TWO STROKE

# SUZUKI

2-Stroke

# Service Bulletin Index

# RM

| NO. | MODEL | SUBJECT |
|---|---|---|
| 1 | RM125M | SPECIFICATIONS |
| 2 | RM125 | OIL RECOMMENDATIONS |
| 3 | RM125 | CABLE GUIDES |
| 4 | RM125 | CHAIN GUIDE ROLLER WASHERS |
| 5 | RM125 | DISPOSING OF SHOCK ABSORBERS |
| 6 | RM125 | MIS-ENGAGEMENT OF 3RD GEAR |
| 7 | RM250/370 | SPECIFICATIONS AND GENERAL INFORMATION |
| 8 | RM250/370 | OIL RECOMMENDATION |
| 9 | RM250/370 | SET-UP INFORMATION |
| 10 | RM250/370 | TROUBLESHOOTING NIPPON DENSO PEI SYSTEM |
| 11 | RM250/370 | REAR FUEL TANK CUSHION MODIFICATION |
| 12 | RM100/125 | PRIMARY DRIVE GEAR NUT WASHER |
| 13 | RM250/370 | REAR BRAKE SHOE RETURN SPRING |
| 14 | RM100/125 | TROUBLE SHOOTING KOKUSAN PEI SYSTEM |
| 15 | RM100/125 | IGNITION TIMING |
| 16 | RM250/370 | JETTING CHANGE |
| 17 | RM125 | KICK STARTER DRIVE GEAR |
| 18 | RM250/370 | GENERAL MAINTENANCE |
| 19 | RM100 | PRIMARY DRIVE/DRIVEN GEARS |
| 20 | RM250/370 | ENGINE MOUNT BOLTS AND BUSHINGS |
| 21 | RM100 | FRONT BRAKE CABLE ROUTING |
| 22 | RM125A | IGNITION TIMING SPECIFICATIONS |
| 23 | RM125A | CARBURETOR NEEDLE JET |
| 24 | RM125A | TROUBLE SHOOTING PEI SYSTEM |
| 25 | RM125M | KICK STARTER DRIVEN GEAR |
| 26 | RM250/370 | BOLT AND NUT INSPECTIONS |
| 27 | RM100M/125M | LEFT CRANKSHAFT MAIN BEARING |

# RM

| NO. | MODEL | SUBJECT |
|---|---|---|
| 28 | RM250/370 | MODIFIED AIR CLEANER ASSEMBLY |
| 29 | RM370 | SECOND DRIVE GEAR |
| 30 | RM250/370 | KICK STARTER SHAFT |
| 31 | RM125 | "AIR" FRONT FORK SERVICING PROCEDURES |
| 32 | RM250 | 1ST AND 5TH DRIVEN GEARS |
| 33 | RM"B's" | TROUBLE SHOOTING PEI SYSTEMS |
| 34 | RM250/370 | PISTON RING LOCATING PINS |
| 35 | RM80 | GEARSHIFT PAWL MODIFICATION |
| 36 | RM80 | TRANSMISSION GEAR MODIFICATION |
| 37 | ALL RM's | CYLINDER PORT CHAMFER RECOMMENDATIONS |
| 38 | RM80 | 2ND DRIVE GEAR |
| 39 | RM125/80 | DRIVE CHAIN TENSIONER |
| 40 | RM80 | TRANS DRAIN PLUG |
| 41 | | |
| 42 | | |
| 43 | | |
| 44 | | |
| 45 | | |
| 46 | | |
| 47 | | |
| 48 | | |
| 49 | | |
| 50 | RM125X | MAIN JET Modification 2-27-81 |
| 51 | | |
| 52 | | |
| 53 | | |
| 54 | | |

# SUZUKI
## 2-Stroke
# Service Bulletin

Bulletin No: RM-1
Date: May 1, 1975

Read and Initial

Manager
Parts
Service RMC

Subject: RM125 SPECIFICATIONS

## GENERAL

| | |
|---|---|
| Length | 80.3 in. (2,040mm) |
| Handlebar width | 33.9 in. (860mm) |
| Footpeg height | 13.8 in. (350mm) |
| Ground clearance | 9.65 in. (245mm) |
| Wheelbase | 53.5 in. (1,360mm) |
| Seat height | 35.5 in. (901mm) no load |
| Dry weight | 190 lbs. (86kg) |
| Wet weight | 204 lbs. (92.7kg) |
| Front brake | 130mm diameter |
| Rear brake | 130mm diameter |
| Front tire | 3.00-21-4PR |
| Rear tire | 3.50-18-4PR |
| Frame | Semi-dual cradle |

## ENGINE

| | |
|---|---|
| Horsepower | 23 hp/10,500 rpm |
| Torque | 12.3 ft.-lbs. (1.7kg-m)/9,500 rpm |
| Engine type | Two-stroke, air cooled, 6-port scavenging |
| Bore and stroke | 56 x 50mm (2.20 x 1.97 in.) |
| Displacement | 123cc (7.5 cu. in.) |
| Compression ratio (corrected) | 7.4:1 |
| Lubrication | Fuel and oil premix, 20:1 |
| Carburetion | Bore.....28mm<br>Main jet.....#180<br>Jet needle.....5DP7-3rd<br>Needle jet.....P-4<br>Cutaway.....2.5<br>Pilot jet.....#50<br>Pilot air screw.....1 1/2 turns<br>Float level.....25mm (0.98 in.) |
| Air filtration | Wet polyurethane filter |
| Exhaust system | Expansion chamber with external silencer |
| Starting system | Primary kick |
| Clutch | Wet, multi-plate type |
| Type of transmission | 5-speed constant-mesh |
| Primary Drive | Straight-cut gears |

| | | | |
|---|---|---|---|
| Primary reduction | 3.389 (61/18) | | |
| Final drive | #428TM chain, 126 links | | |
| Final reduction | 4.286 (60/14) | | |
| | Solid mount rear sprocket | | |
| Gear ratios | Low | 2.143 | (30/14) |
| | 2nd | 1.588 | (27/17) |
| | 3rd | 1.250 | (25/20) |
| | 4th | 1.045 | (23/22) |
| | Top | 0.913 | (21/23) |
| Ignition | PEI (same as TM125) | | |
| Spark plug | NGK B-9EV | | |

## SUSPENSION

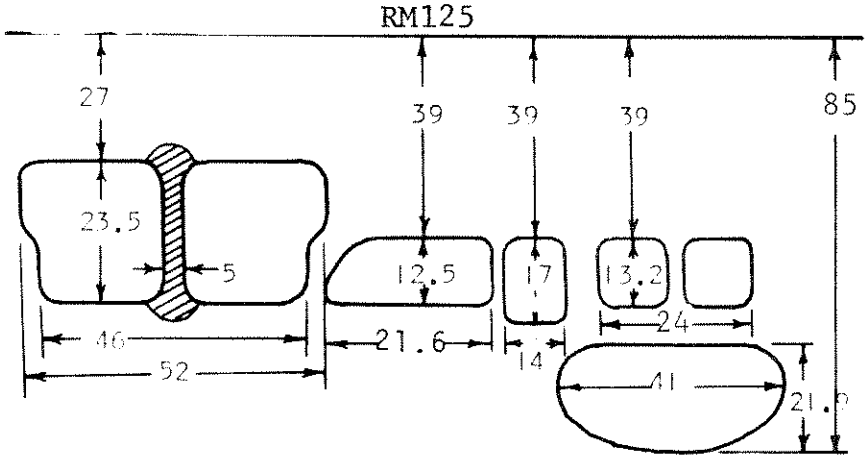
| | |
|---|---|
| Front suspension | Telescopic fork, hydraulic damper |
| Inner fork tube outside diameter | 35mm |
| Front fork travel | 7.48" (190mm) |
| Fork caster (from horizontal) | 61° |
| Fork trail | 4.84" (123mm) |
| Rear suspension | Swing arm, hydraulic damper 5-way adjustable spring |
| Shock absorbers | Gas/oil type, forward mount, "lay-down" position |
| Rear wheel travel | 7.80" (198mm) |

## CAPACITIES

| | |
|---|---|
| Fuel tank | 5.28 L (1.4 U. S. Gal.) |
| Transmission oil | 550cc (1.16 U. S. Pint) |
| Front fork oil | 210cc per leg |

## CYLINDER

The cylinder features wrap-around transfer ports designed for both high rpm and broad midrange torque. The cylinder liner is made of cast iron and is a shrink fit.

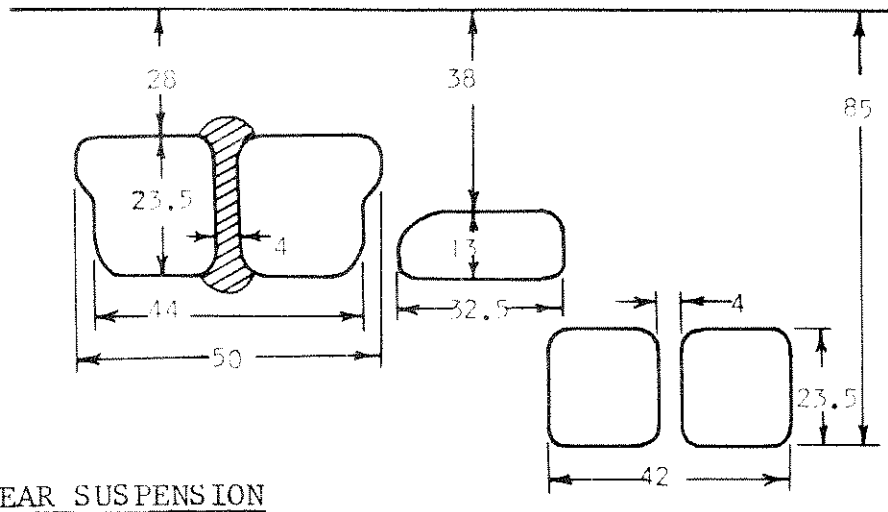



PORT TIMING

Exhaust.....92.41°
Intake.....91.53°
Transfer.....63.36°

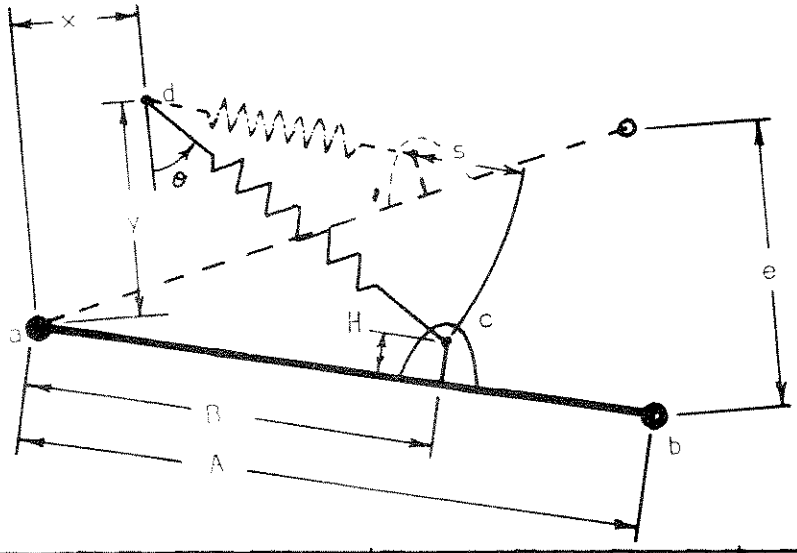
(cont.)

TM125M




REAR SUSPENSION

The rear suspension features gas/oil shock absorbers forward mounted in the "lay-down" position.




a. Rear swing arm pivot shaft
b. Rear axle
c. Rear shock absorber lower mount
d. Rear shock absorber upper mount

| | X | Y | S (SHOCK TRAVEL) | E(STROKE) | θ(WITH RIDER) |
|---|---|---|---|---|---|
| RM125 | 76mm | 237mm | 100mm | 198mm | 40° |
| TM125 | 262mm | 290mm | 115mm | 154mm | 14° |

| | A | B | H |
|---|---|---|---|
| RM125 | 414.5mm | 294mm | 42mm |
| TM125 | 430mm | 343mm | 34mm |

The RM125 rear swing arm width at the pivot shaft is the same as the TM125.

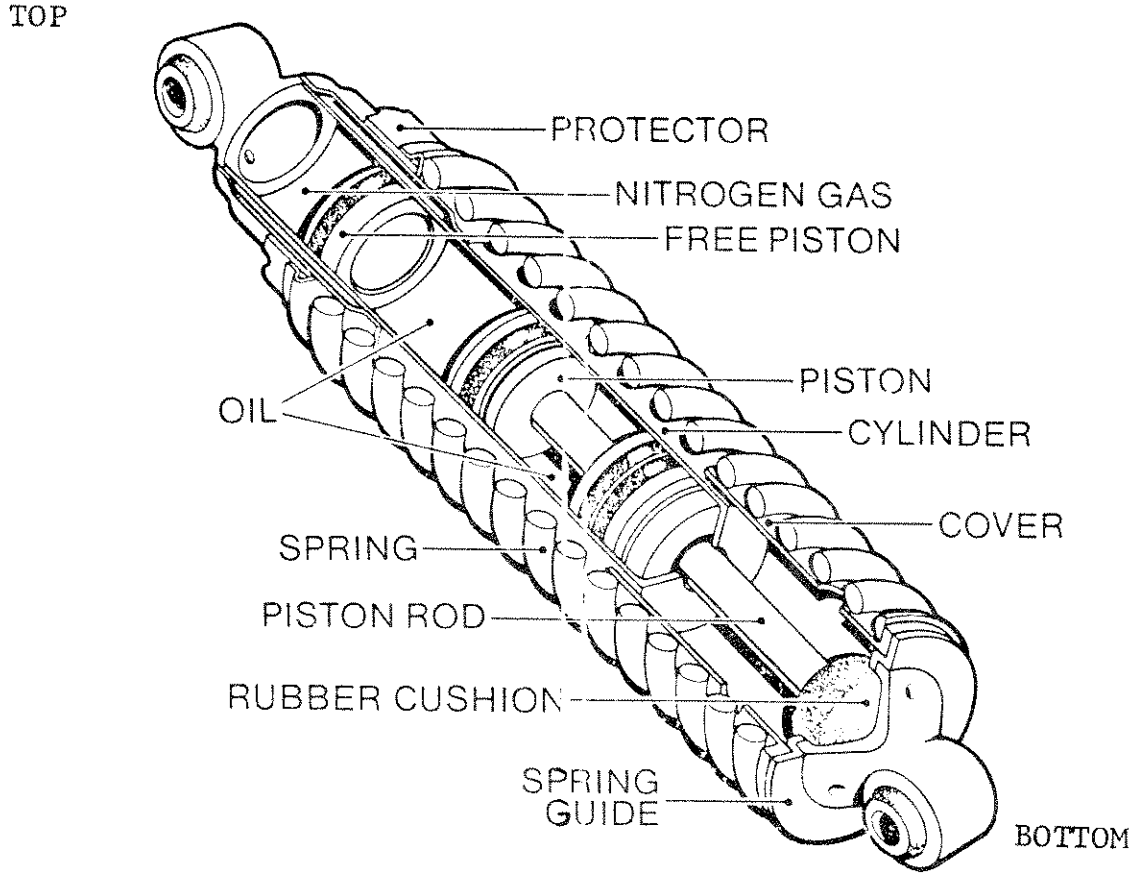
(cont.)

## REAR SHOCK ABSORBERS

The rear shock absorbers are gas/oil type. The gas is compressed nitrogen ($N_2$) and it is separated from the oil by a free floating piston. Due to this construction the oil chamber is completely free from air and the damper piston operates in pure oil. This construction allows fade free constant performance over severe bumps and makes it sensitive even to small bumps.

## IMPORTANT

The rear shock absorbers are to be mounted in the inverse position; that is with the spring tension adjusting collar mounted at the top.




U. S. SUZUKI
TECHNICAL SERVICE DEPARTMENT


# SUZUKI
## 2-Stroke
# Service Bulletin

Bulletin No: RM-2
Date: August 1, 1976

Read and Initial

Manager_____
Parts_____
Service _____

Subject: RM125 OIL RECOMMENDATION

This bulletin includes an additional brand oil recommendation and thus supersedes RM-2 dated June 13, 1975.

As you know, the RM125 is intended as a competition ready-to-race replica of the factory moto-cross machine.

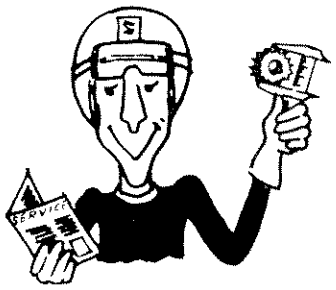
To assure that this machine performs up to public expectation, the factory has conducted exhaustive testing. This testing program has shown that the RM125 delivers superior performance when one of five brands of oil is used. These brands are:

Castrol Racing Oil R-30
Bel-Ray MC-1 Two Stroke Racing Lubricant
Intercontinental Golden Spectro (Synthetic Blend)
Shell Super M
B. P. Racing Oil

Of these five, only Castrol R-30, Bel-Ray MC-1, and Intercontinental Golden Spectro are readily available in this country. We are therefore recommending that only these brands be used in these machines under any conditions. We also recommend that these oils be mixed at a 20:1 ratio.

We are also requesting that you pass along these recommendations to your customer when he takes delivery of his RM125. As you know, there is no warranty on this competition machine, so we wish to assure each customer of the best lubrication package for high-performance and reliability.

U.S. Suzuki Motor Corp. • 13767 Freeway Drive • Santa Fe Springs, California • 90670 • (213) 921-4461



# SUZUKI
## 2-Stroke
# Service Bulletin

Bulletin No: RM-3
Date: June 13, 1975

Read and Initial

Manager
Parts
Service APF

Subject: RM125 CABLE GUIDES

# IMPORTANT

When installing the cable guides which fasten to the number plate, be sure to use a thread lock cement or an adhesive such as 3-M to insure that the nuts do not vibrate loose.

Failure to do this may result in a cable guide falling off and the front brake cable becoming fouled causing the front brake to lock.

Please check all RM125's you have already set up or delivered and be sure to follow this procedure on all future RM125's you receive.

# SUZUKI
## 2-Stroke
# Service Bulletin

Subject: RM125 CHAIN GUIDE ROLLER WASHERS

Bulletin No: RM-4
Date: June 13, 1975

Read and Initial

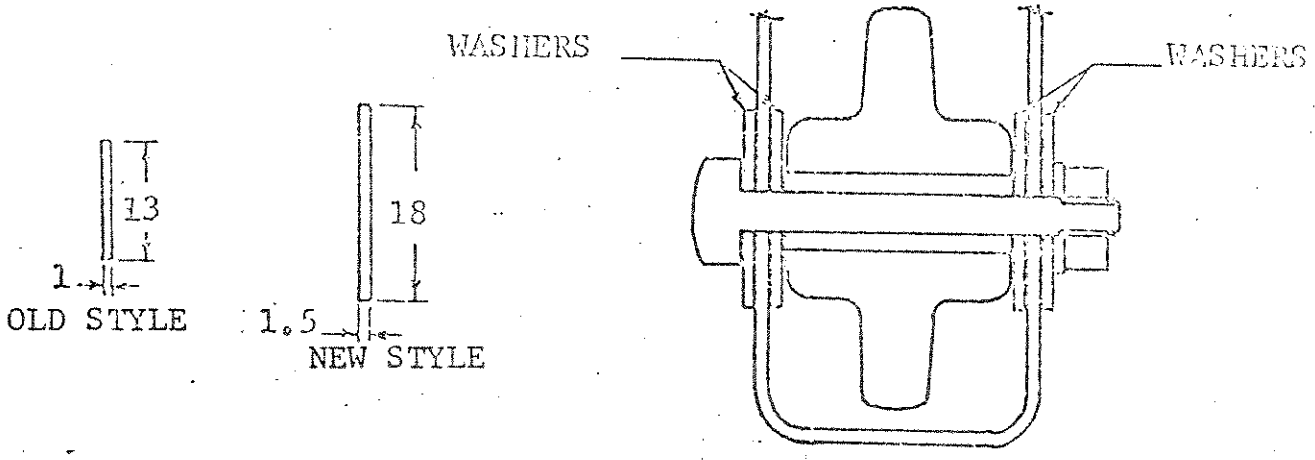
Manager
Parts
Service

PROBLEM:

The washers on each side of the rear chain guide roller are too small. Under hard usage they may bend and bind the roller causing the roller to be damaged by the chain.

MODIFICATION:

The thickness and outside diameter of the washers have been increased for improved durability.

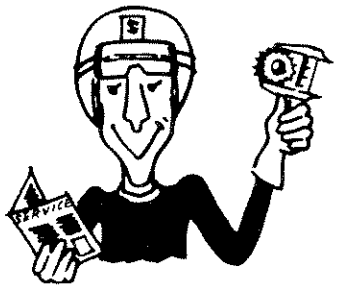



APPLICATION:

The new washers are installed on all RM125's from F/No. - 16174.

Please change to the new style washers on any units you have received manufactured before the above numbers.

| PART DESCRIPTION | OLD PART NO. | NEW PART NO. | QUANITY | INTERCHANGEABILITY |
|---|---|---|---|---|
| Washer | 08322-21068 | 09160-06007 | 4 | OLD ←X→ NEW ←O→ |



# SUZUKI
## 2-Stroke
# Service Bulletin

Bulletin No: RM-5
Date: June 13, 1975

Read and Initial

Manager
Parts
Service ARC

Subject: DISPOSING OF RM125 SHOCK ABSORBERS

The RM125 shock absorbers contain pressurized nitrogen gas and are non-rebuildable. Therefore, the following special precautions must be followed before disposing of them.

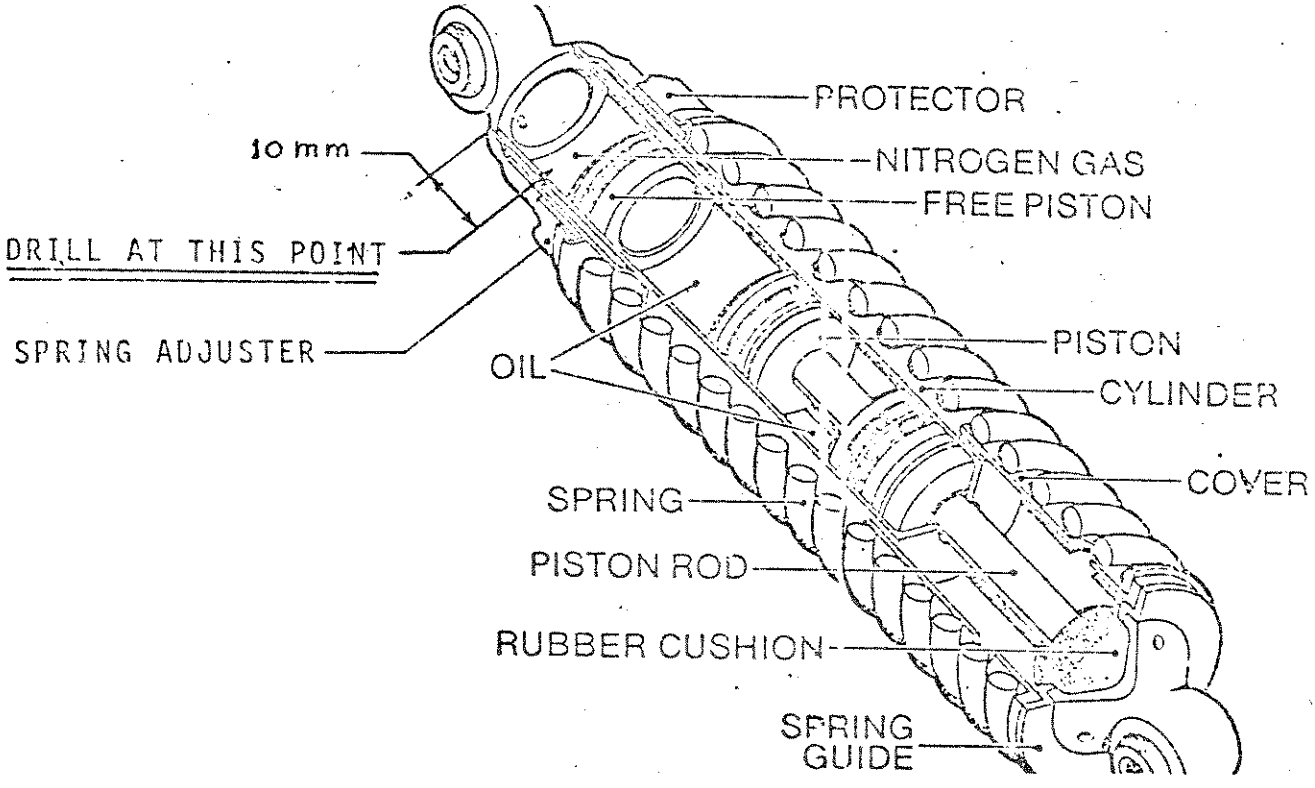
1. Drill the gas chamber with about a 3mm (1/8") drill bit to relieve the gas pressure.

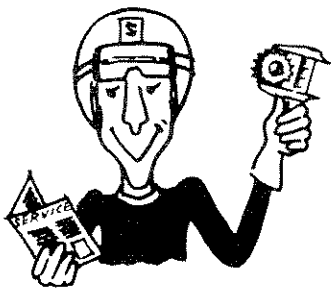
NOTE: Be sure to wear protective glasses and gloves.

2. DO NOT have hole directed towards face or body when drilling.

3. DO NOT drill the oil chamber.

4. After drilling the gas chamber, fully compress the shock absorber several times to expell any trapped gas.





# SUZUKI
## 2-Stroke
# Service Bulletin

Bulletin No: RM-6
Date: July 18, 1975

Read and Initial

Manager
Parts
Service

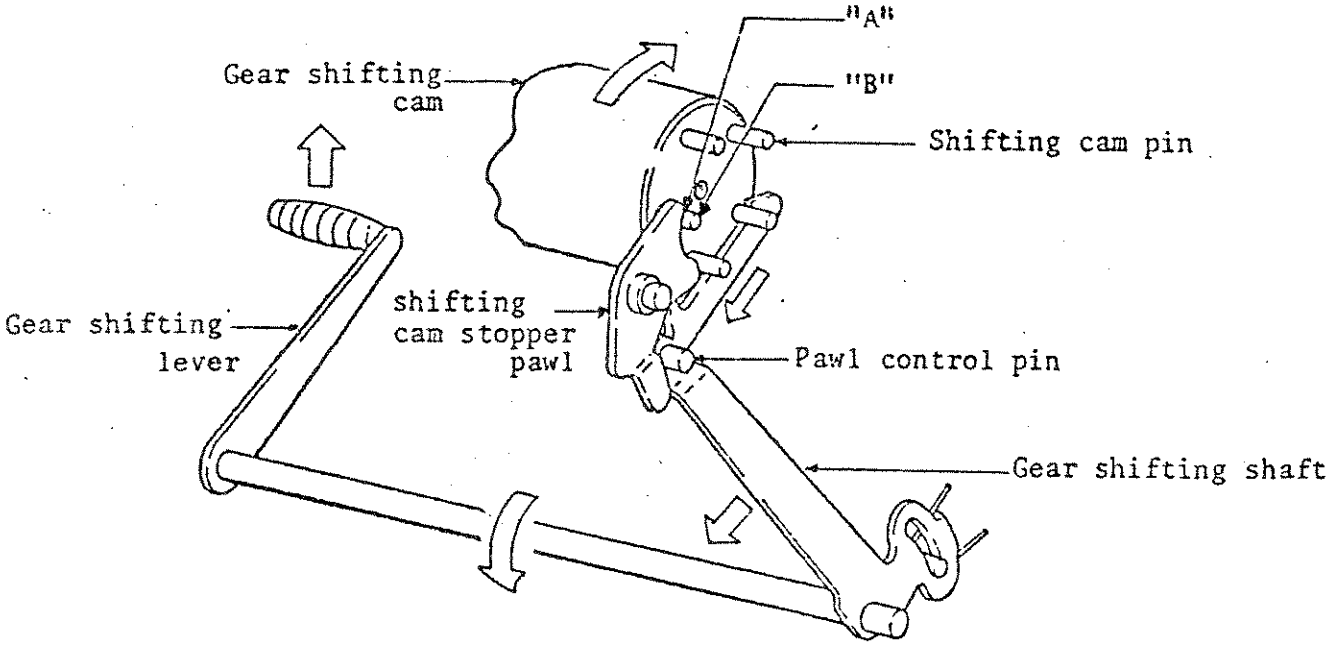
Subject: MIS-ENGAGEMENT OF RM125 3RD GEAR

PROBLEM:

During prolonged and severe competition usage, some RM125's may experience overshifting from 2nd to 3rd gear. This results in a false neutral between 3rd and 4th gear.

CAUSE:

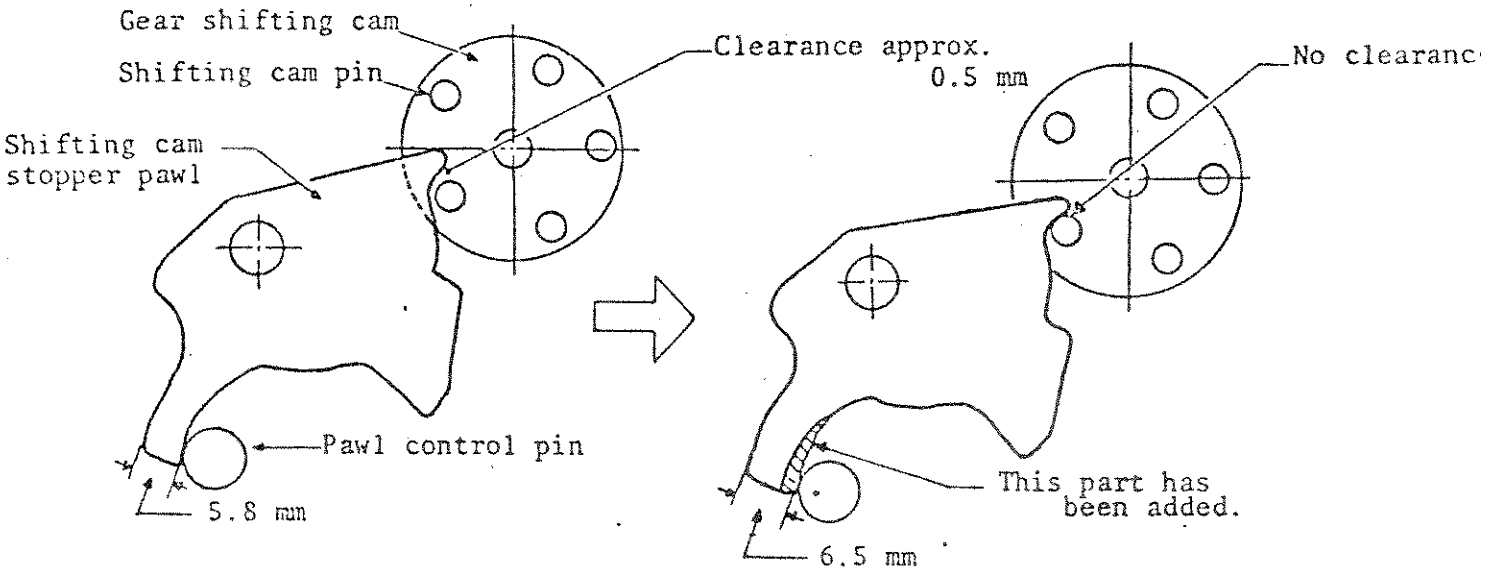
The illustration below shows the gear shift linkage when the shift lever is in the "UP" position during the shifting procedure.




The amount of shift cam rotation is limited by contact of the shifting cam stopper pawl "A" and shifting cam pin "B". If the shifting cam stopper pawl becomes excessively worn at the shift cam pin contact area, over shifting can occur. This is because the shift cam is then allowed to rotate past 3rd gear.

MODIFICATION:

The shifting cam stopper pawl has been dimensionally changed as shown below:




OLD STYLE NEW STYLE

This change removes all initial clearance at the shift cam pin contact area.

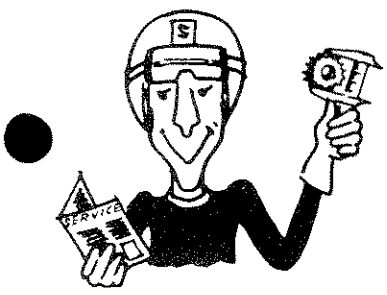
PARTS:

The new style shifting cam stopper pawl is now available from U. S. Suzuki's Parts Department. The old and new style parts are interchangeable. The new style part number is 25370-12101.

APPLICATION:

The new style shifting cam stopper pawl has been installed on and after Engine Number RM125-16201.

U. S. SUZUKI
TECHNICAL SERVICE DEPARTMENT



# SUZUKI
## 2-Stroke
# Service Bulletin

Bulletin No: RM-7
Date: August 29, 1975

Read and Initial
Manager
Parts
Service

Subject: RM250/370 SPECIFICATIONS AND GENERAL INFORMATION

# REVISED UPDATED

| | RM250 | RM370 |
|---|---|---|
| **DIMENSIONS:** | | |
| Overall Length | 2140mm (84.3 in.) | 2140mm (84.3 in.) |
| Overall Width | 935mm (36.8 in.) | 935mm (36.8 in.) |
| Overall Height | 1200mm (47.2 in.) | 1200mm (47.2 in.) |
| Wheelbase | 1440mm (56.7 in.) | 1440mm (56.7 in.) |
| Ground Clearance | 265mm (10.4 in.) | 265mm (10.4 in.) |
| Dry Weight | 97kg (214 lbs.) | 102kg (225 lbs.) |
| **PERFORMANCE:** | | |
| Maximum Horsepower | 36 @ 8,000 rpm | 42 @ 7,000 rpm |
| Maximum Torque | 3.48kg/m (25.2 ft-lb) @ 6,500 rpm | 4.66kg/m (33.7 ft-lb) @ 5,500 rpm |
| **ENGINE:** | | |
| Intake System | Piston & Reed Valve | Piston & Reed Valve |
| Bore x Stroke | 70 x 64mm (2.76 x 2.52 in.) | 77 x 80mm (3.03 x 3.15 in.) |
| Piston Displacement | 246cc (15.0 in.$^3$) | 372cc (22.7 in.$^3$) |
| Compression Ratio | 7.1:1 | 6.9:1 |
| Lubrication | Fuel - Oil Premix 20:1 | Fuel - Oil Premix 20:1 |
| Piston Clearance | .060 - .070mm (.0024 - .0028") | .070 - .080mm (.0028 - .0031") |
| measure at | 26mm (1.02") | ***27mm (1.06") |
| Ring End Gap | 1.4 - 1.7mm (.055 - .067") | 0.20 - 0.40mm (.0079 - .0157") |
| **CARBURETION:** | | |
| Bore | 36mm | 36mm |
| Main Jet | 310 | 340 |
| Pilot Jet | *300 | **310 |
| Needle Jet | 45 | 50 |
| | Q-0 | Q-0 |
| | *Q-4 | **Q-4 |

*On and after Engine Number 13834
**On and after Engine Number 13128

*REVISED: 2/13/76

| | RM250 | RM370 |
|---|---|---|
| **CARBURETION: (con't)** | | |
| Jet Needle | 6FJ6-4 | 6FJ6-3 |
| Cut-Away | 1.5 | 1.5 |
| Pilot Air Screw | 1½ turns out | 1½ turns out |
| Float Level | 13.9mm | 13.9mm |
| **TRANSMISSION:** | | |
| Primary Reduction | 2.727 (60/22) | 2.384 (62/26) |
| Final Reduction | 3.846 (50/13) | 3.846 (50/13) |
| Gear Ratios: low | 2.076 (27/13) | 2.071 (29/14) |
| 2nd | 1.750 (28/16) | 1.625 (26/16) |
| 3rd | 1.352 (23/17) | 1.263 (24/19) |
| 4th | 1.105 (21/19) | 1.000 (21/21) |
| top | 0.913 (21/23) | 0.869 (21/23) |
| Drive Chain | #520, 108 links | #520, 108 links |
| **ELECTRICAL:** | | |
| Ignition Type | PEI | PEI |
| Ignition Timing | 23°BTDC @ 6,000 rpm | 23°BTDC @ 6,000 rpm |
| Spark Plug | NGK B9EV | NGK B9EV |
| **CHASSIS:** | | |
| Front Fork Travel | 220mm (8.66 in.) | 220mm (8.66 in.) |
| Rear Suspension | Swing arm with gas/oil lay down shocks. 3-way adjustable spring | |
| Front Brake Diameter | 130mm | 130mm |
| Rear Brake Diameter | 150mm | 150mm |
| Front Tire Size | 3.00 x 21 4PR | 3.00 x 21 4PR |
| Rear Tire Size | 4.50 x 18 4PR | 4.60 x 18 6PR |
| Caster | 60° | 60° |
| Trail | 126mm (5.0 in.) | 126mm (5.0 in.) |
| Turning Radius | 2.3m (7.5 ft.) | 2.3m (7.5 ft.) |
| **CAPACITIES:** | | |
| Fuel Tank | 8 L (2.1 gal.) | 8 L (2.1 gal.) |
| Front Fork Oil | 245cc (8.3 oz.) | 245cc (8.3 oz.) |
| Transmission Oil | Refilling after draining: 900cc (1.9 pt.) Refilling after rebuilding: 1,000cc (2.1 pt.) | Refilling after draining: 1,000cc (2.1 pt.) Refilling after rebuilding: 1,100cc (2.3 pt.) |

REVISED: 2/13/76

(con't)

OIL RECOMMENDATION:

To assure that these machines perform up to public expectation, the factory has conducted exhaustive testing. This testing program has shown that the RM250/370 delivers superior performance and reliability when one of five brands of oil is used. These brands are:

Castrol Racing Oil R-30
Bel-Ray MC-1 Two Stroke Racing Lubricant
Intercontinental Golden Spectro (Synthetic Blend)
Shell Super M
B. P. Racing Oil

Of these five, only Castrol R-30, Bel-Ray MC-1, and Intercontinental Golden Spectro are readily available in this country. We are therefore recommending that only these oils be mixed at a 20:1 ratio.

We are also requesting that you pass these recommendations to your customer when he takes delivery of his RM250 or RM370. As you know, there is no warranty on this competition machine, so we wish to assure each customer of the best lubrication package for high performance and reliability.

ASSEMBLY:

1. The black wire attached to the PEI "box" mounting bracket should be connected to the "kill" switch mounting screw.

2. For proper rear shock operation, the rear shock abosrbers must be mounted in the inverted position.

CARBURETION ADJUSTMENTS:

The standard RM250 and RM370 carburetor main jet may be too large for some areas, causing a rich condition during 3/4 to full throttle operation.

Whenever decreasing the size of the main jet on the RM250 or RM370 the pilot jet and jet needle clip position must also be changed.

| RM250 | | | |
|---|---|---|---|
| MAIN JET | PILOT JET | JET NEEDLE POSITION | REMARKS |
| 310 | 45 | 4th | Standard |
| 300 | 50 | 5th | Optional |
| 290 | " | " | " |
| 280 | " | " | " |

| RM370 | | | |
|---|---|---|---|
| MAIN JET | PILOT JET | JET NEEDLE POSITION | REMARKS |
| 340 | 50 | 3rd | Standard |
| 330 | 55 | 4th or 5th | Optional |
| 320 | " | " " | " |
| 310 | " | " " | " |

(cont.)

Part numbers for the jets are listed below:

| DESCRIPTION | PART NUMBER | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| Main Jet 280 | 09491-56001 | Main Jet 330 | 09491-66001 |
| 290 | 58001 | 340 | 68001 |
| 300 | 60003 | Pilot Jet 45 | 09492-45009 |
| 310 | 62001 | 50 | 50010 |
| 320 | 64001 | 55 | 55005 |

MISCELLANEOUS NOTES:

1. Spokes must be frequently checked for looseness during initial break-in, until the spoke nipples have "seated in" against the rim. At the same time, caution your customers to tighten spokes equally and evenly to prevent hubs from breakage and from wheel rims getting out of true. Proper tightening torque for spoke nipples is 2.6 ft.-lb.

2. Drive chain adjustment is very critical. The drive chain should be adjusted to have 40-45mm (1.5-1.7 in.) of free play, mid-way between the drive and driven sprocket.

3. Whenever the cylinder is removed the stainless steel reed pedals should be inspected for fatique cracks, and replaced if necessary.

4. Initial shipments of RM250's and RM370's do not contain owners manuals. These owners manuals will be sent automatically to dealers which have been invoiced for RM250's and RM370's.

5. During extensive testing, it was determined that some individuals might prefer stiffer fork action. Therefore, 2 spacers 10mm's long will also be sent automatically at no charge for each RM250 and RM370 your dealer has been invoiced for. These are to be installed if a customer determines that he would prefer stiffer fork action.

In future shipments the spacers will packed in the crate.

U. S. SUZUKI
TECHNICAL SERVICE DEPARTMENT