

SERVICING INFORMATION

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TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or is hard to start.	<p>Compression too low</p> <ol style="list-style-type: none"> 1. Valve clearance out of adjustment. 2. Worn valve guides or poor seating of valves. 3. Valves mistiming. 4. Piston rings excessively worn. 5. Worn-down cylinder bores. 6. Starter motor cranks too slowly. <p>Plugs not sparking</p> <ol style="list-style-type: none"> 1. Fouled spark plugs. 2. Wet spark plug. 3. Defective ignition coil. 4. Open or short in high-tension cord. 5. Defective pick-up coil or ignitor unit. <p>No fuel reaching the carburetors</p> <ol style="list-style-type: none"> 1. Clogged hole in the fuel tank cap. 2. Clogged or defective fuel cock. 3. Defective fuel pump. 4. Defective carburetor float valve. 5. Clogged fuel pipe or suction pipe. 6. Defective pick-up coil, ignition coil/ignitor. 	<p>Adjust. Repair or replace. Adjust. Replace. Replace, or rebore. Consult "electrical complaints".</p> <p>Clean. Clean and dry. Replace. Replace. Replace.</p> <p>Clean. Clean or replace. Replace. Replace. Clean. Replace.</p>
Engine stalls easily.	<ol style="list-style-type: none"> 1. Fouled spark plugs. 2. Defective pick-up coil or ignitor unit. 3. Clogged fuel pipe. 4. Defective fuel pump/fuel pump relay 5. Clogged jets in carburetors. 6. Valve clearance out of adjustment. 	<p>Clean. Replace. Replace. Replace. Clean. Adjust.</p>
Noisy engine.	<p>Excessive valve chatter</p> <ol style="list-style-type: none"> 1. Valve clearance too large. 2. Weakened or broken valve springs. 3. Camshaft journal worn and burnt. <p>Noise appears to come from pistons</p> <ol style="list-style-type: none"> 1. Pistons or cylinders worn down. 2. Combustion chambers fouled with carbon. 3. Piston pins or piston pin bore worn. 4. Piston rings or ring grooves worn. <p>Noise seems to come from timing chain</p> <ol style="list-style-type: none"> 1. Stretched chain. 2. Worn sprockets. 3. Tension adjuster not working. <p>Noise seems to come from clutch</p> <ol style="list-style-type: none"> 1. Worn splines of countershaft or hub. 2. Worn teeth of clutch plates. 3. Distorted clutch plates, driven and drive. 4. Worn/Damaged clutch push rod bearing 	<p>Adjust. Replace. Replace.</p> <p>Replace. Clean. Replace. Replace.</p> <p>Replace. Replace. Replace.</p> <p>Replace. Replace. Replace. Replace.</p>

Complaint	Symptom and possible causes	Remedy
Noisy engine.	<p>Noise seems to come from crankshaft</p> <ol style="list-style-type: none"> 1. Rattling bearings due to wear. 2. Big-end bearings worn and burnt. 3. Journal bearing worn and burnt. 4. Thrust clearance too large. <p>Noise seems to come from transmission</p> <ol style="list-style-type: none"> 1. Gears worn or rubbing. 2. Badly worn splines. 3. Primary gears worn or rubbing. 4. Badly worn bearings. <p>Noise seems to come from water pump.</p> <ol style="list-style-type: none"> 1. Too much play on pump drive chain 2. Worn or damaged drive chain/sprocket. 3. Impeller touches crankcase. 	<p>Replace. Replace. Replace. Adjust.</p> <p>Replace. Replace. Replace. Replace.</p> <p>Adjust. Replace. Replace.</p>
Slipping clutch	<ol style="list-style-type: none"> 1. Weakened clutch springs. 2. Worn or distorted pressure plate. 3. Distorted clutch plates, driven and drive. 	<p>Replace Replace. Replace.</p>
Dragging clutch	<ol style="list-style-type: none"> 1. Leakage of clutch fluid. 2. Worn or damaged master cylinder/clutch cylinder. 3. Damaged oil seal/clutch hose. 4. Some clutch springs weakened while others are not. 5. Distorted pressure plate or clutch plates. 	<p>Repair. Replace. Replace. Replace. Replace.</p>
Transmission will not shift	<ol style="list-style-type: none"> 1. Broken gearshift cam. 2. Distorted gearshift forks. 3. Too much play on gearshift lever. 4. Worn gearshift pawl/guide. 	<p>Replace. Replace. Adjust. Replace.</p>
Transmission will not shift back.	<ol style="list-style-type: none"> 1. Broken return spring on shift shaft. 2. Shift shafts are rubbing or sticky. 3. Distorted or worn gearshift forks. 	<p>Replace. Repair or replace. Replace.</p>
Transmission jumps out of gear.	<ol style="list-style-type: none"> 1. Worn shifting gears on drive shaft or countershaft. 2. Distorted or worn gearshift forks. 3. Weakened stopper spring on gearshift stopper. 	<p>Replace. Replace. Replace.</p>
Engine idles poorly.	<ol style="list-style-type: none"> 1. Valve clearance out of adjustment. 2. Poor seating of valves. 3. Defective valve guides. 4. Spark plug gaps too wide. 5. Defective ignition coil. 6. Defective pick-up coil or ignitor unit. 7. Float-chamber fuel level out of adjustment in carbs. 8. Clogged jets or imbalance of carburetors. 9. Defective fuel pump/fuel pump relay. 	<p>Adjust. Repair or replace. Replace. Adjust. Replace. Replace. Adjust. Clean or adjust. Replace.</p>
Engine runs poorly in high-speed range.	<ol style="list-style-type: none"> 1. Valve springs weakened. 2. Valve timing out of adjustment. 3. Spark plug gaps too narrow. 4. Clogged jets or imbalance of carburetors. 5. Defective ignition coil. 	<p>Replace. Adjust. Adjust. Clean or adjust. Replace.</p>

9-3 SERVICING INFORMATION

Complaint	Symptom and possible causes	Remedy
Engine runs poorly in high-speed range.	<ol style="list-style-type: none"> 6. Defective pick-up coil or ignitor unit. 7. Float-chamber fuel level too low. 8. Clogged air cleaner element. 9. Clogged fuel pipe, resulting in inadequate fuel supply to carburetors. 10. Defective fuel pump. 	<p>Replace. Adjust. Clean. Clean, and prime.</p> <p>Replace.</p>
Dirty or heavy exhaust smoke.	<ol style="list-style-type: none"> 1. Too much engine oil in the engine. 2. Worn piston rings or cylinders. 3. Worn valve guides. 4. Cylinder walls scored or scuffed. 5. Worn valves stems. 6. Defective stem seal. 	<p>Check with level inspection window, drain out excess oil.</p> <p>Replace. Replace. Rebore or replace. Replace. Replace.</p>
Engine lacks power.	<ol style="list-style-type: none"> 1. Loss of valve clearance. 2. Weakened valve springs. 3. Valve timing out of adjustment. 4. Worn piston rings or cylinders. 5. Poor seating of valves. 6. Spark plug gaps incorrect. 7. Clogged jets in carburetors. 8. Float-chamber fuel level out of adjustment. 9. Clogged air cleaner element. 10. Carburetor balancing adjuster loose. 11. Sucking air from intake pipe. 12. Too much engine oil in the engine. 13. Defective fuel pump. 14. Defective pick-up coil/ignitor unit/ignition coil. 	<p>Adjust. Replace. Adjust. Replace. Repair. Adjust or replace. Clean. Adjust. Clean. Retighten and balance the carbs. Retighten or replace. Drain out excess oil. Replace. Replace.</p>
Engine overheats.	<ol style="list-style-type: none"> 1. Heavy carbon deposit on piston crowns. 2. Not enough oil in the engine. 3. Defective oil pump or clogged oil circuit. 4. Fuel level too low in float chambers. 5. Suck air from intake pipes. 6. Use incorrect engine oil. 7. Defective cooling system. 	<p>Clean. Add oil. Replcae or clean. Adjust. Retighten or replace. Change. See radiator section.</p>

SHAFT DRIVE

Complaint	Symptom and possible causes	Remedy
Noisy shaft drive	<p>Noise seems to come from secondary bevel gear and final bevel gear assemblies.</p> <ol style="list-style-type: none"> 1. Oil level too low. 2. Drive and driven bevel gears damaged or worn. 3. Excessive backlash. 4. Improper tooth contact. 5. Damage to bearings. <p>Noise seems to come from propeller shaft area.</p> <ol style="list-style-type: none"> 1. Propeller shaft universal joint damaged. 2. Propeller shaft splines damaged or worn. 3. Insufficient lubricant. 4. Cam dog contacting surface damaged or worn. 	<p>Refill. (Check oil jet/replace oil seal) Replace. Adjust. Adjust. Replace.</p> <p>Replace. Replace. Refill. (Replace oil seal) Replace.</p>

Complaint	Symptom and possible causes	Remedy
No power transmitted from engine to rear wheel.	<ol style="list-style-type: none"> 1. Broken propeller shaft. 2. Broken gear teeth. 3. Broken or damaged input/output cam dog. 	<p>Replace. Replace. Replace.</p>
Secondary bevel gear and final bevel gear assemblies oil leak.	<ol style="list-style-type: none"> 1. Damage to oil seals. 2. Damage to O-rings. 3. Loose bolts on secondary gear case and final gear bearing case. 	<p>Replace. Replace. Retighten.</p>

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	<ol style="list-style-type: none"> 1. Starter jet is clogged. 2. Starter pipe is clogged. 3. Air leaking from a joint between starter body and carburetor. 4. Air leaking from carburetor's joint or vacuum gauge joint. 5. Starter plunger is not operating properly. 	<p>Clean. Clean. Check starter body and carburetor for tightness, adjust and replace gasket. Check and adjust. Check and adjust.</p>
Idling or low-speed trouble	<ol style="list-style-type: none"> 1. Pilot jet, pilot air jet are clogged or loose. 2. Air leaking from carburetor's joint, vacuum gauge joint, or starter. 3. Pilot outlet or bypass is clogged. 4. Starter plunger is not fully closed. 	<p>Check and clean. Check and adjust. Check and clean. Check and adjust.</p>
Medium- or high-speed trouble.	<ol style="list-style-type: none"> 1. Main jet or main air jet is clogged. 2. Needle jet is clogged. 3. Throttle valve not operating properly. 4. Filter is clogged. 5. Carburetor balancing adjuster loose. 	<p>Check and clean. Check and clean. Check throttle valve for operation. Check and clean. Retighten and balance the carbs.</p>
Overflow and fuel level fluctuations.	<ol style="list-style-type: none"> 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 carburetor air vent pipe. 7. Defective fuel pump. 8. Defective pick-up coil/ignitor unit/ignition coil. 	<p>Replace. Replace. Check and adjust. Clean. Adjust float height. Clean. Replace. Replace.</p>

RADIATOR

Complaint	Symptom and possible causes	Remedy
Engine overheats.	<ol style="list-style-type: none"> 1. Not enough cooling water. 2. Radiator core is clogged with dirt or trashes. 3. Erratic thermostat, stuck in closed position. 4. Faulty cooling fan. 5. Defective thermo-switch. 6. Clogged water passage. 7. Air trapped in the cooling circuit. 8. Defective water pump/pump drive chain. 9. Use incorrect cooling water. 	Add coolant. Clean. Replace. Repair or replace. Replace. Clean. Bleed out air. Replace. Replace.
Engine overcools.	<ol style="list-style-type: none"> 1. Erratic thermostat, stuck in full-open position. 2. Defective thermo-switch. 3. Extremely cold weather. 	Replace. Replace. Put on the radiator cover.

ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	<ol style="list-style-type: none"> 1. Defective ignition coil. 2. Defective spark plugs. 3. Defective pick-up coil or ignitor unit. 	Replace. Replace. Replace.
Spark plugs soon become fouled with carbon.	<ol style="list-style-type: none"> 1. Mixture too rich. 2. Idling speed set too high. 3. Incorrect gasoline. 4. Dirty element in air cleaner. 5. Spark plugs too cold. 	Adjust carburetors. Adjust carburetors. Change. Clean. Replace with hot type plugs.
Spark plugs become fouled too soon.	<ol style="list-style-type: none"> 1. Worn piston rings. 2. Pistons or cylinders worn. 3. Excessive clearance of valve stems in valve guides. 4. Worn stem oil seal. 	Replace. Replace. Replace. Replace.
Spark plug electrodes overheat or burn.	<ol style="list-style-type: none"> 1. Spark plugs too hot. 2. The engine overheats. 3. Defective pick-up coil or ignitor unit. 4. Spark plugs loose. 5. Mixture too lean. 	Replace with cold type plugs. Tune up. Replace. Retighten. Adjust carburetors.
Generator does not charge.	<ol style="list-style-type: none"> 1. Open or short in lead wires, or loose lead connections. 2. Shorted, grounded or open generator coils. 3. Shorted or punctured regulator/rectifier. 	Repair or replace or retighten. Replace. Replace.
Generator charge, but charging rate is below the specification.	<ol style="list-style-type: none"> 1. Lead wires tend to get shorted or open-circuited or loosely connected at terminals. 2. Grounded or open-circuited stator coils of generator. 3. Defective regulator/rectifier. 4. Not enough electrolyte in the battery. 5. Defective cell plates in the battery. 	Repair, or retighten. Replace. Replace. Add distilled water between the level lines. Replace the battery.

Complaint	Symptom and possible causes	Remedy
Generator overcharges.	<ol style="list-style-type: none"> 1. Internal short-circuit in the battery. 2. Resistor element in the regulator/rectifier damaged or defective. 3. Regulator/rectifier poorly grounded. 	<p>Replace the battery. Replace.</p> <p>Clean and tighten ground connection.</p>
Unstable charging.	<ol style="list-style-type: none"> 1. Lead wire insulation frayed due to vibration, resulting in intermittent shorting. 2. Generator internally shorted. 3. Defective regulator/rectifier. 	<p>Repair or replace.</p> <p>Replace. Replace.</p>
Starter button is not effective.	<ol style="list-style-type: none"> 1. Battery run down. 2. Defective switch contacts. 3. Brushes not seating properly on commutator in starter motor. 4. Defective starter relay/starter interlock switch. 	<p>Recharge or replace. Replace. Repair or replace.</p> <p>Replace.</p>

BATTERY

Complaint	Symptom and possible causes	Remedy
"Sulfation", acidic white powdery substance or spots on surfaces of cell plates.	<ol style="list-style-type: none"> 1. Not enough electrolyte. 2. Battery case is cracked. 3. Battery has been left in a run-down condition for a long time. 4. Contaminated electrolyte (Foreign matter has entered the battery and become mixed with the electrolyte.) 	<p>Add distilled water, if the battery has not been damaged and "sulfation" has not advanced too far, and recharge.</p> <p>Replace the battery. Replace the battery.</p> <p>If "sulfation" has not advanced too far, try to restore the battery by replacing the electrolyte, recharging it fully with the battery detached from the motorcycle and then adjusting electrolyte S.G.</p>
Battery runs down quickly.	<ol style="list-style-type: none"> 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 high electrolyte S.G. 4. Electrolyte S.G. is too low. 5. Contaminated electrolyte. 6. Battery is too old. 	<p>Check the generator, regulator/rectifier and circuit connections, and make necessary adjustments to obtain specified charging operation.</p> <p>Replace the battery, and correct the charging system. Replace the battery.</p> <p>Recharge the battery fully and adjust electrolyte S.G. Replace the electrolyte, recharge the battery and then adjust S.G. Replace the battery.</p>

9-7 SERVICING INFORMATION

Complaint	Symptom and possible causes	Remedy
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. "sulfation"	<ol style="list-style-type: none"> 1. Charging rate too low or too high. (When not in use, batteries should be recharged at least once a month to avoid sulfation.) 2. Battery electrolyte excessive or insufficient, or its specific gravity too high or too low. 3. The battery left unused for too long in cold climate. 	<p>Replace the battery.</p> <p>Keep the electrolyte up to the prescribed level, or adjust the S.G. by consulting the battery maker's direction.</p> <p>Replace the battery, if badly sulfated.</p>
Battery discharges too rapidly.	<ol style="list-style-type: none"> 1. Dirty container top and sides. 2. Impurities in the electrolyte or electrolyte S.G. is too high. 	<p>Clean.</p> <p>Change the electrolyte by consulting the battery maker's directions.</p>

CHASSIS

Complaint	Symptom and possible causes	Remedy
Handling feels too heavy.	<ol style="list-style-type: none"> 1. Steering stem nut overtightened. 2. Worn roller bearing or race in steering stem. 3. Distorted steering stem. 4. Not enough pressure in tires. 5. Overtightened steering races. 	<p>Adjust.</p> <p>Replace.</p> <p>Replace.</p> <p>Adjust.</p> <p>Adjust.</p>
Steering oscillation.	<ol style="list-style-type: none"> 1. Loss of balance between right and left suspensions. 2. Bent front fork. 3. Bent front axle or crooked tire. 4. Loose steering stem bearings. 5. Worn or incorrect tires or wrong tire pressure. 	<p>Adjust.</p> <p>Repair or replace.</p> <p>Replace.</p> <p>Adjust.</p> <p>Adjust or replace.</p>
Wobbly front wheel.	<ol style="list-style-type: none"> 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. 	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Retighten.</p> <p>Retighten.</p> <p>Replace.</p>
Front suspension too soft.	<ol style="list-style-type: none"> 1. Weakened springs. 2. Not enough fork oil. 3. Wrong weight fork oil. 	<p>Replace.</p> <p>Refill.</p> <p>Replace.</p>
Front suspension too stiff.	<ol style="list-style-type: none"> 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. 	<p>Replace.</p> <p>Remove excess oil.</p> <p>Replace.</p> <p>Adjust.</p>
Noisy front suspension.	<ol style="list-style-type: none"> 1. Not enough fork oil. 2. Loose nuts on suspension. 	<p>Refill.</p> <p>Retighten.</p>

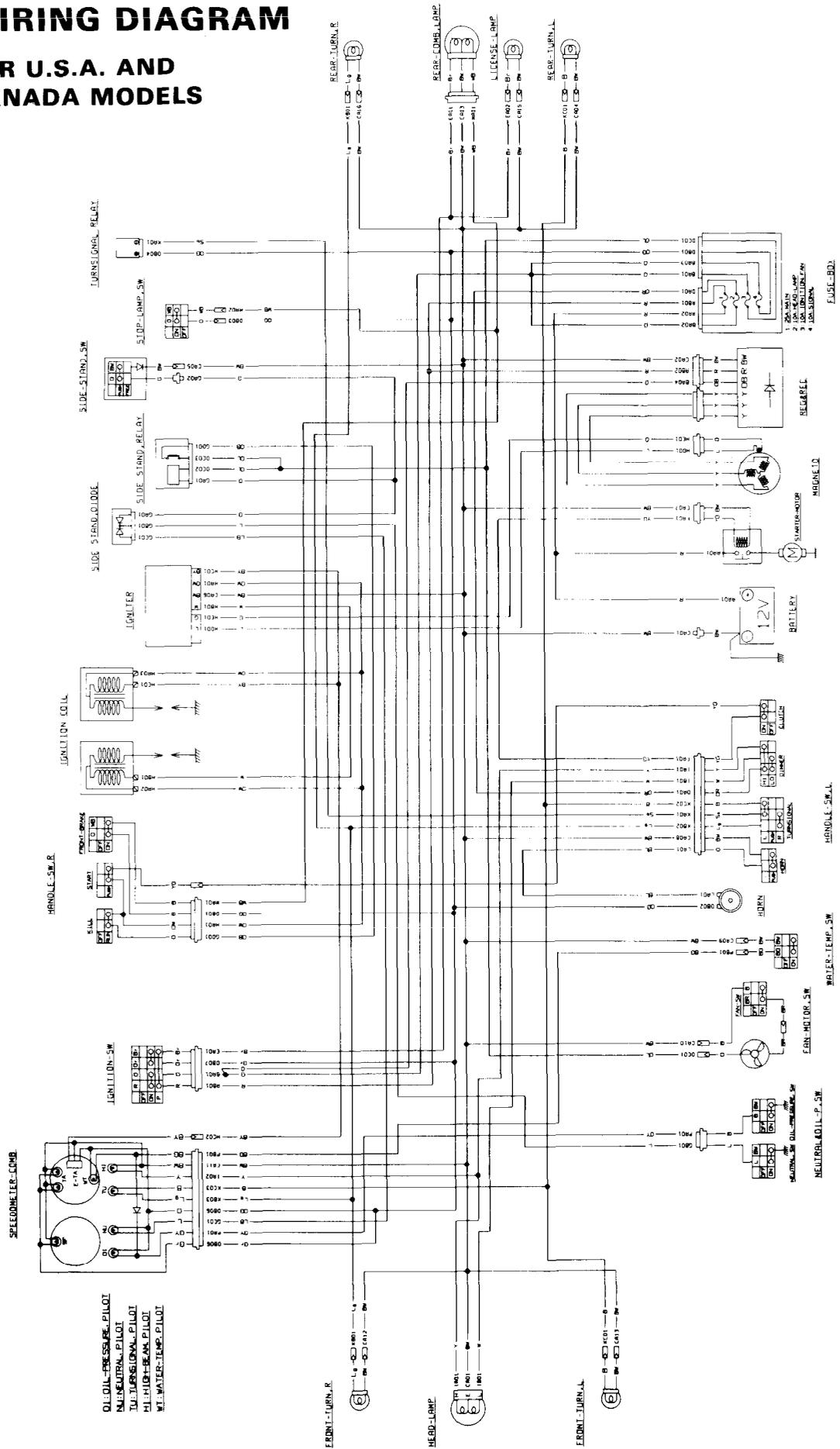
Complaint	Symptom and possible causes	Remedy
Wobbly rear wheel.	<ol style="list-style-type: none"> 1. Distorted wheel rim. 2. Worn rear wheel bearings or swingarm bearings. 3. Defective or incorrect tire. 4. Worn swingarm bearings. 5. Loose nuts on rear suspension. 	Replace. Replace. Replace. Replace. Retighten.
Rear suspension too soft.	<ol style="list-style-type: none"> 1. Weakened spring. 2. Rear suspension adjuster improperly set. 3. Oil leakage of rear shock absorber. 	Replace. Reset. Replace.
Rear suspension too stiff.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1. Loose nut on rear suspension. 2. Worn swingarm bearings. 	Retighten. Replace.

BRAKES

Complaint	Symptom and possible causes	Remedy
Poor braking.	<ol style="list-style-type: none"> 1. Not enough brake fluid in the reservoir. 2. Air trapped intake fluid circuit. 3. Pads/shoe worn down. 4. Too much play on brake lever/pedal. 	Refill to level mark. Bleed air out. Replace. Adjust.
Insufficient brake power.	<ol style="list-style-type: none"> 1. Leakage of brake fluid from hydraulic system. 2. Worn pads/shoe. 3. Oil adhesion on engaging surface of pads/shoe. 4. Worn disc. 5. Air entered into hydraulic system. 	Repair or replace. Replace. Clean disc and pads. Replace. Bleed air.
Brake squeaking.	<ol style="list-style-type: none"> 1. Carbon adhesion on pad/shoe surface. 2. Tilted pad. 3. Damaged wheel bearing. 4. Loose front-wheel axle or rear-wheel axle. 5. Worn pads/shoe. 6. Foreign material in brake fluid. 7. Clogged return port of master cylinder. 8. Wrongly fixed pad shims. 9. Calipers binding no 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.	<ol style="list-style-type: none"> 1. Air entered into hydraulic system. 2. Insufficient brake fluid. 3. Improper quality of brake fluid. 	Bleed air. Replenish fluid to specified level; bleed air. Replace with correct fluid.
Leakage of brake fluid.	<ol style="list-style-type: none"> 1. Insufficient tightening of connection joints. 2. Cracked hose. 3. Worn piston and/or cup. 	Tighten to specified torque. Replace. Replace piston and/or cup.

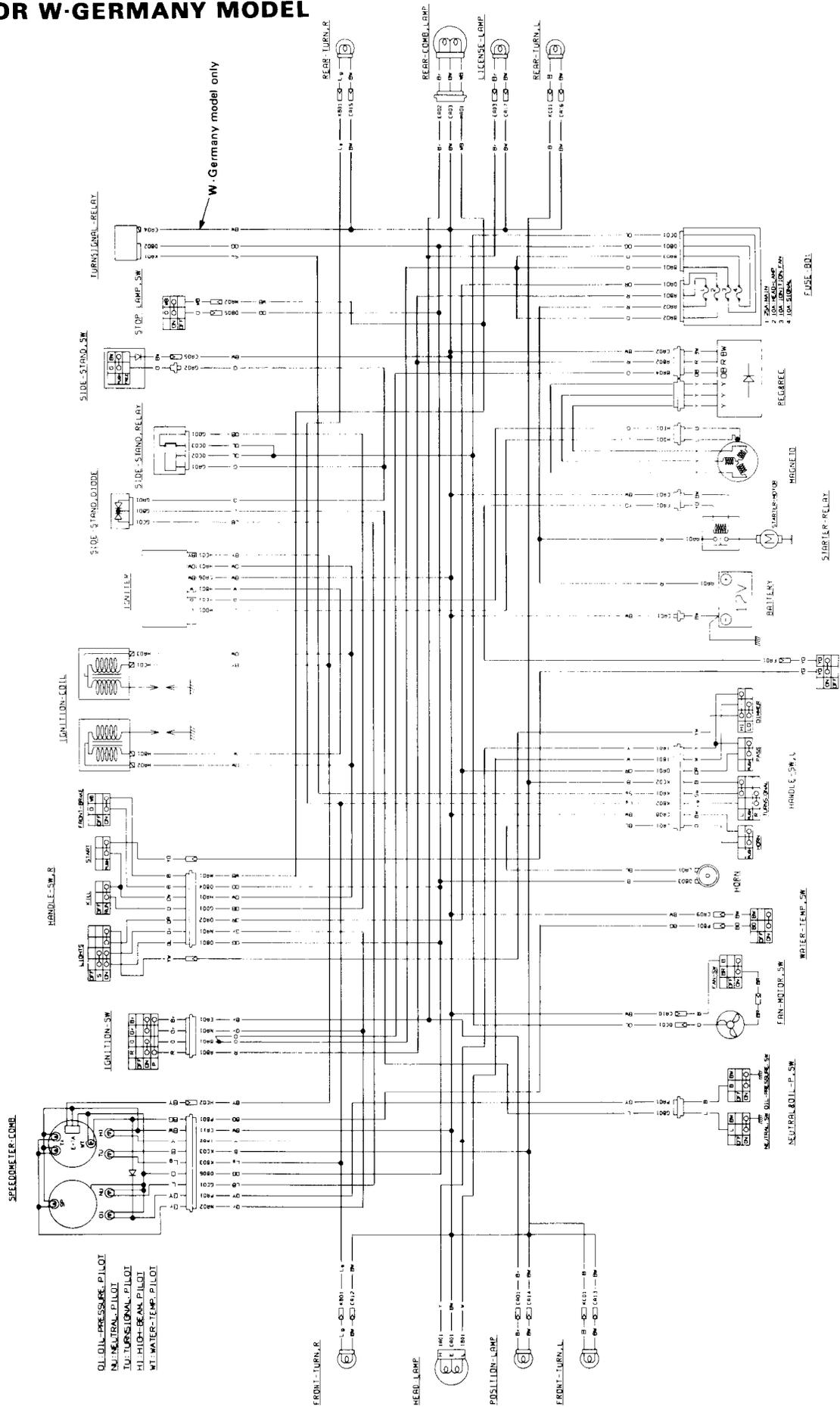
WIRING DIAGRAM

FOR U.S.A. AND CANADA MODELS



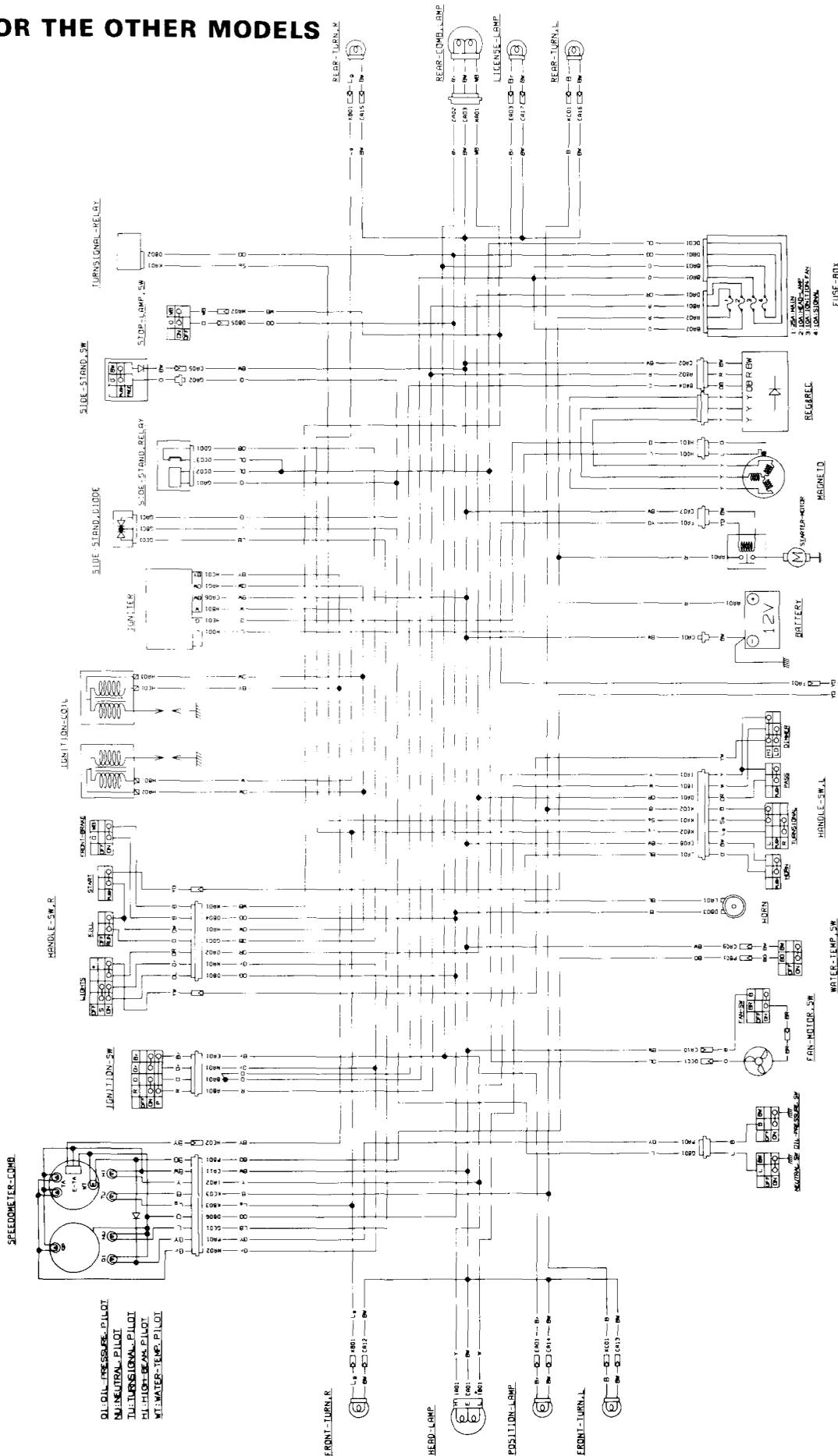
WIRE COLOR	DESCRIPTION
B	Black
Bl	Blue
Br	Brown
G	Green
Gr	Gray
Lbl	Light blue
Lg	Light green
O	Orange
R	Red
W	White
Y	Yellow
B/Br	Black with Brown tracer
B/G	Black with Green tracer
B/R	Black with Red tracer
B/W	Black with White tracer
B/Y	Black with Yellow tracer
G/Y	Green with Yellow tracer
O/B	Orange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

FOR W-GERMANY MODEL



- 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/Br Black with Green tracer
 - B/G Black with Green tracer
 - B/R Black with Red tracer
 - B/W Black with White tracer
 - Bl/W Blue 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
 - O/W Orange with White tracer
 - O/Y Orange with Yellow tracer
 - R/W Red with White tracer
 - W/B White with Black tracer
 - Y/G Yellow with Green tracer

FOR THE OTHER MODELS



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/Br	Black with Brown tracer
B/G	Black with Green tracer
B/R	Black with Red tracer

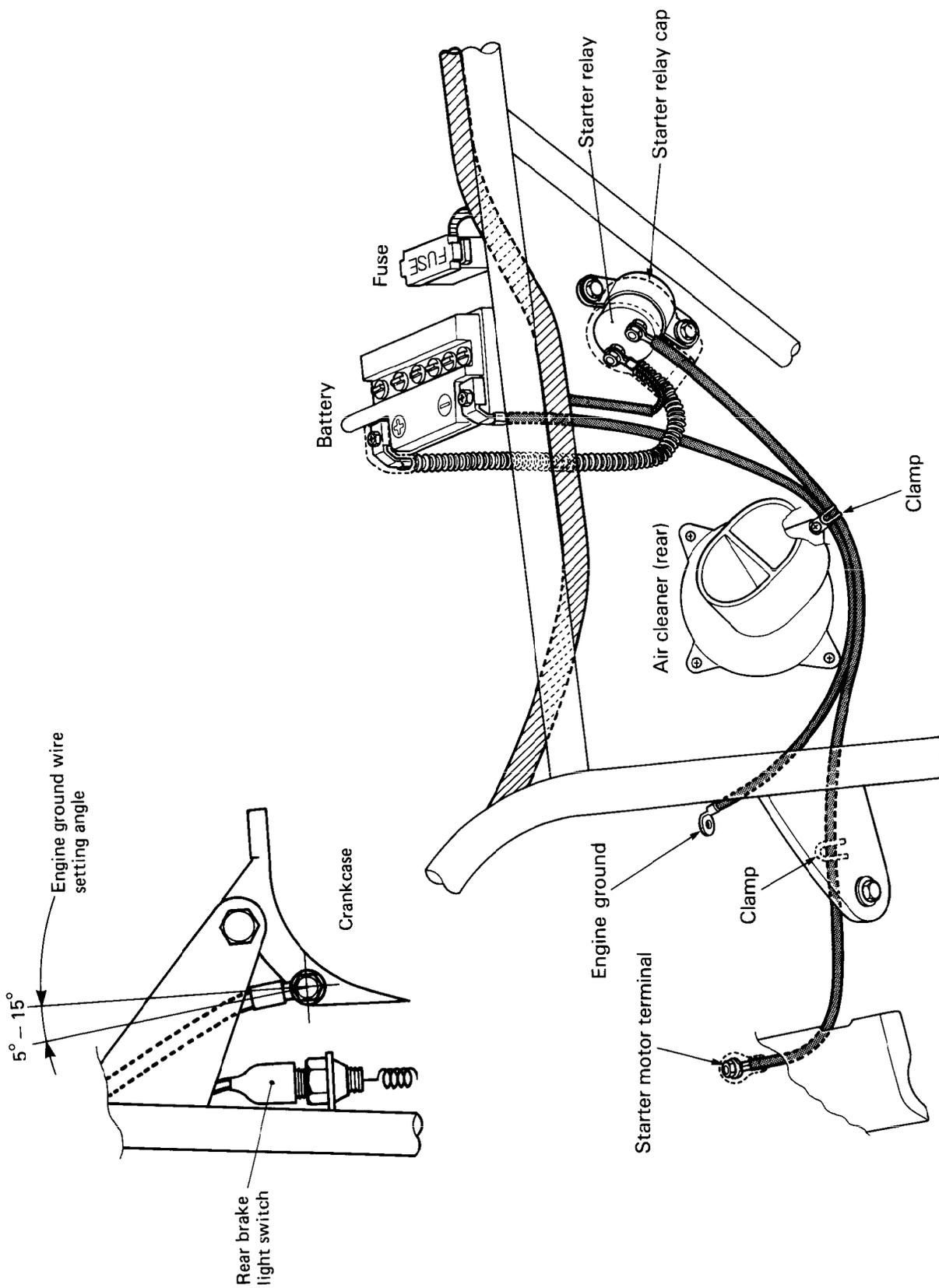
B/W	Black with White tracer
B/Y	Black with Yellow tracer
Bl/W	Blue with White tracer
G/Y	Green with Yellow tracer
O/B	Orange with Black tracer
O/Bl	Orange with Blue tracer
O/G	Orange with Green tracer

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

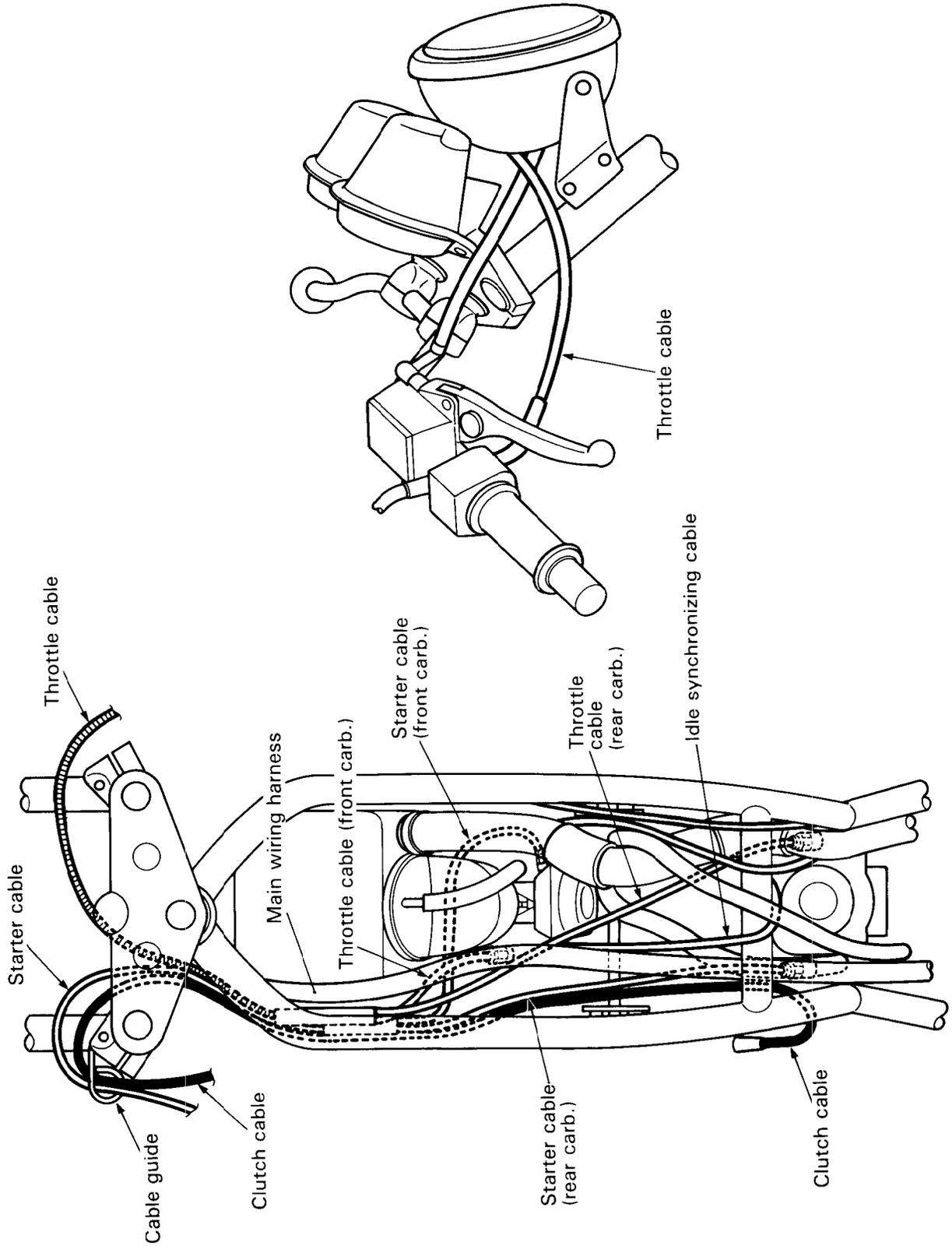
- DI LAMP PRESSURE PILOT
- N L NEUTRAL PILOT
- T L TURN SIGNAL PILOT
- P L PARK SIGNAL PILOT
- W L WATER TEMP PILOT

1 20A MAIN AMP
2 10A FUSE FOR FAN
3 10A FUSE FOR FAN
4 10A FUSE FOR FAN

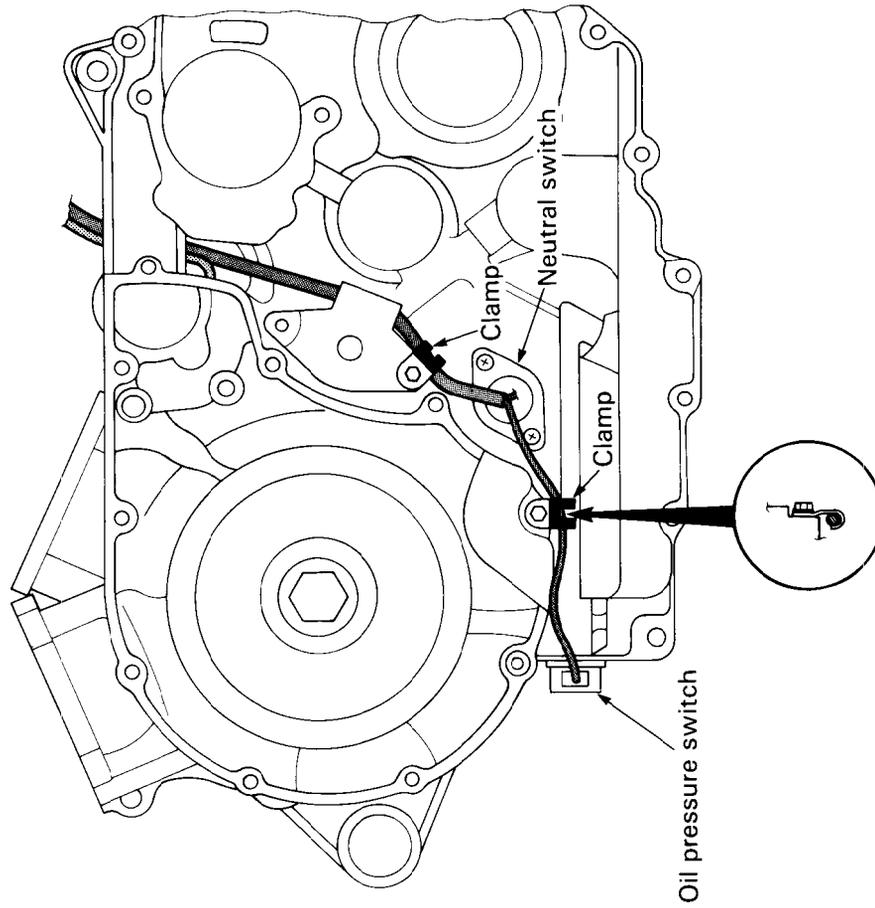
WIRE ROUTING



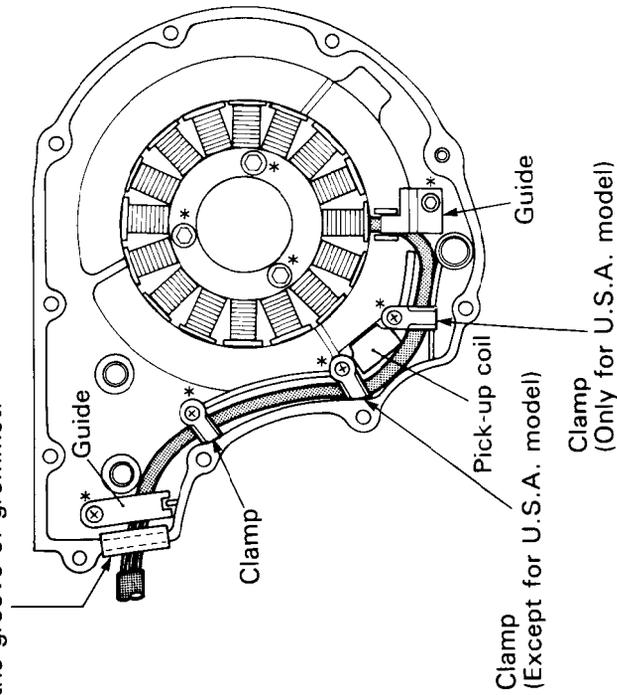
CABLE ROUTING



GENERATOR, NEUTRAL SWITCH AND OIL PRESSURE SWITCH LEAD WIRES

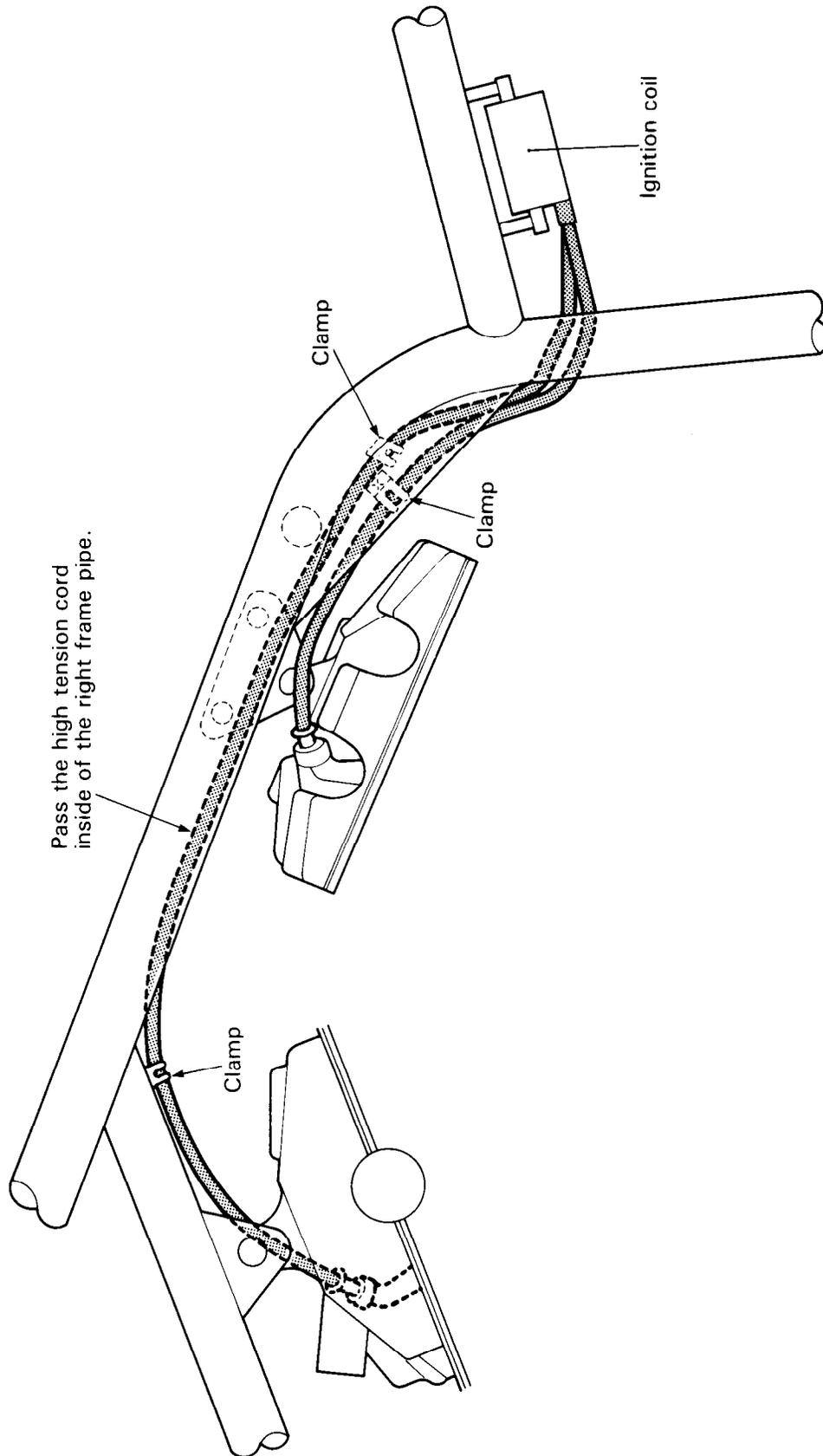


Apply SUZUKI BOND No.1207B/No.1215 to the groove of grommet.

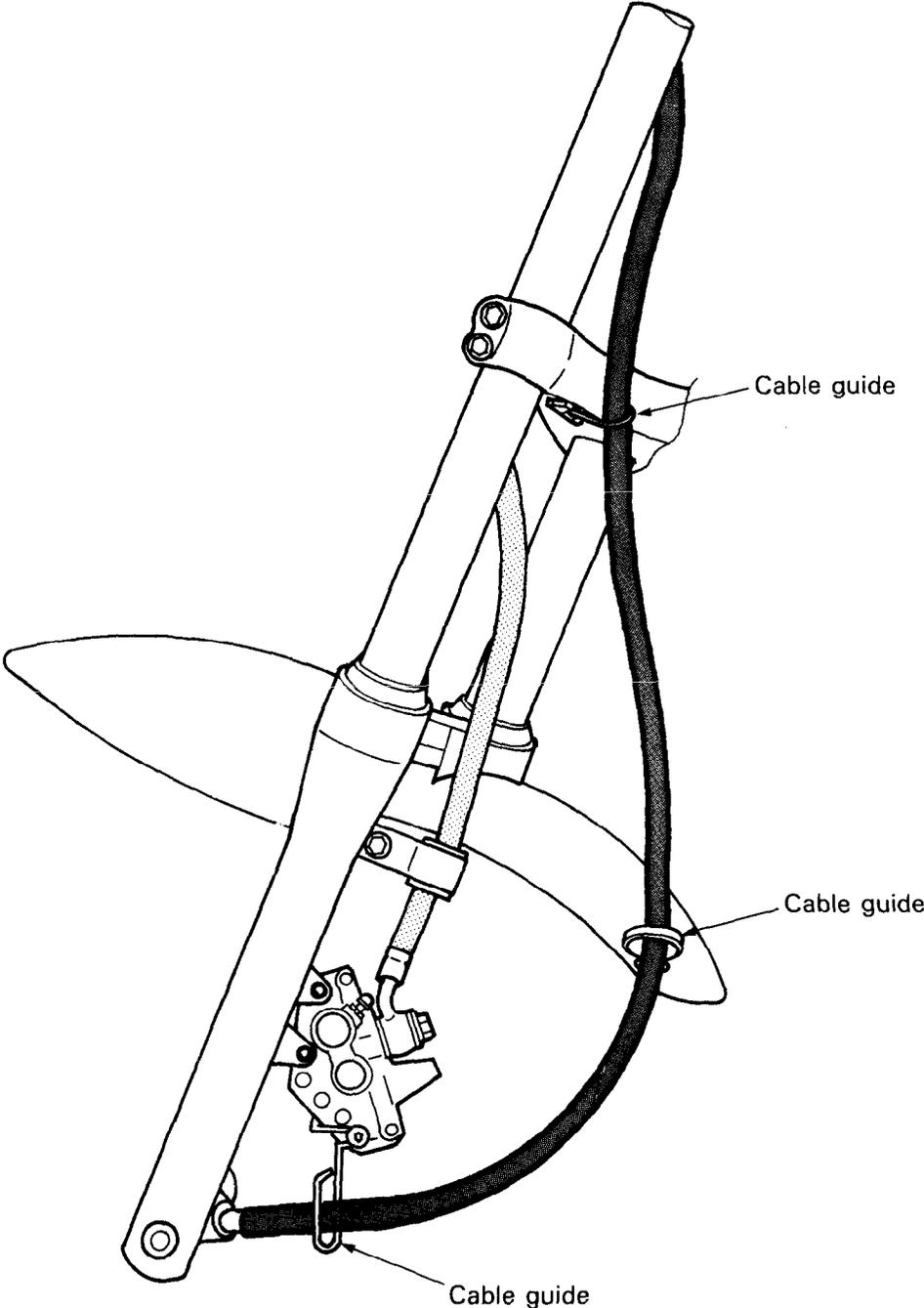


NOTE:
 (*) Apply a small quantity of **THREAD LOCK "1342"** to the respective securing screws and bolts.

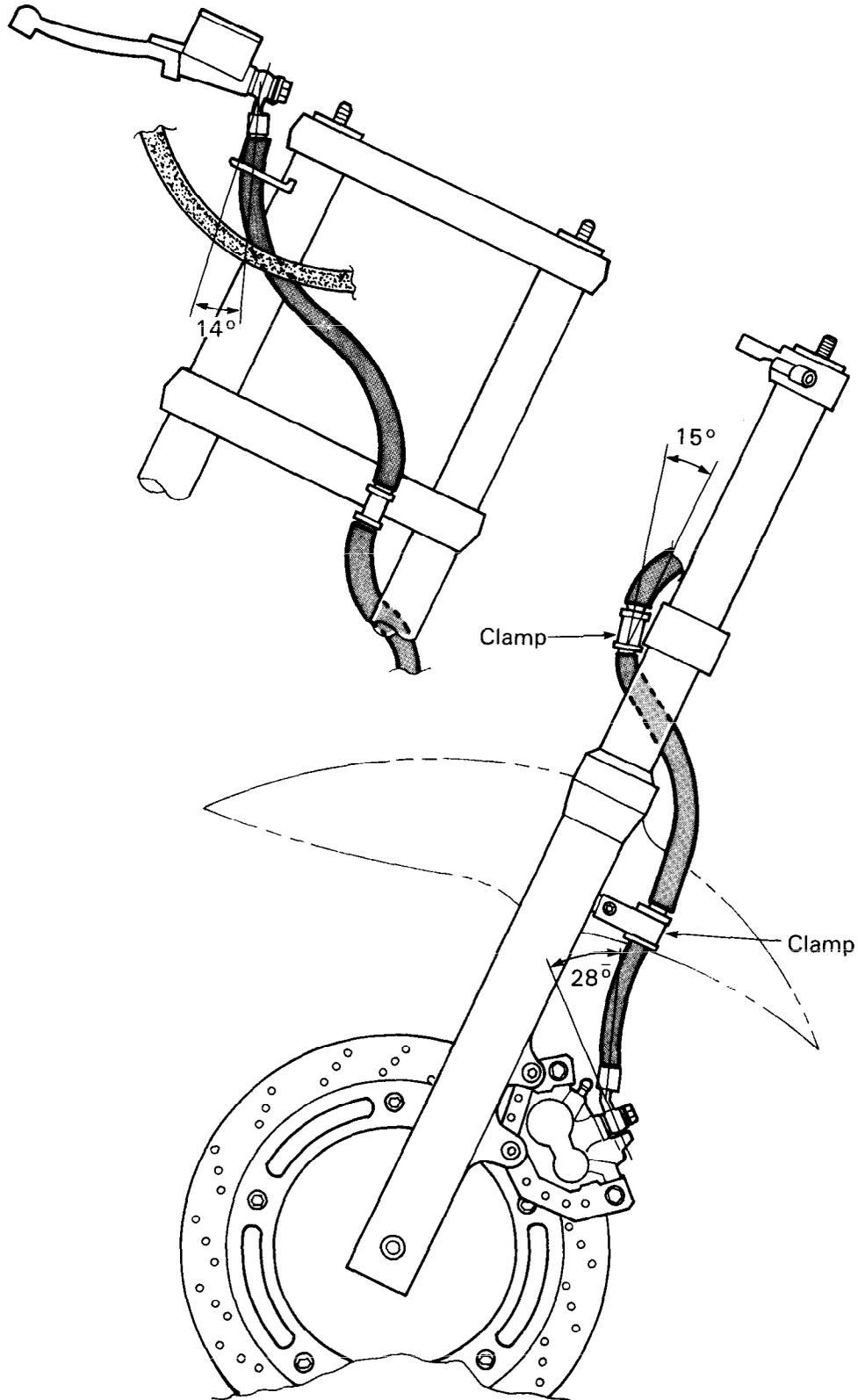
HIGH TENSION CORD ROUTING



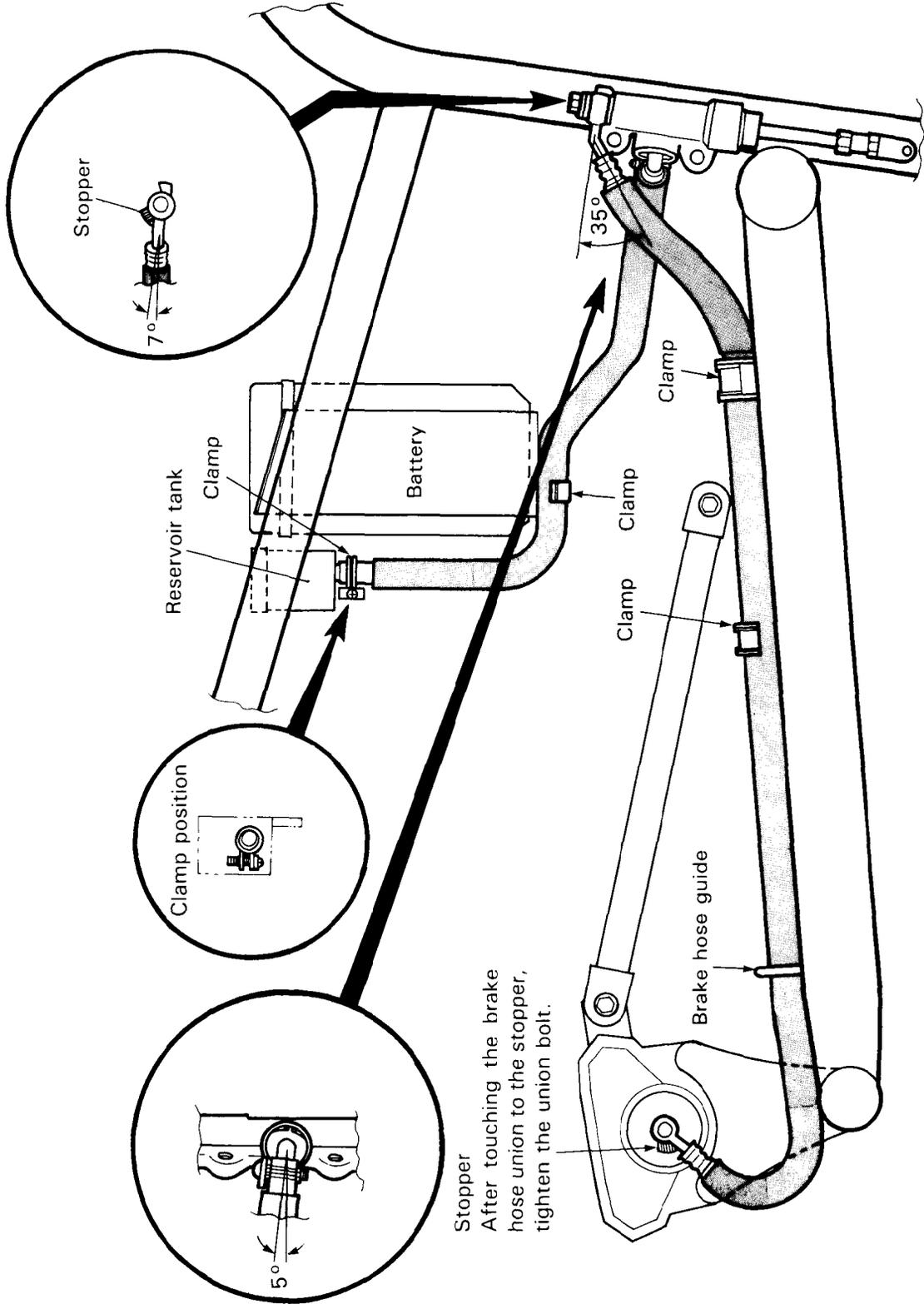
SPEEDOMETER CABLE ROUTING



FRONT BRAKE HOSE ROUTING

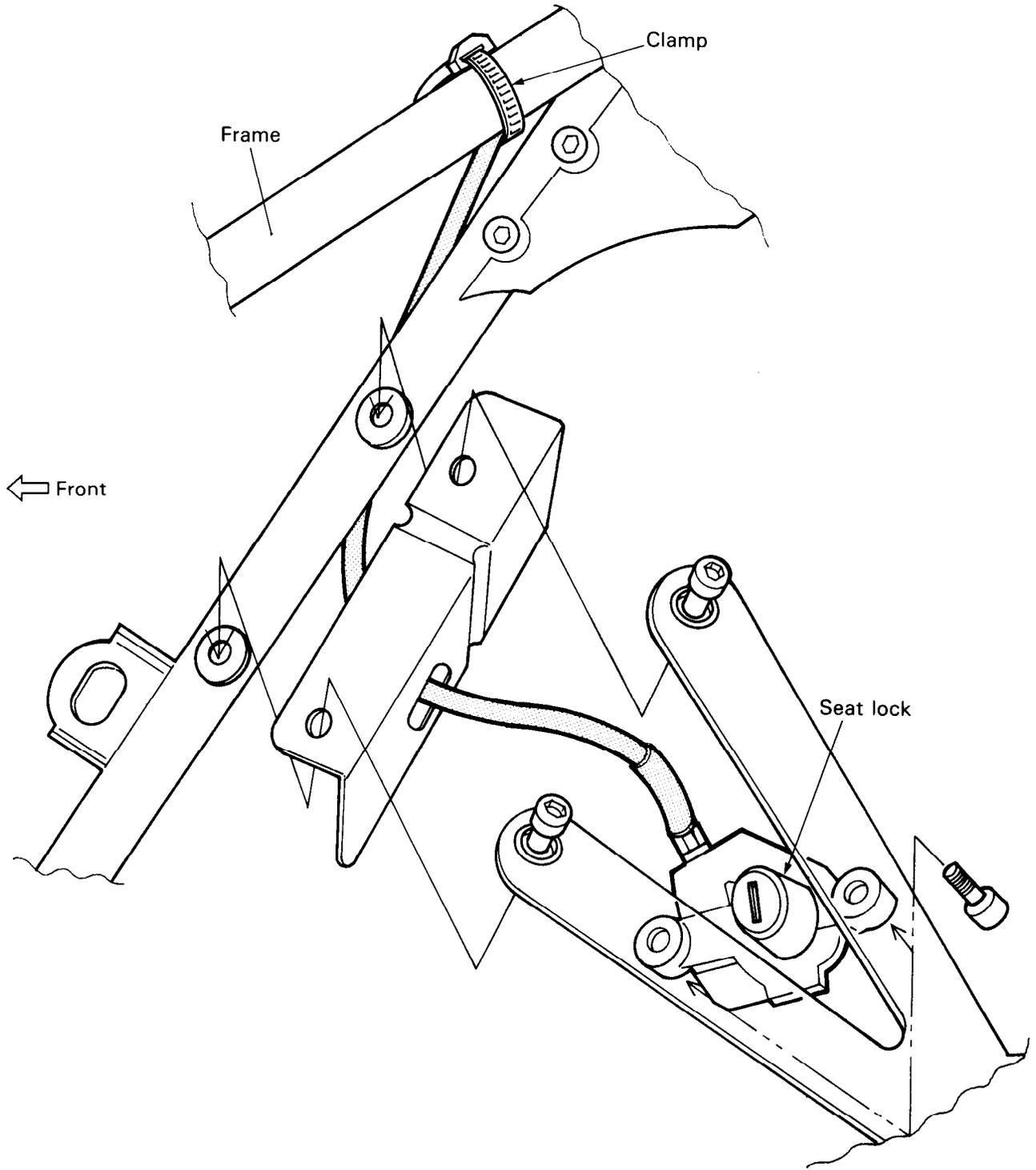


REAR BRAKE HOSE ROUTING

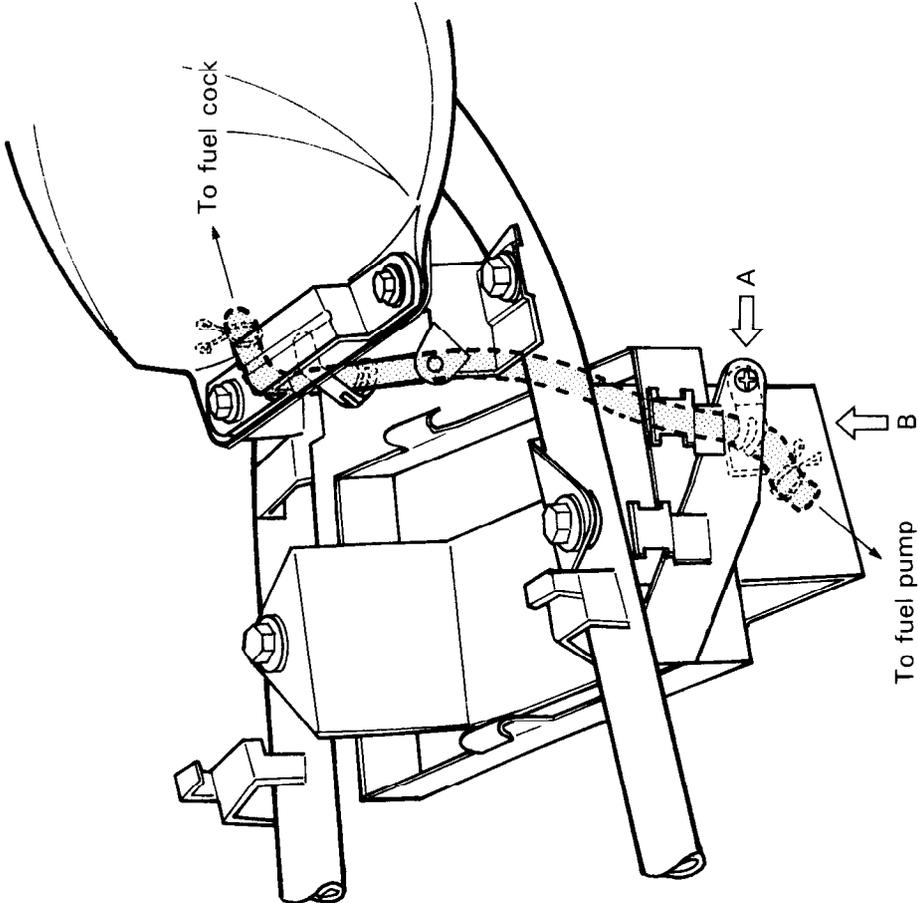
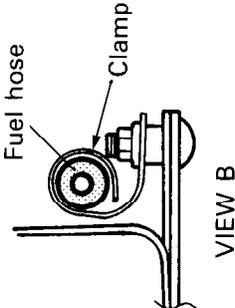
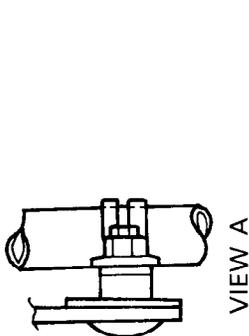


Stopper
After touching the brake hose union to the stopper, tighten the union bolt.

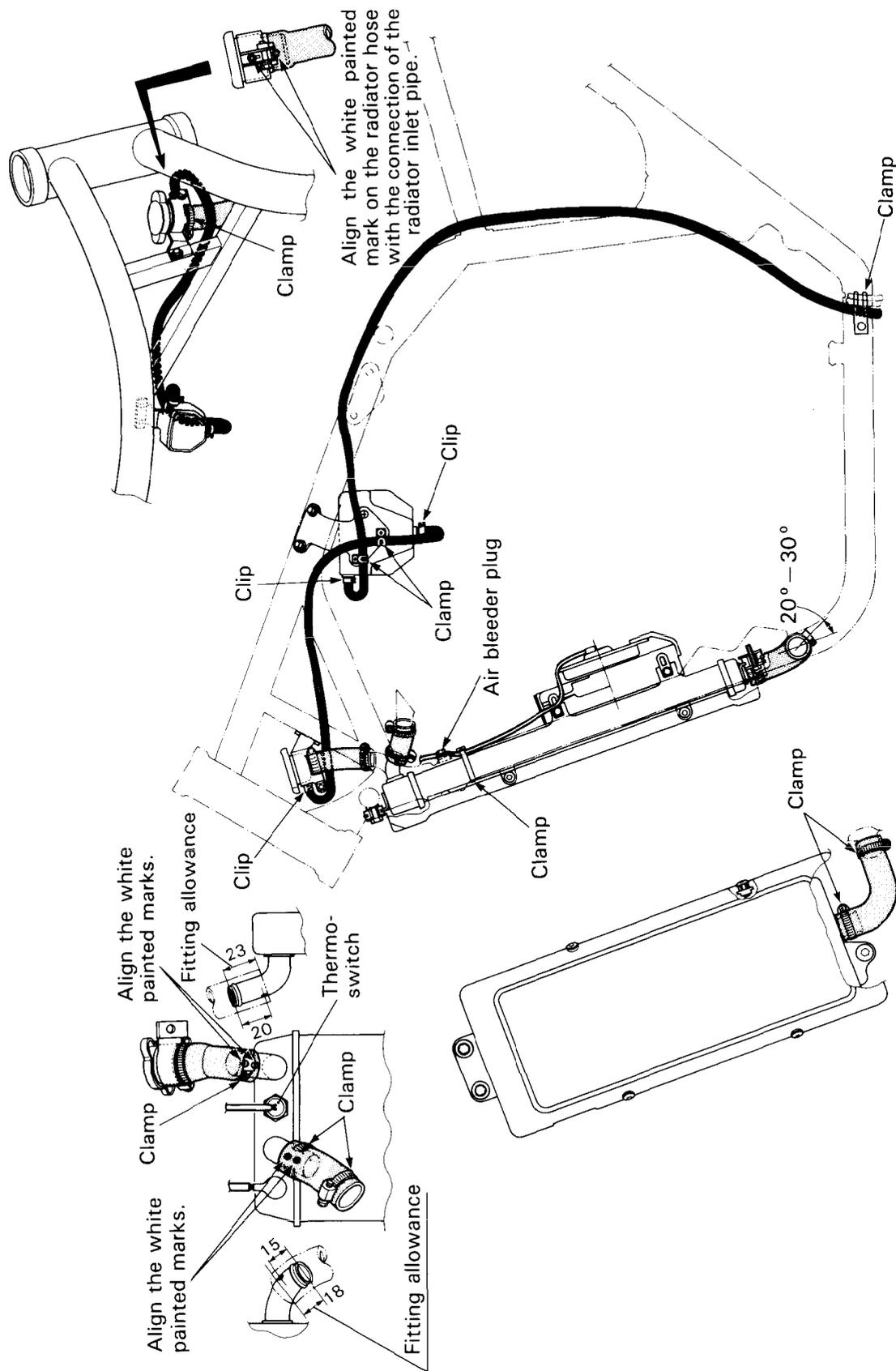
SEAT LOCK CABLE ROUTING



FUEL HOSE ROUTING



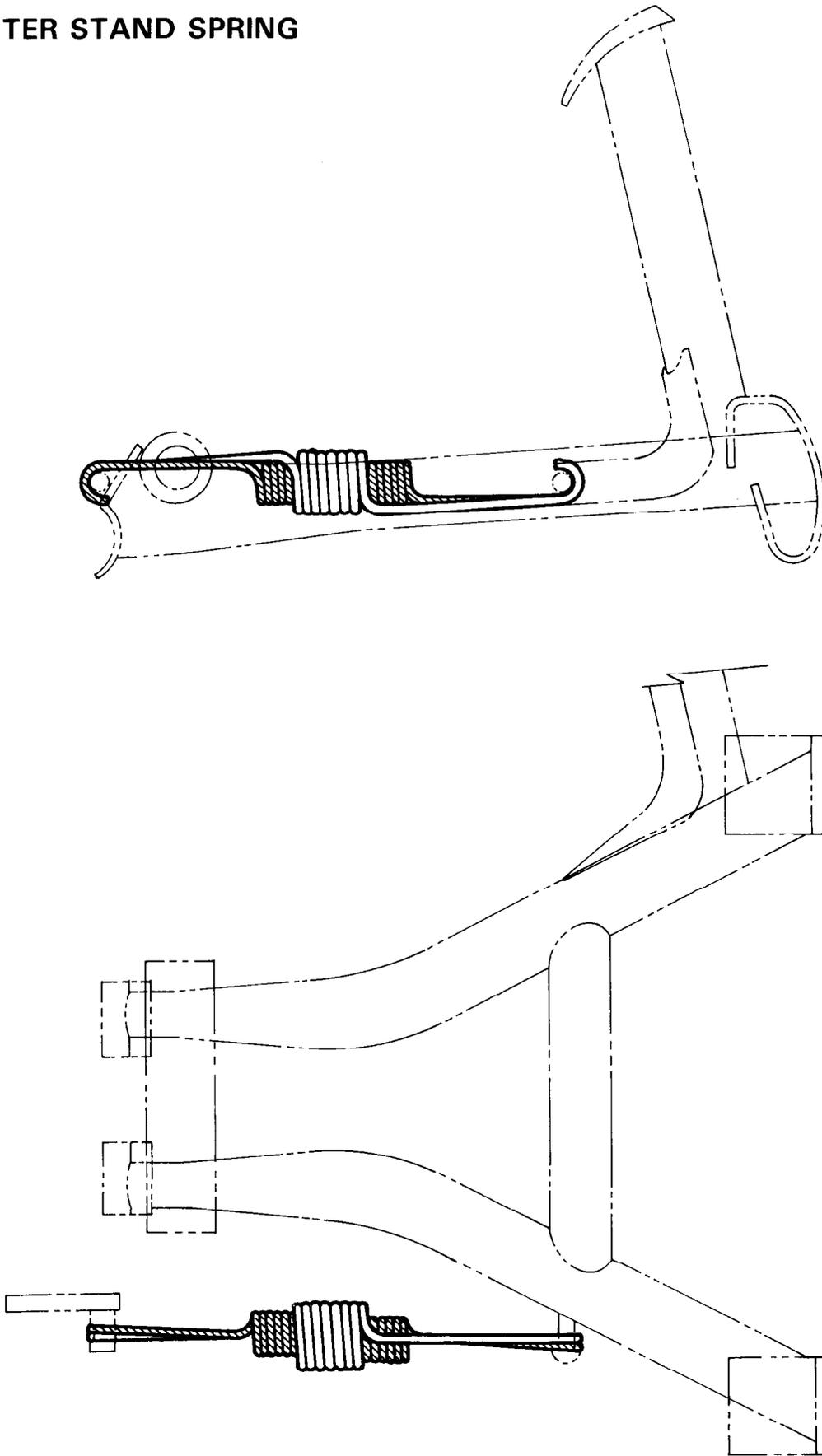
RADIATOR HOSE ROUTING



Tightening torque

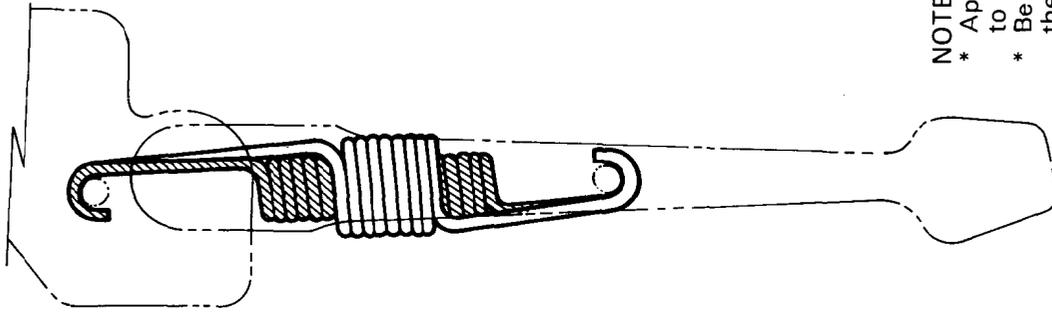
ITEM	N·m	kg·m	lb·ft
Air bleeder plug	10-12	1.0-1.2	7.0-8.5
Thermo-switch	9-14	0.9-1.4	6.5-10.0

CENTER STAND SPRING

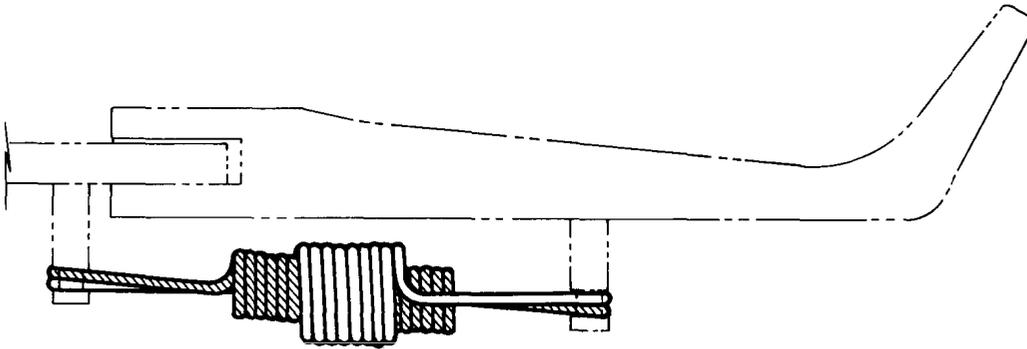


NOTE:
* Apply SUZUKI SUPER GREASE "A" to the center stand pivot.
* Be sure to bring the long arm side of the spring to top when fitting.

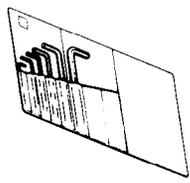
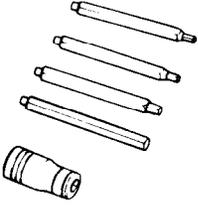
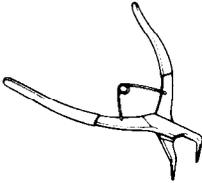
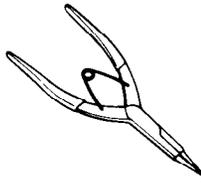
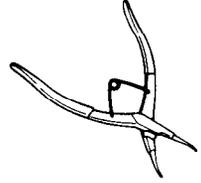
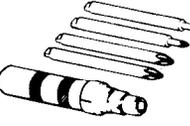
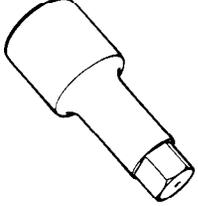
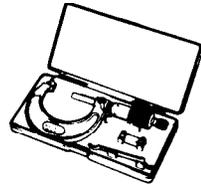
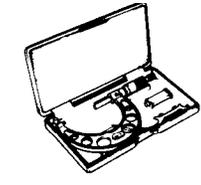
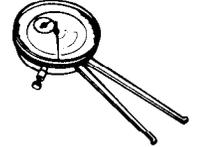
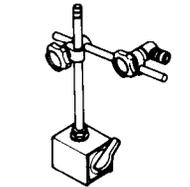
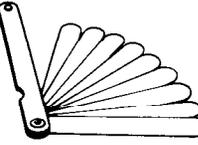
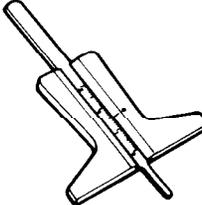
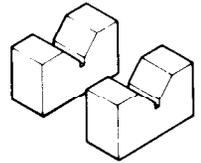
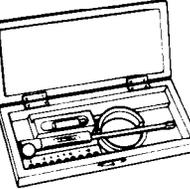
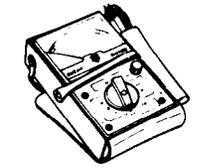
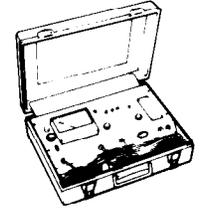
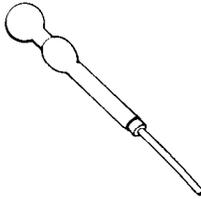
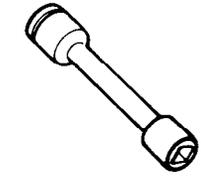
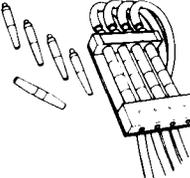
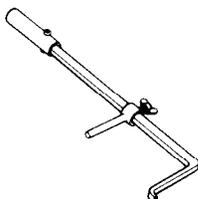
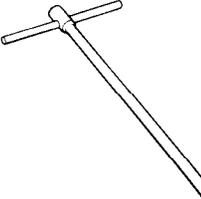
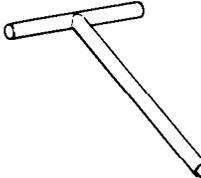
SIDE-STAND SPRING



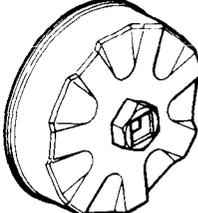
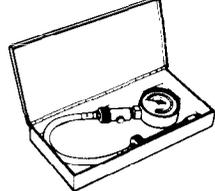
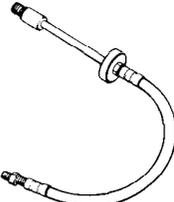
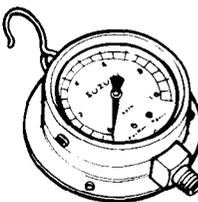
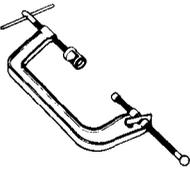
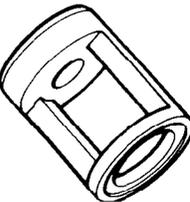
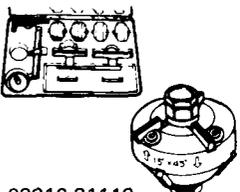
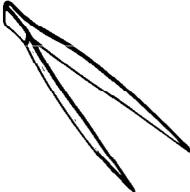
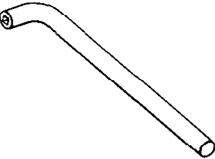
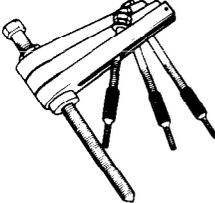
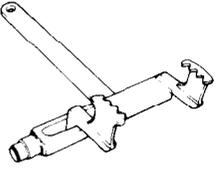
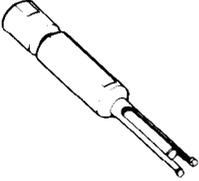
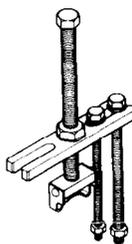
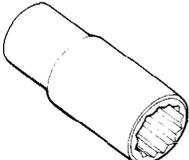
NOTE:
* Apply SUZUKI SUPER GREASE "A"
to the side-stand pivot.
* Be sure to bring the long arm side of
the spring to top when fitting.

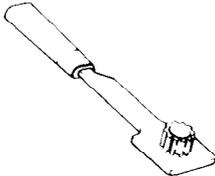
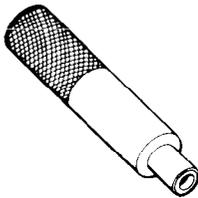
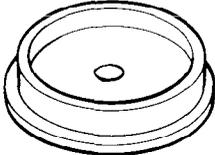
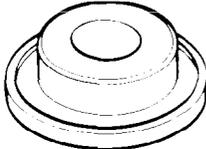
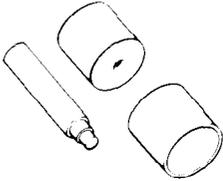
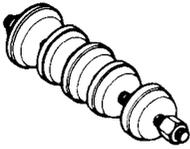
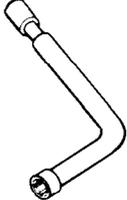
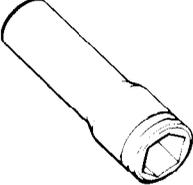
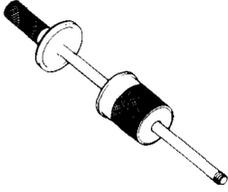
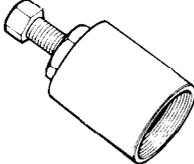
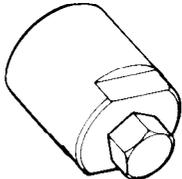
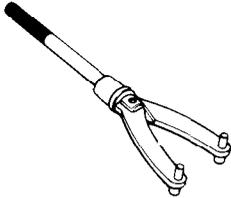
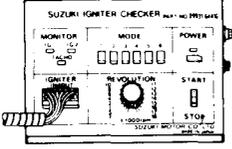
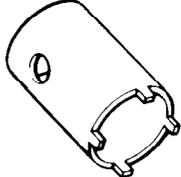
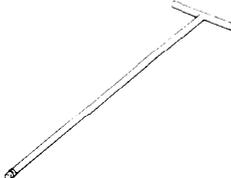
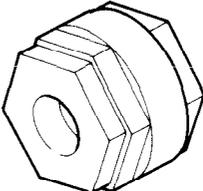
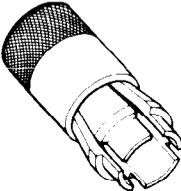
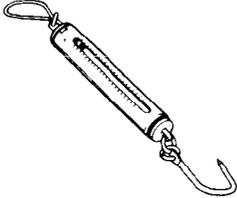
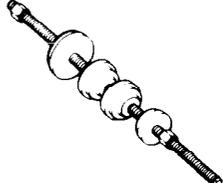
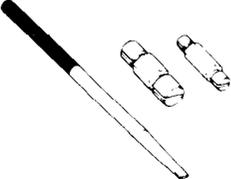
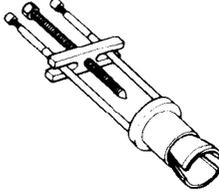
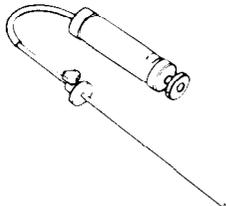


SPECIAL TOOLS

 <p>09900-00401 "L" type hexagon wrench set</p>	 <p>09900-00410 Hexagon bit wrench set</p>	 <p>09900-06105 Snap ring pliers</p>	 <p>09900-06107 Snap ring pliers</p>	 <p>09900-06108 Snap ring pliers</p>
 <p>09900-09003 Impact driver set</p>	 <p>09900-18710 12 mm Hexagon wrench</p>	 <p>09900-20101 or 09900-20102 Vernier calipers</p>	 <p>09900-20202 Micrometer (25 - 50 mm)</p>	 <p>09900-20204 Micrometer (75 - 100 mm)</p>
 <p>09900-20205 Micrometer (0 - 25 mm)</p>	 <p>09900-20508 Cylinder bore gauge set</p>	 <p>09900-20602 Dial gauge (1/1000 mm, 1 mm)</p>	 <p>09900-20605 Dial calipers</p>	 <p>09900-20606 Dial gauge (1/100 mm, 10 mm)</p>
 <p>09900-20701 Magnetic stand</p>	 <p>09900-20803 09900-20804 09900-20806 Thickness gauge</p>	 <p>09900-20805 Tire depth gauge</p>	 <p>09900-21304 V-block (100 mm)</p>	 <p>09900-22301 09900-22302 Plastigauge</p>
 <p>09900-22403 Small bore gauge (18 - 35 mm)</p>	 <p>09900-25002 Pocket tester</p>	 <p>09900-28106 Electro tester</p>	 <p>09900-28403 Hydrometer</p>	 <p>09911-74510 Long socket wrench</p>
 <p>09913-13121 Carburetor balancer gauge</p>	 <p>09913-50121 Oil seal remover</p>	 <p>09913-75820 Bearing installer</p>	 <p>09914-24510 T-handle</p>	 <p>09914-25811 6 mm "T" type hexagon wrench</p>

9-27 SERVICING INFORMATION

 <p>09914-79610 Bearing and oil seal installer</p>	 <p>09915-40611 Oil filter wrench</p>	 <p>09915-64510 Compression gauge</p>	 <p>09918-03810 Compression gauge adaptor</p>	 <p>09915-74510 Oil pressure gauge</p>
 <p>09915-74530 Oil pressure gauge adaptor</p>	 <p>09915-77330 Meter (for high pressure)</p>	 <p>09916-14510 Valve lifter</p>	 <p>09916-14910 Valve lifter attachment</p>	 <p>09916-24480 Solid pilot (N-140-5.5)</p>
 <p>09916-21110 Valve seat cutter set Valve seat cutter head N-116, N-212 * See page 3-28</p>	 <p>09916-34541 Reamer handle</p>	 <p>09916-34550 Valve guide reamer (5.5 mm)</p>	 <p>09916-34580 Valve guide reamer (10.8 mm)</p>	 <p>09916-44910 Valve guide remover/ installer</p>
 <p>09916-44920 Attachment</p>	 <p>09916-84510 Tweezers</p>	 <p>09917-10410 Valve adjuster driver</p>	 <p>09918-53810 Tensioner lock tool</p>	 <p>09920-13120 Crankcase separating tool</p>
 <p>09920-50710 Clutch sleeve hub holder</p>	 <p>09921-20200 Bearing remover</p>	 <p>09921-20210 Bearing remover</p>	 <p>09921-21810 Bearing holder</p>	 <p>09921-21820 Bearing retainer wrench</p>
 <p>09923-73210 Bearing remover</p>	 <p>09923-74510 Bearing puller</p>	 <p>09924-34510 Backlash measuring tool</p>	 <p>09924-62410 Final drive gear bearing holder wrench</p>	 <p>09924-62420 22 mm Long socket</p>

 <p>09924-64510 Final drive gear coupling holder</p>	 <p>09924-74510 Handle</p>	 <p>09924-74520 Oil seal remover</p>	 <p>09924-74550 Bearing installer</p>	 <p>09924-74570 Final driven gear bearing installer and remover</p>
 <p>09924-84510 Bearing installer set</p>	 <p>09930-11910 Torx wrench</p>	 <p>09930-13210 Socket wrench</p>	 <p>09930-14530 Universal joint</p>	 <p>09930-30102 Sliding shaft</p>
 <p>09930-30720 Rotor remover (For U.S.A. model)</p>	 <p>09930-34970 Rotor remover</p>	 <p>09930-40113 Rotor holder</p>	 <p>09931-94430 Ignitor checker (Digital type)</p>	 <p>09940-14911 Steering stem nut wrench</p>
 <p>09940-34520 T-handle (Front fork disassembler)</p>	 <p>09940-34592 Attachment G (Front fork disassembler)</p>	 <p>09940-50113 Front fork oil seal installer</p>	 <p>09940-92710 Spring scale</p>	 <p>09941-34513 Steering race installer</p>
 <p>09941-50110 Bearing remover</p>	 <p>09941-54911 Bearing outer race remover</p>	 <p>09941-64510 Bearing and oil seal remover</p>	 <p>09941-74910 Steering bearing installer</p>	 <p>09941-84510 Bearing remover</p>
 <p>09943-74111 Fork oil level gauge</p>	<p>NOTE: When order the special tool, please confirm whether it is available or not.</p>			

TIGHTENING TORQUE

ENGINE

ITEM		N·m	kg·m	lb·ft
Cylinder head cover bolt	M6	9 – 11	0.9 – 1.1	6.5 – 8.0
	M8	21 – 25	2.1 – 2.5	15.0 – 18.0
Cylinder head bolt and nut	M10	35 – 40	3.5 – 4.0	25.5 – 29.0
	M8	8 – 12	0.8 – 1.2	6.0 – 8.5
	M6	9 – 11	0.9 – 1.1	6.5 – 8.0
Primary drive gear bolt		80 – 110	8.0 – 11.0	58.0 – 79.5
Clutch sleeve hub nut		50 – 70	5.0 – 7.0	36.0 – 50.5
Rocker arm bolt		25 – 30	2.5 – 3.0	18.0 – 21.5
Chain guide bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Chain tensioner bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Cam chain sprocket bolt		14 – 16	1.4 – 1.6	10.0 – 11.5
Tappet adjuster lock nut		13 – 16	1.3 – 1.6	9.5 – 11.5
Crankcase bolt	M6	9 – 13	0.9 – 1.3	6.5 – 9.5
	M8	20 – 24	2.0 – 2.4	14.5 – 17.5
Secondary gear case bolt		20 – 24	2.0 – 2.4	14.5 – 17.5
Oil gallery plug	M6	4 – 7	0.4 – 0.7	3.0 – 5.0
	M8	8 – 12	0.8 – 1.2	6.0 – 8.5
	M10	12 – 18	1.2 – 1.8	8.5 – 13.0
	M14	20 – 25	2.0 – 2.5	14.5 – 18.0
	M16	20 – 25	2.0 – 2.5	14.5 – 18.0
Oil pipe clamp bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Magneto cover hole plug		12 – 18	1.2 – 1.8	8.5 – 13.0
T.D.C. Inspection plug		20 – 25	2.0 – 2.5	14.5 – 18.0
Oil drain plug		18 – 23	1.8 – 2.3	13.0 – 16.5
Oil pump bolt		9 – 13	0.9 – 1.3	6.5 – 9.5
Oil relief valve		25 – 30	2.5 – 3.0	18.0 – 21.5
Oil filter union bolt		12 – 18	1.2 – 1.8	8.5 – 13.0
Engine mounting bolt	M8, L135	37 – 45	3.7 – 4.5	50.5 – 63.5
	M8, L150	37 – 45	3.7 – 4.5	50.5 – 63.5
	M10, L130	70 – 88	7.0 – 8.8	50.5 – 63.5
	M10, L170	70 – 88	7.0 – 8.8	50.5 – 63.5

ITEM		N-m	kg-m	lb-ft
Driveshaft bolt		60 – 70	6.0 – 7.0	43.5 – 50.5
Secondary drive bevel gear shaft nut		80 – 110	8.0 – 11.0	58.0 – 79.5
Magneto rotor bolt		140 – 160	14.0 – 16.0	101.5 – 115.5
Frame mounting bolt		40 – 60	4.0 – 6.0	29.0 – 43.5
Engine mounting bracket bolt	M8	18 – 28	1.8 – 2.8	13.0 – 20.0
	M6	8 – 12	0.8 – 1.2	6.0 – 8.5
Con-rod nut		49 – 53	4.9 – 5.3	35.5 – 38.5

COOLING

ITEM		N-m	kg-m	lb-ft
Radiator mounting bolt	M10	50 – 65	5.0 – 6.5	36.0 – 47.0
Fan switch		9 – 14	0.9 – 1.4	6.5 – 10.0
Temperature gauge		10 – 15	1.0 – 1.5	7.0 – 11.0

SHAFT DRIVE

ITEM		N-m	kg-m	lb-ft
Secondary drive bevel gear housing bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Secondary driven bevel gear housing bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Final drive bevel gear shaft nut		90 – 110	9.0 – 11.0	65.0 – 79.5
Final drive bevel gear bearing stopper		90 – 120	9.0 – 12.0	65.0 – 87.0
Final driven gear bearing retainer screw		8 – 10	0.8 – 1.0	6.0 – 7.0
Final gear bearing case bolt		20 – 26	2.0 – 2.6	14.5 – 19.0

CHASSIS

ITEM		N-m	kg-m	lb-ft
Steering stem head nut		50 – 80	5.0 – 8.0	36.0 – 58.0
Front fork upper clamp bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Front fork lower clamp bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Front axle shaft		36 – 52	3.6 – 5.2	26.0 – 37.5
Front axle pinch bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Handlebar clamp bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Handlebar holder mounting nut		20 – 30	2.0 – 3.0	14.5 – 21.5
Front brake master cylinder mounting bolt		5 – 8	0.5 – 0.8	3.5 – 6.0
Front brake caliper mounting bolt		30 – 48	3.0 – 4.8	21.5 – 34.5
Brake hose union bolt		15 – 20	1.5 – 2.0	11.0 – 14.5
Air bleeder valve		6 – 9	0.6 – 0.9	4.5 – 6.5
Front and rear disc bolt		18 – 28	1.8 – 2.8	13.0 – 20.0
Front footrest bracket mounting bolt		27 – 43	2.7 – 4.3	19.5 – 31.0
Swingarm pivot nut		100 – 130	10 – 13	72.5 – 94.0

ITEM	N-m	kg-m	lb-ft
Rear shock absorber upper/lower mounting nut	22 – 35	2.2 – 3.5	16.0 – 25.5
Rear brake pedal boss bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Rear brake caliper mounting bolt	20 – 31	2.0 – 3.1	14.5 – 22.5
Rear brake caliper housing bolt	30 – 36	3.0 – 3.6	21.5 – 26.0
Torque link nut (Front & Rear)	22 – 35	2.2 – 3.5	16.0 – 25.5
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
Rear axle nut	60 – 96	6.0 – 9.6	43.5 – 69.5
Final bevel gear case joint nut	35 – 45	3.5 – 4.5	25.5 – 32.5

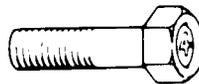
TIGHTENING TORQUE CHART

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

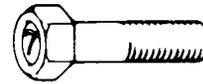
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N-m	kg-m	lb-ft	N-m	kg-m	lb-ft
4	1.0 – 2.0	0.1 – 0.2	0.7 – 1.5	1.5 – 3.0	0.15 – 0.3	1.0 – 2.0
5	2.0 – 4.0	0.2 – 0.4	1.5 – 3.0	3.0 – 6.0	0.3 – 0.6	2.0 – 4.5
6	4.0 – 7.0	0.4 – 0.7	3.0 – 5.0	8.0 – 12.0	0.8 – 1.2	6.0 – 8.5
8	10.0 –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



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA**VALVE + GUIDE**

Unit: mm (in)

ITEM		STANDARD	LIMIT
Valve diam.	IN.	30 (1.18)	—
	EX.	26 (1.02)	—
Valve lift	IN.	8.5 (0.33)	—
	EX.	8.5 (0.33)	—
Valve clearance (when cold)	IN. & EX	0.08–0.13 (0.003–0.005)	—
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	0.35 (0.014)
	EX.	0.035–0.062 (0.0014–0.0024)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.500–5.512 (0.2165–0.2170)	—
Valve stem O.D.	IN.	5.465–5.480 (0.2152–0.2157)	—
	EX.	5.450–5.465 (0.2146–0.2152)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	4.0 (0.16)
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	INNER	—	38.3 (1.51)
	OUTER	—	40.1 (1.58)
Valve spring tension	INNER	6.51–7.49 kg (14.35–16.51 lbs) at length 32.5 mm (1.28 in)	—
	OUTER	12.09–13.91 kg (26.65–30.67 lbs) at length 36.0 mm (1.42 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM		STANDARD	LIMIT
Cam height	IN.	35.954–35.994 (1.4155–1.4171)	35.660 (1.4039)
	EX.	36.919–36.959 (1.4535–1.4551)	36.620 (1.4417)
Camshaft journal oil clearance		0.032–0.066 (0.0013–0.0026)	0.150 (0.0059)

9-33 SERVICING INFORMATION

ITEM	STANDARD		LIMIT
Camshaft journal holder I.D.	No.1 Left side	20.012–20.025	—
	No.2 Right side	(0.7879–0.7884)	
	No.1 Right side	25.012–25.025	—
	No.2 Left side	(0.9847–0.9852)	
Camshaft journal O.D.	No.1 Left side	19.959–19.980	—
	No.2 Right side	(0.7858–0.7866)	
	No.1 Right side	24.959–24.980	—
	No.2 Left side	(0.9826–0.9835)	
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.	11.966–11.984 (0.4711–0.4718)	—
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	1 300–1 600 kPa (13–16 kg/cm ²) (185–228 psi)		1100 kPa (11 kg/cm ²) (156 psi)
Compression pressure difference	—		200 kPa (2 kg/cm ²) (28 psi)
Piston to cylinder clearance	0.045–0.055 (0.0018–0.0022)		0.120 (0.0047)
Cylinder bore	83.000–83.015 (3.2677–3.2683)		83.085 (3.2711)
Piston diam	82.950–82.965 (3.2657–3.2663) Measure at 15 mm (0.6 in) from the skirt end.		82.880 (3.2630)
Cylinder distortion	—		0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.5 (0.413)
	2nd	R	Approx. 11.8 (0.465)
Piston ring end gap	1st	0.20–0.35 (0.008–0.014)	
	2nd	0.20–0.35 (0.008–0.014)	
Piston ring groove clearance	1st	—	
	2nd	—	

ITEM	STANDARD		LIMIT
Piston ring groove width	1st	1.01–1.03 (0.0398–0.0406)	——
	2nd	1.21–1.23 (0.0476–0.0484)	——
	Oil	2.51–2.53 (0.0988–0.0996)	——
Piston ring thickness	1st	0.970–0.990 (0.0382–0.0390)	——
	2nd	1.170–1.190 (0.0461–0.0469)	——
Piston pin bore	20.002–20.008 (0.7875–0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996–20.000 (0.7827–0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.010–20.018 (0.7878–0.7881)	20.040 (0.7890)
Conrod big end side clearance	0.10–0.20 (0.004–0.010)	0.30 (0.012)
Conrod big end width	21.95–22.00 (0.864–0.866)	——
Crank pin width	22.10–22.15 (0.870–0.872)	——
Conrod big end oil clearance	0.024–0.042 (0.0009–0.0017)	0.080 (0.0031)
Crank pin O.D.	40.982–41.000 (1.6135–1.6142)	——
Crankshaft journal oil clearance	0.020–0.050 (0.0008–0.0020)	0.080 (0.0031)
Crankshaft journal O.D.	47.965–47.980 (1.8884–1.8890)	——
Crankshaft thrust bearing thickness	1.925–2.175 (0.0758–0.0856)	——
Crankshaft thrust clearance	0.05–0.10 (0.0020–0.0040)	——
Crankshaft runout	——	0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.859 (71/42 x 32/29)	——
Oil pressure (at 60°C, 140°F)	Above 350 kPa (3.5 kg/cm ² , 50 psi) Below 650 kPa (6.5 kg/cm ² , 92 psi) at 3 000 r/min.	——

CLUTCH

Unit: mm (in)

ITEM	STANDARD		LIMIT
Clutch cable play	4 (0.2)		—
Clutch release screw	¼ – ½ turn back		—
Drive plate thickness	No.1	2.65 – 2.95 (0.104 – 0.116)	2.35 (0.093)
	No.2	3.45 – 3.55 (0.136 – 0.140)	3.15 (0.124)
Drive plate claw width	15.8 – 16.0 (0.62 – 0.63)		15.0 (0.59)
Driven plate thickness	1.60 ± 0.05 (0.063 ± 0.002)		—
Driven plate distortion	—		0.10 (0.004)
Clutch spring free length	No.1	—	24.6 (0.97)
	No.2	—	23.3 (0.92)

TRANSMISSION

Unit: mm (in) Except ratio

ITEM	STANDARD		LIMIT
Primary reduction ratio	1.690 (71/42)		—
Secondary reduction ratio	U.S.A. model	1.133 (30/30 x 17/15)	—
	Other models	1.096 (30/31 x 17/15)	—
Final reduction ratio	3.090 (34/11)		—
Gear ratios	Low	2.285 (32/14)	—
	2nd	1.631 (31/19)	—
	3rd	1.227 (27/22)	—
	4th	1.000 (25/25)	—
	Top	0.851 (23/27)	—
Shift fork to groove clearance	No.1	0.10 – 0.30 (0.004 – 0.012)	0.50 (0.020)
	No.2	0.10 – 0.30 (0.004 – 0.012)	0.50 (0.020)
Shift fork groove width	No.1	5.50 – 5.60 (0.217 – 0.220)	—
	No.2	4.50 – 4.60 (0.177 – 0.181)	—
Shift fork thickness	No.1	5.30 – 5.40 (0.209 – 0.213)	—
	No.2	4.30 – 4.40 (0.169 – 0.173)	—

SHAFT DRIVE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Secondary bevel gear backlash	0.05–0.32 (0.002–0.013)		—
Final bevel gear backlash	Drive side	0.03–0.064 (0.001–0.025)	—

CARBURETOR

ITEM	SPECIFICATION	
	E-02,04,15,21,25,28,34	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C00	←
Idle r/min.	1100 ± 100 r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 132.5	# 120
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5F108-3rd	5D49-3rd
Needle jet (N.J.)	P-4	←
Throttle valve (Th.V.)	# 115	←
Pilot jet (P.J.)	# 47.5	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET) 1 ³ / ₈ turns back	(PRE-SET) 1 ¹ / ₈ turns back
Pilot air jet (P.A.J.)	No.1:(# 70), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	E-03	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C10	←
Idle r/min.	1200 ± 50 r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 132.5	# 122.5
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5E72-1st	5D47-1st
Needle jet (N.J.)	P-7	P-2
Throttle valve (Th.V.)	# 125	# 110
Pilot jet (P.J.)	# 45	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm

ITEM	SPECIFICATION	
	E-03	
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET)	(PRE-SET)
Pilot air jet (P.A.J.)	No.1:(# 65), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	E-33	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C20	←
Idle r/min.	1200 ± 50 r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 132.5	# 122.5
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5E72-1st	5D47-1st
Needle jet (N.J.)	P-7	P-2
Throttle valve (Th.V.)	# 125	# 110
Pilot jet (P.J.)	# 45	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET)	(PRE-SET)
Pilot air jet (P.A.J.)	No.1:(# 65), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	E-18	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C30	←
Idle r/min.	1200 ± ¹⁰⁰ / ₅₀ r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 135	# 125
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5F107-3rd	5D48-3rd

ITEM	SPECIFICATION	
	E-18	
Needle jet (N.J.)	P-4	P-2
Throttle valve (Th.V.)	# 115	←
Pilot jet (P.J.)	# 45	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET) 2 turns back	(PRE-SET) 1¼ turns back
Pilot air jet (P.A.J.)	No.1:(# 55), No.2:(1.85 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	E-01,16	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C40	←
Idle r/min.	1100 ± 100 r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 135	# 122.5
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5F108-3rd	5D49-3rd
Needle jet (N.J.)	P-4	←
Throttle valve (Th.V.)	# 115	←
Pilot jet (P.J.)	# 47.5	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET) 1½ turns back	(PRE-SET) 1⅛ turns back
Pilot air jet (P.A.J.)	No.1:(# 70), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	E-22,24,39	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C50	←
Idle r/min.	1100 ± 100 r/min.	←

ITEM	SPECIFICATION	
	E-22,24,39	
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 132.5	# 120
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5F108-3rd	5D49-3rd
Needle jet (N.J.)	P-4	←
Throttle valve (Th.V.)	# 115	←
Pilot jet (P.J.)	# 47.5	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET) 1 1/8 turns back	(PRE-SET) 1 turn back
Pilot air jet (P.A.J.)	No.1:(# 70), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	U-type of E-22	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C60	←
Idle r/min.	1100 ± 100 r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 135	# 122.5
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5F108-3rd	5D49-3rd
Needle jet (N.J.)	P-4	P-6
Throttle valve (Th.V.)	# 115	←
Pilot jet (P.J.)	# 47.5	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET) 1 1/8 turns back	(PRE-SET) 1 1/16 turns back
Pilot air jet (P.A.J.)	No.1:(# 70), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	←

CARBURETOR

ITEM	SPECIFICATION	
	E-17	
Carburetor type	MIKUNI BS36SS (No.1)	MIKUNI BDS36SS (No.2)
Bore size	36 mm	←
I.D. No.	45C70	←
Idle r/min.	1100 ± 100 r/min.	←
Float height	27.7 ± 1.0 mm (1.09 ± 0.04 in)	9.1 ± 1.0 mm (0.36 ± 0.04 in)
Main jet (M.J.)	# 135	# 122.5
Main air jet (M.A.J.)	1.8 mm	←
Jet needle (J.N.)	5F108-3rd	5D49-3rd
Needle jet (N.J.)	P-4	P-6
Throttle valve (Th.V.)	# 115	←
Pilot jet (P.J.)	# 47.5	# 40
By-pass (B.P.)	0.8 mm x 2PCS	0.8 mm x 3PCS
Pilot outlet (P.O.)	0.8 mm	1.0 mm
Valve seat (V.S.)	1.5 mm	←
Starter jet (G.S.)	# 25	# 22.5
Pilot screw (P.S.)	(PRE-SET) 1 ³ / ₈ turns back	(PRE-SET) 1 ¹ / ₄ turns back
Pilot air jet (P.A.J.)	No.1:(# 70), No.2:(2.0 mm)	No.1:(# 65), No.2:(1.2 mm)
Throttle cable play	0.5 – 1.0 mm (0.02 – 0.04 in)	←
Choke cable play	0.5 – 1.0 mm (0.02 – 0.04 in)	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	T.D.C. Below 1 625 r/min. and 30° B.T.D.C. Above 3 500 r/min.		E-18 model
	5° B.T.D.C. Below 1 650 r/min. and 30° B.T.D.C. Above 3 500 r/min.		U.S.A. model
	5° B.T.D.C. Below 1 625 r/min. and 32° B.T.D.C. Above 3 750 r/min.		Other models
Firing order	1-2		
Spark plug	Type	N.D.: DPR8EA-9 N.G.K.: X24EPR-U9	
	Gap	0.8 – 0.9 (0.031 – 0.035)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 117 Ω (G – Bl)		U.S.A. model
	Approx. 230 Ω (G – Bl)		Other models
Ignition coil resistance	Primary	2 – 6 Ω	+ tap – ⊖ tap
	Secondary	19 – 27 kΩ	Plug cap – + tap
Generator no-load voltage (When engine cold)	More than 65V (AC) at 5 000 r/min.		U.S.A. model
	More than 75 V (AC) at 5 000 r/min.		Other models
Regulated voltage	13.5 – 15.5 V at 5 000 r/min.		
Starter motor brush length	Limit: 9 (0.35)		N.D.

9-41 SERVICING INFORMATION

ITEM	STANDARD		NOTE
Commutator under-cut	Limit: 0.2 (0.008)		
Starter relay resistance	2–6 Ω		
Battery	Type designation	YB16B-A	
	Capacity	12V57.6kC (16Ah)/10HR	
	Standard electrolyte S.G.	1.28 at 20°C (68°F)	
Fuse size	Headlight	10 A	
	Ignition/Fan	10 A	
	Signal	10 A	
	Main	25 A	

WATTAGE

Unit:W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Tail/Brake light		5/21
Turn signal light		21
Speedometer light		3.4
Tachometer light		1.7 x 2PCS
Water temp. indicator light		3
Turn signal indicator light		3.4
High beam indicator light		1.7
Neutral indicator light		3.4
Oil pressure indicator light		3.4
License light		5
Position light		4 (Excerpt E-03,28,33 models)

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	35 (1.4)		—
Brake disc thickness	Front	5.5 ± 0.2 (0.197 ± 0.008)	5.0 (0.20)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)	5.5 (0.22)
Brake disc runout	Front	—	0.30
	Rear	—	(0.012)
Master cylinder bore	Front	12.700–12.743	—
	Rear	(0.5000–0.5017)	
Master cylinder piston diam.	Front	12.657–12.684	—
	Rear	(0.4983–0.4993)	
Brake caliper cylinder bore	Front	33.960–34.036	—
		(1.3370–1.3400)	
	Rear	27.000–27.076 (1.0630–1.0660)	—
		42.850–42.926 (1.6870–1.6900)	—

ITEM	STANDARD		NOTE
Brake caliper piston diam.	Front	33.884 – 33.934 (1.3340 – 1.3360)	—
		26.920 – 26.970 (1.0598 – 1.0618)	—
	Rear	42.770 – 42.820 (1.6839 – 1.6858)	—
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	110/80-18 58H	—
	Rear	150/70-B17 69H	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	150 (5.9)	—	
Front fork spring free length	—	353 (13.9)	E-01,03,28,33 models
	—	348 (13.7)	Other models
Front fork oil level	142 (5.59)	—	E-01,03,28,33 models
	138 (5.43)	—	Other models
Rear wheel travel	118 (4.64)	—	E-01,03,28,33 models
	119 (4.68)	—	Other models
Swingarm pivot shaft runout	—	0.30 (0.012)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	NORMAL RIDING					
	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	225	2.25	33	225	2.25	33
REAR	250	2.50	36	280	2.80	41

FUEL + OIL + COOLANT

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.		U.S.A.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.		Canada model
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		Other models
Fuel tank including reserve reserve	18.0 L (4.8/4.0 US/Imp gal)		California model only
	19.0 L (5.0/4.2 US/Imp gal)		Other models
	4.0 L (1.1/0.9 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	2 400 ml (2.5/2.1 US/Imp qt)	
	Filter change	2 800 ml (3.0/2.5 US/Imp qt)	
	Overhaul	3 300 ml (3.5/2.9 US/Imp qt)	
Front fork oil type	Fork oil # 10		
Front fork oil capacity (each leg)	388 ml (13.1/13.7 US/Imp oz)		E-01,03,28,33, models
	392 ml (13.2/13.8 US/Imp oz)		Other models
Final bevel gear oil type	SAE 90 hypoid gear oil with GL-5 under API classification		
Final bevel gear oil capacity	200–220 ml (6.8/7.0–7.4/7.7 US/Imp oz)		
Brake fluid type	DOT4		
Coolant capacity	1 700 ml (1.8/1.5 US/Imp qt)		

THERMOSTAT + RADIATOR + FAN

ITEM	STANDARD	LIMIT
Thermostat valve opening temperature	75.0 ± 1.5°C (167 ± 2.7°F)	—
Thermostat valve lift	Over 6 mm (0.24 in) at 90°C (194°F)	—
Radiator cap valve release pressure	1.1 ± 0.15 kg/cm ² (15.6 ± 2.1 psi, 110 ± 15 kPa)	—
Electric fan thermo-switch operating temperature	ON	Approx. 105° C (221°F)
	OFF	Approx. 100°C (212°F)