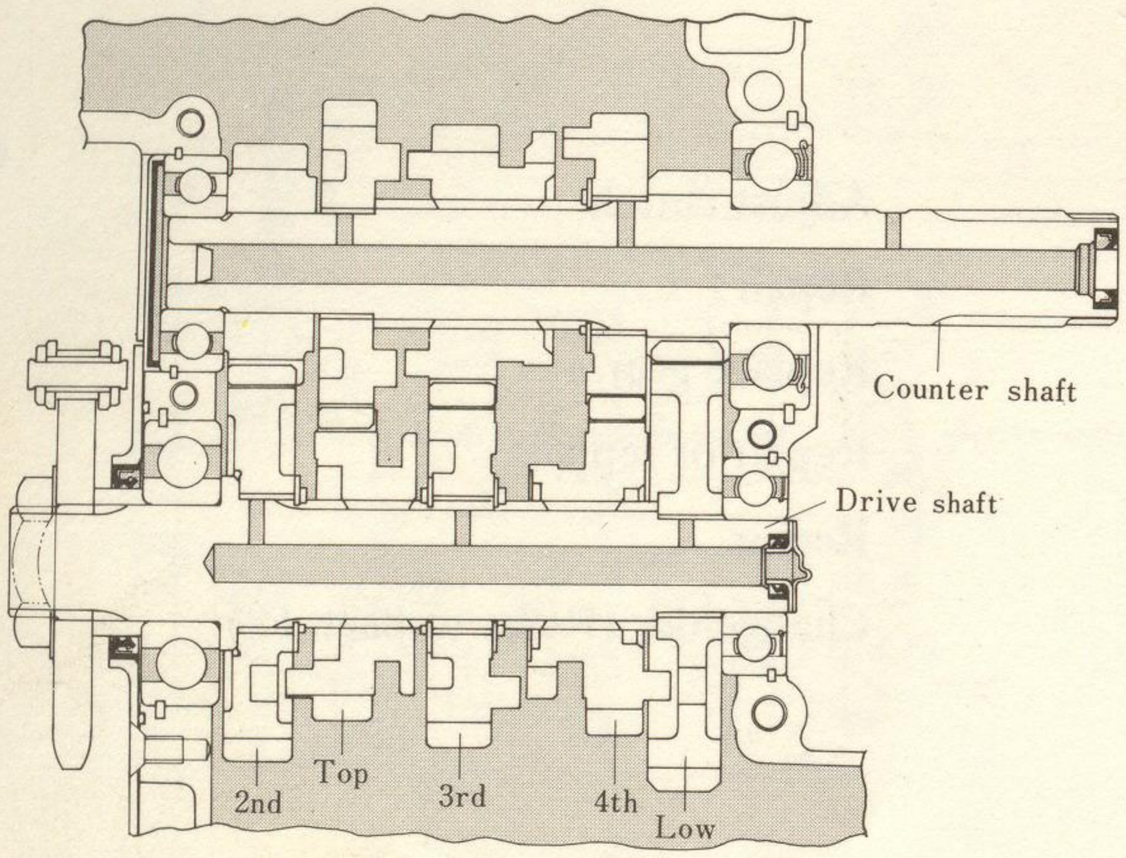
Fig. 5–2 Gear shifting mechanism

Caution: Replacement of 2nd gear is permitted only twice. After that, the counter shaft assembly is to be replaced. Otherwise, the tightening force of second gear deteriorates causing the gear to creep.

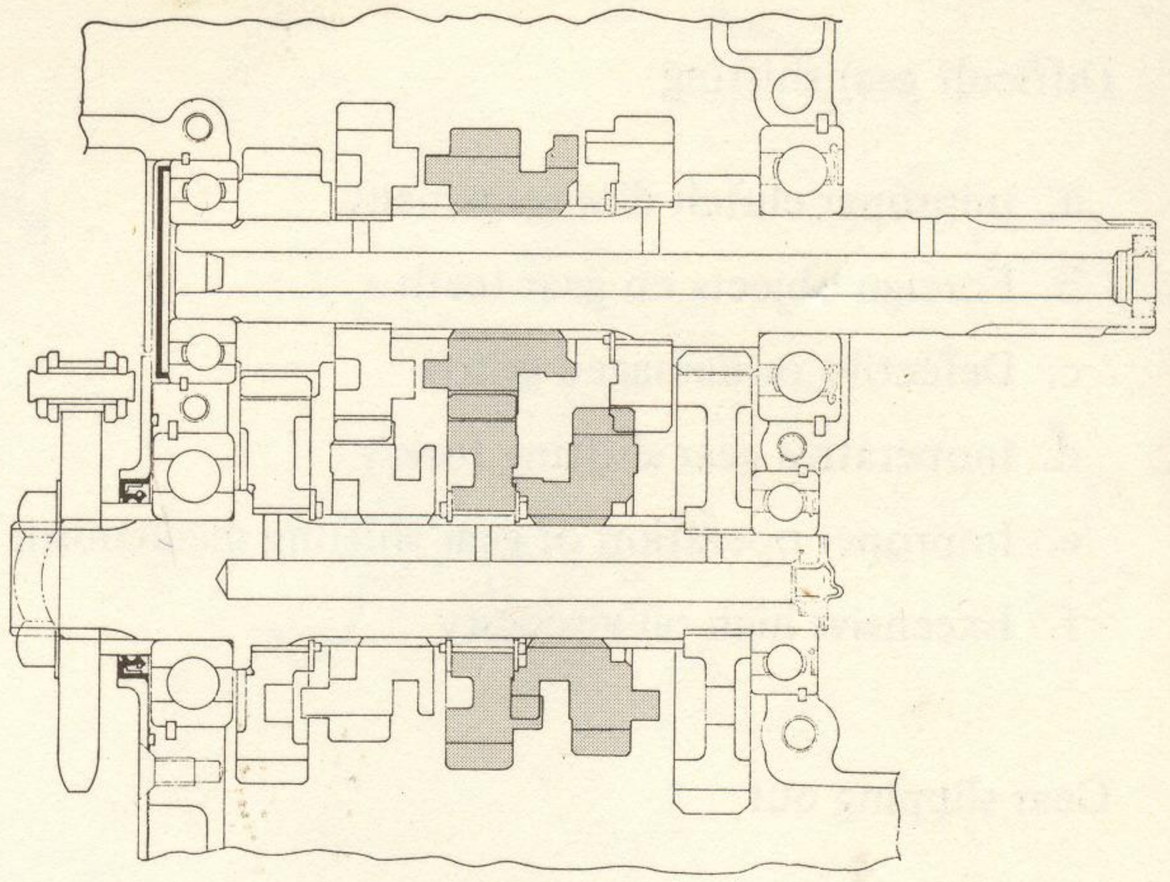
4. Drive shaft can be disassembled by removing the circlip as shown Fig.

Operation

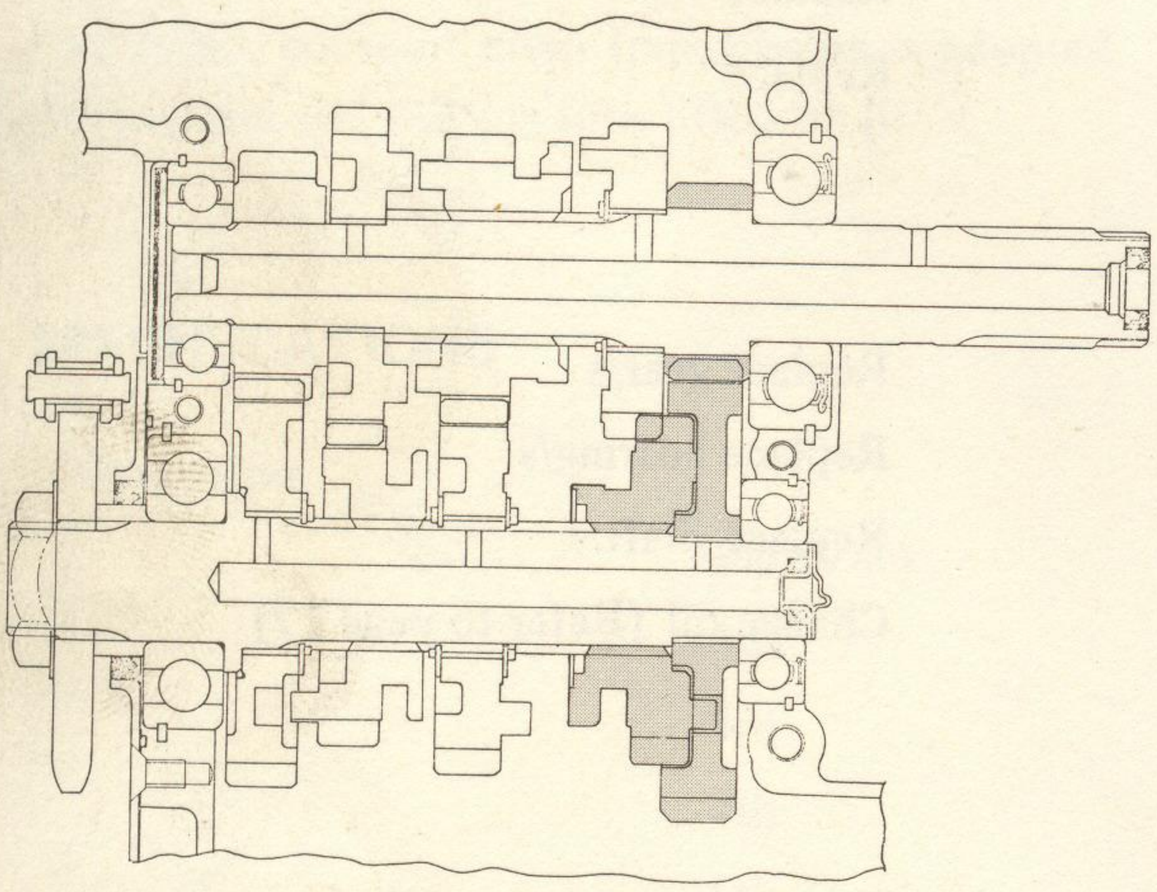
1. Engine power is transmitted by way of the clutch to the rear drive wheel using driving gears as shown under.



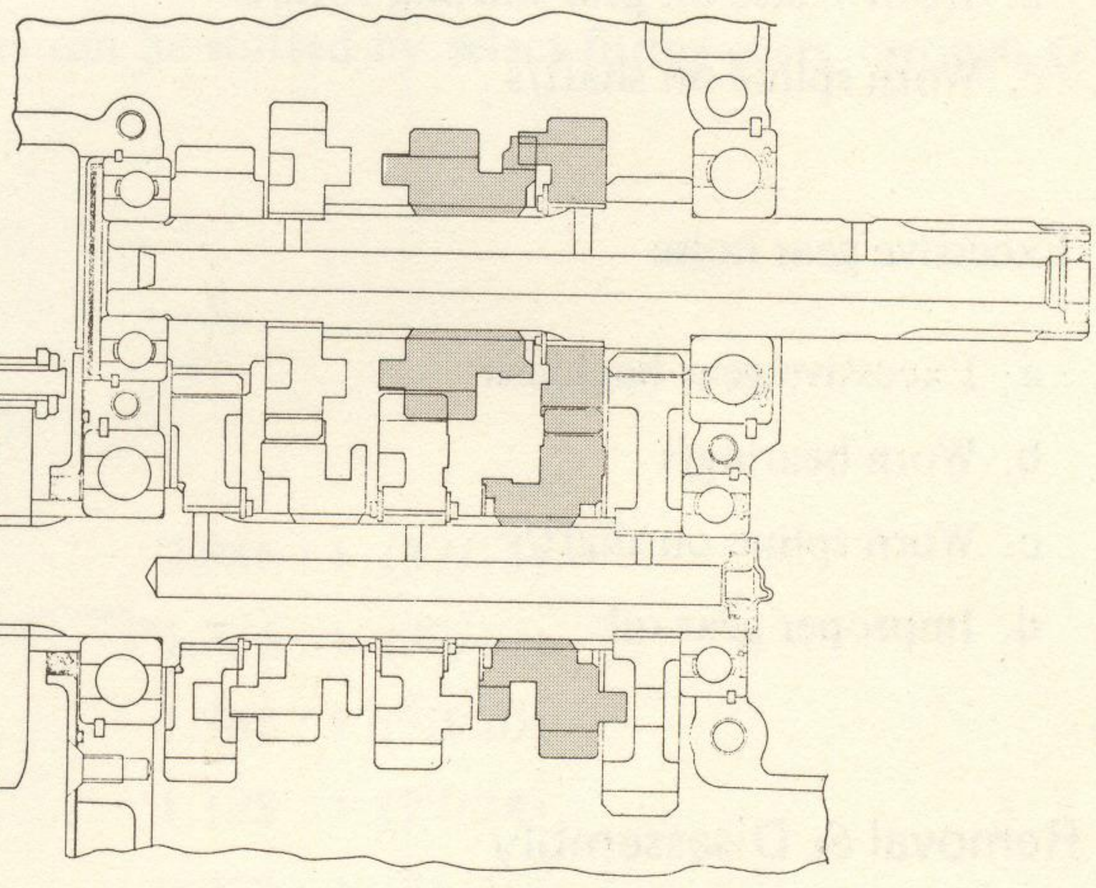
Neutral



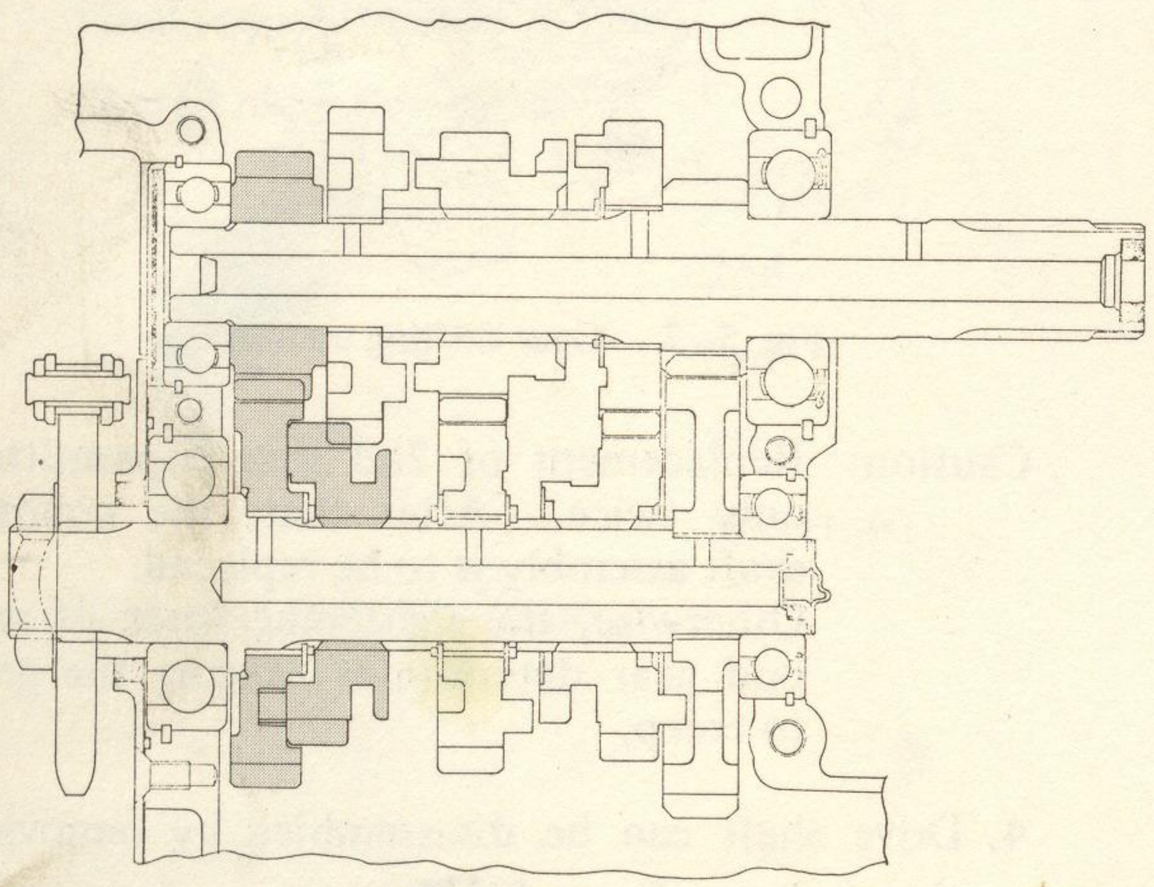
3rd speed



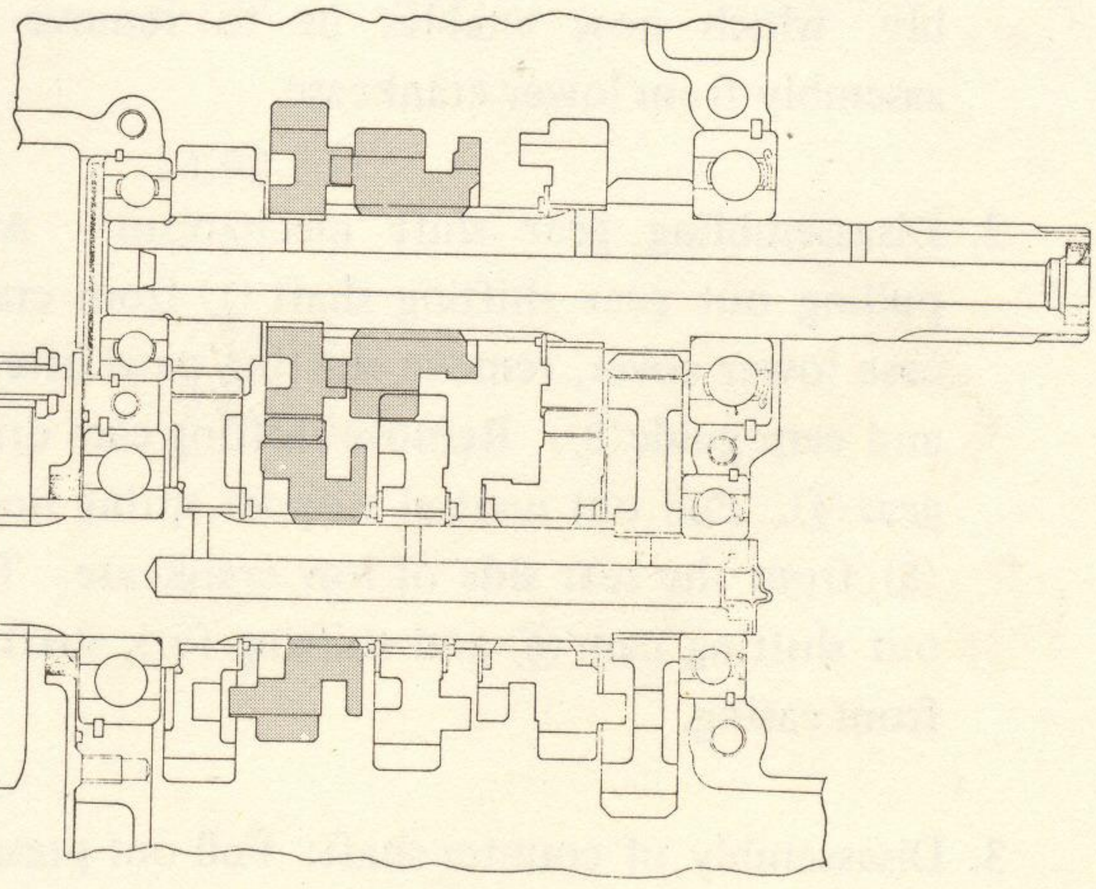
1st (low) speed



4th speed



2nd speed



5th (top) speed

Fig. 5–3 Gear positions

2. As the gear shifting mechanism is shown in Fig. 5–2, Gear shifting pawl and its holder can be actuated by moving the gear shift lever up and down. This turns gear shifting cam, then the shifting fork engaged with it slides laterally. A special device is built-in in this mechanism to ensure the correct gear shifting. When gears are shifted too rapidly, the shifting cam drum tends to rotate beyond the specified limit. A positive stop shifting device is provided for preventing the cam drum from turning too far for this purpose.

Inspection

All parts are to be thoroughly cleaned before inspection.

1. Check for any defect or abnormal wear on gear flanks. Wear of a gear can be obtained by measuring the backlash using a small dial gauge as in Fig. 5–4. First lock the driven gear, then measure play in the direction of the rotation by a dial gauge. If this play exceeds the below specified values, replace the gear.

   Standard backlash:
   for low, 2nd, 3rd and kick gears
   0~0.05 mm (0~0.002")
   for other gears
   0.05~0.1 mm (0.002"~0.004")

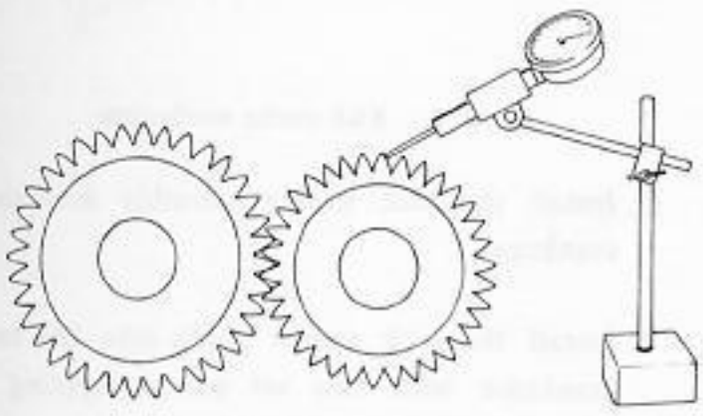


Fig. 5–4 Measuring gear backlash

2. Examine gear dog and dog hole for any defects or excessive wear. Replace it in the case of excessive wear or defects.

3. Check clearance between gear and shaft; if the excessibly worn, burnt or scored parts are found on the gear bore and the shaft, replace them with new ones.

4. Check counter, drive and kick shaft for bend, replace them with new ones if it is found to be bent.

5. Check the clearance between gear shifting fork and shift fork shaft. Check the bend of the shaft at the same time.

   Shifting fork to shaft clearance (standard):
   0.05~0.1 mm (0.002"~0.004")

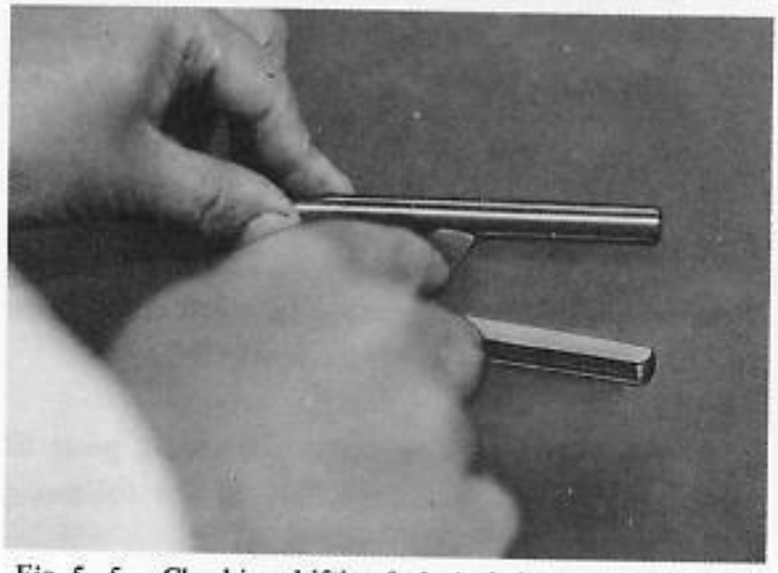


Fig. 5–5 Checking shifting fork shaft for wear and bend

6. Measure the thickness of gear shifting fork at its fingers. If it is less than 4.9 mm (0.19"), replace it.

   Finger thickness (standard):
   4.95~5.05 mm (0.195~0.198")

7. Check wear in gear shifting cam drum. Measure the outer diameter of drum with micrometer. Replace it when the diameter measured exceeds the limit of 44.70 mm (1.7598").

   Drum diameter (standard):
   44.900~44.975 mm (1.7677~1.7706")

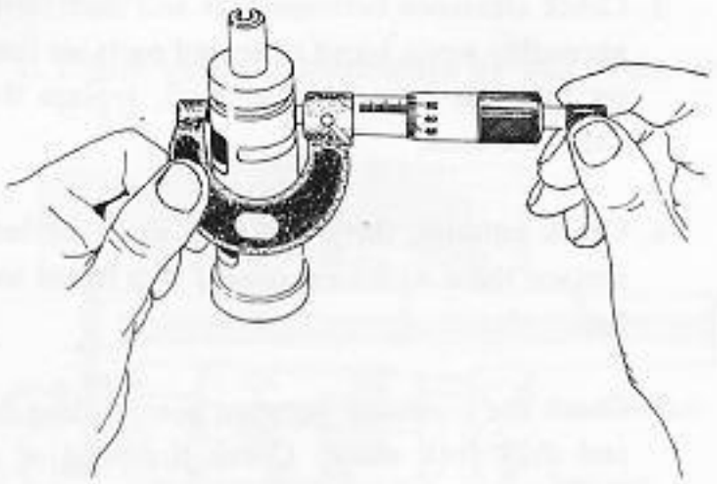


Fig. 5–6 Measuring shifting cam diameter

8. Check wear of bearings. Turn the outer race, as you hold the inner race. If some noise is generated or a smooth turning is not obtained, replace the bearing.

Assembly

Wash all the parts and components and clean them up using compressed air, before assembling.

1. Install 2nd gear to counter shaft by press fit using arbour press machine in the following manner:

   a) Apply Suzuki Super Lock 103Q (99000–32030) onto the bore surface of 2nd driven gear.

   Note: Care must be taken not to apply it on the counter shaft surface.

   b) Press fit the 2nd driven gear, so that the distance between the end of the gear and the end of 1st driven gear is within 109.4 and 109.5 mm (4.307~4.311").

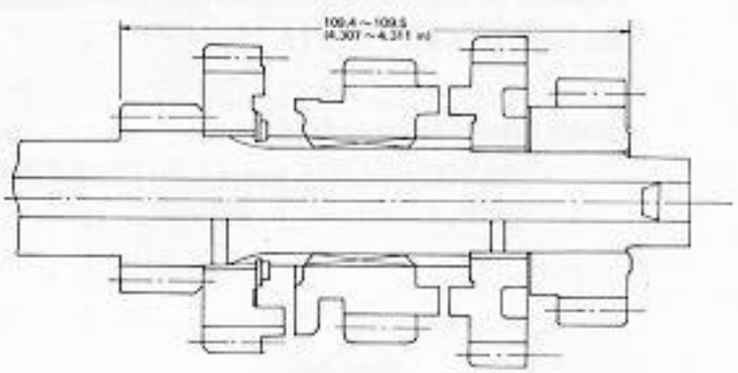


Fig. 5–7 Distance between both end gears

2. Install countershaft assembly, drive shaft assembly and gear shifting mechanism into the lower crankcase. Turn the shaft and check if a smooth turning of the shaft can be attained.

3. Please apply Thread Lock Cement (99000–32010) on all of the screws used for tightening gear shifting pawl, lifter fitting screws, cam guide fitting screws, oil reservoir plate fitting screw.

4. Gear shifting pawl is to be installed by taking due care in the direction of fitting.

5. Assemble kick starter mechanism, keeping it in mind that kick stater ① is installed into kick starter shaft ② with punch marks both on the flank of the kick starter shaft and the spline on the shaft aligned, and also oil guide hole ③ on the kick stater shaft is to face upward when the kick starter comes in contact with kick starter guide ④.

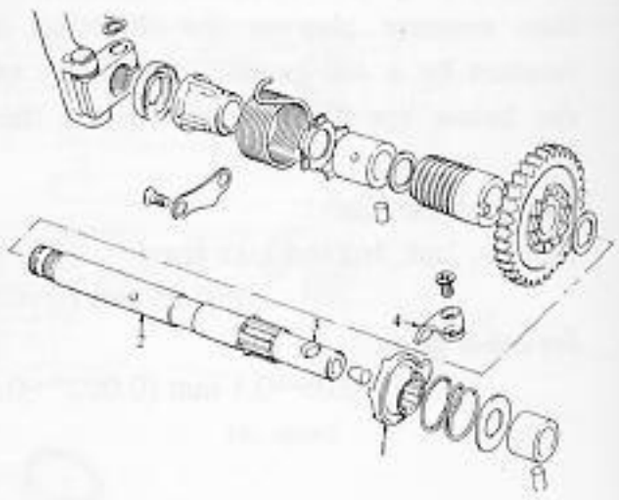


Fig. 5–8 Kick starter mechanism

6. Install the kick starter assembly into lower crankcase.

7. Install the kick starter guide into the lower crankcase with two set screws, appling the Thread Lock Cement on them.

8. Install the kick starter lever into the kick starter shaft so as to align the punch marks ① as shown in Fig. 5–9.

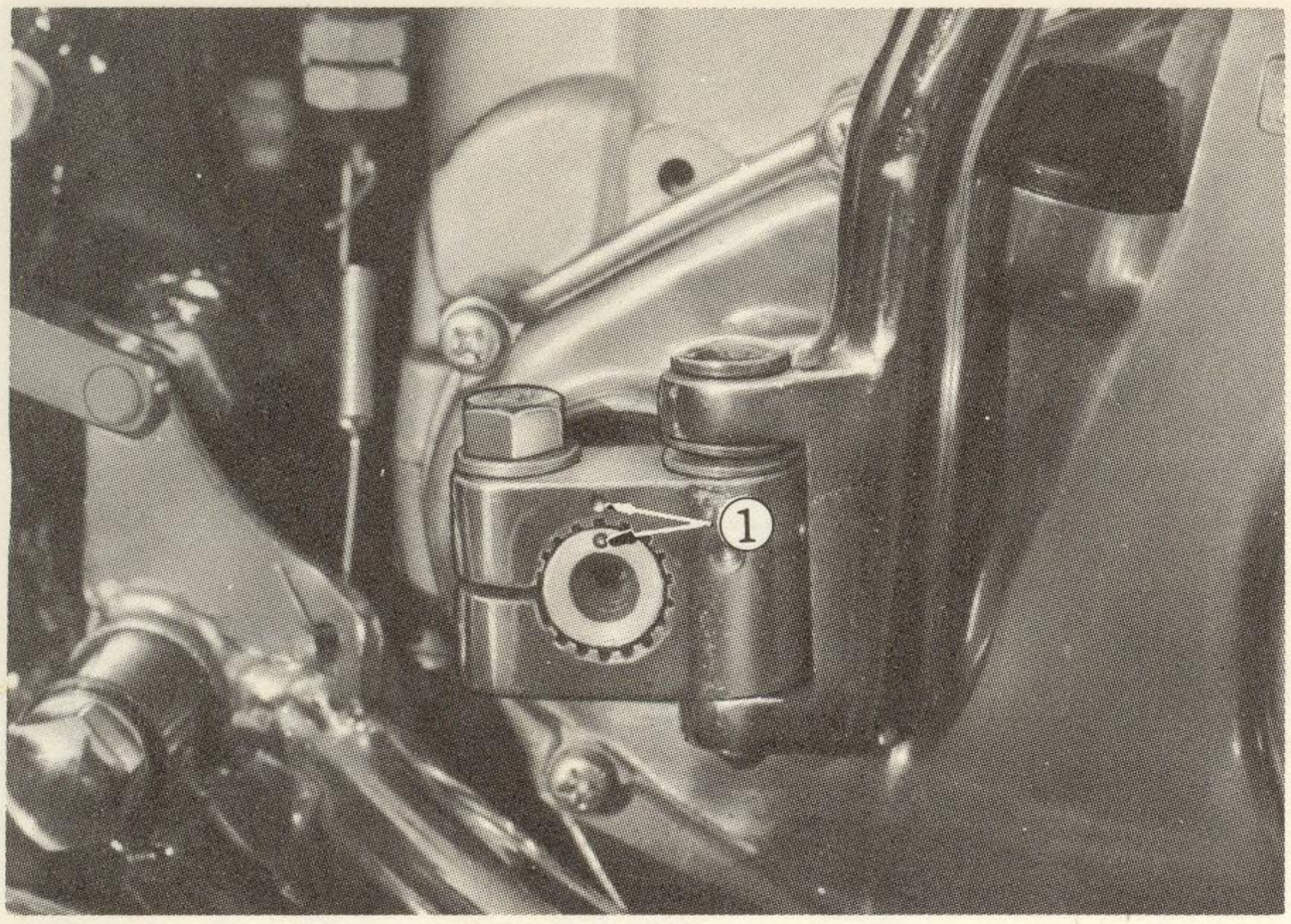


Fig. 5–9 Aligning punch marks

9. Supply transmission oil of 2,500 cc into the transmission case after assembling all parts.

Note: "2200 cc" is indicated on the clutch cover. This merely indicates the oil level needed in re-filling without overhauling engine. When oil is changed without disassembling, a certain amount (about 300 cc) of oil may possibly remain within the casing. That is why the filling capacity of 2200 cc is indicated.

6. LUBRICATING SYSTEM

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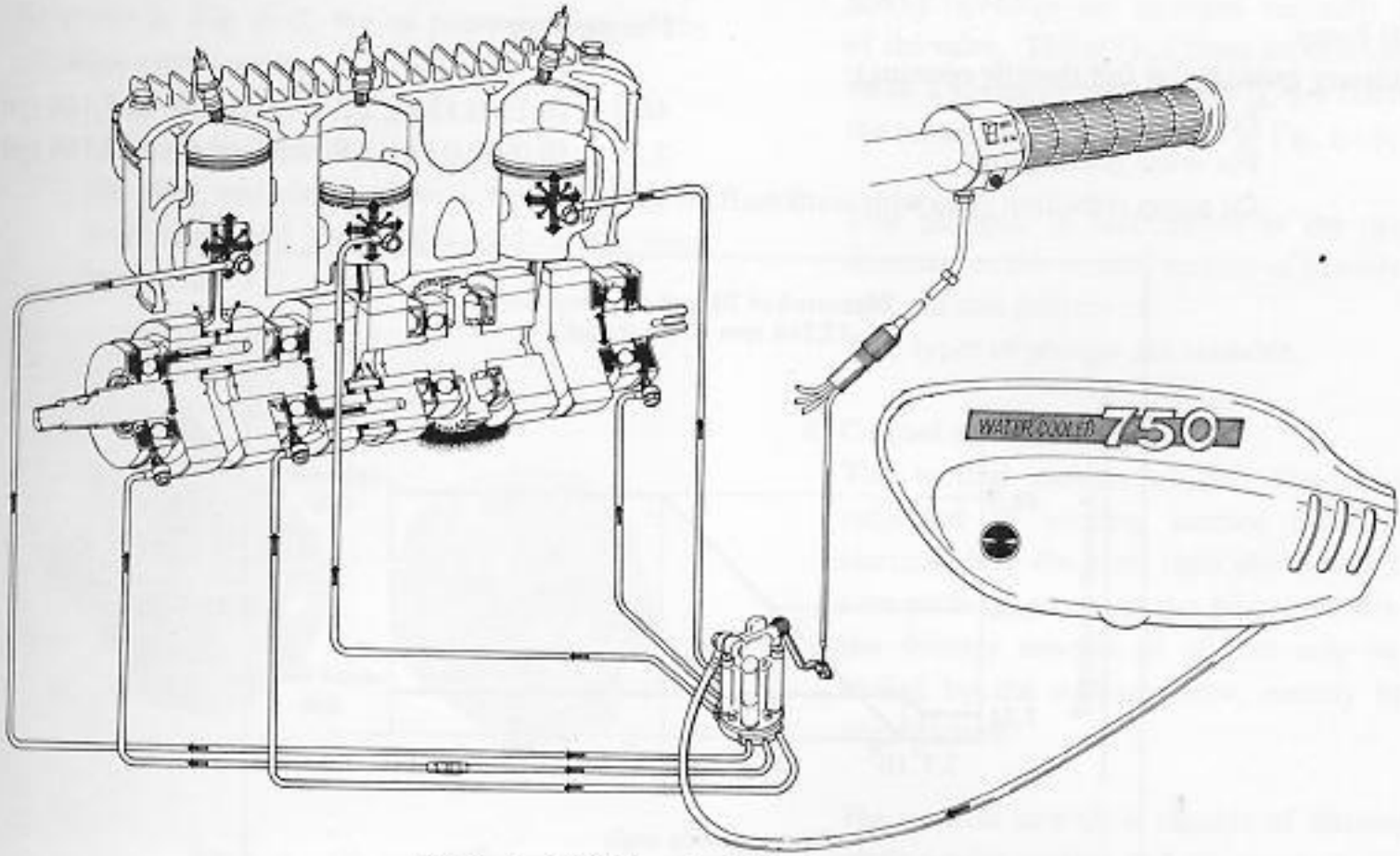


Fig. 6–1 GT750 engine lubricating system

The lubricating system of this engine uses "SUZUKI C.C.I (Cylinder & Crankshaft Injection) System", whereby a required amount of oil is pumped into both the seating or moving portions of each inner part and the stressed points by an oil pump direct from the reservoir of fresh oil with the regulation of this oil flow rate.

The oil pump is of a 6-outlet plunger type which is the original design of SUZUKI. Oil from the pump is distributed to cylinders and crankshaft, and all the inner parts such as a cylinder wall, a crank bearing and connecting rod bearings are equally lubricated.

Fresh oil is always supplied to each inner part without being diluted with gasoline. We see then that wearing of each part can be minimized and its durability is improved.

After lubricating the inside of the engine inside oil is drained into the crankcase. There a new system SRIS (Suzuki Recycle Injection System) is adopted for the recirculation of that oil. This new system has resolved a problem of smoky exhaust gases emission into atmosphere. This is usually due to incomplete combustion of oil in the crank chamber which leak suddenly into the combustion chamber during quick engine acceleration. We have now completed a two-cycle engine free from smoky exhaust gases.

SPECIFICATION

Oil Pump:	Plunger type
Delivery quantity (at full throttle opening):	
For cylinder side:	48.3 cc (0.13/0.11 pt. US/Imp) per Hr. at 2,166 rpm
For crank bearing side:	7.21 cc (0.09/0.07 pt. US/Imp) per Hr. at 2,166 rpm
Oil pump reduction ratio with crankshaft:	63.72 : 1

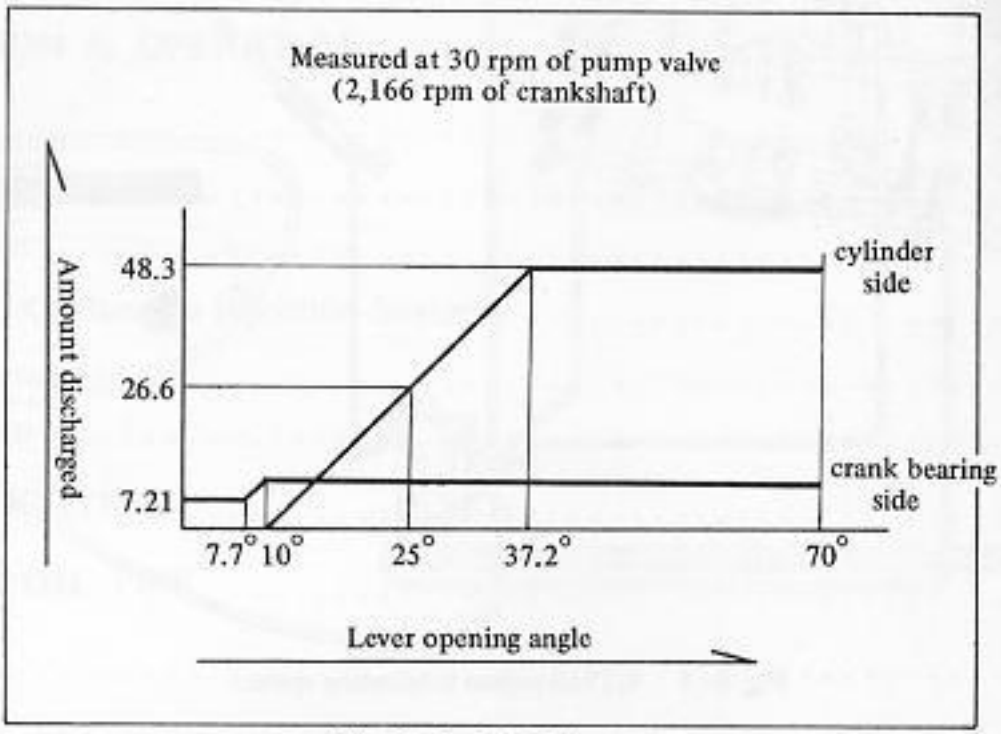
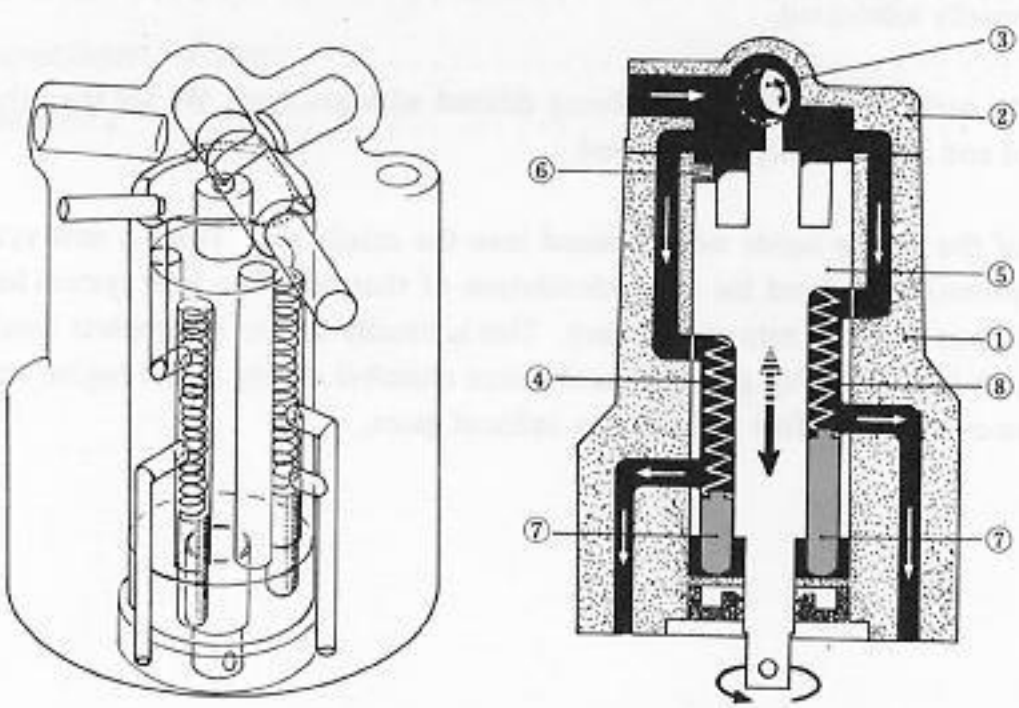


Fig. 6–2 Oil delivering curve

CONSTRUCTION & OPERATION

Oil Pump



① Oil pump body
② Pump control body
③ Control cam
④ Plunger hole
⑤ Pump valve
⑥ Cam guide
⑦ Plunger
⑧ Spring

Fig. 6–3 Oil pump construction

Construction

As shown in Fig. 6–3, the oil pump consists of the following components:

1) Oil pump body:
Oil inlet and delivery ports are provided on both upper and lower sides, and on the inner bore parts.

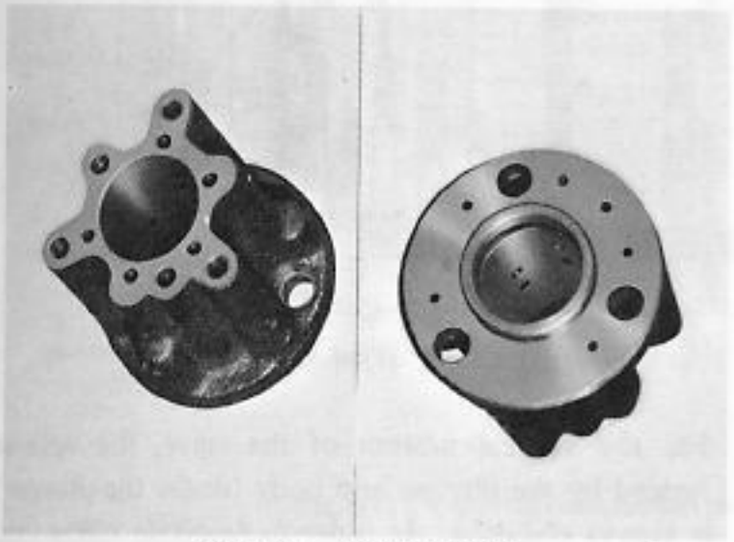


Fig. 6–4 Oil pump body

2) Oil pump valve:
Three(3) kinds of cam ① are provided on upper stems of valves symmetrical to the valve center, for the total of six(6) different elevations.

These cams are provided for three(3) different functions; first for oil suction, second for delivering oil to the cylinder and third for delivering oil to the crankshaft.

On the outer side of the valve, four ports ②, two each on the two row, are provided. The upper two ports are used for oil suction and the lower ones for oil delivery.

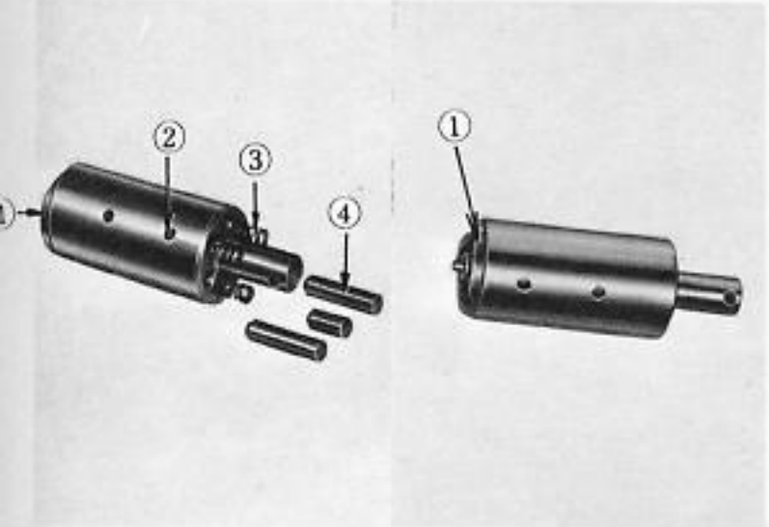


Fig. 6–5 Oil pump valve & plunger

3) Oil pump plunger:
Six(6) openings are arranged vertically inside of the valve. Three(3) of them are through-hole while a spring ③ and plunger ④ are inserted in the remaining three as shown in Fig. 6–5.

This plunger, in fact moves in the opposite direction to the vertical motion of the valve and sucks in and delivers oil.
Two types of plunger are available.

4) Control cam and shaft:
The vertical motion of the valve, which is subjected to rotating motion is effectively controlled by the cams right above it and by a cam guide ① on the pump body. In this case, the delivery amount of oil can only be controlled by the rotating valve, namely by the engine speed.

The control cam ② is capable of limiting the vertical valve motion and consequently changes the amount of oil delivery depending upon engine loads. This control cam is driven by a camshaft lever ③ connected to the carburetor throttle cable.

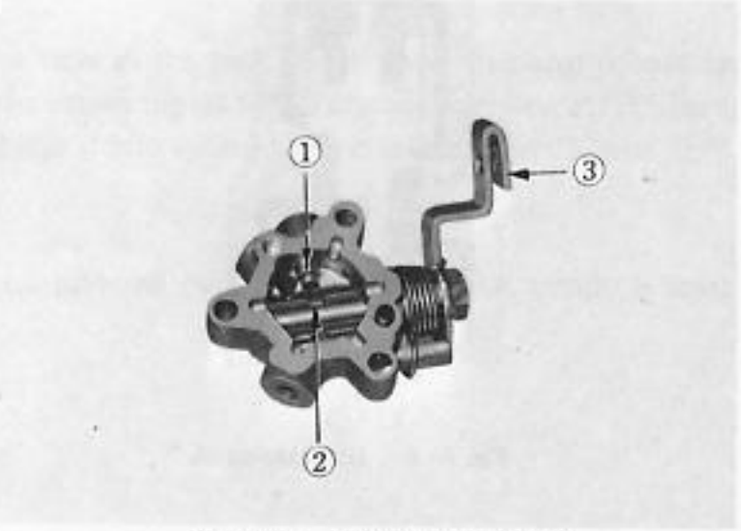


Fig. 6–6 Control cam & shaft

Operation

When the oil pump valve functions and moves upwards being regulated by the valve guide and the control cam, the plunger moves downwards relative to the valve. Oil is, therefore drawn into the valve, when a port on the valve side and the port on the pump body are matched.

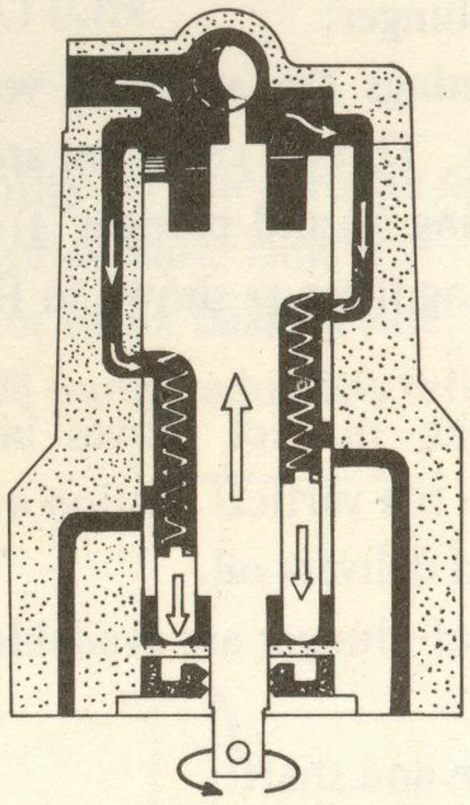


Fig. 6–7 Sucking oil

Then, during the downward strokes of the valve, the plunger moves upwards relative to the valve and oil already sucked into the plunger is discharged. It is to be noted, however, that the oil pump body has separate ports for oiling the cylinder and the crankshaft respectively to deliver the oil.

Oil quantity can be regulated by timing the overlapping period of the outlet ports of the valve and the pump body.

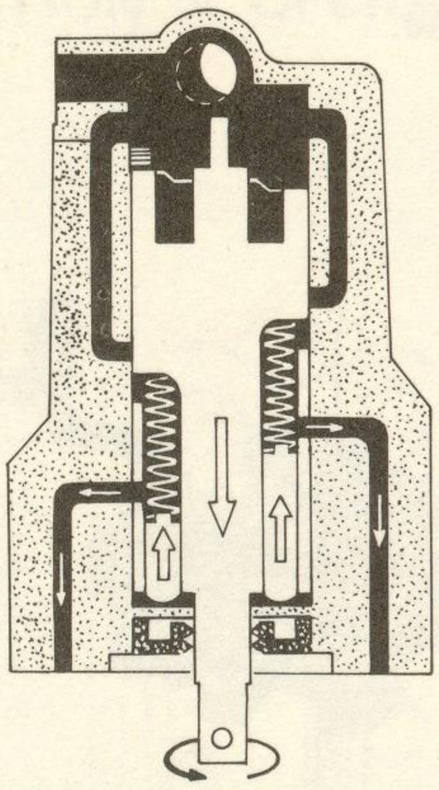


Fig. 6–8 Discharging oil

As mentioned above, four(4) ports two each for each of the two rows are provided on the valve. Corresponding ports are provided on the pump body for delivering oil to the cylinder and the crankshaft. Because it completes a return stroke twice during one rotation, eights discharges of oil will be obtained for with one(1) rotation of the valve. Actually, however, the total of six(6) oil discharges are required for the cylinder and the crankshaft lubrication because the engine has only three(3) cylinders. In order to meet this requirement, oil for each one delivery to the crankshaft and the cylinder is returned to the original place within one(1) rotation, and the total delivery time is kept at six(6). See Fig. 6–9.

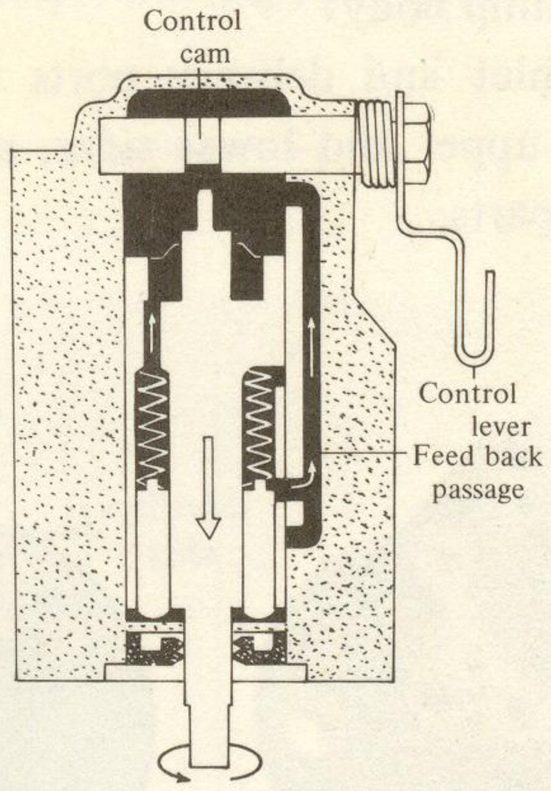


Fig. 6–9 Feed-back passage

For the vertical motion of the valve, the volume formed by the plunger and body (under the plunger) is always changing. In order to facilitate oiling into that portion, an oil circulating passage is provided on the valve body, as shown in Fig. 6–10.

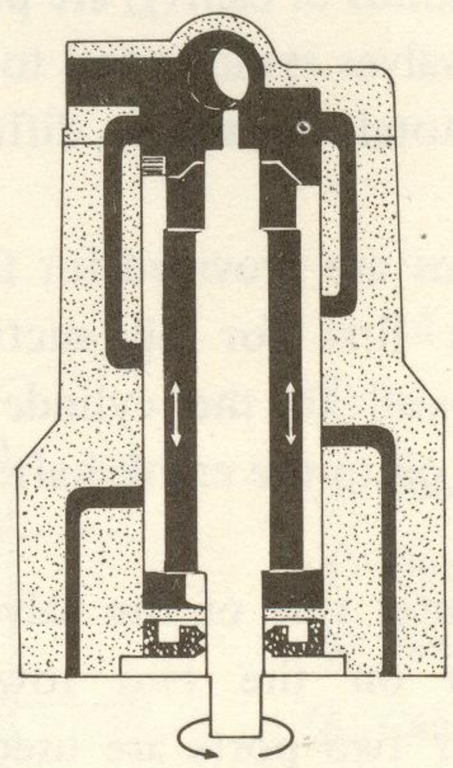


Fig. 6–10 Oil circulating passage

An overall construction and the arrangement under operating conditions are illustrated in the following diagram.

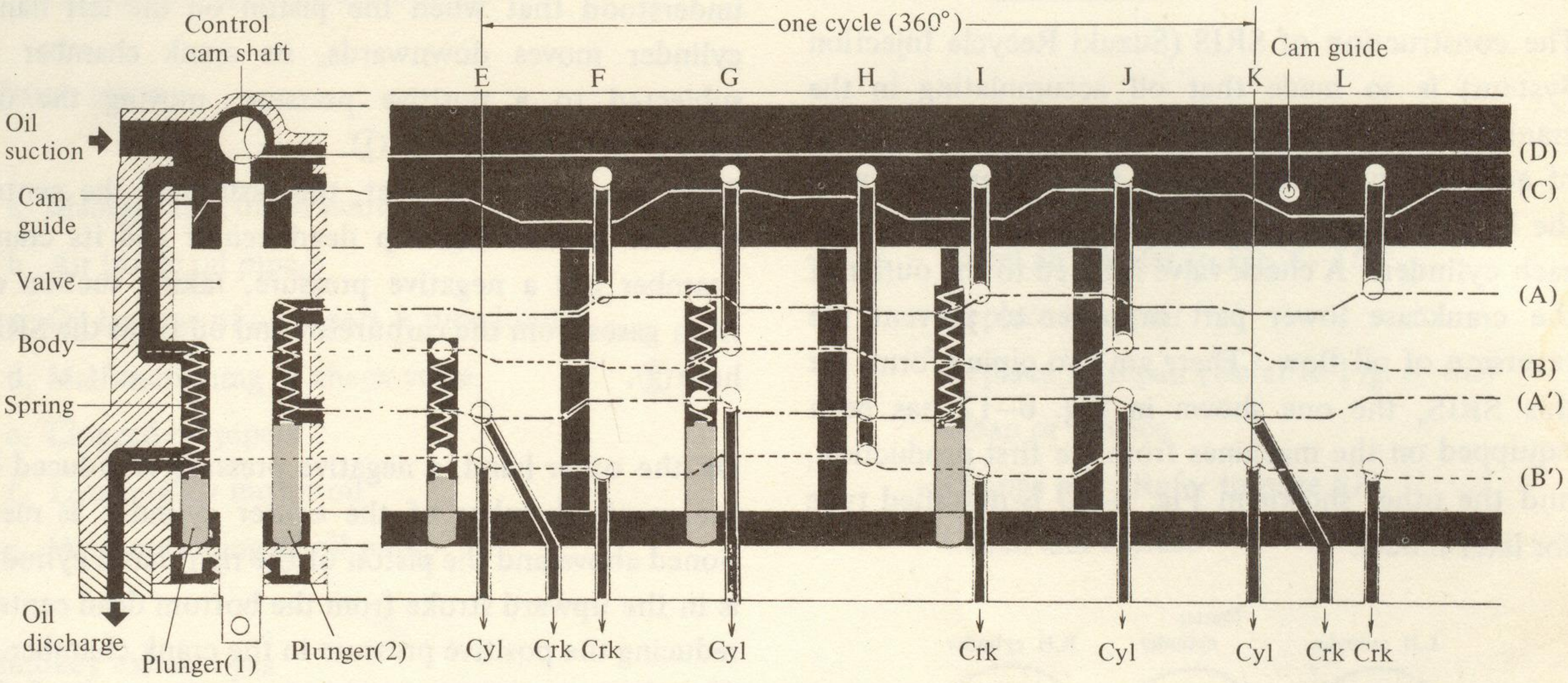


Fig. 6–11 Overall construction and arrangement under operating conditions

(A), (A′), (B) and (B′) show the loci of each oil inlet and outlet on the outside of the valve traced when the valve moves up and down as rotating, with its cam traveled along the cam guide on the inside of the pump body.

These loci will be varied in accordance with the movement of the control cam shaft which is shown as a line(D) in the figure, because the reciprocating movement of the valve is regulated by both the control cam and the cam guide.

To take the plunger ② for example, oil is drawn into the valve at the position "F" and discharge it once to cylinder side to a certain extent at "G" and feed back the remaining oil to the control chamber at "H", then suck oil again from the control chamber at "I" and discharge it into cylinder and crankshaft (at "J" and "L") respectively.

Thus each plunger discharges the specified amount of oil into the cylinder and crankshaft totally 6 times within one cycle.

SRIS

Construction

The construction of SRIS (Suzuki Recycle Injection System) is so made that oil accumulating in the crankcase bottom is forced into the scavenging ports of adjacent cylinders through the rubber pipes with the help of positive and negative pressures induced by each cylinder. A check valve is fitted to the outlet of the crankcase lower part in order to prevent the reversion of oil flow. There are two piping forms for this SRIS, the one shown in Fig. 6–12 has been equipped on the machines from the first production, and the other shown in Fig. 6–13 is modified type for later model.

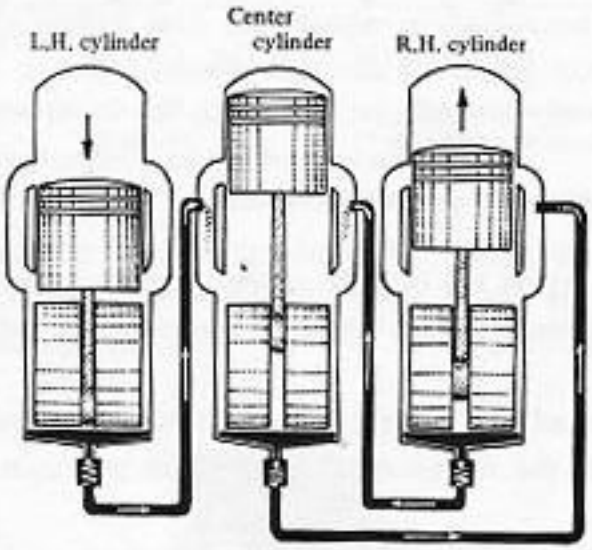


Fig. 6–12 SRIS type 1

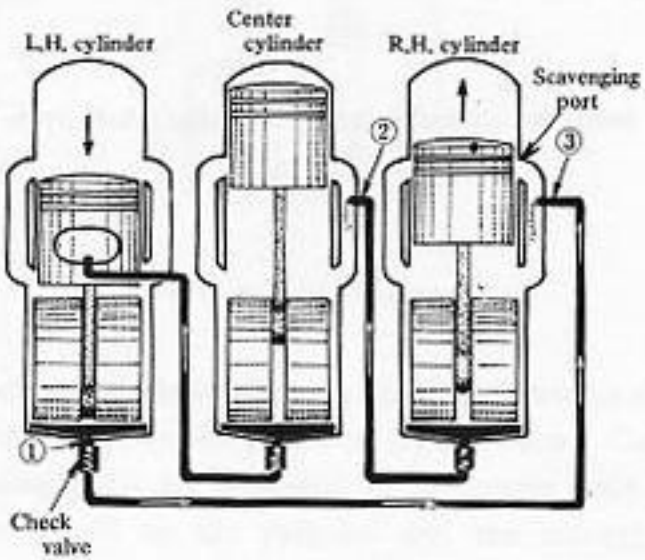


Fig. 6–13 SRIS type 2

Operation

To take the later type (Fig. 6–13) for example, it is understood that when the piston on the left hand cylinder moves downwards, its crank chamber is subjected to a positive pressure, moving the oil outside of its outlet port ①.
Simultaneously with that, the piston on the center cylinder is near the top dead center and its crank chamber has a negative pressure, taking suction of fresh gases from the carburetor and oil from the SRIS hose ②.

On the other hand, a negative pressure is induced in the crank chamber of the center cylinder as mentioned above and the piston of the right hand cylinder is in the upward stroke from the bottom dead center, reducing the positive pressure in the crank chamber. Therefore, a pressure at the scavenging port of the center cylinder cannot attain a sufficiently high value of pressure needed for drawing oil from SRIS hose and oil as stopped at the check valve does not enter into the SRIS hose.

In the cylinder on the left hand side, the crank chamber has a positive pressure, while fresh gases are still flowing into the crankcase of the cylinders on the right hand. Therefore, oil is drawn into the crank chamber from the SRIS hose ③ and though oil is being delivered as a whole, it will no longer be delivered if the pressure is changed from positive to negative as the piston moves upward.

TROUBLE SHOOTING

Symptoms & Probable Causes	Remedies
Piston seizure	
a. Maladjusting of oil pump lever	Adjust (Refer to Fig. 6–19)
b. Air inside oil pipe/s	Expel air (Refer to Fig. 6–16)
c. Oil leakage of oil pipe/s & pipe joint/s	Replace or repair
d. Malfunctioning of check valve	Replace or repair (Refer to Fig. 6–20)
e. Clogged oil pipe/s	Clean or replace
f. Low quality motor oil	Change oil (Refer to page 51)
g. Malfunctioning of oil pump	Check and replace
Smokey exhaust gas	
a. Maladjusting of oil pump lever	Adjust (Refer to Fig. 6–19)
b. Clogged or pinched SRIS pipe	Clean or replace
c. Malfunctioning SRIS check valve	Repair or replace (Refer to Fig. 6–20)
d. Low quality motor oil	Replenish (Refer to page 9, 13)
Excessive oil consumption	
a. Maladjusted oil pump lever	Adjust (Refer to page 10)
b. Oil leakage	Trace leakage and repair

OIL PUMP & OIL PIPE

Removal

(1) Remove oil inlet pipe from oil tank.
(2) Remove oil pump cover.
(3) Remove oil pump.
(4) Remove starter motor cover fitting bolts and lift up the cover along the by-pass hose.
(5) Remove oil outlet pipe union bolts.

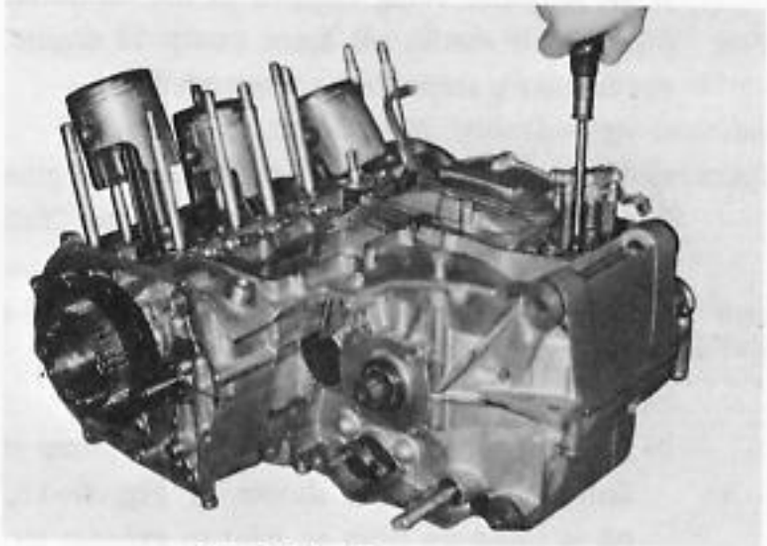


Fig. 6–14 Removing oil pump

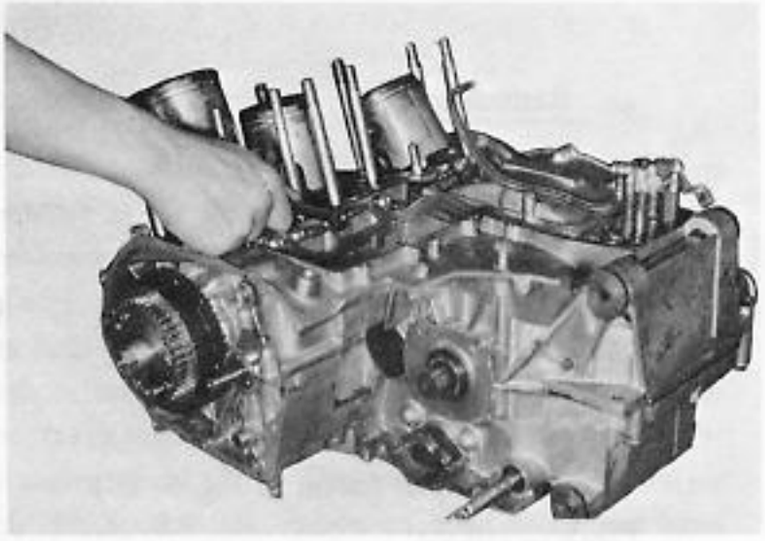


Fig. 6–15 Loosening oil pipe union bolts

Disassembly

The oil pump is manufactured with precision and its efficiency may be reduced once disassembled and is restored to the original, possibly leading to an engine trouble. It is constructed, therefore, as nondisassembly type, similar to the previous model. In this respect, it is difficult to accept any claim about an oil pump being reassembled. Also, it would be unacceptable to treat each oil pump inner part as a supply part for replacement. It is recommended that the whole of the oil pump assembly should be renewed, since any inner part is out of order.

Inspection & Repair

1. The oil pipe is checked to see if there is any trapped air inside. If there is any air found within the oil inlet pipe between the oil tank and the oil pump, the air expelling screw at the upper part of the pump is loosened to expell the air completely.
   If air is found being trapped in the oil outlet pipe which carries oil from pump to engine, the following steps are recommended:

   a) For a small amount of air; With the engine idling, the oil pump lever is set to "full open" position and this condition is maintained until all of the air is believed to be expelled completely.

   b) For a large amount of air; The oil pump is dismounted and as shown in Fig. 6–16, oil is filled up from an inlet to exhaust air. It is to be noted that a check valve is fitted to each pipe end to prevent the reversion of oil flow as indicated in the figure.

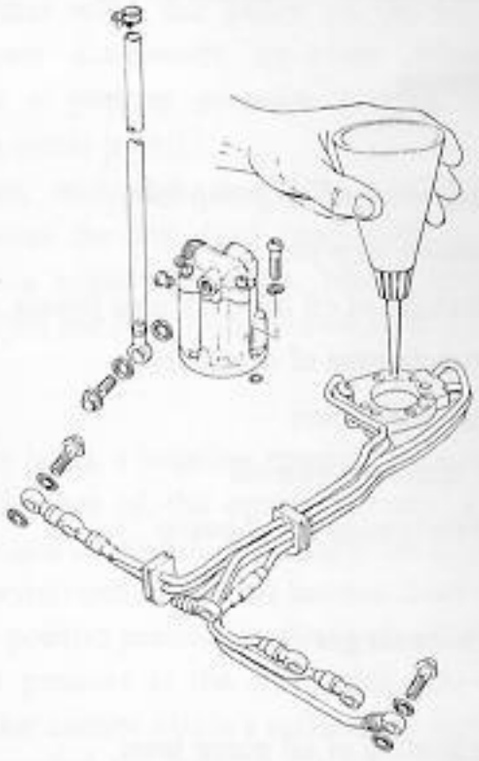


Fig. 6–16 Expelling air in oil pipes

2. Check the oil pump for any air trapped inside. As shown in Fig. 6–17, the expelling air screw is loosened and tightened after confirming the oil discharge.

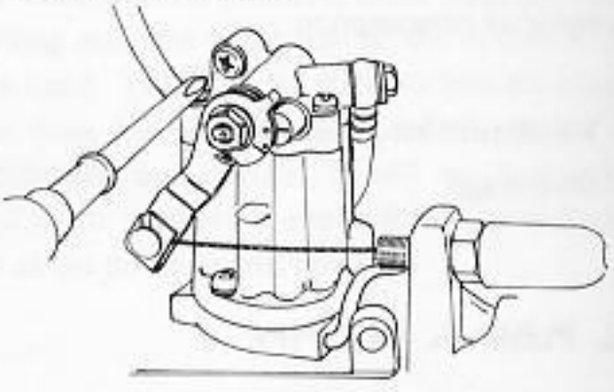


Fig. 6–17 Expelling air in oil pump

3. When an abnormal oil consumption is noted, it is first recommended to replace the oil pump. If the oil consumption does not improve with this, it is most probable that the pump unit has a leakage or the check valve is out of order. These points should therefore be checked.

4. When an engine trouble is caused apparently due to the improper function of the lubricating system and yet a cause of troubles cannot be traced exactly, please check the oil tank cap to see if it is well mounted. It is often seen that a breather hole on the tank cap is closed down due to the improper maintenance.

Assembly & Adjustment

1. Before mounting the oil pump and the oil pipe, oil should be supplied by forced lubrication to the CCI oil passage of the crankcase up to the full level, so as to expel air completely.

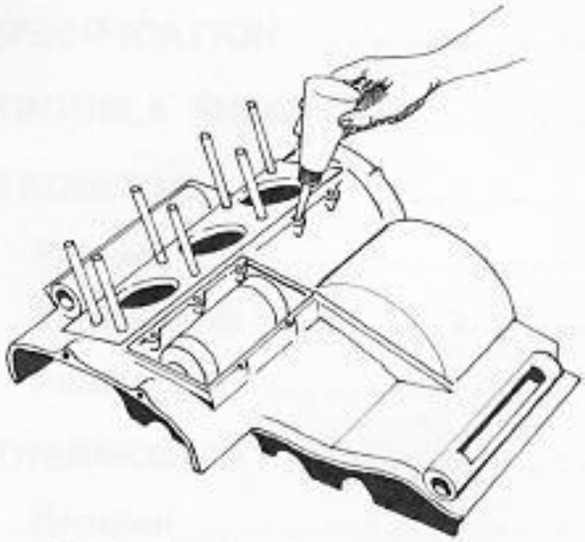


Fig. 6–18 Expelling air in oil passage

2. The oil pipe should also be filled with oil to expel air, as shown in Fig. 6–17.

3. In fitting the oil pump cover after mounting the oil pump, care should be taken not to pinch oil inlet hose between the case and the cover.

4. For the adjustment of oil pump, the throttle is opened gradually as shown in Fig. 6–19 and adjustment is made to align the aligning mark of the oil control lever with that of the stator, when the aligning mark of the throttle valve is on the top of an aligning hole on the side of the carburetor mixing chamber body.

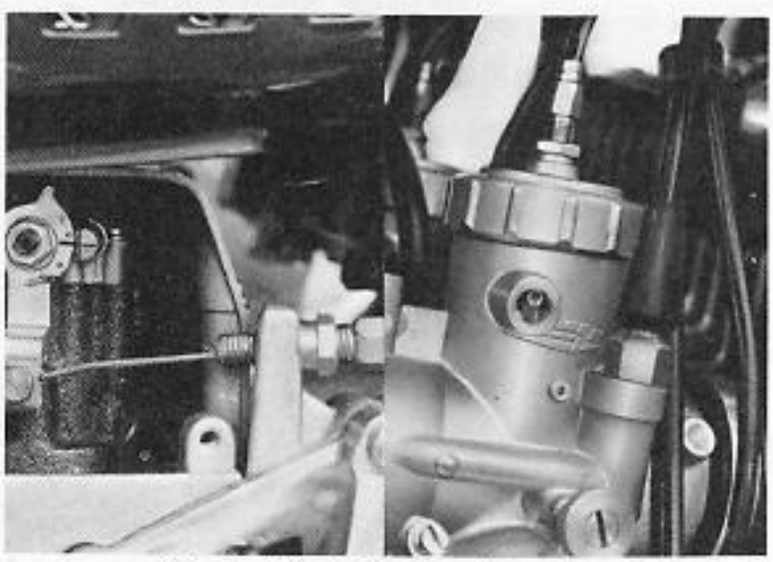


Fig. 6–19 Adjusting oil pump

5. It is recommended to use SUZUKI CCI oil or non-diluent (non-self mixing type) of high quality equivalent to SAE #30 wt.

SRIS (SUZUKI Recycle Injection System)

Removal

1. Remove the oil pipe guide plate from lower crankcase.

2. Disconnect the SRIS pipes at the crankcase lower side by removing the clips with a screw driver.

3. The check valve and union are press-fitted to each of the crankcase and the cylinder on the machine equipping the former SRIS type, while on the later type the check valve is screwed into the crankcase, so that it can be removed easily.

4. Piping from left hand cylinder to right hand cylinder on the later type is made between the left hand crankcase and the right carburetor inlet through the under crankcase fins and the starting motor case. Therefore, when overhauling the engine, be sure to disconnect the pipe ends both at the crankcase and at the carburetor inlet beforehand.

Inspection & Repair

1. Check the oil pipes for crack, bend or pinched part.

2. Check to see if the check valves operate properly by using an injector. If the check valve is found to be clogged with foreign materials, remove the check valve from the lower crankcase and wash it in a solvent.

Note: On the later type, the nylon mesh strainer is provided on the check valve end.

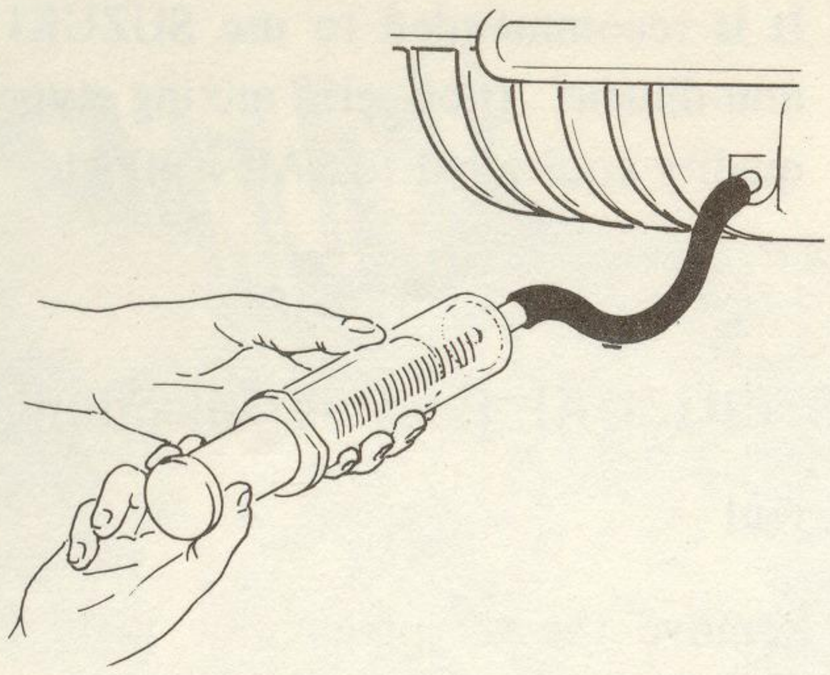


Fig. 6–20 Checking SRIS check valve

Assembly

1. The arrangement of oil pipes from the crankcase to the cylinder is as shown in the figures. Connect each end of the pipes to each union on the front side of the cylinder, where "R", "C" and "L" marks are relieved, so as to match the marks with the cylinder location.
   On the later type, the pipe from the right crankcase to the left cylinder is arranged as shown in Fig.

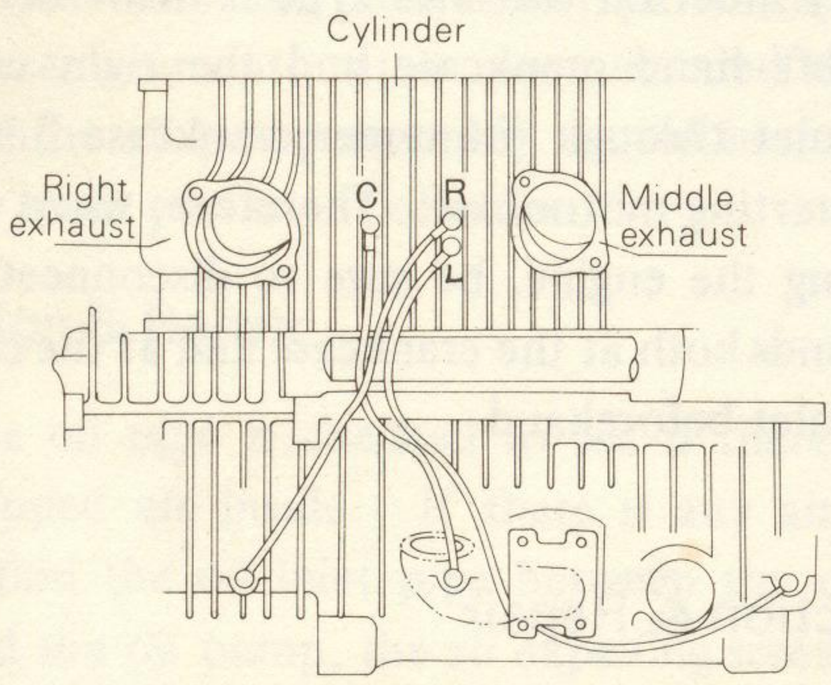


Fig. 6–21 SRIS piping

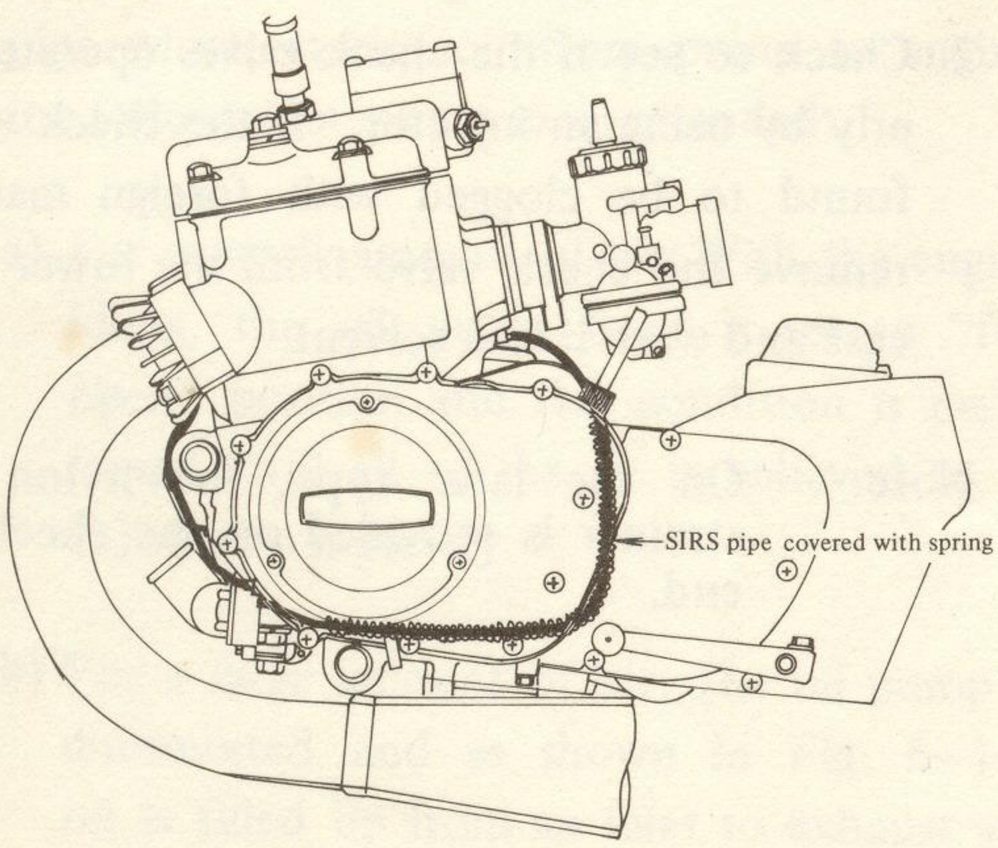


Fig. 6–22 SRIS piping for later model

7. COOLING SYSTEM

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DESCRIPTION

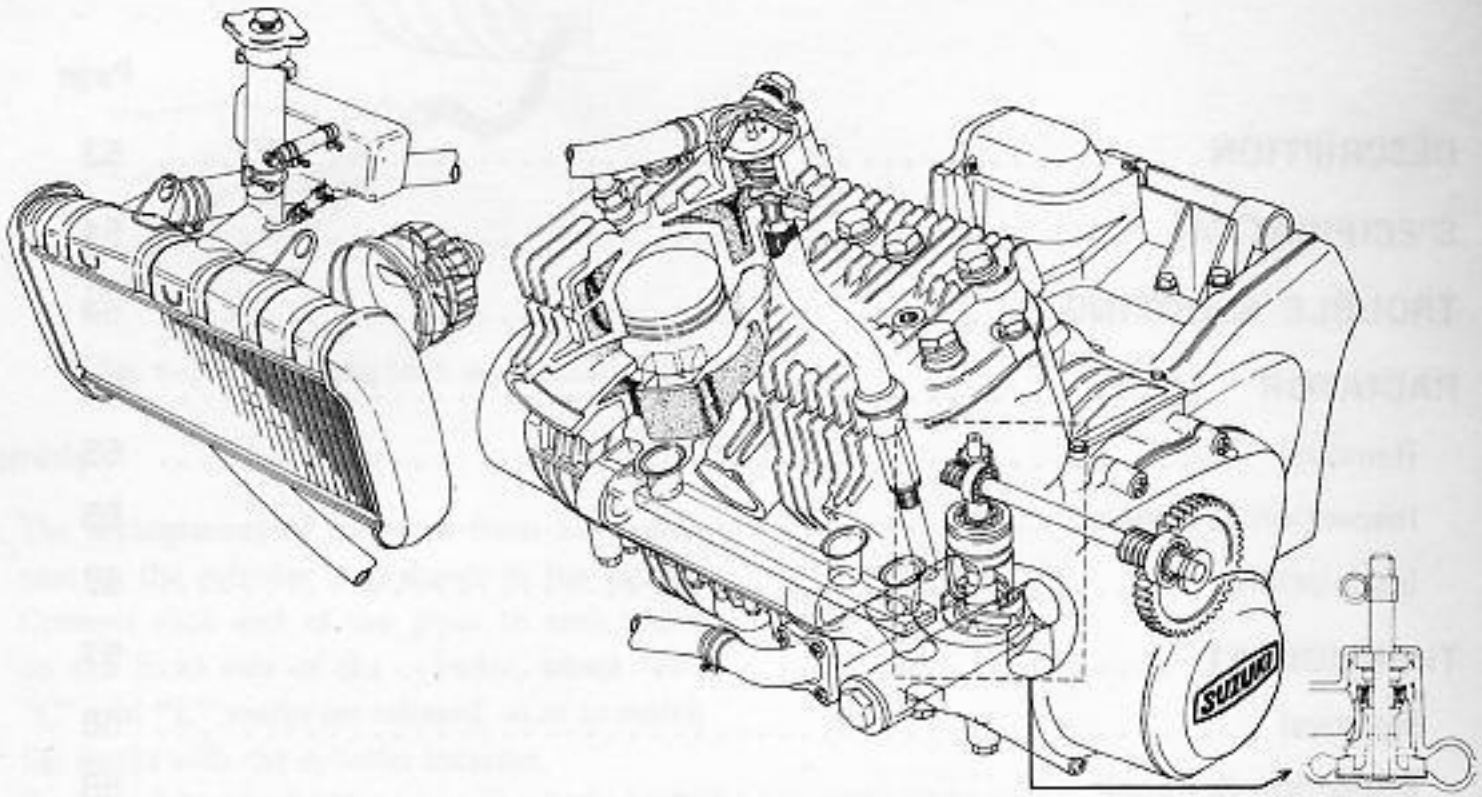


Fig. 7–1 GT750 engine cooling system

The cooling system of this engine uses a pressure forced circulation type and is designed to provide an excellent cooling effect under every imaginable running conditions.

The radiator has a corrugated fin and tube type construction of aluminum material. Therefore, it is characteristic in respect of light weight and heat radiator. Outside of the radiator is provided a reservoir tank as an escape space of the cooling solution due to the expansion from the heating. Expanded cooling solution due to a temperature rise enters into the reservoir tank thus preventing its escape into the atmosphere.

The water pump, with forced circulation of cooling solution among the radiator, the engine and the cylinder block, has centrifugal type construction and is fitted to the lower side of the engine. The pump is direct driven by the crankshaft through the starter clutch gear.

The pump takes in the cooling solution from the lower side of the radiator, by circulating it throughout the water jacket of the cylinder block, the cylinder head and the thermostat, and is finally returned to the ratiator. Cooling solution is circulated within a closed circuit as mentioned above. When the engine is still cold, however, cooling water circualtes through a bypass hose from the thermostat and is returned to the water pump directly.

The radiator cap is designed to maintain a pressure of about 1.9 kg/cm^2 (27.0 lb/in^2) in the cooling system and its reverse valve opens to release an excess portion of the pressure out, when applied to a pressure above the said valve.

The thermostat is wax pellet element type and is designed to maintain an optimal level of temperatures in the cooling water.

SPECIFICATION

Water pump specification	
Type	Six(6) - blade impeller centrifugal type
Delivery capacity	60 liters (15.8/13.2 gal US/Imp) per minute at 6,000 rpm at 20°C (68°F)
Revolution ratio with crankshaft	1.57 : 1
Water seal	Mechanical seal
Radiator specification	
Type	Pressure sealed cooling corrugated fin and tube type
Radiation capacity	200 Kcal/min
Opening pressure radiator cap valve	0.9 kg/cm² (12.78 lb/in²) ± 10%
Coolant capacity	about 1.4 liters (1.47/1.23 Qt. US/Imp)
Radiation area	664 cm² (102.92 in²)
Core dimension	
Height	240 mm (9.45")
Width	430 mm (17.0")
Thickness	59 mm (2.32")
Thermostat specification	
Type	Wax pellet element type
Opening at	82°C (179.6°F)
Full opening at	95°C (197.6°F)
Stroke	8 mm (0.3")

Thermo switch and temperature gauge
Refer "Body Electrical System".

TROUBLE SHOOTING

Symptoms & Probable Causes	Remedy
1. Overheating	
a. Insufficient coolant	Replenish, and check for leak/s
b. Thermostat remain closed by sticking	Replace thermostat
c. Water pump inoperative	Repair or replace
d. Cooling system passage blocked	Clean radiator and water passage
e. Incorrect ignition timing	Adjust ignition timing (Refer to page 11)
f. Brake dragging	Adjust brakes
g. Malfunctioning of cooling fan	Repair
2. Overcooling	
a. Thermostat remain opened by sticking	Check or replace thermostat
b. Extremely cold weather	Cover radiator

Symptoms & Probable Causes	Remedy
3. Loss of coolant	
a. Leaking radiator	Repair radiator
b. Loose or damaged hose connection	Tighten connection or replace hose
c. Leaking water pump cover	Repair or replace
d. Defective cylinder head gasket	Replace gasket
e. Improper tightening of cylinder head bolts	Tighten
f. Cracked cylinder head or block	Replace cylinder head or block
g. Defective radiator cap	Replace radiator cap
4. Noisy cooling system	
a. Defective water pump bearing	Replace water pump ass'y
b. Loose or bent water pump impeller	Replace impeller

RADIATOR

Removal

1. Cooling solution is drained out.
   Refer "Engine Disassembly" on page 22.
2. Remove the fuel tank.
3. Replace the radiator inlet and outlet hoses, the coolant inlet pipe, the radiator reservoir tank and its hose, etc. after loosening hose clamps.
4. The cooling fan and its shroud are removed.

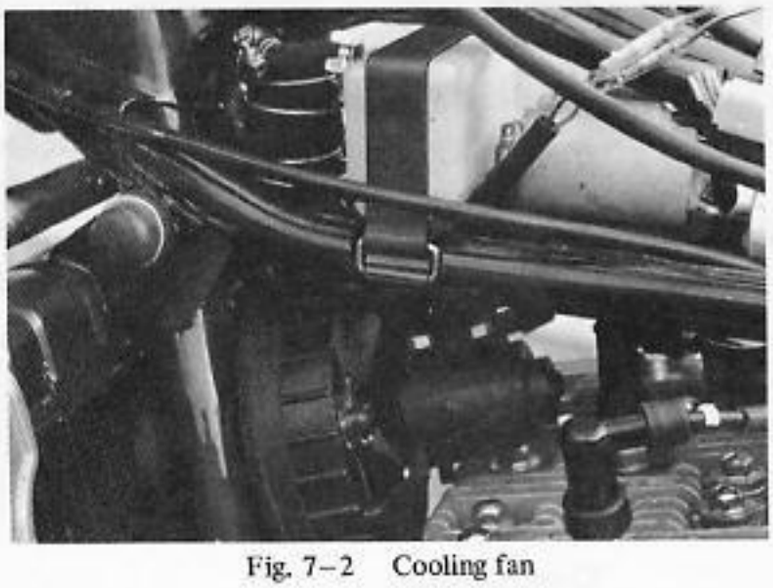


Fig. 7–2 Cooling fan

5. The radiator is dismounted after removing its bumper.

Inspection Repair

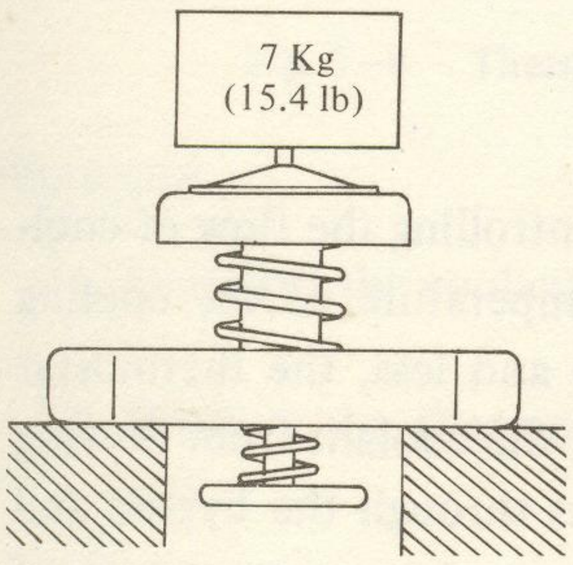
1. Check the radiator for any water leakage at its upper tank, lower tank and core. The radiator should be replaced if any water leakage is found.
   Water leakage in the cooling system including the radiator is sometimes caused often by deteriorated materials and fitting conditions with the elapse of time including the shrinking of gasket, bolt loosening and hose deterioration, in addition to a usual apparent cause such as an accident which may involve rolling over of vehicles. In colder areas, the cooling system may sometimes become out of order, due to freezing coolant.
   It is necessary, therefore, to mix cooling water with an antifreeze and summer coolant and an anti-leakage material. New models GT750 coming out of the line have such agents added in the cooling system.
   As to the cooling water, an anti-freeze and summer coolant and an anti-leakage material, please see page 60.
2. Check the core fin of the radiator for mud or other foreign substances which may block smooth air flow. Also, bent or damaged fins, if any, should be remedied immediately.

Note: When more than 20% of the total radiator core area is clogged, the cooling effect of the radiator will be completely lost and it is necessary to replace the radiator in this instance.

3. Check the reverse valve of the radiator cap for its condition. This should be checked using a pressure gauge as shown in Fig. 7–3. When no pressure gauge is available, add a weight of about 7 kg (15.4 lb) onto the cap valve. It should then open when kept in good condition.

Gauge pressure (standard)

0.9±0.1 kg/cm² (12.78±1.4 lb/in²)



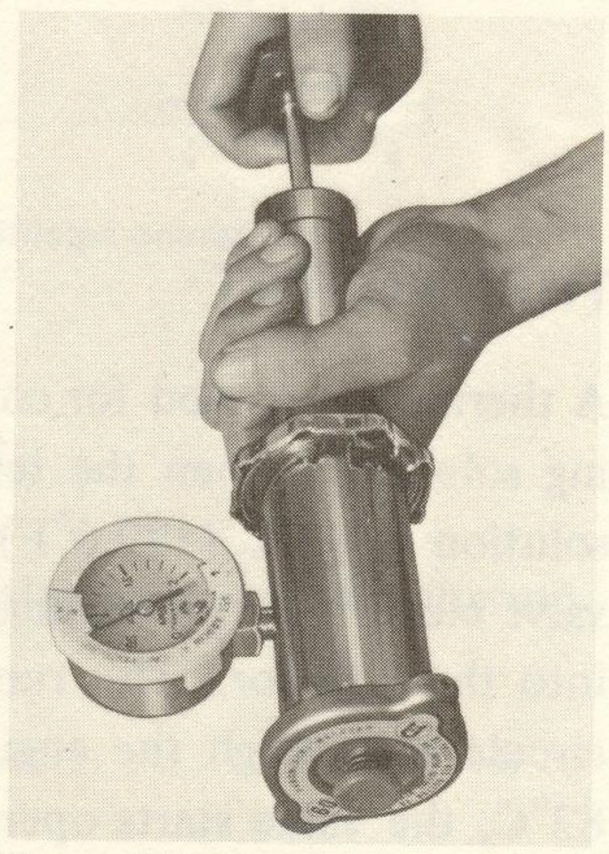


Fig. 7–3 Checking radiator cap

Note: In addition to the reverse valve, the radiator cap is fitted with two(2) other valve mechanisms. The knob(A) is installed for releasing the steam for some abnormal causes.
In this instance, the valve(B) opens, when the knob is pushed down before removing the radiator cap, and the steam within the radiator escapes into the bypass. Therefore, you do not have to worry about burning hands in removing the cap.

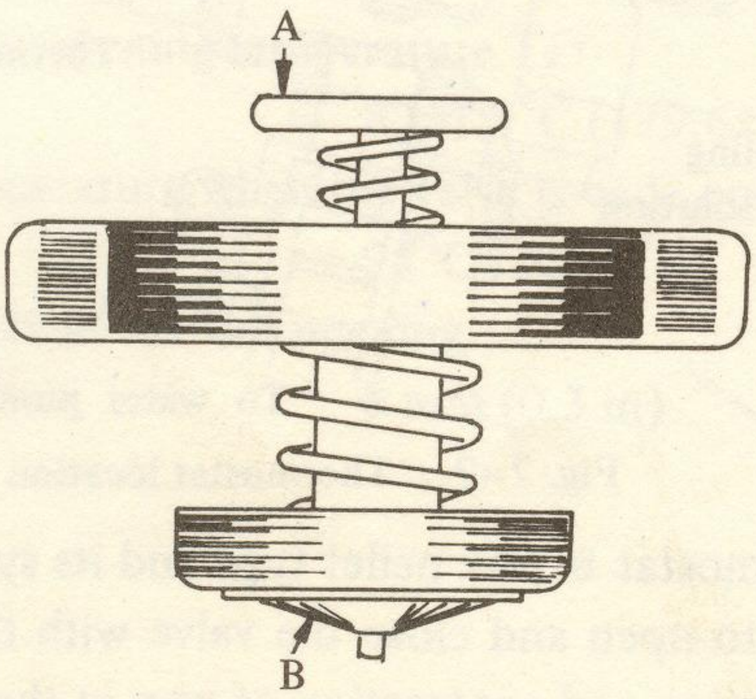


Fig. 7–4 Radiator cap

The valve(B) opens automatically, independent of the knob(A), when the pressure inside the radiator has dropped due to the temperature drop of the coolant and its subsequent contraction. Consequently possible damage on the radiator core due to a negative pressure can be avoided accordingly.

* Reason for adopting pressure-sealed cooling system. *

Pure water freezes at 0°C (32°F) and boils at 100°C (212°F). The use of this pure water as a coolant, however, would bring up many undesirable points. Usually, you may lower the freezing point and raise the boiling point using additives or by pressurizing the cooling system.
When pressurized pure water is heated, its boiling point rises in proportion to the pressure. Based on this principle, the tank cap is completely sealed. This is a pressure-sealed cooling system.

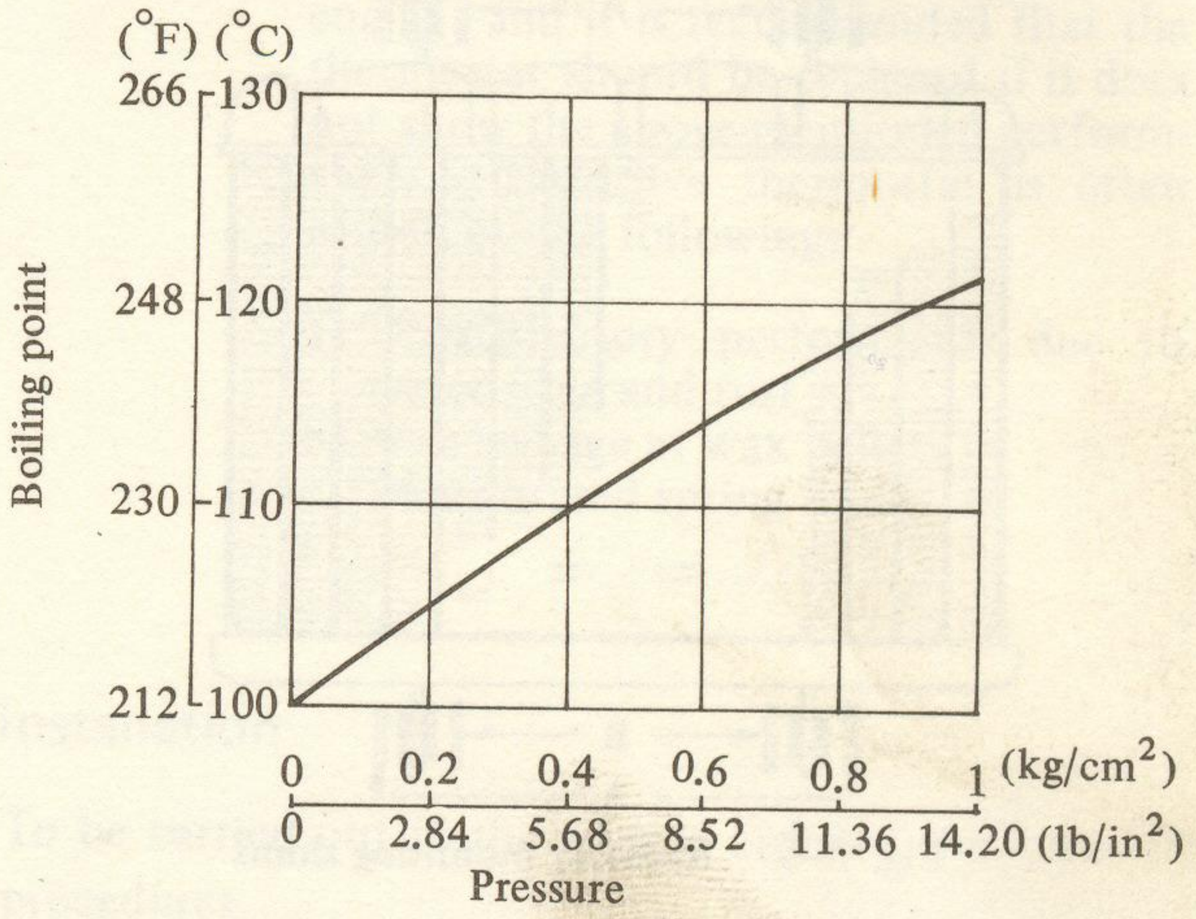


Fig. 7–5 Pressure-boiling point curve

As a coolant rises in temperature and expands, the pressure rises. When it reaches 1.9 kg/cm² (27.0 lbs/in²), a gauge pressure of 0.9 kg/cm² (12.78 lbs/in²), the valve of the radiator cap opens releasing the pressure and to prevent possible damage on the cooling system. As is seen from the above curve, a temperature in that instance is about 120°C (248°F). Actually, however, additives are added in the coolant. Then its boiling point rises further.

Note: A gauge pressure is difined as the difference between the inside pressure and the atmospheric pressure (about 1 kg/cm²).
In the case of the radiator cap of GT750, the gauge pressure of 0.9 kg/cm² (12.8 lbs/in²) is obtained as a balance between 1.9 kg/cm² (27.0 lbs/in²) and 1 kg/cm² (14.2 lbs/in²).

In replacing the radiator cap, it is required to use a new cap specially designed to a gauge pressure of 0.9 kg/cm² (12.8 lbs/in²). The use of other caps would lead to overheating and a possible damage in radiator.

Installation

Installation is carried out in the reverse order of the removal procedure as mentioned hereinbefore and care should be taken on the following points:

There are three(3) kinds of radiator mounting washer of different thickness and these washers are used only for the intended purpose respectively. Be sure to use these washers in a right place in accordance with a white painted round mark on the mounting plate welded to the upper and lower tanks of the radiator. See Fig. 7–6.

Washer (A): 2.0 mm (0.079 in) thick
Washer (B): 1.6 mm (0.063 in) thick
Washer (C): 0.8 mm (0.031 in) thick

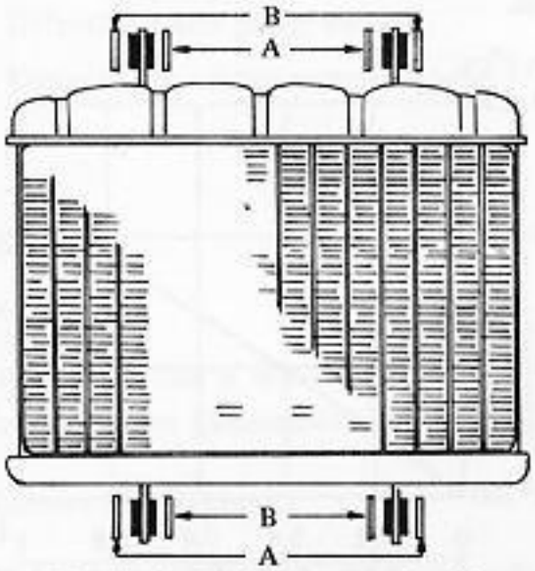


Fig. 7–6 Radiator mounting shims

(1) When marked by a white circle

a. Upper tank mounting plate:
The washer(A) is fitted to the plate inside and (B) to the outside.

b. Lower tank mounting plate:
The washer(A) is fitted to the plate outside and (B) to the inside.

(2) When unmarked by a white circle
Fit the washer(B) to both sides of upper and lower tank plates.

(3) When a white circle mark is painted on the surface of the upper tank only. the washers(A) and (B) are fitted only to the upper tank mounting plate in a similar manner to the above (1). The lower tank mounting plate is fitted with the washer(B) lony. In case only the lower tank is marked by painting, the procedures should be followed by the reversed order.

(4) In case that a slight gap is still there even though the proper washer has been selected, use the washer(C) to fill it up.

The radiator of GT750 is made of aluminum and attention should be paid to the fact that its improper installation would cause a stress concentration in the mounting plate, probably leading to a danger of cracks during the course of time.

Note: The radiator body and three(3) washers are available as spare parts in the form of a set and a suitable washer should be selected according to the above explanations.

THERMOSTAT

A thermostat is used for controlling the flow of cooling solution. When the temperature of the cooling solution is 82°C (179.6°F) and less, the thermostat valve closes thus preventing the coolant from flowing into the radiator. This runs through the bypass and circulates through the engine. At a temperature of 82°C, the value starts opening to release the cooling solution into the radiator as well. At 95°C (203°F), the valve is wide open and the bypass is closed to release all the coolant into the radiator for cooling.

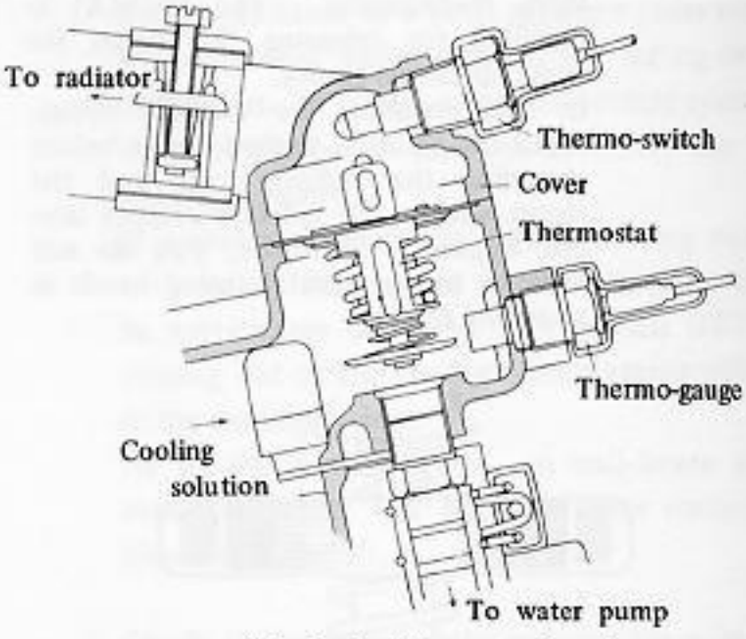


Fig. 7–7 Thermostat location

The thermostat is wax pellet type and its system is so made as to open and close the valve with the help of the expansion and contraction of wax in the pellet.

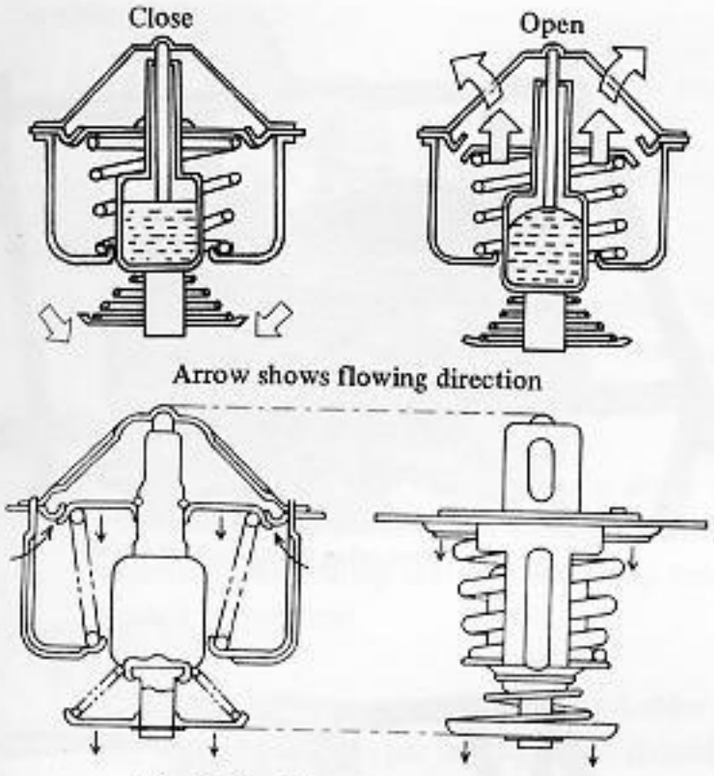


Fig. 7–8 Thermostat operation

Removal

1. Drain off the coolant.

2. Remove the thermostat cover and the thermostat.

Inspection & Repair

1. Check the pellet for any crack.

2. The function of the valve is tested. As shown in Fig. 7–9, both the thermostat and the thermometer are dipped into water within the vessel and water is heated by stirring to obtain a uniform temperature. Then, check the thermostat if it is normally operating at a prescribed temperature.

* Valve opening temperature T_2:
  82±1.5°C (179.6±34°F)
* Temperature when the valve is wide open T_2:
  95°C (203.0°F)
* Stroke at the full opening:
  8 mm (0.3 in)

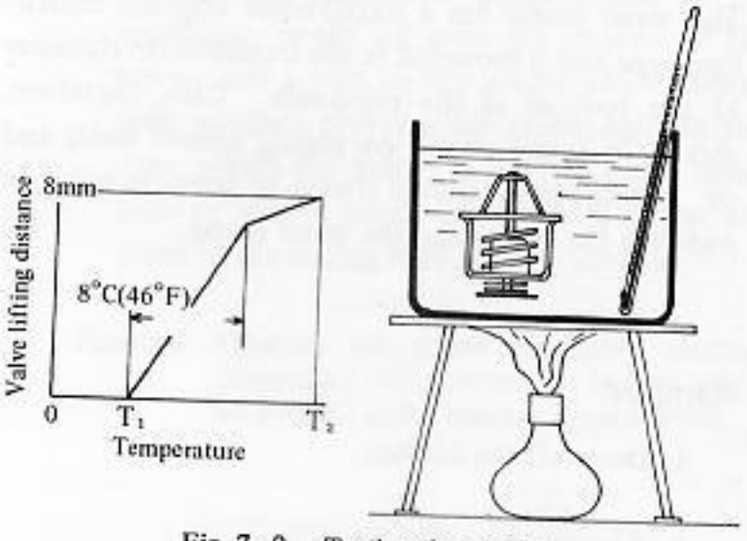


Fig. 7–9 Testing thermostat

Note: An improper thermostat may lead to the overheating and the overcooling of the engine, and it is recommended that the thermostat should be replaced if it does not show the above-mentioned performances. Defective thermostat is often caused by the followings:

a) Unsatisfactory performance due to water scale and rust
b) Wax leakage at wax pellet
c) Deteriorated spring

Installation

To be carried out in the reverse order of the removal procedures.

WATER PUMP

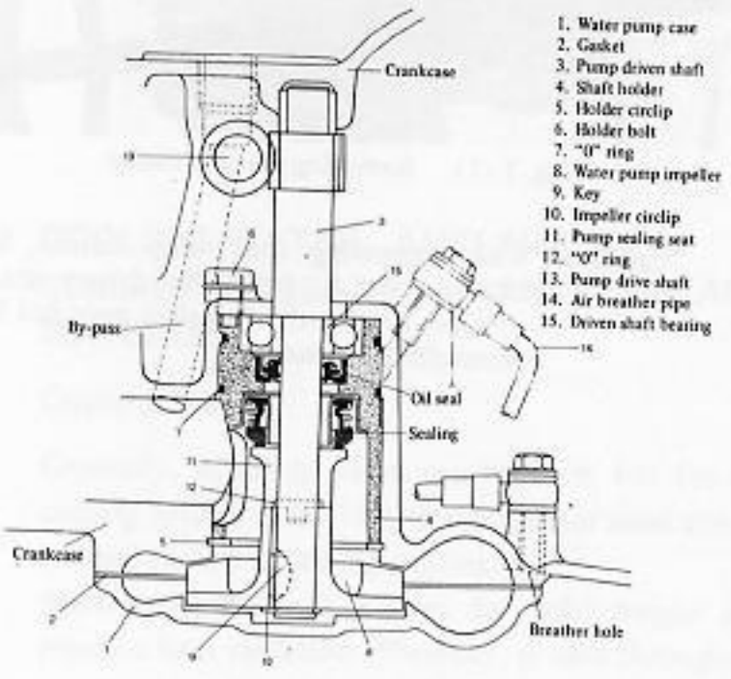


Fig. 7–10 Water pump

The water pump has a six(6)-blade impeller centrifugal type and is mounted in the transmission chamber at the bottom of the crankcase. Care, therefore, should be taken about the sealing against water and oil, and this point should always be borne in mind, in handling the engine and the water pump.

Removal

1. Drain off the coolant.
2. Remove the central muffler.
3. Remove the water pump cover with care so that its fitting surface may not be damaged.
4. Remove the impeller circlip and the impeller.
5. Remove the pump holder circlip and using a snap ring mover (09900–06103). Then, the water pump driven shaft is wrapped in cloth and drawn out downwards using the pliers.

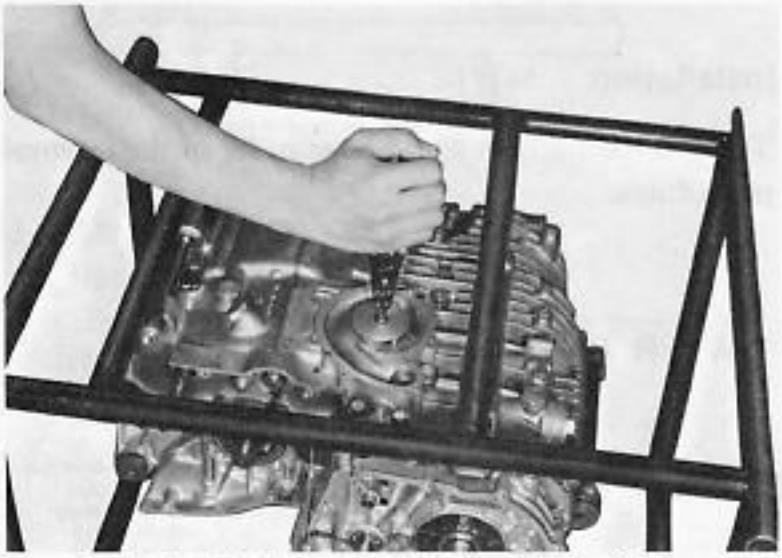


Fig. 7–11 Removing impeller circlip

Caution: When removing the pump holder, be careful not to hurt the driven shaft surface, or else the impeller may not be reinstalled on assembly.

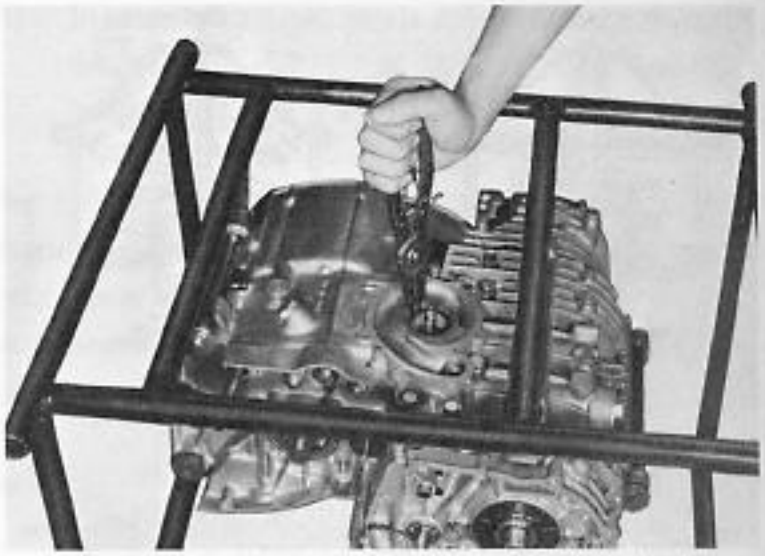


Fig. 7–12 Removing pump holder circlip

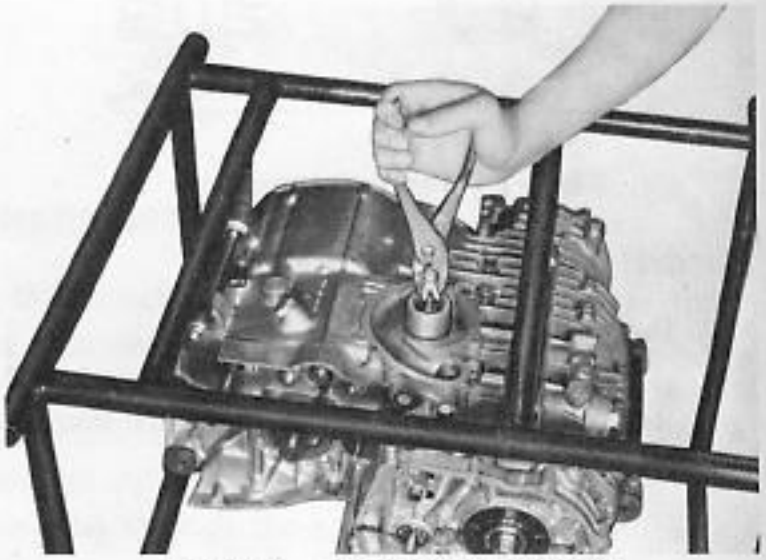


Fig. 7–13 Extracting pump holder

6. In overhauling the water pump driving mechanism, please see the item on the "starter clutch."

Disassembly

The water pump driven shaft and its bearing can be removed if drawn out in the reverse direction to the impeller after the pump holder is heated up to 75–85°C (167–185°C).

A water pump seal and an oil seal in the pump holder should not be removed, which otherwise would be damaged.

Note: Both the water pump seal and the oil seal in spare parts are treated as a complete set with the pump holder and these components may not be supplied separately.

Inspection

1. Check the bearing for rough surface or excessive end play.
   Scales or rust, if any, on the pump dirven shaft should be removed with emery cloth.

2. Check impeller blade for any deflection, bend or damage etc. The impeller should be replaced whenever such a defect is found.

3. Check to see if the sealing seat is worn out excessively and an effective sealing cannot be expected, the sealing seat and the pump holder should be replaced.

4. Check the "0" ring around the pump holder for any damage and proper sealing effect should be expected.

Note: The cooling solution and transmission oil are sealed in two(2) steps, as follows: The solution is first sealed with a pump seal, a sealing seat and an "O" ring installed inside of the sealing seat.
Transmission oil is first sealed with an oil seal. Then, both solution and transmission oil are sealed with two(2) "O" rings outside of the pump holder. The system is so made that the solution or transmission oil, if leaking at the said sealing part, will be drained from the crankcase through a breather pipe.

5. Check water pump drive gears and their bearings for any abnormality.

6. Check the impeller if it is contacting the crankcase or the pump case. A contacting impeller with the crankcase indicates an improper coupling of the pump driven shaft with the bearing. The shaft should be removed for checking.

Standard gap between impeller and crankcase:
0.5–1.5 mm (0.02–0.59 in)

Assembly

The assembly is carried out in the reverse order of the disassembly procedure and care should be taken on the following points:

1. In inserting the water pump holder in the crankcase, apply oil over the outside of the holder and a port on the holder side is aligned with another port on the crankcase. In this case, rotate the holder slightly to either direction so that a notch on the holder top will come to the setting bolt of the crankcase.

Caution: Observe the above alignment method correctly. Otherwise, the holder might be broken and a leakage would occur.

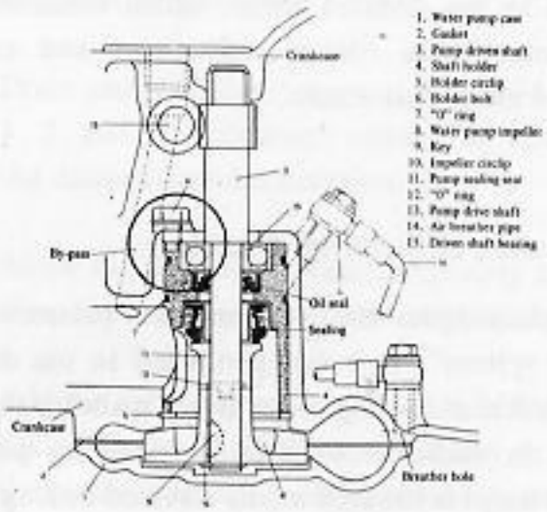


Fig. 7–14 Pump holder notch

2. The impeller is inserted into the pump driven shaft and is secured with a circlip. In this instance, it is necessary to make sure that a gap between the impeller and the crankcase is 1.5 mm (0.59 in). Without this gap, the pump driven shaft should be taken out for a gap adjustment.

3. Apply liquid gasket (99000–33010) on both sides of the waterpump case gasket before mounting the pump case.

COOLING WATER, ANTI-FREEZE & SUMMER COOLANT and ANTI-LEAKAGE MATERIAL

Cooling Water

Generally, drinking water can be used, but for the cooling system of GT750, distilled water must always be used for the following reasons:
Aluminum, which is known for light weight and superior heat radiation efficiency, is used throughout

the cooling system of GT750. This material is liable to rust, as compared with cast iron and bronze which are used generally for the cooling system. In addition to taking some precaution against possible clogging in the water passage, it is necessary to use as pure water as possible. This is to ensure the prevention of the accumulation of foreign substances in the system.
Some drinking water, however, is unsuitable for cooling water and it is usually difficult to judge the hardness of water, upon which the suitability of cooling water depends. In this respect, it is recommended to use distilled water, which contains most likely much less foreign substances and can be obtained with relative ease.

Anti-freeze & Summer Coolant

As explained in the section of "pressure-sealed cooling system", it is not permitted to use distilled water as it is as cooling water and it is always required to put in additives so that the freezing point of cooling water is lowered or the elevated boiling point. These additives are an anti-freeze & summer coolant, which effectively reduces the freezing point of cooling water or raise its boiling point.

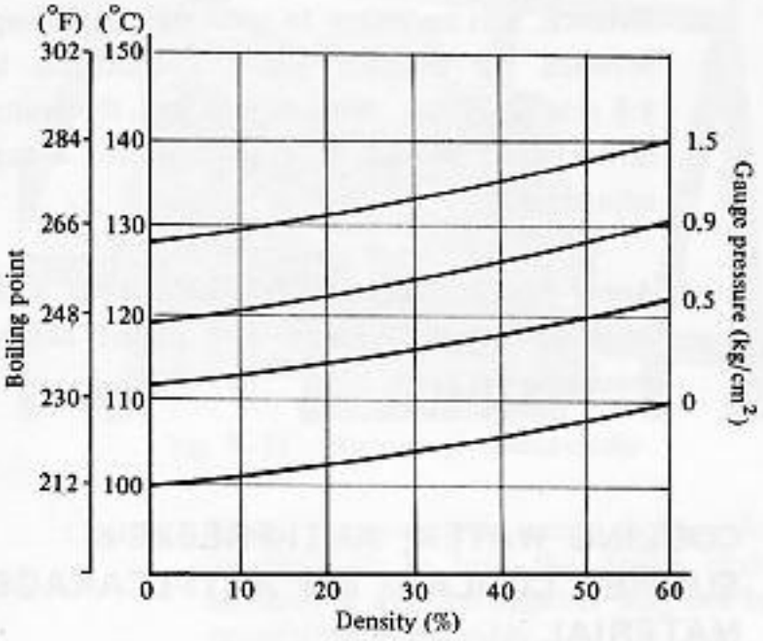


Fig. 7–15 Coolant density-boiling point curve

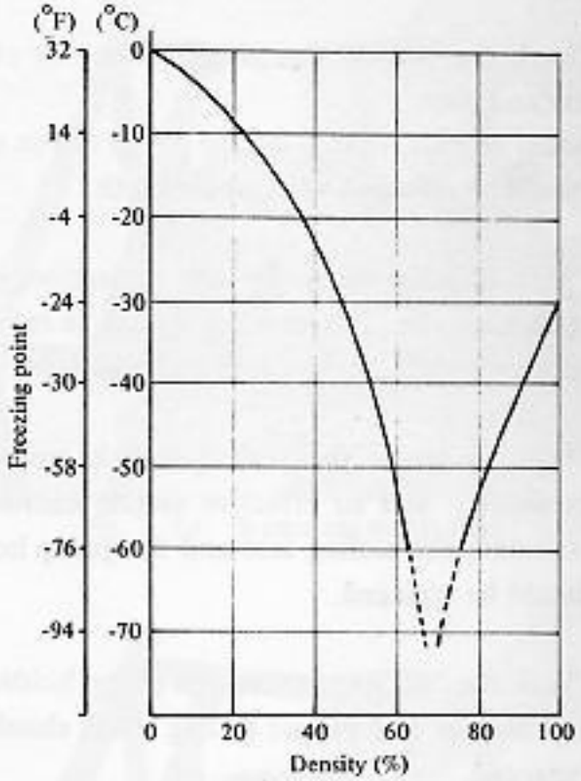


Fig. 7–16 Coolant density-freezing point curve

Note: To elevate a boiling point a most effective method use is pressurizing the system and the use of additives is not so important.

All models of GT750 coming from the production line are pre-filled with 50% of GOLDEN CRUISER 1200 anti-freeze and summer coolant in the cooling system. This material can be used for the motorcycle in colder regions where an atmospheric temperature drops to –31°C (–24°F). See Fig. 7–17.
For use in colder regions or storage in the motorcycle, this mixing ration should be increased up to 55% or 60% according to chart (Fig. 7–17).

Caution: Mixing of the anti-freeze & summer coolant is permitted up to 60%. Mixing beyond it would reduce its efficiency as shown in Fig. 7–16.

The above material is also used as rust-proof or corrosion proof material of the cooling system. It can be used. therefore, in summer or in tropical regions as well as in winter seasons and colder regions. We should also note that only those materials prepared for aluminum cylinders and radiators be sued.
As mentioned above, all new models from our line have GOLDEN CRUISER 1200 anti-freeze and summer coolant filled after being tested and guaranteed. In refilling, the same coolant or its equivalent should be used.

Caution: GOLDEN CRUISER is a year-round type coolant and should be able to retain its effectiveness for two(2) years or travelling distance of 35,000 km (20,000 miles). During that period, it is not necessary to exchange nor replenish the coolant except the case of leakage. Also, it is recommended to avoid mixing two(2) kinds of coolant of different brand.

Anti-leakage material

The anti-freeze is characterized by very high values of permeability and the leakage accident of the cooling system is highly likely. The anti-leakage substance is used to prevent such a possible leakage and every new model GT750 is filled with "Suzuki 7 on Bar's Leaks." The same material or its equivalent should be filled in the raidator when cooling water is changed. "Suzuki 7 on Bar's Leaks" is available as one of spare parts in solid form. A suitable amount for use is 1/2 oz (14 gr) per model and in the case of a liquid anti-leakage material available in the market, 70 cc (0.15/0.12 pt US/Imp) should be used.

Caution: Anti-leakage material should not be added except the time of the renewal of cooling water.

Cooling System Flushing

Every two years the cooling system should be serviced by flushing with plain water, then completely refilled with a fresh solution with spceified mixing ratio of distilled water and GOLDEN CRUISER 1200 anti-freeze and summer coolant, or a high-quality, inhibited (year-around type) glycol base coolant tested and guaranteed by SUZUKI. In addition, Cooling System Sealer (Suzuki 7 on Bar's Leaks) should be added.

1. Drain the coolant through the crankcase drain valve (refer to page 20).
2. Close the valve and add a sufficient amount of plain water to fill the system.
3. Run the engine until the normal operating temperature is reached.
4. Drain and refill the system, as described in steps 1, 2, and 3, a sufficient number of times until the drained liquid is colorless.
5. Allow the system to drain completely and then close the crankcase drain valve tightly.
6. Add the necessary amount of GOLDEN CRUISER 1200 and distilled water solution to provide the required freezing and corrosion protection.
7. Run the engine until normal operating temperature is reached.
8. Check and adjust level of coolant after the system has cooled sufficiently.

Temperature under which	°C	−10	−15	−20	−25	−31	−39
your motorcycle is used	°F	14	5	−4	−13	−24	−38
Mixing ratio of anti-freeze	%	30	35	40	45	50	55
Amount of anti-freeze /distilled water for 4.5 ltr (4.75/3.95 qt, US/Imp) of cooling solution	ltr	1.35/3.15	1.60/2.90	1.80/2.70	2.00/2.50	2.25/2.25	2.50/2.00
	US.pt	1.40/3.30	1.70/3.10	1.90/2.90	2.10/2.60	2.40/2.40	2.60/2.10
	Imp.pt	1.20/2.75	1.40/2.55	1.55/2.40	1.75/2.20	2.00/2.00	2.20/1.75

Note: This table applies to the use of GOLDEN CRUISER 1200 Coolant only.

Fig. 7–17 Required amount of anti-freeze coolant at each temperature

8. FUEL SYSTEM

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FUEL COCK 71

DESCRIPTION

The fuel system consists of a fuel tank, a fuel cock, a carburetor, a fuel pipe, an accelerator cable and an air cleaner.

Three(3) "AMAL" types of carburetor having bore as large as 32 mm are fitted and a large-sized air cleaner suitable for the carburetor is used.

The fuel tank has a capacity of 17 liters (4.49/3.75 gal US/Imp) and fuel is supplied to the carburetor by way of a diaphragm fuel cock which can be automatically turned "on" and "off".

SPECIFICATION

Fuel tank capacity:	
Total capacity	17 ltr. (4.49/3.75 gal US/Imp)
Reserve capacity	3.5 ltr. (0.92/0.77 gal US/Imp)
Fuel cock operating pressure	0.35 kg/cm^2 (4.98 lb/in^2)

TROUBLE SHOOTING

Symptoms & Probable Causes	Remedies
1. Overflowing	
a. Improper seating or damaged float needle valve and seat	Clean or replace needle valve, and seat (Refer to Fig. 8–5)
b. Incorrect fuel level	Adjust fuel level (Refer to page 70)
c. Foreign materials in needle valve	Clean (Refer to Fig. 8–11)
d. Defective fuel cock diaphragm	Replace fuel cock (Refer to page 71)
e. Defective float	Replace (Refer to page 70)
2. Hard starting	
a. Clogged starter system	Disassemble and clean (Refer to page 68)
b. Clogged or defective fuel cock	Clean or replace
c. Loose carburetor mounting clamp(s)	Tighten clamps
d. Air cleaner passage blocked	Clean cleaner element
3. Rough idling	
a. Incorrect idle adjustment	Adjust idling (Refer to page 68)
b. Clogged or loose slow system in carburetor	Clean and tighten
c. Incorrect fuel level	Adjust fuel level (Refer to page 70)
d. Improper starter system	Repair starter system
e. Improper air screw adjustment	Adjust opening of air screw (Refer to Fig. 8–8)

Symptoms & Probable Causes	Remedies
4. Excessive fuel consumption	
a. Incorrect fuel level	Adjust fuel level (Refer to page 70)
b. Improper starter system	Repair
c. Air cleaner passage blocked	Clean cleaner element
d. Loose jet and screw/s	Tighten
5. Poor acceleration	
a. Clogged fuel pipe	Clean pipe
b. Defective cock diaphragm	Repair
c. Improper air screw adjustment	Adjust air screw (Refer to Fig. 8–8)
6. Stalling at high speed	
a. Clogged loose main jet	Clean or tighten main jet
b. Incorrect float level	Adjust float level
c. Loose carburetor mounting clamp/s	Tighten
d. Improper fuel cock	Check, clean

CARBURETOR

Description

For model GT750, three(3) "AMAL" type carburetors VM32 SC are fitted with each carburetor having a different specification largely because of the fact that the muffler at the center cylinder is branched to both right and left sides, and hence the distance from the intake of air cleaner to each carburetor differs.

The starter system is operated by a starter cable fitted independently to each carburetor, with the starter lever being fitted to the handle.

To synchronize and balance three(3) carburetors an aligning mark hole is provided on the mixing chamber body of each carburetor to facilitate the adjustment of an unbalance among three(3) carburetors.

Carburetor Specification (Setting table)

Item	R.H. Carburetor	Center Carburetor	L.H. Carburetor
Type	VM 32Sc	"	"
Body mark	31010R	31010M	31010L
Main jet	102.5	100	102.5
Jet needle	5F16-3	"	"
Needle jet	P-4	P-3	P-4
Cutaway	2.5	"	"
Pilot jet	30	"	"
Bypass	1.4	"	"
Pilot outlet	0.6	"	"
Air screw opening	1-½ turns	"	"
Valve seat	2.5	"	"
Starter jet	50	"	"
Float level	26~28 mm (1.02~1.10 in)	"	"

Fig. 8–1 Carburetor setting table

Construction & Operation

The operation of carburetor is considered in the following four(4) stages of the system:

1. Starter system
2. Slow system
3. Main system
4. Float system

Explanations will follow this order, but please see SUZUKI's Service Manual "Carburetor and Carburetion" of 1971 for further details.

1. Starter System

To start a cold engine a specially rich mixture of air and gasoline is needed. The starter system is used for generating such gases which meet the purpose.

By operating the starter lever, the starter plunger ② opens with the throttle valve being at a closed position for starting the engine. Then, aspirated air into the engine passes through the air passage ① being branched from the main bore. At that time, a negative pressure is induced within the plunger chamber, which draws fuel from the starter jet ③. When the fuel passes through the emulsion tube ④, air entering through a small hole on the tube emulsifies the fuel. This fuel is further mixed with air within the plunger chamber and atomized, jetting into the main bore from the starter outlet ⑤ before reaching the engine.

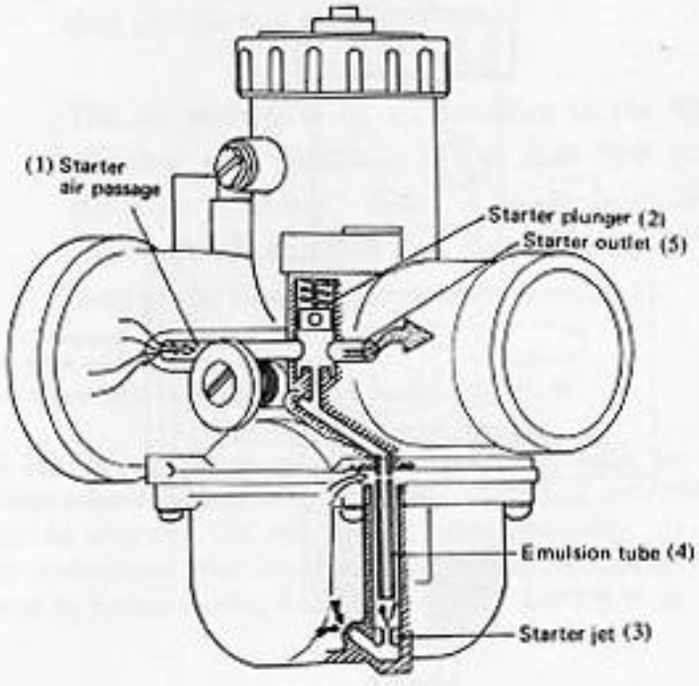


Fig. 8–2 Starter system

The starter cable for operating the plunger is fitted to each carburetor independently to ensure more reliable engine starting.

Note: Care should be taken not to open the throttle grip, when the starter is being used. Otherwise, gases would be diluted and the engine starting would be difficult.

2. Slow System

This system works over a range at a slightly larger opening than the closed position that is, the range is from idling to slow speed condition.

Aspirated air from the air inlet ① due to a negative pressure in the crankchamber can be regulated by the pilot air adjusting screw ② and reaches the pilot jet ③. Fuel is then drawn in and changes into a rich mixture. This mixture is jetted from the pilot outlet ④ and is diluted with air having passed a space between the main bore and the throttle valve. With that dilution, a suitable mixture is formed and supplied to the engine.

With further opening of the throttle valve, the engine speed increases requiring a larger amount of mixed gases, with the same mixed gases being supplied as a jet from the bypass ⑤ to supplying a necessary amount of fuel to the engine.

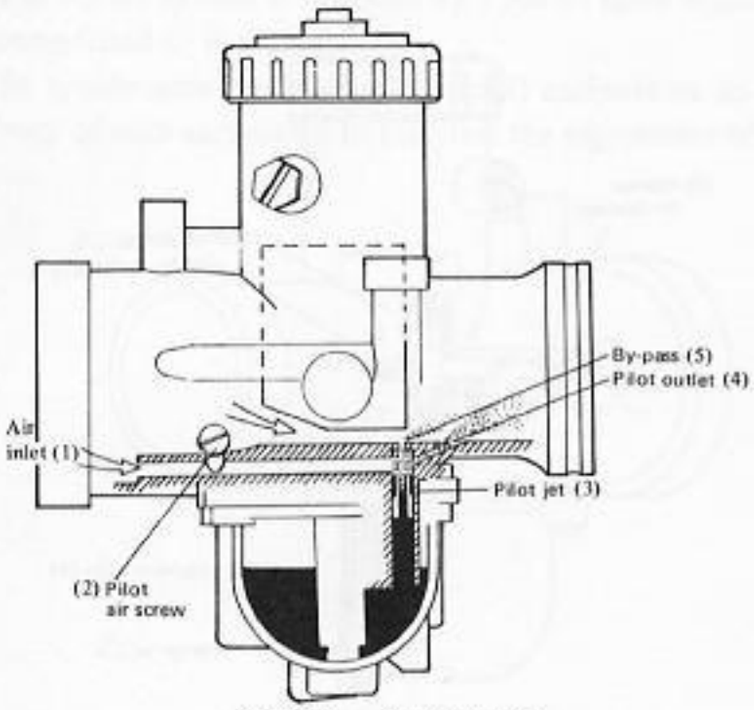


Fig. 8–3 Slow system

* This explains why fuel is drawn in from the pilot jet when air flows in the pilot air passageway. *

As shown in Fig. 8–4, when air drawn from the part A of a large cross-sectional area reaches the part B having a smaller cross section its velocity is accelerated thus reducing its pressure. (Theoretically, the pressure drop is in inverse proportion to the square of the velocity. A pipe having this effect is called "Venturi".)

This pressure drop induces a lifting force, equivalent to the pressure difference between its pressure and the atmospheric pressure, acting on the fuel. The fuel is carried away at high air speed and is well atomized in a jet from the nozzle.

The above principle applies to the carburetor. In the case of slow system, the part A corresponds to the air cleaner, a tube between the parts A and B correspond to the pilot air passageway and the fuel tube of the part B to the pilot jet for control of a fuel flow, respectively. Also, a pilot air adjusting screw is provided to control the air volume in the air passageway and the delivery of an air-fuel mixture is controlled as a whole. The part C corresponds to the pilot outlet.

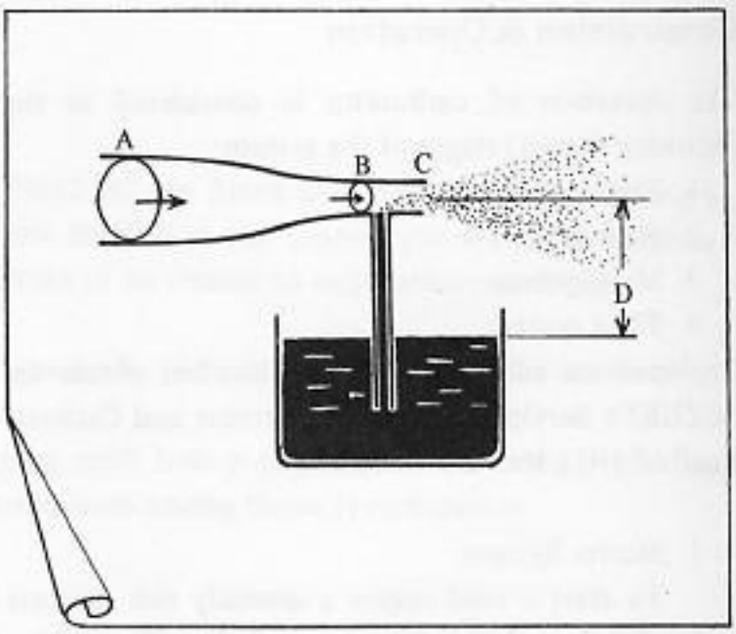


Fig. 8–4 Principle of carburetor

3. Main System

Engine speeds become higher with the throttle valve open, a large amount of air-fuel mixture is needed. Air as drawn does not pass the pilot channel with a large resistance, but flows through the main bore.

It is the main system which is effective in generating the mixture in this instance and the system works over medium and high speed ranges.

As shown in Fig. 8–5, when aspirated air from the air cleaner passes between the main bore and the throttle valve④, it draws in fuel from the main jet① and a gap between the needle jet② and the jet needle③ by the above-mentioned venturi effect. It further atomizes the fuel before being supplied the engine.

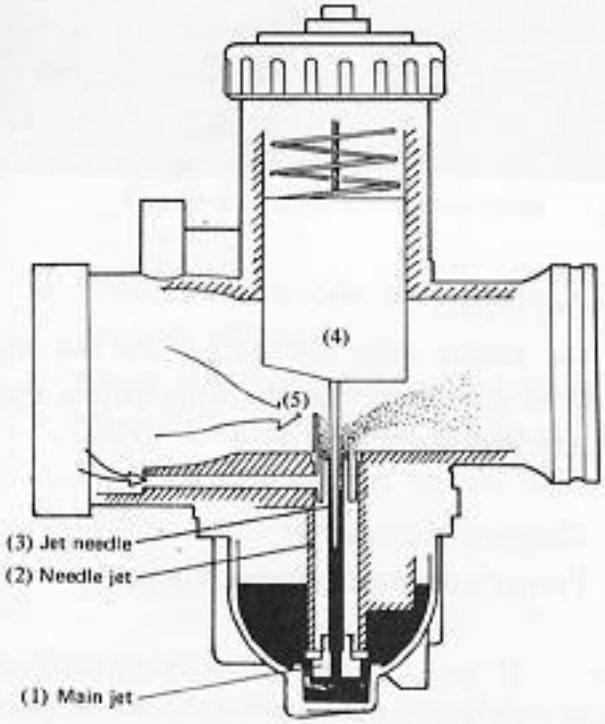


Fig. 8–5 Main system

At the same time, air is introduced from a small air passageway at the lower side of the main bore shown in Fig. 8–5, and passed into the needle jet to facilitate the atomization of the fuel. The screen⑤ fitted to the top of the needle jet blocks the air flow in the main bore generating a turbulent flow at its back which is needed to facilitate the atomization of the fuel. This is called a "primaty choke".

In the main system, air flow can be regulated at the throttle valve and a matched amount of fuel is regulated at the main jet. Fuel so drawn is further regulated depending upon the extent of the throttle valve opening, finally mixed with air and fed to the engine.

4. Float System (Fuel supplying system)
This system provides one of the most important mechanisms in supplying fuel to the carburetor and, as shown in Fig. 8–6, consists of a float①, a needle valve②, a needle valve seat③ and a valve seat gasket④. In addition to the function of a valve for adjusting the fuel flow, they play a very important role to keep a constant fuel level in the float chamber.

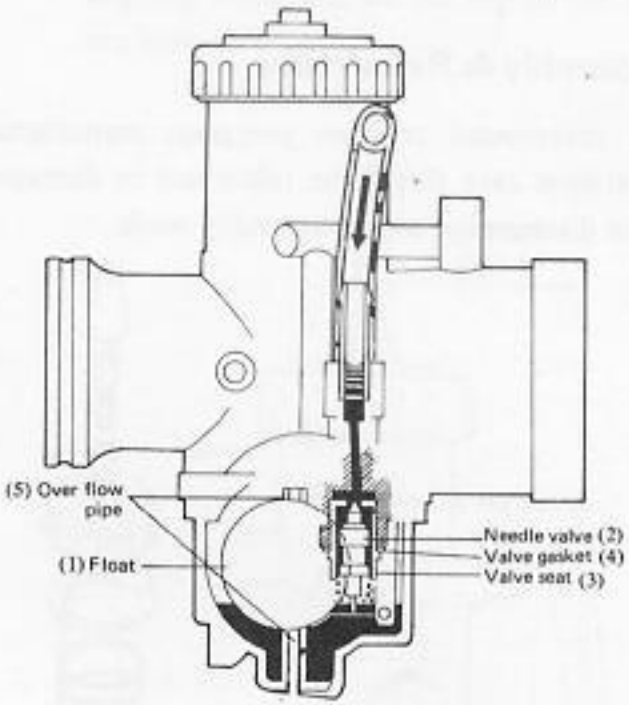


Fig. 8–6 Float system

When fuel in the chamber is below a certain prescribed level, the float① comes down and the needle valve also sinks correspondingly providing a gap at the valve seat. Then, fuel automatically flows in from the gap up to the preset level, moving the float and the needle valve upward and closing the gap to completely shut off the fuel flow.

The air vent⑤ is an air breather in the float chamber and facilitates a free fuel flow from the float chamber. Also, it works as an overflow pipe⑤ to drain the fuel, when the fuel level in the float chamber rises abnormally.

＊Necessity to keep the fuel level constant.＊

A mixing ratio of air and fuel is regulated by valve, jet and other related fittings of each system. If the fuel level should not be constant, the ratio would change markedly. It may be understood that the smaller the distance(D) from fuel level to venturi center, the more is drawn. See Fig. 8–4.

Removal

In dismounting the carburetor, clamps on cylinder and air cleaner rides are lossened first and, then, the carburetor is pushed toward the air cleaner. Each cable and tube should be disconnected on the carburetor side.

Disassembly & Reassembly

Each component requires precision manufacturing and utmost care should be taken not to damage the part in disassembly and re-assembly work.

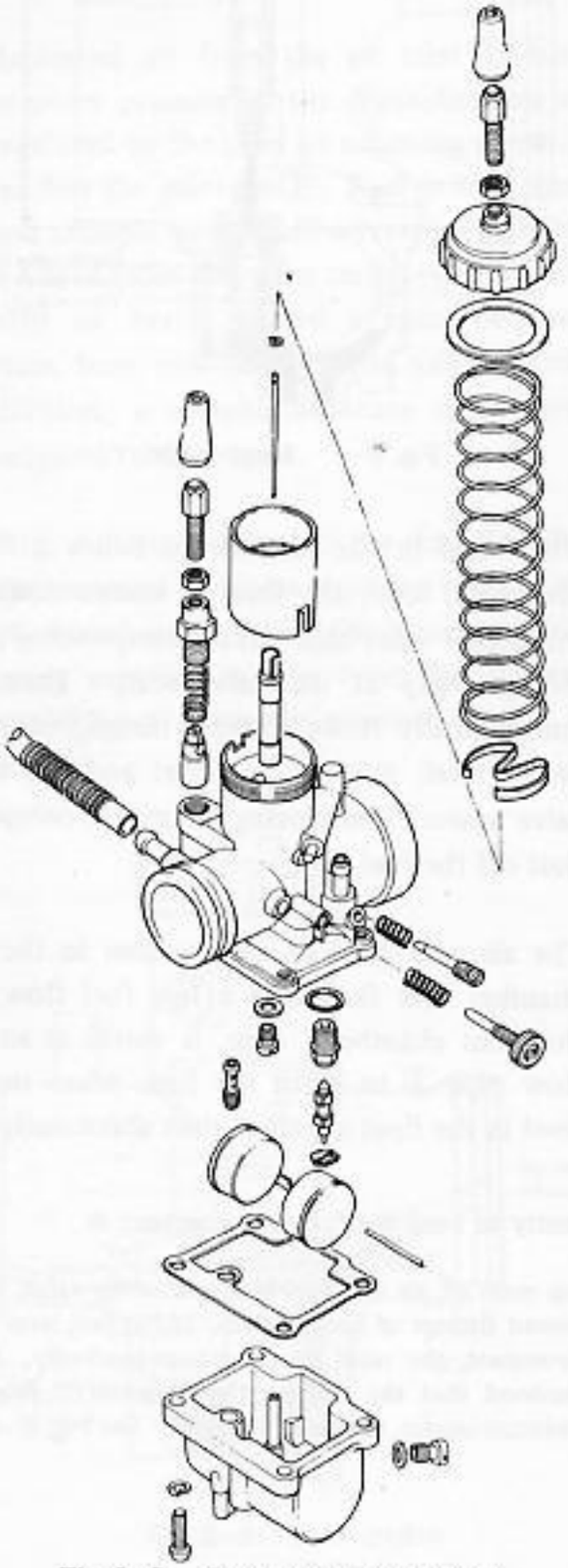


Fig. 8–7 Carburetor construction

Inspection & Adjustment

Before inspection and adjustment the carburetor should be dipped into clean gasoline for the cleaning. After the cleaning, each passageway of the carburetor is blown with the compressed air for removing dusts or other foreign substances.

It is to be noted that a trouble is sometimes caused due to the dusts or other foreign substances in gasoline at the fuel passage and the subsequent clogging of the passage. A wire or any other equivalent tool should not be used in the cleaning work in that instance.

1. Starter system
   If the engine does not start when the starter lever is operated, the following points should be checked:

   a. Clogging of starter jet
   b. Proper working of starter plunger

Note: If any one of three(3) carburetors is defective in actuating the starter plunger, that is, the plunger not returning to the original position, engine idling will be irregular and it is sometimes seen that the engine stops running immediately after the starting.

2. Slow system
   When the engine is subjected to irregular idling, with the engine speed not increasing smoothly or is subjected to jerking when the engine speed is being increased from the idling with an abnormal condition at low speed, careful inspection would be in order. Check as follows:

   a. Check pilot air adjusting screw ① for its functioning.
      A specified air adjusting screw opening is 1–1/2 for all of the three(3) carburetors. The screw should be tightened once and then lossened by 1–1/2 turns.

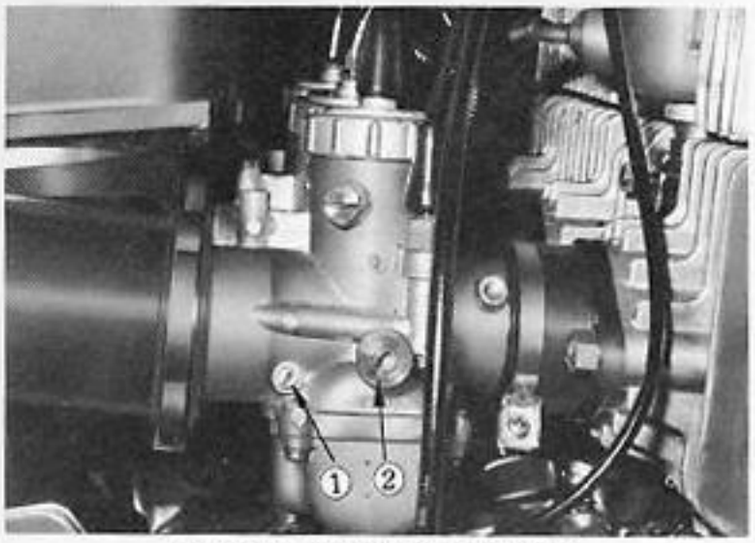


Fig. 8–8 Slow system adjusting

b. Check the throttle stop screw ② if it is properly adjusted.
Check also the throttle cable for idle portion. Their adjusting method will be explained in the following section on the main system below.

3. Main system
When jerking and stalling are encountered at medium and high speed ranges proceed the checking, as follows:

a. Check the main jet for its looseness. A loosen jet means an excess fuel being supplied to the engine and the rich gas condition would be given, deteriorating the engine performance.

b. An incorrect fuel level would lead to deterioration in engine performance. As to the fuel level adjustment, please see the section on the float system.

c. An expected engine performance cannot be attained, if the throttle valve cable is maladjusted and three(3) carburetors are not well synchronized. Adjustment can be made as follows:

(1) Adjust throttle cable adjuster of each carburetor and coordinate each throttle cable for an idling portion to allow a play of 2~3 mm (0.08~1.1").

(2) Remove the plug fitted to the mixing chamber body of each carburetor and operate the throttle grip. Then, it is possible to identify an aligning mark on the throttle valve side.
Therefore, the throttle cable adjuster is so adjusted that for each carburetor, the aligning mark will be on top of the aligning hole.

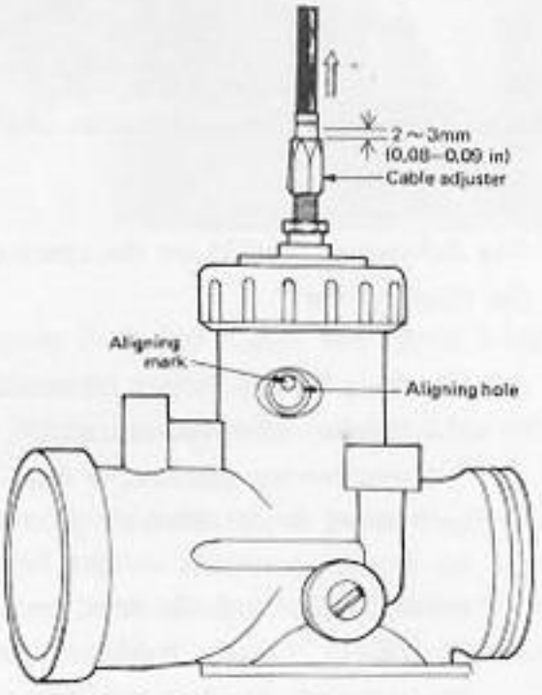


Fig. 8–9 Synchronizing carburetors

(3) The engine is started and warmed up sufficiently. Then adjust idling speed using a throttle stop screw. In adjusting the idling speed, two(2) spark plug caps are removed in turn so that only one(1) cylinder functions and the engine speed should be set to 1,000 rpm for each cylinder.

(4) When each cylinder is adjusted to the speed of 1,000 rpm independently from the adjustment of carburetors, the throttle stop screw of each carburetor is turned back uniformly so that an idling speed of 1,000 rpm can be obtained with the firing of three(3) cylinders.

(5) Finally, the throttle cable adjuster below the throttle grip is adjusted so that the throttle cable will have an idle portion of 0.5~1 mm (0.02~0.04") length.

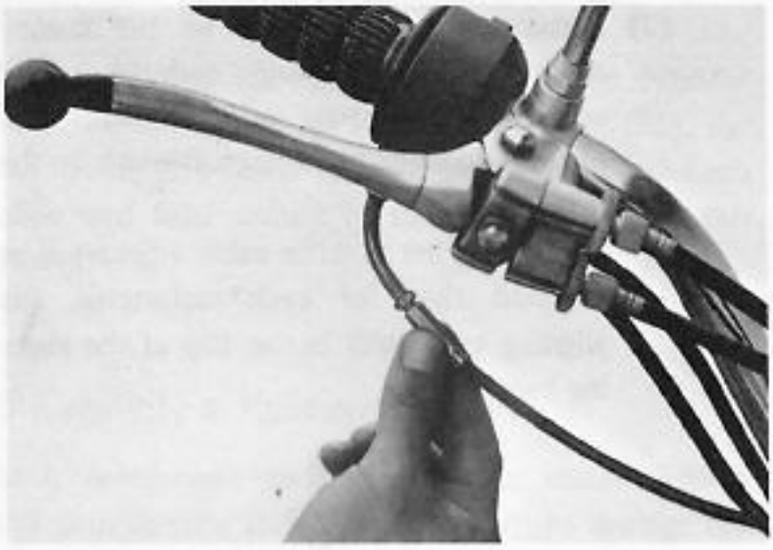


Fig. 8–10 Adjusting throttle cable

4. Float system
The following three(3) are the check points of the float system:

(a) Checking for any foreign materials between the needle valve and its seat.
An overflowing gasoline, if any, from the carburetor is attributable in most cases to foreign materials caught between the needle valve and its seat, as shwon in Fig. 8–11. Such foreign materials can be removed by tapping the carburetor lightly, but it is usually recommended that the needle valve should be drawn out for cleaning.

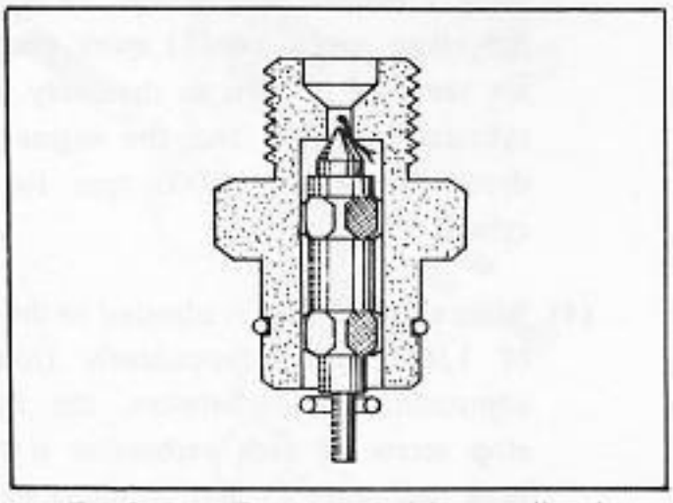


Fig. 8–11 Foreign material on needle valve

(b) The fuel level is adjusted correctly. This is one of the most important steps in the adjustment of the carburetor.
It is recommended that the fuel level should be periodically checked and the needle valve should be replaced if worn out.

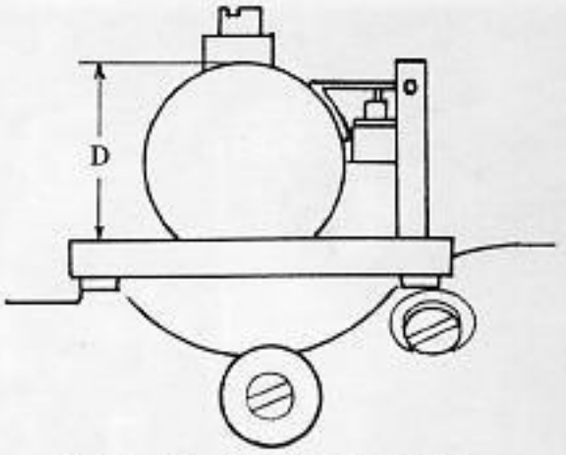


Fig. 8–12 Checking float level

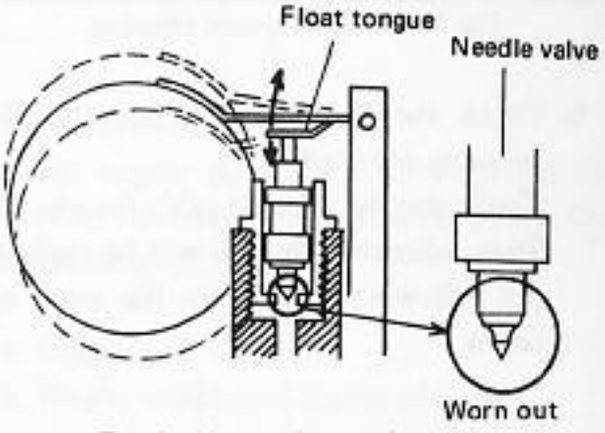


Fig. 8–13 Adjusting float level

For float level adjustment, the tongue of the float arm is bent and as shown in Fig. 8–13, the cap is reversed to give a specified float height.
Standard D = 27±1 mm (1.02~1.10")

(c) Checking if there is any damage on the float or for any water content inside of the float chamber.

FUEL COCK

Description

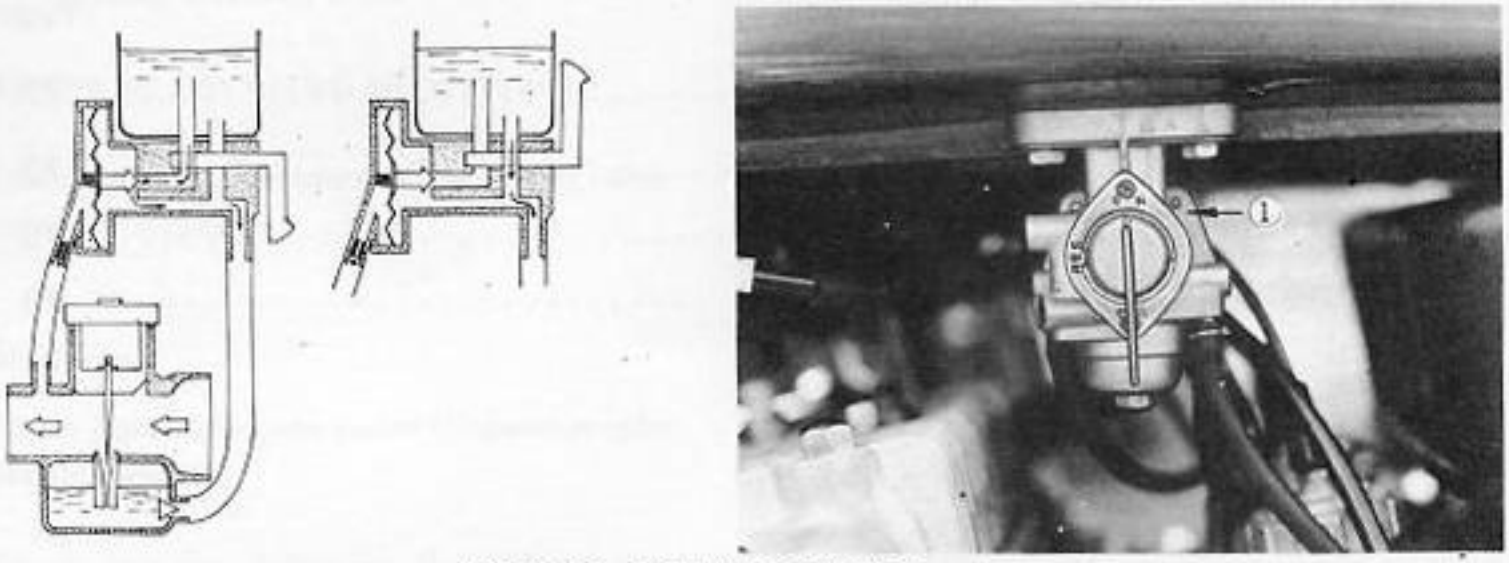


Fig. 8–14 Fuel cock construction

GT750 employs a diaphragm fuel cock which actuates on vacuum from the engine and opens a tap automatically when the engine starts.

The diaphragm chamber includes a diaphragm, valve and spring which presses the valve against the valve seat to close a fuel passage.

From the vacuum chamber to the left hand carburetor runs a strip of tube which transmits the vacuum generated in the carburetor to the cock.

Once the engine runs and vacuum is generated in the carburetor, the diaphragm together with the valve is pulled against the spring by the vacuum, leaving a gap between the valve and seat through which fuel is allowed to flow down to the carburetors.

This fuel cock has three positions, "ON", "RES", and "PRI". Turning the fuel cock lever to "Priming" position allows fuel to flow directly to the carburetor without passing through the diaphragm valve system. When starting the engine of a machine which has been left unused for a long time or the carburetors of which were overhauled, first supply fuel to the carburetor float chamber by turning the cock lever to "Priming" position.

Turn the lever again to "On" position when the engine has started in order to prevent running out of fuel on the way.

Inspection & Repair

1. Check for leakage from cock body or fuel pipe connections.

2. Remove the cock cap and inspect the filter and gasket for defects.

3. Inspect the function of diaphragm cock; take out a fuel and a vacuum pipe from carburetor and suck air from the vacuum pipe with the lever positioned on "ON" or "RES", then check to see if the gasoline flows out or not.

9. EXHAUST SYSTEM

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DESCRIPTION

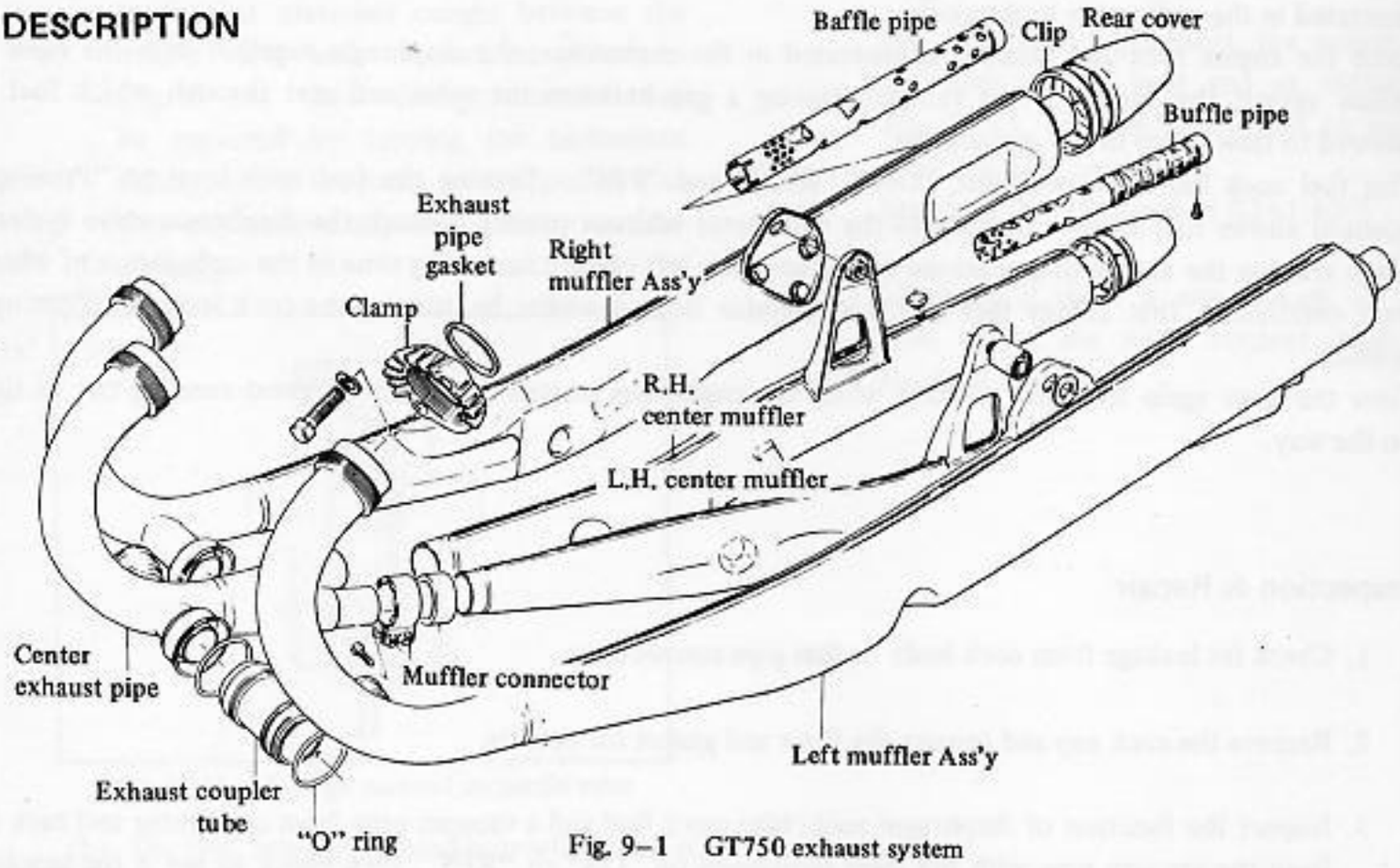


Fig. 9–1 GT750 exhaust system

Exhaust system of this engine consists of the right and left muffler assemblies integrally constructed with muffler and exhaust pipe, and the center exhaust pipe branched at the halfway in two pipes whereto the right and left mufflers are to be fixed.

All mufflers are connected with coupler tubes at the exhaust portion. Inside of each muffler rear body, baffle pipes are installed.

Removal

1. Remove the exhaust clamps of each cylinder by loosening the clamp bolts.

2. Remove the right and left pillion footrest.

3. Disconnect the exhaust coupler tubes, then remove mufflers.

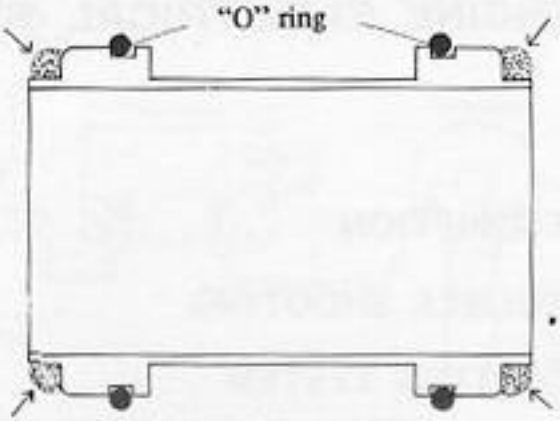


Fig. 9–2 Exhaust coupler tube

Inspection

1. Check the coupler pipe gasket (Exhaust coupler seal) for leakage.

2. Check for any defect on the exhaust pipe gaskets and "0" rings.

3. Check for any cracks on the muffler body.

* Reason for adopting Exhaust coupler tubes *

The muffler on 2 cycle engine is not used only as a silencer, but as subsidiary equipment for increasing engine out-put. This is because that 2 cycle engine has no valves on the cylinder head controlling the flow of working gas like 4 cycle engine and accordingly have to make its muffler substitute for the valves on 4 cycle engine by utilizing the exhausted gas pulse.

The coupler tubes on GT750 are adopted to heighten further this effect than the ordinary muffler and also to improve the exhaust noise.

Assembly

1. Install the center exhaust pipe into the cylinder exhaust port.

2. Support the right and left muffler at the cylinder exhaust port flanges and the pillion footrests.

3. Install the coupler tubes into each flange on the exhaust pipes with the Exhaust coupler seal (99000–31020) applied on the outside of them.

4. Tighten the exhaust clamps of right and left muffler firmly and then mount the R.H. and L.H. center muffler.

Caution: (1). The exhaust clamps should be fixed so as to be 1 mm (0.04") of gap between the flank of cramp and the cylinder.

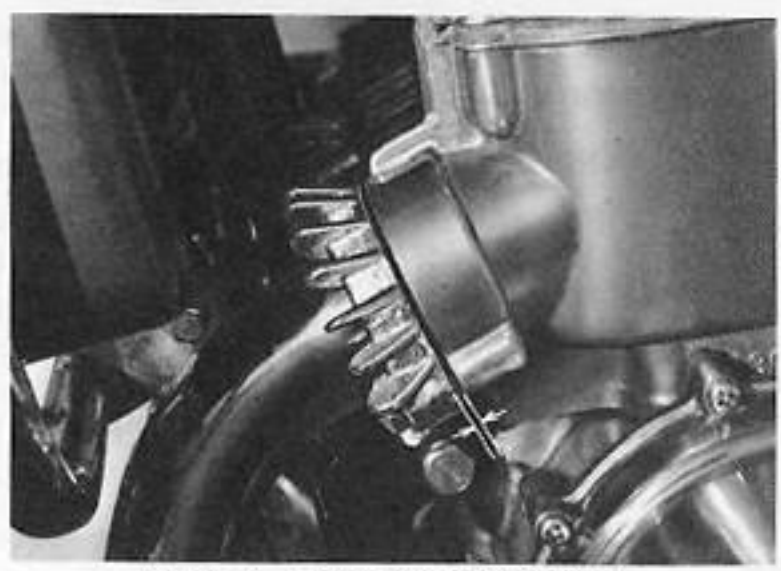


Fig. 9–3 Fixing exhaust pipe clamp

(2). It is recommended to replace Exhaust coupler seal at the time of an overhaul.
It will stop leaking from connecting parts after a while even after replacing.

10. ENGINE ELECTRICAL SYSTEM

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DESCRIPTION

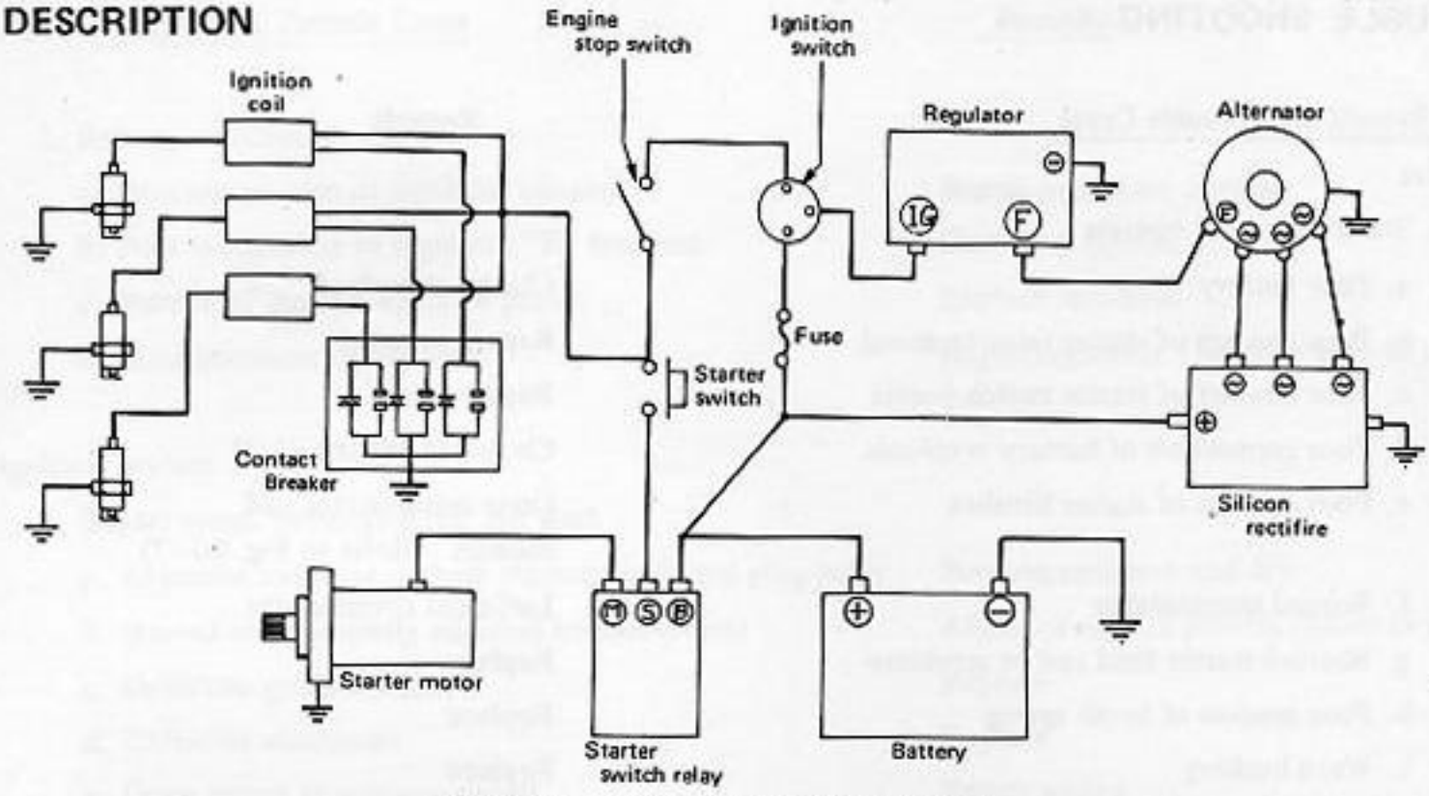


Fig. 10–1 GT750 engine electrical system

GT750 engine is equipped with a 12 volt electrical system, consisting of starting, charging and ignition systems.

Starting system:

The starting motor equipped in this engine is compact and light, and is a sealed type to prevent entry of dirt and dust. It is activated by the magnetic starter relay when the starter button is pushed with both the ignition and the engine stop switches on. The output is transmitted to the engine through the starter clutch which is of over-running type and its driven gear is constant-meshed to the starting motor pinion. The starter relay including the magnetic switch inside is designed to be extremely reduced the possibility of having short circuiting and poor insulation.

Charging system:

The charging system consists of alternator, regulator, silicon rectifier and battery. The alternator generates a high electric output even at low engine speed which enable to eliminate the discharge of the battery in the normal condition.

The function of the alternator regulator is to regulate the generator voltage to a pre-set value by controlling the rotor coil current.

Ignition system:

The ignition system consists of both three ignition coils and contact breaker points. When contact point is closed, the current flow from the battery through the ignition and engine stop switches to the primary windings of the ignition coil, then to ground through the closed breaker point. When the breaker point open, the high voltage current is produced in the secondary coil and led to the spark plug through the high tension cord to make a hot spark between the spark plug gap.

Battery:

The 12V 14AH battery is equipped on the center part of the frame under the seat. The battery is constructed of alternating positive and negative plates with separators between them to prevent a short circuit. The positive plates has fiberglass footed on both sides to prevent them from peeling off. The battery consists of lead peroxide positive plates and spongy lead negative plates and diluted sulfuric acid electrolyte. Six cells are connected in series in the 12 volt battery.

Symptom & Trouble Cause	Remedy
Starter	
1. Starter does not operate	
a. Poor battery	Charge or replace
b. Poor contact of starter relay terminal	Repair terminal
c. Poor contact of starter switch points	Repair switch
d. Poor connection of battery terminals	Clean and tighten
e. Poor contact of starter brushes	Dress commutator and brushes (Refer to Fig. 10–7)
f. Burned commutator	Lathe cut commutator
g. Shorted starter field coil or armature	Replace
h. Poor tension of brush spring	Replace
i. Worn bushing	Replace
j. Defective starter relay	Replace
2. Starter turns, but crankshaft does not turn	
a. Starter clutch slips	Inspect and replace if inner parts are excessively worn out
b. Defective reduction gears	Replace
Alternator & Regulator & Battery	
1. Battery discharges	
a. Shorted or disconnected alternator stator coil	Repair or replace stator (Refer to page 86)
b. Disconnected alternator rotor coil	Replace rotor
c. Poor contact of brushes and spring/s	Clean or replace (Refer to page 87)
d. Defective rectifier/s	Replace rectifier/s
e. Maladjustment of regulator	Adjust regulator (Refer to page 88)
f. Burned or poor contact of regulator point/s	Dress points or replace regulator
g. Lack or insufficient electrolyte of battery	Replenish electrolyte or replace battery
h. Shorted battery plates	Replace battery
i. Poor connection of battery terminal/s	Clean and tighten
j. Open wiring between ignition switch and regulator "IG" terminal	Repair
k. Open wiring between regulator "F" terminal and alternator "F" terminal	Repair

Symptom & Trouble Cause	Remedy
2. Battery overcharge	
a. Poor connection of regulator coupler	Repair or replace coupler
b. Poor connection of regulator "E" terminal	Clean and tighten
c. Burned of melted regulator points	Replace regulator
d. Maladjustment of regulator	Adjust regulator (Refer to page 88)

Ignition System

1. Starter turns, but engine will not start	
a. Excessive moisture on high tension cords and plug gap/s	Remove moisture and dry
b. Burned or improperly adjusted breaker points	Adjust or repalce point/s (Refer to page 92)
c. Defective ignition coil	Replace
d. Defective condenser	Replace
e. Open wiring in primary circuit	Repair wiring
f. Wet or dirty spark plugs	Replace
2. Hard starting	
a. Weak battery	Charge or replace battery
b. Defective spark plug/s	Replace plug/s
c. Defective breaker points	Replace points
d. Loose connection in primary circuit	Tighten or repair
e. Defective condenser/s	Replace condenser/s
f. Defective ignition coil/s	Replace coil/s
g. Maladjustment of ignition timing	Adjust timing (Refer to page 94)
2. Engine misses	
a. Dirty or defective spark plug/s	Clean or replace spark plug/s
b. Loose high tension cord/s or defective spark plug cap/s	Tighten, repair or replace cord/s, cop/s
c. Improper breaker point/s adjustment	Adjust point/s (Refer to page 92)

STARTING SYSTEM

Description

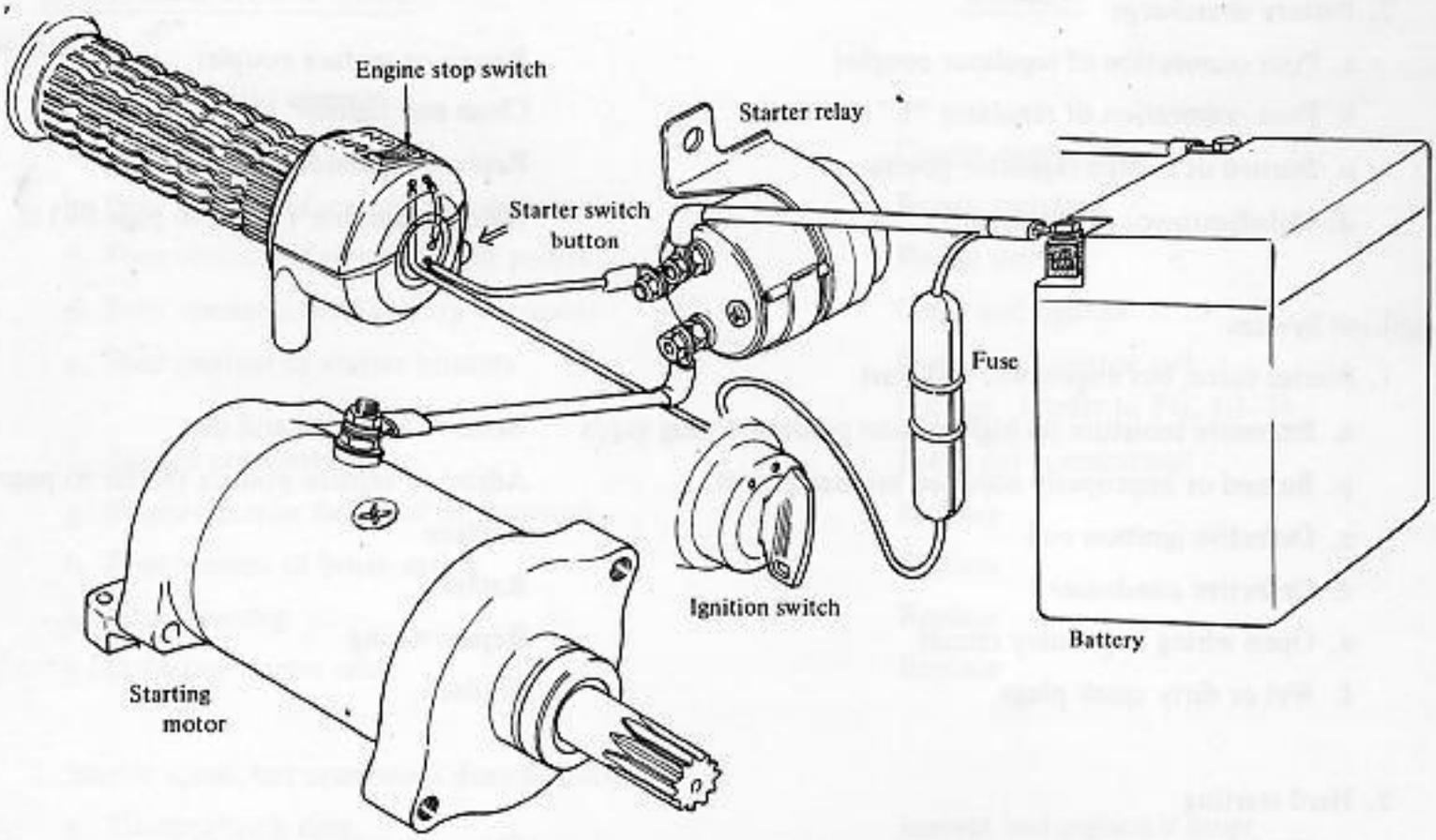


Fig. 10–2 Equipments for starting system

The starting system consists of battery, starter relay, starting motor and two switches as shown in above figure.

The starter relay having magnetic switch inside is provided to flow a large current directly from the battery to the starting motor at starting, since the starter button has no capacity enough to transmit such a large current as to activate the starting motor.
When the starter button is pushed with both the ignition and the engine stop switches on, the solenoid coil of the magnetic switch creates electro magnet with small current from battery and pulls the moving core to close the contacts which closes the circuit between the battery and the starting motor.

The engine stop switch is operated to stop the engine running suddenly in an emergency of the motorcycle being overturned or encountered with some big troubles. Therefore it does not set the starting motor in motion when it is applied even if the starter button is pushed.

The starting motor equipped on the upper crankcase is of cumulative compound type and drive the crankshaft through the starter clutch and its idle gear.

*** The principal and operation of cumulative compound motor ***

The cumulative compound motor has the wiring circuit comprising the shunt coil and series coil. In consequence of this wiring, it combines a virtue of series motor which induce a big torque at staritng engine with a shunt character of shunt motor to keep the speed constant at any time under normal condition.
The characteristic curve of the cumulative compound motor is shown in Fig. 10–3.

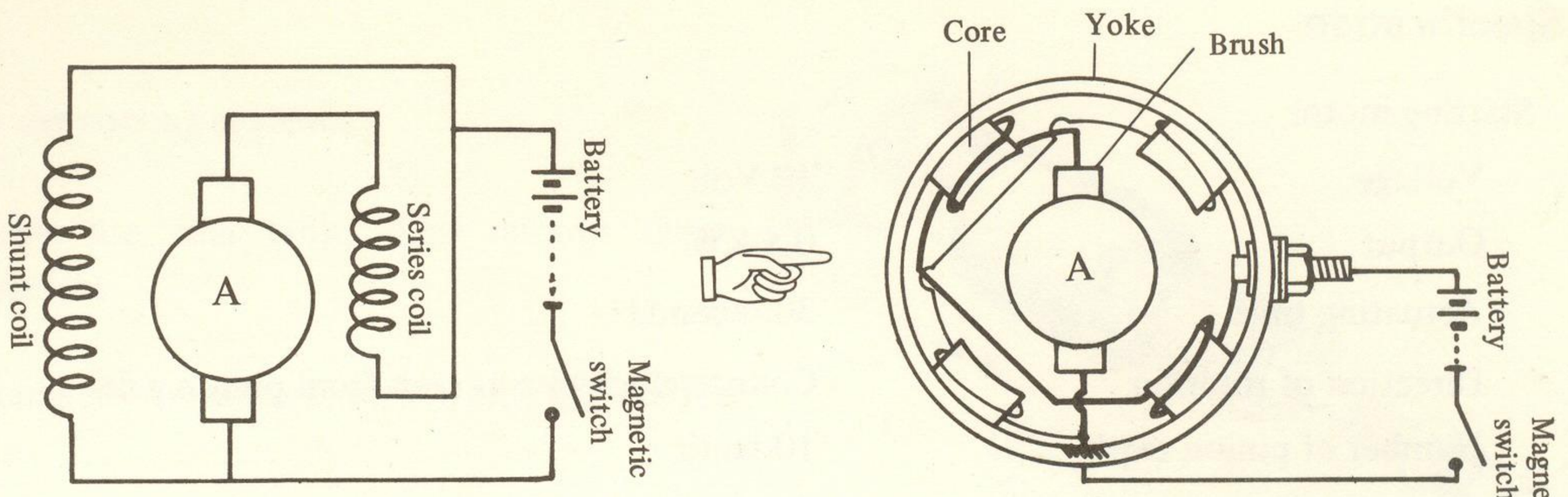


Fig. 10–3 Wiring of cumulative compound motor

The starter clutch equipped on this engine is of over-running type which transmit the starting motor output to the crankshaft and keep the crankshaft free from the starting motor once engine starts.

When the starter clutch gear is driven through idle gear in a direction of arrow as shown in figure, three rollers within the slots are moved to lock the clutch housing and ensuring the starter clutch to rotate.

Since the clutch housing is mounted on the left crankshaft with key, the crankshaft will rotate and ensure the engine to start. Once the engine starts and rotating speed exceeds that of the starter clutch gear, the rollers are moved toward wider section of the slots due to centrifugal force and the engine output is no longer transmitted to the starting motor.

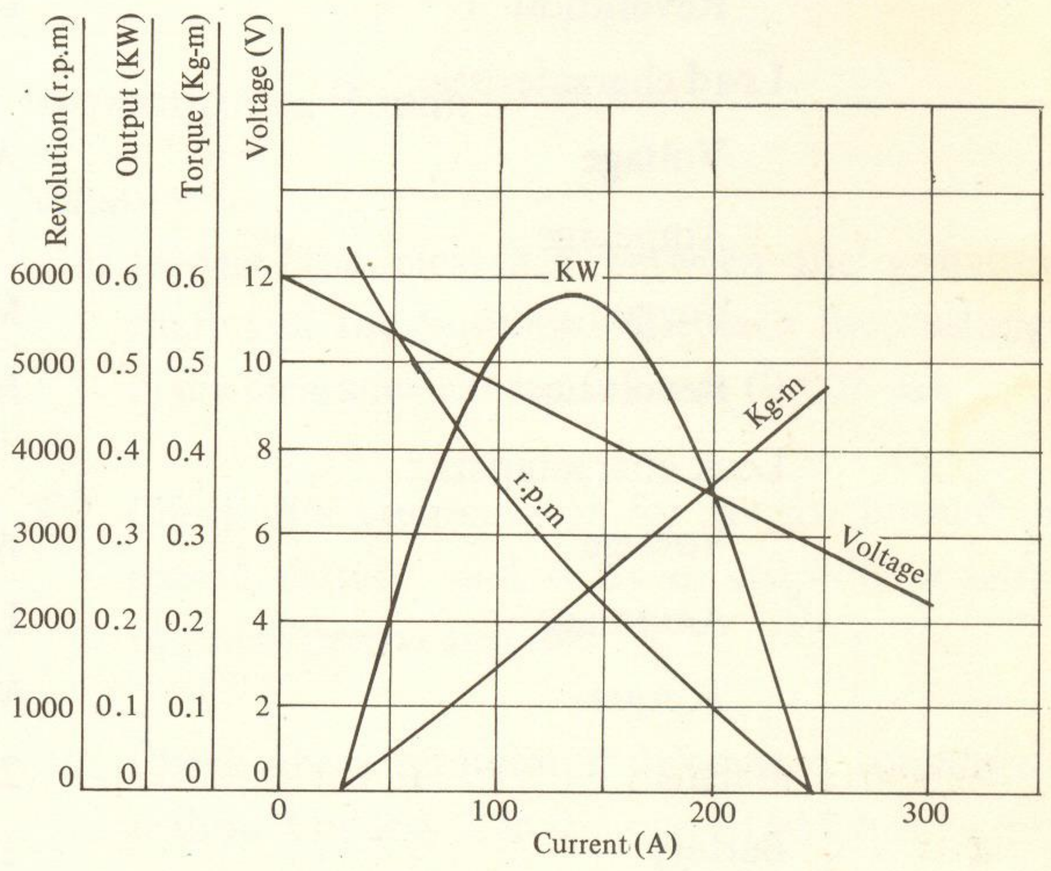
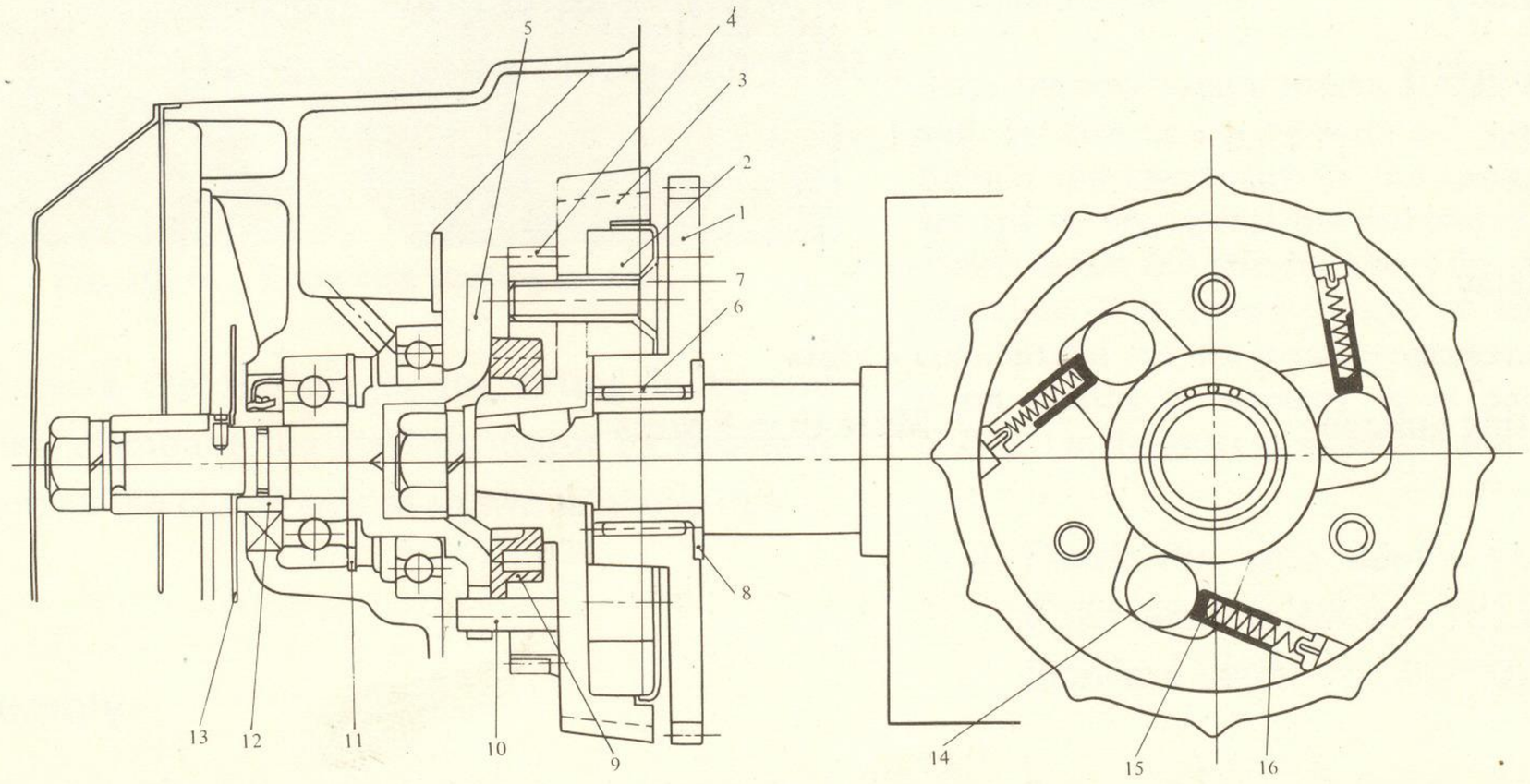


Fig. 10–4 Performance curves of cumulative compound motor



1. Starter clutch gear
2. Starter clutch hub
3. Starter clutch housing
4. Water pump drive gear
5. Breaker cam shaft
6. Needle bearing
7. Screw
8. Crankshaft left bushing
9. Breaker cam shaft dumper rubber
10. Breaker cam shaft drive pin
11. Circlip
12. Spacer
13. Ignition timing plate
14. Starter clutch roller
15. Roller push piece
16. Spring

Fig. 10–5 Starter clutch construction

Specification

Starting motor	
Voltage	12 Volt
Output	0.5 KW
Actuating time	30 seconds
Direction of rotation	Counterclockwise as seen from pinion side
Number of pinion teeth	10 teeth
No-load characteristic:	
Voltage	At 11 volts
Amperage	Less than 50 amperage
Revolution	More than 4,500 rpm
Load characteristic:	
Voltage	At 8.5 volts
Amperage	Less than 150 amperage
Torque	More than 0.2 kg-m (1.45 lb-ft)
Revolution	More than 1,800 rpm
Lock characteristic:	
Voltage	At 5.5 volts
Amperage	Less than 280 amperage
Torque	More than 0.35 kg-m (2.52 lb-ft)
Weight	2.4 kg (5.32 lb)
Battery	14 AH
Reduction ratios:	
Primary	4.78 : 1 (starter motor to idle gear 9 : 43)
Secondary	2.50 : 1 (idle gear to crankshaft 22 : 55)
Total	11.95 : 1
Starter Relay	
Rated voltage	12 volts
Actuating voltage	More than 8 volts

Removal

1. Drain the cooling system.

2. Remove the fuel tank, then remove three carburetors.

3. Disconnect the starter wire from the starter relay.

4. Remove the starter clutch cover without removing the contact breaker assembly and its related parts which are mounted on it.

5. Loosen the water by-pass hose clamp and then remove the by-pass hose from the thermostat case.

6. Take off the water by-pass hose union ① from the upper crankcase after removing the starting motor cover.

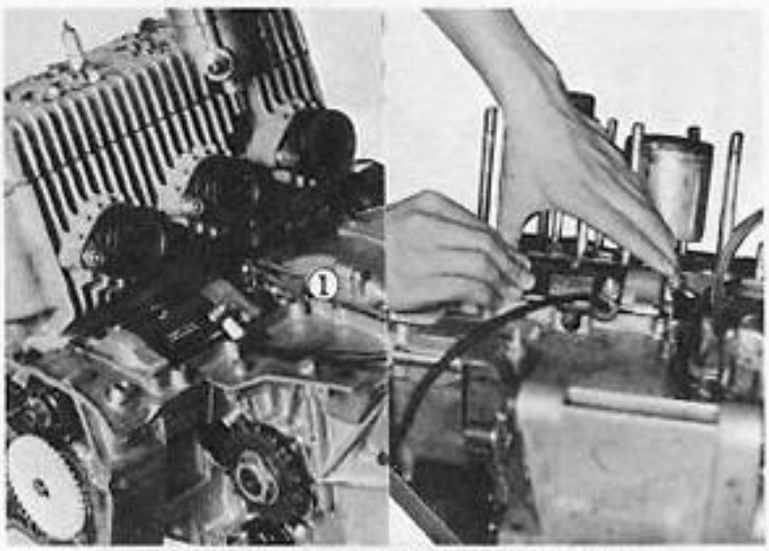


Fig. 10–6 Removing starting motor

7. Remove the starting motor fitting bolts, and then dismount the starting motor by sliding it toward the clutch side as shown in above figure.

Disassembly

1. Remove the through bolts, commutator end frame, brushes and washers.

2. Extract the bushes using press machine, if needed.

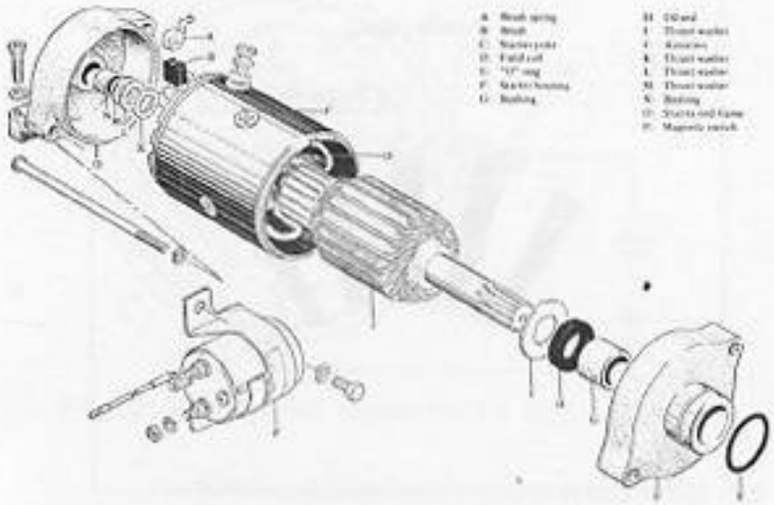


Fig. 10–7 Exploded view of starting motor

Inspection & Repair

Armature

1. Inspect the clearance between the armature shaft and the bushings. Replace the bushings if the clearance exceed 0.2 mm (0.008 in).

2. Check the commutator for rough, burned or scored surface, and dress or cut with a lathe to finish proper surface.

3. Check the commutator for out of roundness, it should be less than 0.3 mm (0.012 in).

*** Necessity of measuring the commutator for out of roundness ***

Since the commutator rotates at high speed always in contact with brushes, it will be worn out both mechanically by the friction and electrically by the spark, and also its segments are apt to rise against the commutator mica, decreasing the commutation and bringing about the abnormal wear.
Therefore, it is quite necessary to inspect and measure the commutator for the wear or eccentricity periodically. Cut it on a lathe if necessary so as not to exceed 26.5 mm (1.045") in diameter and chamfer the edge of each segment.

4. Check the mica depth, and file off the mica if the depth is less than 0.2 mm (0.008").
Standard depth . . . 0.5~0.8 mm (0.02~0.03")

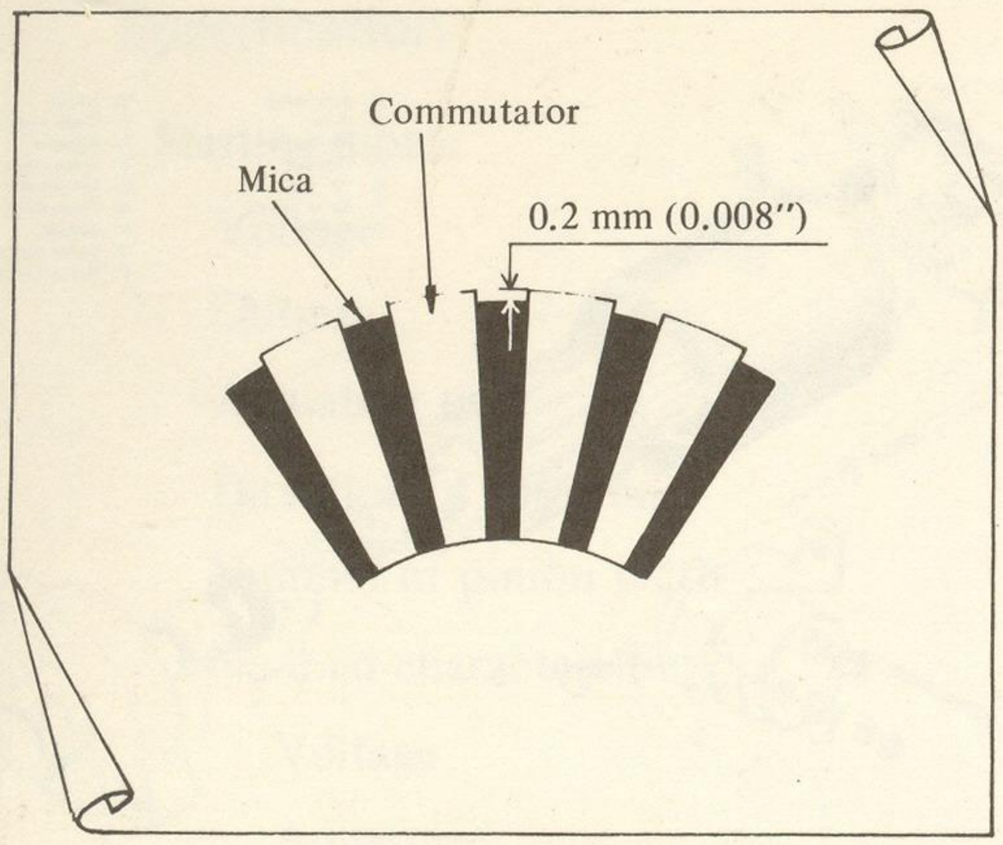


Fig. 10–8 Commutator

5. Check the commutator for ground. Connect one tester prod to commutator, and the other to armature core shaft.

   If the ohmmeter pointer moves or the test lamp on a Glowler tester lights, the commutator grounded.

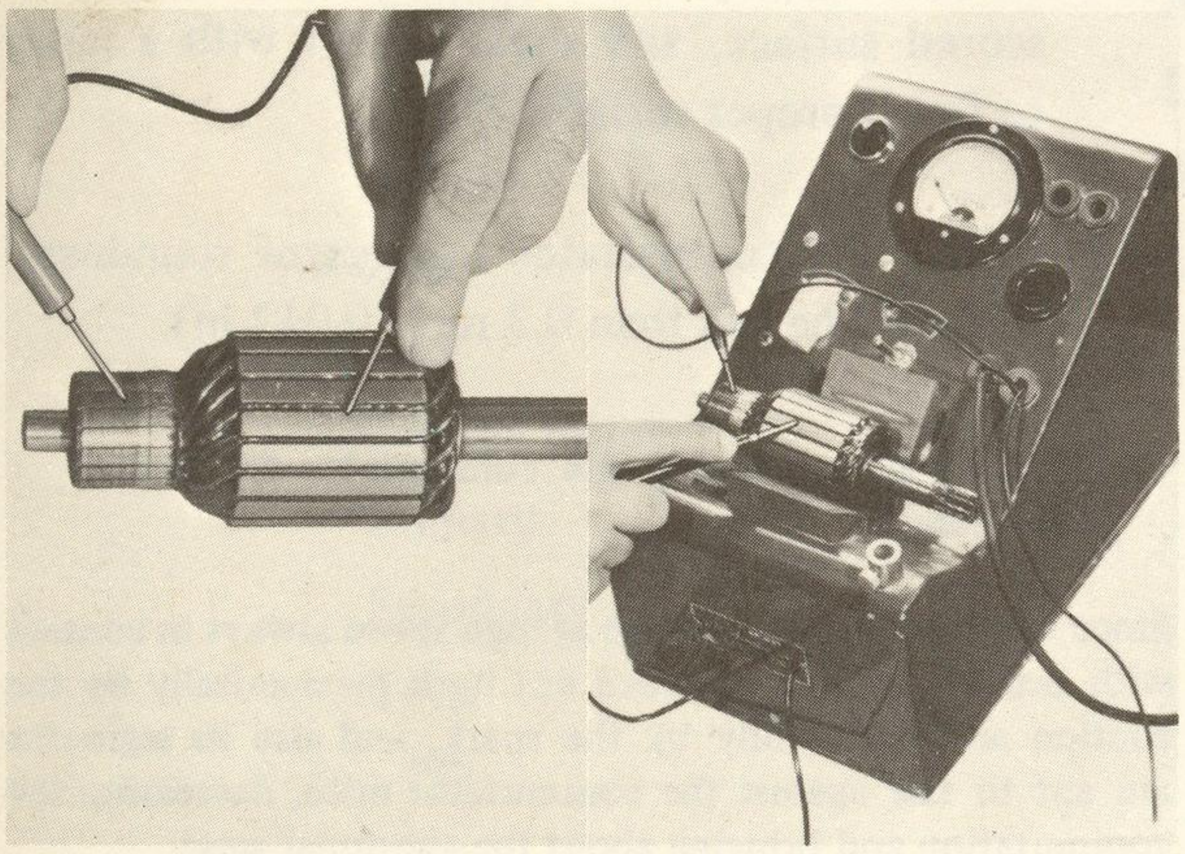


Fig. 10–9 Checking commutator for ground

6. Check the armature for short circuit by placing the armature on a Glowler tester and hold a hacksaw blade over the armature core while the armature is rotated. If the hacksaw blade is drawn and vibrates, the armature coil is shorted.

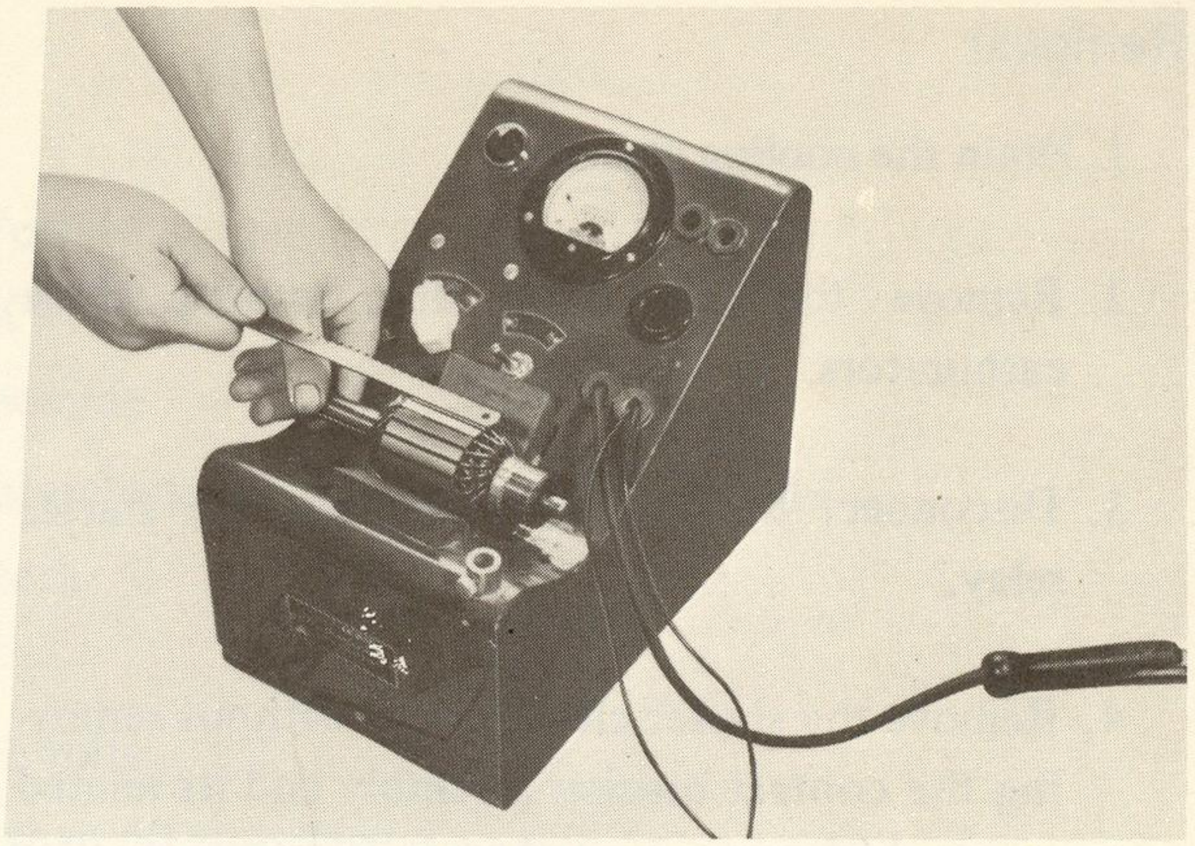


Fig. 10–10 Checking armature for short circuit

7. Check the armature coil for open circuit. Place the armature on a Glowler tester and check the reading on the meter with the tester prods connected to each two segments. If the reading is not uniformity, the armature has a open circuit.

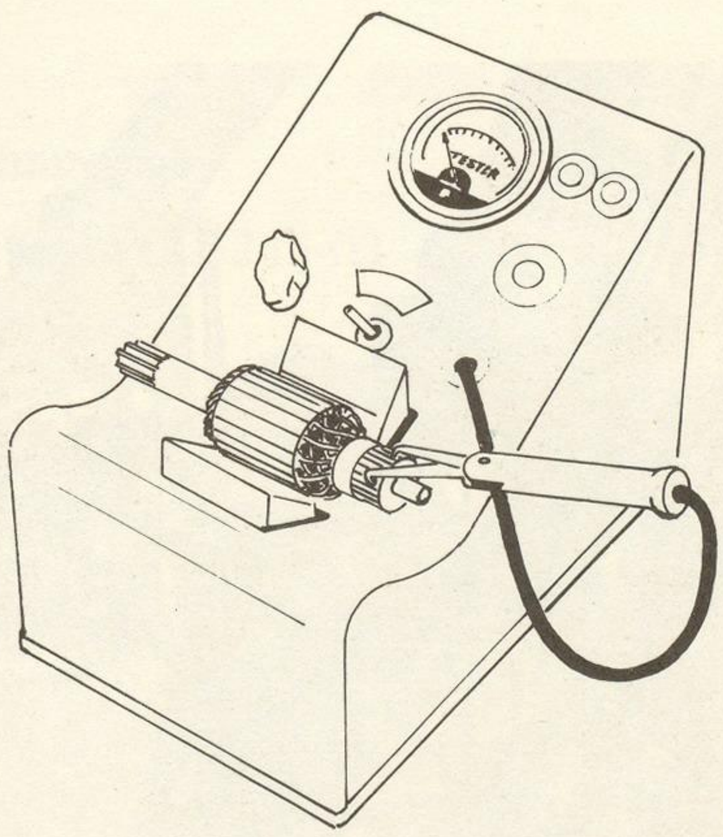


Fig. 10–11 Checking armature for open circuit

Field Coil

1. Check the field coil for open circuit by connecting the test prods to each terminal alternately. If the tester pointer does not move, the field coil has open circuit and should be replaced.

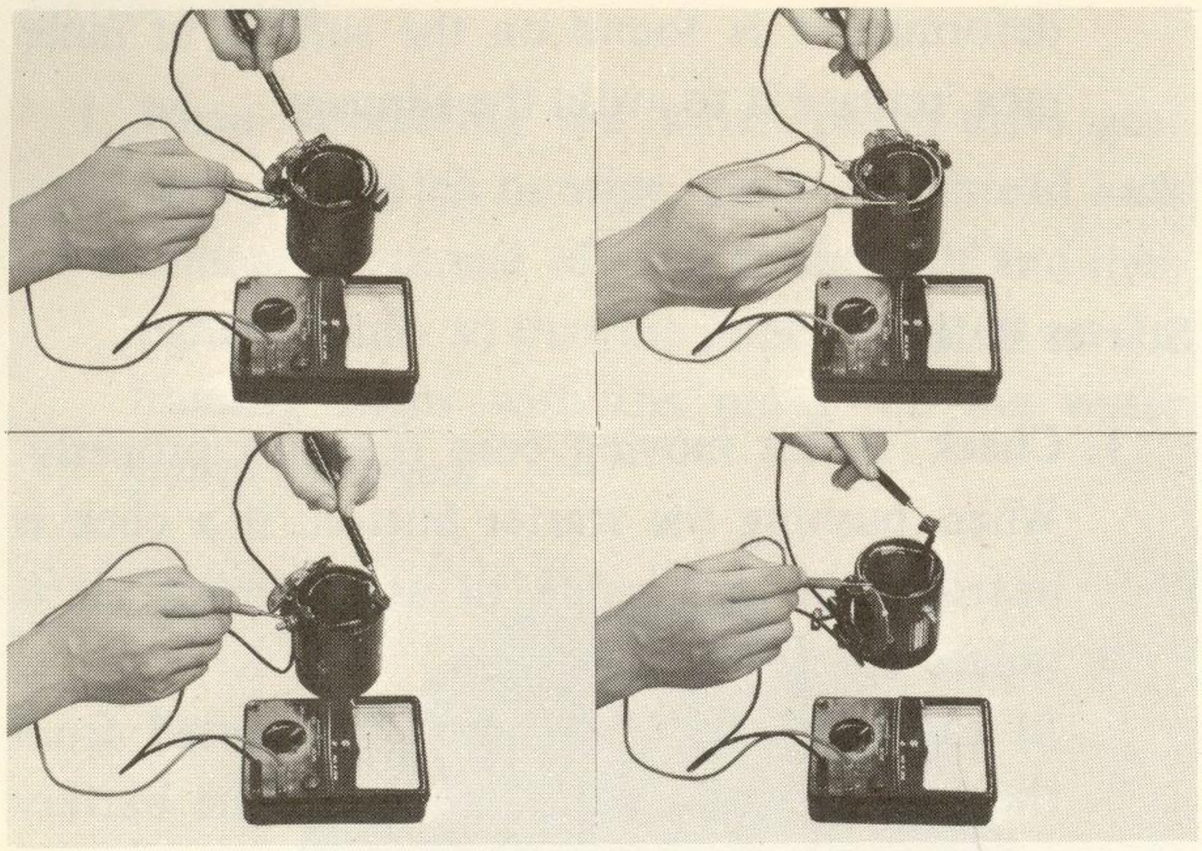


Fig. 10–12 Checking field coil for open circuit

It is also possible to check the field coil for open circuit by exciting the field coils. If the screw driver is not drawn to anywhere when it is inserted into the field yoke, the field coil has a open circuit.

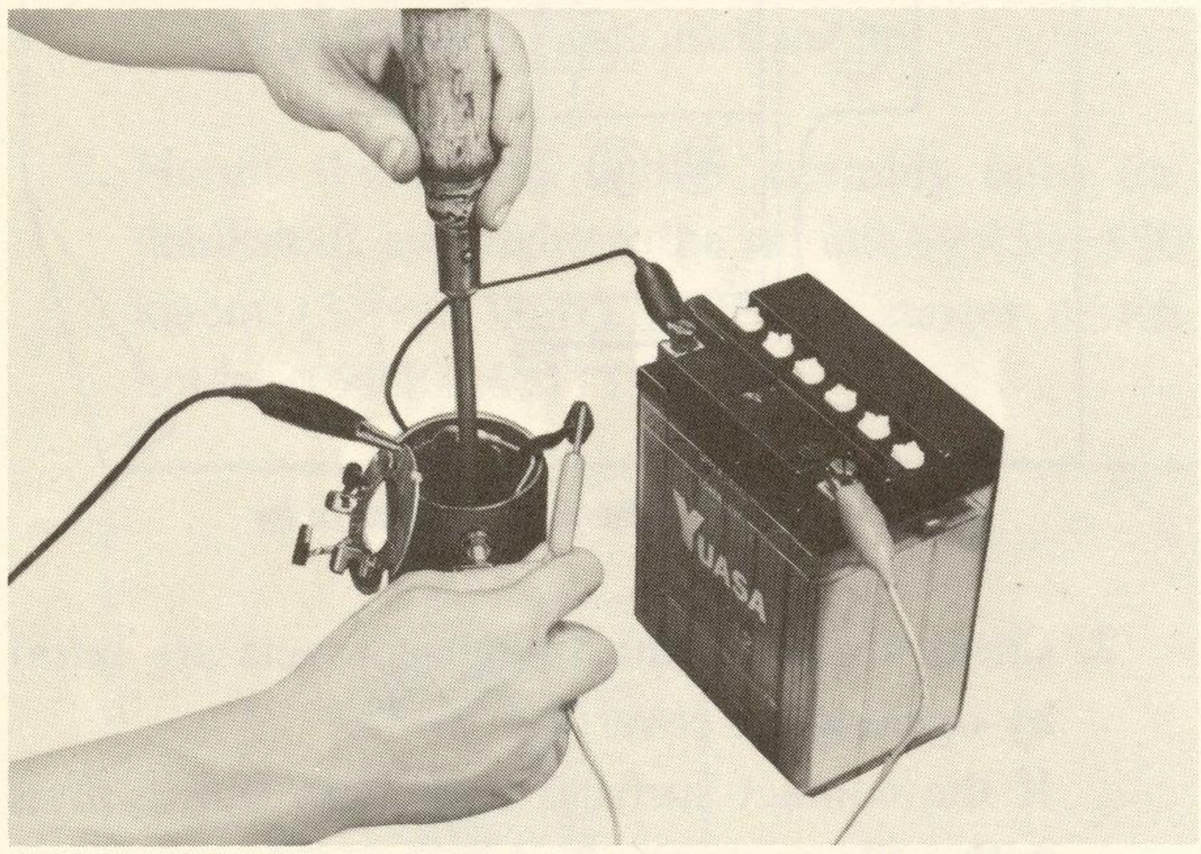


Fig. 10–13 Checking field coil by exiting it

Caution : Be carefull of the following points when testing the fiels coil open circuit by exciting it.

Two kinds of field coils provided on this motor have each different resistance as follows.

Series coil . . . . . 0.02 ohms (Ω)
Shunt coil . . . . . 2.55 ohms (Ω)

When connecting the battery to the field coil as illustrated in Fig. 10–14, a current flow through only shunt coil and the screw driver is drawn toward "A" and "C" cores.

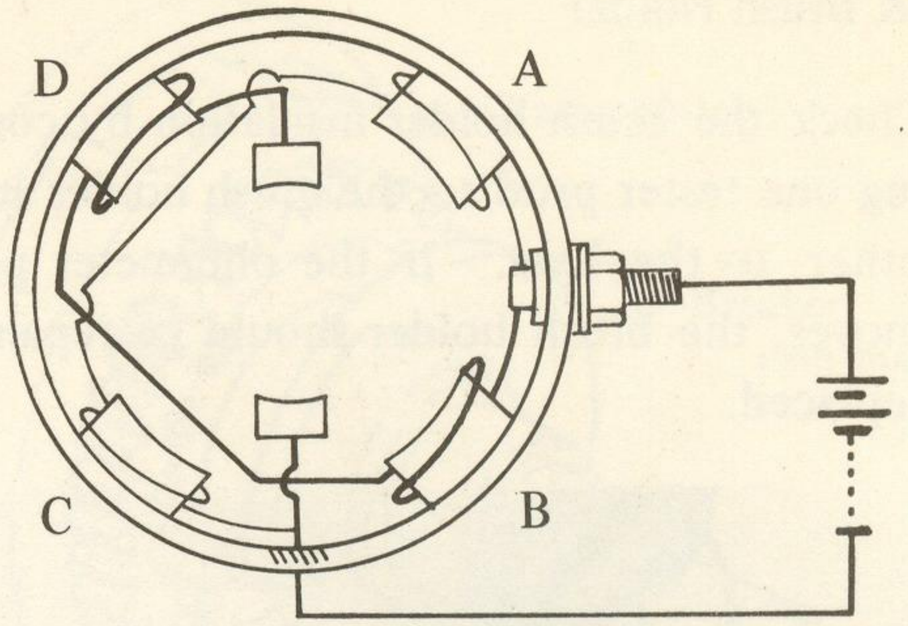


Fig. 10–14 Battery connection for field coil test

On the other hand, when connecting the battery as shown in Fig. 10–15, a current flow through each coil in the order of "D", "B", "A" and "C" in series. In this case, the current is mainly regulated by shunt coil resistance, so that the electromagnetic force is induced on "A" and "C" much more than "B" and "D" coils and accordingly the screw driver will be drawn toward shunt coils.

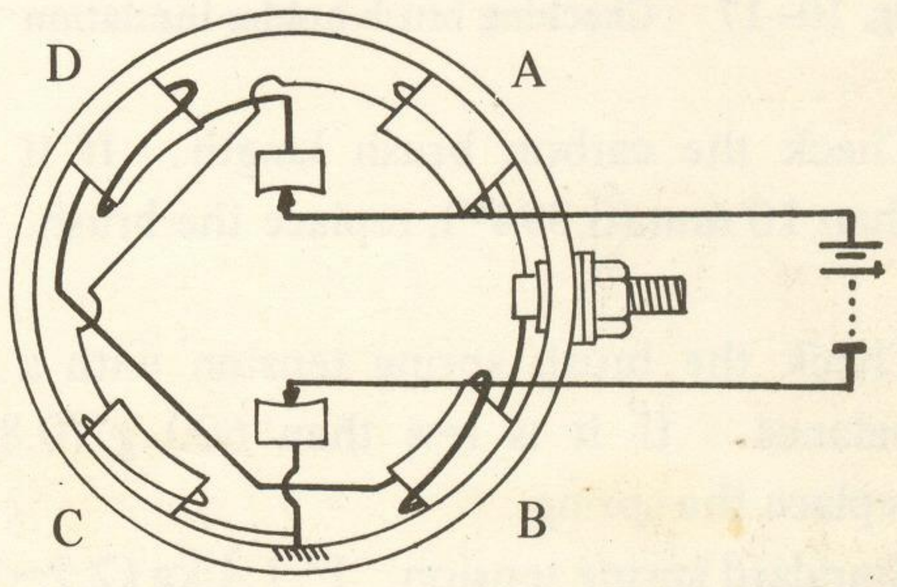


Fig. 10–15 Battery connection for field coil test

2. Check the field coil for ground by connecting one tester prod to the field coil junction on the yoke and the other to the core or yoke. If the ohmmeter pointer moves, the field coil has been grounded and should be replaced.

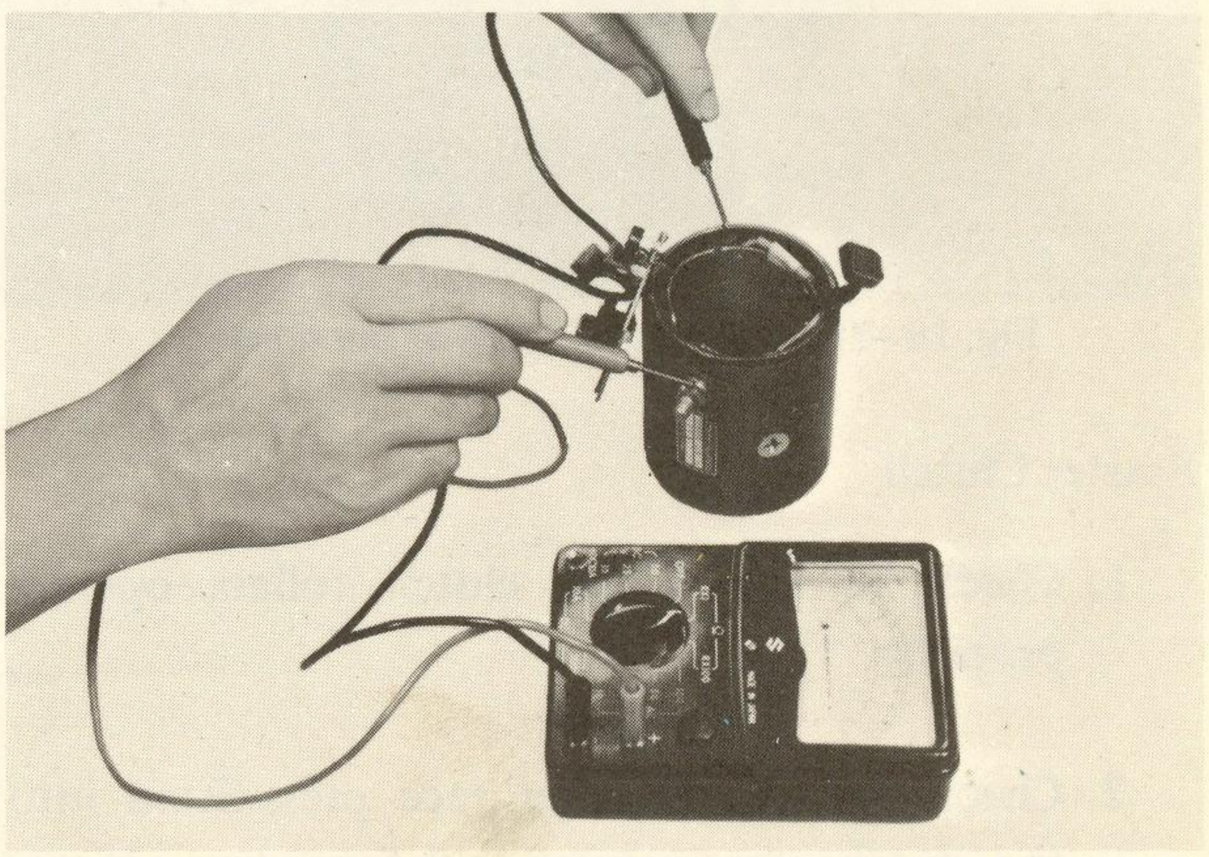


Fig. 10–16 Checking field coil for ground

Brush & Brush Holder

1. Check the brush holder insulation by connecting one tester prod to the brush holder and the other to the base. If the ohmmeter pointer moves, the brush holder should be repaired or replaced.

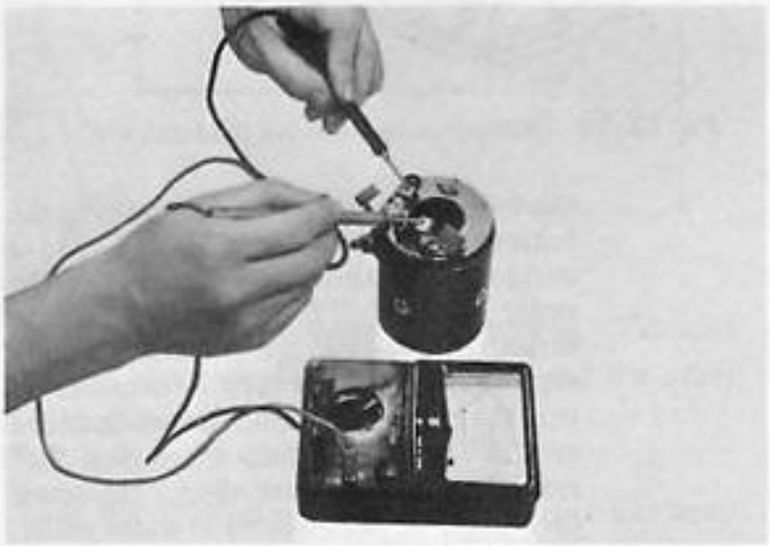


Fig. 10–17 Checking brush holder insulation

2. Check the carbon brush length. If it is less than 10 mm (0.394"), replace the brush.

3. Check the brush spring tension with a spring balance. If it is less than 600 g (0.84 lb), replace the spring.
   Standard spring tension: 1~1.4 kg (2.2~3.1 lb)



Fig. 10–18 Checking brush spring tension

Starter Clutch

1. Check to see if the clutch rollers operate properly.

2. Check the clutch inner race press-fitted into the clutch gear for wear or deformation. If any deformation is found on the surface of inner race, replace it to avoid the slippage.

Starter Relay

1. Check if the moving core operates properly. When pushing the starter button, if a click is heard from the inside of starter relay, it is judged correct.
   In case the relay has been dismounted from the frame, confirm the click with the battery connected between "S" terminal and mounting plate as illustrated in the figure.

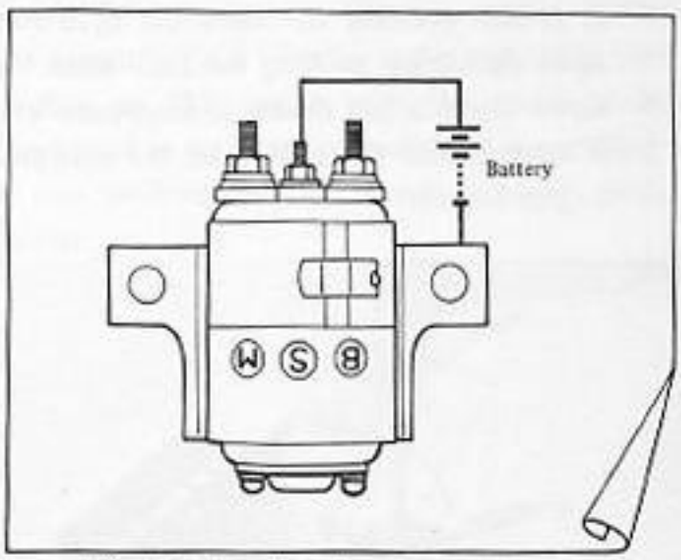


Fig. 10–19 Checking starter relay

2. Check to see if the switch contacts are burnt by opening the cover①.
   If the contact surfaces have been burnt, dress with a file or emery sand paper.

Assembly

Starting Motor

1. Before assembling the starting motor, apply the multipurpose grease on the armature shaft bushings.

2. Install the carbon brushes into brush holders after the armature is settled in the yoke.

3. Install the armature thrust washers, end frame and housing, then tighten them with the through bolts. Check if the armature shaft turns smoothly with hand.

Starter Clutch

1. When assembling the water pump drive gear onto the clutch housing, apply the thread lock cement on thread of each fitting bolt and then tighten firmly so that the punch mark ① on the housing aligns with the pin ② on the water pump drive gear.

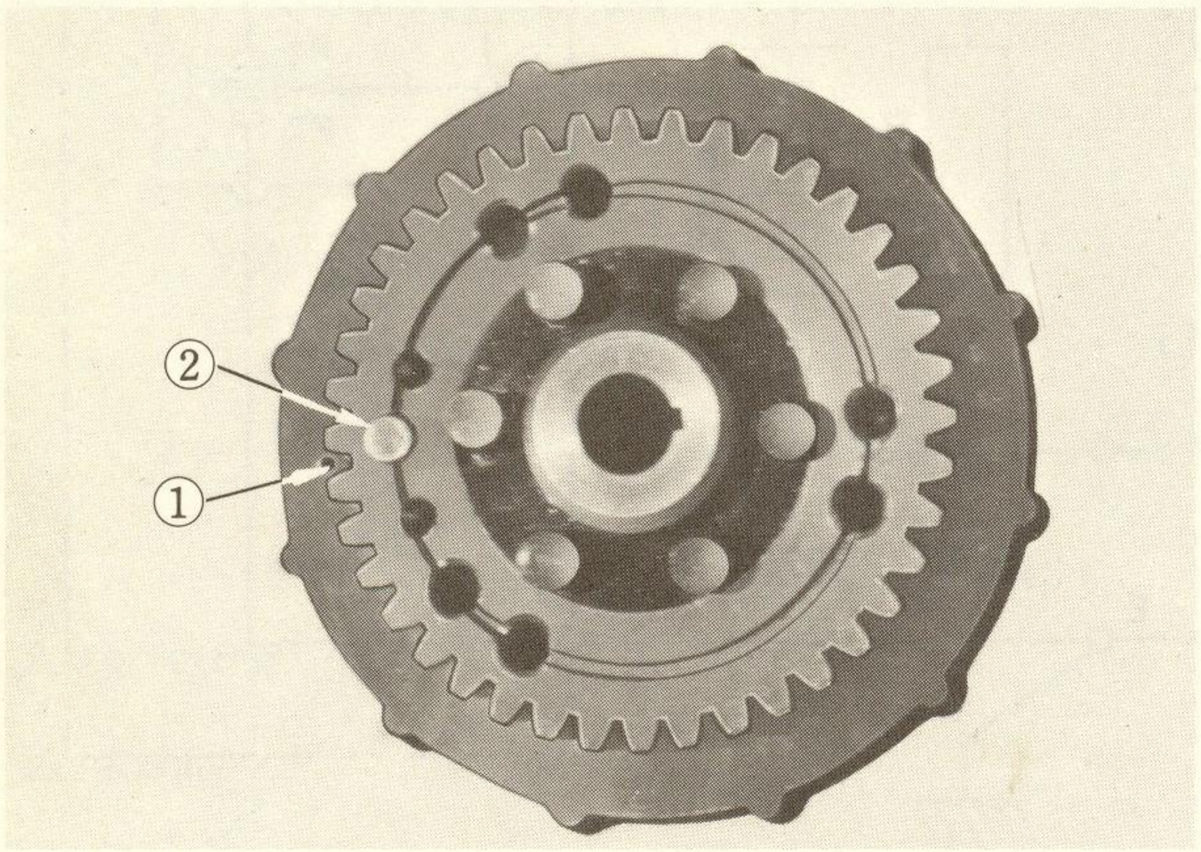


Fig. 10–20 Punch mark and pin

2. Mount the starter clutch assembly onto the crankshaft and tighten the set nut by 450~550 kg-cm (33~40 lb-ft) with the starter clutch holder (09920–40111).

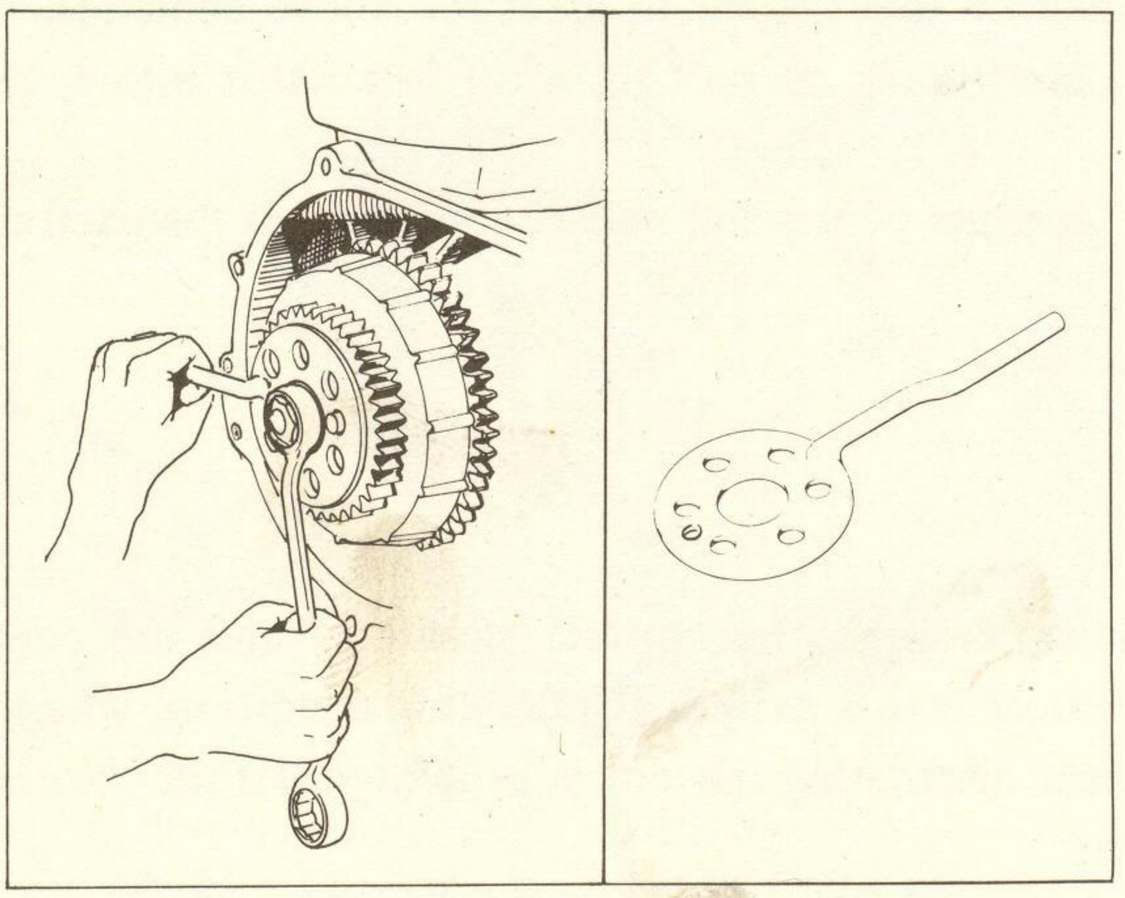


Fig. 10–21 Assembling starter clutch

3. When assembling the starter clutch cover onto the crankcase, turn the breaker cam shaft by hand so as to match the cut-away of breaker cam shaft with the pin on the water pump drive gear.

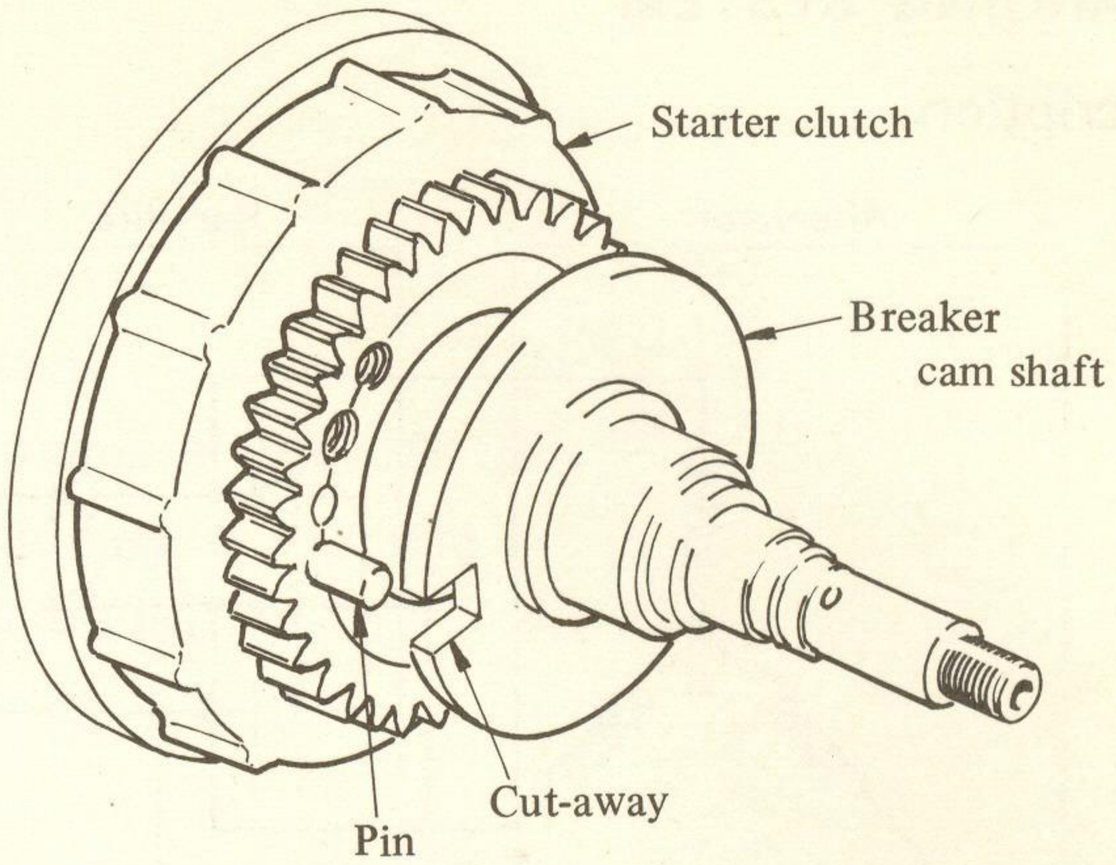


Fig. 10–22 Assembling breaker cam shaft

CHARGING SYSTEM

Description

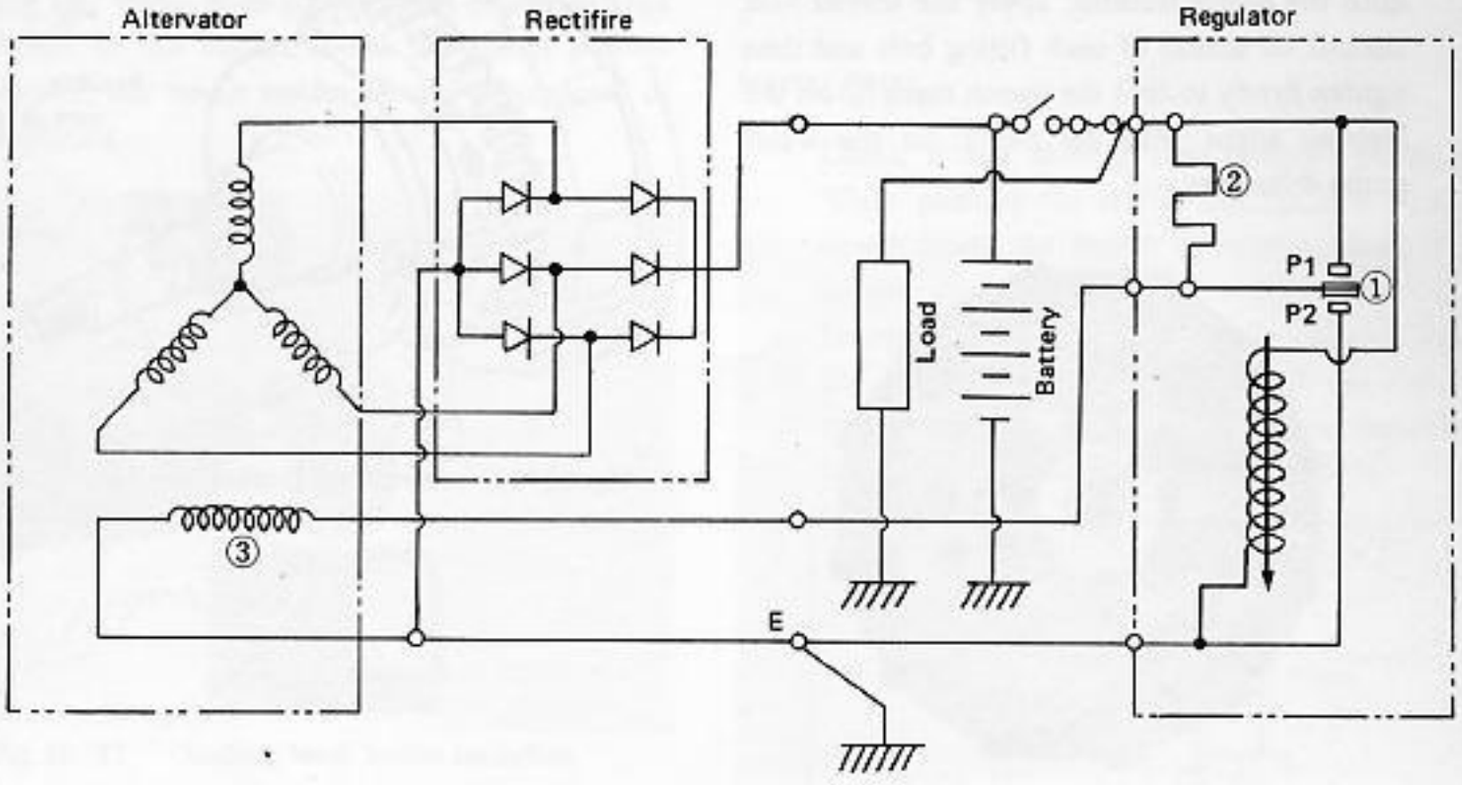


Fig. 10–23 Charging system wiring

The alternator induces a three phase alternating current within the stator coil in proportion to the engine speed, provided that the excitation current supplied from the battery to the rotor coil is constant.

In order to charge the battery, the output current from the alternator should be rectified to a direct current and regulated to a constant voltage (13.5~14.5 volts) in any engine speed.

The silicon rectifier and the voltage regulator are equipped on this system to meet the above demands. The rectifier which consists of six silicon diodes converts a alternating current from the alternator into a direct current.

The voltage regulator which comprises a control resister, contact points and pull-in coil controls the excitation current in the rotor coil.

Operation

When the engine switch is turned on, the current flows through the contact points ① and the control resistance ② in parallel and the rotor coil ③, and the rotor coil is exited. Under this condition, when the engine is started and the rotor is rotated, the three phase alternating current is generated within the stator coil and then rectified to the direct current by the rectifier.

As the charging in the battery is developed, the voltage at the battery terminal naturally becomes higher and also the voltage to the point "IG" increases. Therefore the pull-in force is increased and it pulls the point lever downward so as to open the points from the low speed side (P1). As the point opens, the current flows through the control resistance ② and the excitation current is decreased, resulting in decreasing also alternator output.

Under light load at high revolution, point contacts the high speed side (P2), and the current to the rotor coil is further decreased to control output voltage.

Thus the charging voltage is controled by regulating the excitation current with the control resistance and pull-in coil. On the other hand, stator coil has a self-limiting characteristic in limiting the current flow to the coil to press the value when the revolution increases.

Specification

Alternator:

Voltage	12 volts
Max. output current	20 amperes
Max. output power	280 Watts
No-load revolution	14V, 0 Amp. @ 1050±150 rpm
Output revolution	14V, 20 Amp. @ 3000 rpm
Weight	3.4 kg (7.5 lb)

Voltage regulator:

Regulated voltage	13.5~14.5 volts
Weight	0.22 kg (0.485 lb)

Alternator

Removal

1. Remove the generator cover.

2. Loosen the brush holder fitting screws while firmly pressing the brush holder and then remove, otherwise the brush would spring up and the wire comes off.

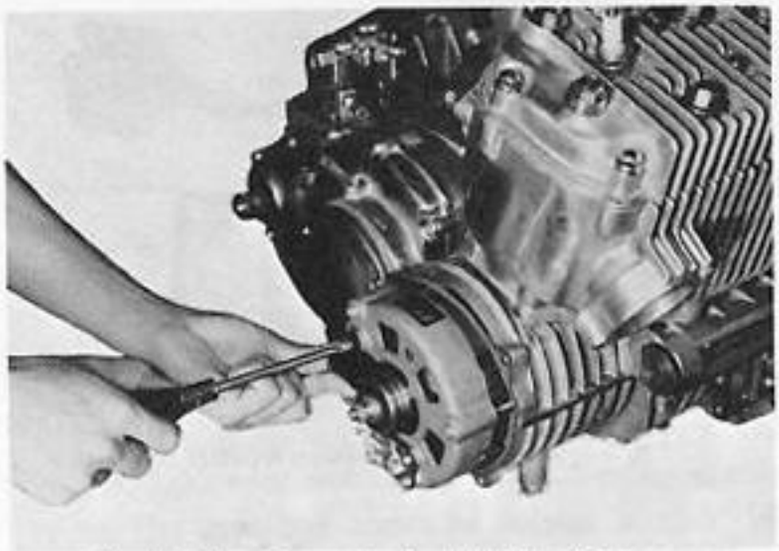


Fig. 10–24 Loosening brush holder fitting screw

3. Remove the alternator stator.

4. Pull out the rotor with the Rotor Remover (09930–33110).

Inspection & Repair

1. Check the rotor coil for open or short circuit by placing the tester prods on each slip ring, and then read the resistance. If the reading is less than the standard (around 10 ohms), the rotor coil has a short circuit or grounded.
   If the reading is much higher than the standard, the coil has a open circuit. Replace the rotor with new one if differences in the reading are found.

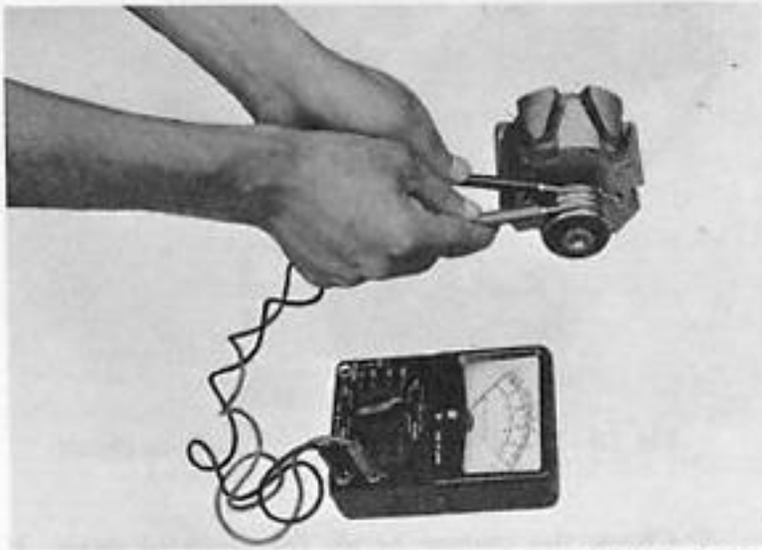


Fig. 10–25 Checking rotor coil for open and short circuit

2. Check the rotor coil for insulation by connecting one tester prod to either slip ring and the other to the rotor core finger. If the ohmmeter pointer moves, the rotor or slip ring is defective and the rotor assembly should be replaced.

3. Check the stator coil for insulation by connecting one tester prod to either stator coil terminal and the other to the stator core. If the ohmmeter pointer moves, the stator assembly should be replaced.

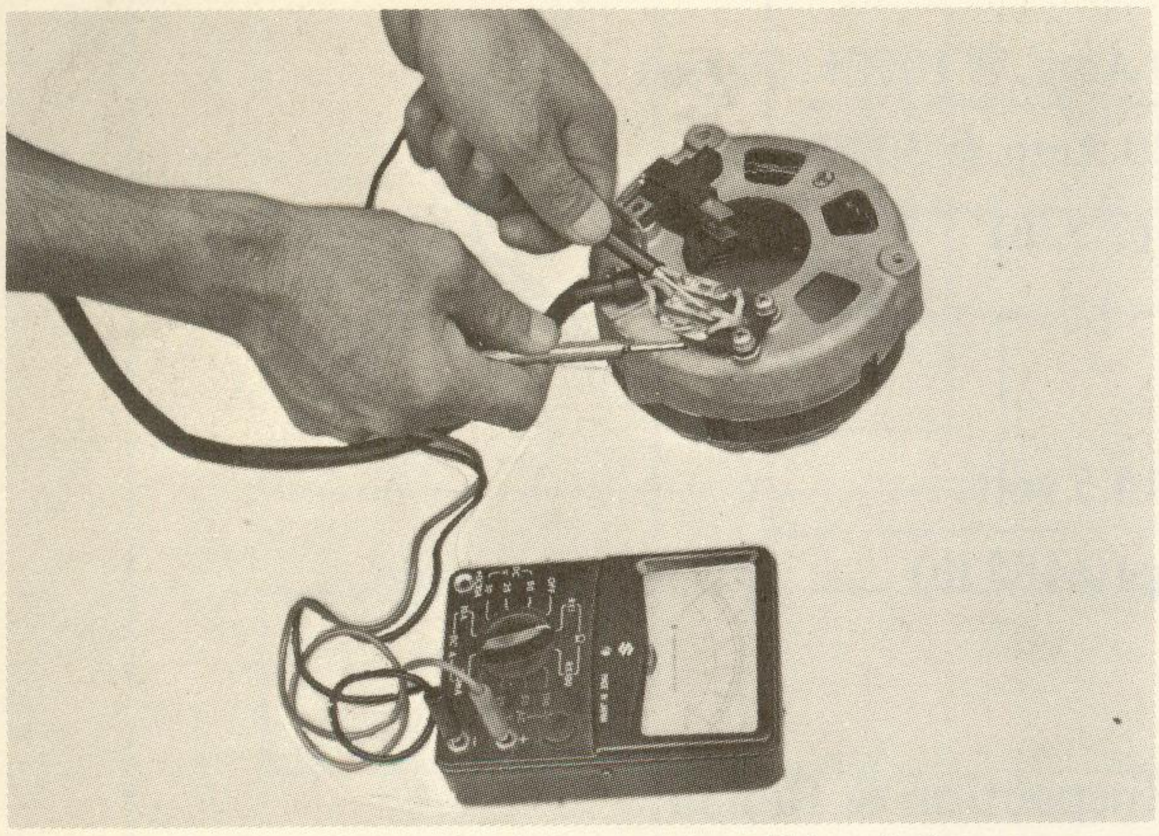


Fig. 10–26 Checking stator coil insulation

4. Check the stator coil for open circuit by placing the tester prods to each stator coil terminal alternately. If the ohmmeter pointer does not move, the stator coil has a open circuit and should be replaced.

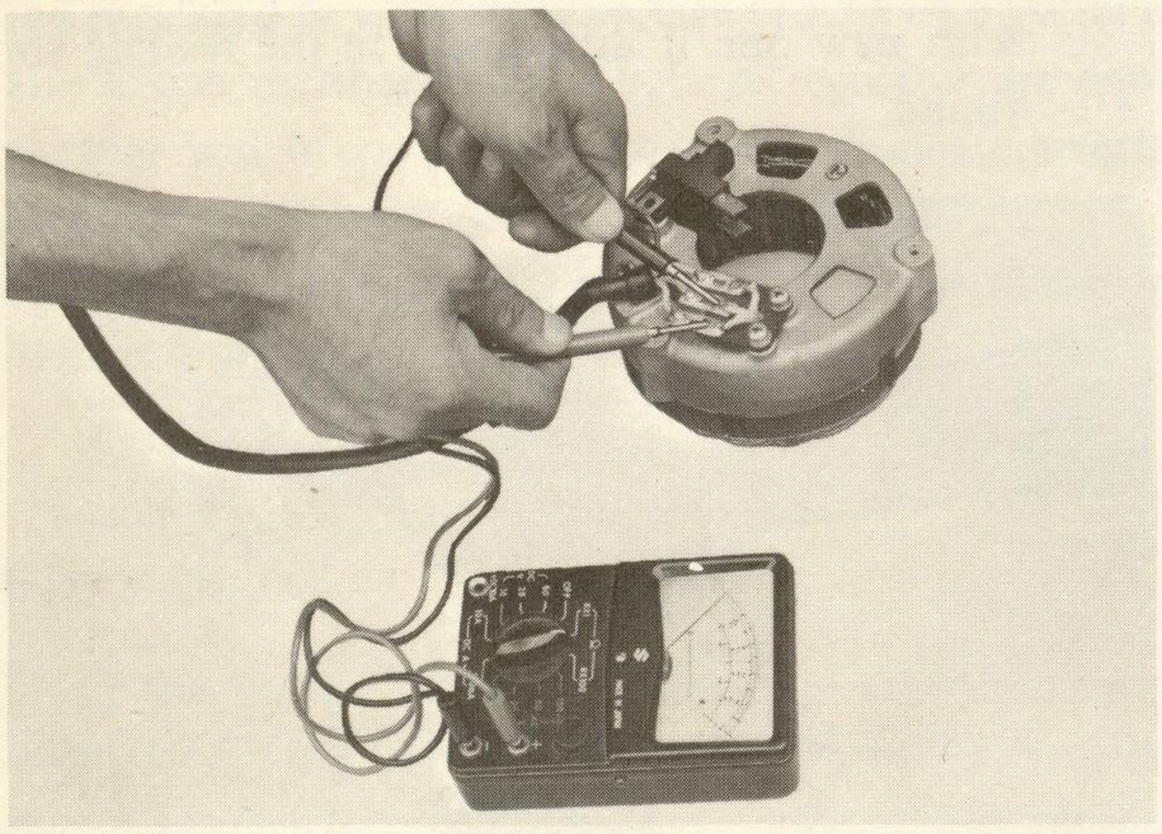


Fig. 10–27 Checking stator coil for open circuit

5. Check the carbon brush for clack or wear. If it is worn out beyond 5.5 mm (0.217″), replace the brushes. The overall length of brand-new brush is 12.5 mm (4.93″).

Note: When replacing the brushes, replace with the brush holder assembly which includes the brush, spring and holder.

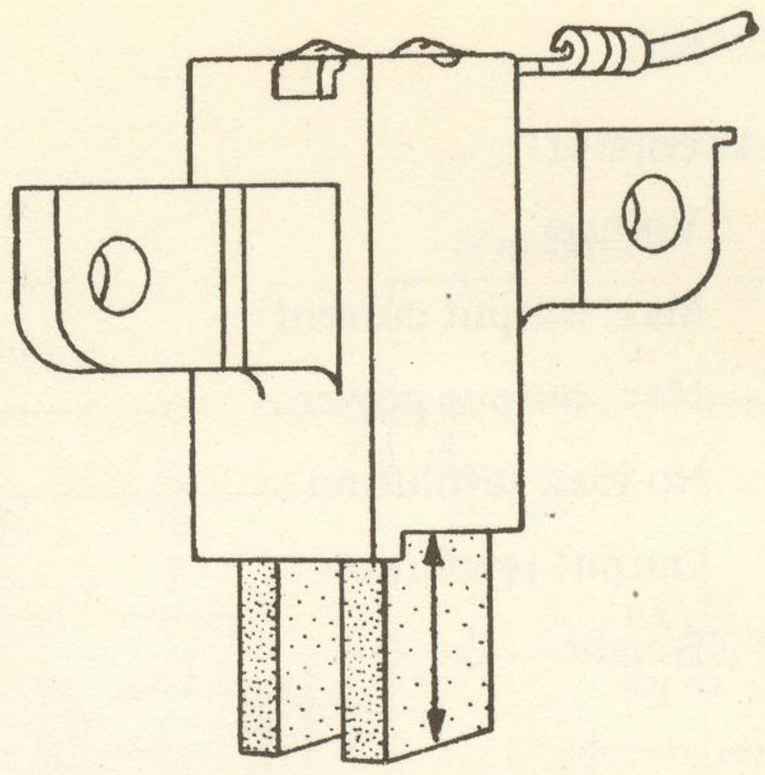


Fig. 10–28 Carbon brush length

6. Check the silicon rectifier for open. Measure the resistance between each terminal. If the silicon rectifier is in good condition, less resistance is measured in the normal direction (for example, Yellow→Red) and no current flows in the inverse direction.

Caution: The ordinal ohmmeter has an inverse polarity, so that a current flows from (−) lead to (+) lead.

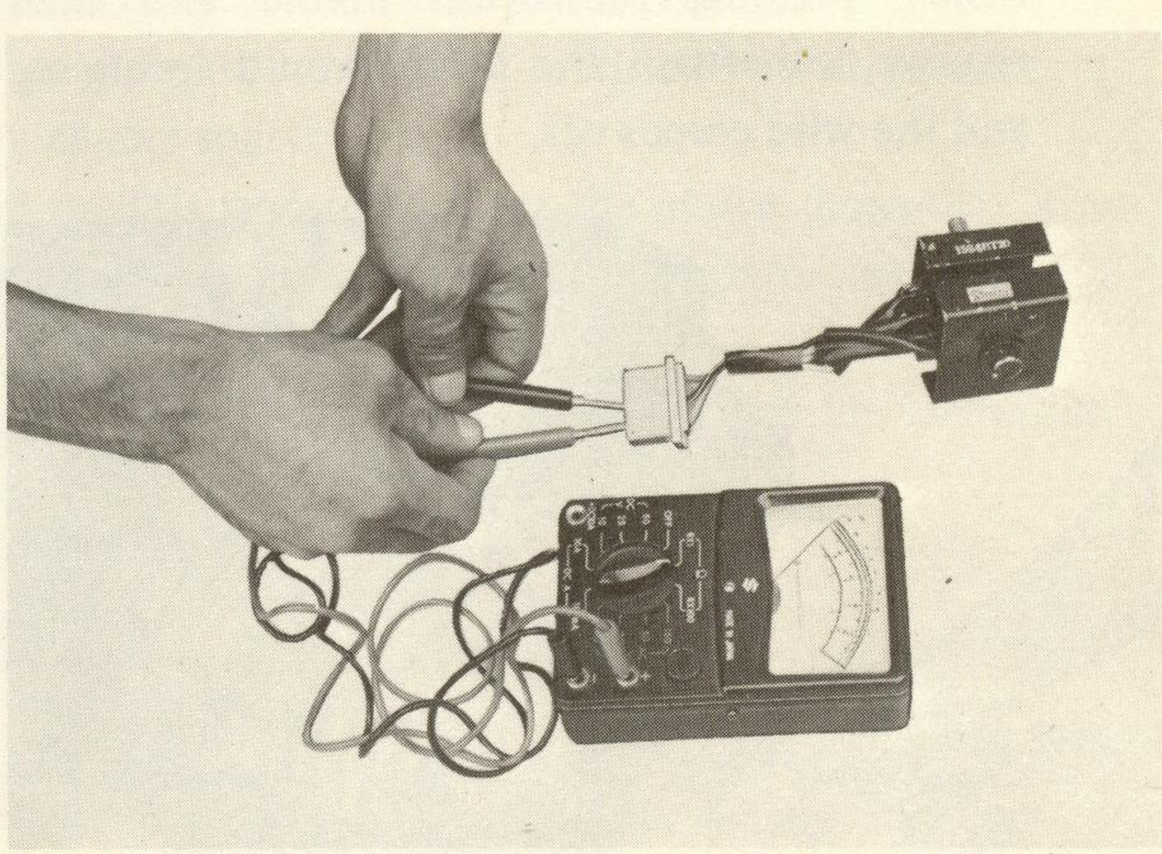


Fig. 10–29 Checking silicon rectifier for open

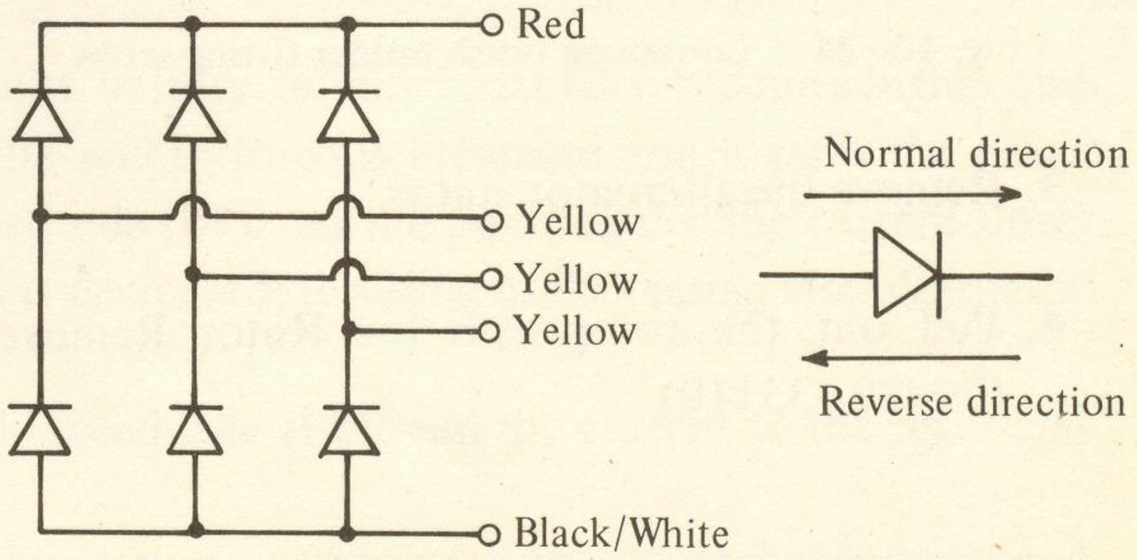


Fig. 10–30 Silicon rectifier

7. Measure the resistance between "IG" (orange lead) and "F" (green lead) terminals. The resistance should be none. If the resistance is there, the voltage regulator low speed point is defective. Open the cover and press the regualtor lever ① to open the points, then measure the resistance again. The specified resistance is 10 ohms.

   If the resistance is excessively higher than the specified value, the control resistor is defective.

Caution: The voltage regulator cover is sealed to keep the inside mechanism free from dust and moisture, and further-more the unnecessary adjustment at ordinal service.
In case it is adjusted from lack of replacement in market, open the cover and inspect it as follows, keeping in mind once it is serviced it will not be guaranteed.

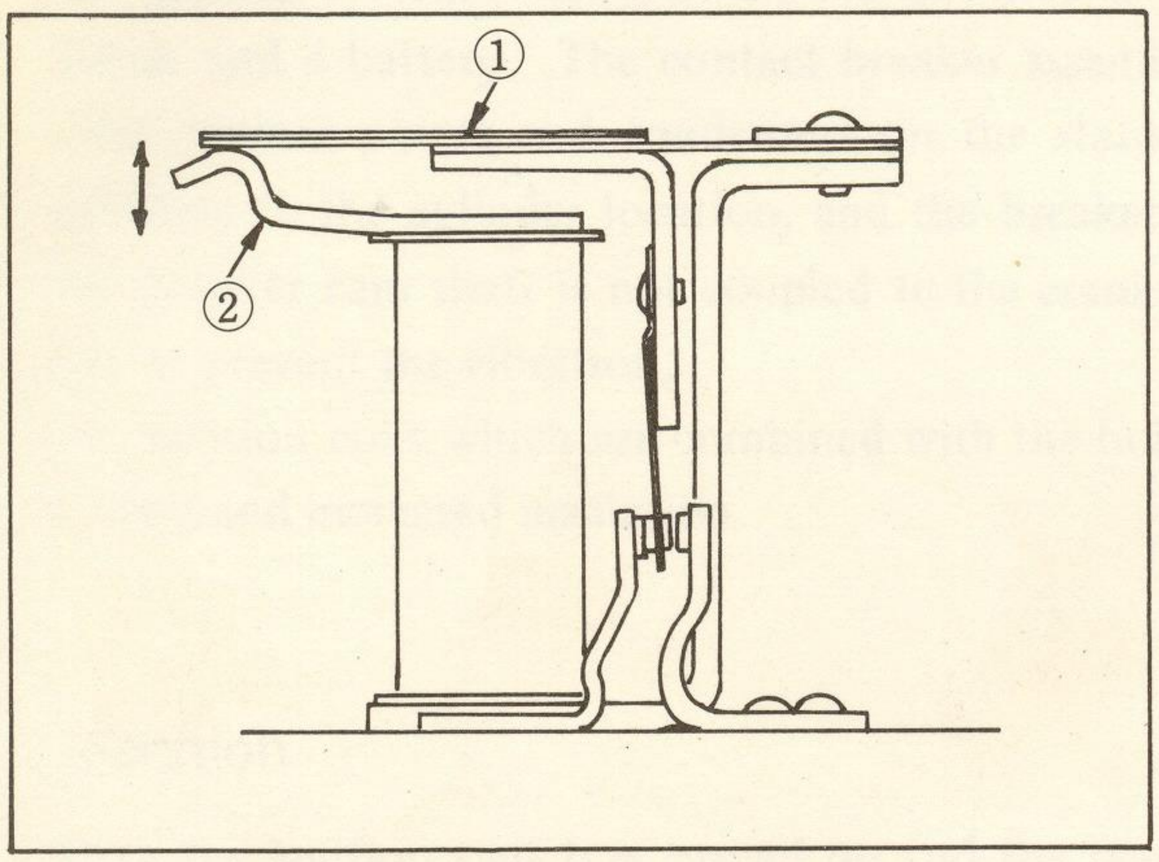


Fig. 10–31 Adjusting regulator

8. Measure the regulated voltage. Insert one tester prod into a cell of the coupler where the orange lead is connected and the other to the engine for grounding. Set the engine to run at 2,000~3,000 rpm and check the voltmeter reading. The specified regulated voltage is 13.5~14.5 volts.

   If the reading is excessively different from the above specified voltage, adjust the regulator by so bending the lever ② as to have a meter reading of 13.5~14.5 volts.

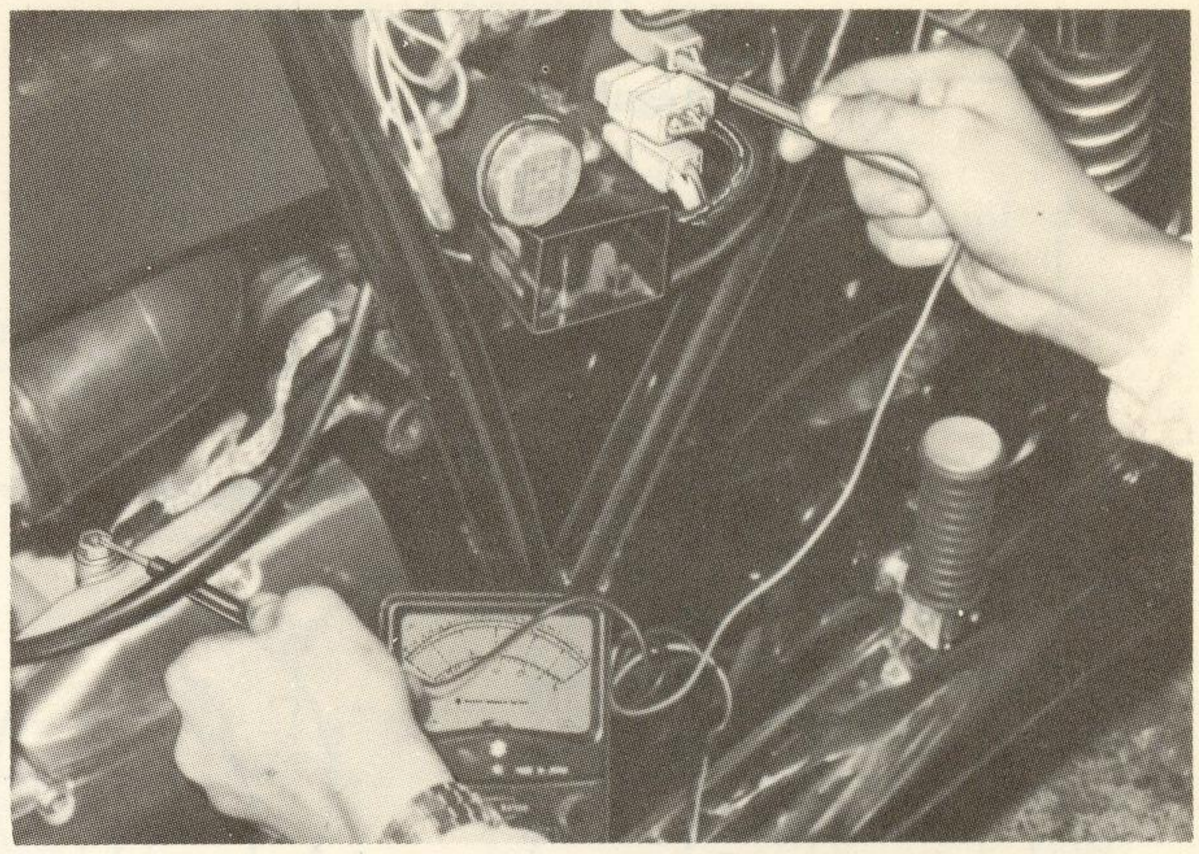


Fig. 10–32 Measuring alternator output

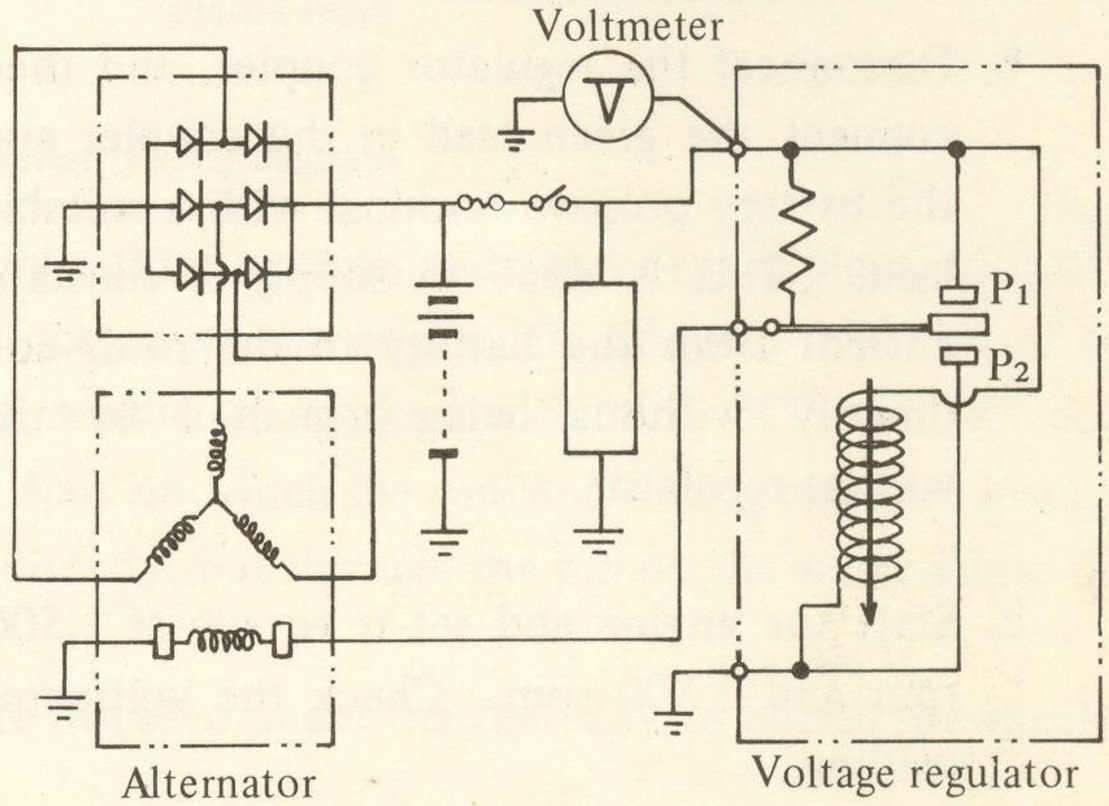


Fig. 10–33 Voltmeter connection

9. Check the alternator no-load performance according to the following procedures.

   a. Disconnect the starter switch relay lead which is colored red from the connector, and also the fuse lead at the connector side where the white tape is wound. Then connect the fuse lead with the relay lead connector, and the voltmeter between the red lead which was connected to the starter switch relay lead originally and the crankcase.

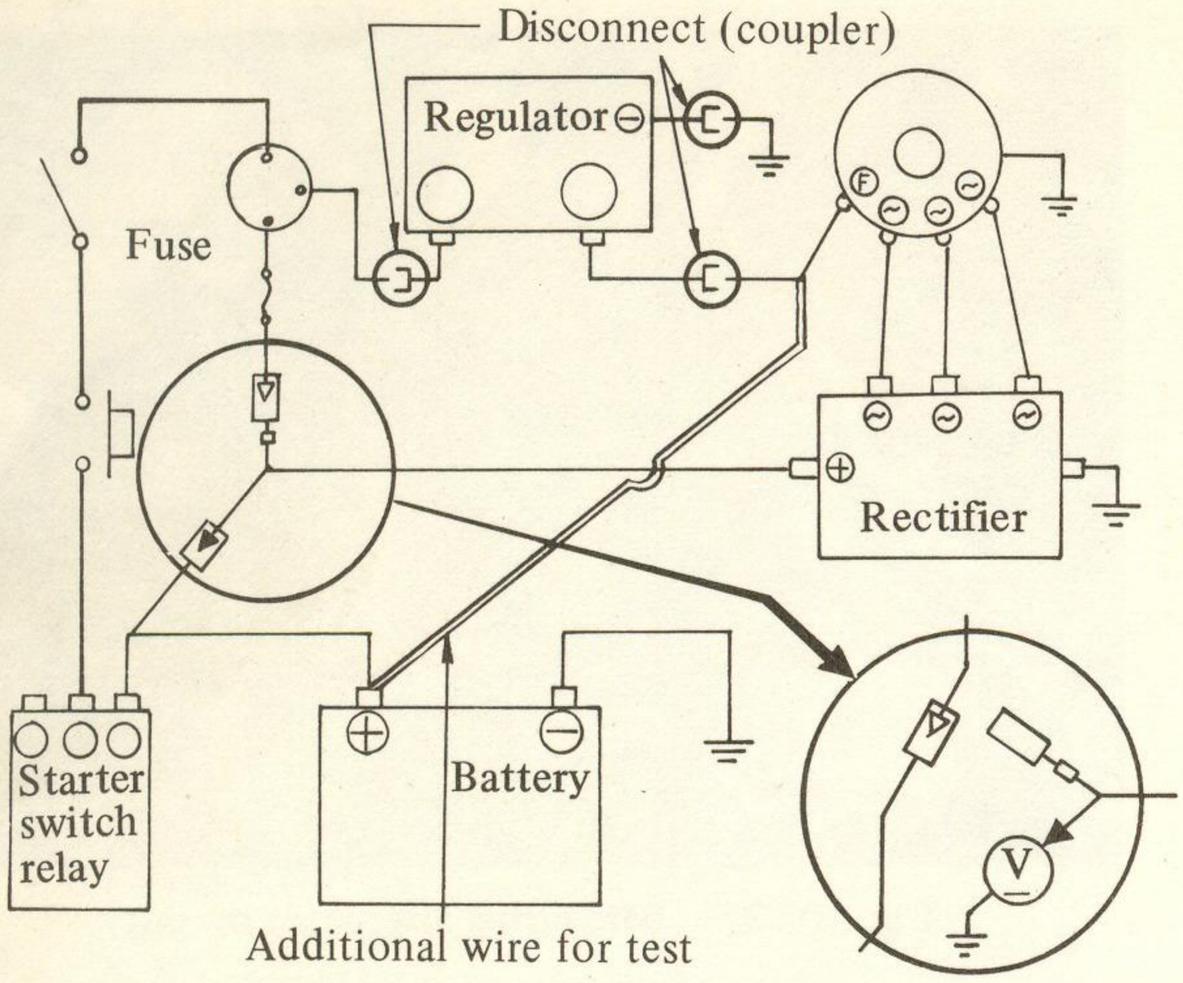


Fig. 10–34 Wiring for measuring output

b. Disconnect the regulator coupler, and then connect the green lead in the coupler and the battery positive terminal with a suitable lead. This is done to supply a constant current from the battery to the rotor coil directly without being regualted by the voltage regulator.

c. Start the engine and set it to run at 1,500 rpm and 2,500 rpm. Check the voltmeter reading.
The specified voltage:

1,500 rpm	More than 16 volts
2,500 rpm	More than 27 volts

In case that the no-load voltage is in good condition but the battery is discharged, check the voltage regulator or battery.
If the voltage reading is less than the specified value, the connection of coupler, silicon rectifier or alternator is defective. Repair or replace them.

IGNITION SYSTEM

Description

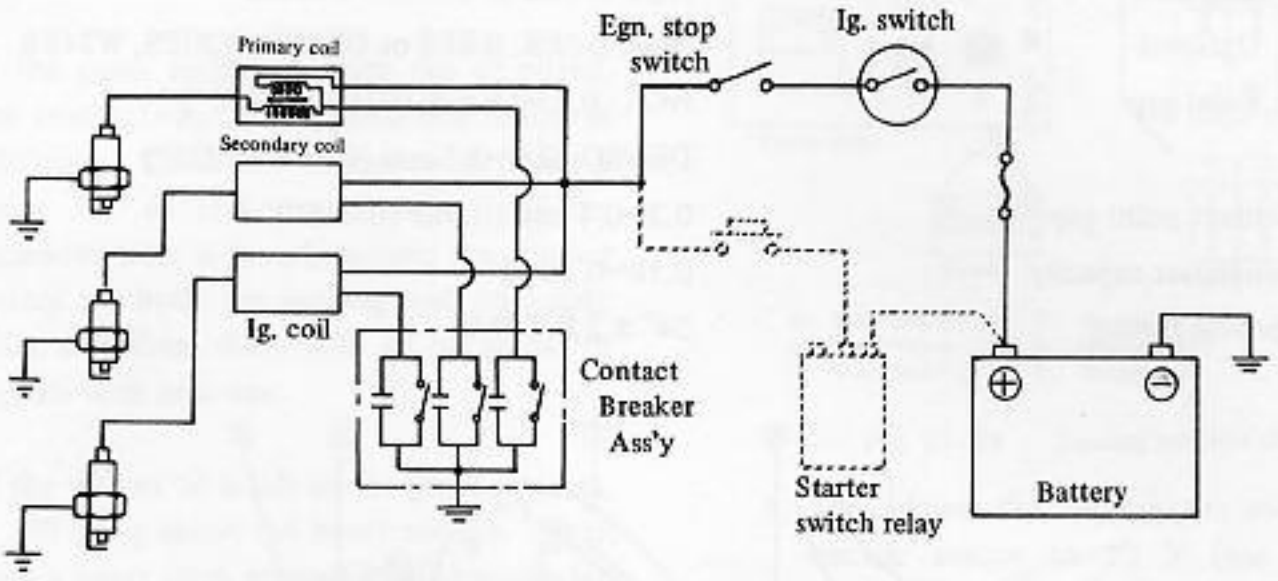


Fig. 10–35 GT750 ignition system wiring diagram

The ignition system consists of the contact breaker assembly, three ignition coils, three spark plugs, an ignition switch and a battery. The contact breaker assembly is located on the engine left side and made up of each three contact points and condensers on the stator base, which are marked with "L", "C" and "R" corresponding to the cylinder location, and the breaker cam shaft on which the cam and timing plate are installed. The breaker cam shaft is not coupled to the crankshaft directly, but through the pin on the water pump drive gear to prevent the vibration.

The ignition coils which are combined with the holder are installed under the fuel tank to obtain the excellent cooling and increased insulation.

Operation

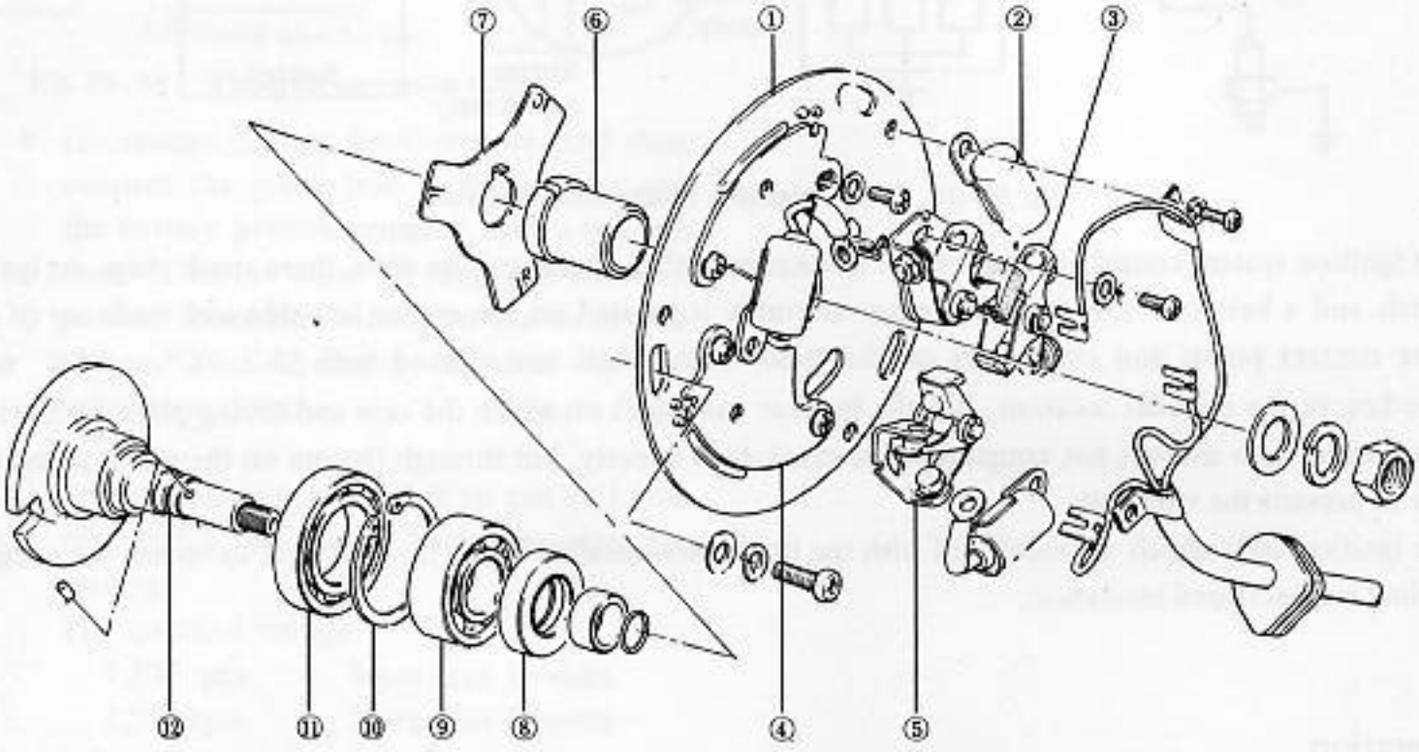
When the ignition switch is turned on and the crankshaft is rotated, a current from the battery flows through the primary coil windings of each ignition coil and contact points if they are closed.

At the time when the point is just opened, a counter electromotive force which is much higher voltage than before is induced within the primary coil by the self induction, and moreover it is stepped up to a high tension current within the secondary coil by the mutual induction so enough as to ignite the spark plug.

A condenser connected in parallel with the contact point is equipped to absorb the electric energy and keep it from sparking between the contact breaker points.

Specification

Spark plug	
Standard	NGK B-7ES or DENSO W22ES
Optional	NGK B-6ES, B-8ES or DENSO W20ES, W24ES
Point gap	NGK: 0.7~0.8 mm (0.028~0.032")
	DENSO: 0.6~0.7 mm (0.024~0.028")
Contact point gap	0.3~0.4 mm (0.012~0.016")
Condenser capacity	0.16~0.20 μF
Ignition timing	24° ± 2 B.T.D.C.



① Contact point base
② Condenser
③ Contact point assembly
④ Contact point set plate
⑤ Contact point shifting plate
⑥ Point breaker cam
⑦ Timing plate
⑧ Oil seal
⑨ Cam shaft inner bearing
⑩ Clamp
⑪ Cam shaft outer bearing
⑫ Cam shaft

Fig. 10–36 Exploded view of contact breaker assembly

Removal

1. Dismount the fuel tank from the frame, and remove the ignition coil assembly.

2. Remove the contact breaker cap, and the contact point base with the points and condensers on it after scriving a mark both on the base and the case near the fitting bolt in order to indicate the position of the base in the case of reassembling.

3. Disconnect the contact breaker lead coupler from the holder plate.

Disassembly

1. Dismount each contact point and condenser from the base by removing fitting screws.

2. Remove the breaker cam shaft nut and washers, then take off the breaker cam and timing plate from the shaft.

3. Extract the breaker cam shaft from the case.

Caution: When removing the breaker cam shaft inner bearing from the case, use the Snap ring opener (09920–70120).

Inspection & Repair

1. Check the contact breaker point for wear, dirt or oil film.

   a. If the point surface is worn out or pitted, the conductivity is decreased and results in misfiring. Dress the surface with either a point file or emery sand paper. If the excessive wear is found, remove the contact points of both the moving and stationaly sides and dress them with an oil stone, or replace with new one.

   b. If the dirt or oil is left on the point surfaces, it will bring about the burnt surface. Clean with a waste cloth soaking a trichloroethylen.

   c. Check to see if the points are in perfect contact. Dress or replace the points if necessary.

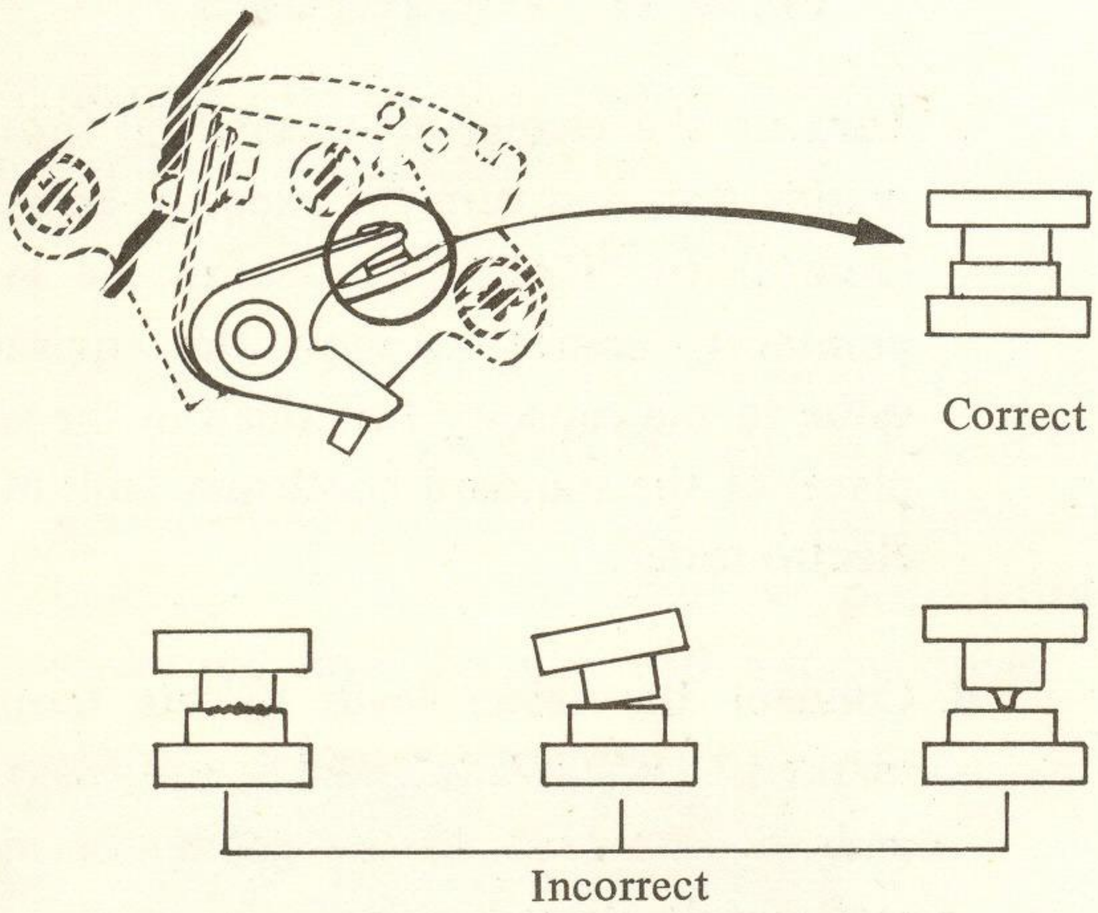


Fig. 10–37 Contact point

   d. Check to see if the point gap is between 0.3~0.4 mm (0.012~0.016″) using the filler gauge, when the point gap is at maximum opening.

2. Check the ignition coils for defects using an electro tester.

   a. Connect the ignition coil to be tested with the tester as illustrated in the figure.

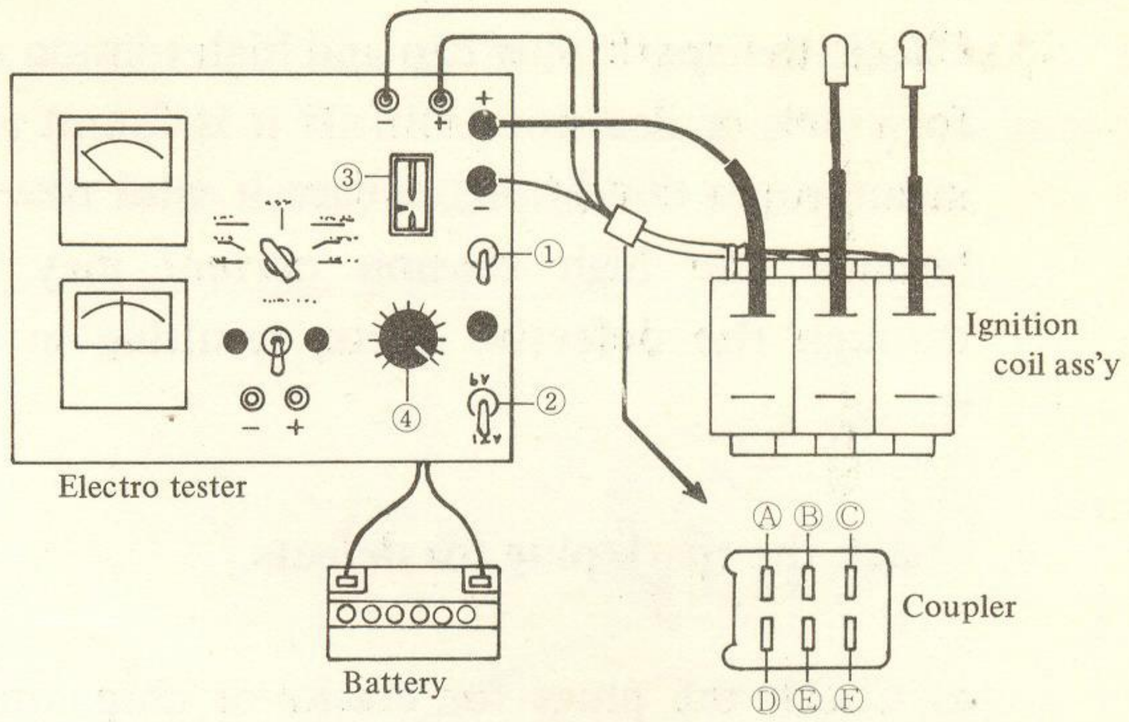


Fig. 10–38 Testing ignition coil

   b. Turn down the change-over switch ② for electric source to 12 V (use a 12 volt battery), and that ① for coil test to "COIL TEST". Then the spark will jumps between the three prong gap ③ if the coil has no defects.

   c. Adjust the tester three prong gap turning the dial ④ to have 6 mm (0.24″) of distance. Check the spark for about 5 minutes.
   The coil is satisfactory if the gap is more than 6 mm and the spark is still strong and blue.

   d. When testing the ignition coil without removing from the frame, remove the spark plug cap and connect the positive tester lead to the high tension cord and the negative lead to the spark plug.

   e. Start the engine and check to see if the spark is maintained over 6 mm of distance.

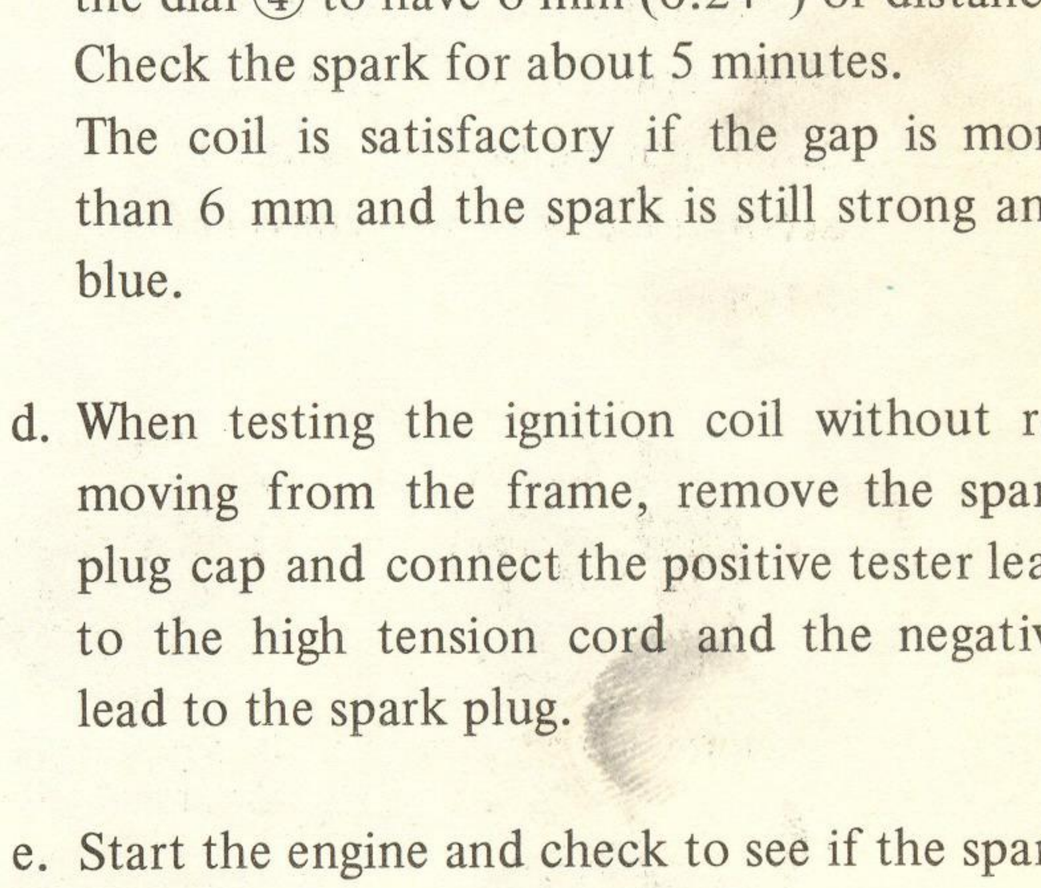


Fig. 10–39 Testing ignition system

3. Check the spark plug cap and high tension cord for crack or deterioration. If it is found to be in improper condition, replace it with new one because the high tension current may leak through the defective parts, resulting in misfiring.

4. Check the spark plug for defects.

   a. Check the plugs for cracks or chips on the porcelain.

   b. Check the electrodes for wear.

   c. Check for excessive carbon deposits. If carbon deposit is excessive, it indicates that the improper heat range spark plug has been used or a too rich fuel-air mixture has been supplied. Replace with a hot type plugs (B-6ES or W20ES) or adjust the carburetors. If the porcelain is excessively white-colored or the electrode is worned out, replace with a cold type plugs (B-8ES or W24ES). When NGK and DENSO plugs are not available, other corresponding plugs may be used in accordance with the conversion chart writen on page



Fig. 10–40 Condition of spark plug

   d. Check the plug gasket for defect.

   e. Check the porcelain for glaze or blister.

   f. Adjust the plug gap to the specified value:
   0.7~0.8 mm (0.028~0.032") for NGK make
   0.6~0.7 mm (0.024~0.028")
   for DENSO make

5. Check the condenser capacity using the electro tester.

   a. Connect a 12 V battery as the electric source for the electro tester.

   b. Position the selector knob ① to "C. Capacity".

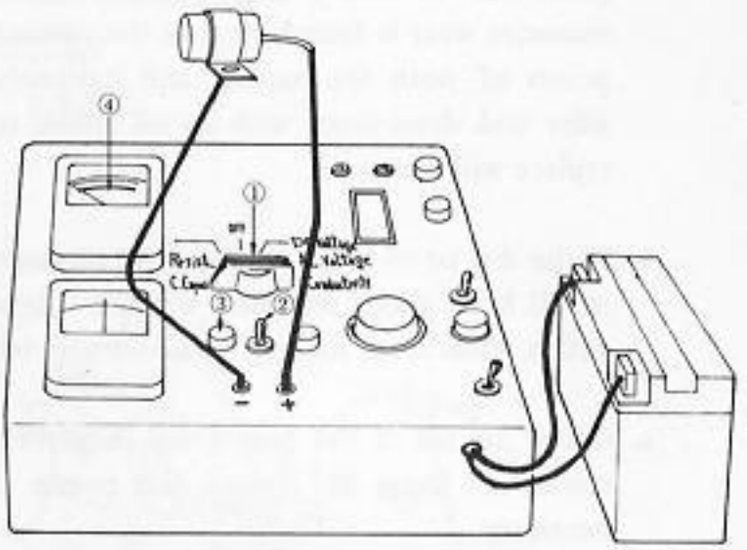


Fig. 10–41 Testing condenser

   c. Turn up the change-over switch ② for calibrating test, and turn the capacity adjusting knob ③ to "CAP. CAL." until the meter pointer ④ comes to show the equivalent value to the capacity (inscribed in the name plate) of the standard condenser built in the electro tester.

   d. Connect the tester leads to the terminal marked "TEST-TERMINAL", and the other ends of the lead to the condenser to be tested as illustrated in the figure.

   e. Turn down the change-over switch ②, then the pointer will show the capacity of the condenser to be tested.
   The specified condenser capacity is 0.16~0.20 μF.

6. Check the condenser insulation resistance using the electro tester.

   a. Position the selector knob to "Insulation" (Megohm).

b. Turn up the change-over switch to "CAL" position, and then turn the zero adjustment knob marked "RES. CAL." untill the meter pointer comes to 0.

c. Connect the tester leads to the terminals marked "TEST-TERMINAL", turn down the change-over switch, and apply the other ends of lead to the condenser to be tested. The pointer will move to the right and then quietly back to the left.
Keeping the connection till the pointer comes to stand still, read the pointer on the scale by Megohm. Bring the condenser wire near the body, so a spark will jump between the wire and the body.
The specified insulation resistance is over 10 Meg-ohm.

Timing Adjustment & Test

When adjusting the ignition timing, both the ignition timing and the breaker point gap should be adjusted. Start the adjustment from the cylinder at left always.

1. Adjust the point gap to 0.35 mm (0.014") for the points with marking "L" on the base at the position where the point gap is at the maximum opening. Loosen the point set plate fitting screw and move the plate with a screw driver.

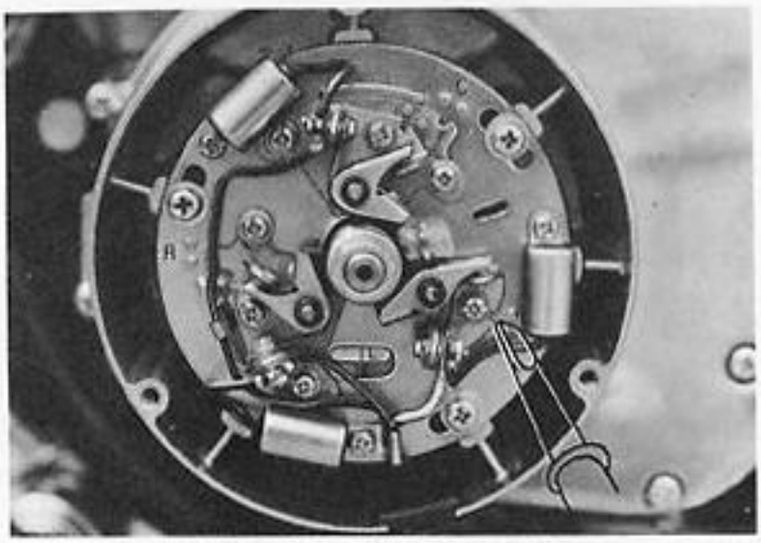


Fig. 10–42 Adjusting point gap

2. Remove the spark plug from left cylinder head, and install the timing dial gauge holder into the plug hole and set the gauge stem where the small needle ① of the dial gauge indicates "4" at T.D.C. Turn the outer ring scale ③ so that the large needle indicates "0" on the scale.

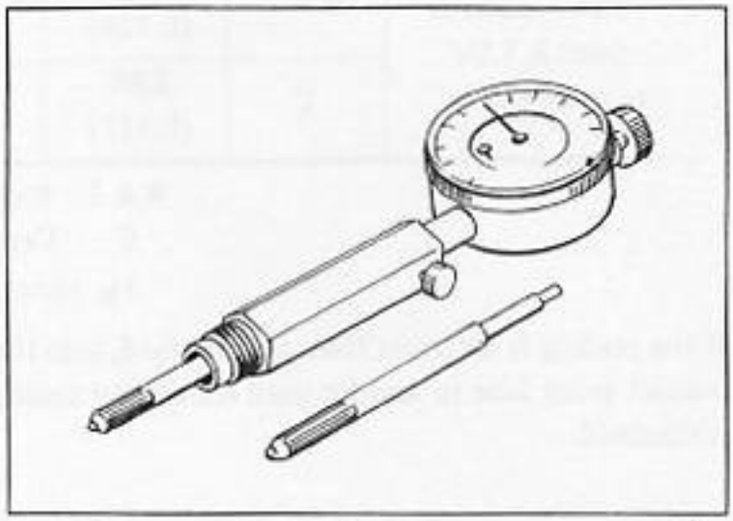


Fig. 10–43 Dial gauge

3. Connect one of the leads of timing tester to the positive terminal where a white and a black leads are connected, and the other to somewhere on the engine to ground it.

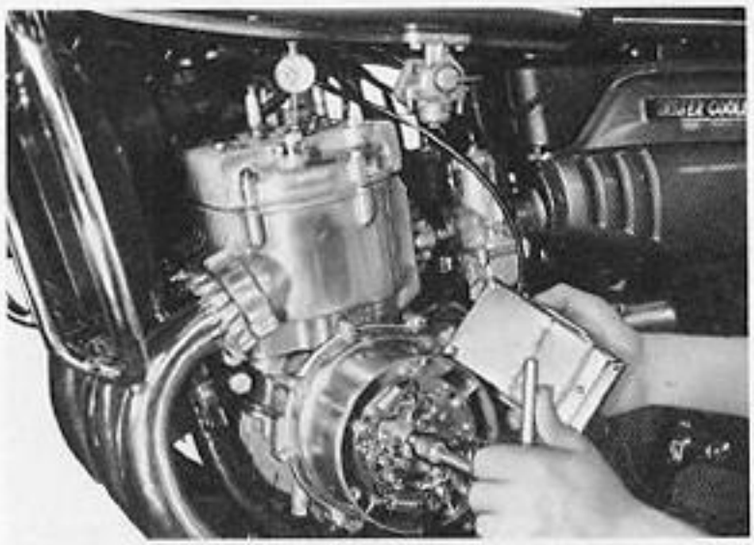


Fig. 10–44 Adjusting timing

4. Turn the crankshaft counterclockwise slowly, and tone of the timing tester buzzer changes and the lamp on the tester goes out. These changes tell you the precise position where contact points begin to open that is ignition timing. Read the dial gauge at this moment. The standard ignition timing is 3.64 mm (0.143") for left cylinder.

Caution: Be carefull that the gauge stroke is not uniform because of the difference in inclination of spark plug hole at each cylinder.

Standard ignition timing : 24° ± 2 (B.T.D.C.)

Crank angle (B.T.D.C.)		22°	23°	24°	25°	26°
Piston distance from B.T.D.C. mm (in)	R & L	3.20 (0.126)	3.35 (0.134)	3.64 (0.143)	3.94 (0.155)	4.25 (0.167)
	C	2.88 (0.113)	3.15 (0.124)	3.42 (0.136)	3.72 (0.146)	3.99 (0.157)

R & L : Right and left cylinder
C : Center cylinder

Fig. 10–45 Ignition timing table

If the reading is different from the standard, turn the contact point base to and fro until the correct timing is obtained.

5. Adjust the points with markings "R" and "C" in a similar manner as "L" after adjusting point gaps to 0.35 mm (0.014") by moving each point set plate ①.

Note: If the dial reading on the center and right cylinders is different from the standard, move the shifting plate ② by loosening two fitting screws.

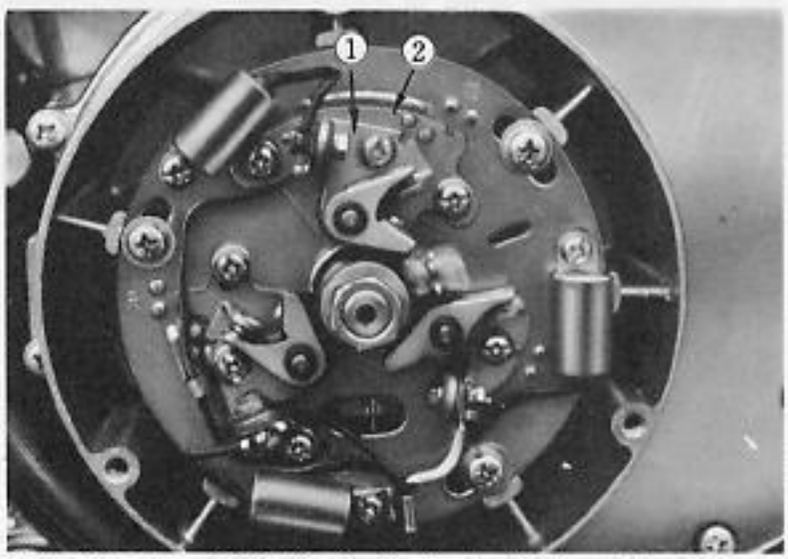


Fig. 10–46 Adjusting ig. timing for R.H. and L cylinders

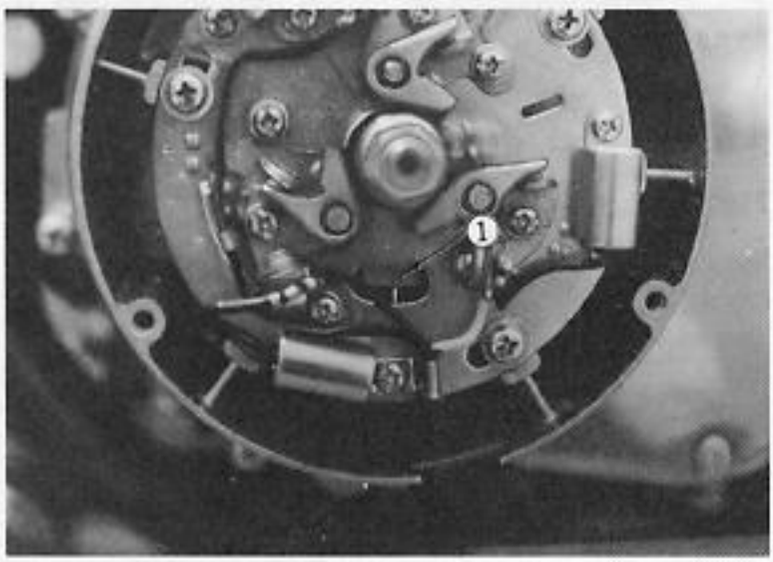
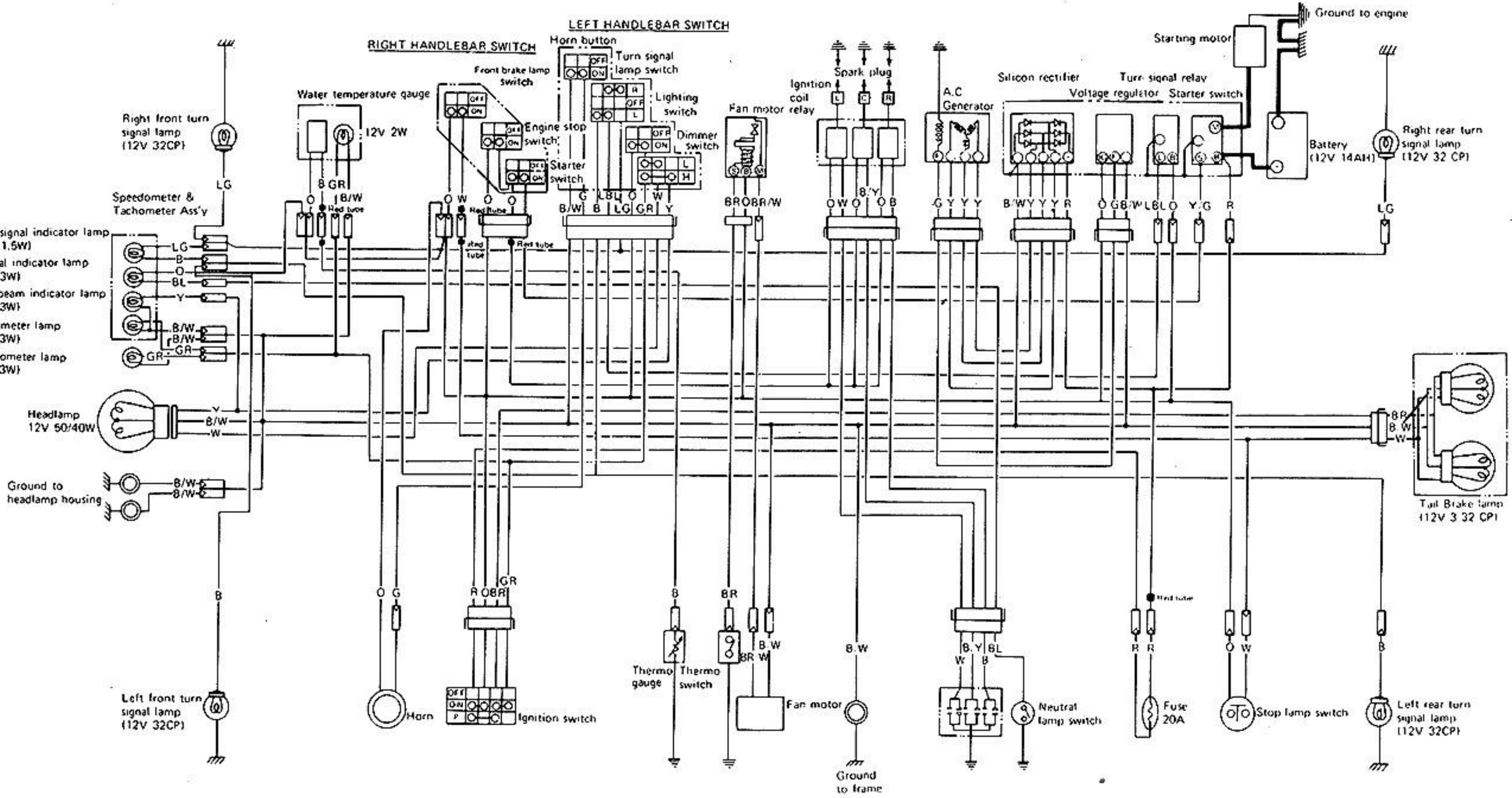


Fig. 10–47 Ignition timing marks

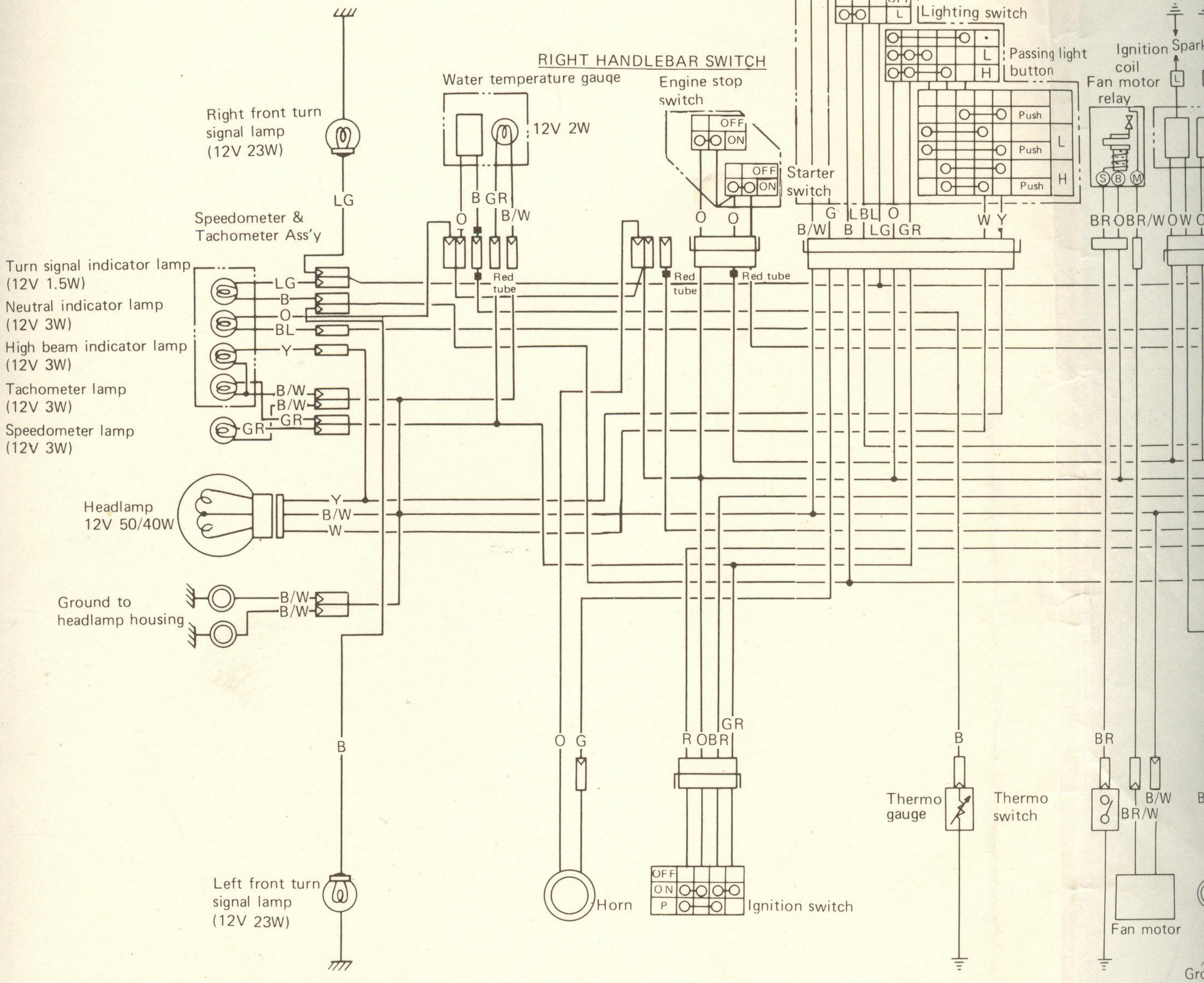
6. When adjusting the ignition timing with timing marks ① both on the timing plate and on the casing, rotate the crankshaft counterclockwise to check if the point opens when "L" marking line on the timing plate is in alignments with an aligning mark of the casing in the adjusting window. If it is out of order, turn the contact point base to and fro until the correct timing obtains.



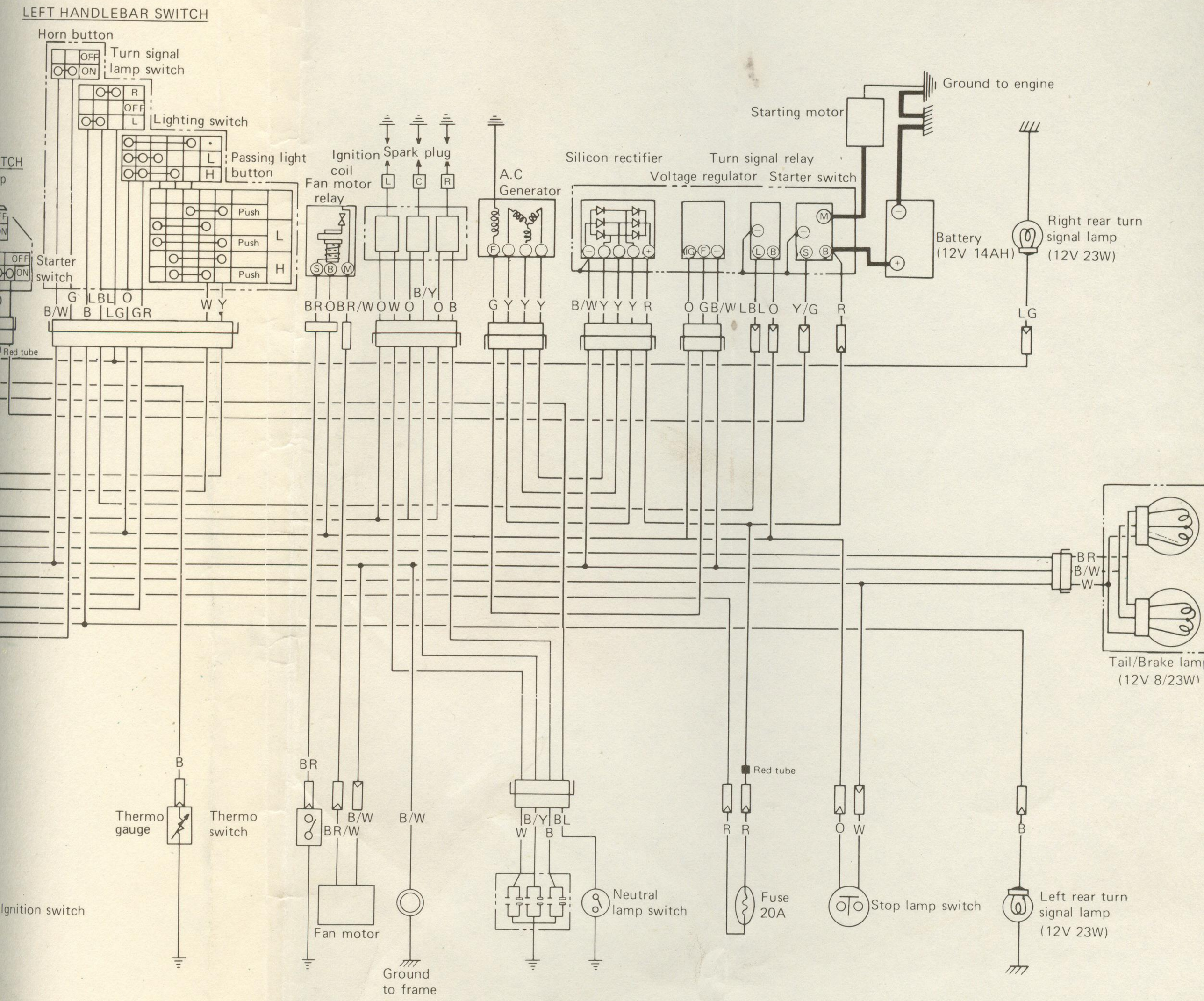
GT-750

O	Orange	G	Green	LBL	Light Blue	B.Y	Black with Yellow tracer
Y	Yellow	BR	Brown	B.W	Black with White tracer	BR.W	Brown with White tracer
B	Black	GR	Gray	Y/G	Yellow with Green tracer		
W	White	BL	Blue				
R	Red	LG	Light Green				

GT750 WIRING DIAGRAM (FOR STAND



G DIAGRAM (FOR STANDARD SPECIFICATION)



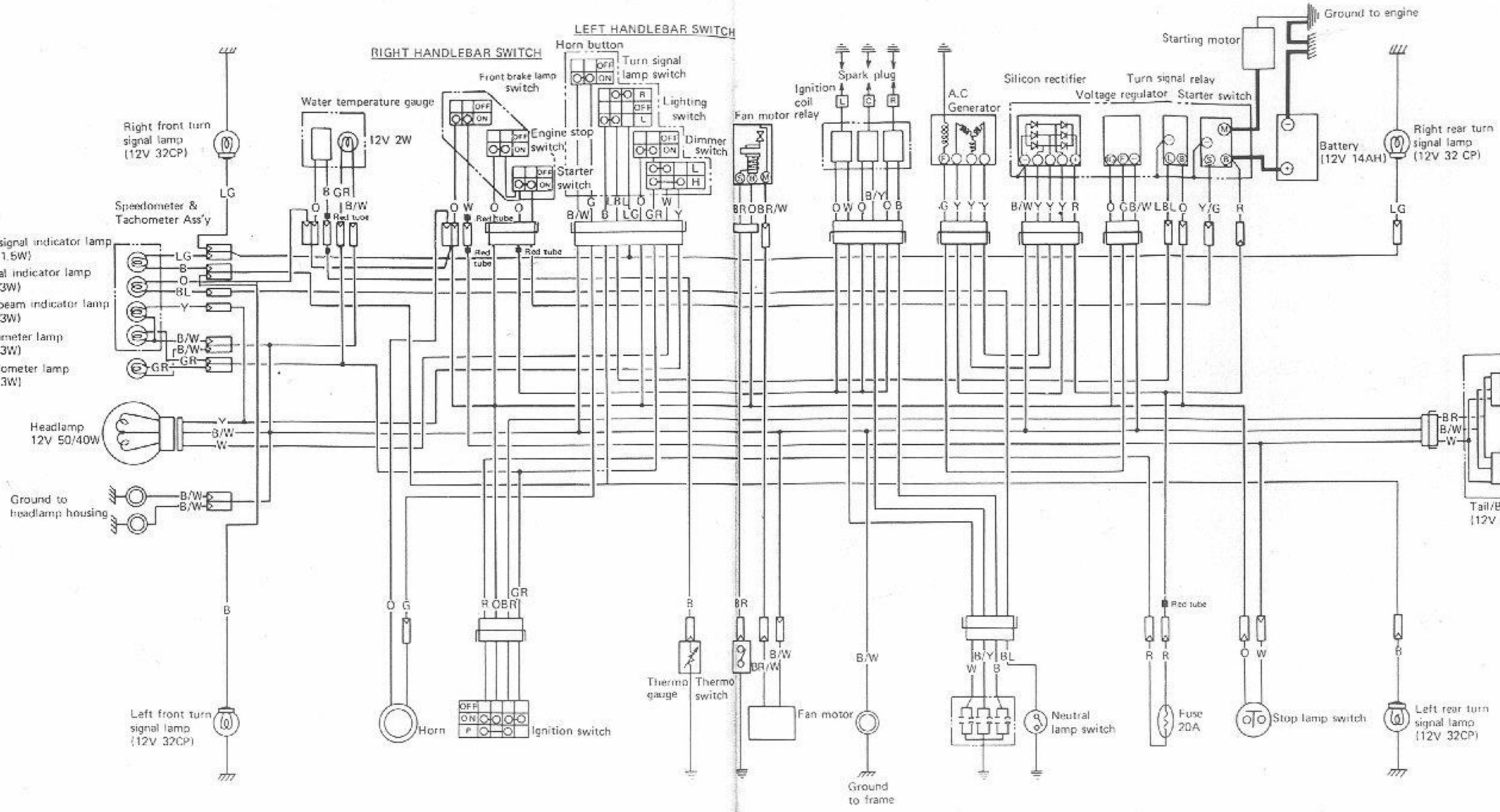
O . . . . . Orange
Y . . . . . Yellow
B . . . . . Black
W . . . . . White
R . . . . . Red

G . . . . . Green
BR . . . . . Brown
GR . . . . . Gray
BL . . . . . Blue
LG . . . . . Light Green

LBL . . . . . Light Blue
B/W . . . . . Black with White tracer
Y/G . . . . . Yellow with Green tracer

B/Y . . . . . Black with Yellow tracer
BR/W . . . . . Brown with White tracer

GT750 WIRING DIAGRAM (FOR USA & CANADA SPECIFICATION)



O	Orange	G	Green	LBL	Light Blue	B/Y	Black with Yellow tracer
Y	Yellow	BR	Brown	B/W	Black with White tracer	BR/W	Brown with White tracer
B	Black	GR	Gray	Y/G	Yellow with Green tracer		
W	White	BL	Blue				
R	Red	LG	Light Green				

GT750 WIRING DIAGRAM (FOR USA &

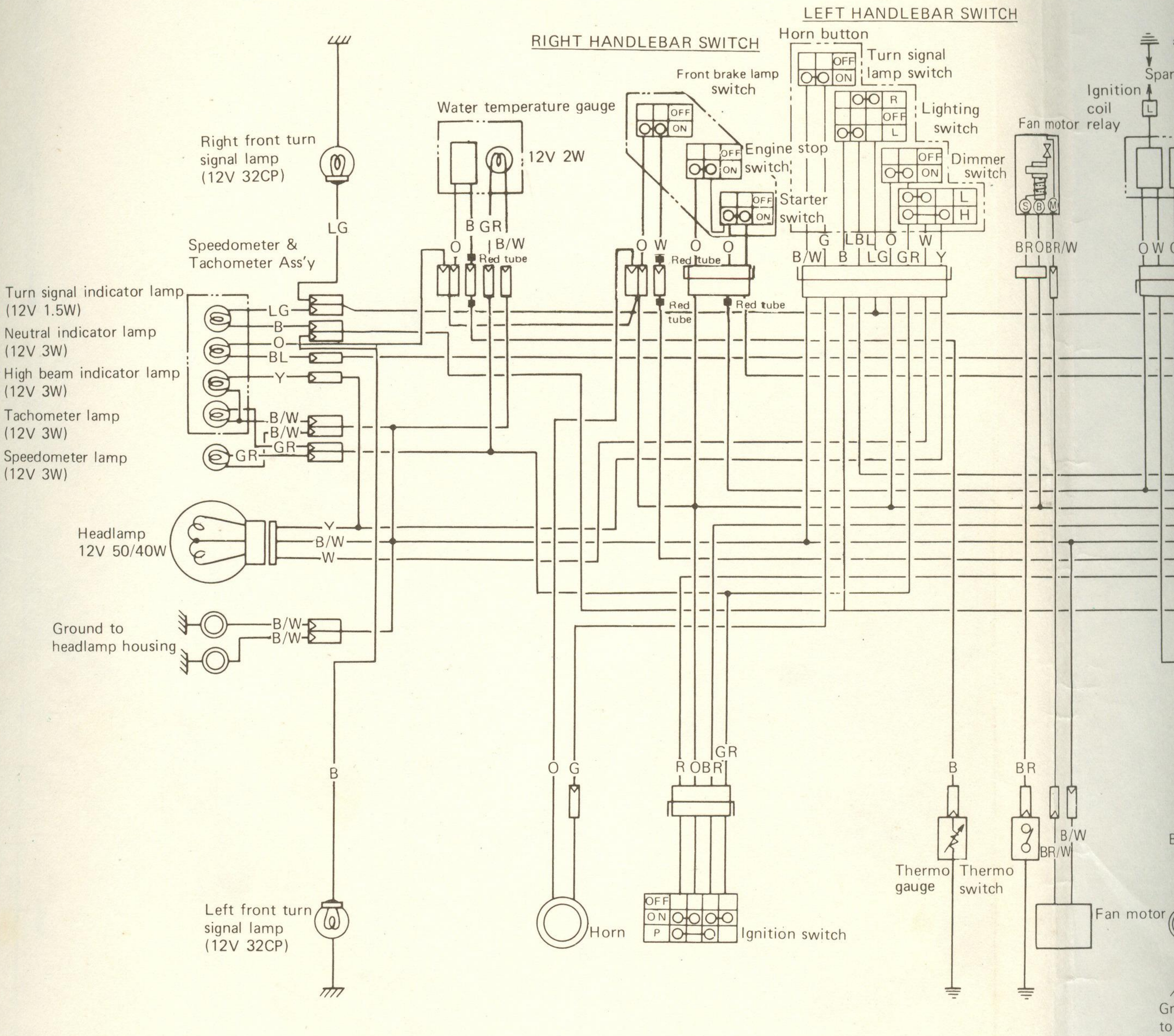
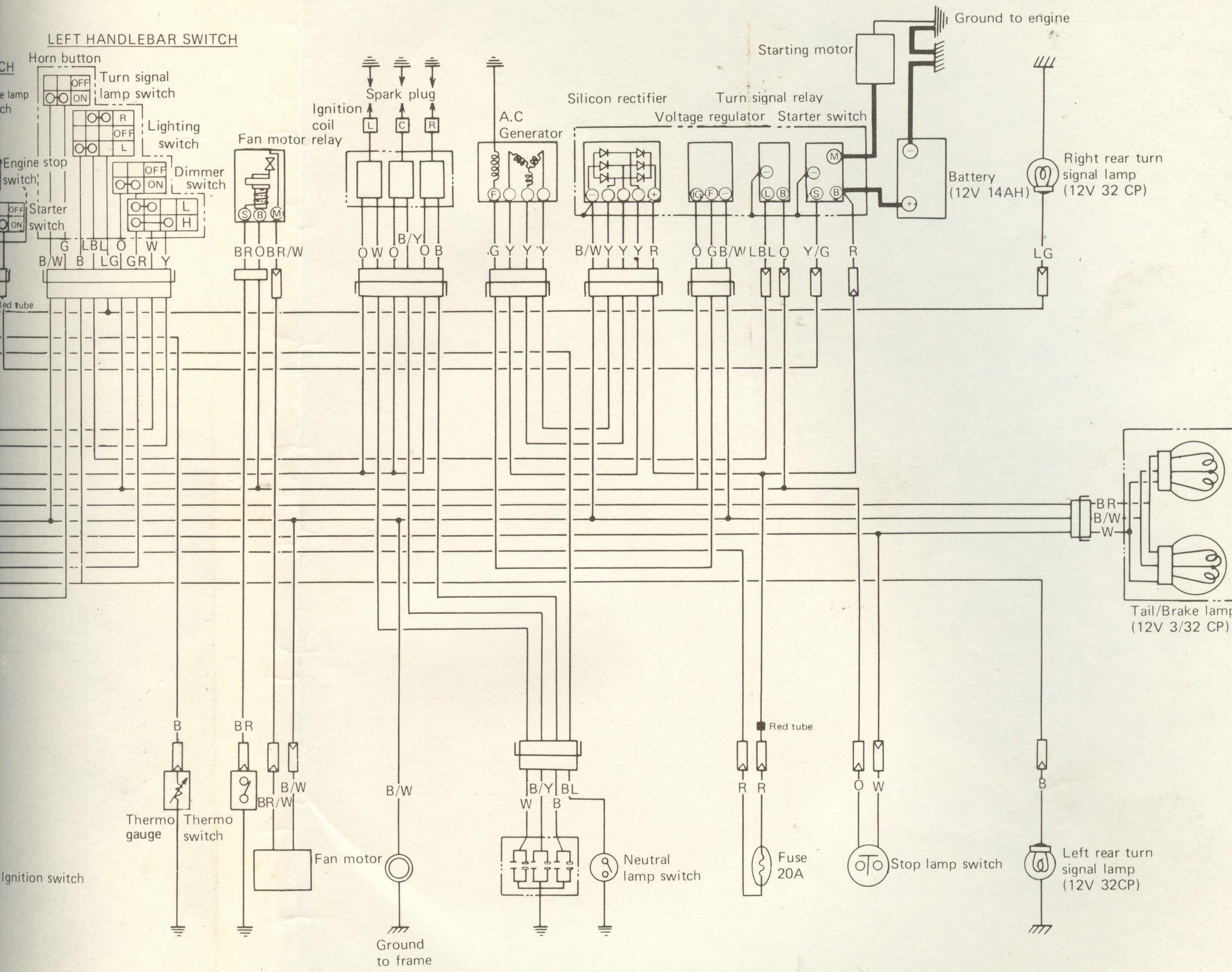
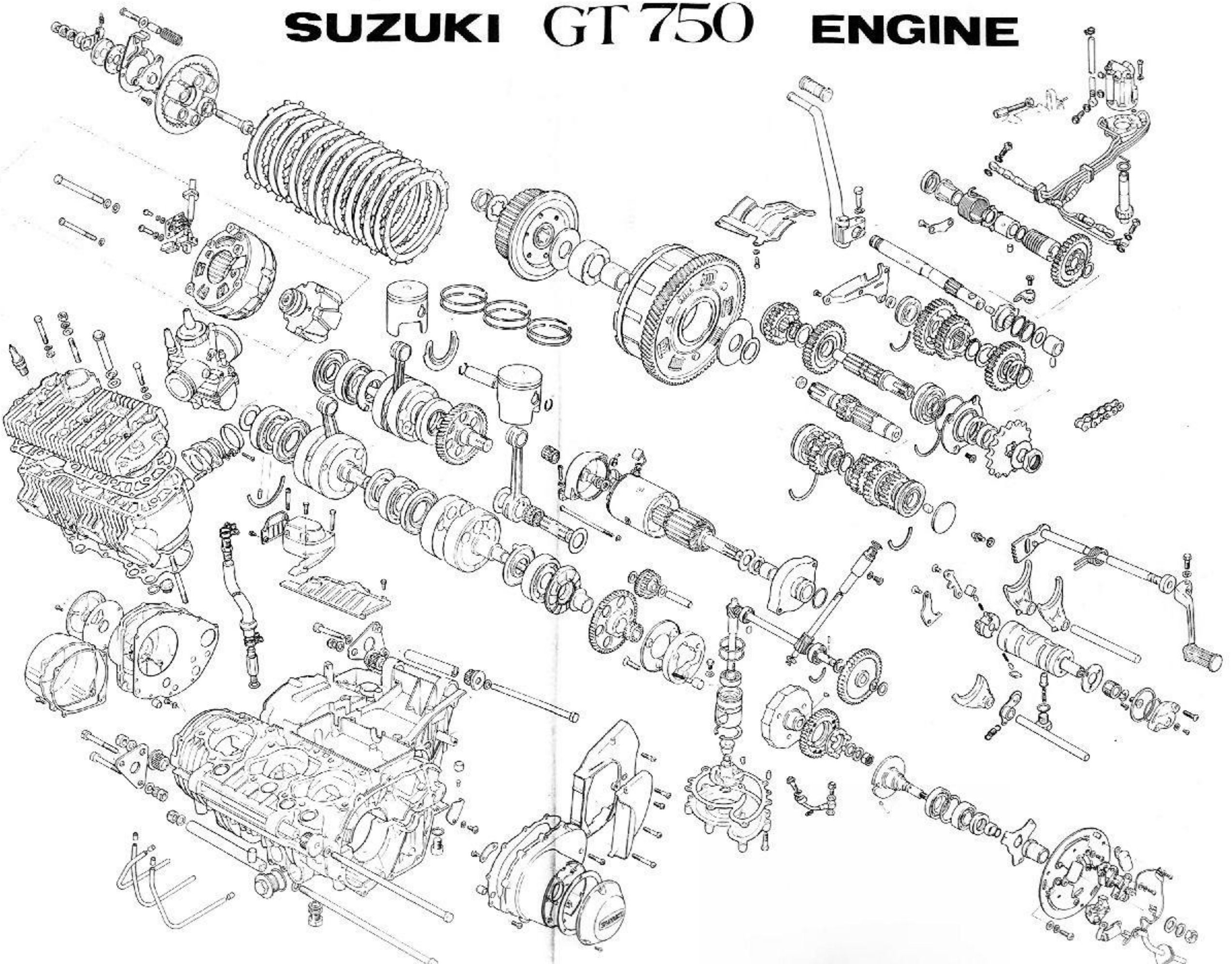


DIAGRAM (FOR USA & CANADA SPECIFICATION)



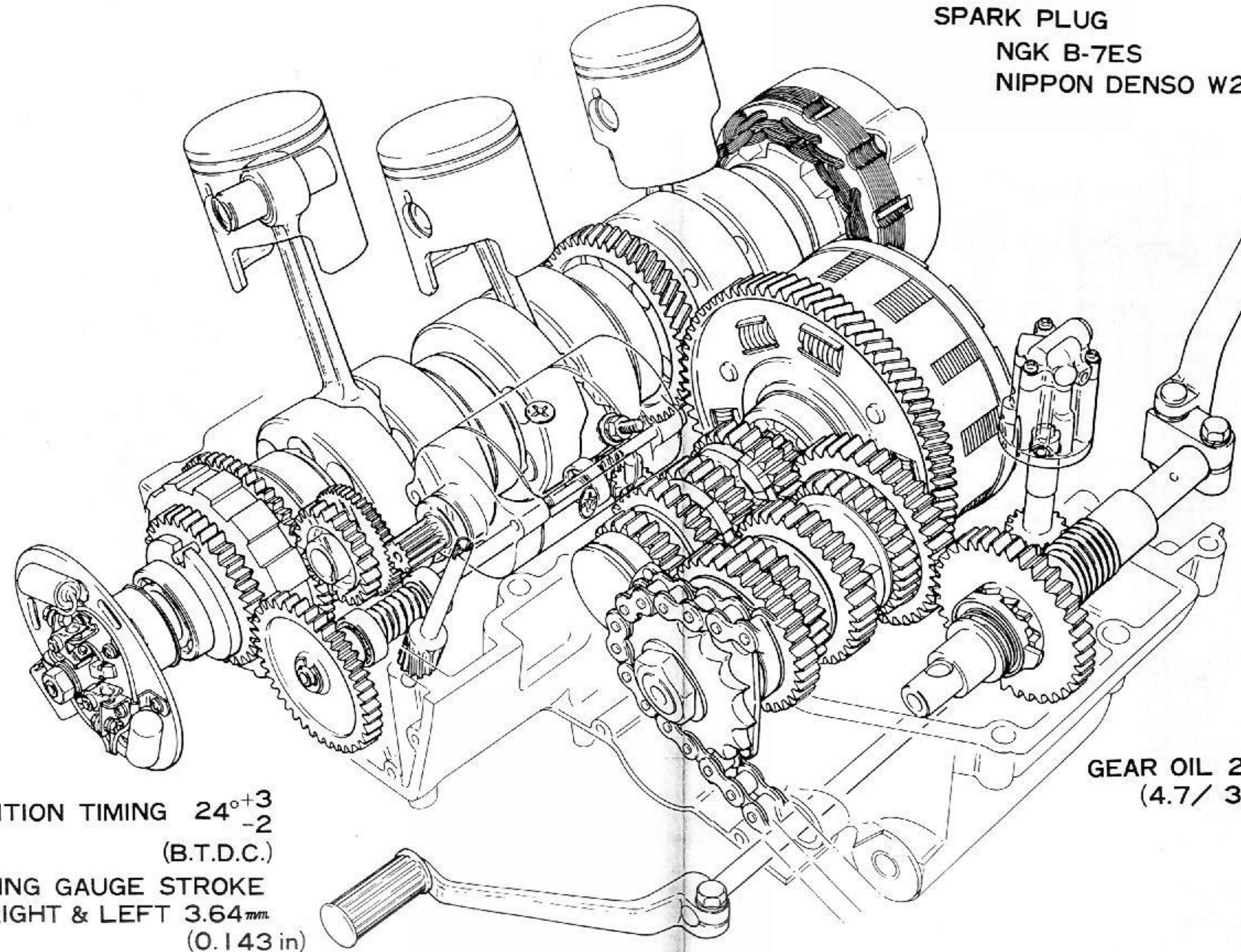
O	Orange	G	Green	LBL	Light Blue	B/Y	Black with Yellow tracer
Y	Yellow	BR	Brown	B/W	Black with White tracer	BR/W	Brown with White tracer
B	Black	GR	Gray	Y/G	Yellow with Green tracer		
W	White	BL	Blue				
R	Red	LG	Light Green				

SUZUKI GT750 ENGINE



SUZUKI GT750 GEARING DIAGRAM

SPARK PLUG
NGK B-7ES
NIPPON DENSO W22ES



GEAR OIL 2.2ℓ
(4.7/ 3.9 pt. US/ I

IGNITION TIMING $24°^{+3}_{-2}$
(B.T.D.C.)

TIMING GAUGE STROKE
RIGHT & LEFT 3.64mm
(0.143 in)

MIDDLE 3.42mm
(0.135 in)

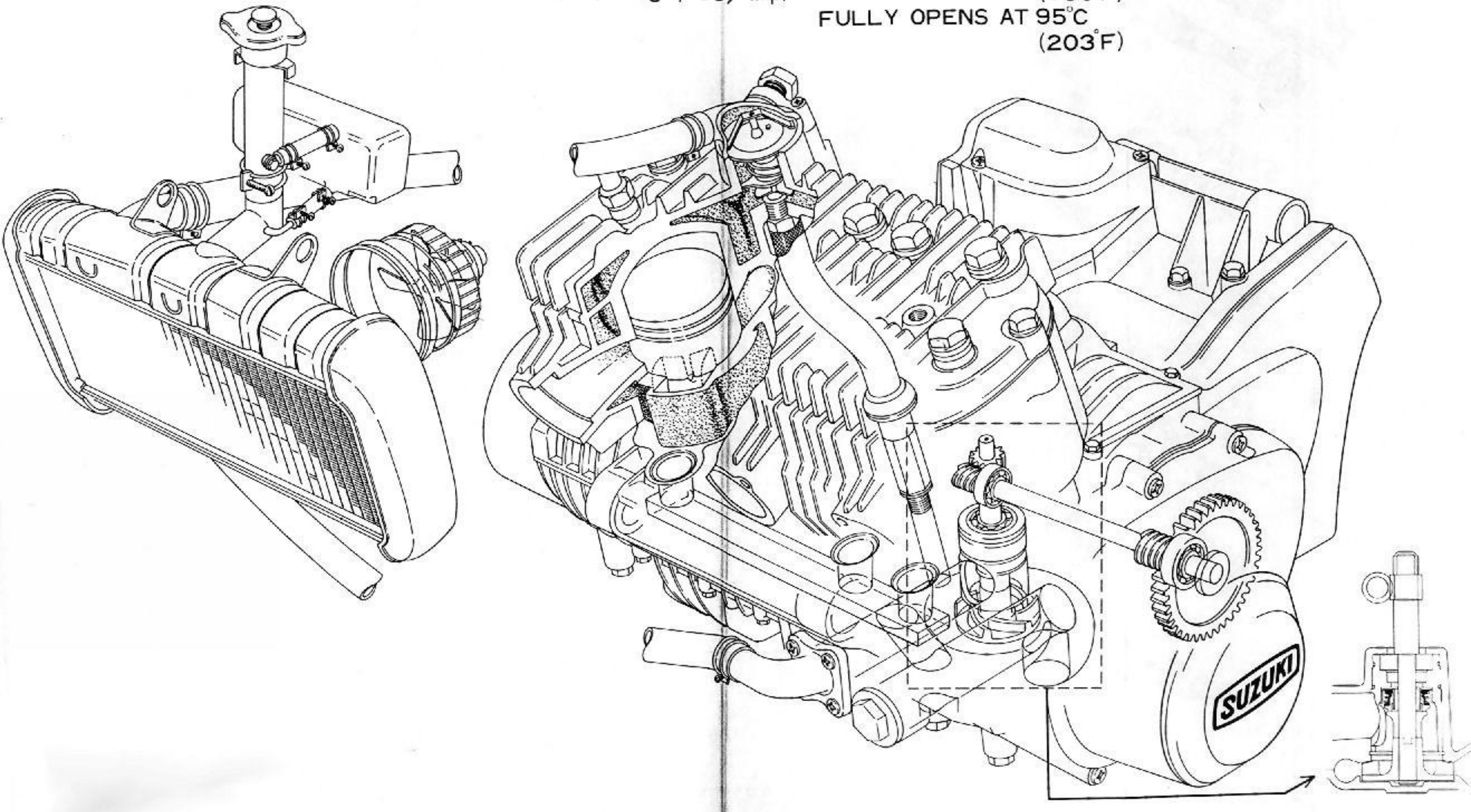
SUZ

PRINTED

SUZUKI GT750 COOLING SYSTEM

COOLING WATER CAPACITY 4.5 ℓ
(1.2/1.0gal, US/Imp)

THERMOSTAT
BEGINS TO OPEN AT 82°C
(180°F)
FULLY OPENS AT 95°C
(203°F)



SUZUKI



DISC BRAKE SERVICE MANUAL

FOR MODELS:

GT250, GT380, GT550 and GT750

FOREWORD

The purpose of this service manual is to provide a detailed description on the construction, operating principles, adjusting and operating methods of the hydraulic disc brakes which have been recently adopted to Models GT250, GT380, GT550 and GT750.

To ensure a safe operation of these models capable of high-speed performance, an adequate maintenance of the brakes is vital. This manual is presented in a simplest possible manner so that the materials included are easily comprehensive to you. We hope that correct maintenance of these disc brakes will be facilitated most effectively by utilization of this manual.

Because this manual has been compiled on the models of the motorcycles available as of November, 1972, it is possible that the contents of this manual may not necessarily correspond to the motorcycles delivered to you due to possible changes of their specifications.

November, 1972

Export Service Section

SUZUKI MOTOR CO.,LTD.

FEATURES OF DISC BRAKE

Compared with the conventional drum-type brakes, the hydraulic disc brake has the following features:

1) Heat radiation from the friction surfaces is quite effective since the discs rotate in direct contact with the air. Therefore, stable brake power can always be provided, even if the disc brake is used repeatedly at high speeds.
2) A brake lever stroke remains always constant since none of the disc brake parts is subjected to any deformation due to elevated temperatures.
3) Replacement of pads is simple and no troublesome adjustment is required.
4) Steady brake performance is ensured, since, even if the disc is wet during running in rainy weather or on muddy road, the restoring ability of brake power is excellent due to the extreme pressure characteristics for pushing pads.
5) It has a smooth operation, since it has little portion to be mechanically abrased.

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3. OUTLINE OF HYDRAULIC DISC BRAKE

3-1 General

The hydraulic disc brake adopted in Suzuki's models GT250, GT380, GT550 and GT750 consists of four main portions, i.e., brake discs mounted on a front wheel hub, master cylinder for pressurizing, brake pipe line for fluid pressure, and caliper which presses pads to brake disc by means of hydraulic pressures.

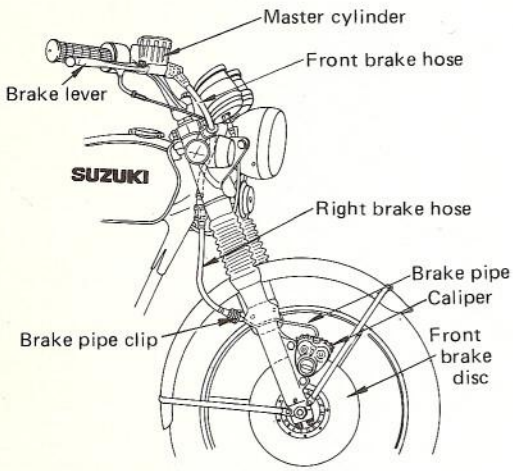


Fig. 3–1–1 (GT250, GT380 and GT550)

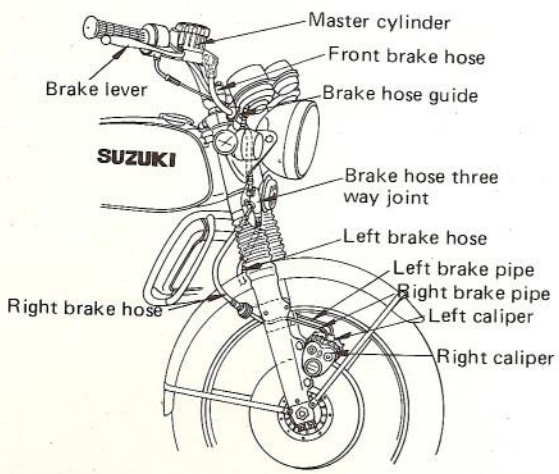


Fig. 3–1–2 (GT750)

3-2 Operation of Master Cylinder

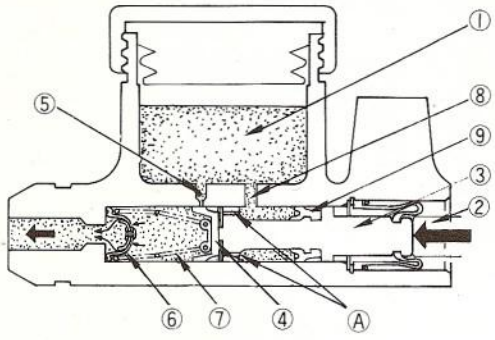


Fig. 3–2–1

1 Reservoir
2 Brake lever cam
3 Piston
4 Primary cup
5 Return port
6 Check valve
7 Spring
8 Inlet port
9 Secondary cup

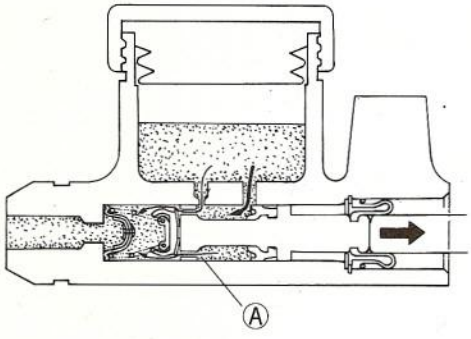


Fig. 3–2–2

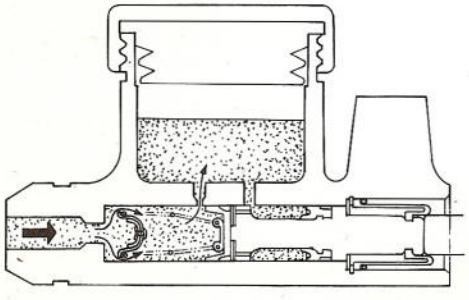


Fig. 3–2–3

3–2–1 Squeezing brake lever

The piston ③ is pushed in the direction of arrow by the brake cam ② when the brake lever is squeezed. The primary cup ④ also moves together with the piston and when it closes the return port ⑤ which is provided at the master cylinder body, brake fluid in front of the primary cup begins to be pressurized and delivered to the caliper by opening the check valve ⑥ with its pressure.

3–2–2 Releasing brake lever

As soon as the brake lever is released, the piston is pushed back by the spring ⑦ . Because the brake fluid from the caliper may not return to the master cylinder immediately due to its flow resistance, hydraulic pressure inside the cylinder is reduced momentarily and fluid flows from the reservoir to the front section of the primary cup through the inlet port ⑧ , three small holes Ⓐ on the piston flange and the circumference of the primary cup.

Then high pressure brake fluid from the caliper releases the check valve body from its contact with the outlet part allowing to have the clearance for a fluid passage. A small amount of the fluid returns from the caliper to the master cylinder through the clearance thus made by the movement of the check valve body.

3–2–3 After completing return stroke of brake lever

A large amount of the brake fluid having been delivered to the caliper returns to the reservoir through the clearance behind the check valve base and the return port on the master cylinder body.

As the brake fluid from the caliper returns to the reservoir, hydraulic pressure in the brake hose is reduced gradually and the spring tension surmounts the hydraulic pressure of the brake hose resulting in closing the clearance behind the check valve base. However, some fluid pressure still remains in the brake hose because of the initial tension of the spring. Brake fluid continues to flow into the reservoir through a small notch provided around the periphery of the check valve body and the return port. The master cylinder completes its operation when residual pressure in the brake hose vanishes completely.

3-3 Operation of Caliper

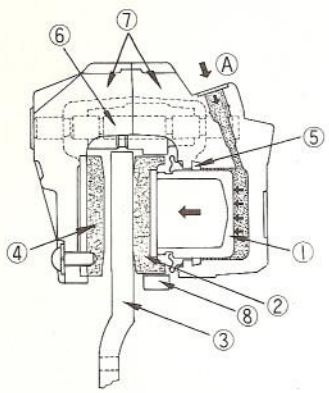


Fig. 3–3–1

1	Piston	5	Piston seal
2	Pad No.1	6	Caliper axle
3	Brake disc	7	Caliper body
4	Pad No.2	8	Caliper holder

3–3–1 Squeezing brake lever

Brake fluid from the master cylinder delivered under pressure flows into the caliper cylinder through inlet portion Ⓐ of the caliper and pushes piston ① in the direction of arrow..

The pushed piston moves together with the pad No. 1 ② in this direction until it can not move any further forward due to the pad No. 1 hitting brake disc ③ .

As soon as the pad No. 1 touches the brake disc so that the piston may not move any further, the caliper body floating on the caliper axle is pushed in reverse direction by the fluid pressure in the cylinder and moves in the right side direction as shown in Fig. 3–3–2.

Since the pad No. 2 ④ is mounted to the caliper body, the disc is subjected to a powerful braking force with pads Nos. 1 and 2 depressing the disc from opposite directions respectively.

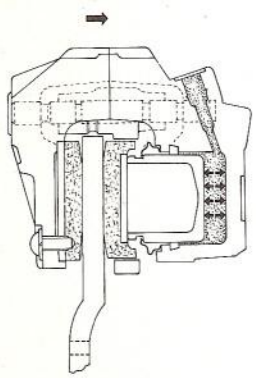


Fig. 3–3–2

3–3–2 Releasing brake lever

When the brake lever is released and fluid pressure in the caliper cylinder vanishes, the piston moves in the direction of arrow in Fig. 3–3–3, being pushed by piston seal ⑤ which was pressed onto the piston by fluid pressure and is now restoring its original shape with fluid pressure released. Therefore, the pads pressed to the disc part from the disc since the piston moves as much as the piston seal displacement, thus setting the brake disc free.

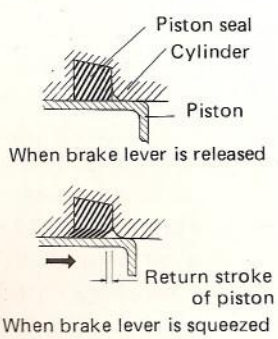


Fig. 3–3–3

3–3–3 Self adjusting of clearance between pads and disc

If the traveling distance of piston exceeds the displacement of the piston seal, the piston is moved as far as the braking stroke while the piston slides between itself and the piston seal, whereas a return stroke of the piston due to the piston seal restoration after brake release is always constant and the returned position of the piston relatively varies with the wear of pads.

Consequently, clearance between the pads and the piston, or between the pads and the brake disc is always kept constant regardless of the condition of pad wear.

4. INSPECTION AND REPAIR

4-1 Brake Fluid and Its Handling

4–1–1 Replenishing brake fluid

Be sure to check brake fluid level in the reservoir after removing the reservoir cap ① and diaphragm ② . In inspecting brake fluid, first mount your motorcycle firmly onto the center stand with its handlebar kept straight up without fail. If the level is found to be lower than the level mark ③ provided on the reservoir, replenish the reservoir with motorvehicle brake fluid graded "DOT 3" or "DOT 4" in U.S.A. and equivalents in other countries.

Note : **Since the brake system of these motorcycles is filled with a glycol base brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise damage sustained will be serious.**

Do not use any brake fluid taken from old or used, or unsealed containers.

Do not squeeze the brake lever while the reservoir cap is removed, otherwise brake fluid will sometimes spout out. Brake fluid will damage the paint surface and instrument gauge lenses.

Take due care especially so that water may not enter brake fluid on rainy day particularly duing replacement or in handling a brake fluid container, because brake fluid has hygroscopic property, and its boiling point falls excessively if water is mixed with it.

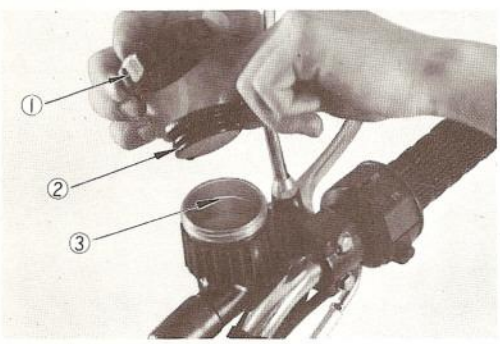


Fig. 4–1–1



Fig. 4–1–2

4–1–2 Air bleeding from brake system

If the brake lever travel becomes excessive or the lever feels a soft or spongy feeling, you must carry out air bleeding from the brake system in the following procedure:
It is best if two persons perform this.

1) Attach the bleeder tube to the bleeder valve after removing the bleeder valve dust cap as shown in Fig. 4–1–2. A transparent tube is useful in finding air bubble expelled from the system.
2) The tube must be submerged in a clean container partially filled with brake fluid.
3) Fill the reservoir with the aforementioned brake fluid.
   Note : Keep at least one half full of fluid in the reservoir during the bleeding procedure.
4) Screw in the cap on the reservoir to prevent a spout of brake fluid and entry of dust.
5) Allow the pressure in the hydraulic system by squeezing rapidly the brake lever several times and then holding the lever tight.
6) Unscrew (open) the bleeder valve by one half turn and squeeze the lever all the way down. Do not release the lever until the bleeder valve is screwed in (closed) again.

7) Repeat steps 5) and 6) until air bubbles disappear in the bleeder tube or container and screw in (close) the bleeder valve securely.
8) Remove the tube and install the bleeder valve dust cap.
9) Check the fluid level in the reservoir and replenish if necessary, after the bleeding operation has been completed.
10) Reinstall the diaphragm and the diaphragm plate and tighten the reservoir cap securely.
Caution: Do not reuse the brake fluid drained from the system.

For model GT750, bleed air at first from the left-hand side caliper and then from the right according to the aforementioned procedure.

4–1–3 Changing brake fluid

Boiling point of brake fluid falls considerably with absorption of moisture which may take place during a long period of use. Therefore, it is recommended to exchange old brake fluid with new one periodically.

Exchange interval : One year

On changing brake fluid, extreme attention should be paid so as not to mix any foreign materials because they would block the return port of the master cylinder resulting in the brake dragging or squeaking.

When brake fluid is to be changed, perform the following procedure.
1) Attach a bleeder tube to the bleeder valve. Drain out old brake fluid by squeezing the brake lever with the bleeder valve opened until the brake fluid disappears in the bleeder tube.
2) After old brake fluid is drained out from the system completely, carry out the same procedure as described "4–1–2 Air bleeding".

4-2 Inspection and Replacing Method of Pads

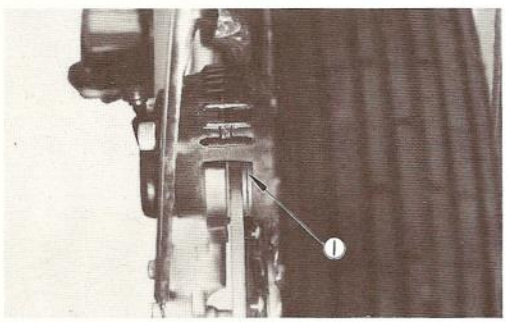


Fig. 4–2–1

4–2–1 Inspection of pads

Check worn condition of the friction pads. If any of the friction pads is worn out up to the red limit line ① marked on its circumference, replace it following the procedure of "4–2–2" or "4–2–3".

Caution : Wash mud and dust off around the front wheel and/or caliper prior to the replacing operation.



Fig. 4–2–2

4–2–2 Replacing of pads for models GT250, GT380 or GT550

1) Set up the center stand and load at the rear portion to let the front wheel free.
2) Remove the front wheel assembly.
3) Unscrew the pad fastening screw, and take off pad No. 2.

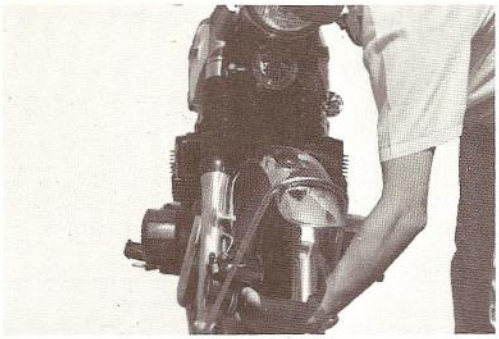


Fig. 4–2–3

4) Squeeze the brake lever two or three times gradually to force out pad No. 1 by fluid pressure while observing the motion of pad.

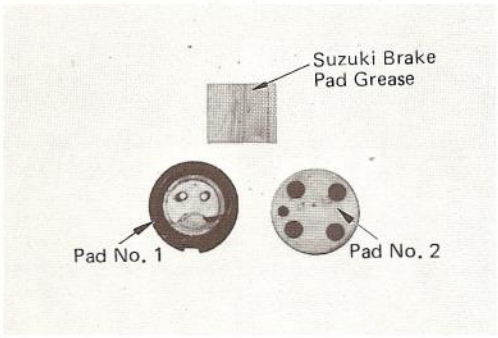


Fig. 4–2–4

5) Apply Suzuki Brake Pad Grease, which is provided as a component of Pad Set as shown in Fig. 4–2–4, onto the periphery and back plate of pad No. 1 as illustrated in Fig. 4–2–5 in a very thin layer.

Caution : **Do not use another grease.**

Apply grease thinly so as not to flow out resulting in reduced brake performance.

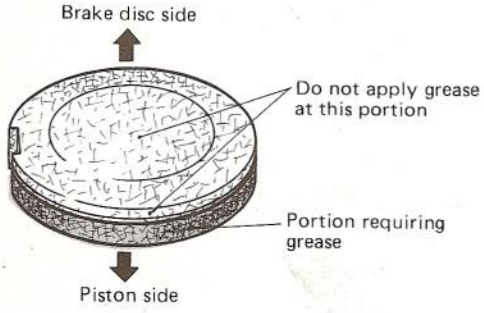


Fig. 4–2–5



Fig. 4–2–6

6) Push in pad No. 1 into the caliper holder.
7) Mount pad No. 2 to the caliper body.

Caution : **Do not apply any grease to the pad No. 2, and take care not to mount it inclined.**

8) Install the front wheel assembly to the front fork.
9) Squeeze the brake lever two or three times to confirm its operation, and bleed air if necessary.



Fig. 4–2–7

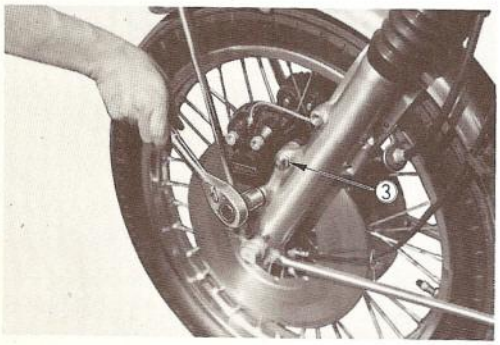


Fig. 4–2–8

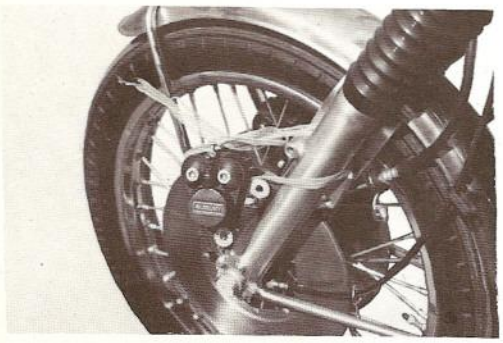


Fig. 4–2–9

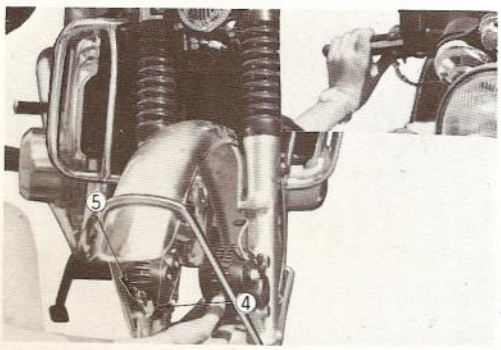


Fig. 4–2–10

4–2–3 Replacing of pad for model GT750

1) Take off the left brake pipe cover ① and pipe guide ② as shown in Fig. 4–2–7.

2) Loosen the two left caliper fitting bolts ③ as shown in Fig. 4–2–8.

3) Detach the left caliper with the brake pipe connected and fix it on the front fork by string or hold it unmoved so as not to bend the brake pipe as shown in Fig. 4–2–9.

4) Take off the front wheel assembly.

5) Mount the removed left caliper to the front fork.

6) Insert a spacer ④ between pads Nos. 1 and 2 of the right caliper to stop piston movement and clip it with an elastic rubber ring ⑤ to prevent it from falling as shown in Fig. 4–2–10.

7) Replace pads Nos. 1 and 2 of the left caliper in the same method as for models GT250, GT380 and GT550.

8) Remove the spacer from the right caliper, and insert it in the left caliper.

9) Replace pads Nos. 1 and 2 of the right caliper.

10) Take off the left caliper and hold it.

11) Install the front wheel assembly to the front fork.

12) Mount the left caliper to the front fork.

13) Mount the left brake pipe cover and guide.

14) Squeeze the brake lever two or three times to confirm its operation, and bleed air if necessary.

Note : When replacing the front tire or repairing puncture, it is necessary to remove the left caliper before removing the front wheel assembly.

4-3 Master Cylinder, and Brake Hose and Brake Pipe

4–3–1 General

Index No.	Description	Q'ty
1	Master cylinder assembly	1
2	Secondary cup	1
3	Primary cup	1
4	Stop plate	1
5	Circlip	1
6	Boot	1
7	Check valve	1
8	Diaphragm	1
9	Diaphragm plate	1
10	Reservoir cap	1
11	Washer	2
12	Bolt	2
13	Master cylinder boot	1
14	Bolt	1
15	Washer	2
16	Brake front hose	1
17	Right brake hose	1
18	Brake hose guide	1
19	Nut	1
20	Lock washer	1
21	Grommet	1
22	Brake hose grommet	1
23	Brake hose clamp	1
24	Hose clamp lock plate	1
25	Grommet	1
26	Lock washer	1
27	Screw	1
28	Brake pipe cover	1
29	Brake pipe	1
30	Spring	1
31	Piston	1
32	Boot plate	1
33	Boot stopper	1

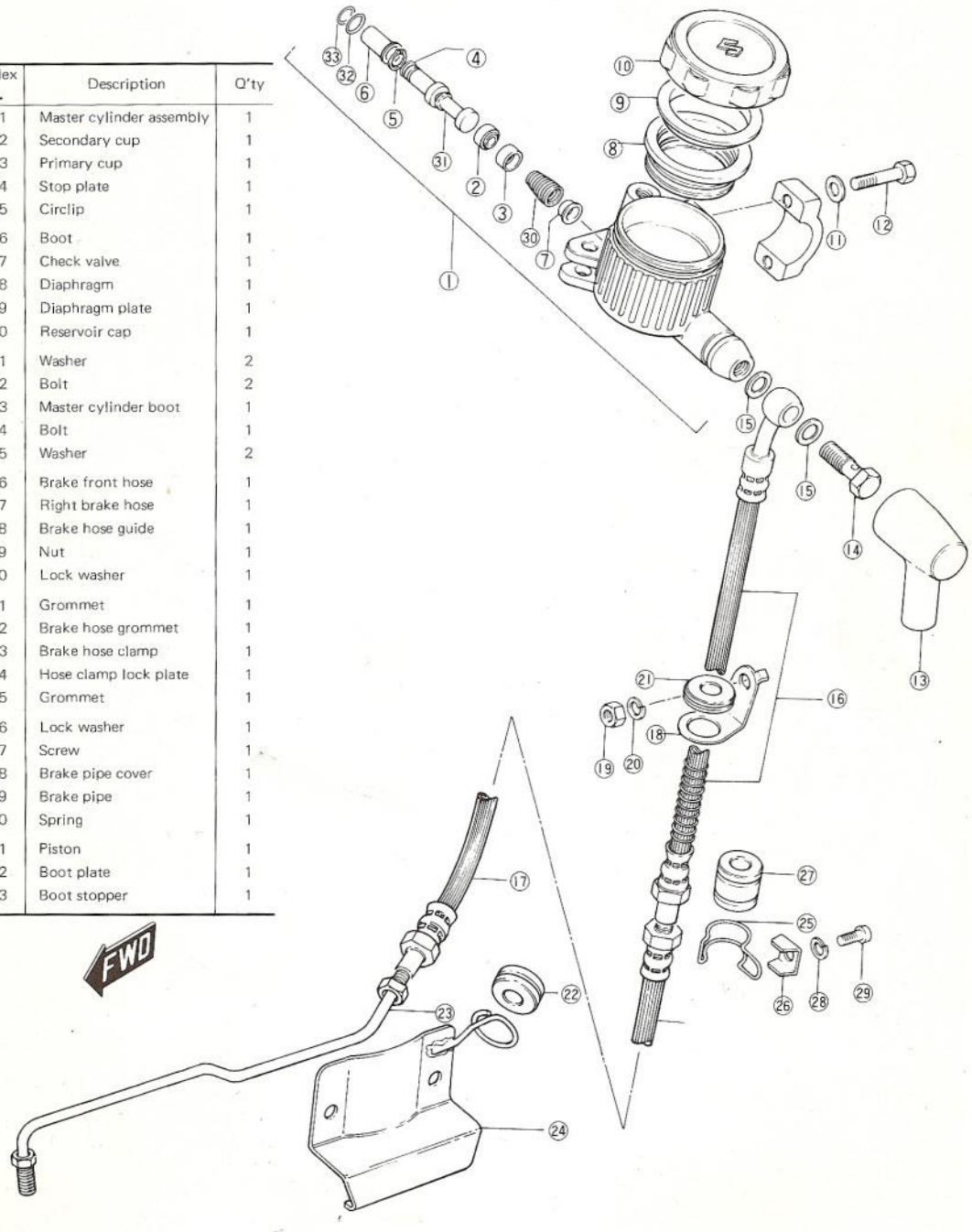


Fig. 4–3–1 (GT250, GT380 & GT550)

Index No.	Description	Q'ty
1	Master cylinder assembly	1
2	Secondary cup	1
3	Primary cup	1
4	Plate stop	1
5	Circlip	1
6	Boot	1
7	Check valve	1
8	Diaphragm	1
9	Diaphragm plate	1
10	Reservoir cap	1
11	Washer	2
12	Bolt	2
13	Master cylinder boot	1
14	Union bolt	4
15	Washer	8
16	Front brake hose	1
17	RH & LH brake hose	2
18	Brake hose guide	1
19	Grommet	1
20	Grommet	2
21	RH brake pipe	1
22	LH brake pipe	1
23	RH brake pipe cover	1
24	LH brake pipe cover	1
25	LH brake pipe guide	1
26	Screw	1
27	Lock washer	1
28	Three way joint	1
29	Spring	1
30	Piston	1
31	Boot plate	1
32	Boot stopper	1

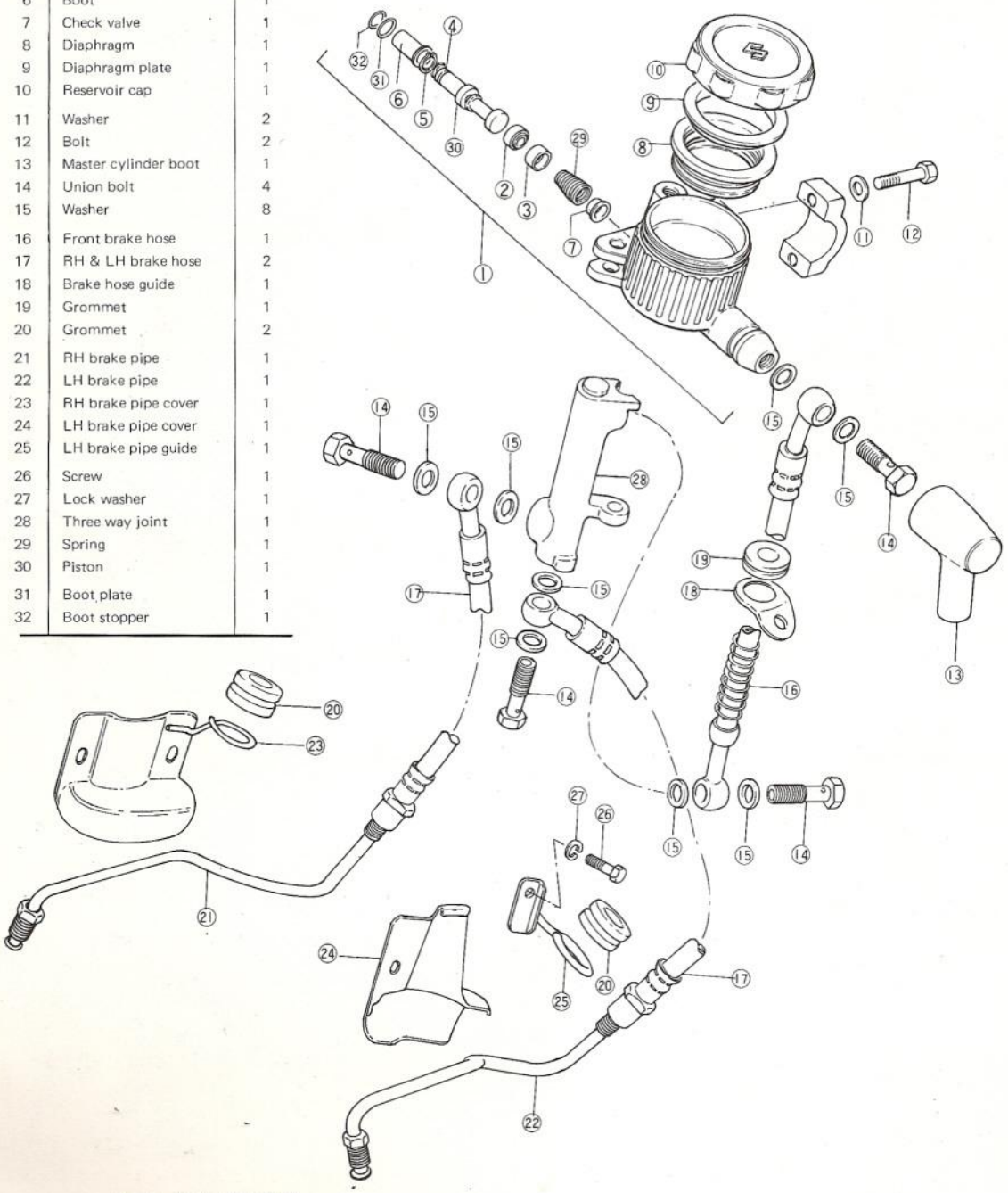


Fig. 4–3–2 (GT750)

Always check the master cylinder, brake hose and the brake pipe for operation and leakage of brake fluid since they are very important parts for safe riding.

If any abnormal condition is found, repair or replace. Though every part is made of material rigidly selected under high degree quality control, periodically replace the master cylinder piston cup and its related parts in order to always keep the motorcycle in its best condition.



Fig. 4–3–3

4–3–2 Removing master cylinder

1) Remove the stop switch from the master cylinder (only for U.S.A. and Canadian specification).

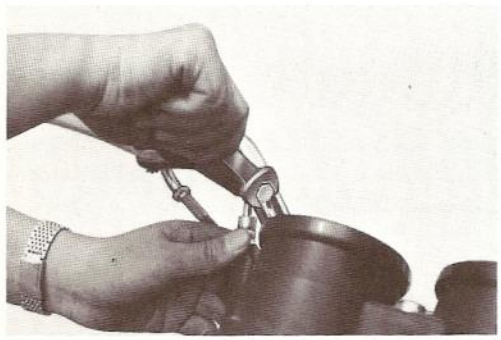


Fig. 4–3–4

2) Put a piece of rag beneath the union bolt on the master cylinder to catch drops of brake fluid. Unscrew the union bolt and disconnect the connection between the brake hose and the master cylinder as shown in Fig. 4–3–4.
3) Unscrew two master cylinder fastening bolts and remove the master cylinder body from the handlebar.
4) Empty brake fluid out of the reservoir.

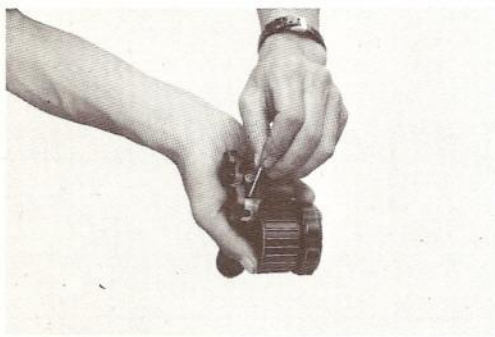


Fig. 4–3–5

4–3–3 Disassembling master cylinder

1) Remove the brake lever.
2) Remove the boot stopper while taking care not to damage the boot and then remove the boot as shown in Fig. 4–3–5.

4–3–7 Assembling brake hose and pipe

When connecting the brake hose and pipe, pay attention to the following points.

1) Be sure to use new brake pipe at all times when the brake pipe is assembled, because the cut end of the used brake pipe has been flared along the shape of the caliper inlet or the brake hose outlet as shown in Fig. 4–3–13. If the used pipe is reinstalled as it is, the air-tightness of the connection decreases, causing the brake fluid leakage.

2) When tightening two brake hose joints for models GT250, GT380 and GT550, be sure to be free either hose so that may not be twisted.

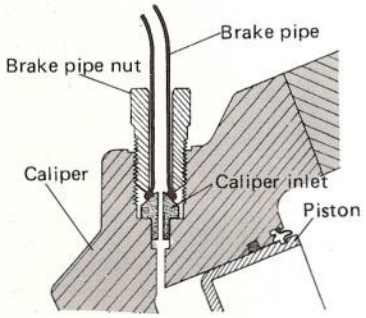


Fig. 4–3–13

3) When connecting the brake pipe to the caliper body, screw the nut in with your fingers to prevent stripping the threads, then tighten with a wrench to the specified torque.

4) Check that there is a generous space between each of them and the fuel tank, the front fork or other parts, and correct if any abnormality is found. Check that the hose or pipe does not contact any other parts particularly when the handlebar is turned fully to the right or left or when the front fork is brought down to the bottom.

5) After the assembling, check for no brake fluid leakage at any connection while holding the brake lever tightly.

4-4 Caliper

4–4–1 General

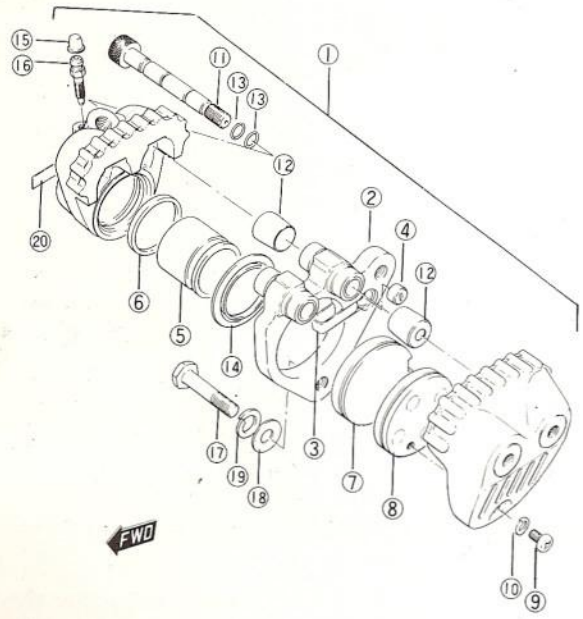


Fig. 4–4–1

Index No.	Description	Q'ty
1	Caliper assembly	1
2	Caliper holder	1
3	Caliper stopper	1
4	Stopper rubber	1
5	Piston	1
6	Piston seal	1
7	Pad No. 1	1
8	Pad No. 2	1
9	Screw	1
10	Lock washer	1
11	Caliper axle	2
12	Axle dust cover	4
13	Caliper axle "O" ring	4
14	Piston boot	1
15	Bleeder cap	1
16	Bleeder	1
17	Bolt	2
18	Washer	2
19	Lock washer	2
20	Caliper emblem	1

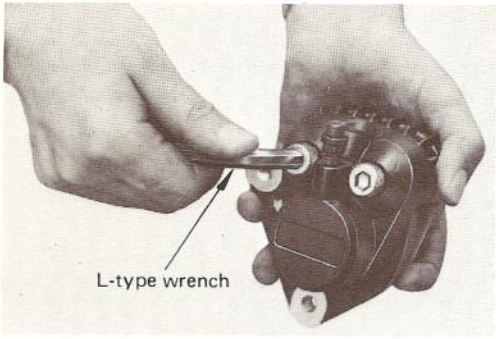


Fig. 4–4–2

4–4–2 Removing

1) Unscrew the brake pipe nut and caliper fastening bolts.
2) Pull out the caliper body from the disc plate.

4–3–3 Disassembling

1) Unscrew the caliper axle bolts with a special tool (8 mm hexagon L-type wrench 09900–06904) and separate the inner caliper body from the outer body as shown in Fig. 4–4–2.



Fig. 4–4–3

2) Remove the caliper holder.
3) Remove "O" rings on the caliper axle.
4) Remove the caliper axles.
5) Remove the piston boot.
6) Push out the piston with compressed air while holding it with finger to prevent it from blowing out as shown in the figure.



Fig. 4–4–4

7) Remove the piston seal.



Fig. 4–4–5

8) Wash the piston, piston boot, piston seal and "O" rings of the caliper axles with new brake fluid.

Caution : **Never use gasoline or petroleum; otherwise rubber parts will be damaged.**

Do not wash the pads and also take care that brake fluid is not splashed onto the pads.

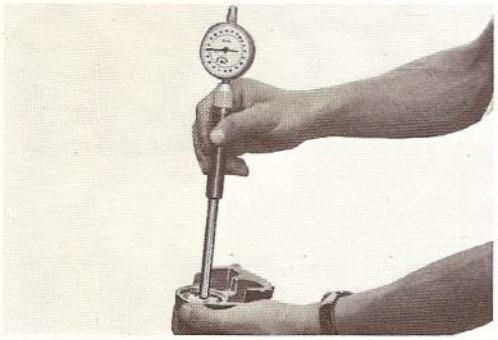


Fig. 4–4–6



Fig. 4–4–7

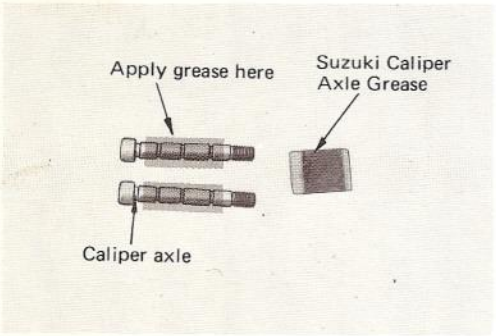


Fig. 4–4–8



Fig. 4–4–9

4–4–4 Checking

When disassembling the caliper, check the following points and replace if any abnormality is found.

1) Cylinder: Its inner diameter is not worn out of its limit.

Standard	Limit	Model
38.18 to 38.20 mm (1.503 to 1.504 in.)	Over 38.22 mm (1.504 in.)	GT250 GT380 GT550 GT750

2) Piston: Its outer diameter is not worn out of its limit.

Standard	Limit	Model
38 15 to 38.18 mm (1.502 to 1.503 in.)	Under 38.10 mm (1.500 in.)	GT250 GT380 GT550 GT750

3) Piston seal: No damage nor excessive wear
4) Piston boot: No damage nor settling
5) Pads Nos. 1 and 2: Not worn out of its limit (refer to page 10).
6) Caliper body: No crack

4–4–5 Assembling

Follow the removal procedure in the reverse order. When assembling them, pay attention to the following points.

1) Apply Suzuki Caliper Axle Grease with property of high heat resistance onto the caliper axle as shown in Fig. 4–4–8.
2) Apply a generous amount of brake fluid onto the inner surface of the cylinder and periphery of the piston and then assemble.
3) Do not assemble the piston seal with it inclined or twisted.
4) In installing the piston, push it slowly into the cylinder while taking care not to damage the piston seal.
5) Apply Suzuki Brake Pad Grease onto the periphery of pad No. 1 (refer to page 11).
6) Bleed air after assembling (refer to page 9).
7) After bleeding air, check for brake fluid leakage while holding the brake lever tightly.
8) After a test run, check the pads and brake disc do not press each other excessively by turning the front wheel by hand.

4-5 Brake Disc

4–5–1 General

The brake disc, made of stainless steel having excellent heat-resistance and abrasion-proof properties, is fastened to the front hub with six high tensile strength bolts.

Runout or wear of the brake disc may not only reduce braking performance but also cause the brake to squeak.



Fig. 4–5–1

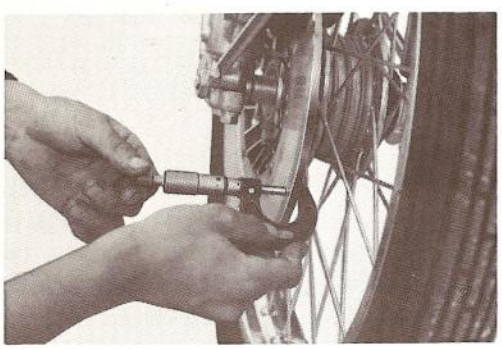


Fig. 4–5–2

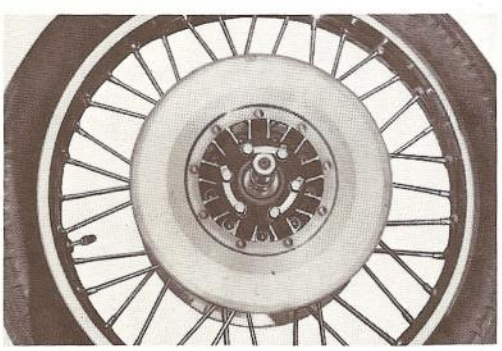


Fig. 4–5–3

4–5–2 Checking

1) Runout of the brake disc should be not greater than the limit. Measure brake disc runout with a dial indicator as shown in Fig. 4–5–1. If the runout is over the limit on the largest periphery of the disc plate, check whether the cause lies in the front wheel bearing or the brake disc itself, and replace defective parts.

Standard	Limit	Model
0.1 mm (0.004 in.)	0.3 mm (0.012 in.)	GT250 GT380 GT550 GT750

2) Thickness of the brake disc should be not less than the limit. Measure its worn portion with a micrometer as shown in Fig. 4–5–2 and replace the brake disc if the thickness is less than the limit.

Standard	Limit	Model
7.00 mm (0.276 in.)	Under 6 mm (0.236 in.)	GT250 GT380 GT550 GT750

3) Surface of the brake disc should be free from oil. Take care that no oil is adhered on the brake disc surface, since oil adhesion there is very dangerous. If oil is placed on the disc by mistake, wipe off the oil with a soft waste-cloth soaked with alcohol.

4) The brake disc fitting bolts should be securely tightened with the specified torque and should be secured with lock washers.

4-6 Periodic Replacement Parts

The component parts of the master cylinder assembly and the caliper assembly may be worn and deteriorated in function in long period of use, however, it is generally difficult to foresee how long each component will further work with proper function thereafter, since deterioration of function much depends upon usage of brake by individual motorcycle.

Then, from safety points of view, the following is defined as periodic replacement parts in order to prevent unforeseen trouble caused by wearing of component.

Replace all the following parts at a time with Suzuki genuine parts sets.

Exchange interval: Two years

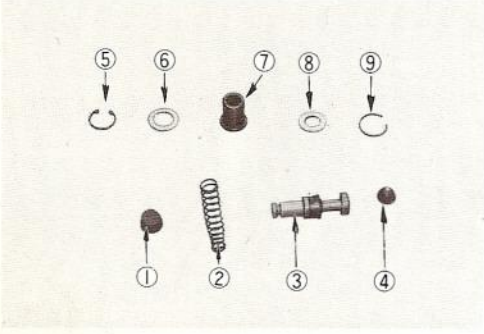


Fig. 4–6–1

1 Components of master cylinder assembly (Use Suzuki Genuine parts: Master cylinder cup set)

1	Primary cup	4	Check valve	7	Boot
2	Spring	5	Circlip	8	Stop plate
3	Piston	6	Boot plate	9	Boot stopper

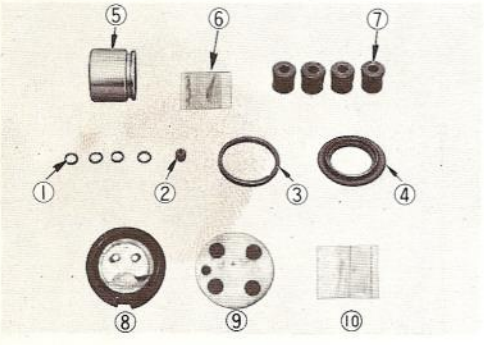


Fig. 4–6–2

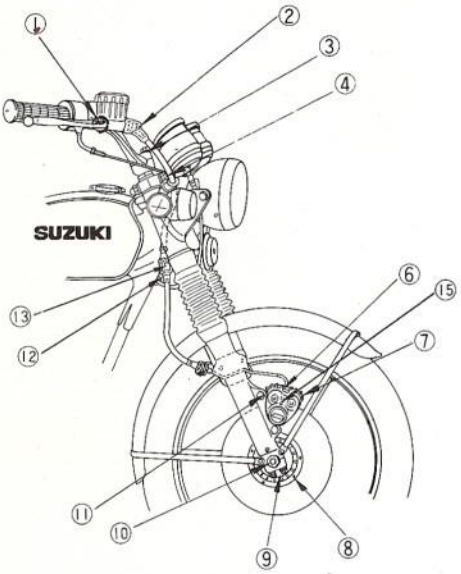
2 Component of caliper assembly (Use Suzuki Genuine parts: Pad and piston set)

1	"O" ring	5	Piston	8	Pad No. 1
2	Stopper	6	Suzuki Caliper	9	Pad No.2
3	Piston seal		Axle Grease	10	Suzuki Brake
4	Boot	7	Axle shaft dust cover		Pad Grease

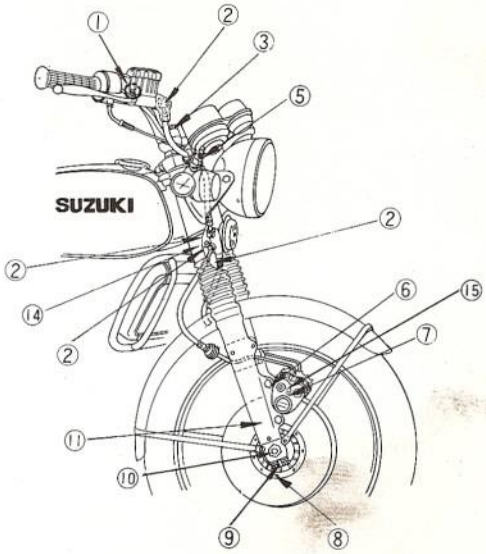
Note : Pad and piston set includes two kinds of grease packed in pouch. Grease in the pouch printed "Caliper Axle Grease" should be used for the caliper axle and printed "Brake Pad Grease" for the pad No. 1.

Caution : Be sure to wash all component parts in the above sets with clean brake fluid before installing them into the master cylinder or caliper.

5. TIGHTENING TORQUE



GT250, GT380, GT550



GT750

Item No.	Description	Bolt and nut diameter	Q'ty	Tightening torque	
		mm		kg-cm	ft-lb
1	Master cylinder clamp bolt	6	2 (2)	50 to 80	3.6 to 5.8
2	Union bolt	10	1 (4)	150 to 250	11 to 18
3	Handlebar clamp bolt	8	4 (4)	120 to 200	9 to 14
4	Brake hose guide nut	10	1 (0)	200 to 300	14 to 22
5	Brake hose guide nut	8	0 (1)	90 to 140	6.6 to 10
6	Brake pipe nut	10	2 (4)	130 to 180	9.5 to 13
7	Caliper axle bolt	10	2 (4)	250 to 350	18 to 25
8	Brake disc fitting bolt	8	6 (12)	150 to 250	11 to 18
9	Front axle holder nut	8	4 (4)	150 to 250	11 to 18
10	Front axle shaft nut	12	1 (1)	360 to 520	26 to 38
11	Caliper fitting bolt	10	2 (4)	250 to 400	18 to 29
12	Brake hose joint	10	1 (0)	250 to 350	18 to 25
13	Brake hose clamp bolt	6	1 (0)	60 to 100	4.4 to 7.3
14	Three way joint fitting bolt	6	0 (1)	40 to 70	2.9 to 5.1
15	Bleeder bolt	7	1 (2)	60 to 90	4.3 to 6.5

Note : The figure in the parentheses is for model GT750.

6. SPECIAL TOOLS FOR DISC BRAKE

The following special tools are necessary for disassembling and reassembling disc brakes. Please use these special tools to ensure your operation.

Parts No.	Description	Used for
09920–73110	Special circlip openner	Disassembling master cylinder
09900–06904	8 mm hexagon L-type wrench	Disassembling caliper



Special circlip opener



8 mm hexagon L-type wrench

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World's largest manufacturer of 2-stroke motorcycles

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SUZUKI
PARTS CATALOGUE

SUZUKI
GT750

1974

SUZUKI GT750J



SUZUKI GT750K



ROYAL RED



PEARL BLUE

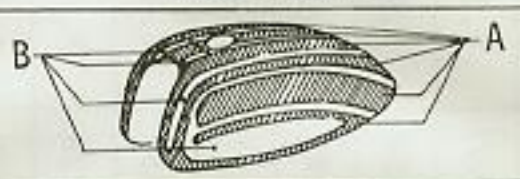
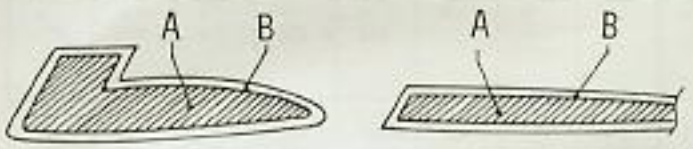
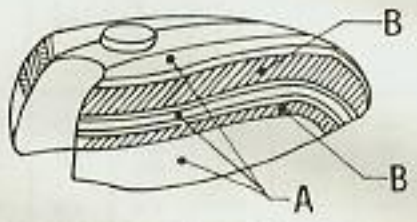
SUZUKI GT750L



7. COLOR CHART

COLOR No.	COLOR NAME	MANSEL COLOR No.	COLOR	GT750J	GT750K	GT750L
019	BLACK	N1		○	○	○
064	PURE WHITE	N9.3		○	○	
126	PEARL METALLIC					○
195	CANDY JACKAL BLUE			○		
216	CANDY LAVENDER			○		
707	PEARL BLUE				○	
708	PEARL RED				○	
718	RED (TAPE)	7.5R 4.5/15			○	
721	ORANGE YELLOW (TAPE)	5.5YR 7/12.5			○	
742	SILVER METALLIC (TAPE)					○
761	FLAKE BLUE					○
762	FLAKE ORANGE					○
403	BLACK (FOR SEAT)			○	○	○

COMBINATION COLOR

COLOR No.	A	B	APPLICABLE TO	GT750J	GT750K	GT750L
533	216	064		○		
534	195	064		○		
911	721	064			○	
914	707	064			○	
915	718	064			○	

Note. *There may be a slight difference between the actual body color and the above printed color due to the printing ink,etc.
*The figure "999" given on end of the parts number means electrical equipment which is not include its bulb.

PLEASE DO NOT USE THE OLD ISSUE PARTS CATALOGUE AFTER RECEIPT NEW EDITION.

WHEN ORDERING PARTS, ALWAYS REFER TO THE NEWEST EDITION OF PARTS CATALOGUE IN ORDER TO OBTAIN A RIGHT PARTS WITH OUT TROUBLE.

MILLIMETER → INCH CONVERSION CHART

	0	1	2	3	4	5	6	7	8	9
00	.000	.039	.079	.118	.157	.197	.236	.276	.315	.354
10	.394	.433	.472	.512	.551	.591	.630	.669	.709	.748
20	.787	.827	.866	.906	.945	.984	1.024	1.063	1.102	1.142
30	1.181	1.220	1.260	1.299	1.339	1.378	1.417	1.457	1.496	1.535
40	1.575	1.614	1.654	1.693	1.732	1.772	1.811	1.850	1.890	1.929
50	1.969	2.008	2.047	2.087	2.126	2.165	2.205	2.244	2.283	2.323
60	2.362	2.402	2.441	2.480	2.520	2.559	2.598	2.638	2.677	2.717
70	2.756	2.795	2.835	2.874	2.913	2.953	2.992	3.031	3.071	3.110
80	3.150	3.189	3.228	3.268	3.307	3.346	3.386	3.425	3.465	3.504
90	3.543	3.583	3.622	3.661	3.701	3.740	3.780	3.819	3.858	3.898

NOTE THAT THE DRAWINGS ILLUST PAGE ARE SUPPLIMENT FOR READY REFERENCE OF SPARE PARTS NUMBER, NOT FOR AN ASSEMBLING MANUAL. WHEN ASSEMBLING, USE "SUZUKI SERVICE MANUAL".

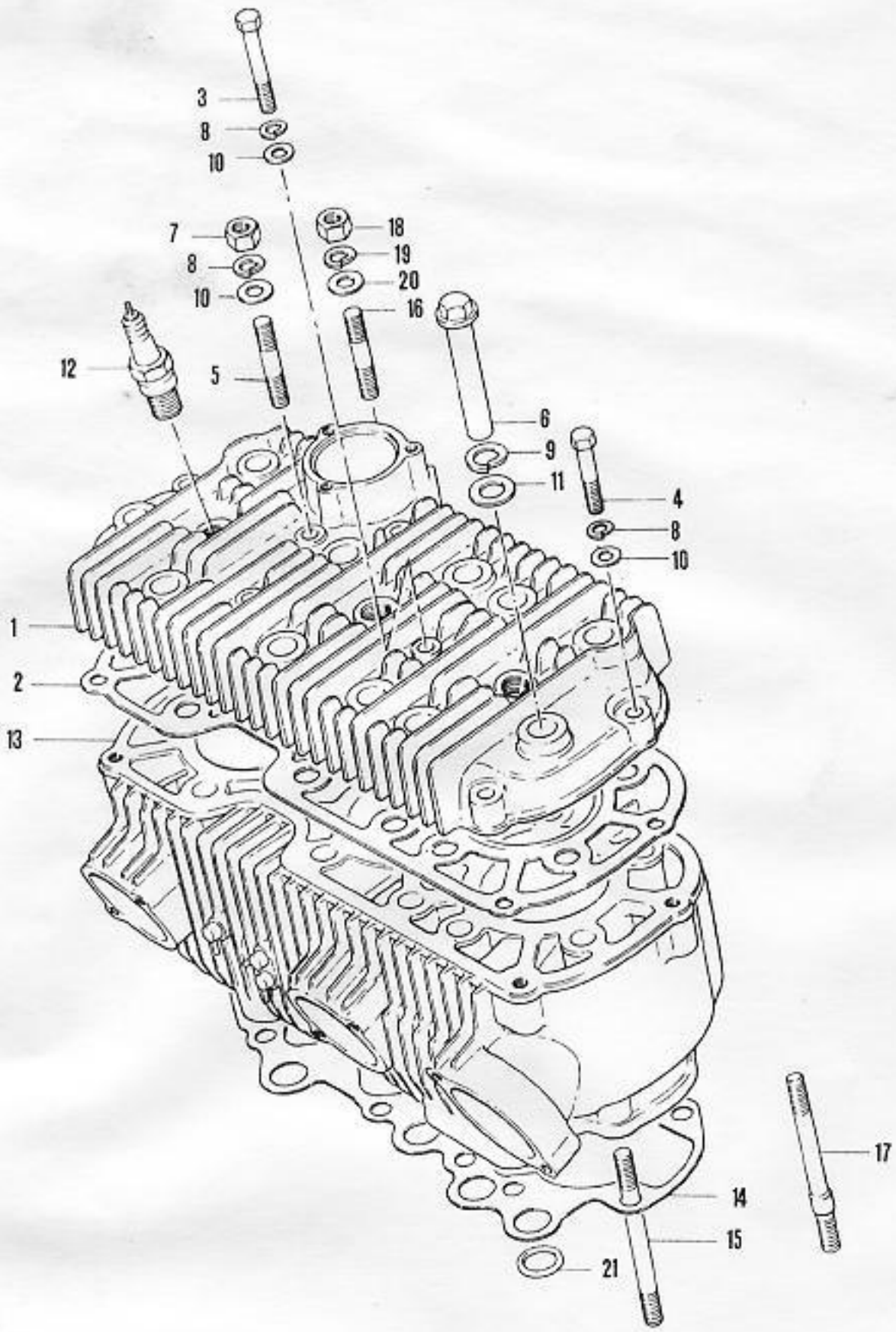
How to Read

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23 millimeters equal 0.906 inch

Contents are subject to change without notice obligation.

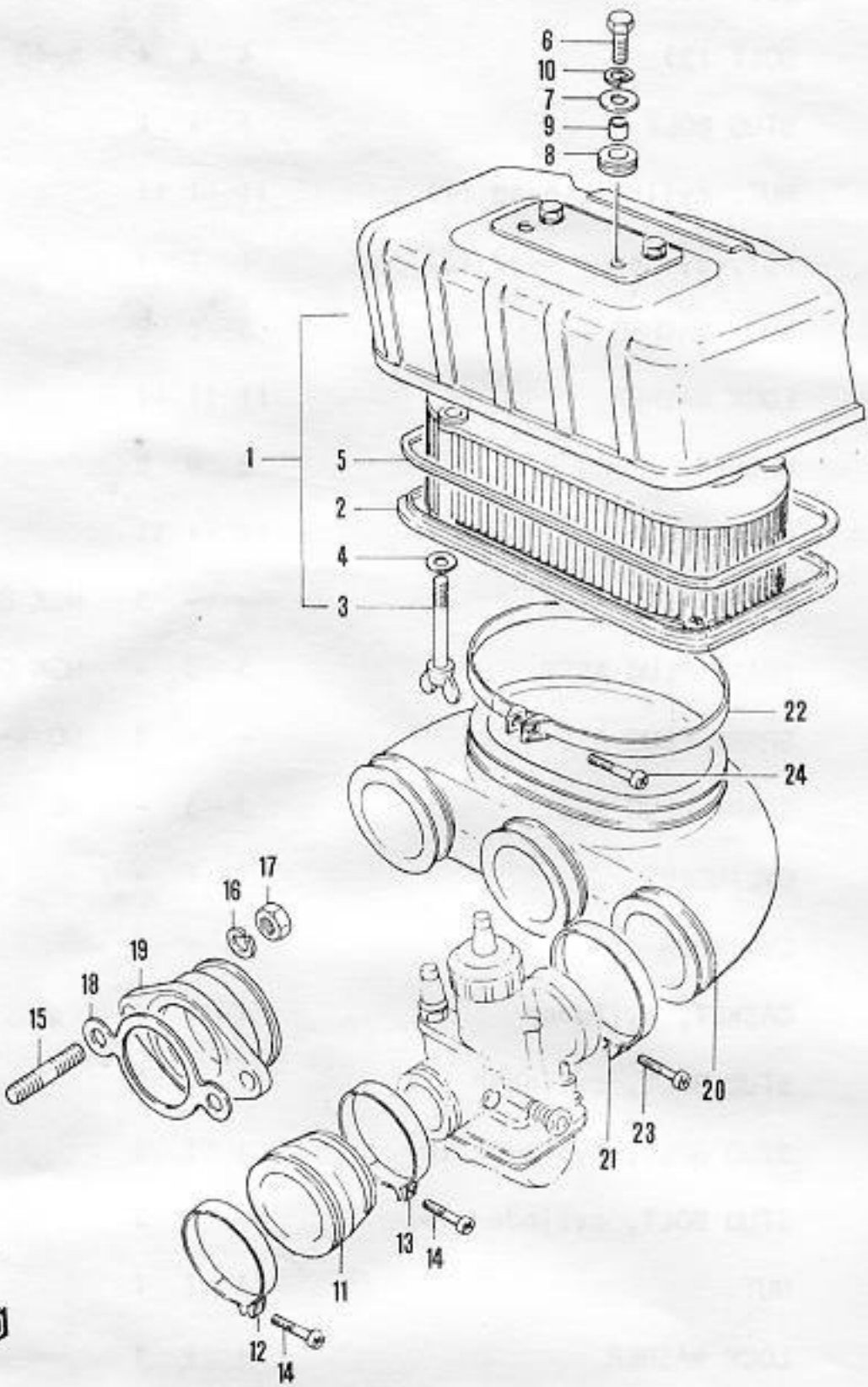
CYLINDER



CYLINDER

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	11111-31001	CYLINDER HEAD	1	1	-	to 11111-31003
1-2	11111-31003	CYLINDER HEAD	-	-	1	
2	11141-31002	GASKET, cylinder head	1	1	1	
3	09104-08009	BOLT (1)	3	3	3	8x55
4	09104-08008	BOLT (2)	4	4	4	8x40
5	09108-08035	STUD BOLT	1	1	1	
6	09159-10010	NUT, cylinder head (1)	11	11	11	
7	08312-11088	NUT, cylinder head (2)	1	1	1	
8	08321-21088	LOCK WASHER	8	8	8	
9	08321-21148	LOCK WASHER	11	11	11	
10	08322-11088	WASHER	8	8	8	
11	09168-14008	WASHER	11	11	11	
12-1	09482-00054	SPARK PLUG ASSY	-	-	3	NGK B-6ES
12-2	09482-00055	SPARK PLUG ASSY	3	3	-	NGK B-7ES
12-3	09482-00068	SPARK PLUG ASSY	-	-	3	ND W-20ES
12-4	09482-00046	SPARK PLUG ASSY	3	3	-	ND W-22ES
13-1	11210-31003	CYLINDER	1	1	-	
13-2	11210-31600	CYLINDER	-	-	1	
14	11241-31000	GASKET, cylinder	1	1	1	
15	09108-10006	STUD BOLT, cylinder (1)	11	11	9	
16	01421-10258	STUD BOLT, cylinder (2)	1	1	1	
17	09108-10012	STUD BOLT, cylinder (3)	-	-	2	
18	08312-11108	NUT	1	1	1	
19	08321-21108	LOCK WASHER	1	1	1	
20	08322-11108	WASHER	1	1	1	
21	09280-22001	GASKET, water seal	3	3	3	

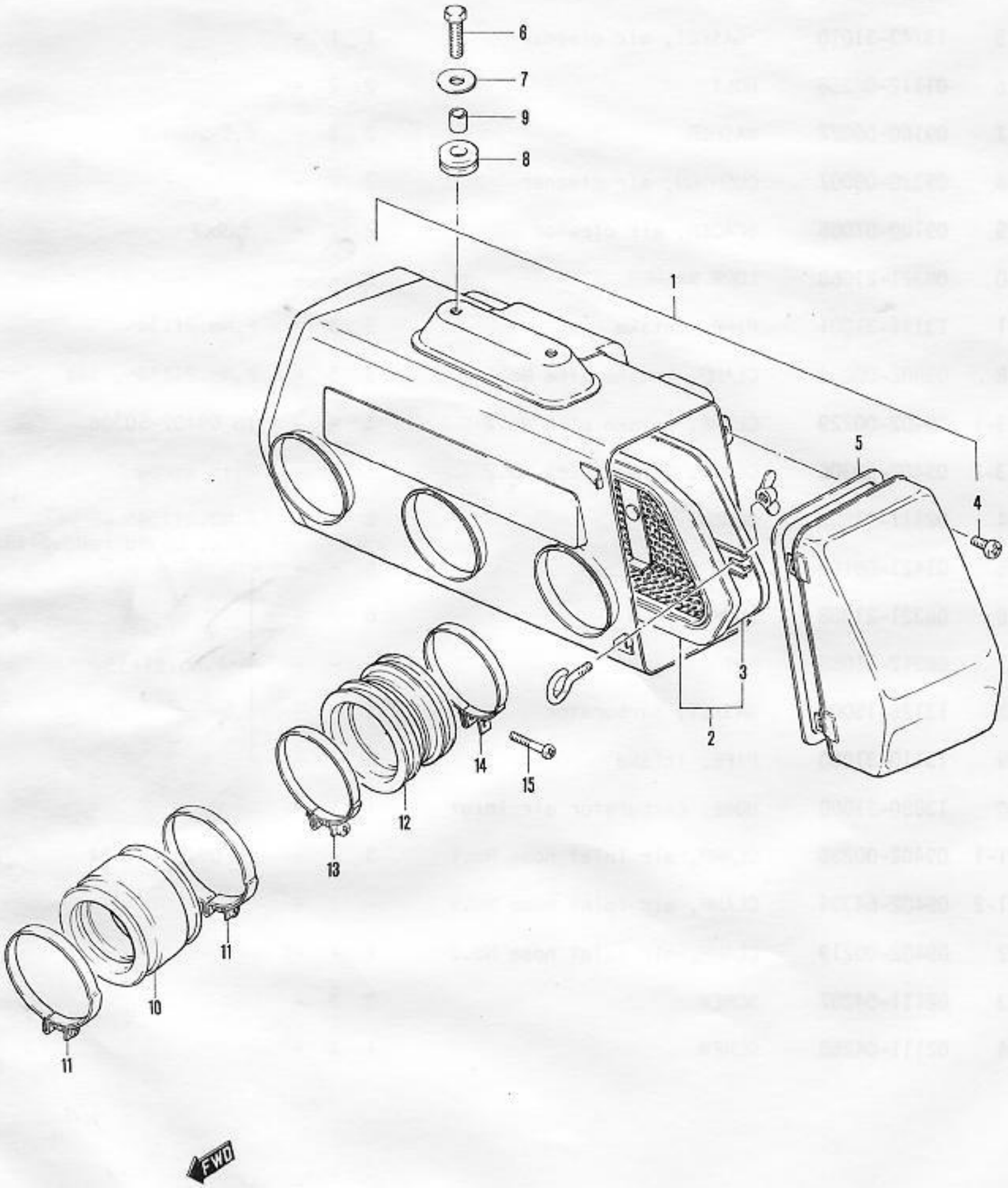
AIR CLEANER



AIR CLEANER

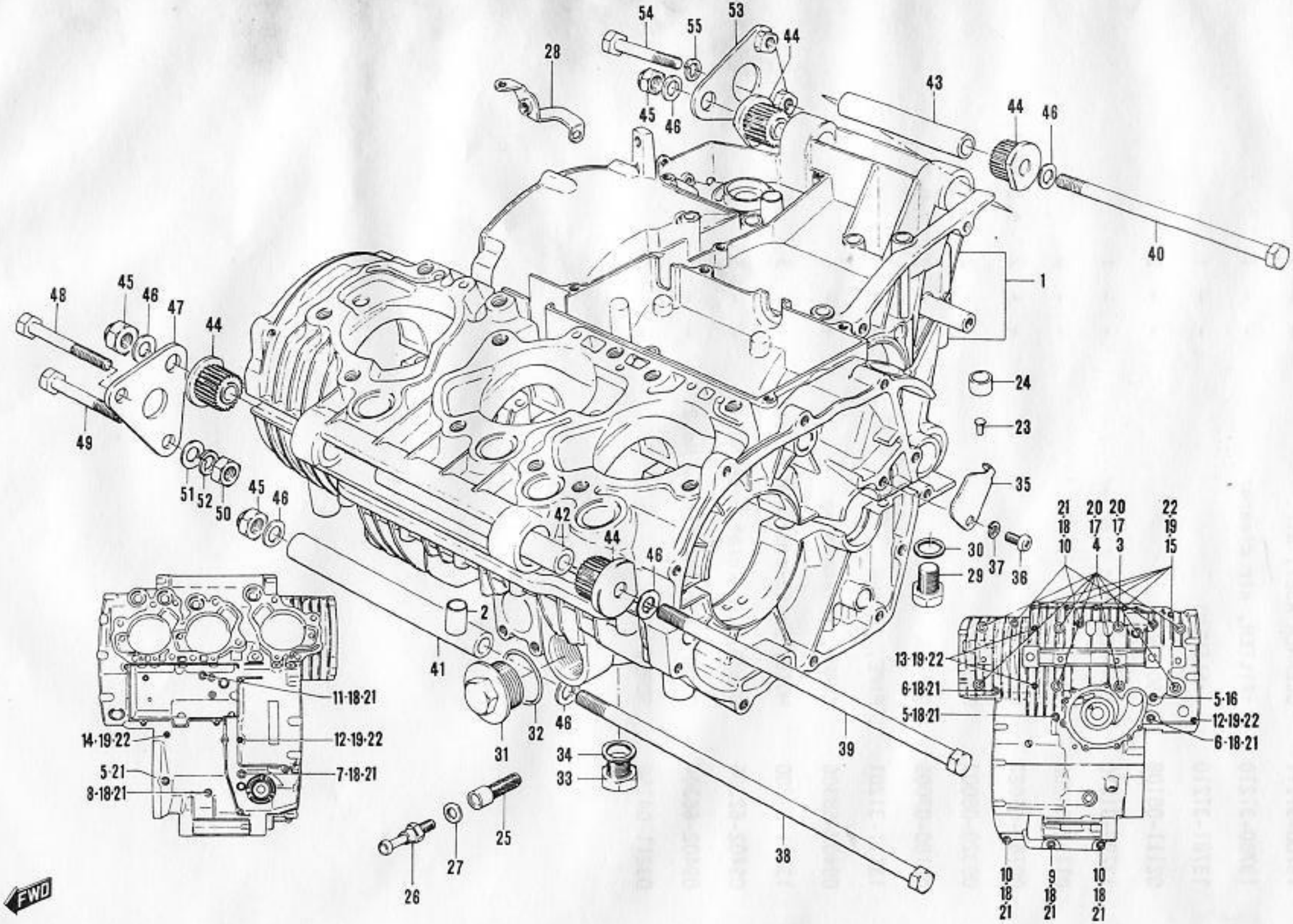
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	13700-31011	CLEANER ASSY, air	1	1	-	
2	13780-31011	·FILTER, air cleaner	1	1	-	
3	13751-31010	·BOLT	2	2	-	
4	08322-11068	·WASHER	2	2	-	
5	13743-31010	·GASKET, air cleaner	1	1	-	
6	01112-06258	BOLT	2	2	-	
7	09160-06027	WASHER	2	2	-	6.5x20x1.2
8	09320-08007	CUSHION, air cleaner	2	2	-	
9	09180-07005	SPACER, air cleaner	2	2	-	7x9x7
10	08321-21068	LOCK WASHER	2	-	-	
11	13111-31001	PIPE, intake	3	3	-	F.No.21134~
12	09402-00234	CLAMP, intake pipe No.1	3	3	-	F.No.21134~, 54φ
13-1	09402-00229	CLAMP, intake pipe No.2	3	-	-	to 09402-50306
13-2	09402-50306	CLAMP, intake pipe No.2	-	3	-	With screw
14	02111-04207	SCREW	6	6	-	F.No.21134~ 3pcs. Up to F.No.21133
15	01421-08168	STUD BOLT	6	-	-	~F.No.21133
16	08321-21088	LOCK WASHER	6	-	-	
17	08312-11088	NUT	6	-	-	
18	13125-15000	GASKET, carburetor	3	-	-	
19	13110-31000	PIPE, intake	3	-	-	
20	13880-31000	HOSE, carburetor air inlet	1	1	-	
21-1	09402-00235	CLAMP, air inlet hose No.1	3	-	-	to 09402-64304
21-2	09402-64304	CLAMP, air inlet hose No.1	-	3	-	
22	09402-00219	CLAMP, air inlet hose No.2	1	1	-	
23	02111-04207	SCREW	3	3	-	
24	02111-04258	SCREW	1	1	-	

AIR CLEANER (GT750L)



AIR CLEANER (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	13700-31211	CLEANER ASSY, air	-	-	1	
2	13780-31210	·FILTER, air cleaner	-	-	1	
3	13781-31210	··ELEMENT	-	-	1	
4	02111-05108	·SCREW	-	-	2	
5	13799-31210	·GASKET, air cleaner	-	-	1	
6	01112-06208	BOLT	-	-	2	
7	09160-06027	WASHER	-	-	2	6.5x20x1.2
8	09320-08007	CUSHION	-	-	2	
9	09180-07005	SPACER	-	-	2	7x9x7
10	13111-31201	PIPE, intake	-	-	3	
11	09402-58306	CLAMP, intake pipe	-	-	6	
12	13881-31200	HOSE, carburetor air inlet	-	-	3	
13	09402-62306	CLAMP, air inlet hose No.1	-	-	3	
14	09402-66304	CLAMP, air inlet hose No.2	-	-	3	
15	03211-04258	SCREW	-	-	3	


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FWD

CRANK CASE

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	11304-31802	CRANK CASE SET	1	1	-	See Note 1 to 11304-31846
1-2	11300-31846	CRANK CASE SET	-	-	1	See Note 1
2	09206-13001	·PIN, crank case	2	2	2	
3	09100-10070	·BOLT, (1)	1	1	1	10x130
4	09100-10035	·BOLT, (2)	7	7	7	10x100
5	09100-08026	·BOLT, (3)	3	3	3	8x110
6	01122-08958	·BOLT, (4)	2	2	2	
7	01122-08858	·BOLT, (5)	1	1	1	
8	01122-08758	·BOLT, (6)	1	1	1	
9	01122-08608	·BOLT, (7)	1	1	1	
10	01122-08508	·BOLT, (8)	5	5	5	
11	01122-08408	·BOLT, (9)	1	1	1	
12	09100-06060	·BOLT, (10)	2	2	2	6x110
13	01112-06958	·BOLT, (11)	2	2	2	
14	01112-06858	·BOLT, (12)	1	1	1	
15	01112-06358	·BOLT, (13)	6	6	6	
16	09168-08008	·GASKET, crank case bolt	1	1	1	8.2x14x1.0
17	08322-11108	·WASHER, (1)	7	8	8	
18	08322-11088	·WASHER, (2)	11	13	13	
19	08322-21068	·WASHER, (3)	11	11	11	
20	08321-21108	·LOCK WASHER, (1)	8	8	8	
21	08321-21088	·LOCK WASHER, (2)	13	13	13	
22	08321-21068	·LOCK WASHER, (3)	11	11	11	
23	09220-04001	·RIVET	1	1	1	
24	09304-10003	·BUSHING, water pump driven shaft	1	1	1	

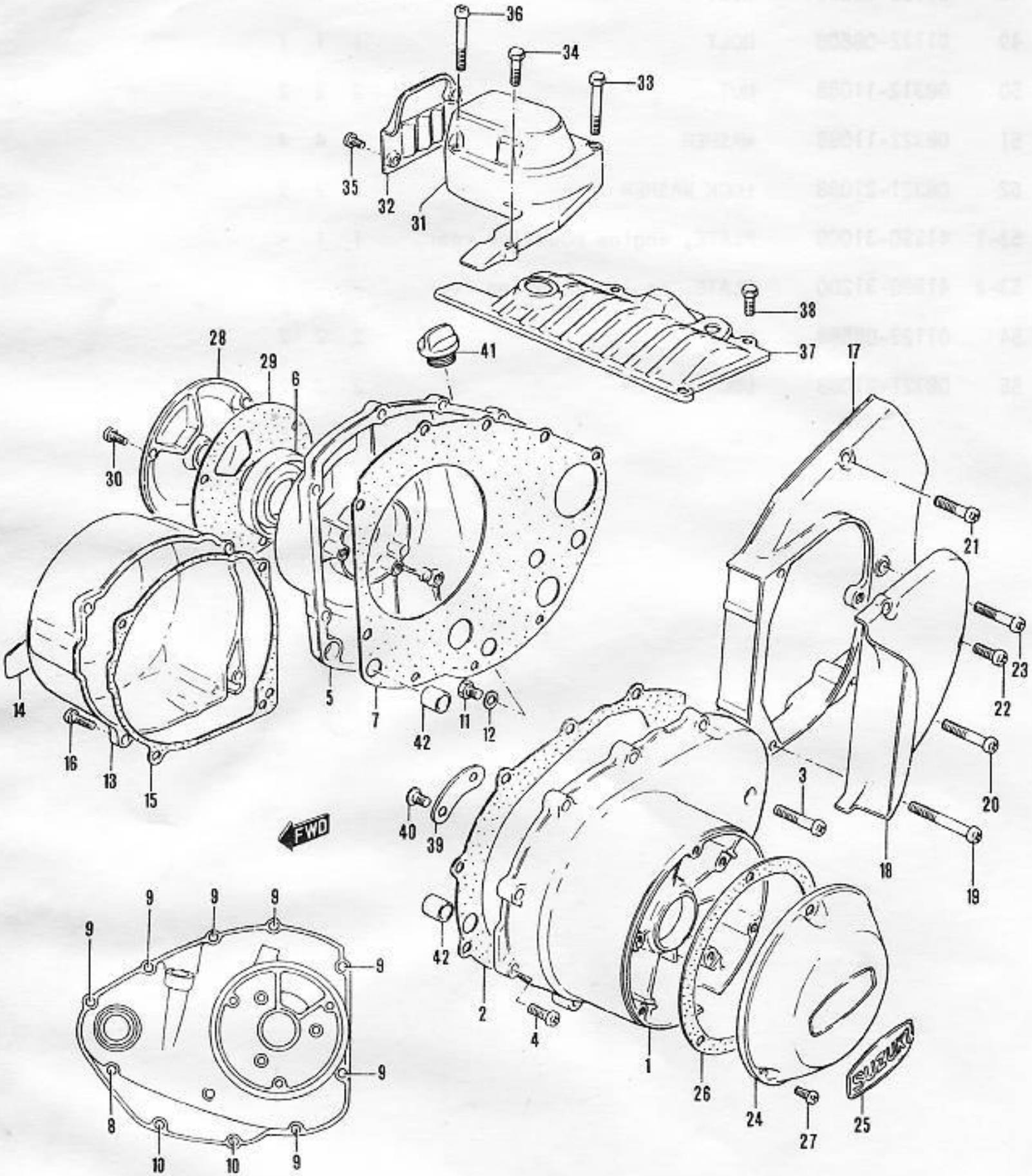
NOTE 1 : The crankcase Set is included as inner parts which are found the period mark before part name naturally, and moreover included ist driven gear, 2nd driven gear, and kick drive gear each 1 piece.

CRANK CASE

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
25	16521-31010	·STRAINER, SRIS	3	3	3	
26-1	16710-31012	·CHECK VALVE, SRIS	3	3	3	Threaded
26-2	16710-31011	·CHECK VALVE, SRIS	3	-	-	not inner parts
27	09168-08008	·GASKET	3	3	3	
28	16293-31000	·HOLDER, oil pump adjuster	1	1	1	
29	09247-14010	PLUG, oil drain	1	1	1	
30-1	09168-14002	GASKET, oil drain plug	1	1	-	to 09168-14004
30-2	09168-14004	GASKET, oil drain plug	-	-	1	
31	09247-32001	PLUG, water drain No.1	1	1	1	
32	09280-33001	O RING	1	1	1	
33	09247-14001	PLUG, water drain No.2	1	1	1	
34-1	09168-14002	GASKET, water drain plug No.2	1	1	-	to 09168-14004
34-2	09168-14004	GASKET, water drain plug No.2	-	-	1	
35	26448-31000	PLATE, tachometer oil reservoir	1	1	1	
36	02112-06128	SCREW	1	1	1	
37	08321-21068	LOCK WASHER	1	1	1	
38	09100-10075	BOLT, engine mounting No.1	1	1	1	10x310
39	09100-10074	BOLT, engine mounting No.2	1	1	1	10x270
40	09100-10073	BOLT, engine mounting No.3	2	2	2	10x185
41	09180-10031	SPACER, engine mounting No.1	1	1	1	10.2x16x182
42	09180-10032	SPACER, engine mounting No.2	1	1	1	10.2x16x164
43	09180-10030	SPACER, engine mounting No.3	2	2	2	10.2x16x107
44	09319-10015	BUSHING, engine mounting	8	8	8	
45	09159-10001	NUT, engine mounting	4	4	4	
46	08322-11108	WASHER	8	8	8	

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
47	41591-31000	PLATE, engine mounting front	1	1	1
48	01122-08658	BOLT	1	1	1
49	01122-08608	BOLT	1	1	1
50	08312-11088	NUT	2	2	2
51	08322-11088	WASHER	4	4	4
52	08321-21088	LOCK WASHER	2	2	2
53-1	41590-31000	PLATE, engine mounting rear	1	1	-
53-2	41590-31200	PLATE, engine mounting rear	-	-	1
54	01122-08558	BOLT	2	2	2
55	08321-21088	LOCK WASHER	2	2	2

COVER


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COVER

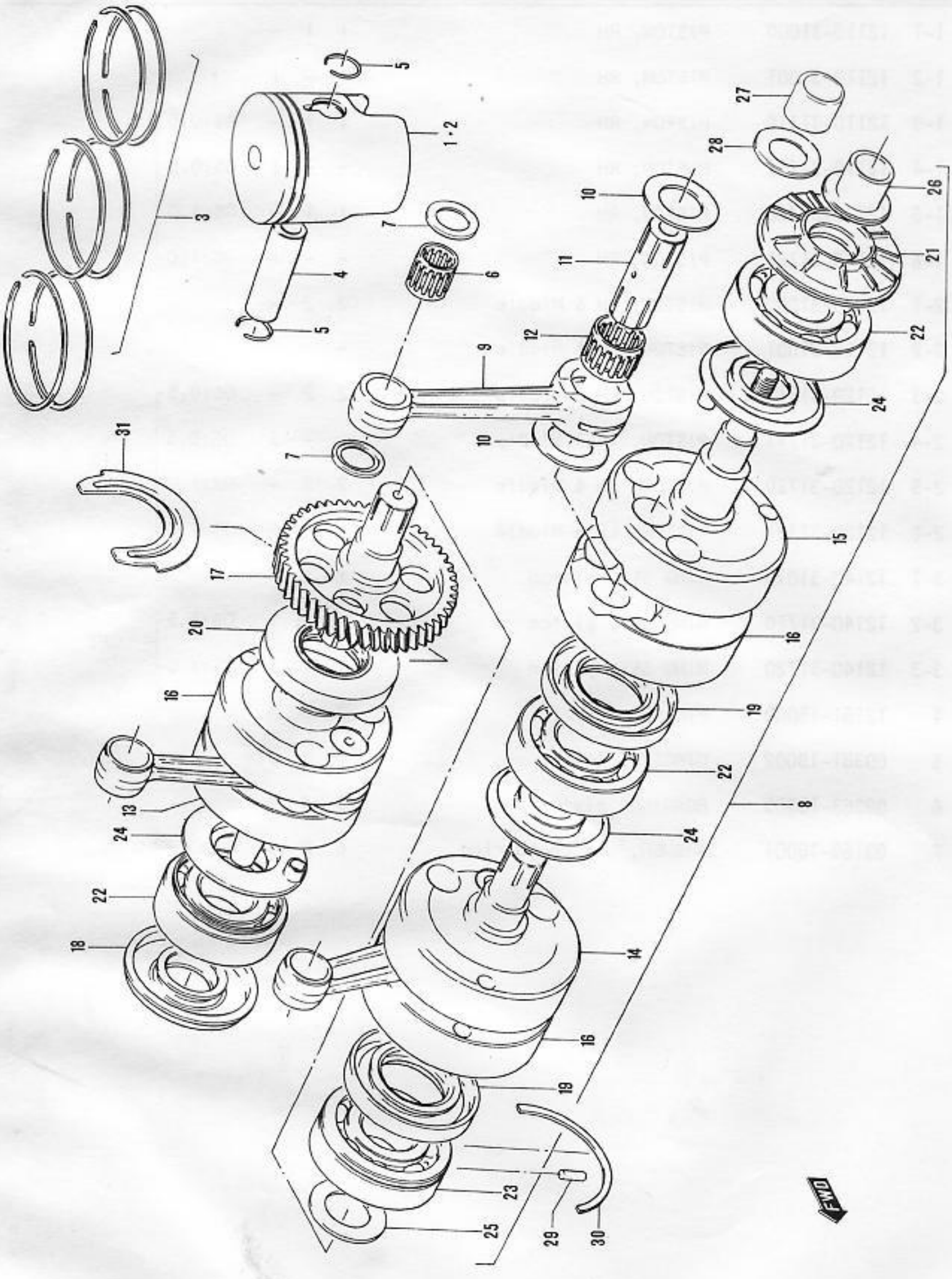
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	11331-31001	COVER, starter gear	1	1	1	
2	11485-31000	GASKET, starter gear cover	1	1	1	
3	02112-06408	SCREW, (1)	3	3	3	
4	02112-06258	SCREW, (2)	7	7	7	
5	11341-31000	COVER, clutch	1	1	1	
6	09285-25002	OIL SEAL	1	1	1	F.No.18527~
7	11482-31000	GASKET, clutch cover	1	1	1	
8	02112-06458	SCREW, (1)	1	1	1	
9	02112-06258	SCREW, (2)	7	7	7	
10	02112-06208	SCREW, (3)	2	2	2	
11	09128-06004	PLUG, oil level	1	1	1	
12	09168-06001	GASKET, oil level plug	1	1	1	
13	11300-31840	COVER, generator	1	1	1	
14	68233-31000	·EMBLEM	1	1	1	
15	11483-31000	GASKET, generator cover	1	1	1	
16	02111-05207	SCREW	4	4	4	
17	11361-31000	COVER, engine sprocket inner	1	1	1	
18	11371-31000	COVER, engine sprocket outer	1	1	1	
19	02112-06557	SCREW, (1)	2	2	2	
20	02112-06458	SCREW, (2)	1	1	1	
21	02112-06307	SCREW, (3)	1	1	1	
22	02112-06208	SCREW, (4)	1	1	1	
23	02112-06358	SCREW, (5)	1	1	1	

COVER

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
24	11300-31830	CAP, contact braker	1	1	1	
25	68233-31000	·EMBLEM	1	1	1	
26	11491-31001	GASKET, contact braker cap	1	1	1	
27	02111-05087	SCREW	3	3	3	
28	11387-31000	CAP, clutch adjusting	1	1	1	
29	11495-31000	GASKET, clutch adjusting cap	1	1	1	
30	02112-05168	SCREW	3	3	3	
31	11411-31001	COVER, oil pump No.1	1	1	1	
32	11412-31000	COVER, oil pump No.2	1	1	1	
33	01111-05458	BOLT, (1)	1	1	1	
34	01111-05208	BOLT, (2)	1	1	1	
35	02112-05168	SCREW, (1)	2	2	2	
36	02111-05458	SCREW, (2)	1	1	1	
37	11440-31001	COVER COMP, starter motor	1	1	1	See Note 1
38	01111-05128	BOLT	4	4	4	
39	12561-31000	PLATE, oil reservoir	1	1	1	
40	02122-06128	SCREW	2	2	2	
41	09259-20003	PLUG, oil filler	1	1	1	
42	09206-13001	PIN, cover	4	4	4	

NOTE 1 : When installing new motor cover, 11440-31001 onto old model, it is necessary to install grommet, 09308-04004 with together it.

PISTON - CRANKSHAFT



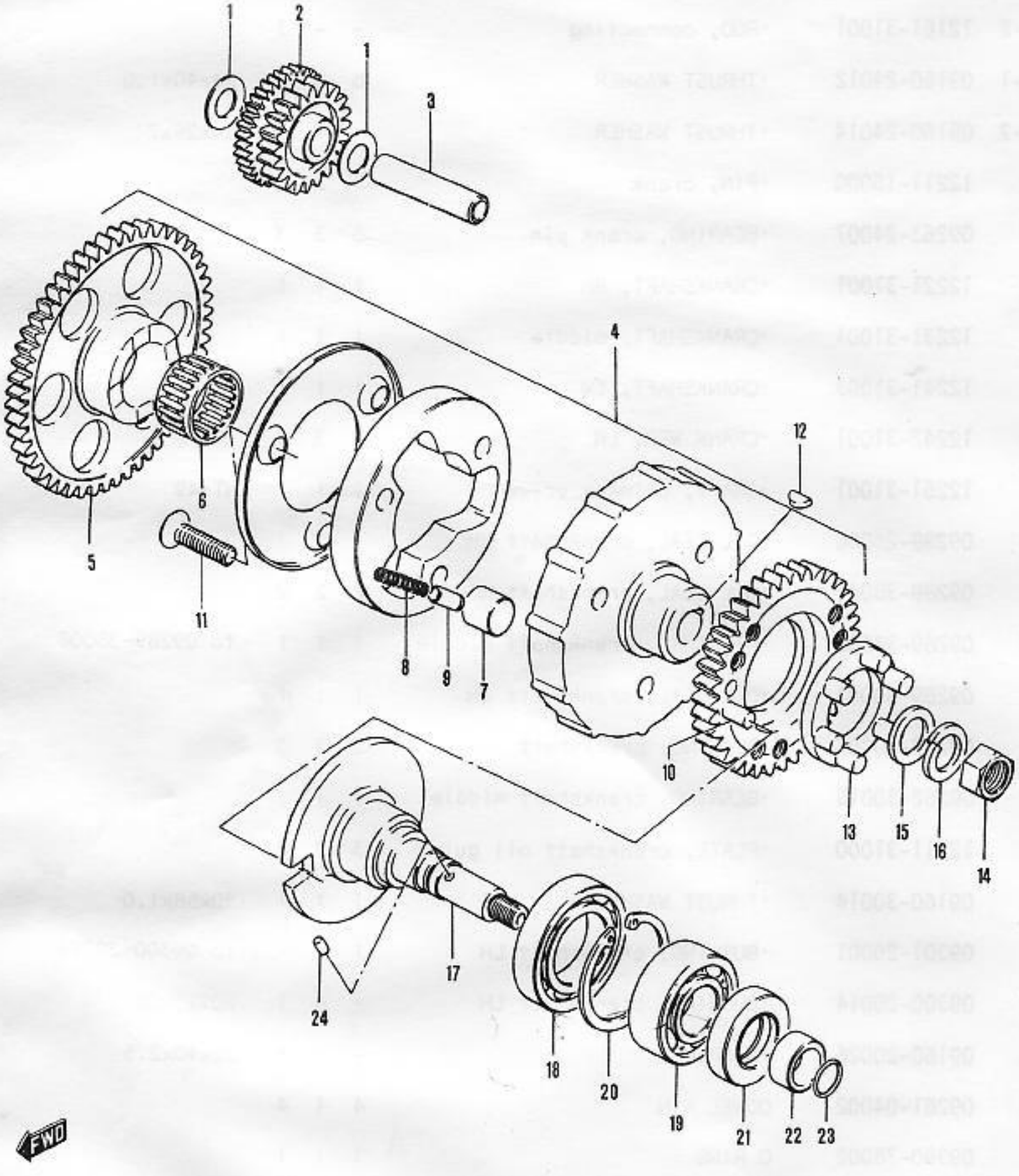
PISTON - CRANKSHAFT

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
8-1	12200-31834	CRANKSHAFT SET	1	1	-	
8-2	12200-31840	CRANKSHAFT SET	-	-	1	
9-1	12161-31000	·ROD, connecting	3	3	-	
9-2	12161-31001	·ROD, connecting	-	-	3	
10-1	09160-24012	·THRUST WASHER	6	6	-	24x40x1.0
10-2	09160-24014	·THRUST WASHER	-	-	6	24x29x2
11	12211-15000	·PIN, crank	3	3	3	
12	09263-24007	·BEARING, crank pin	3	3	3	
13	12221-31001	·CRANKSHAFT, RH	1	1	1	
14	12231-31001	·CRANKSHAFT, middle	1	1	1	
15	12241-31003	·CRANKSHAFT, LH	1	1	1	
16	12242-31001	·CRANK WEB, LH	3	3	3	
17	12251-31001	·SHAFT, primary drive	1	1	1	NT:49
18	09289-25006	·OIL SEAL, crankshaft RH	1	1	1	
19	09289-38001	·OIL SEAL, crankshaft middle	2	2	2	
20	09289-38003	·OIL SEAL, crankshaft middle	1	1	1	to 09289-38008
21	09289-30001	·OIL SEAL, crankshaft LH	1	1	1	
22	09269-30007	·BEARING, crankshaft	3	3	3	
23	09262-30013	·BEARING, crankshaft middle	1	1	1	
24	12511-31000	·PLATE, crankshaft oil guide	3	3	3	
25	09160-30014	·THRUST WASHER	1	1	1	30x58x1.0
26	09301-20001	·BUSHING, crankshaft LH	1	1	-	to 09300-20014
27	09300-20014	·BUSHING, crankshaft LH	-	-	1	20x25x20
28	09160-20026	·WASHER	-	-	1	20x40x2.5
29	09261-04002	DOWEL PIN	4	4	4	
30	09390-78002	C RING	1	1	1	
31	09390-78003	C RING	1	1	1	

PISTON - CRANKSHAFT

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
8-1	12200-31834	CRANKSHAFT SET	1	1	-	
8-2	12200-31840	CRANKSHAFT SET	-	-	1	
9-1	12161-31000	·ROD, connecting	3	3	-	
9-2	12161-31001	·ROD, connecting	-	-	3	
10-1	09160-24012	·THRUST WASHER	6	6	-	24x40x1.0
10-2	09160-24014	·THRUST WASHER	-	-	6	24x29x2
11	12211-15000	·PIN, crank	3	3	3	
12	09263-24007	·BEARING, crank pin	3	3	3	
13	12221-31001	·CRANKSHAFT, RH	1	1	1	
14	12231-31001	·CRANKSHAFT, middle	1	1	1	
15	12241-31003	·CRANKSHAFT, LH	1	1	1	
16	12242-31001	·CRANK WEB, LH	3	3	3	
17	12251-31001	·SHAFT, primary drive	1	1	1	NT:49
18	09289-25006	·OIL SEAL, crankshaft RH	1	1	1	
19	09289-38001	·OIL SEAL, crankshaft middle	2	2	2	
20	09289-38003	·OIL SEAL, crankshaft middle	1	1	1	to 09289-38008
21	09289-30001	·OIL SEAL, crankshaft LH	1	1	1	
22	09269-30007	·BEARING, crankshaft	3	3	3	
23	09262-30013	·BEARING, crankshaft middle	1	1	1	
24	12511-31000	·PLATE, crankshaft oil guide	3	3	3	
25	09160-30014	·THRUST WASHER	1	1	1	30x58x1.0
26	09301-20001	·BUSHING, crankshaft LH	1	1	-	to 09300-20014
27	09300-20014	·BUSHING, crankshaft LH	-	-	1	20x25x20
28	09160-20026	·WASHER	-	-	1	20x40x2.5
29	09261-04002	DOWEL PIN	4	4	4	
30	09390-78002	C RING	1	1	1	
31	09390-78003	C RING	1	1	1	

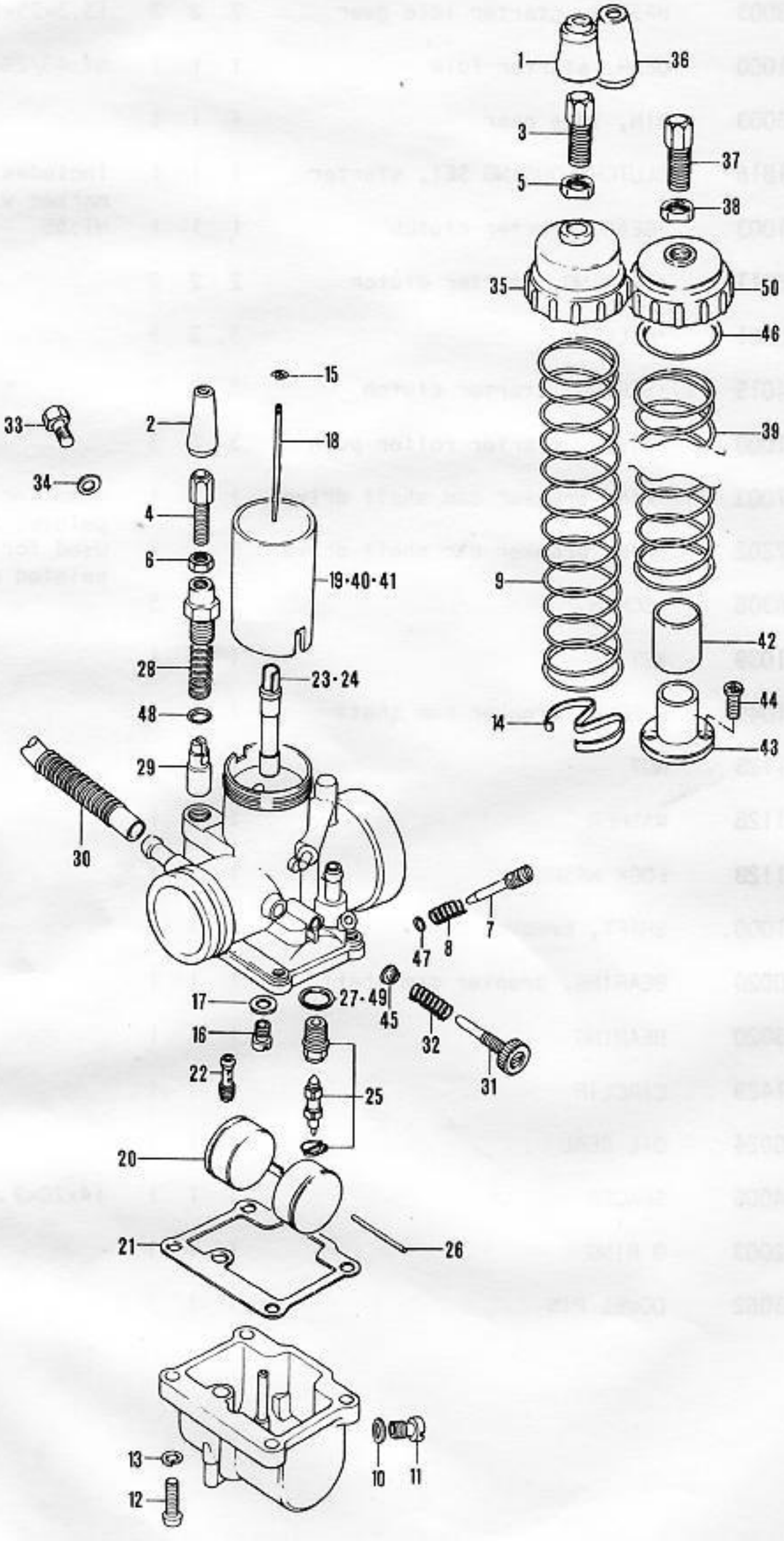
STARTER CLUTCH



STARTER CLUTCH

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	09160-13003	WASHER, starter idle gear	2	2	2	13.3x25x0.85
2	12611-31000	GEAR, starter idle	1	1	1	NT:43/22
3	09206-13003	PIN, idle gear	1	1	1	
4	12603-31816	CLUTCH HOUSING SET, starter	1	1	1	Includes all items marked with an period(·
5	12620-31003	·GEAR, starter clutch	1	1	1	NT:55
6	09263-25011	·BEARING, starter clutch	2	2	2	
7	09261-15001	·ROLLER	3	3	3	
8	09440-04015	·SPRING, starter clutch	3	3	3	
9	12633-31000	·PIECE, starter roller push	3	3	3	
10-1	09261-07003	·PIN, breaker cam shaft drive	1	1	1	Used for 12643-31002 painted blue
10-2	06211-07202	·PIN, breaker cam shaft drive	1	1	1	Used for 12643-31002 painted red
11	02121-08308	·SCREW	3	3	3	
12	08341-31039	KEY	1	1	1	
13	12719-31040	RUBBER, breaker cam shaft	1	1	1	
14	08312-11128	NUT	1	1	1	
15	08322-11128	WASHER	1	1	1	
16	08321-21128	LOCK WASHER	1	1	1	
17	12711-31000	SHAFT, breaker cam	1	1	1	
18	09262-30020	BEARING, breaker cam shaft	1	1	1	
19	08110-63020	BEARING	1	1	1	
20	08331-21429	CIRCLIP	1	1	1	
21	09283-20024	OIL SEAL	1	1	1	
22	09180-14006	SPACER	1	1	1	14x20x9
23	09280-12003	O RING	1	1	1	
24	06211-03052	DOWEL PIN	1	1	1	

CARBURETOR


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CARBURETOR

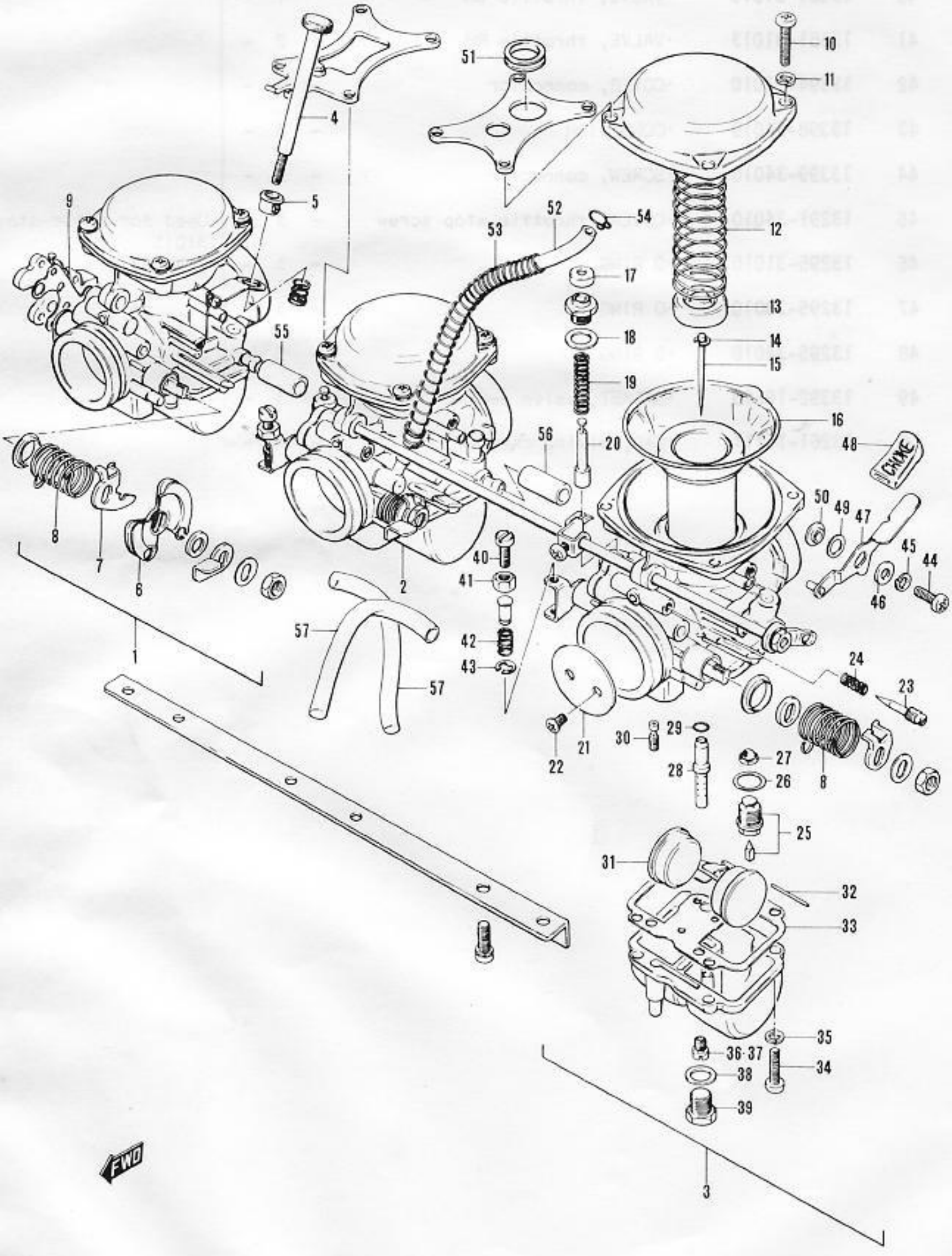
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
	13201-31014	CARBURETOR ASSY, RH	1	1	-	Press-stamped 31014
	13202-31014	CARBURETOR ASSY, middle	1	1	-	F.No.~39100
	13203-31014	CARBURETOR, LH	1	1	-	
	13201-31015	CARBURETOR ASSY, RH	-	1	-	Press-stanped 31015
	13202-31015	CARBURETOR ASSY, middle	-	1	-	F.No.39101~
	13203-31015	CARBURETOR ASSY, LH	-	1	-	
1	13681-31010	·BOOT	3	3	-	
2	13681-16600	·BOOT	3	3	-	to 13681-16601
3	13577-31010	·ADJUSTER, cable	3	3	-	
4	13577-03010	·ADJUSTER, cable	3	3	-	
5	13661-31010	·NUT, cable adjuster	3	3	-	
6	13661-16600	·NUT, cable adjuster	3	3	-	
7	13269-15010	·SCREW, pilot air	3	3	-	
8	13268-01010	·SPRING, pilot air screw	3	3	-	
9	13573-31010	·SPRING, throttle valve return	3	-	-	
10	13249-05010	·GASKET, drain plug	3	3	-	
11	13247-05010	·PLUG, drain	3	3	-	
12	02111-04168	·SCREW	12	12	-	
13	08321-21048	·LOCK WASHER	12	12	-	
14	13581-15010	·SEAT, throttle valve spring	3	3	-	F.No.~39100
15	13394-10010	·CLIP, needle	3	3	-	
16-1	09491-20004	·JET, main (RH & LH)	2	2	-	#102.5
16-2	09491-20003	·JET, main (middle)	1	1	-	#100
16-3	09491-97001	·JET, main	3	3	-	#97.5, OPT

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
17	13382-03110	·WASHER	3	3	-	
18	13383-31010	·NEEDLE, jet	3	3	-	5F 16-3
19-1	13561-31012	·VALVE, throttle (LH)	1	1	-	CA:2.5
19-2	13551-31012	·VALVE, throttle (RH & Middle)	2	2	-	CA:2.5
20	13252-18010	·FLOAT	3	3	-	
21	13251-18010	·GASKET, float chamber	3	3	-	
22	09492-30003	·JET, pilot	3	3	-	#30
23	09494-00051	·JET, needle (RH & LH)	2	2	-	P-4
24	09494-00095	·JET, needle (Middle)	1	1	-	P-3
25	13370-18010	·VALVE ASSY, needle	3	3	-	
26	13254-01010	·PIN, float	3	3	-	
27	13392-15010	·GASKET, valve seat	3	3	-	
28	13417-18630	·SPRING, starter valve	3	3	-	
29	13411-01010	·VALVE, starter	3	3	-	
30	44390-15050	·HOSE, boost	1	1	-	
31-1	13267-31010	·SCREW, throttle stop	3	-	-	
31-2	13267-33010	·SCREW, throttle stop	-	3	-	
32	13268-31010	·SPRING, throttle stop screw	3	3	-	
33	13664-31010	·BOLT, valve inspection	3	3	-	
34	13663-31010	·GASKET, inspection bolt	3	3	-	
35	13261-31011	·CAP, mixing chamber	3	3	-	
36	13681-16601	·BOOT	-	3	-	F.No.39101~
37	13577-03010	·ADJUSTER, cable	-	3	-	F.No.39101~
38	13661-16600	·NUT, cable adjuster	-	3	-	F.No.39101~
39-1	13573-31011	·SPRING, throttle valve return	-	3	-	
39-2	13573-31012	·SPRING, throttle valve return	-	3	-	F.No.39101~

CARBURETOR

Ref.No.	Part No.	Description	Q'ty GT750J GT750K GT750L	Remarks
40	13561-31013	·VALVE, throttle LH	- 1 -	
41	13551-31013	·VALVE, throttle RH	- 2 -	
42	13394-31010	·COVER, connector	- 3 -	
43	13398-34010	·CONNECTOR	- 3 -	
44	13399-34010	·SCREW, connector	- 3 -	
45	13291-34010	·COVER, throttle stop screw	- 3 -	Used for press-stamped 31015 F.No.39101~
46	13295-31010	·O RING	- 3 -	
47	13295-33010	·O RING	- 3 -	
48	13295-34010	·O RING	- 3 -	
49	13392-16600	·GASKET, valve seat	- 3 -	
50	13261-15111	·CAP, mixing chamber	- 3 -	

CARBURETOR (GT750L)



CARBURETOR (GT750L)

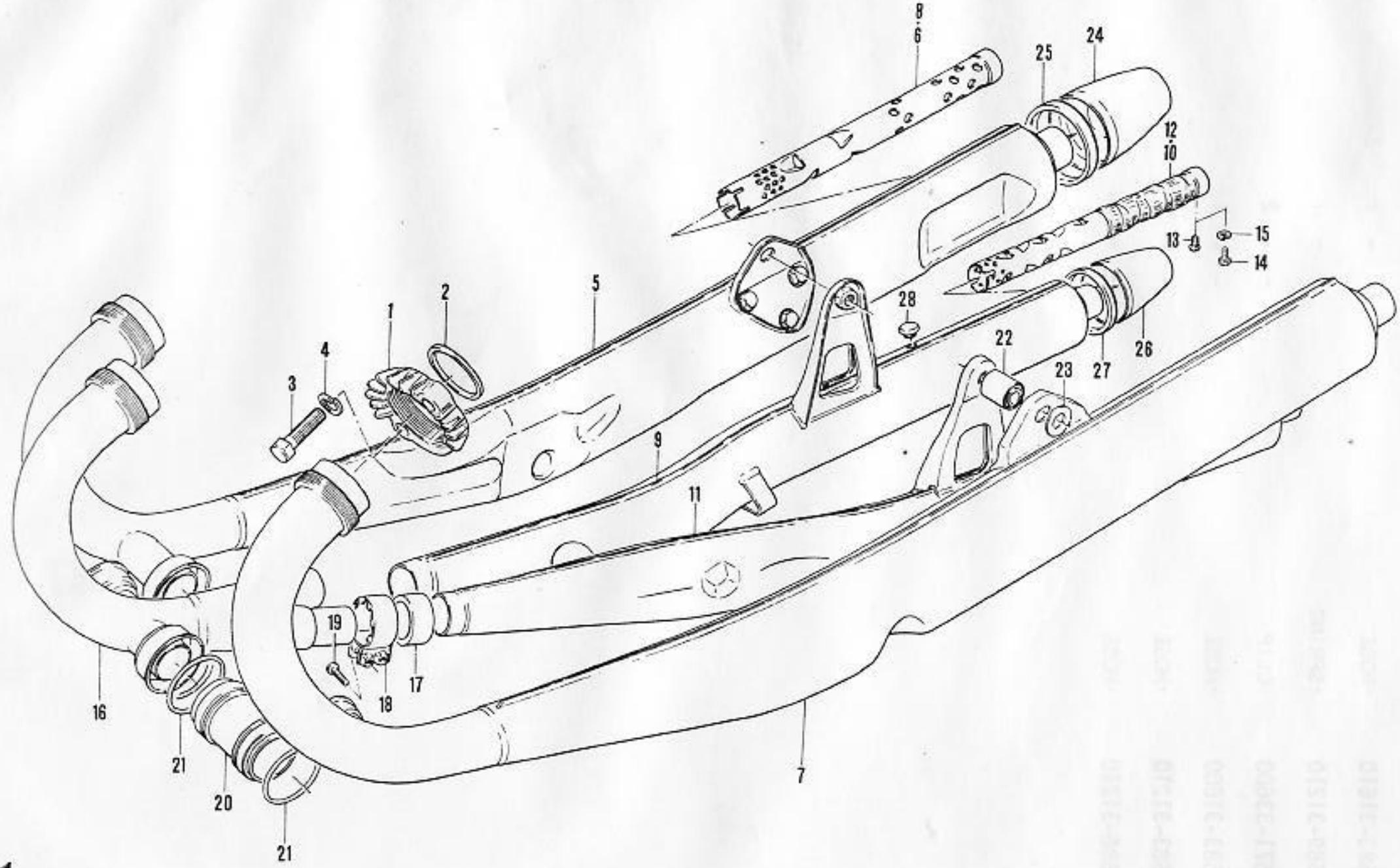
Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
	13200-31210	CARBURETOR ASSY (includes RH, Middle and LH)	-	-	1	
1	13201-31210	·CARBURETOR, RH	-	-	1	
2	13202-31210	·CARBURETOR, Middle	-	-	1	
3	13203-31210	·CARBURETOR, LH	-	-	1	
4	13267-31210	··ADJUSTER, throttle	-	-	1	
5	13276-31210	··BUSH	-	-	1	
6	13553-31600	··LEVER	-	-	1	
7	13555-31610	··LEVER, throttle	-	-	1	
8	13573-31210	··SPRING, throttle shaft	-	-	3	
9	13436-31210	··GASKET	-	-	3	
10	02111-05187	··SCREW	-	-	12	
11	08321-21058	··LOCK WASHER	-	-	12	
12	13503-31210	··SPRING	-	-	3	
13	13398-31210	··PLATE, needle	-	-	3	
14	13394-31210	··E RING	-	-	3	
15	13383-31210	··NEEDLE, jet	-	-	3	4DN18-3
16	13500-31210	··DIAPHRAGM ASSY	-	-	3	
17	13682-31210	··CAP, starter valve	-	-	3	
18	13419-31210	··GASKET, starter valve	-	-	3	
19	13417-08210	··SPRING, starter valve	-	-	3	
20	13411-31210	··PLUNGER, starter valve	-	-	3	
21	13551-31210	··VALVE, throttle	-	-	3	#120
22	02111-03087	··SCREW	-	-	6	
23	13269-31210	··SCREW, pilot air	-	-	3	
24	13268-01010	··SPRING	-	-	3	

CARBURETOR (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
25	13372-31210	··VALVE, needle	-	-	3	
26	13392-16600	··WASHER, needle valve	-	-	3	
27	13376-65010	··FILTER	-	-	3	
28	09494-00141	··JET, needle	-	-	3	Z-0
29	13295-31210	··O RING	-	-	3	
30	09492-47005	··JET, pilot	-	-	3	#47.5
31	13252-31210	··FLOAT	-	-	3	
32	13254-11010	··PIN, float	-	-	3	
33	13251-31210	··GASKET, float chamber	-	-	3	
34	02111-04127	··SCREW	-	-	12	
35	08321-21048	··LOCK WASHER	-	-	12	
36	09491-21011	··JET, main	-	-	1	#107.5
37	09491-22010	··JET, reverse main	-	-	2	#110
38	13249-31210	··WASHER	-	-	3	
39	13247-31210	··SCREW, plug	-	-	3	
40	13267-31600	··SCREW, throttle stop	-	-	2	
41	13607-31610	··NUT	-	-	2	
42	13268-31210	··SPRING, air adjuster	-	-	3	
43	13617-31210	··E RING	-	-	3	
44	02111-04087	··SCREW	-	-	1	
45	08321-21048	··LOCK WASHER	-	-	1	
46	13615-31630	··WASHER	-	-	1	
47	13413-31210	··LEVER, starter	-	-	1	
48	13416-31210	··CAP	-	-	1	
49	13615-31640	··WASHER	-	-	1	
50	13432-31210	··RING	-	-	1	

CARBURETOR (GT750L)

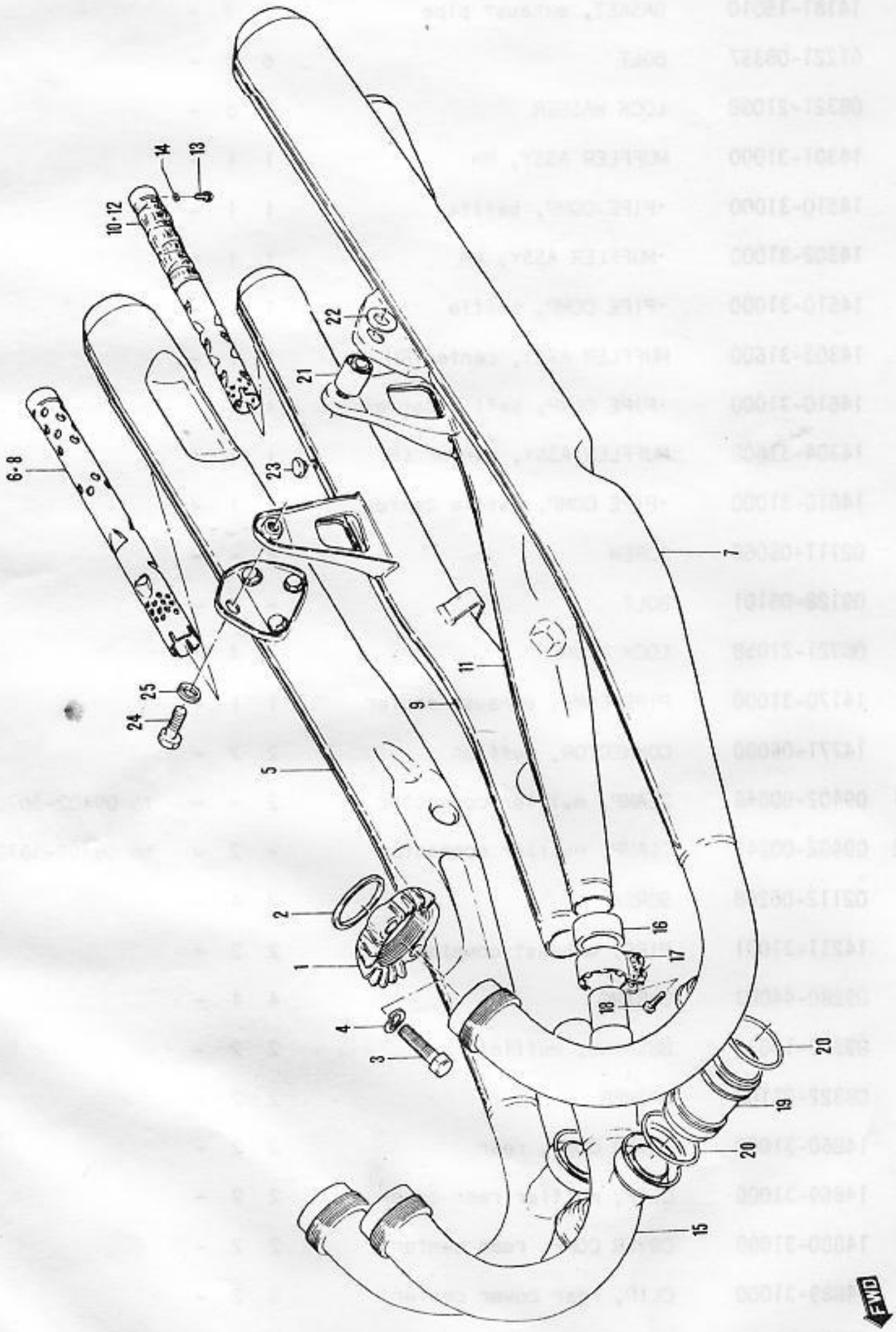
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
51	13625-33110	·CAP	-	-	1
52	13683-31610	·HOSE	-	-	1
53	13689-31210	·SPRING	-	-	1
54	13671-33600	·CLIP	-	-	2
55	13683-31600	·HOSE	-	-	1
56	13683-31210	·HOSE	-	-	1
57	13686-31210	·HOSE	-	-	3


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MUFFLER

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	14182-31001	CLAMP, exhaust pipe	3	3	-	
2	14181-15010	GASKET, exhaust pipe	3	3	-	
3	01221-08357	BOLT	6	6	-	
4	08321-21088	LOCK WASHER	6	6	-	
5	14301-31000	MUFFLER ASSY, RH	1	1	-	
6	14510-31000	·PIPE COMP, baffle	1	1	-	
7	14302-31000	·MUFFLER ASSY, LH	1	1	-	
8	14510-31000	·PIPE COMP, baffle	1	1	-	
9	14303-31600	MUFFLER ASSY, center RH	1	1	-	
10	14610-31000	·PIPE COMP, baffle center	1	1	-	
11	14304-31600	MUFFLER ASSY, center LH	1	1	-	
12	14610-31000	·PIPE COMP, baffle center	1	1	-	
13	02111-05068	SCREW	4	-	-	
14	09128-05101	BOLT	-	4	-	
15	08321-21058	LOCK WASHER	-	4	-	
16	14170-31000	PIPE COMP, exhaust center	1	1	-	
17	14771-06080	CONNECTOR, muffler	2	2	-	
18-1	09402-00048	CLAMP, muffler connector	2	-	-	to 09402-36706
18-2	09402-00245	CLAMP, muffler connector	-	2	-	to 09402-36708
19	02112-06208	SCREW	2	4	-	
20	14211-31001	PIPE, exhaust coupler	2	2	-	
21	09280-44003	O RING	4	4	-	
22	09319-10016	BUSHING, muffler	2	2	-	
23	08322-21108	WASHER	2	2	-	
24	14860-31000	COVER COMP, rear	2	2	-	
25	14869-31000	CLIP, muffler rear cover	2	2	-	
26	14880-31000	COVER COMP, rear center	2	2	-	
27	14889-31000	CLIP, rear cover center	2	2	-	
28	09321-10007	CUSHION, muffler stopper	2	2	-	

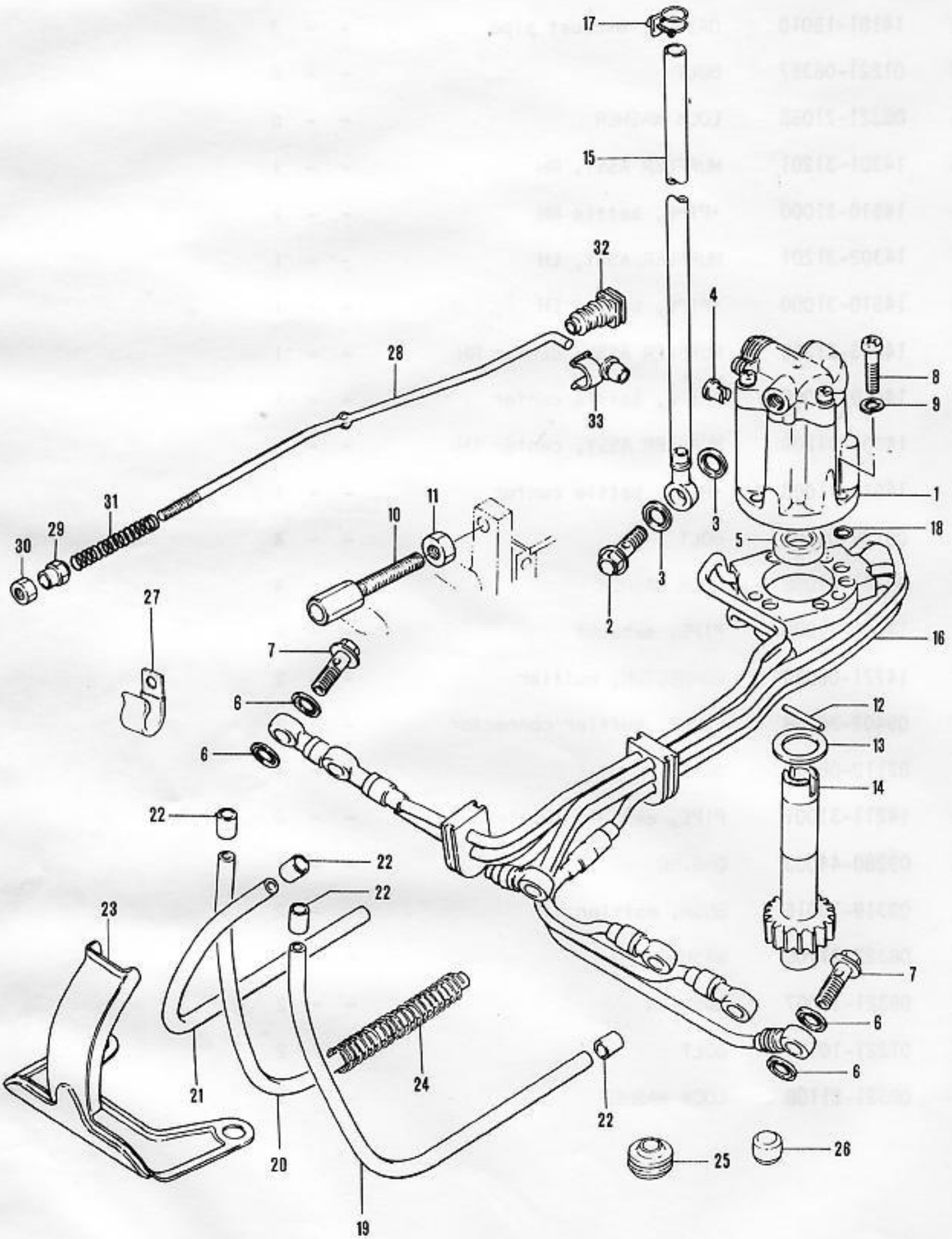
MUFFLER (GT750L)



MUFFLER (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	14182-31001	CLAMP, exhaust pipe	-	-	3
2	14181-15010	GASKET, exhaust pipe	-	-	3
3	01221-08357	BOLT	-	-	6
4	08321-21088	LOCK WASHER	-	-	6
5	14301-31201	MUFFLER ASSY, RH	-	-	1
6	14510-31000	·PIPE, baffle RH	-	-	1
7	14302-31201	MUFFLER ASSY, LH	-	-	1
8	14510-31000	·PIPE, baffle LH	-	-	1
9	14303-31200	MUFFLER ASSY, center RH	-	-	1
10	14610-31000	·PIPE, baffle center	-	-	1
11	14304-31200	MUFFLER ASSY, center LH	-	-	1
12	14610-31000	·PIPE, baffle center	-	-	1
13	09128-05101	BOLT	-	-	4
14	08321-21058	LOCK WASHER	-	-	4
15	14170-31000	PIPE, exhaust	-	-	1
16	14771-06080	CONNECTOR, muffler	-	-	2
17	09402-36708	CLAMP, muffler connector	-	-	2
18	02112-06208	SCREW	-	-	4
19	14211-31001	PIPE, exhaust coupler	-	-	2
20	09280-44003	O RING	-	-	4
21	09319-10016	BUSH, muffler	-	-	2
22	08322-21108	WASHER	-	-	2
23	09321-10007	CUSHION	-	-	2
24	01221-10557	BOLT	-	-	2
25	08321-21108	LOCK WASHER	-	-	2

OIL PUMP - OIL HOSE



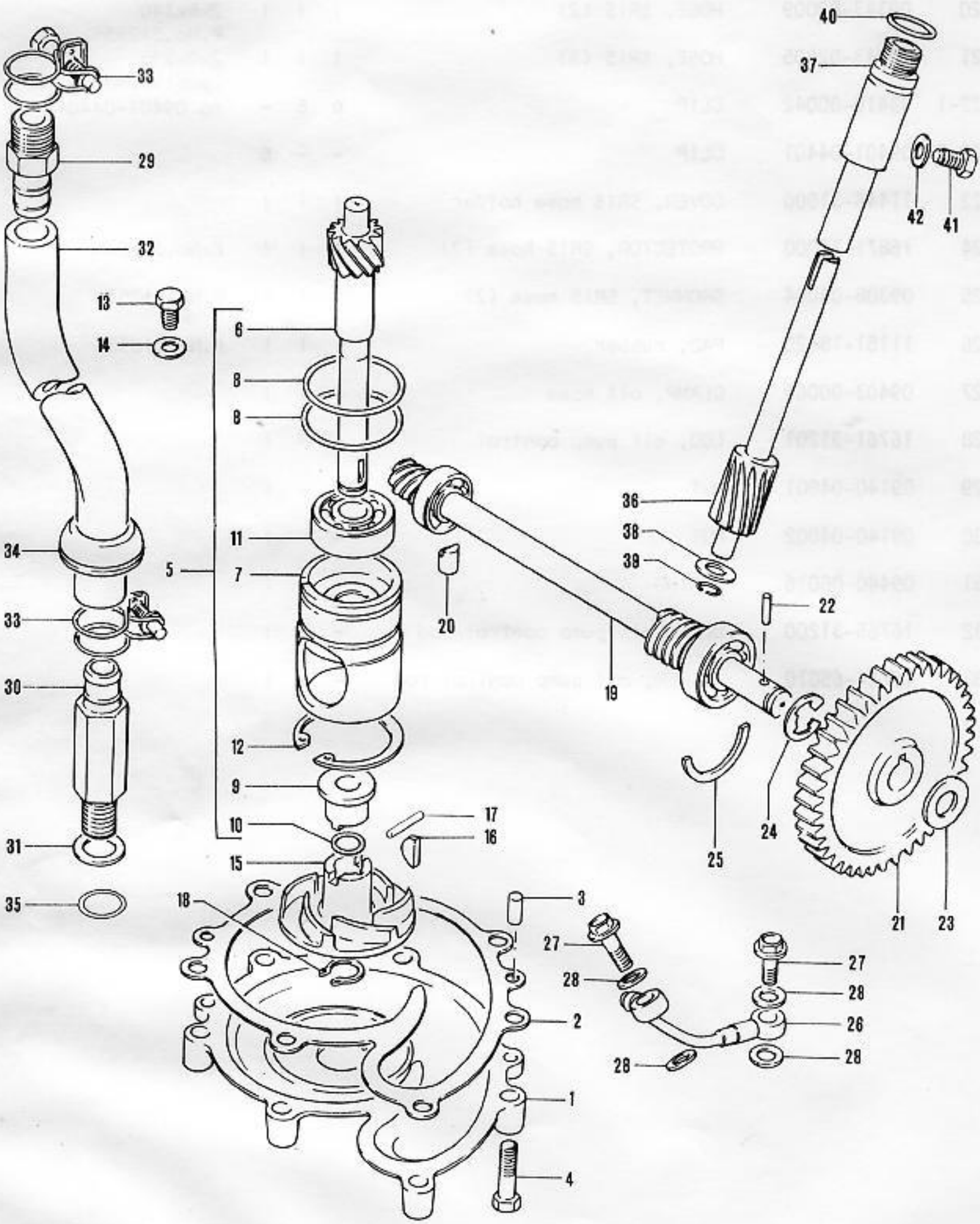
OIL PUMP - OIL HOSE

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	16002-31804	PUMP SET, oil	1	1	-	
1-2	16100-31830	PUMP SET, oil	-	-	1	
2	09360-06003	·UNION BOLT	1	1	1	6x16
3	09168-06002	·GASKET, union bolt	2	2	2	6x11.8x1.5
4	16292-03110	·TERMINAL, cable	1	1	-	
5	09285-08002	·OIL SEAL	1	1	1	
6	09168-06002	GASKET, union bolt	12	12	12	6x11.8x1.5
7	09360-06003	UNION BOLT	6	6	6	6x16
8	02111-05257	SCREW	3	3	3	
9	08321-21058	LOCK WASHER	3	3	3	
10	09119-08014	BOLT, cable adjuster	1	1	-	
11	08312-11088	NUT	1	1	-	
12	09261-03010	PIN, oil pump drive	1	1	1	
13	08211-14221	THRUST WASHER	1	1	1	
14	16331-31001	SHAFT, oil pump driven	1	1	1	NT:15
15	16810-05031	HOSE COMP, oil No.1	1	1	1	
16	16820-31031	HOSE COMP, oil No.2	1	1	1	
17-1	09400-00107	CLAMP, oil hose No.1	1	1	-	to 09400-10301
17-2	09400-10301	CLAMP, oil hose No.1	-	-	1	
18	09280-03002	O RING	6	6	6	

OIL PUMP - OIL HOSE

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
19	09343-02006	HOSE, SRIS (1)	1	1	1	2x5x390
20	09343-02009	HOSE, SRIS (2)	1	1	1	2x5x340 F.No.31253~
21	09343-02005	HOSE, SRIS (3)	1	1	1	2x5x235
22-1	09410-00042	CLIP	6	6	-	2pcs:~F.No.31252 to 09401-04401
22-2	09401-04401	CLIP	-	-	6	
23	11446-31000	COVER, SRIS hose holder	1	1	1	
24	16871-31000	PROTECTOR, SRIS hose (2)	1	1	1	F.No.31253~
25	09308-04004	GROMMET, SRIS hose (2)	1	1	1	F.No.31253~
26	11151-18620	PAD, rubber	1	1	1	F.No.31253~
27	09403-00069	CLAMP, oil hose	-	1	1	
28	16761-31201	LOD, oil pump control	-	-	1	
29	09140-04001	NUT	-	-	1	
30	09140-04002	NUT	-	-	1	
31	09440-06016	SPRING	-	-	1	
32	16765-31200	BOOT, oil pump control rod	-	-	1	
33	16764-65010	HOLDER, oil pump control rod	-	-	1	

WATER PUMP


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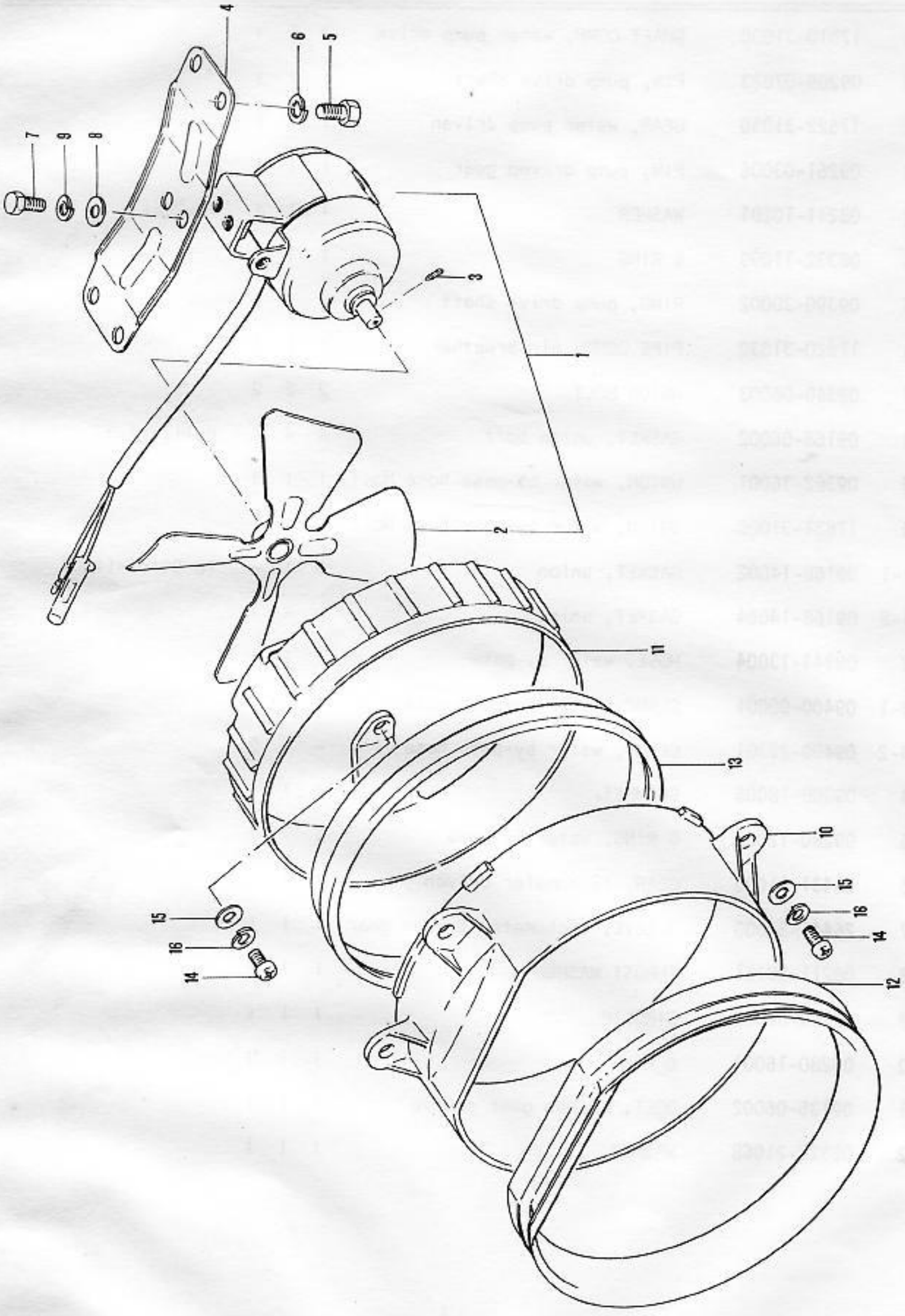
WATER PUMP

Ref.No.	Part No.	Description	Q'ty GT75J	Q'ty GT750K	Q'ty GT750L	Remarks
1	17411-31001	CASE, water pump	1	1	1	
2-1	17431-31001	GASKET, water pump case	1	1	-	to 17431-31002
2-2	17431-31002	GASKET, water pump case	-	-	1	
3	06211-05103	DOWEL PIN	2	2	2	
4	01112-06258	BOLT	8	8	8	
5-1	17000-31819	PUMP SET, water	1	1	-	to 17400-31830
5-2	17400-31830	PUMP SET, water	-	1	1	F.No.37158~
6-1	17461-31000	·SHAFT, water pump driven	1	1	-	to 17461-31001
6-2	17461-31001	·SHAFT, water pump driven	-	1	1	F.No.37158~
7	17400-31809	·HOLDER SET, pump driven shaft	1	1	1	
8	09280-33001	·O RING	2	2	2	32.6x1.9φ
9	17476-31000	·SEALING SEAT, water pump	1	1	1	
10	09280-10001	·O RING	1	1	1	9.6x1.3φ
11	08110-62000	·BEARING	1	1	1	
12	09381-40001	CIRCLIP	1	1	1	
13	09135-06002	BOLT, water pump holder	1	1	1	
14	08322-21068	WASHER	1	1	1	
15-1	17466-31000	IMPELLER, water pump	1	1	-	to 17466-31001
15-2	17466-31001	IMPELLER, water pump	-	1	1	F.No.37158~
16	08341-31039	KEY	1	1	-	
17	09205-03012	PIN	-	1	1	F.No.37158~
18	08331-11109	CIRCLIP	1	1	1	

WATER PUMP

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
19	17510-31000	SHAFT COMP, water pump drive	1	1	1	
20	09209-07023	PIN, pump drive shaft	1	1	1	
21	17522-31030	GEAR, water pump driven	1	1	1	
22	09261-03006	PIN, pump driven gear	1	1	1	
23	08211-10201	WASHER	1	1	1	10x20x1
24	08332-11099	E RING	1	1	2	
25	09390-30002	RING, pump drive shaft	1	1	1	
26	17620-31030	PIPE COMP, air breather	1	1	1	
27	09360-06003	UNION BOLT	2	2	2	
28	09168-06002	GASKET, union bolt	4	4	4	6x11.8x1.5
29	09362-16001	UNION, water by-pass hose No.1	1	1	1	
30	17631-31000	UNION, water by-pass hose No.2	1	1	1	
31-1	09168-14002	GASKET, union	1	1	-	to 09168-14004
31-2	09168-14004	GASKET, union	-	-	1	
32	09343-13004	HOSE, water by-pass	1	1	1	
33-1	09400-00001	CLAMP, water by-pass hose	2	2	-	
33-2	09400-22301	CLAMP, water by-pass hose	-	-	2	
34	09308-18005	GROMMET	1	1	1	
35	09280-12002	O RING, water by-pass	1	1	1	
36	26431-31000	GEAR, tachometer driven	1	1	1	
37	26441-31000	SLEEVE, tachometer driven gear	1	1	1	
38	08211-08161	THRUST WASHER	1	1	1	
39	09380-07002	CIRCLIP	1	1	1	
40	09280-16001	O RING	1	1	1	
41	09135-06002	BOLT, driven gear sleeve	1	1	1	
42	08322-21068	WASHER	1	1	1	

COOLING FAN

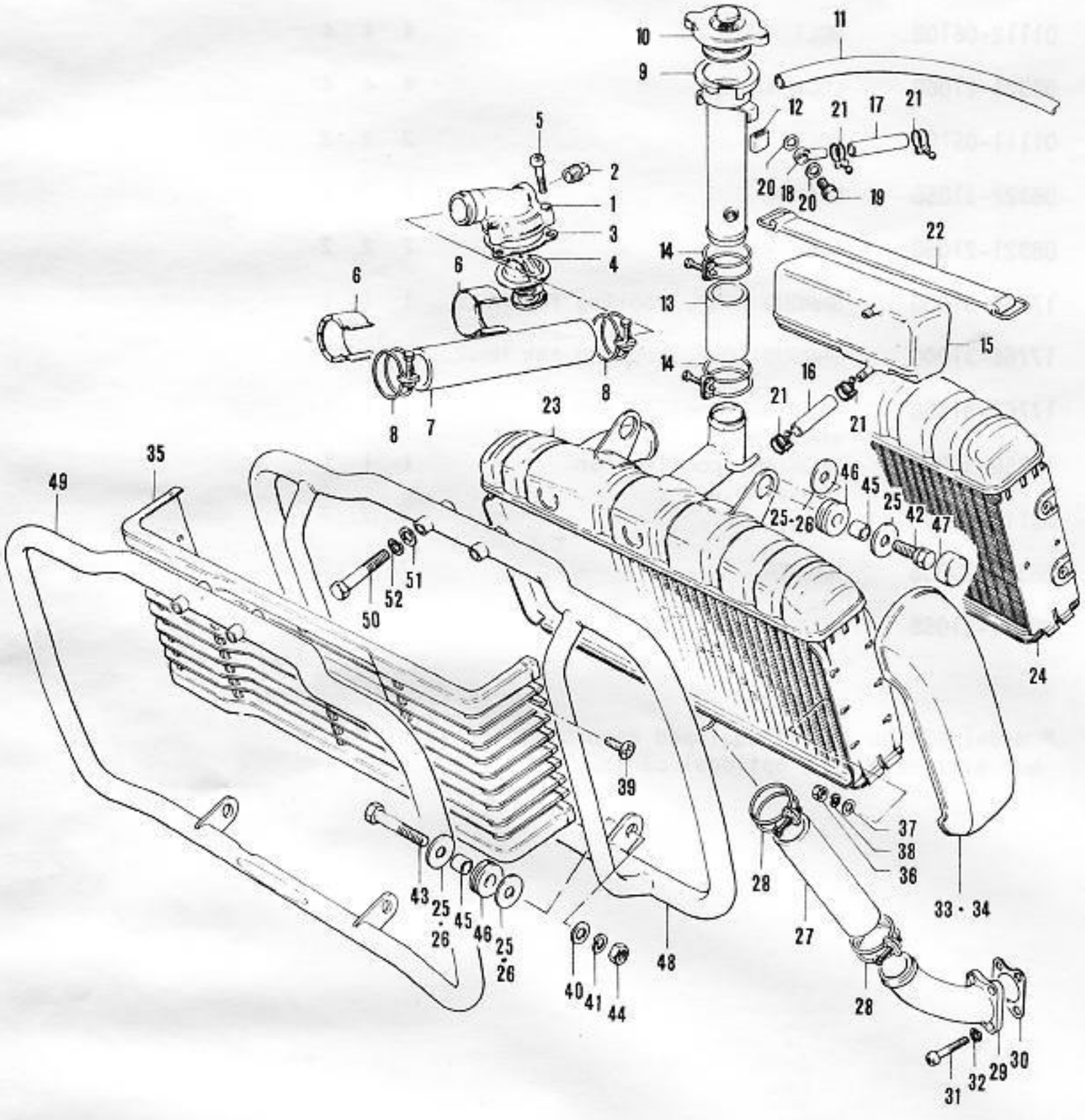


COOLING FAN

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	17110-31010	FAN COMP, cooling	1	1	1
2	17111-31010	·FAN, cooling	1	1	1
3	17112-31010	·SCREW	1	1	1
4	17113-31000	BRACKET, cooling fan motor	1	1	1
5	01112-06108	BOLT	4	4	4
6	08321-21068	LOCK WASHER	4	4	4
7	01111-05108	BOLT	2	2	2
8	08322-21058	WASHER	2	2	2
9	08321-21058	LOCK WASHER	2	2	2
10	17765-31000	SHROUD BOMP, cooling fan No.1	1	1	1
11	17766-31000	SHROUD COMP, cooling fan No.2	1	1	1
12	17767-31000	PACKING, cooling fan shoud No.1	1	1	1
13	17768-31000	PACKING, cooling fan shoud No.2	1	1	1
14	02112-05107	SCREW	7	7	7
15	08322-21058	WASHER	7	7	7
16	08321-21058	LOCK WASHER	7	7	7

* Model GT750L is not equipped as a standard specification but available as a optional parts.

THERMOSTAT - RADIATOR COVER



FWD

THERMOSTAT - RADIATOR COVER

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	17661-31000	COVER, thermostat	1	1	1	
2	09246-16001	PLUG, thermostat cover	-	-	1	
3	17668-31000	GASKET, thermostat cover	1	1	1	
4	17670-65020	THERMOSTAT COMP, water	1	1	1	
5	02112-06307	SCREW	3	3	3	
6	17856-31000	COVER, radiator hose	2	2	4	
7	09343-31001	HOSE, radiator inlet	1	1	1	
8-1	09400-00013	CLAMP, radiator hose	2	2	-	to 09400-40301
8-2	09400-40301	CLAMP, radiator hose	-	-	2	
9	17710-31010	PIPE COMP, water inlet	1	1	1	
10	17780-31010	CAP COMP, radiator	1	1	1	
11	17715-31010	HOSE, water over flow	1	1	1	
12	09329-01003	CUSHION, water inlet pipe	2	2	2	
13	09343-31003	HOSE, water inlet	1	1	1	
14-1	09400-00013	CLAMP, water inlet hose	2	2	-	to 09400-40301
14-2	09400-40301	CLAMP, water inlet hose	-	-	2	
15	17721-31000	TANK, radiator sub	1	1	1	
16	09343-05086	HOSE, sub tank No.1	1	1	1	45x5.5x9.5
17	09343-05087	HOSE, sub tank No.2	1	1	1	52x5.5x9.5
18	17755-31000	UNION, sub tank	1	1	1	
19	09360-06003	UNION BOLT	1	1	1	6x16
20	09168-06002	GASKET	2	2	2	6x11.8x1.5
21-1	09400-00107	CLAMP, sub tank hose	4	4	-	to 09400-10301
21-2	09400-10301	CLAMP, sub tank hose	-	-	4	
22	09462-00051	BAND, sub tank	1	1	1	

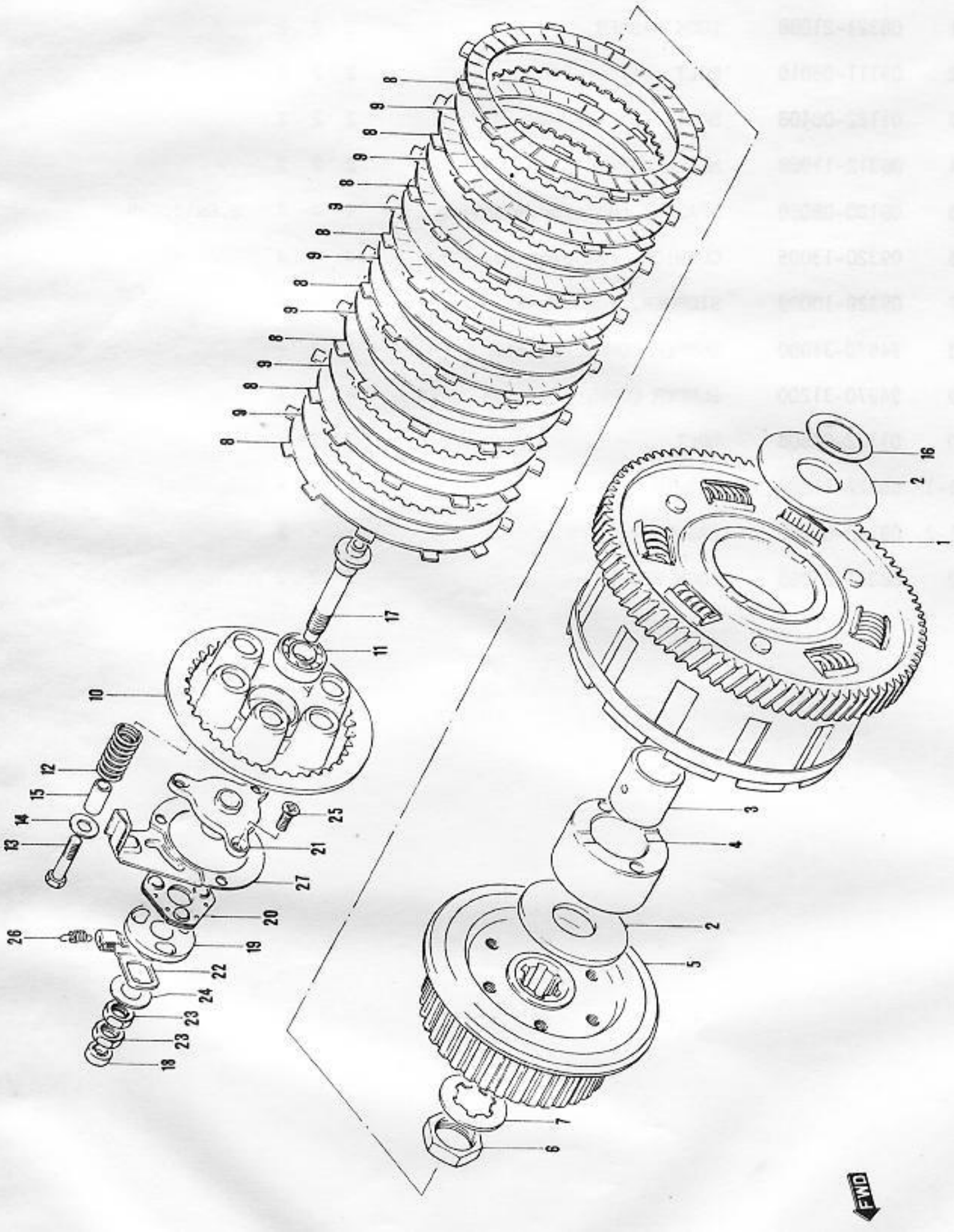
THERMOSTAT - RADIATOR COVER

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
23	17700-31813	RADIATOR SET	1	1	-	to 17700-31830
24	17700-31830	RADIATOR SET	-	-	1	
25	09160-08002	·WASHER, radiator mounting	AR(4∿8)			8.5x29x1.6
26	09160-08006	·WASHER, radiator mounting	AR(0∿4)			8.5x29x2.0
27	09343-31002	HOSE, radiator outlet	1	1	1	
28-1	09400-00013	CLAMP, radiator hose	2	2	-	to 09400-40301
28-2	09400-40301	CLAMP, radiator hose	-	-	2	
29	17854-31000	CONNECTOR, water inlet	1	1	1	
30	17855-31000	GASKET, inlet connector	1	1	1	
31	02112-06258	SCREW	4	4	4	
32	08321-21068	LOCK WASHER	4	4	4	
33-1	17760-31000-195	COVER, radiator	2	-	-	
33-2	17760-31000-216	COVER, radiator	2	-	-	
34	17760-31600	COVER, radiator	-	2	-	
35	17761-31200-126	COVER, radiator	-	-	1	
36	08311-11058	NUT	4	4	-	
37	08322-11058	WASHER	4	4	-	
38	08321-21058	LOCK WASHER	4	4	-	
39	02141-05127	SCREW	-	-	4	

THERMOSTAT - RADIATOR COVER

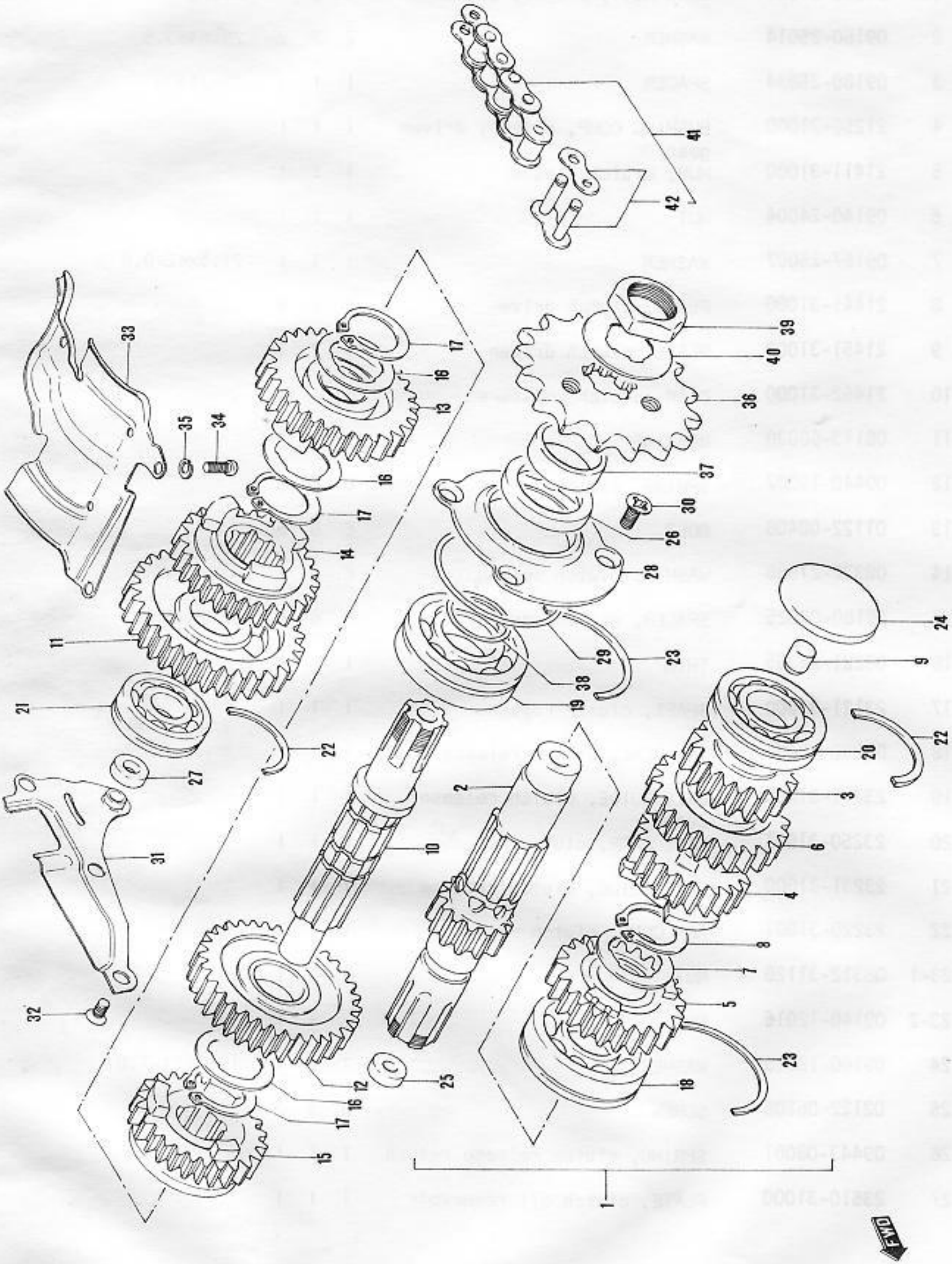
Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
40	08322-11088	WASHER	2	2	2	
41	08321-21088	LOCK WASHER	2	2	2	
42	09111-08010	BOLT, (1)	2	2	2	
43	01122-08408	BOLT, (2)	2	2	2	
44	08312-11088	NUT	2	2	2	
45	09180-08050	SPACER, radiator mounting	4	4	4	8.6x13.8x9
46	09320-13005	CUSHION, radiator mounting	4	4	4	
47	09329-10009	STOPPER, fuel tank	2	-	-	
48	94970-31000	BUMPER COMP, radiator	1	1	-	
49	94970-31200	BUMPER COMP, radiator	-	-	1	
50	01122-08508	BOLT	2	2	2	
51-1	08322-11088	WASHER	2	2	-	
51-2	09160-08030	WASHER	-	-	2	
52	08321-21088	LOCK WASHER	2	2	2	

CLUTCH


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CLUTCH

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	21200-31000	GEAR ASSY, primary driven	1	1	1	NT:82
2	09160-25014	WASHER	2	2	2	25x64x3.5
3	09180-25034	SPACER	1	1	1	25x31x28
4	21250-31000	BUSHING COMP, primary driven gear	1	1	1	
5	21411-31000	HUB, clutch sleeve	1	1	1	
6	09140-24004	NUT	1	1	1	
7	09167-25007	WASHER	1	1	1	21.5x42x0.8
8	21441-31000	PLATE, clutch drive	8	8	8	
9	21451-31000	PLATE, clutch driven	7	7	7	
10	21462-31000	DISK, clutch pressure	1	1	1	
11	08113-60030	BEARING	1	1	1	
12	09440-19007	SPRING, clutch	6	6	6	
13	01122-08408	BOLT	6	6	6	
14	08322-21088	WASHER, clutch spring	6	6	6	8.2x20x1.6
15	09180-08025	SPACER, clutch spring	6	6	6	8x12x23.2
16	08221-25365	THIM	1	1	1	
17	23121-31000	SHAFT, clutch release	1	1	1	
18	09282-10003	OIL SEAL, clutch release shaft	1	1	1	
19	23211-31000	BALL GUIDE, clutch release outer	1	1	1	
20	23250-31001	BALL COMP, clutch release	1	1	1	
21	23231-31000	BALL GUIDE, clutch release inner	1	1	1	
22	23220-31001	ARM COMP, clutch release	1	1	1	
23-1	08312-31128	NUT	2	2	1	
23-2	09140-12016	NUT	-	-	1	
24	09160-12013	WASHER	1	1	1	12.2x24x1.0
25	02122-06208	SCREW	3	3	3	
26	09443-08001	SPRING, clutch release return	1	1	1	
27	23510-31000	PLATE, clutch oil reservoir	1	1	1	


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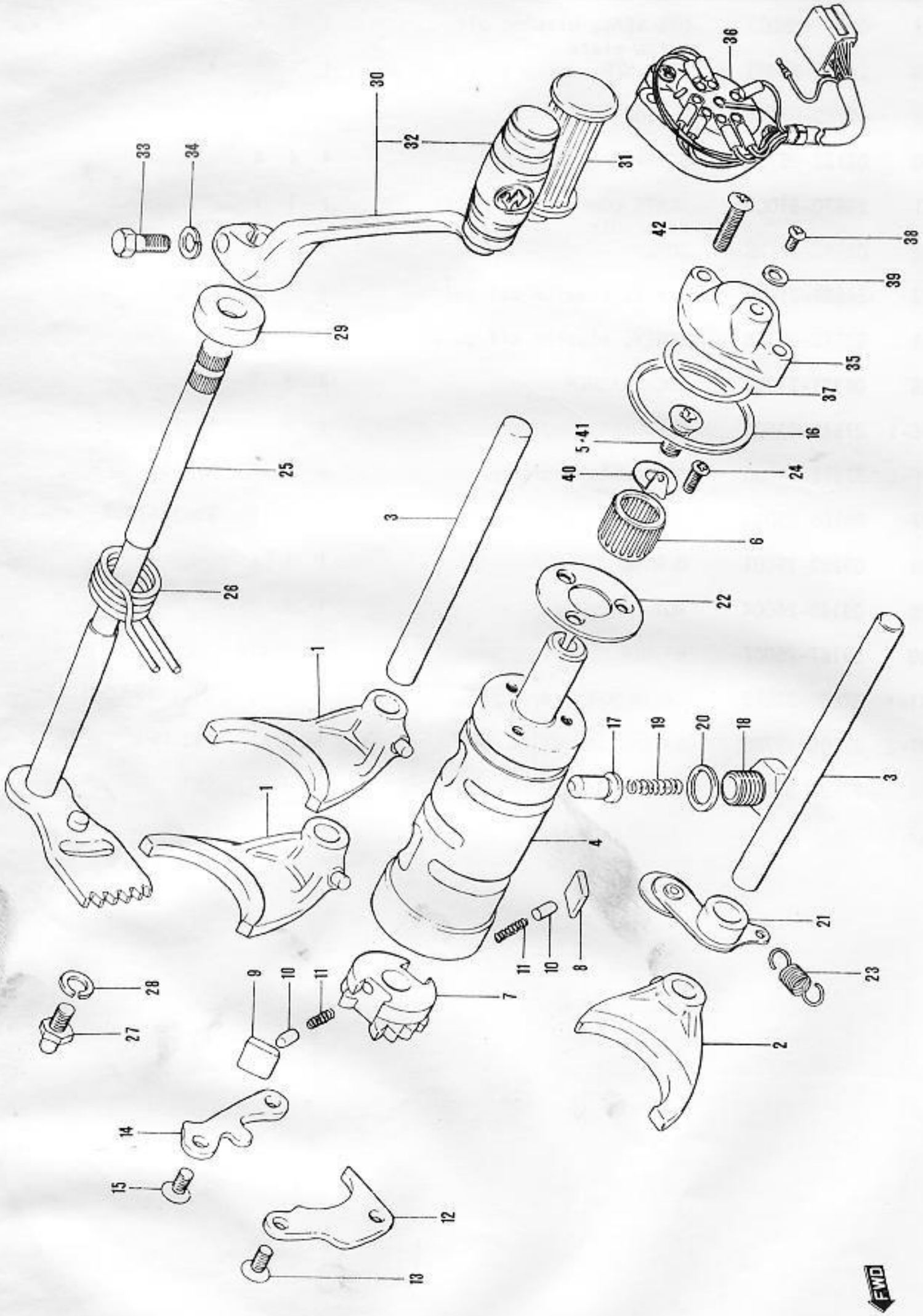
TRANSMISSION

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	24120-31000	COUNTER SHAFT COMP	1	1	1	
2	24121-31000	·COUNTER SHAFT	1	1	1	NT:13
3	24221-31000	·GEAR, 2nd drive	1	1	1	NT:19
4	24231-31000	·GEAR, 3rd drive	1	1	1	NT:22
5	24240-31000	·GEAR COMP, 4th drive	1	1	1	NT:24
6	24250-31000	·GEAR COMP, 5th drive	1	1	1	NT:26
7	09167-28001	·WASHER, 4th drive gear	1	1	1	
8	09380-28002	·CIRCLIP, 4th drive gear	1	1	1	
9	09243-09001	·PLUG, counter shaft	1	1	1	
10	24131-31000	SHAFT, drive	1	1	1	
11	24310-31821	GEAR COMP, 1st driven	1	1	1	NT:37 See Note 1
12	24320-31822	GEAR COMP, 2nd driven	1	1	1	NT:33 See Note 1
13	24330-31000	GEAR COMP, 3rd driven	1	1	1	NT:30
14	24341-31000	GEAR, 4th driven	1	1	1	NT:27
15	24351-31000	GEAR, 5th driven	1	1	1	NT:24
16	09167-28001	WASHER, driven gear	3	3	3	
17	09380-28002	CIRCLIP, driven gear	3	3	3	
18	09262-25024	BEARING, counter shaft RH	1	1	1	
19	08163-63050	BEARING, counter shaft LH	1	1	1	
20	08163-62040	BEARING, counter shaft LH	1	1	1	
21	09262-20036	BEARING, drive shaft RH	1	1	1	
22	09390-47003	C RING	2	2	2	
23	09390-62001	C RING	2	2	2	
24	09242-47001	PLUG, counter shaft bearing LH	1	1	1	
25	09284-10002	OIL SEAL, counter shaft	1	1	1	
26	09283-32003	OIL SEAL, drive shaft	1	1	1	

NOTE : This part consists of two gears per set.
Select one of two gears to fit existing transmission cluster.

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
27	09285-08003	OIL SEAL, mission oil guide plate	1	1	1	
28	24751-31000	RETAINER, drive shaft oil seal	1	1	1	
29	09280-63001	O RING	1	1	1	
30	02122-06128	SCREW	4	4	4	
31	24870-31000	PLATE COMP, mission oil reservoir	1	1	1	
32	02122-06128	SCREW	3	3	3	
33	24881-31000	PLATE, mission oil guide	1	1	1	
34	02112-05168	SCREW, mission oil guide plate	3	3	3	
35	08321-21058	LOCK WASHER	3	3	3	
36-1	27511-33600	SPROCKET, engine	1	1	1	NT:15
36-2	27511-34000	SPROCKET, engine	1	1	1	NT:16 OPT
37	09180-25033	SPACER, engine sprocket	1	1	1	25x32x10.7
38	09280-25001	O RING	1	1	1	
39	09140-24004	NUT	1	1	1	
40	09167-25007	WASHER	1	1	1	
41-1	27600-31013	CHAIN ASSY, drive	1	1	1	DID, 50HDS 108ℓ
41-2	27600-31700	EXTENSION, drive chain	1	1	1	4ℓ, OPT
42	27620-31012	JOINT, chain	1	1	1	OPT

GEAR SHIFTING



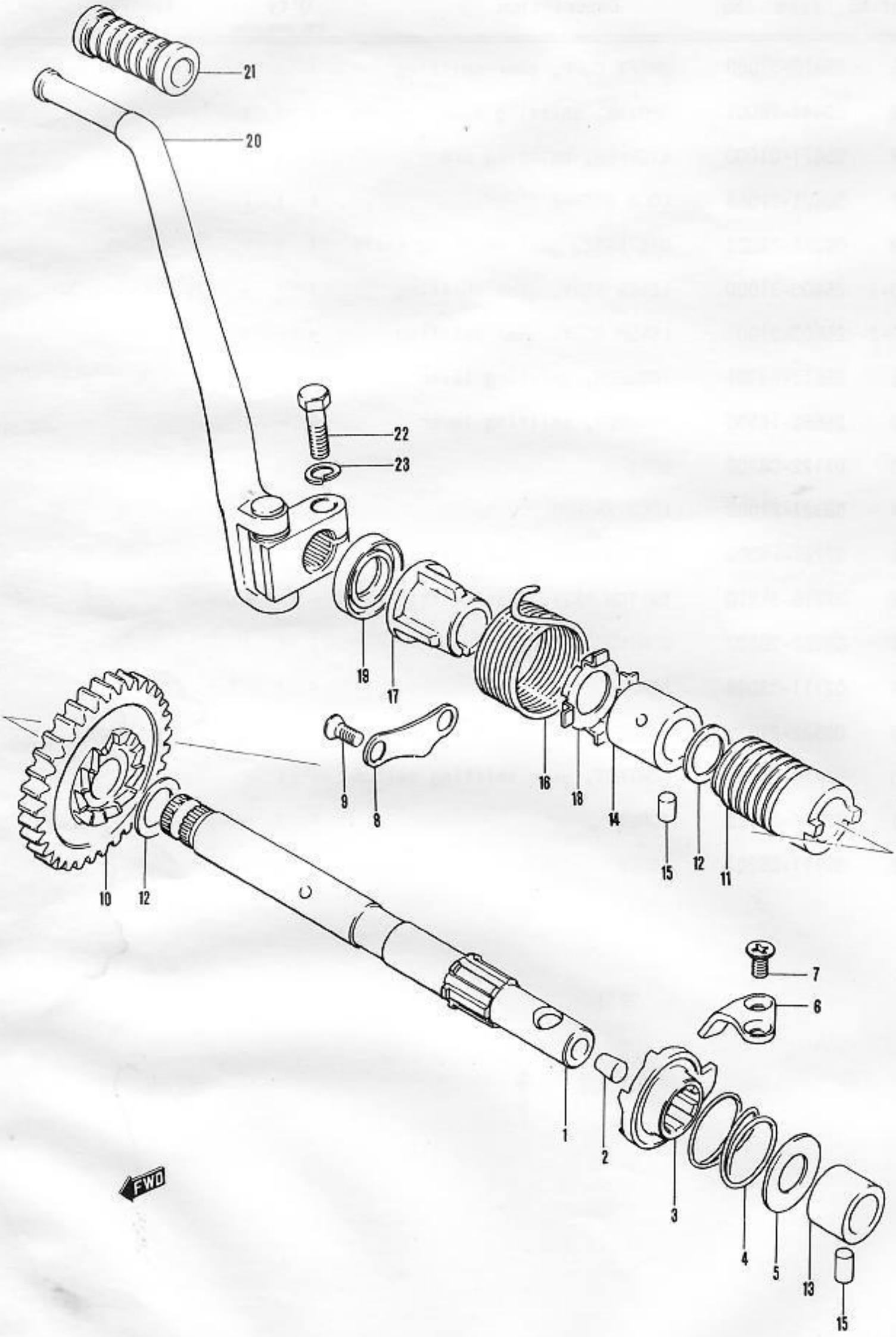
GEAR SHIFTING

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	25211-31000	FORK, gear shifting	2	2	2	
2	25231-31000	FORK, gear shifting	1	1	1	
3	25411-31000	SHAFT, gear shifting fork	2	2	2	
4-1	25310-31000	CAM COMP, shifting	1	1	-	to 25310-31910
4-2	25310-31910	CAM COMP, shifting	-	-	1	
5	02122-06168	SCREW	-	-	1	
6	09263-16006	BEARING, shifting cam	1	1	1	
7	25322-11000	GEAR, shifting cam driven	1	1	1	
8	25323-11000	PAWL, shifting No.1	1	1	1	
9	25324-11000	PAWL, shifting No.2	1	1	1	
10	09261-05003	PIN, shifting pawl	2	2	2	
11	09440-04003	SPRING, shifting pawl return	2	2	2	
12	25331-11001	REFTER, shifting pawl	1	1	1	
13	02122-06128	SCREW	2	2	2	
14	25341-31000	GUIDE, shifting cam	1	1	1	40x45x1
15	02122-06128	SCREW	2	2	2	
16	09160-40001	THRUST WASHER	1	1	1	40x45x1
17	25351-30000	STOPPER, shifting cam	1	1	1	
18	25354-30000	HOLDER, stopper spring	1	1	1	
19	09440-06014	SPRING, shifting cam	1	1	1	
20-1	09168-14002	WASHER, spring holder	1	1	-	to 09168-14004
20-2	09168-14004	WASHER, spring holder	-	-	1	
21	25350-31000	STOPPER COMP, shifting cam	1	1	1	
22	25381-20000	PLATE, shifting cam stopper	1	1	1	
23	09443-09006	SPRING, cam stopper arm	1	1	1	
24	02121-04127	SCREW	3	3	3	

GEAR SHIFTING

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
25	25510-31000	SHAFT COMP, gear shifting	1	1	1	
26	09444-26001	SPRING, shifting shaft return	1	1	1	
27	25671-01000	STOPPER, shifting arm	1	1	1	
28	08321-21088	LOCK WASHER	1	1	1	
29	09285-12002	OIL SEAL, gear shifting shaft	1	1	1	
30-1	25600-31000	LEVER ASSY, gear shifting	1	1	-	to 25600-31001
30-2	25600-31001	LEVER ASSY, gear shifting	-	-	1	
31	25652-03201	·RUBBER, shifting lever	1	1	-	
32	25652-16500	·RUBBER, shifting lever	-	-	1	
33	01122-08208	BOLT	1	1	1	
34	08321-21088	LOCK WASHER	1	1	1	
35	37721-15002	SWITCH ASSY, gear shifting	1	1	-	
36	37710-31210	SWITCH ASSY, gear shifting	-	-	1	
37	09280-28002	O RING	1	1	1	
38	02111-03048	SCREW	1	1	-	
39	08322-21038	WASHER	1	1	-	
40	37711-05100	CONTACT, gear shifting switch	1	1	-	
41	02122-06128	SCREW	1	1	-	
42	02111-05207	SCREW	2	2	2	

KICK STARTER

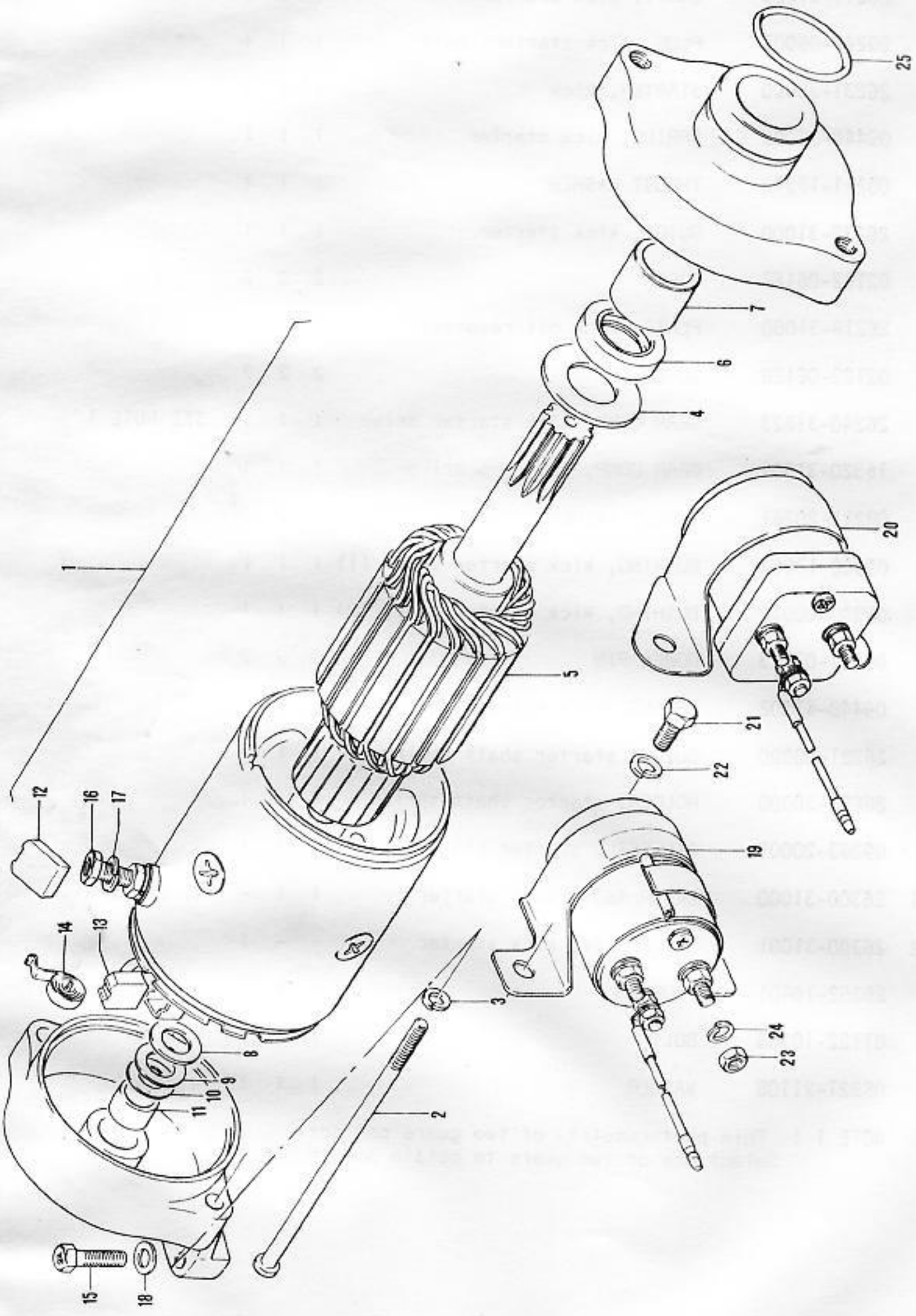


KICK STARTER

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	26211-31000	SHAFT, kick starter	1	1	1	
2	09243-09001	PLUG, kick starter shaft	1	1	1	
3	26231-30000	STARTER, kick	1	1	1	
4	09440-32002	SPRING, kick starter	1	1	1	
5	08211-17342	THRUST WASHER	1	1	1	
6	26232-31000	GUIDE, kick starter	1	1	1	
7	02122-06168	SCREW	2	2	2	
8	26219-31000	PLATE, kick oil reservoir	1	1	1	
9	02122-06128	SCREW	2	2	2	
10	26240-31823	GEAR COMP, kick starter drive	1	1	1	SEE NOTE 1
11	16320-31001	GEAR COMP, oil pump drive	1	1	1	
12	08211-20281	THRUST WASHER	2	2	2	
13	09300-17002	BUSHING, kick starter shaft (1)	1	1	1	
14	09300-20012	BUSHING, kick starter shaft (2)	1	1	1	
15	06211-07123	DOWEL PIN	2	2	2	
16	09448-47002	SPRING, kick starter shaft	1	1	1	
17	26221-30000	GUIDE, starter shaft spring	1	1	1	
18	26222-30000	HOLDER, starter shaft spring	1	1	1	
19	09283-20005	OIL SEAL, starter shaft	1	1	1	
20-1	26300-31000	LEVER ASSY, kick starter	1	1	-	to 26300-31001
20-2	26300-31001	LEVER ASSY, kick starter	-	-	1	
21	26352-16401	RUBBER	1	1	1	
22	01122-10308	BOLT	1	1	1	
23	08321-21108	WASHER	1	1	1	

NOTE 1 : This part consists of two gears per set.
Select one of two gears to obtain smooth operation.

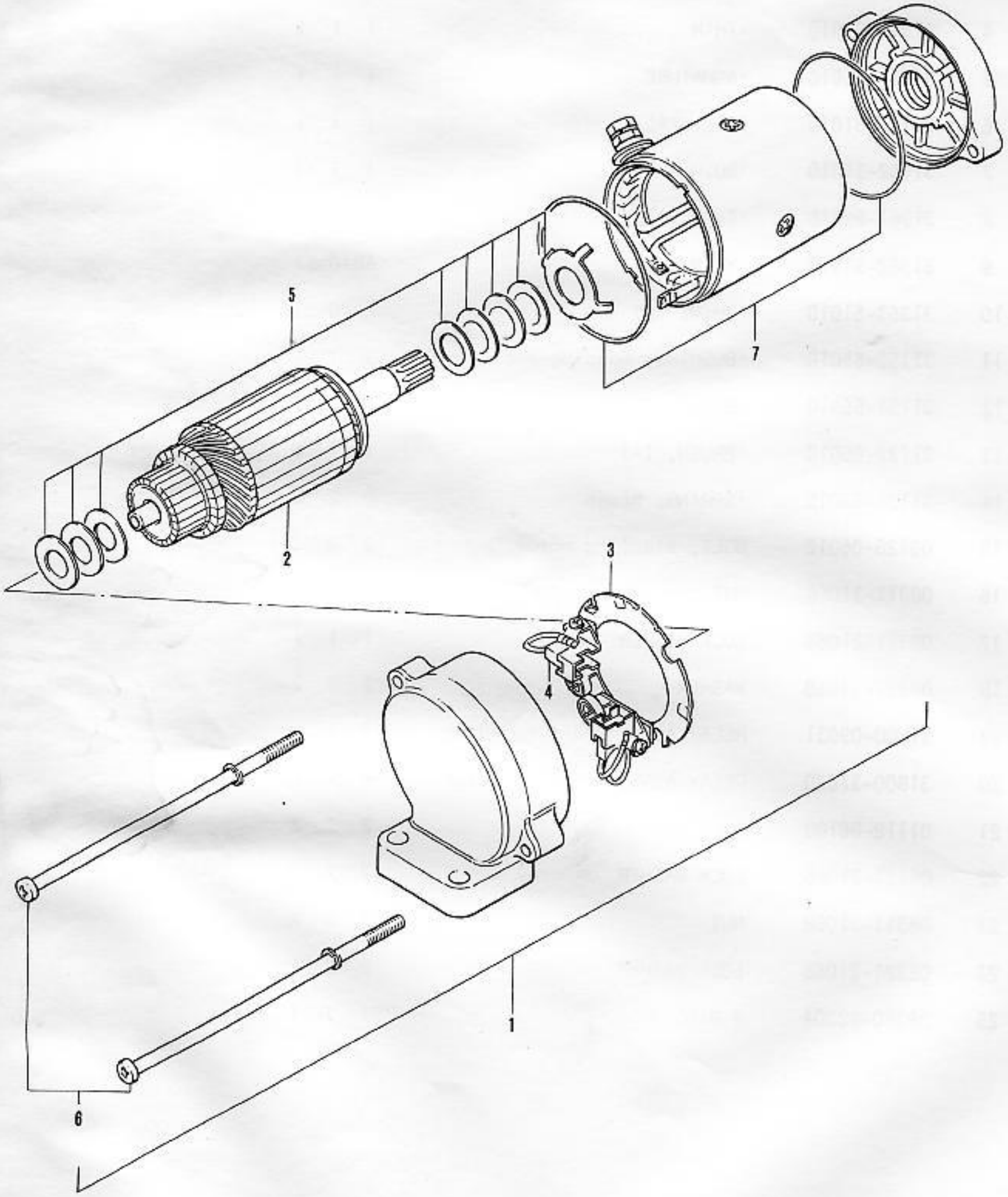
STARTING MOTOR (NIPPON DENSO)



STARTING MOTOR (NIPPON DENSO)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	31100-31010	MOTOR ASSY, starting	1	1	1
2	31281-31010	·BOLT, housing	2	2	2
3	08321-21058	·LOCK WASHER	2	2	2
4	31364-31010	·THIM	1	1	1
5	31311-31010	·ARMATURE	1	1	1
6	31153-31010	·OIL SEAL	1	1	1
7	31152-31010	·BUSHING	1	1	1
8	31361-65010	·THIM, (1)	1	1	1
9	31362-51010	·THIM, (2)	AR(0~2)		
10	31363-51010	·THIM, (3)	AR(0~2)		
11	31152-65010	·BUSHING, housing end	1	1	1
12	31131-65010	·BRUSH, (+)	1	1	1
13	31132-65010	·BRUSH, (-)	1	1	1
14	31135-65010	·SPRING, brush	2	2	2
15	09128-06012	BOLT, starting motor	2	2	2
16	08311-31068	NUT	1	1	1
17	08321-21068	LOCK WASHER	1	1	1
18	08322-11068	WASHER	2	2	2
19	31800-09031	RELAY ASSY, starting motor	1	1	-
20	31800-37020	RELAY ASSY, starting motor	-	-	1
21	01112-06108	BOLT	2	2	2
22	08321-21068	LOCK WASHER	2	2	2
23	08311-31068	NUT	2	2	2
24	08321-21068	LOCK WASHER	2	2	2
25	09280-22004	O RING	1	1	1

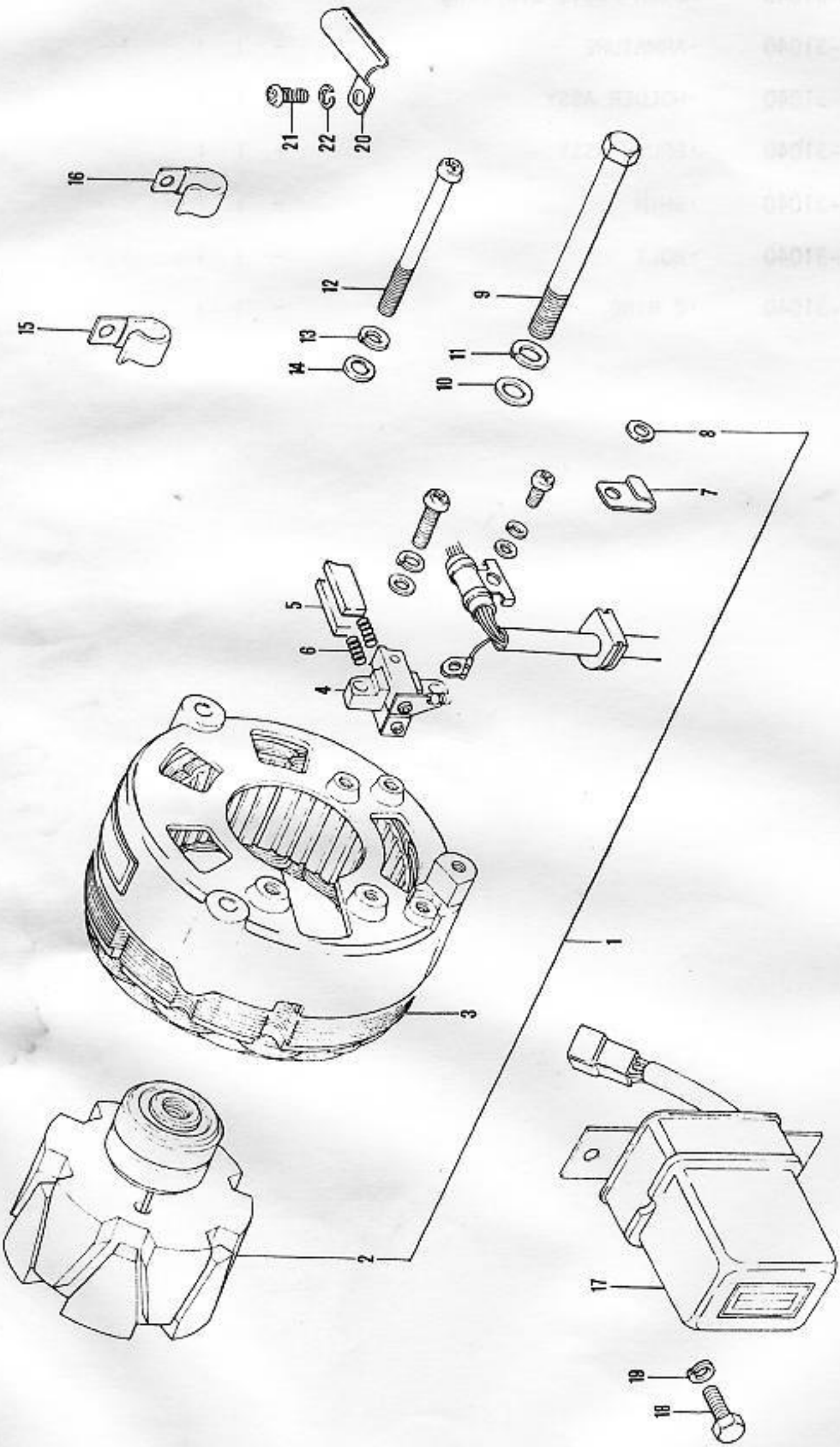
STARTING MOTOR (MITUBISHI)



STARTING MOTOR (MITUBISHI)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	31100-31040	MOTOR ASSY, starting	-	1	1
2	31311-31040	·ARMATURE	-	1	1
3	31173-31040	·HOLDER ASSY	-	1	1
4	31131-31040	·BRUSH ASSY	-	1	1
5	31361-31040	·SHIM	-	1	1
6	31281-31040	·BOLT	-	1	1
7	31264-31040	·O RING	-	1	1

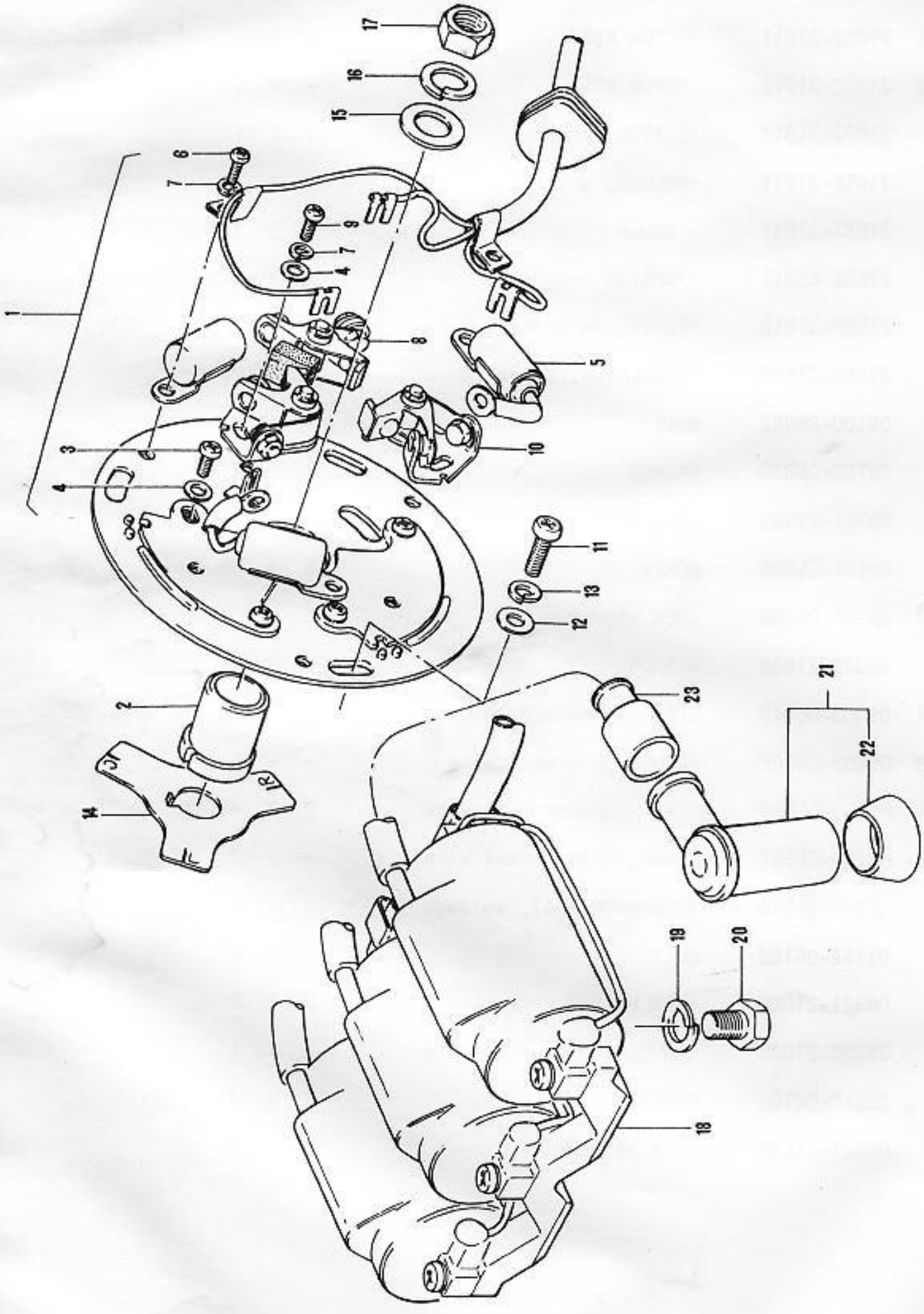
A.C.GENERATOR



A.C.GENERATOR

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	31400-31010	GENERATOR ASSY	1	1	1	
2-1	31402-31011	·ROTOR ASSY	1	1	-	to 31402-31012
2-2	31402-31012	·ROTOR ASSY	-	-	1	
3	31401-31012	·STATOR, brush	1	1	1	
4	31656-31011	·HOLDER, brush	1	1	1	
5	31631-31011	··BRUSH	2	2	2	
6	31635-55011	··SPRING	2	2	2	
7	31667-31010	·PLATE, terminal	1	1	1	
8	31668-31010	·INSULATOR, holder	1	1	1	
9	09100-08092	BOLT	1	1	1	
10	09160-08030	WASHER	1	1	1	
11	08321-21088	LOCK WASHER	1	1	1	
12	02111-05658	SCREW	3	3	3	
13	08321-21058	LOCK WASHER	3	3	3	
14	08322-21058	WASHER	3	3	3	
15-1	09403-00048	CLAMP, generator wire	2	2	-	to 09403-09302
15-2	09403-09302	CLAMP, generator wire	-	-	2	
16-1	09403-00090	CLAMP, braker read wire	2	2	-	to 09403-09301
16-2	09403-09301	CLAMP, braker read wire	-	-	4	
17	32500-31010	REGURATOR ASSY, voltage	1	1	1	
18	01112-06168	BOLT	2	2	2	
19	08321-21068	LOCK WASHER	2	2	2	
20	33280-31000	CLAMP, braker read wire	1	1	1	
21	02112-06108	SCREW	1	1	1	
22	08321-21068	LOCK WASHER	1	1	1	

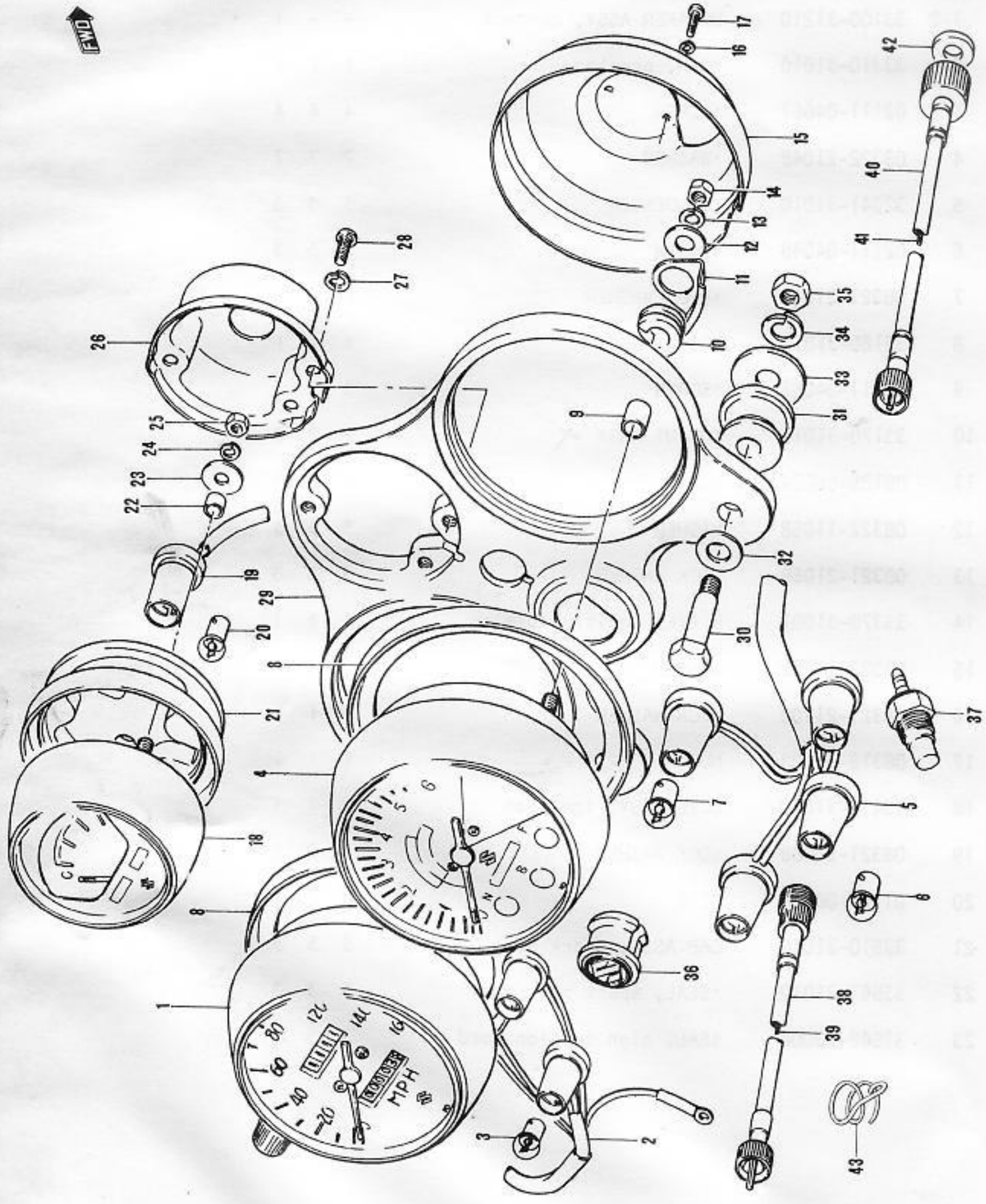
CONTACT BREAKER



CONTACT BREAKER

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1-1	33100-31011	BREAKER ASSY, contact	1	1	-
1-2	33100-31210	BREAKER ASSY, contact	-	-	1
2	33310-31010	·CAM, breaker	1	1	1
3	02111-04067	·SCREW	4	4	4
4	08322-21048	·WASHER	7	7	7
5	32341-31010	·CONDENSER	3	3	3
6	02111-04048	·SCREW	3	3	3
7	08321-21048	·LOCK WASHER	6	6	6
8	33160-31010	·POINT ASSY	1	1	1
9	02111-04067	·SCREW	3	3	3
10	33170-31010	·POINT ASSY ✓	2	2	2
11	09125-05024	SCREW	3	3	3
12	08322-11058	WASHER	3	3	3
13	08321-21058	LOCK WASHER	3	3	3
14	33370-31001	PLATE, ignition timing	1	1	1
15	08322-11108	WASHER	1	1	1
16	08321-21108	LOCK WASHER	1	1	1
17	08312-11108	NUT	1	1	1
18	33410-31010	COIL ASSY, ignition	1	1	1
19	08321-21088	LOCK WASHER	2	2	2
20	01122-08128	BOLT	2	2	2
21	33510-31010	CAP ASSY, spark plug	3	3	3
22	33541-31010	·SEAL, spark plug cap	3	3	3
23	33542-98000	SEAL, high tension cord	3	3	3

COMBINATION METER



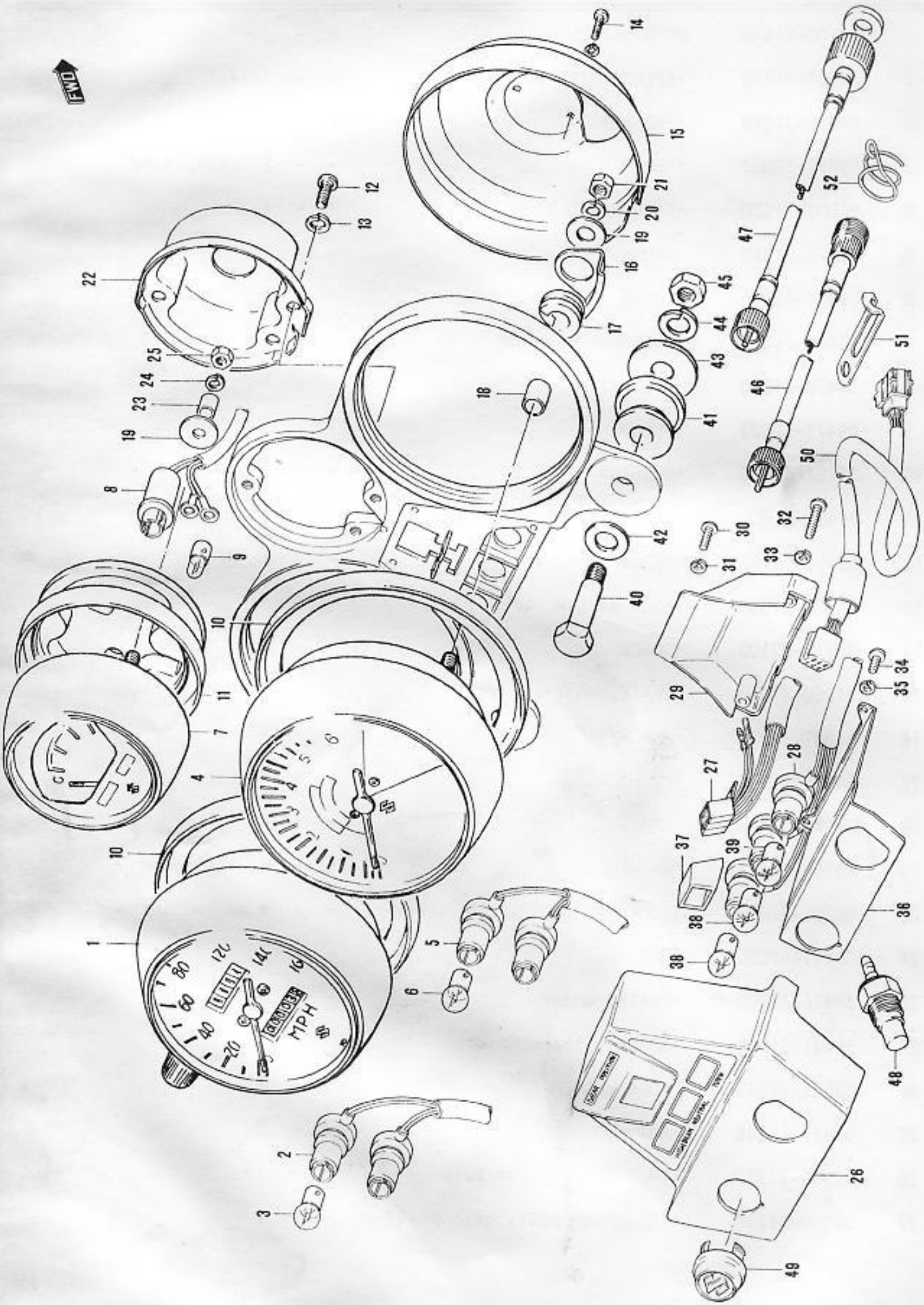
COMBINATION METER

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	34100-31610-999	SPEEDOMETER ASSY	1	-	-	
1-2	34100-31612-999	SPEEDOMETER ASSY	-	1	-	
2-1	34170-31610	·SOCKET ASSY	1	-	-	
2-2	34170-31010	·SOCKET ASSY	-	1	-	
3	09471-12001	BULB	2	2	-	12V, 3.4W
4-1	34200-31011-999	TACHOMETER ASSY	1	-	-	
4-2	34200-31602-999	TACHOMETER ASSY	-	1	-	
5	34270-31011	·SOCKET	1	1	-	
6	09471-12001	BULB	3	3	-	12V, 3.4W
7	09471-12004	BULB	1	1	-	12V, 1.7W
8	34181-31000	CUSHION, speedometer No.1	2	2	-	
9-1	34972-31000	SPACER	4	-	-	
9-2	34972-31012	SPACER	-	4	-	
10	34282-31000	CUSHION, tachometer	4	4	-	
11-1	34951-31000	BRACKET, speedometer	4	-	-	
11-2	34951-31012	BRACKET, speedometer	-	4	-	
12	09160-05017	WASHER	4	6	-	5.5x16x1.2
13	08321-21058	LOCK WASHER	4	4	-	
14	08311-11058	NUT	4	4	-	
15-1	34960-31000	PLATE, speedometer under	2	-	-	
15-2	34960-31012	PLATE, speedometer under	-	2	-	
16	08321-21038	LOCK WASHER	4	-	-	
17	02111-03108	SCREW	4	4	-	
18-1	34400-31011-999	THERMOMETER ASSY	1	-	-	
18-2	34400-31012-999	THERMOMETER ASSY	-	1	-	
19-1	34470-31011	·SOCKET ASSY	1	-	-	
19-2	34470-31012	·SOCKET ASSY	-	1	-	

COMBINATION METER

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
20-1	09471-12001	BULB	1	-	-	12V, 3.4W
20-2	09471-12023	BULB	-	1	-	12V, 2W
21	34481-31000	CUSHION, thermometer No.1	1	1	-	
22	34491-31000	COLLAR, thermometer	5	2	-	
23	09160-04001	WASHER	4	-	-	4.5x14x1.0
24	08321-21048	LOCK WASHER	2	2	-	
25	08311-11048	NUT	2	2	-	
26	34970-31000	PLATE, thermometer under	1	1	-	
27	08321-21058	LOCK WASHER	3	3	-	
28	02111-05127	SCREW	3	3	-	
29	34950-31010	BRACKET, combination meter	1	-	-	
30	34952-31000	BOLT, meter bracket	2	2	-	
31	34956-31000	CUSHION, meter bracket	2	2	-	
32	08322-11108	WASHER	2	2	-	
33	09160-08006	WASHER	2	1	-	8.5x29x2
34	08321-21088	LOCK WASHER	2	2	-	
35	08312-11088	NUT	2	2	-	
36	34995-31600	CAP, speed warning lamp	1	1	-	
37	34850-65011	GAGE ASSY, temperature	1	1	-	
38-1	34910-31030	CABLE ASSY, speedometer	1	-	-	
38-2	34910-34030	CABLE ASSY, speedometer	-	1	-	to 34910-34031
39-1	34911-31030	·CABLE, speedometer inner	1	-	-	
39-2	34911-34030	·CABLE, speedometer inner	-	1	-	to·34910-34031
40	34940-31030	CABLE ASSY, tachometer	1	1	-	
41	34941-31030	·CABLE, tachometer inner	1	1	-	
42	34928-08430	·OIL SEAL	1	1	-	
43	51452-31000	CLAMP	-	1	-	

COMBINATION METER (GT750L)



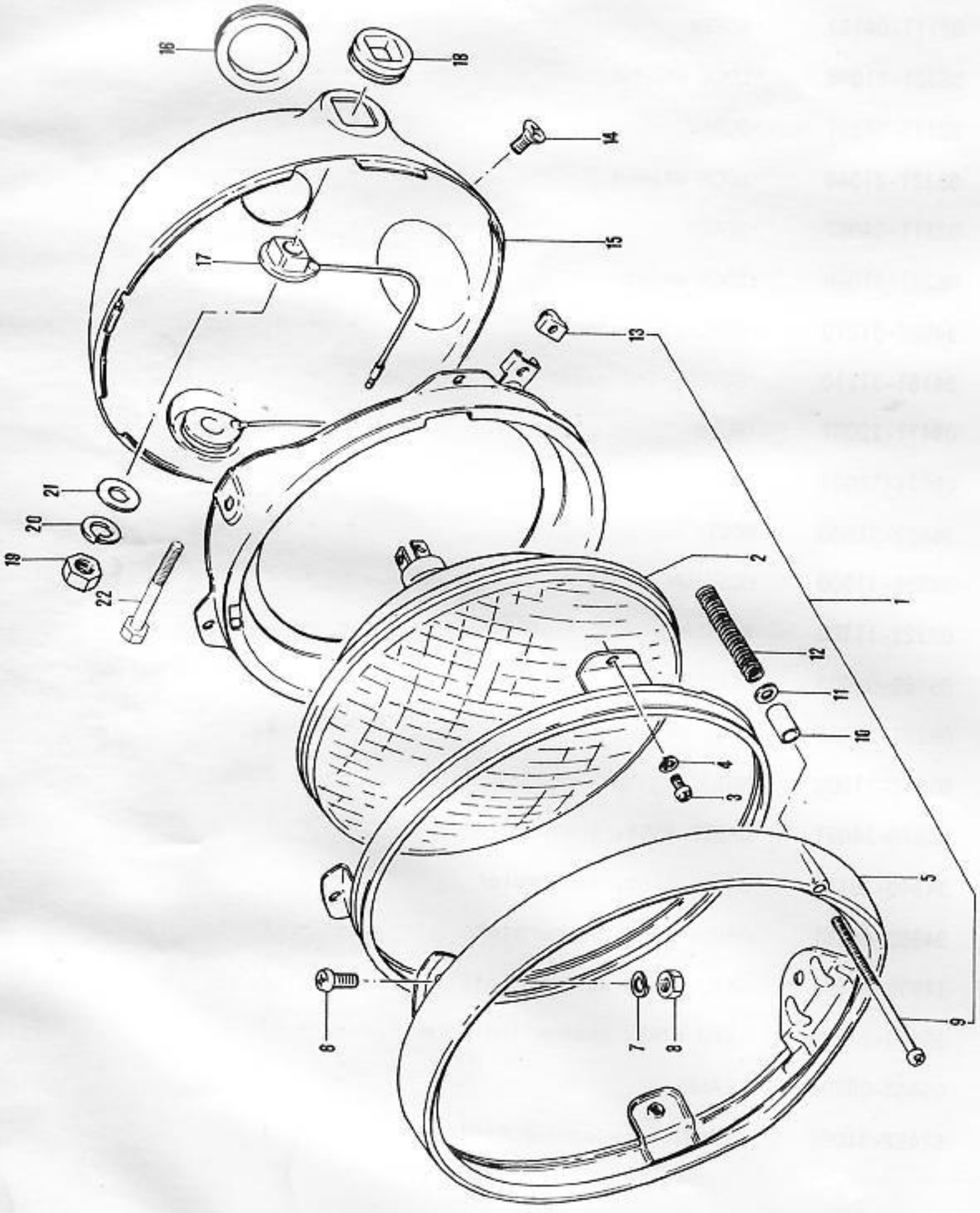
COMBINATION METER (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
	34100-31630	COMBINATION METER ASSY	-	-	1	
1	34101-31630	·SPEEDOMETER ASSY	-	-	1	
2	34270-31210	··SOCKET	-	-	1	
3	09471-12001	··BULB	-	-	2	12V, 3.4W
4	34201-31620	·TACHOMETER ASSY	-	-	1	
5	34270-31210	··SOCKET	-	-	1	
6	09471-12001	··BULB	-	-	2	12V, 3.4W
7	34400-31210	·THERMOMETER ASSY	-	-	1	
8	34470-31210	··SOCKET	-	-	1	
9	09471-12023	··BULB	-	-	1	12V, 2W
10	34181-31000	·CUSHION	-	-	2	
11	34481-31000	·CUSHION	-	-	1	
12	02111-05127	·SCREW	-	-	3	
13	08321-21058	·LOCK WASHER	-	-	3	
14	02111-03108	·SCREW	-	-	4	
15	34960-31012	·PLATE, under	-	-	2	
16	34951-31012	·BRACKET	-	-	4	
17	34282-31000	·CUSHION	-	-	4	
18	34972-31012	·SPACER	-	-	4	
19	09160-05017	·WASHER	-	-	6	5.5x16x1.2
20	08321-21058	·LOCK WASHER	-	-	4	
21	08311-11058	·NUT	-	-	4	
22	34970-31000	·PLATE, under	-	-	1	
23	34491-31000	·SPACER, thermometer	-	-	2	
24	08321-21048	·LOCK WASHER	-	-	2	
25	08311-11048	·NUT	-	-	2	
26	34980-31210	·CASE ASSY, pilot bulb	-	-	1	
27	34990-31210	·INDICATER ASSY, gear position	-	-	1	

COMBINATION METER (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
28	34160-31210	·SOCKET ASSY, pilot bulb	-	-	1	
29	34981-31210	·PLATE	-	-	1	
30	02111-04127	·SCREW	-	-	2	
31	08321-21048	·LOCK WASHER	-	-	2	
32	02111-04207	·SCREW	-	-	2	
33	08321-21048	·LOCK WASHER	-	-	2	
34	02111-04067	·SCREW	-	-	2	
35	08321-21048	·LOCK WASHER	-	-	2	
36	34982-31210	·BRACKET, under	-	-	1	
37	34161-31210	·COVER, indicater	-	-	1	
38	09471-12001	·BULB	-	-	2	12V, 3.4W
39	09471-12004	·BULB	-	-	1	12V, 1.7W
40	34952-31000	BOLT	-	-	2	
41	34956-31000	CUSHION	-	-	2	
42	08322-11108	WASHER	-	-	2	
43	09160-08002	WASHER	-	-	1	8.5x29x1.6
44	08321-21088	LOCK WASHER	-	-	2	
45	08312-11088	NUT	-	-	2	
46	34910-34031	CABLE ASSY, speedometer	-	-	1	
47	34940-18131	CABLE ASSY, tachometer	-	-	1	
48	34850-65011	GAUGE ASSY, temperature	-	-	1	
49	34995-31600	CAP, speed warning lamp	-	-	1	
50	36660-31200	LEAD WIRE, change indicater	-	-	1	
51	09404-08402	CLAMP	-	-	1	
52	51452-31000	CLAMP, speedometer cable	-	-	1	

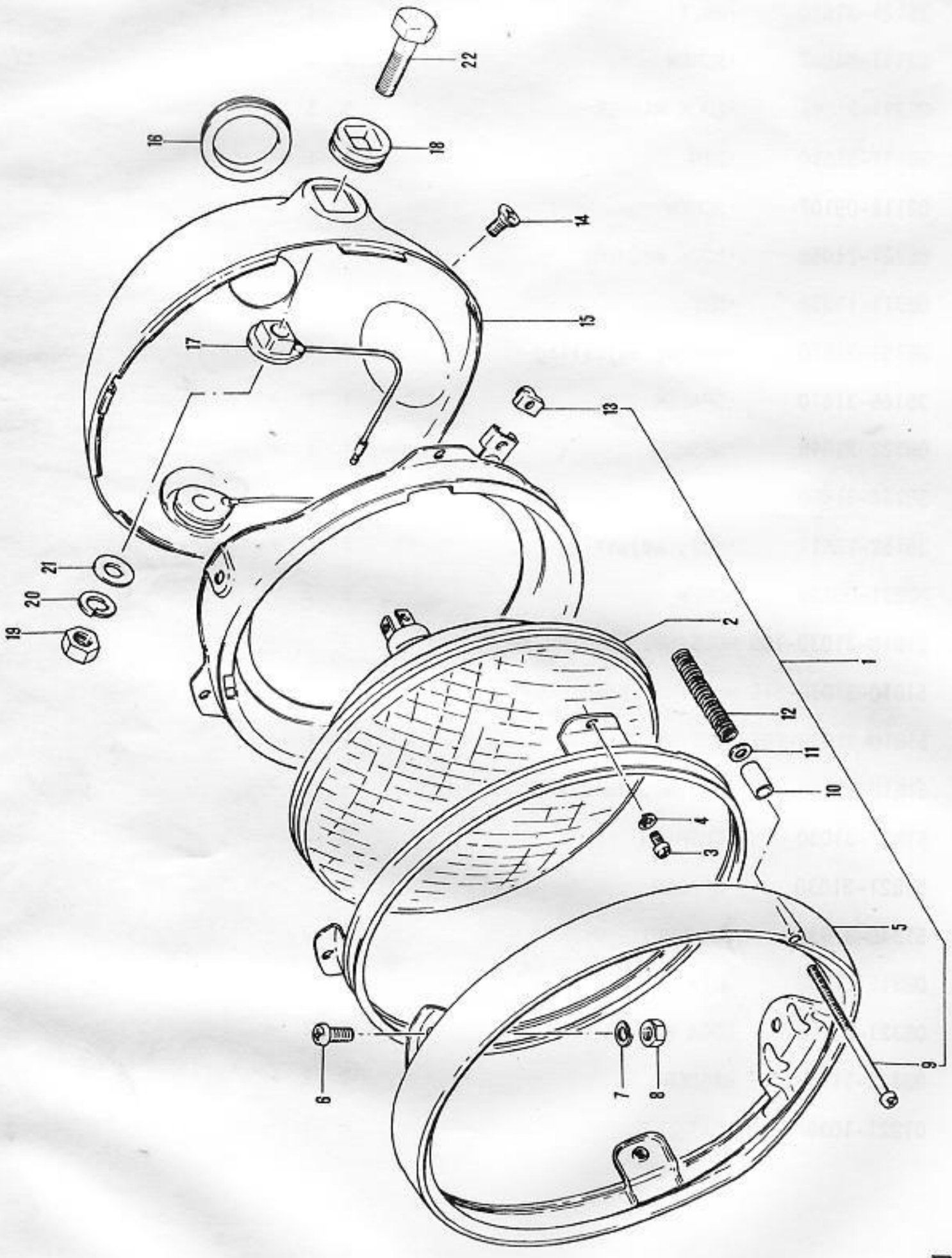
HEAD LAMP



HEADLAMP

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	35100-31610	HEADLAMP ASSY	1	1	-	to 35100-34610
2	35121-31610	·UNIT	1	1	-	
3	02111-04087	·SCREW	3	3	-	
4	08321-21048	·LOCK WASHER	3	3	-	
5	35111-31610	·RIM	1	1	-	
6	02112-05107	·SCREW	2	2	-	
7	08321-21058	·LOCK WASHER	2	2	-	
8	08311-11058	·NUT	2	2	-	
9	35151-31610	·SCREW, adjusting	1	1	-	
10	35165-31610	·SPACER	1	1	-	
11	08322-21048	·WASHER	1	1	-	
12	35154-31610	·SPRING, adjuster	1	1	-	
13	35152-15611	·NUT, adjusting	1	1	-	
14	02231-05128	SCREW	2	2	-	
15-1	51810-31030-195	HOUSING, headlamp	1	-	-	
15-2	51810-31030-216	HOUSING, headlamp	1	-	-	
15-3	51810-31030-707	HOUSING, headlamp	-	1	-	
15-4	51810-31030-708	HOUSING, headlamp	-	1	-	
16	51827-31030	·CUSHION	2	2	-	
17	51821-31030	·SPACER	2	2	-	
18	51845-31030	·GROMMET	2	2	-	
19	08312-11108	NUT	2	-	-	
20	08321-21108	LOCK WASHER	2	2	-	
21	08322-11108	WASHER	2	2	-	
22	01221-10307	BOLT	-	2	-	

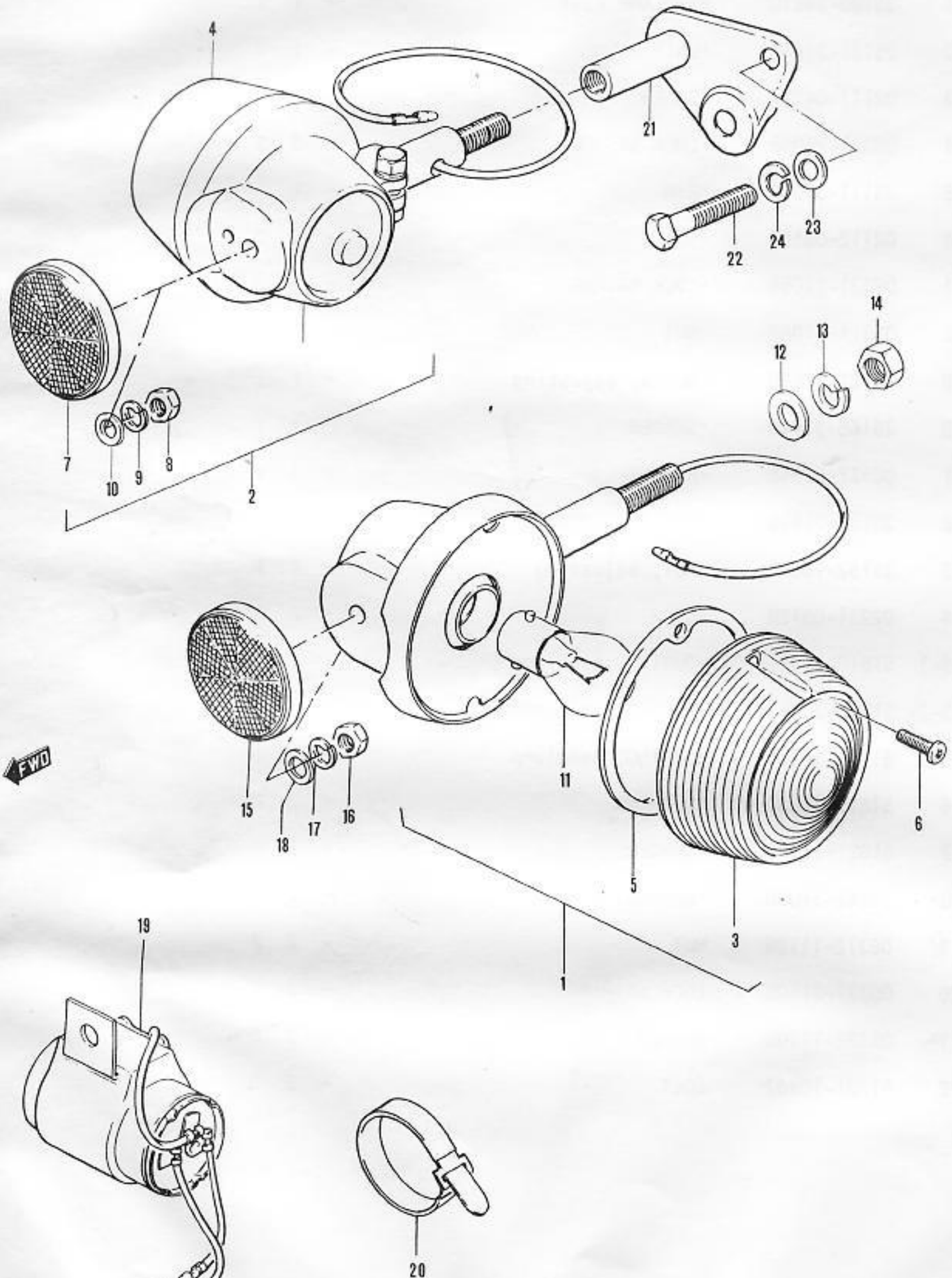
HEAD LAMP (F.No.37423~)



HEADLAMP (F.No.37423∿)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	35100-34610	HEADLAMP ASSY	-	1	1
2	35121-31610	·UNIT	-	1	1
3	02111-04087	·SCREW	-	3	3
4	08321-21048	·LOCK WASHER	-	3	3
5	35111-34030	·RIM	-	1	1
6	02112-05107	·SCREW	-	2	2
7	08321-21058	·LOCK WASHER	-	2	2
8	08311-11058	·NUT	-	2	2
9	35151-31610	·SCREW, adjusting	-	1	1
10	35165-31610	·SPACER	-	1	1
11	08322-21048	·WASHER	-	1	1
12	35154-31610	·SPRING, adjuster	-	1	1
13	35152-15611	·NUT, adjusting	-	1	1
14	02231-05128	SCREW	-	2	2
15-1	51810-31031-707	HOUSING, headlamp	-	1	-
15-2	51810-31031-708	HOUSING, headlamp	-	1	-
15-3	51810-34130	HOUSING, headlamp	-	-	1
16	51827-31030	·CUSHION	-	2	2
17	51821-31030	·SPACER	-	2	2
18	51845-31030	·GROMMET	-	2	2
19	08312-11108	NUT	-	2	2
20	08321-21108	LOCK WASHER	-	2	2
21	08322-11108	WASHER	-	2	2
22	01221-10307	BOLT	-	2	2

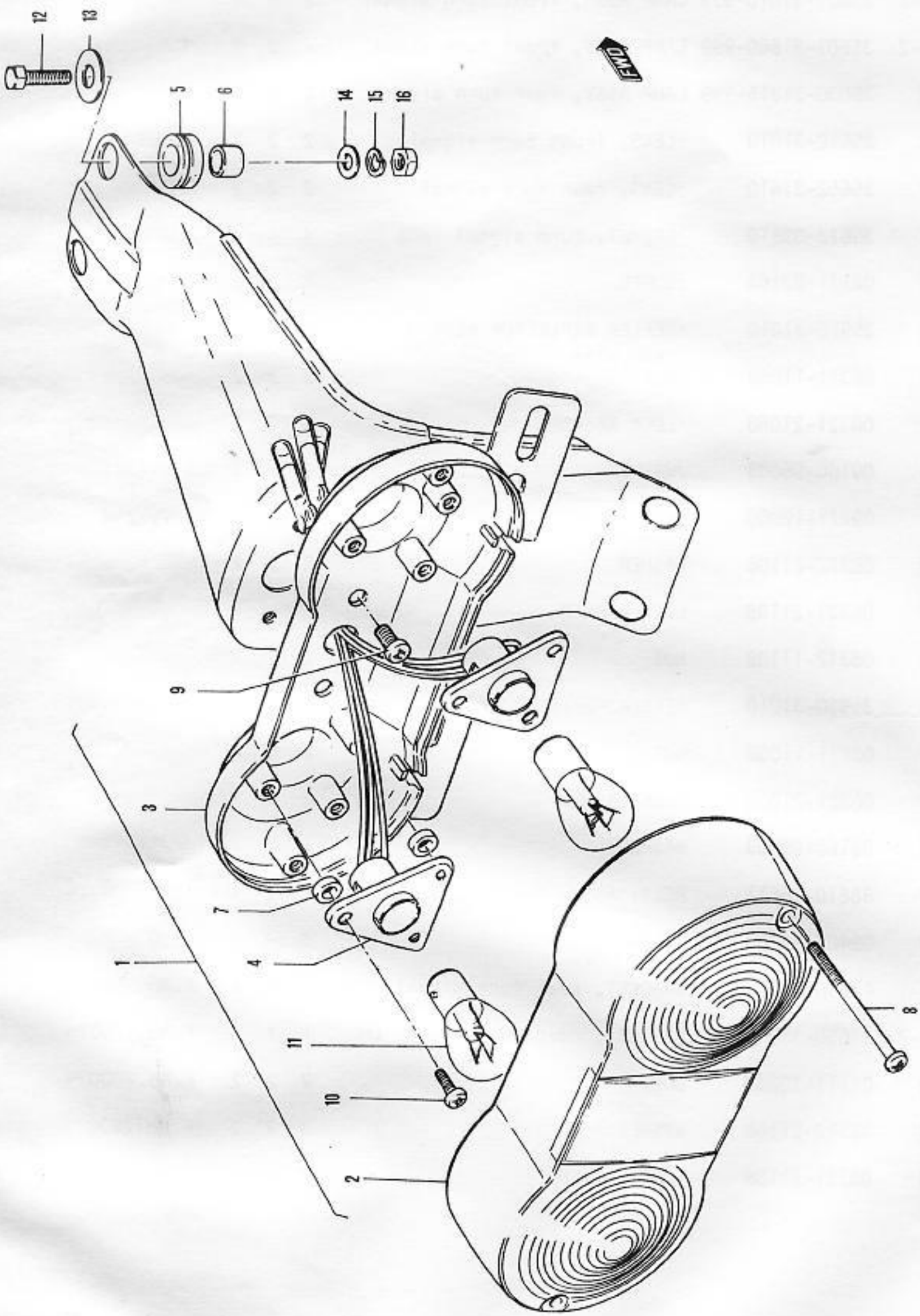
TURN SIGNAL LAMP



TURN SIGNAL LAMP

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	35601-31010-999	LAMP ASSY, front turn signal	2	-	-	
1-2	35601-31660-999	LAMP ASSY, front turn signal	-	2	2	
2	35000-31815-999	LAMP ASSY, rear turn signal	2	2	2	
3	35612-31010	·LENS, front turn signal	2	2	2	AMBER
4	35652-31610	·LENS, rear turn signal	2	2	2	RED
5	35613-03610	·GASKET, turn signal lens	4	4	4	
6	02111-03168	·SCREW	8	8	8	
7	35970-31610	·REFLEX REFLECTOR ASSY rear side	2	2	2	
8	08311-11058	·NUT	2	2	2	
9	08321-21058	·LOCK WASHER	2	2	2	
10	09160-05003	·WASHER	2	2	2	5.5x18x1
11	09471-12006	BULB	4	4	4	12V, 23W
12	08322-21108	WASHER	2	2	2	
13	08321-21108	LOCK WASHER	-	-	2	
14	08312-11108	NUT	2	2	2	
15	35950-31010	REFLEX REFLECTOR ASSY, front	2	2	2	
16	08311-11058	NUT	2	2	2	
17	08321-21058	LOCK WASHER	2	2	2	
18	09160-05003	WASHER	-	2	2	
19	38610-15611	RELAY ASSY, turn signal	1	1	1	
20	09407-09301	CLAMP	3	-	-	L:90
21-1	41640-33001	BRACKET, rear turn signal RH	1	1	1	F.No.22007~
21-2	41650-33001	BRACKET, rear turn signal LH	1	1	1	F.No.22007~
22	01111-10207	BOLT	2	2	2	F.No.22007~
23	08322-21108	WASHER	2	2	2	F.No.22007~
24	08321-21108	LOCK WASHER	2	2	2	F.No.22007~

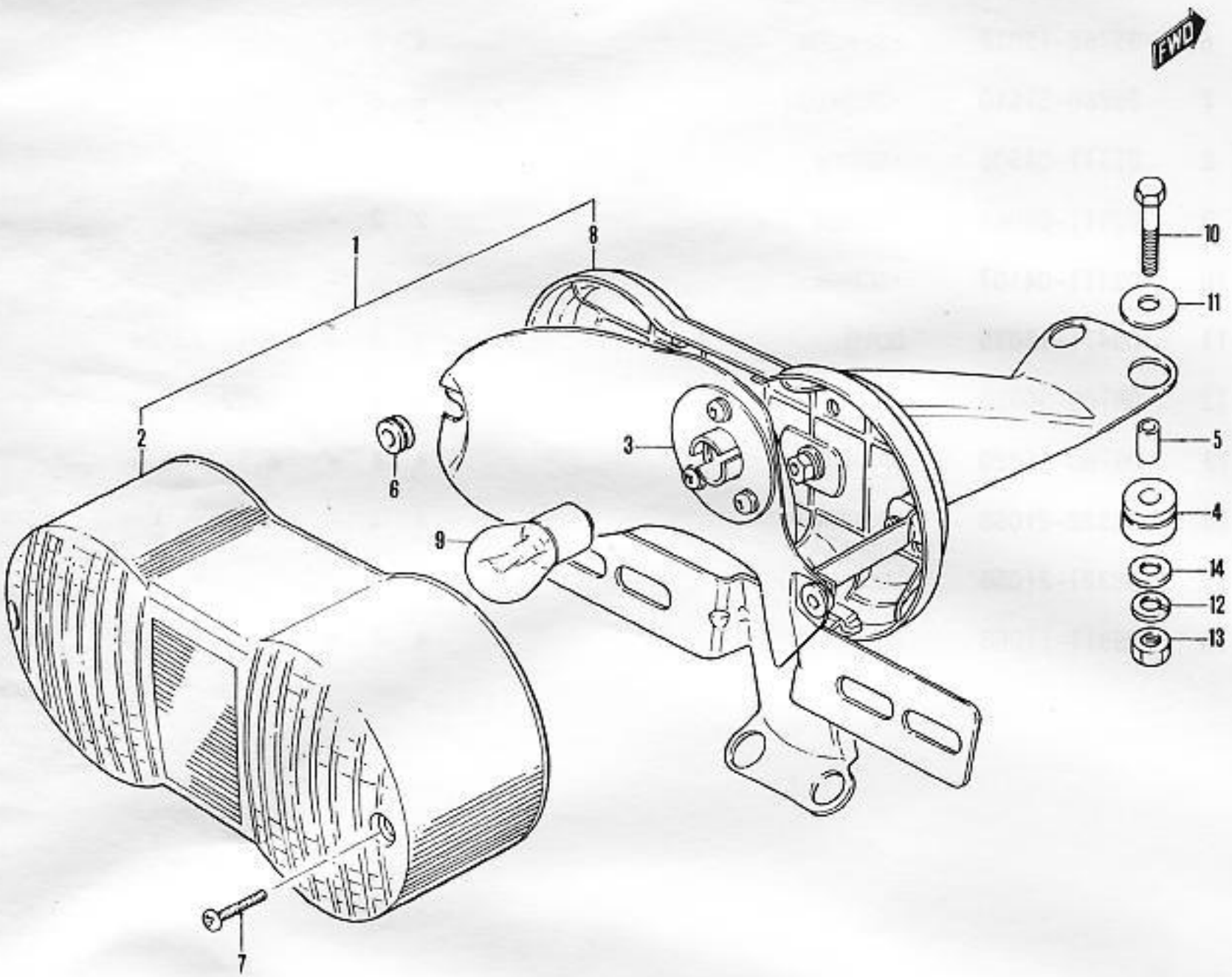
REAR COMBINATION LAMP



REAR COMBINATION LAMP

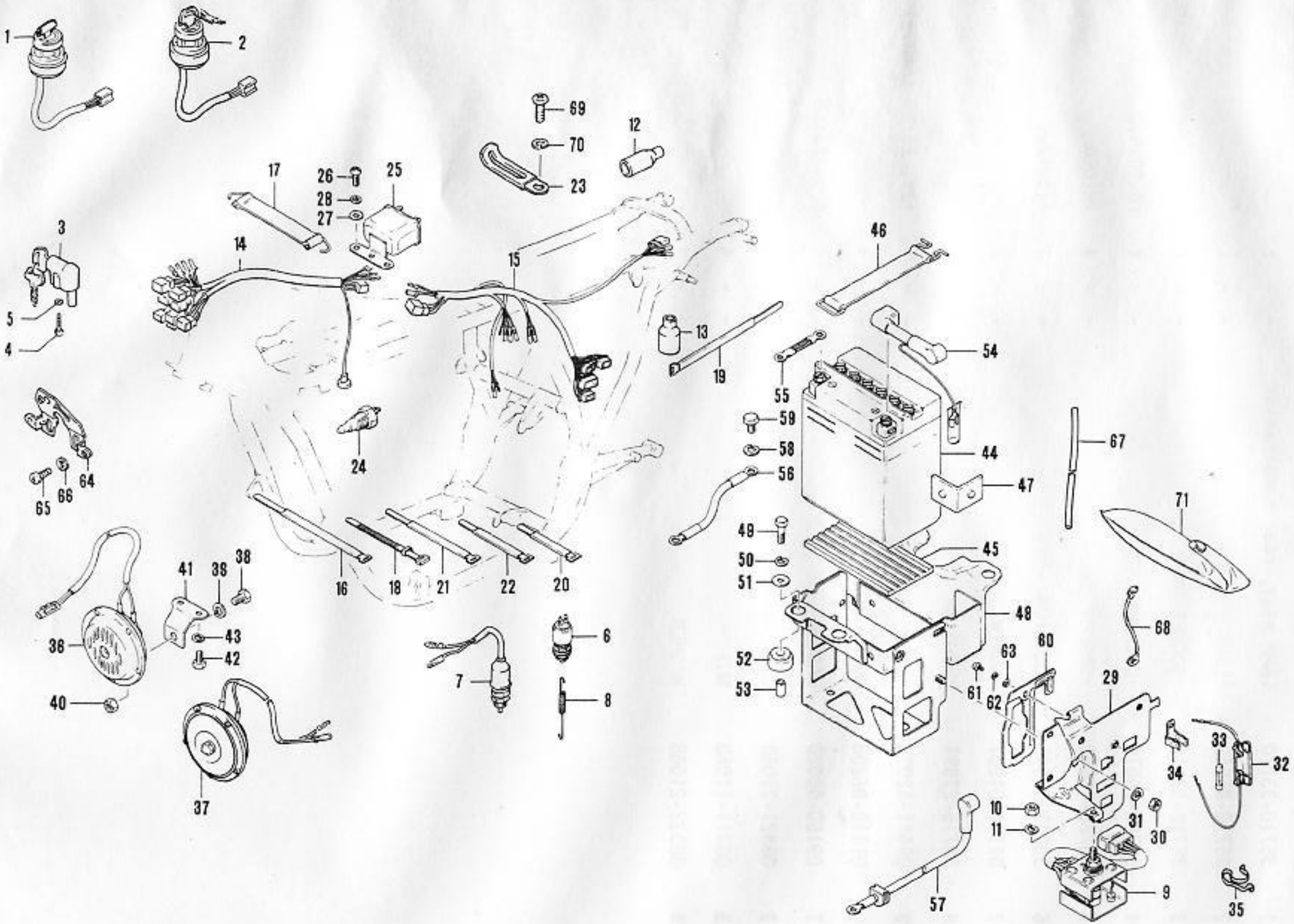
Ref.No.	Part No.	Description	Q'ty GT75J	GT75K	GT75L	Remarks
1	35710-31611-999	LAMP ASSY, rear combination	1	1	-	
2	35712-31610	·LENS	1	1	-	
3	35715-31610	·HOUSING	1	1	-	
4	35718-31610	·SOCKET COMP	2	2	-	
5	35765-15010	·CUSHION	4	4	-	
6	35766-15010	·SPACER	4	4	-	
7	35765-31610	·CUSHION	6	6	-	
8	02111-04508	·SCREW	2	2	-	
9	02111-05087	·SCREW	2	2	-	
10	02111-04107	·SCREW	6	6	-	
11	09471-12035	BULB	2	2	-	12V, 23/8W
12	09100-06039	BOLT	4	4	-	6x22
13	09160-06020	WASHER	4	4	-	6.5x20x1.6
14	08322-21068	WASHER	4	4	-	
15	08321-21068	LOCK WASHER	4	4	-	
16	08311-11068	NUT	4	4	-	

REAR COMBINATION LAMP (GT750L)



REAR COMBINATION LAMP (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	35710-33110	LAMP ASSY, rear combination	-	-	1	
2	35712-27660	·LENS	-	-	1	
3	35718-33110	·SOCKET	-	-	1	
4	35765-15010	·CUSHION	-	-	4	10x20x8.2
5	35766-15010	·SPACER	-	-	4	7x10x8
6	35765-27691	·CUSHION	-	-	2	4.5x12x6
7	02111-04207	·SCREW	-	-	2	
8	35715-27691	·HOUSING	-	-	1	
9	09471-12035	·BULB	-	-	1	12V, 23/8W (A4879)
10	01112-06208	BOLT	-	-	4	
11	09160-06020	WASHER	-	-	4	6.5x20x1.6
12	08321-21068	LOCK WASHER	-	-	4	
13	08311-11068	NUT	-	-	4	
14	08322-21068	WASHER	-	-	4	

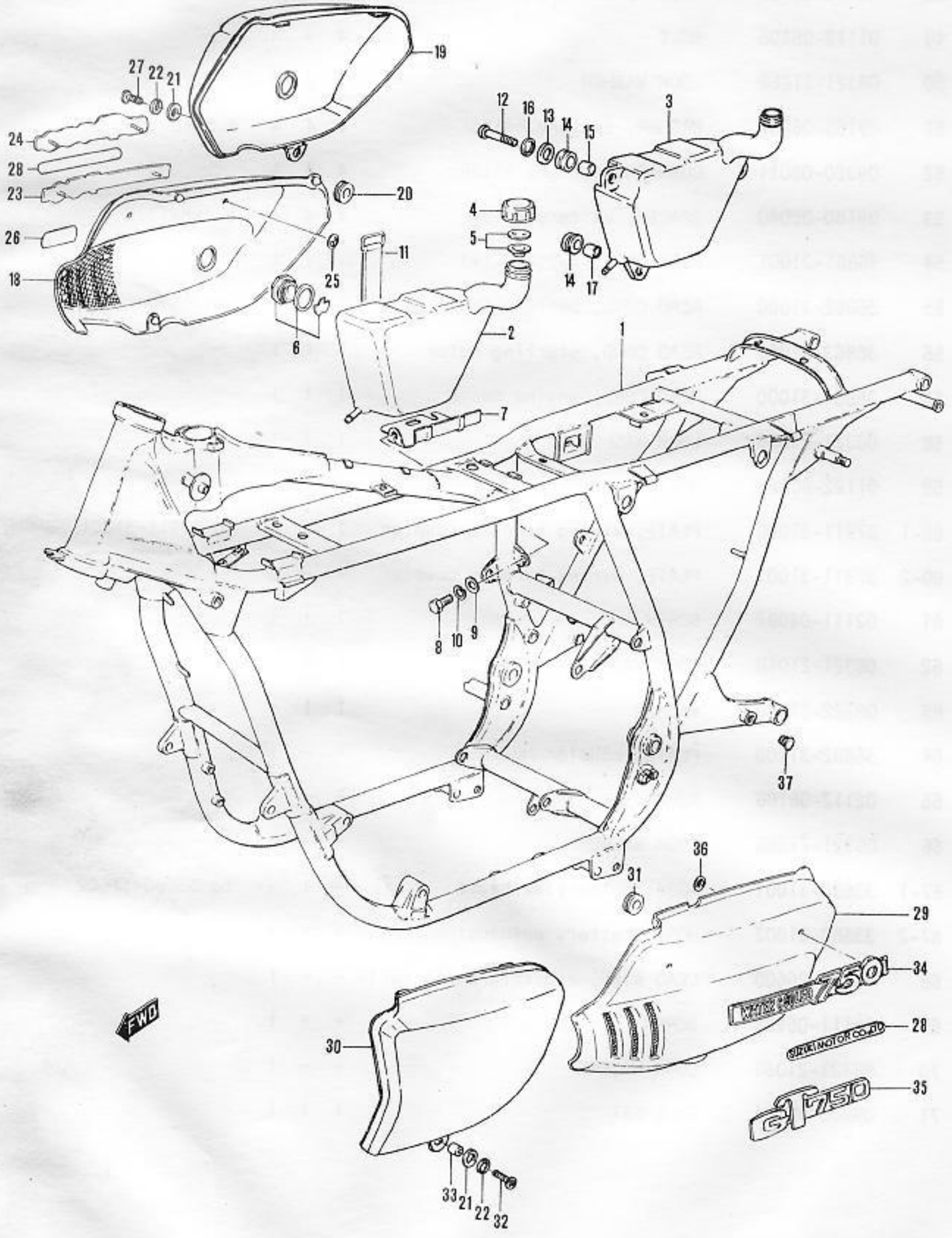

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Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1-1	37110-33010	SWITCH ASSY, ignition	1	-	-	to 37110-33012
1-2	37110-33012	SWITCH ASSY, ignition	-	1	-	
2	37110-31012	SWITCH ASSY, ignition	-	-	1	
3	51900-33810	LOCK SET, steering	1	1	1	
4	02111-05257	SCREW	2	2	2	
5	08321-21058	LOCK WASHER	2	2	2	
6	37740-20010	SWITCH ASSY, brake lamp	1	1	-	to 37740-19051
7	37740-11010	SWITCH ASSY, brake lamp	-	-	1	
8	09443-06023	SPRING, brake lamp switch	1	1	1	
9-1	32800-31020	RECTIFIER ASSY, silicon	1	1	-	to 32800-31021
9-2	32800-31021	RECTIFIER ASSY, silicon	-	-	1	
10	08311-11068	NUT	1	1	1	
11	08321-21068	LOCK WASHER	1	1	1	
12	36618-34000	BOOT, wiring harness	-	-	1	
13	36618-28000	BOOT, wiring harness	1	1	1	
14-1	36610-31001	WIRING HARNESS, No.1	1	1	-	
14-2	36610-31200	WIRING HARNESS, No.1	-	-	1	
15-1	36620-31001	WIRING HARNESS, No.2	1	1	-	
15-2	36620-31002	WIRING HARNESS, No.2	-	-	1	
16	09407-18301	CLAMP, wiring harness	3	3	2	
17	09462-00056	BAND, wiring harness	1	1	1	
18	09407-14401	CLAMP, wiring harness	2	1	1	
19	09403-06302	CLAMP, wiring harness	1	1	-	
20	09407-09301	CLAMP, wiring harness	1	-	-	
21	09407-14301	CLAMP, wiring harness	2	4	4	
22	09407-11302	CLAMP, wiring harness	4	4	5	
23	09404-06402	CLAMP, wiring harness	-	-	1	

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
24	17680-31010	THERMO SWITCH COMP	1	1	Δ1	
25	17690-65010	RELAY COMP, thermo switch	1	1	Δ1	
26	02112-06168	SCREW	2	2	Δ1	Δ:OPT
27	08322-21068	WASHER	2	2	Δ1	
28	08321-21068	LOCK WASHER	2	2	Δ1	
29-1	37900-31000	PLATE, electoric holder	1	1	-	
29-2	32680-31200	PLATE, electoric holder	-	-	1	
30	08311-11068	NUT	1	1	1	
31	08321-21068	LOCK WASHER	1	1	1	
32-1	36740-31010	FUSE CASE ASSY	1	1	-	to 36740-31210
32-2	36740-31210	FUSE CASE ASSY	-	-	1	
33	09481-20001	FUSE	1	1	1	20A
34	36791-25001	HOLDER, fuse case	1	1	-	
35	36791-33100	HOLDER, fuse case	-	-	1	
36	38500-31010	HORN ASSY	1	1	-	to 38500-31011
37	38500-31011	HORN ASSY	-	-	1	
38	01122-08128	BOLT	1	1	1	
39	08321-21088	LOCK WASHER	1	1	1	
40	08312-31088	NUT	1	1	1	
41	38591-31000	BRACKET, horn	1	1	1	
42-1	01112-06208	BOLT	-	1	1	
42-2	01112-06128	BOLT	2	1	1	
43	08321-21068	LOCK WASHER	2	2	2	
44	33610-31010	BATTERY ASSY	1	1	1	12V, 14AH
45	33651-31000	PROTECTOR, battery	1	1	1	
46	09462-00050	BAND, battery	1	1	2	
47	33652-33000	PROTECTOR, battery	2	2	2	

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
48	41540-31000	HOLDER, battery	1	1	1	
49	01112-06308	BOLT	4	4	4	
50	08321-21068	LOCK WASHER	4	4	4	
51	09160-06007	WASHER, battery holder	4	4	4	6.5x18x1.6
52	09320-08011	CUSHION, battery holder	4	4	4	
53	09180-06040	SPACER, battery holder	4	4	4	6.1x8x15.5
54	36861-31001	READ CORD, battery (+)	1	1	1	
55	36862-31000	READ CORD, battery (-)	1	1	1	
56	36863-31000	READ CORD, starting motor	1	1	1	
57	36864-31000	READ CORD, engine earth	1	1	1	
58	08321-21088	LOCK WASHER	1	1	1	
59	01122-08128	BOLT	1	1	1	
60-1	37911-31000	PLATE, wiring harness coupler	1	1	-	to 37911-31001
60-2	37911-31001	PLATE, wiring harness coupler	-	-	1	
61	02111-04087	SCREW	1	1	1	
62	08321-21048	LOCK WASHER	1	1	1	
63	08322-21048	WASHER	1	1	-	
64	36682-31200	PLATE, coupler No.1	-	-	1	
65	02112-06108	SCREW	-	-	3	
66	08321-21068	LOCK WASHER	-	-	3	
67-1	33680-31001	HOSE, battery exthaust	-	1	-	to 33680-31002
67-2	33680-31002	HOSE, battery exthaust	-	-	1	
68	36852-26600	LEAD WIRE, electric parts earth	-	-	1	
69	02111-06128	SCREW	-	-	1	
70	08321-21068	LOCK WASHER	-	-	1	
71	09800-00134	TOOL SET	1	1	1	

FRAME - OIL TANK

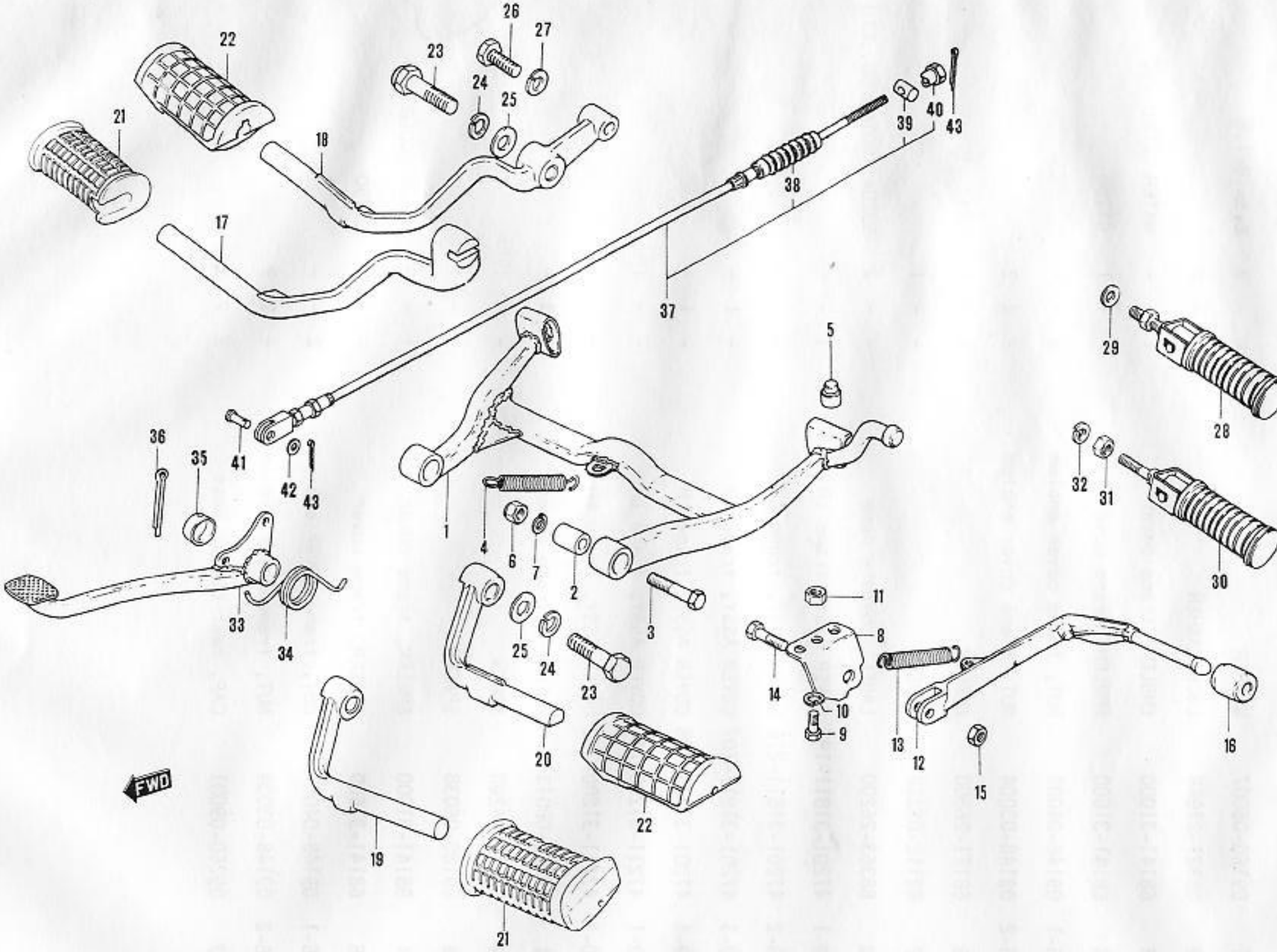


FRAME - OIL TANK

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	41100-31601-019	FRAME	1	1	-	
1-2	41100-31200-019	FRAME	-	-	1	
2	44611-31000	TANK, oil	1	1	-	
3	44611-31200	TANK, oil	-	-	1	
4	44651-05000	CAP, oil tank filler	1	1	1	
5-1	44660-33808	GASKET SET, oil tank filler	1	1	-	to 44600-35820
5-2	44600-35820	GASKET SET, oil tank filler	-	-	1	
6-1	44640-31807	LENS SET, oil inspection	1	1	-	to 44600-31830
6-2	44600-31830	LENS SET, oil inspection	-	-	1	
7	44820-31000	HOLDER COMP, oil tank	1	1	-	
8	01112-06128	BOLT	2	2	-	
9	08322-21068	WASHER	2	2	-	
10	08321-21068	LOCK WASHER	2	2	-	
11	09462-00055	BAND, oil tank	1	1	-	
12	02112-06208	SCREW	-	-	2	
13	09160-06007	WASHER	-	-	2	6.5x18x1.6
14	09320-10008	CUSHION	-	-	3	
15	09180-06030	SPACER	-	-	2	
16	08321-21068	LOCK WASHER	-	-	2	
17	09180-06036	SPACER	-	-	1	
18-1	47101-31810-195	COVER ASSY, frame RH	1	-	-	
18-2	47101-31810-216	COVER ASSY, frame RH	1	-	-	
18-3	47101-31810-707	COVER ASSY, frame RH	-	1	-	
18-4	47101-31810-708	COVER ASSY, frame RH	-	1	-	
19-1	47111-31200-761	COVER ASSY, frame RH	-	-	1	
19-2	47111-31200-762	COVER ASSY, frame RH	-	-	1	

FRAME - OIL TANK

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
20	09320-08013	CUSHION, frame cover	3	3	-	
21	09160-06007	WASHER	-	-	2	6.5x18x1.6
22	08321-21068	LOCK WASHER	-	-	2	
23	68141-31000	EMBLEM, frame cover	1	-	-	WATER COOLD 750
24	68141-31600	EMBLEM, frame cover	-	1	1	GT750
25-1	09148-04007	NUT, frame cover emblem	2	-	-	
25-2	09148-03004	NUT, frame cover emblem	-	2	2	
26	68171-26000	EMBLEM	1	1	1	CCI
27	02112-06358	SCREW	-	-	1	
28	68363-26200	LABEL, company name	-	-	2	SUZUKI MOTER CO.,LTD.
29-1	47201-31811-195	COVER ASSY, frame LH	1	-	-	
29-2	47201-31811-216	COVER ASSY, frame LH	1	-	-	
29-3	47201-31811-707	COVER ASSY, frame LH	-	1	-	
29-4	47201-31811-708	COVER ASSY, frame LH	-	1	-	
30-1	47211-31200-761	COVER ASSY, frame LH	-	-	1	
30-2	47211-31200-762	COVER ASSY, frame LH	-	-	1	
31	09320-08013	CUSHION, frame cover	3	3	-	
32	02112-06208	SCREW	-	-	1	
33	09180-06038	SPACER	-	-	1	
34	68141-31000	EMBLEM, frame cover	1	-	-	WATER COOLD 750
35	68141-31600	EMBLEM, frame cover	-	1	1	GT750
36-1	09148-04007	NUT, frame cover emblem	2	-	-	
36-2	09148-03004	NUT, frame cover emblem	-	2	2	
37	09250-09001	CAP, rear bumper boss	2	2	2	


FWD

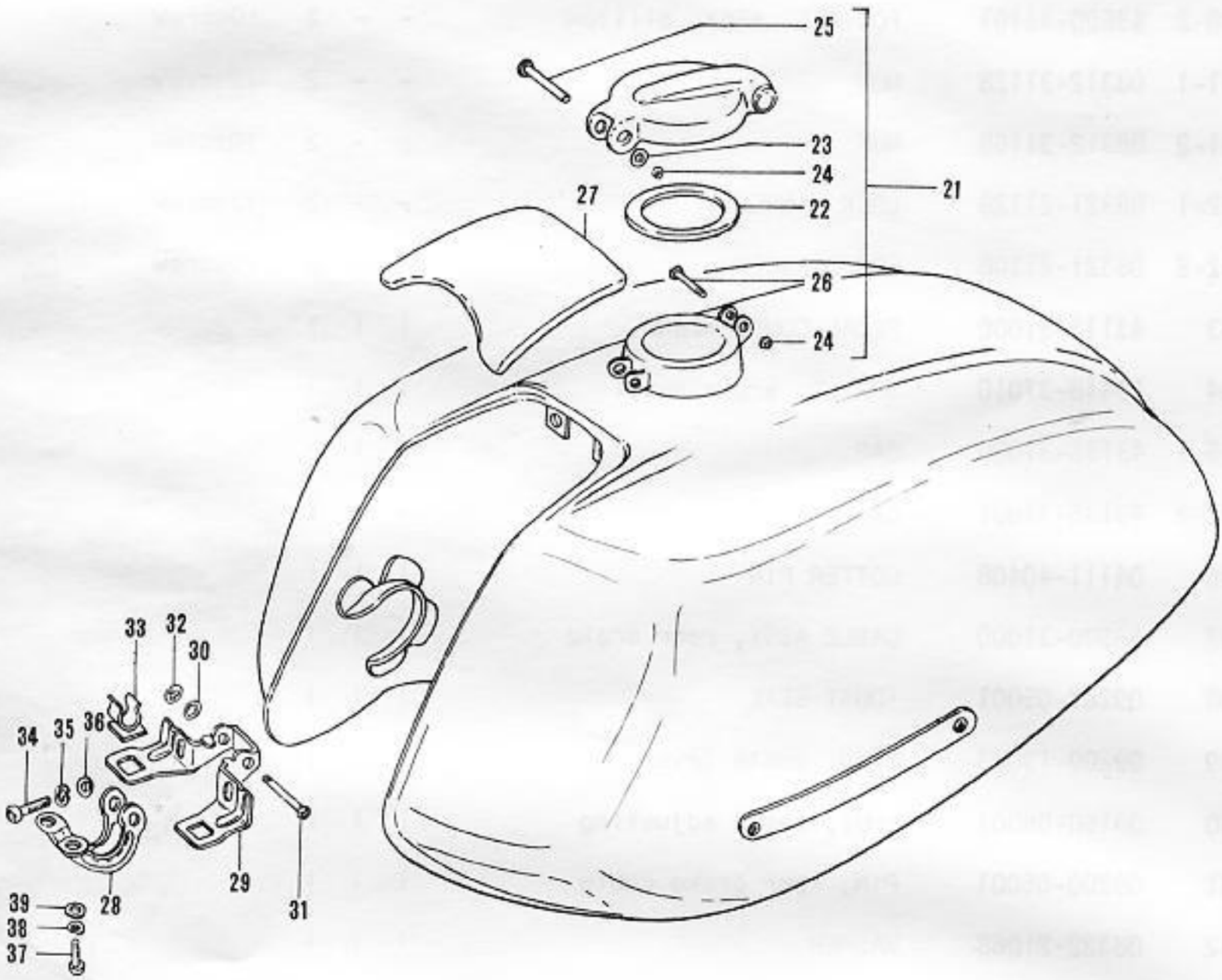
CENTER STAND - BRAKE PEDAL

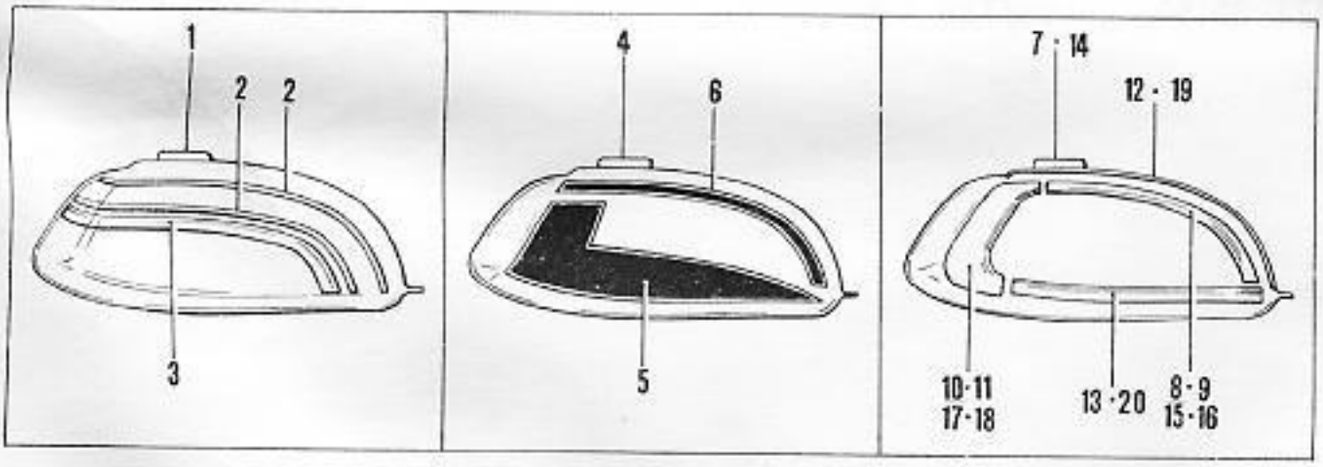
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	42100-31000	STAND COMP, center	1	1	1	
2	09180-10001	SPACER, center stand	2	2	2	10.4x16x30
3	09100-10006	BOLT, center stand	2	2	2	10x48
4	09443-16005	SPRING, center stand	1	1	1	
5	09321-10001	CUSHION, center stand	2	2	2	
6	09159-10011	NUT	2	2	2	
7	08321-21108	LOCK WASHER	2	2	-	
8	42330-31600	BRACKET, prop stand	1	1	1	
9	09100-10007	BOLT	2	3	3	
10	08321-21108	LOCK WASHER	2	3	3	
11	08312-31108	NUT	3	3	3	
12	42310-31000	STAND COMP, prop	1	1	1	
13	09443-14005	SPRING, prop stand	1	1	1	
14	09100-10007	BOLT, prop stand	1	1	1	10x27
15	08312-31108	NUT	1	1	1	
16	09320-07001	CUSHION, prop stand	1	1	1	
17	43511-31000	BAR COMP, front footrest RH	1	1	-	
18	43511-31200	BAR COMP, front footrest RH	-	-	1	
19	43521-31000	BAR COMP, front footrest LH	1	1	-	
20	43521-31200	BAR COMP, front footrest LH	-	-	1	
21	43551-31000	RUBBER, front footrest	2	2	-	
22	43551-36000	RUBBER, front footrest	-	-	2	
23	09104-12011	BOLT, front footrest	2	2	2	L:48
24	08321-21128	LOCK WASHER	2	2	2	
25	08322-21128	WASHER	1	1	-	
26	01221-08357	BOLT	-	-	1	
27	08321-21088	LOCK WASHER	-	-	1	

CENTER STAND - BRAKE PEDAL

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
28	43600-31000	FOOTREST ASSY, pillion	2	2	-	
29	08322-11108	WASHER	2	2	-	
30-1	43600-33100	FOOTREST ASSY, pillion	-	-	2	12screw
30-2	43600-33101	FOOTREST ASSY, pillion	-	-	2	10screw
31-1	08312-31128	NUT	-	-	2	12screw
31-2	08312-31108	NUT	-	-	2	10screw
32-1	08321-21128	LOCK WASHER	-	-	2	12screw
32-2	08321-21108	LOCK WASHER	-	-	2	10screw
33	43110-31000	PEDAL COMP, brake	1	1	1	
34	09448-37010	SPRING, brake pedal	1	1	1	
35-1	43135-31000	CAP	1	1	-	
35-2	43135-31001	CAP	-	-	1	
36	04111-40408	COTTER PIN	1	1	1	
37	58500-31000	CABLE ASSY, rear brake	1	1	1	
38	09287-05001	·DUST SEAL	1	1	1	
39	09209-13003	·PIN, cable lever	1	1	1	
40	09150-06001	·NUT, cable adjusting	1	1	1	
41	09200-05001	PIN, rear brake cable	1	1	1	
42	08322-21068	WASHER	1	1	1	
43	04111-20158	COTTER PIN	2	2	2	

FUEL TANK


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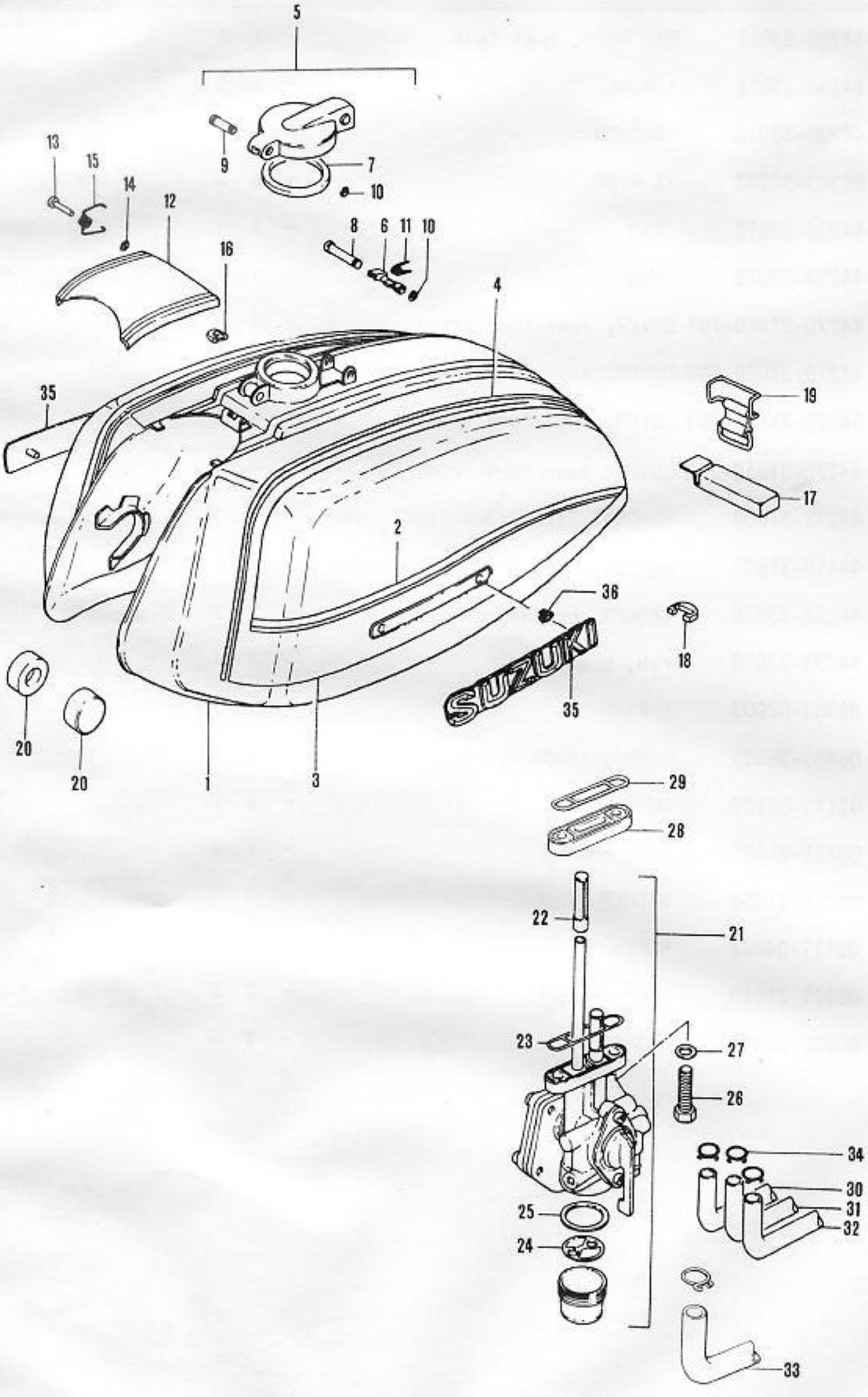
FUEL TANK

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	44110-31824-707	TANK ASSY, fuel	-	1	-	17ℓ
2	68116-31610-718	·TAPE	-	4	-	
3	68119-31610-915	·TAPE, lower	-	2	-	
4	44110-31825-708	TANK ASSY, fuel	-	1	-	
5-1	68115-31620-911	·TAPE, RH	-	1	-	
5-2	68125-31620-911	·TAPE, LH	-	1	-	
6-1	68117-31620-911	·TAPE, center RH	-	1	-	
6-2	68127-31620-911	·TAPE, center LH	-	1	-	
7	44110-31630-761	TANK ASSY, fuel	-	-	1	17ℓ
8	68115-31200-742	·TAPE, striping upper RH	-	-	1	
9	68125-31200-742	·TAPE, striping upper LH	-	-	1	
10	68114-31200-742	·TAPE, striping front RH	-	-	1	
11	68124-31200-742	·TAPE, striping front LH	-	-	1	
12	68117-31200-742	·TAPE, striping center	-	-	2	
13	68119-31200-742	·TAPE, striping lower	-	-	2	
14	44110-31630-762	TANK ASSY, fuel	-	-	1	17ℓ
15	68115-31200-019	·TAPE, striping upper RH	-	-	1	
16	68125-31200-019	·TAPE, striping upper LH	-	-	1	
17	68114-31200-019	·TAPE, striping front RH	-	-	1	
18	68124-31200-019	·TAPE, striping front LH	-	-	1	
19	68117-31200-019	·TAPE, striping center	-	-	2	
20	68119-31200-019	·TAPE, striping lower	-	-	2	

FUEL TANK

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
21	44200-33011	CAP ASSY, fuel tank	-	1	1
22	44248-33011	·GASKET	-	1	1
23	44238-33010	·WASHER	-	1	1
24	09383-02003	·E RING	-	2	2
25	44239-33010	·PIN	-	1	1
26	44233-33010	·PIN	-	1	1
27-1	44270-31610-707	COVER, fuel tank front	-	1	-
27-2	44270-31610-708	COVER, fuel tank front	-	1	-
27-3	44270-31610-761	COVER, fuel tank front	-	-	1
27-4	44270-31610-762	COVER, fuel tank front	-	-	1
28	44272-31600	BRACKET, fuel tank front cover	-	1	1
29	44155-31600	HOLDER, fuel tank front cover	-	1	1
30	44238-33010	WASHER, bracket	-	2	2
31	44239-33010	PIN, bracket	-	1	1
32	09383-02003	E RING	-	1	1
33	09403-06305	CLAMP, front cover	-	2	2
34	02112-05107	SCREW	-	2	2
35	08321-21058	LOCK WASHER	-	1	2
36	08322-21058	WASHER	-	2	2
37	02111-04087	SCREW	-	2	2
38	08321-21048	LOCK WASHER	-	2	2
39	08322-21048	WASHER	-	2	2

FUEL TANK


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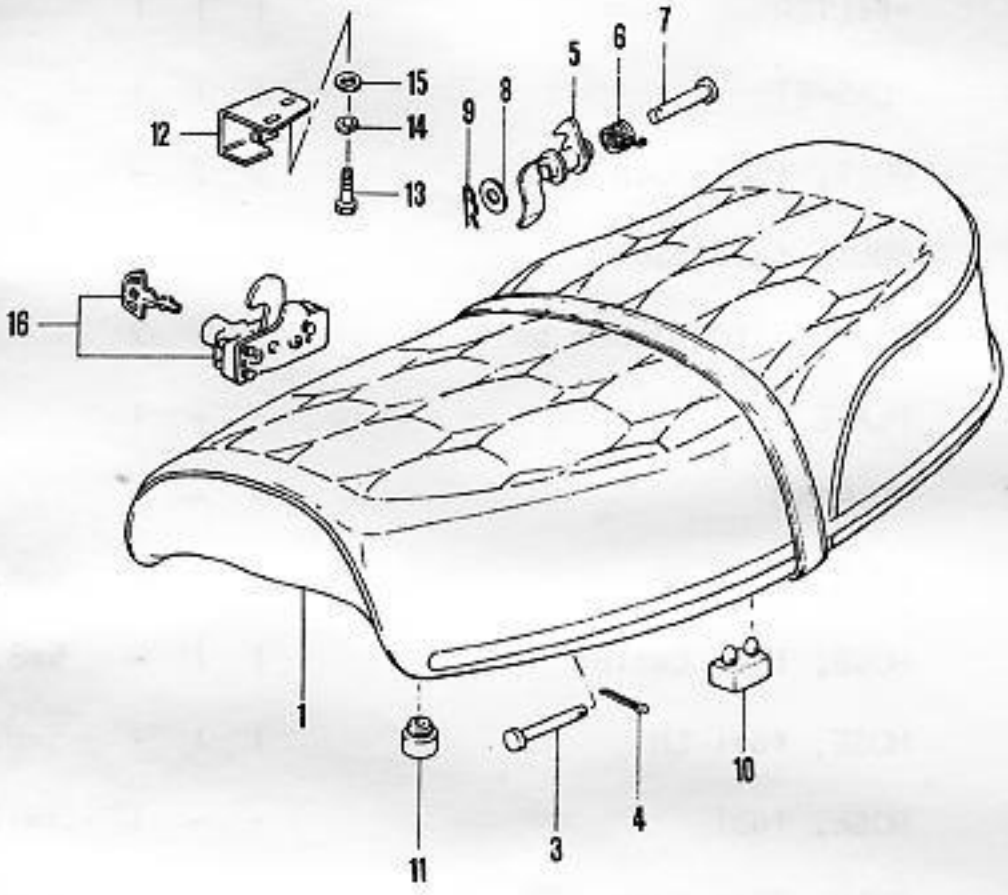
FUEL TANK

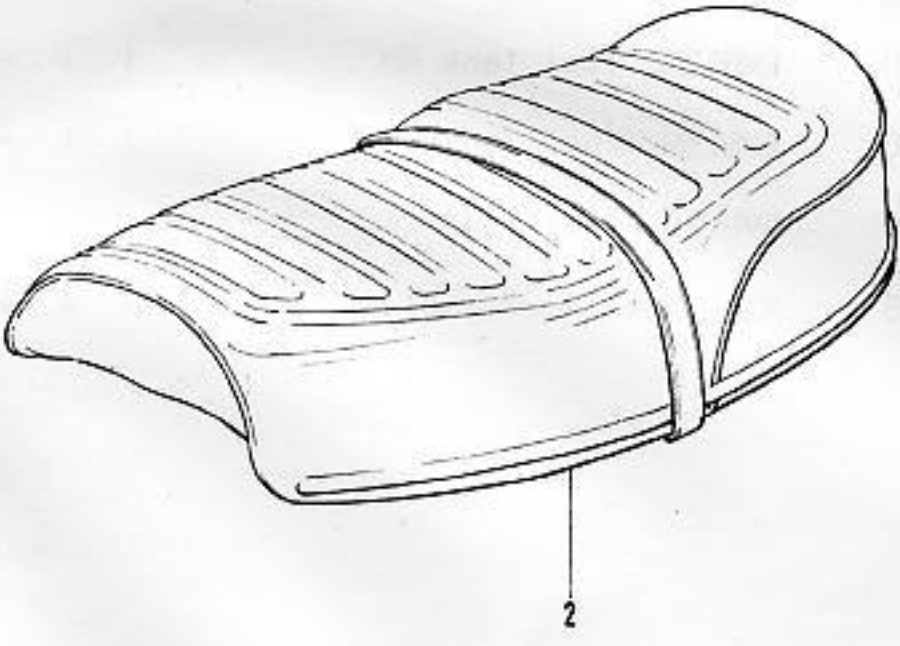
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	
1-1	44110-31600-533	TANK ASSY, fuel	1	-	-	17
1-2	44110-31600-534	TANK ASSY, fuel	1	-	-	17
2	68116-31000	TAPE, center	2	-	-	
3-1	68115-31000	TAPE, right side	1	-	-	
3-2	68125-31000	TAPE, left side	1	-	-	
4	68117-31000	TAPE, upper	2	-	-	
5	44200-15100	CAP ASSY, fuel tank	1	-	-	
6	44246-15100	·LEVER, fuel cap	1	-	-	
7	44248-15100	·GASKET, fuel tank cap	1	-	-	
8	09208-03001	·PIN, tank cap lever	1	-	-	
9	09208-03002	·PIN, tank cap lever front	1	-	-	
10	09383-02003	·E RING	2	-	-	
11	09444-06002	·SPRING, tank cap lever	1	-	-	
12-1	44270-31600-533	COVER, fuel tank front	1	-	-	
12-2	44270-31600-534	COVER, fuel tank front	1	-	-	
13	09208-02001	PIN, front cover	1	-	-	
14	09383-02001	E RING	1	-	-	
15	09448-08003	SPRING	1	-	-	
16	09329-01004	CUSHION, front cover	2	2	2	
17	09329-01002	CUSHION, fuel tank rear	1	1	1	
18	09329-10009	STOPPER, fuel tank	2	2	2	
19	09462-00049	BAND, fuel tank rear	1	1	1	
20	09329-10007	CUSHION, fuel tank rear	2	2	2	

FUEL TANK

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
21-1	44300-31050	COCK ASSY, fuel	1	1	-	
21-2	44300-33150	COCK ASSY, fuel	-	-	1	
22	44322-31050	·FILTER	2	2	2	
23	44348-31050	·O RING	1	1	1	
24	44344-31050	·FILTER	1	1	1	
25	44346-31050	·GASKET	1	1	1	
26-1	01112-06208	BOLT, fuel cock	2	2	-	
26-2	01112-06308	BOLT, fuel cock	-	-	2	
27	09168-06010	GASKET, fuel cock bolt	2	2	2	
28	44380-31250	PLATE	-	-	1	
29	44348-31050	·O RING	-	-	1	
30	09343-05076	HOSE, fuel RH	1	1	-	5x8.2x300
31	09343-05018	HOSE, fuel center	1	1	-	5x8.2x180
32	09343-05025	HOSE, fuel LH	1	1	-	5x8.2x135
33	09343-07003	HOSE, fuel	-	-	1	7x10.2x190
34-1	09386-08001	CLIP, fuel hose	6	6	-	to 09401-10401
34-2	09401-10401	CLIP, fuel hose	-	-	2	
35-1	68111-31600	EMBLEM, fuel tank RH	1	1	-	
35-2	68121-31600	EMBLEM, fuel tank LH	1	1	-	
35-3	68111-31200	EMBLEM, fuel tank	-	-	2	
36	09148-04005	NUT, fuel tank emblem	4	4	4	

SEAT

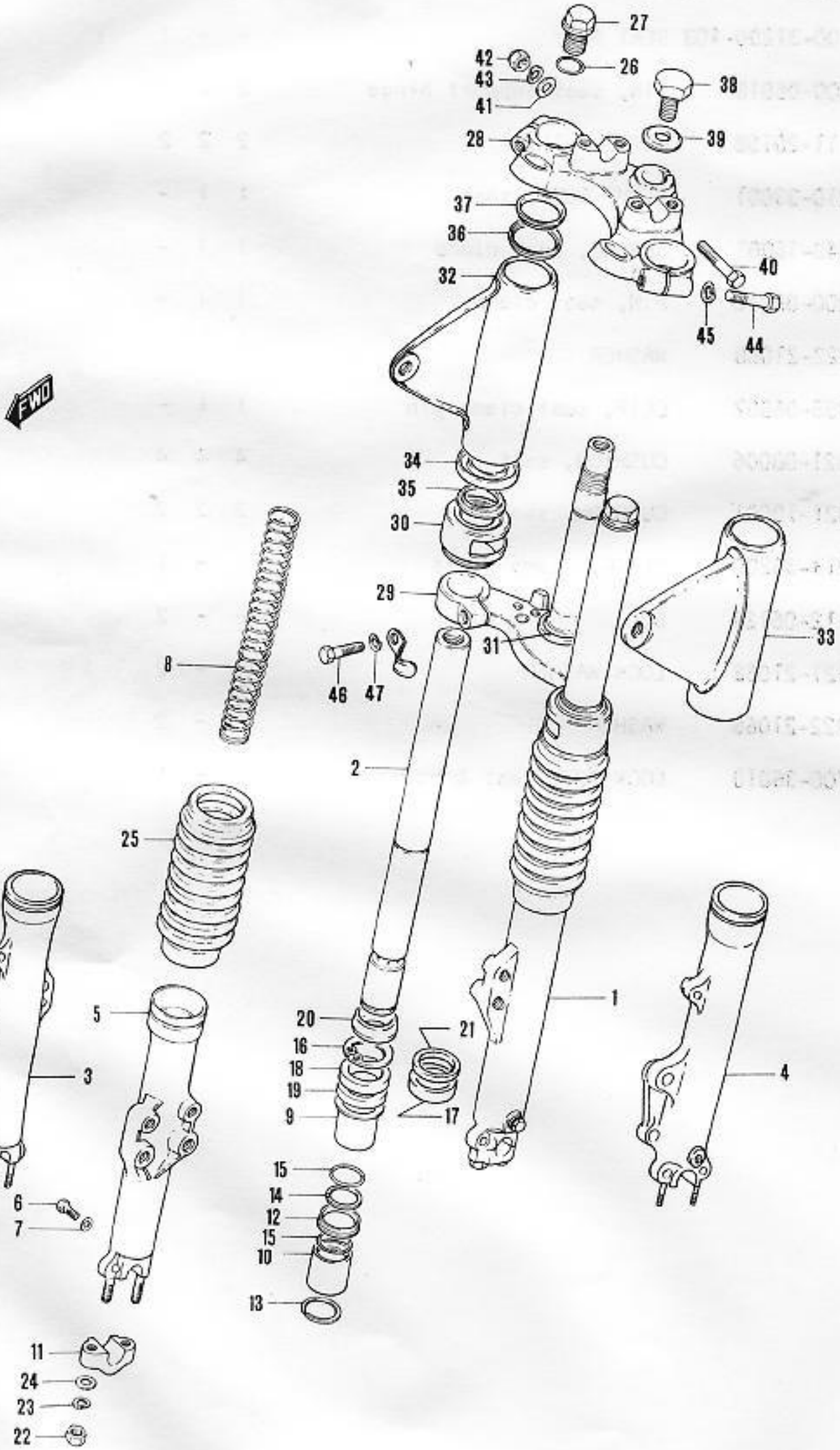




SEAT

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	45100-31000-403	SEAT ASSY	1	1	-	to 45100-31200-403
2	45100-31200-403	SEAT ASSY	-	-	1	
3	09200-06018	PIN, seat support hinge	2	2	2	
4	04111-20158	COTTER PIN	2	2	2	
5	45210-33001	CLAMP COMP, seat	1	1	-	
6	09448-15001	SPRING, seat clamp	1	1	-	
7	09200-06018	PIN, seat clamp	1	1	-	
8	08322-21068	WASHER	1	1	-	
9	09385-06002	CLIP, seat clamp pin	1	1	-	
10	09321-08006	CUSHION, seat	4	4	4	
11	09321-10001	CUSHION, seat	2	2	2	
12	45213-36200	PLATE, clamp guide	-	-	1	
13	01112-06128	BOLT	-	-	2	
14	08321-21068	LOCK WASHER	-	-	2	
15	08322-21068	WASHER	-	-	2	
16	95700-36810	LOCK SET, seat & helmet	-	-	1	

FRONT FORK


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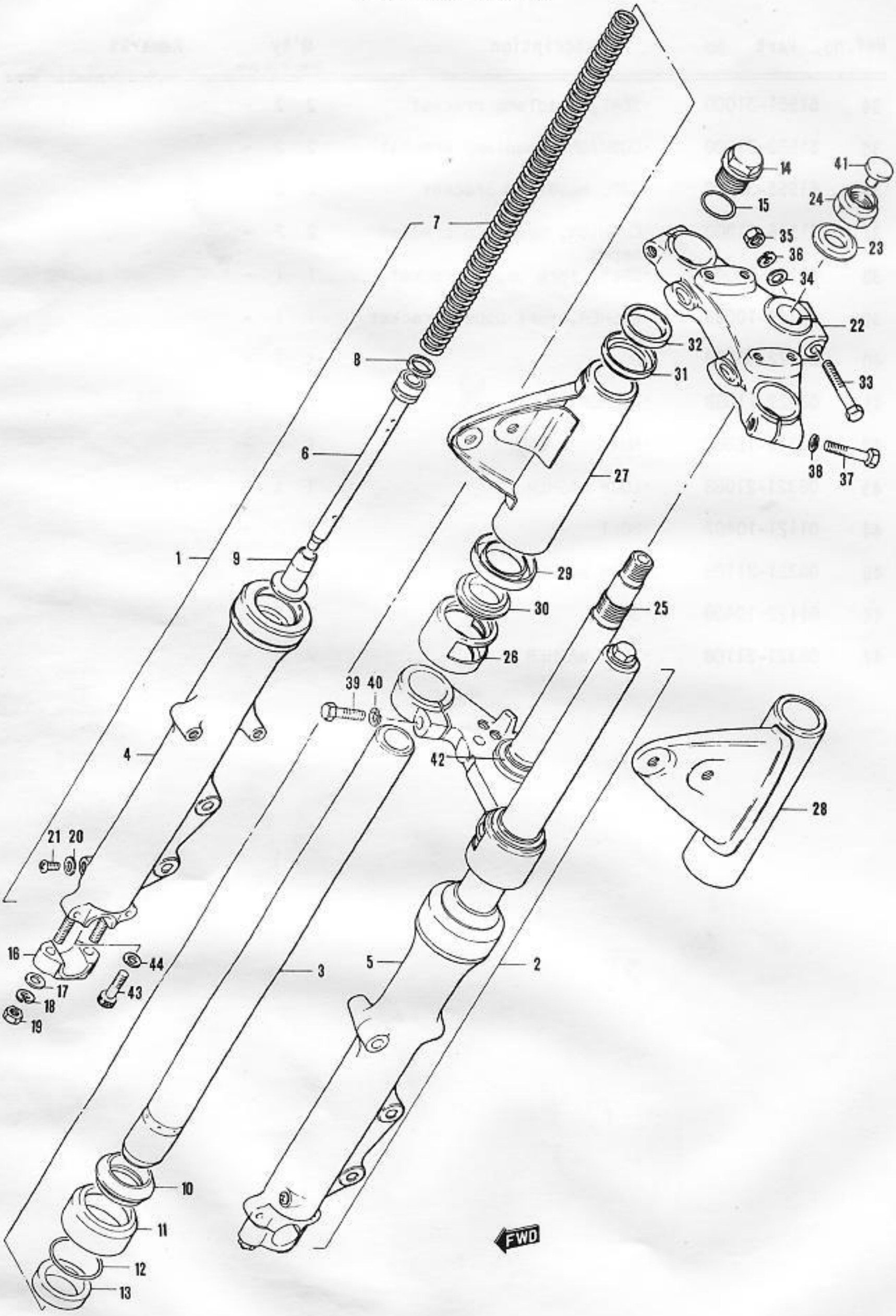
FRONT FORK

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
	51100-31000-195	FORK ASSY, front	1	-	-	
	51100-31000-216	FORK ASSY, front	1	-	-	
1-1	51103-31730	·DAMPER ASSY, RH	-	1	-	to 51103-31731
1-2	51103-31732	·DAMPER ASSY, RH	-	1	-	F.No.11610~
1-3	51104-31730	·DAMPER ASSY, LH	-	1	-	to 51104-31731
1-4	51104-31732	·DAMPER ASSY, LH	-	1	-	F.No.11610~
1-5	51103-31030	·DAMPER ASSY, front fork	2	-	-	
2	51111-31030	··TUBE, inner	2	2	-	
3	51130-34730	··TUBE, outer RH	-	1	-	to 51130-34731
4	51140-31730	··TUBE, outer LH	-	1	-	to 51140-31731
5	51130-31031	··TUBE COMP, outer	2	-	-	
6	09100-06011	··BOLT	2	-	-	
7	51183-31030	··GASKET, drain plug	2	-	-	
8	51171-31033	··SPRING, front fork	2	2	-	
9	51152-31030	··GUIDE, inner tube	2	2	-	
10	51112-31030	··PISTON, inner tube	2	2	-	
11	51132-31030	··HOLDER, axle	2	2	-	
12	51114-31030	··DAMPER	2	2	-	
13	51119-31030	··SNAP RING, piston	2	2	-	
14	51118-31030	··RING, valve stopper	2	2	-	
15	51116-31030	··RING, piston stopper	4	4	-	
16	51156-31030	··CIRCLIP	2	2	-	
17	51153-34730	··OIL SEAL	2	2	-	
18	51153-31030	··OIL SEAL	2	-	-	to 51153-34730
19	51163-31030	··OIL SEAL	2	-	-	
20	51173-31030	··DUST SEAL	-	2	-	F.No.11610~

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
21	51158-34730	··RING	2	2	-	
22	08311-11088	··NUT	4	4	-	
23	08321-21088	··LOCK WASHER	4	4	-	
24	08322-21088	··WASHER	4	4	-	
25	51571-33030	··BOOT	2	2	-	
26	51181-31030	··O RING	2	2	-	23x2.8
27	51351-31030	··CAP, inner tube	2	2	-	
28-1	51311-31000-019	·BRACKET, fork upper	1	-	-	
28-2	51311-31700-019	·BRAKCET, fork upper	-	1	-	
29-1	51410-31001	·BRACKET, fork lower	1	-	-	
29-2	51410-34000	·BRACKET, fork lower	-	1	-	
30	51570-31000	·GUIDE COMP, boots	2	2	-	
31	51621-33001	·RACE, steering outer lower	1	1	-	
32-1	51530-31000-195	·BRACKET, headlamp RH	1	-	-	
32-2	51530-31000-216	·BRACKET, headlamp RH	1	-	-	
32-3	51530-31700-707	·BRACKET, headlamp RH	-	1	-	
32-4	51530-31700-708	·BRACKET, headlamp RH	-	1	-	
33-1	51540-31000-195	·BRACKET, headlamp LH	1	-	-	
33-2	51540-31000-216	·BRACKET, headlamp LH	1	-	-	
33-3	51540-31700-707	·BRACKET, headlamp LH	-	1	-	
33-4	51540-31700-708	·BRACKET, headlamp LH	-	1	-	

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
34	51551-31000	·SEAT, headlamp bracket	2	2	-
35	51553-31000	·CUSHION, headlamp bracket	2	2	-
36	51555-31000	·CAP, headlamp bracket	2	2	-
37	51556-31000	·CUSHION, headlamp bracket upper	2	2	-
38	09104-10005	·BOLT, fork upper bracket	1	1	-
39	09160-10036	·WASHER, fork upper bracket	1	1	-
40	01122-08508	·BOLT	1	1	-
41	08322-11088	·WASHER	1	1	-
42	08312-12087	·NUT	1	1	-
43	08321-21088	·LOCK WASHER	1	1	-
44	01121-10407	·BOLT	2	2	-
45	08321-21108	·LOCK WASHER	2	2	-
46	01122-10408	·BOLT	2	2	-
47	08321-21108	·LOCK WASHER	2	2	-

FRONT FORK (GT750L)

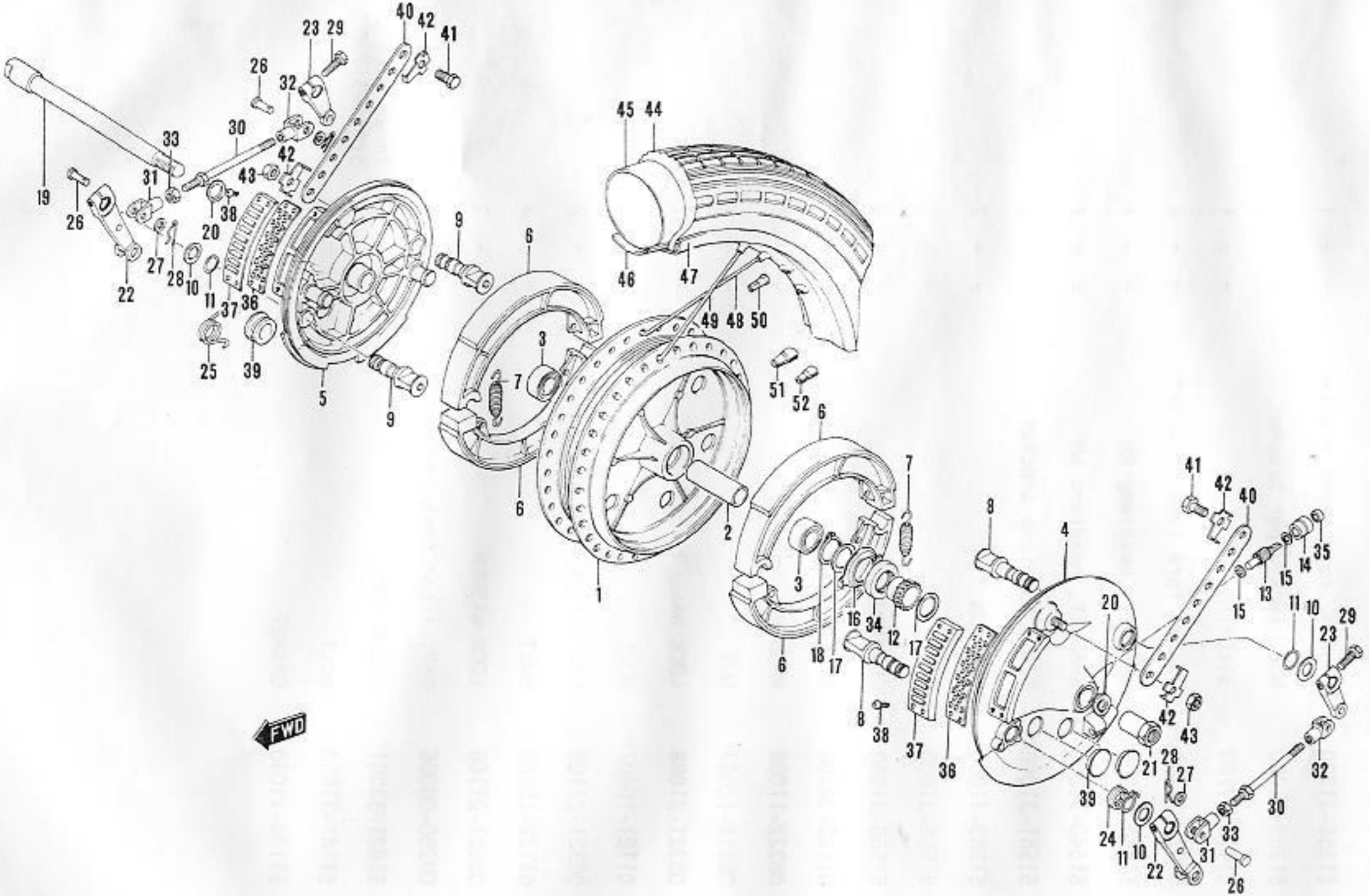


FRONT FORK (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	51103-31230	DAMPER ASSY, RH	-	-	1
2	51104-31230	DAMPER ASSY, LH	-	-	1
3	51110-31230	·TUBE	-	-	2
4	51131-31230	·OUTER TUBE, RH	-	-	1
5	51141-31230	·OUTER TUBE, LH	-	-	1
6	51146-31230	·INNER TUBE	-	-	2
7	51171-31230	·SPRING	-	-	2
8	51196-31230	·RING	-	-	2
9	51195-31230	·PEACE, oil lock	-	-	2
10	51571-31230	·DUST SEAL	-	-	2
11	51572-31230	·CASE COVER	-	-	2
12	51156-31230	·RING, oil seal stop	-	-	2
13	51153-34730	·OIL SEAL	-	-	2
14	51351-31030	·BOLT	-	-	2
15	51181-31030	·O RING	-	-	2
16	51132-31030	·HOLDER	-	-	4
17	08322-21088	·WASHER	-	-	4
18	08321-21088	·LOCK WASHER	-	-	4
19	08311-11088	·NUT	-	-	4
20	51183-33030	·GASKET	-	-	2
21	02111-04067	·SCREW	-	-	2

FRONT FORK (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
22	51311-31700-019	STEERING STEM HEAD	-	-	1	
23	51356-31700	WASHER, fork upper bracket	-	-	1	
24	51353-31700	NUT, fork upper bracket	-	-	1	
25	51410-31700	STEERING STEM	-	-	1	
26	51575-33100	COVER, fork lower bracket	-	-	2	
27	51530-31200	BRACKET, headlamp RH	-	-	1	
28	51540-31200	BRACKET, headlamp LH	-	-	1	
29	51551-31000	SEAT, headlamp bracket	-	-	2	
30	51553-31000	CUSHION	-	-	2	
31	51555-31000	CAP	-	-	2	
32	51556-31000	CUSHION	-	-	2	
33	01122-08508	BOLT	-	-	1	
34	08322-11088	WASHER	-	-	1	
35	08312-12087	NUT	-	-	1	
36	08321-21088	LOCK WASHER	-	-	1	
37	01121-10407	BOLT	-	-	2	
38	08321-21108	LOCK WASHER	-	-	2	
39	01122-10408	BOLT	-	-	2	
40	08321-21108	LOCK WASHER	-	-	2	
41	09250-08005	CAP, front fork steering	-	-	1	
42	51621-33001	OUTER RACE	-	-	1	Inner part of 51410-31700
43	51147-31030	BOLT	-	-	2	
44	51148-31030	GASKET	-	-	2	


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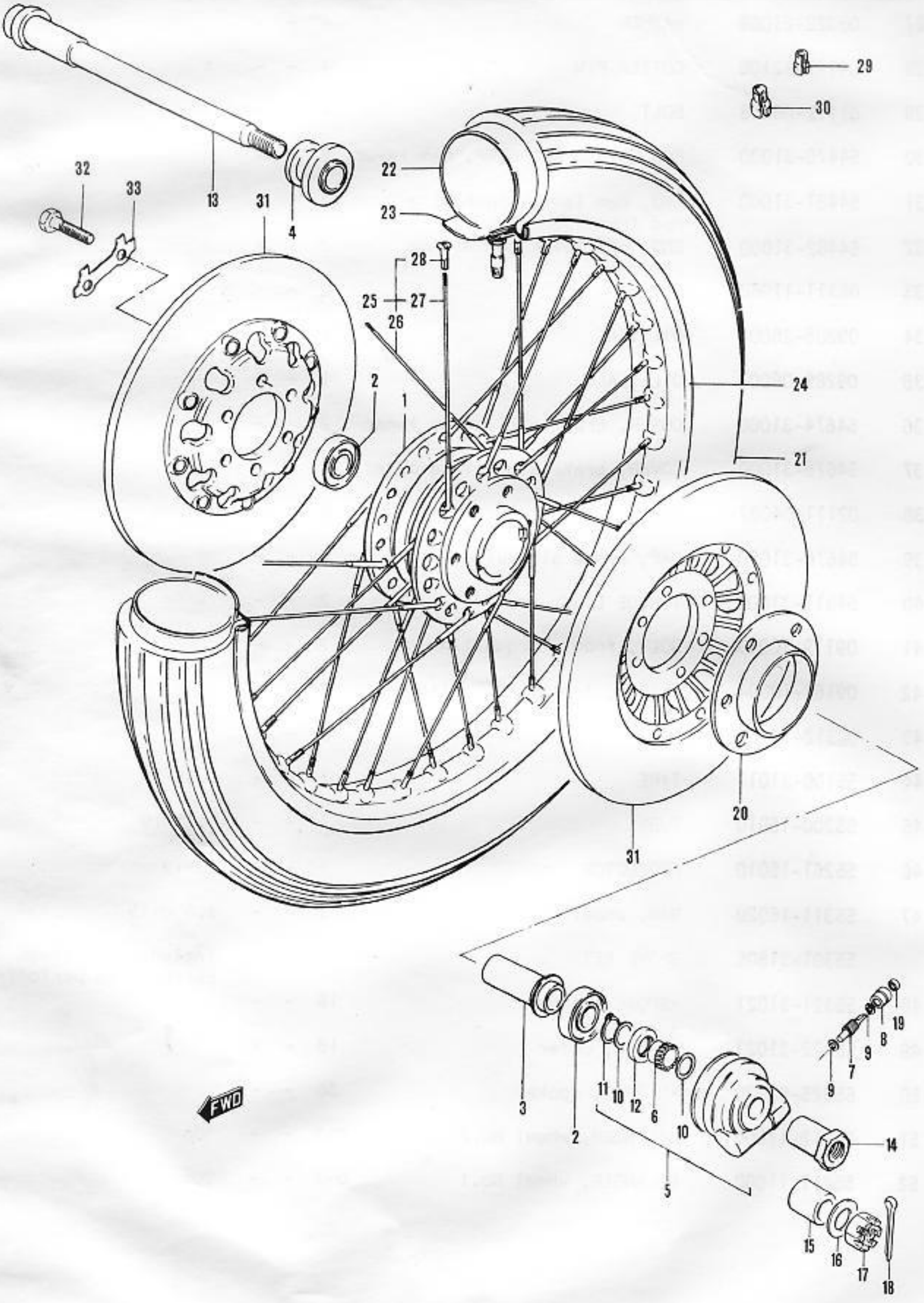
FRONT WHEEL (GT750J)

Ref.No.	Part No.	Description	Q'ty GT750J GT750K GT750L	Remarks
1	54100-31830	HUB SET, front wheel	1 - -	
2	09180-15016	·SPACER, front hub bearing	1 - -	15.3x21.7x56
3	08143-62020	·BEARING	2 - -	
4	54210-31002	PANEL COMP, front wheel LH	1 - -	
5	54250-31002	PANEL COMP, front wheel RH	1 - -	
6	54410-31001	SHOE COMP, front brake	4 - -	
7	55420-30000	SPRING, front brake shoe	4 - -	
8-1	54440-33000	CAM COMP, front brake LH	2 - -	to 54440-33001
8-2	54440-11002	CAM COMP, front brake LH	2 - -	~F.No.GT750-18325 to 54440-11003
9-1	54430-31001	CAM COMP, front brake RH	2 - -	
9-2	54430-31000	CAM COMP, front brake RH	2 - -	~F.No.GT750-18325
10	09160-15001	WASHER	4 - -	15x24x1.6
11	09280-15001	O RING	4 - -	14.8x2.4φ
12	54611-31000	GEAR, speedometer	1 - -	
13	54621-31000	PINION, speedometer	1 - -	
14	54632-11020	BUSHING, speedometer pinion	1 - -	
15	09160-05001	THRUST WASHER	2 - -	5.1x9x0.4
16	54660-11030	DRIVER COMP, speedometer gear	1 - -	
17	09160-22001	THRUST WASHER	2 - -	22.5x27x1.0
18	08331-11229	CIRCLIP	1 - -	
19	54711-31000	AXLE, front	1 - -	
20	09180-15019	SPACER	2 - -	15.1x30x5
21	54721-31000	NUT, front axle	1 - -	
22	54451-31001	LEVER, front brake cam No.1	2 - -	
23	54461-31001	LEVER, front brake cam No.2	2 - -	
24	09448-30001	SPRING, cam lever return LH	1 - -	
25	09448-30002	SPRING, cam lever return RH	1 - -	
26	09200-06001	PIN, cam lever	4 - -	

FRONT WHEEL (GT750J)

Ref.No.	Part No.	Description	Q'ty GT750J GT750K GT750L	Remarks
27	08322-21068	WASHER	4 - -	
28	04111-12108	COTTER PIN	4 - -	
29	01112-06258	BOLT	4 - -	
30	54470-31000	CONNECTING ROD COMP, cam lever	2 - -	
31	54481-31000	END, cam lever connecting rod front	2 - -	
32	54482-31000	END, cam lever connecting rod rear	2 - -	
33	08311-11068	NUT	2 - -	
34	09285-26001	OIL SEAL	1 - -	
35	09289-06001	OIL SEAL	1 - -	
36	54674-31000	COVER, brake air intake inner	2 - -	
37	54675-31000	COVER, brake air intake outer	2 - -	
38	02111-04087	SCREW	8 - -	
39	54676-31000	CAP, brake air outlet	5 - -	
40	54311-31000	TORQUE LINK, front	2 - -	
41	09119-10008	BOLT, front torque link	2 - -	
42	09167-10004	WASHER, front torque link	4 - -	
43	08312-11108	NUT	2 - -	
44	55100-31011	TIRE	1 - -	3.25-19
45	55200-15010	TUBE	1 - -	3.25-19
46	55261-15010	PROTECTOR	1 - -	22-19
47	55311-15020	RIM, wheel	1 - -	1.85B-19
	55301-31805	SPOKE SET	1 - -	Includes all items marked with period(·
48	55321-31021	·SPOKE, inner	18 - -	
49	55322-31021	·SPOKE, outer	18 - -	
50	65325-03020	·NIPPLE, spoke	36 - -	
51	55412-11000	BALANCER, wheel No.2	0~3 - -	30g
52	55411-11000	BALANCER, wheel No.1	0~3 - -	20g

FRONT WHEEL


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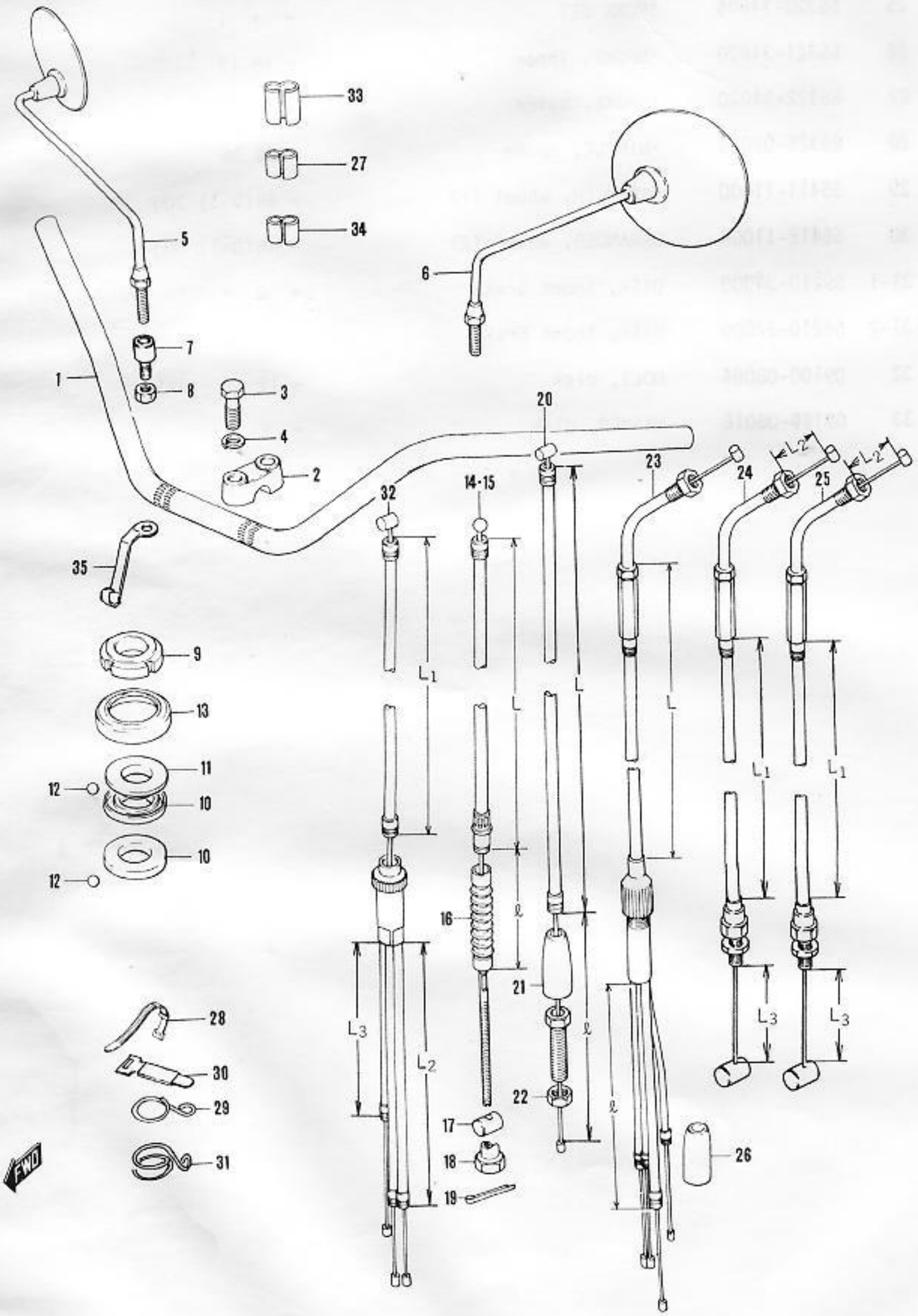
FRONT WHEEL

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	54100-18830	HUB SET, front wheel	-	1	1	
2	08123-63020	·BEARING	-	2	2	
3	54730-18400	·SPACER, front hub bearing	-	1	1	
4	54740-18400	SPACER, front axle right	-	1	1	
5	54600-34000	BOX ASSY, speedometer gear	-	1	1	
6	54611-15000	·GEAR, speedometer	-	1	1	
7	54621-11000	·PINION, speedometer	-	1	1	
8	54632-11020	·BUSHING, speedometer pinion	-	1	1	
9	09160-05001	·THRUST WASHER	-	2	2	5.1×9×0.4
10	09160-22001	·THRUST WASHER	-	2	2	22.5×27×1
11	08331-11229	·CIRCLIP	-	1	1	
12	09285-26002	·OIL SEAL, speedometer gear	-	1	1	
13-1	54711-31700	AXLE, front	-	1	-	L:237
13-2	54711-31701	AXLE, front	-	-	1	L:249
14	54721-31000	NUT, front axle	-	1	-	
15	09180-15034	SPACER	-	-	1	15×22×30
16	08322-21128	WASHER	-	-	1	
17	08314-31128	NUT	-	-	1	
18	04111-30308	COTTER PIN	-	-	1	
19	09289-06001	OIL SEAL, speedometer pinion	-	1	1	
20	54871-31000	DUST SEAL, speedometer gear box	-	1	1	
21	55100-31011	TIRE	-	1	1	3.25-19
22	55200-15010	TUBE	-	1	1	3.25-19
23	55261-15010	PROTECTOR	-	1	1	22×19
24	55311-34020	RIM, front wheel	-	1	1	

FRONT WHEEL

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
25	55320-34805	SPOKE SET	-	1	1	
26	55321-34020	·SPOKE, inner	-	18	18	
27	55322-34020	·SPOKE, outer	-	18	18	
28	65325-03020	·NIPPLE, spoke	-	36	36	
29	55411-11000	BARANCER, wheel (1)	-	AR(0~3)		20g
30	55412-11000	BARANCER, wheel (2)	-	AR(0~3)		30g
31-1	59210-34000	DISK, front brake	-	2	-	to 59210-37000
31-2	59210-37000	DISK, front brake	-	-	2	
32	09100-08094	BOLT, disk	-	12	12	8x40
33	09169-08016	WASHER, disk	-	6	6	

HANDLEBAR - CONTROL CABLE



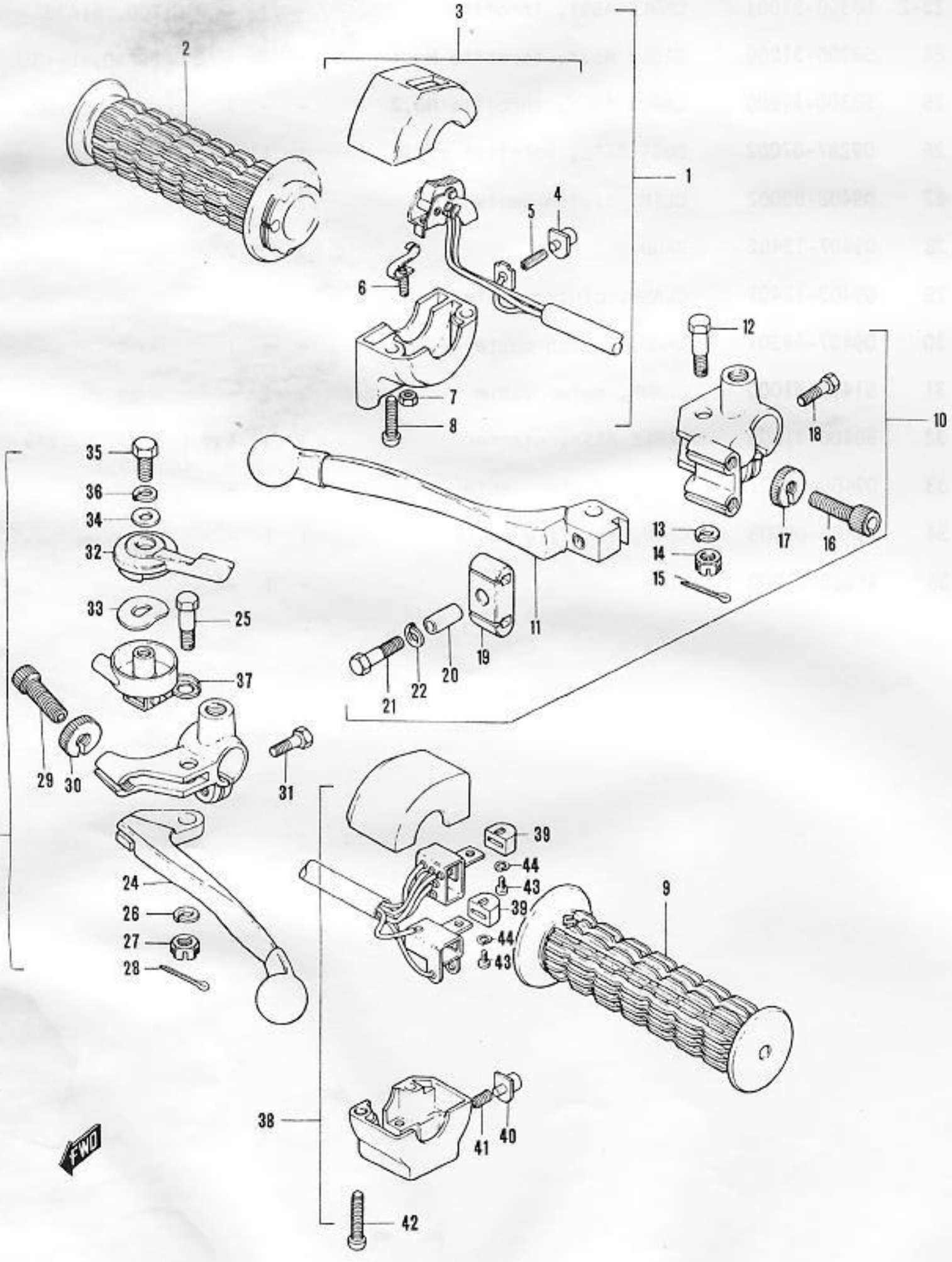
HANDLEBAR - CONTROL CABLE

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	56111-31000	HANDLEBAR	1	1	1	
2	56211-27100-019	CLAMP, handlebar upper	2	2	2	
3	01221-08357	BOLT	4	4	4	
4	08321-21088	LOCK WASHER	4	4	4	
5	56500-31010	MIRROR ASSY, rear view RH	1	1	1	
6	56600-31010	MIRROR ASSY, rear view LH	1	1	1	
7	56700-36000	CUSHION	-	-	2	
8	09140-08009	NUT	-	-	2	
9	51631-28000	NUT, steering stem	1	1	1	
10	51611-33001	RACE, steering inner	2	2	2	
11	51621-30001	RACE, steering outer upper	1	1	1	
12	06111-08003	STEEL BALL	36	36	36	
13	51643-30000	DUST SEAL, steering upper	1	1	1	
14	58110-31000	CABLE COMP, front brake RH	1	-	-	L:1100, ℓ:50
15	58110-31600	CABLE COMP, front brake LH	1	-	-	L:1120, ℓ:50
16	09287-05001	·DUST SEAL	2	-	-	
17	09209-13003	PIN, brake cable lever	2	-	-	
18	09150-06001	NUT, brake cable adjuster	2	-	-	
19	04111-20158	COTTER PIN	2	-	-	
20	58200-31000	CABLE ASSY, clutch	1	1	1	L:1110, ℓ:106
21	09287-10001	·BOOT, clutch cable	1	1	1	
22	08312-11088	·NUT	1	1	1	

HANDLEBAR - CONTROL CABLE

Ref.No.	Part No.	Description	Q'ty GT75J	GT75K	GT75L	Remarks
23-1	58300-31000	CABLE ASSY, throttle	1	-	-	to 58300-31001 L:700, ℓ:415
23-2	58300-31001	CABLE ASSY, throttle	-	1	-	L:700, ℓ:470
24	58300-31200	CABLE ASSY, throttle No.1	-	-	1	L_1:1010, L_2:30 L_3:102
25	58300-31600	CABLE ASSY, throttle No.2	-	-	1	L_1:820, L_2:50, L_3:67
26	09287-07002	DUST SEAL, throttle cable	1	1	-	
27	09408-00002	CLIP, clutch cable	2	2	-	
28	09407-12402	BAND	5	5	2	
29	09403-13401	CLAMP, clutch cable	-	-	1	
30	09407-14301	BAND, clutch cable	-	-	1	
31	51455-31000	CLAMP, meter cable	2	1	-	
32	58400-31000	CABLE ASSY, starter	1	1	-	L_1:700, L_2:240 L_3:270
33	09408-00001	CLIP, starter cable	1	1	-	
34	09408-00005	CLIP, throttle cable	1	1	-	
35	36652-31000	CLIP	-	1	-	

HANDLE SWITCH (GT750J)



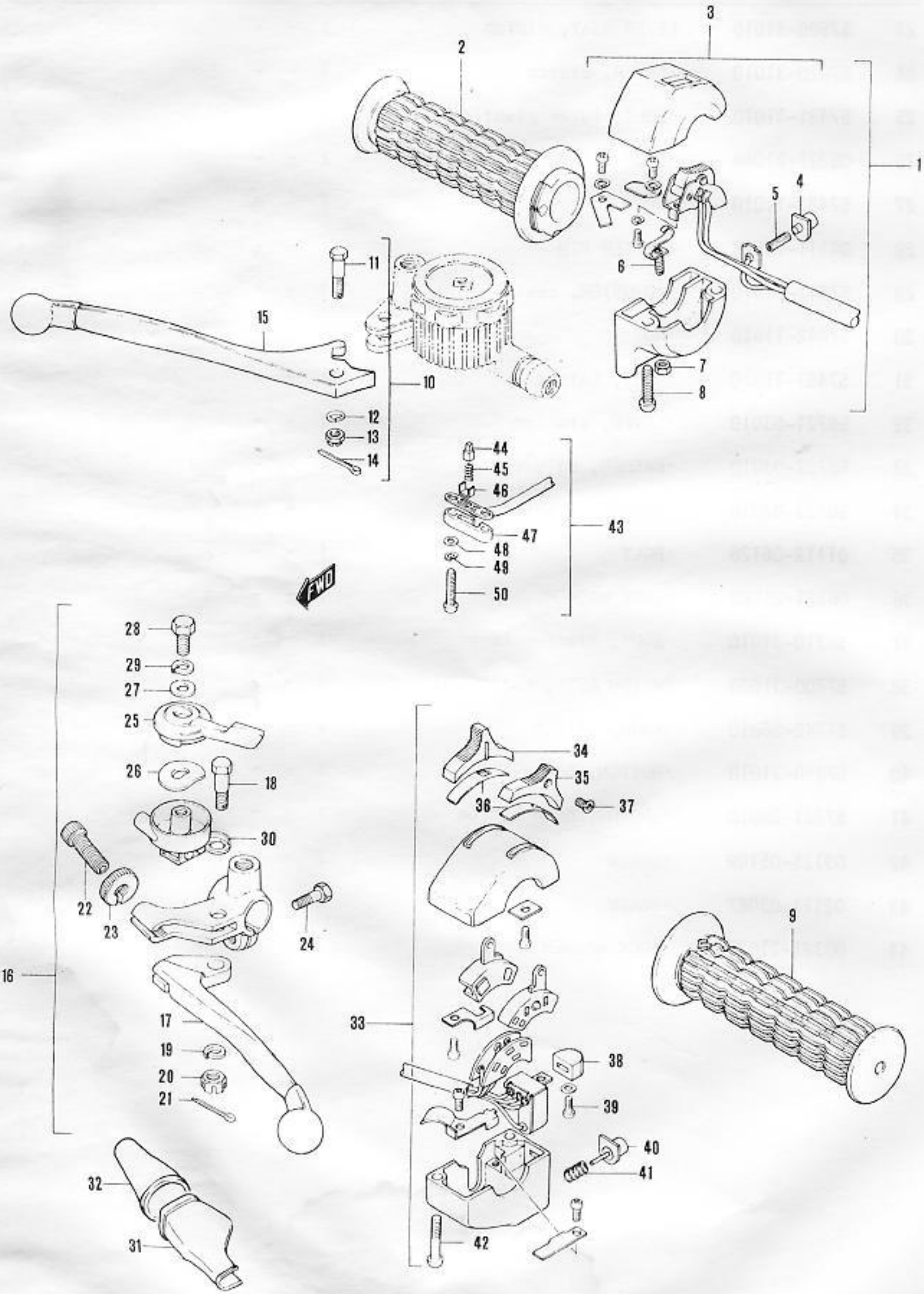
HANDLE SWITCH (GT750J)

Ref.No.	Part No.	Description	Q'ty GT750J GT750K GT750L	Remarks
1	57100-31010	GRIP ASSY, throttle	1 - -	to 57100-31011
2	57110-15110	·GRIP, throttle	1 - -	
3	57100-31818	·SWITCH SET, RH	1 - -	to 57100-31830
4	57370-01311	·BUTTON, starter	1 - -	
5	57382-01311	·SPRING, starter button	1 - -	
6	57170-11011	·ADJUSTER, throttle grip	1 - -	
7	08311-11058	·NUT	1 - -	
8	02111-05257	·SCREW	2 - -	
9	57211-15110	GRIP, LH	1 - -	
10	57300-31010	LEVER ASSY, brake	1 - -	
11	57421-31010	·LEVER, brake	1 - -	
12	57431-31010	·BOLT, lever pivot	1 - -	
13	08321-21068	·LOCK WASHER	1 - -	
14	57433-11010	·NUT	1 - -	
15	04111-16158	·COTTER PIN	1 - -	
16	57441-11010	·ADJUSTER, cable	2 - -	
17	57442-11010	·NUT	2 - -	
18	57451-11010	·BOLT, holder	1 - -	
19	57452-31010	·PIECE, cable end	1 - -	
20	57453-31010	·SPACER, cable end piece	1 - -	
21	57454-31010	·BOLT, cable end piece	1 - -	
22	08321-21068	·LOCK WASHER	1 - -	

HANDLE SWITCH (GT750J)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
23	57500-31010	LEVER ASSY, clutch	1	-	-
24	57620-31010	·LEVER, clutch	1	-	-
25	57431-31010	·BOLT, lever pivot	1	-	-
26	08321-21068	·LOCK WASHER	1	-	-
27	57433-11010	·NUT	1	-	-
28	04111-16158	·COTTER PIN	1	-	-
29	57441-11010	·ADJUSTER, cable	1	-	-
30	57442-11010	·NUT	1	-	-
31	57451-11010	·BOLT, holder	1	-	-
32	58721-03010	·LEVER, starter	1	-	-
33	58722-03010	·WASHER, adjuster	1	-	-
34	58723-03010	·WASHER, starter lever	1	-	-
35	01112-06128	·BOLT	1	-	-
36	08321-21068	·LOCK WASHER	1	-	-
37	58710-31010	·BODY, starter lever	1	-	-
38	57700-31600	SWITCH ASSY, handle LH	1	-	-
39	57742-26010	·KNOB, switch	2	-	-
40	57850-31010	·BUTTON, horn	1	-	-
41	57761-26010	·SPRING, horn button	1	-	-
42	09125-05109	·SCREW	2	-	-
43	02111-03067	·SCREW	2	-	-
44	08321-21038	·LOCK WASHER	2	-	-

HANDLE SWITCH (GT750K)



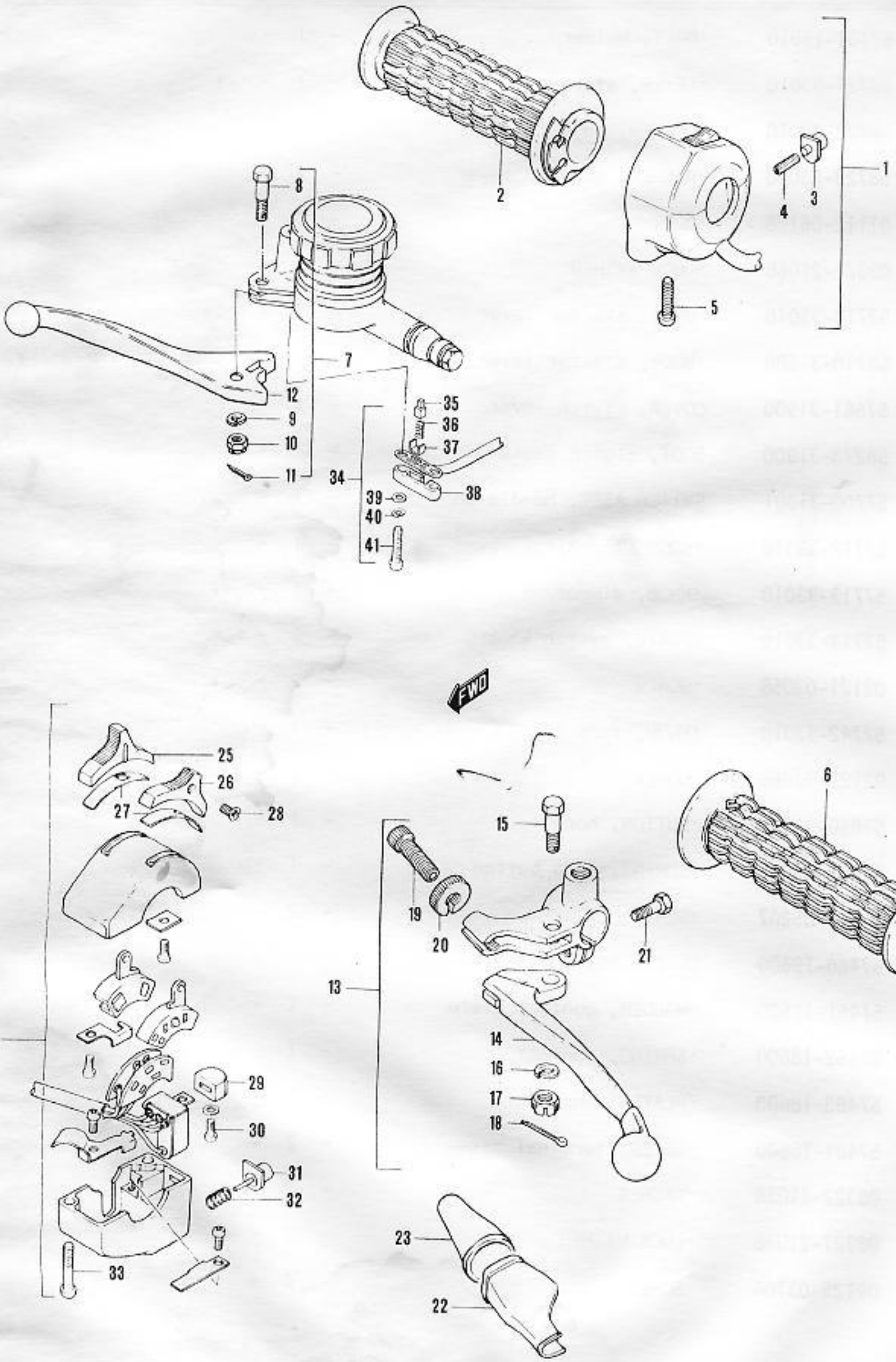
HANDLE SWITCH (GT750K)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	57100-31011	GRIP ASSY, throttle	-	1	-	from 57100-31011
2	57110-15110	·GRIP, throttle	-	1	-	
3	57100-31830	·SWITCH SET, RH	-	1	-	from 57100-31818
4	57370-01311	·BUTTON, starter	-	1	-	
5	57382-01311	·SPRING, starter button	-	1	-	
6	57170-11011	·ADJUSTER, throttle grip	-	1	-	
7	08311-11058	·NUT	-	1	-	
8	02111-05257	·SCREW	-	2	-	
9	57211-15110	GRIP, LH	-	1	-	
10	57300-18620	LEVER, brake	-	1	-	
11	57431-18620	·BOLT, lever pivot	-	1	-	
12	08321-21068	·LOCK WASHER	-	1	-	
13	57433-11010	·NUT, lever pivot	-	1	-	
14	04111-16158	·COTTER PIN	-	1	-	
15	57420-18620	·LEVER, brake	-	1	-	
16-1	57500-33010	LEVER ASSY, clutch	-	1	-	to 57500-31600
16-2	57500-31600	LEVER ASSY, clutch	-	1	-	
17	57620-31010	·LEVER, clutch	-	1	-	
18	57431-31010	·BOLT, lever pivot	-	1	-	
19	08321-21068	·LOCK WASHER	-	1	-	
20	57433-11010	·NUT	-	1	-	
21	04111-16158	·COTTER PIN	-	1	-	
22	57441-11010	·ADJUSTER, cable	-	1	-	
23	57442-11010	·NUT	-	1	-	

HANDLE SWITCH (GT750K)

Ref.No.	Part No.	Description	Q'ty GT750J GT750K GT750L	Remarks
24	57451-11010	·BOLT, holder	- 1 -	
25	58721-03010	·LEVER, starter	- 1 -	
26	58722-03010	·WASHER, adjusting	- 1 -	
27	58723-03010	·WASHER, starter lever	- 1 -	
28	01112-06128	·BOLT	- 1 -	
29	08321-21068	·LOCK WASHER	- 1 -	
30-1	58710-31010	·BODY, starter lever	- 1 -	Used for 57500-33010
30-2	58710-31600	·BODY, starter lever	- 1 -	Used for 57500-31600
31	57661-31900	COVER, clutch lever	- 1 -	
32	58273-31900	BOOT, clutch cable	- 1 -	
33	57700-31601	SWITCH ASSY, handle LH	- 1 -	
34	57712-33010	·KNOB, lighting	- 1 -	
35	57713-33010	·KNOB, dimmer	- 1 -	
36	57714-33010	·PLATE, switch knob	- 2 -	
37	02121-03068	·SCREW	- 2 -	
38	57742-33010	·KNOB, turn signal	- 1 -	
39	02121-03068	·SCREW	- 1 -	
40	57850-31010	·BUTTON, horn	- 1 -	
41	57761-26010	·SPRING, horn button	- 1 -	
42	02111-05207	·SCREW	- 2 -	
43	57460-18600	SWITCH ASSY, stop	- 1 -	
44	57461-18600	·HOLDER, contact plate	- 1 -	
45	57462-18600	·SPRING, contact	- 1 -	
46	57463-18600	·PLATE, contact	- 1 -	
47	57481-18600	·COVER, terminal base	- 2 -	
48	08322-21038	·WASHER	- 2 -	
49	08321-21038	·LOCK WASHER	- 2 -	
50	09125-03105	·SCREW	- 2 -	

HANDLE SWITCH (GT750L)



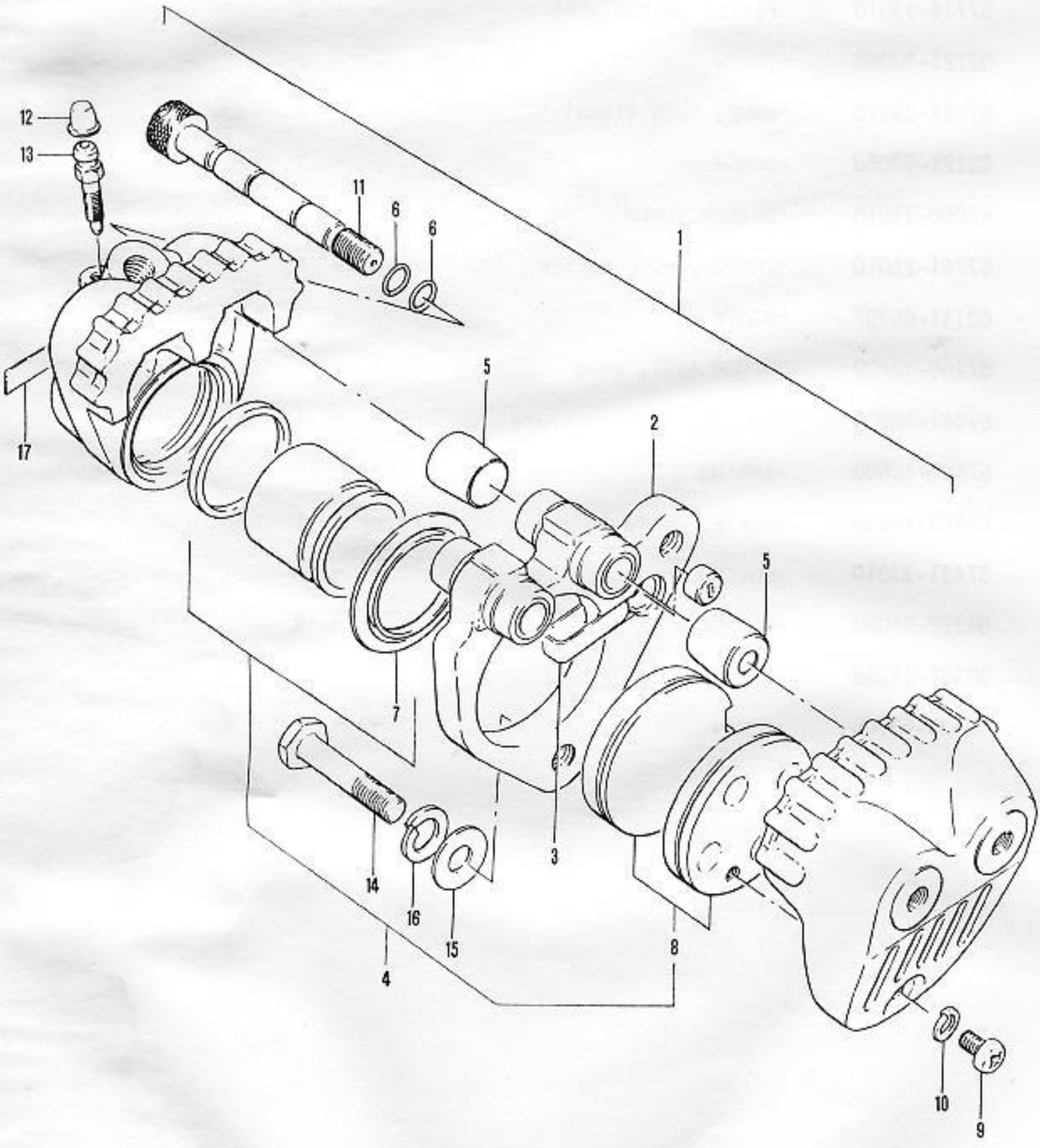
HANDLE SWITCH (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	57100-31012	GRIP ASSY, throttle	-	-	1
2	57110-31012	·GRIP, throttle	-	-	1
3	57370-01311	·BUTTON, starter	-	-	1
4	57382-01311	·SPRING, starter button	-	-	1
5	02111-05257	·SCREW	-	-	2
6	57211-15110	GRIP, LH	-	-	1
7	57300-18620	LEVER, brake	-	-	1
8	57431-18620	·BOLT, lever pivot	-	-	1
9	08321-21068	·LOCK WASHER	-	-	1
10	57433-11010	·NUT, lever pivot	-	-	1
11	04111-16158	·COTTER PIN	-	-	1
12	57420-18620	·LEVER, brake	-	-	1
13	57500-18600	LEVER ASSY, clutch	-	-	1
14	57620-31010	·LEVER, clutch	-	-	1
15	57431-11010	·BOLT, lever pivot	-	-	1
16	08321-21068	·LOCK WASHER	-	-	1
17	57433-11010	·NUT	-	-	1
18	04111-16158	·COTTER PIN	-	-	1
19	57441-11010	·ADJUSTER, cable	-	-	1
20	57442-11010	·NUT	-	-	1
21	57451-11010	·BOLT, holder	-	-	1
22	57661-31000	COVER, clutch lever	-	-	1
23	58273-31000	BOOT, clutch cable	-	-	1

HANDLE SWITCH (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
24	57700-31602	SWITCH ASSY, handle LH	-	-	1
25	57712-33010	·KNOB, lighting	-	-	1
26	57713-33010	·KNOB, dimmer	-	-	1
27	57714-33010	·PLATE, switch knob	-	-	2
28	02121-03068	·SCREW	-	-	2
29	57742-33010	·KNOB, turn signal	-	-	1
30	02121-03068	·SCREW	-	-	1
31	57850-31010	·BUTTON, horn	-	-	1
32	57761-26010	·SPRING, horn button	-	-	1
33	02111-05207	·SCREW	-	-	2
34	57460-33700	SWITCH ASSY, stop	-	-	1
35	57461-18600	·HOLDER, contact plate	-	-	1
36	57462-18600	·SPRING	-	-	1
37	57463-18600	·PLATE, contact	-	-	1
38	57481-33010	·COVER, terminal base	-	-	1
39	08322-21038	·WASHER	-	-	2
40	08321-21038	·LOCK WASHER	-	-	2
41	09125-03105	·SCREW	-	-	2

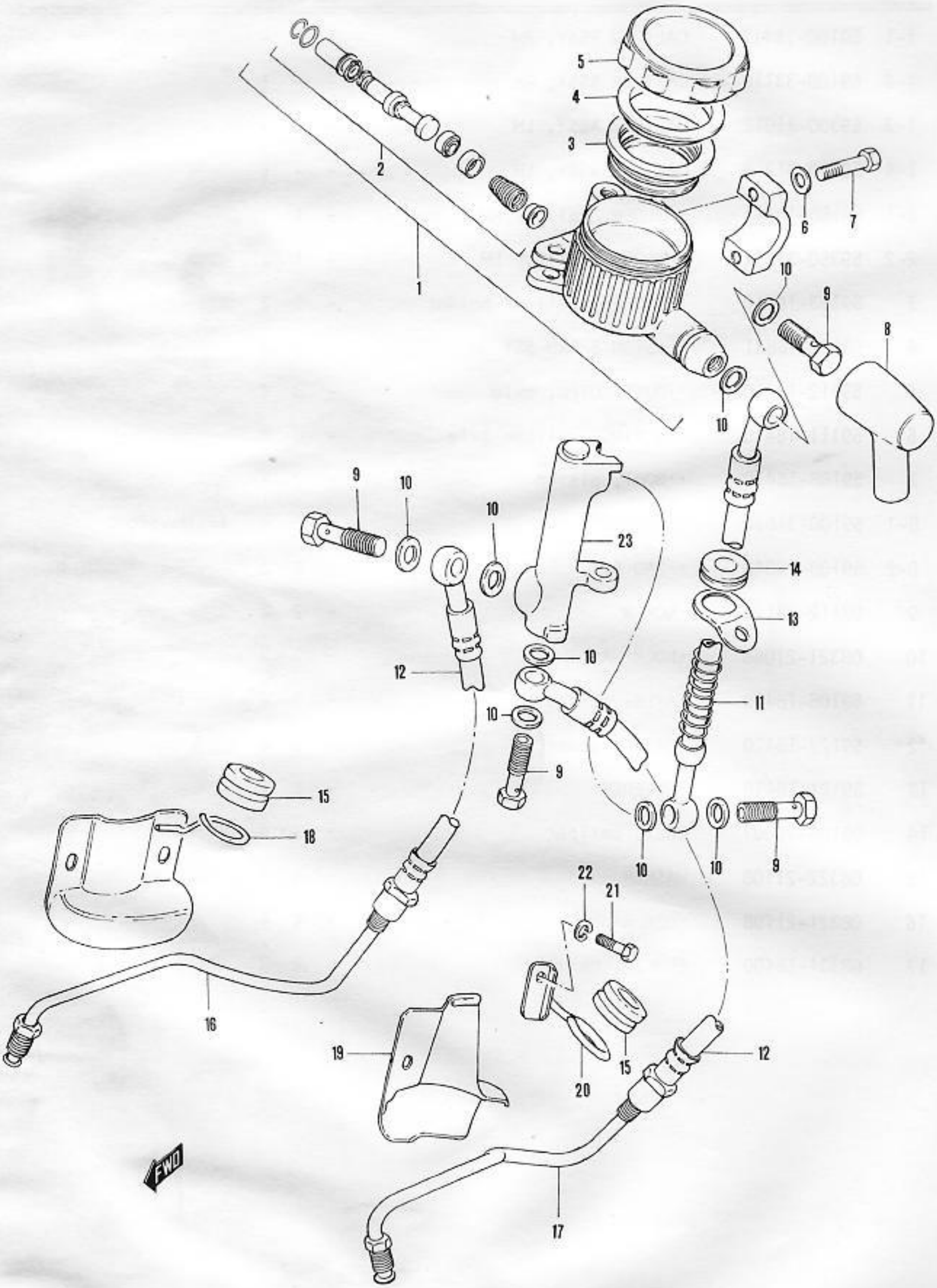
CARIPERS



CARIPERS

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	59100-18412	CALIPER ASSY, RH	-	1	-	
1-2	59100-33110	CALIPER ASSY, RH	-	-	1	
1-3	59300-31012	CALIPER ASSY, LH	-	1	-	
1-4	59300-31210	CALIPER ASSY, LH	-	-	1	
2-1	59150-18411	·HOLDER, caliper RH	-	1	1	
2-2	59350-31011	·HOLDER, caliper LH	-	1	1	
3	59153-18410	·STOPPER, caliper holder	-	2	2	
4	59100-18831	·PISTON & PAD SET	-	2	2	
5	59112-18410	··DUST COVER, axle	-	8	8	
6	59111-18410	··O RING, caliper axle	-	8	8	
7	59108-18410	··BOOT, piston	-	2	2	
8-1	59100-31830	··PAD SET	-	2	-	~F.No.38590
8-2	59100-18840	··PAD SET	-	2	2	
9	02112-06128	·SCREW	-	2	2	
10	08321-21068	·LOCK WASHER	-	2	2	
11	59105-18410	·AXLE, caliper	-	4	4	
12	59122-18410	·CAP, bleeder	-	2	2	
13	59121-18410	·BLEEDER	-	2	2	
14	09104-10007	BOLT, caliper	-	4	4	
15	08322-21108	WASHER	-	4	4	
16	08321-21108	LOCK WASHER	-	4	4	
17	68334-18400	EMBLEM, caliper	-	2	2	

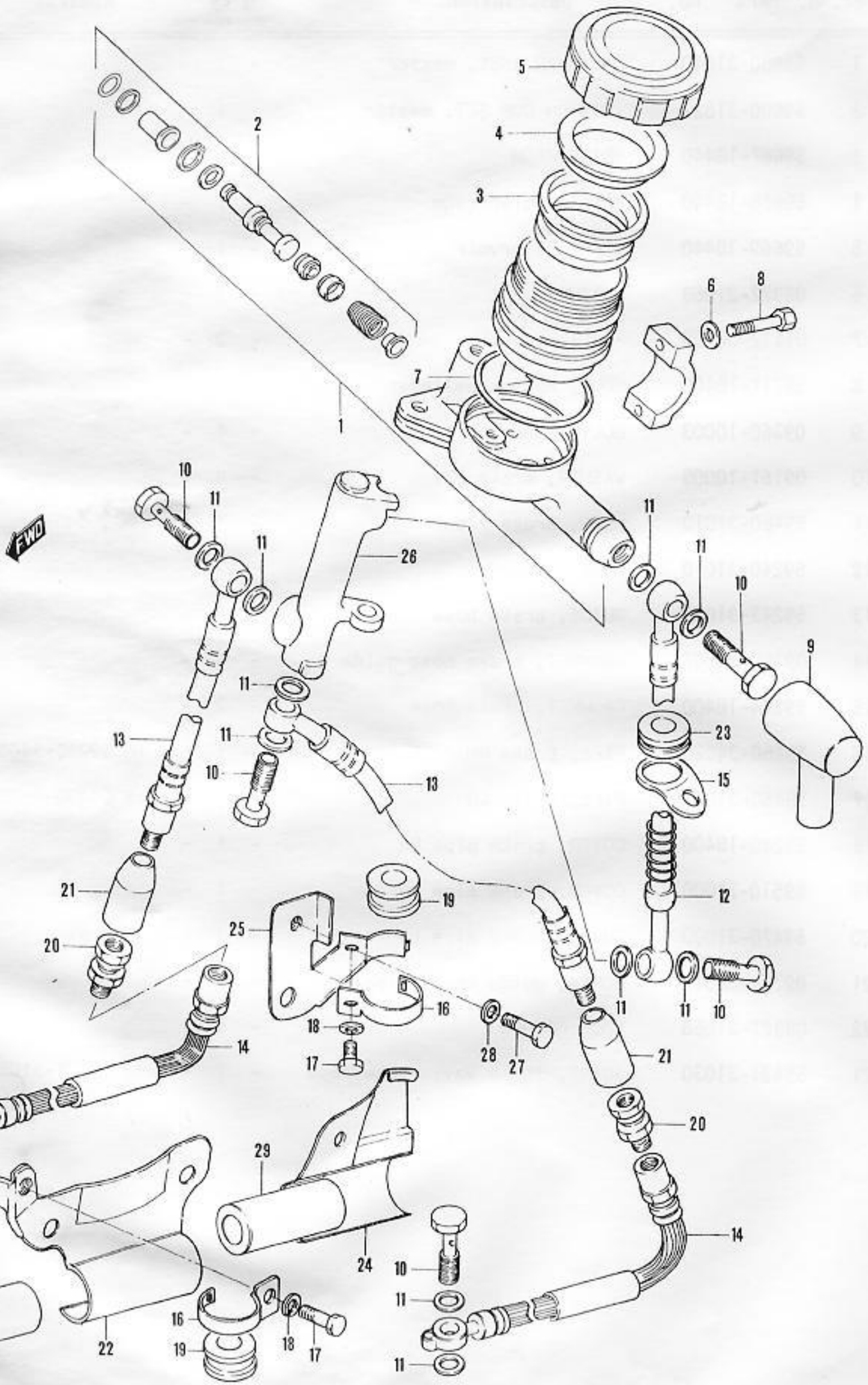
MASTER CYLINDER - BRAKE HOSE (GT750K)



MASTER CYLINDER - BRAKE HOSE (GT750K)

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1	59600-31040	CYLINDER ASSY, master	-	1	-	
2	59600-31827	·PISTON CUP SET, master cylinder	-	1	-	
3	59667-18440	·DIAPHRAGM	-	1	-	
4	59668-18440	·PLATE, diaphragm	-	1	-	
5	59669-18440	·CAP, reservoir	-	1	-	
6	08322-21068	·WASHER	-	2	-	
7	01112-06258	·BOLT	-	2	-	
8	59711-18400	BOOT, master cylinder	-	1	-	
9	09360-10003	BOLT, brake oil	-	4	-	
10	09161-10005	WASHER, brake oil	-	8	-	
11	59480-31010	HOSE, brake front	-	1	-	
12	59240-31010	HOSE, brake	-	2	-	
13	59243-31000	GUIDE, brake hose	-	1	-	
14	09308-14007	GROMMET, brake hose guide	-	1	-	
15	59244-18400	GROMMET, brake hose	-	2	-	
16	59250-34020	PIPE, brake RH	-	1	-	to 59250-34600
17	59450-31020	PIPE, brake LH	-	1	-	to 59450-31600
18	59280-18400	COVER, brake pipe RH	-	1	-	
19	59510-31000	COVER, brake pipe LH	-	1	-	
20	59470-31000	GUIDE, brake pipe LH	-	1	-	
21	09128-06011	SCREW, guide brake pipe LH	-	1	-	
22	08321-21068	LOCK WASHER	-	1	-	
23	59491-31030	JOINT, three way, brake hose	-	1	-	to 59491-31031

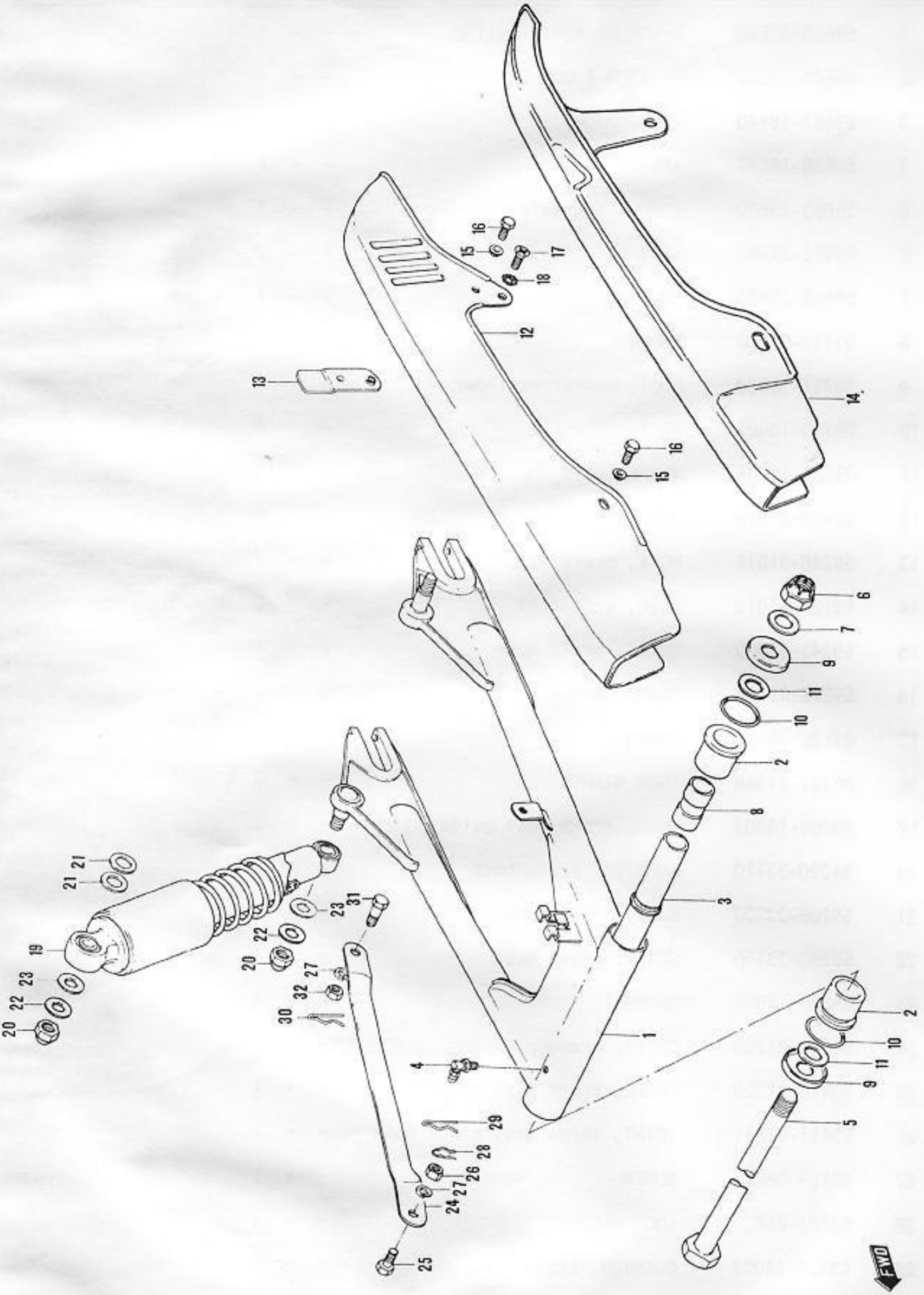
MASTER CYLINDER - BRAKE HOSE (GT750L)



MASTER CYLINDER - BRAKE HOSE (GT750L)

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L
1	59600-31620	CYLINDER ASSY, master	-	-	1
2	59600-31827	·PISTON & CUP SET	-	-	1
3	59667-18440	·DIAPHRAGH	-	-	1
4	59668-18441	·PLATE	-	-	1
5	59669-33600	·CAP, reservoir	-	-	1
6	08322-21068	·WASHER	-	-	2
7	59686-33600	·O RING	-	-	1
8	01112-06258	·BOLT	-	-	2
9	59711-18400	BOOT, master cylinder	-	-	1
10	09360-10003	BOLT	-	-	6
11	09161-10005	WASHER	-	-	12
12	59480-31010	HOSE, brake (1)	-	-	1
13	59240-31011	HOSE, brake (2)	-	-	2
14	59520-31010	HOSE, brake (3)	-	-	2
15	59243-31000	GUIDE, brake hose	-	-	1
16	59268-33100	CLAMP, brake hose	-	-	2
17	09128-06011	SCREW	-	-	2
18	08321-21068	LOCK WASHER	-	-	2
19	09305-14003	BUSH, brake hose guide	-	-	2
20	59290-33110	ADAPTOR, brake hose	-	-	2
21	59265-33100	BOOT, brake hose	-	-	2
22	59280-33100	COVER, brake hose	-	-	1
23	09308-14007	GROMMET	-	-	1
24	59510-31200	COVER, brake pipe LH	-	-	1
25	59470-31200	GUIDE, brake pipe LH	-	-	1
26	59491-31031	JOINT, three way, brake hose	-	-	1
27	09128-06011	SCREW	-	-	1
28	08321-21068	LOCK WASHER	-	-	1
29	09320-14003	CUSHION, brake hose support	-	-	2

REAR SWINGING ARM



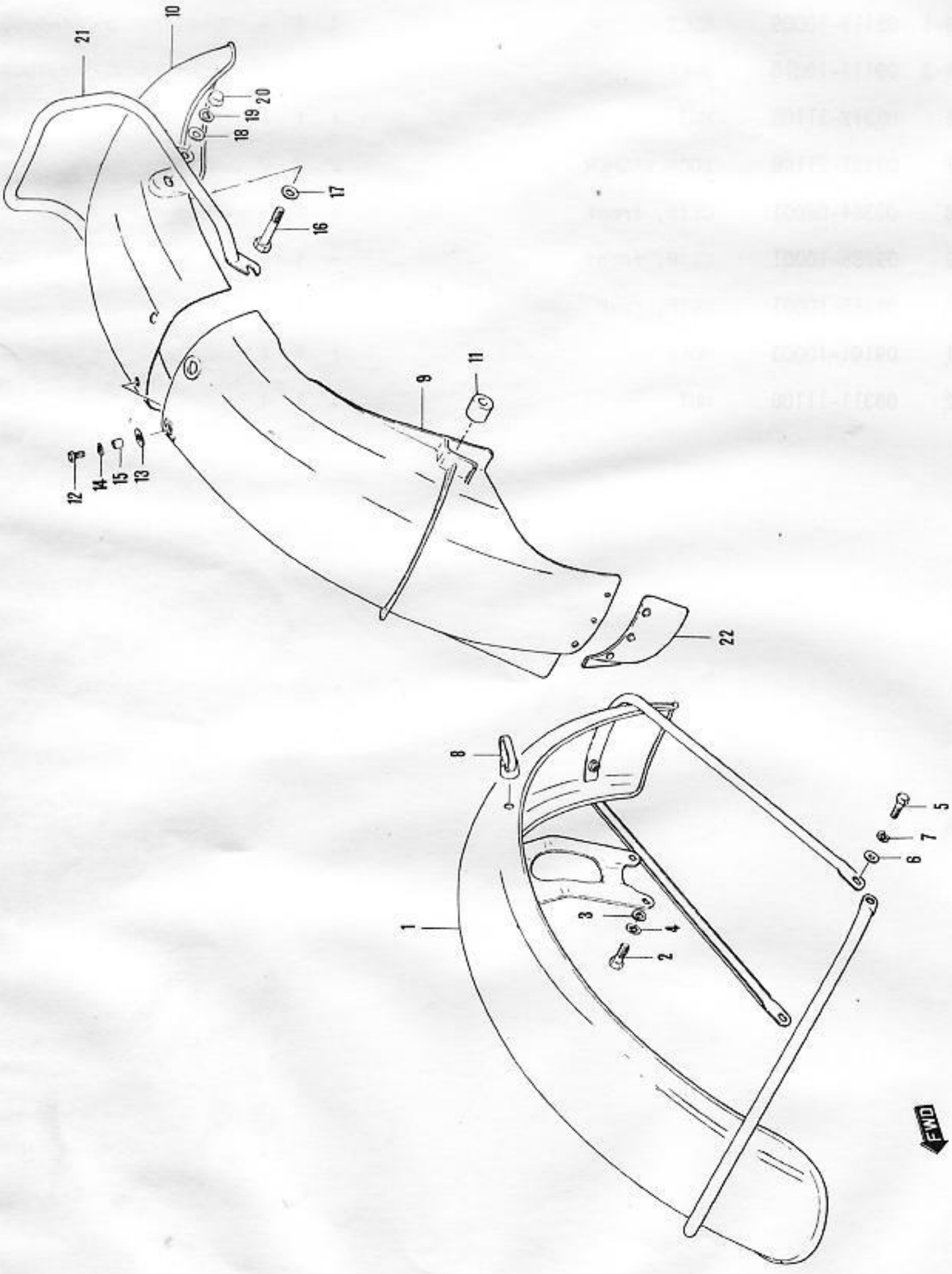
REAR SWINGING ARM

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	61101-31806-019	SWINGING ARM COMP, rear	1	1	1	
2	09307-22002	·BUSHING	2	2	2	
3	61280-31000	·SPACER COMP, swinging arm center	1	1	1	
4	08351-31008	·GREASE NIPPLE	1	1	1	
5	61211-31000	SHAFT, swinging arm pivot	1	1	1	
6	09159-14002	NUT, swinging arm pivot	1	1	1	
7	08322-11148	WASHER	1	1	1	
8	61251-15000	SPACER, swinging arm pivot	2	2	2	
9	61262-15000	COVER, bushing dust seal	2	2	2	
10	09280-30001	O RING	2	2	2	
11	09160-14009	THRUST WASHER	2	2	2	14.5x29x2.3
12	61311-31001-019	CHAIN CASE, upper	1	1	-	
13-1	61381-31001	BRACKET, chain case	1	-	-	to 61381-31002
13-2	61381-31002	BRACKET, chain case	-	1	-	
14	61310-33100	CASE, chain	-	-	1	
15-1	09169-06010	WASHER, chain case	2	2	-	
15-2	09160-06007	WASHER, chain case	-	-	1	6.5x18x1.6
16	09100-06011	BOLT, chain case	2	2	-	6x8
17	02122-06128	SCREW	1	1	1	
18	08323-31068	LOCK WASHER	1	1	1	
19	62100-31032	SHOCK ABSORBER ASSY, rear	2	2	2	
20	08313-11107	NUT	4	4	4	
21	08322-21128	WASHER	4	4	4	
22	09160-10035	WASHER	4	4	4	10.5x24x2.3
23	09160-10033	WASHER	-	-	4	

REAR SWINGING ARM

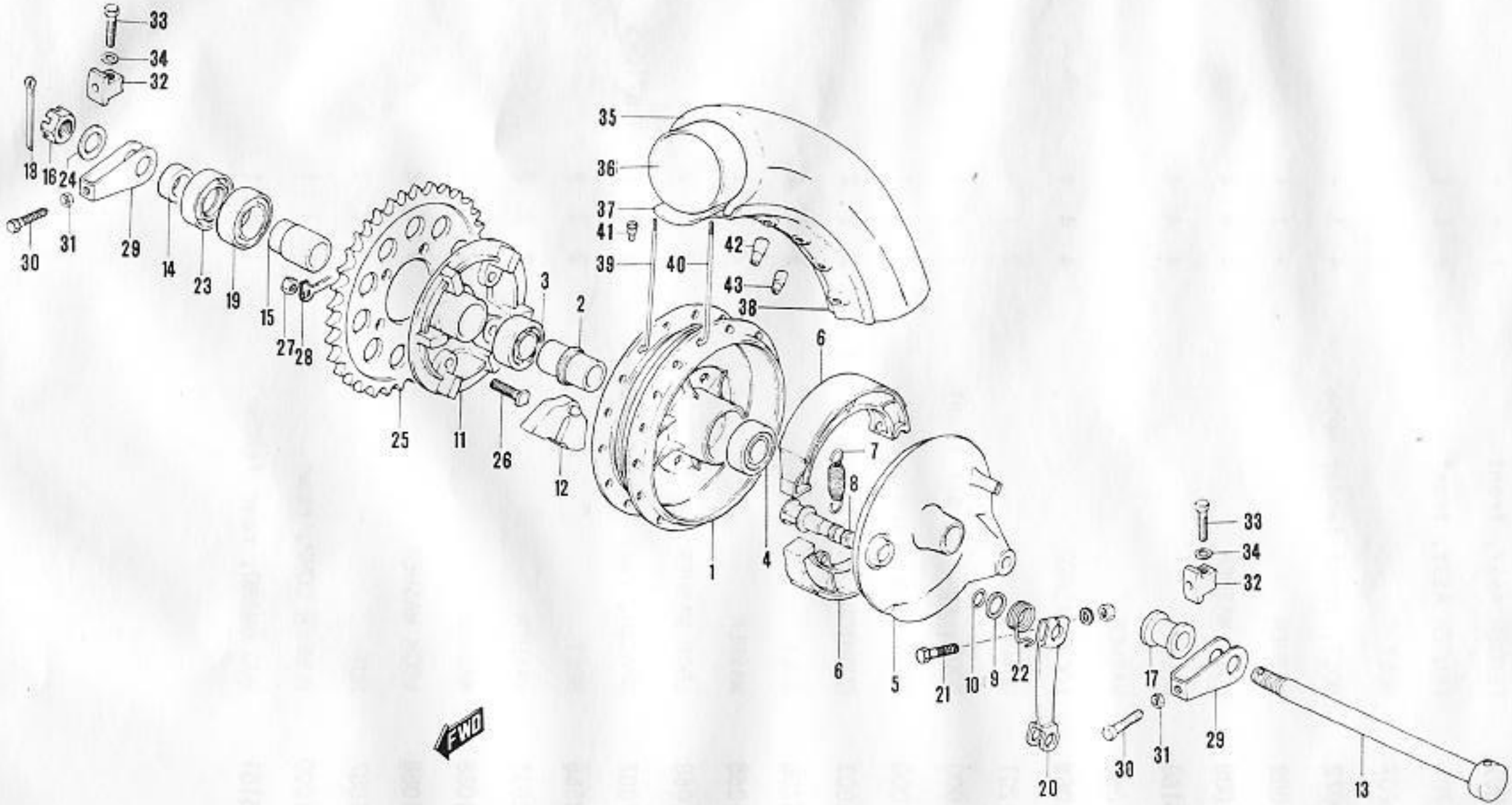
Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
24	64311-31001	TOQUE LINK COMP, rear brake	1	1	1	
25-1	09119-10009	BOLT	1	1	-	Used for 09384-08001
25-2	09111-10010	BOLT	-	1	1	Used for 09385-10001
26	08312-31108	NUT	1	1	1	
27	08321-21108	LOCK WASHER	2	2	2	
28	09384-08001	CLIP, front	1	1	-	
29	09385-10001	CLIP, front	-	1	1	
30	09385-10001	CLIP, rear	1	1	1	
31	09101-10003	BOLT	1	1	1	
32	08311-11108	NUT	1	1	1	

FRONT FENDER - REAR FENDER



FRONT FENDER - REAR FENDER

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1-1	53100-31001	FENDER ASSY, front	1	-	-	
1-2	53100-31701	FENDER ASSY, front	-	1	1	
2-1	01221-08607	BOLT	-	1	1	
2-2	09100-08072	BOLT, front fender upper	4	3	-	
3	08322-11088	WASHER	-	1	1	
4	08321-21088	LOCK WASHER	4	4	4	
5	01112-06168	BOLT	4	4	4	
6	08322-21068	WASHER	4	4	4	
7	08321-21068	LOCK WASHER	4	4	4	
8	58621-21201	GUIDE, cable	2	1	-	
9	63112-31000	BODY, rear fender front	1	1	1	
10	63113-31000	BODY, rear fender rear	1	1	1	
11	09329-05003	CUSHION, rear fender front	2	2	2	
12	01112-06208	BOLT	2	2	2	
13	08322-21068	WASHER	2	2	2	
14	08321-21068	LOCK WASHER	2	2	2	
15	09180-07007	SPACER, rear fender center	2	2	2	7.6x10x5
16	01122-08558	BOLT	2	2	2	
17	09160-08033	WASHER	2	2	2	
18	08322-21088	WASHER	2	2	2	
19	08321-21088	LOCK WASHER	2	2	2	
20	08313-11087	NUT	2	2	2	
21	94710-31000	BUMPER COMP, rear	1	1	1	
22	63411-15101	MUD GUARD, rear fender	1	1	1	


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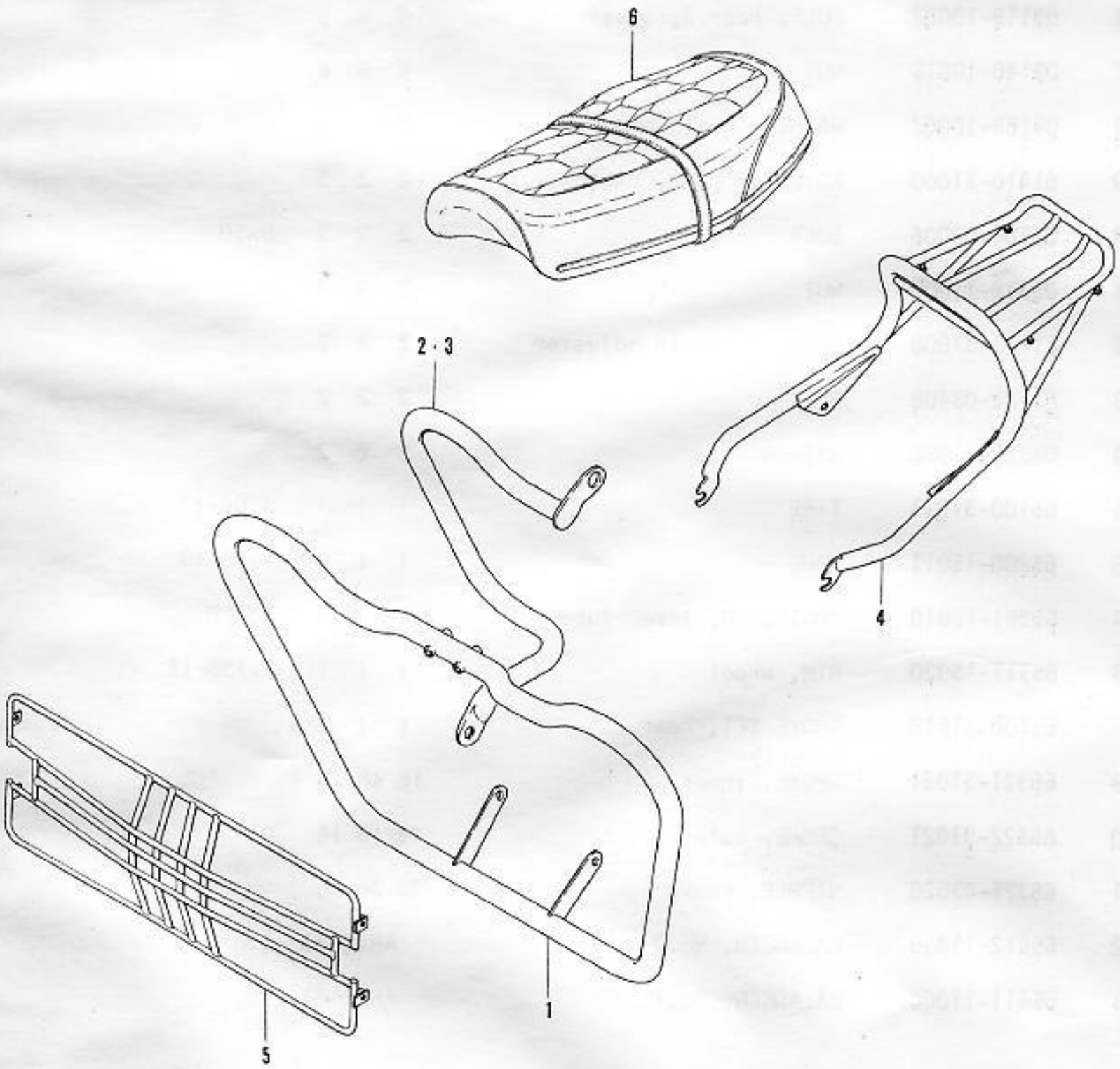
REAR WHEEL

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	64100-31830	HUB SET, rear wheel	1	1	1	
2	64730-31000	·SPACER	1	1	1	
3	08143-63040	·BEARING, RH	1	1	1	
4	08143-62040	·BEARING, LH	1	1	1	
5-1	64210-31001	PANEL COMP, rear wheel	1	1	-	to 64210-31002
5-2	64210-31002	PANEL COMP, rear wheel	-	-	1	
6	64410-31000	SHOE COMP, rear brake	2	2	2	
7	55420-30000	SPRING, rear brake shoe	2	2	2	
8-1	54440-11002	CAM COMP, rear brake	1	1	-	to 54440-11003
8-2	54440-11003	CAM COMP, rear brake	-	-	1	
9	09160-15001	WASHER	1	1	1	15x24x1.6
10	09280-15001	O RING	1	1	1	
11	64611-31000	DRUM, rear sprocket	1	1	1	
12	64651-31000	SHOCK ABSORBER, rear hub	6	6	6	
13	64711-31000	AXLE, rear	1	1	1	
14	09180-20041	SPACER, rear axle RH	1	1	1	
15	64733-31000	RETAINER, rear hub bearing	1	1	1	
16	08314-31187	NUT	1	1	1	
17	09180-20040	SPACER, rear axle LH	1	1	1	20x33x10.5
18	04111-40408	COTTER PIN	1	1	1	
19	08113-63050	BEARING, sprocket drum	1	1	1	
20	64451-31002	LEVER, brake cam	1	1	1	
21	01112-06258	BOLT	1	1	1	
22	09448-30001	SPRING, brake cam lever return	1	1	1	
23	09285-33001	OIL SEAL, sprocket drum	1	1	1	
24	09160-19008	WASHER, rear axle nut	1	1	1	19x34x4.0

REAR WHEEL

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
25-1	64511-31700	SPROCKET, rear	1	1	1	NT:43, OPT
25-2	64511-31000	SPROCKET, rear	1	1	1	NT:45, OPT
25-3	64511-31731	SPROCKET, rear	1	1	1	NT:47, STD
25-4	64511-31740	SPROCKET, rear	1	1	1	NT:49, OPT
25-5	64511-31750	SPROCKET, rear	1	1	1	NT:51, OPT
26	09119-10002	BOLT, rear sprocket	6	6	6	
27	09140-10018	NUT	6	6	6	
28	09169-10007	WASHER, rear sprocket	3	3	3	
29	61410-31000	ADJUSTER COMP, chain	2	2	2	
30	09104-08006	BOLT	2	2	2	8×50
31	08312-11088	NUT	2	2	2	
32	61433-31000	SUPPORT, chain adjuster	2	2	2	
33	01122-08408	BOLT	2	2	2	
34	08322-11088	WASHER	2	2	2	
35	65100-31011	TIRE	1	1	1	4.00-18
36	65200-15011	TUBE	1	1	1	4.00-18
37	65261-15010	PROTECTOR, inner tube	1	1	1	25-18
38	65311-15020	RIM, wheel	1	1	1	2.15B-18
	65300-31812	SPOKE SET, rear	1	1	1	
39	65321-31021	SPOKE, inner	18	18	18	
40	65322-31021	SPOKE, outer	18	18	18	
41	65325-03020	NIPPLE, spoke	36	36	36	
42	55412-11000	BALANCER, No.2	AR(0~3)			30g
43	55411-11000	BALANCER, No.1	AR(0~3)			20g

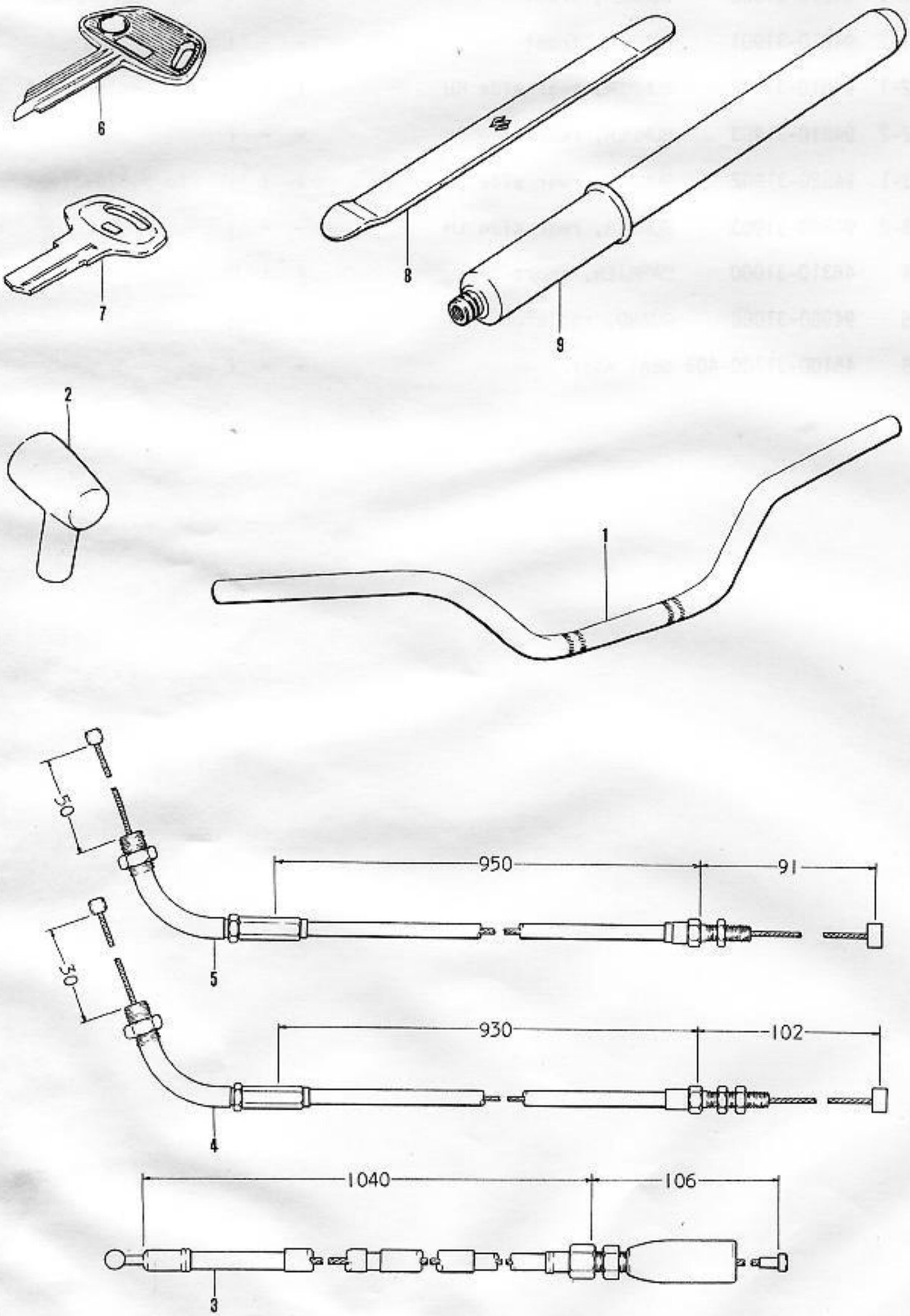
OPTIONAL



OPTIONAL

Ref.No.	Part No.	Description	Q'ty GT750J	Q'ty GT750K	Q'ty GT750L	Remarks
1-1	94210-31900	BUMPER, front	1	1	-	to 94210-31901
1-2	94210-31901	BUMPER, front	-	-	1	
2-1	94810-31902	BUMPER, rear side RH	1	1	-	to 94810-31903
2-2	94810-31903	BUMPER, rear side RH	-	-	1	
3-1	94820-31902	BUMPER, rear side LH	1	1	-	to 94820-31903
3-2	94820-31903	BUMPER, rear side LH	-	-	1	
4	46310-31000	CARRIER, sport	1	1	1	
5	94960-31000	GUARD, radiator	-	1	-	
6	45100-31700-403	SEAT ASSY	-	-	1	

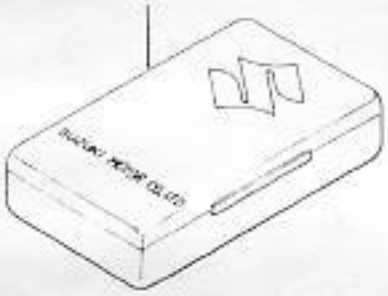
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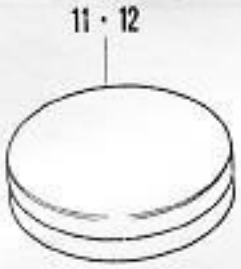
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Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	56111-33600	HANDLEBAR	-	-	1	FLAT
2	59711-33600	BOOT, master cylinder	-	-	1	
3	58200-31600	CABLE, clutch	-	-	1	
4	58300-31610	CABLE, throttle (1)	-	-	1	
5	58300-31620	CABLE, throttle (2)	-	-	1	
6	37145-25700	KEY, slotted brank	1	1	-	
7	37145-19710	KEY, brank (reversible)	-	-	1	
8	09825-00002	LEVER, tire	1	1	1	
9	09821-00002	INFLATOR, air	1	1	1	

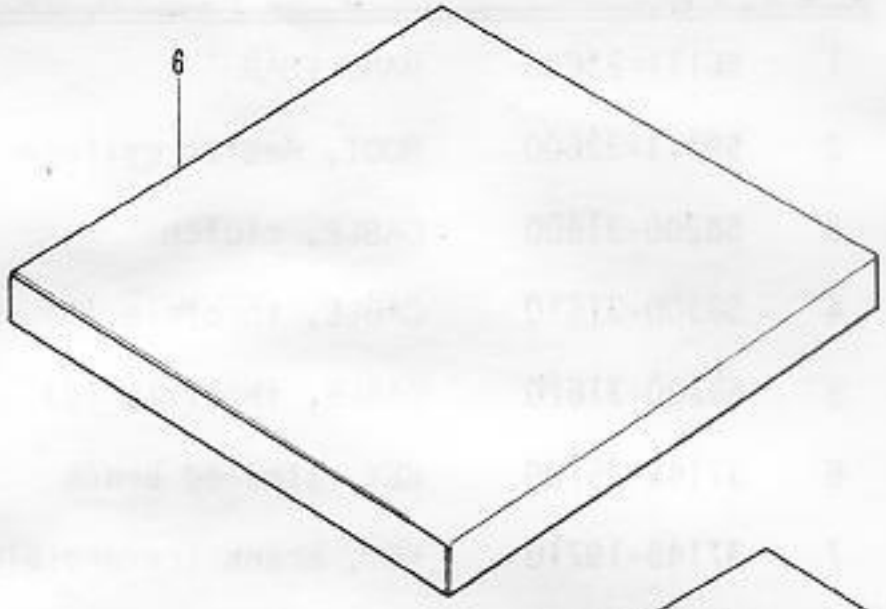
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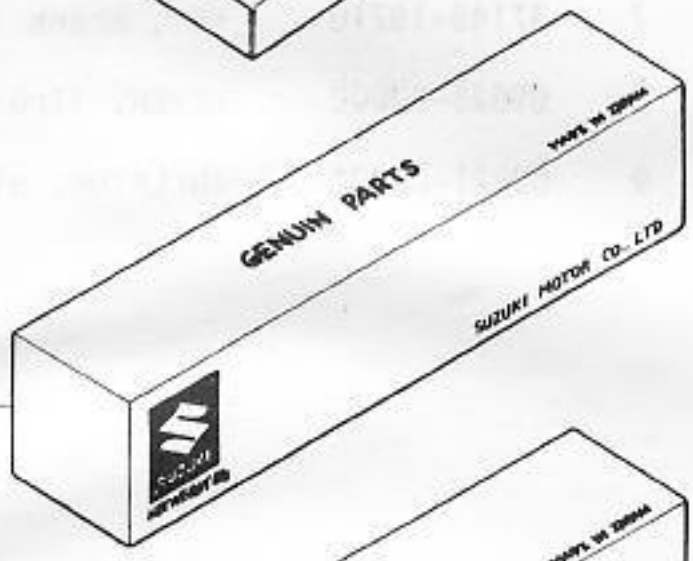
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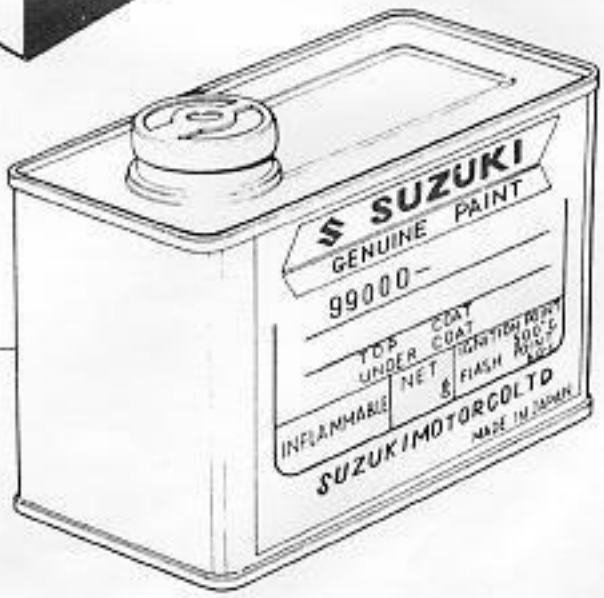
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10



5

OPTIONAL

Ref.No.	Part No.	Description	Q'ty GT750J	GT750K	GT750L	Remarks
1	09826-00001	REPARING TOOL SET, inner tube	1	1	1	
2	99000-32040	THREAD CEMENT	1	1	1	
3	99000-25030	GREASE, suzuki super	1	1	1	
4	99000-31030	SUZUKI CEMENT (4)	-	1	1	
5-1	99000-10195	PAINT (BLACK)	1	1	1	Color No.019
5-2	99000-10645	PAINT (PURE WHITE)	1	-	-	Color No.064
5-3	99000-11265	PAINT (PEARL METALLIC)	-	-	1	Color No.126
5-4	99000-11955	PAINT (CANDY JACKAL BLUE)	1	-	-	Color No.195
5-5	99000-12165	PAINT (CANDY LAVENDER)	1	-	-	Color No.216 NET:500g
5-6	99000-17075	PAINT (PEARL BLUE)	-	1	-	Color No.707
5-7	99000-17085	PAINT (PEARL RED)	-	1	-	Color No.708
5-8	99000-17615	PAINT (FLAKE BLUE)	-	-	1	Color No.761
5-9	99000-17625	PAINT (FLAKE ORANGE)	-	-	1	Color No.762
6	99000-31020	SEAL, exthaust coupler	1	1	1	
7	99000-31010	SEAL, SUZUKI	1	1	1	
8	99000-33010	SILDAR, SUZUKI	1	1	1	
9	99000-24120	GOLDEN CRUISER 1200	1	1	1	
10	99000-24130	SUZUKI 7 ON BARS LEAKS	1	1	1	28g
11	99000-25100	GREESE, SUZUKI brake pad	-	1	1	20g
12	99000-25110	GREESE, SUZUKI caliper axle	-	1	1	20g
	11400-31830	GASKET SET	1	1	-	to 11400-31831
	11400-31831	GASKET SET	-	-	1	



PHOTOGRAPHY: FRANK CONNER AND CHEH NAM LOW

CYCLE ROAD TEST

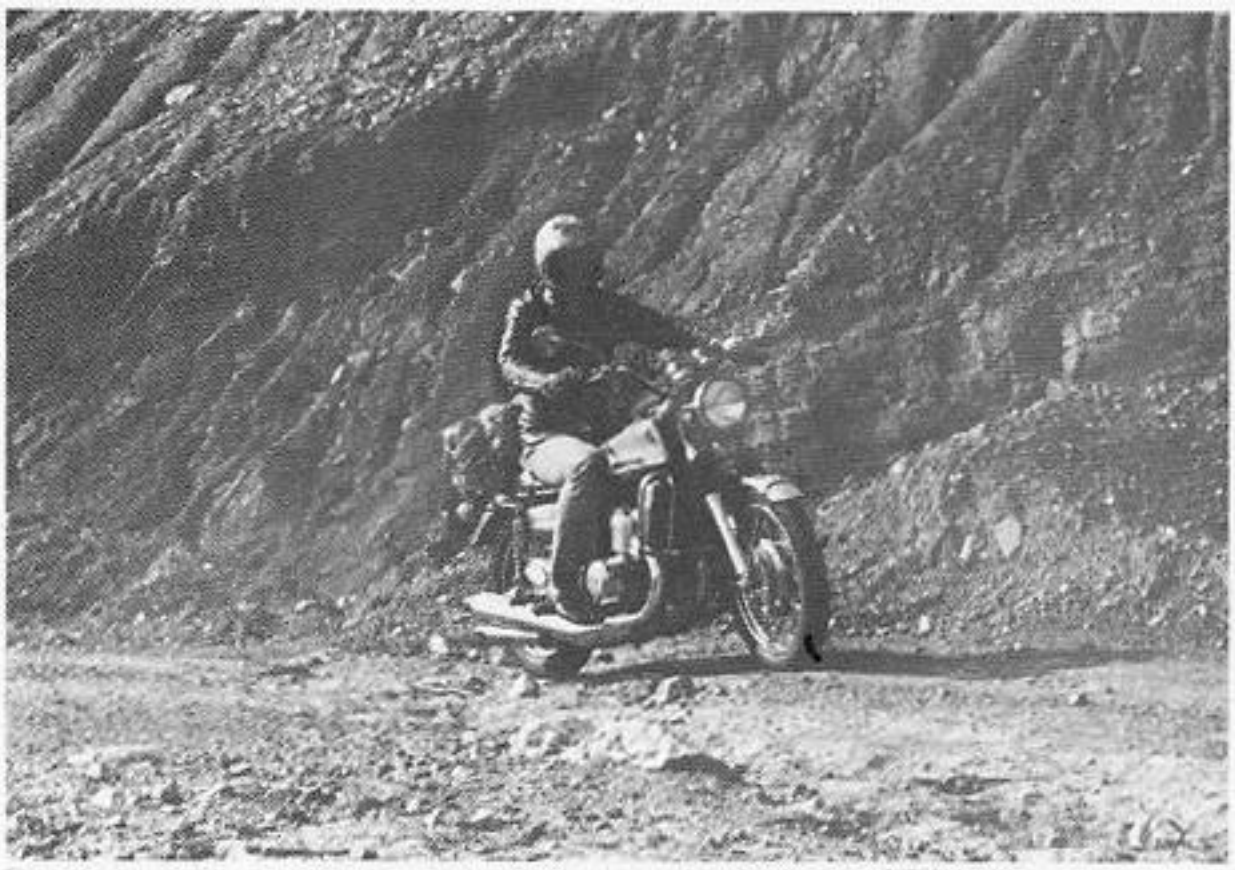
SUZUKI LE MANS

The test: Los Angeles to New York, quick. How fair is that?

The most surprising thing about Suzuki's 750cc water-cooled three is that it took so long to get here. Spy-type journalists began to get sneak photos of the big machine three years ago, two years before its first public appearance at the Tokyo Motor Show. The GT-750J Le Mans has all the features forecast by the show model: water-cooling, electric start, three cylinders, twin dual-leading-shoe front brake, and the host of exotic goodies we've come to expect as standard equipment on the new breed of big bikes from Japan.

But what kind of big bike is the GT? Is it a go-fast tire smoker for the fulfillment and self-expression of the drive-in denizen? Does it cruise effortlessly at 100 mph, taking the curves like a tracked streamliner? Does it stop quickly? Could it possibly be or do all these things? Is it indeed a superbike?

It could have any kind of personality hidden behind the radiator. Suzuki's recent history told us the machine would be mature and easy-going. But how to find out for sure? Run it 3800 miles, that's how.

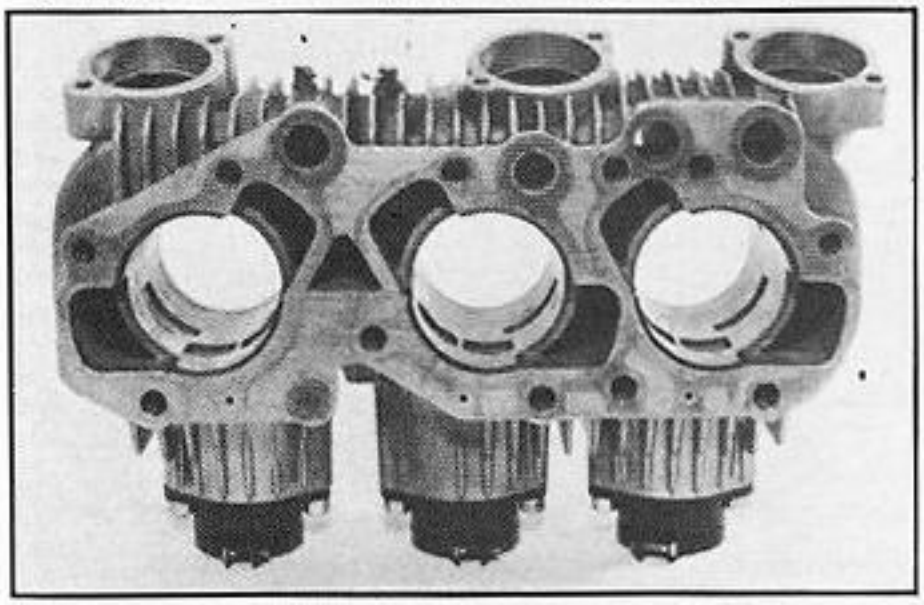


Suspension proved to be remarkably adaptable during visits to quaint North Georgia hamlets.

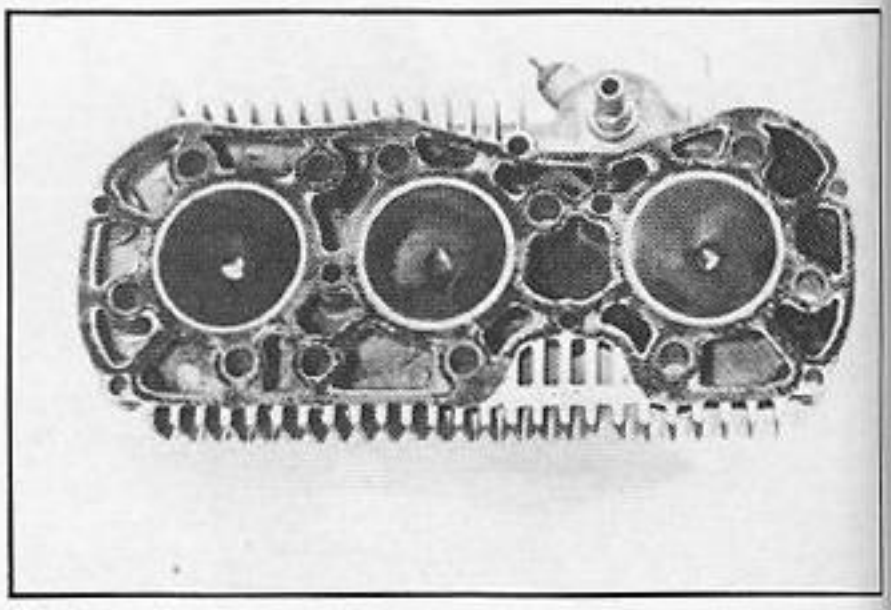
gine bubbled to life at the merest touch of the button, a characteristic which remained throughout the test. Idling sound is unimpressive, like all two-stroke street bikes, and dense grey smoke poured from the mufflers.

Clutch pull is extremely light (measured later at five pounds). As with all Japanese machines, the shift is on the left, and the rear brake is on the right. Pushing down on the left pedal brings forth a resounding clunk as first is selected. Opening the throttle and slowly feeding out the clutch lever brings initial motion to the bike in cushy stages. You can feel little surges as the lever comes home, but it's all smooth with no metallic feel.

Our initial impression of low speed handling was one of heavy clumsiness, a feeling which we later found to be caused by brutally tight steering head bearings. Any friction will cause slow, heavy-feeling handling. If the bearings are loose, the bike is likely to wobble or weave at high speed. With the



Bottom of cylinder shows ingenious transfer port placement to save space.



Combustion chamber spacing shows extra room needed for primary drive.

FIRST IMPRESSIONS: The Le Mans is a big, long and heavy motorcycle. You can definitely feel the heft of its 530 pounds curb weight, standing astraddle the big soft seat and letting the machine fall slightly to either side of balance. Our six-foot rider can comfortably touch both feet when seated. Another is five-eight and has to tip-toe, but is comfortable. Seated height is two inches lower than that of a 750 Honda.

All the switches are within vision and easy reach. The ignition key is on the steering head between the speedo and tach. A panel on the left handlebar grip houses four switches: the top a three-position turn indicator, the second a combination off-low-high beam switch for the headlight, and the third a horn button. On the right handlegrip is an emergency ignition toggle switch, and below it is the starter button.

A small thumb lever mounted near the clutch lever controls the cold-start enriching device. It was a hot day, so we tried the start button without pulling the enricher. The en-



"What happens when it runs out of water?"

bearings properly adjusted, the 750 had an amazingly light feel at 15 mph, much like the Honda 750.

Once the engine runs for a couple of minutes, the smoke disappears. The cause of the smoke is an automatic crankcase syphon that sucks any residual oil onto the piston skirts for initial lubrication. Once the engine is running on the oil metered by the injection pump, hardly a trace of smoke is visible from the pipes.

Sitting still, with the engine purring away at idle, the engine jumps around fitfully, yet the rest of the bike is calm. The whole power plant is rubber mounted! Wow, we thought. And sure enough, all the engine mounts were full of little rubber doughnuts and spacers. Even the exhaust systems are coupled to silentbloc at their rear mountings.

Moving away from a stop is effortless on the big Suzuki. Low gear ratio is set at a rock-bottom 14.85, to minimize stalling. Because of the low gearing and the progressive clutch action, the Le Mans is less demand-

ing to ride in stop-and-go traffic than is the Honda Four with its quick clutch and 14.0 low gear ratio. Unfortunately, the bargain doesn't work for Suzuki from there on out. A huge gap between low and second costs it mightily in a maximum acceleration run. Also, when downshifting, you have to allow the revs to fall quite low in second before catching first gear to keep the rear wheel from hopping.

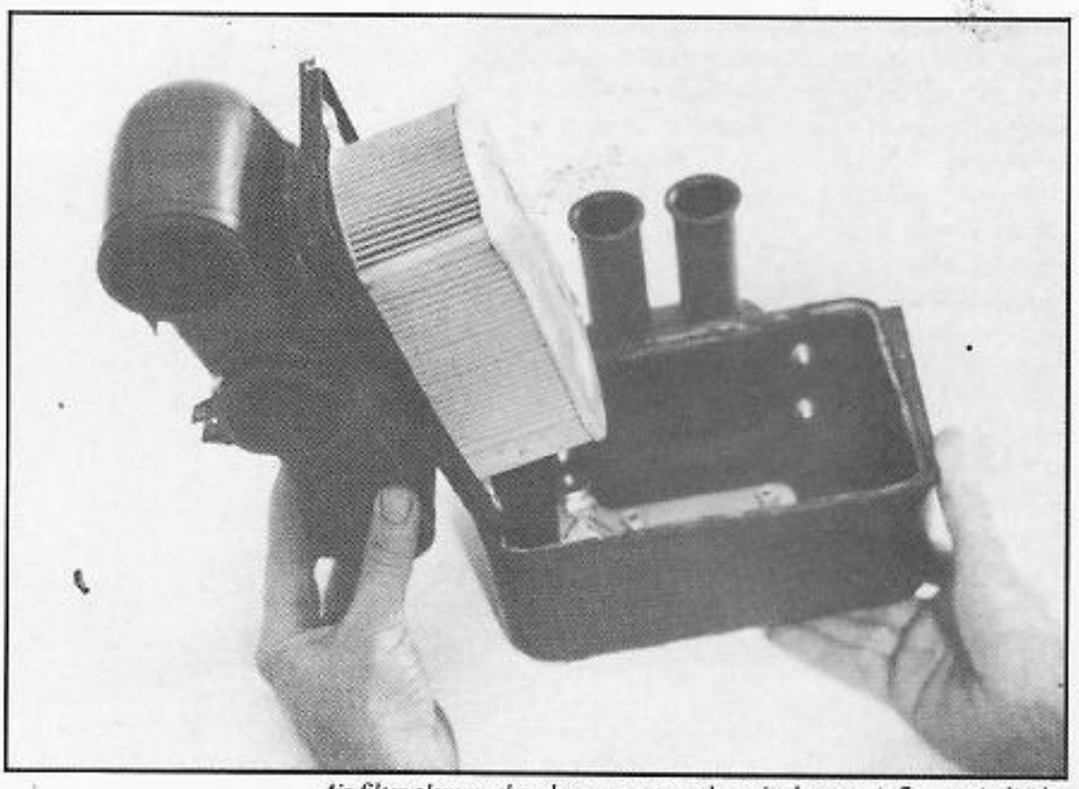
When ridden conservatively, the 750's manners are impeccable. It is very smooth and very quiet. Its quietness, in fact, causes most of the casual remarks one gets from passersby.

The next morning, we took our charge to nearby Orange County International Raceway's super sticky dragstrip. Two main impressions quickly came to the fore: the big Suzuki, despite its enormous low-end torque, is not all that quick or fast in the quarter, when compared to others of the same size and general classification; and the Le Mans is exceptionally smooth and comfortable and easy to ride, fast or slow.

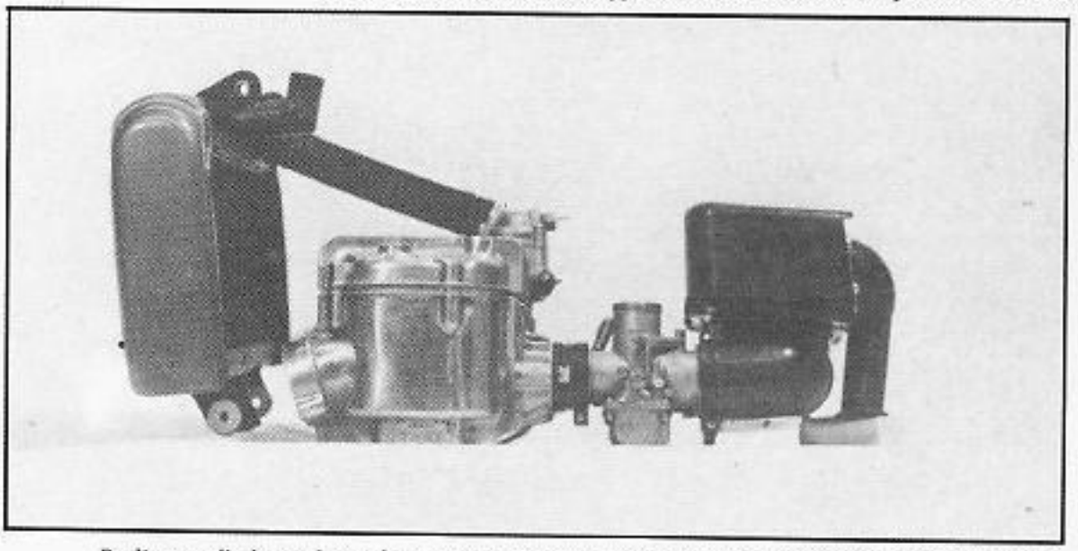
Though we could get a good idea of the bike's character that day at Orange County, the engine was ailing. Times got progressively worse and finally, on a long plug-check run down the back of the road course, one of the pistons started to tighten. A representative quarter-mile test would have to wait.

SETTING UP THE TRIP: Since the leading slogan in Suzuki's advertising campaign is "Built to take on the country," we decided to do just that: ride the 750 from Los Angeles to New York City. A coast-to-coast trip by motorcycle today is nothing compared with the bummer which faced bike riders a few years ago. The Federal Interstate Highway System is all but complete and the dependability of most modern bikes is quite good. Because of construction detours and the like, though, and up-to-date route map, with current road conditions, can be very helpful. In this respect, the Automobile Club of Southern California (2601 S. Figueroa St., Los Angeles, California 90007) came through like Santa Claus at an orphanage. The club's membership is open to cyclists and features free 24-hour road service, as well as the route-planning and map service.

The first portion of the trip, from L.A. to El Paso, was 885 miles. The total length was divided into three sections. The other two were from El Paso to Atlanta, and Atlanta to New York. Bryon Farnsworth got the first leg, Jess Thomas (being a native Texan and knowing the language) the second and longest leg, and Frank Conner (old home town: Dalton, Georgia) got the anchor because he would be least likely to get nabbed by Officer Friendly. The whole route would span roughly 3500 miles through every kind of road riding this country has to offer.



Air filter plenum chamber supports carbs as it cleans as it flows as it divides.

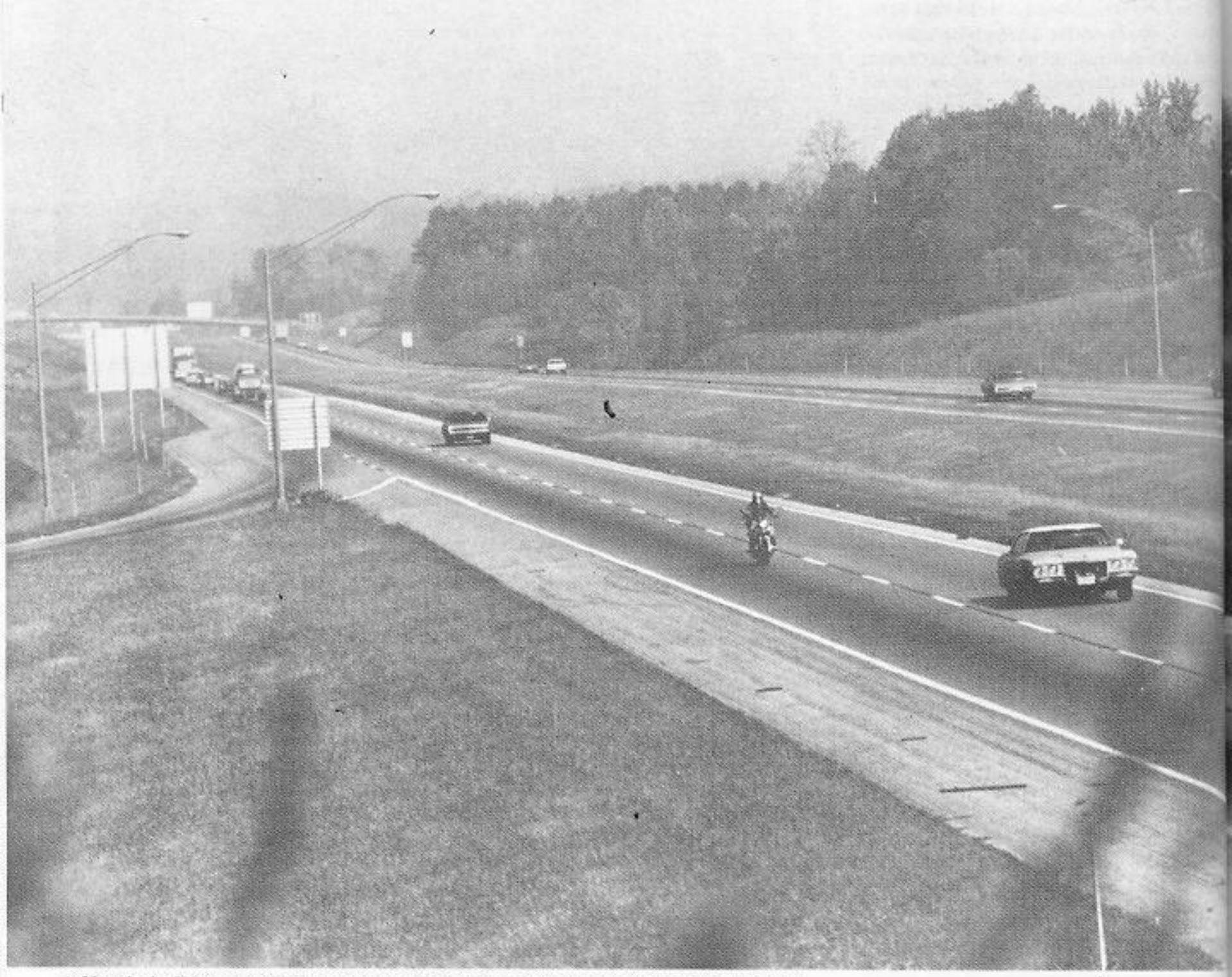


Radiator-cylinder-carb-air cleaner group shows most technically interesting details of new Suzuki.

Though Its Definition Is A Little Vague, The GT-750J Is A Breakthrough In Quiet, Fast Motorcycling.

Just to provide a little insurance, Suzuki decided to make provision for an emergency. There would be a service representative in Dallas and Atlanta when we were scheduled to be in those areas, and a spare motorcycle would be on tap. Suzuki imports their own oil from Japan, and recommends it for all their machines. CCI (for crankcase-cylinder injection) oil and coolant for the radiator would be sent to predetermined spots along the way.

BRYON'S RIDE: L.A.'s 10:00 A.M. traffic was fairly dense on the smog-shrouded Santa Ana Freeway as we nudged our way between an old lady wearing a cowboy hat in her new Chevy pickup (shod with 10-inch wide mags and a "Keep On Trucking" decal in the rear window) and a Hound-bus, all doing 75 in the fast lane about six feet apart. The 750 Suzuki instills confidence in such heavy traffic. Its huge turn indicator lights have just the right cadence to let people know your intentions, without seeming to demand the right-of-way. And the bike is so



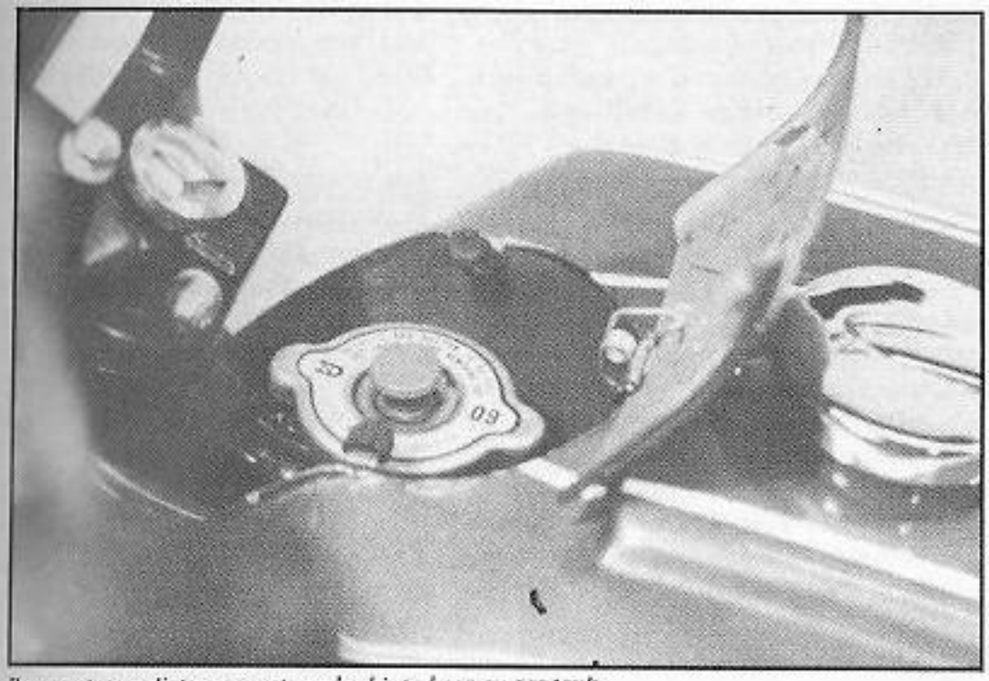
At 80 mph, the 750 water-cooled three is absolutely the smoothest and quietest big bike we've ever tested.

quiet that it doesn't arouse resentment. Changing lanes doesn't produce that knot in your stomach that some big bikes do. There's a slight blump-blump as the new-style Bridgestone tires (3.25 x 19 front, 4.00 x 18 rear) cross those damned series of metal discs used for lane dividers. You can feel a telegraphic interruption in the bars, but there's absolutely no tendency to oscillate or oversteer. In tight freeway traffic, fourth gear gives almost perfect speed range and provides really quick acceleration. Five thousand rpm gives a true 60 mph, and 6000 is equivalent to 75 mph. Speedometer error was high: indicated 60 mph was a true 55.9, and indicated 80 was really 73.3. Our only dense-traffic gripe was with the mirrors. They're made convex to give a wide field of vision, which works well when a car is 10 feet behind you. But the mirror image gets big quickly: an object 30 feet back looks to be 30 yards.

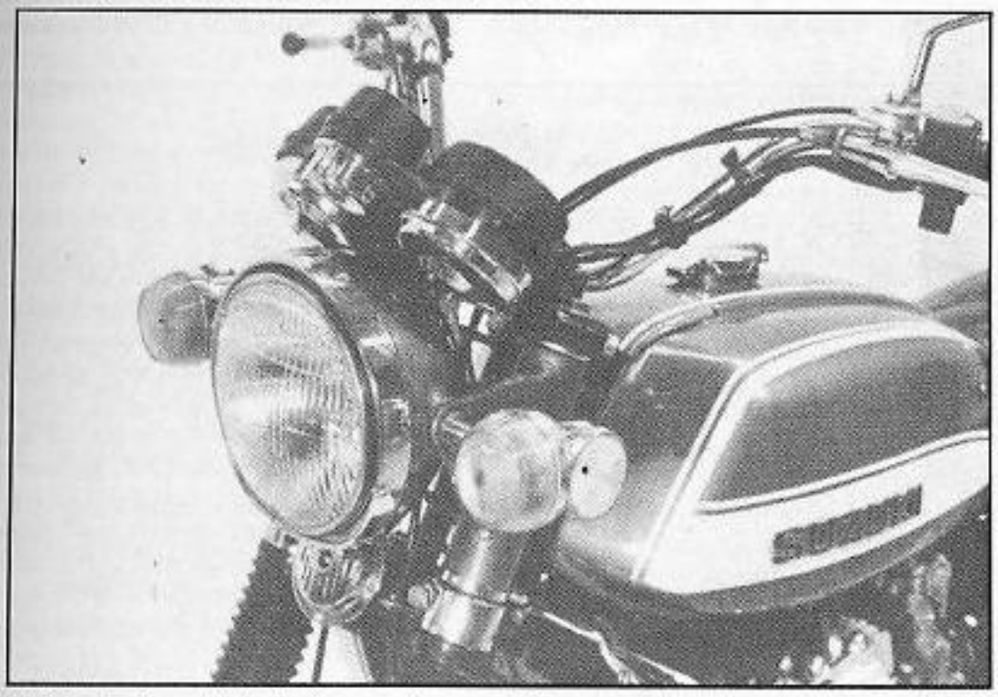
The pace dropped off considerably when we hit Interstate-10, and we relaxed to concentrate on the feel of the machine. "Turbine-like smoothness" is a well-worn phrase in the motorcycle road tester's glossary. The fact is that not very many machines really live up to the term's meaning, or deserve the praise. The 750 Suzuki does. It ranks with the Honda Fours, the BMW-75, and the Guzzi V-7 as the smoothest machines on the road. When accelerating hard, you can feel periods of light vibration come and go as the revs climb and fall with the gear shifts. And between 6000 rpm and 7000 rpm, in any gear, there is quite a buzz in the handlebars and footrests. But if you run up to 75 or 80 mph in fourth and shift to high, all you can hear is the wind tearing at your helmet. Cruising at 80, it is absolutely the quietest and smoothest motorcycle we have ever ridden. Bar none.

While we were cruising southeast past the Salton Sea, Highway 86 dipped to 200 feet below sea level, and the air temperature soared to 95 degrees. The water gauge needle barely hovered past half way, as the thermostat in the cylinder head opened to allow full water circulation. The water pump is hidden under the gearbox, covered by an aluminum plate. The Le Mans was the event of the day for the gas station jockies, and find-the-water-pump became the inevitable pastime. "Say, that mor-sickel's got a raidater on it. Whur's thu wa'er pump?" Hard to say, fella.

Across the desert, cruising steadily at 80 mph, with occasional bursts to 90 and 100, produced an average gas mileage of 38.4 mpg. The resettable trip odometer read between 129 and 135 when the engine would begin to sputter its request for the reserve supply. Reaching down to rotate the fuel valve ninety degrees, so that the pointer was straight forward, was a touchy operation. You have to look down to make certain the marks are aligned. If the valve is partially off, there's always a danger that the engine



Pressure-type radiator cap rests under hinged cap on gas tank.



We feel tank stripes rob dignity from an otherwise subtle motorcycle.

will starve enough to overheat. The valve should have a positive detent to indicate the reserve position by feel.

After a welcome night's sleep in Tuscon, it was time to hassle with the chain again before continuing. Every second gas stop, the chain had to be hand-lubed, and every fourth stop required an adjustment to take out the slack. We purposely left Los Angeles with only those tools and materials that came with the bike, just as an average new owner would. From the first chain adjustment it was obvious that the rear-axle-nut wrench supplied in the standard tool kit was far from adequate. Even using the extension failed to allow enough leverage to loosen the axle. Since there were no hardware stores open when we were in their vicinity, we were forced to rely on service station Crescent wrenches.

Lubricating the chain was a constant pain as well. No provision for either automatic or manual chain oiling is provided on the Le Mans. Until we could find a bike shop open, we had to filch oil from the drain racks in the service stations.

The remainder of the stretch into El Paso was pretty much just a process of filling the tank and watching the odometer roll around. Not even many buzzards out there. *JESS'S SEGMENT:* I had winged into El Paso the previous afternoon and had spent the evening in a solo margarita-and Chihuahua-food tasting competition across the foot-path border in Cuidad Juarez. The resulting early retirement that evening had me up with the sun the next morning, waiting for Bryon. He came lurching, red-eyed and mumbling with fatigue, into the Holiday-Inn coffee shop about 10:30. The bitter, black coffee and sanguine steak restored his faculties somewhat, and he turned over his maps and gear. On going over his notes, the only other things he found bothersome after hours in the saddle were the handlegrips and the seat strap. The grips are the same radially vaned ones used on all Suzukis. Bryon felt that smaller diameter, smooth grips would be more comfortable. Since the 750 is so smooth, the vanes are not needed to dampen handlebar vibration. And the seat strap crosses right under where the rider sits, causing a chafe that begins to smart after about the tenth hour in the saddle. Farnsworth stumbled off to bed while I phoned the local Suzuki dealer to inquire about using his tools.

The drive chain and rear sprocket were shot. Red oxide flaked from each link of the chain and there was a good four inches of slack at the midpoint of the lower run. The sprocket teeth were whipped and eroded to half their original size.

Benito, the shop foreman at the Suzuki agency, was extremely helpful, but had no rear sprocket that was anywhere the right number of teeth. The sprockets from the 500cc bike seemed to have the same bolt pattern, but were much smaller. The chain was tight and worn, but didn't seem to have any damaged links. We loosened and lubed the chain as well as possible, and then adjusted it so that there was about an inch of play. We bought some real chain lube and some face shields, thanked Benito, and left.

By this time, half the Suzuki enthusiasts in El Paso were assembled to inspect the 750. In an odd mixture of Spanish-English, we played yet another round of find-the-water-pump. Some thought that the little electric fan, that draws air through the radiator when the bike is caught in traffic, was certainly the pump. The fan is supposed to cut in automatically when the water temperature reaches 220 degrees, or right at the boiling point in the pressurized system. As our bike never got anywhere near that hot, the fan remained as a curiosity for us.

Aside from the radiator, styling and finish brought the most frequent comments from bystanders. The paint on our bike was called Newport Blue by Suzuki, but was more green than blue. Two plastic side panels, the fuel tank, two radiator end covers, and the headlight shell are painted this blue-green. A black frame contrasts with all the chrome plated or polished aluminum surfaces of the massive engine. Further black splashes to breakup the brightwork and paint appear on the muffler tips, seat, radiator, fork boots, instrument housings, and handlebar grip assemblies. Both fenders are mirror-finish stainless steel, as is the taillight bracket. The fuel tank has a squarish, bulky shape that is absolutely in proportion to the bike's size. The only things we didn't like about the richly detailed machine were the gaudy white panels on the fuel tank and the phoney air slits on the side panels. Too, the huge SUZUKI panel on the tank is as out of place on the elegant machine as coon tails or a

whole set of electric lights in the spokes.

Back on the road, we passed places named Eagle Flat and Borracho. Miles and miles of flat, straight road, flat and straight at 4000 feet. The bike didn't seem to suffer any at the altitude: 80 mph still seemed to be the optimum cruising speed; 90 made lots more wind pressure and made our arms ache from hanging on so tightly. A throttle friction brake would be nice on those long, straight stretches, so that you could rest either arm once in a while.

We tired of borrowing from the stations, so the next auto supply was visited in quest of a wrench to fit the rear axle nut. "We aingano mullie-meter ranches," was the greeting we got. We allowed as how a $^{15}/_{16}$-inch combination would work just fine. The fellow repeated his original remark, and we repeated ours. "Damn-fool," he muttered, as he took our money. The wrench did fit, however: like it had eyes. From there on out, adjusting the chain was a 5-minute chore, without the knuckle-busting.

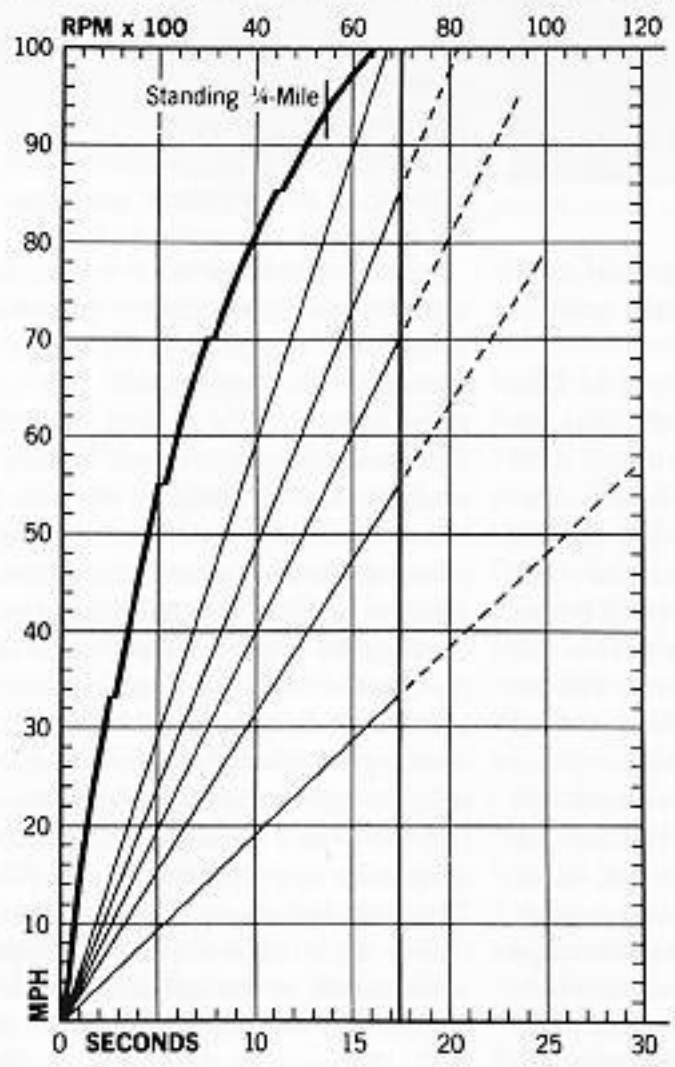
The Le Mans eats lots of oil: an average of a full tank (two quarts) every 600 miles. And filling the plastic tank is often a very messy operation. Access to the tank is made by lifting up the hinged saddle, which pivots over to the left side of the bike. A cap down between the tool box and battery unscrews to reveal a quarter-sized hole. Fine! A quart can of oil and a quarter-sized hole. We usually ended up making a funnel out of a piece of cardboard, and still managed to spill oil all over the tools and spare sparkplugs. We ran low on oil again, at 2:00 in the morning, just outside of Fort Worth. The truckstop had never heard of two-stroke oil, so we had to put in a quart of H-D 20. The plain oil smoked a little, but was otherwise ok.

Late the next morning, we called Suzuki to ask about getting a new chain and sprocket. Their man, John Sperry, was in Dallas, and would be right over. John had the spare bike with him, so we robbed its sprockets. Since the exhaust pipes cover the axle on both sides, the swingarm is slotted at the rear so that the wheel can be removed by just loosening the axle. The chain, however, is the type that has a riveted master link. You have to have a chain breaker to remove the wheel, and there isn't one in the tool kit. You also need some kind of tool to re-rivet the new link. If Suzuki has this type chain on later production bikes, owners will have to find suitable tools. Hopefully Suzuki will have them available.

With the replacement sprockets and new chain in place, we looked at the plugs. The standard oil had left a heavy, caked, light brown deposit on them so we replaced the plugs and drained the remainder of the oil. John filled the reservoir with CCI oil and gave us an extra supply for the trip.

Continued on next page





SUZUKI GT-750J LE MANS

Price, suggested retail	West Coast, POE $1575
Tire, front	3.25 in. x 19 in. Bridgestone 21 F2 Rib
rear	4.00 in. x 18 in. Bridgestone 21 R2
	Universal (directional)
Brake, front	7.81 in. x 1.0 in. (x 2)
rear	7.03 in. x 1.625 in.
Brake swept area	85 sq. in.
Specific brake loading	8.1 lb/sq. in., at test weight
Engine type	Water-cooled piston-port two-stroke triple
Bore and stroke	2.75 in. x 2.52 in., 70mm x 64mm
Piston displacement	45 cu. in., 738cc
Compression ratio	6.6:1 (actual)
Carburetion	3; 32mm; Mikuni
Air filtration	Dry treated paper
Ignition	Battery-coil, breaker points
Bhp @ rpm	67 @ 6500 rpm
Mph/1000 rpm, top gear	15.8
Fuel capacity	4.8 gal.
Oil capacity	4 pints
Lighting	12v, 240 watts
Battery	12v, 14ah
Gear ratios, overall	(1) 14.85 (2) 9.05 (3) 7.12
	(4) 5.86 (5) 4.82
Wheelbase	58.5 in. nominal
Seat height	31.5 in., with rider
Ground clearance	5.5 in., with rider
Curb weight	528 lbs., with ½-tank of gas
Test weight	688 lbs., with rider
Instruments	160 mph speedo, 9000 rpm tach,
	water temp gauge
0-60 mph	5.7 seconds
Standing start ¼ mile	13.67 seconds, 94.04 mph

The radiator cap is under a little hinged door at the front of the fuel tank. The pressure-type cap is identical to the common auto variety. A peek at the water level showed it to be at the bottom of the filler tube. Just right. We didn't touch the timing or anything. John split immediately for Atlanta; we left the next morning.

The stint from Forth Worth to Meridian, Mississippi was completely uneventful. We soon got tired of the Interstate and began cutting off onto the local roads for some diversion. The food wasn't any better, and barking waitresses and the jukebox wailings of Merle Haggard and Buck Owens, all contributing to that peculiar self-pity atmosphere in a late-night truck stop. Throbbing heads, bloodshot eyes, and greasy food. Belch.

The Suzuki was as ready as we were the next morning. Running along at 90 for hours, the 750 was purring like a Jacuzzi water pump in a tub of bath water, and the temp gauge hovered in the green.

Interstate 59 out of Birmingham was nearly deserted as we neared the Georgia border. We decided to see how well the front brake worked. A panic stop from 80 produces little fade: the feel remains constant, but the power isn't all that great. You can't come close to locking the wheel, even if you pull as hard as you can. It hauls the machine down okay, but not anywhere near as quickly as the Honda disc would. Repeated consecutive stops did bring on fade: We could pull the lever all the way to the handle grip, and the Le-Mans just kept rolling. There are ventilation scoops and outlet holes on the backing plates of the twin-sided brake, but these air passages are normally covered. The covers are removable. We took them off and repeated the brake test. Fade still occurred, but recovery time was drastically reduced.

The cable-operated rear brake has a spongy, indefinite feel, and requires lots of pressure to get effective braking power.

After an easy ride to Chattanooga, we turned south on Interstate 75 and followed it 30 miles to Dalton, Georgia, where Frank Conner used to live. While I sat on his porch and nursed a cool one, Franko took the Le Mans a short distance down the Interstate, to see how fast it would go. While sitting upright, he could only get 100 mph indicated; we agreed that the machine was losing the fine edge of its tune.

That night we checked the radiator supply: it was full. We filled the oil reservoir with CCI lube. Then we tightened the rear chain (quite a bit) and lubed it carefully.

The next day—Thursday—we decided to shoot some photos of the Le Mans in action, because Dalton is surrounded by respectable mountains with narrow winding roads—lots of hairpins and switchbacks. I ran the motorcycle through the corners while Franko clicked his camera.

I had left the rear shocks on their softest settings to smooth out the expansion joints in the Interstate highways, and decided not to change the settings for the corners. I found that the bike would hold a pretty good line through corners, but the combination of soft shock settings and the overtightened steering head gave me small oscillations that would cause the motorcycle to drift slightly off its line.

At lower speeds, I could get the bike heeled over to a fairly-respectable left turn lean angle before the centerstand would hit the pavement; the bike would lean farther to the right before the centerstand and a muffler would ground simultaneously.

At high speeds, the increased loading would cause the suspension to compress more and reduce the cornering clearance. The result was an insufficient amount of lean angle when metal began to scrape.

FRANKO'S RIDE: The trip began with a ride across the top of North Georgia. That road crosses almost every wrinkle of every mountain along the way. There are lots of slow corners, and if you try to hurry too much, you'll get to check out the glide ratio of the motorcycle as you hurtle off a cliff. We elected to use lots of revs in the lower gears for that part of the journey. Except for the jump between first and second, the gear ratios were spaced nicely—about 1000 to 1500 rpm between each one. And the powerband was wide enough so that you could be sloppy about shifting, although for cornering or passing we liked to keep the revs between 4500 and 7000.

Although weighing only 135 lbs, I've never before experienced any problems steering the big bikes with body lean; on the Suzuki I found it easier to lean the bike by using opposite lock on the handlebars. I couldn't seem to hold a precise line in a corner—so as to run over a particular discolored spot or crack in the asphalt that we'd spotted—and that was unsatisfactory. The situation was not dangerous—it was just disappointing to a rider who feels that one of the main pleasures of riding is that a motorcycle is so much more responsive than a car.

Similarly (and partly for the same reason), the suspension was a puzzler—it wasn't consistent. Sometimes the bike would go over small bumps so smoothly that you didn't even know the bumps were there. At other times, on the same kind of bumps, the forks would refuse to compress at all, and then the front end would wiggle back and forth. One time when the machine was laid way over in a corner, the front wheel hit a loose rock about two inches in diameter. The bars did a quick tank-slapper, and the bike checked out both shoulders of the road before it decided to settle down again. In curves with lots of bumps, the machine sometimes wanted to walk toward the outside of the corner.

Except for the handlebars, the Le Mans was well laid out for a 5'8" rider. The wide gas tank was okay, mostly because the footpegs were spaced so far apart; the short rider can press his knees against the tank to become more of an extension of the bike when hauling it down into corners.

The handlebars didn't have enough rise or rearward rake, which made us sit too far forward on the saddle, which in turn put too much bend in the knees. Such a position is tiring on long rides, and it doesn't allow you to brace your feet when accelerating hard or slowing fast.

The throttle linkage return spring is too stiff; it wasn't as bad as the setup on a CB-750, but it was bad enough to force us to hang both hands halfway off the grips and sit cocked to get enough leverage to hold the twistgrip open for long periods of time.

After a few hours of fun in the mountains, the motorcycle got sick and would cut out badly at 85 mph. We were nearing Athens, Georgia, so we decided to stop over for the night.

Late Friday morning, we got up and pulled the Suzuki's sparkplugs. The electrodes were badly worn, and the exposed surfaces were covered with heavy deposits, light-brown in color. Part of that problem resulted from feeding the machine high-octane (leaded) gasoline, when the bike had been set up to digest low-octane fuel only. We installed new plugs, and the machine perked up instantly; it would again give us 100 mph indicated on the speedo.

We headed up I-85 toward Charlotte. After a few hours of that, we noticed that the padding material in the saddle was too soft; it seemed to bottom against the pan during normal riding, contributing to a sore butt. The Suzuki saddle does not seem to be as good (at least up front near the gas tank) as the ones on the CB-750, the BMWs, and the Guzzi.

When Jess climbed off the Le Mans in Dalton, he commented that the bike was very smooth and almost vibration-free at normal touring rpm, but by now it was losing its tune. Although very smooth-running from 4500 to 5500 rpm, it started vibrating at 6000—a high-frequency buzz that built up in intensity to the 7000 rpm redline, and worsened as the trip went on.

The instruments were easy to read: they didn't shake at all. The temperature gauge would move around slowly on its shock mount; everything else remained rock-steady. The speedo had 5-mph increments, numbered every 20 mph; it should have been numbered every 10 mph for easier reading at a glance. The illumination of the instruments proved to be excellent at night, except for the trip odometer.

The Le Mans saddle has a lot of room to carry people and things. We had Jess's travel pack (Webco helmet bag) strapped to the back of the saddle. Along the way we added a 6'4" college student weighing 200 lbs. who had his thumb stuck out, and he rode along for 150 miles. As it was, we weren't badly cramped, and there would have been all kinds of room if the bike had been equipped with a luggage carrier to get the travel pack off the saddle.

We had gotten off to a late, late start that Friday morning, and somebody turned off the sun before we reached Dur-

ham, North Carolina. So we found out about the lights. For a motorcycle, the Suzuki has an exceptional headlight. It throws a long, wide pattern that illuminates a lot of concrete, or objects that you need to know about on asphalt.

Durham had a motel that beckoned invitingly; there we tightened and lubed the chain (which had stretched alarmingly), and we aimed a quart of CCI oil at the little bitty filler neck.

Saturday morning didn't really dawn, but the fog did get a touch thinner. We wiped off the wet saddle with Kleenex, zipped up the leather jacket, and touched the Suzuki's starter button. Four-lane highways all the way to New York.

As we made the loops bypassing D.C. and Baltimore, the chain started stretching faster, and the vibration started getting a bit rougher, and we just crossed our fingers and kept heading for the barn.

Manhattan! Traffic jams. No sweat with the Le Mans. The temperature-gauge needle stayed right on the marker that said everything was okay. The bike's acceleration was good enough, and the clutch pull was light enough, so that we made good time among the steady stream of mobile psychotics choking the streets and avenues of the Big Apple. We found a garage.

Sunday morning we collected the undamaged, unstolen Le Mans from the garage and dared the Long Island Expressway. Jess was at *Cycle's* shop, and there we returned the Le Mans to him.

HOME AGAIN: Our first object upon arriving back in New York was to get some accurate quarter-mile times. Suzuki's service rep, Willy Hardin, met us at our shop to give the bike a thorough going-over.

Erosion of the contacts and wear on the cam follower had drastically retarded the timing over the 3500 miles of our trip. While it's normal for the follower to bed-in and require frequent initial adjustment, the contact erosion problem will require some adjustment in condenser value or coil primary-winding resistance.

A new set of points, adjusted to break at the correct time, restored the 750's fading pep, and erased the incipient vibration increases. Provision is made to set the timing with either a dial gauge or a strobe light. Two sets of points are independently adjustable on the backing plate. Willy took one look at the sparkplugs and asked what kind of gasoline we had been using. High test of course. Wrong, he said. These things run best on the big-brand regular.

Re-synchronizing the carbs did away with a slight unevenness when the engine was in transition from idle. Removable caps in the carb slide body made this an easy task. There are circles milled into the faces of the carb slides at a certain height. The outer cables are adjusted so that the circles all align with the bottoms of the cap threads simultaneously. Then the slide stop adjusters (that regulate idle speed) are set to contact the slides at the same time and at the desired idle speed. You can hear a distinct "clack" as the slides bottom.

Other maintenance tasks are quickly and easily carried out. By lifting up the seat, you can check the battery fluid level at a glance. A small level plug is provided to check the combined SAE 20W-40 gearbox, primary drive, clutch oil. The radiator took about a cup of fluid to put the cold level up into the small plastic expansion reservoir, visible under the fuel tank.

With the maintenance done, we headed for New York National Raceway. We made 22 back-to-back runs with less than a half second and three mph spread between the lot. Unlike other two-stroke machines, the Suzuki runs even stronger after a few consecutive runs. With a perfect shot, the clocks read 13.678 seconds and 94.04 mph. The advertising brochure says that the bike will cut a 12.6 second quarter. If it will, it'll only do it on that secret Japanese Motorcycle Industry test track whose starting lights are approached with a bit of a run.

Now that the action was over, we had time to take the Le Mans to the *Cycle* shop for a look at the bike's insides. The machine comes apart amazingly fast. All the water is drained by removing a single plug in the bottom of the crankcase. Just as on a car, removing two hose clamps and a few bolts frees the radiator. A passageway cast into the crankcase, running under the left-center mainbearing, takes water from the bottom of the radiator to the water pump. Removing seven capscrews from a snail-shaped cover under the engine allows removal of a snap ring and the centrifugal vane-type water pump assembly. A long drive shaft with a spiral gear on the end protrudes from the pump. A vertical passage from the output end of the pump leads to a hose, which goes to the cylinder head. A thermostat controls how much water goes through the cylinder and how much gets diverted back directly to the radiator.

With the cooling components off, disassembly is exactly like any of the two-stroke multiples, except the head and cylinder are both one-piece castings. Within the cast-in liners reciprocate pistons and rods indentical to those of the 500cc twin. The crankshaft halves are even the same diameter and thickness as the twin pieces.

Oil for the crankshaft is pumped through the mainbearings into centrifugal feeders for the crankpins. After going through the big-end bearings, the oil escapes into the crankcase to become part of the fuel mixture. Additional oil for piston skirt lubrication is injected directly into the inlet bosses of the cylinder.

An excited field alternator rotates on the right end of the crankshaft. All kinds of things are on the left end. A cushioned coupling connects reduction gearing for the starter motor and combination water pump-tachometer drive. The starter motor is behind and below the left cylinder. Outboard of these drives is another coupling that drives a self-contained breaker points cam, complete with its own double ball bearing support. This system of isolating the points-drive eliminates inaccuracies due to crankshaft runout at high revs.

Primary drive is *via* a helical gear between the right and center cylinders. This gear meshes with a larger gear on the clutch housing. Gearbox oil passes up into the crankcase and lubricates these gears, as well as the two crankshaft mainbearings on either side of the drive gear. An automotive-type compression spring shock absorber is between the clutch and drive gear. The unusual feature of the clutch is its draw-type throw-out mechanism, which does away with the old rod-through-the-mainshaft bit and allows all the components to be lubricated by the gearbox oil. An entirely straight-forward 5-speed gearbox transmits the ratioed power to the drive sprocket.

Three 32 mm Mikuni carbs are suspended in rubber mounts at both ends. A plastic plenum-chamber holds the micronic air filter in flow-controlled space.

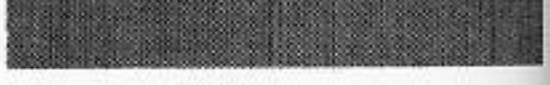
With all the components stripped away, it is amazing how much the Le Mans frame looks like the 750 Honda frame. Except for the radiator filler loop in the top tube, they're almost identical.

Riding the Le Mans was great fun and working on it is just as appealing. Design is uncomplicated and straight-forward, with great attention given to areas that have hampered past designs: things like ignition timing drives, and crankshaft lubrication, and engine vibration.

While we feel that the 750 Suzuki is a breakthrough in the quest to design a truly sporting long-distance touring bike, it still falls short in two major areas. No one wants to have to stop and fiddle with the chain every hundred and thirty miles. And two-stroke oil, never mind two-stroke motorcycle oil, never mind *Suzuki CCI motorcycle* oil, is still too rare to make a 600-mile refilling interval painless. An oil tank capacity of at least 4 quarts would help. If the cost be the demon that denies the construction of the perfect tourer, we would have gladly traded the electric starter for an enclosed, constantly lubricated rear chain, or, even better, a shaft drive.

So, what . . . is it? It's not a superbike—too big, too heavy, too slow, not enough attention to ultra-performance brakes. Period. Again, it is a long-distance tourer, capable of *doing*—performing—all the things that a tourer must to be successful. It's flawed, though, by the rear chain situation, and the oil problem, and its seeming willingness to fall out of tune. The flaws can, and will, be corrected, and in a short period of time.

As a bonus, wait 'till you see a couple of road-racing 750 Suzukis at Daytona a month from now, operating with about 100 horsepower. Gork!



SUZUKI GT 750

Impressive touring bike with the smoothest power plant we've come across

THE Suzuki 750 runs so smoothly a BMW seems, in comparison, like a Leyland diesel. All very invidious, to name names like this, but it was too compelling an analogy to overlook. What gives it particular point is that the chap who made the comment, after riding examples of both marques, is not by any means an experienced motorcyclist. But he knows a thing to two about the i.c. engine, has no preconceived notions as to the relative merits of four-stroke and two-stroke (such as almost all motorcyclists of any standing have), and has certainly, dare we say it, no tendency to stand a little straighter and look wistful in the presence of a BMW motorbike (such as almost all motorcyclists of any standing have). He simply jumped on one bike, rode it a few miles, did the same with the other, and then came out with this remark about *smoothness*.

Well, if we may assume the mantle of the Experienced Motorcyclist we'll say the BMW is smooth, and he was exaggerating—and in any case the BeEmm has plenty of laudable qualities the Suzuki hasn't—and, yes, he was right, too. The Suzuki is smoother. It should be, because its three-cylinder two-stroke engine, with 120-degree throws, gives the firing strokes of a four-stroke six. As you will know, the Suzuki 750 has water-cooling. The chief advantages are extra mechanical hush, because of closer piston clearances permitted by the more even temperatures maintained, and by reason of the muffling effect of the water-jacketing, and a more consistent, possibly higher, power output. The drawbacks are extra complication, weight and, more important in a way, a loss in the good looks department. Suzuki obviously were aware of this last, knowing the sporting motorcyclist's liking for oodles of finning. So they thoughtfully carved vestigial—and, in an absolutely practical sense, quite pointless—fins on the highly polished jacket of the three.

What looks to be a five-gallon petrol tank actually holds just over 3½, for at the front it has to accommodate the header tank, accessible through a hinged flap, of the one-gallon cooling system which is actuated by a vane type pump in the crankcase. A thermostat maintains only a small quantity of water in circulation until a temperature of 82°C is achieved; a small fan behind the radiator, barely visible and never heard, chimes in when the water's temperature rises to 105°C. In our time with the Suzuki the temperature needle rarely got on nodding terms with the mid-way mark on the dial—86°C—and certainly never approached the 105° marking. But presumably Suzuki have to bear in mind mad Americans with a penchant for low-gear work in the Majave desert, as well as those chilly Britons with enough bread to buy this behometh.

Apart from the water-cooling, and the three cylinders, the engine is conventional enough, with two-ring pistons operating in cast-iron liners in a one-piece light-alloy cylinder block. There are five main bearings, three contact-breaker sets at the left end (nearside) of the crankshaft, and a 280 watt alternator at the other end; the helical-gear primary drive is taken from between the middle and right (off) side cylinders. The five gears are all indirect, are controlled by leftside lever of course, and appear ideally suited to the 750's power characteristics (ratios are 14.92, 9.09, 7.14, 5.89 and 4.48 to 1, which means about 4,500 r.p.m. at 70 m.p.h. in top).

How does the Suzuki go? It goes very well. Smooth—we've said that before—extremely quiet, mechanically and on the exhaust, comfortable, a delightful gear-change, very reasonable roadholding (our 750 was on non-standard British Avons, 3.25 and 4.00in) and steering, with naturally some effort involved in thrusting its bulk down into corners, impressive though not neck-jerking acceleration, with waves of torque thrusting on without apparent pause at any point to 105 . . . 6 . . . 7.

Cruising for 100 miles of motorway at between 85 and 100 m.p.h.—which was possible, for reasons we need not labour, only because of the splendid rear-view mirrors which presented an unblurred image at almost all speeds—the Suzuki gave a less strainful ride than any bike we have ridden in recent months at that sort of sustained rate Even the fairly high, wide bars were not uncomfortable. This can be put down to the almost complete lack of vibration from the engine, which in addition to having a basically favourable configuration to this end is mounted on rubber. Some other out-of-balance forces were at work, however, as was evidenced by a frenzied back-and-forth movement of the front fork at speeds between 80 and 90. In those 100 miles just over three gallons of 95 octane petrol were consumed . . . 31 m.p.g., we made it, which these days, thanks to the mind-bending example set by some smaller, air-cooled two-strokes, can be accounted almost moderate. At 70 m.p.h., and with more average going, consumption improved to at least 45 m.p.g.

Speed, handling, thirst, lights—yes, the,

Though the cylinder block is not particularly wide the crankshaft with its contact-breaker sets (on this side) and alternator gives the power unit its impression of bulk



What the Suzuki 750 has is "presence". A Honda 750, or BMW, appear smaller beside it

lights were good—nothing to complain of then . . . Well, yes, the brakes weren't so hot. The front, two 500 units back to back, giving four leading shoes and about 80sq in of swept braking area, was, quite simply, short of power; and the rear, a single unit, was so spongy in operation that one had almost to dislocate one's right ankle to get much effect. Obviously the front could do with a disc set up, and the rear-brake operation, by cable, would benefit from a little work. Still, those are basically minor points. You could probably improve the front brake with a change of lining material, or even change the front brake altogether (and if you can afford more than £750 for a motorbike you can entertain the notion of expending a few more £s to get the brakes right: which is not to say that you should have to). What is important is that this 750 Suzuki is at least 95 per cent *right*. A unique, delightful engine, cycle parts of good, proved quality, a scintillating performance. If you've always liked two-strokes, but wanted big performance plus refinement, you will be pleased to be able to ignore Honda, BMW and the other big valvers. That kink about refinement will mean that you will have to drift on past the big K. To the Suzuki GT750. You'll like it.

And a cry: Why must makers equate "super" with weight and height?

THIS type of machine, this monstrous great super bike, is just not my scene. I should never have let myself get talked into riding it. For a start I had to get the Editor to hold it up for me while I climbed —that is the operative word—on to the great mattress of a seat. It's not my fault that I am small, and there are quite a few others my size. It's not just the Suzuki, it's all the other super bikes too. Why must makers equate super with weight and height to a point which rules out a fair slice of the potential market? George Brough, rest his soul, made super bikes all his life and even half pints like me could ride them and manhandle them. Mind you, they were bespoke and if you asked you could have them a trifle lower in the saddle . . . Lawrence of Arabia was about my size and they slipped a smaller than standard back wheel in specially for him. Oh yes, I know that times have changed and pivot-fork rear suspension demands a greater static height than the more primitive forms of suspension and the great width occasioned by putting an engine unit big enough for a car in an east-west position demands cornering clearance.

But the Orientals love novelties and have a quite unbelievable desire to leave no stone unturned to complete the details which ye olde British manufacturer left you to do yourself in that first heady week or two when you almost slept with your new bike, like rerouteing the cables and neatly taping them in position, bending the footrest hangers to get a more comfortable position, setting the controls just so and sometimes tweaking the exhaust system to miss the kick-start crank . . all nice pleasant jobs which made it your bike. Personalized is the modern word for it. With this in mind, I would have thought they would have solved this little problem of static height. Not with bogie wheels to support you while you get under way, not even if they were operated by some cunning magical electronic device which sensed when you were ready to take off or come in to land. But why not a jacking mechanism to pressurize the forks and rear suspension units? Think of the way the big Citroen cars gently subside when they come to rest and as gracefully rise as they start away. Mere bagatelle to the Nippon mind. Now I frankly admit that at less

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than 10 m.p.h. the Suzuki was perfectly stable but I don't like the idea of having to ride round and round looking for someone to catch me when I stop. I insisted that the Editor stood by to catch me when I came in to land but of course he had wandered off and there I was looking for a high kerb to sidle up against just like I used to do when I rode a Rapide solo.

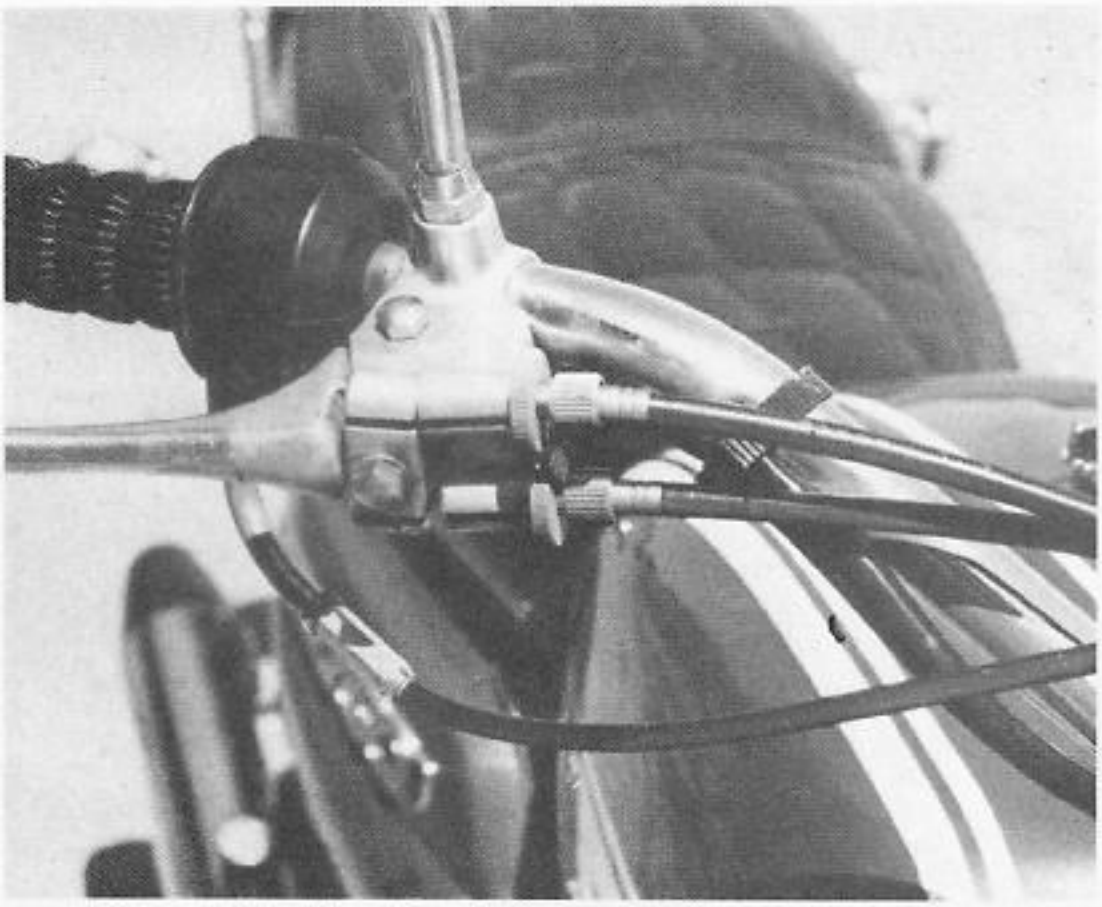
So what was it like on the road? Well of course it's fabulous, in a larger than life way. It's the sort of bike a-dyed-in-the-wool Scott fanatic might imagine in a nightmare after he had had too much supper. Without the side effects of chain swish and carburettor roar and all the snags which endear Scotts to their owners. If you cannot imagine a Scott of 2,000 c.c., which is the feeling the big Suzuki gives me, perhaps you can visualize it as a Mk. VI Bentley on two wheels. The ultimate luxury of seemingly limitless (under road conditions) power, yours to command at the twist of the (quite light action) twist-grip. So much, that for my money the lower gears are completely unnecessary. I know I shall be looked on by the new generation of supermen, who have been bred to ride superbikes, as some sort of elderly nut but I simply do not want and cannot honestly use the power that erupts in the lower gears. It is not pleasurable, and certainly not sensible, to have my arms nearly pulled out by the roots and my whole body strained by the acceleration in the lower gears. Yet the flexibility and utter docility in the higher ratios is a real delight. Here I feel is a power unit which is crying out for an automatic transmission based on two ratios. Lower ratio about like third in the box, sufficient for adequate take off and an effortless but not frightening whoosh up to 70, and then an automatic change into top. On light throttle opening when lazing along the change up would come earlier and kick down would be available below 70 m.p.h.

You may say that you can get the same effect by selecting higher ratios, which is what I soon found myself doing, but it's not quite the same thing. If you have ever experienced the sybaritic pleasure of a big-engined car with automatic transmission you will know what I mean. If you haven't, well I can't adequately describe what I felt about the big Suzuki. It seems to me that if we are to accept super bikes like this, and for them forswear the simple pleasures of occasionally riding down a green lane or up a mountain track and put up with such an incubus when at rest, we should be offered some voluptuous pleasures in return.

I did not ride it far enough or long enough to find the niggly bits that road-testers seem to find. I envy the experts who can write with seeming authority that the rear suspension of a machine is not sufficiently damped at high speeds, that the brakes fade after umpteen applications from 100 m.p.h. plus. Reading some of their reports, I feel very inadequate for I seem quite unable to ride these super bikes in the way they are supposed to be ridden. My only comfort is the feeling that others may be as inadequate, though not so prepared to admit it, for I do not seem to encounter any of these supermen on the road. As far as I can see, most motorcyclists seem to get along at 65-70 m.p.h., the way they always did. Quite obviously, a machine like the Suzuki is not at its best in this country and yearns for another land where 100 m.p.h. can be sustained for hours on end.

But what a magnificent sidecar machine it would make and what a shame it is that with machines at last capable of laughing at the drag of a sidecar no one is interested.

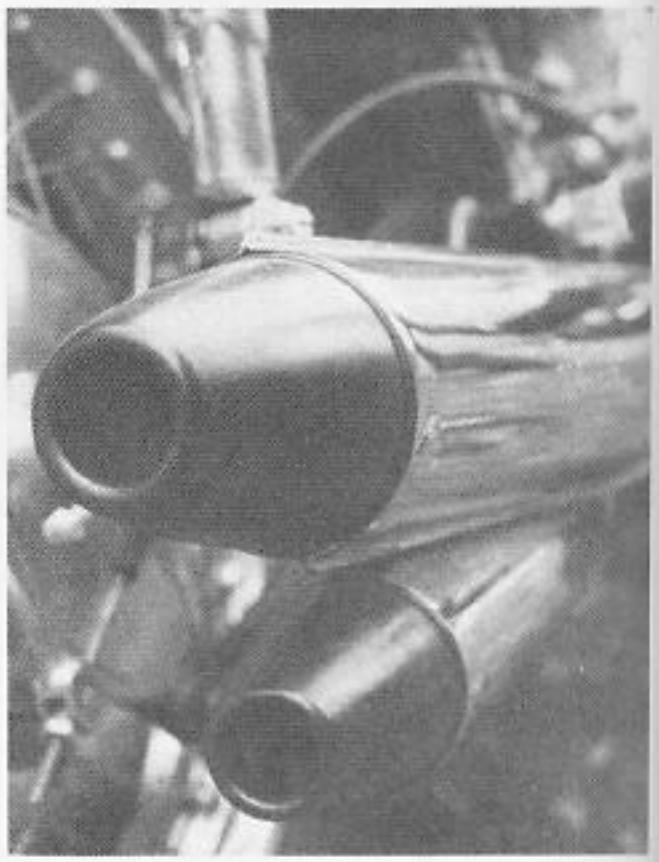
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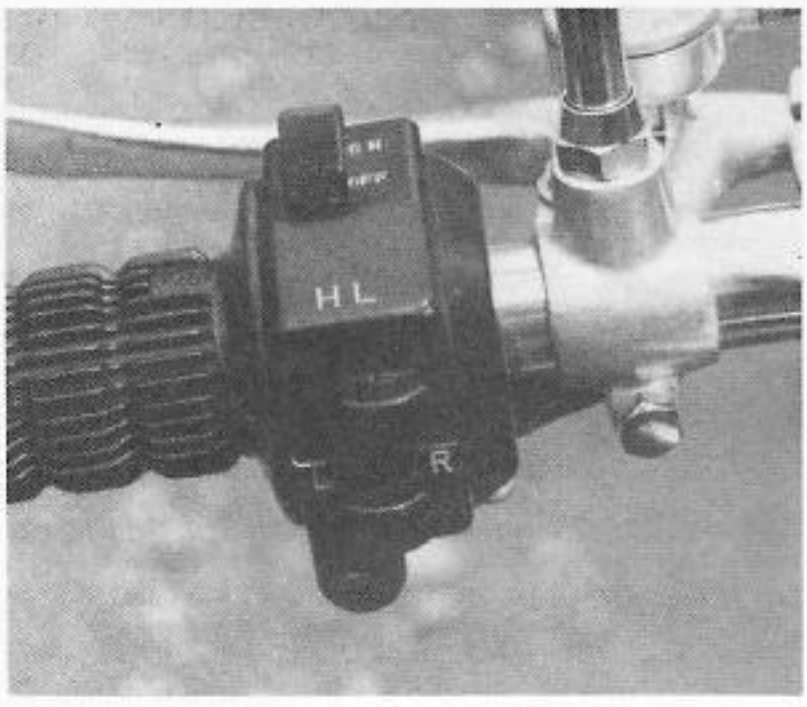


SUZUKI GT 750

Posh, sophisticated









Like to talk to strangers? Meet new friends? Get a GT 750 Suzuki. It attracts the curious like dandies to patent leather. Lots of bedazzling flash. In fact, it has so much pizazz that there is something slightly sinful about the machine, such as its lushness. The bike promises sensual pleasure, is what it does. Fifteen-dollar haircuts, massage parlors, this sort of thing.

If you never buy one, you should at least make every effort to ride one. The saddle, for example, offers acreage spacious enough for two-up touring in a style worthy of the most finicky and tenderly *toucassed* riders. It pampers you with lots of padding and generous support in all areas. Very little vibration reaches the rider through the saddle. There is nothing cramping for either passenger or pilot.

The GT 750's smoothness and quiet operation will also surprise you. Engine vibes are insulated from the frame by rubber mounts. You can actually see the mounts at work when the engine runs in the neighborhood of 2000 rpm. It shakes visibly. If it didn't, this vibrational effort would be transferred to the rest of the bike. Instead, it stays in the engine area. As further illustration of this point, you'll discover after a short while in the saddle that the kickstart lever interferes with your right calf. As the lever is attached to the engine you feel a lot of vibration through your leg while you sense virtually no vibration anywhere else. Bothersome and a graphic example.

The engine's exhaust note is very subdued. Its tone is sonorous but not stifled. The Suzuki is quiet yet still sounds like a motorcycle. It neither gasps nor belches when you gas it. It makes a moan that rapidly increases in pitch; a timbre you've probably not heard before. It's really neat and not offensive at all, even to Beverly Hills cops. You sharpies will notice that the motorcycle sports four exhaust pipes. The center cylinder's sewer splits into two smaller mufflers of the same volume as one big silencer. There is no performance benefit to be gained from this approach. Its main purpose is to provide styling symmetry to the great purple cruiser. There is a balance pipe connecting the three header pipes which aids noise reduction. It is also said that the balance pipe yields a 20-percent torque increase at 2000 rpm. Viewing the GT 750 from the rear you'll see the two large outer pipes sweeping up out of the way while the two smaller inner pipes are suspended a bit lower on the bike. The pipes don't drag, by the way. Clearance is adequate here.

Of course the big feature of the Suzuki is its water cooling. Is it really necessary? Well, if you have a big bore two-stroke, want to maximize long life and silent operation, and are willing to pay a weight penalty, it's the way to go. You see, because of water cooling's greater efficiency of heat control, the engine's internal clearances can be made smaller. For example, the GT 750 pistons are fitted to the cylinders with just .0019-in. clearance. With clearances this snug, the engine will benefit from less noise (not as much room to rattle around in), longer piston life (same reason) and more power (less blowby). The Suzuki boys claim a six-percent torque increase is the result of this over an air-cooled counterpart of identical specs. Total coolant capacity is 5.4 quarts which seems more than enough. A small thermostatically controlled fan is mounted behind the radiator when water temperature reaches 221 degrees F. (the system is pressurized too). The fan on our bike never started because the thermosyphon cooling is so efficient already. This was in spite of a lot of hard, abusive riding. At the dragstrip our test bike was subjected to more than a dozen WFO charges down the pavement. It never became unduly hot; the temperature gauge needle never rose much past the halfway mark. As further testimony to the system's effectiveness, the trap speeds for all the runs at the strip varied not more than two mph! And this is why water cooling is so desired on road racers. The engine operates at peak efficiency for a greater period of time. Incidentally, our best elapsed times were recorded with just minimal wheelspin, coming out of the chute at about 5000-5500 rpm and shifting into second as soon as the tire was solidly hooked up. Had the bike more traction we could have launched it at 7000 or so with no clutch feathering and knocked a few tenths off. Try it with stock tires and you'll see a rubber streak about 30 feet long behind you . . .

The Suzuki's handling is, frankly, hard to get enthused about. It likes to shake its head, particularly through high speed bends. It even does it on the straightaway on occasion. The front end oscillation never seems to get any worse but a slight, unnerving wobble condition exists nonetheless.

An eight-inch diameter front brake is fitted to the GT 750, and despite its authoritative four leading shoes it still gets a rough workout. The motorcycle weighs a tad over 530 pounds and unless you have a disc stopper you're going to encounter fade like the GT 750's. When cold the brake works very well, hauling the big Suzuki down from speed with surprising urgency. But it doesn't stay cold long. One hard braking pass from 100 mph left us with a sizzling binder and mushy lever feel by the time the bike was stopped. When cold we recorded 60-0 distances in the 119-123 feet range—outstanding for a bike this size. When hot, this distance soars to 140 feet and up. There are small brake vent covers which can be removed for more efficient cooling. But even they had little actual effect on fade itself; they hasten brake recovery but seem to have little effect on immediate heat dissipation.

In all, though, we found the Suzuki GT 750 to be a truly delectable mount. While not intended to be a racer, the thing still performs well in its own right. Not every 534-pound motorcycle can clip off the quarter-mile in 13.94 seconds and yet remain blissfully quiet and comfortable. Nor can other bikes boast of such things as electric starting, water cooling and the promise of perhaps more exotic pleasures to come.

SUZUKI GT 750

ENGINE

ENGINE TYPE
two-stroke, three-cylinder, water cooled

HORSEPOWER @ RPM
70 @ 7000

TORQUE
51.7 @ 5500

BORE AND STROKE
70mm x 64mm

DISPLACEMENT
738cc

COMPRESSION RATIO
6.7:1

CARBURETION
(3) Mikuni 32mm

IGNITION
battery-coil

TRANSMISSION

SPEEDS
five

CLUTCH
multi-disc, wet

CHASSIS

LENGTH OVERALL
85 in.

WHEELBASE
58 in.

GROUND CLEARANCE
5¼ in.

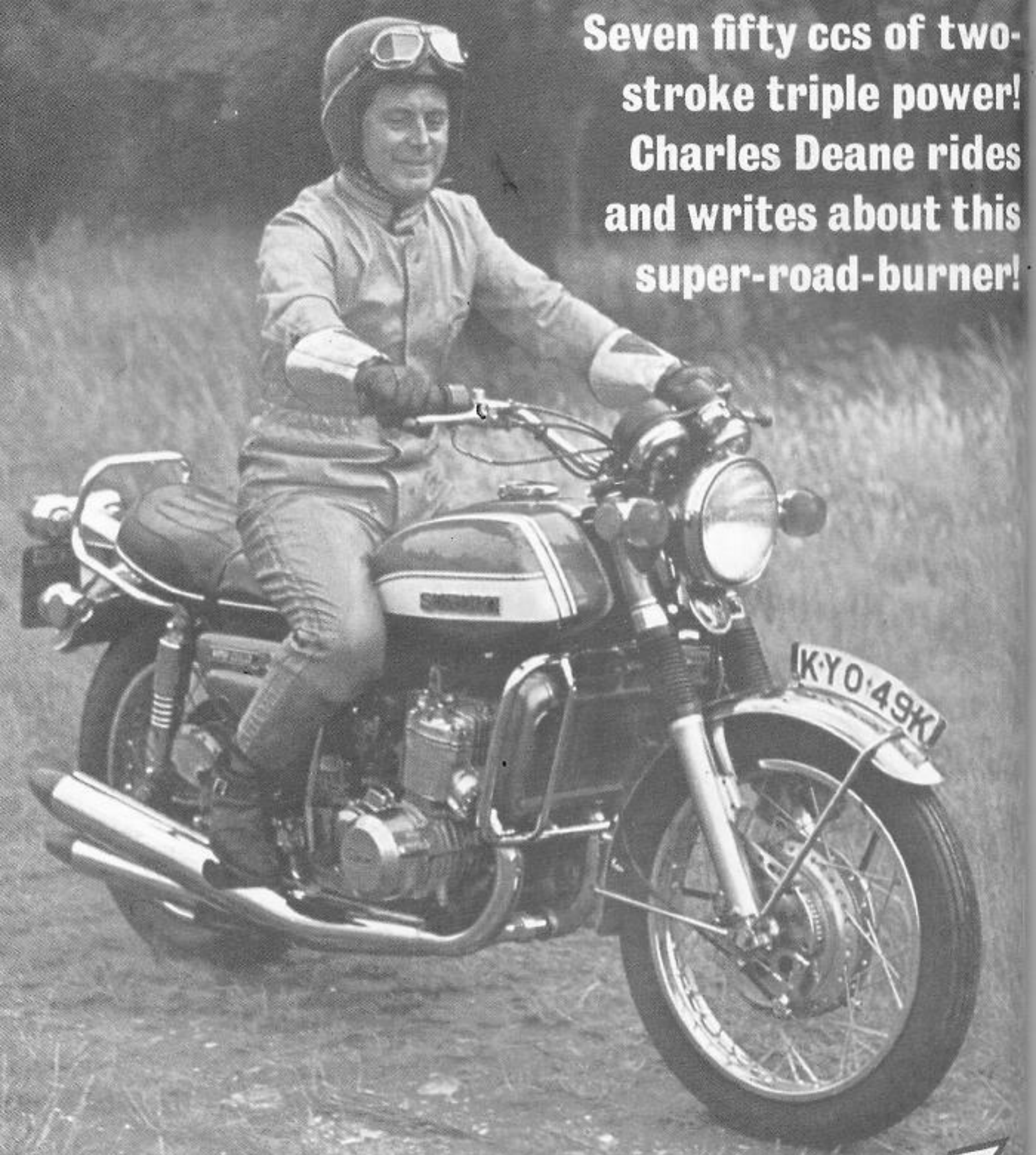
WEIGHT
536 lb.

FRAME TYPE
double downtube

TIRE SIZE
front: 3.25–19
rear: 4.00–18

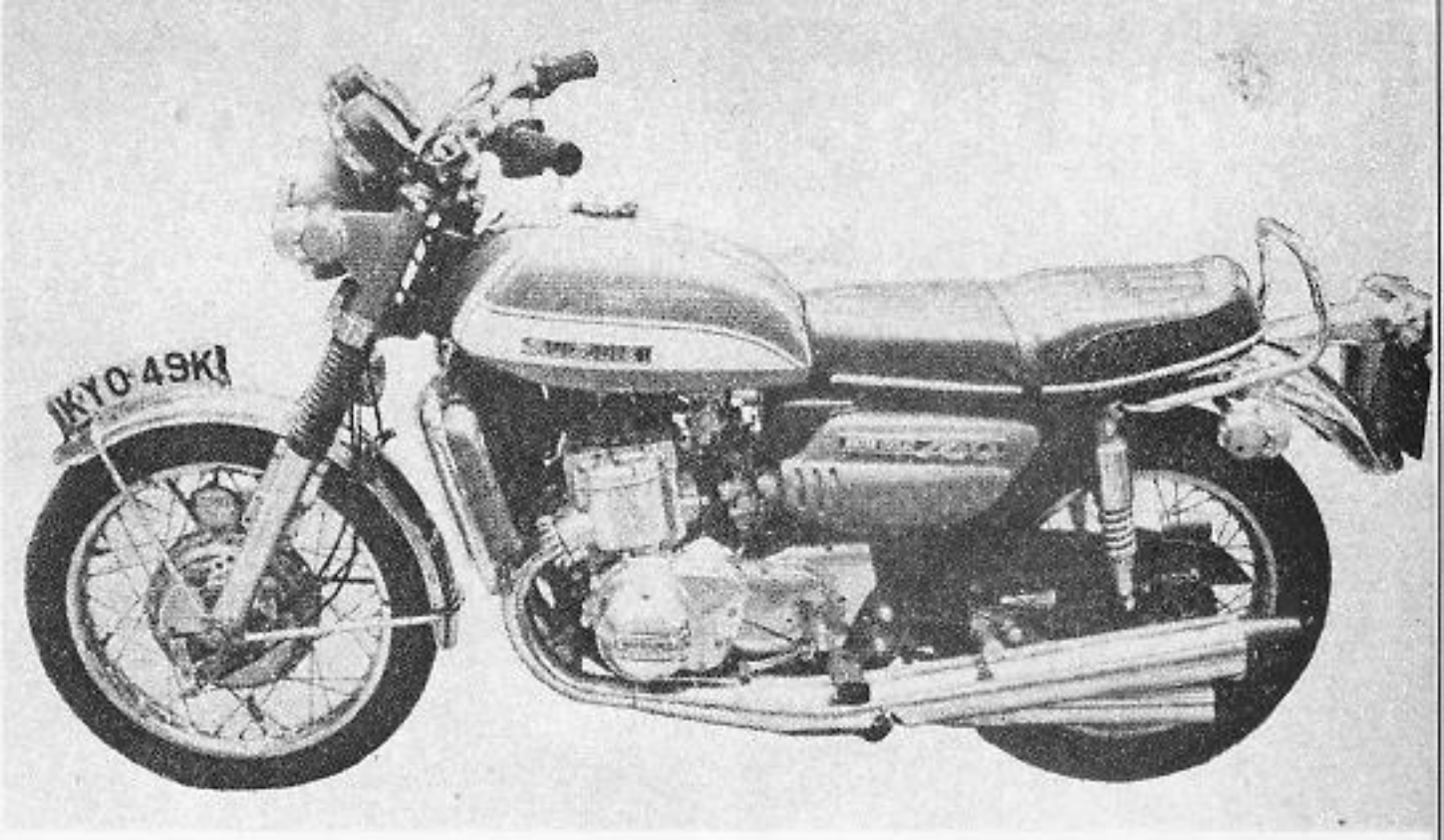
BRAKES
front: four leading shoe
rear: single leading shoe

Seven fifty ccs of two-stroke triple power! Charles Deane rides and writes about this super-road-burner!



SUZUKI

MM ROAD TEST



How can you keep your cool when everyone else is getting hot under the tank? Suzuki have the answer; fill up with water! But perhaps I should explain, before irate publicans reach for their pens, that it's the bike you fill up! Suzukis have gone over to water-cooling for their GT 750.

Why water-cooled? There are several reasons, greater heat dispersion being the main one. Two-strokes always have a heat problem because they fire twice as often as a four-stroke. Excessive heat causes distortion of piston and rings, which has to be allowed for by making larger clearances between moving parts to avoid seizure.

Large clearances are fine, but they make the engine noisy and aid power loss through blow-by past piston rings. A well designed water-cooling system reduces these problems considerably.

Suzuki claim that their 750 runs 30 per cent cooler than any other two-stroke. This enabled the piston clearance of the 750 to be set at 0.0019 in. as against the 0.0026 in. clearances on the air-cooled T500. Noise reduction is automatic even without the deadening effect of water jackets.

A neat radiator, set across the frame at the front of the engine, stores the water. From there it enters the crankcase and is pushed by a pump round the cylinder water jackets and into the head jackets.

The thermostat stays closed until a temperature of 180 deg. F. is reached and the heated water is directed back to the pump in the crankcase. Complete opening of the thermostat occurs at 203 deg. F.

A tiny cooling fan behind the radiator is designed to operate when the temperature reaches 221 deg. F., but this is unlikely this side of the Sahara to say the least, and we feel that the fan will be discontinued next year.

My first comment when I got aboard the Suzuki 750 was "Where's the altimeter?" The impressive mass of controls with dials and press-buttons gave a definite cockpit impression to the whole caboodle.

After a fruitless search down among the carburettors for the choke lever, I found it where all such things should be—on the handlebars. The centre-mounted ignition switch was turned on and the green neutral light told me that we were ready for contact. Petrol on, press the electric starter button on the right-hand bar next to the twist grip and the motor came to life. Twenty seconds later the choke was fully opened and first gear clonked in for take-off.

The first slow bend I came to reminded me of a ride I had on a reluctant camel in the Middle East. It took two or three bends to decide who was master—this time I won.

Steering

At very slow speeds, it seemed as if the head bearings were too tight, but as knots increased steering became light and precise. Mind you, with a dry weight of over 520 lb., a positive approach to all bends is called for. Yet even at a standstill, once balanced, handling the Suzuki was effortless. I wouldn't like to be a short man on an icy road though!

Performance was disappointing if out and out speed is what you are looking for. 100 mph was easily attainable, but 110 mph was the very best figure we achieved, although the speedo gave an optimistic 117!

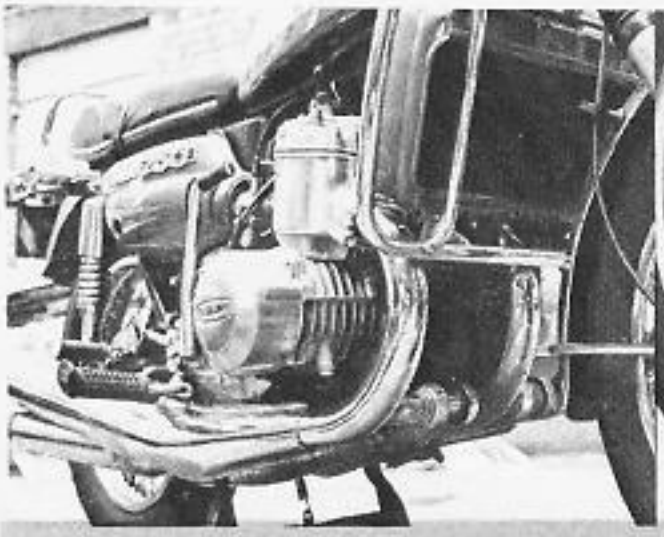
The high speed cruising was superb, effortless. This really is a long-legged bike which loves to gobble miles. The quietness of the motor plus the large, comfortable seat helped to shorten the longest journeys. Only criticism was that the riding position was rather too upright for 70 plus speeds. You can't win 'em all.

I mentioned that the steering was a little top heavy at low speed. At the top end of the scale it became a bit "wallowy". Crossing white lines in the road set up a slight oscillation which was more than off-putting to the chicken-hearted. Possibly this was due to the rather soft front fork action. Anyway, who crosses white lines in the road at over 100 mph?

SUZUKI

SUZUKI TEST

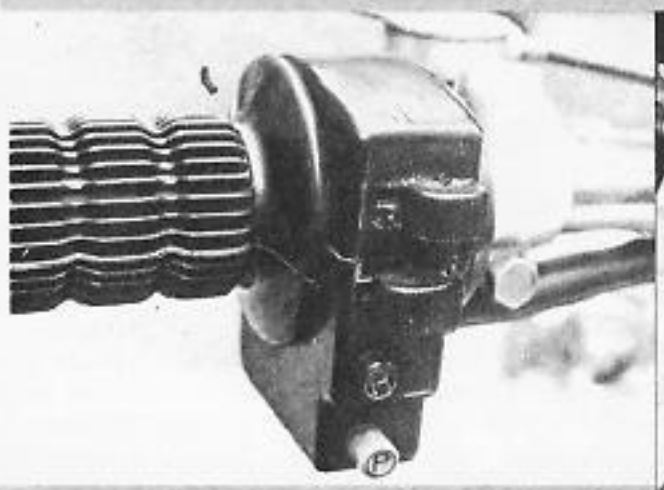




The radiator and its protective crash bar blend neatly in with the lines of the GT



Both brakes were good and could be upon, but we think a disc is needed



This multi-purpose switch was neat to view, but a pig to operate with a gloved hand



No complaints about the instrument pa It was easy to read and well lit at

'a long-legged bike which loves to

A lot has been said about the braking on this bike—most of it good, but nevertheless, brakes could be better.

The rear brake was lacking in "feel" and being cable operated, tended towards sponginess. The front, four-leading shoe unit would fade from 90 plus stops and was by no means as impressive as the massive disc on the Honda Four.

Around town, the lack of "feel" could cause the rear brake to lock the wheel, but the front one behaved quite well, although a big handful was needed to squeal to a stop.

A braking distance of 35 ft. from 30 mph to stop this 500 lb. plus hunk can't be bad, but a disc won't fade when it's needed most. Enough said.

The controls on the handlebars were impressive to view, if rather difficult to operate. The main offender was the all-in-one lighting, dipper, horn, flasher and winker switch on the left handlebar. Trying to select neutral for the winker switch, or operate the dipper was a precarious task with gauntlets on. The only simple thing on the switch was the flasher, even then I pressed the horn button first.

The clutch was light in operation and so, surprisingly, was the throttle twistgrip connected to the three Mikuni carburettors via a junction box with a single cable.

At the end of a long journey, the only complaint was cramp in the left hand because of that blasted switch. The rather thick handlebar rubbers did not help matters. Even with hands like a bunch of bananas, it was quite a stretch.

Both speedo and tachometer were well placed, vibration-free and well lit up for night riding. Also excellent were the lights, especially the massive rear unit.

The ignition switch, sensibly placed in the middle of the instrument panel, used the same key to lock the steering. Both lock and switch were easy to operate—unlike some we have tested.

By lifting the dual seat, you gain access to the battery, tool bag and oil filler. The oil filler has a small hole and you need a funnel to avoid making a mess when topping up. A minor criticism, but still a nuisance.

Transmission is typically Suzuki, with constant mesh gears and one shaft located behind the other along the crankshaft centre line.

Lever action is light, but unless the final drive chain is in perfect adjustment a "clonk" could be heard when selecting first gear and on subsequent upward changes.

With all the power that the Suzuki has on tap, rear chains cannot be expected to survive for too long and adjustment is a regular part of maintenance if power is used to the full.

Slack chain

The result of this was that the rear chain was nearly always a little slack. Therefore, quiet changes could only be made with slow operation and gentle foot pressure. This was no hardship under ordinary conditions, but if you wanted fast, quiet changes, adjustment was the answer.

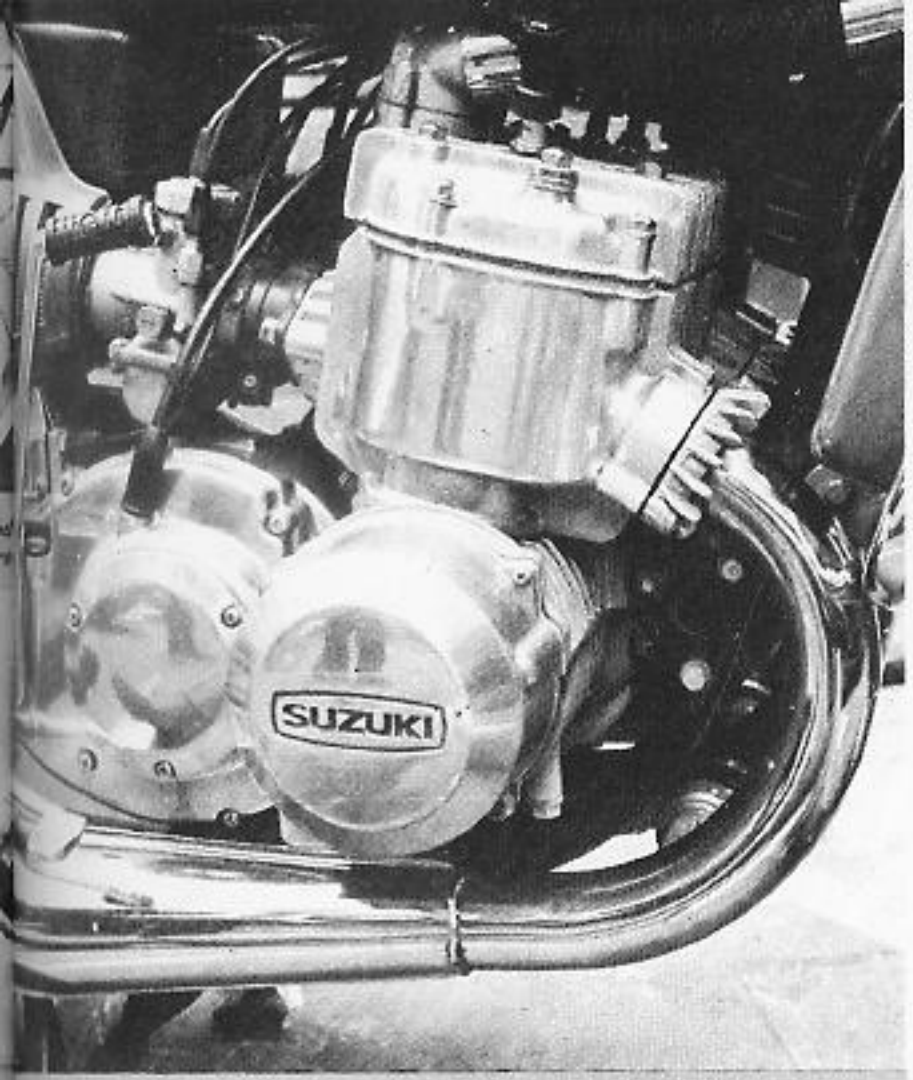
A point worth noting is that no provision for lubricating the rear chain is included.

First gear is set very low at 14.85. This means that moving away is effortless although you tend to feel the large gap from first to second gear, 9.11, when trying for maximum acceleration.

However, the power band of the engine is so wide that there is no need to set the ratios close. The time of just over 18 seconds to 100 mph bears this out—not bad by any standards and remember that this bike is designed as a super tourer.

One rather surprising thing about the engine, smooth and delightful as it was to ride, was the high non-snatch speeds in all gears. In fifth gear, the chain would be on the verge of snatching at 40 mph and in first, even at almost zero mph the engine felt happier when the clutch was being slipped.

It is only fair to add that the rear chain had covered over 6000 miles by the time we gave the Suzuki back. This meant that a good, all-round adjustment was impossible because of chain wear and tight spots. No doubt these



The engine remained oil- and water-tight throughout the test. The finish of engine castings and water jackets is absolutely first class

gobble miles...'

contributed to the high non-snatch speeds.

Finish was excellent. The paintwork showed no deterioration and the chromium plating no rust, except on the front brake anchor arm and flashing indicator bolts.

The welding on the frame joins looked solid enough, but there must be a shortage of scurfing boards or files in Japan, as the welds had not been smoothed at all—just sprayed over. Talk about spoiling the ship for a ha'porth of tar . . .

The main rust trap was the underside of the dualseat. Rust was eating away there with a vengeance and is not what you'd expect from a machine of this calibre, under one year old.

Whine

At the end of the test, there was a distinct whine from the gearbox, as if a bearing was on its last legs. Probably this noise would have gone unnoticed on most other bikes, but the mechanical quietness of the 750 was such that anything amiss was heard immediately.

The Noise Abatement Boys, bless 'em, will love it. Even under harsh acceleration there is hardly more than whoosh from the big three, but motorists move over when they see you coming up behind!

We suffered no mechanical trouble throughout the test. The electric starter was faultless, but keeping the kickstarter is a good policy, we feel.

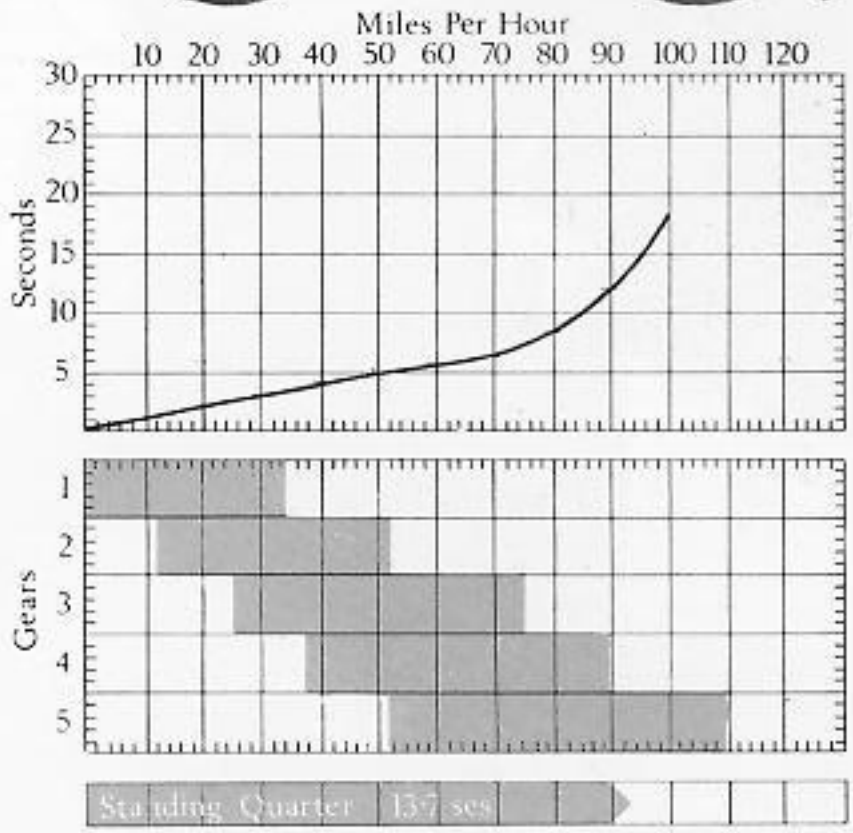
The engine remained absolutely oiltight—and watertight. Apart from rear chain adjustment we didn't lay a spanner on the works at all.

Fuel consumption averaged just over 45 mpg, which is very good for a two-stroke of this size. Oil consumption depended entirely on the way the bike was used. If it was really thrashed, half a pint to two gallons of petrol was used. About town, half a pint to four gallons was the rate.

To sum up, we would say that the Suzuki GT is one of the best bikes we have tested. It is extremely fast and comfortable, has impeccable road manners and really is terrific.

ROAD TEST SUPER SUZUKI





Fuel Consumption (average) **45 mpg**
Braking from 30 mph, both brakes **35 ft.**

SPECIFICATION

Engine: Three cylinder two-stroke, water-cooled. Bore 70 mm, stroke 64 mm, giving capacity of 738 cc. Compression ratio (actual) 6.7:1. Claimed bhp 67 at 6500 rpm.

Transmission: Five-speed gearbox driven by gears through wet, multi-plate clutch. 15.6 mph per 1000 rpm in top gear.

Electrical equipment: 12 volt 14 amp/hr. battery and coil, lighting by 12 volt alternator. Electric starter.

Carburation: Three Mikuni VM32 32 mm carbs.

Wheels: Front wheel is fitted with 325 × 19 tyre, rear tyre is 400 × 18. Front brake diameter and width (2) 8 × 1.6 in., rear 7 × 1.6 in.

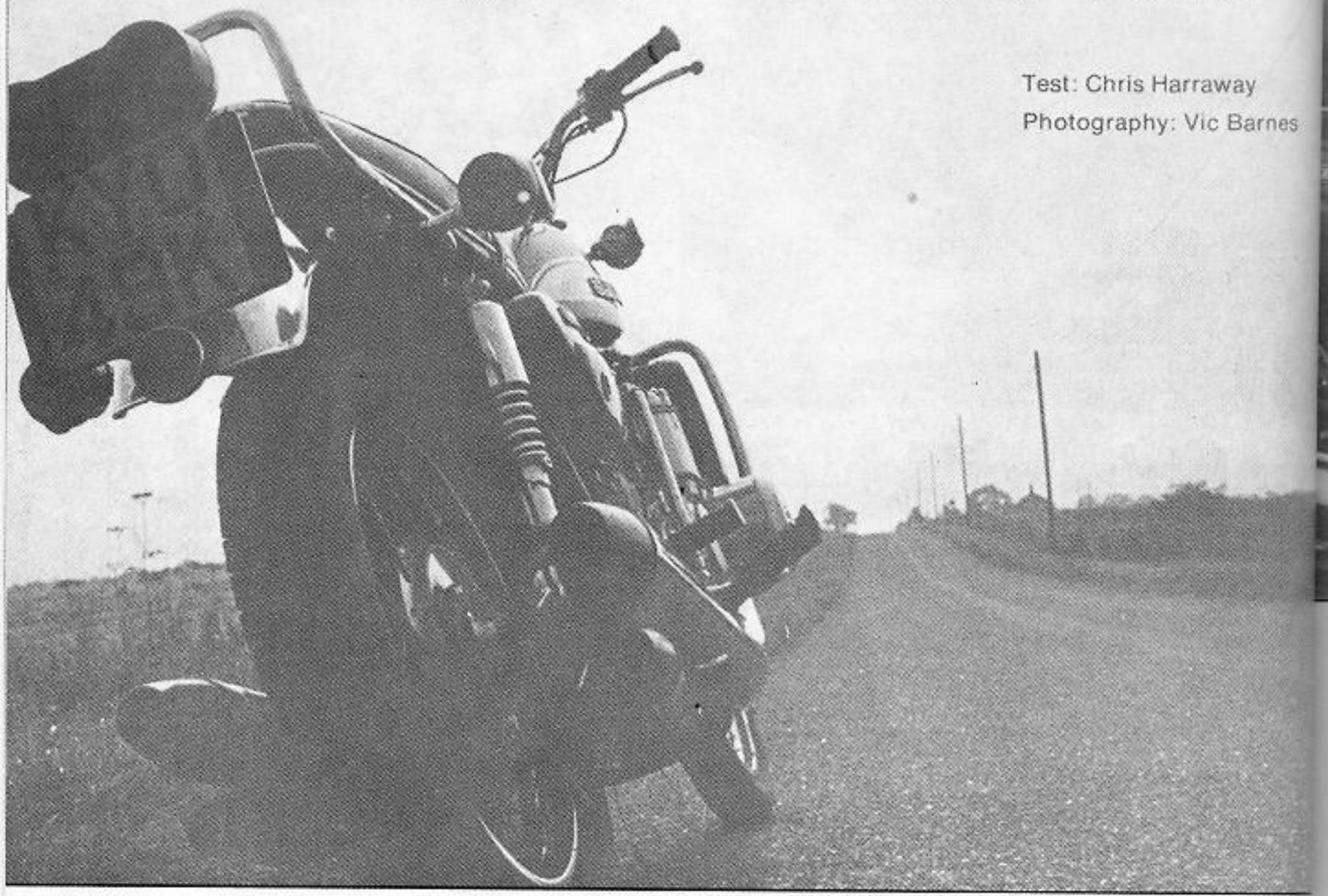
Suspension: Front, telescopic fork; rear, swinging arm with adjustable dampers.

Dimensions: Fuel capacity 4.5 US gallons. Oil capacity 3.8 pints. Seat height 32 in. Wheelbase 58 in. Ground clearance 5.2 in. Handlebar width 32.5 in. Weight distribution front 47.5, rear 52.5 per cent. Kerb weight 525 lb.

Price: £766·50.

Concessionaires: Suzuki (GB) Ltd, Beddington Lane, Croydon, Surrey.

SUZUKI GT 750
A MAGIC BATTLESHIP

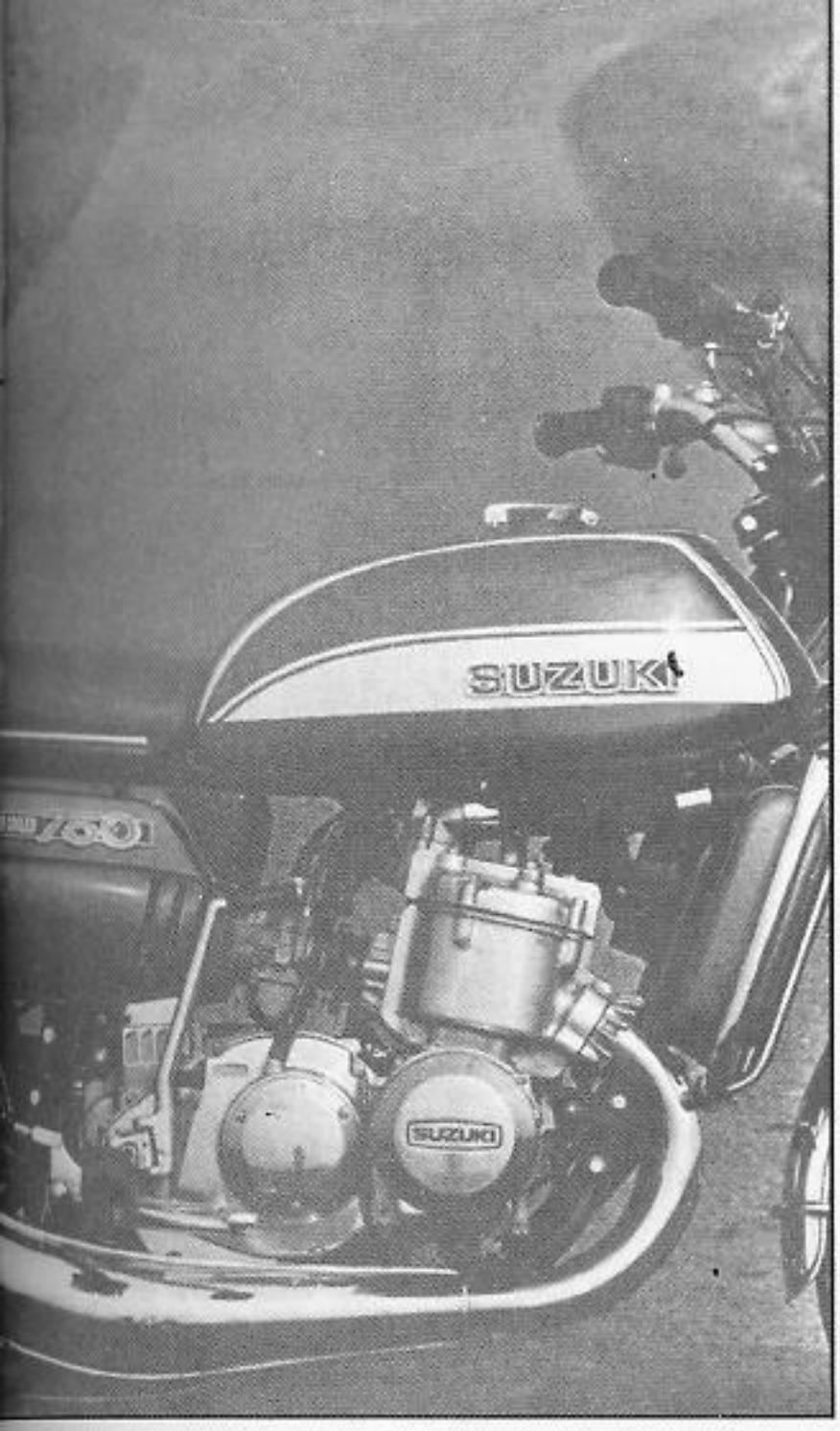


Test: Chris Harraway
Photography: Vic Barnes

STONED. DRUNK AS A lord. An infectious hilarity. Second childhood. Very, very silly. Mood, occasion and circumstance ensured complete inebriation. Hadn't touched a drop all day.

The journey had started in the falling dusk, velvet houses silhouetted with a beauty that was never theirs during daylight, against the fading turquoise of the evening sky. The recurring candescence of street lighting stabbed incongruous punctuation marks through the exhaust haze of a city retiring, tired and dilapidated at the end of a week's grind. Friday night, and the exodus was more purposeful, more desperate than usual. The lemming scramble southward, holding in its arms the inevitable smattering of holidaymakers, already fatigued but invigorated by the prospect of the long weekend that they clutched jealously to their bosoms. The jerk, grumble and grunt of an arterial rush hour, hell bent and defiantly intent on seventy-two hours of freedom.

And then the first few yards of motorway and the Suzuki cleared its throat of frivolous urban meanderings. The low, loud whoop of a slow motion cowboy flinging itself, semitone by semitone, up the scale towards the full octave. At first no more than an electrical rumbling whir, dead spit voice print of the 380 triple. But soon, very soon, deeper, stronger, steadier, without falsetto overtones, the trickle of power developed into a brook, the brook into a river, the river finally and devastatingly into a headlong molten rush, brushing everything aside in its progress, sweeping the



slower procession of vehicles already destined for an unknown number of drab and ugly seaside resorts into a brief whirlwind of backward motion and then obscurity. No clatter, no whine – nothing much except wind roar and the background spiritual of the Suzuki's soothing lullaby.

The route was so well known. Unimpeded progress down forty miles of motorway. The motorway came as an undemanding contrast after the ant stumble across London, but nevertheless all motorways inevitably dilute into a grey, dull monochrome memory of featurelessness. Perhaps boredom forces the eyes awake and small characteristics of the surrounding landscape, otherwise infinitesimal, loom up large and clear, as indicative as any signpost. The scrub marks of tyres on certain bends, the bridge across a river valley and the winds punching the machine from side to side. Small sections no more than a hundred yards long, with whirlygig patterns of white chippings against a black background, waltzing crazily for a split second under the headlight beam. The air becoming neater, keener, noticeably sharper as the road nuzzled farther into the green freshness of the countryside. An oast house wandering ghostly across the skyline. Somehow the time spent on the road was always well spent – enjoyed even. It had something to do with the warm anticipation of the arcadian peace which waited at the other end.

A basic thing to understand about the GT750 is the immediacy with which the machine's ultimate performance can be gained. Throw away pretensions and excuses, and you're left with one word. Torque. With eyes tight shut the first thing to whisper in your mind is your arms. No – they're not being whiplashed away from their sockets, merely undergoing an irrevocable process of traction, stretched slowly but quite definitely over perhaps half a minute – subject to an unseen rack. You'll also find yourself forced farther back along the dual seat, backside aglow with friction. A firm, mammoth, unstoppable force. Something more civilised than brute acceleration, but never ever less exciting. Shambling along at perhaps 25mph in top. Salute the rev needle unwavering at perhaps 1500, probably less. Clear your mind of less important things, reject all trivia. And then send a message below. It won't all happen at once, but in the next second or so the engine will have doubled its activity. A quiet urge, peace before the storm. At three and a half the world will hit you. Firmly. The force – flat, slabby and juicy – will pour in. A crime against the senses to back out now. A torque curve flat and sweeping out to the horizon. No interruption, no change, no let-up. In that gear, speedometer and tachometer needles follow identical courses. At two o'clock high the frenetic, monstrous action will calm down, the first three figures having been and gone. And then relapse onto the oldest cliché of all. Effortlessness. You will have reached maximum. Handstands on the tank, lightened and balanced Y Fronts will make little or damn all difference. There will be no hurly burly grafting after the extra miles an hour, no work involved in obtaining top speed. Try all antics and the machine will stare back at you full of blank but tolerant incomprehension.

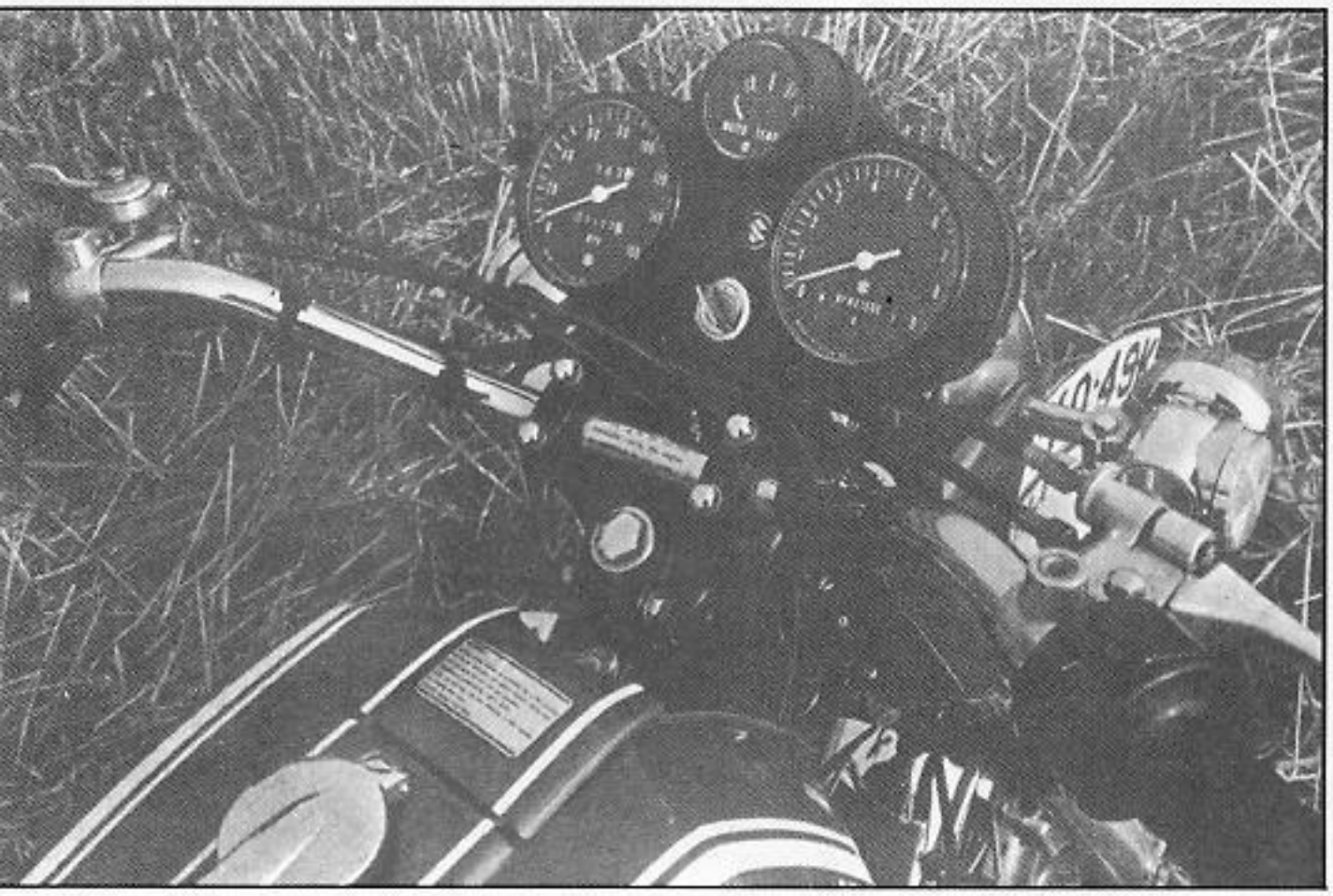
The torque tune was played to the full on the first lighted miles of motorway. Pillion and luggage went contemptuously unacknowledged by the Suzuki. And when the street lighting freckled out and the machine was left only with the Peter Pan crocodile of oncoming headlights quietly ticking past in the opposite direction, the main beam took over with calm efficiency, never allowing speeds to drop below 85 or 90mph. On reflection, I cannot remember riding so rapidly and so safely during the hours of darkness.

Perhaps other drivers were at peace with the world, also. I don't know. But their reactions had none of the disgruntled obstruction that every motorcyclist seems to be the object of. At a hundred yards a flicker from the main beam and within the next fifty, with few heartily abused exceptions, each would slide serenely over, battleship regal progress unhindered. Sometimes they were hooted, but by default more than design. Blame for this was laid firmly on the vertical bank of switchgear on the clutch end of the 'bars. A curious and impressive arrangement with a high/low switch at the top of the bill, followed by trafficators, horn and finally, but by no means least, headlight flasher. Sure – each of the things controlling various illumination had definite stops between positions, but even in light (freezingly light) gloves an occasional fumble and indecision over the two lower warning devices was inevitable. Over the two weeks that we enjoyed the Suzuki mistakes became fewer, but in hurried situations they did still occur.

And a mystifying characteristic showed up during the first motorway minutes. The handlebars should have been everything I despise: high, wide antennae curving back toward the rider and to be viewed with infinite suspicion. On any number of like equipped machines that I've experienced, high-speed wander has, to varying extents, crept into the proceedings, spoiling enjoyment, occupying a portion of concentration that should be left clear and vacant for the more important things of life. I dreaded this phenomenon – the threat of it – on the GT750. But needlessly so. Never once, even at the machine's comparatively low maximum of an indicated 110mph, did any wander or waver occur. The resulting rider position – upright and blameless – was superbly comfortable if the three figure sail effect on arms and shoulders could be ignored. About town it was bliss, and lent the 'bike an ability of surprising manoeuvrability. In a fit of fevered experiment prior to a hideously ignominious trip to Silverstone these strange 'bar creatures were swopped for my ideal – short, flatter things from my own dismembered and dilapidated BMW (a dilapidated BM! Can such a thing exist? You bet your life it rotten does). The results were disappointing. Low speed steering became leaden and awkward, the position almost cramped. Even if the throttle cable had had a smooth run, it wouldn't have been worth the effort (about ten minutes' worth). But it underlined the sound theory, sadly pounced upon by other people first, that the only way many manufacturers overcome heavy steering charactheristics is by huge and increased handlebar leverage.

OVER

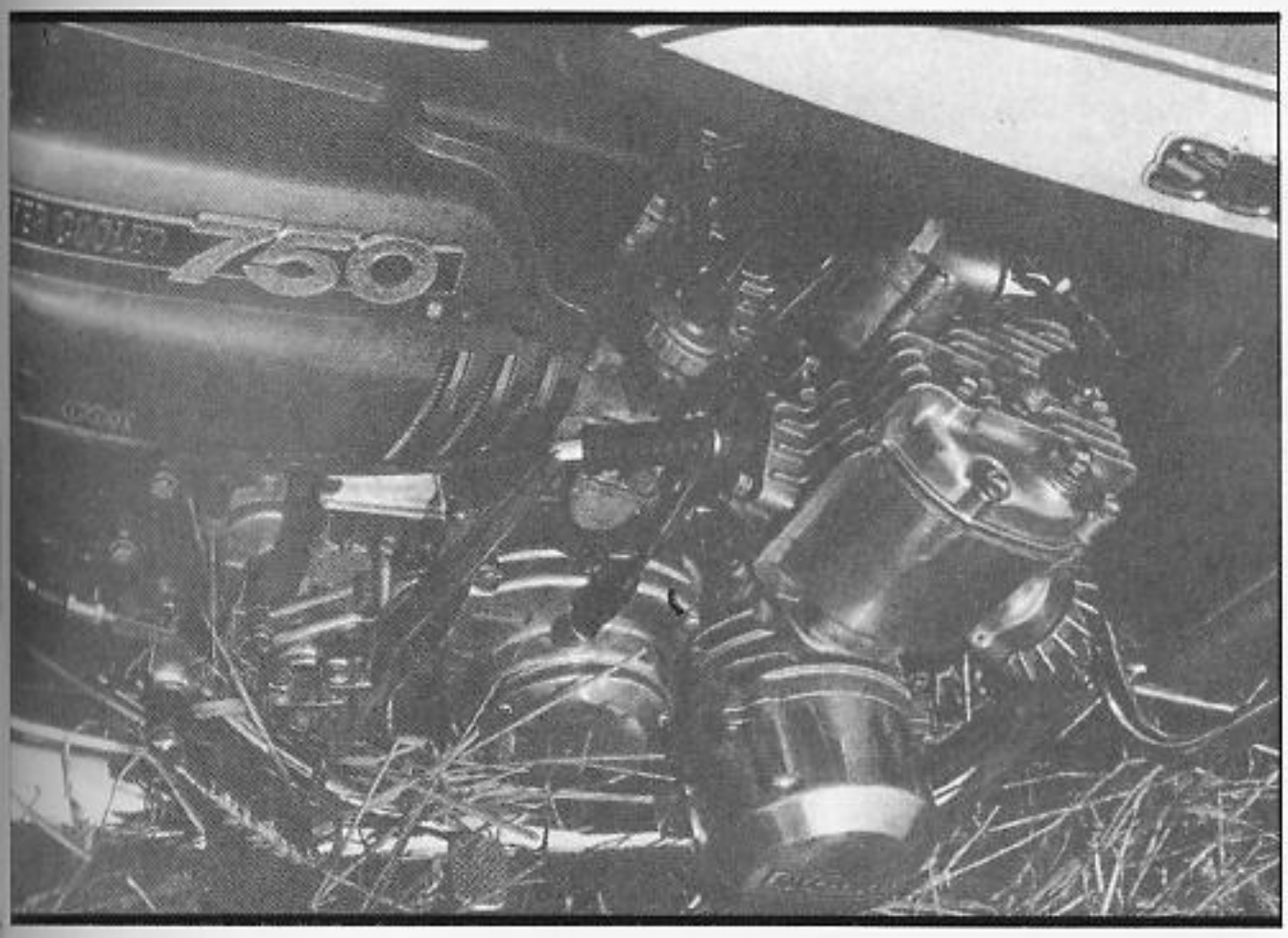


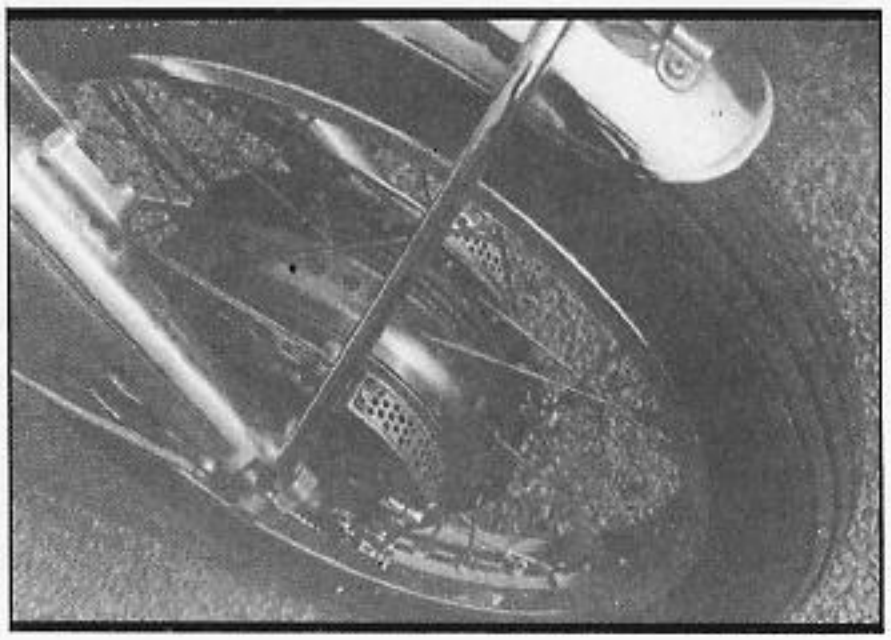


A MAGIC BATTLESHIP

The Suzuki is a heavy machine by any standards. An advertised dry weight of 482lb and it's no babe in swaddling. But through very acceptable weight distribution and balance, impressions of majestic bulk are left only on the eye. Without any intended exaggeration it would not be nudging credibility to say that a rider fresh from, say, a Tiger 100 would find no difficulty in handling the machine. Handling, maybe – but riding safely and to the limit? Another matter altogether. The seat height was never measured exactly but an estimated 32½in might see short, fat hairy legs looking for a convenient curb to dismount at.

Rear damper settings had been played around with to the amusement of one and all but, with the possible exception of the very softest where an infinitesimal wallow would sometimes appear on fast sweeping bends, they seemed to affect roadholding qualities surprisingly little. The optimum, though, was eventually achieved with the aid of the hardest setting and a seven stone passenger. Under these conditions the thing was at its best, though without them one was left with small, occasional suspicions. No out and out vices, but silly, flitting question marks. Heeling over at no more than 50mph, the front tyre would make a brief dart for the outside of the apex – once, twice, never more. Not disastrous, but leaving a tingling in the belly. Infrequent little side slips on the front, even more infrequently on the rear. It was impossible to keep other riders from the Suzuki's saddle. Each had his own story of roadholding being odd, not quite right and yet anything but terrifying. Back end agangle on 100mph sweeps, but again so infrequently. A definite and always present oscillation at the end of the long 'bars on rounding slow, slow corners. These criticisms must be seen in perspective though; seen for the very occasional phenomena that they were, viewed against a backdrop of perhaps a thousand miles. Perhaps the tyring was at fault, the Avon Speedmaster fronting the house and the Mark I rearwards, simply not being man enough for the Suzuki's weight and performance capabilities. Certainly, suspension and damping at either end threw up no obvious criticism. The potential for reasonable angles of lean was there, as a centre stand, the first





thing to scrape (far too easily), ground down to neat points on either side fully testified. Steering was not improved by the same disconcerting characteristic found on the 750's smaller sister, the GT380 – a front spindle oscillation of perhaps an inch and a half at speeds above 80mph. On the smaller machine this phenomenon seldom impinged. On the larger it was a constant, hard patter. Wheel balance is the culprit that springs most easily to mind, but the sensation fluctuated with engine speeds to a certain extent (i.e. whoop it up along a straight piece and declutch). The most interesting and most probable excuse so far offered was an obscure transmission from the engine of out of balance vibrations influencing the end of the forks. We're at a loss to explain it. So the plot thickens.

But despite these characteristics there is no escaping the fact that the 750 is a designed-from-the-ground-up touring machine. Eyebrows have been cocked quizically and not without a tinge of scepticism at reported maximum speeds of anything from 105 to 110mph. Keep your scepticism – the thing was never intended as a competitor to the Kawasaki 750 and the like. Suzuki, in all their machines (the triples at least) have veered away from monstrous performance towards the more stable, comfortable solidness required by the long-distance man. Less stress, less pinging about with the possibility of losing tune, less wear and tear on the rider's mind. Altogether a concept that I personally rather prefer.

From the rider's point of view, or at least from that of his tag end, feet and hands, the GT750 is vibrationless. Smooth as cream, the senses unaware that such things as power units and mechanical effort exist. It wasn't until the editor had set foot on the thing, riding some way with feet touching the crankcase and mentioning that that position betrayed a certain amount of vibration, transmitted direct to leg without benefit of the rubber mountings, that the vaguest suspicion reared its head of the unit possessing any noticeable out of balance factors at all. In practice, one was oblivious to the sensation.

A 750 two-stroke ridden to its maximum, belaboured thoroughly at all times. Three 32mm carburettors greedily agobble at the golden rivulet. Being a realist I expected a gallon to last all of 25 miles. Though I tried mightily I was never able to better 30mpg. For the most part it levelled out to a (comparatively) staggering 35. And please don't write to us all indignant that we consider 35mpg staggering. All things are comparative, and we can but speak from experience. When all is said and done you're still left with a slightly reproachful shake of the head at the petrol tank. A tourer with a thirst and only an eggcupful over three and a half gallons to satisfy it. One day public opinion – that means American sales preference – will sway the other way, and each manufacturer will be vying with the other to out-tank itself. Roll on the day, naïve optimist that you are. In appearance the 750's tank *is* huge, a bulbous slab of at least four and a half big ones. And then the heart sinks as you realise that there is a sneaky little flip-up lid at the head of the thing, hinging up to expose the radiator filler.

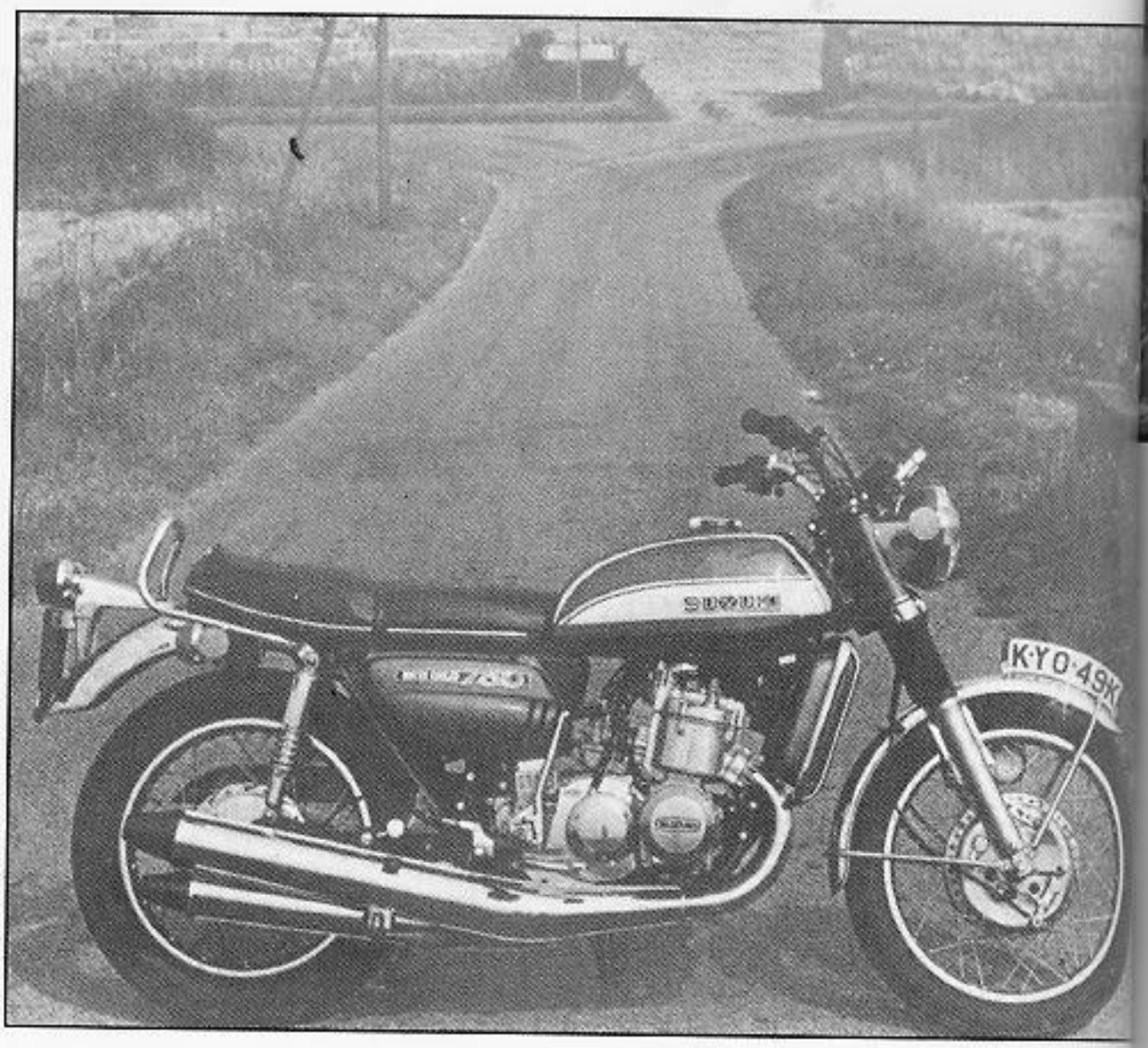
It's well known by now that, encrusted in a very civilised water jacket, the Suzuki 750 power unit is one of the most silent animals around. A gossamer whir and thump in the night were the only signs, apart from the happy burble from the exhausts, that the engine was turning over. Vistually the package is neat, everything aglint with polished alloy. Absence of finning, at least from profile, on the cylinders all lends to the impression of smoothness.

But the water cooling had many people aghast at the supposedly inevitable complexity of the thing. The basics of the matter, though, aren't as horrific as they might have been. The water pump, a six-bladed impeller affair, is situated in the depths of the crankcase, behind and below the left-hand flywheel. The pump's drive is taken from the crankshaft, via starter clutch and bevel geared shaft. It puts up a grand show of pushing the coolant – distilled water and a mixture of summer coolant and anti-freeze – up through the water jacket of the cylinder block, head, thermostat (a wax pellet type, hung with great taste to the rear of the cylinder head) and finally to the top right-hand corner of the radiator. Exit point for the liquid is obviously on the lower edge of the radiator. Quick warming of the engine is facilitated by the thermostat operation which ensures that coolant is not allowed to circulate through the water jacket until a temperature of 82°C is reached, the mixture bypassing the important bits by means of a simple (external) hose direct to the thermostat. Complete circulation is achieved when the show warms to a heat of 95°C. As mentioned before, the system is filled from a pressure cap – complete with loud warning to release pressure before peeking inside – at the nose of the fuel tank. A small way rearwards of the filler there lurks a reservoir, still hidden in the skirts of the petrol tank, which acts as a virtual "overflow" receptacle when the expanding coolant mixture has no place else to go. Simple. You hadn't thought of in that way either?

But this devious little Japanese idea does work. It really does. The ship's instrumentation is superb – two eminently readable semi-Vincent size dials smiling up at you, topped by a calibrated (though not in degrees) water temperature gauge. Notwithstanding our lack of summer, the needle seldom inched its way to the halfway mark – 86°C, and this only in the snarl-

OVER

A MAGIC BATTLESHIP



ing, smarting indignity of endless jams. On the open road, ridden at its peak, the thing rested complacent and sure of itself at perhaps 75°C. Which all lent a certain degree of absurdity to the auxiliary radiator fan rumoured to cut in at 105°C. History – European and Transatlantic – has yet to relate of the fan ever being called for. So superfluous in fact that next year's model may well be *sans*.

Remove the water cooling and you are left with bits and bobs that spin and jog about in rather a conventional fashion, brightened up with one or two "good ideas". The heart of the matter – a pressed up crankshaft – does its duty on four ball race main bearings. Both ends of the conrods are graced by caged needle rollers, naturally. Drive by helical cut gear to the clutch drum is taken from twixt right-hand and centre pots, which will lead you to the unsurprising observation that the bores are not equally spaced. The conrods, though, bear an uncanny likeness to those on the T500 twin. The cylinder block of alloy with cast-in liners contains pistons of peculiar shape. Looking "through" the gudgeon pin a slight tapering towards the crown is apparent, together with (viewed from above) a certain amount of ovality, the component being at its narrowest across the small end. All part of a fiendish plan to deal with temperature variations on differing portions of the piston and hence variation in material expansion.

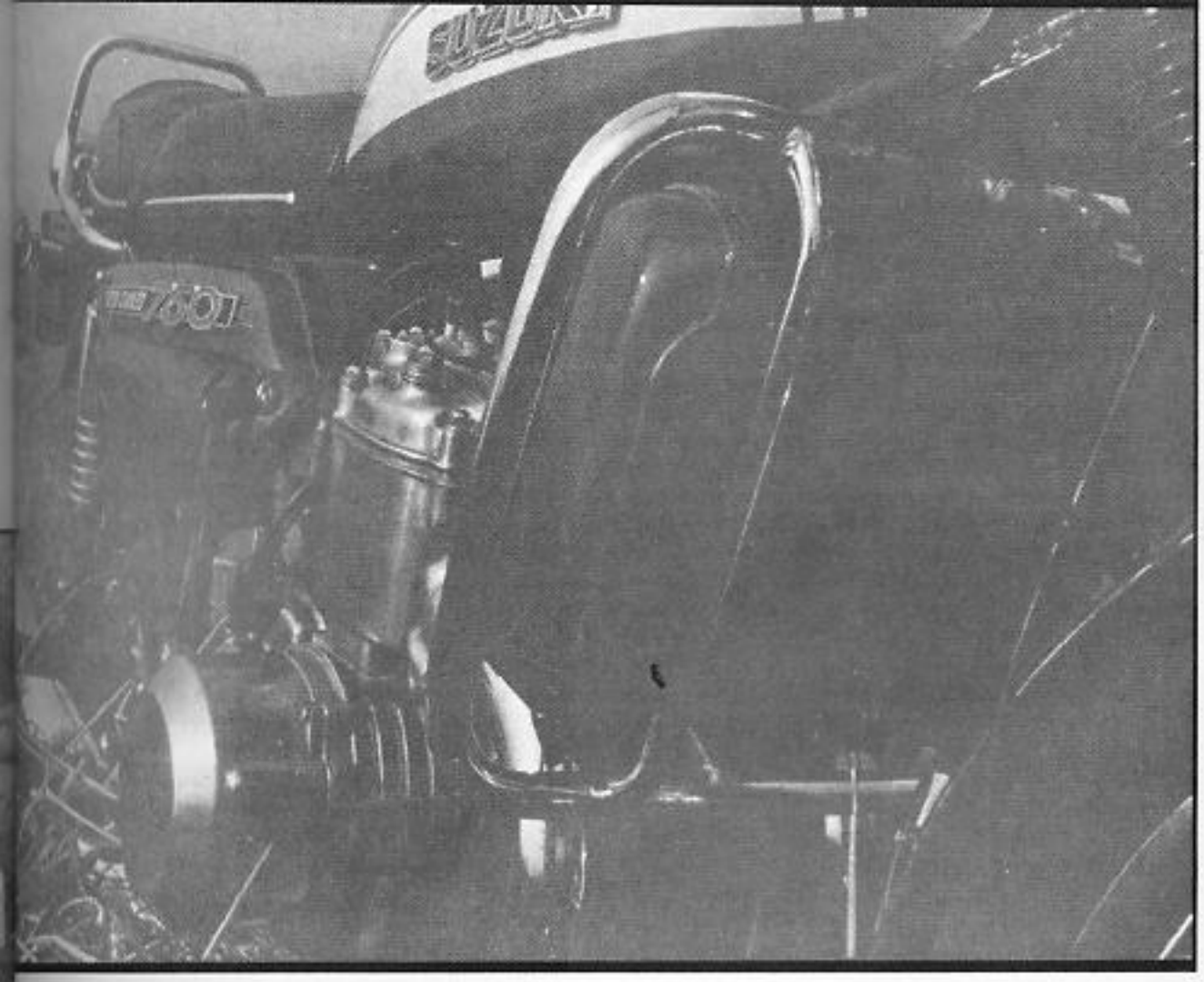
The starter motor, snugging in behind the cylinder block and recessed into the upper crankcase half does the honours through the medium of an idler pinion and a starter clutch driving through on to the crankshaft itself. In practice the thing was occasionally disconcerting. Ninety per cent of the time engagement was immediate, the crank revolving with instant and gleeful haste. The other 10 per cent were greeted by a disgruntled, impotent whine, especially it seemed, on cold mornings. The machine would then be kicked in a fit of early morning spleen, the blow sometimes landing on the kickstarter mechanism. From that point onward, bludgeoned into submission, engagement was foolproof and positive.

The 750's lubrication is carried out by Suzuki's version of oil injection, CCI. It's been around for a long time but I have yet to hear any complaints. Fresh lubricant, unsullied with all that expensive petrol, is pumped direct on to cylinder walls, mains and ends.

CCI, whether in the name of a second string to the lubrication bow or merely in the face of sterner US anti-pollution laws, has received a fillip in the shape of SRIS (Anglo-Japanese for Suzuki Recycle Injection System). A simple but rather snazzy idea of removing accumulated oil from the crankcase bottom, and, by means of external piping, using the positive and negative pressures of one cylinder to transfer said accumulated oil into the scavenge port of another. When we first relieved Beddington Lane of the 750, the machine was the picture of the ecologist's friend. Neither haze nor puff. Then, gradually as the thrashed miles mounted, the Suzuki began to waft and in the end unashamedly billow for perhaps three-quarters of a mile first thing after cold starting. The embarrassing clouds did clear once the machine had warmed to its task, but the old two-stroke bugbear had reared its head.

Of clutch operation there can be few comments. In action it was reasonably light and never showed any hint of slip. After prolonged traffic crawling, with an inevitable amount of close engagement and disengagement, three or four extra millimetres of play appeared at the handlebar, only to vanish again a block's worth of normal progres later. If a criticism has to be mad it would be of the nerve shudder ing, cracking crunch as either firs or second ratios were called for. I had all the blood-chilling qualities of a bone being snapped in a Ham mer production, something wel akin to the BMW's famous failing I suspect, though, that since the characteristic crops up on so many of the GT750s, later models will be modified, and modified p.d.q. Suzuki aren't known for letting deficiencies go on being deficient.

After our hard, happy sprint down the crowded motorway driving well beyond the vehicle capabilities of so many four wheeled animals, yet so well within our own, a fast, well known, well-worn six miles of winding A-class road stood between us and tranquillity. Until



popping deceptively angled corners at the unsuspecting, the sudden reflexes of a snap shooter. Again a mental hat was raised to the strength and penetration of the headlight. Standing in front of the machine, no immediate laser-like qualities stood out distinguisable from the illumination capabilities of any other particular machine. It left a bright red sun hovering on the closed eyelid, but then so do most 12-volt systems. In fact it was mystifying how such hurried progress was so well lit up. But it was. Cat's eyes, stretching perhaps 300 yards down a straight, were unravelled, strung out, spitting at the front wheel, glowing tracer grist to the mill. Later that night, oddly refreshed by the journey, the city day completely forgotten, the machine peered in through windows, unsweated by the journey, provocative and irresistible. The Belisha beacon moon was playing catch as catch can amongst the stringing clouds, the world at once all inky and then, just as soon, flitting out under a silver arc lamp. The situation was beyond our control. There was simply nothing on earth to do but ride again. It didn't take any more than fifteen minutes to get lost, swirling around narrow lanes which hadn't seen humanity in years. If there were houses about we certainly didn't see them. Nor cars. Nor any sign of civilisation. Jabbering stupid and full of delight, little or no responsibility, intoxicated by our solitude. Without doubt the only people in the world. The Suzuki, uncomplaining, entered into our early second childhood, content to bubble gently, softing it around at 25 or less miles per hour, only to be hurled helter skelter, pummelling over fields in hot pursuit of rabbits who should have been thesmerised, but weren't. A mutter from afar of simple pleasures for simple minds? How absolutely right you are.

So – the Suzuki GT750. Did we like it? If thrown into a corner, shackled until some definite answer was given, we would smugly suggest that we enjoyed rather than liked. You see, it presents a difficult and disconcerting package – a true curate's egg. So much of it is good. That silly sledgehammer torque. Quietness. Reliability. And then, of course, top notch comfort. And lighting. And a general character that endeared. Big, woofly, never straining or panting – utterly confident in muscle power. And it's cheering to feel that the true touring market is being given serious consideration by the factory. One immediate thought that struck us was the machine's suitability as a police vehicle if considerations of low speed, high geared cruising capabilities, a reasonable top speed, blameless handling and manoeuvrability are criteria on which decisions are based. But then, set against these charms, are the suspicions in the roadholding department, brakes (twin tls affairs – two T500 units back to back) that demanded a high, high lever pressure and in return still left a certain amount, albeit a small amount, to be desired. The manic crunching from the gearbox entering the first two gears. And, naturally, a rear chain that despite the heavy stresses placed on the thing, had no provision for automatic lubrication leaving one to fumble, and curse between the silencers with an archaic oil can. And, clutched brows all round, why, oh, why can the factory not – just for once – put the damn final drive in a total enclosure? At 300 mile intervals – sometimes less – between chain adjustments the situation, for a touring motorcycle, became silly. No, Suzuki, nuttin' personal – all your mates do the same thing. Endless chains and non QD rear wheels, also, are so common and yet so revolting. . . . One merely and malignantly hopes that Messrs. Honda, Kawasaki and Suzuki – their directors that is – are 'bike riders and one day have to remove rear wheels in some obscure Japanese wilderness.

Of the accusation of complexity we can but take at face value the reports of Suzuki mechanics (and for that matter the best of the American 'bike mags, complete with centrally heated workshops) that the thing is surprisingly easy to work on. MCI's own Rentagutter was strewn with other machines, so the 750 remained an enigma.

Modifications are bound to follow in some measure. The 750 is still very new, but even in its present form represents a refined machine – a concept that I suspect rather a lot of people have been hankering after for some time. ▣

SPECIFICATION

ENGINE: All alloy transverse mounted 2-stroke piston port triple. Bore and stroke, 70 × 64mm. Total capacity, 738cc. Compression ratio (corrected) 6.7:1. Claimed bhp, 67 at 6500rpm. Torque, 55.7lb/ft at 5500rpm. Cooling, by radiator, thermostat and water jacket, pressure forced circulation by vane type water pump.
CARBURATION: 3 × 32mm Mikuni instruments. Air filter, resin processed paper. Petrol tank capacity, 3.7 gallons, including 6.2 pints reserve. Quality, 3-star.
LUBRICATION: By CCI (injection) to mains, ends and cylinder walls. Tank capacity, 3.2 pints. Consumption (approx.) 250mpp. Gear box lubrication by oil bath and splash. Bath capacity, 3.9 pints.
IGNITION: By battery, triple coil, triple contact breakers and crankshaft mounted alternator.
ELECTRICS: Battery, 12v 14 a.h. Generator, 280w. Starter motor, 500w. Cooling fan, 27.6w. Headlight, 50/40w. Tail and brake light (twin) 8/23w. Trafficators, 23w.
TRANSMISSION: Clutch, wet multi plate (8 friction plates, 7 steel). Primary drive by helical cut gear, taken from crankshaft between right and central crankshaft sections. Gearbox, 5-speed, left hand side operation, one down four up. Overall ratios: 1st, 14.92:1; 2nd, 9.09; 3rd, 7.14; 4th, 5.89; 5th (top), 4.48.
SUSPENSION: Front, oil dampened telefork. Rear, pivoted swing arm, hydraulic damping, 5-way adjustable for load.
BRAKES: Front, twin side 200mm tls. Rear, 180mm sls.
DIMENSIONS: Length, 87.2 inches. Width, 34 inches. Height, 44.3 inches. Wheelbase, 57.8 inches. Ground clearance, 5.5 inches. Dry weight (claimed), 482lb.
TYRES: Front, 3.25 × 19. Rear, 4.00 × 18.
FRAME: Duplex full cradle loop, with additional beam from rear down tubes to steering head.
PRICE: £766.50



SUZUKI 380 550 750 TRIPLES

Motorcyclist Comparison Test by Tony Murphy

There was a time when the American rider had a choice of about three touring machines; but these days he has a choice of three from each of the large manufacturers. Honda has a trio of four-cylinder-powered tourers; Kawasaki has no less than four, three two-stroke triples and a four-stroke four. Suzuki, not to be outdone by its competition, got in the act in 1972 with its own three-cylinder threesome; a 380, 550 and water-cooled 750. For '73 they've retained the basic machine layout, updating it with cosmetic changes and the addition of disc brakes. We've already compared what Honda and Kawasaki have to offer in the small, medium and large street/touring capacities, now it's Suzuki's turn for the scrutiny, comparison and opinion that may answer the inevitable question a prospective buyer will ask, "Which one do I need?"

The three-cylinder two-cycle concept is a good one, pioneered in two-stroke tourers by Kawasaki, but closely followed by the water-cooled 750cc Suzuki. For smooth power flow and vibration-free running it can't be topped. With three cylinders to work with, the engine firing impulses can be equally spaced around the 360 degrees of crankshaft rotation. With a firing impulse every 120 degrees, one cylinder is hardly done with its power stroke when another one starts. This overlapping of the engine's power strokes contributes to the overall smoothness of all the Suzukis.

While the choice of three cylinders is pretty easy to analyze, not so the displacements of the smaller two machines. Why a 380cc and 550cc machine? Is it an attempt to get a slight displacement edge within the 350 and 500cc categories? Surely at one time someone at Suzuki had to make the decision and when he proposed a 380 and a 550 someone must have questioned why. We asked but got no satisfactory answer. The initial explanation was that the engines were three singles put together. Three 125's for the 380 and three 185's for the 550. Though it sounds good, the bore and stroke are different in both cases. Perhaps we'll never know.

Whatever the reason, the 380 and 550 are strikingly similar in external appearance, causing one to take a second look to be sure which is which. The big 750 has a look all its own, having little if anything, other than its four exhaust pipes, to place it in the same family as the smaller machines. Not only does it have a look all its own, but its superior touring-type performance actually qualifies it alone as the true touring machine of the three. The other two fit in a different slot. While the 550 will double as a good tourer, the 380 is best kept away from the open road.

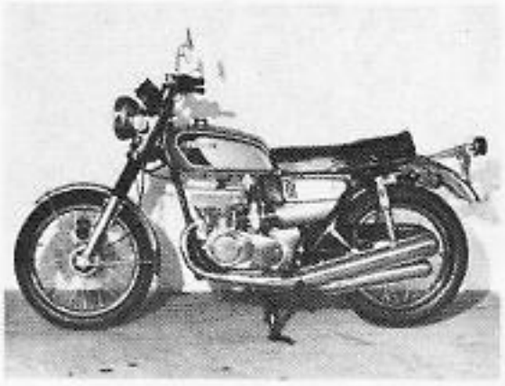
Those are pretty much the overall opinions reached by our test staff after a side-by-side-by-side test, covering some 1500 miles of highway and byway riding. By switching riders every tankful and keeping accurate records of fuel and oil consumption, we found out a great deal about the efficiency, performance and relative comfort of each. Many miles were spent on each one with a passenger, gaining further impressions of two-up suitability. Seating comfort, rear peg vibration are important considerations before any new bike purchase. How the added weight of a passenger affects the performance and handling was another area of interest to us since we'd previously experienced several rocketships that turned into pussycats once another 170 pounds was added to the weight. The 380 and 550 had a very noticeable drop in performance under such conditions, while the 750 took the added weight in its stride. In fact, a high-gear drag race from 60 mph between the 550 with one 150-pound rider and the 750 with two riders totalling well over 350 pounds came as quite a shock. The 750 just walked away.

But while the 750 shines as a tourer, it lacks the slow speed agility of the smaller two, making in-town riding a full-time job for smaller riders. Its gassed-up weight of 551 pounds and heavy steering keep you on your toes all the time. Much of the weight is in the engine itself, but there have been very few efforts to save weight on the rest of the machine. Unfortunately, in spite of the massiveness of the machine in general, the handling seems to have suffered rather than improved as a result. While the engine is smooth and super powerful, the chassis wiggles and shakes, hanging up on even medium speed corners with one person, and what seems like all the time with two. After watching the flexi-flyer Suzuki racers at Ontario it's a safe bet the chassis for both the racer and the street job were designed by the same engineering team.

But wiggle and shake as it does, the turbine-smooth powerplant is delightful. On the open road there is nothing about the machine's performance that can be faulted. Even on steep grades with two aboard, a twist of the throttle squirts the heaviest load right by any slower vehicles without resorting to a downshift. Even the Suzuki's worst critic must admit that the engine is super.

It should come as no real surprise that Suzuki came up with a water-pumper that worked. They've had a lot of experience with small racing engines that were liquid cooled and managed to win some world championships with them. No doubt many of the pitfalls that one might expect of a new design were made years back, long before they even entertained thoughts of a water-cooled tourer.

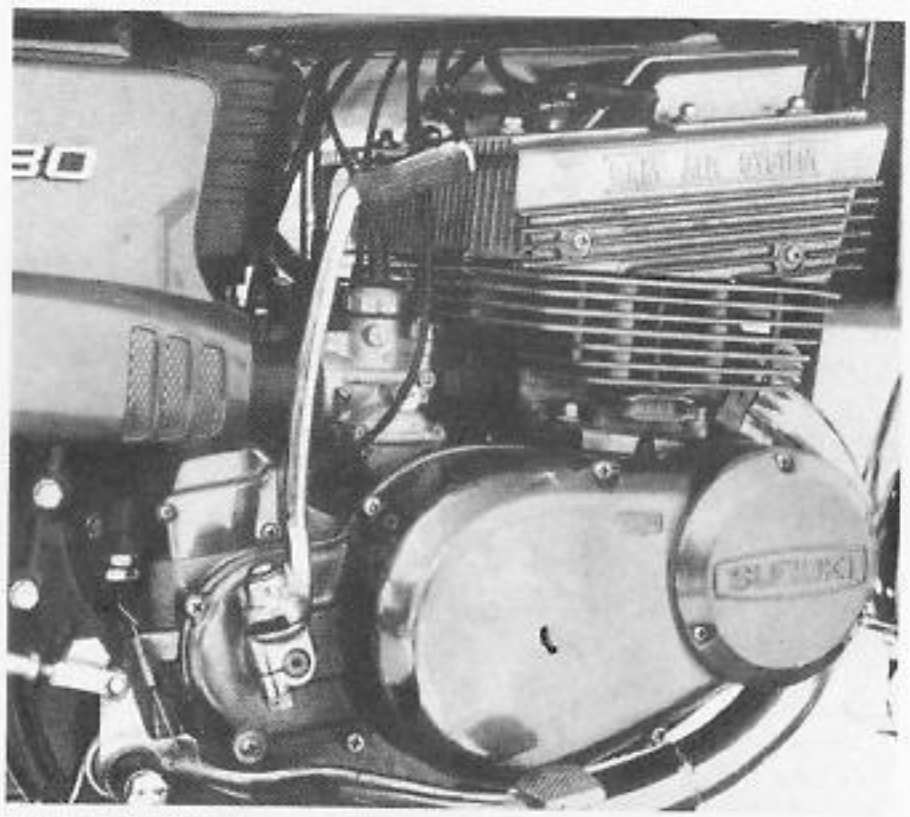




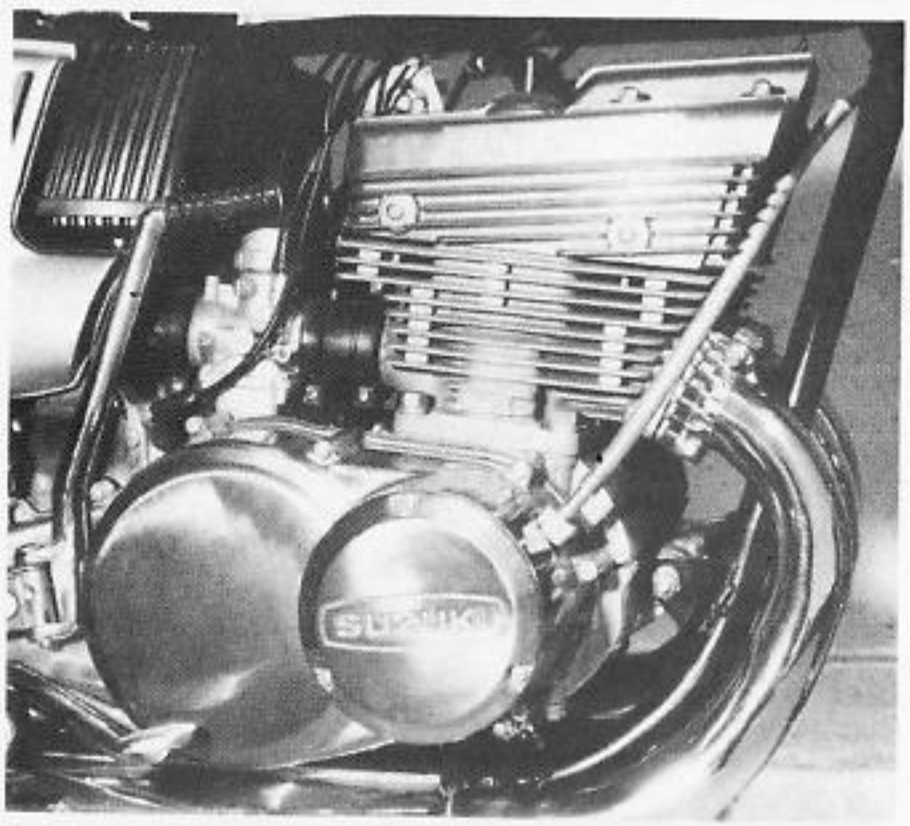
PHOTOGRAPHY BY ERIC RICKMAN

There are big differences other than engine size to help (or confuse) your choice of these three street/tourers.

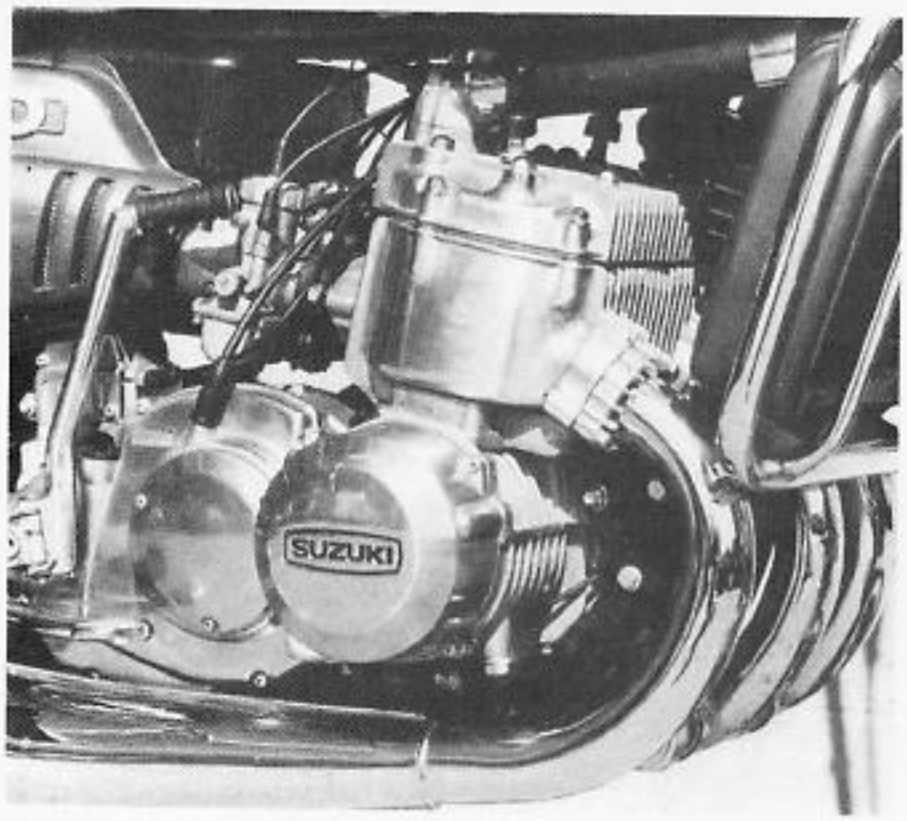




380: *At a glance the engines in the 380 and 550 appear to be identical. However, closer inspection reveals differences in side cover, carbs and cylinder fins.*



550: *Oil pump is located on rear of crankcases just behind kick start lever. Cable out of side cover is for tachometer. Note ram air cover on cylinder head.*



750: *Engine is massive, bears no resemblance to the smaller versions. Sides of cylinder and head are brightly polished.*

Without the cylinders and head in place, the 750cc crankcase assembly is conventional. Conventional, that is, if you don't spot the water pump hanging underneath. It's a mechanical pump driven through a spiral gear by an idler gear off the left side of the crankshaft. The water is pumped through the crankcases to the cylinder block, then through a thermostat opening to the radiator. When the engine is cold, the water bypasses the thermostat and returns directly to the pump. Once engine water temperature reaches 95°C, the bypass valve opens and provides the system with a free flow to the radiator. An electric fan just behind the radiator is automatically activated when engine temperature exceeds 105°C but is otherwise inoperative.

Why water-cooling? Suzuki claims that engine temperatures are reduced by some 30% and therefore closer assembly tolerances are employed. This, they say, results in quieter running, less piston slap and longer engine life. They're right about the first two since the engine noise is as low as anything we've ever tested. As far as longer engine life, only time will tell.

The crankshaft rides in four large main bearings, each with its own rubber seal to prevent leakage from one cylinder to the one next to it. The primary drive helical gear is part of the crankshaft assembly, situated between the right and center cylinder. By placing the gear inboard of the crank end, the clutch assembly that it drives can also be placed inboard and the rear of the engine can be narrower than one might expect and there is no need for a jackshaft arrangement as used on the almost-as-wide Honda multis. Unfortunately the same pains were not taken with the front of the engine. The generator is mounted on one end of the crankshaft and the ignition system on the other, making the engine one of the widest ever made, rivaling a BMW for overall width.

The five-speed, start-in-gear transmission is, again, conventional, being driven by the multi-plate wet clutch. The internal gear ratios are identical to those of the 550, although the transmissions are not interchangeable. So wide is the power band of the engine that the actual ratios are unimportant since the rider has his choice of two gears for just about every situation.

The transmission also serves to drive the CCI automatic oiling system that provides lubrication for both the crankshaft and cylinders. The pump is mounted atop the crankcases to the rear of the transmission and is driven by a spiral gear on the kickstarter shaft. In addition to the automatic oiling, all three of the Suzukis incorporate an excess-oil recycle system that draws oil accumulated in the crankcase on one

cylinder and forces it into the transfer port of another. There it serves as extra lubrication for that cylinder rather than accumulating in the crankcase where it would ultimately belch out in a cloud of unwanted smoke.

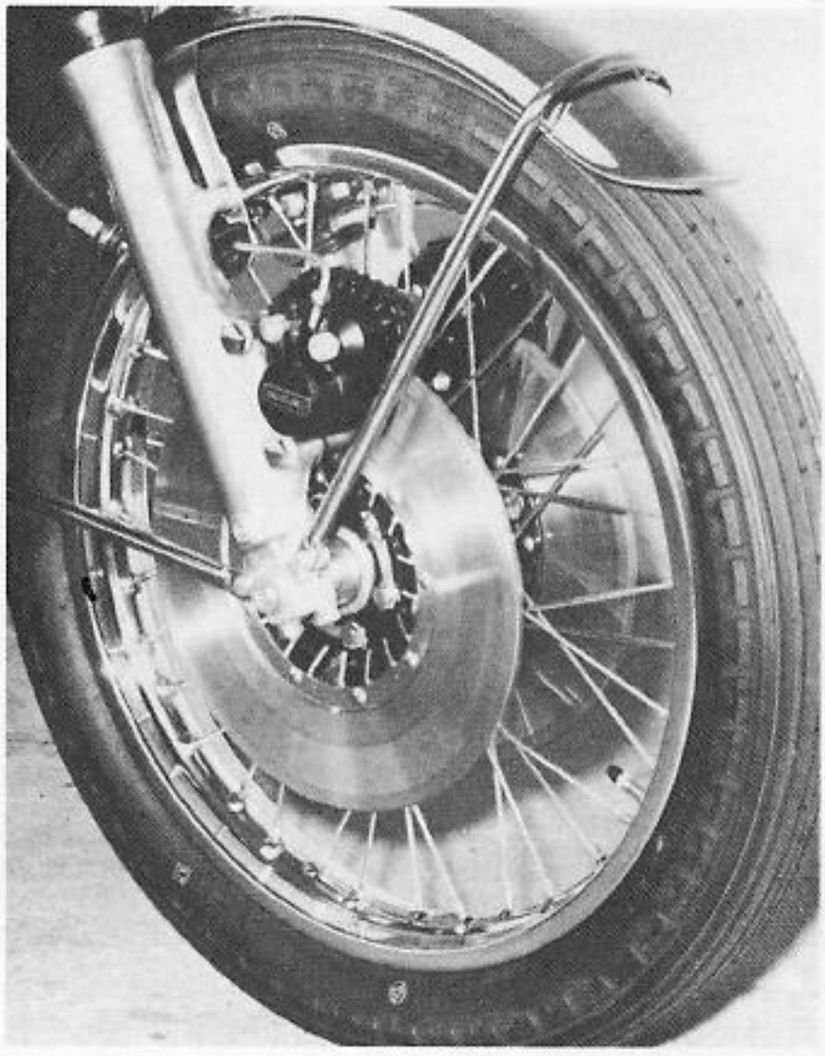
The three cylinders are cast in one block, just like a car. Alloy pistons, each with two rings, ride in cast-in steel sleeves. As is almost 100% common these days, the piston pin is supported on a caged needle bearing. To accommodate large transfer ports, the ports are not on each side of the cylinders as found on a single. Instead, each cylinder sleeve has been rotated approximately 45 degrees to allow the cylinders to be placed closer together. It is interesting to think just how wide the engine might be if this had not been done. As a result, the exhaust ports are not equally spaced across the front of the cylinder, there being a greater distance between the right exhaust and the center than there is between the center and the left. This is not the case with the intakes since they are situated below the level of the transfer ports. Three 32mm Mikunis are equally spaced, joined by a rubber boot arrangement that feeds them from the air cleaner.

Like the cylinder, the cylinder head is a one-piece alloy casting, incorporating the thermostat housing. The absence of finning is a little strange to look at in the beginning but one gets used to it. Each end of the cylinder and head are brightly polished with small non-essential fins in the front and back.

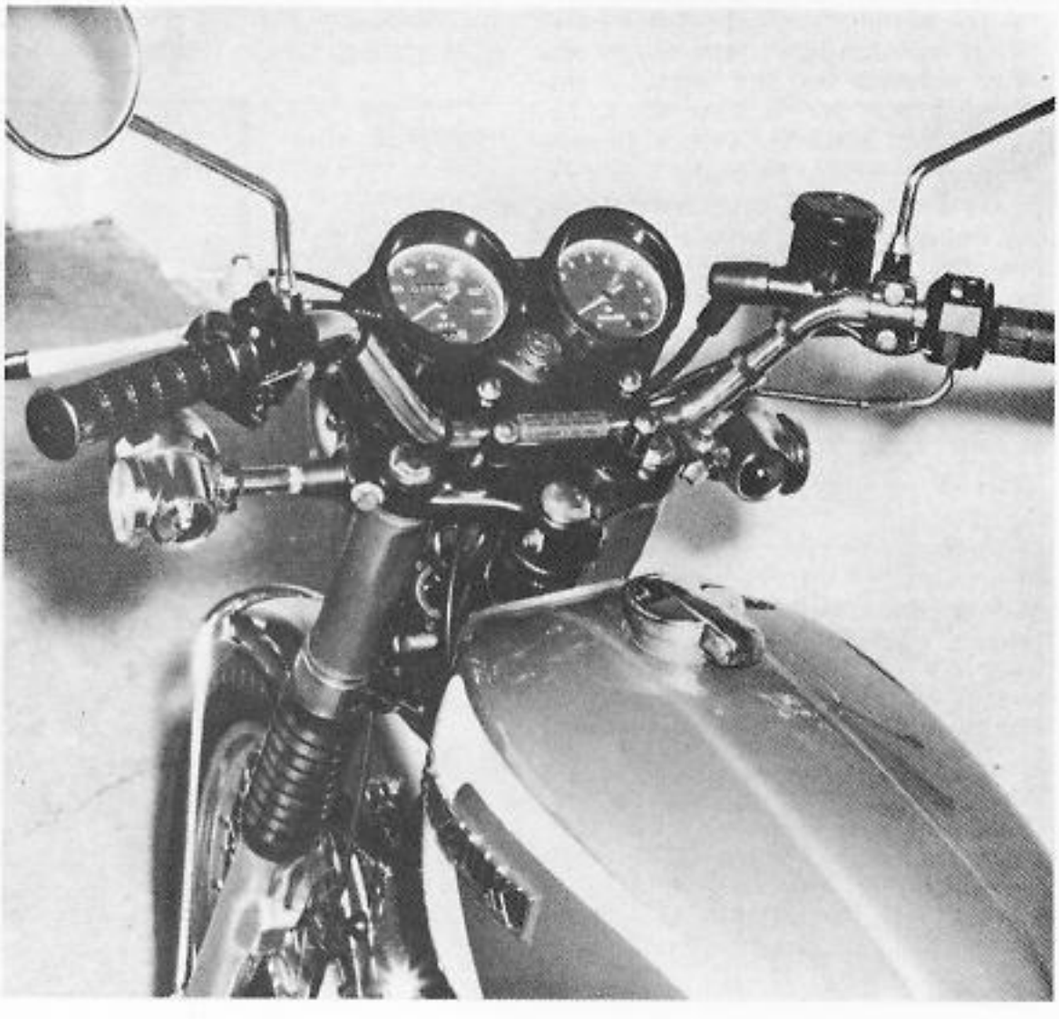
The engine assembly is rubber-mounted in the large double downtube frame to further eliminate vibration. How well the rubber works can be observed at idle when the engine is wobbling around in the frame and yet not even a tingle can be felt in the bars or footpegs. Once off idle the engine settles down but it could well be that the rubber mounts contribute to some of the machine's peculiarities.

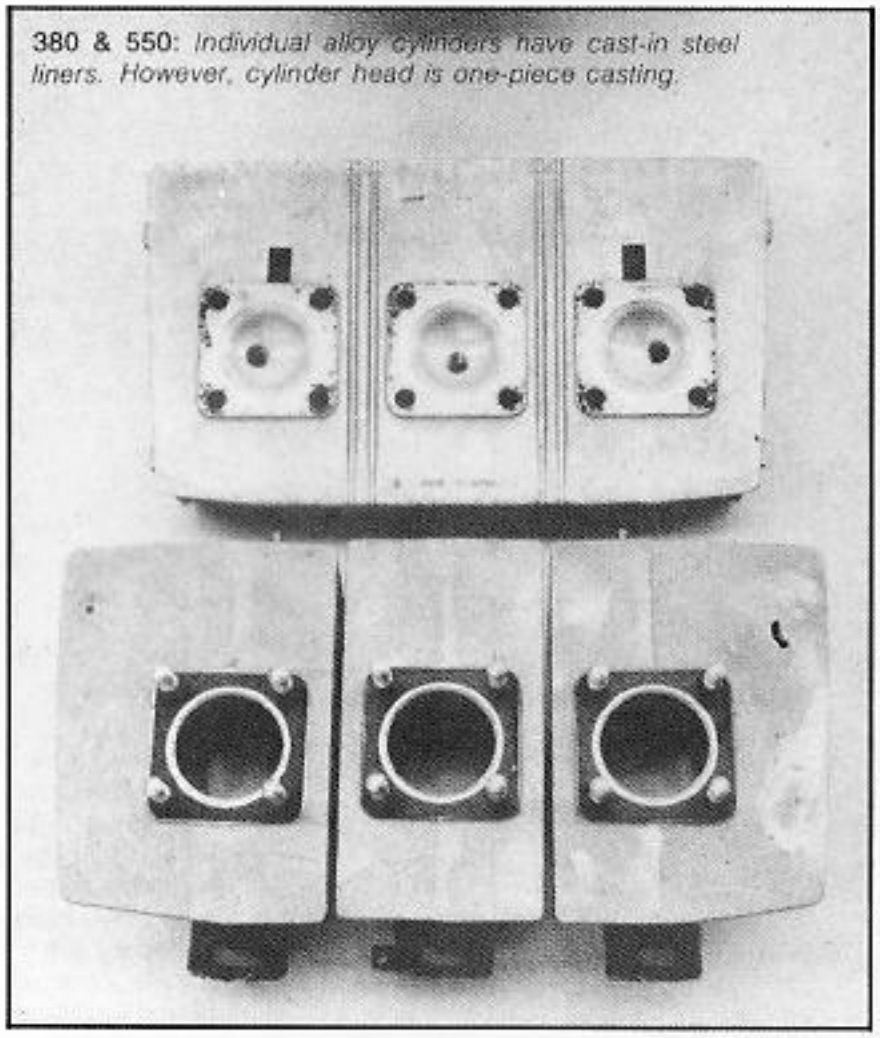
Robust it may be, but for some reason, or a combination of many reasons, it does not handle if the rider is in a hurry. Because there are four massive exhaust pipes and mufflers hung beneath the machine, items like the side and center stand are so close to the ground that they scrape at even the most conservative angle of lean. The machine is so wide and low that it can be ridden up to a curb and just leaned against it without the need to use either stand.

The forks and rear suspension offer about the same level of efficiency as the frame when the machine is ridden hard. Cruised at normal touring speeds on a black top road the ride is plush and comfortable, but get on a cement slab highway and both ends stop working. The slight variation in the height of the slabs is not enough to move either the forks or the rear shocks and as a result each transition jolts the rider through both the bars and the pegs. Such a suspension system is not uncommon these days, particularly among the Japanese machines, but since several other road machines don't suffer from it there is no reason that it can't be corrected.

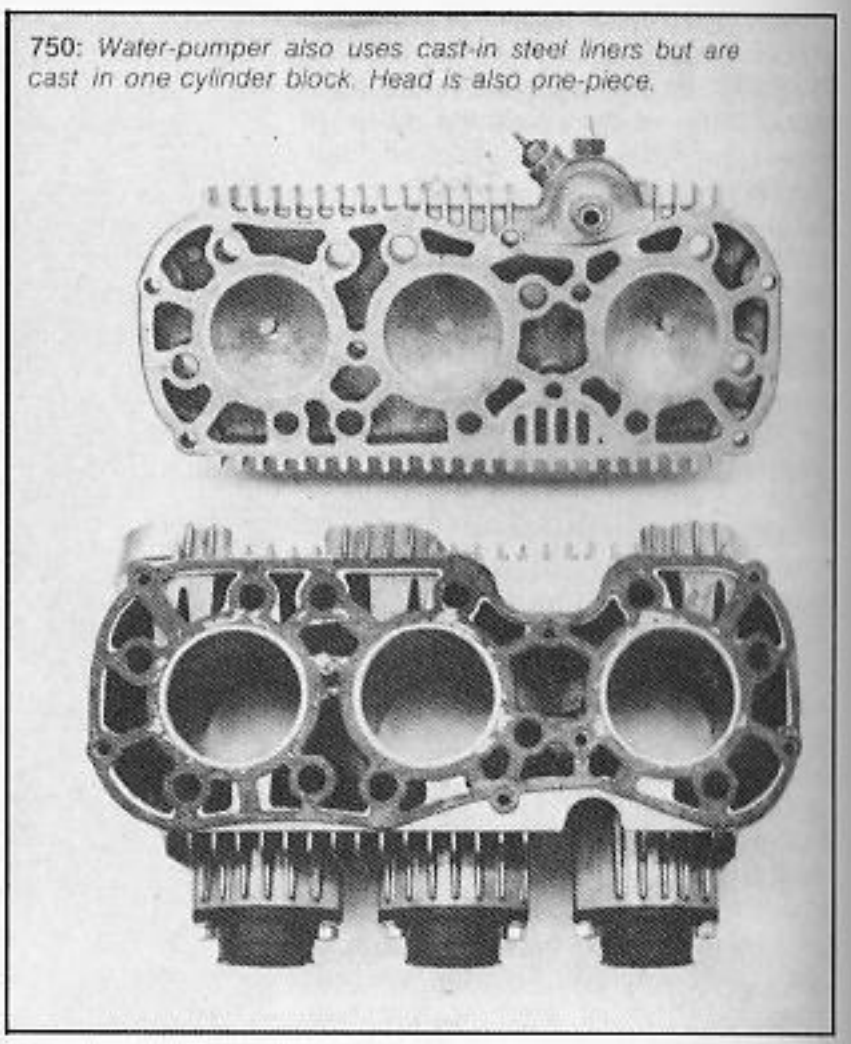


Left: *Double discs on 750 are a big improvement over earlier drums. The 380 and 550 use a single disc setup.*
Below: *Instruments on all three are first rate, have warning lights for high beam and neutral. Turn signal and ignition switch in middle.*





380 & 550: *Individual alloy cylinders have cast-in steel liners. However, cylinder head is one-piece casting.*



750: *Water-pumper also uses cast-in steel liners but are cast in one cylinder block. Head is also one-piece.*

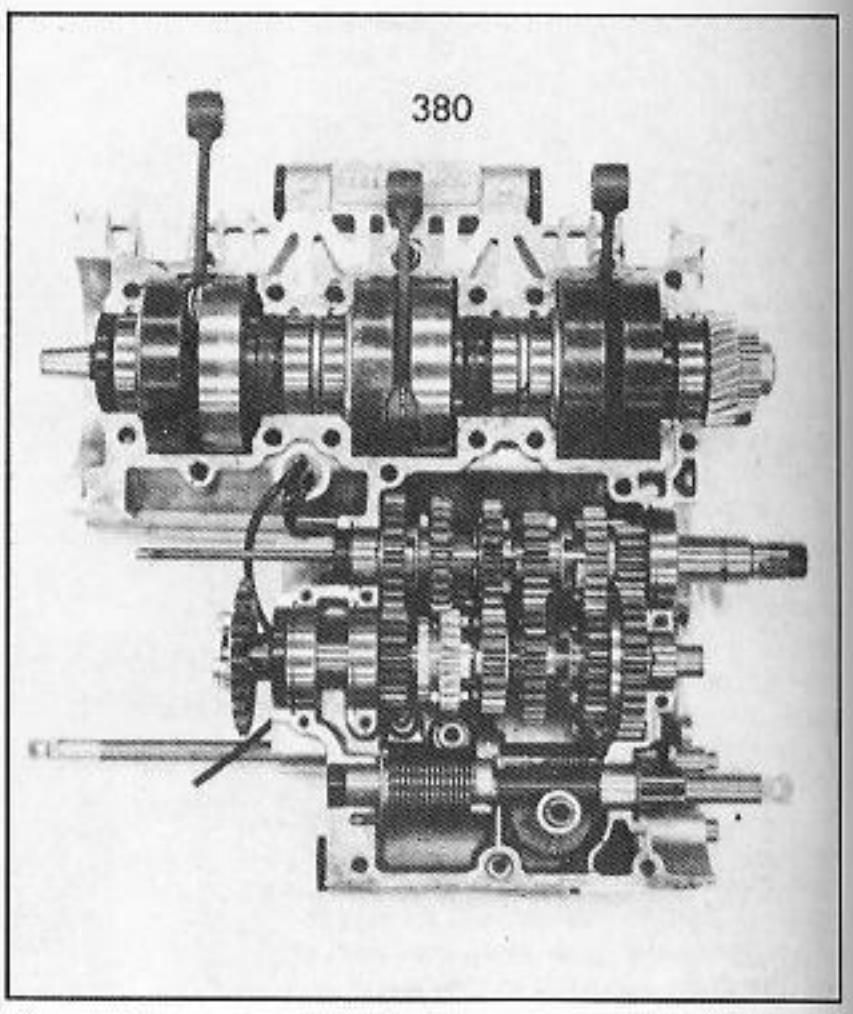
All three of our test machines were actually 1972 models since the first batch of '73's had not yet arrived from Japan. Suzuki assured us that mechanically the new ones would be just like the old ones with the exception of disc brakes on the front wheels so all of our impressions were gained on a trio of new '72's. Before the test's conclusion we had an opportunity to spend a day riding three disc brake versions and satisfied ourselves that the engines, transmissions and chassis were the same. The brakes, however, were a tremendous improvement. Particularly in view of the fact that the drum versions on the earlier machines were next to useless after several hard stops. The discs were tremendous, providing positive, fade-free stopping no matter how hard or how often they were used.

As we said earlier, the 750 is the true tourer. Consequently, we tackled it first and minimized direct comparisons with either the 380 or 550 because they are out of a different mold. However, their similarity does enable some comparison with each other, relating to both touring and around-towning as well as mechanical make up. Before we get to that we'll tell you one thing. If you are looking for a long distance tourer capable of carrying two people and their essentials, don't read on. The 750 is it among the Suzukis, the smaller machines falling far short in many areas.

Since the origin of the 380-550 concept is unexplained, we'll just assume that somebody, somewhere pegged them as being ideal. For fun transportation they weren't far off. There are several areas that will come under criticism, but there are also several areas that will get a great deal of praise. Here goes.

The single most noticeable difference from the 750 is the fact that the smaller versions are air cooled, causing us to wonder why water-cooling is such a bonus on one model but not on the others. Accepting Suzuki's reason of less noise through closer tolerances, it follows that the larger cylinder bore of the 750 requires more piston clearance while the smaller engines can get by with less. At any rate, mechanical engine noise on both the 380 and 550 are well within acceptable limits, but the induction roar is quite noticeable.

Other than the fact that the engines are three-cylinder two-strokes, the design layout is very conventional. Not unlike a twin-cylinder two-stroke with



380: *Major visual difference between 380 and 550 is the six-speeder in the 380 and the smaller crank dimensions.*
550: *Basic design of both is the same. With only five-speed transmission, gears are bigger while they take up same space as six-speed.*
750: *Primary drive is taken from crank between cylinders. This allows clutch to be tucked in behind the widest portion of engine.*

an extra cylinder. The crankshafts have six main bearings, compared to four on the 750, each separated from their respective set of flywheels by a rubber seal. The rods ride on caged needle bearings on a straight press crankpin. Side-play of the rod is controlled by thrust washers.

Primary drive from the crankshaft is taken off the right side by a set of helical reduction gears. Outboard of the drive on the right side are the ignition points and tachometer drive gear. The left end of the crankshaft drives the alternator. Engine width is kept down on the left but the right side, housing both the primary drive and multi-plate clutch, sticks well out. While the engine width itself does not affect performance it does require that items like the footpegs and rear brake controls be placed farther apart and therefore are more prone to come in contact with the ground, particularly with the weight of two riders. Like the 750, both the 380 and 550 can be leaned against a curb once the side and center stands have been ground off, something that could easily happen to an overexuberant rider.

Topside, there are three individual cylinders, each with a steel liner. The alloy pistons each have two rings and are supported on the connecting rod with a caged needle bearing. Like the 750, the cylinder head on both the 380 and 550 is a one-piece casting with the center cylinder's spark plug dead center in the combustion chamber and the outboard ones a little off center to facilitate removal. A separate bolt-on cover, termed Ram-air induction, sits above the cylinder head with three access holes for the plugs. The squared-off engine shape is becoming Suzuki's trademark and as with the other machines in their line that are using it, it is very attractive.

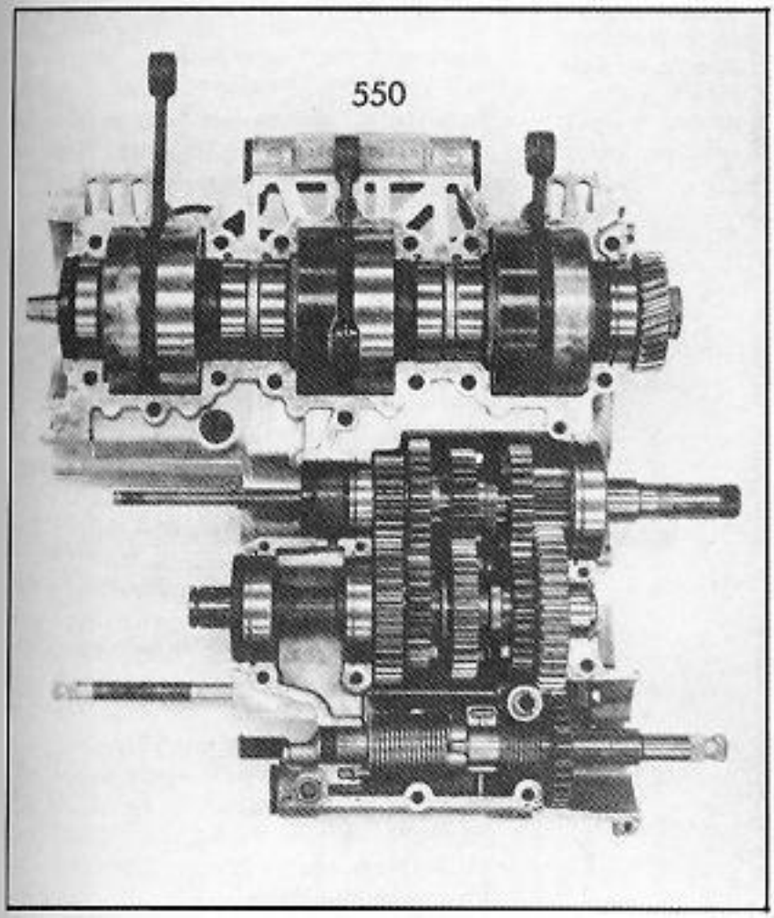
Transmissions differ in that the 380 is a six-speeder and the 550 gets along with five, but in both cases the selection of gear ratios is right on. The combination of ratios and a wide power range from both engines never catches the machine off guard. There's always a smooth flow of power without the big lunge associated with many high-performance two-strokes. Changing gears is easy and always positive, but there's a tremendous clunk that goes with each change out of low gear. We traced it to the very long dog slots that are engaged for second gear, but try as we did it seems impossible to make the low to second gear change on either machine without the big clunk that is felt as well as heard. Though probably not harmful to the transmission, it's annoying to the rider.

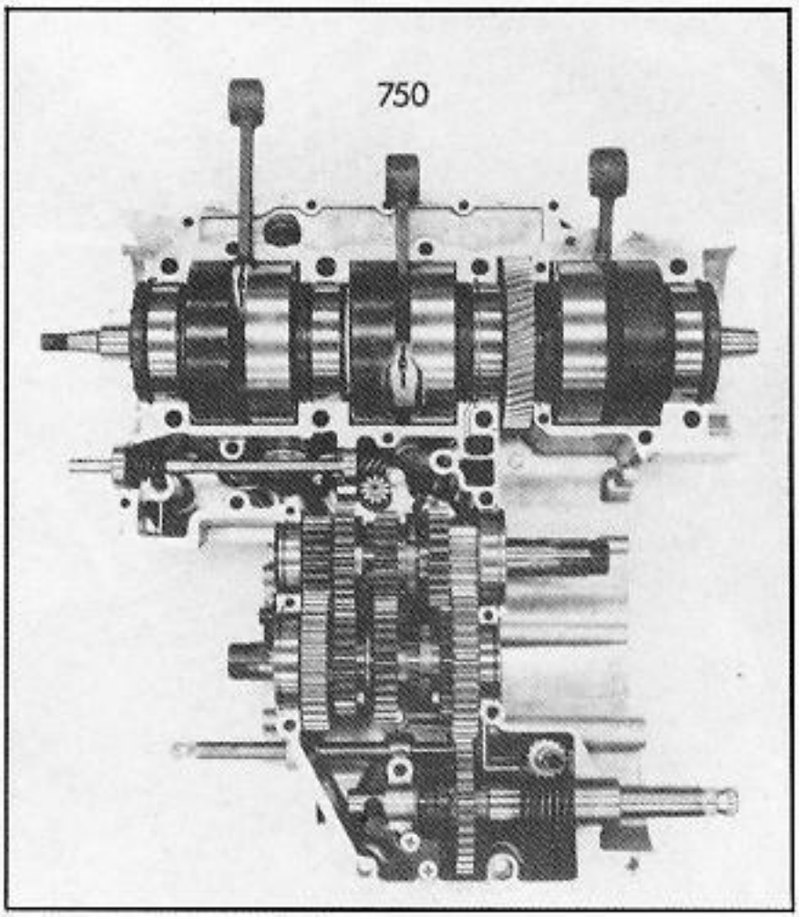
Equally annoying to the rider are some little things like the kickstarter arm resting against the rider's calf, vibrating all the time along with the rubber-mounted engine. Passenger comforts on both the small machines are a world apart from the 750. The rear pegs vibrate enough to put your feet to sleep and the seats are so small that the rider must scoot forward to allow room for his passenger. Little by little the points add up against taking either one on a serious trip with a companion.

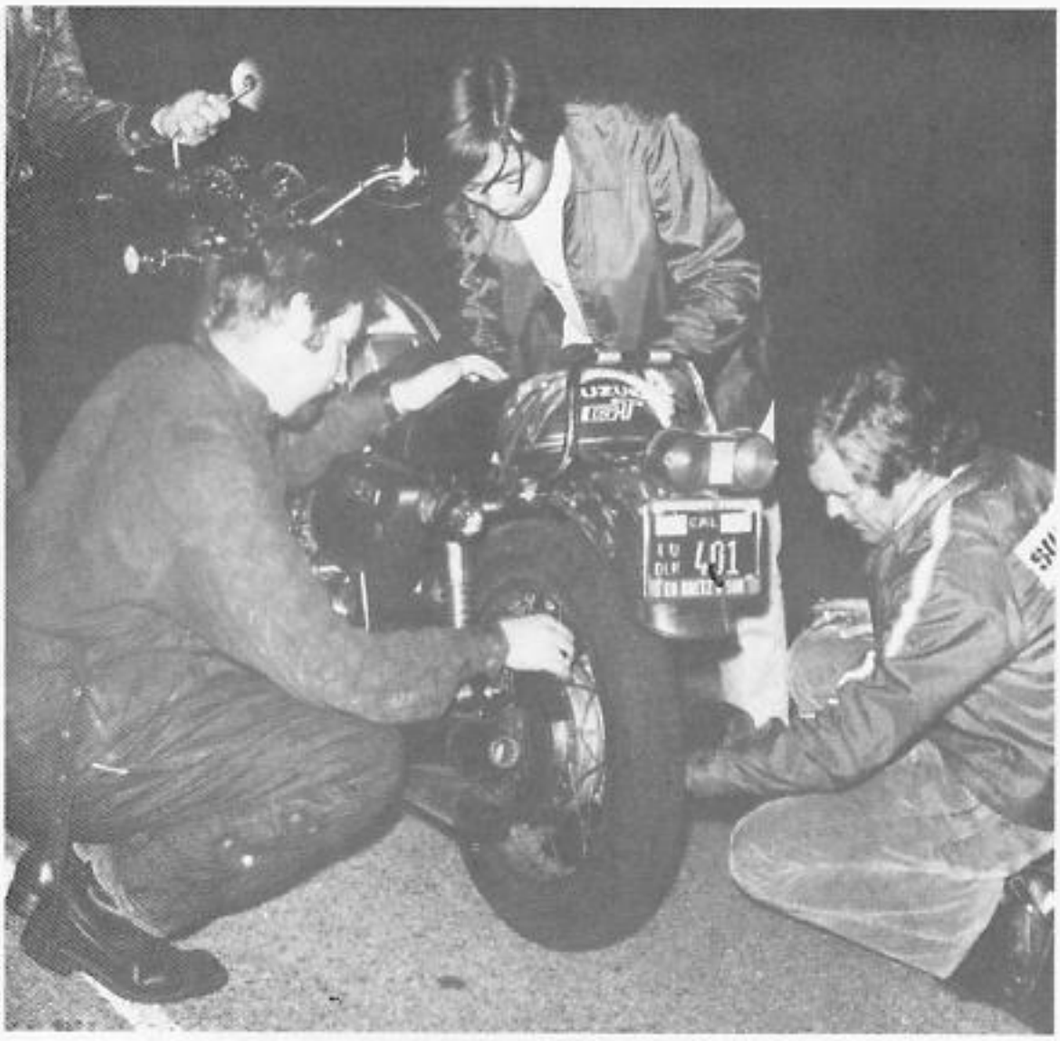
Since that area is somewhat eliminated, we'd better take a long hard look at the alternative; around town riding. Both are nimble in traffic but, although the engines are spirited enough for pseudo racers, the chassis lets them down. Neither machine can be called a good handler when ridden hard strictly because they both scrape on the ground and feel like they have a hinge in the middle. Arguments that a street machine is not intended to be ridden fast enough to scrape things can easily be countered by pointing out the fact that the engines are touted as being powerful, which they are, and performance is judged by how fast each will go. In this case Suzuki claims over 100 mph for each of them, a figure that we know is accurate. If such is the case, the chassis should be up to taking bike and rider around corners as well as down a straight stretch of road. In an emergency situation, the ability to lean the machine over may be more important than its ability to stop, something that both do extremely well with the front discs, poorly with last year's drums.

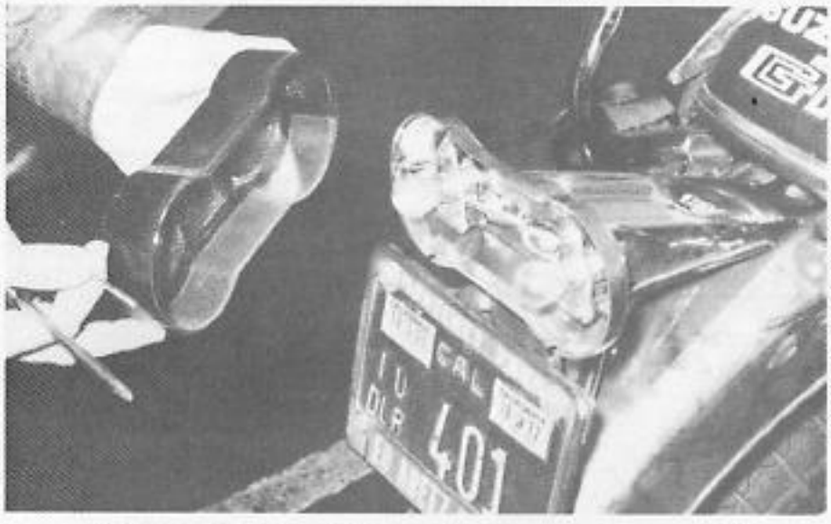
Item by item there are few features that have been forgotten on any of the three. Why then has the importance of each item's function been overlooked? The speedometer/tachometer assembly, complete with a water temperature gauge on the 750, is easy to read and very attractive. All the speedos have a resettable trip mileage while the tachometers house warning lights for neutral and high beam. Tucked between the two instruments is the ignition key. Very compact.

Handlebar controls are simple and easy to find. On the left there's a choke lever, horn button and headlight on/off, turn signal and dimmer switch; on the

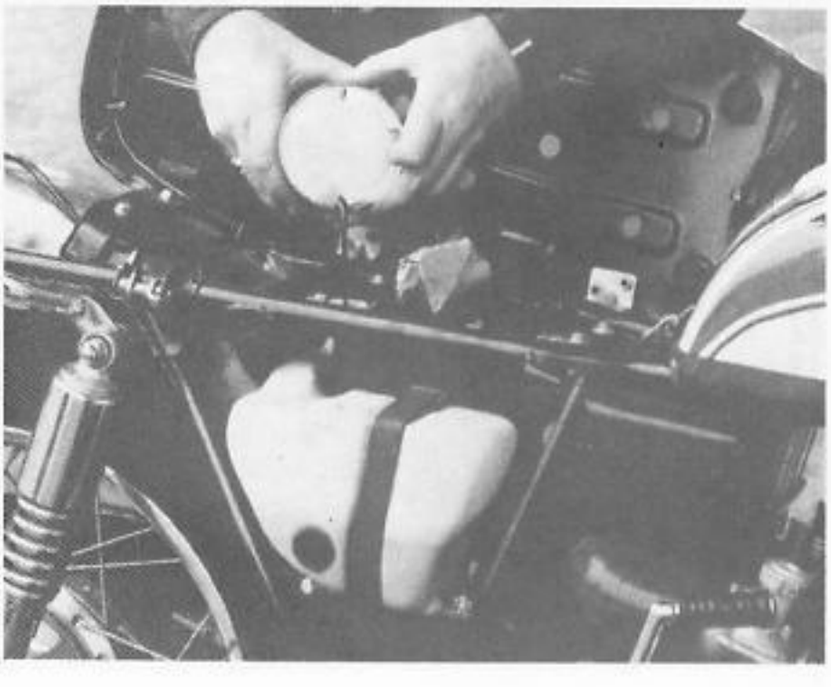








Top: *Testing was not without any incidents. Spokes in rear wheel of 750 got so loose wheel wobbled.* **Left:** *Double-bulb taillight is good feature, industry should take note.* **Bottom:** *Adding oil to any of the three is a chore. Filler neck on oil tank is small, recessed too far.*



right there's the button for the electric starter on the 550 and 750 and the on/off kill button. Unlike some others, the kill button cannot easily be moved accidentally since it must be depressed rather than turned. Again, very compact and very tidy, adding greatly to the quality look found all over the machines.

Safety considerations that are important include a double-bulb taillight that assures the rider of at least some rear illumination should vibration of the rear fender get to the bulb's filaments. The lights on our test machines were on at all times without any failures, attesting to the quality of Japanese electrical equipment, although each test that involves night riding reconfirms or opinion that even the best of lighting systems is really inadequate once off the well-lit streets and highways.

For the money, with any one of the three you get a lot of motorcycle in terms of engineering time and costly extras, there's no disputing that. What you don't get, as we see it, is a motorcycle that is as good as it should be for the amount of time and money Suzuki spent in development. If the chassis had turned out to be as functional as the hard-to-criticize engines, Suzuki would come close to having the world's best motorcycles. In their defense, the same thing can be said for the other Japanese manufacturers as well; outstanding powerplants but only, at best, fair chassis. That's the way we see it.

While we've touched on some engine features and the concepts that go to make up the design, we've stayed away from in-depth specifications and concentrated on road impressions formed by the members of the test staff. The accompanying specification chart will tell you all you want to know about the mechanical dimensions and measurable performances of the dragstrip. We'll tell you this as to the placement of each of the three within the world of motorcycling. The 380 is cute, lively and would be right at home as an around towner. The 550 has more muscle and can make do as a touring machine but would probably make the serious tourer start shopping for a more suitable mount after one long trip. It too, is an in-town runabout that has excellent engine performance. The big daddy, the 750, is strictly a tourer, and a good one if you heed the caution of not trying to play racer. It is more at home on the open road with two aboard than most anything we've tested. Last year when the ads said Suzuki was ready to take on the country, the 750 was the one they were talking about. This year their battle song could well apply to the 380 and 550 if you intend to emulate Dick Mann or Mark Brelsford. "Look out 1973! Here comes Suzuki." Put the emphasis on the "look out."

Suzuki GT380 GT550 GT750 Comparison

	380	550	750
Suggested list price	$985	$1265	$1665
ENGINE			
Type	Vertical 3-cylinder, piston port, 2-stroke	Same	Same
Displacement	371cc	544cc	738cc
Bore x stroke	54 x 54mm	61 x 62mm	70 x 64mm
Claimed hp @ rpm	38 @ 7500	50 @ 6500	67 @ 6500
Claimed torque (ft-lb) @ rpm	28.4 @ 6000	44.1 @ 5000	55.7 @ 5500
Compression ratio	6.7:1	6.8:1	6.7:1
Lubrication system	Oil injection	Same	Same
Cooling system	Air, shrouded head	same as GT380	Water, forced circulation
Carburetors	Three 24mm Mikuni	Three 28mm Mikuni	Three 32mm Mikuni
Air filter	Wet foam	Same as GT380	Paper
Ignition system	Battery/point/coil	Same	Same
Battery	12V 7AH	12V 11AH	12V 14AH
Charging system	Alternator, rectifier	Same	Same
Starting system	Direct kick	Direct electric, indirect kick	Same as GT550
Exhaust system	Four baffled chrome mufflers	Same	Same
DRIVE TRAIN			
Primary	Helical gear	Same	Same
Clutch	Wet, multi-disc	Same	Same
Transmission	6-speed, constant mesh	5-speed, constant mesh	Same as GT550
Shift	Left foot, down-for-low	Same	Same
Final drive	5/8 x 3/8 chain, riveted master link	Same	Same
Ratios : 1			
primary	2.833 (68/24)	2.242 (74/33)	1.673 (82/49)
final	3.000 (42/14)	2.500 (40/16)	3.133 (47/15)
gears			
1	2.333 (28/12)	2.846 (37/13)	2.846 (37/13)
2	1.500 (24/16)	1.736 (33/19)	1.736 (33/19)
3	1.157 (22/19)	1.363 (30/22)	1.363 (30/22)
4	.904 (19/21)	1.125 (27/24)	1.125 (27/24)
5	.782 (18/23)	.923 (24/26)	.923 (24/26)
6	.708 (17/24)	NA	NA
overall			
1	19.82	16.07	14.92
2	12.74	9.74	9.09
3	9.83	7.65	7.14
4	7.68	6.31	5.89
5	6.64	5.18	4.48
6	6.01	NA	NA
CHASSIS AND SUSPENSION			
Frame	Tubular, double cradle, triple backbone	Same	Same
Forks	Telescopic, double damped, internal springs	Same	Same
Rake angle	62°	61°	63°
Trail	4.3 in.	4.6 in.	3.74 in.
Steering angle (L & R)	40°	42°	40°
Turn radius	7.5 ft.	8.2 ft.	8.5 ft.
Rear shocks	Constant rate spring, 5-position adjustment	Same	Same

	380	550	750
Front brakes	Hydraulic, single disc	Same as GT380	Hydraulic, dual disc
Rear brakes	Internal drum, leading/trailing shoe	Same	Same
Tires			
front	3.00 x 19 4PR	3.25 x 19 4PR	Same as GT550
rear	3.00 x 18 4PR	4.00 x 18 4PR	Same as GT550
DIMENSIONS AND CAPACITIES			
Wheelbase	54.5 in.	56.0 in.	57.5 in.
Overall length	83.0 in.	85.0 in.	86.0 in.
Seat height	31.0 in.	32.0 in.	32.0 in.
Peg height	12.0 in.	12.0 in.	12.5 in.
Bar height	42.0 in.	41.5 in.	43.5 in.
Bar width	29.0 in.	29.0 in.	32.0 in.
Ground clearance	5.75 in.	Same	Same
Fuel capacity	4.0 gal.	Same as GT380	4.5 gal.
Engine oil tank	3.2 pt.	Same as GT380	3.8 pt.
Gearbox oil	3.0 pt.	3.2 pt.	4.7 pt.
Cooling system	NA	NA	4.8 quarts
Weight, wet	408 lbs.	480 lbs.	551 lbs.
front/rear	187/221	229/251	262/289
STANDARD EQUIPMENT			
Instruments	0-150 speedometer, quick-reset tripmeter, tachometer	Same as GT380	0-160 speedometer, quick-reset tripmeter, tachometer, water temp gauge
Indicator lights	High beam, neutral, turn signal	Same	Same
Controls			
left hand	Lights, separate high beam switch, turn signal, horn button	Same	Same
right hand	Engine kill switch	Engine kill switch, starter button	Same as GT550
Locks	Ignition, fork, gas cap	Same	Same
Miscellaneous	Center-stand, left hand side-stand, passenger pegs, tool kit	Same	Same
Colors	Canyon Red, Coronado Blue	Lime Green, Hermosa Blue	Royal Red, Royal Blue
Warranty	12 month/12,000 mile	Same	Same
PERFORMANCE			
Gas mileage range under varying conditions	30-53 mpg	35-57 mpg	35-49 mpg
Oil mileage	120 mi/qt	181 mi/qt	304 mi/qt
True speed			
@ 45 mph indicated	41.25	42.25	41.46
@ 60 mph indicated	56.81	57.17	54.87
@ 80 mph indicated	74.68	79.85	75.12
Best standing ¼-mile	15.22-sec, 86.53 mph	14.68-sec, 88.14 mph	14.35-sec, 91.00 mph
Stopping distance (1972 model drum brakes)			
from 30 mph	26.50 ft.	26.00 ft.	30.75 ft.
from 60 mph	126.50 ft.	113.25 ft.	112.25 ft.



SUZUKI GT-750K

With its new twin-disc brake, the Suzuki 750 can outstop all the Superbikes. But the best part of this machine is its water-cooled engine.

• Suzuki's big water-cooled 750 triple is now in its second year of production and though still somewhat schizophrenic in its underlying character, the bike is much better in one vital area than when first introduced. In addition to the customary second-year detail improvements, the Suzuki has acquired a massive dual-disc front brake, which moves it ahead of the whole Superbike class in terms of stopping power. There is little doubt that the Suzuki 750's engine has the potential to do the same thing for the bike's sheer straight-line speed, but that hasn't been done. The Suzuki wavers midway between conforming more closely with the image projected by its roadracing counterpart, and a more sedate kinship with the milder BMWs and H-D's Electra Glide.

There's nothing wavering in the solution applied to the braking problem encountered in the original 750, which had a front brake that should have been strong enough but wasn't. Dual drums (back to back) and four shoes inside the Suzuki's front wheel lent it a very racing-bike appearance, but all this drum and lining proved unequal to stopping 700-plus pounds of machinery and rider. That's not really surprising. If you consider the load on the brakes in terms of pounds/foot/second you will see that the 700-pound tourer works its brakes as hard in hauling down from 60 mph as a 350 pound-roadracer stopping from twice that speed. In any case, the dual drum brake wasn't up to the load, so Suzuki, contemptuous of half-measures, replaced it with a dual disc. The new GT-750K's front hub is flanked by a pair of 295mm discs, each with its own hydraulic caliper, which afford it just about twice the swept area of its nearest competitor.

Given the almost fade-proof nature of disc brakes, there is nothing in mere swept area to bestow superior single-stop braking performance. Other factors must also be present. Like good tires, which the Suzuki has. But very probably the most important is an almost indefinable something called "feel." Virtually all of the current crop of disc brakes are powerful enough to let you lock the front wheel if you give the lever a really hard squeeze. The trick in making very quick stops is to load the bike's front tire until it is on the verge of sliding, which requires extremely close control of braking pressure. Such close control is all but impossible when lock-up pressure occurs near the point of finger-fade. With the Suzuki's abundance of disc and pad areas, and the approximately 65 per cent increase in mechanical advantage between the brake lever and the pads, you don't have to squeeze so hard that sensitivity is lost. As a direct result, the front tire can be loaded in braking right at the limit of adhesion and the bike will average a stunning 0.932G in a stop from 60 mph—or .010G more than the Kawasaki Mach IV, winner of the braking segment of our Superbike Comparison Test.

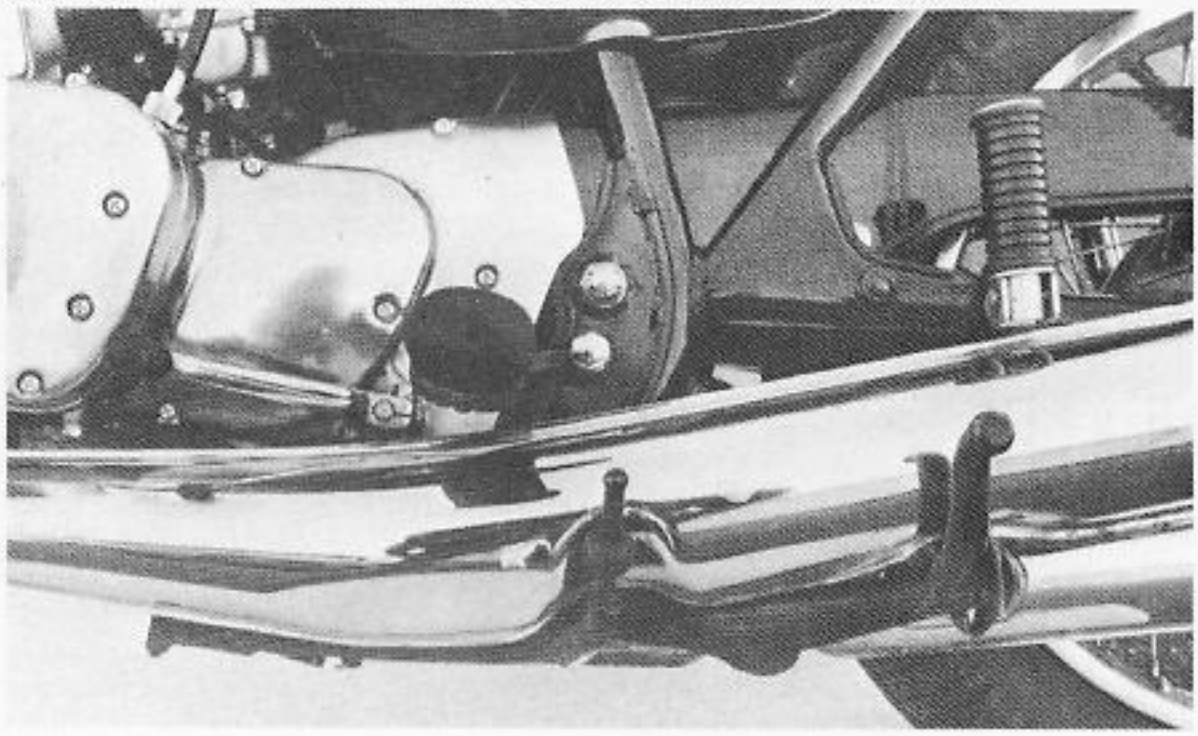
Acceleration and top speed are substantially identical to the performance of the original water-cooled 750 we tested for the February, 1972 issue of *Cycle*. Indeed, the quarter-mile trap speed of 94.04 mph is the same right out to the last digit. The numbers indicate that the GT-750K is slightly slower in elapsed time than the GT-750J but the difference is more apparent than real. As it happens, the Suzuki isn't an easy bike to coax off the mark at the drag strip, tending to either bog down or light its rear tire. We put together a couple of near-perfect starts when we tested the 750J but were unable to find the combination with the GT-750K. That's the reason for the two-tenths difference in quarter-mile time.

No substantive changes have been made in the Suzuki 750's engine. The only difference worth mentioning came at some point



Comfort is the word: the saddle is cushy, the vibration nearly non-existent, the exhaust subdued.

Careful perusal of the centerstand's undercarriage shows scuff marks made by pavement.



during the first year's production, when the plumbing for the "Suzuki Recycle Injection System" was rerouted. Oil tends to drain down from the upper cylinder and collect in a two-stroke engine's crankcase when a bike is parked. To get this oil back up where it belongs and the surplus expelled from the engine as quickly as possible the Suzuki has a drain port, check valve and transfer tube in the base of each crank chamber. Originally there was an incomplete crossfeed arrangement. The center cylinder received puddled oil from both end cylinders and expelled its own surplus into the cylinder at its right, leaving the left-end cylinder dry. Now the feed is from cylinder one to three, two to one and three to two. This system also keeps the crankcases clear when the bike is being ridden slowly, reducing to almost invisible proportions, the characteristic trail of white smoke laid down by two-strokes when they break free of a traffic jam and are blasted back up to speed. You get one big cloud of smoke just after starting the Suzuki, and then thereafter the exhaust stays fairly clear.

Even without the "SRIS" plumbing the Suzuki's oiling system would be complex. Most modern two-stroke engines are fitted with automatic oiling systems, with a variable volume pump metering the flow of oil from a reserve tank and feeding it to either the crankshaft or inlet port—or both, using a pressure-regulated bypass to split the flow. In the Suzuki the oil flow is divided, but not by anything as imprecise as a bypass valve. The GT-750K's oil pump (located above the transmission and driven at $1/72$ crank speed) has entirely separate delivery plungers. The one pumping oil to the crankshaft reaches full-stroke when more than 14 per cent of throttle is applied so its output is virtually a function of engine speed. The plunger delivering oil to a nozzle in each inlet port works at full-stroke only when more than half throttle is applied, so overall oil delivery is proportioned to suit load conditions. The even distribution of oil has been insured by making a multi-port rotary valve part of the pump assembly, and there is a separate feed line to each port and bearing.

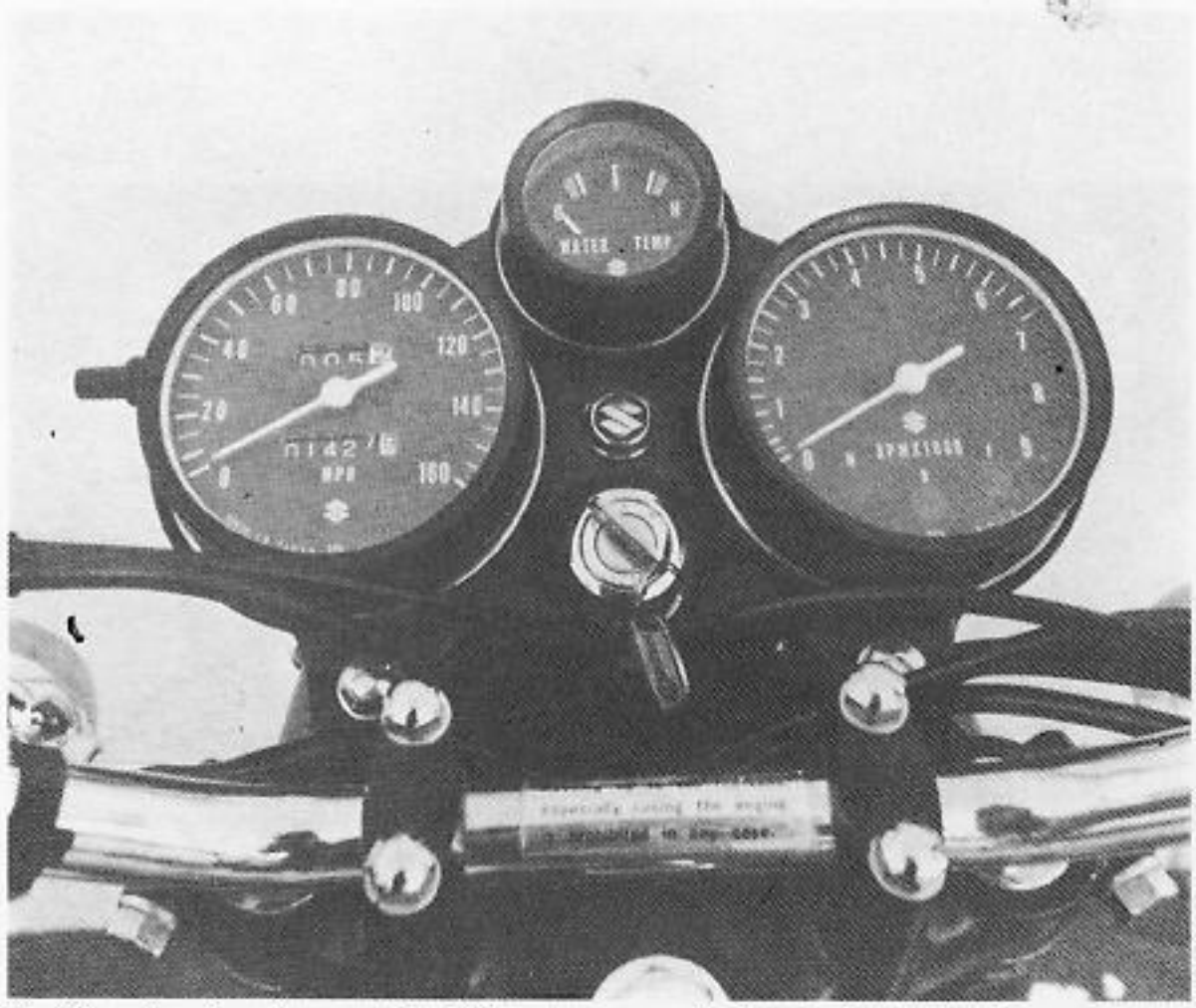
More extraordinary, exertions on the part of the Suzuki's designers are to be seen in its ignition system. Electrically, it is a simple "Kettering" battery/coil/contact breaker arrangement with what amounts to a separate ignition system for each cylinder. This much is standard for all touring two-strokes (if we ignore the magnetically triggered solid-state systems on the big Kawasakis). What is *not* standard is the breaker cam layout. Breaker cams usually are just slipped over an extension on the end of the crankshaft, which is simple but likely to introduce a lot of timing error. Clearance in the mainshaft bearings and the slight flexing of the

crankshaft under running loads shift the ignition timing in unpredictable ways. Timing errors thus introduced are small, but tests have shown that shifts of no more than three degrees either side of the optimum reduce engine output. Suzuki has sidestepped all these problems in the GT-750 by mounting the breaker camshaft in its own precision bearings and driving it through a flange and pin arrangement off the face of the gear that is part of the water-pump drive. In doing this they have isolated the ignition from any disturbances originating with the crankshaft and the spark can be timed very accurately.

Service station attendants are driven crazy by the Suzuki's cooling system. They see the radiator and realize that the engine is water-cooled but can't find the expected fan belt and water pump even when they hunker down for a closer look. Actually there isn't any fan belt to be seen, and the water pump is buried in the base of the engine/transmission casing. A train of gears and shafts takes the drive from the left end of the crankshaft down to the pump impeller. Cast-in passages route the water from an inlet on the front of the engine up through the block and out the cylinderhead. Elaborate seals prevent water from seeping up past the impeller drive shaft to dilute the transmission oil or vice versa, and a drain has been built into the system to divert either water or oil getting past the seals. People who keep at GT-750 a long time and face the possibility of repairs should be pleased to know that the entire pump assembly can be removed without dismantling the engine.

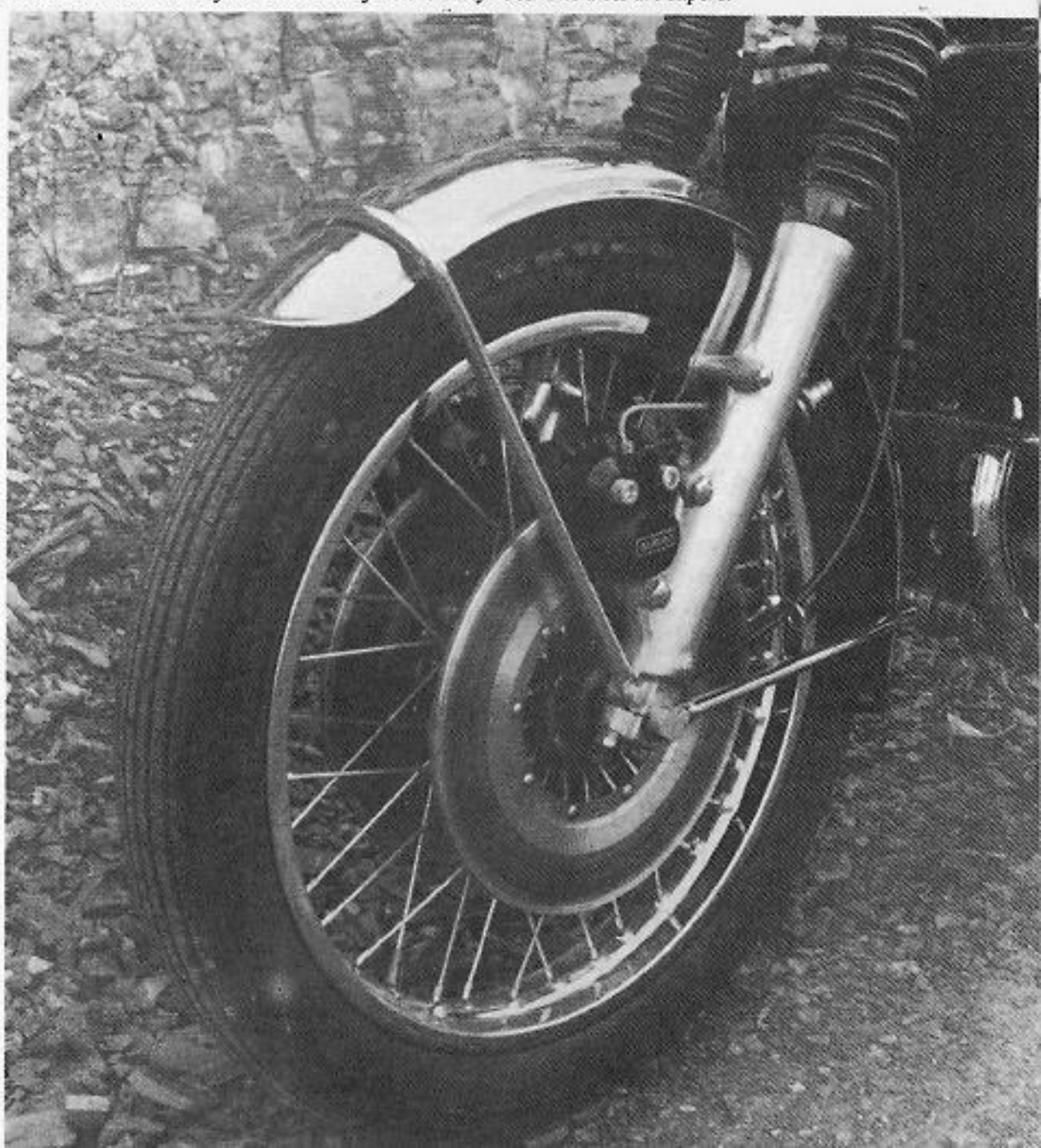
A thermostat is installed in the water outlet neck and it valves water through the radiator or around a bypass to hold the coolant temperature at about 190°F. There also is a thermostatic switch in the system that is supposed to start a small electric fan if the temperature in the system exceeds 220°F. We'll have to take Suzuki's word for that because no combination of loads and road conditions (heat, grades, etc.) we tried would nudge the water temp needle much past the center of the scale. The radiator is very small (9.45 x 17.0 inches and 2.32 inches thick) but it is made of aluminum, which transfers heat efficiently, and it is more than equal to the job it's asked to do.

Suzuki also points out that the aluminum radiator is light. That's not particularly impressive in a motorcycle that is so very heavy in so many other places. Probably the most important reason for having an aluminum radiator on the bike is to avoid electrolytic corrosion. Those who buy this bike should be aware that corrosion inside the engine could become a serious problem unless they give particular and close attention to the owner's-manual instructions regarding coolant. You do not just squirt the radiator

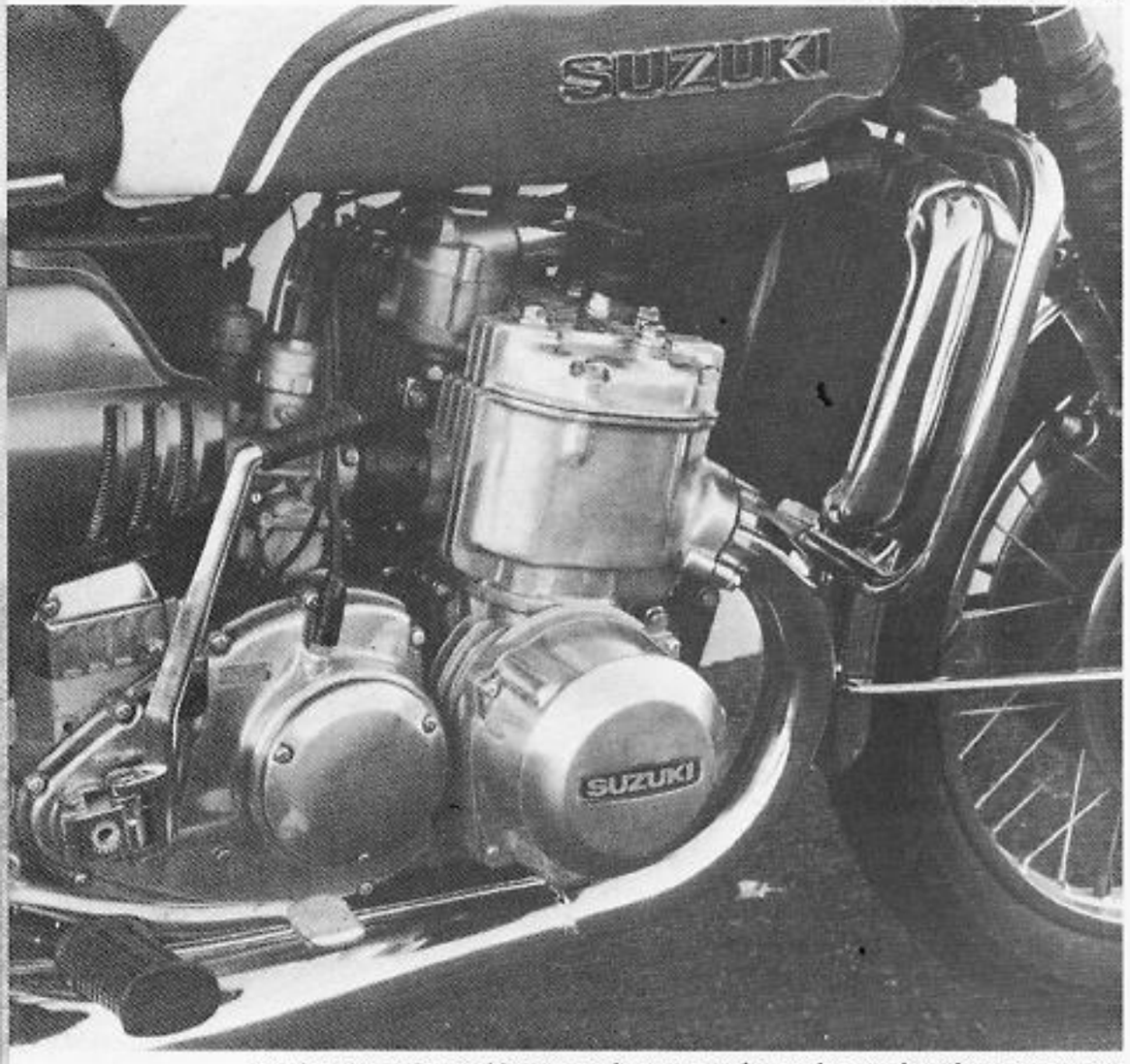


The 160-mph speedometer suggests the 750's pretentions or aspirations; key is at easy reach.

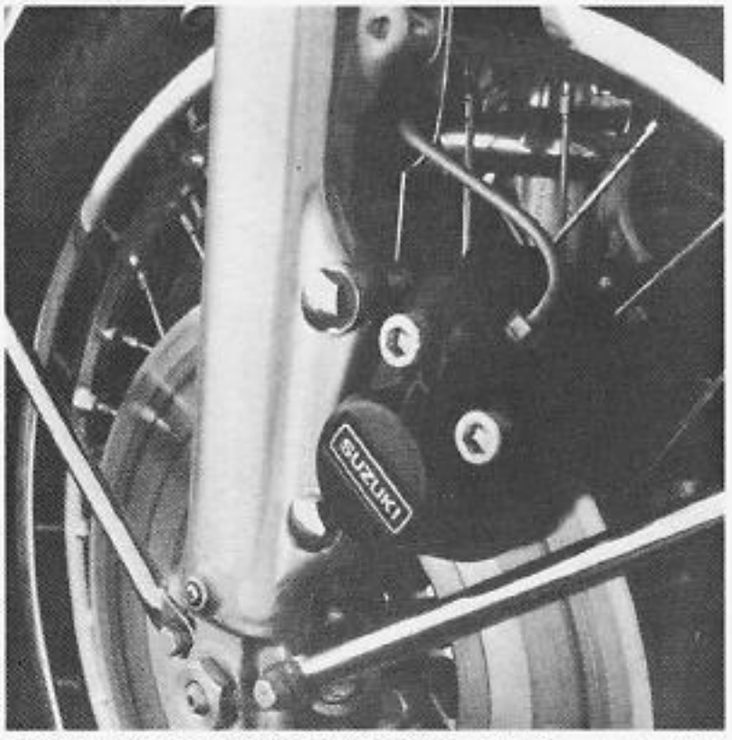
Gone is the weak sister four-shoe brake fitted to early 750s. The discs are superb.



PHOTOGRAPHY: MARC MADOW



It's the most sophiscated big two-stroke: water-cooling and a complex oil injection system.



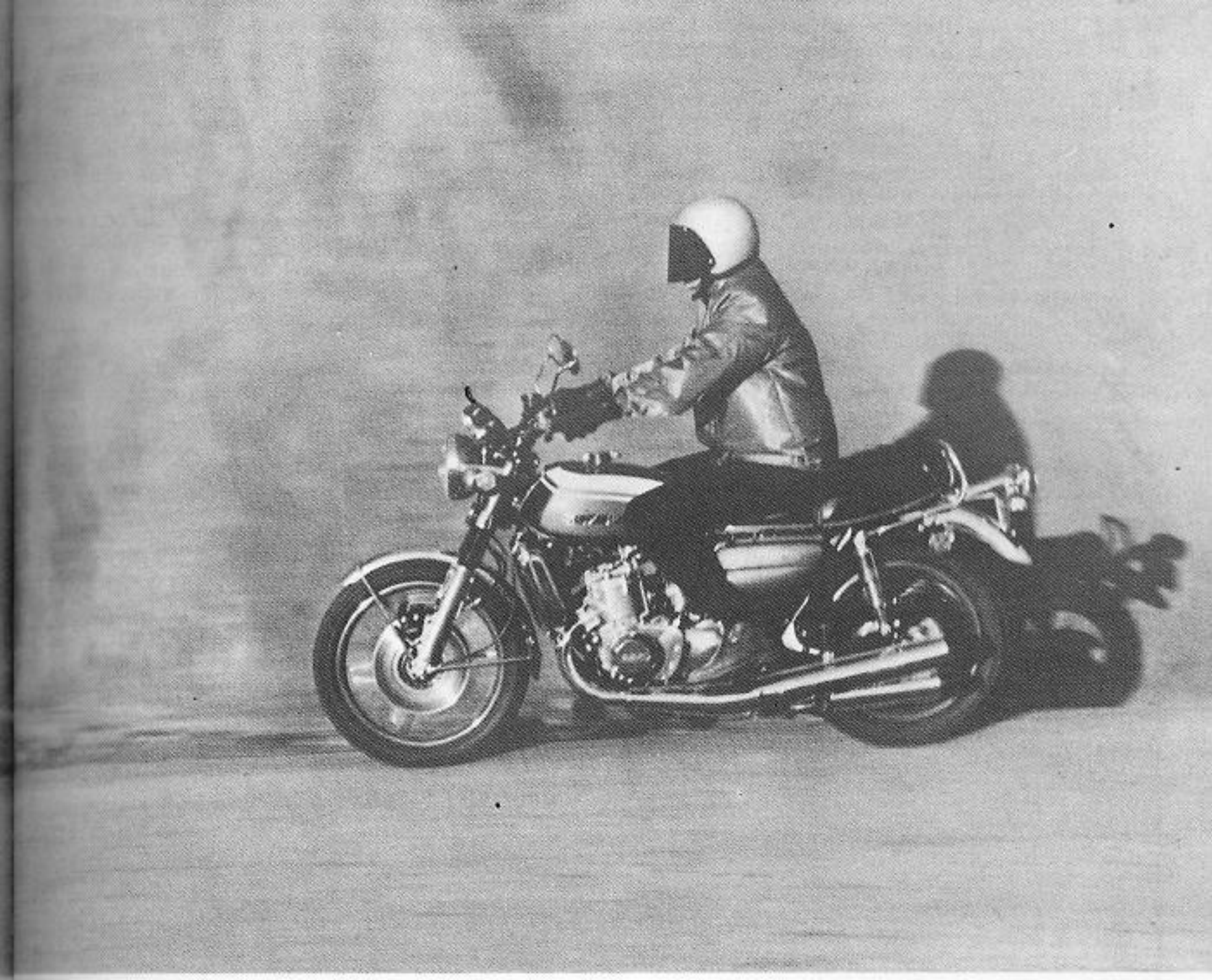
With its massive double-discs, the GT-750K has stopping power superior to the best Superbikes.



Touring along straight up is the big Suzuki's forte. It's

full of water. It is supposed to be filled with a 50-50 mixture of corrosion-inhibiting antifreeze and distilled water, with a dash of anti-leak compound, the whole mixture to be replaced annually. Our experience with two water-cooled Suzukis leads us to think that their cooling systems may be regarded virtually as sealed. You never have to add coolant, so you don't need to worry about finding the right mix of anti-leak, antifreeze and distilled water out in the middle of nowhere. And you won't have to worry about overheating the Suzuki while pulling long grades in hot weather, which is more than may be said about other motorcycles.

As a matter of fact, the Suzuki GT-750K just couldn't be what it is without the water-cooling. Because what it is more than anything else is absolutely tireless, and the cooling system is much of what makes it that way. High speed flogging and low speed slogging are all the same to the Suzuki. The



...ds of torque, and packing double does not lessen its handling.

temperature needle never says anything alarming, and you never hear the tinny clatter of detonation even when you've been doing things that would bring most other two-strokes right to the edge of seizure.

Equally important is that water-cooling stabilizes spark plug temperatures. The owner's manual specifies NGK B-8ES plugs but the workshop manual says the GT-750 should have B-7ES plugs for normal riding, B-6ES (or the equivalent heat range in another brand) if the B-7s show signs of fouling and B-8s only if there is evidence of spark plug overheating. Based on our observation of the plugs in our test bike, which were NGK B-7ES plugs, the colder B-8s would be necessary only for sustained flat-out running across Death Valley in August, and the warmer B-6s beneficial only in thousand-mile slow riding contests. We rode our test bike in traffic and on freeways, doing everything owners would be at all likely to do, without producing a trace of either scorching or fouling the B-7 spark plugs. In contrast, the Suzuki's air-cooled counterparts use spark plugs one grade hotter for normal riding and tend to stagger back and forth between fouling and dread detonation with any substantial departures from the optimum pace.

Like most two-strokes, the GT-750 is a bit limber at low speeds and develops real muscle only when worked within its power band. Where it's different is in having a power band that begins at about 2,000 rpm and stays with you all the way to the 7,000 rpm red-line. The machine as a whole may be slightly confused about its identity but the engine is perfect for touring. Sheer mind-boggling horsepower potential is there of course, only everything has been arranged to give broad range torque as big as all outdoors. From the non-squish combustion chambers to the mild port timings and right out to the exhaust system, the intent is as clear as the efforts have been successful. Torque is what the touring rider needs and torque is what the GT-750 has in abundance. There's a smooth light-finger clutch and a good five-speed transmission, but you can ignore both once you get the big Suzuki rolling. Just click it into fifth and let the engine do all the work. Performance is better when you use the gears for leverage, but the difference certainly is not as great as with most motorcycles.

On the other hand, you'll find the riding rather more pleasant if you do stir the gears. The engine will pull like a bear from 2,000 rpm, but full throttle at those revs also will provoke a fit of shaking. Triples with 120 degree crankpins have a fairly strong longitudinal rocking vibration, and the Suzuki is no exception. It is exceptional in having elastic engine mountings to keep the vibration largely confined to the engine itself

rather than spreading them throughout the motorcycle. These rubber-bushed mountings are very effective in stopping high frequency, low amplitude vibrations; they are less able to cope with the opposite condition. So when you hook on a lot of throttle at low engine speeds, a lot of torque-reaction shaking (low frequency, high amplitude) combines with the normal dynamic imbalances to overwhelm engine-mount elasticity and set up a considerable tremor in the seat, pegs and handlebars. All this can be avoided simply by spinning the engine faster and using less throttle, and at speeds for which the mountings were designed—like steady 70 mph cruising—the water-cooled Suzuki is one of the smoothest motorcycles available anywhere.

In most respects the Suzuki's riding comfort is excellent. For one thing its makers have not succumbed to the morbid fear of throttle sticking that has gripped so many of their contemporaries. Despite having three throttle return springs (one in each carburetor) the bike's twist grip rotates back quite easily, and you can hold it open for hours without becoming conscious of the effort required. In this regard the Suzuki is better than either the Honda or Kawasaki Fours with their vastly more complicated throttle actuating mechanisms. You don't notice things like overanxious return springs when you ride a dealer's demonstrator around the block; they loom large after a few continuous hours in the saddle.

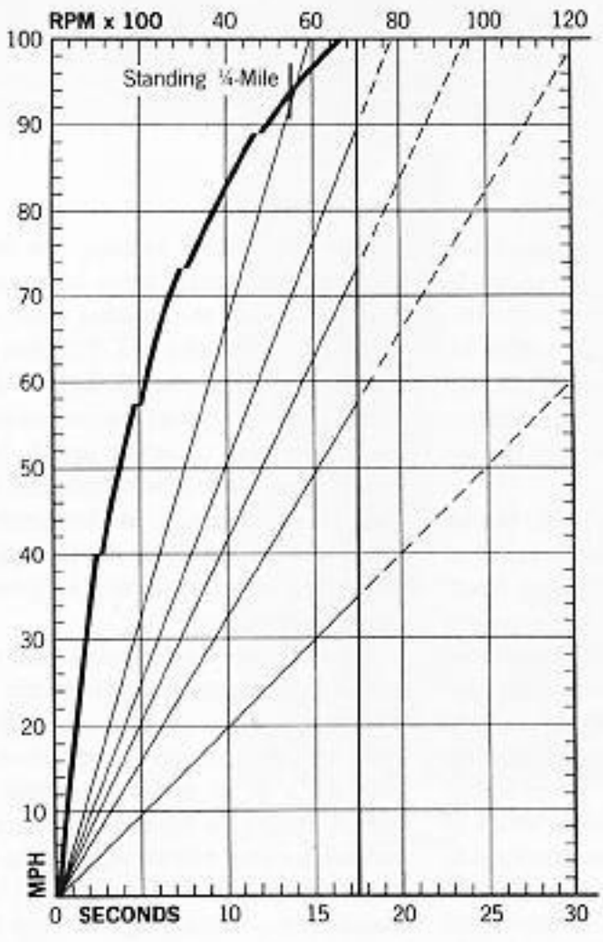
Saddles themselves can be a large pain in a rider's nether regions. The Suzuki's isn't. The saddle is broad, soft and comfortable. It does present a problem for short-legged riders because the bike's seat height makes the ground a tip-toe reach even for tall people and the seat width doesn't help things a bit. Riders of all sizes will find that the kick start lever is positioned just right to be a genuine shin-digger. If you sit well back on the seat and straight-arm the handlebars you'll get your calf back away from the kick starter—but that kind of riding position looks overly dramatic and is decidedly uncomfortable. Otherwise, the riding position is very good. Initially we were sure the handlebars were too low and flat, but we found that even though they feel slightly peculiar you can spend a lot of time with your fingers wrapped around the grips without beginning to notice muscles knotting up in your arms and back.

The GT-750 rides pretty nicely; we think this is more a function of its weight than any suspension refinements. Its mass forces the tires to eat small irregularities in the road; ripples and expansion strips ask for compliance from the springs and shocks, and they can be stubbornly uncooperative. In fact the springs are too stiff and the shocks too limp for the suspension to be really effective in either ride or handling.

Unless Suzuki 750 owners are willing to

(Continued on page 81)





SUZUKI GT-750K

Price, suggested retail	West Coast, POE $1,665
Tire, front	3.25 in. x 19 in.
rear	4.00 in. x 18 in.
Brake, front	11.6 in. x 1.94 (x2) in.
rear	7.03 in. x 1.625 in.
Brake swept area	216.86 sq. in.
Specific brake loading	3.33 lb/sq. in., at test weight
Stopping force in Gs	0.932G
Engine type	Water-cooled two-stroke triple
Bore and stroke	2.75 in. x 2.52 in. 70mm x 64mm
Piston displacement	45.0 cu. in., 738cc
Compression ratio	6.7:1
Carburetion	3; 32mm; Mikuni
Air filtration	Dry treated paper
Ignition	Battery/coil, breaker points
Bhp @ rpm (claimed)	67 @ 6,500 rpm
Mph/1000 rpm, top gear	16.6
Fuel capacity	4.5 gal.
Oil capacity	3.8 pts.
Lighting	12v, 280 watts
Battery	12v, 14 ah
Gear ratios, overall	(1) 14.92 (2) 9.09 (3) 7.14 (4) 5.89 (5) 4.48
Seat height	31.5 in., with rider
Ground clearance	5.5 in., with rider
Curb weight	553 lbs. with full tank of gas
Test weight	723 lbs. with rider
Instruments	Speedometer, Tachometer Water temperature gauge
Sound level, Calif. Std.	85.7 dB(A)
Standing start ¼ mile	13.86 seconds, 94.04 mph

SUZUKI *Continued from page 80*

do a certain amount of major rearranging they should just try to find a softer set of springs and settle for the Ivory Soap ride, because the bike isn't going to whiz corners rapidly even with the best of tires and shocks. There simply isn't enough side clearance. Flop it down into a turn and long before you get to the natural limit of nerve or tire adhesion you'll have the stand striking sparks off the pavement. Turn left and the kickstand scrubs; turn right and the little foot on the centerstand begins to drag. None of this need be reason for concern if you can plan things in advance and kind of sneak up on the critical angle of lean. But may the gods be with you if you're feeling frisky on an unfamiliar road and inadvertently get into a turn a trifle too fast. You then get a beggar's choice: flick the bike over hard in an attempt to make the turn and it will clang hard on the stand, jack the rear wheel off the road and dump you on your ear. Be more gentle, feeling for the stand, and you'll be right off through the bushes. And if you get too frisky in fast turns the limp rear shocks will set up a wallowing and waggling the likes of which most people never experience and you wouldn't want twice.

These difficulties notwithstanding, it is quite capable of motoring along mountain roads at fairly high average speeds. Crank the rear spring cams up to the tightest of the five notches; that provides the most of such cornering clearance as the bike does have, and pump the tires up to 28 psi front and 32 psi rear. You'll still get outcornered by everything but Vincents and Super Glides but you'll be able to reel in a lot of the slack with instant throttle response and the Suzuki's superb brakes. We did a lot of this kind of riding, and found that the Suzuki's thunderous no-shift lunge between corners could be used in combination with a two-finger braking technique very effectively. Two fingers for the throttle and two for the brake lever makes for ultra-smooth transitions between acceleration and braking. The overall effect is to lengthen the straight bits of road, especially at the end when you can brake really hard and carry the braking right into a turn. It's a method that only works when the front brake does, but it's fast and fun. We should mention here that it is good that the front brake is powerful and fade-proof; the rear drum brake isn't, and does a Lamont Cranston on you at the earliest opportunity.

You won't be using that rear brake very vigorously anyway if you've put the GT-750 up on its centerstand under less than ideal conditions. Why? Because you'll be nursing a hernia, that's why. No bike weighing 550 pounds is going to snap up on its stand without a fair amount of help, but there's no convenient grab-handle on the Suzuki and its centerstand is too tall. So the bike needs to be lifted high to get it on the stand and you have to do it just grabbing the thing by the scruff of its neck—so to speak.

No motorcycle in the world carries a passenger with less straining than the GT-750K. When you've already loaded the engine with 720 pounds of bike and rider, another 120 pounds of female companionship isn't going to make a perceptible difference in performance. That big engine will haul 840 pounds just as effortlessly as it manages 720. And adding a passenger doesn't borrow any seat room from the rider or make the handling worse. If anything the Suzuki handles better when it's carrying two people.

Suzuki's stylists needed someone to tell them when they had done enough in embellishing the GT-750K. There are baubles, bangles and furbelows everywhere, as well as entirely too much striping and too many written reminders that the bike is a water-cooled 750 Suzuki. There also are gratuitous touches like the molded-in phoney louvers on the oil pump cover and the plastic chain guard.

Such things tend to divert one's attention from the Suzuki's two best features, which are tremendous never-say-die torque and the ability to run enormous distances at high speeds without strain or excessive fuel consumption. Even while we were doing our best to whip the wheels off the GT-750 it gave us a bit over 34 mpg, and you can get another 10 miles out of each gallon riding more conservatively. And when riding conservatively you can largely ignore the shift lever, using the engine's torque as a substitute for an automatic transmission. Chain life is depressingly brief even when all the manual's admonitions about lubrication and adjustment are followed, but this is typical of heavy and muscular motorcycles and the Suzuki's owner won't have to worry about anything but the chain. The engine and transmission are marvels of strength and reliability.

What we like least about the Suzuki GT-750 is its confusion of identity. The bike stands exactly equidistant between true Superbikes and staid, comfortable tourers and although its tireless reliability is a priceless asset in the latter category, it also has shortcomings there. A softer suspension and slightly more wheel travel are needed to make it your complete tourer. And if it wants to be a Superbike it will have to lose some weight and gain some cornering clearance and peak-rev power, along with more refined suspension damping. The frustrating thing is that only a nudge is needed to move it a long way in either direction. As it stands, it is conspicuously at a point of departure. Give it saddlebags, a windshield and softer springs and it becomes a touring bike. Fiddle the porting, tuck in the pipes and hang on a better set of shocks and the GT-750 would be a Superbike. The effort required to give the bike a more clearly defined identity is so minimal that its owners can do it themselves. We wonder why Suzuki has not saved them the trouble. ◉

Giant Test

2-stroke triples: nasty business

Riding a big triple stroker will make you the meanest speedfreak on the road. *Mark Williams* and *Bill Hayllock* learn why on Kawasaki's 750 H2 and Suzuki's 750 GT.

Photography: *Dick Scott Steward*



GIANT TEST

Kawasaki 750 H2 V Suzuki GT 750

IN THE SPRING of last year a curious atmosphere pervaded the old *Bike* offices, situated as they were in one of the seamier parts of Soho. A disparate crowd of goggle-eyed, down - at - heel freaks, plain clothes lawmen and sleazy suited Chinamen gathered at the end of Gerrard Place whenever a dedicated *Bike* staffer mooched into work around eleven-thirty.

Actually, mooched is hardly the right expletive, for at the time Hero Harrison and myself were disporting ourselves aboard a brace of extremely heavy duty scoots: a Triumph Hurricane and a Kawasaki Mach IV H1. There was a definite sense of tension around at the time for both machines offered an almost overwhelming abundance of horses and a sense of aggressive *elan* that just cried out to be used ... or tamed, godamnit. Every excuse to leave the office was an excuse to get out and incinerate rubber: even in central London you can have lots of laughs with a machine that turns the quarter in just over 12 seconds. Harrison and I let a lot of work hang-fire during the few weeks we had those bikes, a lot of people must've gotten awful aggravated by our continual absence from the office, not least Ms. O'Reilly who in between dealing with angry 'phone calls was wondering just which hospital we were going to end up in.

Reckless behaviour was indeed the order of the day and as long as someone else was paying for the gas, I dug every minute of it. So here I am a year later, drinking Mike Volans' Newcastle Brown up at Silverstone and pretending to be dead nonchalant about his offer of the latest H2 750 Kawa, when I'm already making mental notes about cancelling all sorts of silly business commitments during the fortnight that I'm to be let loose with the thing. As if that ain't enough, ten minutes later Twig's trying to lay Apple Motorcycle's 750 Suzuki demo bike on us. Naturally another 750 Giant Test is in the making, and who am I to repress such a notion?

But understand from the outset that these two bolides, two-stroke triples though they both may be, are birds of very different plumage. The Suzuki is a big, heavy machine with sophisticated engine cooling and electronic circuitry, and very distinct touring pretensions. In many respects it would not be unfair to pit it against a BMW or a Moto Guzzi rather than the nastiest, meanest motorcycle ever to wrench the wrist muscles of the know-it-all biker. Yes, friends, the H2 Mach IV may certainly be a refined version of last season's 750 Kawasaki, but it is still the ultimate machismo street 'cycle.

But *nasty*? *Mean*? Is that any way to describe an item of ironmongery that's taken half a decade to develop and is already selling by the barrowload in the US of A? Surely not. Well, Kawasaki, who I've come to admire more than any other bike builder for that upfront, performance - at - any - cost principle which they seem to ascribe to, are totally honest about the Mach IV's behaviour in their brochure, starting right from paragraph one:

> *"The Kawasaki 750 Mach IV has only one purpose in life; to give you the most exciting and exhilarating performance. It's so quick it demands the razor sharp reactions of an experienced rider. It's a machine you must take seriously."*

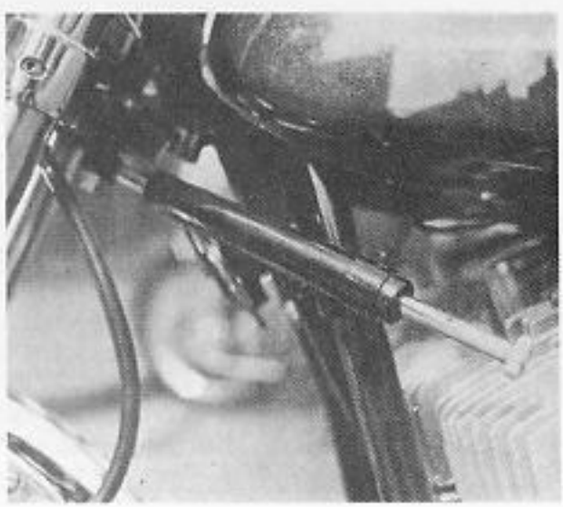
Damn right, you must. If you don't you'll end up in a wooden waistcoat, that's for sure. And all power to Kawasaki Heavy Industries for having the balls to sell a motorcycle on that premise alone.

Like I said, the Suzuki exudes an altogether milder image, but that's not to say it's a pig as our performance figures show. Prior to this test, the only knowledge we had of the standard GT750 came from the lips of some gentlemen from Manchester's 71 M/cycle Club, who invited me along to talk rubbish to 'em one evening. Frightening tales of rear-ends wriggling round corners and ferocious tank slapping at anything above 80. These stories were reinforced by a gentleman in Wales who invited me to autograph his plastered leg a few weeks later. My own experiences with the handling of the smaller Suzuki roadsters — which I've almost universally found to be incredibly soggy — led me to accept these claims as being quite credible.

So it was obviously going to be an interesting Giant Test, if Haylock and yours truly managed to stay in one piece, that is; the total fire breathing ball-buster versus a computerised kettle on wheels.

kawasaki
750 H2





THERE WAS a recent article in the *Guardian* regaling the reader with stirring tales of the RAF's crack Red Arrows aerobatic display squadron. The hack who churned out this particular eulogistic epistle actually went up in one of the lads' Folland Gnats and, upon reflecting on his evidently awesome acrobatic experience, was at great pains to point out that these highly trained, highly paid wallahs were living on a knife-edge throughout their formation flying sequences.

A smile flickered across my face as I read that. If that particular typewriter artist cared to venture on the pillion of the 750 Kawasaki I was riding at the time (well not *actually* at the time, although Martin Harrison tells me that he had time to complete the *Times* crossword whilst braking for traffic lights aboard a certain Russian motorcycle), he would discover that one neither has to be highly trained nor highly paid to live close to instant karma. One merely has to own a Kawasaki!

I mean here is a machine so utterly and completely dedicated to completing the distance from A to B in the fastest posible time, that you're forced to consider whether or not there was some truth in the old Triumph Owner's Club joke about "Kamikaze five-hundreds, ho-ho-ho." This motorcycle is not a toy, either. Instead it is something between the two, a kind of safe way of living dangerously — if you're ready for *that*?

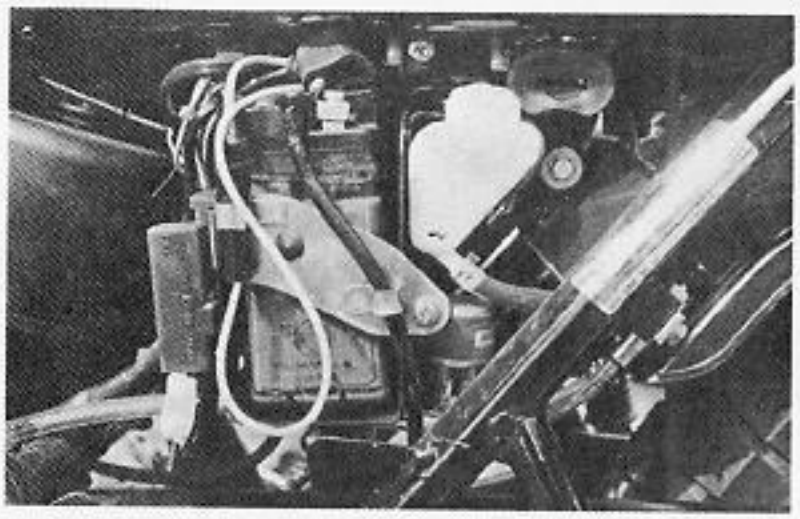
This bike is capable of hauling ass very fast indeed: about 100 miles per hour in 13 seconds capable, in fact. Such acceleration will satisfy even the most mind-wrenched adrenalin addict. It also handles in a manner strange to those bred on British or Italian vehicles, which is not undesirable once mastered. Further, it has sufficient spread of torque — and this is its distinct advantage over the lower capacity Kawas — to enable it to be ridden satisfactorily at low or high engine speeds, a point which makes it a practical machine to own even if a lot of your riding is in urban conditions.

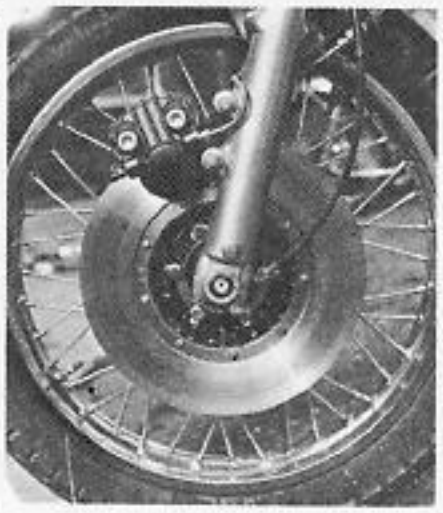
I have prefaced this evaluation with my conclusion because it's pretty pointless to read about the Mach IV unless you appreciate that it is a totally unique machine.

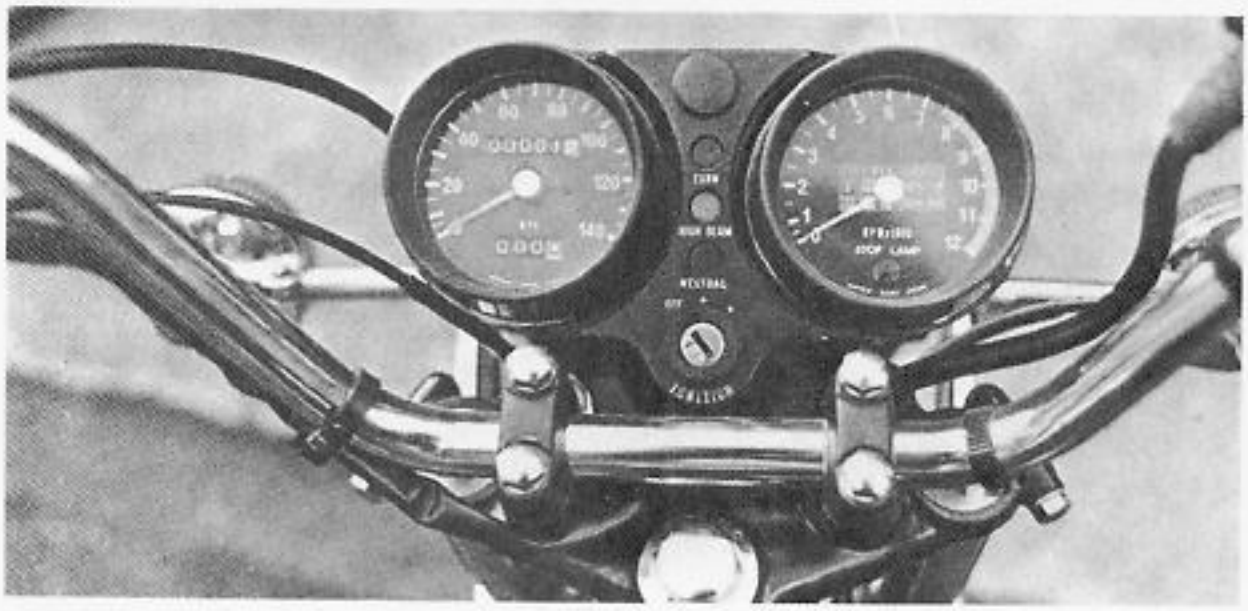
The Mach IV H2 engine differs from its predessor in several ways. New oilways have been drilled in the big-ends to improve lubing, and oil scavenging has been improved with a resultant reduction in exhaust smoke. Finally, it transpires that the clutch friction plates are now concocted from a new mixture which is supposed to reduce slippage — but more on that later.

These factors which are, I suppose, gestures in the direction of legislative sanitation, contrive to lower last year's bhp figure by precisely three ponies. No matter. The engine response is still as swift as ever, requiring a sensitive hand if you intend riding it on the pipe, for there is a strong surge of energy as you reach beyond the 4500 mark. Below that point, power still lurks but it emerges more slowly and is, therefore, well suited to dawdling through heavy traffic. The H2's solid state CDI ignition system ensures a balanced supply of sparks at all engine speeds, and the sparks are fat enough to fire even the most sluggish bunch of hydrocarbons — providing the correct plugs are used. The bike was fitted with Champion UL 17Vs when I collected it but these proved too hot for trouble-free town riding. I then fitted a set of flat-top Champion L-78s (developed, apparently, for two-stroke marine engines) which behaved perfectly under a variety of conditions. A slight mod to the h.t. leads is required to accommodation the L-78s, which feature fixed, rather than screw-on, collars.

Of course despite the engine's low speed capability, its small flywheel bottom end is really there for the benefit of mucho revs. Wind 'er up, bang home the gear driven









Slim Kawasaki (top left) is more nimble through the traffic jams. Hydraulic steering damper (left) takes some of the trauma out of the handling. Chain oiler (top centre) lives with the battery behind the side panel. Notice the small white oil tank, and the plunger behind the frame tube. Single disc brake (top right) works as well as the Suzuki's twin disc unit. Instrument display ain't as mindwarping as the Suzuki's, but still glows like a Christmas tree with all those idiot lights. Compact motor/transmission unit (right) contributes to good power to weight ratio.

multi-plate clutch and whammo, you're off and running. Unfortunately the clutch on this particular test bike, after over 6,000 miles of hard riding in the hands of various impecunious motorcycling journals, was developing a bad case of slipping friction that only new plates would cure. This accounts for performance figures that are slightly less than one might expect them to be.

Clutch action itself is as stiff on the H2 as it was on its predecessor, although I only really found it tiresome after extensive stop-start urban scooting. Like the gearshift pattern — neutral at the bottom, then five up — the heavy clutch is a peculiarity that one presumably learns to live with. 'Course if you're blessed with exceptionally puny wrists, it's not beyond the realms of possibility to engage gear without the benefit of the exotically lined clutch plates. But naturally I wouldn't practice such butchery with a Davick test bike. The gearbox itself feels as though the ratios are fairly closely spaced, and I actually felt first was a bit too high for calm about-town riding . . . but then I didn't do very much *calm* riding.

The motor bopped along faultlessly and all the H2 owner has to do is decide whether he's going to ride it with an iron glove or a limp wrist. There was, however, a modicum of vibration which I understood Kawasaki were supposed to've overcome on the H2 by virtue of rubber engine mountings. They even boast about it in their brochure, but the fact remains that there's a definite tingle in both 'bars and footpegs above 5000/5250 revs. Even on a long (100 mile plus) run it was annoying rather than numbing, but things might be different in winter conditions.

Now the roadholding of Davick's test bike was slightly non-standard inasmuch as they'd fitted an English TT100 to the rear, whilst Japanese rubber shod the front wheel. How much this differs from the stock arrangement I wouldn't like to guess because there have been refinements to the frame geometry over the H1 model which inherently improve the manners of the basic bike. The wheelbase has increased one inch to 56.5 ins., due to alteration in the steering caster angle, which facilitates a reduction in horrorshow tactics when belting through fast corners and also lessening the 750's proclivity for instant wheelies and other such amusing idiosyncracies. We are also told that front and rear suspension components have been uprated, but quite frankly they seem to me about typical for a Jap big bike — just on the hard side of mushy.

Anyroadup, the bike actually *handles!* That is, its cornering abilities match the power characteristics of the machine admirably and leaves it to the rider to judge where the boundaries of the power/handling equation lie. No, I'm not trying to say that the H2 is safe and predictable. Instead I'm endeavouring to point out that as this motorcycle is probably a lot faster than anything most of us have ever ridden, we must appreciate that bounding up to and exiting from corners at speeds faster than we're normally used to means accepting a little less innate security than we demand from slower vehicles. And *that's* what I meant about living on the edge — it's fun when you get used to it.

Fortunately the front disc brake is so good that if you do find yourself trotting into a situation that you're not really sure you can handle, a quick jab on the anchors will bring you down to a reasonable speed in very neat fashion, and in a very short space of time. And this was largely true even on wet roads — how different from last year's plot! Even the twin discs of the admittedly heavier Suzuki failed to improve on the braking figures donated by the single caliper unit fitted to the Kawa.

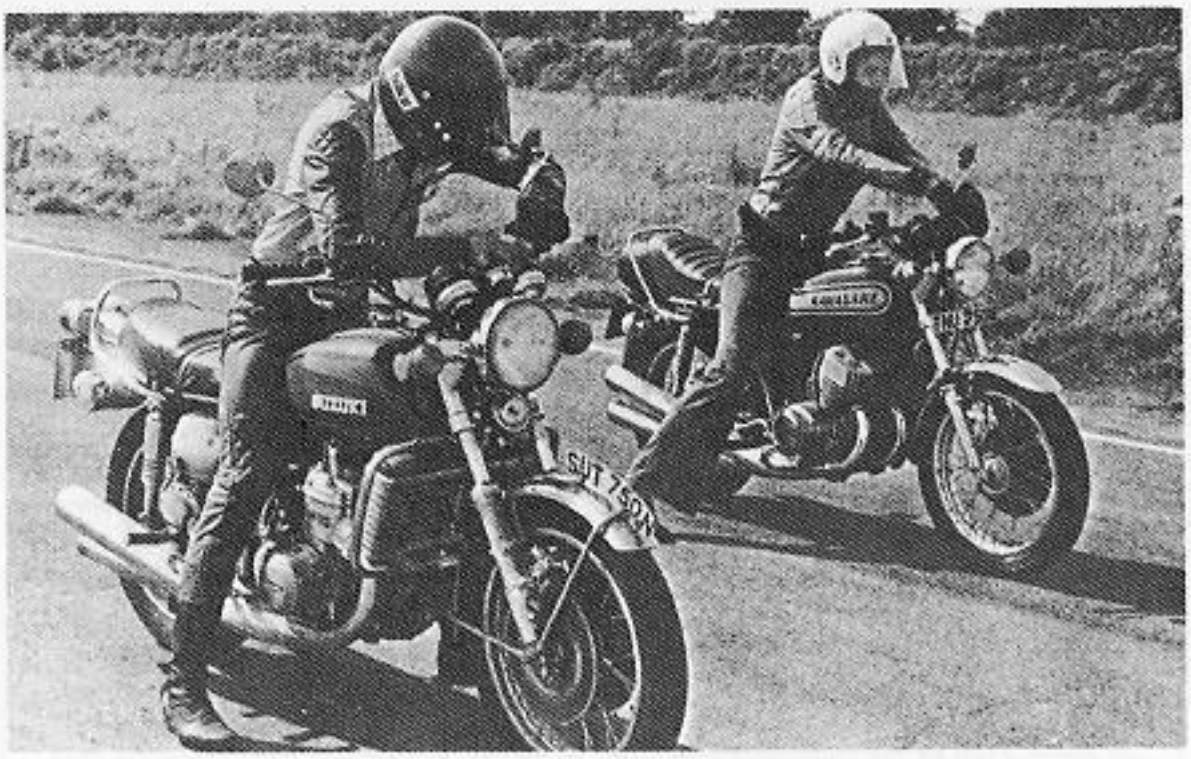
In short, fast roadwork was a joy marred only by the awful fuel consumption. I returned to London from Davick's by diverse minor "A" roads which eventually led me to the A1 along which I cruised at a comfortable ninety to a hundred per. I had to fill up twice before I got home! An average of 21.6 mpg was the reason for this — and when I can average 25/26 mpg in my four wheeled Alfa cruising at similar speeds, I begin to wonder whether or not Kawasaki have done all they could to maximise engine efficiency.

However, East Midland Allied Press were paying for the juice and in enjoying that privelege I spent many happy hours squirting around both town and country tarmac. Yes, if you can afford the fuel, the surging Kawasaki Mach IV is a very good machine for safe, aggressive driving. Chain-wear was considerably less of a problem than on other big torquers, largely due to the manual chain oil pump situated just to the rear of the near-side rear subframe strut. From its little plastic reservoir it releases enough oil to apparently lube the chain for 500 miles each time you lift the knob. Just to be on the safe side I tended to pull it every 100 miles, or even less. Still, a neat little device — now you know why I fitted one to my Yamadale!

Electrics, from the CDI system downwards, were exemplary. The stop-light, for example, was considerably more sensitive than those on most other bikes I've ridden, requiring only the proverbial butterfly's kiss to illuminate the blasted great rear lamp, and the headlamp threw a well proportioned beam of an intensity well suited to 70 mph night-riding on unlit highways.

Warning indicator lamps were not as prolific as on Suzuki's electricians' special, but you can nevertheless glance down and discover whether or not your stop-light, trafficators, and main beam are doing what they should be, and whether you've succeeded in finding neutral. Switchgear and attendant tarradiddles are okay, if a bit fussy — something common to most Nipponese products these days. The left 'bar carries choke (which required only minimal use throughout the test), horn/headlamp flasher, main/dip switches and a mirror all in one moulding, whilst the twistgrip collar holds the emergency kill switch and an on/off lighting switch. All these functional trinkets are finished in matt-black alloy, as are the helmet/seat lock and headlamp nacelle. This sets off the high quality metallic dark green and lime tank 'n' seat hump very prettily (deep red and bright red is the other optional colour scheme), and demonstrates just how nifty the Kawasaki stylists can be.

Even the layout 'neath the comfortable side-hinged seat is extremely well ordered. The perspex topped plug carrier with its three spares is easily accessible, as are the battery, tool-kit (strapped into the rear hump along with your dope stash — a mere joke m'lud), the CDI boxes and air filter cover.



Bike's ***destruction testing team at it again. Four or five drag starts for the standing*** $\frac{1}{4}$ ***mile plays havoc with clutch adjustment. The Suzy survived but it was all too much for the Kawasaki, who's clutch gave up the struggle the following day.***

Overall finish is fairly whizzing, but I'm sure the chrome exhaust wouldn't emerge rust-free from a British winter without much recourse to elbow grease and Solvol Autosol. Kawasaki don't, thank Jehovah, coat their porous alloy engine cases with translucent gunge, mainly because they don't use 'orrible porous alloy! Almost as good as the British variety, no less. But the frame welding is only marginally better than on some of the more tawdry Oriental scoots, even if Kawasaki cover it up with a goodly coat of black enamel.

And so it goes. As I think you may understand by now, the performance potential of this bike is so vastly superior to most other two wheeled products that if poke is your main criterium, such things as riding position, economy and durability are things you'll learn to live with or adapt to your secondary requirements. And at £829 the price is a great compensation for those contemplating other 750 exotica.

Mark Williams

SO YOU THINK being a journalist on *Bike* is an easy touch, huh? A life of eternal bliss, always burning free gas along sun-drenched highways to exotic places on fabulously expensive machinery someone else has paid for?

Well, forget it. Sad, but it ain't like that. Writing and other dull editorial duties keep us shackled to office desks most of the time. Apart from frantic bleary-eyed dashes to and from the office and a quick round of the pubs in the evening, we don't get in as much biking as we'd like.

But when there's a couple of particularly rapid hunks of metal standing silently outside the office it gets difficult to concentrate on a typewriter keyboard. It all gets too much, even for the editor. He starts cursing the telephone and muttering about work "getting on moi troipe", whatever that curious West Country expression may mean.

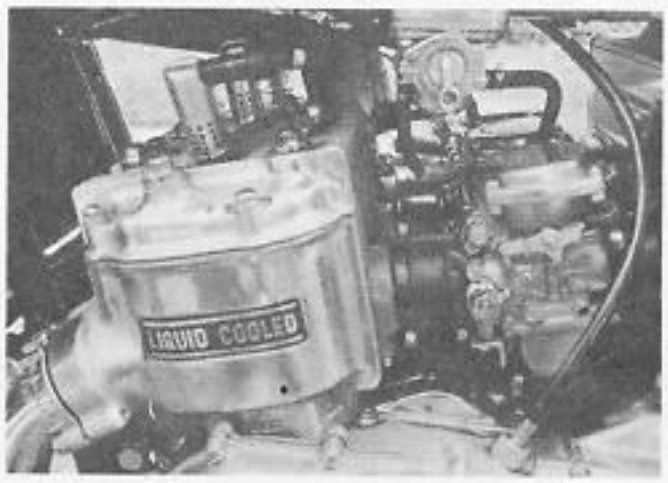
The heavy metal that proved so distracting this time was a 500 Kawasaki and the Suzuki GT750L. An editorial conference decided we should take a day off for the purposes of road testing and ale tasting in the West Country. Well when the boss suggests that sort of thing you don't kick a gift horse in the teeth, do you?

Ah, the freedom from the daily office drudgery, it almost began to feel like we were living that jet-set dream, 'cept it was the South of England we were headed for, not the South of France. The sun was shining, the air was balmy and the Northamptonshire country roads were deserted. Even the fact that both bikes were still running in didn't spoil the fun too much. We could hit 80 mph, and the fun of swinging round those convoluted country lanes made up for the lack of high speed kicks.

Despite my prejudices, I was getting to like the Suzy. The sheer grossness of its heavy carcass hadn't endeared me to it when I first saw the bike. I mean, it looked fat and smug with about as much grace as a women's shotputting champion. But just as many a hefty female can prove to be a nifty

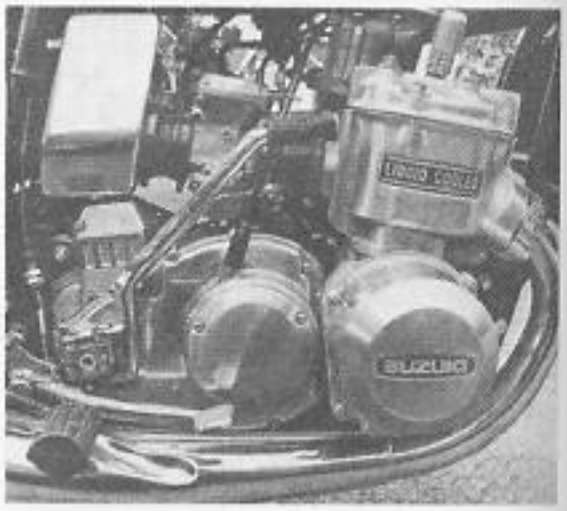
suzuki
GT 750L

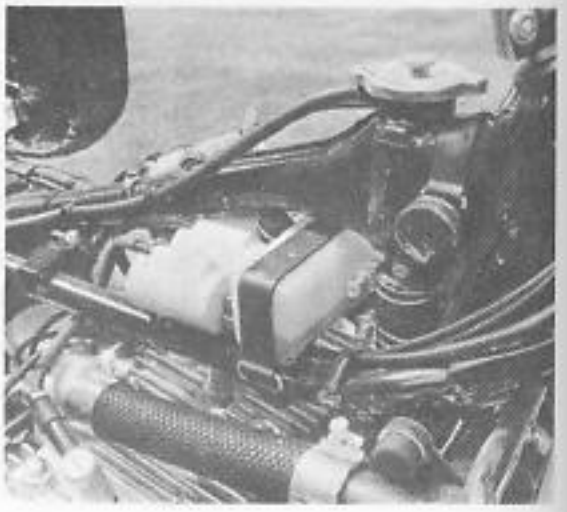












The 115 mph steamroller (above left). From any angle the Suzuki looks a real hefty hunk of steel. Get those huge new diaphragm carbs (top centre). "Liquid cooled" it says, just in case any ignoramus hadn't already guessed from the rad stuck in front of the mill (top right). Instrument panel (above centre) would make a Jumbo pilot feel at home. Flap on the front of the tank lifts to reveal the radiator cap. When the tank is removed (bottom right) you can see why it doesn't hold as much juice as you'd expect. Space is taken up by cooling system overflow tank and the three ignition coils.

mover, the Suzuki was no sluggard. Grabbing those ultra-wide bars for the first time gives you the impression you're trundling a wheelbarrow, the great slab of a tank, and fat, comfy seat all give a paunchy feel to the bike, but it's a nice feel. It's solid and utterly secure at the ton and comfortably relaxing in the way that only a heavyweight cruiser can be, but it's also perfectly manageable trickling along at walking pace. The only time it's 550-odd pounds become embarrassing is when you try to heave the thing onto the centre stand. Suzuki should include advice from Charles Atlas in the riders' handbook.

But the way that deceptively docile motor can shift five cwt. of bulk with indecent haste comes as quite a surprise. Even keeping the revs well below the red during running-in you begin to suspect that behind the image of the sedate, inoffensive tourer, lurks something of a mean streak. And when the motor's nicely bedded in and the three pots begin to scream purposefully through the gears you just know you needn't be ashamed in the company of bikes with racier pretensions. Jeez, the obese Suzy even stole the lean 'n' hungry Kawasaki's thunder at the Snetterton test session, although to be fair the H2 was a a little off colour.

A bike that can turn 13.39 in the quarter ain't slow, and when that motor's dragging quarter of a ton of sophisticated mechanical and electrical gadgetry, then it's pretty amazing.

But as we weaved our way down to Exeter, I still hadn't tried the full potential of its performance. I was more taken first of all by the comfort and smoothness of the bike. For this kind of long distance jaunt it's ideal. Another item that impressed me as we hurled the projectiles around the snaking bends on the B4525 to Banbury was the front brake. Originally fitted with a double twin leading shoe device, the GT750 was reputed to be underbraked for its weight and performance. But the twin 11-inch discs introduced on the L model do a remarkable job of retarding that formidable weight. As light and pleasant a disc brake as I've ever come across, it was also reassuringly powerful. The fact that the twin discs even the loading on the front forks also keeps the bike stable under heavy braking.

As we really got into the bend swinging on that fantastic biking road from Northampton to Banbury it became evident that the designers' efforts to improve ground clearance with new upswept silencers hadn't been completely successful — the exhausts still touched down when bumps compressed the rear suspension. Stiffer dampers would make a great improvement to the bike's scratching capabilities, if you want to forgo some creature comfort.

Not that the handling's that bad anyway. The old kettle looks such an ungainly brute it's difficult to imagine stuffing it into bends fast and surviving, much less enjoying it. But the Suzy's secret seems to be excellent weight distribution. For a product of a Japanese factory, it feels beautifully well balanced, and can be flicked from side to side with surprising agility.

Sure, it gets a bit of a twitch on at the back end on fast bumpy bends due to the already mentioned infamous Nipponese failing — inadequate damping. But the Suzuki's handling can't be all that bad I thought, keeping a wary eye on the hair-raising path the rear wheel of the 500 Kawasaki was following towards Exeter. Evidently those strange oscillations worried me more than Mike Nicks. While I cringed and reflected on how inadvisable it would be to run over one's editor every time the Kawasaki started following ever decreasing arcs, the said editor later exclaimed he'd been enjoying it immensely. Must be that every Kawasaki rider has a death wish or something.

After Banbury we hit some "A" roads at last, down to Chipping Norton and out over the undulating Oxfordshire countryside. Nice biking country with wide open roads, fast, sweeping bends and pleasant rural landscapes which we hardly noticed because the bikes felt good, the sun was still shining, and the roads were nearly empty.

That's the sort of territory where the Suzuki feels right at home, and a steady eighty began to feel slow, except when we zapped past the odd bunch of traffic. The motor is so smooth and unobtrusive it began to feel like I was being towed along in the Kawa's slipstream. There's no noise except the wind, no vibes, and the hedgerows in the mirrors recede unblurred into the distance.

Pampered by unaccustomed comfort I became hyper-critical of any vibration that appeared in the rev range, and low frequency shakes come in noticeably at 2,000 rpm and below. But it's not as uncomfortable as a high frequency buzz, and anyway it's easy just to swap cogs and keep the revs above that level. That also helps to eliminate the annoying two-stroke characteristic of four-stroking at low throttle openings, which results in uncomfortable transmission snatch in the Suzuki.

Stopping to fuel up the Kawasaki every 60 miles or so got pretty tedious. The Suzuki was covering 40 miles to the gallon and could have gone twice as far as the Kawa without stopping. But even that sort of range isn't good enough for a long distance hauler like this. Trouble is, the slab-sided tank that contributes much of the bike's chunky looks is deceptive. A huge recess underneath, hiding the cooling system reservoir tank and three ignition coils, reduces the capacity to 3.7 galls, the odd 0.7 of which is reserve.

Apart from the fuel stops and a halt for fish 'n' chips, eaten at the roadside in best biker's style, we made good time right down to Ilchester. But there we caught the London holiday traffic oozing along the A303. Wriggling through the jams was the only time the Suzuki's bulk bothered me, and then it was mainly due to the psychological effect of its width, rather than the weight. I just breathed in and hoped no idiot stuck

his head out of a car window. It was a pretty tight squeeze.

So five hours after leaving Peterborough we rode into Exeter, most favoured city in the land, where the maidens are fair and the boozers open at five in the afternoon, according to Mike Nicks anyway. You might just have realised by now that he happens to be a native of these parts. To demonstrate the veracity of his enthusiastic claims about the Utopian licensing laws in the town we rode into the yard of a riverside pub on the dot of five. Sadly, the worthy landlord of said hostelry didn't share Mr Nicks enthusiasm for five o'clock opening time and so we leaned against the door until he relented and let us in.

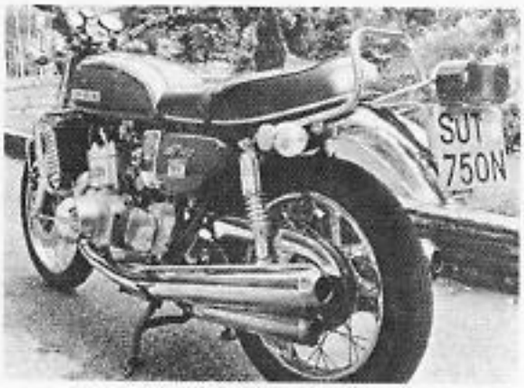
After parking the bikes for the night we embarked on a tour of the town as Mike nostalgically re-visited the iniquitous haunts of his mis-spent youth. He got quite melancholic relating stories of amazing happenings in steamy, beer soaked bar-rooms before those sinister subverters of public good times, the big brewers, took them over and "improved" them. Now most of them are those neon-lit sanitised beer supermarkets where silent people lean on plastic bar tops and stare vacantly in front of them as they sip fizzy chemical brew of dubious alcoholic content. Didn't even see a good fight or anyone throwing up while we were there.

We left for home with thick heads in the morning, but it's amazing how quickly a dose of adrenalin clears a hangover. The sun was still shining, and as the bikes were just about run in now we were keyed up for a bustling return journey. There was still plenty of holiday traffic about, but I got a real kick from jolting the somnolent drivers of family saloons out of their reveries with the banshee wail of the Suzy's three screaming cylinders red-lining past. No doubt about it, these big triples bring out the worst in you.

First time I tentatively opened the tap right out, the Suzuki choked and coughed approaching the ton, but she soon cleared her throat and was pulling healthy and strong. I kept a close eye on the temperature gauge, mounted atop the instrument panel between speedo and tacho, in case the motor should still be a bit tight. But no fear, the needle never went over halfway across the dial.

Suzuki have discovered, in fact, that the water cooling is so effective that the radiator fan fitted to earlier models was redundant, in European climates at least. It was driven by an electric motor and thermostatically controlled, but the coolant never got hot enough to switch the fan in. Without the fan, and with a new plastic grille, the radiator looks slimmer and less obtrusive than on the previous models. And even held up in traffic the needle stayed in the lower half of the temp gauge.

Another change on this latest model concerns the carbs. The GT750 is now fitted with three huge Mikuni "Automatic Variable Venturi", that's to say diaphragm type, instruments. They're claimed to improve



Four into three don't go — or does it? Just so's Suzuki owners won't suffer an inferiority complex in the company of Honda four riders, the exhaust pipe from the centre pot branches into two and feeds the lower, smaller pair of silencers.

fuel economy and reduce exhaust emissions. They also give smooth and instant response to the throttle.

Cruising homewards a sight faster than we'd travelled in the opposite direction, I found those high, wide bars which helped low speed handling became pretty shoulder wrenching. So I shifted back on that huge, fat seat and crouched forwards. It's in the BMW class for comfort, with the inertia of all that weight helping to iron the bumps out.

A few days later, at Snetterton for performance tests, the mild-mannered Suzuki's urge proved an embarrassment to both the 500 and 750 Kawasakis. It more than made up for its weight handicap with the kind of slugging torque you just don't expect from a two-stroke, although it got out of shape once or twice on the standing quarters as I dropped the clutch too quickly and got the rear tyre spinning furiously. It's interesting that the standard GT750 turned a faster time than the Dresda Suzuki we tested in the June/July ish, despite carrying more than a hundredweight extra. The Dresda was significantly faster on top whack, but its lightness made it a handful getting off the line. The GT750's weight actually helped by keeping the front wheel on the deck.

Another do-or-die dash followed, this time in company with Mark Williams and the big Kawasaki, down to London for a photo session. Again the psychological effect of the Suzuki's bulk bothered me in traffic, or was it that Mr Williams suffered similar suicidal tendencies to Mr Nicks as soon as he straddled a Kawasaki? Anyway, he knew the roads and I didn't, well that's my excuse.

Posed together for the pix, the Suzuki didn't look too photogenic alongside the Kawasaki's racy lines. But after enjoying the riding so much, somehow it didn't seem so ugly as it had at first. The chunky appearance is quite impressive by virtue of its sheer bulk, and the shining alloy water jacket around the cylinders is an eye-catching lump. Finish is generally good, apart from some poor chrome on the crash bar surrounding the radiator.

The Suzuki suffers the usual Japanese failing of messy welding and cheap 'n' nasty pressed steel frame gusseting. The silvered plastic grille over the radiator is perhaps a bit too fussy, but it is valuable protection, and being non-corrosive, is easy to clean. The array of gadgets produced either gasps of wonder or sneers of derision from onlookers. To a hard-riding Kawasaki freak who's only interested in how fast he's going, it must all seem a bit superfluous. And I doubt the value of gimmicks like the digital gear indicator, which lights up the number of which ever ratio you're in, on a little display unit on the instrument panel — while watching with fascination as the numbers flash up and down, chances are you could ride smack into the back of a truck! Still, all the lights and dials and things let you know exactly what's going on and they're all clear and easy to read. And besides, they impress people who don't know any better.

Although I haven't mentioned the lights till now, they deserve special praise. Not that they're any better than they should be, it's just that the usual standard of motorcycle lighting is so abysmal it makes you feel like cheering when you come across a bike that even approaches an acceptable standard. Main beam on the Suzy is a penetrating 50 watts, and a well shaped dip beam of 40 watts means you no longer have to grope through the murk in the face of oncoming traffic.

When I reluctantly returned the bike to the Apple emporium at Hinckley and caught the train back I felt really low. Crammed in a carriage full of sweating humanity, I realised, ain't the way to travel when a heavy road pounder like that has got into your blood. It poses something of a problem. Am I going to buy a Suzuki after I've got my Ducati 450? Or before I lash out on a Harley Sportster? Anyway, it's one of the rapidly diminishing number of desirable motorcycles my limited resources are likely to stretch to one of these days. I mean, watercooling, fantastic brakes, good electrics and comfort for £882 must make the Suzuki the best value for money going in the 750 class.

Bill Haylock



The Kawasaki looks positively lean an' hungry compared to the comfortably obese Suzuki. It makes no compromises in fulfilling its role as an all action street racer.

Checkout



KAWASAKI 750 H2



SUZUKI GT750L

	KAWASAKI 750 H2	SUZUKI GT750L
Engine	3-cylinder, piston valve 2-stroke	3-cylinder piston valve water-cooled 2-stroke
Bore and stroke	71 x 63 mm	70 x 64 mm
Capacity	748 cc	738 cc
Comp ratio	7.0:1	6.7:1
Carburettors	3 x 30 mm Mikuni	3 x 32 mm Mikuni diaphragm type
BHP @ RPM	71 @ 6,800	67 @ 6,500
Primary Drive	gear	gear
Clutch	wet, multiplate	wet, multiplate
Gear ratios overall		
(1)	12.77:1	14.92:1
(2)	8.65:1	9.09:1
(3)	6.53:1	7.14:1
(4)	5.41:1	5.89:1
(5)	4.76:1	4.48:1
Electrical system	CDI electronic ignition, alternator	12v 280w alternator, battery & coil ignition
Lighting	35/35w headlight 5/21w tail/stoplight	50/40w headlight 8/23w tail/stoplight
DIMENSIONS		
Wheelbase	56.5 ins	57.8 ins
Seat height	33.5 ins	32.5 ins
Ground clearance	6.3 ins	5.5 ins
Handlebar height	46.5 ins	45 ins
Weight	451 lbs (dry)	554 lbs (with 2 galls of fuel and 3 pints of oil)
Oil capacity	3.6 pints	3.2 pints
Fuel capacity	3.7 galls	3.7 galls
EQUIPMENT		
Steering damper	Yes (hydraulic)	No
Trafficators	Yes	Yes
Electric starter	No	Yes
Trip mileometer	Yes	Yes
Steering lock	Yes	Yes
Helmet lock	Yes	Yes
Headlamp flasher	Yes	Yes
Kill button	Yes	Yes
Toolkit	Yes	Yes
Spare parts	3 spark plugs	—
Other		Mirrors, gear position indicator
Tyres (front)	3.25x19 Japanese Dunlop	Yokohama 3.25 x 19
(rear)	4.00x18 Japanese Dunlop	Yokohama 4.00 x 18
Brakes (front)	11.65 in. disc	twin 11 in. discs
(rear)	7.9 in. sls drum	9 in. sls drum
PERFORMANCE		
Top speed	113.2 mph	114.9 mph
Standing ¼ mile	13.456 secs	13.39 secs
0-30 mph	2.5 secs	2.7 secs
0-60 mph	5.8 secs	5.9 secs
Speedometer error		
At indicated 30 mph	28.16 mph	27.70 mph
At indicated 60 mph	58.29 mph	52.66 mph
Fuel consumption		
(average)	—	37.7 mpg
(driven hard)	21.6 mpg	30 mpg
Braking distance		
from 30 mph	31 ft 2 ins	31 ft 8 ins
from 60 mph	115 ft	118 ft 6 ins
PRICE	£829 inc. VAT	£882 inc. VAT
GUARANTEE	6 months/6,000 miles parts and labour	6 months parts & labour
Supplied by	Davick Motique, Northfield Ave., Sawley, Long Eaton, Notts. NG10 3FH.	Apple Motorcycles, Lower Bond St., Hinckley, Leics.

SUZUKI TRIPLE REBUILD

Graham Saunders shows the correct way to rebuild this popular water cooled two-stroke.

Back in the dark ages of motorcycling if you had to take your motorcycle to a dealer you took a chance that his mechanic had actually worked on your make and model of motorcycle. In the last few years things have changed, we have now entered the era of the motor cycle technician, the specialist in a white coat.

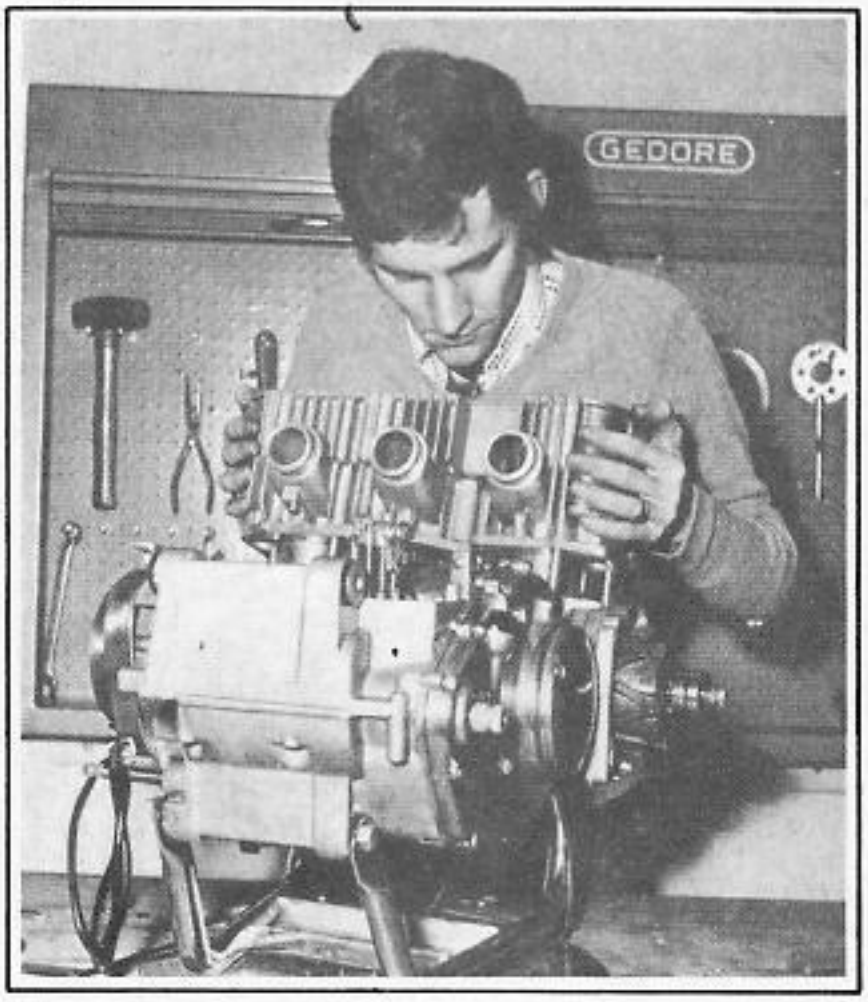
To find out how to rebuild the Suzuki 750-3 we chose the king technician, the man who trains all the others, Graham Saunders — technical training manager for the Suzuki importers.

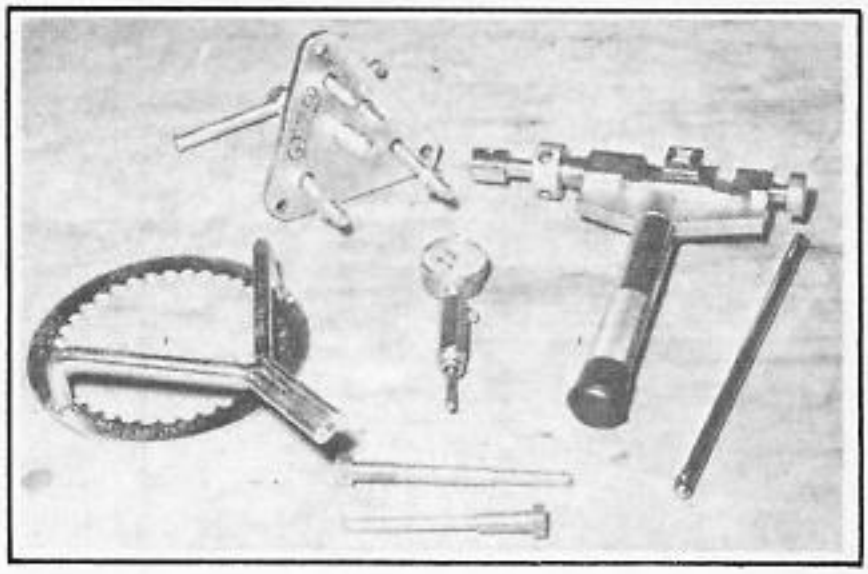
The training school at Croydon has been built almost regardless of cost so the selected mechanics who go there can learn under ideal conditions how to service and maintain any bike in the Suzuki range.

The very first point Graham made was the importance of having the right workshop manual. Although written in rather quaint English the manual is very comprehensive. Apart from basic details on what part fits where it also goes into great detail about measuring for wear and checking various components for electrical function.

The manual gives full details of important things like gear selection. Inside the crankcases there is a large blob of coloured paint which refers to the gear sizes. For instance a red paint blob on the crankcase means you need a yellow coded first driven gear, a yellow coded second driven gear and a brown coded kick-start drive gear. If you have any form of gearbox troubles then you must refer to the manual before ordering parts.

The jointing compound to use on this engine is very important. The compound has to be able to withstand oil, pressure and water and the only compound the importers have found that does this job is Suzuki Bond No. 4.





Above are the essential special tools needed for working on the big Suzuki engine. From the top the starter clutch puller with the clutch holding tool below and to the left. To the right is the dial test gauge needed for setting the ignition timing and to the right of this is the rear chain splitting tool. Bottom of the picture are the two different types of rotor extractor.

There is one very vital bolt which holds the crankcases together, the long No 13 which goes up from underneath the crankcases. It is essential that this bolt is smothered in Bond No. 4 before fitting otherwise you will get water leaks with all the problems of an overheated engine.

The gearbox is marked 2200cc which is supposed to be the quantity of oil it contains. In fact if the engine is taken apart it will need slightly more oil than this, about 4½ pints should be right.

The early "J" models can be brought up to current specification in some respects. The early model used a one-piece bearing on the starter clutch and this should be replaced with the later two-piece bearing. The alloy washer on crankcase bolt 13 can be replaced with the later copper washer which gives better sealing.

Every time the engine is apart new gaskets must be used. A complete gasket set is cheaper to buy than a head gasket on its own.

The oil pump adjustment is critical. Different adjustment methods are used depending upon whether the engine has the later CV carbs or the earlier type. On the earlier carbs there is a small check screw set into the carb body. This screw should be removed and the throttle opened until a small punch mark on the slide is aligned with the top of the hole. At this point the punch mark on the oil pump lever should be adjusted level with the scribed line on the oil pump body.

When the later CV carbs are fitted the oil pump is adjusted with the carbs on full throttle. In this case the pump mark is lined up with the scribed line on the pump lever.

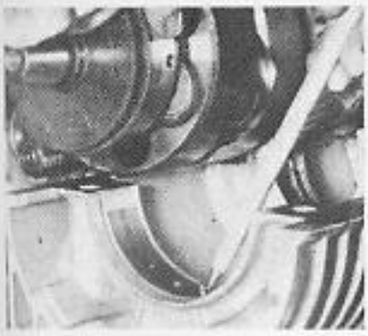
When the oil pump has

been removed for any reason it must be bled of any trapped air as soon as the engine is started up. There is a bleed screw fitted to the top of the pump body. Full details on how to bleed the pump are given in the workshop manual.

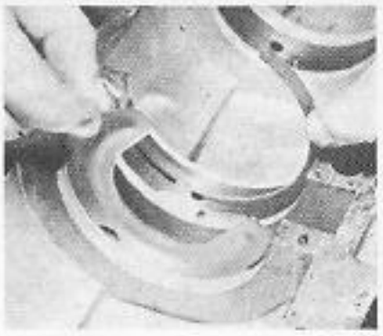
Regardless of the type of carbs fitted it is important to make sure that all three are perfectly synchronised.

The most important adjustment with any two-stroke, and especially the big Suzuki is the ignition timing. You can set the timing with a strobe but the only accurate way is with a dial test indicator reading off the top of the piston and an ohmmeter across the points. The important thing here is that the ignition is set to the piston position, not the crankshaft position. At the Service School they have a 750 motor with a deliberately twisted crankshaft. If the timing is set on the crankshaft position then timing for one of the cylinders will out by a considerable amount. Set the ignition timing with a dial test gauge and one set of points will not line up pointing to a crankshaft problem inside the engine.

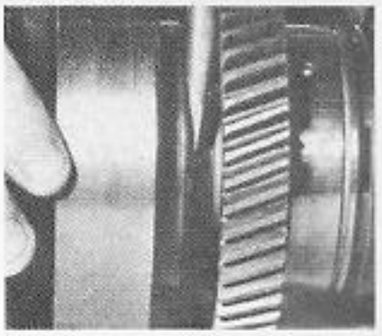
There are some components which you can test, the most important being the thermostat. The thermostat should be opened up with your fingers and a piece of cotton put between the valve and the valve seat. The valve is then allowed to return to its seat trapping the cotton. The thermostat is then suspended in water which is slowly warmed up. At 82 degrees F the thermostat should fall off the cotton. Any lower or any higher and the thermostat may be faulty.



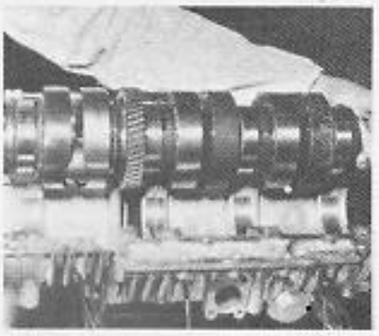
All the bearings are pegged like these mains. Make sure holes in bearings are clear.



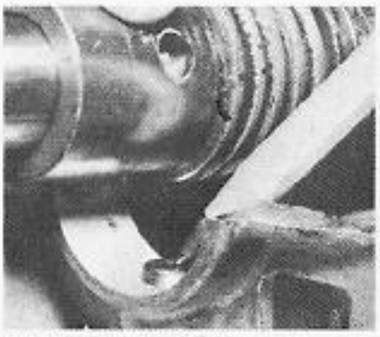
On the left is the oil seal packing washer which must be fitted as shown with the . . .



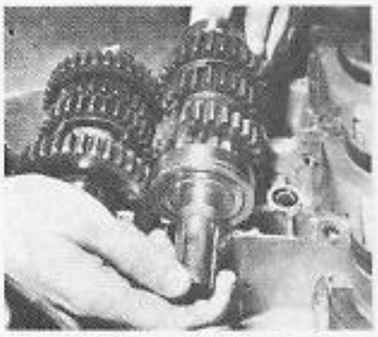
. . . dimple facing towards the oil seal. This point is very essential for long seal life.



Lower crankshaft carefully into the bottom case. Make sure conrods do not bang on case.



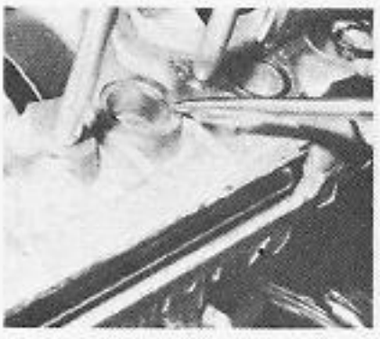
Kickstart shaft bushes are pegged into position. Make sure shaft fits fully into recess.



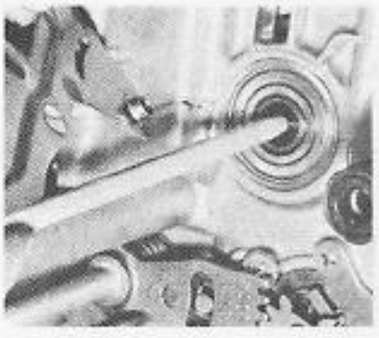
When shafts are fitted give them a spin to make sure that they are mounted correctly.



The vital crankcase bolt 13. This bolt must be smoothered in Suzuki Bond No 4 to . . .



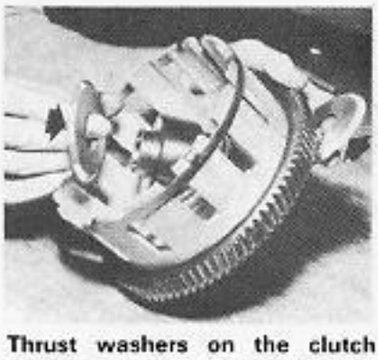
. . . prevent any water leaks. Barrel "O" ring is not fitted at the point shown in picture.



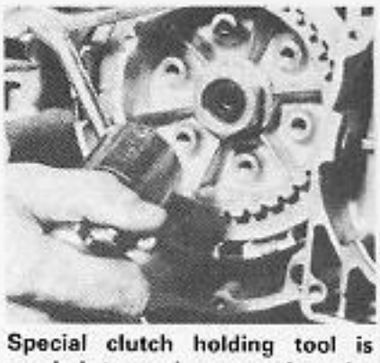
The oil catch plate is fitted so the boss goes into the hole in bearing indicated by pencil.



Wind up the kickstart spring with a pair of strong pliers and fit tang into the shaft.



Thrust washers on the clutch bearing must be fitted with the taper pointing as shown.



Special clutch holding tool is needed to make sure that the centre nut is done up tight.



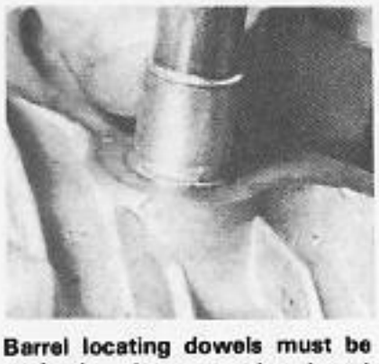
Clutch springs are fitted with the centre spacer fitted as shown. Always use new springs.



Clutch adjustment is set without the cable being fitted. End float must be just right.



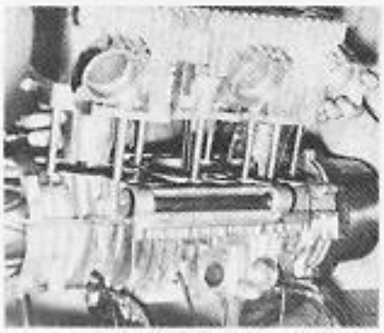
Pistons are marked. "L" pistons are used in left and centre cylinder bores. "R" for right.



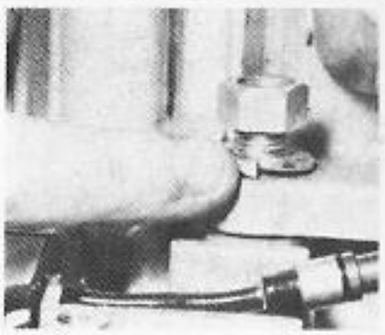
Barrel locating dowels must be perfectly clean or the barrel could be damaged during fitting.



Note there are con-rod locating washers either side of the small end bearing. Fit the . . .



. . . centre piston to the barrel first and then fit the outside pistons. No ring clamps are used.



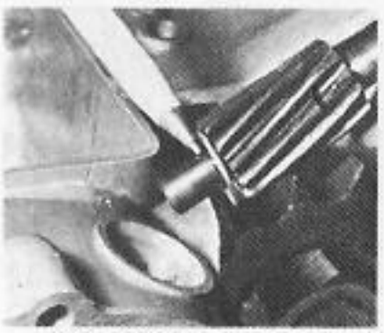
Only a single barrel base nut is used so don't forget it. Cylinder head is held down . . .



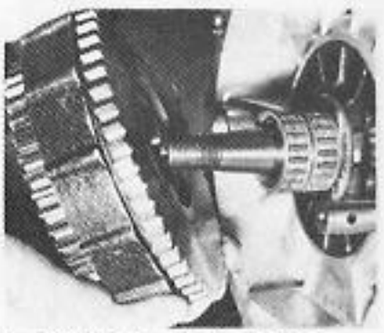
. . . by two 10mm bolts, which must be tightened down first, and a number of 8mm bolts.



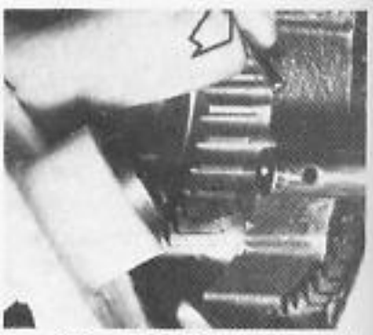
Align hole in tacho drive boss by eye so that small screw will fit in. When pulling . . .



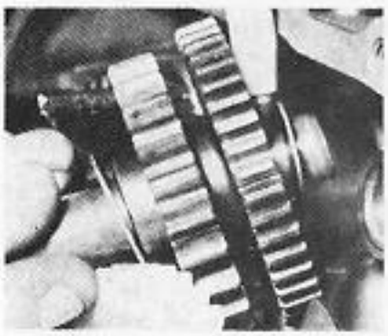
. . . the engine down check if there is a washer at the bottom of the tacho driven gear.



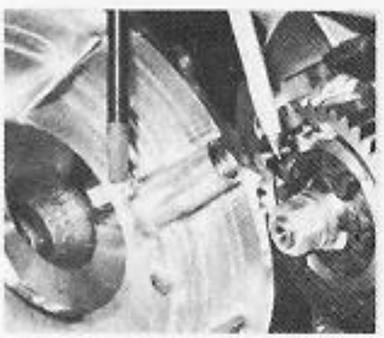
Lubricate the starter clutch bearings before assembly. Drive to the clutch is via a nylon . . .



. . . pinion which is held onto the shaft by a steel peg. Check peg for signs of wear before . . .



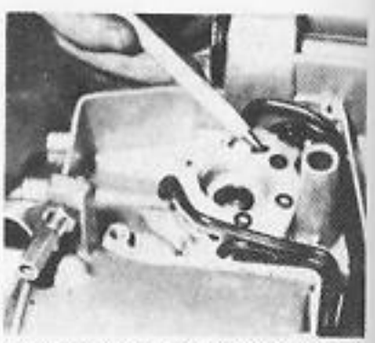
. . . fitting. Gear shown will have washers fitted on either side. Check they are fitted correctly.



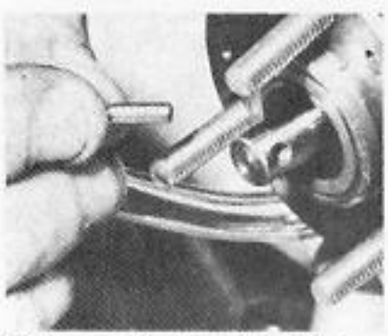
Drive to generator is via a peg and cutaway. Align these by eye then offer into place.



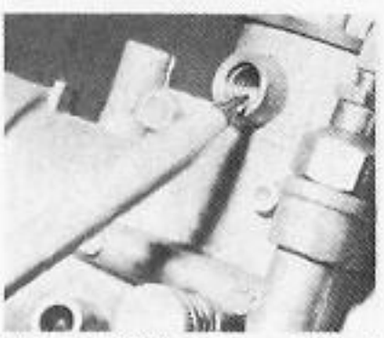
Don't forget the washers on the oil pipe connections and make sure you don't overtighten.



The oil pump is sealed by these small "O" rings. If in doubt fit new washers during assembly.



Oil pump is driven by this peg which slips into the pump spindle. Check carefully for wear.



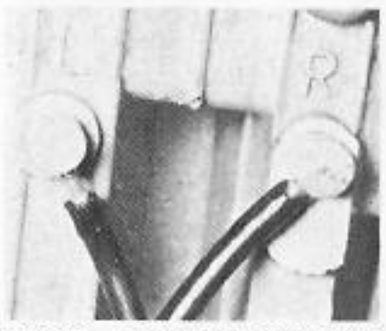
Through this hole you will find the oil pump setting mark. New CV carbs are set on full throttle.



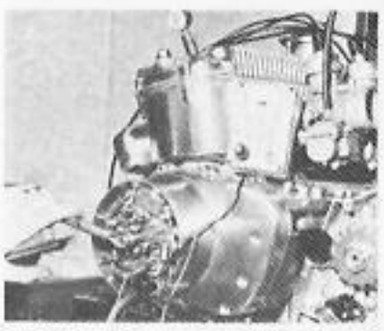
This centre punch mark is the setting point to use when your engine has older type carbs.



CV carbs are set on full throttle with the oil pump lined up to this scribed mark on the lever.



"SRIS" pipes are connected back to the barrel. Check with manual where the pipes go.



Ignition timing is critical and must be set with a dial test gauge and an ohmmeter.



Checking out electrical components should really be left to a dealer who has right tools.



Lodge a piece of cotton between valve and seat and suspend the stat in water to check operation.

Cycle Test

SUZUKI GT-750M

• Suzuki has always moved in guarded and mysterious ways. Many of the factory's engineering triumphs have been hidden in the confines of engines with restrained performance. Conservative and sometime ponderous styling has disguised a few near-great machines from Suzuki. Still, dynamic new motorcycles from Suzuki have often stunned the industry and the competition. They were the first Oriental concern with a big displacement two-stroke—the 500cc Titan twin; they were the first Japanese maker with a big displacement motocrosser—the 400cc Cyclone; they were the first with a 400cc enduro—the Apache; they were the first with a production water-cooled 750—the LeMans; they were the first with a rotary tourer—the RE5.

In its fifth model year, the GT 750M is the best of the LeMans series. Suzuki has made some unusual changes in creating the M-model. The GT-750M's new performance gains can almost classify it more a superbike than a tourer. But it has retained all the posh comforts that have in the past made it the most comfortable and pleasant straight-line tourer from Japan.

Suzuki's introduction of the RE5 rotary would have had given them two big tourers with nearly identical performance



PHOTOGRAPHY: DAVE HOLEMAN



New paint doesn't make a new motorcycle. But when Suzuki did some exotic port carving and installed bigger carburetors and new mufflers on their M-series Le Mans, what happened? A new motorcycle - with new paint.

characteristics. The rotary project had consumed two years of the factory's time. As a result Suzuki hadn't developed any new street bikes (except the rotary) in three model years. To prevent direct competition between the two machines major performance modifications had to be made to the LeMans.

The decision to drastically modify the LeMans for 1975 was made secretly by the factory. With the entire engineering staff of Suzuki fully committed to the RE5 project a secondary effort to hop-up the LeMans was established. Lines were drawn placing the RE5 as Suzuki's top-of-the-line tourer and the LeMans was to become their performance roadster.

During its initial years of acceptance the LeMans was treated as a gelding superbike. In acceleration and speed it couldn't begin to hold its own against other 750s. A LeMans could, at best, slog down the quarter mile in just under 14-seconds in the low 90s. The original J-series bikes were quicker than the three models that followed. Increased baffling of the intake system (to reduce induction drone) drugged the already sleepy acceleration into utter somnolence.

The shift in performance emphasis from gutty torque to explosive horsepower comes from numerous internal and external engine changes. The cylinder's intake port windows have had the lower edges dropped a staggering 5.0mm and the exhaust opening top edges have been raised 2.5mm. To compensate for the compression loss the cylinderhead has been milled 0.2mm and the head gasket thickness reduced 0.7mm. As a result the combustion chamber volume has been lowered slightly from 30.6cc to 29.7cc.

Internal port timing and compression changes necessitated intake and exhaust modifications. The old trio of 32mm slide type carburetors have been replaced with three 40mm constant velocity (vacuum actuated slides) Mikunis. The induction box has been improved to permit better air flow. The exhaust system has been redesigned to give increased engine performance and additional ground clearance. The crossover tubes connecting the head pipes have been eliminated. The trio of head pipes have a tighter radius bend and the mufflers have smaller internal baffle holes.

Piston clearance has been narrowed down from .0025-inch to .002-inch. This change is possible because the M-model has more consistant control over wavering operating temperatures common with older LeMans. The clutch plate base material is now aluminum rather than phenolic plastic. Final drive gearing is substantially taller than before (from 3.13:1 to 2.69:1). The countershaft sprocket is one tooth larger and the rear wheel drive is reduced by four teeth. The metal clutch hub bushing has been replaced with a caged needle bearing.

Ease of operation remains an outstanding trait of the LeMans. The electric starter never strains in spinning over the 45-cubic inch two-stroke. With the choke

lever on cold starts are instantaneous. Hot starting gets the same results. It takes about five minutes for the temperature gauge to indicate its normal 175° to 194° operating heat. Fortunately the bike doesn't exhibit the common motorcycle cold-blooded symptoms and is rideable even when cold. All of the controls—ignition key, switches, start button and gauges—are comfortably located.

The taller gearing and a reduced amount of low speed torque almost overload the engine when leaving a stop. Unlike the previous LeMans, which had usable power from 2000 to 7000 rpm, the M-model is reluctant to pull the 559 pound package until the tachometer needle reaches 4500 rpm. Practice is required to coordinate rolling open the throttle while slipping the clutch to prevent bogging the engine.

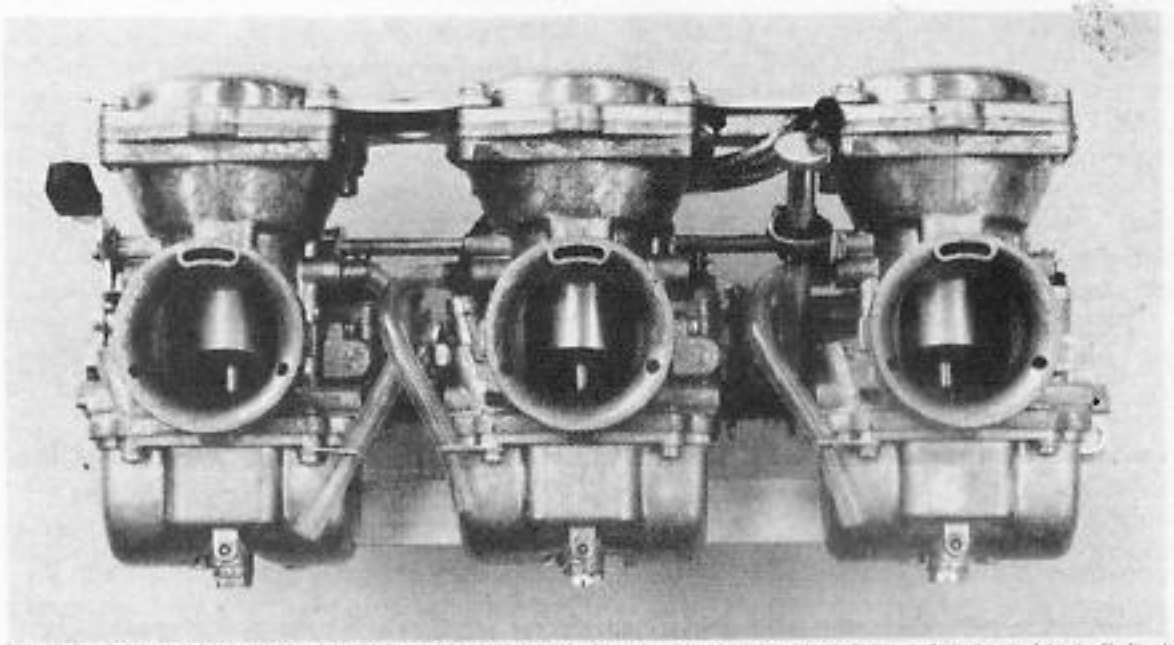
In-town and suburban riding will require use of only the first three gears—on occasion fourth. Flat roads and open highways enable the use of fifth gear while the engine turns a slow 3000 rpm at the legal speed limit. Upgrades or passing require downshifting to fourth gear—and down to third for quick acceleration. The tall gearing results in engine operating speeds which are below the peak power band. Carrying two-up taxes the engine unless lower gears are used constantly.

While at the drag strip we installed a smaller 15-tooth countershaft sprocket (from last year's LeMans) expecting quicker and faster performance. Strangely the top speed fell one mile per hour and the elapsed time improved only .004 second. While the LeMans effortlessly smoked its back tire off the line the best times were attained by clutching off the first 100 feet. This was the case with both gearing set-ups.

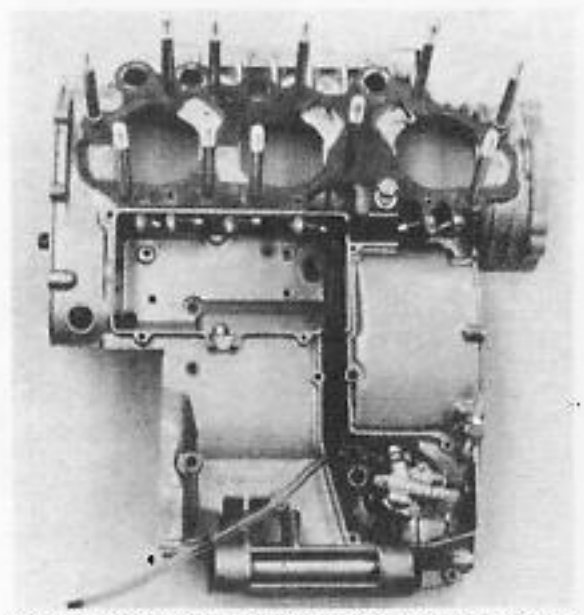
Road performance was improved markedly in both roll-on acceleration and comfort with a 15-tooth sprocket. Engine speed was raised just enough to allow top gear or one-downshift passing with two-up. Upgrades that had to be tackled in fourth could be made in fifth. In-town riding was bettered by making stop light departures far less effort on the engine, and fourth gear could be used more often.

An unexpected side-benefit of changing the gearing was a substantial reduction of an irritating saddle vibration that would buzz through the posterior of rider and passenger. With crankshaft throws set 120 degrees apart the two-stroke triple inherently wobbles in its rubber-cushion mounts. The effect of this rocking couple was reduced this year with stiffer rubber bushings, but more rigid attachment causes an increase in the vibration traveling through the chassis on the M-model. The height of this vibration's amplitude occurs at highway cruising speeds with standard gearing. Changing the gearing moved the engine speed above the critical frequency and reduced the vibration to a gentle tingle, which greatly improved riding comfort.

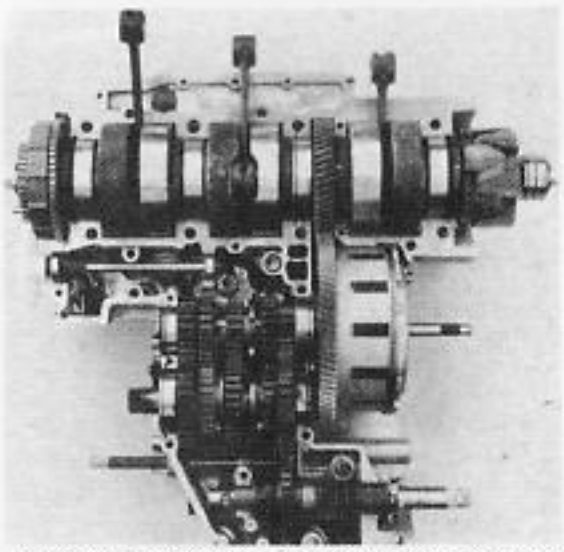
Substantial gains in engine performance apparently have not diminished



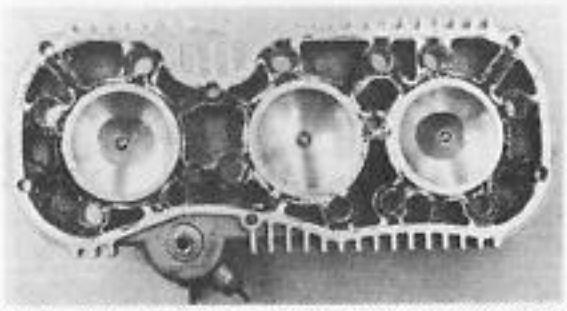
The trio of new constant velocity Mikunis arrest much of the engine bucking. Single cable is linked to rod crank linkage to keep carburetors in synchronization. Gas mileage is about 10% improved.



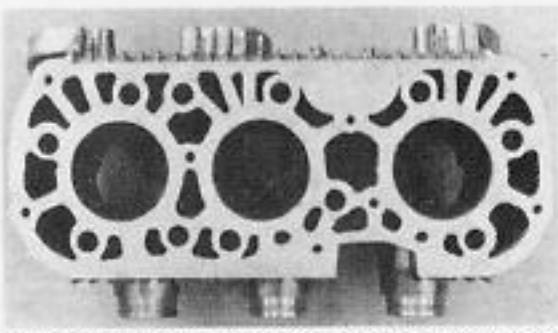
The crankcases split horizontally. The upper case half routes the maze of oil lines to the big end.



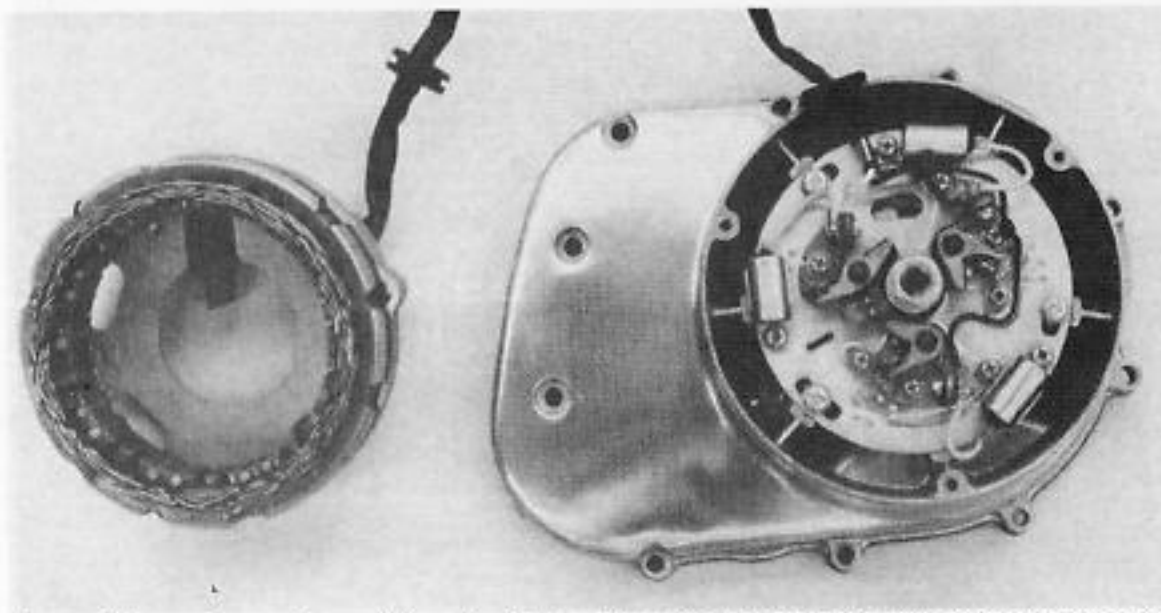
Excessive width comes from starter and generator on crank. Mid-driven clutch is large and tough.



Water jacket cylinderhead has smaller combustion area and uses thinner gasket.



Mammoth cylinder casting cools with water and hides piston noise. Engine produces 57 bhp.



Larger AC generator produces 280-watts. Triple points system attaches to cover that bolts to case.

the LeMans's durability. The clutch lever pull is light and the friction point is pleasantly long—unlike the instant engagement snap of many Japanese oil-bathed units. Gearbox operation requires sharp movements of the shift lever. Engagement of the lower two gears often results in loud clunks as the mating cogs come together. The clutch and gearbox easily withstood 14 passes at the drag strip.

The big dual-disc front brake still makes the LeMans most powerful-stopping of the big bikes. Since it's lighter than the RE5 or Honda's GL-1000 (both with dual discs), the Suzuki stops harder than either one. The GT-750 is the second hardest-stopping bike ever tested by Cycle. The rear drum brake is adequate but it won't take nearly the abuse of the discs without showing signs of fading.

Long overdue is a change of the exhaust system location and side and center stand protrusions. The tighter head pipe bends make for higher and closer location of the mufflers. Both stands have raised with the mufflers. The increased ground clearance is a welcome improvement for spirited mountain road riding. High speed turns can be taken about 10 to 15 mph faster than with earlier LeMans, which started dragging metal on the asphalt at dangerously slow speeds.

While the additional ground clearance was needed, the actual lean angle the LeMans can manage without dragging its bottom is woefully small—especially with the speeds you can get from this year's stronger engine. The RE5, Kawasaki Z-1, BMW R90 and Honda 750 have much more lean-angle clearance. When the LeMans is driven into a turn—especially a bumpy one—hard enough to grind the side stand, the suspension reaches its limit of reasonable stability. At the bike's maximum lean angle the LeMans starts a slow steering oscillation that would turn into a full fledged wobble if the water-pumper could be ridden any faster.

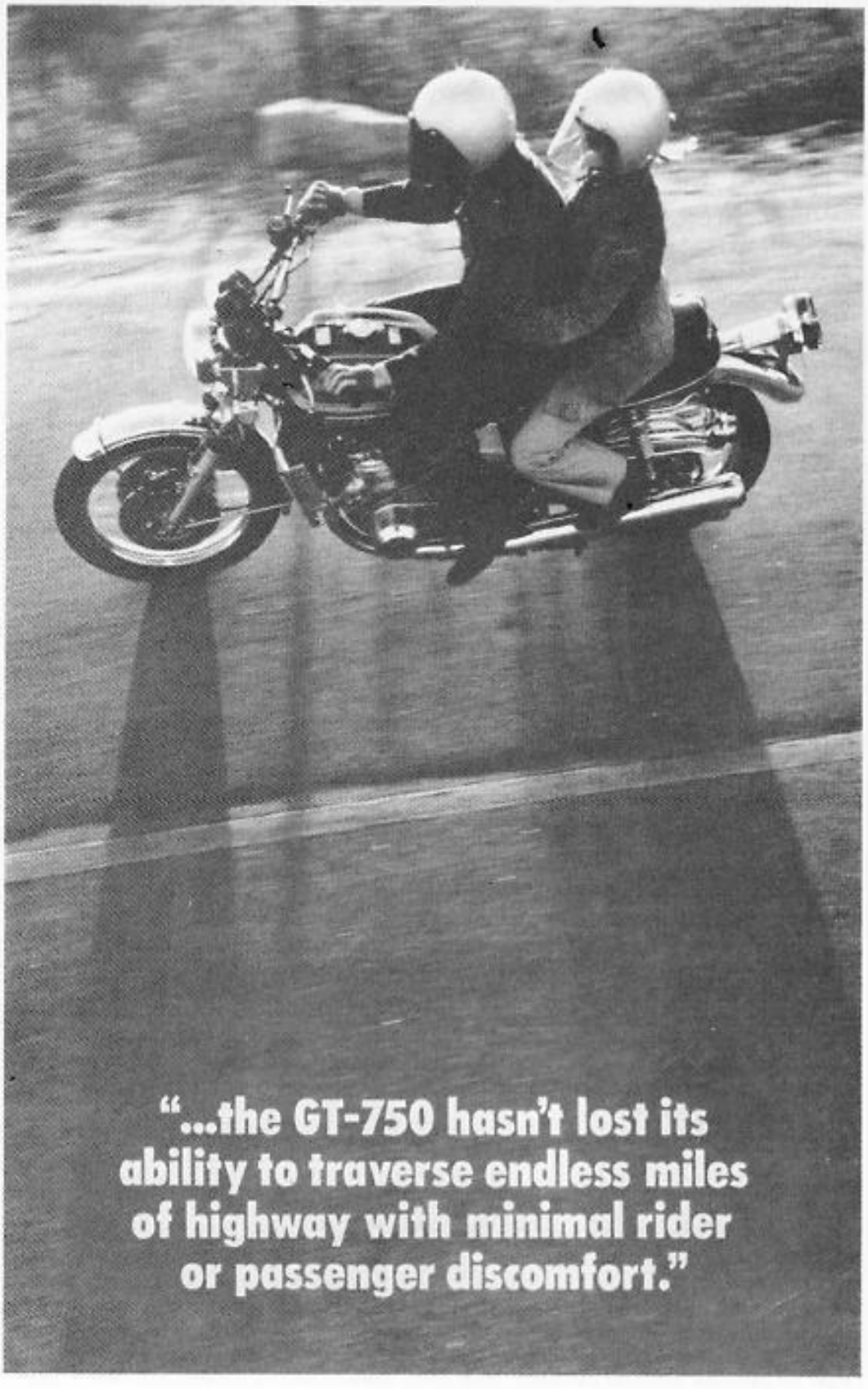
Both front and rear suspension units are set for open road touring. Springing fore and aft is cushy. The damping of the shocks is soft. The fork damping is good and more than the springs could overcome. They collapsed after 2000 miles showed on the odometer. A new set of good fork springs would aid the ride, stability and cornering clearance. Stiffening the shock springs would aid cornering rigidity but detract from road comfort.

Engine noise is virtually nil; the tight piston clearance and water-jacket insulation turns back all but minor gear whir. Exhaust rumble is mute and non-offensive and the intake drone is hardly noticeable. Once in motion none of the operating sounds can pierce a helmet save the buzzing of the DID chain.

Even with the big change in engine tune the GT750 hasn't lost its ability to traverse endless miles of open highway and mountain roads with minimal rider or passenger discomfort. The super-long 26.5 inch bench-type saddle is firmly cushioned with semi-stiff foam. Initially it felt too solid to provide the cushion necessary for hundred-plus mile non-stop jaunts. Its solidness prevents the rider or passenger from ever feeling the seat base. The tremendous length permits the passenger to sit comfortably behind the pilot without having his or her buttocks hanging off the end of the saddle. The additional width and length allow both people to shift about freely to prevent cramps and numbing.

Gas mileage is up about ten percent over previous models. The gearing change we made didn't ruin the gas consumption; it remained the same as with the standard sprocket. We rode the Suzuki harder than most commuters or tourers and still recorded consistent indicated 40 mpg averages. Holding speeds down to the posted limits bumps the mark up to 45 mpg and riding two-up drops it slightly. Amazingly oil consumption is really on the frugal side—approximately one quart each 600 miles. With a 4.5 gallon gas tank the LeMans has a desirable 180 mile or more touring range. It will go over 1000 miles before needing oil.

The GT-750 bounces and weaves very little on grooved cement highways. No fork will move up and down on the cement expansion-line undulations because slider-to-stanchion friction and the gentle approach angle of each expansion strip keeps the fork from moving. High profile motorcycle tires with 30 psi won't absorb much of those small humps either. Suzuki's LeMans, much like the BMW R90S,



"...the GT-750 hasn't lost its ability to traverse endless miles of highway with minimal rider or passenger discomfort."

has the rider situated very close to the rocking center of the machine so that the motorcycle's freeway dance affects the pilot very little. The tire match is good and keeps the bike from following the rain grooves and weaving.

Experience with the new test bike and Suzuki's earlier water-pumpers prove that its all but impossible to overheat the engine. The temperature needle stays right in the middle of the gauge now and doesn't waver back and forth as it once did. The aluminum radiator dissipates heat exceptionally well and the six-blade impeller pump forces almost 16 gallons of coolant per minute through the system at 6000 rpm.

Normal servicing of some of the common repair areas is unnecessarily complex and difficult. Timing involves setting each of three point sets in the ignition system. A single point system would be far more convenient. Removal of the front wheel involves taking off the fender and both brake calipers. Thanks to the awkward location of retaining bolts and the hydraulic lines, a simple task becomes a difficult knuckle-buster. Replacement of the endless chain (no connecting link) requires the removal of the complete swing arm so that a new chain can be laced over the countershaft sprocket. You'll need a chain with a connecting link for long-term service ease.

Undesirable side effects of the big-two-stroke are its bucking and smoking. When the throttle is rolled off the engine fires irregularly and bucks and surges. We learned to hold the clutch in while decelerating or down-shifting to prevent the surging. Using Suzuki's own CCI oil during the test, the bike would smoke almost invisibly under light constant-speed operating. When accelerating hard, particularly when the engine was cold, the visible smoke emitting from the exhaust was irritating and embarrassing. The speedometer and odometer are both ten percent fast and unnecessarily lie about true speed and mileage.

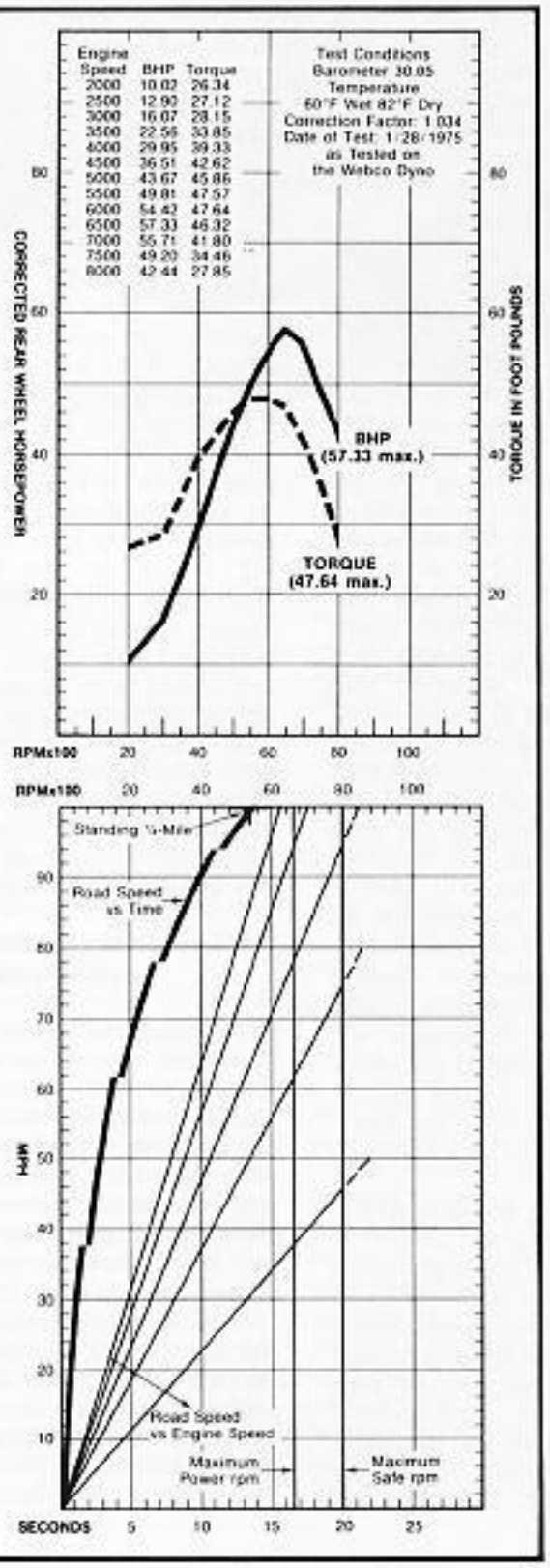
Defining the GT-750M is a difficult task. At the end of the superbike era Suzuki has mysteriously traded off booming touring torque for lots of horsepower. The old 750s were famed for their open road performance consistency, unparalleled two-stroke reliability, low purchase price and inexpensive operating costs. Suzuki once referred to their GT-750 as a 12-second ton-up quarter-miler. It wasn't then and isn't now. Today Suzuki calls their 13-second 100mph roadster a touring machine.

What the GT-750M does best is get from where you are to where you want to go and back without ruffling your feathers. You have to shift gears more often than before but then you can get from the start of a straightaway to the end a lot faster. The LeMans is a very comfortable touring machine with sporting engine performance. It accelerates fast, stops superhard, carries a big payload, goes around corners slightly better and costs more. It's a likeable combination. ◉



SUZUKI GT 750M LE MANS

Price, suggested retail	$2145
Tire, front	3.25 x 19 in. Bridgestone
rear	4.00 x 18 in. Bridgestone
Brake, front	11.6 in. x 1.94 in. (X2) (295 x 50mm) (X2)
rear	7.03 in. x 1.625 in. (178.5 x 41mm)
Brake swept area	216.85 sq. in. (1157.4 cm²)
Specific brake loading	3.33 lb./sq. in. @ test weight
Engine type	Piston port, two-stroke, triple
Bore and stroke	2.76 in. x 2.52 in. (70 x 64mm)
Piston displacement	45.0 (738 cm³)
Compression ratio	6.7:1
Carburetion	3-40mm Mikuni CV
Air filtration	Paper
Ignition	Battery/coil
Bhp @ rpm	57.33 @ 6500
Torque @ rpm	47.64 @ 6000
Rake/Trail	27°/3.74 in.
Mph/1000 rpm, top gear	17.2 mph
Fuel capacity	4.5 gal. (17 l.)
Oil capacity	3.8 pts. (1.8 l.)
Electrical power	AC generator
Battery	12V-14AH
Primary Drive	Helical spur gear 1.673:1
Gear ratios, overall	(1) 12.798 (2) 7.805 (3) 6.129 (4) 5.059 (5) 4.325
Wheelbase	57.8 in. (147 cm)
Seat height	33 in. (84 cm)
Ground clearance	6 in. (15.2 cm)
Curb weight	556 lbs. wet (252 kg)
Test weight	716 lbs. w/rider (325 kg)
Instruments	Tachometer and speedometer w/tripmeter
Sound level (California Standard)	85.7 dB(A)
Standing start ¼-mile	13.296 sec./100.44 mph
Average fuel consumption	40 mpg
Speedometer error	Indicated 30 mph = 25.61 actual Indicated 60 mph = 53.91 actual



ROAD-TEST REPORT

Suzuki GT750M

The modifications to the GT750 for this season have been enough to merit the new M suffix to the model name; and this time the change denotes a truly transformed motorcycle



YOU MAY HAVE thought that the Suzuki 750 was just another overweight and overengineered exercise in salesmanship unable to put up a good fight to sustain its specification in any real competitive company. Frankly, up to the L mark, you would not be entirely wrong. The earlier 750s were underbraked, and not overendowed with performance. They did, however, produce mountains of smooth and undemanding torque, if little else, and steadily won a small but growing following as the major faults were eradicated. Once the inadequate drum brake had been replaced by a pair of discs on the front wheel, the considerable bulk of the GT750 was matched to its performance, and the increasing involvement of Suzuki in 750 racing steadily altered the image of what was really a solid if stolid tourer.

Modifications to the GT750 for this season have been enough to merit the M suffix to the model, and this time the change denotes a transformed motorcycle.

What has been done to the GT750 is to strip the torque from the lower r.p.m. range, and deliver a drastic boost to the power curve. The porting has been extensively altered with several millimetres carved from the timing on the exhaust port, with commensurate alterations all round. None of this is really very difficult, but the fact remains that Suzuki decided to do it, and thereby probably alienate their painfully won customers for their heavy, smooth watercooled tourer. Not being foolish, they had another such tourer ready – the RE5 Wankel: also watercooled, also a tourer, and also very heavy. With all that investment in complex machinery and heavy R&D expenditure to recover, the RE5 had taken much of Suzuki's available resources: obviously the GT750 was sitting in the same market slot, and had to be shifted a bit. While the resultant transformation smacks of a shot of stimulant applied to a middle-aged recipient, the GT750 has now become a real contender in the "superbike" market. At the price it is indeed a strong one, and once it has become more broadly known how it has changed, the demand will sprint upwards. In a way it is sad to see such a workmanlike cruiser disappear. I enjoy touring. But the market place now asks for – and gets – machines with a different balance of characteristics.

I had the GT750 for a week, and covered 500 miles on it through varied country. Unfortunately the rain failed to arrive and so the critical aspects of wet weather performance of the tyres and the disc brake linings were untested. Almost instantly one forgot that Inoue tyres used to be little short of terrifying, as their dry road adhesion was perfectly acceptable. Until tested in the wet I do not feel happy with that particular brand, having had too many nasty experiences with Inoue tyres in the past. This need not concern prospective purchasers as GT750s are usually delivered with those excellent Bridgestone tyres which have done so much to wake up the flagging motorcycle R&D of British manufacturers other than Dunlop.

Tyres are critically important to the overall feel of modern machines. The standards set by the best tyres are very high, and the new Avon and Michelin covers are joined by K91 Dunlops: all these are built as general purpose tyres, and are not tuned to one machine rather than another. Some manufacturers are able to ensure that the tyre is built for their machines explicitly. Continental and BMW share a special attunement, and most of the Japanese manufacturers set up tyres for the machines built in Japan. This may explain the manner in which the Inoue tyres performed. The unthinking automatic exchange of Japanese-built original equipment tyres for Avon or Dunlop before delivery can produce some quite horrid side effects. The well-known (and personally experienced) terrifying speed wobble provided by TT100 tyres on Z1 Kawasakis was enough to make me look very much askance at the British product. As yet I have not had the chance to try an Avon Roadrunner or Dunlop K91, but of the modern V rated tyres tried so far, I would place my money on the Michelin M45. Initial experiments with Michelins have, I am told by Suzuki, not yet been completed. From my own experience I have found that the tyre pressures – and indeed tyre temperatures – which suit a specific machine may be both critical and hard to determine. Just a single psi alteration in differential nailed my Ducati to the road: similarly, an unexpectedly large pressure differential between front and rear tyres on a Z1 was needed to tame the aforementioned strange and worrying behaviour on TT100s.

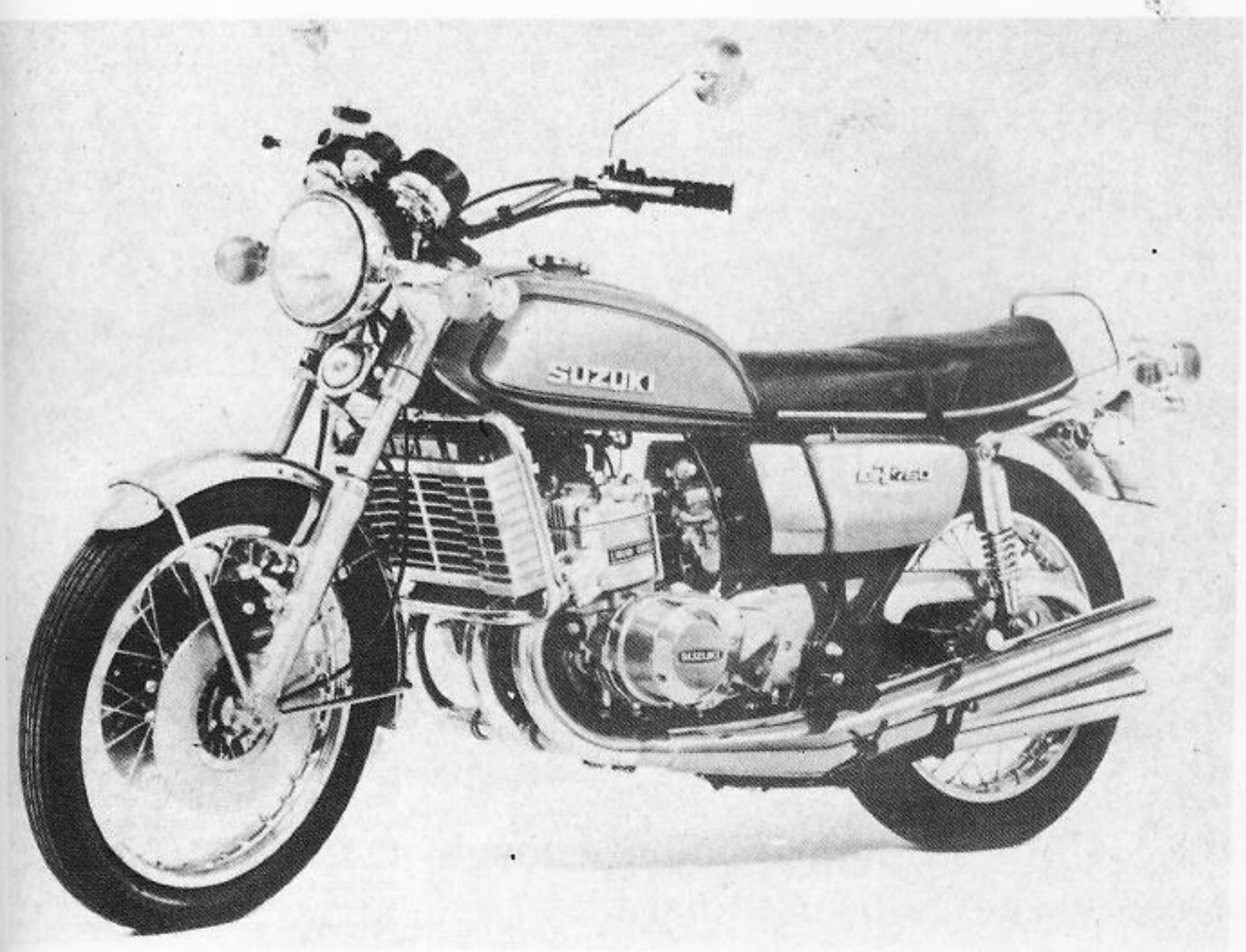
Buyers should give original tyres a chance

This issue has been raised to try to encourage purchasers to give the original tyres a chance. The matching of general-purpose tyres to different machines can take a while to tune in, and even then the characteristics in handling may differ substantially. I hope to complete a series of tyre comparisons, showing set up alterations, handling characteristics, and wear rates. The first two will be covered in the 12,000 mile report coming up on my Z1a Kawasaki.

Why worry so much about tyres on a tourer like the GT750? It used not to have enough ground clearance to require much cornering adhesion. The slight changes in ground clearance can really be used now, and the loss in low-speed torque encourages a more spirited type of riding. The GT750 is also fast: 120 m.p.h. – indicated speeds are not difficult to obtain, and while clearly no greater than 108-112 m.p.h. really, it is not often appreciated just how fast *100* m.p.h. is. Do not confuse this machine with the 750 of last year. This is not simply to say that it has improved: it has changed its character almost entirely. If you have always coveted a 750GT, forget it and have a look at the RE5 or the 550: if you were more in the market for a Z1 but couldn't afford it, or were bored with Honda CB750 fours, then the new Suzuki has a great deal to offer. The handling and road holding is an improvement over the earlier GT750s, and I tried an earlier version after the test to confirm this suspicion. The silencers seem to be tucked away a bit better and the engine note is altered slightly. The steering is very light and quick, which might be expected to help town manoeuvres: actually it doesn't, as the torque required to make such town trickling a pleasure is totally inadequate. Second and third gears are frequently needed in town, and the extra power delivered at the higher r.p.m. then used is an embarrassment which makes one wish for slower steering once more.

Once the town has been escaped the GT750 finds its own pace. The pace is pretty rapid. Third gear is an inviting gear to ride in, as it gives a speed range from 10 to over 90 m.p.h. with a real response at most r.p.m. The smoothness of a three-cylinder two-stroke is not quite as perfect as theory and advertisements might suggest. The result is good enough to make a smooth Honda CB750 feel a bit rough when exchanging machines, so the vibrations felt on the GT are clearly a result of that endearing human trait of uprating standards as fast as the product improves. The handlebars are quite inappropriate for this quick motorcycle. The steering rake is not severe enough to need the leverage, and the wind pressure at the natural pace of travel is quite uncomfortable.

The handlebar grips are of the type which pass vibration all too easily, and the tingles at 60/70 m.p.h. are quite tangible as a result. The motor is not as nice and well-behaved at low r.p.m. as a good tourer ought to be: a certain amount of bucking and hiccupping is evident up to 3,500 r.p.m. but as the power is pretty minimal until 4-4,500 this is no real disadvantage. The use of lots of throttle and r.p.m. in town usually induces two-strokes to make a great deal of evil-smelling smoke and emit a lot of noise. The GT does neither: the silencing is good, and the oil smoke minimal. These two factors are the saving grace of the high-pitched power delivery band. The gearbox is typical of modern Japanese units in that it has a short positive action, and digs a real sore on one's toes. The digital gear indicator is really useful on this machine, and after less than an hour it became accepted as an essential element of the controls.



The clutch is sweet, one of the nicest I have used on a large machine. The action is light, and the engagement point totally lacks the sudden catch point of the Honda CB750, which can be so infuriating. The clutch gets a lot of use and even when slipped repeatedly in hot Hyde Park Corner to Chiswick crawls it retained its good nature.

The appearance of the machine is surprisingly neat. The radiator is not terribly obtrusive, unlike that of the RE5 The front wheel with its massive pair of discs is the dominant feature. The 19in rim carries a 3.25 x H19in tyre, with tread right round the sidewalls. The 19in rim makes the discs look smaller than they really are. The chromed mudguard is pop-rivetted on to the stays; not a very good solution – racing Yamahas suffer from the steady loss of such rivets. Due to the lower levels of vibration the pop-rivets on the GT750 had not started to go, and indeed may not loosen for many miles. I just don't like this method of fixing. Welding is far better. The radiator has a grey plastic surround with a distinct dent to fit the mudguard on full rebound. The fork action is such that the full clearance is used. The rim round the radiator is a crashbar of unobtrusive appearance. The instrument panel on the fork yokes is rubber mounted in an equally neat manner, and the needle readings are commendably steady as a result. The mirrors are isolated by their own little rubber pots on the lower stems, and gave a clear image at all speeds. Quite a change after a Z1.

Appearance is surprisingly neat, though the machine is formidably large. The radiator is not too obtrusive, unlike that of the RE5. The front wheel, with its twin discs, is the dominant feature

The water temperature gauge is central on the panel, and after a certain delay it sits just below halfway across the scale in almost any kind of use. When cold the engine is a bit difficult to ease along smoothly, but it is quite rideable. The B8ES NGK plugs are well up to the sustained choke usage needed. They are assisted by the lack of those nasty metal caps which the Japanese so often insist on fitting to their plug caps, to add to wet-weather ignition uncertainties.

The handlebar levers and switches are of mixed design. The switches are very good, and the kill switch on the right hand side is quite the best I have used. Only the positions of the headlamp flasher and horn buttons are a bit awkward. The clutch lever is protected at the pivot by a plastic casing which does a good job of keeping out rain and dust from the clutch cable. This guard alone probably contributes as much to the continued sweet action of the clutch as the design of the throw-out mechanism.

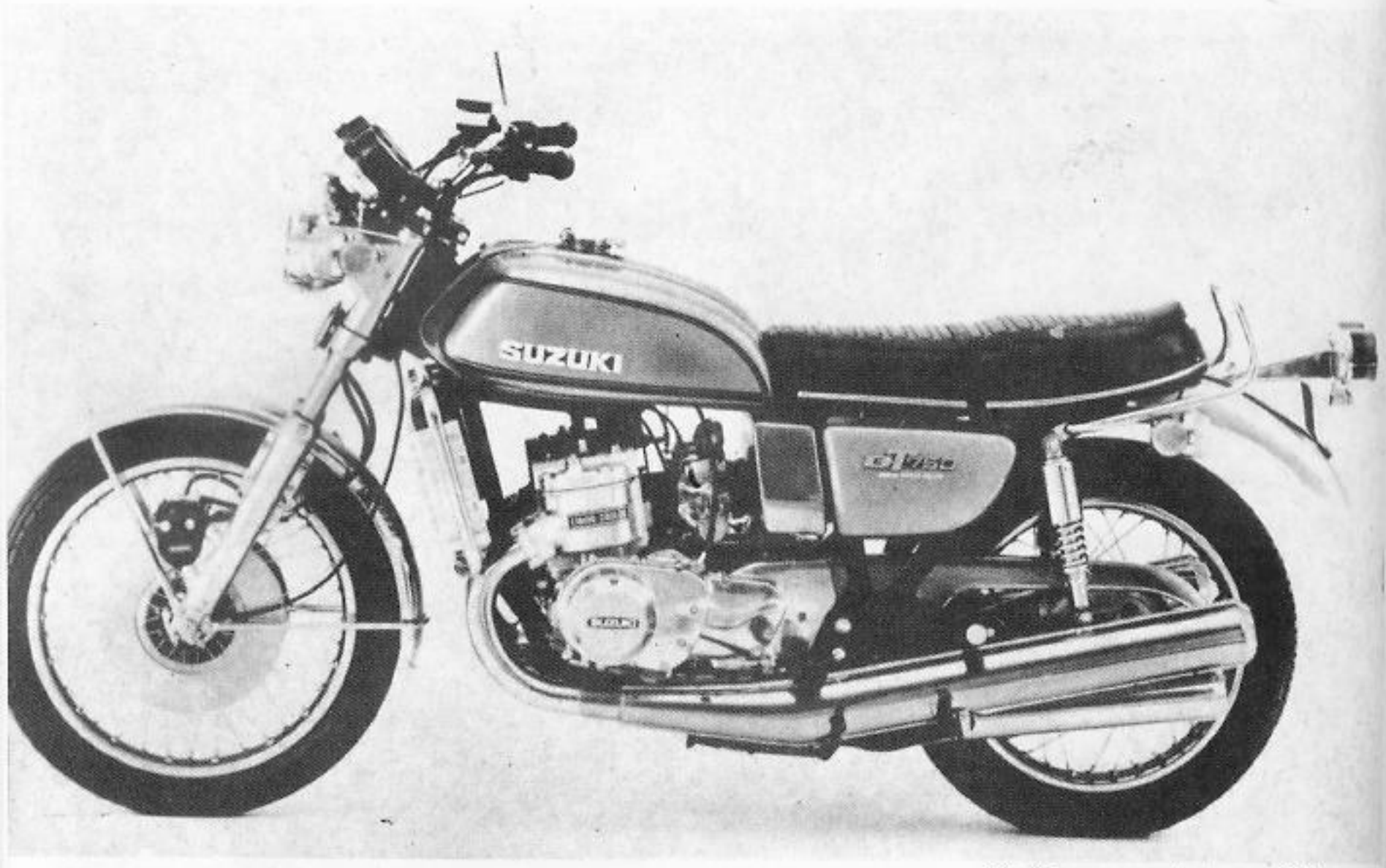
The brake lever attracts a black look: there is no action-point adjustment provided. This would not matter if the standard Suzuki pads were not so mulishly reluctant either to stop the bike in the dry without hard pressures, or to wipe the water off at all when damped in a ford. These discs are remarkably effective when properly set up, but I cannot agree with the choice of linings on the machine supplied. The lever pressures needed are far too high, and the leverage ratio on the handlebar should really be altered to give a better feel. On the credit side, the lever feel is the best of any twin-disc system that I have used other than the twin Ducati Scarab units.

Like the Ducati, the GT750 has a clear body to the hydraulic master cylinder which is in fact sufficiently clear to allow an easy view of the level of fluid without danger of spoiling paintwork with spillage of Lockheed 329.

The throttle is a push-pull, double-cable type, which is really a bit unnecessary now that constant vacuum carburettors are fitted. Nevertheless it is a further piece of solidly safe design, well executed.

Some of the detail on the bike is a bit overdone, but the addition of a locking filler cap is no longer a joke with petrol at its present price.

One omission is worth noting: there is no steering damper fitted, either friction or hydraulic – just a black plastic button where the accountant drew the line at any extra accessories, after the engineers had evidently found it worth considering! On many machines a steering damper is not really needed. The GT750 isn't one of them. The harsh rear suspension and the choppy front fork action under pressure on a fast, bumpy bend combine to produce some spine-twisting crunches if bumps are crossed on fast corners. The front wheel oscillates violently



Civilized . . . the dual seat is amply long for two-up riding and is very comfortable

The GT750 is fun . . . and has enough safety margin to be used hard

in sympathy, and a hydraulic damper would be very welcome. When controlling these wobbles the wide, wide tank does not help: the tank of course is actually a double affair, with a water tank header under a flap at the front. The kickstarter is obtrusive, and even in mild town-traversing rides the continual abrasion of the top of the kickstarter on one's right leg becomes very irritating indeed.

The fuel tap is beautifully designed: none of the uncertainty as to the direction of on or off: the Suzuki lever has a ring on it which circles the appropriate setting as it is reached. The choke, however, is unlabelled and it isn't clear which way is "on" until the plugs start to foul.

The seat is fairly comfortable, but the 4.00 x 18in Inoue rear tyre has to be run at a rather high pressure, leading to a feeling that the seat could really do with some substantial improvement. The five-position rear shock absorbers could with profit be replaced by an owner with a set of gas Girlings or Konis with appropriately softer springing: then it might be fair to judge the seat, but as it is the shocks are transmitted all too well from ground to spine. The suspension also gives the rear chain a harder time than need be. In 400 miles on a pretty new chain the adjustment required was 10 flats on the adjusters – and no rain had been encountered, nor had the ford test for disc brake wet testing yet been met with.

I would have tried a wider range of suspension settings had the kit in the machine had the appropriate tool. There was no plug spanner, either, and so the plugs were not checked until the end of the test.

The mix of uses to which the machine was put gave the plugs no chance to get furred up for long. An interesting fact on the gearing is that the peak power is at 6,500, and this was precisely the r.p.m. indicated in top gear when the Suzuki was fully extended. As the gearing translates to 17.2 m.p.h./1,000 this suggests a speed of 115 m.p.h. or so. Allowing for r.p.m. leakage on the revmeter (a Smiths unit on a Desmo 750 Ducati overread by 580 r.p.m. when tested recently), a real 110 m.p.h. is on tap. This puts the Suzuki right up with the BMWs for all practical purposes. It is interesting to note that the GT750 and the R90S share one pair of features precisely. Neither is very nice in town, the R90S because of lumpy bottom-end power delivery and lack of torque and its unhappy gearbox; the Suzuki due to its lack of low-speed torque, its "hunting" at 2-3,000 r.p.m., and its tall gearing. Outside town conditions the R90S and the GT750 also share characteristics: both of them are a joy to ride swiftly – if not really hard – on open roads, on twisty roads, and even at night. When you consider that you could get a Ducati GT750 and a Suzuki GT750 and still have change from the bill for a new 90S . . . just what does the purchaser get for his money? The answer is very difficult to give: it all depends so much on how you use a machine, and how it uses you. The Suzuki is such a nice lane-burner that my first 130 miles were covered at a mere 33.5 m.p.g. As the fun of blinding along using the gearbox and throttle to the full faded, 36.7 m.p.g. came up, and after a determined effort to ride without exploiting the power band had been made a giddy 46.0 was reached at the cost of really quite difficult riding, as the GT simply does not like low r.p.m. operations.

The silence of the engine is remarkable. The liquid-cooled sign on the barrels not only works but silences the two-stroke rustles almost entirely! The refinement is carried right through to the exhaust system, where it falls down. The contrived three-into-four arrangement achieves little beyond more weight, more metal to clean, and less accessibility to the machine. The rattle of a two-stroke whuffles out of all four pipes, and somehow demeans the otherwise civilised sounds. The smoky exhaust still all too common in two-strokes is not a feature of the Suzuki. The form of positive oil feed used by this firm is very efficient, both in terms of its frugal thirst for oil, and in terms of the low smoke content of the exhaust gases. If really hard acceleration is used a trail of smoke still appears, so there is some room for improvement still.

The civilized aspect is extended to the passenger in that the dualseat has ample room for the second rider, and gives a good standard of ride comfort once the jolts of the rear suspension are discounted. That infuriating four-pipe exhaust system reduces the available space for panniers, and the high and huge rear light assembly makes it hard to get a carrier down to a reasonably low loading level. The rear winkers are fairly neatly placed, and have reflectors fitted to the sides. Quite often the side reflectors required by American markets are removed for our shipments.

Not all the development of this long established engine is yet completed: the points

arrangement is contorted, to say the least. While some of Suzuki's competitors hae gone over to electronic ignition, the GT sticks with a three contact-breaker arrangement. Timing really matters on two-strokes, and although the precision ritual is necessary for such sporting thoroughbreds as the Yamaha RD series, the GT is basically a high-performance tourer, and ought to have a simpler and more reliable ignition arrangement. The water cooling *is* foolproof, and it is difficult indeed to complain about a system so silently efficient in its operation, and so successful in both stabilizing the power and quieting the motor: how about finishing the job? It really needs these final touches to transform it into a classic.

The Suzuki frame and suspension layout is now going to get a great deal more testing. Eddie Crooks entered a GT750 in the 10-lap Production TT, and although it circulated at a very healthy rate, at about 90 m.p.h. in its befairinged guise, it was really too heavy and too slow for the competition. It is not beyond the bounds of possibility that the same forcing process applied long ago to the T500 may be brought to bear on the 750. This could do nothing but good for everyone. The 500 engine has now been very thoroughly tried in highly tuned versions, by numerous riders and by works racing efforts. The T500 was the subject of some cobby race-prepared works sales, and the full spares kit which went with them made even the Yamaha booty look inadequate. Suzuki just might do the same for the 750, and build a number of T750 race motors with spares kits to allow the racers themselves to sort out the frame, brakes and running gear, just as they did with the air-cooled 500s. It would do wonders for the image of the 750, and Charlie Sanby's excellent ride in the Isle of Man is unlikely to do any harm to this possibility. Suzuki GB learned very quickly and very successfully of the sales-building potential of racing in production classes, and the Suzuki GB team is really getting ahead now. If Heron hold to the same commercial judgements then we can expect some aid for the production racer on Suzukis before very long.

The general tenor of this report has been fairly critical: this should be put into perspective. Modern motorcycles are in general very good indeed, and in a mere 500 miles it takes a great deal of care to get even an approximate view of the overall character of the machine – let alone its reliability or real worth. Sensitivity to tyres, compound and tread, to state of tune, to tyre pressures, to suspension settings, and to other minor items can make such a large comparative difference between one machine and another that the poor tester, trying to give a sound critical appraisal for the readers, is pushed to two extremes: first the standards of criticism have to be raised, just as the Snell Foundation keeps half a jump ahead of the field in helmet standards, and secondly the tests have to get longer.

We are putting this policy into effect, and 1,000-mile racing/road test reports of the 750 Ducati Desmo and 13,000 miles of problems and pleasures of a Z1 Kawasaki are nearing completion: so too are 12,000-mile reports on BMW750 and 5,000 miles on Yamaha RD250, although the latter two will be treated in summary form as the full tests of these models have been amply reported, and only the longer-term characteristics and sensitivities to different equipment require additional comment.

One thing which is difficult to appraise is the degree to which fine words about spares and service are actually borne out in practice. While this has been done for a number of the machines mentioned, the Suzuki was not with us long enough to obtain experience of this nature. It is worth noting that when the GT750 was returned to Suzuki GB at Beddington Lane at the appointed hour, the Z1 I'd left there had a few extra miles on the clock – and a new rear inner tube due to a slow puncture spotted by the service staff. This sort of alert thoroughness is all that one can point to from personal experience, but it must be freely admitted that it makes it very tempting to guess that this sort of thoroughness extends to the whole HQ. At least the service manager has a real affinity for motorcycles, and makes regular and spirited use of a 750 on a regular basis – for fun. In fact he asked for a car *and* a bike for his duties on the firm . . . The cutaway diagrams with this text are typical of the data which one can ask for fruitlessly from all too many manufacturers and concessionaires, and is worth close examination. It is far easier to get a clear idea of the design of a motor from an exploded diagram than from straightforward pictures of the parts. The minor features such as the shock absorbers in the clutch housing, and the design of the water pump, are quite clear from the isometrics. The second diagram of the gearing arrangements also shows the characteristically compact nature of the design layout. Personally I don't really like the long outrigger arrangement for the contact-breakers, and feel that a far better job could have been made of it. The tolerances offered for the spark timing – 24° + 3 and - 2 – is rather generous by two-stroke standards, and it is only fair to point out that this diagram has remained unchanged since the first 750 models. No doubt the tolerances have been tightened up by now, to go with the greater thermal loads induced by the greater power output and increased compression ratios now in use.

How does one concisely summarize the GT750M?

It stops;

It is fast;

It delivers good fuel economy when driven sanely;

It has sufficient ground clearance for solo enjoyment (but not for full load and passenger antics);

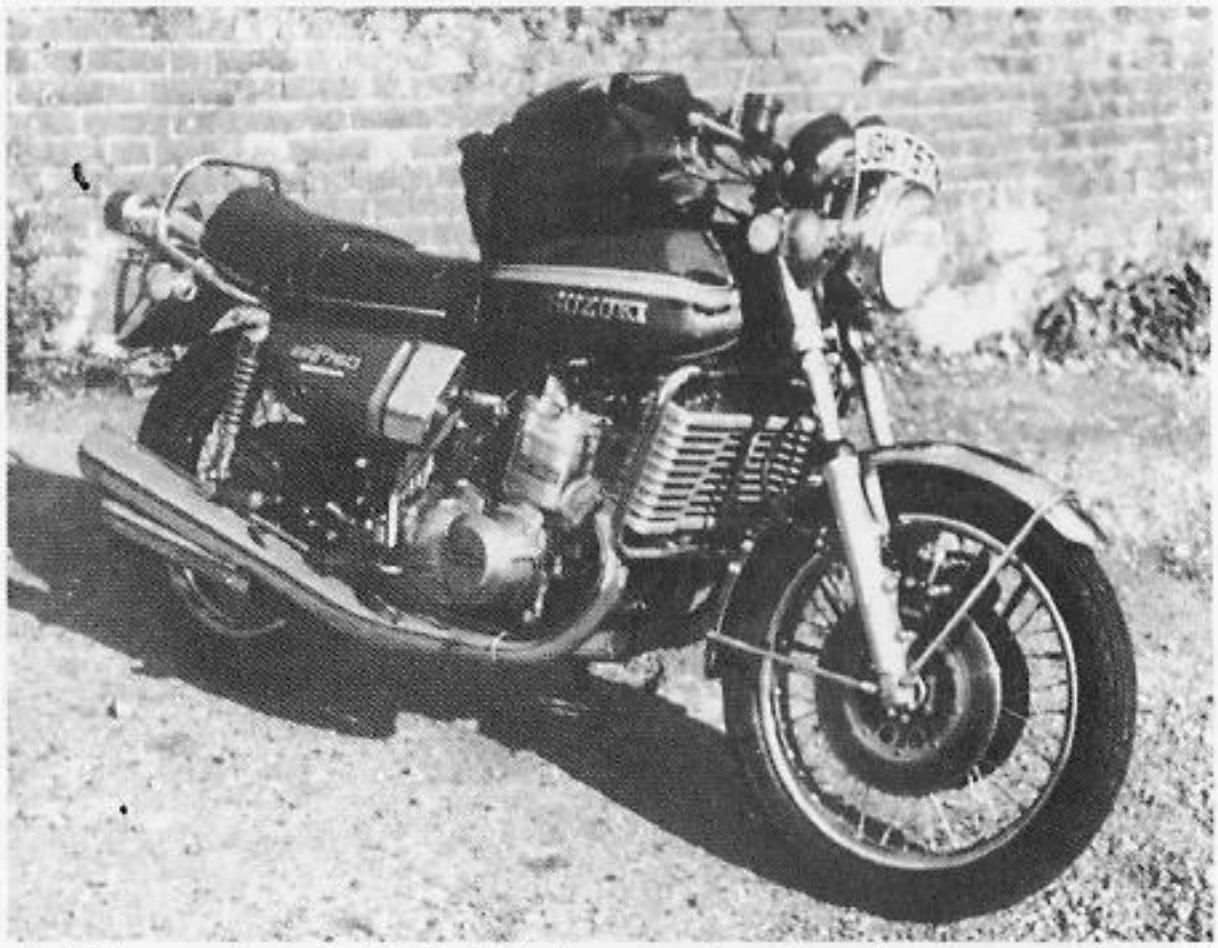
It is neatly made;

It is cheap;

It is quite acceptable in town, but in its element in the country;

It is fun.

Let's stick with the last entry in the list: the GT750 is FUN – and has sufficient safety margin to be used hard as it stands. It will also haul load and passenger with some degree of comfort at the price only of a lot of gear changing (I often looked for a sixth gear from the feel of the machine). On balance, the GT750 provides the quiet, understated package now needed to sell high-performance machines upmarket – and retains the basic robustness of design to sustain the idiotic treatment that so many large machines now suffer. The T500 has been touted as a classic and as very good value for money: frankly that outdated and underbraked machine vibrates far too much to be really usable, the brakes detracting notably from peace of mind. The GT750 suffers in neither direction, and is totally usable. Hold the price, Suzuki stabilize the design, and clear up the odd aberration – and when the tooling is written off the customers will still be queuing up to buy.



Specification: Suzuki GT750M: R.r.p. – £969

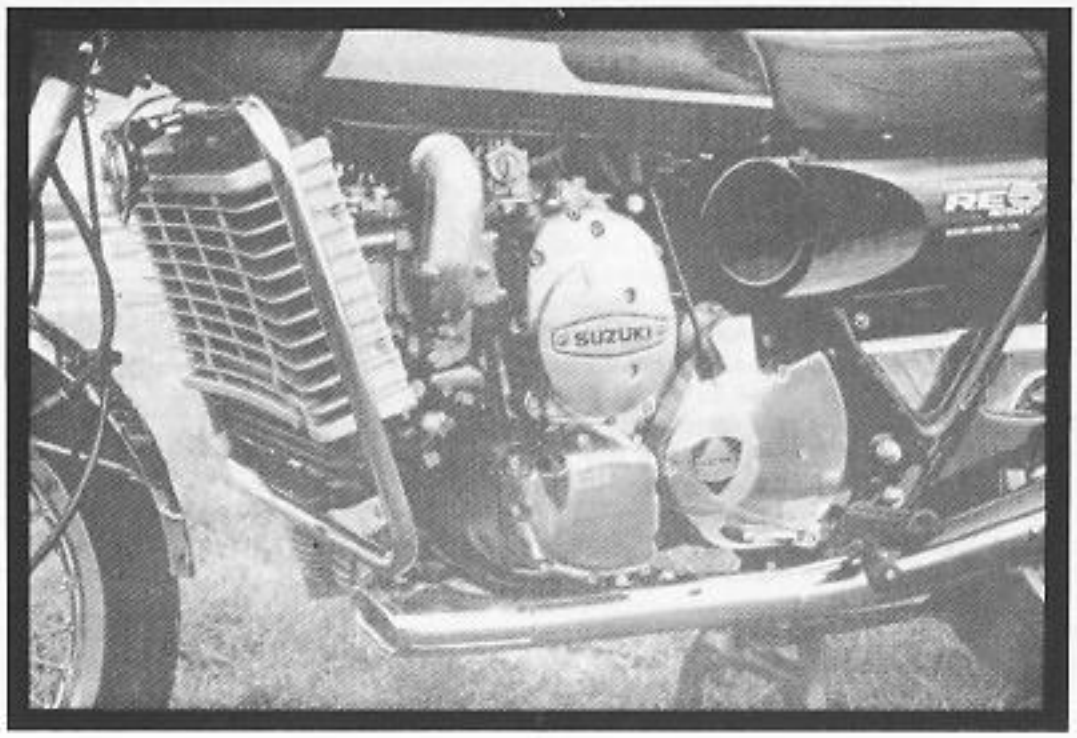
Tyres: Front: 3.25 x 19in Inoue. Rear: 4.00 x 18in Inoue
Brakes: Front: Twin 11.6in discs. Rear: S.L.S. 7in drum
Engine: 3 cylinders, bore/stroke: 70 x 64mm (738 c.c.)
Carburettors: 3 x 40mm CV Mikuni
Corrected C.R.: 6:7
BHP: 57 @ 6,500 at rear wheel
Dent torque: 48 @ 6,000
R.P.M. limits: 7,500-8,000
M.P.H./1,000 r.p.m.: 17.2
Fuel tank: 17 litres
Oil: 1.8 litres
Gearing: Primary: 1.67:1. Overall: 1) 12.8; 2) 7.8; 3) 6.1; 4) 5.1; 5) 4.3
Wheelbase: 147cm wet
Weight: 560 lb (wet)



RE5 v

ROTARY OR TRIPLE

BIG BORE SUZI



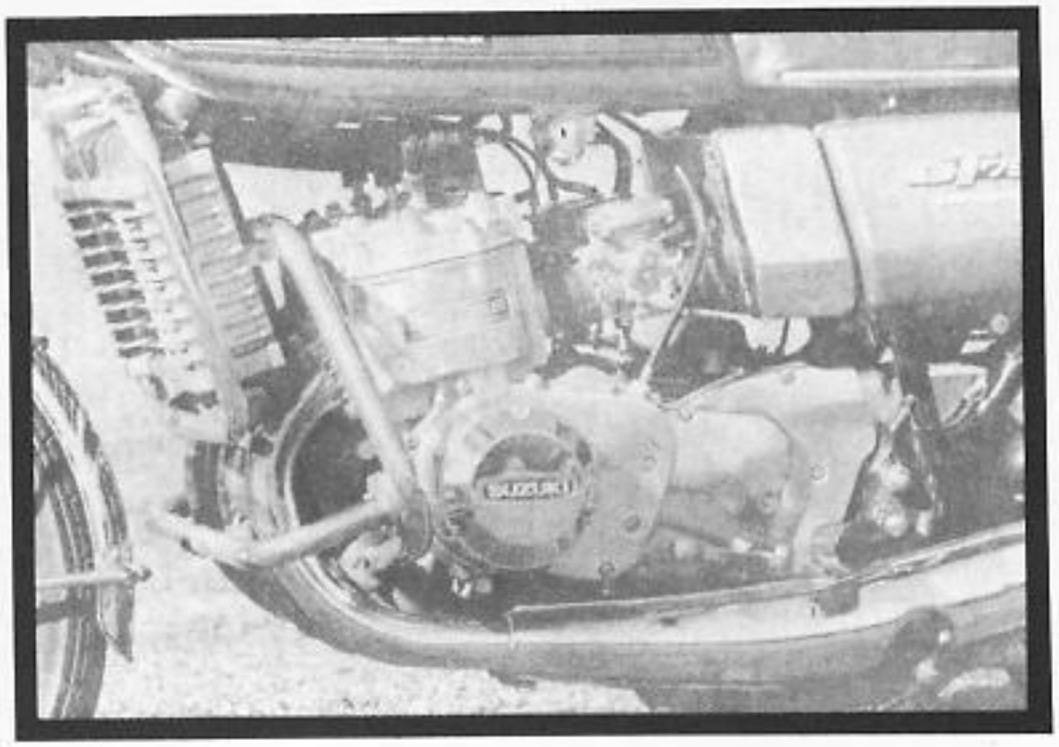
When Suzuki's production water-cooled 'stroker triple debuted it was a radical device. And immediately following came another – a "rotary revolution," said Suzuki, "a bike of totally different concept". So now we have the GT750 and the RE5. Are they really worlds apart – or a similar conclusion reached from different approaches? LESTER MORRIS investigates . . .

GT750

WHICH IS BETTER?
SHOOTOUT!

AT FIRST glance the two Suzuki heavyweights, the three-cylinder two-stroke 750 and the single-rotary 500, are extremely alike. They both use twin disc front brakes, both are water-cooled, they have similar dimensions, and both appear to be designed to fulfill similar functions. Why then did the Japanese factory slot them both into the top end of the market, where they will compete not only with some very formidable opposition, but with each other as well?

Oriental sales philosophy has always preached that maximum saturation of a specific class of machine will result in better sales. One has only to look at Honda's technique in the 350 cm^3 class — the range includes singles, twins, fours, trail models, road-going





RE5 v GT750

machines, off-road workhorses, new cafe-racers and who-knows-what-else around the corner!

Now Suzuki has two flagships of similar purpose but how do they shape up in normal service — in terms of road performance? The two powerplants are as different as any two units could be, and yet they offer similar performance . . . or do they?

We thought a thorough comparison between the two models was indicated, so one bright and crisp morning set out to put the two juggernauts through their paces. We were prepared for some surprises and, we got 'em! For a start we were interested to see how the rotary's carburetion performed after careful tuning by the distributors. Our first test bike (TWO WHEELS, June) had definite problems with the super-complex carb. But our second bike had no problems, aside from an indication of overheating in very heavy traffic. The temperature gauge showed a high reading but no other symptoms appeared.

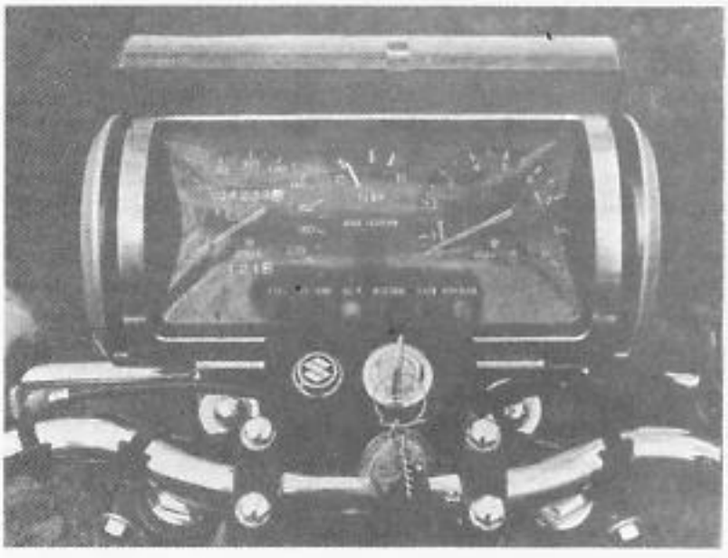
The big three-cylinder two-stroke has been around long enough to have had all its bugs ironed out by now, and behaved itself perfectly, again proving that it is a fine touring iron, at once easy to ride and quite tireless in point-to-point riding.

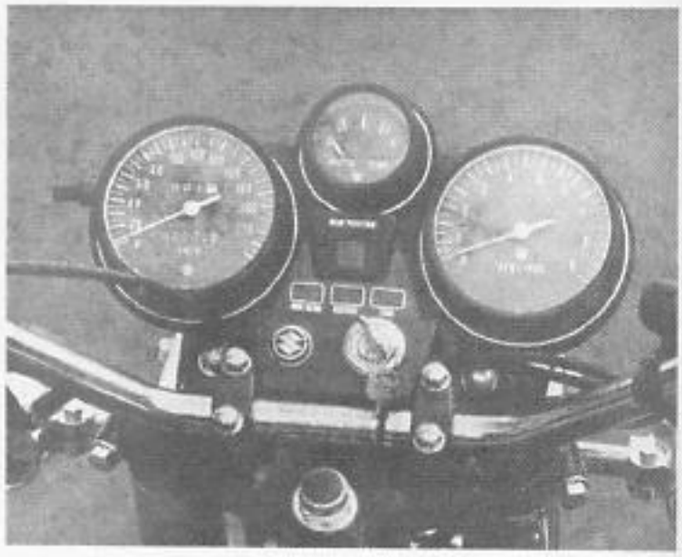
While the two machines are similar in general appearance and bulk, the strange-looking engine-room on the rotary model advertises its totally different design. The rotary is a single-chamber 500, with primary drive by roller chain to a massive clutch assembly and five-speed gearbox. Cleverly, the rotor revolves in the same direction as the machine's road wheels, neatly obviating the torque-effect problems inherent in masses rotating contrary to the bike's direction. Water cooling allows the transverse engine positioning, but does result in odd bulges and generally untidy lines in the castings. The castings themselves are beautifully executed and very well finished, but are nowhere near as neat as the components on the conventional machine.

This cobby look extends to the points cover and oil filter element, which seems to spring out of the castings as though they were glued on as an afterthought. For all that,

Worlds apart or the same conclusion reached from different approaches? However way you look at it the most outstanding thing about Suzuki's two heavyweights is their similarity — engines regardless.

Plenty of room for differing opinion here! The rotary's nacelle is neat and easy to read but flip-top was thought by most riders to be a needless excursion into gimmickry. The concensus of opinion favored the GT750 layout and we'd agree.





the RE5 has a masculine air, and looks rugged and strong.

In fact, the only really jarring note on the whole machine is the instrument casing. It resembles an old oil can which someone has cut up to hold an excellent range of instruments. On the credit side, it is doubtful if any factory is likely to come up with a better set of instruments and/or idiot lights for some time to come. Along with the normal speedo and rev counter clocks nestle a water temperature gauge and a *very* handy digital gear indicator. Idiot lights wink from the panel and let the unwary know that high beam is on, blinkers are functioning, you are coasting in neutral gear or that silly you have strolled away and left the ignition on.

Beautifully instrumented — if only they would throw that tin can away! It is a safe bet that later models will plump for a much neater nacelle, but this is probably some time away. The older 750 model is fitted with similarly excellent instruments and switchgear, but makes do quite well with a more acceptable fitting. General finish of enamel, chromium plate and alloy castings is similarly first class on both examples of the marque, but on closer examination basic differences become obvious!

Rather than fitting the new engine in a tired old frame (as many an English manufacturer has been known to do) Suzuki has given the rotary a totally different frame and some other components peculiar to itself, making the machine truly a *new model* — distinct from its now-not-quite-so-similar stablemate. It is only when the two machines are lined up together that the many differences between them become really apparent — this side of riding them, that is!

For a start, the juxtaposition of footrests, handlebars and seating position is quite different on both machines — not radically so, but in the odd centimetre or two here and there that makes all the difference between an acceptable design and one which may just miss the boat. Saddle height on the RE5 was commendably low and the seat wide and soft (apparently with the long-distance tourer's needs very much in mind) and higher-mounted footrests allowed a comfortable bend at the knee. Handlebars required a slight lean forward on the move. Wrist angle was perfect; the well-sited switchgear and essential controls could be easily reached. General riding position seemed to combine the ideals of great comfort and sports touring.

The GT750 offers a higher saddle position than its rotary stablemate — 6 cm to be exact — and also plumps for handlebars 4 cm wider. Footrests are 2 cm lower and 3 cm further forward. Thus the riding position on the GT750 is almost totally different than the obviously more sporting arrangement of the RE5. It would seem that Suzuki regards the RE5 as a definite sports-tourer, and the apparently more docile water-cooled three as a staid tourer.

But the factory may well have its Oriental preferences about face! Although set up with a much more stately riding position, the GT750 *is* a fire-breathing dragon if one wishes to really ride the machine to anywhere near its full potential. The older three can hose off the rotary challenger — although it is not quite as easy to ride.

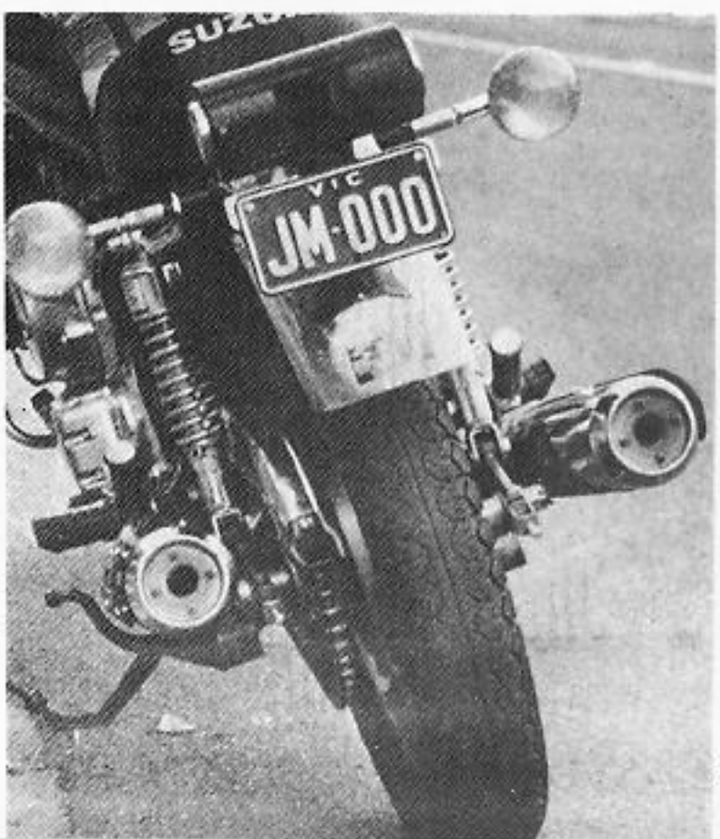
The GT750 is rated at about 6 kW (8 hp) more than the RE5's quite reasonable 46 kW (62 hp) at the same 6500 rpm engine speeds. Both weigh in at 230 kg. Maximum torque is delivered by the rotary engine at a low 3500 rpm while the two-stroke delivers its peak torque much higher in the range at 5500 rpm.

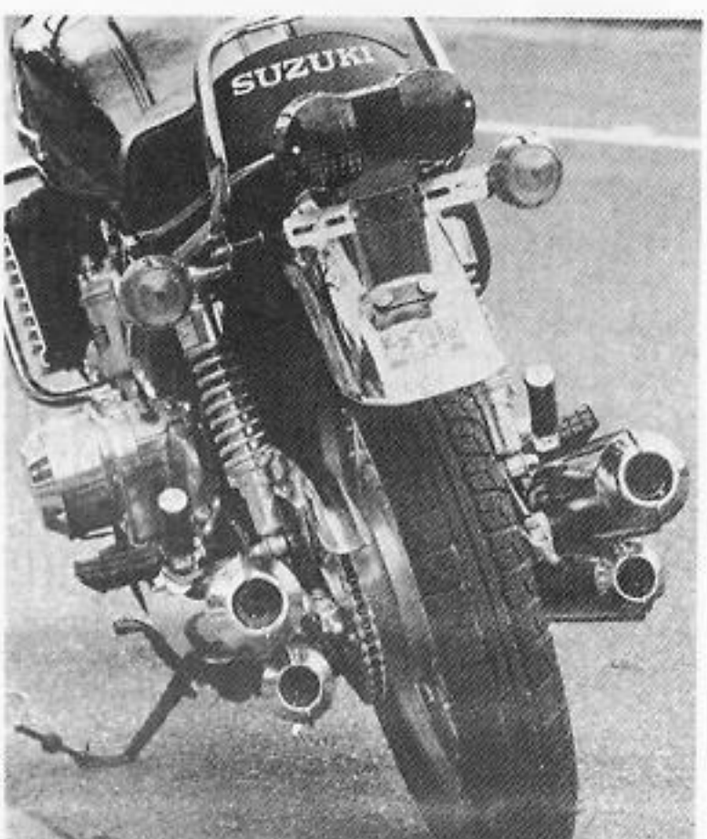
The engine characteristics are so varied on the two Suzukis that one could easily be led astray by the *feel* of the different power plants. Even when fired up initially they have separate personalities; the rotary idles with a rough *galoomp-galoomp* which sounds as though the exhaust were escaping underwater, while the more conventional three-cylinder two-stroke sounds and feels as though it is a more "sorted-out" engine. It idles with the distinct *poong-a-poong* so typical of this type of engine, and is not so turbine smooth at these very low engine revs.

The single chamber rotary is fed by a car-type carburettor with progressive linkage to low and high speed butterflies inserted in the instrument itself and in the induction tract. The latest example of the big two-stroke has three separate constant-vacuum carburettors of more normal motorcycle design. Ignition is controlled on the rotary by the capacitor-discharge system, while the other has conventional coil-and-points ignition.

For all that, both are capable of very brisk acceleration, with the GT giving a much smoother take-off on small throttle openings; the RE is a

Rearview giveaway! Twin-piped rotary definitely offers better clearance — but not as much as the shots suggest. Way before the pipes hang up all sorts of other things are graunching — but that's a long way over! The RE is also extremely responsive to steering changes — superbly so considering its bulk.





RE5 v GT750

bit sharper if the throttle is snapped open as the clutch is fed in. The rotary we had still had a falter on take-off and a small flat spot in carburetion at around 2500 to 3000 rpm — even though it is actually pulling very strongly at this stage — but this did not appear in takeoffs with wider throttle openings.

However, with the throttle held wide on initial acceleration, there was an annoying and quite rough vibration period beginning at 3100 and running to just over 3700 rpm. In top gear this is right in the top end of the traffic cruising range. It is not really a vibration period as we know the term, but more of a high-frequency shudder caused, I suspect, by some odd harmonic imbalance. It's a sensation some riders may have experienced and traced to uneven wear in over-tightened primary transmission chains.

Whatever the cause, it was more a disappointment than an annoyance, for the rotary is really turbine smooth under virtually all other conditions and at all other rev ranges — smoother in fact than the GT model which held first prize in this department almost unchallenged.

But the GT doesn't escape its share of rough running, which occurs typically on the over-run when the rear wheel is, in effect, driving the engine. It is here that the old two-stroke bogey of uneven firing — and hence lumpy running — manifests itself in jerky transmission of power and consequent rear chain chatter. One situation is escapable ((you don't *have* to screw the rotary hard to get it on the boil) the other is not.

Gear ratios are typically well-chosen on both models and gearboxes are probably similar internally, although the RE gear change is unaccountably less clunky. Clutch action is as light and easy as one has come to expect from the marque.

Never let it be said that minor differences in frame design cannot be easily detected, for the two bikes (though similarly set up as far as front forks, rear shocks and weight distribution are concerned) handled very differently indeed. Strangely, the suspension on the GT750 was a deal harder than the softly-sprung RE5, but the rotary model handled better overall. Perhaps this could be a result of a lower seating position, allowing rider weight of 63 kg to scrape along closer to the deck, or it could be because the rotary's more sporting riding position allows the edge in rider control, but the fact remains that the later model could be pinned down more effectively in a corner and the power could be applied earlier before the exit as a bonus.

What the rotary loses fractionally on initial acceleration it picks up by being more responsive where it counts most. In point of fact, if Suzuki had cast its big two-stroke more in the sporting mould it would probably have had more acceptance amongst a lot of riders who are unaware of its performance potential.

The GT gives the impression it will scrape itself, along the deck at extreme cornering angles. Not so the RE, which feels well clear of the ground and which is again limited only by the tendency for the thing to wag its tail in that happy Oriental fashion. The low-slung appearance of the 750, engendered by those bulbous mufflers, may help create this impression; the RE5 *appears* to be lighter and to have more ground clearance, but this is obviously not the case.

Surprisingly, both bikes returned similar and acceptable fuel consumption figures of 12.4 km/l (35 mpg) from the RE and around 13.5 km/l (38 mpg) from the GT750.

According to Suzuki running costs are likely to be lower with the rotary, a claim made in the face of some extremely high figures being knocked by the GT750. The maintenance tasks on the RE5 are said to be limited to the occasional oil filter element replacement and the periodical renewal of the long-suffering single spark plug. Although well protected, automatically adjusted and positively lubricated, the primary drive chain will need replacement at some stage and may be better left to the distributors. We understand that after very large distances have been covered, exchange rotor assemblies will be available at comparatively low prices.

While the GT750 is a simple, well-designed and not too heavily stressed engine, it is likely to require more frequent periodic engine reconditioning, from the simple decoke to the more complex tasks of piston ring and engine bearing replacement. But these tasks are well within the scope of many owners bought up on the more traditional engine.

Naturally, rear chain life and rapid tyre wear are relative in strict proportion to the way the bikes are ridden, but rear chain wear ought to be less on the smoother-running rotary model. As the GT750 seems to take off in a more spirited manner than its stablemate, and tracks acceptably well in a straight line, intending owners who consider this virtue above all others will probably report shorter tyre life as well!

So this is how the two big Suzukis line up, each with its own personality and each with its own appeal. There is little doubt the factory has pinned a lot of faith on the rotary model, just as there is little doubt they expect it to augment the 750 at the top of the range.

And which is the better of the two?

I'm sure the machines are intended to compete with one another, but there is probably no one point in which one is clearly ahead of the other. I found the RE5 very much to my liking, for it handled better overall and could be squirted harder — more in the lines of the sports tourer it pretends to be. The GT750 is more a touring iron and is happy at this task. Frankly, I think it is probably one of the most under-rated motorcycles on the road, for it is easy to ride and has few vices.

For me the rotary has the edge. But for you, well, you pay your money and . . . *

If different model bikes are going to continue to look as similar as these two it's going to be tough to tell 'em apart!



SUZUKI GT750-M ROAD TEST

If there was an award for the most uninteresting "Superbike", Suzuki would have been in the running for the last few years with their 750 triple. Considering how many points were common to the works road racers it was astonishing just how slow the road bike went, and just how badly it handled. Suzuki countered the moans by pointing out that the triple was a tourer and was never intended to compete with the sports machines other firms were offering.

With the introduction of the rotary engined RE5 Suzuki found themselves with two touring bikes in their range and rather than drop the 750 they set out to show just how much potential lurked inside those water-cooled barrels. The proof is the new GT750M, and it's a flyer. The new and the old models may look the same but there the similarity ends.

Water cooling a big two-stroke does make sense, especially when one of the cylinders is in an area out of the blast of cooling air. The water jacket allows the engine to operate within a very tight temperature range and the designers can use this to build the engine to much closer tolerances. Besides the consideration of a more efficient engine there is an additional bonus of having a motor which is far quieter. The disadvantage is a big increase in weight.

The GT750M looks bulky. All the space at the front of the bike is taken up by the massive radiator, its heavy duty crash bar and the bulky exhaust. Even the area behind the engine is filled with the three large constant velocity carburettors. When you sit on it it feels even bigger than it looks. Immediately in front of the rider is an imposing array of dials, gauges and warning lights. Look down and all you can see is the bulk of the radiator and the engine sticking out past it. The surprising thing is that as soon as you pull away the impression of bulk seems to disappear and so well balanced is the bike that feet up, clutch home, first gear "U" turns are easy.

NO KNOTS!

The last time we tested a GT750 our complaint wasn't about low speed handling, but what happened when the taps were opened. From about eighty miles an hour upwards the bike started to tie itself in knots. Our comment then was that there seemed to be a flexible coupling between the front and rear wheels!

While handling and steering on the M series isn't perfect at least the problems are reserved for high speed. When the bike is moving out into the three figure bracket the front end starts to go light, and road surface imperfections can cause it to weave around, but at no time does the bike feel as though it is in charge of the rider. The only significant difference between the old and new models seems to be the front forks. They don't look that much different from the outside but the construction is



SUZUKI 750-M

ENGINE

type	two-stroke, in line three cylinder piston ported
displacement	738cc
bore x stroke	70 x 64 mm
compression ratio	6.9:1
claimed power output	70 HP at 6500 rpm
lubrication	Suzuki CCI
carburettor	3 x Mikuni VS40
ignition	280W alternator charging
charging/lighting	12V battery

TRANSMISSION

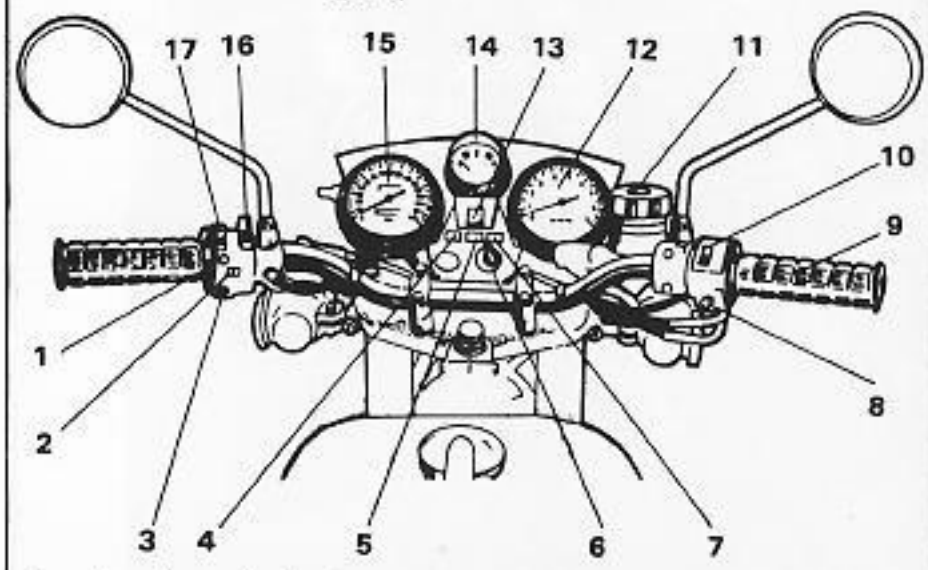
clutch	wet, multi plate
primary drive	gear
final drive	chain
gearbox sprocket	15 (optional 16)
rear wheel sprocket	43 (optional 45, 47, 49, 51)
gear ratios	2.846/1.77/1.364/1.125/0.962

CHASSIS

front tyre	3.25 x 19 Bridgestone
rear tyre	4.00 x 18 Bridgestone
front suspension	hydraulic damped telescopic fork
rear suspension	spring damper controlled swinging arm
front brake	2 x 11.7 inch disc
rear brake	s.l.s. drum
wheelbase	57.8 inches
castor	63 degrees
trail	3.74 inches
overall length	87.27 inches
overall width	34 inches
seat height	31 inches
ground clearance	5.5 inches
dry weight	507 lbs
fuel tank capacity	3.7 gallons
oil tank capacity	3.2 pints

PARTS PRICES (inc. VAT)

front mudguard	£18.46
handlebar	£6.04
speedo cable (complete)	£1.73
exhaust system (complete)	£138.13
set of points (3 cylinders)	£8.10
set of pistons (complete)	£40.20
list price	£919.50 plus makers delivery charge of £7.56
warranty	6 months on parts 3 months on labour, no mileage restriction
concessionaires	Suzuki (GB) Ltd., Beddington Lane, Croydon, Surrey



1 — headlamp flasher button; 2 — indicator control switch; 3 — horn button; 4 — main beam indicating light; 5 — neutral indicating light; 6 — ignition and parking light switch; 7 — indicator warning light; 8 — starter motor button; 9 —twistgrip; 10 — ignition kill switch; 11 — front brake master cylinder; 12 — rev counter; 13 — gear indicator; 14 — temperature gauge; 15 — speedometer; 16 — lights (on-off) switch; 17 — dip switch.

TEST CONDITIONS

dry, sunny
ambient temperature 84 deg F
wind less than 2 mph

PERFORMANCE

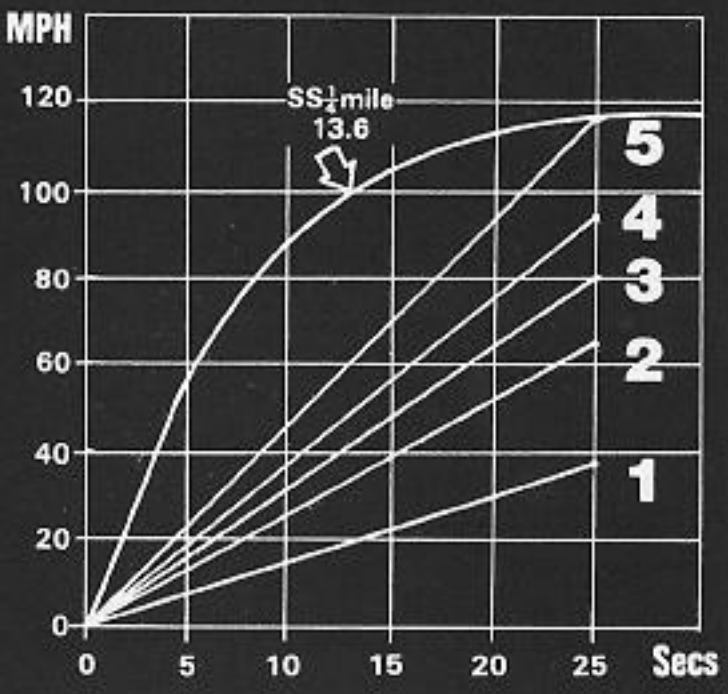
maximum speed	118 mph
braking from 30 mph	29 feet
fuel consumption	
hard riding	35.8 mpg
average	41.7 mpg
minimum speeds in gears	
1st	2 mph
2nd	11 mph
3rd	15 mph
4th	18 mph
5th	25 mph
standing start quarter mile	
13.6 seconds at 99 mph	



HOW IT COMPARES

MODEL	Price inc. VAT	Max Speed	Average mpg	SS ½ mile	Dry Weight lbs
SUZUKI GT 750 M	£969.50	118	42	13.6	507
HONDA CB 750	£979.00	112	49	13.0	480
TRIUMPH T160	£1215.00	118	38	—	503
MOTO GUZZI S3	£1749.00	124	48	14.15	454
DUCATI 860 GT	£1299.00	110	42	13.2	452
SUZUKI RE5	£1195.00	105	38	13.5	507

*See text for further information



SUZUKI GT750-M

beefier and they appear to be stronger laterally.

Although high speed handling is still not perfect it is up to the performance of the bike. Where the Suzuki really is outstanding is in slow speed manoeuvres. For such a large heavy machine to be able to tackle heavy traffic with such little strain is a big bonus feature. Curiously the GT will run at below a thousand revs in first gear without jerking or snatching, but in second gear it is difficult to ride at less than two five and third gear or above can only be used when the engine is turning over at more than 3500 rpm. I believe that the poor low speed carburation is not an inherent design fault but due to out of adjustment carburettors on our test bike. Constant velocity carbs should give much smoother low speed power than the conventional type which were used.

The performance figures obtained with our test bike could have been better if the machine hadn't been pulling such a high first gear. The bike felt like it should be doing high twelve second quarter mile times if there was some way it could be launched faster from the line. Using lots of revs and dropping the clutch just made it go sideways, while pulling away using low revs the bike just bogged down.

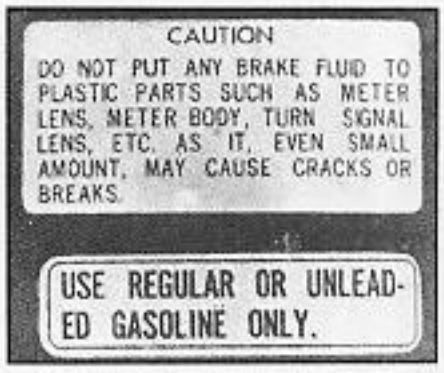
Once under way the Suzuki produces enough power to satisfy most riders. Unlike the Kawasaki 750 triple, with which the GT must inevitably be compared, the Suzy spreads its power over a wide band. The more the throttle is twisted the more power there is available. The almost turbine like performance can be deceptive and on more than one occasion I found myself going a lot faster than I realised.

SUPERB BRAKE

Fortunately it is a bike on which it is possible to stop very quickly. The front brake is superb. At low speeds, up to about 50 mph, the double disc isn't any

CONTINUED BELOW







more efficient than a single disc, but from high speeds it hauls the heavy bike down to cruising speeds incredibly quickly. Unfortunately we have never kept records of braking distances from 60 mph, but if we did I feel sure that the Suzuki would record the best figures ever. On one occasion, on the test track, I tried a panic stop from an indicated 90 and all the way down to rest the front tyre was howling, the wheel obviously right on the point of locking, yet the bike was under perfect control. This is the only machine which I have ridden which could stop so quickly without causing the rider any anxiety.

If there is anything which could be said to let the Suzuki's braking down it is the tyres. They appear to be made from some sort of plastic. They certainly feel as hard as plastic and give just about as much grip. On more than one occasion the rear wheel lost traction on a dry road, and on the solitary occasion when the bike was ridden in the wet it felt more like riding on ice.

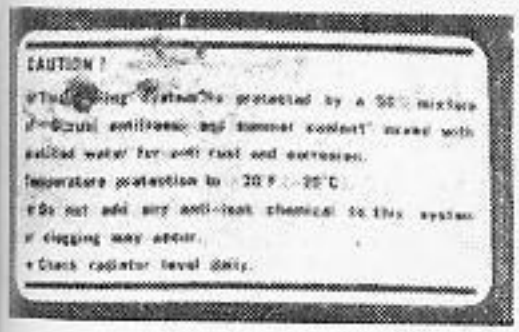
Reporting on the Suzuki 550 last month I said that Japanese tyres were falling too far behind the standards set by the new generation of European tyres, and after riding the GT750 I am sure that there is a case for importing bikes without tyres and fitting either Michelin, Dunlop or Avon. Nobody could claim that a hard compound is being used to give extended mileage because both front and back tyres wore out at an incredible rate.

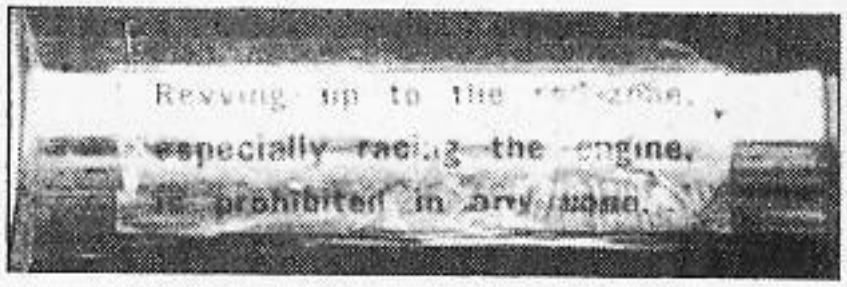
FAULTY TAP

When I tested the 550 Suzuki I expressed doubts about its diaphragm fuel tap. The bike certainly used more fuel than I felt it should. On the 750 fuel consumption was reasonable considering the way the bike was driven but fuel consumption could have been better because, once again, the diaphragm tap was faulty. When the bike was parked overnight, especially with the tap in the reserve position, a trace of fuel could be found round the diaphragm joint the next morning. I fail to see the need for such taps. If our experience means anything they are not reliable and only add to the cost of the bike.

Most of the Suzuki range of bikes are now being fitted with a digital gear position indicator. At one time I used to think that this too was just a gimmick, but having ridden a couple of bikes with a gear indicator I find that it is quite a useful device. With the massive torque which the Suzuki develops it is sometimes difficult to remember which gear you're in, and it's nice to have an instant visual check rather than strain the gearbox and clutch by pushing for a gear which may not be there. In the same way the neutral indicator light confirms what the rider may already think and you don't have to ease the clutch home to find if the bike's in gear.

The big Suzuki can handle any number of lights, like the gear indicator or neutral light, because it is fitted with a massive 230 watt alternator.

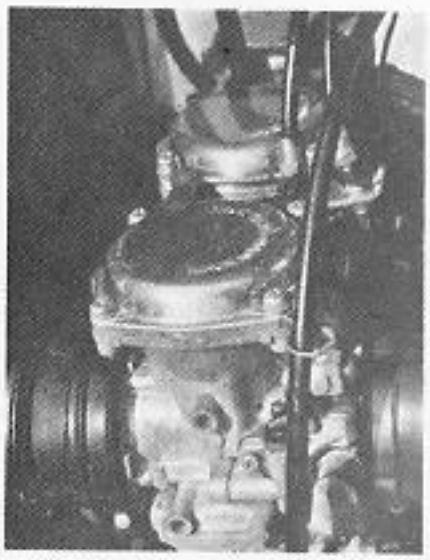


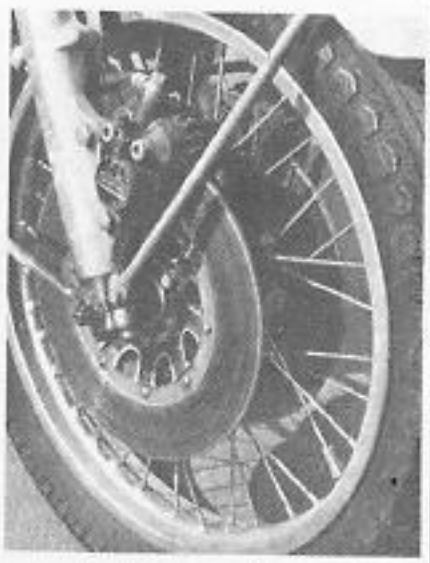


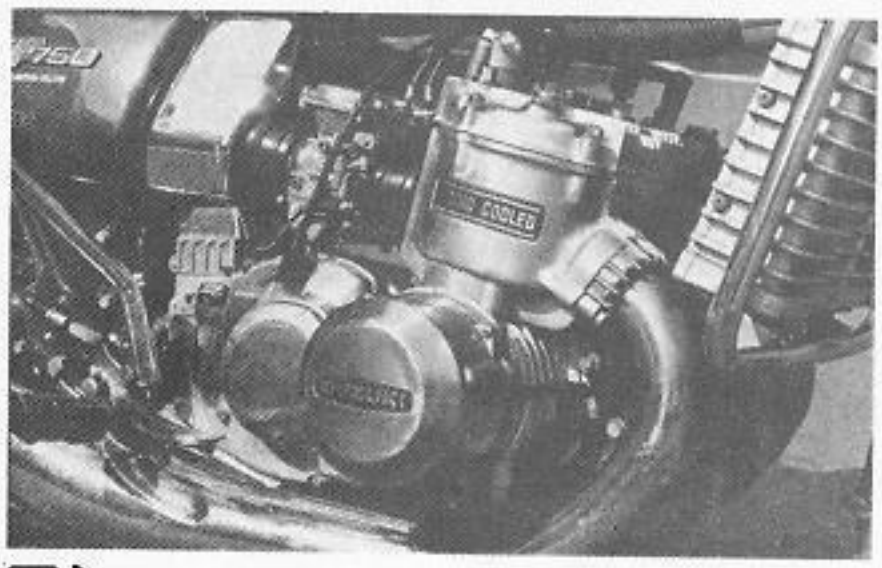
AND KEEP OFF THE GRASS!

SUZUKI GT750-M









Far left: triple CV carbs supply the mixture. Left: superb double disc front brake records ultra short stopping distances with total confidence.

Below: the engine looks small because it is dwarfed by the massive exhaust, and the radiator with its protective crash bar.

The high power alternator is needed to keep the battery in top condition for the electric starter. In practice the bike fires up so quickly it is necessary only to touch the button to bring it into life with the engine hot or cold. On the one occasion I tried the kick-starter it took less than half a prod to wake the engine up. The lever is difficult to use because the foot cross-piece is so high above the ground, but with such a reliable electrical system there shouldn't be any need to ever start the bike manually.

Although the headlight is only a conventional pre-focus unit it is remarkably effective. The main beam is down on power when compared with a quartz halogen light but what light it does produce isn't scattered all over the road. The Dip beam has an almost Continental type vertical cut off. The lights are good enough for 70 mph cruising after dark but for higher speeds a quartz unit should be fitted.

Surprisingly the stop light works only off the rear brake pedal, and as I have already said most of the time I only used the front brake. After finding out why following motorists were trying to run into the back of me I started to use the rear brake just as a switch to turn the warning light on.

A TOURER

Although it's much more of a sporty bike than before the Suzuki is still really a touring bike, and it is in rider comfort that it really excels. The dual seat is very long by any standard. Even with a passenger on there is plenty of room to move around. The footrest position seemed ideal to me although longer legged riders might feel that the rests were too close to the seat. The rear brake pedal falls just under the ball of the foot but there is rather a large gap between the footrest and the gear lever. The overall combination of footrests, handlebar and seat adds up to a machine which was close to perfect for me.

Contributing to the riding comfort is the exceptionally smooth engine. There is a slight vibration which can be felt at about 3000 rpm but it is not bad enough to cause any real annoyance. Although the exhaust noise seems loud when the bike is standing still at anything over 30 mph it cannot be heard at all. Both the smoothness and the silence go a long way towards making the GT a machine which you want to ride.

To a certain extent sales of the big Suzuki have in the past been based on the fact that it is one of the cheapest bikes in its class. Cheap to buy doesn't always mean the same as cheap to run as any Suzuki owner who has dropped his bike would probably be prepared to confirm! One of the first things to get damaged in even the slightest shunt is the exhaust system and at almost £140 rule one is don't drop it!

Although some spares prices are noticably more expensive than similar parts for bikes of comparable capacity, generally prices are about par. Where Suzuki do have an edge is in the range of accessories which they are now designing and putting on the market. At long last it should be possible to buy carriers and panniers and fairings and so on which fit without the use of a lump hammer and which don't fall off the first time you go over a bumpy road. It would be nice to think that every other manufacturer and importer was working along the same lines.

Although there is still a certain amount of doubt about the Suzuki's exact place amongst the superbikes in one department there is no question that the Suzuki can rival any other machine. The watery wonder is made to last. Check with any large dealer and he'll tell you that the Suzuki is one of the most reliable big bikes on the market. Everything seems to be almost over engineered, certainly all the external fixtures and fittings look solid.

There is no doubt that the GT750M is a considerable improvement on the earlier model, not only in terms of the amount of power available but the way it handles and steers. Its low initial cost brings it within the reach of a lot of riders and if it's a sports touring bike that you are after then it would be worth taking more than one look at the big Suzy.

SUPERZUKI: THIS IS A SLEEPER!



With tightened-up handling and a loosened-up engine, this 1974 GT-750 watercooled triple has become as mean 'n' nasty as anything on the street.

By Sam Moses

• The 1974 Suzuki GT-750L suffered from an identity crisis. It couldn't make up its mind whether it wanted to be a Superbike or a tourer, and in its attempt to be both it missed greatness as either. Ron Grant, the former Suzuki factory road-racer, knows a lot about what can be done to make any GT-750 better for fast riding. The business at Ron Grant's Racing Specialties in South San Francisco, Ca., is developing and selling parts that re-create street Suzukis into production racers, café racers, street racers, or even all-out road-racers. For this project, Grant helped me take a slightly used GT-750L and change the insides without changing the outsides by much. The result is a Superzuki in standard GT-750 clothing. Considering everything that was involved the expense is reasonable, but it isn't cheap: the total investment for a project such as this could reach $1,500.

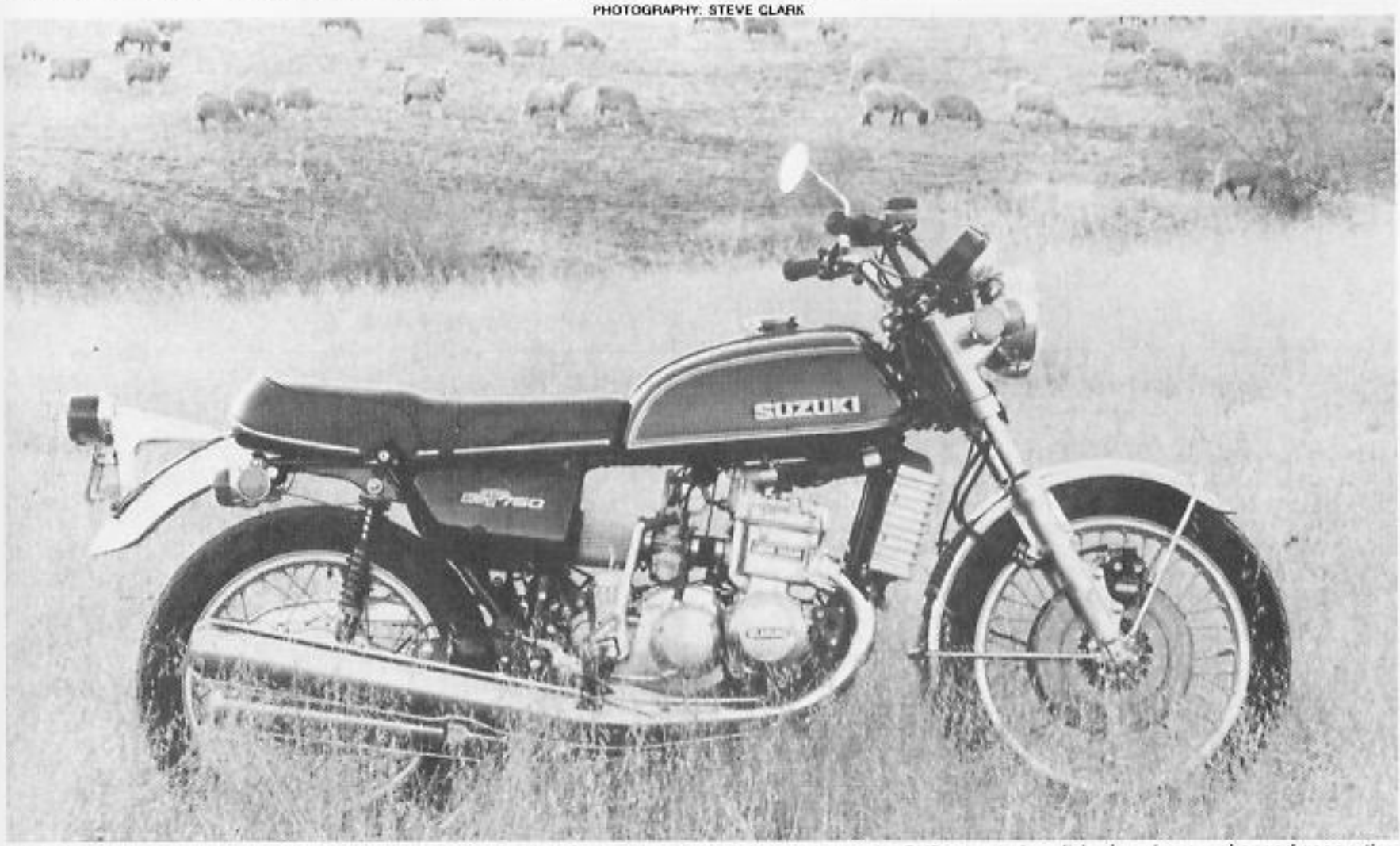
The first priority was to tighten up the handling. In a fast bend the GT-750 wallows (as do most Japanese heavyweights), especially if the bend has a bump or ripple. We all know this; the question is what to do about it.

Since the object was to improve that which already exists on the GT-750, major items like a new fork or a new swingarm were ruled out. But some parts were doomed for rejection, such as the tires and rims. The 3.25x19 front and 4.00x18 rear Inoue tires break away too easily on dry pavement, and in the rain they work like banana skins. (Some GT-750s come with Bridgestone tires, which give about the same results.) We fit a set of Dunlop TT100s, a 4.00x19 front and extra-wide 4.25/85x18 rear, to a pair of Akront shoulderless alloy rims (WM2 front and WM3 rear). The Akronts weigh a total of 2½ pounds less than the stock steel rims; that much of a reduction in unsprung weight can improve handling because a light wheel will follow road irregularities better than a heavy one.

Another big improvement to the handling came with a set of Harry Hunt sprayed aluminum disc brake rotors. In the February 1975 issue of *Cycle* the merits of these disc rotors were explained in a product evaluation; the biggest advantage, again, is the reduction of unsprung weight. Here, the saving at the front wheel was a whopping 9½ pounds. Each Hunt disc rotor weighs 1¾ pounds, while the stainless steel Suzuki disc rotors each weigh 6½ pounds. The installation was relatively simple; the most difficult part was removing the rivets from the stock disc rotors, which was done on a lathe. They can also be drilled and chiseled out.

Since the aluminum disc rotors are initially harder on brake pads, we replaced the stock pads with a set of metallic-impregnated Ferrodo pads, which are more fade- and wear-resistant than

PHOTOGRAPHY: STEVE CLARK



There's more here than meets the eye: Ron Grant's Racing Specialties peeled the engine to its BVDs, ported, polished, and even changed gear ratios.

SUPERZUKI!

the Suzuki pads. They also squeak more, and coupled with the aluminum disc rotors, demand considerably higher brake lever pressure.

The suspension was the trickiest part of the project. Here's what we knew before we started: the rear shocks were 11½ inches long, had a stroke of 3½", and used 150-pound constant-rate springs. From experience we also knew that the damping was inadequate and the springs had a tendency to weaken after about 2,000 miles. The fork legs had the same report card as the shocks: 4.4" of travel was adequate, but the damping was poor, and the fork springs had an even greater tendency to collapse than the shock springs.

S&W shocks have an excellent reputation. We chose a pair of 12" S&Ws; that extra half-inch in length gives a bit more ground clearance, although the rear wheel travel is unaffected because the stroke of the 12-inch S&Ws is also 3½". We tried three selections of springs: 100, 110 and 125 pounds. With a 160-pound rider, the 100-pound springs worked best for fast street riding. They could only be made to bottom on a bumpy race course.

S&W didn't have any replacement fork springs for the GT-750, which are rated at 46.5 pounds, have a 1" diameter, and are 21½ inches long. Since it's an expensive job to custom-make fork springs, and since we felt that handling was damaged by damping characteristics and not by spring rate, we left the stock springs in and simply changed the fork oil. The GT-750 comes with 160cc of ATF in the forks; after some experimenting, we settled for 220cc of Lubritech 30-weight fork oil. And to jack up the front end for a bit more clearance, we slipped in ¾" spacers.

After the bike had about 2,200 miles on it, we checked to see how much the springs had collapsed. When the springs came out of the machine, they had shrunk three inches. (There were also marks on some of the coils of one spring that indicated the spring was not straight, and was rubbing at various points in the fork tube.) We asked S&W to make us a set of replacement springs to the stock specifications. In the meantime, we used a set of Z-1 springs; they are 20" long (with a 45-pound rate), so we preloaded them with 1¾" valve springs to match the length of the Suzuki springs. When we left S&W, they said they would start making replacement springs for the GT-750—a frequent request by *Cycle* readers, according to the Technical Editor.

The improved suspension, reduced unsprung weight and good tires make street handling immeasurably better, and the ride is no stiffer. The bike still can be made to wallow at racing speeds, however (which is due to a flexing frame, and is incurable by fiddling with the suspension). The first test of the finished product was in an AFM race at the bumpy Sears Point circuit; Pat Hennen, the Suzuki factory rider, rode the bike to a close second-place against a Yamaha TZ-350 (turning lap times with the GT-750 just four seconds slower than those he had recorded earlier that day on his TR-750).

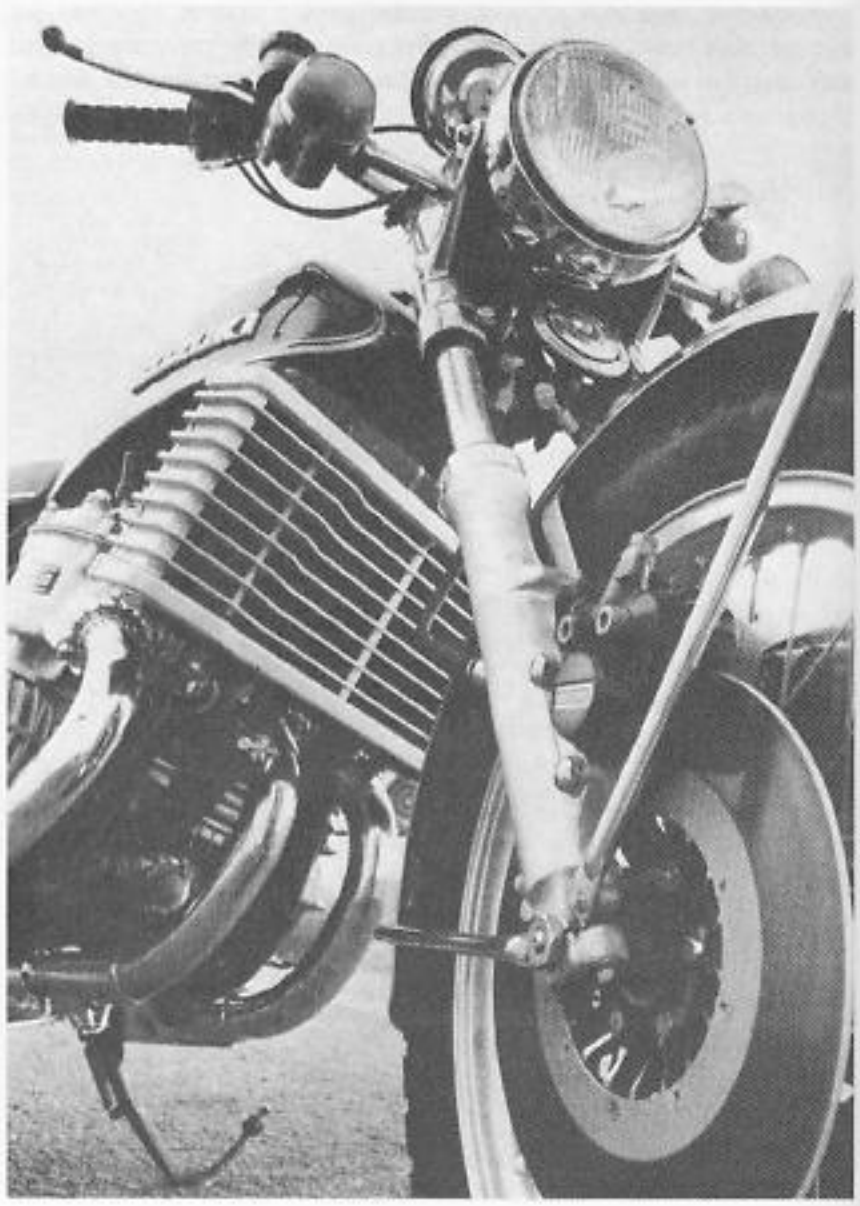
The engine was modified at Grant's shop, and includes no special work or part that isn't normally available. The modifications fall somewhere between his Stage II and Stage III hop-ups (Stage IV is the ultimate, a road-racer). The power-band is noticeably narrower, but not so peaky that the bike is unpleasant to ride in traffic. The stock engine reaches its power peak at 6,000 rpm and revs to about 8,000. This engine can bury the tach needle at over 9,000 rpm, and peaks at about 7,600 rpm. But the best part is that below 6,000 rpm, it still accelerates usefully.

Pat Hennen is Grant's porting specialist. He begins the job by trimming the bridge that runs the length of each intake tunnel to a depth of ½". Then he widens the transfer ports by 2mm and raises them 1.5mm. The exhaust ports are raised 7mm and widened 5mm, and the intake ports are widened 6mm. All the windows are carefully chamfered for maximum ring life, and the edges are sanded smooth. The

Continued on next page



Aluminum disc rotors from Harry Hunt lightened the front wheel mass by 9½ pounds; another pound was trimmed by switching to a light alloy Akront rim. The engine was given 36mm Mikuni racing carburetors, a boost in compression, complete but not drastic rearrangement of its intake, transfer and exhaust port dimensions. Among the fine touches was a regrinding of the ignition breaker cam to provide an extra 30–35 degrees of "dwell," which gives the coils more time to saturate and improves high-speed spark output. A set of expansion chambers stimulated a 12.16 sec./108 mph Superbike-bracket quarter-mile run.



pistons and rings are stock, but the skirts are trimmed 1mm. The cylinderhead was milled .040", or 1.016mm; with the stock head gasket this raises the compression ratio from 6.7:1 to about 7.6:1.

While the top end was off the engine, we made sure the crank was true to .0015", and changed the fifth gear cluster, which is spaced a bit too far from fourth gear. The new ratio of 0.87:1 (stock is 1:1) changes the overall final drive ratio from 4.81:1 to 5.53:1; fourth gear remains the same at 5.91:1. This closer fifth gear reduces the occasional necessity to downshift when passing; of course the new ratio also increases the engine revolutions at cruising speed, as well as contributing to increased gas consumption (to about 22 mpg).

The points breaker cam was ground so the points stay closed longer; this helps increase rpm because it gives the coils more time to saturate, thus reducing spark breakdown. The stock cam keeps the points open for about 120 degrees; the modified cam keeps them open for only 85–90 degrees. The points are also gapped slightly closer, from the standard .015" to .013".

The 32mm Mikuni constant velocity carburetors were replaced by 36mm Mikuni racing carburetors (the biggest reason for the uninspired gas mileage). It was basically a bolt-on job, although there were a few bugs. The carburetor mouths had to be turned on a lathe in order for the air cleaner hoses to fit, and a stamp-sized piece of aluminum had to be bolted to the oil pump cover to provide a place for the oil pump cable to be adjusted. The stock oil pump linkage uses a rod from the right carburetor, but the 36mm carburetors have no such rod. A throttle cable from a 1972 GT-750J is used, because the earlier Suzukis (without constant velocity carbs) controlled the oil pump with a throttle cable.

After making a nine-inch tube to divide the fuel line into three sections, we left out the air bleed screws to the pilot jets, because the new pilot jet was so big it couldn't get too much air. Actually sorting out the jetting was a two-day test of patience; the final solution included P8 needle jets, #40 pilot jets, and #310 main jets.

Matt Cristie, an extremely skillful welder who works for Grant, fabricated a set of expansion pipes with silencers, for use on special occasions. They are mounted low and close, but not even Hennen could make them drag. Cristie did a lot of strategic trimming and crafty twisting of the standard-pattern cones in order to have a custom fit while still adhering to the formula that determines their shape. For the street, a set of GT-750M pipes is used; they are tucked in more tightly than the GT-750L pipes due to tighter head curves.

One last update to GT-750M specs was the clutch; the 1975 clutch has aluminum drive plates, whereas the old plates were phenolic. The outer clutch hub was also changed; now it rides on a needle bearing instead of the old plain bushing.

With the added horsepower it seemed prudent to fit a thick #60 Denselube chain (¾" pitch, ½" width), which comes in a kit from Jacwal with a transmission sprocket and a plastic rear sprocket. The combination of 42-13 was about right for the drag strip (stock, with a #530 chain, is 47-15).

Cycle's Technical Editor recorded a quarter-mile time of 12.16 at 108 mph, using the expansion pipes. But that was with a 12-tooth transmission sprocket, which was too small. With the 13-tooth sprocket, the bike would doubtless drop into the 11s, at something over 110 mph. Even with the mufflers, it's bound to be a couple seconds quicker than a stock '74 GT-750, which goes through in 14.27 at 91 mph.

It also stops slightly better, handles much better, is just as reliable, the engine still pulls from low rpm and it still idles. Ironically, even the straight-line ride is improved, because of the reduction in unsprung weight and the fact that the S&W shock springs (and to a lesser degree the fork springs) are actually softer.

The nice part about this project is that it's basically bolt-on: tires, rims, brake disc rotors and pads, shocks, fork springs, a new cylinder, head and points cam (all exchange items from Ron Grant's Racing Specialties), Mikuni carburetors, a Suzuki clutch and a Denselube chain. With all the parts at your side, you could put it together in a couple of days. ◉

SUPPLIERS

Ron Grant's Racing Specialties
(engine work)
PO Box 485
Brisbane, Ca. 94005

Ken Roberts Enterprises
(S&W shocks)
8611 Roland, Bldg. E
Buena Park, Ca. 90620

Jacwal Corp.
(chain and sprockets)
13310 Mapledale St.
Norwalk, Ca. 90650

Harry Hunt
(brake disc rotors)
23 San Bruno Ave.
Brisbane, Ca. 94005

Buchanan Wheel and Frame
(Akront rims)
629 East Garvey
Monterey Park, Ca. 90650

Joe Dunphy
(brake pads)
176 Sydenham Rd.
London, SE26
England

S&W
(fork and shock springs)
12268 Woodruff Ave.
Downey, Ca. 90241

SIMPLE SERVICE

By Dave Walker

SUZUKI GT

RIGHT THEN, wake yourself up and pay attention because with this particular service I am going to start with the engine tune and that is the most important part of the job. If you get it wrong it can do an awful lot of damage and engine bits don't come cheap these days, even for a Suzuki 750.

Talking about getting it right I would also like to point out that you are going to need more than a Woolies screwdriver and adjustable spanner to make a proper job of it. To get the engine 100 per cent right you will need three vacuum gauges, a dwell meter, dial gauge and ohm-meter. This little lot will probably set you back around £30 but look on it as an investment for the future, that way you will feel better about parting with your greenies!

First job is to remove the points cover and inspect the contact breaker faces for signs of pitting or burning, any suspect points should be replaced with genuine Suzuki parts, the cost of which (about £11) will soon wipe the smile off your face. Having checked or replaced any suspect points the dwell angle must be set at 45 degrees or 50 per cent if your meter is calibrated that way. It takes some time to get all three sets reading the same but it must be done regardless of any differences in the breaker gaps. The dwell angle is simply a way of expressing the amount of time in degrees that the points are together and this closed period is the thing that matters, not the amount that the points are lifted. If you don't want to buy a proper dwell meter the gaps should be set to 14 thou. On completing the setting up of the dwell angle the contact points should have a gap of 12 to 16 thou, if not they should be replaced as they will have worn beyond acceptable limits.

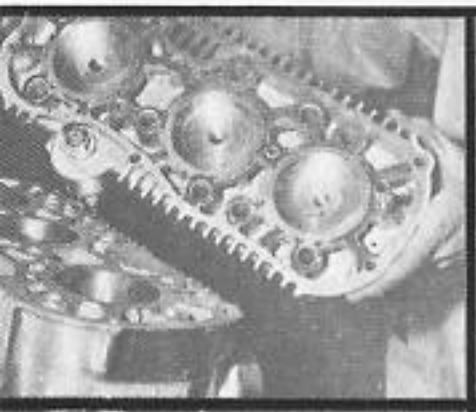
Having set up the points to ensure a nice fat spark from the coil the next item is to make sure that it arrives at the right time. For this operation you must use a dial gauge to set the piston to the required position before top dead centre. Before eagle-eyed readers start writing in to tell me that strobe marks are provided I will explain now that you must not use them. They are there for factory use only during the engine building and are not a guide to ignition timing.

TIMING

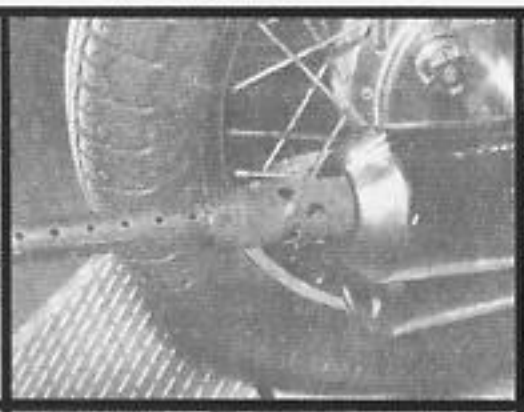
If this is the first time you have used a dial gauge you should read the next bit carefully or you will end up with one nice new BENT gauge. The problem lies in the timing of the outer cylinders which have the plugs angled towards the outside. If you just remove the plug and screw in the gauge the piston comes up, meets the gauge needle at an angle and bends it! The answer is to leave the gauge loose in the head until the piston is very near TDC and then tighten it up. Another way is to put your finger through the plug hole to determine TDC and then fit the gauge.

With the dial gauge safely installed at TDC the engine is now turned back just past the ignition point and then brought forward again to the specified timing position. If you do not do it this way but just turn the engine back from TDC you are not allowing for the play in all the bearings etc., and the timing will be out when the engine is

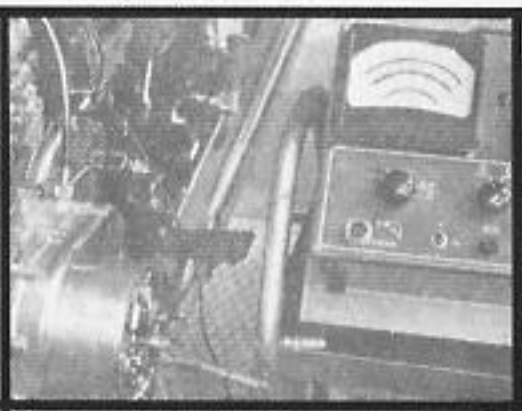
1. If you decide that the engine is going to need a de-coke then it must be done first.



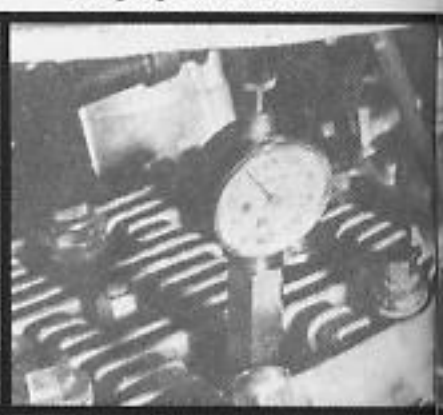
2. Decoking the exhaust is also very important, the fibre packing can be removed as shown here.

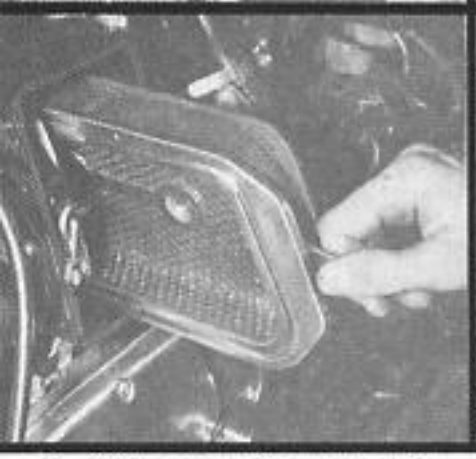


3. Start the engine tune by setting the contact breaker dwell angle or gap points to 14 thou.

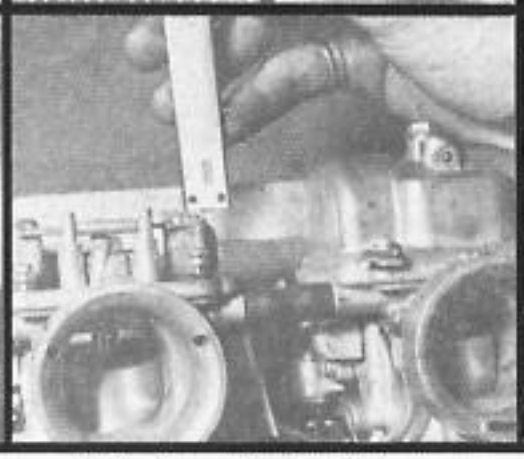


4. When timing the engine a dial gauge must be used, take care or the gauge can be wrecked.

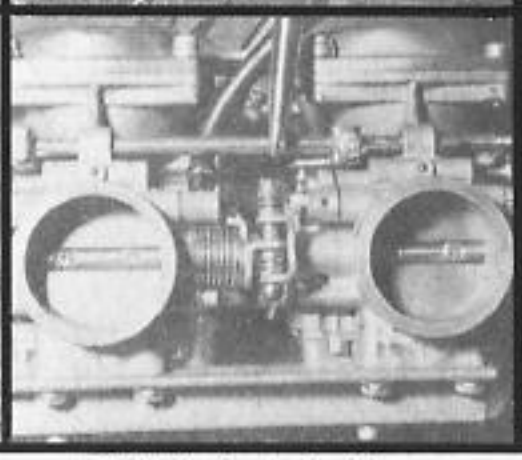




6. Before attempting any carb tuning the air cleaner must be cleaned or replaced.



7. Carbs are tilted until the tongue of the float is just touching needle when setting float height.



8. The throttle synchronising system is clearly visible here with the vacuum type carbs removed.



9. Three damped out (restricted feed) vacuum gauges are required to balance the throttles.

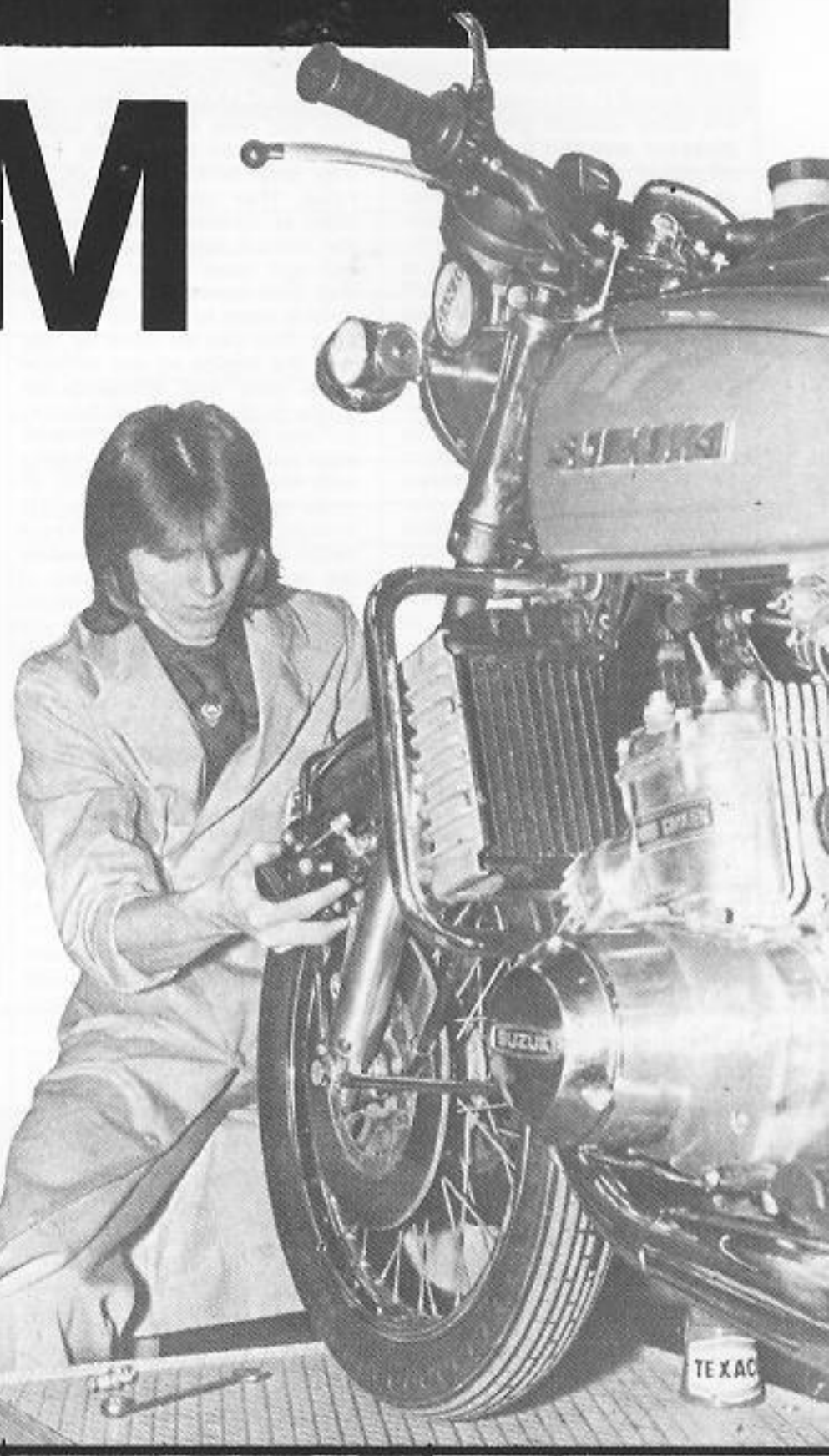
750A/M

running. The timing on the outer cylinders should be set to 3.64mm and the centre one to 3.42mm. The reason for the difference is only due to the inclination of the outer spark plugs effecting the rate of movement of the dial gauge. If the head is off and the dial gauge is mounted vertical then the timing is set to 3.42mm on all three pots.

POINTS

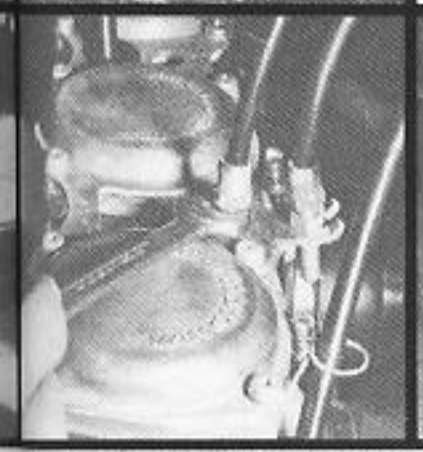
With the engine set to the right position the ohmeter is connected across the points and their position relative to the cam adjusted until the meter just starts to register an increase in resistance indicating that the points are just about to open. This operation is repeated for all three cylinders. I should point out, in case you miss it in the data panel, that the ignition timing on the latest 750A is 3.66mm L/R and 3.45mm centre. OK so there is not a lot in it, but if you are going to do the job you might as well do it right. Before I move on to carb adjustment it's worth mentioning that you may have trouble in getting a good reading from your ohmeter. If so you will have to remove the condenser from the points to get a full scale deflection of the needle. The last item for your attention on the points/timing side is to put a squirt of lube on the braker felt pad to help reduce heel wear. Suzuki point out that they now only recommend Texaco oil.

If there is one thing that frightens people more than timing it is carb adjustment but regular readers should now be 'experts on the subject after reading last month's carb tuning feature! First job is to clean out the air filter which may be a paper element or a foam rubber job. If it is very dirty the paper will have to be replaced but foam filters can be washed out and re-oiled at the same time by using a petrol and oil mixture. If you have the required vacuum gauges then the filter can be replaced during the carb adjustment. If not you may want to try using a small balancer such as the Guyson held over the intake stub. the throttle balance is set by two screws that interconnect the butterflies of the three carbs on

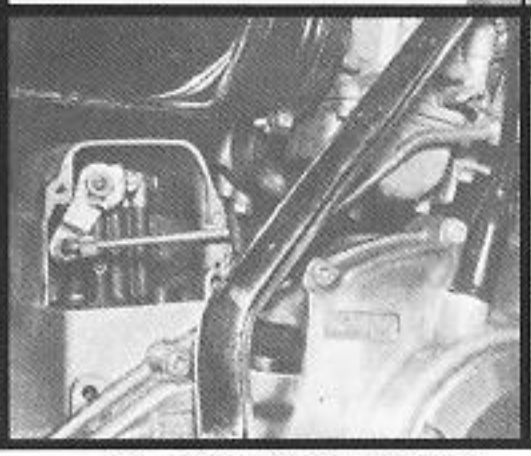


5. Turn the engine forward to the correct position and then adjust the points timing with a meter.

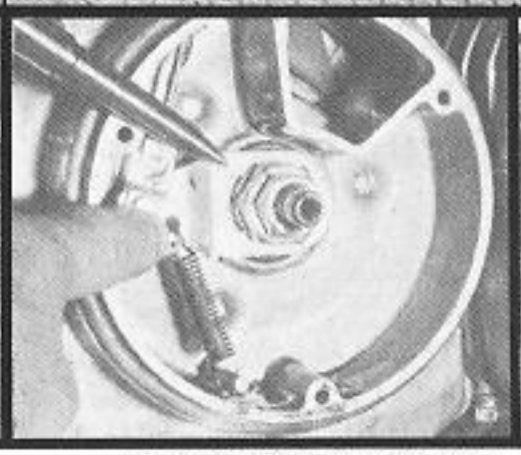




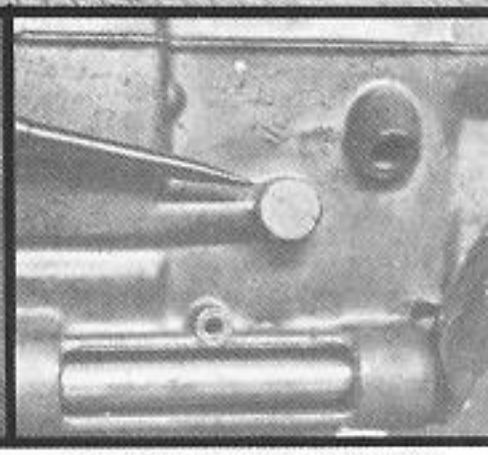
10. Do not over-adjust the throttle closing cable play or you will get throttle sticking problems.



11. Solid lines in pump must align when the throttle is closed. Dots must align when fully open.



12. Clutch adjusting nuts clearly visible. The feeler for adjusting the free play fits here.



13. This plug is the oil drain, the angled one next to it is for the camplate detent spring.

SIMPLE SERVICE

the 750A model with the constant vacuum type carbs. If you are using vacuum gauges then plugs are provided for their take off points on all three carbs, but you may find it easier to connect the centre carb via the diaphragm tap rubber tube remembering to switch the tap to prime to keep the petrol flowing. The off side adjuster is set first and then the near side until you have the same reading on all three gauges.

This operation should be carried out at approx 2000rpm. The tick over can be set to 1200rpm by the single thumb screw located on the off side. The mixture screws should not be fiddled with but left at their standard setting of ¾ turn out from fully closed. After removing the vacuum gauges don't forget to return the tap to the "run" position.

By now some of you may be thinking that's OK for all the rich guys that can afford the later models but what about the earlier Amal type carbs? Well relax, because your carbs are much easier to set up and the way to do it is as follows. Start by loosening off the throttle cables at the top of the carbs until you have 2 to 3mm of free play and then remove the plugs located on the side of their main body. Now open the twistgrip until a small dot appears in the plug hole and then adjust the cables until all three carbs have their dots level with the top of the holes. That takes care of the main synchronising so now set the mixture screws to 1½ turns out and leave them alone. All that then remains is to set the throttle stops to balance the tick-over. This can be done by running the engine on one cylinder at a time and adjusting the screw to give 1000rpm tickover on one pot. Repeat this with each cylinder in turn and, finally, with the engine running on all three cylinders. The idle speed is brought down to 1000/1200rpm by turning the screws back all by the same amount. You can, of course, use a conventional balance or vacuum gauge if you wish, which would probably be more accurate anyway.

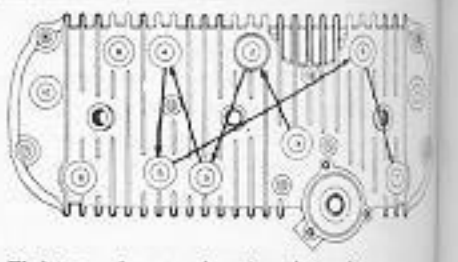
LUBRICATION

As you will have cleaned and gapped the plugs before refitting them after timing the engine, the only job remaining on the engine is to drain the gearbox oil and refil it with 2200cc of 20/50 to the level plug.

While on the subject of lubrication, and since you will still have the oil can in your hand, you could top up the engine oil with two-stroke. Two screws retain the cover for the oil pump and it's position should be checked and adjusted as required via the operating rod. The solid lines should line up when closed and the dots line up on full throttle. The middle dot should be ignored as it is only used during pump calibration checks. Providing the engine is running sweetly that completes the engine side of the service but if you still have problems then you may need to remove the head for a de-coke and take off the carbs to check float levels. If you do decide to remove the head then the tightening order is shown by the drawing and the torque values listed in the data panel, along with the float heights measured from the top of the float to the flange face.

Talking about levels, it's not a bad idea to keep the brake fluid topped up between the high and low limits set out on the master cylinder reservoir, but don't worry too much about leaks if the level is only slightly down, this could only be due to brake pad wear as the brake pistons sit closer to the disc causing the level to drop.

The other level worth keeping an eye on is the coolant in the radiator which should be topped up with distilled water to the small protrusion in the filler neck. And remember that the cooling system should be drained, flushed out and re-filled every 20,000 miles or two years. The coolant is a 50/50 mix of distilled water and "Golden Cruiser" year round anti-freeze. To this solution should be added one pellet of Suzuki 7 Bars Leaks. While making free with the distilled water don't forget battery.



Tighten down the head only with a torque wrench and in the order set out in the drawing.

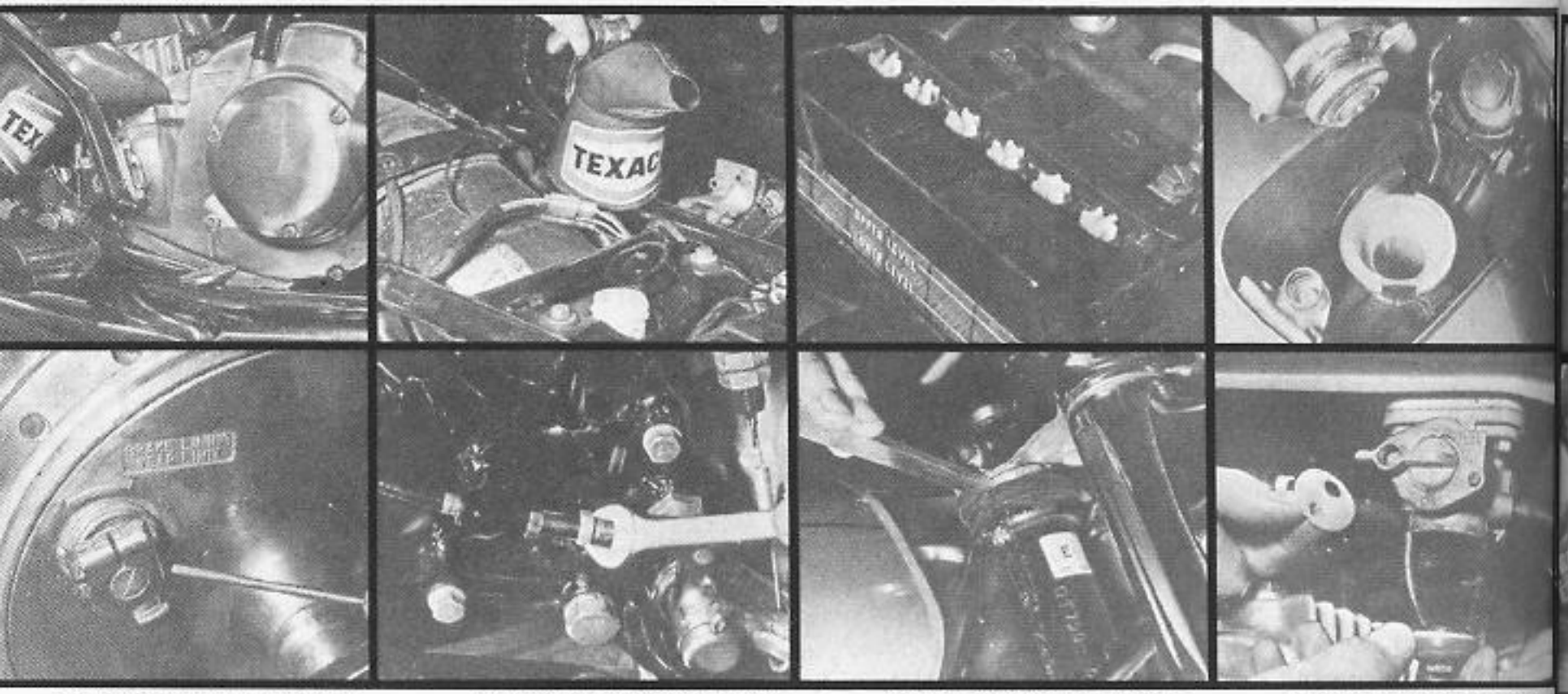
Since there is no set system for servicing the cycle parts start at the front and work your way to the rear. After checking the front tyre for wear, pressure and runout you should cast your beady eye over the brake pads and renew same if the wear is beyond the limit set by the red line on the pad. Next drain down

14. After draining the gearbox oil don't forget to refill with 2200cc of 20/50 oil (to the level plug).

15. Not just a service item, the engine oil tank should be checked and topped up regularly.

16. The battery levels are clearly marked. Keep the connections clean and tight.

17. Keep the rad topped up with distilled water / Golden Cruiser anti-freeze. Don't check hot.



20. Brake pad wear is shown on the rear linings by this indicator. Check with the brake applied.

21. After adjusting the rear brake the stop light may need re-setting via the two large nuts.

22. The steering head bearings are adjusted with a C spanner but the bars should turn freely.

23. The fuel filter is removed like so. Note that the diaphragm tap is not set to the prime position.

SUZUKI GT750L

The Water Buffalo.

by Margie Siegal

photography by Nick Cedar

PEOPLE RESTORE MOTORCYCLES for different reasons. Some find it an enjoyable hobby. Others want to create a tribute to a beloved relative who used to own a similar bike. Once Ray Meyers started putting the liquid-cooled Suzuki triple he bought new in 1974 back to factory condition, he found working on the bike made a positive impact on his life. Meyers feels that in restoring the GT750L, he helped himself as much as the bike.



Meyers was very young when he first brought the Suzuki home. He had been excited by the magazine articles about this very different motorcycle, and had been saving his money to buy one since its first appearance in 1972. "I was already a loyal Suzuki fan. All the kids around were riding small enduros. I had to have a bigger bike, so I bought a Suzuki X6 in a basket. It took me a year to put it together, and I fell in love with Suzuki engineering."

The GT750L was Meyers' only transportation for a while. He commuted to college and toured Mexico. "It was born to be a long-distance cruiser. The Suzuki is whisper quiet and as smooth as riding on glass. It is user-friendly and has a good cruising range. I would rarely see other GTs on the road, so it was kind of a novelty. I once brought a Christmas tree home on the back, and a rare turtle back from Los Angeles. I was always on it."

Before World War II, Suzuki produced, of all things, wooden cloth-weaving looms. After the war, the market for looms was not what it had been, but the market for clip-on engines for bicycles was roaring. Anything that ran could be sold. Suzuki started making small four-stroke engines that were

used by assemblers to make motorcycles for the Japanese home market.

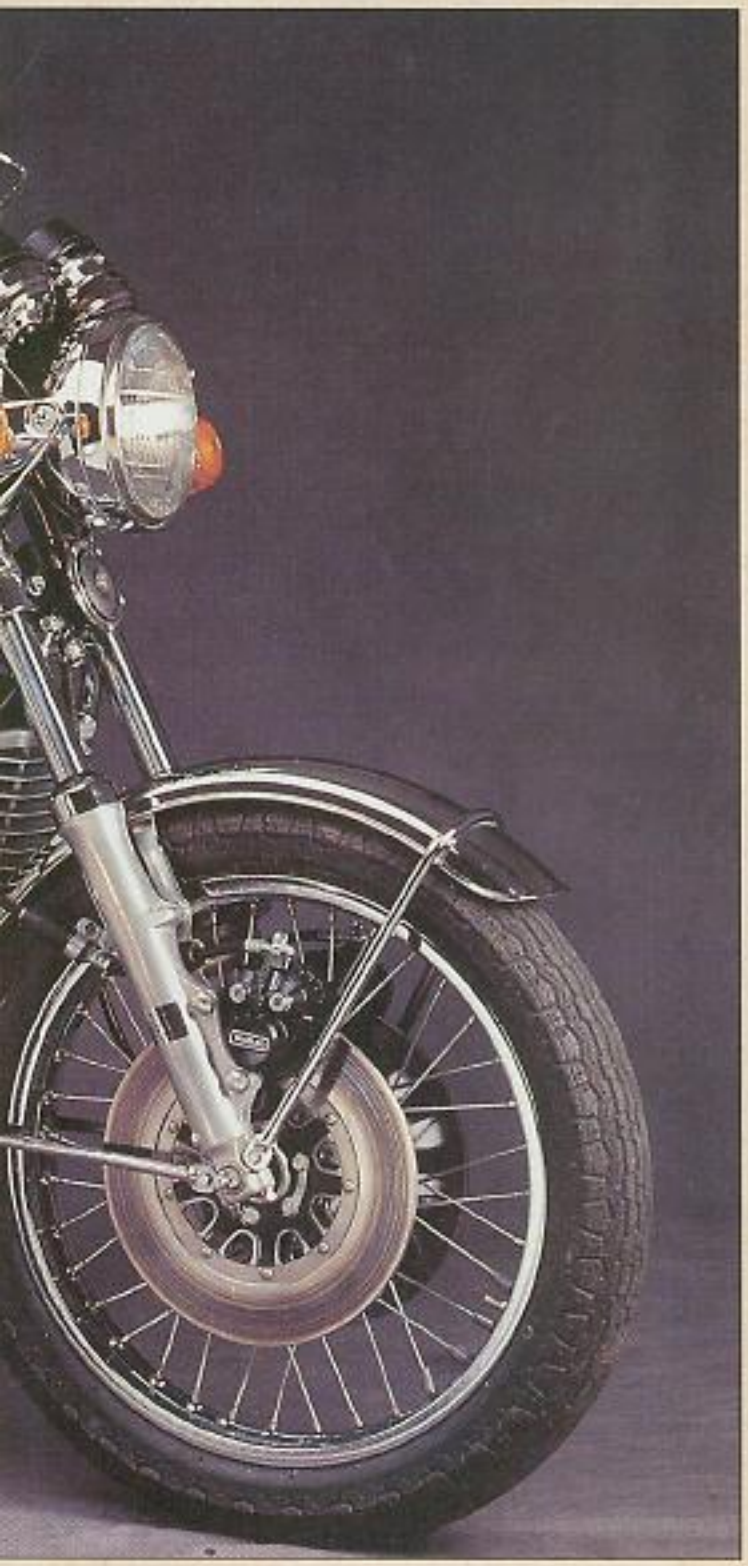
The first complete motorcycle built by Suzuki was a 250cc two-stroke, largely copied from the German Adler. The firm used the brand name "Colleda," concerned that a failure would reflect badly on the parent weaving-loom company. Suzuki needn't have worried—Colledas had an excellent finish and were well-received by the Japanese public.

In 1961, Suzuki had the great good fortune to hire Ernst Degner, an engineer who was irritated by the restrictions of the dictatorial regime then running East Germany. Degner designed some of the most advanced two-strokes on the planet.

The 250cc Colleda X6 twin sported an automatic oil-mixing system, with plastic leads to oil the main bearings, a six-speed gearbox and excellent brakes. Soon the badges on the X6 read Suzuki, and the bikes were being exported to Europe. Suzuki built a 500cc twin in 1967, but it was soon eclipsed by the Kawasaki Mach 3 triple and the Honda CB750 in-line four.







Above: The GT750L came in Firemist Orange and Firemist Blue and sported lots of chrome. Beneath the chrome was a reliable, fast motorcycle, with a wide powerband and excellent brakes. Left: Busy instrument panel caused dissension among period testers. Some loved it, some didn't. One-hundred-sixty-mph speedometer was optimistic; actual top speed was just shy of 120 mph.

Seeking to regain marketing momentum, Suzuki displayed a liquid-cooled 750 triple at the October 1970 Tokyo motor show. Production did not start until late 1971, but in the meantime, Suzuki displayed the prototype of the GT750 all over the world.

This Suzuki was not the first liquid-cooled motorcycle. Several pioneer motorcycles were liquid-cooled, and the first Scott liquid-cooled two-strokes were built in England in 1909. The concept lost favor early on, though, and by 1970, liquid-cooling was unusual and attracted a lot of attention. The GT750 acquired a different nickname in each country it was sold. In Great Britain, the bike was called the Kettle, and in the United States, everyone called the big Suzuki the Water Buffalo.

The stock Water Buffalo was powered by a detuned motor that could be made mind-numbingly fast with a little work. Unfortunately, the Suzuki factory racer's handling didn't match its speed, and it became famous for throwing rider Barry Sheene at 180 mph. As a result of the publicity generated by the racer, riders expected the GT to be fast off the line, and were puzzled when they found out it was supposed to be a touring machine. Meyers remembers that he expected the GT to be like another Kawasaki triple.

True to Suzuki tradition, the GT was well-finished and reliable. Unlike most Japanese two strokes, it had a wide powerband and quiet exhaust. The engine was rubber-mounted, eliminating vibration. The first version, the J, had a four-leading-shoe front brake, but by 1973, the front wheel sported double discs, the first pair on a Japanese production motorcycle.

Suzuki improved the suspension and top speed of the GT750 each year. The 1974 L model came with a redesigned frame, constant-velocity Mikuni carburetors and a digital gear indicator. The radiator incorporated a fan for the first two years of the model run, but the fan proved to be unnecessary and was gone by 1974.

Period magazine tests praised the wide powerband, the brakes, the smooth gearbox and clutch and the lack of vibration, but objected to the

bike's high-speed cornering. Meyers says the bike feels faster than the test reports, the riding position is good, even two-up, and the brakes are excellent for the year. "Two-finger stops!" In 60,000 miles of riding, he always did his own work, and found the Suzuki was easy to maintain.

The GT750 has conventional breaker points, isolated from the crankshaft by a set of bearings. The water tank fills with 50/50 coolant and distilled water. Wet-foam air cleaners need occasional maintenance, but, according to Meyers, the three synchronized carburetors rarely go out of adjustment. The drive chain used to need constant adjustment and wore out on a regular basis, but the advent of modern O-ring chains cured that problem.

Unlike most two-stroke manufacturers of the '70s, Suzuki tried to be environmentally responsible. The CCI lubrication system precisely metered oil delivery, the mufflers quieted the engine to a neighbor-pleasing burble, and a scavenging system recycled unused gas/oil mix. But by the late '70s, Suzuki management decided that even the GT could not meet the new government emissions standards, and cancelled the model in 1977.

Meanwhile, Meyers got married and had a child. With the pressures of family life and his growing business, there was less and less time for the motorcycle. Eventually, it just sat in a corner of the garage, even though Meyers refused to sell it and kept promising he would refurbish it.



Left: Three exhaust ports become four mufflers. The GT750L had respectable horsepower, but wouldn't wake the neighbors.





Top: Double-disc front end was the first on a Japanese-built motorcycle. Above: Rear view of the three two-stroke cyclinders. The center exhaust splits into two.



IN 1996, MEYERS fell from a pallet rack at work. "I sat at home and started thinking about the bike. When I could get up, I went out to the garage. There were spiders on the bike. I went to the Internet, and was amazed that there were so many people devoted to Water Buffalos. I learned that it is one of the easier bikes to restore. Suzuki gave its dealers a lot of old parts, and there are two people specializing in selling Suzuki parts full-time.

"I had to learn a lot of skills. I decided that time was no object. It was a steep learning curve, and it took five years, but it was a life-changing event. Restoring the bike allowed me to be both an artist and a technician. Last year, I decided to go to the Classic Japanese Motorcycle Club Show, a great event that takes place in Lake Tahoe, California. I was still working on the bike at 1 a.m. the night before. I wasn't going to show it, but everybody tried to talk me into putting it in the show, and I finally rolled it in 15 minutes before they closed the entries. It won first place in the Classic division. Most of the people at the show were Honda owners, and I am surprised that all the Honda owners voted for a Suzuki.

"I wouldn't restore a bike for a trophy—that would be doing it for the wrong reasons. I feel a connection with my Suzuki. Sometimes I just go out and look at it. I feel good just being around the bike."

Interested in Water Buffalos? Check out the American GT750 Club's Web site at http://groups.yahoo.com/group/GT750, or the international Kettle Club at www.thekettleclub.org.uk.

1974 SUZUKI GT750L

ENGINE

Type: Liquid-cooled, transverse two-stroke in-line triple
Displacement: 738.9cc
Bore x Stroke: 70.0mm x 64.0mm
Compression Ratio: 6.7:1
Port Arrangement: One intake, two transfers, one exhaust
Carburetion: Mikuni BS40 CV x 3
Air Filter: Washable oiled-foam element
Transmission: 5-speed, left foot shift
Clutch: Wet, 8 drive plates, 7 driven plates
Lubrication: Oil injection, 3.8-pint tank capacity
Final Drive: Chain

ELECTRICAL

Ignition: Battery, 3 coils, three sets of points
Charging System: 12V AC generator, voltage regulator and rectifier

CHASSIS

Frame: Tubular steel, double loop
Wheelbase: 57.8 in.
Seat Height: 32 in.
Ground Clearance: 5.5 in.
Suspension, Front: Telescopic fork, 4.25-in. stroke
Rear: Swingarm with dual shocks
Brakes, front: Dual single-action calipers w/ 11.7-in. floating discs
Rear: Cable-actuated single leading-shoe drum
Tires, front: 3.25 x 19 in.
Rear: 4.00 x 18 in.
Claimed Dry Weight: 507 lbs.

PERFORMANCE

Fuel Capacity: 4.5 gals.
Average mpg (period test): 41.9
Oil Capacity: 3.8 pints
Horsepower: 65 @ 6,500 rpm
Top Speed (period test): 119 mph
Standing ¼-mile (period test): 14.27 sec.

SUZUKI GT750A/M

the front fork oil, one side at a time, and refill with 160cc of TQF oil.

With the front wheel in the air the forks can be rocked back and forth to check the state of the steering head bearings which should be adjusted with a C spanner, but don't overdo things, the bars should still be free enough to fall from side to side under their own weight. Speaking of handlebars this would be a good time to adjust the clutch and throttle cables. The throttles should be adjusted to give around 2mm of play at the twist-grip. If the closing cable is over adjusted it can cause problems with the throttle sticking.

To adjust the clutch cable you will have to start at the gearbox end and after removing the clutch operating cover the centre rod is adjusted by the two lock nuts with a .2mm feeler behind the operating arm (see pic). The handlebar lever play is set with its own adjuster to around 3mm. While on the subject of cables the rear brake can be adjusted to set the pedal to the required position and the rear lining wear is indicated by marks on the back-plate. You should take the rear wheel out on every service to clean out the drum but we would be inclined to only do it every other service (4000 mile intervals) providing the wear rate was acceptable.

Around the other side of the bike you will find the fuel tap which has a gauze filter screen inside and will require cleaning out on every other service.

One item that should not be overlooked is de-coking the muffler in the silencer. This is listed as on every other service job but you can do it every time to keep the system up to scratch. As with other Suzuki models the muffler is fitted with a fibreglass pad which is probably best thrown away.

During the muffler operation your nose will be in the vicinity of the rear wheel so you should take time to inspect the back tyre for wear and correct pressure. By placing your hands on same and pulling to and fro you can also check the rear swinging arm bushes. A small amount of play can be taken up by greasing the swinging arm, an operation you should on no account miss.

Still down by the back wheel the drive chain and sprocket must be given the visual once over and adjusted as required.

Spoke pinging is a pleasant pastime and if you can find a few loose ones it is possible to play some nice little tunes, but it doesn't help handling if a loose spoke breaks and punctures the inner tube at 70mph. Check each spoke in turn and, if you find more than the odd one loose, check the rim run out after tightening.

Last, but certainly not least, go around the bike checking the tightness of wheel nuts, engine mountings and the like. Stop when you reach the exhaust bolts at the cylinder barrel because these bolts are threaded straight into the alloy block and will strip if overtightened. They must only be checked with a torque wrench to 9.5ft/lb.

SERVICE MILEAGE INTERVALS

	8000	10,000	12,000	14,000
Transmission oil	R	R	R	R
CCI tank	T	T	T	T
Brake fluid	T	T	T	T
Coolant level	T	T	T	T
Battery	TC	TC	TC	TC
Spark plug	R	CA	R	CA
Contact points	R	CA	CA	CA
Ignition timing	A	A	A	A
Contact cam felt	L	L	L	L
Carburettor	OCA	CA	CA	CA
Oil pump	A	A	A	A
Air cleaner	R			C
Control cables	LA	LA	LA	LA
Fuel strainers	C		C	
Fuel hoses	R	I	I	I
Front fork oil	CA	R		R
Steering head races	CA		CA	
Tyres air and wear	CI		CA	
Front and rear brake shoes, pads	C	CI	CI	CI
De-coke muffler			C	
De-coke cylinder head (if required)	C		C	
Drive sprockets and chain	LIA		LIA	LIA
Wheel nuts and spokes	A	LIA	A	
Swinging arm bushes	GC	GC	GC	GC
Lights, speedo, horn etc.	I	I	I	I

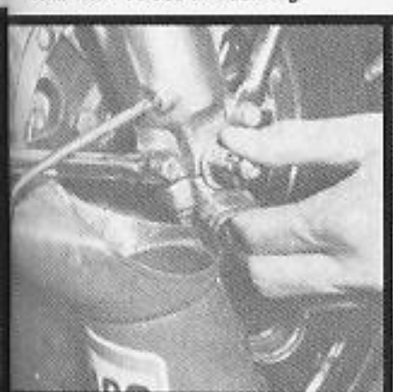
Index: R = Replace; T = top up; I = inspect; G = grease; C = clean; L = lubricate; A = adjust; O = overhaul.

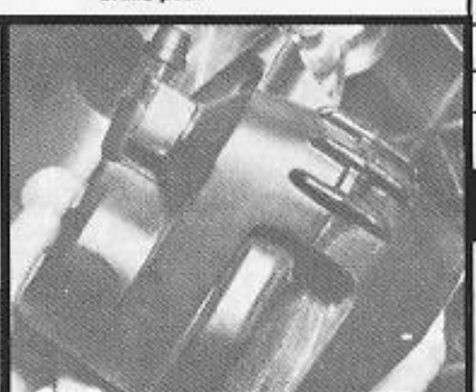
SERVICE DATA

Gearbox oil	Texaco 20/50 Multigrade
Front fork oil	Texaco Auto trans fluid. 160cc
Tyre pressures	25 front 28 rear solo 25-32 loaded
Points gap	14 thou
Dwell angle	45° or 50%
Timing	L/R 3.64mm C 3.42mm
	L/R 3.66mm C 3.45mm on A model
Carbs CV type	40mm bore
Main jet	R/L 110 C 107½
Needle jet	ZO
Needle	40N 18 on fourth notch
Pilot jet	45
Air screw	¾ turn out
Float level	27½mm
Carbs Amal type	32mm bore
Main jet	R/L 102½ C 100
Needle jet	R/L P4 C p3
Needle	5F16/3
Cutaway	2½
Pilot jet	30
Air screw	1½ turns out
Float level	27mm
TORQUE DATA	
Head bolts	10mm 22/29ft lb 8mm 13/16ft lb
Exhaust bolts	9.5 ft lb

18. Drain the fork legs one at a time, pumping all old oil out, and refill with 160cc in each leg.

19. Minimum brake pad wear is indicated by the red line on the brake pad.







24. The exhaust pipe bolts are very easy to strip in the block. Only use a torque wrench here.

Suzuki 750 triple

According to its own Service Manual, translated from the Japanese, the Suzuki GT 750 is "a large size sporty type motorcycle equipped with advanced mechanisms" — a definition which few would deny. Indeed, when it comes to overhaul time, the apparant complexity of these 'advanced mechanisms' adds up to quite a daunting prospect for the average table-top mechanic.

However, the good news is that things aren't as complicated as they look. The water-cooled triple is certainly a lot of engine — but in line with most Japanese machinery, when you get down to the nitty-gritty of pulling it apart you find that logic is on your side and the problems tend to dissolve, or at least, most of them do . . .

One snag you might come up against early in the game is that having taken off the head, you then find the barrels won't move: sweat and puff as you might, the cylinder block remains firmly stuck to the crankcase. There are two possible reasons for this. The first is that you've forgotten to undo the single base-flange nut under the right hand inlet port — and the second, rather more seriously, is that the cylinder studs may have become adhered to the cylinder block due to corrosion. If this happens, we can only suggest that you persuade the barrel upwards with a wooden drift and a mallet as best you can; it may take a while, but it's really about the only thing you can do.

Having got the barrels off, have the bores checked with a micrometer in the usual way. (See chart for limits). Also, check the flatness of the cylinder head surface, preferably on a surface-plate but at the very least with a good steel rule.

Piston diameter should be measured at right angles to the gudgeon pin 'ole and 32mm above the bottom of the skirt: if you do it anywhere else you won't get an accurate reading 'cos the pistons are made both tapering and slightly out-of-round. Piston ring gaps should be checked in the bottom of the bores, and the ring-grooves in the pistons should have the carbon cleaned out of them and then the ring side-clearance (up-and-down clearance in the groove) measured with a feeler. This is important because the 750 uses key-stone rings, for

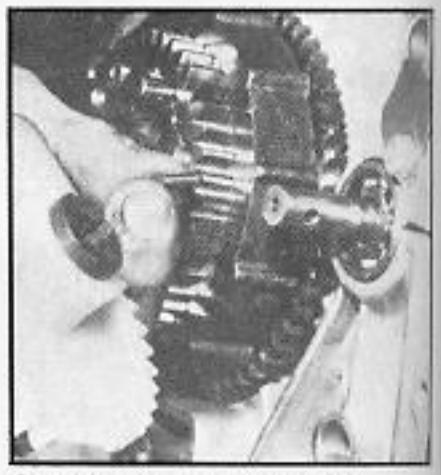




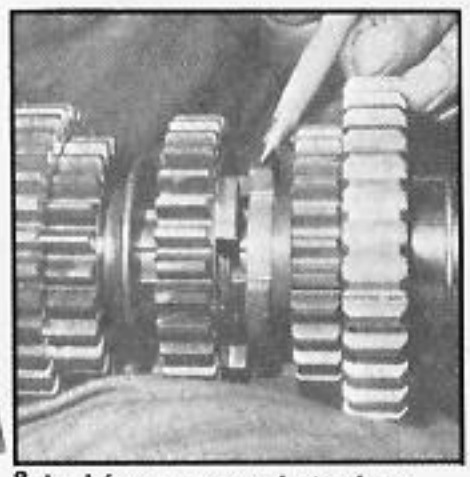
1. Cylinder block is held down by this one nut as well as head bolts. If you're not stripping cases, watch for corrosion crud dropping in as block is lifted.



2. Check small ends for play as usual, and also look for polish marks on the edges of bearing cages. Bearing and pin wears first, then conrod eye.



3. Remove starter gear and shaft noting shim positions, then nylon water pump gear. Note loose drive peg, similar to oil pump shaft.



8. Look for worn gear selector dogs. Also make usual check on bearings, gearteeth, etc.



9. Check selector forks for thickness (see chart) and blueing. Also condition of the pegs and the slots in the selector drum.

which the side-clearance is rather more critical than usual. The rings are always fitted with the markings on them at the top.

Incidentally, don't be dismayed to find that you have one piston stamped R for Right and two stamped L for left: both the left and centre pistons are the same pattern, while the right hand job has its ports moved round a bit. Obviously, you make your own marks to ensure that each 'left' piston goes back in it's original pot if you're not having a re-bore.

Next off is the water pump housing on the underside of the engine. With that out of the way the impeller can be removed, the pump-holder retaining circlip sprung out, and the pump holder lifted away. After that the oil pump and its distributor block and lines are removed. (The nylon block and lines being one unit, of course). Take care not to lose the little drive pin thingy at the bottom end of the pump shaft: this is not a press-fit in the shaft and will fall out and hide itself on the floor given half a chance. The SRIS (Suzuki recycle injection system) pipes from the bottoms of the three crankcase chambers to the cylinder block will have been removed already. The actual routing of the pipes depends on the age of the engine, but you don't have to worry about it 'cos the spigots on the cylinder block are stamped Left, Right, and Centre.

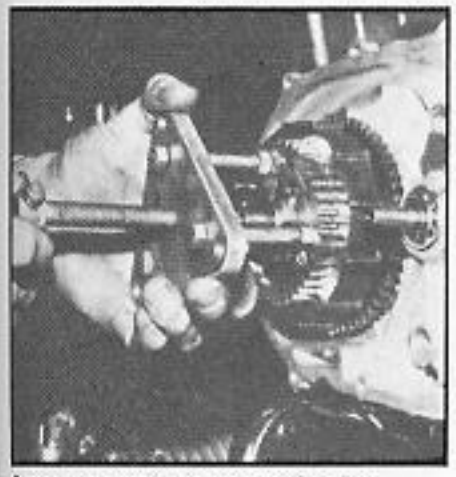
Next thing to remove is the water by-pass spigot near the back end of the starter motor, and then take out the motor itself. After that the points-plate is taken off, followed by the left hand side cover, which brings with it the ignition cam. The pinions under the cover are then lifted out — taking care to note the positions of thrust washers and drive pins — and then the nut securing the starter clutch is undone and the clutch pulled off with a puller (see pic). If you haven't got this puller, or the equipment to make it up, don't worry too much: the crankshaft can be lifted out with the starter clutch still attached and toddled down to your friendly Suzy dealer for removal later on.

Turning now to the other side of the mill, the clutch cover and generator stator are removed. The stator unit has a pair of brushes on it which are easily accessible and should be checked for wear. (See chart). The rotor can then be pulled off. The currently recommended tool for this is a shock-puller, but you can do it by screwing a 10mm bolt into the end of the rotor, tightening it down so it bears on the crankshaft, and then giving the end of the bolt a sharp tap with a copper 'ammer. The snag about this is that if you heave the bolt up too tight you can damage the end of the crankshaft — so if the rotor doesn't come off fairly easily, give up and leave it on the crank in the same way as the starter clutch.

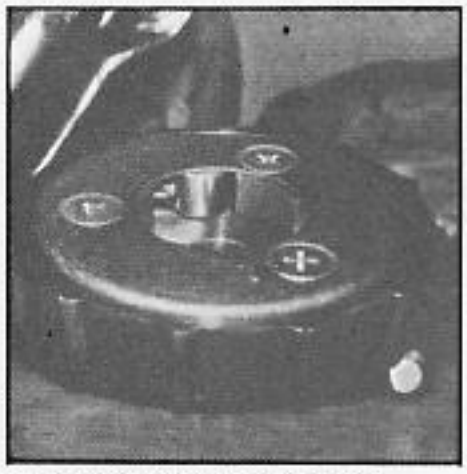
Next item on the agenda is the clutch itself. Slacken the clutch springs equally and progressively, then pull out the plates and check them for thickness and warpage (see chart). The clutch sleeve hub must then be pulled out using two bolts (see pic) before the clutch drum will slide clear. Note the positions of the various thrust washers, and also which way round the bevelled edges go on the two big ones.

After that the oil reservoir plate is removed, then the kick-start spring and the gear selector rod. (If the rod has been bent by your goodself falling off the large size sporty type motorcycle at any time and thereby leaning most of the weight of same on the gearlever, then cut the left hand end of the shaft off with a hacksaw before yanking it out. You'll have to buy a new rod unit, of course, but this is a damn sight cheaper than hauling a bent shaft out by brute force and messing up the crankcase as a result).

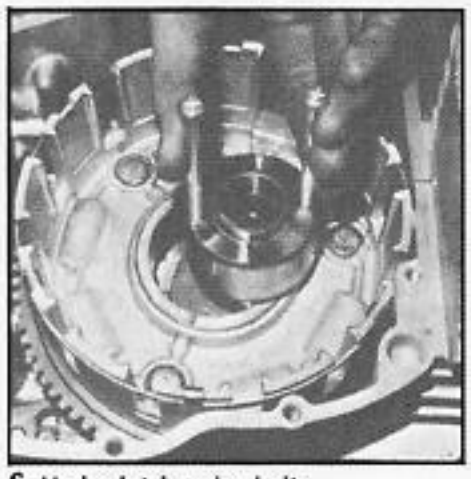
Next, we turn back to the left hand side and remove the gearbox final drive sprocket, the plate behind same (noting the presence of the rubber O ring, which ought to be renewed), and then the neutral light switch thingy. (Which, for later reference, is fitted with the electrical contact towards the front). Finally, we remove the rev counter drive unit lockbolt and pull the unit carefully out. We say 'carefully' because if you ain't careful the drive pinion inside the housing will fall out as you pull the housing upwards, and drop down into the crankcase. This doesn't matter greatly if you're about to split the crankcase anyway, but can be more than slightly niggling if (a) you weren't intending to make the



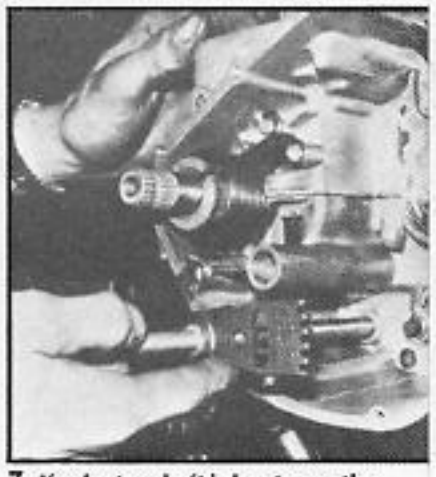
4. Starter clutch needs a puller, but you can remove crank with it still on.



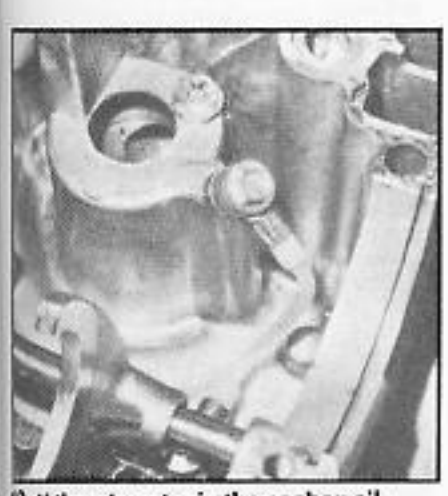
5. Starter clutch is a spring-loaded roller affair. Not prone to trouble but springs and rollers can be replaced if it slips or screams.



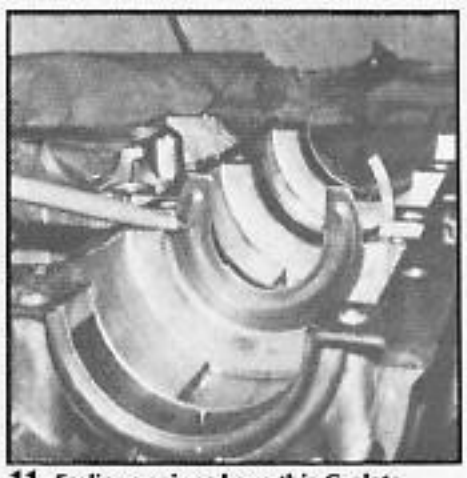
6. Undo clutch spring bolts progressively, remove centre nut, then screw two screws into hub centre to pull it out. Clutch drum then clears front of casing.



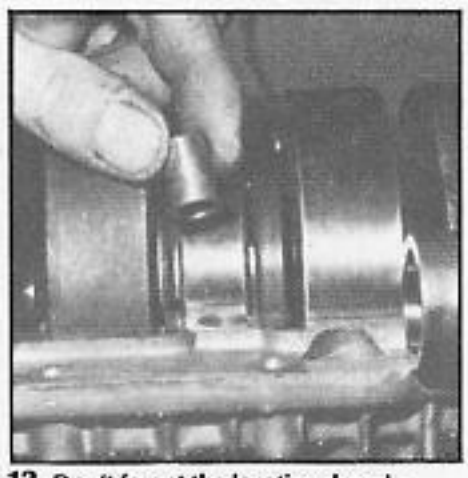
7. If selector shaft is bent, saw the other end off before withdrawing it. Remove oil collector plate (arrowed) and kickstart spring assembly.



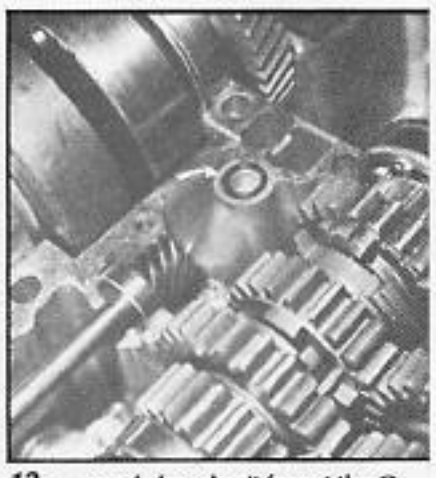
0. If there's water in the cogbox oil, s duff water pump holder seals. his pipe is intended to take away nall dribbles of water/oil emulsion.



11. Earlier engines have this C-plate to locate no. 2 oilseal: if you have it, get the bulge to the right. Note bearing locating pegs and the single set-ring to locate shaft laterally.



12. Don't forget the locating dowels between the crankcase halves . . .



13. . . . and also, don't forget the O ring in the main water gallery. All O rings on the engine should be renewed.

ENGINE REBUILD SERIES

big split, or (b) you've just put the engine back together and it happens while you're putting the unit back. (To avoid the second embarrassment the wise mechanic puts heavy grease on the pinion shaft to hold it in its housing during re-assembly, and also turns the engine downside-up so he's feeding in the whole gubbins *upwards* instead of downwards. If that doesn't make sense, see the piccies).

Anyway, with all that out of the way we can now split the case. This involves undoing no less than 33 bolts — seven on the upper case and the rest on the lower — in the *reverse* order to the numbers stamped alongside each bolt 'ole. (I.e. starting at number 33 and working backwards to number one). The upper crankcase half is then tapped upwards off the lower, to break the seal, and lifted out of the way.

Having thus gained access to the innards, the crankshaft, gear shafts and 'most everything else can simply be lifted out. Most of the bearings are located by half-circular set-rings, with the major exception of the little tiny bearing on the inner end of the rev-counter/water pump drive shaft, wot is located by a wee peg thingy. (This peg may be well stuck in place, or it may lift out easily: if the latter, take care not to lose the blighter).

Taking the crankshaft first, the conscientious mechanic is now faced with the interesting question of whether it's fit for further use or whether he's got to lash out some £90 for an exchange unit. There's nothing you can do about dismantling the thing — you can't even press the three parts of it apart to replace the oilseals — so there's no half-measures: either it and the seals are okay or they aren't.

Starting at the top, the first thing to examine is the state of the needle-roller small ends. If these are knackered the first sign, obviously, is the pin rocking when you push it into the bearing in the small end eye. You also look for wear-marks on the pin, and for ditto on the inside ends of the bearing cages, since these are apt to touch the pin when the bearing has handed in its dinner pail. If this is the maximum extent of any wear you're in luck, 'cos all you need to replace are the pins and the bearings. But the next thing which can happen, if you've been listening to a rattly small end for some time and continually promising yourself you'll do something about it next week, is that the small end eye in the rod shows signs of wear and/or scoring. If this is the case, you've had it; you need an exchange crank. The moral, obviously, is to strip the top end down immediately if you ever suspect there may be a small end problem.

Next thing to check is the big end up-and-down movement, which to all intents and purposes shouldn't exist; if you can feel any up-and-down play with your fingers, you need another crank. Likewise if there is any roughness or axial play on any of the main bearings.

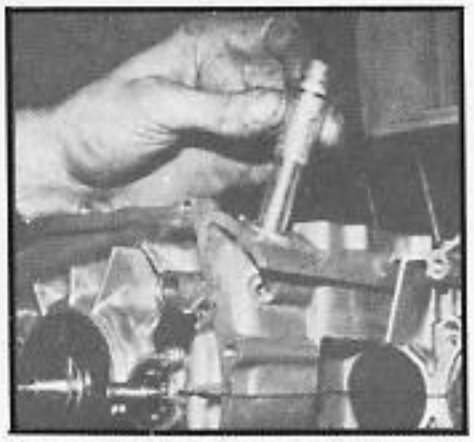
A bit more difficult to decide about is the state of the oilseals. In fact, once you've got the crank out there isn't really *any* way of checking whether the seals are any good or not (with the possible exception of the two outermost seals, of course). However, there are some indications which you can bear in mind before you even start the job. The favourite seal for blowing is the two-way job between the drive pinion and the starboard chamber: if one half of this starts to blow, the gearbox begins to breath out a lot of oil — and if both lips give up the ghost, the right hand pot starts to smoke out of the exhaust as well. (The reason for the gearbox blowing oil out is that the starboard inner main bearing, unlike the other three mains, gets its lubrication from the gearbox sump. If the seal goes, therefore, the gearbox chamber comes in for a bit of second-hand pressurisation from the centre crankcase chamber). The pattern of this particular seal was changed a while back, removing the need for the separate C-plate shown in the pics. The later type of oilseal fits straight into any age of crankcase.

Turning now to the gear cluster, the first thing to check for is any roughness in the bearings. Also look for wear on the engagement dogs and dog 'oles, and obviously inspect all the teeth for pitting, damage, etc. Remove the gear selector forks and check their finger thickness (see chart), and the fork rods for straightness. The gearshift drum doesn't usually need removing: just have a gander at the slots for obvious signs of wear, which mean a new drum.

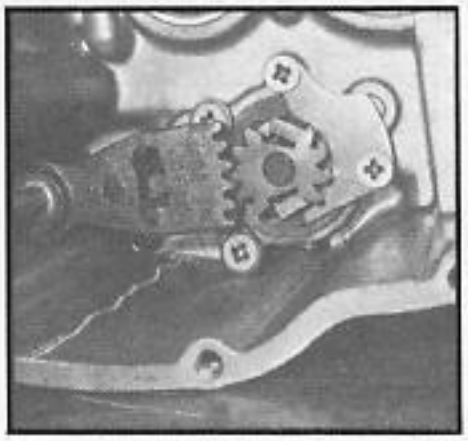
There isn't usually any reason to dismantle the kickstart assembly; but if you do, note that on



14. Crankcase bolts are numbered in order of tightening. Number 13 uses copper washer, and needs gasket goo on it, as does case joint and water pump housing.



15. Grease rev counter shaft to stop it falling out of housing during fitting. Wise man also turns the engine upside down to remove possibility of it dropping in.



16. Selector shaft goes in so that the quadrant engages like this, with teeth equi-spaced.



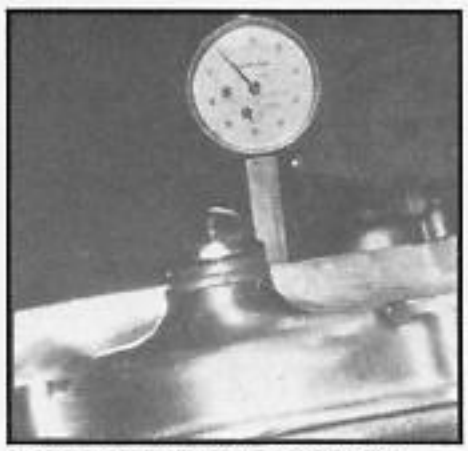
17. Use new O rings on the water pump housing, renew the internal seals, and oil it copiously. This slot engages on locating bolt at bottom of the hole.



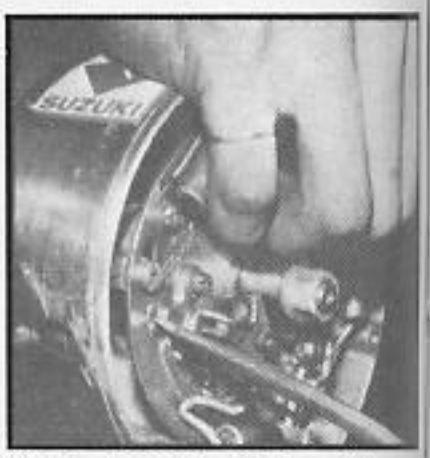
20. Pistons are arrowed to the front and marked R and L. (Left and right). Use a left piston for the centre pot.



21. Later pattern headbolts have rubber seals. Tighten gradually working diagonally from the centre outwards.



22. Timing must be done with a dial gauge. Centre pot is different to outers, and remember that engine turns the 'wrong' way.



23. Time the left pot first by rotating the whole points backplate. Centre and right hand points are mounted on their own backplates for timing those cylinders.

putting it back together again there is a punch mark on the shaft and another one on the engagement pawl, which have to be adjacent. After that, remember to turn the assembly so that the pawl comes up against the stop before bolting the crankcase halves together. Finally, when everything's back in one piece and re-fitted in the frame, align the punch mark on the shaft with the ditto on the kickstart lever when replacing same.

Re-assembly

The rebuild is started using the bottom crankcase half as a base. Make sure all the set-rings and so forth are in place, then drop in the gear cluster and the crankshaft. The punch marks on the main bearing outer tracks should all be aligned with the crankcase joint at the front except in the case of the right hand outer main, which should have its punch-mark at the rear. Don't forget all the locating dowels and the rubber O ring round the main internal water gallery. Also, don't do what we once did, which was to leave out the vertical oil pump drive shaft.

The joint between the two crankcase halves uses a jointing compund. Tighten the crankcase bolts down in the order of their numbering: bolt number 13 has a copper washer and should be smeared with Suzy Bond as well, since it goes through into a waterway.

From then on,, re-assembly is pretty much a straightforward reversal of the dismantling procedure. Replace all the rubber O rings as a matter of course, DON'T drop the rev-counter drive shaft into the bloody crankcase, and take care to use Loctite or summat similar on all the internal screws. When you come to replace the water pump holder (which *must* have its O rings renewed and copiously oiled), make sure the slot in the holder engages with the protruding end of its locating bolt (see pic), then pop its retaining circlip in, fit the impeller, and measure the gap between the impeller blades and the bottom of the crankcase with a feeler. (See pic again.) If this gap is wrong, the pump shaft probably isn't seating properly in its bearing in the holder. This has to be corrected, or the impeller may start chavelling through the crankcase or the water pump housing. Finally, when re-fitting the housing, use a non-setting goo on the gasket. (The rest of the gaskets on the engine are fitted dry, or with a light smear of grease.)

Before you come to re-fit the oil pump and the CCI pipes, remember to fill all the oilways in the crankcase with Suzy CCI oil, and then do likewise with the pipes themselves. This is most important, since it takes a year-and-a-day for the oil to get round if the lines and galleries are empty. The cautious man will also prime the SRIS pipes, although this isn't so essential. Finally, when the engine's back in the frame, the pump must be adjusted as per the pics, and the bleed screw on top of the pump body slackened or removed altogether until the main feed line from the oil tank is clear of air bubbles. In addition, many of the cogniscenti like to hold the oil pump lever fully open by hand for the first minute or so when the re-built engine is initially started up. This usually produces a smoke screen thick enough to shut down Heathrow, but on the other hand it does ensure that everything gets a good lashing of the slippery.

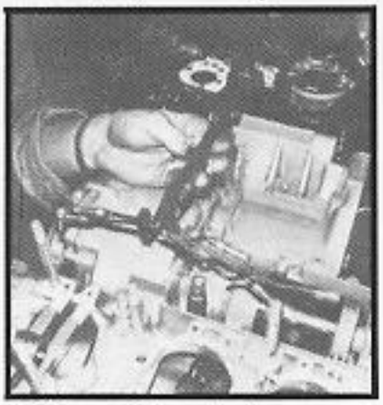
Ignition timing on the GT750 is very critical indeed — so critical, in fact, that it must be done with a dial gauge to determine the distance before TDC on each pot, and *not* with the timing marks on the plate attached to the ignition cam. The timing sequence starts with the left hand cylinder, since the points for the left pot are mounted directly on the circular points backplate. You find TDC with the dial gauge, turn the crankshaft until the piston is 3.64mm BTDC, and then rotate the entire points-plate until the points are just opening according to your light or buzzer or whatever. (Note that when looking at the left hand side of the engine you turn the crank ANTICLOCKWISE in order to go from top dead centre to before —TDC: because there's no idler gear in the primary drive, the Suzy engine runs backwards compared to most 'conventional' machines). Timing the centre and right hand pots is achieved by moving the individual backplates carrying the points themselves. Note that the centre cylinder is timed to a different figure than the two outer pots (see chart).

We would like to thank Steve Aitken and Ray Battersby of Suzuki (GB) Ltd, Beddington Lane, Croydon, for their invaluable help in compiling this feature.

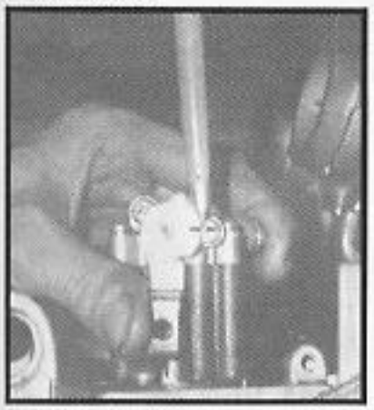
Brian Lecombe



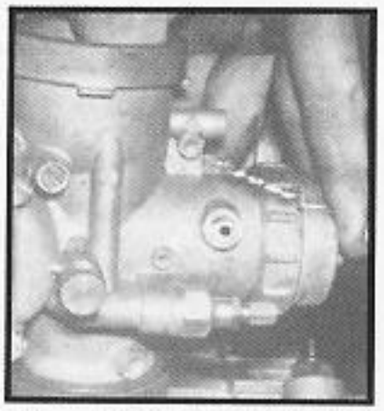
18. Measure this clearance with the pump housing circlipped home and the impeller fitted. If it's wrong, shaft isn't fitted properly in the bearing and impeller may damage case or pump housing.



19. Renew O rings in oil pump distributor block, and prime all the pipes and oil galleries with Suzy CCI oil. Use new washers on the unions, and don't overtighten them.



24. To set the CCI pump, adjust the cables so that these two marks line up . . .



25. . . . when the throttle is open so that this pip is in the top of it's 'window'.

ENGINE DATA

LIMITS	MM.	IN.
Standard cylinder bore:	70.00	2.756
Wear and taper limit:	.07	.0018
Oversizes available:	+ .50	
	+ 1.00	
Max. piston/bore clearance:*	.07	.0018
Piston ring end gap min:	.15	.006
Piston ring end gap max:	.70	.027
Piston ring side clearance, max:	.095	.004
Max crankshaft run-out:	.08	.003
Clutch fibre plate thickness, min:	2.70	.106
Clutch steel plate thickness, min:	1.70	.062
Clutch spring free length, min:	39.00	1.535
Selector fork finger thickness, min:	4.90	.190

TORQUES	KG-CM	LB-FT
Crankcase bolts: 6mm	100	7.00
8mm	230	15.00
10mm	400	27.00
Head bolts: 8mm	200	15.00
10mm	350	26.00
Clutch sleeve nut:	500	36.00

SETTINGS	MM.	IN.
Contact breaker points:	.35	.014
Plug gap (NGK B-7ES)	.75	.030
Ignition timing: (24 degrees BTDC).		
left and right pots, BTDC:	3.64	.143
centre, BTDC:	1.42	.136
Water impeller/crankcase clearance, between:	0.5-1.5	.020-.059

Coolant solution: 1.35 ltr Golden Cruiser 1200 plus 3.15 ltr distilled water.
Thermostat opens at 82°C; fully open at 95°C.
Gearbox oil capacity: 2,500 cc. (2,200 cc when gearbox is topped up after draining, since 300 cc residue is left in the box.)

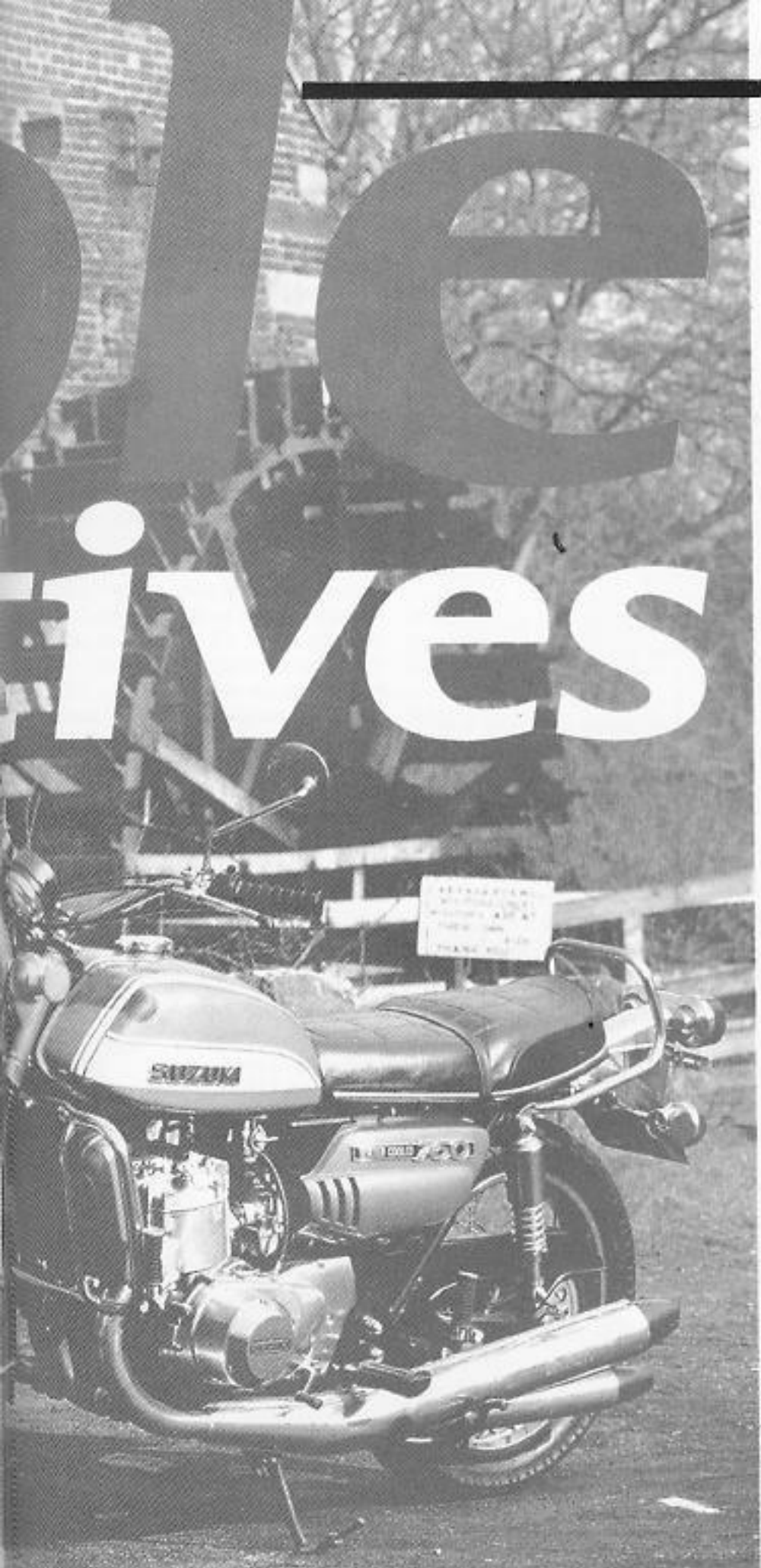
Engine oil: Suzuki CCI oil or SAE 30 (Non self-mixing).

*Bore and piston tolerances are smaller than usual because the GT750 is watercooled.

Alterna

AS PART OF HIS FORLORN QUEST FOR MOTORCYCLING NIRVANA, ROD KER PITTED A TRIUMPH TRIDENT T150 AGAINST SUZUKI'S GT750. WHY, EXACTLY? READ ON...

ive s



On the face of it, Suzuki's biggest two-stroke would seem to have little in common with what some suggest was Triumph's biggest mistake. But the longer you look, the more similarities you notice. Alert *CBG* readers will immediately spot that both machines have three-cylinder engines displacing a nominal 750cc, for instance.

Beyond the obvious, we might also notice that both bikes went to the wall in about 1976, and for each manufacturer this represented the end of an era. In Suzuki's case, the demise of the smelly GT triple in favour of the GS750 4-stroke four set the trend for a clean green future. For Triumph, the Trident's departure heralded the end of NVT and anything with more than two cylinders — at least until John Bloor rode into Meriden waving his wallet many years later.

Background
TRIUMPH T150

The Trident has often been accused of being a rushed job, but in actual fact the idea of a British triple was first proposed in 1963, a good five years before the finished (allegedly) article made it into production. Speed Twin creator, Edward Turner, was still at the Meriden helm at the time, and he rejected the three-pot concept. Although he had visited Japan and therefore had good reason to worry about the Oriental threat, somehow a British multi was not seen as the way forward. Turner apparently believed to his death that parallel twins were the only thing to have, despite mounting evidence to the contrary.

In 1964 Harry Sturgeon took command and gave the go-ahead to the triple, with Doug Hele in charge of the development team. So far, so good. The 'mistakes' began when it was decided that the new engine must be based on the twin, which was a fine design in 1939, but really had no place in a modern, oil-tight world.

Initially, the engine actually went back to the very beginning, using cylinders of 63 x 80mm dimensions, as on the first Speed Twin. The official justification for this was to keep the engine narrow, but you'd have to be naive to believe that. Once the basic layout had been finalised, the cylinder dimensions were changed to a shorter stroke, 67 x 70mm configuration to improve breathing... and perhaps because the C15 engine happened to have the same measurements.

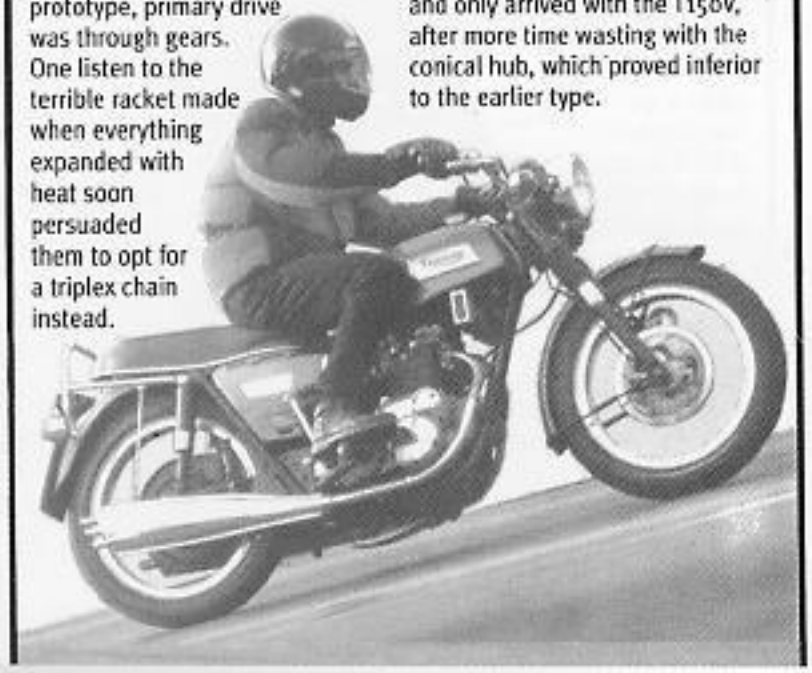
Narrowness (in all senses) was a bit of an obsession with the design team. Special attention was paid to primary transmission width, which is why a car-type single plate clutch was chosen instead of the usual wet multiplate affair. On the prototype, primary drive was through gears. One listen to the terrible racket made when everything expanded with heat soon persuaded them to opt for a triplex chain instead.

In every other way the triple was very much a twin multiplied by 1.5, although you got double the number of pushrod tubes — and possibly ten times the potential oil leaks because of the complexity of it all! Vertically split in the traditional way, the engine comprised a vast number of castings which needed time, skill and a fair bit of luck to fit together properly.

Honda's heavyweight 750cc four was still a blob on the horizon at this stage. If the Brit team hadn't dithered in the final phase, the Trident and its BSA Rocket Three stablemate could have been on the market and established before the overhead cam smoothy from the East arrived. But they did, and wasted precious time messing around with overhead cam twins, partly because the all-important Americans preferred that sort of thing for flat track racing.

A further delay occurred when the triple was sent to Umberslade Hall for a re-style. Apart from costing the company a fortune, the effectiveness of 'Slumberglade' can be judged by the reception the Trident received when it finally appeared in late '68. Beauty may be in the eye of the beholder but not many beholders liked the look of the oblong petrol tank, which had all the grace of a housebrick. And although we drool over the three-outlet silencers now, in those days not everyone was so keen.

Aside from the novel number of cylinders and petrol tank shape, the Trident was all orthodox Triumph fare. A single-downtube frame of 57in wheelbase did the chassis bit, and stopping was taken care of by an 8in tls humdrum brake. Triumph's promised disc was already lagging and only arrived with the T150V, after more time wasting with the conical hub, which proved inferior to the earlier type.



Suzuki GT750

Suzuki, famed manufacturer of small, rapid 2-strokes, also responded to Honda's 750 four. Although the exact reasons are not well documented, it took much longer before plans became motorcycles in their case.

Environmental protection was already becoming a hot topic by the end of the Sixties, and polluting 2-strokes were obviously not the cleanest things on wheels. Still, abandoning their ring-dinging roots and wandering into 4-stroke territory would not perhaps have been wise for Suzuki. At that time the T500 twin was the biggest they had to offer. Going beyond 250cc per pot just doesn't seem to work properly on a stroker (cue Silk owners for assault on letters pages). Meanwhile, Kawasaki were creating a storm with their 'Green Meanie' triples. Logic said that a 2-stroke three would be the way forward for Suzuki, too.

The T500 engine had cylinders of 70 x 64mm dimensions. Add another pot and you get a 740cc triple. Which is what they did, sort of. But, as became apparent when the first GT750J appeared in 1971, there was a difference. Liquid cooling! Air-cooled engines are happy when the cylinders hang out in the breeze, but when one pot is sandwiched between two others it's inevitable that extra problems will be created: Two-strokes suffer particularly — as Kawasaki owners often discovered.

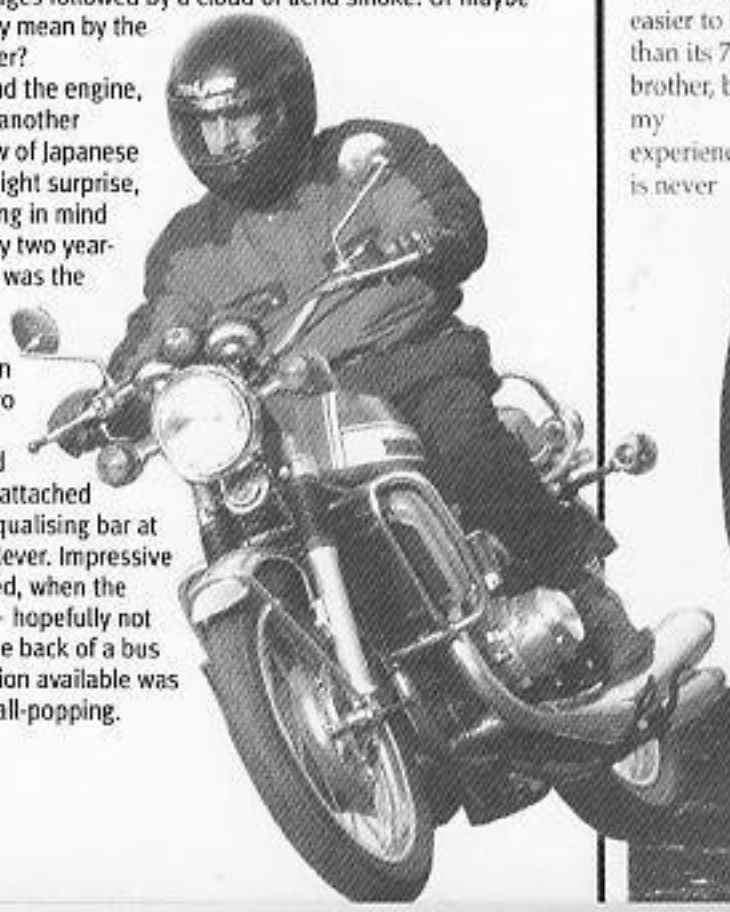
But by surrounding cylinders with water instead of air, temperatures can be controlled. As an additional benefit, a water jacket also muffles mechanical noise made by skeletal pistons rattling around in ported cylinders.

The penalty is, of course, weight. This point was made manifest by the huge GT750, often affectionately referred to in America as the 'Water Buffalo', a name that seems more apposite than its other unofficial christening as the Kettle. Once the extra flab had appeared in the water jackets, the poundage kept on increasing. A radiator was required, plus an electric fan for especially sweltering conditions, plus plumbing. Which used up space, so the bike became bigger, which made it heavier... and so on. It was all part of the vicious superbike circle of the Seventies that reached its ultimate conclusion with the gargantuan Kawasaki Z1300.

So, at over 500lbs dry (not a very useful figure if the engine is water-cooled, you may think) the GT was quite a lump — a heavier lump, in fact, than Honda's CB750 and considerably more porky than the Trident. This immediately precluded any sporting aspirations it might have had and was something of a culture shock for a typical sporty Suzuki customer.

An identity crisis loomed. If a 750 isn't for going fast, what's it for? Well, touring, of course... so Suzuki proudly plugged the new GT750J as a machine for travelling long distances in comfort. Trouble was, it had a 2-stroke engine, remember, and it was hard to think of riding big mileages followed by a cloud of acrid smoke. Or maybe that's what they mean by the wild blue yonder?

Once beyond the engine, the Kettle was another traditional brew of Japanese ancillaries. A slight surprise, however, bearing in mind Honda's already two year-old disc brake, was the provision of a massive 4ls front stopper. In effect it was two brakes in one drum, operated by twin cables attached to a pivoting equalising bar at the handlebar lever. Impressive though it looked, when the crunch came — hopefully not literally, into the back of a bus — the retardation available was less than eyeball-popping.



In the Metal

So much for the history. To see how everything turned out on the road, shining examples of both GT750 and T150 were procured. The Trident was not quite original, but had been modified sensibly, with riding in mind. Borrani alloy rims replaced Dunlop chromed steel, and the wobbly Lucas contact breakers had gone in favour of electronic spark triggers. Purists will no doubt be choking over their cornflakes at the sight of those suspiciously Oriental indicators, but if you ever turn right after dark you'll be glad of them. Otherwise, everything seemed to be present and correct, from the Dan Dare silencers to the aquamarine metallic paint.

Our GT750 tester, finished in a similar hue, was more original and unmolested, having spent most of its life in North America, where motorcycles often escape the ravages of wet winters. If you want to buy a really mint early Japanese bike, an import is the best option. Even without the usual signs of age, the USA provenance would be revealed by red rear indicator lenses and additional cruiser footrests mounted on the front crashbars next to the radiator.

Now take a squint at the pictures. Assuming the *CBG* design dept did its stuff, doesn't the Suzuki look about half as big again as the Triumph? While wheeling the bikes around for the photo session the GT certainly felt far heavier and less manageable. Interestingly, while the 40lb difference in weight is fact, the two sit on almost identical wheelbases, so most of the Suzuki's visual impact comes from its extra height and general glitziness.

Time for some exercise. The Triumph lump is easier to kick over than its 750 twin brother, but in my experience is never particularly keen to start. With practice, my own long-lost T150V would spring to life from cold first or second kick when prepared for action with a strict sequence of tickling, air lever setting and throttle opening. But however much we relish this sort of ritual, simply operating an enrichment lever and pressing a button is a more sensible way of life, so the Suzuki immediately noses ahead in the convenience quotient.

The GT has a kickstart, which is actually harder to use than the T150's, but of course you never need to bother unless the battery is flat. Once running, the big 2-stroke is less satisfying, burbling away with a haze of smoke pouring from its four black-capped silencers. The smoke thins as it warms up and clears its crankcases, but the timbre is never really appealing until plenty of revs are used.

Tridents, on the other hand, make a glorious noise, and lots of it. In addition to the clamour of pushrods, chain and camshaft gears, the exhaust note is unique. Later T150V models with more restrictive air filters and long cigar-shaped silencers were quite mumbly and muted, and T160s were muffled to death, but ray-gun equipped originals are LOUD. Even at low revs there's a resonant bass roar; wind it up through the gears and the whole neighbourhood's in



for a treat. Assuming they appreciate listening to old motorcycles... Here at *CBG*, we definitely do, but it has to be said that after extended exposure on a long journey the Trumpet's blare gets to be a bit too much of a good thing. The T140 twin's less frantic rumble is more relaxing.

Twenty-five years after its debut, the Suzuki still compares well in any company in the easy-cruising stakes. Forget what type of engine it has — the three pot stroker is low-revving and torquey. From tickover it pulls strongly, with the real power coming in at 5000rpm, announced by a change in exhaust note to a Kawasaki crackle.

It needs plenty of low-down pull, because the gearing is very high. In fifth it strides along at 20mph per 1000rpm, according to the instrument console. Suz' speedometers of the period tended to be very optimistic, but there's no doubt about the GT750's soothing gait. After a touch of shuddering while pottering around, the engine is extremely smooth and quiet at a steady cruise, and would no doubt run for ever and a day without getting hot and bothered.

Suzuki realised after a few years of production that the cooling system was actually too good. Despite later models' increased power, Kettles never boiled unless there was something wrong, so they deleted the electric fan to save weight. Every little bit helped.

Triumph's 4-stroke triple came with an oil-cooler as standard, for good reason. In the prototype stage, overheating was a major problem. Even with its lube flowing through the radiator hung below the petrol tank, the engine does tend to heat up and become bad-tempered when subjected to slow-speed use. After prolonged urban operation the motor develops a distinct frying-tonight aroma.

Gears — only four until the V model — shift smoothly when the clutch doesn't really need to do anything. Once heated to Gas Mk 8 in a traffic jam, however, the single-plate diaphragm unit exhibits all the faults that made Triumph multi-plate clutches infamous. Neutral becomes elusive, gears stick, tempers fray — you know the sort of thing. If you're about to start a London-based classic despatch company, don't buy a fleet of Tridents.

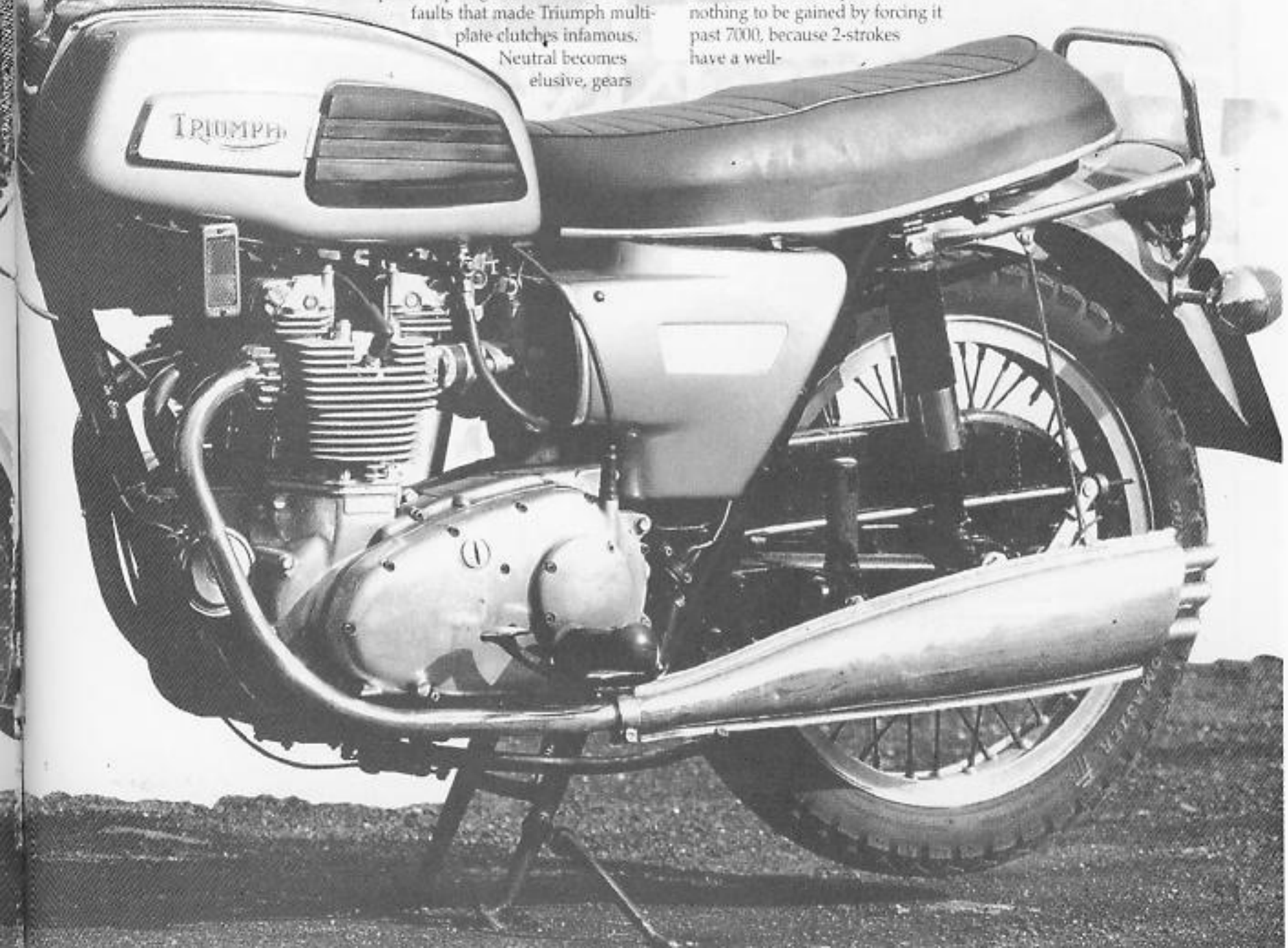
It's only when the going gets faster and more bendy that the British contender begins to win back points. While the response in the first half of the rev range is disappointing, at 5000rpm the over-sized intake apparatus really starts to do its stuff. In the interests of science, road-testing and fun a couple of bursts in second and third gave the engine a chance to show its mettle. Maximum power arrives at a claimed 7250 and according to lore 9000 is possible. On a Bonneville or other parallel twin, 9000rpm is beyond the point at which you expect the engine to show its metal, rather than mettle (when the crankcases explode) but remembering the triple's racing success might put your mind at ease. I used to take my Trident to about 8000 on a fairly regular basis without mishap. Riding someone else's bike, you don't try to break it, so the rev-counter needle stayed well below those dizzy heights.

The GT750 also concentrates its efforts at over 5000rpm, but there's nothing to be gained by forcing it past 7000, because 2-strokes have a well-



The be-finned 4-stroke and the water-closetted 2-stroke – similar concepts? No. Just the same number of cylinders.







EVOLUTION RAG

Both British and Japanese triples benefitted from gradual evolution. Early triples, like the beautiful blue Rocket 3 we gave away last year, came complete with 2ls front brakes, just four gears clustered behind the engine, and starting only by kick. The Suzuki too boasted a monster front drum (a very handsome – if slightly ineffective – mechanism, too), but offered its rider five ratios and an electric leg to supplement its kickstart. Interestingly, both triples boasted eccentric silencers, the Trident's being the famed fishtails, while the Suzuki wore a three-into-four, complete with an odd array of blck caps.

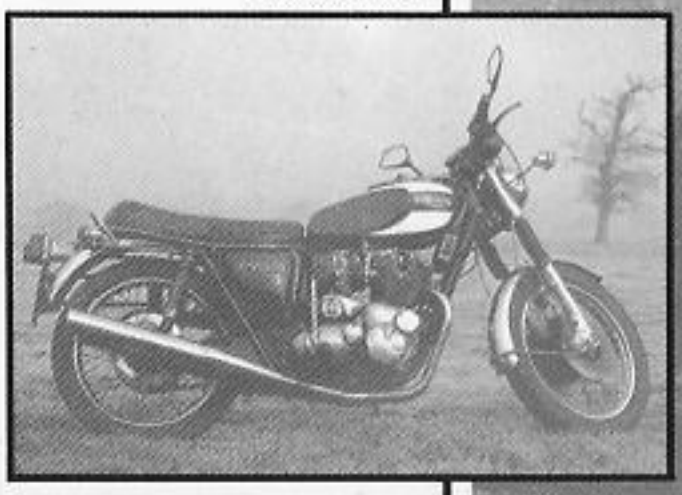
As the years passed, the BSA passed away with them, but the Triumph eventually managed to collect disc brakes at each end, and an electric foot. This latter, remarkably, works with great efficiency.

Meanwhile, Suzuki had spotted that their range of 2-stroke threes was an evolutionary blind alley, and concentrated their development dosh on a replacement range of more conventional 4-stroke fours.

There is inevitably some debate about which version of the British triple is the best, with some riders preferring the early fishtailed 4-speeders and other swearing by the late electric starters, with similar fans of everything in between. And so, just to stir up troubled waters, here's a personal view from one fortunate enough to have ridden most versions of the BSA/Triumph's finest...

My favourite? The very first of the UK Rocket 3s, which has a better riding position than the Tridents, and better handling to match – that is a personal opinion, mind. The most practical of the Brit threes has to be the final T160 Trident – but you can always convert earlier bikes to a higher spec, should you wish. The best Kettle? The later ones, with brakes that usually work, that's the one!

Frank Westworth



defined limit set by exhaust, port and intake design more than mechanical stress. Early models like this weren't over-endowed with horsepower. Suzuki subsequently managed to inject more Go with revisions to port timing and exhaust, plus a set of CV carbs. Although the claimed increase was only 5bhp,' it felt more dramatic subjectively. And the best part was that the tuned engine returned better mpg figures.

At braking time, the 4ls lived down to its reputation for being much better to look at than stop with. This could be explained partly by the test bike's extended period of idleness in a showroom. A bit of fettling would have no doubt improved matters. Even so, I've ridden several early GTs and the front drum has always felt marginal for dealing with their weight.

Triumph's less impressive looking 2ls drum performed better, once you got the hang of the servo effect. It's also generally accepted to be superior to the later conical hub, although the T150V's Lockheed disc was the final solution... until the chrome peeled off or it rained.

Suzuki went one better, fitting a brace of discs to the later GT: it needed them, although again braking efficiency was drastically reduced by rain. I didn't notice the rear brake of either bike, which probably means they both worked without grabbing or doing anything else unusual.

Having worked the two up to speed on the straight, it's inevitable that you will need to go round a corner. And this is where the Suzuki begins to come unstuck, possibly literally. In the early Seventies the Japanese still had a lot to learn about chassis and tyre design. Suspensions tended to be all springs and no damping, while Yokohama, Inoue and other OE rubberware could be dangerous on slippery roads. Somehow, it never seemed to occur to the inscrutable engineers that people ride motorcycles in the rain.

On purely visual evidence, the massive Suzuki frame would appear to be man enough for the job. In comparison the Triumph's single-downtube (not the choice configuration for a transverse triple) trellis looks quite delicate. But in the case of motorcycle chassis, appearances can be very deceptive. Whether it was due to the frame bending, the tyres shuffling or the suspension bouncing, the GT750 quickly earned a reputation for lousy handling and instability. My suspicion is that roadtesters of the era would have said that on principle, whether it was true or not.

The Trident, on the other hand, was always blessed with marvellous handling, and was only ever criticised for lack of ground clearance. Without a doubt, it had an immediate advantage by being fitted with Dunlop TT100 tyres — rather better than a pair of K70s or instant-slip Yokohamas. However, this didn't mean that TT100s worked wonders on bikes like the GT750, as many owners later discovered.

A quarter-century later your *CBG* test pilot was riding the same two machines, round the same corner, at (almost) the same time. He certainly wasn't trying to get anywhere near the limits of anything, but it has to be said that for the same amount of effort the Trident was a good 10mph faster. Allowing for the Brit's modest speedo and the Jap's optimism, the difference was probably 15-20mph. A manhole cover on the entrance going one way threw the GT into confused hops, while the Trident handled it without batting a motorcycling eyelid. Alternatively, I could simply steer round the obstacle, an option that felt risky sitting high and wide on the lumbering GT. In the

Suzuki's defence, it was wearing a particularly worrying combination of tyres and by that stage I'd ridden the Triumph far more. Even so, this completely unscientific test must have proved something.

At the end of the pre-classic day, perhaps the Trident's superior handling didn't matter much. If you couldn't start the engine, you were only likely to go round the bend in one sense, and wish you'd bought a reliable Suzuki, Kawasaki, Yamaha or Honda instead. Most did, dismissing the Triumph on the grounds of unreliability, oil leaks and expense.

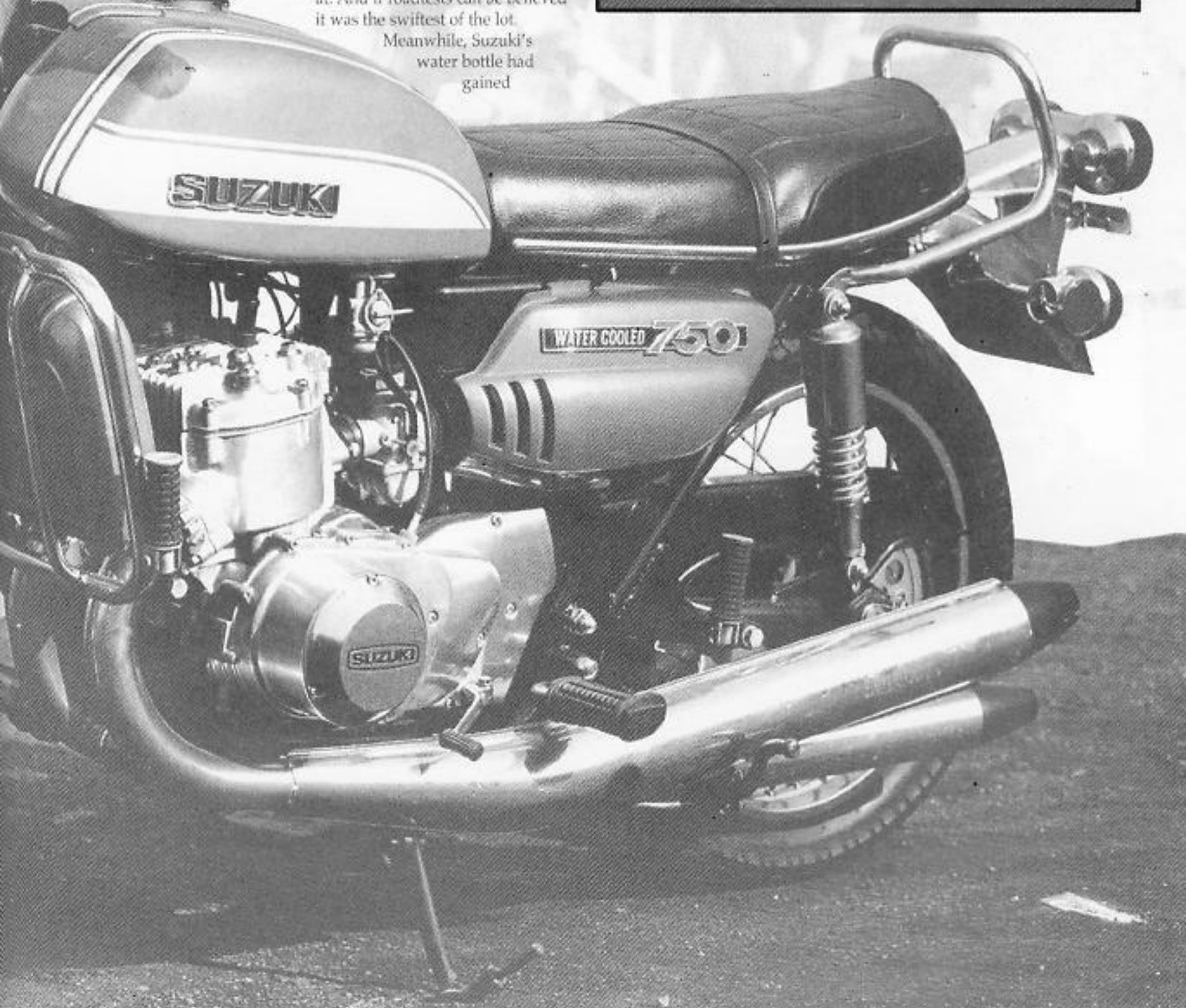
Conclusion

To return to the beginning of the story, and the similarities between the Trident and GT750, the thing they really have in common is the way they improved during their production life. Triumph eventually responded to criticisms of the styling and announced the more curvaceous export model. The T150V had the badly-needed five gears and disc brake. Then, wonder of wonders, just when it was too late, the T160 came along in 1975 with an electric start and enough grace and style to shake a pushrod at. And if roadtests can be believed it was the swiftest of the lot.

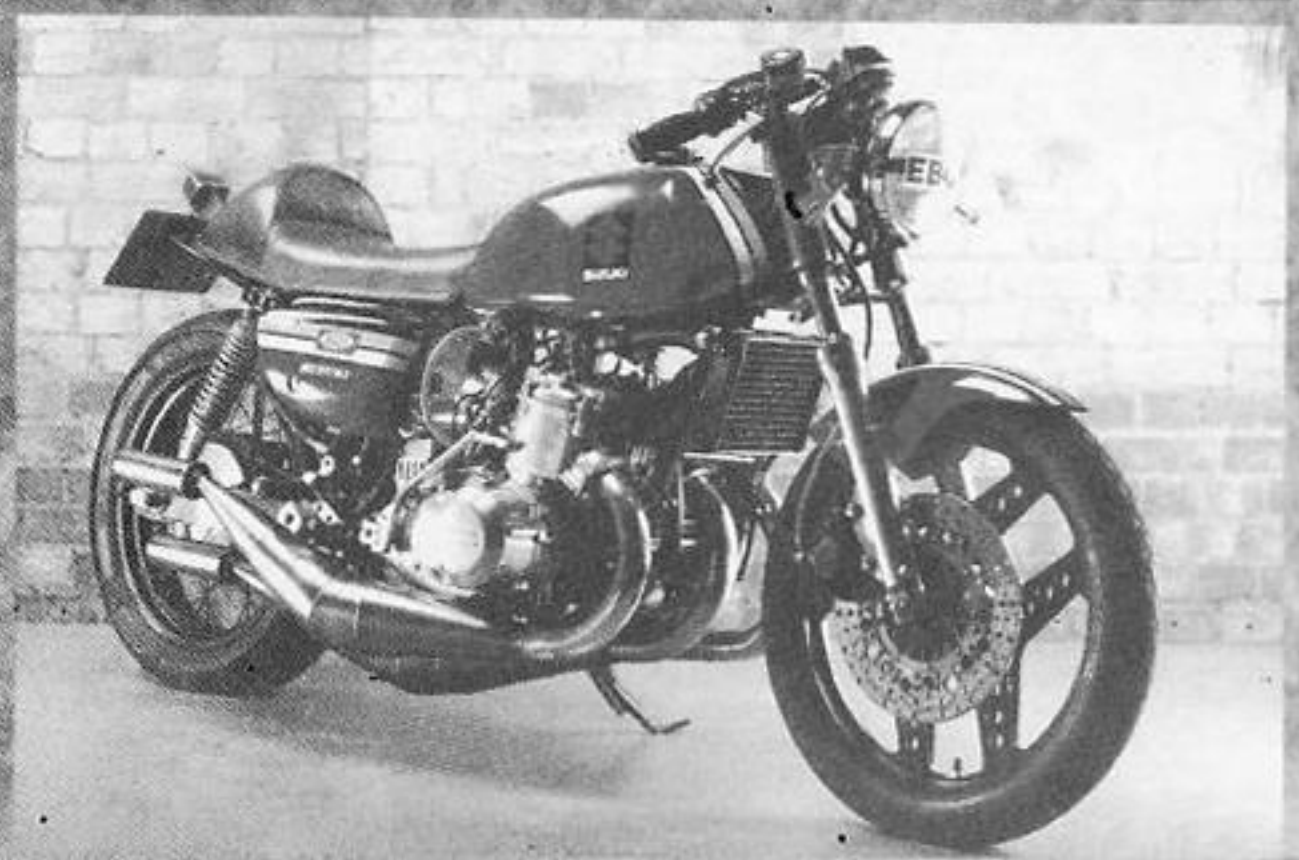
Meanwhile, Suzuki's water bottle had gained power to go, power to stop and a reasonable amount of cornering composure. The final GT750B was fast, dependable, economical, smooth — and cheap. Even the most blinkered Britophile would probably admit that the ultimate Triumph triple had only one of these qualities.

Thanks to Sportbike of Stoke Road, Shelton (01782 415768), for the loan of the Trident. It might still be for sale at £2,999. And thanks also to D&K of Station Road, Cheddleton, Nr Leek (01538 361635), for the loan of the Suzuki GT750.





BILLY PUT THE KETTLE ON



Bill Callcutt's GT750 doledragger is the fastest street-legal two-stroke in the country. It's also one of the oldest and probably the cheapest.



It is fourteen years old, runs very low elevens, makes well over 100 horsepower and costs practically nothing.

It's here because rider Bill Callcutt was unimpressed by bikes we featured with acres of lovely paintwork but not a dirty exhaust or a performance figure in sight. His words:

It's also officially the fastest street legal two-stroke in the country, having won three rounds and the final of *Superbike's* Ultimate Streetbike contest plus the Northern round of the NSA 900 road-legal class. With a best time so far of 11.19 seconds and 123mph terminal it is, within the spirit of the regulations, street legal. The horn is operated by the indicator switch because the horn button operates the home-made air shifter, and the silencer cans are empty, but otherwise...

Bill, who used to road-race when overhead cams were rare, used the GT750 as a road bike for a while and then, a few years ago, took it to some Run Wot Ya Brung events. Then he joined the NSA and started to make a few modifications. There was no particular reason for choosing the Suzuki, just that Bill happened to have it at the time and had "always liked big two-strokes."

The Kettle is remembered as a rather heavy, ponderous tourer, although it also came in other guises. The TR750 formula racer, as ridden by Sheene et al, was a fearsome device and it was this engine which formed the basis of Bill's development.

Bearing in mind that this was all done on the tightest budget — Bill is unemployed — the racetrack results, and the soaring curve produced by the TTS Superflow, are no mean achievement.

Bill is running the GT's bores 1mm oversize, with a view to going a bit further if he can locate the necessary pistons (Wiseco still list them but no-one's sure if that means they have any). The porting is like the TR but a bit more radical, with bigger exhausts. It can afford to be, it only has to run for eleven seconds at a go.

There is a longer taper on the exhaust header and the rest of the system, again based on the roadracer, was altered in length until Bill got the best characteristics and times on the drag strip.

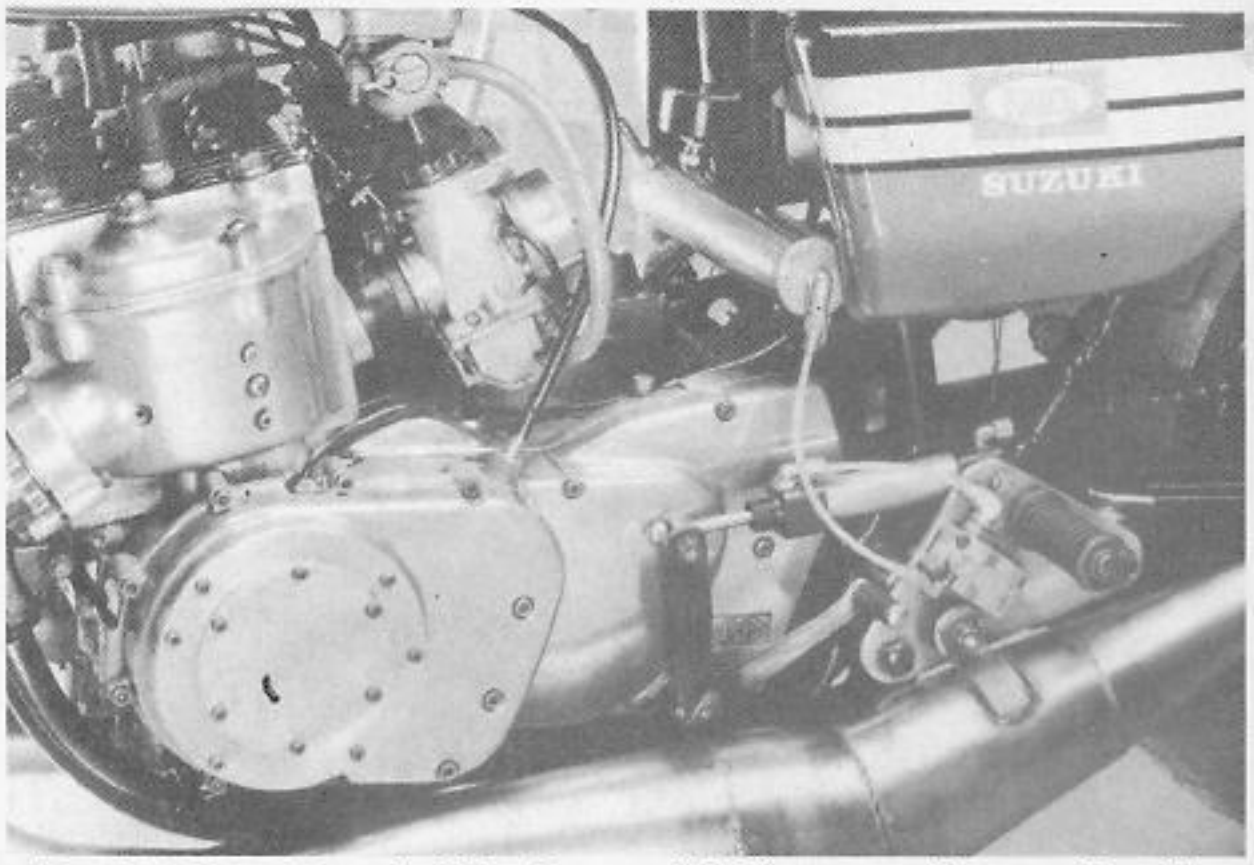
The motor uses three Amal carburettors bored from the original 38mm to 40mm and a Lucas RITA ignition. This has three pick-ups on a ring held by grub screws to the old electric start gear on the left end of the crankshaft. There used to be a large casing which contained the bulky triple contact-breaker



Pics: Alan Dowkes, Martyn Bennett


:boeri
SUZUKI
SUZUKI

BILLY PUT THE KETTLE ON



All the tricky bits are here; air-shifter, home-made ignition cover, exhausts and bored Amals.

gear and an outrigger bearing. Bill has hacked all this off, leaving only the pump drive gears, and made up his own smaller cover, with a detachable centre plate so that the ignition timing can be adjusted quickly.

He keeps the stock oil pump — using Castrol A545 — and also runs 100:1 premix, with pump petrol and Silkolene octane booster. He finds that the fuel additive lets him use a fraction more ignition advance, which gives the motor a crisper pick-up and better throttle response.

Bottom gear in the standard box was too low, so Bill had a non-stock item made, increasing the ratio and closing the gap between first and second. He gears the bike so that it only uses the first four gears in the quarter mile. Using another couple of hundred yards and top gear took it comfortably up to 138mph at Bruntingthorpe. It probably would have pulled a higher gear — at the time none of us realised just how much power it was putting out. But without a fairing and with a rapidly-heating engine, the bike isn't set up for top speed anyway.

It uses an LC125 radiator mounted sideways — so the flow only makes use of two-thirds of the radiator area. The engine is set up to run cold, where it gives its best power, and to run rich. As it gets hotter, it gets progressively richer and this, combined with the natural power fade when two-strokes get hot, severely lops horsepower away from the top end.

It's a sort of safety feature in competition — if there's not enough time between races to let the block fully cool down Bill simply refills it with cold water — but it makes the 750 a real pain to test.

After about 15 seconds on the dyno it lost some 4bhp from its peak, and had dropped over 10bhp at 8250rpm. What the dyno did show was that it gave more power below 7000 on the second (hot) run. Maybe it needs the extra richness at the bottom of its power band — it won't take full throttle much below 6000, so anything that makes the power band a fraction wider would be very useful.

The narrow slice of speed range and the vicious rate at which the power is delivered would be too much for the standard clutch. Bill gets it up in the powerband, dumps the clutch hard and then controls the spinning wheel to find maximum traction.

The 150/70 ME99A puts up with this treatment pretty well, allowing Bill to get away with a standard clutch plus one extra steel plate and stronger springs.

To cope with this starting technique, Bill prefers to let his feet trail out and back, which means that the engine reaches the end of first gear before the Callcutt feet can reach the footrests. An airshifter — homemade, of course — solves the problem, and after pumping up the cylindrical reservoir above the gearbox, there's enough pressure for the three shifts which Bill makes in each pass.

The horn button simultaneously activitates the air-shift and cuts the ignition, so Bill can powershift, wide open and without disturbing the clutch, with just one dab on the button.

What started as a stock frame has been lengthened, lowered and lightened. An MBX80 front wheel carries the original GT750 disc which is now multi-holed and has a GSX1100 caliper. The rear wheel is an Akront rim spoked on to the GT750 hub and carried in a GSX1100 swing arm. To lower the rear end, FVQ shocks from a CB650 Honda are used, the struts shortened by an inch, while the forks are raised through the yokes to lower the front. The swing arm is 2½ inches longer than stock, and the wheelbase is 60 inches.

The only problems have been in the gearbox and in the crankshaft. Second gear, which was a press fit on its shaft, began to slip. A friend of Bill's, John Foster, who regularly helps with engineering problems, shimmed it and welded the gear in place.

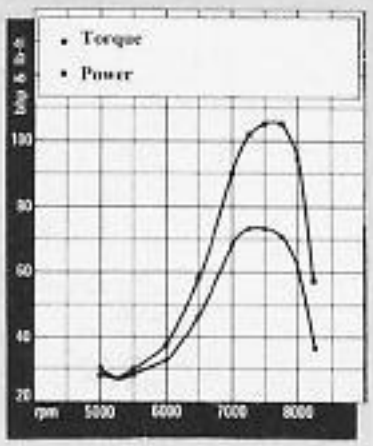
The crank had been rebuilt once at SEP but the seals failed, making the mixture run lean and causing a few piston seizures. Eventually Bill fitted a new crank — which sounds like it was probably the biggest single item of expenditure.

With no sponsorship, just help from John Foster and shared travelling expenses between Bill, John and another friend, Ray Luke, this is the cheap way to go racing. And win.

John Robinson

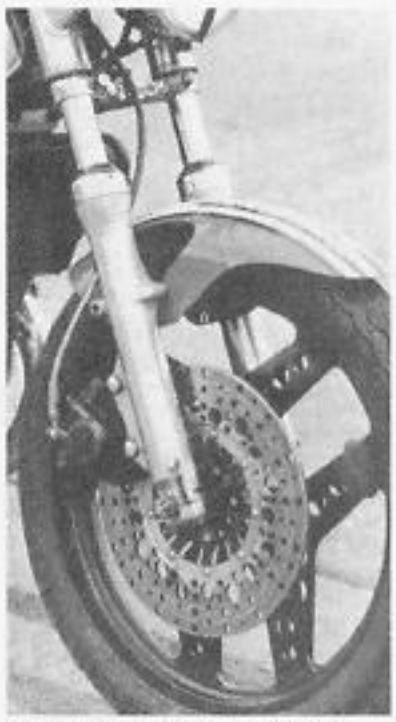
SPEC

As Suzuki GT750 except:
Oversize pistons.
Porting based on TR750.
Exhaust based on TR750.
Amal carbs bored to 40mm.
Lucas RITA ignition.
RD125LC radiator.
Lubrication: **Castrol A545 in stock injector and 100:1 premix.**
Front wheel: **MBX80.**
Front caliper: **GSX1100.**
Rear wheel: **Akront rim on GT750 hub with ME99A 150/70-18 tyre.**
Swing arm: **GSX1100.**
Rear suspension: **shortened FVQ units from a CB650.**
Air shifter, modified gearbox, modified clutch.

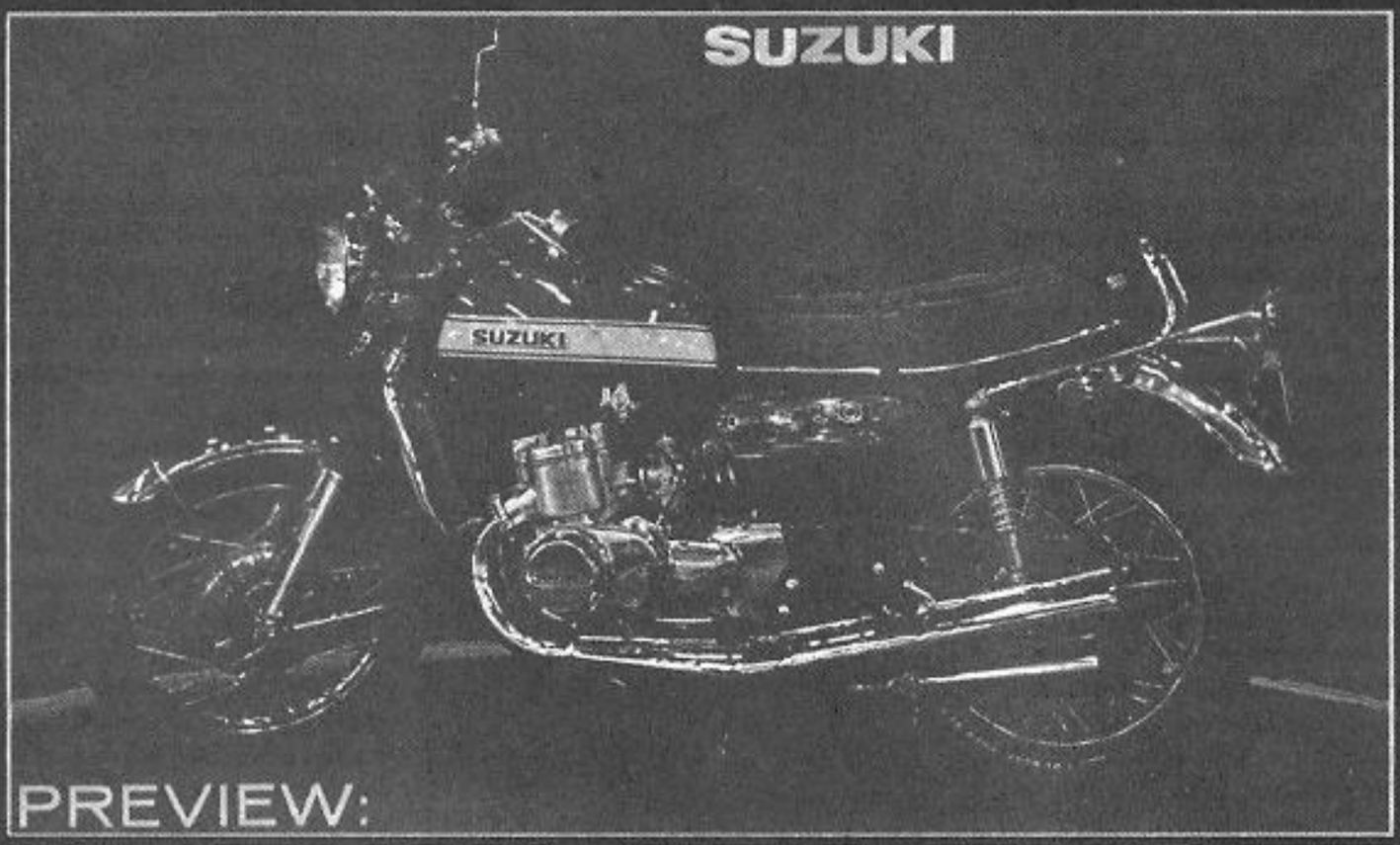




A150/70 Metzeler takes the place of the clutch in providing a variable drive.



MBX80 wheel carries the severely lightened Suzuki disc and a GSX1100 caliper.



PREVIEW:

SUZUKI 750 THREE

BY YUKIO KURODA

A Gigantic, Water-Cooled Two-Stroke Makes Its Debut At The Japanese Motor Show

ONE OF THE EYEPOPPINGEST machines to be seen in a long time was unveiled by Suzuki at the 17th Tokyo International Motor Show.

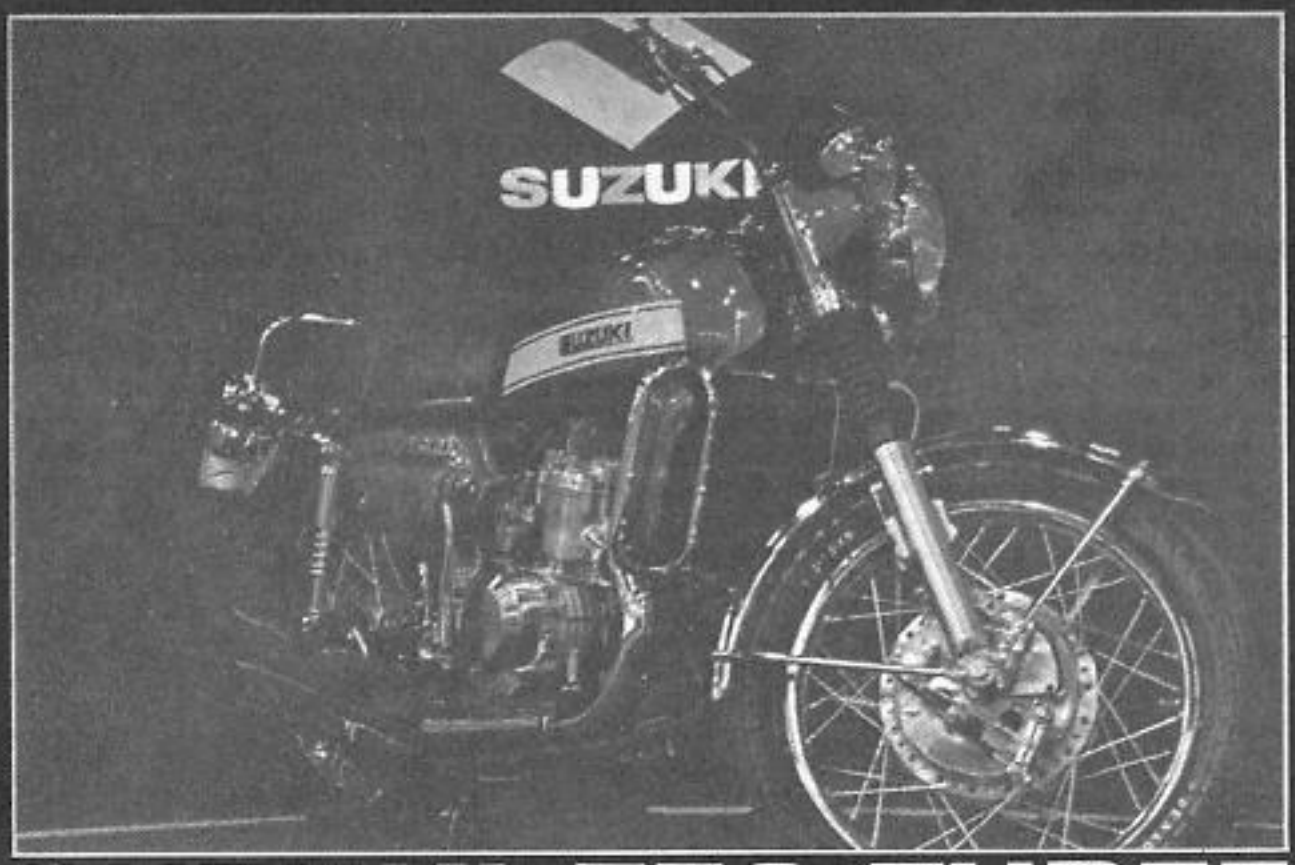
Behold the wondrous 750, powered by a transverse, three-cylinder, two-cycle engine, in unit with a five-speed transmission. No horsepower figures were given, but if you study the Titan 500 which has 46 horsepower, divide by half, and add that onto 46, that gives 69 plus with maybe five or six more thrown in for the water-cooling and electronic ignition. Seventy-five horses sounds about right. You can bet it won't be much less, for Suzuki knows they will have to build a screamer to flee from the swiftest Honda Four and Mach III.

The vitals: three carburetors fitted with short rubber tubes onto the engine, feeding mixture through a piston-port induction system. Lubrication by Suzuki CCI. A capacitor discharge electronic ignition system, similar to the ignition on Suzuki racing cars. And kick starting, which shows that Suzuki has a lot of faith in their cdi to fire up before your leg wears out.

The most unique feature of the engine is the water-cooling; this is the only water-cooled motorcycle to appear since the famous Scott two-strokes of the late 1930s. A polished aluminum water jacket surrounds the three cylinders, and is cast with rows of stubby vertical fins for what could strictly be called an air/water cooling system. Short intake and exhaust stubs are also cast on the cylinders. Coolant is circulated through a small radiator set in front of the engine. An electric fan is enclosed in a small shrouding behind the central part of the radiator; presumably it is switched on automatically at a certain critical engine temperature (as when idling too long or moving in slow stop-go traffic).

The engine exhausts through three pipes; the right and left pipes fit into huge mufflers that end with black reverse taper cones. The center pipe is siamesed at a point under the engine and feeds into two smaller mufflers. Their total volume is supposedly equal to that of one of the big ones. The reason for the split exhaust system for the center cylinder is said to be the symmetrical styling it allows on the machine. Indeed, the swept-up angle of the pipes does seem to resemble the Honda CB750, generally regarded as a styling standard in Japan.

The exquisite engine is carried in a twin-cradle frame of broad beam and sturdy gusseting. Large webs at the point where the downtubes meet the top rails provide further reinforcement.



SUZUKI 750 THREE

The front forks are sturdy telescopics, and the front brake is, surprisingly, *not* a disc. A 750-cc two-stroke of such potential (and a near-500-lb. weight) is going to need super-good brakes to stop it, and the most logical guess would have been a disc braking system for maximum stopping power. Suzuki has not had as much practical experience with disc brakes as Honda, and this is probably the reason for sticking to drums for the 750. And such a brake! It's a four-leading-shoe unit of about nine-inch diameter. It has integral air scoops, and looks like it would lock up the front wheel at the speed of sound. Hopefully it will be able to stop briskly without that deadly feather-touch of some of the larger four-shoe Italian units. And one advantage it *will* have over the Honda disc is *weight:* drum brakes are lighter than discs.

Styling is an important factor in the design of the new 750. Suzuki styling has dramatically improved over the past few years, and the 750 is quite well proportioned and beautiful to look at. The color scheme of the tank and side covers is extended to small shell-type caps that fit over the ends of the radiator. A chromed "crashbar" also protects the radiator from minor damage, but it looks more decorative than protective, and wouldn't be much help if you actually had to lay the big bike down at speed.

Polished engine cases further accentuate the styling, and an instrument panel is canted back toward the rider, and consists of a central ignition switch, water temperature gauge, 240-kph speedo and 9000-rpm tach with its redline at 7000.

The new 750 should go into production during the late winter, and will probably be in the showrooms sometime in the spring of 1971.

Actually, the story of the new Suzuki three-cylinder 750 begins with the story of the Kawasaki Mach III. That sound weird to you? It shouldn't. Suzuki introduced their own two-stroke 500, the swift Titan Twin, several years ago. When sales failed to reach expected levels, they came to the conclusion that most motorcyclists weren't in the mood for a large displacement two-stroke.

But then a year or so later Kawasaki brought out the swifter Mach III, and the subsequent success story of that machine was enough to inspire Suzuki to give it another try with a big stroker, but this time in a wilder configuration than before. The new 750 is designed to lure the attention of riders who might otherwise be inclined to choose a Mach III or (at a higher price) a Honda 750 Four. And if Suzuki prices the 750 right smack between the aforementioned behemoths, it will be like turning loose a wolverine in a rabbit hutch.

Because of its timing, the Motor Show is primarily a car show: it ends in the middle of November, and the chilly and often rainy Japanese winter so near at hand doesn't do anything for sales of new two-wheel machines. Consequently, the other motorcycle manufacturers had displays instead of new machines.

Honda exhibited their engines mounted along a wall, as objects of art, which they certainly are. They had a thundering waterfall in the middle of their display, and a closed-circuit TV rider safety education program. Honda's only surprise was a delicious chocolate-colored CB750, which should attract more riders with a sweet tooth to this popular tourer.

Kawasaki showed a one-off kneeler touring outfit, very smartly built by a Tokyo firm, and powered by—get set—a Mach III engine. They also had new color schemes for the W1SS 650-cc Twin, now sold on the domestic market only, and a couple of A-series bikes that were painted in psychedelic colors from stem to stoplight.

Yamaha had happy little bears and dwarfs riding around on little bikes and going ho-ho. I looked around for Snow White but they told me she was up in her room with a customer.

There were a million and a half people at last year's Motor Show. There seemed to be twice that number the day I went there, so I took one last look at the big Suzuki 750 and checked out.

◆750cc TWO-STROKE SUZUKI

THE BLACK KETTLE

PHOTOGRAPHY STEWART McDIARMID

Riders who slated Suzuki's GT750 may have been calling the kettle black. Or were they jealous of the chromed showboat styling?/**Stewart McDiarmid**

COMPARED TO the Münch Mammoth, Suzuki's triple wasn't the biggest superbike around in the early seventies, but from a distance the behemoth water kettle certainly looked it.

Step up closer, step on board, try it for size, folks — and it felt it, too. Handlebars way up there, engine way out wider, tall at the clocks, big and beamy. And heavy. It was the first bike I rode which demanded a technique, as opposed to a grunt and a heave, to get it onto the centre stand. And probably the first to be styled by Wurlitzer.

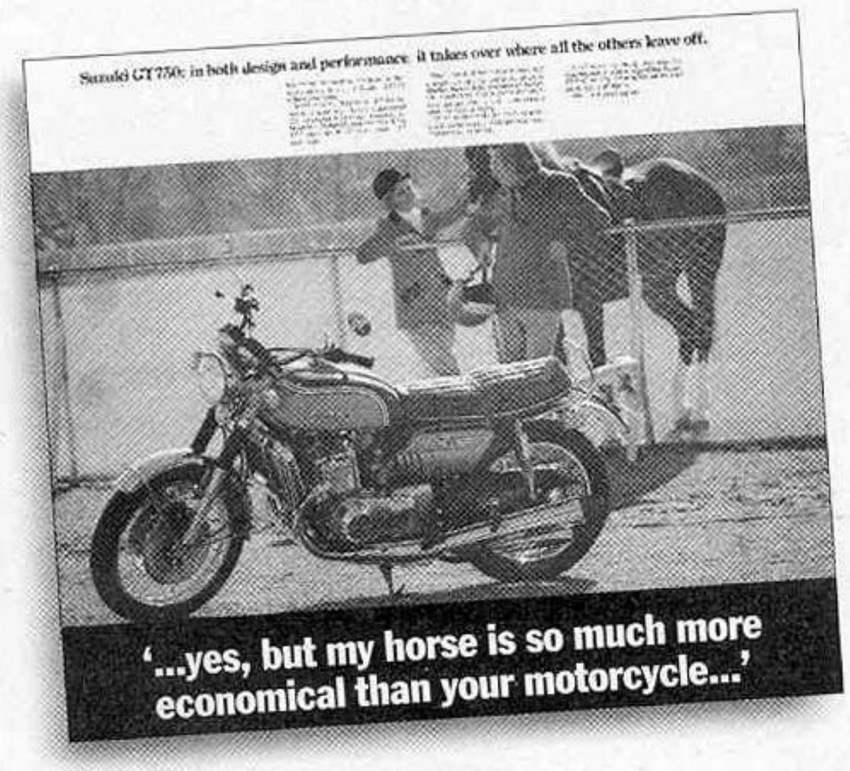
Although easy to lump with Honda's seminal CB750, the two models couldn't have been more different. This was the stroker which became a byword for easy-going grunt, while the four-stroke launched the tide of rev-happy multis which surrounds us still. Weight and bulk aside, any Triumph twin owner would have felt far more at home on the Suzuki. Weird. It shouldn't be a surprise: two-strokes are torquey, four-strokes are frantic

THE BLACK KETTLE

continued

(and multis are manic). But there have been such things as stationary two-strokes, happy to chug along all week at 2000rpm or so. All Suzuki did was bolt three of these onto common crankcases. Ironically, just five years previously Suzuki were working on a 50cc racing triple which revved to 19,000 and didn't have enough gears with 14.

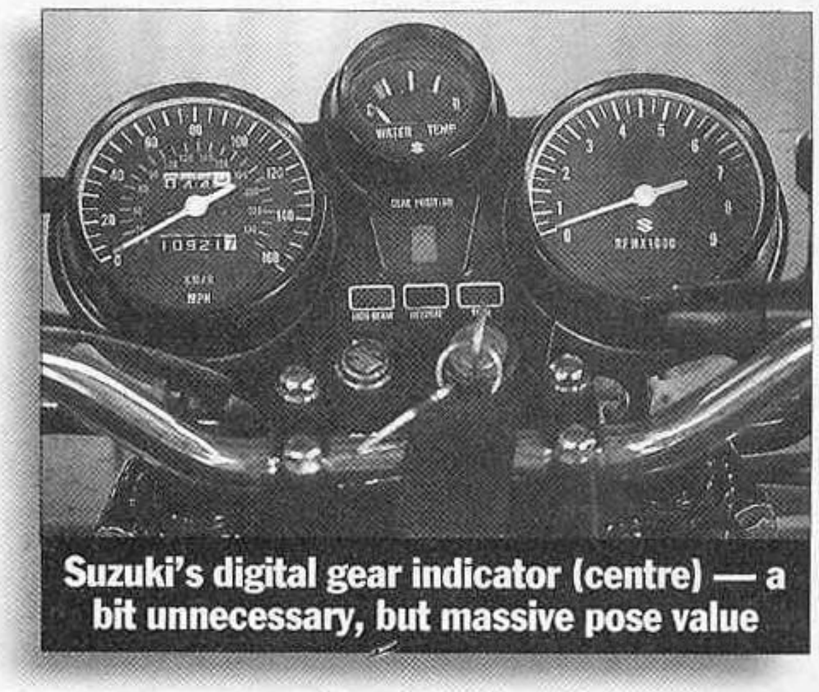
For the simple, piston-ported Kettle, five gears were ample. In fact they were so ample that when a peakier, uprated engine arrived in 1975, they


Suzuki GT750: in both design and performance it takes over where all the others leave off.

'...yes, but my horse is so much more economical than your motorcycle...'

remained more than sufficient. While the Honda buzzed and screamed (and excited), the Suzuki earned plaudit after plaudit for creating the definitive touring powerplant. And it had the best of both worlds: typically light two-stroke flywheels, allowing the crank to spin freely; and three meaty power strokes every revolution to keep it plugging along.

The example tested, Rod Morgan's GT750B, was the last of the breed when first registered back in '78. The B's most obvious distinguishing feature is the lack of stays on the chrome front mudguard.


Suzuki's digital gear indicator (centre) — a bit unnecessary, but massive pose value

Due to its later arrival on the one hand, and periodic Middle Eastern difficulties on the other (and the cul-de-sac of the rotary RE5 in between), the Kettle enjoyed a much shorter model run than its Honda counterpart. The first Kettle, the GT750J, was introduced in 1971. It was notable for its drum front brake, lurid green or purple metallic paint and four curious silencers whose black end-cones were adept at falling off, shortly followed by a din like Mad Sunday in Hades as the baffles followed suit. The J was succeeded by the short model run 750K, substantially the same bike but with much-needed — except in the wet — twin discs up front.

A re-styled 750L arrived in 1974, a slightly less baroque affair with new radiator shrouds, one-piece chrome silencers and improved — but still inadequate — ground clearance. A year later the M appeared (from engine number 57533), with the 70bhp engine which was to last the Kettle until the end of its days. The changes included substantially longer port timing (5mm lower inlet port, 2.5mm higher exhaust port), bigger — constant vacuum — carbs, and higher compression (6.9:1 rather than 6.7:1).

Compared to the previous 65bhp motor, the M was about 8mph faster and somewhat revvier, but still a big softy at heart. Perhaps it had become embarrassing to Suzuki to have a pussy-cat on the street, when its racing cousin was such a tyre-shredding missile round the Daytona banking.

When Suzuki announced what was to be the last of the Kettles in late '76, the writing on the wall, unveiled at much the same time, was the GS750B, Suzuki's first big four-stroke multi. Apart from looking about a hundredweight lighter (it wasn't: only 25lb), the GS set the standards for the next generation by doing something the GT never could: it handled.

In the meantime, the GT majored on effortlessness. And, at a time when two-strokes were less than bywords for longevity, any bike costing the best part of four figures — £969 in 1975 — had an image problem.

Suzuki addressed this by limiting peak power revs to a mere 6500, equivalent to a mean piston speed of just 2700 feet per minute, or about two-thirds of what the triple might have been safe to. The liquid-cooling, too, was to promote durability by

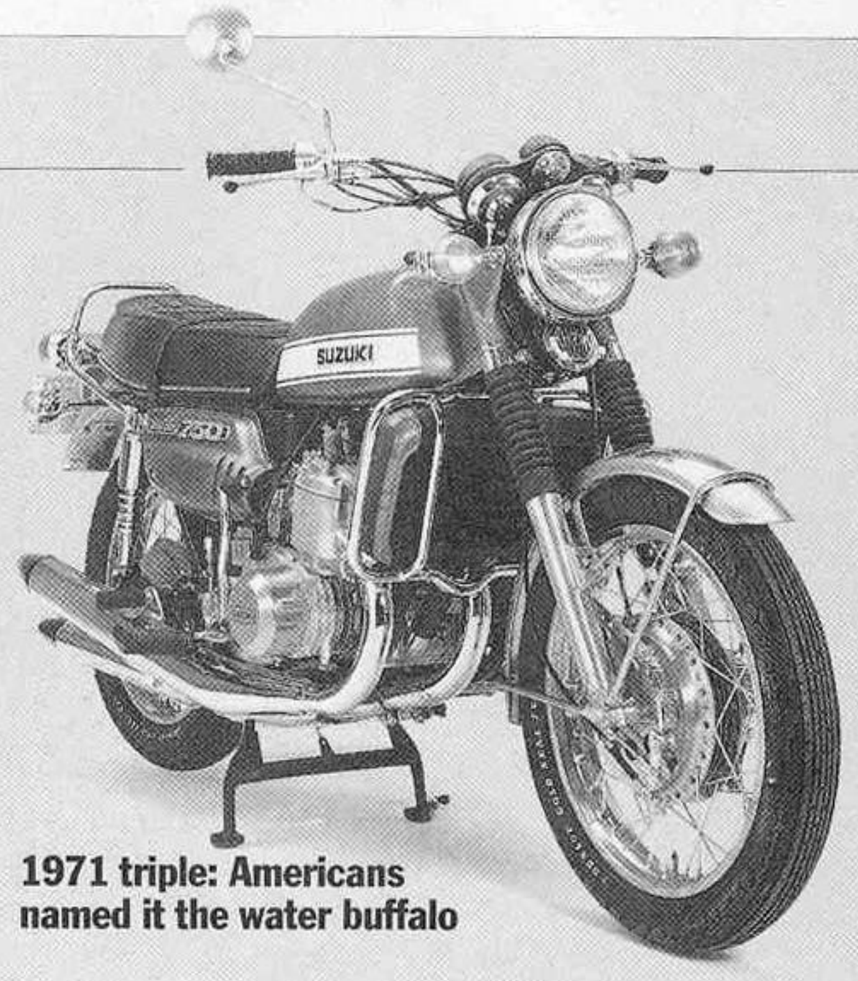
Getting into hot water

I admit to being one of those people not sufficiently deterred by the early Kettle's disgusting appearance to actually buy one. Mine was a 750J in Candy Green — a colour whose only redeeming feature was that it was less vile than the Candy Pink alternative.

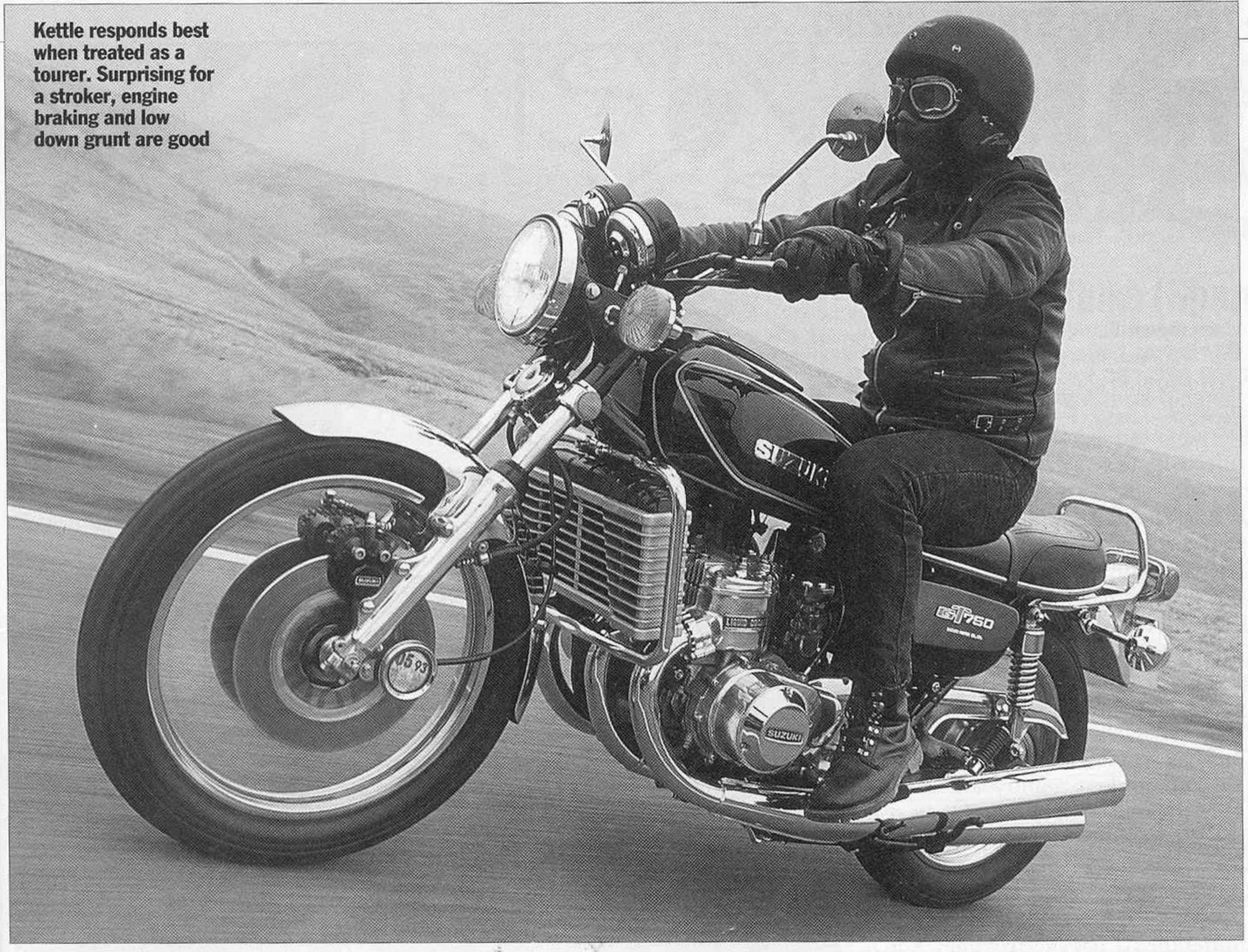
When I'm feeling kindly disposed towards the big Suzuki — and it was enormous — I remember its engine: a big, soft, smooth, grunty hunk of increasingly furry aluminium which belied everything you'd ever been told about peaky two-strokes. At around 41mpg it wasn't even desperately thirsty, but nor was it the quickest thing around: an indicated 115mph was top whack under neutral conditions. Later versions could creep to 120mph, at some cost in fuel consumption.

Still, it was comfy, and felt the quickest thing around, mainly because the mediocrity of the chassis was only exceeded by that of the brakes. The Kettle's double-sided twin-leader became a byword for brake fade. Ironically, the brake always locked solid on the day's first application, so the neighbours soon got used to an early morning squeal from the bike, occasionally followed by a shriek from me as I bounced up the road ahead of it. Ferodo AM4 linings and twice-weekly adjustment helped in defeating fade, although nothing I did prevented early-morning lock-up.

It's when you start to push a Kettle that things get interesting. It can actually be scratched fairly hard, but zero throttle invites a wallow through turns, and really attacking a corner can provoke the mother of all tank-slappers.


1971 triple: Americans named it the water buffalo

From its hinged-in-the-middle frame to its feeble rear shocks, the chassis gave more feedback than it was possible to absorb. Ground clearance was laugh-



Kettle responds best when treated as a tourer. Surprising for a stroker, engine braking and low down grunt are good

minimising temperature gradients and piston clearances — in stark contrast to the water-jacketed two-strokes which would follow. And everything, from the geared primary drive to the gearbox itself, was built big.

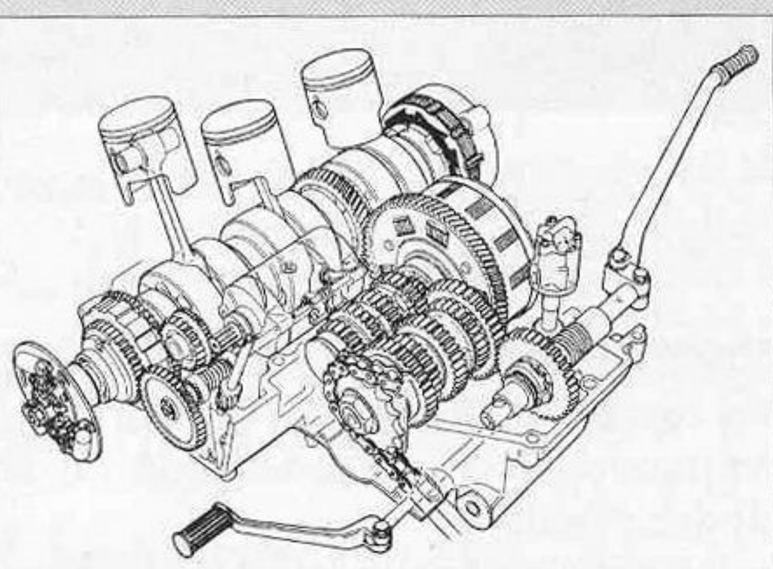
In this respect the Kettle was a complete success, regularly clocking mileages previously unheard of for stinkwheels, without so much as re-ringing. Maintenance, too, was simple, with just occasional gearbox oil-changes and ignition points to look after. The latter, with three sets of contact-breakers on the left-hand end of the crank, was the most arduous, and must have made Granby Yamaha a fortune in timing kits. Ironically it was the electrics, rather than the engine, that usually proved the weak link when Kettles did break down.

But most of all the triple was appealing — and still is — for the way it went. Not only was it better braked, far more tractable and easier to get away from the lights than the Honda four, but it was smoother, too. Its sheer tractability goes some way towards offsetting a slightly

able, but not as big a problem as you'd suppose because the silencers had at least as much grip as the OE Inoue tyres. This is in every way more a frumpy old dowager than a sports bike, and responds best if ridden accordingly.

Mechanically, the Kettle was bullet-proof, although all Suzukis of the period, mine included, were prone to alternator failure. The voltage regulator was also a bit temperamental, with a sneaky trick of boiling the battery dry at midnight in the middle of nowhere: suddenly everything went dark, then every operational bulb on the bike would blow in the battery's final death throe.

Timing three sets of points was also a pain, especially as they only seemed to last ten minutes and cost £3.50 a set. £10.50 was a lot in those days.



Bullet-proof engine has gear primary drive and three sets of contact breakers

The aluminium block had a nasty habit of corroding onto the aluminium dowels which located it, a foible I discovered when I attempted to take the engine apart to tune it. I filled the dowel holes with penetrating oil, suspended the entire bike by its block from a garage roof for a week, and hammered hardwood wedges at it daily, but it still wouldn't budge. It was trying to tell me something: the last thing the Kettle needed was more power — especially as the standard shocks used to dump their oil on the rear tyre just as you were attacking your favourite corner.

For all that, as a long-haul machine the GT750 really worked, once taking me and a passenger from Barcelona to Calais in one hit — in relative comfort from the chest down.

Ultimately, of course, it enjoys a unique place as not only the first, but the last of the big two-strokes, a demise jointly ensured by rising oil prices and increasing concern over emissions. Whether in the long run it did anything positive for motorcycling is a moot question, but it sure made me appreciate the Ducati I bought next.

THE BLACK KETTLE

continued

clonky gearchange and mild transmission snatch at low revs. There is also, for a two-stroke, a useful degree of engine braking.

The handling, though, is distinctly mixed. It's as somebody else's pride and joy — when that someone is watching — that the GT works best. Ridden with that sort of prudence, it's an attractive package. Although it feels much bigger and heavier than the CB750, the difference is actually only a few pounds.

Despite identical rake and trail to the Honda, at town speeds Rod Morgan's Kettle steers much more neutrally with far less tendency to fall into turns and much crisper low-down power. Moderate cruising along country lanes is similarly tranquil, despite an elderly rear cover, an Avon Roadrunner with severe alopecia of the tread and eczema of the sidewalls.

It's unfortunate, then, that even as a tourer the GT has shortcomings. You'll find very few seats as all-day comfy, and the engine will happily plug along at 100mph-plus for long periods if your neck muscles and wallet can stand it.

Yet at 90mph-plus, even the mildest motorway curve is likely to invoke a weave. Aftermarket shocks (or a 12-stone passenger) help enormously. Questionable 'conveniences' like a digital gear indicator and vacuum-controlled fuel tap can't conceal the fact that getting anywhere quickly is a bit of a lottery



Size was everything in the seventies. I've got smaller radiators in my front room

Dusty discovery

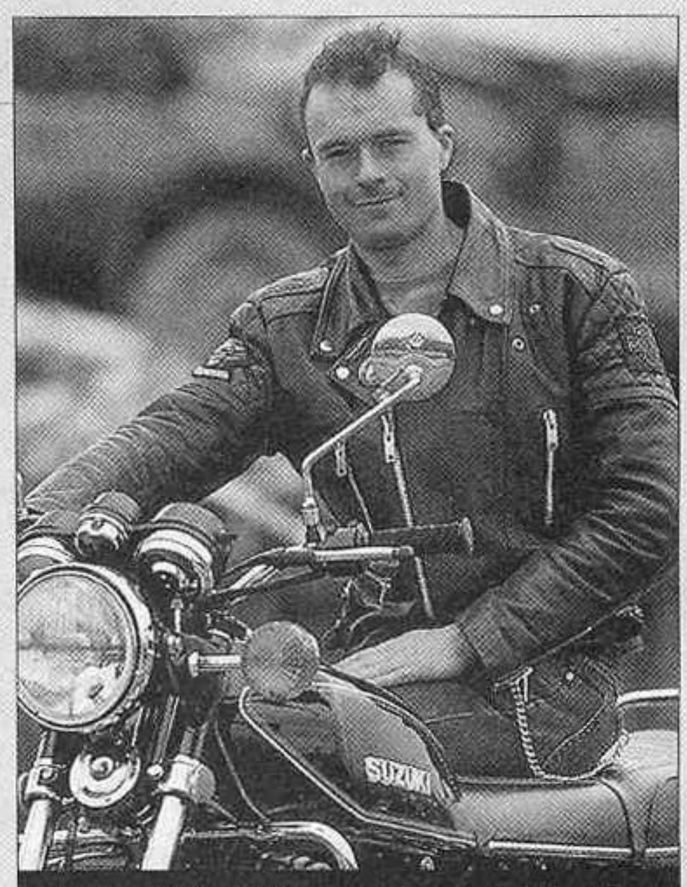
You don't come across a find like Rod Morgan's GT750B every day. Tucked away at the rear of a dealer's showroom, it was covered in dust and in need of an extensive clean. But with just 11,000 miles on the clock it was in totally original condition and came complete with tool kit and full documents.

'I made the dealer an offer of £2000 — a lot less than originally asked, and a few days later it was mine,' Rod said.

He stripped the black Suzuki and polished everything by hand before rebuilding. There was nothing mechanically wrong — the engine was in perfect condition and still running on the original Nippon Denso sparking plugs.

In four years of ownership Rod has won many concours awards with the Suzuki. But he stresses that the machine is in regular use 'not just trailered around the various shows.'

He says that spares for the big two-strokes are in reasonably plentiful supply from Welsh Suzuki specialist Bran Bardsley (0286 673060) and Crooks Suzuki of Barrow-in-Furness (0229 822342). There are a few difficult or impossible to obtain items, including right-hand side exhausts, handlebar grips and the seat.



Owner Rod Morgan has two Honda 750 fours as well as the kettle

SUZUKI GT 750 TEST

COULD IT BE THAT MOTORCYCLING HAS ENTERED A STATE OF ELEGANCE?

It's superbike time! Everybody is making superbikes. Screamers that turn the quarter mile in under 15 seconds and nearly break 100 mph doing it. Big things that accelerate so fast they leave you in a state of delight and panic. The big guys are here.

750cc's computes down to 45 cubic inches. During the middle '30s, 45s were considered little folk among the 61 and 74 cu. in. V-twins that were commonly called motorcycles. There were even a few 80-inch flat heads and some larger in-line fours. A lot of cubes is nothing new in this industry. It's just that technology has advanced to the state where they're pumping out such ungodly amounts of power that they can draw the line at 45 and still have enough performance to keep the average motorcyclist pumped.

Water-cooled motorcycle engines and injection oil systems are not new either. The famous Scotts from England were 2-stroke twins of 500 and 600cc displacements that featured both. These Scotts were considered advanced for their time—1930.

In this more recent decade of 750cc superbikes we can begin in England. We've seen the Royal Enfield and Norton twins, and more recently the Triumph and BSA triples. All 4-strokes.

Then Honda pumped in a 45 cu. in. tranverse four that set the pattern for things to come. Two years later and almost simultaneously Kawasaki and Suzuki jumped in with their 750cc triples. And we've seen photos of another tranverse 750cc four-cylinder, only this time it's a 2-stroke from Yamaha.

It's just like Detroit a few years ago when everybody wanted big engines. They're all trying to outdo each other with a superbike that will take the gutsy bike rider down the highway in a mind bending blur. Our test bike is one of those.

When's the last time you saw a motorcycle with a water temperature gauge? Instrumentation is excellent; in addition to the tach and speedometer, idiot lights warn the rider about neutral, high beam operation and high beam function.



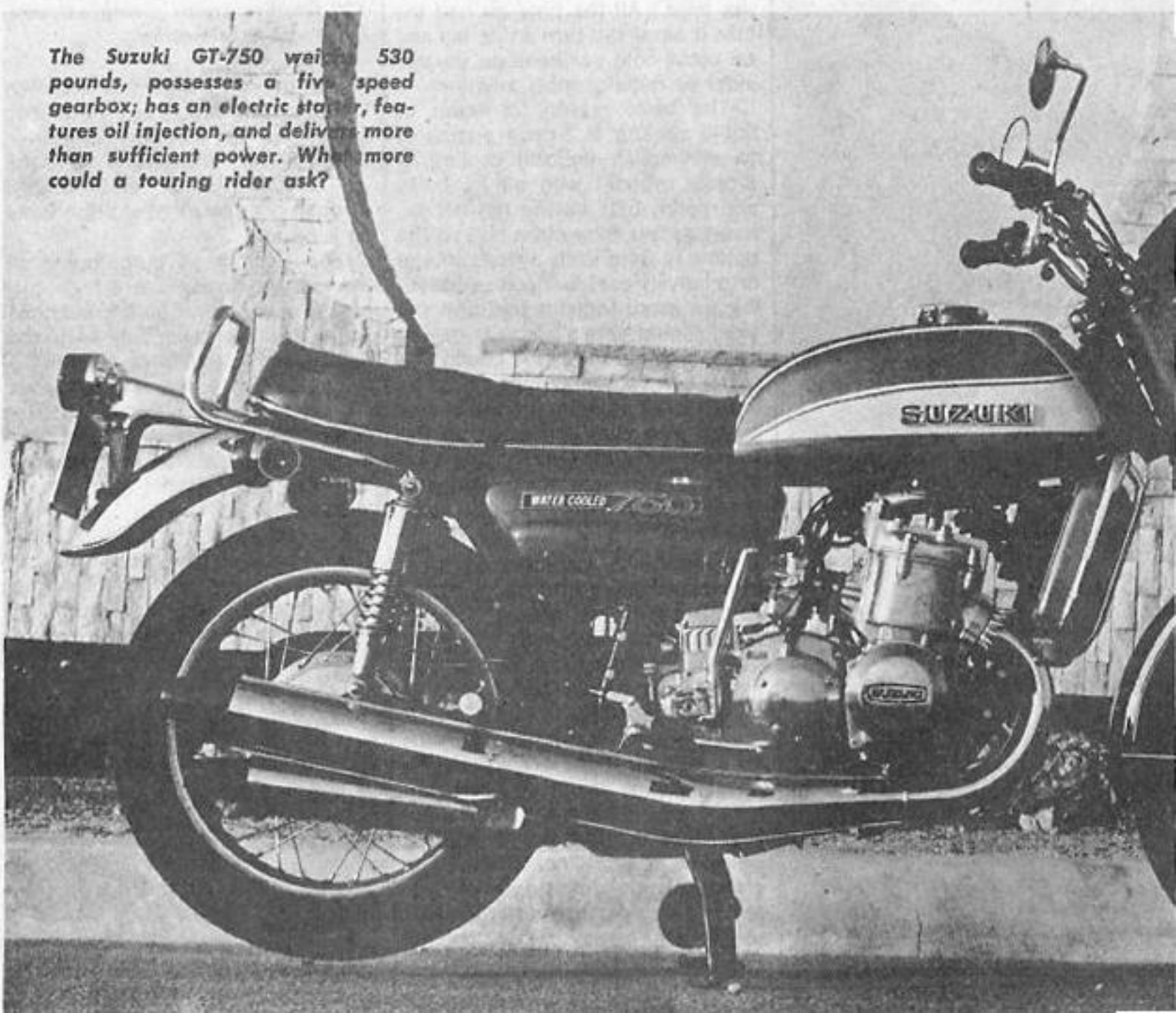


A monsterbike that stretches your arms at the shoulders and elbows as it accelerates hard at over 70 mph. The sensation is doubly eerie because all you can hear is the wind passing around your helmet and you feel no vibration, just the wind front pressing on your chest and face.

If you're standing on a street corner as it goes by all you'll hear is the drive chain. If he opens the throttle a little whirling inlet noise will accompany a low-pitched murmur from the exhaust pipes as it accelerates madly away.

Suzuki's GT750 is a thoroughly tested and highly developed piece of machinery. It has all the ingredients to make it a standard for other manufacturers to shoot for. For a machine that weighs over 500 pounds it handles deceptively well.

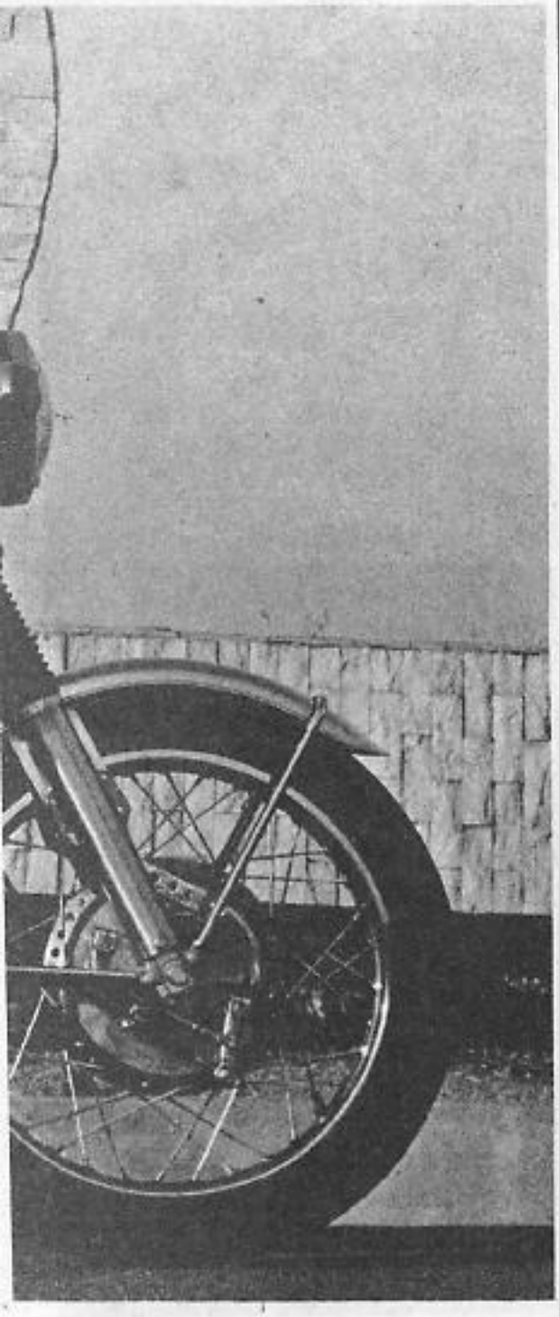
SUZUKI



The Suzuki GT-750 weighs 530 pounds, possesses a five-speed gearbox; has an electric starter, features oil injection, and delivers more than sufficient power. What more could a touring rider ask?



Filler cap for radiator is concealed beneath this flip-up panel at the front of the gas tank. Radiator capacity is 4.5 quarts, and an electrically operated fan assures that temperatures remain within reason.



Its performance is breathtaking and, as mentioned before, it's unbelievably quiet.

The big reason for all this silent operation is the water jacket around the head and cylinder. Water in itself is a sound deadener and the additional metal to house it lessens the noise that much more.

A radiator is mounted up front and high under the steering crown. Wisely enough it has a steel crash bar around it. The 750 uses a mechanical pump to circulate the water and there is an auxiliary electric fan behind the radiator to start some wind blowing if there is none.

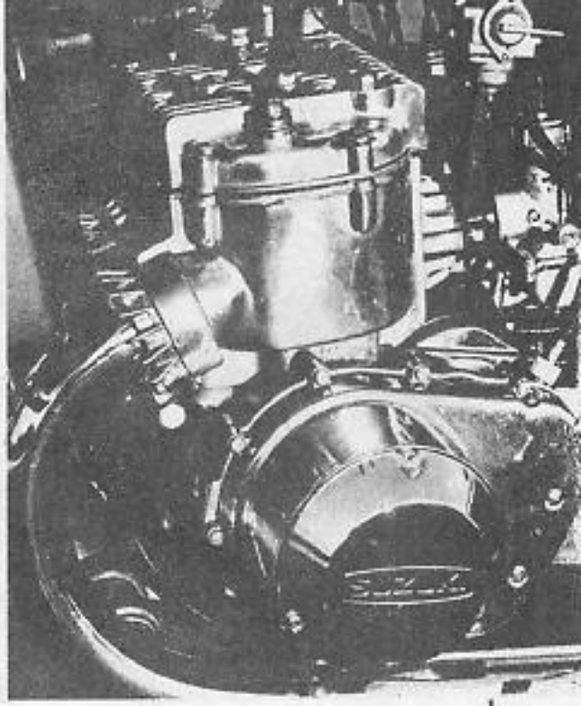
This would only be necessary if the machine were standing still. The fan won't come on until the water temperature reaches 221 degrees F. anyway. (It's under a pressure system and isn't supposed to boil until it reaches 230 degrees F. at sea level.) All the time we had the bike it never did turn on its fan and we could hold our hand on the cylinder or radiator most anytime.

The basic reason for water or liquid cooling a 2-cycle engine is to accomplish uniform cooling. A 2-cycle cylinder with all its holes and ports, plus having the hot exhaust gasses blow out a hole at the bottom in front while a fresh charge of relatively cool fuel comes whistling up some transfer ports on the side, should have a problem staying round and parallel. This is why the bores are .003 larger than the piston, it's for growth. In the water-cooled jobs they can close up the tolerances by 30 percent and gain a better seal with the piston and rings, and it also has less noise due to piston rock.

Since this is a transverse three-cylinder engine one of the cylinders has to be in the middle. On air-cooled engines that middle cylinder gets hotter than those on the outside. The water-cooled job doesn't have this problem.

If it weren't for the two growths on each end of the crankshaft the Suzuki engine would be fairly narrow. The engine cases follow Suzuki's normal practice of splitting on a horizontal centerline. The crankshaft, transmission mainshaft and countershaft, and the kick starter gear all lay parallel and on the same centerline.

Power is transferred from the crankshaft to the mainshaft through

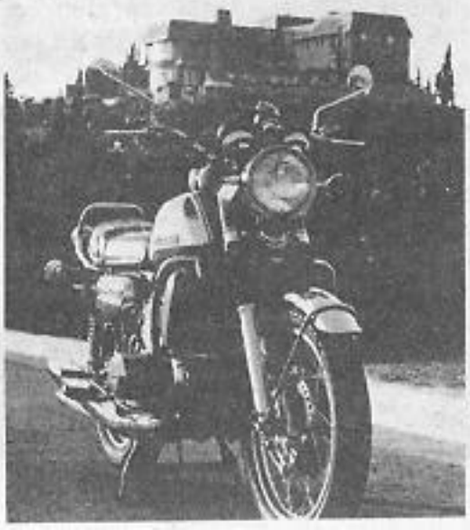


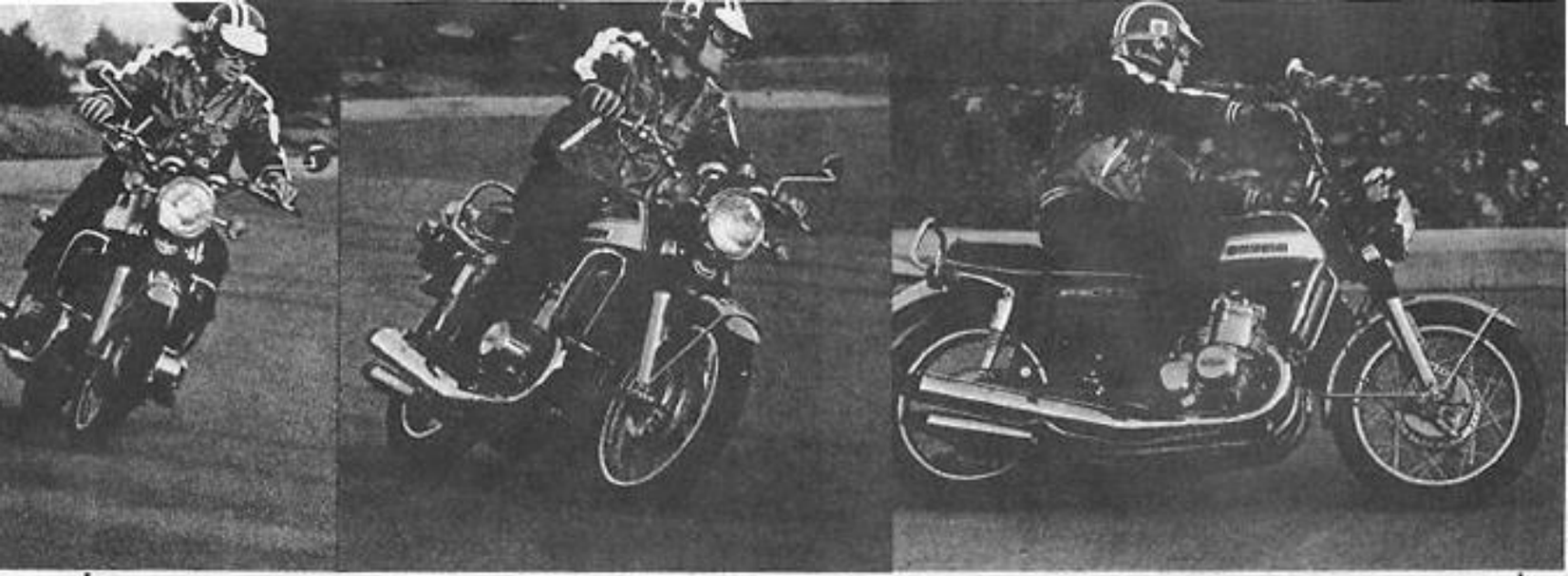
The transversely mounted two stroke engine produces great amounts of power. The crank pins are spaced 120 degrees apart, giving extremely smooth acceleration.

helical gears. The gear is attached to the clutch and is equipped with several springs that work as a drive cushion. The transmission gears are all constant mesh and engage through dogs by three shifting forks on a drum.

The right hand outcropping of the crankshaft features a high output AC generator. The left side has some auxiliary gear sets with the points and condensers at the extreme end. One set of gears goes off to drive the waterpump. The other ties into an electric starter motor that is nestled in the cases between the cylinder and transmission.

The frame is a multi-tube pipe affair that keeps a good hold between the swing arm and fulcrum and steering head. The cradle is widely spaced to straddle the engine





cases. The engine is mounted in bonded rubber bushes and you can watch it shake profusely at idle. It visually smooths out as you rev it up and no vibration is transmitted to the remainder of the motorcycle at any speed.

There is a choke lever fitted to the three carburetors and it must be used to get the thing running when cold. It even takes more time to warm up than if it were air-cooled. But once the Suzuki is warm it starts immediately, sometimes in less than a full revolution of the crank. There is really no need to have a kick-start lever on this machine. If the battery goes flat on this type of motorcycle you've got to push it anyway.

The footrests are still a bit wide, but on this motorcycle they fit into the whole theme of things. The handlebar, seat, footrest locations are very good for sitting with a longish reach to the bars if you are short.

The instrument package is very well done and is perched at the proper angle for easy viewing. The third instrument is a water temperature gauge, and the odometer is fitted with a mileage trip. The headlight switch is thumb operated on the left side instead of with an ignition key.

The twist required to open the three carburetors is not as great as it is to open two on many motorcycles. They accomplished this simply by running one cable into a junction block that goes to three plus another to the oiler. They have eliminated the bends in three cables thus reducing drag.

The front brake is operated by two cables that have a balance bar at the lever. The brake itself is a two-sided affair with a total of four brake shoes. They are coupled as leading shoes and should have worked better than the ones on the bike we tested. The front brake is not at all sensitive and takes a firm pull to get any action from it. This is the only Japanese superbike that doesn't use disc brakes, maybe it should.

The cable operated rear brake worked quite well, and with the flywheel action of this big triple good brakes are a necessity. We found we would shut it off and the thing would keep right on going. Downshifting helps a little.

Riding a three-cylinder triple is kinda like driving a six-cylinder car. You really don't need to shift it much. The GT750 pulls well from 30 mph in fifth gear. It runs well over that in first. Sometimes I wonder at the wisdom of coupling a 5-speed gearbox with an engine this flexible and powerful. Seems to me one would get tired of shifting.

They've done something special to make it feel light in cornering. The bike lays over quickly with no fuss at all, unusual for a machine of this weight. You can get it over far enough for the center stand to drag and still feel safe. If it were a sporty car we would call it understeer.

Under acceleration it wants to go forward rather than wheelie. When shifted quickly the test bike would clunk into second gear and lunge. At full throttle the front end wouldn't leave the ground, it only felt light. The machine is fast enough to be competitive in the stoplight Grand Prix.

The GT750 is a great bike designed to dazzle the mind of the enthusiasts. It's a touring machine that will do its job, and a racer that will frighten the pants off the competition. •

GT 750



MAKE SUZUKI
MODEL GT 750
PRICE AS TESTED N.A.
MAXIMUM SPEED AS GEARED 110 mph
WEIGHT 525 WET

ENGINE

Engine Type	3 CYLINDER, 2-STROKE
Bore	70mm
Stroke	64mm
Displacement	738cc
Compression Ratio	6.7:1
B.H.P. at R.P.M.	67 AT 6500
Carburetor	MIKUNI 32mm
Ignition	BATTERY & COIL
Starting System	ELECTRIC & KICK
Lubricating System	OIL INJECTION

FUEL AND OIL

Oil Capacity	3.8 PINTS
Oil System	AUTOLUBE
Fuel Capacity	4.5 GALLONS
Fuel Recommended	PREMIUM
Approximate mpg	45

FILTERING SYSTEMS

Air	MICRONITE PAPER
Oil	SCREEN
Fuel	SCREEN

FRAME

Frame Type	DUPLEX CRADLE
Weight Distribution	FRONT: 48%; REAR: 52%
Wheelbase	58 INCHES
Ground Clearance	5.2 INCHES
Peg Height	11 INCHES
Seat Height	32 INCHES

SUSPENSION-TYPE

Front	TELEDRAULIC
Rear	SWING ARM

SUSPENSION-TRAVEL

Front	6 INCHES
Rear	3 INCHES

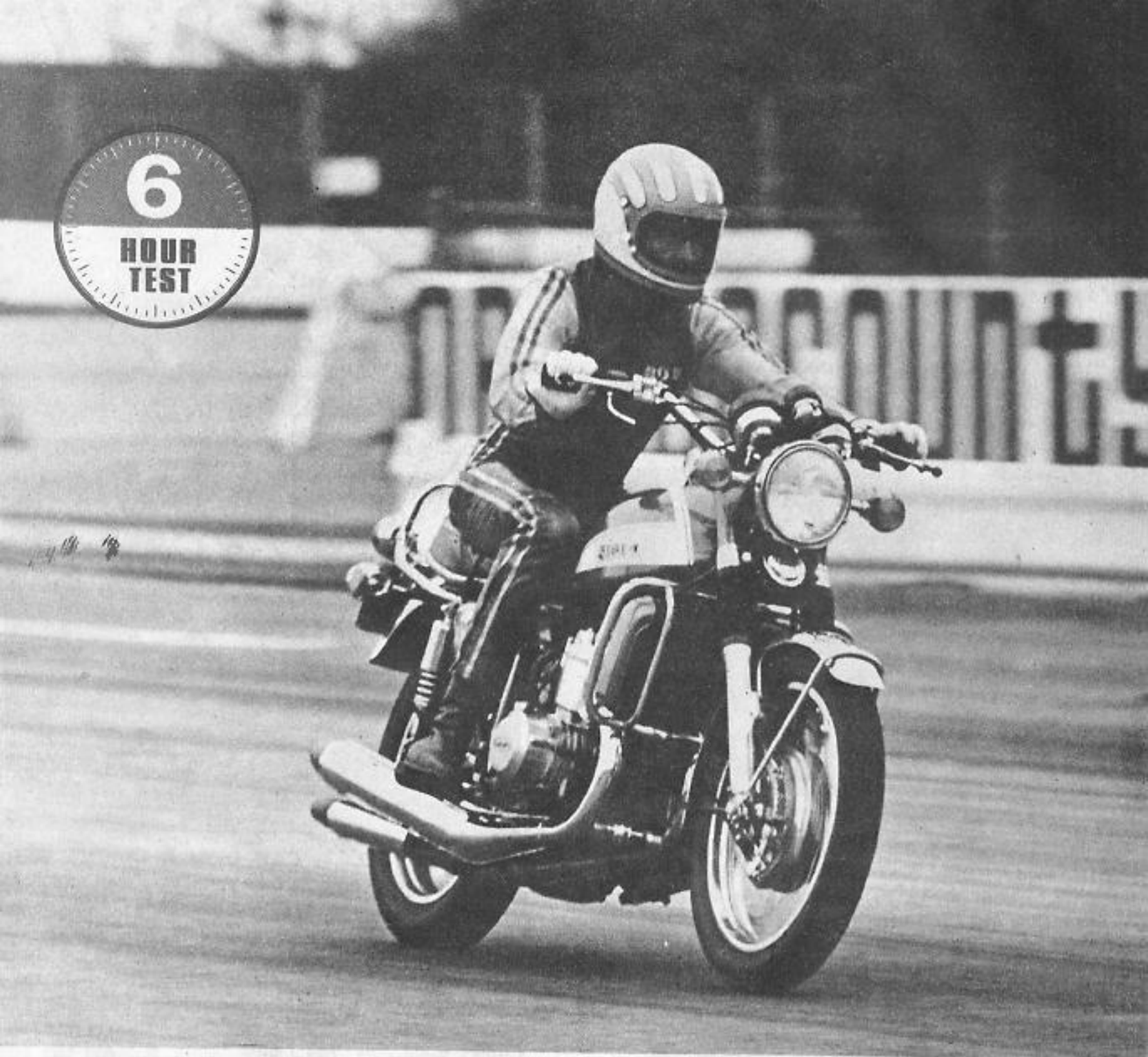
DRIVE TRAIN

Clutch Type	MULTI-DISC, WET
Primary Drive	GEAR
Countershaft Sprocket	N.A.
Final Sprocket	N.A.
Final Drive	N.A.
Gear Ratios	
1st	14.92:1
2nd	9.11:1
3rd	7.15:1
4th	5.90:1
5th	4.84:1

TIRES AND WHEELS

Front	3.25 x 19 LOW PROFILE
Rear	4.00 x 18 LOW PROFILE

IMPRESSIONS	Poor	Good	Excellent
Throttle Response			●
Acceleration			●
Power Band			●
Starting			●
Engine Noise			●
Muffling			●
Vibration			●
Handling		●	
Choice of Tires			●
Suspension			●
Rider Comfort			●
Transmission			●
Instrumentation			●
Lighting			●
Toolkit		●	
Paint and Chrome		●	
Styling		●	
Mileage		●	
Braking		●	



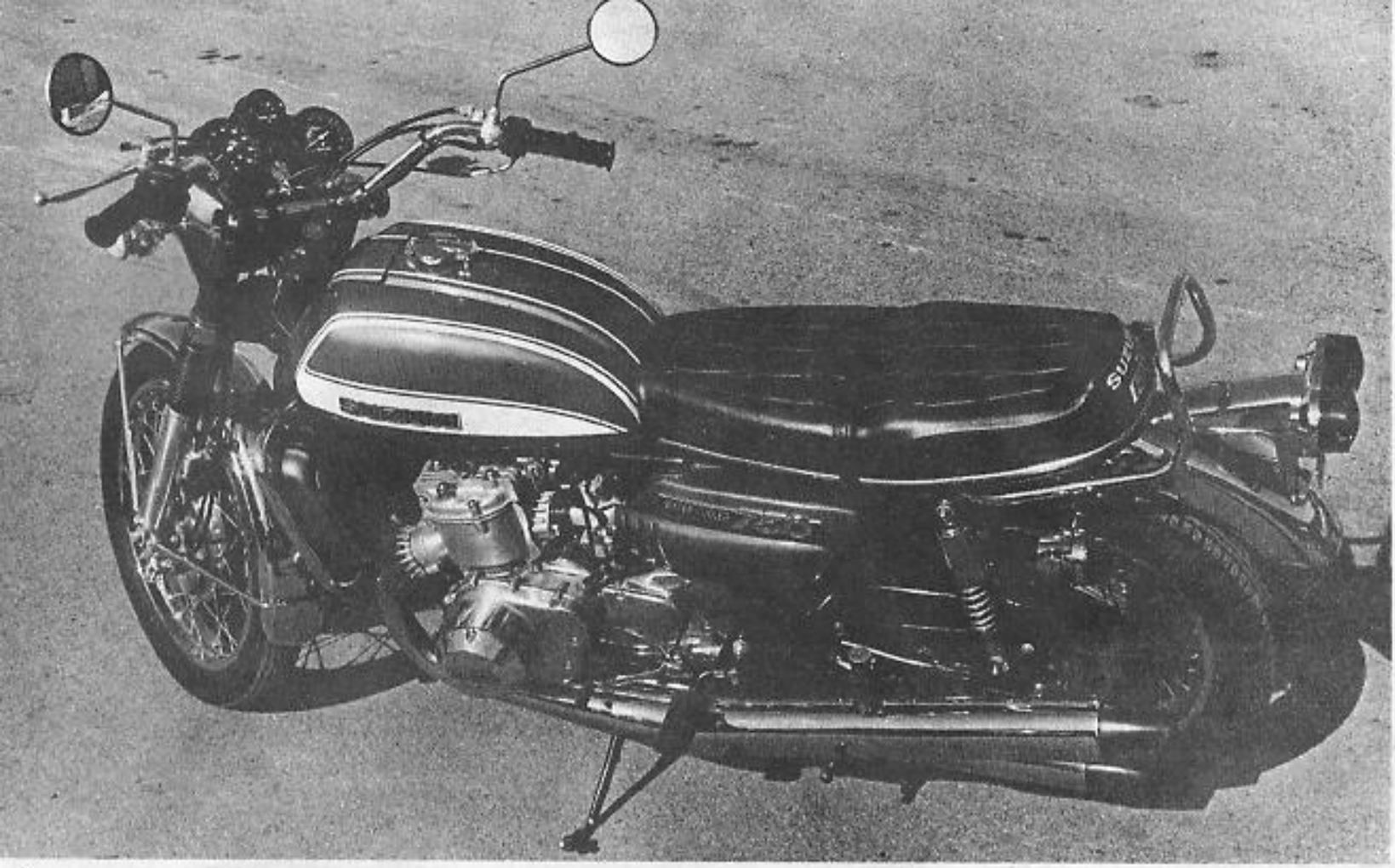
COOL AND QUIET

Of All the New Superbikes, the Big Suzuki Probably Sports as Many Sophisticated Features as Any Now Offered for Sale

It really wasn't too surprising that Suzuki went to water cooling. Not when you look at their background in Grand Prix racing. These people probably have as much experience with this form of engine design as anyone in the world today. A number of people might ask why bother going to water cooling at all. There are a number of disadvantages, of which complexity and added weight top the list.

There is one large benefit that cannot be overlooked. One of the inherent problems in any two stroke engine is that of heat transfer. The bigger the engine, the more heat must be dissipated to keep it from doing bad things. There is no question that water cooling does a better job of dispersing heat, than depending on air temperature. This was borne out during the six hours we ran the bike wide open at Orange County Raceway.

With every other two stroke we have ridden under similar circumstances, after the first few laps the power dropped off slightly. The big Suzuki didn't. If anything, it kept getting faster as the parts bedded in and



The overall finish and high quality in the biggest of all Suzukis can only be rated as superb. The paint, chrome and general finish would be impossible to fault on our test machine.



The tach and speedometer have a third instrument added to the cluster—the water temperature gauge. The temperature never rose past the midway mark during our tests.

the machine loosened up. With one eye glued to the water temperature gauge, we noticed the temperature got up to about the middle of the scale and never wavered one way or the other. It remained there for the entire six hours. Although the air temperature warmed up considerably, the power plant never got hot.

While water cooling is one of the GT 750's strong points, what impressed us more than anything else was the smoothness and comfort of this new touring machine. It is the most comfortable road bike, bar none, we have ever tried. It's possible to ride great distances without getting cramped or tired. It feels as natural as sitting in your armchair in the living room.

In this country we are blessed with fast freeway systems. This is a good thing, because the Suzuki needs further development in the chassis department. As long as you are moving in a straight line, everything seems fine. Once you move off that straight line, it takes a bit of work to herd the bike around corners. We have found that the six hour tests will quickly point up any deficiency in engine or chassis design. If there is a weak point anywhere, we find it. The Suzuki was no different.

As the day wore on, the suspension wore out. The swinging arm bushings wore to the point where we could get perceptible side movement from the arm at the pivot. Running through the "S's" at 90 mph (which is no problem for most high speed motorcycles) proved to be a chore with the 750 Suzuki. We approached the first part of the "S," which was a right-hander, at between 85-90. Although the engine was capable of going faster, the chassis wasn't. Once through the first part of the "S," the bike had to be carefully picked up to a vertical position and the throttle rolled off, allowing the speed to run down another 5 or 10 mph. After moving over to the edge of the road, the bike was eased into the left hander. At the same time, the throttle was turned wide open. By turning the throttle on hard, the chain would pull the swinging arm and wheel over to one side, taking all the play out of it and cancel the tendency for the rear end to move around.

Another problem is that the forks are too soft. Perhaps by beefing up the front end, the stability can be improved even further. Naturally, with higher speeds the problems become more aggravated, but this problem is quite evident at lower freeway speeds also.

While we are at it, we might as well get rid of all the negative aspects. The other thing we feel should be modified, and very quickly too, is the braking system. It definitely is not ade-



HOW DO YOU KNOW YOU WON'T LIKE IT IF YOU DON'T TRY IT?

TEST: SUZUKI GT750 LE MANS

A year ago this month *Modern Cycle* tested the Suzuki 750 triple. For the most part we liked the motorcycle very much. We had just a couple of criticisms. This month we tested the newest 750. We still like it very much - even more because its earlier faults have been corrected and its previously good features are intact in the 1973 version.

The LeMans, as Suzuki has labeled their liquid-cooled maxiroadster, poses some interesting questions about the character of the motorcycle buying public. For instance, we find it curious that the Suzuki 750 hasn't faired better in sales to touring riders. The Suzuki is smoother and even more vibration-free than Honda's super-smooth multis, and it's miles ahead of Kawasaki's three-cylinder jets on the same count.

Certainly the LeMans proved itself to the performance fans with its blinding acceleration and speed at Daytona this past year. If anything, the Suzuki was too strong, too fast; its chief problem was that its performance exceeded the capability of existing racing tires. If that's not a spectacular testimony for the go-fast set we're hard pressed to imagine what is.

It's conjectural, of course, but we feel that the 750 Suzuki may very well have been hoisted on its own petard. Its design coup, liquid cooling in a reasonably priced production bike, may just be a little more than the market is, or at least was ready for. Perhaps 1973 will see better sales for the 750.

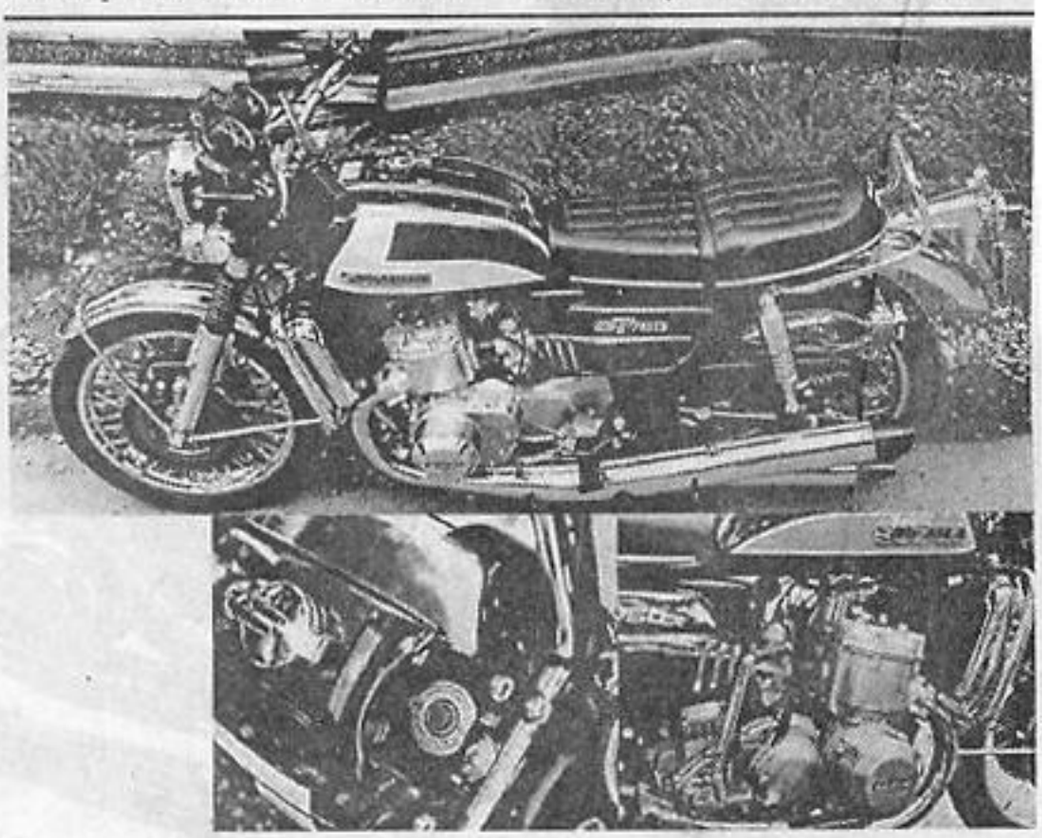
The trappings on a liquid-cooled engine do take a bit of getting used to. We've all become so accustomed to more and larger cooling fins, strange and wonderful finning patterns blackened fins with shiny, polished edges, that a near-finless engine perhaps does not compute. And then there's the coolant radiator. As nicely placed and scaled to the motorcycle as it is, it adds unfortunate visual bulk that we're not used to.

Still, the anomaly here is not that the Suzuki 750 didn't sell - because it certainly did - but that it didn't sell as well as it should have. The LeMans is a spectacularly good motorcycle. It's quieter than most and smoother than all of its competition. The coolant jacketing and the coolant itself damp much of the mechanical engine operating noises that are common to air-cooled engines. The good neighbor qualities are further enhanced by a very quiet three-into-four exhaust system. It seems reasonable to assume that the number of mufflers was settled on not so much from necessity as for visual and physical symmetry. A bonus to the exhaust system designer accrues here in the form of ample volume with which to accommodate eagerly expanding exhaust gas charges and silencing baffles all at the same time.

Surprisingly, for a two-stroke (we had to constantly remind ourselves that it *was* a two-stroke,) the Suzuki has a very quiet intake tract with no apparent tricks employed. The engine is a piston-port design, fitted with conventional Mikuni carburetors and a predictable sort of air box/filter system. Even under hard full-throttle acceleration the intake noise is quite moderate, more like a four-stroke multi than a two-stroke.

During city and suburban running, up and down through the gear train, the LeMans is more pleasant than most. It's most comfortable in second and third gears at surface street speeds. The 750 is a deceptive piece. Through the courtesy of this displacement the Suzuki enjoys a broad torque register and can be ridden pleasantly with moderate throttle openings.

When the wick is turned up the LeMans gains continual strength, up through the mid-range and onto the pipes where it really begins to hustle, changing its conservative wraps for a flying cape. It's tire peeling potential really becomes apparent. The indications of stout torqueiness felt at moderate speeds are suddenly realized as just a hint of what the LeMans is capable of when totally excited. Throughout its operating range the 750 is unbelievably smooth, a veritable



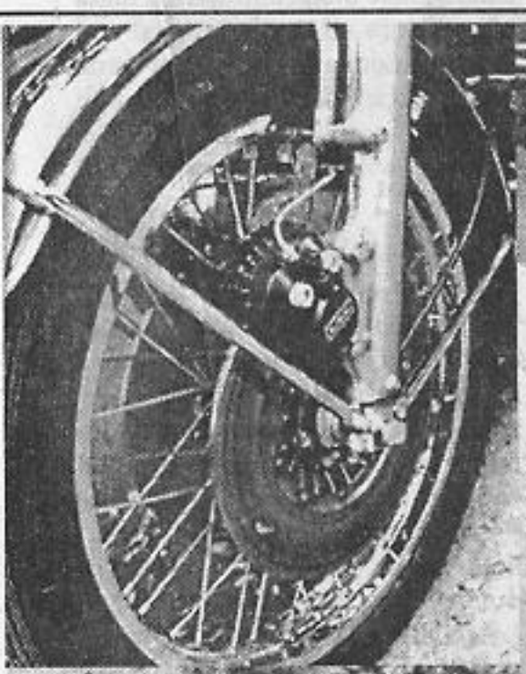
turbine - and this is just one of its very strong attributes.

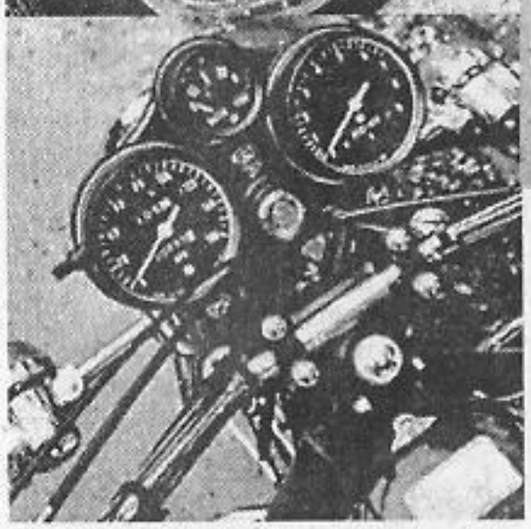
In addition to potentially longer engine life the liquid cooling offers a definite performance advantage. At the lower operating temperature (lower than a comparable air-cooled engine) combustion charges are denser and consequently potentially stronger. This is most beneficial in hot weather when traveling long distances. The LeMans is always strong and fresh feeling. The transfer of the coolant through the system is effected by a pump located beneath the engine and driven by a quill shaft. The pump is aided by thermal siphon effect, in which the hot coolant rises and the colder coolant falls, from the radiator back into the cooling jacket. All in all it's a very efficient system; the engine runs extremely cool.

The first of the 750 liquid-cooled 750s had every bit as much muscle as this new model. Absent on the earlier piece was a braking scheme capable of handling this much weight and potential velocity with a comforting margin. But that's all in the past; the LeMans for 1973 is equipped with a dual disc front brake. The calipers float on brackets bolted to the fork legs and are activated by a single master cylinder. Control sensitivity is excellent and the stopping power is nothing short of incredible. First application after the motorcycle has been sitting for a long time produces a loud, steady squeal but subsequent use is quiet. The rear unit is a conventional single leading shoe drum type that also responds well without threatened lockup. In combination, both brake units are well suited to the 750 and offer the peace of mind that was lacking in the '72's.

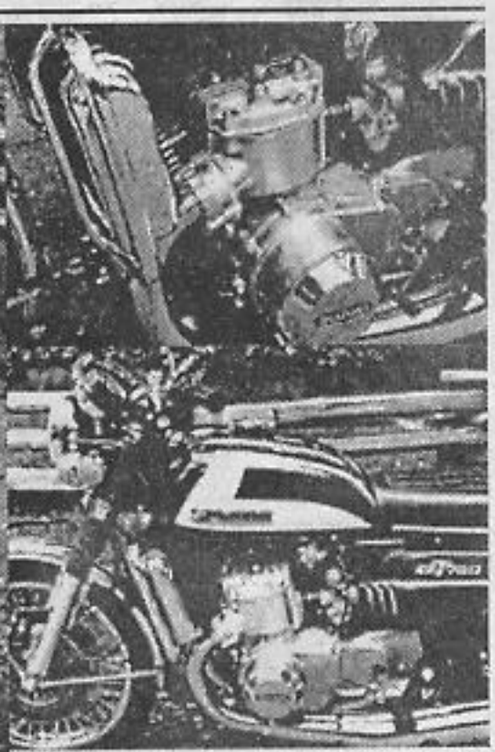
Somewhat surprisingly the LeMans is a good handler. We say somewhat surprisingly because the motorcycle is one of the heavier superbikes and would appear to have a great deal of top hamper because of its coolant jacketing, radiator and very large fuel tank. In reality, however, the LeMans exhibits very little top hamper. It's uncommonly agile and can be flipped from side to side as effortlessly and with as much assurance as some of the better handling middle weights. At low speed the 750 has a slight but understandable heavy feel, but not so much that city riding becomes a chore. At highway and freeway cruising speeds the LeMans is rock steady with sufficient available torque to carry it up long grades in top gear.

As with the earlier 750 the new LeMans evidences a shuddering change from first to second gear. Hard acceleration from a standstill with a brisk change into second feels as though it places undue stress on the drive train. We discovered that it is best to get it moving in low gear and shift gingerly into second before applying great gobs of power. Changes into the upper three gears show none of the characteristics of the first-to-second change; they're effortless and always smooth. The transmission has but one neutral and it is easily found with a light tap down from second. When the motorcycle





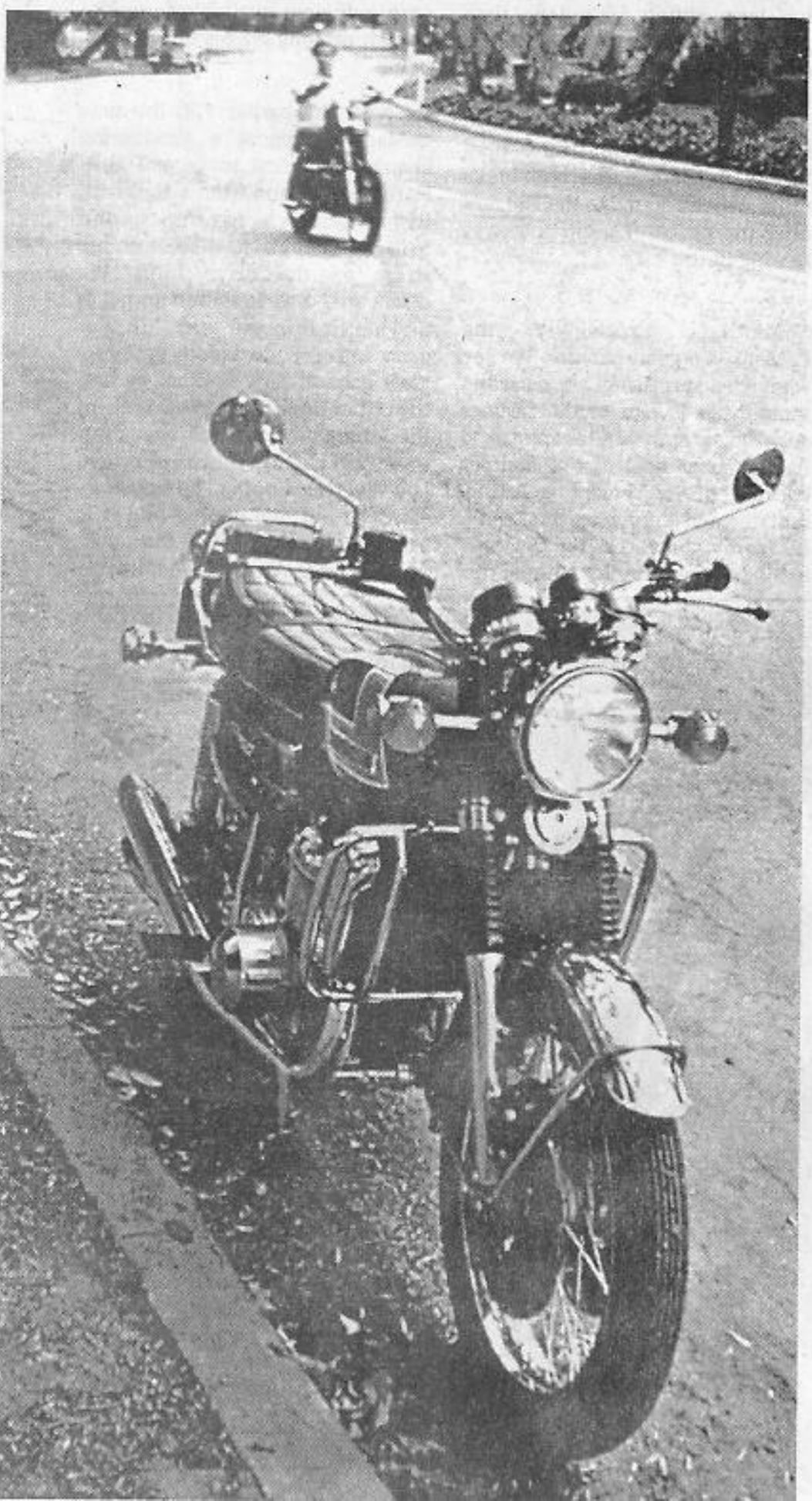




TEST: SUZUKI 750







was first received for test it had very few miles on it. The transmission felt just a shade stiff and it was difficult to engage low gear. Several firm stomps were required to get the green light to go out, and while the condition has improved with accumulating mileage low gear engagement was never wholly satisfactory. We suspect that this problem is confined to this particular motorcycle and may simply be the result of an extreme in manufacturing tolerance. Last year's 750 was not similarly afflicted and there have been no design changes to account for the balkiness in this test model.

The ever-improving state of the motorcycle manufacturers art continues to provide super-sophisticated bits and pieces and systems to marvel at. Engine and chassis ideas aside the LeMans sparkles with innovative engineering and handsome details. Typical of this sort of thing is the packaging of the electrical system support components.

The voltage regulator, directional flasher, fuse block and wiring loom plug-ins are all neatly arrayed and housed beneath the right side cover. Electrical system testing and trouble-shooting just has to be a breeze with an arrangement like this.

The instrument cluster has also received some careful thought. The handsome "dashboard" houses the coolant temperature gauge in addition to the tachometer and speedometer. Indicator lights are large and well defined. The coolant temperature gauge, incidentally, never registered more than about one-half its range all during the time we rode the LeMans. A sensor connected to the gauge circuit is calibrated to switch on the radiator fan should the coolant temperature exceed 221° F. It never did however, and we were deprived of seeing the unit work.

As with all their models, Suzuki has done a nice job of the numerous control buttons and switches. They are well positioned and require no hunting. All the controls work consistently and add

MAKE SUZUKI
MODEL GT 750
PRICE AS TESTED $1,665.00
MAXIMUM SPEED AS GEARED 110 mph
WEIGHT 525 lbs. WET

Distributor..... SUZUKI MOTOR CORPORATION 13767 Freeway Drive, Santa Fe Springs, Calif. 90670

ENGINE

Engine Type 3-CYLINDER, 2-STROKE
Bore 70mm
Stroke 64mm
Displacement 738cc
Compression Ratio 6.7:1
B.H.P. at R.P.M. .....67 at 6,500
Carburetor .....32mm MIKUNI
Ignition .....BATTERY AND COIL
Starting System .....ELECTRIC AND KICK
Lubricating System .....OIL INJECTION

FUEL AND OIL

Oil Capacity .....3.8 PINTS
Oil System .....C.C.I.
Fuel Capacity .....4.5 GALLONS
Fuel Recommended .....PREMIUM
Approximate mpg 45

FILTERING SYSTEMS

Air .....MICRONITE PAPER
Oil .....SCREEN
Fuel .....SCREEN

FRAME

Frame Type .....DUPLEX CRADLE
Weight Distribution FRONT: 48%, REAR: 52%
Wheelbase .....58 INCHES
Ground Clearance .....5.2 INCHES
Peg Height .....11 INCHES
Seat Height .....32 INCHES

SUSPENSION-TYPE

Front .....TELESCOPIC FORK
Rear .....SWING ARM

SUSPENSION-TRAVEL

Front .....6 INCHES
Rear .....3 INCHES

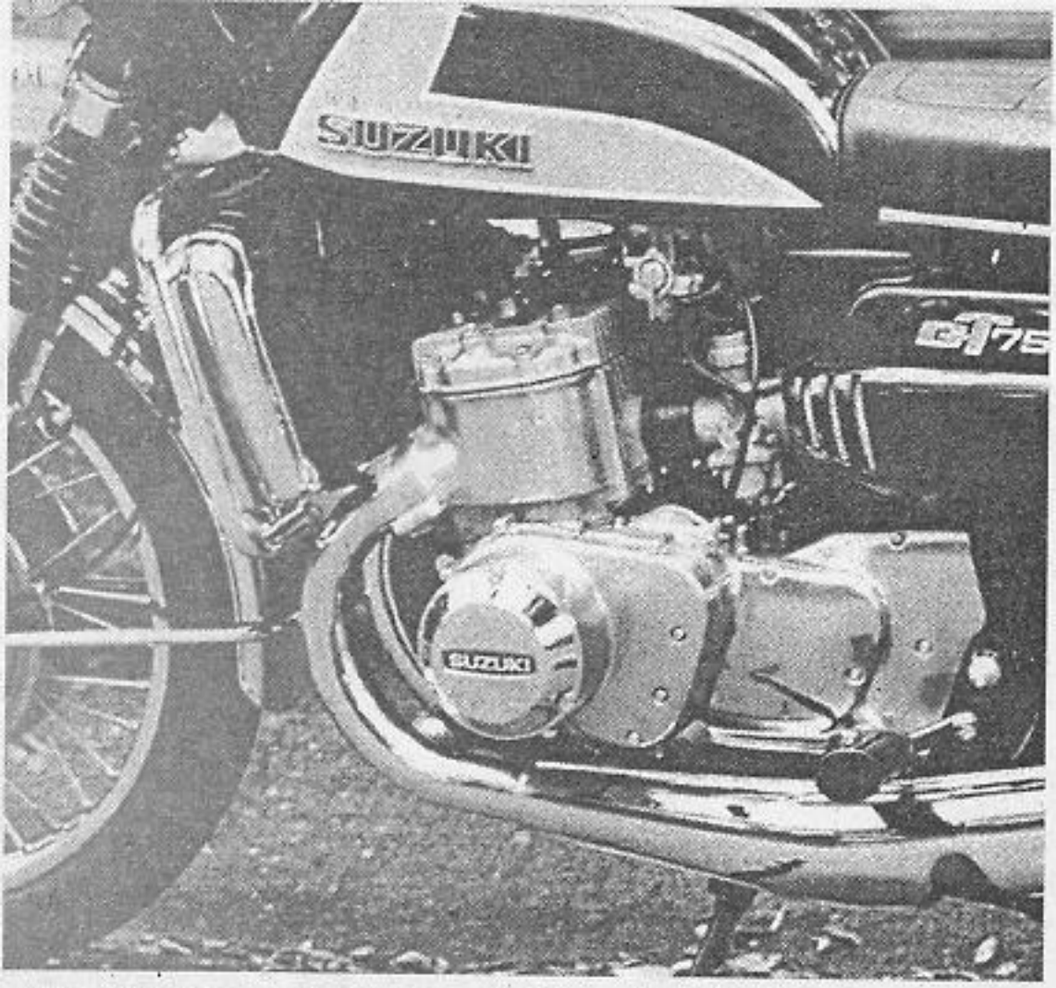
DRIVE TRAIN

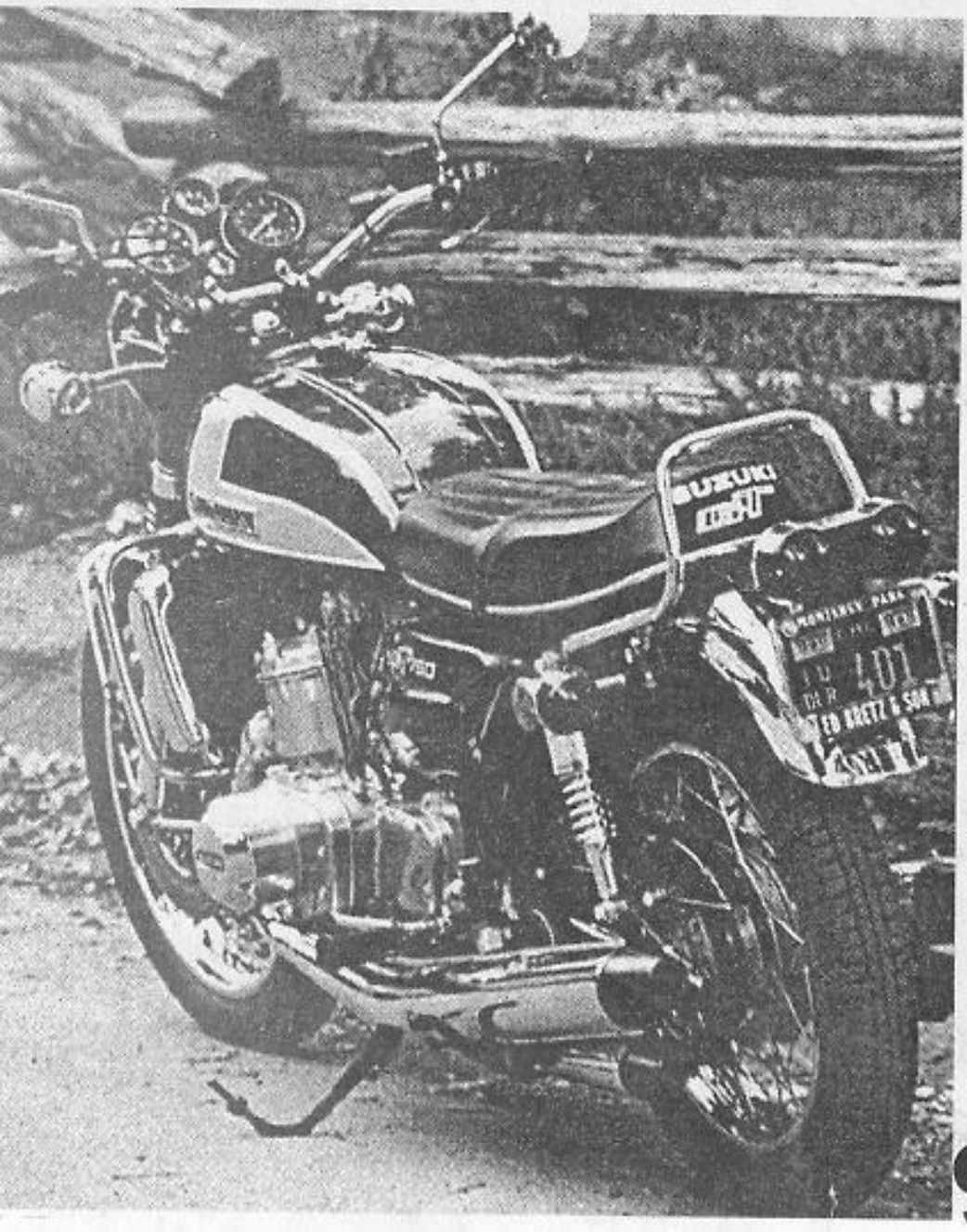
Clutch Type .....MULTI-DISC, WET
Primary Drive .....GEAR
Countershaft Sprocket .....17 TEETH
Final Sprocket .....38 TEETH
Final Drive .....SINGLE ROW CHAIN
Gear Ratios .....Overall
1st 14.92:1
2nd 9.11:1
3rd 7.15:1
4th 5.90:1
5th 4.84:1

TIRES AND WHEELS

Front .....3.25x19 LOW PROFILE
Rear .....4.00x18 LOW PROFILE

IMPRESSIONS	Poor	Good	Excellent
Throttle Response			●
Acceleration			●
Power Band			●
Starting			●
Engine Noise			●
Muffling			●
Vibration			●
Handling		●	
Choice of Tires			●
Suspension			●
Rider Comfort			●
Transmission			●
Instrumentation			●
Lighting			●
Toolkit		●	
Paint and Chrome		●	
Styling		●	
Mileage		●	
Braking			●





much to the pleasure of operating the machine.

The LeMans' riding comfort is compromised slightly by the width of the fuel tank and the front of the seat. Typical of transverse multis, the LeMans is wide both at the pegs and the upper end of the engine. As a result the overall motorcycle package is wide requiring both rider and passenger to stretch their muscles along the insides of their thighs. An hour or so in the saddle is often attended by some soreness in the pelvic area, but it became less pronounced as the days rolled by and the miles were accumulated.

For some strange reason the LeMans' headlight is not quite up to the standards we've come to expect. It's bright enough, but it punches a wide rather than a deep hole into the darkness. While it is possible to lengthen its throw through adjustment we would hesitate to recommend it; because that may very well invite an equipment violation.

As Suzuki enters their second year of production of the LeMans we can only wonder how it will fair in sales. Certainly they must be optimistic. They've had time to expose it to the touring market and word of mouth from those who own the model should help put more units on the road. Too, we've all had time to get used to the big, smooth, liquid-cooled pavement scorcher. In combination with the performance of the road racing versions that have put something new in the game it would seem that the LeMans will do very well. If it were economically possible for dealers to make demonstrators available to potential customers the GT 750 would catch on in a big way; it's a motorcycle that is best appreciated through several hours in the saddle. To know it is to like it - very much.

As printed in MODERN CYCLE
copyright Feb. 1973

TEST: SUZUKI 750

JUST PASSIN' THROUGH...

Suzuki GT750K

Makin' My Way To Donner On A Cosmic Smoothie / By D. Randy Riggs

(Editor's Note: This is the first in a series of articles that will appear from time to time on various roadsters. The purpose is to combine the sights, smells, and problems involved in touring with useful comments on the machine involved. A full road test data panel is included for your convenience. The actual test session, as always, involved the entire CYCLE WORLD staff.)

FOG AND overcast skies were seemingly endless and my spirit was waning. The sun had made such infrequent visits to the coast around Laguna and Newport Beach that summer simply wasn't happening, though already it was early August. The perfect out had to be the new Suzuki GT750K residing in the CYCLE WORLD garage, as it sat there quietly beckoning...sort of saying, "Hey, it's time for a trip, don't you think?" Indeed, it *was* time.

I mentioned the thought one evening to my lady: "Might be takin' a new Suzuki somewhere pretty soon." "Oh?" she replied. "When?" "I think maybe in the morning." "Oh, maybe I'd better get some of your things together!" "Yup, maybe you'd better." I had ridden the 750 home and went out to give it another look.

The second year of production for the water-cooled Triple has helped it in many areas; those subtle detail improvements that somehow manufacturers never think of the first time 'round. Striping on the fuel tank has been changed and the result is a motorcycle with a whole lot more class. Coupled with flavorful paint colors, the scheme turns the GT750 into a bike that will demand its share of attention.

The paint has some help from a mechanical addition; something that was included for reasons other than appearance, though cosmetically they add a touch of class. The addition of dual front disc brakes is what I'm referring to, the most significant change made this year on the big 750. Last year's four leading shoe drum unit was an excellent arrangement, but few people knew how to adjust it properly; the result was less than excellent braking in many instances. By the looks of those massive discs attached to the front wheel assembly, I was sure no more complaints would be heard.

Last year I had divided about 3500 miles between two Suzuki 750s, so the machine wouldn't be that unfamiliar, but I still went over this new one carefully to see if I could spot any change that might affect riding comfort or operation. If there were any besides the items I've already mentioned, I couldn't spot them. However, I did notice a source of irritation that continues on the latest offering...the handgrips. They are absolutely and totally worthless, with a surface that bites into your hands even on short trips...even if you're wearing heavy gloves. How much fun it would be to take the designer of these items and position him on the motorcycle with his hands in place on the bars and wrap them there so he couldn't move them for maybe a week or so. Next year we would see proper grips...guaranteed. Luckily, it is not much of a problem to make a switch, but it's unnecessarily wasteful.

The damp ocean air was beginning to dim the gleam of the Suzuki's chrome and had me thinking about a cup of hot chocolate, so I wheeled the water-pumper into its parking spot and headed inside; I had a trip to think about.

The next morning was just as foggy as ever. Don't get me wrong, I like offbeat weather on occasion, but a steady diet of *anything* has a definite effect on my attitude. I bungee-corded a small duffle bag to the rear portion of the big seat; inside were a few changes of socks and underwear, some cold weather garb and a good supply of beef jerky. I like to carry jerky on any outing, because it's nice to snack on when the nibblies hit and you're in the

Suzuki GT750K

middle of nowhere.

Basically I was fairly well prepared for most weather except rain, and where I was headed the wet stuff was a possibility. This time I would gamble going without a rainsuit, like I have a hundred times before. So far Ma Nature and I are about even on the rain aspect. But at least this time she couldn't get to me at night, since I would be snug in a motel. If this kid happens to cram a bunch of miles into a day's ride he doesn't relish the thought of roughing it; I get enough of that on my dirt bike trips to Baja. There are times, however, when the price of certain motels makes me wish I had a sleeping bag strapped to the front of my machine...just like Bronson.

"Just where *was* I headed, anyway?" my lady asked at breakfast that morning. "Think I'll go up to Donner Pass. Lots of history there. And probably the last chance I'll have to go through on a bike before winter hits those mountains." "Isn't that where some passenger train got stuck in the snow one time and it took them *three days* to rescue the people?" she inquired. "I'll say it was some train, the crack liner 'City of San Francisco,' one of the best then...it was 1952. They had 22 feet of snow on the level." That comment got a raised eyebrow look so I swallowed more coffee and let it sink in. "What kind of weather do they have this time of year?" was her next question. I slowly put on my jacket and grabbed my helmet. "You just never know...."

It was cold in Laguna that morning. The kind of cold that is perfectly comfortable if you're walking but perfectly miserable if you happen to be on a motorcycle. I wondered how the new Suzuki would act after sitting all night. The ignition switch, speedometer, water temperature gauge and tachometer are all contained in one cluster, angled precisely, easy to see and reach. The switch is not one of those that will accept a double-sided key, and it has three positions–off to the left, on in the center, and parking light activation to the right. With the switch in the "on" position I fed the 750 some choke and hit the "start" button. What they should call it is an "instant on" switch. The starter motor didn't whir or crank or grind; it simply made the Suzuki run...and right now. The water-cooled Triple burbled at about 2000 rpm until the choke was lifted; it would run on its own after about two minutes of warm-up. Try to pull away smartly before that and you're likely to embarrass yourself with a stumbling, coughing motorcycle.

Freeways are the fastest way out of the L.A. basin, and it was no time before I found myself hustling along in the fast lane at a clip well above the posted; but that was because everyone else was well above the posted and I wasn't about to be run down! I hate riding the freeways; you can't relax for even a moment and expect to survive. Lots of grit flies up from the roadway and stings your neck, there are usually large pieces of debris to test reflexes, cars want the lane you have, and some stretches of pavement even throw in those rain grooves that coax certain motorcycles into wiggling. The Suzuki, however, was not hassled by any of it. If there could be only one word to describe the GT750 it would have to be *smooth*, because, though it is powerful and a lot of other things...it is smooth above all else. That was the first impression I received out on that freeway; and that is the impression that remained with me after some 1600 miles of straight through riding.

I hadn't ventured too far past the Los Angeles County line when the winds hit. These were tricky winds. First they'd hit head on, then quickly shift to the side. It was hard to anticipate what they were going to do next, and I was never lucky enough to have them behind me. Just once I'd like a tail wind. The Suzuki was more stable than many machines I have ridden in the wind, helped somewhat, I would imagine, by its sheer bulk.

Past Mojave, my first gas stop, the winds were not only strong and gusty, but damned hot. I pulled over for a minute on the shoulder to feel how strong the wind was blowing on its own, and I would have been reluctant to park the machine on its sidestand for fear of it blowing over. The temperature was 108 back in Mojave; it was probably the same here.

As intense as the heat was, it didn't seem to be affecting the bike. I had been running the thing along fairly hard for many miles, but the needle on the temp gauge never once passed the center mark, well below the danger level. No amount of flogging or altitude or hard climbing and hot weather ever got that needle past the normal zone. Even more impressive was the way the GT performed under these abnormal conditions. There was never any deteriorating performance as I have noticed on many air-cooled two-strokes in the same conditions.

If there is anything annoying about the cooling system, it would have to be the hot air blast on the rider's legs coming from the radiator. This is only during hot weather though...the rest of the time it's not present.

The winds stopped abruptly at Olancha. Now the only gusts came from trucks passing in the other direction. The Suzuki was smoothest at 80; it simply *wanted* to run along at 80. That sounds a trifle fast, maybe, but the road is wide open and smooth, there is little traffic, and you can see the cops coming for miles. In fact, on Highway 395 you will be *passed* quite regularly if you don't go any faster. I didn't...and was....

By the time I reached Lone Pine, halfway up the Owens Valley, it had cooled off considerably. Off on my left a storm was brewing, high up in the mountains, the peaks of which are some of the tallest in the Continental U.S. Mt. Whitney is there, along with a few others, and by the looks of things I was glad I was down on the valley floor. The storm didn't look like it would get out of the mountains and if it did I would be too far north for it to matter. Or so I hoped.

There is lots to see anywhere in this area, but I was headed for Donner and made only brief stops for fuel and chain servicing. The Suzuki's chain surprised me. Though the machine was new, it didn't stretch enough to require an adjustment until about 1000 miles into the trip. I lubed it religiously every second gas stop, which usually fell between 250 and 300 miles.

Smells along 395 had been delicious. The pungency and sweetness of sage, the dampness of irrigation ponds...and when the clouds covered the sun, one could smell the rain. It was coming. But I wasn't waiting for it.

I passed through Bishop at dinner time, but didn't stop. My dinner was planned at "The Top" restaurant on Conway Summit, gambling that they wouldn't be closed by the time I arrived. They were, but let me in just the same, fired up the grill and cooked me one heck of a meal. People that nice are hard to find these days.

With a full belly the trip went much better, but now darkness had set in and cold had returned. There would still be several hours before I reached my destination, but I felt like riding, not stopping and calling it a day. The 750's comfort allows for such long-winded excursions. I could think of many other machines that would have been torture after so many hours in the saddle.

Headlight illumination was about what you would expect from a motorcycle. Only two bikes I know of have *really* good night lighting, the BMW and the Electra Glide with extra cost spotlights. What I was really worried about on this stretch of 395 in the darkness were deer. Hit one of those on a motorcycle and you might as well kiss it goodbye.

>











After the lights of Reno, Donner Pass lay just ahead. Once there was no road, no Interstate...only obstacles such as granite cliffs and the worst weather imaginable. Jacob Donner tried in 1846 to take his group of men, women and children over that pass; he wound up snowbound at the lake which now carries his name. It is one of the most incredible stories of hardship ever recorded. Survival for many meant eating the flesh of their frozen companions; few made it.

Only 20 years later the Central Pacific Railroad laid rails through the same area. They were told it could never be done, but spared no expense (human as well) and accomplished the feat just the same.

I spent the night at a cozy lodge right on the lake. It was hard to imagine what it must have looked like during that incredibly hard winter of 1846.

Water skiers were already playing on the lake when I awakened the following morning. After a sausage-and-eggs breakfast I went exploring.

That first day's ride had covered just slightly over 600 miles; this particular day I would take it much easier. I checked the oil supply for the automatic oil injection system before leaving; I was surprised to see that I was not yet able to add the quart of oil I had brought along on the jaunt. I thought, "No wonder this thing doesn't smoke any...it's not using any oil!" Actually, the SRIS (Suzuki Recycle Injection System) is a very efficient setup. Without going into great detail, the system allows for excess oil collected in the crankcases to be metered and burned evenly; initial oil delivery is controlled by throttle opening and engine rpm. Not only was the Suzuki averaging about 45 miles per gallon of gasoline, but nearly 1000 miles per quart of two-stroke oil. Who said two-strokes were no good for touring?

One could spend weeks in the pass doing any number of things. There is now Interstate 80 cutting a swath through the grandeur to make it easier for the motor home crowd, but I avoid that like the plague and stick to the old two-lane U.S. 40. Here is a biker's road, winding its way through Gold Rush territory, towns like Gold Run, Dutch Flat, Emigrant Gap, Auburn, Truckee and Blue Canyon. In Blue Canyon I had an interesting talk with an old-timer that had lived in that pass all of his life. "Bet you don't know where Blue Canyon got its name," he says, gravel voiced. "No," I say, "now that you mention it, I don't."

"Back in the old days the steam engines ran through here...wood burners the old ones were. Well, they made lotta smoke...blue smoke, and it hung here in the canyon for hours...looked blue it did, when you looked out there," he finishes, pointing...across a most spectacular curve in the mountains. He gives his watch a glance, then adds, "The Amtrak oughta be through any time now." Within a minute we heard a train winding up the canyon. Incredible. He looked pleased that the Amtrak was on time.

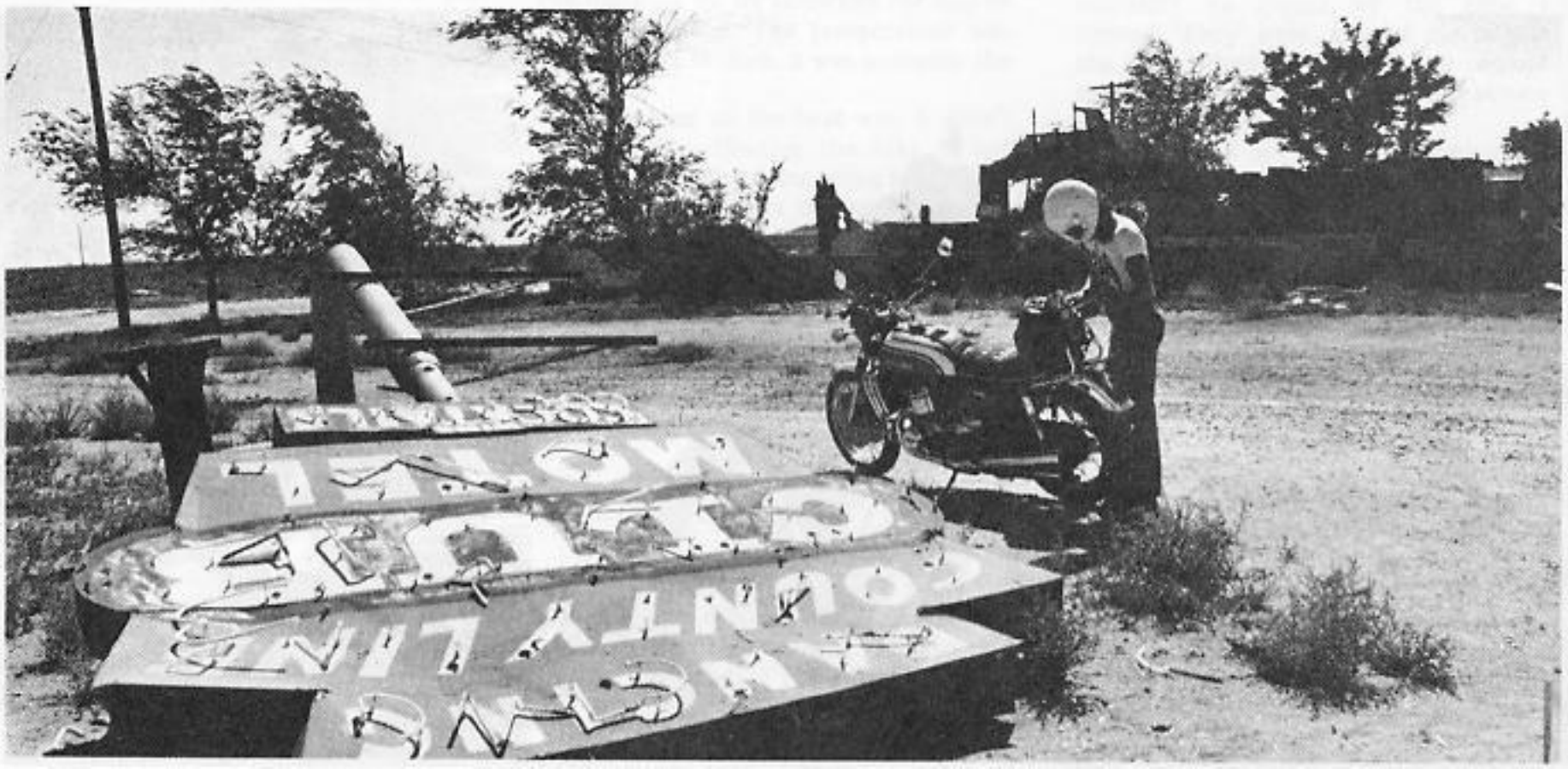
There were no steam engines on the Amtrak, but at least the diesels were about 20 years old. Lots of people, too...I was surprised. They waved, and we waved. It rounded a curve, disappeared from view, and Blue Canyon was quiet once again.

On the winding road back to the main highway I heard something on the Suzuki go "clunk," so I pulled over. One of the rear turn indicators was hanging by its wire down by the spokes; the bracket had fractured at the spot weld and the unit had simply fallen off. I got to wondering about the other one and gave it a look. Sure enough, it had cracked as well and wouldn't last long. I helped it the rest of the way and packed both units in with my other gear. Looked to me like weak brackets. Suzuki later informed me that some earlier models had the weak brackets; my machine was one of them. The items are covered by warranty and are being replaced by much healthier components, but I still wondered what would happen if one of those lights got tangled up in the spokes.

Another night was spent at the lake before I pointed the Suzuki in the direction of Sacramento and San Francisco. The 750 handled lighter than I expected at slow speeds; it absorbed the heavy pace of the Oakland Bay Bridge much better than I did. Though several "Superbikes" are capable of making the Suzuki lose a drag race, few will match its wide, useful powerband. Lots of torque at nearly any speed makes shifting less important. But I enjoy working the gearbox on this one, because the clutch is light and the cogs just go "snick-snick-snick," easy as pie.

Down Highway One on the California Coast I began riding the Suzuki hard. The curves were perfect for it, but the GT750 wasn't. Basically the problem seems to be a matter of ground clearance; things start dragging if one really heels it over. Moderate to fast riding is okay, but try to really whistle

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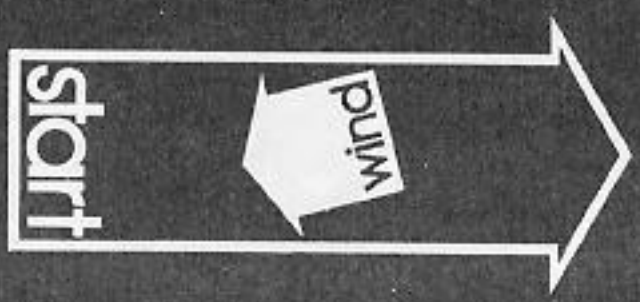
Suzuki GT750K

SPECIFICATIONS

List price	$1752
Suspension, front	telescopic fork
Suspension, rear	swinging arm
Tire, front	3.25-19
Tire, rear	4.00-18
Brake, front, eff. dia. x width, in.	(4) 9.60 x 1.47
Brake, rear, dia. x width, in.	7.0 x 1.6
Total brake swept area, sq. in.	185
Brake loading, lb./sq. in. (160-lb. rider)	3.8
Engine, type	two-stroke, water-cooled Three
Bore x stroke, in., mm	2.76 x 2.52, 70 x 64
Piston displacement, cu. in., cc	45, 738
Compression ratio	6.7:1 (corrected)
Claimed bhp @ rpm	67 @ 6500
Claimed torque @ rpm, lb.-ft.	55.7 @ 5500
Carburetion	(3) Mikuni VM32SC
Ignition	coil and battery
Oil system	oil injection
Oil capacity, pt.	3.8
Fuel capacity, U.S. gal.	4.5
Recommended fuel	premium
Starting system	electric; kick, folding crank
Lighting system	12V alternator
Air filtration	dry treated paper
Clutch	multi-plate, wet
Primary drive	helical gear
Final drive	single-row chain
Gear ratios, overall:1	
5th	4.48
4th	5.89
3rd	7.14
2nd	9.09
1st	14.92
Wheelbase, in.	57
Seat height, in.	33.5
Seat width, in.	11.5
Handlebar width, in.	32.0
Footpeg height, in.	13.0
Ground clearance, in.	5.8 (at pipe)
Curb weight (w/half-tank fuel), lb.	543
Weight bias, front/rear, percent	47/53
Test weight (fuel and rider), lb.	683
Mileage at completion of test	2085

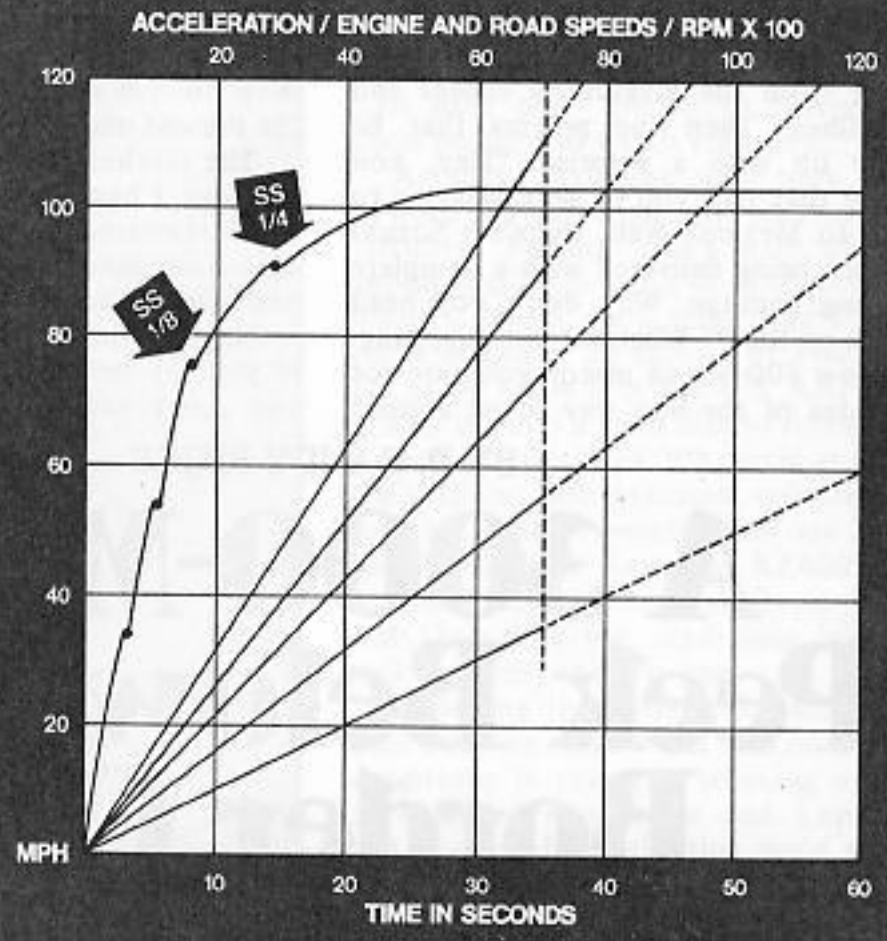
TEST CONDITIONS

Air temperature, degrees F	91
Humidity, percent	48
Barometric pressure, in. hg.	30.07
Altitude above mean sea level, ft.	468
Wind velocity, mph	10-12
Strip alignment, relative wind:	



PERFORMANCE

Top speed (actual (@6500 rpm), mph	104
Computed top speed in gears (@7000 rpm), mph:	
5th	112
4th	90
3rd	74
2nd	55
1st	35
Mph/1000 rpm, top gear	16.9
Engine revolutions/mile, top gear	3833
Piston speed (@7000 rpm), ft./min.	2940
Lb./hp (160-lb. rider)	10.5
Fuel consumption, mpg	41-45
Speedometer error:	
50 mph indicated, actually	45
60 mph indicated, actually	54
70 mph indicated, actually	63
Braking distance:	
from 30 mph, ft.	35
from 60 mph, ft.	131
Acceleration, zero to:	
30 mph, sec.	3.1
40 mph, sec.	4.2
50 mph, sec.	4.9
60 mph, sec.	6.0
70 mph, sec.	7.1
80 mph, sec.	9.2
90 mph, sec.	13.4
100 mph, sec.	20.0
Standing one-eighth mile, sec.	8.66
terminal speed, mph	77.65
Standing one-quarter mile, sec.	14.10
terminal speed, mph	91.09



Suzuki GT750K

CONTINUED FROM PAGE 50

and there will be trouble. Actually, I don't think this type of riding was part of Suzuki's intent. It's a long-distance machine and lots of long distance riders aren't that interested in making like a cafe racer.

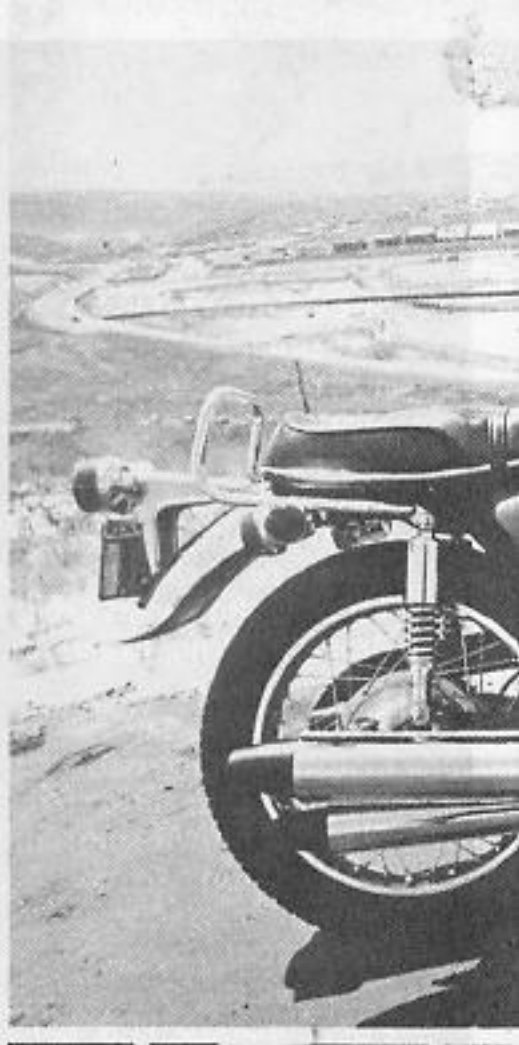
Aside from the clearance problem, I was happy with the handling. One couldn't push it hard enough (without dragging) to really work out the suspension. No changes were made in the frame for 1973, or in the suspension components for that matter, so maybe Suzuki was pretty well dialed in first time around.

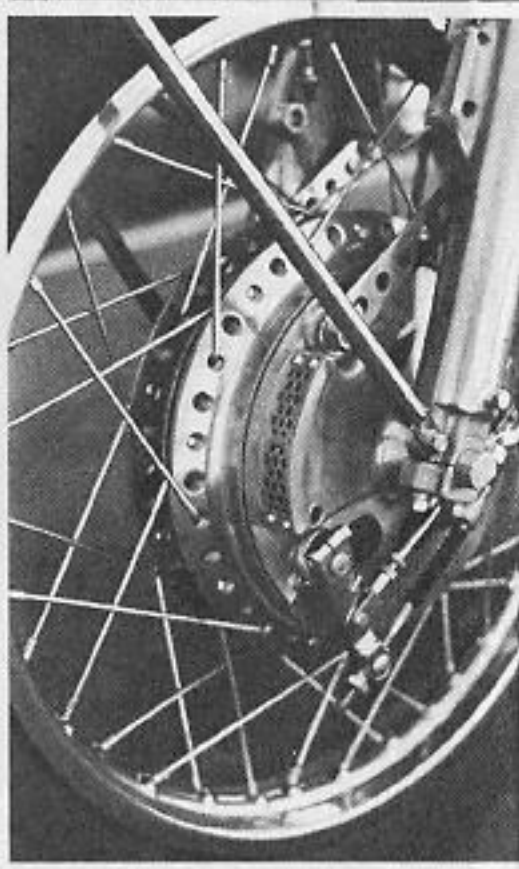
As expected, the brakes were phenomenal. The dual discs offer the rider superb feel, so that he is able to get on those brakes right to the point of making the tire lock...but it never does because this *feel* puts him in control. Mile upon mile of "dive it into the corner—don't get on the brakes until the last second" riding never once fazed the stopping power. So much of the braking load is absorbed by the front units that life is made easier for the conventional drum unit at the rear. Well-done, Suzuki!

At Monterey I decided to take the famous 17-mile drive, but was stopped at the gate. "No motorcycles!" the guard said. "Whatdaya mean, no motorcycles! Why the hell not?" I wondered. "I know it's a dumb rule, but I don't make the rules," he said. "Who does?" I wanted to know. "The property owners...it's private property and they can do what they want with it. Used to have lots of choppers through here...they wanted it stopped. I get paid to enforce it. Sorry." I was angry. I could drive through in my car but not on my bike. In a way, though, I couldn't blame them. Interesting how a few bad ones can spoil it for a lot of good ones. And I don't mean to say that chopper people are bad, but some are and they've fixed it for all of us.

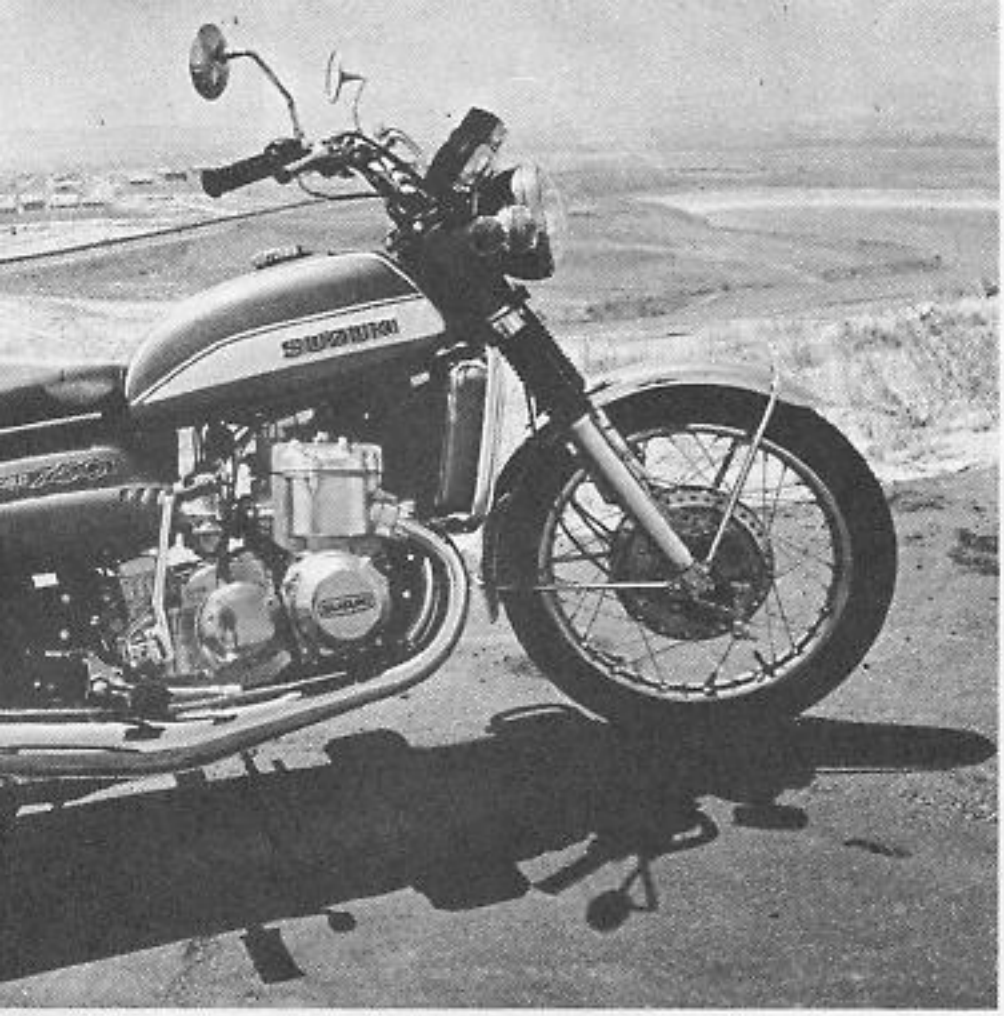
The Suzuki and I went to San Luis Obispo that evening; it had convinced me that it was ready, willing and able to head for the open road, with no fuss involved. The next morning we were home in Newport Beach. I'll go again soon, a different route, a different motorcycle. Lots of people along the way will wave; they secretly wish they were out there too...just passin' through.











SUZUKI GT750

A Posh Tourer With Water Cooling And Authoritative Performance.

CYCLE WORLD
ROAD TEST



SUZUKI'S T500 "TITAN," largest of the twin-cylinder two-strokes in general production, aroused the interest of the motorcycling press several years ago. Critics of the design argued that because of cooling problems, it wasn't feasible to put two large cylinders so close together. Spacing the cylinders farther apart would add to the width of the engine, thus spoiling the lines of the machine, besides adding to the bulk of the engine/transmission package.

But with a sound basic design and Japanese technology, the T500 soon became a machine to be reckoned with in all categories. As a touring bike it is comfortable, reliable, economical, and it comes within a hairsbreadth of being a true Superbike in terms of performance. The last T500 we tested turned in a standing quarter-mile of 14.31 sec. with a terminal speed of 91.06 mph.

Once again Suzuki has introduced a paradox: the GT750. Big, heavy, comfortable, economical and extremely smooth, the GT750 is capable of high 13-sec. standing start quarter-miles, effortless high speed cruising, hairline steering and tremendous braking. It's a Superbike in every sense of the word.

The most interesting feature of the GT750 is the engine, and more particularly the method used to cool it. Water cooling for two-strokes is not new: the British Scott, which went out of general production just before WW II, was the last large-capacity machine to use it. More recently, the horizontally opposed Velocette "LE" 200-cc Twin employed water cooling, but it too is defunct.

Several advantages accrue to water cooling a two-stroke, where heat is an inherent problem because a two-stroke fires twice as often as a four-stroke. Water cooling more efficiently disperses this heat, which can cause piston and cylinder distortion, with a consequent reduction of obtainable power. If clearances between moving parts must be made large enough to avoid excessive friction and possible seizures, this also leads to loss of power from blow-by past the piston rings, and contributes to the mechanical noise of the engine. A properly designed water cooling system can reduce these problems.

Among the negative aspects of water cooling is the need for a radiator, thermostat, water pump (which can sometimes be dispensed with if a thermo-syphon system is used), and a cooling fan, items which Suzuki has managed to skillfully blend into a most attractive package. With the exception of the radiator, the motorcycle is as cleanly styled and aesthetically pleasing as any model in Suzuki's lineup. Moderately valanced chrome plated fenders blend well with the wide dual seat, large instrument cluster and large, slightly bulbous gas tank. Even the radiator, which is protected by a chrome-plated safety bar, finally takes its niche in the design, although it looks somewhat out of place at first.

A transversely mounted two-stroke Three is a design made popular by Kawasaki, with their frighteningly fast 500-cc Mach III. The GT750 engine features horizontally split crankcase halves which support the massive, four-main-bearing crankshaft. The crank has throws spaced 120 deg. apart, giving the same number of firing impulses as an in-line six-cylinder four-stroke. Looking at the engine from the top, we find three sets of contact breaker points located at the extreme left end of the crankshaft which are driven by a flexible coupling. Just inboard is an idler bearing and to the right is a gear which drives the tachometer and water pump. The water pump is a vane-type unit driven by a horizontal shaft and located in the bottom of the crankcase. It has an output of 16.2 gal./min. at an engine speed of 6000 rpm, which compares favorably with many small cars. At the right is a one-way clutch for the electric starter, a main bearing, the left cylinder's flywheel

assembly, another main bearing and the central cylinder's flywheel assembly. Still another main bearing follows, which is adjacent to the helical gear for the primary drive.

Grafted onto the other side of the primary gear is the third cylinder's flywheel assembly, another main bearing and the alternator. The main reason for taking the primary drive from between the second and third cylinders was to keep the engine's width behind the crankshaft to a minimum. This arrangement leaves more space between the numbers 2 and 3 than numbers 1 and 2 cylinders, but with water cooling it doesn't make any difference.

The one-piece cylinder casting is fitted with cast-in iron liners which are not removable. However, pistons are available in two oversizes, and if the aircleaner remains intact and properly serviced, piston wear should be negligible.

Cast-in aluminum cooling fins don't help cooling the cylinder and the head much, but are much nicer looking than a smooth exterior. All aluminum crankcase, cylinder and cylinder head castings are polished to a high luster, adding a touch of class to this unique motorcycle.

A single cylinder head casting with relatively shallow combustion chambers is used, and the outlet pipe from the engine's cooling system emerges from between the center- and right-hand cylinders.

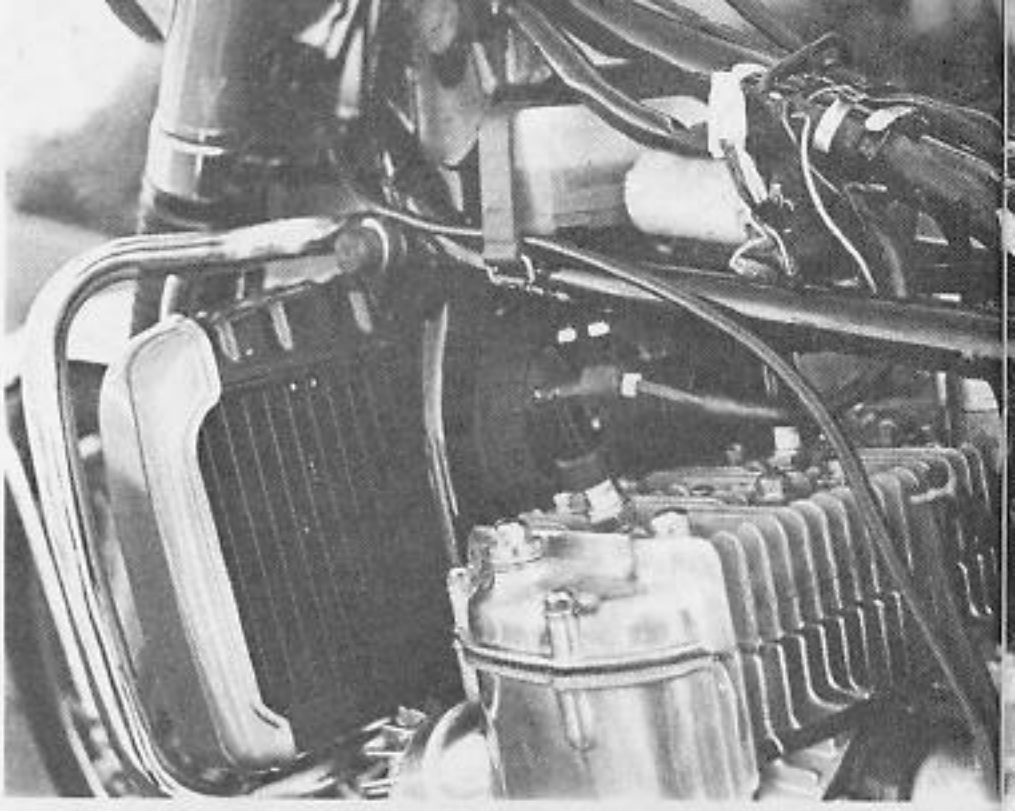
Conventional two-ring pistons are virtually identical to those of the T500 (the bore/stroke dimensions for both machines are the same), and, like the T500, needle bearings support the pistons, and roller bearings support the connecting rods. It is interesting to note that while the pistons and connecting rods are almost identical to those of the T500, the flywheels are smaller in diameter and roughly approximate the size of those used in the TR500 road racer.

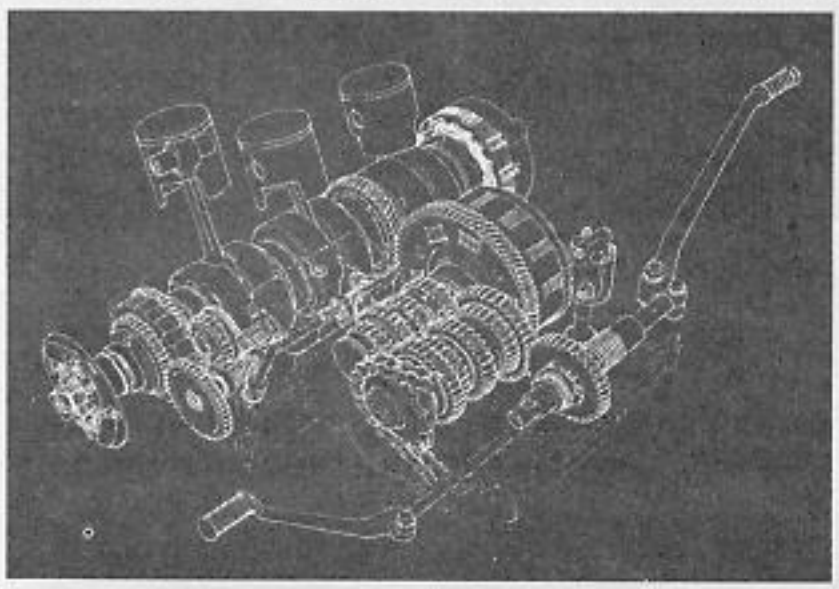
Water for cooling the engine enters the crankcase from the radiator at the front of the engine. The pump picks up the water and pushes it up through the water jackets around the cylinders and into the cylinder head jackets. Until a temperature of 82 deg. C (180 deg. F) is reached, the thermostat remains closed and the heated water is redirected to the pump in the bottom of the crankcase. Complete opening of the thermostat occurs at 95 deg. C (203 deg. F), and if the water temperature reaches 105 deg. C (221 deg. F), the tiny cooling fan behind the radiator cuts in and keeps running until the water temperature falls to 100 deg. C (212 deg. F).

During a series of tests carried out in the Los Angeles area by a team of Suzuki engineers during the hottest part of the year, it was practically impossible to get the water temperature high enough to activate the fan, so there's a good possibility it will be dispensed with altogether. Total coolant capacity is a generous 5.4 U.S. qt., and the system is pressurized as are those on automobiles. Also included in the system is a header tank which further precludes boiling over.

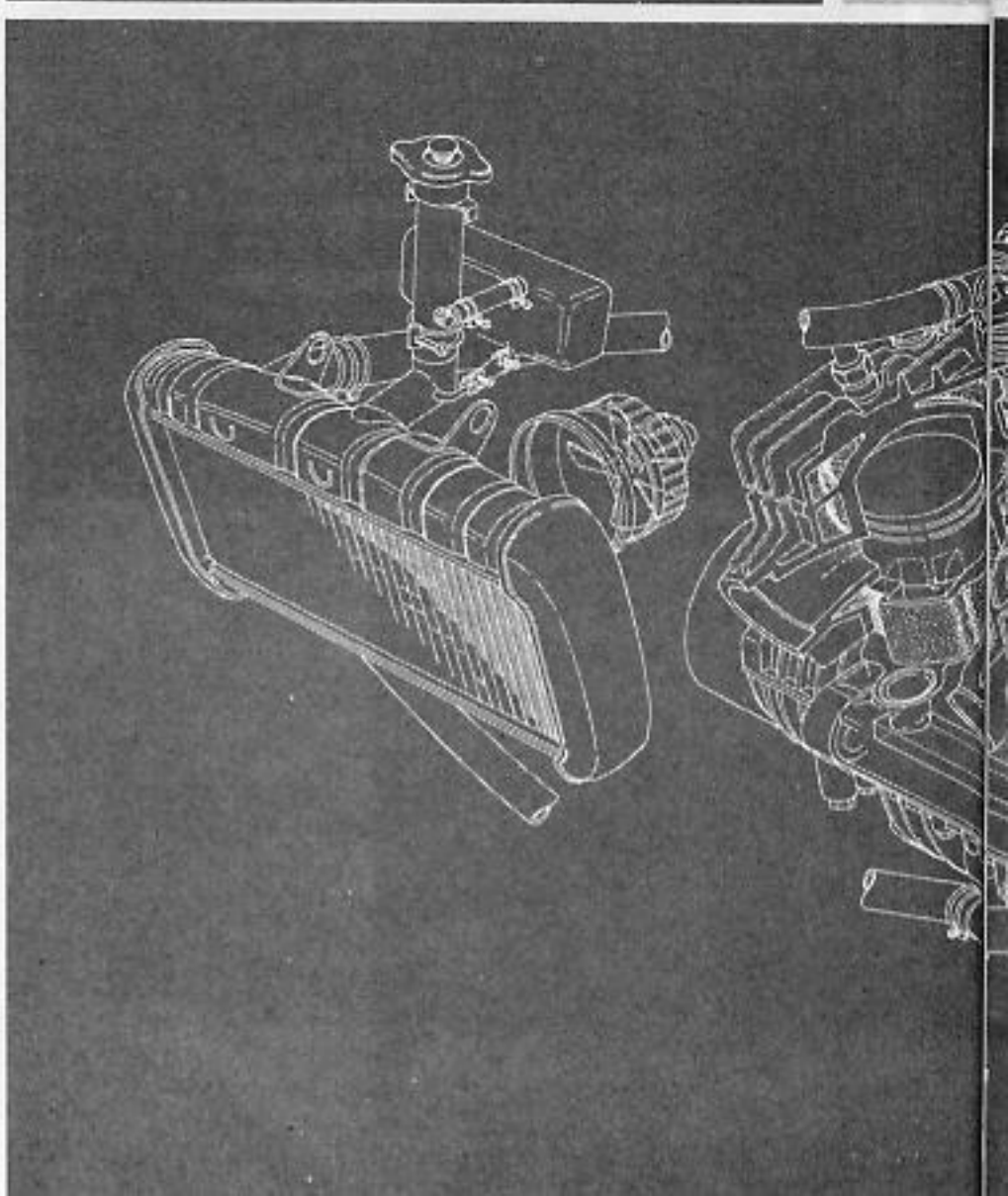
Drawing heavily from their water-cooled motorcycle grand prix experience, and from their work with small water-cooled cars and trucks, Suzuki engineers claim a temperature reduction of some 30 percent over the machine's air-cooled counterpart, a six percent increase in torque and the ability to reduce piston clearance from the 0.0026-0.0030 in. of the T500 to a very close 0.0019 in. An added benefit of the close tolerances is reduced piston noise, which is further lessened by the deadening effect of the water in the jackets.

Silence and smoothness are key words for the GT750. Rubber mountings inside the crankcase attachment points to the frame allow the engine to shake just slightly around 2000 rpm, but above that figure the motor is completely smooth up to maximum revs. Both the handlebars and the footrests are solidly mounted, indicating no need to damp out spurious

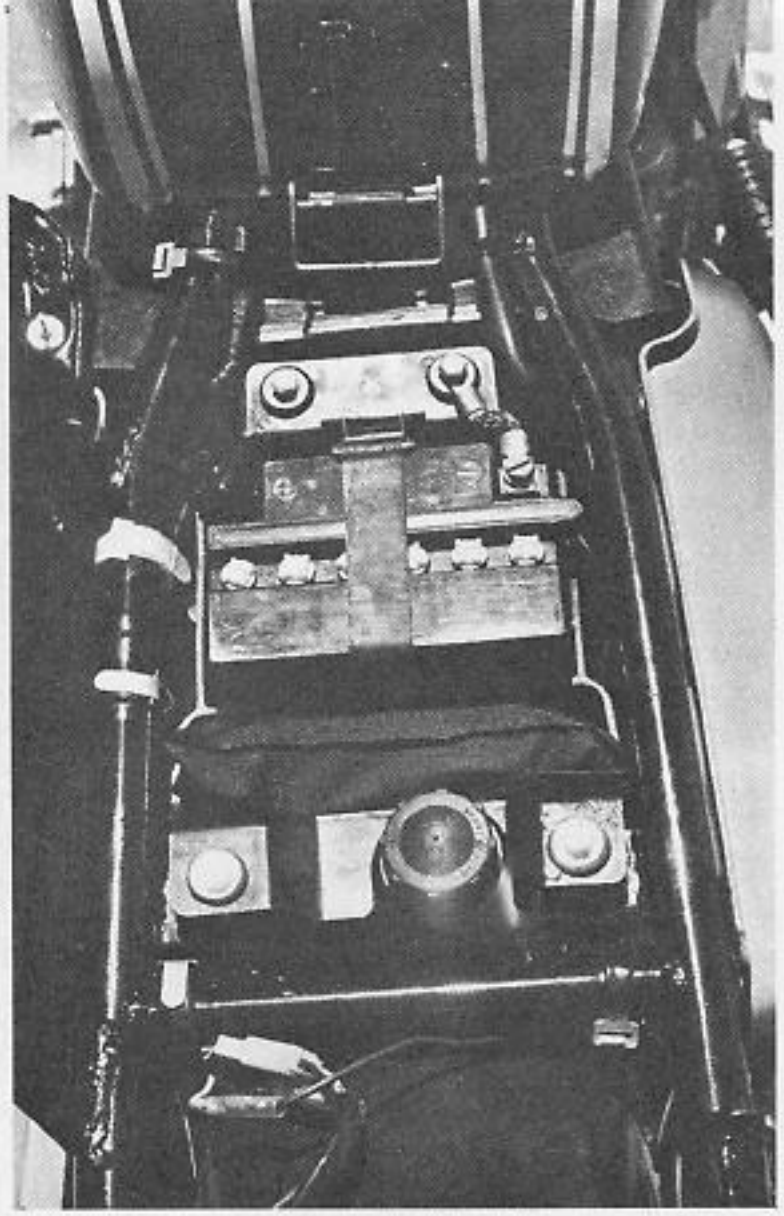




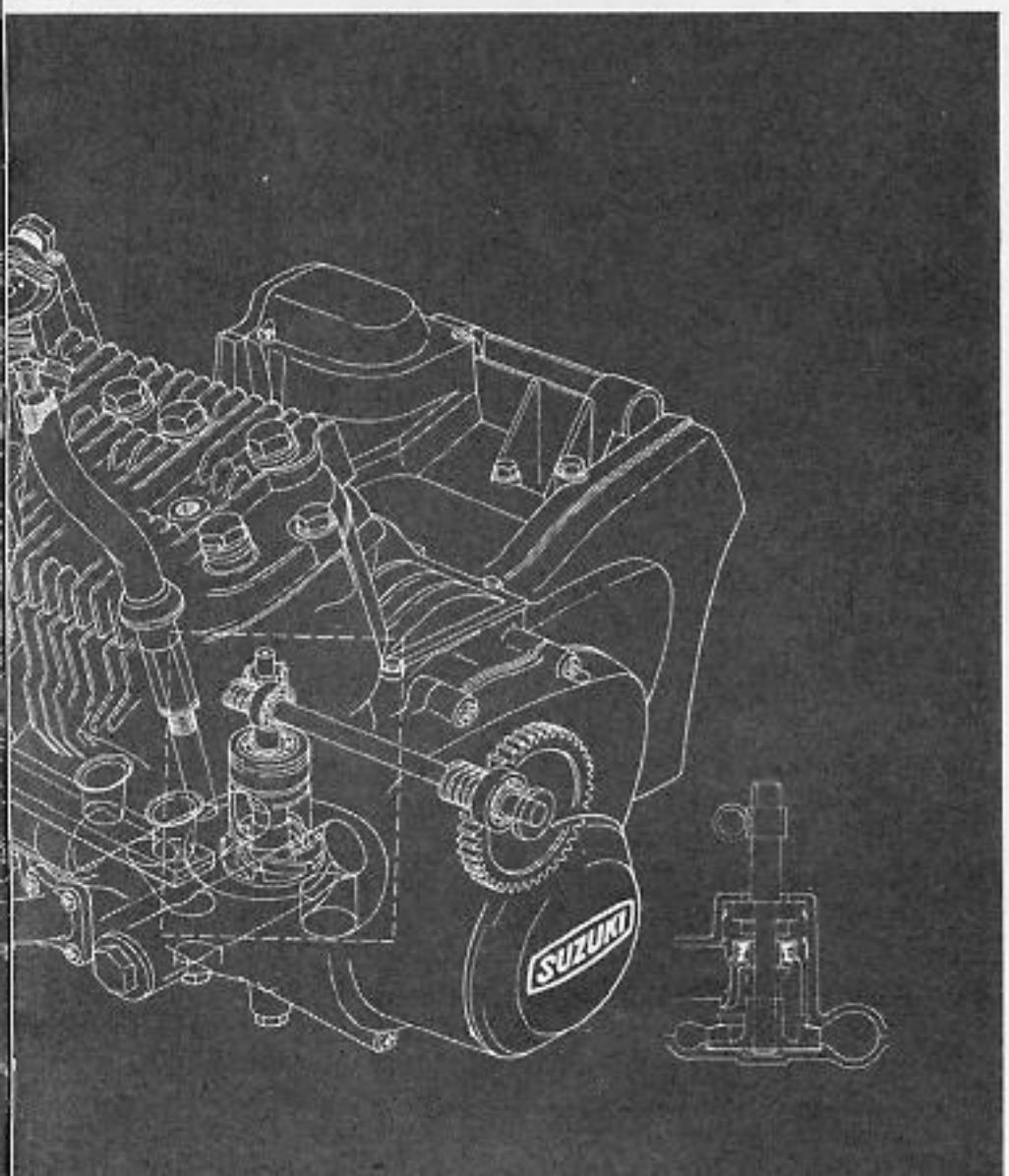








SUZUKI GT750



vibrations at those points of rider contact with the machine. In a further effort to make the GT750 as quiet as possible, Suzuki incorporated an air filter intake system to minimize the intake roar characteristic of two-cycle engines. At the rear of the air cleaner box are two rubber tubes with slightly flared ends through which air is admitted to the filter. These tubes do a remarkable job of silencing, and because they are pointed downwards, it is more difficult for water to enter the filter.

Wanting to maintain as much symmetry as possible, but faced with the large physical dimensions of each of the super quiet mufflers, Suzuki opted to split the center cylinder's exhaust system into two smaller mufflers containing the same volume as one large one. A connector (balance) pipe running between the three header pipes not only aids noise reduction, but increases the amount of torque at 2000 rpm by about 20 percent. Viewed from the rear, the GT750 looks like a four-cylinder machine with its four pipes. The two large outer pipes are tucked up out of the way, while the two smaller inner pipes are somewhat lower but tucked in far enough to preclude dragging on sharp corners. Although the machine's actual ground clearance is only a shade over 5 in., this lowness is near the center line of the bike; the only thing we were able to drag during vigorous cornering was the side stand.

A particularly appealing feature is a gadget to reduce the output of exhaust smoke under certain conditions. When a two-cycle engine is operated at low speeds for a time, unburned oil collects in the bottom of the crankcase where it stays until the machine is accelerated hard, as when going on the freeway, at which time the bike takes on the qualities of a crop duster! This device is a one-way valve in the bottom of each crankcase which is connected by a tube to an adjacent cylinder's transfer port. Instead of collecting, this unburned oil is directed to and burned by the other cylinder and is ejected from the engine at a more constant rate. The same amount of oil is used, of course, but not so noticeably.

Three 32-mm Mikuni carburetors are connected to the twistgrip through a junction box with a single cable, and operate surprisingly easily. A starting enrichment lever (choke) located on the left handlebar lever mount must be used to start the machine on cool mornings. It makes starting so easy, we can't see a reason for retaining the kick starter. Depressing the starter button instantly fires the engine, indicating that less than one revolution of the crankshaft has taken place.

A negative feature of the starting system is that, as is, the crank lever bumps the rider's right calf, transmitting the engine's vibrations to his body. With the kickstarter assembly removed, the entire engine unit could be made smaller and lighter, with a subsequent reduction in the area occupied by the transmission. The transmission design follows previous Suzuki practice with constant mesh gears and one shaft located behind the other along the crankcase horizontal center line. All indirect, the ratios are ideally suited to the power characteristics of the engine; they are not especially close, but making them close would be foolish because of the broad, flat torque range of the engine. Shifting action is very smooth and positive, but we feel that the GT750 is "undergeared" and think a two- or three-tooth-smaller rear sprocket would be more appropriate.

At 70 mph on the highway the engine is spinning at 4500 rpm, many more than are needed to keep it up to speed with a low throttle opening. In fact, the torque curve is so flat that pickup is possible from 2000 rpm in top gear with almost no change in apparent acceleration. We were amazed at the small amount of throttle needed to keep the GT750 moving, and at the large engine's willingness to rev. Also impressive, if not outstanding, was the fuel economy. Dividing our test riding as

we do (70 percent highway, 30 percent in town), we got gas mileage ranging from 41 to 47 mpg, outstanding for a four-stroke of comparable size, and nothing short of amazing for a two-stroke.

Oil consumption was also low. The oiling system on the GT750 is virtually identical to that of the T500 which employs a variable displacement plunger unit that increases its delivery according to the engine's rpm and the amount of throttle opening. A cam, connected to the throttle cable junction box, opens the pump in accordance with the throttle opening. At cruising speeds, the pump is almost shut off, but as soon as the throttle is opened to climb a hill, the oil supply is increased. Conversely, when the throttle is closed, the pump's output is reduced to help lower the chances of the engine's loading up with raw oil.

Two additional outlets at the pump supply oil to the right-hand cylinder, but the system works the same. Oil is injected to all the main bearings except the one located next to the primary gear, which receives its lubrication from the transmission's oil supply. Oil used to lubricate the other mains then travels through the crankpin centers and lubricates the big-end bearings before being flung upwards to lube the wrist pin needle bearings. It is then burned and expelled out the exhaust. There is also an oil feed point in each inlet port to supply oil to the wrist pins and cylinder walls.

At 524 lb. with a half-tank of fuel, the GT750 is just slightly heavier than the Honda CB750 Four, but it feels deceptively light at any speed. In slow traffic the only clues you have about the machine's bulk are the width of the gas tank (which holds a moderate 4.5 gal. because of a cutaway at the front for the radiator header tank and filler), the broad handlebars and the size of the instrument panel. At the top, in between the speedometer and tachometer, is the water temperature gauge. Neutral, high beam and turn signal indicator lights are located on the face of the tachometer, but there is no charging light. Our test machine had a confusing array of thumb operated switches on the left side which will be modified for production. From top to bottom were the headlight switch/dipper assembly, turn signal switch, horn button and a headlight flasher. The right side houses an on/off switch and the electric starter button. Later models will not have a headlight flasher, and the headlight switch/dipper assembly will be moved to the right side.

Like the T500, the GT750 gets top marks in the handling department. A massive double cradle frame features a huge maintube with the radiator filler going through it, running from the steering head back to the rear of the gas tank. It butts into a transverse crossbrace which doubles as the top attachment point for the aircleaner. Two auxiliary toptubes extend from the steering head rearward. They finally terminate at a point some 9 in. behind the top rear suspension mounts to serve as mounting points for the rear fender. The downtubes act as a mounting point for the radiator and continue under the engine rearward to just behind the transmission, where they bend upward and attach with the top tubes under the seat. Diagonal tubes branch from the bottom cradle and extend back to the rear suspension top mounts. Strengthening triangulation is evident here as in the steering head/main toptube area.



The relatively short swinging arm is supported at the pivot point by large bushings, and the tubes are a healthy 1 5/16 in. in diameter. Thick steel gussets which provide mounting points for the bottom of the rear suspension units and the rear axle are uncommonly long and strong. Even under hard acceleration in high-speed corners, the GT750 tracked as though on rails. In fact, the only part of the suspension package which isn't quite up to spirited cornering are the front forks. In keeping with the comfort-oriented idea behind the machine, the forks are softly sprung, but they nonetheless provide excellent control on all but the roughest surfaces. Notable also are the De Carbon-type sealed gas rear shock absorbers featuring a five-position spring rate adjustment. The Suzuki's shocks are very sensitive to small road irregularities, and have sufficient damping to prevent rear wheel hop under heavy braking, or yawing in fast corners.

At first we had reservations about the brakes. With many of today's high performance motorcycles going to disc brakes on the front, it seemed logical that Suzuki would follow suit. They haven't, but the GT750's brakes are just short of fantastic, capable of hauling the heavy machine down from 60 mph in 118 ft. The front brake is little more than two T500 brakes in a single housing with cooling airscoops. Twin cables fitted into a balance bar at the brake lever are adjustable for length both at the lever and at the brake operating arm end. Although the front brake heats up under hard usage, fade is minimal. The rear brake is identical to the rear unit on the T500, but it, too, is reluctant to fade.

Riding the GT750 is a joy which must be experienced to be fully appreciated. The wide, ultra-soft dual seat is very comfortable, although we had a heavy friend who complained that the padding was too soft and allowed his buttocks to hit on the bottom of the seat. Footrests are slightly on the long side, and do not fold rearward. This makes it easy to bump one's calves while "walking" the machine from a seated position. The relationship between handlebars, seat and footpegs was deemed very comfortable by all our testers. The main complaint stemmed from the upright seating position, which doesn't allow the rider to lean forward into the wind at high speeds. The almost complete lack of vibration and unnerving mechanical, intake and exhaust silence give one the feeling of riding a steam turbine. The loudest noise, by no means unpleasant, was the gear whine of the all-indirect ratio transmission and the rear chain.

Our duty pillion passengers also rated the seat comfortable and were pleased with the lack of vibration through their footpegs.

Detailing is exquisite. Heavily applied chrome and lavish use of the buffing wheel on aluminum parts slightly outdid the paint, which was moderately less perfect than on other Suzuki models. Welding on the frame is very good, and all engine parts fit neatly together. Lighting is excellent, with what is possibly the largest taillight on a motorcycle. All electrical components are first-rate, including the neatly routed wiring. We also liked the location of the ignition switch: right in the center of the instrument panel.

Suzuki's most pleasing combination, the GT750 is the most refined, and yet most awesome, two-stroke ever.

SUZUKI GT750

SPECIFICATIONS

List price	N.A.
Suspension, front	telescopic fork
Suspension, rear	swinging arm
Tire, front	3.25-19
Tire, rear	4.00-18
Brake, front, diameter x width, in.	(2) 8.0 x 1.6
Brake, rear, diameter x width, in.	7.0 x 1.6
Total brake swept area, sq. in.	115.6
Brake loading, lb./sq. in.	4.56
Engine, type	two-stroke, water-cooled Three
Bore x stroke, in., mm	2.76 x 2.52, 70 x 64
Piston displacement, cu. in., cc	45, 738
Compression ratio	6.7:1
Claimed bhp @ rpm	67 @ 6500
Claimed torque @ rpm, lb.-ft.	51.7 @ 5500
Carburetion	(3) Mikuni VM 32
Ignition	battery and coil
Oil system	oil injection
Oil capacity, pt.	3.8
Fuel capacity, U.S. gal.	4.5
Recommended fuel	premium
Starting system	electric; kick, folding crank
Lighting system	12-V alternator
Air filtration	dry paper
Clutch	multi-disc, wet
Primary drive	gear
Final drive	single-row chain
Gear ratios, overall:1	
5th	4.84
4th	5.90
3rd	7.15
2nd	9.11
1st	14.92
Wheelbase, in.	58.0
Seat height, in.	32.0
Seat width, in.	11.5
Handlebar width, in.	32.5
Footpeg height, in.	11.0
Ground clearance, in.	5.2
Curb weight (w/half-tank fuel), lb.	524
Weight bias, front/rear, percent	47.5/52.5
Test weight (fuel and rider), lb.	654
Mileage at completion of test	820

TEST CONDITIONS

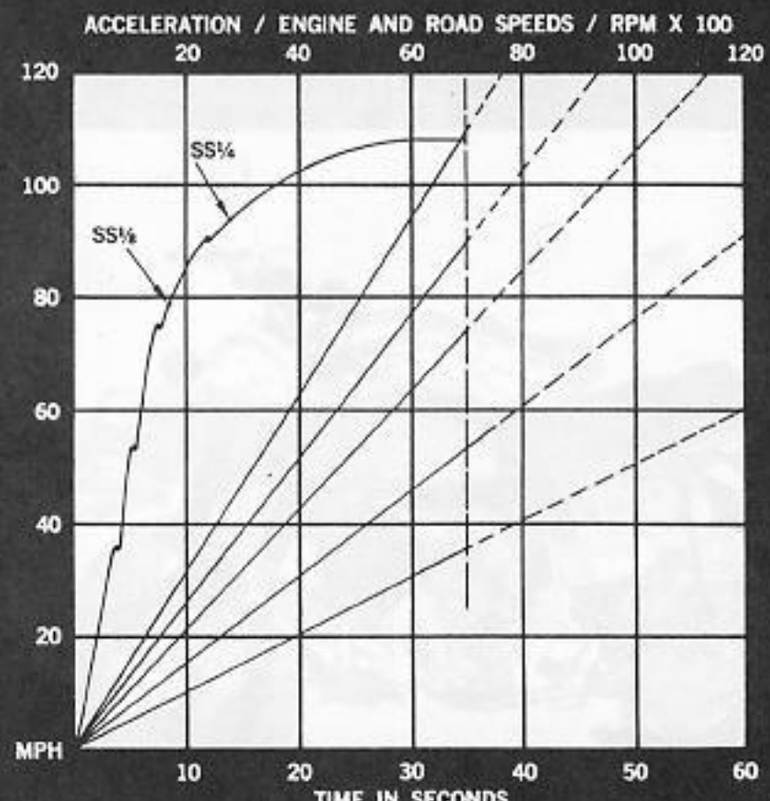
Air temperature, degrees F	81
Humidity, percent	70
Barometric pressure, in. hg.	30.60
Altitude above mean sea level, ft.	50
Wind velocity, mph	10-14

Strip alignment, relative wind:



PERFORMANCE

Top speed (actual @ 6880 rpm), mph	107.27
Computed top speed in gears (@ 7000 rpm), mph:	
5th	110
4th	90
3rd	74
2nd	53
1st	35
Mph/1000 rpm, top gear	15.6
Engine revolutions/mile, top gear	3222
Piston speed (@ 7000 rpm), ft./min.	2940
Lb./hp (test wt.)	9.75
Fuel consumption, mpg	44
Speedometer error:	
50 mph indicated, actually	45.4
60 mph indicated, actually	53.8
70 mph indicated, actually	63.8
Braking distance:	
from 30 mph, ft.	35.4
from 60 mph, ft.	118.0
Acceleration, zero to:	
30 mph, sec.	3.1
40 mph, sec.	4.2
50 mph, sec.	5.0
60 mph, sec.	5.9
70 mph, sec.	6.8
80 mph, sec.	8.6
90 mph, sec.	12.5
100 mph, sec.	18.2
Standing one-eighth mile, sec.	8.38
terminal speed, mph	78.74
Standing one-quarter mile, sec.	13.87
terminal speed, mph	93.55



KAWASAKI 750

AND THE AMERICAN



Kawasaki have built a hard, raw, exciting package – unbelievably irresistible.

IF I HADN'T DONE it myself I would not have believed it possible. A genuine, second gear, downhill wheelie from power only, no yanking on the bars or any of that hucky pucky, just a twist and nearer my God to thee. Yes, the 750 Kawasaki really does go, no doubt about it. I had been riding it about for an hour or so, and had spent the time popping wheelies and rushing up to solid things at a ludicrous rate, then smashing on the anchors, down a few gears, then off again with the banshee wail of a 750cc, two-stroke, five-speed monster. Well, you see, it gets inside you 'cos there really is very little else on this planet outside of NASA that tramps on in such a frenetic way. You can't help but gas the thing everywhere.

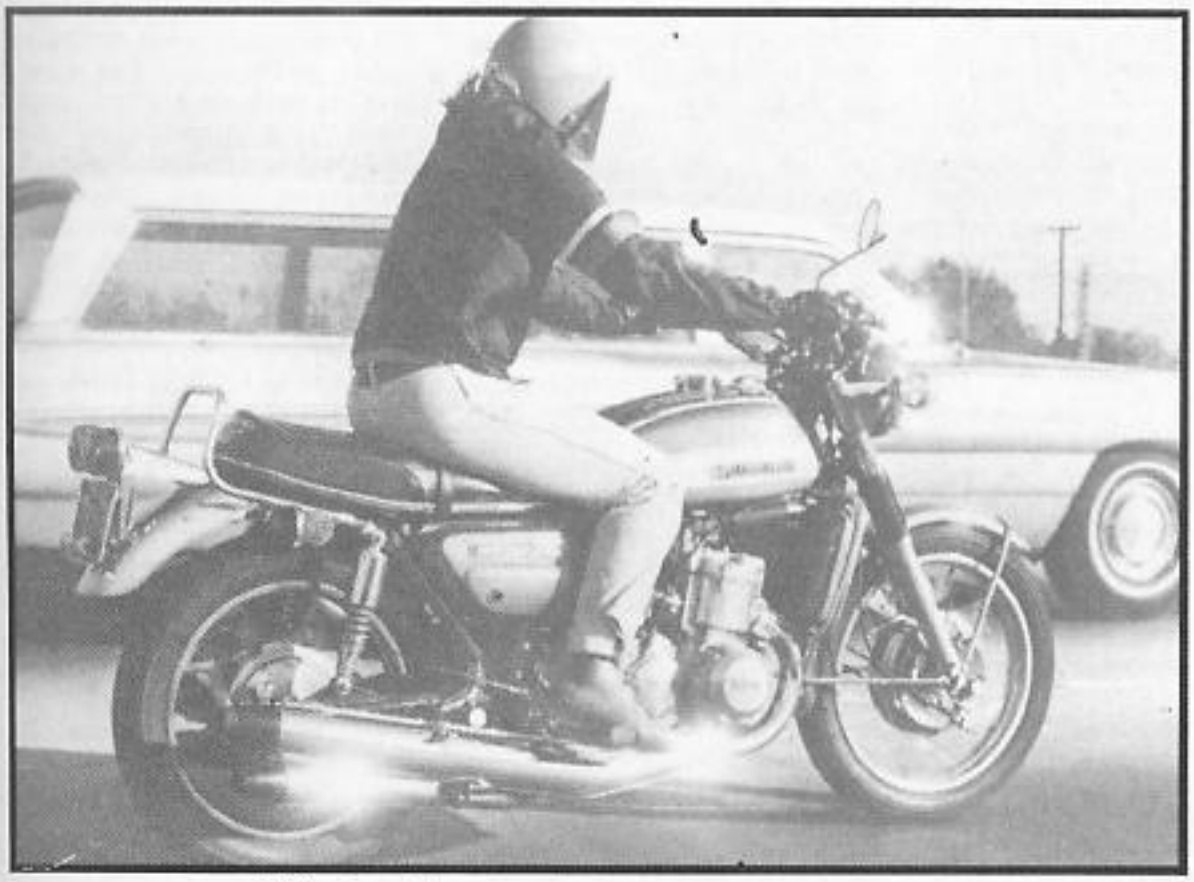
Having made that excuse, I will tell you of how I discovered fear brown. I was riding with a friend, I on the Mach IV and he on a DT1 Yamaha, round the roads circling Beverley Hills. (*Motorcyclist Illustrated* spares no expense to bring you the latest scoop, don't you know!) We dropped down to a T-junction on Sunset Boulevard and made the mandatory stop. Dave gunned into a space in the traffic and after a look over my left shoulder and finding sufficient gap, I dropped the Mach IV over to the right and squirted it. Then all hell let loose. The rear wheel broke away and ran around the front wheel – or rather, would have done, but being a bit of a whizz at the old moto-cross and speedway and that stuff, I steered into it. Thus our fearless tester and Kawasaki's pride and joy did a giant Mauger across three lanes of Los Angeles traffic before finally realising that shutting off the tap might be an idea. Not bad thinking, Batman, but the damn thing then gripped and nearly highsided. A quick Joel Robert body lean and a prayer brought it all back into some kinda order and off we jolly well went, popping a wheelie just to show I wasn't really scared.

Dave, meanwhile, had stopped up the road and watched all this with a face that had the utmost scorn for such outlandish trick shots, while I forced a grin that was meant to inspire confidence. I could see that he wasn't convinced and, looking over my shoulder, I could see that the rest of the traffic was not amused, either. Ho, hum.

Back at base, Dave (who in real life is editor of a 'bike magazine and from whom the Kawasaki was collected) readily agreed that they

SUZUKI 750

DREAM by Alan Baker



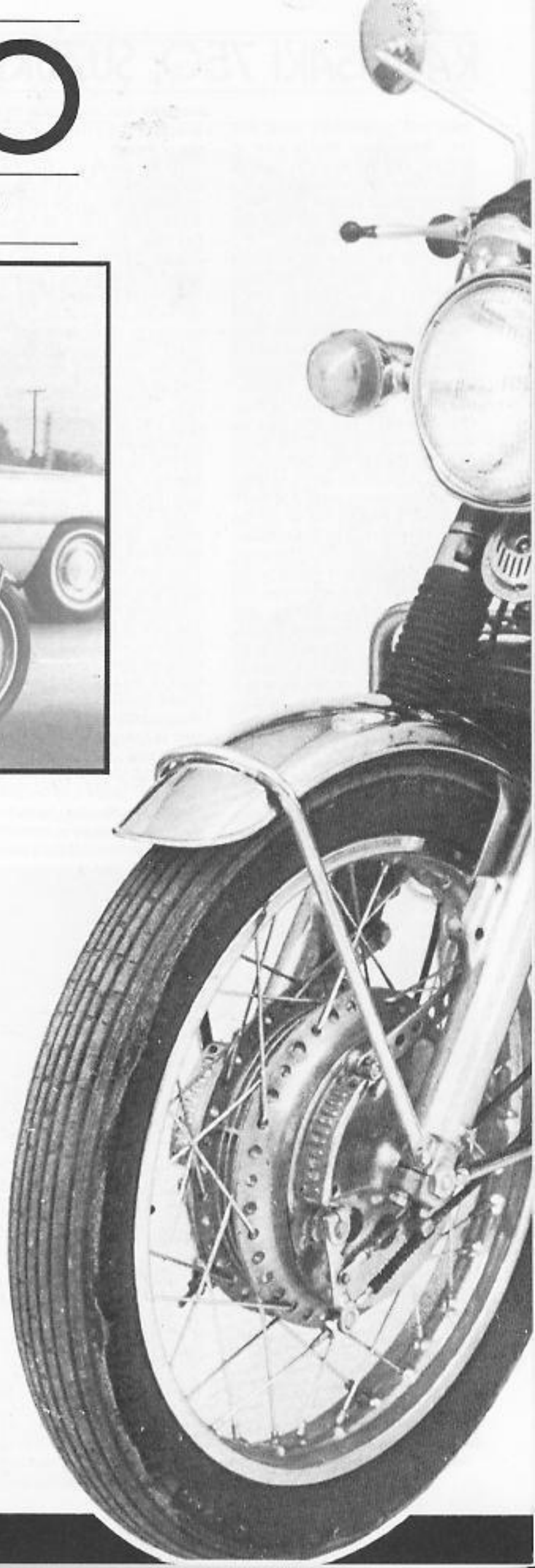
While Suzuki have made a grand tourer, and a very good one at that.

do go, they do. And they do get out of shape so easily, these big, powerful 750 two-strokes, so quickly that we got down to discussing the thinking behind them. With the instability of the American motorcycle market – by this I mean that it is still going through its birth pangs, as witnessed by the still staggering growth rate – the market just has not settled to produce its own definitions. The new crop of superbikes has shown this very clearly.

The existing 750s are a bit tame in comparison to this raw new challenger from Kawasaki. It is as if Kawasaki has thrown the gentleman's agreement about these 'bikes out of the window. The BSA/Triumph threes, Honda's 750 and Norton's Commando are all civilised in comparison and, really, when you consider the specific power outputs of all of them it is not hard to see why the Kawasaki is such a mind tweaker. It claims 74hp and this is just on 100bhp per litre, which is terrific. It is also several bhp up on the opposition, for various tests have found a true 52hp from the Honda, for example, at the rear wheel. The Kawasaki feels as if it has the power claimed, so even 65hp at the rear wheel would boost it to the top of the league by so much that it would be hard to catch with anything.

But more important is the way that it does it. The power is there from nothing on the clock save the maker's name, right up to a low top limit of 7000rpm and it can be transmitted through the delightful geartrain very quickly. Plus the fact that 3 cylinder strokers tend to accelerate rapido. The problem is that it is not a together package and is one which really gets out of hand so quickly it is, quite literally, lethal. The implication in that statement is so strong that before Kawasaki come leaping upon me with a ton of legal bricks let me say that, technically, if you had to produce a 750cc three, two-stroke, then Kawasaki have done a very competent 1971 job. What worries me is the marketing decision to produce it. Certainly the formula is correct, for I expect that all over the world motorcycle enthusiasts are not sleeping straight at nights, wishing for a blast on one of these jets. But notwithstanding, I still reckon that most of the people leaping on this beast will scare themselves silly within the first few hours. And some of them will be a bit bent and split, because the

Continued on next page



KAWASAKI 750, SUZUKI 750

bike will outperform itself and you. Remember that in a lot of places, and America is one of these, there is no training capacity like our 250cc learner limit, so a raw novice can buy one and tear off on this as his first bike.

Having sounded off like the local parson about the delicious delights of all that's bad for you, I bet you're all dying for a go, right? Well, that is just what this thing does. Just as Dave Minton said in December about the S2 Kawasaki 350cc, these are only "movin' machines", nothing more or less. Only, where the 350 can be wanged on at the end of the throttle cable, the 750 very rarely needs the top stops on the carbs, as there is so much scenery around to make one cool it enough not to try flat out everywhere. The test was carried out in the environs of the greater Los Angeles area which is one hell (literally) of a sprawling 100 miles by 70 miles of freeway and suburban 25mph speed limits. Even the freeways are 65mph limit, so most of the time you just cannot get going on the thing at a good fast lick. So, not surprisingly, seeing as it was built for this very existence, it does not like running at 25mph or 65mph constant, not even any speed constantly. Out at the next state, Nevada, there are no speed limits but that is 350 miles away, and the thought of those miles on this machine was too much to entertain. It is not a tourer in any manner of means.

At all times it "fidgets" and makes you want to change gear or accelerate, put on the brakes or try some stunt. It is a most peculiar feeling, for the throttle cable seems directly connected to the speedo cable, so very precise control over road speed is obtained by minute movements of the twistgrip. The drawback is that every little relaxation of concentration produces acceleration or deceleration, giving a very tiring ride. The easy way out is to just play round-the-block racers and try going flat out everywhere, then nicety of control means nought. Seems a waste, though, for a big lump like this.

On top of this the styling is great. The new tank and seat combo are just right, in my eyes. They look terrific, with the tail unit matching the blue of the tank and continuing the multi stripe motif. The seat is long and is one of the few dual seats that have enough room on them for two. Round the back of the seat is a grab rail which is now state law over the ditch, and is a great idea for first-time passengers to have something to cling to. The whole seat flips up and leaves a little tail bit with a cubby hole for bits and pieces to be stowed. Unfortunately, you have to wrap them up as they have a tendency to fall into the road if they are loose.

The 'bars are ginormous, like a pair of arms trying to encircle you. When the plot gets all out of shape, instead of them being a boon they are so far away from the action that they seem to require being pushed round like a tiller to get the steerage the way required. At first, it was like a couple of wrestlers locking arms and going into the initial sparring – first prize being a pin fall on the ear.

The cockpit is typical Japanese and that is high praise indeed. They really have the control systems buttoned up as far as I am concerned, for they put buttons etc., where they can be reached. There being no electric start, the switches are simple with lights and dipping plus the indicators, all in easy reach. The long, alloy, ball-ended clutch lever has a strong clutch on the end of it. It is much heavier, though sweeter, than the 500 Mach III clutch or the 750 Honda clutch. The clutch was fussy, depending on the abuse it had had. At no time was there trouble, but it needed little adjustments all the time if clunks were not to be had, changing gear after doing lots of clutch starts with high revs on board.

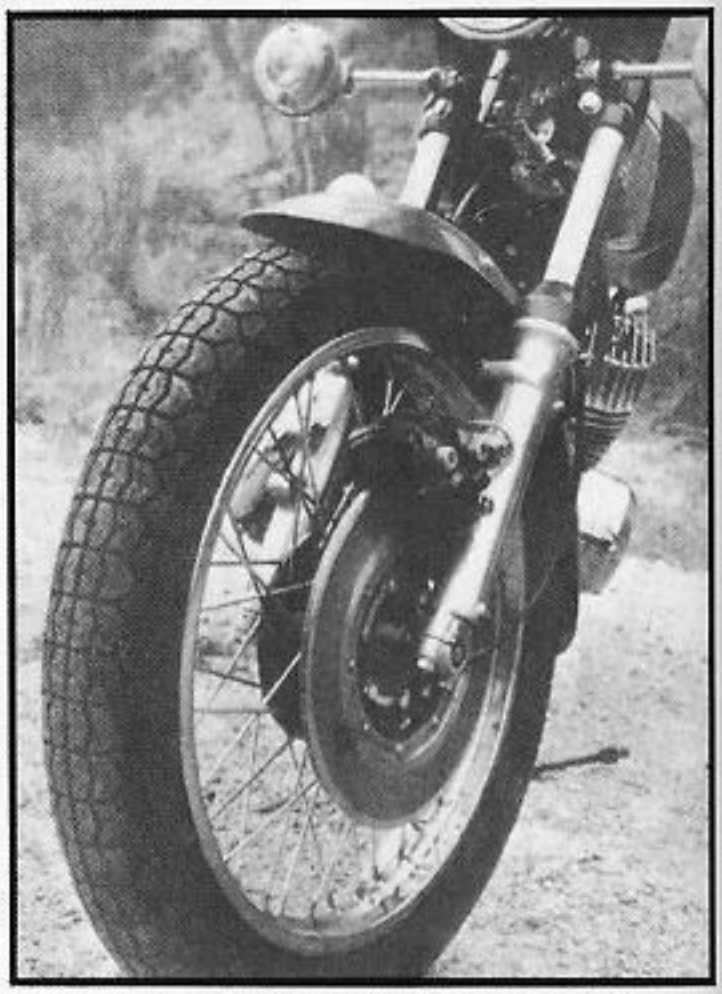
The front brake is a disc unit in the current Japanese vogue and quaintly called "retro rocket discs" in the publicity hand-out. The same hand out also claims a braking distance of 40ft from 31mph, which is terrible. The actuality feels about the same, though; namely, terrible. The problem is not so much stopping the front wheel as stopping the 'bike. A most unwelcome feature this, especially as the plot develops into a braking situation very quickly. The brake doesn't grab or fade, it just doesn't stop the 'bike like it should. High pressure locks the front wheel but this does not stop the 'bike, which sails straight on whatever. The front end does not dip reassuringly while locking up either, so I give up trying to explain it. Just add a bit of leeway while trying on this one. With disc front brakes, I feel that rear should be a bit superfluous. This one was up to the job, but on its own it was not enough to make up for the rather disappointing front unit.

Playing dragsters

NOTWITHSTANDING THE rest of the 'bike, the heart is the power plant. The formula when first unveiled on the Mach III was a mind-blower and still the adrenalin factor is there, for a 750cc, three-cylinder, two-stroke, air-cooled, five-speed, electronic-ignited, unit construction assembly is still something to behold. When sitting on the 'bike, the "outside" cylinders are plainly in view, like cast aluminium toast racks. They sure look purdy, though. The unit is shallow and not very long but ain't 'arf wide. The kick-start is at the right-hand back end and is a long, prodding lever what folds out to clear the mufflers



This time, a gentle meander, but the Kawasaki did turn nasty and almost hurled our tester to his doom.



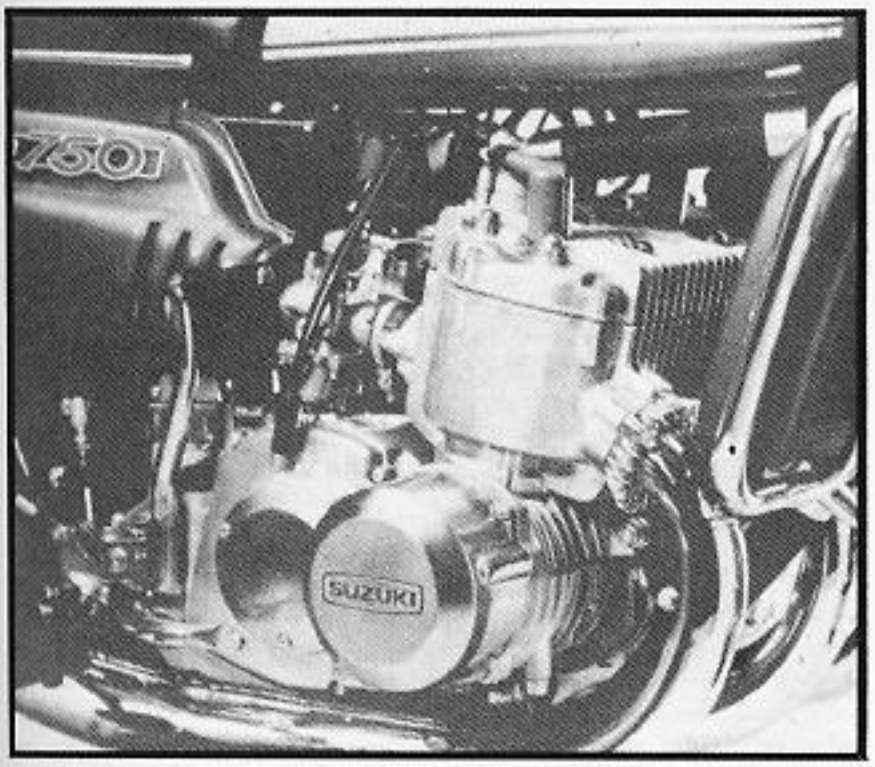
Front brake of the Kawasaki is quaintly called a "retro rocket disc" by the makers.

KAWASAKI 750, SUZUKI 750

– or as Kawasaki have it "Mosport styled mufflers". The mufflers are so huge that they have horrid, amateur-looking dents smashed in the tops for the gearchange to clear and the brake and kick-start on the right side (controls being standard Japanese). The gearchange is "return shift" with neutral all the way down at the bottom. Bottom gear ratio is surprisingly high. We thought this might have been to try and stop the number of low-level looping Kawasakis that would be around if they had a normal first gear ratio. This was what caused the clutch to get a bit finicky after a morning playing dragsters. The claimed 12.0 sec dead for the quarter is probably possible, but not easy to achieve and, in fact, we got down to 12.4 sec, but no closer than that.

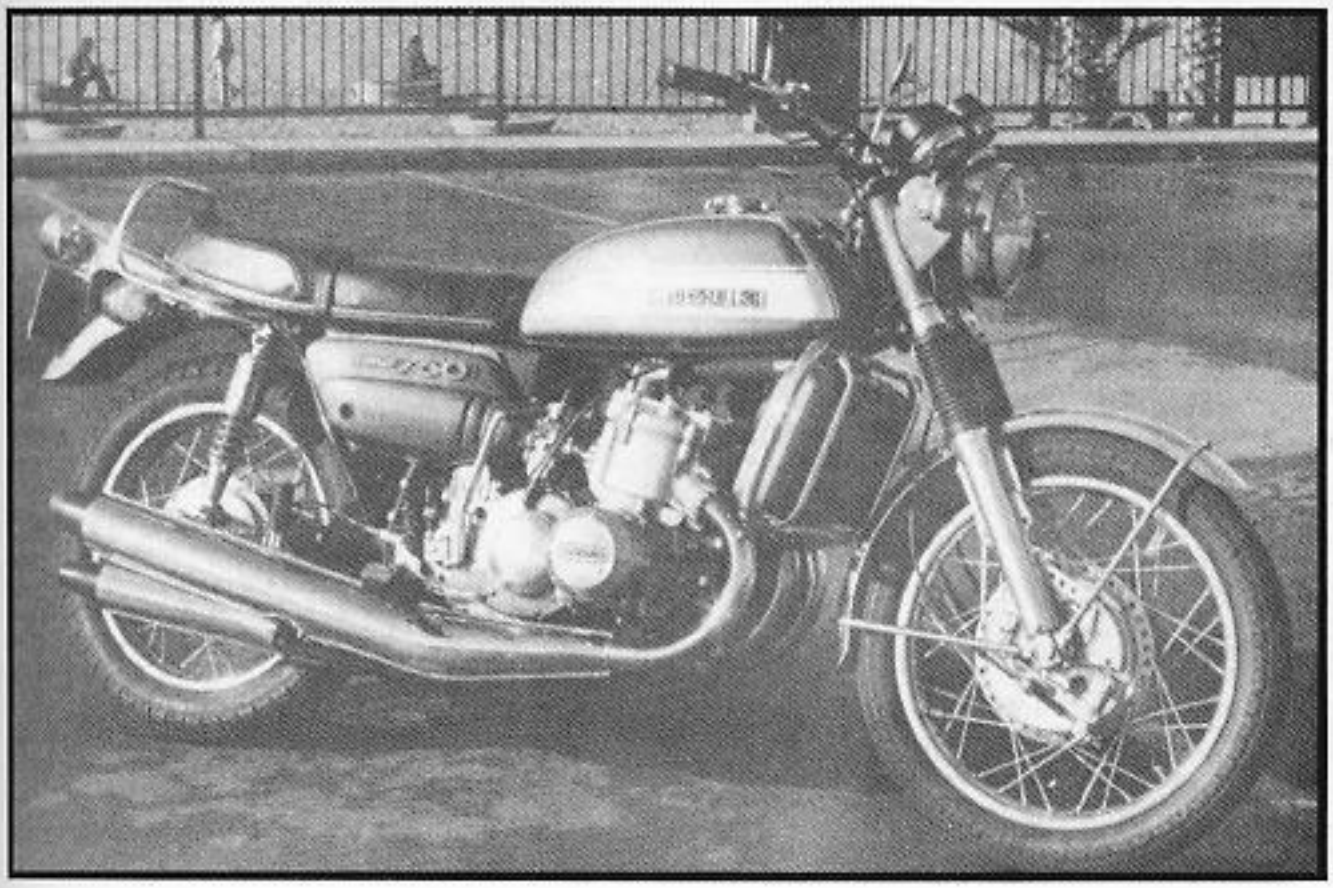
More interesting were the erratic performances achieved. This was in no way the fault of the 'bike, which ran beautifully all the time, although requiring frequent trips to the bar for both petrol and oil for its separate Injectolube system. The trouble at the strip was that the all-important thing was to get out of the hole super quick and thus get a good time. With the bars coming so far back it was not possible to sit well forward and take off at 7000 in second and spin the rear wheel, for with the high centre of gravity and the rear weight bias of a short engine it would grip rather than break loose, and stand on end. This was aggravated by the engine having gobs of torque everywhere – and when it gripped, by the great tuner in the sky, it just shot up vertically.

Thus a good run was one where, for most of the time, it was under control, yet no run was made where for the whole time the 'bike was on full throttle acceleration. Hence, 12 sec flat would be possible if you could tame it. Taking all the troubles of control into account, it does go, and is the fastest thing short of a Dunstall 810 that I have ever ridden. Interestingly enough, the Dunstall returned 12.0 sec for me, though 11.7 for another tester on the same day was easy to achieve, as it had a better seating position and lower c of g, and a superb flow of solid power that broke the rear wheel loose for a full 100 yds. From there on it was just flat out through the gears.



LEFT: The watercooled jacket of the Suzuki is beautifully polished. Encasement . . . gives a mechanically quiet engine.

BELOW: Suzuki have been a bit quiet recently, but have succeeded in making this very sanitary piece of machinery.



Suzuki GT750

IF THE MACH IV COULD have been ridden like this, I think it would be a close thing, but then the Kawasaki would also need Dunstall discs and handling to cure the rest of its problems. The handling was a bit like a speedway rig for it felt like it was going round turns standing upright. The 'bars had to be turned into the bends to get it to go round, rather than the lot being dropped in. I suppose this amounts to an American market compromise for people who want a straight-line block racer.

And that is the Kawasaki Mach IV. Not my favourite 'bike, but one of the most exciting I have ridden for many a long day, although I never felt I could actually live through one.

Just at the end of my stay in smoggy L.A., I had the offer of a GT750 Suzuki for the weekend and, being a bit greedy, I thought this would be a good chance to ride another of the superbikes, although not with enough time to actually film much and take test figures. As things turned out it was shortened to one day. However, it was a very pleasurable run round on what should have been the nearest thing to the Mach IV that man could devise. It turned out that they were like chalk to cheese. Technically, you add water cooling and an electric starter to the Mach IV and take off the disc and use a conventional 2LS double brake. Actually, that is something where a twin 2LS is considered a bit technically average these days. Best thing of all was that this brake was terrific. A claimed figure of 35ft from 30mph is not good, but it felt a lot better than this and certainly hauled this 500lb plus (yes, 524lb was the test weight!) 750 down most impressively. The thing with this 'bike is that it is a tourer in the grand manner and was a very relaxing ride. It would waffle along at constant speeds and these could be from a little over 30mph (which is 2000rpm) right up to a top of only around 100mph. The unit has lots of torque but runs out of puff from about 6000rpm. The maximum torque figure claimed is 51ft/lb at 5500, which compares with the 57ft/lb at 6500 of the Kawasaki. This, in conjunction with the added 100lb weight, gives a claimed 13.7 sec quarter. This puts this 'bike in the Honda 750 class and the two really are to be compared, with the Kawasaki as the odd man out. One of the nicest features was the superb elegance of the ride and the quietness of the unit. The water-cooled jacket is beautifully polished and the

encasement of the noisy bits in water gives a mechanically quiet engine. The intake roar is well silenced and this, plus the efficient, if funny-looking, four pipes gives a truly sophisticated touring two-stroke. Though I did not measure it, the fuel figures that other magazines are achieving are a shattering 44mpg overall average. The Kawasaki would not run 80 miles on its 4.5 US gal tank, yet this 'bike had a range of 180 miles from the same amount of gas.

Things have been a bit quiet from Suzuki recently and the GT750 is the obvious reason. They have put in a lot of very hard work to achieve technical excellency with this machine and they have certainly succeeded in making a very sanitary piece of machinery. Taking, first of all, the water cooling system, this features a pump to accelerate the water round the hot spots. The pump shifts 16.2 gal at an engine speed of 6000 rpm. This gives very well controlled cooling and thus minimum distortion to the cylinders which are, of necessity, subjected to a heat gradient between the hot exhaust and the cool inlet. The barrel is all in one piece, but the pistons can be supplied in oversizes rather than removable liners or chrome bore, which would make rebores prohibitive. Drive is taken from between the end and middle cylinder on the right side, which gives asymmetrical spacing. With the water cooling this does not matter as suitable passages have been devised to allow for this. (This is allowed for using water cooling and is not noticeable in the external appearance.)

The radiator is mounted across the frame at the most obvious place, but what is difficult to see is the header tank and the small electric fan behind the radiator. The header is filled by a flap in the front of the gas tank and then sealed with the usual car-type rad cap. The fan cuts in when the temperature reaches 105°C and cuts out at 100°C. The thermostat in the system is fully open at 95°C and this results in a quick warm-up, yet safe operating, even in desert type freeway conditions. This really has to be the most sophisticated cooling thus far on a 'bike. Round the radiator is a chrome crash bar and the whole lot looks all right, actually. The complete engine is rubber mounted to take out the tingle due to the secondary out of balance inherent in this unit. The primary forces are in balance so it is not the same sort of system as the Commando, which needs lots of movement, but rather one to just isolate the tingle. Indeed, the unit is virtually vibration free over 2000 revs.

The three front pipes on the exhaust have interconnections like the balance pipes on BSA/Triumphs and, apparently, this gives an increase in torque and a reduction in noise level. One of the best features of this 'bike is the uncanny mechanical and exhaust quietness. About the most annoying noise now is the gear whine from the straight cut gears in the box and the frantic jangle of the drive chain. Apparently, these 'bikes are eating rear chains and seeing the load and power, I am not surprised.

Another crafty little device which shows that Suzuki really care is a one-way valve that stops build-up of excess oil in the crankcase under light load conditions. Consequently, when the throttle is yanked open there is not the familiar pall of two-stroke haze left for all to see. The excess oil is directed up to the transfer ports where it is burnt during these off-load conditions. Rounding off this very sensible package is the World's Largest Rear Light. So, if you missed it as it arrived, you'll never miss the going of it. It has virtually two complete rear lamp units mounted right across the top of the licence plate.

So that is the newest choice to challenge the other 750s. Kawasaki have built something that captures your imagination in a hard, raw, exciting package that is unbelievably irresistible to, at least, have a go on whereas Suzuki have made a grand tourer, and a very good one at that. The packages are so nearly identical that the difference between them is difficult to comprehend. In the ensuing sales battle perhaps there will be enough buyers for both of them and Hondas *et al* to all claim success. Or perhaps Harley Davidson will come through with their latest 1300cc Duo Glide. Who knows? I don't.



Kawasaki 750 and small friend – Yamaha DT1. Fun machinery from the opposite ends of the strata.

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SILENT RUNNING



THE SUZUKI GT-750 COMES OF AGE

BY PAUL S. WILCOX

Ever notice how motorcycle magazines always save the Dynamic Statements till the very last? You know, those statements like, "The Belchfire X-509 is the finest in its class — a real performer . . ." Or, "The bike was found to be very evil-handling, unreliable, and generally a terror to ride . . ."

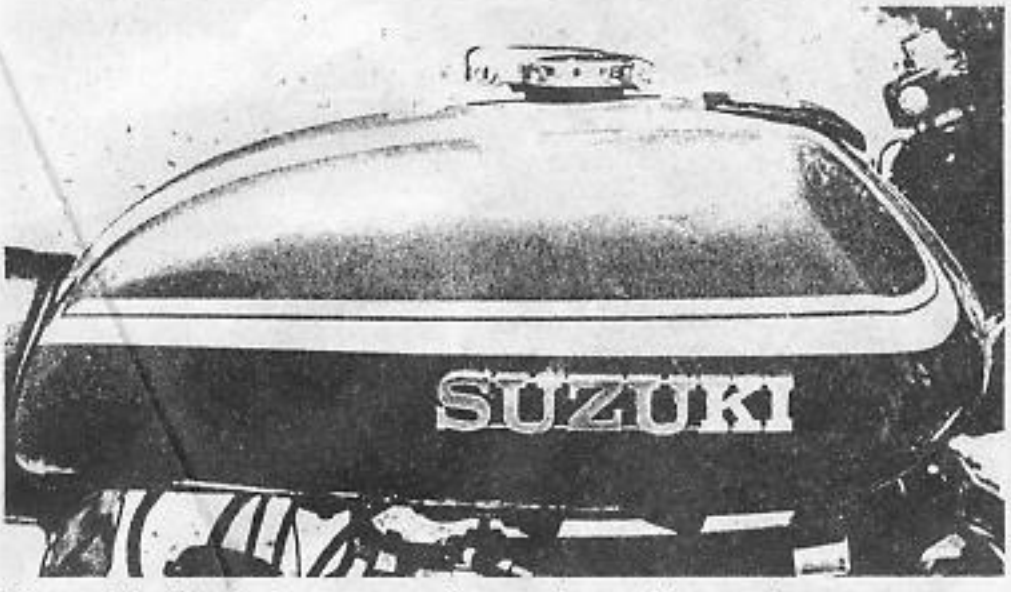
It's a semi-sneaky way to get you to read all of the test before any hard, cold opinions are let loose. Because editors of motorcycle magazines are supposedly low-key, unopinionated middle-of-the-road types.

Ideally, at least.

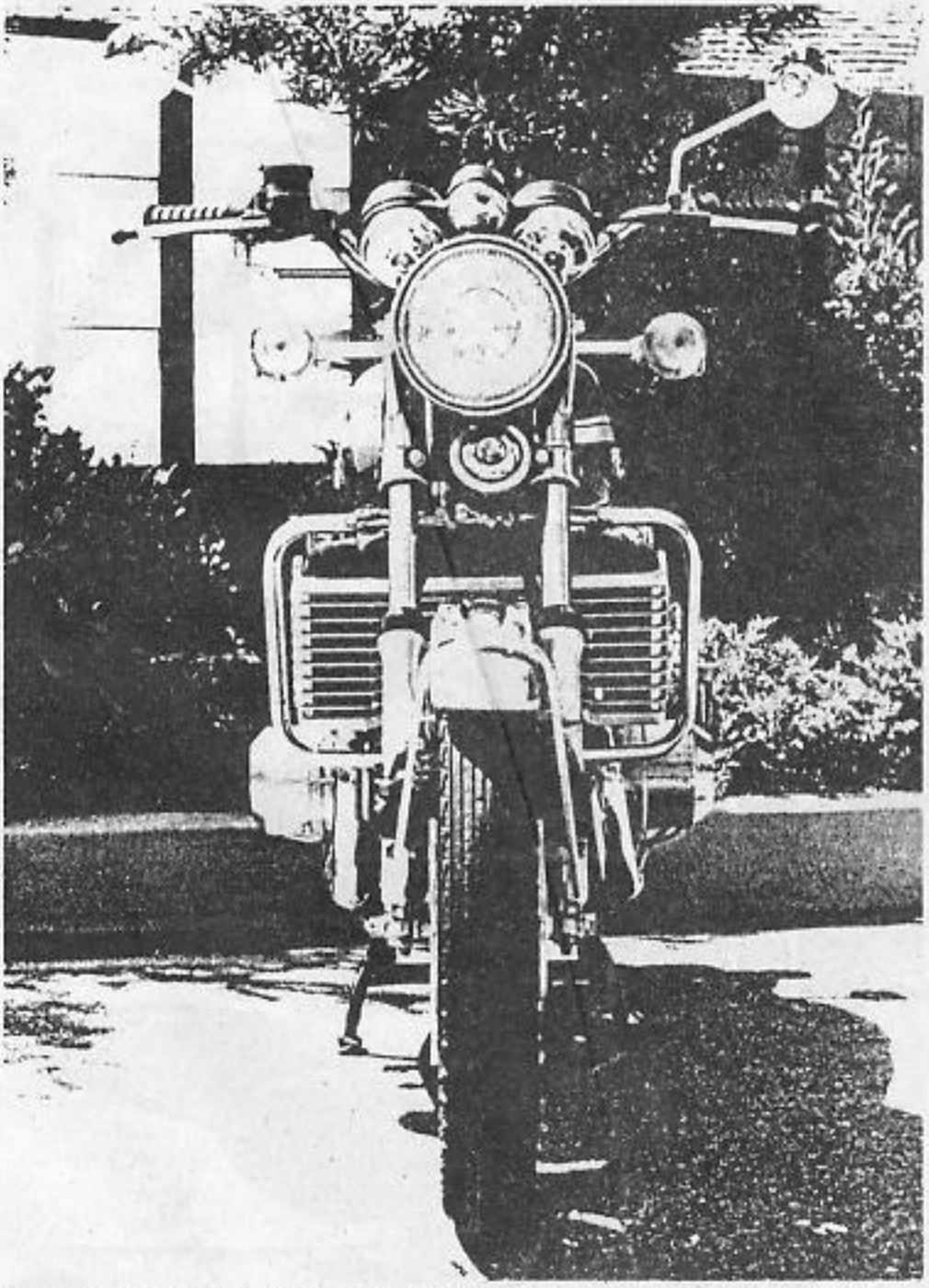
And on that note . . .

The Suzuki GT750 LeMans is, to date, one of the finest and most enjoyable touring machines on the market. This includes bikes like the BMW, Moto Guzzi, Honda 1000, Kawasaki Z-1 and so on. The LeMans is smoother than any of the aforementioned machines. It's quieter, holds the road better, stops faster and is less fatiguing to ride for long distances. Argue if you like, but we've ridden them ALL.

On top of that, it's one of the most



The tank holds a little over 4.5 gallons and provides a good touring range. Small door in front of gas filler is for access to radiator cap.



Even though the Suzi's head-on profile is wide and cumbersome looking, it is actually quite agile at all speeds. The headlamp, by the way, can be replaced with a $1.19 automotive unit, and gives superior illumination.

reliable machines to be found anywhere, and is far less expensive than its competitors.

So there, traditionalists.

But still, not many people like the Suzuki very much. Sadly, many of Suzuki's finest machines have a serious handicap — bizarre styling. Much of the bikes' real beauty is covered up with contrasting lines, flashy plastic and assorted doodads.

The evolutionary cycle of the GT750 is an interesting one. In 1972 the machine was introduced in a mind-boggling shade of Shocking Purple. It had four of the strangest looking exhaust pipes in the industry — which very closely resembled Martian ray-guns. The radiator trim panels were of the same sickly purple as the rest of the bike. It had one of the ugliest front brakes in history — a quadruple leading shoe drum brake of massive proportions which sported 20 pounds of levers, cams and cables. But the bike was quiet, smooth and quick.

In '73, some of the lines were cleaned up, and the shoe brake was replaced with a dual hydraulic disc setup — one of the finest units around.

But it was still ugly.

In '74, the bike started to come into its own . . . the ray-gun pipes were dropped and new pipes with clean, simple lines were adapted. The side covers, which were formerly a lot like a Dali original,



The dual disc arrangement stops the bike INSTANTLY. Front forks give an excellent feel through the turns, and a soft, cushy ride on the open road.

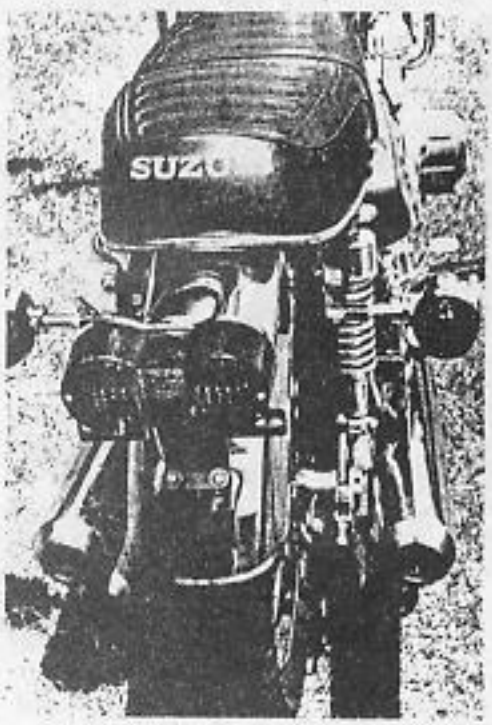
became less flashy and more appealing.

And the latest model is looking better than ever — basically the same as the '74 version, but with more attractive paint work and more subtle striping. A little less flash, a little more civilized. With only a minimal amount of work, the owner of a '75 LeMans can have a very good looking machine.

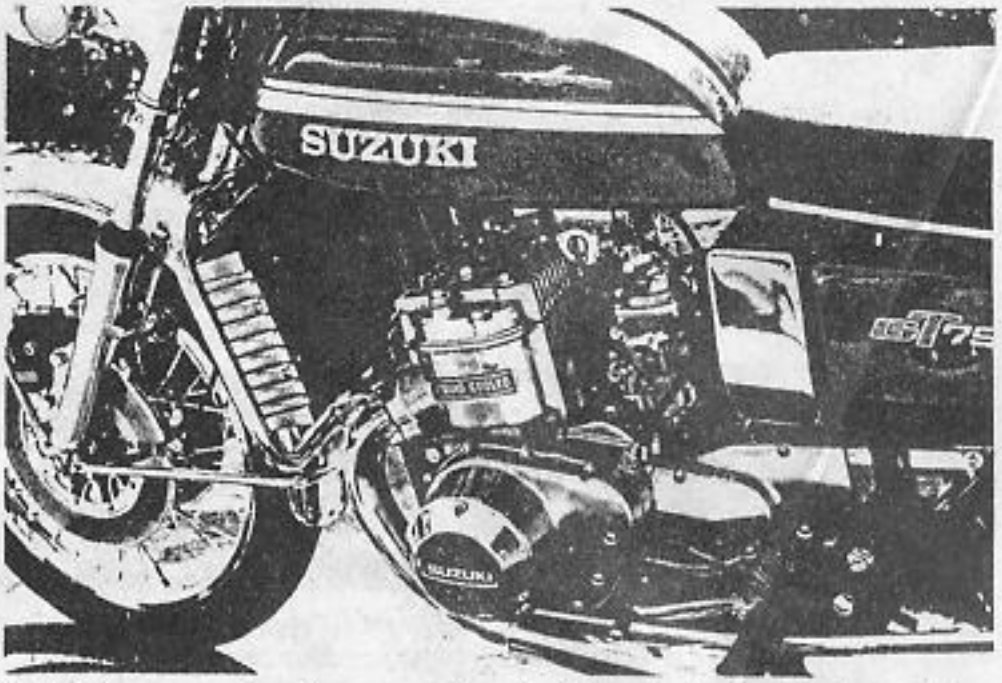
Of course styling isn't the only thing that has changed in the last few model years . . .

A year or two back, the standard Mikuni piston/slide carbs were replaced with three constant vacuum Mikuni units. The old carbs were troubled with air leakage problems, and since they had a triamese throttle cable, were hard to hold open for long periods. And they were just as hard to keep in synch. The new units have no tendency to leak air, and have a mechanical push-pull linkage assembly that keeps the carbs in perfect synchronization for a long, long time. And since they are constant vacuum units, they help give the engine slightly increased torque at low rpm.

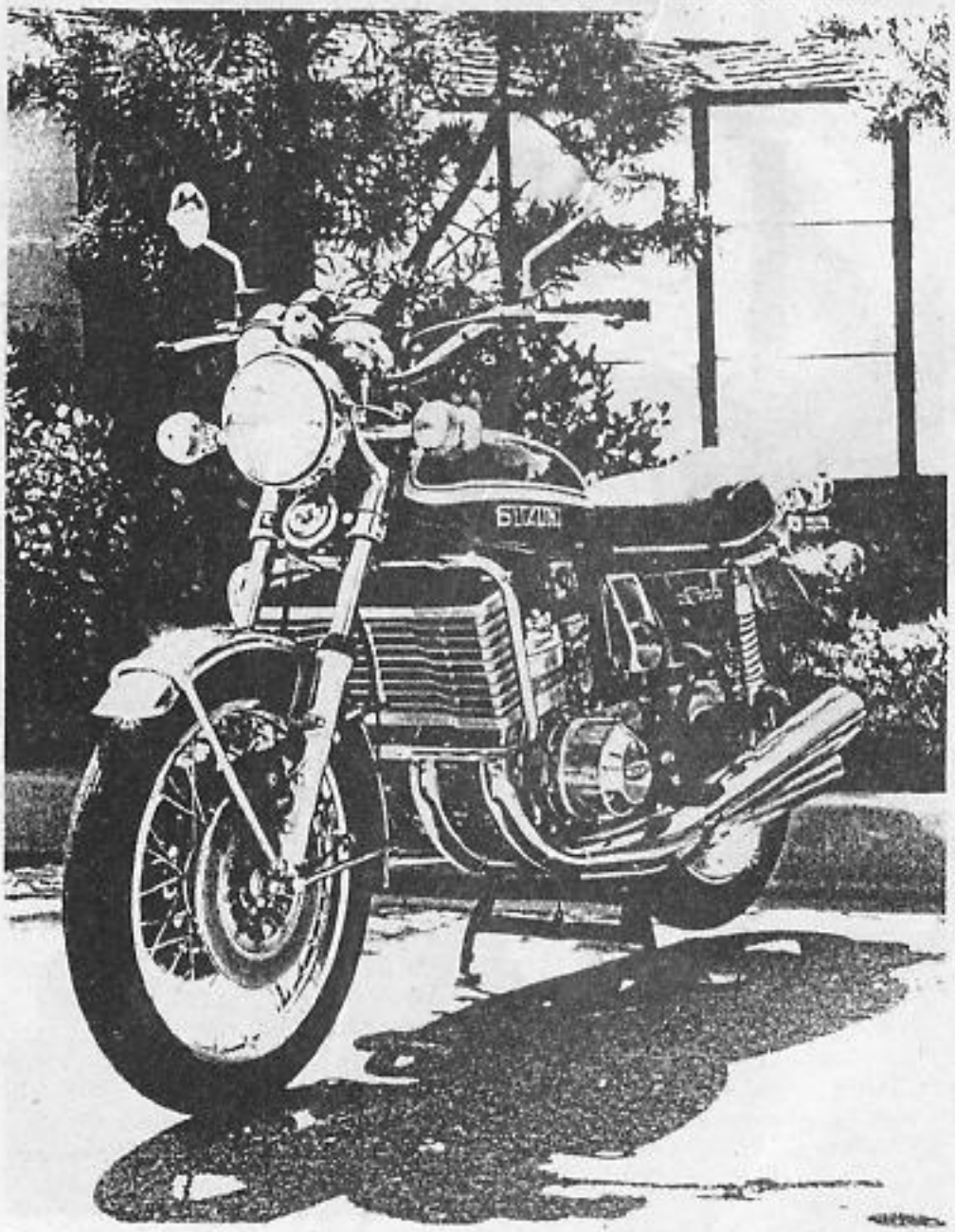
The 750 powerplant has been one of the cleanest two-strokes for some time now. This is largely because of SRIS (Suzuki Recycling Injection System), which draws out oil sediment from the bottom of the cases and recycles it through the transfer ports — where it is burned a second time. The '74 and '75 versions



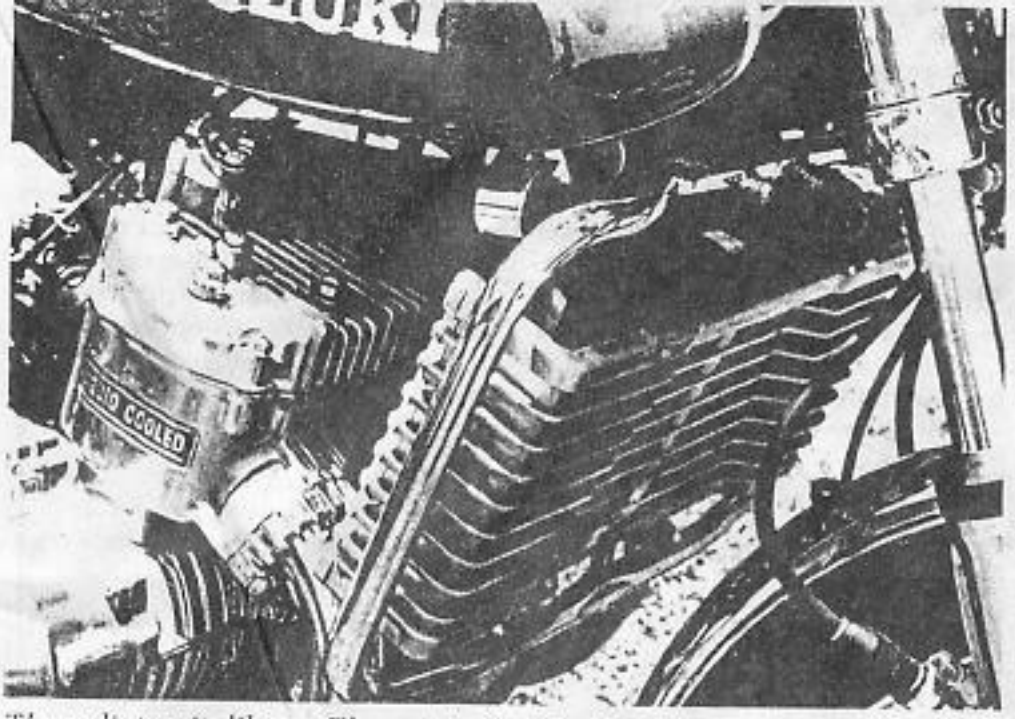
The tail lamp/brake lamp assembly, though very bizarre in appearance, features excellent illumination.



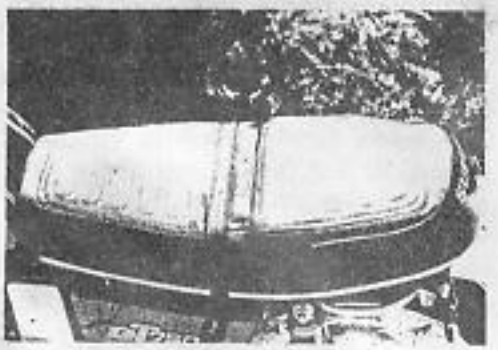
The 738cc powerplant is very quick and reliable. Basically, it's a Suzi 500 mill with an extra cylinder plus water cooling. On the freeway the engine is so quiet that it seems like the bike is driven by a 70 hp electric motor.



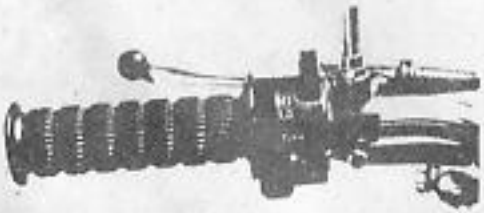
It seems as though Suzuki is finally starting to catch on — the 750 for '75 looks fairly nice . . . unlike the flashy models of '72 and '73 . . .



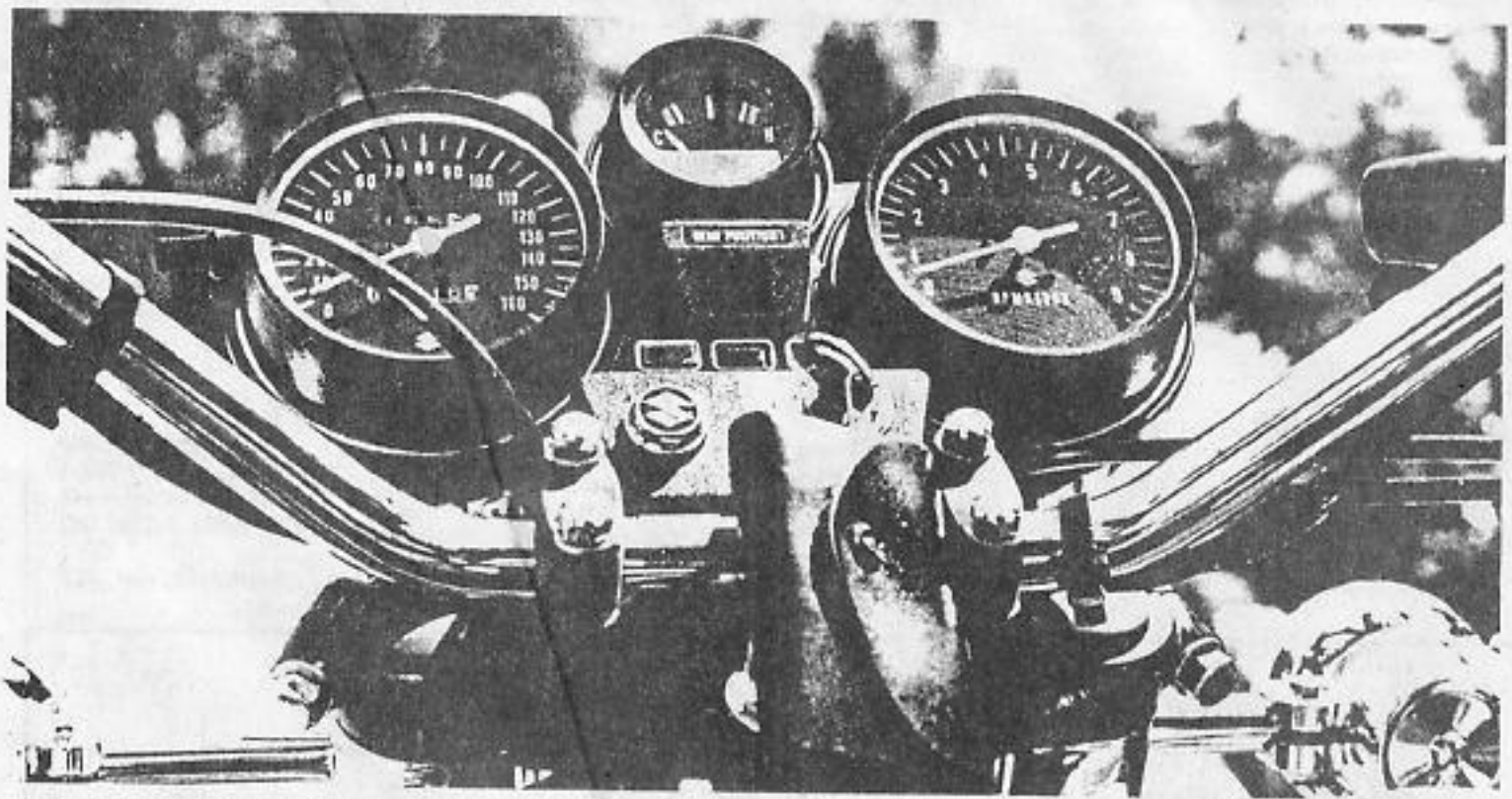
The radiator sits like so. The unit is of solid alloy construction, and won't ever overheat. Period.



The stock seat (even if it looks as if you should sit on it sideways) is really quite comfortable when touring.



Hand controls were within easy reach, and functioned perfectly.



The very complete instrument panel is easy to read and well lit. Digital gear indicator is standard.

have an improved system which reclaims and reburns even more of these blow-by sediments, making for a virtually *smokeless* two-stroke engine. The CCI system also provides excellent oil mileage. Couple that with a very large injection oil reservoir, and you've got a really carefree system.

Then there's the water-cooling system . . .

After four model years on the road, plus preliminary testing before release, there is no doubt that the cooling system is completely bullet-proof . . . a word not used lightly. We know of several riders who have four-year-old 750s and have never so much as removed the radiator cap . . . and who have never gotten their temperature gauges past the halfway mark.

The reason for this reliability in the cooling department is simple. Since the entire system is comprised of alloy components, there is no way for it to rust. The radiator itself is *solid aluminum*, which is highly effective in dissipating heat. Only two hoses are utilized in the system, and both are super-heavy-duty nylon-reinforced items, likely to outlive the rider. The system has proven to be *so* effective that the electric fan that came on the original models has been eliminated. It was designed to be actuated when coolant temperatures reached a certain excessive temperature. Since the radiator did such a good job of eliminating heat the fan never went on, so Suzuki simply eliminated it from the rest of the 750s. (By the way, the Honda 1000, which utilizes a different radiator design, constant-

ly activates its fan any time the bike is allowed to idle for very long.) The only two recorded cases in which a Suzi 750 overheated are: (1) A late-model LeMans was in a parade lasting all day, averaging about two mph, at which time the coolant temperature rose to an excessive rate; and (2) A '74 model had problems with its water pump impeller shaft, and coolant was unable to circulate freely, with the same results.

Another major change for the new version of the LeMans is increased horsepower. The new units are now pumping out a claimed 70 horses. The added power is due to carb changes, slightly higher compression and minor porting changes. Even with the added horsepower, the bike is as smooth as ever, if not smoother.

Riding the '75 LeMans is extraordinary. Cold starts are easy enough — simply insert the key, engage the enricheners and hit the electric starter button. The powerplant comes to life instantly, burbling in a low, muffled monotone. Let the engine warm up, and you're ready to ride. Sitting at an idle, the whole bike quivers in a subtle sort of way, since almost everything is rubber-mounted. The tank shakes slightly, the temp gauge wiggles around and the handlebars flap. Perhaps this is one thing that makes prospective riders a bit leery.

SPECIFICATIONS

Model & Year ..... 1975 Suzuki GT-750

ENGINE

Engine Type	Three-cylinder, water-cooled, two-stroke
Displacement	738cc
Bore & Stroke	70 x 64mm
Claimed BHP Horsepower at RPM	70 at 6500
Claimed Torque at RPM ft./lbs.	61.5 at 6500
Compression Ratio	6.9:1
Carburetion	40 CV Mikuni (3)
Ignition	Battery/coil
Electrical System	12-volt generator
Starting System	Electric or kick
Air Filter	Washable foam
Recommended Fuel	Low lead or unleaded
Lubrication Method	CCI oil injection

PERFORMANCE

Weather Conditions	70–85 degrees
Quarter Mile E.T.	13.97 at 92.60
Top Speed	120 mph
Gas Mileage	40–50 mpg
Touring Range	200-plus
Braking at 40 mph:	
Front Only	57.5 feet
Rear Only	110 feet
Both Front and Rear	52.5 feet

CHASSIS

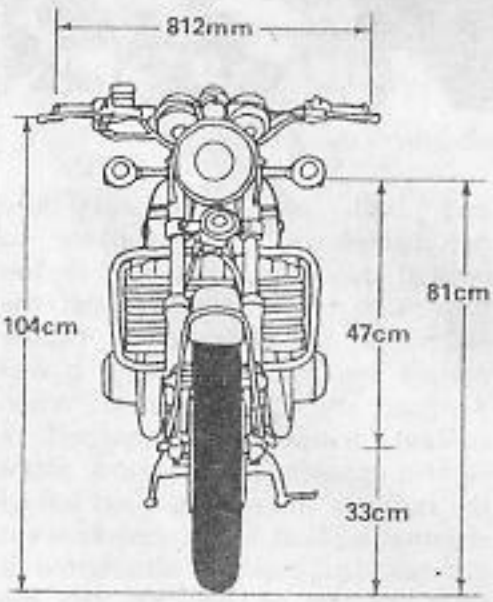
Color	Metallic Gray or Candy Red
Frame	Dual downtube, tubular steel
Forks	Oil/spring teleforks
Rear Suspension	Five-way adjustable shocks
Front Tire	3.25x19
Rear Tire	4.00x18
Brakes:	
Front	Dual hydraulic discs
Rear	Single leading shoe
Curb Weight	554 pounds wet w/coolant
Weight Bias	N/A
Steering Head Angle	27 degrees
Fork Trail	95mm

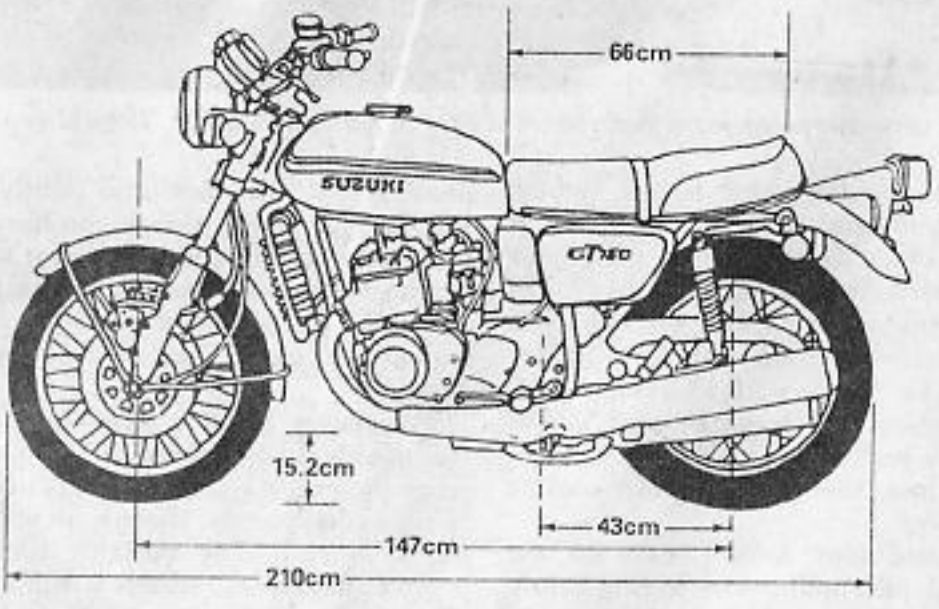
CAPACITIES

Fuel	17 liters (4.5 gallons)
Engine Oil	1.8 liters (3.8 pints)
Gearbox Oil	2200cc
Forks	230cc

DRIVE TRAIN

Clutch	Wet, multi-plate
Primary Ratio	1.763:1
Transmission	Five-speed, constant mesh
Ratio	2.846, 1.736, 1.363, 1.125, .962
Final Drive	3.133:1
Sprockets	Front, 16T; rear, 43T





Continued from page 33

What these guys don't know, though, is that the bike goes through this ritual *only at an idle*. Once you plunk down on the shifter and let the clutch out, everything is silky-smooth. Going through the gears is effortless, with every shift being clean, smooth and positive.

Even though the machine tips the scales at about 550 pounds, it is surprisingly maneuverable in city traffic. Steering head angle is just right for quick turns, and seating position, even though meant for touring, is more than acceptable for around-town use.

Up in the canyons, the Suzuki takes curves quickly. Although the earlier models used to wallow around and bounce a lot when stuffed into a corner, the updated version has no such problems. While the shocks are admittedly trash by nature, the rest of the machine makes up for such drawbacks with an excellent front end and more rigid frame. About the only limitations in handling would be the tires and the centerstand, which scrapes excessively on the left side of the machine. With the stand off and the addition of good tires and shocks, the LeMans is a very good handler. Especially considering its size and weight.

And, of course, there's the 750's real forte . . .

. . .*The open road.* The long, straight stretches of nothingness. The freedom of the highway and all of that. Under the silent, water-cooled exterior is a semi-radical screamer. First gear will carry you to at least 55 mph — second to 75, and so forth. Indeed, the bike is geared kinda high — at 55 mph in fifth gear, the engine is turning a leisurely 2500 rpm — just a grand or so above an idle.

At that speed — at that rpm — the bike is, for all practical purposes, Stone Dead Silent. All the rider hears is a very, very faint hummmm, and the whoosh of the wind. So there you sit, on a bike that may as well be powered by a 70 hp electric motor. Almost all of the road irregularities are soaked up by the soft suspension, and you glide along in a semi-euphoric state, effortlessly gobbling up the miles. Since Sound equals Fatigue, you can stay on the road a lot longer without tiring. You won't even be able to bitch about the seat, since you can easily live with it for 400 miles at a time.

If you spend any appreciable time on the bike, you start to run out of things to look at, particularly if you're out in the desert or some place equally dull.

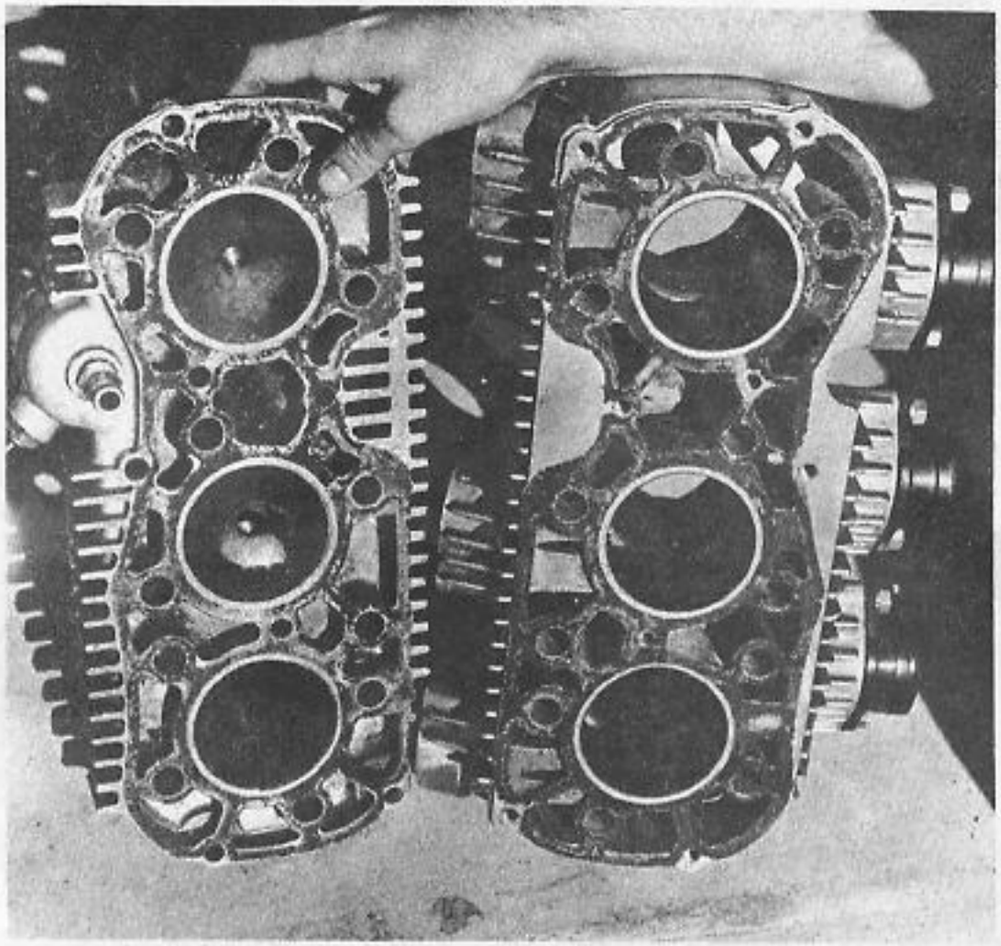
. . .So you sit and ogle the controls, dials, lights and assorted doodads on the bike . . . and the LeMans has plenty of them: speedometer and tachometer, trip meter, water temperature gauge, high beam, flasher and neutral warning lights, 20 different hand controls, and an electronic LED digital gear position readout. The gear readout is always fun to look at, and stares you in the face with a big, red "5" all the while. The instruments are clearly marked and well lit, giving off a soft bluish-green glow.

All of the hand controls are well within easy reach and are quite comfortable to use, since the rider doesn't have to grope his way around to find the right switch position. But the damn things are almost completely covered with blood-red lettering, telling what switch does what. Since the rider can familiarize himself with the controls in just a few minutes, all of the markings and foofaraw are hardly needed. Ah, those Federal "suggestions."

As long as we're sniveling about unneeded things, we might mention one of Suzuki's very bad habits: stickers. They're *everywhere* on the bike. Two stickers on the forks warn that brake operation may be less effective at the beginning of the stroke when the discs are wet — another on the handlebars awkwardly tells the rider that "running the engine in the red zone, especially revving the engine, is prohibited in any case." Prohibited?? Still more stickers tell the rider not to spill brake fluid on painted or plastic parts — not to forget checking the coolant — not to forget about the right tire pressures, ad nauseum. The bike is a rolling owner's manual, so please, Suzuki — no more stickers, OK?

So the bike is still a bit on the flashy side. Nothing that can't be corrected by pulling things off . . .

Incidentally, if you're still looking for that last Dynamic Statement, go back to the beginning . . . and believe.



The water cooled head and cylinder assembly give some idea of the large area available to the coolant, insuring adequate heat transfer under the most adverse conditions.



Located under a spring-loaded trap door just ahead of the gas cap is the water filler. We recommend filling the system with anti-freeze and not water, to prevent corrosion in the all aluminum engine.



Although the bike is probably the most comfortable machine now offered for sale, it is our opinion the front fork springs are not adequate. It would be better to use a stiffer spring. Rebound damping was fair.

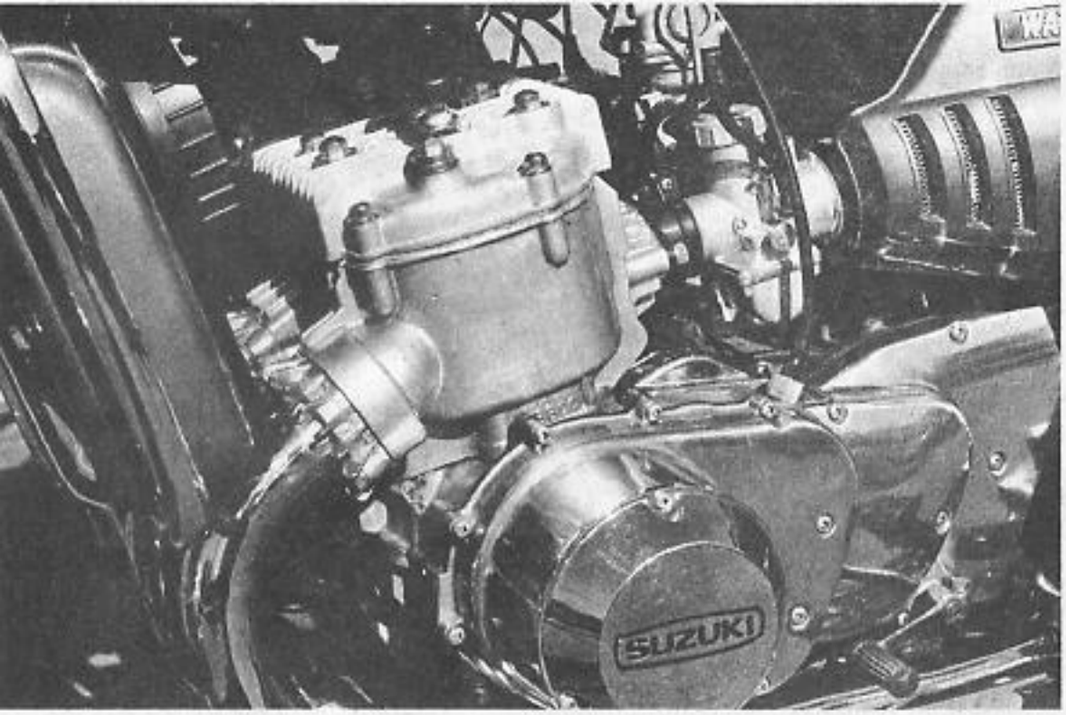
quate for a motorcycle that has this performance potential. It really mystifies us why Suzuki chose to take two 500 Titan backing plates and mate them to a new front hub. With the state of the art being what it is, there is a wealth of information on how to make a motorcycle stop quickly. In 4½ hours, we wore them out to the point where there were no brakes left at all. The adjustments were completely taken up, and during the remaining time we had to ride the bike very conservatively. The rear brake, like the front, disappeared quickly. Even at normal freeway speeds, after a few hard stops it was necessary to wait before using the brakes again.

The high degree of finish on the motorcycle was outstanding. Everything is first class. We could not detect any areas that indicated hurried thinking or sloppy production technique. Quality wise, the customer gets every nickel's worth in this fine, almost handcrafted looking package. The paint and chrome are typical of Suzuki quality. Over the past couple years, there has been a tremendous improvement in the entire Suzuki line, and the GT 750 exemplifies the factory's insistence on doing things right.

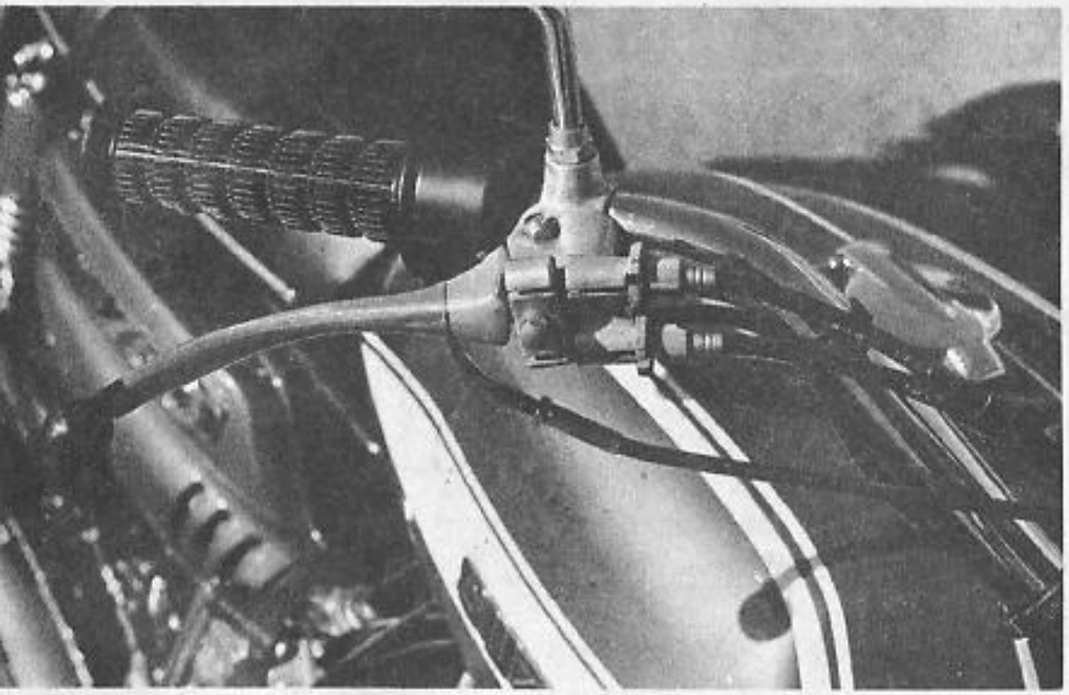
After flogging the motorcycle for six hours, there was not a trace of anything coming out of the engine. The only dirt on the machine was the lubricant thrown off the chain onto the rear wheel. The rest of the bike was as spotless as when we started.

The bike is deceptively fast. Because of the all-up weight of 540 pounds, it does not move off the line as smartly as some of the other superbikes. But once under way, it quickly gathers momentum and moves right along. While it is no threat as a drag racer in its present form, our feeling is the bike was never designed with this goal in mind. To be competitive, it would be necessary to shave at least 100 pounds off the chassis to make it run with some of its equally displaced brethren.

The GT 750's long suit is comfort, dependability and longevity. The engineers have achieved this at the expense of some performance, but don't get us wrong. The bike isn't that much slower, which brings up another point we question. Upon completion of our six hour test, Suzuki brought the motorcycle back to the shop, and we were to receive it back the following week to take it to the dragstrip for that part of the test. Our only request was that the motorcycle not be touched as far as the engine was concerned. When we got the motorcycle back, we found somebody had been fiddling with it. It was running considerably quicker than it had before. Up to this point, the quickest the machine had run was 13.70's. Now suddenly we were running in the 13.20's. We would like to know



Although we ran the bike hard for six hours, there was not a trace of liquid from the power plant section. This speaks well of Suzuki's quality control.



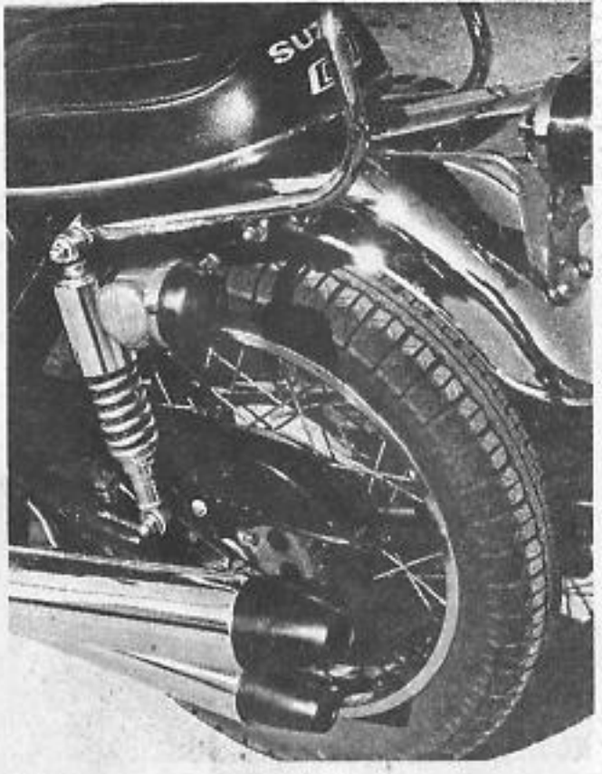
Two individual brake cables are utilized for actuating the quad shoe front brake assembly. Adjusting was surprisingly easy.

where that extra half a second came from, since you don't pick up that much time by merely fitting a new set of spark plugs. We would have preferred Suzuki leaving the bike alone as we requested.

We also discovered that while running straight at high speed, moving the bike quickly from one side of the road to the other produced an uncomfortable twitchy feeling. We suspect this comes from the worn swinging arm bushings mentioned previously.

Starting the bike is ridiculously easy. It took a few seconds for the electric starter to turn the engine over before it fired. Once warmed, a quick touch of the button (without touching the throttle at all) and the engine was running.

As well as being comfortable and well finished, the Suzuki is probably the quietest road bike being sold today. Even when being run wide open, until the machine is ten yards away from you, you can't hear it. The exhaust system and the water cooling help dampen any mechanical noises normally associated with air cooled engines. The engineers have come up with a big plus here. This is another reason the bike is such a delight to



Although the engine has three cylinders, there are four mufflers. The center cylinder splits into two branches that end in a muffler on each side.

ride on long trips. You don't have the droning in your ears all the time you are on the highway.

Along with the superbly designed engine is an equally fine clutch and gearbox. Never once during the testing did we find the bike awkward to shift or the clutch sticky to operate.

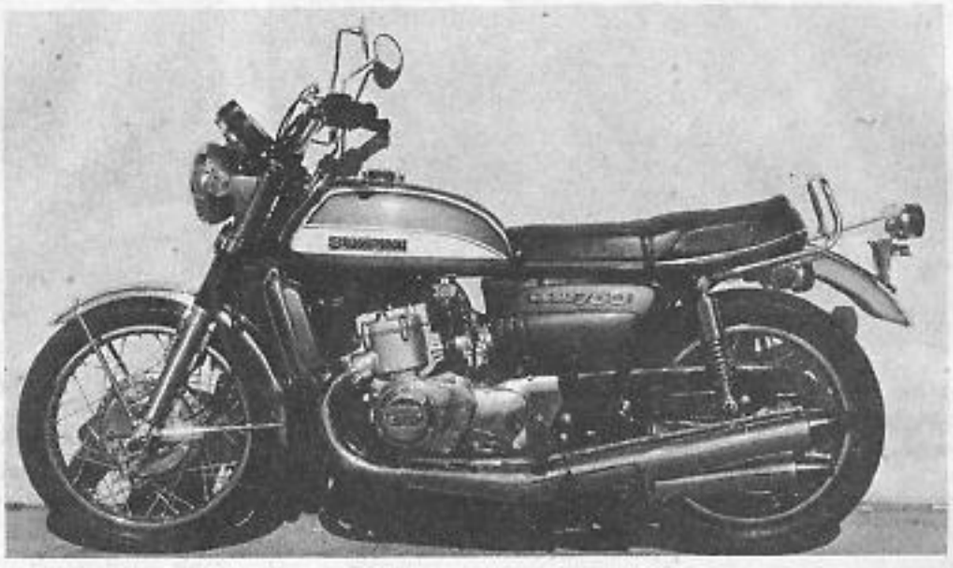
In order to get the maximum performance on the dragstrip, we found it necessary to slip the clutch excessively when coming out of the gate. Even though Suzuki told us this was necessary, we didn't believe them. We used the old tried and true method of burning the tire in and turning the throttle wide open at the same time we dropped the clutch. All this achieved was a lot of smoke and wheelspin, and the ET went down the tubes. From that point on, we applied their technique and the ET's plummeted like a rock. We went from the high 14's to the low 13's in a matter of just eight runs. The trap speeds were just about 100 mph flat.

During the dragstrip portion of our testing, we discovered the speedometer is wildly optimistic. Although the top speed of the machine registers 120 on the clock, the true top speed is only 111. We found the bike easy to ride on the dragstrip because of the wide, flat torque curve. Power comes in at 3000 and is constant up to the red line at 7 grand. We were told later to shift at 6200 instead of 7000, although it felt as though the machine was pulling hard up to the point of shifting. **Continued on page 26**

An urgent word of warning is necessary for all buyers of the new Suzuki GT750. An aluminum liquid cooled engine is extremely susceptible to corrosion from the coolant. Whatever you do, don't use plain water in the cooling system. Our recommendation would be to immediately fill it with a good quality corrosion preventive antifreeze. This will give you the added protection of a coolant with a higher boiling point than water, in case you encounter a sudden overheating problem. But corrosion is the big danger, and garden variety water will do the engine in before you're aware of any problem.

The new three cylinder, liquid cooled Suzuki 750 is a quality machine that needs some easily made engineering changes to be right on. The most urgent modification required is to the brakes. Slightly less urgent, but still necessary, are modifications to the fork springs and swing arm bushings. With these changes to improve the handling and stopping of the machine, the GT750 would be an ideal touring bike. Even as it is, it's pretty good, but we'd hate to see Suzuki compromise on a few points on an otherwide outstanding motorcycle.—*Bob Braverman.*







SUZUKI GT 750

ENGINE

Type	three cylinder piston port water cooled two stroke
Bore and stroke	70x64mm
Displacement	738cc
Compression Ratio	6.7:1
Rated max. horsepower	67 @ 6500 rpm
Rated max. torque	51.7 @ 5500 rpm
Ignition	battery/coil
Carburetion	three 32mm Mikuni Concentrics
Lubrication	oil injection

DIMENSIONS

Seat height	32.0 in.
Wheelbase	58.0 in.
Ground clearance	5.2 in.
Dry weight	531 lbs.

WHEELS AND BRAKES

Front tire size	3.25x19 in.
Front brake type	double leading shoe, internal expanding
Rear tire size	4.00x18 in.
Rear brake type	internal expanding

TRANSMISSION

Type	constant mesh 5-speed
Clutch	wet multi-plate
Overall gear ratios	1st 14.92:1; 2nd 9.11:1; 3rd 7.15:1; 4th 5.90:1; 5th 4.84:1

PERFORMANCE

Indicated highest one-way speed	111
Acceleration 0-60	7.0
Braking distance 30-0	42
Quarter-mile acceleration:	
Top speed	92.75
Elapsed time	13.70

GENERAL

Air Filtration	dry paper
Battery type	12 V-6 ah

CAPACITIES

Fuel tank	4.5 gal.
Fuel reserve	.5 gal.
Oil tank	3.8 qt.

FRAME AND SUSPENSION

Front suspension	telescopic oil damping
Rear suspension	adjustable spring over shock
Frame type	tubular double cradle

PRICE AS TESTED

N.A.

DISTRIBUTOR

U.S. Suzuki
P.O. Box 2397
Santa Fe Springs, Ca. 90670

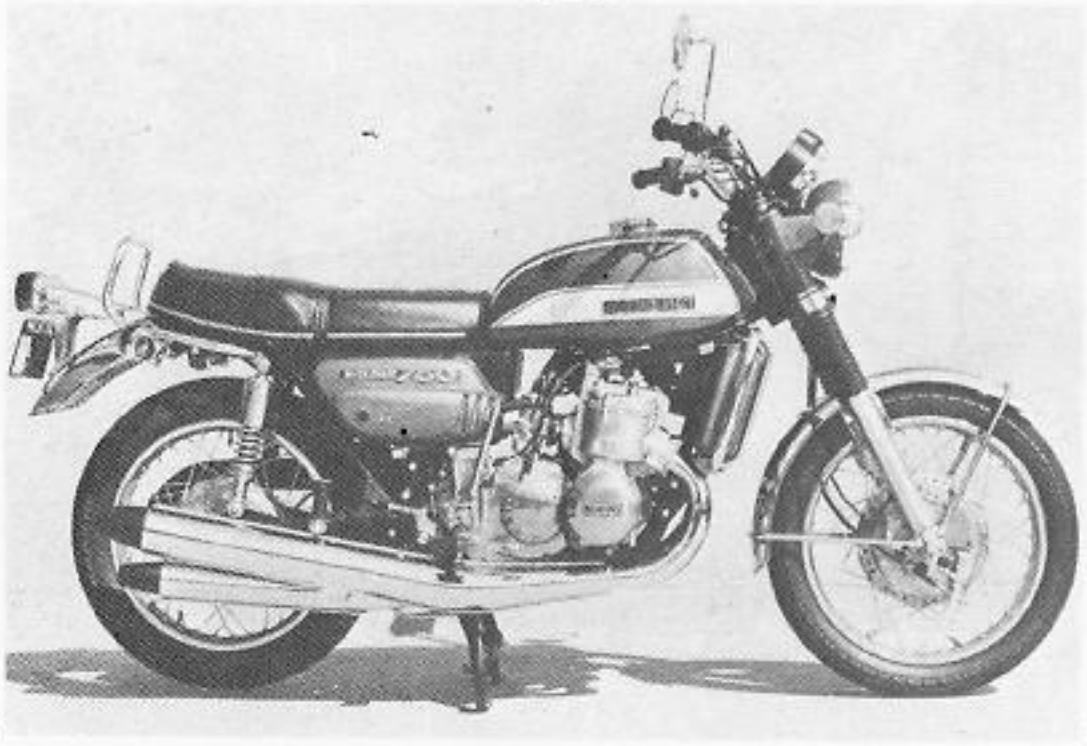
confirms factory tests showing no drop in level in 20,000 miles. Maintenance involves changing coolant once a year. Zero water loss in the cooling-system level of course disproves leaks out of the engine. As for the other negative predictions, there's no denying that extra components increase the possibility of something failing, but even with the addition of water pump, thermostat, etc., the Suzuki has nowhere near the number of moving parts as a four-stroke. The hoses appear to be of superior strength, the fan can be tested in a 10-second check and bugs come off the radiator with an air blast from any gas station.

The advantages of water cooling are several: it enables closer spacing of the cylinders by eliminating the wide fins on air-cooled engines, so the crankshaft may be narrower for minimum flex. Noisy cooling fin resonance is lost and further silencing is gained by the water's dampening affect on internal mechanical noise. Indeed the Suzuki has a narrower crank than the Kawasaki, with four main bearings instead of six, and its whisper-quiet operation is so silent that a Suzuki rider will hear the din of his buddy's Kawasaki in the next lane far above his own muffled drone. The factory also says water cooling is the only way to cool the center cylinder adequately. This contention is debatable, however, based on Kawasaki's complete success with air-cooled triples and thermocouple tests which show the center cylinder on their 750 actually runs cooler than the outside cylinders. In any case the Suzuki is blessed/cursed with water cooling, depending on how you look at it. To our way of thinking, noise abatement alone makes it a blessing.

Our classification of the Suzuki GT-750J Le Mans as a touring bike comes after 1600 miles of testing, including a 1247-mile jaunt from *Motorcyclist's* home base in Hollywood to San Francisco and beyond in the company of a 1971 BSA Rocket 3, which served as an excellent yardstick for measuring the subject's performance. A BMW came along the first day also—another valuable yardstick. We braved the freeways on the way up, detouring once on a secluded 44-mile dirt cutoff, and snaked down legendary Highway 1 through Big Sur and Monterey on the way back, cooled by the ever-present ocean and seduced by the curving, sloping road and scenic coastline. In the cities at either end of our journey, the Suzuki revealed itself as an adequate motorcycle, heavy and somewhat ungainly in slow traffic, but out on the open road its magic was indescribable.

The motor is awesomely impressive. In the first place it's as quick as any superbike but the Kawasaki 750 from a drag-race start right through the five gears to its 115-mph top end with 160-pound rider. And the torque-laden Le Mans will even pull the Kawasaki 750

WET AND WILD



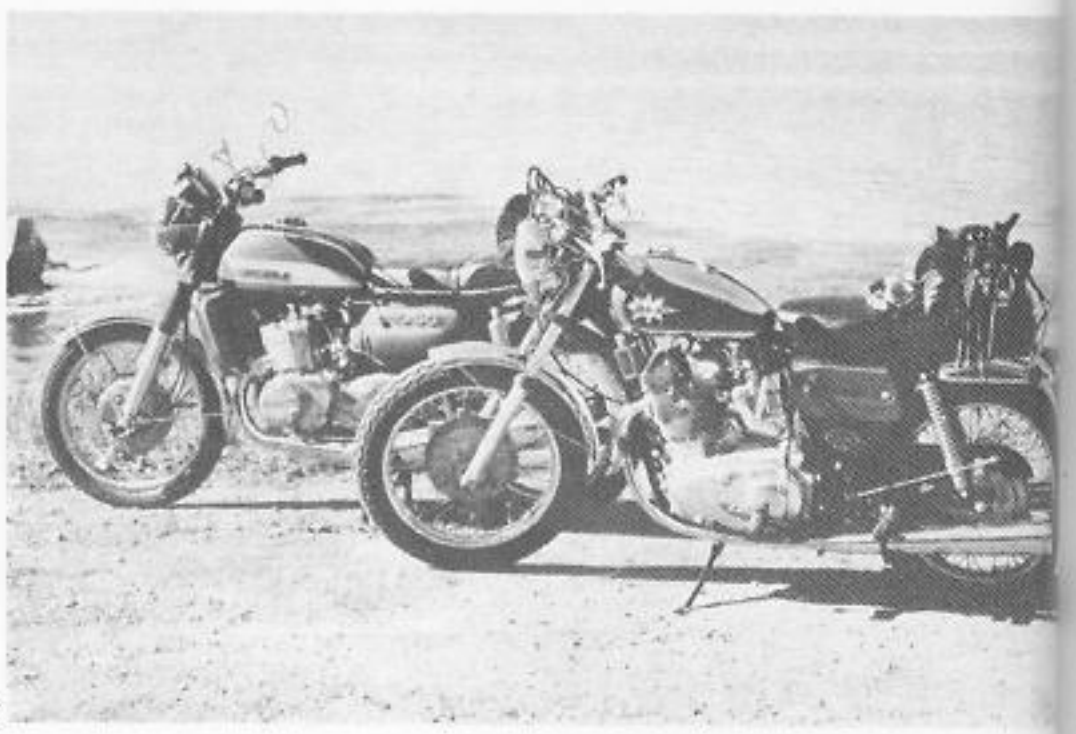
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in certain throttle roll-on comparisons. For instance with both bikes cruising up a hill in fifth at 3500 rpm (50 mph), the Suzuki leaps ahead instantly under full throttle while the Kawasaki bogs, necessitating a downshift to increase speed at all. On level ground at the same engine speeds, the Suzuki will forge ahead for about 5 seconds, then be passed. Off the line from a standing start the two are wheel to wheel through peak revs in third—about 60-65 mph, and then the Suzuki slowly succumbs as its tormentor zips an indicated 121 mph to its 110. Each bike carried equal 220-pound loads during these runoffs. Against the BSA the GT spotted 50 pounds total and still did itself proud. A side-by-side throttle roll-on at 70 mph put both bikes stone equal to 85 mph, then the BSA inched ahead and lay 15 feet in front when the two-stroke peaked at 110 mph. Switching riders so Britain's best now carried the former Trojan lineman resulted in instant Suzuki dominance from 70 mph, and a 5-mph better top end clocking of 115. Drag races were won by the lighter rider regardless of his mount. These impressive accelerations and speed achievements of a 531-pound behemoth against equal-displacement machines of 464 (Kawasaki) and 501 pounds (BSA) are convincing proof that the torque a rider feels from the saddle is there, and that two-strokes can be made to pull just as hard as four-strokes.

One final comparison ought to convince the most skeptical diehard. An excursion tangent to the San Francisco goal involved visiting a long-time classic motorcycle collector who met us in Tulare and escorted our two 750's to his Fresno home on a big throbbing Vincent Rapide, 1000cc's of V-twin torque personified, the strongest puller of all in legend, and in reality a pretty swift scooter. Old Hugh Darby was passing cars like mad on the snarling beast, with quick high-gear bursts from 70 mph, and who was right on his tail losing not an inch of ground in a 10-second pass? The old water wizard, GT 750 Le Mans. It's got real torque—from 2500 R's on up. If you don't believe it, drag out your Honda Four or Sportster.

"So it squirts, how 'bout the ride? A touring bike's gotta have a smooth ride." It's the smoothest. And if you don't believe it, drag out your baby buggy. The pilot experiences this cloud-9 effect for two reasons: first, the silence of the engine leaves only the wind to insinuate movement audibly; secondly, the rider is isolated from the engine's considerable vibration with 100% effectiveness — nothing gets through. Only the road can put a ripple in the ride, and rather easily too for the front forks are solid on freeway seams and minor road irregularities. Rubber engine mounting is the key to table-top stability for the rider, though it's not implemented with big round donuts as Norton uses in their Isolastic suspension, but with tubular motor mounts lined with ¾-inch of rubber. It's simple and it works, though there may be more to it than this external observation. In any case effectiveness of the method employed is complete for even headlights remained distinct in both mirrors. The Suzuki even embarrassed the traditional king of the overstuffed cushion set, BMW, in our tradeoff rides to compare smoothness; the exhaust notes and engine noise of the two bikes were about equal to 70 mph.

A comfortable seat and pleasant riding position helped reduce fatigue, though without gloves handgrips were uncomfortable. Overall size of the massive bike comes into play more at slow speeds, of course, making stop-and-go-movement in slow traffic somewhat ponderous, with engine width and seat height likely to scare away some of the little guys. Once underway, however, overall handling is sufficiently sure and predictable that all trace of weight dissolves in the ease and thrill of whipping a nimble couch through the turns; or so is the feeling if the road is smooth—the bike can seemingly do no wrong except scrape a centerstand. But hit a twisty section with rough spots and you better slow down, for bumps initiate a wallowing that's no fun to experience and quickly remind you of the bike's touring purpose. Stiffening the shocks a couple of notches helps mountain handling, but once the suspension starts to reciprocate, the bike's weight is against it. On straight lines Le Mans is stable and tracks true, but reacts quicker than some when commanded; unusual for a machine with a lengthy 58½-inch wheelbase.

"Braking is a primary consideration on bike this fast and heavy, so why didn't they choose a disc?" There's no factory statement citing weight or production-cost saving as the reason, but we'll venture to say the factory felt they could produce a four-shoe drum unit equal to a disc . . . so they did. And it is. In fact road feel is greater and action more progressive on the Suzuki's brake than on either the Kawasaki or Honda disc. The lighter feel of a disc may lead many to think it's stronger, but a devastating series of full-anchor stops side-by-side with the Kawasaki proved otherwise. In two stops from 30, 40 and 60 mph the bikes halted within three feet of each other every time, the shorter distance being covered by the machine whose rider happened to react quicker at the grab-line—the Kawasaki won four deceleration tests, the Suzuki two; both riders agreed there was greater feel from the drum.

Immediately after these punishing stops, we continued braking hard from 60 mph, using the front stoppers only, to see when fade would set in. On the third drop from 60 mph, and the fifth total counting the earlier tests, the Suzuki's drum noticeably lost power and the cooling fins crackled and snapped with heat so intense they boiled saliva. The Kawasaki was still a stone wall to momentum and never faded through ten or more stops; the pucks had begun to drag slightly on the disc, however, a condition which lasted until two days of normal use realigned the floating caliper. Conclusion: both brakes are superb in average conditions, the Kawasaki being superb in all conditions.

"So far we have a pretty neat package. How 'bout the trimmings?" The spec chart is overflowing with "Yesses" next to such goodies as electric starter, trip mileage, start in any gear and turn signals. But that's not all. There's a handy kill switch on the right handlebar, a plastic coating on the levers so "aluminum black" doesn't end up on the hands, and ball-end levers with a rubber covering to minimize their poking potential if the bike lands on top of you in a spill. The pop-top gas cap does not leak. A tool tray under the folding seat has room for tire irons and an extra set of plugs. Our only complaint with the large-face, well-lighted speedo is that numerical mph graduations are in 20-mile increments with thick and thin lines designating speeds in between, so a quick glance doesn't suffice to reveal exact speed. Rather than rate the speedo at an unrealistic 160 mph, it would be better to stop the spread at 125 mph and make graduations in the 60-80 mph cruising range more distinct. We also didn't like the combination headlight on/off

1. Styling the 531-pound monster was a tough assignment considering bulky size of radiator and pipes, and Suzuki hasn't pulled it off so Le Mans will win any beauty contests. Tank, sidecovers need a facelift. Wheelbase is 58½".
2. Many water-cooled machines preceded GT 750, including Suzuki's own 50cc World Championship road racer which zips 110 mph with 14-speed box, 15 hp.
3. Suzuki's wide saddle is comfortable for both pilot and passenger. Some testers complained of heat on rider's legs from Suzuki radiator. Note dual taillight. Kawasaki seat is crowded for two but notice slim engine width, a full inch narrower than '71 Mach III.
4. BSA Rocket 3 joined Suzuki on a 1247-mile excursion from L.A. to San Francisco. Both bikes are jets and near equal in power but the Suzuki has the edge as a comfy touring rig.

and dimmer switch which makes it possible to turn off the light when switching from high to low beam, especially when wearing a bulky glove. This switch is also too easily confused with the turnsignal lever directly below it, and there is no detent stop employed in the turnsignal lever, so one can accidentally activate the left flasher while turning off the right if not overly delicate with the lever. These small criticisms are minor, but there, and if Suzuki is after the ultimate, they'll be working on cures already.

Now let's get down to technicalities and see how it all works. We'll discuss the components by category with subjective interjections when apropos.

Frame

The Le Mans has a massive double-cradle frame with dual top tubes running horizontally from the steering head to beyond the shock mounts. Another tube with a vertical hole passing through it for the radiator filler neck makes a triangle with the steering head and twin top tubes. The swing arm mounts on heavy gussets and has a zerk fitting for easy greasing. Rake is 27°, trail is 3¾ inches on a 58½-inch wheelbase; a BMW's wheelbase is 56 inches, a Guzzi's is 57¾ inches and an H-D 74's is 61½ inches. Weight distribution: 47½% front, 52½% rear.

Suspension

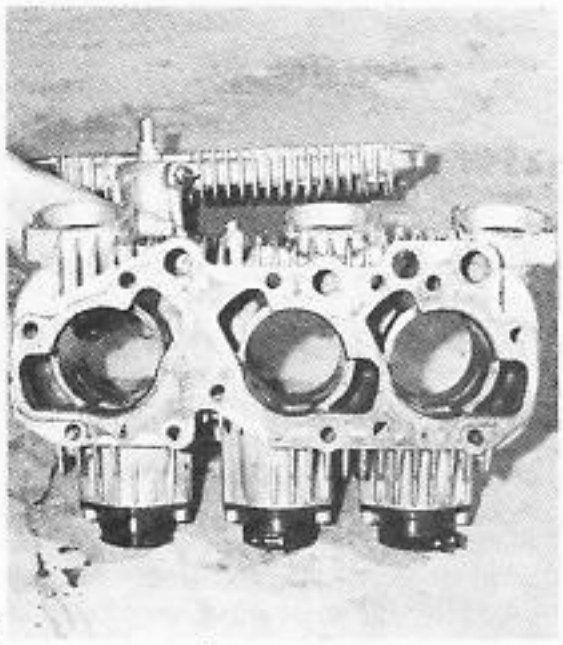
Robust telescopic oil-dampened forks with internal springs and rubber gaiter dust covers are further strengthened by stiff fender brackets which act as a fork brace. Action is good once triggered but they should move with less urging; perhaps eventual break-in will loosen their operation. Shocks are five-way adjustable units which absorb bumps best in the softest position but improve handling in the third or fourth position. They are quiet and the springs don't rub the piston chamber.

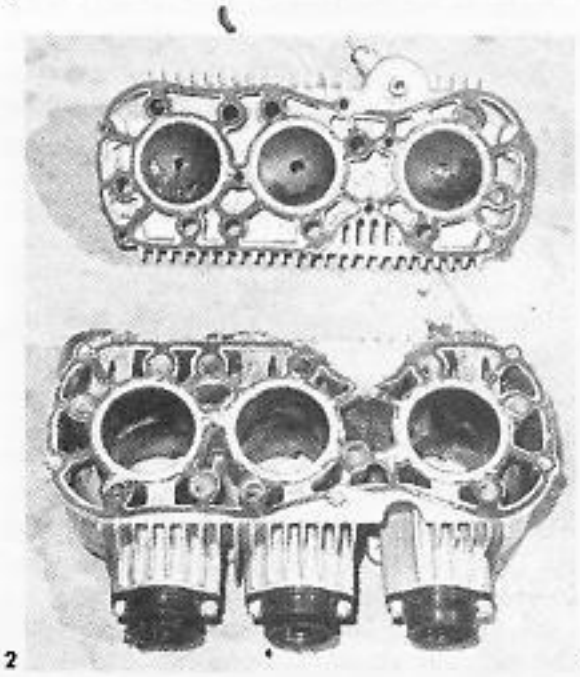
Running Gear

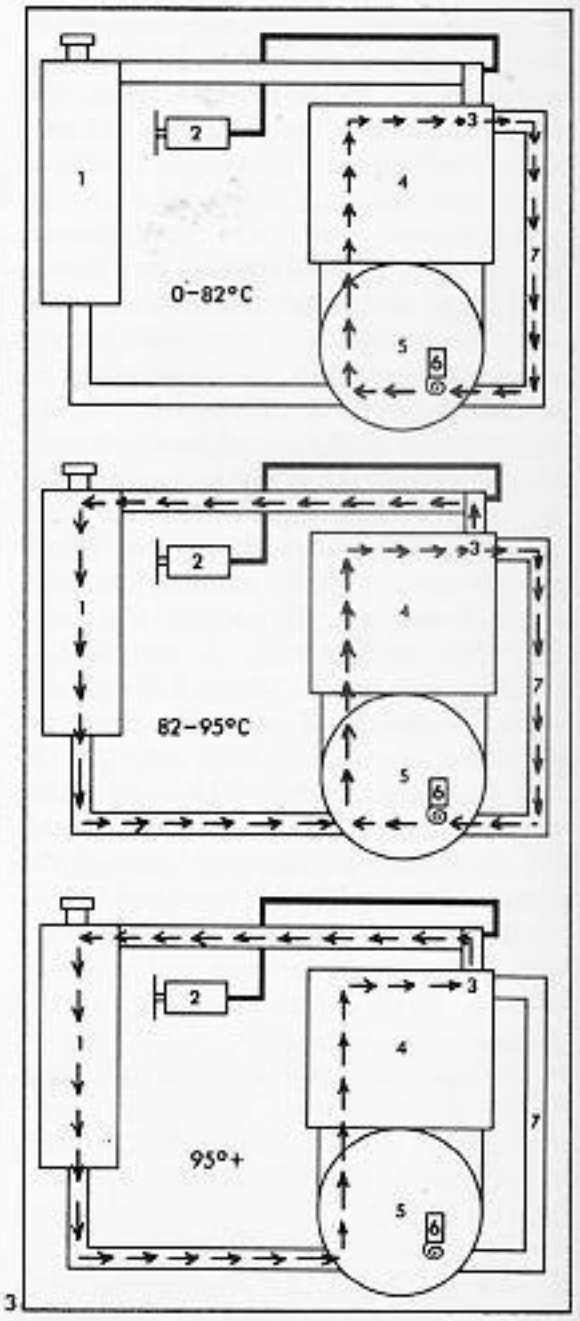
Chromed steel rims are laced to allow hubs with a cross 2 spoke pattern. Bridgestone tires, a 3.25x19 ribber up front and a 4.00x18 rear are mounted without security bolts. We got good performance with 27 pounds in front and 30 pounds in rear. The front brake is a double-cam, dual drum (four leading shoe) unit with air scoops and auxiliary air-scoop covers for wet-weather riding. A full width hub in back contains a single-cam, twin-shoe brake. The wheel can be removed without disturbing the pipes by sliding it all the way forward in the swing-arm slots to slip the "endless chain" over the sprocket, then removing the whole wheel and axle assembly together. Simple. Chain adjustment is normal.

Engine

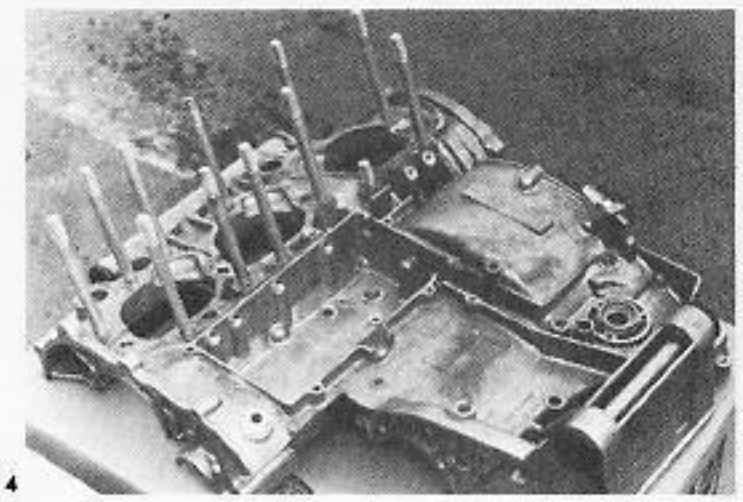
Displacement totals 738cc's from three aluminum cylinders measuring

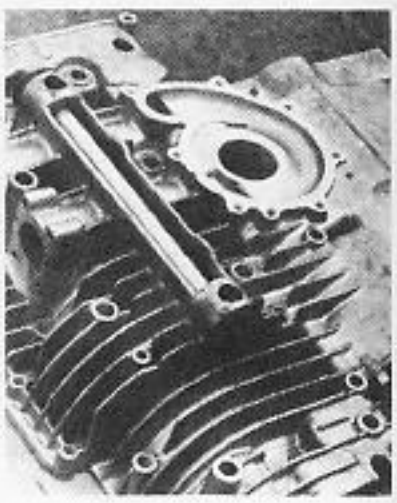

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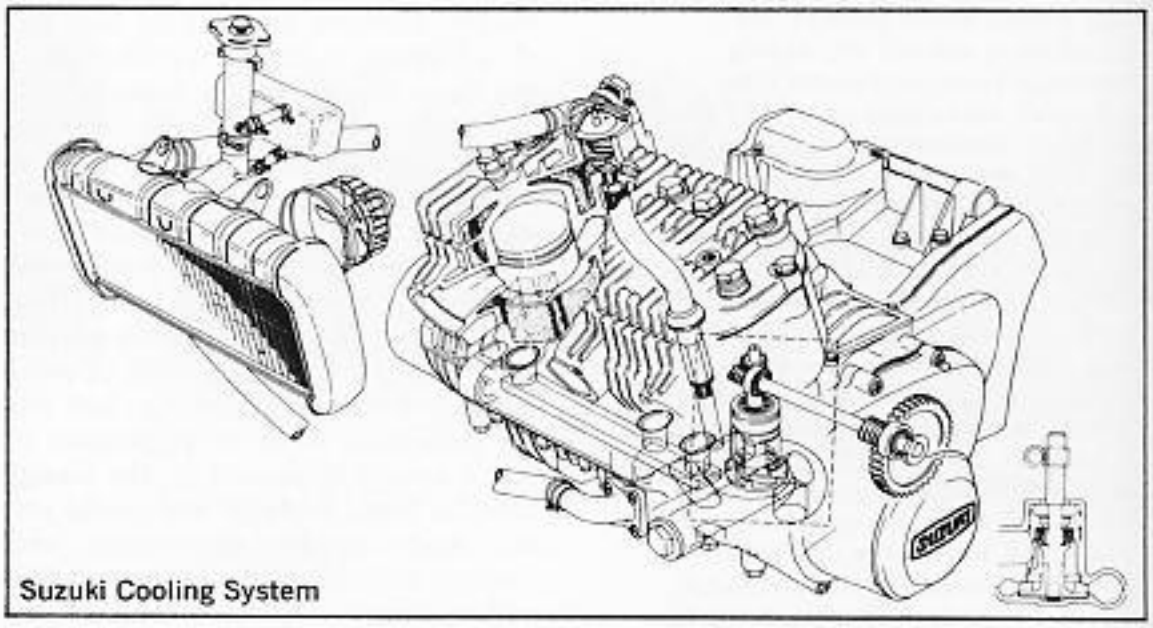

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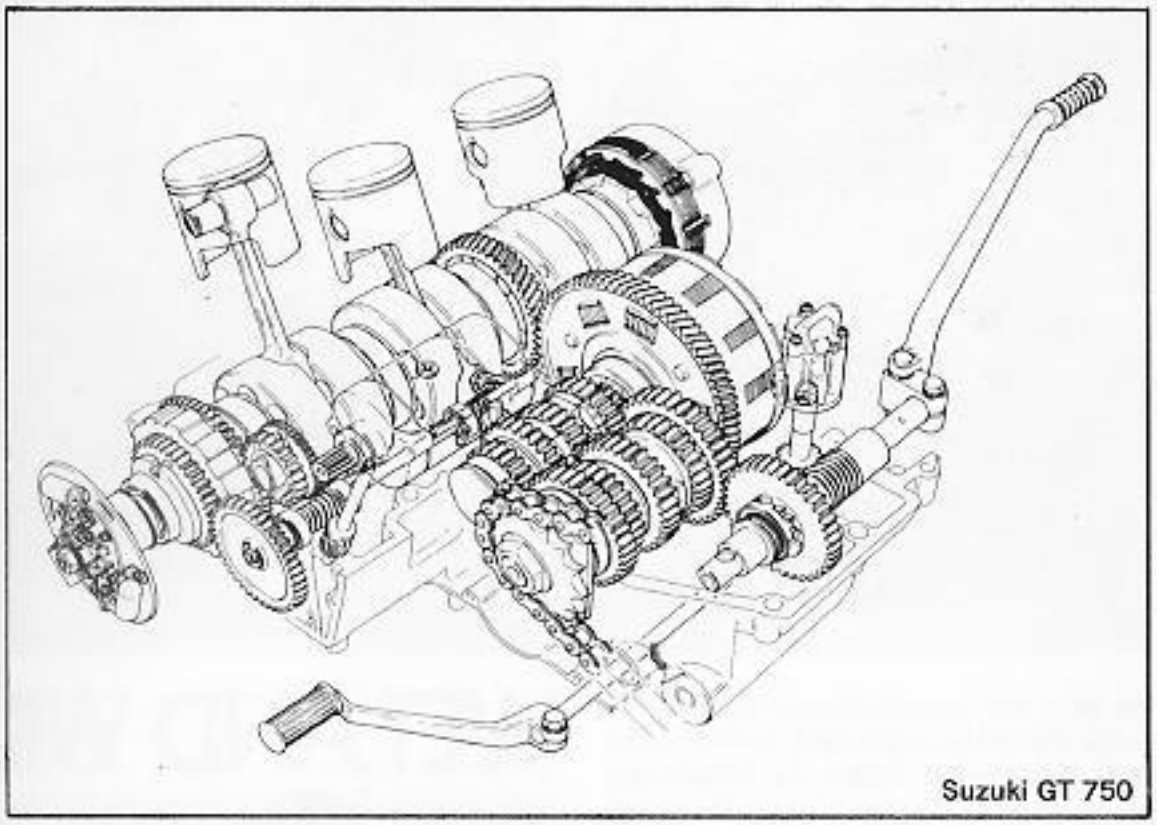
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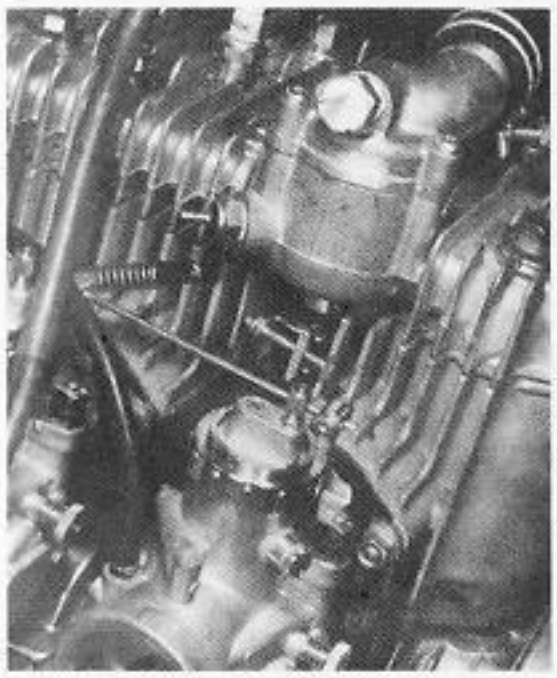
Suzuki Cooling System



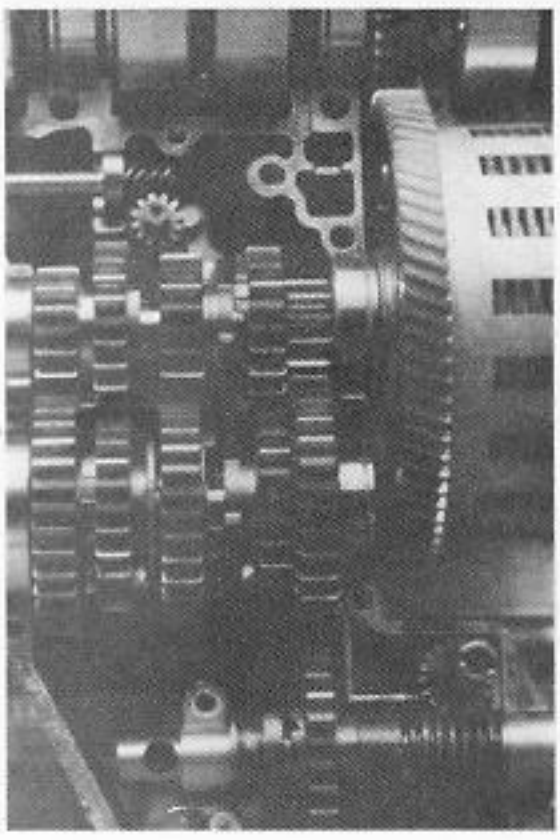
Suzuki GT 750

WET AND WILD

1. Bottom of cylinder block shows clever arrangement of transfer ports for narrowest possible engine width. 2. Generous water jackets surround cylinders while a separate maze of tunneling in head serves combustion chambers. Cooler engine means cooler charge and more hp. GT's got plenty. 3. Components are radiator (1), fan (2), combination thermostat and flow-control valve (3), cylinder block (4), crankcase (5), water pump (6) and radiator bypass hose (7). During warm-up, water flows in engine only. Between 82 and 95°C, thermostat opens hose to radiator without closing the bypass valve so water from engine and radiator meet at impeller-type water pump. All the while a heat sensor on thermostat sends readings to rider. At 95°C bypass valve closes and all water is cooled by radiator before returning to engine. Fan automatically cuts in if temp reaches 105°C but in much hard riding our gauge needle hardly budged past the half-way point. 4. Rectangular space in center houses electric-starter motor and contains water gallery hole leading to water pump located deep inside crankcase. Note engine mounts and circular oil pump base at rear. Engine doesn't leak. 5. Lower engine casting shows water-pump swirl chamber, coolant-system drain plug at upper left and four of the eight rubber engine-mount points. 6. Thermostat-bypass valve combination between center and right cylinders meters water in three separate routes depending on temperature. Radiator bypass hose runs in front of carbs. 7. Huge clutch shares oil with five-speed gearbox and crank main bearing inboard of primary drive takeoff gear. Worm gear at lower right turns oil pump. Right angle gear behind center flywheel is water-pump drive. Small, light flywheels are a factor in the severity of engine's surging effect.



6



7

70 x 64mm, and power is rated at a healthy 67 hp at 6500 rpm, though the motor was crowding the 7000-rpm redline at full tilt in high gear. Much of the motor's vast torque evolves from a new porting layout discovered during development of Suzuki's World Champion 250 moto-crosser.

Since this design involves huge transfer ports, Suzuki had to figure out a way to place three of these cylinders in a row without the large transfers consuming all the space gained by eliminating cooling fins and thereby extending crankshaft width. Some simple but clever cylinder layout rotation did the trick; the most area between two circles drawn side-by-side is between 2 o'clock and 10 o'clock on top, and 4 o'clock and 8 o'clock on the bottom. That's where you put the inside set of transfer ports, some 30° away from their normal 3 o'clock and 9 o'clock positions. Slick. The right-hand bore is spaced farther from the center than the left to make room for the primary drive takeoff gear, but its porting is rotated a like amount, but in an opposite direction, so symmetry and tuning characteristics are equal on all three barrels. Engine width is 16 inches and crankpins are located 120° apart so high-frequency vibes are low.

Another recent change from prototypes which also boosts torque and helps reduce noise involves the fitting of connector tubes between the mufflers just ahead of the point where the center pipe divides into two. The center cylinder's exhaust splits beneath the engine into a pair of muffled expansion chambers whose total area equals that of each single pipe; therefore size is reduced by half and ground clearance problems common to three-pipe triples are eliminated. The reverse cone mufflers are detachable for cleaning and rightly so because cleaning baffles is always a critical part of two-stroke maintenance.

Suzuki claims water-cooling reduces operating temperatures by 30% and therefore closer assembly tolerances can be employed since expansion factors are not as great; thus quieter running, no piston slap, more even cooling and more engine life. Possibly so, but generous use of strong bearings everywhere will probably be more responsible for long life. There are caged needle bearings on both rod ends, and four hefty caged ball bearings supporting the crank. Each side of both transmission shafts rotate on caged balls. A massive 15-plate clutch with six shock absorbing springs and six pressure springs combines with a unique system of flexible rivets to provide smooth action and weld-like grip. It shares oil with the gearbox, a five-speeder with overall ratios of 14.9, 9.1, 7.1, 5.9 and 4.8 to one. Gearing could

1. *Dale Boller exercises Suzuki GT.*
2. *Well positioned instrument cluster includes a water temperature gauge and center ignition-lock location. Just in front of pop-top gas cap is folding panel covering radiator neck.*
3. *Electrics are clustered in this readily accessible and easily serviceable location behind left sidecover. Separate plug-in harneses from mill are seen along with starter solenoid, rectifier, voltage regulator and turn-signal relay. Ignition: battery-coil.*
4. *Three coils and radiator overflow tank nestle between top tube and dual top rails. Note gussetted hole in top tube for radiator filler neck and robust radiator hose running to thermostat and bypass-valve combination on head.*



1

be juggled for more acceleration or top speed, whichever the rider is a glutton for, since the motor is easily up to pulling a higher cog. Shifting is sure and quick, but engaging first from a stop produces an annoying clunk, sometimes also prevalent when snicking into second. Finding neutral is easy.

Automatic oiling, called CCI (Crank Cylinder Injection) by Suzuki, is metered by a pump driven from a worm gear on the outer kickstarter shaft; but this gearbox-driven shaft turns only when the clutch is engaged, so don't sit at red lights in gear. Two-stroke oil is delivered under pressure to nozzles in the inlet track for piston lubrication and to nozzles aimed directly at three main bearings; the fourth (between center flywheel and primary takeoff gear) runs in gearbox oil. Suzuki claims precise metering of no more oil than necessary, plus exact carburetion, has eliminated most all smoking—this is true. Throughout warm-up there's enough smoke to get dirty looks from anti-pollution buffs, but within 10 minutes the Le Mans cleans itself up and runs without a trace of blue, with the possible exception of a wispy flurry when responding to sudden wide-open throttle blasts. Evidence of the pump's selfish metering is in the amazing oil-tank mileage; we squeezed out 720 miles before the level even reached the viewing window's center point, yet the tank was still good for another 200 miles—that's about 475 miles per quart, or a cool 1900 miles per gallon! It can be done —Kawasaki take note.

The carburetion so critical in smokeless running is handled by a trio of 32mm Mikuni VM's fitted to finned intake manifolds with plastic adapters. Air is drawn through a large filtration chamber with removable element. A small control above the clutch lever activates three separate cable-operated enrichening devices for easy cold starting. Hot or cold, the electric starter needed only a half-second burst. But be sure the vacuum-controlled petcock is in the proper position before starting; here's why. Since the diaphragm stops flow when the engine isn't running, there is no need for an off position on the petcock. The normal operating position is with the arrow pointing straight up, reserve points at 9 o'clock and a diaphragm-bypass position for draining the tank or filling the float bowls after cleaning is straight down. We blew it and left our petcock in this "prime" position overnight, and upon starting up next morning . . . nothing but a thunk from the starter gear engaging. She was locked solid. The center piston had been in such a position that gas filled the crankcase and hydraulic lock ensued. So we had to return the bike to Suzuki and get another one, which was good for our evaluation since the second bike could confirm findings on the first. The only difference besides color was slightly less progressive clutch feel in the second machine.

Ironically Suzuki stayed conventional with the ignition system, no space-age electronics in sealed black boxes. A simple battery and coil system employs three condensers and coils and three sets of mechanical points activated on on the outside of the crank. The design originally called for a lobed cam on the end of the crank itself to trigger the points, but at high revs the shaft would whip enough to advance spark timing. The shaft extension directly off the crank was replaced by a separate short-shaft running in two bearings and attached to the water-pump gear on the end of the crank by a flange which contains a peg that now activates the points. Problem solved. An alternator on the right side of the crank charges the 12V battery and supplies the lights with electricity via a voltage regulator. The taillight is a large Class A twin-bulb unit, so there is always one light at least.

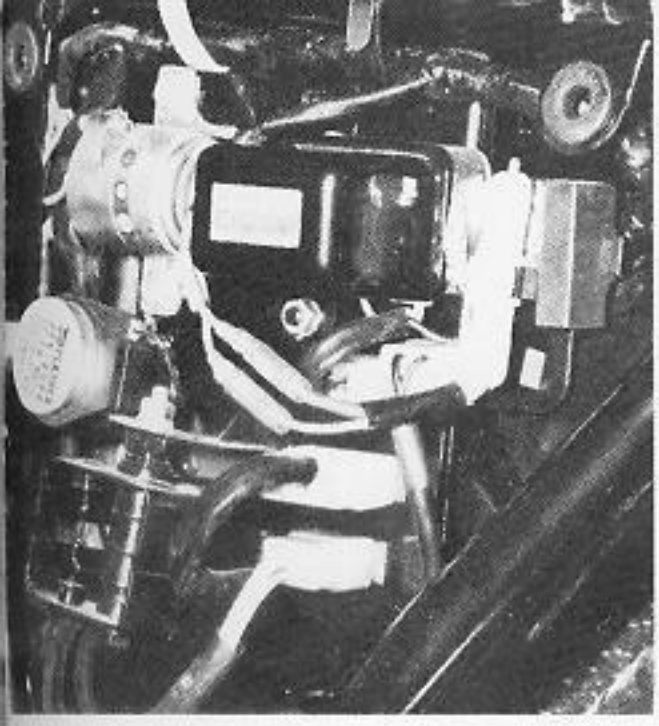
And now to the cooling system. If you understand how cooling in a car

WET AND WILD



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works, the Suzuki's system should be duck soup. There are three basic components: a radiator, a centrifugal impeller-type water pump deep inside the left crankcase and a thermostat which controls a radiator bypass valve atop the head where the water leaves the engine. Depending on temperature, coolant follows three different circuits in traveling through the water jackets around the cylinders and combustion chambers. To hasten warm-up the thermostat closes the engine outlet to the radiator and water returns directly to the pump via a raditor bypass hose between the carbs and cylinder block. Soon the temperature reaches 82°C and the thermostat opens the radiator hose but the bypass is still open so cold water entering from the radiator meets the already-hot bypass water at the water pump so the resultant mixture is heated sufficiently to enter the water jackets. When the temperature reaches 95°C, the bypass valve closes and all coolant is routed through the radiator. In extreme cases of 105°C readings, possible in bogged traffic when natural airflow through the radiator is nil, a heat-sensitive relay



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switches on a small radiator fan with four plastic blades. Since the fan rarely operates, periodic checking is accomplished by pulling quick-removable wire connectors from the relay and switching on the ignition. Temperature is monitored by the rider on a gauge above the tach and speedo, and there is a plastic radiator overflow reservoir halfway down the filler neck. The system works so well a rider can lay his bare hand on the cylinders while cruising 70 mph. In addition the residual finning still on the cylinders and head (no doubt for looks and strength) also aids cooling. Cucumber city.

"So that's how it works. Why did they build it that way?" It had to be an offensive move with a big splash. Suzuki was on the defensive in the touring and superbike market with their 500cc Titan two-stroke twin because just a year after the Titan's pioneering debut in 1968, Honda arrived with the Four, Kawasaki with the Mach III and Yamaha was aboard with their 650 four-stroke. To top this performance-oriented competition from Japan and slide in on the touring business of BMW, Harley-Davidson and Moto Guzzi with a conventional motorcycle would be a difficult task technologically and certainly would not gain the same publicity as an all-new, radical design. No doubt Suzuki's top design team sat down with a blank sheet of engineer's drawing paper and minds carefully disciplined to absolute objectivity regarding the form their proposed superbike tourer should embody; without this total objectivity Suzuki might have done something conventional and lost the opportunity to employ this refreshing, and completely effective, alternative. The final choice was based on what the engineers truly believed was ideal.

Suzuki had an advantage in implementing their design because of direct familiarity with water-cooled two-strokes. For years the tiny 360cc cars sold by the thousands in Japan have featured three-cylinder water-cooled engines. Also their 50cc 110-mph 5-hp-per-cubic-inch road racer was an aqua baby. With this experience the Le Mans should be quite trouble free. Indeed, factory testing racked up 180,000 miles on six 750's without a hitch; the U.S. distributor zipped their first two production bikes from L.A. to Salt Lake City and back (4000 miles) without a hitch; and finally we experienced zero trouble in 1600 miles of hard, fast riding on two different low-mileage bikes not even properly broken-in. The bike's got endurance, and that's why it's named after racing's most grueling marathon—Le Mans.

"Sounds pretty good. Who's going to buy it?" Easy. Those who've sacrificed sporting performance for easy-chair ride can now get both, thrilling touring with 41 mpg to boot. That adds up to a lot of sales. Cost will be $1575, right in Honda Four country and below H-D, BMW and Moto Guzzi. The sporting rider should be no less apt to buy the Le Mans for city riding than he would a Honda Four, unless the Suzuki's more ponderous appearance and graceless styling offend his aesthetics. But we won't see nearly as many of the two-strokes as Honda Fours for two reasons: (1) Fewer Suzuki dealers. (2) Not enough potential buyers will get the opportunity to take Le Mans on a long test ride. For that's what this sweetheart needs, running room and a chance to let its overall performance overshadow the negative impression it gives on a simple around-the-block test ride.

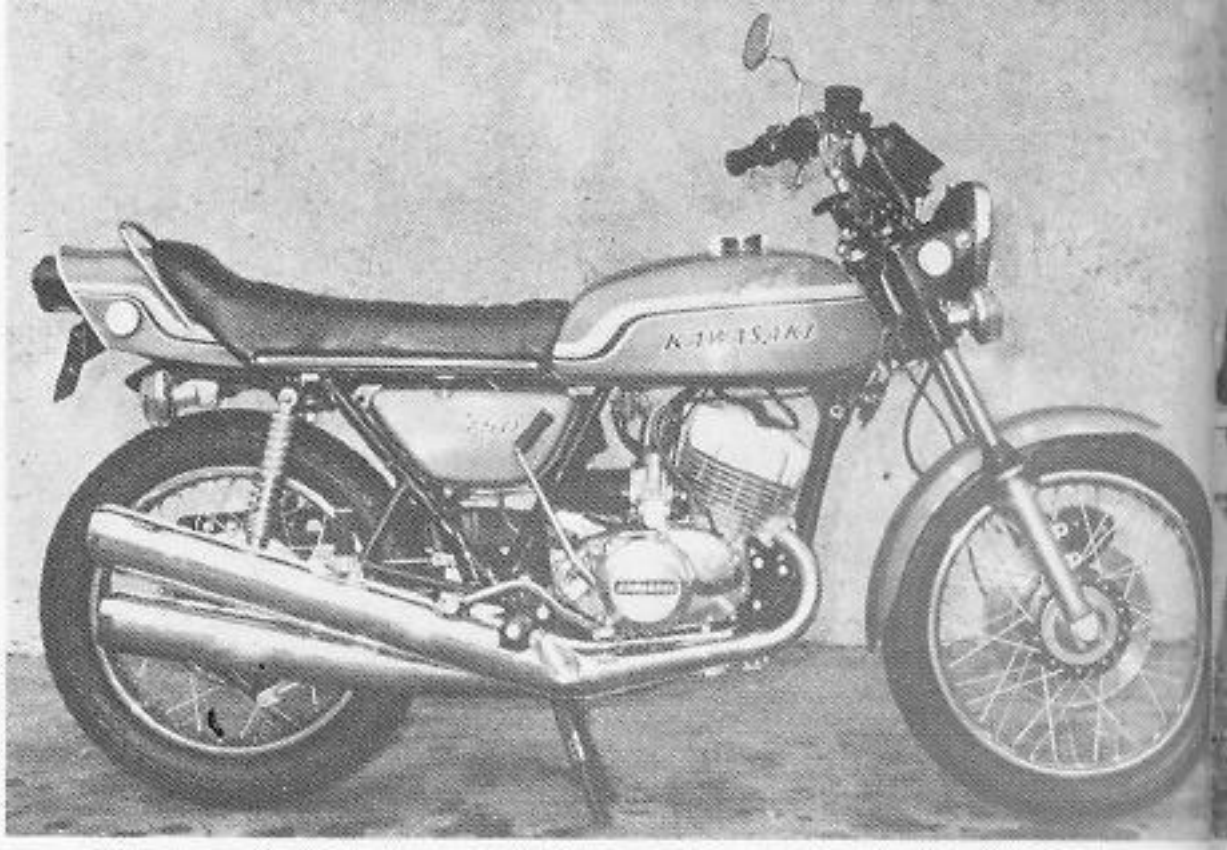
"What? A flaw?" Unfortunately, yes. And a bad one. Remember we said the rider is isolated from the engine's "considerable vibration?" Well, we were being nice. The engine is a noticeable shaker. No vibration of the high-frequency kind reaches the rider because what little the engine generates is dampened thoroughly by rubber mounting. Instead the rider feels and hears rat-tat-tat jerks in the drivetrain and the whole engine caused by a normal two-stroke phenomenon called surging, which is simply an intermittent firing of residual charge in the crankcase between power strokes. It's unavoidable and relatively harmless to the engine. Surging becomes more pronounced as number of cylinders and their bore increases; that's why it's not felt on a 100cc single and why the 750 Kawasaki shakes twice as badly as the 500. Surging occurs *only* when the engine is not under a considerable load, so on downhills, or when the throttle is rolled off or even when cruising at low rpm on level ground the engine is leaping about in its mounts.

Why did we wait so long to reveal this seemingly major shortcoming? We wanted you to read about it in light of the bike's overall brilliant performance, for that's how we view this detraction, a minor irritation in an otherwise consummate package. Once the rider realizes the problem and gets used to it, the Suzuki's many other overwhelming virtues easily offset the occasional surging effect.

Any negative speculation we have about the bike centers around the ultimate toll this engine shaking will take on internals and drivetrain components; fatigue failure is certainly more likely to occur, but remember this same surging exists in the 850 Saab water-cooled car engine and we know of a 1964 model with 44,000 miles and a '66 with 140,000 trouble-free miles. Also realize this shaking is no worse than that common on the big four-stroke singles of yesteryear, and what enthusiast doesn't know of a BSA Gold Star or Velocette Clubman that isn't on its second 100,000 miles? In any case you'll have to experience this jittering in combination with a long country road, and we'll bet your opinion of the bike will be completely different than if you restricted the test ride to the city only where surging is more pronounced. Dealers take note. Turn your customers loose on a long test journey. It's the only sales pitch you'll ever need.

Obviously we were greatly impressed with the motorcycle. Our necessary dedication to objectivity as a tester crumbled under the Suzuki's seductive bursts of acceleration and effortless winging at unmentionable speeds; we fell in love. In spite of jerky surging and scraping centerstands we hang a big fat blue ribbon on this baby's bars, and in so doing predict the Le Mans in racer form will be in the winner's circle at Daytona, Talladega and Ontario within a year. It's a touring bike supreme and a superbike in disguise, all backed by a 12-month, 12,000-mile warranty. But you won't believe a word of this unless you ride it 50 miles.

WET AND WILD



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We can't write near as much about the Kawasaki as we did about the Suzuki because nowhere near the same amount of technical data was available at the early November deadline. The Mach IV would merit equal space if tested alone and if equal material was available, but in an article of limited size we let the Suzuki upstage some of the Kawasaki's space because on a comparison basis it upstages the Kawasaki. For in this new '72 from the Japanese industrial giant, we have a machine of extremely narrow scope, limited drastically by its own grand design, which most certainly appears to be power with a capital P.

In other words the Kawasaki Mach IV 750 two-stroke triple delivers performance – shattering acceleration and 121-mph top end–but little else in the way of practical motorcycling. For instance, mileage averaged an abysmally low 20.8 mpg and sunk to 18.3 with hard running; exhaust smoking is excessive; engine noise is aggravating to a whole city block; the vibrations have vibrations and the surging effect is unspeakably pronounced, even more so than in the Suzuki. The U.S. distributor concurs with the existence of all these faults and explains they are concessions to performance, which almost single-handedly must offer enough of an offsetting virtue to sell lots of motorcycles.

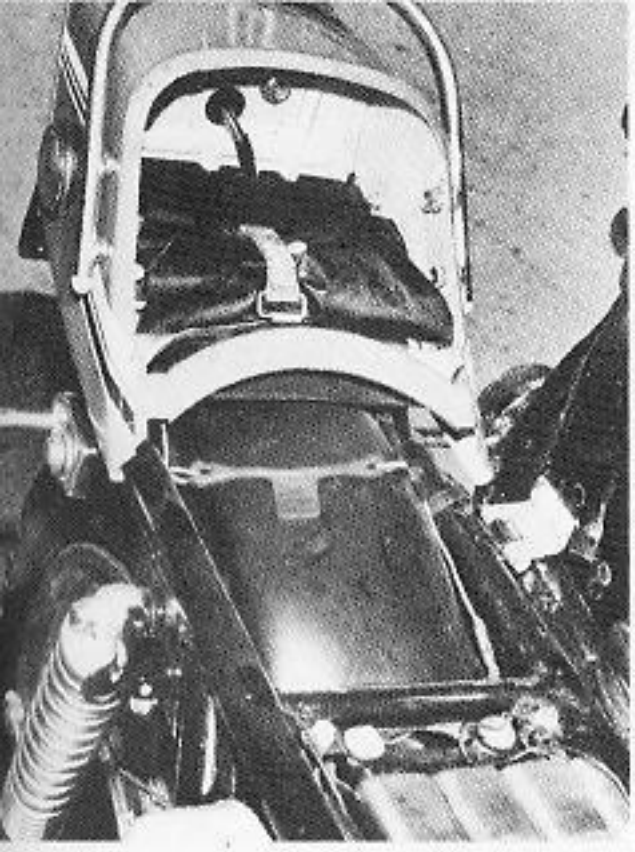
The picture really isn't this bleak, for the 750 is endowed with many desirable attributes in addition to being a lightning bolt, but in light of the more versatile Suzuki and four-stroke multis, it falls short when more practical aspects of motorcycle ownership are considered. Perhaps the factory felt obligated to top their 500's performance with the 750 rather than restrict speed and power to what certainly would be superior anyway, and attack competition in areas of smoothness, comfort and versatility. Since the 500 would still be No. 1 shotgun without the 750, why not go for overall excellence?–which could easily be achieved on the Mach IV with a minimal power compromise.

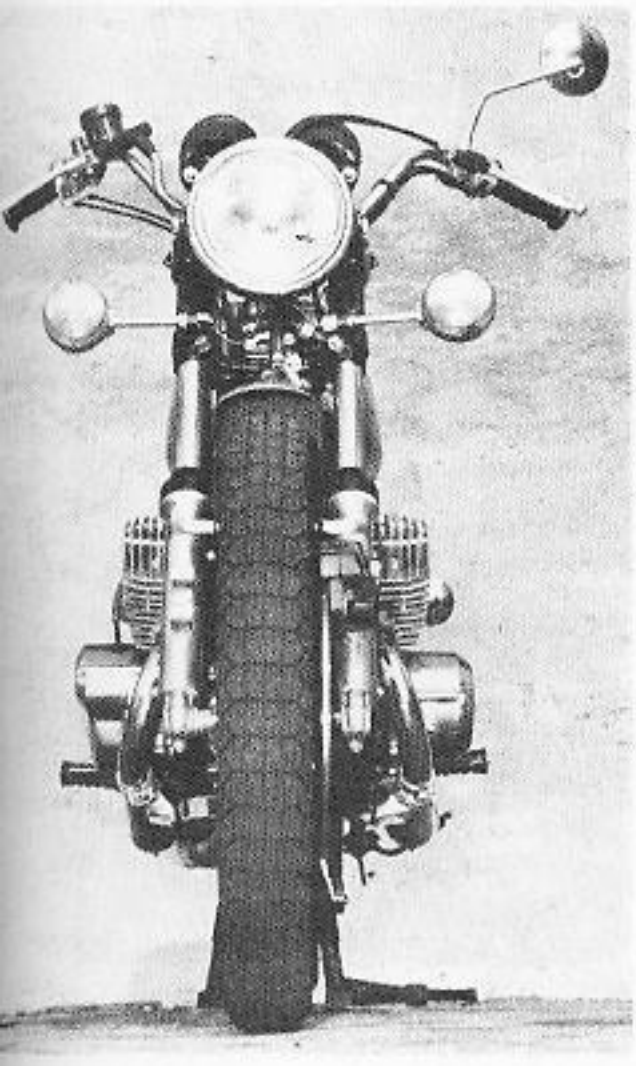
In any case the long-awaited sequel to the legendary Mach III 500 is here, arriving amidst a flurry of rumors that predicted Kawasaki might be working on a massive four-stroke to defend the onslaught of faster and faster superbikes from other manufacturers. Instead they enlarged a proven two-stroke engine design, solved the Mach III's handling problems, added a luscious disc brake, projected a rock-bottom price of $1395 and called it the Mach IV.

Everybody knew it would be a rocket ship. It is. But surprisingly it doesn't



3





1. Styling is new and fresh but liking it is a matter of personal taste. Fine workmanship throughout enhances design.
2. Tail section has gobs of room for extra tools or even gloves, goggles.
3. Tony Murphy bends the big K.
4. A 56-inch wheelbase and excellent suspension delivers good handling. It's a jet for expert riders only.

really feel as swift as it is. Until a rider sees ¼-mile slips or actually times a top-end run, he might think the 500 is quicker. This is because a much wider powerband with more torque distributes even acceleration over a longer spread in each gear—that great rush of power when the Mach III hits its pipes is gone. Also the large amount of engine noise and vibration attendent to blasts on the 750 tends to detract the senses from their complete concentration on the feeling of acceleration. But brother, that motorcycle squirts, from 3500 rpm right on past the redline, and the guy who can't handle it had better disconnect a cylinder or something, for it won't take long to lose the whole works. Thankfully the Kawasaki is slow running and tractable at small throttle openings and shows no racy temperament while poking in the city. Vastly superior torque to the 500 completely eliminates the old clutch-slipping game, and the 750 will start off hills in second that require deft clutching in first with the 500. Good torque is there, but not near as low down as the Suzuki.

"How does its power compare with other bikes?" In 900 miles of testing we chose-off every rider who didn't pretend to ignore us when he saw those big "750" numerals on the sidecovers; never lost once. Honda Four riders were the maddest, Mach III riders were the happiest, because they just saw their next bike in action. Our own test Suzuki actually gave the Mach IV its closest combat, matching it through third gear and again for several seconds after a high-gear throttle roll-on at 70 mph. But if it's jet propulsion you want, there's only one choice, all 74 horses of it.

"What about braking and handling?" Braking is superb. Kawasaki obviously did much research and testing on their disc, for not only does it stop straight and sure with no fork flexing, but also the entire wheel and fluid-line components are designed for the bolt-on addition of a second disc. No rush job to meet production schedules here. The system includes a leak-proof reservoir atop the right handlebar, an adjustable brake lever, floating caliper with self-aligning action and synthetic pucks with a bright red line to indicate replacement time. The attachment method of the disc-support to the wheel also makes the axle an integral part of the entire hub assembly, so overall wheel strength should be exceptional. As recounted earlier, a whole series of punishing tests revealed no fading, but road feel is less than in certain drum units. In combination with an excellent single leading shoe rear anchor, overall stopping efficiency is unexcelled.

Handling is far better than expected and a vast improvement over the sometimes snaky Mach III. Never more did a motorcycle need good handling to steady and direct its great speed, and thankfully the 750's geometry and suspension are up to the job. With this engine a rider can be over his head with alarming frequency on mountain roads, yet the chassis will save him by rifling through turns without any scraping or undue waver. On off-camber turns or extremely deep leaning the footpegs will lightly brush the ground as a warning which should be heeded by most riders. No stability is lost as speed increases, and the Kawasaki copes with rough-road turns much better than the Suzuki. Excellent forks which even began moving over freeway seams after 700 miles of break-in are fitted with a friction steering damper for precise control in varying conditions. Three-way adjustable shocks performed best in the center setting. A good riding position complements handling and there's no need to scrunch up or slide rearward to bring out the best in the chassis; just settle back and gas it, the frame can handle as much of the engine as you can.

"How 'bout the usual raft of Kawasaki features?" They're all there and a couple of new ones besides. For instance Kawasaki may have come up with the first truly effective chain oiler in motorcycle history. In back of the left-side electrical panel is a small oil reservoir with a manually controlled spring-loaded plunger valve. This valve is connected to a clear plastic hose which aims directly on the chain just in back of the countershaft sprocket. The valve is easily operable from the saddle, even with gloves, and recommended procedure is to zip up past 60 mph, pull the valve for a count of three and let your favorite brand of 30 weight bathe away. Repeat every 200 miles for longer and more quiet chain operation. We found the three count was sufficient to cover the entire ⅝ x ⅜ "endless" chain without flinging a nasty residue on the bike or rider.

Further extra features include adjustable pegs (up and down) and a convertible gear shift (left or right). The right and center carbs have big knurled wheels on the idle screws for easy hand adjustment. An ignition lock front-and-center with the instrument cluster accepts the key either way, and the fork lock works with the wheel turned either right or left. About the only major feature the big K doesn't have is electric starting. The engine lights off easily by foot, however, but some riders complain of the lever folding up and snapping back before the bottom of its stroke.

Finish, as on all Kawasakis, is flawless. Our pilot-production bike was rough in a few places, such as around lever-clearance indentations in the exhaust pipes, but a later model examined at the distributor's showed artisan-like detailing and several minor improvements in hose routing and rear-axle access. They're updating all the time.

Styling at first looks contrived with the seemingly bulky and high tail section existing only as a medium to continue the tank's accent stripe; even a separate shorty fender is needed below to fulfill the tail section's duty properly. But soon the lines begin to flow and the combination is appealing, but at the expense of passenger comfort, as learned on the first two-up ride. The spacious tail section with its extra room for tools and gloves steepens and shortens the rear seat's contour to the point that neither rider nor passenger can be comfortable. We'd rather see the Mach III's seat on all of Kawasaki's multis.

Technically the 750 is similar to the 500 and much simpler than the Suzuki, primarily because of air cooling, which is so efficient that it provokes wonderment at Suzuki for choosing an alternative. Ever see your girlfriend test the temperature of an iron? She licks her finger and brushes it across the shoe; there's a quick hiss if it's hot. Try the same thing on the Mach IV's outside cylinder-head fin—not a sizzle because it isn't hot. Uncanny. Other technical details are just as impressive.

Frame

Mach IV sports a frame almost identical to the Suzuki. Double cradle, dual top tubes and an angled tube splitting the gas tank from the steering crown. Welds are gloppy, but deep, and the swing arm appears to have extremely rigid mounting. The only dimension we can confirm at presstime is a 56-inch wheelbase.

Suspension

Standard telescopic forks with internal springs and exposed stanchions mount on a cast triple crown and work as well as any roadbike forks we have tested. And they get better as mileage piles up. Unusual rear shock springs with the bottom five coils permanently bound have good action and are well damped. No complaints at either end.

Running Gear

Cross 2 spoke lacing ties a handsome black and chrome hub to a 19-inch steel rim up front, while at rear an 18-incher spins with a full-width alloy hub-and-brake combination. Yokohama tires with an unusually soft rubber compound for a production bike measure 3.25 and 4.00. The softer rubber sacrifices long life for superior gripping qualities, and indeed, the tires added much to the bike's stable handling.

Engine

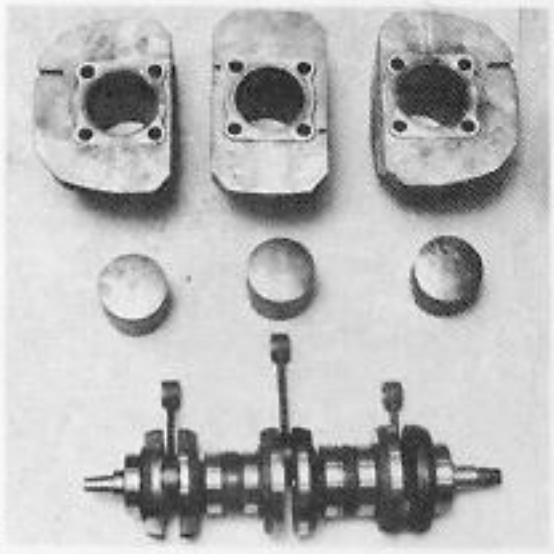
The source of 74 hp at 6800 rpm is a 745cc aluminum alloy two-stroke with 7:1 compression and three 71 x 63mm cylinders. The smallest of the six 750 main bearings is the same size as the biggest main bearing in the 500 Mach III; similar structural increases accompany all phases of the 750's design so reliability at least concurrent with 500 figures should be expected from the Mach IV. Both rod ends oscillate in caged needle bearings while both transmission shafts rotate in caged ball bearings on the drive side and caged needles on the opposite side. Piston-port induction controls charge mixed by three 30mm Mikuni carbs which are positioned for easy synchronization by such tools as the Uni-Syn. Induction noise is virtually eliminated by a huge air cleaner and special rubber intake stack under the seat.

Ignition is a more serviceable version of the former Mach III CDI system; instead of using a single "black box" and coil, this machine employs three electronic pick-ups to activate three black boxes under the seat and three coils under the tank. Each cylinder has a separate, traceable system and even the pick-ups are quick replaceable bolt-ons. Timing is still permanent and can be checked statically or by strobe. An alternator works in conjunction with a solid-state voltage regulator and diode in charging the battery and serving the lights. These electrical components are tucked neatly behind the left side-panel. Automatic oiling regulated by throttle opening pressure-feeds lubricant to main bearings and the induction tract. A 2.1-quart tank serves the "Injectolube" system and is good for about 750 miles of riding.

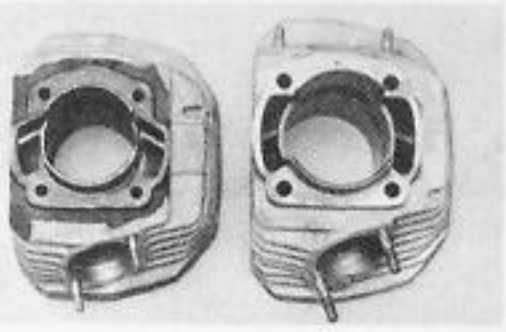
Power transmission consists of a gear-drive primary, multi-disc wet clutch with two more plates than the 500 and a butter-action five-speed gearbox with neutral at the bottom of the shift pattern, which unfortunately leaves the door open for accidental free wheeling when downshifting. Well spaced ratios are 2.17, 1.47, 1.11, .92 and .81 to one. The gear pattern and an occasional clunk when engaging first gear from neutral are our only complaints with the entire powertrain.

That these docile-sounding specifications combine to deliver such brute performance is indeed a credit to Japanese technology. However in catering to gluttonous American desire for more and more power, Kawasaki has produced an engine which is the source of nearly all the Mach IV's shortcomings. Ironic but true, since the whole list of complaints emanates from the powerplant: smoking, noise, vibration, surging and poor mileage.

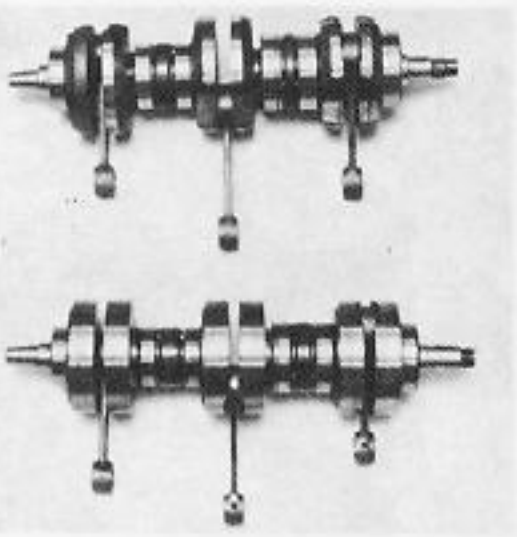
These deficiencies are severe enough



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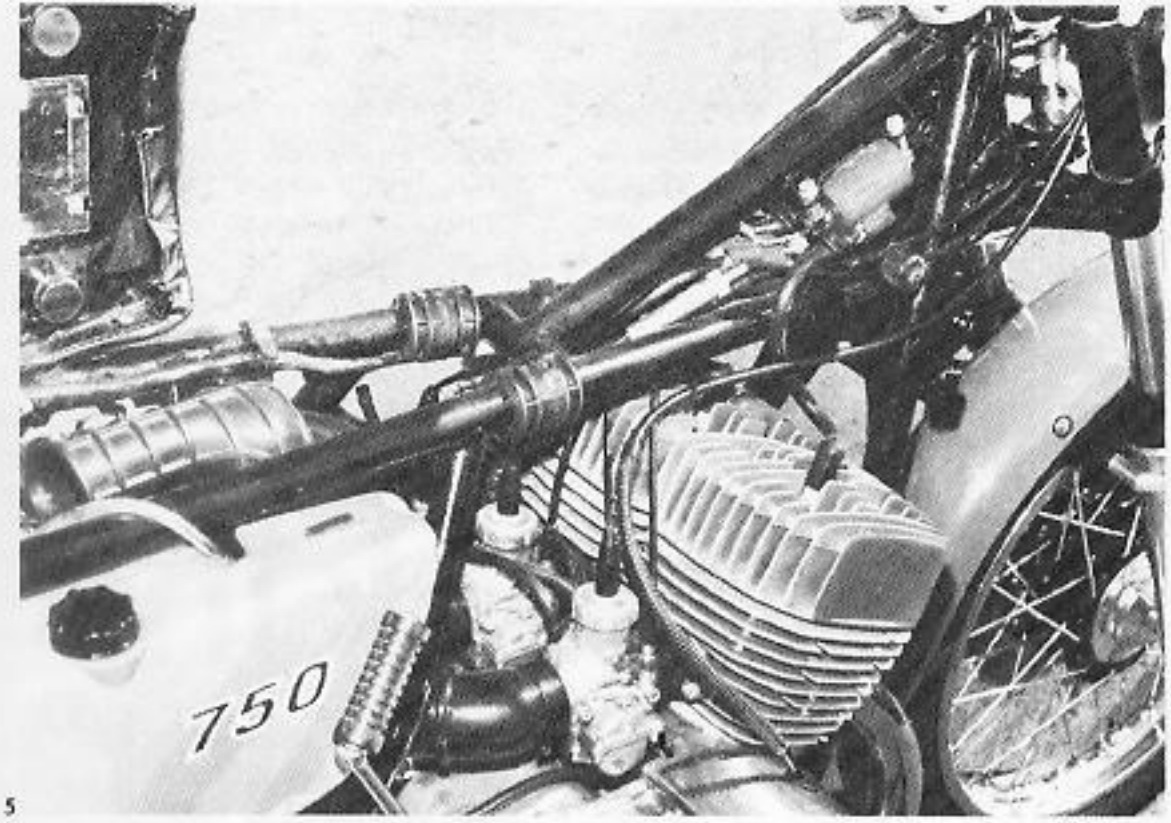


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1. Three separate cylinders mate with two-ring alloy pistons whose pins are offset 1 mm. Ample finning helps bike run extremely cool in all conditions.
2. The 750 cylinder on right has much larger transfer ports than 500 barrel.
3. Mach IV 750 crank is actually a shade narrower than 500 version below. Bigger bearings and chopped flywheels are other differences in six-bearing, 120° offset units. Small flywheels are inadequate in resisting surging.
4. Left sidecover hides battery and chain-oiler reservoir but plunger valve for chain oiler remains exposed. Clear tube directs oil on countershaft.
5. Above 2.1-quart oil tank is round rubber air-cleaner intake tube which muffles induction noise.



5

WET AND WILD

	KAWASAKI	SUZUKI
Model	MACH IV 750	GT-750J LeMANS
Price	Approx. $1395	$1575
Displacement	748cc	738cc
Engine Type	2/S Triple	2/S Triple
Bore & Stroke	71 x 63mm	70 x 64mm
Comp. Ratio	7:1	6.7:1
Carburetion	(3) 30mm Mikuni	(3) 32mm Mikuni
Ignition	Electronic CDI	Battery & Coil
Claimed HP @ RPM	74 @ 6800	67 @ 6500
Clutch	Multi-disc, Wet	Multi-disc, Wet
Primary Drive	Helical Gear	Helical Gear
Gears	5	5
Indicated Top Speed	121 mph	115 mph
Mileage	20.8 mpg	41.3 mpg
Weight (Wet)	464 lbs.	531 lbs.
Frame	Dbl. downtube 2 Tri backtubes	Dbl downtube 2 Tri backtubes
Front Brake	Disc	Four leading shoe
Shift Pattern	Left, Neu. down	Left, 1st down
Fuel Capacity	4.5 gal.	4.5 gal.
Oil Tank Capacity	2.1 qts.	1.9 qts.
Tire Brand	Yokohama	Bridgestone
Tire Sizes	3.25x19, 4.00x18	3.25x19, 4.00x18
Wheelbase	56"	58½"
Ground Clearance	6⅝"	5⅞"
Handlebar Width	31½"	31½"
Peg Height	12½"	12"
Seat Height	31¾"	31½"
Peg to Seat	19¼"	19½"
Overall Length	6'10"	7'2½"
Trip Mileage	Yes	Yes
Fork Lock	Yes	Yes
Ignition Lock	Yes	Yes
Kill Button	No	Yes
Steering Damper	Yes	No
Pop-Top Gas Cap	Yes	Yes
Folding Pegs	Yes	Rear only
Adjustable Shocks	3 pos.	5 pos.
Tools	Yes	Yes
Turn Signals	Yes	Yes
Start In Any Gear Feature	No	Yes
Electric Starter	No	Yes

to dampen the appeal of performance-with-all-the-trimmings to the rider who is seeking a touring bike, daily transportation or even a weekend playtoy where the play is at posted road speeds. A legion of sporting riders bent on experiencing the fastest will purchase the Kawasaki and love it, but even many speed freaks will pass after a couple of test rides. Here's why:

Blue smoke from our machine was excessive despite proper pump adjustment and correct oil. When we added an unrecommended oil, smoking increased. Kawasaki is presently attempting to cure this problem by decreasing the oil-pump ratio (volume of oil flow/engine rpm). Suzuki was successful in eliminating smoking, and Kawasaki should be too. The sooner the better.

At high rpm the piercing din of engine noise amplified by cooling fins plus the exhaust note is an earsplitter for the rider and any other nearby persons. In contrast with the Suzuki it's like Grand Funk Railroad compared to James Taylor.

High frequency vibration reaches feet, hands and hips, unstopped by rubber engine mounts and unusually large handlebar dampers. Vibes are minimal at certain engine speeds but rarely are auto headlights reflected crisply in the rear view mirror. It's livable, but rather irritating.

Surging takes on machine-gun proportions when the engine is not under load and comes on with a sound and shaking that is dreadful. This inherent two-stroke problem can be minimized by exact carb tuning but never eliminated completely. It's something a rider can get used to, but it's serious enough to cause the loss of many sales on its own; especially if the Kawasaki is tested immediately after riding a nice, smooth four-stroke.

Mileage is labeled poor because it averaged 20.8 in 900 miles of testing with a low of 18.3 mpg at 80-mph cruising and a high of 26 mpg in the city with a light, slow rider. The tank would typically go on reserve after 65 miles, so a traveler would be forced to stop for gas once an hour and he could expect to go 90-95 miles on a tank at most.

These five shortcomings are enough to have generated an ambivalent attitude toward the Kawasaki among the *Motorcyclist* staff. Every potential buyer would discover all but mileage within a city block, so we're not doing Kawasaki a disservice with frank discussions here. By now the reader should know that if he wants the fastest, he should buy a Mach IV, and be prepared for a little noise and a few shakes; it's as simple as that.

"A 12-second 750 for $1395? So what if it shakes?" •