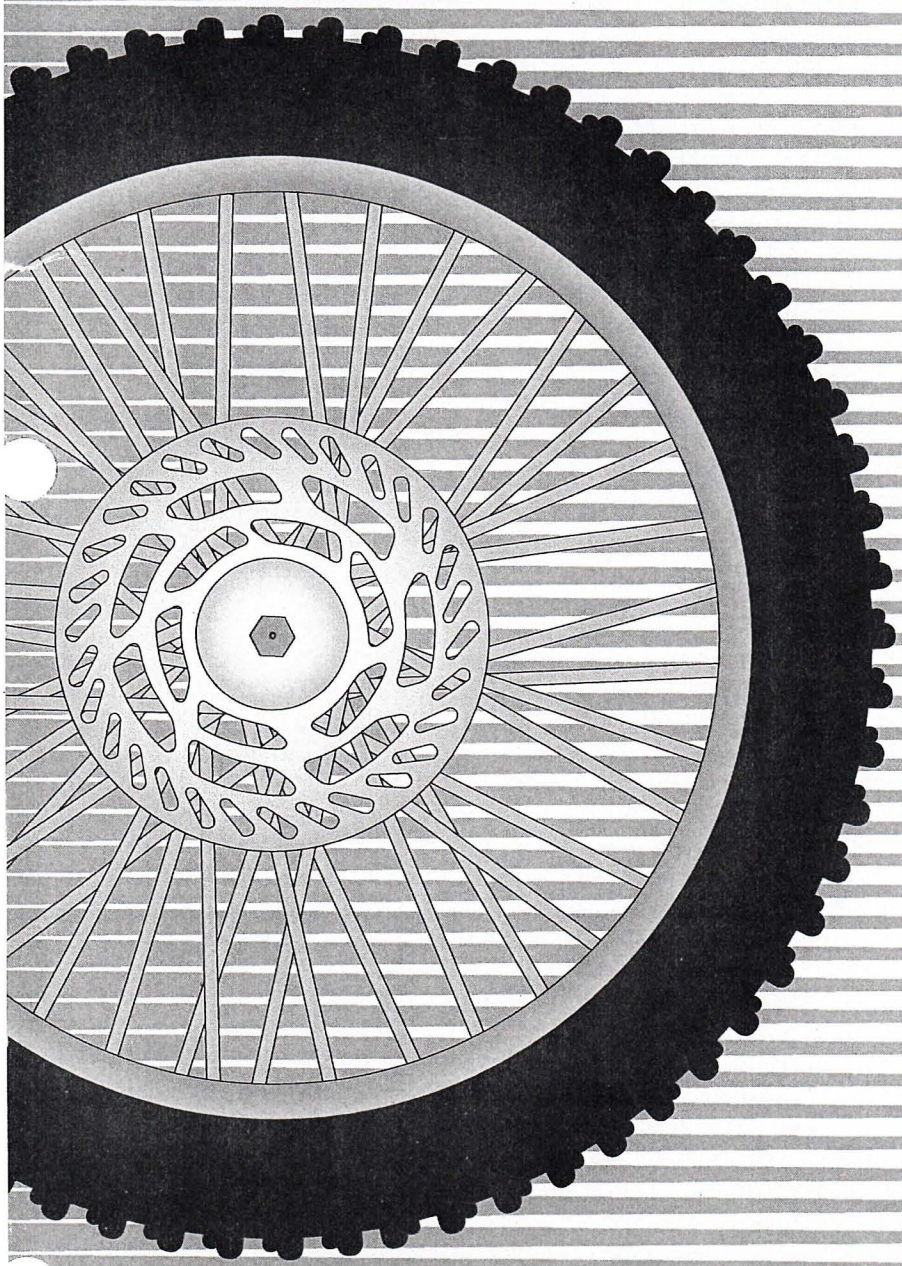
DR350/DR350S

SUZUKI®

Service Manual



99500-43019-03E

FOREWORD

The SUZUKI DR350 was designed to offer superior performance through lightweight design, four stroke-power, engine counter-balancer, drysump lubrication system and link type rear suspention.

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

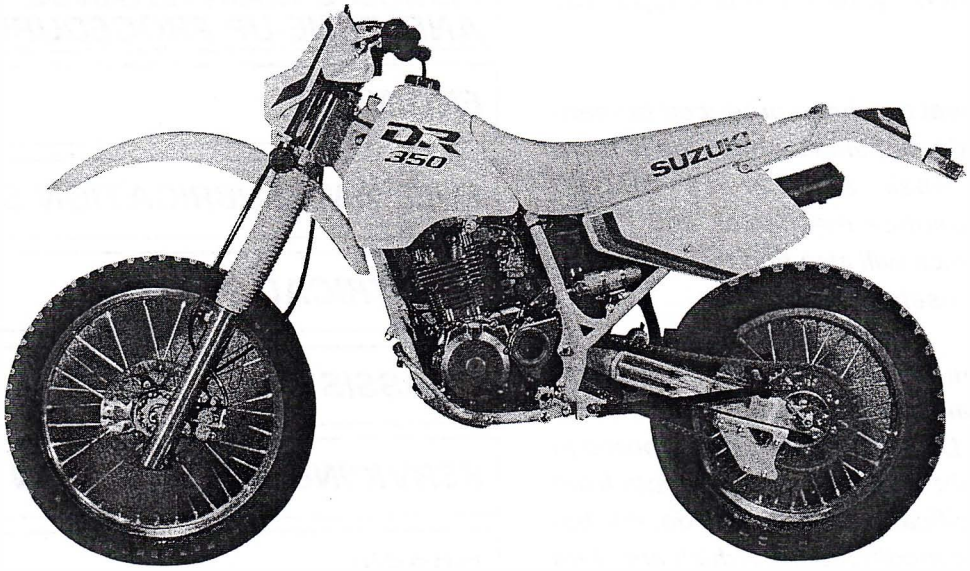
The DR350, manufactured to standard specifications, is the main subject matter of this manual. However, the DR350 machines distributed in your country might differ in minor respects from the standard-specification and, if they do, it is because some minor modifications (which are of no consequence in 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, to whom you are kindly requested to make query about updated information, if any.

SUZUKI MOTOR CORPORATION
Motorcycle Service Department

GROUP INDEX

VIEW OF DR350L



LEFT SIDE

RIGHT SIDE

GENERAL INFORMATION

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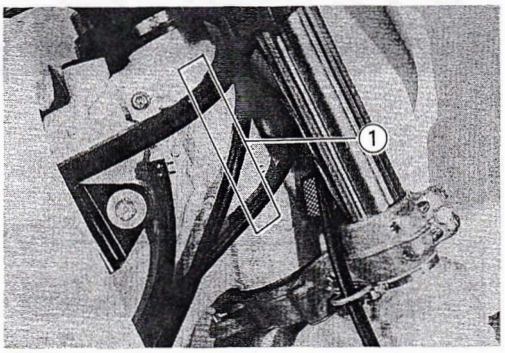
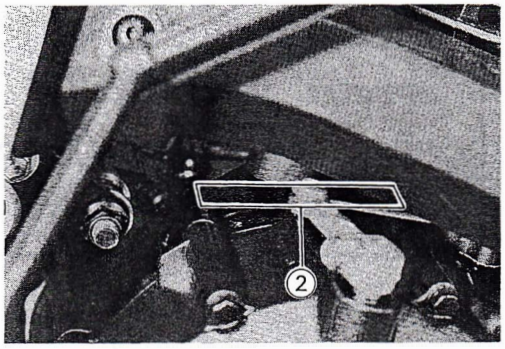
VIN AND SERIAL NUMBER LOCATIONS

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the steering head pipe. The engine serial number ② is located on the right side of the crankcase.

These number are required especially for registering the machine and ordering spare parts.





FUEL AND OIL RECOMMENDATIONS

FUEL

For U.S.A. model

1. Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the research method.
2. SUZUKI recommends that customers use alcohol free, unleaded gasoline whenever possible.
3. Use of blended gasoline containing MTBE (Methyl Tertiary Butyl Ether) is permitted.
4. Use of blended gasoline/alcohol fuel is permitted provided that it contains not more than 10% ethanol. Gasoline/alcohol fuel may contain up to 5% methanol if appropriate cosolvents and corrosion inhibitors are present.
5. If the performance of the vehicle is unsatisfactory while using blended gasoline/alcohol fuel, you should switch to alcohol free unleaded gasoline.
6. Failure to follow thses guideline could possibly void applicable warranty coverage. Check with your fuel supplier to be sure that the fuel you intend to use meets the requirements listed above.

For CANADA model

Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.

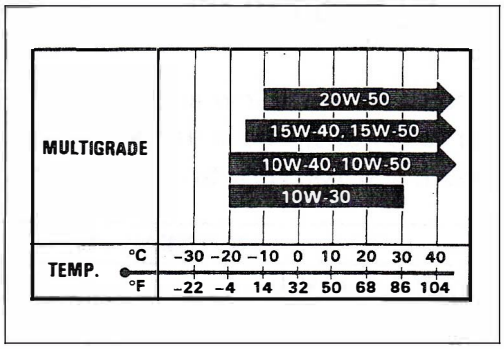
For other models

Gasoline used should be graded 85—95 octane or higher. An unleaded gasoline is recommended.

ENGINE OIL

For U.S.A. model

SUZUKI recomends the use of SUZUKI PERFORMANCE 4 MOTOR OIL or an oil which is rated SE or SF uner the API (American Petroleum Institute) classification system. The viscosity rating is SAE 10W/40. If an SAE 10W/40 motor oil is not available, select an alternate according to the right chart.



For other models

Be sure that the engine oil you use comes under API classification of SE or SF and that its viscosity rating is SAE 10W/40. If an SAE 10W/40 motor oil is not available, select the oil viscosity according to the right chart.

FRONT FORK OIL

Use fork oil #10

99000-99044-10G : SUZUKI FORK OIL #10

BRAKE FLUID

Specification and classification : DOT 4

99000-23110 : SUZUKI BRAKE FLUID

WARNING:

* **Since the brake system of this motorycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.**
* **Do not use any brake fluid taken from oil or used or unsealed containers.**
* **Never re-use brake fluid left over from the previous servicing and stored for a long period.**

BREAK-IN PROCEDURES

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.

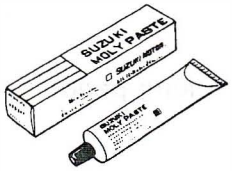
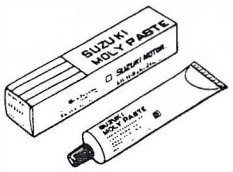
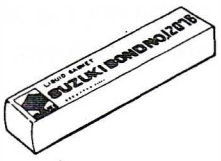
Keep to thses break-in throttle position

Initial 10 hours : Less than ½ throttle

Up to 15 hours : Less than ¾ throttle

SPECIAL MATERIALS

The materials listed below are needed for maintenance work on the DR350 and should be kept on hand for ready use. These items supplement such standard materials as cleaning fluids, lubricant, emery cloth and like. How to use them and where to use them are described in the text of this manual.

METERIAL		PART	PAGE
For U.S.A. model	For other models		
 SUZUKI SUPER GREASE "A" 99000-25030	 SUZUKI SUPER GREASE "A" 99000-25010	• Throttle grip • Odometer gear box • Side stand pivot • Oil seals • O-ring • Front and rear wheel hub bearing • Steering stem bearing • Cushion lever bearings, dust seals and spacer • Swingarm bearings	2-2 2-2 2-2 3-32 3-47 2-2 6-1,20 2-2 6-16 2-2 6-28 6-28
 SUZUKI SILICONE GREASE 99000-25100	 SUZUKI SILICONE GREASE 99000-25100	• Caliper axle • Caliper axle and piston	6-5 6-23
 SUZUKI MOLY PASTE 99000-25140	 SUZUKI MOLY PASTE 99000-25140	• Rocker arm shafts • De-compression shaft • Valve stems • Countershaft and driveshaft gears • Piston pin • Camshaft journals and cams • Cam chain tensioner	3-15 3-15 3-21 3-29 3-43 3-45 3-46
 SUZUKI BOND NO. 1207B 99104-31140	 SUZUKI BOND NO. 1215 99000-31110	• Cylinder head cover • Mating surface of left and right halves of crankcase	2-3 3-45 3-36
 THREAD LOCK "1342" 99000-32050	 THREAD LOCK "1342" 99000-32050	• Front and rear brake caliper bolt • Front footrest bolt • Chain case rear side mounting bolt • Rear fender rear side mounting bolt	6-5 6-23

MATERIAL		PART	PAGE
For U.S.A. model	For other models		
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1322" 99000-32110	• Gearshift cam bearing retainer screw • Pawel lifter screw • Kick starter lever mounting bolt • Gearshift cam driven gear bolt	3-31, 34 3-34, 38 3-38 3-34, 38
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1303" 99000-32030	• Engine mounting bolts and nuts • Kick starter pawl guide/stopper • Cam sprocket bolts • Gearshift arm stopper	3-4 8-17 3-38,39 3-45 3-34, 37
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1305" 99000-32100	• Magneto rotor nut	3-42
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1324" 99000-32120	• Brake disc bolt	6-1 6-20
 SUZUKI FORK OIL #10 99000-99044-10G (1.0 L)	 SUZUKI FORK OIL #10 99000-99044-10G (1.0 L)	• Front fork oil	1-2 6-14
 SUZUKI BRAKE FLUID 99000-23110 (0.5 L)	 SUZUKI BRAKE FLUID 99000-23110 (0.5 L)	• Front and rear brake	1-2 2-11

PRECAUTIONS AND GENERAL INSTRUCTIONS

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

- Do not run engine 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.

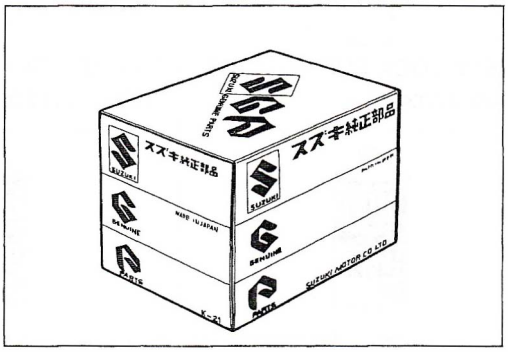
- Tighten bolts and nuts from the ones of larger diameter to those of smaller diameter, and from inside to outside diagonally, to the specified tightening torque.
- Use special tools where specified.
- Use specified genuine parts and recommended oils.
- When more than 2 persons perform work together, 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 . . . . . The parsonal safety of the rider or bystanders may be involved. Disregarding this information could result in personal injury.
CAUTION . . . . . Thses instructions point out special service procedures or precautions that must be followed to avoid damaging the machine.
NOTE . . . . . This provides special information to make maintenance easier or important instructions clearer.

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.

SPECIFICATIONS

DEMENSIONS AND DRY MASS

Overall length	2 165 mm (85.2 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled, OHC
Number of cylinders	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm^3 (21.3 cu. in)
Compression ratio	9.5 : 1
Carburator	MIKUNI TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRNSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction	2.818 (62/22)
Final reduction	3.357 (47/14)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
TOP	0.826 (19/23)
Drive chain	TAKASAGO RK520SO or DAIDO DID, 520VC5, 110 links

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	5° B.T.D.C. below 2 300 r/min and 30° B.T.D.C. above 4 300 r/min
Spark plug	NGK DPR9EA-9 or NIPPON DENSO X27EPR-U9

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully way adjustable, compression damping force adjustable
Rear suspension	Link type suspension system, gas/oil damped, spring preload fully way adjustable, compression and rebound damping force adjustable
Steering angle	45° (right and left)
Caster	62°30'
Trail	118 mm (4.6 in)
Turning radius	2.2 m (7.2 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	80/100-21 51M
Rear tire size	110/100-18 64M

CAPACITIES

Fuel tank	
including reserve	9.5 L (2.5/2.1 US/Imp gal)
reserve	1.8 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
Front fork oil	586 ml (19.8/20.6 US/Imp oz)

These specifications are subject to change without notice.

PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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CONTENTS

PERIODIC MAINTENANCE SCHEDULE

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

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

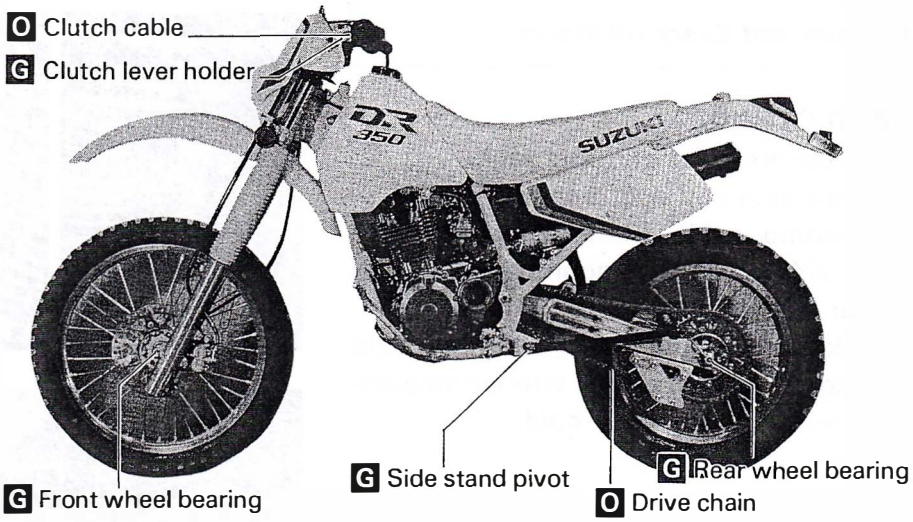
PERIODIC MAINTENANCE CHART

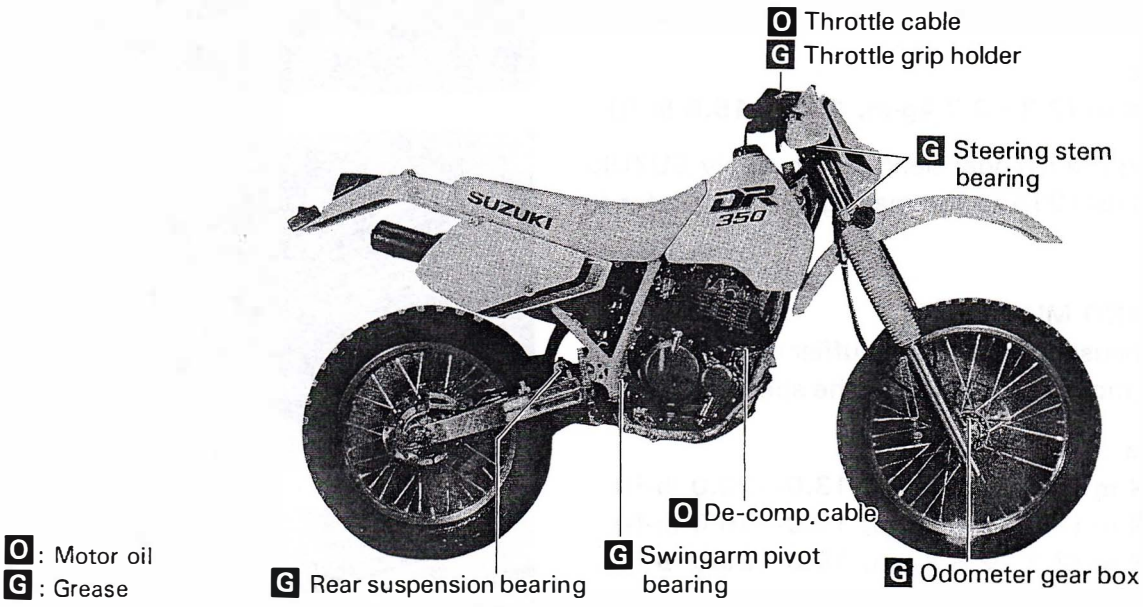
Item \ Interval	Initial 5 Hours	Every 30 Hours	Every 60 Hours
Cylinder head bolts and nuts, cylinder nuts, exhaust pipe bolts and muffler connections	T	T	T
Valve clearance	I	—	I
Spark plug	—	I	R
Spark arrester	—	C	C
Air cleaner	Inspect each time the motorcycle is ridden and clean as necessary		
De-compression lever	I	I	I
Engine oil and oil filter	R	—	R
Engine oil hoses	I	I	I
Engine oil strainer	C	—	C
Carburetor	I	I	I
Fuel line	I	I	I
	Replace every 4 years		
Clutch	I	I	I
Drive chain	Clean, lubricate and inspect each time the motorcycle is ridden		
Brakes	I	I	I
Brake hoses	I	I	I
	Replace every 4 years		
Brake fluid	I	I	I
	Replace every 2 years		
Tires	Inspect tire pressure and damage each time the motorcycle is ridden		
Spoke nipples	Inspect each time the motorcycle is ridden		
Steering	I	—	I
Front fork	I	—	I
Rear suspension	I	—	I
Chassis bolts and nuts	T	T	T

I : Inspect and adjust, clean, lubricate or replace as necessary
R : Replece T : Tighten C : Clean

LUBRICATION POINTS

Proper lubrication is important for smooth operation and long life of each warking part of the motorcycle.
Major lubrication points are indicated below.





NOTE:

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

MAINTENANCE AND TUNE-UP PROCEDURES

This section describes the servicing procedures for each item of the Periodic Maintenance requirements.

CYLINDER HEAD BOLTS AND NUTS, CYLINDER NUTS, EXHAUST PIPE BOLTS AND MUFFLER CONNECTIONS

Tighten Initial 5 Hours and Every 30 Hours

CYLINDER HEAD AND CYLINDER

- Remove the frame covers, seat and fuel tank.
- Disconnect the spark plug cap and breather hose.
- Disconnect the de-comp. cable. (Refer to page 3-2.)
- Remove the upper side of engine mounting bolts and cylinder head cover. (Refer to pages 3-3 and 3-7.)
- First loosen and retighten the four bolts ① and two nuts ② to the specified torque with a torque wrench sequentially in diagonally with the engine is cold.

Tightening torque
Bolt ①: 35—40 N·m (3.5—4.0 kg-m, 25.5—29.0 lb-ft)
Nut ②: 23—27 N·m (2.3—2.7 kg-m, 16.5—19.5 lb-ft)

- After firmly tightening the cylinder head bolts and nuts, tighten the two cylinder nuts ③ to the specified torque.

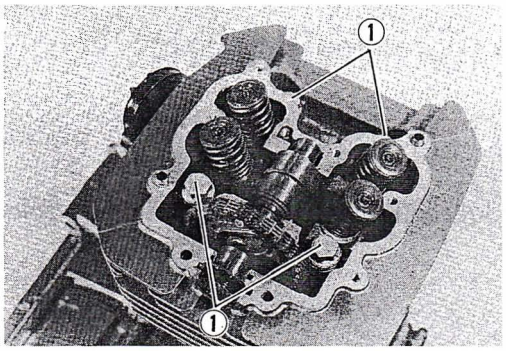
Tightening torque
Nut ③: 23—27 N·m (2.3—2.7 kg-m, 16.5—19.5 lb-ft)

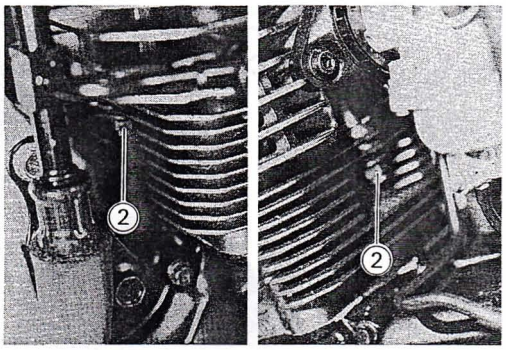
- When installing the cylinder head cover, apply SUZUKI BOND No.1207B/1215 to the mating surface.(Refer to page 3-45.)

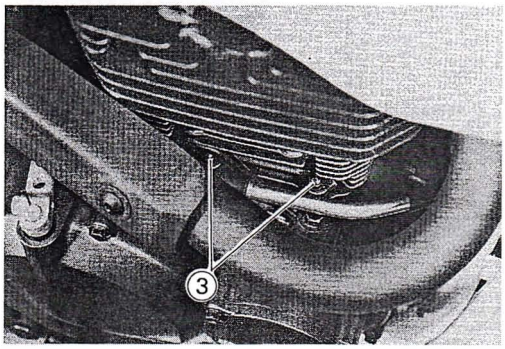
EXHAUST PIPE AND MUFFLER

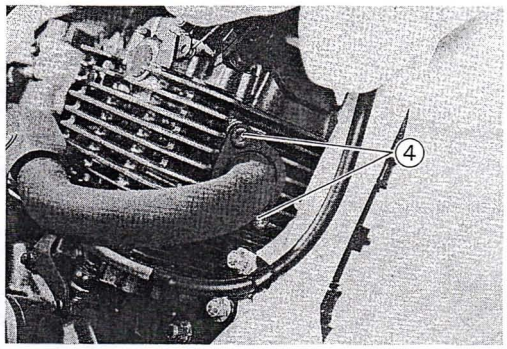
- Tighten the exhaust pipe bolts ④, muffler connection bolt ⑤ and muffler mounting bolts ⑥ to the specified torque.

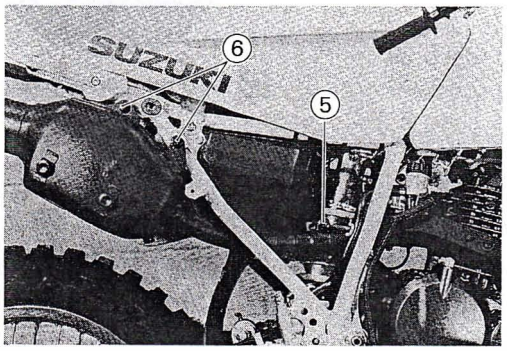
Tightening torque
Bolt ④:18—28 N·m (1.8—2.8 kg-m, 13.0—20.0 lb-ft)
Bolt ⑤:18—28 N·m (1.8—2.8 kg-m, 13.0—20.0 lb-ft)
Bolt ⑥:23—28 N·m (2.3—2.8 kg-m, 16.5—20.0 lb-ft)











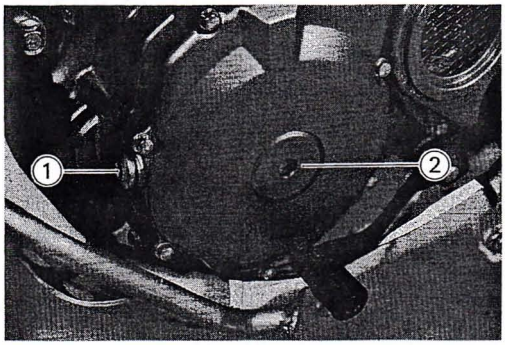
VALVE CLEARANCE

Inspect Initial 5 Hours and Every 60 Hours

Excessive valve clearance results in valve noise and insufficient valve clearance results in valve damage and reduced power. At the distances indicated above, check and adjust the clearance to the specification.
The procedure for adjusting the valve clearance is as follows:

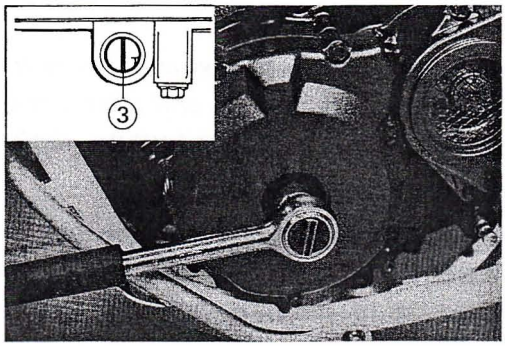
NOTE:
Valve clearance is to be checked when the engine is cold. Both intake and exhaust valves must be checked and adjusted when the piston is at Top—Dead—Center (T.D.C.) on the compression stroke.

- Remove the frame covers, seat, fuel tank and ignition coil.
- Remove the spark plug and valve inspection caps, intake and exhaust.

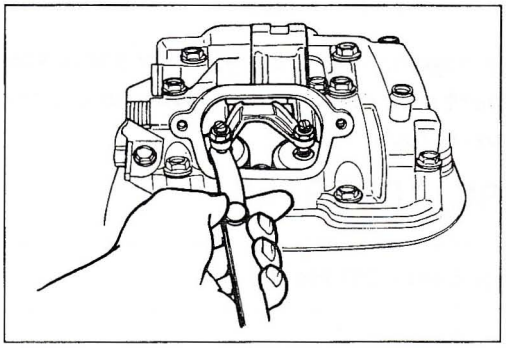


NOTE:
Before adjusting the valve clearance, check or adjust the decompression lever clearance.

Valve clearance specifications
IN.: 0.05—0.10 mm (0.002—0.004 in)
EX.: 0.08—0.13 mm (0.003—0.005 in)

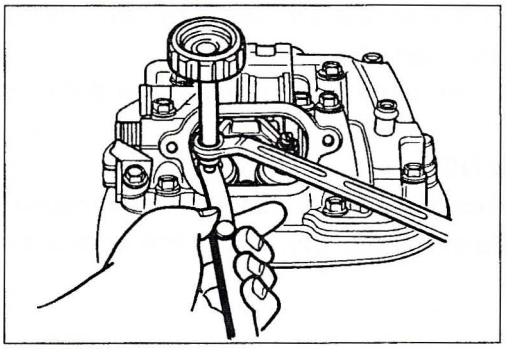


- Drain engine oil. (Refer to page 2-7.)
- Remove the T.D.C. inspection plug ① and magneto cover cap ② on the magneto cover.
- Turn the crankshaft counterclockwise with the box wrench to set the piston at T.D.C. on the compression stroke. (Turn the crankshaft until the engraved line ③ on the magneto rotor is aligned with the center of hole on the magneto cover.)
- Insert the thickness gauge into the clearance between the valve stem end and the adjusting screw on the rocker arm.



09900-20803: Thickness gauge
09917-14910: Valve adjust driver

- If clearance is off the specification, bring it into the specified range with the special tools.
- Securely tighten the lock nut after adjustment is completed.



CAUTION:
Both right and left valve clearances, should be as closely set as possible.

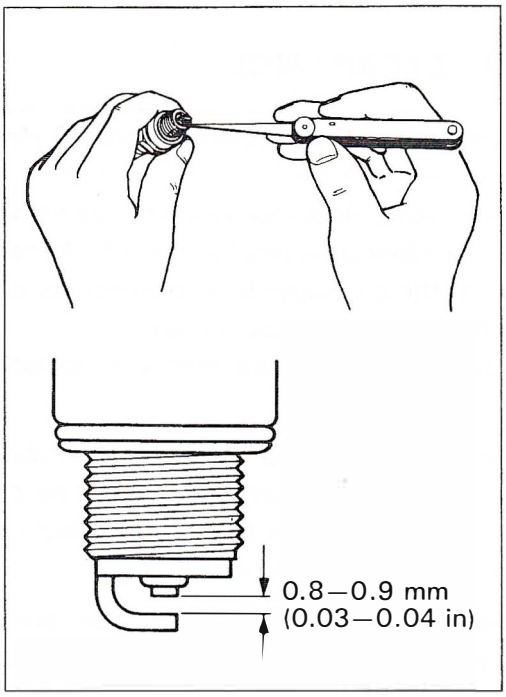
NOTE:
Make sure to re-check the de-compression lever play, after valve clearance adjustment is made.

- Reinstall the removed parts and add engine oil.

SPARK PLUG

Inspect Every 30 Hours and Replace Every 60 Hours

The plug gap is adjusted to 0.8—0.9 mm (0.03—0.04 in). The gap is correctly adjusted with a thickness gauge. When carbon is deposited on the spark plug, remove the carbon deposits with wire or pin. If the electrodes are extremely worn or burnt, replace the plug. Also replace the plug if it has a broken insulator, damaged thread, etc.
NGK DPR9EA-9 or NIPPON DENSO X27EPR-U9 as listed in the table should be used as the standard plug. However, the heat range of the plug should be selected to meet the requirements of speed, actual load, fuel, etc. If the plug need to be replaced, it is recommended that the standard plug listed in the table be selected. Remove the plug and inspect the insulator. Proper heat range would be indicated if it insulator was light brown in color. If it is blackened by carbon, it should be replaced by a hot type NGK DPR8EA-9 or NIPPON DENSO X24EPR-U9.



NOTE:
To check the spark plug, first make sure that the fuel tank contains unleaded gasoline, and after a test ride if the plug is sooty with carbon or burnt white, replace it.

NOTE:
Confirm the thread size and reach when replacing the plug. If the reach is too short, carbon will be depoisted on the screw portion of the plug hole and engine damage may reslut.

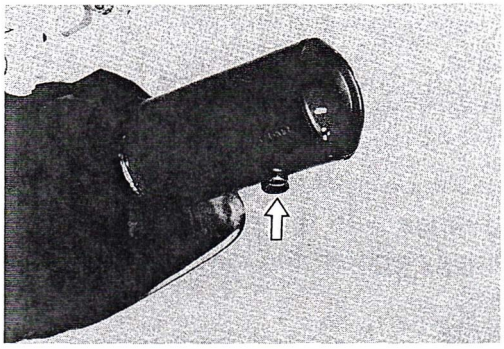
NOTE:
"R" type spark plug is installed for some specifications. "R" type spark plug has a resistor located at the center electrode to prevent radio noise.

NGK	NIPPON DENSO	REMARKS
DPR8EA-9	X24EPR-U9	If the standard plug is apt to get wet, replace it with this hot type plug.
DPR9EA-9	**X27EPR-U9**	**Standard**

SPARK ARRESTER

Clean Every 30 Hours

- Remove the drain bolt.
- Start the engine and rev it to blow out the accumulated carbon particles.
- Stop the engine, and install the drain bolt securely.



WARNING:
Only clean the spark arrester in an open area away from combustible materials. Exhausted hot carbon particles can start a fire.

AIR CLEANER

Inspect each time the motorcycle is rdden and clean as necessary

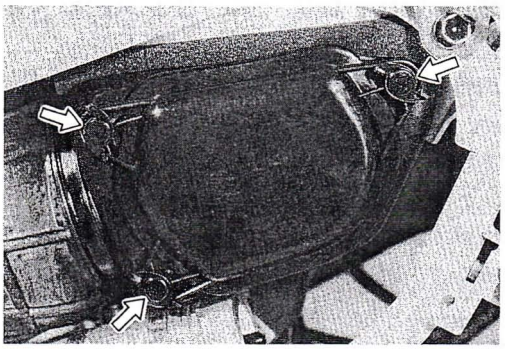
If the air cleaner is clogged with dust, intake resistance will be increased with a resultant decrease in power output and an increase in fuel consumption.
Check and clean the element in the following manner:

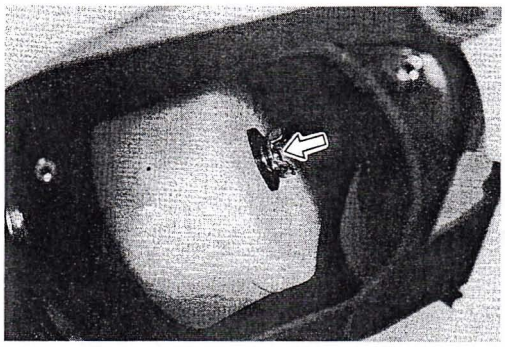
- Remove the left frame cover.
- Remove the air cleaner case cover.
- Remove the element.
- Separate the polyurethan foam element ① from the element frame ② .
- Fill a washing pan of a proper size with nonflammable cleaning solvent. Immerse the element in the cleaning solvent and wash it clean.
- Squeeze the cleaning solvent 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.

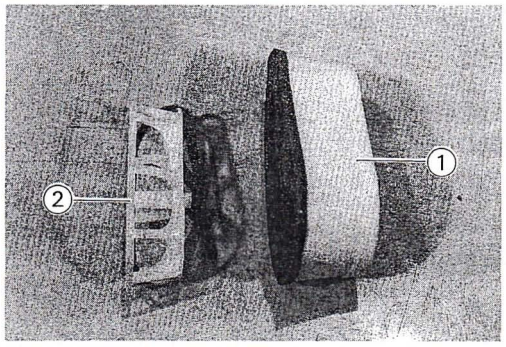
NOTE:
Do not twist or wring the element because it will tear or the individual cells of the element will be damaged.

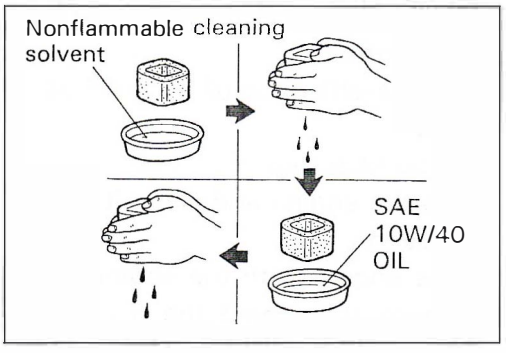
CAUTION:
Inspect the element carefully for rips, torn seams, etc. If any damage is noted, replace the element.

- Reinstall the cleaned or new cleaner element in the reverse order of removal.









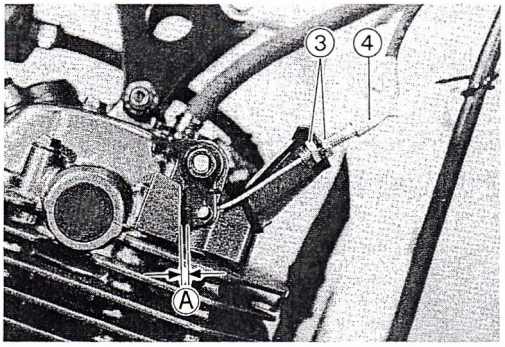
DE-COMPRESSION LEVER

Inspect Initial 5 Hours and Every 30 Hours

Incorrect adjustment of the lever clearance may result in starting difficulties or engine damage. Check the lever clearence and if necessary, adjust as follows:

- Adjust the valve clearance. (Refer to page 2-4.)
- Loosen both lock nuts ③ on the cable adjuster ④.
- Locate the adjuster ④ to provide the specified lever clearance Ⓐ as shown in photograph.
- Tighten both lock nuts ③.

De-compression lever clearance Ⓐ: 1—2 mm (0.04—0.08 in)



ENGINE OIL, OIL FILTER AND OIL STRAINER

Replace (Change) oil and oil filter Initial 5 Hours and Every 60 Hours
Clean oil strainer Initial 5 Hours and Every 60 Hours

The oil should be changed while the engine is hot .Oil filter replacement at the above intervals should be done together with engine oil change.

- Rmove the engine under cover.
- Keep the motorcycle upright, supported by jack or block.
- Place an oil pan under the frame head pipe and the engine.
- Rmove the engine oil drain plugs (① and ②) and oil filler cap ③ to drain engine oil.
- Remove the oil filter cap ④ by removing the three bolts.
- Remove the old filter ⑤, and install the new one.
- Replace the filter cap ④ and tighten the bolts securely.

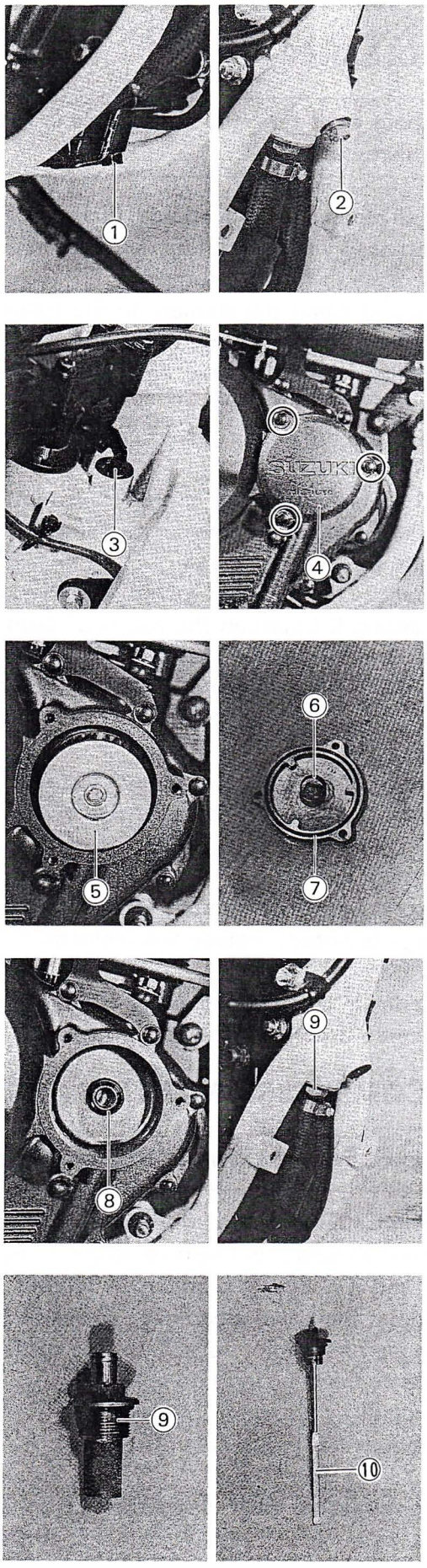
NOTE:
Before installing the oil filter and filter cap, check to be sure that the spring ⑥ and new O-rings (⑦ and ⑧) are installed correctly.

- Remove the oil strainer ⑨,
- Clean the oil strainer ⑨ at the above intervals.
- Tighten the oil strainer ⑨ to the specified torque.

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

- Tighten the oil drain plugs (① and ②) securely, and add fresh oil through the oil filler. The engine will hold about 1 900 ml of oil.
  Use API classification of SE or SF oil with SAE 10W/40 viscosity.
- Install the filler cap ③.
- Start up the engine and allow it to run for 3 minutes at idling speed.
- Stop the engine with the engine stop switch and wait one minute, then check the oil level by removing the oil level gauge ⑩. If the level is below mark "F", add oil to that level.

NECESSARY AMOUNT OF ENGINE OIL
Oil change: 1 700 ml (1.8/1.5 US/Imp qt)
Filter change: 1 900 ml (2.0/1.7 US/Imp qt)
Overhaul engine: 2 100 ml (2.2/1.8 US/Imp qt)



CARBURETOR

Inspect Initial 5 Hours and Every 30 Hours

THROTTLE CABLE ADJUSTMENT

A twin throttle cable system is used in this motorcycle. Cable ① is for pulling and cable ② is for returning. To adjust the cable play,adjust the returning cable first and then adjust the pulling cable.

Returning Cable Play

The returning cable adjuster should have 2—3 mm (0.08—0.12 in) of clearance as shown in the illustration. If the adjustment is necessary, carry out the procedure below:

- Loosen the lock nut ③ .
- Turn adjuster ④ to obtain the clearance Ⓐ of 2—3 mm (0.08—0.12 in).
- Tighten the lock nut ③ securely.

Pulling Cable Play

The pulling cable play Ⓑ should be 0.5—1.0 mm (0.02—0.04 in). If the adjustment is necessary, carry out the procedure below:

- Turn the handlebar all the way to the left.
- Loosen lock nut ⑤.
- Turn adjuster ⑥ to obtain a cable play of 0.5—1.0 mm (0.02—0.04 in).
- Tighten lock nut ⑤ securely.
- Make sure that the clearance of Ⓒ is less than 1.0 mm (0.04 in) when the throttle grip is fully opened.

WARNING:

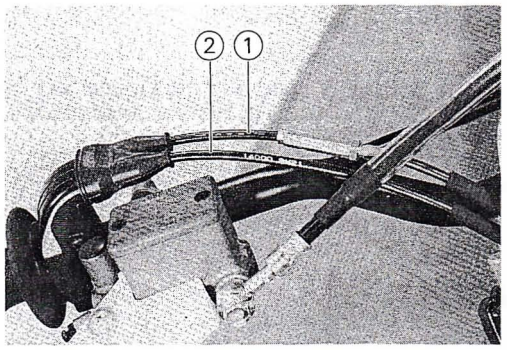
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.

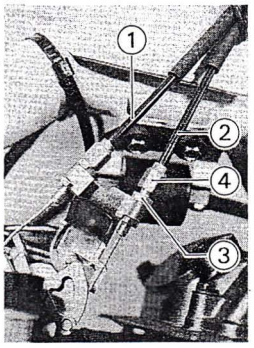
AIDLE RPM(Idling adjustment)

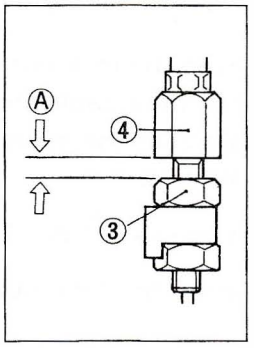
NOTE:

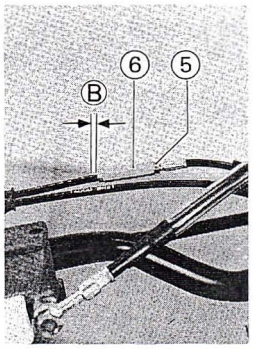
Make this adjustment when the engine is hot.

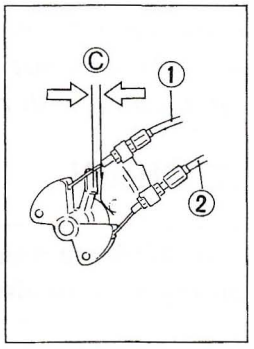
- Start up the engine and set its speed at anywhere between 1 300 and 1 500 r/min by turning the throttle stop screw ⑦.
- Turn in or out the pilot screw ⑧ within 1/2 turn from the standard setting, and set it when the engine speed is at the highest possible level.
- After this adjustment, recheck the idling speed and adjust to between 1 300 and 1 500 r/min with throttle stop screw if necessary.

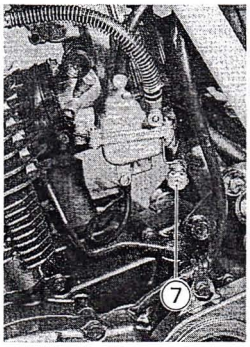


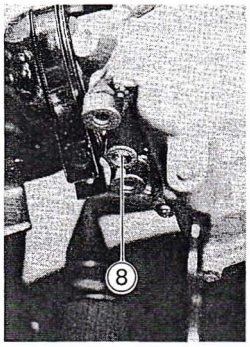








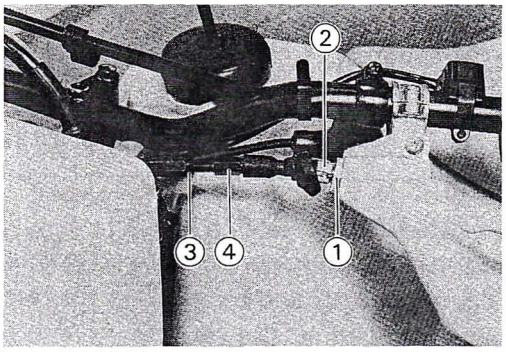




FUEL LINE

Inspect Initial 5 Hours and Every 30 Hours
Replace Every 4 years

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



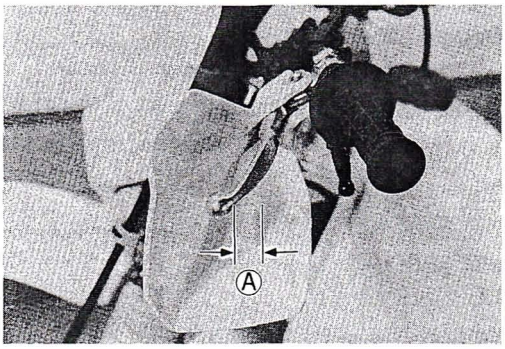
CLUTCH

Inspect Initial 5 Hours and Every 30 Hours

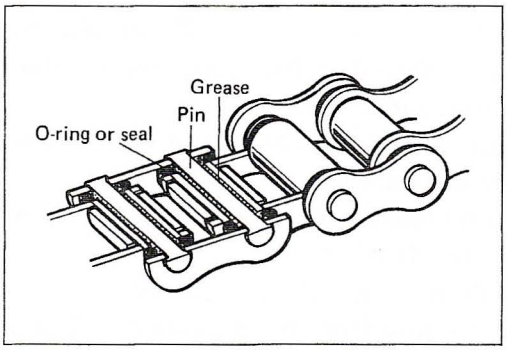
- Loosen the lock nut ① and turn the adjuster ② fully in.
- Loosen the cable lock nut ③ and adjust the play of the cable with the adjuster ④ until play of the clutch lever is 10—15 mm.

Clutch lever play Ⓐ: 10—15 mm(0.4—0.6 in)

- Tighten the lock nuts (① and ③).



NOTE:
Minor adjustment can be made by the adjuster ② after loosening the lock nut ①. At the same intervals, lubricate the clutch cable with motor oil.



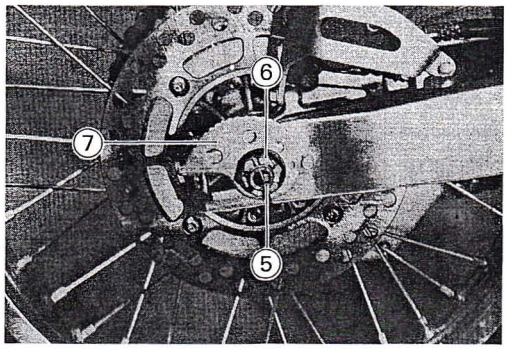
DRIVE CHAIN

Clean, lubricate and inspect each time the motorcycle is redden

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

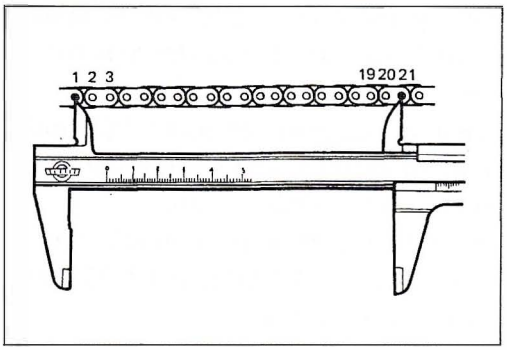
* Loose pins
* Damaged rollers
* Dry or rusted links
* Kinked or binding links
* Excessive wear
* Missing O-rings

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



CHECKING

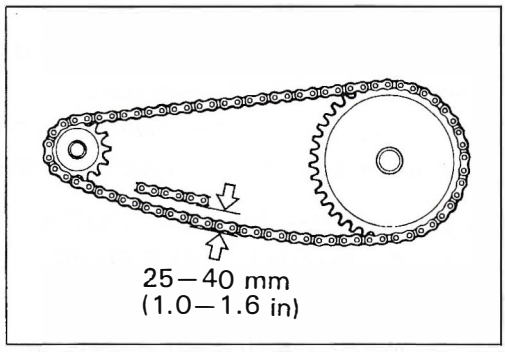
- Remove the cotter pin ⑤ (For U.S.A. and Canada).
- Loosen the axle nut ⑥.
- Tension the drive chain fully by turning the right and left chain adjusters ⑦.
- Count out 21 pins (20 pitches) on the chain and measure the distance between the two points. If the distance exceeds following limit, the chain must be replaced.



Service Limit: 319.4 mm (12.57 in)

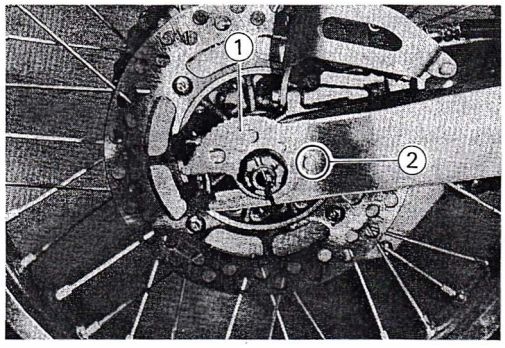
ADJUSTING

- Turn both chain adjusters ① until the chain has 25—40 mm of slack at the middle between engine and rear sprockets. The number ② on both chain adjusters must be at the same position to ensure that the front and rear wheels are correctly aligned. Place the motorcycle on the side stand for accurate adjustment.



Drive chain slack: 25—40 mm (1.0—1.6 in)

- After adjusting the drive chain slack, tighten the axle nut to the specified torque.

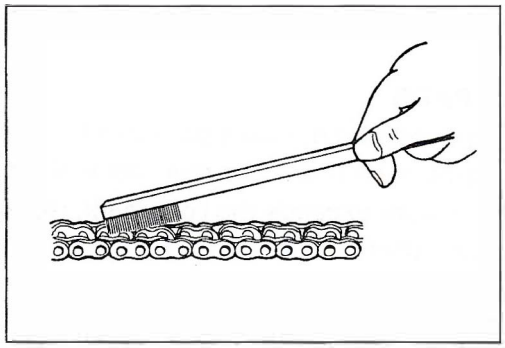


Tightening torque
Rear axle nut: 85—115 N·m
(8.5—11.5 kg-m, 61.5—83.0 lb-ft)

CLEANING AND LUBRICATING

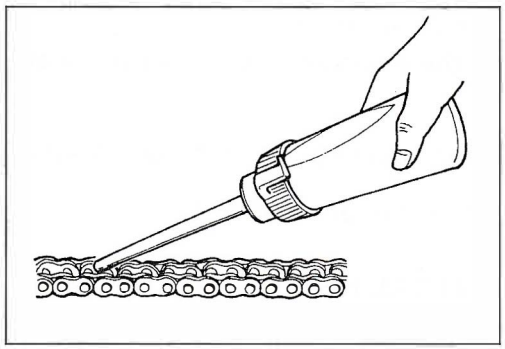
- Wash the chain with kerosene. If the chain tends to rust faster, the intervals must be shortened.

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, can damage the "O" rings (or seals) confining the 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, oil it with a heavyweight motor oil.

CAUTION:
Do not use any oil sold commercially as "drive chain oil". Such oil can damage the "O" rings (or seals).
The standard drive chain is DAIDO D.I.D.520VC5 or TAKASAGO RK520SO SUZUKI recommends that the above-mentioned standard drive chain be used for the replacement.



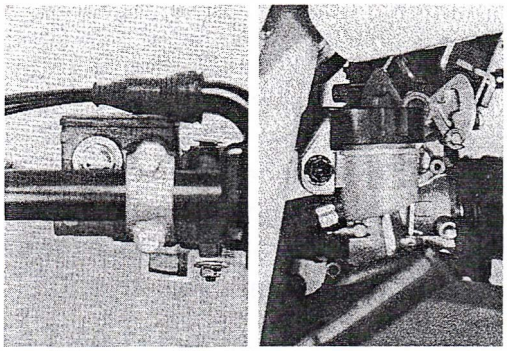
BRAKES

Inspect Initial 5 Hours and Every 30 Hours
Replace hoses Every 4 years
Replace (change) fluid Every 2 years

BRAKE FLUID LEVEL

- Keep the motorcycle upright and place the handlebar straight.

- Check the brake fluid level by observing the upper (only for rear brake) and lower (both front and rear brake) limit lines on the brake fluid reservoirs.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.



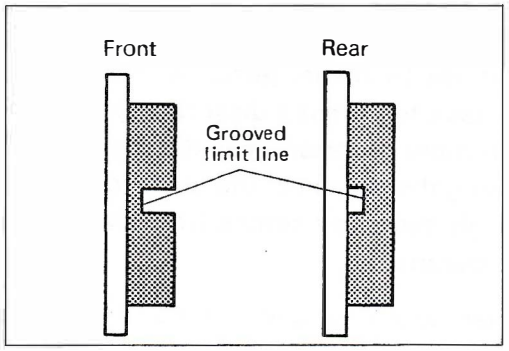
Specification and classification : DOT 4
99000-23110 : SUZUKI BRAKE FLUID

WARNING:
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. 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 periods.

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

BRAKE PADS

Wearing condition of brake pads can be checked by observing the groove ① (front and rear calipers) marked on the pad. When the wear exceeds the limit mark, replace the pads with new ones. (Refer to pages 6-6 and 6-23.)



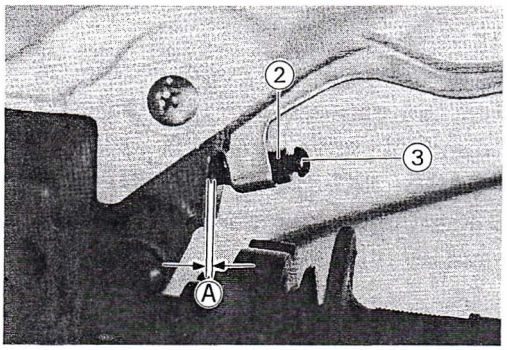
BRAKE LEVER PLAY

Adjust the front brake lever play as follows.

- Loosen the lock nut ②.
- Turn the adjuster ③ in or out to obtain the correct play Ⓐ.

Brake lever play Ⓐ: 0—0.3 mm (0—0.01 in)

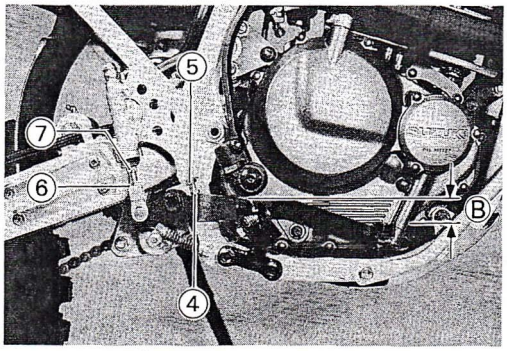
- Tighten the lock nut ②.



BRAKE PEDAL HEIGHT

- Loosen the lock nut ④ and stopper bolt ⑤.
- Loosen the lock nut ⑥, and rotate push rod ⑦ to locate brake pedal 5 mm below the top face of the footrest.
- Retighten the lock nut ⑥ to secure the push rod ⑦ in the proper position.
- Tighten the stopper bolt ⑤ so that the clearance between the stopper bolt and stopper is zero.
- Tighten the lock nut ④ securly.

Brake pedal height Ⓑ : 5 mm (0.2 in)



BLEEDING AIR FROM THE 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 caliper. 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:

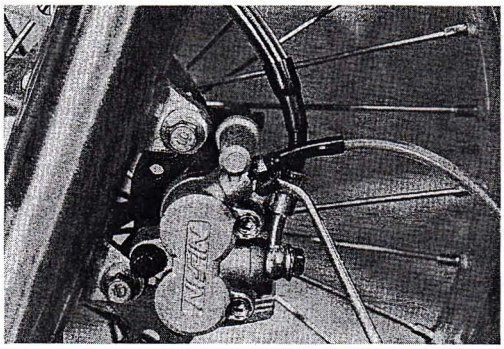
- Fill up the master cylinder reservoir to the upper end of the inspection window (for front brake) and upper line (for rear brake). Replace the reservoir cap to prevent entry of dirt.
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle.
- Squeeze and release 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.

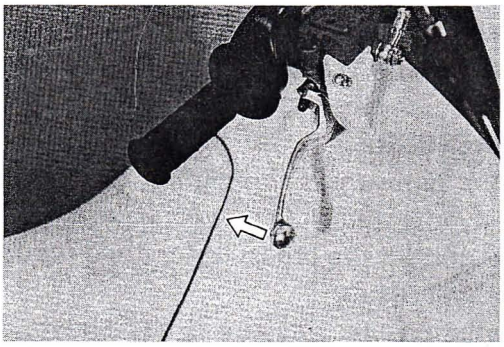
NOTE:
Replenish the brake fluid reservoir as necessary while bleeding the brake system.
Make sure that there is always some fluid visible in the reservoir.

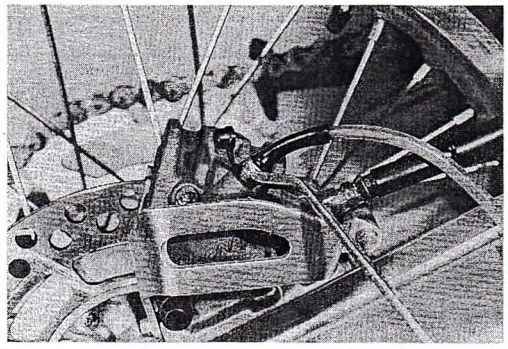
- Close the bleeder valve, and disconnect the pipe. Fill the reservoir to the upper end of the inspection window (for front brake) and upper line (for rear brake).
- Rear
  the master cylinder is actuated by a pedal.

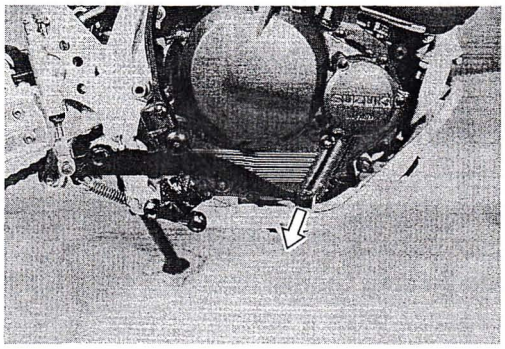
Bleeder valve
Tightening torque : 6—9 N·m
(0.6—0.9 kg-m, 4.5—6.5 lb-ft)

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

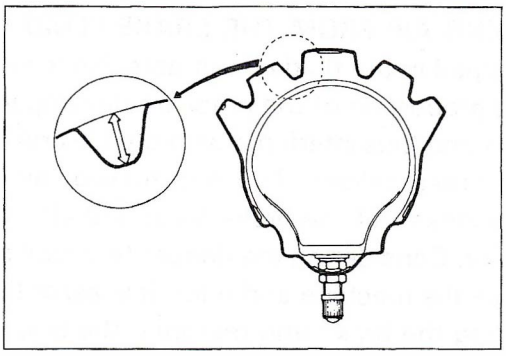








TIRES

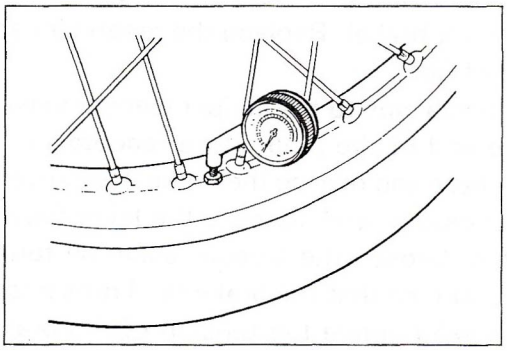


Inspect tire pressure and damage each time the motorcycle is redden

TIRE TREAD CONDITION

Operating the motorcycle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace tire when the remaining depth of tire tread reaches the following specification.

Tire tread depth limit
Front & Rear: 4.0 mm (0.16 in)



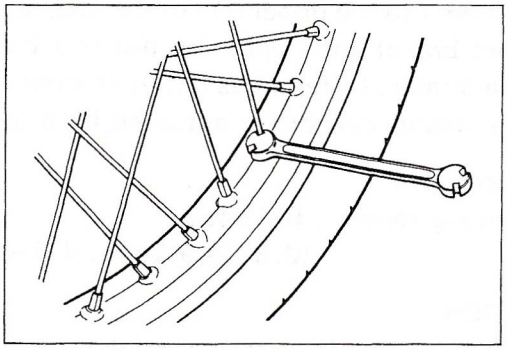
TIRE PRESSURE

If the tire pressure is too high or too low, steering will be adversely affected and tire wear increased. Therefore, maintain the correct tire pressure for good roadability or shorter tire life will result.
Cold inflation tire pressure is as follows.

FRONT			REAR		
kPa	kg/cm²	psi	kPa	kg/cm²	psi
100	1.00	14	100	1.00	14

CAUTION:
The standard tire fitted on this motorcycle is 80/100-21 51M for front and 110/100-18 64M for rear. The use of tires other than the those specified may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

SPOKE NIPPLES



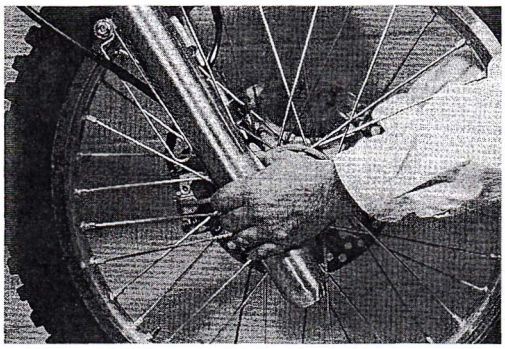
Inspect each time the motorcycle is ridden.

Check to be sure that all nipples are tight, and retighten them as necessary with a special tool.

09940-60133:Spoke nipple wrench
Tightening torque:2—4 N·m (0.2—0.4 kg-m, 1.5—3.0 lb-ft)

STEERING

Inspect Initial 5 Hours and Every 60 Hours



Steering should be adjusted properly for smooth turning of handlebar and safe running. Overtight steering prevents smooth turning of the handlebar and too loose steering will cause the handlebar to vibrate.

Check that there is no play in the front fork assembly by supporting the motorcycle so that the front wheel is off the ground, with the wheel straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, perform steering bearing adjustment as described in page 6-19 of this manual.

FRONT FORK

Inspect Initial 5 Hours and Every 60 Hours

Inspect the front fork oil leakage, scoring or scratches on the outer surface of the inner tubes. Replace any defective parts, if necessary.

REAR SUSPENSION

Inspect Initial 5 Hours and Every 60 Hours

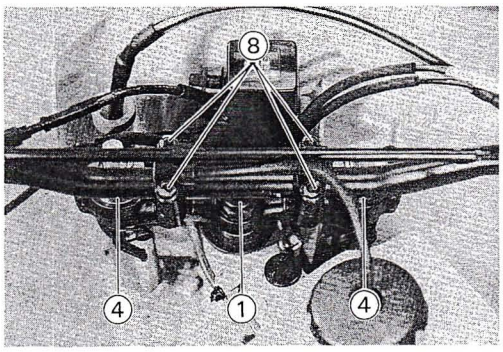
Inspect the shock absorber for oil leakage and check that there is no play in the swingarm assembly.

CHASSIS BOLTS AND NUTS

Tighten Initial 5 Hours and Every 60 Hours

The nuts and bolts listed below are important safety parts. They must be retightened when necessary to the specified torque with a torque wrench. (Refer to page 2-16 for the locations of the following nuts and bolts on the motorcycle.

Item	N·m	kg-m	lb-ft
① Steering stem head nut	80—100	8.0—10.0	58.0—72.5
② Front fork upper clamp bolt	20—31	2.0—3.1	14.5—22.5
③ Front fork lower clamp bolt	20—31	2.0—3.1	14.5—22.5
④ Front fork cap bolt	30—40	3.0—4.0	21.5—29.0
⑤ Front fork damper rod bolt	30—40	3.0—4.0	21.5—29.0
⑥ Front axle shaft	50—80	5.0—8.0	36.0—58.0
⑦ Front axle pinch nut	6—8	0.6—0.8	4.5—6.0
⑧ Handlebar clamp bolt	18—28	1.8—2.8	13.0—20.0
⑨ Front brake master cylinder mounting bolt	6—9	0.6—0.9	4.5—6.5
⑩ Front brake caliper mounting bolt	20—31	2.0—3.1	14.5—22.5
⑪ Brake hose union bolt (Front & Rear)	20—25	2.0—2.5	14.5—18.0
⑫ Air bleeder valve (Front & Rear)	6—9	0.6—0.9	4.5—6.5
⑬ Brake disc mounting bolt (Front & Rear)	18—28	1.8—2.8	13.0—20.0
⑭ Front footrest bolt	44—66	4.4—6.6	32.0—47.5
⑮ Swingarm pivot nut	61—94	6.1—9.4	44.0—68.0
⑯ Shock absorber mounting nut (Upper & Lower)	48—72	4.8—7.2	34.5—52.0
⑰ Rear cushion rod mounting nut	84—120	8.4—12.0	60.5—87.0
⑱ Rear cushion lever nut (Front)	60—96	6.0—9.6	43.5—69.5
⑲ Rear cushion lever nut (Center)	84—120	8.4—12.0	60.5—87.0
⑳ Rear axle nut	85—115	8.5—11.5	61.5—83.0
㉑ Spoke nipple	2—4	0.2—0.4	1.5—3.0
㉒ Rear brake master cylinder mounting bolt	8—12	0.8—1.2	6.0—8.5
㉓ Rear brake rod lock nut	15—20	1.5—2.0	11.0—14.5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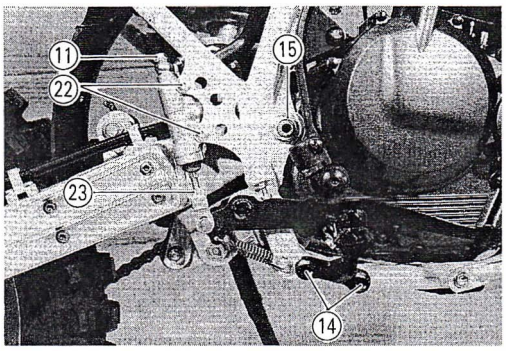
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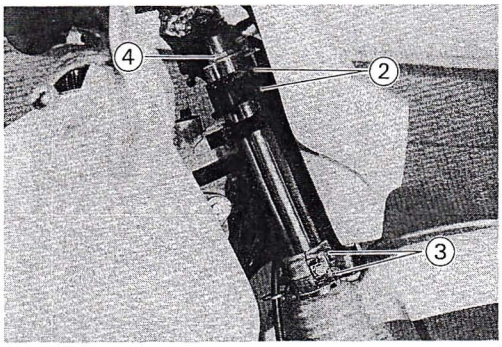
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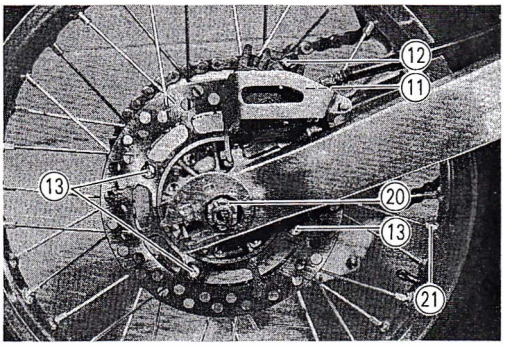
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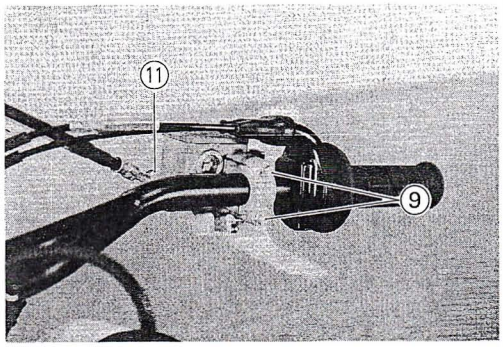
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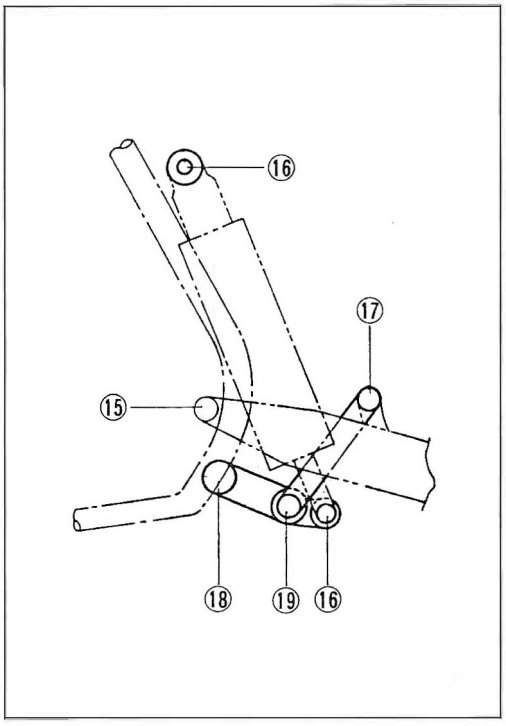
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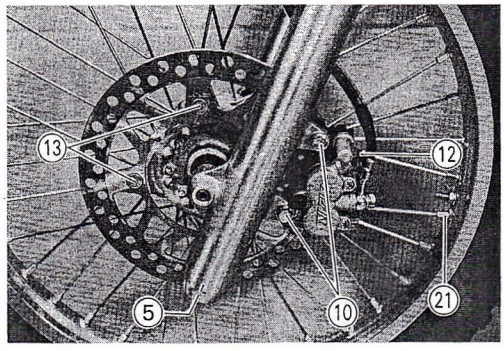
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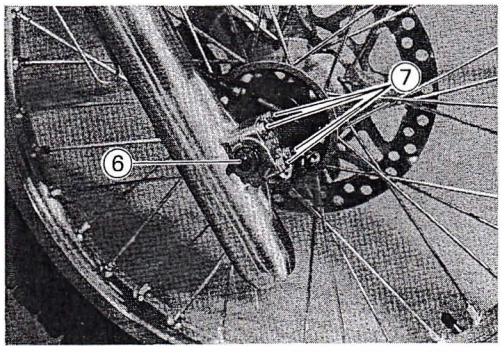
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6

ENGINE

CONTENTS

ENGINE COMPONENTS REMOVABLE WITH THE 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

ENGINE CENTER

ENGINE RIGHT SIDE

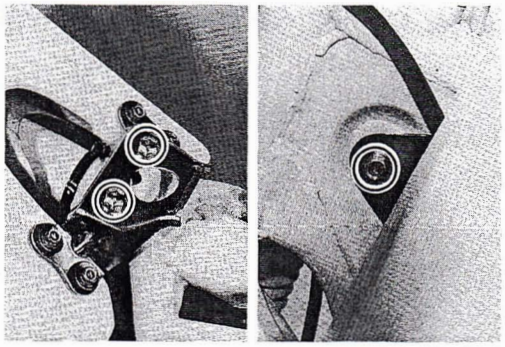
ENGINE REMOVAL AND REMOUNTING

ENGIEN REMOVAL

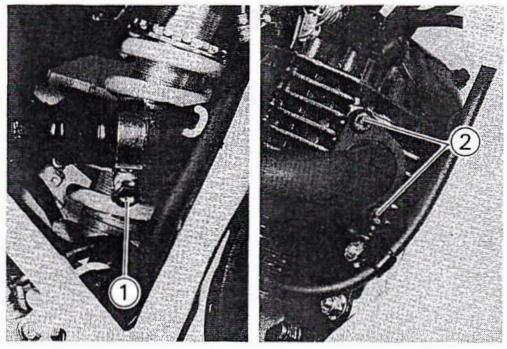
Before taking the engine out of the frame, thoroughly clean the engine with a suitable cleaner.
The procedure of engine removal is sequentially explained in the following steps.

- Remove the left and right frame covers.
- Remove the seat by removing the two bolts.

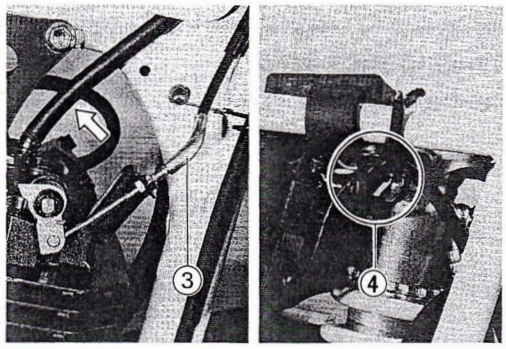
- Turn the fuel cock lever to "OFF" position.
- Disconnect the fuel hose.
- Remove the fuel tank by removing the four mounting bolts.
- Remove the engine under cover by removing the four bolts.
- Drain engine oil. (Refer to page 2-7.)



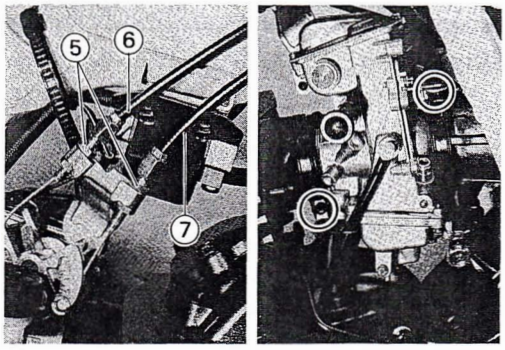
- Loosen the muffler clamp bolt ①.
- Remove the exhaust pipe by removing the exhaust bolts ②.



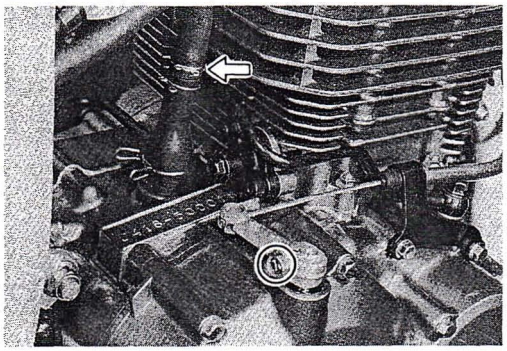
- Disconnect the de-compression cable ③ and cylinder head breather hose.
- Remove the high tension cord clamp.
- Disconnect the spark plug cap.
- Disconnect the magneto lead wires ④ .



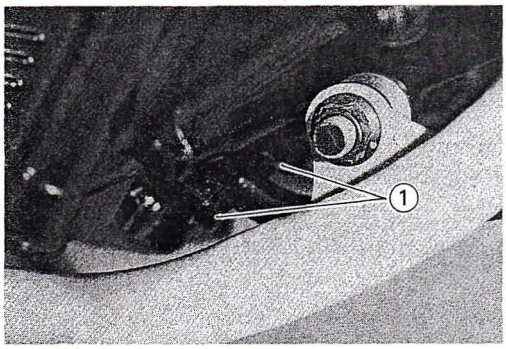
- Loosen the lock nuts ⑤ and disconnect the throttle cables (pulling cable ⑥ and returning cable ⑦).
- Remove the carburator by loosening the clamp screws.



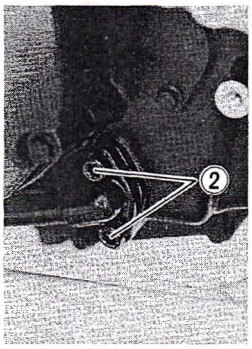
- Disconnect the clutch cable along with the release arm.
- Disconnect the crankcase breather hose.

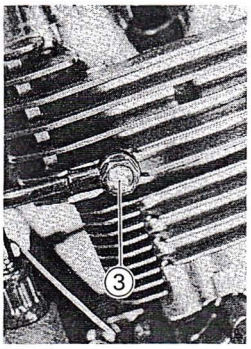


- Remove the oil hose connector mounting bolts ①.

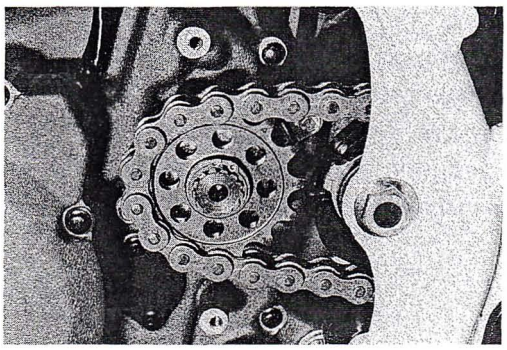


- Remove the gearshift lever, engine sprocket cover and left footrest.
- Remove the engine oil hose connecter mounting bolts (② and ③).

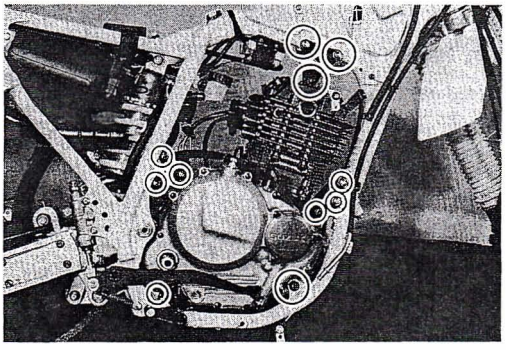




- Remove the engine sprocket with the drive chain by removing the circlip.
- Remove the kick lever.



- Remove the engine mounting bolts and brackets.
- Remove the engine from the left side of the frame.

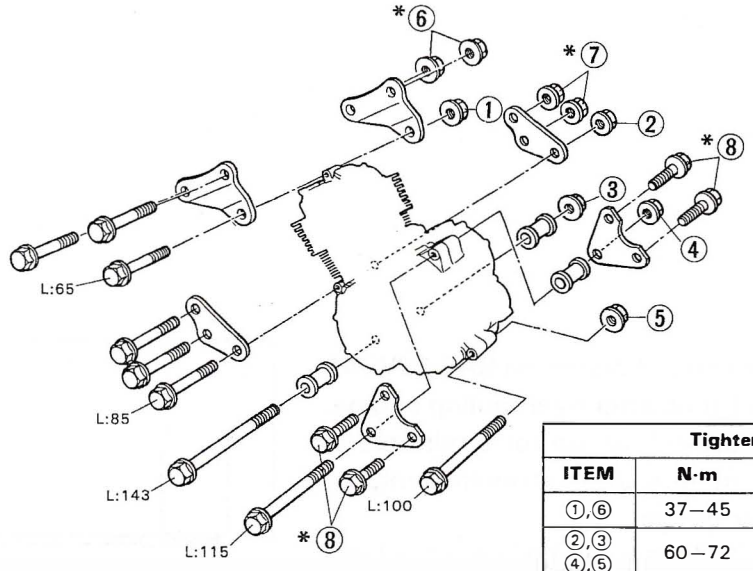


ENGINE REMOUNTING

Remount the engine in the reverse order of engine removal.

- Install the brackets, spacers, bolts and nut properly as shown in the illustration.

NOTE:
The engine mounting nuts are self-locking nut. 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.



* Apply THREAD LOCK SUPER "1303" (99000-32030)

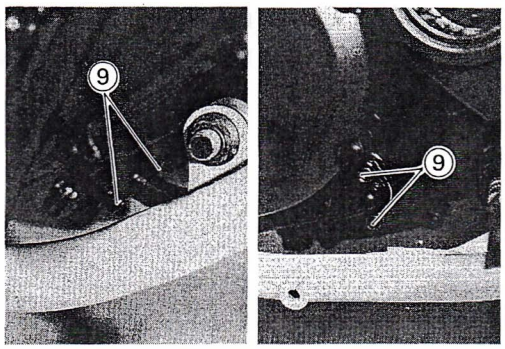
Tightening torque			
ITEM	N·m	kg-m	lb-ft
①,⑥	37–45	3.7–4.5	27.0–32.5
②,③ ④,⑤	60–72	6.0–7.2	43.5–52.0
⑦,⑧	18–28	1.8–2.8	13.0–20.0

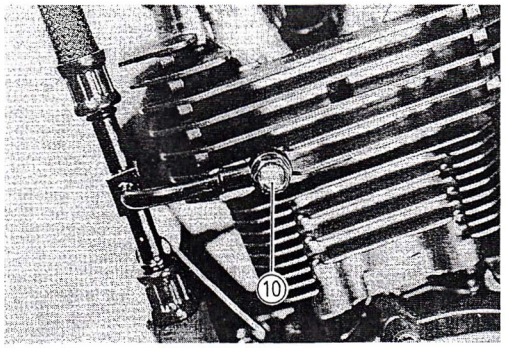
- Install the oil pipes, to the crankcases correctly.

CAUTION:
Replace the O-rings with new ones to prevent oil leakage.

- Tighten the oil pipe securing bolts ⑨ and union bolt ⑩ to the specified torque.

Tightening torque
Bolt ⑨ : 8–12 N·m (0.8–1.2 kg-m,6.0–8.5 lb-ft)
Bolt ⑩ : 20–25 N·m (2.0–2.5 kg-m,14.5–18.0 lb-ft)

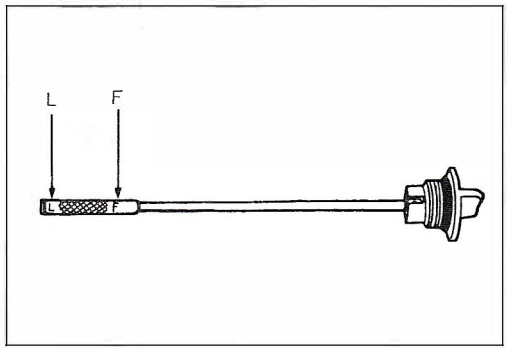




- After remounting the engine, following adjustments are necessary.

* De-compression cable play (Refer to page 2-6.)
* Clutch cable play (Refer to page 2-9.)
* Drive chain slack (Refer to page 2-10.)
* Idling speed (Refer to page 2-8.)
* Throttle cable play (Refer to page 2-8.)

- Pour 2.1 L (2.2/1.8 US/Imp qt) of engine oil SAE 10W/40 graded SE or SF into the frame after overhauling engine.
- Start up the engine and allow it to run for 3 minutes at idle speed. About one minute after stopping engine, check oil level with filler gauge.
  If the level is below the "F" mark, add oil until the level reaches the "F" mark.

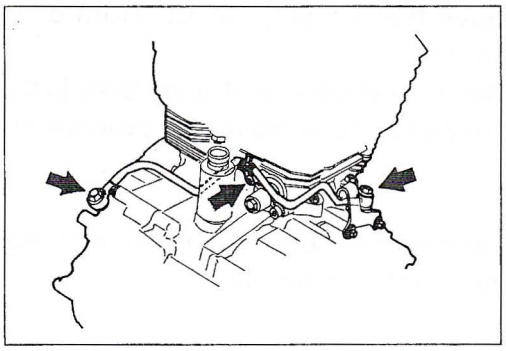


Engine oil capacity

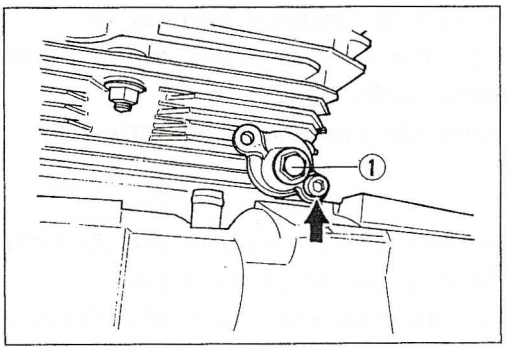
Change	**: 1 700 ml (1.8/1.5 US/Imp qt)**
Filter change	**: 1 900 ml (2.0/1.7 US/Imp qt)**
Overhaul	**: 2 100 ml (2.2/1.8 US/Imp qt)**

ENGINE DISASSEMBLY

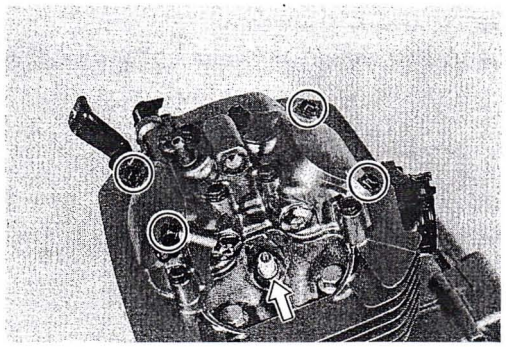
- Remove the oil pipe.
- Remove the crankcase breather pipe.



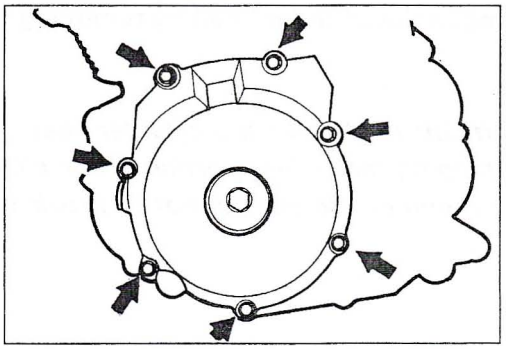
- Loosen the bolt ① and remove the chain tensioner mounting bolt.



- Remove the valve inspection caps (Intake and Exhaust).
- Remove the spark plug.

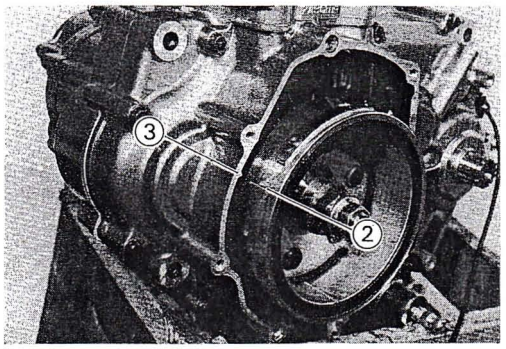


- Remove the magneto cover.

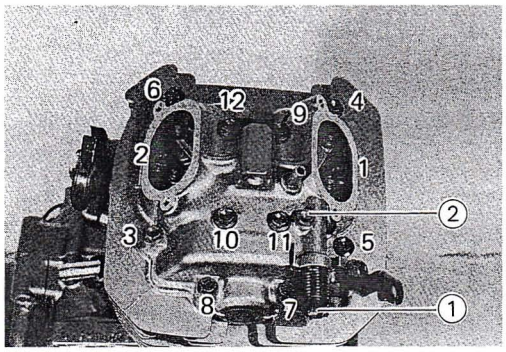


- Rotate the mangeto rotor until the "T" line ② on the rotor is aligned with index mark ③ on the crankcase.

NOTE:
When removing the cylinder head cover, the piston must be at top dead center on the compression stroke.

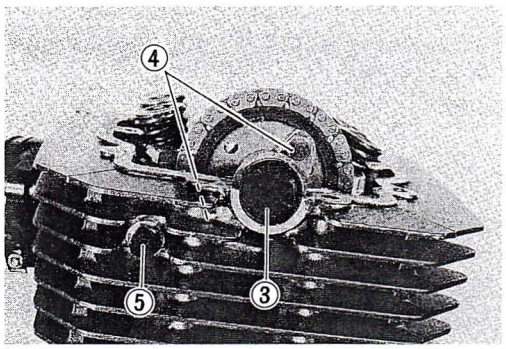


- Remove the de-comp. shaft return spring by removing the nut ①.
- Loosen the cylinder head cover bolts in the ascending order numbers and remove the cylinder head cover.



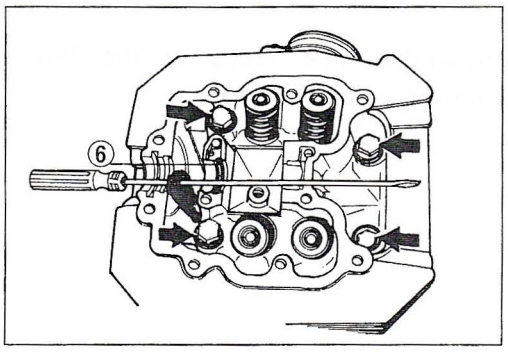
NOTE:
When removing the cylinder head cover, do not remove the de-comp. shaft set bolt ②.

- Remove the camshaft end cap ③.
- Flatten the lock washers and remove the camshaft sprocket bolts ④.
- Remove the camshaft and sprocket.



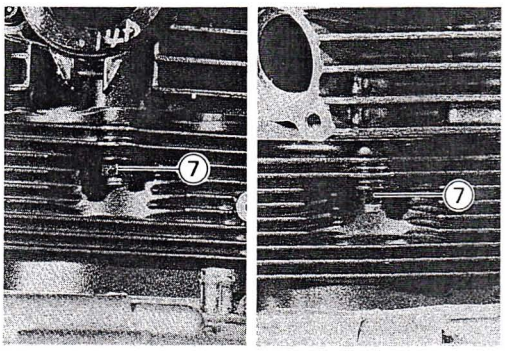
NOTE:
* *The cam chain tensioner set bolt ⑤ is to be removed only when disassembling the engine.*
* *Do not drop the camshaft drive chain, pin and sprocket into the crankcase.*

- Remove the C-ring ⑥.
- Loosen the cylinder head bolts diagonally.

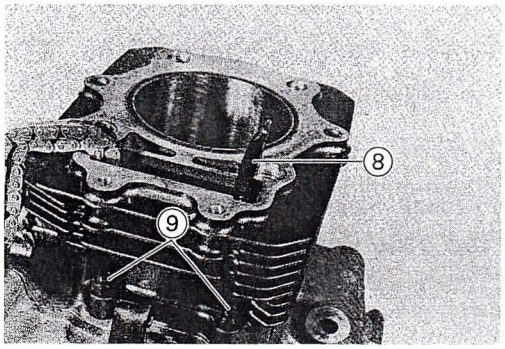


- Remove the cylinder head by removing the two nuts ⑦.

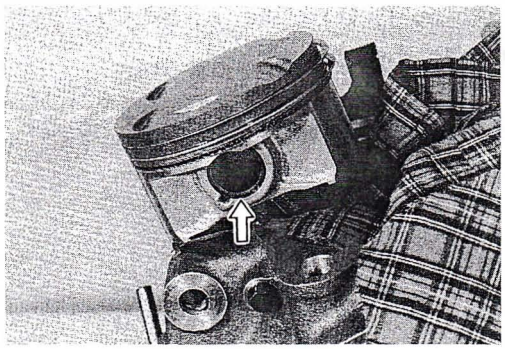
NOTE:
It is difficult to remove the cylinder head, gently pry it off while tapping the finless portion of the clinder head with a plastic hammer. Be careful not to break the fins.



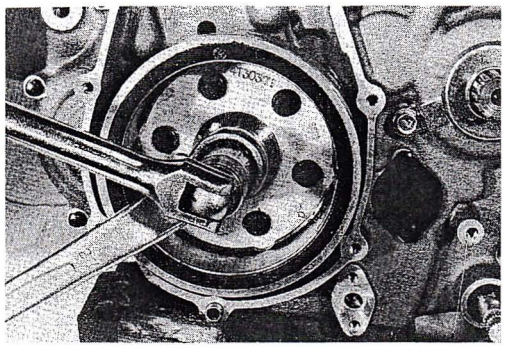
- Remove the cam chain guide ⑧.
- Remove the cylinder by removing the two nuts ⑨.



- Place a clean rag over the cylinder base to prevent the piston pin circlips from dropping into crankcase. Remove the piston pin circlips with long-nose pliers.
- Remove the piston pin with a proper drift.



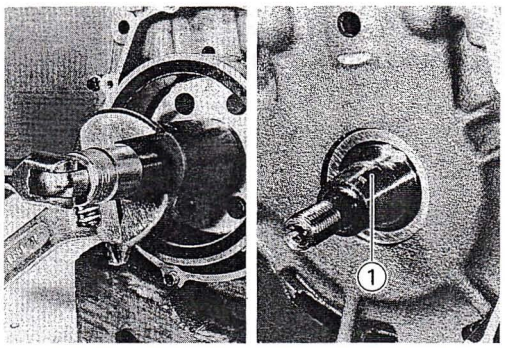
- Loosen the magneto rotor nut with a 27 mm box-end wrench.



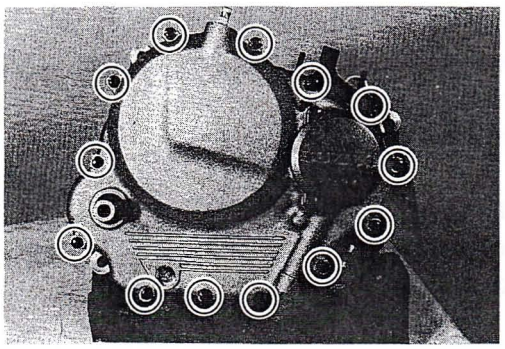
- Remove the magneto rotor with the special tool.

09930-34960: Rotor remover

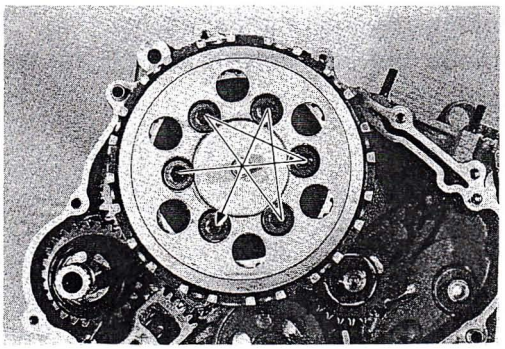
- Remove the key ①.



- Remove the clutch cover.

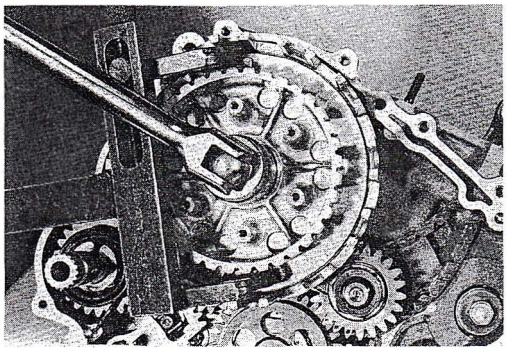


- Remove the clutch spring mounting bolts diagonally.
- Remove the pressure plate along with the clutch release bearing and rack.
- Remove the several clutch drive and driven plates.

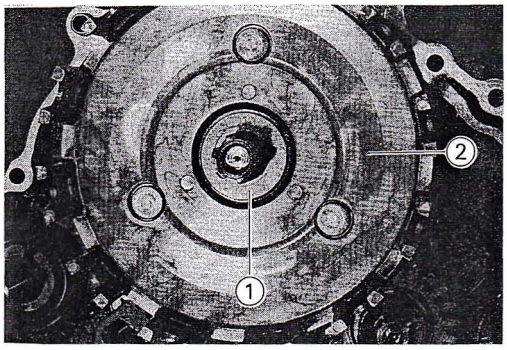


- Flatten the lock washer and remove the clutch sleeve hub nut with the special tool.

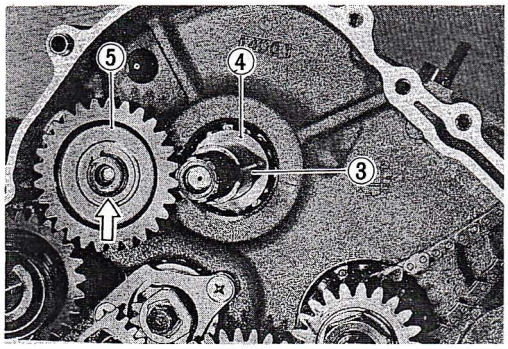
09920-53710: Clutch sleeve hub holder



- Remove the washer ① and primary driven gear assembly ②.

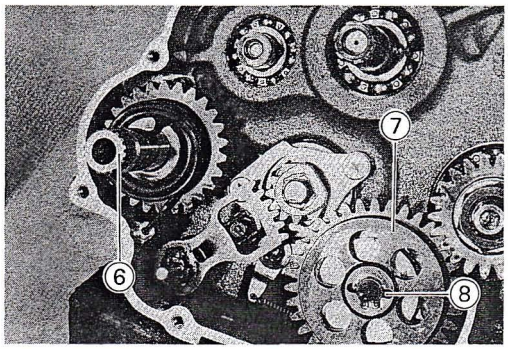


- Remove the spacer ③ and washer ④.
- Remove the kick idle gear ⑤ by removing the circlip.

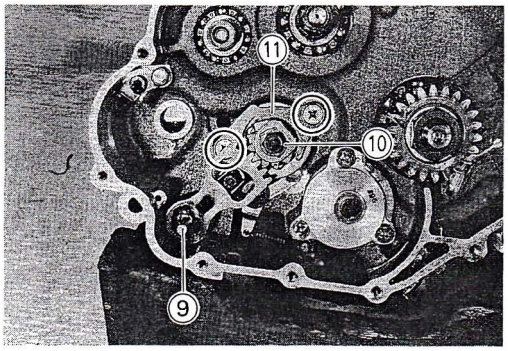


- Remove the kick shaft assembly ⑥.
- Remove the oil pump driven gear ⑦ by removing the circlip.
- Remove the pin ⑧.

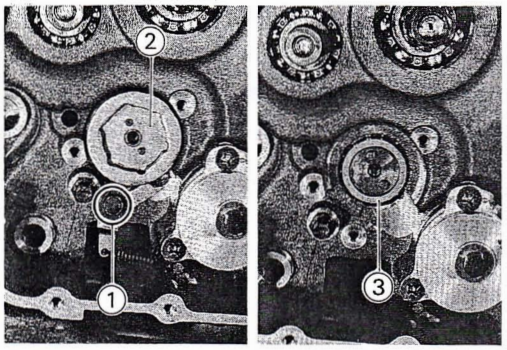
CAUTION:
Do not remove the oil pump No.1 before separating the crankcase.



- Remove the gearshift shaft ⑨.
- Remove the cam driven gear ⑩ by removing the cam guide ⑪.



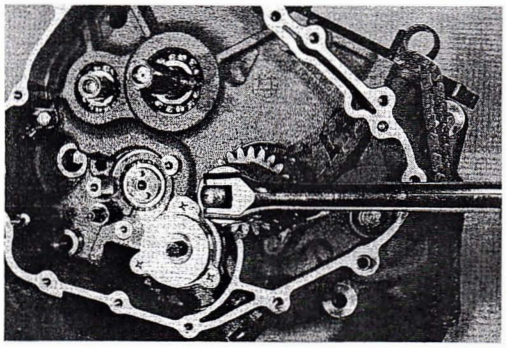
- Remove the cam stopper ① and cam stopper plate ② by removing the bolt.
- Remove the spacer ③.



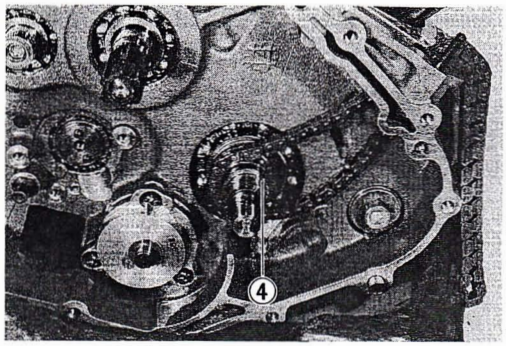
- Remove the primary drive gear by removing the nut with the special tool.

09910-20115 : Conrod holder

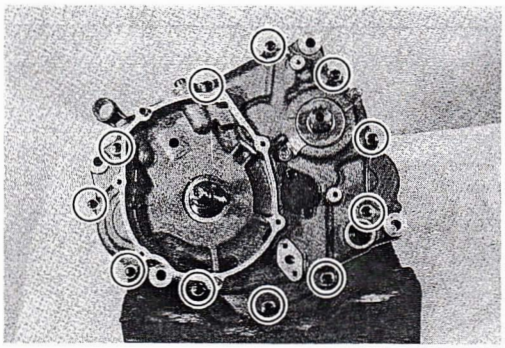
CAUTION;
This nut has left-hand thread.



- Remove the cam chain and key ④.



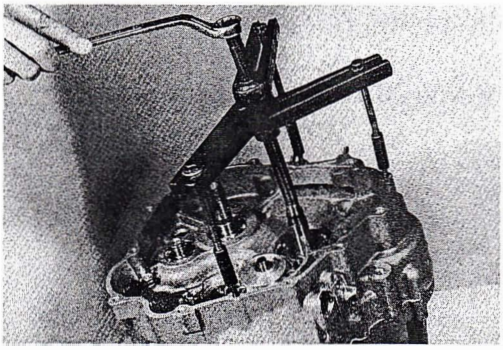
- Remove the crankcase securing bolts.



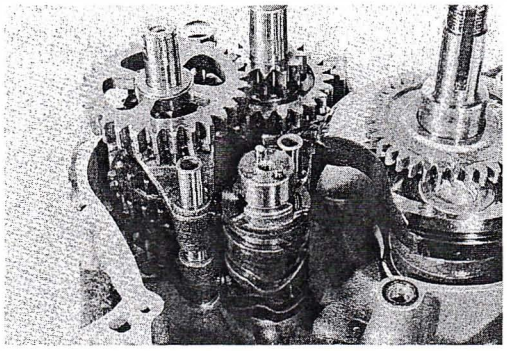
- Separate the crankcase, right and left with the special tool.

09920-13120 : Crankcase separating tool

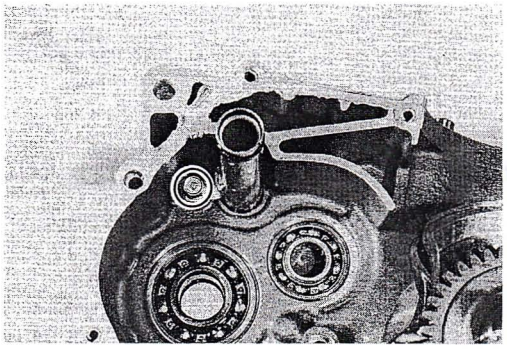
NOTE:
Fit the crankcase separating tool, so that the tool plate is parallel with the end face of the crankcase.
The crankshaft and transmission components must remain in the left crankcase half.



- Remove the gearshift fork shafts and gearshift forks.
- Remove the gearshift cam.
- Remove the driveshaft assembly and countershaft assembly.

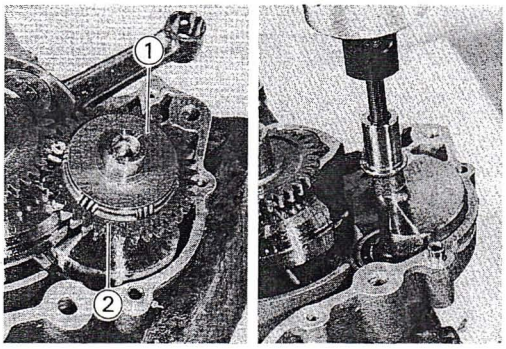


- Remove the oil pipe.

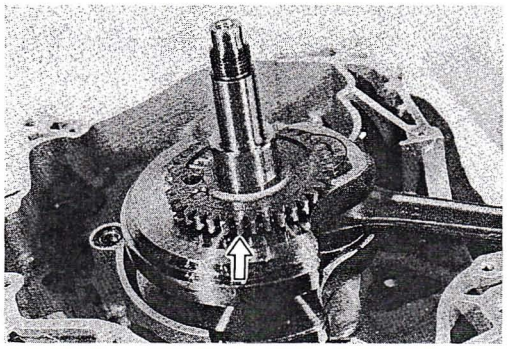


- Remove the plate ① and balancer driven gear ②.
- Remove the balacer shaft with the special tools.

09930-30102 : Sliding shaft
09930-30141 : Attachment A

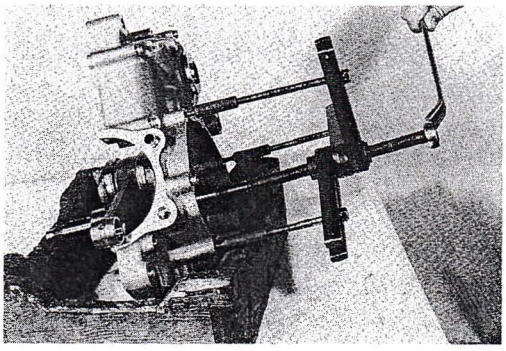


- Remove the balancer drive gear.

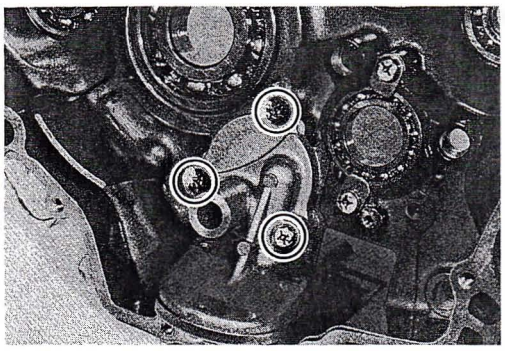


- Remove the crankshaft with the special tool.

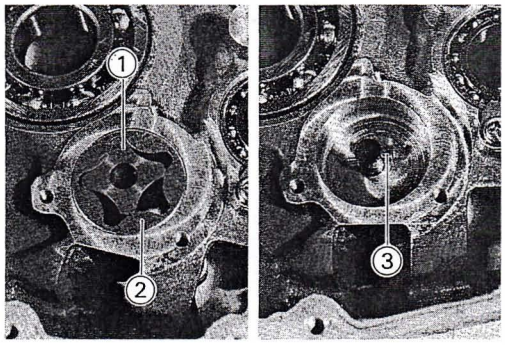
09920-13120 : Crankshaft remover
(Crankcase separating tool)



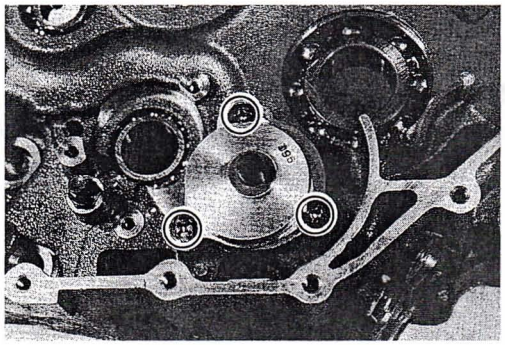
- Remove the oil pump No. 2.



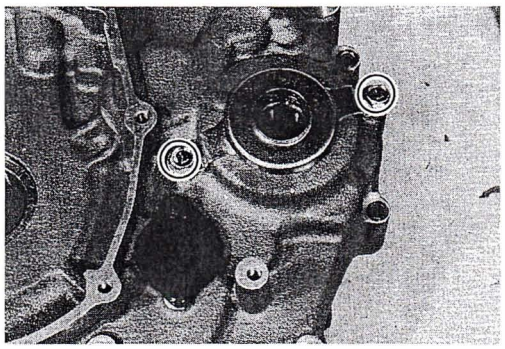
- Remover the inner rotor ① and outer rotor ②.
- Remove the pin ③.



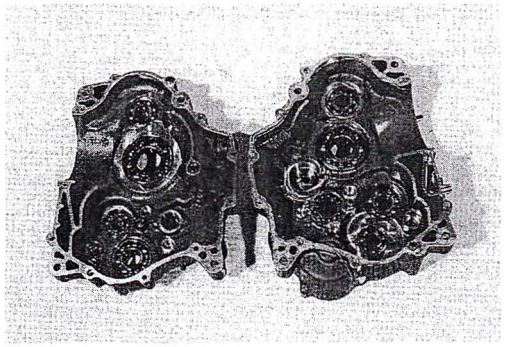
- Remove the oil pump No.1.



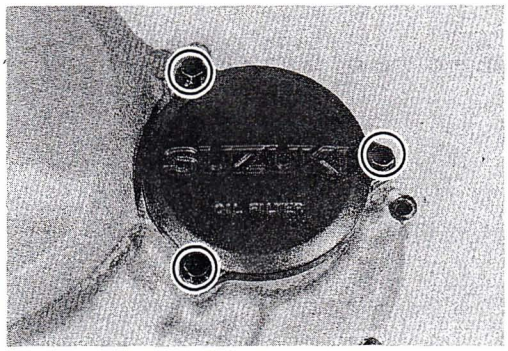
- Remove the retainer.



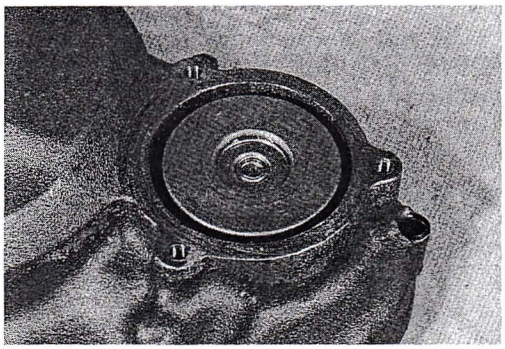
- Remove the oil seals and bearings.



- Remove the oil filter cap.

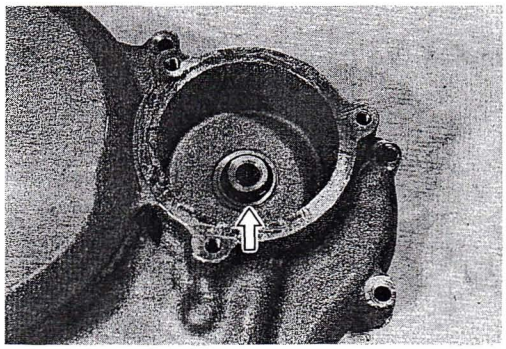


- Remove the oil filter.

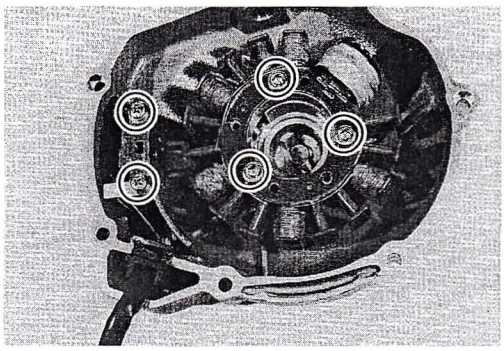


- Remove the O-ring.

CAUTION:
The removed O-ring should be replaced with new one.



- Remove the magneto coil.



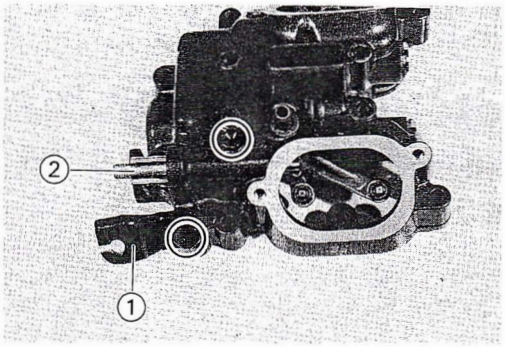
ENGINE COMPONENTS INSPECTION AND SERVICING

CYLINDER HEAD COVER SERVICING

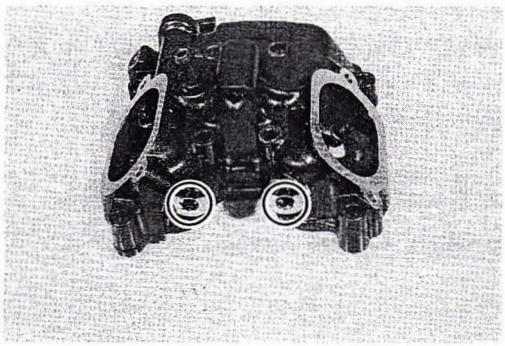
CAUTION:

Be sure to identify each removed part as to its location, and lay the parts out in groups designated as "Exhaust" and "Inlet", so that each will be restored to the original location during assembly.

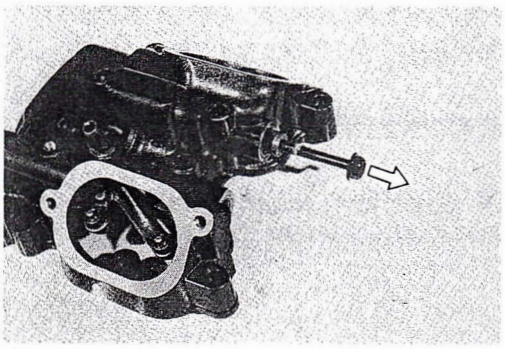
- Remove the de-comp. cable bracket ①.
- Remove the de-comp. shaft ②.

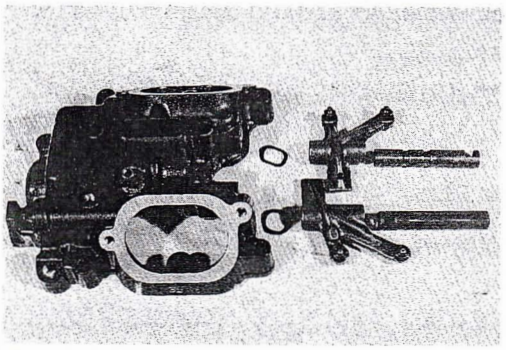


- Remove the intake and exhaust rocker arm shaft set bolts.



- Remove the intake and exhaust rocker arm shafts with a 6 mm bolt.



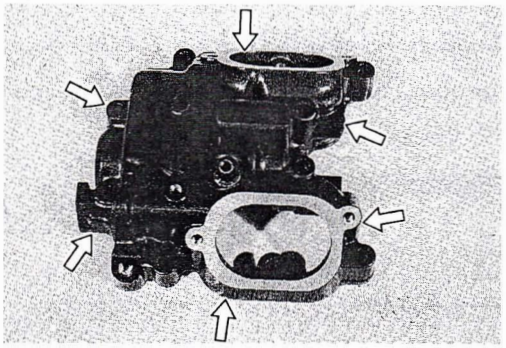


CYLINDER HEAD COVER DISTORTION

After removing sealant from the fitting surface of the cylinder head cover, place the cylinder head cover on a surface plate and check for distortion with a thickness gauge. Check points are shown in photograph.

Service Limit : 0.05 mm (0.002 in)

If the distortion exceeds the limit, replace the cylinder head cover.

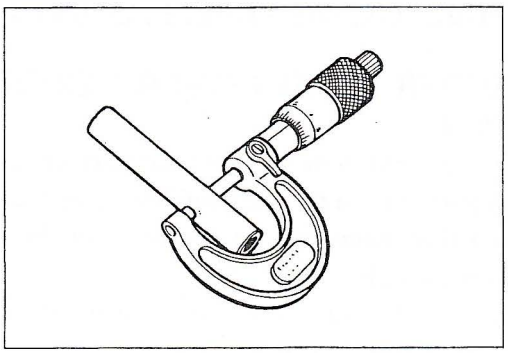


ROCKER ARM SHAFT O.D.

Measure the diameter of rocker arm shaft with a microteter.

Standard : 11.973—11.984 mm(0.4714—0.4718 in)

09900-20205 : Micrometer (0—25 mm)

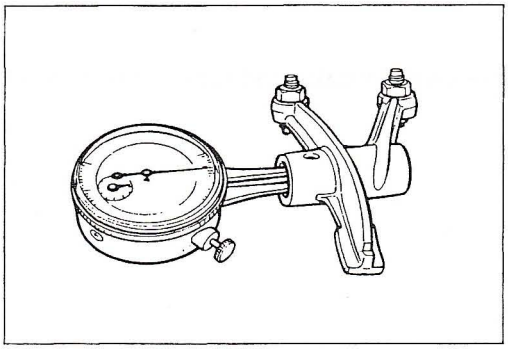


ROCKER ARM I.D.

When checking the valve rocker arm, the inside diameter of the valve rocker arm and wear of the camshaft contacting surface should be checked.

Standard : 12.000—12.018 mm (0.4724—0.4731 in)

09900-20605 : Dial calipers

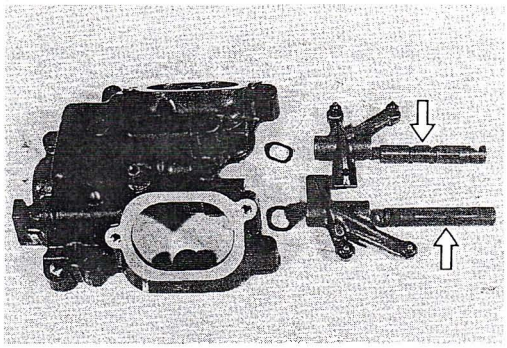


ROCKER ARM AND SHAFT REASSEMBLY

- Apply SUZUKI MOLY PASTE to the rocker arm shafts.

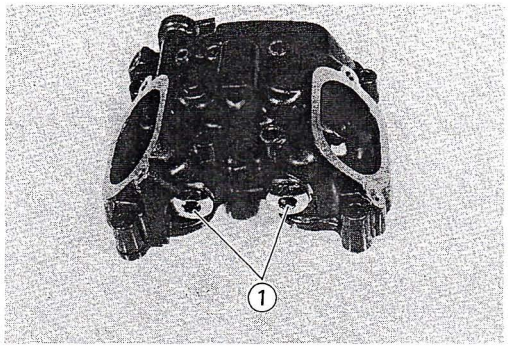
99000-25140 : SUZUKI MOLY PASTE

- Insert the rocker arm shafts with their threaded hole end positioned outside.



- Tighten each rocker arm shaft bolts to the specified torque.

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



NOTE:
Use new gasket on the set bolt ①.

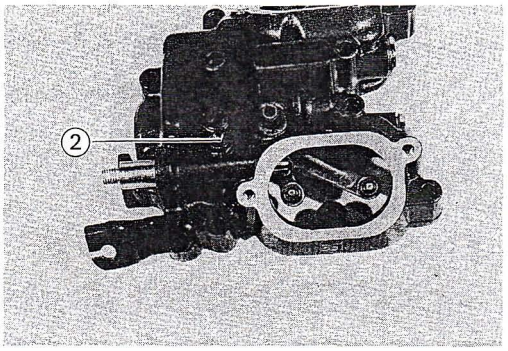
DE-COMP. SHAFT REASSEMBLY

- Apply SUZUKI MOLY PASTE to the de-comp. shaft.

99000-25140 : SUZUKI MOLY PASTE

- After inserting the de-comp. shaft, tighten its bolt to the specified torque.

Tightening torque : 8—12 N·m
(0.8—1.2 kg-m,6.0—8.5 lb-ft)

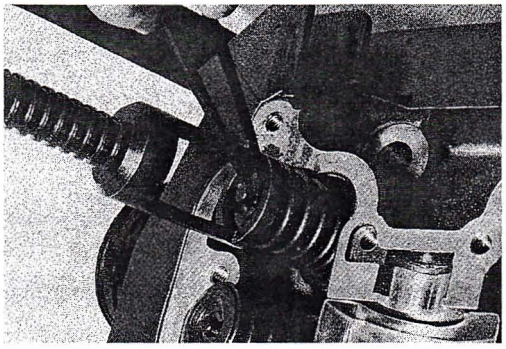


NOTE:
Use new gasket ② on the set bolt.

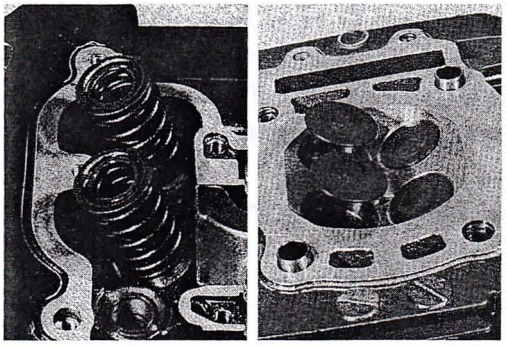
CYLINDER HEAD SERVICING

- Compress the valve springs with the special tools.
- Remove the valve cotters.

09916-14510 : Valve spring compressor
09916-14910 : Attachment
09916-84510 : Tweezers

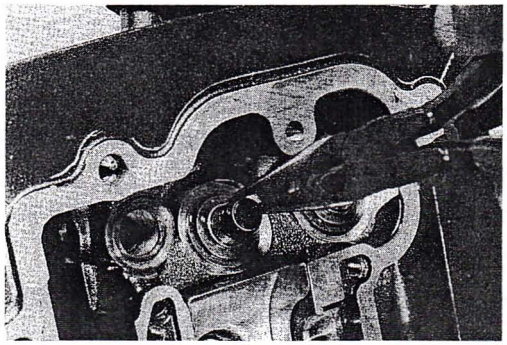


- Remove the valve spring ratainer, inner spring and outer spring.
- Remove the valves.



- Remove the oil seal, and remove the spring seat.

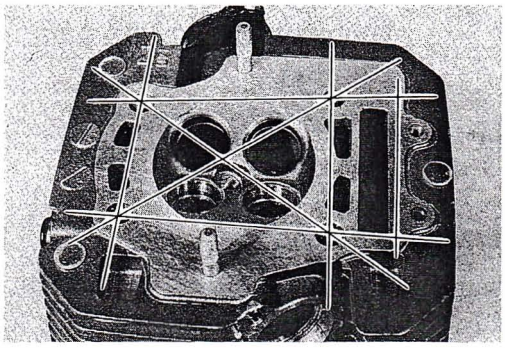
NOTE:
Removal of valves completes ordinary disassembling work. If valve guides have to be removed for replacement after inspection related parts, carry out the steps shown in valve guide servicing.



CYLINDER HEAD DISTORTION

Decarbon the combustion chamber.
Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder head.

Service Limit : 0.05 mm (0.002 in)

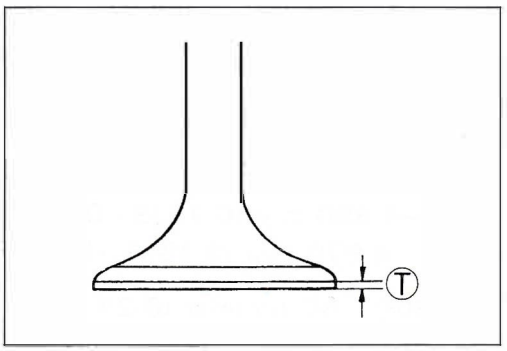


VALVE FACE WEAR

Measure the thickness Ⓣ and, if the thickness is found to have been reduced to the limit, replacle the valve.

NOTE:
Visually inspect each valve for wear of its seating face. Replace any valve with an abnormally worn face.

Service Limit : 0.5 mm (0.02 in)

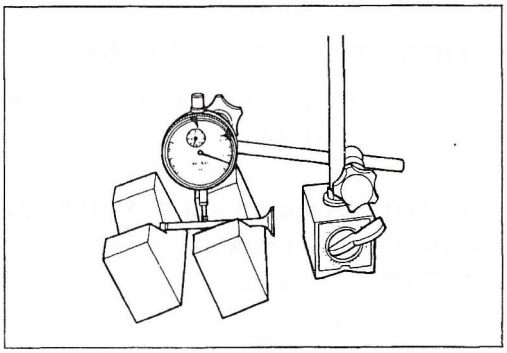


VALVE STEM RUNOUT

Support the valve with "V" blocks, as shown, and check its runout with a dial gauge. The valve must be replaced if the runout exceeds the limit.

Service Limit : 0.05 mm (0.002 in)

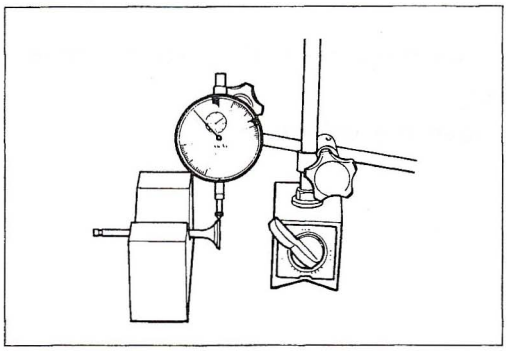
09900-20701 : Magnetic stand
09900-20606 : Dial gauge (1/100 mm)



VALVE HEAD RADIAL RUNOUT

Place the dial gauge at right angles to the valve head, and measure the valve head radial runout.
If it measures more than limit, replace the valve.

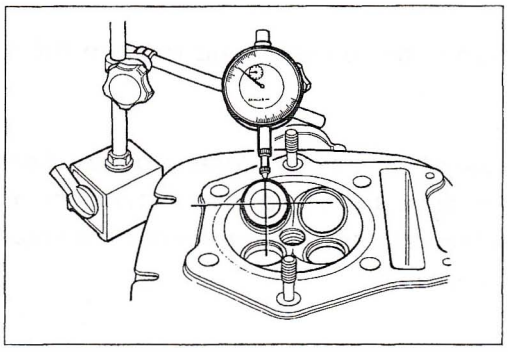
Service Limit : 0.03 mm (0.001 in)



VALVE GUIDE-VALVE STEM CLEARANCE

Measure the clearance in two directions, "X" and "Y" perpendicular to each other, by rigging up the dial gauge as shown. If the clearance measured exceeds the limit specified below, then determine whether the valve or the guide should be replaced to reduce the clearance to within the standard range:

	Standard	Limit
IN.	0.010—0.037 mm (0.0004—0.0015 in)	0.35 mm (0.014 in)
EX.	0.030—0.057 mm (0.0012—0.0022 in)	0.35 mm (0.014 in)

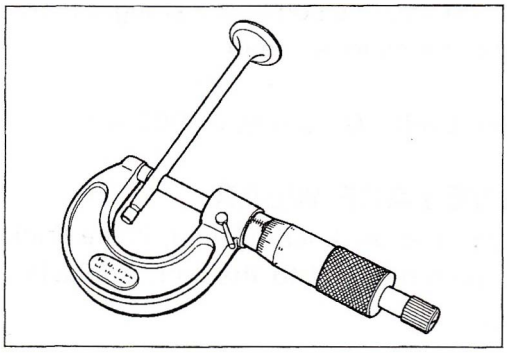


VALVE STEM WEAR

If the valve stem is worn down to the limit, when measured with a micrometer, and the clearance is found to be in excess of the limit indicated previously, replace the valve, if the stem is within the limit, then replace the guide. After replalcing valve or guide, be sure to re-check the clearance.

Valve stem O.D.
Standard
IN.: 4.975—4.990 mm (0.1959—0.1965 in)
EX.: 4.955—4.970 mm (0.1951—0.1957 in)

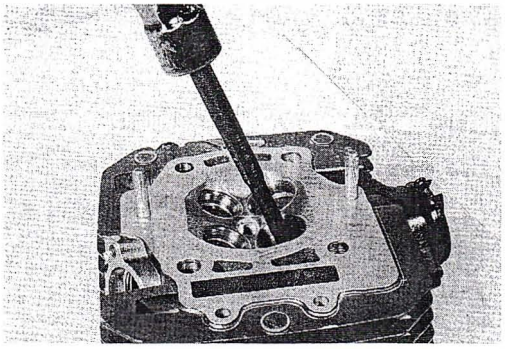
09900-20205 : Micrometer (0-25 mm)



VALVE GUIDE SERVICING

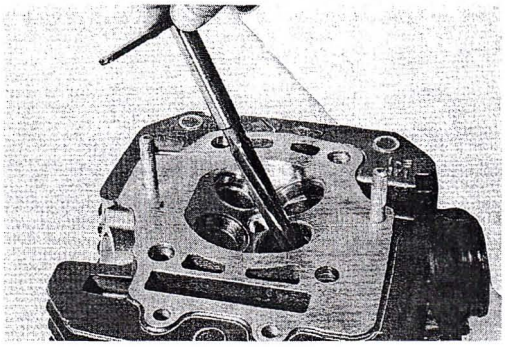
- Remove the valve guide with the special tool.

09916-44310 : Valve guide remover



- Re-finish the valve guide holes in cylinder head with a 10.8 mm reamer and handle.

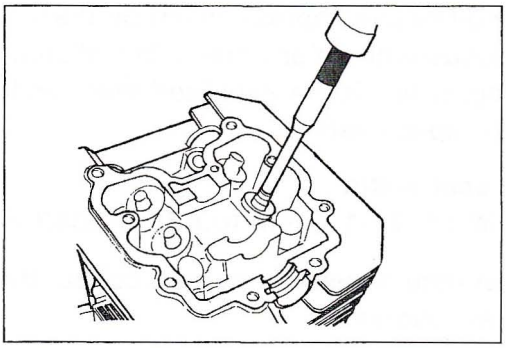
09916-34580 : 10.8 mm reamer
09916-34541 : Handle



- Fit a ring to each valve guide. Be sure to use new rings and valve guides. Rings and valve guides removed in disassembly must be discarded.

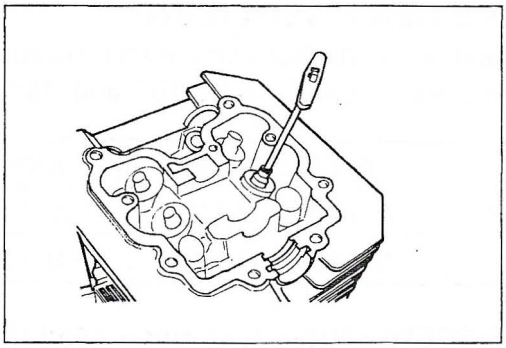
- Lubricate each valve guide and drive the guide into the guide hole with a valve guide installer.

09916-44310 : Valve guide installer and remover

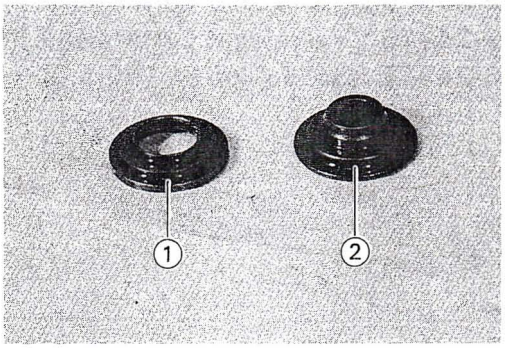


- After fitting valve guides, re-finish their guiding bores with a 5.0 mm reamer and handle. Be sure to clean and oil the guides after reaming.

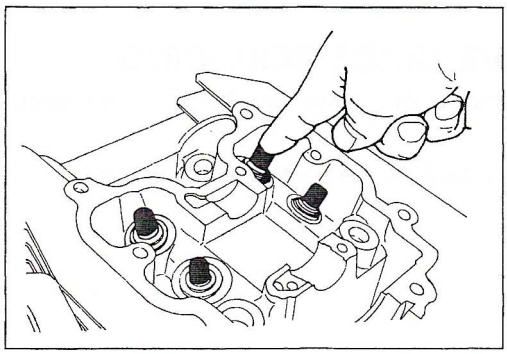
09916-34570 : 5.0 mm reamer
09916-34541 : Handle



- Install the valve spring seat ①. Be careful not to confuse the lower seat with the spring retainer ②.



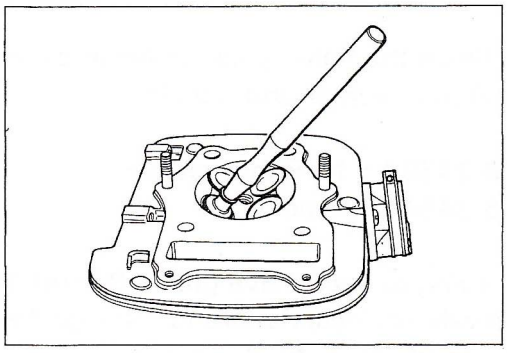
- Lubricate each stem seal with engine oil,and install the seal.



CAUTION:
Install the new stem seals.

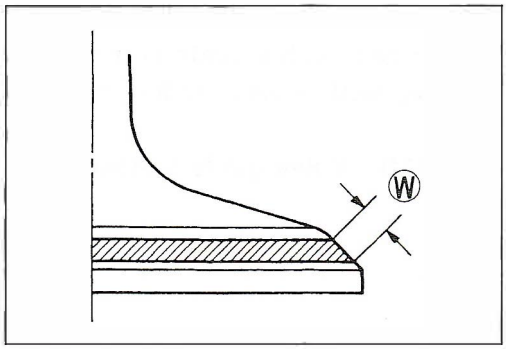
VALVE AND SEAT CONDITION
VALVE SEAT WIDTH

Coat the valve seat with prussian blue uniformly. Fit the valve and tap the coated seat with the valve face in a rotating manner, in order to obtain a clear impression of the seating contact. In this operation, use the lapper to hold the valve head.



The ring-like dye impression left on the valve face must be continuous-without any break. In addition, the width of the dye ring, which is the visualized seat ''width'', must be within the specification.

Valve seat width
STD. Ⓦ : 0.9—1.1 mm (0.035—0.043 in)

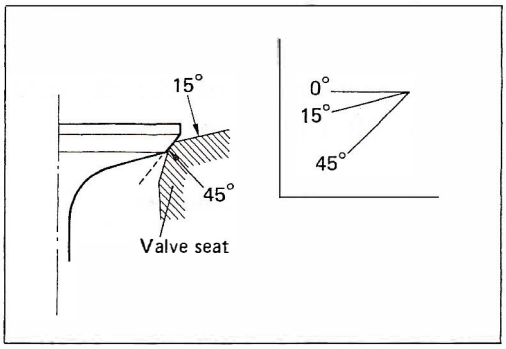


If either requirement is not met, correct the seat by servicing it as follows.

VALVE SEAT SERVICING

The valve seats for both intake and exhaust valves are angled to present two bevels, 15° and 45°

	INTAKE SIDE	EXHAUST SIDE
45°	N-116 or N-122	N-116 or N-122
15°	N-116 or N-121	N-116 or N-121



09916-20610 : Valve seat cutter head (N-121)
09916-20620 : Valve seat cutter head (N-122)
09916-24420 : Valve seat cutter head (N-116)
09916-24311 : Solid pilot (N-100-5.0)

NOTE:
The valve seat contact area must be inspected after each cut.

1. Insert with a slight rotation, the solid pilot that gives a snug fit. The shoulder on the pilot should be about 10 mm (0.39 in) from the valve guide.
2. Using the 45° cutter, descale and cleanup the seat with one or two turns.
3. Inspect the seat by the previous seat width measurement procedure. If the seat is pitted or burned, additional seat conditioning with the 45° cutter is required.

CAUTION:
Cut the minimum amount necessary from the seat to prevent the possibility of the valve stem becoming too close to the rocker arm for correct valve contact angle.

If the contact area is too low or too narrow, use the 45° cutter to raise and widen the contact area. If the contact area is too high or too wide, use the 15° cutter to lower and narrow the contact area.

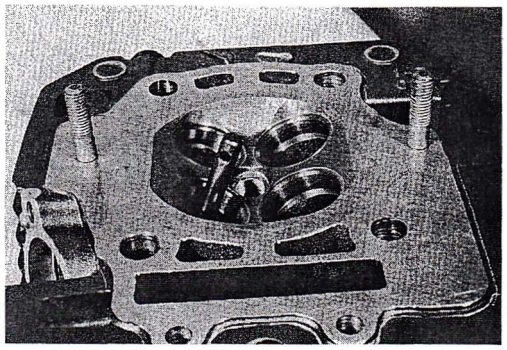
4. After the desired seat positon and width is achieved, use the 45° cutter very lightly to clean up any burrs caused by the previous cutting operations. DO NOT use lapping compound after the final cut is made. The finished valve seat should have a velvety smooth finish and not a highly polished or shiny finish. This will provide a soft surface for the final seating of the valve which will occur during the first few seconds of engine operation.
5. Clean and assemble the head and valve components. Fill the intake and exhaust ports with gasoline to check for leaks. If any leaks occur, inspect the valve seat and face for burrs or other things that could prevent the valve from sealing.

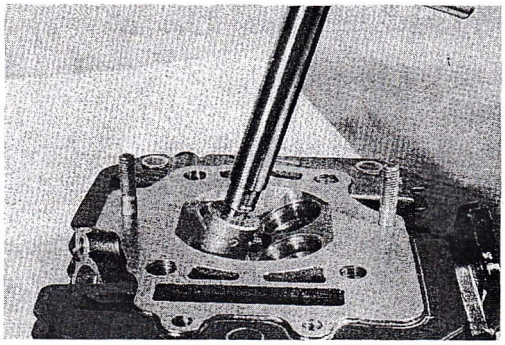
WARNING:
Always use extreme caution when handling gasoline.

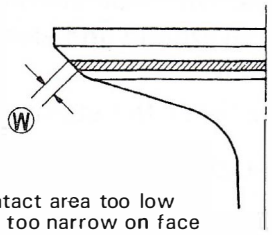
NOTE:
Be sure to adjust the valve clearance after reassembling the engine.

VALVE STEM END CONDITION

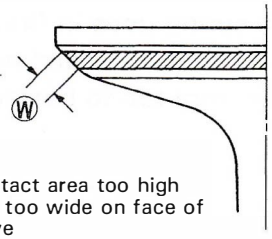
Inspec the valve stem end face for pitting and wear. If pitting or wear of the stem end face are present, the valve stem end may be resurfaced, providing that the length ① will not be reduced to less than 1.8 mm (0.07 in). If this length becomes less than 1.8 mm (0.07 in), the valve must be replaced. After installing a valve whose stem end has been ground off as above, check to ensure that the face ② of the valve stem end is above the cotters ③.



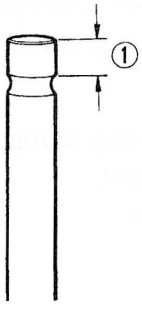


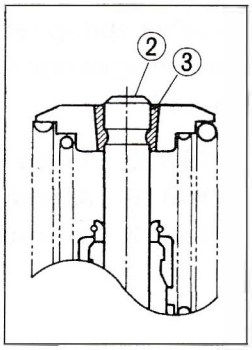


Contact area too low and too narrow on face of valve



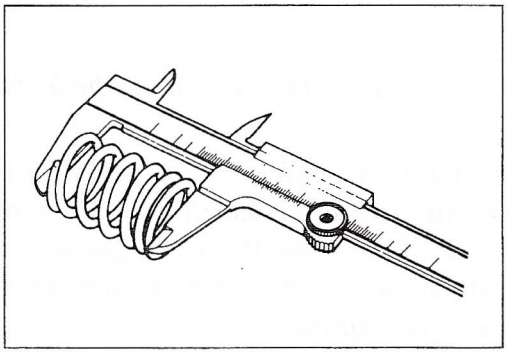
Contact area too high and too wide on face of valve



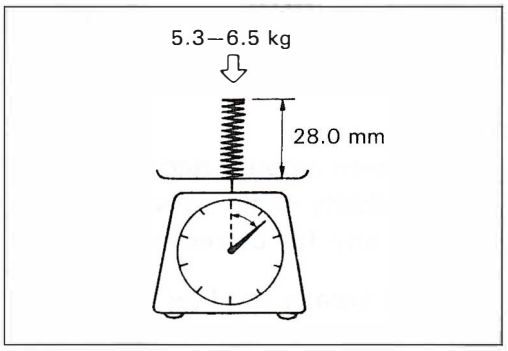


VALVE SPRING

Check the springs for strength by measuring their free lengths and also the force required to compress them. If the limit indicated below is exceeded by the free length reading or if the measured force does not fall within the range specified, replace both the inner and outer springs as a set.



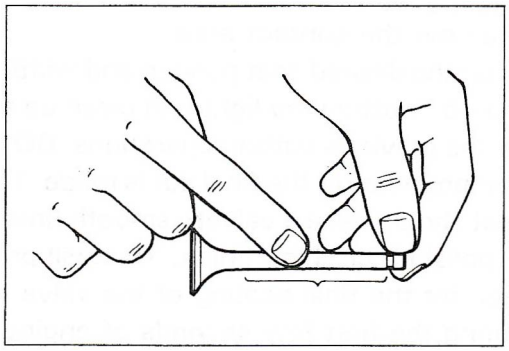
Valve spring free length
Service Limit
INNER : 35.0 mm (1.38 in)
OUTER : 37.8 mm (1.49 in)



Valve spring tension
Standard
INNER : 5.3–6.5 kg/28.0 mm (11.7–14.3 lbs/1.10 in)
OUTER : 13.1–15.1 kg/31.5 mm (28.9–33.3 lbs/1.24 in)

VALVE AND VALVE SPRING REASSEMBLY

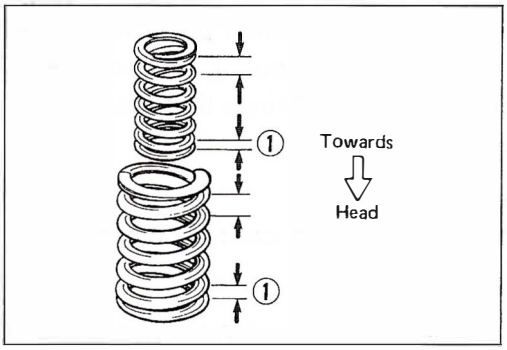
- Insert the valves, with their stems coated with (SUZUKI MOLY PASTE) all around and along the full stem length without any break.
  Similarly oil the lip of the stem seal.



99000-25140 : SUZUKI MOLY PASTE

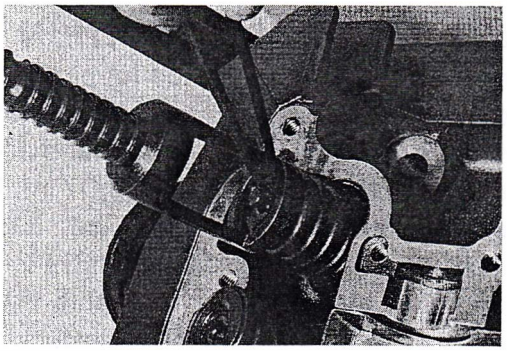
CAUTION:
When inserting each valve, take care not to damage the lip of the stem seal.

- Install the valve springs, making sure that the close-pitch end ① of each spring goes in first to rest on the head. The coil pitch of both inner and outer springs vary: the pitch decreases from top to bottom, as shown in the illustration.



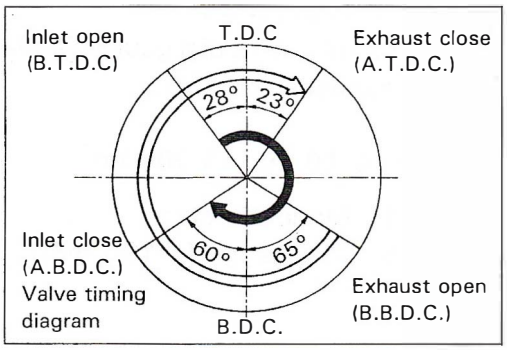
- Fit a valve spring retainer, compress the springs with a valve spring compressor and fit the cotter halves to the stem end.

09916-14510 : Valve spring compressor
09916-14910 : Attachment
09916-84510 : Tweezers



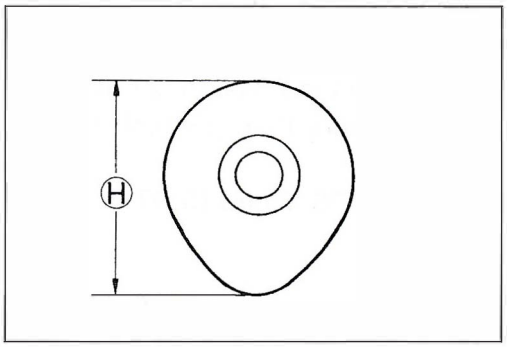
CAMSHAFT

The camshaft should be checked for runout and also for wear of cams and journals if the engine has been noted to produce abnormal noise or vibration or to lack output power. Any of these malconditions could be caused by a worn camshaft.



CAMSHAFT CAM WEAR

Worn-down cams are often the cause of mistimed valve operation resulting in reduced output power. The limit of cam wear is specified for both intake and exhaust cams in terms of cam height Ⓗ, which is to be measured with a micrometer. Replace the camshaft if found it worn down to the limit.



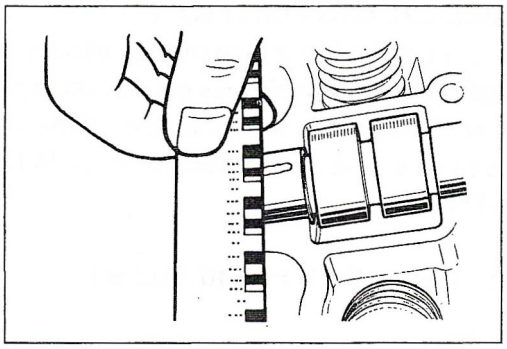
Cam height

Height Ⓗ	Service Limit
Intake cam	33.13 mm (1.3043 in)
Exhaust cam	33.16 mm (1.3055 in)

09900-20202 : Micrometr (25—50 mm)

CAMSHAFT JOURNAL WEAR

Determine whether each journal is worn down to the limit or not by measuring camshaft journal oil clearance with the camshaft installed. Use plastigauge to read the clearance, which is specified as follows.



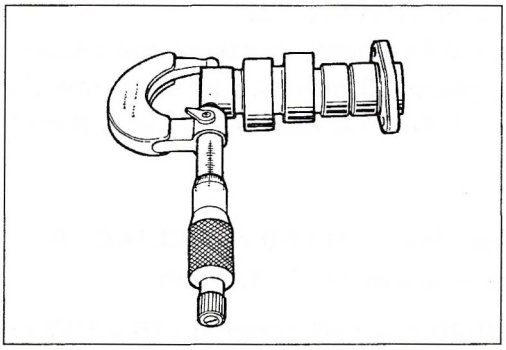
Camshaft journal oil clearance
Service Limit : 0.150 mm (0.0059 in)

- Tighten the cylinder head cover bolts evenly and diagonally to the specified torque.

Tightening torque : 8—12 N·m
(0.8—1.2 kg-m, 6.0—8.5 lb-ft)
09900-22301 : Plastigauge

NOTE:
To properly measure the oil clearance with plastigauge, all gasket material must be ramoved from fitting surfaces of cylinder head and cover. Do not apply SUZUKI BOND No. 1207B/1215 until after the oil clearance has been determined.

If the camshaft journal oil clearance measured exceeds the limit, measure the outside diameter of camshaft. Replace either the cylinder head set or the camshaft if the clearance is incorrect.



Camshaft journal O.D.

	Standard
Right side	21.959—21.980 mm (0.8645—0.8654 in)
Left side	17.466—17.484 mm (0.6876—0.6883 in)

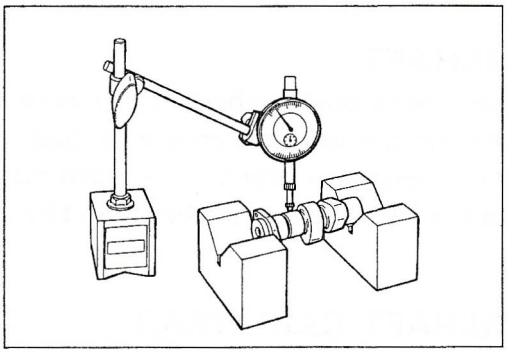
09900-20205 : Micrometer (0—25 mm)

CAMSHAFT RUNOUT

Measure the runout with a dial gauge. Replace the camshaft if the runout exceeds the limit.

Service Limit : 0.10 mm (0.004 in)

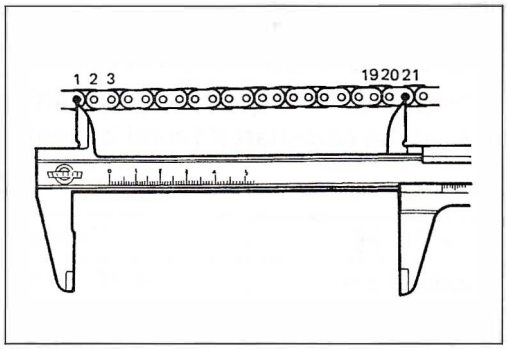
09900-20701 : Magnetic stand
09900-20606 : Dial gauge (1/100 mm)



CAM CHAIN 20-PITCH LENGTH

Pull the chain tight to remove any slack, then using venier calipers, measure the 20-pitch (21 pins) length of cam chain. If it measures more than the limit replace the cam chain.

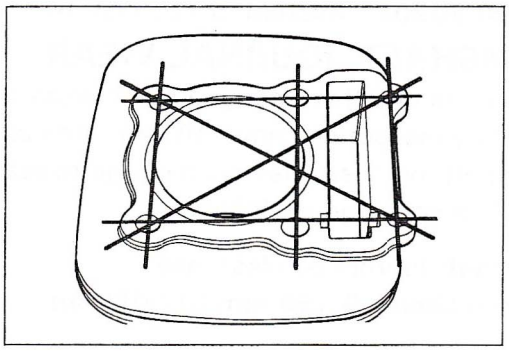
Service Limit : 128.9 mm (5.07 in)



CYLINDER DISTORTION

Check the gasketed surface of the cylinder for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any positon of the straightedge exceeds the limits, replace the cylinder.

Service Limit : 0.05 mm (0.002 in)

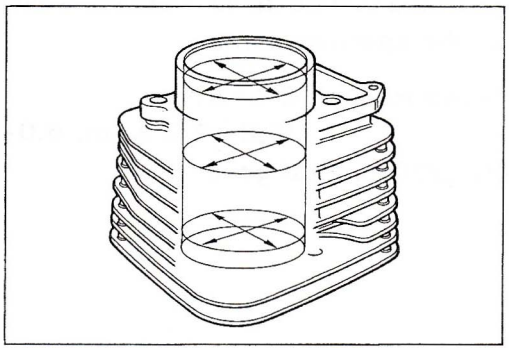


CYLINDER BORE

Measure the cylinder bore diameter at six places. If any one of the measurements exceeds the limit, overhaul the cylinder and replace the piston with an oversize, or replace the cylinder.

Service Limit : 79.075 mm (3.1132 in)

09900-20508 : Cylinder gauge set

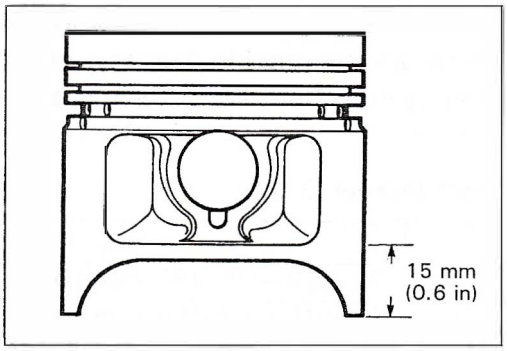


PISTON DIAMETER

Using a micrometer, measure the piston outside diameter at the place 15 mm (0.6 in) from the skirt end as shown in Fig. If the measurement is less than limit, replace the piston.

Service Limit : 78.880 mm (3.1055 in)
Piston oversize : 0.5, 1.0 mm

09900-20204 : Micrometer (75—100 mm)



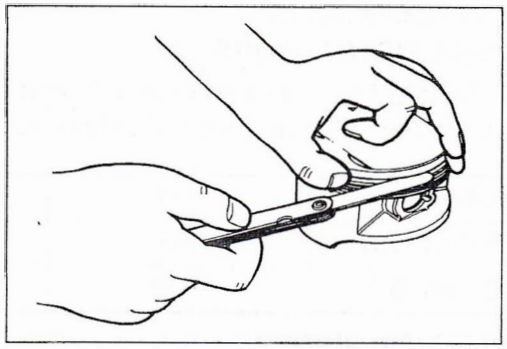
PISTON-CYLINDER CLEARANCE

As a result of the previous measurement, if the piston to cylinder clearance exceeds the limit, overhaul the cylinder and use and oversize piston, or replace both cylinder and piston.

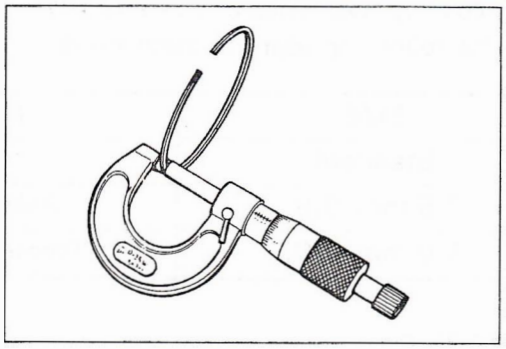
Service Limit : 0.120 mm (0.0047 in)

PISTON RING-GROOVE CLEARANCE

Using a thickness gauge, measure the side clearance of the 1st and 2nd rings. If any of the clearances exceeds the limit, replace both piston and piston rings.



Piston ring-groove clearance
Service Limit
1st : 0.180 mm (0.0071 in)
2nd : 0.150 mm (0.0059 in)
09900-20803 : Thickness gauge



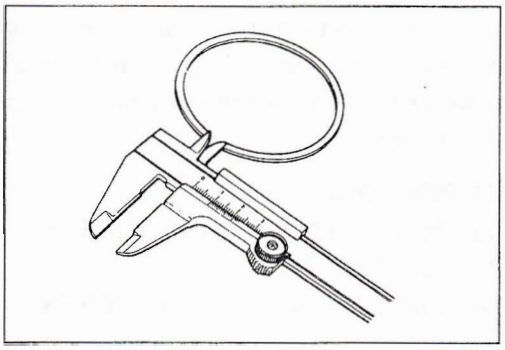
Piston ring groove width
Standard
1st and 2nd : 1.01—1.03 mm (0.040—0.041 in)
Oil : 2.01—2.03 mm (0.079—0.080 in)

Piston ring thickness
Standard
1st and 2nd : 0.97—0.99 mm (0.038—0.039 in)

NOTE:
Using a soft-metal scraper, decarbon the crown of the piston. Clean the ring grooves similarly.

PISTON RING FREE END GAP AND PISTON RING END GAP

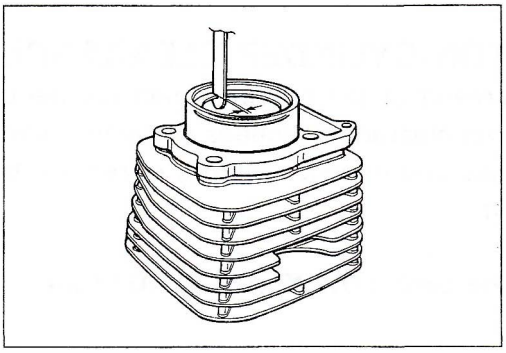
Before installing piston rings, measure the free end gap of each ring using vernier calipers.
Next, fit the ring in the cylinder, and measure each ring end gap using a thickness gauge.
If any ring has an excess end gap, replace the ring.



Piston ring free end gap
Service Limit
1st : 8.2 mm (0.32 in)
2nd : 8.9 mm (0.35 in)
09900-20101 : Vernier calilpers

Piston ring end gap
Service Limit
1st and 2nd : 0.70 mm (0.028 in)

09900-20803 : Thickness gauge



OVERSIZE RINGS

OVERSIZE PISTON RINGS

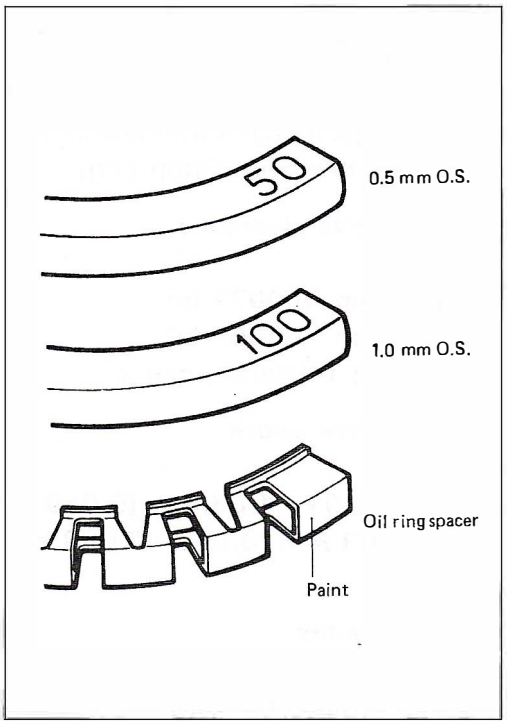
The following two types of oversize piston rings are used. They bear the following identification numbers.

Piston ring	1st	2nd
0.5 mm O.S.	50	50
1.0 mm O.S.	100	100

OVERSIZE OIL RINGS

The following two types of oversize oil rings are used, They bear the following identification marks.

SIZE	MARK
Standard	NIL
0.5 mm O.S.	Painted red
1.0 mm O.S.	Painted yellow



OVERSIZE RAIL

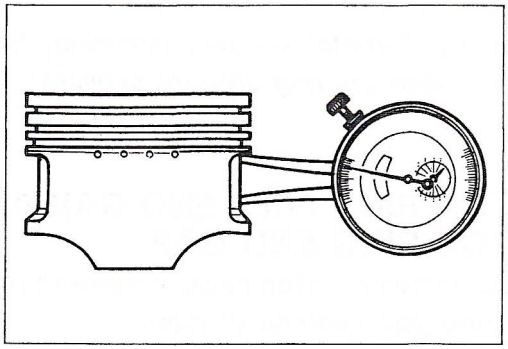
Just measure outside diameter to identify the side rail as there is no mark or number on it.

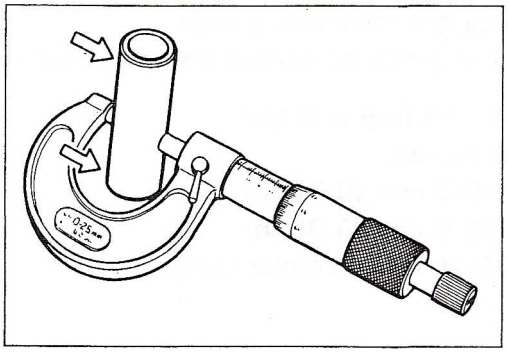
PISTON PIN AND PIN BORE

Using a caliper gauge, measure the piston pin bore inside diameter, and using a micrometer measure the piston pin outside diameter. If the difference between the these two measurements is more than the limits, replace both piston and piston pin.

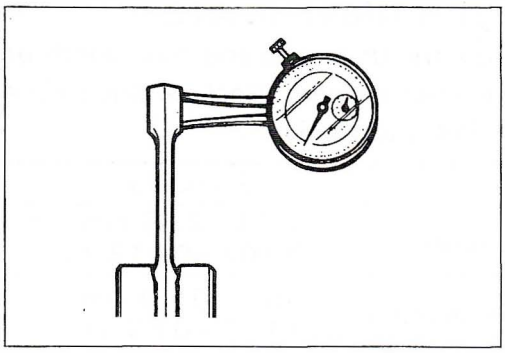
PISTON PIN BORE
Service Limit : 20.030 mm (0.7886 in)
PISTON PIN O.D.
Service Limit : 19.980 mm (0.7866 in)

09900-20605 : Dial caliper
09900-20205 : Micrometer (0—25 mm)





CONROD SMALL END I.D.

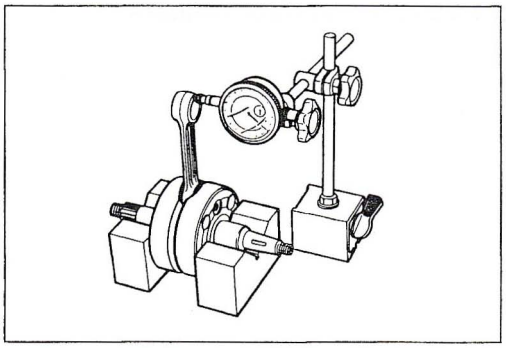


Using a caliper gauge, measure the conrod small end insdie diameter.

Service Limit : 20.040 mm (0.7890 in)

If the conrod small end bore inside diameter exceeds the limit, replace conrod.

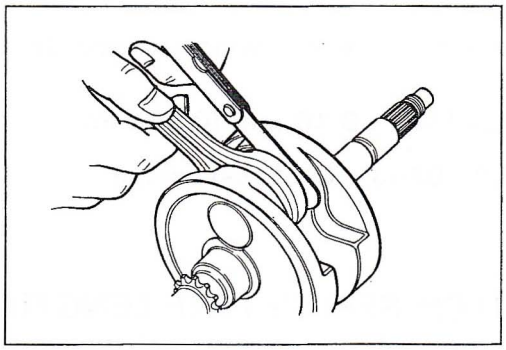
CONROD DEFLECTION AND CONROD BIG END SIDE CLEARANCE



Wear on the big end of the conrod 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 conrod's big end.

Service Limit : 3.0 mm (0.12 in)

09900-20701 : Magnetic stand
09900-20606 : Dial gauge (1/100 mm)
09900-21304 : V-block



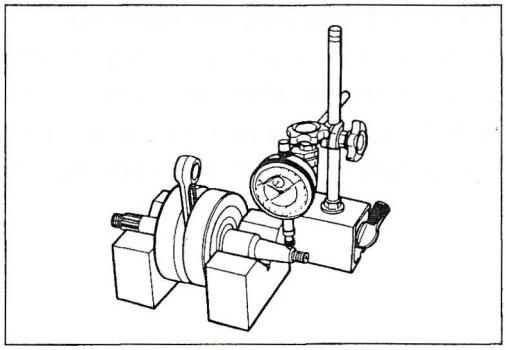
Push the big end of the conrod to one side and measure the side clearance with a thickness gauge.

Standard : 0.10—0.55 mm (0.004—0.022 in)
Service Limit : 1.0 mm (0.04 in)

09900-20803 : Thickness guage

Where the limit is exceeded, replace crankshaft assembly or reduce the deflection and the side clearance to within the limit by replacing the worn parts—conrod, big end bearig and crank pin etc.

CRANKSHAFT RUNOUT



Support the crankshaft with "V" blocks as shown, with the two end journals resting on the blocks.
Position the dial gauge, as shown, and rotate the crankshaft slowly to read the runout.
Correct or replace the crankshaft if the runout is greater than the limit.

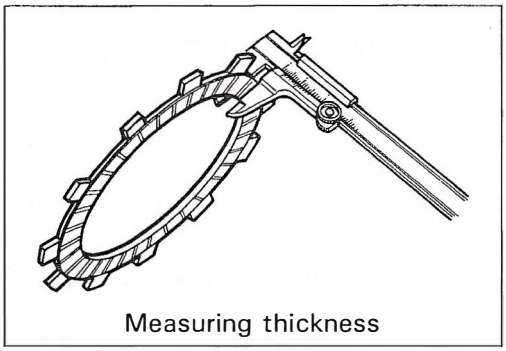
Service Limit : 0.05 mm (0.002 in)

CLUTCH DRIVE PLATE

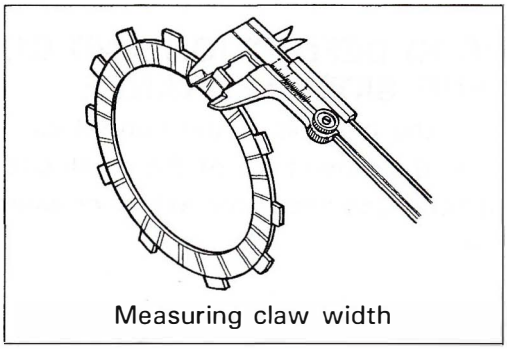
Measure the thickness and claw width of each drive plate with vernier calipers. Replace drive plates found to have worn down to the limit.

	Standard	Service Limit
Thickness	2.72—2.88 mm (0.107—0.113 in)	2.42 mm (0.095 in)
Claw width	15.8—16.0 mm (0.62—0.63 in)	15.2 mm (0.60 in)

09900-20101 : Vernier calipers



Measuring thickness



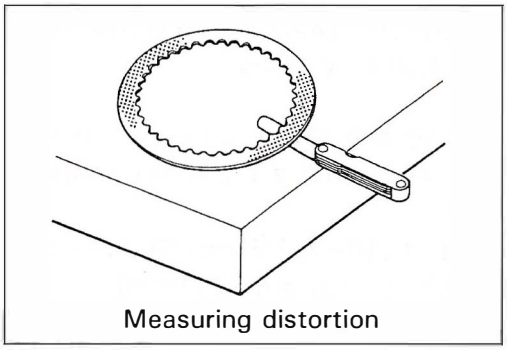
Measuring claw width

CLUTCH DRIVEN PALTE

Measure each driven plate for distortion with a thickness gauge.
Replace driven plates which exceed the limit.

Service Limit : 0.10 mm (0.004 in)

09900-20803 : Thickness gauge



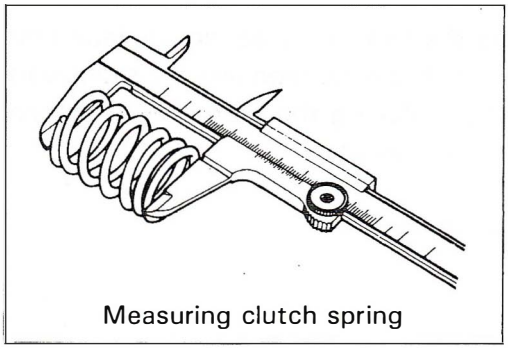
Measuring distortion

CLUTCH SPRING FREE LENGTH

Measure the free length of each coil spring with a vernier calipers, and determine the elastic strength of each. Replalce any spring not within the limit.

Service Limit : 29.5 mm (1.16 in)

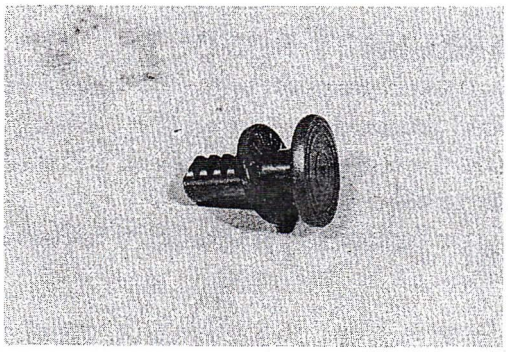
09900-20101 : Vernier calipers



Measuring clutch spring

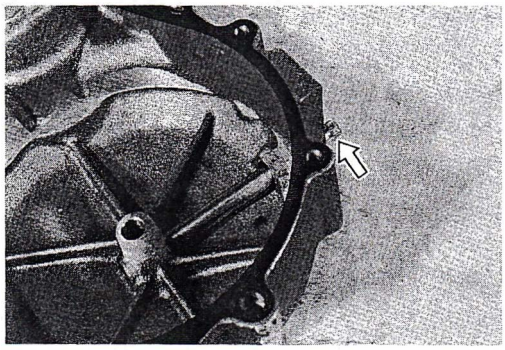
CLUTCH RELEASE BEARING

Inspect the release bearing for any abnormality, particularly cracks, 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.



CLUTCH RELEASE PINION AND RACK

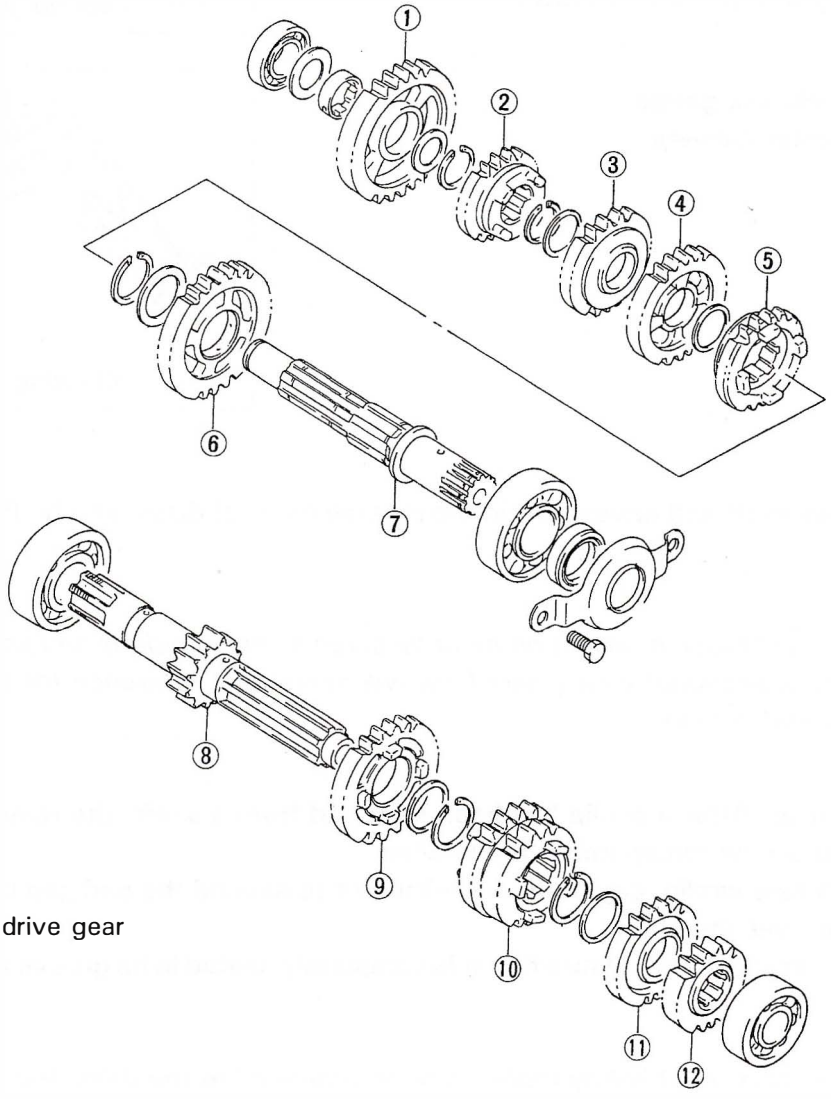
Rotate the clutch release pinion by hand to inspect for a smooth rotation. If a large resistance is felt to rotation, inspect the pinion and rack for damage or wear. If the defect is found, replace them as a set.



TRANSMISSION

DISASSEMBLY

- Disassemble the transmission gears as shown in the illustration.



① Low driven gear
② Top driven gear
③ 4th driven gear
④ 3rd driven gear
⑤ 5th driven gear
⑥ 2nd driven gear
⑦ Driveshaft
⑧ Countershaft/Low drive gear
⑨ Top drive gear
⑩ 4th/3rd drive gear
⑪ 5th drive gear
⑫ 2nd drive gear

GEARSHIFT FORK-GROOVE CLEARANCE

Using a thickness gauge, check the shifting fork clearance in the groove of its gear.
The clearance for each of the three shifting forks plays an improtant role in the smoothness and positiveness of shifting action.

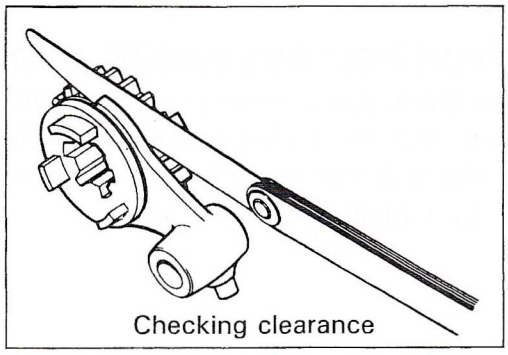
Shift fork-Groove clearance
Standard : 0.1—0.3 mm (0.004—0.012 in)
Service Limit : 0.5 mm (0.020 in)

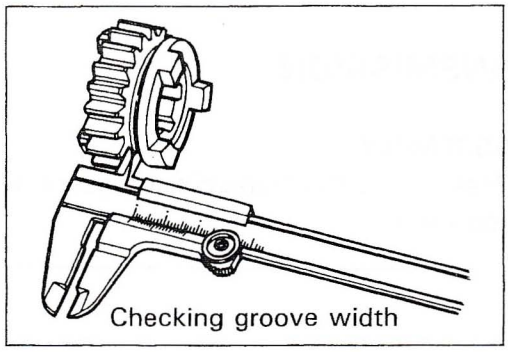
If the clearance checked is noted to exceed the limit specified, replace the fork or its gear, or both.

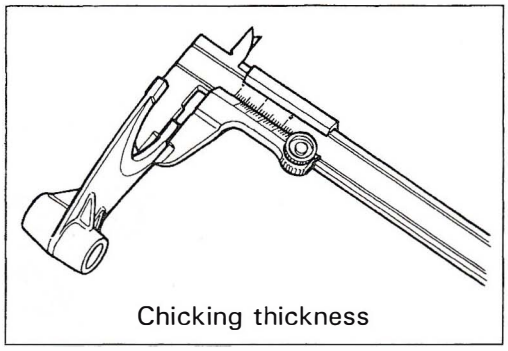
Shift fork groove width
Standard : 5.0—5.1 mm (0.197—0.200 in)

Shift fork thickness
Standard : 4.8—4.9 mm (0.189—0.193 in)

09900-20803 : Thickness gauge
09900-20101 : Vernier calipers


Checking clearance


Checking groove width


Chicking thickness

REASSEMBLY

Assemble the countershaft and driveshaft, in the reverse order of disassembly. Pay attention to following points:

NOTE:
In reassembling the transmission, attention must be given to the locations and positions of washers and circlips. The cross sectional view given here will serve as a reference for correctly mounting the gears, washers and circlips.

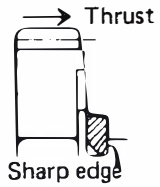
CAUTION:

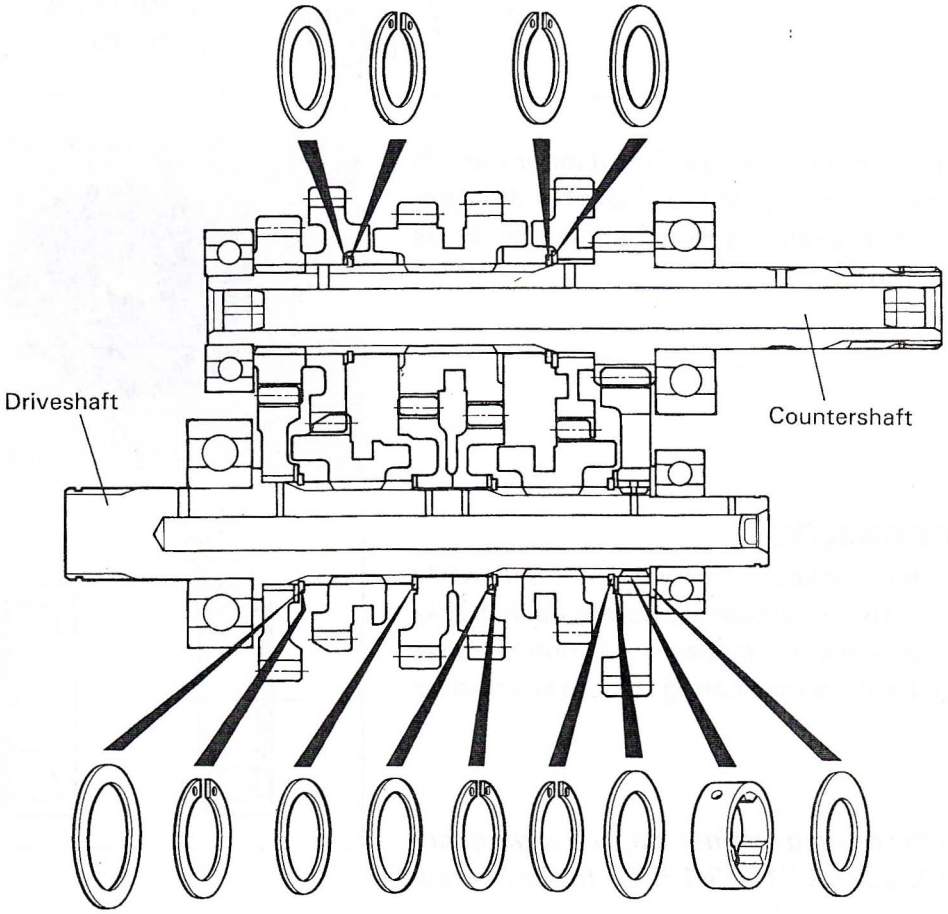
* **Never reuse a circlip. After a circlip has been removed from a shaft, the removed circlip should be discarded and a new circlip must be installed.**
* **When installing a new circlip, care must be taken not to expand the end gap larger than required to slip the circlip over the shaft.**
* **After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

NOTE:
Before installing the gears, coat lightly moly paste or engine oil to the driveshaft and countershaft.

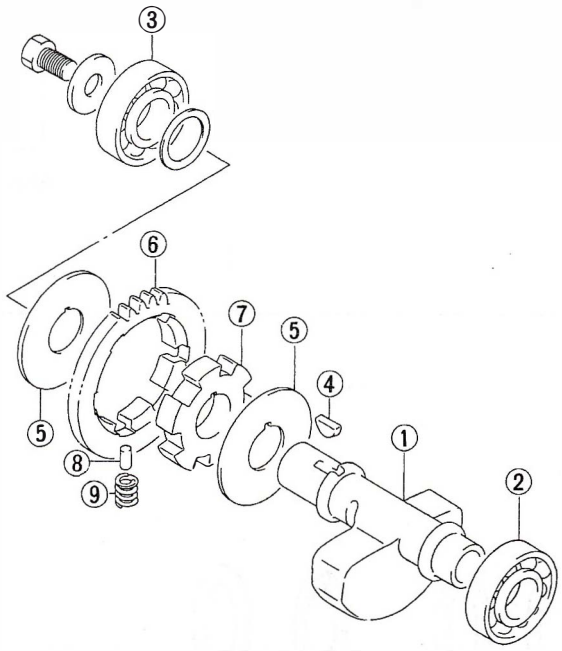
99000-25140 : SUZUKI MOLY PASTE

- When installing a new circlip, pay attention to the direction of the circlip. Fit it to the side where the thrust is as shown in figure.



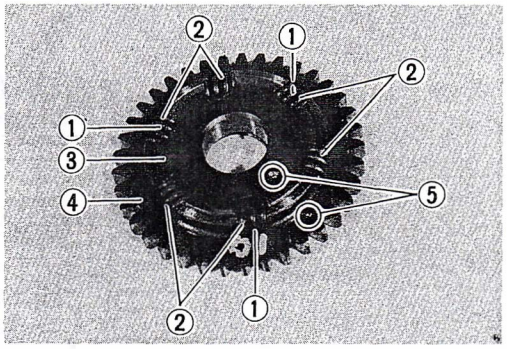


BALANCER SHAFT AND GEARS



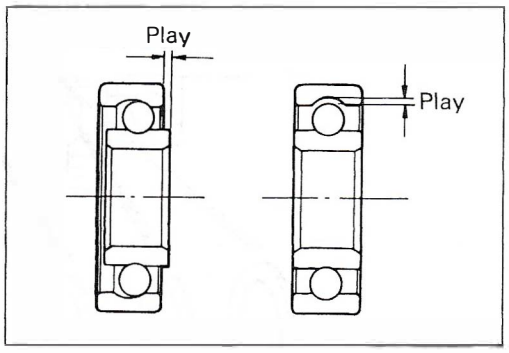
① Crank balancer shaft
② Bearing, L
③ Bearing,R
④ Key
⑤ Washer
⑥ Balancer driven gear
⑦ Driven gear inner race
⑧ Pin (3 pcs)
⑨ Spring (6 pcs)

- When installing the pins ①, springs ② and inner race ③ to the balancer driven gear ④, set the pins ① to the symmetrical position, and align the punched marks ⑤ as shown in the illustration.



CRANKCASE BEARINGS

Inspect the play of the crankcase bearings by hand while they are in the right and left crankcases. Rotate each crankcase bearing inner race by hand to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual.



NOTE:
When reassembling the bearing retainer, apply a small quantity of THREAD LOCK SUPER "1303/1322" to the bearing retainer screws.

99000-32030 : THREAD LOCK SUPER "1303" (U.S.A.)
99000-32110 : THREAD LOCK SUPER "1322" (Others)

ENGINE REASSEMBLY

Reassembly is generally performed in the reverse order to 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.

NOTE:
Apply engine oil to each running and sliding part before reassembling.

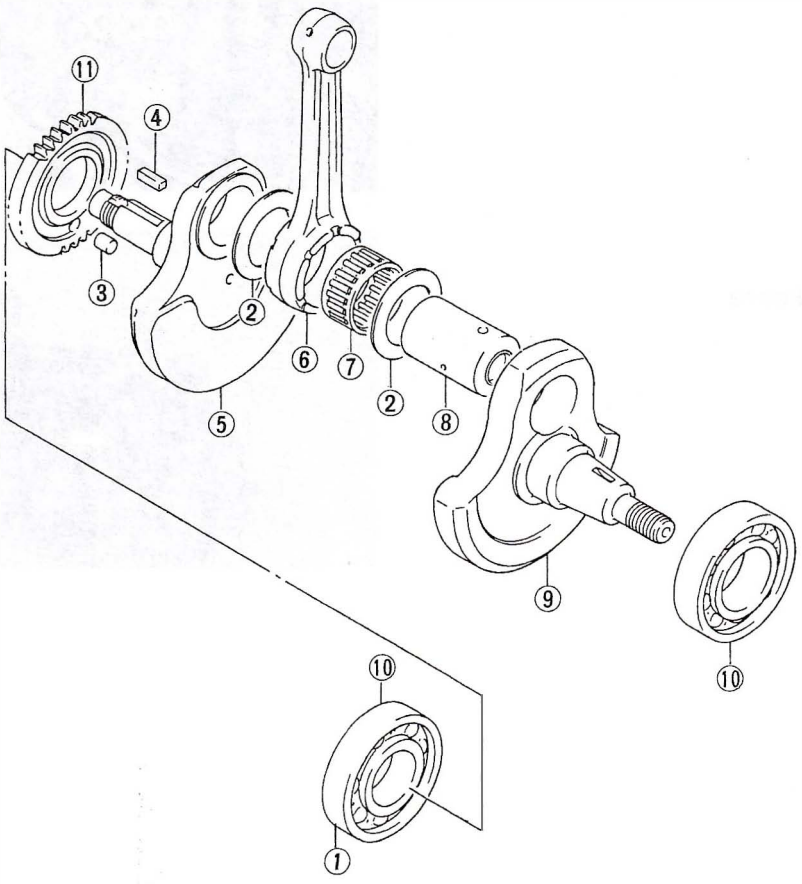
OIL SEALS

- Fit the respective oil seals.
- Coat SUPER GREASE "A" to the lip of each oil seal.

99000-25030 : SUZUKI SUPER GREASE "A" (U.S.A.)
99000-25010 : SUZUKI SUPER GREASE "A" (Others)

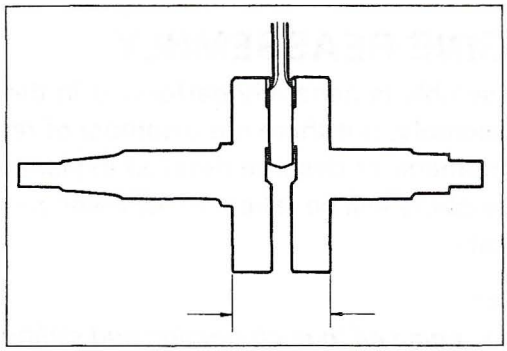
CAUTION:
Replace the oil seals with new ones every disassembly to prevent oil leakage

CRANKSHAFT



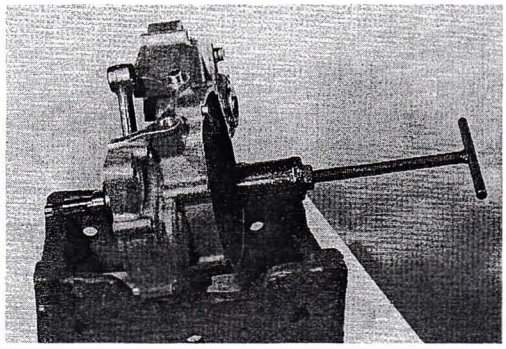
① Bearing, R
② Thrust washer
③ Pin
④ Key
⑤ Crankshaft, R
⑥ Conrod
⑦ Bearing
⑧ Crank pin
⑨ Crankshaft, L
⑩ Bearing, L
⑪ Balancer drive gear

- Decide the width between the webs referring to the figure below when rebuilding the crankshaft.



STD width between webs : 60.0 ± 0.1 mm (2.362 ± 0.004 in)

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

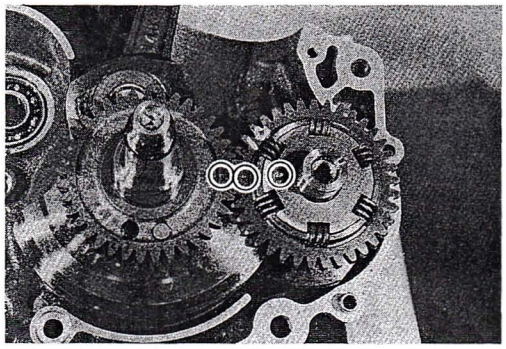


09910-32812 : Crankshaft installer

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.

BALANCERSHAFT AND GEARS

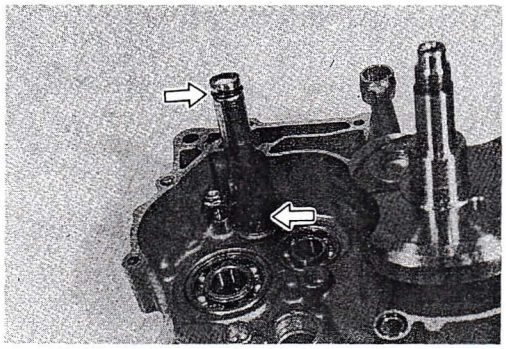
- When installing the balancer drive gear and driven gear, align the three punched marks.



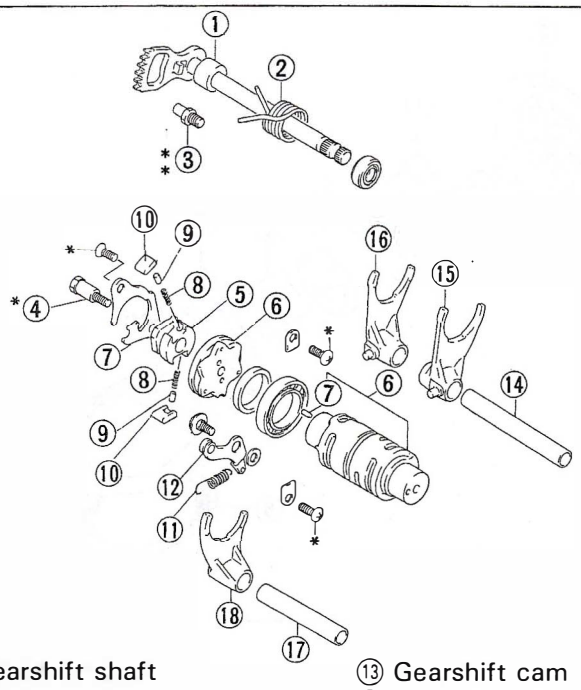
OIL PIPE

Install the oil pipe to the crankcase.

NOTE:
Use the new O-rings.

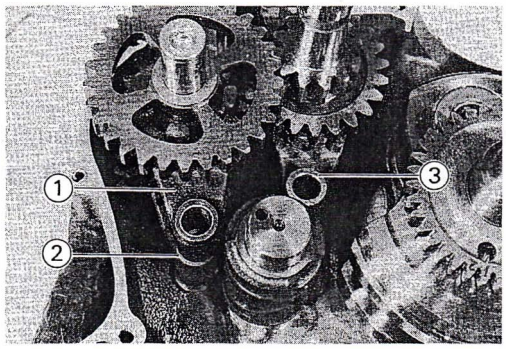


GEARSHIFT CAM AND FORKS

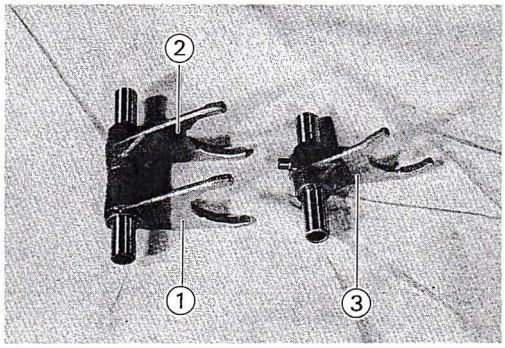


① Gearshift shaft
② Return spring
③ Gearshift arm stopper
④ Cam driven gear securing bolt
⑤ Cam driven gear
⑥ Gearshift cam stopper plate
⑦ Cam guide
⑥ Spring
⑨ Pin
⑩ Gearshift pawl
⑪ Gearshift cam stopper spring
⑫ Gearshift cam stopper
⑬ Gearshift cam
⑭ Fork shaft No.1
⑮ Gearshift fork No.2
⑮ Gearshift fork No.1
⑰ Fork shaft No.2
⑱ Gearshift fork No.3
*: Apply THREAD LOCK SUPER "1303/1322"
**: Apply THREAD LOCK SUPER "1303"

- After installing the countershaft assembly and driveshaft assembly into the left crankcase, fit the gearshift forks ① , ② and ③ into the gearshift fork grooves.

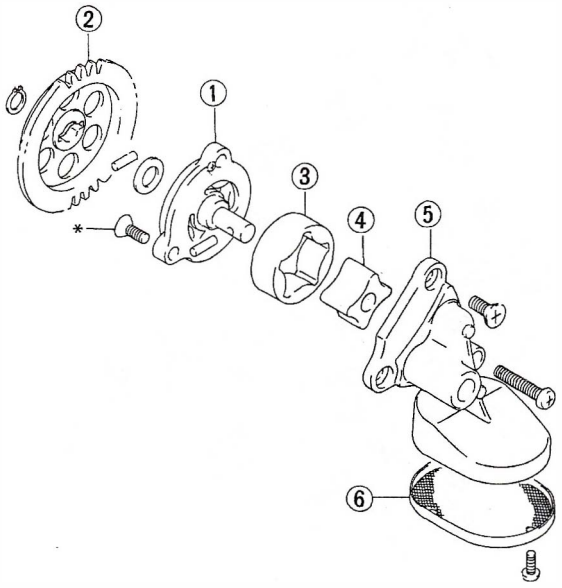


① For 4th driven gear (No. 1)
② For Top driven gear (No. 2)
③ For 3rd drive gear (No. 3)



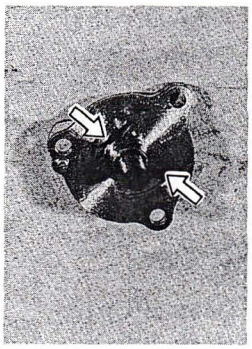
NOTE:
Three kinds of gearshift forks, ①, ② and ③ are used. They reassemble each other very closely in external appearance and configuration.
Carefully examine the illustration for correct installing positions and directions.

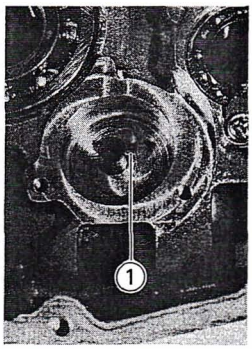
OIL PUMP AND OIL SUMP FILTER



① Oil pump No.1
② Oil pump driven gear
③ Outer rotor
④ Inner rotor
⑤ Oil pump No.2
⑥ Oil sump filter

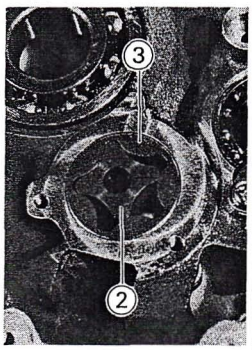
- Before mounting the oil pump, apply engine oil to the sliding surfaces of the case, outer rotor, inner rotor and shaft.
- Install the oil pump No.1.
- Install the pin ① .

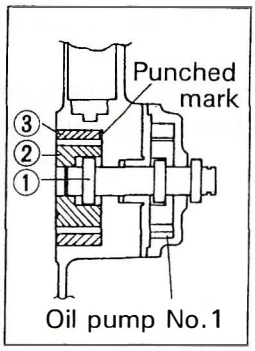




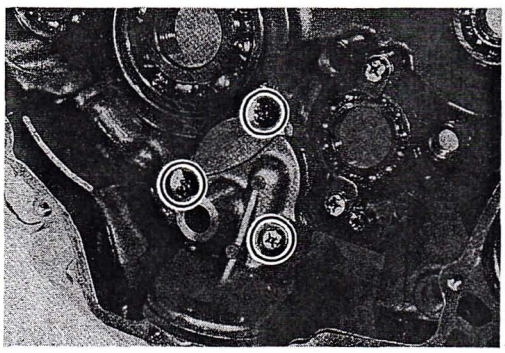
- When installing the inner rotor ②, align the groove of inner rotor with pin ①.

CAUTION:
When installing the outer rotor ③, the punched mark on the outer rotor must face to the inside (Oil pump No.1 side).





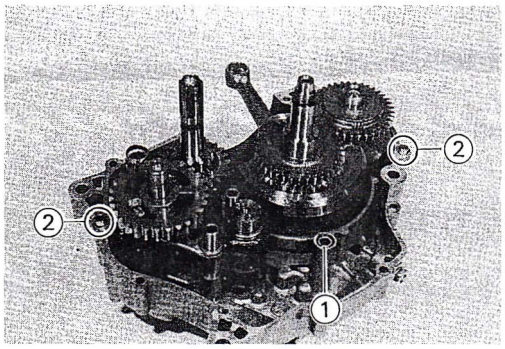
- Apply engine oil to the rotors.
- Install the oil sump filter.

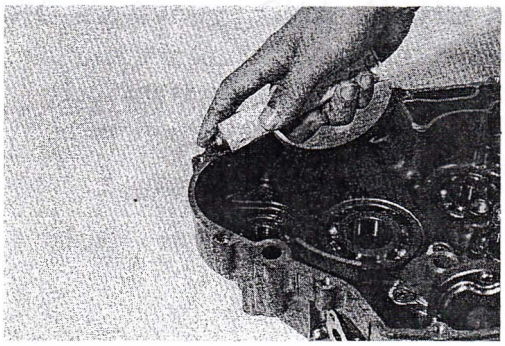


CRANKCASE

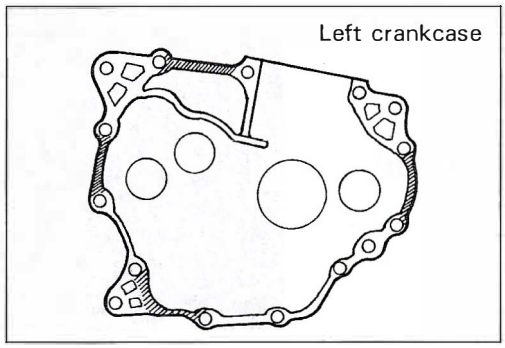
When reassembling the crankcase pay attention to the following points:

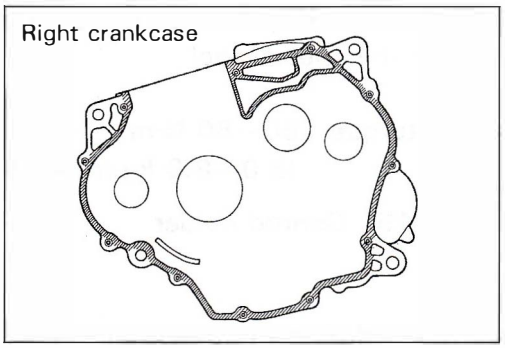
- Remove sealant material on the mating surfaces of right and left halves of crankcase and thoroughly remove oil stains.
- Fit the new O-ring ① and dowel pins ② on the left half as shown in Fig.
- Apply engine oil to the conrod big end of the crankshaft and all parts of the transmission gears.
- Apply SUZUKI BOND No. 1207B/1215 uniformly to the mating surface of the right and left crankcases as shown in the illustration, and assemble the cases within few minutes.





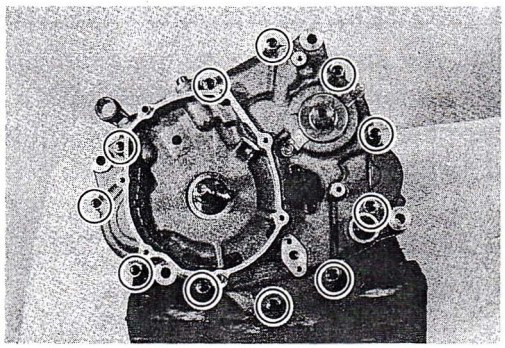
99104-31140 : SUZUKI BOND No. 1207B (U.S.A.)
99000-31110 : SUZUKI BOND No.1215 (Others)



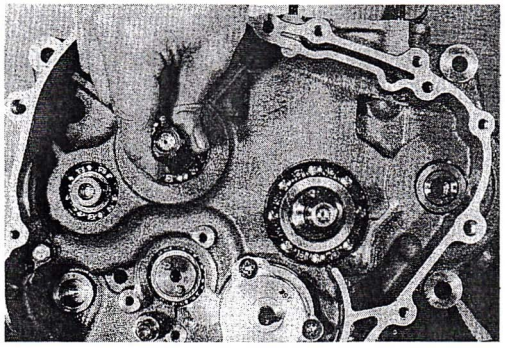


- Tighten the crankcase bolts to the specified torque.

Tightening torque : 9—13 N·m
(0.9—1.3 kg-m, 6.5—9.5 lb-ft)



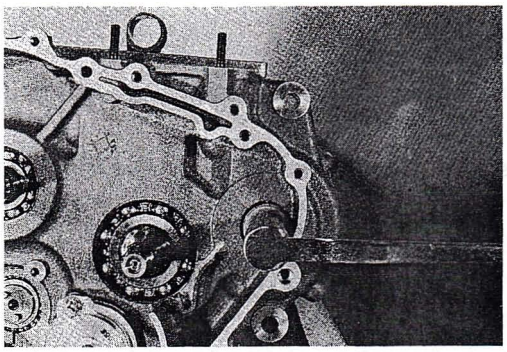
- After the crankcase bolts have been tightened, check if crankshaft, countershaft and driveshaft rotate smoothly.
- If a large resistance is felt to rotation, try to free the shafts by tapping the shafts with a plastic hammer.



- Tighten the balancershaft bolt to the specified torque with the special tool.

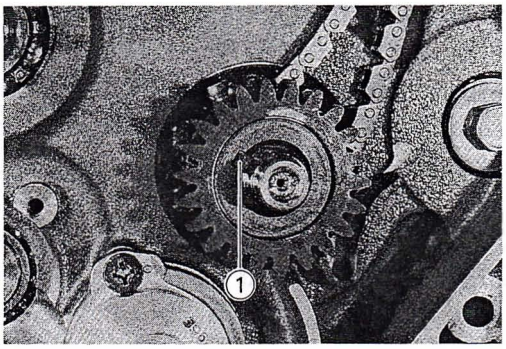
Tightening torque : 40—60 N·m
(4.0—6.0 kg-m, 29.0—43.5 lb-ft)

09910-20115:Conrod holder



CAM CHAIN AND PRIMARY DRIVE GEAR

- Engage the cam chain to the sprocket.
- Install the key ① to the crankshaft.
- When installing the primary drive gear, align the key ① with the groove of gear.

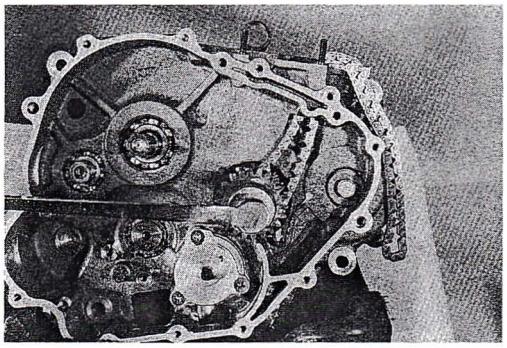


- Tighten the primary drive gear nut to the specified torque with the special tool.

Tightening torque : 60—80 N·m
(6.0—8.0 kg-m, 43.5—58.0 lb-ft)

09910-20115 : Conrod holder

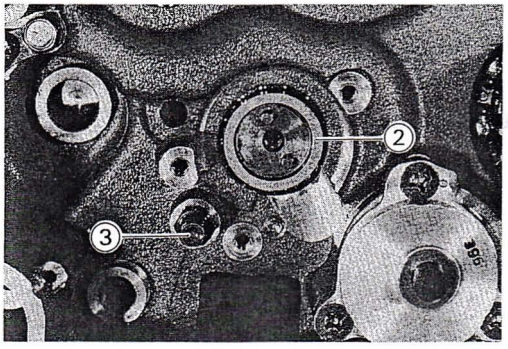
NOTE:
This nut has left-hand thread.



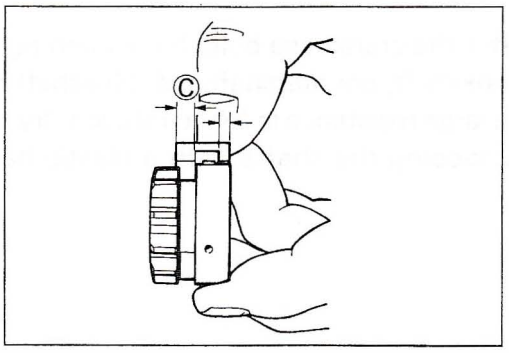
CAM DRIVEN GEAR AND GEARSHIFT SHAFT

- Install the spacer ② onto the gearshift cam.
- Apply a small quantity of THREAD LOCK SUPER "1303" to the gearshift stopper bolt ③, and tighten it to the specified torque.

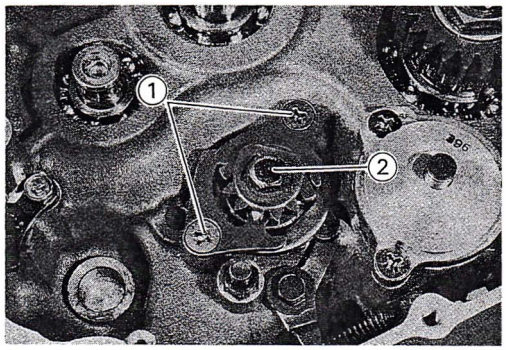
99000-32030 : THREAD LOCK SUPER "1303"
Tightening torque : 15—23 N·m
(1.5—2.3 kg-m, 11.0—16.5 lb-ft)



- Install the gearshift pawls into the cam driven gear. The large shoulder Ⓒmust face to the outside as shown in the illustration.



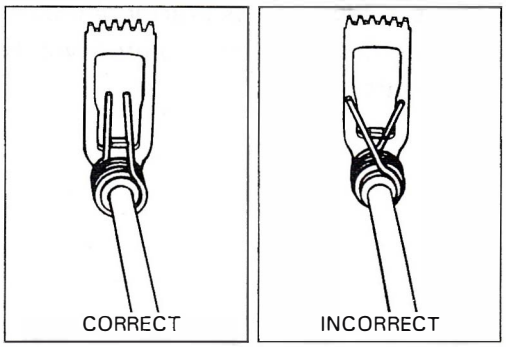
- Apply a small quantity of THREAD LOCK SUPER "1303/1322" to the cam pawel lifter securing screws ① and cam driven gear securing bolt ②.



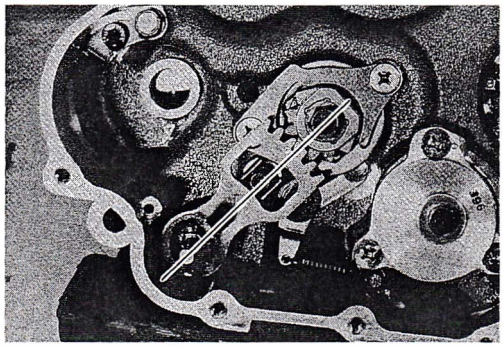
99000-32030 : THREAD LOCK SUPER "1303" (U.S.A.)
99000-32110 : THREAD LOCK SUPER "1322" (Others)

Tightening torque
Bolt ② : 8—12 N·m (0.8—1.2 kg-m, 6.0—8.5 lb-ft)

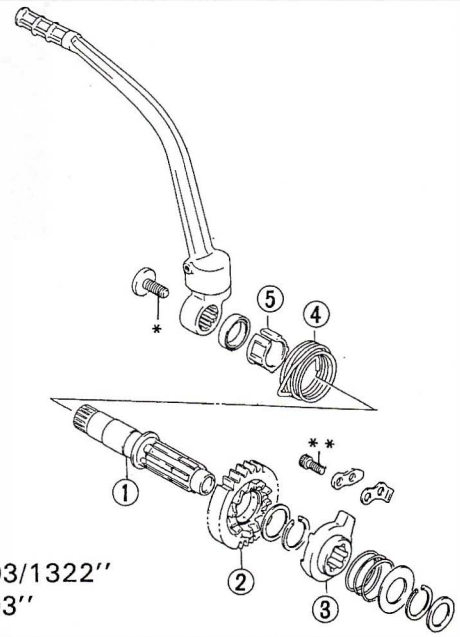
- Fit the spring to the gearshift shaft correctly.



- Install the gearshift shaft. Match the center teeth of the gear on the gearshift shaft with the center teeth on the cam driven gear as shown in Fig.



KICK STARTER SHAFT

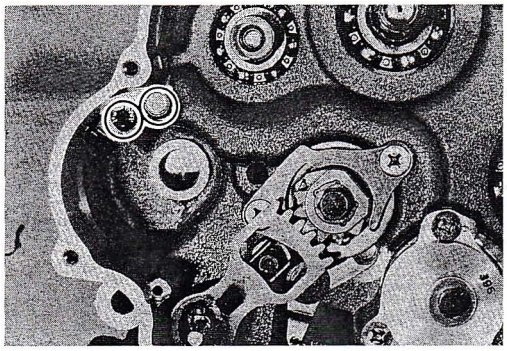


① Kick starter shaft
② Kick drive gear
③ Kick starter pawel
④ Return spring
⑤ Spring guide

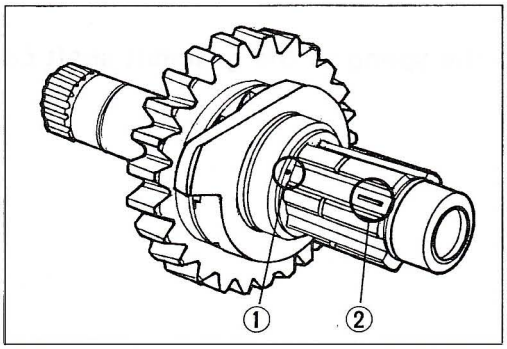
* Apply THREAD LOCK SUPER "1303/1322"
** Apply THREAD LOCK SUPER "1303"

- Apply a small quantity THREAD LOCK SUPER "1303" to the kick stopper bolts and tighten them.

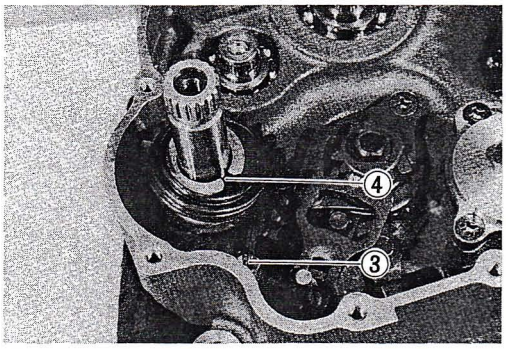
99000-32030 : THREAD LOCK SUPER "1303"



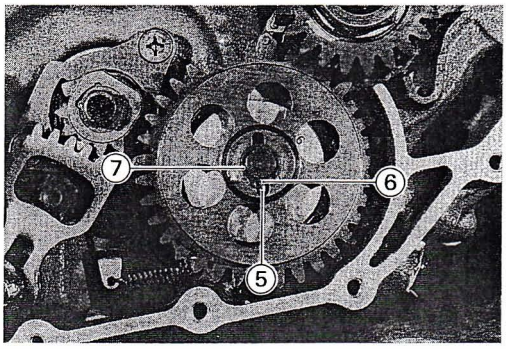
- When installing the kick starter pawel, align the punched mark ① on the kick starter pawel with line ② on the kick starter shaft.



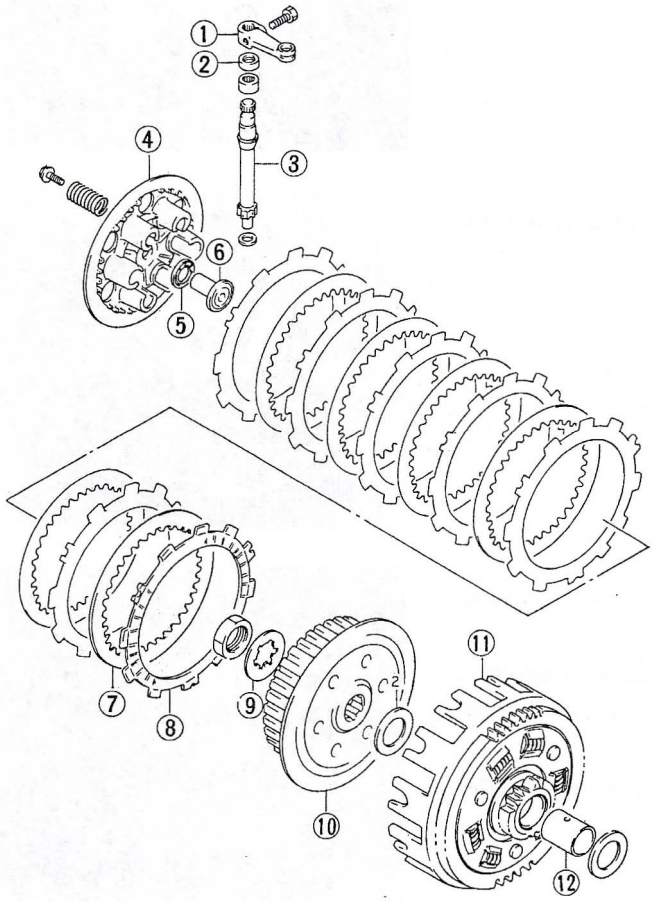
- When installing the kick return spring, hook part ③ of return spring into the hole of crankcase and turn it 1/2 turn counterclockwise with plilers and fit part ④ of return spring into the hole of the kick shaft. Install the spring guide.



- When installing the oil pump driven gear, align the pin ⑤ with the pin groove ⑥.
- Install the circlip ⑦.



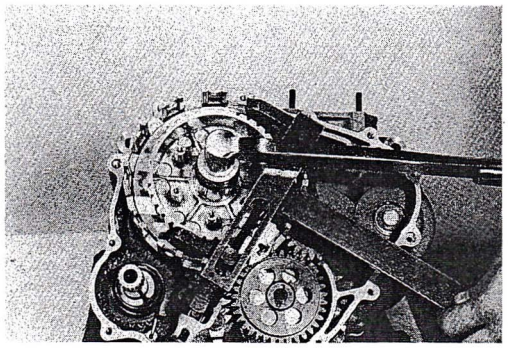
CLUTCH



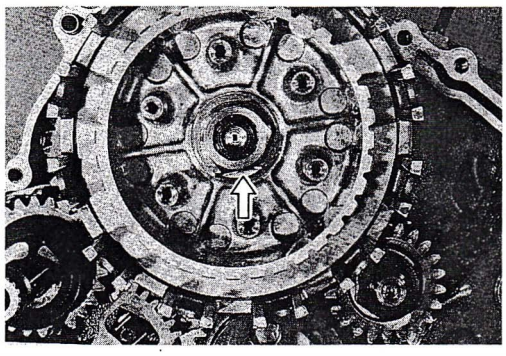
① Clutch release arm
② Oil seal
③ Clutch release pinion
④ Clutch pressure plate
⑤ Release bearing
⑥ Clutch release rack
⑦ Clutch driven plate
⑧ Clutch drive plate
⑨ Lock washer
⑩ Clutch sleeve hub
⑪ Primary driven gear
⑫ Spacer

- After installing the primary driven gear assembly and clutch sleeve hub onto the countershaft, tighten the clutch sleeve hub nut to the specified torque with the special tool and torque wrench.

09920-53710 : Clutch sleeve hub holder
Tightening torque : 40—60 N·m
(4.0—6.0 kg-m, 29.0—43.5 lb-ft)

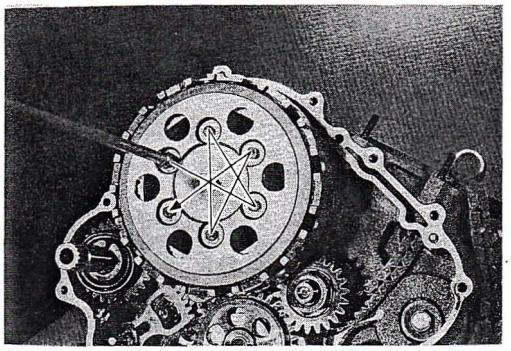


- After tightening the clutch sleeve hub nut, be sure to lock the nut by firmly bending the tongue of the lock washer.



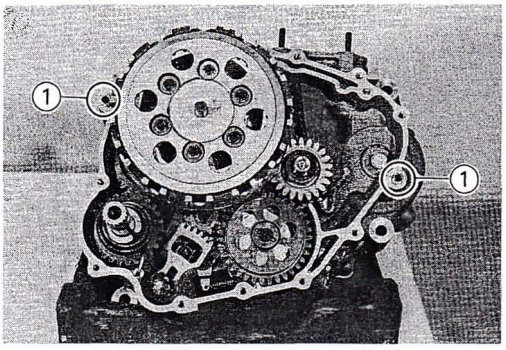
- Tighten the clutch spring mounting bolts diagonally with the special tool.

09910-20115 : Conrod holder

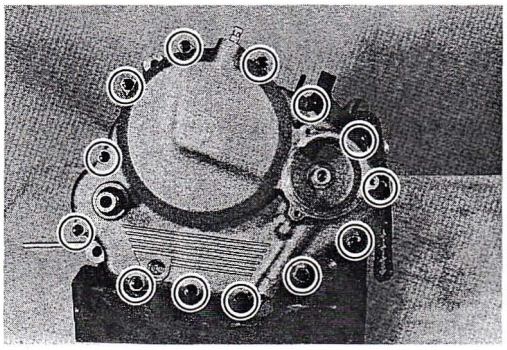


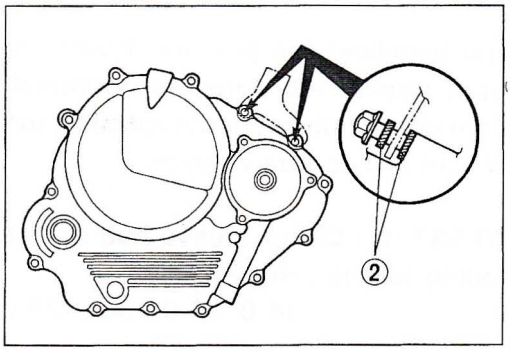
- Fit the two dowel pins ① to the crankcase and attach new gasket.

CAUTION:
Use a new gasket to prevent oil leakage.



- Engage the teeth of clutch release rack with those of pinion gear at the clutch cover side, and replace clutch cover. Make sure that the rack and pinion gear engage positively. To install cover, tap lightly with plastic hammer, and tighten the bolts.
- Fit the new gaskets ② (4 pcs) to the clutch cable holder bolts as shown in the illustration.

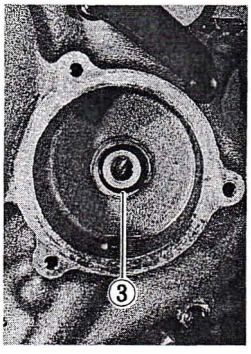


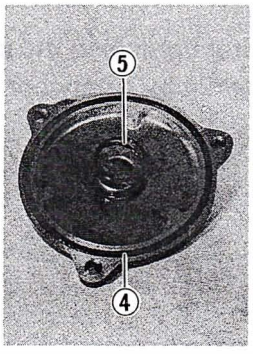


OIL FILTER

- Before installing the oil filter, check to be sure that the O-rings, ③ and ④, and spring ⑤ are installed correctly.

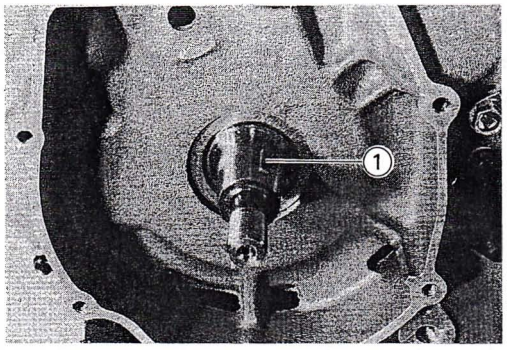
CAUTION:
Replace the O-rings, with new ones to prevent oil leakage.





MAGNETO

- Fit the key ① in the key slot on the crankshaft, then install the magneto rotor.

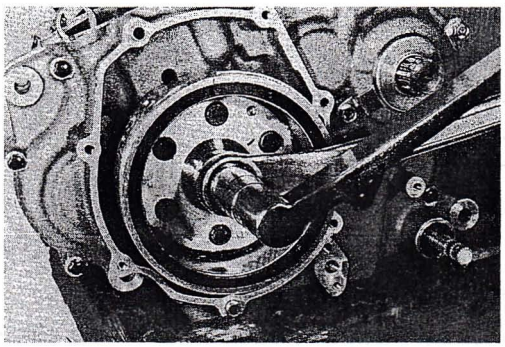


CAUTION:
Degrease the tapered portion of the magneto rotor and also the crankshaft.

- Apply a small quantity of THREAD LOCK SUPER "1303/1305" to the threaded part of nut.

99000—32030 : THREAD LOCK SUPER "1303" (U.S.A.)
99000—32100 : THREAD LOCK SUPER "1305" (Others)

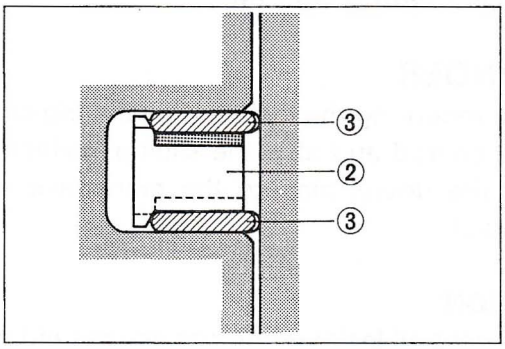
- Tighten the nut to the specified torque with a 27 mm box-end wrench.



Tightening torque : 120—140 N·m
(12.0—14.0 kg-m, 87.0—101.5 lb-ft)

OIL RING

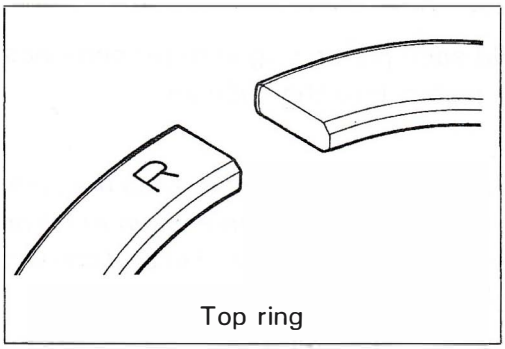
Install the spacer ② into the oil ring groove first. Then install both side rails ③, one on each side of the spacer. The spacer and side rails do not have a specific top or bottom when they are new. When reassembling used parts, install them in their original place and direction.



TOP RING AND 2ND RING

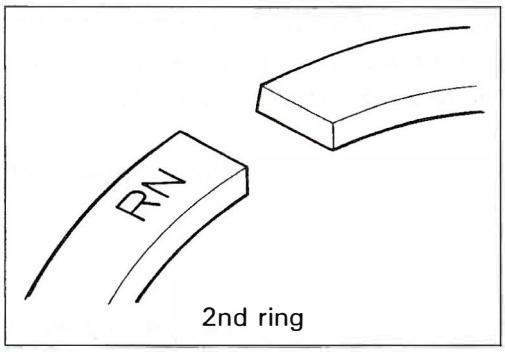
Top ring and 2nd ring differ in the shape of ring face. Top and 2nd rings have the letter "R" and "RN" marked on the top.

Top ring : "R" mark
2nd ring : "RN" mark



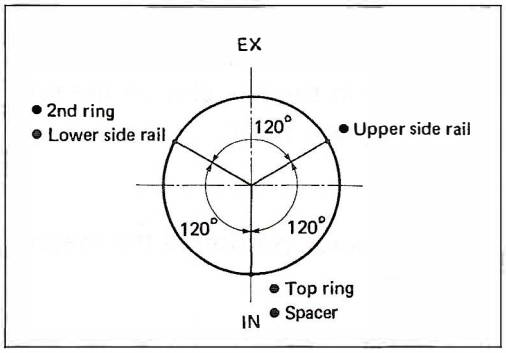
Top ring

NOTE:
Be sure to bring the marked side to top when fitting them to the piston.



2nd ring

Position the gaps of the three rings as shown.
Before inserting piston into the cylinder, check that the gaps are so located.

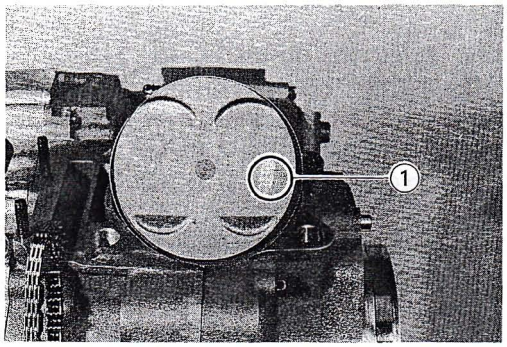


PISTON

The following are reminders for piston installation:

- Rub a small quantity of SUZUKI MOLY PASTE onto the piston pin.
- Place a clean rag over the cylinder base to prevent the piston pin circlips from dropping into the crankcase.
- When fitting the piston, turn arrow mark ① on the piston head to exhaust side
- Fit the piston pin circlips with long-nose pliers.

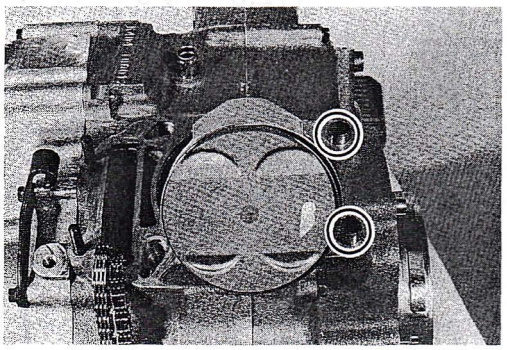
CAUTION:
Use new piston pin circlip to prevent circlip failure which will occur with a bent one.



CYLINDER

Before mounting the cylinder, oil the big end and small end of the conrod and also the sliding surface of the piston.

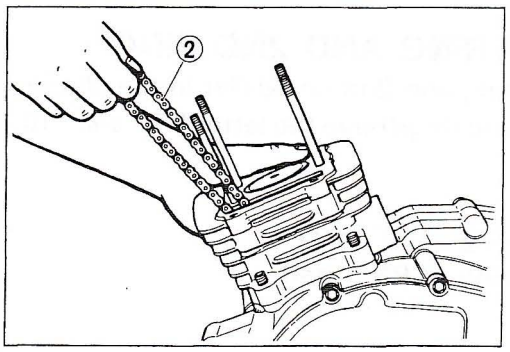
- Fit the dowel pins to the crankcase and attach new gasket.



CAUTION:
To prevent oil leakage, do not use the old gasket again, always use new one.

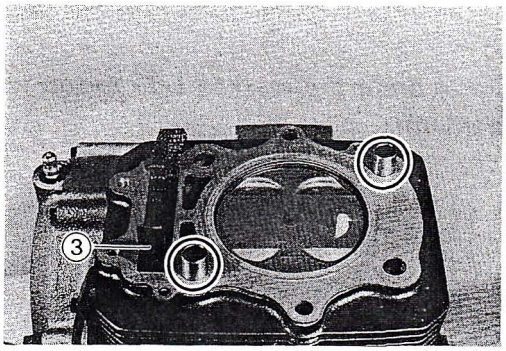
- Hold each piston ring with properly position, and insert the piston into the cylinder.

NOTE:
When mounting the cylinder, keep the camshaft drive chain ② taut. The camshaft drive chain must not be caught between cam drive chain sproket and crankcase when crankshaft is rotated.



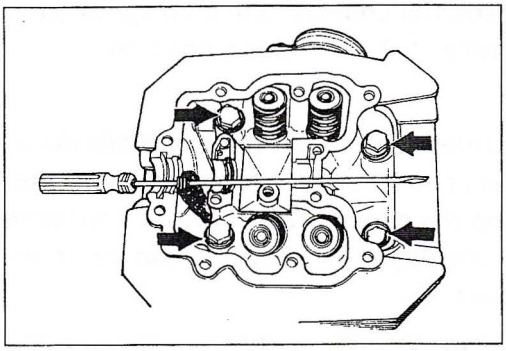
NOTE:
There is a holder for the bottom end of the cam chain guide cast in the crankcase. Be sure that the guide ③ is inserted properly or binding of the cam chain and guide may result.

- Fit the dowel pins to the cylinder and attach the new gasket.



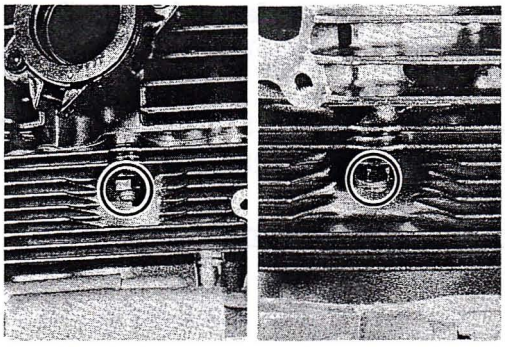
CAUTION:
Use a new cylinder head gasket to prevent oil leakage. Do not use the old gasket.

CYLINDER HEAD



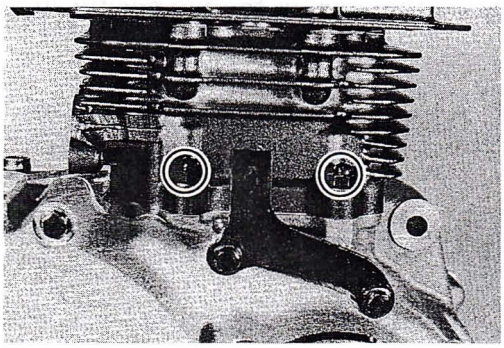
- With the head snugly seated on the cylinder, secure it by tightening the bolts diagonally. Tighten each bolt to the specified torque.

Tightening torque :
35—40 N·m (3.5—4.0 kg-m, 25.5—29.0 lb-ft)

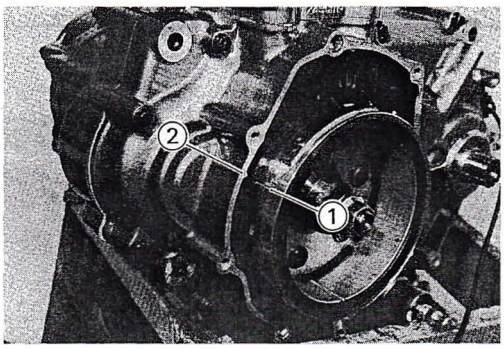


- After tightening the cylinder head bolts to the specification, tighten the cylinder head nuts and cylinder base nuts.

Tightening torque :
23—27 N·m (2.3—2.7 kg-m, 16.5—19.5 lb-ft)



CAMSHAFT



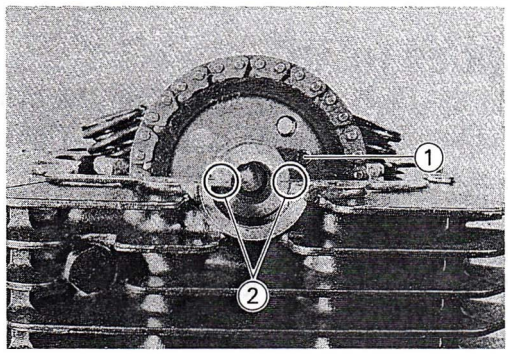
- Align "T" mark ① on the magneto rotor with the index mark ② on the crankcase keeping the camshaft drive chain pulled upward.

CAUTION:
If crankshaft is turned without drawing the camshaft drive chain upward, the chain will be caught between crankcase and cam chain drive sprocket.

NOTE:
Apply grease on the cam sprocket locating pin and install the pin into the camshaft.

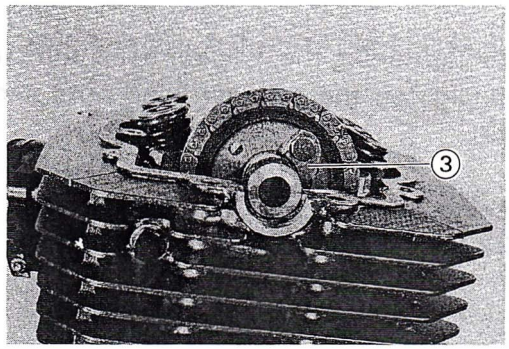
- Install the C-ring into the its groove of the cylinder head.

- Engage the chain on the cam sprocket with the locating pin hole ① two o'clock position.



NOTE:
Do not rotate the magneto rotor while doing this. When the sprocket is not positioned correctly, turn the sprocket. When installing the camshaft into the cam sprocket, pay attention not to dislodge the locating pin or it may fall into the crankcase.

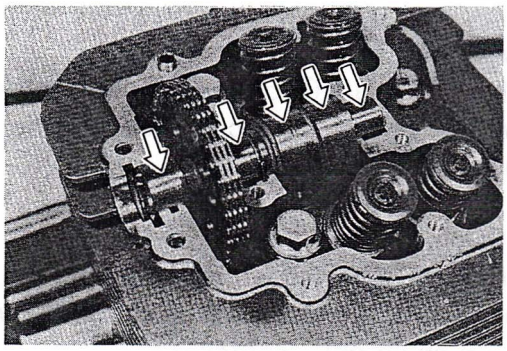
- Align the engraved line mark ② on the camshaft so it is parallel with the surface of the cylinder head.
- Fit the lock washer ③ so that it is covering the locating pin.
- Apply THREAD LOCK SUPER "1303" to the cam sprocket bolts and tighten them to the specified torque.



99000-32030 : THREAD LOCK SUPER "1303"
Tightening torque : 14—16 N·m
(1.4—1.6 kg-m, 10.0—11.5 lb-ft)

- Bend up the washer tonque positively to lock the bolts.

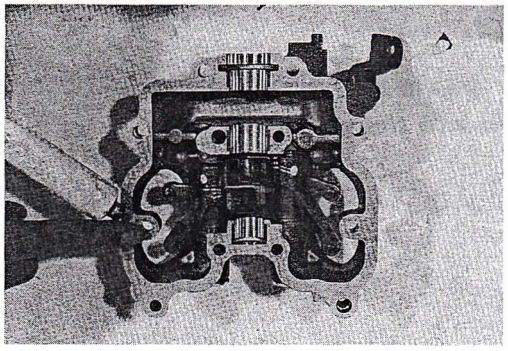
- Apply SUZUKI MOLY PASTE to the camshaft journals and cam faces.



99000-25140 : SUZUKI MOLY PASTE

CYLINDER HEAD COVER

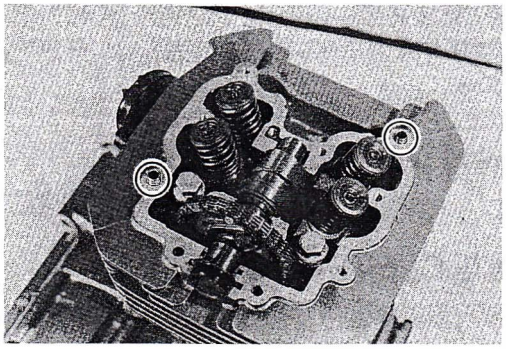
- Thoroughly wipe off oil from the fitting surfaces of cylinder head and cover.
- Fit the two dowel pins to the cylinder head.
- Uniformly apply SUZUKI BOND No. 1207B/1215 to the cylinder head cover surface.



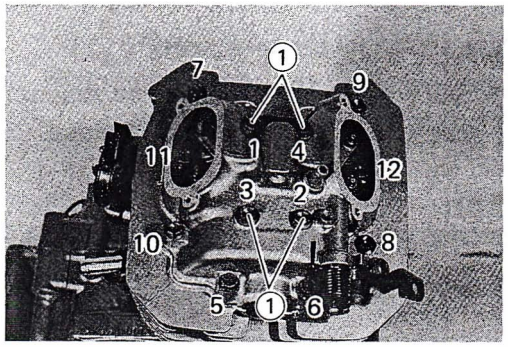
99104-31140 : SUZUKI BOND No. 1207B (U.S.A.)
99000-31110 : SUZUKI BOND No. 1215 (Others)

NOTE:
Do not apply SUZUKI BOND No. 1207B/1215 to the camshaft end cap.

- Install the dowel pins.



- Fit the four new gaskets ① to the head cover bolts correctly.



CAUTION:
Use new gaskets to prevent oil leakage.

NOTE:
When tightening the cylinder head cover bolts, the piston must be at top dead center on the compression stroke.

- Lightly tighten the cylinder head cover bolts sequentially in the ascending order of numbers, and then if everything is satisfactory, tighten securely with a torque wrench to the specified torque.

Tightening torque : 8—12 N·m
(0.8—1.2 kg-m, 6.0—8.5 lb-ft)

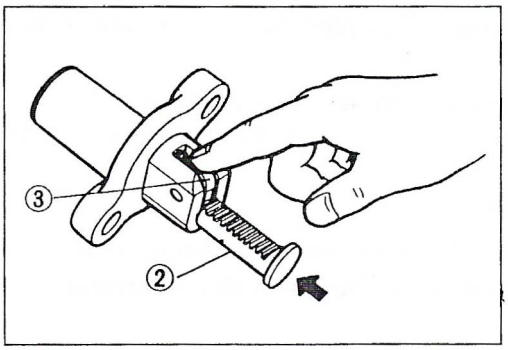
CAM CHAIN TENSIONER ADJUSTER

Install the cam chain tensioner adjuster following the procedure below.

- Apply SUZUKI MOLY PASTE to the push rod ②.

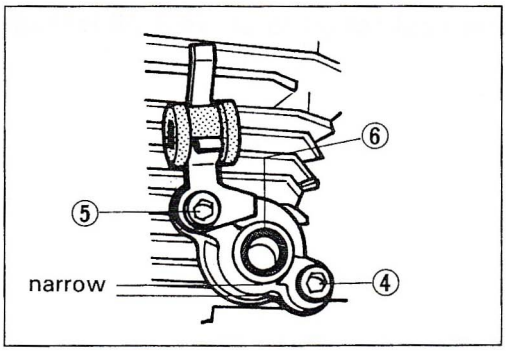
99000-25140 : SUZUKI MOLY PASTE

- Unlock the ratchet mechanism ③ and push in the push rod ② all the way before mounting the chain tensioner.
- Install a new gasket and the cam chain tensioner to the cylinder block with two bolts (④ and ⑤), and tighten them to the specified torque as shown in the illustration.



Tightening torque :

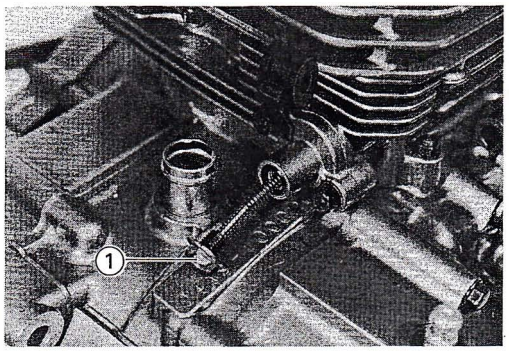
Bolt ④ : 8—12 N·m (0.8—1.2 kg-m, 6.0—8.5 lb-ft)
Bolt ⑤ : 9—13 N·m (0.9—1.3 kg-m, 6.5—9.5 lb-ft)



CAUTION:
Always use a new gasket and O-ring ⑥ to prevent oil leakage.

- Insert the spring into the cam chain tensioner and tighten the spring holder bolt ① to the specitied torque.

Tightening torque : 7—9 N·m
(0.7—0.9 kg-m, 5.0—6.5 lb-ft)



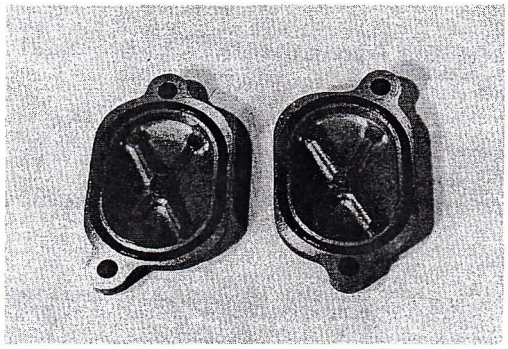
VALVE CLEARANCE

- Check and adjust the valve clearance. (Refer to page 2-4)

VALVE INSPECITON CAP

- Before installing the valve inspection caps, coat the respective O-rings with grease.

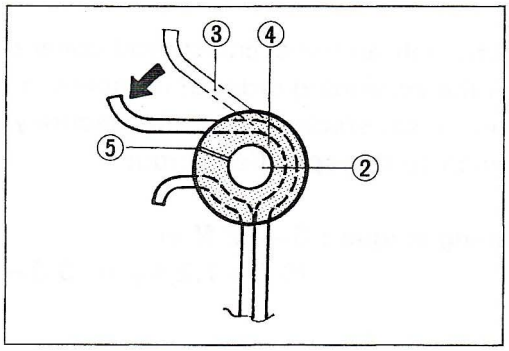
CAUTION:
Replace the respective O-rings with new ones.



OIL PIPE

- Set the oil pipe ② to the cushion, and bend the clamp as shown in the illustration.

③ : Clamp
④ : Cushion
⑤ : Slit of cushion

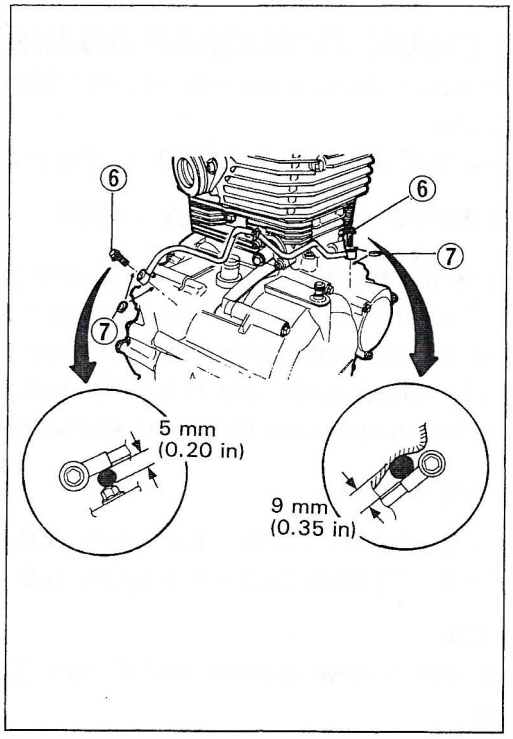


- Tighten the union bolts ⑥ to the specified torque.

Tightening torque : 18—23 N·m
(1.8—2.3 kg-m, 13.0—16.5 lb-ft)

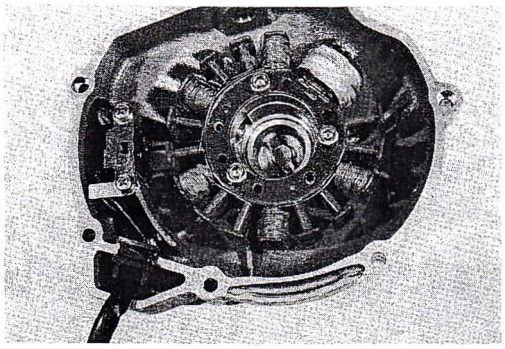
CAUTION:
When tightening the union bolts, use the stoppers (5 mm and 9 mm) as shown in the illustration.

CAUTION:
Use new gaskets ⑦ to prevent oil leakage.

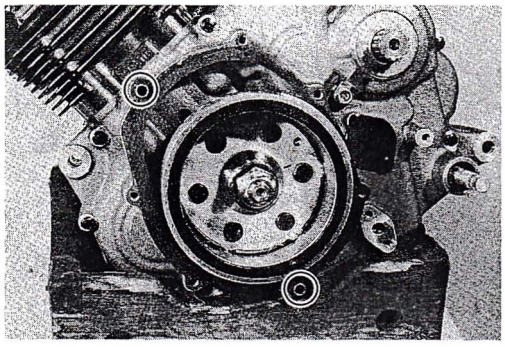


MAGNETO COVER

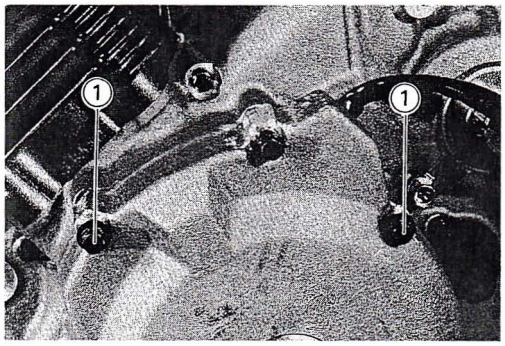
- Install the stator, clamp pick-up coil and grommet correctly. (Refer to page 7-10.)



- Fit the two dowel pins and new gasket.



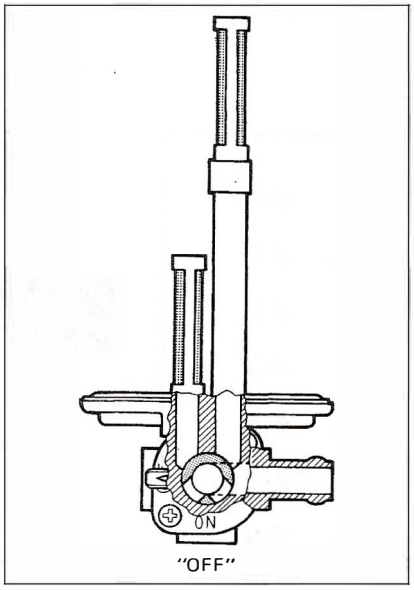
- Fit the new gaskets ① to the magneto cover bolts as shown in photo.



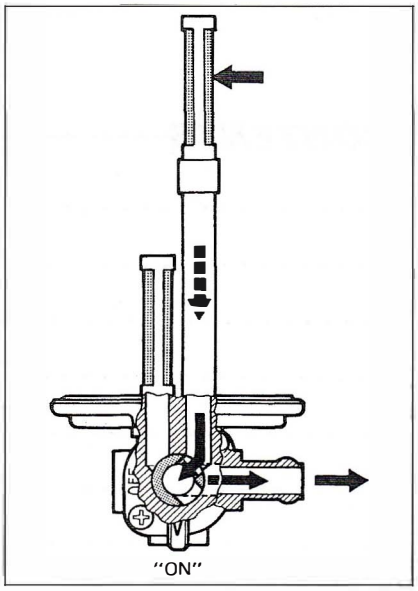
FUEL AND LUBRICATION SYSTEM

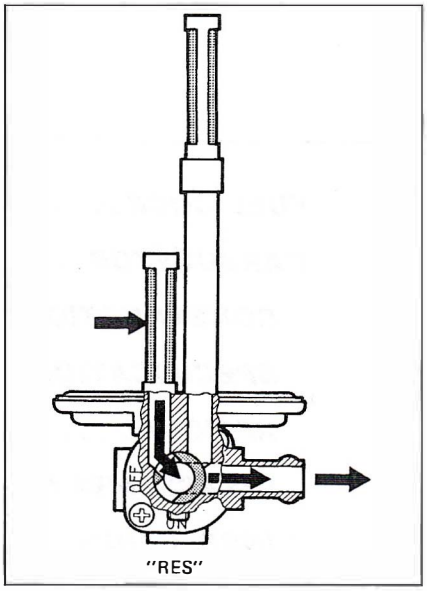
CONTENTS

FUEL COCK



"OFF"


"ON"

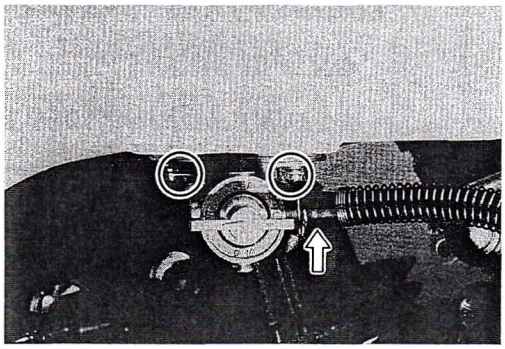


"RES"

INSPECTION AND CLEANING

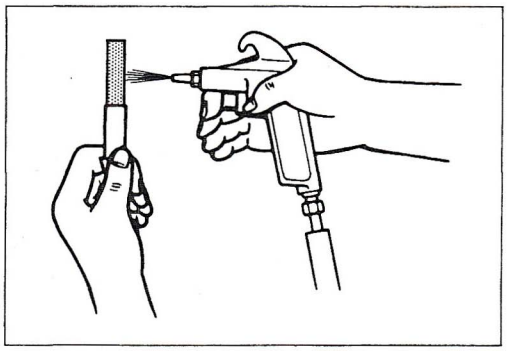
If the fuel strainer is darty with sediment or rust, fuel will not flow smoothly and loss in engine power may result. Clean the fuel strainer in the following manner:

- Turn the fuel cock to OFF position.
- Disconnect the fuel hose.
- Turn the fuel cock to "RES" position and drain fuel.
- Remove the fuel cock assembly by removing the bolts.
- Clean the fuel strainer with compressed air.



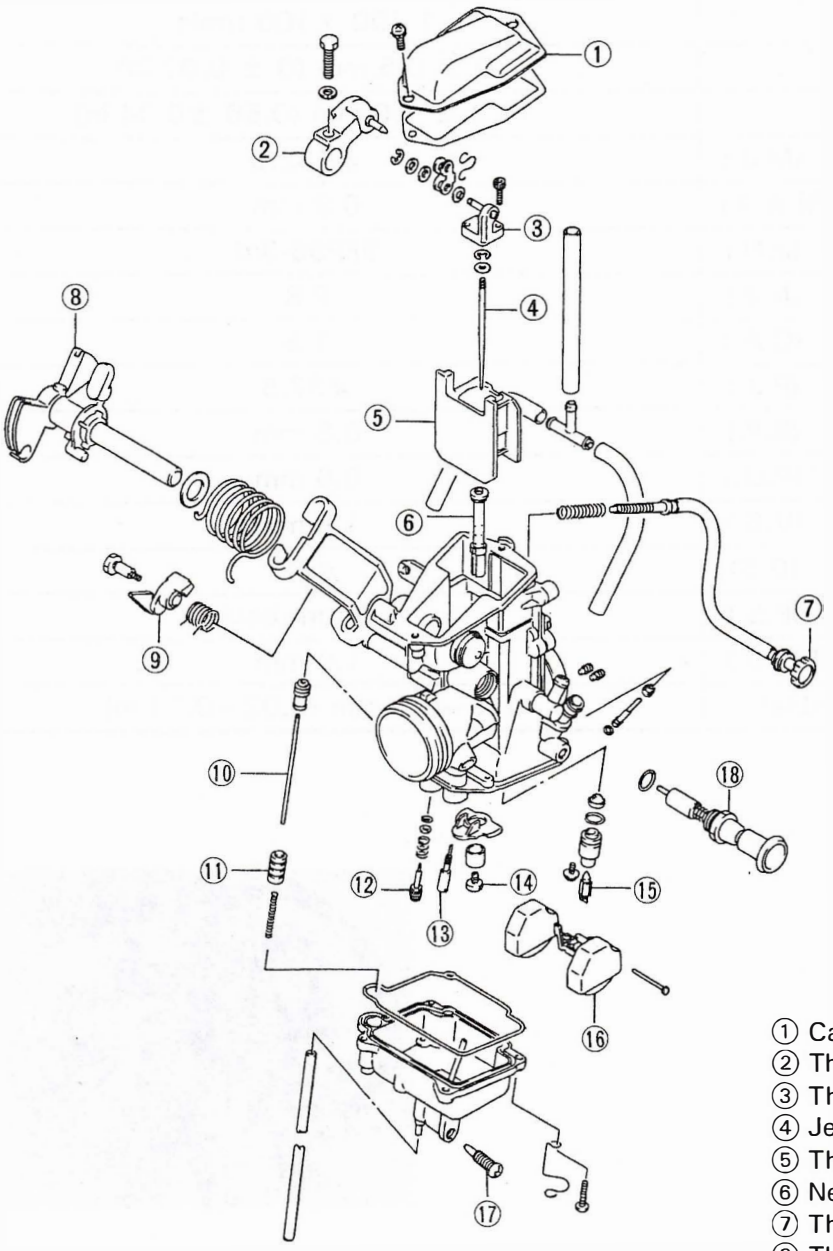
WARNING:

* **Gasoline is very explosive. Extreme care must be taken.**
* **Gaskets and O-rings must be replaced with new ones to prevent fuel leakage.**



CARBURETOR

CONSTRUCTIONS

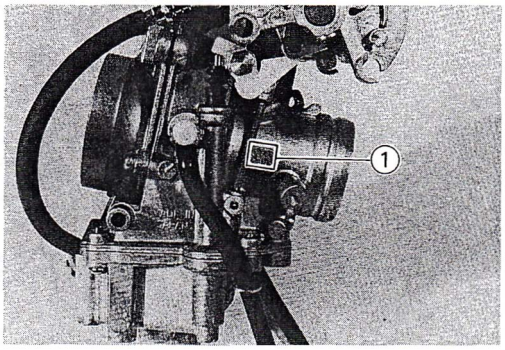


① Carburetor top cap
② Throttle valve lever
③ Throttle valve bracket
④ Jet needle
⑤ Throttle valve
⑥ Needle jet
⑦ Throttle stop screw adjuster
⑧ Throttle lever shaft
⑨ Accelerating lever
⑩ Accelerating rod
⑪ Accelerating plunger
⑫ Pilot screw
⑬ Pilot jet
⑭ Main jet
⑮ Needle valve
⑱ Float
⑰ Drain plug
⑱ Starting plunger

SPECIFICATIONS

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM33SS
I.D. No.		14D0
Bore size		33 mm
Idle r/min		1 400 ± 100 r/min
Fuel level		0 ± 0.5 mm (0 ± 0.02 in)
Float height		14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet	(M.J.)	#132.5
Main air jet	(M.A.J.)	0.9 mm
Jet needle	(J.N.)	5FP96-3rd
Needle jet	(N.J.)	P-8
Cut-away	(C.A.)	1.5
Pilot jet	(P.J.)	#37.5
By-pass	(B.P.)	0.8 mm
Pilot outlet	(P.O.)	0.6 mm
Valve seat	(V.S.)	1.8 mm
Starter jet	(G.S)	#50
Pilot screw	(P.S.)	1.0 turn back
Pilot air jet	(P.A.J.)	1.0 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)

I.D. No. LOCATION ①

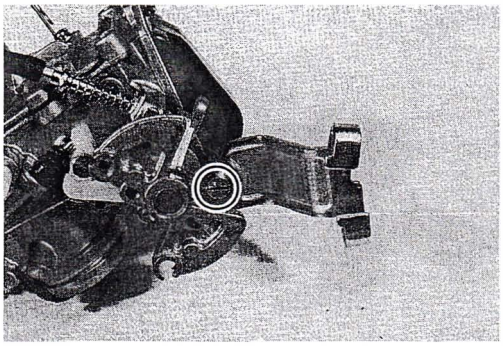


REMOVAL

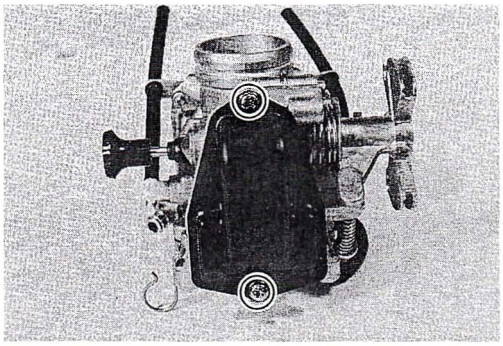
- Remove the carburetor. (Refer to page 3-2.)

DISASSEMBLY

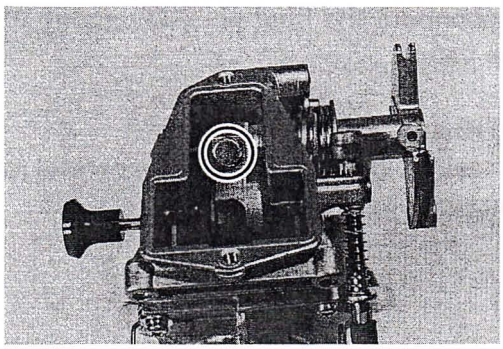
- Remove the throttle cable holder.

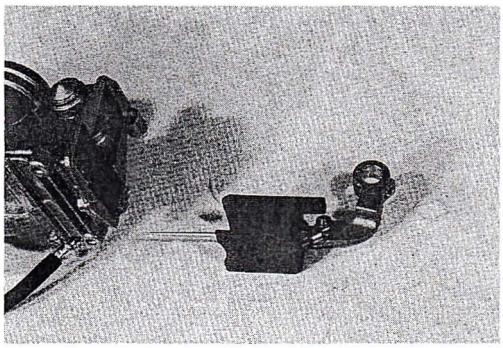


- Remove the top cap.

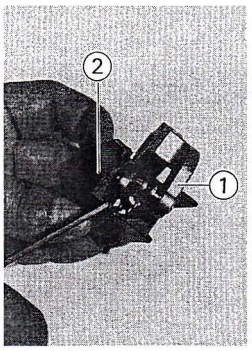


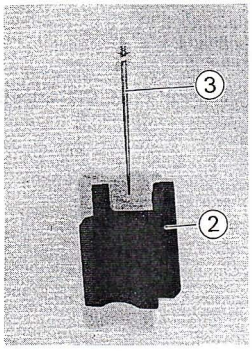
- Remove the throttle lever shaft.
- Remove the throttle valve assembly.



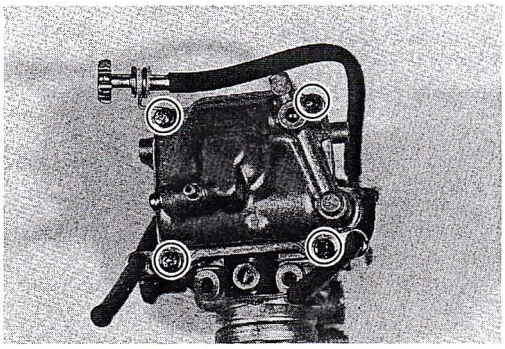


- Separate the throttle lever arm ① and throttle valve ② by removing the bolts with a 2.5 mm hexagon wrench.
- Separate the jet needle ③ and throttle valve ②.

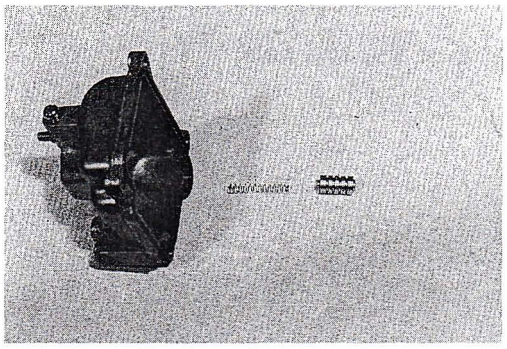




- Remove the float chamber.

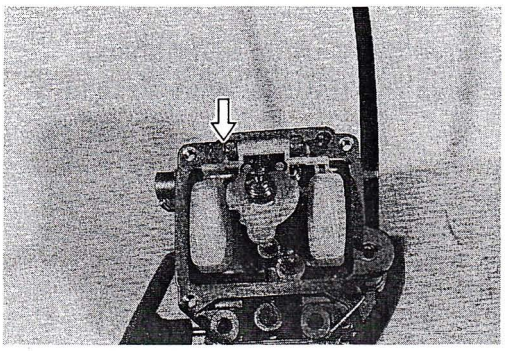


- Remove the accelerating plunger and spring.

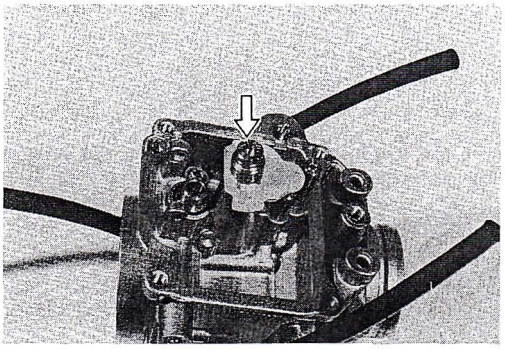


- Disconnect the float pin and remove the float with needle valve.

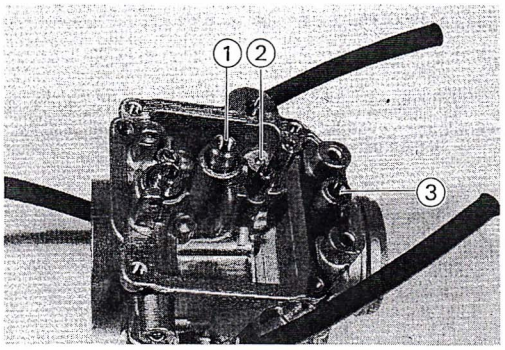
CAUTION:
When removing the float pin, be careful not to damage the carburetor body.



- Remove the main jet and palte.

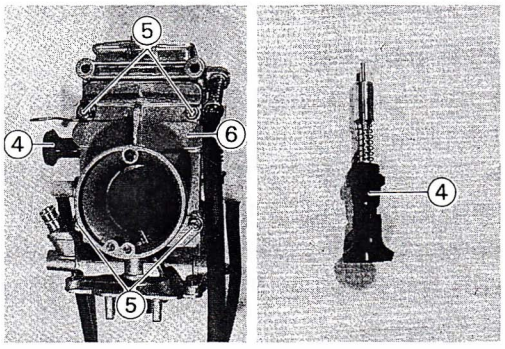


- Remove the needle jet ① from the bore side.
- Remove the pilot jet ② and pilot screw ③.



- Remove the starter plunger assembly ④.

CAUTION:
Do not attempt to disassemble the four screws ⑤ this part ⑥ is not serviceable



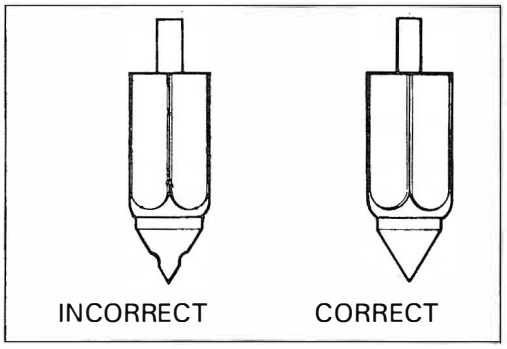
INSPECTION

Check following items for any damage or clogging.

* Pilot jet
* Main jet
* Main air jet
* Pilot air jet
* Needle jet air bleeding hole
* Float
* Needle valve
* Starter jet
* Gasket
* Throttle shaft seal
* Pilot outlet and by-pass holes
* Accelerating nozzle

NEEDLE VALVE

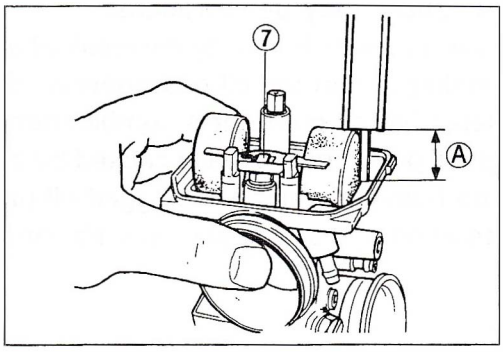
If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn beyond the permissible lilmits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber. Clean the float chamber and float parts with gasolilne. 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 with calipers. Bend the tongue ⑦ as necessary to bring the height Ⓐ to this valve.

Float height Ⓐ: 14.2±1.0 mm (0.56±0.04 in)
09900-20101 : Vernier calipers



REASSEMBLY AND REMOUNTING

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

* Throttle cable play (Refer to page 2-8.)
* Idling adjustment (Refer to page 2-8.)

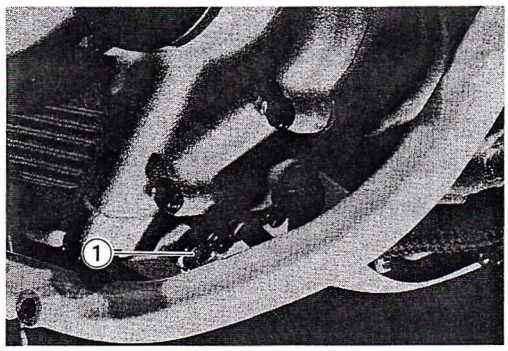
LUBRICATION SYSTEM

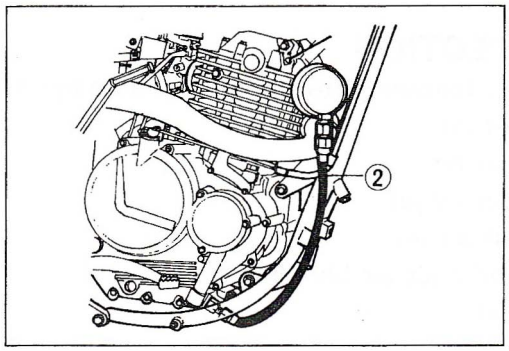
OIL PRESSURE

Check the oil level with oil level gauge of the oil filler cap. (Refer to page 2-7.)

Check the oil pressure in the following manner:

- Remove the engine under cover. (Refer to page 3-2.)
- Remove the oil pressure inspection plug ①.
- Install the oil pressure gauge ② in the positon in the illustration.
- Connect an electric tachometer to the engine.
- Warm up the engine as follows.
  Summer approx. 10 min. at 2 000 r/min.
  Winter approx. 20 min. aat 2 000 r/min.
- After the warming up operation, increase the engine speed to 3 000 r/min, and read the oil pressure gauge.





NOTE:
Engine oil must be warmed up to 60°C (140°F) when checking the oil pressure.

09915-74510 : Oil pressure gauge

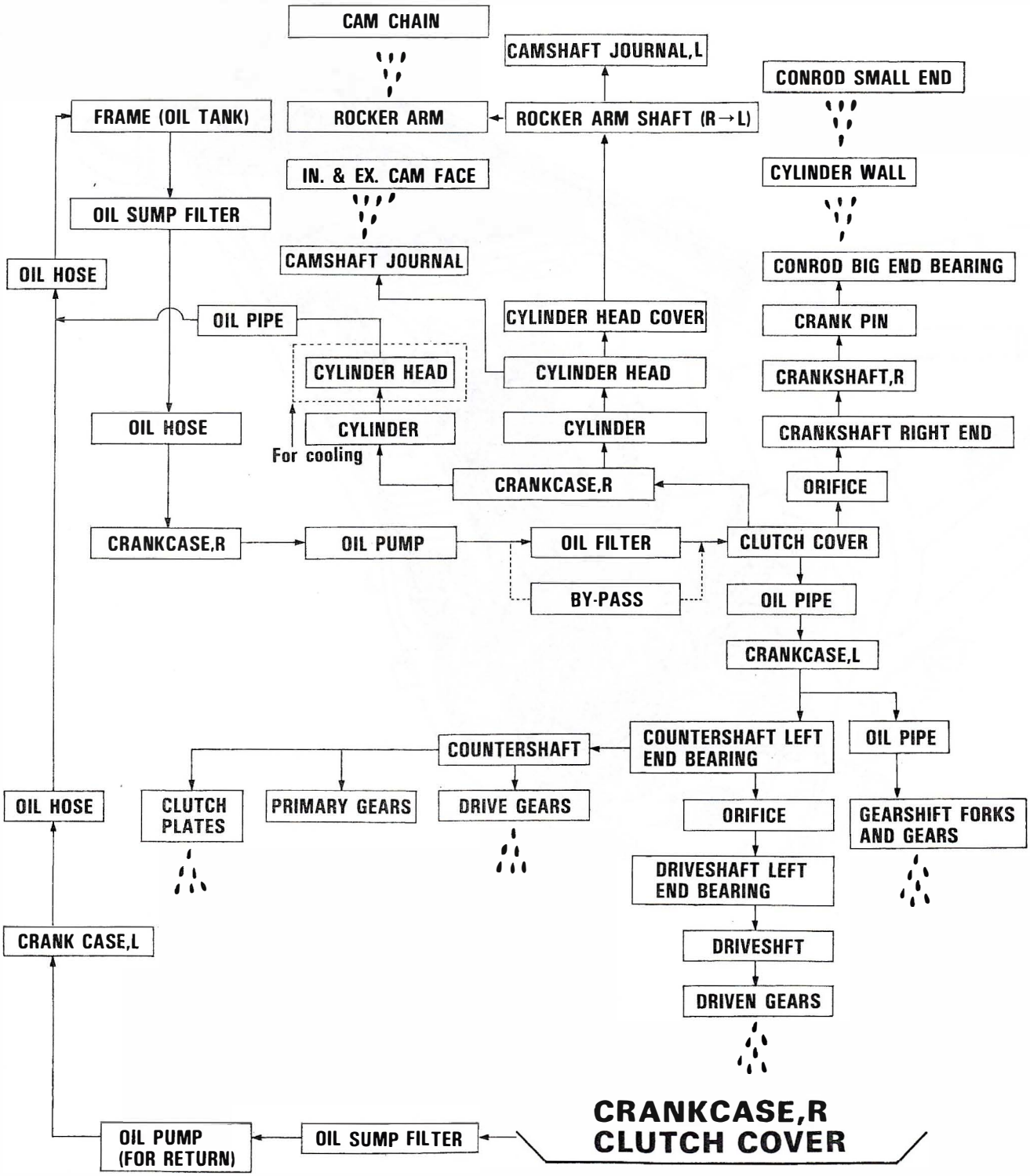
Oil pressure specification

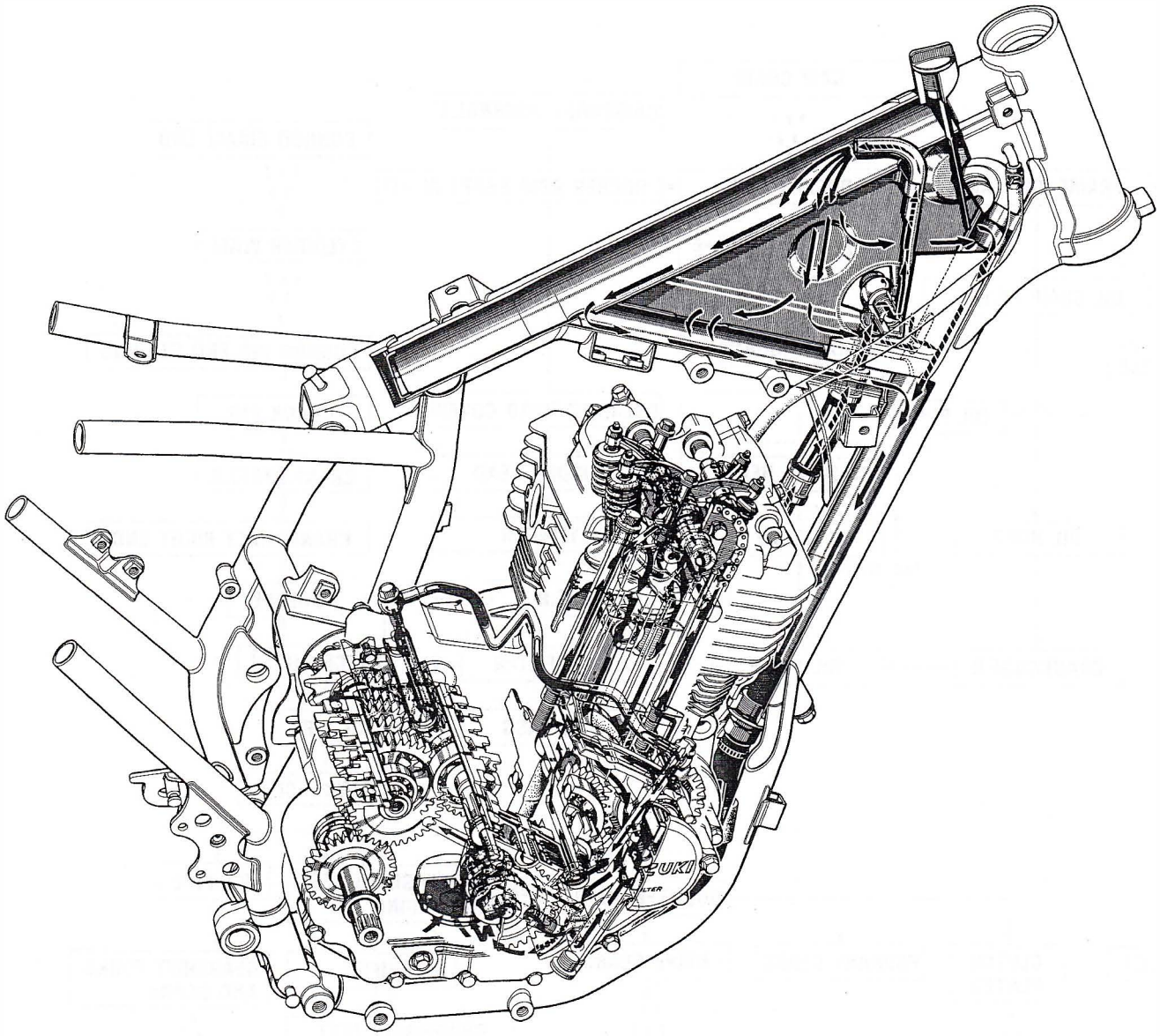
Above 40 kPa, (0.4 kg/cm², 5.7 psi), Below 140 kPa, (1.4 kg/cm², 19.9 psi) at 3 000 r/min. Oil temp. at 60°C (140°F)

If the oil pressure is lower or higher than the specifications, several causes may be considered.

* Low oil pressure is usually the result of a clogged oil filter, oil leakage from the oil passageway, damaged oil seal, a defective oil pump or a combination of these items.
* High oil pressure is usually caused by a engine oil which is too heavy a weight, a clogged oil passage, improper installation of the oil filter or a combination of these items.

ENIGNE LUBRICATION SYSTEM CHART





ELECTRICAL SYSTEM

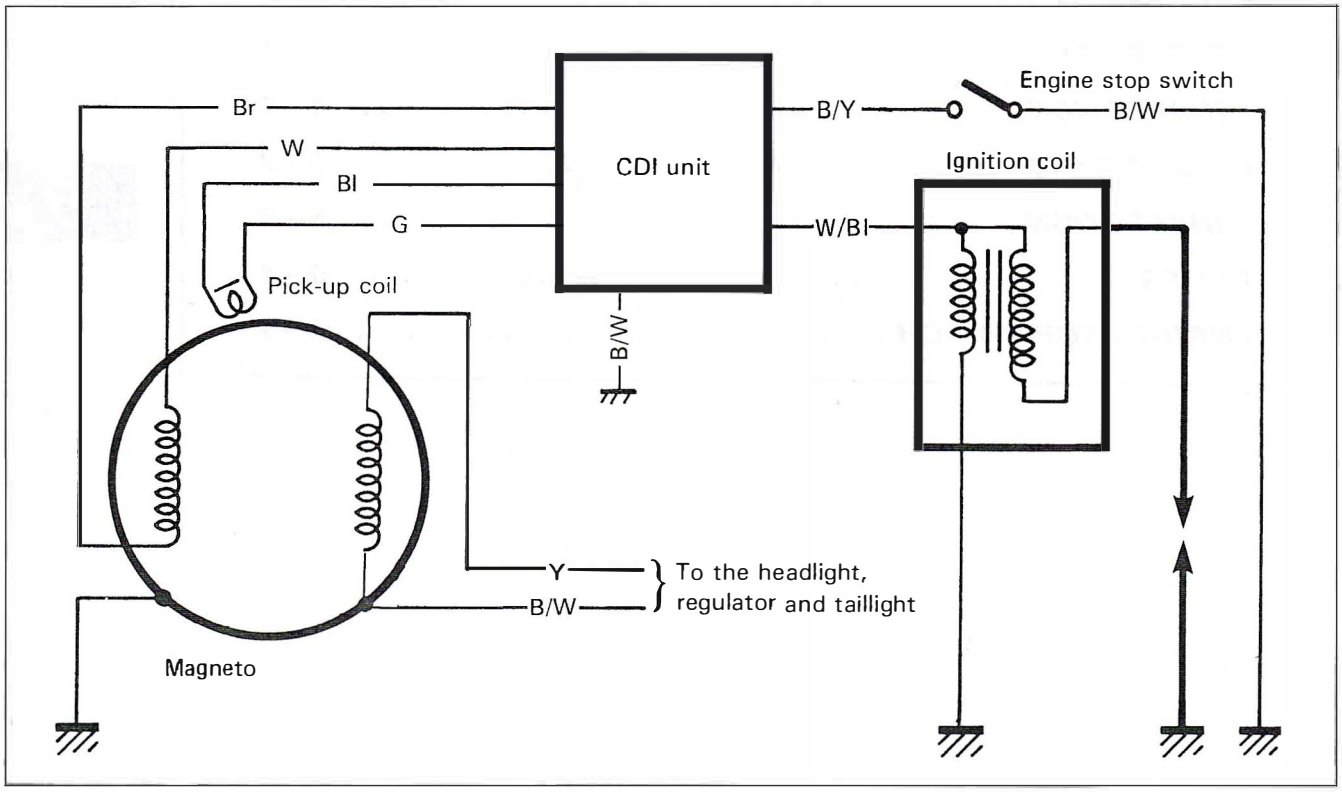
CONTENTS

5

IGNITION SYSTEM

DISCRIPTION

The capacitor discharged ignition system consists of a magneto, CDI unit, ignition coil and spark plug. 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 through 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 gaps.

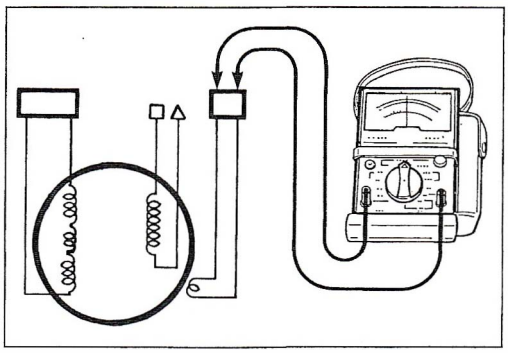


INSPECTION

MAGNETO COIL

- Disconnect the pick-up coil and power source coil lead wires of the magneto.

Measure the resistance between the lead wires with a pocket tester.



Magneto coil resistance
Pick-up coil : 180—270Ω (G—Bl)
Power source coil : 250—370Ω (W—Br)

09900-25002 : Pocket tester

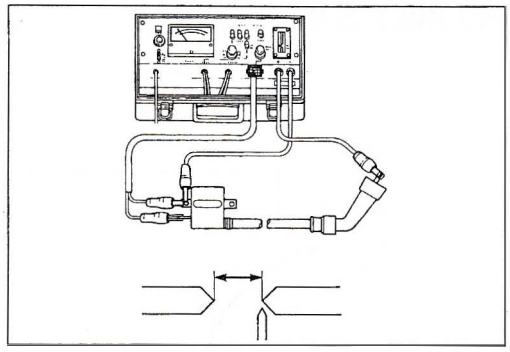
WIRE COLOR
Bl : Blue
Br : Brown
G : Green
W : White

IGNITION COIL

Checking with electro tester

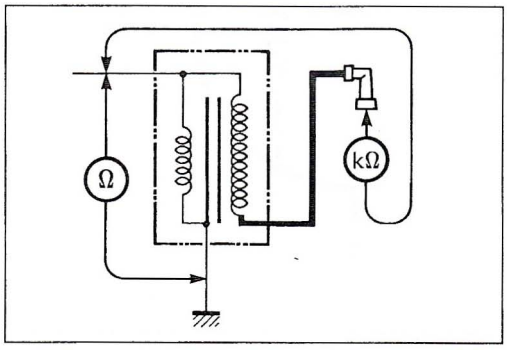
- Remove the ignition coil from the frame.

Test the ignition coil for sparking performance. The test connection is as indicated. Make sure that the three-needle sparking distance is at least 8 mm. If no sparking or orange color sparking occurs with this much gap, then it is defective and must be replalced.



STD Spark performance : 8 mm (0.3 in)
09900-28106 : Electro tester

Checking with pocket tester
Ignition coil resistance
Primary (Terminal-Ground) : 0.1—1.0 Ω
Secondary (Terminal-plug cap) : 12—22 kΩ

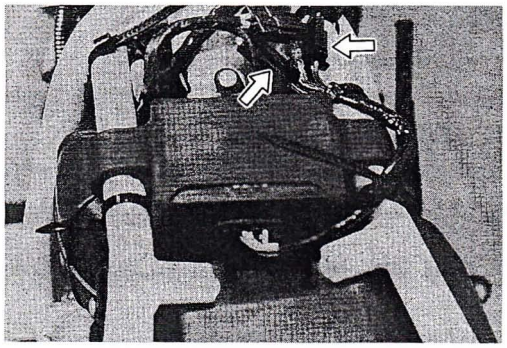


CDI UNIT

- Remove the frame covers and seat.
- Disconnect the CDI unit lead wires.

Check the continuity and measure the resistance values with a pocket tester.

09900-25002 : Pocket tester



Unit : Approx. kΩ

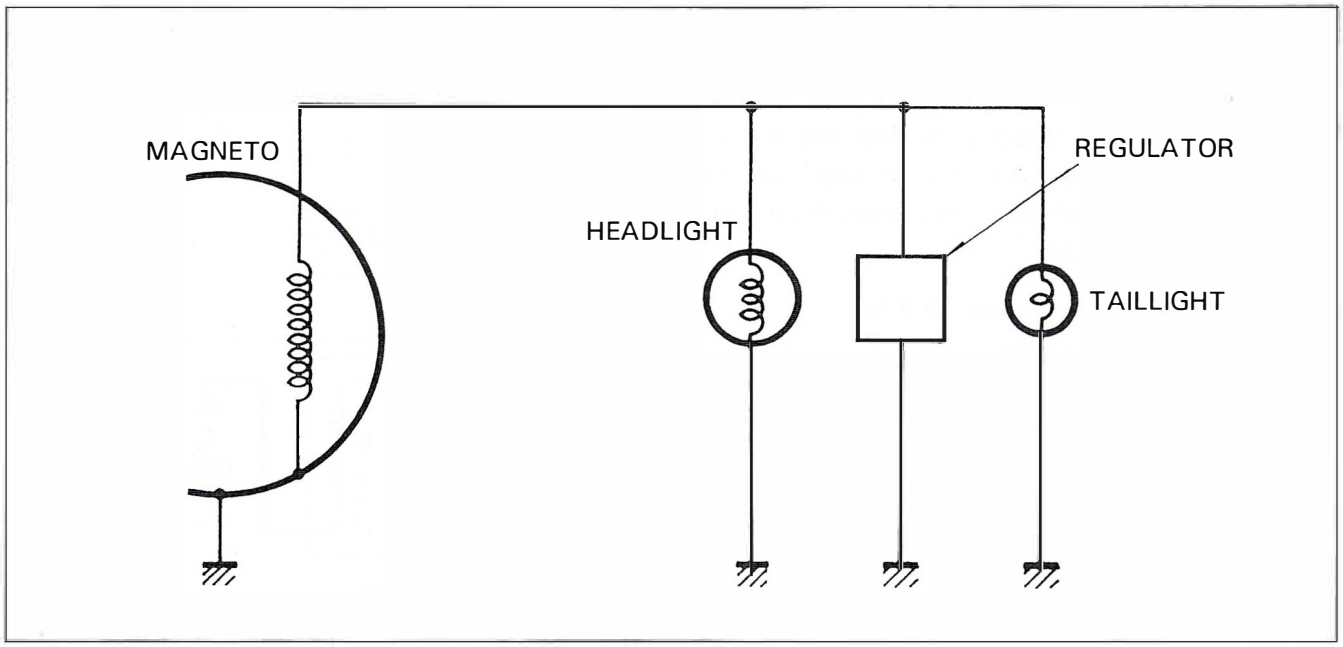
⊖ Probe of tester to: \ ⊕ Probe of tester to:	W	Br	Bl	G	W/Bl	B/Y	B/W
W		100—240	80—120	80—120	∞	240—600	90
Br	80—180		36—72	56—120	∞	2—5	50
Bl	2—5	2—5		7—14	∞	6—17	0
G	13—24	12—24	7—14		∞	24—54	9
W/Bl	8—24	8—22	2—6	14—27		28—120	3
B/Y	∞	∞	∞	∞	∞		∞
B/W	2—5	2—5	0	7—14	∞	6—17	

WIRE COLOR
Bl : Blue
Br : Brown
G : Green
W : White
B/W : Black with White tracer
B/Y : Black with Yellow tracer
W/Bl: White with Blue tracer

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

NOTE:
Remove the spark plug and place the spark plug on the cylinder head cover kick the engine and check the sparks of the spark plug. If no sparking at spark plug gap, replace the CDI unit or inspect the magneto coils, ignition coils and spark plug. If the magneto coils, ignition coils and spark plug checked are correct, the CDI unit may be faulty, replace the CDI unit with a new one.

LIGHTING SYSTEM

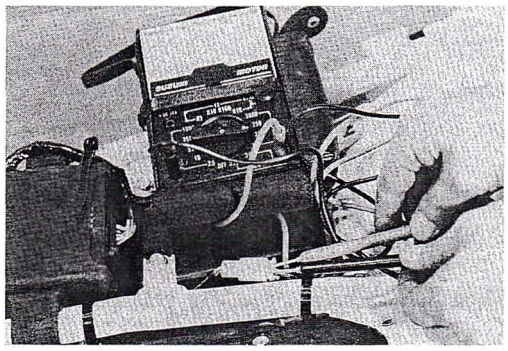


INSPECTION

LIGHTING PERFORMANCE CHECK

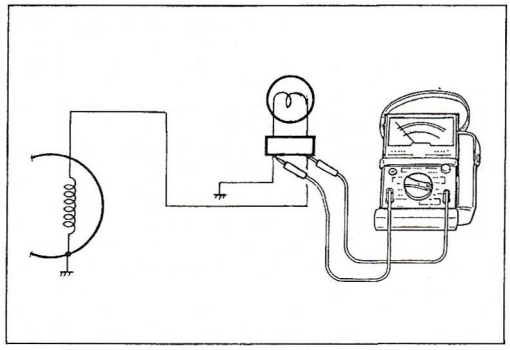
- Connect the probes of the pocket tester to the taillight lead wires (Y and B/W).
- Set the tester knob to the AC volt range 25 V.
- Connect a tachometer and start the engine.

Check that the voltmeter reads as follows.



12—14V (AC) at 5 000 r/min.

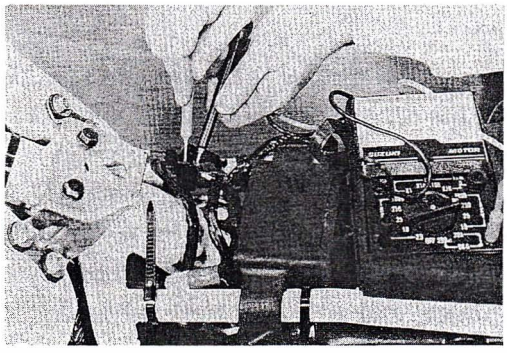
If the voltage checked is incorrect, check the magneto coil or regulator.



Lighting coil output check.

- Disconnect the lighting coil lead wire coupler.
- Connect a tachometer and start the engine.

Check that the voltmeter reads as follows.



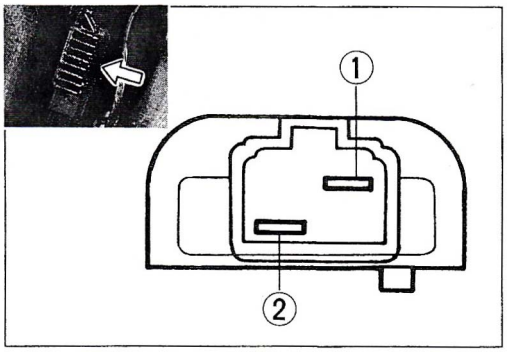
More than 75V (AC) at 5 000 r/min

If the voltage checked is incorrect, replace the magneto coil.

Regulator check

- Remove the frame cover and seat.
- Disconnect the lead wires.

Check the continuity and measure the resistance values with a pocket tester.



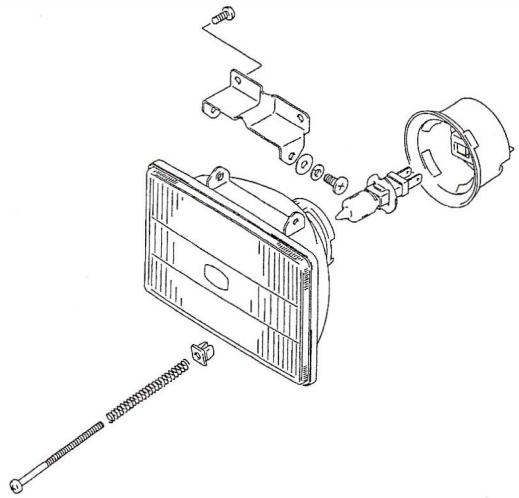
09900-25002 : Pocket tester

Unit : Approx. kΩ

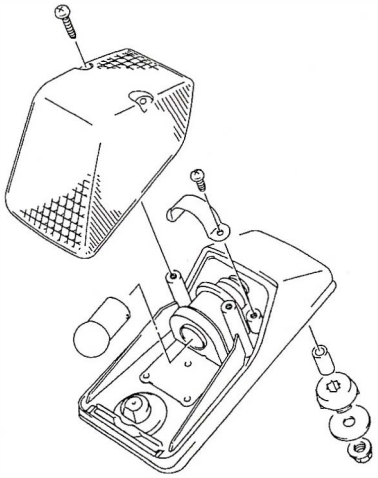
		⊕ Probe of tester to:	
		①	②
⊖ Probe of tester to:	①		∞
	②	7	

LAMPS

HEADLIGHT



TAILLIGHT



ENGINE STOP SWITCH

Inspect the engine stop switch for continuity with a pocket tester.

09900-25002 : Pocket tester

COLOR / POSITION	B/Y	B/W
OFF		
ON (Push)	○———	———○

WIRE COLOR

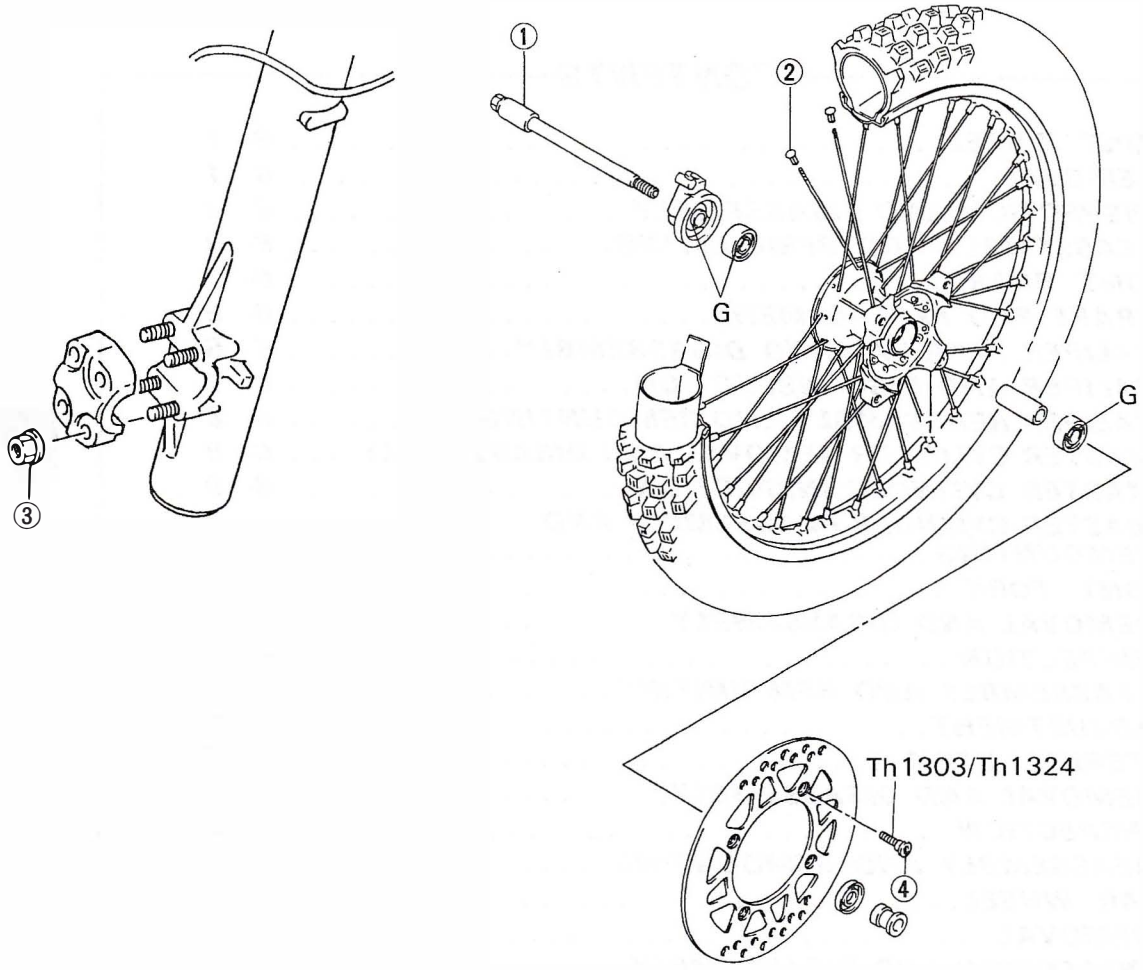
B/W : Black with White tracer

B/Y : Black with Yellow tracer

CHASSIS

CONTENTS

FRONT WHEEL



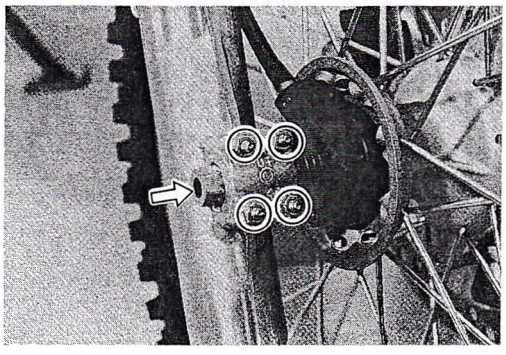
Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	50–80	5.0–8.0	36.0–58.0
②	2–4	0.2–0.4	1.5–3.0
③	6–8	0.6–0.8	4.5–6.0
④	18–28	1.8–2.8	13.0–20.0

G : Apply SUZUKI Super grease "A" :
99000-25030 (U.S.A.)
99000-25010 (Others)
Th1303/Th1324 :
Apply THREAD LOCK SUPER "1303/1324"
99000-32030 : THREAD LOCK SUPER "1303" (U.S.A.)
99000-32120 : THREAD LOCK SUPER "1324" (Others)

REMOVAL

- Loosen the front axle holder nuts and axle shaft.
- Support the motorcycle with jack or block, and keep the front wheel off the ground.
- Draw out the axle shaft and remove the front wheel.

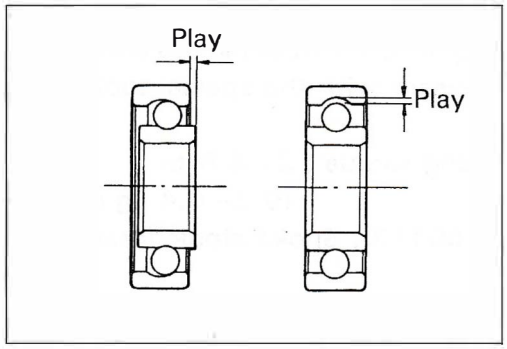
NOTE:
Do not operate the brake lever while dismounting the front wheel.



INSPECTION AND DISASSEMBLY

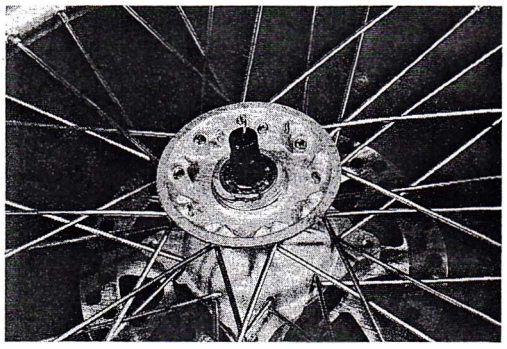
WHEEL BEARING

Inspect the play of bearing inner ring by hand while mounted in the wheel.
Rotate the inner ring by hand to inspect if any abnormal noise occurs or rotating smoothly.
Replace the bearing if there is anything unusual.



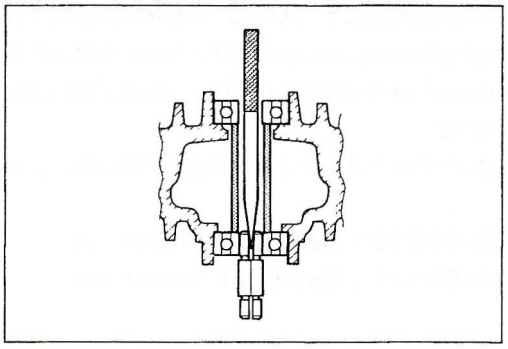
- Drive out the both bearing with the special tool in the follwoing procedures.

09941-50110 : Bearing remover



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

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

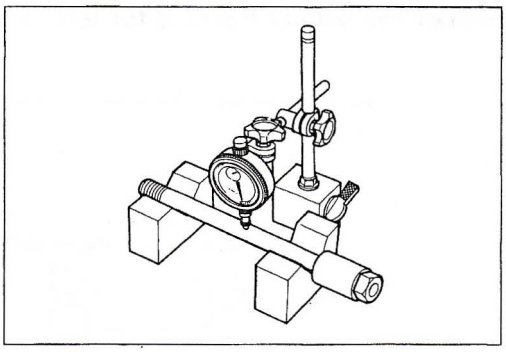


AXLE SHAFT

Check the axle shaft runout with a dial gauge and replace it if the runout exceeds the limit.

Service Limit : 0.25 mm (0.010 in)

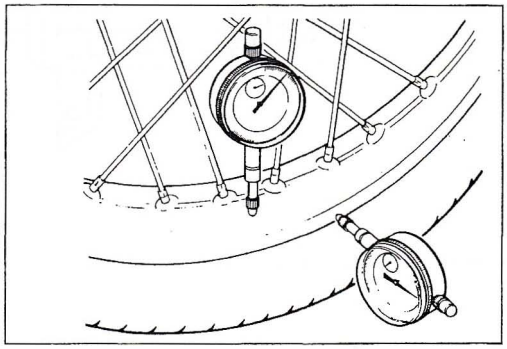
09900-20606 : Dial gauge (1/100 mm)
09900-20701 : Magnetic stand
09900-21304 : 'V' block set



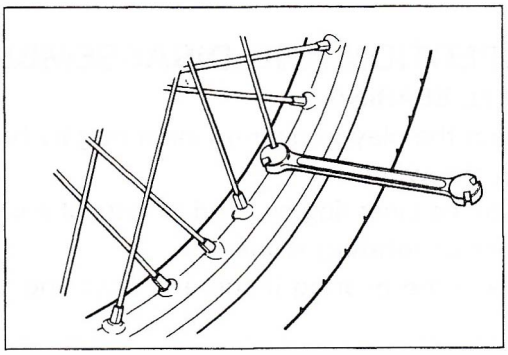
WHEEL RIM

Make sure that the wheel rim runout does not exceed the service limit when checked as shown.
As excessive runout is usually due to worn or loose wheel bearings and can be reduced by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel.

Service Limit : 2.0 mm (0.08 in)
(Axial and Radial)



SPOKE NIPPLE
Check to be sure that all nipples are tight, and retighten them as necessary with the special tool.



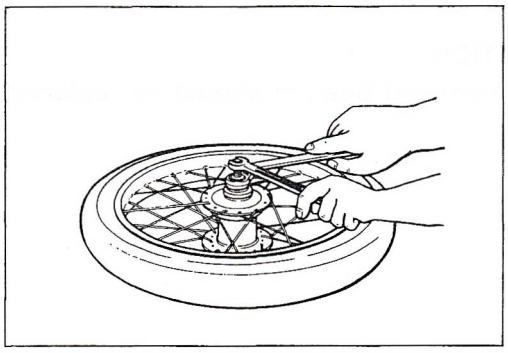
Tightening torque : 2—4 N·m
(0.2—0.4 kg-m, 1.5—3.0 lb-ft)
09940-60113 : Spoke nipple wrench

TIRE
Refer to page 2-13.

Service Limit : 4.0 mm (0.16 in)

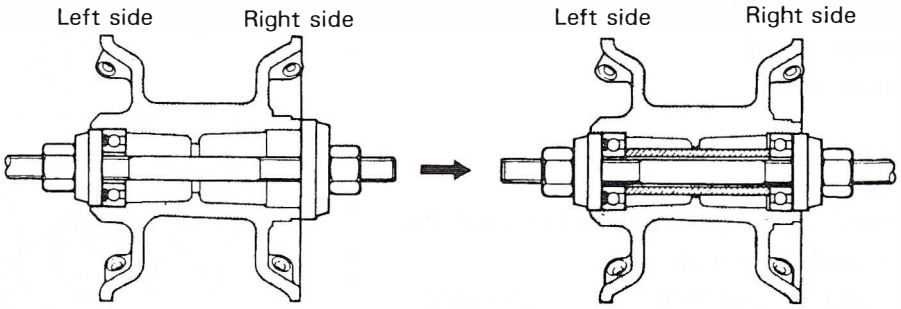
REASSEMBLY AND REMOUNTING
Reassemble and remount the front wheel in the reverse order of removal and disassembly, and also carry out the following steps:

- Install the wheel bearing with the special tools.

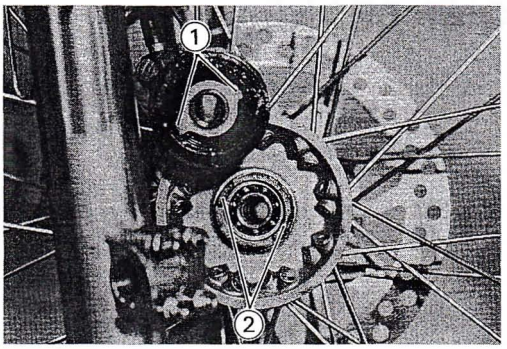


09924-84510 : Bearing installer set
09924-84521 : Bearing installer set

CAUTION:
First install the wheel bearing for left side.

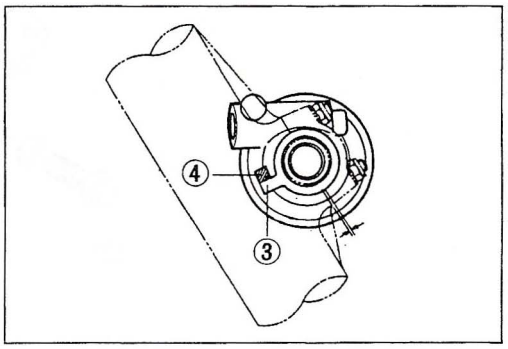


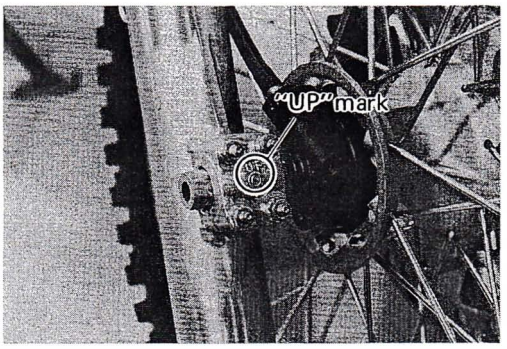
- When installing the odometer gear box, align the two drive pawls ① with the two recesses ② of the wheel hub.



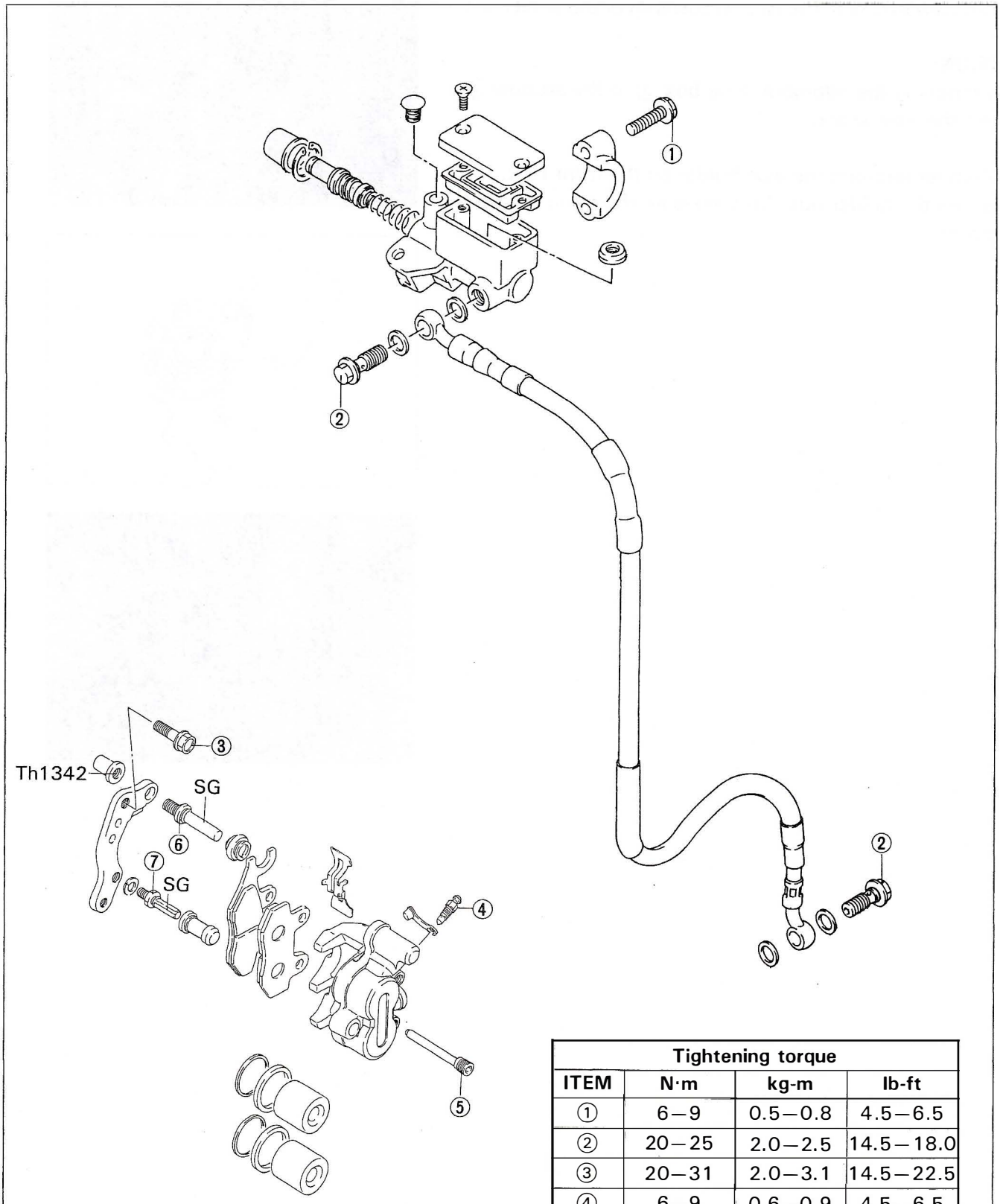
CAUTION:
After touching the odometer gear box ③ to the stopper ④, tighten the axle shaft.

- When remounting the axle holder on the front fork, first tighten the holder nuts for upside as shown in the illustration.





FRONT BRAKE

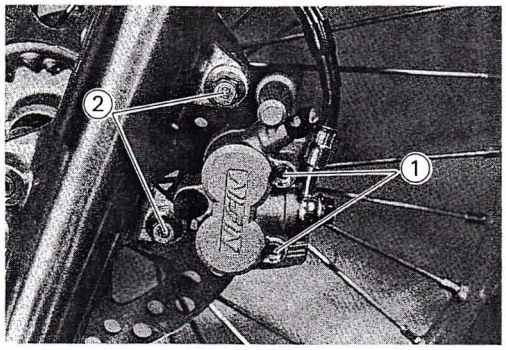


Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	6–9	0.5–0.8	4.5–6.5
②	20–25	2.0–2.5	14.5–18.0
③	20–31	2.0–3.1	14.5–22.5
④	6–9	0.6–0.9	4.5–6.5
⑤	15–20	1.5–2.0	11.0–14.5
⑥	20–25	2.0–2.5	14.5–18.0
⑦	15–20	1.5–2.0	11.0–14.5

SG: Apply SUZUKI Silicone grease (99000-25100)
Th1342 : Apply THREAD LOCK "1342" (99000-32050)

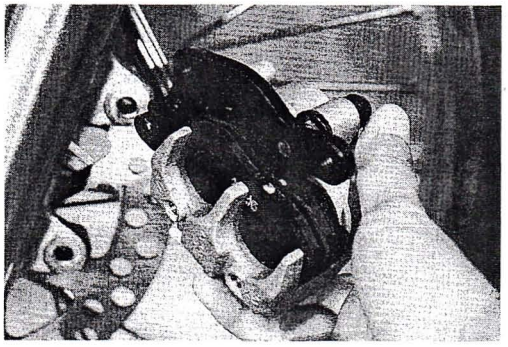
BRAKE PAD REPLACEMENT

- Slightly loosen the pad mounting bolts ① to facilitate later disassembly.
- Remove the caliper by removing the caliper mounting bolts ②.



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

- Remove the brake pad by removing the pad mounting bolts.

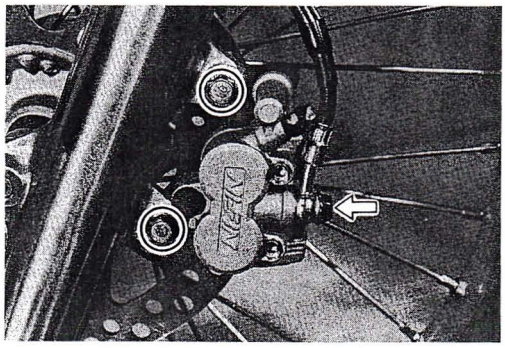


CAUTION:
Replace the brake pad as a set, otherwise braking performance will be adversely affected.

- Reassemble and remount the caliper. (Refer to page 6-5.)

CALIPER REMOVAL AND DISASSEMBLY

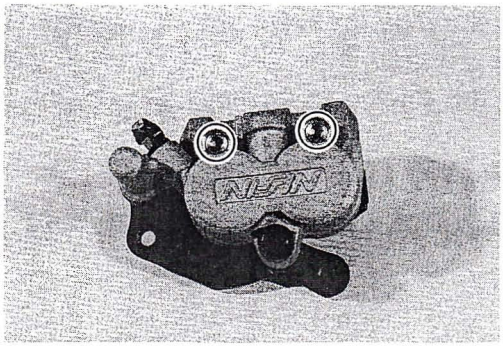
- Remove the brake hose and catch the brake fluid in a suitable receptacle.



CAUTION:
Never re-use the brake fluid left over from the last servicing and stored for long periods.

- Remove the caliper.

- Remove the pads by removing the mounting bolts.
- Remove the caliper holder.



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

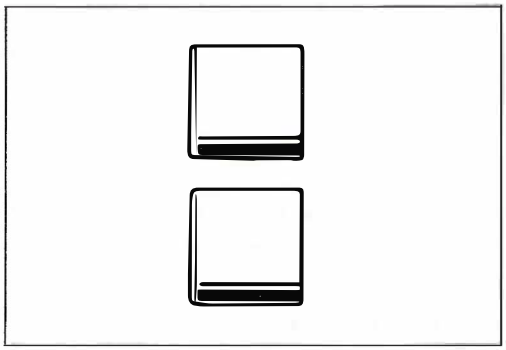
CAUTION:
Do not use high pressure air to prevent piston damage.

- Remove the dust seals and piston seals.

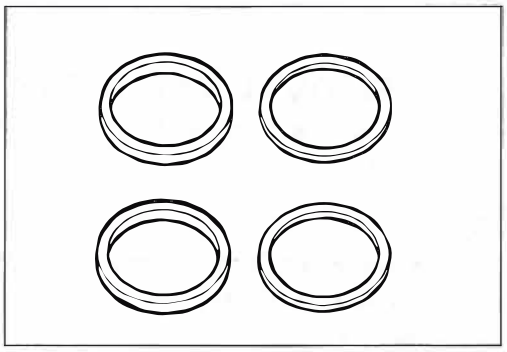
CALIPER AND DISC INSPECTION

Inspect the caliper cylinder bore wall for nicks, scratches or other damage.

Inspect each piston for damage and wear.



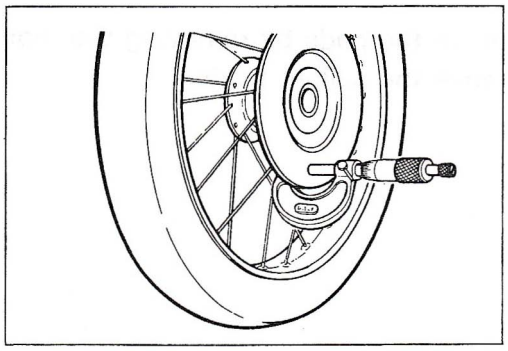
Inspect each rubber part for damage and wear.



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

Service Limit : 3.0 mm (0.12 in)

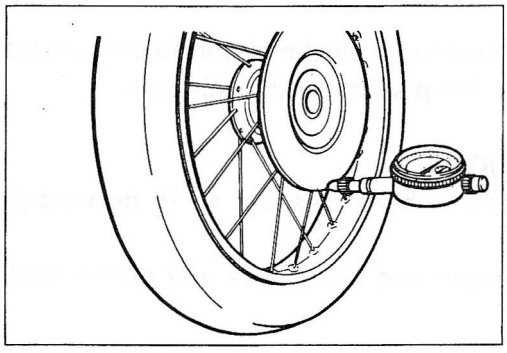
09900-20205 : Micrometer (0—25 mm)



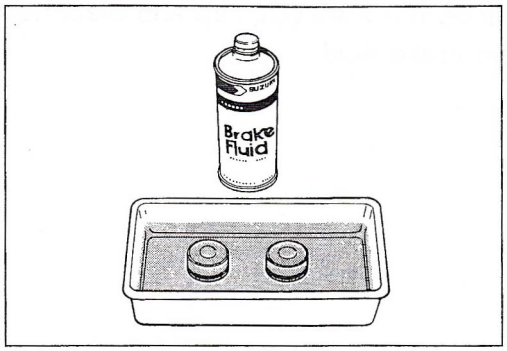
With the disc mounted on the wheel, check the disc for face runout with a dial gauge, as shown.
Replace the disc if the runout exceeds the service limit.

Service Limit : 0.30 mm (0.012 in)

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



CALIPER REASSEMBLY AND REMOUNTING



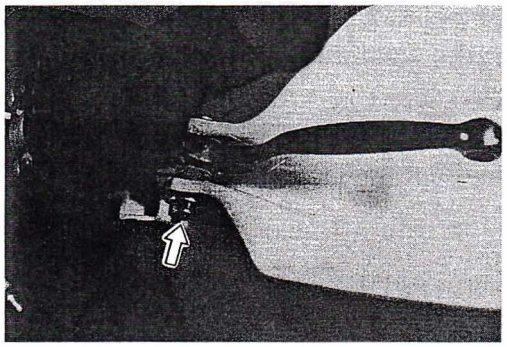
Reassemble and remount the caliper in the reverse order of removal, and also carry out the following steps:

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 to be inserted into the bore.

- Reassemble and remount the caliper. (Refer to page 6-5.)

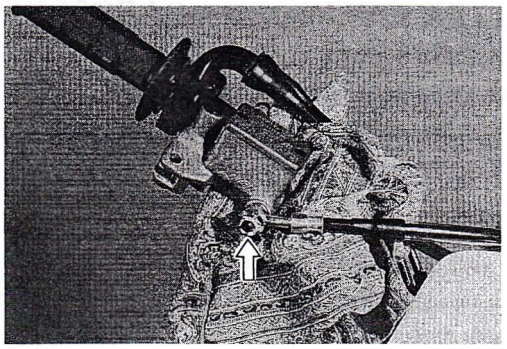
WARNING:
Bleed air after reassembling the caliper. (Refer to page 2-12.)

MASTER CYLINDER REMOVAL AND DISASSEMBLY



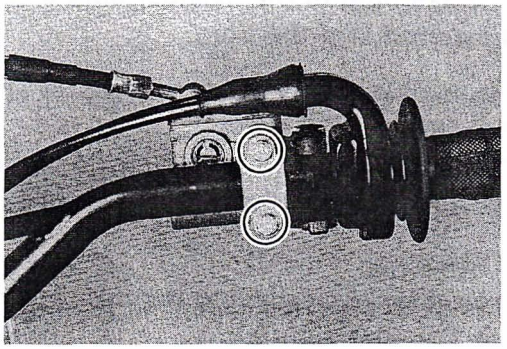
- Remove the brake lever cover and brake lever by removing the mounting bolt and nut.

NOTE:
When removing the brake lever, do not lose the spring.



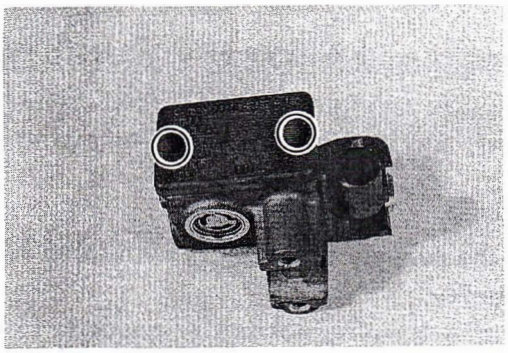
- Place a cloth undermeath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose/master cylinder joint.

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



- Remove the master cylinder.

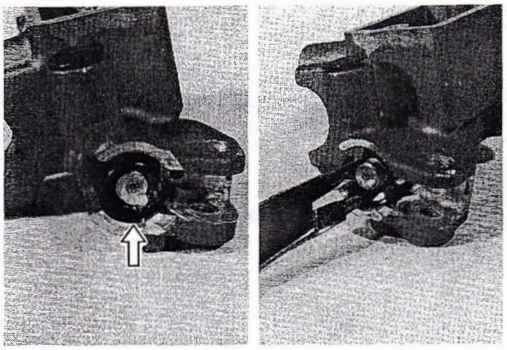
- Remove the reservoir cap and diaphragm.
- Drain brake fluid.



- Remove the dust boot.
- Remove the circlip with the special tool.

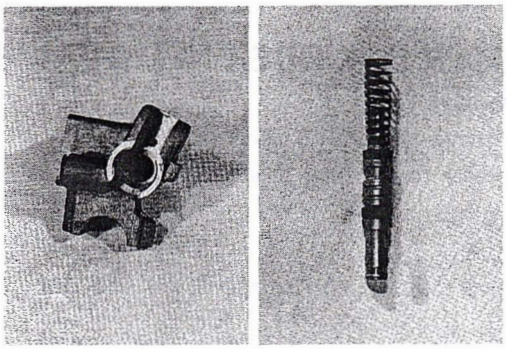
09900-06108 : Snap ring pliers

- Remove the piston/primary cup with return spring.



MASTER CYLINDER INSPECTION

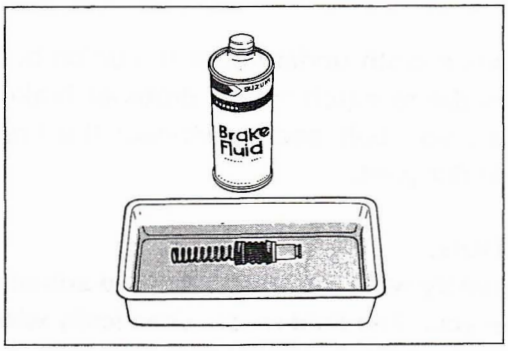
Inspect the master cylinder bore for any scraatches or other damage.
Inspect the piston surface for scratches or other damage.
Inspect the primary cup and dust boot for wear or damage.



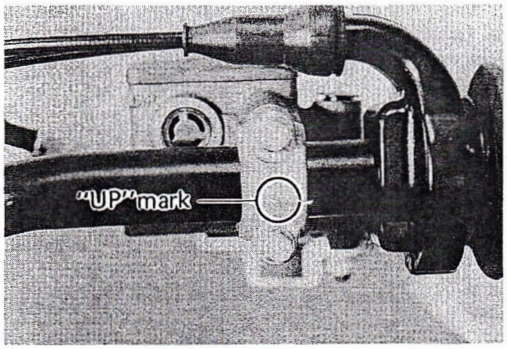
MASTER CYLINDER REASSEMBLY AND REMOUNTING

Reassemble and remount the master cylinder in the reverse order of removal and disassembly, 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.

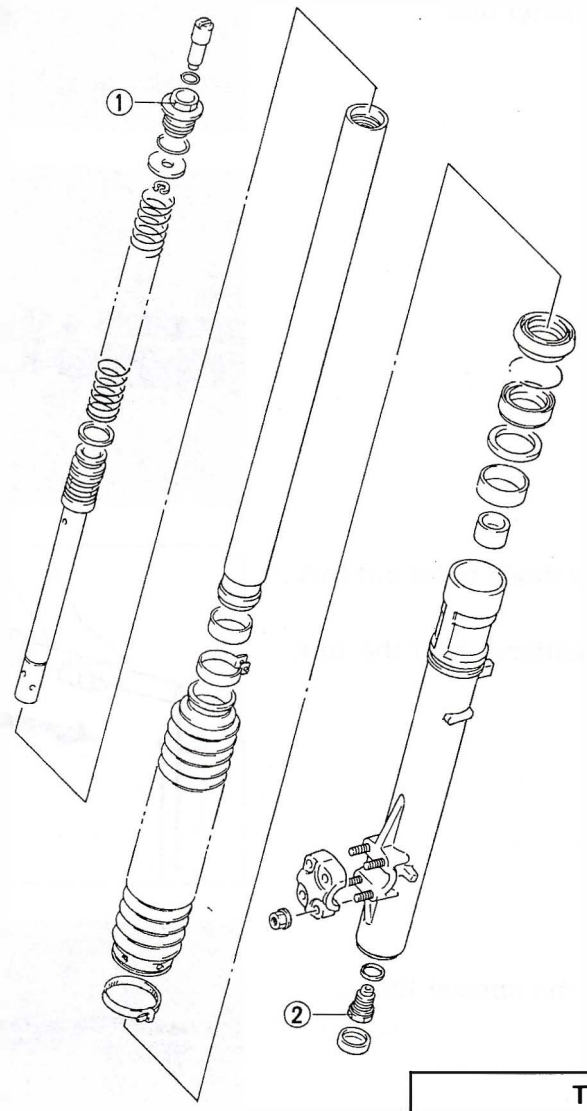


- Reassemble and remount the master cylinder. (Refer to page 6-5.)
- When remounting the master cylinder on the handlebar, first tighten the clamp bolt for upside.



CAUTION:
Bleed air after reassembling the master cylinder. (Refer to page 2-12).

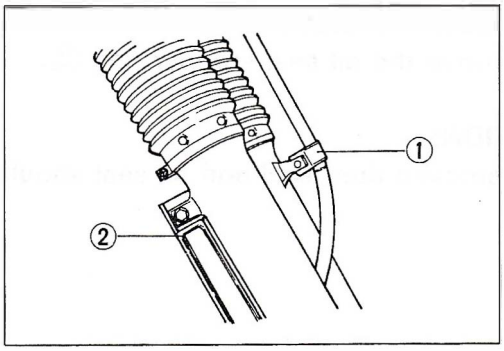
FRONT FORK



Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	30–40	3.0–4.0	21.5–29.0
②	30–40	3.0–4.0	21.5–29.0

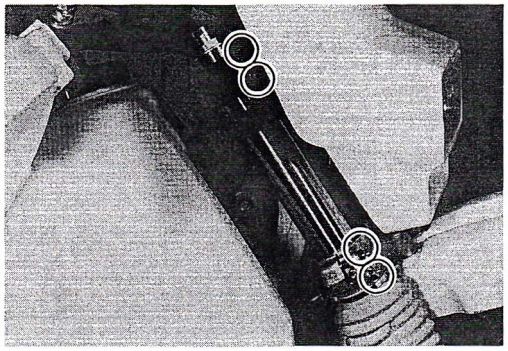
REMOVAL AND DISASSEMBLY

- Remove the front wheel. (Refer to page 6-1.)
- Remove the caliper mounting bolts. (Refer to page 6-6.)
- Remove the front brake hose holder ① and odometer cable guide ②.



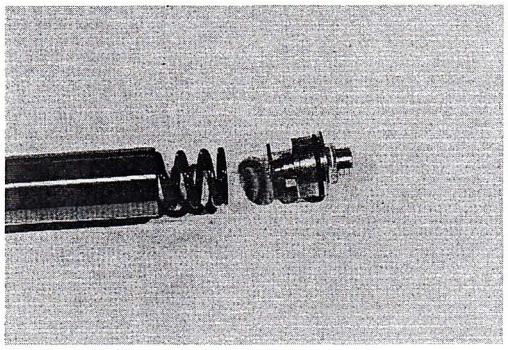
CAUTION:
Hang the caliper from the motorcycle frame by using the string, etc., taking care not to bend the brake hose.

- Loosen the front fork upper and lower clamp bolts and remove the front fork.

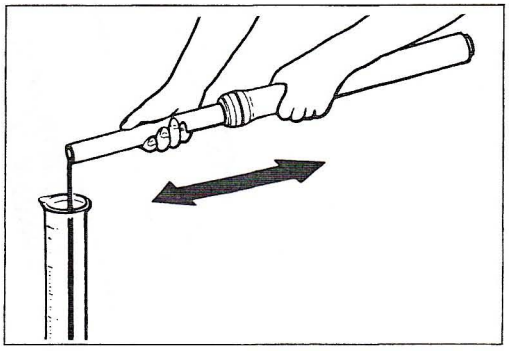


NOTE:
Slightly loosen the front fork cap bolt facilitate later disassembly, before loosening the lower clamp bolt.

- Remove the cap bolt and spring.

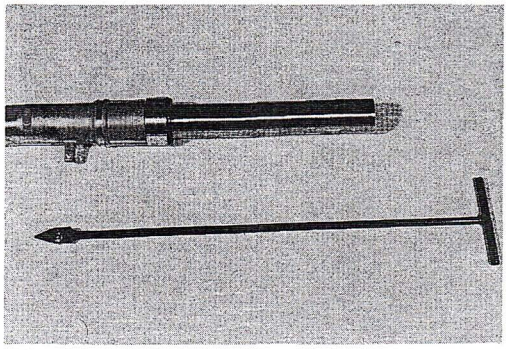


- Invert the fork and stroke it several times to let out fork oil.
- Under the condition (inverted condition), hold the fork for a few minutes.



- Remove the boot.
- Loosen the damper rod bolt with the special tools.

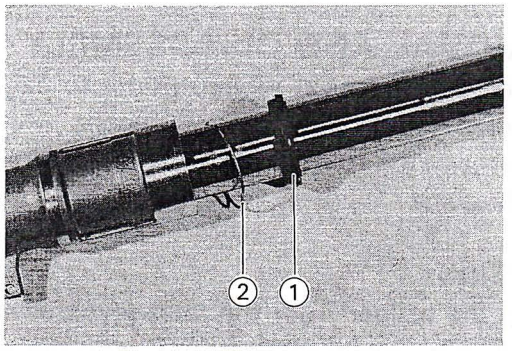
09940-34520 : T handle
09940-34530 : Attachment "A"



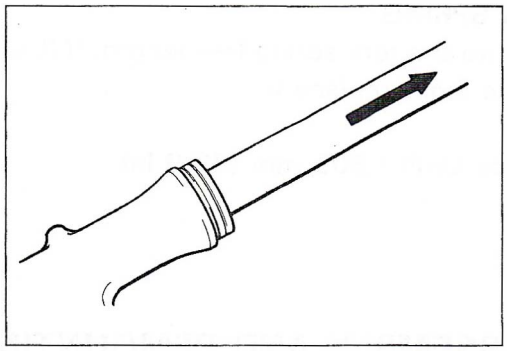
- Remove the damper rod from the outer tube.

- Remove the dust seal ①.
- Remove the oil seal stopper ring ②.

CAUTION:
The removed dust seal and oil seal should be replaced.

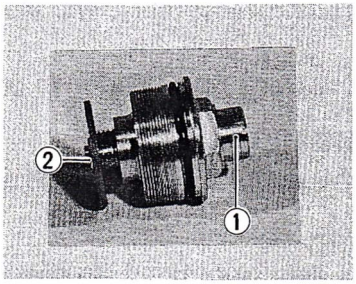


- Separate the inner tube from the outer tube.



CAUTION:
When separating the inner tube from the outer tube, both antifriction metals may be damaged and must be replaced with new ones.

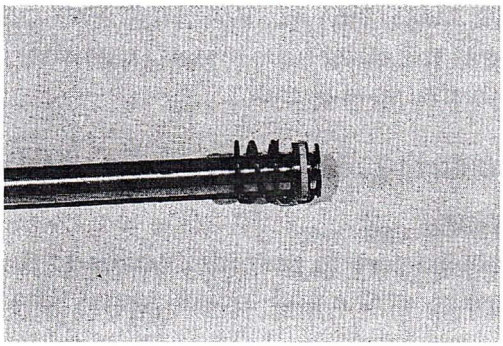
- Separate the spring adjuster ① by removing the E-ring ②.



INSPECTION

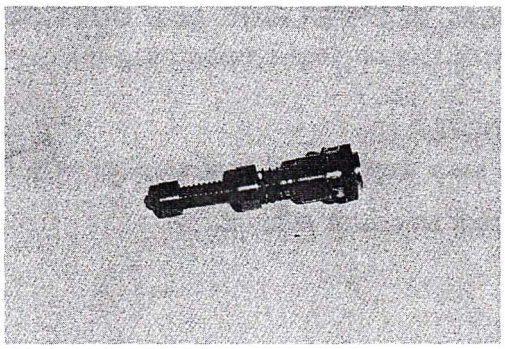
DAMPER ROD RING

Inspect the damper rod ring for wear and damage.



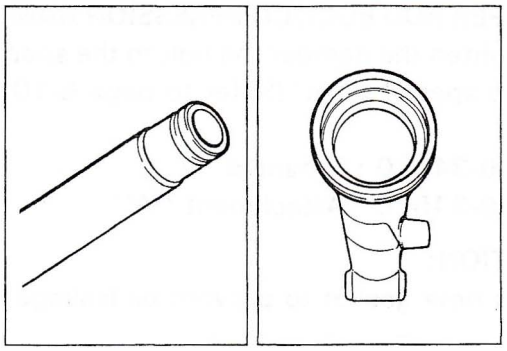
DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

Inspect the damper rod bolt/damping force adjuster for damage or wear.



INNER TUBE AND OUTER TUBE

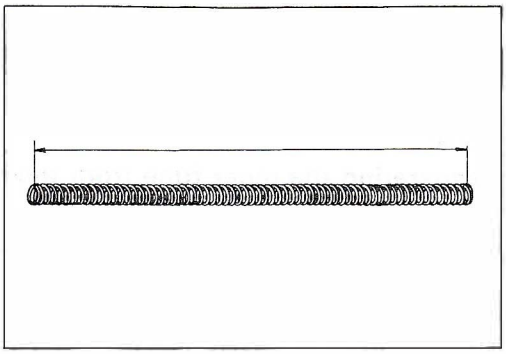
Inspect the inner tube and outer tube sliding surfaces for any scuffing or flaws.



FORK SPRING

Measure the fork spring free length, If it is shorter that the service limit, replace it.

Service Limit : 608 mm (23.9 in)



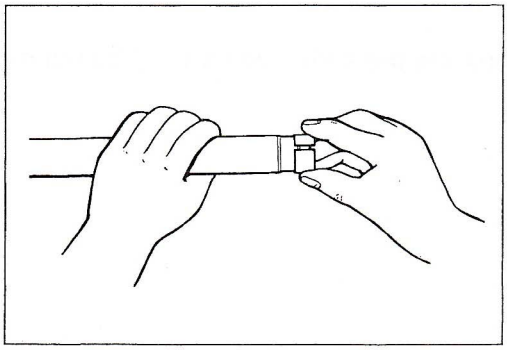
REASSEMBLY AND REMOUNTING

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

- Install the front fork. (Refer to page 6-10.)

INNER TUBE METAL

- Install the metal by hand as shown.



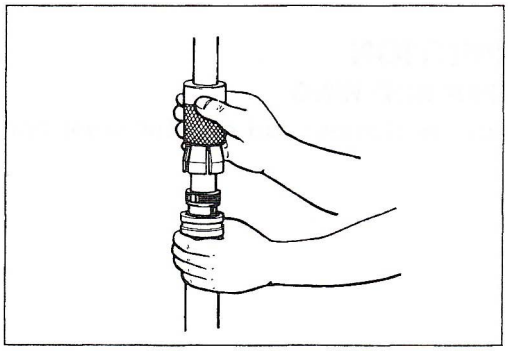
CAUTION:

Use special care to prevent damage to the "Teflon" coated surface of the Anti-friction metal when mounting it.

OUTER TUBE METAL, WASHER AND OIL SEAL

- Install the outer tube metal ①, washer ② and oil seal ③ with the special tool.

09940-50113 : Front fork oil seal installer

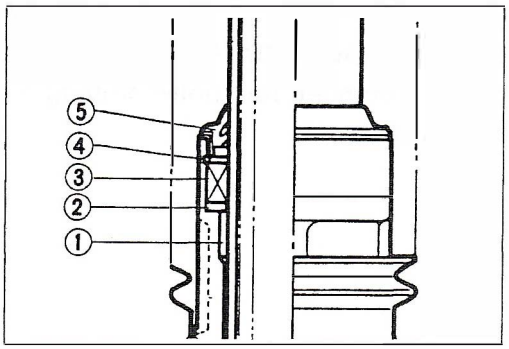


CAUTION;

Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.

OIL SEAL STOPPER RING AND DUST SEAL

- Install the oil seal stopper ring ④.



CAUTION:

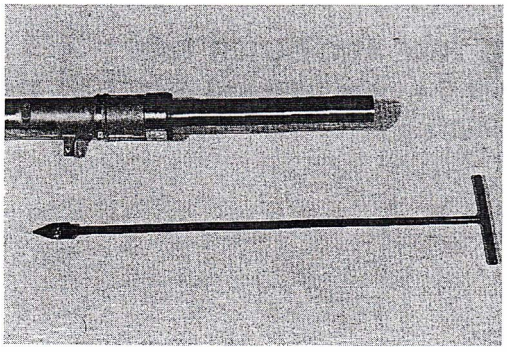
Make sure that the oil seal stopper ring fitted securely.

- Install the dust seal ⑤.

DAMPER ROD BOLT/COMPRESSION DAMPING ADJUSTER

- Tighten the damper rod bolt to the specified torque with the special tools. (Refer to page 6-10.)

09940-34520 : T handle
09940-34530 : Attachment "A"



CAUTION:

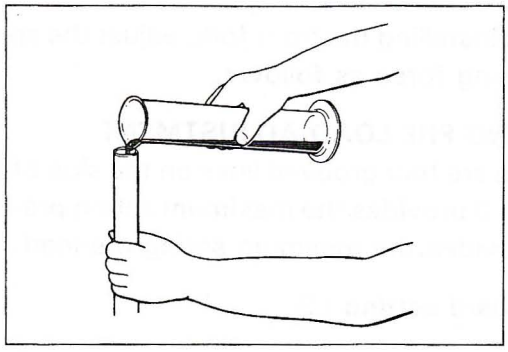
Use a new gasket to prevent oil leakage.

FORK OIL

- Place the front fork vertically with full compressed position.
- For the fork oil, be sure to use a front fork oil whose viscosity rating meets specifications below.

Fork oil type : Fork oil #10

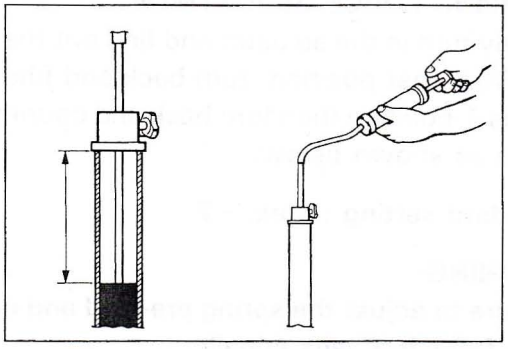
99000-99044-10G : SUZUKI FORK OIL #10



- Hold the front fork vertical and adjust the fork oil level with the special tool.

Oil level : 145 mm (5.7 in)

09943-74111 : Fork oil level gauge

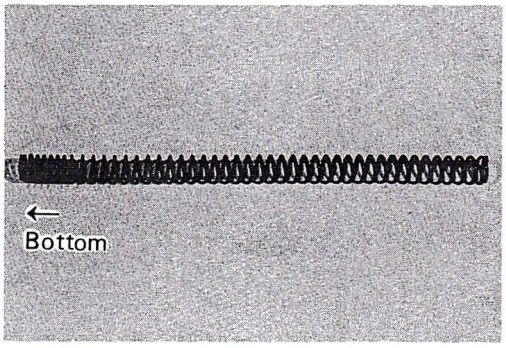


NOTE:
When adjusting the oil level, remove the fork spring and compress the inner tube fully.

FORK SPRING

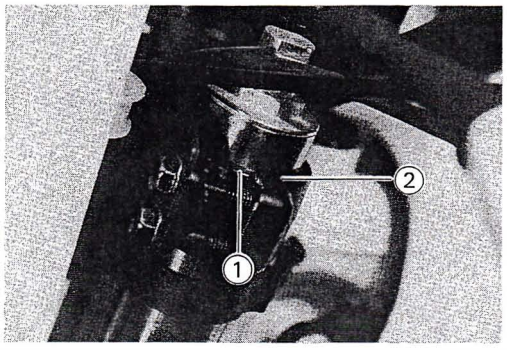
- Install the fork spring as shown in photograph.

NOTE:
Close-pitch end of spring should position bottom.



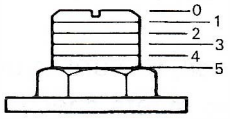
FRONT FORK REMOUNTING

- When installing the front fork assembly, align the line ① on the inner tube to the upper surface of the steering stem upper bracket ②.



ADJUSTMENT

After installing the front fork, adjust the spring pre-load and damping force as follows.

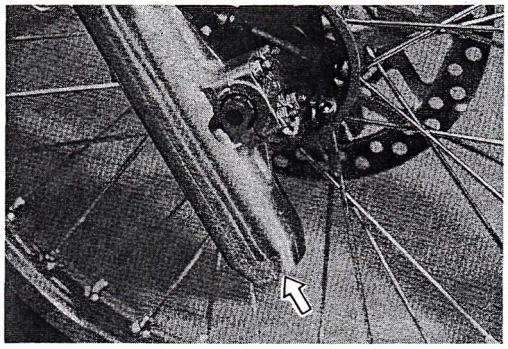


Position 6

SPRING PRE-LOAD ADJUSTMENT

There are four grooved lines on the side of the adjuster. Position 0 provides the maximum spring pre-load and position 5 provides the minimum spring pre-load.

Standard setting : 3



DAMPING FORCE ADJUSTMENT

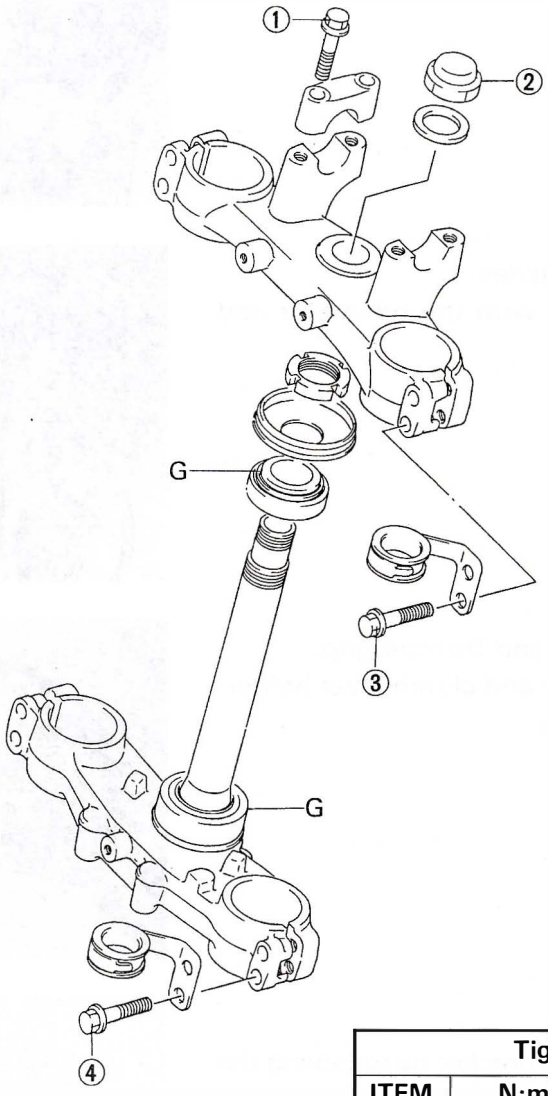
Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click—that is 1-position then turn back and count the specified position as shown below.

Standard setting : Max. – 7

WARNING:

Be sure to adjust the spring pre-load and damping force on both front fork legs equally.

STEERING STEM

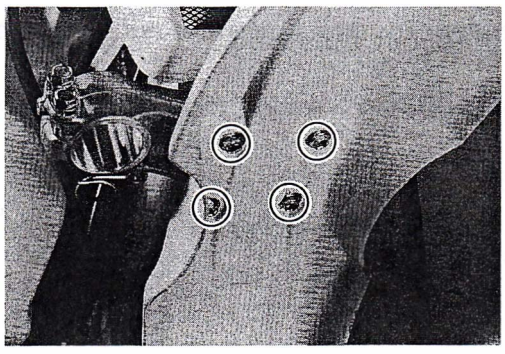


Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	18—28	1.8—2.8	13.0—20.0
②	80—100	8.0—10.0	58.0—72.5
③	20—31	2.0—3.1	14.5—22.5
④	20—31	2.0—3.1	14.5—22.5

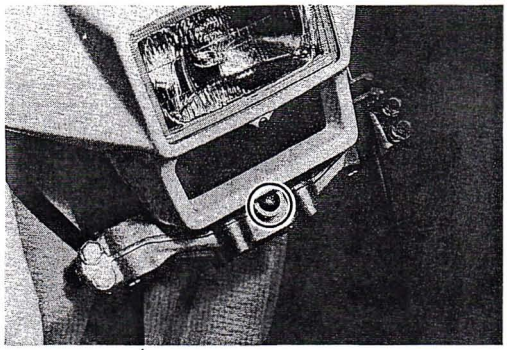
G : Apply SUZUKI SUPER GREASE "A"
99000-25030 (U.S.A.)
99000-25010 (Others)

REMOVAL AND DISASSEMBLY

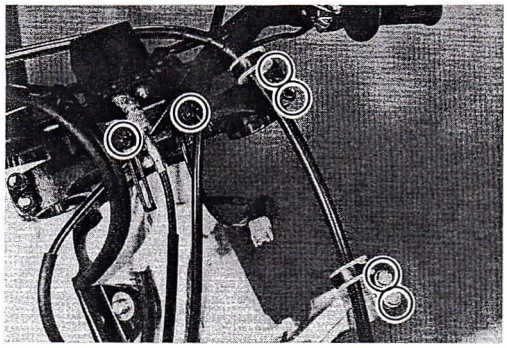
- Remove the front wheel. (Refer to page 6-1.)
- Remove the front fork. (Refer to page 6-10.)
- Remove the front fender.



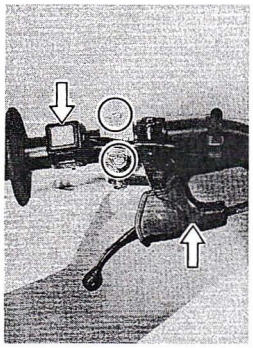
- Disconnect the headlight lead wires.
- Remove the headlight housing with headlight by removing the screw.



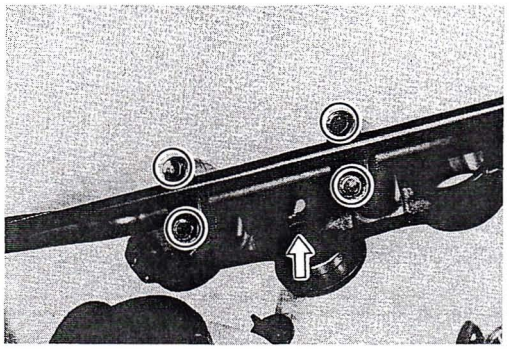
- Remove the two brake hose guides.
- Remove the odometer bracket with the odometer and cable.



- Remove the throttle grip case and throttle grip.
- Remove the engine stop switch and clutch lever holder.
- Disconnect the de-comp. cable.



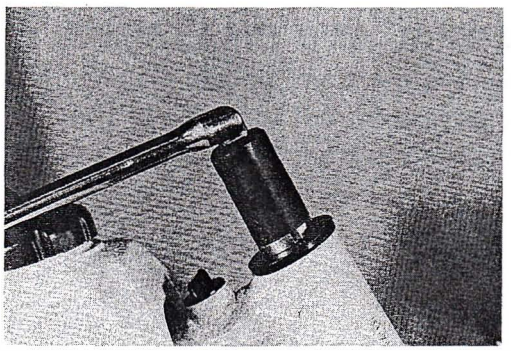
- Remove the handlebar.
- Remove the steering stem upper bracket by removing the nut.



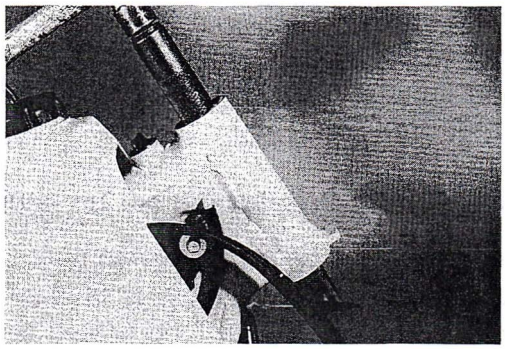
- Remove the steering stem nut with the special tool.

09940-14920 : Steering nut socket wrench.

NOTE:
Hold the steering stem lower bracket by hand to prevent it from falling.

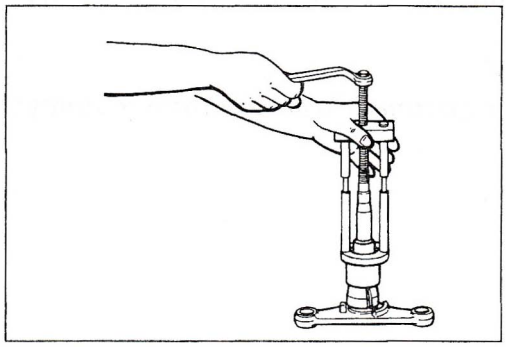


- Remove the upper bearing.
- Remove the upper bearing race and lower bearing race with the special tools.



09941-54911 : Bearing outer race remover
09941-74910 : Steering bearing remover and installer

- Remove the lower bearing with the special tool.



09941-84510 : Bearing remover

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

INSPECTION

Inspect the removed parts for the following abnormalities.

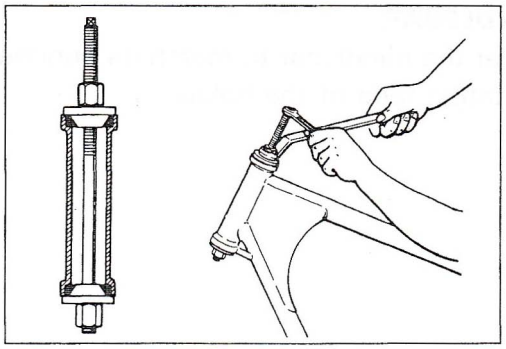
* Handlebar distortion
* Handlebar clamp wear
* Race wear and brinelling
* Abnormal noise of bearing
* Distortion of steering stem

REASSEMBLY AND REMOUNTING

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

BEARING RACES

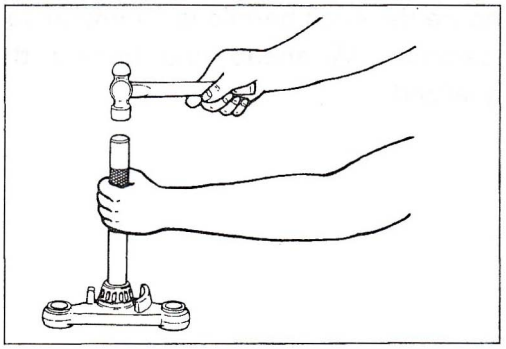
- Press in the upper and lower bearing races with the special tool.



09941-34513 : Steering outer race installer

BEARING

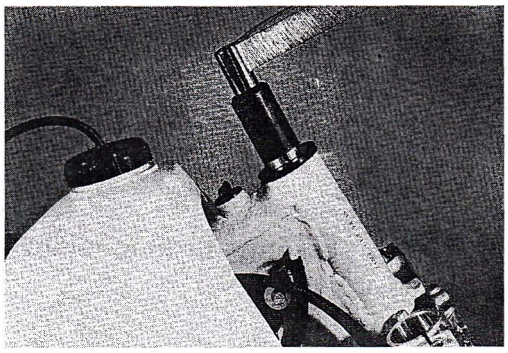
- Press in the lower bearing with the special tool.



09941-74910 : Steering bearing installer

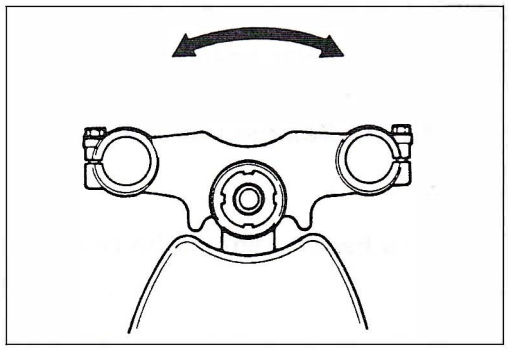
STEERING STEM NUT

- Tighten the steering stem nut with the special tool to the specified torque (40—50 N·m, 4.0—5.0 kg-m, 29.0—36.0 lb-ft).



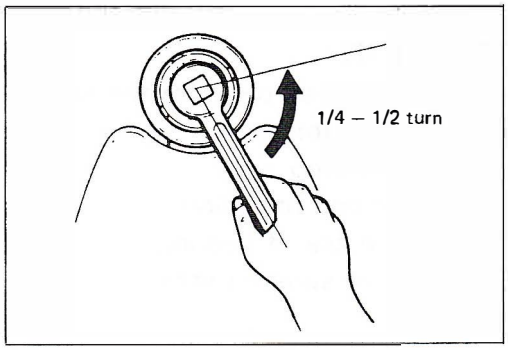
09940-14920 : Steering nut socket wrench

- Turn the steering stem bracket about five or six times to the left and right until it locks in position so that the taper roller bearings will be seated properly.
- Turn back the stem nut by 1/4—1/2 turn.



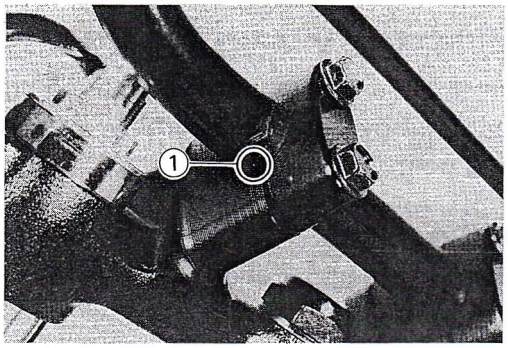
NOTE:
This adjustment will vary from motorcycle to motorcycle.

CAUTION:
After performing the adjustment and installing the steering stem upper bracket, "rock" the front wheel assembly forward and backward to ensure that there is no play and that the procedure was accomplished correctly.
Finally check to be sure that the steering stem moves freely from left to right with its own weight. If play or stiffness is noticeable, readjust the steering stem nut.

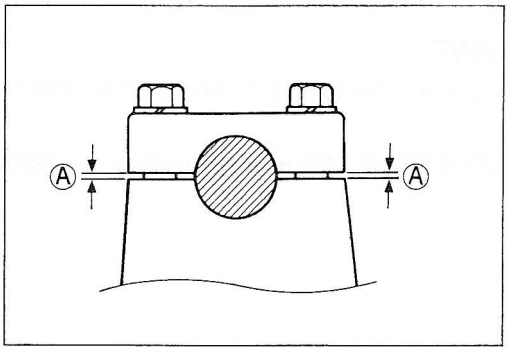


HANDLEBAR

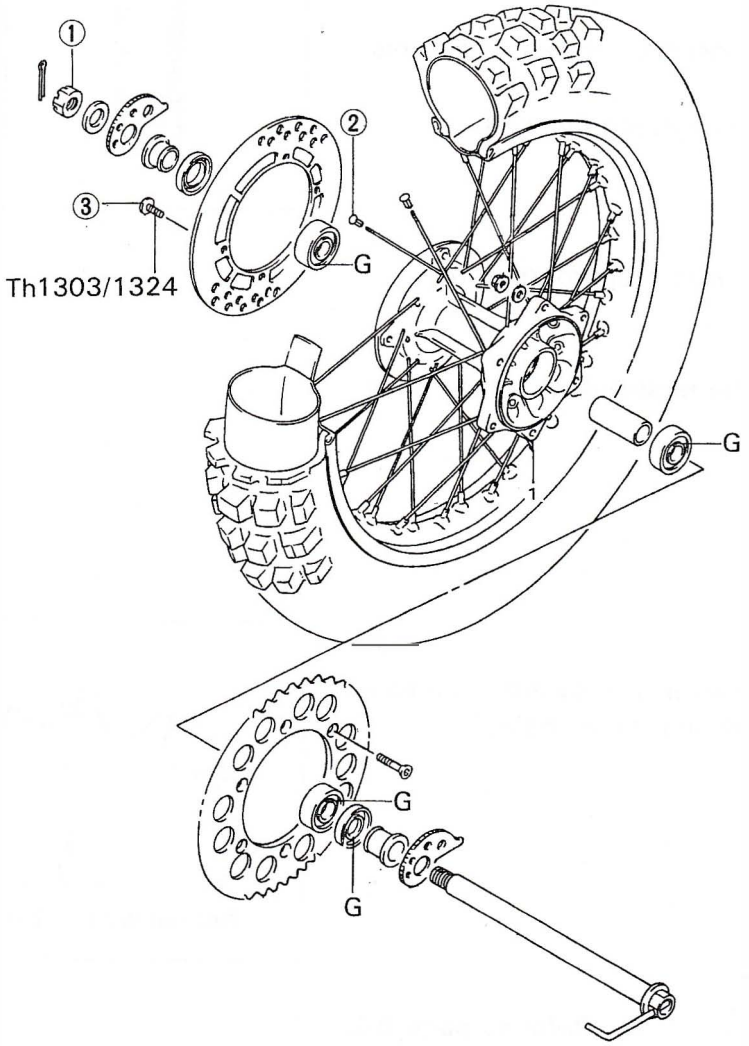
- Set the handlebar to match its punched mark ① to the mating face of the holder.



- Secure the each handlebar clamp in such a way that the clearances Ⓐ ahead and behind the handlebar are equalized.



REAR WHEEL

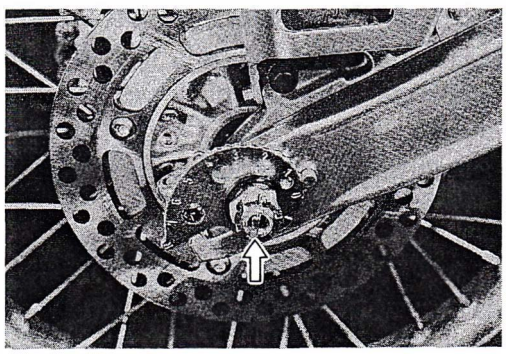


Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	85—115	8.5—11.5	61.5—83.0
②	2—4	0.2—0.4	1.5—3.0
③	18—28	1.8—2.8	13.0—20.0

G : Apply SUZUKI SUPER GREASE "A"
99000-25030 (U.S.A.) 99000-25010 (Others)
Th1303/1324 : Apply THREAD LOCK SUPER "1303/1324"
99000-32030 : THREAD LOCK SUPER "1303" (U.S.A.)
99000-32120 : THREAD LOCK SUPER "1324" (Others)

REMOVAL

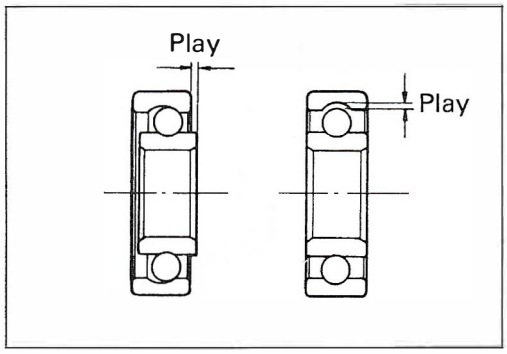
- Remove the cotter pin. (For U.S.A. and Canada)
- Remove the axle nut.
- Support the motorcycle with jack or block, and keep the rear wheel off the ground.
- Remove the axle shaft and disengage the drive chain from the rear sprocket.
- Remove the rear wheel.



INSPECTION AND DISASSEMBLY

WHEEL HUB BEARING

Inspect the play of the wheel hub bearings by hand while mounted in the wheel hub.
Rotate the inner ring by hand to inspect if any abnormal noise occurs or rotating smoothly.
Replace the bearing if there is anything unusual.

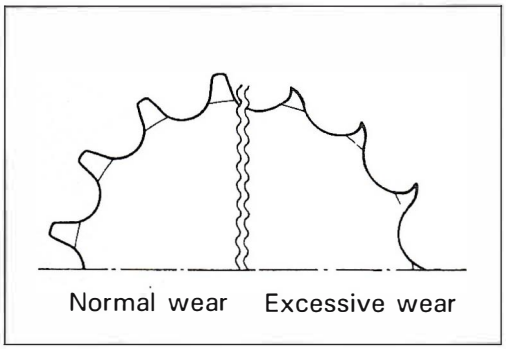


- Remove the both bearings with a appropriate bar.

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

REAR SPROCKET

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



AXLE SHAFT . . . . . Refer to page 6-2.
WHEEL RIM . . . . . Refer to page 6-2.
TIRE . . . . . Refer to page 2-13
Service Limit : 4.0 mm (0.16 in)
SPOKE NIPPLE . . . . . Refer to page 6-3.

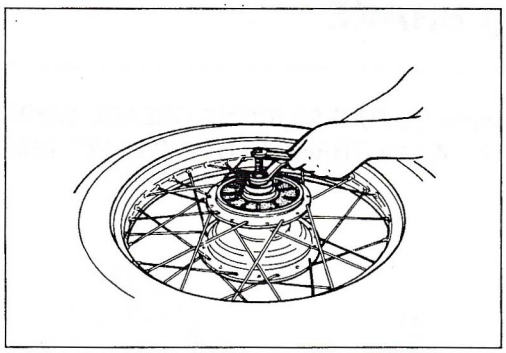
REASSEMBLY AND REMOUNTING

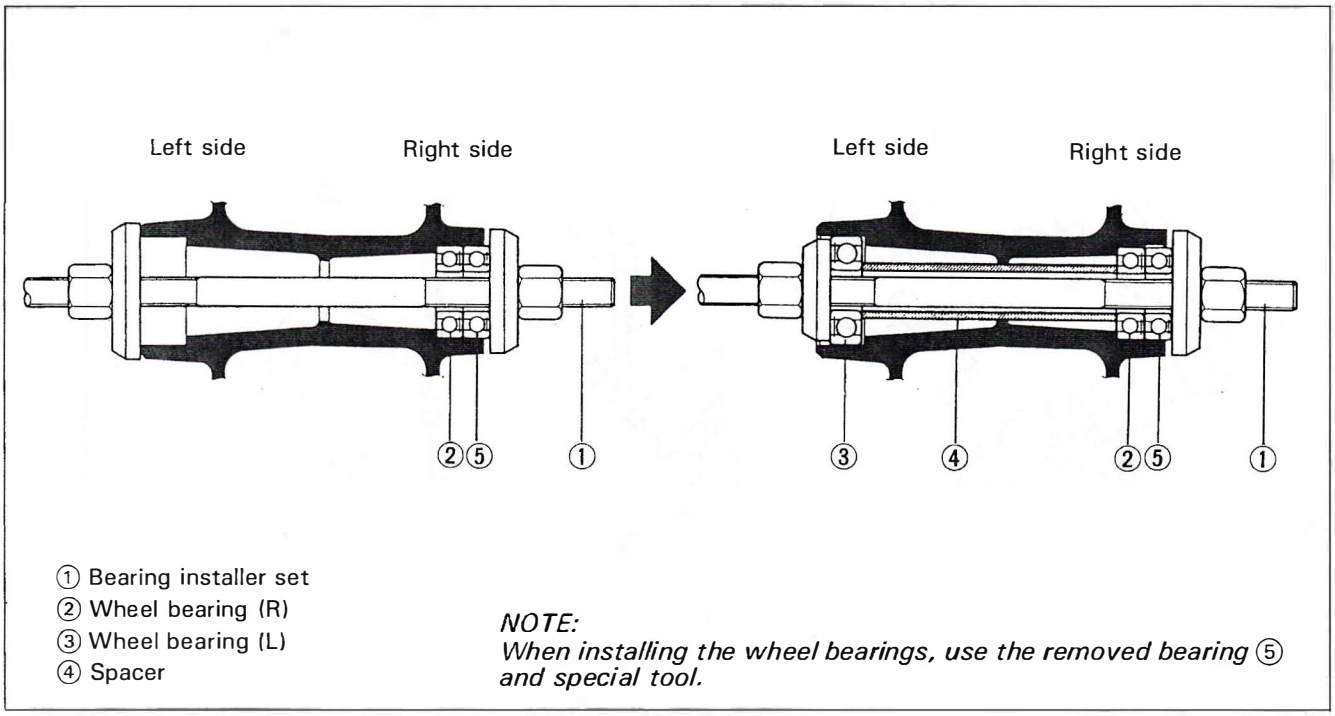
- Reassemble and remount the rear wheel in the reverse order of removal and disassembly, and also carry out the following steps:
- Reassemble and remount the rear wheel. (Refer to page 6-20.)

- Install the wheel bearing with the special tools.

09924-84510 : Bearing installer
09924-84521 : Bearing installer

CAUTION:
First install the wheel bearing for right side.





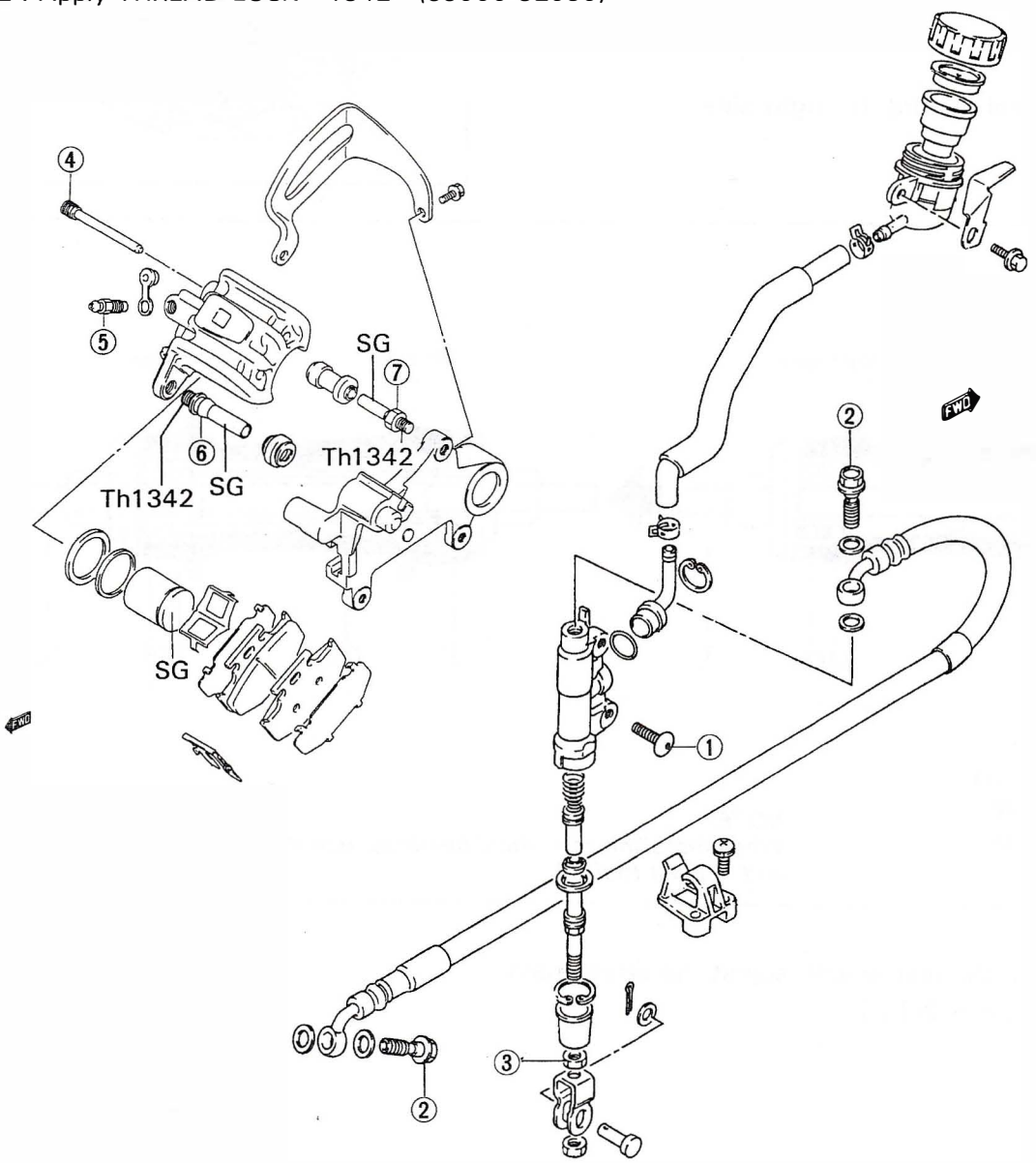
① Bearing installer set
② Wheel bearing (R)
③ Wheel bearing (L)
④ Spacer

NOTE:
When installing the wheel bearings, use the removed bearing ⑤ and special tool.

- After remounting the rear wheel, adjust the drive chain slack. (Refer to page 2-10.)

REAR BRAKE

SG : Apply SUZUKI SILICONE GREASE (99000-25100)
Th1342 : Apply THREAD LOCK "1342" (99000-32050)

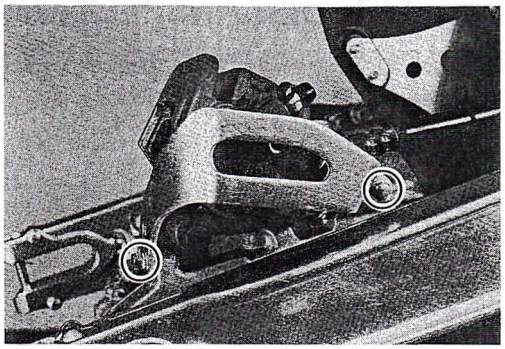


Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	8–12	0.8–1.2	6.0–8.5
②	20–25	2.0–2.5	14.5–18.0
③	15–20	1.5–2.0	11.0–14.5
④	15–20	1.5–2.0	11.0–14.5
⑤	6–9	0.6–0.9	4.5–6.5
⑥	20–25	2.0–2.5	14.5–18.0
⑦	10–15	1.0–1.5	7.0–11.0

BRAKE PAD REPLACEMENT

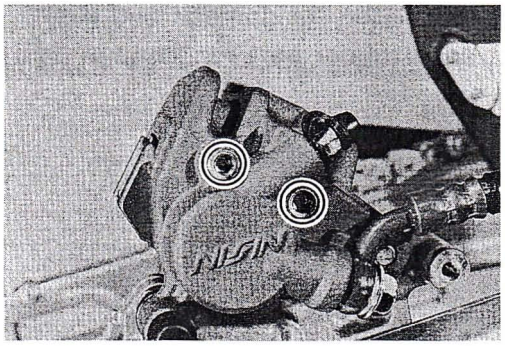
- Remove the rear wheel. (Refer to page 6-20.)
- Remove the caliper cover.

NOTE:
Do not operate the brake while dismounting the rear wheel.



- Remove the brake pads by removing the pads mounting bolts.

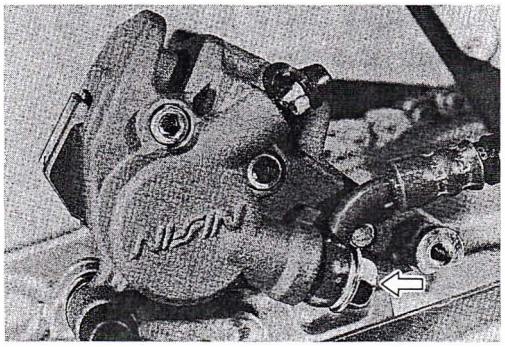
CAUTION:
Replace the brake pad as a set, otherwise braking performance will be adversely affected.



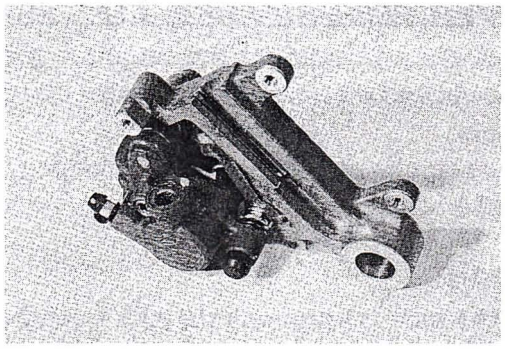
- Reassemble and remount the caliper. (Refer to page 6-23.)

CALIPER REMOVAL AND DISASSEMBLY

- Remove the rear wheel. (Refer to page 6-20.)
- Remove the caliper cover.
- Disconnect the brake hose and catch the brake fluid in a suitable receptacle.
- Remove the caliper.

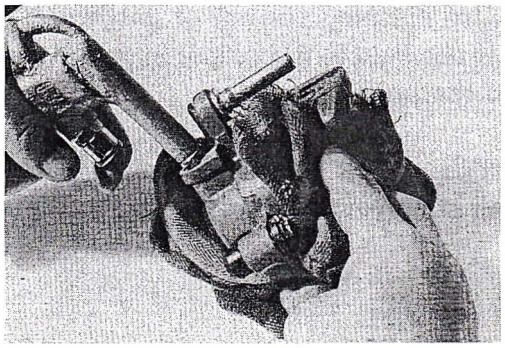


- Remove the caliper holder.
- Remove the pads by removing the mounting bolts.



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

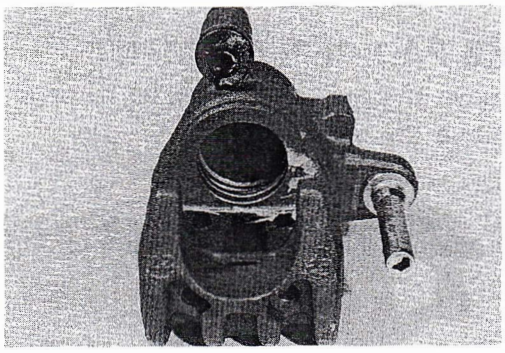
CAUTION:
Do not use high pressure air to prevent piston damage.



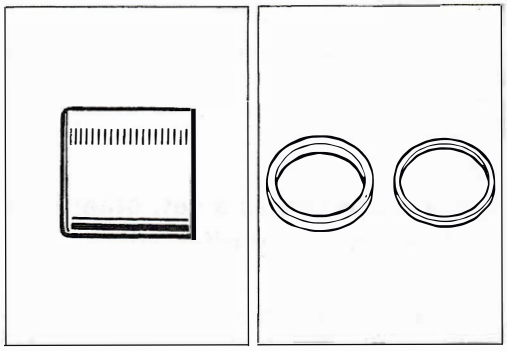
- Remove the dust seal and piston seal.

CALIPER AND DISC INSPECTION

Inspect the caliper bore wall for nicks, scraches or other damage.



Inspect the piston for damage and wear.
Inspect each rubber part for damage and wear.



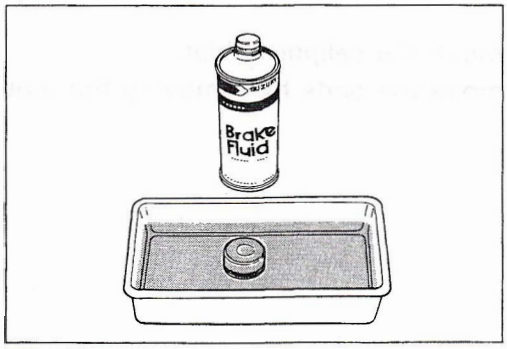
DISC THICKNESS (Refer to page 6-7.)
Service Limit : 3.5 mm (0.14 in)

DISC RUNOUT (Refer to page 6-7.)
Service Limit : 0.3 mm (0.012 in)

CALIPER REASSEMBLY AND REMOUNTING

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

- Reassemble and remount the caliper. (Refer to page 6-23.)

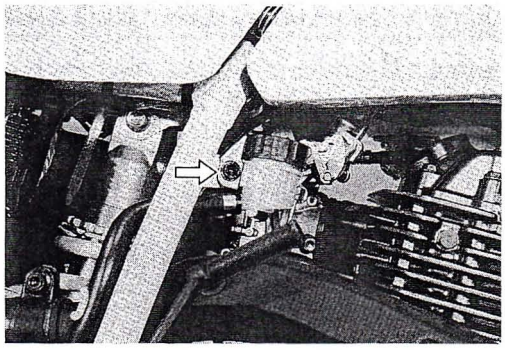


CAUTION:
Wash the caliper components with fresh brake fluid before reassembly.
Never use cleaning solvent or gasoline to wash them.
Apply brake fluid to the caliper bore and piston to be inserted into the bore.

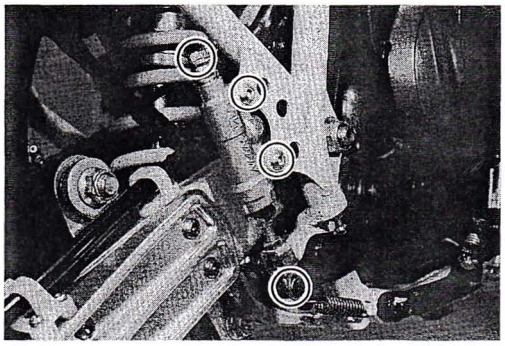
WARNING:
Bleed air after reassembling the caliper. (Refer to page 2-12.)

MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Remove the reservoir tank mounting bolt.



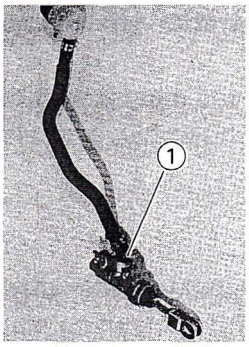
- Remove the cotter pin and pin.
- Place a cloth underneath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose/master cylinder joint.



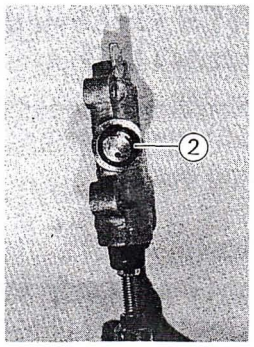
CAUTON:
Completely wipe off any brake fluid adhering to any part of motorcycle. The fluid reacts chemically with paint, plastlics, rubber materials, etc.

- Remove the connector by removing the circlip ① with the special tool.

09900-06108 : Snap ring pliers

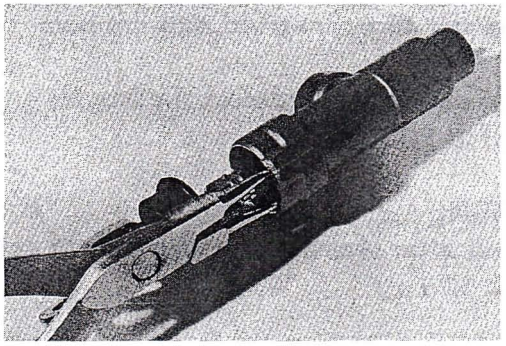


- Remove the O-ring ②.

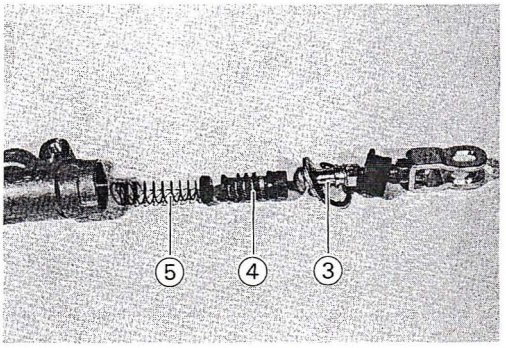


- Remove the dust boot.
- Remove the circlip with the special tool.

09900-06108 : Snap ring pliers

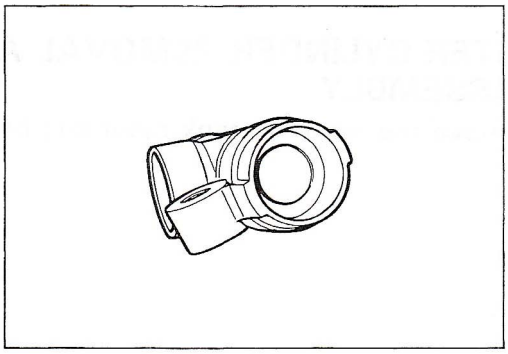


- Remove the rod ③, piston/primary cup ④ and spring ⑤.

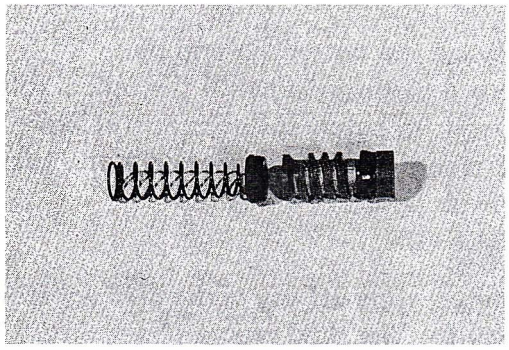


MASTER CYLINDER INSPECTION

Inspect the cylinder bore wall for any scratches or other damage.

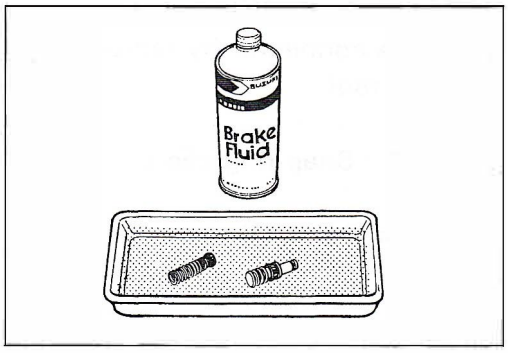


Inspect the piston surface for scratches or other damage.
Inspect the primary cup for damage.



MASTER CYLINDER REASSEMBLY AND REMOUNTING

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

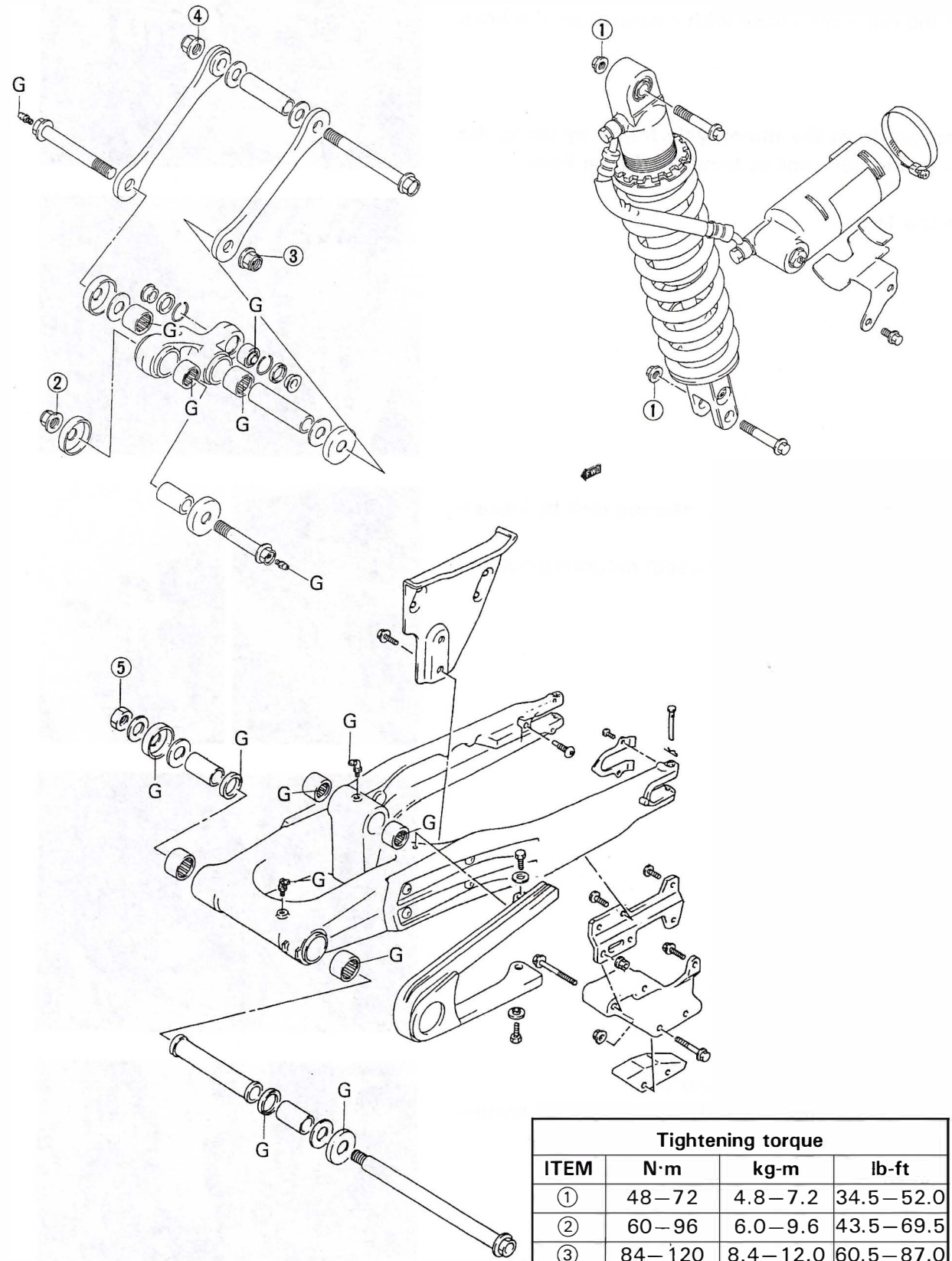


CAUTION:
Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them. Apply brake fluid to the cylinder bore and all internals to be inserted into the bore.

- Reassemble and remount the master cylinder. (Refer to page 6-23.)

CAUTION:
Bleed air after reassembling the master cylinder. (Refer to page 2-12.)

REAR SWINGARM AND SUSPENSION

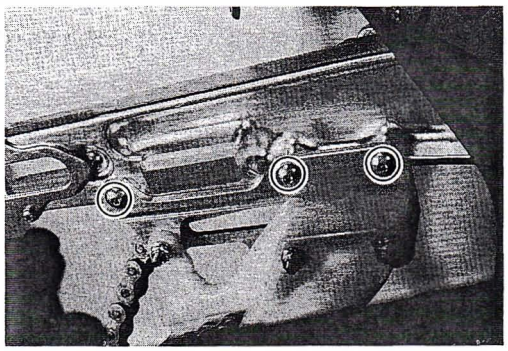


Tightening torque			
ITEM	N·m	kg-m	lb-ft
①	48–72	4.8–7.2	34.5–52.0
②	60–96	6.0–9.6	43.5–69.5
③	84–120	8.4–12.0	60.5–87.0
④	84–120	8.4–12.0	60.5–87.0
⑤	61–94	6.1–9.4	44.0–68.0

G : Apply SUZUKI SUPER GREASE "A"
99000-25030 (U.S.A.)
99000-25010 (Others)

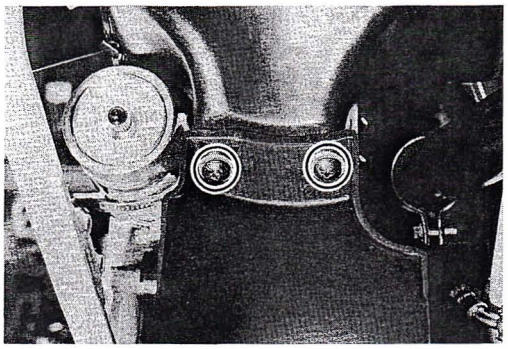
REMOVAL

- Remove the rear wheel. (Refer to page 6-20.)
- Remove the chain guide.
- Remove the rear brake hose with caliper from the hose guides.

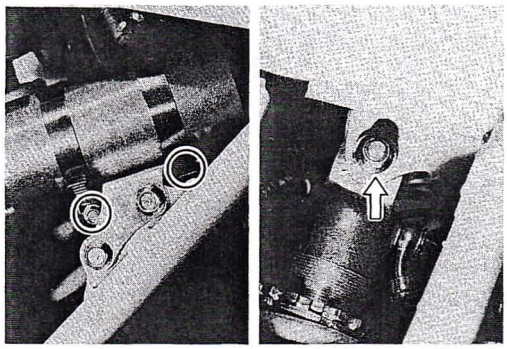


CAUTION:
Hang the caliper from the motorcycle frame by using the string etc., taking care not to bend the brake hose.

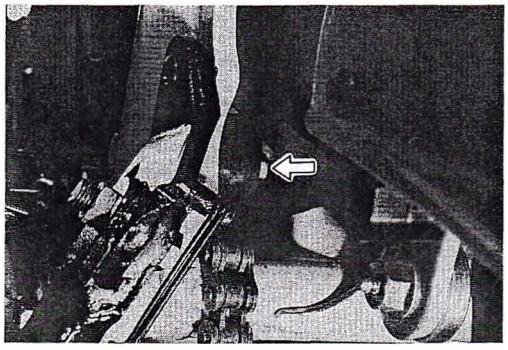
- Remove the fender.



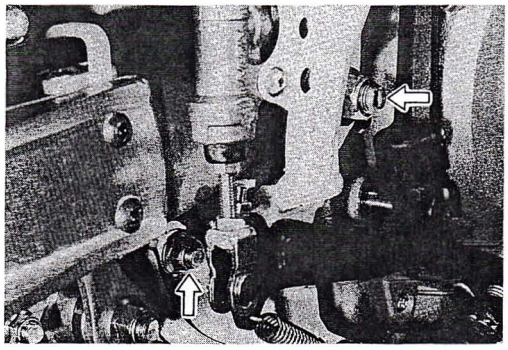
- Remove the rear shock absorber reservoir tank by loosening the clamps.
- Remove the rear shock absober upper mounting nut and bolt.



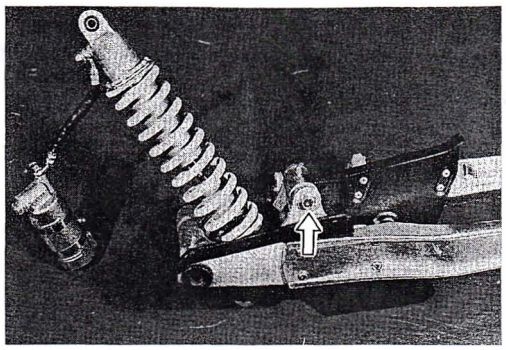
- Remove the chain roller.



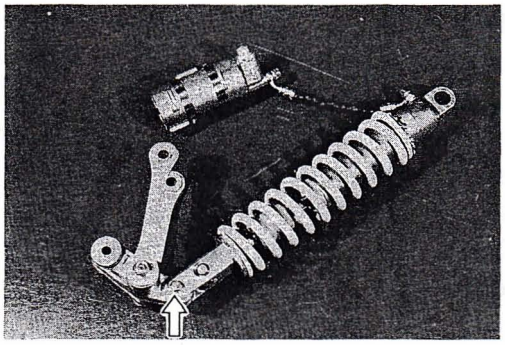
- Remove the cushion rod nut and bolt.
- Remove the rear swingarm with suspension by removing the swingarm pivot shaft.



- Remove the chain buffer.
- Remove the chain case.
- Remove the suspension mounting nut and bolt.

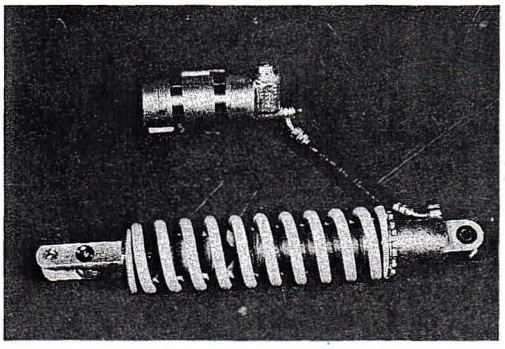


- Remove the shock absorber with the reservoir tank.



INSPECTION AND DISASSEMBLY

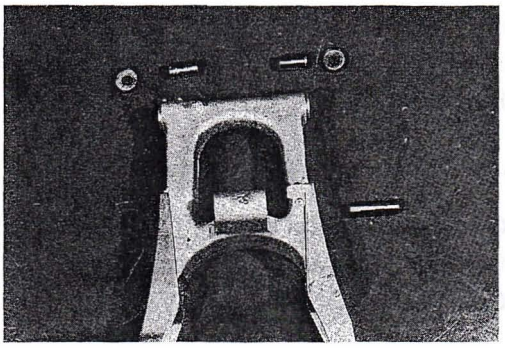
Inspect the shock absorber for oil leakage or other damage.



REAR SWINGARM

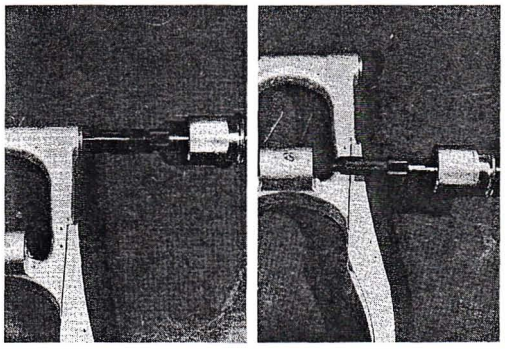
Inspect the swingarm bearings by hand while mounted in the swingarm. Rotate the bearing spacer to inspect for abnormal moise and smooth rotation.
Replace the bearing if there is anything unusual.
Inspect the dust seals. If they are found to be damage, replace them with new ones.

- Remove the dust seals and spacars.

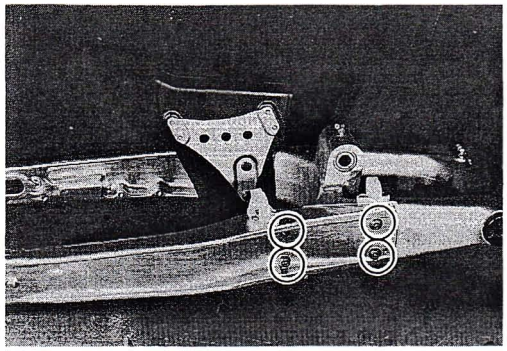


- Remove the bearings with the special tools.

09923-74510 : Bearing remover
09930-30102 : Sliding shaft

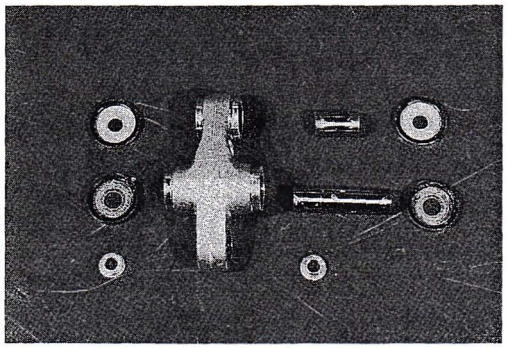


CAUTION:
Do not attempt to remove the bolts, right and left. Swingarm is not disassembly.



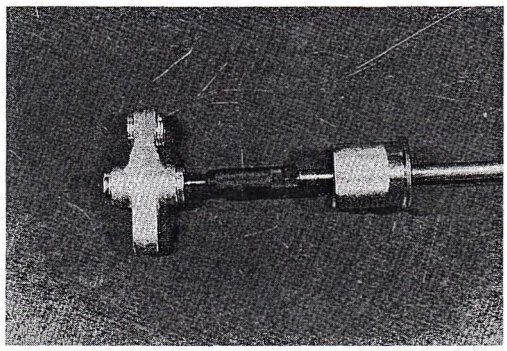
CUSHION LEVER
Inspect the respective cushion lever bearings by hand while they are in the cushion lever.
Rotate each bearing spacer to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual. Inspect the dust seals. If they are found to be damaged, replace them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

- Remove the dust seals and spacers.



- Remove the bearings with the special tools and proper tool.

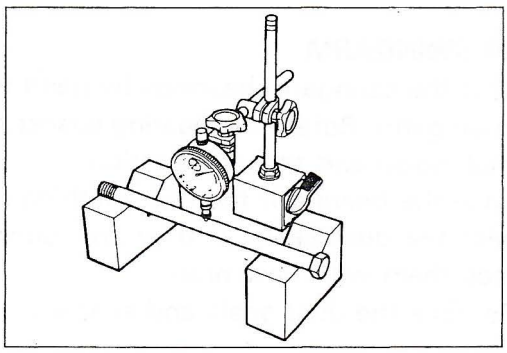
09923-74510 : Bearing remover
09930-30102 : Sliding shaft



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

Service Limit : 0.3 mm (0.01 in)

09900-20606 : Dial gauge (1/100 mm)
09900-20701 : Magnetic stand
09900-21304 : V-block



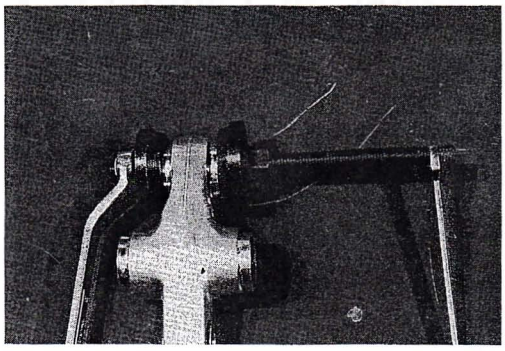
REASSEMBLY AND REMOUTING

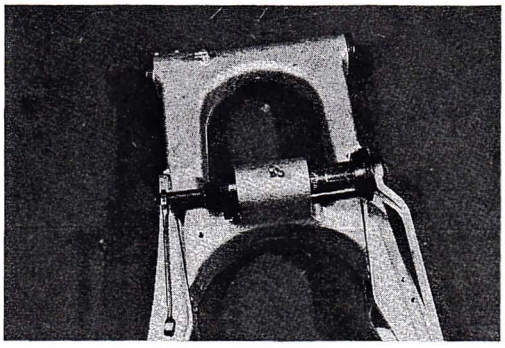
Reassemble and remount the rear suspension in the reverse order of removal and disassembly, and also carry out the following steps.

- Reassemble and remount the rear suspension. (Refer to pages 6-28. and 6-33.)
- Install the cushion lever and swingarm bearings with the special tool and proper socket wrench.

09924-84510 : Bearing installer

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



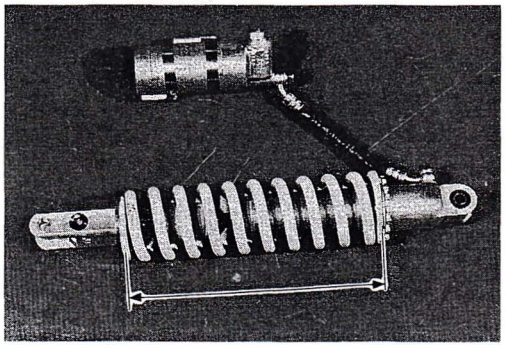


SHOCK ABSORBER SPRING PRE-LOAD ADJUSTMENT

Using the universal clamp wrench, adjust the spring tension of the shock absorber by turning the spring pre-load adjuster ring as follows.

Standard spring pre-set length : 269.2 mm (10.6 in)

09910-60611 : Universal clamp wrench



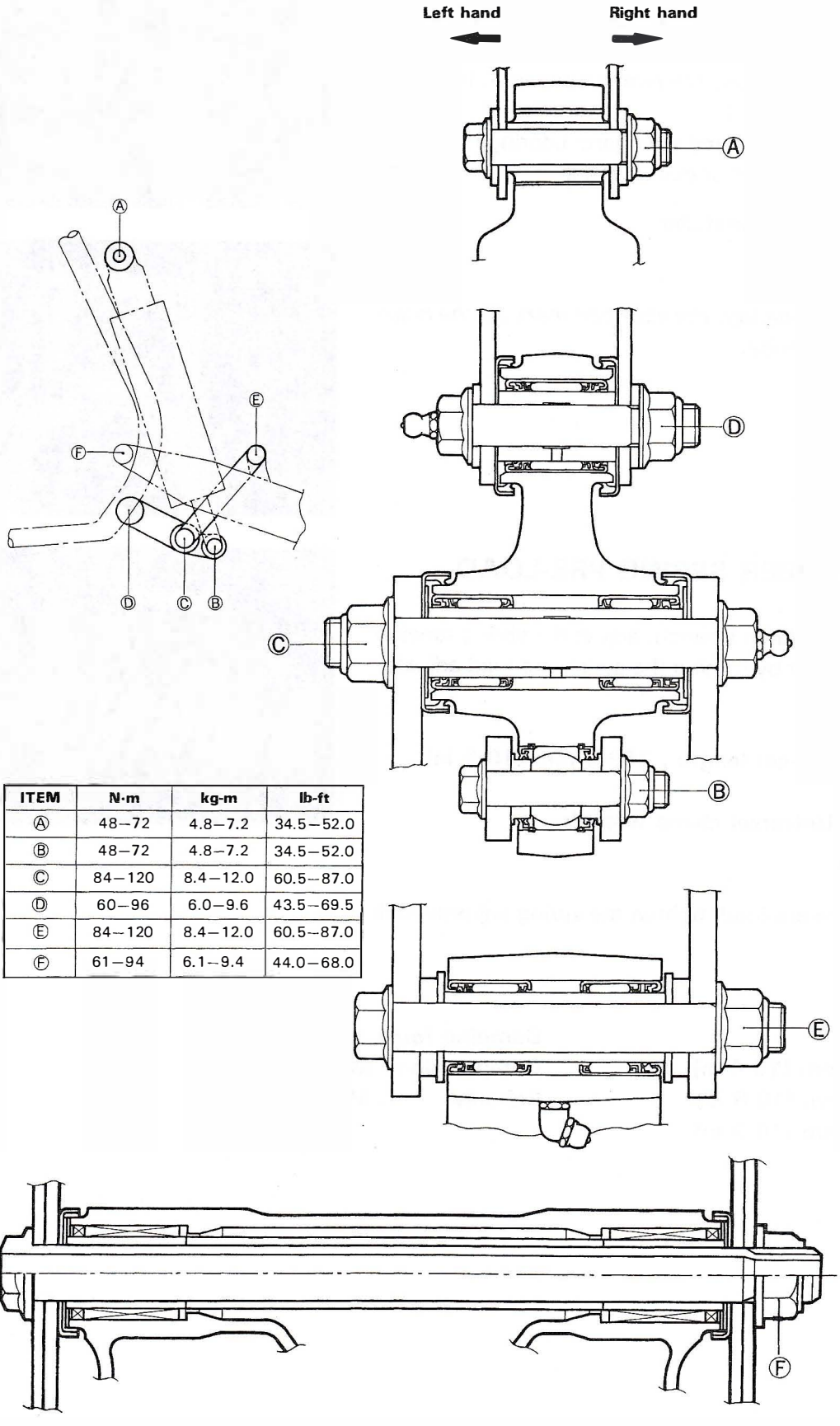
CAUTION:
After adjusting the pre-load, tighten the spring adjuster lock ring securely.

SETTING TABLE

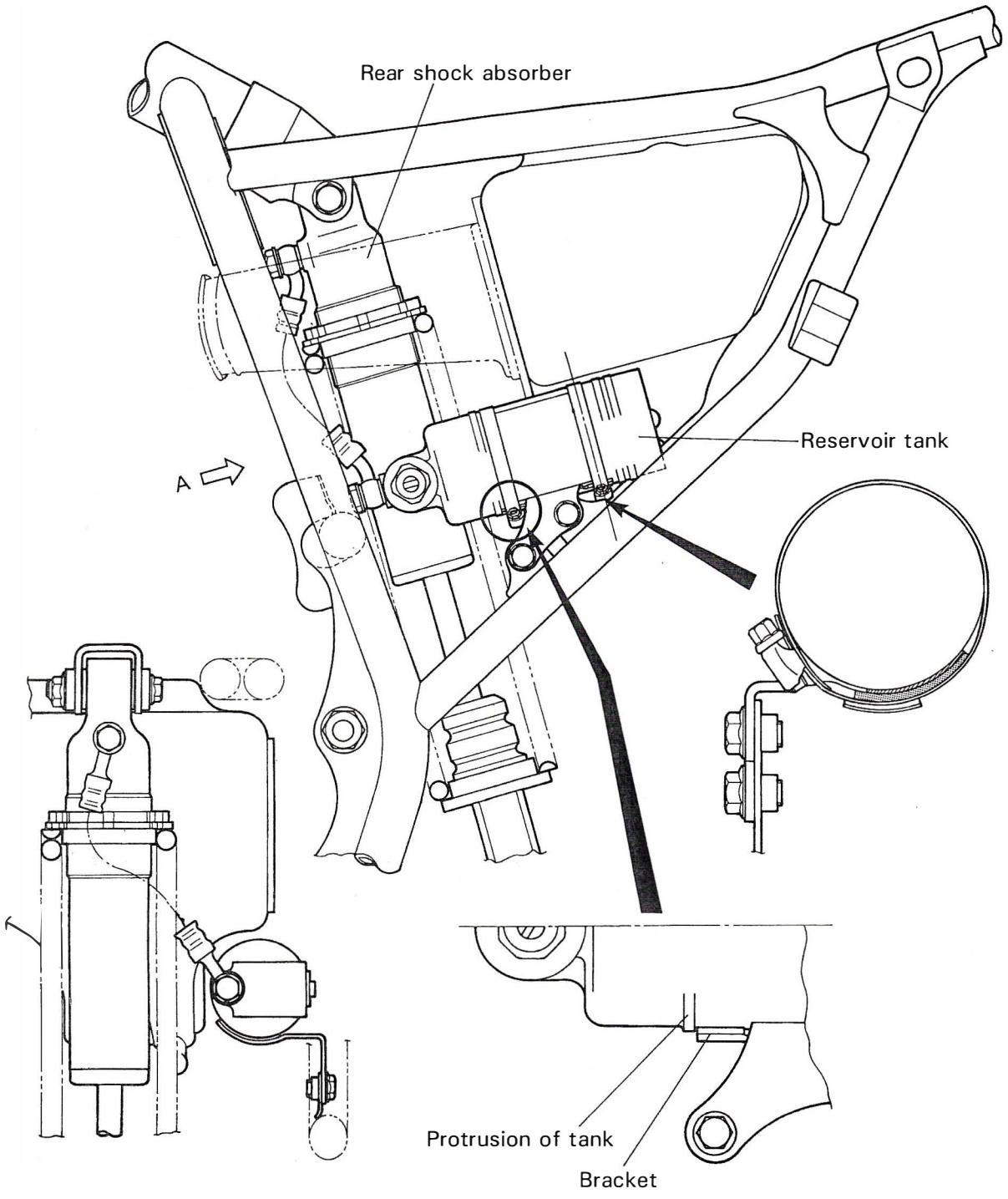
Spring length
STD : 269.2 mm (10.6 in)
Softer : 274.2 mm (10.8 in)
Stiffer : 261.2 mm (10.3 in)

Damping force adjuster (STD)
Compression : Max. – 2
Rebound ; Max. – 2.5

REASSEMBLING INFORMATION



ITEM	N·m	kg-m	lb-ft
Ⓐ	48–72	4.8–7.2	34.5–52.0
Ⓑ	48–72	4.8–7.2	34.5–52.0
Ⓒ	84–120	8.4–12.0	60.5–87.0
Ⓓ	60–96	6.0–9.6	43.5–69.5
Ⓔ	84–120	8.4–12.0	60.5–87.0
Ⓕ	61–94	6.1–9.4	44.0–68.0


Rear shock absorber
Reservoir tank
A
Protrusion of tank
Bracket

VIEW A

SERVICING INFORMATION

CONTENTS

TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or is hard to start.	1. Valve clearance out of adjustment.	Adjust.
	2. Worn valve guides or poor seating of valves.	Repair, or replace.
	3. Valves mistiming.	Adjust.
	4. Piston rings excessively worn.	Replace.
	5. Worn-down cylinder bore.	Replace, or rebore.
	6. Improperly adjusted de-compression cable.	Replace.
	7. Poor seating of spark plug	Retighen
	Plug not sparking	
	1. Fouled spark plug.	Clean.
	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 or CDI unit.	Replace.
	No fuel reaching the carburetor	
	1. Clogged hole in the fuel tank cap.	Clean.
	2. Clogged or defective fuel cock.	Clean or replace.
	3. Defective carburetor float valve.	Replace.
	4. Clogged fuel hose	Clean.
	5. Clogged fuel filter.	Replace.
Engine stalls easily	1. Fouled spark plug	Clean.
	2. Defective pick-up coil or CDI unit.	Replace.
	3. Clogged fuel hose.	Replace.
	4. Clogged jets in carburetor	Clean.
	5. Valve clearance out of adjustment.	Adjust.
	6. Defective ignition coil.	Replace.
Noisy engine.	**Excessive valve chatter**	
	1. Valve clearance too large.	Adjust
	2. Weakned or broken valve springs.	Replace.
	3. Camshaft journal worn and burnt.	Replace.
	4. De-compression cable play is maladjusted.	Adjust.
	Noise appears to come from piston	
	1. Piston or cylinder worn down.	Replace.
	2. Combusion chamber fouled with carbon.	Clean.
	3. Piston pin or piston pin bore worn.	Replace.
	4. Piston rigns or ring groove worn.	Replace.
	Noise seems to come from timing chain	
	1. Stretched chain.	Replace.
	2. Worn sprocket.	Replace.
	3. Tension adjuster not working	Repair or replace.

Complaint	Symptom and possible causes	Remedy
Noisy engine.	**Noise seems to come from clutch**	
	1. Worn splines of countershaft or hub.	Replace.
	2. Worn teeth of clutch plates.	Replace.
	3. Distorted clutch plates, drive and driven.	Replace.
	4. Worn/Damaged clutch release bearing	Replace.
	5. Clutch dampers weakened.	Replace the primary driven gear.
	Noise seems to come from crankshaft	
	1. Rattling thrust washer due to wear.	Replace.
	2. Big-end bearings worn and burnt.	Replace.
	3. Journal bearing worn and 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.
Slipping clutch.	1. Clutch control out of adjustment or loss of play.	Adjust.
	2. Weakened clutch springs.	Replace.
	3. Worn or distorted pressure plate.	Replace.
	4. Distorted clutch plates, driven and drive.	Replace.
Dragging clutch.	1. Clutch control out of adjustment or too much play.	Adjust.
	2. Some clutch springs weakened while others are not.	Replace.
	3. Distorted pressure plate or clutch plates.	Replace.
Transmission will not shift.	1. Broken gearshift cam.	Replace.
	2. Distorted gearshift forks.	Replace.
	3. Worn gearshift pawl.	Replace.
Transmission will not shift back.	1. Broken return spring on gearshift shaft.	Replace.
	2. Gearshift fork shafts are rubbing or sticky.	Repair.
	3. Distorted or worn gearshift forks.	Replace.
Transmission jumps out of gear.	1. Worn shifting gears on driveshaft or countershaft.	Replace.
	2. Distorted or worn gearshift forks.	Replace.
	3. Weakened cam stopper spring of gearshift cam.	Replace.
	4. Worn gearshift pawl.	Replace.
Engine idles poorly.	1. Valve clearance out of adjustment.	Adjust.
	2. Poor seating of valves.	Repair or replace.
	3. Defective valve guides.	Replace.
	4. Spark plug gap too wide.	Adjust or replace.
	5. Defective ignition coil.	Replace.
	6. Defective pick-up coil or CDI unit.	Replace.
	7. Float-chamber fuel level out of adjustment in caburator.	Adjust.
	8. Clogged jets in carburetor.	Clean or adjust.

Complant	Symptom and possible causes	Remedy
Engine runs poorly in high-speed range.	1. Valve spring weakened. 2. Valve timing out of adjustment. 3. Spark plug gap too narrow. 4. Clogged jets in carburetor 5. Defective ignition coil. 6. Defective pick-up coil or CDI unit. 7. Float-chamber fuel level too low. 8. Clogged air cleaner element. 9. Clogged fuel hose, resulting in inadequate fuel supply to carburator.	Replace. Adjust. Adjust or replace. Clean or adjust. Replace. Replace. Adjust. Clean or replace. Clean and prime.
Dirty of heavey exhaust smoke.	1. Too much engine oil in the engine. 2. Worn piston rings or cylinder. 3. Worn valve guides. 4. Cylinder walls scored or scuffed. 5. Worn valve stems. 6. Defective stem seal. 7. Worn oil ring or side rail.	Check with oil level gauge, drain out excess oil. Replace. Replace. Rebore or replace. Replace. Replace. Replace.
Engine lacks power.	1. Loss of valve clearance. 2. Weakened valve springs. 3. Valve timing out of adjustment. 4. Worn piston rings or cylinder. 5. Poor seating of valves. 6. Spark plug gap incorrect. 7. Clogged jets in carburator. 8. Float-chamber fuel level out of adjustment. 9. Clogged air cleaner element. 10. Sucking air from intake pipe. 11. Too much engine oil. 12. Defective pick-up coil/CDI unit/ignition coil.	Adjust. Replace. Adjust. Replace. Repair. Adjust or replace. Clean. Adjust. Clean. Retighten or replace. Drain out excess oil. Replace
Engine overheats.	1. Heavy carbon deposit on piston crown. 2. Not enough oil in the frame. 3. Defective oil pump or clogged oil circuit. 4. Fuel level too low in float chamber. 5. Suck air from intake pipe. 6. Use incorrect engine oil.	Clean. Add oil. Replace or clean. Adjust. Retighten or replace. Change.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	1. Starter jet is clogged. 2. Starter pipe is clogged. 3. Air leaking from a joint between starter body and carburator. 4. Starter plunger is not operating properly.	Clean. Clean. Check starter body and carburetor for tighteness, adjust and replace gesket. Check and adjust.
Idling or low-speed trouble.	1. Pilot jet, pilot air jet are clogged or loose. 2. Improperly set pilot air screw. 3. Pilot outlet or by-pass is clogged. 4. Starter plunger is not fully closed. 5. Incorrect float height.	Check and clean. Adjust. Check and clean. Check and adjust. Adjust.
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. Incorect float height	Check and clean. Check and clean. Check throttle valve for operation. Check and clean. Adjust.
Overflow and fuel level fluctuations.	1. Needle valve is worn or damaged. 2. Spring in needle valve is broken. 3. Float is not working properly. 4. Foreign matter has adhered to needle valve. 5. Fuel level is too high or low. 6. Clogged carburator air vent hose.	Replace. Replace. Check and adjust. Clean. Adjust float height. Clean.

ELECTRICAL

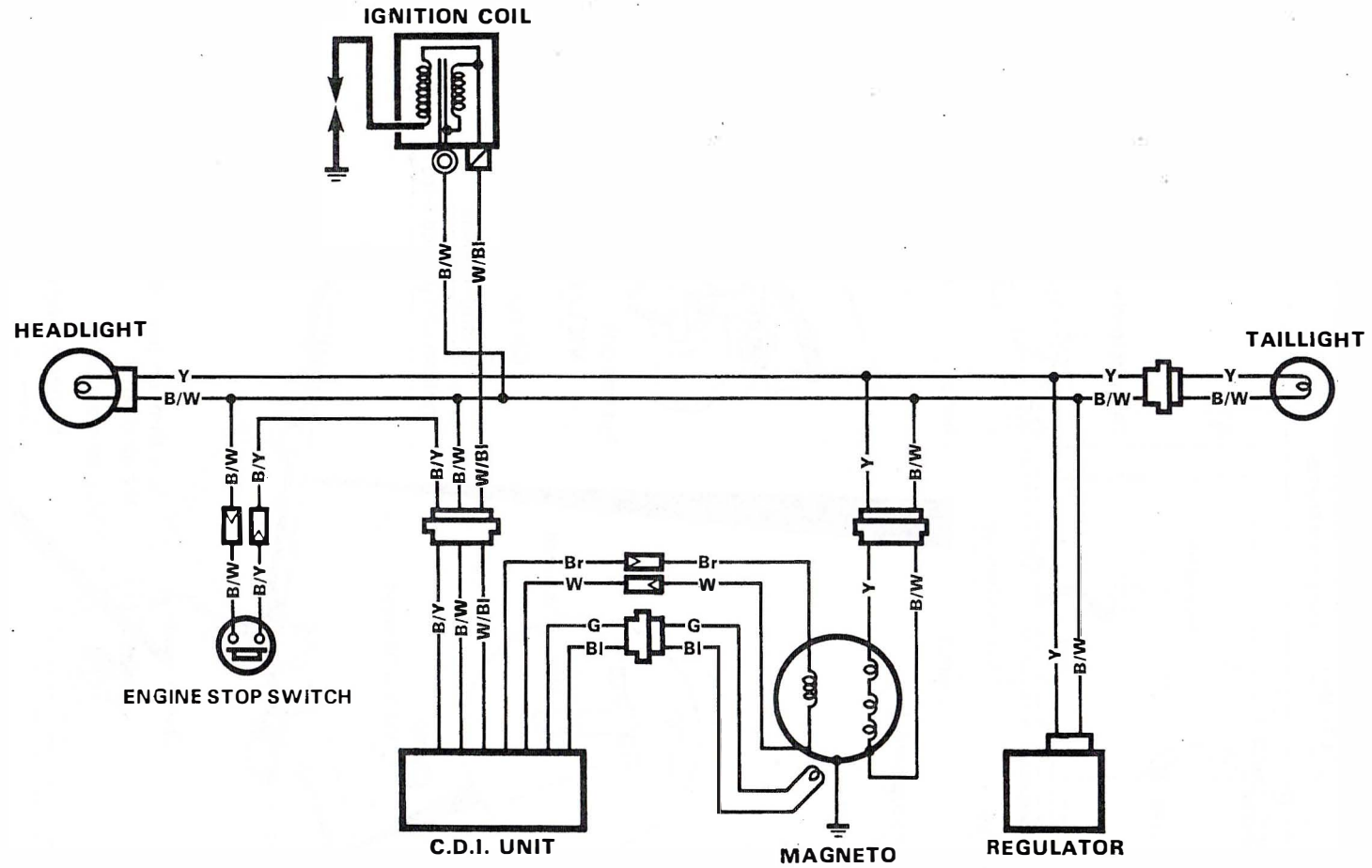
Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	1. Defective ignition coil. 2. Defective sprak plug. 3. Defective pick-up coil or CDI unit. 4. Defective magneto.	Replace. Replace. Replace. Replace.
Spark plug soon become fouled with carbon.	1. Mixture too rich. 2. Idling speed set too high. 3. Incorrect gasoline. 4. Dirty element in air cleaner. 5. Spark plug too cold.	Adjust carburetor. Adjust carburetor. Change. Clean. Replalce by hot type plug.
Spark plug become fouled too soon.	1. Worn piston rings 2. Piston or cylinder worn. 3. Excessive clearance of valve stems in valve guides. 4. Worn stem oil seals.	Replace. Replace. Replace. Replace.
Spark plug electrodes overheat or burn.	1. Spark plug too hot. 2. The engine overheats. 3. Defective pick-up coil or CDI unit. 4. Spark plug loose. 5. Mixture too lean.	Replace by cold type plug. Tune up. Replce. Retighten. Adjust carbutetor
Bulb does not light.	1. Blown bulb. 2. Open or short in lead wires, or loose lead connections. 3. Shorted, grounded or open mangeto lighting coil.	Replace. Repair, replace or retighten. Replace.

CHASSIS

Complaint	Symptom and possible causes	Remedy
Handling feels too heavy.	1. Steering stem nut overtightened. 2. Worn roller bearing or race in steering stem. 3. Distorted steering stem. 4. Not enough pressure in tires.	Adjust. Replace. Replace. Adjust.
Steering oscillation.	1. Loss of balance between right and left suspensions. 2. Bent front fork. 3. Bent front axle or crooked tire. 4. Loose steering stem nut. 5. Worn or incorrect tires or wrong tire pressure.	Adjust. Repair or repalce. Replace. Adjust. Adjust or replace.
Wobbly front wheel.	1. Distorted wheel. 2. Worn front wheel bearings. 3. Defective or incorrect tire. 4. Loose nut on axle. 5. Loose nuts on rear shock. 6. Worn swingarm bearings.	Replace. Replace. Replace. Retighten. Retighten. Replace.
Front suspension too soft.	1. Weaknend springs. 2. Not enough fork oil. 3. Wrong weight fork oil.	Replace. Refill. Replace.
Front suspension too stiff.	1. Fork oil too viscous. 2. Too much fork oil. 3. Front axle bent. 4. Fork tubes not adjusted evenly in forks stem and steering stem head	Replace. Drain excess oil. Replace. Adjust.
Noisy front suspention.	1. Not enough fork oil. 2. Loose nuts on suspension.	Refill. Retighten.
Wobbly rear wheel.	1. Distorted wheel rim. 2. Worn-down rear wheel bearings or swingarm bearings. 3. Defective or incorrect tire. 4. Worn swingarm bearings. 5. Loosen nuts on rear suspention. 6. Loosen nut on axle.	Replace. Replace. Replace. Replace. Retighten. Retighten.
Rear suspension too soft.	1. Weakened spring. 2. Rear suspension adjuster improperly set. 3. Oil leakage of rear shock absorber.	Replace. Reset. Replace.
Rear suspension too stiff.	1. Rear suspension adjuster improperly set. 2. Shock absorber shaft bent. 3. Swingarm bent. 4. Worn swingarm bearings.	Adjust. Replace. Replace. Replace.
Noisy rear suspension.	1. Loose nut on rear suspension. 2. Worn swingarm bearings.	Retighten. Replalce.

BRAKES

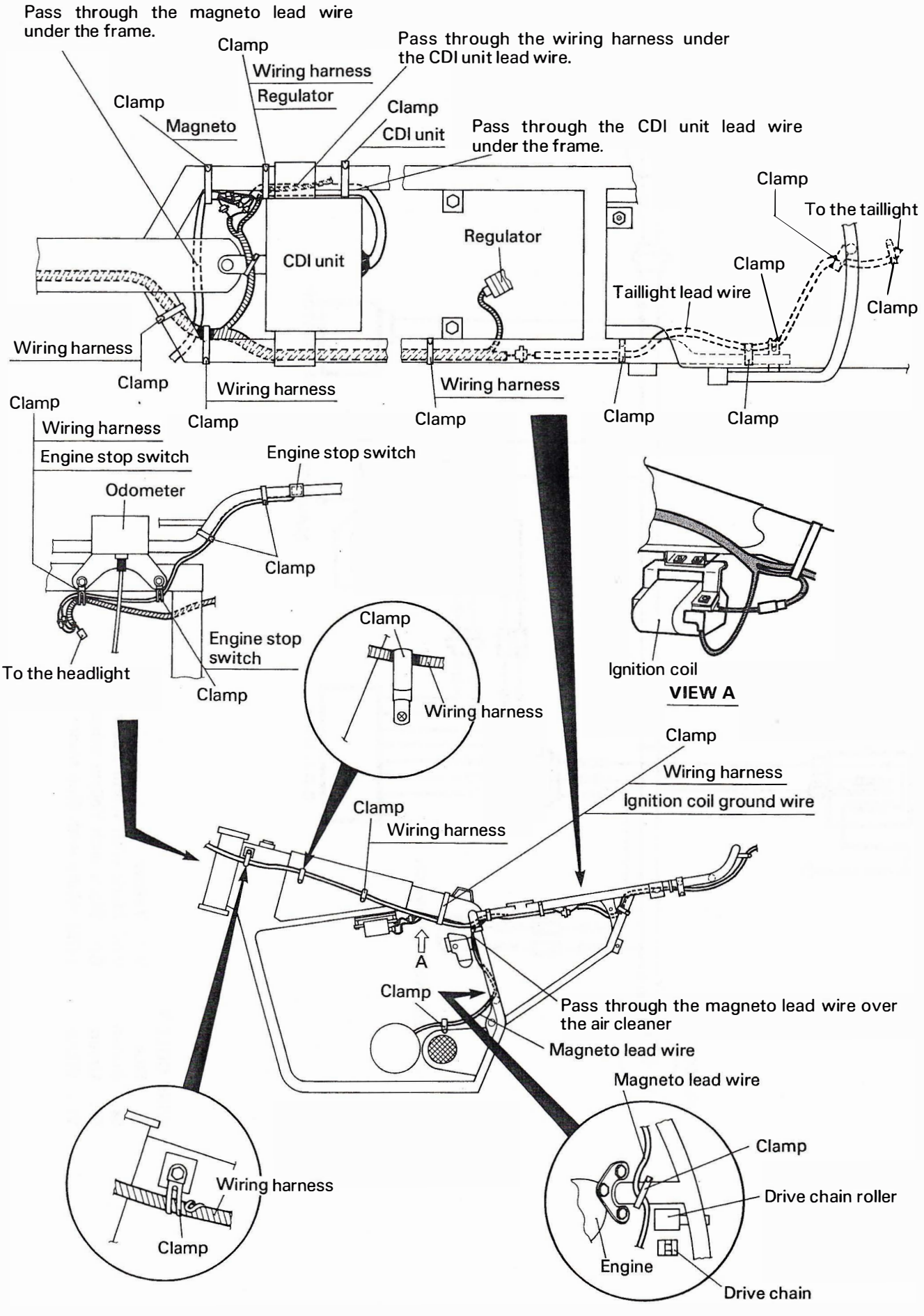
Complaint	Symptom and possible causes	Remedy
Poor braking.	1. Not enough brake fluid in the reservoir. 2. Air trapped in brake fluid circuit. 3. Pads worn down. 4. Too much play on brake lever.	Refill to level mark. Bleed air out. Replace. Adjust.
Insufficient brake power.	1. Leakage of brake fluid from hydraulic system. 2. Worn pads. 3. Oil adhesion on engaging surface of pads. 4. Worn disc. 5. Air entered into 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 bearings. 4. Loose front wheel axle or rear wheel axle. 5. Worn pads. 6. Foreign material in brake fluid. 7. Clogged return port of master cylinder. 8. Wrongly fixed pad shim, retainer or spring. 9. Caliper binding on caliper axles.	Repair surface with sandpaper. Modify pad fitting. Replace. Tighten to specified torque. Replace. Replace brake fluid. Disassemble and clean master cylinder. Set correctly. Clean and lubricate.
Excessive brake lever stroke.	1. Air entered into hydraulic system. 2. Insufficienet 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.

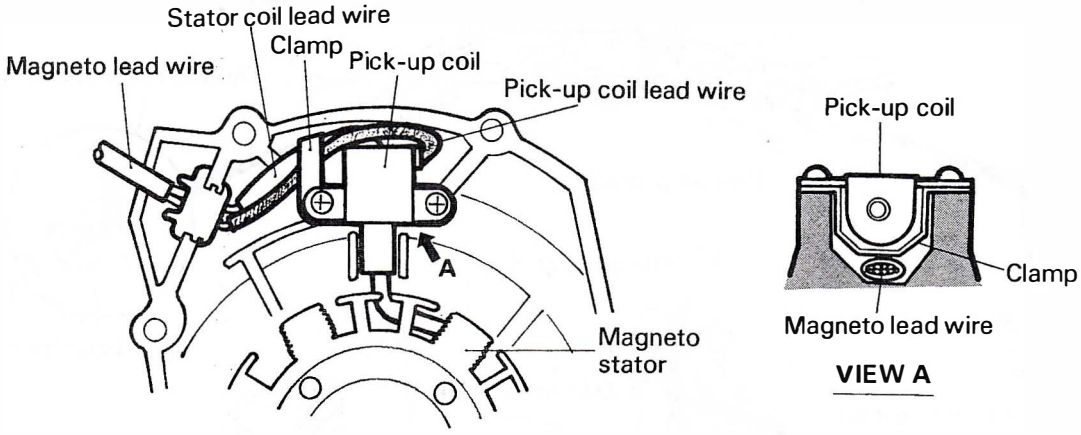


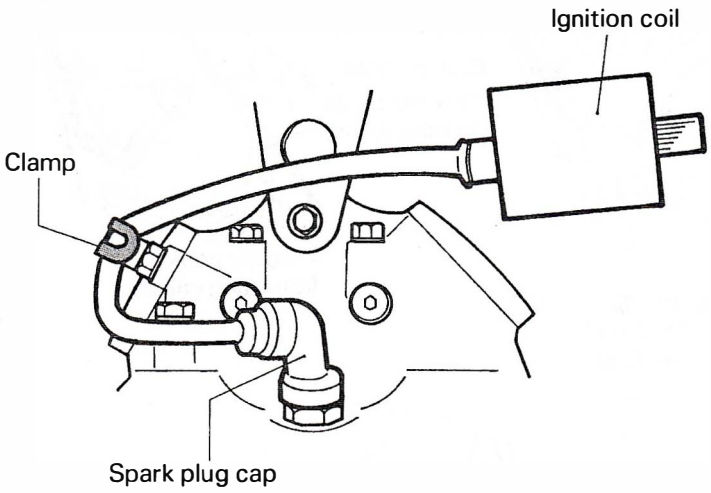
WIRE COLOR

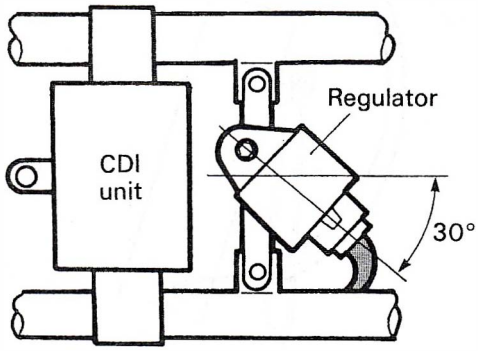
Bl :	Blue	Y :	Yellow
Br :	Brown	B/W:	Black with White tracer
G :	Green	B/Y:	Black with Yellow tracer
W :	White	W/Bl:	White with Blue tracer

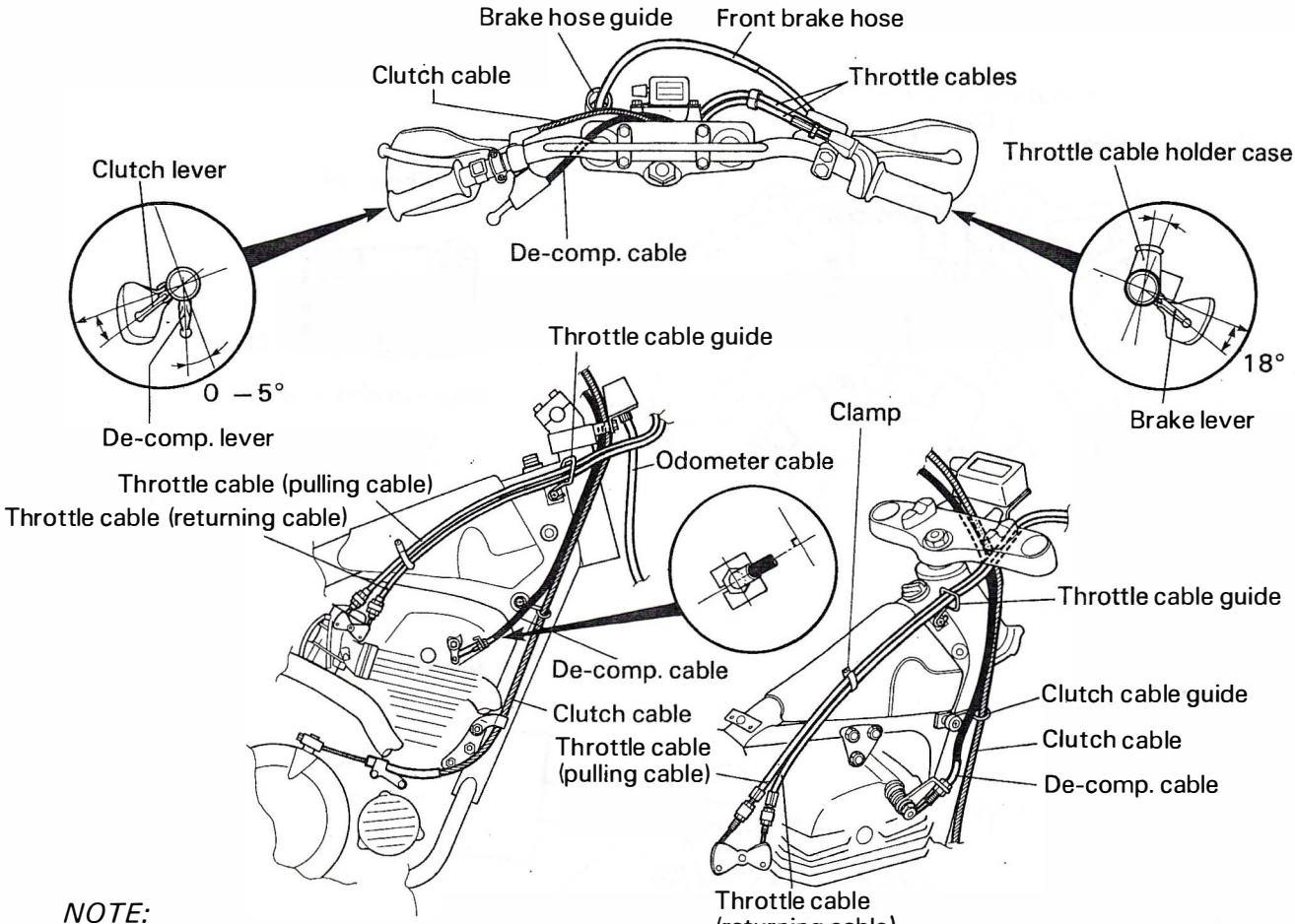
WIRE, CABLE AND HOSE ROUTING



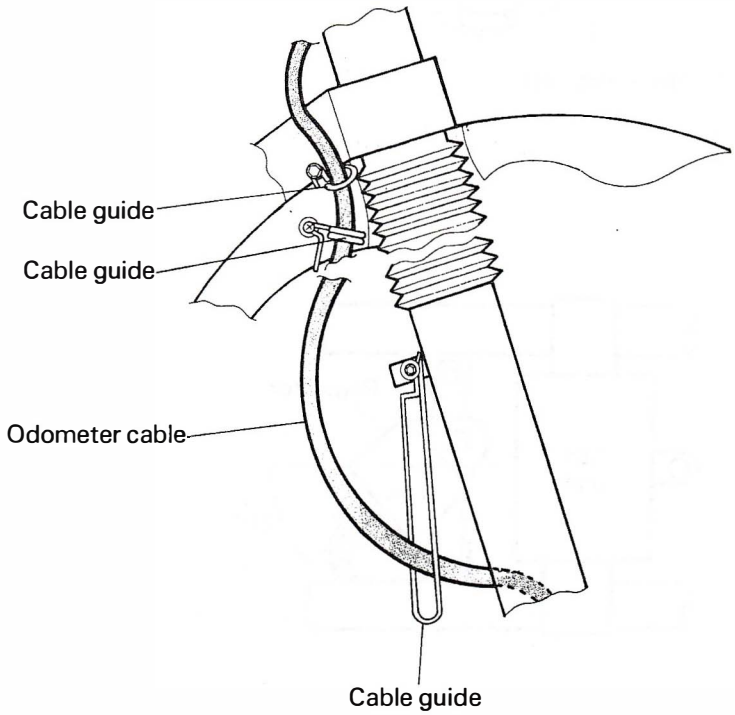

Stator coil lead wire
Clamp
Magneto lead wire
Pick-up coil
Pick-up coil lead wire
A
Magneto stator
Pick-up coil
Clamp
Magneto lead wire
VIEW A

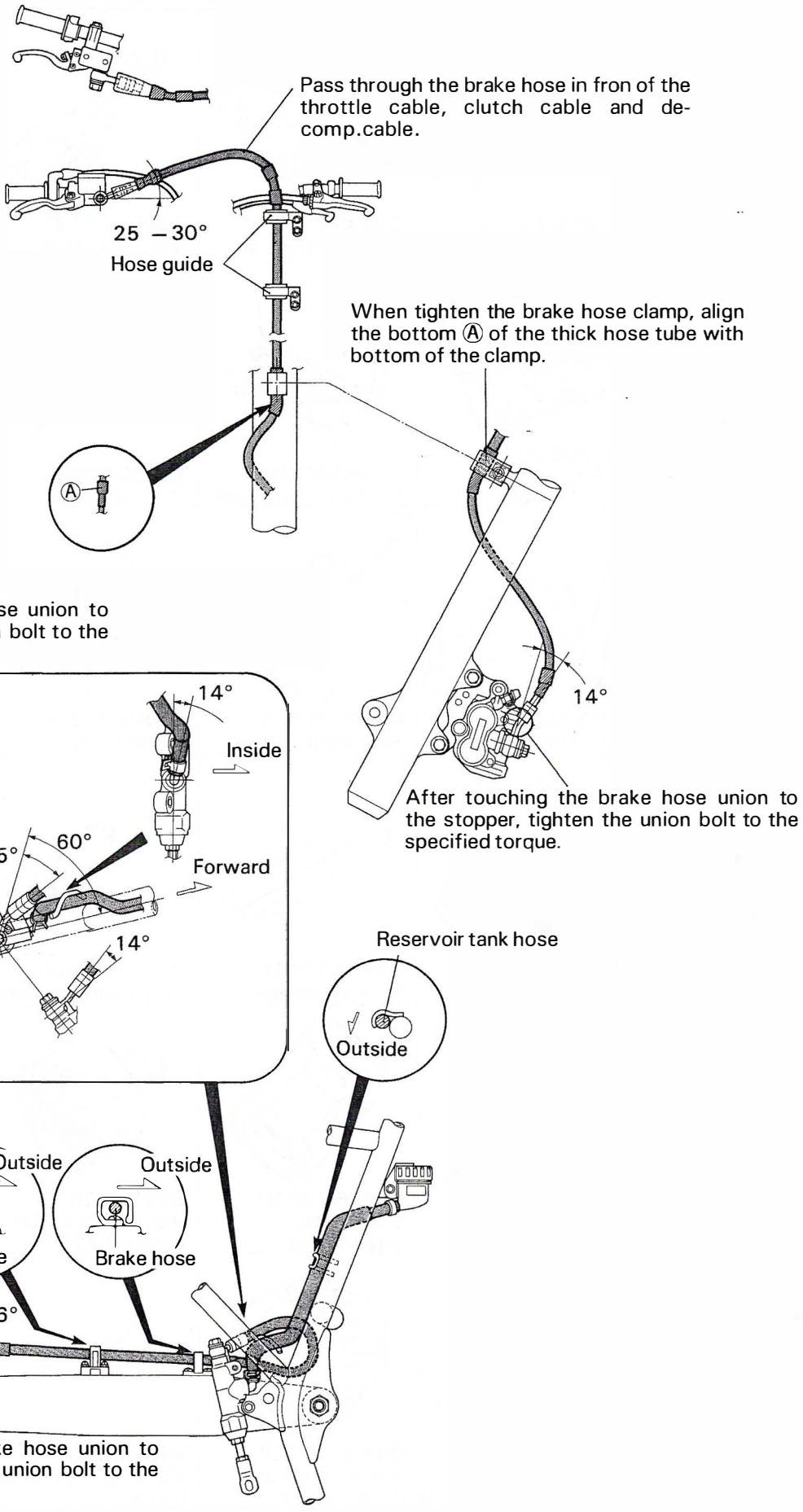

Ignition coil
Clamp
Spark plug cap


Regulator
CDI unit
30°

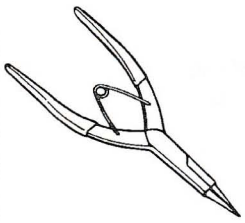
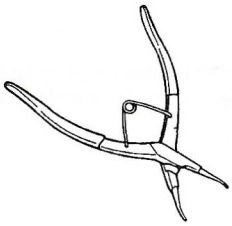
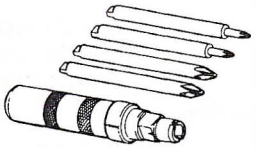
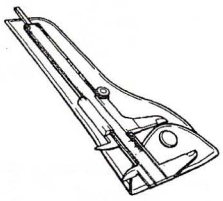
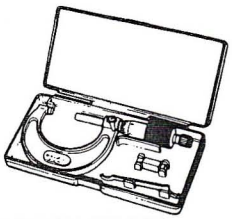
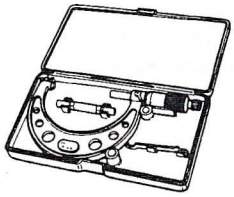
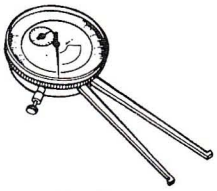
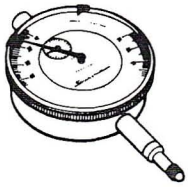
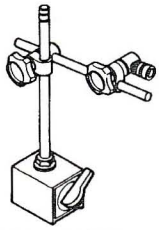
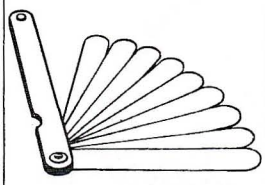
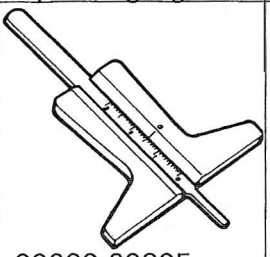
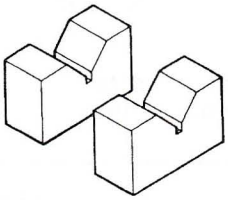
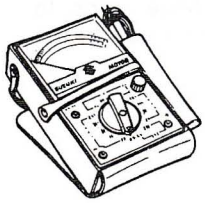
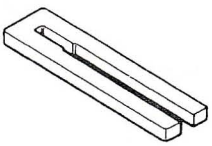
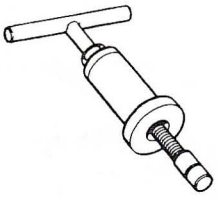
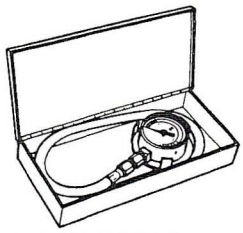
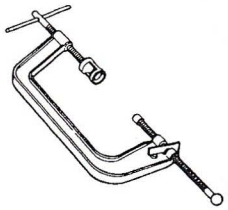
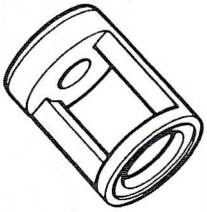
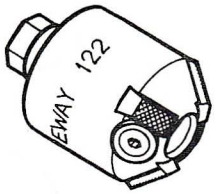
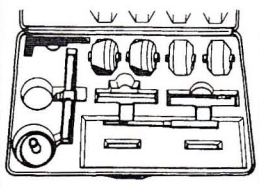
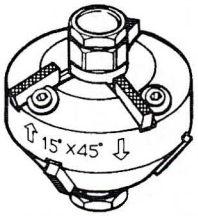


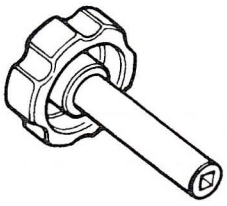
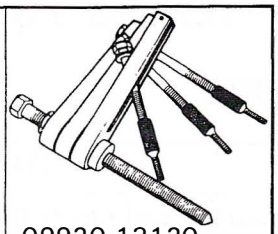
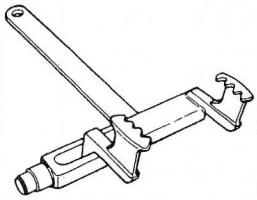
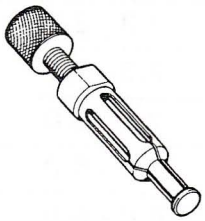
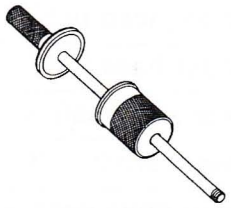
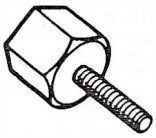
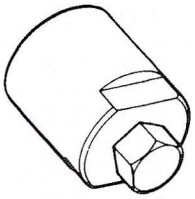
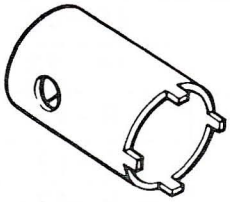
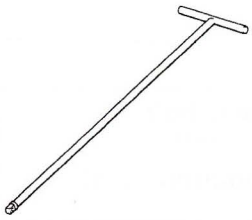
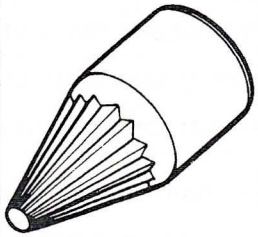
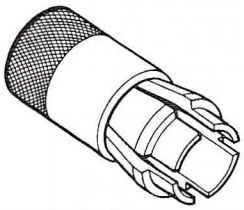
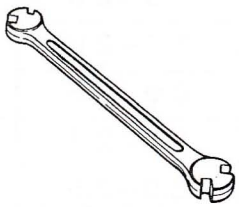
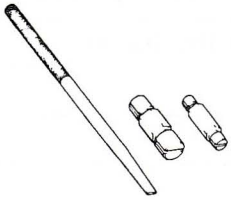
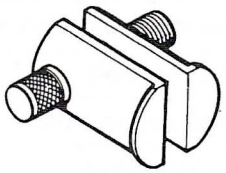
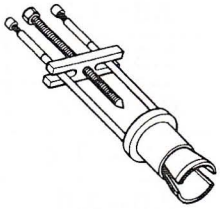
NOTE:
Make sure that the de-comp. Cable is not touch the fuel tank after mounting the fuel tank.




Pass through the brake hose in fron of the throttle cable, clutch cable and de-comp.cable.
25 – 30°
Hose guide
When tighten the brake hose clamp, align the bottom Ⓐ of the thick hose tube with bottom of the clamp.
Ⓐ
14°
After touching the brake hose union to the stopper, tighten the union bolt to the specified torque.
After touching the brake hose union to the stopper, tighten the union bolt to the specified torque.
14°
Inside
35°
60°
Forward
Stopper
14°
Reservoir tank hose
Outside
Outside
Outside
Brake hose
Brake hose
56°
After touching the brake hose union to the stopper, tighten the union bolt to the specified torque.

SPECIAL TOOLS

 09900-06107 Snap ring pliers	 09900-06108 Snap ring pliers	 09900-09003 Impact driver set	 09900-20101 Varnier calipers	 09900-20202 Micrometer (25-50 mm)
 09900-20204 Micrometer (75—100 mm)	 09900-20205 Micrometer (0—25 mm)	 09900-20508 Cylinder gauge set	 09900-20605 Dial calipers	 09900-20606 Dial gauge
 09900-20701 Magnetic stand	 09900-20803 Thickness gauge	 09900-20805 Tire depth gauge	 09900-21304 V-block set	 09900-22301 Plastigauge
 09900-25002 Pocket tester	 09900-28106 Electro tester	 09910-20115 Conrod stopper	 09910-32812 Crankshaft installer	 09910-60611 Universal clamp wrench
 09915-74510 Oil pressure gauge	 09916-14510 Valve lifter	 09916-14910 Valve lifter attachment	 09916-20610 Valve seat cutter head (N-121)	 09916-20620 Valve seat cutter head (N-122)
 09916-21110 Valve seat cutter set	 09916-24311 Valve seat cutter solid pilot (N-100-5.0)	 09916-24420 Valve seat cutter head (N-116)	 09916-34541 Valve guide reamer handle	 09916-34570 Valve guide reamer (5.0 mm)

 09916-34580 Valve guide reamer (10.8 mm)	 09916-44310 Valve guide remover and installer	 09916-84510 Tweezers	 09917-14910 Valve adjust driver	 09920-13120 Crankcase separator/ crankshaft remover
 09920-53710 Clutch sleeve hub holder	 09923-74510 Bearing remover	 09924-84510 Bearing installer set	 09924-84521 Bearing installer set	 09930-30102 Sliding shaft
 09930-30141 Attachment	 09930-34960 Magneto rotor remover	 09940-14920 Steering stem nut socket wrench	 09940-34520 T handle	 09940-34530 Attachment "A"
 09940-50113 Front fork oil seal installer	 09940-60113 Spoke nipple wrench	 09941-34513 Steering race installer	 09941-50110 Wheel bearing remover	 09941-54911 Bearing outer race remover
 09941-74910 Steering bearing installer	 09941-84510 Bearing remover	 09943-74111 Front fork oil level gauge		

TIGHTENING TORQUE

ENGINE

ITEM	N·m	kg-m	lb-ft
Cylinder head cover bolt	8—12	0.8—1.2	6.0—8.5
Camshaft sprocket bolt	14—16	1.4—1.6	10.0—11.5
Cylinder head bolt	35—40	3.5—4.0	25.5—29.0
Cylinder head nut	23—27	2.3—2.7	16.5—19.5
Cylinder base nut	23—27	2.3—2.7	16.5—19.5
Rocker arm shaft bolt	25—30	2.5—3.0	18.0—21.5
Balancer shaft bolt	40—60	4.0—6.0	29.0—43.5
Primary drive gear nut	60—80	6.0—8.0	43.5—58.0
Magneto rotor nut	120—140	12.0—14.0	87.0—101.5
Clutch sleeve hub nut	40—60	4.0—6.0	29.0—43.5
Gearshift arm stopper	15—23	1.5—2.3	11.0—16.5
Gearshift cam driven gear bolt	8—12	0.8—1.2	6.0—8.5
Cam chain tensioner mounting bolt	8—12	0.8—1.2	6.0—8.5
	9—13	0.9—1.3	6.5—9.5
Cam chain tensioner spring holder bolt	7—9	0.7—0.9	5.0—6.5
Engine oil drain plug (On the crankcase)	18—23	1.8—2.3	13.0—16.5
Engine oil drain bolt (on the frame)	15—20	1.5—2.0	11.0—14.5
Crankcase bolt	9—13	0.9—1.3	6.5—9.5
Oil pipe union bolt	18—23	1.8—2.3	13.0—16.5
Oil gallery plug	20—25	2.0—2.5	14.5—18.0
Oil strainer	25—30	2.5—3.0	18.0—21.5
Oil hose union bolt	25—30	2.5—3.0	18.0—21.5
Oil check bolt	8—12	0.8—1.2	6.0—8.0
Oil hose bolt (on the crankcase)	8—12	0.8—1.2	6.0—8.5
Oil hose bolt (on the cylinder head)	8—12	0.8—1.2	6.0—8.5
Oil hose clamp screw	1.5—2.0	0.15—0.2	1.0—1.5
T.D.C. plug	20—25	2.0—2.5	14.5—18.0
Engine mounting bolt and nut (Refer to page 3-4)	60—72	6.0—7.2	43.5—52.0
	37—45	3.7—4.5	27.0—32.5
	18—28	1.8—2.8	13.0—20.0
Exhaust pipe bolt	18—28	1.8—2.8	13.0—20.0
Muffler connection bolt	18—28	1.8—2.8	13.0—20.0
Muffler mounting bolt	18—28	1.8—2.8	13.0—20.0

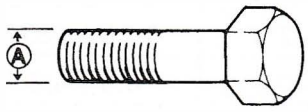
CHASSIS

ITEM	N·m	kg-m	lb-ft
Front axle shaft	50–80	5.0–8.0	36.0–58.0
Front axle pinch nut	6–8	0.6–0.8	4.5–6.0
Front fork damper rod bolt	30–40	3.0–4.0	21.5–29.0
Front fork lower clamp bolt	20–31	2.0–3.1	14.5–22.5
Front fork upper clamp bolt	20–31	2.0–3.1	14.5–22.5
Front fork cap bolt	30–40	3.0–4.0	21.5–29.0
Steering stem head nut	80–100	8.0–10.0	58.0–72.5
Handlebar clamp bolt	18–28	1.8–2.8	13.0–20.0
Front brake master cylinder mounting bolt	6–9	0.6–0.9	4.5–6.5
Front brake caliper mounting bolt	20–31	2.0–3.1	14.5–22.5
Front brake pad mounting bolt	15–20	1.5–2.0	11.0–14.5
Brake hose union bolt (Front & Rear)	20–25	2.0–2.5	14.5–18.0
Air bleeder valve (Front & Rear)	6–9	0.6–0.9	4.5–6.5
Brake disc mounting bolt (Front & Rear)	18–28	1.8–2.8	13.0–20.0
Swingarm pivot nut	61–94	6.1–9.4	44.0–68.0
Front footrest bolt	44–66	4.4–6.6	32.0–47.5
Shock absorber mounting nut (Upper & Lower)	48–72	4.8–7.2	34.5–52.0
Rear cushion rod mounting nut	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
Rear cushion lever nut (Center)	84–120	8.4–12.0	60.5–87.0
Rear axle nut	85–115	8.5–11.5	61.5–83.0
Rear brake pad mounting bolt	15–20	1.5–2.0	11.0–14.5
Rear brake master cylinder mounting bolt	8–12	0.8–1.2	6.0–8.5
Rear brake rod lock nut	15–20	1.5–2.0	11.0–14.5
Spoke nipple	2–4	0.2–0.4	1.5–3.0

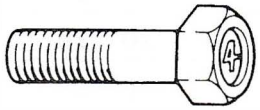
TIGHTENING TORQUE CHART

For other bolts and nuts not listed in the preceding page, refer to this chart:

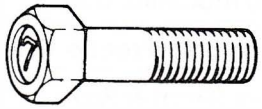
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kg-m	lb-ft	N·m	kg-m	lb-ft
4	1—2	0.1—0.2	0.7—1.5	1.5—3	0.15—0.3	1.0—2.0
5	2—4	0.2—0.4	1.5—3.0	3—6	0.3—0.6	2.0—4.5
6	4—7	0.4—0.7	3.0—5.0	8—12	0.8—1.2	6.0—8.5
8	10—16	1.0—1.6	7.0—11.5	18—28	1.8—2.8	13.0—20.0
10	22—35	2.2—3.5	16.0—25.5	40—60	4.0—6.0	29.0—43.5
12	35—55	3.5—5.5	25.5—40.0	70—100	7.0—10.0	50.5—72.5
14	50—80	5.0—8.0	36.0—58.0	110—160	11.0—16.0	79.5—115.5
16	80—130	8.0—13.0	58.0—94.0	170—250	17.0—25.0	123.0—181.0
18	130—190	13.0—19.0	94.0—137.5	200—280	20.0—28.0	144.5—202.5



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	———
	EX.	27.0 (1.06)	———
Valve lift	IN.	8.0 (0.31)	———
	EX.	8.0 (0.31)	———
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	———
	EX.	0.08—0.13 (0.003—0.005)	———
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	———
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	———
	EX.	4.955—4.970 (0.1951—0.1957)	———
Valve stem runout	IN. & EX.	———	0.05 (0.002)
Valve head thickness	IN. & EX.	———	0.5 (0.02)
Valve stem end length	IN. & EX.	———	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	———
Valve head radial runout	IN. & EX.	———	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	———	35.0 (1.38)
	OUTER	———	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	———
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	———

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	1—2 (0.04—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		—
Final reduction ratio		3.357 (47/14)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	DAIDO: D.I.D. 520VC5 TAKASAGO: RK520SO	—
		Links	110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI TM33SS
Bore size	33 mm
I.D. No	14D0
Idle r/min.	1 400 ± 100 r/min
Fuel level	0 ± 0.5 mm (0 ± 0.02 in)
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet(M.J.)	#132.5
Main air jet (M.A.J.)	0.9 mm
Jet needle (J.N.)	5FP96-3rd
Needle jet (N.J.)	P-8
Cut-away (C.A.)	1.5
Pilot jet (P.J.)	#37.5
By-pass (B.P.)	0.8 mm
Pilot outlet (P.O.)	0.6 mm
Valve seat (V.S.)	1.8 mm
Starter jet (G.S.)	#50
Pilot screw (P.S.)	1.0 turn back
Pilot air jet (P.A.J.)	1.0 mm
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	5°B.T.D.C. below 2 300 r/min and 30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
	Gap	0.8—0.9 (0.03—0.04)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	250—370 Ω	W—Br
	Pick-up	180—270 Ω	G—Bl
Lighting coil no-load voltage (when engine is cold)	More than 75 V (AC) at 5 000 r/min.		
Regulated voltage	12—14 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0—0.3 (0—0.01)	———
Rear brake pedal height		5 (0.2)	———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		———	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	———
	Rear	12.700—12.743 (0.5000—0.5017)	———
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	———
	Rear	12.657—12.684 (0.4983—0.4994)	———
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	———
	Rear	27.000—27.050 (1.0630—1.0650)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	26.900—26.950 (1.0591—1.0610)	———
Wheel rim runout	Axial	———	2.0 (0.08)
	Radial	———	2.0 (0.08)
Wheel axle runout	Front	———	0.25 (0.010)
	Rear	———	0.25 (0.010)
Tire size	Front	80/100-21 51M	———
	Rear	110/100-18 64M	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	608 (23.9)	
Front fork oil level	145 (5.7)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	269.2 (10.6)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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.		For U.S.A.
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.		For Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		For the others
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	586 ml (19.8/20.6 US/Imp oz)		
Brake fluid type	DOT 4		

DR350S

FOREWORD

This chapter describes up-to-date service procedures which differ from those of the DR350.
Please refer to the chapters 1 through 7 except for the items described in this chapter.

NOTE:
*Any differences between DR350 and DR350S in specifications and service data are clearly indicated with the asterisk mark (*).*

IMPORTANT

All street-legal SUZUKI motorcycles with engine displacement of 50cc or greater are subject to Environmental Protection Agency emission regulations. These regulations set specific standards for exhaust emission output levels as well as particular servicing requirements. This manual includes specific information required to properly inspect and service DR350S in accordance with all EPA regulations. It is strongly recommended that the chapter on Emission Control, Periodic Servicing and Carburetion be thoroughly reviewed before any type of service work is performed.

Further information concerning the EPA emission regulations and U.S. Suzuki's emission control program can be found in the U.S. SUZUKI EMISSION CONTROL PROGRAM MANUAL/SERVICE BULLETIN.

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CONTENTS

VIEW OF DR350S

LEFT SIDE

RIGHT SIDE

SPECIFICATIONS

DEMENSIONES AND DRY MASS

Overall length	*2 235 mm (88.0 in)
Overall width	885 mm (34.8 in)
Overall height	*1 245 mm (40.9 in)
Wheelbase	*1 435 mm (56.5 in)
Ground clearance	*290 mm (11.4 in)
Seat height	*890 mm (35.0 in)
Dry mass	*118 kg (260 lbs)

ENGINE

Type	Four-stroke, air-cooled, OHC
Number of cylinders	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm^3 (21.3 cu. in)
Compression ratio	9.5 : 1
Carburator	* MIKUNI BST33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction	2.818 (62/22)
Final reduction	*3.071 (43/14)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
TOP	0.826 (19/23)
Drive chain	TAKASAGO RK520SO or DAIDO DID, 520VC5, *108 links

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	5° B.T.D.C. below 2 300 r/min and 30° B.T.D.C. above 4 300 r/min
Spark plug	NGK DPR9EA-9 or NIPPON DENSO X27EPR-U9
Battery	*12V 10.8 kC (3 Ah)/10HR
Fuse	*15A

CHASIS

Front suspension	Telescopic, coil spring, oil dampened, spring preload fully way adjustable, compression damping force adjustable
Rear suspension	Link type suspension coil spring, gas/oil damped, spring preload fully way adjustable, compression damping force adjustable
Steering angle	45° (right and left)
Caster	62° 30'
Trail	*115 mm (4.6 in)
Turning radius	*2.3 m (7.2 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	*80/100-21 51P
Rear tire size	*110/90-18 61P

CAPACITIES

Fuel tank	
including reserve	*9.0 L (2.4/2.0 US/Imp gal)
	*8.0L (2.1/1.8 US/Imp gal) ... California only
reserve	*1.5 L (0.4/0.3 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
Front fork oil	*544 ml (18.4/19.2 US/Imp oz)

Specifications marked with asterisks (*) are exclusive to DR350S.

These specifications are subject to change without notice.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.08—0.13 (0.003—0.005)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	* 0—1 (0—0.04)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)		0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)		79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.		78.880 (3.1055)
Cylinder distortion	———		0.05 (0.002)
Piston ring free end gap	1st R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

Specifications marked with asterisk (*) is exclusive to DR350S.

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		—
Final reduction ratio		*3.071 (43/14)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	DAIDO: D.I.D. 520VC5 TAKASAGO: RK520SO	—
		Links	*108	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

Specification marked with asterisks (*) are exclusive to DR350S.

CARBURETOR

ITEM		SPECIFICATION	
		U.S.A.	California model only
Carburetor type		*MIKUNI BST33SS	←
Bore size		33 mm	←
I.D. No		*14D2	*14D3
Idle r/min.		*1 500 ± 100 r/min	←
Fuel level		*1.5 ± 0.5 mm (0.06 ± 0.02 in)	←
Float height		*14.6 ± 1.0 mm (0.57 ± 0.04 in)	←
Main jet	(M.J.)	*#135	←
Main air jet	(M.A.J.)	*0.6 mm	←
Jet needle	(J.N.)	*5CD16	←
Needle jet	(N.J.)	*O-6	←
Throttle valve	(Th.V.)	*#115	←
Pilot jet	(P.J.)	*#37.5	←
By-pass	(B.P.)	*0.8 mm, 0.8 mm, 0.8 mm	←
Pilot outlet	(P.O.)	*0.8 mm	←
Valve seat	(V.S.)	*1.5 mm	←
Starter jet	(G.S.)	*#37.5	←
Pilot screw	(P.S.)	PRE-SET	←
Pilot air jet	(P.A.J.)	*1.3 mm	←
Throttle cable play		*0.5—1.0 mm (0.02—0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM			SPECIFICATION	NOTE
Ignition timing			5°B.T.D.C. below 2 300 r/min and 30°B.T.D.C. above 4 300 r/min	
Spark plug		Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
		Gap	0.8—0.9 (0.03—0.04)	
Spark performance			Over 8 (0.3) at 1 atm.	
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap — Terminal
Magneto coil resistance		Charging	*0.1—1.3 Ω	Y—Y
		Power source	250—370 Ω	W—Br
		Pick-up	180—270 Ω	G—Bl
Charging coil no-load voltage (when engine is cold)			More than*65 V (AC) at 5 000 r/min.	
Regulated voltage			*13.0—15.5 V at 5 000 r/min.	
Battery	Type designation		*YT4L-BS or FT4L-BS	
	Capacity		*12V 10.8 kC (3Ah)/10HR	
	Standard electrolyte S.G.		*1.320 at 20°C (68°F)	
Fuse size			*15 A	

Specification marked with asterisks (*) are exclusive to DR350S.

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	*60
	LO	*55
Position light		
Tail/Brake light		*5/21
Turn signal light		*21
Tachometer light		*3
Speedometer light		*1.7
Turn signal indicator light		*1.7
High beam indicator light		*1.7
Neutral indicator light		*1.7
License light		*5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0—0.3 (0—0.01)		—
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	—
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	27.000—27.050 (1.0630—1.0650)	—
	Rear	*30.230—30.280 (1.1902—1.1921)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	*30.160—30.180 (1.1874—1.1882)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)

Specication marked with astrisks (*) are exclusive to DR350S.

Unit: mm (in)

ITEM	STANDARD		LIMIT
Tire size	Front	*80/100-21 51P	———
	Rear	*110/90-18 61P	———
Tire tread depth	Front	———	*3.0 (0.12)
	Rear	———	*3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	*602 (23.7)	
Front fork oil level	*170 (6.7)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*272.8 (10.7)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	*150	*1.50	*22	*150	*1.50	*22
REAR	*150	*1.50	*22	*175	*1.75	*25

Specication marked with astrisks (*) are exclusive to DR350S.

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (method) 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.		For U.S.A.
	Use only unleaded gasoline of at least 87 pump octane (method) or 91 octane or higher rated by the Research Method.		For Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		For the others
Fuel tank including reserve	* 9.0 L (2.4/2.0 US/Imp gal)		
	* 8.0 L (2.1/1.8 US/Imp gal)		California only
reserve	* 1.5 L (0.4/0.3 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	*544 ml (18.4/19.2 US/Imp oz)		
Brake fluid type	DOT 4		

* Specifications marked with asterisk (*) are exclusive to DR350S.

TIGHTENING TORQUE

ENGINE

ITEM	N·m	kg-m	lb-ft
Cylinder head cover bolt	8—12	0.8—1.2	6.0—8.5
Camshaft sprocket bolt	14—16	1.4—1.6	10.0—11.5
Cylinder head bolt	35—40	3.5—4.0	25.5—29.0
Cylinder head nut	23—27	2.3—2.7	16.5—19.5
Cylinder base nut	23—27	2.3—2.7	16.5—19.5
Rocker arm shaft bolt	25—30	2.5—3.0	18.0—21.5
Balancer shaft bolt	40—60	4.0—6.0	29.0—43.5
Primary drive gear nut	60—80	6.0—8.0	43.5—58.0
Magneto rotor nut	120—140	12.0—14.0	87.0—101.5
Clutch sleeve hub nut	40—60	4.0—6.0	29.0—43.5
Gearshift arm stopper	15—23	1.5—2.3	11.0—16.5
Gearshift cam driven gear bolt	8—12	0.8—1.2	6.0—8.5
Cam chain tensioner mounting bolt (Right hand)	8—12	0.8—1.2	6.0—8.5
Cam chain tensioner mounting bolt (Left hand)	9—13	0.9—1.3	6.5—9.5
Cam chain tensioner spring holder bolt	7—9	0.7—0.9	5.0—6.5
Engine oil drain plug (on the crankcase)	18—23	1.8—2.3	13.0—16.5
Engine oil drain bolt (on the frame)	15—20	1.5—2.0	11.0—14.5
Crankcase bolt	9—13	0.9—1.3	6.5—9.5
Oil pipe union bolt	18—23	1.8—2.3	13.0—16.5
Oil gallery plug	20—25	2.0—2.5	14.5—18.0
Oil strainer	25—30	2.5—3.0	18.0—21.5
Oil hose union bolt	25—30	2.5—3.0	18.0—21.5
Oil check bolt	8—12	0.8—1.2	6.0—8.0
Oil hose bolt (on the crankcase)	8—12	0.8—1.2	6.0—8.5
Oil hose bolt (on the cylinder head)	20—25	2.0—2.5	14.5—18.0
Oil hose clamp screw	1.5—2.0	0.15—0.2	1.0—1.5
T.D.C. plug	20—25	2.0—2.5	14.5—18.0
Engine mounting bolt and nut (Refer to page 8-17)	60—72	6.0—7.2	43.5—52.0
	37—45	3.7—4.5	27.0—32.5
	18—28	1.8—2.8	13.0—20.0
Exhaust pipe bolt	18—28	1.8—2.8	13.0—20.0
Muffler connection bolt	18—28	1.8—2.8	13.0—20.0
Muffler mounting bolt	23—28	2.3—2.8	16.5—20.0

CHASSIS

ITEM	N·m	kg-m	lb-ft
Front axle shaft	50—80	5.0—8.0	36.0—58.0
Front axle pinch nut	6—8	0.6—0.8	4.5—6.0
Front fork damper rod bolt	30—40	3.0—4.0	21.5—29.0
Front fork lower clamp bolt	20—31	2.0—3.1	14.5—22.5
Front fork upper clamp bolt	20—31	2.0—3.1	14.5—22.5
Front fork cap bolt	30—40	3.0—4.0	21.5—29.0
Steering stem head nut	80—100	8.0—10.0	58.0—72.5
Handlebar clamp bolt	18—28	1.8—2.8	13.0—20.0
Front brake master cylinder mounting bolt	6—9	0.6—0.9	4.5—6.5
Front brake caliper mounting bolt	20—31	2.0—3.1	14.5—22.5
Front brake pad mounting bolt	15—20	1.5—2.0	11.0—14.5
Brake hose union bolt (Front & Rear)	20—25	2.0—2.5	14.5—18.0
Air bleeder valve (Front & Rear)	6—9	0.6—0.9	4.5—6.5
Brake disc mounting bolt (Front & Rear)	18—28	1.8—2.8	13.0—20.0
Swingarm pivot nut	61—94	6.1—9.4	44.0—68.0
Front footrest bolt	44—66	4.4—6.6	32.0—47.5
Shock absorber mounting nut (Upper & Lower)	48—72	4.8—7.2	34.5—52.0
Rear cushion rod mounting nut	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
Rear cushion lever nut (Center)	84—120	8.4—12.0	60.5—87.0
Rear axle nut	85—115	8.5—11.5	61.5—83.0
Rear brake pad mounting bolt	15—20	1.5—2.0	11.0—14.5
Rear brake master cylinder mounting bolt	8—12	0.8—1.2	6.0—8.5
Rear brake rod lock nut	15—20	1.5—2.0	11.0—14.5
Spoke nipple	2—4	0.2—0.4	1.5—3.0

PERIODIC MAINTENANCE SCHEDULE

IMPORTANT: The periodic maintenance intervals and service requirements have been established in accordance with EPA regulations. Following these instructions will ensure that the motorcycle will not exceed emission standards and it will also ensure the reliability and performance of the motorcycle.

NOTE:
More frequent servicing may be performed on motorcycles that are used under severe conditions however, it is not necessary for ensuring emission level compliance.

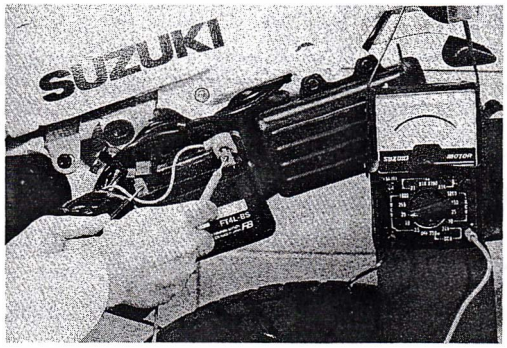
The chart below lists the recommended intervals for all the required periodic sevice work necessary to keep the motorcycle operating at peak performance and economy. Mileages are expressed in terms of kilometers, miles and time for your convenience.

PERIODIC MAINTENANCE CHART

INTERVAL: THIS INTERVAL SHOULD BE JUDGED BY ODOMETER READING OR MONTHS WHICHEVER COMES FIRST	km	1 000	6 000	12 000	18 000	24 000
	miles	600	4 000	7 500	11 000	15 000
	months	2	12	24	36	48
Battery		—	I	I	I	I
Cylinder head bolts and nuts, cylinder nuts, exhaust pipe bolts and muffler connections		T	T	T	T	T
Valve clearance		I	I	I	I	I
Spark plug		—	I	R	I	R
Spark arrester		—	C	C	C	C
Air cleaner		Clean every 3 000 km (2 000 miles).				
De-compression lever		I	I	I	I	I
Engine oil and oil filter		R	R	R	R	R
Engine oil hoses		I	I	I	I	I
Engine oil strainer		C	C	C	C	C
Carburetor		I	I	I	I	I
Fuel line		I	I	I	I	I
(Vapor hose ... California model only)		Replace every 4 years.				
Clutch		I	I	I	I	I
Drive chain		I	I	I	I	I
		Clean and lubricate every 1 000 km (600 miles).				
Brakes		I	I	I	I	I
Brake hoses		I	I	I	I	I
		Replace every 4 years.				
Brake fluid		I	I	I	I	I
		Replace every 2 years.				
Tires		I	I	I	I	I
Spoke nipples		I	I	I	I	I
Steering		I	I	I	I	I
Front fork		I	I	I	I	I
Rear suspension		I	I	I	I	I
Chassis bolts and nuts		T	T	T	T	T

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

BATTERY



Inspect Every 6 000 km (4 000 miles, 12 months)

- Remove the left frame cover.
- Check the battery voltage with a pocket tester.

09900-25002 : Pocket tester

If the voltage reading is below 12.0 V, this battery needs recharging.

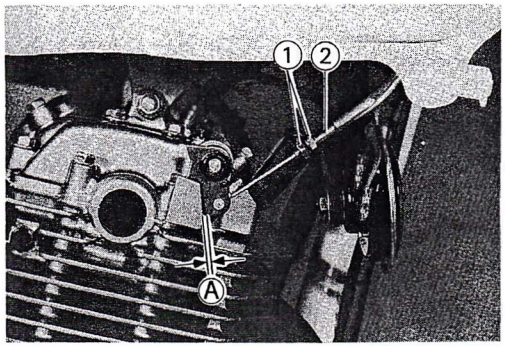
Battery voltage : Above 12.0 V

- Disconect the battery ⊖ and ⊕ lead wires and remove the battery.

WARNING:
When disconnecting the battery lead wires, ⊖ lead wire first.

CAUTION:
Read the "BATTERY SECTION" for the servicing battery. (Refer to page 8-34.)

DE-COMPRESSION LEVER



Inspect Inital 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months)

Incorrect adjustment of the lever clearance may result in starting difficulties or engine damage. Check the lever clearance and if necessary, adjust as follows:

- Adjust the valve clearance. (Refer to page 2-4.)
- Remove the right fuel tank cover.
- Loosen both lock nuts ① on the cable adjuster ②.
- Locate the adjuster ② to provide the specified lever clearance Ⓐ as shown in potograph.
- Tighten the lock nuts ①.

De-compression lever clearance Ⓐ : 0—1 mm (0—0.04 in)

CARBURETOR

Inspect Initial 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months)

THROTTLE CABLE PLAY

The throttle cable should be adjusted to have a play Ⓐ of 0.5—1.0 mm (0.02—0.04 in).

If the adjustment is necessary, adjust the play in the following way:

- Loosen the lock nut ① and turn the adjuster ② fully in.
- Remove the seat and fuel tank.
- Loosen the lock nut ③ and turn the adjuster ④ to acquire the specified play Ⓐ.

Throttle cable paly : 0.5—1.0 mm (0.02—0.04 in)

- After adjusting the play, tighten the lock nuts (① and ③).

NOTE:
Minor adjustment can be made by the adjuster ② after loosening the lock nut ①.

WARNING:
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.

IDLE R/MIN ADJUSTMENT

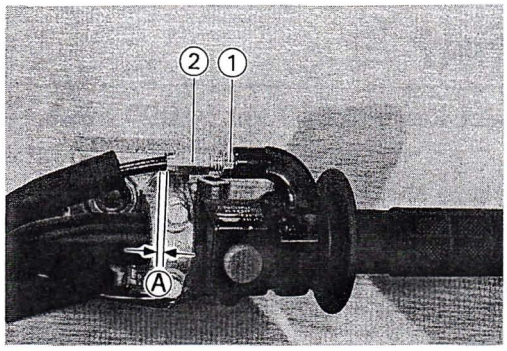
- Adjust the throttle cable paly.

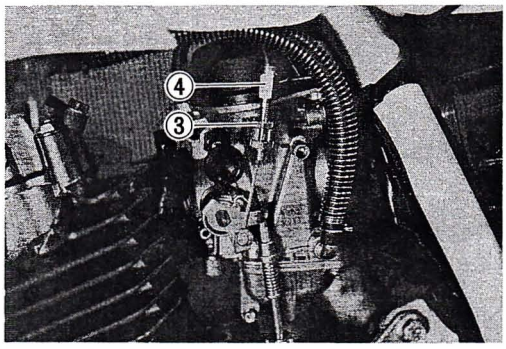
NOTE:
Make this adjustment when the engine is hot.

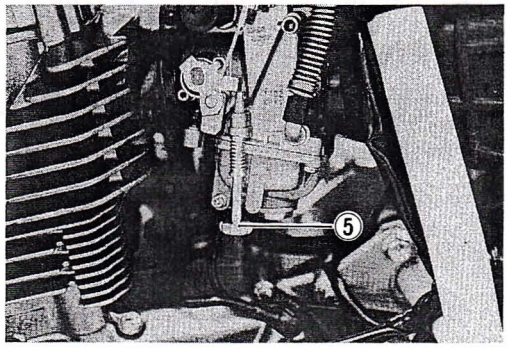
- Connect a tachometer.
- Start up the engine and seat its speed at anywhere between 1 400 and 1 600 r/min by turning the throttle stop screw ⑤.

IDLE R/MIN

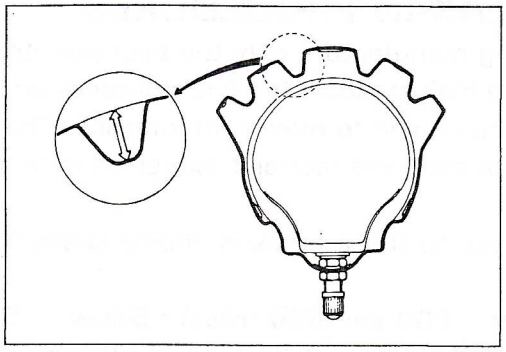
- **1 400—1 600 r/min**







TIRES

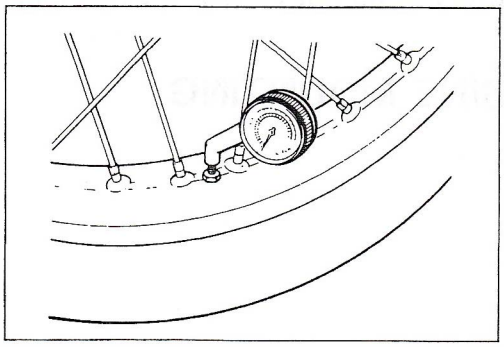


Inspect Initial 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months)

TIRE TREAD CONDITION

Operating the motorcycle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace tire when the remaining depth of tire tread reches the following specification.

Tire tread depth limit
Front & Rear : 3.0 mm (0.12 in)



TIRE PRESSURE

If the tire pressure is too high or too low, steering will be adversely affected and tire wear increased. Threrefore, maintain the correct tire pressure for good roadability or shorter tire lift will result.
Cold inflation tire pressure is as follows.

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

CAUTION:
The standard tire fitted on this motorcycle is 80/100-21 51P for front and 110/90-18 61P for rear. The use of tires other than the those specified may cuase instability. It is highly recommended to use a SUZUKI Genuine Tire.

BREAK-IN PROCEDURES

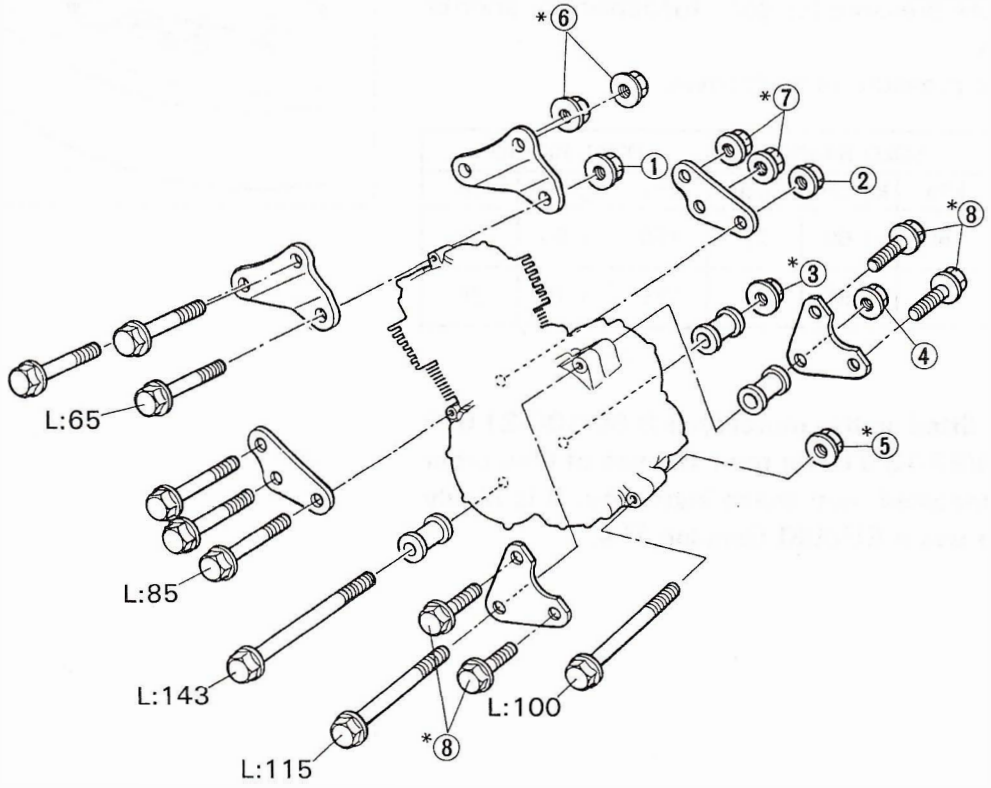
During manufacture only the best possible materials are use and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to ''BREAK-IN'' before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on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

- Keep to these break-in engine speed limits.

Initial 800 km (500 miles) : Below 5 000 r/min
Up to 1 600 km (1 000 miles) : Below 6 000 r/min
Over 1 600 km (1 000 miles) : Below 9 500 r/min

- Upon reaching an odometer reading of 1 600 km (1 000 miles) you can subject the motorcycle to full throttle operation.
  However, do not exceed 9 500 r/min at any time.

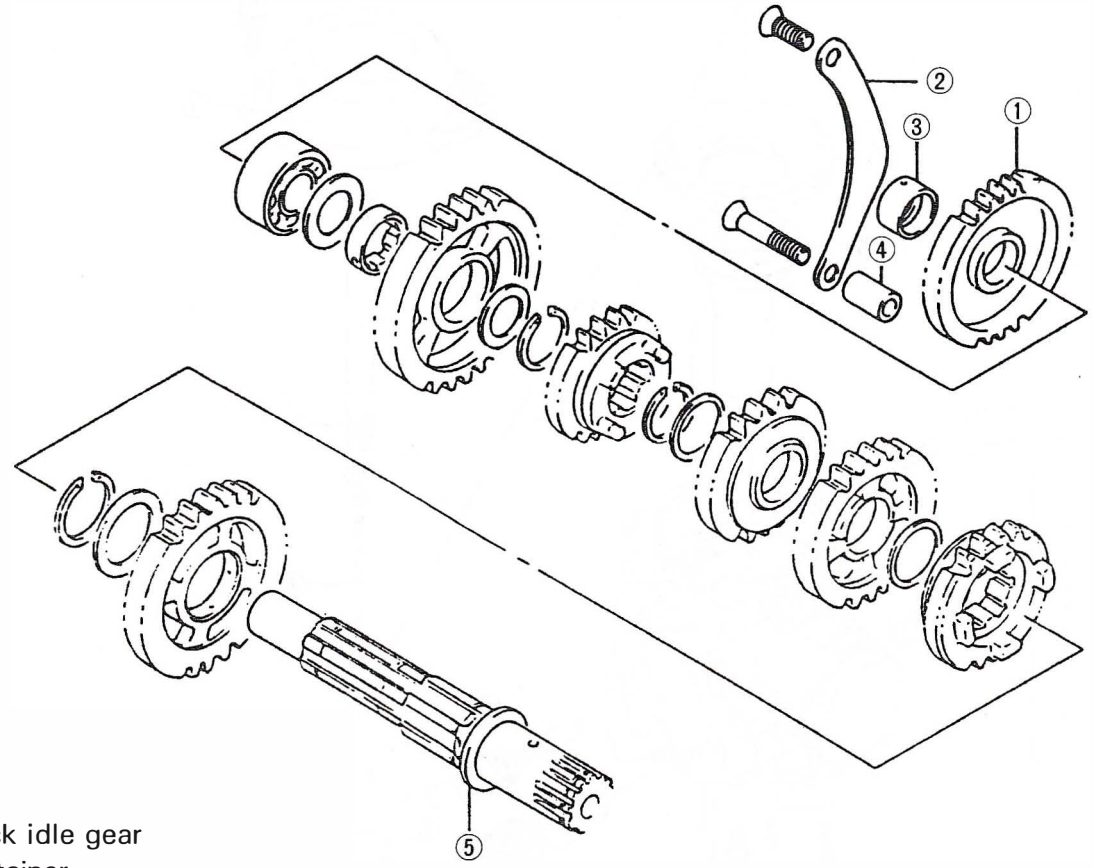
ENGINE MOUNTING



Tightening torque			
ITEM	N·m	kg-m	lb-ft
①,⑥ ⑦	37—45	3.7—4.5	27.0—32.5
②,③ ④,⑤	60—72	6.0—7.2	43.5—52.0
⑧	18—28	1.8—2.8	13.0—20.0

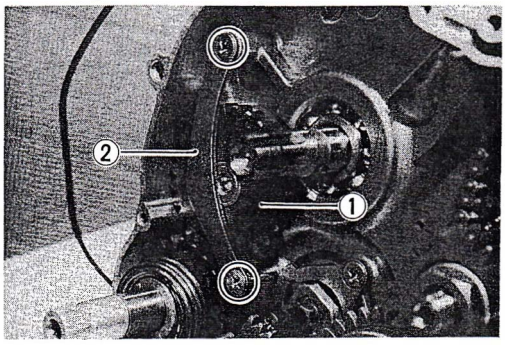
* Apply THREAD LOCK SUPER ''1303'' (99000-32030)

KICK IDLE GEAR



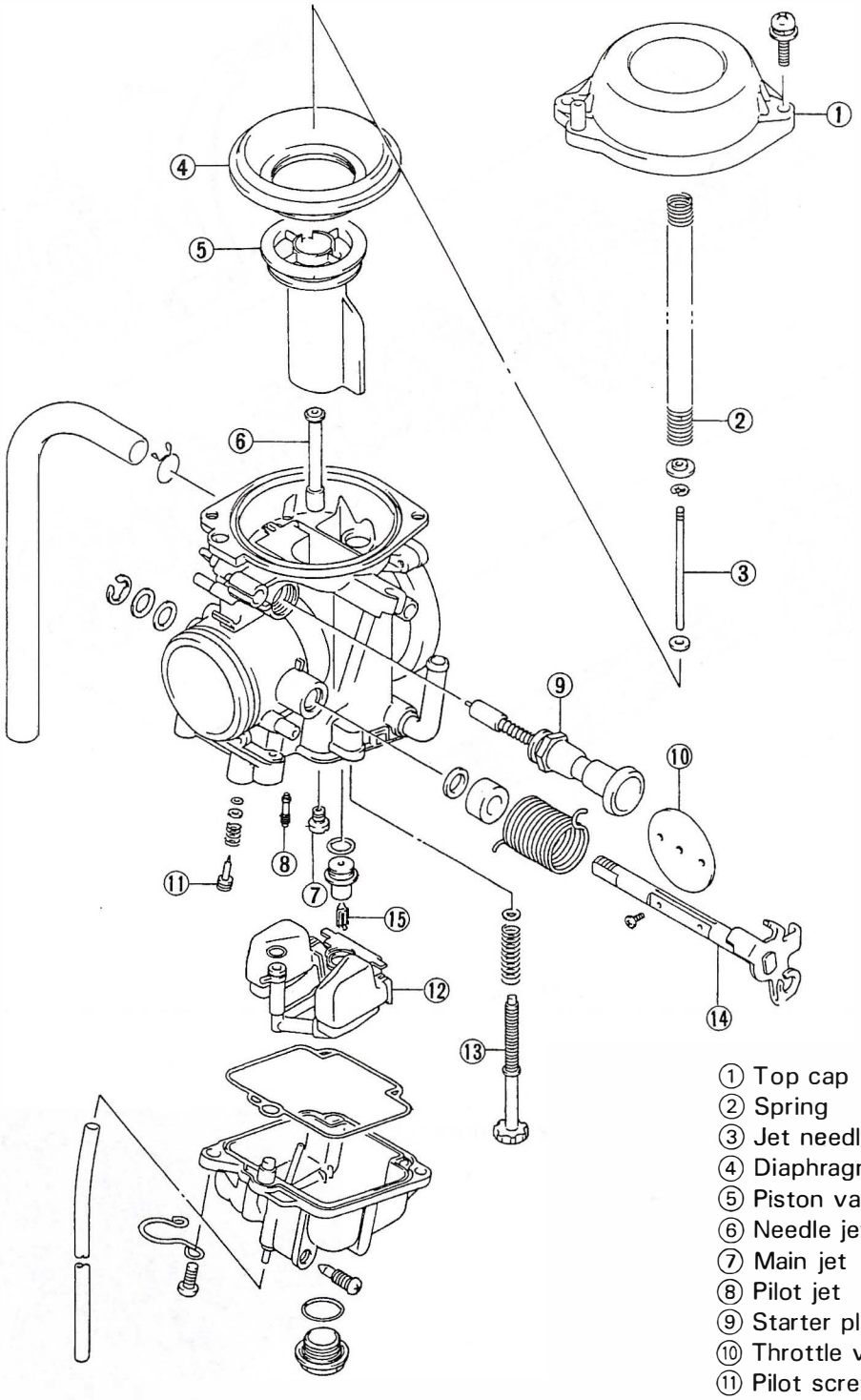
① Kick idle gear
② Retainer
③ Bushing
④ Spacer
⑤ Driveshaft

- Remove the kick idle gear ① by removing the retainer ②.



CARBURETOR

CONSTRUCTION

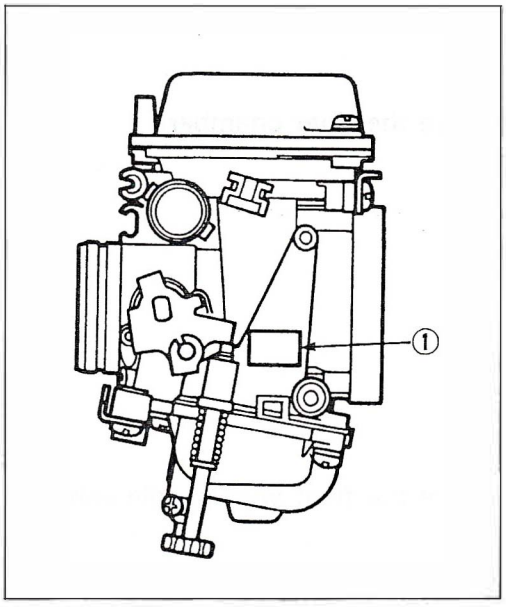


① Top cap
② Spring
③ Jet needle
④ Diaphragm
⑤ Piston valve
⑥ Needle jet
⑦ Main jet
⑧ Pilot jet
⑨ Starter plunger
⑩ Throttle valve
⑪ Pilot screw
⑫ Float
⑬ Throttle stop screw
⑭ Throttle valve shaft
⑮ Needle valve

ITEM	SPECIFICATION	
	U.S.A.	California model only
Carburetor type	MIKUNI BST33SS	←
Bore size	33 mm	←
I.D. No.	14D2	14D3
Idle r/min	1500±100 r/min	←
Fuel level	1.5 ± 0.5 mm (0.06±0.02 in)	←
Float height	14.6±1.0 mm (0.57±0.04 in)	←
Main jet (M.J.)	#135	←
Main air jet (M.A.J.)	0.6 mm	←
Jet needle (J.N.)	5CD16	←
Needle jet (N.J.)	O-6	←
Throttle valve (Th.V.)	#115	←
Pilot jet (P.J.)	#37.5	←
By-pass (B.P.)	0.8,0.8,0.8 mm	←
Pilot outlet (P.O.)	0.8 mm	←
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S)	#37.5	←
Pilot screw (P.S)	PRE-SET	←
Pilot air jet (P.A.J.)	1.3 mm	←
Throttle cable play	0.5—1.0 mm (0.02—0.04 in)	←

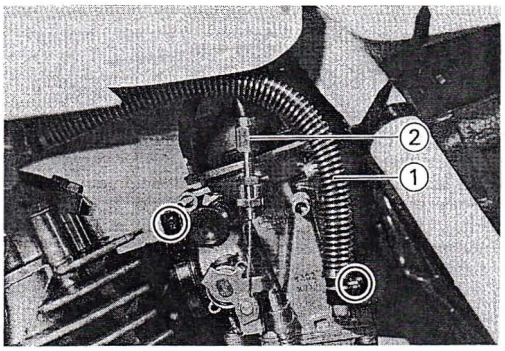
I.D. NO. LOCATION

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



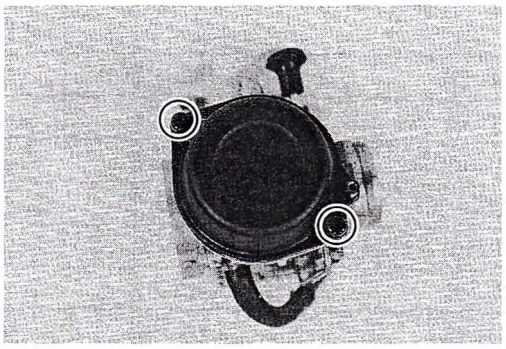
REMOVAL

- Disconnect the fuel hose ①.
- Remove the throttle cable ②.
- Loosen the clamp screws and remove the carburetor.

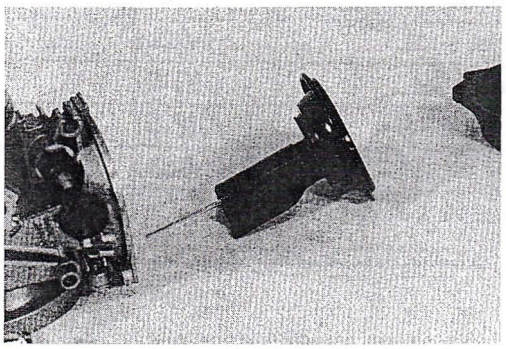


DISASSEMBLY

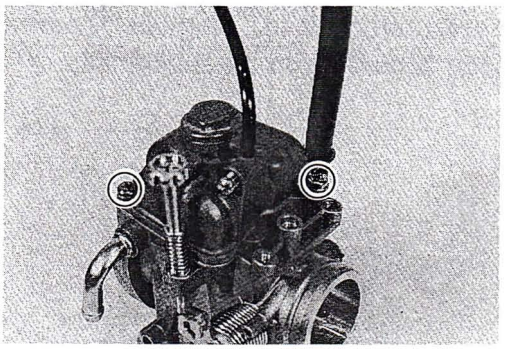
- Remove the top cap.



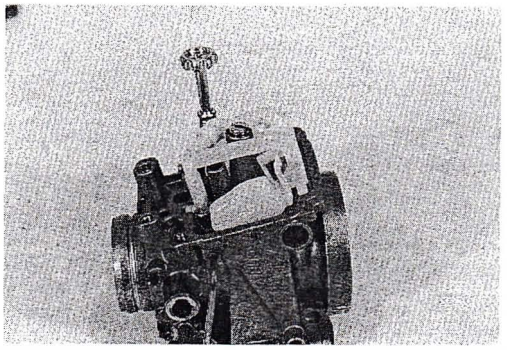
- Remove the diaphragm with piston valve.



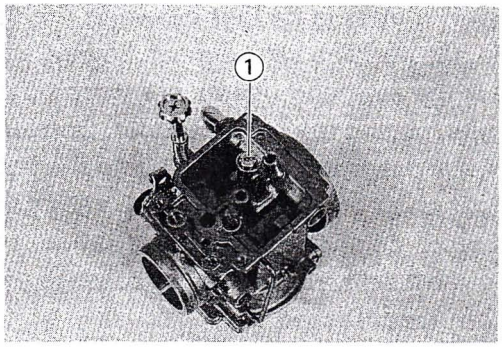
- Remove the float chamber.



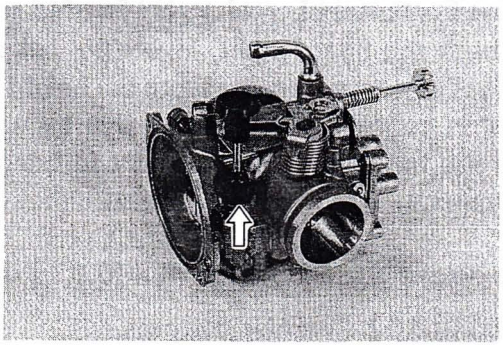
- Remove the float with needle valve.



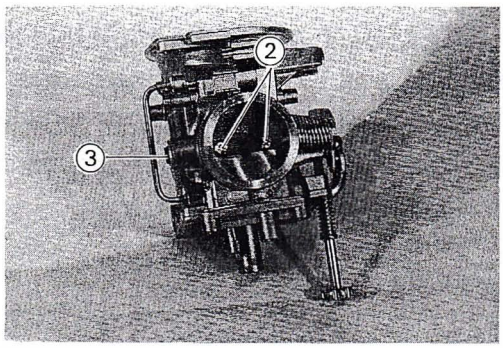
- Remove the main jet ①.



- Remove the starter plunger.



- Remove the throttle valve by removing the screws ②.
- Remove the throttle valve shaft and return spring **by** removing the E-ring ③.



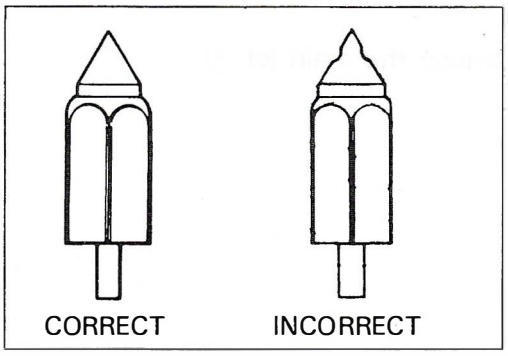
INSPECTION AND ADJUSTMENT

Check following items for any damage or clogging.

* Pilot jet
* Main jet
* Main air jet
* Pilot air jet
* Needle jet air bleeding hole
* Float
* Needle valve
* Starter jet
* Gasket and O-ring
* Throttle shaft oil seal
* Diaphragm
* Pilot outlet and by-pass holes

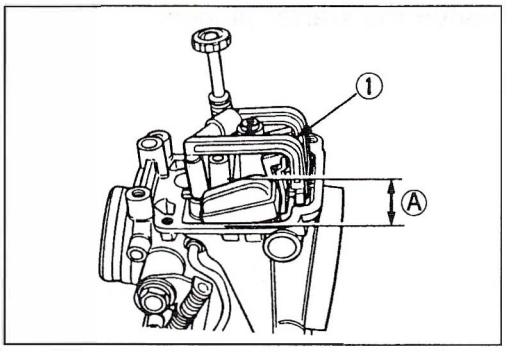
NEEDLE VALVE INSPECTION

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



Float height Ⓐ: 14.6 ± 1.0 mm (0.57 ± 0.04 in)

09900-20102 : Vernier calilpers

REASSEMBLY AND REMOUNTING

Reassemble and remount the carburetor assembly in the reverse order of removal and disassembly.

- After remounting the carburetor, the following adjustments are necessary.
  - * Engine idle r/min . . . . . Page 8-15
  - * Throttle cable play . . . . . Page 8-15

EMISSION CONTROL CARBURETOR COMPONENTS

DR350S motorcycles are equipped with precision, manufactured carburetors for emission level control. These carburetors require special mixture control components and other percision adjustments to function properly.

There are several carburetor mixture control components in each carburetor assembly. Three (3) of thses components are machined to much closer tolerances than standard machined carburetor jets. These three (3) particular jets—MAIN JET, NEEDLE JET, PILOT JET— must not be replaced by standard jets. To aid in identifying these three (3) jets a different design of letter and number are used. If replacement of these close tolerance jets becomes necessary, be sure to replace them with the same type close tolerance jets marked as in the examples shown below.

The jet needle is also of special manufacture. Only one clip position is provided on the jet needle. If replacement becomes necessary the jet needle may only be replaced with an equivalent performing replacement component. Suzuki recommends that Genuine Suzuki Parts be utilized whenever possible for the best possible performance and durability.

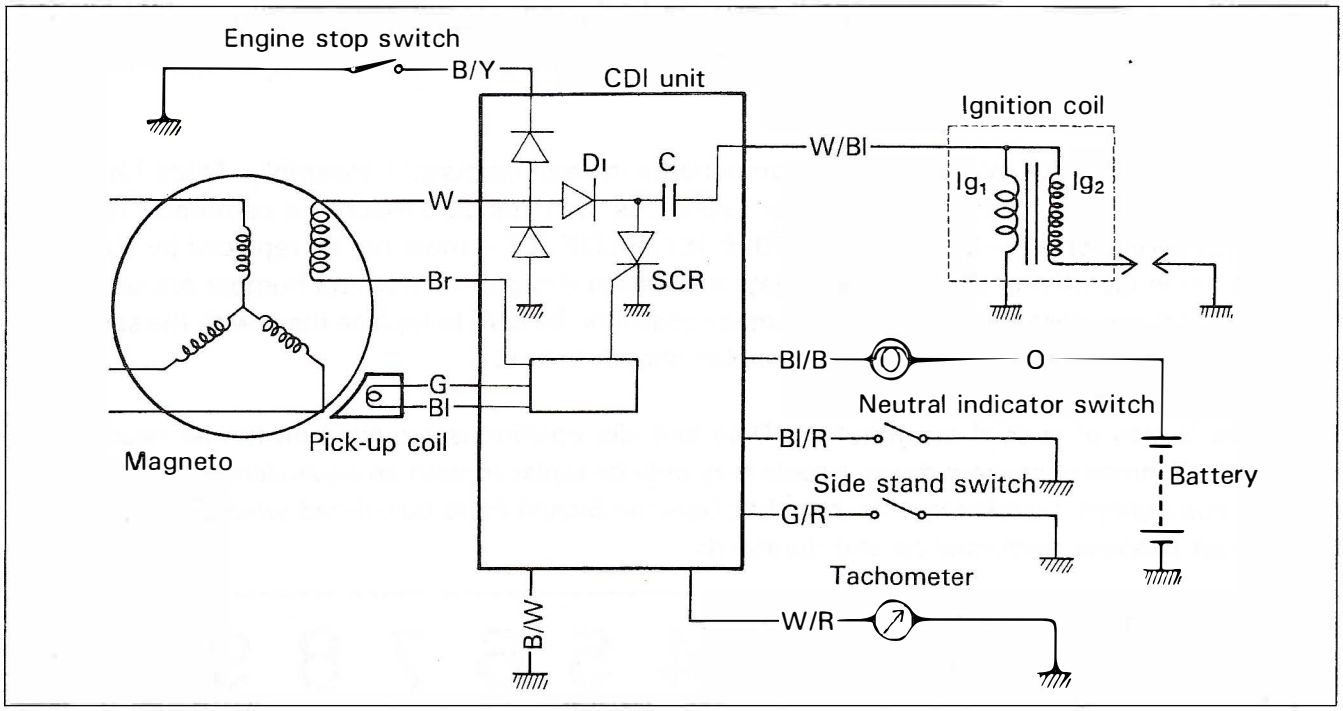
Conventional Figures Used on Standard Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0
Emission Type Figures Used On Close Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0

The carburetor specification for the emission-controlled DR350S are as follows.

Carburetor I.D. No.	Main Jet	Needle Jet	Jet Needle	Pilot Jet	Pilot Screw
14D3 (California model)	#135	0-6	5CD16	#37.5	PRE-SET DO NOT ADJUST
14D2 (Other state models)					

The pilot screw is pre-set by the factory utilizing specialized testing and adjusting procedures. The pilot screw is not adustable as the idle circuit is "sealed" after factory adjustment. Adjusting, interferring with, improper replacement, or resetting of any of the carburetor components may adversely affect carburetor performance and cause the motorcycle to exceed the exhaust emission level limits. If persons, who are unaware of these special carburetor servicing requirements tamper with the carburetors the Suzuki dealer should restore the carburetors to their original condition or if unable to effect repairs, contact the distributors representative for further technical information and assistance.

IGNITION SYSTEM



DESCRIPTION

The DR350S engine is equipped with a new type ignition system. This new system further reduces timing fluctuations. It has an "ignition timing control circuit" which accurately controls ignition timing depending on the engine r/min.

OPERATION

When the magneto rotor rotates, an electric current is generated in the power source coils, and this current charges the capacitor "C" via diode "D_1". On the other hand, when the protrusion on the rotor passes the pick-up coil, the currents are generated, they flow to the ignition timing control circuit, and they are converted into one ignition signal. This signal is sent to "SCR", the "SCR" becomes ON, the circuit "C" → "SCR" → "Ig_1" is formed, and as the electric energy stored in the capacitor "C" is discharged instantly, a high voltage is induced in the ignition secondary coil "Ig_2", and a spark.

This motorcycle is equipped with interlock switches for ignition circuit. The engine can only be started if:

The transmission is in neutral or

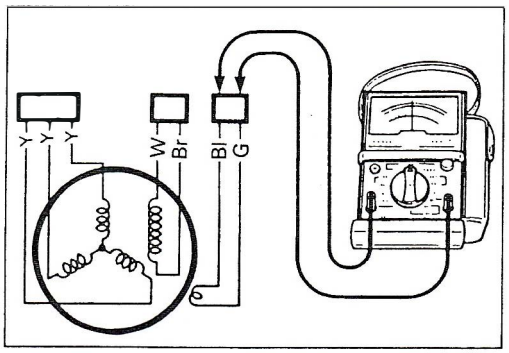
The transmission is in gear, the side stand is fully up.

INSPECTION

MAGNETO COIL

- Remove the seat.
- Measure the resistance between the lead wires in the following table with a pocket tester.

09900-25002 : Pocket tester



Magneto coil resistance

Pick-up coil	G—Bl 180—270 Ω (x 100 Ω range)
Power source coil	W—Br 250—370 Ω (x 100 Ω range)
Charging coil	Y—Y 0.1—1.3 Ω (x 1Ω range)

WIRE COLOR
Bl : Blue
Br : Brown
G : Green
W : White
Y : Yellow

IGNITION COIL

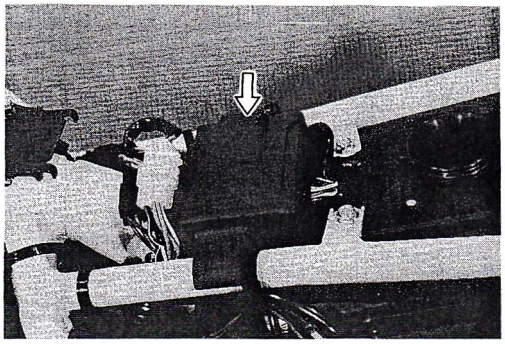
Refer to page 5-2.

CDI UNIT

- Remove the seat.
- Remove the CDI unit.

Measure the resistance between the lead wires in the **following** table with the pocket tester.

09900-25002 : Pocket tester



Unit : Approx. kΩ

⊖ Probe of tester to: \ ⊕ Probe of tester to :	G	Bl	W	W/Bl	B/Y	B/W	Br	Bl/R	Bl/B	G/R	W/R
G		7—14	13—24	∞	22—54	7—14	12—24	80—180	∞	80—180	16—33
Bl	7—14		2—5	∞	6—18	0	2—5	56—150	∞	56—150	4—10
W	64—180	40—120		∞	160—500	48—120	160—360	400—1000	∞	400—1000	17—42
W/Bl	12—27	2—5	7—20		24—110	2—5	6—18	160—600	∞	160—600	12—35
B/Y	∞	∞	∞	∞		∞	∞	∞	∞	∞	∞
B/W	7—14	0	2—5	∞	6—18		1—5	56—150	∞	56—150	4—10
Br	48—110	32—72	64—180	∞	2—5	32—72		160—500	∞	160—500	56—120
Bl/R	∞	∞	∞	∞	∞	∞	∞		∞	∞	∞
Bl/B	∞	∞	∞	∞	∞	∞	∞	2—5		∞	∞
G/R	∞	∞	∞	∞	∞	∞	∞	∞	∞		∞
W/R	24—60	8—24	32—180	∞	72—360	11—24	22—60	320—1000	∞	320—1000	

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

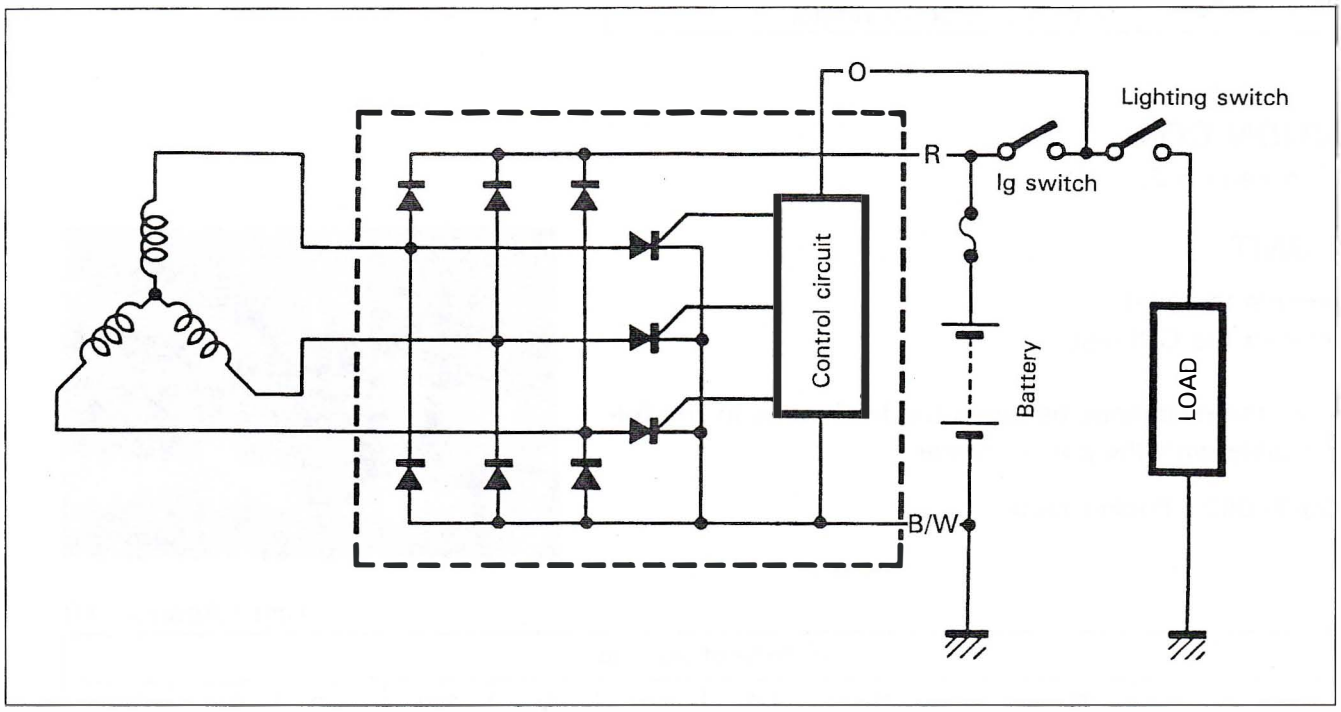
WIRE COLOR
Bl :Blue
Br :Brown
G :Green
W :White
B/W :Black with White tracer
B/Y :Black with Yellow tracer
Bl/B :Blue with Black tracer
Bl/R :Blue with Red tracer
G/R :Green with Red tracer
W/Bl:White with Blue tracer
W/R :White with Red tracer

CHARGING SYSTEM

DESCRIPTION

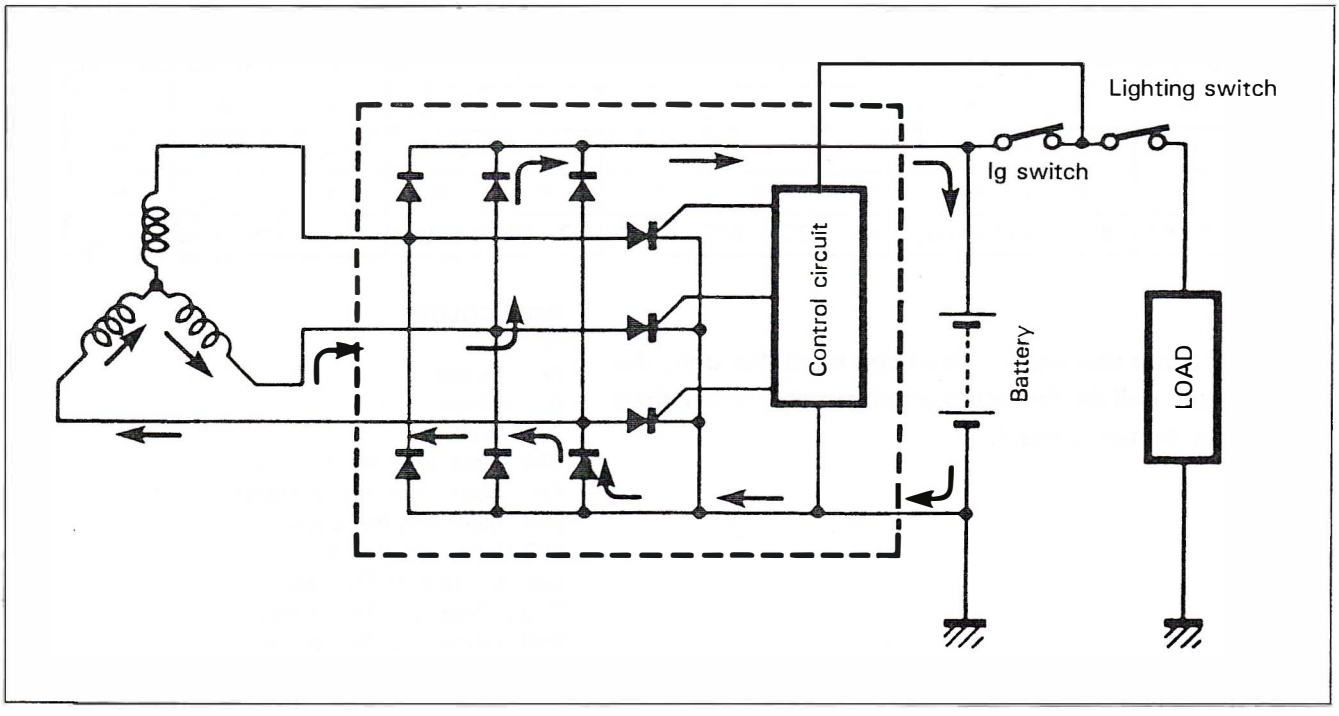
The circuit of the charging system is indicated in figure, which is composed of an AC generator, regulator/rectifier unit and battery.

The AC current generated from AC generator is rectified by rectifier and is turned into DC current, then it charges the battery.

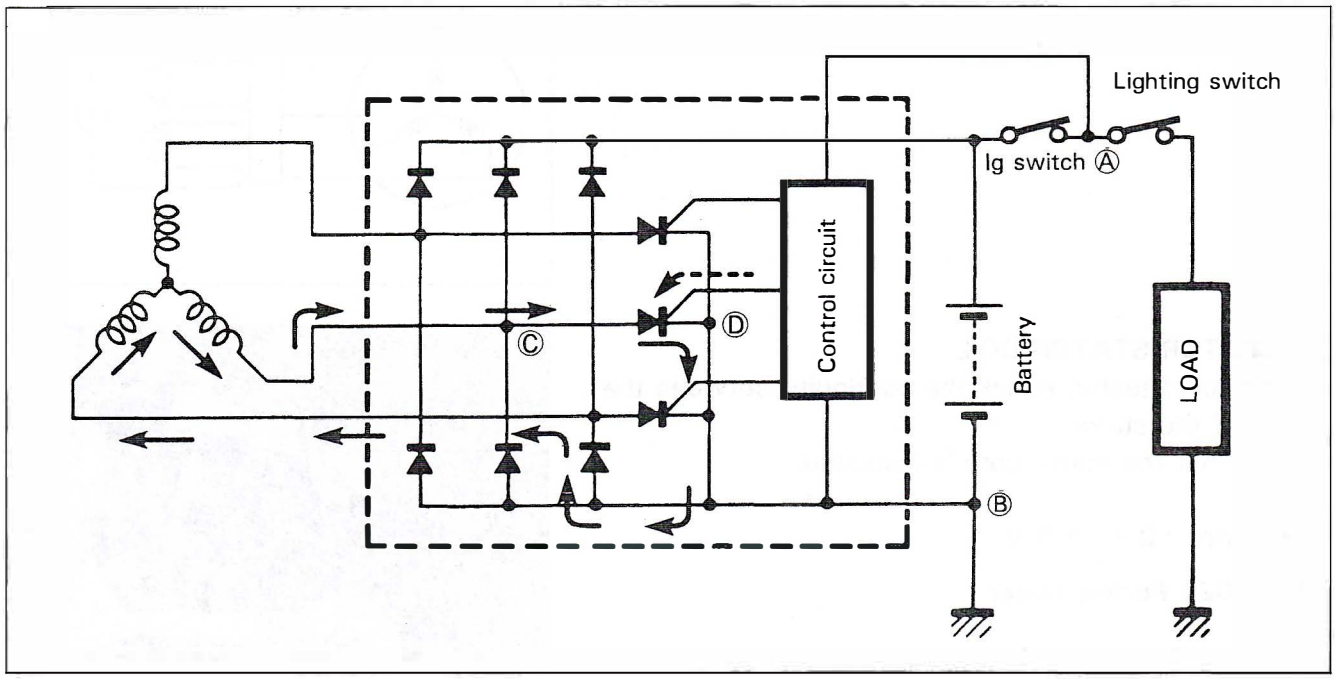


Function of Regulator

While the engine r/min in low and the generated voltage of AC generator is lower than the adjusted voltage of regulator, the regulator does not function. However, the generated current charges the battery directly at this time.



When the engine speed increases and the load decreases, the battery charge voltage will increase due to the generated voltage by the generator. The battery will continue to be charged by the generated voltage until the battery voltage (voltage between Ⓐ and Ⓑ) reaches the value set of the control circuit in the regulator, then a signal from the circuit will flow to the SCR. When the SCR goes "ON", Ⓒ and Ⓓ will become conductive, hence the voltage does not charge the battery but returns to the generator.
When the battery voltage falls, the signal to the SCR will be out off, causing the SCR to go "OFF". As a result, the generated voltage will start to charge the battery once again. Due to the repetition of the above operation of the regulator, the battery voltage will be maintained constant, preventing overcharging of the battery.



INSPECTION

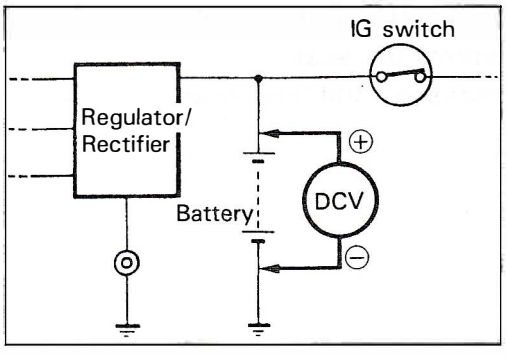
CHARGING OUTPUT CHECK

- Remove the left frame cover.
- Start the engine and keep it running at 5 000 r/min **with** the lighting swtich turned ON (High position).
- Using the pocket tester, measure the DC voltage between the battery ⊕ terminal and ⊖ terminal. If the tester reads under 13.0V or over 15.5V, check the AC generator no-load performance and regulator/rectifier.

NOTE:
When making this test, be sure that the battery is in fully-charged condition.

STD charging output : 13.0—15.5V (DC) at 5 000 r/min

09900-25002 : Pocket tester

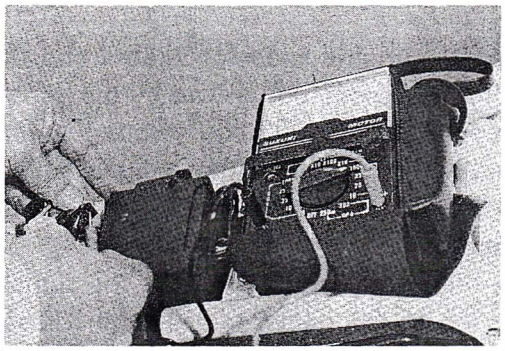


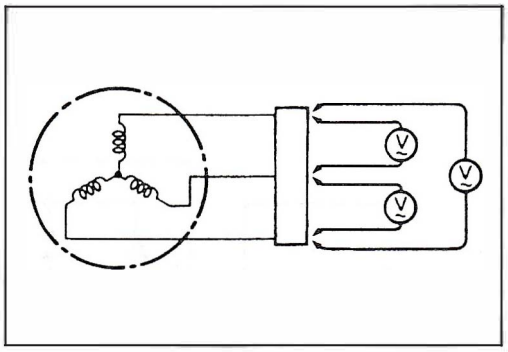
AC GENERATOR NO-LOAD PERFORMANCE

- Remove the seat.
- Disconnect the AC generator lead wire coupler.
- Start the engine and keep it running at 5 000 r/min.
- Measure the AC voltage between the three yellow lead wires with the pocket tester.
  If the tester reads under 65 V, the AC generator is faulty.

STD No-load performance : More than 65V (AC) at 5 000 r/min

09900-25002 : Pocket tester





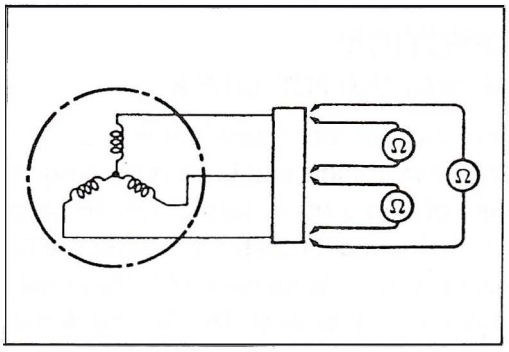
AC GENERATOR STATOR COIL

Using the pocket tester, check the continuity between the lead wires of the stator.
Also check that the stator core is insulated.

STD resistance : 0.1—1.3 Ω

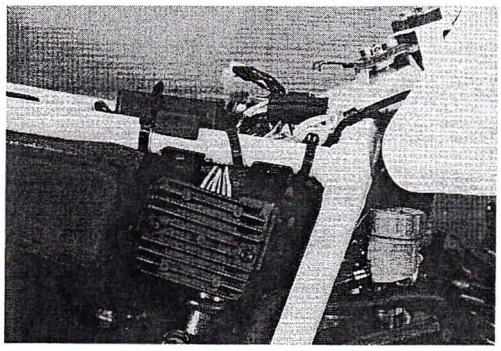
09900-25002 : Pocket tester

NOTE:
When making this test, it is not necessary to remove the AC generator.



REGULATOR/RECTIFIER

- Remove the seat.
- Disconnect the lead wires.

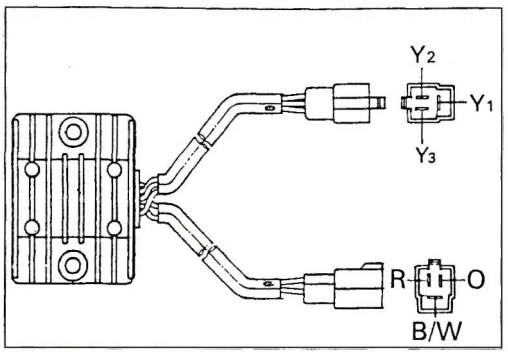


Using the pocket tester (x 1kΩ range); measure the resistance between the lead wires in the following table. If the reading is incorrect, replace the regulator/rectifier.

09900-25002 : Pocket tester

Unit : Approx. kΩ

⊖ Probe of tester to:	⊕ Probe of tester to:						
		Y_1	Y_2	Y_3	R	B/W	O
Y_1			∞	∞	1–5	∞	∞
Y_2		∞		∞	1–5	∞	∞
Y_3		∞	∞		1–5	∞	∞
R		∞	∞	∞		∞	∞
B/W		1–5	1–5	1–5	4–10		2–8
O		20–60	20–60	20–60	40–100	15–50	



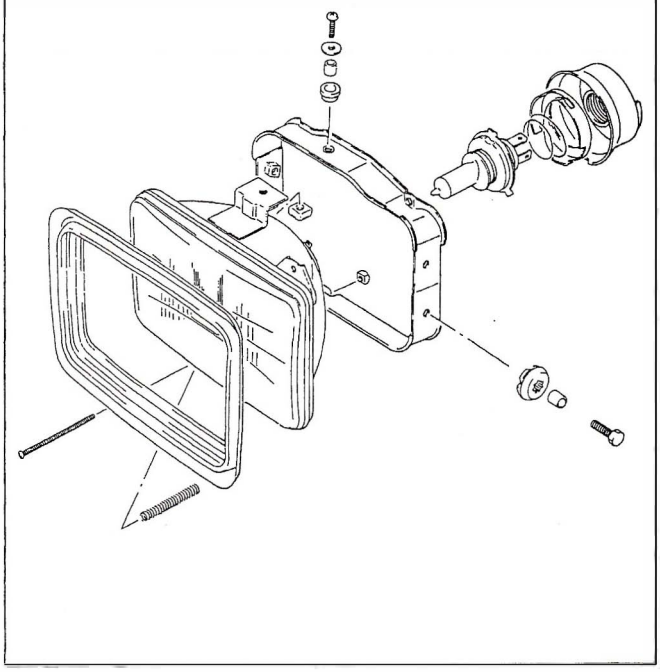
WIRE COLOR

O : Orange Y : Yellow
R : Red
B/W : Black with White tracer

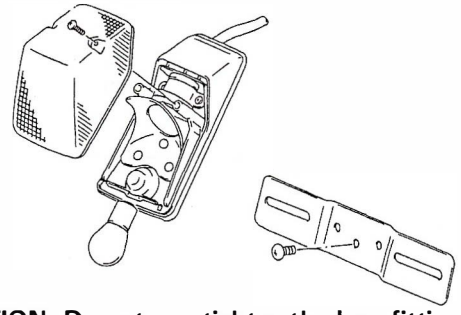
CAUTION:
As SCR and diodes are used inside this regulator/rectifier unit, the resistance values will differ when an ohmmeter other than SUZUKI pocket tester is used.

LAMPS

HEADLIGHT

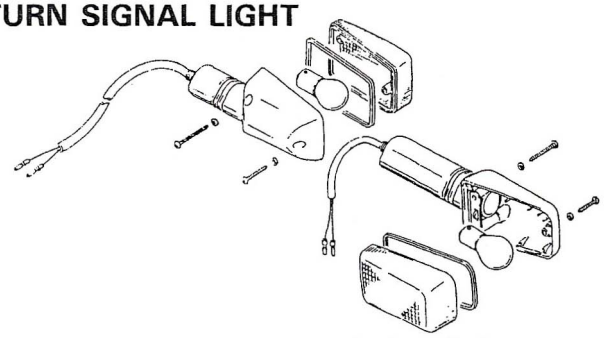


TAIL/BRAKE LIGHT



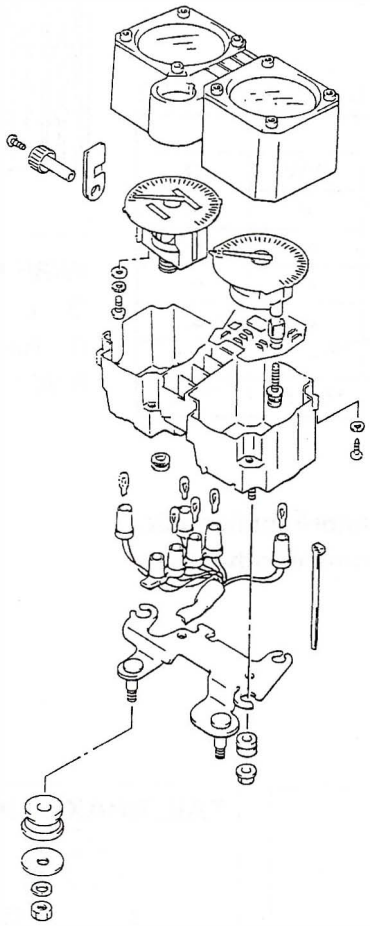
CAUTION: Do not overtighten the lens fitting screws.

TURN SIGNAL LIGHT



CAUTION: Do not overtighten the lens fitting screws.

SPEEDOMETER AND TACHOMETER



SWITCHES

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

IGNITION SWITCH

COLOR / POSITION	B/Y	B/W	R	O	Gr	Br
OFF	○—○					
ON			○—○		○—○	
P	○—○		○—○			○

LIGHTING SWITCH

(For Canada and U.S.A. models)

COLOR / POSITION	O	Gr	Y/W
ON	○—○	○—○	○

(For the other models)

COLOR / POSITION	O	Gr	Y/W
OFF			
•	○—○	○	
ON	○—○	○—○	○

DIMMER SWITCH

COLOR / POSITION	W	Y	Y/W
HI		○—○	
LO	○		○

TURN SIGNAL SWITCH

COLOR / POSITION	B	Lbl	Lg
R		○—○	
•			
L	○—○	○	

HORN SWITCH

COLOR / POSITION	B/Bl	B/W
ON (Push)	○—○	
OFF		

SIDE STAND SWITCH

COLOR / POSITION	G	B/W
ON (Upright position)	○—○	
OFF (Down position)		

NOTE:
When inspecting side stand switch, connect the ⊕ probe of pocket tester to B/W lead wire and ⊖ probe to G lead wire.

ENGINE STOP SWITCH

COLOR / POSITION	B/Y	B/W
OFF	○—○	
RUN		

NEUTRAL INDICATOR SWITCH

COLOR / POSITION	Bl	Ground
ON (Neutral position)	○—○	
OFF		

FRONT BRAKE SWITCH

COLOR / POSITION	Terminal	Terminal
ON (Squeeze lever)	○———	———○
OFF		

REAR BRAKE SWITCH

COLOR / POSITION	O	W/B
ON (Depress pedal)	○———	———○
OFF		

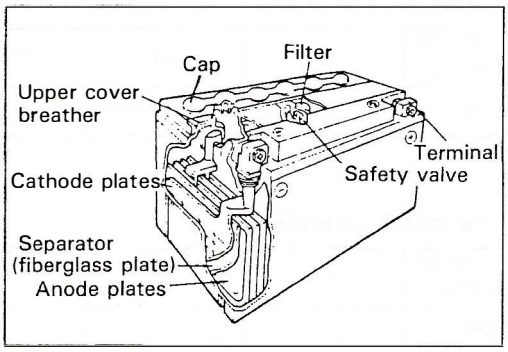
WIRE COLOR

B : Black
Bl : Blue
Br : Brown
G : Green
Gr : Gray
Lbl : Light blue
Lg : Light green
O : Orange
R : Red
W : White
Y : Yellow
B/Bl : Black with Blue tracer
B/W : Black with White tracer
B/Y : Black with Yellow tracer
W/B : White with Black tracer
Y/W : Yellow with White tracer

BATTERY

SPECIFICATIONS

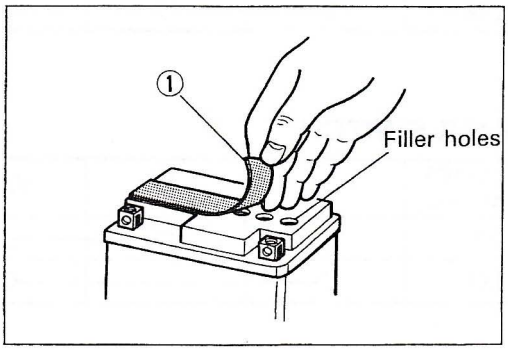
Type designation	YT4L–BS or FT4L–BS
Capacity	12V 10.8kC (3 Ah)/10HR
Standard electrolyte S.G.	1.320 at 20° C (68° F)



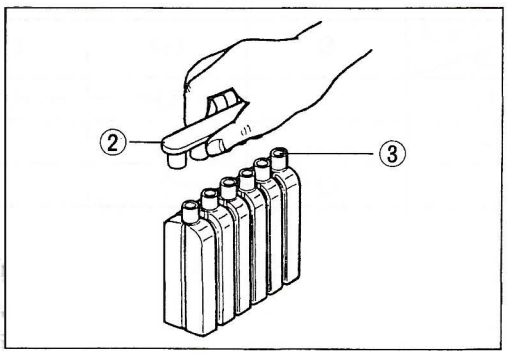
INITIAL CHARGING

Filling electrolyte

- Remove the aluminum tape ① sealing the battery electrolyte filler holes.



- Remove the caps ②.

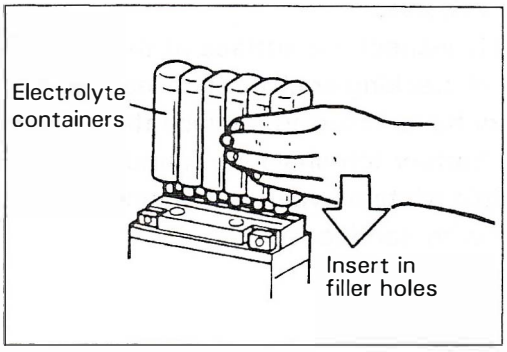


NOTE:

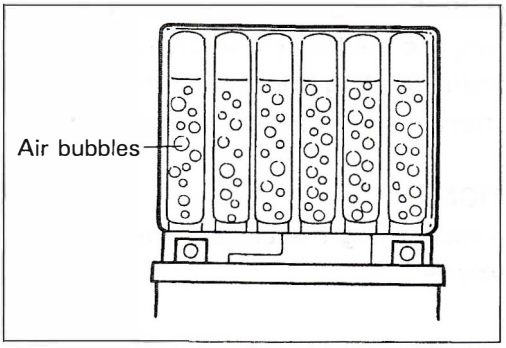
* *After filling the electrolyte completely, use the removed cap ② as the seald caps of battery-filler holes.*

* *Do not remove or pierce the sealed areas ③ of the electrolyte container.*

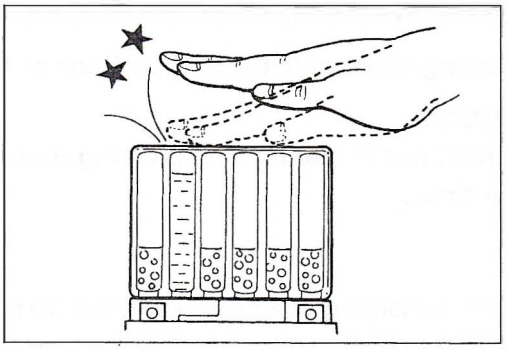
- Insert the nozzles of the electrolyte container into the battery's electrolyte filler holes, holding the container firmly so that it does not fall. Take precaution not to allow any of the fluid to spill.



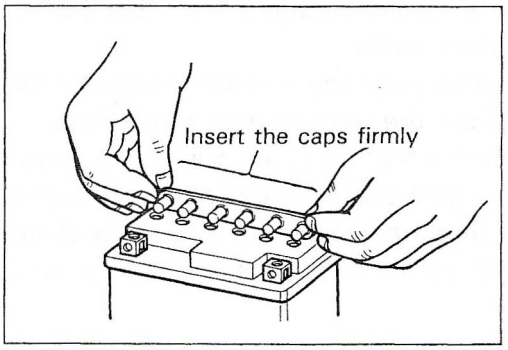
- Make sure air bubbles are coming up each electrolyte container, and leave in this position for about more than 20 minutes.



NOTE:
If no air bubbles are coming up from a filler port, tap the bottom of the two or three times.
Never remove the container from the battery.

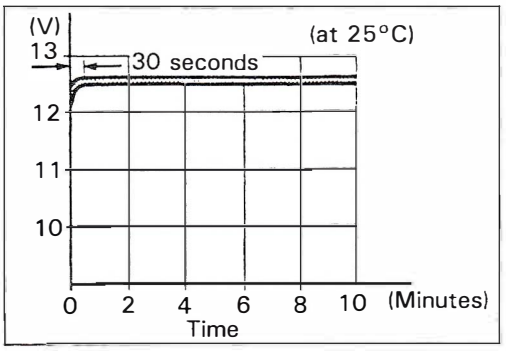


- After confirming that the electrolyte has entered the battery completely, remove the electrolyte containers from the battery. Wait for around 20 minutes.
- Insert the caps into the filler holes, pressing in firmly so that the top of the caps do not protrude above the upper surface of the battery's top cover.



CAUTION:
* **Never use anything except the specified battery.**
* **Once install the caps to the battery; do not remove the caps.**

- Using SUZUKI pocket tester, measure the battery voltage. The tester should indicate more than 12.5V (DC) as shown in the Fig. If the battery voltages is lower than the specification, charge the battery with a battery charger. (Refer to the recharging operation on page 8-35.)



NOTE:
Initial charging for a new battery is recommended if two years have elapsed since the date of manufacture.

SERVICING

Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, then this can be cleaned away with sandpaper.

RECHARGING OPERATION

- Using the pocket tester, check the battery voltage. If the voltage reading is less than the 12.0V (DC), recharge the battery with a battery charger.

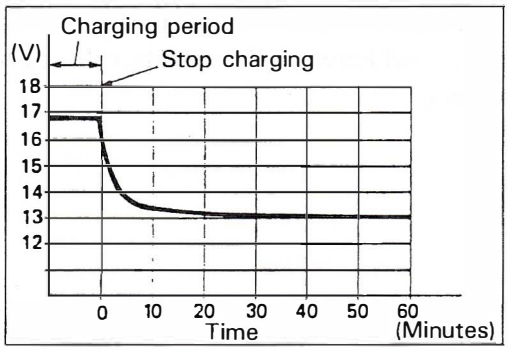
CAUTION:
When recharging the battery, remove the battery from the motorcycle.

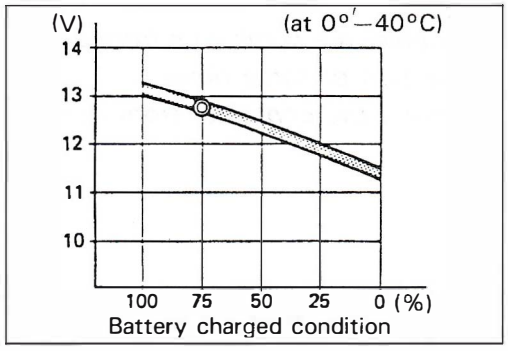
NOTE:
Do not remove the caps on the battery top while recharging.

Recharging time : 4A for half an hour or 0.4A for 5 hours

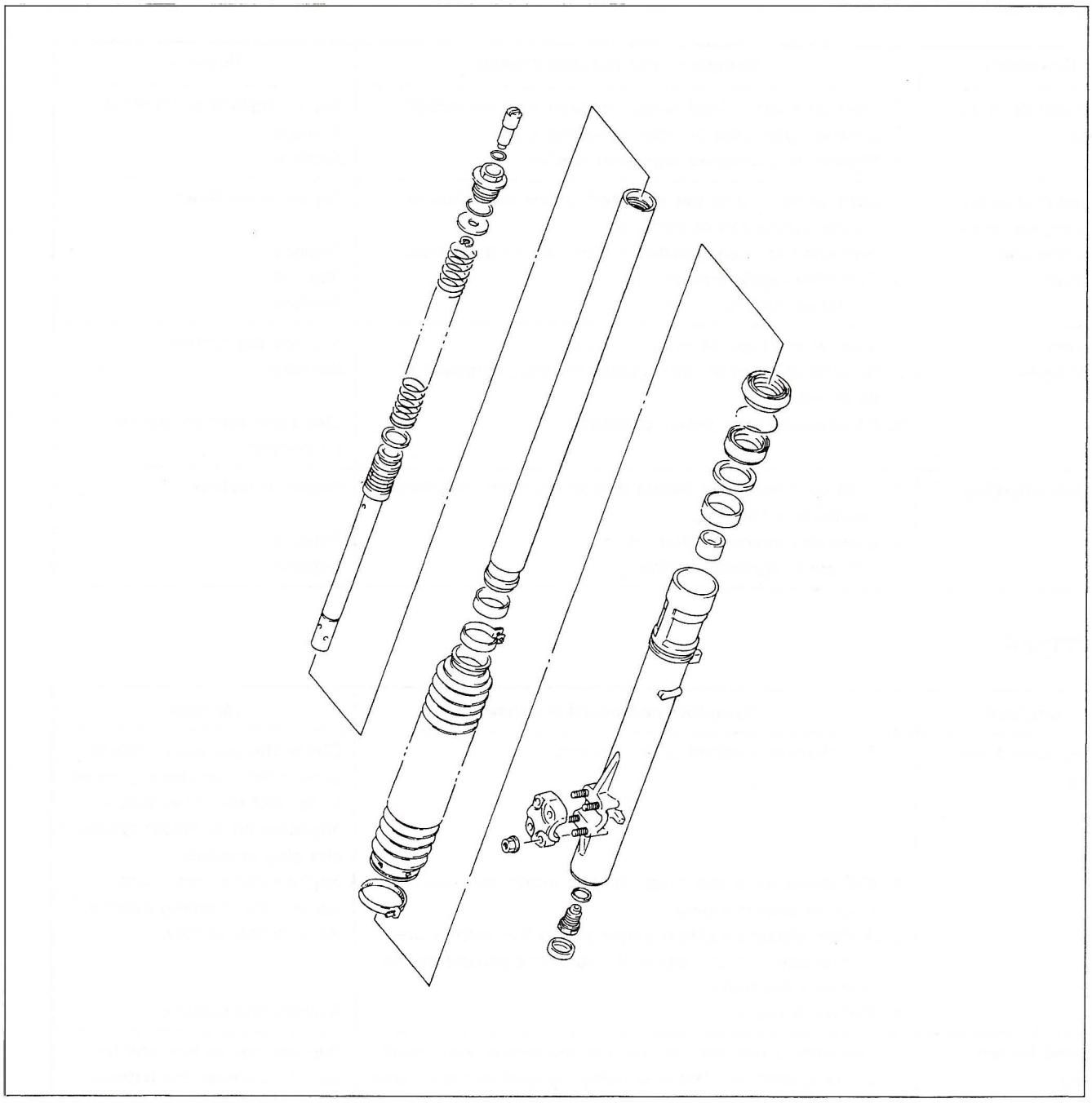
CAUTION:
Be careful not to permit the charging current to exceed 4A at any time.

- After recharging, wait for more than 30 minutes and check the battery voltage with a pocket tester.
- If the battery voltage is less than the 12.5V, recharge the battery again.
- If battery voltage is still less than 12.5V after recharging, replace the battery with a new one.
- When a battery is left for a long term without using, it is subject to discharge. When the motorcycle is not used for more than 1 month (especially during the winter season), recharge the battery once a month at least.





FRONT FORK



Fork spring
Service Limit : 602 mm (23.7in)

Fork oil type : Fork oil #10
Fork oil capacity : 544 ml
(18.4/19.2 US/Imp oz)
STD fork oil level : 170 mm (6.7 in)

STANDARD SUSPENSION SETTING

FRONT		REAR	
Spring pre-load adjuster	Damping force adjuster	Spring set length	Damping force adjuster
3	Max. – 7	272.8 mm (10.74 in)	Max. – 1.5

TROUBLESHOOTING

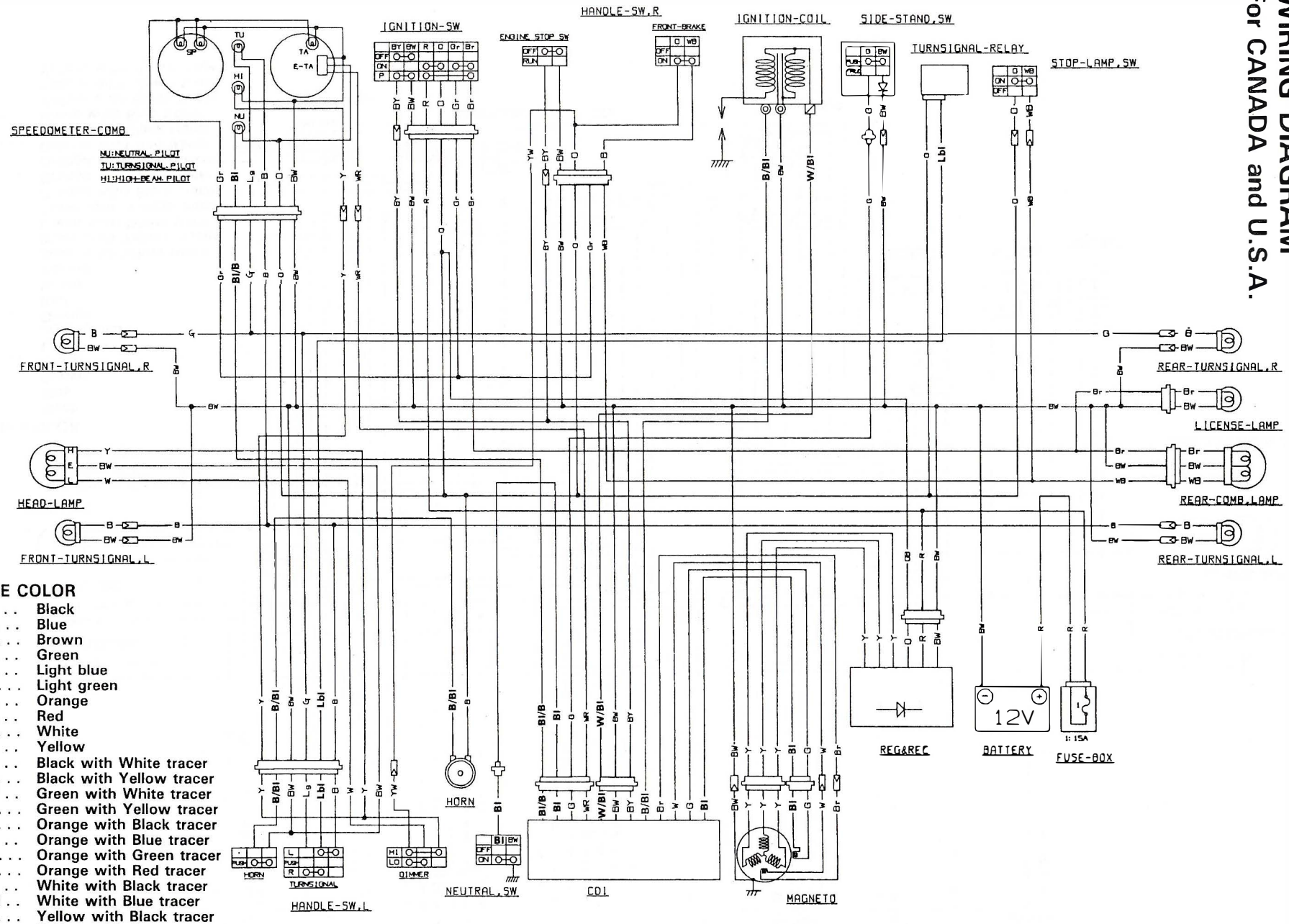
ELECTRICAL

Complaint	Symptom and possible causes	Remedy
Generator does not charge.	1. Open or short in lead wires, or loose lead connictions. 2. Shorted, grounded or open generator coils. 3. Shorted or punctured regulator/rectifier.	Repair, replace or retighten. Replace. Replace.
Generator charges, but charging rate is below the specification	1. Lead wires tend to get shourted or open-circuited or loosely connected at terminals. 2. Grounded or open-circuited stator coils of generator. 3. Defective regulator/rectifier. 4. Defective battery.	Repair or retighten. Replace. Replace. Replace
Generator overcharges.	1. Internal short-circuit in the battery. 2. Resistor element in the regulator/rectifier damaged or defective. 3. Regulator/rectifier poorly grounded.	Replace the battery. Replalce. Clean and tighten ground connection.
Unstable charging.	1. Lead wire insulation frayed due to vibration, resulting in intermittent shorting. 2. Generator internally shorted. 3. Defective regulator/rectifier.	Repair or replace. Replace. Replace.

BATTERY

Complaint	Symptom and possible causes	Remedy
Battery runs down quickly.	1. The charging method is not correct. 2. Cell plates have lost much of their active material as a result of over-charging. 3. A short-circuit condition exists within the battery due to excessive accumulation of sediments caused by the incorrect electrolyte. 4. Battery is too old.	Check the generator, regulator/rectifier and circuit connections, and make necessary adjustments to obtain specified charging operation. Replace the battery, and correct the charging system. Replace the battery. Replace the battery.
Reversed battery polarity.	The battery has been connected the wrong way round in the system, so that it is being charged in the reverse direction.	Replace the battery and be sure to connect the battery properly.
Battery discharges too rapidly	1. Dirty container top and sides. 2. Battery is too old.	Clean. Replace.

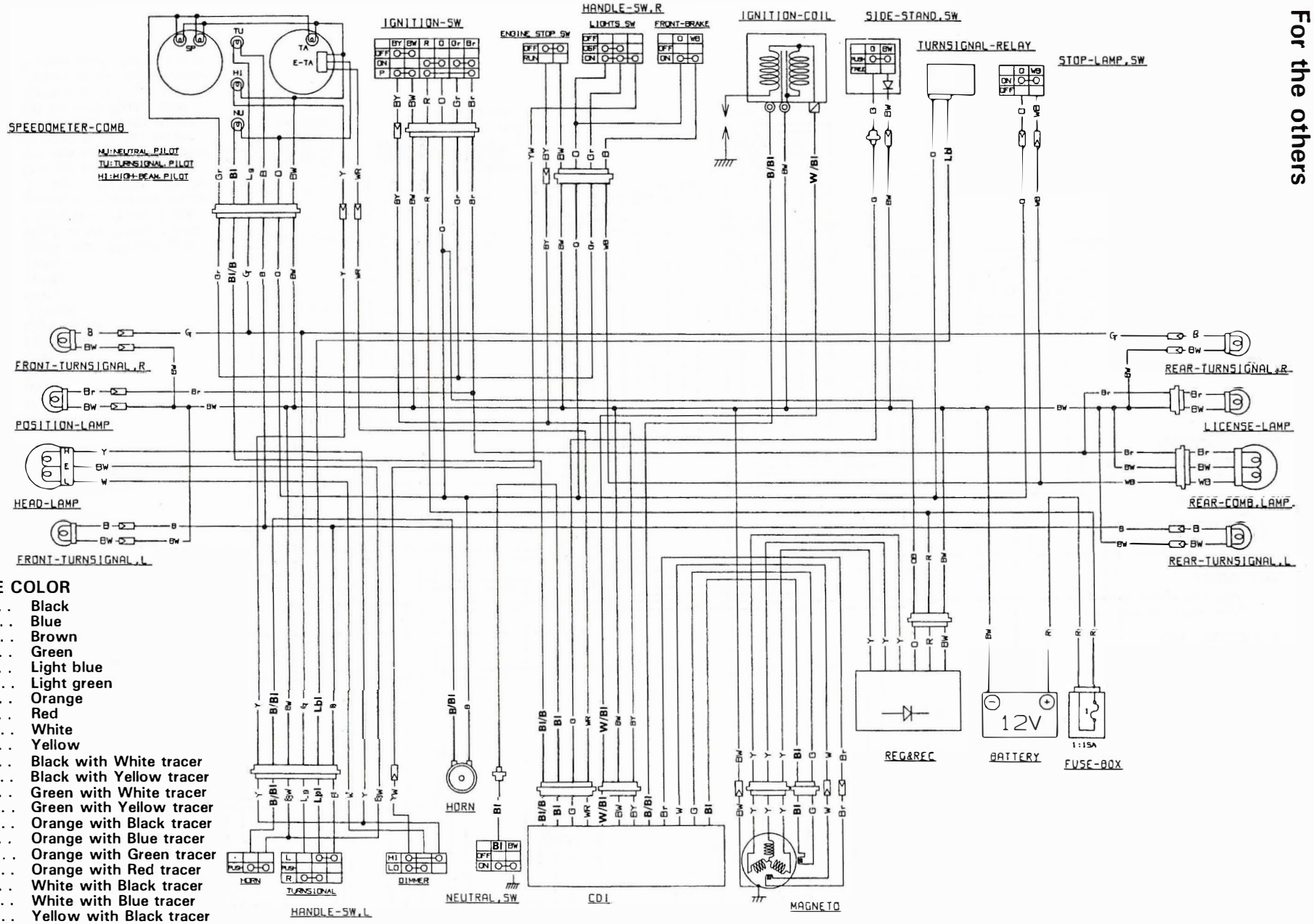
WIRING DIAGRAM
For CANADA and U.S.A.



WIRE COLOR

B	Black
Bl	Blue
Br	Brown
G	Green
Lbl . . .	Light blue
Lg	Light green
O	Orange
R	Red
W	White
Y	Yellow
B/W . .	Black with White tracer
B/Y . . .	Black with Yellow tracer
G/W . .	Green with White tracer
G/Y . . .	Green with Yellow tracer
O/B . . .	Orange with Black tracer
O/Bl . .	Orange with Blue tracer
O/G . . .	Orange with Green tracer
O/R . . .	Orange with Red tracer
W/B . .	White with Black tracer
W/Bl . .	White with Blue tracer
Y/B . . .	Yellow with Black tracer
Y/G . . .	Yellow with Green tracer
Y/W . .	Yellow with White tracer

For the others

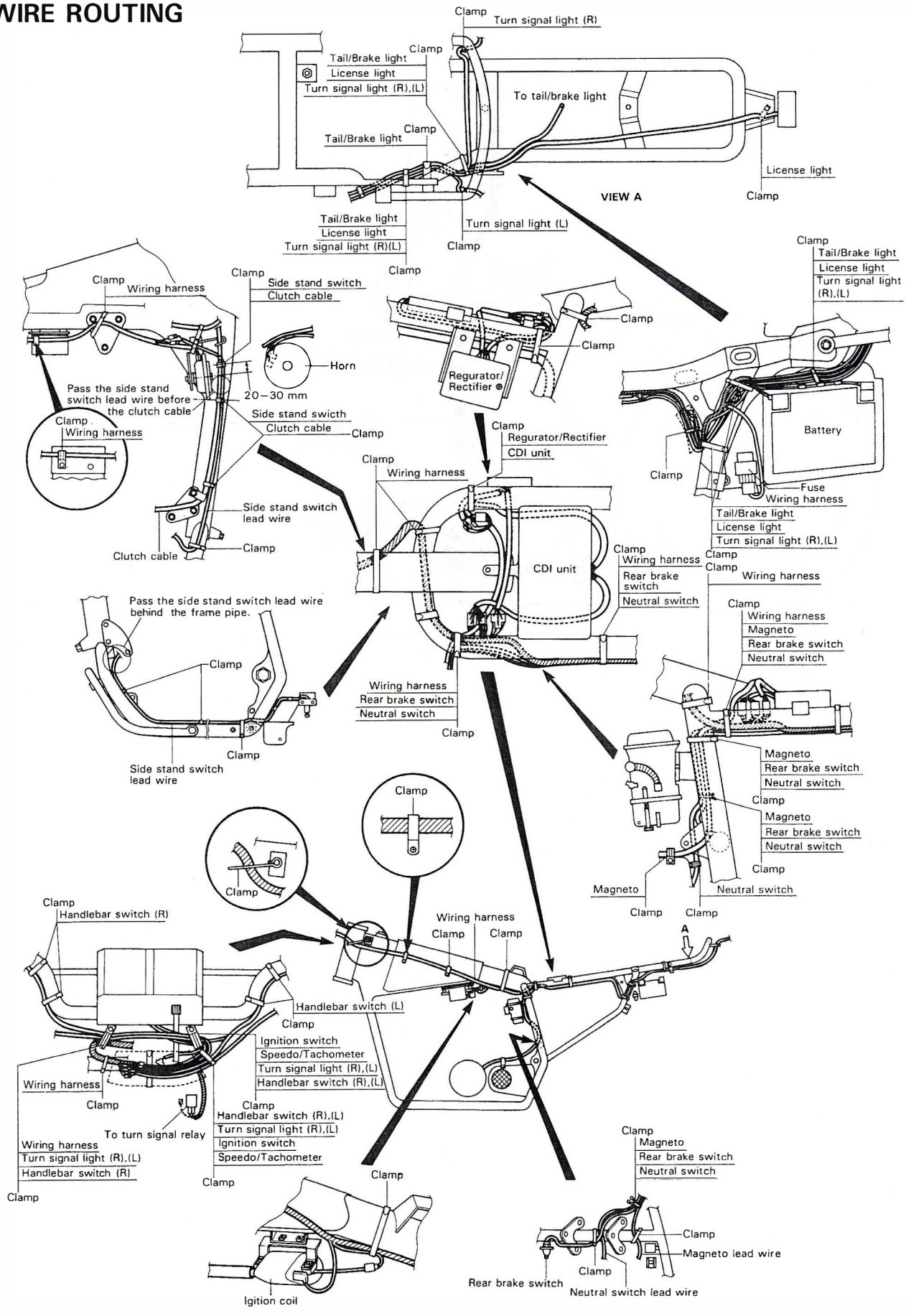


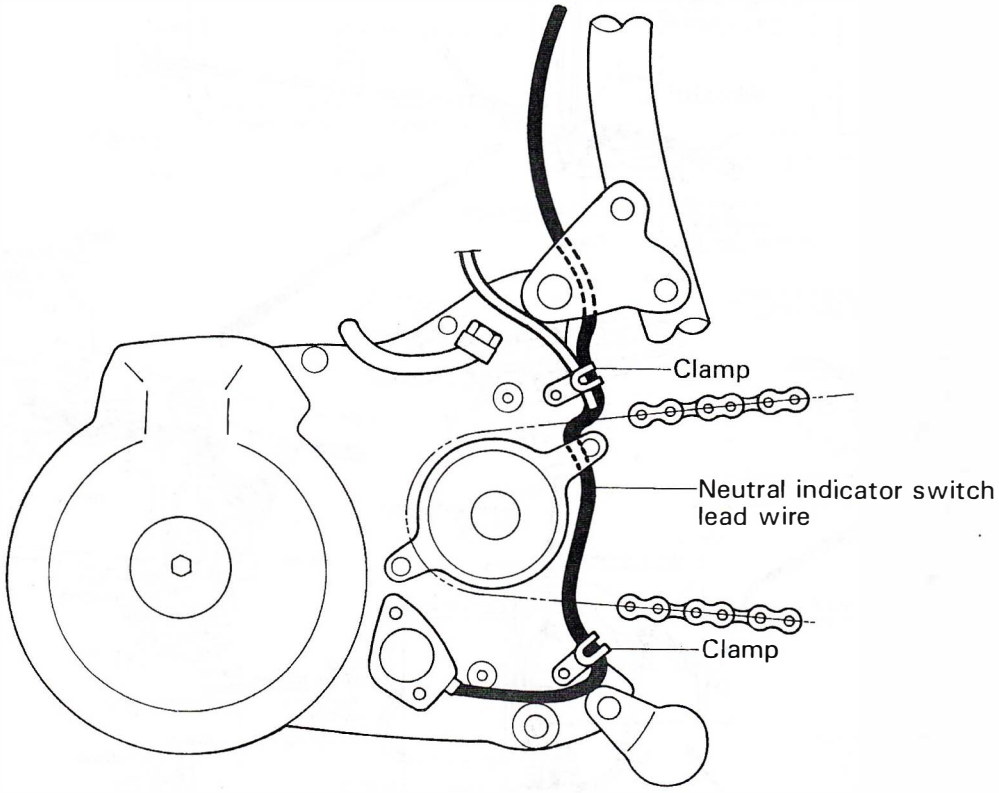
WIRE COLOR

B	Black
Bl	Blue
Br	Brown
G	Green
Lbl . . .	Light blue
Lg	Light green
O	Orange
R	Red
W	White
Y	Yellow
B/W . .	Black with White tracer
B/Y . . .	Black with Yellow tracer
G/W . .	Green with White tracer
G/Y . . .	Green with Yellow tracer
O/B . . .	Orange with Black tracer
O/Bl . .	Orange with Blue tracer
O/G . . .	Orange with Green tracer
O/R . . .	Orange with Red tracer
W/B . .	White with Black tracer
W/Bl . .	White with Blue tracer
Y/B . . .	Yellow with Black tracer
Y/G . . .	Yellow with Green tracer
Y/W . .	Yellow with White tracer

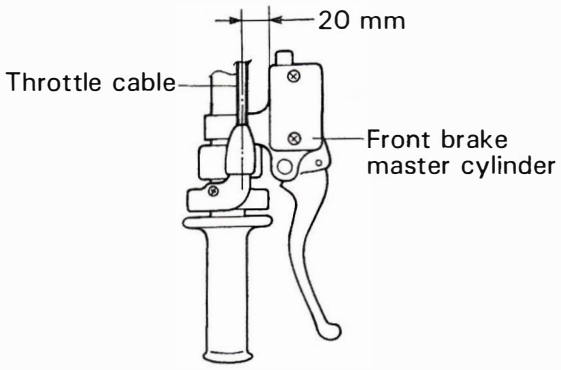
WIRE, CABLE AND HOSE ROUTING

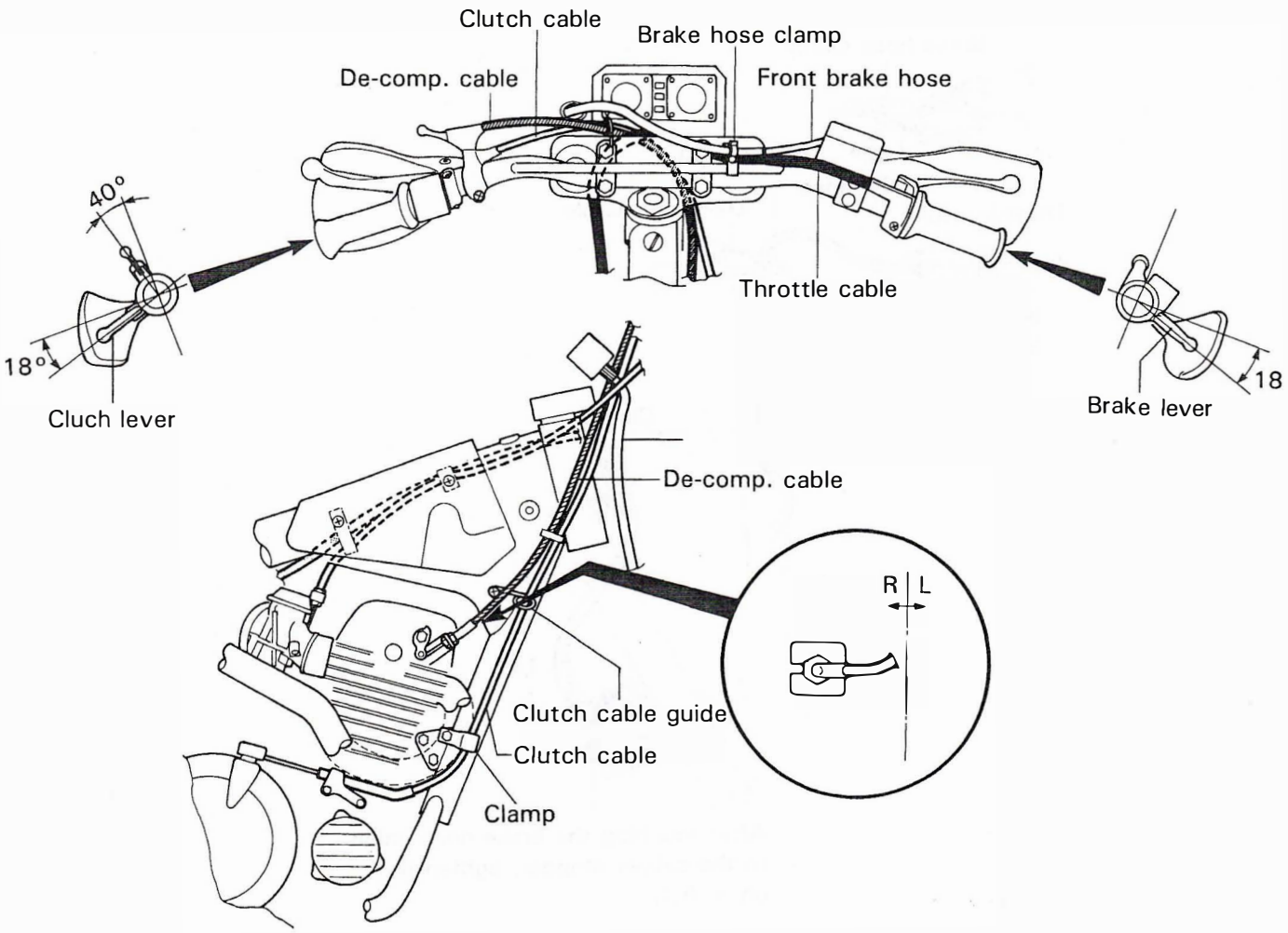
WIRE ROUTING



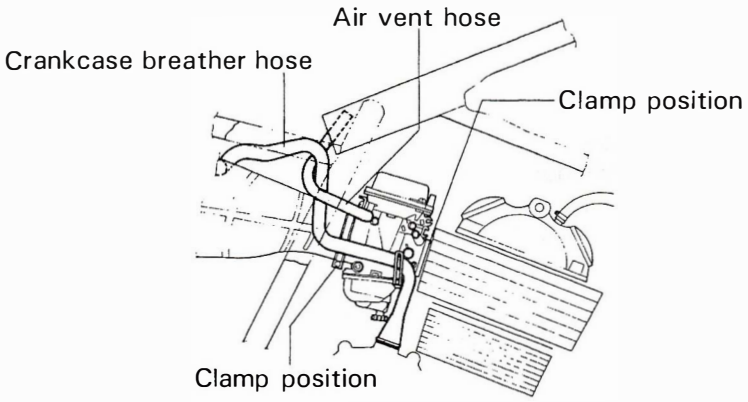

Clamp
Neutral indicator switch lead wire
Clamp

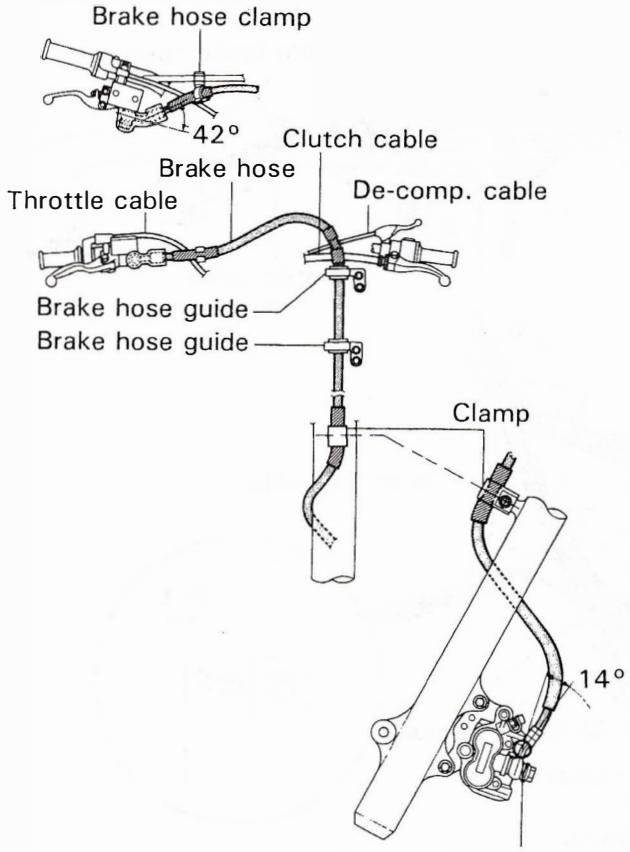
CABLE ROUTING





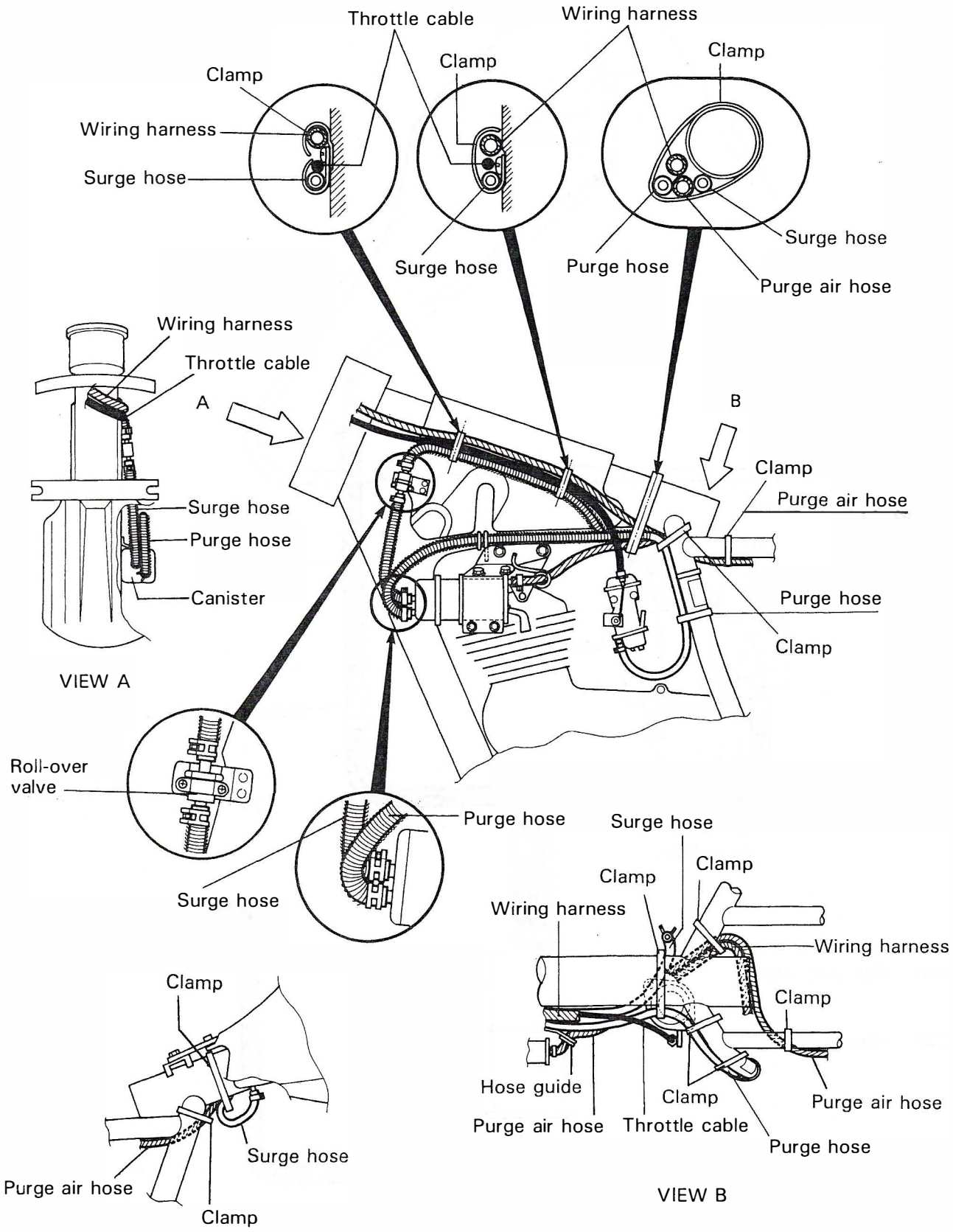
HOSE ROUTING



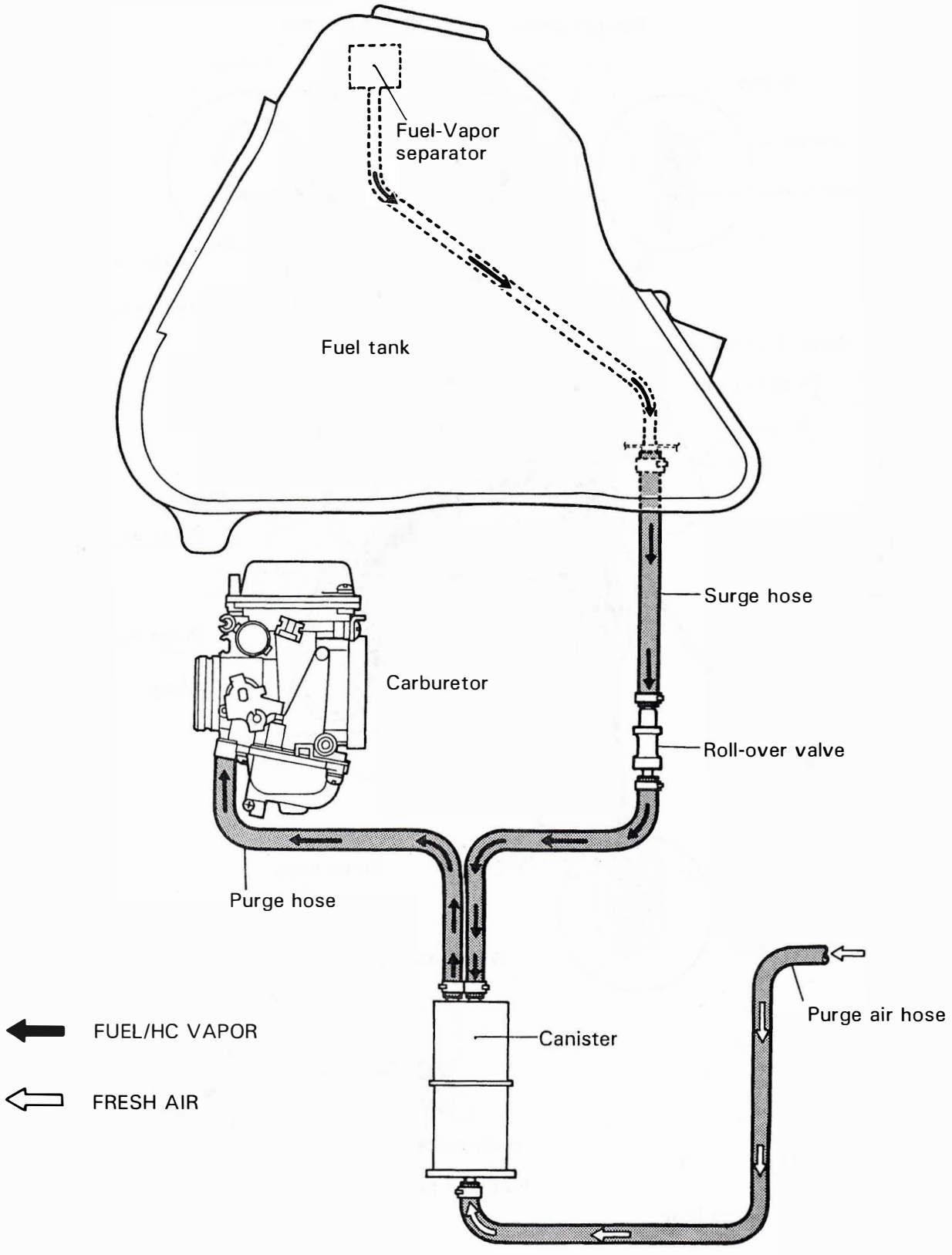


After touching the brake hose union to the caliper stopper, tighten the union bolt.

CANISTER HOSE ROUTING
(California model only)



EVAPORATIVE EMISSION CONTROL SYSTEM
(California model only)



DR350M ('91-MODEL)

CONTENTS

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SPECIFICATIONS

DEMENSIONS AND DRY MASS

Overall length	2 165 mm (85.2 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled, OHC
Number of cylinders	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm^3 (21.3 cu. in)
Compression ratio	9.5 : 1
Carburator	MIKUNI TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRNSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction	2.818 (62/22)
Final reduction	3.357 (47/14)
Gear ratios Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
TOP	0.826 (19/23)
Drive chain	TAKASAGO RK520SO or DAIDO DID, 520VC5, 110 links

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	5° B.T.D.C. below 2 300 r/min and 30° B.T.D.C. above 4 300 r/min
Spark plug	NGK DPR9EA-9 or NIPPON DENSO X27EPR-U9

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully way adjustable, compression damping force adjustable
Rear suspension	Link type suspension system, gas/oil damped, spring preload fully way adjustable, compression and rebound damping force adjustable
Steering angle	45° (right and left)
Caster	62°30'
Trail	118 mm (4.6 in)
Turning radius	2.2 m (7.2 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	80/100-21 51M
Rear tire size	110/100-18 64M

CAPACITIES

Fuel tank	
including reserve	9.5 L (2.5/2.1 US/Imp gal)
reserve	1.8 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
Front fork oil	586 ml (19.8/20.6 US/Imp oz)

These specifications are subject to change without notice.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.08—0.13 (0.003—0.005)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		———
Final reduction ratio		3.357 (47/14)		———
Gear ratios	Low	2.416 (29/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	DAIDO: D.I.D. 520VC5 TAKASAGO: RK520SO	———
		Links	110	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI TM33SS
Bore size	33 mm
I.D. No	14D0
Idle r/min.	1 400 ± 100 r/min
Fuel level	0 ± 0.5 mm (0 ± 0.02 in)
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet(M.J.)	*#127.5
Main air jet (M.A.J.)	*0.7 mm
Jet needle (J.N.)	5FP96-3rd
Needle jet (N.J.)	P-8
Cut-away (C.A.)	1.5
Pilot jet (P.J.)	#37.5
By-pass (B.P.)	0.8 mm
Pilot outlet (P.O.)	0.6 mm
Valve seat (V.S.)	1.8 mm
Starter jet (G.S.)	#50
Pilot screw (P.S.)	*1 1/8 turn back
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	5°B.T.D.C. below 2 300 r/min and 30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
	Gap	0.8—0.9 (0.03—0.04)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	250—370 Ω	W—Br
	Pick-up	180—270 Ω	G—Bl
Lighting coil no-load voltage (when engine is cold)	More than 75 V (AC) at 5 000 r/min.		
Regulated voltage	12—14 V at 5 000 r/min.		

Asterisk mark (*) indicates the New DR350M model specifications.

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0—0.3 (0—0.01)		—
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21	—
	Rear	110/100-18	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	608 (23.9)	
Front fork oil level	145 (5.7)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	269.2 (10.6)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

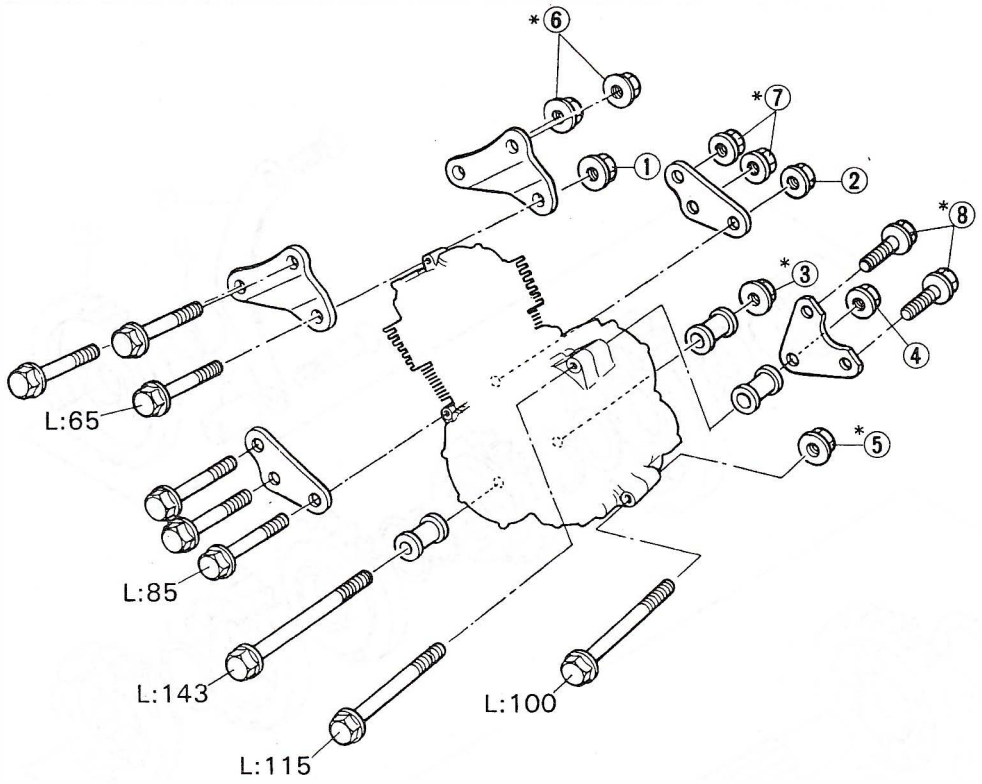
TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	586 ml (19.8/20.6 US/Imp oz)		
Brake fluid type	DOT 4		

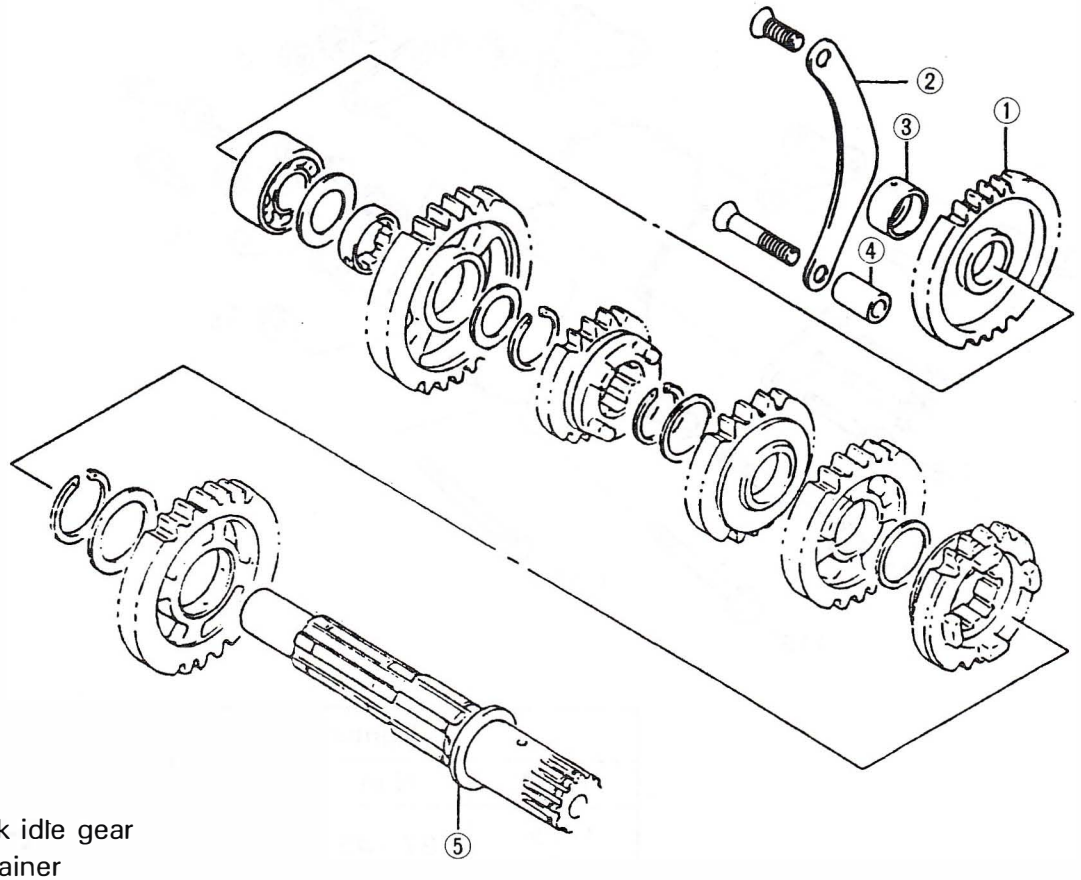
ENGINE MOUNTING



Tightening torque			
ITEM	N·m	kg-m	lb-ft
①, ⑥ ⑦	37—45	3.7—4.5	27.0—32.5
②, ③ ④, ⑤	60—72	6.0—7.2	43.5—52.0
⑧	18—28	1.8—2.8	13.0—20.0

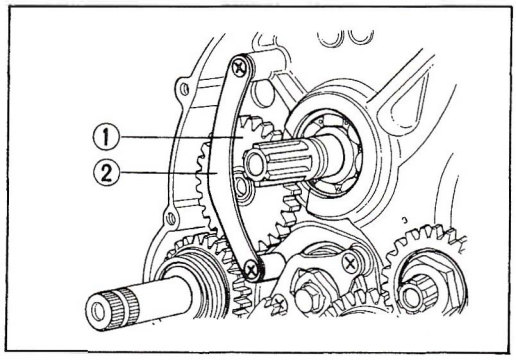
* Apply THREAD LOCK SUPER ''1303'' (99000-32030)

KICK IDLE GEAR

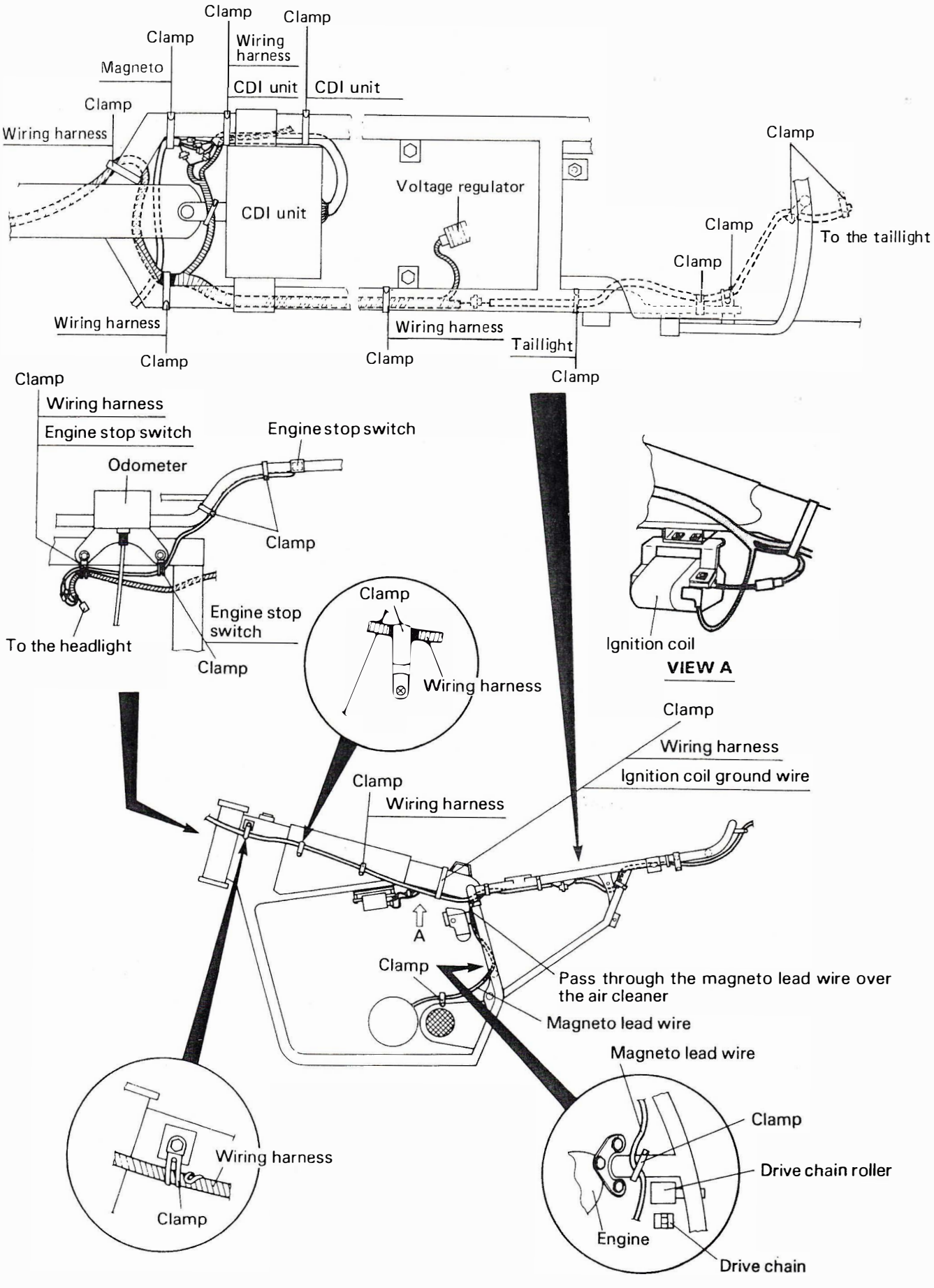


① Kick idle gear
② Retainer
③ Bushing
④ Spacer
⑤ Driveshaft

- Remove the kick idle gear ① by removing the retainer ② .



WIRE ROUTING



DR350SM ('91-MODEL)

CONTENTS

SPECIFICATIONS

DIMENSIONS AND DRY MASS	
Overall length	2335 mm (91.9 in) E15, 17, 18, 22
	2240 mm (88.2 in) E34
	2235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1245 mm (49.0 in)
Wheelbase	1440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	890 mm (35.0 in)
Dry mass	118 kg (260 lbs)
ENGINE	
Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05 – 0.10 mm (0.002 – 0.004 in)
EX	0.10 – 0.15 mm (0.004 – 0.006 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm^3 (21.3 cu. in)
Compression ratio	9.5 : 1
Carburetor	MIKUNI BST33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump
TRANSMISSION	
Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22)
Final reduction ratio	3.071 (43/14)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Drive chain	TAKASAGO RK520SO or DAIDO DID520VC.5, 108 links
CHASSIS	
Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	115 mm (4.52 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	80/100-21 51P, tube
Rear tire size	110/90-18 61P, tube
ELECTRICAL	
Ignition type	SUZUKI "PEI"
Ignition timing	5° B.T.D.C. below 2300 r/min and 30° B.T.D.C. above 4300 r/min
Spark plug	NGK DPR9EA-9 or NIPPONDENSO X27EPR-U9
Battery	12V 10.8 kC (3Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 55W
Position light	12V 3.4W E02, 24
	12V 4W E04, 15, 17, 18, 21, 22, 25, 34
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W
CAPACITIES	
Fuel tank, including reserve	9.0 L (2.4/2.0 US/Imp. gal)
Reserve	1.5 L (0.4/0.3 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	544 ml (18.4/19.2 US/Imp. oz)

These specifications are subject to change without notice.
Asterisk mark (*) indicates the new "M" model specification.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	*0.10—0.15 (0.004—0.006)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

Asterisk mark (*) indicates the new "M" model specification.

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	*0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

Asterisk mark (*) indicates the new "M" model specification.

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		———
Final reduction ratio		3.071 (43/14)		———
Gear ratios	Low	2.416 (29/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	DAIDO: D.I.D. 520VC5 TAKASAGO: RK520SO	———
		Links	108	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

CARBURETOR

ITEM		SPECIFICATION	
		E-03	E-33
Carburetor type		MIKUNI BST33SS	←
Bore size		33 mm	←
I.D. No		14D2	14D3
Idle r/min.		1 500 ± 100 r/min	←
Fuel level		1.5 ± 0.5 mm (0.06 ± 0.02 in)	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←
Main jet	(M.J.)	#135	←
Main air jet	(M.A.J.)	0.6 mm	←
Jet needle	(J.N.)	5CD16	←
Needle jet	(N.J.)	O-6	←
Throttle valve	(Th.V.)	#115	←
Pilot jet	(P.J.)	#37.5	←
By-pass	(B.P.)	0.8 mm, 0.8 mm, 0.8 mm	←
Pilot outlet	(P.O.)	0.8 mm	←
Valve seat	(V.S.)	1.5 mm	←
Starter jet	(G.S.)	#37.5	←
Pilot screw	(P.S.)	PRE-SET	←
Pilot air jet	(P.A.J.)	1.3 mm	←
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)	←

CARBURETOR

ITEM		SPECIFICATION				
		E-02,04,16, 17,21,25,34	E15,22	E-24	E28	E-18
Carburetor type		MIKUNI BST33SS	←	←	←	←
Bore size		33 mm	←	←	←	←
I.D. No		14D1	14D4	14D7	14D6	14D5
Idle r/min.		1 500 ± 100 r/min	←	←	←	1 500 ± 50 r/min
Fuel level		1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←	←	←
Main jet	(M.J.)	#135	←	←	←	←
Main air jet	(M.A.J.)	0.6 mm	←	←	←	←
Jet needle	(J.N.)	*5CD56-3rd	5CD18-4th	←	5CD18-3rd	5CD20-3rd
Needle jet	(N.J.)	*O-3	O-6	←	←	O-7
Throttle valve	(Th.V.)	#115	←	←	←	←
Pilot jet	(P.J.)	*#42.5	#40	←	#37.5	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←	←	←

Asterisk mark (*) indicates the new "M" model specification.

ITEM		SPECIFICATION				
		E-02,04,16, 17,21,25,34	E-15,22	E-24	E-28	E-18
Pilot outlet	(P.O.)	0.8 mm	←	←	←	←
Valve seat	(V.S.)	1.5 mm	←	←	←	←
Starter jet	(G.S.)	*#45	←	←	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET (1.0 turn back)	←	PRE-SET (2.0 turns back)	PRE-SET (2⅛ turns back)
Pilot air jet	(P.A.J.)	1.3 mm	←	←	←	1.4 mm
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)	←	←	←	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		5°B.T.D.C. below 2 300 r/min and 30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
		Gap	0.8—0.9 (0.03—0.04)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance		Charging	0.1—1.3 Ω	Y—Y
		Power source	250—370 Ω	W—Br
		Pick-up	180—270 Ω	G—Bl
Lighting coil no-load voltage (when engine is cold)		More than 65 V (AC) at 5 000 r/min.		
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Battery	Type designation	YT4L-BS or FT4L-BS		
	Capacity	12V 10.8 kC (3Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		15 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,28,33	E-02,04,15,16,17,18, 21,22,24,25,34
Headlight	HI	60	←
	LO	55	←
Position light			3.4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7	←
Turn signal indicator light		1.7	←

Asterisk mark (*) indicates the new "M" model specification.

ITEM	SPECIFICATION	
	E-03,28,33	E-02,04,15,16,17,18, 21,22,24,25,34
High beam indicator light	1.7	←
Neutral indicator light	1.7	←
License light	5	←

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0—0.3 (0—0.01)	——
Rear brake pedal height		5 (0.2)	——
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	——
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	27.000—27.050 (1.0630—1.0650)	——
	Rear	30.230—30.280 (1.1902—1.1921)	——
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	——
	Rear	30.160—30.180 (1.1874—1.1882)	——
Wheel rim runout	Axial	——	2.0 (0.08)
	Radial	——	2.0 (0.08)
Wheel axle runout	Front	——	0.25 (0.010)
	Rear	——	0.25 (0.010)
Tire size	Front	80/100-21 51P	——
	Rear	110/90-18 61P	——
Tire tread depth	Front	——	3.0 (0.12)
	Rear	——	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	—	
Front fork spring free length	—	602 (23.7)	
Front fork oil level	170 (6.7)	—	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	—	
Rear shock absorber spring pre-set length	272.8 (10.7)	—	
Rear wheel travel	280 (11.0)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

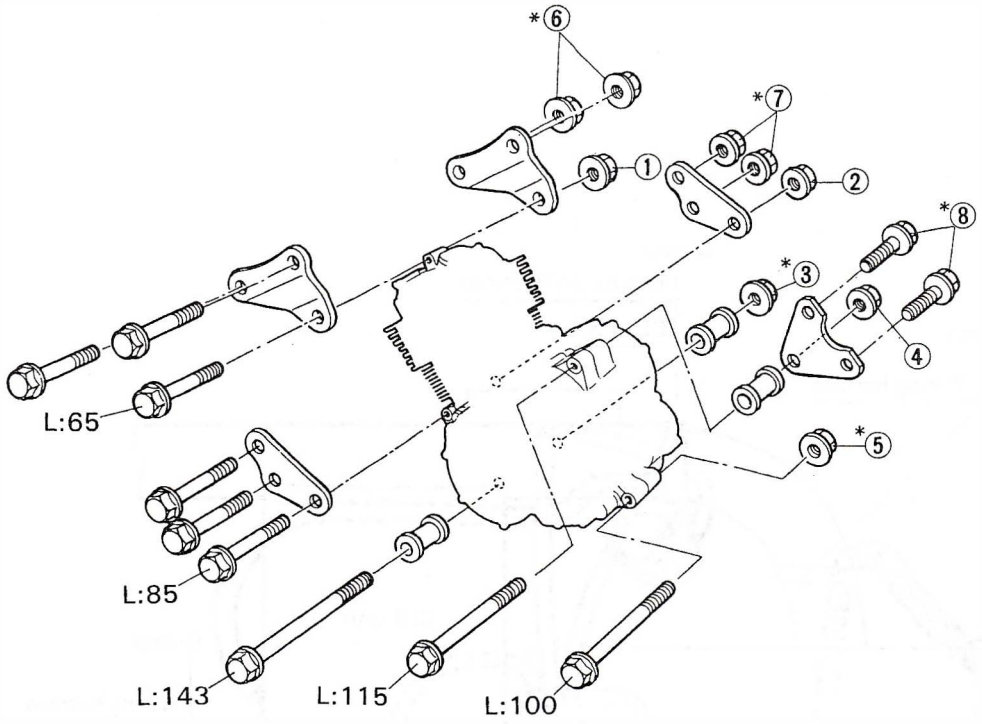
TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	9.0 L (2.4/2.0 US/Imp gal)		
reserve	1.5 L (0.4/0.3 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	544 ml (18.4/19.2 US/Imp oz)		
Brake fluid type	DOT 4		

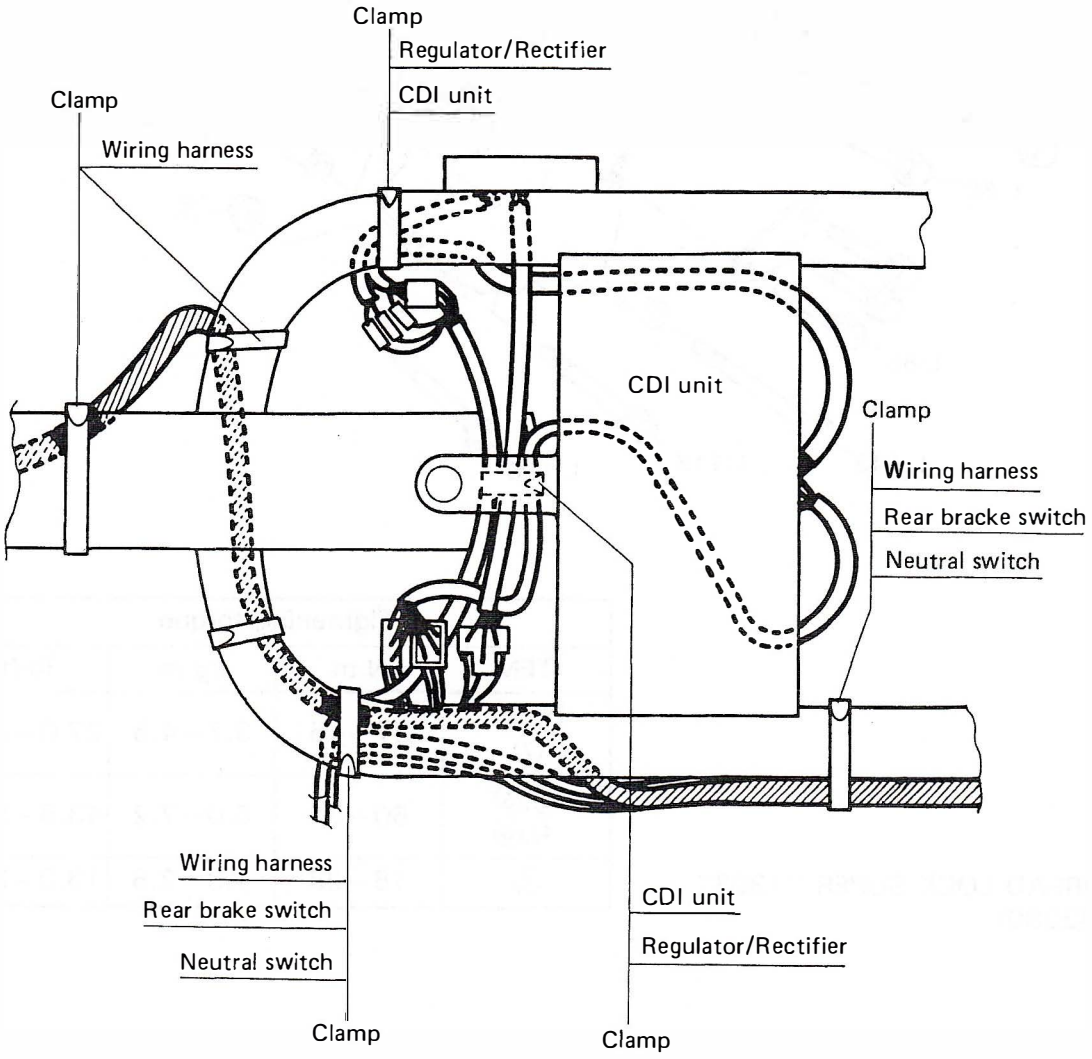
ENGINE MOUNTING



Tightening torque			
ITEM	N·m	kg-m	lb-ft
①,⑥ ⑦	37—45	3.7—4.5	27.0—32.5
②,③ ④,⑤	60—72	6.0—7.2	43.5—52.0
⑧	18—28	1.8—2.8	13.0—20.0

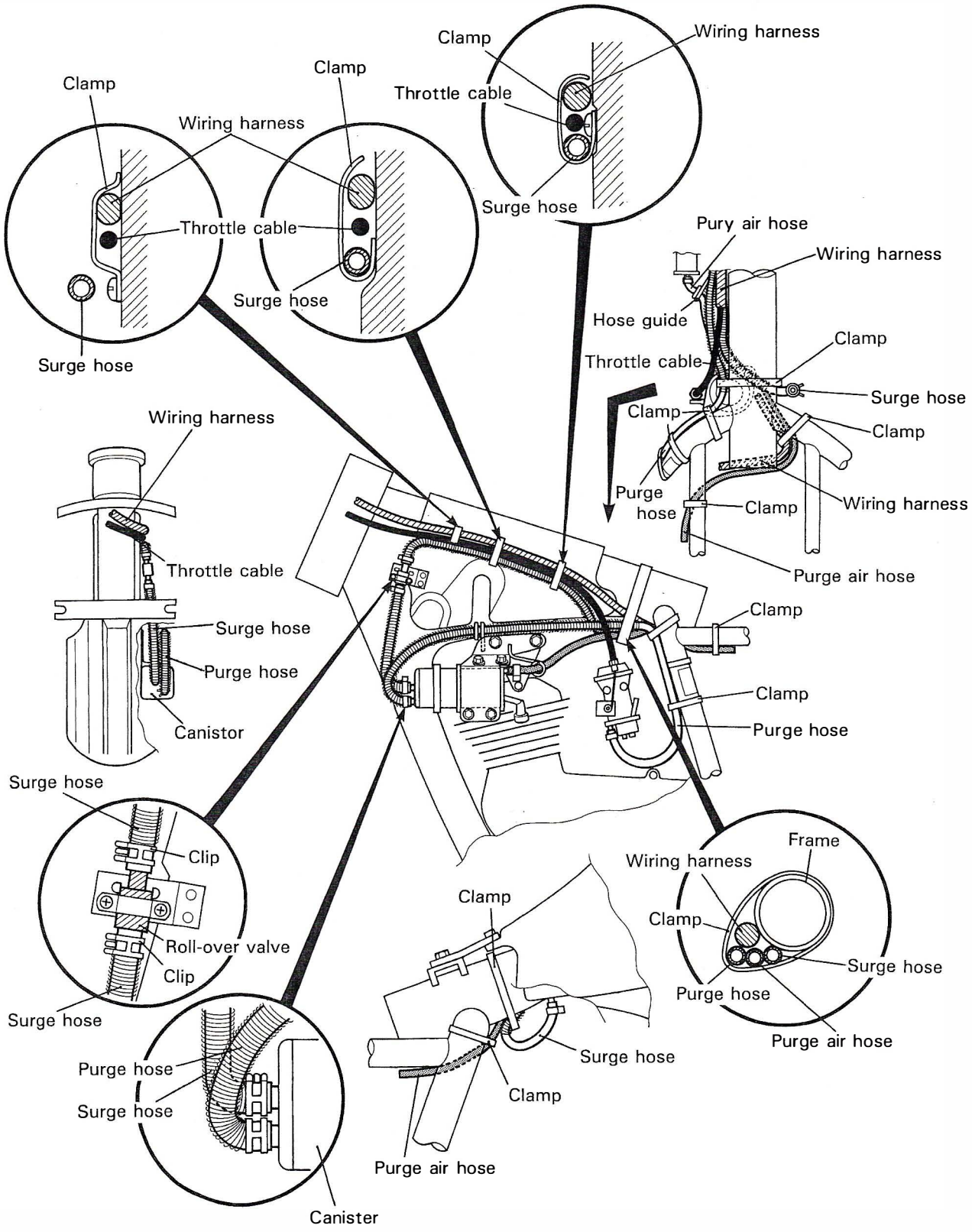
* Apply THREAD LOCK SUPER "1303" (99000-32030)

WIRE ROUTING



CANISTER HOSE ROUTING

(California model only)



DR350N/DR350SN ('92-MODEL)

CONTENTS

SPECIFICATIONS (DR350N)

DIMENSIONS AND DRY MASS	
Overall length	2165 mm (82.5 in)
Overall width	885 mm (34.8 in)
Overall height	1250 mm (49.2 in)
Wheelbase	1440 mm (56.7 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)
ENGINE	
Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05 – 0.10 mm (0.002 – 0.004 in)
EX	*0.10 – 0.15 mm (0.004 – 0.006 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm^3 (21.3 cu. in)
Compression ratio	9.5 : 1
Carburetor	MIKUNI TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump
TRANSMISSION	
Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22)
Final reduction ratio	3.357 (47/14)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Drive chain	TAKASAGO RK520SO or DAIDO DID520VC.5, 110 links
CHASSIS	
Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression and rebound damping force adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30′
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	2.2 m (7.2 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube
ELECTRICAL	
Ignition type	SUZUKI "PEI"
Ignition timing	5° B.T.D.C. below 2300 r/min and 30° B.T.D.C. above 4300 r/min
Spark plug	NGK DPR9EA-9 or ND X27EPR-U9
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W
CAPACITIES	
Fuel tank, including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	586 ml (19.8/20.6 US/Imp. oz)

Asterisk mark (*) indicates the New "N" model specification.

SPECIFICATIONS (DR350SN)

DIMENSIONS AND DRY MASS	
Overall length	2335 mm (91.9 in) . . . . . E15, 16, 17, 18, 22 2240 mm (88.2 in) . . . . . E34 2235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1245 mm (49.0 in)
Wheelbase	1440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	900 mm (35.0 in)
Dry mass	118 kg (260 lbs)
ENGINE	
Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05 – 0.10 mm (0.002 – 0.004 in)
EX	0.10 – 0.15 mm (0.004 – 0.006 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm^3 (21.3 cu. in)
Compression ratio	9.5 : 1
Carburetor	MIKUNI BST33, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump
TRANSMISSION	
Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22)
Final reduction ratio	3.071 (43/14)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Drive chain	TAKASAGO RK520SO or DAIDO DID520VC.5, 108 links
CHASSIS	
Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc
Rear brake	Disc
Front tire size	80/100-21 51P, tube
Rear tire size	110/90-18 61P, tube
ELECTRICAL	
Ignition type	SUZUKI "PEI"
Ignition timing	5° B.T.D.C. below 2300 r/min and 30° B.T.D.C. above 4300 r/min
Spark plug	NGK DPR9EA-9 or ND X27EPR-U9
Battery	12V 10.8 kC (3Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 60/55W
Position light	12V 3.4W . . . . . E02 *12V 4W E04, 15, 16, 17, 18, 21, 22, 24, 25, 34, 39, 94
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W
CAPACITIES	
Fuel tank, including reserve	9.0 L (2.4/2.0 US/Imp. gal)
Reserve	1.5 L (0.4/0.3 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	*569 ml (19.2/20.0 US/Imp. oz)

Asterisk mark (*) indicates the New "N" model specifications.

SERVICE DATA (DR350N)

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	*0.10—0.15 (0.004—0.006)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

Asterisk mark (*) indicates the New "N" model specification.

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C, 140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		—
Final reduction ratio		3.357 (47/14)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	DAIDO: D.I.D. 520VC5 TAKASAGO: RK520SO	—
		Links	110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI TM33 SS
Bore size		33 mm
I.D. No		14D0
Idle r/min.		1 400 ± 100 r/min
Fuel level		0 ± 0.5 mm (0 ± 0.02 in)
Float height		14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet	(M.J.)	#127.5
Main air jet	(M.A.J.)	0.7 mm
Jet needle	(J.N.)	5FP96-3rd
Needle jet	(N.J.)	P-8
Cut-away	(C.A.)	1.5
Pilot jet	(P.J.)	#37.5
By-pass	(B.P.)	0.8 mm
Pilot outlet	(P.O.)	0.6 mm
Valve seat	(V.S.)	1.8 mm
Starter jet	(G.S.)	#50
Pilot screw	(P.S.)	1 1/8 turn back
Pilot air jet	(P.A.J.)	1.1 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	5°B.T.D.C. below 2 300 r/min and 30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
	Gap	0.8—0.9 (0.03—0.04)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	250—370 Ω	W—Br
	Pick-up	180—270 Ω	G—Bl
Lighting coil no-load voltage (when engine is cold)	More than 75 V (AC) at 5 000 r/min.		
Regulated voltage	12—14 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0—0.3 (0—0.01)		—
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51M	—
	Rear	110/100-18 64M	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	608 (23.9)	
Front fork oil level	145 (5.7)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	269.2 (10.6)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	586 ml (19.8/20.6 US/Imp oz)		
Brake fluid type	DOT 4		

SERVICE DATA (DR350SN)

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.10—0.15 (0.004—0.006)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		—
Final reduction ratio		3.071 (43/14)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	DAIDO: D.I.D. 520VC5 TAKASAGO: RK520SO	—
		Links	108	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM	SPECIFICATION		
	E-03	E-33	E-28
Carburetor type	MIKUNI BST33SS	←	←
Bore size	33 mm	←	←
I.D. No	*14E2	*14E3	*14E7
Idle r/min.	1 500 ± 100 r/min	←	←
Fuel level	1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet (M.J.)	#135	←	#135
Main air jet (M.A.J.)	0.6 mm	←	←
Jet needle (J.N.)	5CD16	←	5CD18-3rd

Asterisk mark (*) indicates the New "N" model specifications.

ITEM		SPECIFICATION		
		E-03	E-33	E-28
Needle jet	(N.J.)	O-6	←	O-6
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#37.5	←	#37.5
By-pass	(B.P.)	0.8 mm, 0.8 mm, 0.8 mm	←	←
Pilot outlet	(P.O.)	0.8 mm	←	←
Valve seat	(V.S.)	1.5 mm	←	←
Starter jet	(G.S.)	#37.5	←	#45
Pilot screw	(P.S.)	PRE-SET	←	PRE-SET *(2⅛ turns back)
Pilot air jet	(P.A.J.)	1.3 mm	←	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION				
		E-02,04,16, 17,21,25, 34,94	E-15,22	E-18	E-24	E-39
Carburetor type		MIKUNI BST33SS	←	←	←	←
Bore size		33 mm	←	←	←	←
I.D. No		*14E0	*14E1	*14E4	14D7	*14E6
Idle r/min.		1 500± 100 r/min	←	*1 400±50 r/min	1 500± 100 r/min	*1400±50 r/min
Fuel level		1.5±0.5 mm (0.06± 0.02 in)	←	←	←	←
Float height		14.6±1.0 mm (0.57 ±0.04 in)	←	←	←	←
Main jet	(M.J.)	#135	←	*#130	#135	#130
Main air jet	(M.A.J.)	0.6 mm	←	←	←	←
Jet needle	(J.N.)	5CD56-3rd	5CD18-4th	5CD20-3rd	5CD18-4th	5CD20-3rd
Needle jet	(N.J.)	O-3	O-6	O-7	O-6	O-7
Throttle valve	(Th.V.)	#115	←	←	←	←
Pilot jet	(P.J.)	#42.5	#40	#37.5	#40	#37.5
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←	←	←
Pilot outlet	(P.O.)	0.8 mm	←	←	←	←
Valve seat	(V.S.)	1.5 mm	←	←	2.0 mm	1.5 mm
Starter jet	(G.S.)	*#45	*←	←	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET *(1¼ turns back)	PRE-SET *(2.0 turns back)	PRE-SET (1¼ turns back)	PRE-SET (2.0 turns back)
Pilot air jet	(P.A.J.)	1.3 mm	←	*←	←	1.35 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02— 0.04 in)	←	←	←	←

Asterisk mark (*) indicates the New "N" model specifications.

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		5°B.T.D.C. below 2 300 r/min and 30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
		Gap	0.8—0.9 (0.03—0.04)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance		Charging	0.1—1.3 Ω	Y—Y
		Power source	250—370 Ω	W—Br
		Pick-up	180—270 Ω	G—Bl
Lighting coil no-load voltage (when engine is cold)		More than 65 V (AC) at 5 000 r/min.		
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Battery	Type designation	YT4L-BS or FT4L-BS		
	Capacity	12V 10.8 kC (3Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		15 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION		
		E-03,28,33	E-02	The others
Headlight	HI	60	←	←
	LO	55	←	←
Position light			3.4	*4
Tail/Brake light		5/21	←	←
Turn signal light		21	←	←
Tachometer light		3	←	←
Speedometer light		1.7	←	←
Turn signal indicator light		1.7	←	←
High beam indicator light		1.7	←	←
Neutral indicator light		1.7	←	←
License light		5	←	←

Asterisk mark (*) indicates the New "N" specification.

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0—0.3 (0—0.01)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	—
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	27.000—27.050 (1.0630—1.0650)	—
	Rear	30.230—30.280 (1.1902—1.1921)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	30.160—30.180 (1.1874—1.1882)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51P	—
	Rear	110/90-18 61P	—
Tire tread depth	Front	—	3.0 (0.12)
	Rear	—	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	602 (23.7)	
Front fork oil level	*152 (6.0)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*268.2 (10.6)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

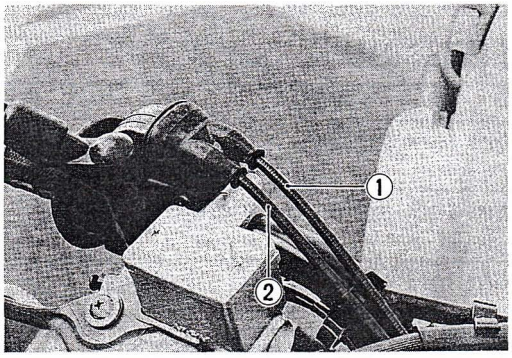
FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	9.0 L (2.4/2.0 US/Imp gal)		
reserve	1.5 L (0.4/0.3 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	*569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type	DOT 4		

Asterisk mark (*) indicates the New "N" specifications.

THROTTLE CABLE ADJUSTMENT (DR350SN) (Except for Australia)

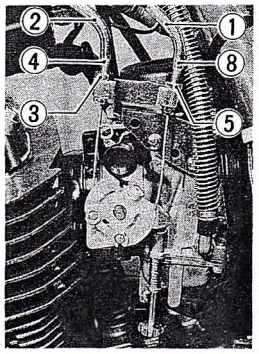
A twin throttle cable system is used in this motorcycle. Cable ① is for pulling and cable ② is for returning. To adjust the cable play, adjust the returning cable first and then adjust the pulling cable.

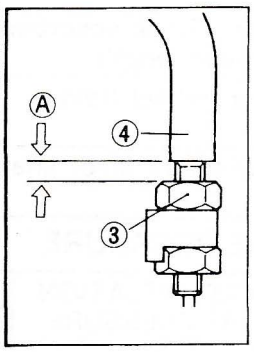


Returning Cable Play

The returning cable adjuster ④ should have 2 – 3 mm (0.08 – 0.12 in) of clearance as shown in the illustration. If the adjustment is necessary, carry out the procedure below:

- Loosen the lock nut ③.
- Move the adjuster ④ to obtain the clearance Ⓐ of 2 – 3 mm (0.08 – 0.12 in).
- Tighten the lock nut ③ securely.

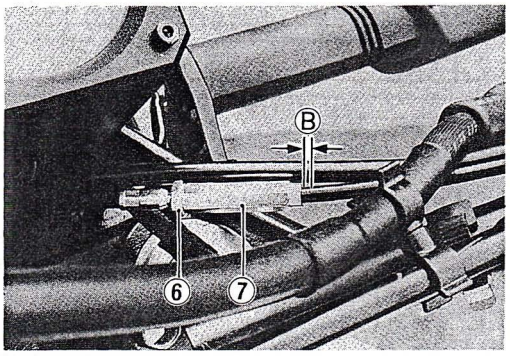




Pulling Cable Play

The pulling cable play Ⓑ should be 0.5 – 1.0 mm (0.02 – 0.04 in). If the adjustment is necessary, carry out the procedure below:

- Turn the handlebar all the way to the left.
- Loosen lock nuts (⑤, ⑥).
- Turn adjuster ⑦ or move the adjuster ⑧ to obtain a cable play of 0.5 – 1.0 mm (0.02 – 0.04 in).
- Tighten lock nuts (⑤, ⑥) securely.



WARNING:

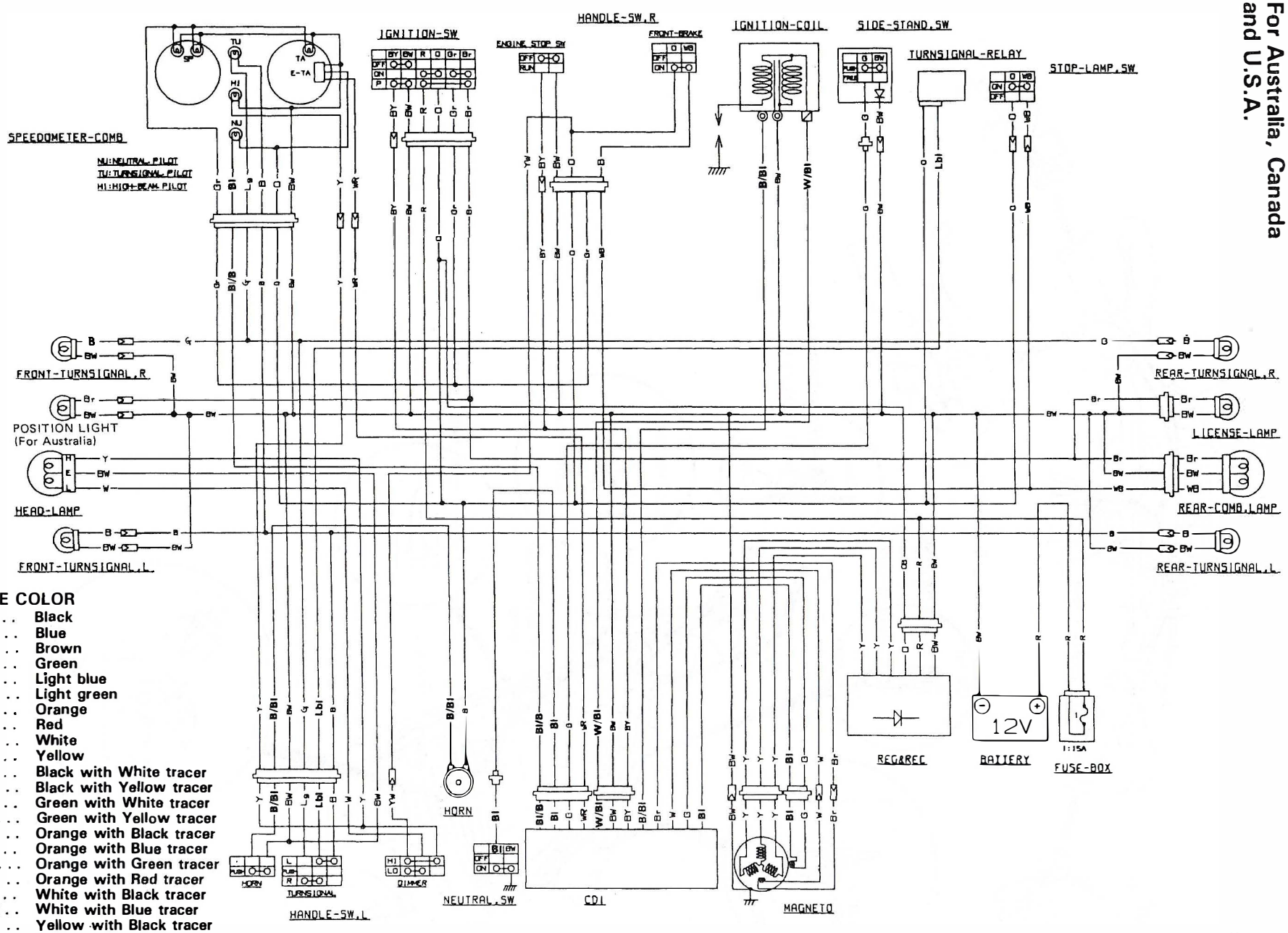
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.

STANDARD SUSPENSION SETTING

FRONT		REAR	
Spring pre-load adjuster	Damping force adjuster	Spring set length	Damping force adjuster
3	Max. – 8	268.2 mm (10.56 in)	Max. – 3/4

WIRING DIAGRAM (DR350SN)

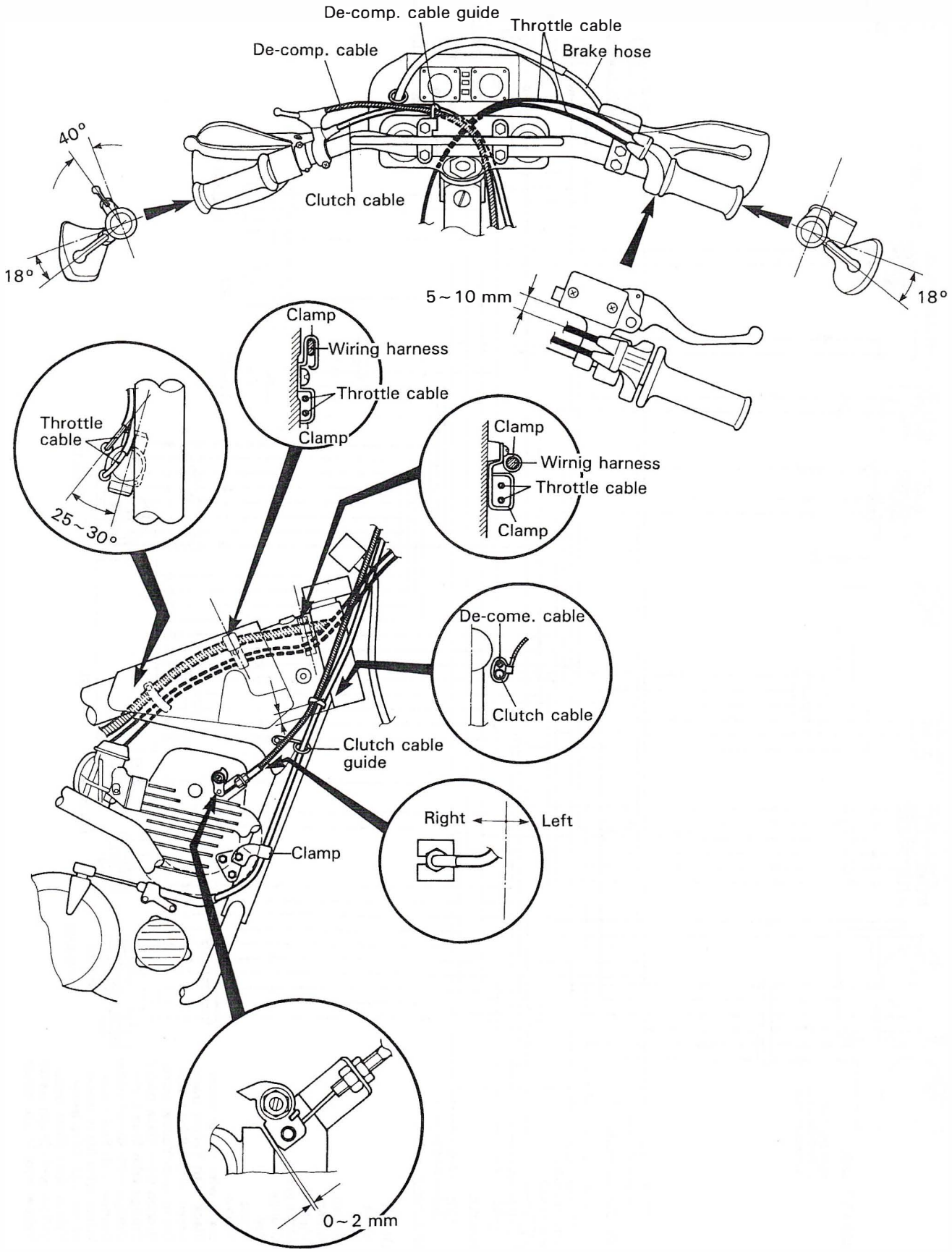
For Australia, Canada and U.S.A.



WIRE COLOR

- B . . . . Black
- Bl . . . . Blue
- Br . . . . Brown
- G . . . . Green
- Lbl . . . Light blue
- Lg . . . . Light green
- O . . . . Orange
- R . . . . Red
- W . . . . White
- Y . . . . Yellow
- B/W . . Black with White tracer
- B/Y . . . Black with Yellow tracer
- G/W . . Green with White tracer
- G/Y . . . Green with Yellow tracer
- O/B . . . Orange with Black tracer
- O/Bl . . Orange with Blue tracer
- O/G . . . Orange with Green tracer
- O/R . . . Orange with Red tracer
- W/B . . White with Black tracer
- W/Bl . . White with Blue tracer
- Y/B . . . Yellow with Black tracer
- Y/G . . . Yellow with Green tracer
- Y/W . . Yellow with White tracer

CABLE ROUTING



DR350P/SP ('93-MODEL)

FOREWORD

This chapter describes service data and servicing procedures which differ from those of the DR350N/SN ('92-MODEL).
Please refer to the sections 1 through 11 for details which are not given in this section.

NOTE:
Any differences between DR350N/SN and DR350P/SP in specifications and service data are clearly indicated with the asterisk marks (*).

CONTENTS

SPECIFICATIONS

DR350P

DIMENSIONS AND DRY MASS

Overall length	2 165 mm (82.5 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.10—0.15 mm (0.004—0.006 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm³ (21.3 cu. in)
Compression ratio	9.5 : 1
Carburetor	MIKUNI TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	3.357 (47/14)
Drive chain	TAKASAGO RK520SO or DAIDO DID520VC.5, 110 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	2.2 m (7.2 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	*30° B.T.D.C. above 4300 r/min
Spark plug	NGK DPR9EA-9 or ND X27EPR-U9
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	586 ml (19.8/20.6 US/Imp. oz)

Asterisk mark (*) indicates the New "P" model specification.

DR350SP

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in) . . . . . For Finland, Germany and Sweden
	2 240 mm (88.2 in) . . . . . For Italy
	2 235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1 245 mm (49.0 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	900 mm (35.0 in)
Dry mass	118 kg (260 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.10—0.15 mm (0.004—0.006 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	349 cm³ (21.3 cu. in)
Compression ratio	9.5 : 1
Carburetor	MIKUNI BST33, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	3.071 (43/14)
Drive chain	TAKASAGO RK520SO or DAIDO DID520VC.5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	*30° B.T.D.C. above 4300 r/min
Spark plug	NGK DPR9EA-9 or NIPPONDENSO X27EPR-U9
Battery	12V 10.8 kC (3Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 60/55W
Position light	12V 3.4W . . . . . For U.K.
	12V 4W . . . . . Others
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	9.0 L (2.4/2.0 US/Imp gal). . . Others
	8.0 L (2.1/1.8 US/Imp gal). . . For California (U.S.A.)
Reserve	*2.0 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
with filter change	1 900 ml (2.0/1.7 US/Imp qt)
overhaul	2 100 ml (2.2/1.8 US/Imp qt)
Front fork oil (each leg)	569 ml (19.2/20.0 US/Imp oz)

Asterisk mark (*) indicates the New "P" model specifications.

SERVICE DATA

DR350P

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.10—0.15 (0.004—0.006)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C, 140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		—
Final reduction ratio		3.357 (47/14)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	D.I.D. 520VC5 or RK520SO	—
		Links	110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		TM33 SS
Bore size		33 mm
I.D. No		14D0
Idle r/min.		1 400 ± 100 r/min
Float height		14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet	(M.J.)	#127.5
Main air jet	(M.A.J.)	0.7 mm
Jet needle	(J.N.)	5FP96-3rd
Needle jet	(N.J.)	P-8
Cut-away	(C.A.)	1.5
Pilot jet	(P.J.)	#37.5
By-pass	(B.P.)	0.8 mm
Pilot outlet	(P.O.)	0.6 mm
Valve seat	(V.S.)	1.8 mm
Starter jet	(G.S.)	#50
Pilot screw	(P.S.)	1 1/8 turn back
Pilot air jet	(P.A.J.)	1.1 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	*30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
	Gap	0.8—0.9 (0.03—0.04)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	*350—650 Ω	W—Br
	Pick-up No.1	*350—700 Ω	G—Bl
	Pick-up No.2	*350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)	More than 40 V (AC) at 5 000 r/min.		Y—B
Regulated voltage	12—14 V at 5 000 r/min.		

Asterisk mark (*) indicates the New "P" model specifications.

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0—0.3 (0—0.01)		—
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51M	—
	Rear	110/100-18 64M	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	608 (23.9)	
Front fork oil level	145 (5.7)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*268.2 (10.6)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

Asterisk mark (*) indicates the New "P" model specification.

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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.		For U.S.A.
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.		For Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		For the others
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	586 ml (19.8/20.6 US/Imp oz)		
Brake fluid type	DOT 4		

DR350SP

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve lift	IN.	8.0 (0.31)	—
	EX.	8.0 (0.31)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.10—0.15 (0.004—0.006)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	0.35 (0.014)
	EX.	0.030—0.057 (0.0012—0.0022)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.430—33.470 (1.3161—1.3177)	33.13 (1.3043)
	EX.	33.460—33.500 (1.3173—1.3189)	33.16 (1.3055)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Cam chain 20-pitch length	———		128.9 (5.07)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)		0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)		79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.		78.880 (3.1055)
Cylinder distortion	———		0.05 (0.002)
Piston ring free end gap	1st R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Corod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C, 140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.818 (62/22)		———
Final reduction ratio		3.071 (43/14)		———
Gear ratios	Low	2.416 (29/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	D.I.D. 520VC5 or RK520SO	———
		Links	108	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

CARBURETOR

ITEM	SPECIFICATION		
	E-03	E-33	E-28
Carburetor type	BST33SS	←	←
Bore size	33 mm	←	←
I.D. No	*14E9	*14EC	*14EF
Idle r/min.	1 500 ± 100 r/min	←	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet (M.J.)	*# 127.5	*←	*# 127.5
Main air jet (M.A.J.)	0.6 mm	←	←
Jet needle (J.N.)	5CD16	←	*5CD56-4th

Asterisk mark (*) indicates the New "P" model specifications.

E-03: U.S.A. E-33: California (U.S.A.) E-28: Canada

ITEM		SPECIFICATION		
		E-03	E-33	E-28
Needle jet	(N.J.)	O-6	←	*O-5
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#37.5	←	#37.5
By-pass	(B.P.)	0.8 mm, 0.8 mm, 0.8 mm	←	←
Pilot outlet	(P.O.)	*1.0 mm	←	0.8 mm
Valve seat	(V.S.)	1.5 mm	←	←
Starter jet	(G.S.)	*#35	*←	*←
Pilot screw	(P.S.)	PRE-SET	←	* PRE-SET (1¾ turns back)
Pilot air jet	(P.A.J.)	1.3 mm	←	*1.2 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION			
		E-02,04, 17,21,25, 34,94	E-15,22	E-24	E-39
Carburetor type		BST33SS	←	←	←
Bore size		33 mm	←	←	←
I.D. No		14E0	*14EA	*14EE	*14ED
Idle r/min.		1 500± 100 r/min	←	←	1 400± 50 r/min
Float height		14.6± 1.0 mm (0.57 ±0.04 in)	←	←	←
Main jet	(M.J.)	#135	*#127.5	*←	*←
Main air jet	(M.A.J.)	0.6 mm	←	←	←
Jet needle	(J.N.)	5CD56-3rd	*5CD56-4th	*←	*←
Needle jet	(N.J.)	O-3	*O-5	*←	*O-6
Throttle valve	(Th.V.)	#115	←	←	←
Pilot jet	(P.J.)	#42.5	*#37.5	*←	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←	←
Pilot outlet	(P.O.)	0.8 mm	←	←	*0.9 mm
Valve seat	(V.S.)	1.5 mm	←	*←	←
Starter jet	(G.S.)	#45	*#35	*←	*←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	*←	*←	PRE-SET *(2⅛ turns back)
Pilot air jet	(P.A.J.)	1.3 mm	*1.2 mm	*←	1.35 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02— 0.04 in)	←	←	←

Asterisk mark (*) indicates the New "P" model specifications.

E-02: U.K. E-04: France E-15: Finland E-17: Sweden E-21: Belgium E-22: Germany
E-24: Australia E-25: Netherlands E-34: Italy E-39:Austria E-94: Barbados

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		*30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND.: X27EPR-U9 N.G.K.: DPR9EA-9	
		Gap	0.8—0.9 (0.03—0.04)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance		Charging	0.1—1.5 Ω	Y—Y
		Power source	*350—650 Ω	W—Br
		Pick-up No.1	*350—700 Ω	G—Bl
		Pick-up No.2	*350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)		More than*60 V (AC) at 5 000 r/min.		Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Magneto Max. output		Approx. 125 W at 5 000 r/min.		
Battery	Type designation	YT4L-BS		E-24
		FT4L-BS		For the others
	Capacity	12V 10.8 kC (3Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		15 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION		
		E-03,28,33	E-02	The others
Headlight	HI	60	←	←
	LO	55	←	←
Position light			3.4	4
Tail/Brake light		5/21	←	←
Turn signal light		21	←	←
Tachometer light		3	←	←
Speedometer light		1.7	←	←
Turn signal indicator light		1.7	←	←
High beam indicator light		1.7	←	←
Neutral indicator light		1.7	←	←
License light		5	←	←

Asterisk mark (*) indicates the New "P" model specifications.

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0—0.3 (0—0.01)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	—
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	27.000—27.050 (1.0630—1.0650)	—
	Rear	30.230—30.280 (1.1902—1.1921)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	30.160—30.180 (1.1874—1.1882)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51P	—
	Rear	110/90-18 61P	—
Tire tread depth	Front	—	3.0 (0.12)
	Rear	—	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	—	
Front fork spring free length	—	602 (23.7)	
Front fork oil level	152 (6.0)	—	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	—	
Rear shock absorber spring pre-set length	268.2 (10.6)	—	
Rear wheel travel	280 (11.0)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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.		For U.S.A.
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.		For Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		For the others
Fuel tank including reserve	8.0 L (2.1/1.8 US/Imp gal)		For California (U.S.A.)
	9.0 L (2.4/2.0 US/Imp gal)		For the others
reserve	*2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type	DOT 4		

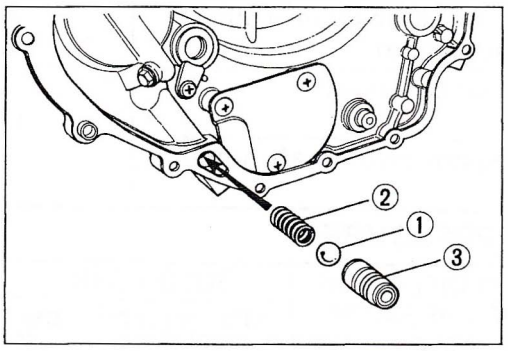
Asterisk mark (*) indicates the New "P" model specification.

OIL CHECK BALL

REMOVAL

- Drain engine oil.
- Remove the rear brake master cylinder bolts.
- Remove the clutch cable bracket bolts.
- Remove the oil pipe bolt on the clutch cover.
- Remove the kick starter lever.
- Remove the clutch cover.

- Remove the oil check ball ① and spring ② by removing the bushing ③.

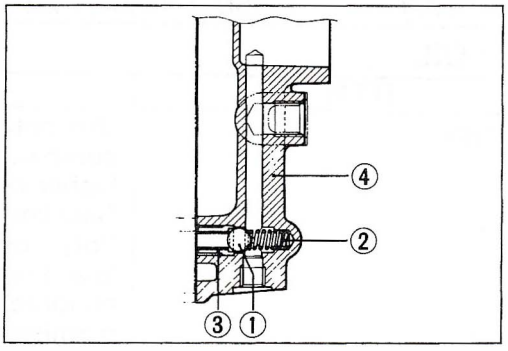


REASSEMBLY

Reassemble the spring ②, oil check ball ① and bushing ③ to the clutch cover ④ as shown in the illustration.

CAUTION:

When fitting the bushing ③ to the clutch cover, face the rubber part of bushing to the outside.



EMISSION CONTROL CARBURETOR COMPONENTS

DR350S motorcycles are equipped with precision, manufactured carburetors for emission level control. These carburetors require special mixture control components and other percision adjustments to function properly.

There are several carburetor mixture control components in each carburetor assembly. Three (3) of thses components are machined to much closer tolerances than standard machined carburetor jets. These three (3) particular jets—MAIN JET, NEEDLE JET, PILOT JET— must not be replaced by standard jets. To aid in identifying these three (3) jets a different design of letter and number are used. If replacement of these close tolerance jets becomes necessary, be sure to replace them with the same type close tolerance jets marked as in the examples shown below.

The jet needle is also of special manufacture. Only one clip position is provided on the jet needle. If replacement becomes necessary the jet needle may only be replaced with an equivalent performing replacement component. Suzuki recommends that Genuine Suzuki Parts be utilized whenever possible for the best possible performance and durability.

Conventional Figures Used on Standard Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0
Emission Type Figures Used On Close Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0

The carburetor specification for the emission-controlled DR350S are as follows.

Carburetor I.D. No.	Main Jet	Needle Jet	Jet Needle	Pilot Jet	Pilot Screw
14EC (California model)	#127.5	0-6	5CD16	#37.5	PRE-SET DO NOT ADJUST
14E9 (Other state models)					

The pilot screw is pre-set by the factory utilizing specialized testing and adjusting procedures. The pilot screw is not adustable as the idle circuit is ''sealed'' after factory adjustment. Adjusting, interferring with, improper replacement, or resetting of any of the carburetor components may adversely affect carburetor performance and cause the motorcycle to exceed the exhaust emission level limits. If persons, who are unaware of these special carburetor servicing requirements tamper with the carburetors the Suzuki dealer should restore the carburetors to their original condition or if unable to effect repairs, contact the distributors representative for further technical information and assistance.

MAGNETO

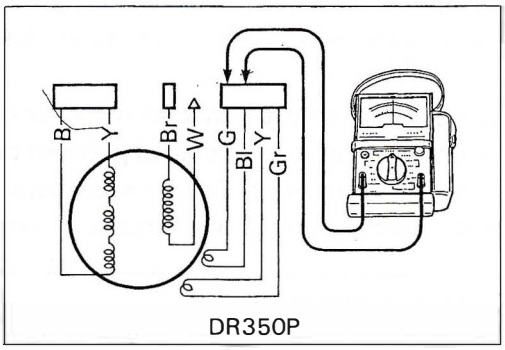
MAGNETO COIL

- Remove the frame covers and seat.
- Disconnect the magneto lead wires.

Measure the resistance between the lead wires with a pocket tester as shown in the illustration.

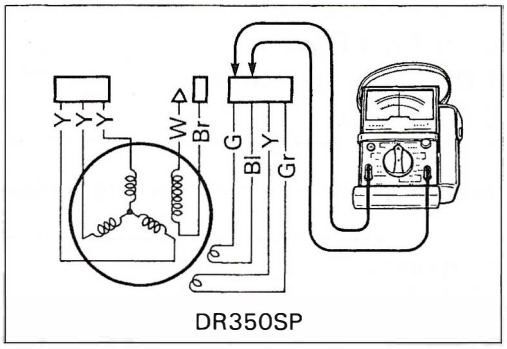
09900-25002 : Pocket tester

Magneto coil resistance (DR350P)
Lighting coil : 0.1—1.5 Ω (Y—B)
Power source coil : 350—650 Ω (W—Br)
Pick-up coil No.1 : 350—700 Ω (G—Bl)
Pick-up coil No.2 : 350—700 Ω (Y—Gr)



DR350P

Magneto coil resistance (DR350SP)
Charging coil : 0.1—1.5 Ω (Y—Y)
Power source coil : 350—650 Ω (W—Br)
Pick-up coil No.1 : 350—700 Ω (G—Bl)
Pick-up coil No.2 : 350—700 Ω (Y—Gr)

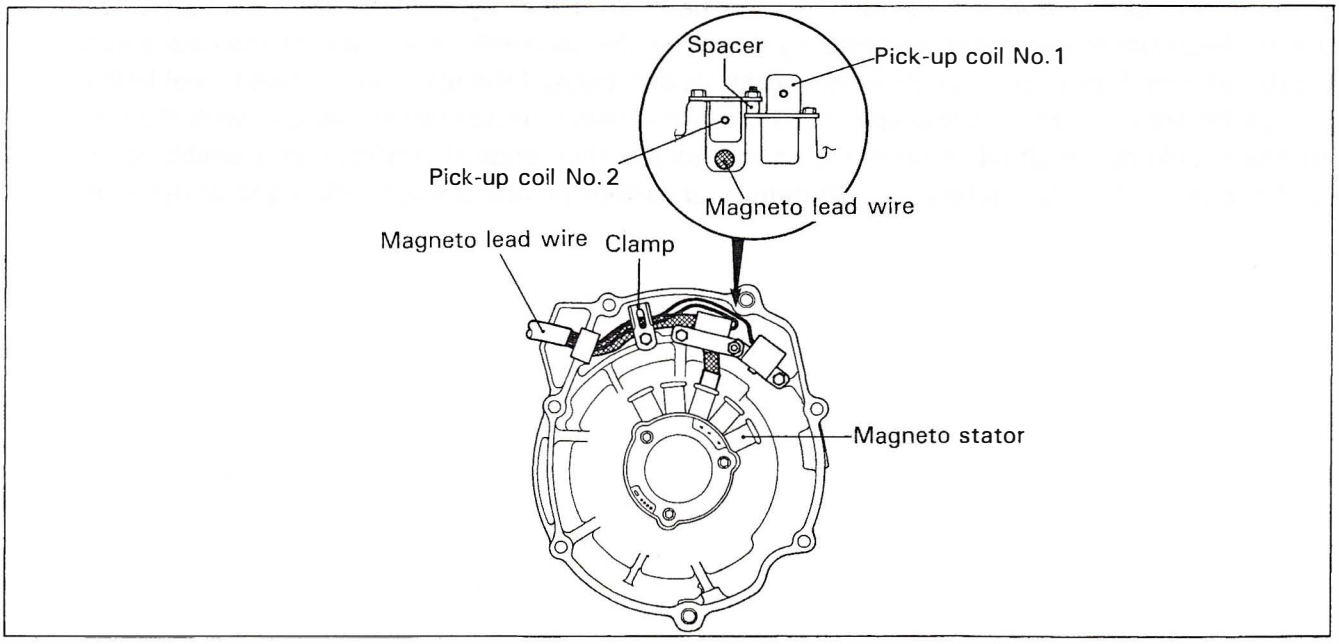


DR350SP

WIRE COLOR

B : Black	Gr : Gray
Bl : Blue	W : White
Br : Brown	Y : Yellow
G : Green	

MAGNETO STATOR INSTALLATION



CDI UNIT

- Remove the frame covers and seat.
- Disconnect the CDI unit lead wires.

Check the continuity and measure the resistance values with a pocket tester.

09900-25002: Pocket tester

DR350P Unit: kΩ

⊖ Probe of tester to: / ⊕ Probe of tester to:	G	Bl	Y	Gr	W	Br	B/Y	W/Bl	B/W
G		3–30	5–40	3–30	5–40	5–40	10–100	∞	3–30
Bl	3–30		3–30	0	0.5–10	0.5–10	3–40	∞	0
Y	5–40	3–30		3–30	5–40	5–40	10–100	∞	3–30
Gr	3–30	0	3–30		0.5–10	0.5–10	3–40	∞	0
W	5–80	3–40	5–80	3–40		10–100	30–1000	∞	3–40
Br	50–300	50–300	50–300	50–300	50–300		0.5–10	∞	50–300
B/Y	∞	∞	∞	∞	∞	∞		∞	∞
W/Bl	5–40	0.5–10	5–40	0.5–10	3–40	3–40	10–300		0.5–10
B/W	3–30	0	3–30	0	0.5–10	0.5–10	3–40	∞	

⊖ Probe of tester to:

WIRE COLOR
- Bl : Blue
- Br : Brown
- G : Green
- Gr : Gray
- W : White
- Y : Yellow
- B/W : Black with White tracer
- B/Y : Black with Yellow tracer
- Bl/B : Blue with Black tracer
- Bl/R : Blue with Red tracer
- G/R : Green with Red tracer
- W/Bl : White with Blue tracer
- W/R : White with Red tracer

DR350SP Unit: kΩ

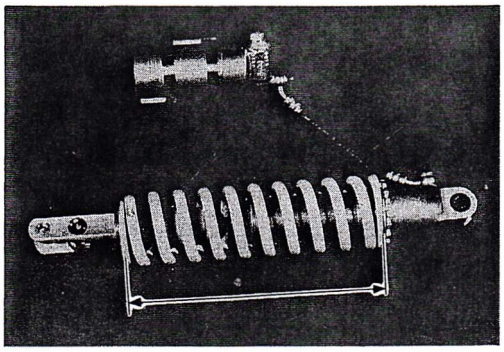
⊖ Probe of tester to: / ⊕ Probe of tester to:	G	Bl	Y	Gr	W	Br	B/Y	W/Bl	B/W	Bl/R	Bl/B	G/R	W/R
G		3–30	5–40	3–30	5–40	5–40	10–100	∞	3–30	50–500	∞	50–500	5–80
Bl	3–30		3–30	0	0.5–10	0.5–10	3–40	∞	0	30–500	∞	30–500	1–30
Y	5–40	3–30		3–30	5–40	5–40	10–100	∞	3–30	50–500	∞	50–500	5–80
Gr	3–30	0	3–30		0.5–10	0.5–10	3–40	∞	0	30–500	∞	30–500	1–30
W	5–80	3–40	5–80	3–40		10–100	30–1000	∞	3–40	Over 100	∞	Over 100	5–100
Br	50–300	50–300	50–300	50–300	50–300		0.5–10	∞	50–300	Over 100	∞	Over 100	50–500
B/Y	∞	∞	∞	∞	∞	∞		∞	∞	∞	∞	∞	∞
W/Bl	5–40	0.5–10	5–40	0.5–10	3–40	3–40	10–300		0.5–10	Over 70	∞	Over 70	5–50
B/W	3–30	0	3–30	0	0.5–10	0.5–10	3–40	∞		30–500	∞	30–500	1–20
Bl/R	∞	∞	∞	∞	∞	∞	∞	∞	∞		∞	∞	∞
Bl/B	∞	∞	∞	∞	∞	∞	∞	∞	∞	0.5–10		∞	∞
G/R	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞		∞
W/R	10–100	5–80	10–100	5–80	10–200	10–200	30–1000	∞	5–80	Over 100	∞	Over 100	

⊖ Probe of tester to:

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

NOTE:
Remove the spark plug and place the spark plug on the cylinder head cover kick the engine and check the sparks of the spark plug. If no sparking at spark plug gap, replace the CDI unit or inspect the magneto coils, ignition coils and spark plug. If the magneto coils, ignition coils and spark plug checked are correct, the CDI unit may be faulty, replace the CDI unit with a new one.

REAR SHOCK ABSORBER (DR350P)



SHOCK ABSORBER SPRING PRE-LOAD ADJUSTMENT

Using the universal clamp wrench, adjust the spring tension of the shock absorber by turning the spring pre-load adjuster ring as follows.

Standard spring pre-set length: 268.2 mm (10.6 in)

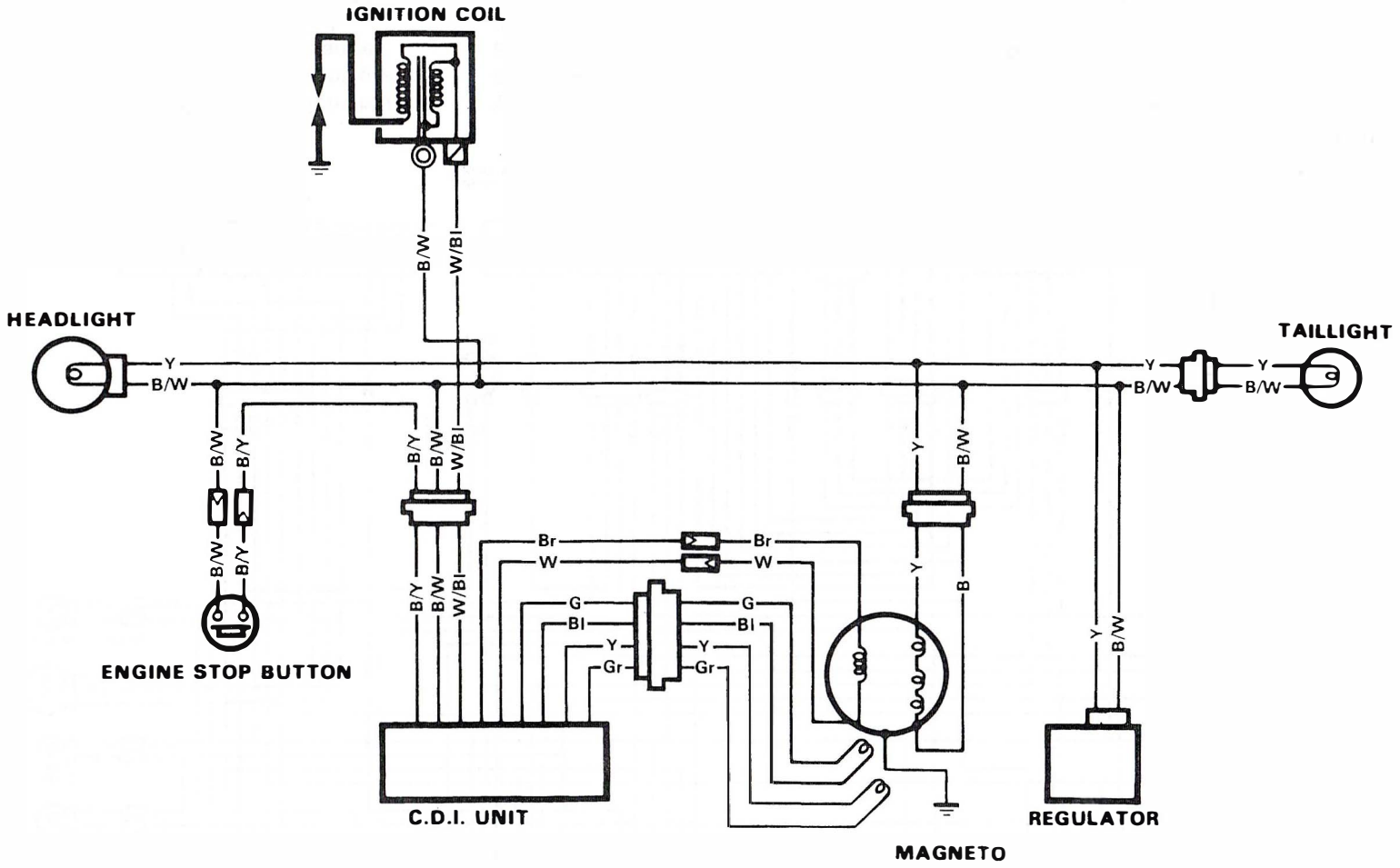
09910-60611: Universal clamp wrench

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

SETTING TABLE
Spring length
STD : 268.2 mm (10.6 in)
Softer : 273.2 mm (10.8 in)
Stiffer : 260.2 mm (10.2 in)

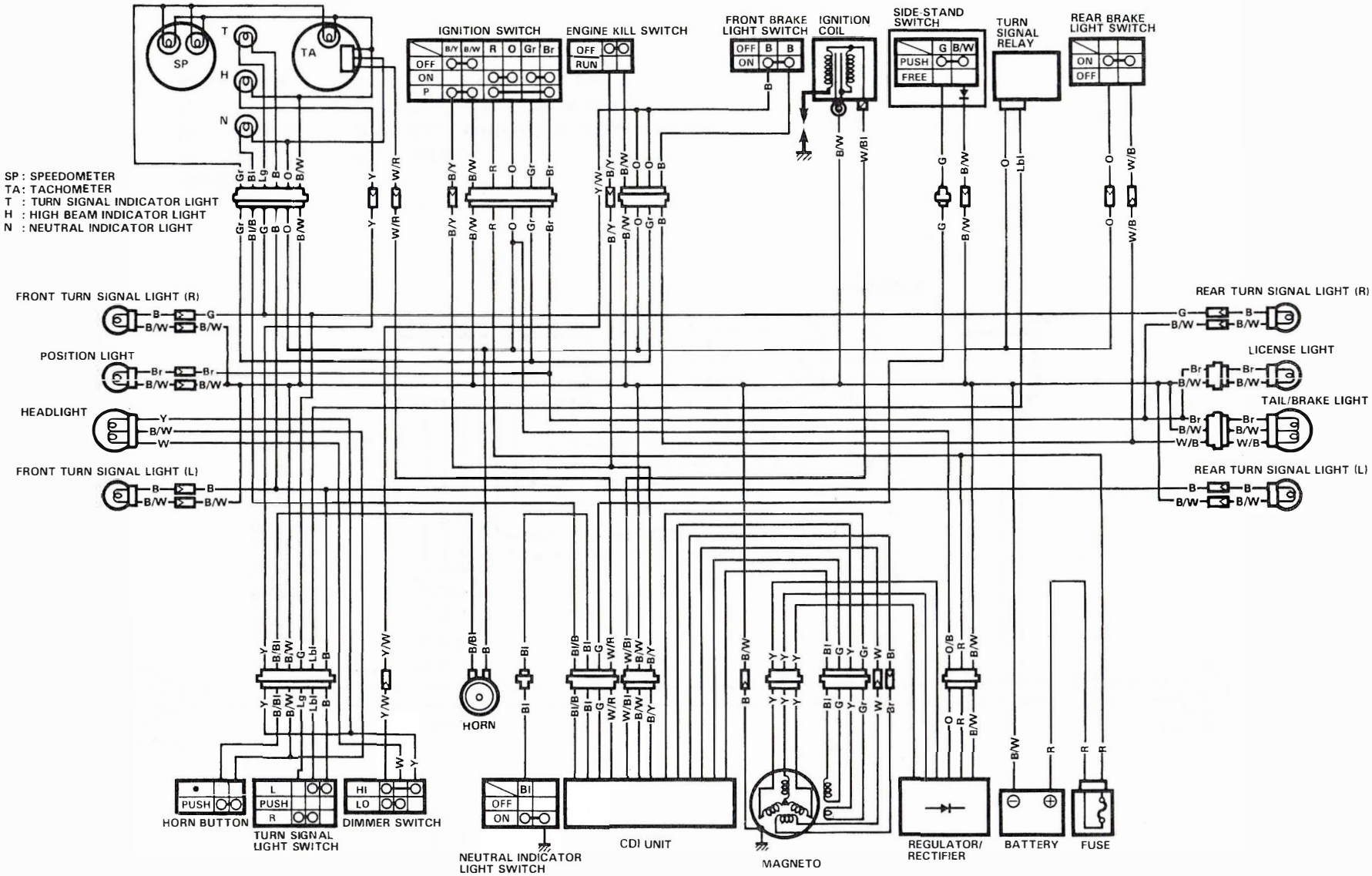
Damping force adjuster (STD)
Compression : Fully turned-out position
Rebound : 2½ turned-out position from the fully turned-in position.

NOTE:
Fully turned-in position provides stiffest damping force.



WIRE COLOR

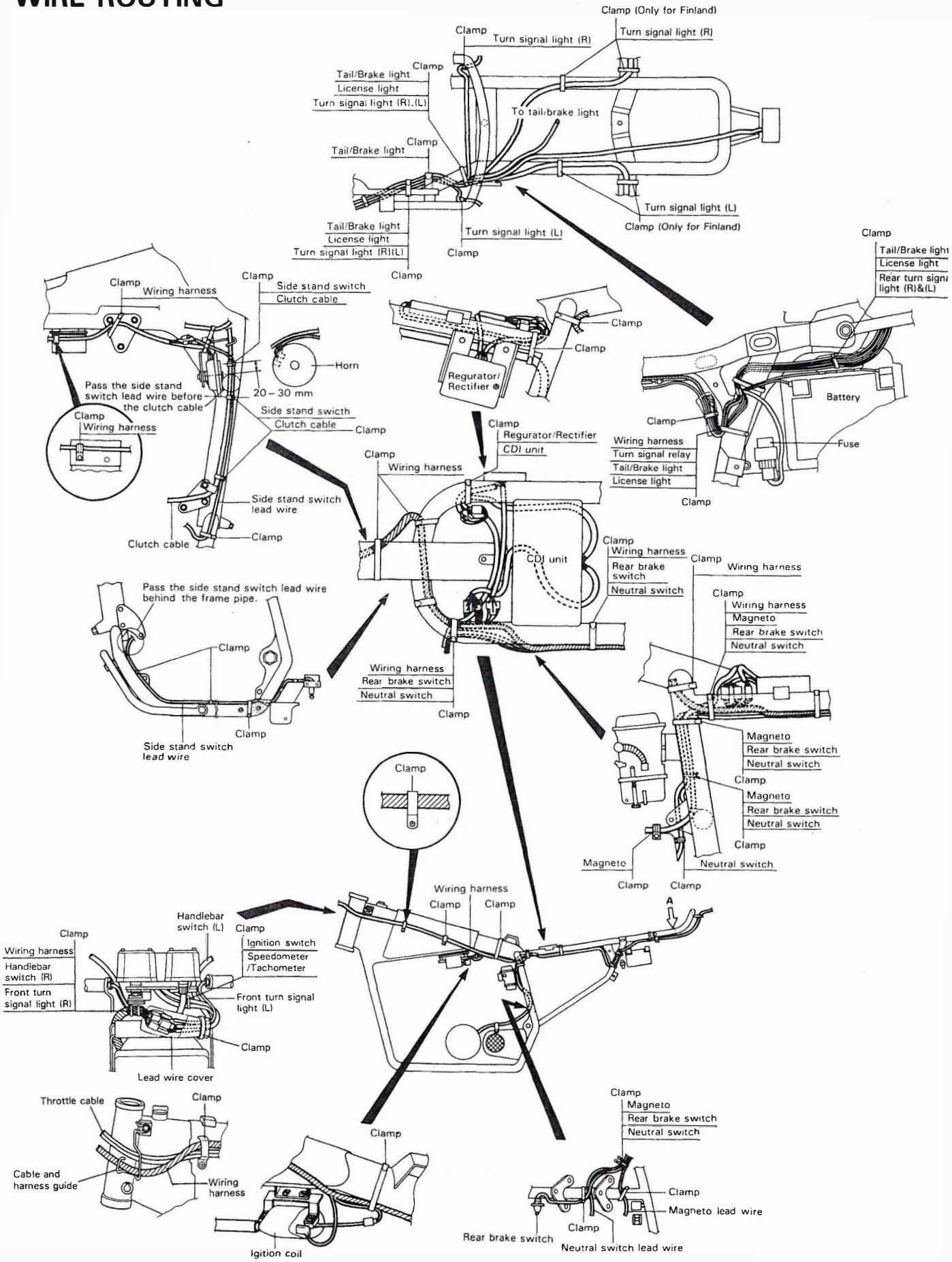
Bl :	Blue	Y :	Yellow
Br :	Brown	B/W:	Black with White tracer
G :	Green	B/Y:	Black with Yellow tracer
W :	White	W/Bl:	White with Blue tracer



WIRE COLOR

B : Black	Lbl: Light blue	Y : Yellow	O/B : Orange with Black tracer
Bl : Blue	Lg : Light green	B/Bl : Black with Blue tracer	W/B : White with Black tracer
Br : Brown	O : Orange	B/W : Black with White tracer	W/Bl : White with Blue tracer
G : Green	R : Red	B/Y : Black with Yellow tracer	W/R : White with Red tracer
Gr : Gray	W : White	Bl/B : Blue with Black tracer	Y/W : Yellow with White tracer

WIRE ROUTING



DR350R/SER ('94-MODEL)

FOREWORD

This section describes service data and servicing procedures which differ from those of the DR350P/SP ('93-MODEL).

NOTE:

- *Any differences between DR350P/SP and DR350R/SER in specifications and service data are clearly indicated with the asterisk marks (*).*
- *Please refer to the sections 1 through 12 for details which are not given in this section.*

CONTENTS

SPECIFICATIONS

DR350R

DIMENSIONS AND DRY MASS

Overall length	2 165 mm (82.5 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	*1 450 mm (57.1 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	*0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	*3.200 (64/20)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	*2.933 (44/15)
Drive chain	RK520SO or DID520VC.5, 110 links

CHASSIS

Front suspension	*Telescopic, coil spring, oil damped, compression damping force 12-way adjustable ..... For Canada and U.S.A. Telescopic, coil spring, oil damped, spring preload fully adjustable, damping force adjustable ..... For Barbados
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	*2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	*NGK CR9EK or NIPPONDENSO U27ET-R
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	* 541 ml (18.3/19.0 US/Imp. oz) ..... For Canada and U.S.A. 586 ml (19.8/20.6 US/Imp. oz) ..... For Barbados

Asterisk mark (*) indicates the New "R" model specifications.

DR350SER

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in) . . . . . Germany and Switzerland
	*2 235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1 245 mm (49.0 in)
Wheelbase	*1 440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	* 890 mm (35.0 in)
Dry mass	* 130 kg (286 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	BST33, single
Air cleaner	Polyurethane foam element
Starter system	*Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.733 (41/15)
Drive chain	RK520SO or DID520VC.5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	*255 mm (10.0 in)
Caster	62° 30′
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	Electronic ignition
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Battery	*12V 21.6 kC (6Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 60/55W
Position light	12V 4W
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	9.0 L (2.4/2.0 US/Imp gal). . . Others
	8.0 L (2.1/1.8 US/Imp gal). . . California only (U.S.A.)
Reserve	2.0 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
with filter change	1 900 ml (2.0/1.7 US/Imp qt)
overhaul	2 100 ml (2.2/1.8 US/Imp qt)
Front fork oil (each leg)	569 ml (19.2/20.0 US/Imp oz)

Specifications marked with asterisk (*) are exclusive to DR350SER.

SERVICE DATA

DR350R

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	*0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

Asterisk mark (*) indicates the New "R" model specification.

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	*33.450—33.490 (1.3169—1.3185)	*33.150 (1.3051)
	EX.	*33.520—33.560 (1.3197—1.3213)	*33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)		0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)		79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.		78.880 (3.1055)
Cylinder distortion	———		0.05 (0.002)
Piston ring free end gap	1st R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

Asterisk mark (*) indicates the New "R" model specifications.

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		*3.200 (64/20)		—
Final reduction ratio		*2.933 (44/15)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	D.I.D. 520VC5 or RK520SO	—
		Links	110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

Asterisk mark (*) indicates the New "R" model specifications.

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		TM33 SS
Bore size		33 mm
I.D. No		14D0
Idle r/min.		1 400 ± 100 r/min
Float height		14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet	(M.J.)	#127.5
Main air jet	(M.A.J.)	0.7 mm
Jet needle	(J.N.)	5FP96-3rd
Needle jet	(N.J.)	P-8
Cut-away	(C.A.)	1.5
Pilot jet	(P.J.)	#37.5
By-pass	(B.P.)	0.8 mm
Pilot outlet	(P.O.)	0.6 mm
Valve seat	(V.S.)	1.8 mm
Starter jet	(G.S.)	#50
Pilot screw	(P.S.)	1 ⅛ turn back
Pilot air jet	(P.A.J.)	1.1 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND:*U27ETR NGK:*CR9EK	
	Gap	*0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	350—650 Ω	W—Br
	Pick-up No.1	350—700 Ω	G—Bl
	Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)	More than 40 V (AC) at 5 000 r/min.		Y—B
Regulated voltage	12—14 V at 5 000 r/min.		

Asterisk mark (*) indicates the New "R" model specifications.

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		—	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51M	—
	Rear	110/100-18 64M	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	*551 (21.7)	E-03,28
	———	608 (23.9)	E-94
Front fork oil level	*144 (5.67)	———	E-03,28
	145 (5.71)	———	E-94
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*267.3 (10.5)	———	E-03,28
	268.2 (10.6)	———	E-94
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

Asterisk mark (*) indicates the New "R" model specifications.

E-03 ..... U.S.A. E-28 ..... Canada E-94 ..... Barbados

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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 87 pump octane ($\frac{R+M}{2}$ method) or 91 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-94
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	*Fork oil SS05		E-03,28
	Fork oil #10		E-94
Front fork oil capacity (each leg)	*541 ml (18.3/19.0 US/Imp oz)		E-03,28
	586 ml (19.8/20.6 US/Imp oz)		E-94
Brake fluid type	DOT 4		

Asterisk mark (*) indicates the New "R" model specifications.

E-03 ..... U.S.A. E-28 ..... Canada E-94 ..... Barbados

DR350SER
VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)		0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)		79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.		78.880 (3.1055)
Cylinder distortion	———		0.05 (0.002)
Piston ring free end gap	1st R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		—
Final reduction ratio		2.733 (41/15)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	D.I.D. 520VC5 or RK520SO	—
		Links	108	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

Specifications marked with asterisk (*) are exclusive to DR350SER.

E-03 ... U.S.A. (other than California) E-04 ... France E-18 ... Switzerland
E-21 ... Belgium E-22 ... Germany E-28 ... Canada
E-33 ... California E-34 ... Italy E-94 ... Barbados

CARBURETOR

ITEM	SPECIFICATION		
	E-04,21,34,94	E-03	E-33
Carburetor type	BST33SS	←	←
Bore size	33 mm	←	←
I.D. No.	*14EK	*14EP	*14ES
Idle r/min.	1 500 ± 100 r/min.	←	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet (M.J.)	#135	#127.5	←
Main air jet (M.A.J.)	0.6 mm	←	←
Jet needle (J.N.)	5CD56-3rd	5CD16	←
Needle jet (N.J.)	O-3	O-6	←
Throttle valve (Th.V.)	#115	←	←
Pilot jet (P.J.)	#42.5	#37.5	←
By-pass (B.P.)	0.8,0.8,0.8 mm	←	←
Pilot outlet (P.O.)	0.8 mm	1.0 mm	←
Valve seat (V.S.)	1.5 mm	←	←
Starter jet (G.S.)	*#35	←	←
Pilot screw (P.S.)	PRE-SET (1⅛ turns back)	PRE-SET	←
Pilot air jet (P.A.J.)	1.3 mm	←	←
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM	SPECIFICATION		
	E-22	E-28	E-18
Carburetor type	BST33SS	←	←
Bore size	33 mm	←	←
I.D. No.	*14EM	*14ER	*14EL
Idle r/min.	1 500 ± 100 r/min.	←	1 400 ± 50 r/min.
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet (M.J.)	#127.5	←	#132.5
Main air jet (M.A.J.)	0.6 mm	←	←
Jet needle (J.N.)	5CD56-4th	←	←
Needle jet (N.J.)	O-5	←	O-7
Throttle valve (Th.V.)	#115	←	←
Pilot jet (P.J.)	#37.5	←	←
By-pass (B.P.)	0.8,0.8,0.8 mm	←	←
Pilot outlet (P.O.)	0.8 mm	←	0.9 mm
Valve seat (V.S.)	1.5 mm	←	←
Starter jet (G.S.)	#35	←	←
Pilot screw (P.S.)	PRE-SET (1⅛ turns back)	PRE-SET (1¾ turns back)	PRE-SET (2.0 turns back)
Pilot air jet (P.A.J.)	1.2 mm	←	1.3 mm
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)	←	←

Specifications marked with asterisk (*) are exclusive to DR350SER.

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND: U27ETR NGK: CR9EK	
		Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance		Charging	0.1—1.5 Ω	Y—Y
		Power source	350—650 Ω	W—Br
		Pick-up No.1	350—700 Ω	G—Bl
		Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)		More than 60 V (AC) at 5 000 r/min.		Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Magneto Max. output		Approx. 125 W at 5 000 r/min.		
Starter motor brush length		*Limit : 6 (0.24)		
Commutator under-cut		*Limit : 0.2 (0.008)		
Starter relay resistance		*3—7 Ω		
Battery	Type designation	*YTX7L-BS		
	Capacity	*12V 21.6 kC (6Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		*20 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7 x 2	←
Turn signal indicator light		1.7	←
High beam indicator light		1.7	←
Neutral indicator light		1.7	←
License light		5	←

Specifications marked with asterisk (*) are exclusive to DR350SER.

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	———
Rear brake pedal height		5 (0.2)	———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	———
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	27.000—27.050 (1.0630—1.0650)	———
	Rear	30.230—30.280 (1.1902—1.1921)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	30.160—30.180 (1.1874—1.1882)	———
Wheel rim runout	Axial	———	2.0 (0.08)
	Radial	———	2.0 (0.08)
Wheel axle runout	Front	———	0.25 (0.010)
	Rear	———	0.25 (0.010)
Tire size & type	Front	80/100-21 51P *Dunlop D601J (E-03,28,33) Dunlop K560J (others)	———
	Rear	110/90-18 61P *Dunlop D601 (E-03,28,33) Dunlop K560J (others)	———
Tire tread depth	Front	———	3.0 (0.12)
	Rear	———	3.0 (0.12)

Specifications marked with asterisk (*) are exclusive to DR350SER.

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	602 (23.7)	
Front fork oil level	152 (6.0)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*253.4 (10.0)	———	
Rear wheel travel	* 255 (10.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM		SPECIFICATION		NOTE
Fuel type		Use only unleaded gasoline of at least 87 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-03,33
		Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including		8.0 L (2.1/1.8 US/Imp gal)		E33
		9.0 L (2.4/2.0 US/Imp gal)		For the others
	reserve	2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type		SAE 10W/40, API SE or SF		
Engine oil capacity		Change	1 700 ml (1.8/1.5 US/Imp qt)	
		Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
		Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type		Fork oil # 10		
Front fork oil capacity (each leg)		569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type		DOT 4		

Specifications marked with asterisk (*) are exclusive to DR350SER.

TIGHTENING TORQUE (DR350SER)

ENGINE

ITEM		N·m	kg-m	lb-ft
Cylinder head cover bolt		10	1.0	7.0
Camshaft sprocket bolt		15	1.5	11.0
Cylinder head bolt		38	3.8	27.5
Cylinder head nut		25	2.5	18.0
Cylinder base nut		25	2.5	18.0
Rocker arm shaft bolt		28	2.8	20.0
Balancer shaft bolt		50	5.0	36.0
Primary drive gear nut		70	7.0	50.5
Magneto rotor nut		130	13.0	94.0
Starter clutch bolt		*26	*2.6	*19.0
Clutch sleeve hub nut		50	5.0	36.0
Gearshift arm stopper		19	1.9	13.5
Gearshift cam driven gear bolt		10	1.0	7.0
Cam chain tensioner mounting bolt	Right hand	10	1.0	7.0
	Left hand	11	1.1	8.0
Cam chain tensioner spring holder bolt		8	0.8	6.0
Engine oil drain plug (on the crankcase)		21	2.1	15.0
Engine oil drain bolt (on the frame)		18	1.8	13.0
Crankcase bolt		11	1.1	8.0
Oil pipe union bolt		21	2.1	15.0
Oil gallery plug		23	2.3	16.5
Oil strainer		28	2.8	20.0
Oil hose union bolt		28	2.8	20.0
Oil check bolt		10	1.0	7.0
Oil hose bolt (on the crankcase)		10	1.0	7.0
Oil hose bolt (on the cylinder head)		23	2.3	16.5
Oil hose clamp screw		1.8	0.18	13.0
T.D.C. plug		23	2.3	16.5
Engine mounting bolt and nut		66	6.6	48
		41	4.1	29.5
		23	2.3	16.5
Exhaust pipe bolt		23	2.3	16.5
Muffler connection bolt		23	2.3	16.5
Muffler mounting bolt		26	2.6	19.0

Specifications marked with asterisk (*) are exclusive to DR350SER.

PERIODIC MAINTENANCE SCHEDULE (DR350SER)

IMPORTANT: The periodic maintenance intervals and service requirements have been established in accordance with EPA regulations. Following these instructions will ensure that the motorcycle will not exceed emission standards and it will also ensure the reliability and performance of the motorcycle.

NOTE:
More frequent servicing may be performed on motorcycles that are used under severe conditions however, it is not necessary for ensuring emission level compliance.

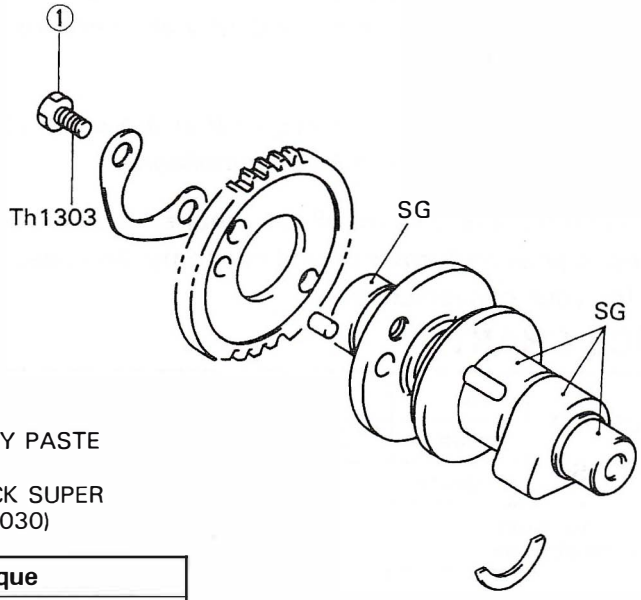
The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Mileages are expressed in terms of kilometers, miles and time for your convenience.

PERIODIC MAINTENANCE CHART

INTERVAL: THIS INTERVAL SHOULD BE JUDGED BY ODOMETER READING OR MONTHS WHICHEVER COMES FIRST						
	km	1 000	6 000	12 000	18 000	24 000
	miles	600	4 000	7 500	11 000	15 000
	months	2	12	24	36	48
Cylinder head bolts and nuts, cylinder nuts, exhaust pipe bolts and muffler connections		T	T	T	T	T
Valve clearance		I	I	I	I	I
Spark plug		—	I	R	I	R
Spark arrester (Only for U.S.A. and Canada)		—	C	C	C	C
Air cleaner		Clean every 3 000 km (2 000 miles).				
Engine oil and oil filter		R	R	R	R	R
Engine oil hoses		I	I	I	I	I
Engine oil strainer		C	C	C	C	R
Carburetor		I	I	I	I	I
Fuel line (Vapor hose... California model only)		I	I	I	I	I
		Replace every 4 years.				
Clutch		I	I	I	I	I
Drive chain		I	I	I	I	I
		Clean and lubricate every 1 000 km (600 miles).				
Brakes		I	I	I	I	I
Brake hoses		I	I	I	I	I
		Replace every 4 years.				
Brake fluid		I	I	I	I	I
		Replace every 2 years.				
Tires		I	I	I	I	I
Steering		I	I	I	I	I
Front forks		I	—	I	—	I
Rear suspension		I	—	I	—	I
Chassis bolts and nuts		T	T	T	T	T

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

CAMSHAFT/AUTOMATIC DE-COMP. ASSEMBLY



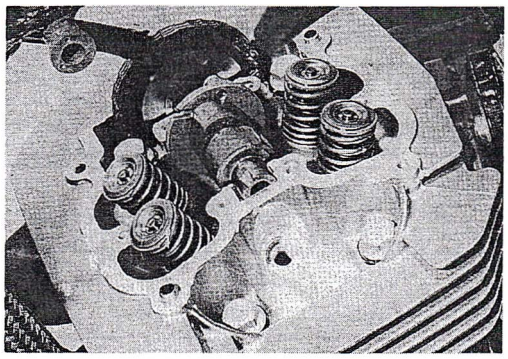
SG: Apply SUZUKI MOLY PASTE (99000-25140)
Th1303: Apply THREAD LOCK SUPER "1303" (99000-32030)

Tightening torque		
ITEM	N·m	kg-m
①	15	1.5

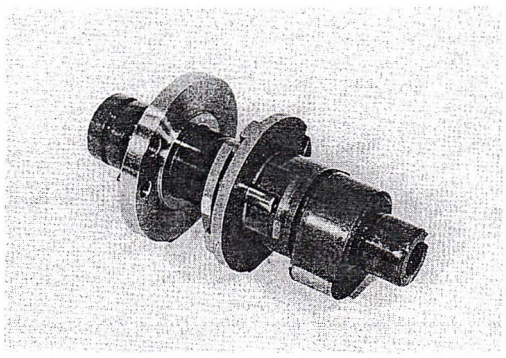
REMOVAL

- Remove the frame covers, seat and fuel tank.
- Drain engine oil.
- Remove the T.D.C. inspection plug and magneto cover cap.
- Turn the crankshaft counter clockwise to set the position at T.D.C. on the compression stroke.

- Remove the chain tensioner.
- Remove the intake and exhaust valve inspection caps.
- Remove the cylinder head cover.
- Remove the camshaft end cap.
- Flatten the lock washers and remove the camshaft sprocket bolts.
- Remove the sprocket and camshaft/auto-decompression assembly.



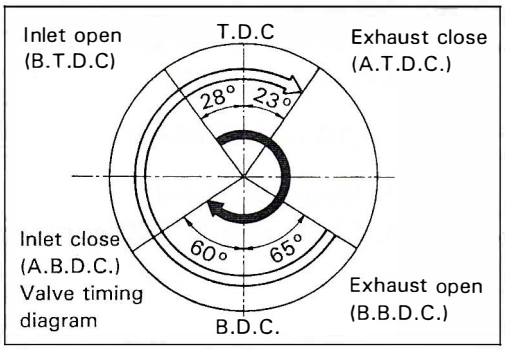
CAUTION:
Do not attempt to disassemble the camshaft/automatic de-comp. assembly. It is not serviceable.



INSPECTION

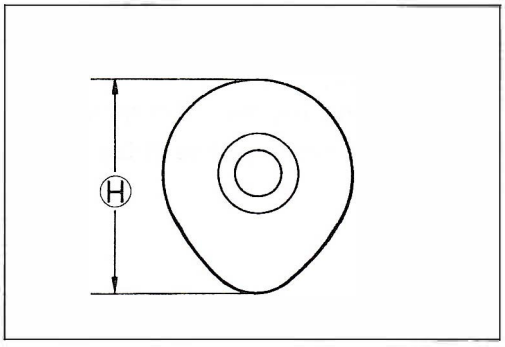
CAMSHAFT

The camshaft should be checked for runout and also for wear of cams and journals if the engine has been noted to produce abnormal noise or vibration or to lack output power. Any of these malconditions could be caused by a worn camshaft.



CAMSHAFT CAM WEAR

Worn-down cams are often the cause of mistimed valve operation resulting in reduced output power. The limit of cam wear is specified for both intake and exhaust cams in terms of cam height Ⓗ, which is to be measured with a micrometer. Replace the camshaft if found it worn down to the limit.



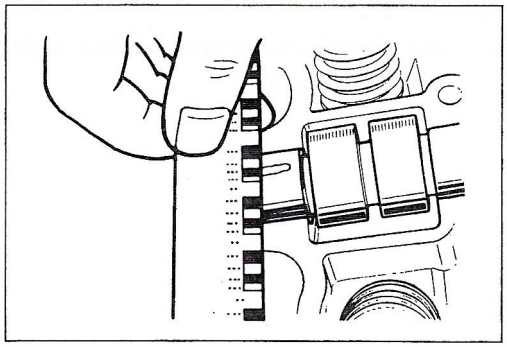
Cam height

Height Ⓗ	Service Limit
Intake cam	33.150 mm (1.3051 in)
Exhaust cam	33.220 mm (1.3079 in)

09900-20202: Micrometer (25—50 mm)

CAMSHAFT JOURNAL WEAR

Determine whether each journal is worn down to the limit or not by measuring camshaft journal oil clearance with the camshaft installed. Use plastigauge to read the clearance, which is specified as follows.



Camshaft journal oil clearance
Service Limit: 0.150 mm (0.0059 in)

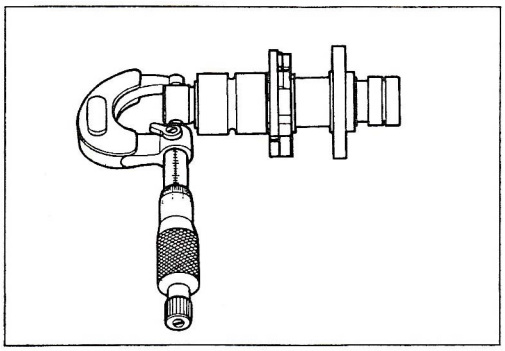
- Tighten the cylinder head cover bolts evenly and diagonally to the specified torque.

Tightening torque: 10 N·m (1.0 kg-m)

09900-22301: Plastigauge

NOTE:
To properly measure the oil clearance with plastigauge, all gasket material must be removed from fitting surfaces of cylinder head and cover. Do not apply SUZUKI BOND No. 1207B/1215 until after the oil clearance has been determined.

If the camshaft journal oil clearance measured exceeds the limit, measure the outside diameter of camshaft. Replace either the cylinder head set or the camshaft if the clearance is incorrect.



Camshaft journal O.D.

	Standard
Right side	21.959—21.980 mm (0.8645—0.8654 in)
Left side	17.466—17.484 mm (0.6876—0.6883 in)

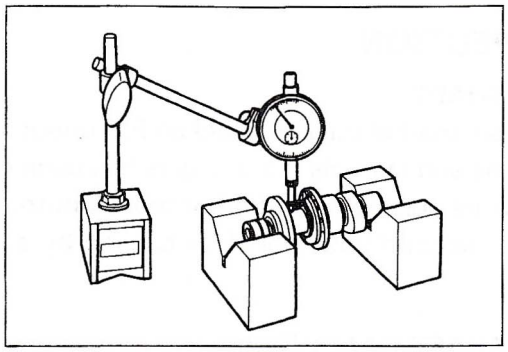
09900-20205: Micrometer (0—25 mm)

CAMSHAFT RUNOUT

Measure the runout with a dial gauge. Replace the camshaft if the runout exceeds the limit.

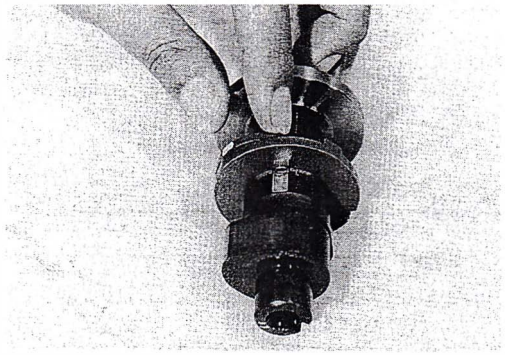
Service Limit: 0.10 mm (0.004 in)

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



AUTOMATIC DE-COMP. ASSEMBLY

Move the automatic de-comp. weight by hand to inspect if operating smoothly.
If it does not smoothly must be replaced with a new camshaft/automatic de-comp. assembly.



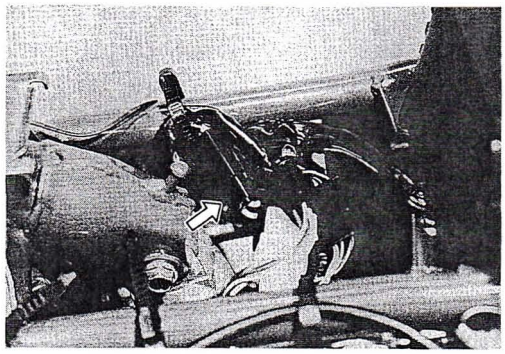
REMOUNTING

Remount the camshaft/automatic de-comp. assembly in the reverse order of removal.

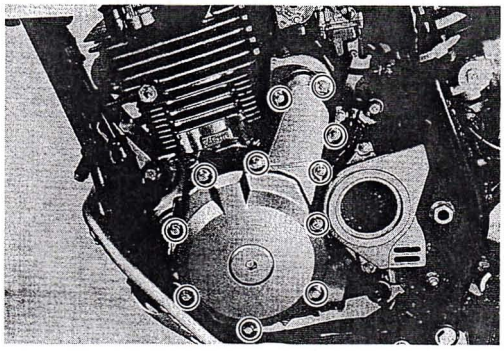
STARTER CLUCH (DR350SER)

REMOVAL

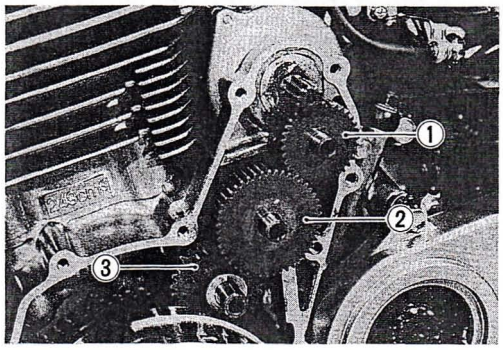
- Drain engine oil.
- Remove the frame covers.
- Remove the seat.
- Disconnect the magneto lead wires after moving the CDI unit.



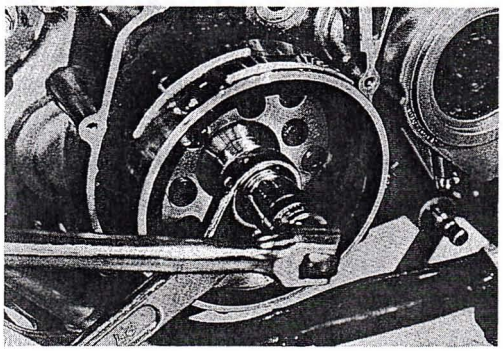
- Remove the gearshift lever.
- Remove the magneto cover.



- Remove the starter idle gears with shaft.
  ①: Starter idle gear No.1
  ②: Starter idle gear No.2
  ③: Starter idle gear No.3



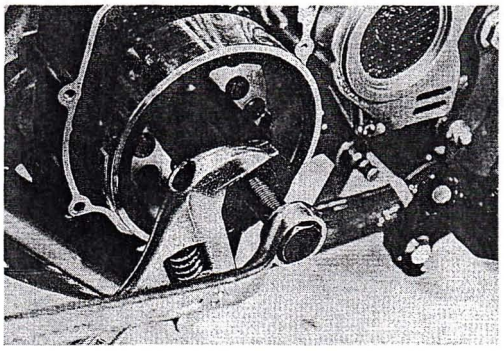
- Remove the magneto rotor nut with a 27 mm box-end wrench.



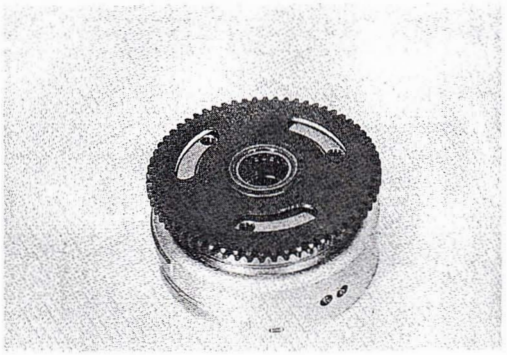
- Remove the magneto rotor assembly with the special tool.

09930-34912: Rotor remover

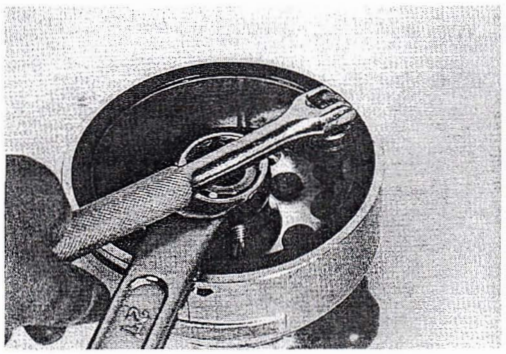
CAUTION:
Do not hit the rotor with a hammer.



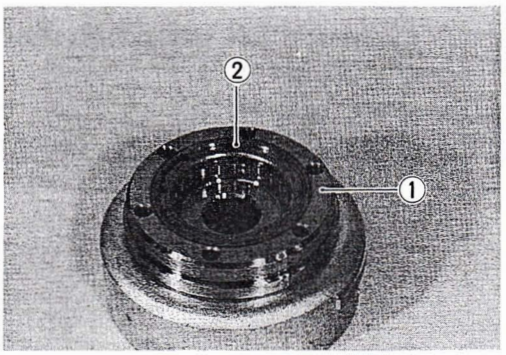
- Remove the starter gear and bearing.



- Remove the three bolts with 6 mm hexagon wrench and 27 mm box-end wrench.



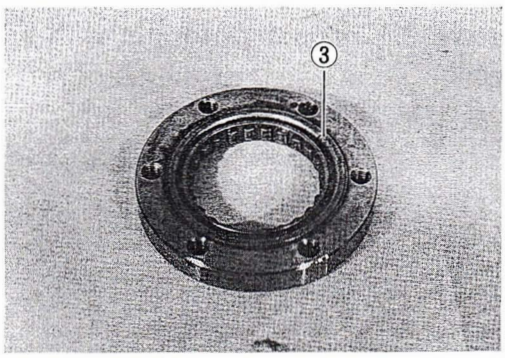
- Remove the starter clutch holder ① and starter clutch ②.



REASSEMBLY AND REMOUNTING

Reassemble and remounting the starter clutch in the reverse order of removal and disassembly, and also carry out the following steps.

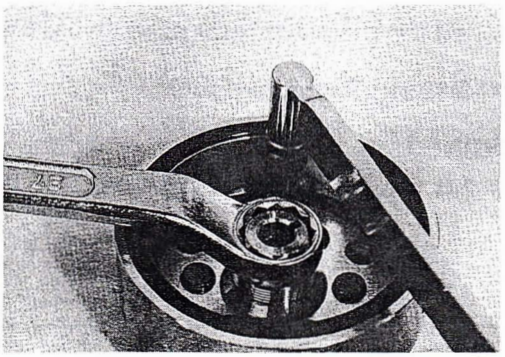
- When installing the starter clutch to the rotor, face the cut ③ of the cage to the rotor as shown in photo.



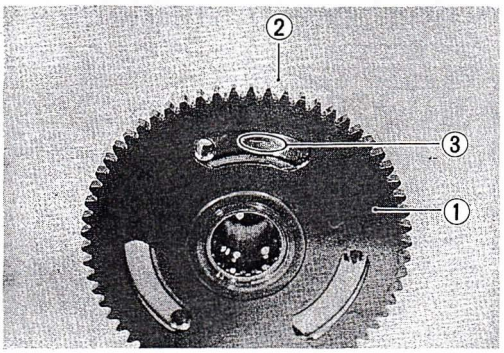
- Apply THREAD LOCK SUPER "1303" to the bolts and tighten them to the specified torque.

99000-32030: THREAD LOCK SUPER "1303"

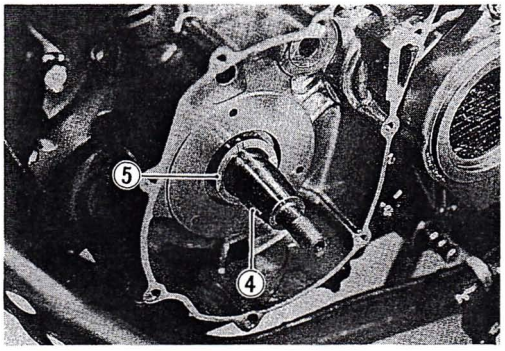
Tightening torque: 26 N·m (2.6 kg-m, 19.0 lb-ft)



- Install the starter gear ① to the stater clutch.
- Check that the rotor ② turns in the direction of the arrow mark ③ on the starter clutch holder while holding the starter gear ①, and that the rotor ② never turns in the opposite direction of the arrow mark ③.



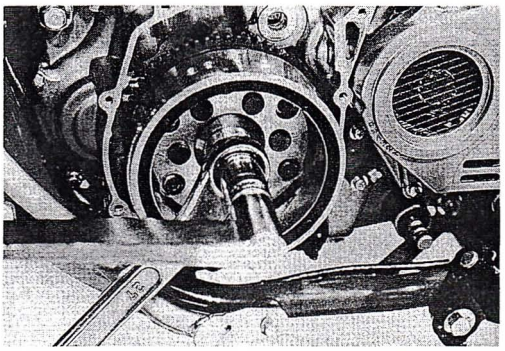
- Degrease the tapered portion of the magneto rotor and also crankshaft.
- Fit the key ④ and washer ⑤.
- Install the magneto rotor assembly.



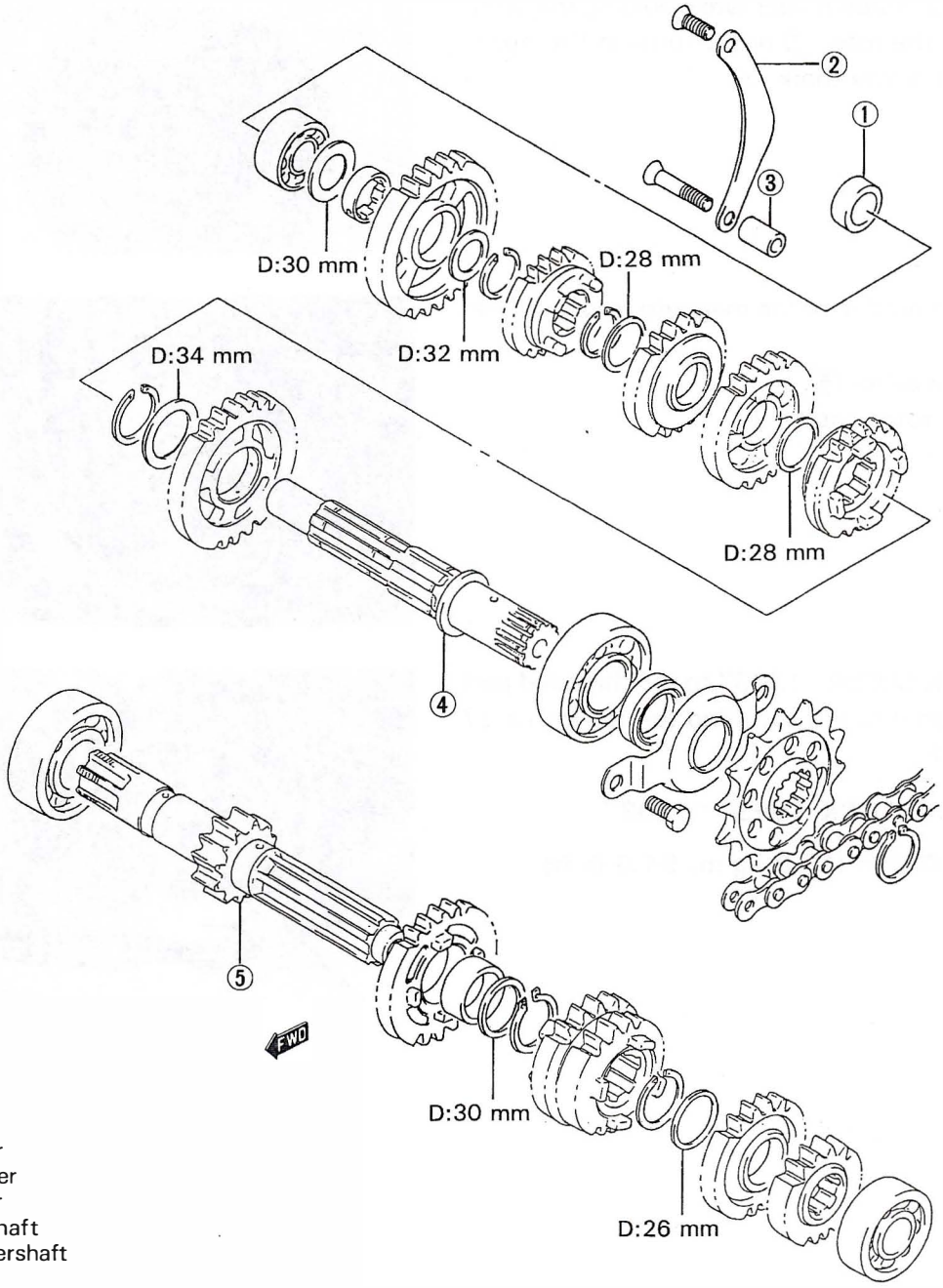
- Apply THREAD LOCK SUPER "1303" to the threaded part of the nut and tighten it to the specified torque with a 27 mm box-end wrench.

99000-32030: THREAD LOCK SUPER "1303"

Tightening torque: 130 N·m (13.0 kg-m, 94.0 lb-ft)



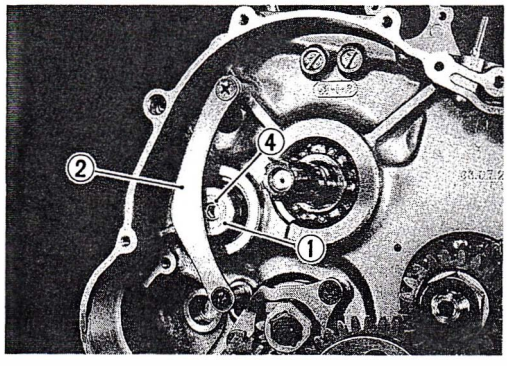
TRANSMISSION ASSEMBLY



① Spacer
② Retainer
③ Spacer
④ Driveshaft
⑤ Countershaft

Note: "D" means the outer diameter of washers.

- Install the spacer ① to the driveshaft ④ before installing the retainer ②.



EMISSION CONTROL CARBURETOR COMPONENTS (DR350SER)

DR350SER motorcycles are equipped with precision, manufactured carburetors for emission level control. These carburetors require special mixture control components and other percision adjustments to function properly.

There are several carburetor mixture control components in each carburetor assembly. Three (3) of these components are machined to much closer tolerances than standard machined carburetor jets. These three (3) particular jets—MAIN JET, NEEDLE JET, PILOT JET— must not be replaced by standard jets. To aid in identifying these three (3) jets a different design of letter and number are used. If replacement of these close tolerance jets becomes necessary, be sure to replace them with the same type close tolerance jets marked as in the examples shown below.

The jet needle is also of special manufacture. Only one clip position is provided on the jet needle. If replacement becomes necessary the jet needle may only be replaced with an equivalent performing replacement component. Suzuki recommends that Genuine Suzuki Parts be utilized whenever possible for the best possible performance and durability.

Conventional Figures Used on Standard Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0
Emission Type Figures Used On Close Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0

The carburetor specification for the emission-controlled DR350SER are as follows.

Carburetor I.D. No.	Main Jet	Needle Jet	Jet Needle	Pilot Jet	Pilot Screw
14ES (California model)	#127.5	0-6	5CD16	#37.5	PRE-SET DO NOT ADJUST
14EP (Other state models)					

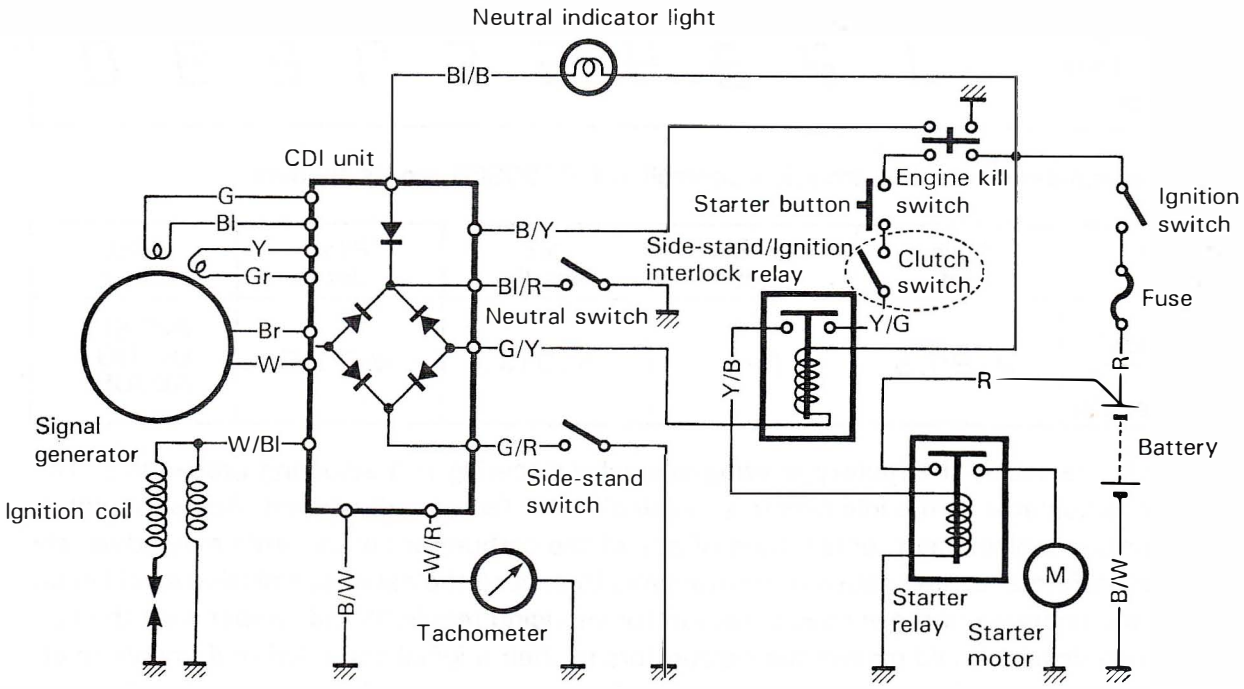
The pilot screw is pre-set by the factory utilizing specialized testing and adjusting procedures. The pilot screw is not adjustable as the idle circuit is "sealed" after factory adjustment. Adjusting, interferring with, improper replacement, or resetting of any of the carburetor components may adversely affect carburetor performance and cause the motorcycle to exceed the exhaust emission level limits. If persons, who are unaware of these special carburetor servicing requirements tamper with the carburetors the Suzuki dealer should restore the carburetors to their original condition or if unable to effect repairs, contact the distributors representative for further technical information and assistance.

IGNITION AND STARTER SYSTEM (DR350SER)

DESCRIPTION

The capacitor discharged ignition system consists of a signal generator, CDI unit, ignition coil and spark plug. The electrical energy generated by the signal generator charges the capacitor. This energy is released in a single surge at the specified ignition timing point, and current flows through 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 cut-off circuit is incorporated in the CDI unit. If the crankshaft turns in the reverse direction and reverse current is produced, this circuit works on the capacitor to cut off the primary current of the ignition coil. It causes no sparking between spark plug gap.

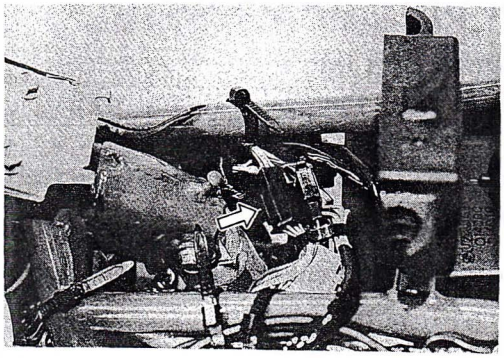
The starter system consists of a side-stand switch, neutral switch, clutch switch and side-stand relay. This function is to supply the current from the battery to the side-stand relay and starter relay only when the transmission gear is at the neutral position or when the side-stand is at the upright position.



Note: Clutch switch is installed only for U.S.A. and Canada.

GENERATOR (DR350SER)

GENERATOR STATOR COIL

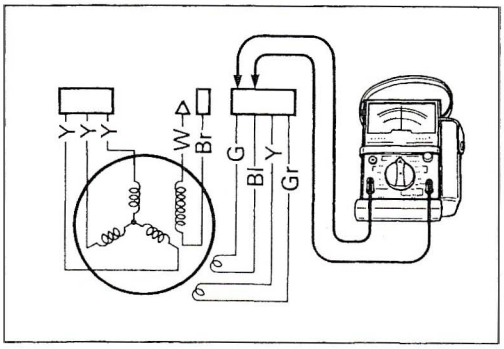


- Remove the frame covers and seat.
- Disconnect the generator lead wires.

Measure the resistance between the lead wires with a pocket tester as shown in the illustration.

09900-25002: Pocket tester

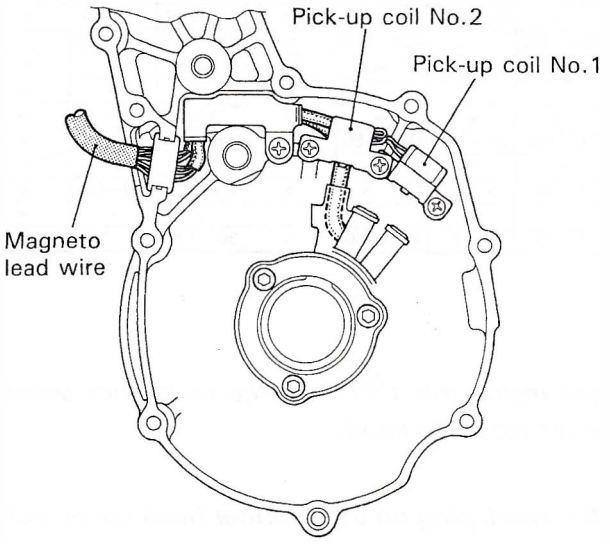
Generator stator coil resistance (DR350SER)
Charging coil: 0.1—1.5 Ω (Y—Y)
Power source coil: 350—650 Ω (W—Br)
Pick-up coil No.1: 350—700 Ω (G—Bl)
Pick-up coil No.2: 350—700 Ω (Y—Gr)



WIRE COLOR

B	: Black	Gr	: Gray
Bl	: Blue	W	: White
Br	: Brown	Y	: Yellow
G	: Green		

GENERATOR STATOR INSTALLATION



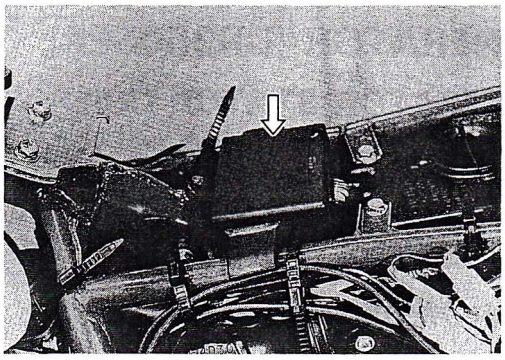
DR350SER

CDI UNIT (DR350SER)

- Remove the frame covers and seat.
- Disconnect the CDI unit lead wires.

Check the continuity and measure the resistance values with a pocket tester.

09900-25002: Pocket tester



WIRE COLOR
Bl : Blue
Br : Brown
G : Green
Gr : Gray
W : White
Y : Yellow
B/W : Black with White tracer
B/Y : Black with Yellow tracer
Bl/B : Blue with Black tracer
Bl/R : Blue with Red tracer
G/R : Green with Red tracer
W/Bl : White with Blue tracer
W/R : White with Red tracer

DR350SER

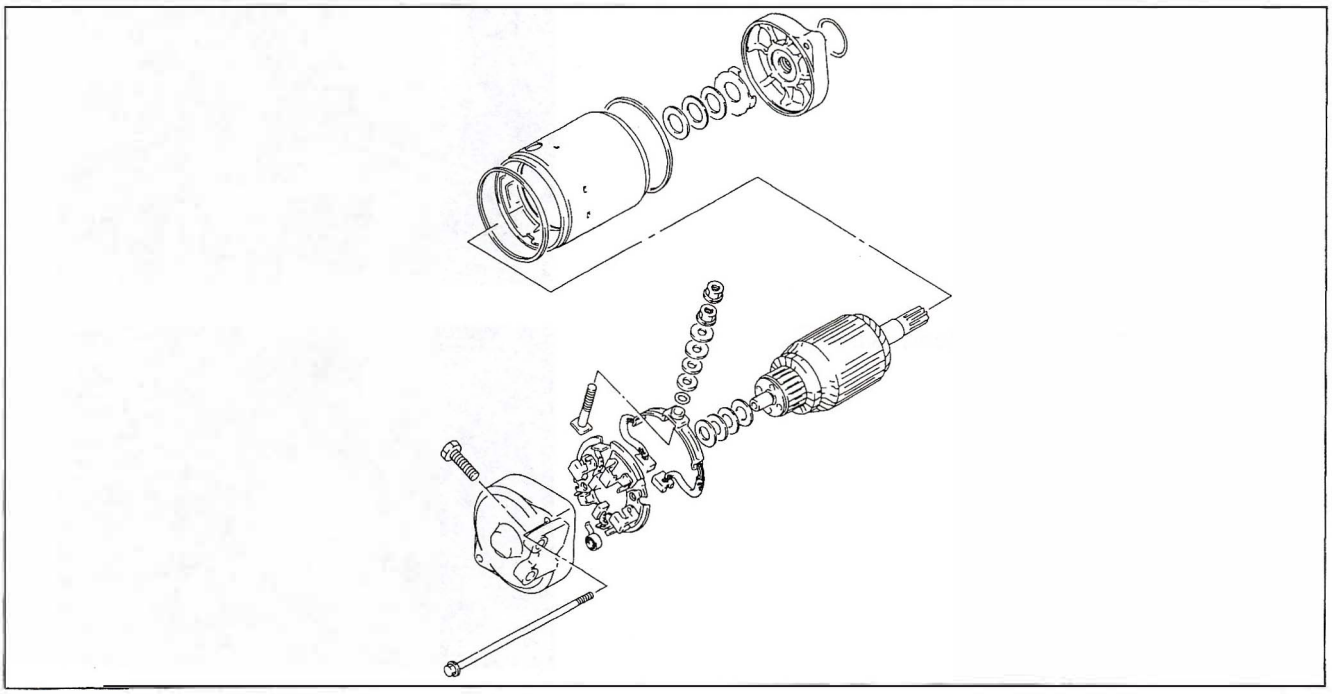
Unit: kΩ

⊖ Probe of tester to: / ⊕ Probe of tester to:	G	Bl	Y	Gr	W	Br	Bl/R	Bl/B	G/R	W/R	G/Y	W/Bl	B/Y	B/W
G		5–15	15–30	5–15	10–30	10–30	50–200	∞	50–200	10–40	∞	∞	20–80	5–20
Bl	5–15		5–15	0	1–10	1–8	40–150	∞	30–180	3–15	∞	∞	5–30	0
Y	15–30	5–15		5–15	10–30	10–30	50–200	∞	50–200	15–40	∞	∞	20–80	5–20
Gr	5–15	0	5–15		1–10	1–8	40–150	∞	30–180	3–15	∞	∞	5–30	0
W	70–250	30–200	70–250	30–200		100–600	50–200	∞	50–200	15–80	∞	∞	Over 300	30–200
Br	100–250	100–250	100–250	100–250	150–250		400–600	∞	300–600	150–300	∞	∞	1–10	100–200
Bl/R	∞	∞	∞	∞	∞	∞		∞	∞	∞	∞	∞	∞	∞
Bl/B	∞	∞	∞	∞	∞	∞	1–10		∞	∞	∞	∞	∞	∞
G/R	∞	∞	∞	∞	∞	∞	∞	∞		∞	∞	∞	∞	∞
W/R	20–60	10–30	20–60	10–30	20–100	20–100	Over 150	∞	Over 150		∞	∞	50–600	10–30
G/Y	∞	∞	∞	∞	∞	∞	1–10	∞	1–10	∞		∞	∞	∞
W/Bl	10–30	1–8	10–30	1–8	5–30	5–25	100–600	∞	Over 80	10–40	∞		15–200	1–8
B/Y	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞		∞
B/W	5–15	0	5–15	0	1–10	1–8	40–150	∞	30–170	4–15	∞	∞	5–30	

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

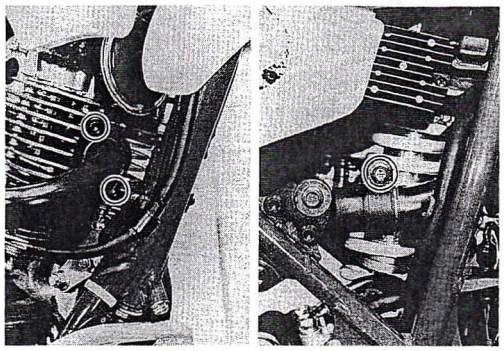
NOTE:
Remove the spark plug and place the spark plug on the cylinder head cover kick the engine and check the sparks of the spark plug. If no sparking at spark plug gap, replace the CDI unit or inspect the magneto coils, ignition coils and spark plug. If the magneto coils, ignition coils and spark plug checked are correct, the CDI unit may be faulty, replace the CDI unit with a new one.

STARTER MOTOR (DR350SER)

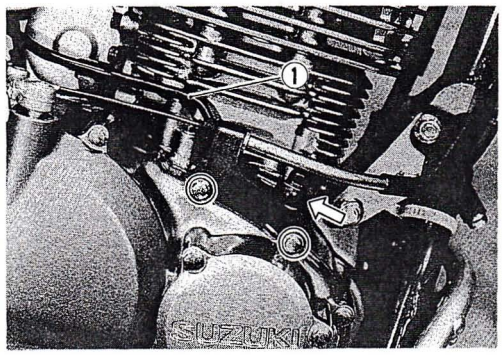


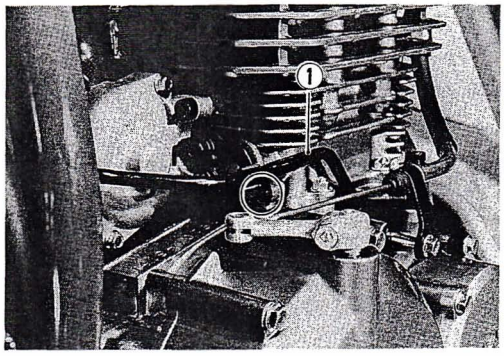
STARTER MOTOR REMOVAL AND DISASSEMBLY

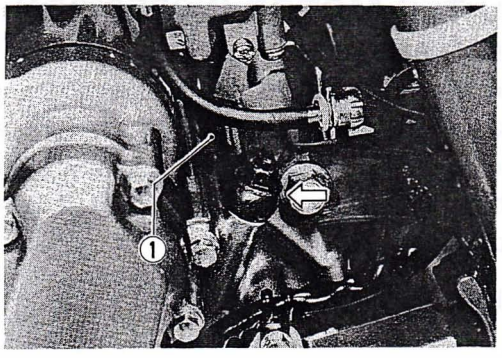
- Remove the exhaust muffler.



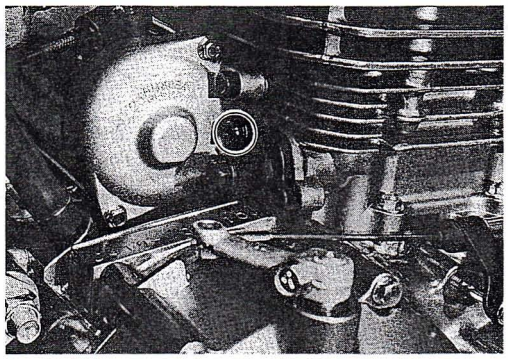
- Remove the engine oil pipe ① after loosening the clutch cable holder bolts.



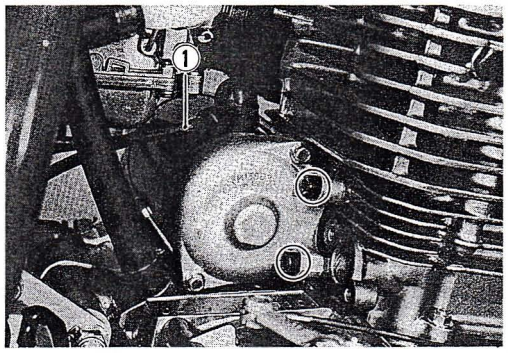




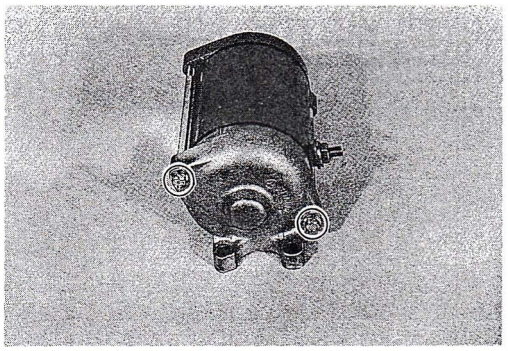
- Remove the cam chain tensioner adjuster.



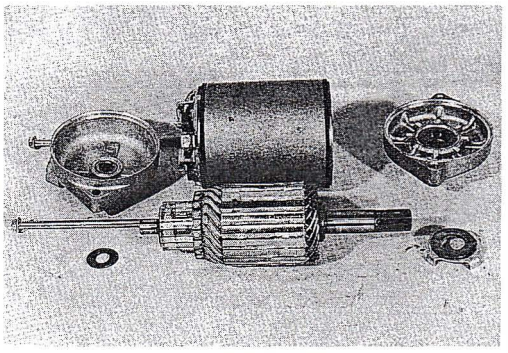
- Disconnect the starter motor lead wire ①.
- Remove the starter motor.



- Remove the bolts.



- Disassemble the starter motor.

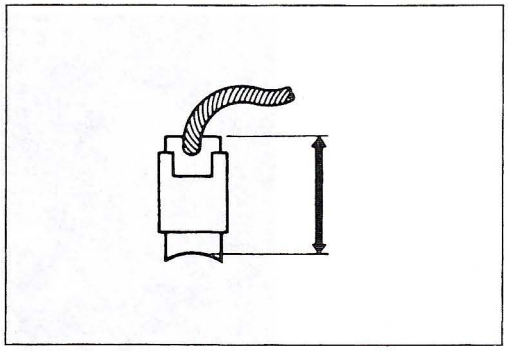


STARTER MOTOR INSPECTION

CARBON BRUSH

When the brushes are worn, the motor will be unable to produce sufficient torque, and the engine will be difficult to turn over. To prevent this, periodically, inspect the length of the brushes, replacing them when they are too short or chipping.

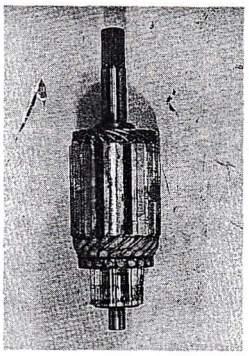
Service Limit: 6.0 mm (0.24 in)

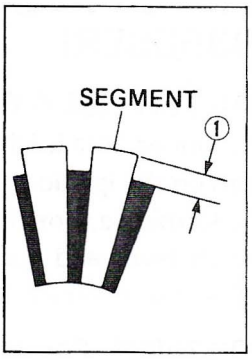


COMMUTATOR

If the commutator surface is dirty, starting performance decreases. Polish the commutator with #400 or similar fine emery paper when it is dirty.
After polishing it, wipe the commutator with a clean dry cloth.
Measure the commutator under-cut ①.

Service Limit: 0.2 mm (0.008 in)

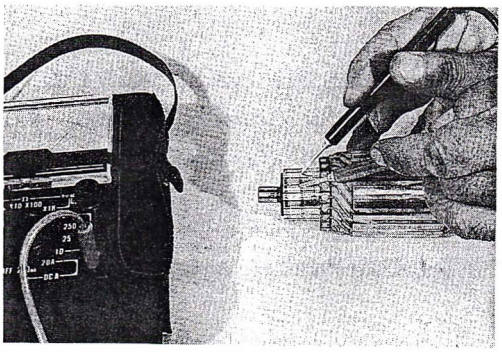




ARMATURE COIL

Using a pocket tester, check the coil for open and ground by placing probe pins on each commutator segment and rotor core (to test for ground) and on any two segments at various places (to test for open), with the brushes lifted off the commutator surface.
If the coil is found to be open-circuited or grounded, replace the armature. Continuous use of a defective armature will cause the starter motor to suddenly fail.

09900-25002: Pocket tester



STARTER MOTOR REASSEMBLY

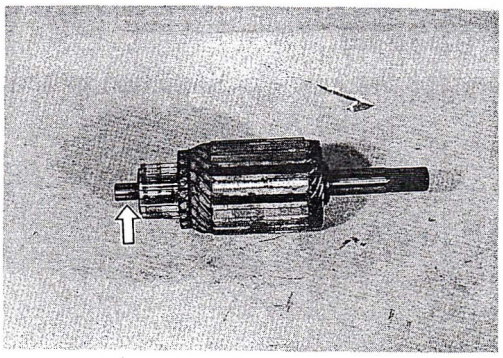
O-RING

CAUTION:
Replace the O-ring with new ones to prevent oil leakage and moisture.

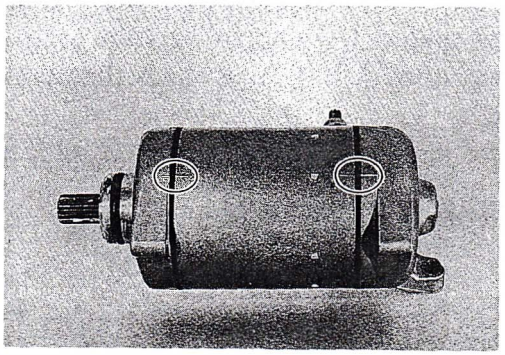
ARMATURE

- Apply a small quantity of moly paste to the armature end.

99000-25140: SUZUKI Moly Paste

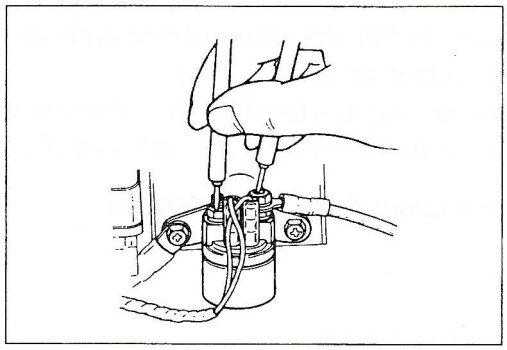


- When installing the motor housing and housing end, align the marks.



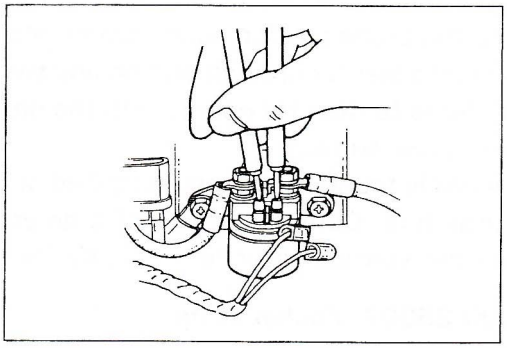
STARTER RELAY AND SIDE-STAND/IGNITION INTERLOCK RELAY (DR350SER)

STARTER RELAY INSPECTION



- Disconnect the lead wire of starter motor at starter relay.
- Turn on the ignition switch, inspect the continuity between the terminals, positive and negative, when squeezing the clutch lever and pushing the starter button.
  If the starter relay is in sound condition, continuity if found.

09900-25002: Pocket tester



- Disconnect the lead wires from the starter relay.
- Check the coil for "open", "ground" and ohmic resistance.
  The coil is in good condition if the resistance is as follows.

Starter relay resistance: 3—7 Ω

09900-25002: Pocket tester

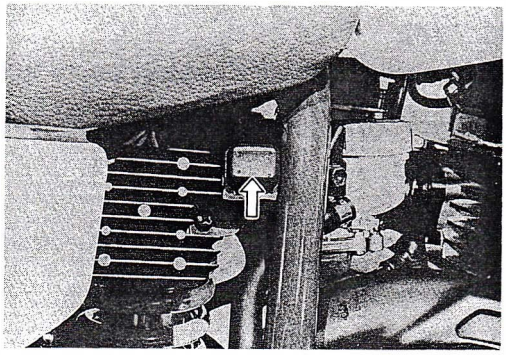
SIDE-STAND SWITCH INSPECTION

	Green	Black/White
ON (Up-right position)	○———	———○
OFF (Down position)		

NOTE:
When inspecting side-stand switch, connect the ⊕ probe of pocket tester to Black/White lead wire and ⊖ probe to Green lead wire.

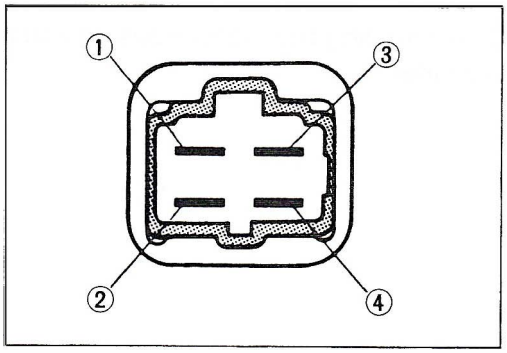
SIDE-STAND/IGNITION INTERLOCK RELAY INSPECTION

Disconnect the side-stand/ignition interlock relay.



First, check the insulation between ① and ② terminals with pocket tester. Then apply 12 volts to ③ and ④ terminals, ⊕ to ③ and ⊖ to ④, and check the continuity between ① and ②.
If there is no continuity, replace it with a new one.

09900-25002: Pocket tester



BATTERY (DR350SER)

SPECIFICATIONS

Type designation	YTX7L-BS
Capacity	12V 21.6 kC (6 Ah)/10HR
Standard electrolyte S.G.	1.320 at 20°C (68°F)

RECHARGING OPERATION

- Using the pocket tester, check the battery voltage. If the voltage reading is less than the 12.0V (DC), recharge the battery with a battery charger.

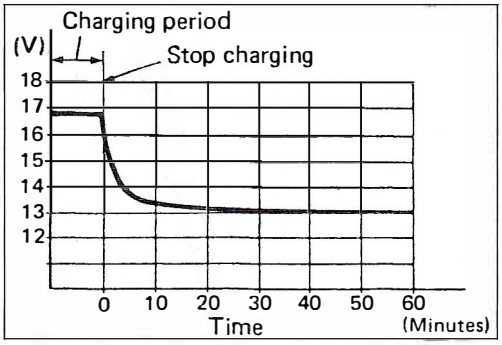
CAUTION:
When recharging the battery, remove the battery from the motorcycle.

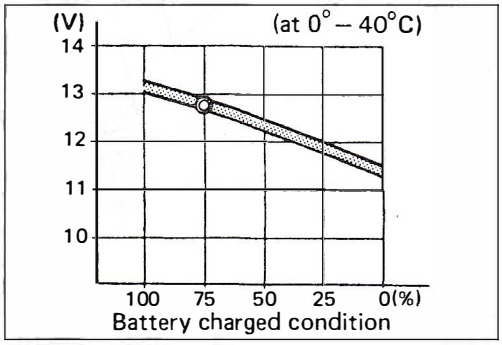
NOTE:
Do not remove the caps on the battery top while recharging.

Recharging time: 0.7A for 5 hours or 3A for one hour

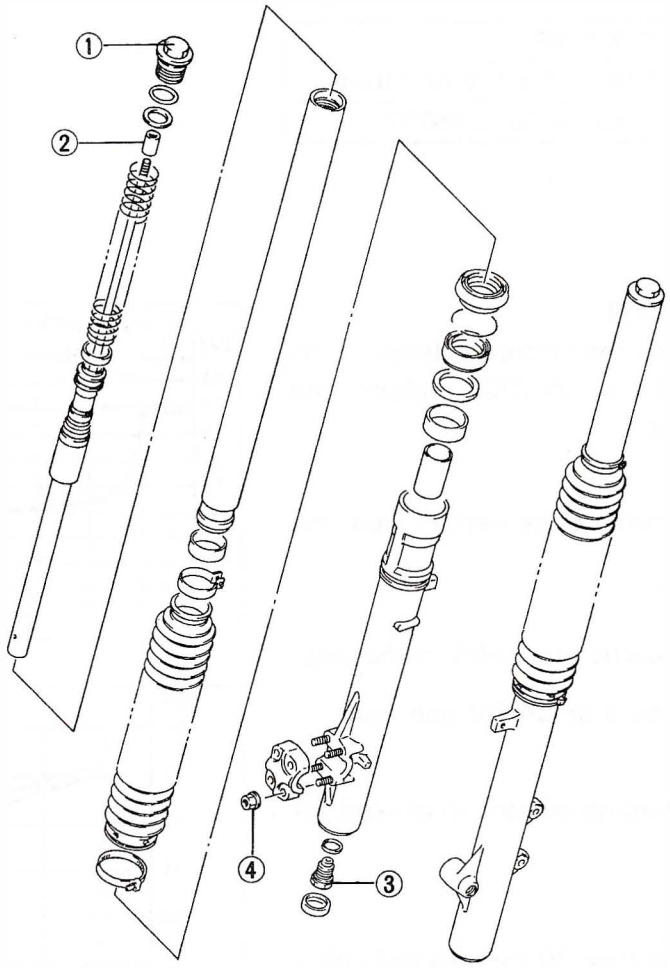
CAUTION:
Be careful not to permit the charging current to exceed 3A at any time.

- After recharging, wait for more than 30 minutes and check the battery voltage with a pocket tester.
- If the battery voltage is less than the 12.5V, recharge the battery again.
- If battery voltage is still less than 12.5V after recharging, replace the battery with a new one.
- When a battery is left for a long term without using, it is subject to discharge. When the motorcycle is not used for more than 1 month (especially during the winter season), check the battery voltage once a month at least.





FRONT FORK (DR350R)



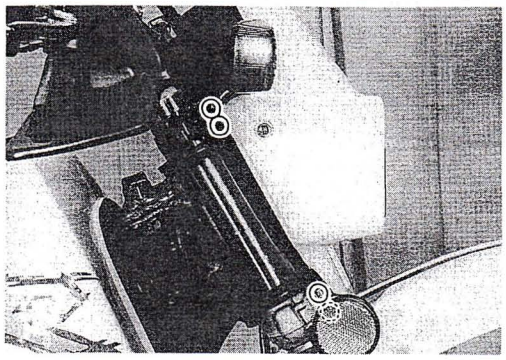
Tightening torque		
ITEM	N·m	kg-m
①	35	3.5
②	20	2.0
③	35	3.5
④	7	0.7

REMOVAL AND DISASSEMBLY

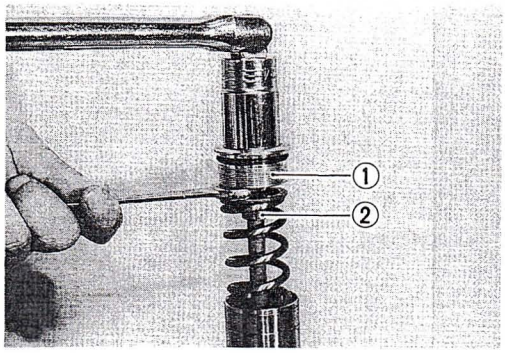
- Remove the front wheel.
- Remove the front brake caliper mounting bolts.
- Remove the front brake hose holder and meter cable guide.

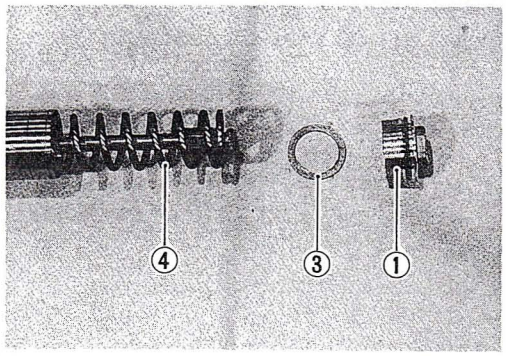
- Remove the front fork by loosening the upper and lower clamp bolts.

NOTE:
Slightly loosen the front fork cap facilitate later disassembly, before loosening the lower clamp bolts.

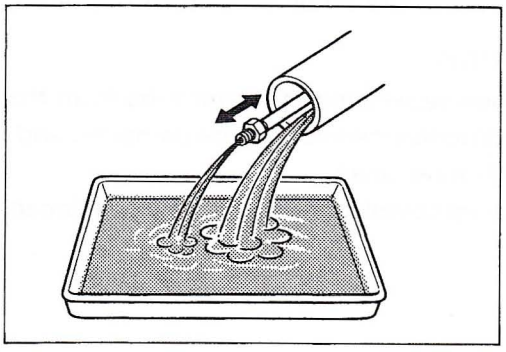


- Remove the front fork cap ① by loosening the lock nut ②.
- Remove the washer ③ and spring ④.

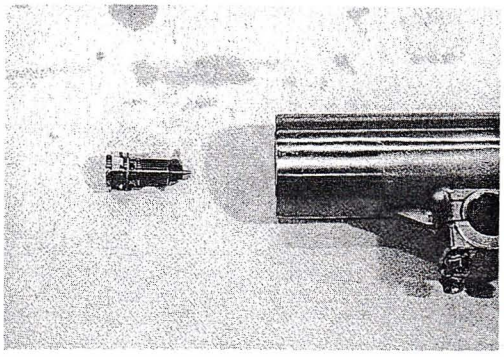




- Invert the fork and stroke the inner tube and inner rod several times to drain fork oil. Hold the fork inverted for a few minutes to drain oil.

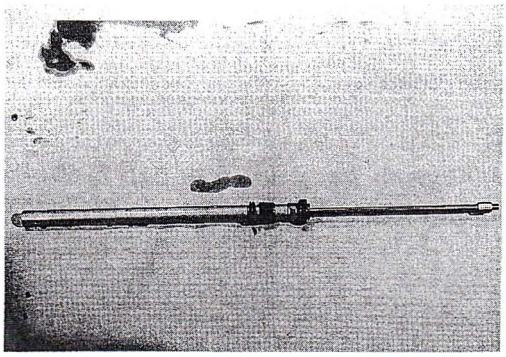


- Remove the damper rod bolt.

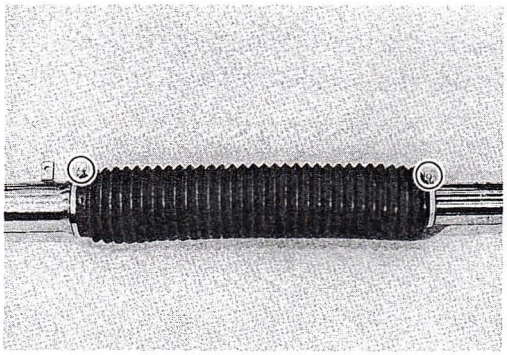


- Remove the inner rod.

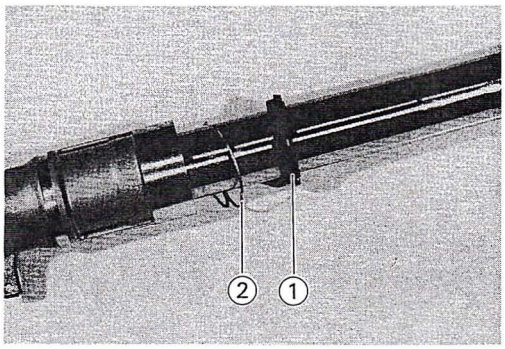
CAUTION:
Do not attempt to disassemble the inner rod. It is not serviceable.



- Remove the boot by loosening the clamp screws.

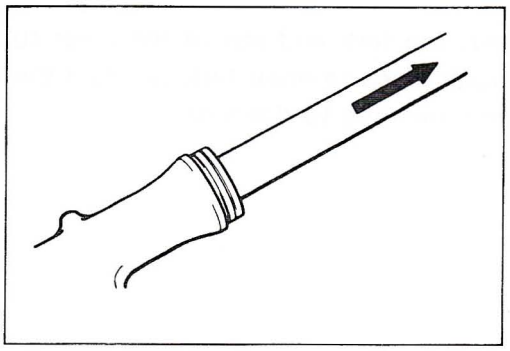


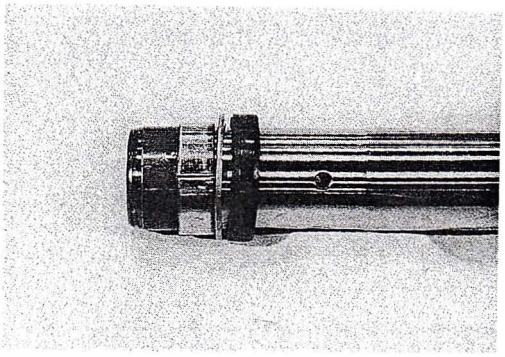
- Remove the dust seal ①.
- Remove the oil seal stopper ring ②.



- Separate the inner tube from the outer tube.

CAUTION:
* **When separating the inner tube from the outer tube, both antifriction metals may be damaged and must be replaced with new ones.**
* **The removed oil seal should be replaced with a new one.**

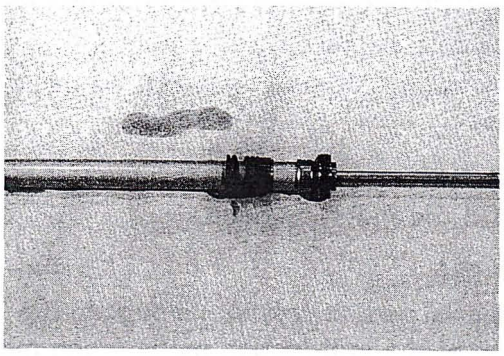




INSPECTION

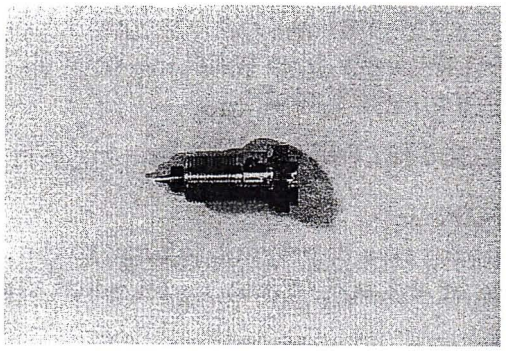
DAMPER ROD RING

Inspect the damper rod ring for wear or damage.



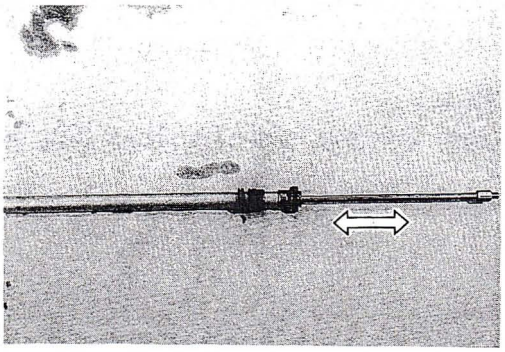
DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

Inspect the damper rod bolt/damping force adjuster for wear or damage.



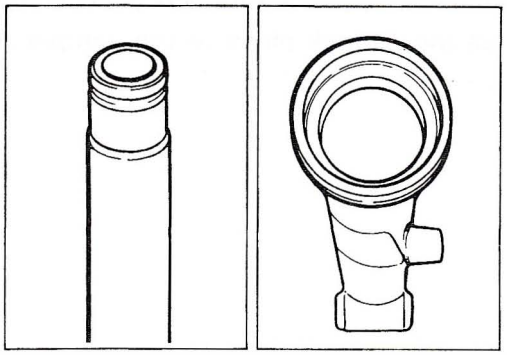
DAMPER ROD

Move the inner rod by hand to inspect it if operating smoothly.



INNER AND OUTER TUBE

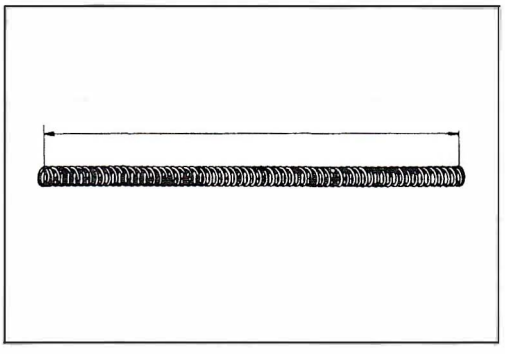
Inspect the inner tube and outer tube sliding surfaces for any scuffing or flaws.



FORK SPRING

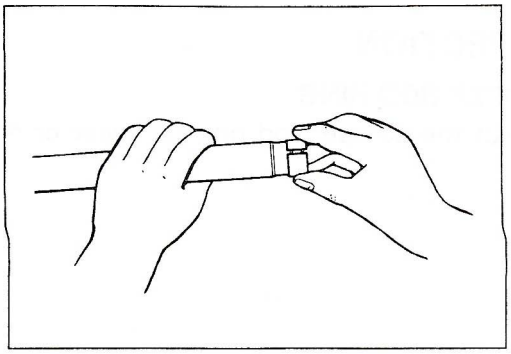
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit: 551 mm (21.7 in)



REASSEMBLY AND REMOUNTING

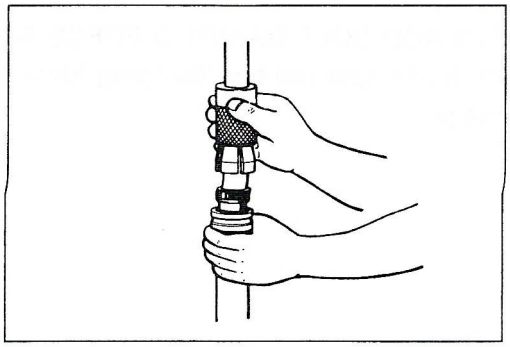
Reassemble and remount the front fork in the reverse order of removal and disassembly, and also carry out the following steps:



INNER TUBE METAL

- Install the metal by hand.

CAUTION:
Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.

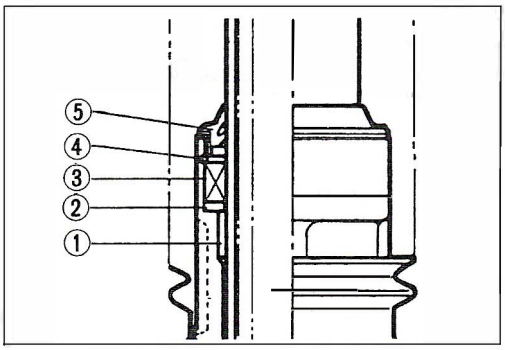


OUTER TUBE METAL, WASHER AND OIL SEAL

- Install the outer tube metal ①, washer ② and oil seal ③ with the special tool.

09940-50113: Front fork oil seal installer

CAUTION:
Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.



OIL SEAL STOPPER RING AND DUST SEAL

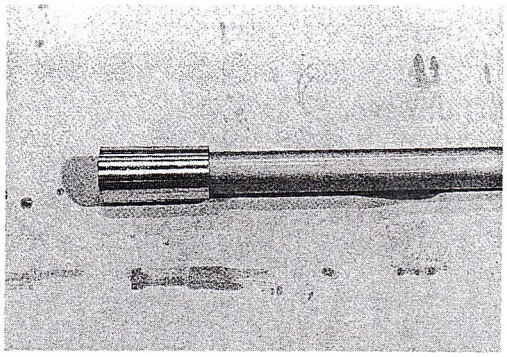
- Install the oil seal stopper ring ④.

CAUTION:
Make sure that the oil seal stopper ring fitted securely.

- Install the dust seal ⑤.

DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

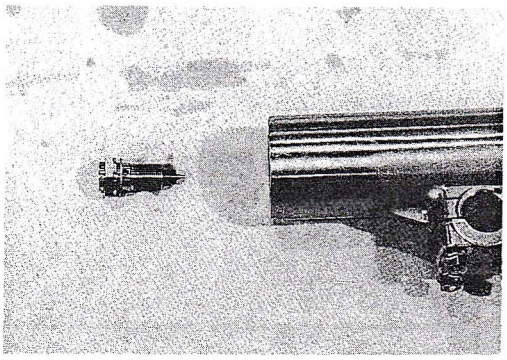
- Install the oil lock piece to the damper rod.



- Tighten the damper rod bolt/damping force adjuster to the specified torque.

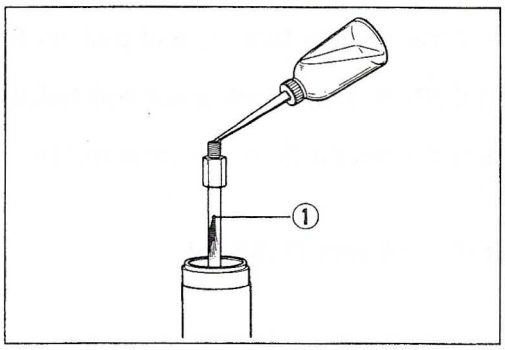
Tightening torque: 35 N·m (3.5 kg-m)

CAUTION:
Use a new gasket to prevent oil leakage.



FORK OIL

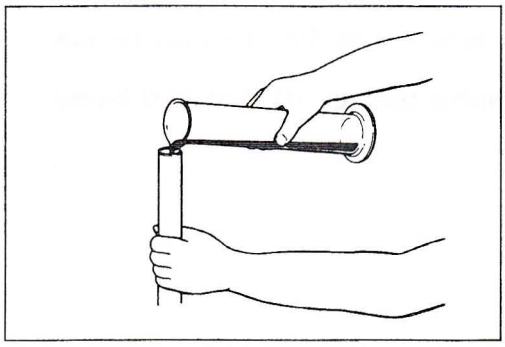
- Place the front fork vertically with full compressed position.
- Pour fork oil until its flow from the hole ① on inner rod as shown in the illustration, and then pour fork oil to the inner tube.
- For the fork oil, be sure to use a front fork oil whose viscosity rating meets specifications below.



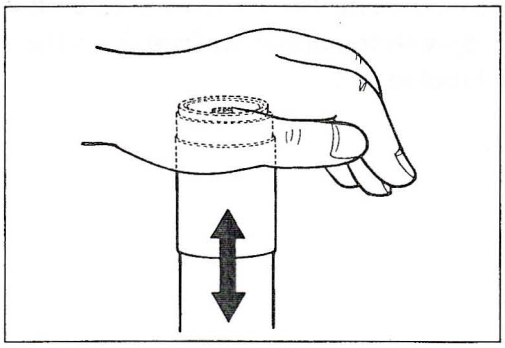
Fork oil type: Fork oil SS-05

99000-99001-SS5: Fork oil SS-05

Capacity (each leg): 541 ml (18.3/19.0 US/Imp oz)



- Cover the inner tube with palm, and move the inner tube up and down 3 or 4 times.

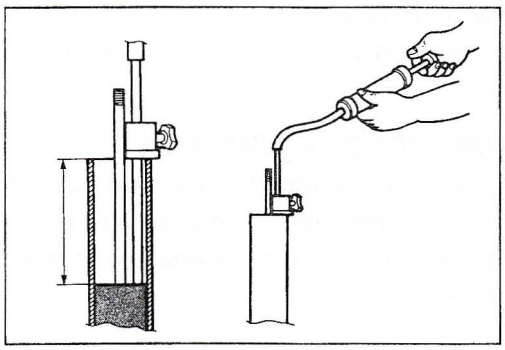


- Hold the front fork vertical and adjust the fork oil level with the special tool.

Oil level: 144 mm (5.7 in)

09943-74111: Fork oil level gauge

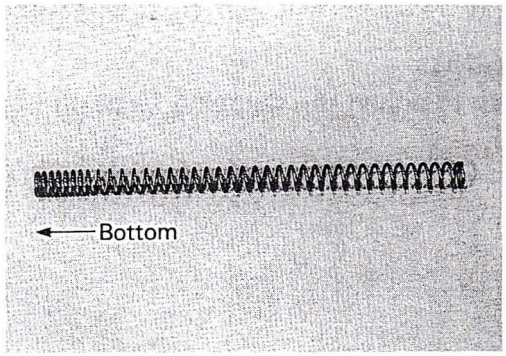
NOTE:
When adjusting the oil level, remove the fork spring and compress the inner tube fully.



FORK SPRING

- Install the fork spring as shown in the photograph.

NOTE:
Close-pitch end of spring should position bottom.



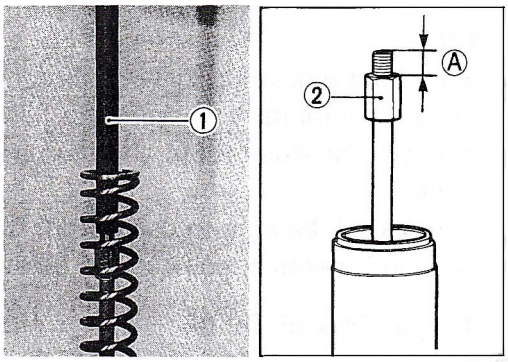
INNER ROD AND LOCK NUT

- Install the special tool ① and pull up the inner rod.

09940-52840: Front fork inner rod holder

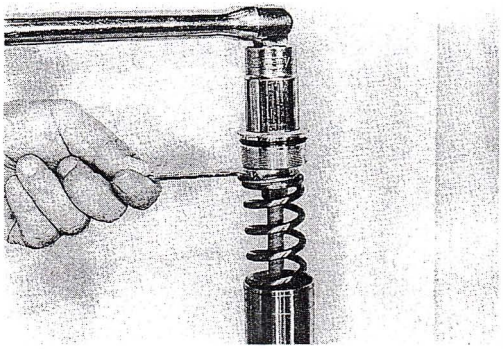
- Adjust the height Ⓐ of the inner rod by adjusting the lock nut ②.

Height Ⓐ: 14 mm (1.57 in)

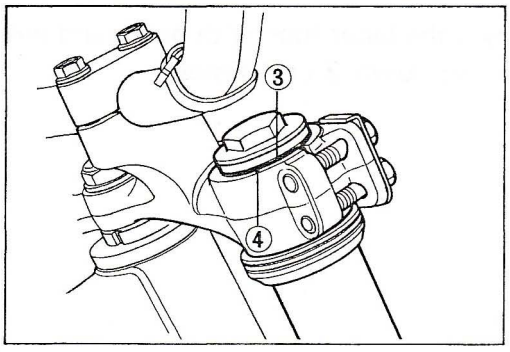


- Tighten the front fork cap with your finger, and tighten the lock nut to the specified torque.

Tightening torque: 20 N·m (2.0 kg-m)



- When installing the front fork assembly, align the upper line ③ with the upper surface ④ of the steering stem upper bracket.



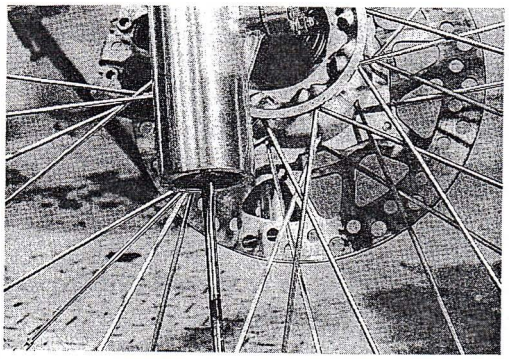
ADJUSTMENT

After installing the front fork, adjust the damping force as follows.

DAMPING FORCE ADJUSTMENT

Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click that is 1-position then turn back and count the specified position as follow.

Standard setting: Turn back 9-positions from fully turned-in position



WARNING:

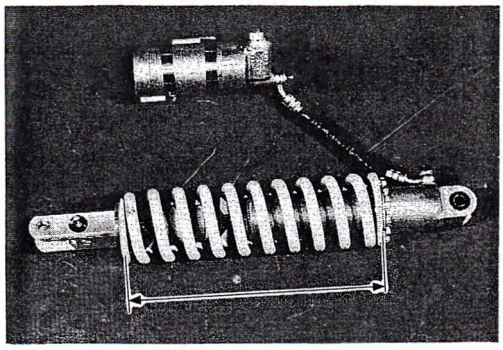
Be sure to adjust the damping force on both front fork legs equally.

REAR SHOCK ABSORBER

Adjust the spring pre-load and damping force as follows.

DR350R

SPRING PRE-LOAD ADJUSTMENT



- Remove the shock absorber.
- Loosen the lock nut and adjust the spring tension of the shock absorber by turning the adjuster ring with the special tool.

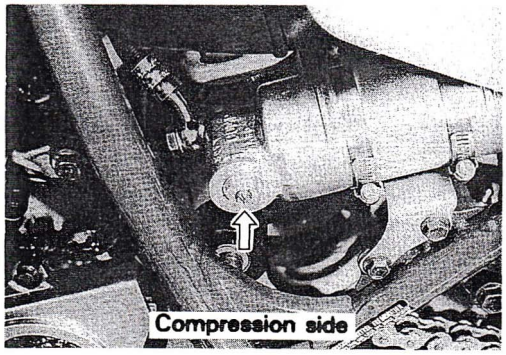
Standard spring pre-set length: 267.3 mm (10.5 in)

09910-60611: Universal clamp wrench

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

DAMPING FORCE ADJUSTMENT

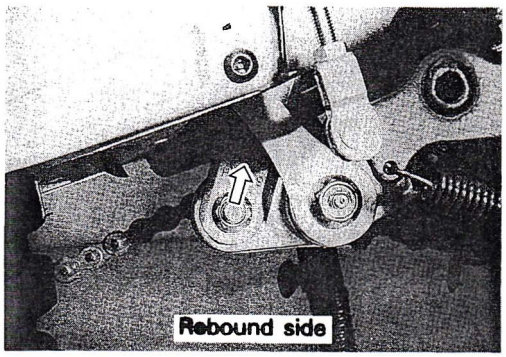
COMPRESSION SIDE



Fully turn the damping force adjuster clockwise. It is at stiffest position and turn it out to standard setting position as follows.

Standard: 1-turn out from fully turned-in position

REBOUND SIDE



Fully turn the damping force adjuster clockwise. It is at stiffest position and turn it out to standard setting position as follows.

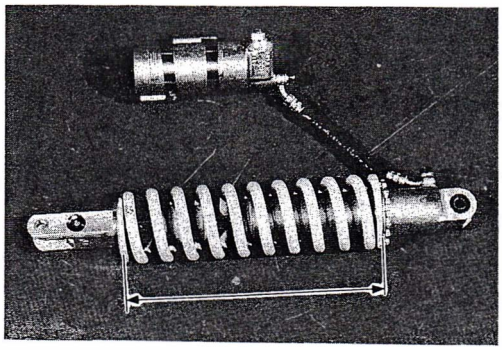
Standard: 2½-turns out from fully turned-in position

REAR SHOCK ABSORBER SETTING

Spring pre-set length	Softtest	272.0 mm (10.7 in)
	STD	267.3 mm (10.5 in)
	Stiffest	259.0 mm (10.2 in)
Damping force	Compression STD	1-turn out
	Rebound STD	2½-turns out

DR350SER

SPRING PRE-LOAD AND DAMPING FORCE ADJUSTMENT



Standard spring pre-set length:
DR350SER: 253.4 mm (10.0 in)

09910-60611: Universal clamp wrench

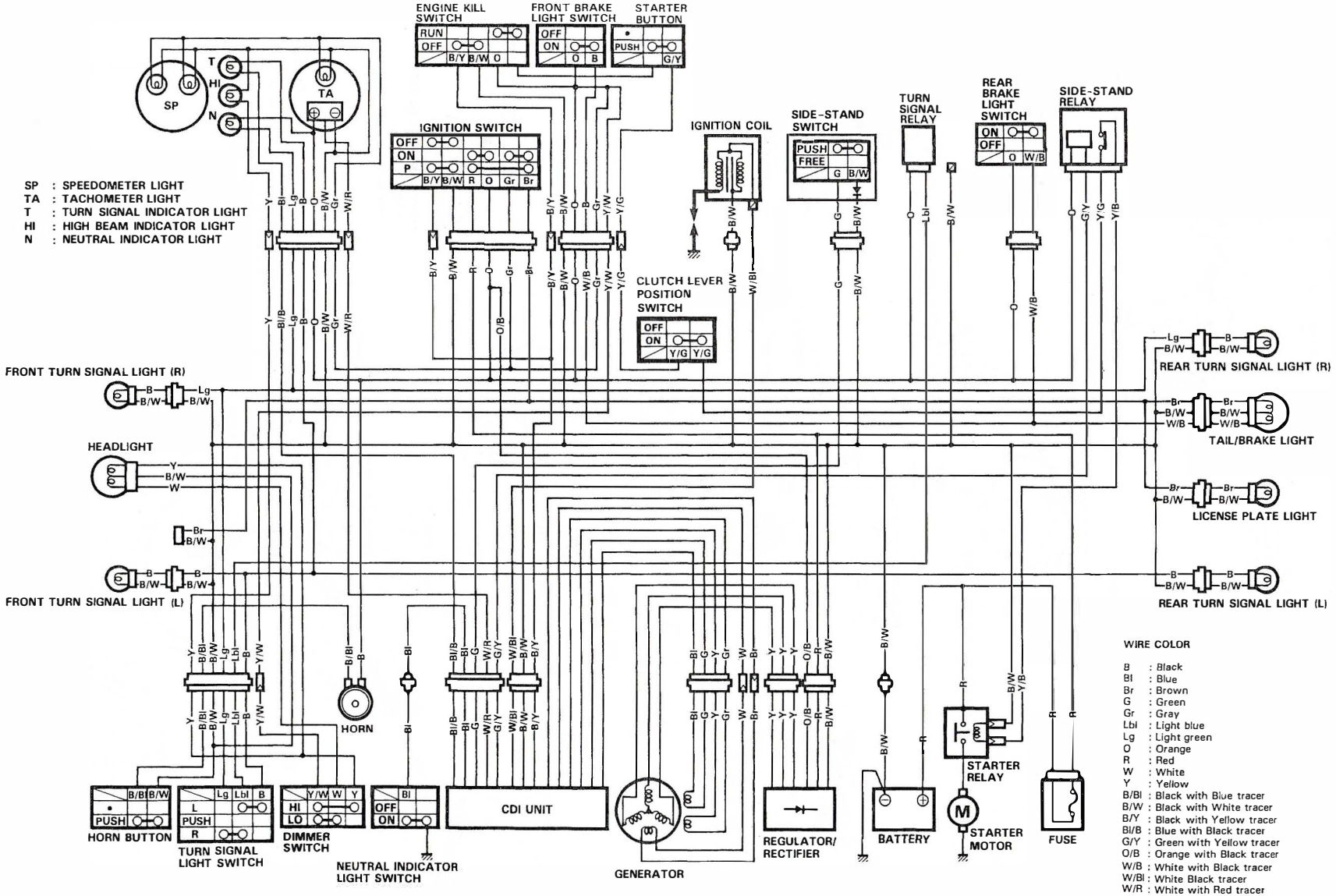
CAUTION:
After adjusting the pre-load, tighten the spring adjuster lock ring securely.

SETTING TABLE
Spring length
STD : 253.4 mm (10.0 in)
Softer : 258.4 mm (10.2 in)
Stiffer : 235.9 mm (9.3 in)

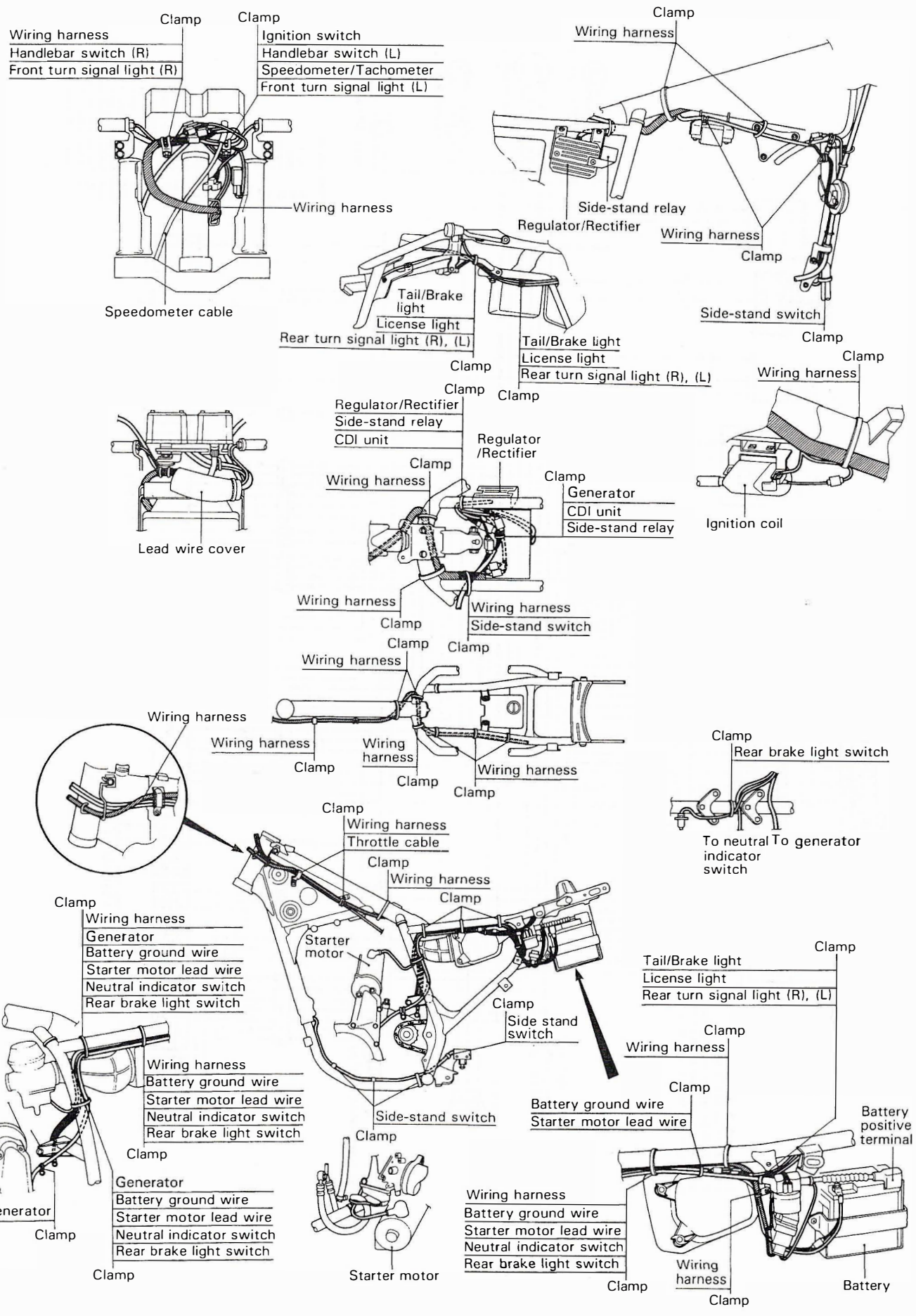
Damping force adjuster
Compression : 3/4 turned-out position from the fully turned-in position.

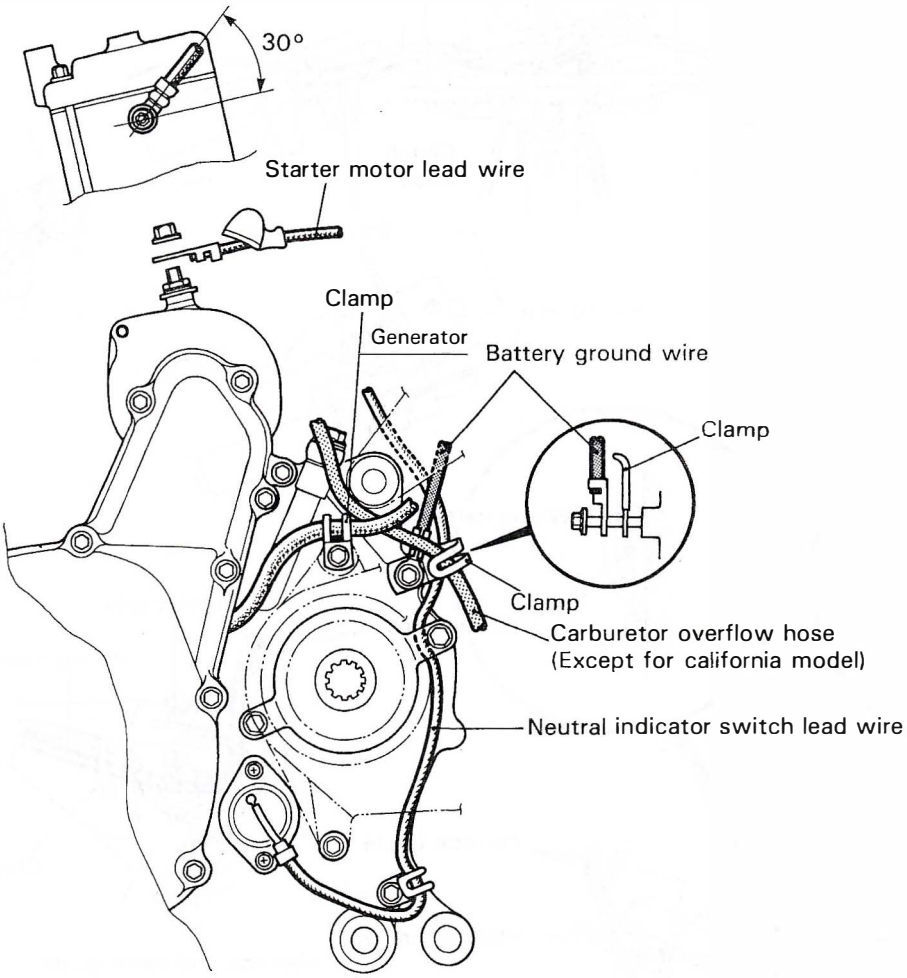
NOTE:
Fully turned-in position provides stiffest damping force.

WIRING DIAGRAM (DR350SER)

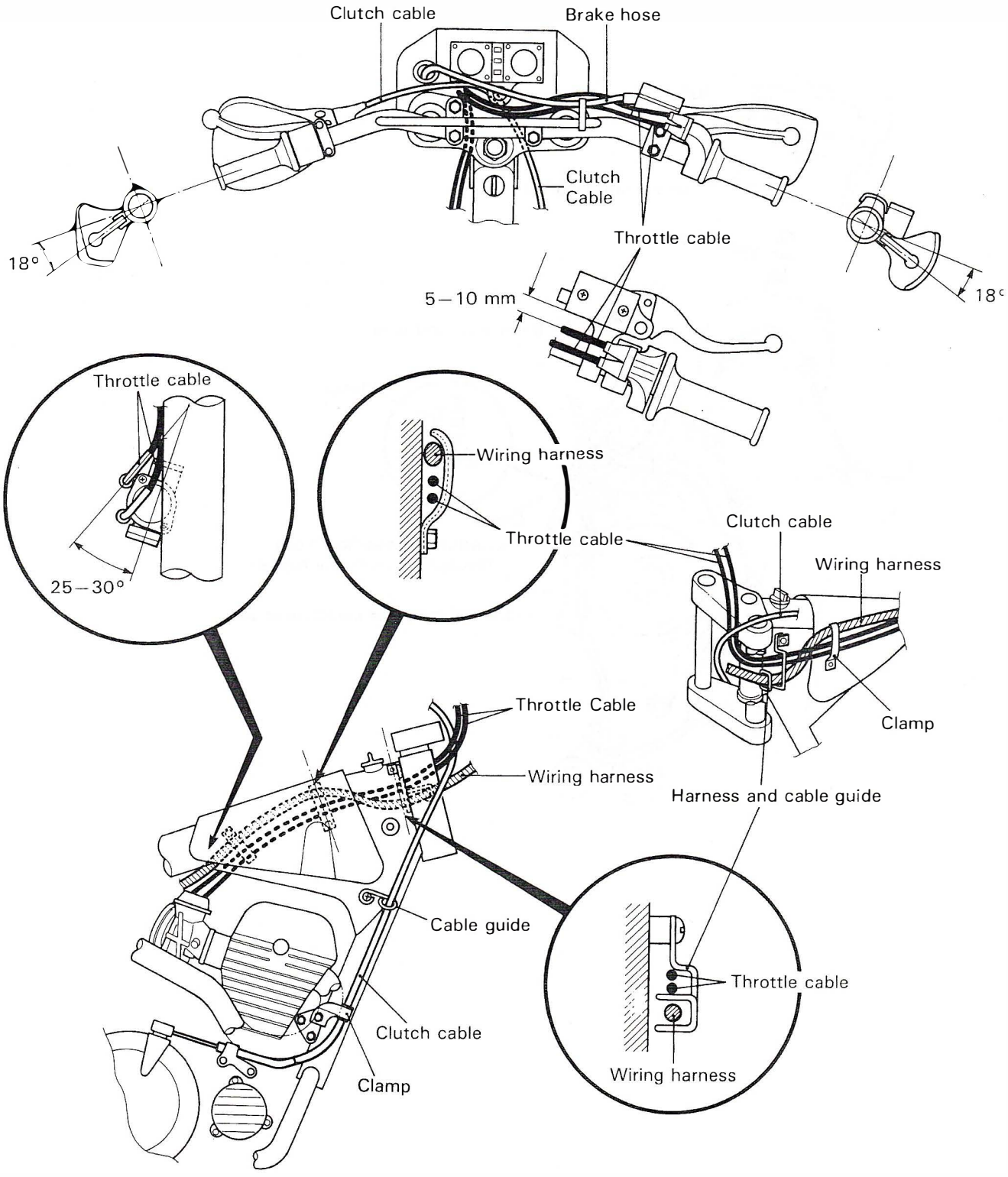


WIRE ROUTING (DR350SER)



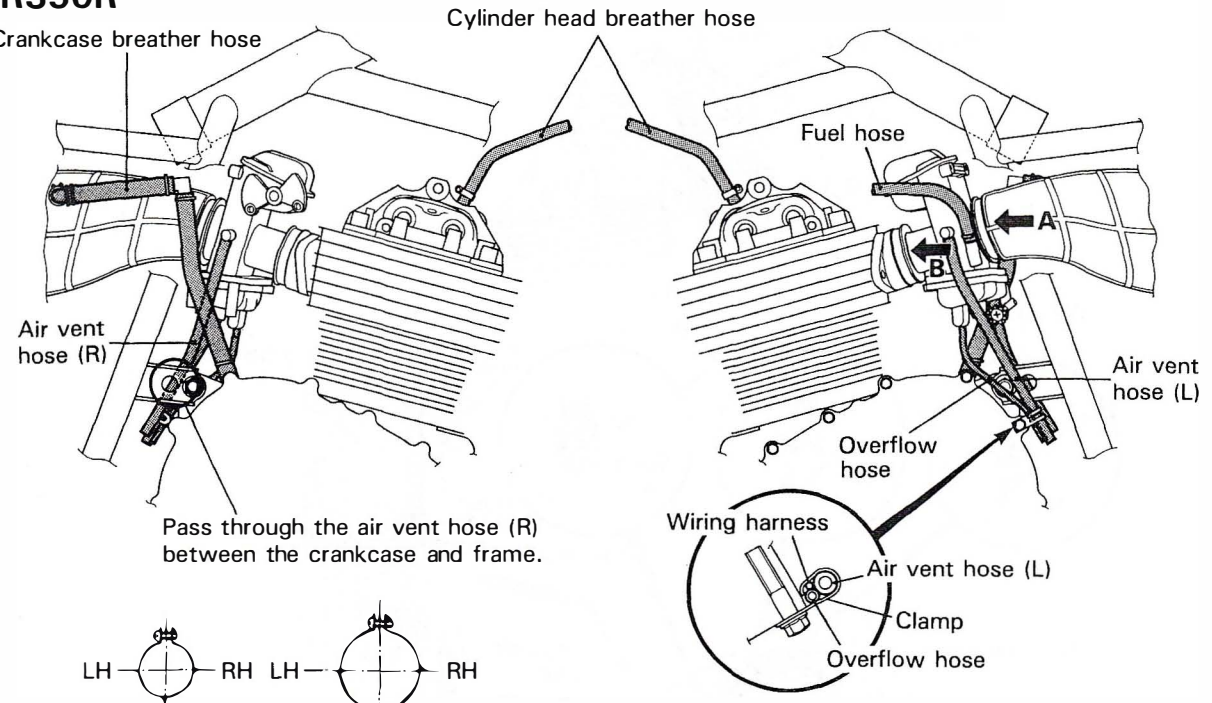

30°
Starter motor lead wire
Clamp
Generator
Battery ground wire
Clamp
Clamp
Carburetor overflow hose
(Except for california model)
Neutral indicator switch lead wire

CABLE ROUTING (DR350SER)



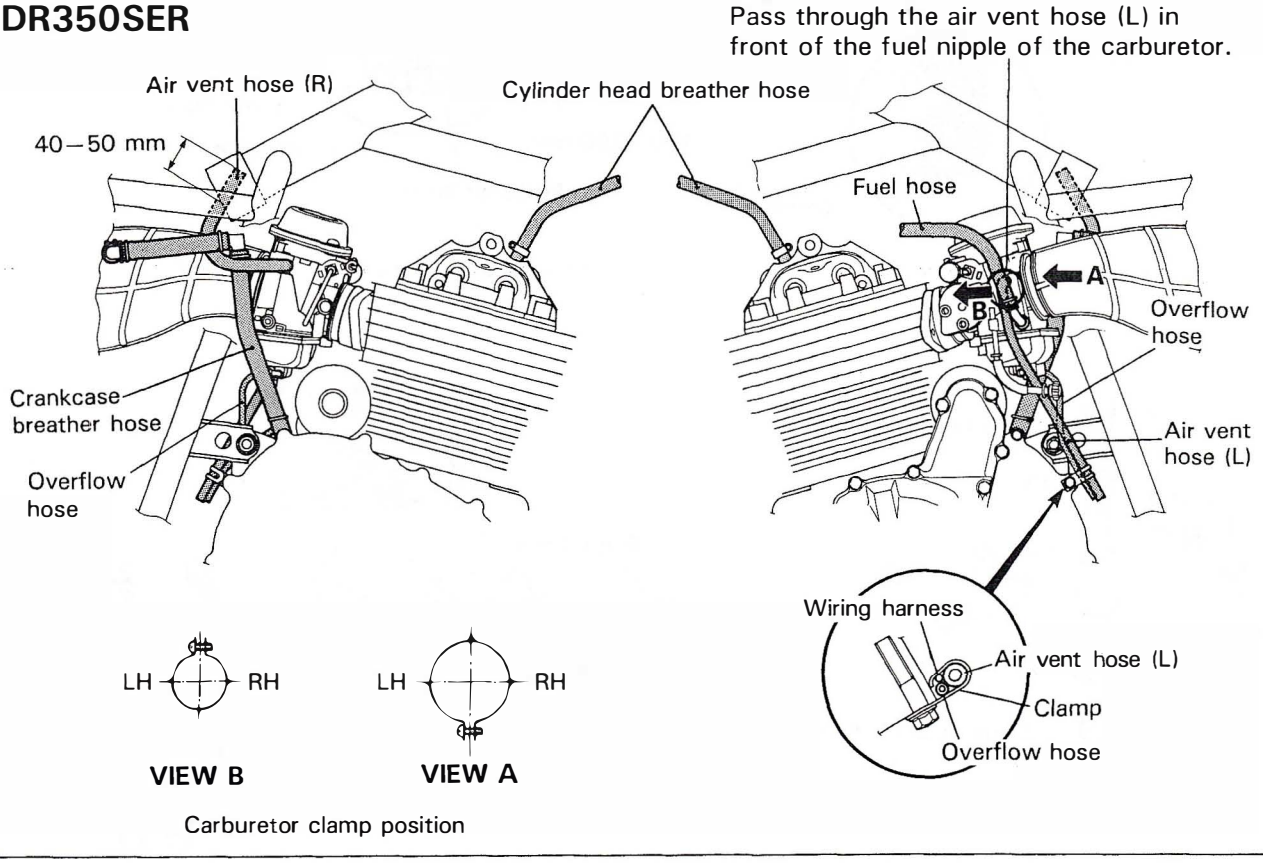
CARBURETOR HOSE ROUTING

DR350R



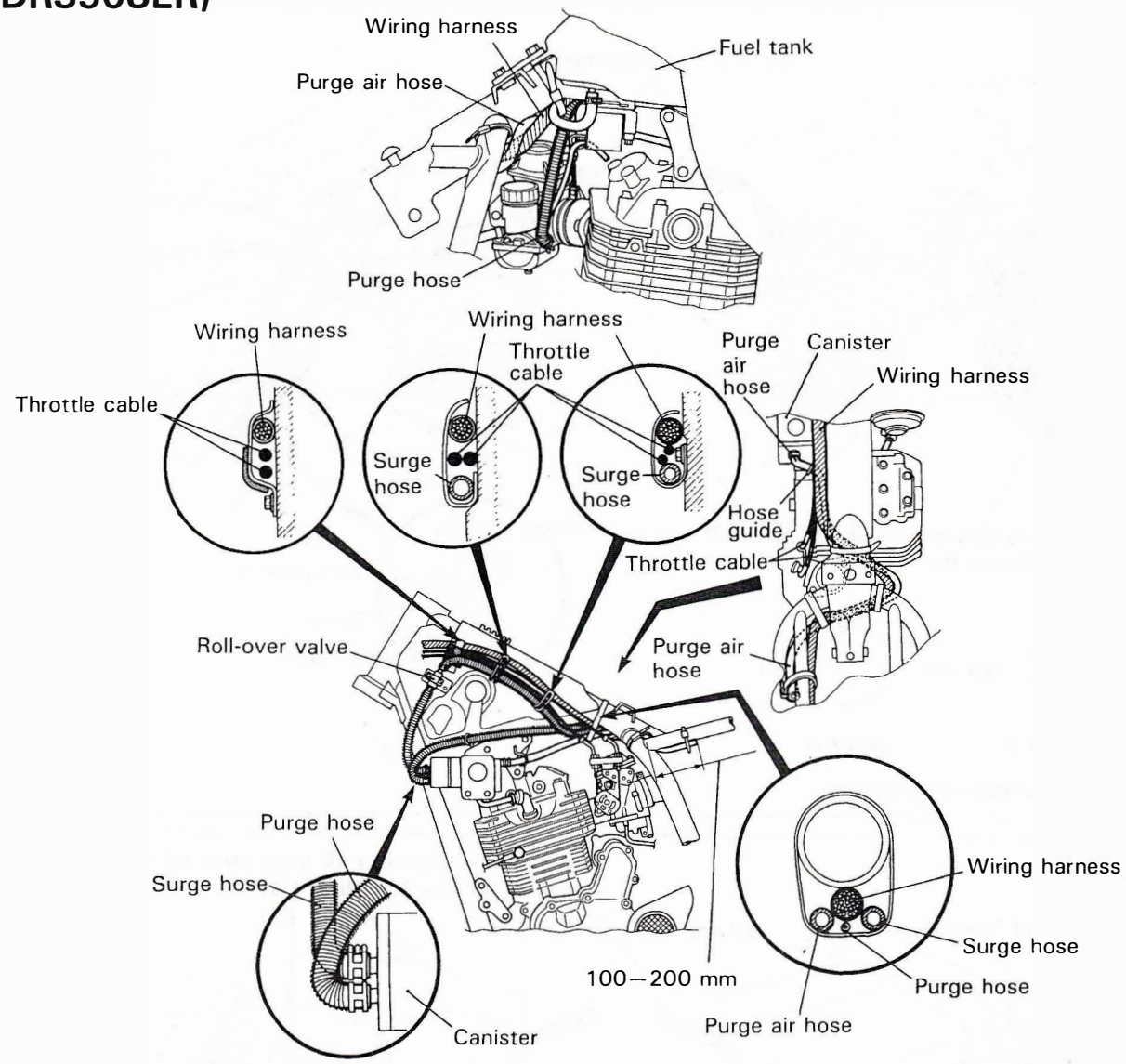
Carburetor clamp position

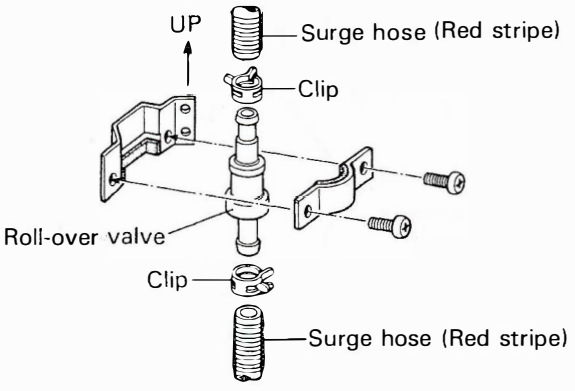
DR350SER

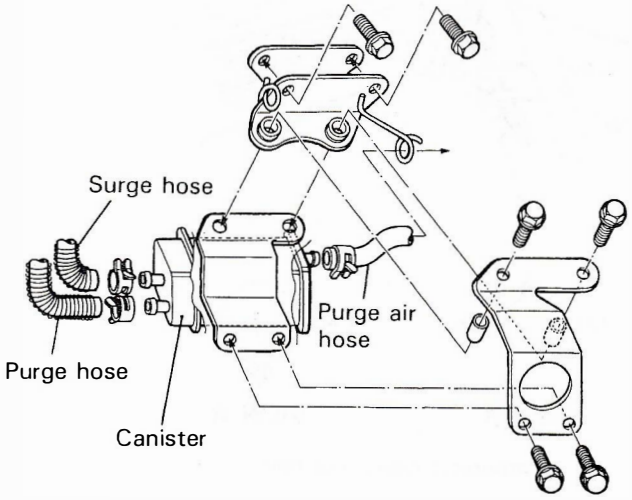


Carburetor clamp position

CANISTER HOSE ROUTING (California model only) (DR350SER)







DR350S/SES ('95-MODEL)

FOREWORD

This section describes service data and servicing procedures which differ from those of the DR350R/SER ('94-MODEL).

NOTE:
Please refer to the sections 1 through 13 for details which are not given in this section.

CONTENTS

SPECIFICATIONS

DR350S

DIMENSIONS AND DRY MASS

Overall length	2 165 mm (85.2 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 450 mm (57.1 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.933 (44/15)
Drive chain	DID520VC5, 110 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, compression damping force 12-way adjustable .... E01, 03 Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force adjustable E94
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression and rebound damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	541 ml (18.3/19.0 US/Imp. oz)

DR350SES

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in) E18, 22
	2 235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1 245 mm (49.0 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	890 mm (35.0 in)
Dry mass	130 kg (286 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	BST33, single
Air cleaner	Polyurethane foam element
Starter system	Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.733 (41/15)
Drive chain	DID520VC5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	255 mm (10.0 in)
Caster	62° 30'
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Battery	12V 21.6 kC (6Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 60/55W
Position light	12V 4W
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	8.0 L (2.1/1.8 US/Imp gal). . . E33
	9.0 L (2.4/2.0 US/Imp gal). . . Others
Reserve	2.0 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
with filter change	1 900 ml (2.0/1.7 US/Imp qt)
overhaul	2 100 ml (2.2/1.8 US/Imp qt)
Front fork oil (each leg)	569 ml (19.2/20.0 US/Imp oz)

SERVICE DATA

DR350S

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)		0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)		79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.		78.880 (3.1055)
Cylinder distortion	———		0.05 (0.002)
Piston ring free end gap	1st R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		—
Final reduction ratio		2.933 (44/15)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	D.I.D. 520VC5	—
		Links	110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	TM33 SS
Bore size	33 mm
I.D. No	14D0
Idle r/min.	1 400 ± 100 r/min
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet (M.J.)	#127.5
Main air jet (M.A.J.)	0.7 mm
Jet needle (J.N.)	5FP96-3rd
Needle jet (N.J.)	P-8
Cut-away (C.A.)	1.5
Pilot jet (P.J.)	#37.5
By-pass (B.P.)	0.8 mm
Pilot outlet (P.O.)	0.6 mm
Valve seat (V.S.)	1.8 mm
Starter jet (G.S.)	#50
Pilot screw (P.S.)	1 1/8 turn back
Pilot air jet (P.A.J.)	1.1 mm
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND: U27ETR NGK: CR9EK	
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	350—650 Ω	W—Br
	Pick-up No.1	350—700 Ω	G—Bl
	Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)	More than 40 V (AC) at 5 000 r/min.		Y—B
Regulated voltage	12—14 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		—	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51M	—
	Rear	110/100-18 64M	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	551 (21.7)	E-01,03
	———	608 (23.9)	E-94
Front fork oil level	144 (5.67)	———	E-01,03
	145 (5.71)	———	E-94
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	267.3 (10.5)	———	E-01,03
	268.2 (10.6)	———	E-94
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		E-01,94
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil SS05		E-01,03
	Fork oil #10		E-94
Front fork oil capacity (each leg)	541 ml (18.3/19.0 US/Imp oz)		E-01,03
	586 ml (19.8/20.6 US/Imp oz)		E-94
Brake fluid type	DOT 4		

DR350SES

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)		0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)		79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.		78.880 (3.1055)
Cylinder distortion	———		0.05 (0.002)
Piston ring free end gap	1st R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		—
Final reduction ratio		2.733 (41/15)		—
Gear ratios	Low	2.416 (29/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	D.I.D. 520VC5	—
		Links	108	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM		SPECIFICATION		
		E-02,04,21,34,94	E-03	E-33
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		14EK	14EP	14ES
Idle r/min.		1 500 ± 100 r/min.	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	#135	#127.5	←
Main air jet	(M.A.J.)	0.6 mm	←	←
Jet needle	(J.N.)	5CD56-3rd	5CD16	←
Needle jet	(N.J.)	O-3	O-6	←
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#42.5	#37.5	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←
Pilot outlet	(P.O.)	0.8 mm	1.0 mm	←
Valve seat	(V.S.)	1.5 mm	←	←
Starter jet	(G.S.)	#35	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION		
		E-22,24	E-28	E-18
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		14EM	14ER	14EL
Idle r/min.		1 500 ± 100 r/min.	←	1 400 ± 50 r/min.
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	#127.5	←	#132.5
Main air jet	(M.A.J.)	0.6 mm	←	←
Jet needle	(J.N.)	5CD56-4th	←	←
Needle jet	(N.J.)	O-5	←	O-7
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#37.5	←	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←
Pilot outlet	(P.O.)	0.8 mm	←	0.9 mm
Valve seat	(V.S.)	1.5 mm	←	←
Starter jet	(G.S.)	#35	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET (1¾ turns back)	PRE-SET (2.0 turns back)
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0:04 in)	←	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND: U27ETR NGK: CR9EK	
		Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance		Charging	0.1—1.5 Ω	Y—Y
		Power source	350—650 Ω	W—Br
		Pick-up No.1	350—700 Ω	G—Bl
		Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)		More than 60 V (AC) at 5 000 r/min.		Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Magneto Max. output		Approx. 125 W at 5 000 r/min.		
Starter motor brush length		Limit : 6 (0.24)		
Commutator under-cut		Limit : 0.2 (0.008)		
Starter relay resistance		3—7 Ω		
Battery	Type designation	YTX7L-BS		
	Capacity	12V 21.6 kC (6Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		20 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7 x 2	←
Turn signal indicator light		1.7	←
High beam indicator light		1.7	←
Neutral indicator light		1.7	←
License light		5	←

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	—
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	27.000—27.050 (1.0630—1.0650)	—
	Rear	30.230—30.280 (1.1902—1.1921)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	30.160—30.180 (1.1874—1.1882)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size & type	Front	80/100-21 51P Dunlop D601J (E-03,28,33) Dunlop K560J (others)	—
	Rear	110/90-18 61P Dunlop D601 (E-03,28,33) Dunlop K560J (others)	—
Tire tread depth	Front	—	3.0 (0.12)
	Rear	—	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	602 (23.7)	
Front fork oil level	152 (6.0)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	253.4 (10.0)	———	
Rear wheel travel	255 (10.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 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-03,33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	8.0 L (2.1/1.8 US/Imp gal)		E-33
	9.0 L (2.4/2.0 US/Imp gal)		For the others
reserve	2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type	DOT 4		

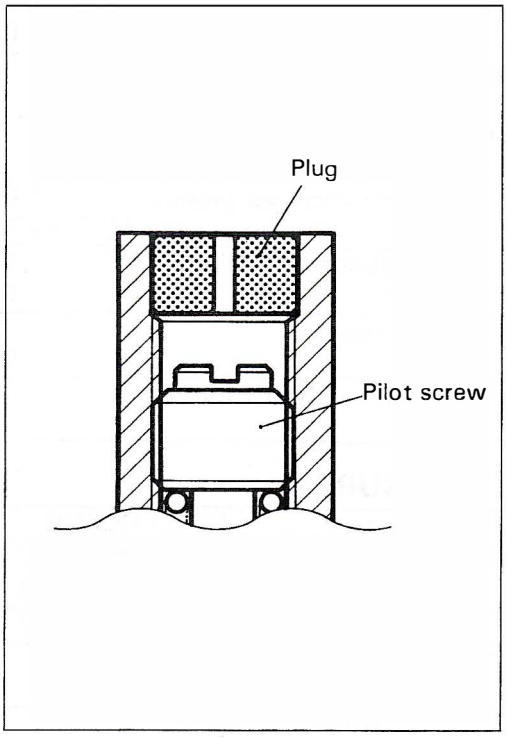
CARBURETOR

PILOT SCREW REMOVAL AND INSTALLATION

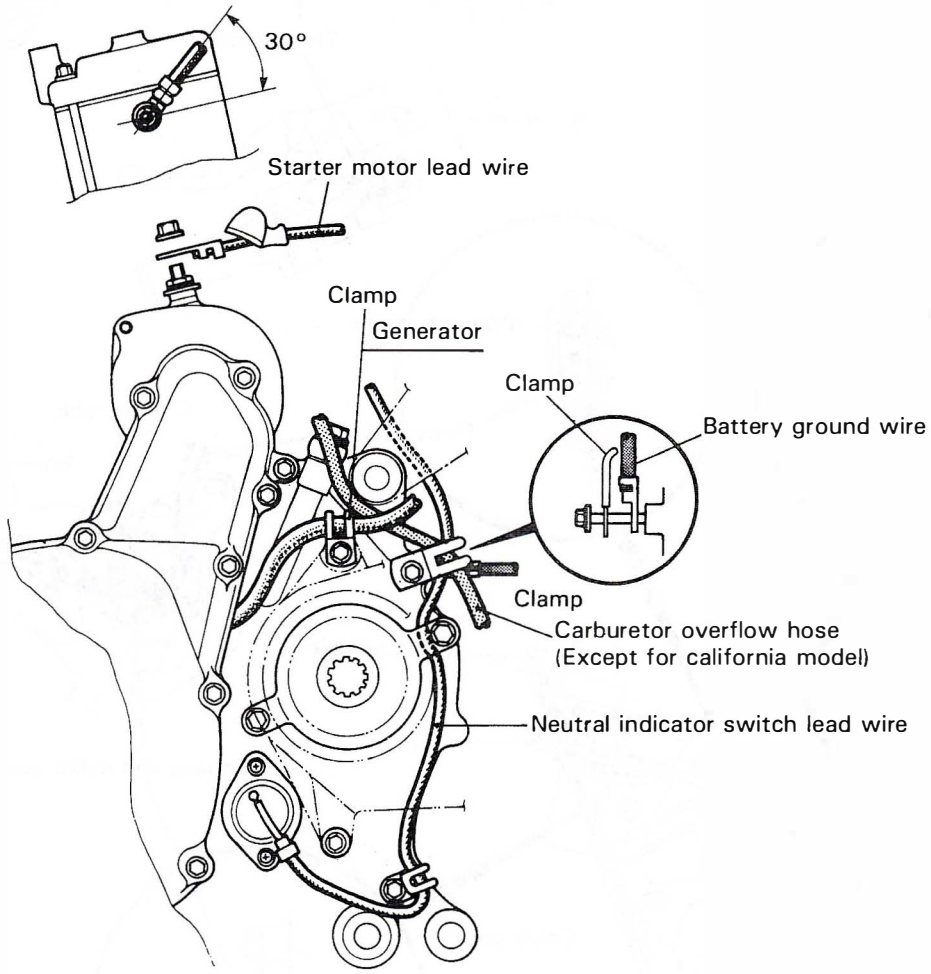
- Remove the plug by carefully punching a hole in it using an awl or suitable tool.
- Before removing the pilot screw, determine the setting by slowly turning it clockwise and count the number of turns required to lightly seat the screw. Turn the screw counterclockwise to remove it.

NOTE:
This counted number is important when reassembling pilot screw to original position.

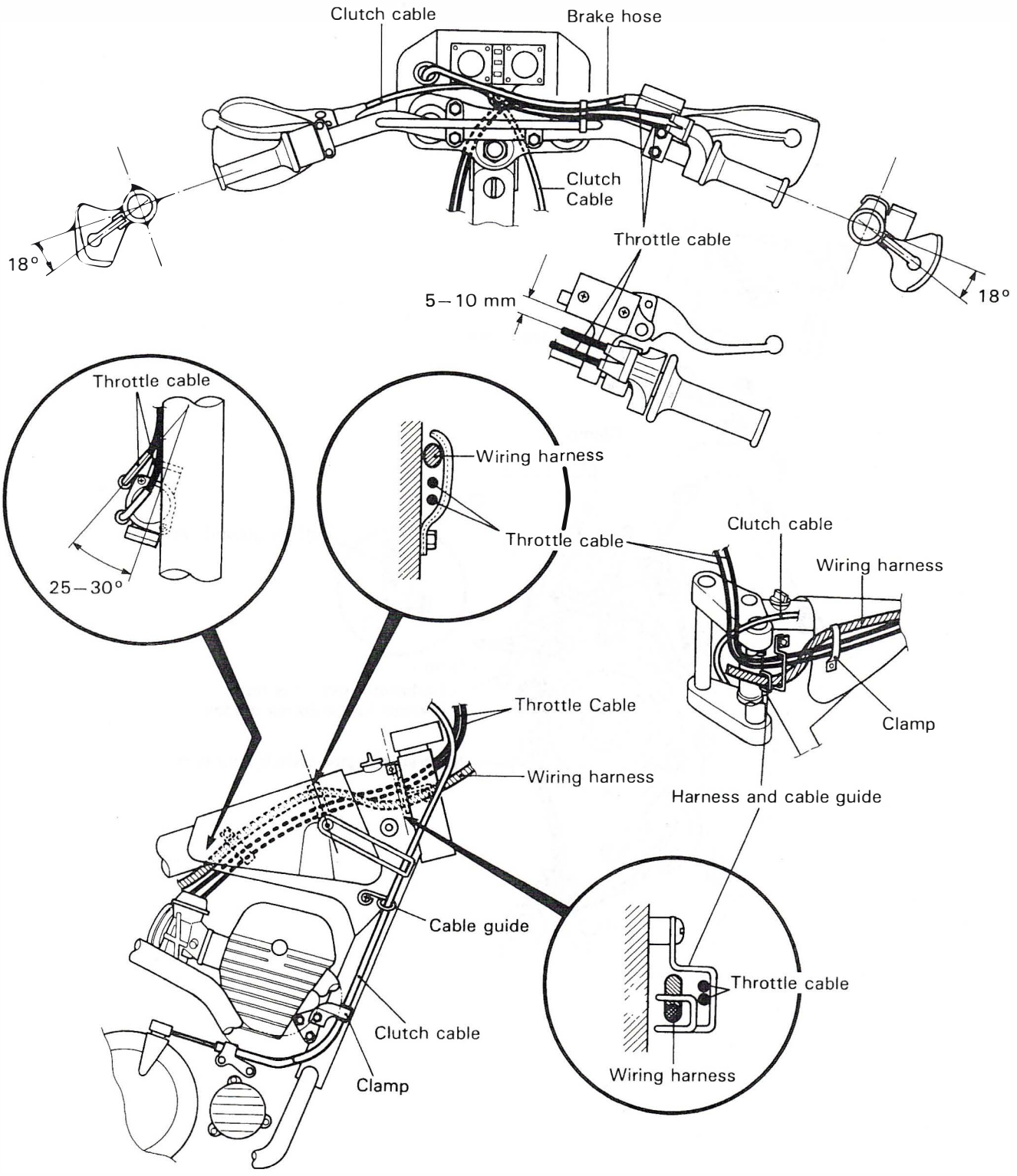
- When installing the pilot screw, turn it in fully but not tightly. From that position turn it out the same number as counted during removal.
- Install the new plug in the pilot screw hole.



WIRE ROUTING



CABLE ROUTING



DR350T/SET ('96-MODEL)

CONTENTS

SPECIFICATIONS

DR350T

DIMENSIONS AND DRY MASS

Overall length	2 165 mm (85.2 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 450 mm (57.1 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05–0.10 mm (0.002–0.004 in)
EX	0.17–0.22 mm (0.007–0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm^3 (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	*2.500 (30/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.933 (44/15)
Drive chain	DID520VC5, 110 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, compression damping force 12-way adjustable .... E01, 03 Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force adjustable E94
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression and rebound damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	541 ml (18.3/19.0 US/Imp. oz) ... E-01, 03 586 ml (19.8/20.6 US/Imp. oz) ... E-94

Asterisk mark (*) indicates the New "T" model specification.

DR350SET

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in) E18, 22
	2 235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1 245 mm (49.0 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	890 mm (35.0 in)
Dry mass	130 kg (286 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	BST33, single
Air cleaner	Polyurethane foam element
Starter system	Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	*2.500 (30/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.733 (41/15)
Drive chain	DID520VC5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	255 mm (10.0 in)
Caster	62° 30′
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Battery	12V 21.6 kC (6Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 60/55W
Position light	12V 4W ... Except for E-03, 24, 28, 33
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	8.0 L (2.1/1.8 US/Imp gal) . . . E33
	9.0 L (2.4/2.0 US/Imp gal) . . . Others
Reserve	2.0 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
with filter change	1 900 ml (2.0/1.7 US/Imp qt)
overhaul	2 100 ml (2.2/1.8 US/Imp qt)
Front fork oil (each leg)	569 ml (19.2/20.0 US/Imp oz)

Asterisk mark (*) indicates the New "T" model specification.

SERVICE DATA

DR350T

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	——
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)	15.2 (0.60)
Driven plate distortion	——	0.10 (0.004)
Clutch spring free length	——	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		——
Final reduction ratio		2.933 (44/15)		——
Gear ratios	Low	*2.500 (30/12)		——
	2nd	1.733 (26/15)		——
	3rd	1.333 (24/18)		——
	4th	1.111 (20/18)		——
	5th	0.952 (20/21)		——
	Top	0.826 (19/23)		——
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	——
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	——
Drive chain		Type	D.I.D. 520VC5	——
		Links	110	——
		20-pitch length	——	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		——

Asterisk mark (*) indicates the New "T" model specification.

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	TM33 SS
Bore size	33 mm
I.D. No	14D0
Idle r/min.	1 400 ± 100 r/min
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet (M.J.)	#127.5
Jet needle (J.N.)	5FP96-3rd
Needle jet (N.J.)	P-8
Pilot jet (P.J.)	#37.5
Starter jet (G.S.)	#50
Pilot screw (P.S.)	1 ⅛ turn back
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND: U27ETR NGK: CR9EK	
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap—Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	350—650 Ω	W—Br
	Pick-up No.1	350—700 Ω	G—Bl
	Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)	More than 40 V (AC) at 5 000 r/min.		Y—B
Regulated voltage	12—14 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		—	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	80/100-21 51M	—
	Rear	110/100-18 64M	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	551 (21.7)	E-01,03
	———	608 (23.9)	E-94
Front fork oil level	144 (5.67)	———	E-01,03
	145 (5.71)	———	E-94
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	267.3 (10.5)	———	E-01,03
	268.2 (10.6)	———	E-94
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		E-01,94
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE, SF or SG		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil SS05		E-01,03
	Fork oil # 10		E-94
Front fork oil capacity (each leg)	541 ml (18.3/19.0 US/Imp oz)		E-01,03
	586 ml (19.8/20.6 US/Imp oz)		E-94
Brake fluid type	DOT 4		

DR350SET

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure (Automatic-decomp. actuated)	Approx. 1 100 kPa (11 kg/cm², 156 psi)			———
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		———
Final reduction ratio	E-02,04, 22,34	*2.866 (43/15)		———
	The others	2.733 (41/15)		———
Gear ratios	Low	*2.500 (30/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	D.I.D. 520VC5	———
		Links	108	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

Asterisk mark (*) indicates the New "T" model specifications.

CARBURETOR

ITEM		SPECIFICATION		
		E-02,04,34	E-03	E-33
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		*14D9	14EP	14ES
Idle r/min.		1 500 ± 100 r/min.	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	*# 127,5	#127.5	←
Jet needle	(J.N.)	*5CD27-4th	5CD16	←
Needle jet	(N.J.)	*O-5	O-6	←
Throttle valve	(Th.V.)	# 115	←	←
Pilot jet	(P.J.)	*# 37.5	#37.5	←
Starter jet	(G.S.)	# 35	←	←
Pilot screw	(P.S.)	*PRE-SET (1¾ turns back)	PRE-SET	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION		
		E-22	E-28	E-18
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		*14DA	14ER	14EL
Idle r/min.		1 500 ± 100 r/min.	←	1 400 ± 50 r/min.
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	# 127.5	←	# 132.5
Jet needle	(J.N.)	*5CD27-4th	←	←
Needle jet	(N.J.)	O-5	←	O-7
Throttle valve	(Th.V.)	# 115	←	←
Pilot jet	(P.J.)	# 37.5	←	←
Starter jet	(G.S.)	# 35	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET (1¾ turns back)	PRE-SET (2.0 turns back)
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

Asterisk mark (*) indicates the New "T" model specifications.

CARBURETOR

ITEM		SPECIFICATION	
		E-94	E-24
Carburetor type		BST33SS	←
Bore size		33 mm	←
I.D. No.		14EK	14EM
Idle r/min.		1 500 ± 100 r/min.	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←
Main jet	(M.J.)	#135	#127.5
Jet needle	(J.N.)	5CD56-3rd	5CD56-4th
Needle jet	(N.J.)	O-3	O-5
Throttle valve	(Th.V.)	#115	←
Pilot jet	(P.J.)	#42.5	#37.5
Starter jet	(G.S.)	#35	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND: U27ETR NGK: CR9EK	
		Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Generator coil resistance		Charging	0.1—1.5 Ω	Y—Y
		Power source	350—650 Ω	W—Br
		Pick-up No.1	350—700 Ω	G—Bl
		Pick-up No.2	350—700 Ω	Y—Gr
Generator no-load voltage (when engine is cold)		More than 60 V (AC) at 5 000 r/min.		Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Generator Max. output		Approx. 125 W at 5 000 r/min.		
Starter motor brush length		Limit : 6 (0.24)		
Commutator under-cut		Limit : 0.2 (0.008)		
Starter relay resistance		3—7 Ω		
Battery	Type designation	YTX7L-BS		
	Capacity	12V 21.6 kC (6Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		20 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,24,28,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7 x 2	←
Turn signal indicator light		1.7	←
High beam indicator light		1.7	←
Neutral indicator light		1.7	←
License light		5	←

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0.1—0.3 (0.004—0.010)		———
Rear brake pedal height	5 (0.2)		———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	———
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	27.000—27.050 (1.0630—1.0650)	———
	Rear	30.230—30.280 (1.1902—1.1921)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	30.160—30.180 (1.1874—1.1882)	———
Wheel rim runout	Axial	———	2.0 (0.08)
	Radial	———	2.0 (0.08)
Wheel axle runout	Front	———	0.25 (0.010)
	Rear	———	0.25 (0.010)

ITEM	STANDARD		LIMIT
Wheel rim size	Front	21 × 1.60	———
	Rear	18 × 2.15	———
Tire size & type	Front	80/100-21 51P Dunlop D601J (E-03,28,33) Dunlop K560J (others)	———
	Rear	110/90-18 61P Dunlop D601 (E-03,28,33) Dunlop K560J (others)	———
Tire tread depth	Front	———	3.0 (0.12)
	Rear	———	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	602 (23.7)	
Front fork oil level	152 (6.0)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	253.4 (10.0)	———	
Rear wheel travel	255 (10.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 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-03,33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	8.0 L (2.1/1.8 US/Imp gal)		E-33
	9.0 L (2.4/2.0 US/Imp gal)		For the others
reserve	2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE, SF or SG		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type	DOT 4		

FOREWORD

This section describes sevice data and servicing procedures which differ from those of the DR350T/SET ('96-MODEL).

NOTE:

* *Any differences between DR350T/SET ('96-MODEL) and DR350V/SEV ('97-MODEL) in specifications and service data are clearly indicated with the asterisk marks (*).*
* *Please refer to the sections 1 through 15 for details which are not given in this section.*

CONTENTS

SPECIFICATIONS

DR350V

DIMENSIONS AND DRY MASS

Overall length	2 165 mm (85.2 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 450 mm (57.1 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	TM33SS, single ... E-01,03,28 *BST33SS, single ... E-33
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	2.500 (30/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.933 (44/15)
Drive chain	DID520VC5, 110 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, rebound damping force 17-way adjustable, compression damping force 13-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression and rebound damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	27° 30'
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disk brake
Rear brake	Disk brake
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	495 ml (16.7/17.4 US/Imp. oz)

DR350SEV

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in) . . . . . E18, 22 2 235 mm (88.0 in) . . . . . Others
Overall width	885 mm (34.8 in)
Overall height	1 245 mm (49.0 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	890 mm (35.0 in)
Dry mass	130 kg (286 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Displacement	348 cm^3 (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	BST33SS, single
Air cleaner	Polyurethane foam element
Starter system	Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22) . . . E02,04,22,34 3.200 (64/20) . . . Others
Gear ratios, Low	2.500 (30/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.867 (43/15) . . . E02,04,22,34 2.733 (41/15) . . . Others
Drive chain	DID520VC5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	255 mm (10.0 in)
Caster	27° 30′
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disk brake
Rear brake	Disk brake
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Battery	12V 21.6 kC (6Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	20A
Headlight	12V 60/55W
Position light	12V 4W ... E02, 04, 18, 22, 34, 94
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	8.0 L (2.1/1.8 US/Imp gal). . . E33 9.0 L (2.4/2.0 US/Imp gal). . . Others
Reserve	2.0 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
with filter change	1 900 ml (2.0/1.7 US/Imp qt)
overhaul	2 100 ml (2.2/1.8 US/Imp qt)
Front fork oil (each leg)	569 ml (19.2/20.0 US/Imp oz)

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		———
Final reduction ratio		2.933 (44/15)		———
Gear ratios	Low	2.500 (30/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	D.I.D. 520VC5	———
		Links	110	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

CARBURETOR

ITEM	SPECIFICATION	
	E-01, 03, 28	E-33
Carburetor type	TM33 SS	*BST33SS
Bore size	33 mm	←
I.D. No	14D0	*14DB
Idle r/min.	1 400 ± 100 r/min	*1 500 ± 100 r/min
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)	*14.6 ± 1.0 mm (0.57 ± 0.04 in)
Main jet (M.J.)	#127.5	*#122.5
Jet needle (J.N.)	5FP96-3rd	*5CD16
Needle jet (N.J.)	P-8	*P-1
Pilot jet (P.J.)	#37.5	*#35
Starter jet (G.S.)	#42.5	*#35
Throttle valve (Th.V.)		*#115
Pilot screw (P.S.)	1 1/8 turn back	*PRE-SET
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND: U27ETR NGK: CR9EK	
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap — Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	350—650 Ω	W—Br
	Pick-up No.1	350—700 Ω	G—Bl
	Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)	More than 40 V (AC) at 5 000 r/min.		Y—B
Regulated voltage	12—14 V at 5 000 r/min.		

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	—
Rear brake pedal height		5 (0.2)	—
Brake disc thickness	Front	*3.0 ± 0.2 (0.118 ± 0.008)	*2.5 (0.098)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		—	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	—
	Rear	12.657—12.684 (0.4983—0.4994)	—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	—
	Rear	27.000—27.050 (1.0630—1.0650)	—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	—
	Rear	26.900—26.950 (1.0591—1.0610)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Wheel rim size	Front	J21 × 1.60	—
	Rear	J18 × 2.15	—
Tire size	Front	80/100-21 51M	—
	Rear	110/100-18 64M	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	*525 (20.7)	
Front fork spring characteristic	*7.65 N·/mm (0.78 kg/mm)	———	
Front fork oil level	144 (5.67)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	267.3 (10.5)	———	
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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, 33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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-01
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SF or SG		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil SS05		
Front fork oil capacity (each leg)	*495 ml (16.7/17.4 US/Imp oz)		
Brake fluid type	DOT 4		

DR350SEV

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure (Automatic-decomp. actuated)	Approx. 1 100 kPa (11 kg/cm², 156 psi)			———
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	———	0.180 (0.007)
	2nd	———	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	———
	2nd	1.01—1.03 (0.040—0.041)	———
	Oil	2.01—2.03 (0.079—0.080)	———
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	———
	2nd	0.97—0.99 (0.038—0.039)	———
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	———	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	———
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	———
Crankshaft runout	———	0.05 (0.002)
Balancer spring free length	———	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	———
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	———

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio	E-02,04, 22,34	2.818 (62/22)	———
	The others	3.200 (64/20)	———
Final reduction ratio	E-02,04, 22,34	2.866 (43/15)	———
	The others	2.733 (41/15)	———
Gear ratios	Low	2.500 (30/12)	———
	2nd	1.733 (26/15)	———
	3rd	1.333 (24/18)	———
	4th	1.111 (20/18)	———
	5th	0.952 (20/21)	———
	Top	0.826 (19/23)	———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.020)
Shift fork groove width	No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness	No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain	Type	D.I.D. 520VC5	———
	Links	108	———
	20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)	———

CARBURETOR

ITEM		SPECIFICATION		
		E-03	E-28	E-33
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		14EP	*←	14ES
Idle r/min.		1 500 ± 100 r/min.	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	# 127.5	*←	←
Jet needle	(J.N.)	5CD16	*←	←
Needle jet	(N.J.)	O-6M	*←	←
Throttle valve	(Th.V.)	# 115	←	←
Pilot jet	(P.J.)	# 37.5	*←	←
Starter jet	(G.S.)	# 35	←	←
Pilot screw	(P.S.)	PRE-SET	←	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION		
		E-02,04,34	E-22	E-18
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		14D9	14DA	14EL
Idle r/min.		1 500 ± 100 r/min.	←	1 400 ± 50 r/min.
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	# 127.5	←	# 132.5
Jet needle	(J.N.)	5CD27-4th	←	5CD56-4th
Needle jet	(N.J.)	O-5	←	O-7
Throttle valve	(Th.V.)	# 115	←	←
Pilot jet	(P.J.)	# 37.5	←	←
Starter jet	(G.S.)	# 35	←	←
Pilot screw	(P.S.)	PRE-SET (1¾ turns back)	PRE-SET (1⅛ turns back)	PRE-SET (2.0 turns back)
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

CARBURETOR

ITEM	SPECIFICATION	
	E-94	E-24
Carburetor type	BST33SS	←
Bore size	33 mm	←
I.D. No.	14EK	14EM
Idle r/min.	1 500 ± 100 r/min.	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←
Main jet (M.J.)	#135	#127.5
Jet needle (J.N.)	5CD56-3rd	5CD56-4th
Needle jet (N.J.)	O-3	O-5
Throttle valve (Th.V.)	#115	←
Pilot jet (P.J.)	#42.5	#37.5
Starter jet (G.S.)	#35	←
Pilot screw (P.S.)	PRE-SET (1⅛ turns back)	←
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	ND: U27ETR NGK: CR9EK	
		Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Generator coil resistance		Charging	0.1—1.5 Ω	Y—Y
		Power source	350—650 Ω	W—Br
		Pick-up No.1	350—700 Ω	G—Bl
		Pick-up No.2	350—700 Ω	Y—Gr
Generator no-load voltage (when engine is cold)		More than 60 V (AC) at 5 000 r/min.		Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Generator Max. output		Approx. 125 W at 5 000 r/min.		
Starter motor brush length		Limit : 6 (0.24)		
Commutator under-cut		Limit : 0.2 (0.008)		
Starter relay resistance		3—7 Ω		
Battery	Type designation	YTX7L-BS		
	Capacity	12V 21.6 kC (6Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		20 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,24,28,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7 x 2	←
Turn signal indicator light		1.7	←
High beam indicator light		1.7	←
Neutral indicator light		1.7	←
License light		5	←

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Brake lever play	0.1—0.3 (0.004—0.010)		———
Rear brake pedal height	5 (0.2)		———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	———
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	27.000—27.050 (1.0630—1.0650)	———
	Rear	30.230—30.280 (1.1902—1.1921)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	30.160—30.180 (1.1874—1.1882)	———
Wheel rim runout	Axial	———	2.0 (0.08)
	Radial	———	2.0 (0.08)
Wheel axle runout	Front	———	0.25 (0.010)
	Rear	———	0.25 (0.010)

ITEM	STANDARD		LIMIT
Wheel rim size	Front	J21 × 1.60	———
	Rear	J18 × 2.15	———
Tire size & type	Front	80/100-21 51P Dunlop D601J (E-03,28,33) Dunlop K560J (others)	———
	Rear	110/90-18 61P Dunlop D601 (E-03,28,33) Dunlop K560J (others)	———
Tire tread depth	Front	———	3.0 (0.12)
	Rear	———	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	602 (23.7)	
Front fork oil level	152 (6.0)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	253.4 (10.0)	———	
Rear wheel travel	255 (10.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

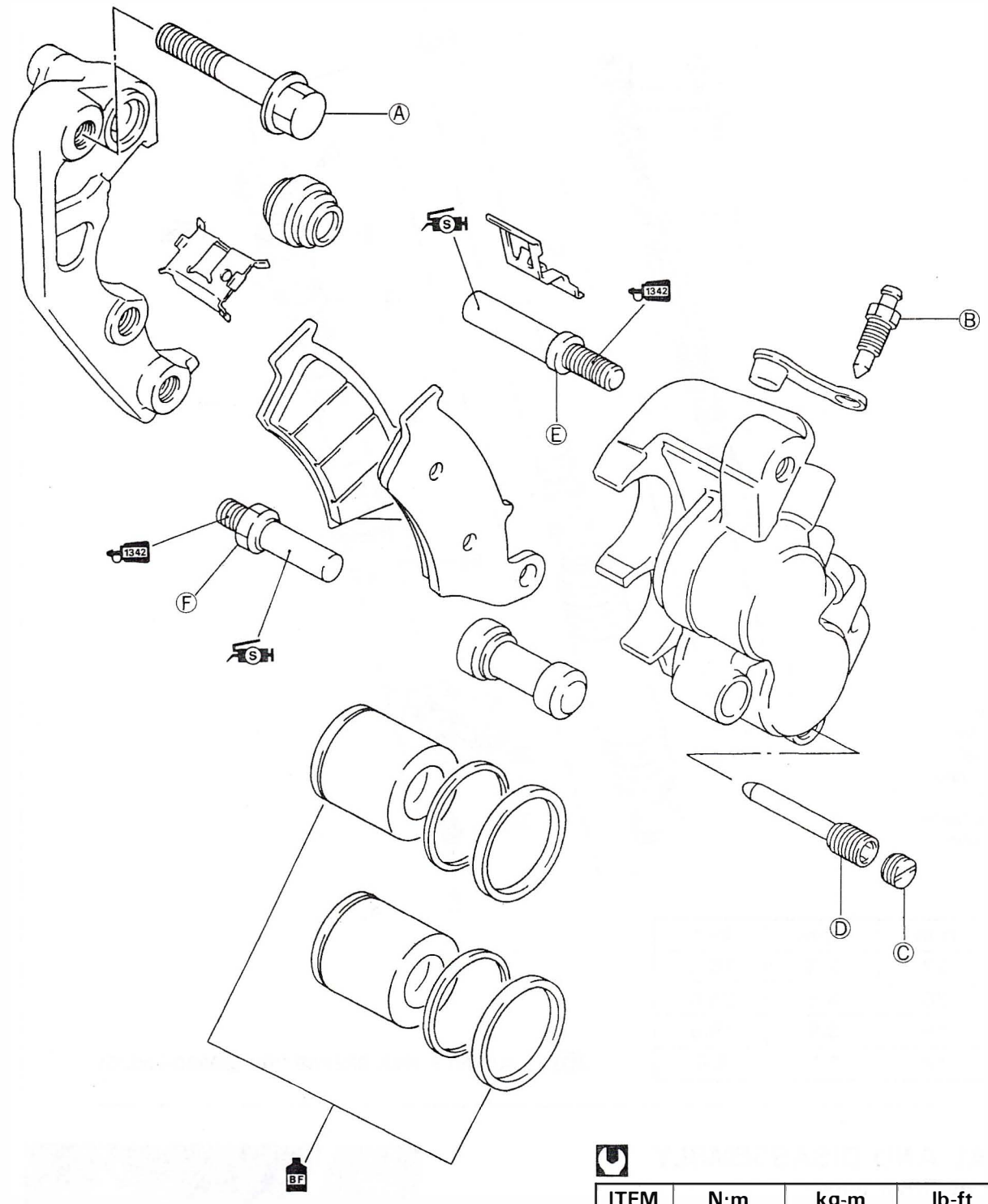
TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 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-03,33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	8.0 L (2.1/1.8 US/Imp gal)		E-33
	9.0 L (2.4/2.0 US/Imp gal)		For the others
reserve	2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SF or SG		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil # 10		
Front fork oil capacity (each leg)	569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type	DOT 4		

FRONT BRAKE CALIPER (For DR350V)



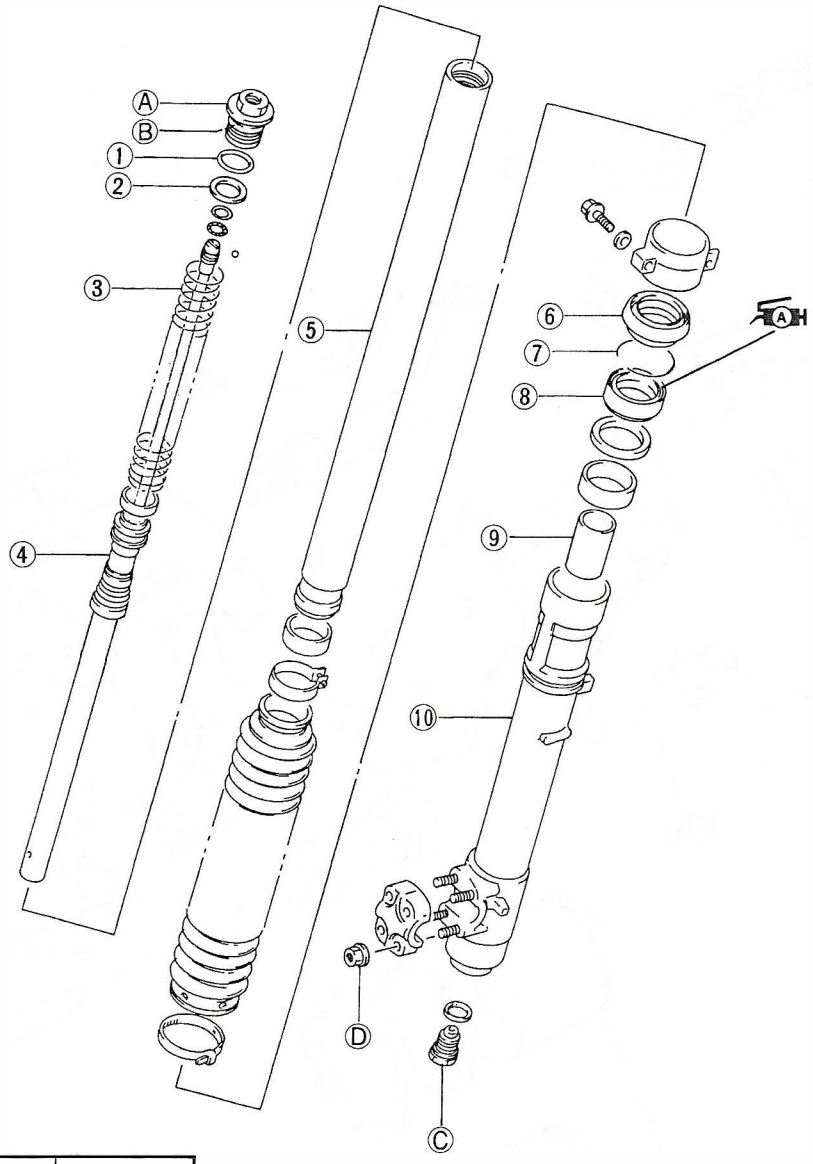
ITEM	N·m	kg-m	lb-ft
Ⓐ	26	2.6	19.0
Ⓑ	5.5	0.55	4.0
Ⓒ	2.5	0.25	1.8
Ⓓ	18	1.8	13.0
Ⓔ	23	2.3	16.5
Ⓕ	13	1.3	9.5

BF : Brake fluid (DOT4)

S : SUZUKI SILICONE GREASE (99000-25100)

1342 : THREAD LOCK "1342" (99000-32050)

FRONT FORK (For DR350V)



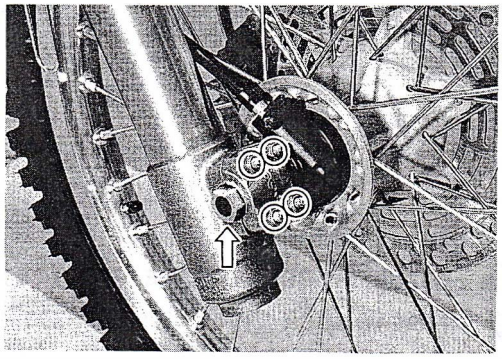
① O-ring
② Washer
③ Spring
④ Damper
⑤ Inner tube
⑤ Dust seal
⑦ Stopper ring
⑧ Oil seal
⑧ Oil lock piece
⑩ Outer tube

ITEM	N·m	kg-m	lb-ft
Ⓐ	23	2.3	16.5
Ⓑ	35	3.5	25.5
Ⓒ	35	3.5	25.5
Ⓓ	12	1.2	8.5

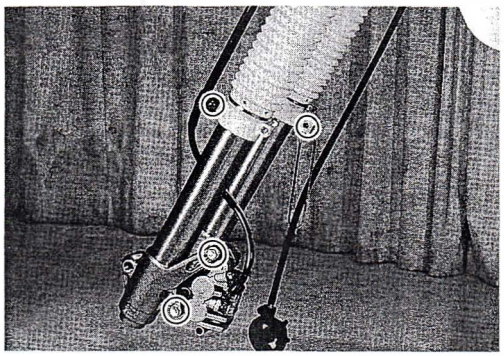
A H : SUZUKI SUPER GREASE "A" (99000-25030)

REMOVAL AND DISASSEMBLY

- Remove the front wheel.

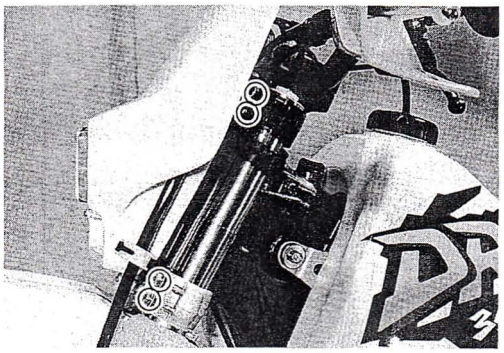


- Remove the front brake caliper mounting bolts.
- Remove the brake hose holder and speedometer cable guide.

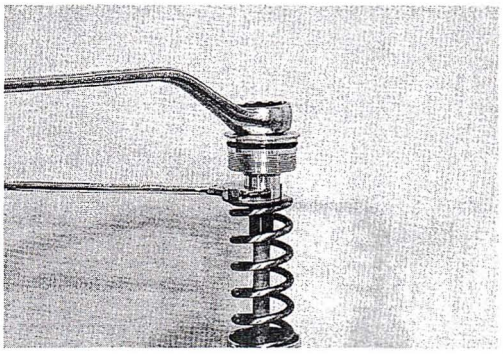


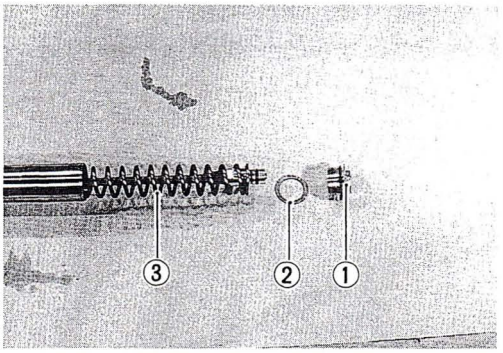
- Remove the front fork by loosening the upper and lower clamp bolts.

NOTE:
Slightly loosen the front fork cap facilitate later disassembly, before loosening the lower clamp bolts.

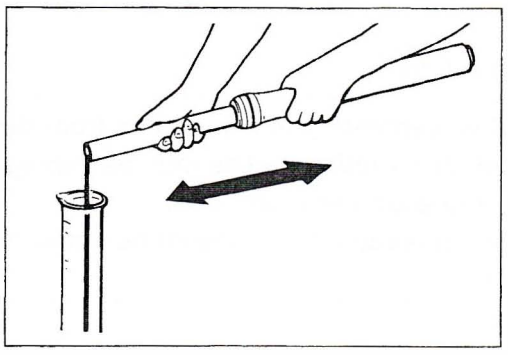


- Remove the front fork cap ①.
- Remove the washer ② and spring ③.

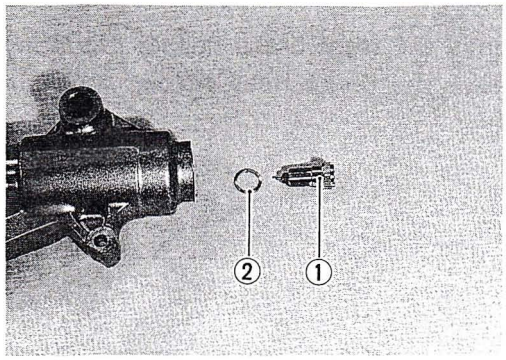




- Invert the fork and stroke the inner tube and inner rod several times to drain fork oil. Hold the fork inverted for a few minutes to drain oil.



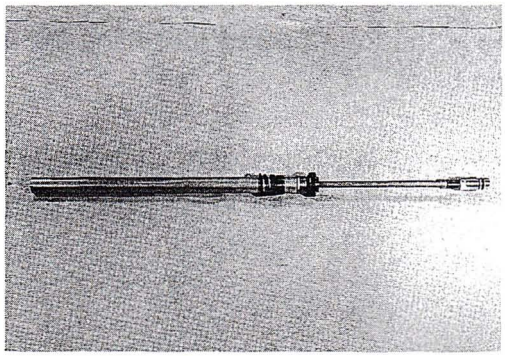
- Remove the damper rod bolt/damping force adjuster ① and gasket ②.



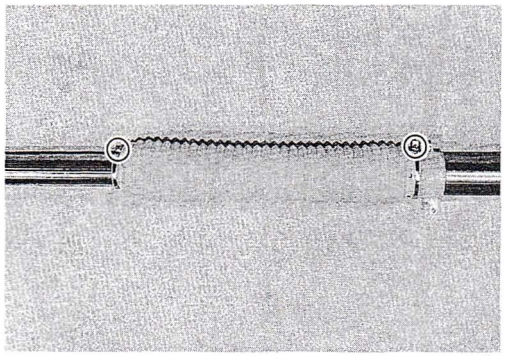
- Remove the damper assembly.

⚠ CAUTION

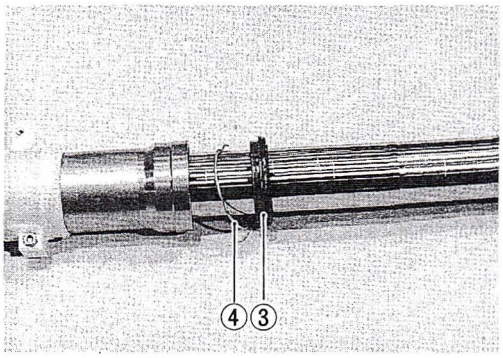
Do not attempt to disassemble the damper assembly. It is not serviceable.



- Remove the boot by loosening the clamp screws.



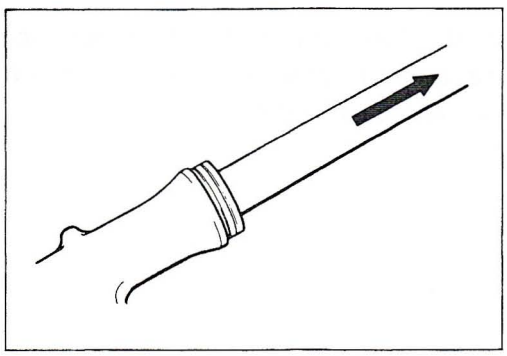
- Remove the dust seal ③.
- Remove the oil seal stopper ring ④.



- Separate the inner tube from the outer tube.

⚠ CAUTION

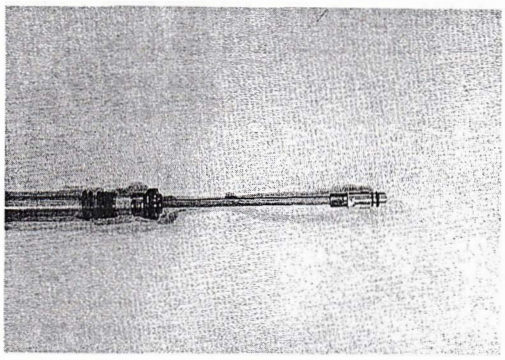
- *** When separating the inner tube from the outer tube, both anti-friction metals may be damaged and must be replaced with new ones.**
- *** The removed oil seal should be replaced with a new one.**



INSPECTION

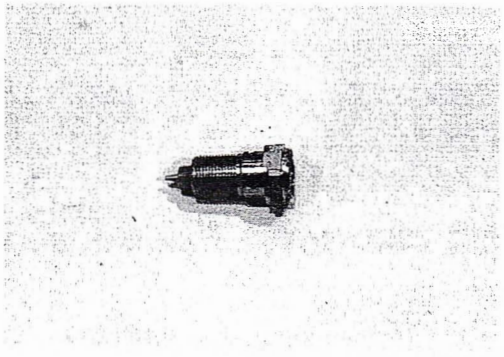
DAMPER

Inspect the damper rod ring for wear or damage.
Move the inner rod by hand to inspect it if operating smoothly.



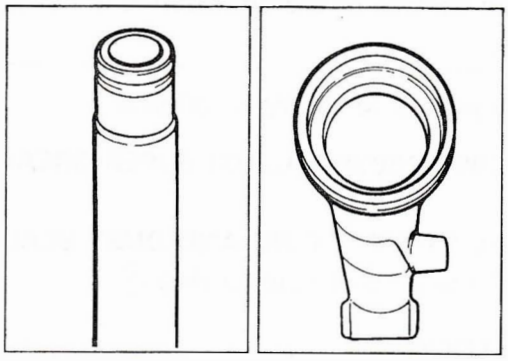
DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

Inspect the damper rod bolt/damping force adjuster for wear or damage.



INNER AND OUTER TUBE

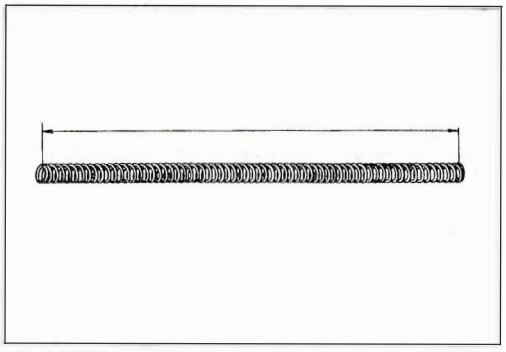
Inspect the inner tube and outer tube sliding surfaces for any scuffing or flaws.



FORK SPRING

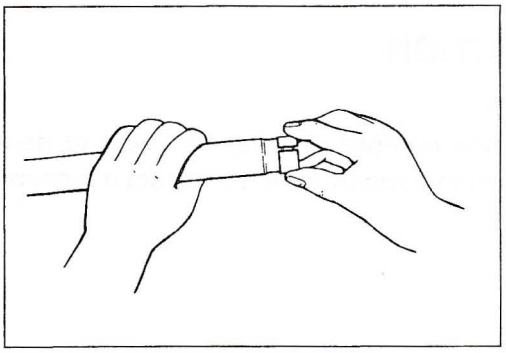
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit: 525 mm (20.7 in)



REASSEMBLY AND REMOUNTING

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



INNER TUBE METAL

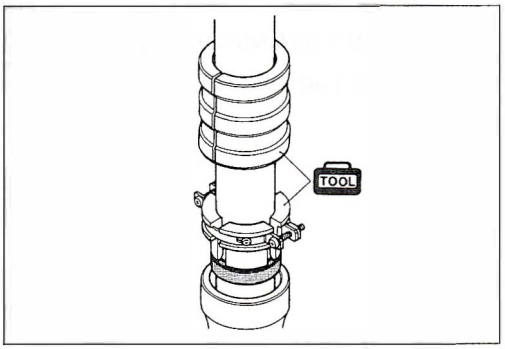
- Install the metal by hand.

⚠ CAUTION

Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.

OUTER TUBE METAL, WASHER AND OIL SEAL

- Install the outer tube metal ①, washer ② and oil seal ③ with the special tool.



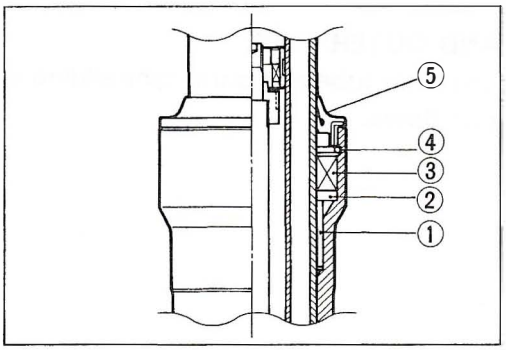
TOOL 09940-50113: Front fork oil seal installer

⚠ CAUTION

Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.

- Apply grease to the lip of oil seal.

A-H 99000-25030: SUZUKI SUPER GREASE "A"



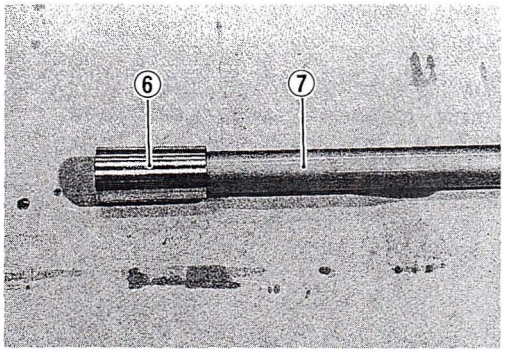
OIL SEAL STOPPER RING AND DUST SEAL

- Install the oil seal stopper ring ④.

⚠ CAUTION

Make sure that the oil seal stopper ring fitted securely.

- Install the dust seal ⑤.

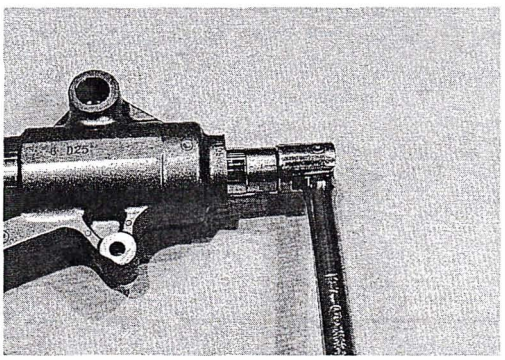


DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

- Install the oil lock piece ⑥ with the damper rod ⑦ to the outer tube.

- Tighten the damper rod bolt/damping force adjuster to the specified torque.

Damper rod bolt/damping force adjuster:
35 N·m (3.5 kg-m, 25.5 lb-ft)



⚠ CAUTION

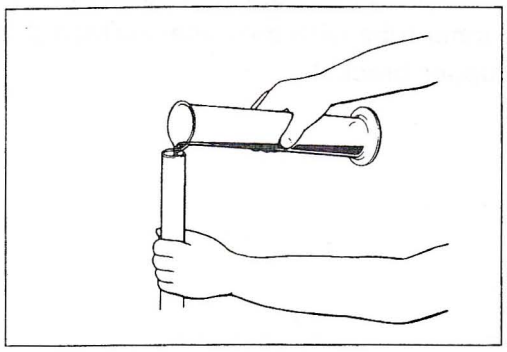
Use a new gasket to prevent oil leakage.

FORK OIL

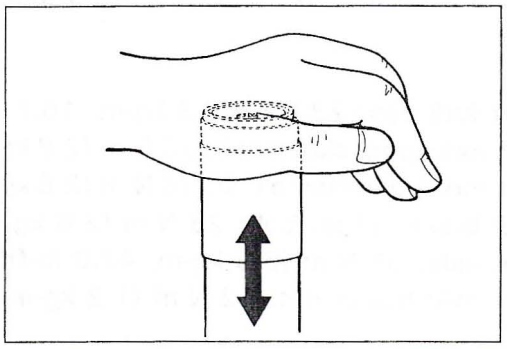
- Place the front fork vertically.
- Pour fork oil to the inner tube.
- For the fork oil, be sure to use a front fork oil whose viscosity rating meets specifications below.

FORK Fork oil type: Fork oil SS-05
99000-99001-SS5: Fork oil SS-05

Capacity: 495 ml (16.7/17.4 US/Imp oz)



- Cover the inner tube with palm, and move the inner tube up and down 3 or 4 times.

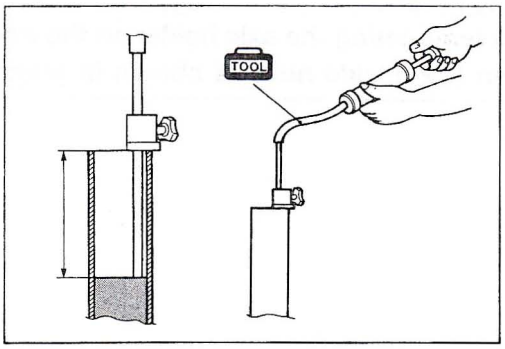


- Hold the front fork vertical and adjust the fork oil level with the special tool.

Oil level: 144 mm (5.7 in)

TOOL 09943-74111: Fork oil level gauge

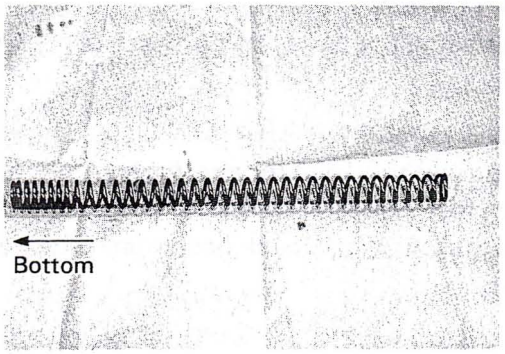
NOTE:
When adjusting the oil level, remove the fork spring and compress the inner tube fully.



FORK SPRING

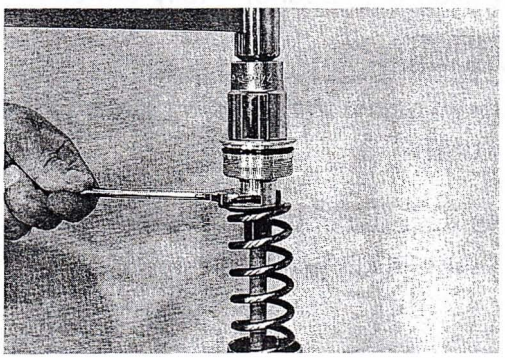
- Install the fork spring as shown in the photograph.

NOTE:
Close-pitch end of spring should position bottom.

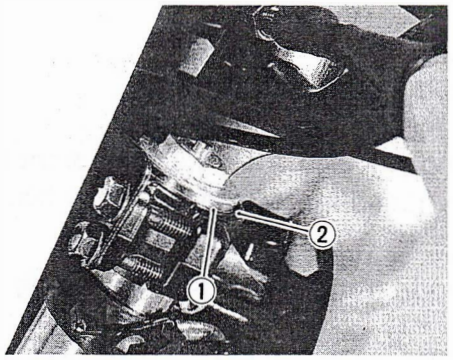


- Tighten the front fork cap to the damper assembly to the specified torque.

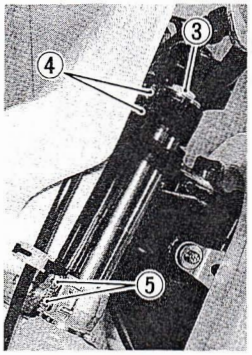
Front fork cap: 35 N·m (3.5 kg-m, 25.5 lb-ft)

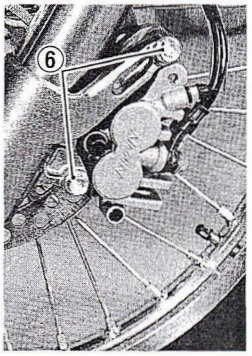


- When installing the front fork assembly, align the line ① of the inner tube with the upper surface ② of the steering stem upper bracket.



- Tighten each bolt to the specified torque.

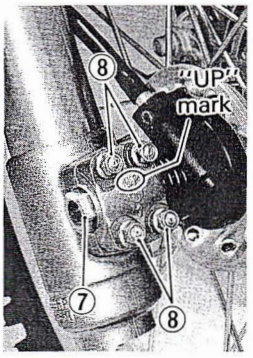


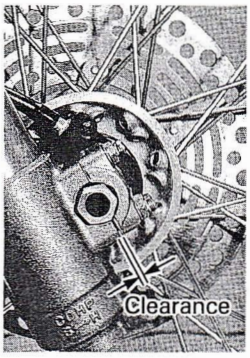


③ Front fork cap: 23 N·m (2.3 kg-m, 16.5 lb-ft)
④ Front fork upper clamp bolt: 26 N·m (2.6 kg-m, 19.0 lb-ft)
⑤ Front fork lower clamp bolt: 26 N·m (2.6 kg-m, 19.0 lb-ft)
⑥ Front brake caliper bolt: 26 N·m (2.6 kg-m, 19.0 lb-ft)
⑦ Front axle: 65 N·m (6.5 kg-m, 47.0 lb-ft)
⑧ Front axle holder nut: 12 N·m (1.2 kg-m, 8.5 lb-ft)

⚠ CAUTION

When remounting the axle holder on the front fork, first tighten the upside nuts as shown in photo.





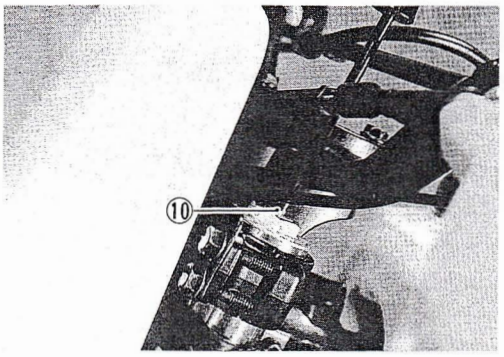
ADJUSTMENT

After installing the front fork, adjust the both damping force as follows.

DAMPING FORCE ADJUSTMENT

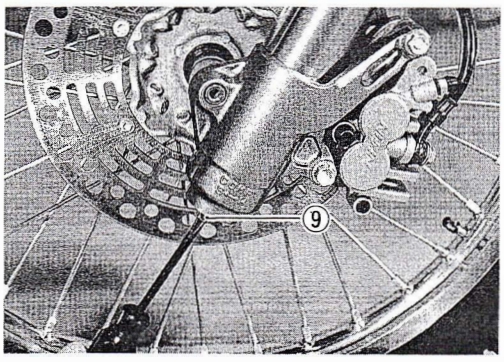
Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click that is 1-position then turn back and count the specified position as follow.

Standard setting (Compression & Rebound) : Turn back 7-positions from fully turned-in position



⚠ WARNING

Be sure to adjust the damping force on both front fork legs equally.



⑨: Compression damping force adjuster
⑩: Rebound damping force adjuster

FOREWORD

This section describes sevice data and servicing procedures which differ from those of the DR350V/SEV ('97-MODEL).

NOTE:

* *Any differences between DR350V/SEV ('97-MODEL) and DR350W/X/SEW/SEX ('98,'99-MODELS) in specifications and service data are clearly indicated with the asterisk marks (*).*
* *Please refer to the sections 1 through 16 for details which are not given in this section.*

CONTENTS

COUNTRY OR AREA

E-01: General
E-02: U.K.
E-03: U.S.A.
E-04: France
E-18: Switzerland
E-22: Germany
E-24: Australia
E-28: Canada
E-33: California (U.S.A.)
E-34: Italy
E-94: Barbados

SPECIFICATIONS

DR350W/X

DIMENSIONS AND DRY MASS

Overall length	*2 250 mm (88.6 in) ... E-24 2 165 mm (85.2 in) ... Others
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	1 450 mm (57.1 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	*BST33SS ... E-33 TM33SS, single ... Others
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	2.500 (30/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.933 (44/15)
Drive chain	DID520VC5, 110 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, rebound damping force 17-way adjustable, compression damping force 13-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression and rebound damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	27° 30′
Trail	112 mm (4.41 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disk brake
Rear brake	Disk brake
Front tire size	*3.00-21 51P, tube ... E-24 80/100-21 51M, tube ... Others
Rear tire size	*120/90-18 65P, tube ... E-24 110/100-18 64M, tube ... Others

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or DENSO U27ETR
Generator	Flywheel magneto
Headlight	*12V 60/55W ... E-24 12V 55W ... Others
Brake light/Taillight	*12V 21/5W ... E-24
Taillight	12V 5W
Turn signal light	*12V 21W ... E-24
Speedometer light	*12V 3W ... E-24
Neutral indicator light	*12V 2W ... E-24
Turn signal indicator light	*12V 2W ... E-24
High beam indicator light	*12V 2W ... E-24
License light	*12V 5W ... E-24

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	495 ml (16.7/17.4 US/Imp. oz)

DR350SEW/SEX

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in) ... E-18, 22 2 235 mm (88.0 in) ... Others
Overall width	885 mm (34.8 in)
Overall height	1 245 mm (49.0 in)
Wheelbase	1 440 mm (56.7 in)
Ground clearance	290 mm (11.4 in)
Seat height	890 mm (35.0 in)
Dry mass	130 kg (286 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Displacement	348 cm^3 (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	BST33, single
Air cleaner	Polyurethane foam element
Starter system	Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	2.818 (62/22) ... E-02,04,22,34 3.200 (64/20) ... Others
Gear ratios, Low	2.500 (30/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.867 (43/15) ... E-02,04,22,34 2.733 (41/15) ... Others
Drive chain	DID520VC5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, rebound damping force 17-way adjustable, compression damping force 13-way adjustable ... E-03,28,33 Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable ... Others
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	255 mm (10.0 in)
Caster	27° 30'
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disk brake
Rear brake	Disk brake
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or DENSO U27ETR
Battery	12V 21.6 kC (6Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	20A
Headlight	12V 60/55W
Position light	12V 4W ... E-02, 04, 18, 22, 34, 94
Turn signal light	12V 21W
Brake light/Taillight	12V 21/5W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	8.0 L (2.1/1.8 US/Imp gal) ... E-33 9.0 L (2.4/2.0 US/Imp gal) ... Others
Reserve	2.0 L (0.5/0.4 US/Imp gal)
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)
with filter change	1 900 ml (2.0/1.7 US/Imp qt)
overhaul	2 100 ml (2.2/1.8 US/Imp qt)
Front fork oil (each leg)	*494 ml (16.7/17.4 US/Imp oz) ... E-03,28,33 569 ml (19.2/20.0 US/Imp oz) ... Others

SERVICE DATA

DR350W/X
VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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)	15.2 (0.60)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		—
Final reduction ratio		2.933 (44/15)		—
Gear ratios	Low	2.500 (30/12)		—
	2nd	1.733 (26/15)		—
	3rd	1.333 (24/18)		—
	4th	1.111 (20/18)		—
	5th	0.952 (20/21)		—
	Top	0.826 (19/23)		—
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	—
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	—
Drive chain		Type	D.I.D. 520VC5	—
		Links	110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		—

CARBURETOR

ITEM	SPECIFICATION		
	E-01, 03, 28	E-24	E-33
Carburetor type	TM33SS	←	BST33SS
Bore size	33 mm	←	←
I.D. No	14D0	*14DC	14DB
Idle r/min.	1 500 ± 100 r/min	←	←
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)	←	14.6 ± 1.0 mm (0.57 ± 0.04 in)
Main jet (M.J.)	#127.5	*#145	#122.5
Jet needle (J.N.)	5FP96-3rd	←	5CD16
Needle jet (N.J.)	P-8	←	P-1
Pilot jet (P.J.)	#37.5	←	#35
Starter jet (G.S.)	#42.5	←	#35
Throttle valve (Th.V.)			#115
Pilot screw (P.S.)	1 ⅛ turn back	←	PRE-SET
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)	←	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	DENSO: U27ETR NGK: CR9EK	
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω (Terminal—Ground)	
	Secondary	12—22 kΩ (Plug cap—Terminal)	
Generator coil resistance	Lighting	0.1—1.5 Ω (Y—B)	E-01,03,28,33
		0.1—1.5 Ω (Y—Y)	E-24
	Power source	350—650 Ω (W—Br)	
	Pick-up No.1	350—700 Ω (G—Bl)	
	Pick-up No.2	350—700 Ω (Y—Gr)	
Generator no-load voltage (when engine is cold)	*More than 65 V (AC) at 5 000 r/min. (Y—Y)		E-24
	More than 40 V (AC) at 5 000 r/min. (Y—B)		E-01,03,28,33
Regulated voltage	*13—15 V at 5 000 r/min.		E-24
	12—14 V at 5 000 r/min.		E-01,03,28,33

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-24	E-01,03,28,33
Headlight	HI	*60	55
	LO	*55	
Brake light/Taillight		*21/5	
Taillight			5
Turn signal light		*21	
Speedometer light		*3	
Neutral indicator light		*2	
Turn signal indicator light		*2	
High beam indicator light		*2	
License plate light		*5	

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD			LIMIT
Brake lever play	0.1—0.3 (0.004—0.010)			—
Rear brake pedal height	5 (0.2)			—
Brake disc thickness	Front	E-01,03, 28,33	3.0±0.2 (0.118 ± 0.008)	2.5 (0.098)
		E-24	*3.5±0.2 (0.138±0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)		3.5 (0.138)
Brake disc runout	—			0.30 (0.012)
Master cylinder bore	Front	E-01,03, 28,33	11.000—11.043 (0.4331—0.4348)	—
		E-24	*12.700—12.743 (0.4331—0.4348)	—
	Rear	12.700—12.743 (0.5000—0.5017)		—
Master cylinder piston diam.	Front	E-01,03, 28,33	10.957—10.984 (0.4314—0.4324)	—
		E-24	*12.657—12.684 (0.4983—0.4994)	—
	Rear	12.657—12.684 (0.4983—0.4994)		—
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)		—
	Rear	27.000—27.050 (1.0630—1.0650)		—
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)		—
	Rear	26.900—26.950 (1.0591—1.0610)		—

ITEM	STANDARD			LIMIT
Wheel rim runout	Axial	——		2.0 (0.08)
	Radial	——		2.0 (0.08)
Wheel axle runout	Front	——		0.25 (0.010)
	Rear	——		0.25 (0.010)
Wheel rim size	Front	J21 × 1.60		——
	Rear	J18 × 2.15		——
Tire size	Front	E-01,03, 28,33	80/100-21 51M	——
		E-24	*3.00-21 51P	——
	Front	E-01,03, 28,33	110/100-18 64M	——
		E-24	*120/90-18 65P	——
Tire tread depth	Front	——		4.0 (0.16)
	Rear	——		4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	——	
Front fork spring free length	——	525 (20.7)	
Front fork spring characteristic	7.65 N·/mm (0.78 kg/mm)	——	
Front fork oil level	144 (5.67)	——	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	——	
Rear shock absorber spring pre-set length	267.3 (10.5)	——	
Rear wheel travel	280 (11.0)	——	
Swingarm pivot shaft runout	——	0.3 (0.01)	

TIRE PRESSURE
For E-01,03,28 and 33

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

For E-24

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	*150	*1.50	*22
REAR	*150	*1.50	*22

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) 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, 33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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-01, 24
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SF or SG		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	Fork oil SS05		
Front fork oil capacity (each leg)	495 ml (16.7/17.4 US/Imp oz)		
Brake fluid type	DOT 4		

DR350SEW/SEX
VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
Valve seat width	IN. & EX.	0.9—1.1 (0.035—0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3—6.5 kg (11.7—14.3 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000—12.018 (0.4724—0.4731)	———
Rocker arm shaft O.D.	IN. & EX.	11.973—11.984 (0.4714—0.4718)	———
Cylinder head distortion	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure (Automatic-decomp. actuated)	Approx. 1 100 kPa (11 kg/cm², 156 psi)			———
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (0.006)
Piston ring groove width	1st	1.01—1.03 (0.040—0.041)	—
	2nd	1.01—1.03 (0.040—0.041)	—
	Oil	2.01—2.03 (0.079—0.080)	—
Piston ring thickness	1st	0.97—0.99 (0.038—0.039)	—
	2nd	0.97—0.99 (0.038—0.039)	—
Piston pin bore	20.002—20.008 (0.7875—0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996—20.000 (0.7872—0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
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)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio	E-02,04, 22,34	2.818 (62/22)		———
	The others	3.200 (64/20)		———
Final reduction ratio	E-02,04, 22,34	2.866 (43/15)		———
	The others	2.733 (41/15)		———
Gear ratios	Low	2.500 (30/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	D.I.D. 520VC5	———
		Links	108	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

CARBURETOR

ITEM		SPECIFICATION		
		E-03	E-28	E-33
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		14EP	←	14ES
Idle r/min.		1 500 ± 100 r/min.	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	#127.5	←	←
Jet needle	(J.N.)	5CD16	←	←
Needle jet	(N.J.)	O-6M	←	←
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#37.5	←	←
Starter jet	(G.S.)	#35	←	←
Pilot screw	(P.S.)	PRE-SET	←	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION		
		E-02,04,34	E-22	E-18
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		14D9	14DA	14EL
Idle r/min.		1 500 ± 100 r/min.	←	1 400 ± 50 r/min.
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	#127.5	←	#132.5
Jet needle	(J.N.)	5CD27-4th	←	5CD56-4th
Needle jet	(N.J.)	O-5	←	O-7
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#37.5	←	←
Starter jet	(G.S.)	#35	←	←
Pilot screw	(P.S.)	PRE-SET (1¾ turns back)	PRE-SET (1⅛ turns back)	PRE-SET (2.0 turns back)
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

CARBURETOR

ITEM	SPECIFICATION	
	E-94	E-24
Carburetor type	BST33SS	←
Bore size	33 mm	←
I.D. No.	14EK	14EM
Idle r/min.	1 500 ± 100 r/min.	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←
Main jet (M.J.)	#135	#127.5
Jet needle (J.N.)	5CD56-3rd	5CD56-4th
Needle jet (N.J.)	O-3	O-5
Throttle valve (Th.V.)	#115	←
Pilot jet (P.J.)	#42.5	#37.5
Starter jet (G.S.)	#35	←
Pilot screw (P.S.)	PRE-SET (1⅛ turns back)	←
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		30°B.T.D.C. above 4 300 r/min		
Spark plug		Type	DENSO: U27ETR NGK: CR9EK	
		Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance		Primary	0.1—1.0 Ω	Terminal — Ground
		Secondary	12—22 kΩ	Plug cap—Terminal
Generator coil resistance		Charging	0.1—1.5 Ω	Y—Y
		Power source	350—650 Ω	W—Br
		Pick-up No.1	350—700 Ω	G—Bl
		Pick-up No.2	350—700 Ω	Y—Gr
Generator no-load voltage (when engine is cold)		More than 60 V (AC) at 5 000 r/min.		Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.		
Generator Max. output		Approx. 125 W at 5 000 r/min.		
Starter motor brush length		Limit : 6 (0.24)		
Commutator under-cut		Limit : 0.2 (0.008)		
Starter relay resistance		3—7 Ω		
Battery	Type designation	YTX7L-BS		
	Capacity	12V 21.6 kC (6Ah)/10HR		
	Standard electrolyte S.G.	1.320 at 20°C (68°F)		
Fuse size		20 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,24,28,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7 x 2	←
Turn signal indicator light		1.7	←
High beam indicator light		1.7	←
Neutral indicator light		1.7	←
License light		5	←

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	———
Rear brake pedal height		5 (0.2)	———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
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)	———
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	27.000—27.050 (1.0630—1.0650)	———
	Rear	30.230—30.280 (1.1902—1.1921)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	30.160—30.180 (1.1874—1.1882)	———
Wheel rim runout	Axial	———	2.0 (0.08)
	Radial	———	2.0 (0.08)
Wheel axle runout	Front	———	0.25 (0.010)
	Rear	———	0.25 (0.010)

ITEM	STANDARD		LIMIT
Wheel rim size	Front	J21 x 1.60	———
	Rear	J18 x 2.15	———
Tire size & type	Front	80/100-21 51P Dunlop D601J (E-03,28,33) Dunlop K560J (others)	———
	Rear	110/90-18 61P Dunlop D601 (E-03,28,33) Dunlop K560J (others)	———
Tire tread depth	Front	———	3.0 (0.12)
	Rear	———	3.0 (0.12)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	*525 (20.7)	E-03,28,33
	———	602 (23.7)	For the others
Front fork oil level	*147 (5.8)	———	E-03,28,33
	152 (6.0)	———	For the others
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	253.4 (10.0)	———	
Rear wheel travel	255 (10.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

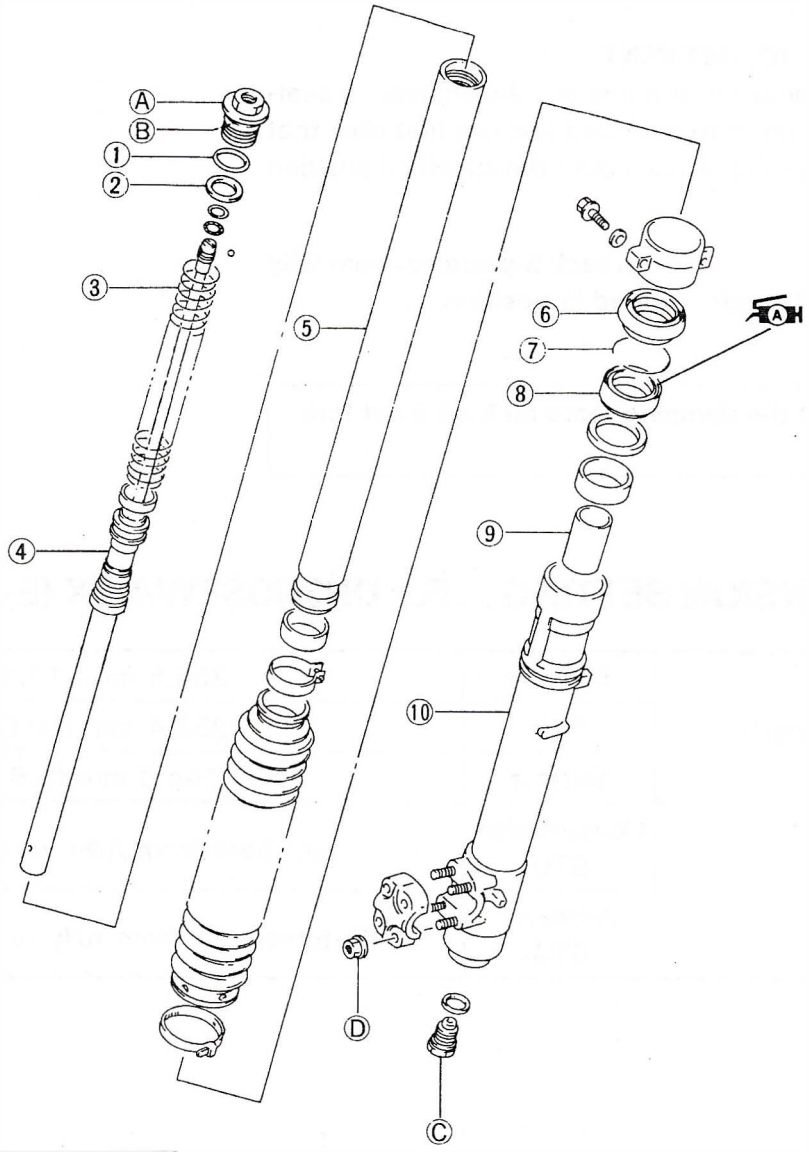
TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 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-03,33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 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.		For the others
Fuel tank including reserve	8.0 L (2.1/1.8 US/Imp gal)		E-33
	9.0 L (2.4/2.0 US/Imp gal)		For the others
reserve	2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SF or SG		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	*Fork oil SS05		E-03,28,33
	Fork oil # 10		For the others
Front fork oil capacity (each leg)	*494 ml (16.7/17.4 US/Imp oz)		E-03,28,33
	569 ml (19.2/20.0 US/Imp oz)		For the others
Brake fluid type	DOT 4		

FRONT FORK ... For DR350SEW/SEX (E-03,28 and 33)



① O-ring
② Washer
③ Spring
④ Damper
⑤ Inner tube
⑥ Dust seal
⑦ Stopper ring
⑧ Oil seal
⑨ Oil lock piece
⑩ Outer tube

ITEM	N·m	kg-m	lb-ft
Ⓐ	23	2.3	16.5
Ⓑ	35	3.5	25.5
Ⓒ	35	3.5	25.5
Ⓓ	12	1.2	8.5

FORK **Fork oil type: Fork oil SS05**
Capacity: 494 ml
Oil level: 147 mm

REMOVAL AND DISASSEMBLY . . . . . **Same as DR350V front fork**
REASSEMBLY AND REMOUNTING . . . . . **Same as DR350V front fork**

Refer to pages 16-21 through -27.

ADJUSTMENT

After installing the front fork, adjust the both damping force as follows.

DAMPING FORCE ADJUSTMENT

Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click that is 1-position then turn back and count the specified position as follows.

Standard setting (Compression & Rebound) : **Turn back 5-positions from fully turned-in position**

⚠ WARNING

Be sure to adjust the damping force on both front fork equally.

REAR SUSPENSION SETTING ... For DR350SEW/SEX (E-03,28, and 33)

Spring pre-set length	Softest	256.5 mm (10.1 in)
	STD	253.4 mm (10.0 in)
	Stiffest	244.0 mm (9.6 in)
Damping force	Compression STD	1-turn back from fully turned-in position
	Rebound STD	2¼-turns back from fully turned-in position