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FOREWORD

The SUZUKI LT250R was designed to offer superior performance through water cooled engine with crank balancer and exhaust valve control, equipped with wishbone type front suspension and Full-floating rear suspension.

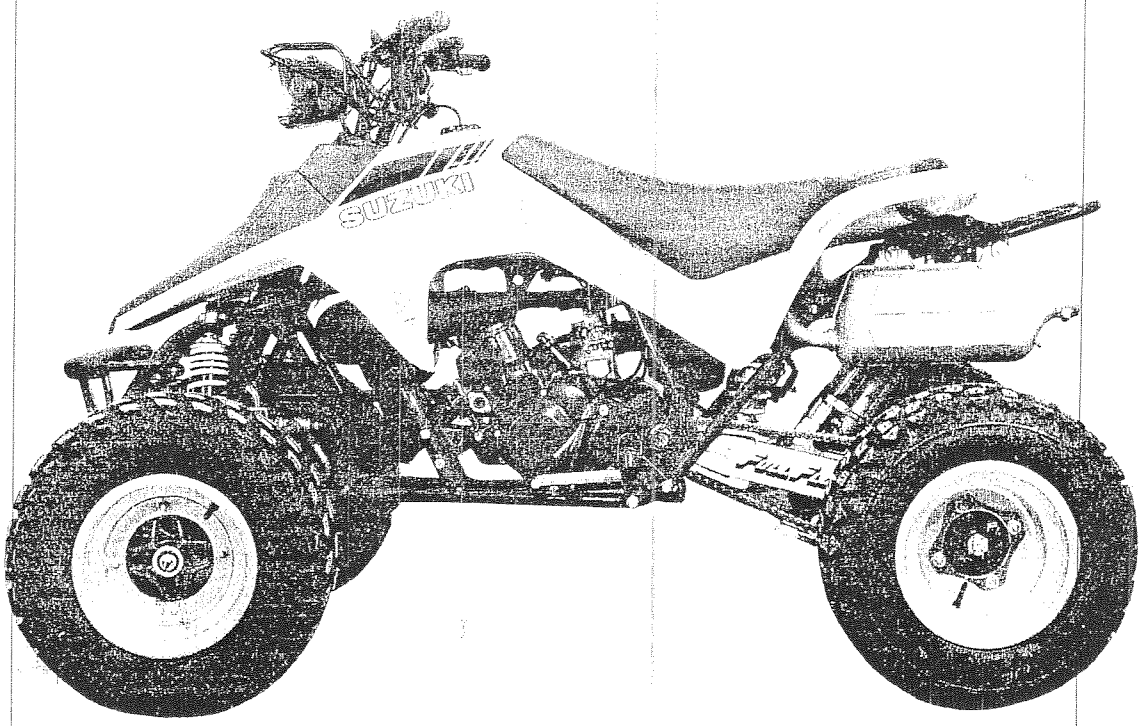
This service manual has been produced primarily for experienced machanics whose job is to inspect, adjust, repair and service SUZUKI Vehicles. Apprentice mechanics and "do it yourself" mechanics will also find this manual to be an extremely useful guide.

The LT250R manufactured to standard specifications is the main subject matter of this manual. However, the LT250R machines distributed in your country might differ in minor respects from the standard-specification LT250R and, if they do, it is because some minor modifications (which are of no consequence in most cases as far as servicing is concerned) had to be made to comply with the statutory requirements of your country.

This manual contains up-to-date information at the time of its issue. Later made modifications and changes will be explained to each SUZUKI distributor in respective markets, from whom you may request updated information, if any.

SUZUKI MOTOR CORPORATION
Motorcycle Technical Service Department

MODEL LT250R



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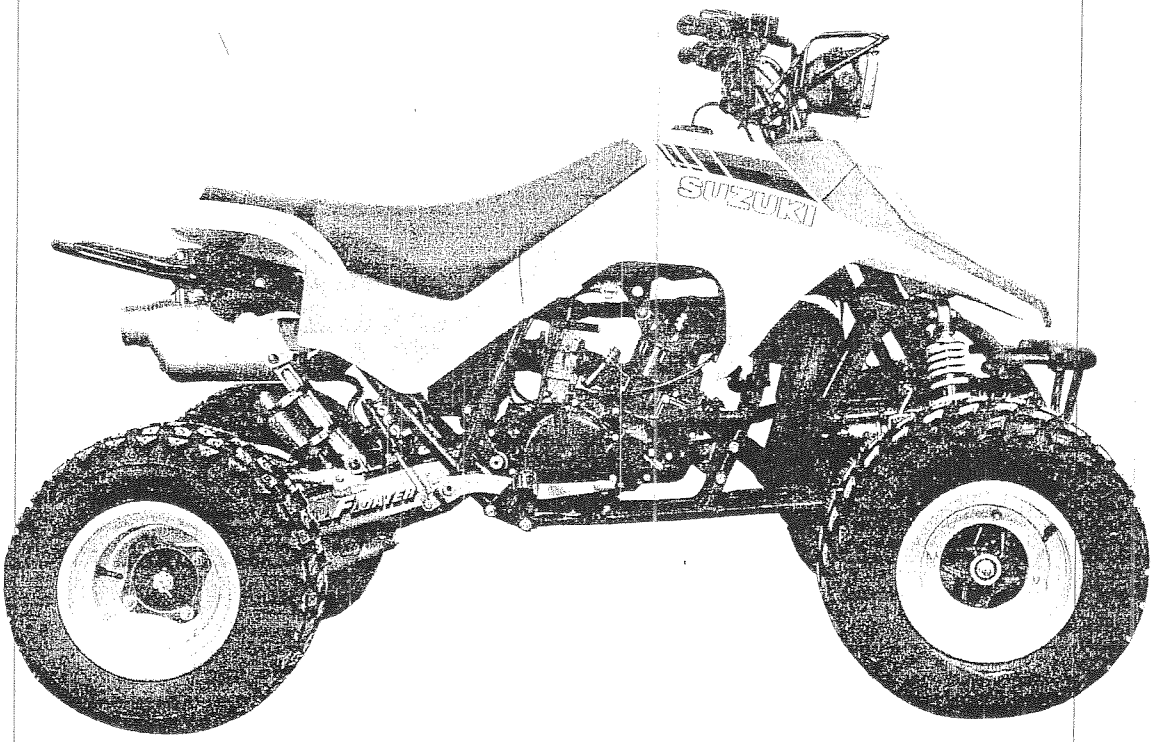

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GENERAL INFORMATION

1

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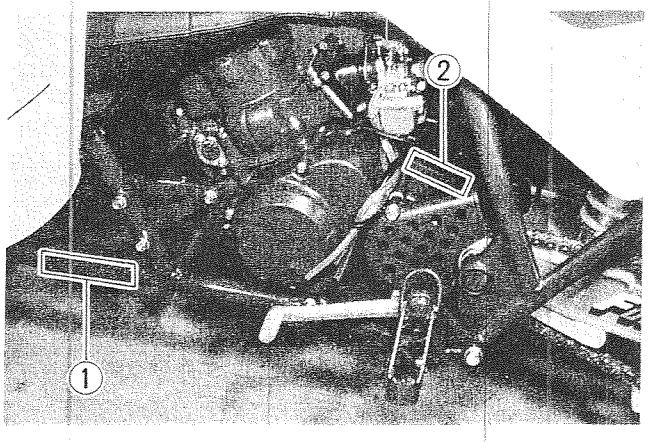
VIN AND SERIAL NUMBER LOCATIONS

The VIN number ① is stamped on the left frame member as shown in photograph. The engine serial number ② is located on the crankcase.
These numbers are required especially for registering the vehicle and ordering spare parts.



FUEL, OIL AND COOLING SOLUTION RECOMMENDATIONS

FUEL

For U.S. and CANADA model

Use unleaded gasoline containing no alcohol, with at least 85 pump octane ($\frac{R+M}{2}$ method). Regular leaded gasoline containing no alcohol may also be used.

NOTE:
Unleaded and low-lead gasoline will extend spark plug life.

For other models

Use gasoline with an octane number of at least 85 octane (Research Method), preferably unleaded or low-lead.

ENGINE OIL

For U.S. and CANADA model

SUZUKI strongly recommends the use of SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT. If this oil is not available, use an equivalent high quality two Cycle Racing Lubricant.

For other models

For the oil to be mixed with gasoline, any of the following brands or its equivalent will do.

* SHELL SUPER M
* CASTROL A747
* CASTROL R30
* BELL-RAY MC-100
* CASTROL TTS (A545)
* MOTUL CENTURY 300 2T
* B.P. RACING

CAUTION:
Do not allow two different brands to get mixed in the fuel-oil mixture.

MIXING RATIO

20 parts gasoline to 1 part oil is the correct gasoline to oil mixture ratio for your engine.
For proper engine performance, it is essential that the above fuel-oil mixture should be maintained.

FUEL OIL MIXTURE RATIO OF 20 : 1

GASOLINE	OIL	GASOLINE	OIL
L	ml	(qt)	(oz)
0.5	25	0.5	0.8
1.0	50	1.0	1.6
1.5	75	1.5	2.4
2.0	100	2.0	3.2
2.5	125	2.5	4.0
3.0	150	3.0	4.8
3.5	175	3.5	5.6
4.0	200	4.0	6.4
4.5	225	4.5	7.2
5.0	250	5.0	8.0
5.5	275	5.5	8.8
6.0	300	6.0	9.6
6.5	325	6.5	10.4
7.0	350	7.0	11.2
7.5	375	7.5	12.0
8.0	400	8.0	12.8
8.5	425	8.5	13.6
9.0	450	9.0	14.4
9.5	475	9.5	15.2
10.0	500	10.0	16.0

BRAKE FLUID

Specification and classification:	DOT3 or DOT4 For U.S. model
	SAE J1703, DOT3 or DOT4 For other models
99000-23021	SUZUKI BRAKE FLUID Not available in U.S. model

TRANSMISSION OIL

Use a good quality SAE 20W-40 malti-grade motor oil.

COOLING SOLUTION

Use an anti-freeze & Summer coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.

WATER FOR MIXING

Use distilled water only. Water other than distilled water can corrode and clog the aluminum radiator.

ANTI-FREEZE & SUMMER COOLANT

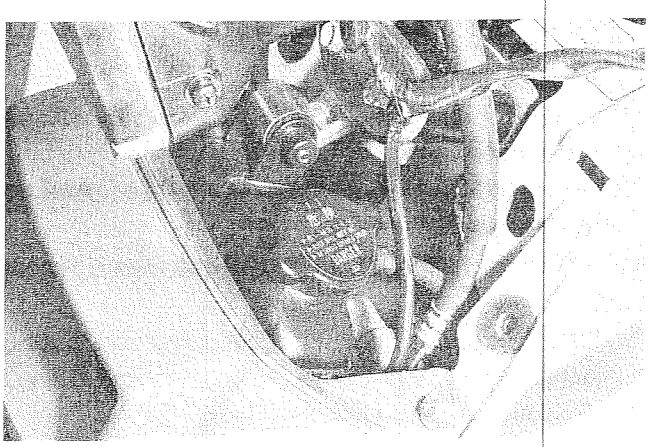
The coolant performs as corrosion and rust inhibitor as well as anti-freeze. Therefore, the coolant should be used at all times even though the atmospheric temperature in your area does not go down to freezing point.

SUZUKI recommends the use of SUZUKI GOLDEN CRUISER 1 200 anti-freeze & summer coolant. If this is not available, use an equivalent which is compatible with aluminum radiator.

99000-24120 Not available in U.S. model	SUZUKI GOLDEN CRUISER 1200

REQUIRED AMOUNT OF WATER/COOLANT

Solution capacity (total): 880 ml
(0.93/0.77 US/Imp qt)



CAUTION:

Mixing of anti-freeze & summer coolant shoud be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze & summer coolant mixing ratio is below 30%, rust inhibiting performance is greatly reduced. Every new unit is serviced with anti-leakage material, Bar's leak.

30%	Water	610 ml (20.6/21.5 US/Imp oz)
	Coolant	270 ml (9.1/ 9.5 US/Imp oz)
40%	Water	520 ml (17.6/18.3 US/Imp oz)
	Coolant	360 ml (12.2/12.7 US/Imp oz)
50%	Water	440 ml (14.9/15.5 US/Imp oz)
	Coolant	440 ml (14.9/15.5 US/Imp oz)

BREAKING-IN PROCEDURE

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to "BREAK-IN" before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows:

- Keep the breaking-in engine speed limits:

Up to 10 hours	Less than 1/2 throttle

- Do not maintain constant engine speed for an extended time period during any portion of the break-in. Try to vary the throttle position.

PRECAUTIONS AND GENERAL INSTRUCTIONS

Observe the following items without fail when disassembling and reassembling vehicles.

- Do not run engine indoors with little or no ventilation.
- Be sure to replace packings, gaskets, circlips, O-rings and cotter pins with new ones.

CAUTION:
Never reuse a circlip after a circlip has been removed from a shaft, it should be discarded and a new circlip must be installed.
When installing a new circlip, care must be taken not to expand the end gap larger than required to slip the circlip over the shaft.
After installing a circlip, always insure that it is completely seated in its groove and securely fitted.

- Tighten cylinder head and case bolts and nuts beginning with larger diameter and ending with smaller diameter, and from inside to outside diagonally, to the specified tightening torque.
- Use special tools where specified.
- Use genuine parts and recommended oils.
- When 2 or more persons work together, pay attention to the safety of each other.
- After the reassembly, check parts for tightness and operation.
- Treat gasoline, which is extremely flammable and highly explosive, with greatest care. Never use gasoline as cleaning solvent.

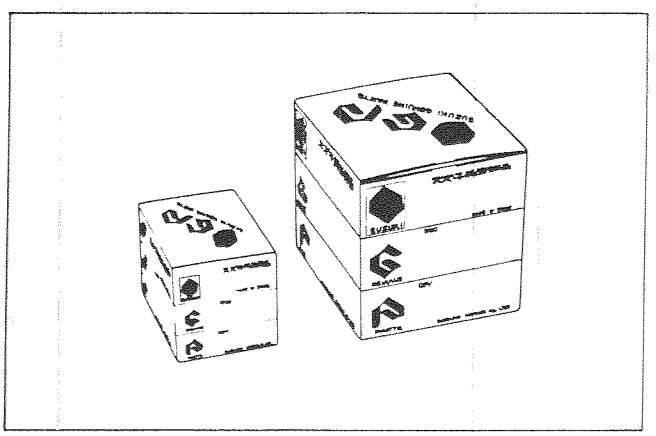
Warning, Caution and Note are included in this manual occasionally, describing the following contents.

WARNING ..... When personal safety of the rider is involved, disregard of the information could result in injury.
CAUTION ..... For the protection of the motorcycle, the instruction or rule must be strictly adhered to.
NOTE ..... Advice calculated to facilitate the use of the motorcycle is given under this heading.

REPLACEMENT PARTS

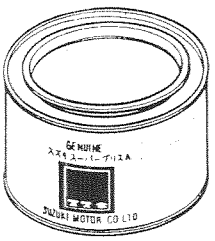
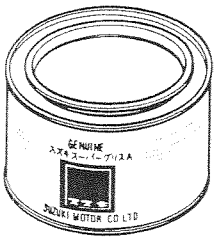
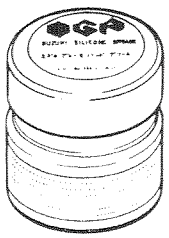
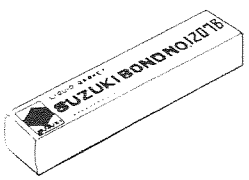
When you replace any parts, use only genuine SUZUKI replacement parts, or their equivalent. Genuine SUZUKI parts are high quality parts which are designed and built specifically for SUZUKI vehicles.

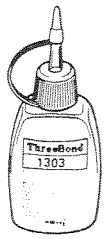
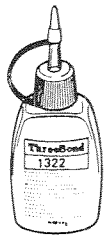
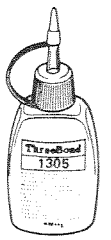
CAUTION:
Use of replacement parts which are not equivalent in quality to genuine SUZUKI parts can lead to performance problems and damage.



SPECIAL MATERIALS

The materials listed below are needed for maintenance work on the LT250R and should be kept on hand for ready use. These items supplement such standard materials as cleaning fluids, lubricants, emery cloth and the like. How to use them and where to use them are described in the text of this manual.

Material		Part	Page
For U.S. model	For other models		
 SUZUKI SUPER GREASE "A" 99000-25030	 SUZUKI SUPER GREASE "A" 99000-25010	• Crankcase oil seal and bearing • Water pump oil seal • Front wheel hub bearing • Front wheel hub dust seal • Steering shaft dust seal • Steering shaft O-ring • Steering shaft holder and dust seal • Rear axle housing bearing and dust seal • Rear axle shaft right and left serration • Rear cushion lever bearing and dust seal • Rear cushion rod bearing and dust seal • Rear shock absorber bearing and dust seal • Rear swingarm bearing and dust seal	3-20 4-10 7- 6 7-31 7- 7 7-31 7-26 7-31 7-27 7-31 7-27 7-31 7-46 7-49 7-47 7-49 7-55 7-58 7-55 7-58 7-56 7-58 7-57 7-58
 SUZUKI SILICONE GREASE 99000-25100		• Front brake caliper axle • Rear brake caliper axle • Rear brake caliper mounting bracket inner surface	7-15 7-39 7-47 7-49
 SUZUKI BOND NO. "1207B" 99104-31140	 SUZUKI BOND NO. "1215" 99000-31110	• Mating surface of the crankcase • Mating surface of the mechanical seal • Rear sprocket and brake disc mounting flange	3-42 4-10 7-47 7-49

Material		Part	Page
For U.S. model	For other models		
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1303" 99000-32030	• Gearshift arm stopper • Water pump impeller bolt	3-47 4-11
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1322" 99000-32110	• Crankcase bearing/oil seal retainer screw • Gearshift cam retainer bolt • Kick starter pawl guide bolt • Kick starter lever bolt • Wishbone arm end bolt • Steering knuckle arm bolt • Lower wishbone arm end pinch bolt • Rear sprocket mounting bolt • Rear axle lock nut	3-20 3-42 3-47 3-48 3-47 7-28 7-31 7-29 7-31 7-29 7-31 7-34 7-49 7-48 7-49
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1305" 99000-32100	• Magneto rotor nut • Balancer driven gear nut	3-43 3-45
 THREAD LOCK "1342" 99000-32050	 THREAD LOCK "1342" 99000-32050	• Crankshaft oil seal • Exhaust valve actuator retainer screw • Stator retainer screw • Parking brake housing bolt	3-20 3-29 3-43 6- 2 7-39

Material		Part	Page
U.S. model	For other models		
		• Front brake disc mounting bolt • Rear brake disc mounting bolt	7- 7 7-31 7-47 7-49
T IREAD LOCK SUPER " 360" 9 000-32130	THREAD LOCK SUPER "1360" 99000-32130		
Not available	 SUZUKI BRAKE FLUID 99000-23021	• Front and rear brake	1- 1
Not available	 SUZUKI GOLDEN CRUISER 1200 99000-24120	• Radiator	1- 2
Not available	BAR'S LEAKS 99000-24240	• Radiator	4- 2

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	1 830 mm (72.0 in.)
Overall width	1 135 mm (44.7 in.)
Overall height	1 125 mm (44.3 in.)
Wheelbase	1 280 mm (50.4 in.)
Ground clearance	125 mm (4.9 in.)
Front track	960 mm (37.8 in.)
Rear track	850 mm (33.5 in.)
Seat height	780 mm (30.7 in.)
Dry mass	147 kg (324 lb.)

ENGINE

Type	Two stroke, water cooled, SAEC
Number of cylinders	1
Bore	67.0 mm (2.638 in.)
Stroke	70.0 mm (2.756 in.)
Piston displacement	246 cm³ (15.0 cu. in.)
Corrected compression ratio	8.0 : 1
Carburetor	MIKUNI TM34SS
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Fuel and oil premixture of 20 : 1

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Motorcycle Technical Service Department
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TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.681 (59/22)
Gear ratios, Low	2.384 (31/13)
2nd	1.785 (25/14)
3rd	1.437 (23/16)
4th	1.166 (21/18)
5th	0.950 (19/20)
Top	0.818 (18/22)
Final reduction ratio	3.500 (42/12)
Drive chain	DAIDO D.I.D. 520VS or TAKASAGO RK520SMO-Z2, 102 links

CHASSIS

Front suspension	Double wishbone, spring preload 5-way adjustable, damping force 4-way adjustable
Rear suspension	Full floating suspension system, spring preload fully adjustable, damping force 4-way adjustable
Caster	9° 00′
Trail	40 mm (1.6 in.)
Steering angle	41° 30′
Turning radius	3.0 m (9.8 ft.)
Front brake	Disc
Rear brake	Disc
Front tire size	AT21 x 7 – 10 ☆☆
Rear tire size	AT21 x 10 – 10 ☆

ELECTRICAL

Ignition type	SUZUKI PEI
Ignition timing	6° B.T.D.C. at 1000 rpm and 11° B.T.D.C. at 9000 rpm
Spark plug	NGK BR8EV . . . For CANADA NGK B8EGV . . . For OTHERS
Headlight	12V 60/55W
Tail light	12V 5W

CAPACITIES

Fuel tank, including reserve	11.5 L (3.0/2.5 US/Imp. gal.)
reserve	1.1 L (1.2/1.0 US/Imp. qt.)
Transmission oil	900 ml (30.4/31.7 US/Imp. oz.)
Coolant	880 ml (0.93/0.77 US/Imp. qt.)

PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

2

CONTENTS

PERIODIC MAINTENANCE SCHEDULE 2- 1

MAINTENANCE PROCEDURES 2- 2

- CYLINDER HEAD NUTS, CYLINDER NUTS AND EXHAUST PIPE NUTS 2- 2
- CYLINDER HEAD AND MUFFLER 2- 3
- AIR CLEANER 2- 3
- SPARK PLUG 2- 4
- FUEL LINE 2- 5
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PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the vehicle operating at peak performance and economy. Intervals are expressed in terms of months.

NOTE:
More frequent servicing may be performed on vehicles that are used under severe conditions.

Item \ Interval	Initial 1 month	Every 3 months	Every 6 months
Cylinder head nuts, cylinder nuts and exhaust pipe nuts	T	T	–
Cylinder head and muffler	–	–	C
Air cleaner element	I	I	–
Spark plug	–	I	R
Fuel line	I	I	–
	Replace every 4 years		
Throttle cable	I	–	I
Engine idle speed	I	–	I
Clutch	I	–	I
Transmission oil	R	–	R
Drive chain	Inspect every time before riding		
Sprockets (wear and mounting)	I	I	–
Coolant	Replace every 2 years		
Radiator hose	I	I	–
	Repalce every 4 years		
Tires	Inspect every time before riding		
Brakes	I	I	–
Brake fluid	I	I	–
	Replace every 2 years		
Brake hose	–	I	–
	Replace every 4 years		
Steering	I	I	–
Chassis nuts and bolts	T	T	–
General lubrications	–	L	–

I: Inspect and clean, adjust, lubricate or replace, if necessary
C: Clean R: Replace T: Tighten L: Lubricate

MAINTENANCE PROCEDURES

This section describes the service procedure for each section of Periodic Maintenance.

ENGINE NUTS AND BOLTS

Tighten Initially at 1 month and Every 3 months.

CYLINDER HEAD AND CYLINDER NUTS

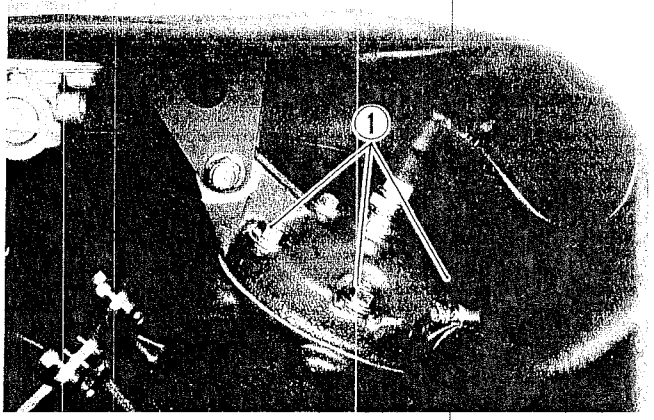
- Tighten the six cylinder head nuts ① to the specified torque.
- Tighten the seven cylinder nuts ② and ③ to the specified torque.

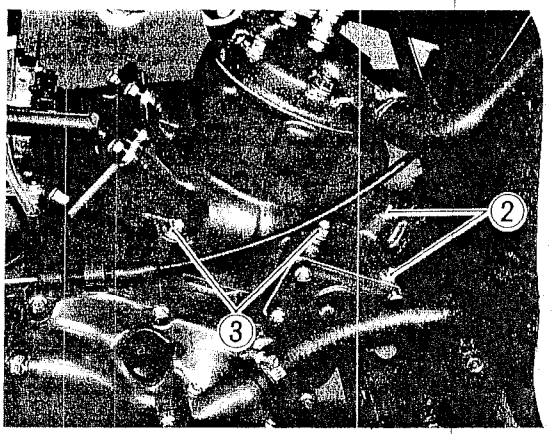
Item	Tightening torque
①	26 – 30 N·m (2.6 – 3.0 kg-m, 19.0 – 21.5 lb-ft)
② (M6)	8 – 12 N·m (0.8 – 1.2 kg-m, 6.0 – 8.5 lb-ft)
③ (M8)	26 – 30 N·m (2.6 – 3.0 kg-m, 19.0 – 21.5 lb-ft)

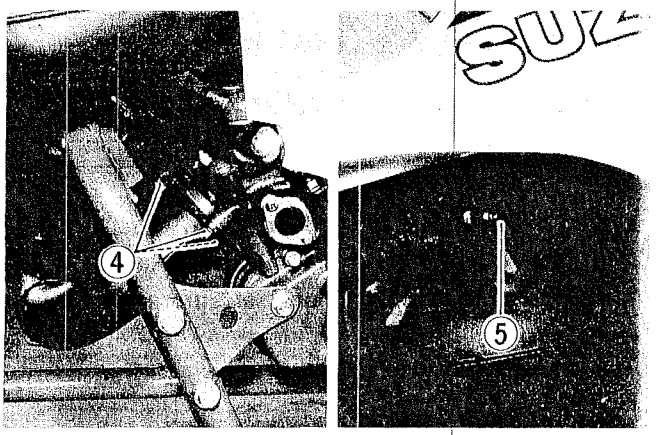
EXHAUST PIPE NUTS AND MUFFLER BOLTS

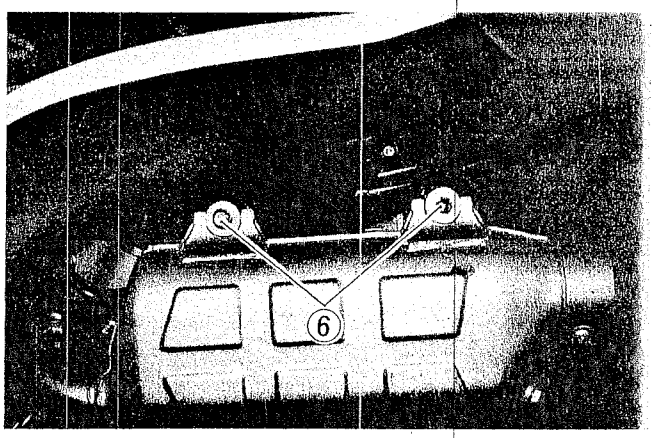
- Tighten the three exhaust pipe nuts ④, exhaust pipe mounting nut ⑤ and two muffler mounting bolts ⑥.

Item	Tightening torque
④	4 – 7 N·m (0.4 – 0.7 kg-m, 3.0 – 5.0 lb-ft)
⑤	20 – 25 N·m (2.0 – 2.5 kg-m, 14.5 – 18.0 lb-ft)
⑥	20 – 25 N·m (2.0 – 2.5 kg-m, 14.5 – 18.0 lb-ft)







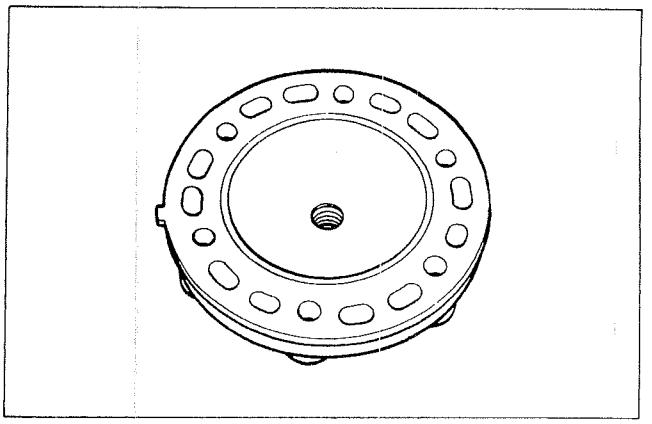


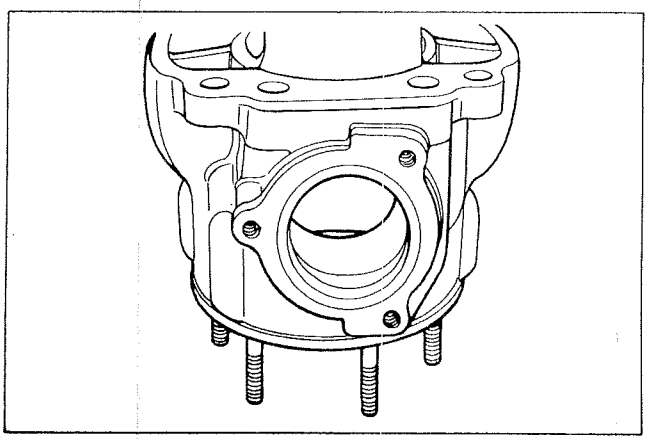
CYLINDER HEAD AND MUFFLER

Clean Every 6 months.

- Carbon deposits in the combustion chamber of the cylinder head and at the piston crown will raise the compression ratio and may cause pre-ignition or overheating.
- Carbon deposited at the exhaust port of the cylinder will prevent the flow of exhaust gas, reducing the output. Remove carbon deposits periodically.

NOTE:
For the removal, refer to page 3-9.



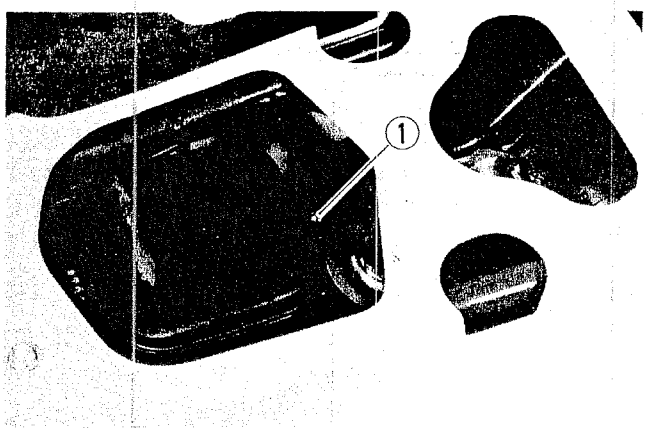


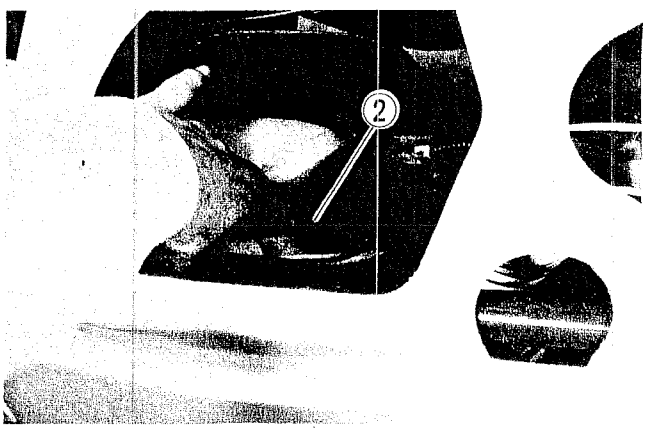
AIR CLEANER ELEMENT

Inspect Initially at 1 month and Every 3 months.

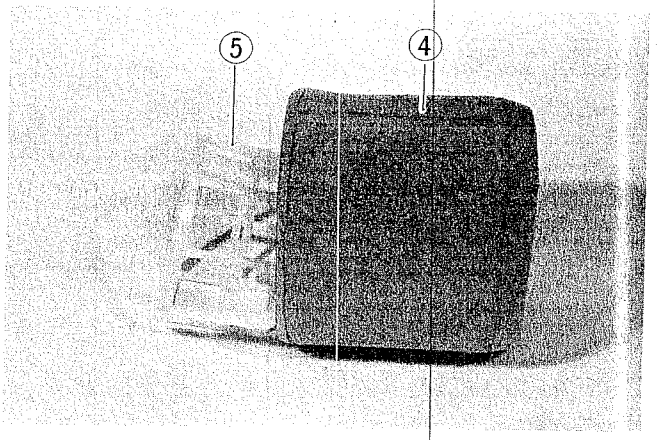
If the air cleaner is clogged with dust, intake resistance will be increased with a resultant decrease in power output and an increase in fuel consumption.
Check and clean the element more frequently. Check and clean the element in the following manner.

- Remove the seat.
- Remove the air cleaner case cover by loosening screw ①.
- Loosen and remove the retaining nut ② and take off the air cleaner element.





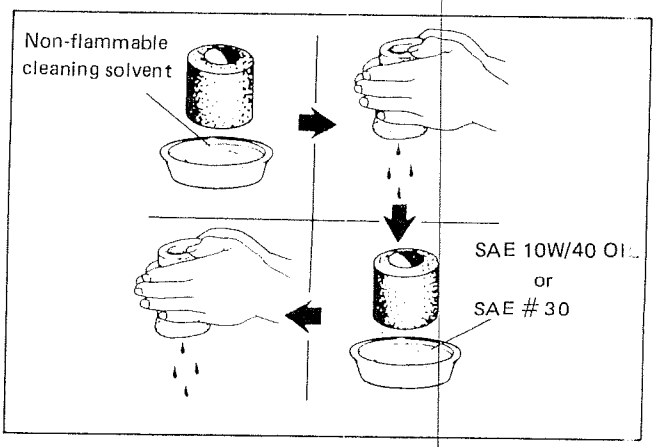
- Remove the polyurethane foam element ④ from the element frame ⑤.
- Fill a washing pan of a proper size with non-flammable cleaning solvent. Immerse the element in the cleaning solvent and wash it clean.
- Squeeze the cleaning solvent out of the washed element by pressing it between the palms of both hands.
- Immerse the element in motor oil, and squeeze the oil out of the element leaving it slightly wet with oil.



NOTE:
Do not twist or wring the element because it will tear or the individual cells of the element will be damaged.

CAUTION:
Inspect the element carefully for rips, torn seams, etc. If any damage is noted, replace the element.

NOTE:
Reinstall the cleaned element in reverse order of removal. Be absolutely sure that the element is securely in position and is sealing properly.

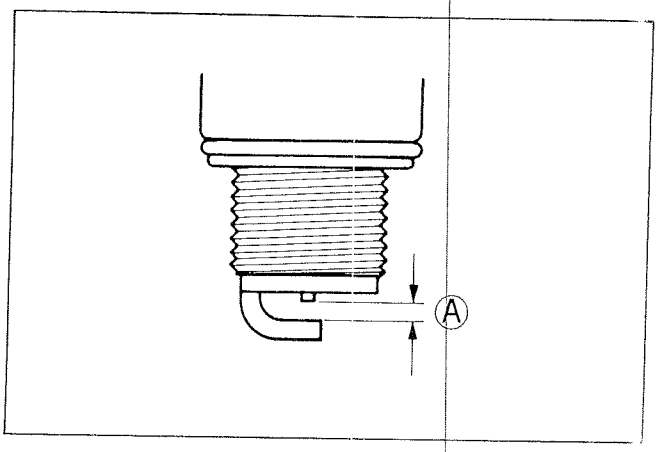


SPARK PLUG

Inspect Every 3 months and Replace Every 6 months.

Remove the carbon deposits with a wire or pin and adjust the spark plug gap Ⓐ with a thickness gauge.

09900-20804	Thickness gauge (Not available US market)



Plug	Gap Ⓐ
B8EGV	0.55 – 0.65 mm (0.022 – 0.026 in)
BR8EV	0.5 – 0.6 mm (0.020 – 0.024 in)

When removing carbon deposits, be sure to observe the appearance of the plug, noting the color of the carbon deposits. The color observed indicates whether the standard plug is suitable or not. If the standard plug is apt to get wet, a hotter plug should be used.

	CANADA	The others
	NGK	NGK
Hot type	BR7EV	B7EGV
Standard	BR8EV	B8EGV
Cold type	BR9EV	B9EGV

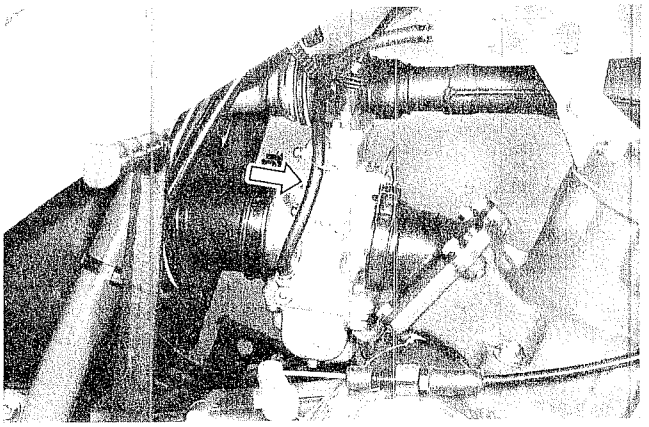
NOTE:
"R" type spark plug is installed for some specifi cations. An "R" type spark plug has a resiste located at the center electrode to prevent radic noise.

FUEL LINE

Inspect Initially at 1 month and Every 6 months and Replace Every 4 years.

- Inspect the fuel line and connections for damage and fuel leakage.
- If any defects are found, the fuel line must be replaced.

NOTE:
Turn the fuel cock "OFF" position, when replacing the fuel line.

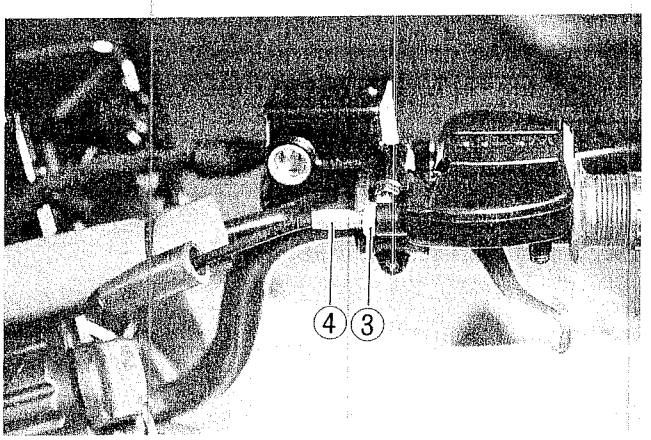


CARBURETOR

Inspect Initially at 1 month and Every 6 months.

ADJUSTING THROTTLE CABLE

- Loosen the lock nut ③ and turn the adjuster ④ in.
- Loosen lock nut ②.
- Adjust the cable play Ⓐ to 0.5 – 1.0 mm by turning adjuster ①.
- After adjust play, tighten the lock nut ②.



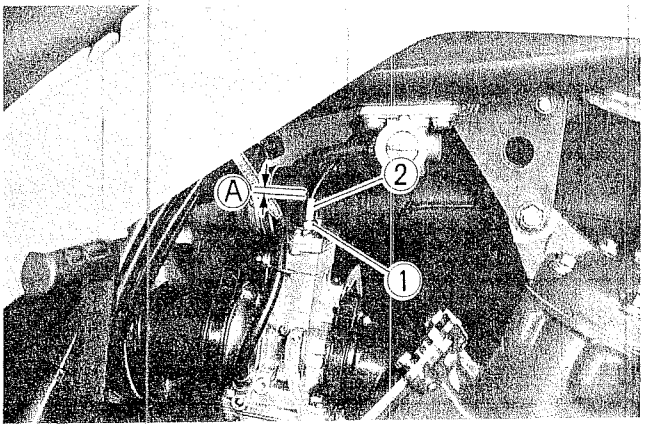
Cable play Ⓐ	0.5 – 1.0 mm (0.02 – 0.04 in)

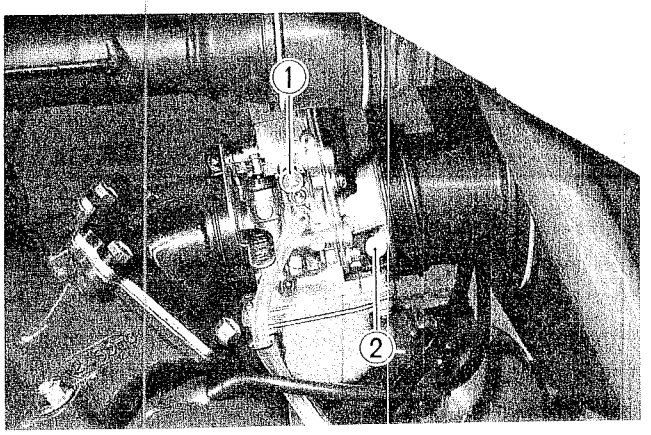
IDLE R/MIN ADJUSTMENT

- Adjust the throttle cable play.
- Start the engine and allow it to warm up.

NOTE:
A warm engine means an engine which has been run averaging 50 km/h in top gear for 9 minutes.

- Turn the throttle valve stop screw ① so that engine idles at 1 400 r/min.
- Turn the pilot air screw ② in or out around 1/4 turn from the original setting (1 1/2 turn out).
- The engine r/min will increase or decrease in accordance with the turning of the pilot air screw.





- Set this screw in a position that allows the engine to idle at the highest r/min.
- Turn the throttle valve stop screw again and adjust the idling r/min at 1 350 – 1 450 r/min.

Engine idle r/min	1 350 – 1 450 r/min

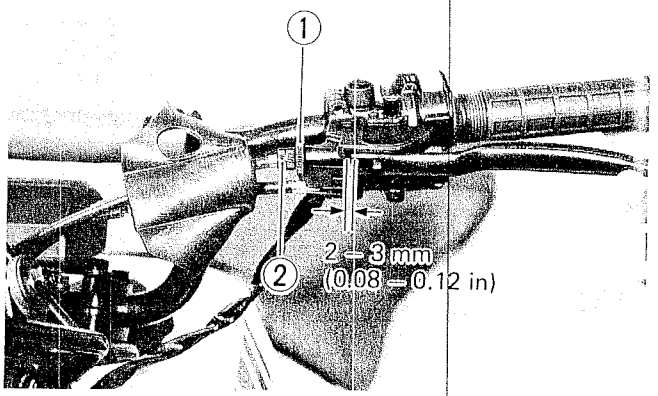
OVERHAUL AND CLEANING

- Wash the carburetor and component parts in cleaning solvent after disassembly.
- Before reassembly, inspect the float level and needle valve. Adjust and replace parts when necessary. (Refer to page 5-7.)
- Then blow compressed air through all jets and passages to make sure they are not clogged. Do not use wire, etc. to clean them, as this can damage the parts.

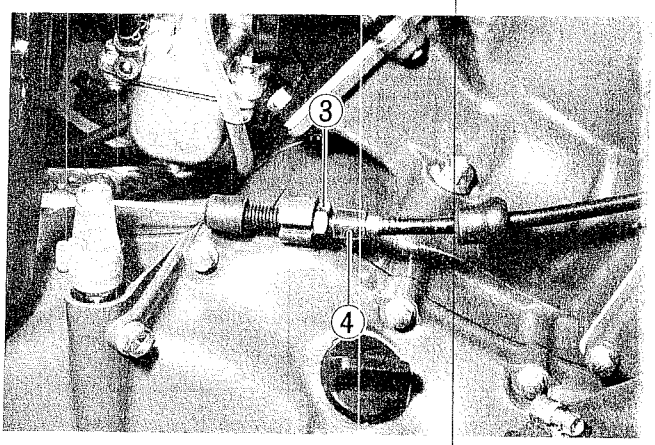
CLUTCH

Inspect Initially at 1 month and Every 6 months.

The play of the clutch should be 2 – 3 mm (0.08 – 0.12 in) as measured at the clutch lever holder before the clutch begins to disengage. If the play in the clutch is incorrect, adjust it in the following way:



- Loosen the lock nut ① and screw the adjuster ②on the clutch lever holder all the way in.
- Loosen the lock nut ③ and turn the adjuster ④in or out to provide the specific play.
- Tighten the lock nut ③.



Clutch cable play	2 – 3 mm (0.08 – 0.12 in)

TRANSMISSION OIL

Replace Initially at 1 month and Every 6 months.

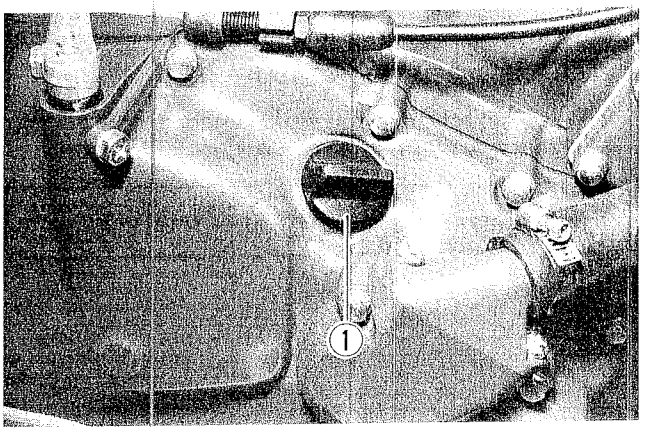
After a long period of use, the transmission oil will deteriorate and quicken the wear of sliding and interlocking surfaces. Replace the transmission oil periodically following the procedure below.

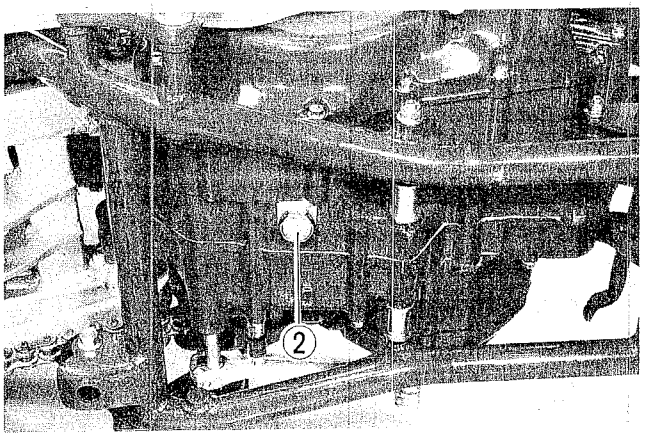
- Place the vehicle on the level ground.
- Start the engine to warm up the oil, this will facilitate draining of oil. Shut off the engine.
- Remove the oil filler cap ① and drain plug ②, and drain the oil completely.
- Tighten the drain plug.

Tightening torque	20 – 25 N·m (2.0 – 2.5 kg-m 14.5 – 18.0 lb-ft)

- Pour the specified amount of oil, which is a good quality SAE 20W-40 multi-grade oil, into the transmission case.

Capacity	900 ml (0.95/0.79 US/Imp qt)





DRIVE CHAIN

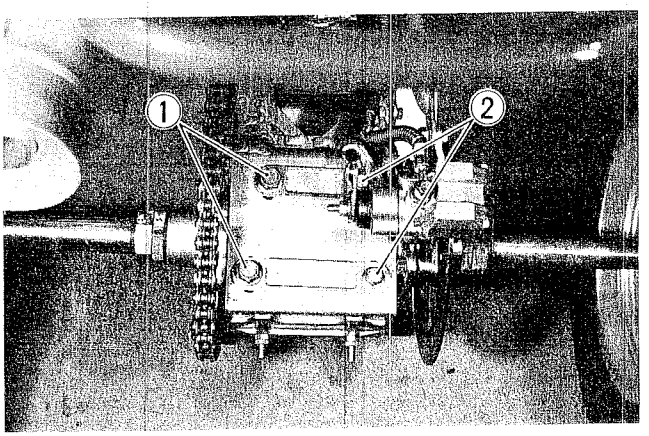
Inspect Every time before riding.

Visually inspect the drive chain for the below-listed possible malconditions. (Lift the rear wheel and place a jack or block under the swing arm, and turn the rear wheel slowly by hand, with the transmission in NEUTRAL.)

Inspect for:

1. Loose pins
2. Damaged rollers
3. Rusted links
4. Twisted or seized links
5. Excessive wear

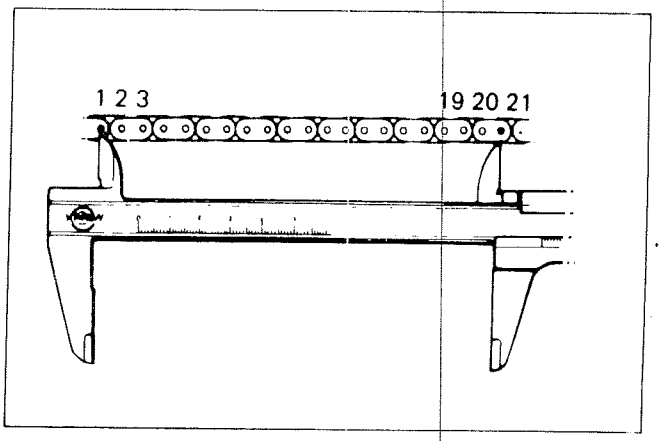
If any defects are found, the drive chain must be replaced.



CHECKING

Place the vehicle on a level ground.

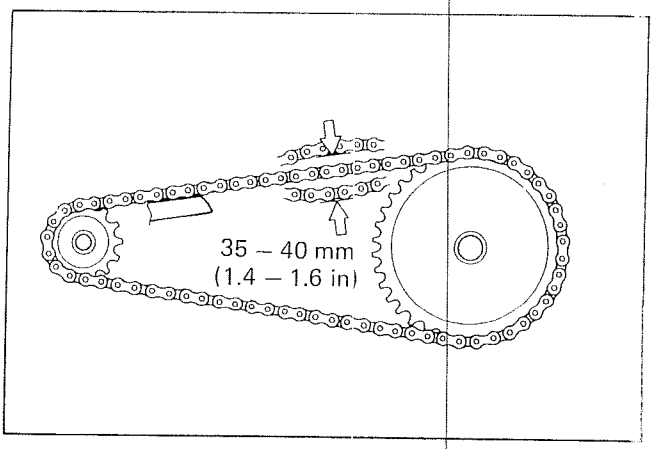
- Loosen the four bolts ①, ②.
- Loosen the chain adjusting lock nuts ③ and tension the drive chain fully by tightening the chain adjusting nuts ④.
- Count out 21 pins on the chain and measure the distance between 1st and 21 pins. If the distance exceeds 323.9 mm (12.75 in) the chain must be replaced.



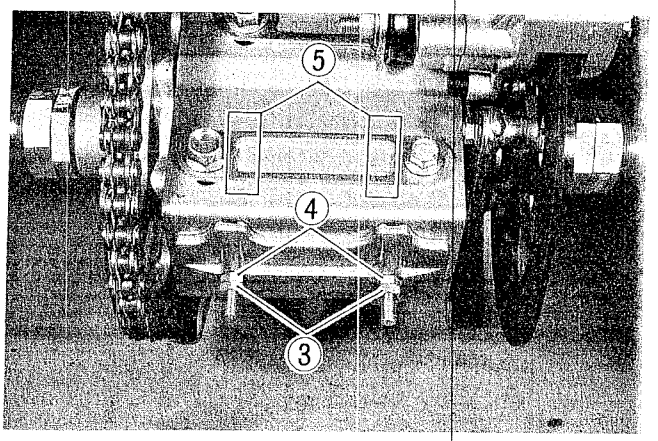
ADJUSTING

Place the vehicle on a level ground.

- Loosen the four bolts ①, ②.
- Loosen the adjusting nuts ④ until the chain has 35 – 40 mm (1.4 – 1.6 in) of slack at the middle between the engine and rear sprockets as shown in the illustration.
- The mark ⑤ on the both chain adjusters must be at the same position on the scale to align the right and left wheels correctly.
- After adjusting the drive chain, tighten the four bolts ①, ② to the specified torque.
- Tighten the chain adjusting nuts ④ and lock nuts ③ securely.



Tightening torque	①	70 – 90 N·m (7.0 – 9.0 kg-m / 50.5 – 65.0 lb-ft)
	②	40 – 60 N·m (4.0 – 6.0 kg-m / 29.0 – 43.5 lb-ft)

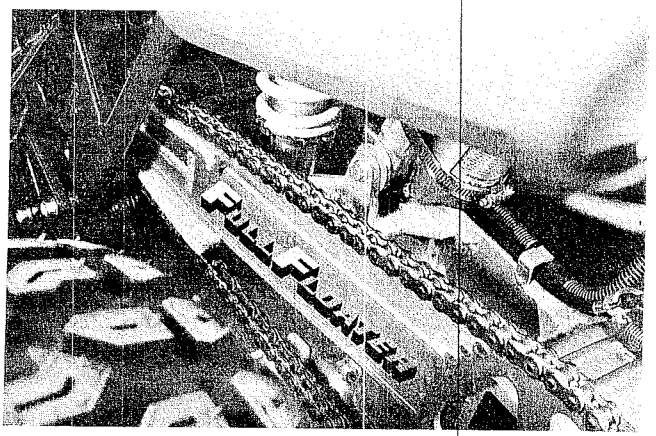


CLEANING AND LUBRICATING

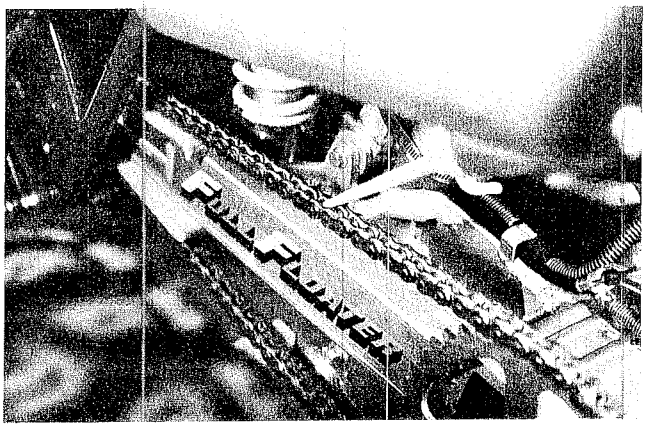
- Wash the chain with kerosene. If the chain tends to rust faster, the intervals must be shortened.

CAUTION:

Do not use trichlene, gasoline or any similar fluids: These fluids have too great a dissolving power for this chain and, what is more important is that they can damage the "O" rings (or seals) confining grease in the bush to pin clearance. Remember, high durability comes from the presence of grease in that clearance.



- After washing and drying the chain, apply heavy-weight motor oil (hypoid gear oil) to it.



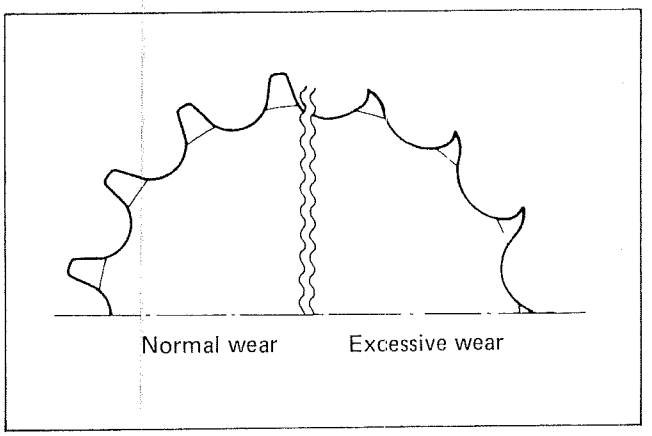
WARNING:
Do not use any oil sold commercially as "drive chain oil". Such oil can damage the "O" rings (or seals).

CAUTION:
The standard drive chain is TAKASAGO RK520-SMO-Z2 or DAIDO D.I.D. 520VS. For the replacement of the chain SUZUKI recommends above-mentioned standard drive chain.

SPROCKETS (ENGINE SIDE/REAR SIDE)

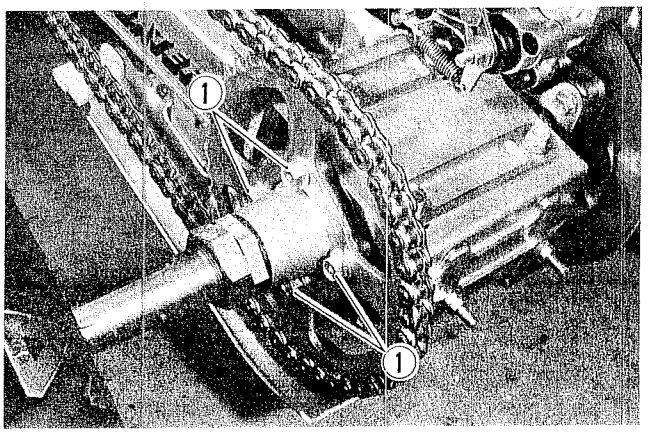
Inspect Initially at 1 month and Every 3 months.

Inspect each sprocket teeth for wear and damage. If they are worn as illustration, replace the sprockets and drive chain with new ones. (Refer to pages 3-5, 7-34.)



- After replacing the rear sprocket, tighten the rear sprocket mounting bolts ① to the specified torque.

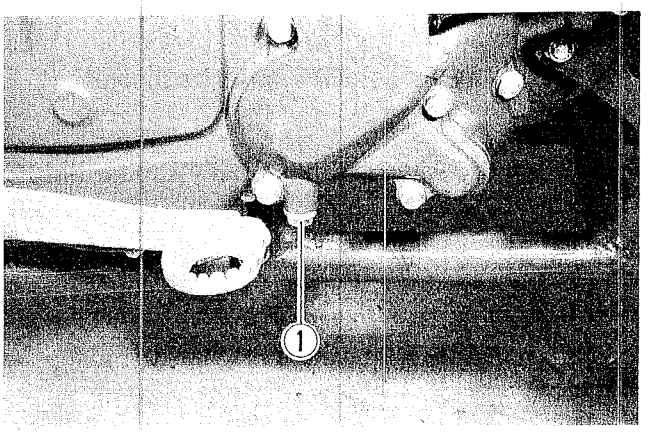
Tightening torque	15 – 25 N·m (1.5 – 2.5 kg-m 11.0 – 18.0 lb-ft)



COOLANT

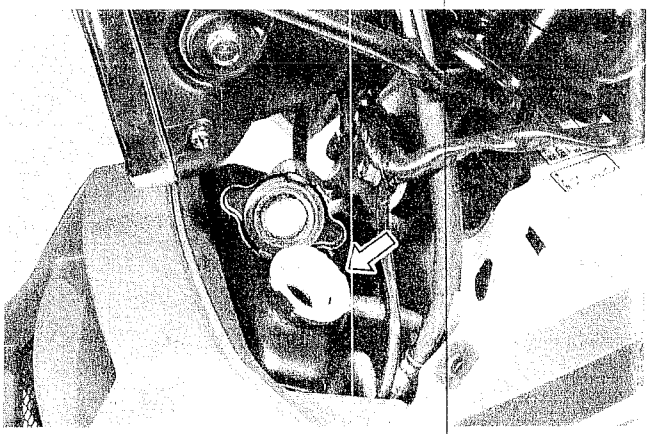
Change Every 2 years.

- Place a clean container under the water pump and remove the drain plug ①.
- Remove the radiator cap and drain coolant completely.

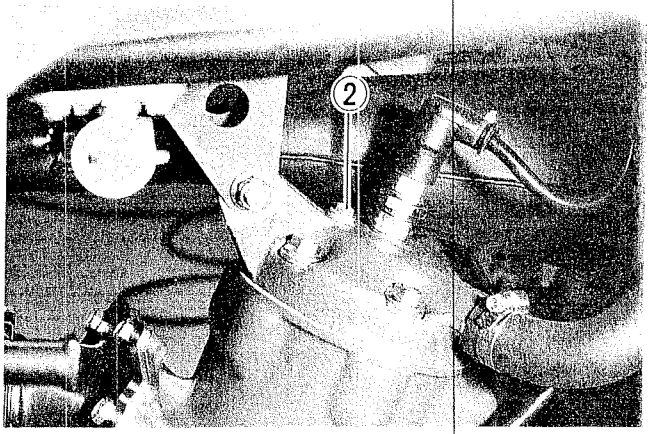


WARNING:
Do not open the radiator cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.

WARNING:
Cooling solution may be harmful if swallowed or if it comes in contact with skin or eyes. If cooling solution gets into the eyes or in contact with the skin, it should be flushed thoroughly with plenty of water. If swallowed, induce vomitting and call physician immediately.



- Reinstall the drain plug.
- Fill up the radiator with the specified density of coolant.
- Loosen the air bleeder bolt ② and bleed air completely.
- Close the radiator cap securely and warm up the engine.
- After cooling down, remove the cap again and fill up the radiator.



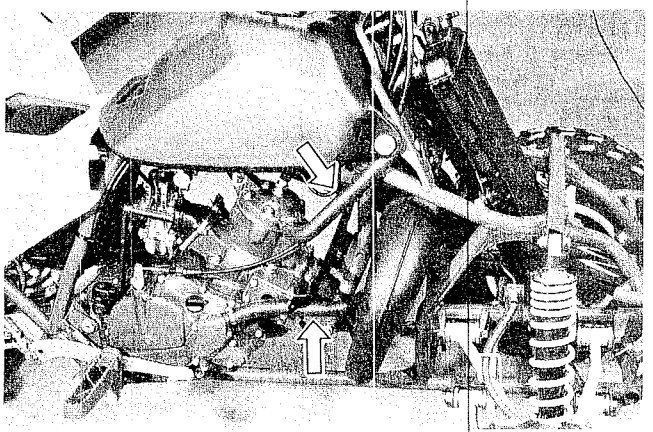
NOTE:
About 880 ml (0.93/0.77 US/Imp qt) of cooling solution may be needed when the radiator is filled.

CAUTION:
Repeat the above procedure several times and make sure that the radiator is filled with coolant up to the inlet hole.

RADIATOR HOSE

Inspect Initially at 1 month and Every 3 months and Replace Every 4 years.

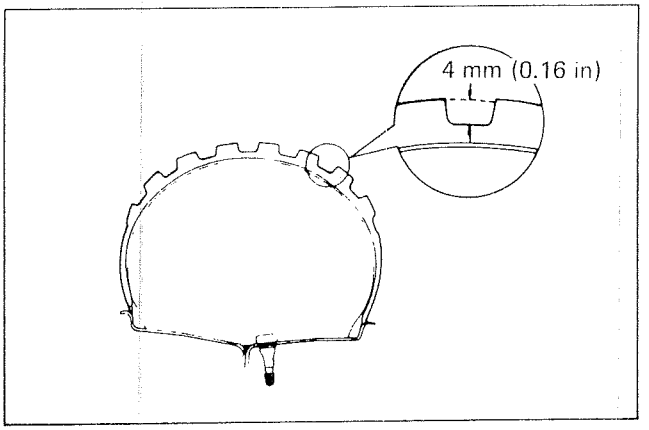
Inspect for leakage from the radiator hose connecting (joint) section and from the radiator hose itself and fork kinks in the radiator hose.
If any leakage from the radiator hose is detected, the radiator hose should be replaced.
Any leakages from the connecting (joint) section should be corrected by proper tightening.



TIRES

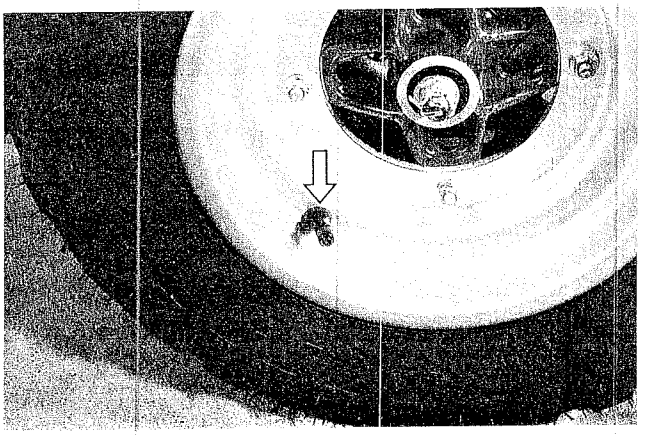
Inspect every time before riding.

Inspect the tires for wear and damage.
Check the tire tread depth as shown.
Replace a badly worn or damaged tire.
A tire with its tread worn down to the limit (in terms of tread depth) must be replaced.



Tread depth service limit

Front	4.0 mm (0.16 in)
Rear	



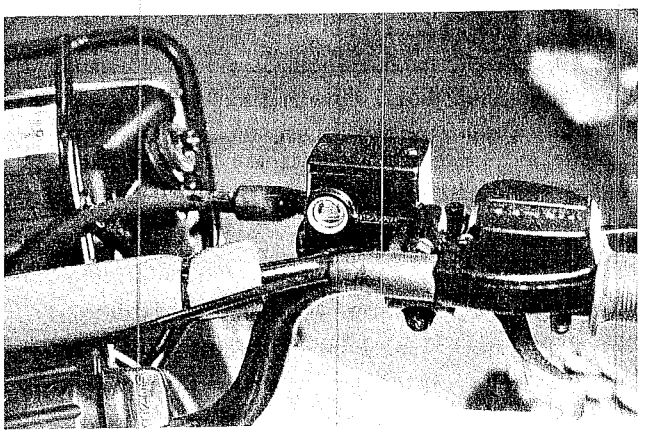
Check the tire pressure, and examine the valve for evidence of air leakage.

LOAD CAPACITY	TIRE PRESSURE	
	FRONT	REAR
Up to 80 kg (Up to 175 lbs)	0.25 kg/cm² (25 kPa 3.6 psi)	0.20 kg/cm² (20 kPa 2.9 psi)
From 80 – 120 kg (From 175 – 265 lbs)	0.30 kg/cm² (30 kPa 4.4 psi)	0.25 kg/cm² (25 kPa 3.6 psi)

CAUTION:
To minimize the possibility of tire damage from overinflation, we strongly recommend that a manual type air pump be used rather than a high pressure tire filler as found in gas stations. When pumping air in, never exceed 70 kPa (0.7 kg/cm², 10 psi).

BRAKES

Inspect Initially at 1 month and
Every 3 months.
Change fluid Every 2 years.
Replace hose Every 4 years.

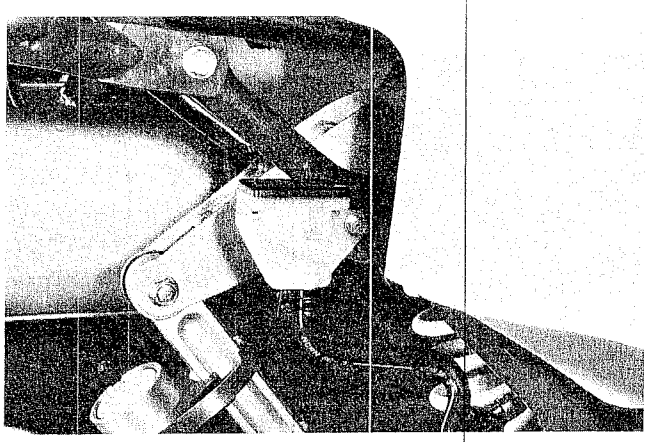


BRAKE FLUID LEVEL

- Check the brake fluid level by observing the lower limit line on the brake fluid reservoirs.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

Specification and classification	DOT3 or DOT4 (For U.S. model)
	SAE 1703, DOT3 or DOT4 (For other models)

99000-23021	SUZUKI Brake fluid (Not available in U.S. model)



WARNING:
Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses for cracks and hose joint for leakage before riding.

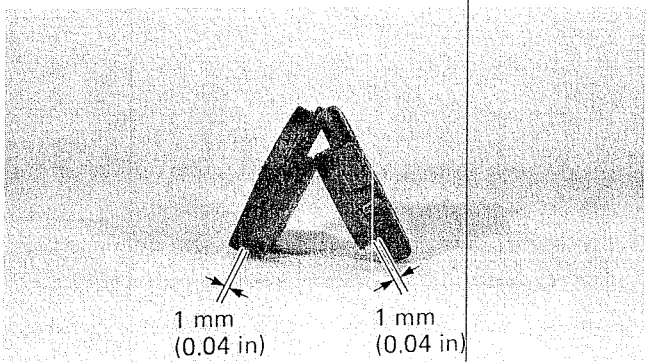
CAUTION:
The brake system of this motorcycle is filled with a glycol-based brake fluid. Do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will be caused. Do not use any brake fluid taken from old, used or unsealed containers. Never re-use the brake fluid left over from the last servicing and stored for long period.

BRAKE PADS

Front

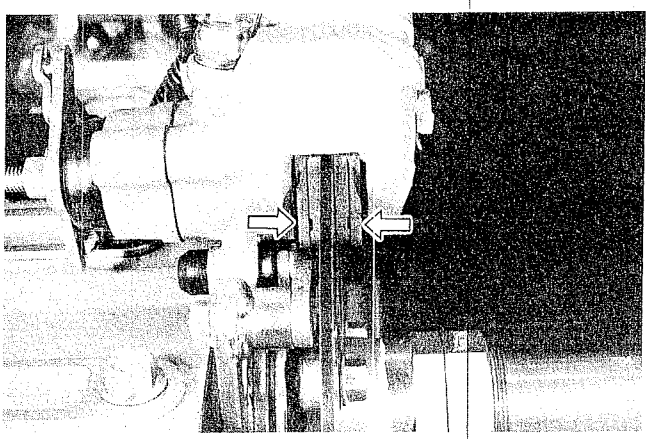
- Remove the front wheel. (Refer to page 7-3)
- Measure the thickness of front brake pad by a vernier calipers.
- If the thickness is below the limit, replace the pads with new ones. (Refer to page 7-12)

Service limit	1.0 mm (0.04 in)



Rear

- Check the extent of rear brake pad wear by observing the limit groove on the pad.
- If the wear exceeds the limit, replace the pads with new ones. (Refer to page 7-36)



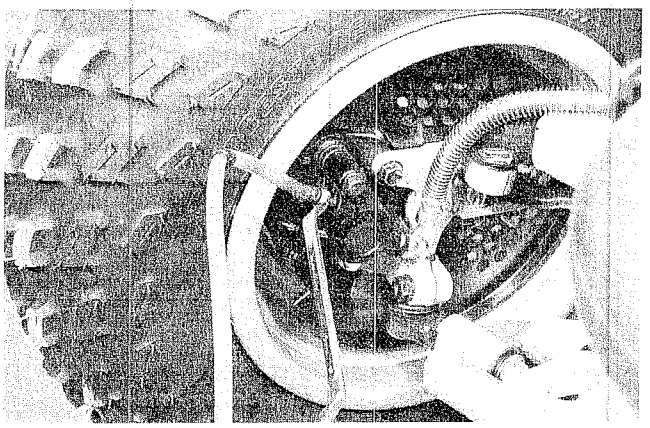
BLEEDING AIR FROM BRAKE FLUID CIRCUIT

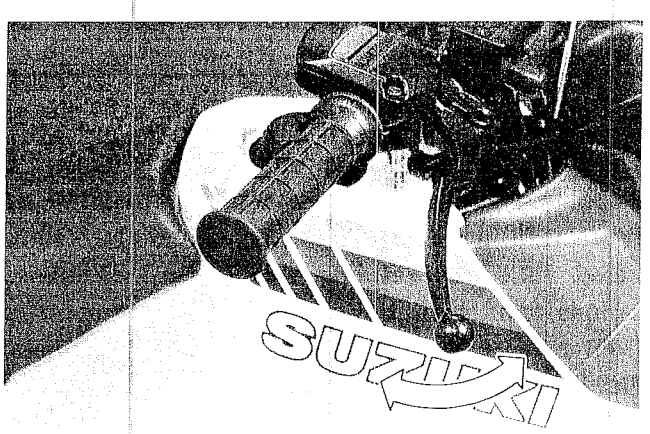
Air trapped in the fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and thus interferes with the full braking performance of the brake. The presence of air is indicated by "sponginess" of the brake lever and also by lack of braking force. Considering the danger to which such trapped air exposes the machine and rider, it is essential that, after remounting the brake and restoring the brake system to the normal condition, the brake fluid circuit be purged of air in the following manner:

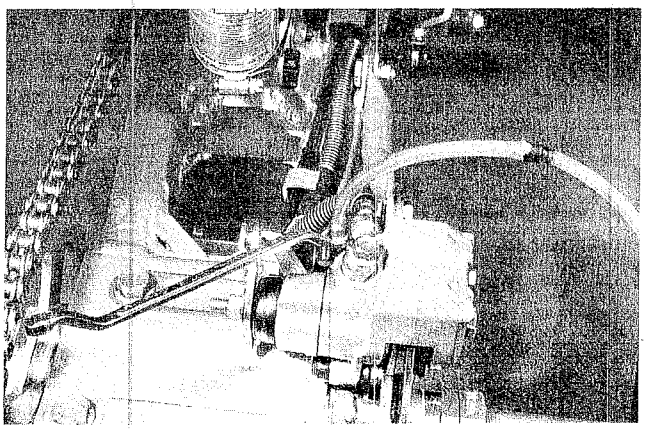
- Fill up the master cylinder reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent entry of dirt.
- Front brake: Bleed the air as following order. ① Right caliper → ② Left caliper
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle containing a small amount of brake fluid. Make sure that the end of the pipe is kept submerged in the brake fluid. This will keep air from being drawn back in the brake system during the bleeding operation.
- Squeeze and release the brake lever several times in rapid succession, and squeeze the lever fully without releasing it. Loosen the bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacle; this will remove the tension of the brake lever causing it to touch the handlebar grip. Then, close the valve, pump and squeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles.

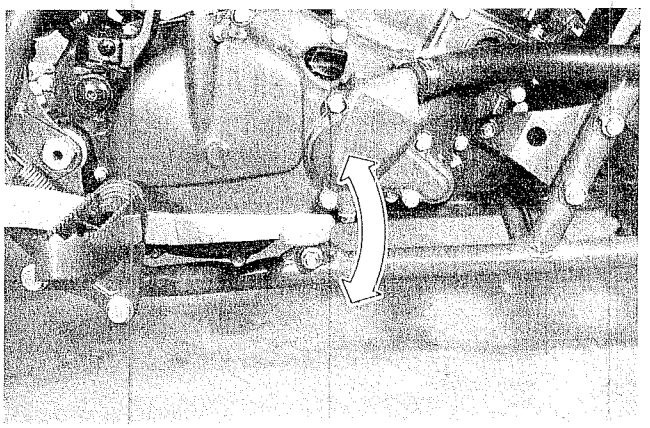
NOTE:
Replenish the brake fluid reservoir as necessary while bleeding the brake system.
Make sure that there is always some fluid visible in the reservoir.

NOTE:
Differences between front and rear are that the rear master cylinder is actuated by a pedal.









- Close the bleeder valve to the specified torque and disconnect the pipe. Fill the reservoir with brake fluid to the upper end of the inspection window.

Bleeder valve tightening torque	7 – 9 N·m (0.7 – 0.9 kg-m / 5.1 – 6.5 lb-ft)

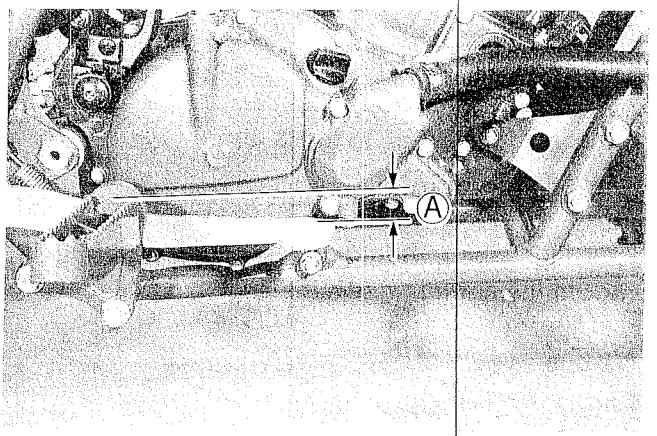
CAUTION:
Handle the brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials, etc.

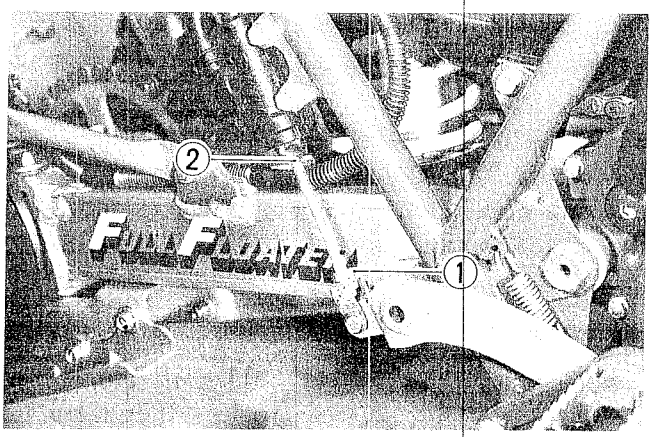
BRAKE PEDAL HEIGHT

Adjust the pedal height Ⓐ in the following manner:

- Loosen the lock nut ①, and rotate the push rod ② to locate brake pedal 5 mm (0.2 in) below the top face of the footrest.
- Retighten lock nut ①.

Brake pedal height Ⓐ	5 mm (0.2 in)

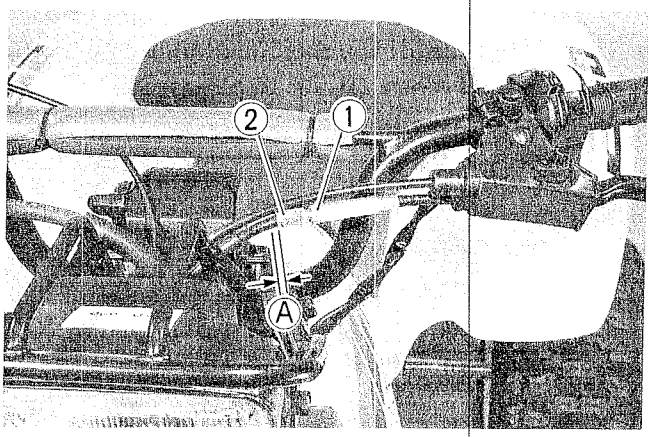




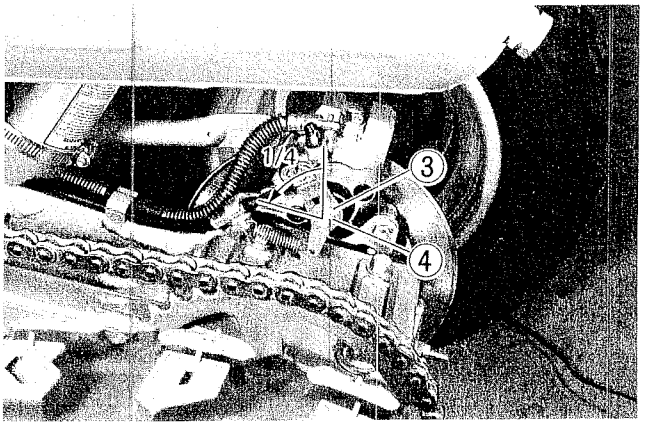
PARKING BRAKE

Place the vehicle on level ground. Lift the rear end of the vehicle and place a block under the swingarm.

- Loosen the lock nut ①.
- Relocate the adjuster ② to provide the play Ⓐ of the cable is very little or none.
- Tighten the lock nut ①.



- Loosen the lock nut ③.
- Tighten the adjuster ④ until the resistance is felt. Loosen the adjuster ¼ turn.
- Secure the lock nut ③ while holding the adjuster in position.



WARNING:
After adjusting the parking brake, check that there is no dragging when turning the rear wheel with the wheel off the ground and that the wheel is locked securely when the parking brake is engaged.

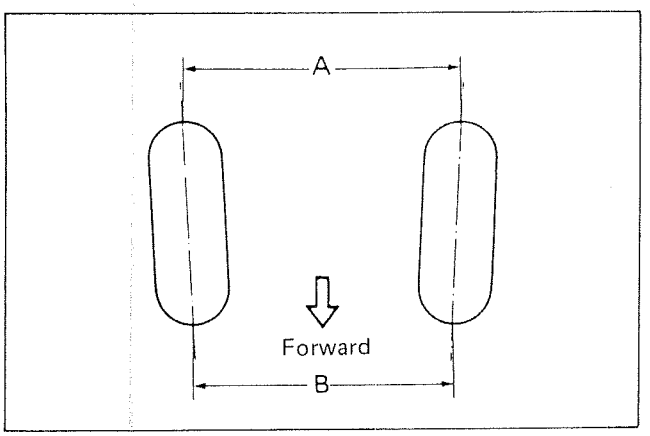
STEERING

Inspect Initially at 1 month and Every 3 months.

Steering system should be adjusted properly for smooth manipulation of handlebar and safe running.

TOE-IN

- Place the vehicle on level ground.
- Make sure the tire pressure for both tires is the same and set to the proper specification.
- The front wheels are set in straight ahead position.
- Mount 75 kg (165 lbs) load on the seat.
- Measure the distance (A and B in illustration) of front wheels with a toe-in gauge as shown in illustration and caliculate the difference between A and B.



Toe-in with 75 kg (165 lbs) load	11 – 19 mm (0.43 – 0.75 in)

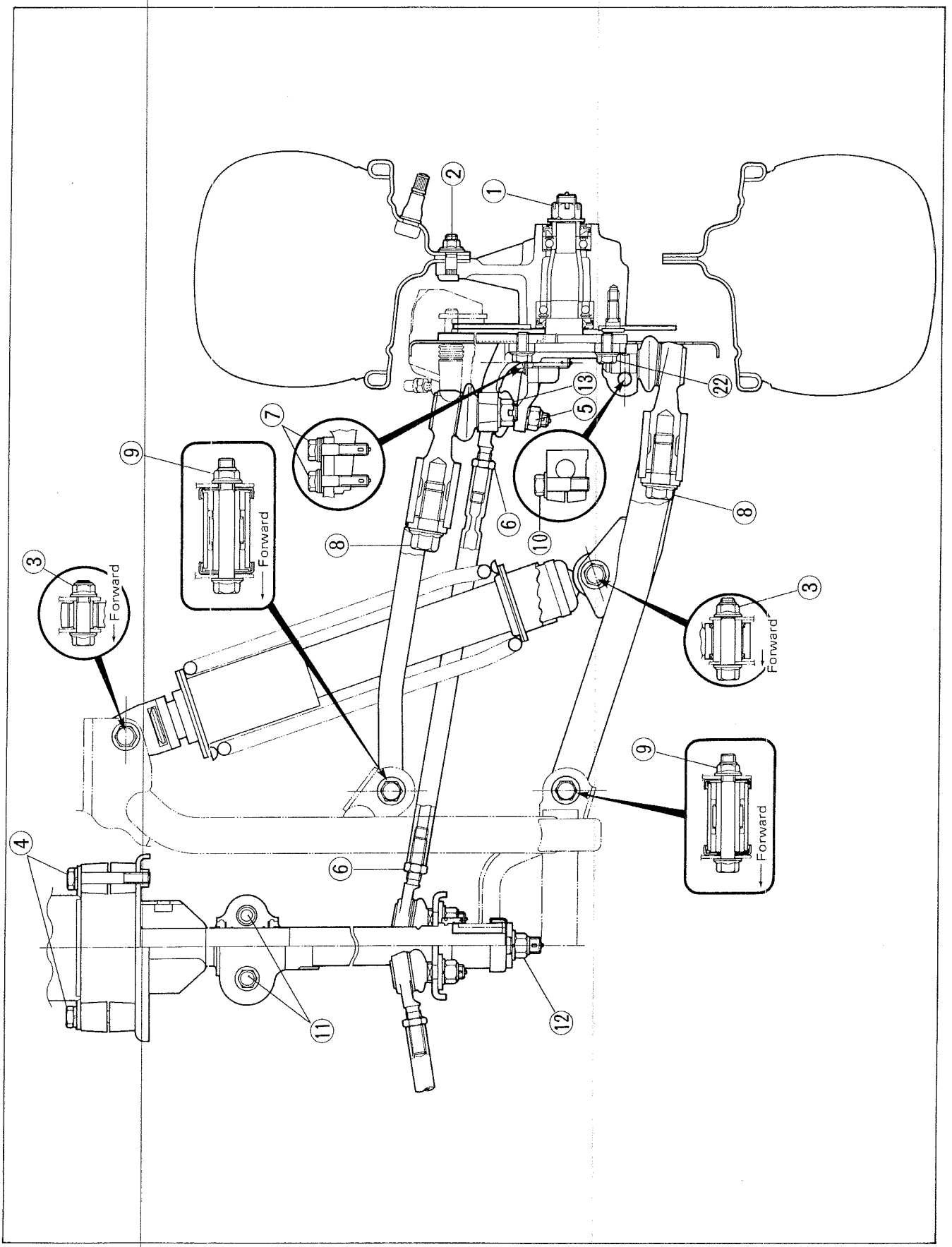
- If the toe-in is off the specification, bring it into the specified range. (Refer to page 7-30).

CHASSIS NUTS AND BOLTS

Tighten Initially at 1 month and Every 3 months.

The bolts and nuts listed below are important parts, and they must be in good condition for safety. They must be retightened, as necessary, to the specified torque with a torque wrench.

	ITEM		N·m	kg-m	lb-ft
①	Front wheel hub nut		50 – 80	5.0 – 8.0	36.0 – 58.0
②	Front wheel set nut		20 – 31	2.0 – 3.1	14.5 – 22.5
③	Front shock absorber nut (Upper and Lower)		40 – 60	4.0 – 6.0	29.0 – 43.5
④	Handlebar clamp bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
⑤	Tie-rod end nut		22 – 35	2.2 – 3.5	16.0 – 25.5
⑥	Tie-rod lock nut		22 – 35	2.2 – 3.5	16.0 – 25.5
⑦	Steering knuckle arm bolt		42.5 – 47.5	4.25 – 4.75	30.5 – 34.5
⑧	Wishbone arm end bolt (Upper and Lower)		120 – 170	12.0 – 17.0	87.0 – 123.0
⑨	Wishbone arm inner nut		40 – 60	4.0 – 6.0	29.0 – 43.5
⑩	Steering knuckle arm lower bolt		40 – 60	4.0 – 6.0	29.0 – 43.5
⑪	Steering shaft holder bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
⑫	Steering shaft lower nut		38 – 60	3.8 – 6.0	27.5 – 43.5
⑬	Steering knuckle end nut		35 – 50	3.5 – 5.0	25.5 – 36.0
⑭	Brake hose union bolt (Front and Rear)		20 – 25	2.0 – 2.5	14.5 – 18.0
⑮	Brake pipe connecting nut		13 – 18	1.3 – 1.8	9.5 – 13.0
⑯	Brake caliper mounting bolt (Front and Rear)		15 – 25	1.5 – 2.5	11.0 – 18.0
⑰	Rear wheel hub nut		85 – 115	8.5 – 11.5	61.5 – 83.0
⑱	Rear wheel set nut		45 – 65	4.5 – 6.5	32.5 – 47.0
⑲	Rear sprocket mounting bolt		50 – 60	5.0 – 6.0	36.0 – 43.5
⑳	Rear axle lock nut		160 – 200	16.0 – 20.0	115.5 – 144.5
㉑	Torque link bolt	Front	20 – 31	2.0 – 3.1	14.5 – 22.5
		Rear	44 – 66	4.4 – 6.6	32.0 – 47.5
㉒	Disc plate mounting bolt (Front and Rear)		15 – 25	1.5 – 2.5	11.0 – 18.0
㉓	Rear axle housing set nut	Right	40 – 60	4.0 – 6.0	29.0 – 43.5
		Left	70 – 90	7.0 – 9.0	50.5 – 65.0
㉔	Rear shock absorber nut (Upper and Lower)		40 – 60	4.0 – 6.0	29.0 – 43.5
㉕	Cushion lever center shaft nut		70 – 100	7.0 – 10.0	50.5 – 72.5
㉖	Cushion rod nut (Upper and Lower)		40 – 60	4.0 – 6.0	29.0 – 43.5
㉗	Swingarm pivot nut		50 – 80	5.0 – 8.0	36.0 – 58.0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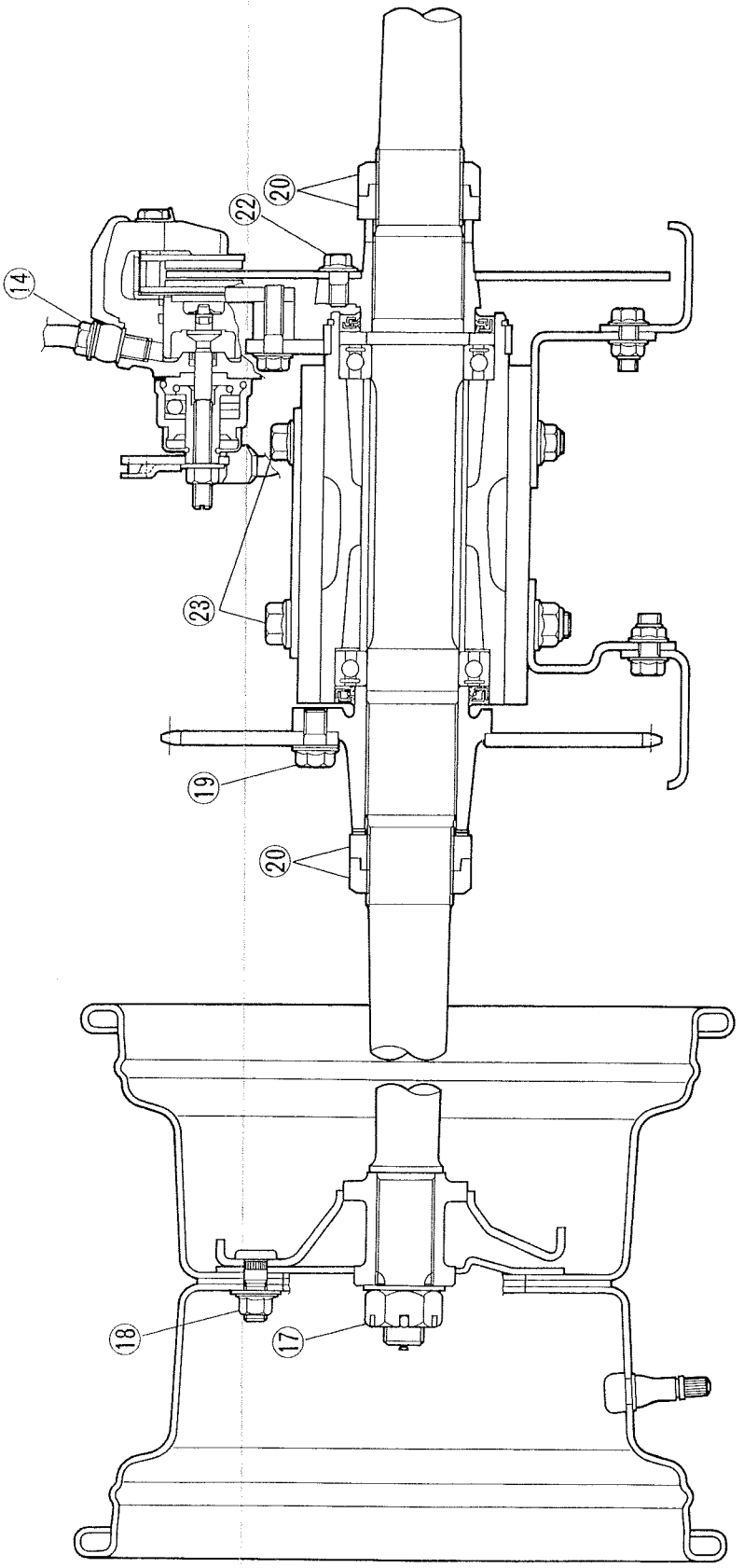
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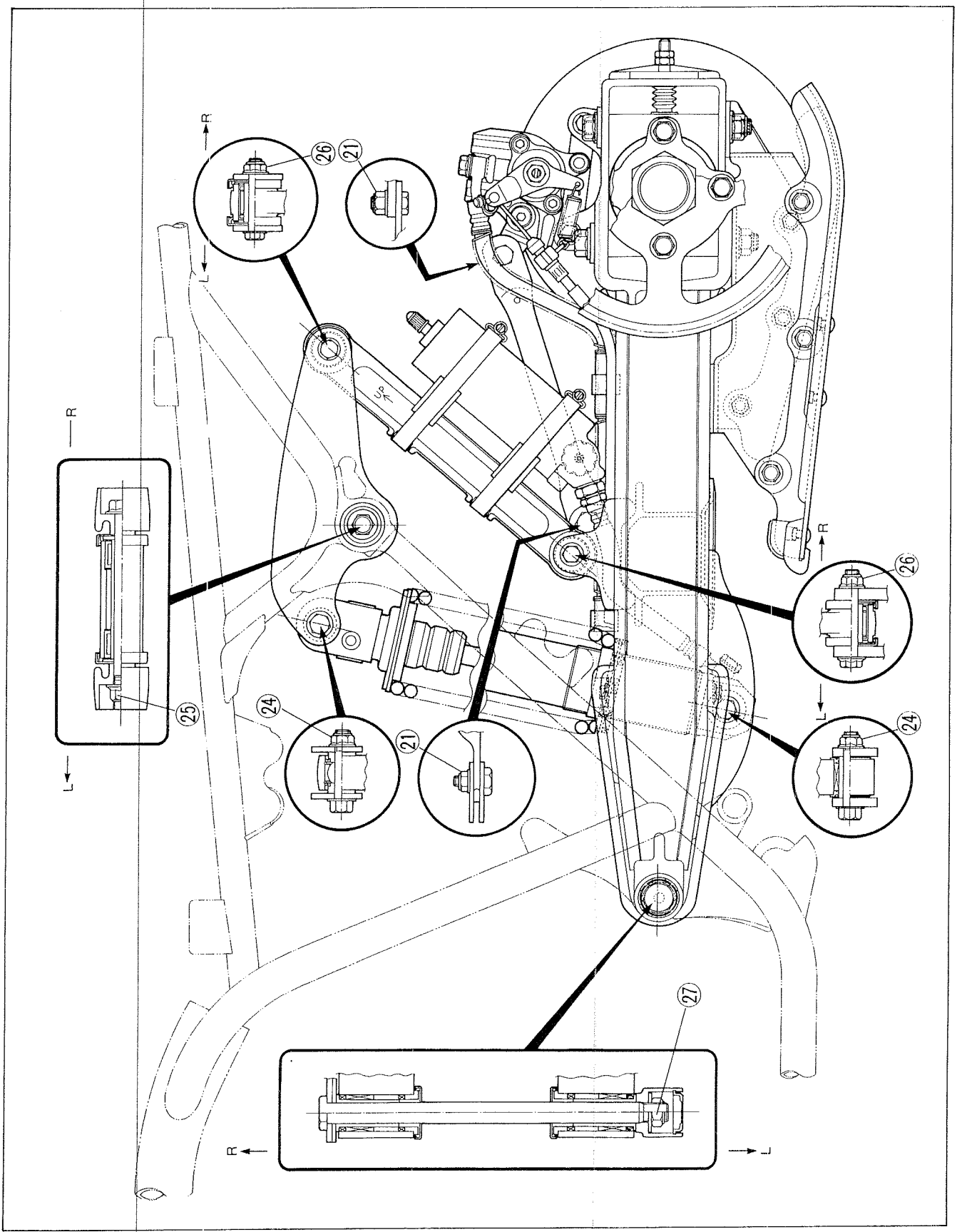
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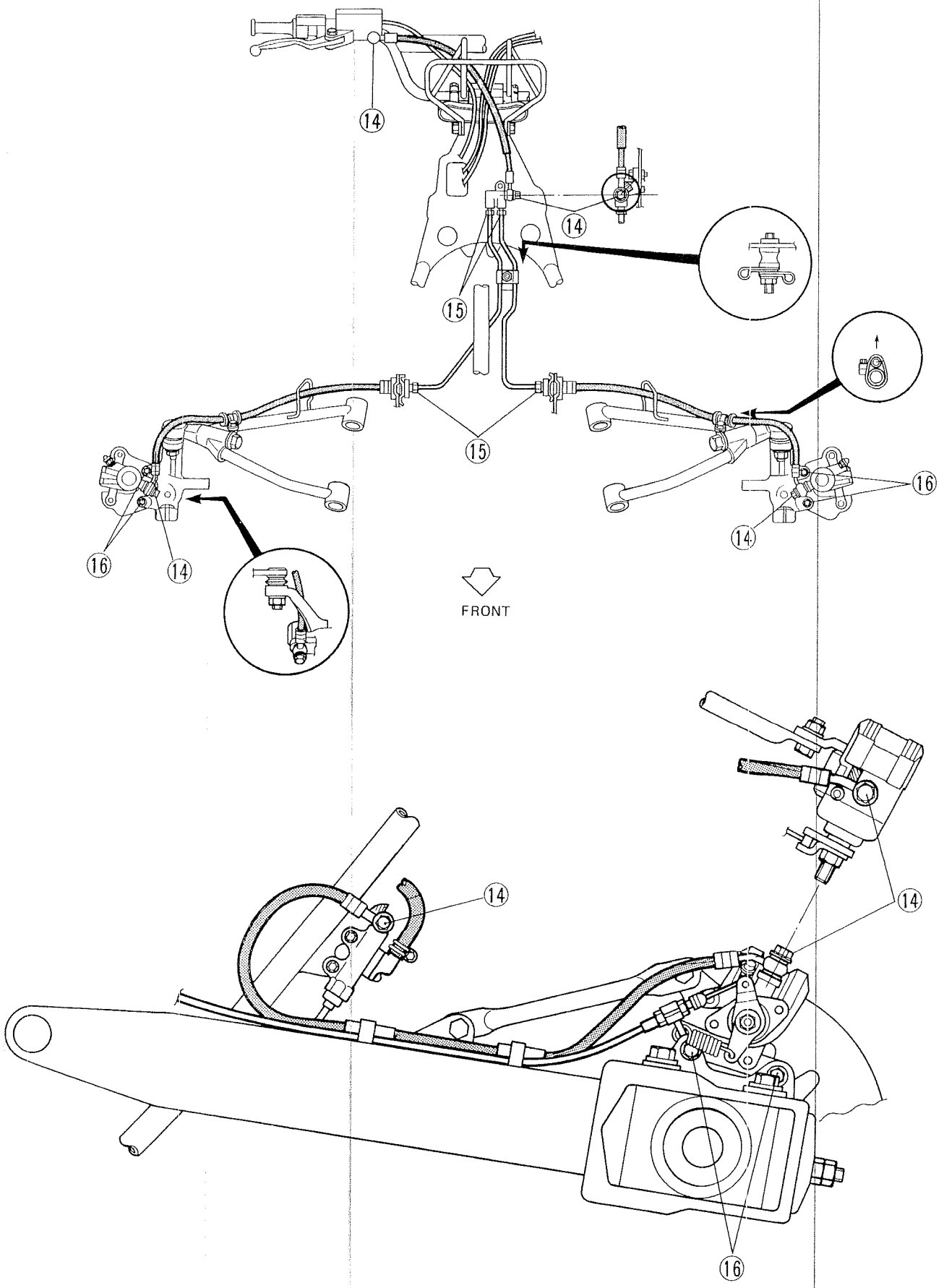
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FRONT
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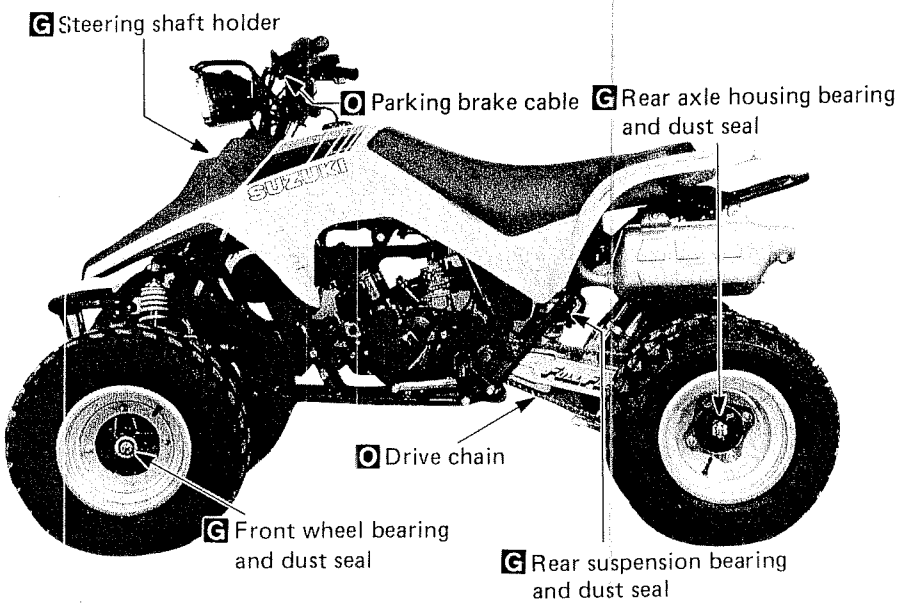
GENERAL LUBRICATIONS

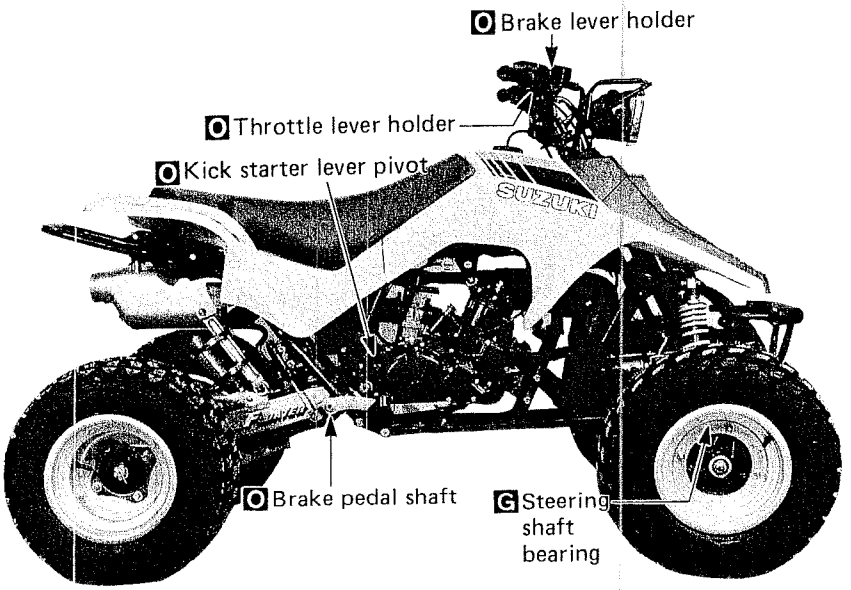
Lubricate Every 3 months.

Proper lubrication is important for smooth operation and long life of each working part of your vehicle and also for safe riding. It is a good practice to lubricate the machine after along rough ride and after getting it wet in the rain or after washing it. Major librication points are indicated below.

* Lubricate exposed parts which are subject to rust with motor or grease.
* Before lubricating each part, clean off any rusty spots and wipe off and grease, oil, dirt or grime.

WARNING:
Be careful not to apply too much grease to the brake disc. If grease gets on the discs, brake slippage will result.





ENGINE

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ENGINE COMPONENTS REMOVABLE WITH ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the page listed in this section for removal instruction.

ENGINE LEFT SIDE

	Page
Gearshift lever	3- 5
Engine sprocket	3- 5
Mangeto cover	3-14
Magneto rotor	3-14
Stator coil	3-15
Balancer shaft	3-16

ENGINE CENTER

	Page
Cylinder head	3- 9
Exhaust valve inspection window	3- 9
Cylinder	3- 9
Piston	3-10
Piston pin	3-10

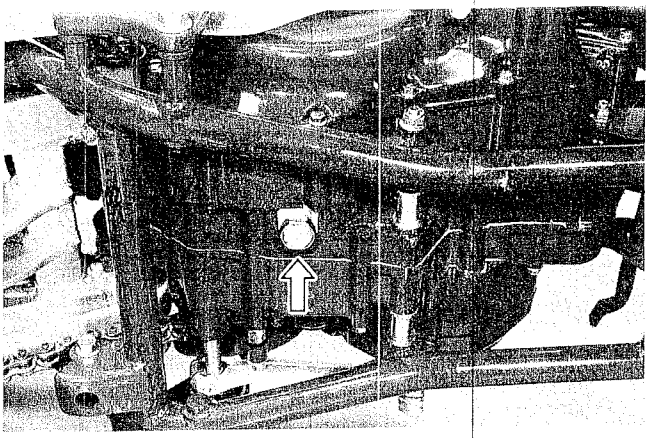
ENGINE RIGHT SIDE

	Page
Kick starter lever	3-10
Clutch cover	3-11
Clutch assembly	3-11
Kick starter shaft	3-12
Kick starter idle gear	3-13
Gearshift shaft	3-13
Gearshift cam driven gear	3-13
Exhaust valve governor	3-13
Balancer drive gear	3-14
Balancer driven gear	3-14
Primary drive gear	3-14

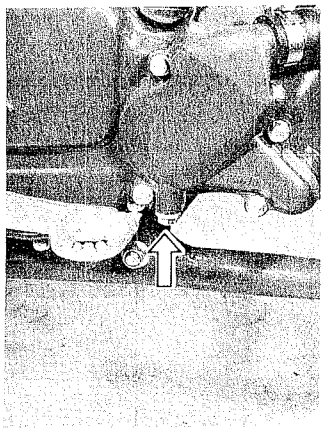
ENGINE REMOVAL

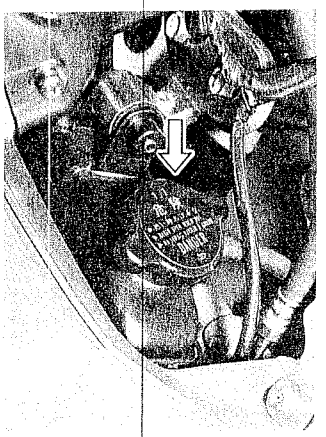
Before taking the engine out of the frame, wash the engine with a steam cleaner and drain transmission oil, etc. The procedure of engine removal is sequentially explained in the following steps, and engine reinstallation is effected by reversing the removal procedure.

- Drain the transmission oil. (Refer to page 2-7)

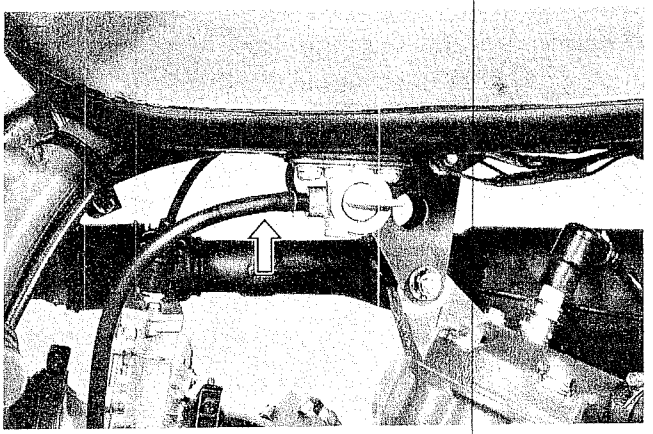


- Drain the coolant. (Refer to page 2-10)

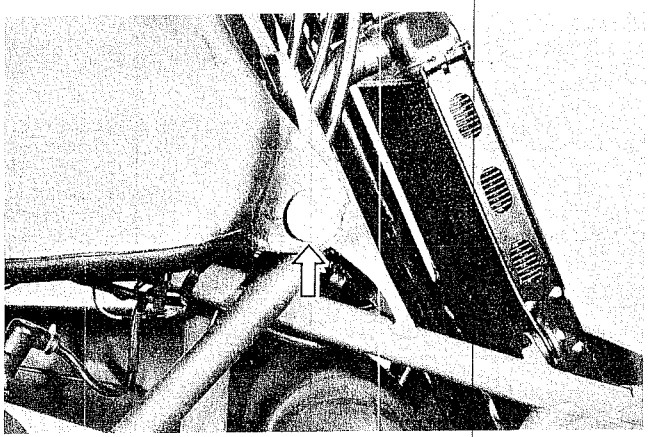




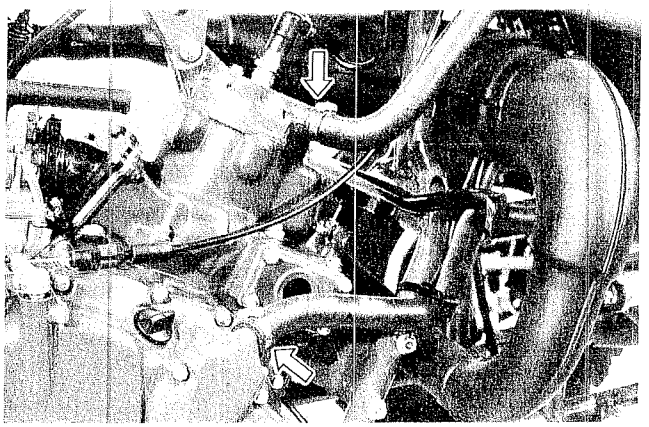
- Remove the front and rear fender. (Refer to page 7-1)
- Turn the fuel cock "OFF" position and disconnect the fuel hose.



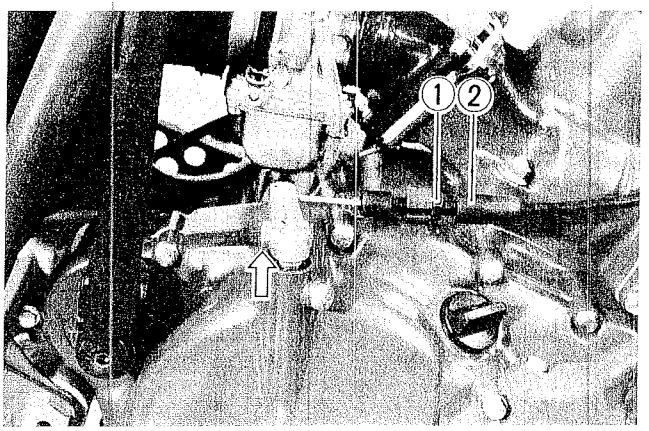
- Loosen the fuel tank mounting bolts and remove the fuel tank.



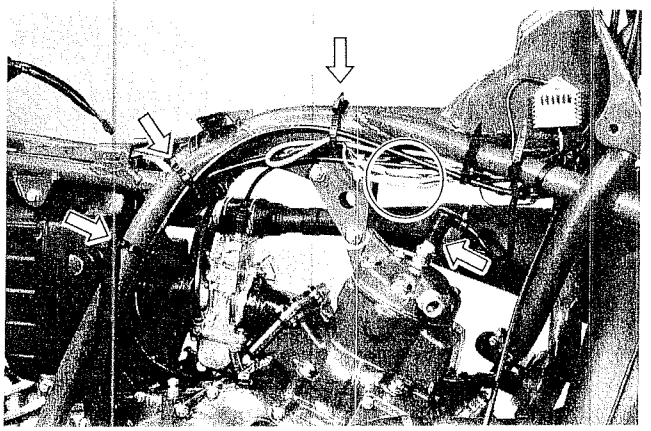
- Disconnect the both radiator hoses (cylinder head side and water pump side) after unscrewing the radiator clamps.



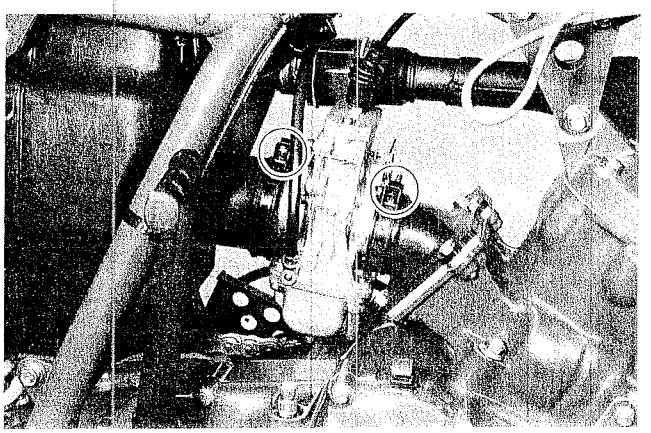
- Loosen the lock nut ① and then turn the adjuster ② to obtain the enough clutch cable paly.
- Loosen the clutch release lever securing bolt and separate the joint portion.
- Remove the clutch cable adjuster from the clutch cover.



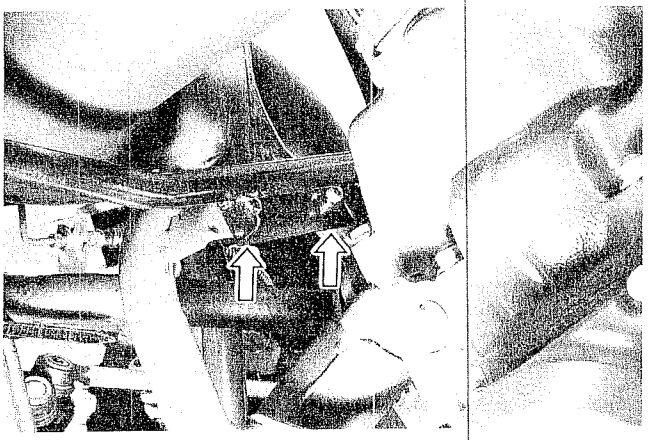
- Disconnect the magneto lead wires and spark plug cap after unclamping the three clamps.



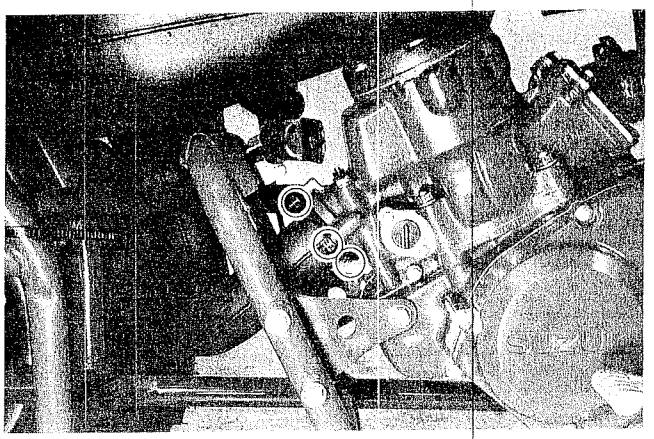
- Loosen the carburetor clamp screws, and then remove the carburetor.
- Unclamp the breather pipes/overflow pipe clamp.

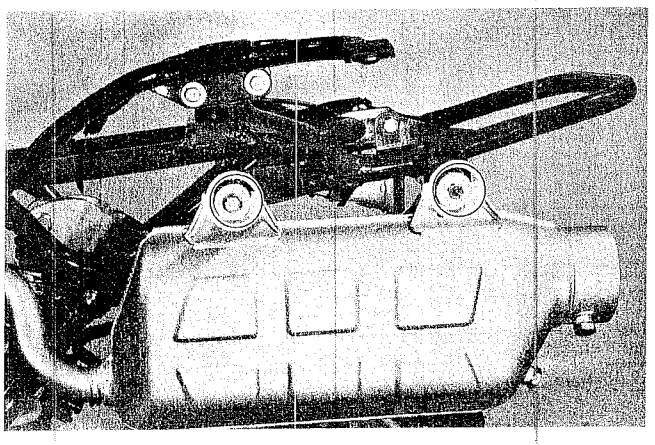


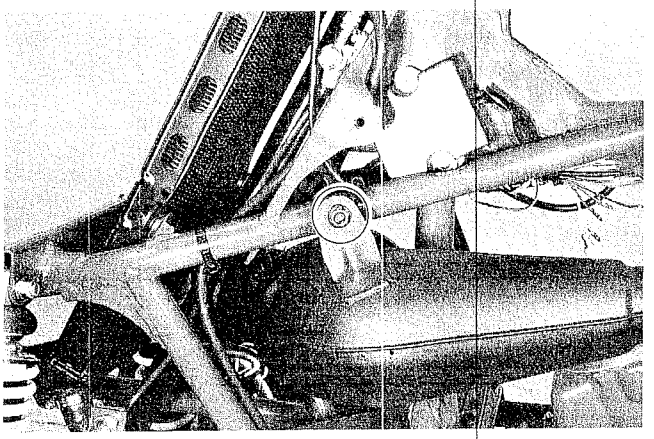
- Remove the front fender reinforcement by loosening the securing bolts.



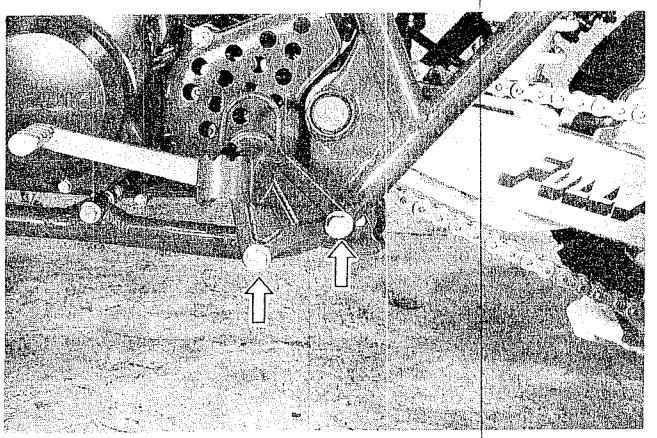
- Remove the exhaust pipe and muffler.



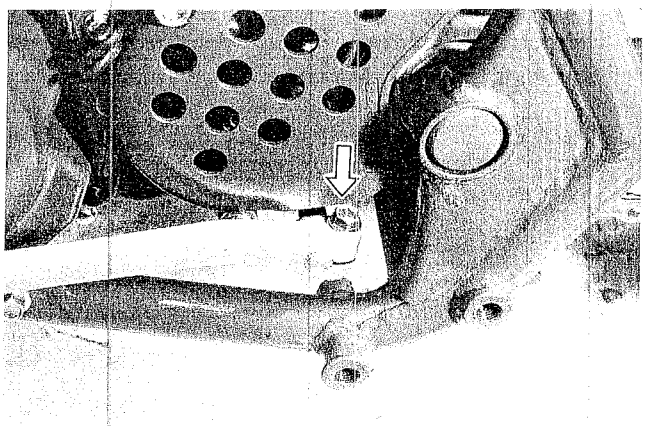




- Remove the left footrest by loosening the two securing bolts.

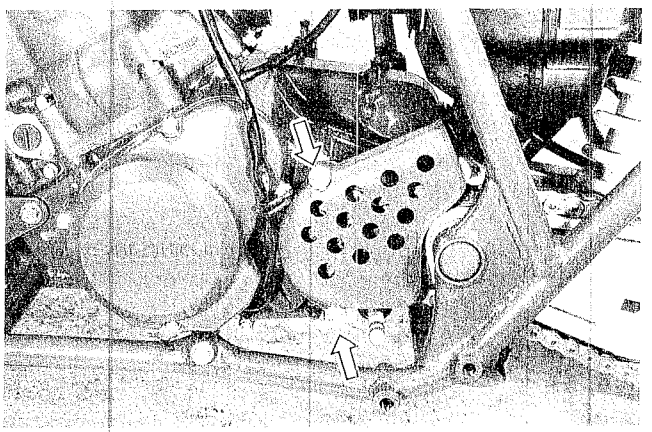


- Remove the gearshift lever by loosening the securing bolt.



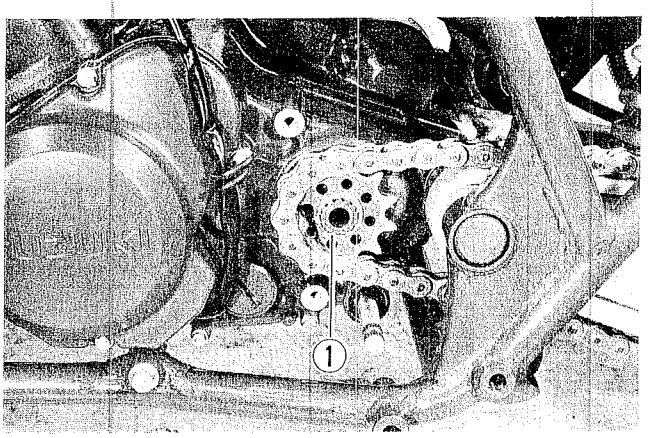
- Remove the engine sprocket cover with chain guide and two spacers by loosening two bolts.

NOTE:
When reinstalling the drive chain guide, "UP" letter must be faced outside.



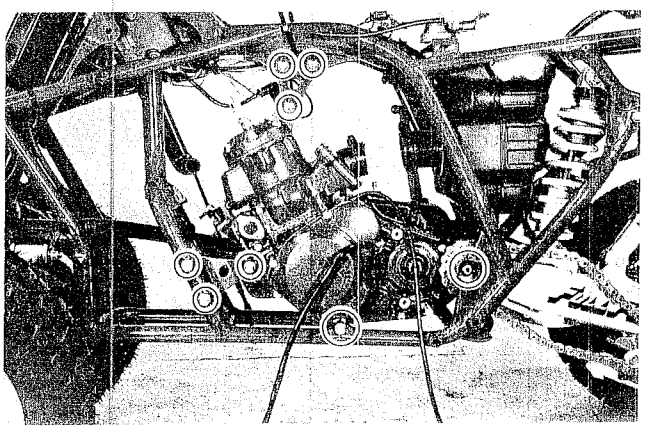
- Remove the circlip ①, and then remove the engine sprocket with chain.

NOTE:
If removing the engine sprocket is difficult, obtain the enough chain slack. (Refer to page 2-8)



- Loosen and remove the engine mounting bracket bolts, engine mounting bolts and swingarm pivot shaft nut.

NOTE:
Be careful not to draw out the swingarm pivot shaft completely from the right side swingarm pivoting hole. Insert the shaft or rod into the left side pivoting hole from the left side of the frame to keep the alignment of the frame holes and swingarm pivoting holes.



- Remove the engine from left side.

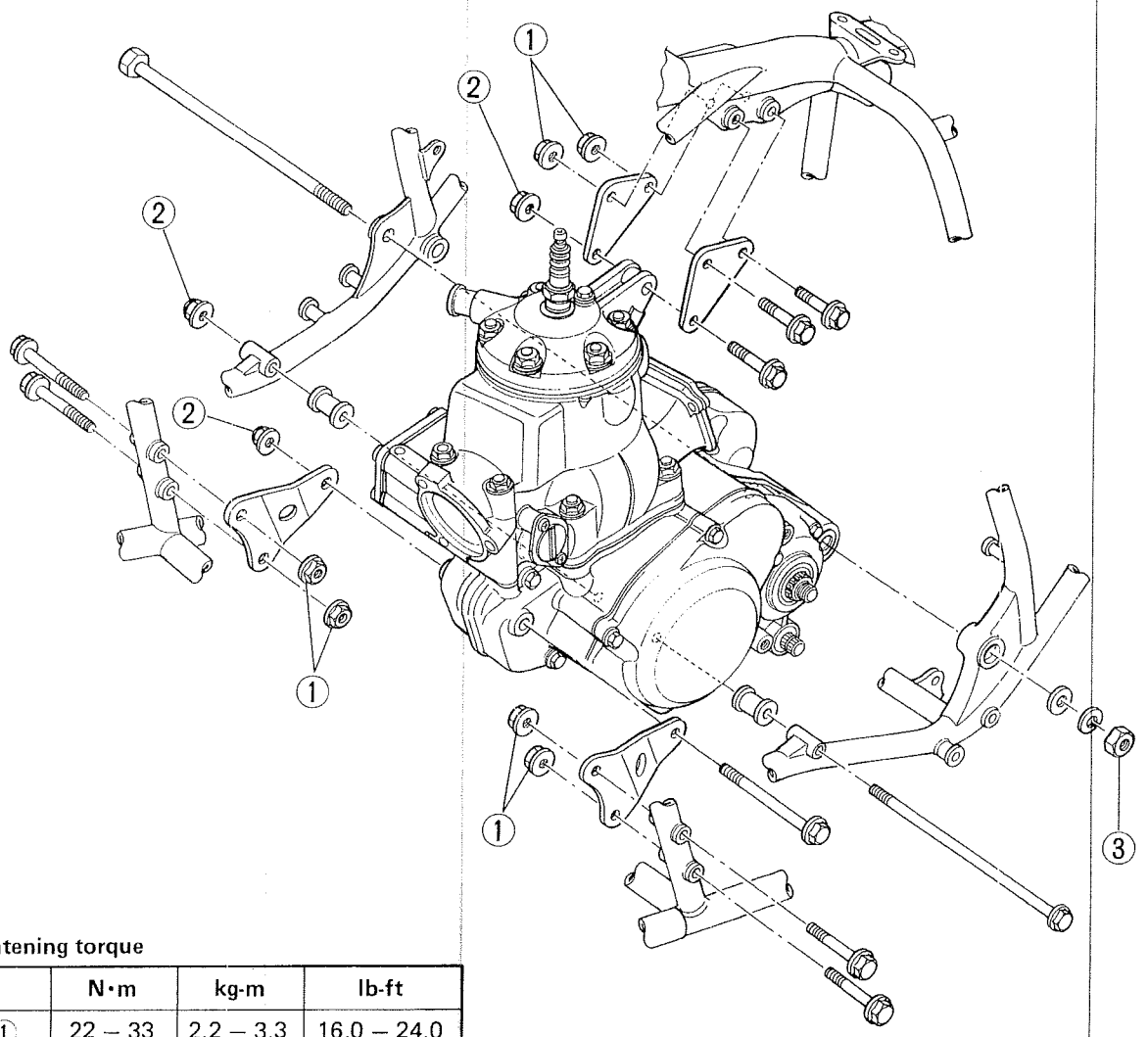
ENGINE REINSTALLATION

Remount the engine in the reverse order of the engine removal and carry out the following steps.

ENGINE MOUNTING BOLTS AND NUTS

- Temporarily fasten the engine mounting brackets before inserting the engine mounting bolts.
- Tighten the engine mounting bracket bolts, engine mounting bolts and swingarm pivot nuts to the specified torque.

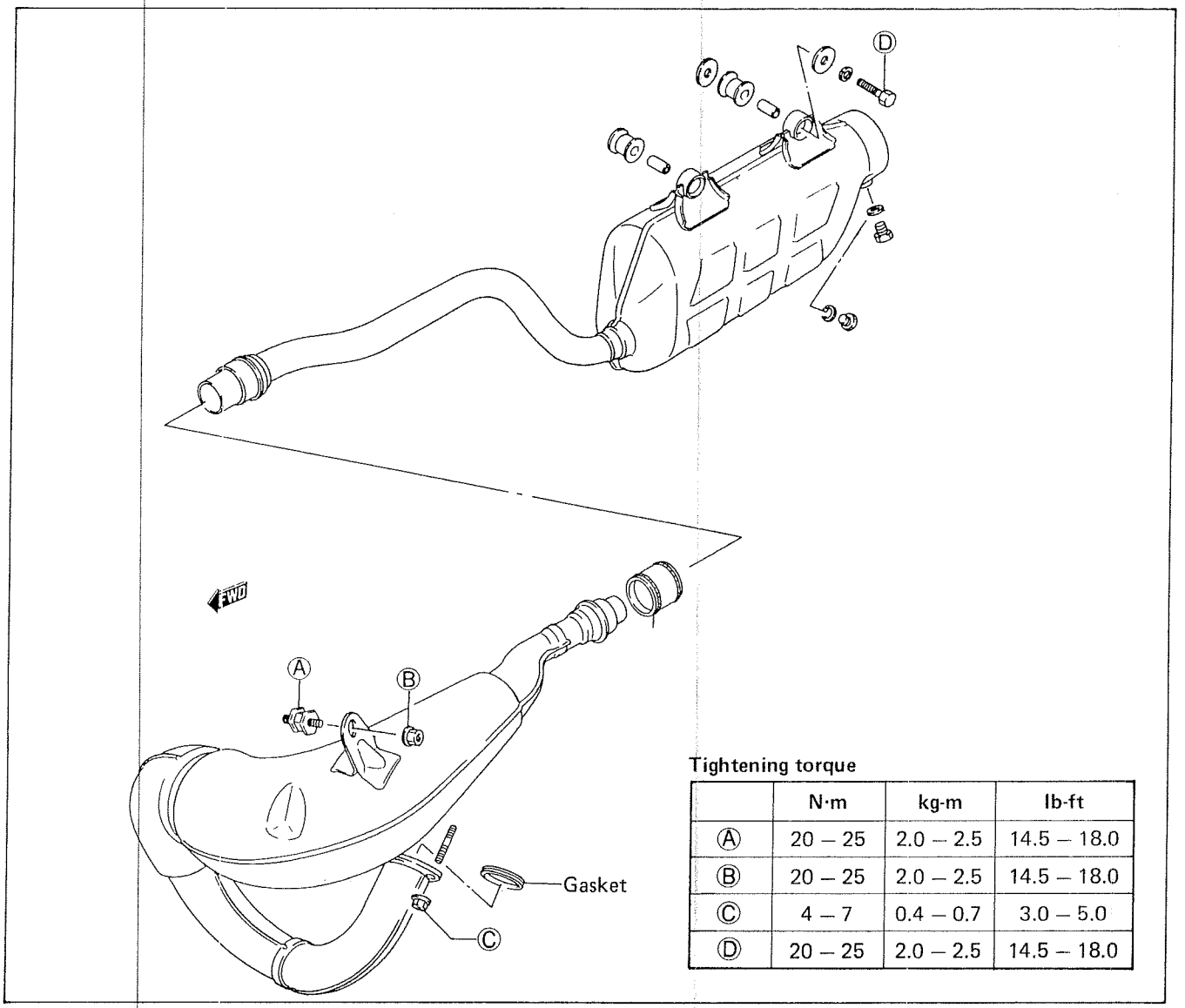
NOTE:
The engine mounting nuts are self-locking. Once the nut has been removed, it is no longer of any use. Be sure to use new nuts and tighten them to the specified torque.



Tightening torque

	N·m	kg-m	lb-ft
①	22 – 33	2.2 – 3.3	16.0 – 24.0
②	37 – 45	3.7 – 4.5	27.0 – 32.5
③	50 – 80	5.0 – 8.0	36.0 – 58.0

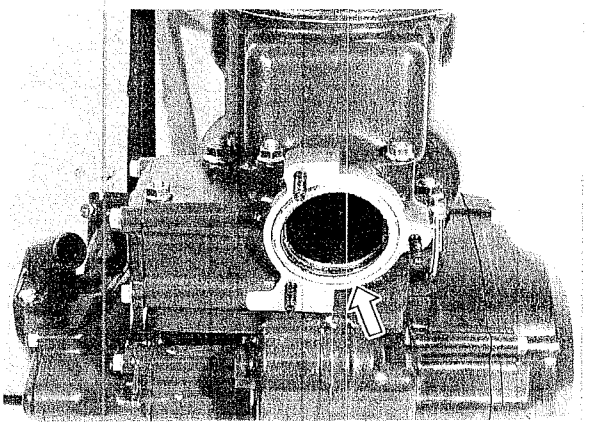
- Tighten the exhaust pipe nuts and exhaust pipe support bolts to the specified torque.
- Tighten the muffler mounting bolts to the specified torque.



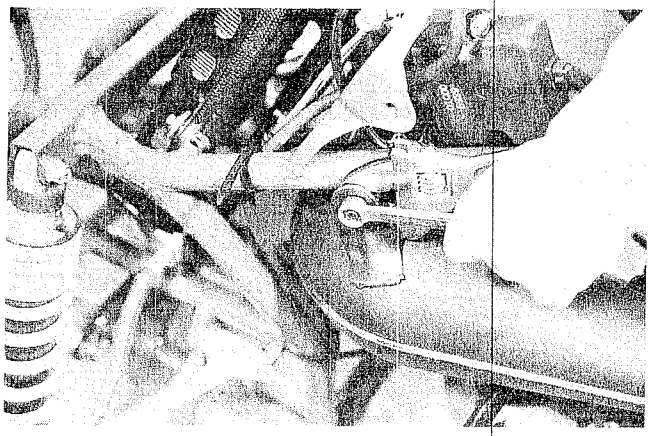
Tightening torque

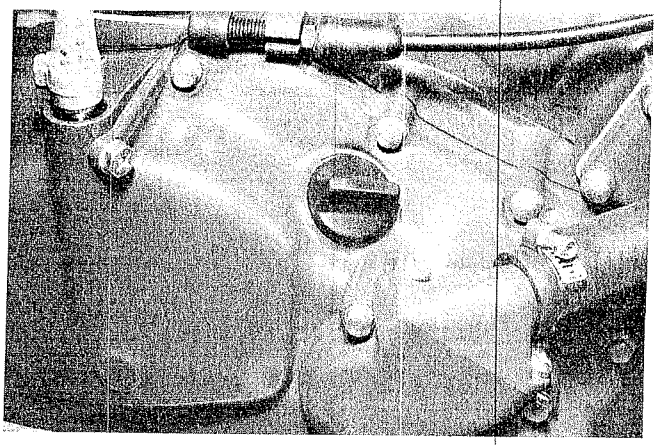
	N·m	kg-m	lb-ft
Ⓐ	20 – 25	2.0 – 2.5	14.5 – 18.0
Ⓑ	20 – 25	2.0 – 2.5	14.5 – 18.0
Ⓒ	4 – 7	0.4 – 0.7	3.0 – 5.0
Ⓓ	20 – 25	2.0 – 2.5	14.5 – 18.0

- Install the gasket with a new one.



NOTE:
Retighten the exhaust pipe mounting nut while holding cushion bolt with adjustable wrench.





TRANSMISSION OIL

- Before starting the engine, make sure to pour the specified amount of transmission oil into the crankcase.

Transmission oil (when overhauling engine)	950 ml (1.00/0.84 US/Imp qt)

COOLANT

- Before starting the engine, pour the specified amount of coolant into the radiator.

Coolant	880 ml (0.93/0.77 US/Imp qt)

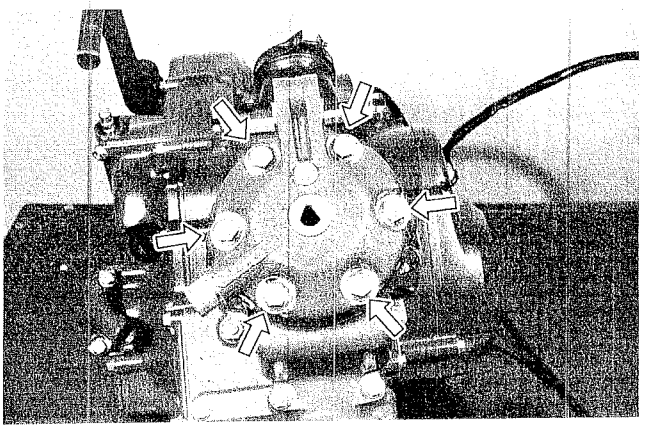
ADJUSTMENT

- After mounting the engine, route wiring harness, hoses and cables properly by referring to the sections for wire routing and cable routing, and adjust the following items to the specification.

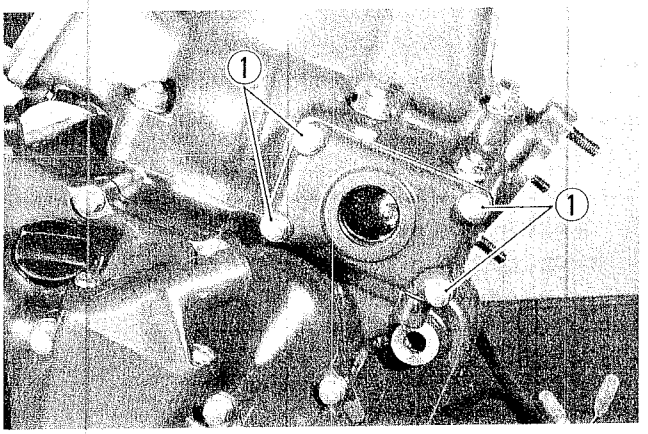
page
* Throttle cable paly 2-5
* Engine idle r/min 2-5
* Clutch cable paly 2-6
* Drive chain play 2-8

ENGINE DISASSEMBLY

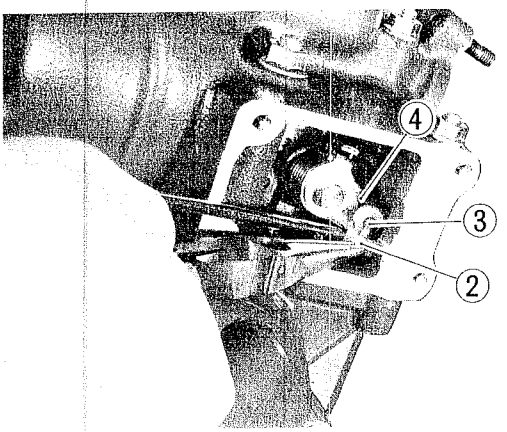
- Remove the spark plug and the six cylinder head nuts.
- Remove the cylinder head and its gasket.



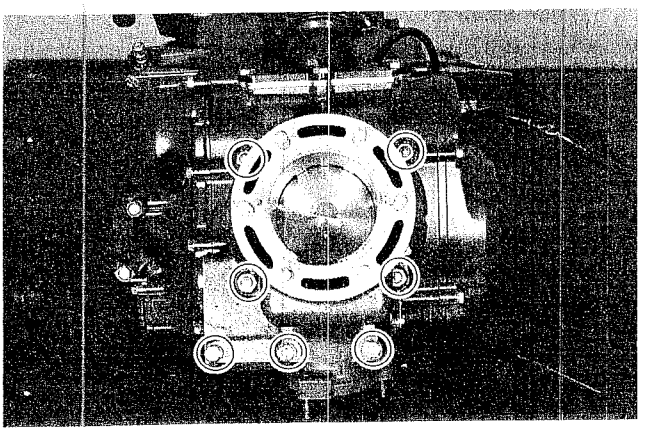
- Remove the exhaust valve inspection window by removing the four bolts ①.



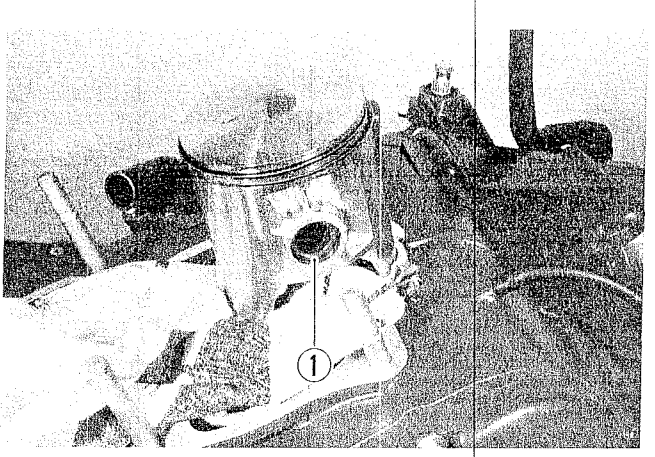
- Unhook the exhaust valve rod retainer clip ② with a long-nose pliers.
- Disconnect the exhaust valve rod ③ from the exhaust valve lever ④.



- Remove the cylinder by removing the seven cylinder nuts.



- Place a clean rag over the cylinder base to prevent the piston pin circlip from dropping into the crankcase, and then remove the piston pin circlip ① with a long-nose pliers.

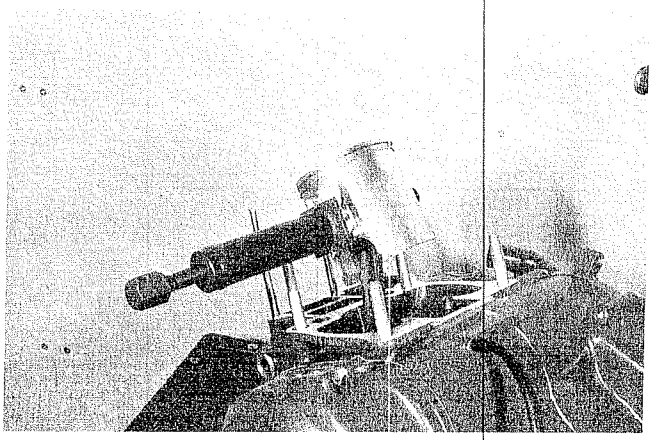


- Extract the piston pin with the special tool.

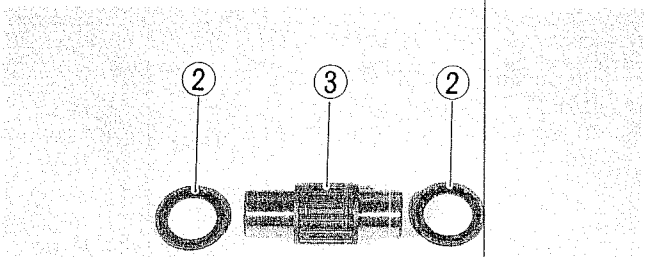
09910-34510	Piston pin puller

- Remove the piston.

NOTE:
Be careful not to drop the two thrust washers.

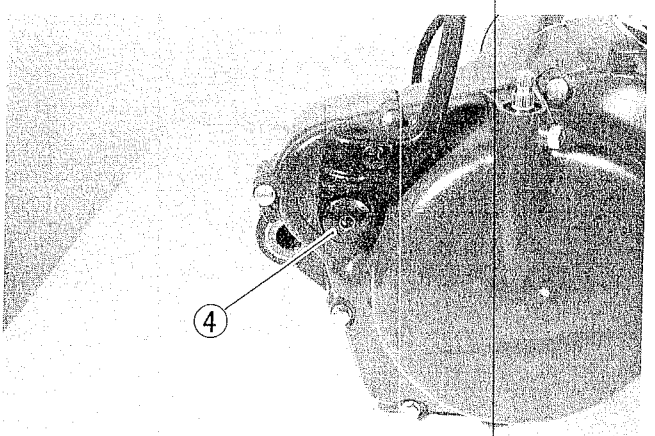


- Remove the two thrust washers ② and bearing ③.



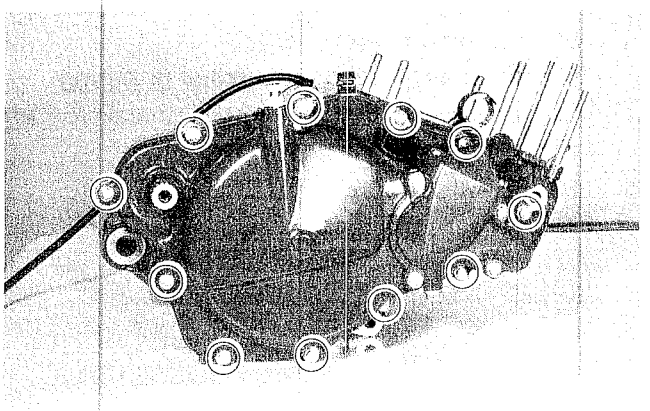
- Remove the kick starter lever by removing the allen bolt ④ with the special tool.

09900-00401	Hexagon wrench set



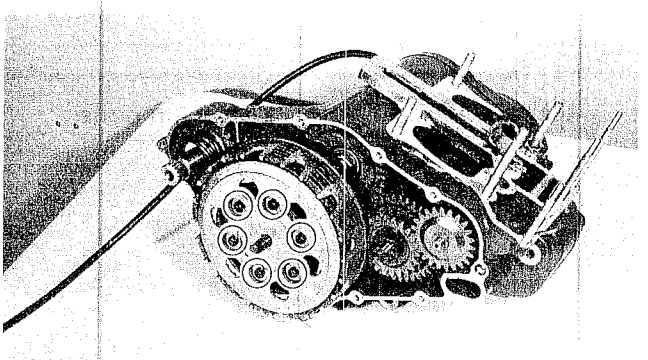
- Remove the clutch cover by removing the bolts.

NOTE:
When servicing the water pump, refer to page 4-7 for details.

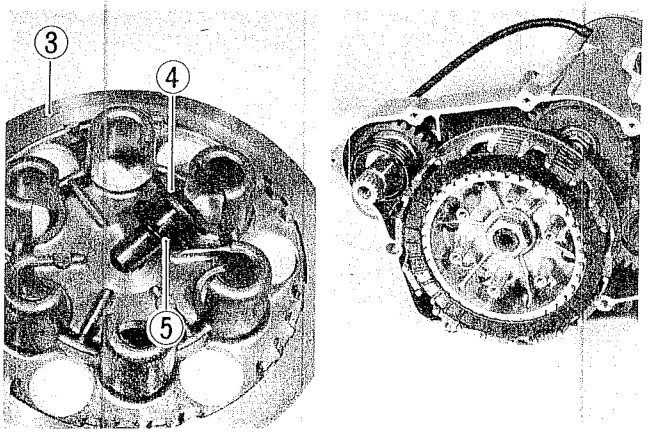


- Remove the six clutch pressure plate bolts with the special tool.

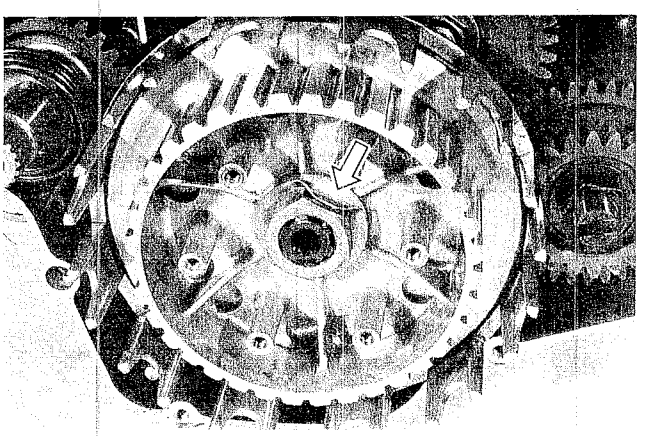
09910-20115	Conrod stopper



- Remove the six clutch springs.
- Remove the pressure plate ③, release rack ④ and thrust bearing ⑤.
- Remove the clutch drive and driven plates.



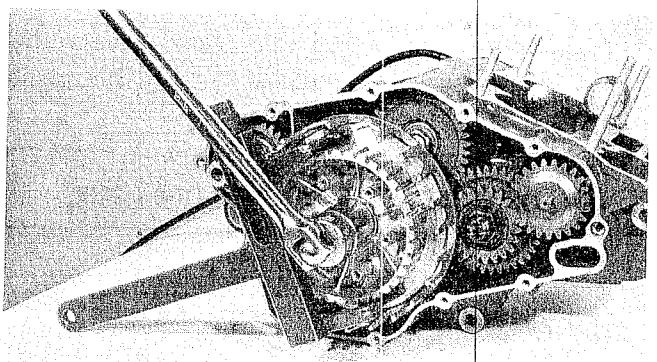
- Flatten the clutch sleeve hub nut lock washer by using the chisel.



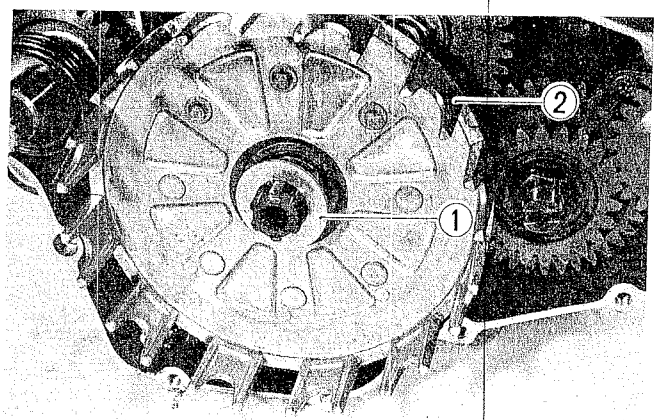
- Remove the clutch sleeve hub nut with the special tool.

09920-53710	Clutch sleeve hub holder

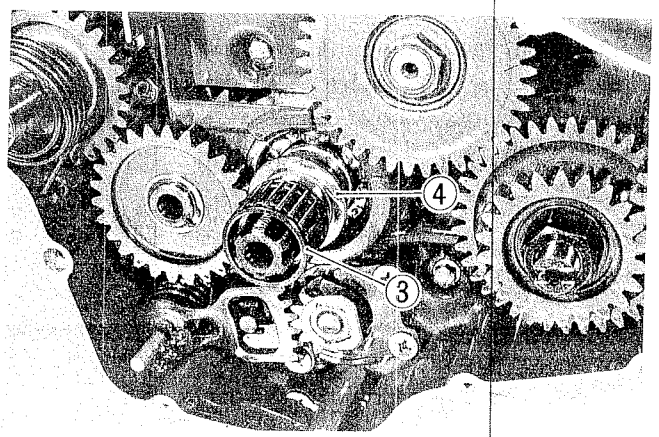
- Remove the clutch sleeve hub.



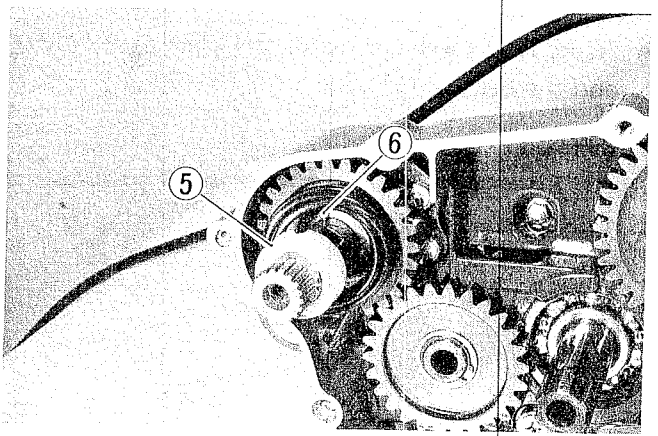
- Remove the washer ① and clutch housing ②.



- Remove the clutch housing bearing ③ and its spacer ④.

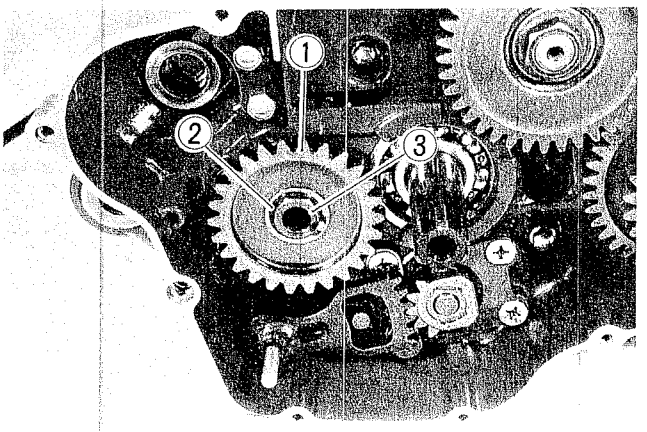


- Remove the spring guide ⑤ and release the spring ⑥ from the kick starter shaft.
- Remove the kick starter shaft.

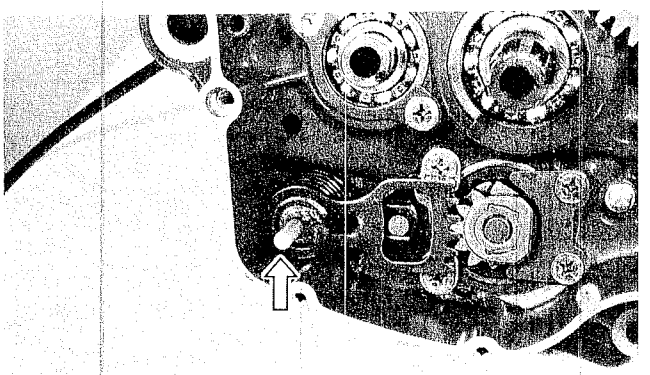


- Remove the kick starter idle gear ① and washer ② by removing the circlip ③ with the special tool.

09900-06107	Snap ring pliers



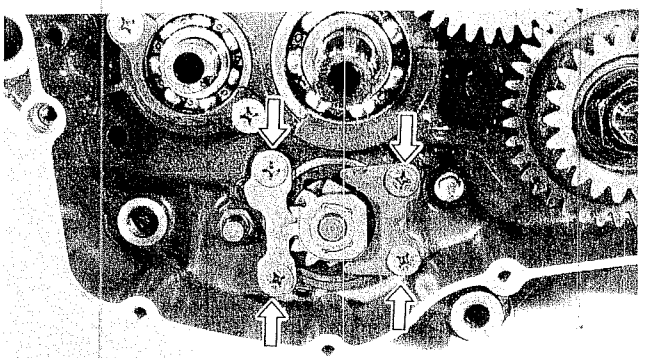
- Remove the gearshift shaft from the crankcase.



- Remove the cam guide and pawl lifter by removing the screws with the special tool.

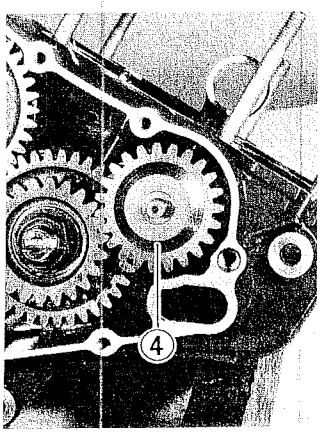
09900-09003	Impact driver set

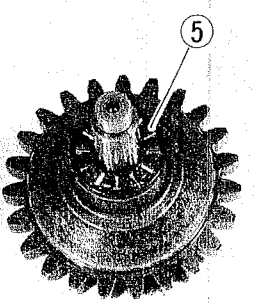
- Remove the gearshift cam driven gear together with pawls, pins and springs.



- Remove the exhaust valve governor assembly ④ and the bearing ⑤.

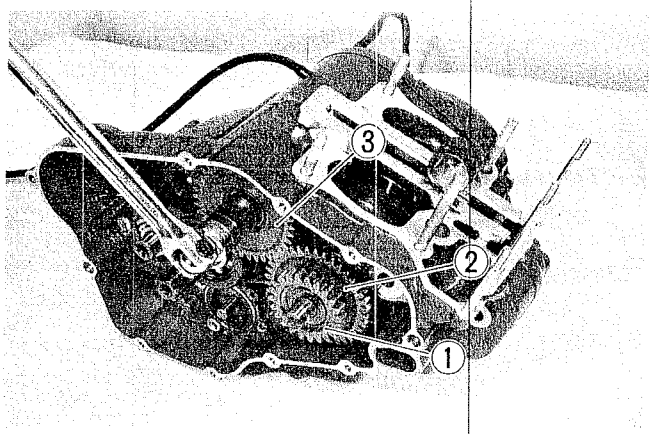
CAUTION:
Avoid disassembling the exhaust valve governor, it is not serviceable.





- Remove the primary drive gear nut and balancer driven gear nut with the special tool.

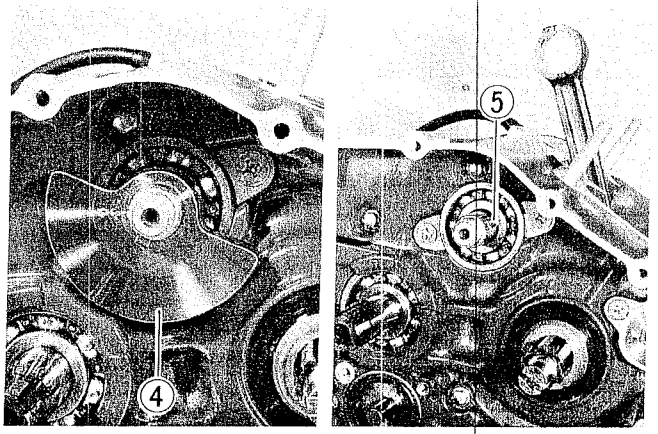
09910-20115	Conrod holder



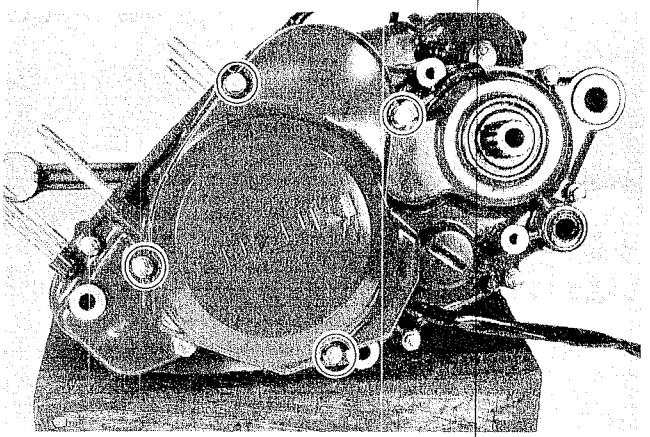
CAUTION:
Primary drive gear nut is left hand thread.

- Remove the primary drive gear ①, balancer drive gear ② and balancer driven gear ③.

- Remove the right balancer weight ④ and key ⑤.

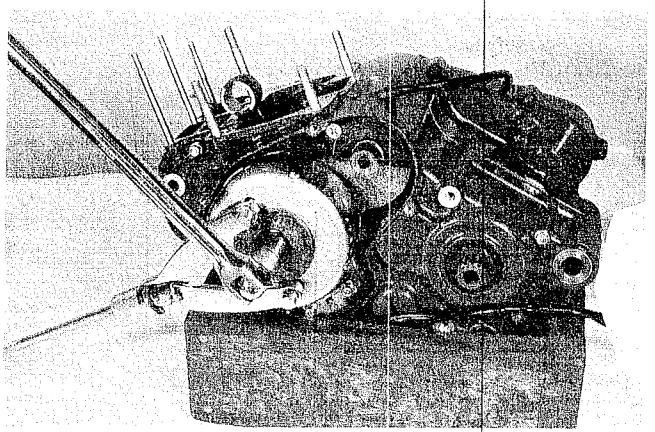


- Remove the magneto cover by loosening four magneto cover bolts.



- Remove the magneto rotor nut with the special tool.

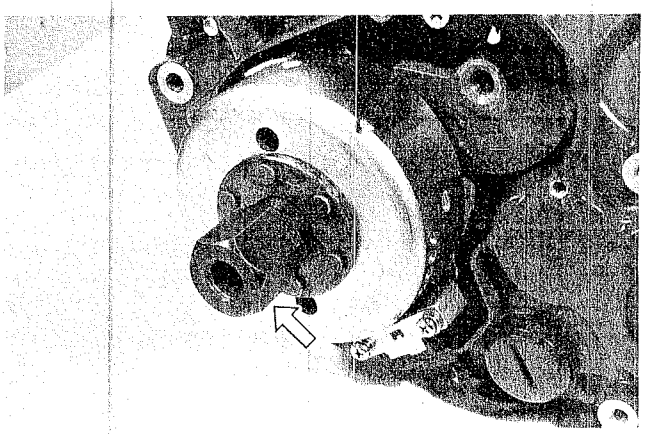
09930-40113	Rotor holder



- Screw the attachment (special tool) on the rotor.

NOTE:
Attachment is left hand thread.

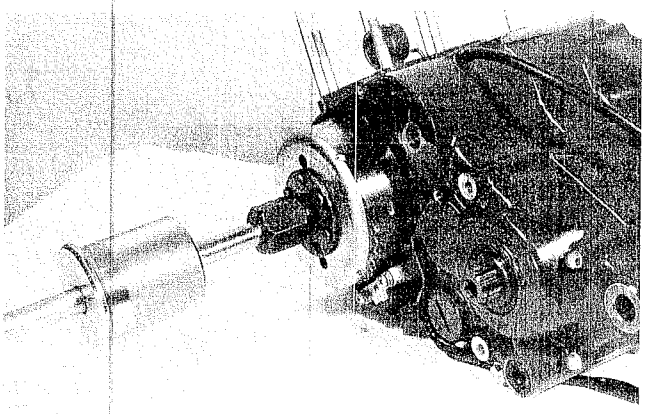
09930-30161	Attachment



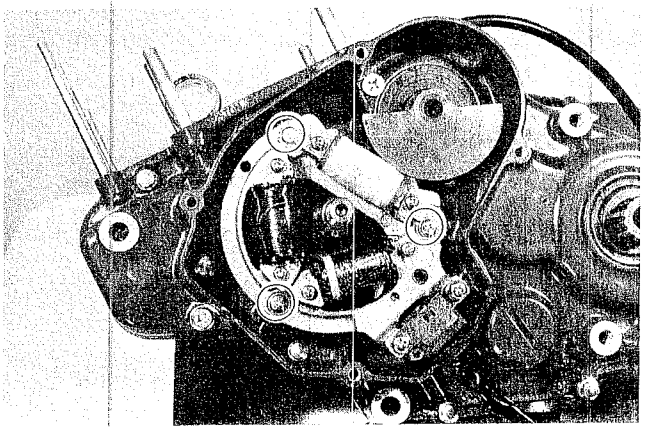
- Screw the sliding shaft (special tool) on the attachment.

09930-30102	Sliding shaft

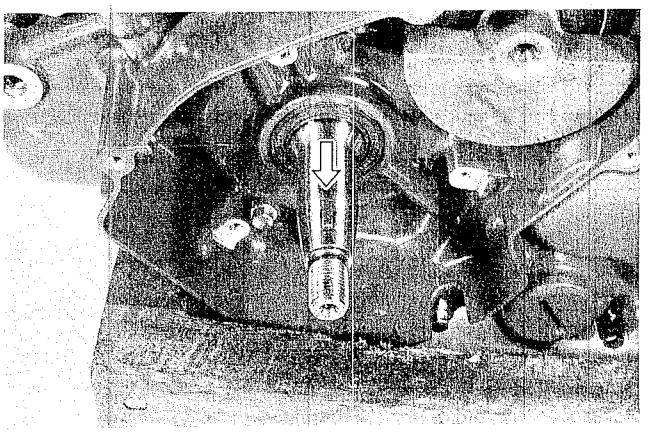
- Remove the rotor with above special tool.



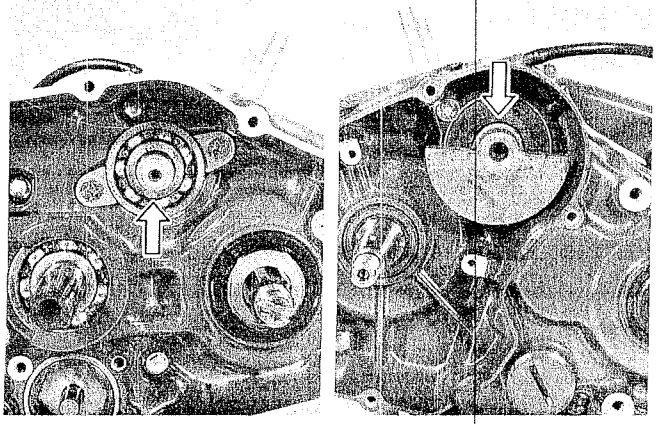
- Remove the stator by removing the three securing screws.



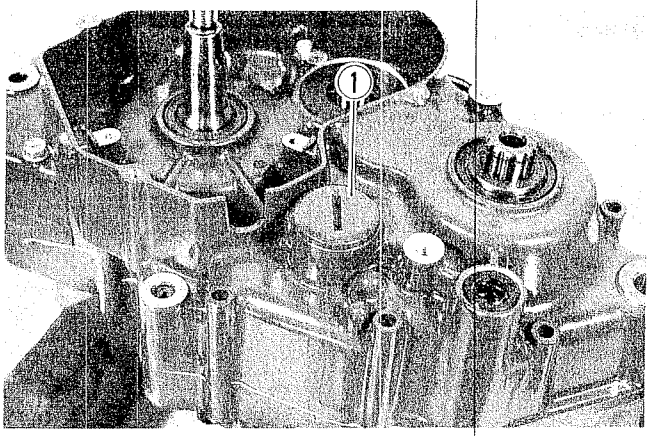
- Remove the key.

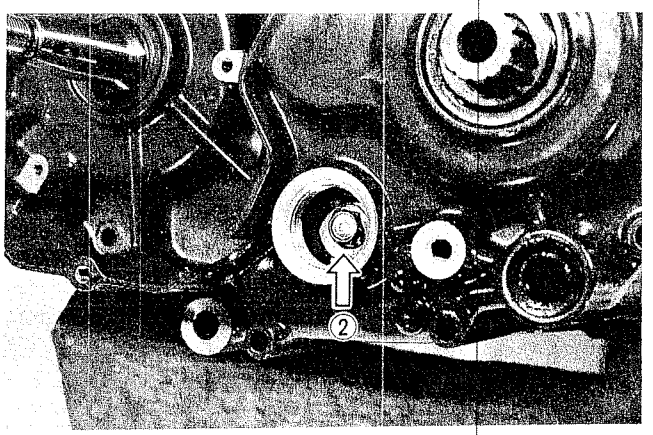


- Remove the balancershaft by hitting the right end of balancershaft with plastic hammer.

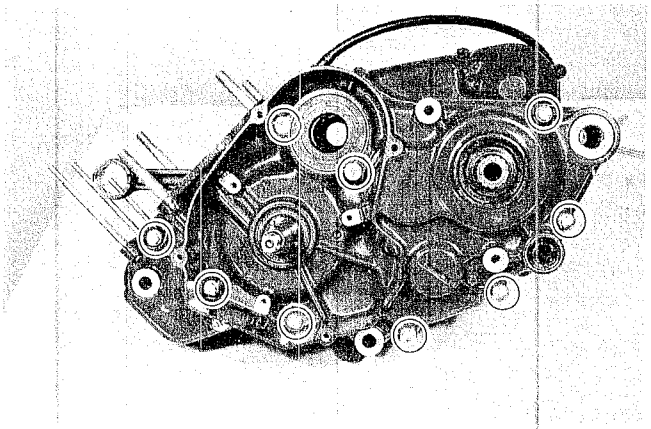


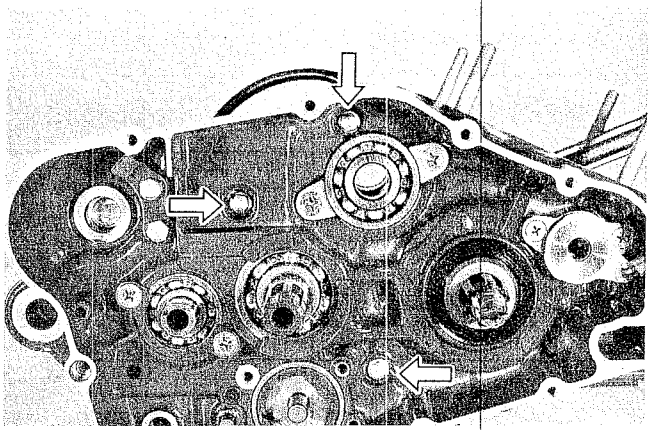
- Remove the cap ①, and then gearshift cam retainer bolt ②.





- Remove the right and left crankcase securing screws and bolts.

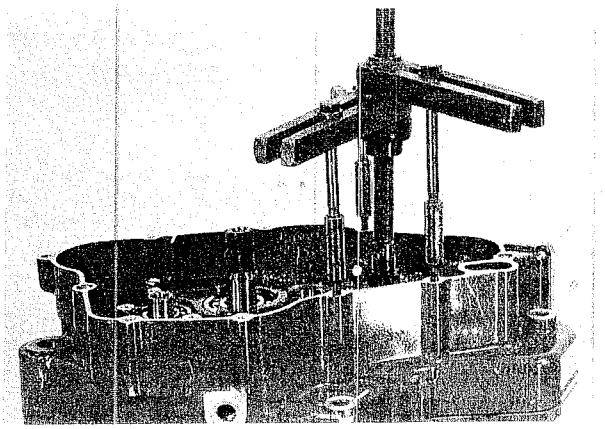




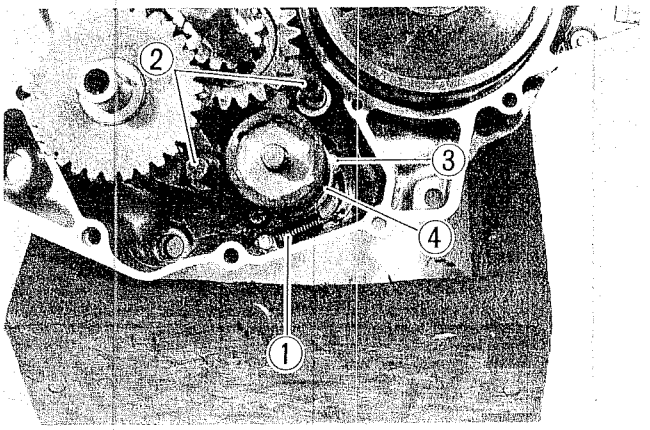
- Separate the crankcase into 2 parts, right and left, with the special tool.

09920-13120	Crankcase separating tool

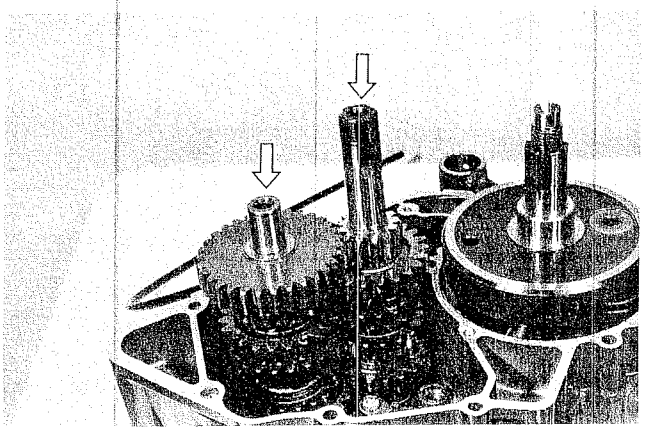
NOTE:
Fit the crankcase separating tool, so that the tool plate is parallel with the mating face of the clutch cover.



- Remove the cam stopper spring ①.
- Pull out the shift fork shafts ②, shift forks, cam stopper ③ and cam ④.

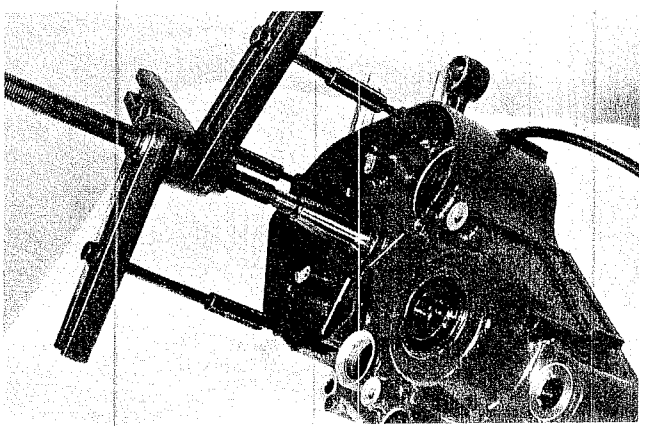


- Remove the countershaft and driveshaft assemblies.



- Remove the crankshaft with the special tool.

09920-13120	Crankcase separating tool

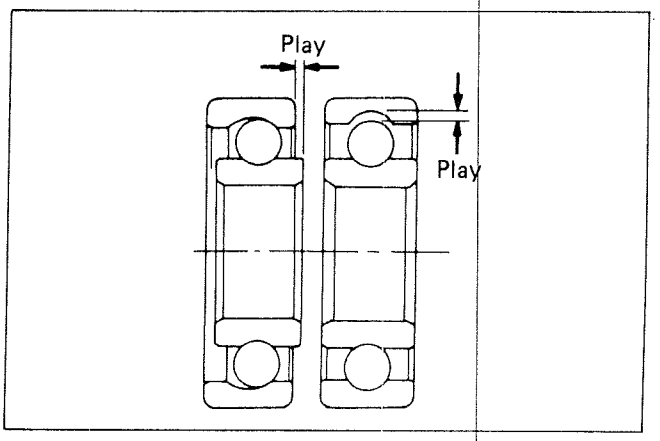


ENGINE COMPONENTS INSPECTION AND SERVICING

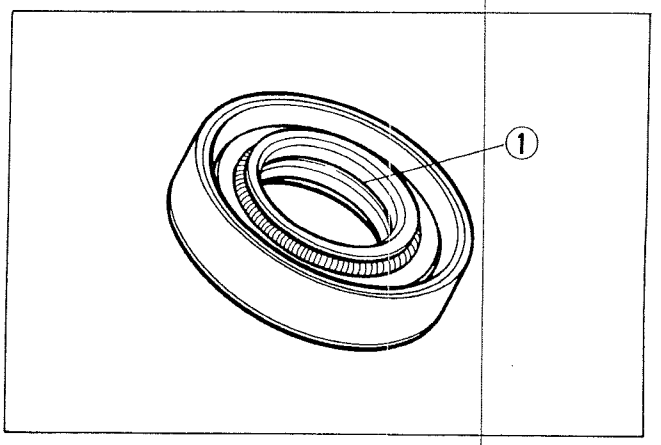
BEARING AND OIL SEALS

INSPECTION

- Wash the bearings with cleaning solvent and lubricate with motor oil before inspecting.
- Turn the inner race and check to see that the inner race turns smoothly.
- If it does not turn lightly, quietly and smoothly, or if noise is heard, the bearing is defective and must be replaced with a new one.



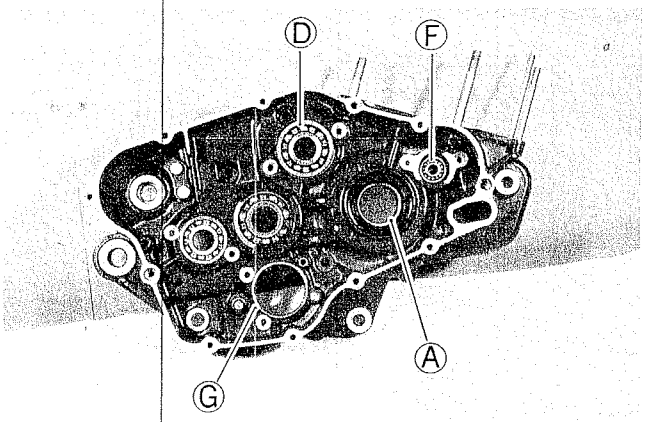
- Damage to the lip ① of the oil seal may result in leakage of the fuel-air mixture or oil. Inspect for damage and be sure to replace damaged parts if there are any.

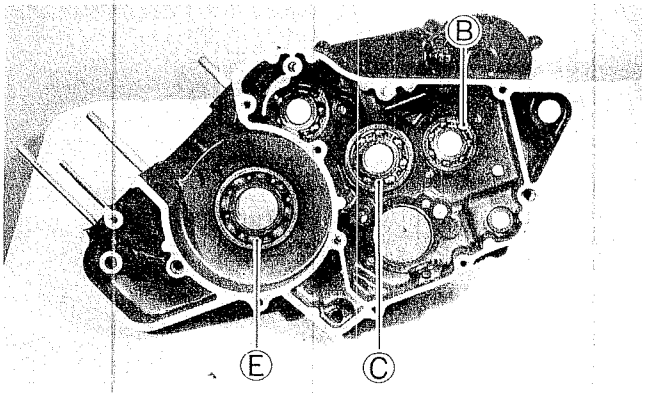


REMOVAL AND INSTALLATION

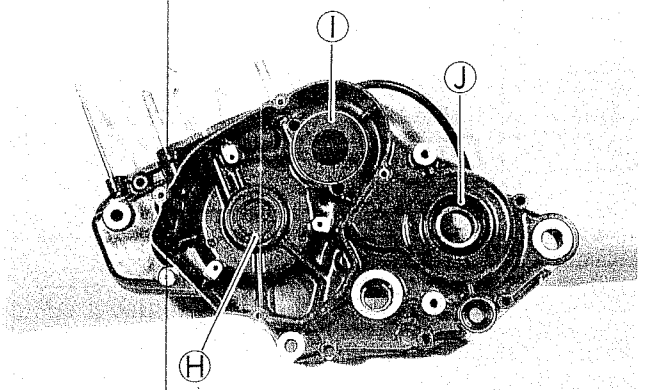
- Remove the bearing/oil seal retainers, and then remove the oil seals and bearings with the special tools.

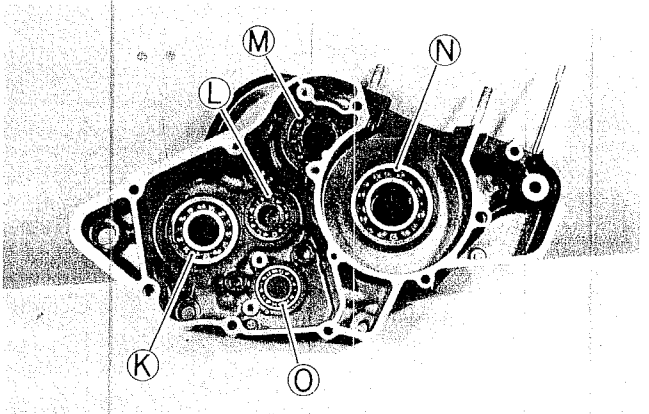
RIGHT CRANKCASE BEARINGS AND OIL SEAL					
Items		REMOVER		INSTALLER	
		Part No.	Part Name	Part No.	Part Name
Ⓐ	Crankshaft oil seal	09913-50121	Oil seal remover	09913-75810	Bearing remover
Ⓑ	Driveshaft bearing	09922-55131	Bearing remover	09914-79610	Bearing remover
Ⓒ	Countershaft bearing	09914-79610	Bearing remover	09913-75810	Bearing remover
Ⓓ	Balancer bearing	09913-80112	Bearing remover	09913-76010	Bearing remover
Ⓔ	Crankshaft bearing	09914-79610	Bearing remover	09913-85210	Bearing remover
Ⓕ	Exhaust valve actuator bearing	09917-50410	Bearing remover		Appropriate socket
Ⓖ	Gearshift bearing		Plain screwdriver	09913-76010	Bearing remover





LEFT CRANKCASE BEARINGS AND OIL SEALS					
Items		REMOVER		INSTALLER	
		Part No.	Part Name	Part No.	Part Name
Ⓗ	Crankshaft oil seal	09913-50121	Oil seal remover	09913-76010	Bearing remover
Ⓘ	Balancer oil seal	09913-50121	Oil seal remover	09913-75520	Bearing installer
Ⓙ	Driveshaft oil seal	09913-50121	Oil seal remover	09913-75810	Bearing remover
Ⓚ	Driveshaft bearing	09914-79610	Bearing remover	09913-85210	Bearing remover
Ⓛ	Countershaft bearing	09923-73210	Bearing remover	09914-79610	Bearing remover
		09930-30102	Sliding shaft		
Ⓜ	Balancer bearing	09913-80112	Bearing remover	09913-75810	Bearing remover
Ⓝ	Crankshaft bearing	09922-55131	Bearing remover	09913-85210	Bearing remover
Ⓞ	Gearshift bearing		Appropriate socket	09913-80112	Bearing remover





NOTE:

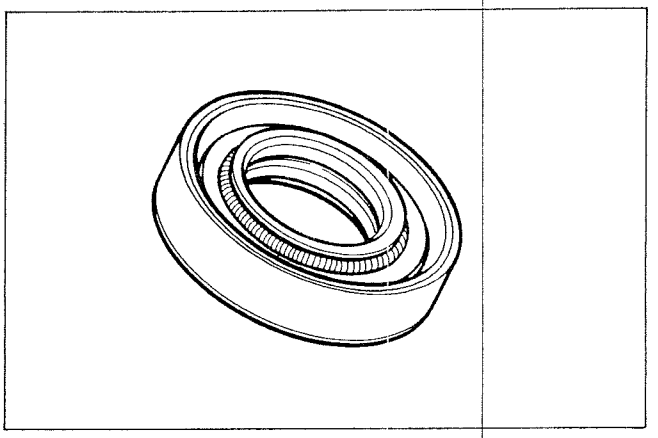
- *The removed oil seals and bearings should be replaced with new ones.*
- *Apply SUZUKI SUPER GREASE "A" to the lips of oil seals and bearings.*

99000-25030 For U.S. model	SUZUKI SUPER GREASE "A"
99000-25010 For other models	

CRANKSHAFT OIL SEALS

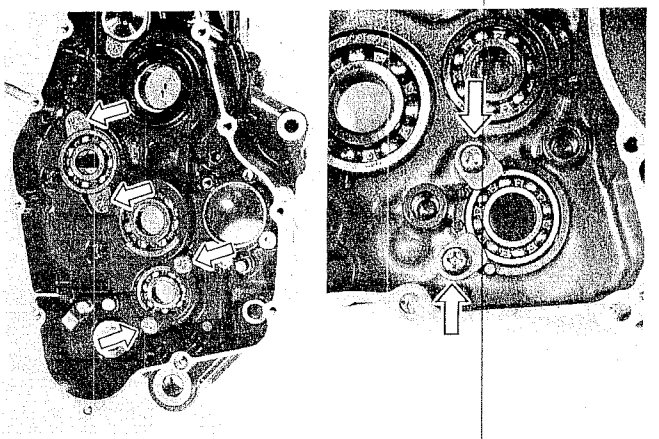
- When installing the crankshaft oil seals, be sure to apply THREAD LOCK "1342" to the outer surfaces of the right and left crankshaft oil seals, to prevent them from moving.

99000-32050	THREAD LOCK "1342"



NOTE:
When reinstalling the bearing/oil seal retainer screws, apply the THREAD LOCK SUPER "1303"/ "1322" to the screws.

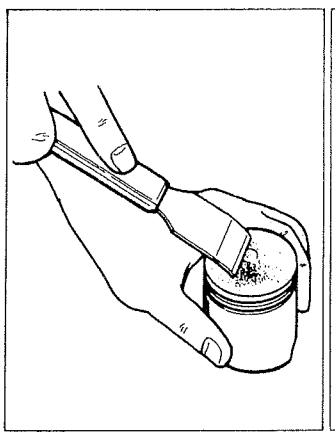
99000-32030 For U.S. model	THREAD LOCK SUPER "1303"
99000-32110 For other models	THREAD LOCK SUPER "1322"

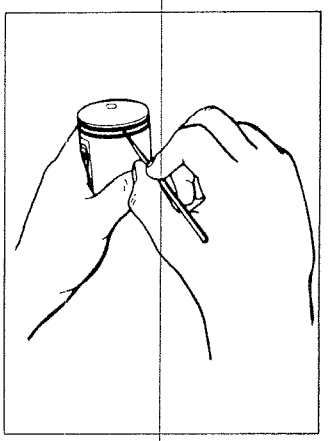


PISTON

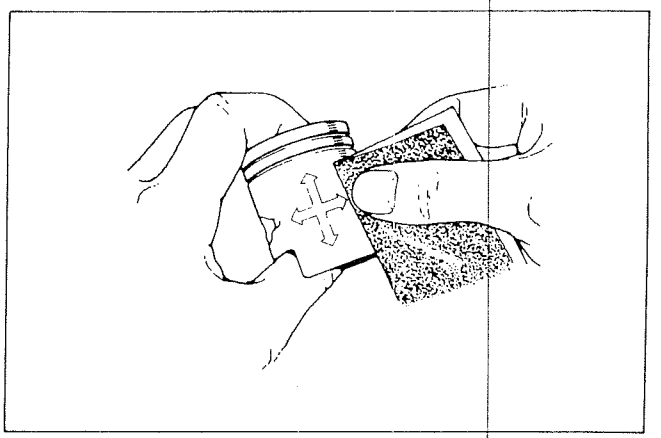
DECARBON

- De-carbon the crown of the piston and piston ring grooves. After cleaning the grooves, fit the rings and rotate them in their respective grooves to be sure that they move smoothly.
- Carbon in the groove is liable to cause the piston ring to get stuck in the groove, and this condition will lead to reduced engine power output.





- A piston whose sliding surface is badly grooved or scuffed due to overheating must be replaced.
- Shallow grooves or minor scuff can be removed by sanding with emery paper of about # 400.



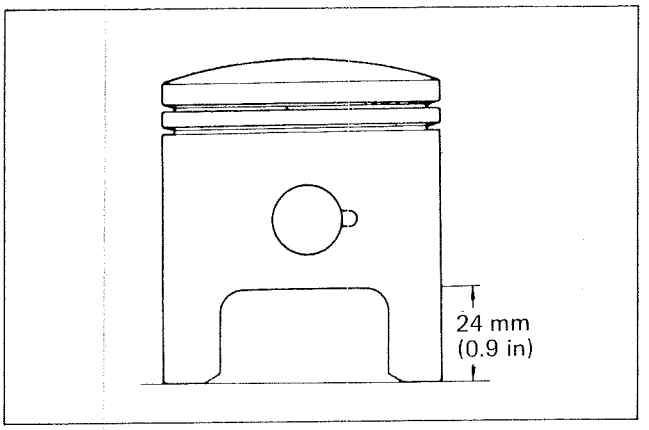
PISTON DIAMETER

- With a micrometer, measure the piston outside diameter 24 mm (0.9 in) from the skirt end as shown in Fig.
- If the measurement is less than the limit, replace the piston.

09900-20203	Micrometer (50 – 75 mm)

Service Limit	66.880 mm (2.6331 in)

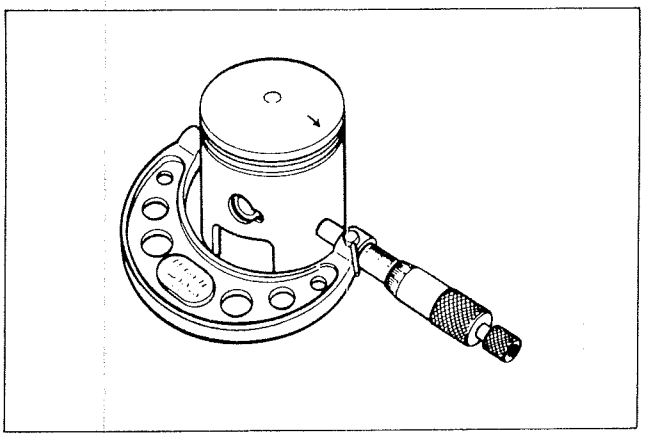
Piston oversize	0.5, 1.0 mm (0.02, 0.04 in)



PISTON-CYLINDER CLEARANCE

- As a result of the above measurement, if the piston to cylinder clearance exceeds the limit shown in the table below, overhaul the cylinder and use an oversize piston, or replace both cylinder and piston.

Service Limit	0.120 mm (0.0047 in)

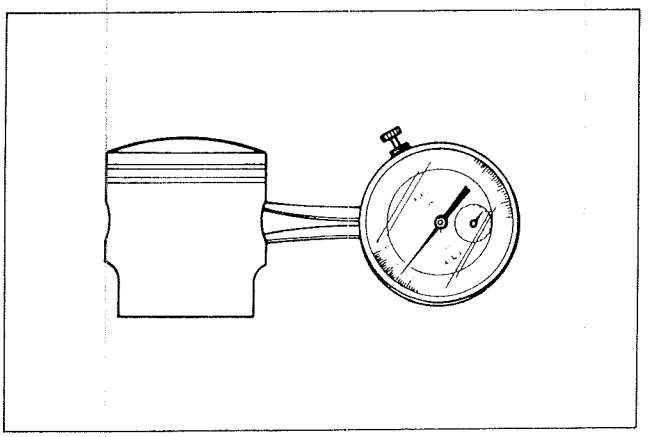


PISTON PIN BORE I.D.

- With a caliper gauge, measure the piston pin bore inside diameter.
- If the reading exceeds the following service limit, replace it with a new one.

Service Limit	18.030 mm (0.7098 in)

09900-20605	Dial calipers

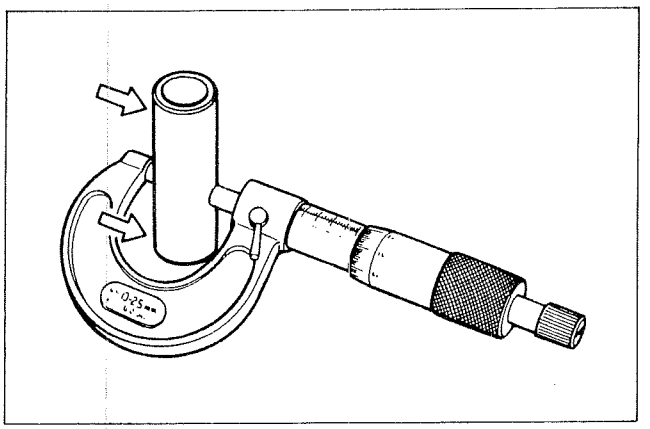


PISTON PIN O.D.

- With a micrometer, measure the piston pin outside diameter at three positions.

09900-20205	Micrometer (0 – 25 mm)

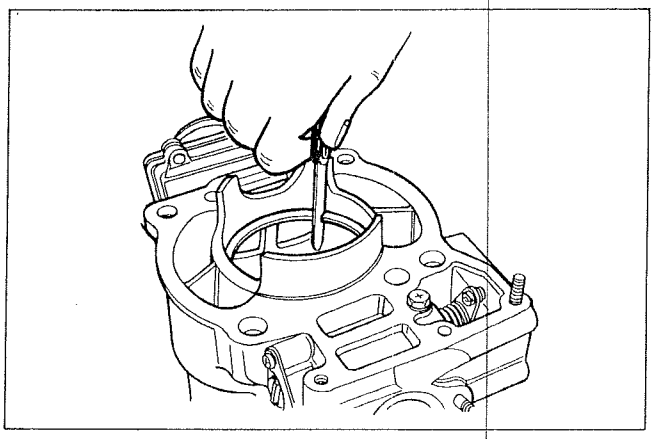
Service Limit	17.977 mm (0.7078 in)



PISTON RINGS

PISTON RING END GAP

- Check each ring for end gap, reading the gap with a thickness gauge as shown in the Fig. If the end gap is found to exceed the limit indicated below, replace it with a new one.
- The end gap of each ring is to be measured with the ring fitted squarely into the cylinder bore and held at the least worn part near the cylinder bottom.

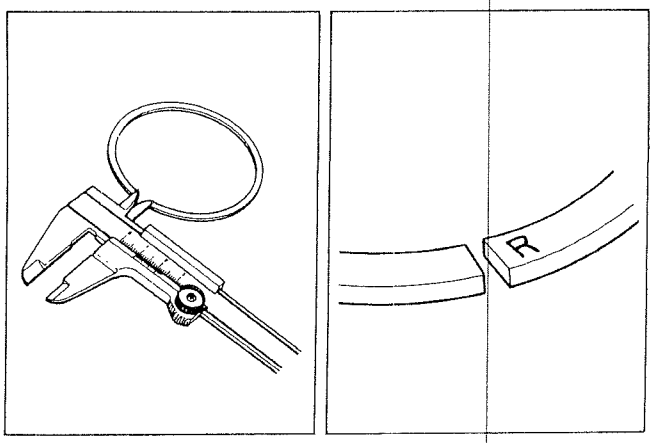


09900-20803	Thickness gauge

Service Limit	0.85 mm (0.033 in)

PISTON RING FREE END GAP

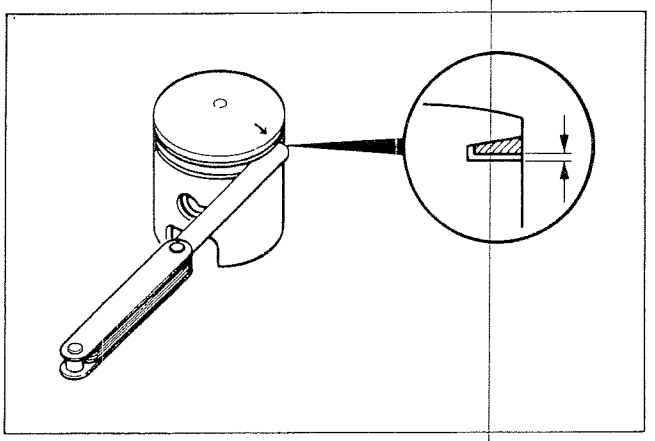
- As the piston ring wears, its end gap increases reducing engine power output because of the resultant blowby gas through the enlarged gap. Here lies the importance of using piston rings with end gaps within the limit.
- Measure the piston ring free end gap to check the spring tension.



Mark	Service Limit
R	5.5 mm (0.22 in)

PISTON RING TO GROOVE CLEARANCE

- Fix the piston ring in the piston ring groove, measure the ring side clearance with the thickness gauge while matching the sliding surface of piston and ring.



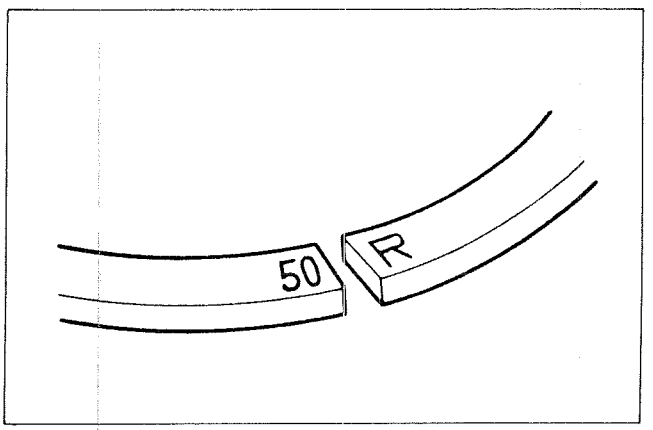
STD Clearance	0.01 – 0.05 mm (0.0004 – 0.0020 in)

09900-20803	Thickness gauge

OVERSIZE PISTON RING

- The following two types of oversize piston rings are used. They bear the following identification numbers.

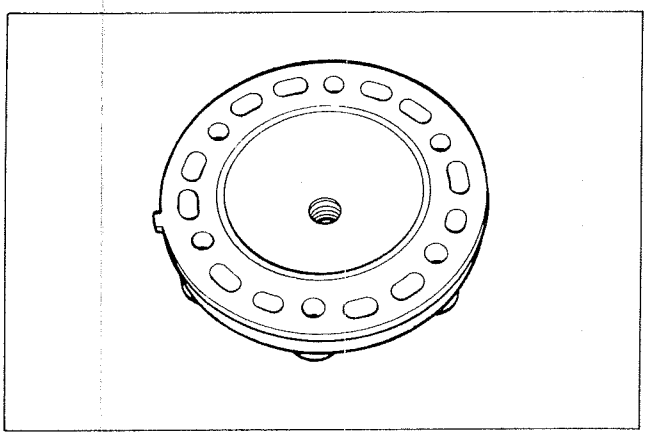
Oversize	Mark (1st and 2nd)
0.5 mm	50
1.0 mm	100



CYLINDER HEAD

DECARBON

- Decarbon the combustion chamber.

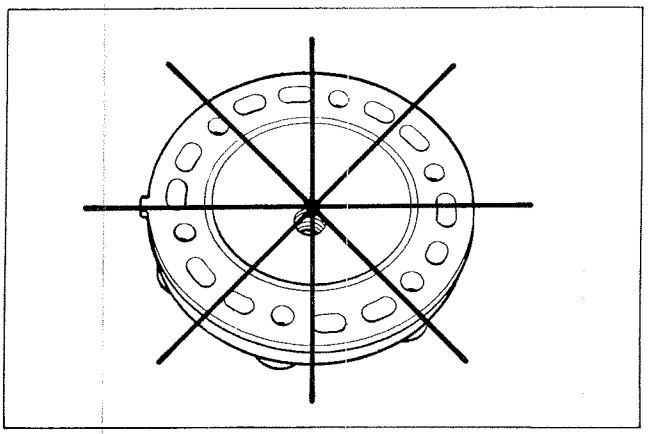


CYLINDER HEAD DISTORTION

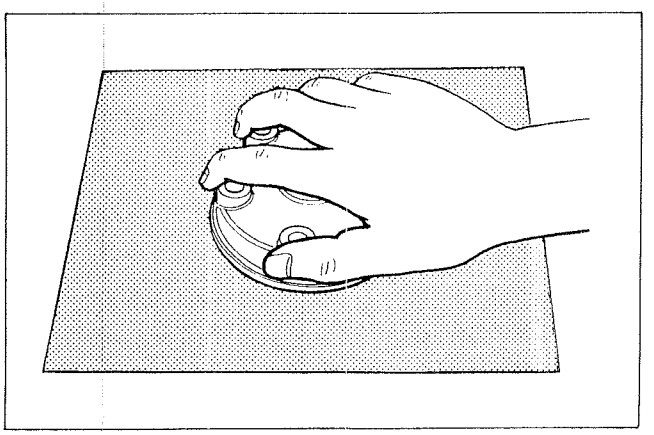
- Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places.

09900-20803	Thickness gauge

Service Limit	0.05 mm (0.002 in)



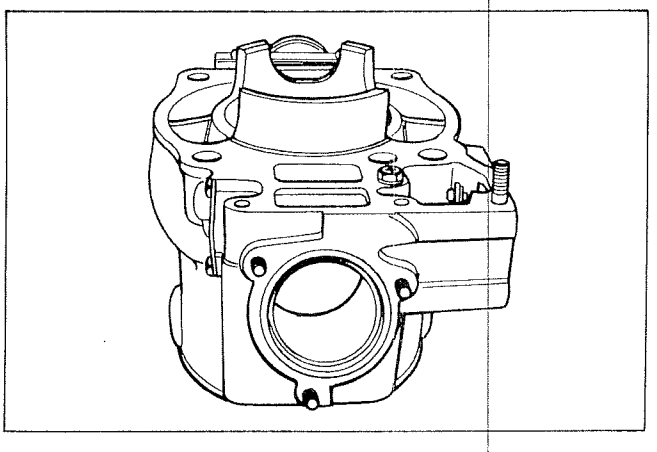
- If the largest reading at any portion of the straightedge exceeds the limit, rework the surface by rubbing it against emery paper (of about # 400) laid flat on the surface plate in a lapping manner.
- The gasketed surface must be smooth and perfectly flat in order to secure a tight joint: a leaky joint can be the cause of reduced power output and increased fuel consumption.



CYLINDER

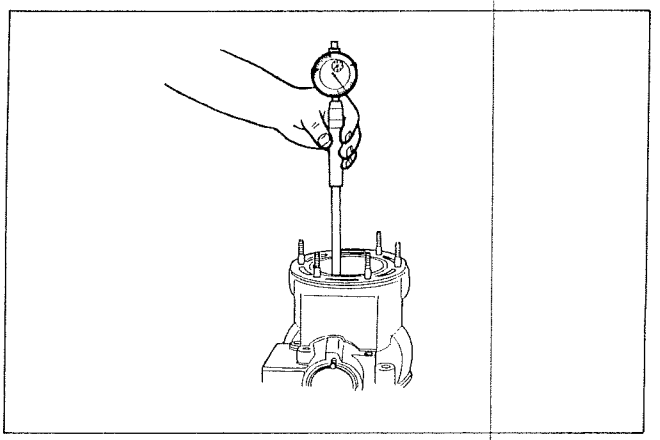
DECARBON

- Decarbon the exhaust port and the upper part of the cylinder, taking care not to damage the cylinder wall surface.



CYLINDER BORE

- The wear of the cylinder wall is determined from diameter readings taken at 20 mm (0.79 in) from the top of the cylinder with a cylinder gauge.
- If the wear thus determined exceeds the limit indicated, rework the bore to the next oversize with a boring machine or replace the cylinder with a new one.
- Oversize pistons are available in two sizes: 0.5 mm (0.02 in) and 1.0 mm (0.04 in) oversizes.



09900-20508	Cylinder gauge set

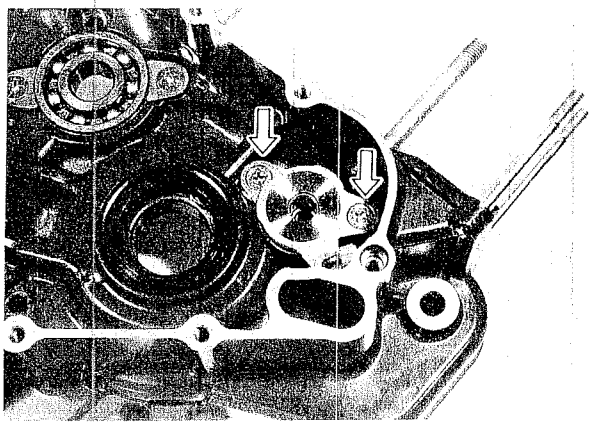
Service Limit	67.050 mm (2.6398 in)

- After reworking the bore to an oversize, be sure to chamfer the edges of ports and smooth the chamfered edges with emery paper. To chamfer, use a scraper, taking care not to nick the wall surface.

NOTE:
Minor surface flaws on the cylinder wall due to seizure or similar abnormalities can be corrected by removing the flaws with finegrain emery paper. If the flaws are deep grooves or otherwise persist, the cylinder must be reworked with a boring machine to the next oversize.

EXHAUST VALVE

REMOVAL

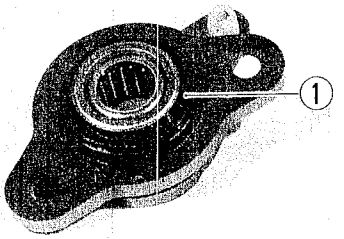


- Remove the exhaust valve actuator by removing the two screws with the special tool.

09900-09003	Impact driver set

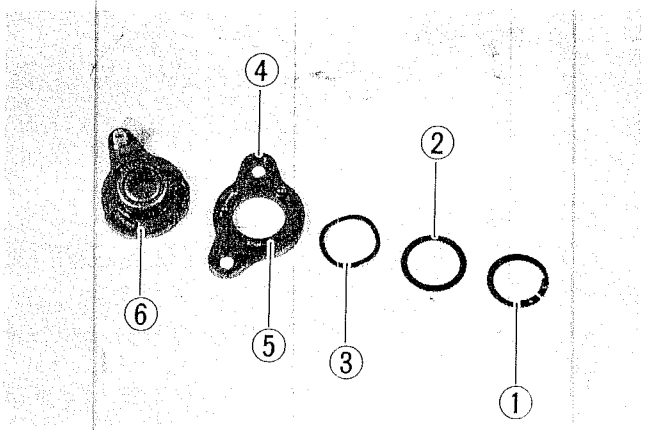
- Remove the snap ring ① on the exhaust valve actuator with the special tool.

09900-06107	Snap ring pliers

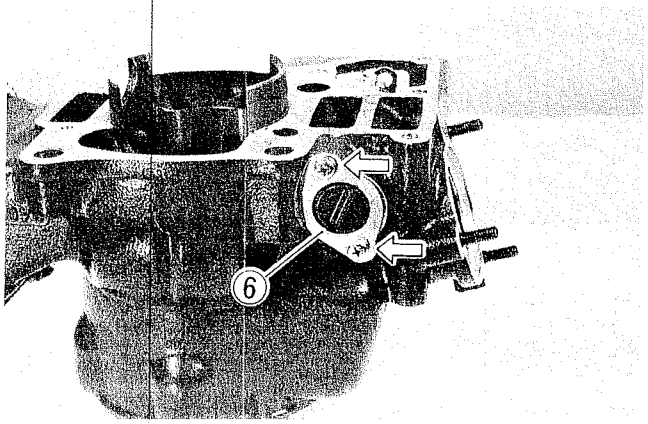


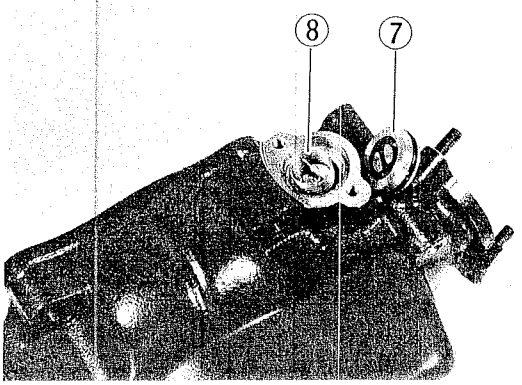
NOTE:
Do not lose the three balls.

①: Snap ring
②: Wave washer
③: Washer
④: Actuator stator
⑤: Steel ball
⑥: Exhaust valve actuator

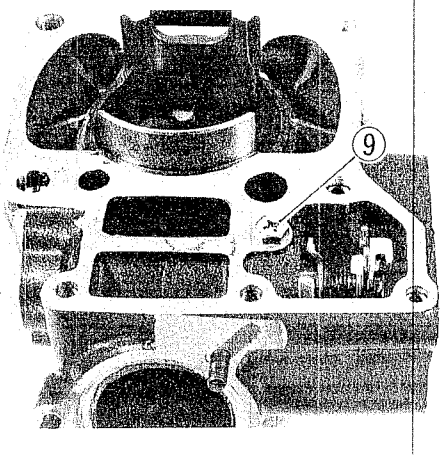


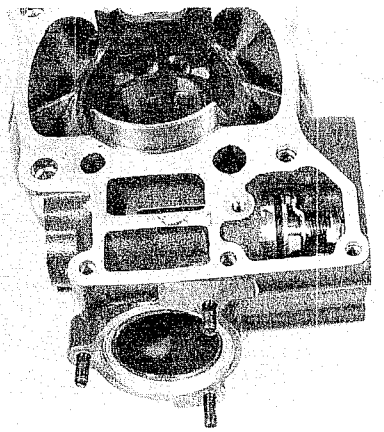
- Remove the exhaust valve cap retainer ⑥ by removing the two screws.
- Remove the exhaust valve cap ⑦ and the return spring ⑧.



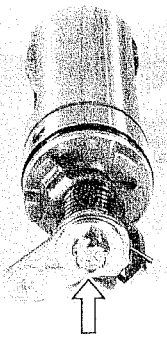


- Remove the exhaust valve stopper bolt ⑨.
- Drive out the exhaust valve by knocking with an appropriate bar.

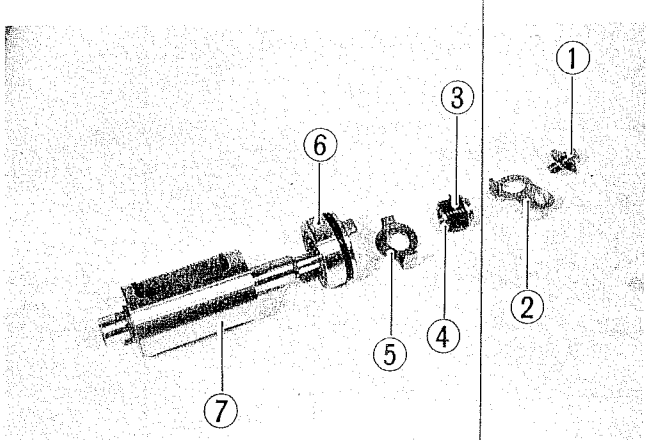




- Remove the exhaust valve bolt.

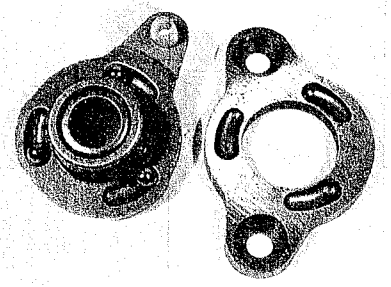


① Bolt (with lock washer and washer)
② Exhaust valve No. 1 lever
③ Spring
④ Spacer
⑤ Exhaust valve No. 2 lever
⑥ Exhaust valve holder
⑦ Exhaust valve



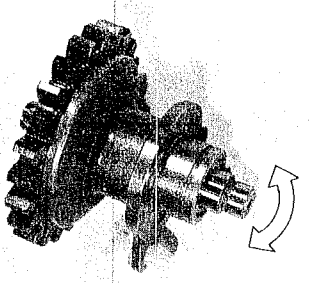
INSPECTION

- Check the exhaust valve actuator races wear and balls wear.

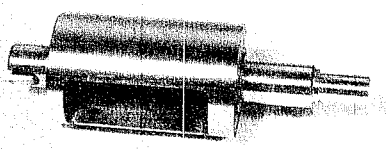


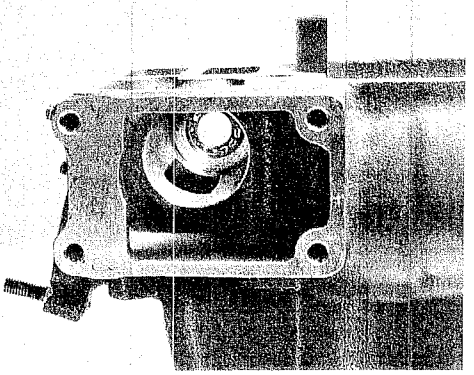
- Inspect the exhaust valve actuator bearing for the play by moving the governor shaft up and down while holding the exhaust valve actuator. If an excessive play is noted, replace the governor body with a new one.

NOTE:
It is not necessary to install the thrust bearing.

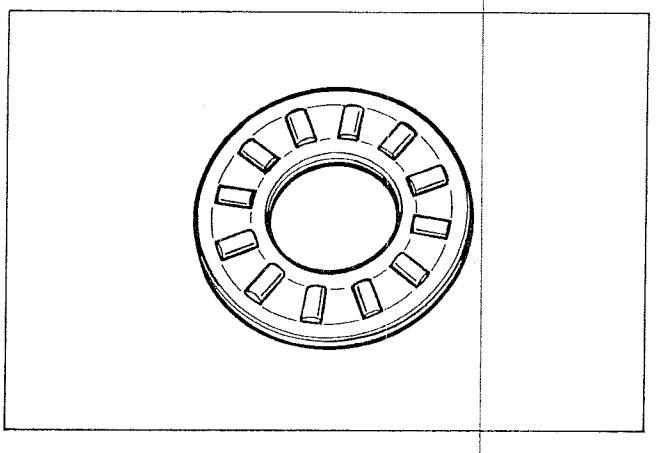


- Check the exhaust valve surface and cylinder surface for any scratches or other damage.

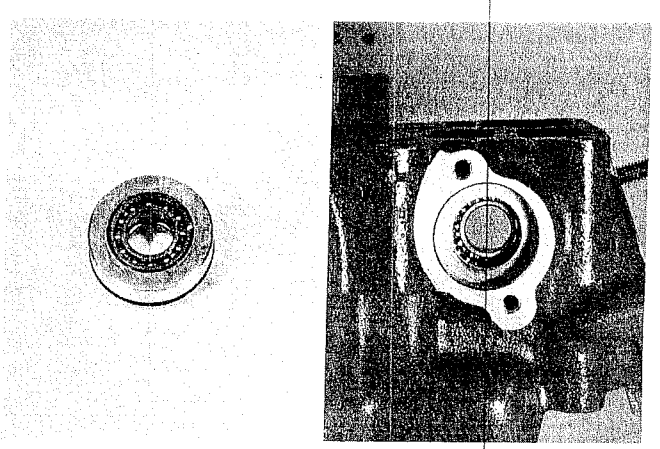




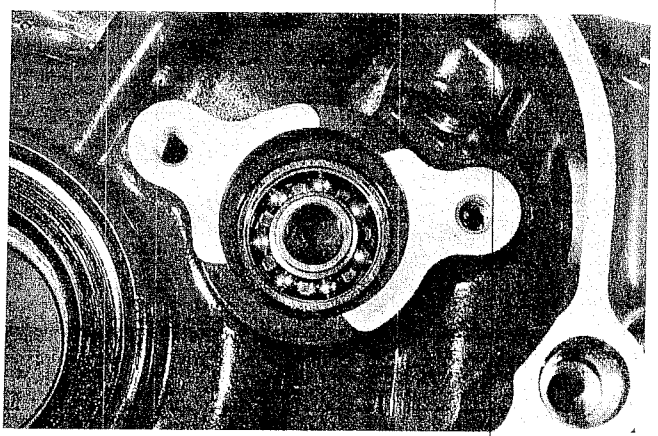
- Inspect the exhaust valve thrust-type bearing for any abnormality, paticulary cracks, upon removal off the exhaust valve governer, to decide whether it can be reused or should be replaced.



- Rotate the inner race of the exhaust valve bearing by hand to inspect for abnormal noise occurs and rotating smoothly.
  Replace the bearing if there is anything unusual.



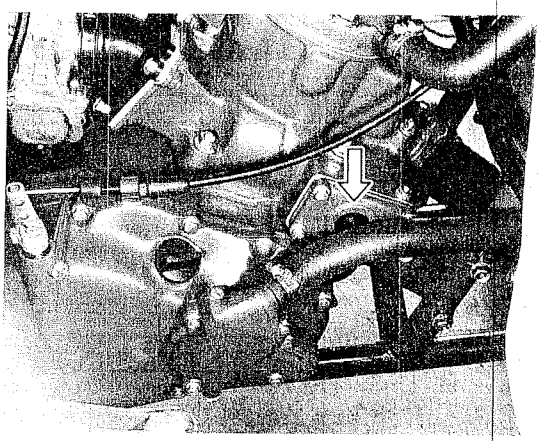
- Rotate the inner race of the exhaust valve governor bearing by hand to inspect it for the play. Repalce the bearing if there is anything unusual. (Refer to page 3-18)



Opening and closing r.p.m. check

- Connect an electric tachometer.

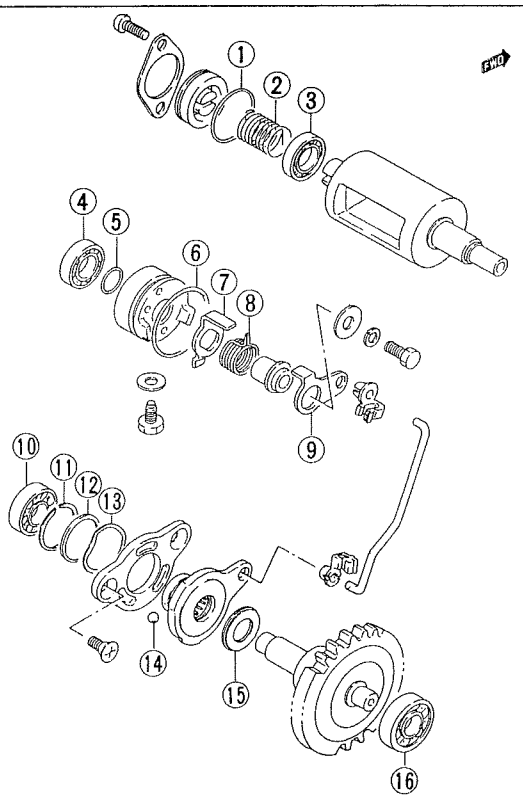
09900-26006	Tachometer Not available in U.S.A.



- Start the engine.
- Increase the engine speed and check to read the r.p.m. when the exhaust valve closing and opening r.p.m. through the inspection window.

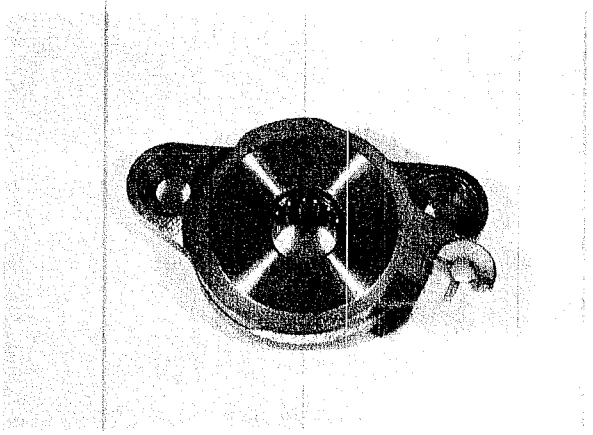
Closing	5 000 r.p.m.
Opening	5 500 r.p.m.

ASSEMBLY



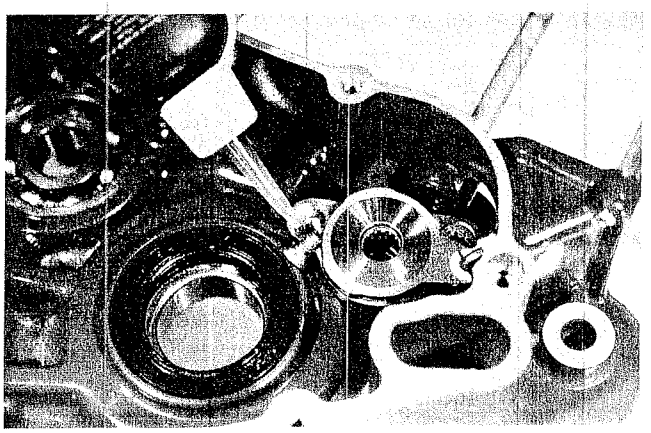
① O-ring
② Spring
③ Bearing
④ Bearing
⑤ O-ring
⑥ O-ring
⑦ Exhaust valve No. 2 lever
⑧ Spring
⑨ Exhaust valve No. 1 lever
⑩ Bearing
⑪ Circlip
⑫ Washer
⑬ Wave washer
⑭ Steel ball (3 pcs)
⑮ Thrust-type bearing
⑯ Bearing

- Assemble the exhaust valve actuator.



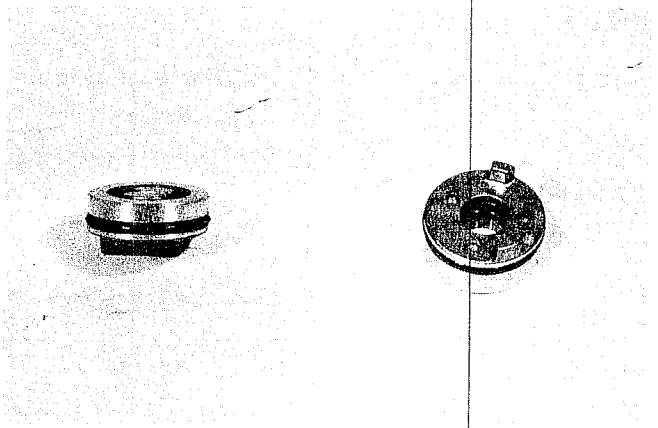
- When installing the exhaust valve actuator, apply THREAD LOCK "1342" to the screws.

99000-32050	THREAD LOCK "1342"



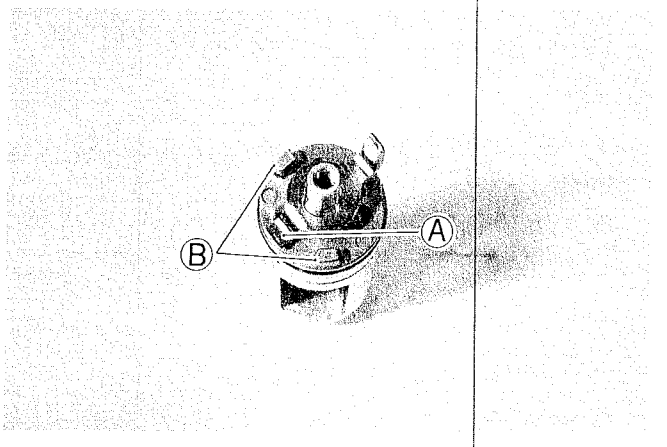
NOTE:
When reassembling the exhaust valve actuator, apply grease to the steel balls.

- When installing the exhaust valve cap and exhaust valve shaft holder, replace the O-ring with new ones.

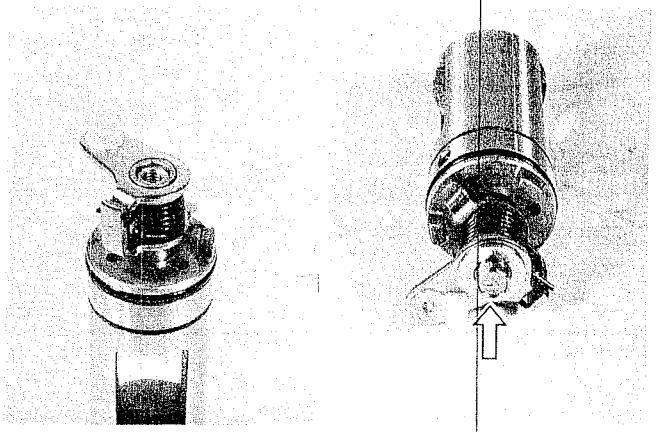


- Install the exhaust valve No. 2 lever as shown in the photograph.

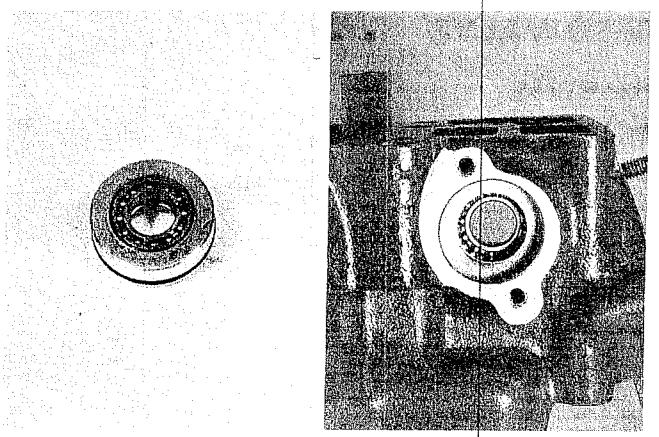
NOTE:
Portion Ⓐ of the No. 2 lever is placed between two stoppers (Narrow side Ⓑ).



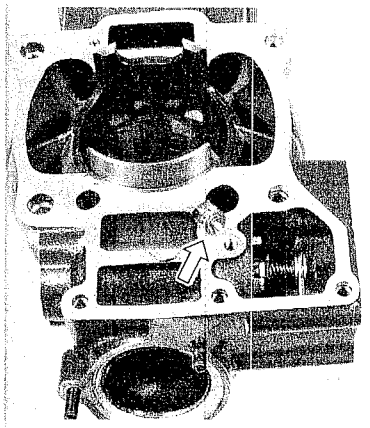
- Install the spacer, spring and exhaust valve No. 1 lever on the exhaust valve.
- Tighten the exhaust valve retainer bolt.



- Lubricate the exhaust valve bearing with SUZUKI CCI Oil or two-stroke oil.



- Fit a new gasket onto the exhaust valve stopper bolt, and install the exhaust valve stopper bolt.

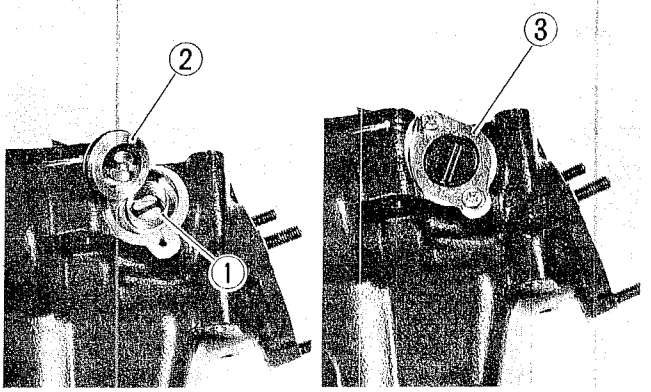


- Set the spring ①, cap ② and cap retainer ③.

NOTE:

* *Do not tighten the cap retainer screws at this stage.*

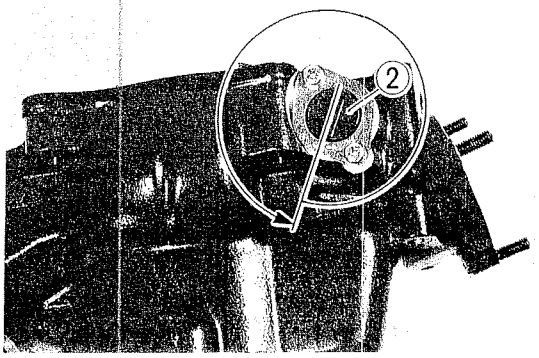
* *Be sure that the mark "250" of the cap retainer is at the top.*



- Turn the cap ② counterclockwise 360 deg and tighten the screws.

NOTE:

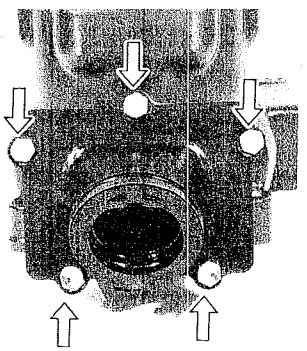
If the opening and closing r.p.m. are beyond the specification, turn the cap ② counterclockwise or clockwise.



REED VALVE

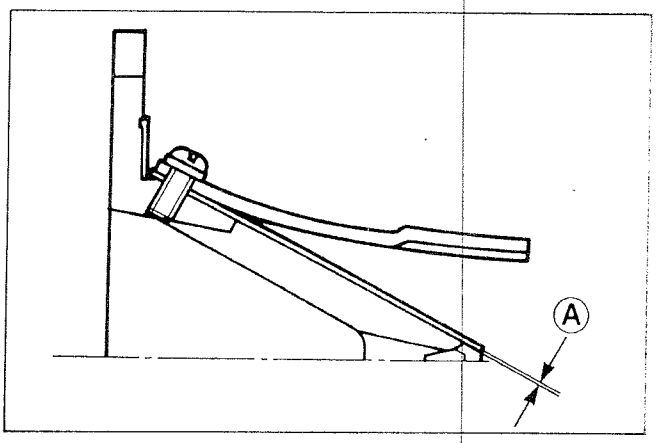
REMOVAL

- Remove the reed valve and intake pipe by removing the five bolts.



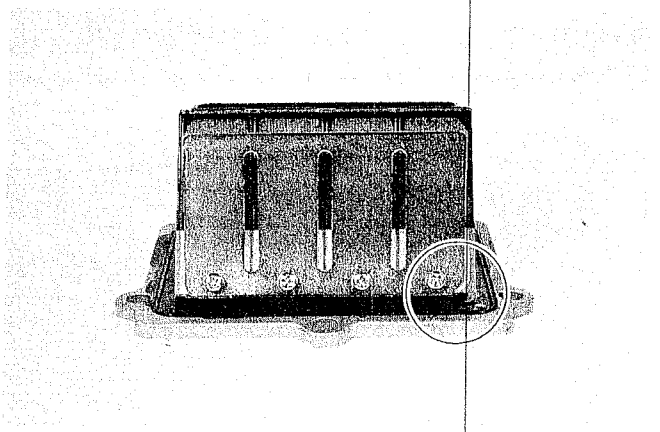
INSPECTION

- Check the clearance Ⓐ between reed valve and its seat. If the clearance Ⓐ is noted to exceed 0.2 mm, replace the reed valve assembly.

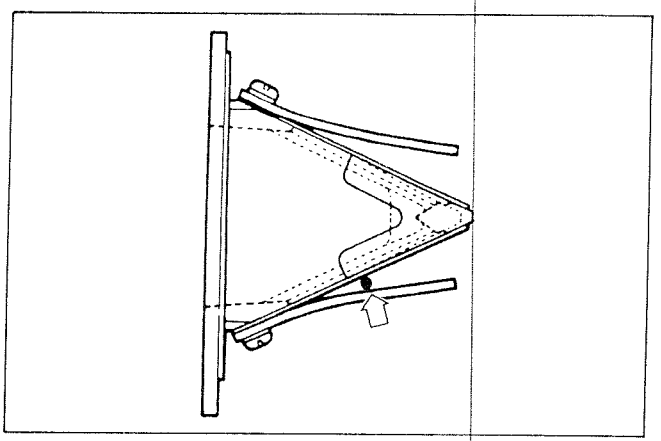


ASSEMBLY

- When assembling the reed valve, align the cut of the stopper.



- Just before installing the reed valve assembly, make sure that there is not foreign matter stuck between the reed valve and its stopper.

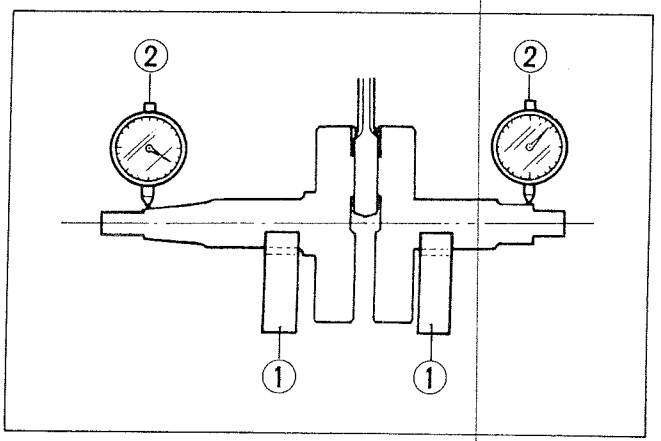


CRANKSHAFT

CRANKSHAFT RUNOUT

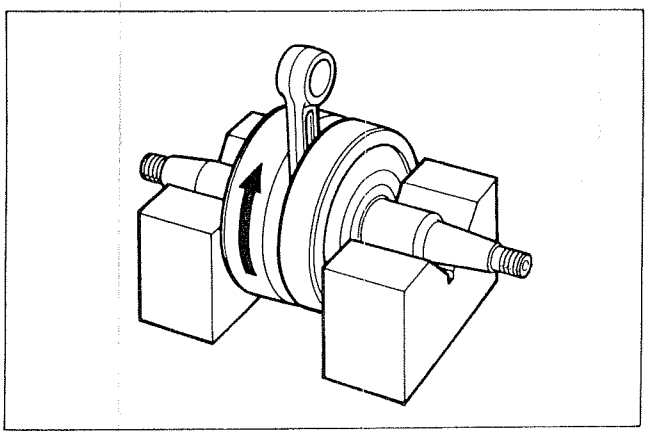
- Support crankshaft with "V" blocks ①, with the dial gauge ② rigged to read the runout as shown.

Service Limit	0.05 mm (0.002 in)



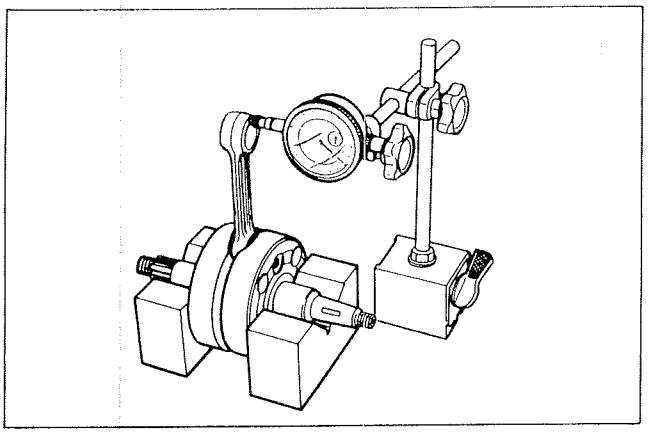
- Excessive crankshaft runout is often responsible for abnormal engine vibration. Such vibration shortens engine life.

09900-21304	V-block (Not available in U.S.A.)
09900-20701	Magnetic stand (Not available in U.S.A.)
09900-20606	Dial gauge (1/100 mm)



CONDITION OF BIG END BEARING

- Turn the crankshaft with the connecting rod to feel the smoothness of rotary motion in the big end. Move the rod up and down while holding the crankshaft rigidly to be sure that there is no rattle in the big end.
- Wear on the big end of the connecting rod can be estimated by checking the movement of the small end of the rod. This method can also check the extent of wear on the parts of the connecting rod's big end.
- If wear exceeds the limit, the connecting rod, crank pin and crank pin bearing should all be replaced.



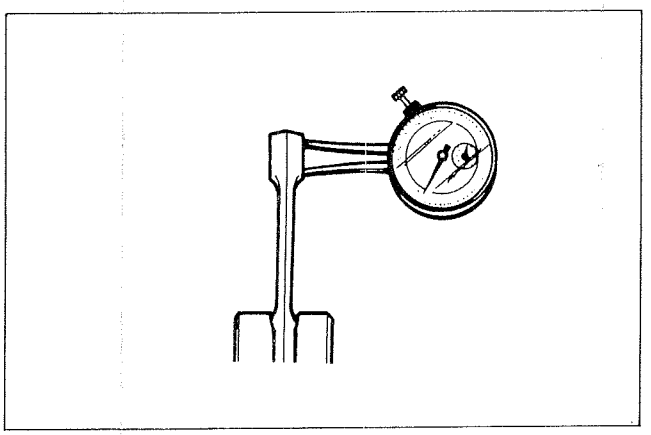
Service Limit	3.0 mm (0.12 in)

CON-ROD SMALL END I.D.

- With a caliper gauge, measure the con-rod small end diameter.

Service Limit	23.040 mm (0.9071 in)

09900-20605	Dial calipers



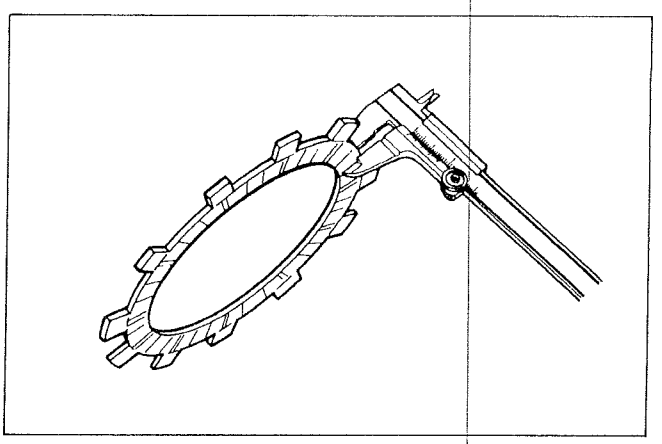
CLUTCH

CLUTCH PLATES

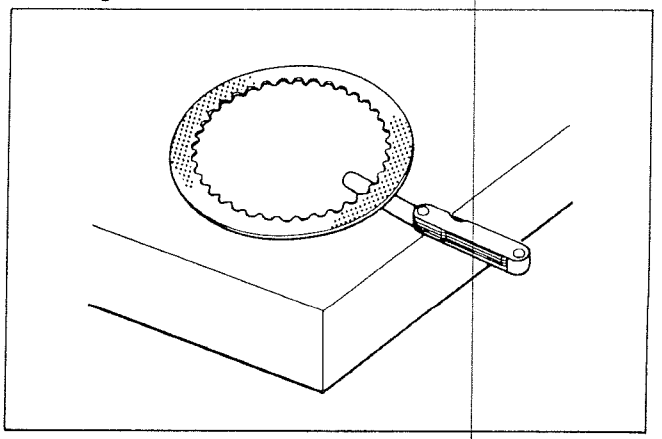
- Clutch plates in service remain in an oily condition as they were lubricated with oil. Because of this condition, both drive and driven plates are subject to little wearing action and therefore last much longer. Their life depends largely on the quality of oil used in the clutch and also on the way the clutch is operated.
- These plates are expendable: they are meant to be replaced when found worn down or distorted to the respective limit: use a calipers to check thickness and claw width and a thickness gauge to check distortion of surface plate.

09900-20102	Vernier calipers
09900-20804	Thickness gauge

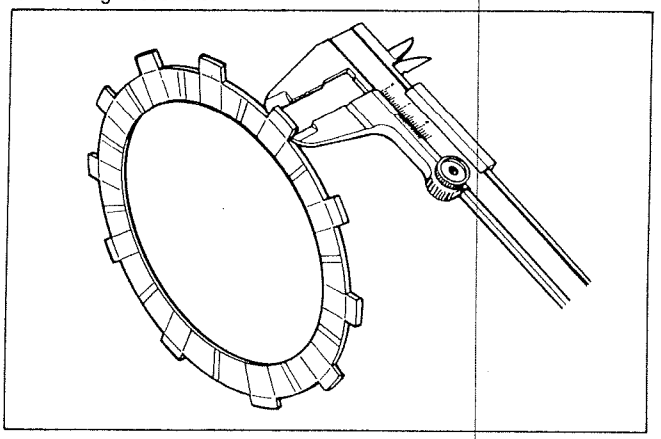
Service Limit	Drive plate	Driven plate
Thickness	2.42 mm (0.095 in)	–
Distortion	–	0.10 mm (0.004 in)
Claw width	15.0 mm (0.59 in)	–



Checking thickness



Checking distortion



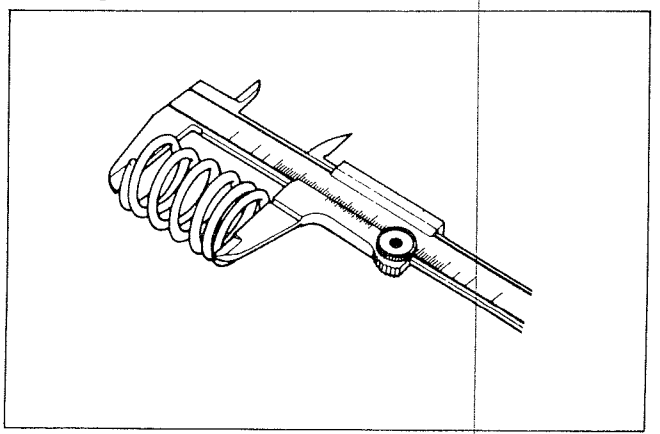
Checking claw width

CLUTCH SPRINGS

- Clutch springs which have lost their tension also cause clutch slipping, resulting in loss of power and rapid wear of the clutch plates.
- Remove the clutch springs and measure their free length with calipers.

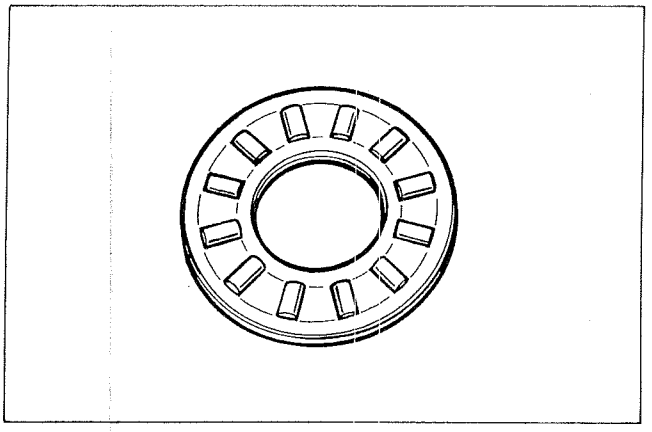
09900-20102	Vernier calipers

Service Limit	29.8 mm (1.17 in)



CLUTCH RELEASE BEARING

- Inspect this thrust-type bearing for any abnormality, particulary cracks, upon removal from the clutch, to decide whether it can be reused or should be replaced.
- Smooth engagement and disengagement of the clutch depends much on the condition of this bearing.



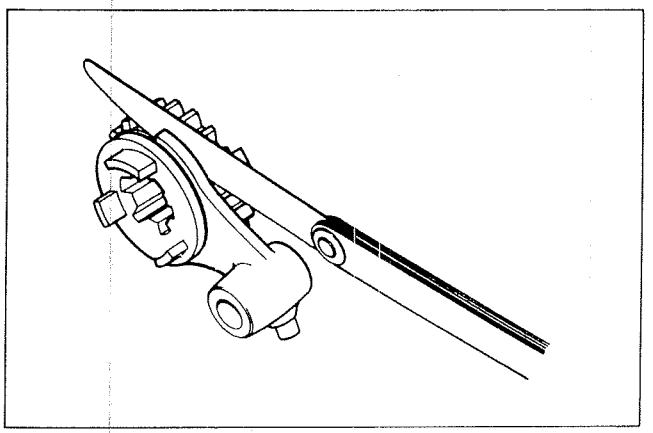
GEARSHIFT FORK

GEARSHIFT FORK CLEARANCE

With a thickness gauge, check the shifting for clearance in the groove of its gear. If the clearance limit is exceeded on any of the three gears, determine whether the gear or the gear shifting fork should be replaced by measuring the thickness and groove width.

09900-20803	Thickness gauge

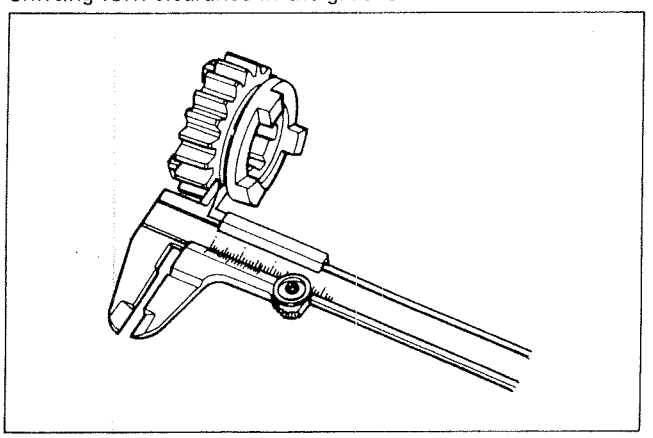
Item	Standard	Limit
Shift fork to groove clearance	0.10 – 0.30 mm (0.004 – 0.012 in)	0.50 mm (0.020 in)



Shifting fork clearance in the groove

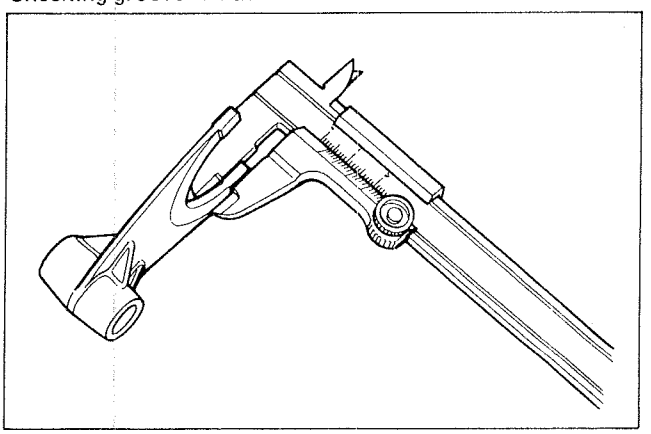
09900-20101	Vernier calipers

Item	Standard
Shift fork groove width	5.0 – 5.1 mm (0.197 – 0.201 in)



Checking groove width

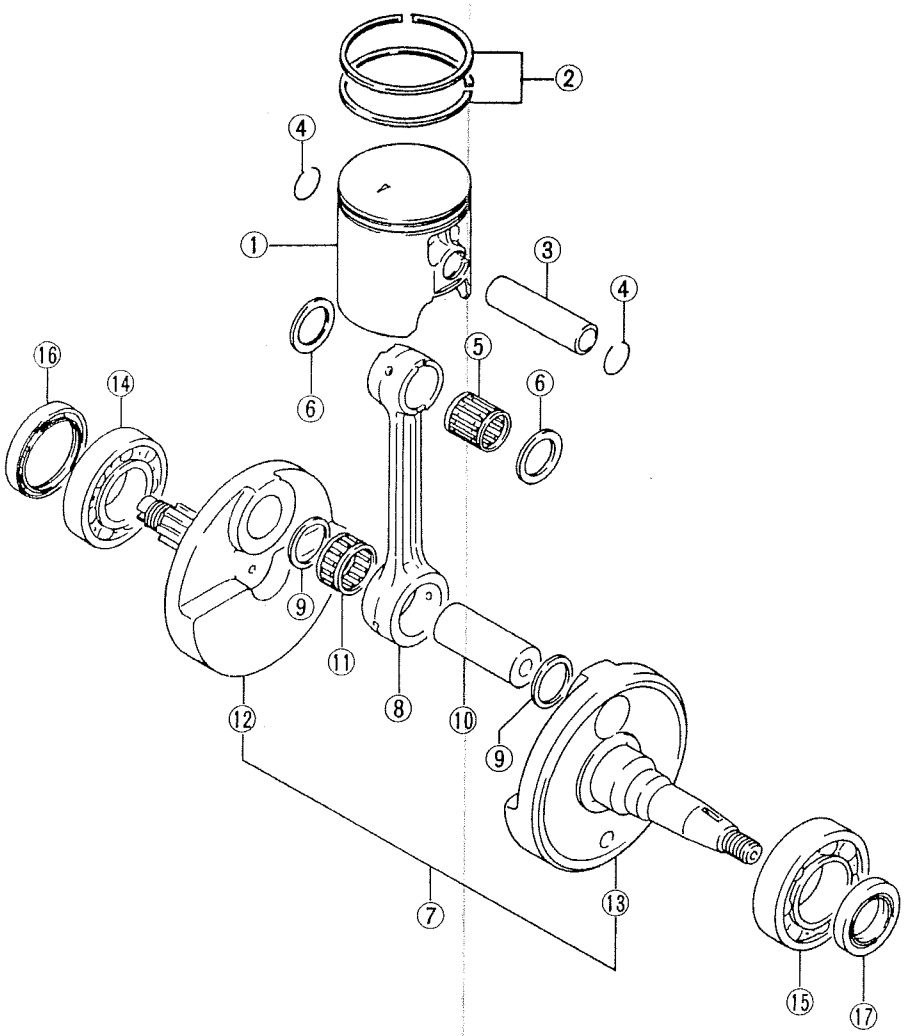
Item	Standard
Shift fork thickness	4.8 – 4.9 mm (0.18 – 0.19 in)



ENGINE REASSEMBLY

Reassembly is generally performed in the reverse order of disassembly, but there are a number of reassembling steps that demand or deserve detailed explanation or emphasis. These steps will be taken up for respective parts and components.

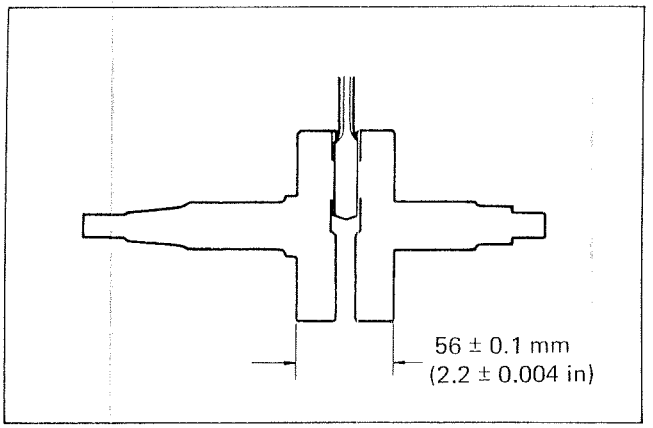
CRANKSHAFT



① Piston
② Piston ring
③ Piston pin
④ Circlip
⑤ Piston pin bearing
⑥ Small end thrust washer
⑦ Crankshaft
⑧ Conrod
⑨ Big end thrust washer
⑩ Crank pin
⑪ Conrod big end bearing
⑫ Right crankshaft
⑬ Left crankshaft
⑭ Bearing
⑮ Bearing
⑯ Oil seal
⑰ Oil seal

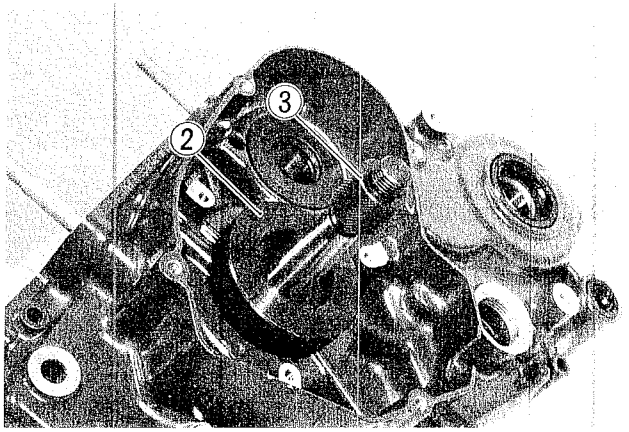
- Inspect for the proper width between the webs by referring to the figure at right when rebuilding the crankshaft.

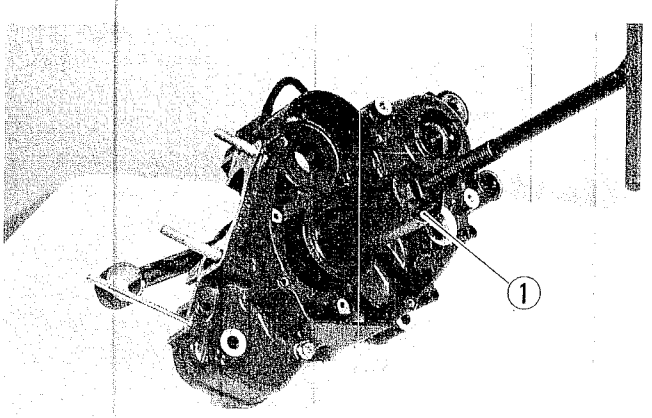
Crank web to web width	56 ± 0.1 mm (2.2 ± 0.004 in)



- When mounting the crankshaft in the crankcase, it is necessary to pull its left end into the crankcase with the special tool.

①	09910-32812	Crankshaft insaller
②	09910-32820	Spacer
③	09911-11310	Attachment



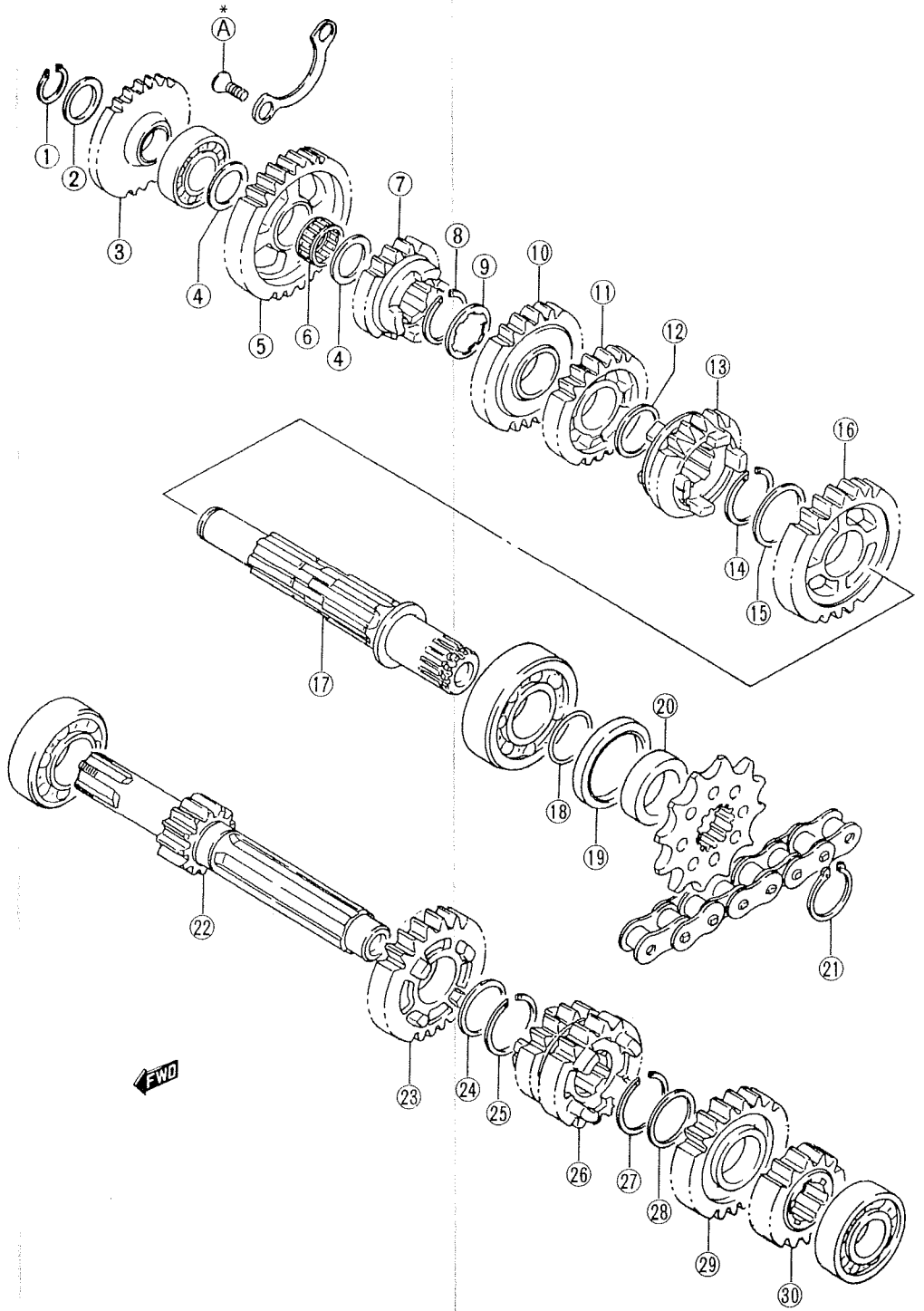


CAUTION:
Never fit the crankshaft into the crankcase by tapping it with a plastic hammer.
Always use the special tool, otherwise crankshaft alignment accuracy will be affected.

TRANSMISSION

- In ressembling the transmission, attention must be given to the locations and positions of washers and circlips. The exploded view given here will serve as a reference for correctly mounting the gears, washers and circlips.

CAUTION:
* **Never reuse a circlip. After a circlip has been removed from a shaft, it should be discarded and a new circlip must be installed.**
* **When installing a new circlip, care must be taken not to expand the end gap larger than required to slip the circlip over the shaft.**
* **After installing a circlip, always insure that it is completely seated in its groove and securely fitted.**

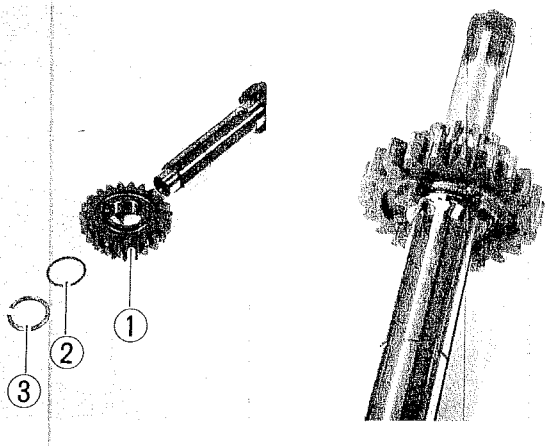


① Circlip
② Washer
③ Kick idle gear
④ Washer
⑤ Low driven gear
⑥ Bearing
⑦ Top driven gear
⑧ Circlip
⑨ Thrust washer
⑩ 3rd driven gear
⑪ 4th driven gear
⑫ Thrust washer
⑬ 5th driven gear
⑭ Circlip
⑮ Thrust washer
⑯ 2nd driven gear
⑰ Driveshaft
⑱ O-ring
⑲ Oil seal
⑳ Spacer
㉑ Circlip
㉒ Countershaft
㉓ Top drive gear
㉔ Thrust washer
㉕ Circlip
㉖ 3rd/4th drive gear
㉗ Circlip
㉘ Thrust washer
㉙ 5th drive gear
㉚ 2nd drive gear

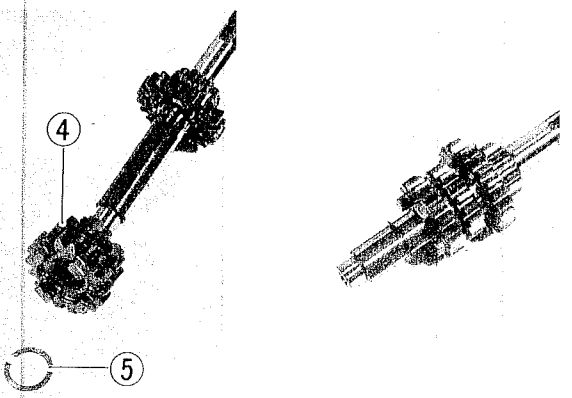
* Ⓐ Apply THREAD LOCK SUPER "1303"/"1322" to the screws.

COUNTERSHAFT

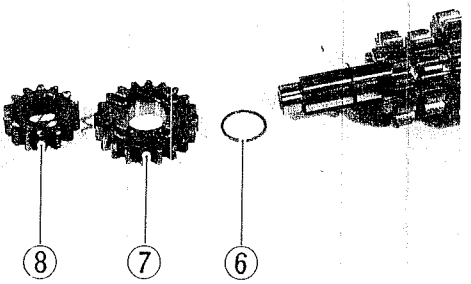
- Install the Top drive gear ①, thrust washer ② on the countershaft with the circlip ③.



- Install the 3rd/4th drive gear ④ and the circlip ⑤ on the countershaft.

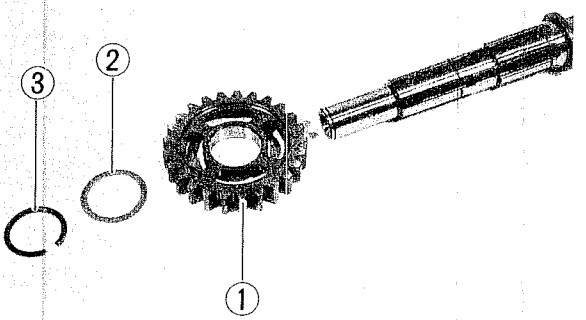


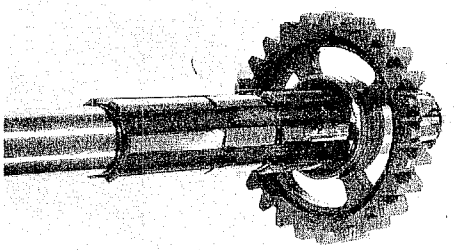
- Install the thrust washer ⑥, 5th drive gear ⑦ and 2nd drive gear ⑧ on the countershaft.



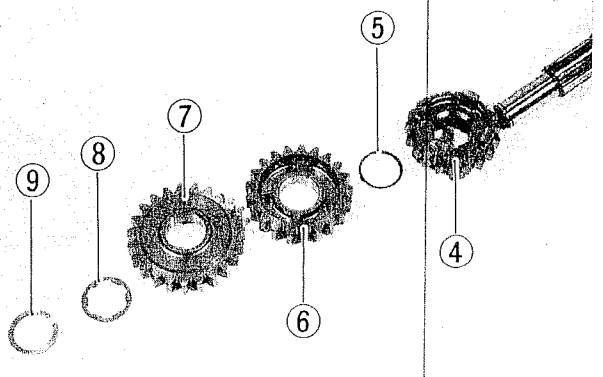
DRIVESHAFT

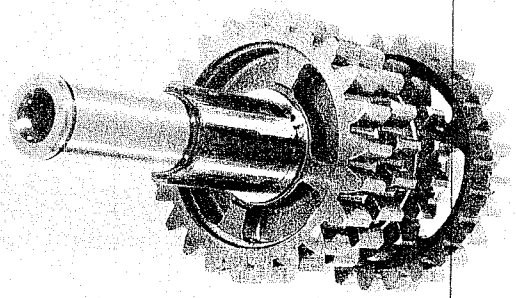
- Install the 2nd driven gear ① and thrust washer ② on the driveshaft with the circlip ③.



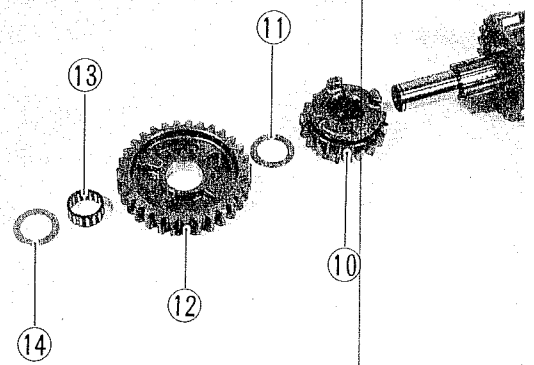


- Install the 5th driven gear ④, thrust washer ⑤, 4th driven gear ⑥, 3rd driven gear ⑦ and thrust washer ⑧ on the drive shaft with the circlip ⑨.

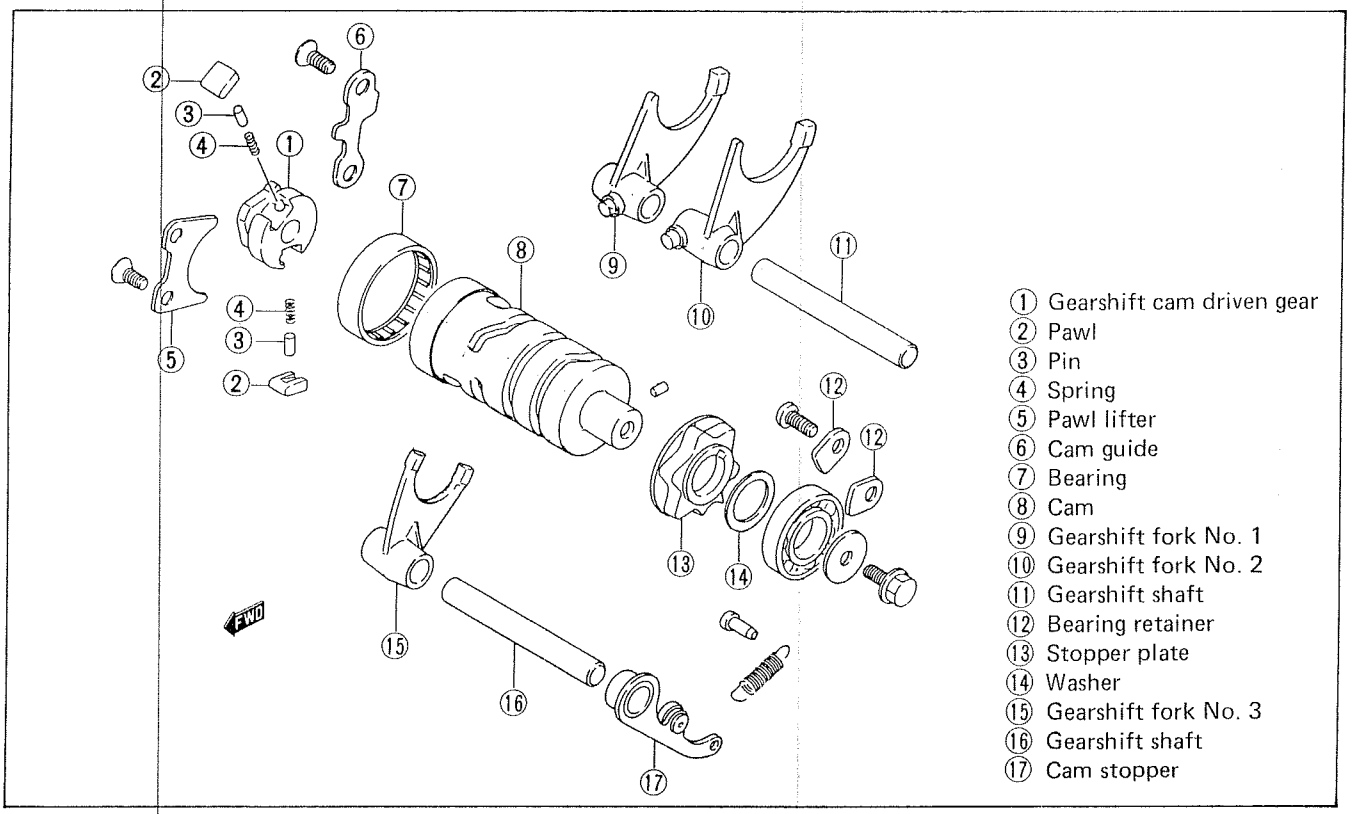




- Install the top driven gear ⑩, thrust washer ⑪, low driven gear ⑫, bearing ⑬ and thrust washer ⑭ on the driveshaft.

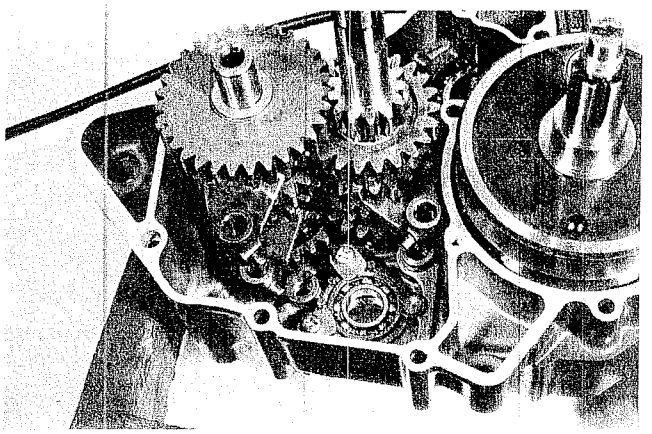


GEARSHIFT CAM AND FORK



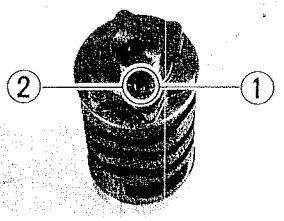
① Gearshift cam driven gear
② Pawl
③ Pin
④ Spring
⑤ Pawl lifter
⑥ Cam guide
⑦ Bearing
⑧ Cam
⑨ Gearshift fork No. 1
⑩ Gearshift fork No. 2
⑪ Gearshift shaft
⑫ Bearing retainer
⑬ Stopper plate
⑭ Washer
⑮ Gearshift fork No. 3
⑯ Gearshift shaft
⑰ Cam stopper

- Fit the three gearshift forks and the cam stopper correctly.

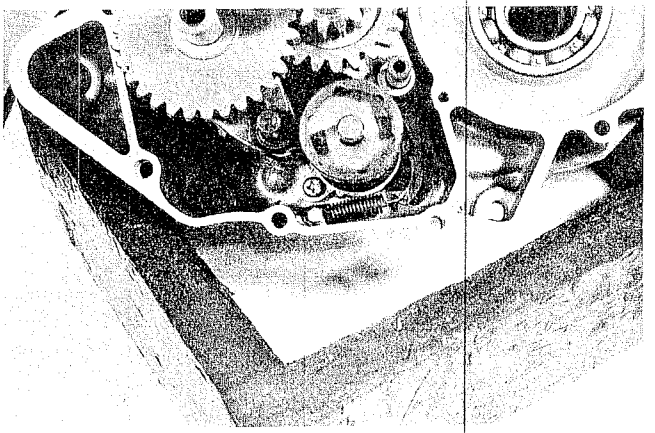


- Install the stopper plate after aligning the slit ① of stopper plate with pin ②.

NOTE:
Be sure to install the washer on the gearshift cam.



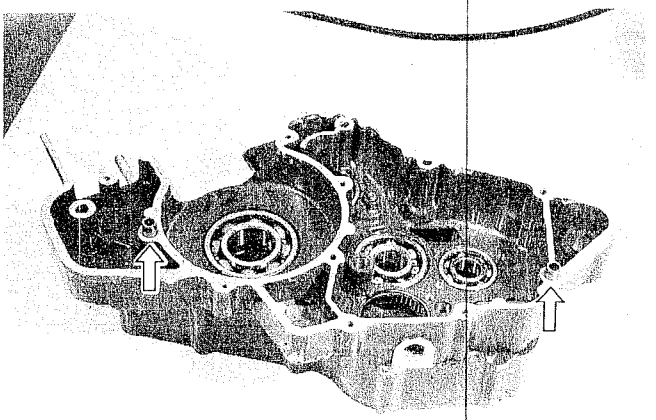
- Hook the cam stopper spring onto the crankcase with a long-nose pliers.



CRANKCASE

- Apply SUZUKI BOND NO. "1207B"/"1215" uniformly to the mating surface of the crankcase.

99104-31140 For U.S. model	SUZUKI BOND NO. "1207B"
99000-31110 For other models	SUZUKI BOND NO. "1215"

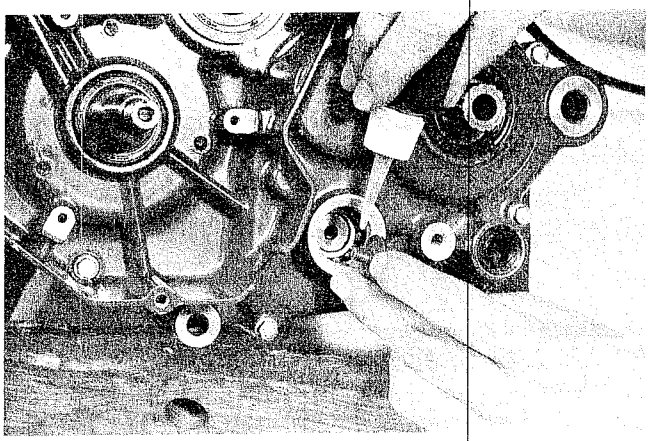


- Install the two dowel pins on the crankcase.
- Tighten the crankcase screws and bolts securely.

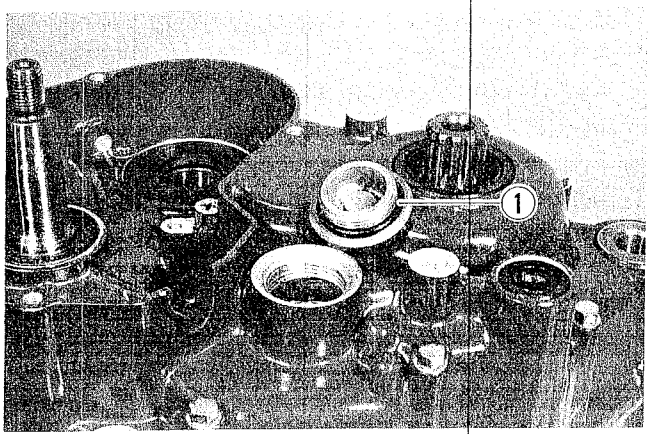
GEARSHIFT CAM

- After applying a small quantity of THREAD LOCK SUPER "1322"/"1303" to the gearshift cam retainer bolt and tighten the bolt to the specified torque.

99000-32030 For U.S. model	THREAD LOCK SUPER "1303"
99000-32110 For other models	THREAD LOCK SUPER "1322"



Tightening torque	8 – 12 N·m (0.8 – 1.2 kg-m 6.0 – 9.0 lb-ft)

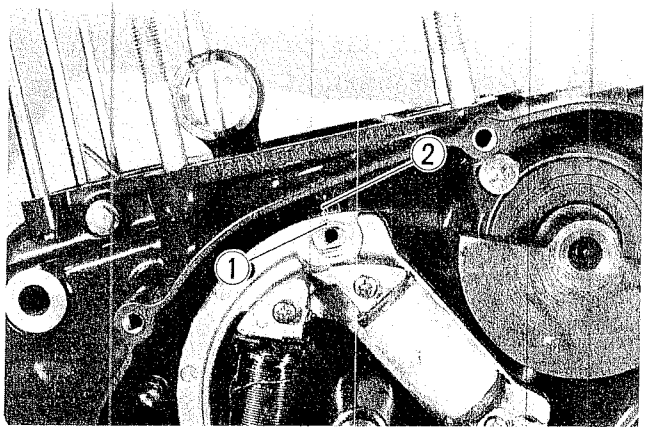


- Fit a new O-ring ① and install the gearshift cam cap.

NOTE:
A new O-ring is required to prevent oil leakage.

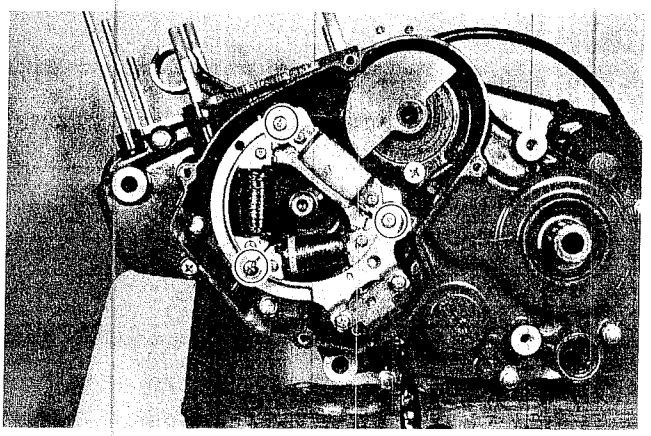
STATOR

- Align the engraved line ① on the stator with the aligning line ② on the crankcase.



- Apply a small quantity of THREAD LOCK "1342" to the threaded part of the three stator screws.

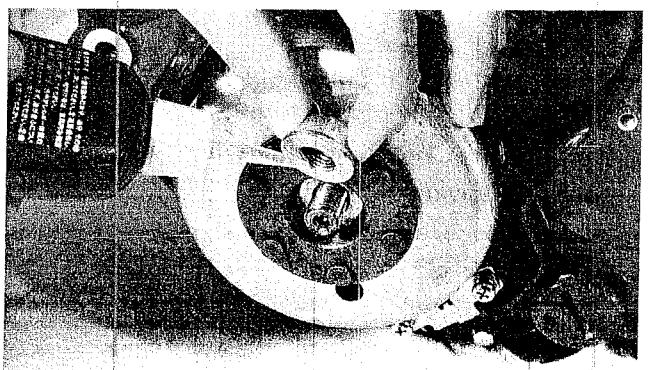
99000-32050	THREAD LOCK "1342"



MAGNETO ROTOR

- Clean thoroughly both mating surfaces of the rotor and crankshaft with cleaning solvent.
- Fit the key into the key slot on the crankshaft.
- Install the magneto rotor.
- Apply a small quantity of THREAD LOCK SUPER "1303"/"1305" to the threaded part of the crankshaft.

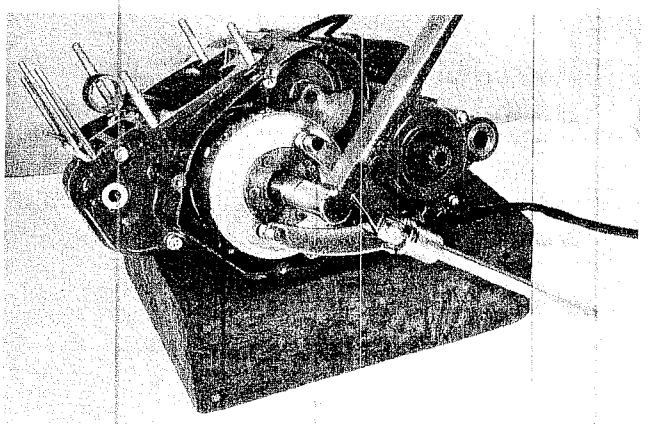
99000-32030 For U.S. model	THREAD LOCK SUPER "1303"
99000-32100 For other models	THREAD LOCK SUPER "1305"



- Tighten the magneto rotor nut to the specified torque with the special tool.

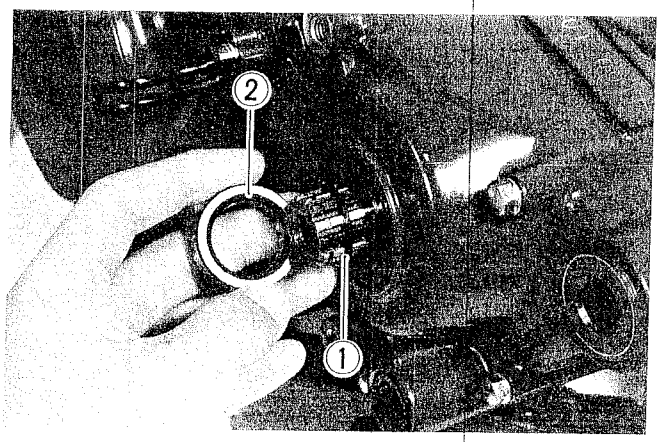
09930-40113	Rotor holder

Tightening torque	90 – 100 N·m (9.0 – 10.0 kg-m 65.0 – 72.5 lb-ft)

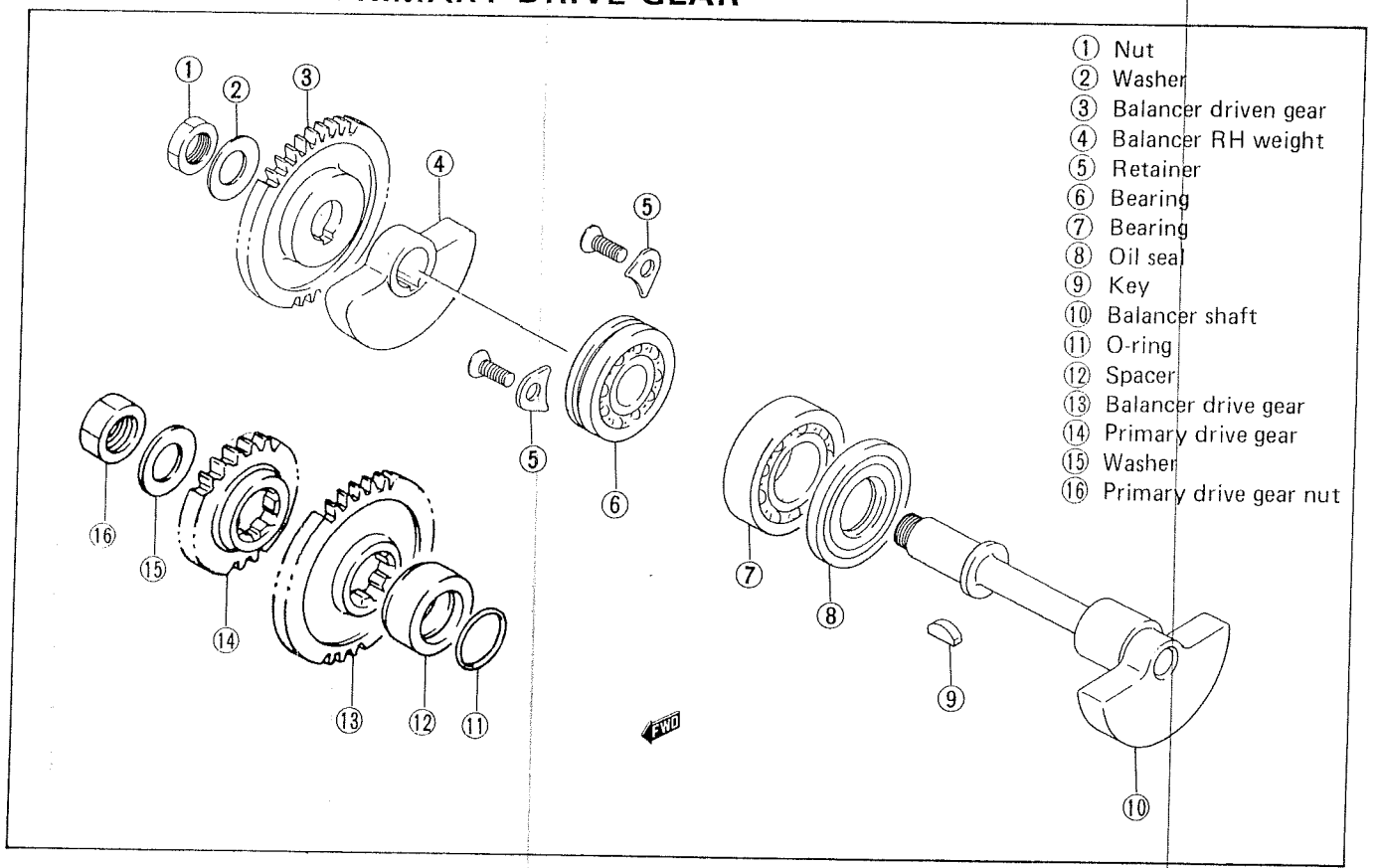


- Install the O-ring ① and spacer.

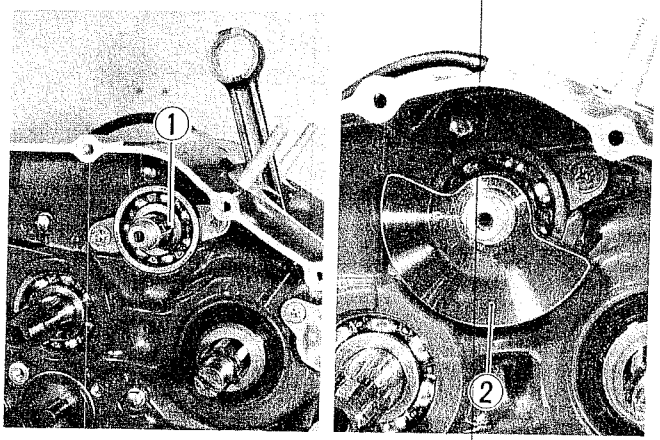
NOTE:
Chamfer side ② of the spacer faces inside.



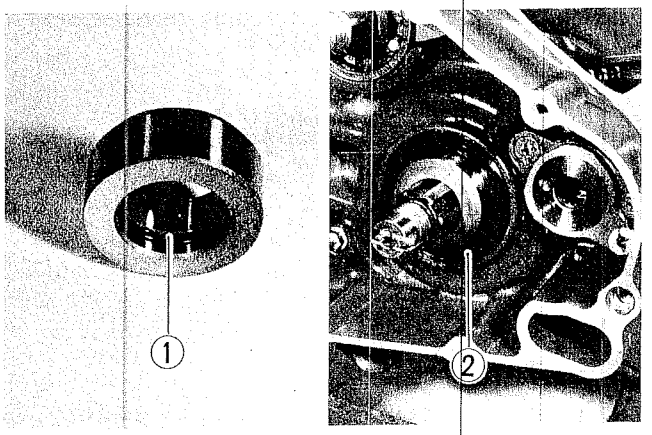
BALANCER AND PRIMARY DRIVE GEAR



- Install the key ① onto the balancershaft.
- Install the balancer web ② onto the balancershaft.

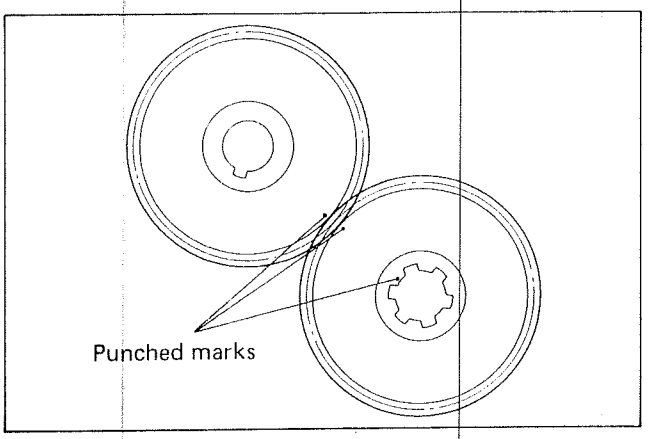


- Install the primary drive gear spacer onto the crankshaft.



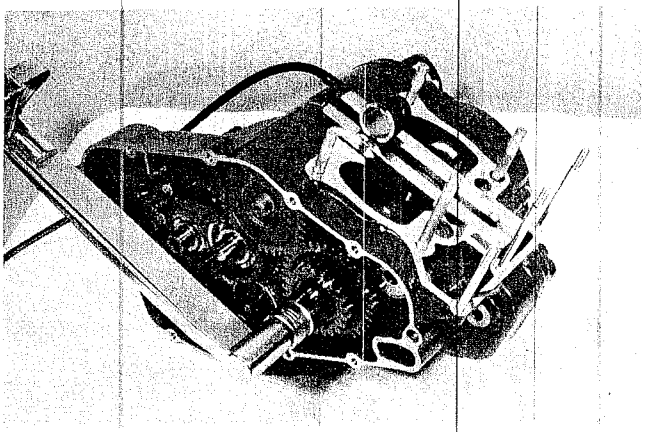
NOTE:
- *Fit a new O-ring ① into the O-ring groove of spacer.*
- *Chamfer side ② of spacer faces outside.*

- Install the balancer drive gear and driven gear while aligning the three punched marks on the crankshaft, drive gear and driven gear.



NOTE:
Align the three punched marks in line.
Refer to page 3-54.

- Install the primary drive gear.
- Apply a small quantity of THREAD LOCK SUPER "1303"/"1305" to the threaded part of the balancershaft, and tighten the balancer driven gear nut and primary drive gear nut to the specified torque with the special tool.

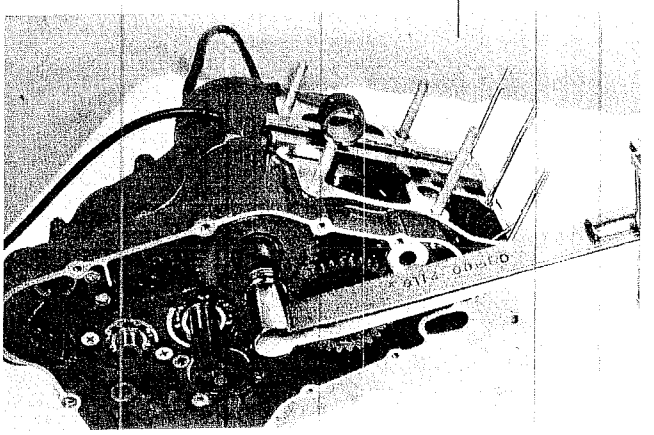


99000-32030 For U.S. model	THREAD LOCK SUPER "1303"
99000-32100 For other models	THREAD LOCK SUPER "1305"

NOTE:
Primary drive gear nut is left-hand thread.

Tightening torque

Balancer driven gear nut	70 – 90 N·m (7.0 – 9.0 kg-m 50.5 – 65.0 lb-ft)
Primary drive gear nut	80 – 100 N·m (8.0 – 10.0 kg-m 58.0 – 72.5 lb-ft)

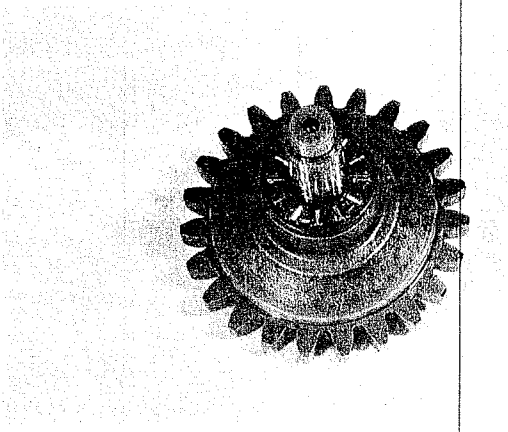


09910-20115	Conrod stopper

EXHAUST VALVE GOVERNOR

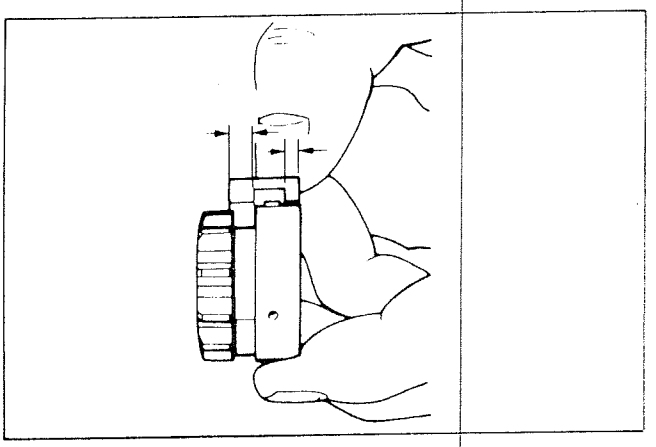
- When installing the governor, be sure to install the thrust bearing ①.

NOTE:
The roller side of the thrust bearing ① faces to the actuator.

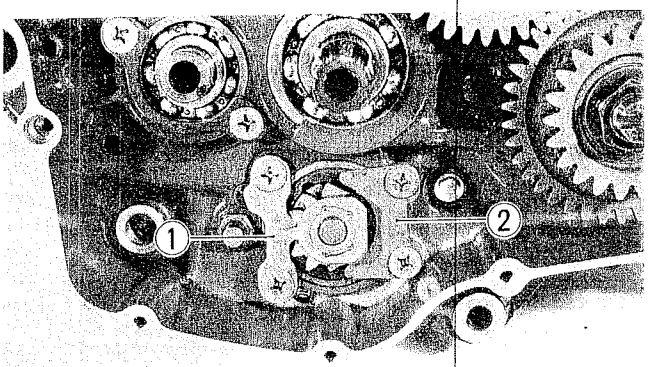


GEARSHIFT CAM DRIVE GEAR

- The shape of each gearshift pawl is different, install the pawl with the narrower width side facing to the gearshift cam side.

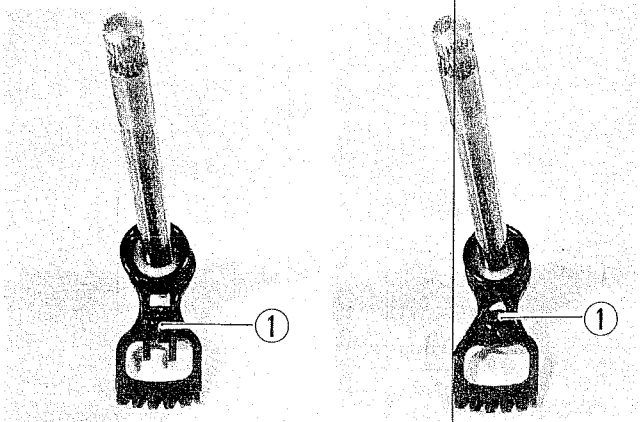


- Install the cam guide ① and pawl lifter ② with screws.



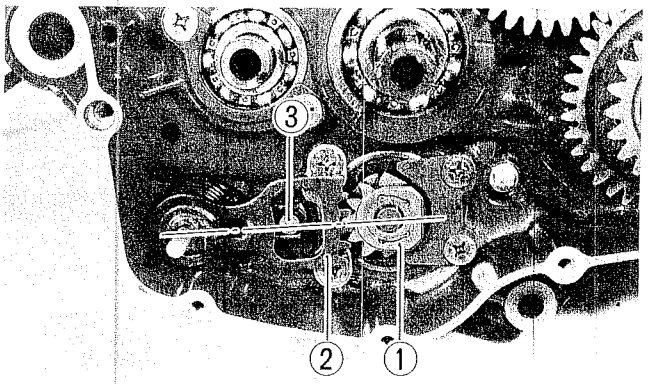
GEARSHIFT SHAFT

- Install the gearshift return spring onto the gearshift shaft with the stopper ① hatched by the spring ends.



Correct Incorrect

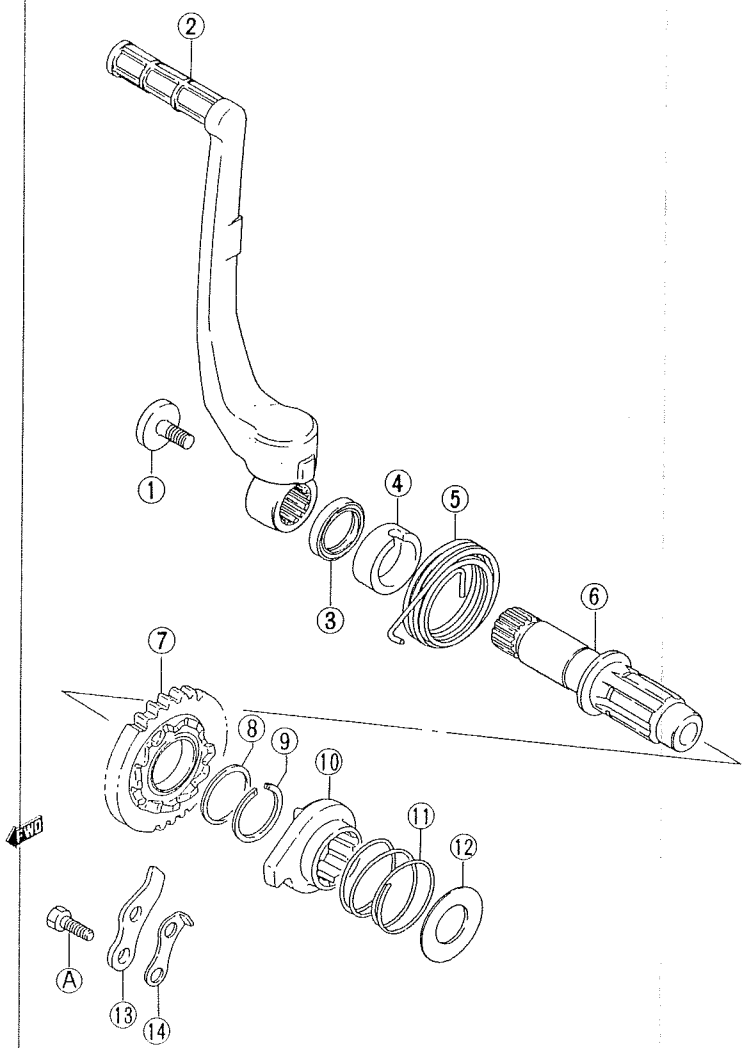
- Install the gearshift shaft into the crankcase. Gearshift cam driven gear ① meshes with the gearshift cam drive gear ② mounted on the gearshift shaft. Be sure to mesh the gears ① and ② with their center lines coinciding with each other, or the mechanism will shift poorly or will not shift at all.



NOTE:
When replacing the gearshift arm stopper ③, apply a small quantity of THREAD LOCK SUPER "1303" to the threaded part of the stopper and tighten it to the specified torque.

99000-32030	THREAD LOCK SUPER "1303"

KICK STARTER

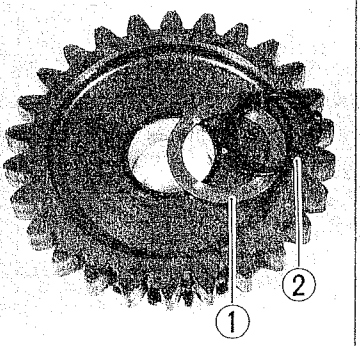


* Apply THREAD LOCK SUPER "1303"/"1322" to the bolts ① and Ⓐ.

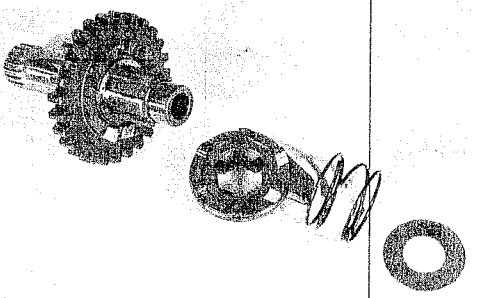
"1303"	U.S. model
"1322"	Other models

① Kick starter lever mounting bolt
② Kick starter lever
③ Oil seal
④ Spring guide
⑤ Kick starter spring
⑥ Kick starter shaft
⑦ Kick starter drive gear
⑧ Washer
⑨ Circlip
⑩ Kick starter pawl
⑪ Spring
⑫ Washer
⑬ Kick starter pawl guide
⑭ Kick starter pawl stopper

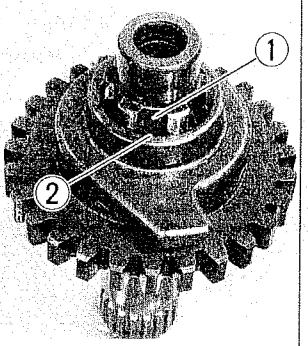
- Install the kick starter idle gear with washer ① and circlip ②.



- Assemble the kick starter.

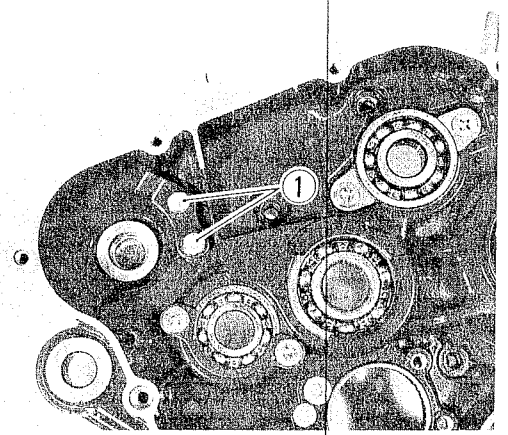


NOTE:
When installing the kick starter pawl onto the kick starter shaft, be sure to align the punched marks ①, ②.

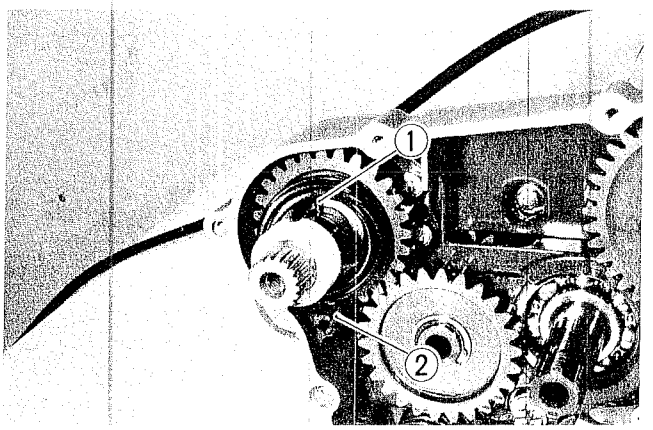


- When installing the kick starter pawl guide apply THREAD LOCK SUPER "1303"/"1322" to the threaded part of the mounting bolts ①.

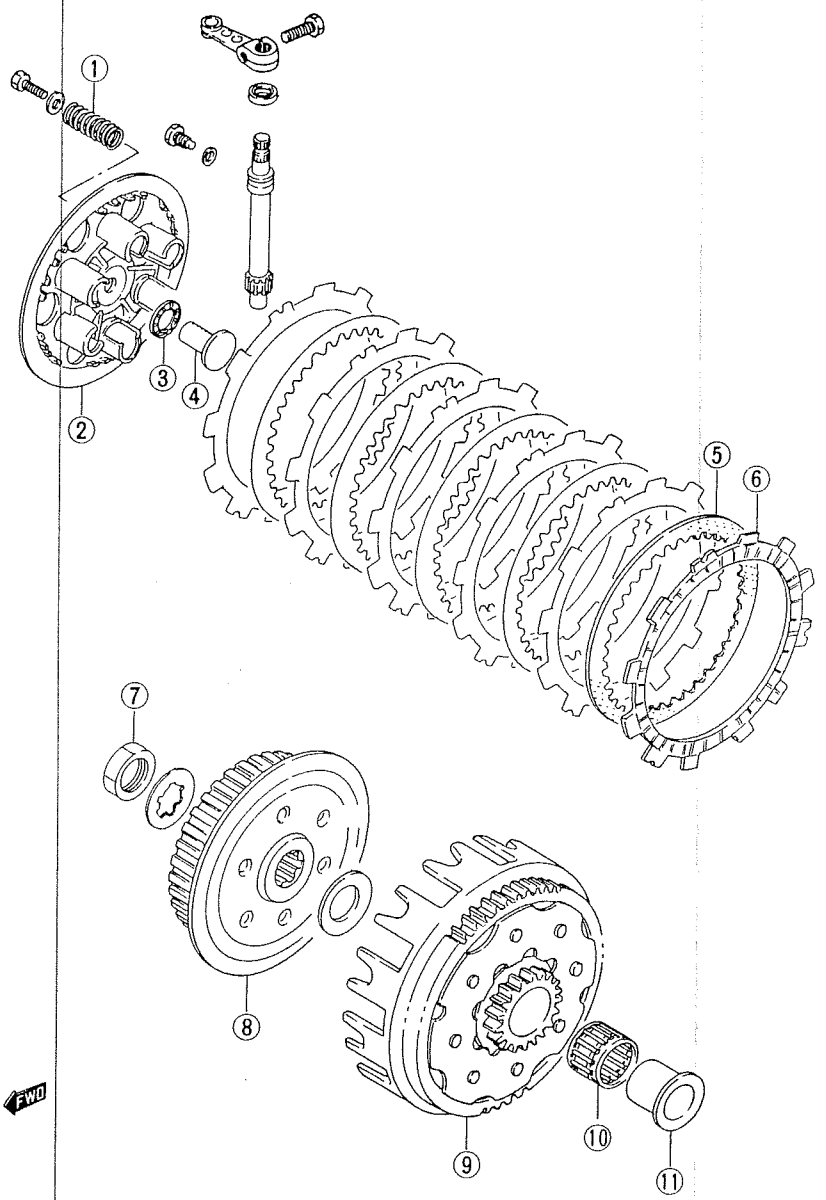
99000-32030 For U.S. model	THREAD LOCK SUPER "1303"
99000-32110 For other models	THREAD LOCK SUPER "1322"



- When fitting the kick starter return spring, hook the part ① of the return spring into the hole of the kick starter shaft, and turn it 1/2 a turn, clockwise and hook the part ② of the return spring onto the crankcase with a pliers.
- Install the spring guide with its groove aligned with the spring end.



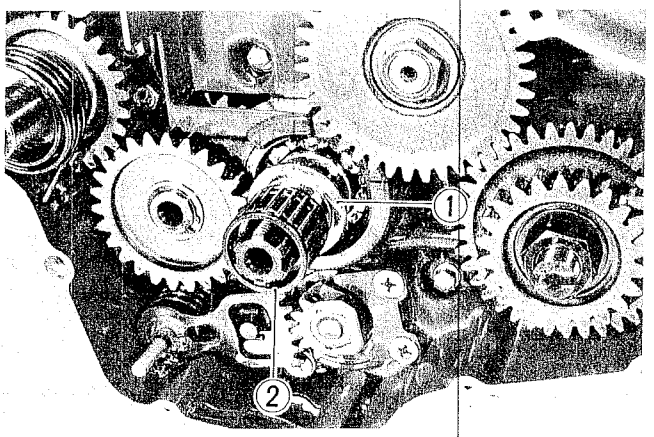
CLUTCH



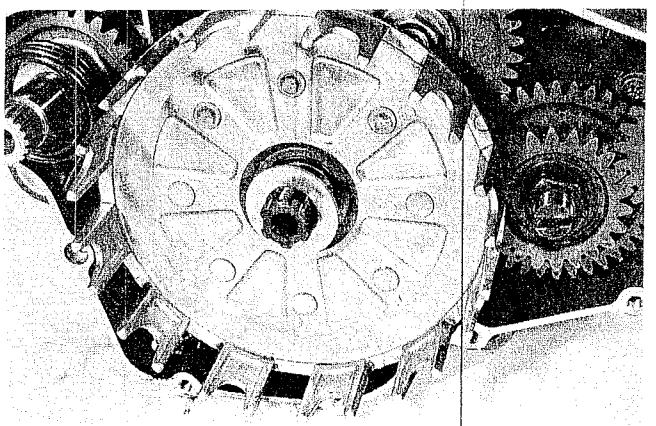
① Clutch spring
② Pressure plate
③ Thrust bearing
④ Clutch release rack
⑤ Driven plate
⑥ Drive plate
⑦ Clutch sleeve hub nut
⑧ Clutch sleeve hub
⑨ Primary driven gear assembly
⑩ Bearing
⑪ Spacer

- Install the spacer ① and bearing ②.

NOTE:
Apply the mission oil to the bearing.



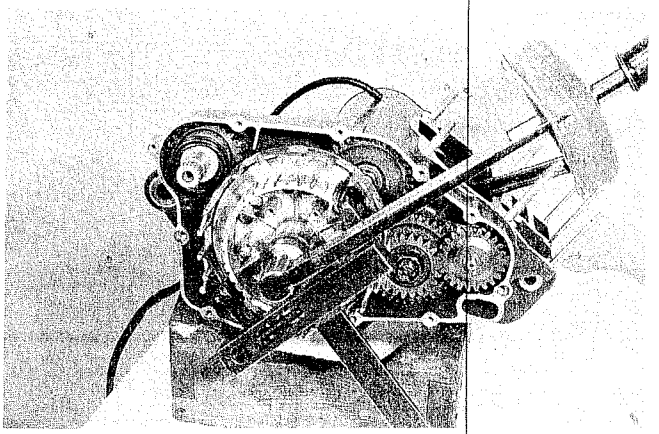
- Install the clutch housing and washer.



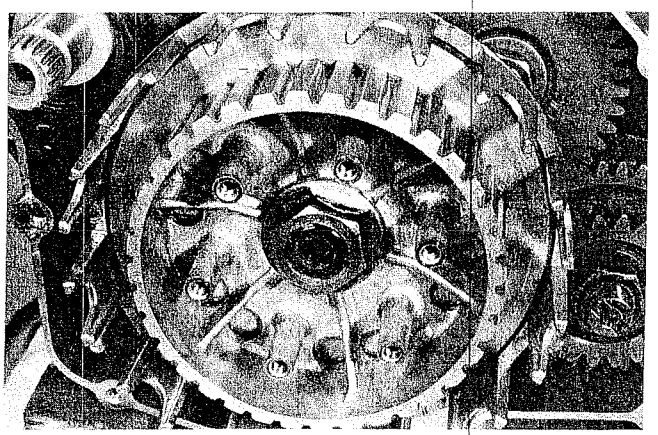
- Tighten the clutch sleeve hub nut to the specified torque with the special tool.

Tightening torque	40 – 60 N·m (4.0 – 6.0 kg-m 29.0 – 43.5 lb-ft)

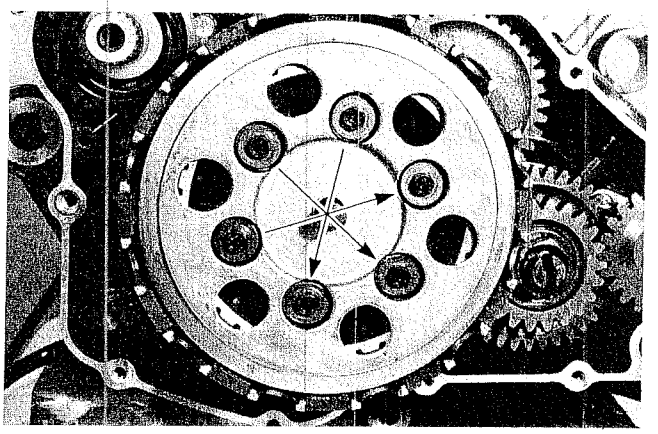
09920-53710	Clutch sleeve hub holder



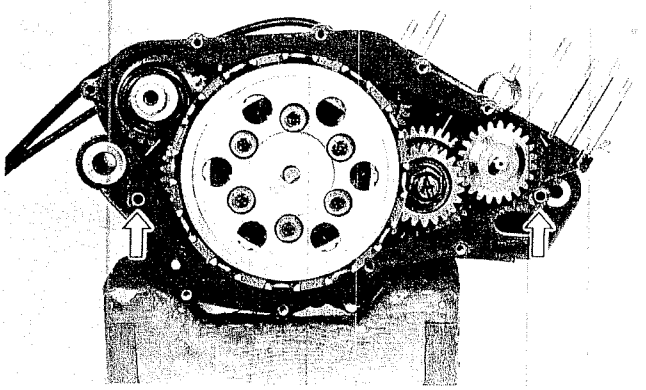
- Bend up the lock washer.



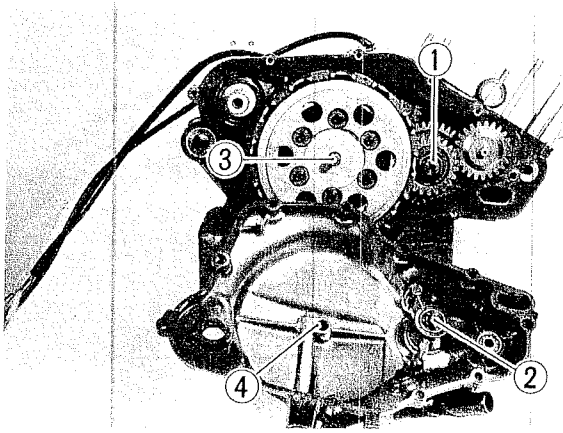
- Install the clutch plates, pressure plate, clutch release rack, bearing and springs.
- Tighten the clutch spring set bolts diagonally.



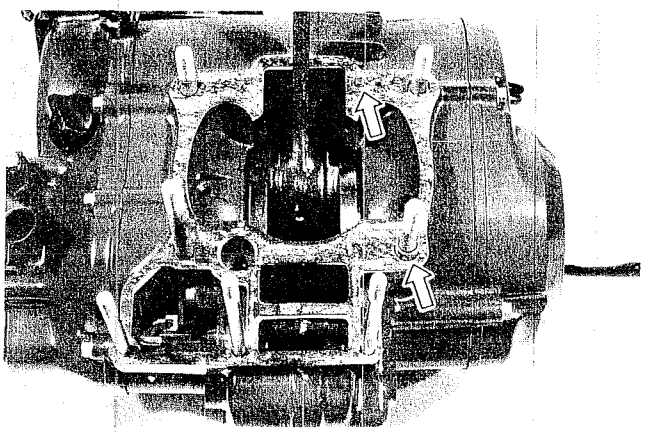
- Install the two dowel pins.
- Fit a new gasket.



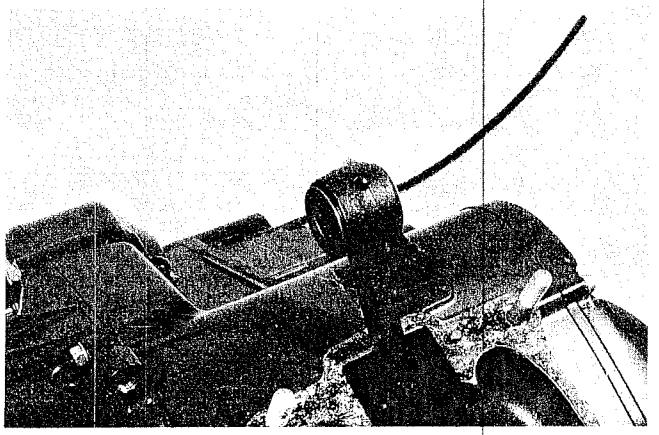
- Align the crankshaft groove ① with the water pump driven protrusion ②.
- Align the rack ③ with the pinion ④.
- Install the clutch cover.



- Install the new cylinder gasket and two dowel pins.

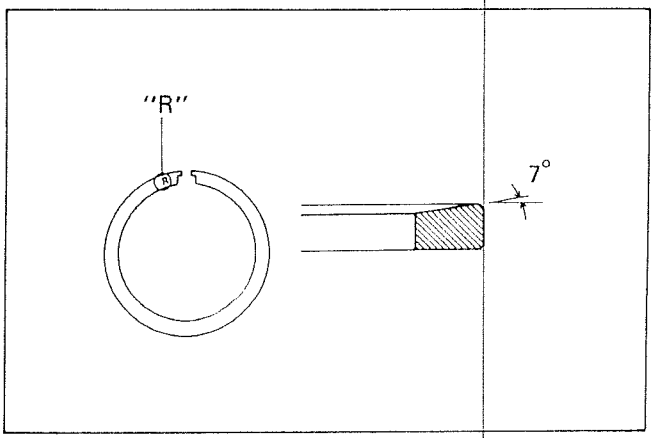


- Install the bearing and two washers.

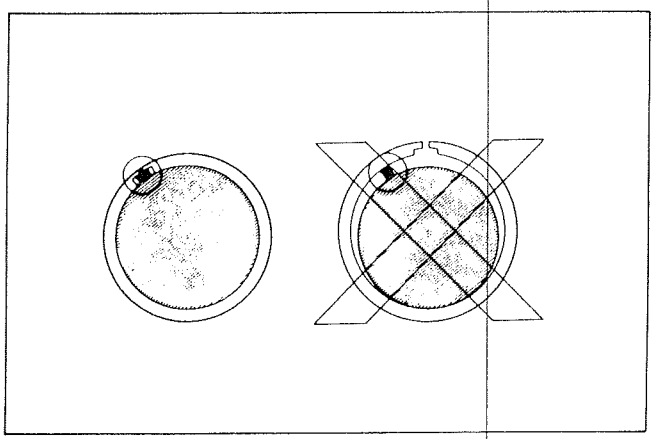


PISTON RINGS

- Both the 1st and 2nd rings are keystone type and identical in shape. The ring grooves on the piston are machined according to the shape of the piston rings. Therefore, the rings must be placed in the proper direction otherwise the piston will not fit in the cylinder.
- Each ring has a punched mark at its end and face it upside.

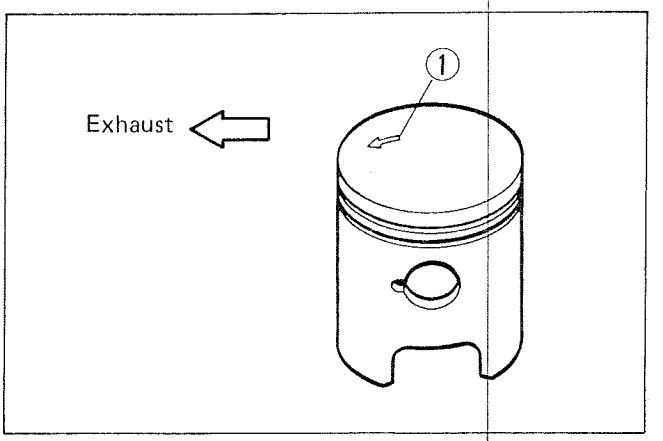


- It is extremely important that, when the piston is placed into the cylinder, each ring is properly positioned the locating pin as shown in the Fig.



PISTON

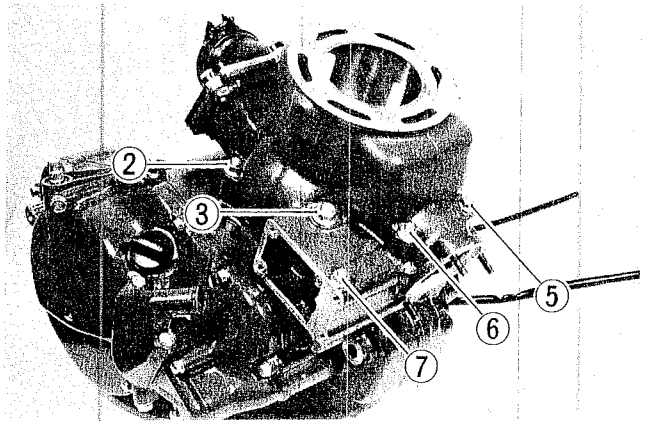
- Before connecting the piston to the connecting rod, be sure to apply SUZUKI CCI SUPER 2-CYCLE Oil or SUZUKI CCI Oil or two-stroke oil on the connecting rod big end and small end bearings.
- The arrow mark ① on the piston crown points to the exhaust port side.

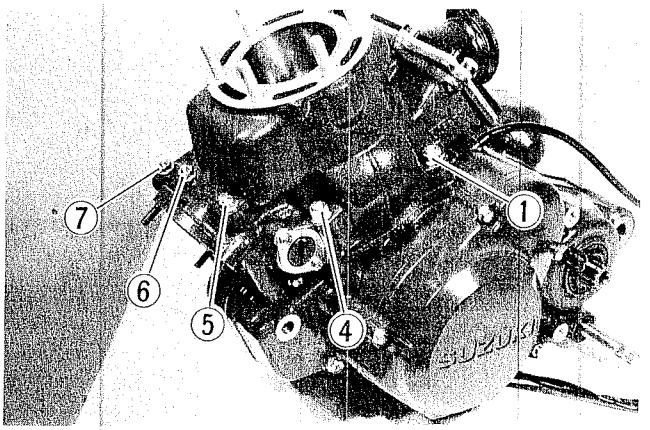


- Install the cylinder and tighten the cylinder base nuts to the specified torque in the ascending order of numbers indicated in Fig.

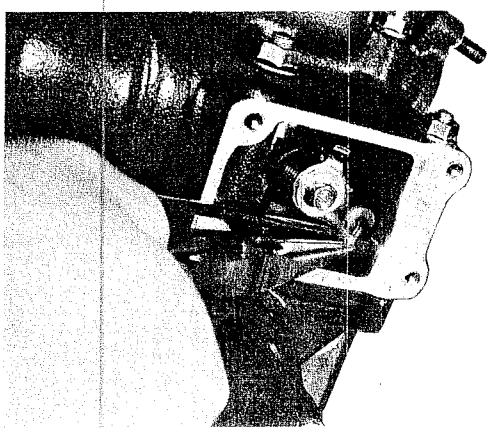
Tightening torque

No. 1, 2, 3, 4	8 mm	26 – 30 N·m (2.6 – 3.0 kg-m / 19.0 – 21.5 lb-ft)
No. 5, 6, 7	6 mm	8 – 12 N·m (0.8 – 1.2 kg-m / 6.0 – 8.5 lb-ft)

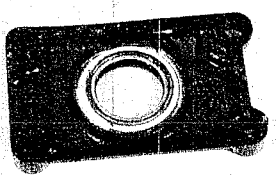




- Connect the exhaust valve rod to the exhaust valve lever No.1 by hooking the clip with a long-nose pliers.

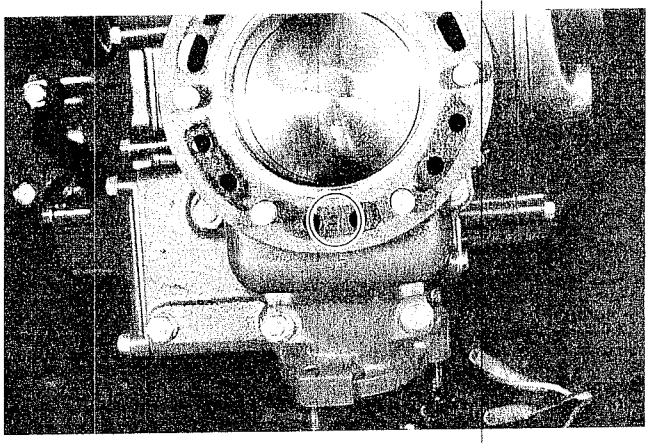


- Install the exhaust valve inspection window together with a new gasket.



- Fit a new cylinder head gasket.

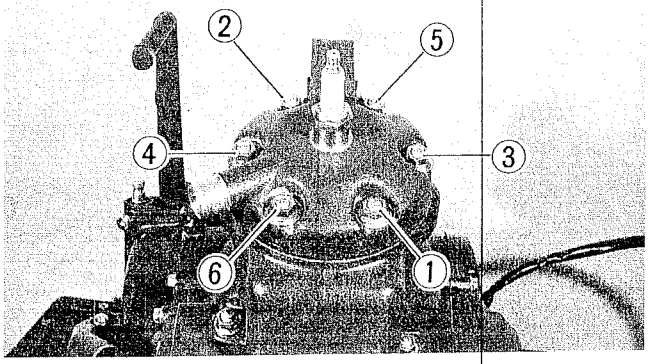
NOTE:
"E" mark of the gasket faces to the exhaust and up side.



- Install the cylinder head and tighten the cylinder head nuts to the specified torque in the ascending order of numbers.

Tightening torque

Initial	15 N·m (1.5 kg-m / 11.0 lb-ft)
Final	26 – 30 N·m (2.6 – 3.0 kg-m / 19.0 – 21.5 lb-ft)



COOLING SYSTEM

CONTENTS

COOLING SYSTEM 4- 1
COOLING SOLUTION 4- 1
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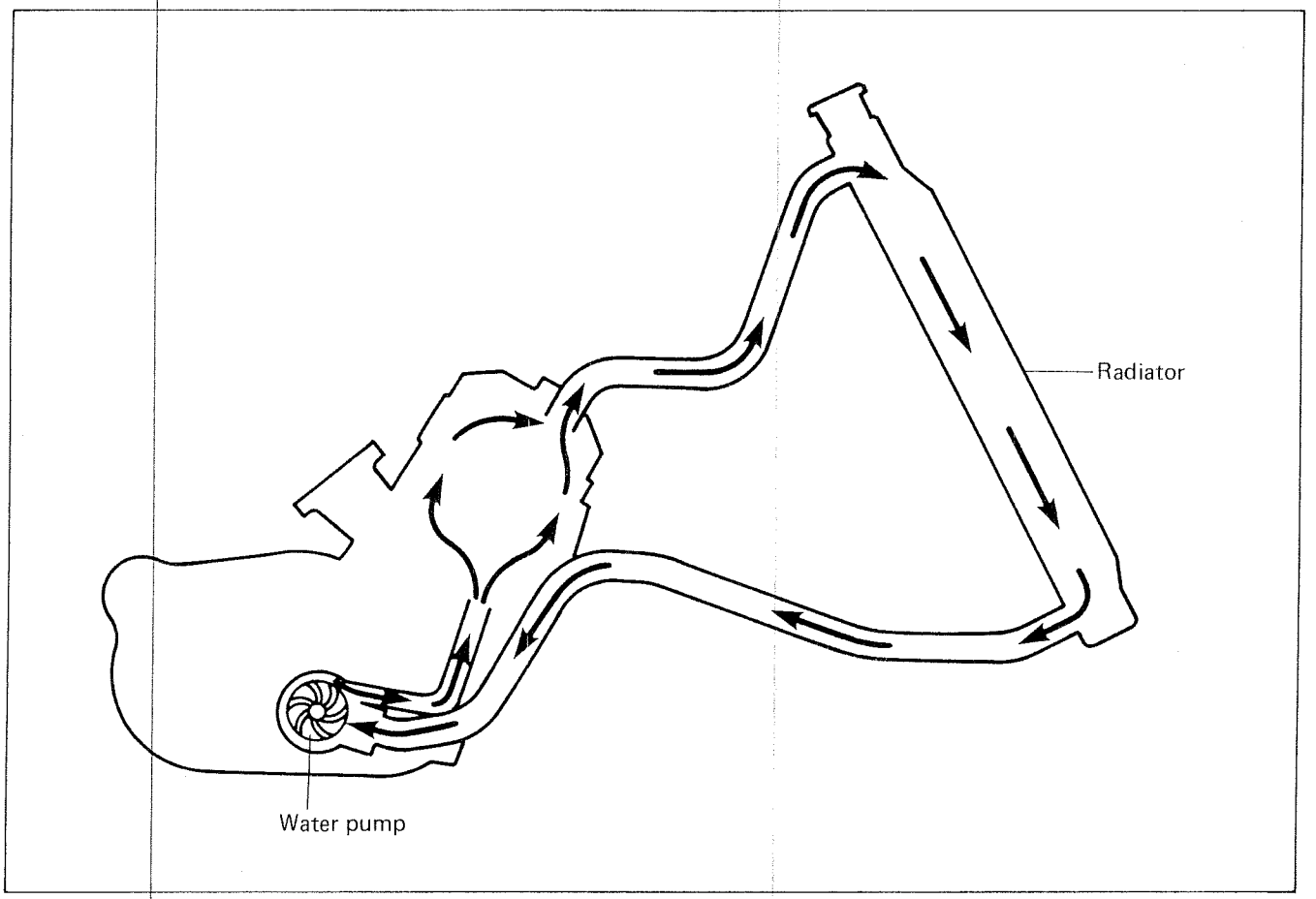
REMOVAL 4- 4
INSPECTION 4- 5
REMOUNTING 4- 5
WATER PUMP 4- 6
REMOVAL 4- 7
DISASSEMBLY 4- 7
INSPECTION 4- 9
REASSEMBLY 4-10

COOLING SYSTEM

The engine is cooled by coolant set in forced recirculation through jackets formed in the cylinder and head, and through the radiator. For the water pump, a high-capacity centrifugal pump is used. The radiator is a tube-and-fin type made of aluminum material, which is characterized by lightness in weight and good radiation.



COOLING SOLUTION

At the time of manufacture, the cooling system is filled with 50 : 50 solution of distilled water and anti-freeze/summer coolant. This 50 : 50 mixutre will provide excellent heat protection, and will protect the cooling system from freezing at temperatures above –31°C (–24°F).
If the motorcycle is to be exposed to temperatures below –31°C (–24°F), this mixing ratio should be increased up to 55% or 60% according to the Fig. 2.

NOTE:
Also included in the cooling solution at the time of manufacture is Bar's Leaks material to help ensure protection against coolant leakage.

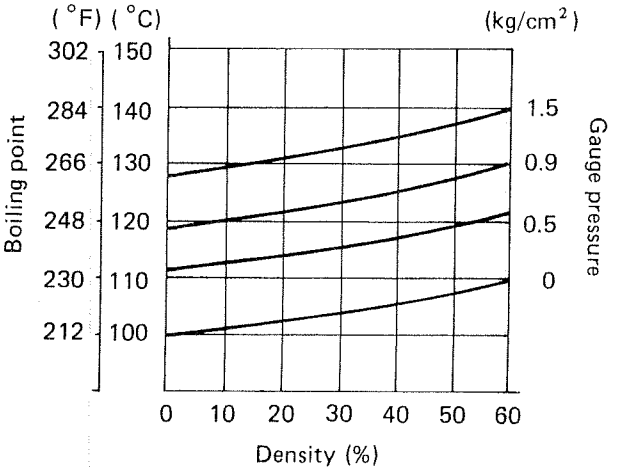


Fig. 1 Coolant density-boiling point curve

NOTE:
The characteristics of different anti-freezes vary. Read the label to know the protection you will have.

CAUTION:
Do not put in more than 60% anti-freeze or less than 50%. Do not mix different brands of anti-freeze.

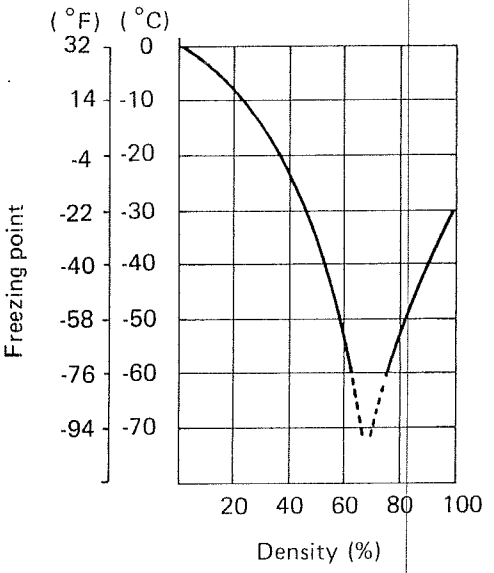


Fig. 2 Coolant density-freezing point curve

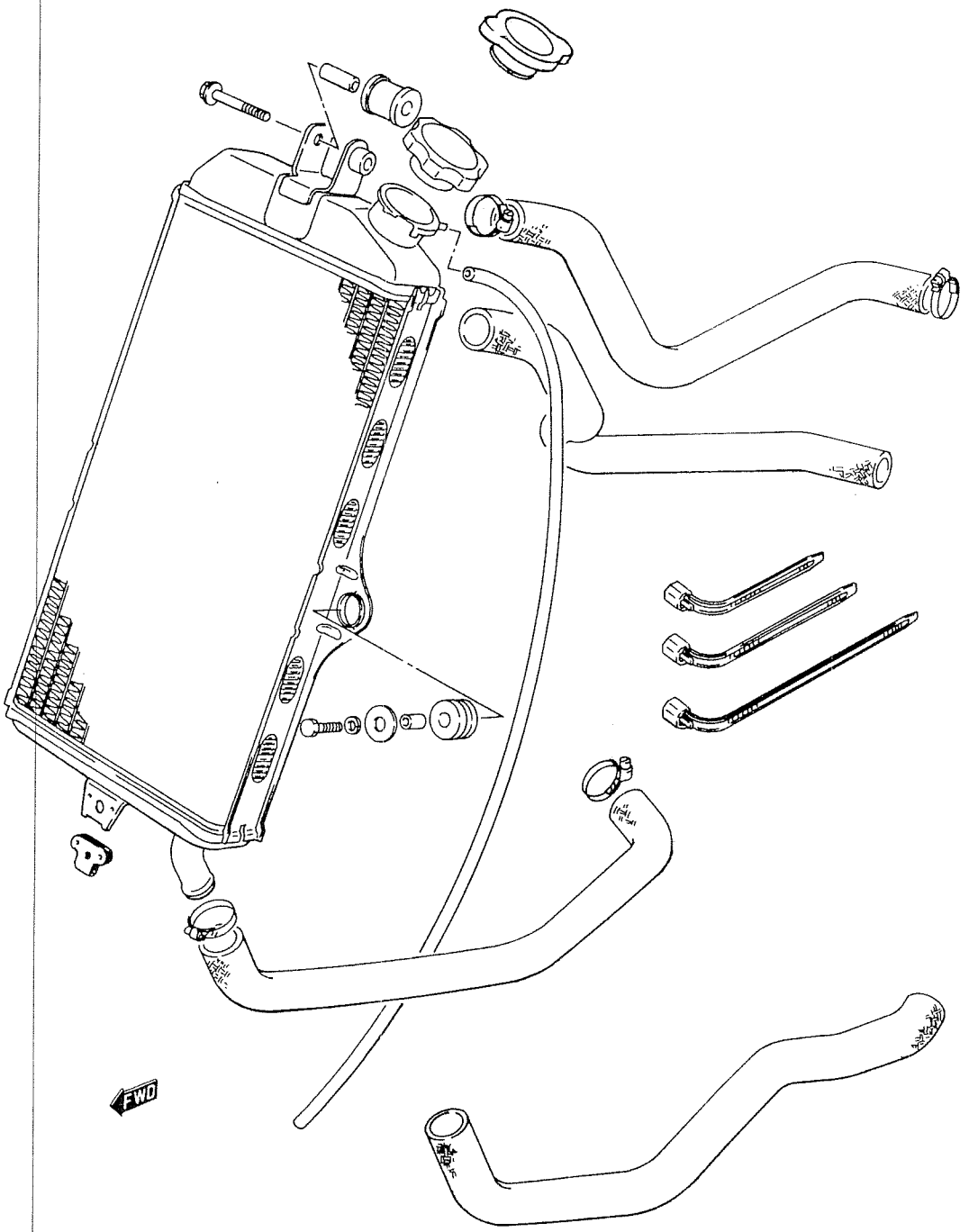
ANTI-LEAKAGE MATERIAL

The anti-freeze is characterized by very high values of permeability and a leakage accident of the cooling system is highly likely. The anti-leakage substance is used to prevent such a possible leakage and every new motorcycle is serviced with "Bar's Leaks". The same material or its equivalent should be filled in the radiator when the cooling water is changed. "Bar's Leaks" is available as spare parts in solid form. A suitable amount for use is 1/5 pack per model, and in the case of a liquid anti-leakage material available in the market, 13 — 14 ml (cc) should be used.

09900-24240	Bar's Leaks Not available in U.S. model

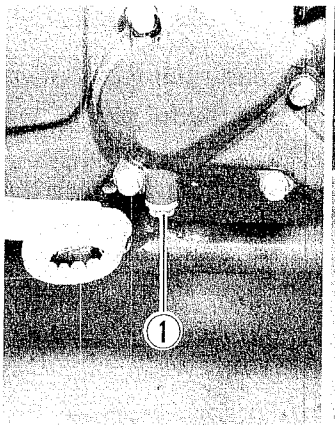
CAUTION:
Anti-leakage material should not be added except the time of the renewal of cooling water.

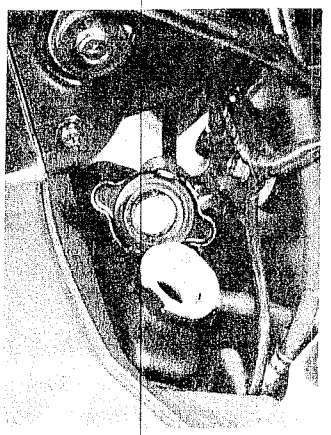
RADIATOR



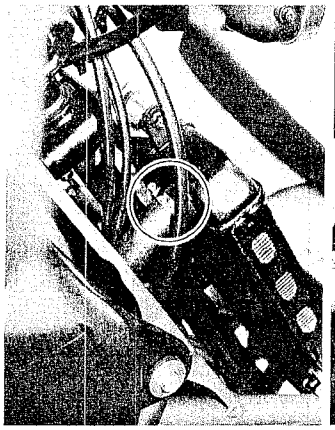
REMOVAL

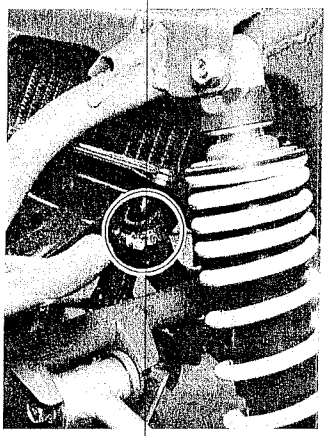
- Remove the radiator cover.
- Remove the drain plug ① and radiator cap to drain coolant completely. (Refer to page 2-9)



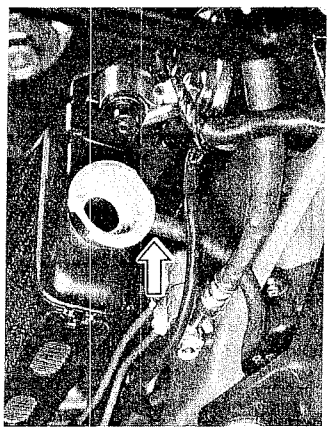


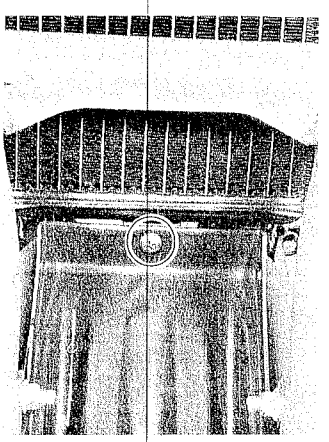
- Remove the front fender. (Refer to page 7-1)
- Disconnect the radiator hoses by loosening the clamp screws.



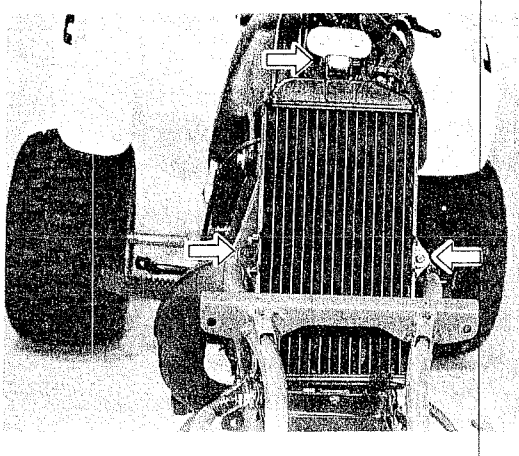


- Disconnect the breather pipe.
- Remove the front radiator cover by removing the screw.





- Remove the radiator by removing the securing bolts.



INSPECTION

Before removing the radiator and draining coolant inspect the radiating system for the following two items.

1. With coolant filled to the filler neck, test the cooling system for tightness using a radiator tester (commercially available) in the following manner:

- Remove the radiator cap and connect the tester ① to the filler neck.
- Give a pressure of about 1 kg/cm² (14.2 psi) and see if the system holds this pressure for 10 seconds. If not, repair or replace the leaking components.

WARNING:

The engine must be cool before servicing the cooling system, or scalding may result.

2. Test the radiator cap ② for relieving pressure using the radiator tester in the following manner:

- Fit the cap to the tester and build up pressure slowly by operating the tester. Make sure that the pressure built-up stops at 1.1 ± 0.15 kg/cm² and that, with the tester held at a standstill, the cap is capable of that pressure for at least 10 seconds. Replace the cap if it is found not to satisfy either of these two requirements.

Radiator cap valve release pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm², 15.6 ± 2.1 psi)

NOTE:

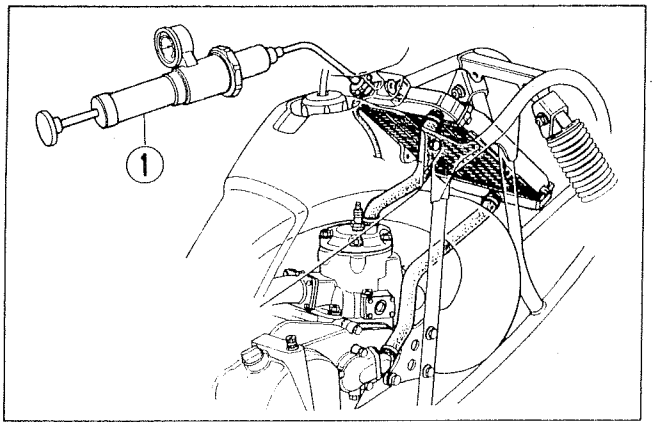
Before installing the cap to the tester, apply water to sealing surfaces.

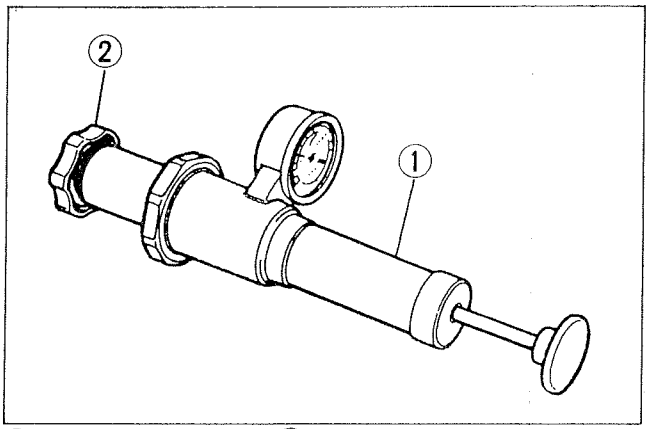
3. Road dirt or trash stuck to the radiator fins must be removed. Use of compressed air is recommended for this cleaning. Fins bent down or dented can be repaired by straightening them with the blade of a small screwdriver.
4. Any water hose found in a cracked condition or flattened must be replaced.

REMOUNTING

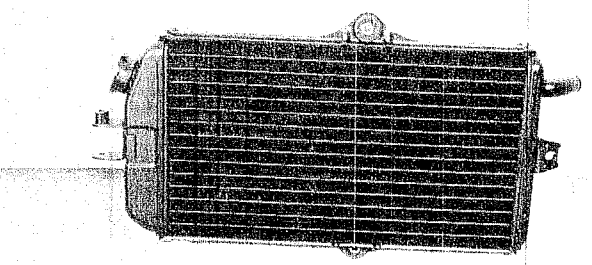
Remount the radiator in the reverse order of the removal. Also, pay attention the following points.

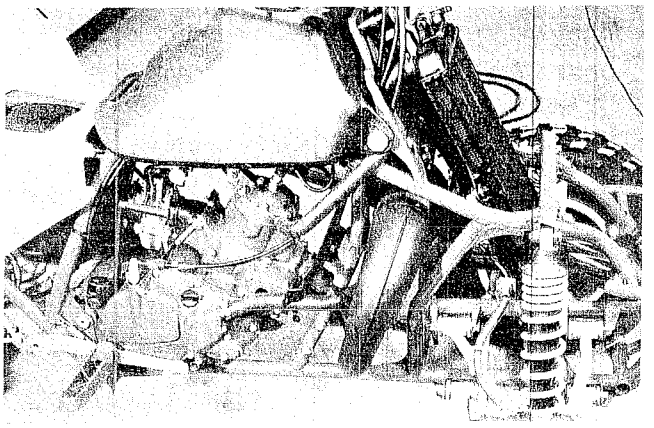
- Remount the radiator side bolts, right and left.
- Connect the overflow hose.





① Radiator cap tester ② Radiator cap



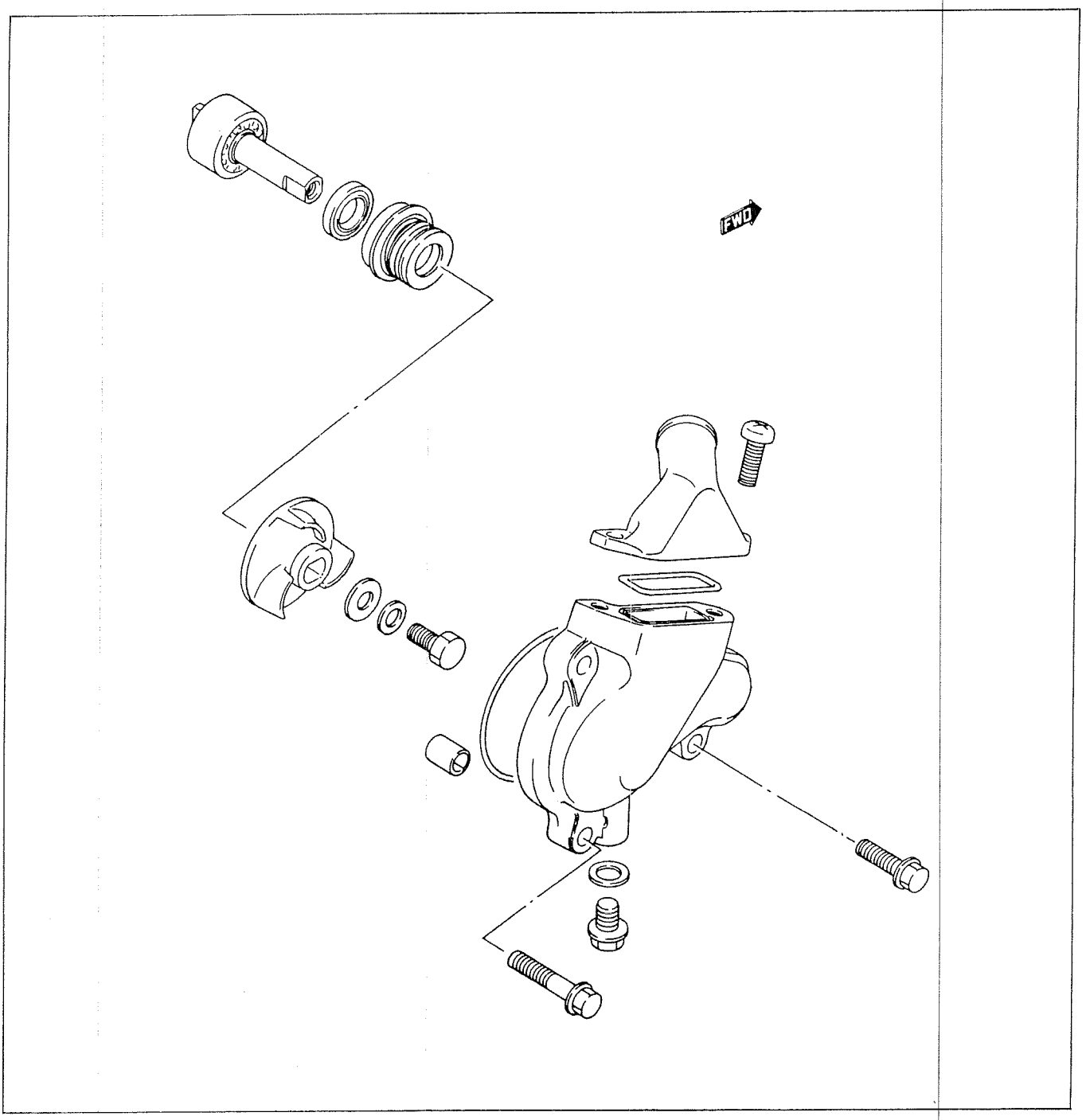


- Connect the radiator hoses with the white mark facing up and tighten the clamp with the specified torque.

Tightening torque	2 – 2.5 N·m (0.2 – 0.25 kg-m 1.4 – 1.8 lb-ft)

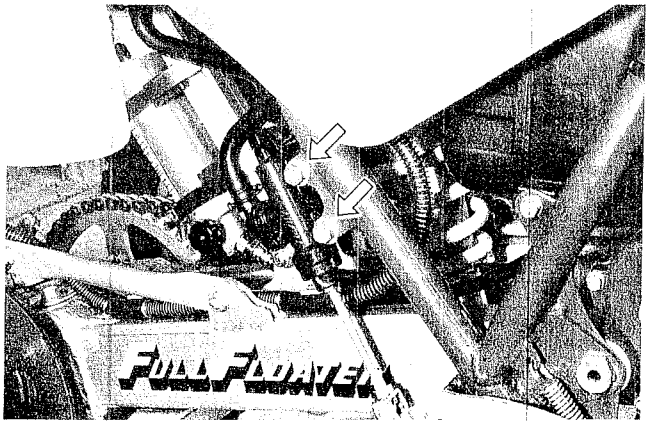
- Refill the radiator with coolant. (Refer to page 2-10)
- Finally inspect the radiating system.

WATER PUMP

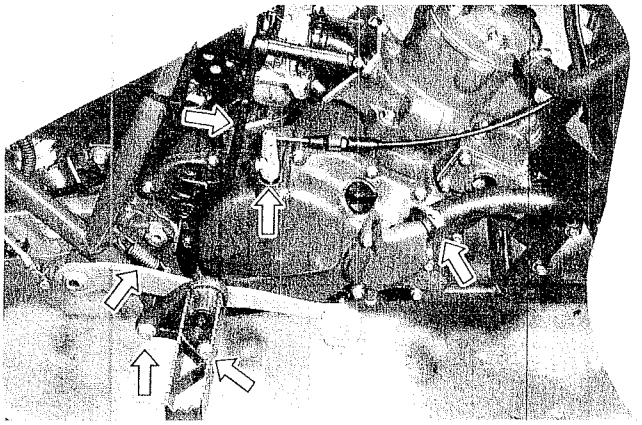


REMOVAL

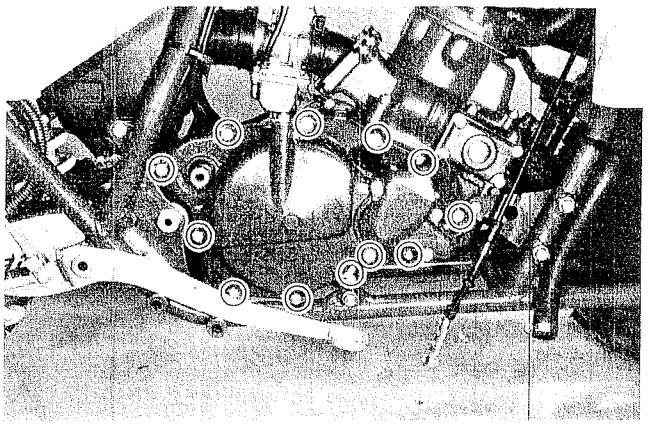
- Drain the coolant. (Refer to page 2-10)
- Drain the transmission oil. (Refer to page 2-7)
- Remove the rear brake master cylinder by removing the two securing bolts.



- Remove the clutch cable. (Refer to page 2-6)
- Disconnect the radiator hose.
- Remove the kick starter lever.
- Remove the rear brake return spring.
- Remove the right footrest by removing the two bolts.

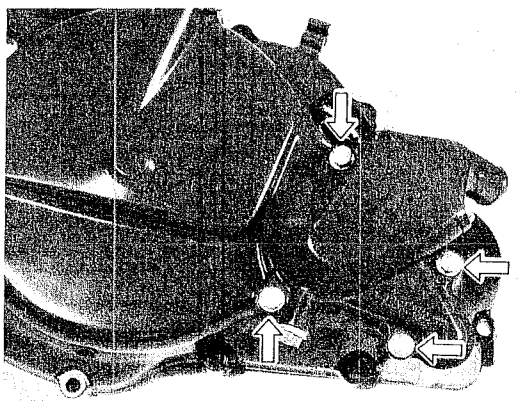


- Remove the clutch cover bolts.
- Remove the clutch cover.



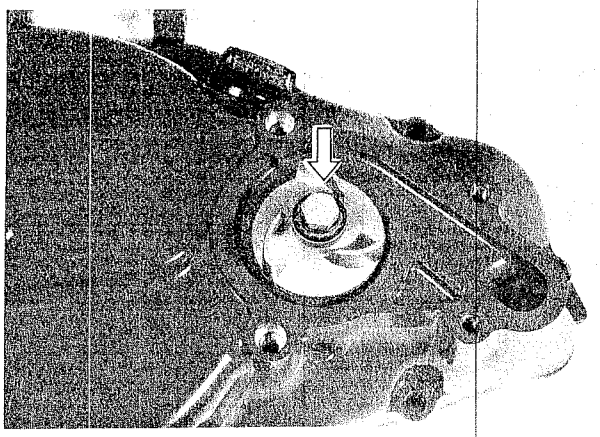
DISASSEMBLY

- Remove the water cover by removing four bolts.



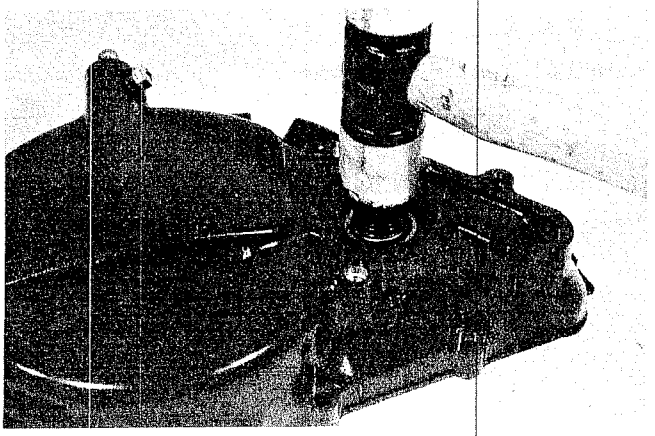
- Remove the water pump bolt while holding the water pump shaft.

NOTE:
The water pump bolt is left-hand thread.

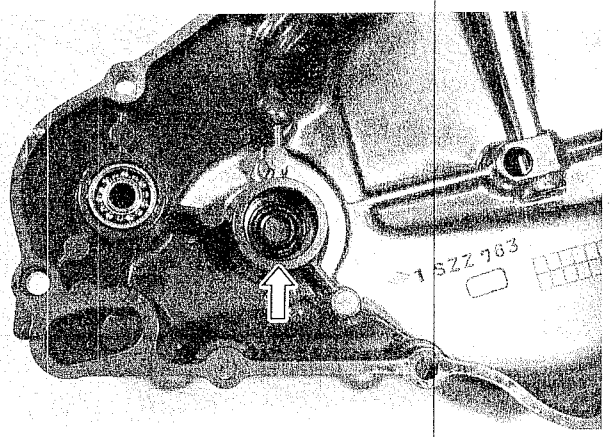


- Remove the impeller.

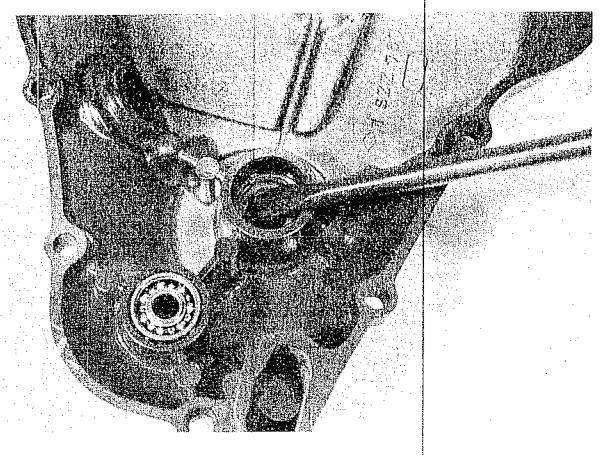
- Remove the water pump shaft by hitting it with plastic hammer.



- Remove the oil seal.

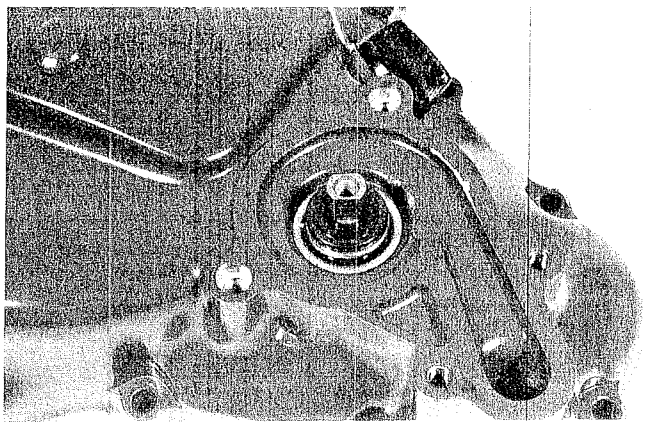


- Drive out the mechanical seal using a proper socket wrench.

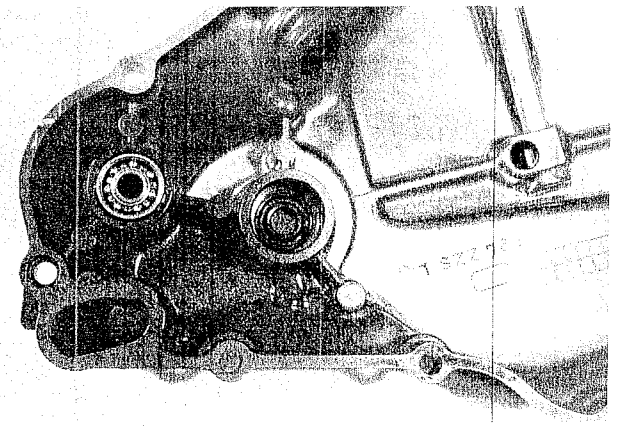


INSPECTION

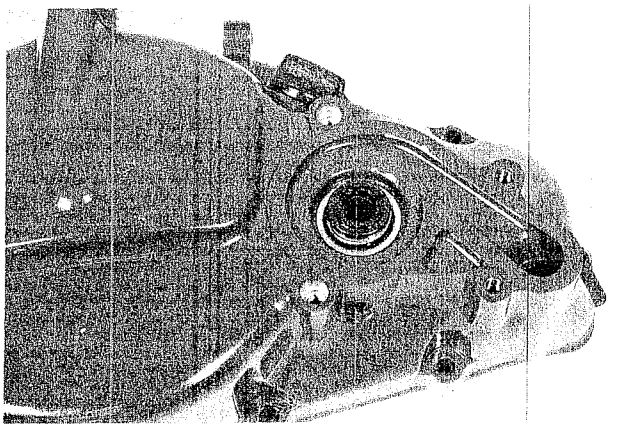
- Inspect the water pump bearing for looseness and damage by moving the pump shaft while remaining it on the clutch cover.



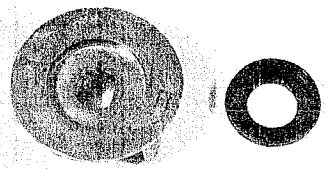
- Inspect the oil seal and if any damage is found replace it with a new one.



- Inspect the mechanical seal and if any damage is found replace it with a new one.



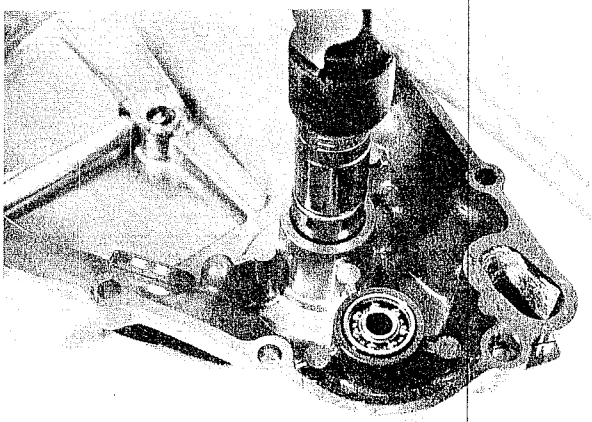
- Inspect the ceramic plate and oil seal at the back-side of the impeller. If any damage is found replace the impeller.



REASSEMBLY

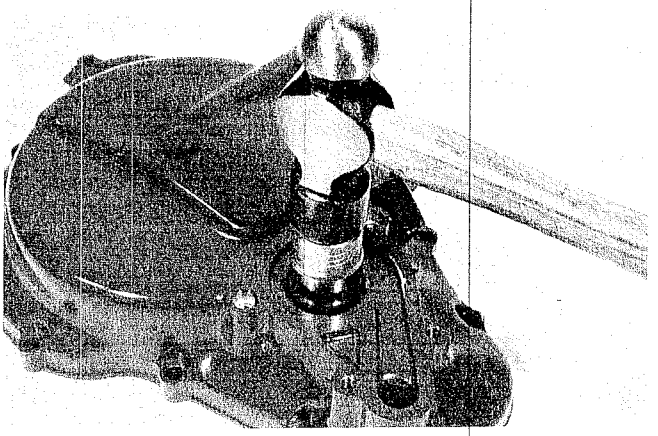
Reassemble the water pump in the reverse order of the disassembly, and also carry out the following steps:

- Drive a new oil seal with a proper socket wrench.
- Apply SUZUKI SUPER GREASE "A" to the oil seal lip.



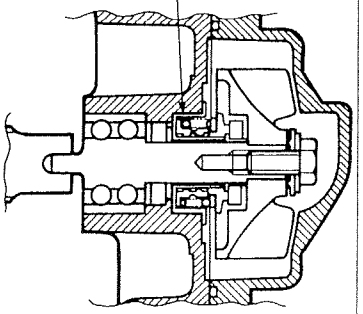
99000-25030 For U.S. model	SUZUKI SUPER GREASE "A"
99000-25010 For other models	

- Drive a new mechanical seal with a proper socket wrench.
- Apply the SUZUKI BOND NO. "1207B"/"1215" to the mating surface of the mechanical seal as shown in the illustration.

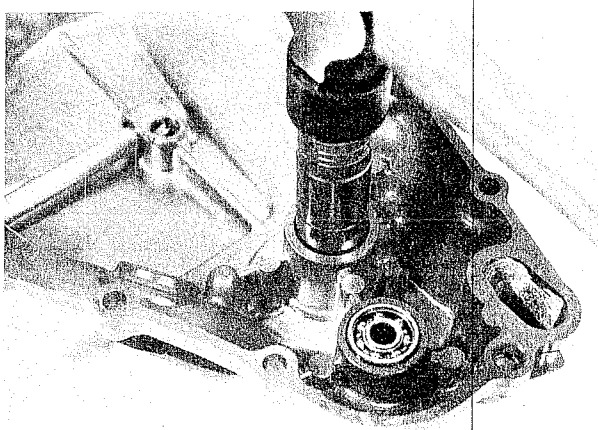


99104-31140 For U.S. model	SUZUKI BOND NO. "1207B"
99000-31110 For other models	SUZUKI BOND NO. "1215"

Apply SUZUKI Bond No. "1207B"/"1215" to mating surface of mechanical seal.



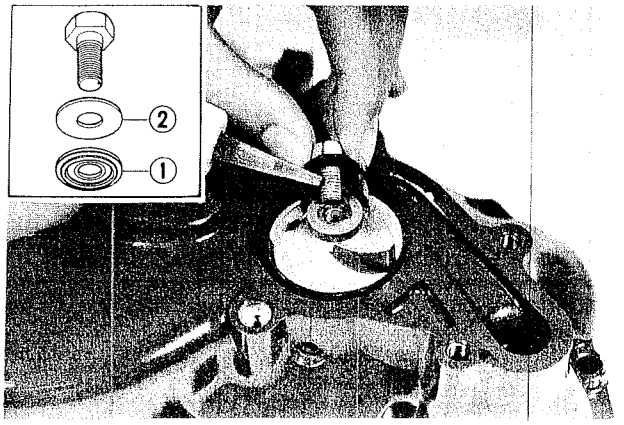
- Drive the water pump shaft with a proper socket wrench.



Apply THREAD LOCK SUPER "1303" to the impeller bolt and tighten it to the specified torque.

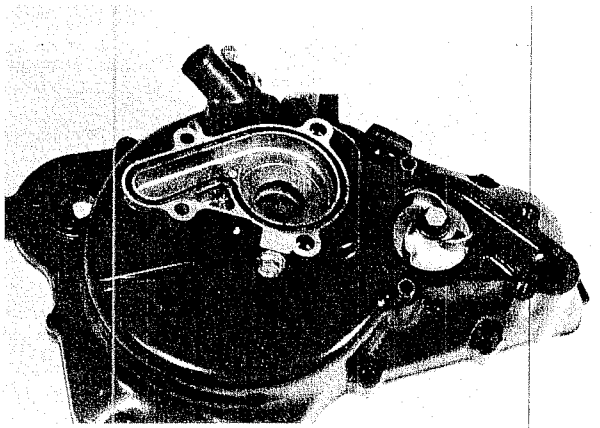
99000-32030	THREAD LOCK SUPER "1303"

Tightening torque	8 – 12 N·m (0.8 – 1.2 kg-m / 6.0 – 8.5 lb-ft)



CAUTION:
Use a new gasket ① for the impeller bolt. When installing the gasket, face the iron side to the spring washer ② and bolt.

- Install the dowel pins and a new O-ring.



- Connect the radiator hoses and tighten the clamps to the specified torque.

Tightening torque	2 – 2.5 N·m (0.2 – 0.25 kg-m / 1.4 – 1.8 lb-ft)

- Refill transmission oil. (Refer to page 2-7)
- Refill coolant. (Refer to pages 2-10, 4-1)
- Inspect the radiating system. (Refer to page 4-5)
- Adjust the clutch cable play. (Refer to page 2-6)
- Adjust the brake pedal height if necessary. (Refer to page 2-14)

FUEL SYSTEM

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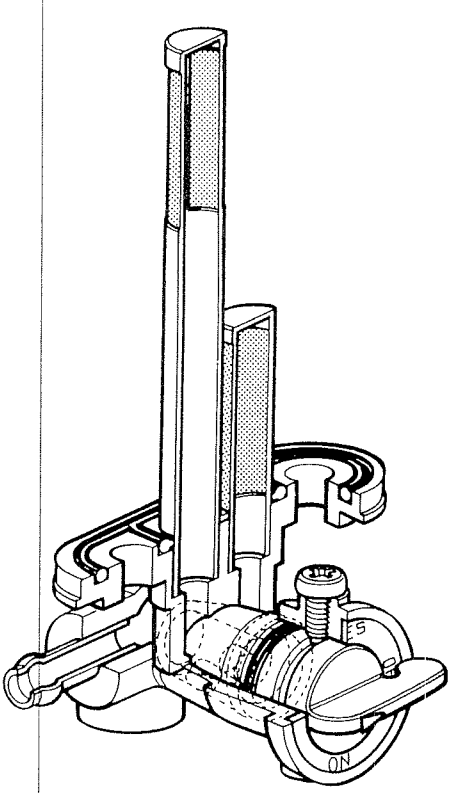
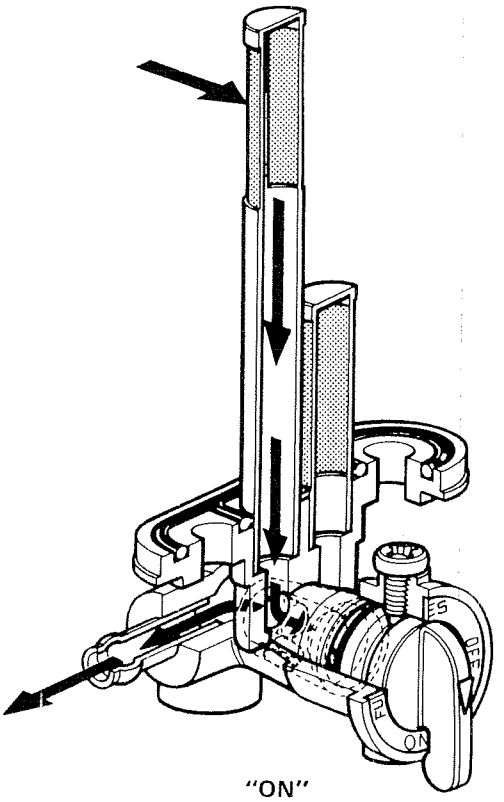
REASSEMBLY AND REMOUNTING 5-11

FUEL COCK

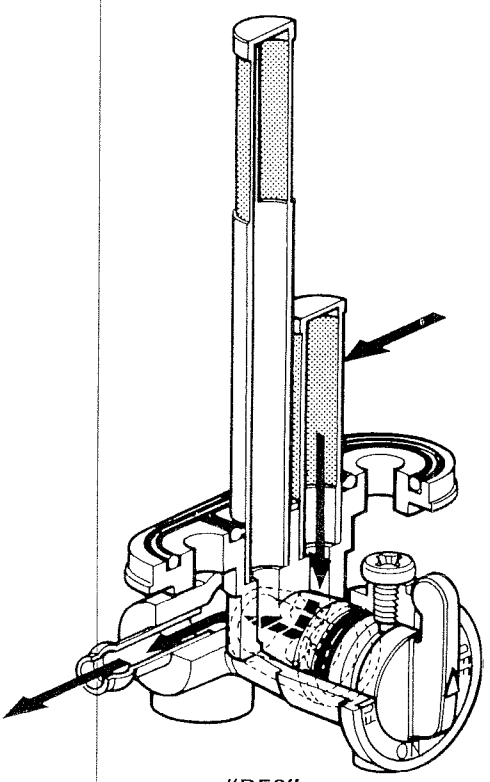
This fuel cock can be switched to three passages "OFF", "ON" and "RES" by the valve operated together with the fuel cock lever as shown below.



"OFF"



"ON"



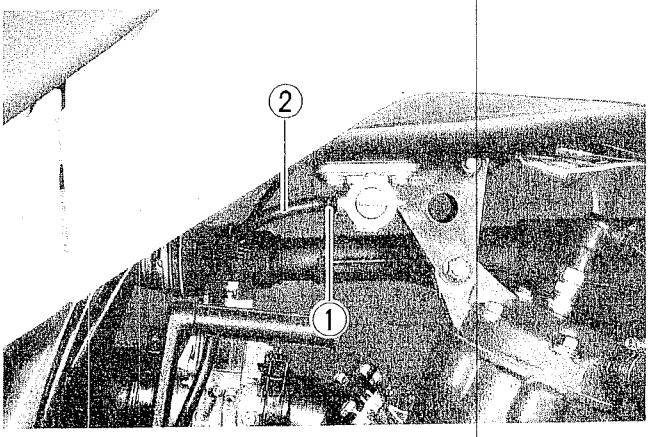
"RES"

Fuel

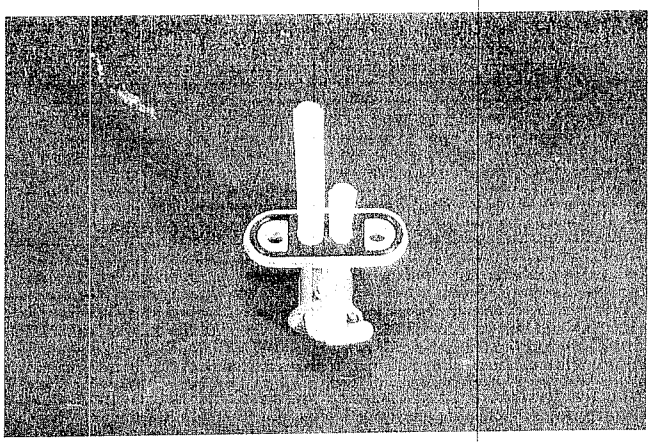
REMOVAL

- Turn the fuel cock to "OFF" position.
- Slide the clip ① and disconnect the fuel hose ② from the carburetor.
- Turn the fuel cock to "RES" position and drain fuel completely to a clean container.

WARNING:
Gasoline is very explosive. Extreme care must be taken.



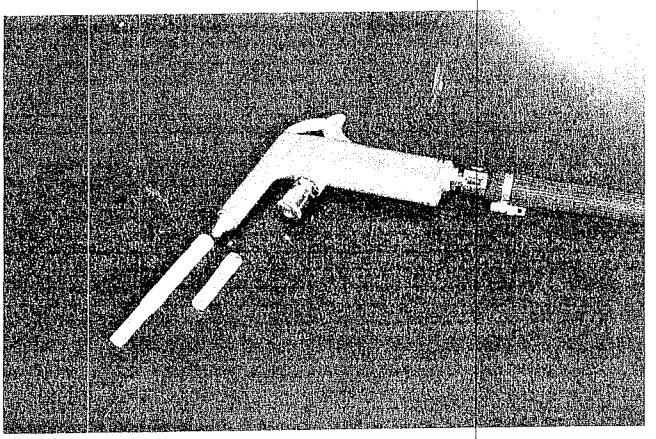
- Remove the two screws and remove the fuel cock assembly.



- Remove the gasket and the fuel filters.

CLEANING

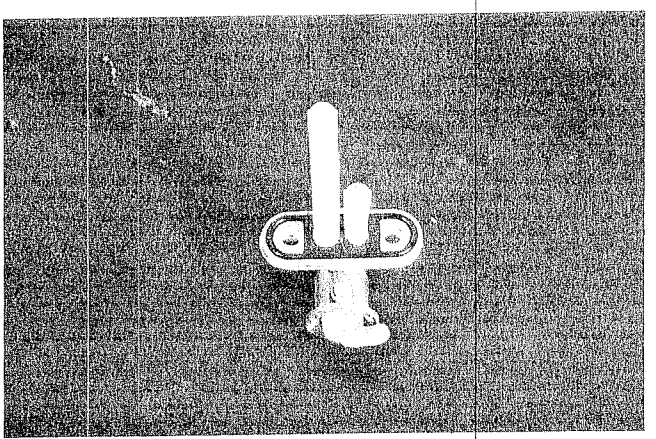
Rust or foreign matter in the fuel tends to build up on the filter, which, when the filter has been neglected for a long period, inhibits the flow of fuel.
Wash the strainer with non-flammable cleaning solvent and blow compressed air through it to dry off solvent.



REMOUNTING

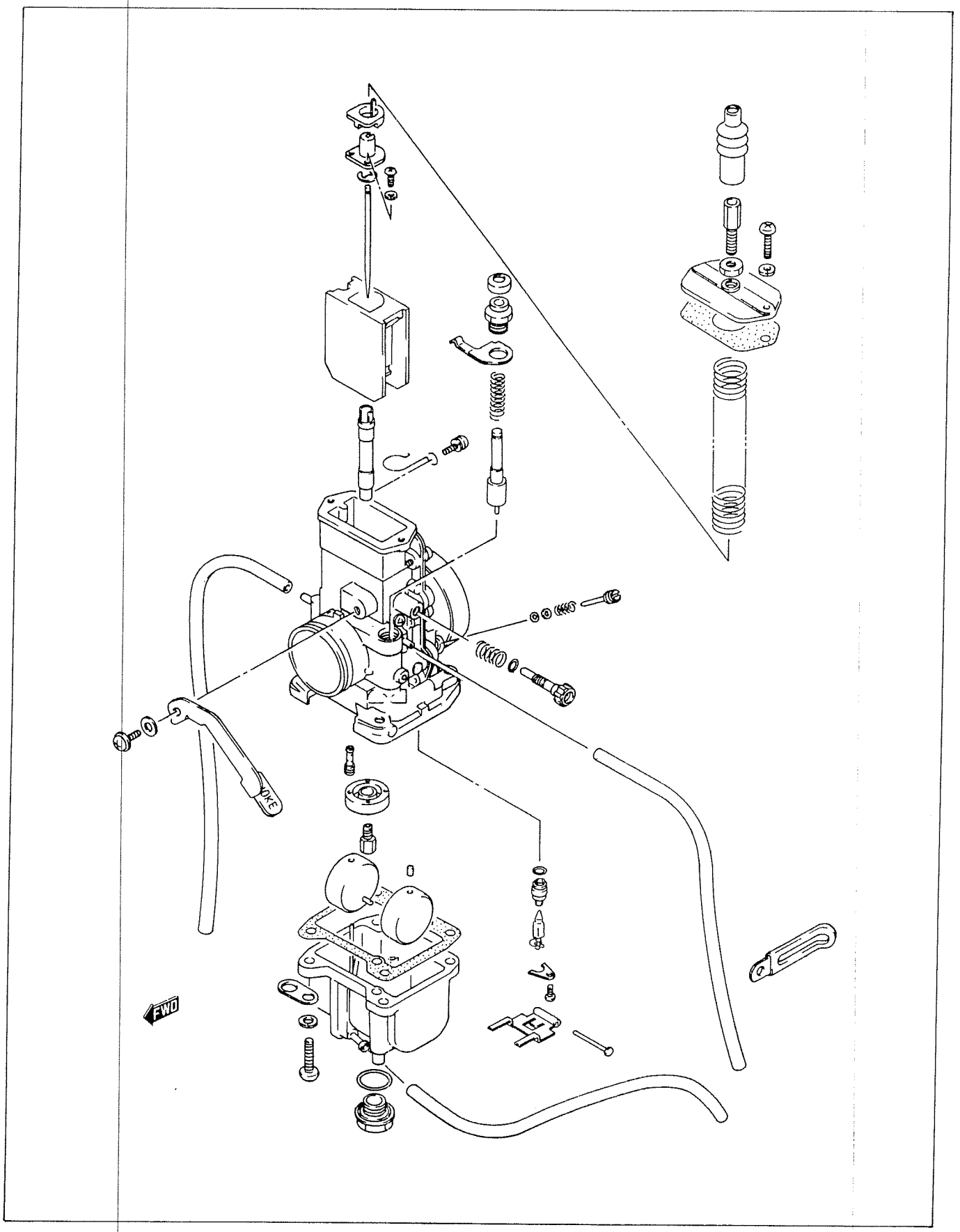
Remount the fuel cock in the reverse order of the removal.

NOTE:
Route the fuel hose properly.



WARNING:
Gasket must be replaced with a new one to prevent fuel leakage when reinstalling the fuel cock to the fuel tank, and is seated properly.

CARBURETOR



SPECIFICATIONS

ITEM		SPECIFICATION
Carburetor type		TM34SS
Bore size		34 mm (1.3 in)
I.D. No.		01C00
Idle r/min.		1400 ± 50 r/min.
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)
Main jet	(M.J.)	# 240 (Spare main jet # 200, # 220, #250)
Jet needle	(J.N.)	6FP60-3rd
Needle jet	(N.J.)	Q-8
Cut-away	(C.A.)	4.0
Pilot jet	(P.J.)	# 37.5
By pass	(B.P.)	1.2 mm
Pilot outlet	(P.O.)	0.8 mm
Air screw	(A.S.)	1½ turn out
Valve seat	(V.S.)	3.3 mm
Starter jet	(G.S.)	# 110
Throttle cable play		0.5 – 1.0 mm (0.02 – 0.04 in)

SETTING TABLE

TYPICAL CONDITION SETTING

The following table shows the carburetor setting selections by typical conditions which particularly affect the carburetion to a large degree. When adjusting the carburetion, refer to this table for finding suitable jet selections.

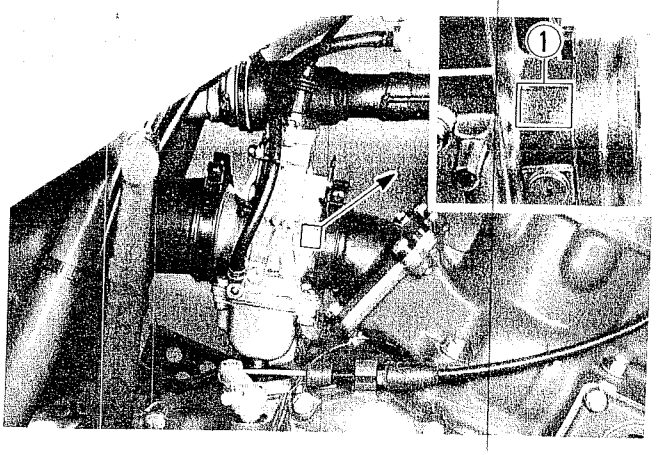
Altitude \ Atomospheric temperature		Below 5°C (41°F)	5 – 25°C (41–77°F)	Above 25°C (77°F)
0–1500 m (0–5000 ft)	Main jet	# 250	# 240	# 220
	Jet needle	4th	3rd	2nd
	Air screw	1 turn out	1½ turn out	2 turn out
Above 1500 m (5000 ft)	Main jet	# 240	# 220	# 200
	Jet needle	3rd	2nd	2nd
	Air screw	1½ turn out	1¾ turn out	2 turn out

Each one of the main jet is included in the spare parts. The list below is part No. of each main jet.

Part name	Part No.
Main jet # 200	09491-40004
Main jet # 220	09491-44001
Main jet # 240	09491-46001
Main jet # 250	09491-50003

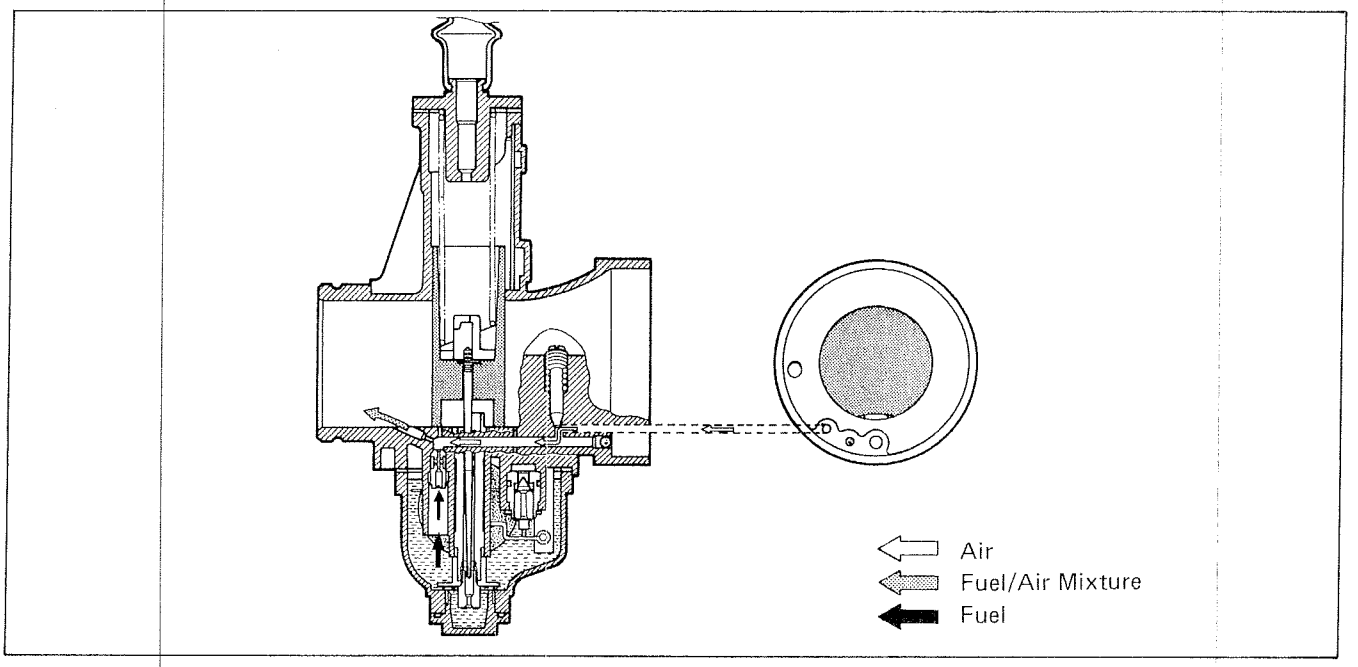
I.D. NO. LOCATION

Each carburetor has I.D. Number ① printed on the carburetor body according to its specifications.



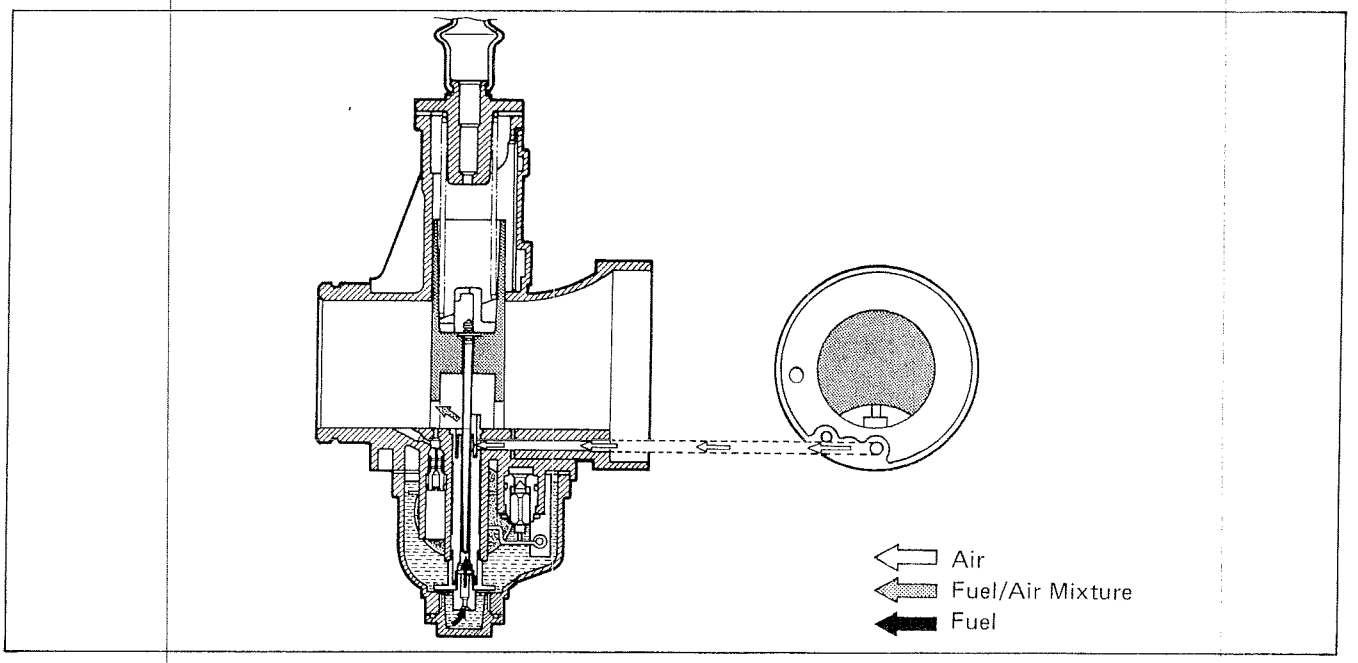
SLOW SYSTEM

This system supplies fuel during engine operation with piston valve closed or slightly opened.
The fuel metered by the pilot jet is mixed with the proper amount of air metered by the pilot air screw and is separated into fine particles. Mixture then exits into the main bore through the pilot outlet.
The air screw controls the amount of mixture. When the piston valve opens a little, the mixture jets through the by-pass and the pilot outlet.



MAIN SYSTEM

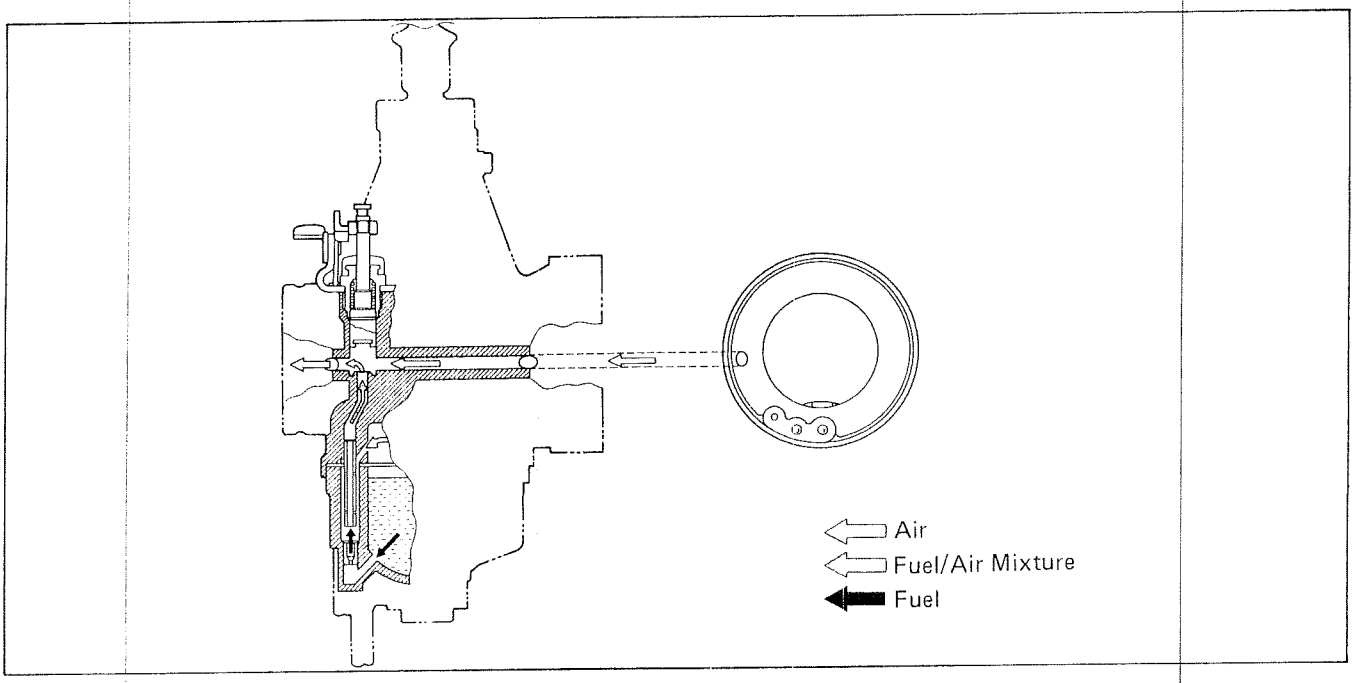
This system supplies fuel during engine operation when the piston valve is 1/4 – Full open.
The fuel passes through the main jet and mixes with air metered by the main air jet. The mixture passes by the clearance between the needle jet and jet needle and then exits into the main bore after being metered by the jet needle.



STARTER SYSTEM

When the starter plunger is lifted, the fuel metered by the starter jet is mixed with air coming from the float chamber. This mixture, rich with fuel, flows into the plunger area and mixes again with air coming from the starter air passage.

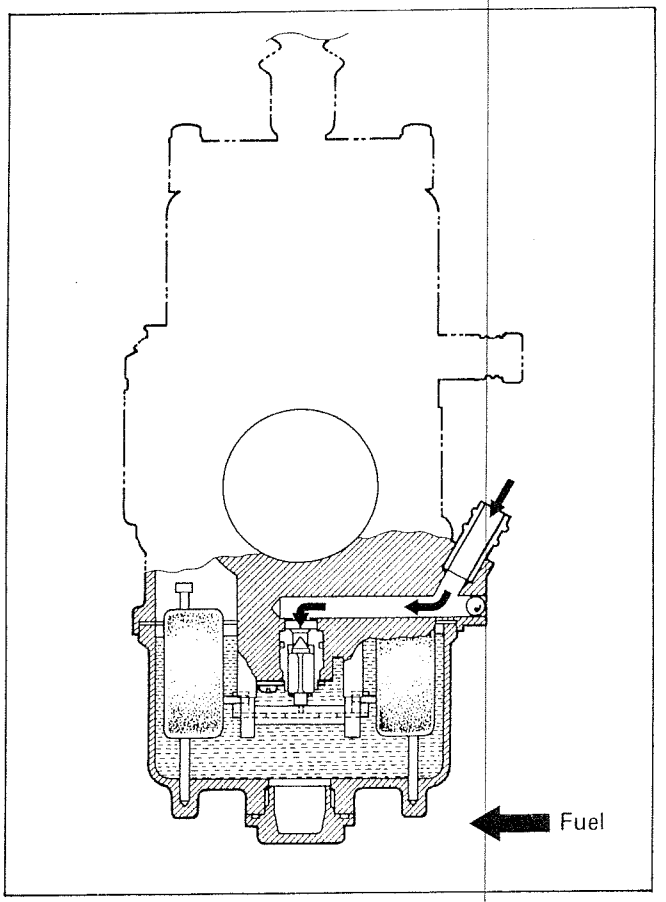
The two successive mixings of fuel with air are such that a proper fuel/air mixture for starting is produced when the mixture is sprayed out through the starter outlet into the main bore.



FLOAT SYSTEM

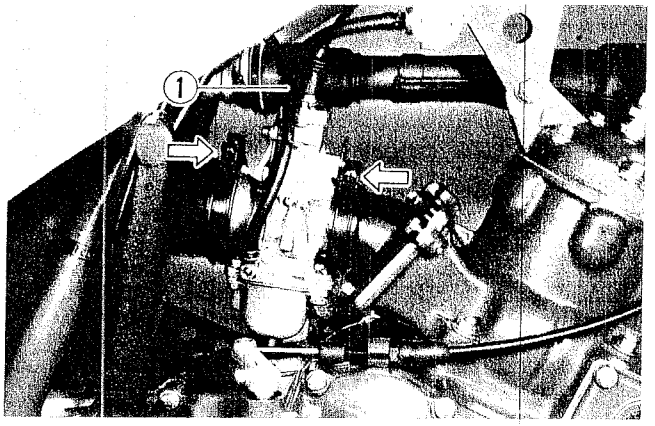
The floats and needle valve are associated with the same mechanism, so that, as the floats move up and down, the needle valve too moves likewise. When the fuel level is up in the float chamber, the floats are up and the needle valve remains pushed up against valve seat. Under this condition, no fuel enters the float chamber.

As the fuel level falls, the floats go down and the needle valve unseats itself to admit fuel into the chamber. In this manner, the needle valve admits and shuts off fuel alternately to maintain a practically constant fuel level inside the float chamber.

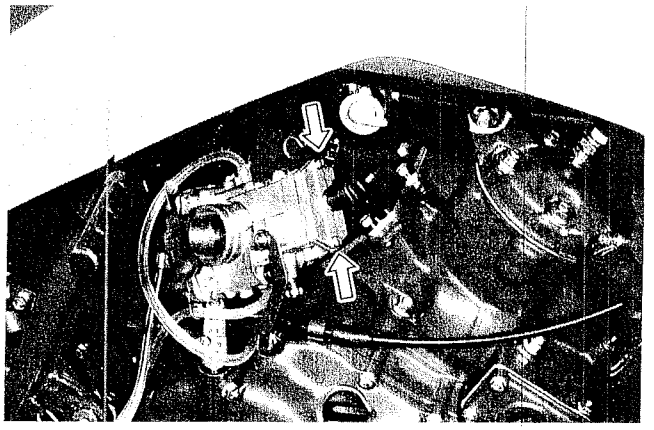


REMOVAL AND DISASSEMBLY

- Turn the fuel cock to "OFF" position.
- Slide the clip and disconnect the fuel hose ①.
- Loosen the two carburetor clamp screws and remove the carburetor.

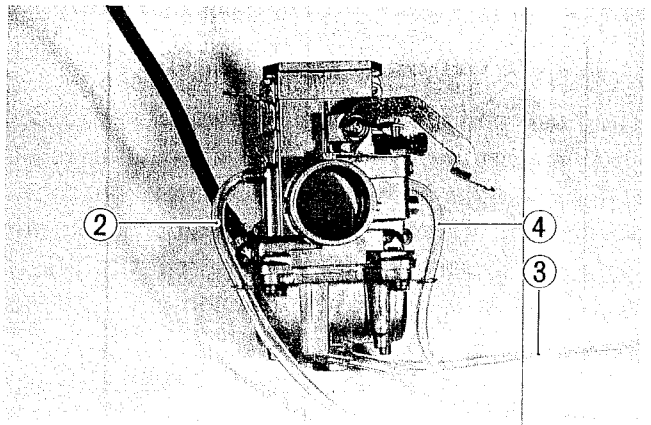


- Remove the two screws and remove the throttle valve assembly.
- Remove the two clamps and remove the carburetor from the machine.



- Disconnect the overflow pipe ② and breather hoses ③, ④.

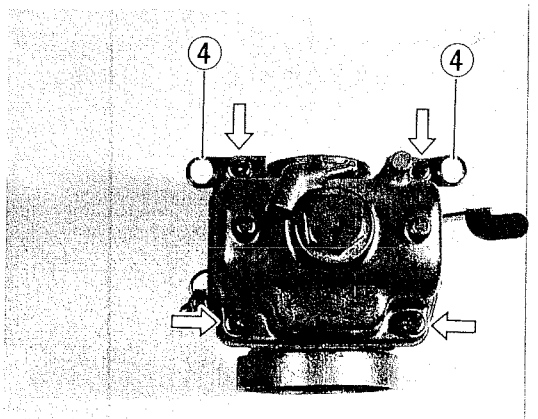
No.	Length Unit: mm (in)
②	355 (14.0)
③	230 (9.1)
④	290 (11.4)



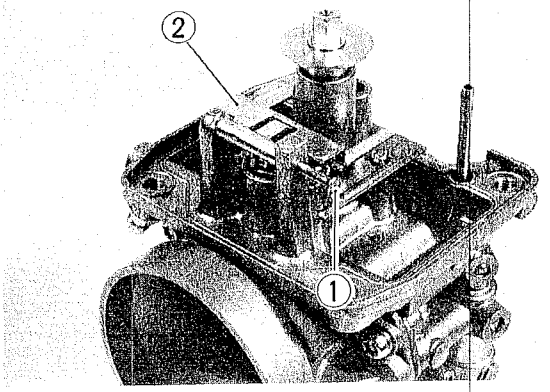
- Remove the screws with the special tool and remove the float chamber body.

09900-09003	Impact driver set

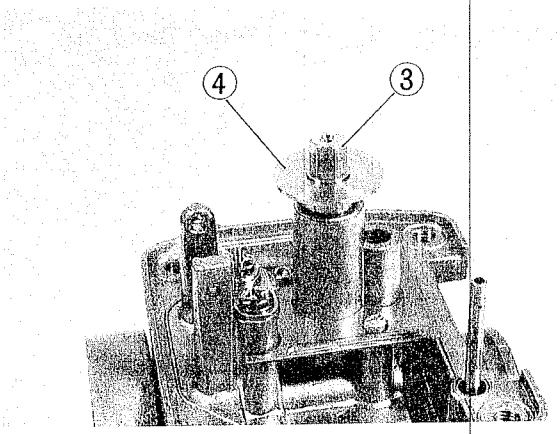
NOTE:
Do not loose the breather hose guides ④.



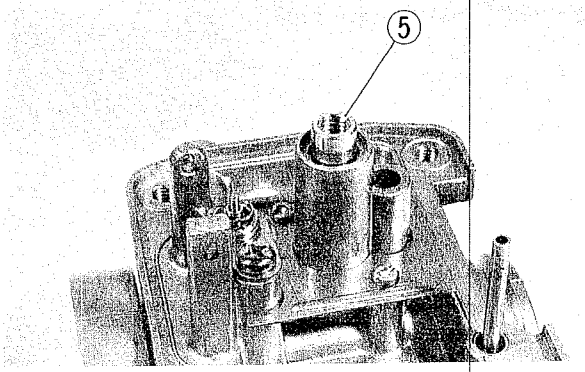
- Pull out the float arm pin ① and remove the float arm ②.



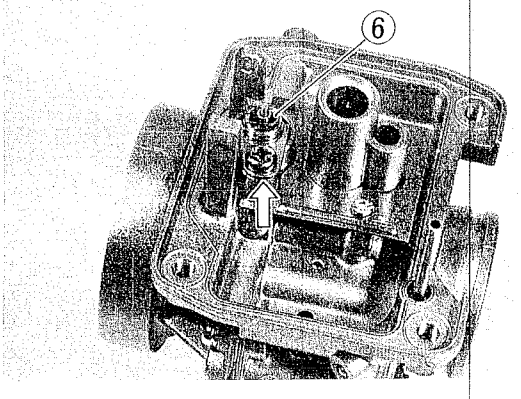
- Remove the main jet ③ and ring ④.



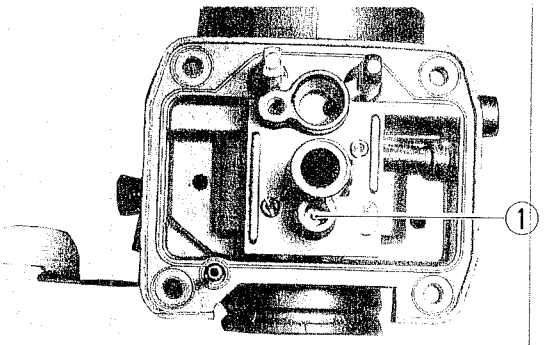
- Remove the needle jet ⑤.



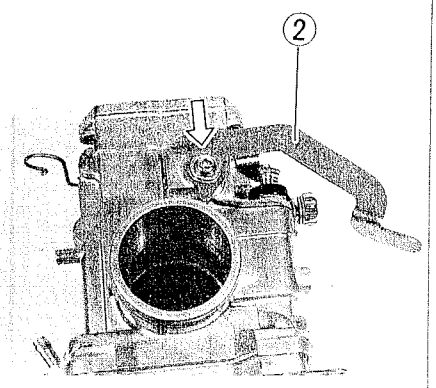
- Remove the needle valve ⑥ by removing the securing screw.



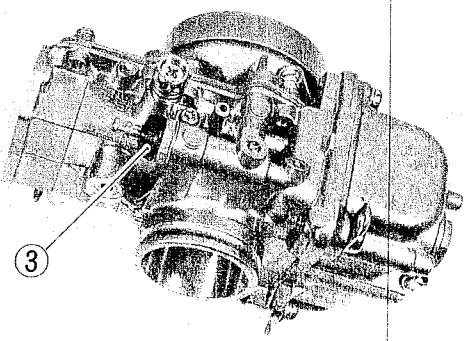
- Remove the pilot jet ①.



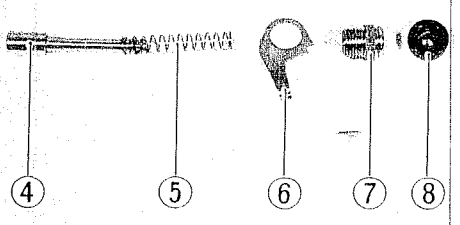
- Remove the lever ② by removing the screw.



- Remove the starter plunger ③.
- Separate the starter plunger.

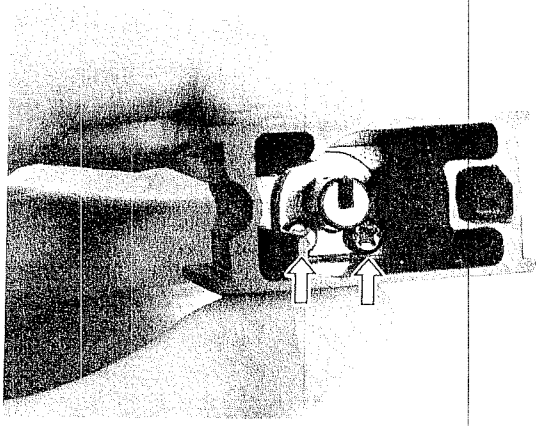


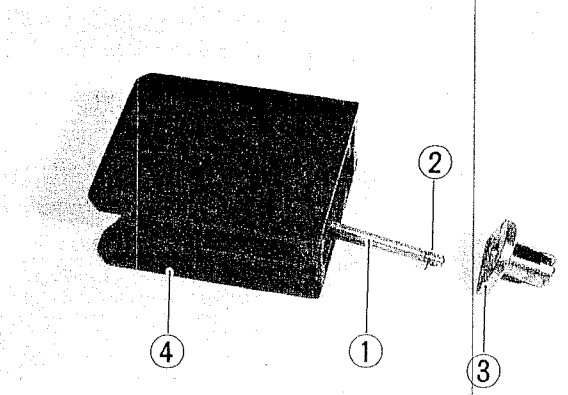
④ Plunger
⑤ Spring
⑥ Guide
⑦ Cap bolt
⑧ Boot



- Remove the two screws and separate the throttle valve assembly.

① Jet needle
② E-ring
③ Stopper plate
④ Throttle valve





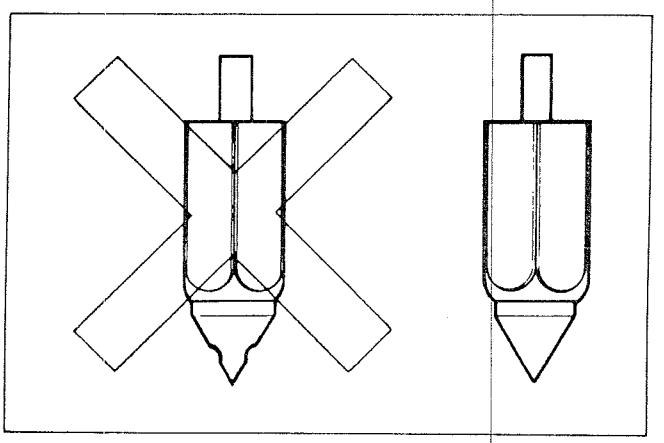
INSPECTION

Check following items for any damage or clogging.

* Pilot jet
* Main jet
* Float
* Gasket
* Throttle valve
* Pilot outlet and bypass holes

NEEDLE VALVE INSPECTION

If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn beyond the permissible limits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber. Clean the float chamber and float parts with gasoline. If the needle is worn as shown in the illustration, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.

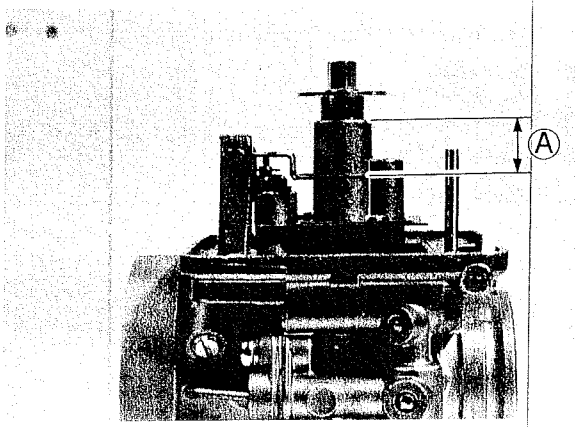


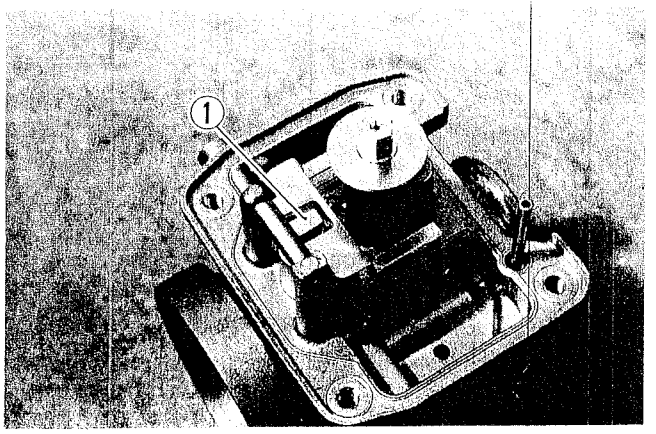
FLOAT HEIGHT ADJUSTMENT

To check the float height, invert the carburetor body, with the float arm kept free, measure the height Ⓐ while float arm is just in contact with needle valve using calipers.
Bend the tongue ① as necessary to bring the height Ⓐ to this value.

Float height	11.9 ± 1.0 mm (0.47 ± 0.04 in)

09900-20102	Vernier calipers Not available in U.S. model





REASSEMBLY AND REMOUNTING

Reassemble and remount the carburetor in the reverse order of the removal and disassembly. Also, following adjustments are necessary after remounting.

- Throttle cable play. (Refer to page 2-5)
- Engine idle speed adjustment. (Refer to page 2-5)

ELECTRICAL SYSTEM

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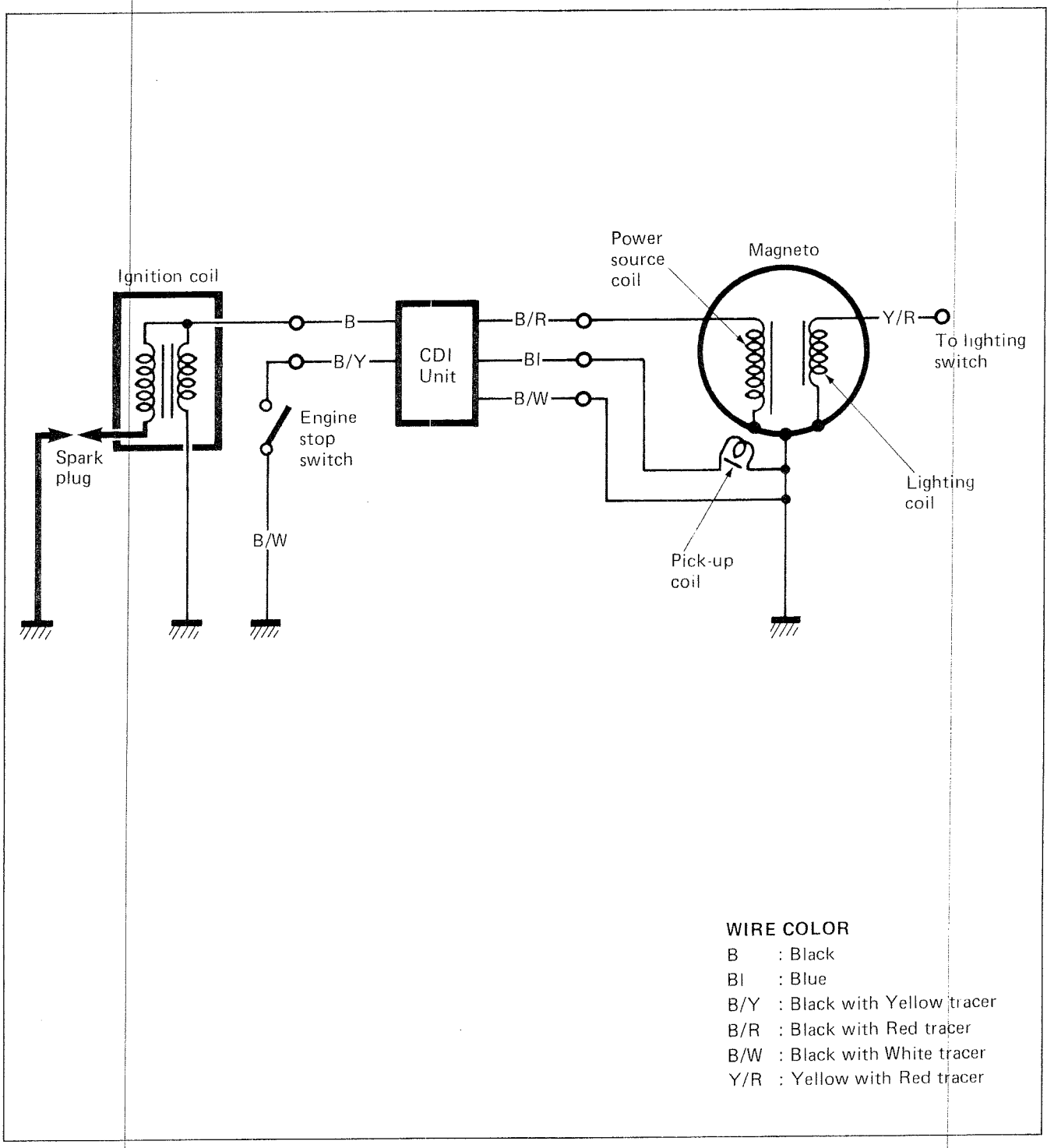
INSPECTION 6- 2
LIGHTING SYSTEM 6- 4
INSPECTION 6- 4
LAMPS 6- 5
INSPECTION 6- 5
SWITCHES 6- 6
INSPECTION 6- 6

IGNITION SYSTEM

In the capacitor discharged ignition system, the electrical energy generated by the magneto charges the capacitor. This energy is released in a single surge at the specified ignition timing point, and current flows througth the primary side of the ignition coil. A high voltage current is induced in the secondary windings of the ignition coil resulting in strong spark between the spark plug gap.

IGNITION SYSTEM DIAGRAM



INSPECTION

MAGNETO COIL

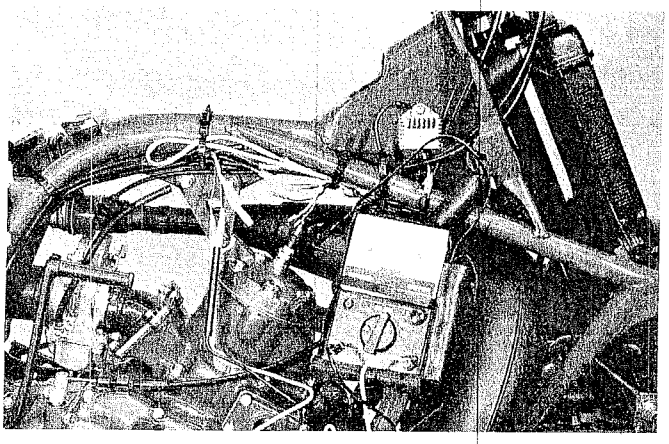
- Remove the fuel tank.
- Disconnect the pick-up and power source lead wires from the magneto.
- Using the pocket tester, measure the resistance between the lead wires in the following table.

09900-25002	Pocket tester

(Range: x 100 Ω)

Magneto coil resistance	
Pick-up	Bl – B/W 175 – 265 Ω
Power source	B/R – B/W 315 – 475 Ω

WIRE COLOR
Bl : Blue
B/W : Black with White tracer
B/R : Black with Red tracer



NOTE:
When replacing the magneto coils, apply a small quantity of THREAD LOCK "1342" to the threaded parts of screws. (Refer to page 3-43.)

99000-32050	Thread Lock "1342"

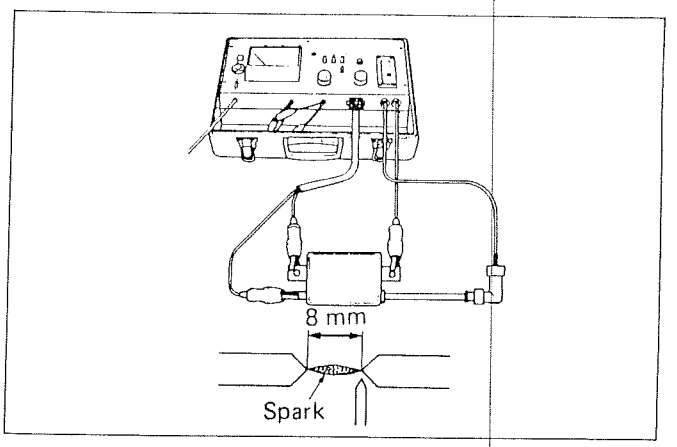
IGNITION COIL

Checking with electro tester

- Remove the ignition coil from the frame.
- Test the ignition coil for sparking performance. Test connection is as indicated. Make sure that the three-needle sparking distance is at least 8 mm.

09900-28106	Electro tester

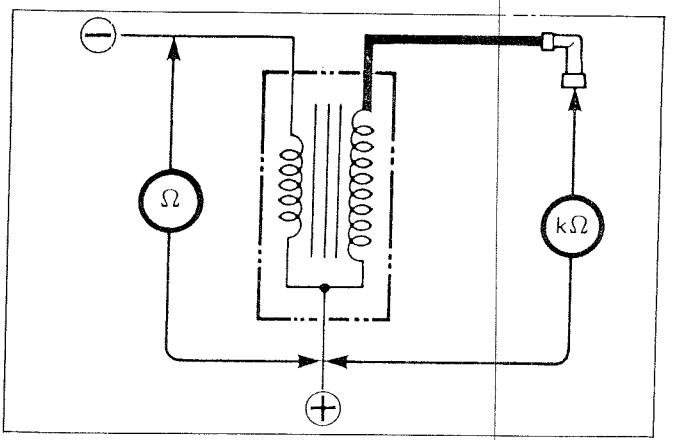
STD Spark performance	8 mm (0.3 in)



Checking with pocket tester

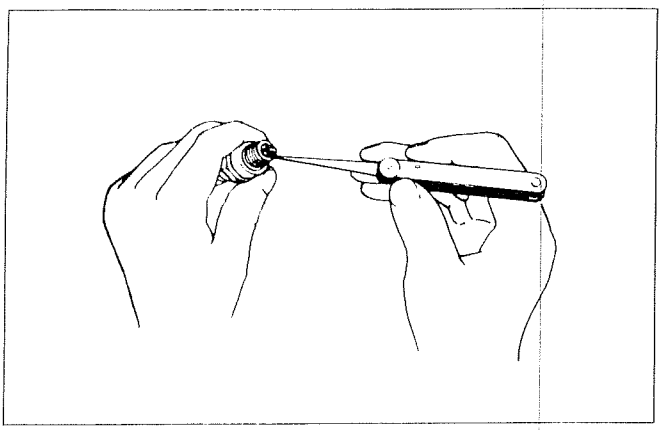
09900-25002	Pocket tester

Ignition coil resistance	
Primary	⊕ terminal – Ground (Range: x 1 Ω) 0 – 1.0 Ω
Secondary	Plug cap – ⊕ terminal (Range: x 1 kΩ) 3 – 5 kΩ
Secondary (Only for Canada model)	Plug cap – ⊕ terminal (Range: x 1 kΩ) 11 – 17 kΩ



SPARK PLUG

- Clean the plug with a wire brush and pin. Use the pin to remove carbon, taking care not to damage the porcelain.



SPARK PLUG GAP

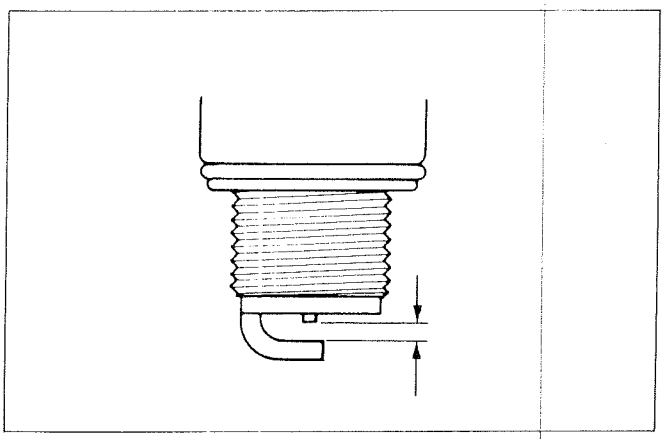
- Check the gap with a thickness gauge.

For U.S. and other models

B8EGV	0.55 – 0.65 mm (0.022 – 0.026 in)

For Canada model

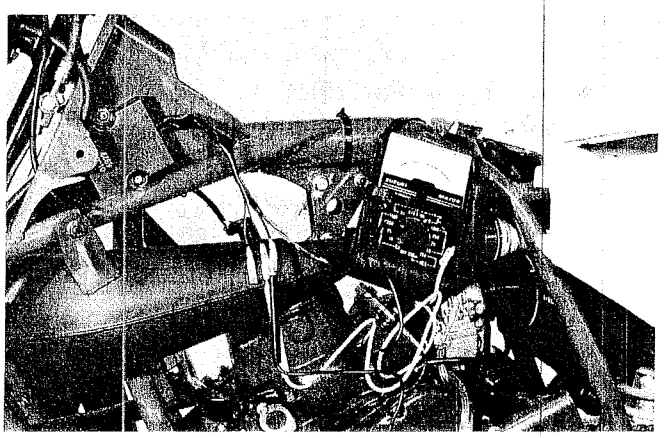
BR8EV	0.5 – 0.6 mm (0.020 – 0.024 in)



CDI UNIT

- Disconnect the lead wire couplers from the CDI unit.
- Using the pocket tester (x1 kΩ range), measure the resistance between the lead wires in the following table.
  If the resistance checked is incorrect, replace the CDI unit or inspect the magneto coils, ignition coil and spark plug.

09900-25002	Pocket tester



Unit: Approx. kΩ

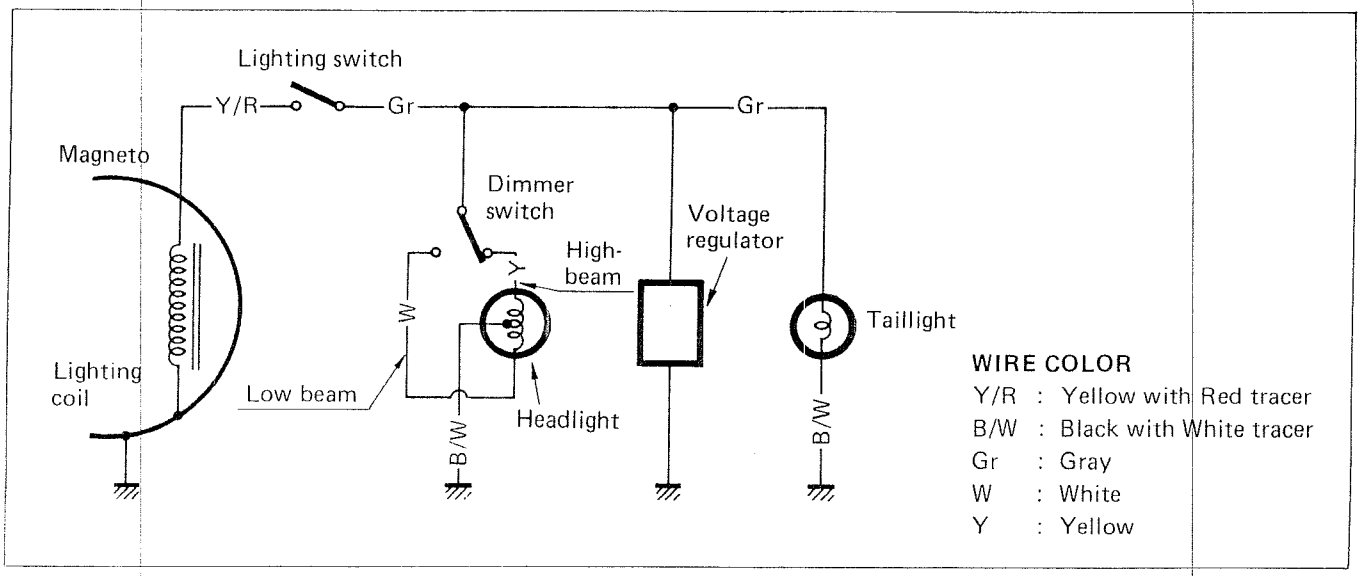
⊖ Probe of tester to:	⊕ Probe of tester to: B/Y	B/W	B/R	B	Bl
B/Y		∞	∞	∞	∞
B/W	11		3.5	∞	9.5
B/R	3.0	130		∞	150
B	35	2.8	10		16
Bl	32	8	15	∞	

CAUTION:
As transistors, capacitors, zener diodes, etc. are used inside this CDI unit, the resistance values will differ when an ohmmeter other than the SUZUKI pocket tester is used.

NOTE:
If the magneto coils, ignition coil and spark plug checked are correct, the CDI unit may be faulty, replace the CDI unit with a new one.

LIGHTING SYSTEM

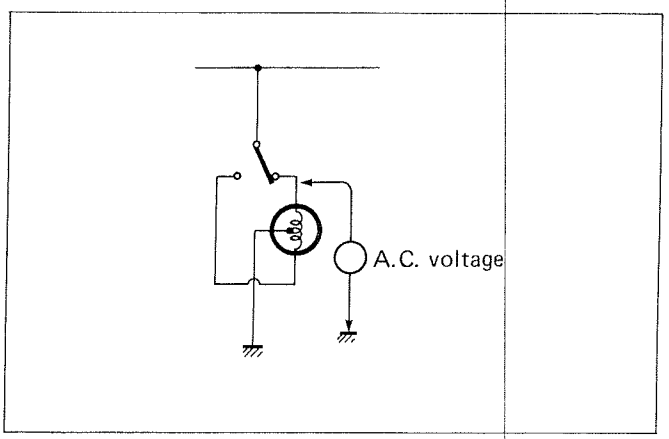
The lighting coil is mounted on the stator of the magneto and generates A.C. current as the magneto rotor turns. A.C. voltage from the lighting coil is regulated by the voltage regulator, and then current flows to the headlight and tailight.



INSPECTION

REGULATED VOLTAGE

- Start the engine and keep it running at 5 000 r/min with the lighting switch turned ON.
- Using the pocket tester, measure the A.C. voltage between the headlight lead wire and ground.
  If the tester reads under 13.0V or over 14.0V the regulator is faulty.

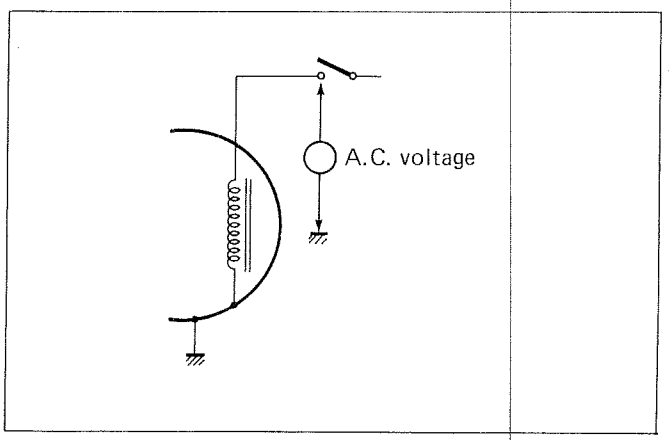


Regulated voltage	13.0 – 14.0V at 5 000 r/min

09900-25002	Pocket tester

LIGHTING COIL OUTPUT

- Start the engine and keep it running at 3 000 r/min and 8 000 r/min with the lighting switch turned OFF.
- Using the pocket tester, measure the A.C. voltage between lighting coil lead wires (Y/R and B/W). If the A.C. voltage is not within the specification, the lighting coil and/or rotor are faulty.



Lighting coil output

	Above 12V at 3 000 r/min Below 18V at 8 000 r/min

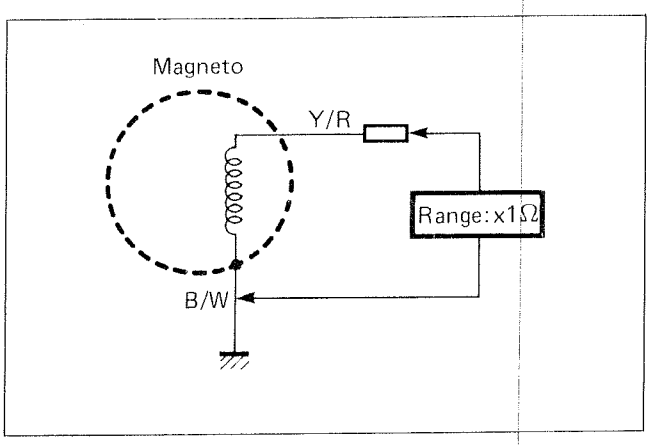
09900-25002	Pocket tester

LIGHTING COIL RESISTANCE

- Using the pocket tester, measure the resistance between the lighting coil lead wires (Y/R and B/W). If the resistance is not within the specification, the lighting coil is faulty.

Lighting coil resistance	Y/R – B/W 0.5 – 1.0 Ω

09900-25002	Pocket tester

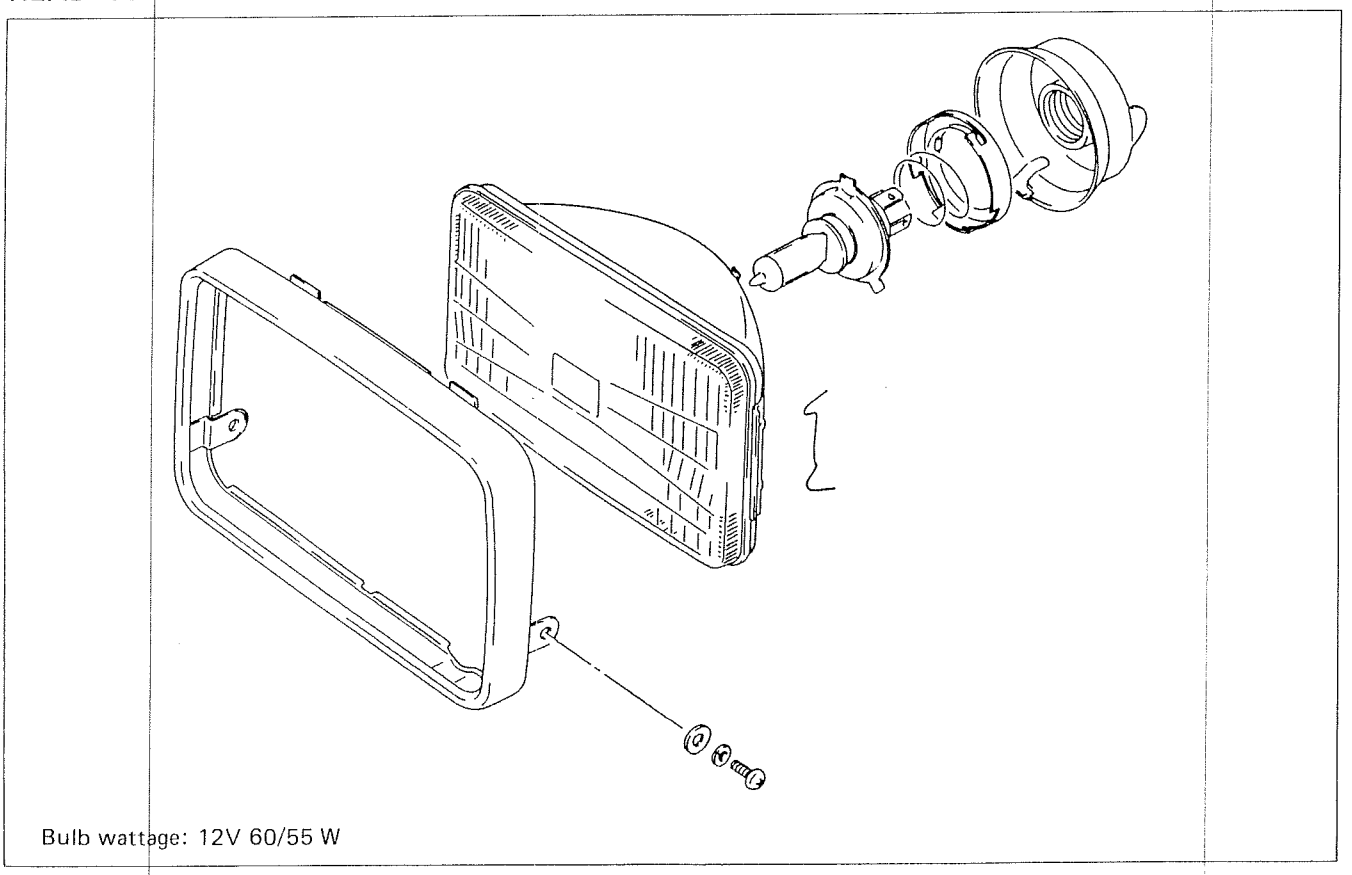


LAMPS

INSPECTION

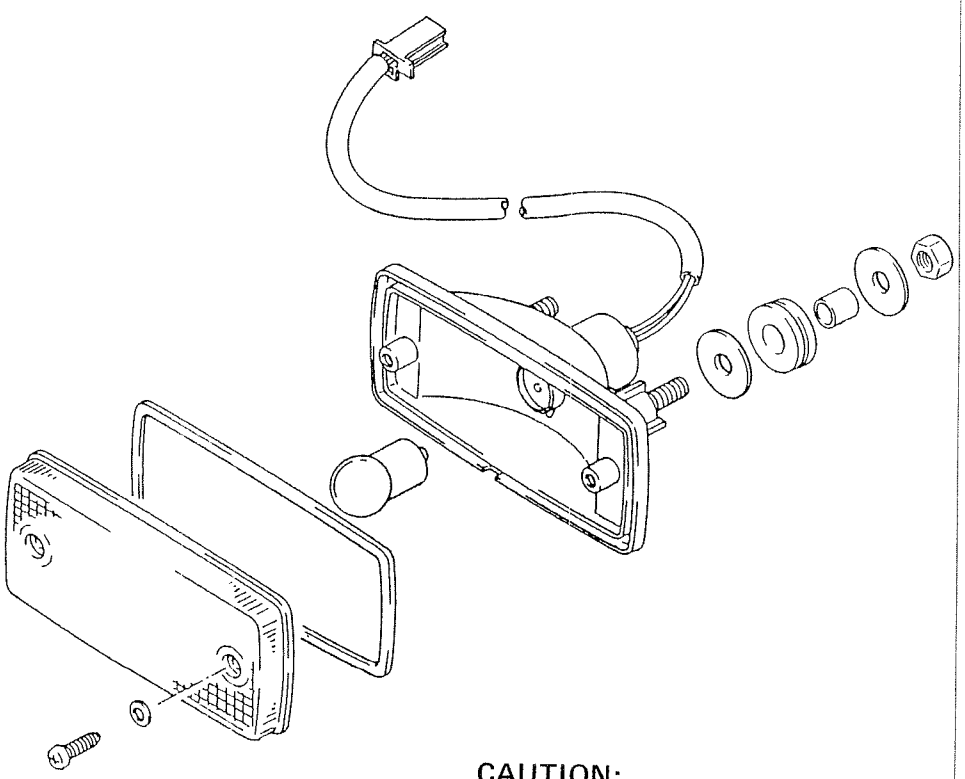
After installing a new bulb, check for continuity. If the bulb does not light, inspect the wiring for open or short circuit.

HEADLIGHT



Bulb wattage: 12V 60/55 W

TAILLIGHT



Bulb wattage: 12V 5W

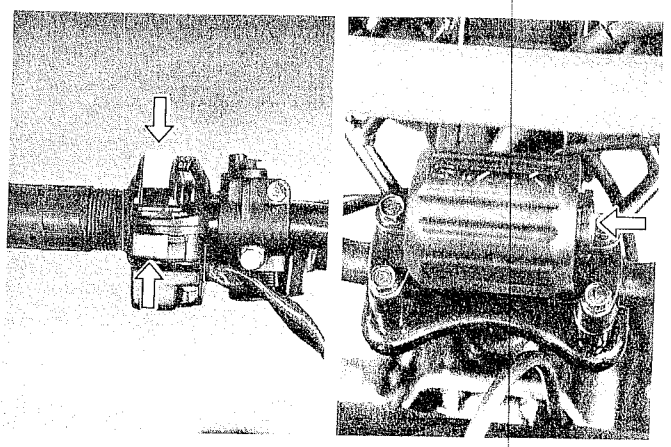
CAUTION:
Do not overtighten the lens fitting screws.

SWITCHES

INSPECTION

Inspect each switch for continuity with the pocket tester referring to the chart. If any abnormality is found, replace the respective switch assemblies with new ones.

09900-25002	Pocket tester



LIGHTING/DIMMER SWITCH

	Y/R	Gr	Y	W
HI	○	○	○	
LO	○	○		○
OFF				

IGNITION SWITCH

	B/W	B/Y
OFF	○	○
ON		

ENGINE STOP SWITCH

	B/Y	B/W
OFF	○	○
RUN		

CHASSIS

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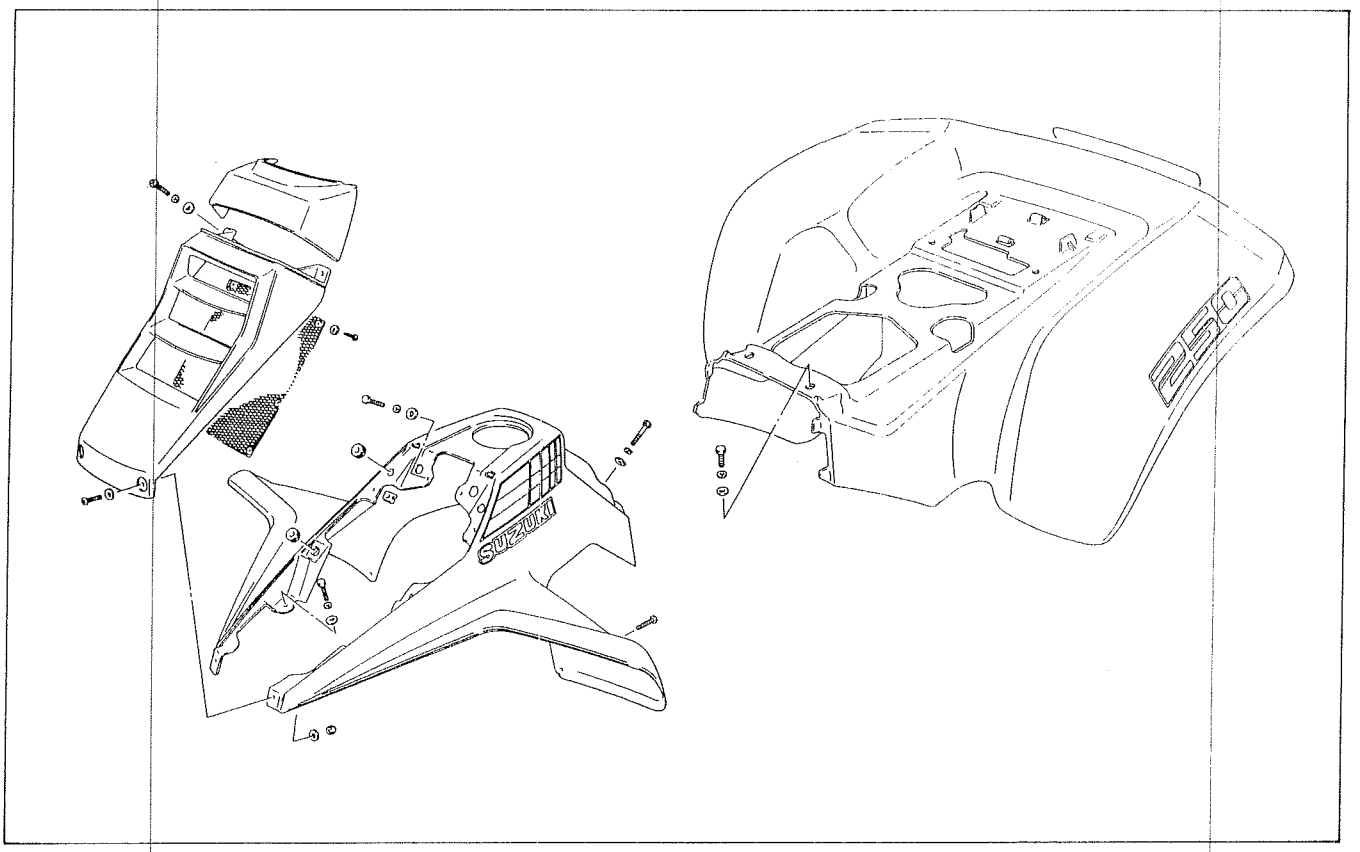
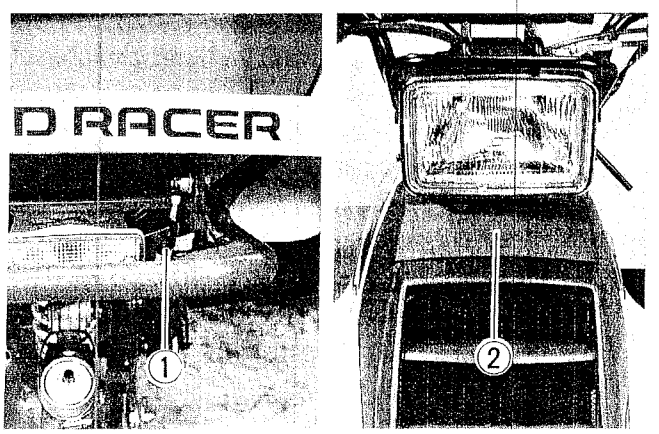
FRONT AND REAR FENDER



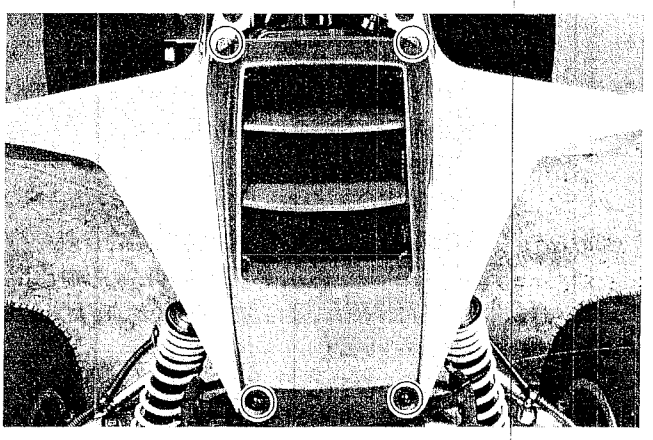
REMOVAL

FRONT FENDER

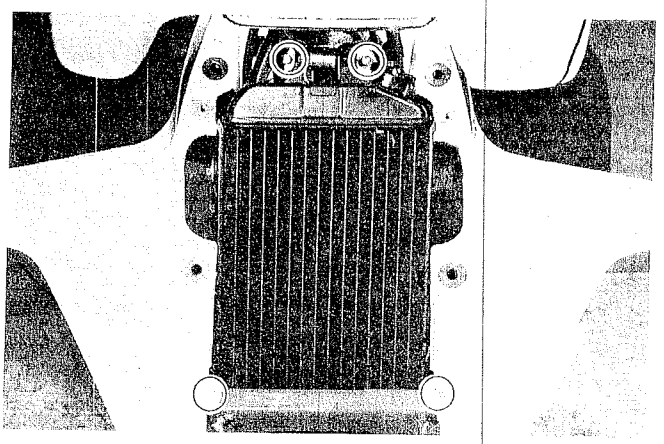
- Pull the seat lock ring ① and remove the seat.
- Remove the cover ②.



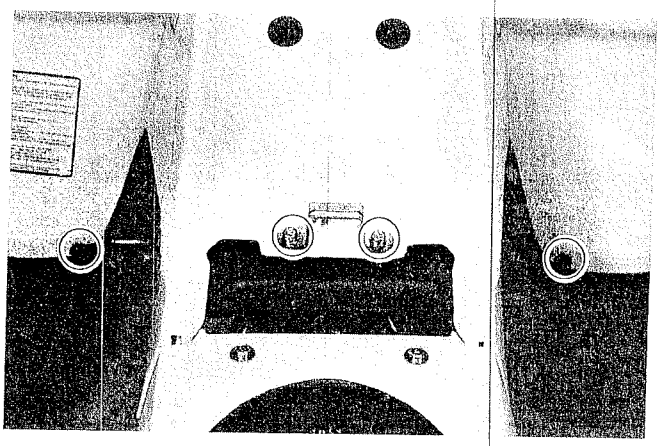
- Remove the four bolts and remove the radiator cover.



- Remove the four bolts.

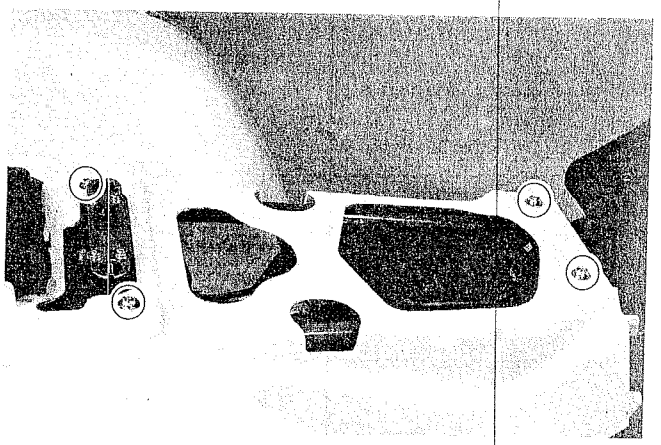


- Remove the two bolts and two screws and remove the front fender.



REAR FENDER

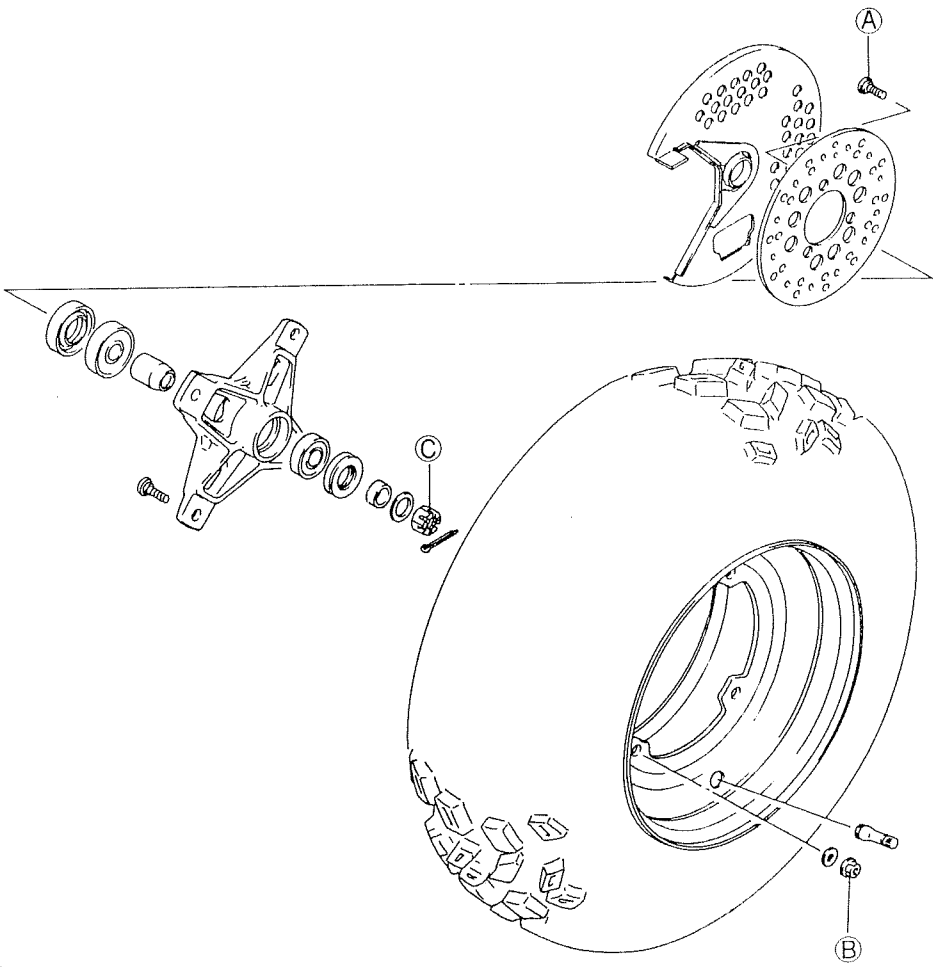
Remove the four bolts and remove the rear fender.



REMOUNTING

Remount the front and rear fender in the reverse order of removal.

FRONT WHEEL AND WHEEL HUB

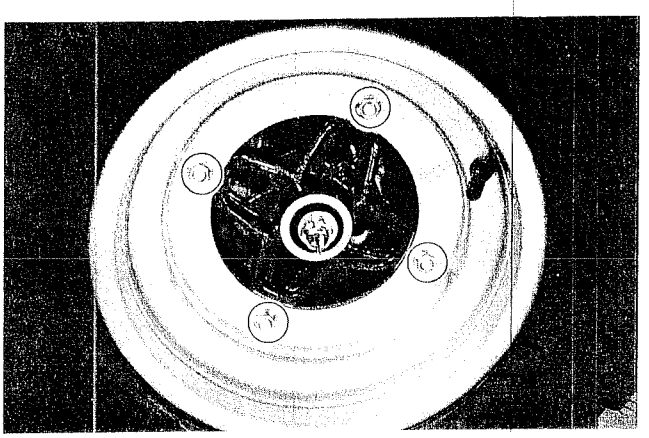


Tightening torque

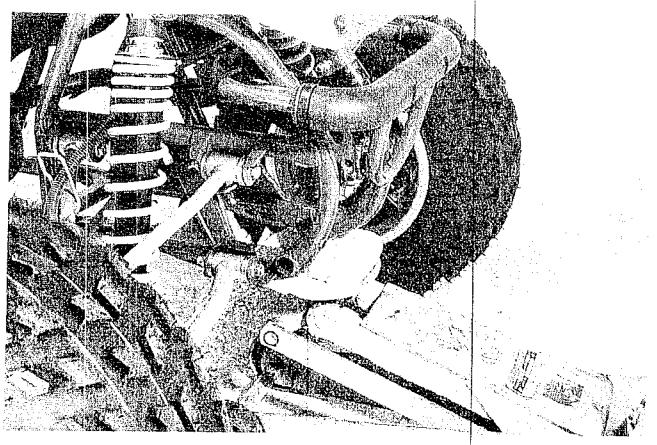
Item	N·m	kg-m	lb-ft
Ⓐ	15 – 25	1.5 – 2.5	11.0 – 18.0
Ⓑ	20 – 31	2.0 – 3.1	14.5 – 22.5
Ⓒ	50 – 80	5.0 – 8.0	36.0 – 58.0

REMOVAL AND DISASSEMBLY

- Place the vehicle on level ground.
- Loosen the wheel set nuts.



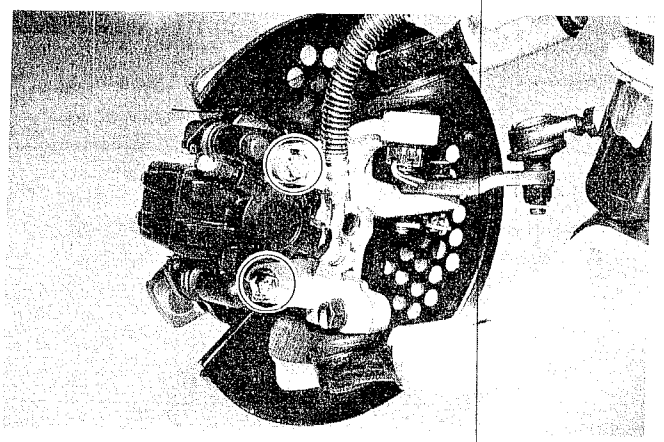
- Support the vehicle by jack or block.
- Remove the wheel by removing the wheel set nuts.



- Remove the front brake caliper.

CAUTION:
Hang the caliper from the vehicle frame with string, etc., taking care not to bend the brake hose.

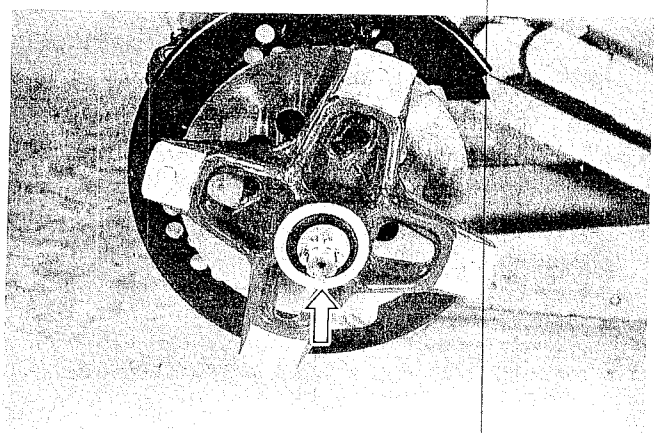
NOTE:
Do not operate the brake lever while dismounting the caliper.



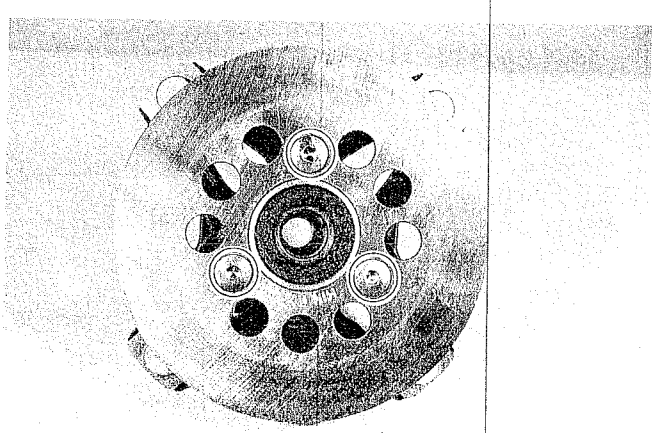
- Remove the cotter pin.

CAUTION:
The removed cotter pin should be replaced with a new one.

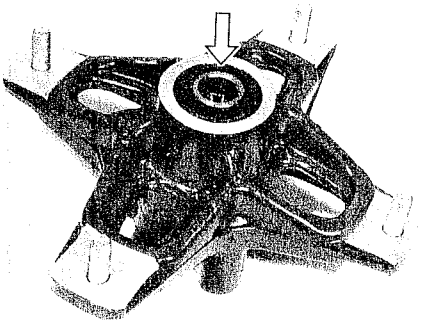
- Remove the wheel hub nut and remove the wheel hub.



- Remove the disc plate.

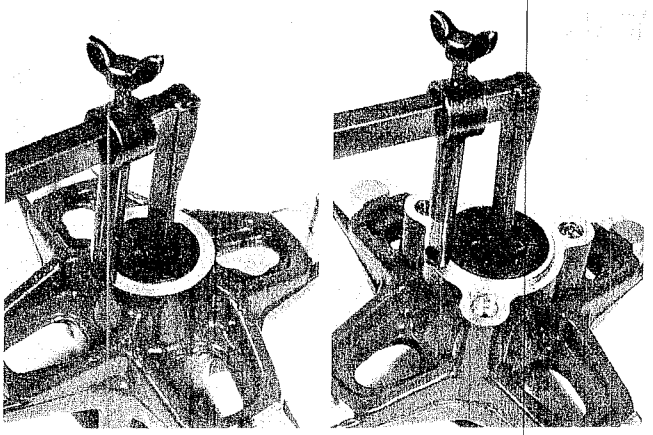


- Remove the spacer.



- Remove the dust seals with the special tool.

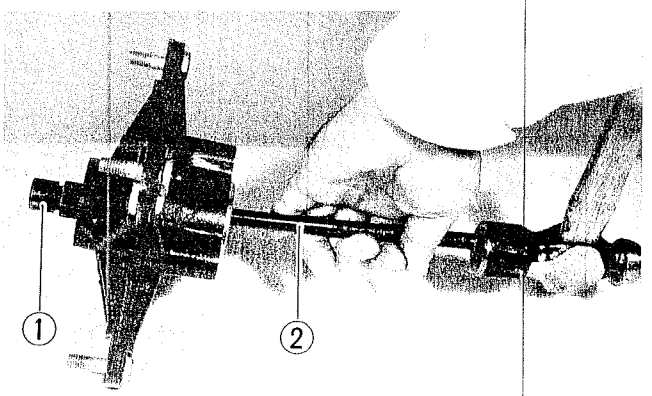
09913-50121	Oil seal remover



CAUTION:
The removed dust seals should be replaced with new ones.

Remove the wheel bearings with the special tool in the following procedures.

- Insert the adapter ① into the wheel bearing.
- After inserting the wedge bar ② from opposite side, lock the wedge bar in the slit of the adapter.
- Drive out the wheel bearing by knocking the wedge bar.



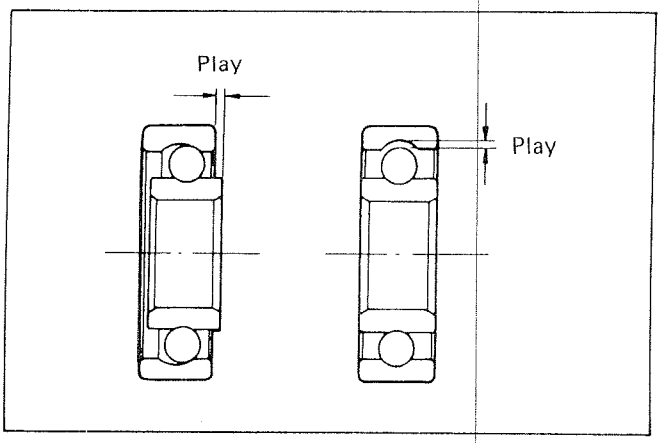
CAUTION:
The removed bearings should be replaced with new ones.

09941-50110	Bearing remover (Not available in U.S. model)

INSPECTION

WHEEL HUB BEARING

Inspect the play of the wheel hub bearings inner race by hand while fixing it in the wheel hub.
Rotate the inner race by hand to inspect whether abnormal noise occurs or if it rotates smoothly.
Replace the bearing if there is anything unusual.



DUST SEAL

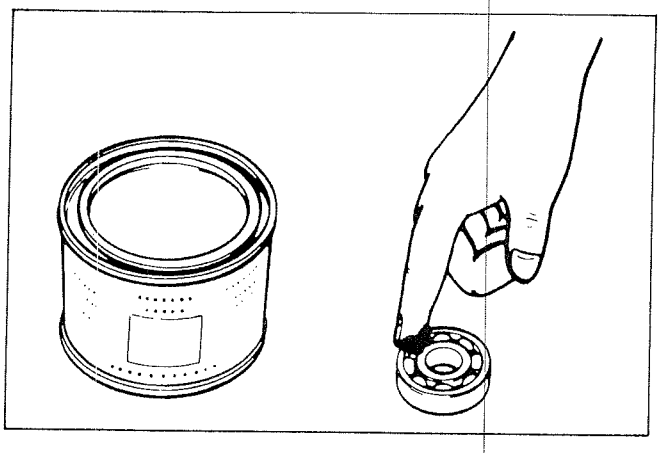
Inspect the lip of dust seal for damage.

REASSEMBLY AND REMOUNTING

Reassemble and remount the front wheel in the reverse order of disassembly and removal, and also carry out the following steps:

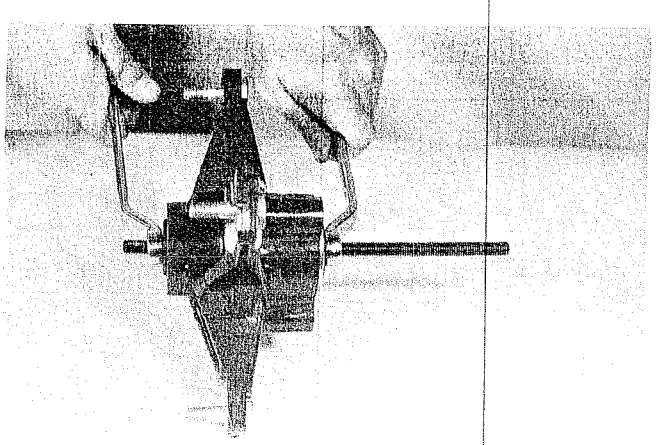
- Apply grease to the bearings before installing.

99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



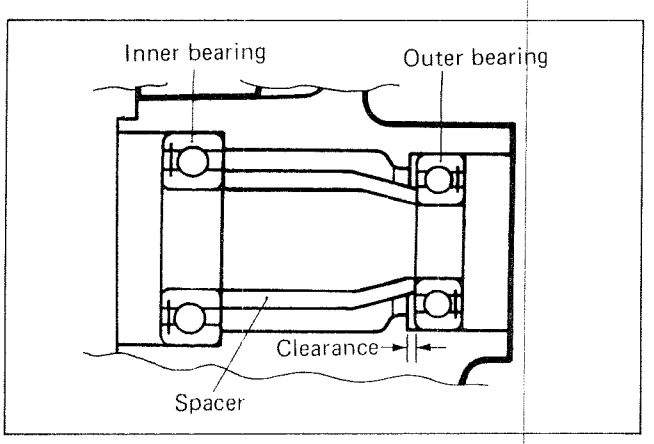
- Install the wheel hub bearings with the special tool.

09924-84510	Bearing installer set



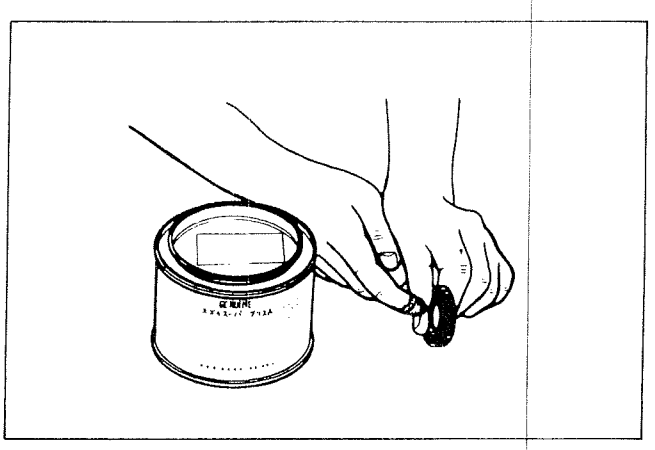
NOTE:
First install the inside bearing.

CAUTION:
Do not mistake the direction of spacer.



- Apply grease to the dust seals before installing.

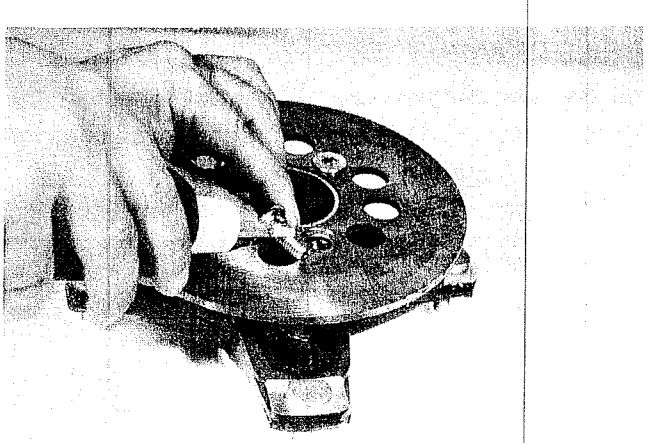
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



- Apply THREAD LOCK SUPER "1360" to the bolts and tighten them to the specification.

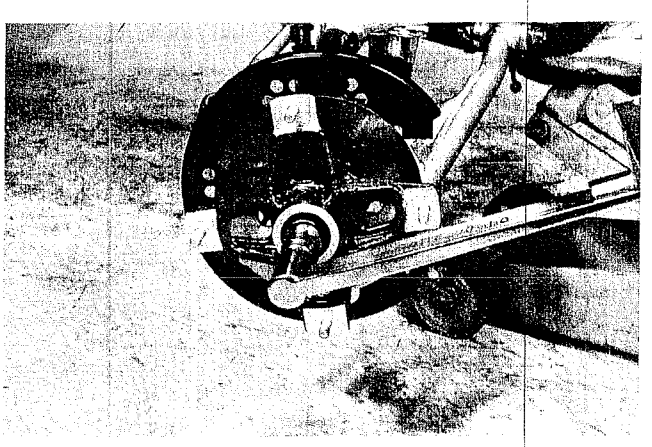
Tightening torque	15 – 25 N·m (1.5 – 2.5 kg-m 11.0 – 18.0 lb-ft)

99000-32130	Thread Lock Super "1360"



- Make sure that the disc plate is clean and free of any greasy matter.
- Tighten the wheel hub nut to the specification.

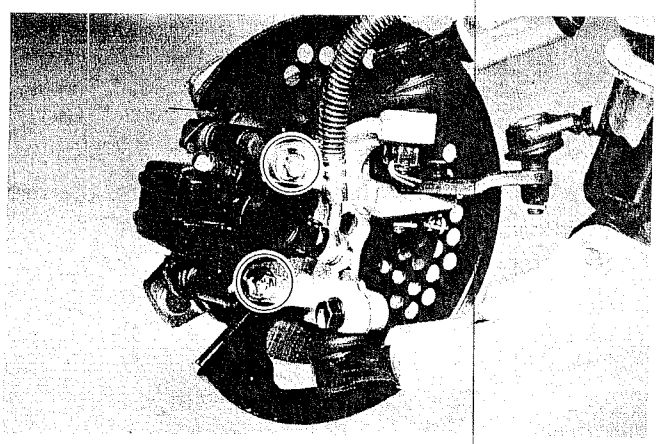
Tightening torque	50 – 80 N·m (5.0 – 8.0 kg-m 36.0 – 58.0 lb-ft)



- Install the new cotter pin and bend up it positively.

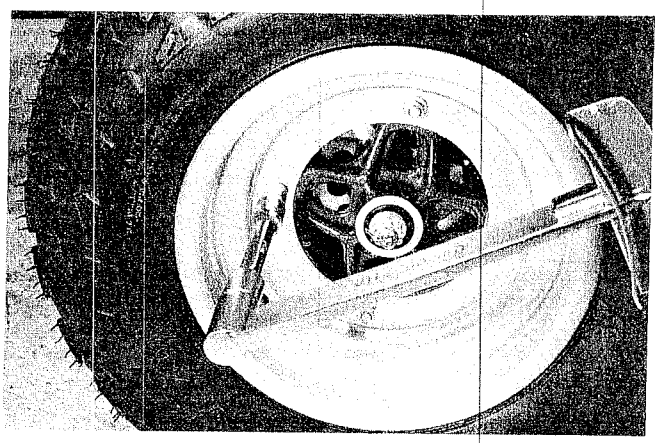
- Tighten the caliper mounting bolts to the specification.

Tightening torque	15 – 25 N·m (1.5 – 2.5 kg-m 11.0 – 18.0 lb-ft)



- Tighten the wheel set nuts to the specification.

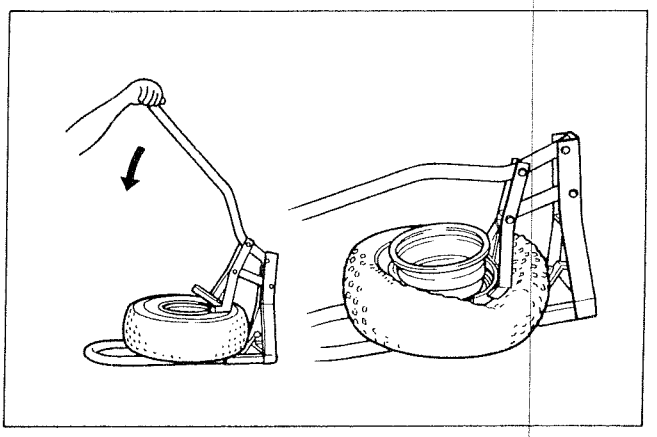
Tightening torque	20 – 31 N·m (2.0 – 3.1 kg-m 14.5 – 22.5 lb-ft)



TIRES

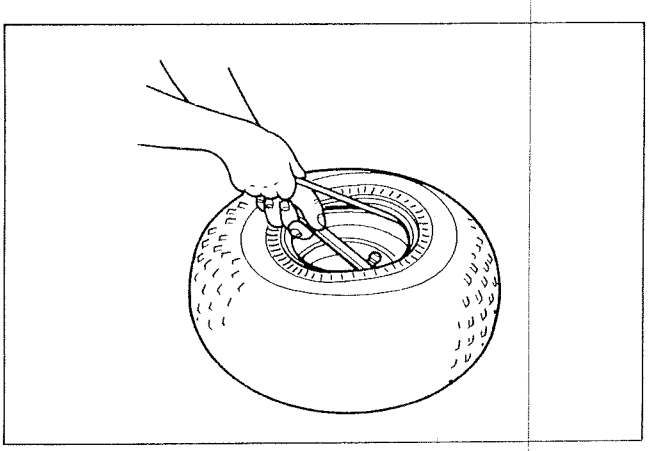
TIRE REPLACEMENT

- Remove the front wheel. (Refer to page 7-1.)
- Remove the rear wheel. (Refer to page 7-32.)
- After removing the air valve cap, release the tire pressure by depressing the nozzle.
- Dismount the bead from the rim completely as shown in the illustration.



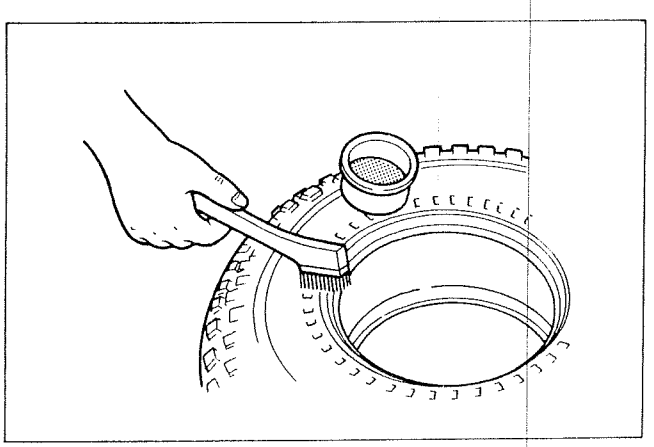
- Using a set of tire levers and rim protectors, separate the tire from the rim.

09941-94510	Rim protector



CAUTION:
When using the tire levers, do not scratch or hit the sealing portion (hump) of the wheel or it may cause air-leakage.

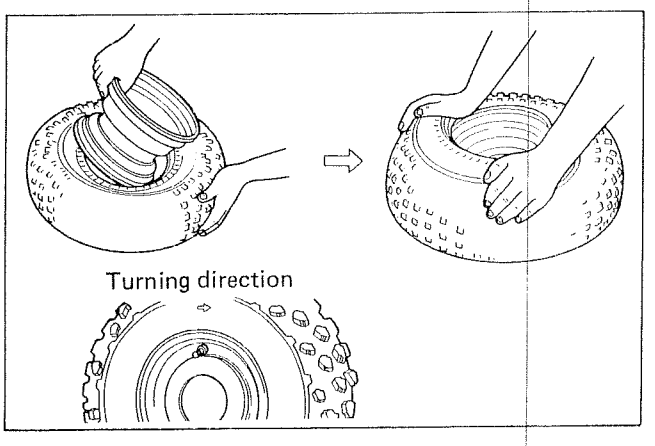
- Apply clean water to the tire bead and the flange of the rim.



CAUTION:
Never use engine oil or gasoline because they will deteriorate the tire.

CAUTION:
The standard tire fitted on this vehicle is AT21 x 7-10 ☆☆ for front and AT21 x 10-10 ☆ for rear.
The use of a tire other than the standard may cause instability. It is highly recommended to use a SUZUKI Genuine tire.

- Mount the tire on the rim by hand as shown in the illustration.



NOTE:
Before mounting the tire on the rim, inspect the sealing portion of rim.
When mounting a tire, be sure to install the tire onto the rim with the arrow on the side wall pointing in the direction of rotation. Also, be certain that outer side of wheel rim faces to the outside.

- Inflate the tire to seat the bead.

MAX. BEAD SEAT PRESSURE	Front	250 kPa (2.5 kg/cm², 36 psi)
	Rear	

CAUTION:
Place the tire under a protective tire cage or similar protective covering before inflating the tire. To minimize the possibility of tire damage when seating the bead, never exceed the MAX. BEAD SEAT PRESSURE rating shown on the tire.

NOTE:
Check the "rim line" cast on the tire side walls. It must be equally spaced from the wheel rim all the way around. If the distance between the rim line and the wheel rim varies, this indicates that the bead is not properly seated. If this is so, deflate the tire completely, and unseat the bead for the both sides. Coat the bead with clean water, and try again.

- As soon as the bead is seated, deflate the tire and reinflate it to the proper operating pressure.

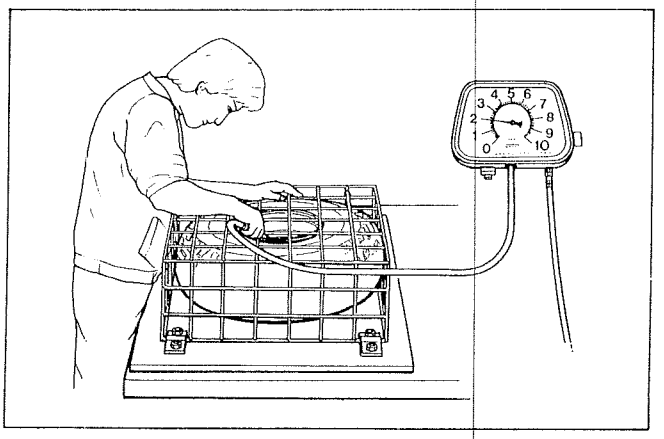
COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi	NOTE
FRONT	25	0.25	3.6	LOAD CAPACITY UP TO 80 kg (175 lbs)
REAR	20	0.20	2.9	
FRONT	30	0.30	4.4	LOAD CAPACITY 80 – 120 kg (175 – 265 lbs)
REAR	25	0.25	3.6	

VEHICLE LOAD CAPACITY LIMIT: 120 kg (265 lbs)

CAUTION:
Before inflating the tire, check the MAX. OPERATING PRESSURE rating of the tire. This is indicated by a "☆" following the tire size shown on the sidewall. The number of "☆" on the tire indicates the max. operating pressure as shown right.

NOTE:
For inspecting the tire refer to the page 2-11.

NOTE:
Before installing the valve core, inspect the core.

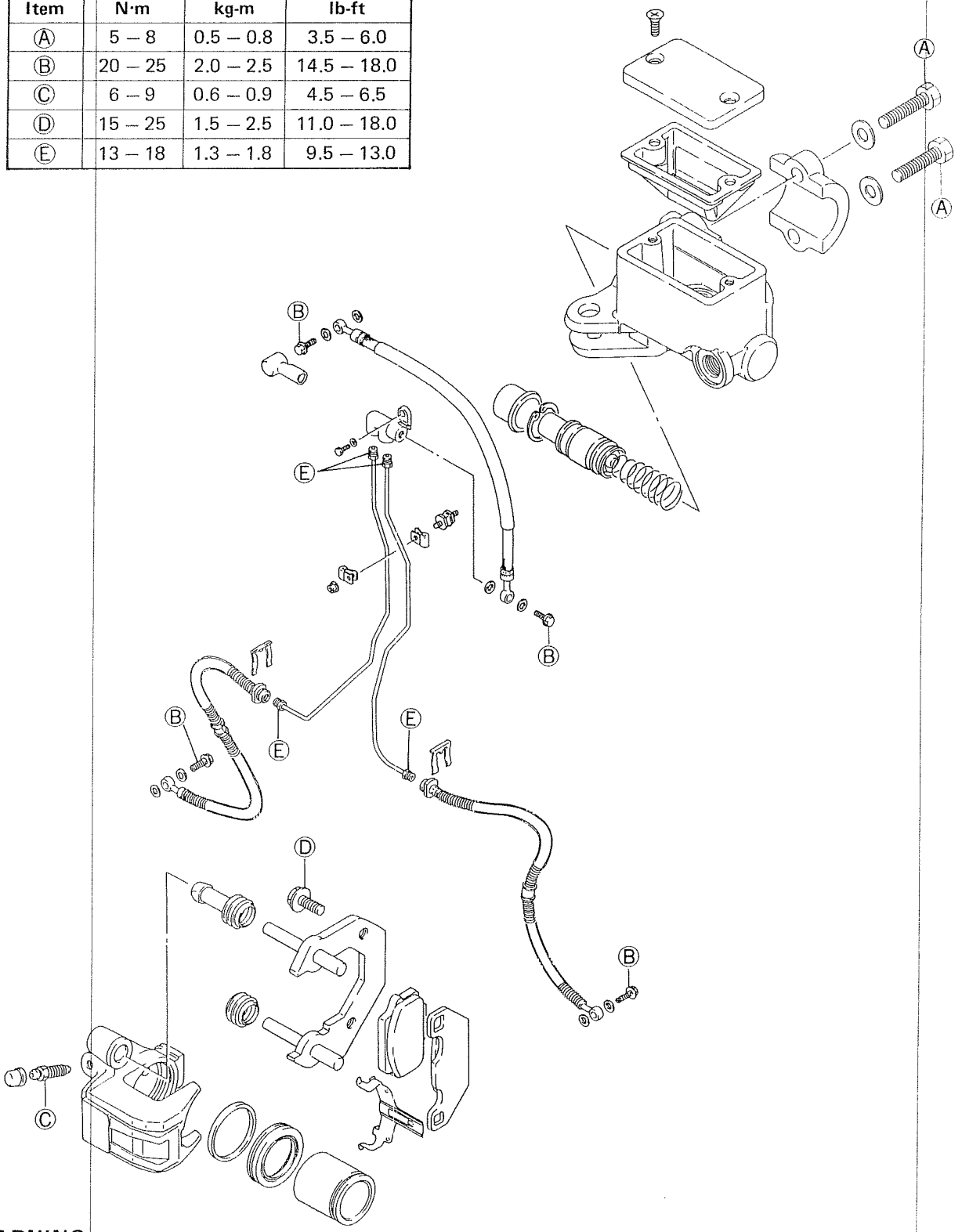


	MAX. OPERATING PRESSURE		
	kPa	kg/cm²	psi
☆	25	0.25	3.6
☆☆	35	0.35	5.1
☆☆☆	45	0.45	6.5

FRONT BRAKE

Tightening torque

Item	N·m	kg-m	lb-ft
Ⓐ	5 – 8	0.5 – 0.8	3.5 – 6.0
Ⓑ	20 – 25	2.0 – 2.5	14.5 – 18.0
Ⓒ	6 – 9	0.6 – 0.9	4.5 – 6.5
Ⓓ	15 – 25	1.5 – 2.5	11.0 – 18.0
Ⓔ	13 – 18	1.3 – 1.8	9.5 – 13.0

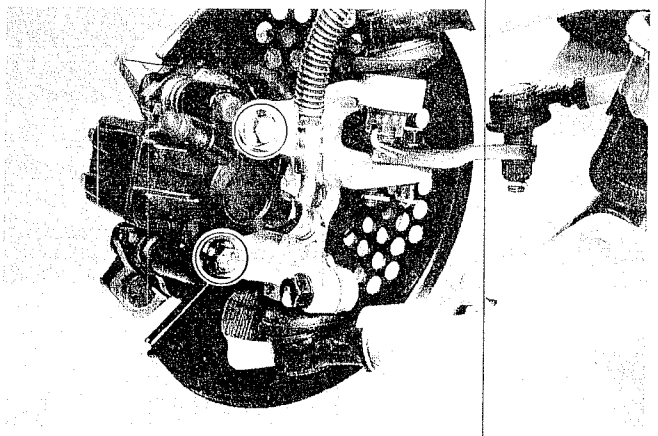


WARNING:
If remove or replace the brake hose or brake pipe, make sure to secure the brake hose or brake pipe by clamp.

BRAKE PAD REPLACEMENT

- Remove the front wheel. (Refer to page 7-1.)
- Remove the caliper.

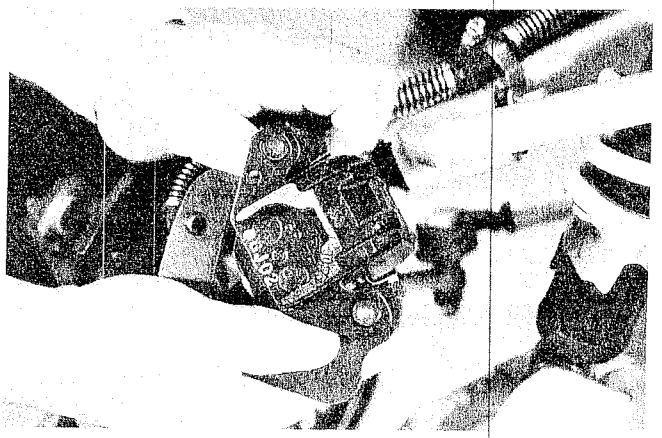
NOTE:
Do not operate the brake lever while dismounting the caliper.



- Push the caliper holder when removing the pads.
- Remove the pads.

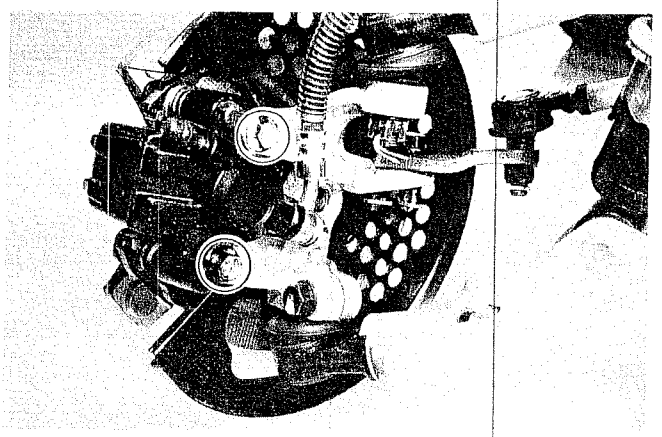
CAUTION:
Replace the pads as a set, otherwise braking performance will be adversely affected.

CAUTION:
When reassembling the pads, install the pad spring properly.



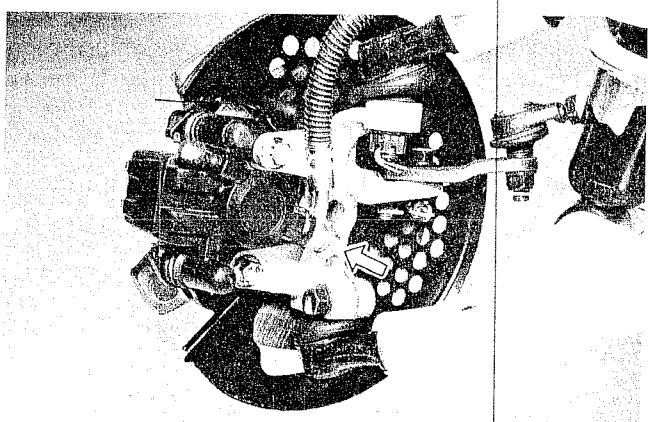
- Tighten the caliper mounting bolts to the specification.

Tightening torque	15 – 25 N·m (1.5 – 2.5 kg-m 11.0 – 18.0 lb-ft)



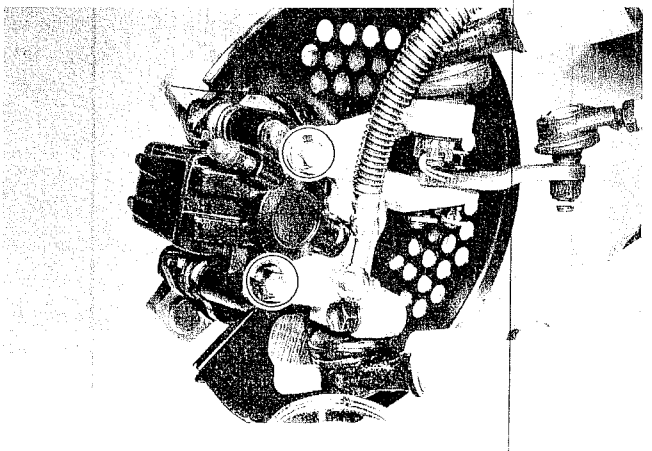
CALIPER REMOVAL AND DISASSEMBLY

- Remove the front wheel. (Refer to page 7-1.)
- Remove the brake hose union bolt and catch brake fluid in a suitable receptacle.

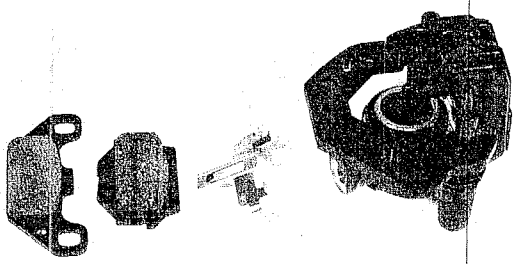


CAUTION:
Completely wipe off any brake fluid adhering to any part of vehicle. The fluid reacts chemically with paint, plastics, rubber materials, etc.

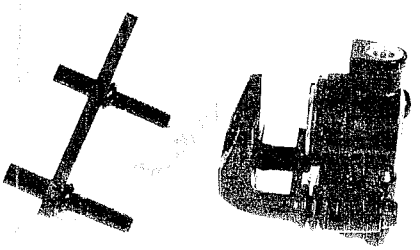
- Remove the caliper.



- Remove the pads and spring.

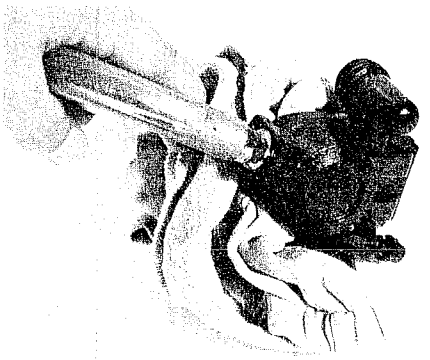


- Remove the caliper holder and boot.

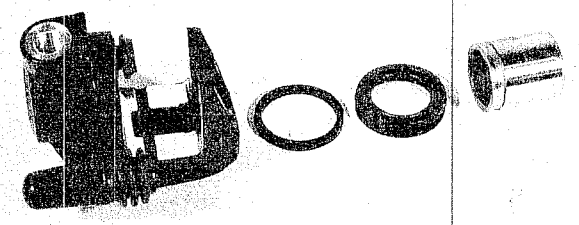


- Place a rag over the piston to prevent popping up. Force out the piston with a air gun.

CAUTION:
Do not use high pressure air to prevent piston damage.

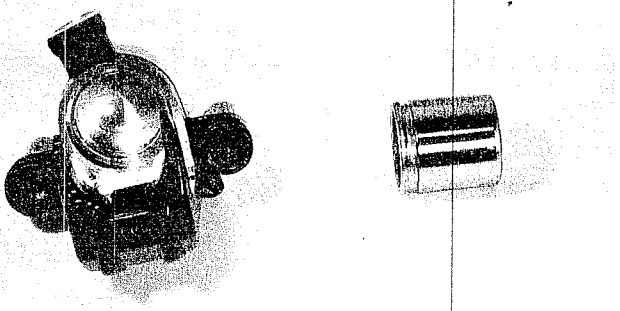


- Remove the dust boot and piston seal.



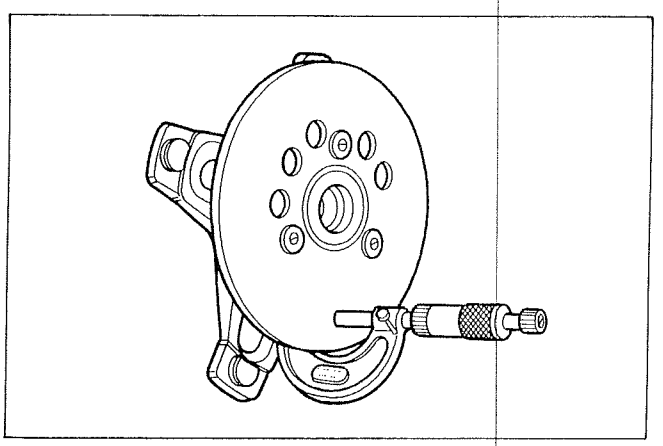
CALIPER AND DISC INSPECTION

- Inspect the caliper bore wall for nicks, scratches or other damage.
- Inspect each of the rubber parts for damage and wear.
- Inspect the piston surface for any scratches or other damage.



- Check the disc for wear with a micrometer. Its thickness can be checked with disc and front wheel hub in place. Replace the disc if the thickness exceeds the service limit.

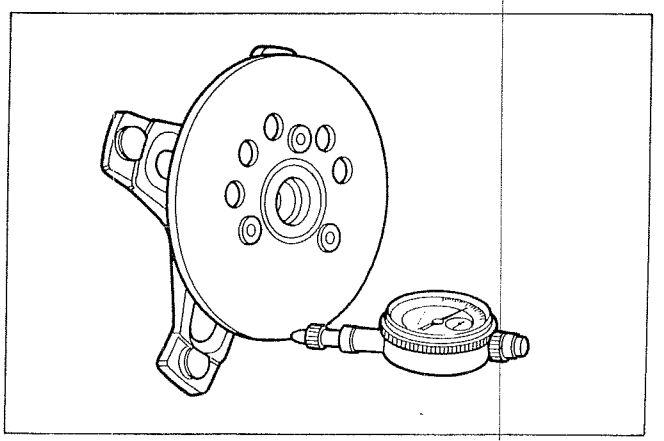
09900-20205	Micrometer (0 – 25 mm)
Service Limit	3.0 mm (0.12 in)



- With the disc mounted on the front wheel hub, check the disc for face runout with a dial gauge, as shown. Replace the disc if the runout exceeds the service limit.

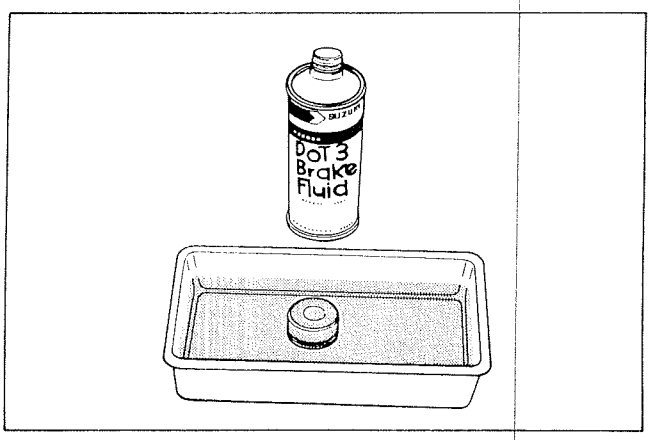
09900-20606	Dial gauge (1/100 mm)
09900-20701	Magnetic stand

Service Limit	0.30 mm (0.012 in)



CALIPER REASSEMBLY

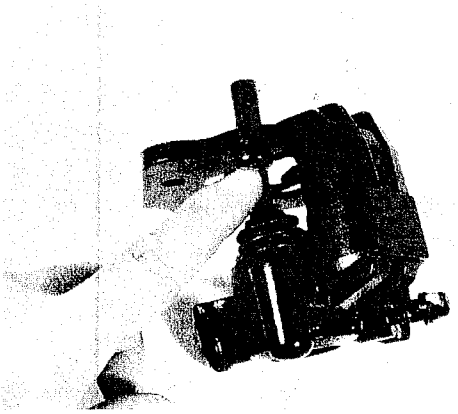
Reassemble the caliper in the reverse order of disassembly and removal, and also carry out the following steps:



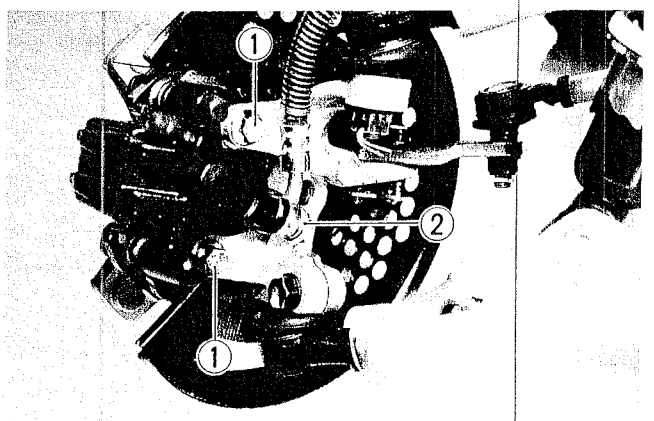
CAUTION:
Wash the caliper components with fresh brake fluid before reassembly.
Never use cleaning solvent or gasoline to wash them.
Apply brake fluid to the caliper bore and piston.

- Apply SUZUKI Silicone grease to the caliper axles of caliper holder.

99000-25100	SUZUKI Silicone grease



- Tighten the caliper mounting bolts ① and brake hose union bolt ②.



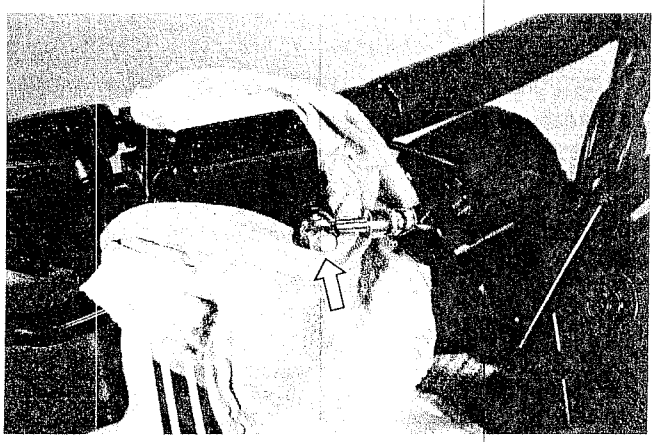
Tightening torque:

Caliper mounting bolt ①	15 – 25 N·m (1.5 – 2.5 kg-m / 11.0 – 18.0 lb-ft)
Union bolt ②	20 – 25 N·m (2.0 – 2.5 kg-m / 14.5 – 18.0 lb-ft)

WARNING:
Bleed air from the brake fluid circuit after reassembling the caliper. (Refer to page 2-13.)

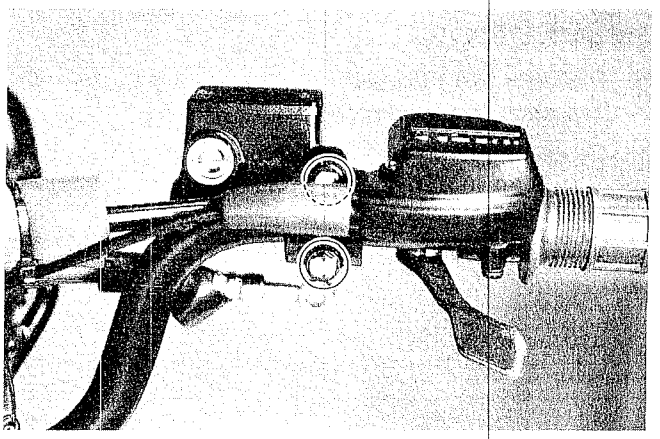
MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Place a cloth underneath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose/master cylinder joint.

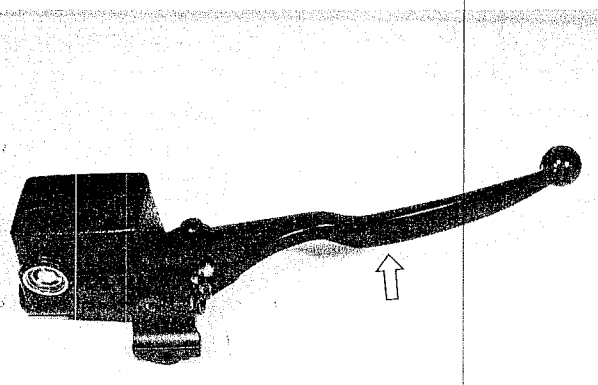


CAUTION:
Completely wipe off any brake fluid adhering to any part of vehicle. The fluid reacts chemically with paint, plastics, rubber materials, etc.

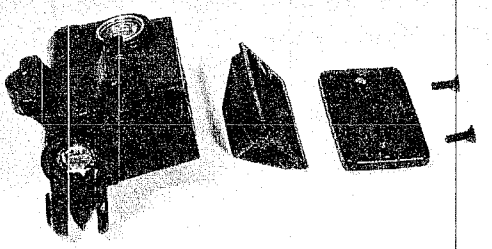
- Remove the two clamp bolts and remove the master cylinder assembly.



- Remove the brake lever.

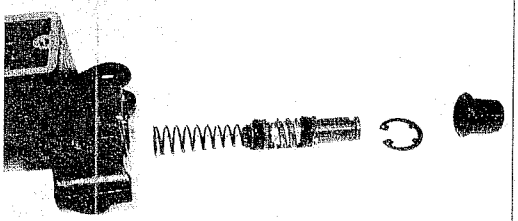


- Remove the reservoir cap and diaphragm.
- Drain brake fluid.



- Remove the dust boot.
- Remove the circlip with the special tool.
- Remove the piston/primary cup and spring.

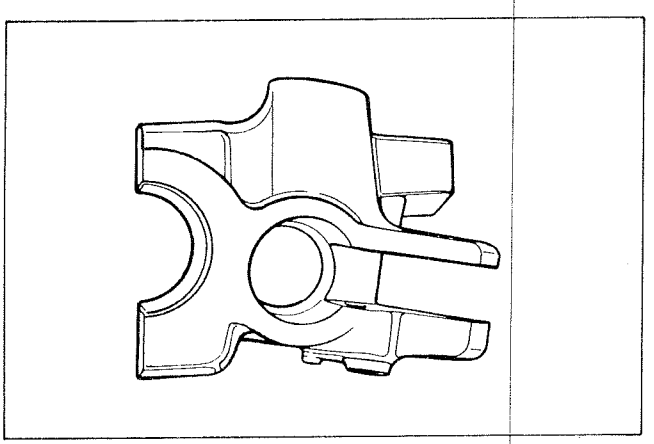
09900-06108	Snap ring pliers



① Dust boot
② Circlip
③ Piston/primary cup
④ Return spring

INSPECTION

- Inspect the master cylinder bore for any scratches or other damage.

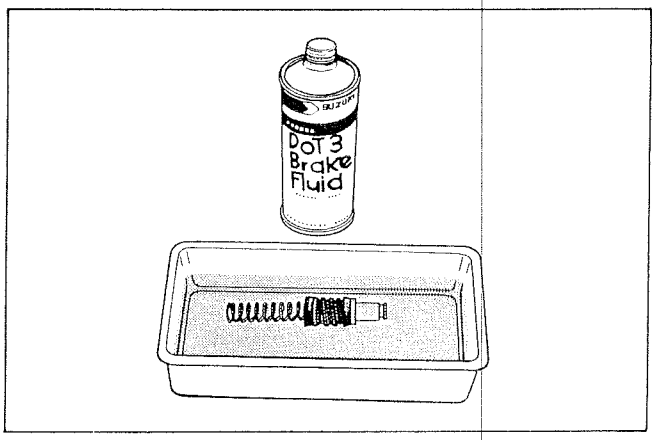


- Inspect the piston/primary cup surface for scratches or other damage.
- Inspect the dust boot for damage.

REASSEMBLY AND REMOUNTING

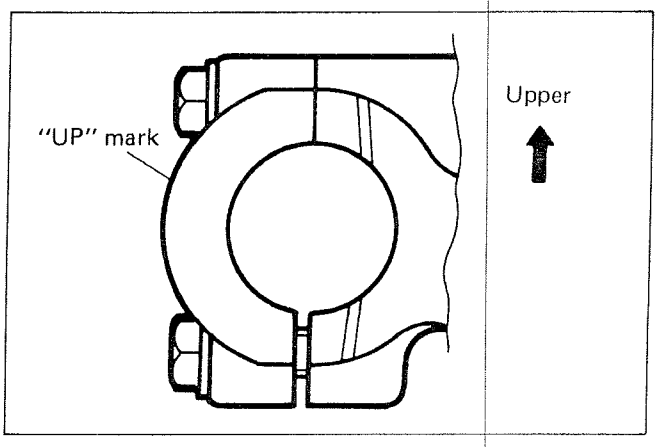
Reassemble and remount the master cylinder in the reverse order of disassembly and removal, and also carry out the following steps:

CAUTION:
Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them. Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.



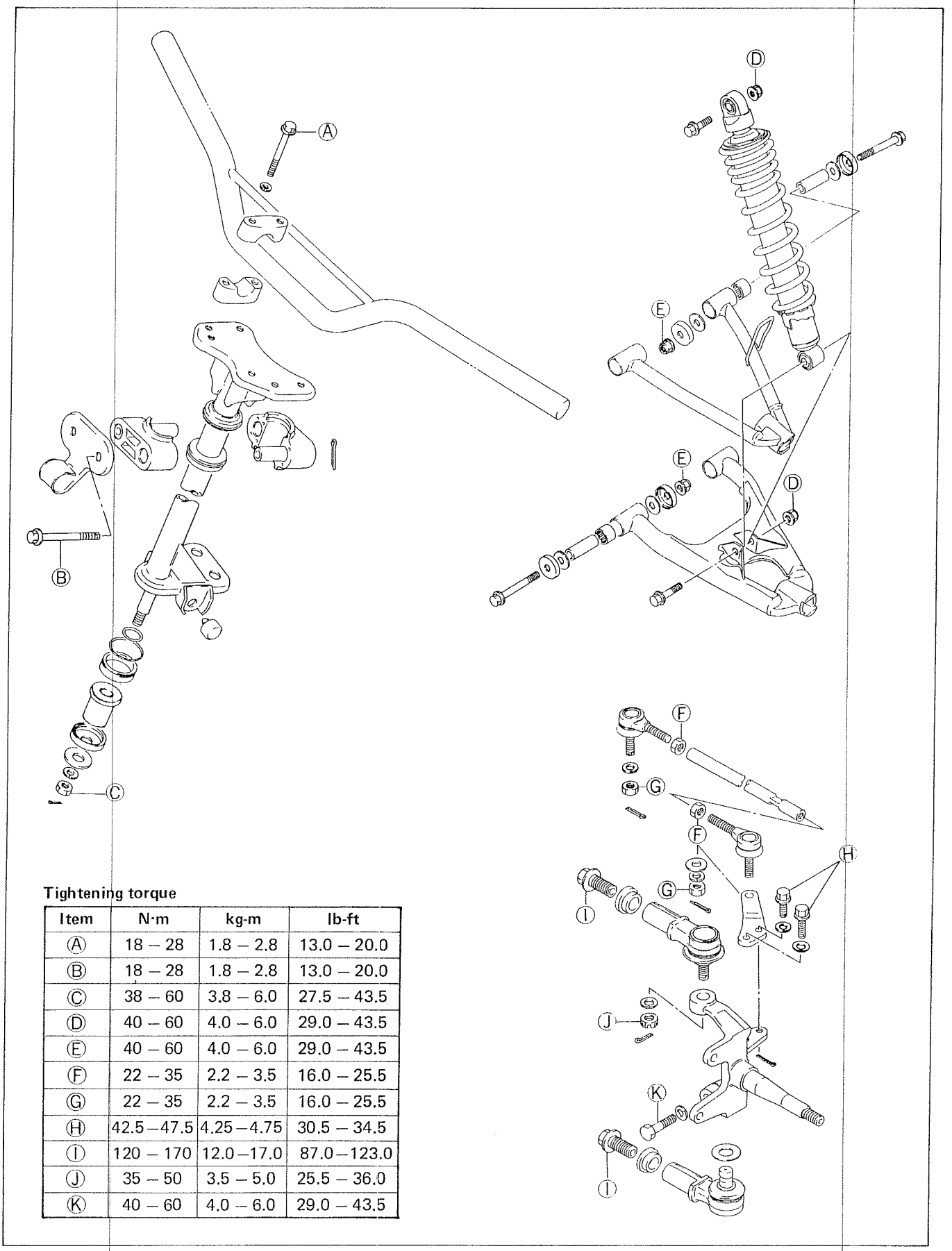
When remounting the master cylinder on the handlebar, first tighten the upper clamp bolt as shown.

Master cylinder clamp bolt tightening torque	5 – 8 N·m (0.5 – 0.8 kg-m / 3.5 – 6.0 lb-ft)



CAUTION:
Bleed air from the brake fluid circuit after reassembling the master cylinder. (Refer to page 2-13.)

FRONT SUSPENSION AND STEERING



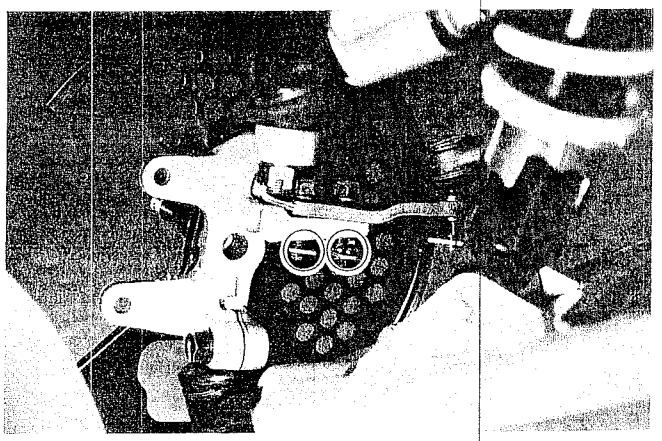
Tightening torque

Item	N·m	kg-m	lb-ft
Ⓐ	18 – 28	1.8 – 2.8	13.0 – 20.0
Ⓑ	18 – 28	1.8 – 2.8	13.0 – 20.0
Ⓒ	38 – 60	3.8 – 6.0	27.5 – 43.5
Ⓓ	40 – 60	4.0 – 6.0	29.0 – 43.5
Ⓔ	40 – 60	4.0 – 6.0	29.0 – 43.5
Ⓕ	22 – 35	2.2 – 3.5	16.0 – 25.5
Ⓖ	22 – 35	2.2 – 3.5	16.0 – 25.5
Ⓗ	42.5 – 47.5	4.25 – 4.75	30.5 – 34.5
Ⓘ	120 – 170	12.0 – 17.0	87.0 – 123.0
Ⓙ	35 – 50	3.5 – 5.0	25.5 – 36.0
Ⓚ	40 – 60	4.0 – 6.0	29.0 – 43.5

REMOVAL AND DISASSEMBLY

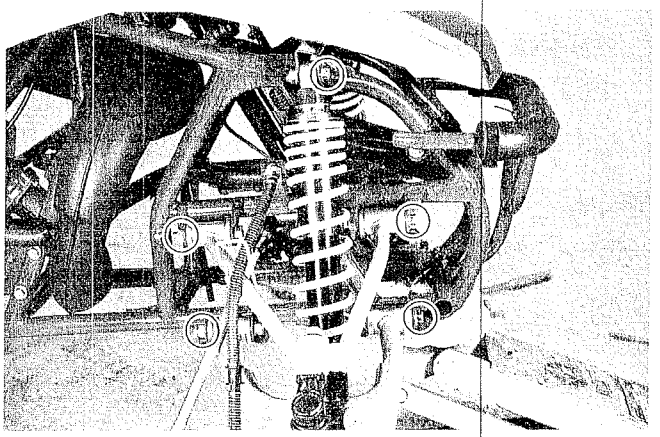
- Remove the front wheel. (Refer to page 7-1.)
- Remove the caliper. (Refer to page 7-9.)
- Remove the cotter pins and remove the bolts and nut.

NOTE:
The removed cotter pins should be replaced with new ones.

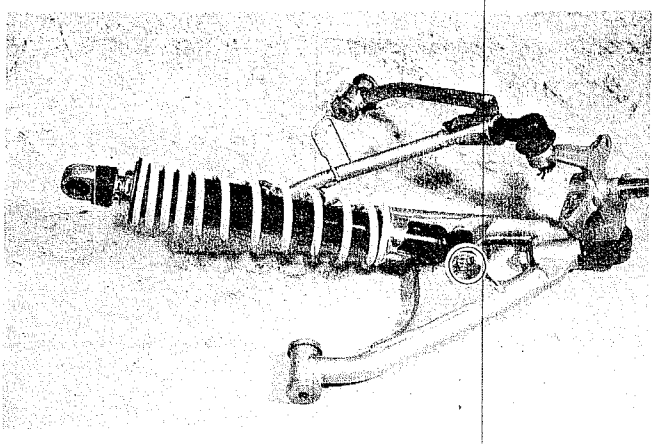


- Remove the disc protector.

- Remove the shock absorber upper bolt and wishbone arm upper and lower pivot bolts.

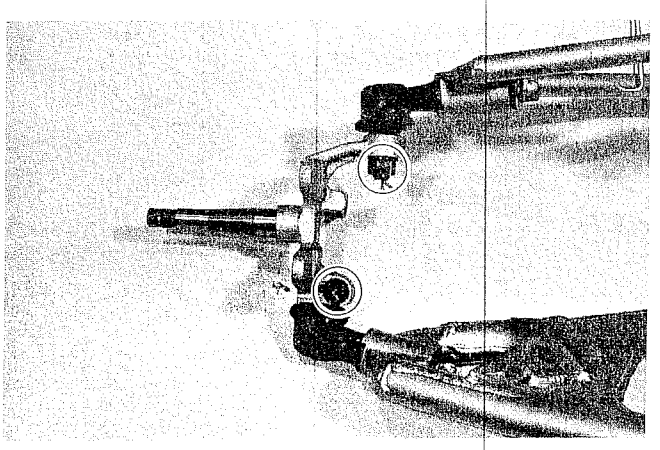


- Remove the shock absorber.



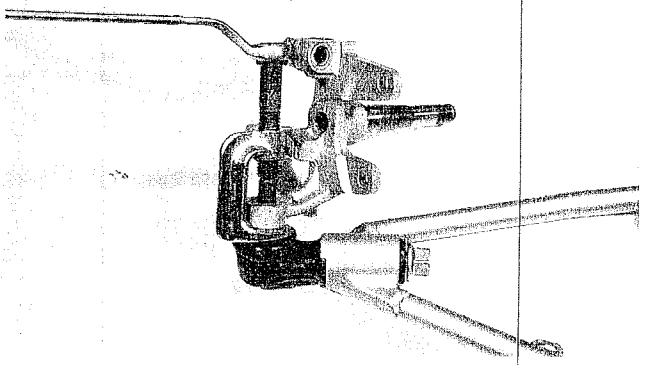
- Remove the lower wishbone arm.
- Remove the cotter pin and nut.

NOTE:
The removed cotter pin should be replaced with a new one.

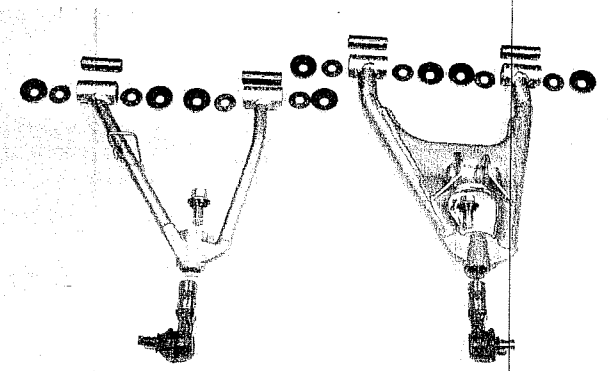


- Remove the upper wishbone arm with the special tool.

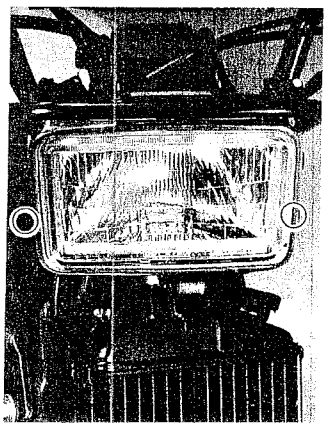
09942-72410	Steering knuckle arm remover

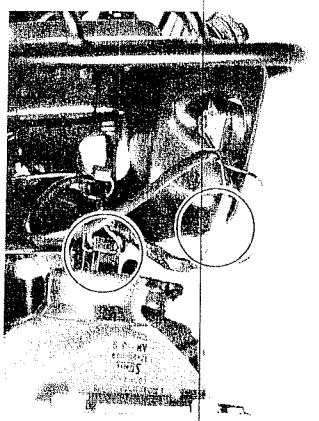


- Separate the wishbone arm ends, upper and lower wishbone arms, spacers and washers.

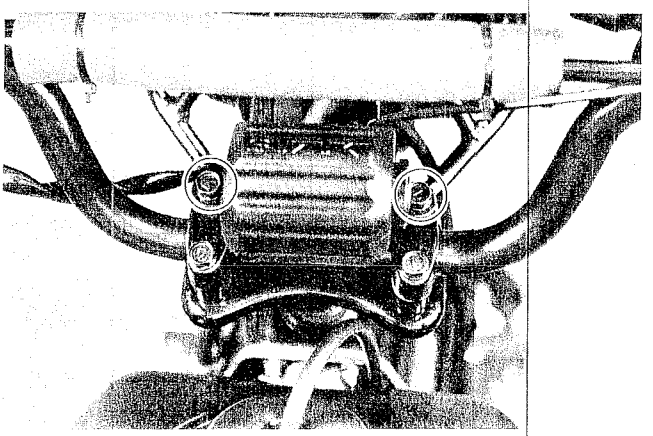


- Remove the headlight mounting screws and disconnect the headlight coupler and engine stop switch lead wire.

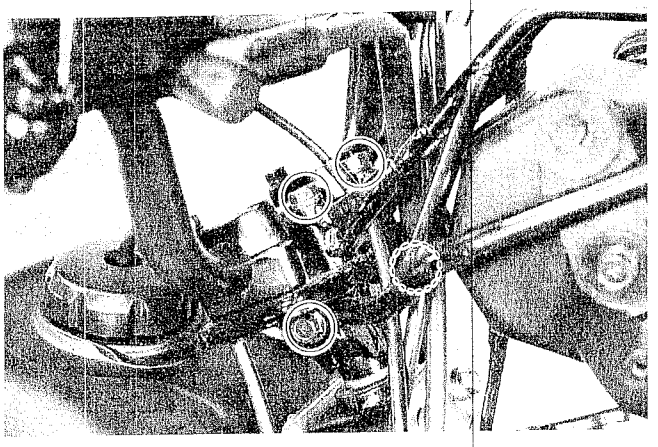




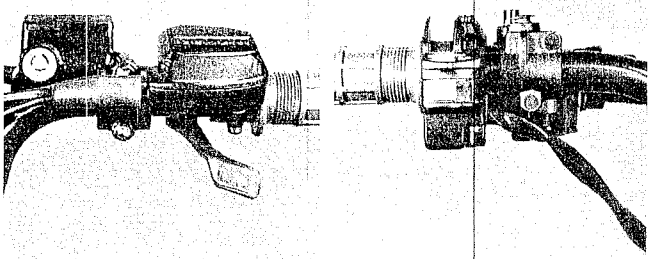
- Remove the ignition switch.



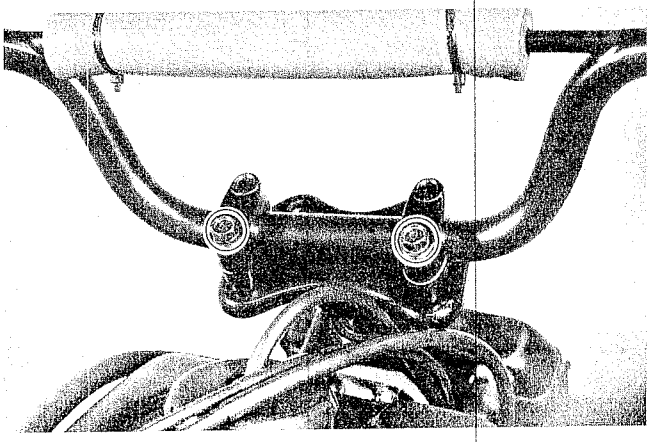
- Remove the headlight housing mounting bracket.



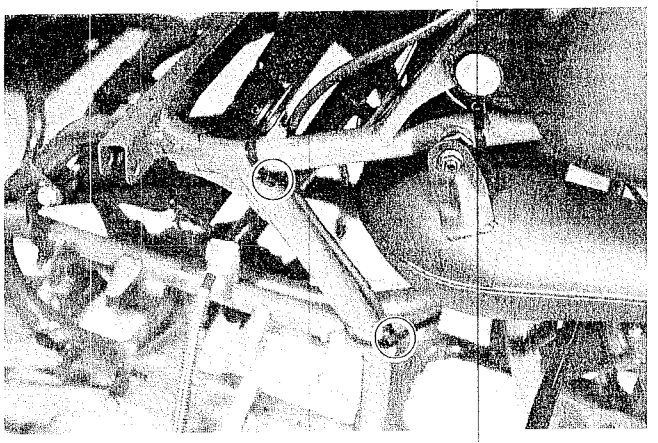
- Remove the throttle case and front brake master cylinder.
- Remove the left handlebar switch.



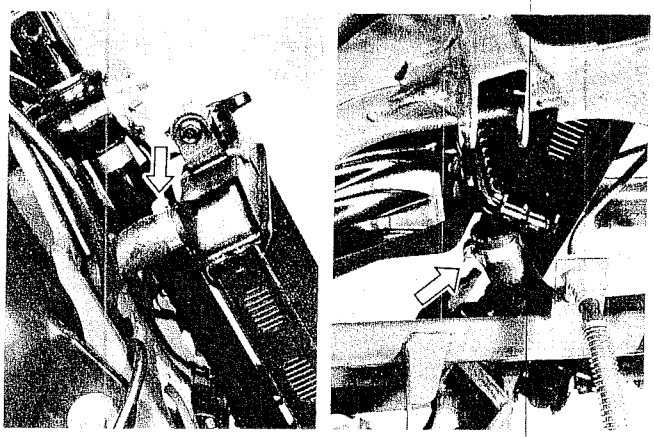
- Remove the handlebar.



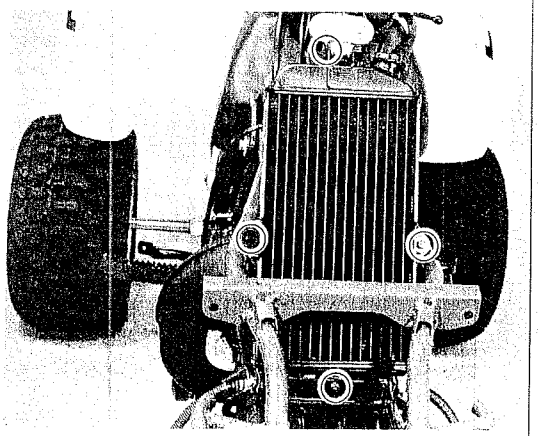
- Remove the radiator breather hose clamps.



- Drain coolant. (Refer to page 2-9.)
- Disconnect the inlet and outlet radiator hoses.

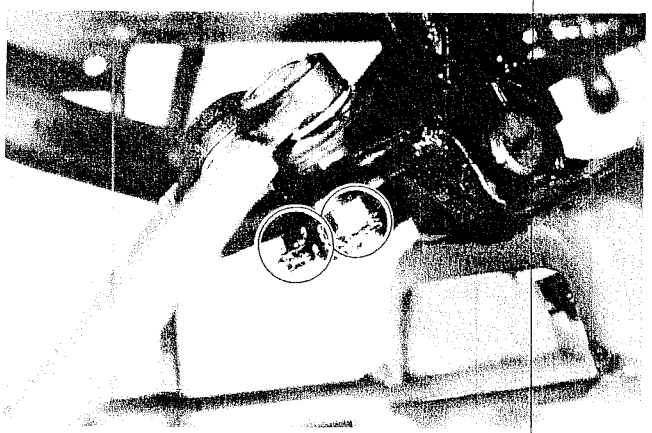


- Remove the radiator.



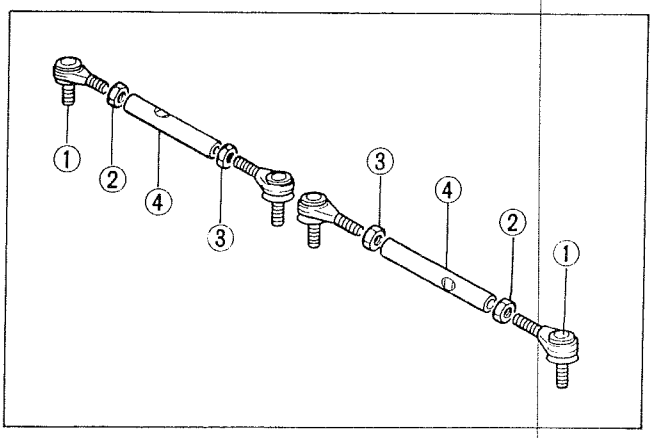
- Remove the cotter pins and remove the tie-rods.

NOTE:
The removed cotter pins should be replaced with new ones.



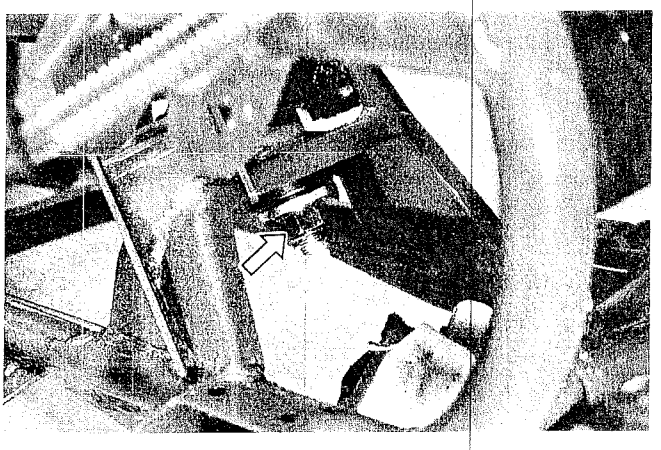
- Separate the tie-rod ends ①, nuts ②, ③ and tie-rods ④.

CAUTION:
Inside lock nuts ③ (surface finishing of yellow) have left-hand thread.

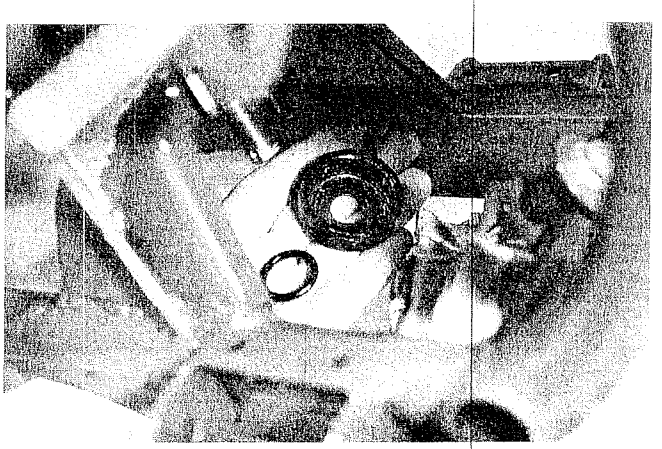


- Remove the cotter pin and steering shaft lower nut.

NOTE:
The removed cotter pin should be replaced with a new one.

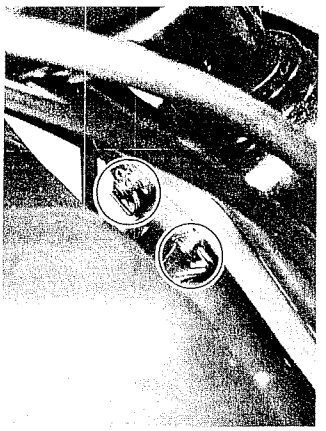


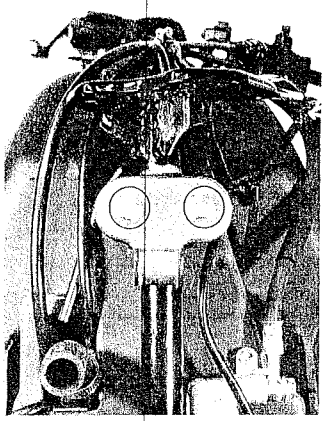
- Remove the dust seal and O-ring.



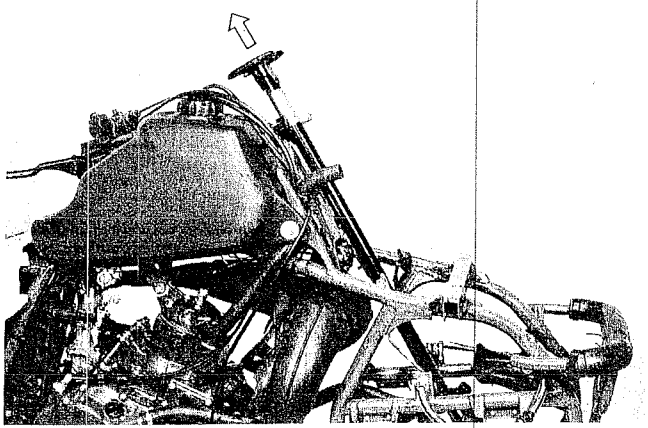
- Remove the cotter pins and remove the steering shaft holder bolts.
- Remove the steering shaft holders and dust seals.

NOTE:
The removed cotter pins should be replaced with new ones.



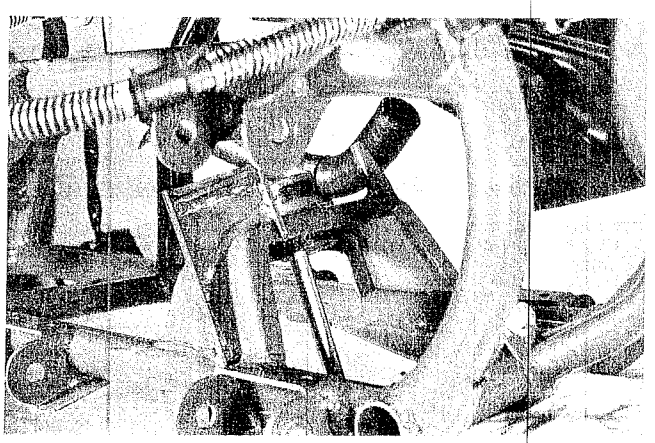


- Remove the steering shaft.



- Using an appropriate bar, drive out the bushing.

NOTE:
The removed bushing should be replaced with a new one.



INSPECTION

Inspect the removed parts for the following abnormalities.

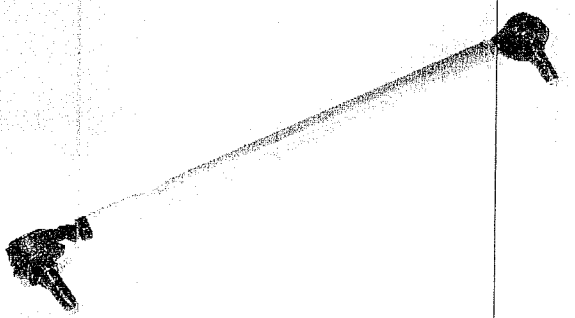
* Handlebar distortion
* Handlebar clamp wear

DUST SEAL

Inspect the dust seals for damage.

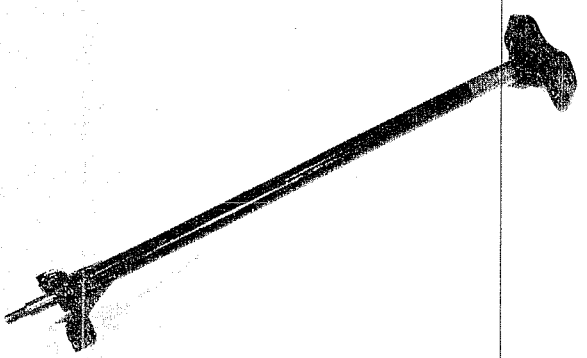
TIE-ROD

Inspect the tie-rod for distortion and the boot for wear.

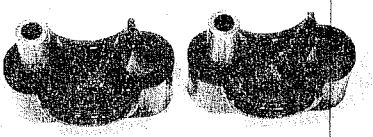


STEERING SHAFT AND HOLDER

Inspect the steering shaft for distortion or bend.

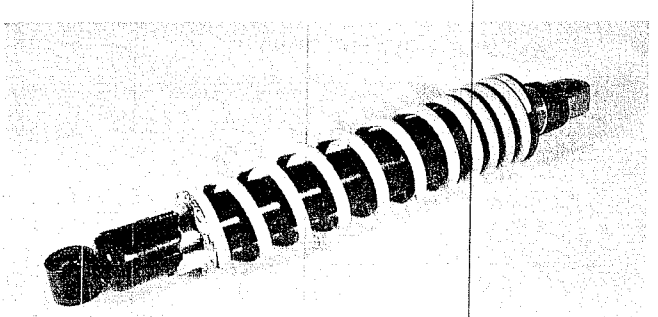


Inspect the two steering shaft holders for wear.



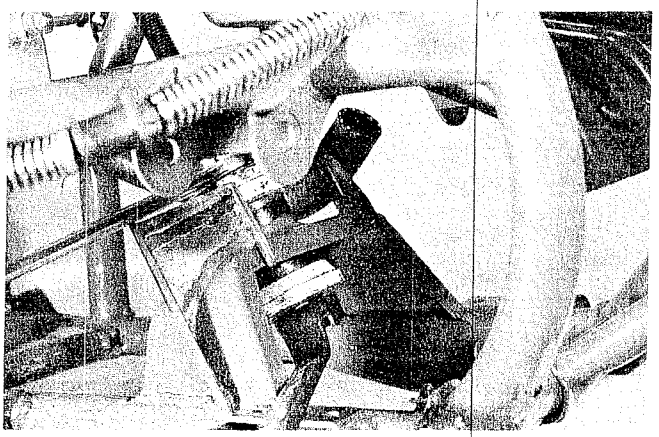
SHOCK ABSORBER

Inspect the shock absorber for oil leakage or other damage.



REASSEMBLY AND REMOUNTING

Reassemble and remounting the steering system in the reverse order of disassembly and removal, and also carry out the following steps:



STEERING BUSHING

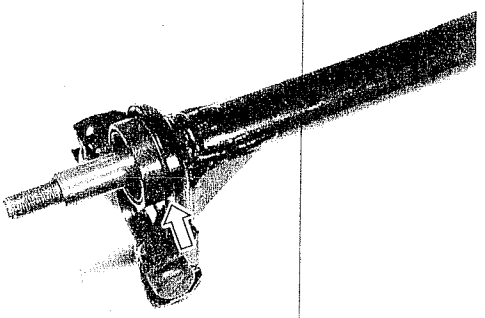
Install the steering bushing with the special tool.

09924-84510	Bearing installer set

STEERING SHAFT

- Apply grease to the dust seal and install it to the steering shaft.

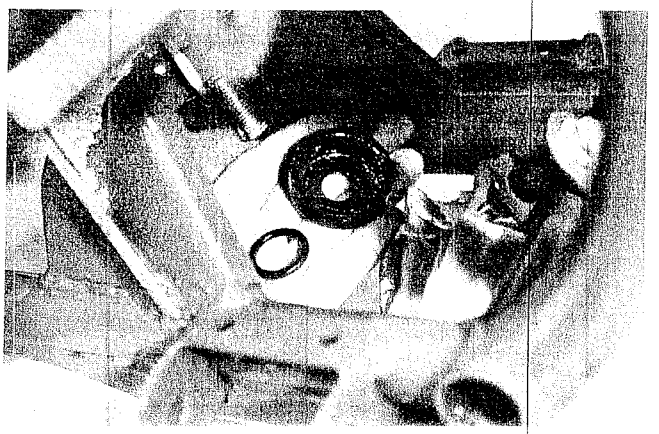
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



- Fit the circlip to the dust seal.

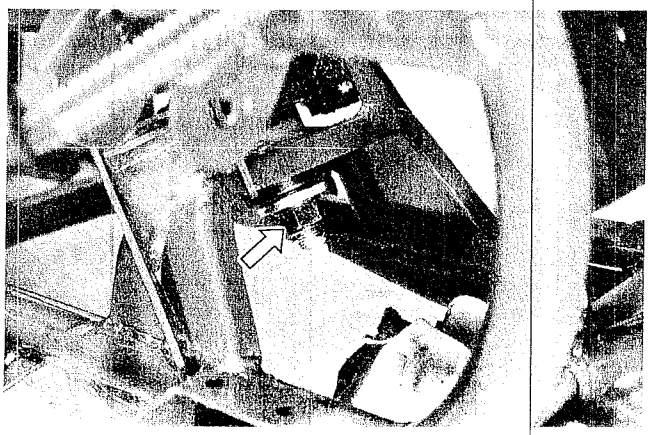
- Install the steering shaft to the frame.
- Apply grease to the O-ring and dust seal.

99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



- Tighten the steering shaft lower nut to the specification and install a new cotter pin.

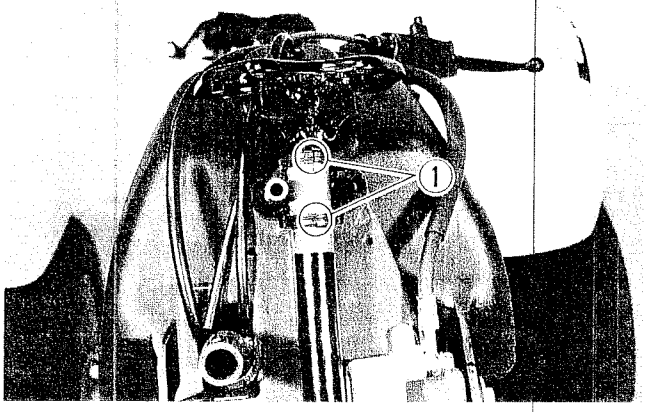
Tightening torque	38 – 60 N·m (3.8 – 6.0 kg-m 27.5 – 43.5 lb-ft)



- Apply grease to the steering shaft holders and dust seals.

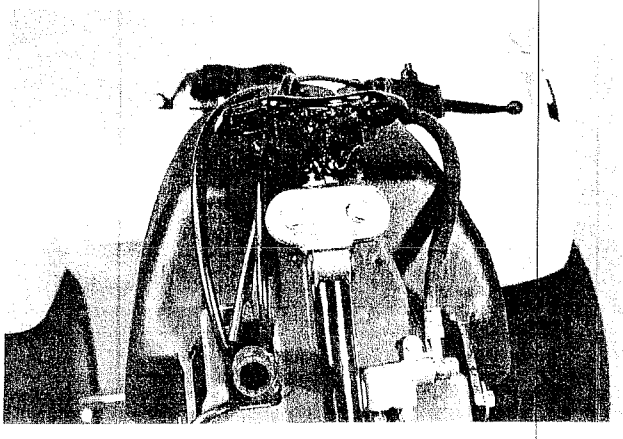
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	

NOTE:
The dust seal end ① should be mounted on the steering shaft facing forward to prevent entry of dirt.



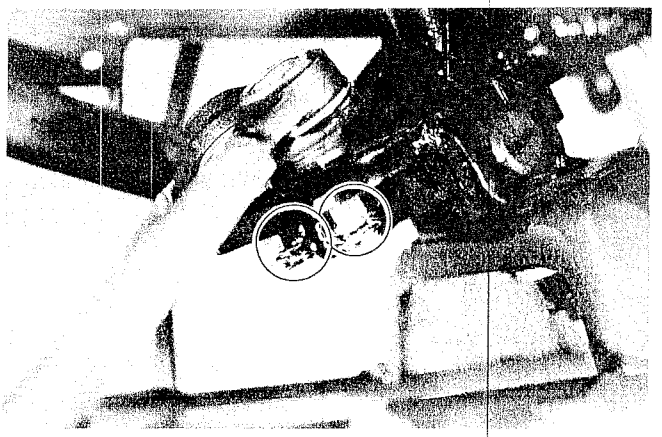
- Tighten the steering shaft holder bolts to the specification.

Tightening torque	18 – 28 N·m (1.8 – 2.8 kg-m 13.0 – 20.0 lb-ft)



- Tighten the tie-rod end nuts to the specification.

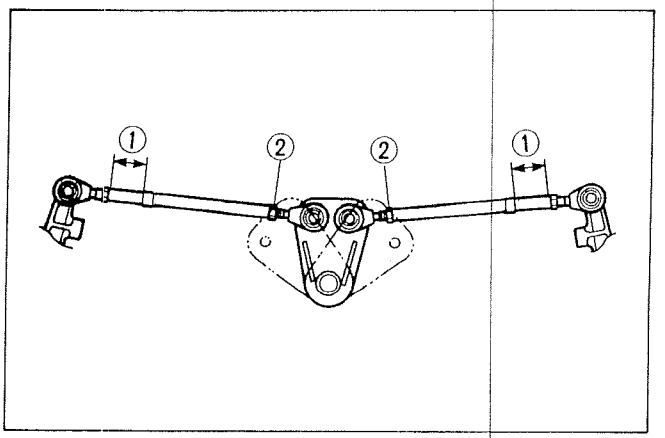
Tightening torque	22 – 35 N·m (2.2 – 3.5 kg-m 16.0 – 25.5 lb-ft)



- When installing the tie-rod, make sure that the narrow side ① of the tie-rod comes outside.

NOTE:
Inside lock nuts ② (surface finishing of yellow) have left-hand thread.

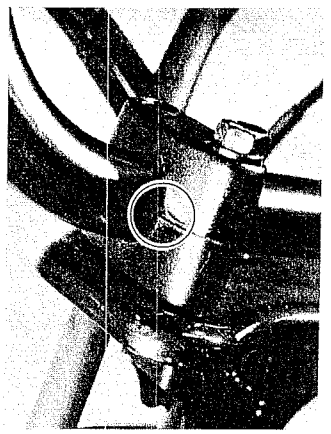
Tightening torque	22 – 35 N·m (2.2 – 3.5 kg-m 16.0 – 25.5 lb-ft)

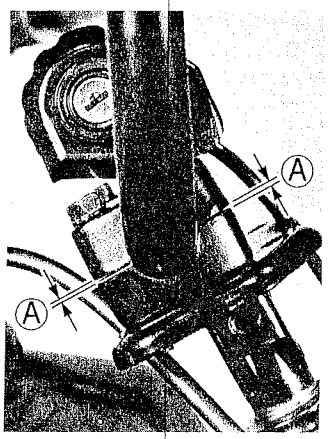


HANDLEBAR

- Set the handlebar to match its punched mark to the mating face of the holder.
- Secure the each handlebar clamp in such a way that the clearances Ⓐ ahead and behind of the handlebar should be equalized.

Tightening torque	18 – 28 N·m (1.8 – 2.8 kg-m 13.0 – 20.0 lb-ft)

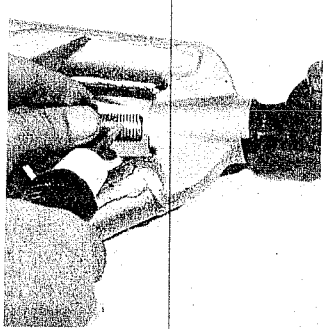




WISHBONE ARM BOLTS

- Install the knuckle steering ends on the upper/ lower wishbone arm.
- Apply THREAD LOCK "1303"/"1322" to the bolt.

99000-32030	Thread Lock "1303" For U.S. model
99000-32110	Thread Lock "1322" For other models

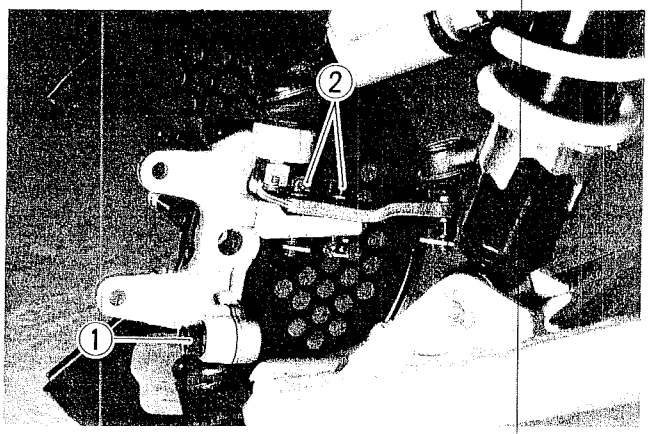


- Tighten the bolts to the specification.

Tightening torque	120 – 170 N·m (12.0 – 17.0 kg-m 87.0 – 123.0 lb-ft)

STEERING KNUCKLE ARM LOWER BOLT AND KNUCKLE ARM BOLTS

- Apply THREAD LOCK SUPER "1303"/"1322" to the knuckle arm lower bolt ① and knuckle arm bolts ②, and tighten them to the specification.
- Install the new cotter pins to the knuckle arm bolts.



99000-32030 For U.S. model	Thread Lock Super "1303"
99000-32110 For other models	Thread Lock Super "1322"

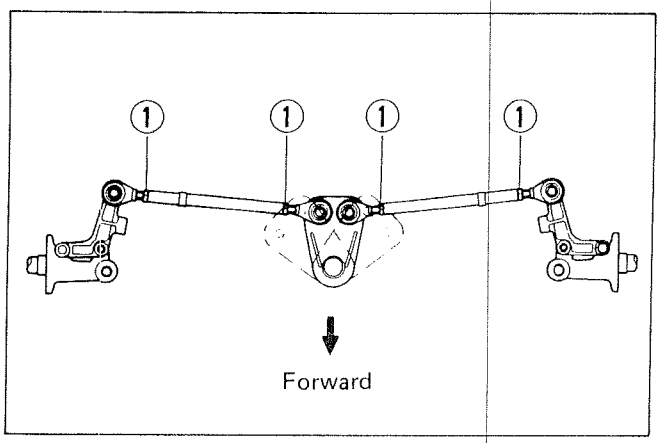
Tightening torque	①	40 – 60 N·m (4.0 – 6.0 kg-m 29.0 – 43.5 lb-ft)
	②	42.5 – 47.5 N·m (4.25 – 4.75 kg-m 30.5 – 34.5 lb-ft)

RADIATOR (Refer to page 4-5.)

TOE-IN ADJUSTMENT

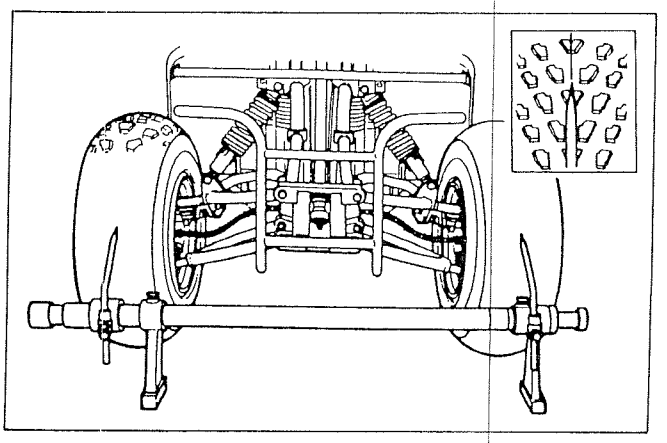
The procedure for adjusting the toe-in is as follows.

- Place the vehicle on level ground and set the handlebar straight.
  Make sure that the all tires are inflated to the standard pressure.
- Loosen the lock nuts ① on each tie rod.



CAUTION:
Lock nuts of yellow surface finishing have left-hand thread.

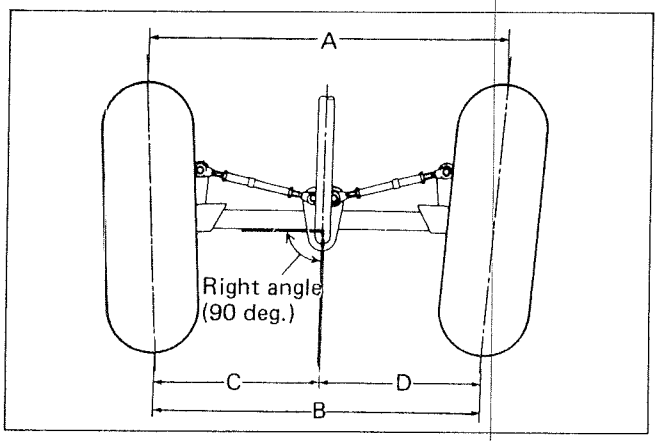
- Measure the distances A and B of front wheels (in illustration) and adjust the tie-rods, right and left, to within the specified range.
  A – B = Toe-in



Toe-in	11 – 19 mm (0.43 – 0.75 in)

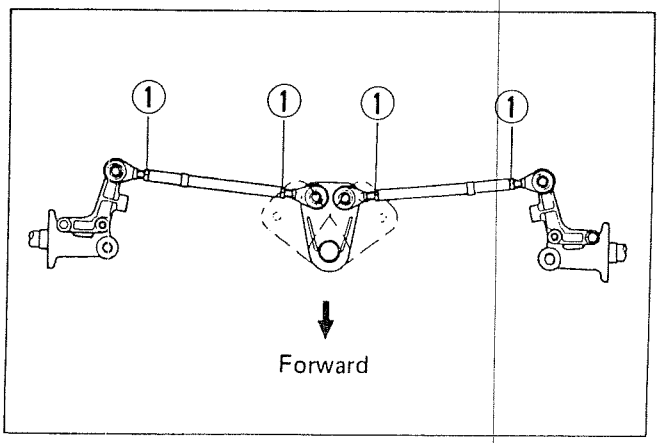
NOTE:
When measuring the distance A and B, place the weight (75 kg, 165 lbs) on the seat.

- Temporarily tighten the four lock nuts.
- Check that the distances C and D (in illustration) are equal. If the distances C and D are not equal, readjust the tie-rod, right or left, whichever makes the toe-in value closer to the specification. Check the toe-in again by measuring the distances A and B.
- If the toe-in is not within specification, repeat the adjustment as above until the proper toe-in value is obtained and at the same time the distances C and D are equal.

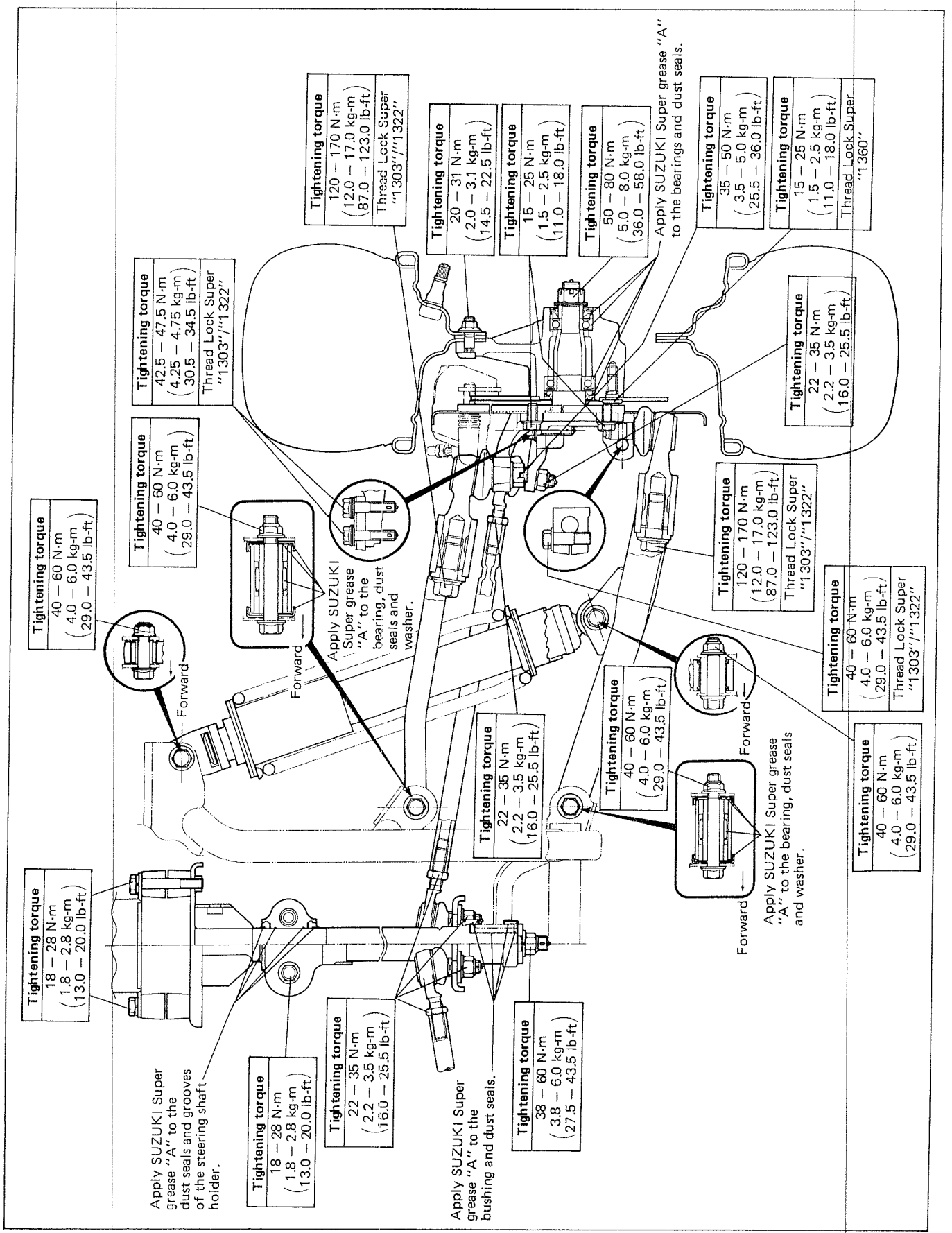


- Tighten the four nuts ① after adjustment of toe-in is made.

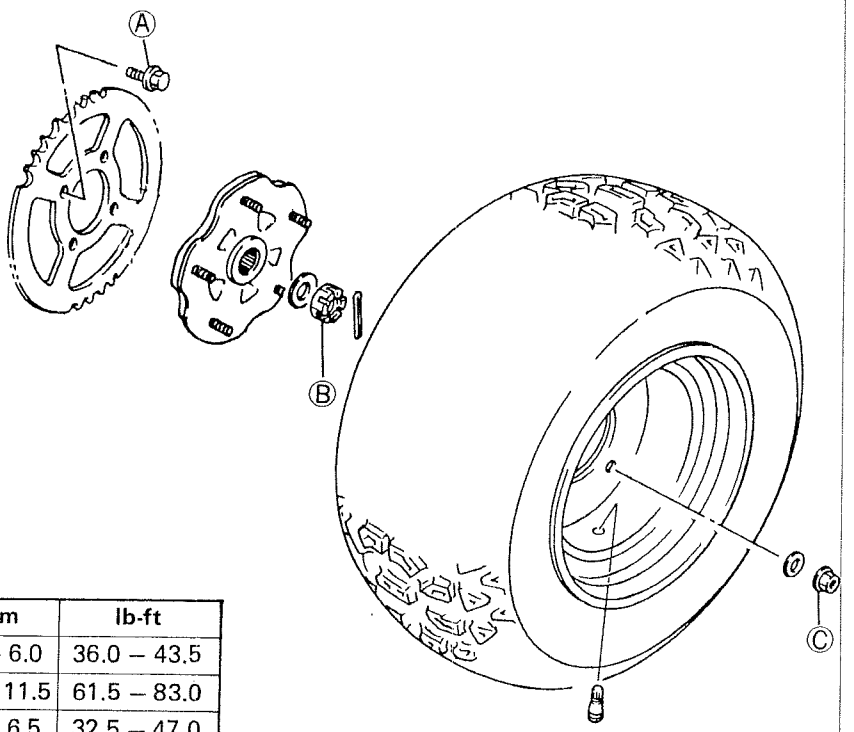
Tightening torque	22 – 35 N·m (2.2 – 3.5 kg-m 16.0 – 25.5 lb-ft)



REASSEMBLY INFORMATION



REAR WHEEL AND REAR SPROCKET

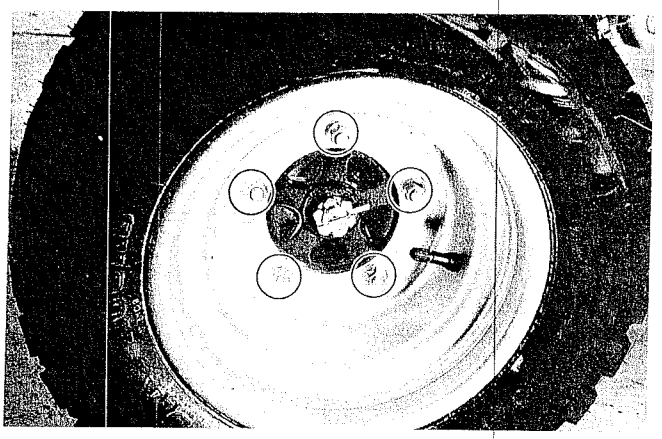


Tightening torque

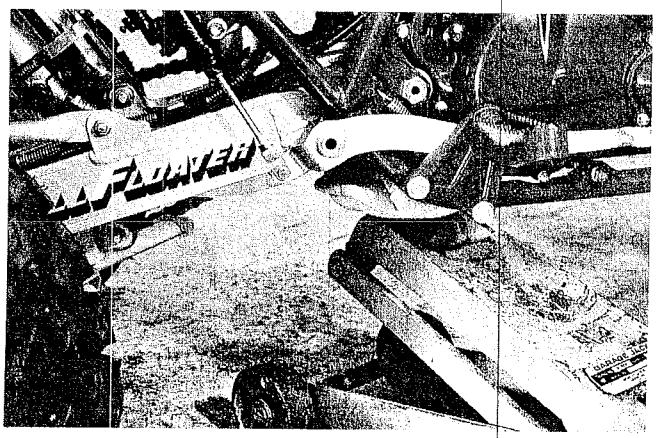
Item	N·m	kg-m	lb-ft
Ⓐ	50 – 60	5.0 – 6.0	36.0 – 43.5
Ⓑ	85 – 115	8.5 – 11.5	61.5 – 83.0
Ⓒ	45 – 65	4.5 – 6.5	32.5 – 47.0

REAR WHEEL REMOVAL

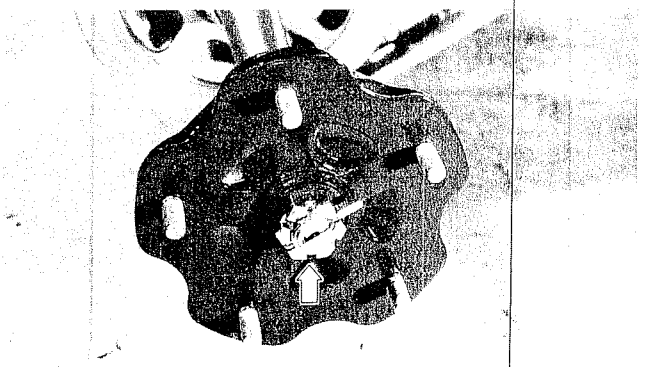
- Place the vehicle on level ground.
- Loosen the wheel set nuts.



- Support the vehicle by jack or block.
- Remove the rear wheel.



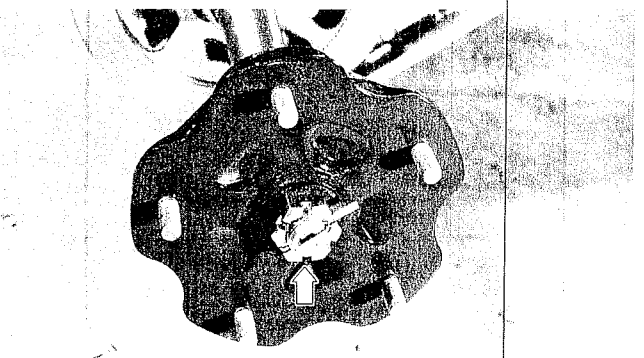
- Remove the cotter pin and remove the wheel hub nut while depressing the rear brake pedal.



CAUTION:
The removed cotter pin should be replaced with a new one.

REMOUNTING

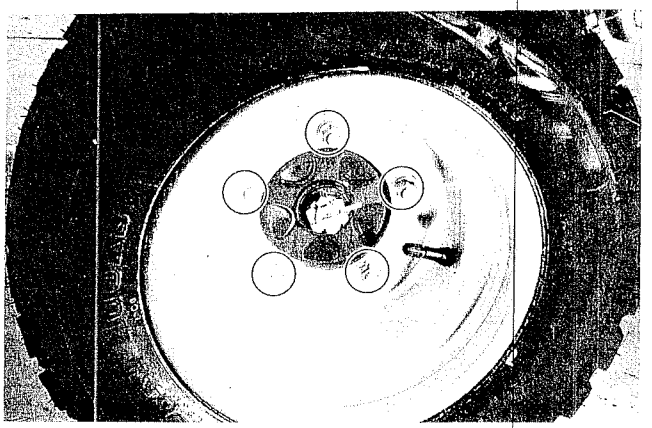
- Tighten the wheel hub nut to the specification.



Tightening torque	85 – 115 N·m (8.5 – 11.5 kg-m) (61.5 – 83.0 lb-ft)

- Install the new cotter pin.

- Tighten the wheel set nuts to the specification.

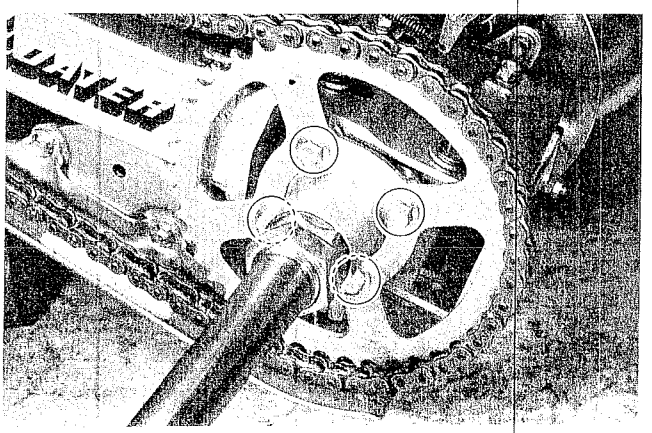


Tightening torque	45 – 65 N·m (4.5 – 6.5 kg-m) (32.5 – 47.0 lb-ft)

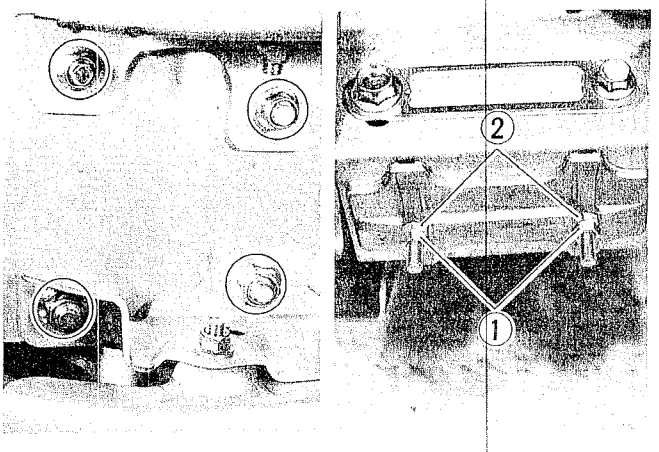
TIRE AND WHEEL (Refer to page 7-9.)

REAR SPROCKET REMOVAL

- Remove the rear sprocket mounting bolts.



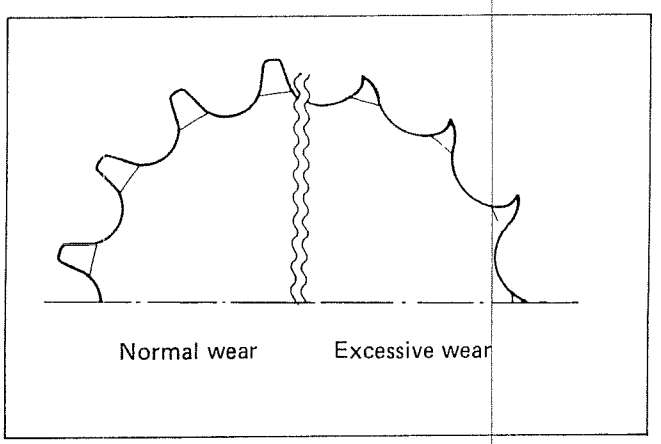
- Loosen the rear axle housing nuts.
- Loosen the chain adjuster lock nuts ① and adjuster nuts ②.
- Disengage the drive chain and remove the sprocket.



INSPECTION

ENGINE SPROCKET AND REAR SPROCKET

Inspect the sprocket teeth for wear. If they are worn as illustrated, replace the sprocket and drive chain.

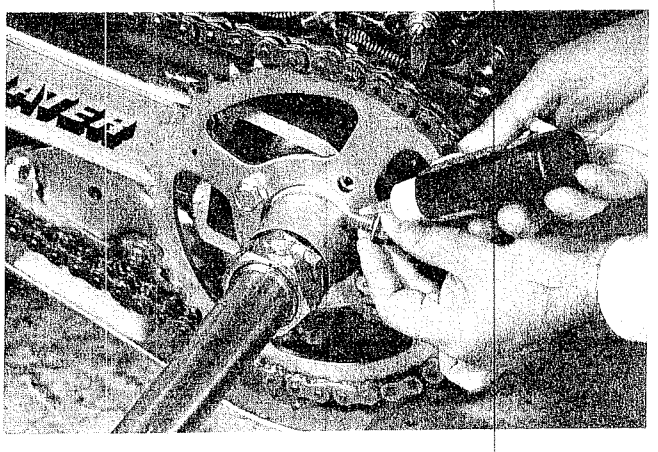


REMOUNTING

Remount the rear sprocket in the reverse order of removal, and also carry out the following steps.

- Apply THREAD LOCK SUPER "1303"/"1322" to the bolts.

99000-32030 For U.S. model	Thread Lock Super "1303"
99000-32110 For other models	Thread Lock Super "1322"

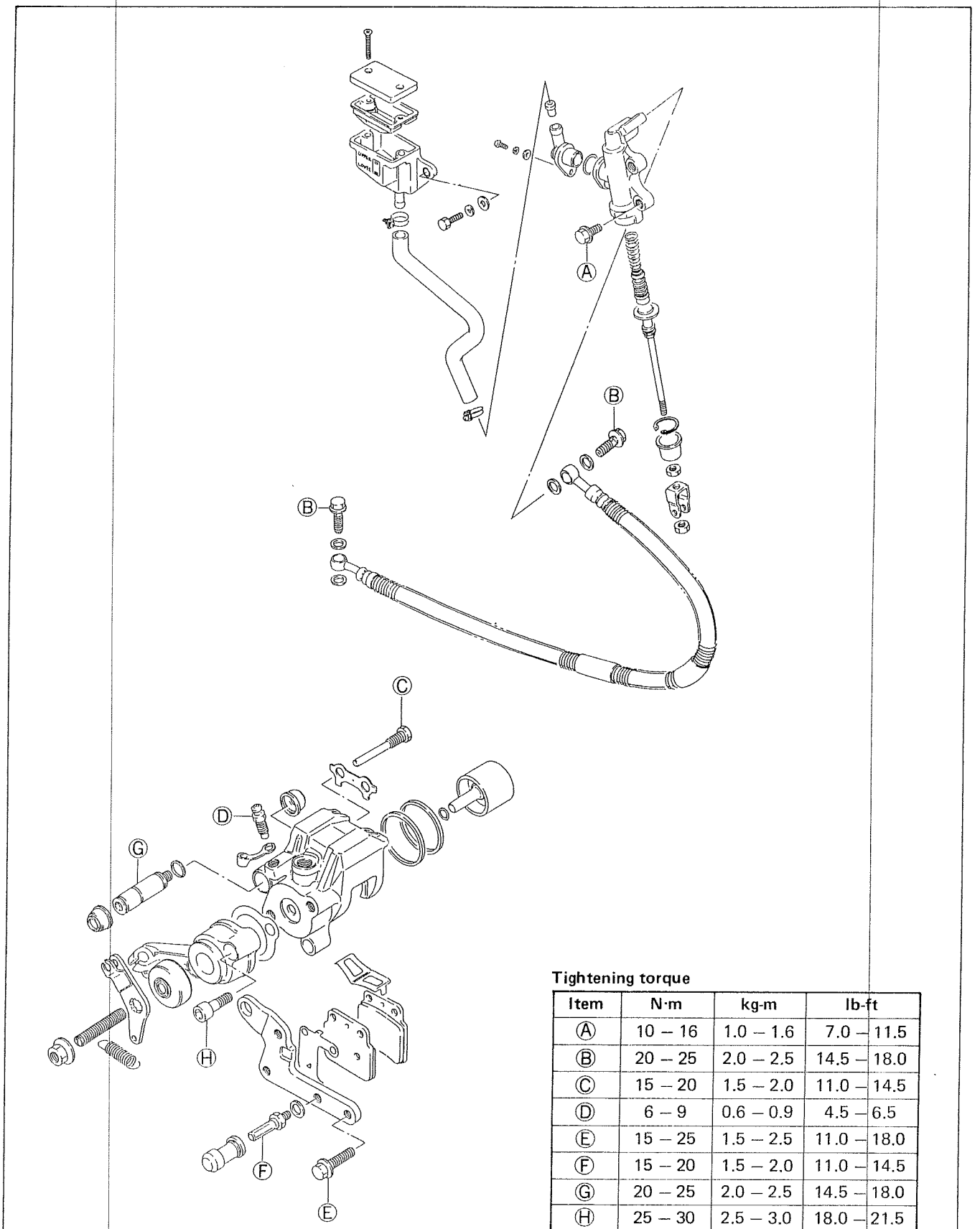


- Tighten the bolts to the specification.

Tightening torque	50 – 60 N·m (5.0 – 6.0 kg-m 36.0 – 43.5 lb-ft)

- Adjust the chain slack after installing the drive chain. (Refer to page 2-8.)

REAR BRAKE

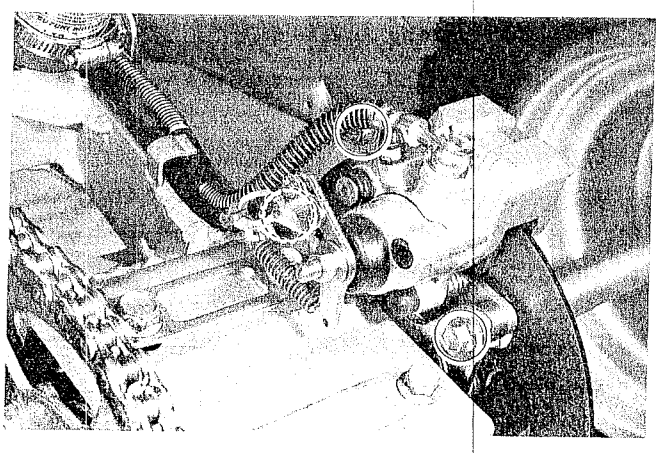


Tightening torque

Item	N·m	kg-m	lb-ft
Ⓐ	10 – 16	1.0 – 1.6	7.0 – 11.5
Ⓑ	20 – 25	2.0 – 2.5	14.5 – 18.0
Ⓒ	15 – 20	1.5 – 2.0	11.0 – 14.5
Ⓓ	6 – 9	0.6 – 0.9	4.5 – 6.5
Ⓔ	15 – 25	1.5 – 2.5	11.0 – 18.0
Ⓕ	15 – 20	1.5 – 2.0	11.0 – 14.5
Ⓖ	20 – 25	2.0 – 2.5	14.5 – 18.0
Ⓗ	25 – 30	2.5 – 3.0	18.0 – 21.5

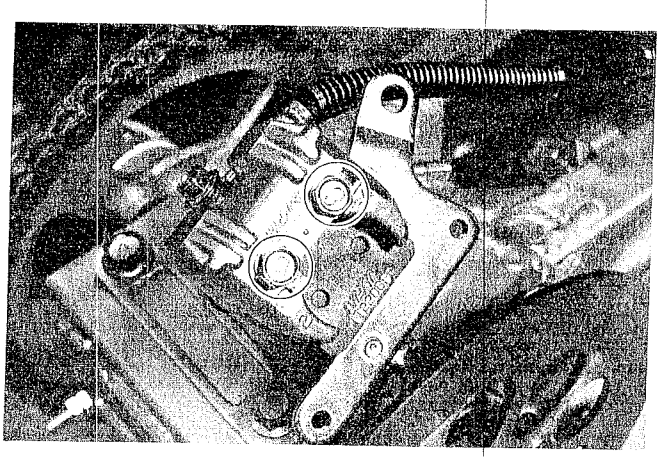
BRAKE PAD REPLACEMENT

- Remove the caliper mounting bolts and rear torque link nuts and bolt.



- Remove the pad mounting bolts after flatting the lock washer.

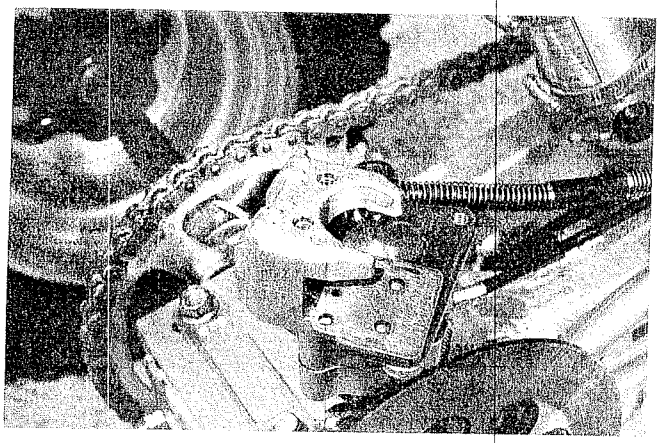
Tightening torque	15 – 20 N·m (1.5 – 2.0 kg-m 11.0 – 14.5 lb-ft)



- Remove the pads.

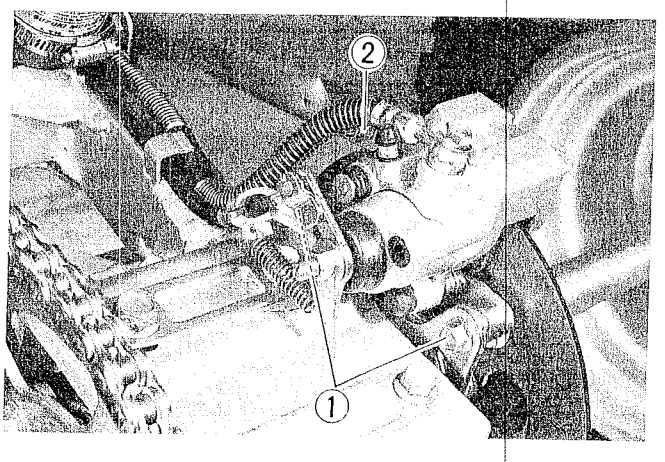
CAUTION:

* **Do not operate the brake pedal while dismounting the pads.**
* **Replace the brake pad as a set, otherwise braking performance will be adversely affected.**



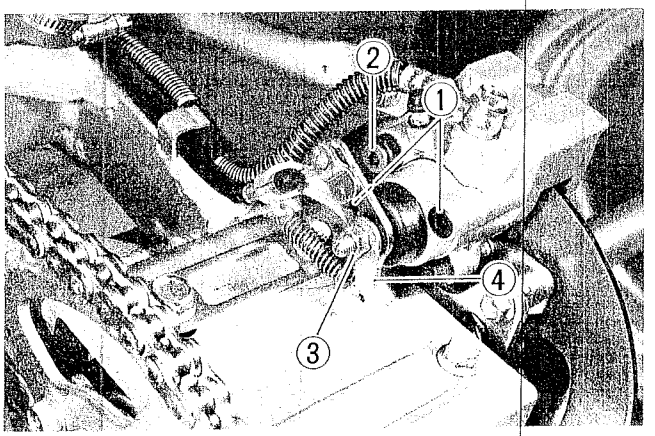
Tightening torque:

Caliper mounting bolt ①	15 – 25 N·m (1.5 – 2.5 kg-m 11.0 – 18.0 lb-ft)
Rear torque link nut ②	20 – 25 N·m (2.0 – 2.5 kg-m 14.5 – 18.0 lb-ft)



CALIPER REMOVAL AND DISASSEMBLY

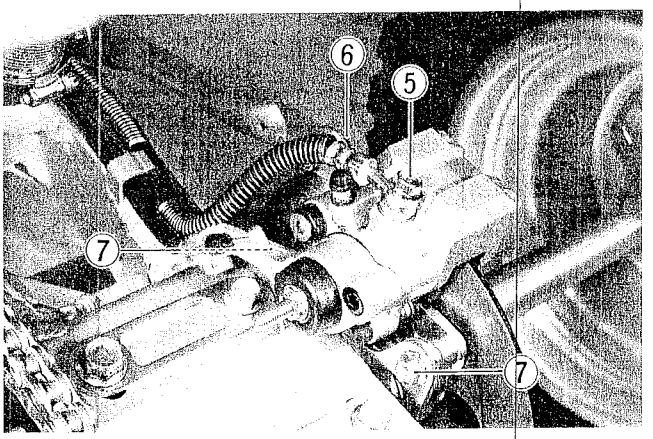
NOTE:
Slightly loosen the brake pad mounting bolts, parking brake housing bolts ① and caliper axle bolt ② to facilitate later disassembly.



- Disconnect the parking brake cable by removing the lever lock nut ③ and lever ④.

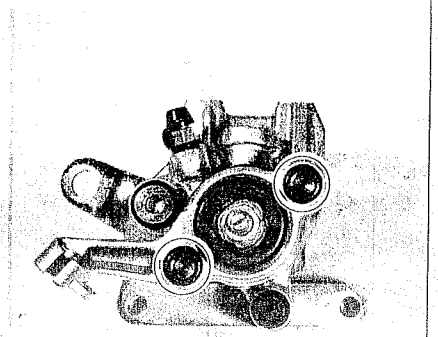
- Remove the brake hose union bolt ⑤ and catch brake fluid in a suitable receptacle.

CAUTION:
Completely wipe off any brake fluid adhering to any part of vehicle. The fluid reacts chemically with paint, plastics, rubber materials, etc.

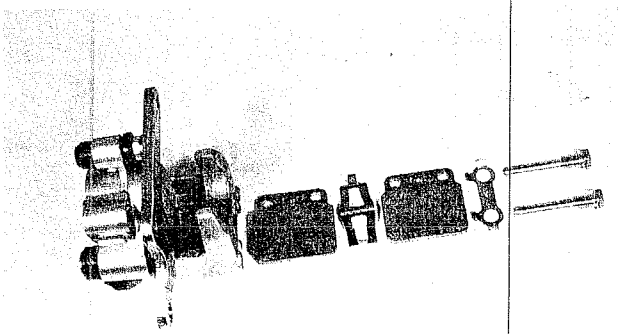


- Remove the torque link nut ⑥ and bolt.
- Remove the caliper by removing the caliper mounting bolts ⑦.

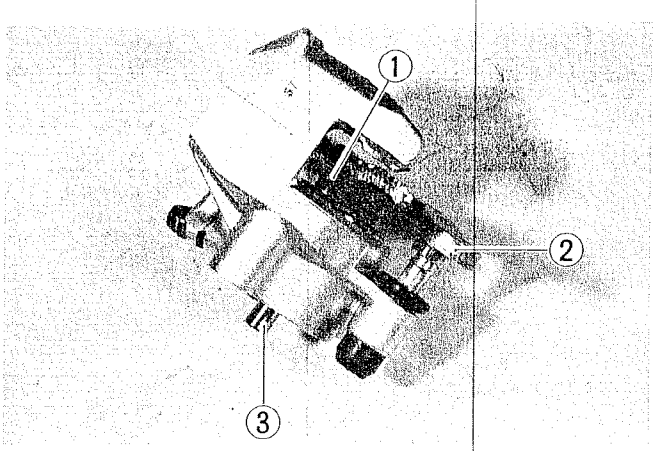
- Remove the parking brake housing.



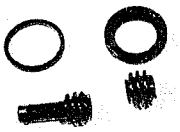
- Remove the pad mounting bolts and remove the brake pads and pad shim.



- Remove the caliper axle bolt ①, then remove the caliper holder ②.
- Remove the piston by pushing the piston/shaft ③.

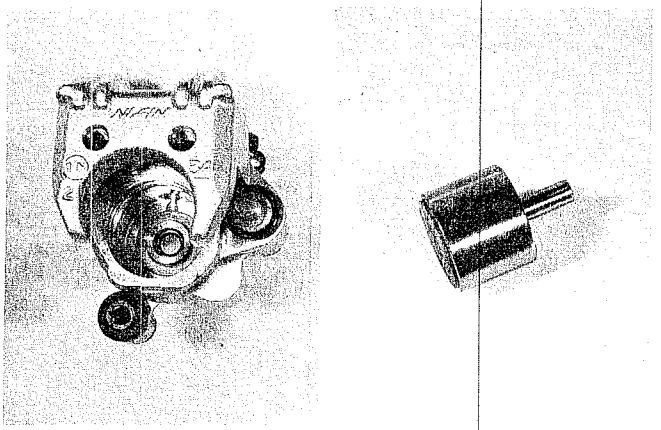


- Remove the rubber boots, piston seal and dust seal from the caliper.

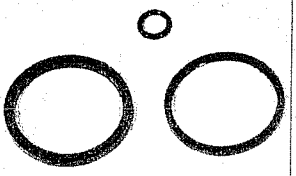


CALIPER INSPECTION

- Inspect the caliper bore wall for nicks, scratches or other damage. Inspect the piston surface for any scratches or other damage.

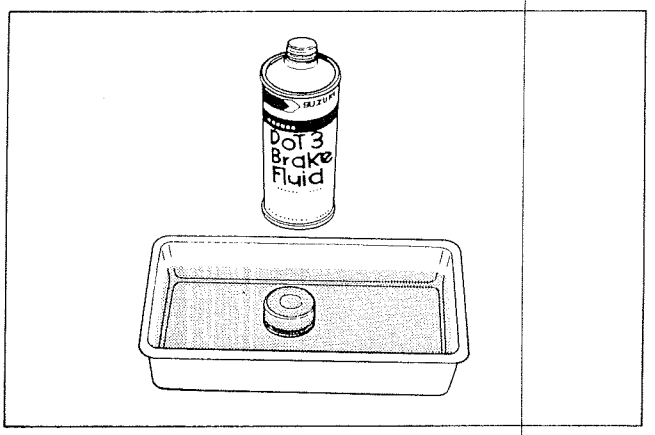


- Inspect the rubber parts for damage and wear.



CALIPER REASSEMBLY AND REMOUNTING

Reassemble and remount the caliper in the reverse order of disassembly and removal. Pay attention to the following points:

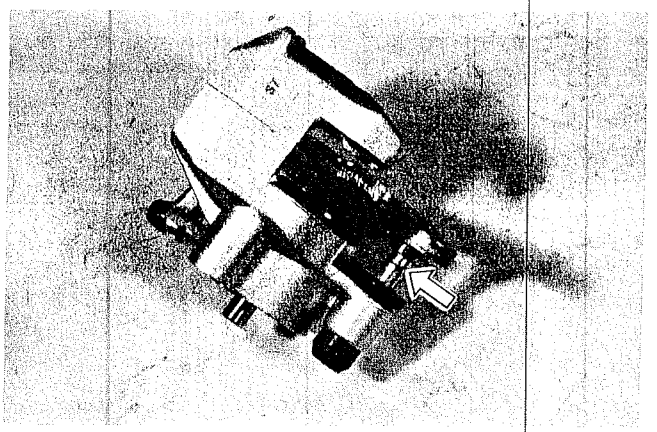


CAUTION:

* **Wash the caliper components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.**
* **Apply brake fluid to the caliper bore and piston to be inserted into the bore.**

- Apply SUZUKI silicone grease to the caliper axles.

99000-25100	SUZUKI Silicone grease



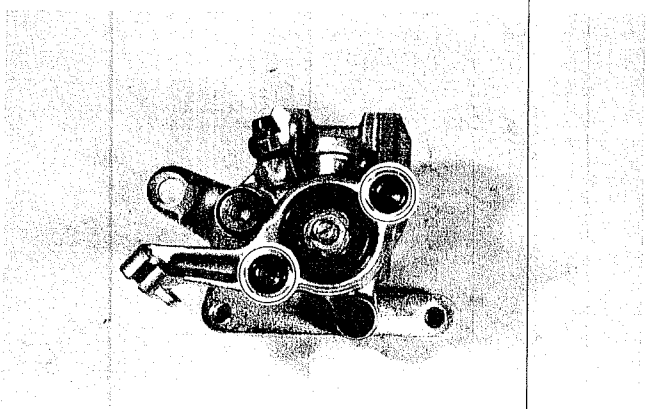
- Tighten the caliper axle bolt to the specified torque.

Tightening torque	20 – 25 N·m (2.0 – 2.5 kg-m 14.5 – 18.0 lb-ft)

- Apply THREAD LOCK "1342" to the parking brake housing bolts and tighten them to the specified torque.

99000-32050	Thread Lock "1342"

Tightening torque	25 – 30 N·m (2.5 – 3.0 kg-m 18.0 – 21.5 lb-ft)

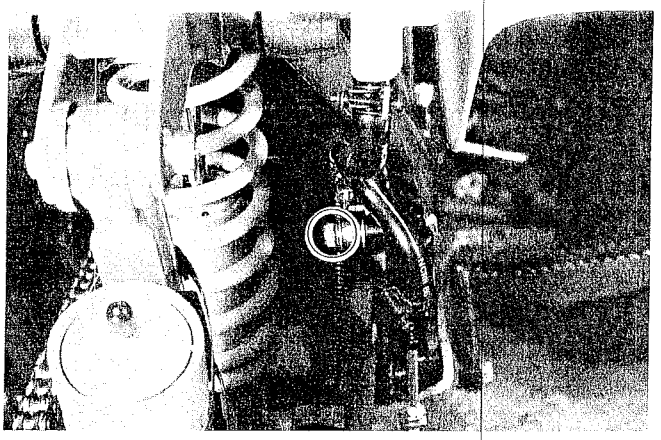


WARNING:

* **Bleed air out of the brake fluid circuit after reassembling the caliper. (Refer to page 2-13.)**
* **Adjust the parking brake cable play. (Refer to page 2-14.)**

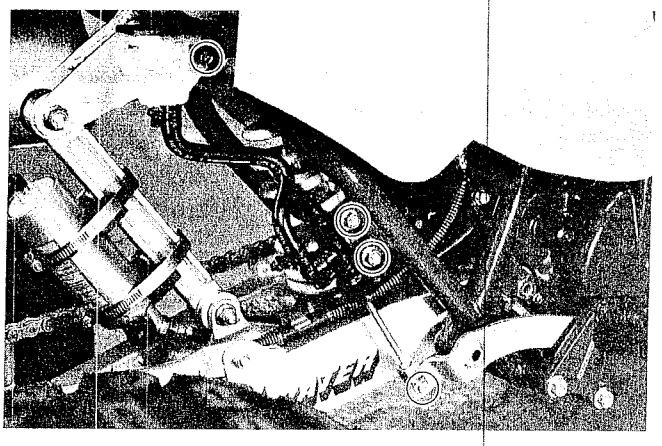
MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Place a rag underneath the union bolt on the master cylinder to catch spilled drops of brake fluid.
  Unscrew the union bolt and disconnect the brake hose/master cylinder joint.



CAUTION:
Completely wipe off any brake fluid adhering to any parts of vehicle. The fluid reacts chemically with paint, plastics, rubber materials, etc.

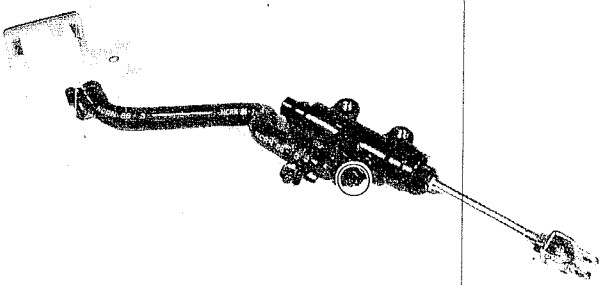
- Remove the reservoir tank mounting bolt.
- Disconnect the push rod from the rear brake pedal end by removing the cotter pin and pin.



CAUTION:
The removed cotter pin should be replaced with a new one.

- Remove the master cylinder assembly.

- Remove the screw and separate the master cylinder assembly and reservoir tank.



- Remove the reservoir cap and diaphragm.

- Remove the dust seal boot.
- Remove the circlip with a snap ring pliers.

09900-06108	Snap ring pliers

- Remove the piston/primary cup and spring.

MASTER CYLINDER INSPECTION

- Inspect the master cylinder bore for any scratches or other damage.

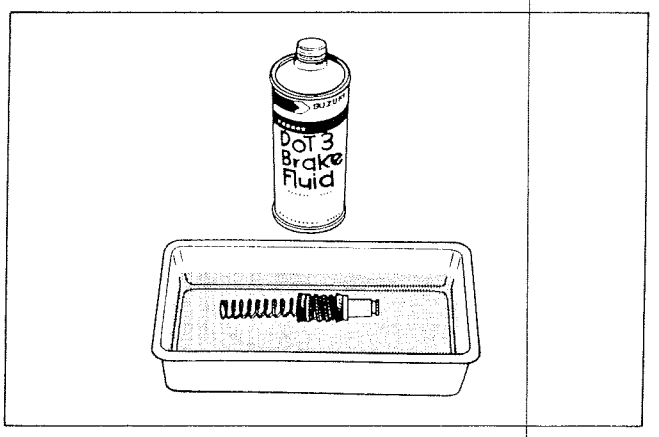
- Inspect the piston/primary cup surface for scratches or other damage.
  Inspect the rubber parts for wear or damage.

MASTER CYLINDER REASSEMBLY AND REMOUNTING

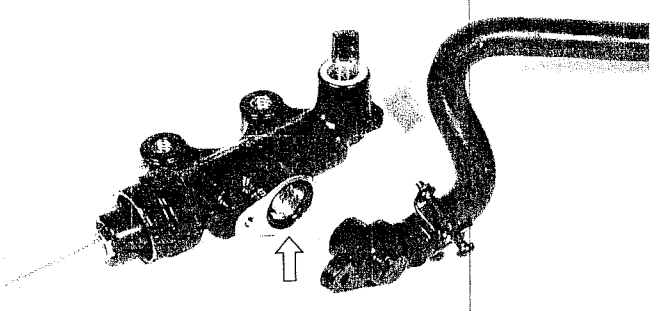
Reassemble and remount the master cylinder in the reverse order of disassembly and removal. Pay attention to the following points:

CAUTION:

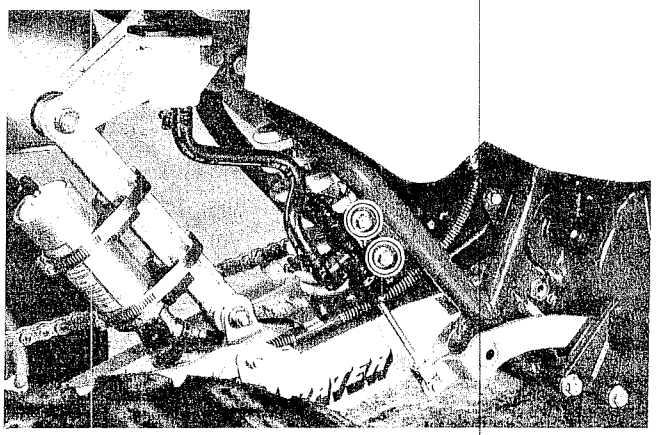
* **Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.**
* **Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.**



- Install a new O-ring to the master cylinder.



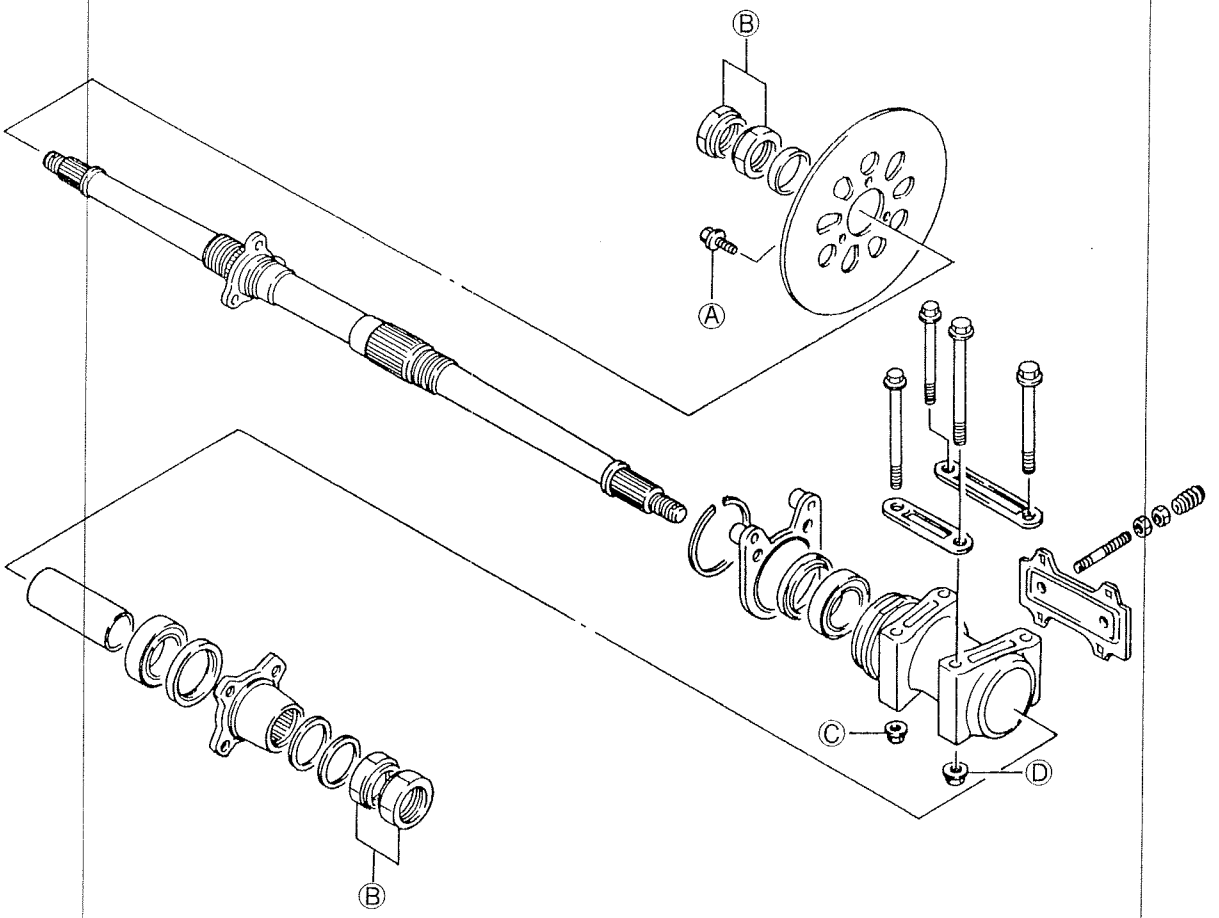
- Tighten the master cylinder mounting bolts to the specification.



Tightening torque	10 – 16 N·m (1.0 – 1.6 kg-m 7.0 – 11.5 lb-ft)

WARNING:
Bleed air out of the brake fluid circuit after re-assembling the master cylinder.
(Refer to page 2-13.)

REAR AXLE SHAFT AND AXLE HOUSING



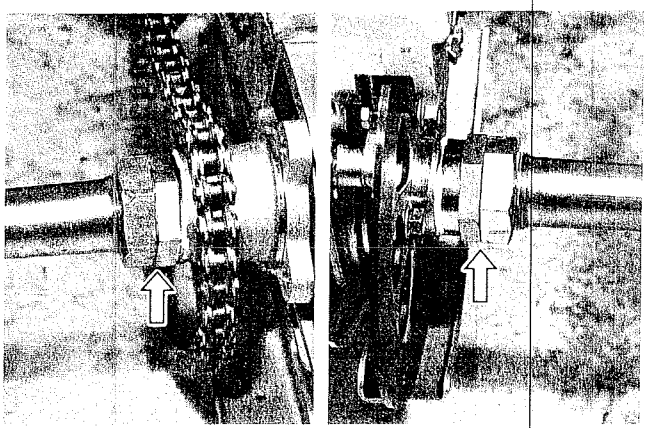
Tightening torque

Item	N·m	kg-m	lb-ft
Ⓐ	15 – 25	1.5 – 2.5	11.0 – 18.0
Ⓑ	160 – 200	16.0 – 20.0	115.5 – 144.5
Ⓒ	40 – 60	4.0 – 6.0	29.0 – 43.5
Ⓓ	70 – 90	7.0 – 9.0	50.5 – 65.0

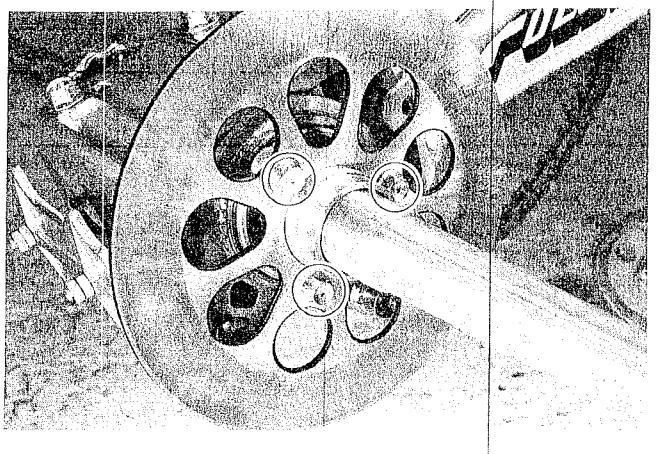
REMOVAL

- Loosen the inner and outer lock nuts with the special tool while depressing the rear brake pedal.

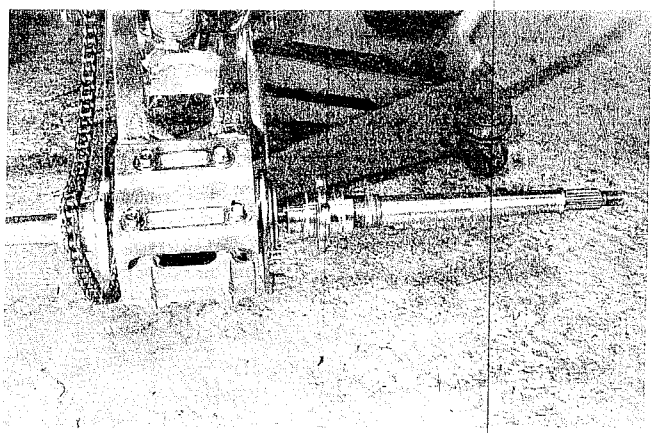
09940-92410	Rear axle lock nut holder/ remover set



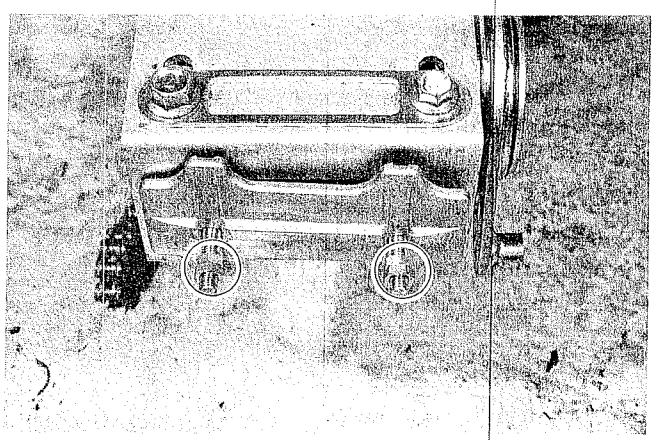
- Remove the rear sprocket. (Refer to page 7-33.)
- Remove the rear wheels and hubs. (Refer to page 7-32.)
- Remove the rear brake caliper. (Refer to page 7-36.)
- Remove the axle housing under guard.
- Remove the rear brake disc plate.



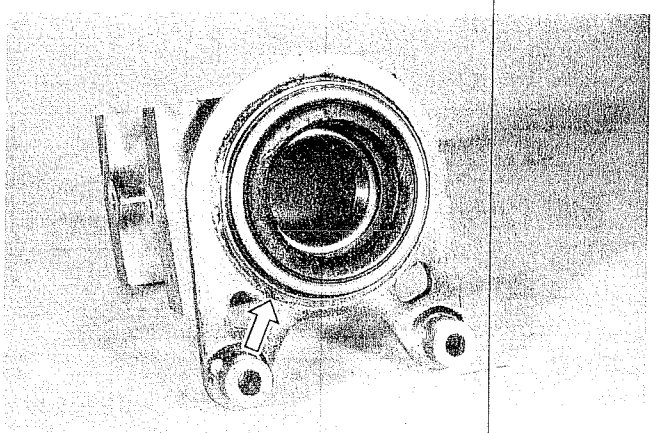
- Remove the rear sprocket flange and brake disc flange by removing the respective flange axle lock nuts.
- Remove the rear axle shaft to the right side.



- Remove the drive chain adjusting stud bolts with their nuts or stud extractor.
- Remove the axle housing mounting bolts and remove the axle housing.

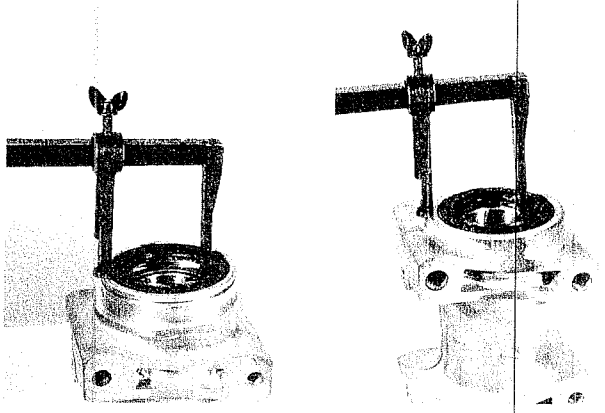


- Remove the caliper mounting bracket by removing the circlip.



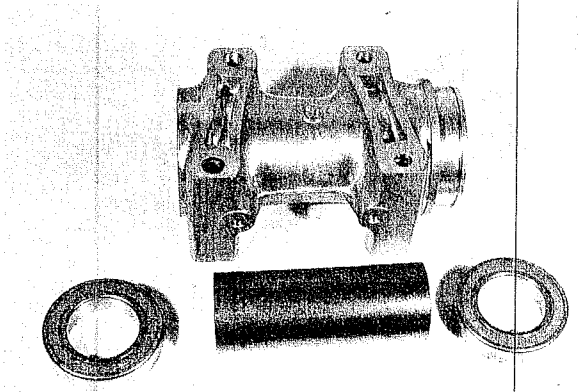
- Remove the dust seals with the special tool.

09913-50121	Oil seal remover



CAUTION:
The removed dust seals should be replaced with new ones.

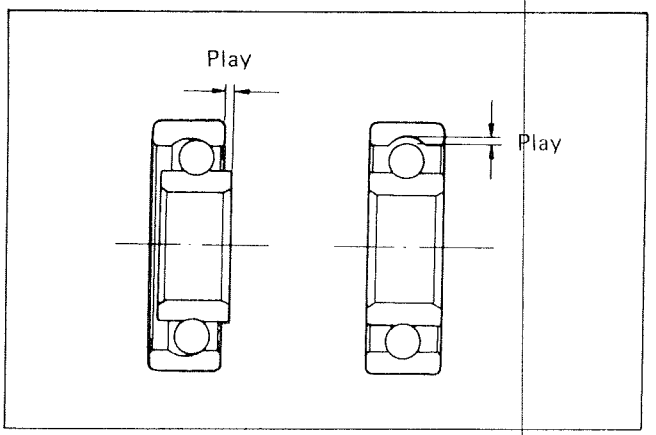
- Remove the bearings with appropriate bar and remove the spacer.



INSPECTION

AXLE BEARING

Inspect the play of axle bearings inner race by hand while fixing it in the axle housing.
Rotate the inner race by hand to inspect whether abnormal noise occurs or if it rotates smoothly.
Replace the bearing if there is anything unusual.

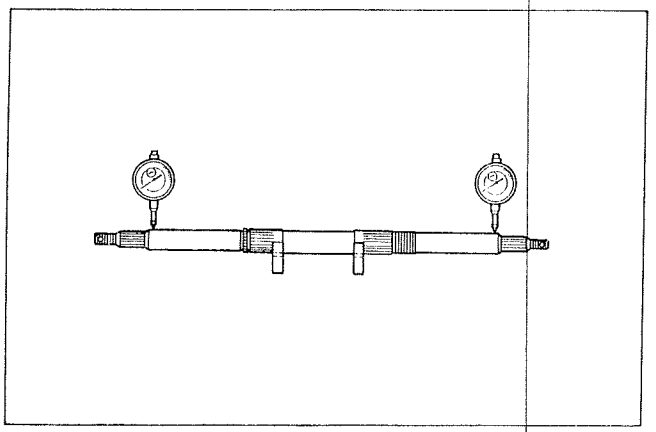


AXLE SHAFT

Inspect the axle shaft runout with dial gauge. The axle shaft must be replaced if the runout exceeds the limit.

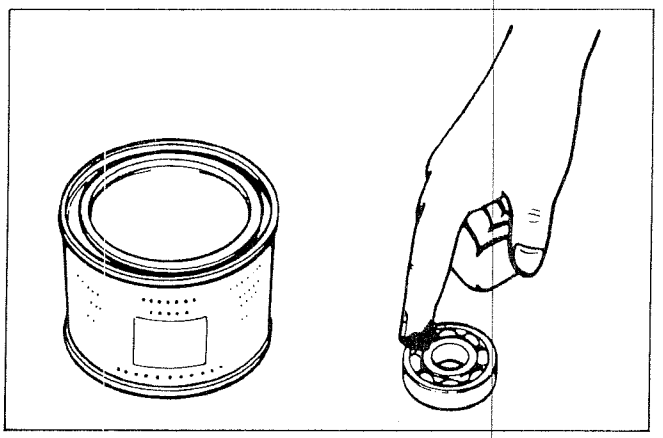
09900-20606	Dial gauge (1/100)
09900-20701	Magnetic stand Not available in U.S.A.
09900-21304	V-block (100 mm) Not available in U.S.A.

Service Limit	8.0 mm (0.31 in)



REASSEMBLY AND REMOUNTING

Reassemble and remount the rear axle shaft and rear axle housing in the reverse order of diassembly and removal. Pay attention to the following points:



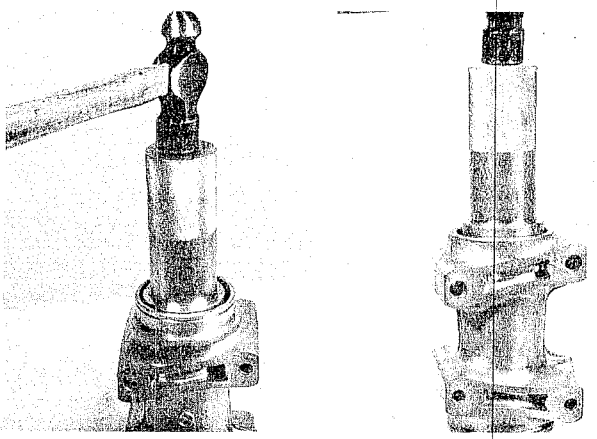
AXLE BEARING AND DUST SEAL

- Apply grease to the bearings and dust seals.

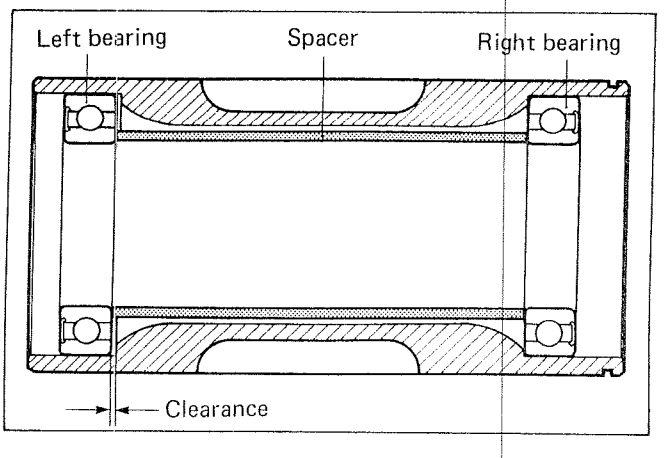
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	

- Install the bearings and dust seals with the special tools.

09913-75510	Bearing installer Not available in U.S.A.

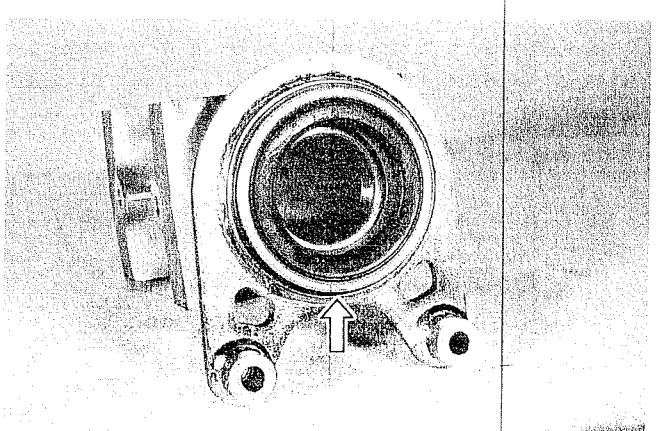


NOTE:
First install the bearing for right side. The sealed cover on the bearing is positioned outside.



- Apply small quantity of SUZUKI Silicone grease to the inner surface of the caliper mounting bracket.

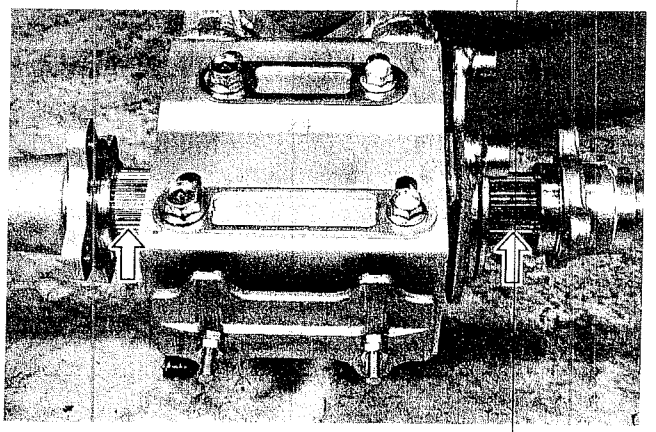
99000-25100	SUZUKI Silicone grease



- After installing the axle housing and axle shaft into the swingarm, mount the sprocket/flange and brake disc/flange onto the axle shaft.

NOTE:
Apply grease to the sprocket flange serration and brake disc flange serration of the axle shaft.

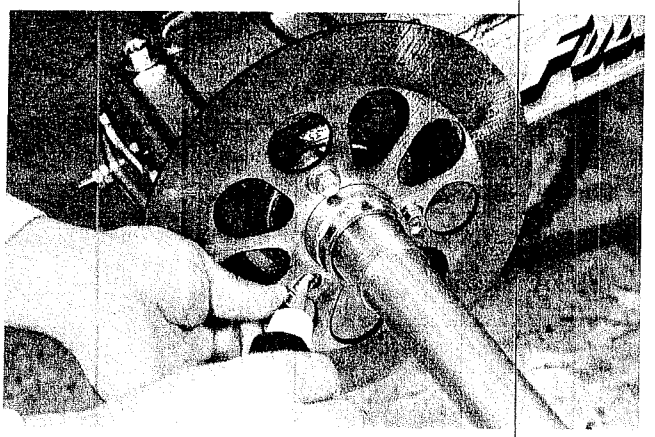
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



- Make sure that the brake disc plate is clean and free of any greasy matter. Apply THREAD LOCK SUPER "1360" to the mounting bolts and tighten them to the specified torque.

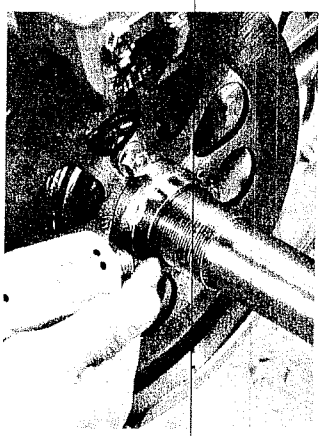
99000-32130	Thread Lock Super "1360"

Tightening torque	15 – 25 N·m (1.5 – 2.5 kg-m 11.0 – 18.0 lb-ft)



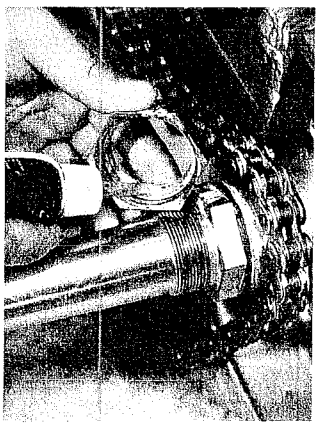
- Apply SUZUKI Bond No. "1207B"/"1215" to the outside end surfaces of the sprocket flange and brake disc flange.

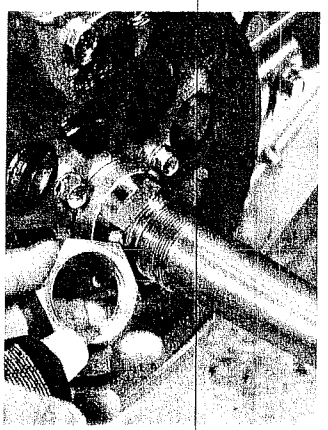
99104-31140	SUZUKI Bond No. "1207B" For U.S. model
99000-31110	SUZUKI Bond No. "1215" For other models



- Apply THREAD LOCK SUPER "1303"/"1322" to the threaded parts of respective flange axle lock nuts.

99000-32030	Thread Lock super "1303" For U.S. model
99000-32110	Thread Lock super "1322" For other models



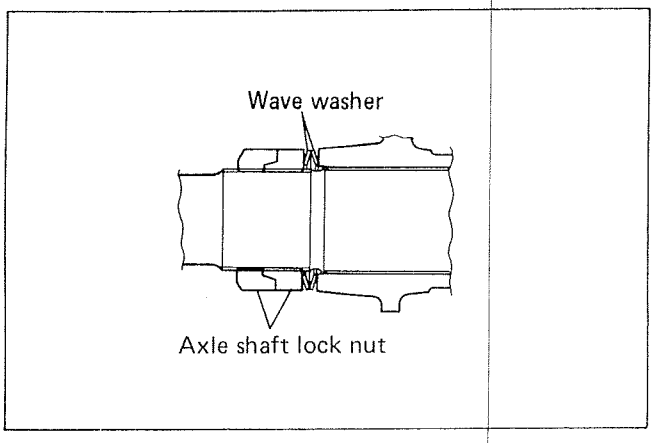


Tighten the nuts to the specification with the special tool.

09940-92410	Rear axle nut holder/remover set

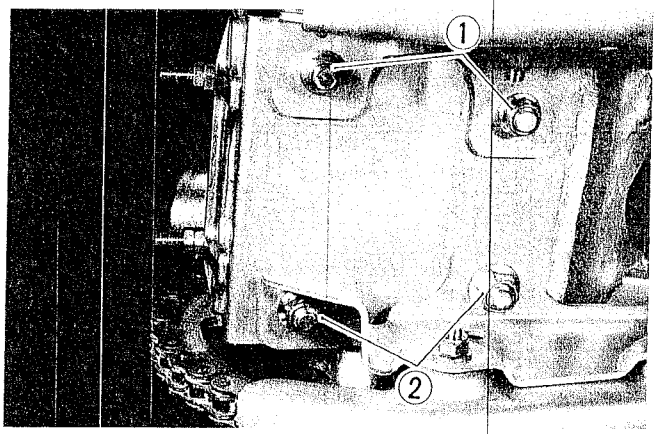
Tightening torque	160 – 200 N·m (16.0 – 20.0 kg-m 115.5 – 144.5 lb-ft)

NOTE:
When installing the wave washers to the left side as shown in the illustration.

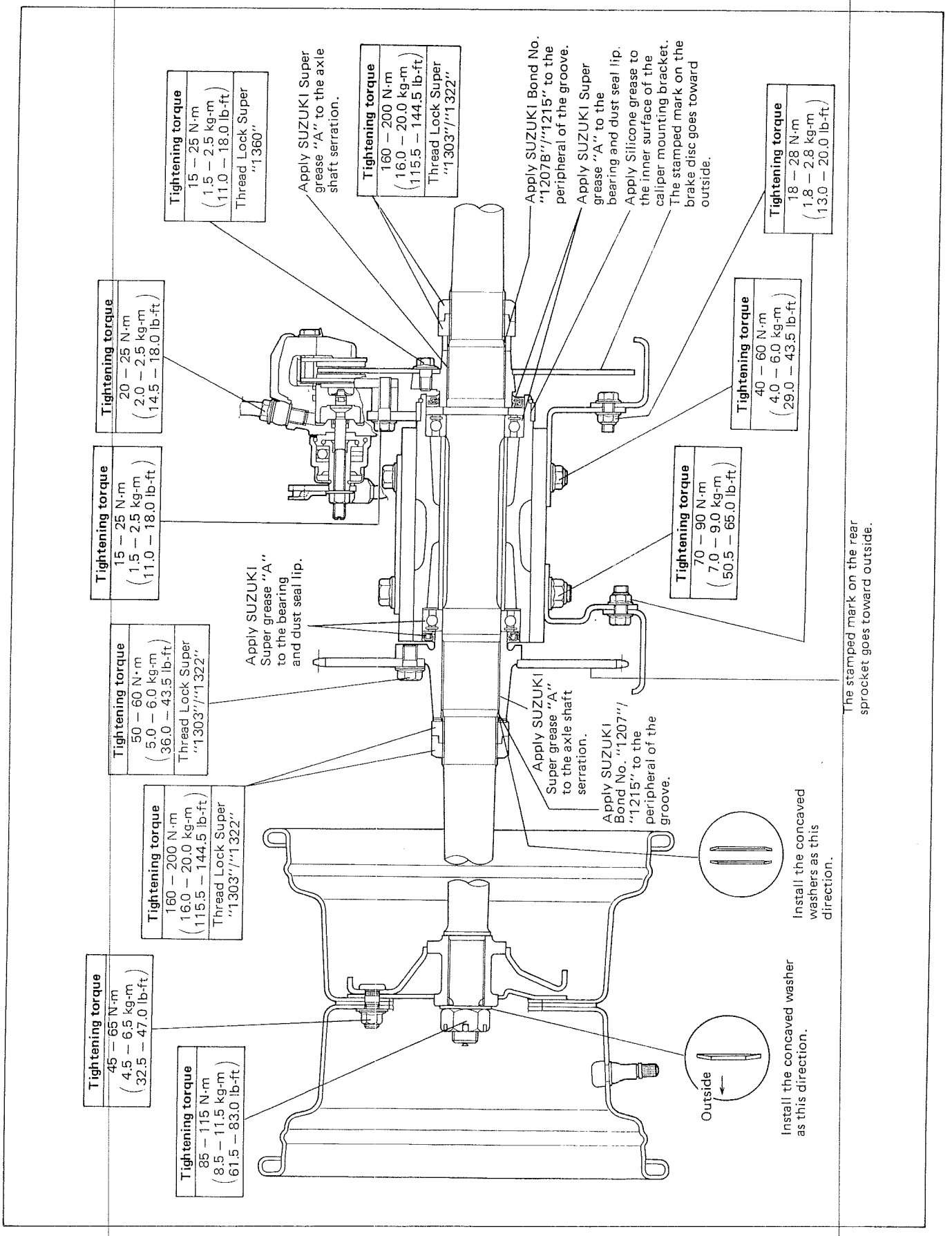


- Tighten the axle housing mounting nuts to the specification.

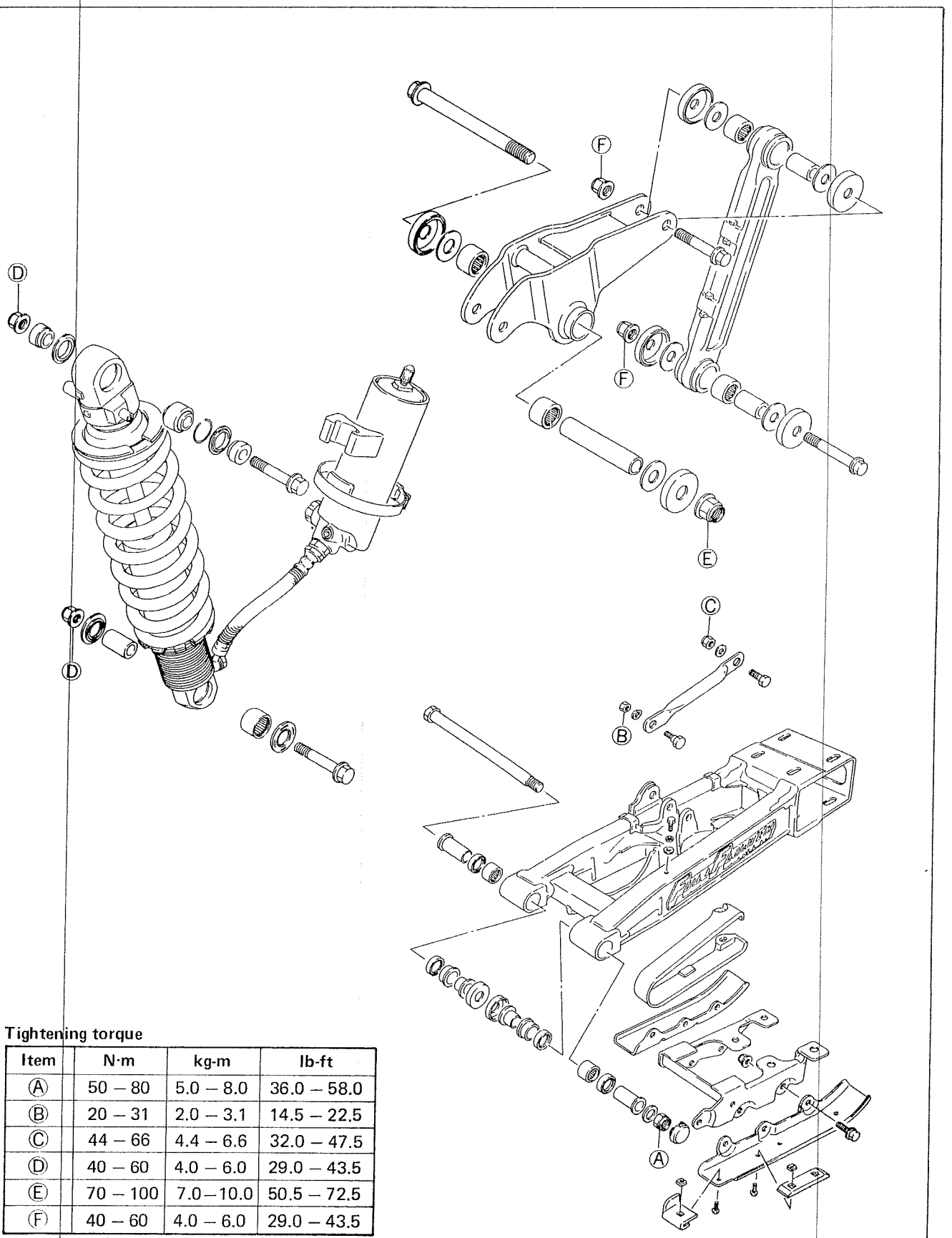
Tightening torque	①	40 – 60 N·m (4.0 – 6.0 kg-m 29.0 – 43.5 lb-ft)
	②	70 – 90 N·m (7.0 – 9.0 kg-m 50.5 – 65.0 lb-ft)



REASSEMBLY INFORMATION



REAR SUSPENSION AND SWINGARM

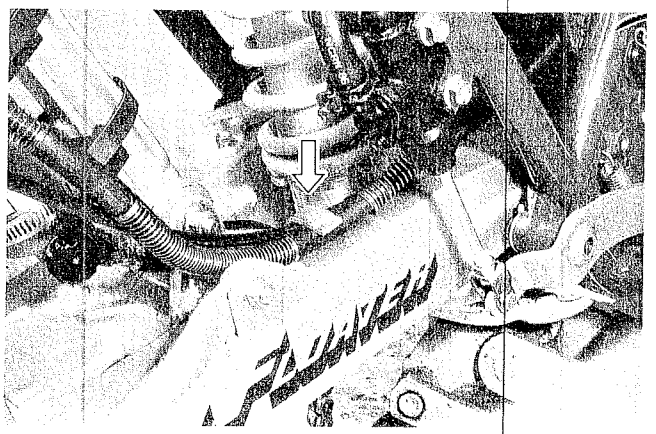


Tightening torque

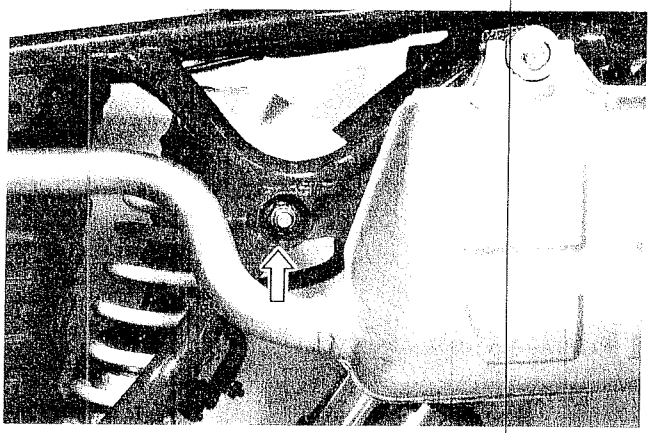
Item	N·m	kg-m	lb-ft
Ⓐ	50 – 80	5.0 – 8.0	36.0 – 58.0
Ⓑ	20 – 31	2.0 – 3.1	14.5 – 22.5
Ⓒ	44 – 66	4.4 – 6.6	32.0 – 47.5
Ⓓ	40 – 60	4.0 – 6.0	29.0 – 43.5
Ⓔ	70 – 100	7.0 – 10.0	50.5 – 72.5
Ⓕ	40 – 60	4.0 – 6.0	29.0 – 43.5

REMOVAL

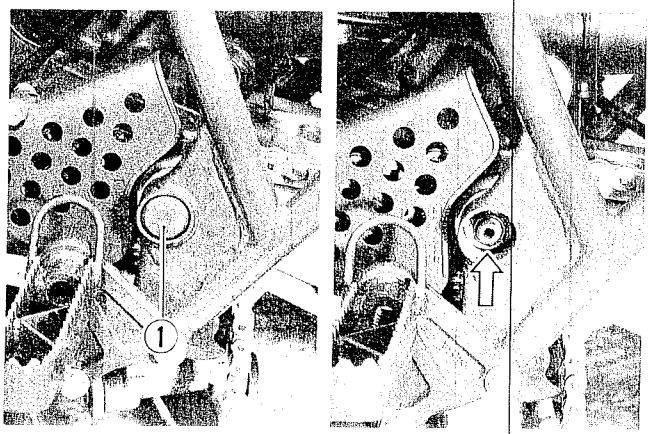
- Remove the rear fender. (Refer to page 7-2.)
- Remove the rear wheels. (Refer to page 7-32.)
- Remove the rear axle housing. (Refer to page 7-44.)
- Disconnect the rear brake hose and parking brake cable.



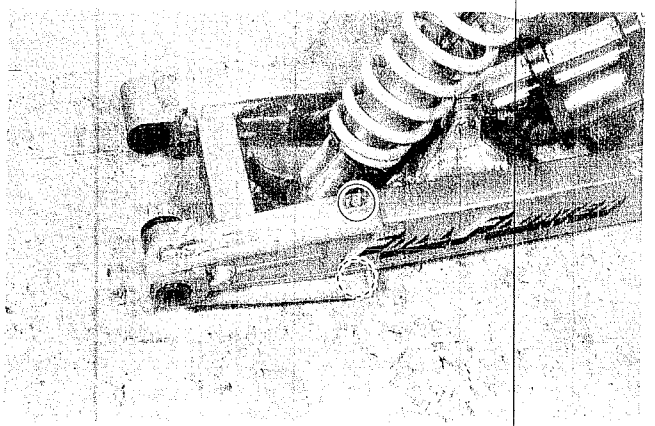
- Remove the cushion lever center shaft.



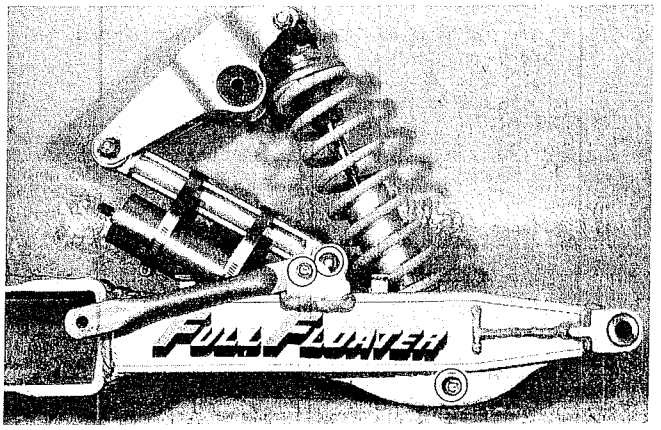
- Remove the cap ①.
- Remove the swingarm pivot shaft and remove the swingarm with rear shock absorber.



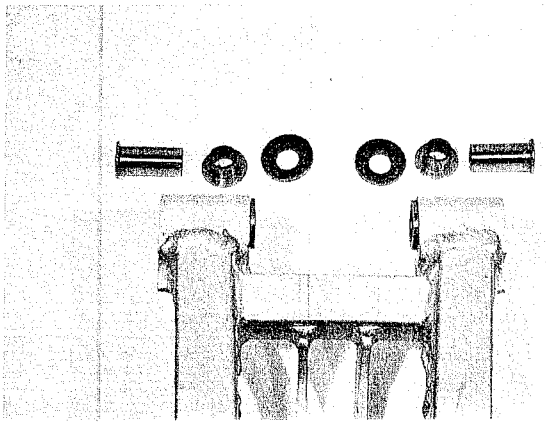
- Remove the chain buffer.



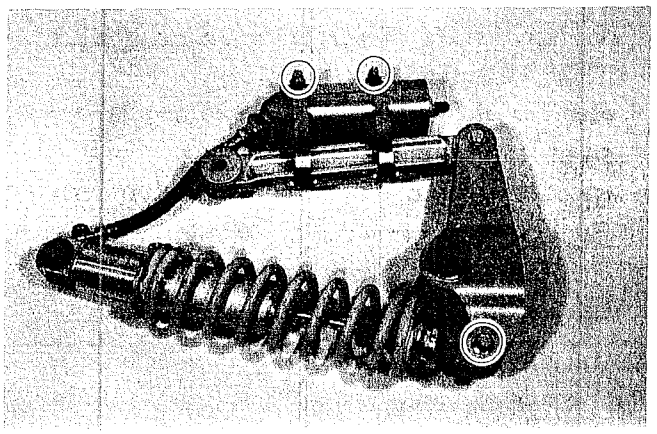
- Remove the shock absorber with cushion lever.
- Remove the rear torque link.



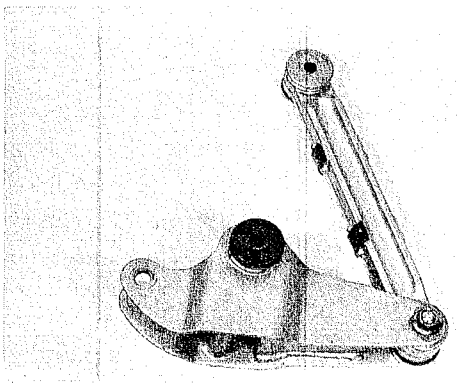
- Remove the dust seals and inner and outer spacers.



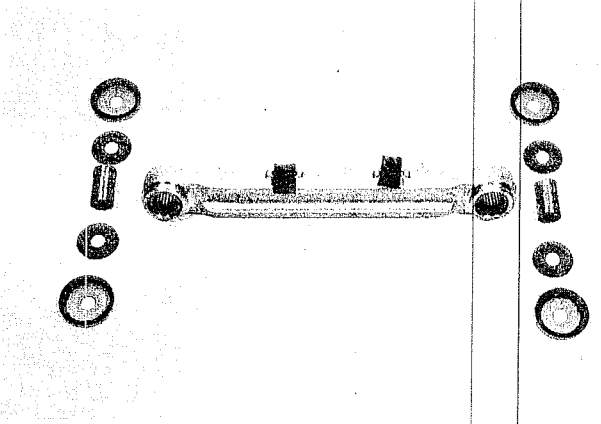
- Remove the shock absorber assembly.



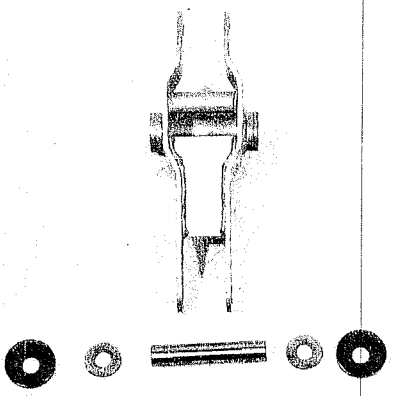
- Separate the rear cushion rod and cushion lever.



- Remove the dust seals, washers and spacers.



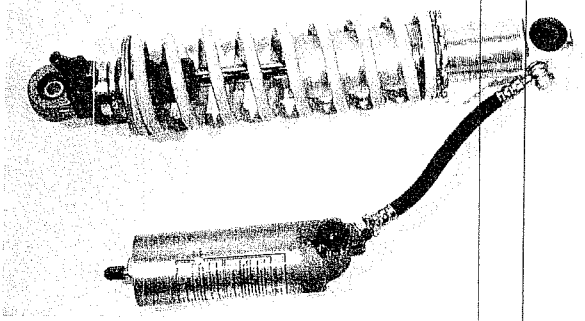
- Remove the dust seals, washers and spacer.



INSPECTION AND DISASSEMBLY

SHOCK ABSORBER

- Remove the upper end spacers and dust seals. Inspect the upper end bearing by hand to inspect for abnormal noise and smooth movement. Replace the bearing if there is anything unusual.
- Remove the stopper rings and drive out the bearing with appropriate socket wrench.



CAUTION:

The removed stopper rings and bearing should be replaced with new ones.

- Remove the lower end dust seals and spacer. Insert the spacer into the lower end bearing and check the bearing for abnormal noise and smooth movement by moving the spacer. Replace the bearing if there is anything unusual.
- Drive out the bearing with appropriate socket wrench.

CAUTION:

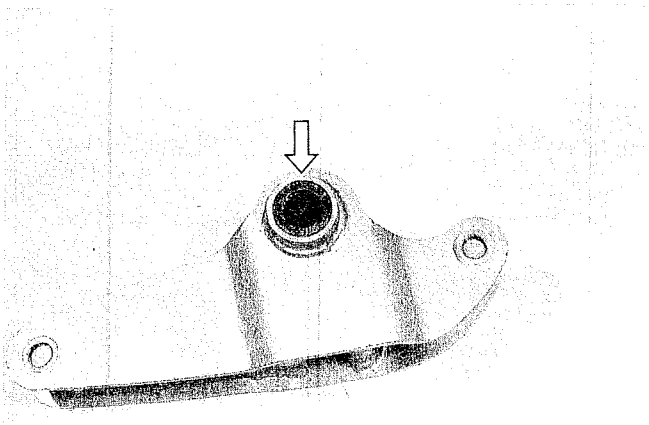
The removed dust seals and bearing should be replaced with new ones.

- Inspect the shock absorber for oil leakage or other damage.

CUSHION LEVER

Inspect the respective cushion lever bearings by hand while they are in the cushion lever. Rotate each bearing spacer to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual. Inspect each dust seal. If they are found to be damaged, replace them with new ones.

- Remove the cushion lever bearings with the special tools.



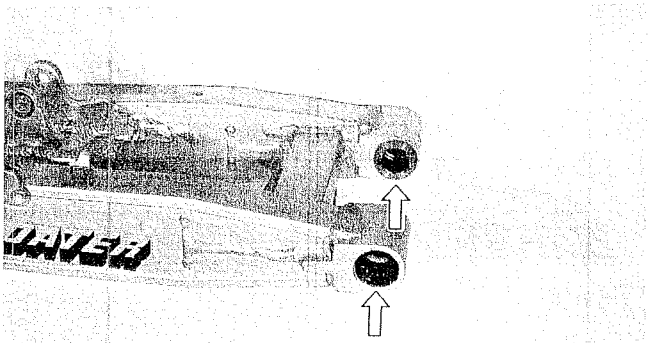
09913-85210	Bearing installer/remover
09923-73210	Bearing Puller
09930-30102	Sliding shaft

CAUTION:
The removed bearings should be replaced with new ones.

SWINGARM

Inspect the swingarm pivot bearings by hand while they are in the swingarm. Rotate the bearing spacer to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual. Inspect the dust seals, if they are found to be damaged, replace them with new ones.

- Remove the dust seals.
- Remove the swingarm pivot bearings with the special tools.



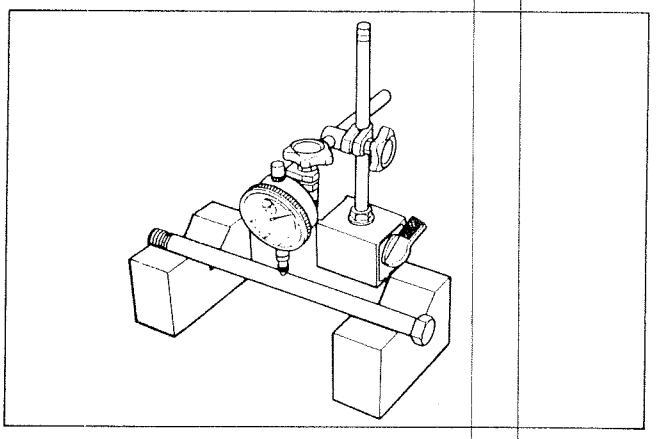
09923-74510	Bearing puller
09930-30102	Sliding shaft

- Drive out the swingarm pivot bushings with appropriate wrench.

CAUTION:
The removed dust seals, bushings and bearings should be replaced with new ones.

SWINGARM PIVOT SHAFT

Inspect the swingarm pivot shaft runout with the dial gauge. The swingarm pivot shaft must be replaced if the runout exceeds the limit.



09900-20606	Dial gauge (1/100)
09900-20701	Magnetic stand Not available in U.S.A.
09900-21304	V-block (100 mm) Not available in U.S.A.

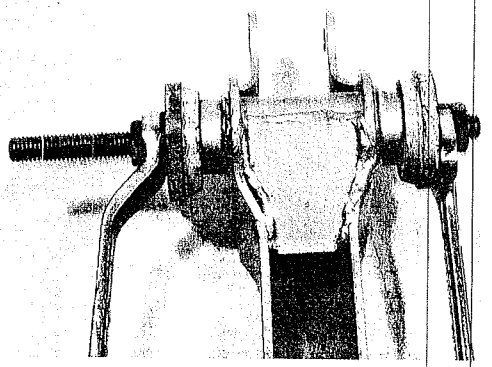
Service Limit	0.3 mm (0.01 in)

REASSEMBLY AND REMOUNTING

Reassemble and remount the rear suspension in the reverse order of disassembly and removal. Pay attention to the following points:

CUSHION LEVER

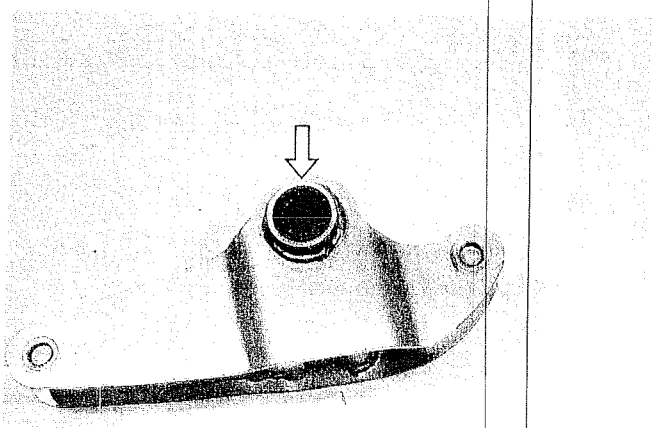
- Install the new cushion lever bearings with the special tools.



09913-75820	Bearing installer/remover
09913-85210	Bearing installer/remover

(Refer to page 7-58 for details.)

- Apply grease to the bearings and dust seals.



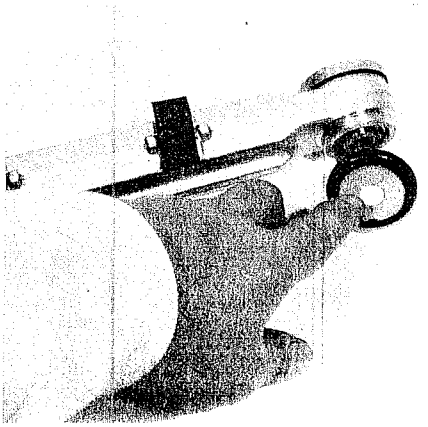
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	

(Refer to page 7-58 for details.)

CUSHION ROD

- Install the new cushion rod bearings with the appropriate socket wrench.
- Apply grease to the bearings and dust seals.

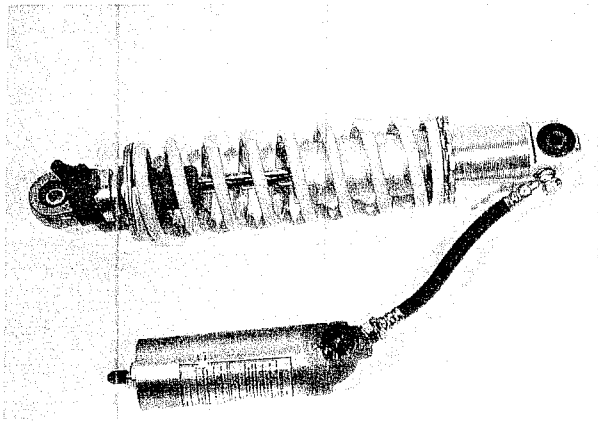
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



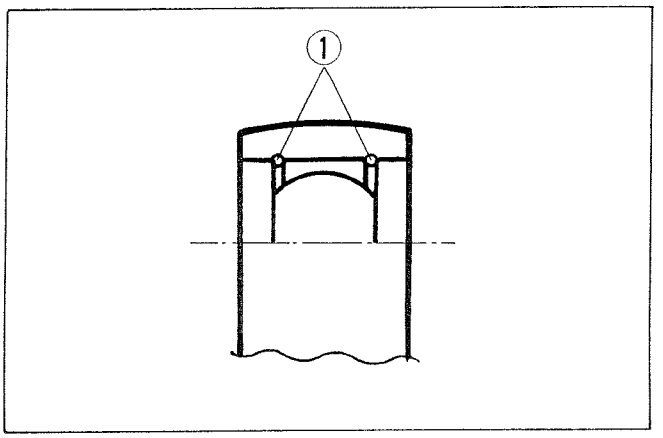
SHOCK ABSORBER

- Apply grease to the bearings and dust seals.

99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	



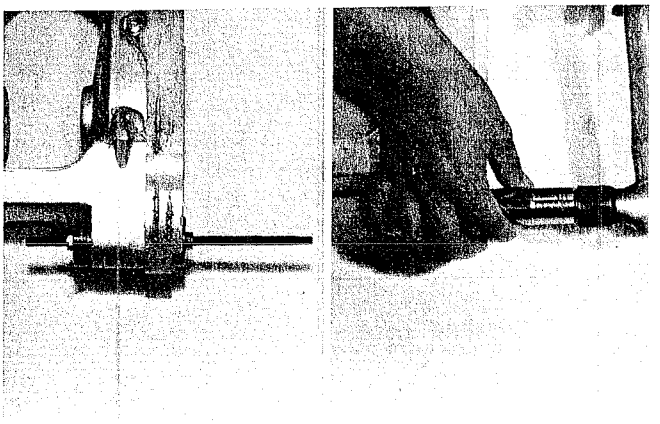
- Install the upper and lower bearings with appropriate socket wrench.
- Install new stopper rings ① into the ring grooves. (Refer to page 7-58 for details.)



SWINGARM

- Install the swingarm pivot bearings and bushings with the special tool and appropriate socket wrench.

09924-84520	Bearing installer

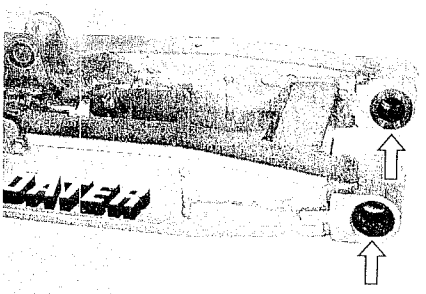


NOTE:
When installing the bearing, the stamped mark on the bearing is positioned outside.

- Apply grease to the bearings and dust seals.

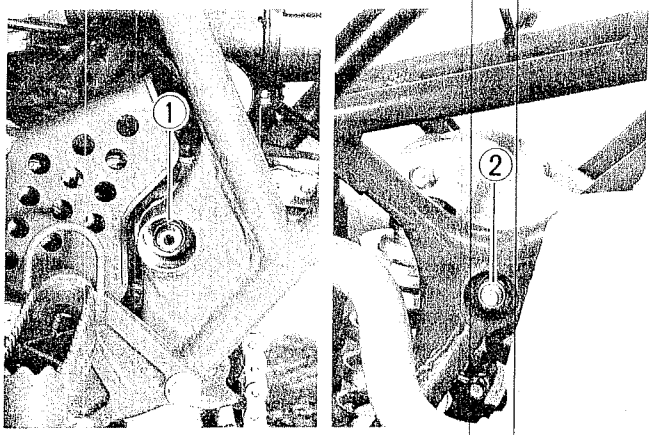
99000-25030 For U.S. model	SUZUKI Super grease "A"
99000-25010 For other models	

(Refer to page 7-58 for deteils.)



- Tighten the swingarm pivot nut ① and cushion lever center nut ② to the specification.

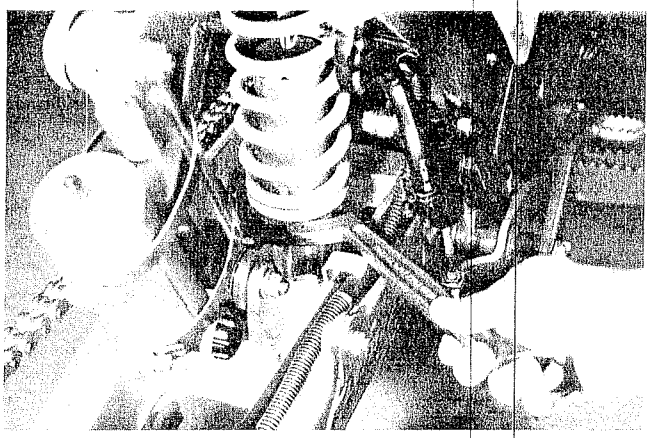
Tightening torque	①	50 – 80 N·m (5.0 – 8.0 kg-m 36.0 – 58.0 lb-ft)
	②	70 – 100 N·m (7.0 – 10.0 kg-m 50.5 – 72.5 lb-ft)



REAR SUSPENSION ADJUSTMENT

Spring pre-load and damping force are adjustable by changing the respective adjusters. The extension damping force adjuster is located at the top end of the shock absorber and the compression damping force adjuster is located at the reservoir tank.

09910-60611	Universal clamp wrench



CAUTION:
After adjusting the pre-load, tighten the spring adjuster lock ring securely.

SETTING TABLE

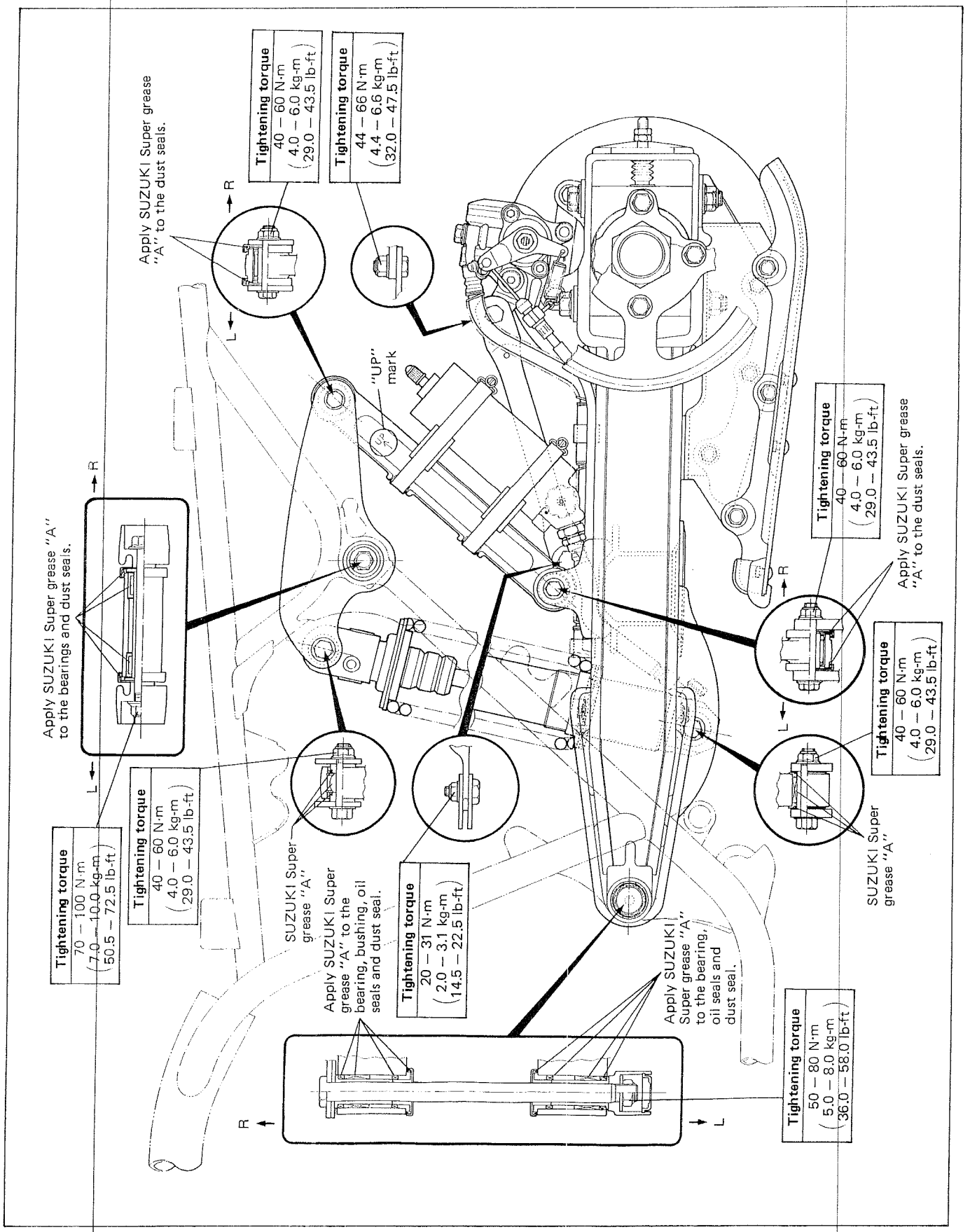
Spring set length

Softer	Standard	Stiffer
234.5 mm (9.23 in)	234.5 mm (9.23 in)	231.5 mm (9.11 in)

Standard damping force

Extension side	3rd position
Compression side	2nd position

REASSEMBLY INFORMATION



SERVICE INFORMATION

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TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or it is hard to start.	**Compression too low**	
	1. Excessively worn cylinder or piston rings.	Replace.
	2. Stiff piston ring in place.	Repair or replace.
	3. Gas leaks from the joint in crankcase, cylinder or cylinder head.	Repair or replace.
	4. Damaged reed valve.	Replace.
	5. Spark plug too loose.	Tighten.
	6. Broken, cracked or otherwise failed piston.	Replace.
	Plug not sparking	
	1. Fouled spark plug.	Clean or replace.
	2. Wet spark plug.	Clean and dry.
	3. Defective ignition coil.	Replace.
	4. Open or short in high-tension cord.	Replace.
	5. Defective pick-up coil, primary coil or CDI unit.	Replace.
	No fuel reaching the carburetor	
	1. Clogged fuel tank vent hose.	Clean.
	2. Clogged or defective fuel cock.	Clean or replace.
	3. Defective carburetor needle valve.	Replace.
	4. Clogged fuel pipe.	Clean.
Engine stalls easily.	1. Fouled spark plug.	Clean or replace.
	2. Defective pick-up coil, primary coil or CDI unit.	Replace.
	3. Clogged fuel pipe.	Replace.
	4. Clogged jets in carburetor.	Clean.
	5. Improperly set throttle valve stop screw/pilot air screw.	Adjust.
	6. Clogged exhaust pipe.	Clean.
Noisy engine.	**Noise appears to come from piston**	
	1. Piston or cylinder worn down.	Replace.
	2. Combustion chamber fouled with carbon.	Clean.
	3. Piston pin or piston pin bore worn.	Replace.
	4. Piston ring or ring groove worn.	Replace.
	5. Piston pin bearing worn.	Replace.
	6. Piston pin bearing side washer worn.	Replace.
	Noise seems to come from clutch	
	1. Worn splines of countershaft or hub.	Replace.
	2. Worn teeth of clutch plates.	Replace.
	3. Distorted clutch plated, driven and drive.	Replace.
	4. Clutch dampers weakened.	Replace.
	Noise seems to come from crankshaft or balancer	
	1. Rattling bearings due to wear.	Replace.
	2. Big-end bearing worn or burnt.	Replace.
	3. Journal bearing worn or burnt.	Replace.
	4. Thrust clearance too large.	Replace.
	Noise seems to come from transmission	
	1. Gears worn or rubbing.	Replace.
	2. Badly worn splines.	Replace.
	3. Primary gears worn or rubbing.	Replace.
	4. Badly worn bearings.	Replace.

Complaint	Symptom and possible causes	Remedy
Slipping clutch	1. Clutch control out of adjustment, or loss of play. 2. Weakened clutch springs. 3. Worn or distorted pressure plate. 4. Distorted clutch plates, driven and drive.	Adjust. Replace. Replace. Replace.
Dragging clutch	1. Clutch control out of adjustment or too much play. 2. Some clutch springs weakened while others are not. 3. Distorted pressure plate or clutch plates. 4. Transmission oil too viscous.	Adjust. Replace. Replace. Change.
Transmission will not shift.	1. Broken gearshift cam. 2. Distorted gearshift forks. 3. Worn gearshift pawl. 4. Worn or damaged clutch release mechanism.	Replace. Replace. Replace. Replace.
Transmission will not shift back.	1. Broken return spring on gearshift shaft. 2. Gearshift shaft is rubbing or sticky.	Replace. Repair or replace.
Transmission jumps out of gear.	1. Worn shifting gears on driveshaft or countershaft. 2. Distorted or worn gearshift forks. 3. Weakened cam stopper spring on gearshift stopper. 4. Worn gearshift pawl. 5. Worn gearshift cam.	Remedy. Replace. Replace. Replace. Replace.
Engine idles poorly.	1. Spark plug gap too wide. 2. Defective ignition coil. 3. Defective pick-up coil, primary coil or CDI unit. 4. Float-chamber fuel level out of adjustment in carburetor. 5. Clogged jets. 6. Improperly set throttle stop screw/pilot air screw. 7. Unseated reed valve. 8. Too heavy carbon deposit on piston, ring, piston head and exhaust pipe. 9. Excessively worn cylinder or piston rings. 10. Piston ring stuck in place.	Adjust. Replace. Replace. Adjust. Clean. Adjust. Replace. Clean. Replace. Replace.
Engine runs poorly in high speed range.	1. Excessively worn cylinder or piston rings. 2. Piston ring stuck in place. 3. Improperly spark plug gap. 4. Clogged jets. 5. Defective ignition coil. 6. Defective pick-up coil, primary coil or CDI unit. 7. Float-chamber fuel level too low. 8. Clogged air cleaner element. 9. Clogged fuel pipe, resulting in inadequate fuel supply to carburetor. 10. Clogged carburetor breather pipe.	Replace. Replace. Adjust. Clean. Replace. Replace. Adjust. Clean. Clean. Clean.
Dirty or heavy exhaust smoke.	1. Incorrect mixing ratio of fuel and oil. 2. Damage or worn crankshaft oil seal.	Correct. Replace.
Engine lacks power.	1. Worn piston rings or cylinder. 2. Spark plug gaps incorrect. 3. Clogged jets in carburetor. 4. Float-chamber fuel level out of adjustment. 5. Clogged air cleancer element. 6. Sucking air from intake pipe.	Replace. Adjust or replace. Clean. Adjust. Clean. Retighten or replace.

Complaint	Symptom and possible causes	Remedy
Engine lacks power.	7. Too much transmission oil in the engine. 8. Damaged or unseated reed valve. 9. Carbon deposit on combustion chamber/exhaust pipe.	Drain out excess oil. Replace. Clean.
Engine overheats.	1. Heavy carbon deposit on piston crown/exhaust port. 2. Fuel level too low in float chamber. 3. Sucking air from intake pipe. 4. Use incorrect engine oil. 5. Defective cooling system.	Clean. Adjust. Retighten or replace. Change. See radiator section.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	1. Starter jet is clogged. 2. Starter pipe is clogged. 3. Air leaking from joint between starter body and carburetor. 4. Starter plunger is not fully closed. 5. Improperly set throttle stop screw/pilot air screw.	Clean. Clean. Check and retighten. Repair. Adjust.
Idling or low-speed trouble.	1. Pilot jet or pilot air jet is clogged or loose. 2. Incorrect float height. 3. Pilot outlet is clogged. 4. Starter plunger is not fully closed. 5. Air leaking from intake pipe.	Check and clean. Adjust. Check and clean. Check and adjust. Replace.
Medium or high-speed trouble.	1. Main jet or main air jet is clogged. 2. Needle jet is clogged. 3. Throttle valve is not operating properly. 4. Filter is clogged. 5. Air leaking from intake pipe.	Check and clean. Check and clean. Check throttle valve for operation. Check and clean. Replace.
Overflow and fuel level fluctuations.	1. Needle valve is worn or damaged. 2. Float is not working properly. 3. Foreign matter has adhered to needle valve. 4. Fuel level is too high or low. 5. Clogged carburetor air vent pipe.	Replace. Check and adjust. Clean. Adjust float height. Clean.

RADIATOR

Symptom	Probable cause	Remedy
Engine overheats.	1. Not enough cooling water. 2. Radiator core is clogged with dirt or trashes. 3. Clogged water passage. 4. Air trapped in the cooling circuit. 5. Defective water pump. 6. Use incorrect cooling water.	Add. Clean. Clean. Bleed out air. Replace. Change.
Engine overcools.	1. Extermely cold weather.	Put on the radiator cover.

ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	1. Defective ignition coil. 2. Defective spark plug. 3. Defective pick-up coil, primary coil or CDI unit. 4. Defective high tension cord.	Replace. Replace. Replace. Replace.
Spark plug soon becomes fouled with carbon.	1. Mixture too rich. 2. Idling speed set too high. 3. Incorrect gasoline. 4. Dirty element in air cleaner. 5. Spark plug too cold. 6. Incorrect engine oil. 7. Worn piston rings. 8. Piston or cylinder worn.	Adjust carburetor. Adjust carburetor. Change. Clean. Replace by hot type plug. Replace. Replace. Replace.
Spark plug electrodes overheat or burn.	1. Spark plug too hot. 2. The engine overheats. 3. Spark plug loose. 4. Mixture too lean. 5. Incorrect fuel.	Replace by cold type plug. Tune up. Retighten. Adjust carburetor. Replace.
Headlight and/or Taillight is not lighted.	1. Bulbs is shorted. 2. Open or short in lead wire, or loose lead connection. 3. Shorted, grounded or open lighting coil. 4. Shorted or punctured regulator.	Replace. Repair or replace or retighten. Replace. Replace.

CHASSIS

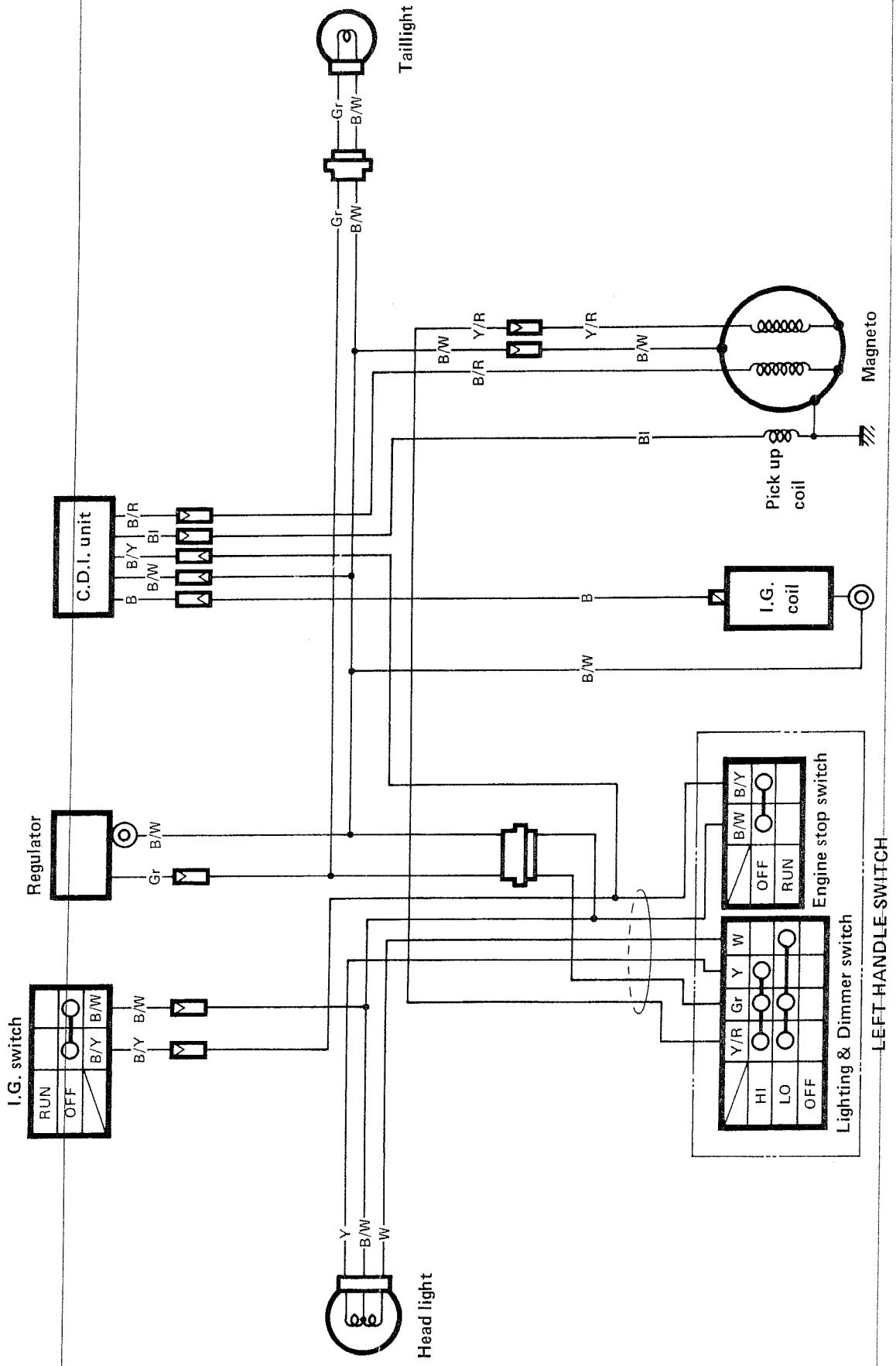
Complaint	Symptom and possible causes	Remedy
Handling feels too heavy or stiff.	1. Disturbed front wheel alignment. 2. Poorly lubricated. 3. Not enough pressure in tires. 4. Tie rod ends tending to seize. 5. Linkage connections tending to seize.	Adjust. Lubricate. Adjust. Replace. Repair or replace.
Steering oscillation.	1. Wheel tires inflated unequally. 2. Wobbly wheels. 3. Loose nut on wheel hub. 4. Damaged or worn wheel hub bearing. 5. Worn or loose tie rod ends. 6. Defective or incorrect tires. 7. Damaged wishbone arm bearings. 8. Loosen bolts and nuts on chassis.	Adjust tire pressure. Replace. Retighten. Replace. Replace or retighten. Replace. Replace. Retighten.
Steering pulling to one side.	1. Wheel tires inflated unequally. 2. Disturbed front wheel alignment. 3. Worn or broken wheel hub bearings. 4. Distorted frame. 5. Defective shock absorber.	Adjust tire pressure. Adjust. Replace. Repair or replace. Replace.
Shocks coming to steering.	1. Tire inflating pressure too high. 2. Worn steering linkage connections. 3. Loosen bolts on suspension system.	Adjust. Replace. Retighten.

Complaint	Symptom and possible causes	Remedy
Rapid wear or uneven wear of tires.	1. Worn or loosen wheel hub bearings. 2. Disturbed front wheel alignment.	Replace. Adjust.
Steering noise.	1. Loose bolts and nuts. 2. Broken or otherwise damaged wheel hub bearings. 3. Poorly lubricated.	Retighten. Replace. Lubricate.
Suspension too soft. (Front and Rear)	1. Weakened spring. 2. Oil leakage of shock absorber. 3. Suspension adjuster improperly set.	Replace. Replace. Adjust.
Suspension too stiff. (Front and Rear)	1. Worn wishbone arm bearings. 2. Suspension adjuster improperly set. 3. Distorted shock absorber shaft. 4. Worn swingarm related bearings.	Replace. Adjust. Replace. Replace.
Noisy suspension.	1. Loose bolts on suspension system. 2. Worn wishobone arm bearings.	Retighten. Replace.
Rear wheel oscillation.	1. Worn or loose rear axle housing bearings. 2. Defective or incorrect tires. 3. Distorted wheel rim. 4. Loose nuts on wheel hub. 5. Loose nuts on axle shaft. 6. Rear shock and/or cushion lever bearing is worn.	Replace. Replace. Replace. Retighten. Retighten. Replace.

BRAKES

Complaint	Symptom and possible causes	Remedy
Insufficient brake power.	1. Leakage of brake fluid from hydraulic system. 2. Worn pads. 3. Oil adhesion on engaging surface of pads. 4. Worn disc. 5. Air in hydraulic system.	Repair or replace. Replace. Clean disc and pads. Replace. Bleed air.
Brake squeaking.	1. Carbon adhesion on pad surface. 2. Tilted pad. 3. Damaged wheel bearing. 4. Loose wheel axle. 5. Worn pads. 6. Foreign material in brake fluid. 7. Clogged return port of master cylinder.	Repair surface with sandpaper. Modify pad fitting. Replace. Tighten to specified torque. Replace. Replace brake fluid. Disassemble and clean master cylinder.
Excessive brake lever stroke.	1. Air in hydraulic system. 2. Insufficient brake fluid. 3. Improper quality of brake fluid.	Bleed air. Replenish fluid to specified level, bleed air. Replace with correct fluid.
Leakage of brake fluid.	1. Insufficient tightening of connection joints. 2. Cracked hose. 3. Worn piston and/or cup.	Tighten to specified torque. Replace. Replace piston and/or cup.

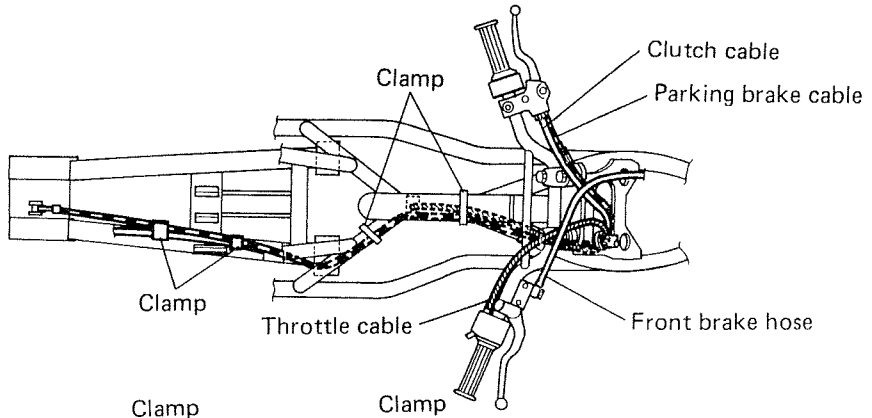
WIRING DIAGRAM

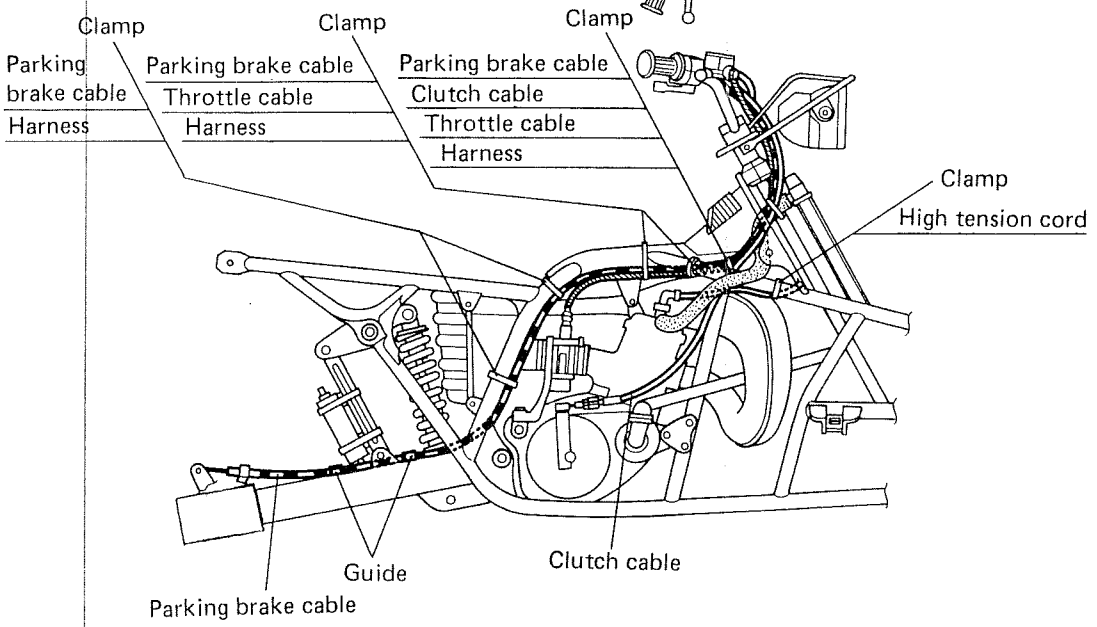


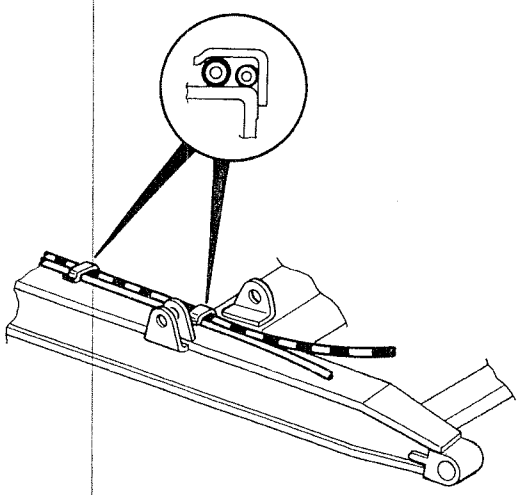
WIRE COLOR

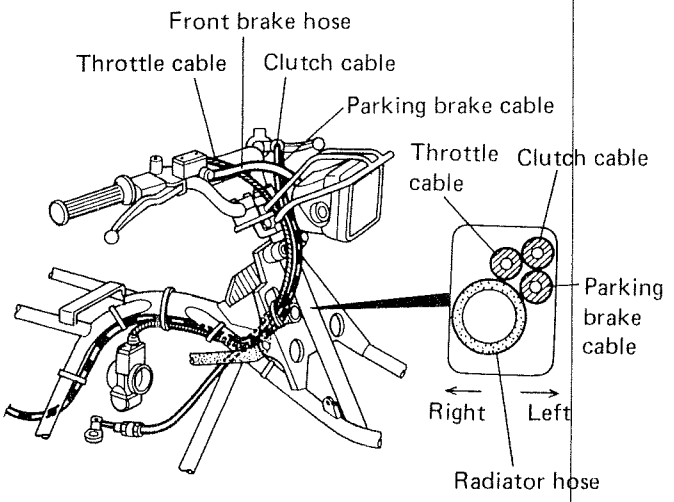
B . . . . . Black
Bl . . . . . Blue
Gr . . . . . Gray
W . . . . . White
Y . . . . . Yellow
B/W . . . . . Black with White tracer
B/Y . . . . . Black with Yellow tracer
B/R . . . . . Black with Red tracer
Y/R . . . . . Yellow with Red tracer

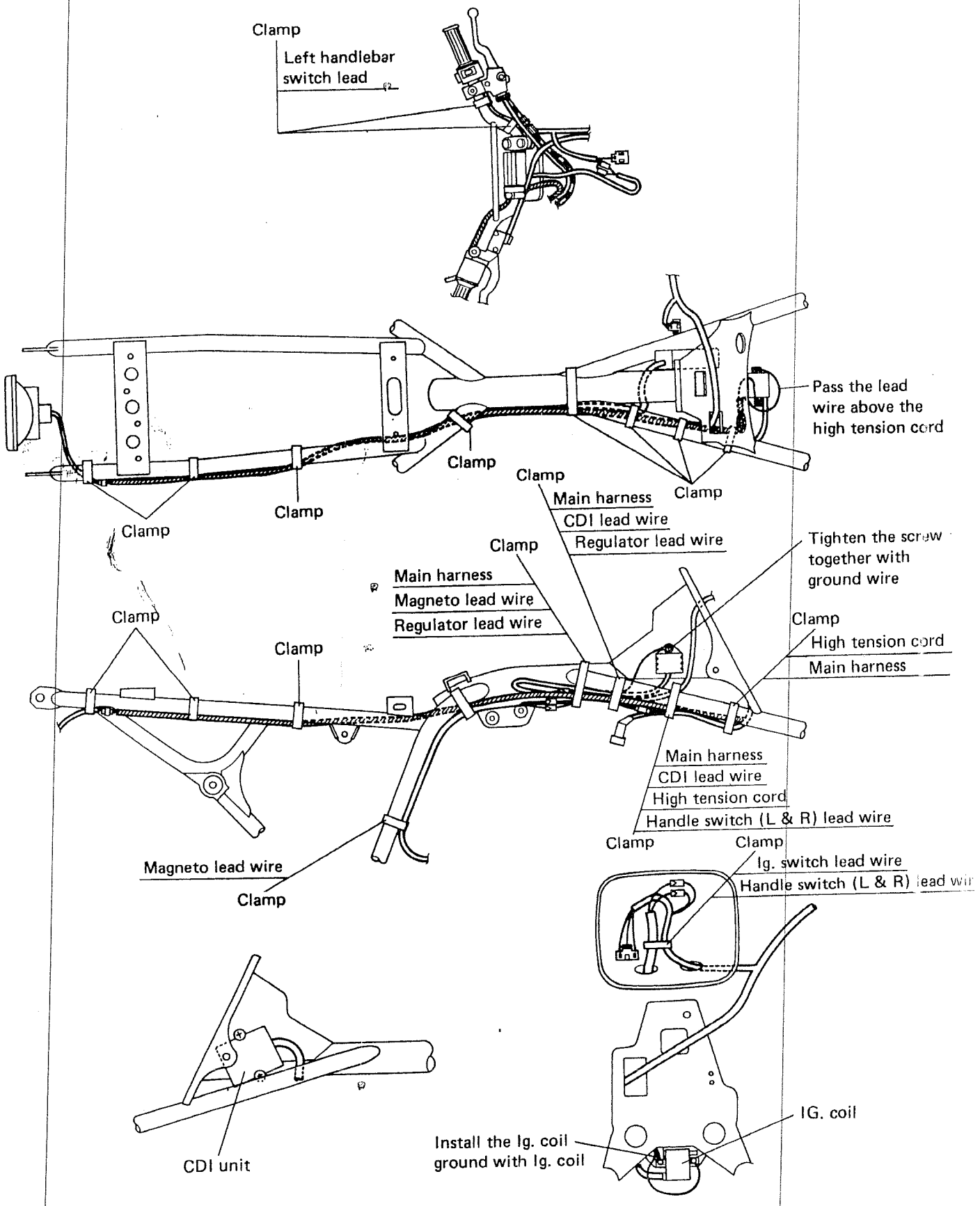
WIRE, CABLE AND HOSE ROUTING

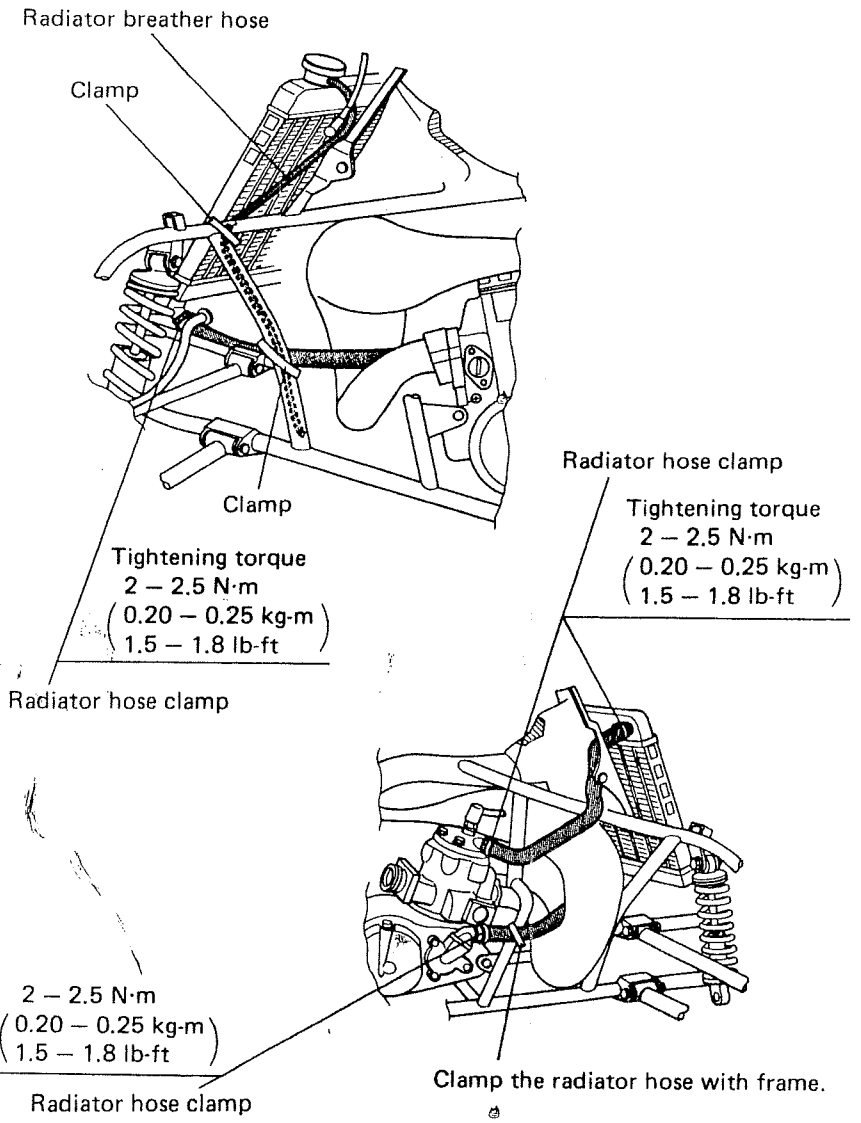




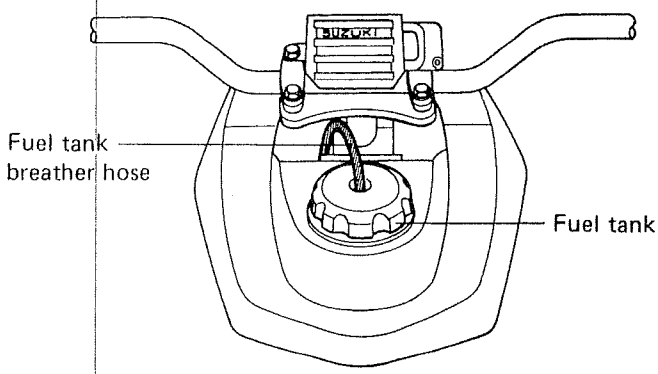


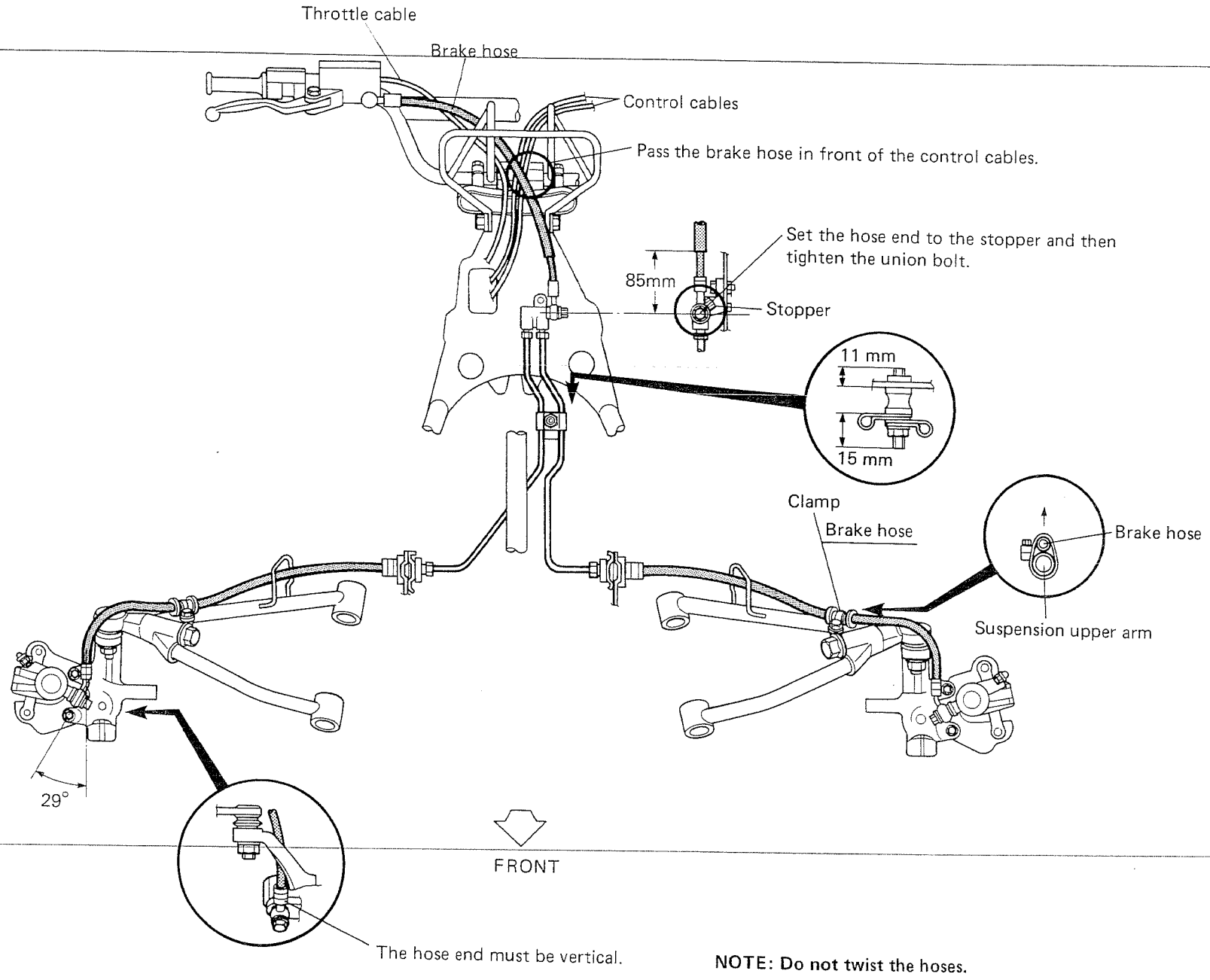



Clamp
Left handlebar switch lead
Pass the lead wire above the high tension cord
Clamp
Clamp
Clamp
Clamp
Main harness
CDI lead wire
Regulator lead wire
Clamp
Main harness
Magneto lead wire
Regulator lead wire
Tighten the screw together with ground wire
Clamp
Clamp
Clamp
High tension cord
Main harness
Main harness
CDI lead wire
High tension cord
Handle switch (L & R) lead wire
Clamp
Clamp
Ig. switch lead wire
Handle switch (L & R) lead wir
Magneto lead wire
Clamp
IG. coil
Install the Ig. coil ground with Ig. coil
CDI unit

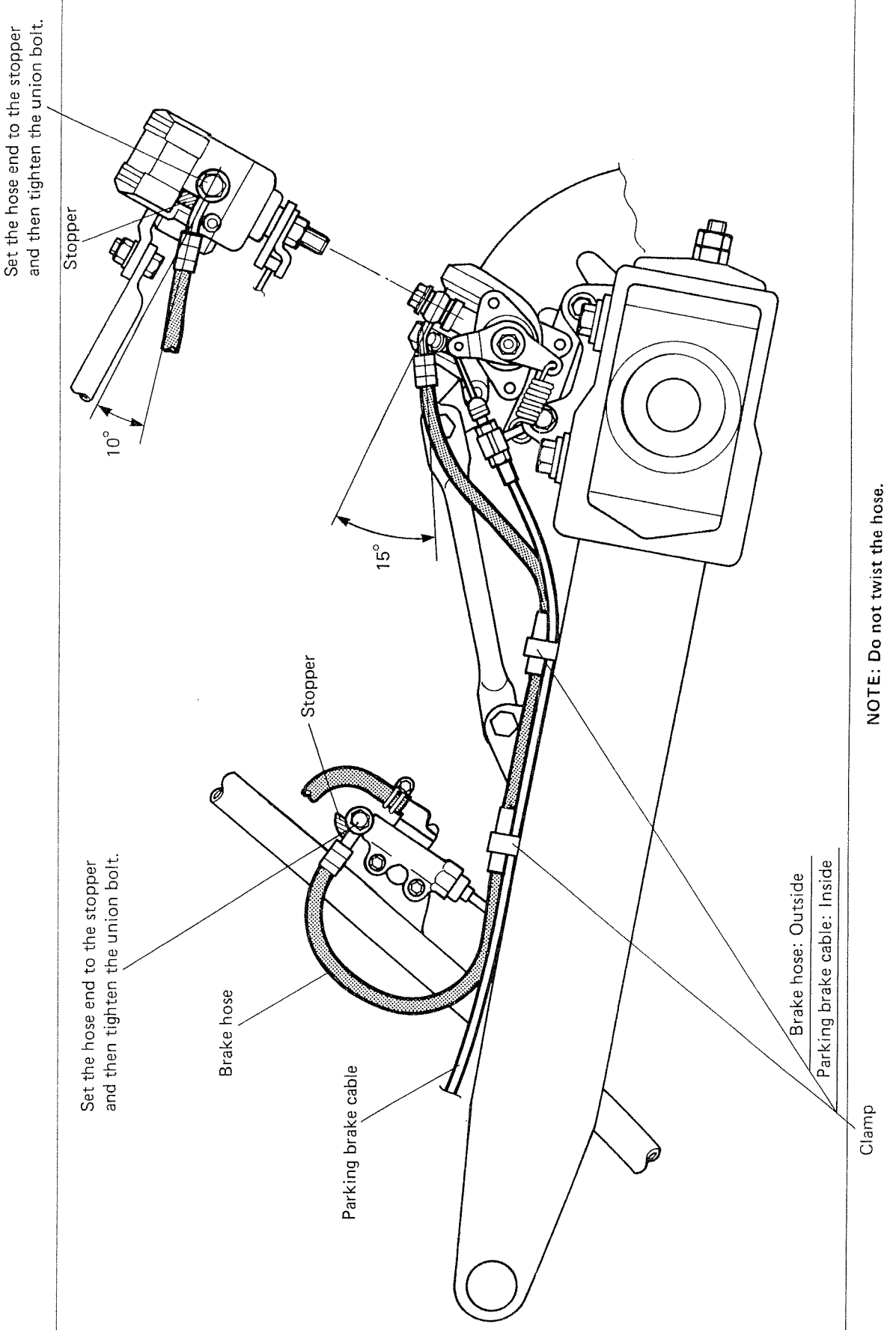


*Don't crush the radiator hose when clamping the radiator hose onto radiator, cylinder head and water pump cover.



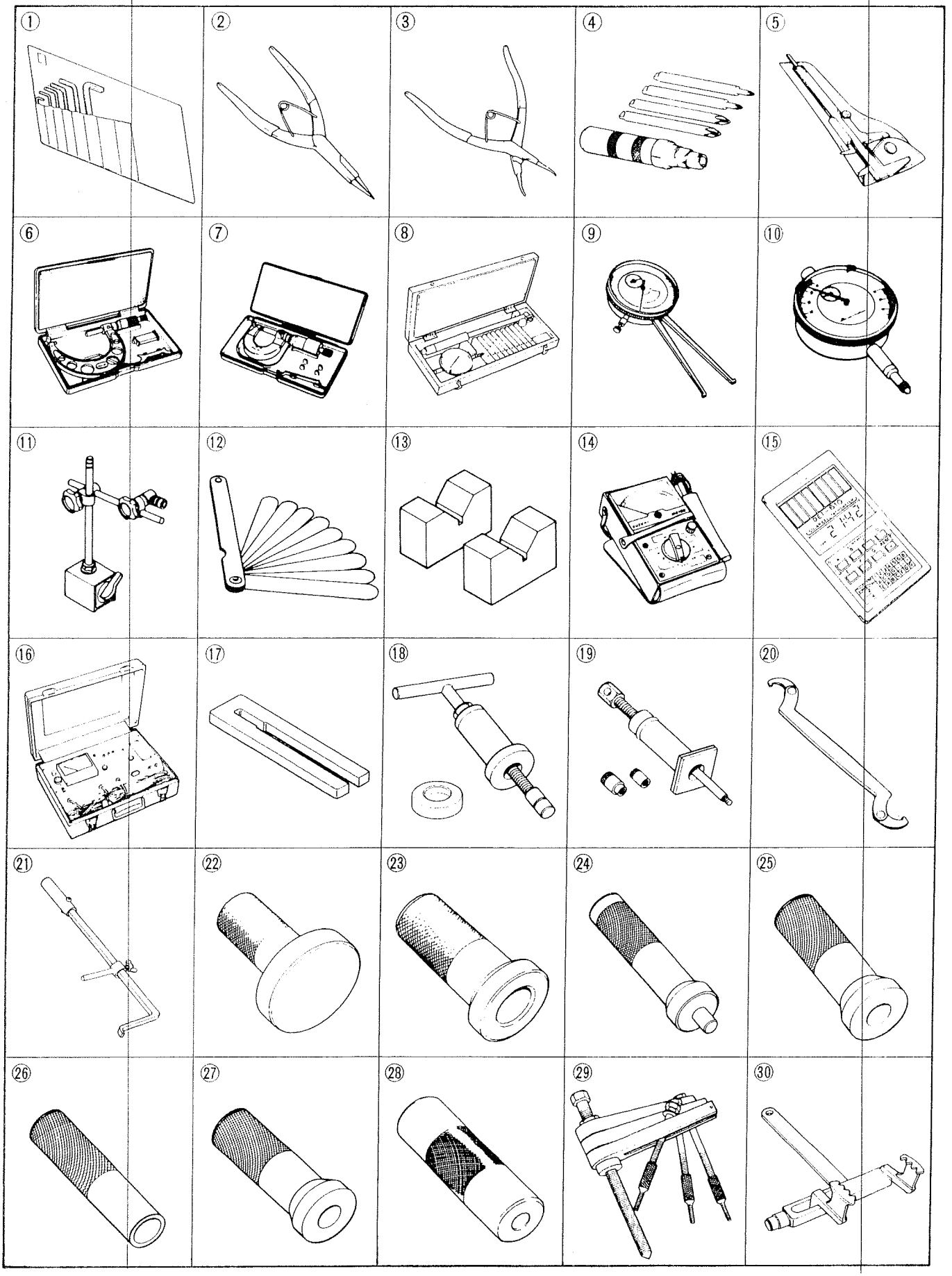


NOTE: Do not twist the hoses.


Set the hose end to the stopper and then tighten the union bolt.
Stopper
10°
15°
Stopper
Set the hose end to the stopper and then tighten the union bolt.
Brake hose
Parking brake cable
Brake hose: Outside
Parking brake cable: Inside
Clamp
NOTE: Do not twist the hose.

SPECIAL TOOLS

Item	Part Number	Part Name
1	09900-00401	"L" type hexagon wrench set (Not available in U.S. market)
2	09900-06107	Snap ring pliers
3	09900-06108	Snap ring pliers
4	09900-09003	Impact driver set
5	09900-20102	Vernier calipers (Not available in U.S. market)
6	09900-20203	Micrometer
7	09900-20205	Micrometer
8	09900-20508	Cylinder gauge set
9	09900-20605	Dial calipers (Not available in U.S. market)
10	09900-20606	Dial gauge
11	09900-20701	Magnetic stand (Not available in U.S. market)
12	09900-20803	Thickness gauge
13	09900-21304	V-block (Not available in U.S. market)
14	09900-25002	Pocket tester
15	09900-26006	Tachometer (Not available in U.S. market)
16	09900-28106	Electro tester
17	09910-20115	Con-rod stopper (Not available in U.S. market)
18	09910-32812	Crankshaft installer
	09911-11310	Attachment (Not available in U.S. market)
	09910-32820	Spacer
19	09910-34510	Piston pin puller
20	09910-60611	Universal clamp wrench
21	09913-50121	Oil seal remover
22	09913-75510	Bearing installer (Not available in U.S. market)
23	09913-75810	Bearing remover (Not available in U.S. market)
24	09913-75820	Bearing remover (Not available in U.S. market)
25	09913-76010	Bearing remover (Not available in U.S. market)
26	09913-80112	Bearing installer
27	09913-85210	Bearing remover
28	09914-79610	Bearing remover
29	09920-13120	Crankcase separating tool
30	09920-53710	Clutch sleeve hub holder
31	09922-55131	Bearing remover (Not available in U.S. market)
32	09923-73210	Bearing puller
33	09923-74510	Bearing puller
34	09924-84510	Bearing installer set
35	09924-84520	Bearing installer (Not available in U.S. market)
36	09930-30102	Sliding shaft
	09930-30161	Attachment C
37	09930-40113	Rotor holder
38	09940-92410	Rear axle nut holder/remover set
39	09941-50110	Bearing remover (Not available in U.S. market)
40	09941-94510	Rim protector
41	09942-72410	Steering knuckle arm remover
42	09917-50410	Bearing remover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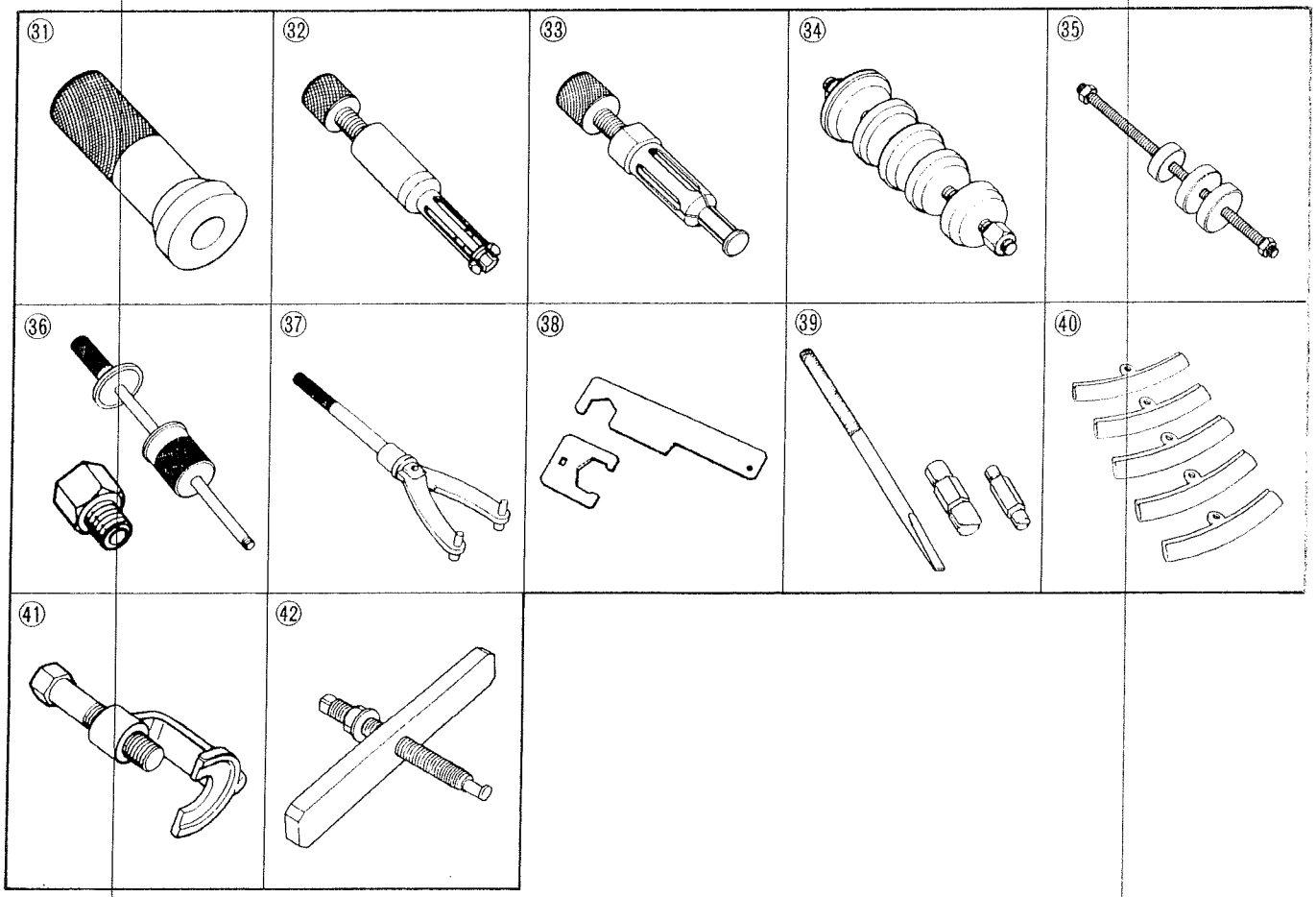
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TIGHTENING TORQUE

ENGINE

ITEM		N·m	kg-m	lb-ft
Cylinder head nut		26 – 30	2.6 – 3.0	19.0 – 21.5
Cylinder base nut	8 mm	26 – 30	2.6 – 3.0	19.0 – 21.5
	6 mm	8 – 12	0.8 – 1.2	6.0 – 8.5
Spark plug		25 – 30	2.5 – 3.0	18.0 – 21.5
Mission oil drain plug		20 – 25	2.0 – 2.5	14.5 – 18.0
Magneto rotor nut		90 – 100	9.0 – 10.0	65.0 – 72.5
Clutch sleeve hub nut		40 – 60	4.0 – 6.0	29.0 – 43.5
Primary drive gear nut		80 – 100	8.0 – 10.0	58.0 – 72.5
Impeller bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Balancer driven gear nut		90 – 110	9.0 – 11.0	65.0 – 79.5
Gearshift cam mounting bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Engine mounting bracket bolt		22 – 33	2.2 – 3.3	20.0 – 24.5
Engine mounting bolt		37 – 45	3.7 – 4.5	27.0 – 32.5

CHASSIS

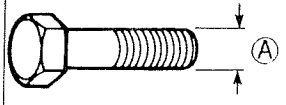
ITEM	N·m	kg-m	lb-ft
Front wheel hub nut	50 – 80	5.0 – 8.0	36.0 – 58.0
Front wheel set nut	20 – 31	2.0 – 3.1	14.5 – 22.5
Front shock absorber nut (Upper and Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5
Handlebar clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Tie-rod lock nut	22 – 35	2.2 – 3.5	16.0 – 25.5
Tie-rod end nut	22 – 35	2.2 – 3.5	16.0 – 25.5
Steering knuckle arm bolt	42.5 – 47.5	4.25 – 4.75	30.5 – 34.5
Wishbone arm end bolt (Upper and Lower)	120 – 170	12.0 – 17.0	87.0 – 123.0
Wishbone arm inner nut	40 – 60	4.0 – 6.0	29.0 – 43.5
Steering knuckle arm lower bolt	40 – 60	4.0 – 6.0	29.0 – 43.5
Steering shaft holder bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Steering shaft lower nut	38 – 60	3.8 – 6.0	27.5 – 43.5
Steering knuckle end nut	35 – 50	3.5 – 5.0	25.5 – 36.0
Brake hose union bolt (Front and Rear)	20 – 25	2.0 – 2.5	14.5 – 18.0
Brake pipe connecting nut	13 – 18	1.3 – 1.8	9.5 – 13.0
Caliper mounting bolt (Front and Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0
Caliper air bleeder valve (Front and Rear)	6 – 9	0.6 – 0.9	4.5 – 6.5

ITEM		N·m	kg-m	lb-ft
Front master cylinder mounting bolt		5 – 8	0.5 – 0.8	3.5 – 6.0
Rear master cylinder mounting bolt		10 – 16	1.0 – 1.6	7.0 – 11.5
Parking brake housing bolt		25 – 30	2.5 – 3.0	18.0 – 21.5
Rear caliper axle bolt	Front	20 – 25	2.0 – 2.5	14.5 – 18.0
	Rear	15 – 20	1.5 – 2.0	11.0 – 14.5
Rear brake pad mounting bolt		15 – 20	1.5 – 2.0	11.0 – 14.5
Rear axle lock nut		160 – 200	16.0 – 20.0	115.5 – 144.5
Rear sprocket mounting bolt		50 – 60	5.0 – 6.0	36.0 – 43.5
Rear wheel hub nut		85 – 115	8.5 – 11.5	61.5 – 83.0
Rear wheel set nut		45 – 65	4.5 – 6.5	32.5 – 47.0
Torque link bolt	Front	20 – 31	2.0 – 3.1	14.5 – 22.5
	Rear	44 – 66	4.4 – 6.6	32.0 – 47.5
Disc plate mounting bolt (Front and Rear)		15 – 25	1.5 – 2.5	11.0 – 18.0
Rear axle housing set nut	Right side	40 – 60	4.0 – 6.0	29.0 – 43.5
	Left side	70 – 90	7.0 – 9.0	50.5 – 65.0
Rear shock absorber nut (Upper and Lower)		40 – 60	4.0 – 6.0	29.5 – 43.5
Cushion rod nut (Upper and Lower)		40 – 60	4.0 – 6.0	29.0 – 43.5
Cushion lever center shaft nut		70 – 100	7.0 – 10.0	50.5 – 72.5
Swingarm pivot nut		50 – 80	5.0 – 8.0	36.0 – 58.0

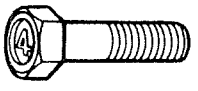
TIGHTENING TORQUE CHART

For other bolts and nuts not listed above, refer to this chart:

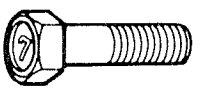
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kg-m	lb-ft	N·m	kg-m	lb-ft
4	1.0 – 2.0	0.1 – 0.2	0.7 – 1.5	1.5 – 3.0	0.15 – 0.3	1.0 – 2.0
5	2.0 – 4.0	0.2 – 0.4	1.5 – 3.0	3.0 – 6.0	0.3 – 0.6	2.0 – 4.5
6	4.0 – 7.0	0.4 – 0.7	3.0 – 5.0	8.0 – 12.0	0.8 – 1.2	6.0 – 8.5
8	10.0 – 16.0	1.0 – 1.6	7.0 – 11.5	18.0 – 28.0	1.8 – 2.8	13.0 – 20.0
10	22.0 – 35.0	2.2 – 3.5	16.0 – 25.5	40.0 – 60.0	4.0 – 6.0	29.0 – 43.5
12	35.0 – 55.0	3.5 – 5.5	25.5 – 40.8	70.0 – 100.0	7.0 – 10.0	50.5 – 72.5
14	50.0 – 80.0	5.0 – 8.0	36.0 – 58.0	110.0 – 160.0	11.0 – 16.0	79.5 – 115.5
16	80.0 – 130.0	8.0 – 13.0	58.0 – 94.0	170.0 – 250.0	17.0 – 25.0	123.0 – 181.0
18	130.0 – 190.0	13.0 – 19.0	94.0 – 137.5	200.0 – 280.0	20.0 – 28.0	144.5 – 202.5



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)	0.120 (0.0047)
Cylinder bore	67.000—67.015 (2.6378—2.6384) Measure at 20 (0.8) from the top surface	67.050 (2.6398)
Piston diam.	66.915—66.930 (2.6344—2.6350) Measure at 24 (0.9) from the skirt end.	66.880 (2.6331)
Cylinder distortion	———	0.05 (0.002)
Cylinder head distortion	———	0.05 (0.002)
Piston ring free end gap	1st & 2nd / R / Approx. 5.5 (0.22)	4.4 (0.17)
Piston ring end gap	0.20—0.40 (0.008—0.016)	0.85 (0.033)
Piston ring to groove clearance	1st & 2nd / 0.01—0.05 (0.0004—0.0020)	———
Piston pin bore	18.002—18.012 (0.7087—0.7091)	18.030 (0.7098)
Piston pin O.D.	17.994—17.997 (0.7084—0.7085)	17.977 (0.7078)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 (0.9056—0.9059)	23.040 (0.9071)
Crank web to web width	56 ± 0.1 (2.2 ± 0.004)	———
Crankshaft runout	———	0.05 (0.002)

EXHAUST VALVE

ITEM	STANDARD
Closing r/min.	Approx. 5 000 r/min.
Opening r/min.	Approx. 5 500 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 (0.08—0.12)	———
Drive plate thickness	2.72—2.88 (0.107—0.113)	2.42 (0.095)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.0 (0.59)
Driven plate distortion	———	0.10 (0.004)

ITEM	STANDARD	LIMIT
Clutch spring free length	———	29.8 (1.17)

THERMOSTAT + RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm², 15.6 ± 2.1 psi)	———

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		2.681 (59/22)	———
Final reduction ratio		3.500 (42/12)	———
Gear ratios	Low	2.384 (31/13)	———
	2nd	1.785 (25/14)	———
	3rd	1.437 (23/16)	———
	4th	1.166 (21/18)	———
	5th	0.950 (19/20)	———
	Top	0.818 (18/22)	———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.02)
Shift fork groove width		5.0—5.1 (0.19—0.20)	———
Shift fork thickness	No.1, No.2 & No.3	4.8—4.9 (0.18—0.19)	———

DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 520V-S TAKASAGO: RK520SMO-Z2	———
	Links	102	———
	20-pitch length	———	323.9 (12.75)
Drive chain slack		35—40 (1.4—1.6)	———

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM34SS
Bore size		34 mm (1.3 in)
I.D. No.		01C00
Idle r/min.		1 400 ± 50 r/min.
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)
Main jet	(M.J.)	#240 (SPARE MAIN JETS: #200, #220 and #250)
Main air jet	(M.A.J.)	2.5 mm
Jet needle	(J.N.)	6FP60-3rd
Needle jet	(N.J.)	Q-8

ITEM		SPECIFICATION
Cut-away	(C.A.)	4.0
Pilot jet	(P.J.)	#37.5
By-pass	(B.P.)	1.2 mm
Pilot outlet	(P.O.)	0.8 mm
Air screw	(A.S.)	1 1/2 turns back
Starter jet	(G.S.)	#110
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		6° B.T.D.C. at 1 000 r/min.		
		11° B.T.D.C. at 9 000 r/min.		
Spark plug		Type	NGK: B8EGV	E-03, 24
		Gap	0.55—0.65 (0.022—0.026)	
		Type	NGK: BR8EV	E-28
		Gap	0.5—0.6 (0.020—0.024)	
Ignition coil resistance	E-03, 24	Primary	0.1—1.0 Ω	Terminal—Ground
		Secondary	3—5 kΩ	Plug cap—Ground
	E-28	Primary	0.1—1.0 Ω	Terminal—Ground
		Secondary	11—17 kΩ	Plug cap—Plug cap
Magneto coil resistance		Lighting	0.5—1.0 Ω	Y/R—B/W
		Pick-up	175—265 Ω	Bl—B/W
		Power source	315—475 Ω	B/R—B/W
Lighting coil output		Above 12 V at 3 000 r/min. Below 18 V at 8 000 r/min.		
Regulated voltage		13.4—14.0 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Rear brake pedal height		5 (0.2)	———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.12)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.14)
Brake disc runout		———	0.30 (0.012)
Master cylinder bore	Front	12.700–12.743 (0.5000–0.5017)	———
	Rear	14.000–14.043 (0.5512–0.5529)	———
Master cylinder piston diam.	Front	12.657–12.684 (0.4983–0.4994)	———
	Rear	13.957–13.984 (0.5495–0.5506)	———
Brake caliper cylinder bore	Front	30.230–30.280 (1.1902–1.1921)	———
	Rear	33.960–34.010 (1.3370–1.3390)	———
Brake caliper piston diam.	Front	30.167–30.200 (1.1877–1.1890)	———
	Rear	33.923–33.928 (1.3355–1.3357)	———
Steering angle	Inside	40°	———
	Outside	27°	———
Turing radius		3.0 m (9.8 ft)	———
Toe-in (with 75 kg, 165 lbs)		11–19 (0.43–0.75)	———
Caster		9°00′	———
Tire size	Front	AT21 × 7-10 ☆☆	———
	Rear	AT21 × 10-10 ☆	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)
Trail		4.0 (1.6)	———
Wheel axle runout	Rear	———	8.0 (0.31)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front shock absorber spring setting	2nd position	———	
Rear shock absorber spring pre-set length	234.5 (9.2)	———	
Rear shock absorber damping force adjuster, compression side	2nd position	———	

ITEM	STANDARD	LIMIT	NOTE
Rear shock absorber damping force adjuster, extension side	3rd position	———	
Rear shock absorber gas pressure	1 000 kPa, 10 kg/cm², 142 psi	———	
Front wheel travel	218 (8.6)	———	
Rear wheel travel	211 (8.3)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

LOAD CAPACITY / COLD INFLATION TIRE PRESSURE	FRONT			REAR		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
UP TO 80 kg (UP TO 175 lbs)	25	0.25	3.6	20	0.20	2.9
80—120 kg (175—265 lbs)	30	0.30	4.4	25	0.25	3.6

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		E-03, 28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		E-24
Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)		
reserve	1.1 L (1.2/1.0 US/Imp qt)		
Engine oil type	SUZUKI CCI oil or CCI super		
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	900 ml (0.95/0.79 US/Imp qt)	
	Overhaul	950 ml (1.00/0.84 US/Imp qt)	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.		
Coolant capacity	880 ml (0.93/0.77 US/Imp qt)		
Brake fluid type	SAE J1703, DOT3 or DOT4		E-24, 28
	DOT3 or DOT4		E-03

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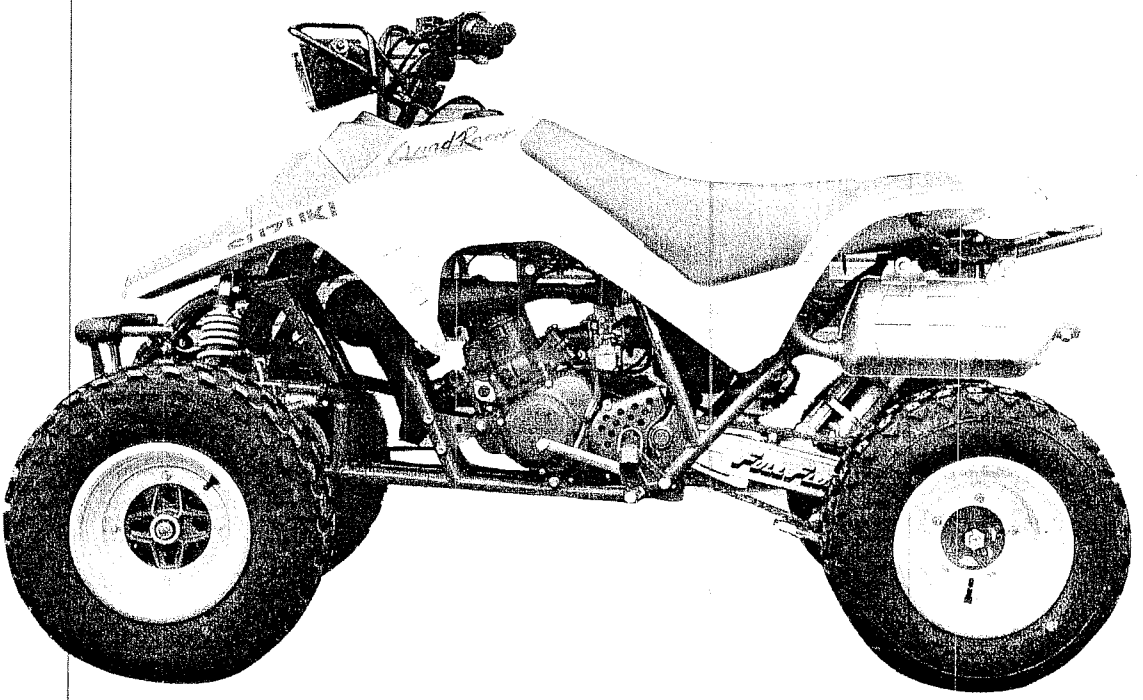
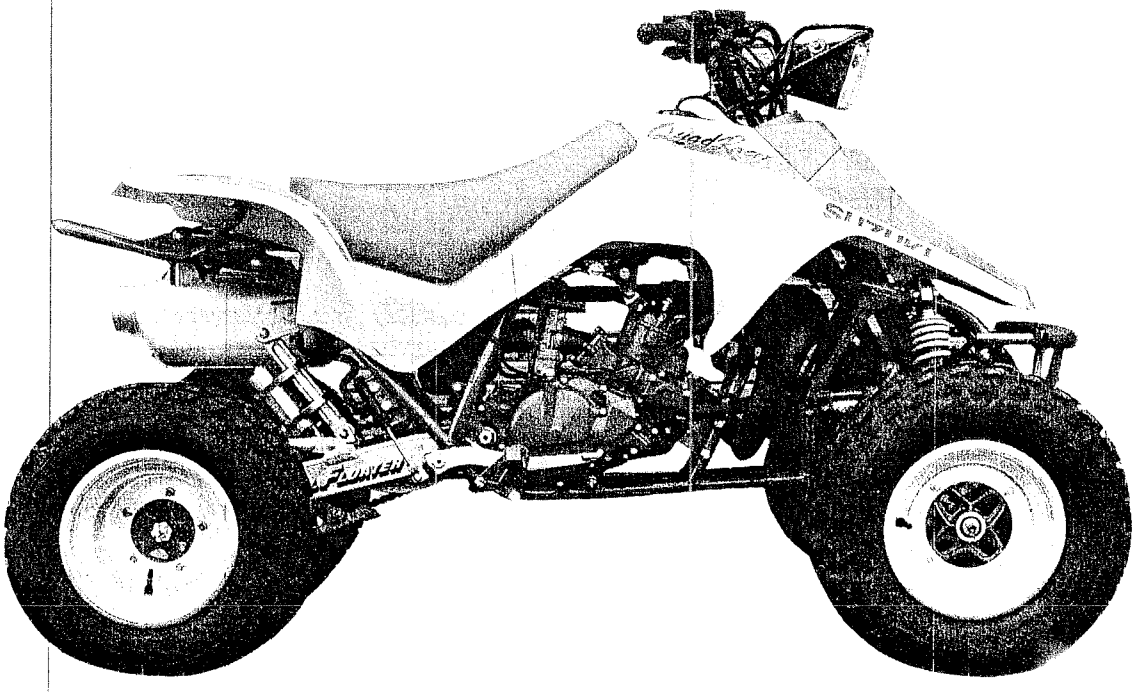
NOTE:

- *Any differences in service data and service specifications with those that apply to the LT250RH model are clearly indicated with an asterisk (*).*
- *Please refer to the sections 1 through 8 for details which are not given in this section.*

MODEL LT250RJ



LEFT SIDE



RIGHT SIDE

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	1 830 mm (72.0 in)
Overall width	1 135 mm (44.7 in)
Overall height	1 125 mm (44.3 in)
Wheelbase	1 280 mm (50.4 in)
Front track	960 mm (37.8 in)
Rear track	850 mm (33.5 in)
Seat height	780 mm (30.7 in)
Ground clearance	125 mm (4.9 in)
Dry mass	147 kg (324 lbs)

ENGINE

Type	Two-stroke, water-cooled, SAEC
Number of cylinders	1
Bore	67.0 mm (2.638 in)
Stroke	70.0 mm (2.756 in)
Piston displacement	246 cm^3 (15.0 cu. in)
Compression ratio	8.0 : 1
Carburetor	MIKUNI TM34SS, Single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Fuel and oil premixture of 20 : 1

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5 up
Primary reduction	2.681 (59/22)
Final reduction	3.500 (42/12)
Gear ratios, Low 2nd 3rd 4th 5th Top	2.384 (31/13) 1.785 (25/14) 1.437 (23/16) 1.166 (21/18) 0.950 (19/20) 0.818 (18/22)
*Drive chain	DAIDO D.I.D. 520VS2 or TAKASAGO RK520SMO-Z9, 102 links

CHASSIS

Front suspension	Double wishbone, spring preload 5-way adjustable, damping force 4-way adjustable
Rear suspension	Full-floating suspension system, spring preload fully adjustable, damping force 4-way adjustable
Steering angle	41° 30' (right & left)
Caster	9° 00'
Trail	40 mm (1.6 in)
Turning radius	3.0 m (9.8 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	AT21 x 7 – 10☆☆
Rear tire size	AT21 x 10 – 10☆

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	6° B.T.D.C. at 1 000 r/min and 11° B.T.D.C. at 9 000 r/min
Spark plug	N.G.K.: B8EGV – E-03, 24 N.G.K.: BR8EV – E-28
Head light	12V 60/55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)
reserve	1.1 L (1.2/1.0 US/Imp qt)
Transmission oil	900 ml (30.4/31.7 US/Imp oz)
Coolant	880 ml (0.93/0.77 US/Imp qt)

Specifications are subject to change without notice.

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)	0.120 (0.0047)
Cylinder bore	67.000—67.015 (2.6378—2.6384) Measure at 20 (0.8) from the top surface	67.050 (2.6398)
Piston diam.	66.915—66.930 (2.6344—2.6350) Measure at 24 (0.9) from the skirt end	66.880 (2.6331)
Cylinder distortion	———	0.05 (0.002)
Cylinder head distortion	———	0.05 (0.002)
Piston ring free end gap	1st & 2nd / R / Approx. 5.5 (0.22)	4.4 (0.17)
Piston ring end gap	0.20—0.40 (0.008—0.016)	0.85 (0.033)
Piston pin bore	18.002—18.012 (0.7087—0.7091)	18.030 (0.7098)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)	17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 (0.9056—0.9059)	23.040 (0.9071)
Crank web to web width	56.0 ± 0.1 (2.205 ± 0.004)	———
Crankshaft runout	———	0.05 (0.002)

EXHAUST VALVE

ITEM	STANDARD
Closing r/min.	Approx. 5 500 r/min.
Opening r/min.	Approx. 6 000 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 (0.08—0.12)	———
Drive plate thickness	2.45—2.75 (0.096—0.108)	2.15 (0.085)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.0 (0.59)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.8 (1.17)

RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm², 15.6 ± 2.1 psi)	———

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		2.681 (59/22)	———
Final reduction ratio		3.500 (42/12)	———
Gear ratios	Low	2.384 (31/13)	———
	2nd	1.785 (25/14)	———
	3rd	1.437 (23/16)	———
	4th	1.166 (21/18)	———
	5th	0.950 (19/20)	———
	Top	0.818 (18/22)	———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.020)
Shift fork groove width		5.0—5.1 (0.19—0.20)	———
Shift fork thickness	No.1, No.2 & No.3	4.8—4.9 (0.18—0.19)	———

DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 520VS2 TAKASAGO: RK520SMO-Z9	———
	Links	102	———
	20-pitch length	———	323.9 (12.75)
Drive chain slack	35—40 (1.4—1.6)		———

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM34SS
Bore size		34 mm (1.3 in)
I.D. No.		01C10
Idle r/min.		1 400 ± 50 r/min
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)
Main jet	(M.J.)	#240 [SPARE MAIN JETS #200, #220 and #250]
Main air jet	(M.A.J.)	2.5 mm
Jet needle	(J.N.)	6FP63-3rd
Needle jet	(N.J.)	R-0
Cut-away	(C.A.)	4.0
Pilot jet	(P.J.)	#30
By-pass	(B.P.)	1.2 mm

ITEM		SPECIFICATION
Pilot outlet	(P.O.)	0.8 mm
Air screw	(A.S.)	2 turns back
Starter jet	(G.S.)	#110
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	4° B.T.D.C. at 1 000 r/min.		
	11° B.T.D.C. at 9 500 r/min.		
Spark plug	Type	NGK: B8EGV	E-03,24
	Gap	0.55—0.65 (0.022—0.026)	
	Type	NGK: BR8EV	E-28
	Gap	0.5—0.6 (0.020—0.024)	
Ignition coil resistance	Primary	0—1 Ω	Terminal—Ground
	Secondary	3—5 kΩ	Plug cap—Ground
Magneto coil resistance	Lighting	0.5—1.0 Ω	Y/R—B/W
	Pick-up	175—265 Ω	Bl—B/W
	Power source	315—475 Ω	B/R—B/W
Lighting coil output	Above 12 V at 3 000 r/min. Below 18 V at 8 000 r/min.		
Regulated voltage	13.0—14.0 V at 5 000 r/min.		SU236S-1

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	0—10 (0—0.4)		———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.12)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.14)
Brake disc runout	———		0.30 (0.012)
Master cylinder bore	Front	12.700—12.743 (0.5000—0.5017)	———
	Rear	12.700—12.743 (0.5000—0.5017)	———

ITEM	STANDARD		LIMIT
Master cylinder piston diam.	Front	12.657—12.684 (0.4983—0.4994)	———
	Rear	12.657—12.684 (0.4983—0.4994)	———
Brake caliper cylinder bore	Front	30.230—30.280 (1.1902—1.1921)	———
	Rear	33.960—34.010 (1.3370—1.3390)	———
Brake caliper piston diam.	Front	30.167—30.200 (1.1877—1.1890)	———
	Rear	33.923—33.928 (1.3355—1.3357)	———
Steering angle	Inside	37°—43°	———
	Outside	24°—30°	———
Turning radius	3.0 m (9.8 ft)		———
Toe-in (with 75 kg, 165 lbs)	11—19 (0.43—0.75)		———
Caster	9°00′		———
Tire size	Front	AT21 × 7-10 ☆ ☆	———
	Rear	AT21 × 10-10 ☆	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)
Trail	37.4 (1.47)		———
Wheel axle runout	Rear	———	8.0 (0.31)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front shock absorber spring setting position	3rd position	———	
Rear shock absorber spring pre-set length	232.5 (9.2)	———	
Rear shock absorber damping force adjuster setting position, compression side	2nd position	———	
Rear shock absorber damping force adjuster setting position, extension side	3rd position	———	
Rear shock absorber gas pressure	1 000 kPa, (10 kg/cm^2, 142 psi)		
Front wheel travel	218 (8.6)	———	
Rear wheel travel	211 (8.3)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

LOAD CAPACITY \ COLD INFLATION TIRE PRESSURE	FRONT			REAR		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
UP TO 80 kg (UP TO 175 lbs)	25	0.25	3.6	20	0.20	2.9
80—120 kg (175—265 lbs)	30	0.30	4.4	25	0.35	3.6

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		E-03, 28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		E-24
Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)		
reserve	1.1 L (1.2/1.0 US/Imp qt)		
Engine oil type	SUZUKI CCI oil or CCI super		
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	900 ml (30.4/31.7 US/Imp oz)	
	Overhaul	950 ml (32.1/33.4 US/Imp oz)	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.		
Coolant capacity	880 ml (0.93/0.77 US/Imp qt)		
Brake fluid type	SAE J1703, DOT 3 or DOT 4		E-24,28
	DOT 3 or DOT 4		E-03

NOTE: Symbols described on above "NOTE" space stand for each country as the following.

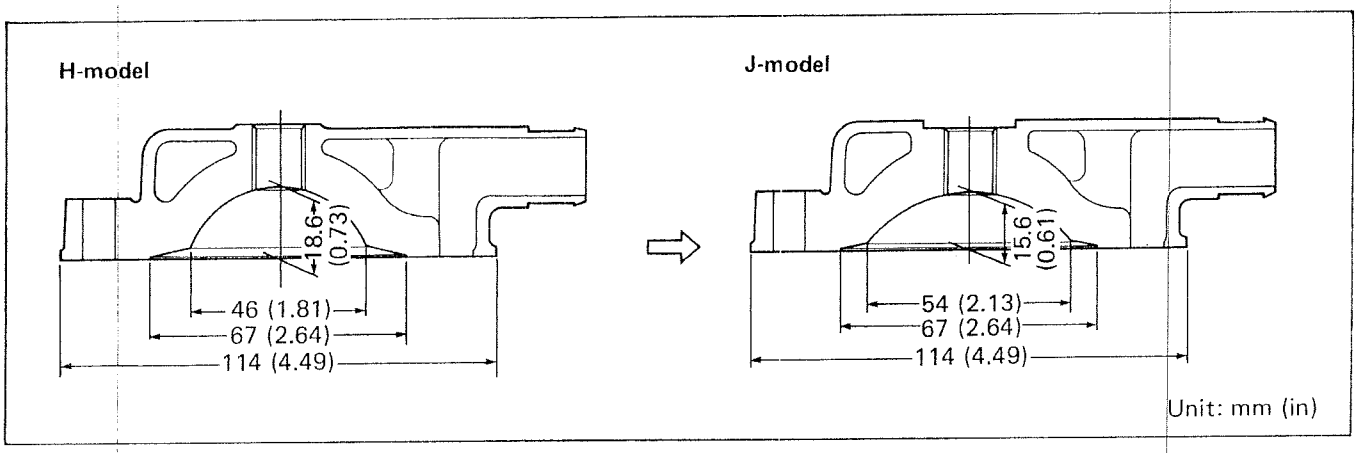
E-03..... USA
E-24..... Australia
E-28..... Canada

CHANGES

The following changes have been made with the first production of model: LT250RJ.

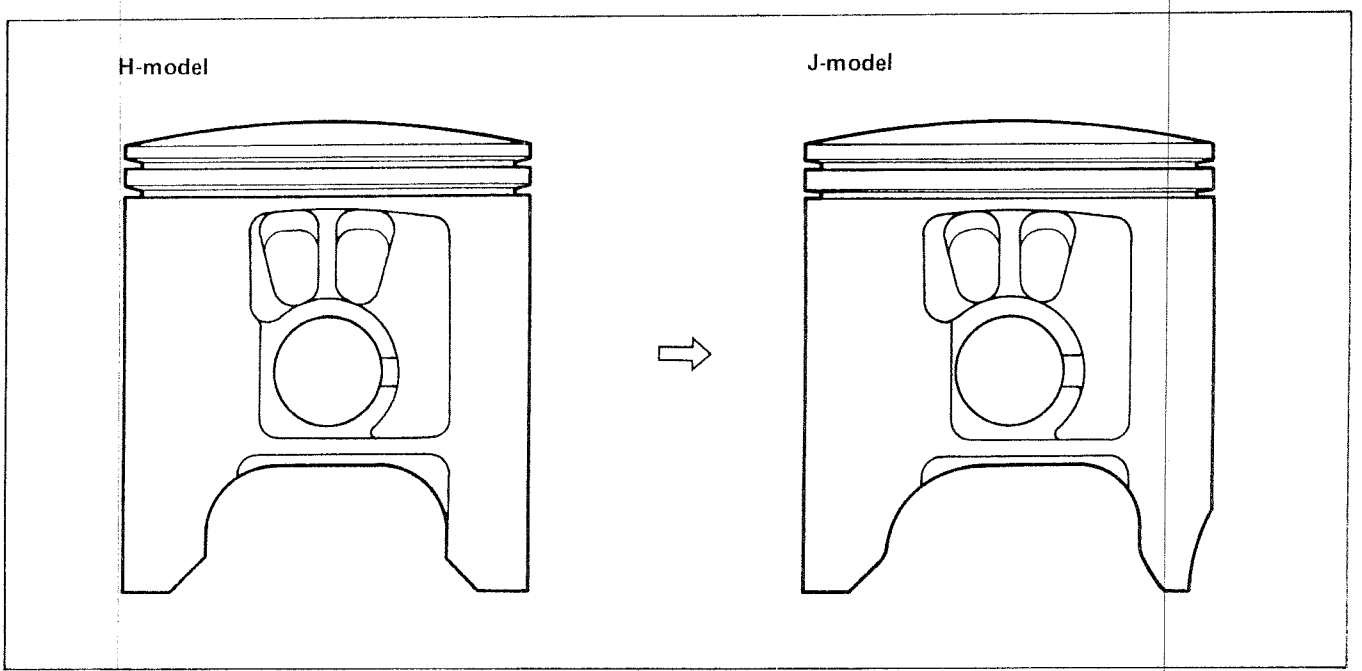
CYLINDER HEAD

Internal shape of combustion chamber is modified as follows.



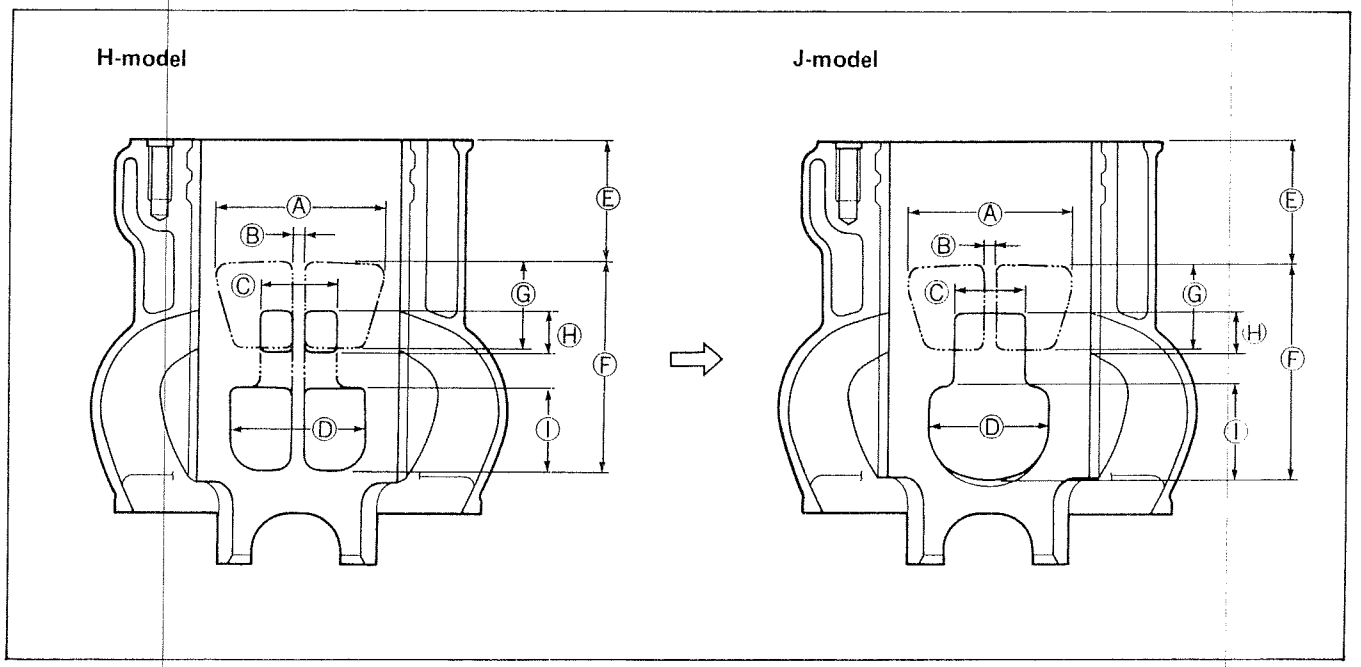
PISTON

Several parts of shape is modified as follows.



CYLINDER

Port shape and port timing are modified as follows.

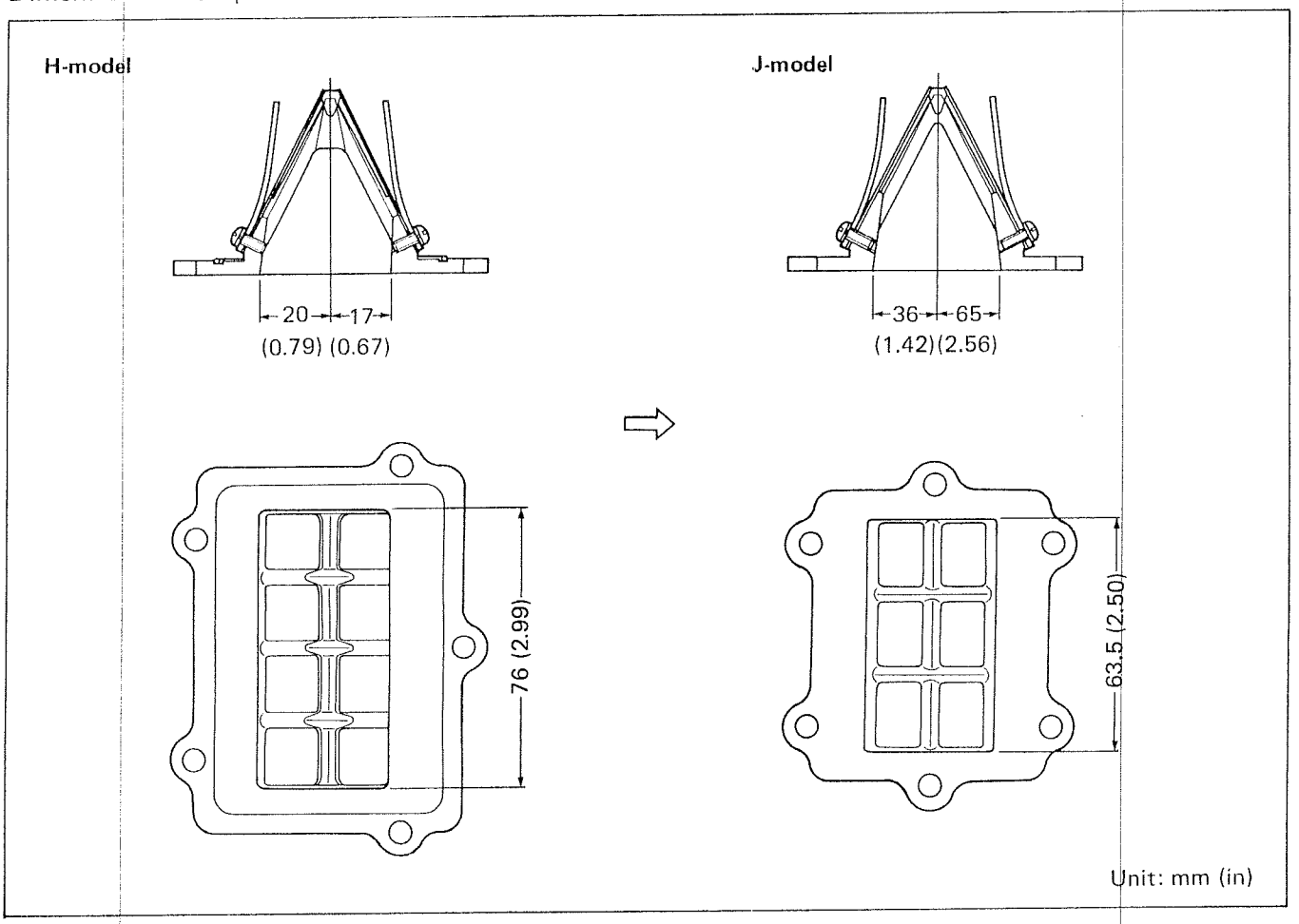


Unit: mm (in)

DIMENSION		
ITEM	H-model	J-model
Ⓐ	56.0 (2.20)	54.0 (2.13)
Ⓑ	4.0 (0.16)	←
Ⓒ	26.0 (1.02)	24.0 (0.94)
Ⓓ	45.0 (1.77)	40.0 (1.57)
Ⓔ	41.5 (1.63)	41.0 (1.61)
Ⓕ	68.5 (2.70)	72.0 (2.83)
Ⓖ	28.5 (1.12)	29.0 (1.14)
Ⓗ	13.5 (0.53)	13.5 (0.53)
Ⓘ	27.0 (1.06)	31.0 (1.22)

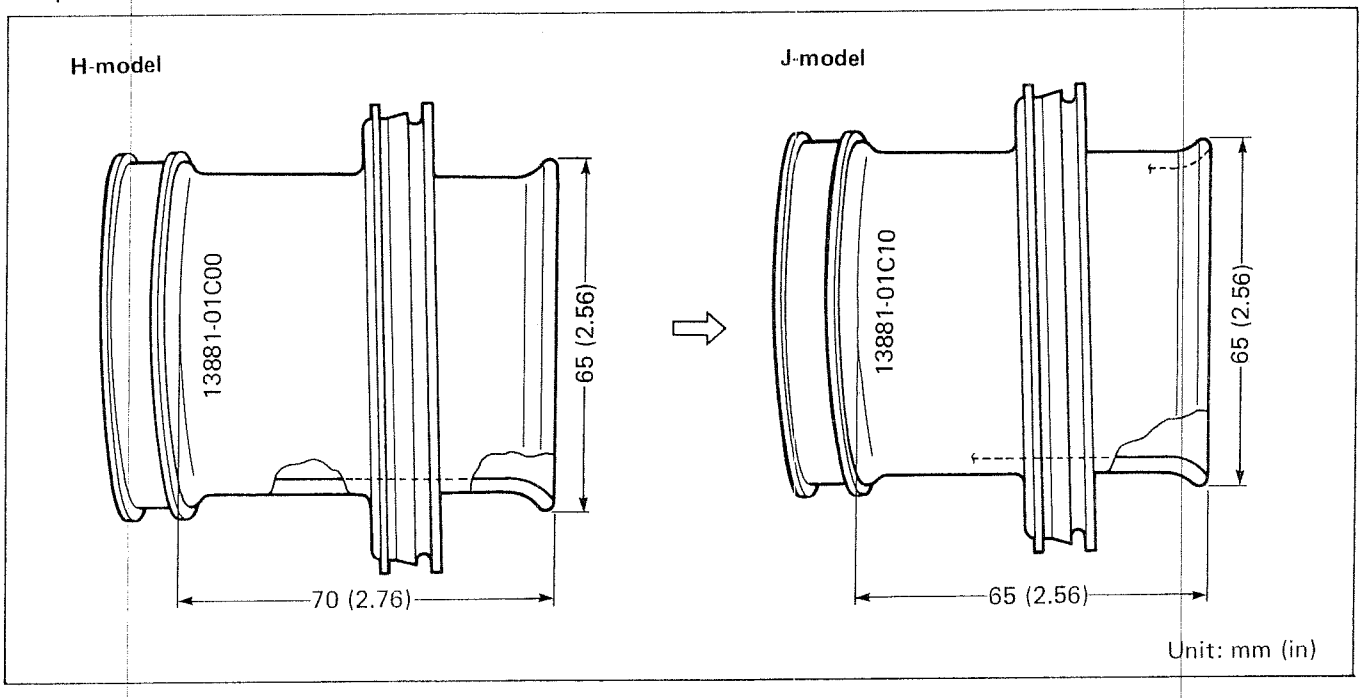
REED VALVE

Dimension and shape are modified as follows.



AIR CLEANER OUTLET TUBE

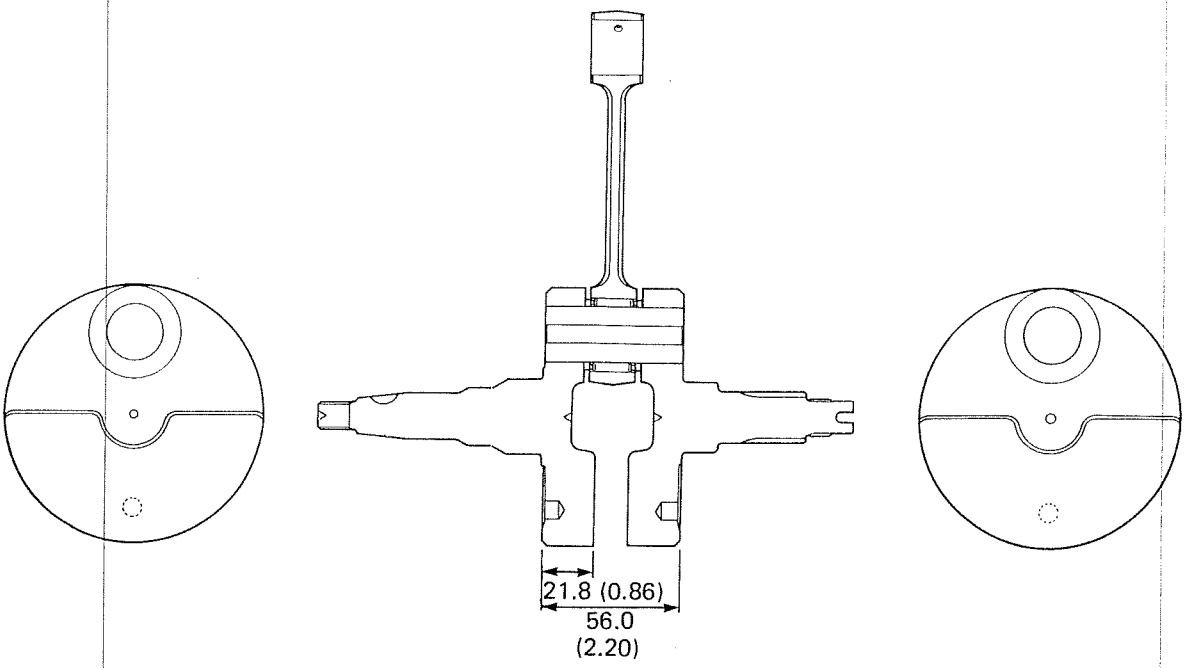
Shape is modified as follows.



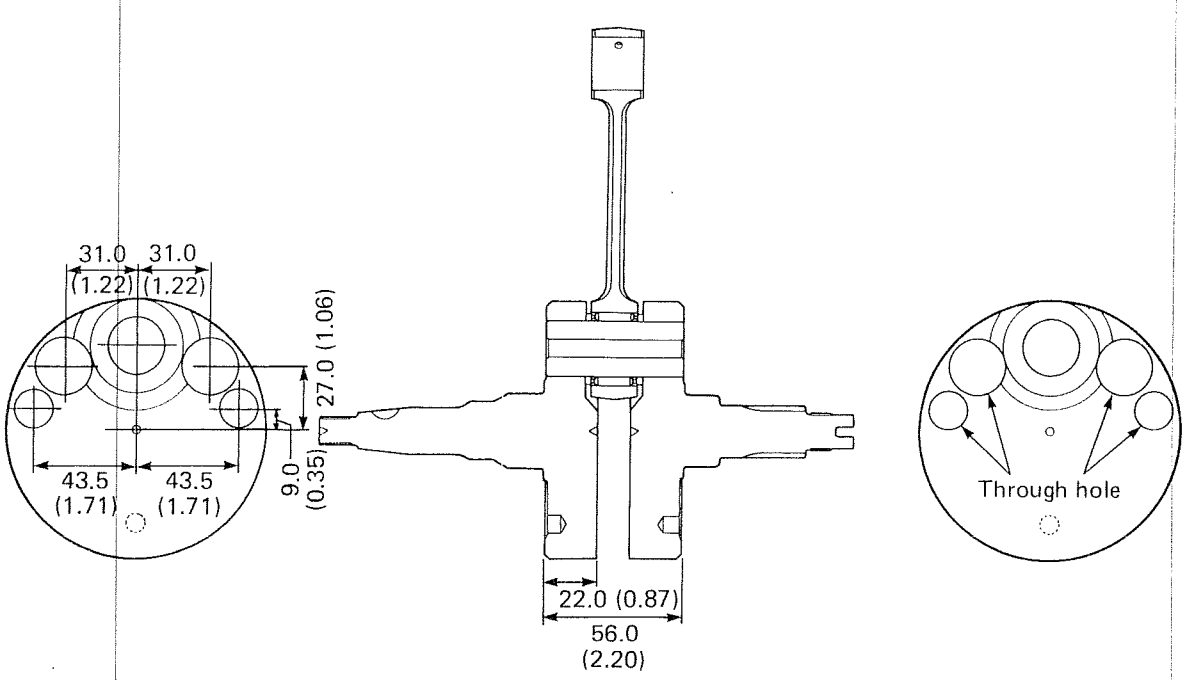
CRANKSHAFT

Several parts of shape is modified as follows.

H-model



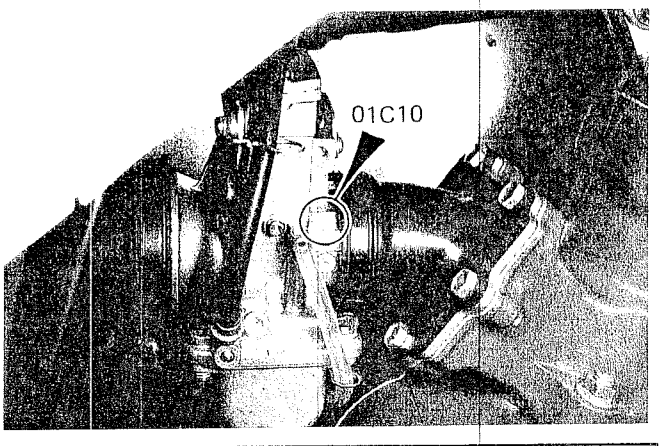
J-model



Unit: mm (in)

CARBURETOR

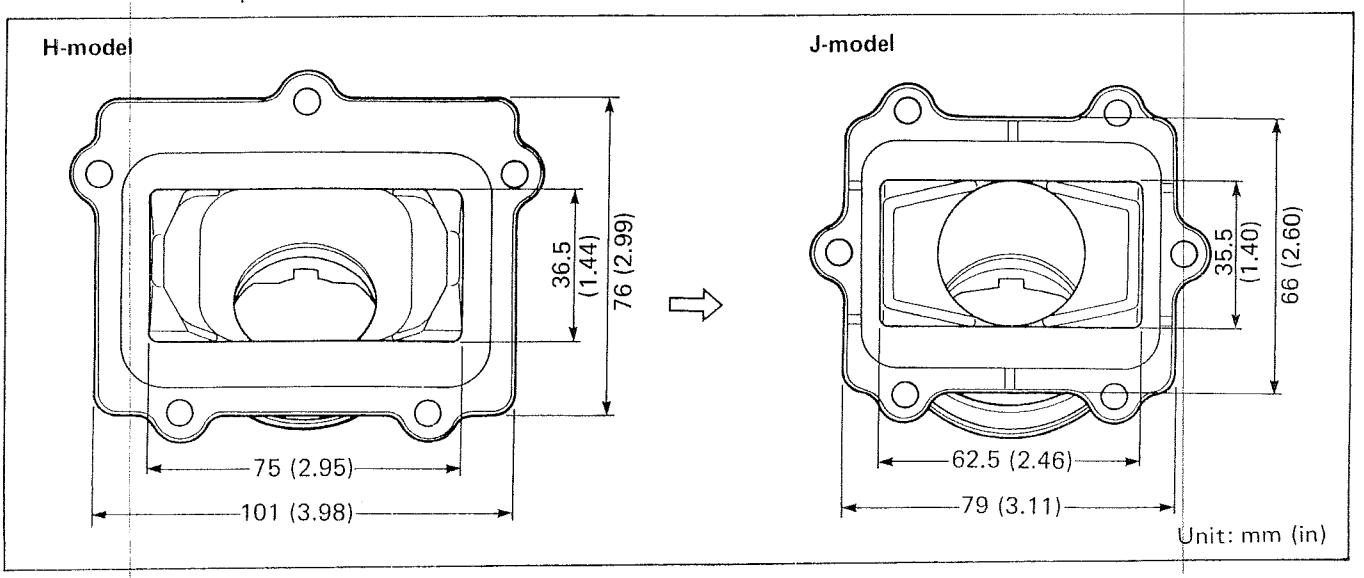
Carburetor jettings are modified as follows.



SPECIFICATION			
ITEM		H-model	J-model
Carburetor type		MIKUNI TM34SS	←
Bore size		34 mm (1.3 in)	←
I.D. No.		01C00	01C10
Idle r/min.		1 400 ± 50 r/min.	←
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)	←
Main jet	(M.J.)	# 240	←
Main air jet	(M.A.J.)	2.5 mm (0.10 in)	←
Jet needle	(J.N.)	6FP60-3	6FP63-3
Needle jet	(N.J.)	Q – 8	R – 0
Cut-away	(C.A.)	4.0	←
Pilot jet	(P.J.)	# 37.5	# 30
By-pass	(B.P.)	1.2 mm (0.05 in)	←
Pilot outlet	(P.O.)	0.8 mm (0.03 in)	←
Air screw	(A.S.)	1-½ turns back	2 turns back
Starter jet	(G.S.)	# 110	←

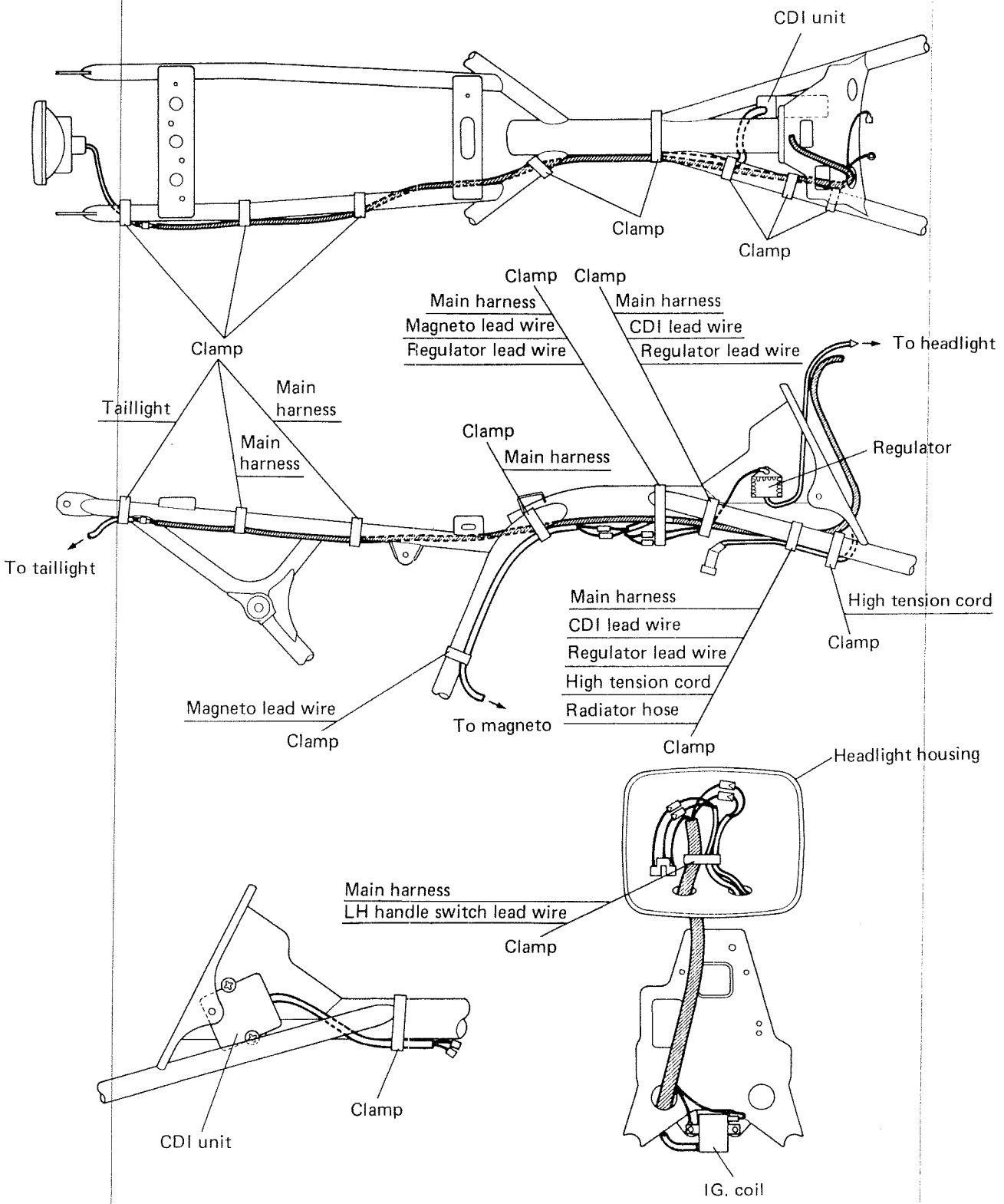
CARBURETOR INTAKE PIPE

Dimension and shape are modified as follows.

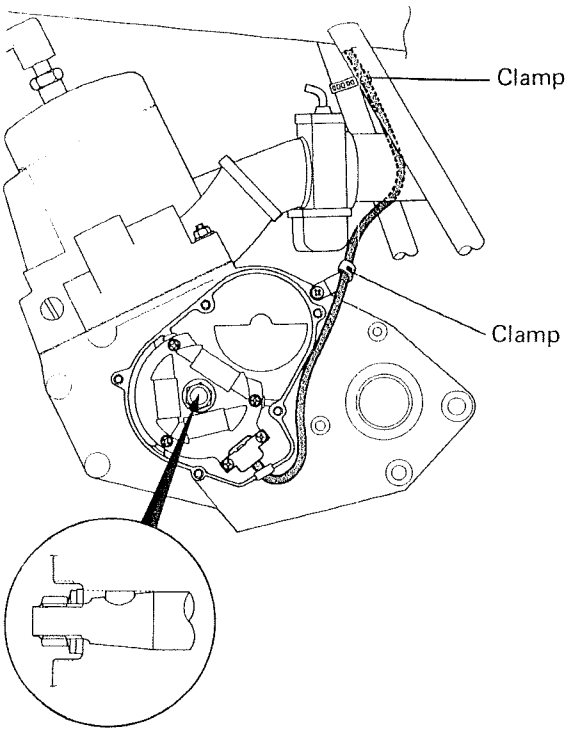


WIRE, CABLE AND HOSE ROUTING

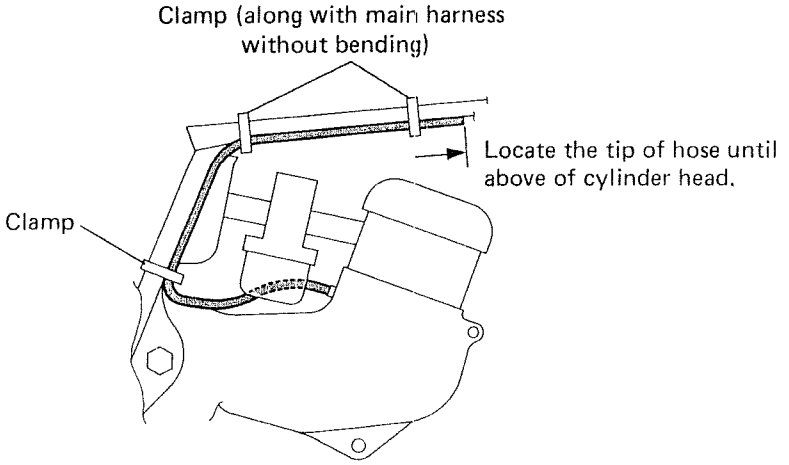
WIRE HARNESS



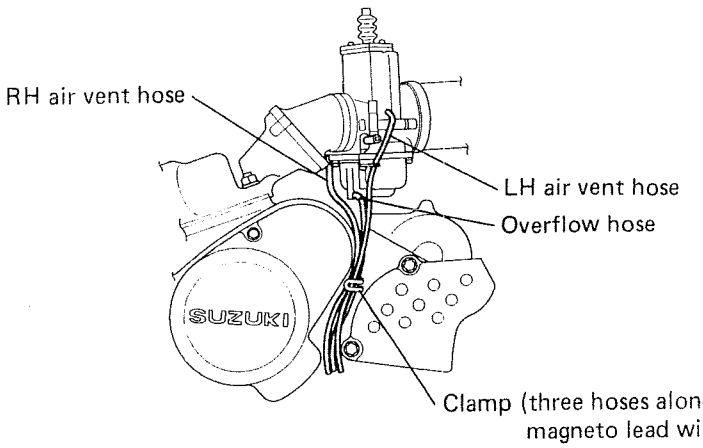
MAGNETO LEAD WIRE



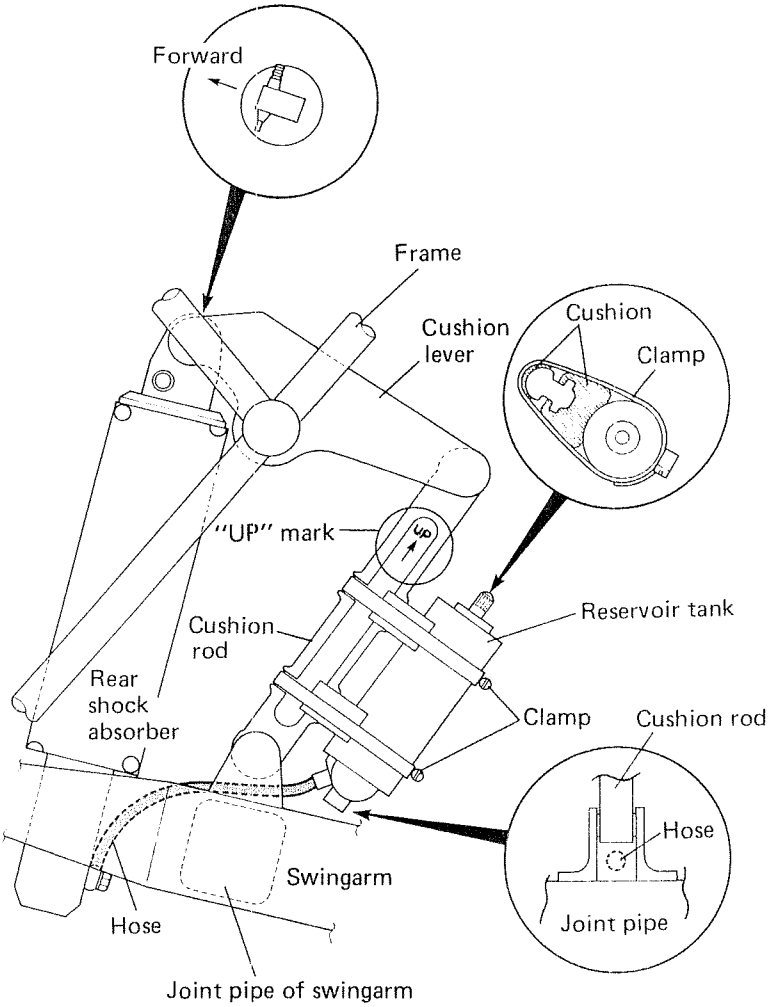
OIL BREATHER HOSE



CARBURETOR HOSE

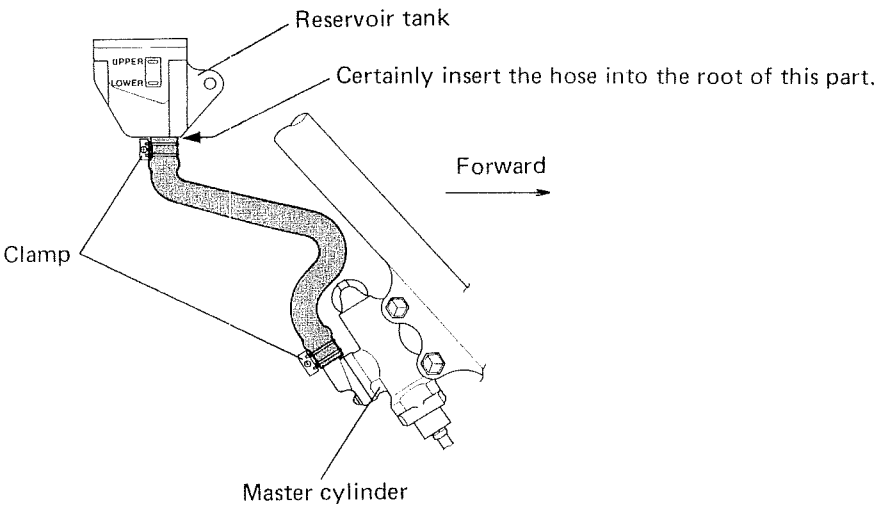


REAR SHOCK ABSORBER RESERVOIR TANK HOSE



* Pass the reservoir tank hose through between cushion rod and joint pipe of swingarm.

REAR BRAKE RESERVOIR TANK HOSE



CONTENTS

SERVICE DATA 10-1

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)	0.120 (0.0047)
Cylinder bore	67.000—67.015 (2.6378—2.6384) Measure at 20 (0.8) from the top surface	67.050 (2.6398)
Piston diam.	66.915—66.930 (2.6344—2.6350) Measure at 24 (0.9) from the skirt end	66.880 (2.6331)
Cylinder distortion	—	0.05 (0.002)
Cylinder head distortion	—	0.05 (0.002)
Piston ring free end gap	1st & 2nd / R / Approx. 5.5 (0.22)	4.4 (0.17)
Piston ring end gap	0.20—0.40 (0.008—0.016)	0.85 (0.033)
Piston pin bore	18.002—18.012 (0.7087—0.7091)	18.030 (0.7098)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)	17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 (0.9056—0.9059)	23.040 (0.9071)
Crank web to web width	56.0 ± 0.1 (2.205 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)

EXHAUST VALVE

ITEM	STANDARD
Closing r/min.	Approx. 5 500 r/min.
Opening r/min.	Approx. 6 000 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 (0.08—0.12)	—
Drive plate thickness	2.45—2.75 (0.096—0.108)	2.15 (0.085)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.0 (0.59)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.8 (1.17)

RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm², 15.6 ± 2.1 psi)	———

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		2.681 (59/22)	———
Final reduction ratio		3.500 (42/12)	———
Gear ratios	Low	2.384 (31/13)	———
	2nd	1.785 (25/14)	———
	3rd	1.437 (23/16)	———
	4th	1.166 (21/18)	———
	5th	0.950 (19/20)	———
	Top	0.818 (18/22)	———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.020)
Shift fork groove width		5.0—5.1 (0.19—0.20)	———
Shift fork thickness	No.1, No.2 & No.3	4.8—4.9 (0.18—0.19)	———

DRIVE CHAIN

Unit: mm (in)

ITEM		STANDARD	LIMIT
Drive chain	Type	D.I.D.: 520VS2 TAKASAGO: RK520SMO-Z9	———
	Links	102	———
	20-pitch length	———	323.9 (12.75)
Drive chain slack		35—40 (1.4—1.6)	———

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM34SS
Bore size		34 mm (1.3 in)
I.D. No.		01C10
Idle r/min.		1 400 ± 50 r/min
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)
Main jet	(M.J.)	#240 [SPARE MAIN JETS #200, #220 and #250]
Main air jet	(M.A.J.)	2.5 mm
Jet needle	(J.N.)	6FP63-3rd
Needle jet	(N.J.)	R-0
Cut-away	(C.A.)	4.0
Pilot jet	(P.J.)	#30
By-pass	(B.P.)	1.2 mm

ITEM		SPECIFICATION
Pilot outlet	(P.O.)	0.8 mm
Air screw	(A.S.)	2 turns back
Starter jet	(G.S.)	#110
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	6° B.T.D.C. at 1 000 r/min.		
	11° B.T.D.C. at 9 000 r/min.		
Spark plug	Type	NGK: B8EGV	E-03, 24
	Gap	0.55—0.65 (0.022—0.026)	
	Type	NGK: BR8EV	E-28
	Gap	0.5—0.6 (0.020—0.024)	
Ignition coil resistance	Primary	0—1 Ω	Terminal—Ground
	Secondary	3—5 kΩ	Plug cap—Ground
Magneto coil resistance	Lighting	0.5—1.0 Ω	Y/R—B/W
	Pick-up	175—265 Ω	Bl—B/W
	Power source	315—475 Ω	B/R—B/W
Lighting coil output	Above 12 V at 3 000 r/min. Below 18 V at 8 000 r/min.		
Regulated voltage	13.0—14.0 V at 5 000 r/min.		SU236S-1

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	0—10 (0—0.4)		———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.12)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.14)
Brake disc runout	———		0.30 (0.012)
Master cylinder bore	Front	12.700—12.743 (0.5000—0.5017)	———
	Rear	12.700—12.743 (0.5000—0.5017)	———

ITEM	STANDARD		LIMIT
Master cylinder piston diam.	Front	12.657—12.684 (0.4983—0.4994)	———
	Rear	12.657—12.684 (0.4983—0.4994)	———
Brake caliper cylinder bore	Front	30.230—30.280 (1.1902—1.1921)	———
	Rear	33.960—34.010 (1.3370—1.3390)	———
Brake caliper piston diam.	Front	30.167—30.200 (1.1877—1.1890)	———
	Rear	33.923—33.928 (1.3355—1.3357)	———
Steering angle	Inside	37°—43°	———
	Outside	24°—30°	———
Turning radius	3.0 m (9.8 ft)		———
Toe-in (with 75 kg, 165 lbs)	11—19 (0.43—0.75)		———
Caster	Rear	9°00'	———
Tire size	Front	AT21 × 7-10 ☆ ☆	———
	Rear	AT21 × 10-10 ☆	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)
Trail	37.4 (1.47)		———
Wheel axle runout	Rear	———	8.0 (0.31)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front shock absorber spring setting position	3rd position	———	
Rear shock absorber spring pre-set length	232.5 (9.2)	———	
Rear shock absorber damping force adjuster setting position, compression side	2nd position	———	
Rear shock absorber damping force adjuster setting position, extension side	3rd position	———	
Rear shock absorber gas pressure	1 000 kPa, (10 kg/cm², 142 psi)		
Front wheel travel	218 (8.6)	———	
Rear wheel travel	211 (8.3)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

LOAD CAPACITY \ COLD INFLATION TIRE PRESSURE	FRONT			REAR		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
UP TO 80 kg (UP TO 175 lbs)	25	0.25	3.6	20	0.20	2.9
80—120 kg (175—265 lbs)	30	0.30	4.4	25	0.35	3.6

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		E-03, 28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		E-24
Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)		
reserve	1.1 L (1.2/1.0 US/Imp qt)		
Engine oil type	SUZUKI CCI oil or CCI super		
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	900 ml (30.4/31.7 US/Imp oz)	
	Overhaul	950 ml (32.1/33.4 US/Imp oz)	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.		
Coolant capacity	880 ml (0.93/0.77 US/Imp qt)		
Brake fluid type	SAE J1703, DOT 3 or DOT 4		E-24, 28
	DOT 3 or DOT 4		E-03

CONTENTS

SPECIFICATIONS 11-1
SERVICE DATA 11-2

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	1 830 mm (72.0 in.)
Overall width	1 135 mm (44.7 in.)
Overall height	1 125 mm (44.3 in.)
Wheelbase	1 280 mm (50.4 in.)
Ground clearance	125 mm (4.9 in.)
Front track	960 mm (37.8 in)
Rear track	850 mm (33.5 in)
Seat height	780 mm (30.7 in.)
Dry mass	147 kg (324 lbs)

ENGINE

Type	Two-stroke, water-cooled, SAEC
Number of cylinders	1
Bore	67.0 mm (2.638 in.)
Stroke	70.0 mm (2.756 in.)
Piston displacement	246 cm^3 (15.0 cu. in.)
Corrected compression ratio	8.0 : 1
Carburetor	MIKUNI TM34SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Fuel and oil premixture of 20 : 1

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction	2.681 (59/22)
Final reduction	3.500 (42/12)
Gear ratios, Low	2.384 (31/13)
2nd	1.785 (25/14)
3rd	1.437 (23/16)
4th	1.166 (21/18)
5th	0.950 (19/20)
Top	0.818 (18/22)
Drive chain	DAIDO D.I.D.520VS2 or TAKASAGO RK520SM-Z9 102 links

CHASSIS

Front suspension	Double wishbone, spring pre-load 5-way adjustable, damping force 4-way adjustable
Rear suspension	Full-floating suspension system, spring pre-load fully adjustable, damping force 4-way adjustable
Steering angle	41°30' (right & left)
Caster	9°00'
Trail	37.4 mm (1.47 in)
Turning radius	3.0 m (9.8 ft.)
Front brake	Disc
Rear brake	Disc
Front tire size	AT21 x 7-10 ☆☆
Rear tire size	AT21 × 10-10 ☆

ELECTRICAL

Ignition type	SUZUKI "PEI" (CDI)
Ignition timing	6° B.T.D.C. below 1 000 r/min. and 11° B.T.D.C above 9 000 r/min.
Spark plug	N.G.K.: BR9EV ...For E-01, 28 N.G.K.: B9EGV ...For E-02, 03
Headlight	12V 60/55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal.)
reserve	1.1 L (1.2/1.0 US/Imp qt.)
Transmission oil change	900 ml (30.4/31.7 US/Imp. oz.)
Coolant	880 ml (0.93/0.77 US/Imp qt.)

These specifications are subject to change without notice.

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)	0.120 (0.0047)
Cylinder bore	67.000—67.015 (2.6378—2.6384) Measure at 20 (0.8) from the top surface	67.050 (2.6398)
Piston diam.	66.915—66.930 (2.6344—2.6350) Measure at 24 (0.9) from the skirt end.	66.880 (2.6331)
Cylinder distortion	—	0.05 (0.002)
Cylinder head distortion	—	0.05 (0.002)
Piston ring free end gap	1st & 2nd / R / Approx. 5.5 (0.22)	4.4 (0.17)
Piston ring end gap	0.20—0.40 (0.008—0.016)	0.85 (0.033)
Piston pin bore	18.002—18.012 (0.7087—0.7091)	18.030 (0.7098)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)	17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 (0.9056—0.9059)	23.040 (0.9071)
Crank web to web width	56.0 ± 0.1 (2.205 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)

EXHAUST VALVE

ITEM	STANDARD
Closing r/min.	Approx. 5 500 r/min.
Opening r/min.	Approx. 6 000 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 (0.08—0.12)	—
Drive plate thickness	2.45—2.75 (0.096—0.108)	2.15 (0.085)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.0 (0.59)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.8 (1.17)

RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110± 15 kPa (1.1±0.15 kg/cm², 15.6 ±2.1 psi)	—

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		2.681 (59/22)	—
Final reduction ratio		3.500 (42/12)	—
Gear ratios	Low	2.384 (31/13)	—
	2nd	1.785 (25/14)	—
	3rd	1.437 (23/16)	—
	4th	1.166 (21/18)	—
	5th	0.950 (19/20)	—
	Top	0.818 (18/22)	—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.020)
Shift fork groove width		5.0—5.1 (0.19—0.20)	—
Shift fork thickness	No.1 No.2 & No.3	4.8—4.9 (0.18—0.19)	—

DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 520VS2 TAKASAGO: RK520SMO-Z9	—
	Links	102	—
	20-pitch length	—	323.9 (12.75)
Drive chain slack	35—40 (1.4—1.6)		—

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM34SS
Bore size		34 mm (1.3 in)
I.D. No.		01C10
Idle r/min.		1 400 ± 50 r/min
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)
Main jet	(M.J.)	#240 [SPARE MAIN JETS #200, #220 and #250]
Main air jet	(M.A.J.)	2.5 mm
Jet needle	(J.N.)	6FP63-3rd
Needle jet	(N.J.)	R-0
Cut-away	(C.A.)	4.0
Pilot jet	(P.J.)	#30
By-pass	(B.P.)	1.2 mm

ITEM		SPECIFICATION
Pilot outlet	(P.O.)	0.8 mm
Air screw	(A.S.)	2 turns back
Starter jet	(G.S.)	#110
Throttle cable play		0.5 – 1.0 mm (0.02 – 0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	6° B.T.D.C. at 1 000 r/min. and 11° B.T.D.C. at 9 000 r/min.		
Spark plug	Type	NGK: B9EGV	E-02, 03
	Gap	0.55 – 0.65 (0.022 – 0.026)	
	Type	NGK: BR9EV	E-01, 28
	Gap	0.5 – 0.6 (0.020 – 0.024)	
Ignition coil resistance	Primary	0 – 1 Ω	Terminal – Ground
	Secondary	3 – 5 kΩ	Plug cap – Ground
Magneto coil resistance	Lighting	0.5 – 1.0 Ω	Y/R – B/W
	Pick-up	175 – 265 Ω	Bl – B/W
	Power source	315 – 475 Ω	B/R – B/W
Lighting coil output	Above 12V at 3 000 r/min. Below 18V at 8 000 r/min.		
Regulated voltage	13.0 – 14.0 V at 5 000 r/min.		SU236S-1

WATTAGE

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	0 – 10 (0 – 0.4)		———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.12)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.14)
Brake disc runout	———		0.30 (0.012)
Master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)	———
	Rear	12.700 – 12.743 (0.5000 – 0.5017)	———

ITEM	STANDARD		LIMIT
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	———
	Rear	12.657 – 12.684 (0.4983 – 0.4994)	———
Brake caliper cylinder bore	Front	30.230 – 30.280 (1.1902 – 1.1921)	———
	Rear	33.960 – 34.010 (1.3370 – 1.3390)	———
Brake caliper piston diam.	Front	30.167 – 30.200 (1.1877 – 1.1890)	———
	Rear	33.923 – 33.928 (1.3355 – 1.3357)	———
Steering angle	Inside	37° – 43°	———
	Outside	24° – 30°	———
Turning radius	3.0 m (9.8 ft)		———
Toe-in (with 75 kg, 165 lbs)	11 – 19 (0.43 – 0.75)		———
Caster	Rear	9°00′	———
Tire size	Front	AT21 x 7-10 ☆☆	———
	Rear	AT21 x 10-10 ☆	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)
Trail	37.4 (1.47)		———
Wheel axle runout	Rear	———	8.0 (0.31)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front shock absorber spring setting position	3rd position	———	
Rear shock absorber spring pre-set length	232.5 (9.2)	———	
Rear shock absorber damping force adjuster setting position, compression side	2nd position	———	
Rear shock absorber damping force adjuster setting position, extension side	3rd position	———	
Rear shock absorber gas pressure	1 000 kPa, (10 kg/cm^2, 142 psi)	———	
Front wheel travel	218 (8.6)	———	
Rear wheel travel	211 (8.3)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE / LOAD CAPACITY	FRONT			REAR		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
UP TO 80 kg (UP TO 175lbs)	25	0.25	3.6	20	0.20	2.9
80 – 120 kg (175 – 265 lbs)	30	0.30	4.4	25	0.35	3.6

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 85 pump octane $(\frac{R+M}{2})$ or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane $(\frac{R+M}{2}$ method) or 89 octane or higher rated by the research method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		For the others
Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)		
reserve	1.1 L (1.2/1.0 US/Imp qt)		
Engine oil type	Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent high quality 2-cycle Racing Lubricant.		E-03
	* SHELL SUPER M * CASTROL R30 * CASTROL TTS (A545) * CASTROL A747 * BELL-RAY MC-100 * MOTUL CENTURY 300 2T * B.P. RACING		For the others
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	900 ml (30.4/31.7 US/Imp oz)	
	Overhaul	950 ml (32.1/33.4 US/Imp oz)	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.		
Coolant capacity	880 ml (0.93/0.77 US/Imp qt)		
Brake fluid type	DOT 4		

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SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)	0.120 (0.0047)
Cylinder bore	67.000—67.015 (2.6378—2.6384) Measure at 20 (0.8) from the top surface	67.050 (2.6398)
Piston diam.	66.915—66.930 (2.6344—2.6350) Measure at 24 (0.9) from the skirt end.	66.880 (2.6331)
Cylinder distortion	———	0.05 (0.002)
Cylinder head distortion	———	0.05 (0.002)
Piston ring free end gap	1st & 2nd / R / Approx. 5.5 (0.22)	4.4 (0.17)
Piston ring end gap	0.20—0.40 (0.008—0.016)	0.85 (0.033)
Piston pin bore	18.002—18.012 (0.7087—0.7091)	18.030 (0.7098)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)	17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 (0.9056—0.9059)	23.040 (0.9071)
Crank web to web width	56.0 ± 0.1 (2.205 ± 0.004)	———
Crankshaft runout	———	0.05 (0.002)

EXHAUST VALVE

ITEM	STANDARD
Closing r/min.	Approx. 6 300 r/min.
Opening r/min.	Approx. 6 800 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 (0.08—0.12)	———
Drive plate thickness	2.45—2.75 (0.096—0.108)	2.15 (0.085)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.0 (0.59)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.8 (1.17)

RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm², 15.6 ± 2.1 psi)	—

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		2.681 (59/22)	—
Final reduction ratio		3.500 (42/12)	—
Gear ratios	Low	2.384 (31/13)	—
	2nd	1.785 (25/14)	—
	3rd	1.437 (23/16)	—
	4th	1.166 (21/18)	—
	5th	0.950 (19/20)	—
	Top	0.818 (18/22)	—
Shift fork to groove clearance		0.1 – 0.3 (0.004 – 0.012)	0.5 (0.020)
Shift fork groove width		5.0 – 5.1 (0.19 – 0.20)	—
Shift fork thickness	No.1 No.2 & No.3	4.8 – 4.9 (0.18 – 0.19)	—

DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 520VS TAKASAGO: RK520SMO-Z9	—
	Links	102	—
	20-pitch length	—	323.9 (12.75)
Drive chain slack	35 – 40 (1.4 – 1.6)		—

CARBURETOR

ITEM		SPECIFICATION	
		E-03 (Up to F/No. of 100434)	E-03 (From F/No. of 100435) and E-01,02,28
Carburetor type		MIKUNI TM34SS	←
Bore size		34 mm (1.3 in)	←
I.D. No.		01C3	←
Idle r/min.		1 400 ± 50 r/min.	←
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)	←
Main jet	(M.J.)	#270 [SPARE MAIN JETS # 250,#260 and #280]	#260 [SPARE MAIN JETS #240,#250 and #270]
Main air jet	(M.A.J.)	2.5 mm	←
Jet needle	(J.N.)	6FP63-3rd	←
Needle jet	(N.J.)	Q-8	Q-7
Cut-away	(C.A.)	4.0	←
Pilot jet	(P.J.)	#30	←
By-pass	(B.P.)	1.2 mm	←

ITEM		SPECIFICATION	
		E-03 (Up to F/No. of 100434)	E-03 (From F/No. of 100435) and E-01,02,28
Pilot outlet	(P.O.)	0.8 mm	←
Air screw	(A.S.)	2 turns back	1 ¾ turns back
Starter jet	(G.S.)	#110	←
Throttle cable play		0.5 – 1.0 mm (0.02 – 0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	6° B.T.D.C. at 1 000 r/min. and 11° B.T.D.C. at 9 000 r/min.		
Spark plug	Type	NGK: B9EGV	E-01,02,03
	Gap	0.55 – 0.65 (0.022 – 0.026)	
	Type	NGK: BR9EV	E-28
	Gap	0.5 – 0.6 (0.020 – 0.024)	
Ignition coil resistance	Primary	0 – 1 Ω	Terminal – Ground
	Secondary	3 – 5 kΩ	Plug cap – Ground
Magneto coil resistance	Lighting	0.5 – 1.0 Ω	Y/R – B/W
	Pick-up	175 – 265 Ω	Bl – B/W
	Power source	315 – 475 Ω	B/R – B/W
Lighting coil output	Above 12V at 3 000 r/min. Below 18V at 8 000 r/min.		
Regulated voltage	13.0 – 14.0 V at 5 000 r/min.		

WATTAGE

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	0 – 10 (0 – 0.4)		—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.12)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.14)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)	—
	Rear	12.700 – 12.743 (0.5000 – 0.5017)	—

ITEM	STANDARD		LIMIT
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	—
	Rear	12.657 – 12.684 (0.4983 – 0.4994)	—
Brake caliper cylinder bore	Front	30.230 – 30.280 (1.1902 – 1.1921)	—
	Rear	33.960 – 34.010 (1.3370 – 1.3390)	—
Brake caliper piston diam.	Front	30.167 – 30.200 (1.1877 – 1.1890)	—
	Rear	33.923 – 33.928 (1.3355 – 1.3357)	—
Steering angle	Inside	37° – 43°	—
	Outside	24° – 30°	—
Turning radius	3.0 m (9.8 ft)		—
Toe-in (with 75 kg, 165 lbs)	11 – 19 (0.43 – 0.75)		—
Caster	Rear	9°00′	—
Tire size	Front	AT21 x 7-10 ☆☆	—
	Rear	AT21 x 10-10 ☆	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)
Trail	40 (1.57)		—
Wheel axle runout	Rear	—	8.0 (0.31)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front shock absorber spring setting position	3rd position	—	
Front shock absorber damping force adjuster setting position, extension side	1st position	—	
Rear shock absorber spring pre-set length	240 (9.4)	—	
Rear shock absorber damping force adjuster setting position, compression side	9th position	—	
Rear shock absorber damping force adjuster setting position, extension side	5th position	—	
Rear shock absorber gas pressure	1 000 kPa, (10 kg/cm^2, 142 psi)	—	
Front wheel travel	218 (8.6)	—	
Rear wheel travel	214 (8.4)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE / LOAD CAPACITY	FRONT			REAR		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
UP TO 80 kg (UP TO 175lbs)	25	0.25	3.6	20	0.20	2.9
80 – 120 kg (175 – 265 lbs)	30	0.30	4.4	25	0.25	3.6

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 85 pump octane $(\frac{R+M}{2})$ or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane $(\frac{R+M}{2}$ method) or 89 octane or higher rated by the research method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		For the others
Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)		
reserve	1.1 L (0.3/0.2 US/Imp gal)		
Engine oil type	Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent high quality 2-cycle Racing Lubricant.		E-03
	* SHELL SUPER M * CASTROL R30 * CASTROL TTS (A545) * CASTROL A747 * BELL-RAY MC-100 * MOTUL CENTURY 300 2T * B.P. RACING		For the others
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 10W/40		
Transmission oil capacity	Change	900 ml (30.4/31.7 US/Imp oz)	
	Overhaul	950 ml (32.1/33.4 US/Imp oz)	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.		
Coolant capacity	880 ml (0.93/0.77 US/Imp qt)		
Brake fluid type	DOT 4		

TIGHTENING TORQUE

ENGINE

ITEM		N·m	kg-m	lb-ft
Cylinder head nut		26 – 30	2.6 – 3.0	19.0 – 21.5
Cylinder base nut	8 mm	26 – 30	2.6 – 3.0	19.0 – 21.5
	6 mm	8 – 12	0.8 – 1.2	6.0 – 8.5
Spark plug		25 – 30	2.5 – 3.0	18.0 – 21.5
Mission oil drain plug		20 – 25	2.0 – 2.5	14.5 – 18.0
Magneto rotor nut		90 – 100	9.0 – 10.0	65.0 – 72.5
Clutch sleeve hub nut		40 – 60	4.0 – 6.0	29.0 – 43.5
Primary drive gear nut		80 – 100	8.0 – 10.0	58.0 – 72.5
Impeller bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Balancer driven gear nut		90 – 110	9.0 – 11.0	65.0 – 79.5
Gearshift cam mounting bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Engine mounting bracket bolt		22 – 33	2.2 – 3.3	20.0 – 24.5
Engine mounting bolt		37 – 45	3.7 – 4.5	27.0 – 32.5

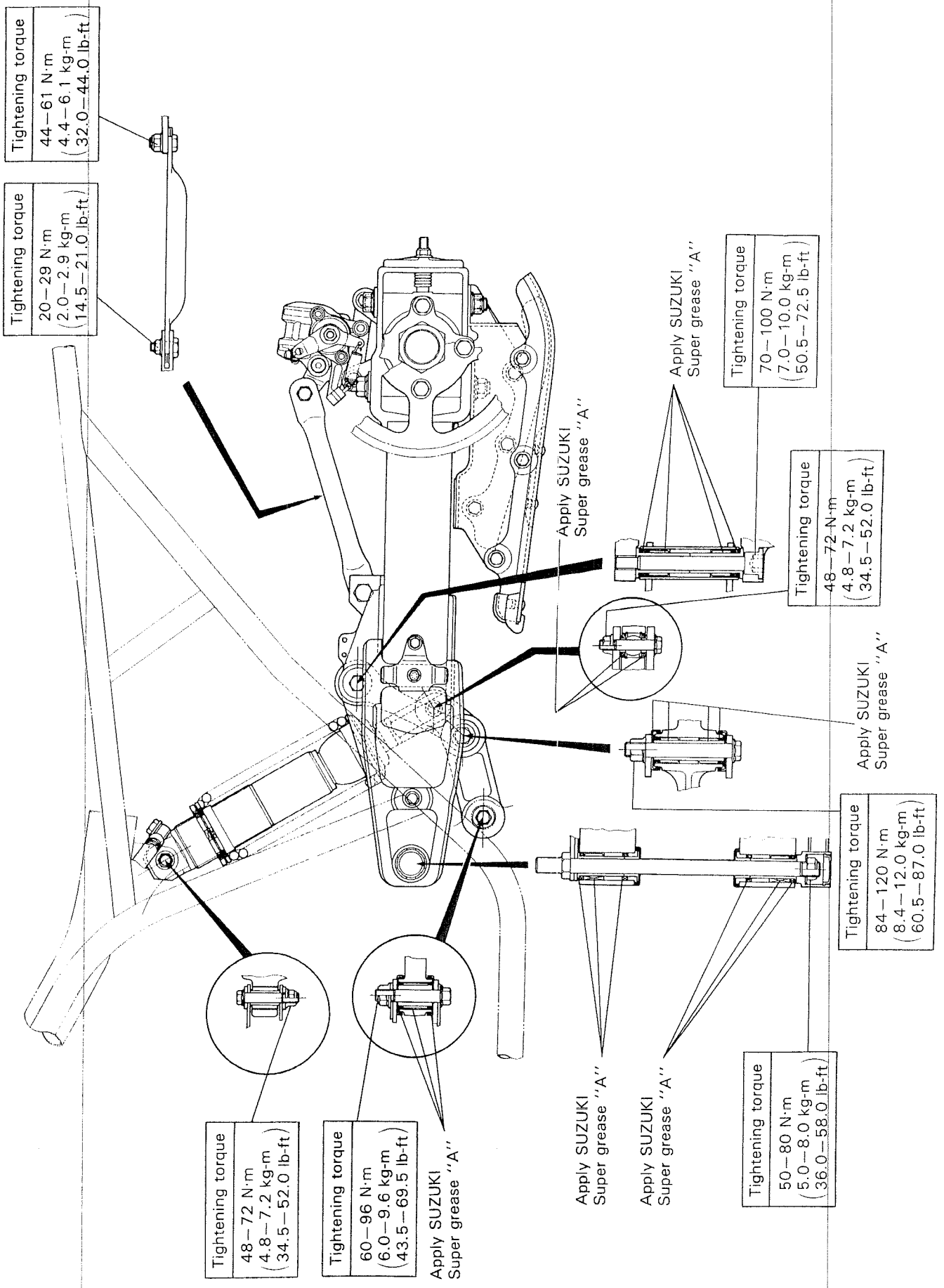
CHASSIS

ITEM	N·m	kg-m	lb-ft
Front wheel hub nut	50 – 80	5.0 – 8.0	36.0 – 58.0
Front wheel set nut	20 – 31	2.0 – 3.1	14.5 – 22.5
Front shock absorber nut (Upper and Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5
Handlebar clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Tie-rod lock nut	22 – 35	2.2 – 3.5	16.0 – 25.5
Tie-rod end nut	22 – 35	2.2 – 3.5	16.0 – 25.5
Steering knuckle arm bolt	42.5 – 47.5	4.25 – 4.75	30.5 – 34.5
Wishbone arm end bolt (Upper and Lower)	120 – 170	12.0 – 17.0	87.0 – 123.0
Wishbone arm inner nut	40 – 60	4.0 – 6.0	29.0 – 43.5
Steering knuckle arm lower bolt	40 – 60	4.0 – 6.0	29.0 – 43.5
Steering shaft holder bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Steering shaft lower nut	38 – 60	3.8 – 6.0	27.5 – 43.5
Steering knuckle end nut	35 – 50	3.5 – 5.0	25.5 – 36.0
Brake hose union bolt (Front and Rear)	20 – 25	2.0 – 2.5	14.5 – 18.0
Brake pipe connecting nut	13 – 18	1.3 – 1.8	9.5 – 13.0
Caliper mounting bolt (Front and Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0
Caliper air bleeder valve (Front and Rear)	6 – 9	0.6 – 0.9	4.5 – 6.5

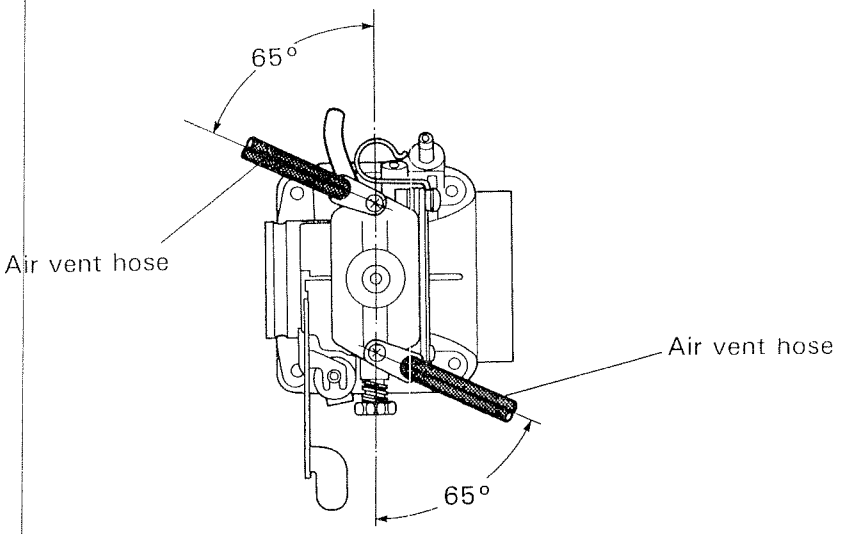
ITEM		N·m	kg-m	lb-ft
Front master cylinder mounting bolt		5 – 8	0.5 – 0.8	3.5 – 6.0
Rear master cylinder mounting bolt		10 – 16	1.0 – 1.6	7.0 – 11.5
Parking brake housing bolt		25 – 30	2.5 – 3.0	18.0 – 21.5
Rear caliper axle bolt	Front	20 – 25	2.0 – 2.5	14.5 – 18.0
	Rear	15 – 20	1.5 – 2.0	11.0 – 14.5
Rear brake pad mounting bolt		15 – 20	1.5 – 2.0	11.0 – 14.5
Rear axle lock nut		160 – 200	16.0 – 20.0	115.5 – 144.5
Rear sprocket mounting bolt		50 – 60	5.0 – 6.0	36.0 – 43.5
Rear wheel hub nut		85 – 115	8.5 – 11.5	61.5 – 83.0
Rear wheel set nut		45 – 65	4.5 – 6.5	32.5 – 47.0
Torque link bolt	Front	*20 – 29	*2.0 – 2.9	*14.5 – 21.0
	Rear	*44 – 61	*4.4 – 6.1	*32.0 – 44.0
Disc plate mounting bolt (Front and Rear)		15 – 25	1.5 – 2.5	11.0 – 18.0
Rear axle housing set nut	Right side	40 – 60	4.0 – 6.0	29.0 – 43.5
	Left side	70 – 90	7.0 – 9.0	50.5 – 65.0
Rear shock absorber nut (Upper and Lower)		*48 – 72	*4.8 – 7.2	*34.5 – 52.0
Rear cushion rod nut		*70 – 100	*7.0 – 10.0	*50.5 – 72.5
Rear cushion lever nut (Center)		*84 – 120	*8.4 – 12.0	*60.5 – 87.0
Rear cushion lever nut (Front)		*60 – 96	*6.0 – 9.6	*43.5 – 69.5
Swingarm pivot nut		50 – 80	5.0 – 8.0	36.0 – 58.0

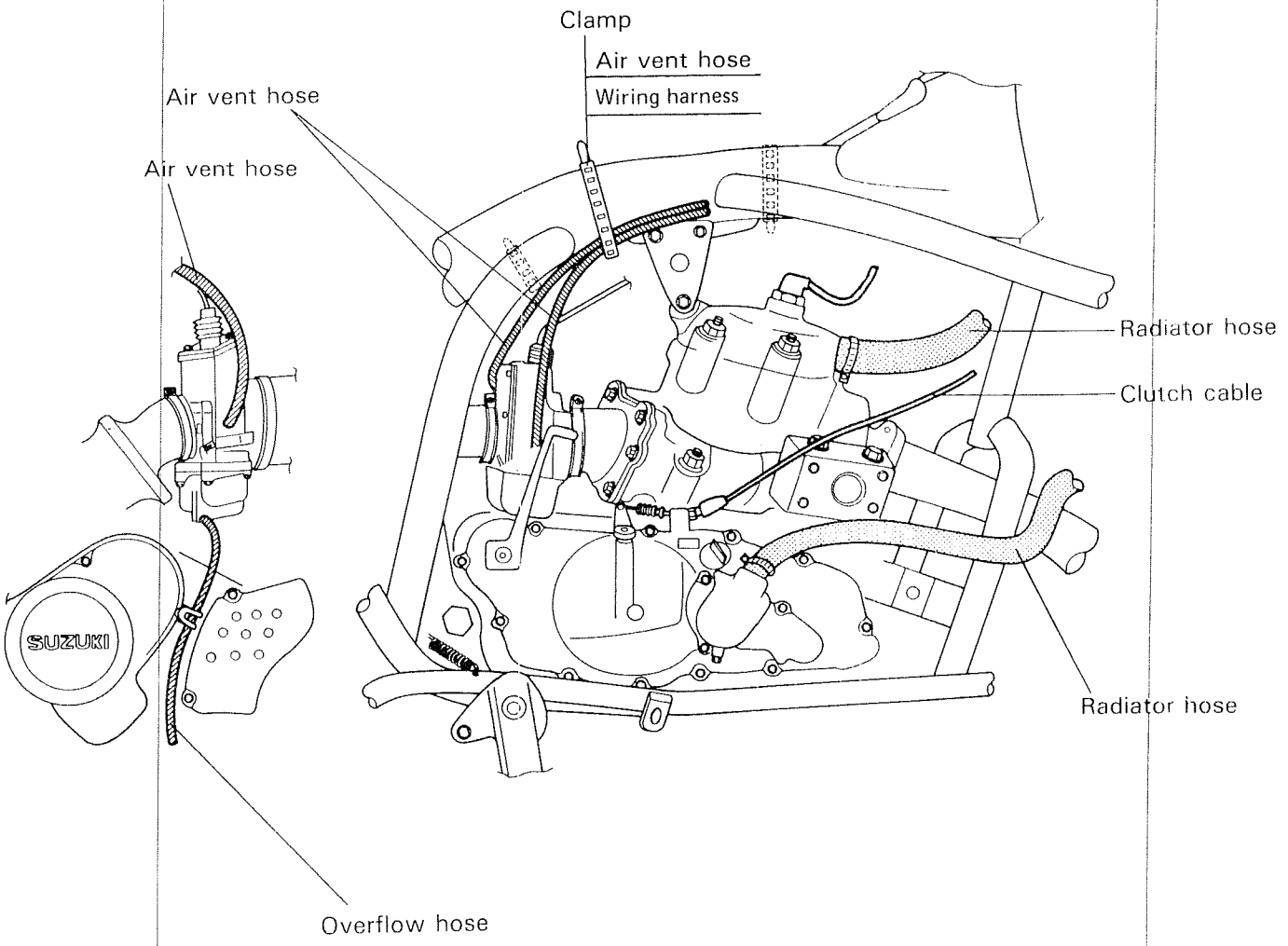
Asterisk mark (*) indicates the New "M" model specifications.

REAR SUSPENSION REASSEMBLING INFORMATION



CARBURETOR AIR VENT HOSE ROUTING





CONTENTS

SERVICE DATA 13- 1

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)	0.120 (0.0047)
Cylinder bore	67.000—67.015 (2.6378—2.6384) Measure at 20 (0.8) from the top surface.	67.050 (2.6398)
Piston diam.	66.915—66.930 (2.6344—2.6350) Measure at 24 (0.9) from the skirt end.	66.880 (2.6331)
Cylinder distortion	—	0.05 (0.002)
Cylinder head distortion	—	0.05 (0.002)
Piston ring free end gap	1st & 2nd / R / Approx. 5.5 (0.22)	4.4 (0.17)
Piston ring end gap	0.20—0.40 (0.008—0.016)	0.85 (0.033)
Piston pin bore	18.002—18.012 (0.7087—0.7091)	18.030 (0.7098)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)	17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 (0.9056—0.9059)	23.040 (0.9071)
Crank web to web width	56.0±0.1 (2.205±0.004)	—
Crankshaft runout	—	0.05 (0.002)

EXHAUST VALVE

ITEM	SPECIFICATION
Closing r/min.	Approx. 6 300 r/min.
Opening r/min.	Approx. 6 800 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 (0.08—0.12)	—
Drive plate thickness	2.45—2.75 (0.096—0.108)	2.15 (0.085)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.0 (0.59)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.8 (1.17)

RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm², 15.6 ± 2.1 psi)	—

TRANSMISSION

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		2.681 (59/22)	—
Final reduction ratio		3.500 (42/12)	—
Gear ratios	Low	2.384 (31/13)	—
	2nd	1.785 (25/14)	—
	3rd	1.437 (23/16)	—
	4th	1.166 (21/18)	—
	5th	0.950 (19/20)	—
	Top	0.818 (18/22)	—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.020)
Shift fork groove width		5.0—5.1 (0.19—0.20)	—
Shift fork thickness	No.1, No.2 & No.3	4.8—4.9 (0.18—0.19)	—

DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 520VS TAKASAGO: RK520SMO-Z9	—
	Links	102	—
	20-pitch length	—	323.9 (12.75)
Drive chain slack	35—40 (1.4—1.6)		—

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM34SS
Bore size		34 mm
I.D. No.		01C31
Idle r/min.		1 400 ± 50 r/min.
Float height		11.9 ± 1.0 mm (0.47 ± 0.04 in)
Main jet	(M.J.)	#260 [SPARE MAIN JETS #240, #250 and #270]
Main air jet	(M.A.J.)	2.5 mm
Jet needle	(J.N.)	6FP63-3rd
Needle jet	(N.J.)	Q-7
Cut-away	(C.A.)	4.0
Pilot jet	(P.J.)	#30
By-pass	(B.P.)	1.2 mm

ITEM		SPECIFICATION
Pilot outlet	(P.O.)	0.8 mm
Air screw	(A.S.)	1¾ turns back
Starter jet	(G.S.)	#110
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION	NOTE
Ignition timing	6° B.T.D.C. at 1 000 r/min. and 11° B.T.D.C. at 9 000 r/min.		
Spark plug	Type	NGK: B9EGV	E-02,03
	Gap	0.55—0.65 (0.022—0.026)	
	Type	NGK: BR9EV	E-28
	Gap	0.5—0.6 (0.020—0.024)	
Ignition coil resistance	Primary	0—1 Ω	Terminal—Ground
	Secondary	12—18 kΩ Plug cap—Ground	E-28
		3—5 kΩ Plug cap—Ground	The others
Magneto coil resistance	Lighting	0.5—1.0 Ω	Y/R—B/W
	Pick-up	175—265 Ω	Bl—B/W
	Power source	315—475 Ω	B/R—B/W
Lighting coil output	Above 12 V at 3 000 r/min. Below 18 V at 8 000 r/min.		
Regulated voltage	13.0—14.0 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	0—10 (0—0.4)		—
Brake disc thickness	Front	3.5±0.2 (0.138±0.008)	3.0 (0.12)
	Rear	4.0±0.2 (0.157±0.008)	3.5 (0.14)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	12.700—12.743 (0.5000—0.5017)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—

ITEM	STANDARD		LIMIT
Master cylinder piston diam.	Front	12.657—12.684 (0.4983—0.4994)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	30.230—30.280 (1.1902—1.1921)	—
	Rear	33.960—34.010 (1.3370—1.3390)	—
Brake caliper piston diam.	Front	30.167—30.200 (1.1877—1.1890)	—
	Rear	33.923—33.928 (1.3355—1.3357)	—
Steering angle	Inside	37°—43°	—
	Outside	24°—30°	—
Turning radius	3.0 m (9.8 ft)		—
Toe-in (with 75 kg, 165 lbs)	11—19 (0.43—0.75)		—
Caster	Rear	9°00′	—
Tire size	Front	AT21 x 7-10☆☆	—
	Rear	AT21 x 10-10☆	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)
Trail	40 (1.6)		—
Wheel axle runout	Rear	—	8.0 (0.31)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front shock absorber spring setting position	3rd position	—	
Front shock absorber damping force adjuster setting position, extension side	1st position	—	
Rear shock absorber spring pre-set length	240 (9.4)	—	
Rear shock absorber damping force adjuster setting position, compression side	9th position	—	
Rear shock absorber damping force adjuster setting position, extension side	5th position	—	
Rear shock absorber gas pressure	1 000 kPa, (10 kg/cm², 142 psi)	—	
Front wheel travel	218 (8.6)	—	
Rear wheel travel	214 (8.4)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE / LOAD CAPACITY	FRONT			REAR		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
UP TO 80 kg (UP TO 175 lbs)	25	0.25	3.6	20	0.20	2.9
80—120 kg (175—265 lbs)	30	0.30	4.4	25	0.25	3.6

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 85 pump octane ($\frac{R+M}{2}$) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03
	Use only unleaded gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the research method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		E-02
Fuel tank including reserve	11.5 L (3.0/2.5 US/Imp gal)		
reserve	1.1 L (0.3/0.2 US/Imp gal)		
Engine oil type	Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent high quality 2-cycle Racing Lubricant.		E-03
	• SHELL SUPER M • CASTROL R30 • CASTROL TTS (A545) • CASTROL A747 • BELL-RAY MC-100 • MOTUL CENTURY 300 2T • B.P. RACING		The others
Fuel and engine oil mixture ratio	20:1		
Transmission oil type	SAE 10W/40		
Transmission oil capacity	Change	900 ml (30.4/31.7 US/Imp oz)	
	Overhaul	950 ml (32.1/33.4 US/Imp oz)	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50		
Coolant capacity	880 ml (0.93/0.77 US/Imp qt)		
Brake fluid type	DOT 4		