

Introduction to the Suzuki 500 range

The Suzuki Motor Company commenced making motor cycles in 1936. However, their machines were not imported to the UK until 1963. Backed by the success of their racing machinery, the 250 cc models quickly caught on and their impressive performance has maintained their popularity.

In November 1968 Suzuki introduced their first 500 cc machine, the T500 Cobra and showed they had overcome the design problems of building a high revving large capacity two-stroke engine. Once again, the performance obtainable from Suzuki's machine immediately took it into the production racing field and it was later developed for road racing - its only apparent drawback being its high fuel consumption which necessitated large fuel tanks for long distance events.

A year after its introduction, the Cobra was revamped and introduced to the UK as the T500 II. This machine, in turn, was discontinued in August 1970 and replaced in October 1970 by the T500 III Charger which possessed a luggage grid on the petrol tank and a few minor modifications. However, in January 1971 the T500 III became the T500R with the disappearance of the luggage grid and the inclusion of a restyled tank and new colour scheme, a tripmeter in the speedometer and a new lighting switch. January 1972 and another paint scheme plus a few minor modifications turned the 'R' to a 'T'; January 1973 brought the T500K and January 1974 the T500L which shows that Suzuki must be well pleased with their T500 series.

In general, the T500 series of motor cycles have been virtually unchanged since the initial revamping of the T500 Cobra. This shows that extensive development work must have been carried out by Suzuki before they introduced the tried and tested machine to the UK. From the maintenance viewpoint, the engine is relatively easy to work on, as are most two-strokes, and should present few problems to the home mechanic. Also,

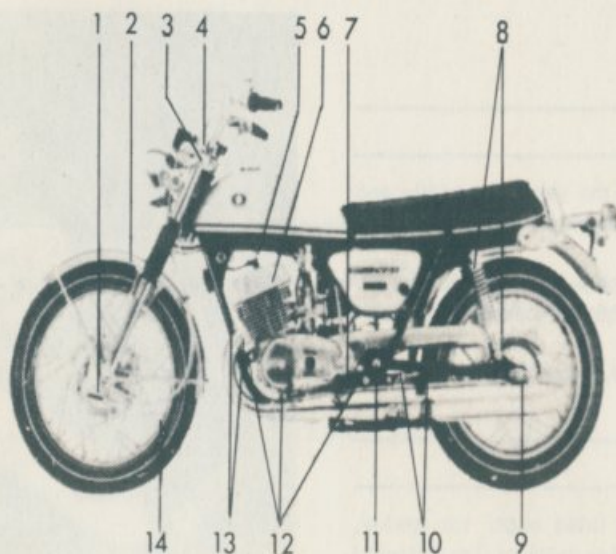
dealers have indicated that the motor is reliable and rarely requires a complete stripdown as long as regular maintenance has been carried out by the owner. In addition, riders comments must place it as one of the best motor cycles available today - a high performance, finely balanced, well designed machine.

Suzuki have shown that, with their 'Possi-force' (or 'CCI') lubrication system, they can produce reliable, large capacity two-stroke motor cycle engines and, unlike their other Japanese competitors, have remained faithful to the two-stroke for their two and three cylinder machines. Experience gained in the early 1960's under the exacting conditions of racing led to a World Championship; proof enough that Suzuki rank amongst the leaders in the design and manufacture of high performance two-stroke engines. The trend continues, as emphasised by Suzuki's recent victory in the British 'Formula 750' Championship and by the formation of the Suzuki Owners Club of Great Britain.

Dimensions	T500	GT500A
Overall length	86.2 in (2190 mm)	86.9 in (2206 mm)
Overall width	34.3 in (870 mm)	34.6 in (880 mm)
Overall height	44.3 in (1125 mm)	44.7 in (1135 mm)
Wheelbase	57.3 in (1455 mm)	57.7 in (1466 mm)
Ground clearance	6.9 in (175 mm)	6.3 in (160 mm)
Dry weight	412 lb (187 kg)	395 lb (179 kg)

RM1. TORQUE SETTINGS

No.	Part	Quantity	Tightening Torque
1	Front axle nut	1	650 kg cm (47 lb ft)
2	Fork inner tube fitting bolt	2	200 kg cm (14 lb ft)
3	Steering stem head fitting bolt	3	250 kg cm (18 lb ft)
4	Handlebar clamp bolt	4	130 kg cm (9.5 lb ft)
5	Spark plug	2	200 kg cm (14 lb ft)
6	Cylinder head nut and bolt	16	350 kg cm, 200 kg cm
7	Kickstarter fitting bolt	1	300 kg cm (21 lb ft)
8	Rear shock absorber nut	4	250 kg cm (18 lb ft)
9	Rear axle nut	1	650 kg cm (47 lb ft)
10	Muffler fitting bolt	4	300 kg cm (21 lb ft)
11	Rear swinging arm pivot shaft	1	650 kg cm (47 lb ft)
12	Engine mounting bolt	3	600 kg cm (43 lb ft)
13	Exhaust pipe fitting bolt	4	130 kg cm (9.5 lb ft)
14	Spoke nipple	72	



RM1. Torque wrench settings: check regularly

Quick glance routine maintenance adjustments and capacities

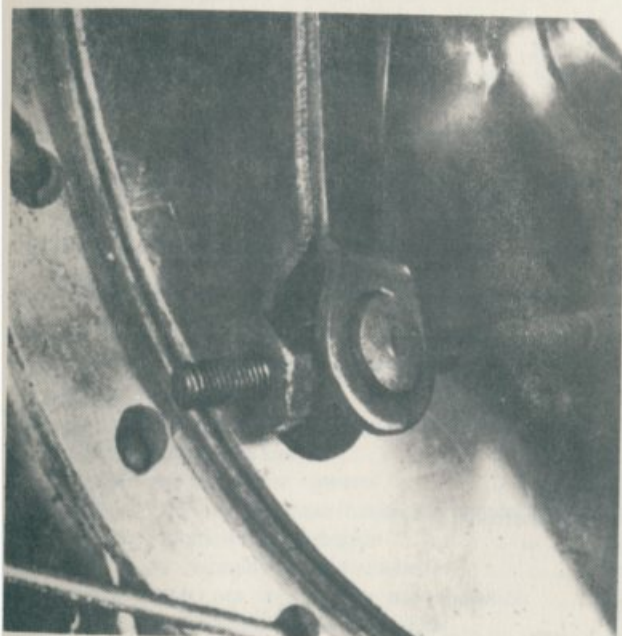
Contact breaker gaps	0.012 in - 0.016 in
Spark plug gaps	0.020 in - 0.024 in
Spark plugs - standard	NGK B-77HC
Ignition timing	24° BTDC 3.44 mm (0.134 in)
Fuel tank capacity	3.1 Imp gallons *
Oil tank capacity	3.16 pints *

* See list of recommended lubricants for grades

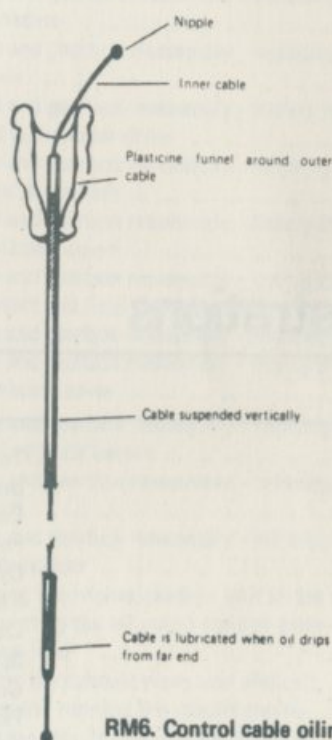
Tyre pressures

Solo
Duo

Front	Rear
23 psi	27 psi
23 psi	33 psi



RM5. Brakes are fitted with adjusters, as shown



RM6. Control cable oiling

Recommended lubricants

ENGINE	...	...	...	...	Castrol TT two-stroke oil (1.8 litres) 3.16 Imp. pints, 3.8- U.S. pints Note: The oil is contained in a separate oil tank, which forms part of the "Posi-Force" lubrication system. OIL SHOULD NOT be mixed with the petrol in the fuel tank.
GEARBOX	...	...	...	...	Castrol GTX (1.4 litres) 2.5 Imp. pints
GREASE NIPPLES	...	...	...	...	Castrol LM Grease
CONTROL CABLES	...	...	...	...	Castrol Everyman oil
TELESCOPIC FORKS	...	...	...	...	Castrolite (220 cc per leg) 0.39 Imp. pints 0.46 U.S. pints
CHAIN	...	...	...	...	"Linklyfe" or "Chainguard"

Specifications

Model	All T500 models and GT500A
Engine	Twin cylinder two stroke
Cylinder heads	Aluminium alloy
Cylinder barrels	Aluminium alloy
Bore	70 mm (2.75 in)
Stroke	64 mm (2.52 in)
Cubic capacity	492 cc
Compression ratio (corrected)	6.6 : 1
Maximum bhp at 7000 rpm	47
Maximum torque at 6000 rpm	37.5 lb ft 38.3 lb ft
Weight	139 lb (63 kg)
Pistons	
Type	Aluminium with piston ring pegs
Oversizes available	+ 0.5 mm (0.020 in), + 1.0 mm (0.040 in)

Piston rings

Number	Two per piston
Gap	0.008 - 0.040 in
Groove clearance	Not greater than 0.006 in
Capacities	
Oil tank	1.8 litres (3.2 pints)
Gearbox	1.2 litres (2.2 pints)

Gear ratios

Bottom gear	2.500 : 1
Second gear	1.563 : 1
Third gear	1.158 : 1
Fourth gear	0.955 : 1
Top gear	0.870 : 1
Primary drive	2.50 : 1
Final drive (standard)	2.20 : 1 (33/15)

Overall reduction in top gear	$\frac{0.87}{1} \times \frac{2.50}{1} \times \frac{2.20}{1} = \frac{4.79}{1}$
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Clutch

Friction plates	
Number	7
Thickness	
Standard	3.5 mm (0.138 in)
Minimum	3.2 mm (0.126 in)
Maximum warpage	0.4 mm (0.016 in)
Steel plates	
Number	7
Thickness	
Standard	2 mm (0.08 in)
Minimum	1.85 mm (0.07 in)
Maximum warpage	0.1 mm (0.004 in)

Clutch springs

Free length	
Standard	40.4 mm (1.58 in)
Minimum	39.0 mm (1.53 in)

Torque wrench settings

	lb ft	kg cm
Cylinder head nuts (long)	25	350
Cylinder head bolts (short)	14.4	200
Engine sprocket nut	29	400
Oil pump union bolt	3.6	50
Primary pinion	36	500
Crankcase bolts - 6 mm	7	100
Crankcase bolts - 8 mm	14	200

Miscellaneous

Backlash in primary drive	
Standard	0.025 - 0.065 mm
Maximum	0.16 mm (0.006 in)
Maximum crankshaft run-out	0.06 mm (0.0024 in)
Maximum sideways play at small end	3 mm (0.118 in)
Gear selector fork - gearwheel clearance	
Standard	0.4 - 0.6 mm
Maximum	0.8 mm (0.03 in)
Clutch housing - axial play	
Standard	0.05 - 0.20 mm
Maximum	0.25 mm (0.01 in)
Maximum piston clearance	0.15 mm (0.006 in)

Fuel tank capacity 100 litres

All models

Oil tank capacity

All models *** **

Carburettors

Make *** **

Type ... VM34SC ... VM32SC

...	VM34SC	VM 32 SC
Main jet	110	150

Slow running jet	410	150	97.5	97.5
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slow running jet	25	30	30
Needle	5500		

Needle ... 5DP2 SEP8 5FP17-3 5FP17-3

Throttle valve	...	2.5	2.5
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Chapter 3 Ignition System

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Specifications

Spark plugs

Make	NGK
Type	
Standard	B-77HC B-7HS (GT500A model)
Cold	B-8HC, B-8HS or B-9H
Hot	B-7H, B-7HC or B-7HS
Reach	½ in (12.7 mm)
Thread	14 mm
Gap	0.020 - 0.024 in (0.5 - 0.6 mm)
	0.024 - 0.028 in (0.06 - 0.7 mm) GT500A

Plug equivalents

Thread size	Heat Range	NGK	Nippon-denso	Champion	AC	Auto-Lite	Bosch	Lodge
	Hot	B-6HS	W17F		44F	AE3		
14 mm				L87	42F			
X				L7, L7J	44FF		W225T1	H14, HN
12.7 mm (½ in)		B-7HS	W22F	L5	42FF	AE2	W240T1	2HN, 3HN
Reach		B-77HC	W24F	L4J, L62R				
X					MC41F	AE23	W240P11S	
20.6 HEX		B-8HS	W24F		M42FF			
	Cold	B-9H		L4J			W260T1	HH14

Contact breakers

Gap	0.012 in - 0.016 in (0.3 - 0.4 mm) CDI system, GT500A model
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Ignition timing	0.134 in (3.44 mm) BTDC both cylinders, measured by dial gauge 24° BTDC both cylinders, measured by degree disc
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Capacitor (condenser)

Rating	0.22 - 0.28 µF
Resistance	10 + Meg ohm

Specifications

Battery

Type	...	Lead acid
Make	...	Yuasa MBR3-12D
		Furukawa FB 12N7-4A
		Furukawa BRT3-12G
Voltage	...	12 volts
Capacity	...	7 amp hr

Alternator

Output	...	1.5 - 2.5 amps at 8000 rpm (daytime running - light electrical load)
		2 - 3 amps at 8000 rpm (night running - heavy electrical load)
Cut out	...	1500 rpm (day and night)
Main fuse	...	15 amp

Bulbs

Main headlamp	...	35/25W Pre-focus
Parking lamp	...	3.4W bayonet fitting
Tail/stop lamp	...	7/23W offset pins
Speedometer lamp	...	3.4W bayonet fitting
Tachometer lamp	...	3.4W bayonet fitting
Neutral indicator lamp	...	3.4W bayonet fitting
Headlamp beam indicator lamp	...	3.4W bayonet fitting
Flashing indicators lamp	...	1.7W bayonet fitting
Flashing indicator lamps		23W each bayonet fitting

All bulbs 12 volt rating