

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. Defective lash-adjuster. 2. Trapped air in lash-adjuster. 3. Worn valve guides or poor seating of valves. 4. Valves mistiming. 5. Piston rings excessively worn. 6. Worn-down cylinder bores. 7. Starter motor cranks but 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 cords. 5. Defective signal generator or ignitor unit. <p>No fuel reaching the carburetors</p> <ol style="list-style-type: none"> 1. Clogged holes in the fuel tank cap. 2. Clogged or defective fuel cock. 3. Clogged fuel filter. 4. Defective fuel pump. 5. Defective fuel pump relay. 6. Defective carburetor float valve. 7. Clogged fuel pipe or suction pipe. 8. Defective signal generator/ignition coil/ignitor. 	<p>Replace. Bleed air. Adjust. Repair, or replace. Replace. Replace, or rebore. Consult "electrical complaints".</p> <p>Clean. Clean and dry, or replace Replace. Replace. Replace.</p> <p>Clean. Clean or replace. Replace. Replace. Replace. Replace. Clean. Replace.</p>
Engine stalls easily.	<ol style="list-style-type: none"> 1. Fouled spark plugs. 2. Defective signal generator or ignitor unit. 3. Clogged fuel filter. 4. Clogged fuel pipe. 5. Defective fuel pump/fuel pump relay 6. Clogged jets in carburetors. 7. Defective lash-adjuster. 	<p>Clean. Replace Replace. Replace. Replace. Clean. Replace.</p>
Noisy engine.	<p>Excessive valve chatter</p> <ol style="list-style-type: none"> 1. Trapped air in lash-adjuster. 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 groove 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>Bleed air. 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 thrust bearings due to wear. 2. Big-end bearings worn and burnt. 3. Journal bearing worn and burnt. <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. <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/chain guide/sprocket. 3. Impeller touches crankcase. 4. Worn or damaged water pump bearing. 	<p>Replace. Replace. Replace.</p> <p>Replace. Replace. Replace.</p> <p>Replace. Replace. 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. 	<p>Replace. Repair or 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. Trapped air in lash-adjuster. 2. Poor seating of valves. 3. Defective valve guides. 4. Spark plug gaps too wide. 5. Defective ignition coil. 6. Defective signal generator or ignitor unit. 7. Float-chamber fuel level out of adjustment in carburetors. 8. Clogged jets or imbalance of carburetors. 9. Defective fuel pump/fuel pump relay. 10. Clogged fuel filter. 	<p>Bleed air. Repair or replace. Replace. Adjust. Replace. Replace. Adjust.</p> <p>Clean or adjust. Replace. Replace.</p>
Engine runs poorly in high-speed range.	<ol style="list-style-type: none"> 1. Valve springs weakened. 2. Trapped air in lash-adjuster. 3. Spark plug gaps too narrow. 4. Clogged jets or imbalance of carburetors. 5. Defective ignition coil. 	<p>Replace. Bleed air. Adjust. Clean or adjust. Replace.</p>

10-3 SERVICING INFORMATION

Complaint	Symptom and possible causes	Remedy
Engine runs poorly in high-speed range.	6. Defective signal generator or ignitor unit. 7. Float-chamber fuel level too low. 8. Clogged air cleaner element. 9. Clogged fuel pipe/ fuel filter, resulting in inadequate fuel supply to carburetors. 10. Defective fuel pump/fuel pump relay. 11. Defective lash-adjuster.	Replace. Adjust. Clean. Clean, and prime. Replace. Replace.
Dirty or heavy exhaust smoke.	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.	Check with level inspection window, drain out excess oil. Replace. Replace. Rebore or replace. Replace. Replace.
Engine lacks power.	1. Trapped air in lash-adjuster. 2. Weakened valve springs. 3. Defective lash-adjuster. 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 screw loose. 11. Sucking air from intake pipe. 12. Too much engine oil in the engine. 13. Defective fuel pump/fuel pump relay. 14. Defective signal generator/ignitor unit/ignition coil. 15. Clogged fuel filter.	Bleed air. Replace. Replace. Replace. Repair. Adjust or replace. Clean. Adjust. Clean. Retighten and balance the carbs. Retighten or replace. Drain out excess oil. Replace. Replace. Replace.
Engine overheats.	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. Sucking air from intake pipes. 6. Using incorrect engine oil. 7. Defective cooling system.	Clean. Add oil. Replace or clean. Adjust. Retighten or replace. Change. See radiator section.

SHAFT DRIVE

Complaint	Symptom and possible causes	Remedy
Noisy shaft drive.	Noise seems to come from secondary bevel gear and final bevel gear assemblies. 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. 6. Cam dog contacting surface damaged or worn. 7. Weakened damper spring. Noise seems to come from propeller shaft area. 1. Propeller shaft universal joint damaged. 2. Propeller shaft splines damaged or worn. 3. Insufficient lubricant.	Refill. (Replace oil seal) Replace. Adjust. Adjust. Replace. Replace. Replace. Replace. Replace. Refill. (Replace oil seal)

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. 4. Weakened damper spring. 	Replace. Replace. Replace. Replace.
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. 	Replace. Replace. Retighten.

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. 	Clean. Clean. Check starter body and carburetor for tightness, adjust and replace O-ring. Check for tightness and replace gasket. Check and adjust.
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. 	Check and clean. Check and adjust. Check and clean. Check and adjust.
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 is not operating properly. 4. Filter is clogged. 5. Carburetor balancing screw loose. 	Check and clean. Check and clean. Check throttle valve for operation. Replace. Retighten and balance the carbs.
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/fuel pump relay. 8. Defective signal generator/ignitor unit/ignition coil. 	Replace. Replace. Check and adjust. Clean. Adjust float height. Clean. Replace. Replace.

AUTO CRUISE CONTROL SYSTEM

Complaint	Symptom and possible causes	Remedy
SET switch is not effective.	<p>Auto cruise indicator lamp does not light.</p> <ol style="list-style-type: none"> 1. Burnt SIGNAL fuse. 2. Defective power switch. 3. Defective SET switch. 4. Cancel signal is inputted into control unit. <ul style="list-style-type: none"> • Brake switch (Front/rear). • Clutch switch. • Gear position indicator switch (5th). • Throttle grip full close switch. 5. Speedometer cable or reed switch is not working properly. 6. Defective control unit. 7. Open-circuited lead wire between control unit and actuator. 8. Defective actuator. <p>Auto cruise indicator lamp lights once, and soon turns off.</p> <ol style="list-style-type: none"> 1. Open-circuited lead wires between control unit and actuator. 2. Too much play on the actuator cable. 3. Worn or damaged cable junction box. 4. Kinked actuator cable. 5. Defective control unit. 6. Defective actuator. 	<p>Replace.</p> <p>Repair or replace.</p> <p>Repair or replace.</p> <p>Check.</p> <p>Repair or replace.</p> <p>Repair or replace.</p> <p>Repair or replace.</p> <p>Repair or replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Repair.</p> <p>Adjust.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Vehicle speed drops gradually after setting the auto cruise control.	<ol style="list-style-type: none"> 1. Too much play on the actuator cable. 2. Worn or damaged cable junction box. 3. Kinked actuator cable. 4. Defective control unit. 5. Defective actuator. 	<p>Adjust.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Vehicle speed changes in the auto cruising condition on the flat road. (more than ± 3 mph (5 km/h))	<ol style="list-style-type: none"> 1. Loose speedometer cable coupler. 2. Broken speedometer cable. 3. Contaminated reed switch in the speedometer. 4. Kinked actuator cable. 5. Defective control unit. 6. Defective actuator. 	<p>Retighten.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Cancel switch is not effective.	<p>All of the cancel switches are not effective</p> <ol style="list-style-type: none"> 1. Defective control unit. <p>Some of the cancel switches are not effective</p> <ol style="list-style-type: none"> 1. Defective cancel switch. 2. Open-circuited cancel switch lead wire. 3. Defective control unit. 	<p>Replace.</p> <p>Replace.</p> <p>Repair or replace.</p> <p>Replace.</p>
RESUME switch is not effective.	<ol style="list-style-type: none"> 1. Defective RESUME switch. 2. Defective control unit. 	<p>Replace.</p> <p>Replace.</p>

Complaint	Symptom and possible causes	Remedy
Automatic deceleration system does not work properly. (continuously pushing SET switch)	Automatic deceleration system works sometimes. 1. Defective SET switch. 2. Defective control unit.	Replace. Replace
	Continuous deceleration and then cancellation occur even if releasing the SET switch. 1. Kinked actuator cable. 2. Too small play on the actuator cable. 3. Defective control unit.	Replace. Adjust. Replace.
Automatic acceleration system does not work properly. (continuously pushing "RESUME" switch)	1. Defective "RESUME" switch. 2. Defective control unit.	Replace. Replace.
After passing with throttle grip vehicle speed does not return to the original SET speed.	1. Too much play on the actuator cable. 2. Defective control unit.	Adjust or replace. Replace.

RADIATOR

Complaint	Symptom and possible causes	Remedy
Engine overheats.	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.	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.	1. Defective ignition coils. 2. Defective spark plugs. 3. Defective signal generator or ignitor unit.	Replace. Replace. Replace.
Spark plugs 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 plugs too cold.	Adjust carburetors. Adjust carburetors. Change. Clean. Replace by hot type plugs.

10-7 SERVICING INFORMATION

Complaint	Symptom and possible causes	Remedy
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 signal generator or ignitor unit.4. Spark plugs loose.5. Mixture too lean.	Replace by 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.
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.	Replace the battery. Replace. Clean and tighten ground connection.
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.	Repair or replace. Replace. Replace.
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.	Recharge or replace. Replace. Repair or replace. Replace.

AUDIO

Complaint	Symptom and possible causes	Remedy
No sound.	<ol style="list-style-type: none">1. Defective ignition switch.2. Burnt AUDIO fuse.3. Open-circuited speaker connection.4. Defective speaker.5. Defective audio set. (Volume controller, Head set/speaker controller)	Repair or replace. Replace. Repair. Replace. Repair or replace.

Complaint	Symptom and possible causes	Remedy
No sound from one speaker	<ol style="list-style-type: none"> 1. Open-circuited speaker connection. 2. Defective speaker. 3. Defective audio set. (Balance controller) 	Repair. Replace. Repair or replace.
No sound from radio only.	<ol style="list-style-type: none"> 1. Open-circuited antenna connection. 2. Improperly set the Radio/Tape selector. 3. Improperly set the turning knob. 4. Defective audio set. (Radio) 	Repair. Set to Radio. Tune. Replace.
Radio will not stop auto tuning.	<ol style="list-style-type: none"> 1. Defective audio set. (DX/LO switch) 	Replace.
No FM stereo separation.	<ol style="list-style-type: none"> 1. Check the Audio set in a known strong signal area. 	
Noise occurred when starting engine.	<ol style="list-style-type: none"> 1. Open-circuited Y/G lead wire between Audio set and starter relay. 	Repair.
Noise occurred when running engine.	<ol style="list-style-type: none"> 1. Defective noise filter. 	Replace.

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.) 	Add distilled water, if the battery has not been damaged and "sulfation" has not advanced too far, and recharge. Replace the battery. Replace the battery. 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 motor-cycle and then adjusting electrolyte S.G..
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. 	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. Recharge the battery fully and adjust electrolyte S.G.. Replace the electrolyte, recharge the battery and then adjust S.G.. Replace the battery.

10-9 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 directions.</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 related 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 fork 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-down rear wheel bearings or swingarm bearings. 3. Defective or incorrect tire. 4. Worn swingarm related bearings. 5. Loose nuts on rear suspension. 6. Air leakage from rear suspension. 7. Loss of balance between right and left suspension. 8. Not enough tire air pressure. 	<p>Replace. Replace.</p> <p>Replace. Replace. Retighten. Charge air or replace. Adjust. Charge.</p>
Rear suspension too soft.	<ol style="list-style-type: none"> 1. Weakened spring. 2. Rear suspension improperly set. 3. Oil leakage of rear shock absorber. 4. Air leakage from rear shock absorber. 	<p>Replace. Reset. Replace. Replace.</p>
Rear suspension too stiff.	<ol style="list-style-type: none"> 1. Rear suspension improperly set. 2. Shock absorber shaft bent. 3. Swingarm bent. 4. Worn swingarm related bearings. 	<p>Reset. Replace. Replace. Replace.</p>
Noisy rear suspension.	<ol style="list-style-type: none"> 1. Loose nut on rear suspension. 2. Worn swingarm related bearings. 	<p>Retighten. Replace.</p>

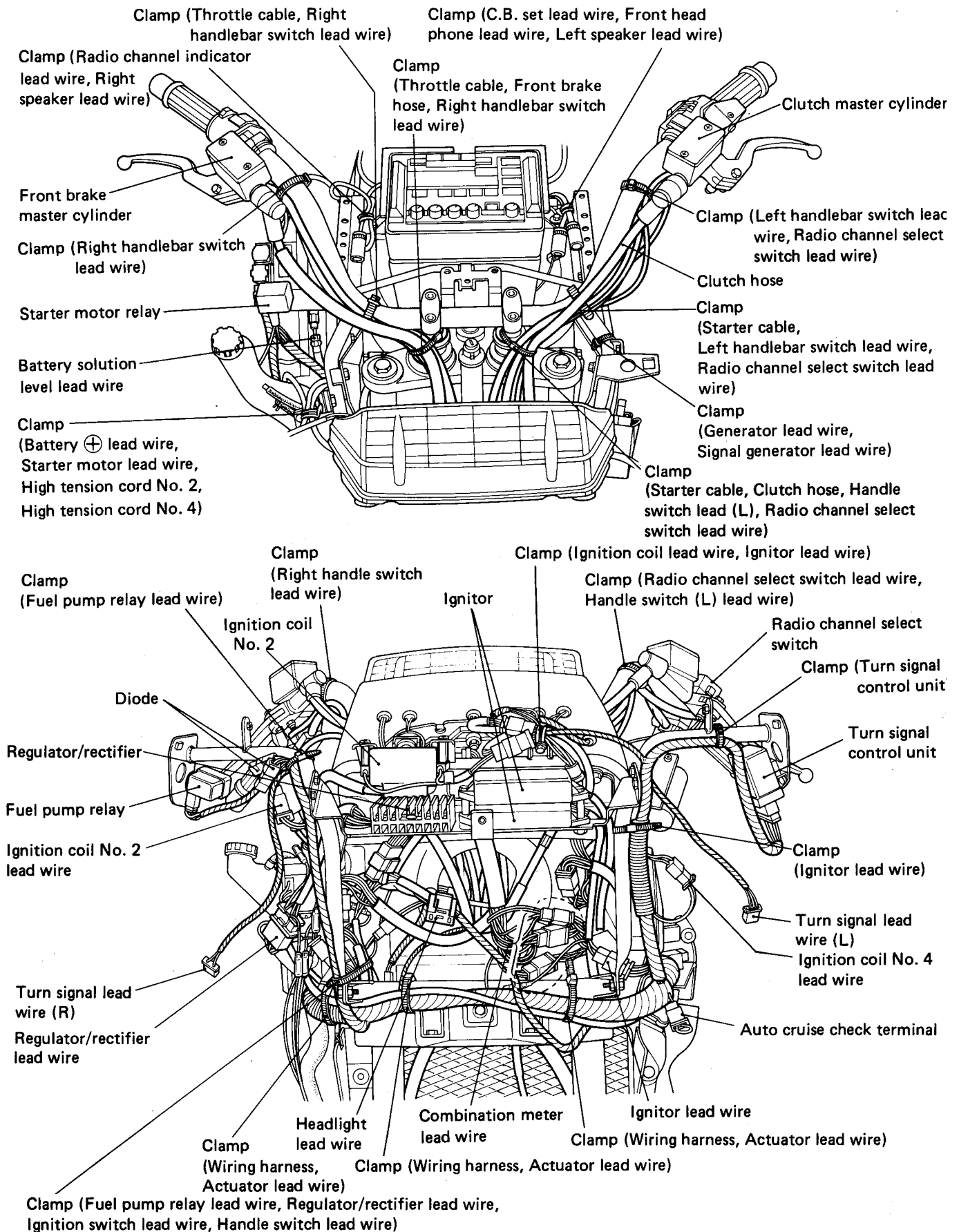
AUTO-LEVELLING AND SEAT ADJUSTMENT

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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 in brake fluid circuit. 3. Pads 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. 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.	<ol style="list-style-type: none"> 1. Carbon adhesion on pad surface. 2. Tilted pad. 3. Damaged wheel bearing. 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 shims. 9. Calipers 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.	<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.

CABLE, HARNESS AND HOSE ROUTING



Clamp (Starter motor lead wire, High tension cord, Battery ⊕ lead wire)

Fuel pump relay

Diode

Starter motor relay

Clamp (Wiring harness)

Ignition coil No. 2 lead wire

Actuator

Noise filter

Battery ⊕ lead wire

Ground

Circuit breaker

Fuse No. 1

Fuse No. 2

Oil pressure lead wire

Battery ⊖ lead wire

Clamp (Wiring harness)

Clamp (Wiring harness, Actuator lead wire)

Clamp (Fuel pump relay lead wire, Regulator/rectifier lead wire, Ignition switch lead wire, Handle switch lead wire)

Reservoir tank

Regulator/rectifier lead wire

Turn signal lead wire (R)

Ignition coil lead wire

Clamp (Ignition coil lead wire, Ignitor lead wire)

Ignition coil No. 4

Clamp (Turn signal control unit lead wire)

Turn signal control unit

Clamp (Signal generator lead wire, Generator lead wire)

Audio ground

Diode

Turn signal lead wire (L)

Auto cruise check terminal

Auto cruise control unit

Clamp (Wiring harness, Actuator lead wire)

Clamp (Wiring harness, Actuator lead wire)

Ignition coil No. 2

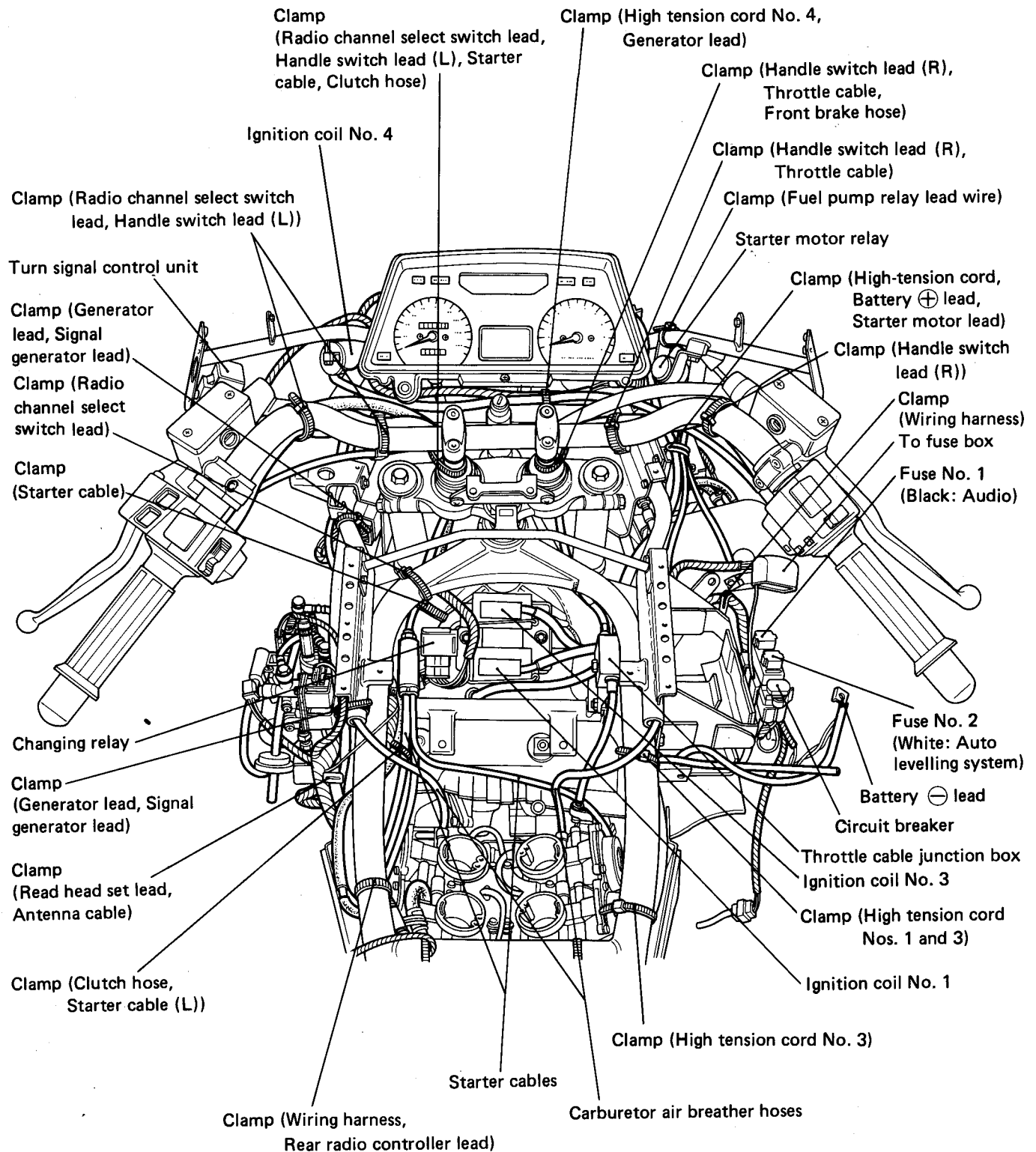
Regulator/rectifier

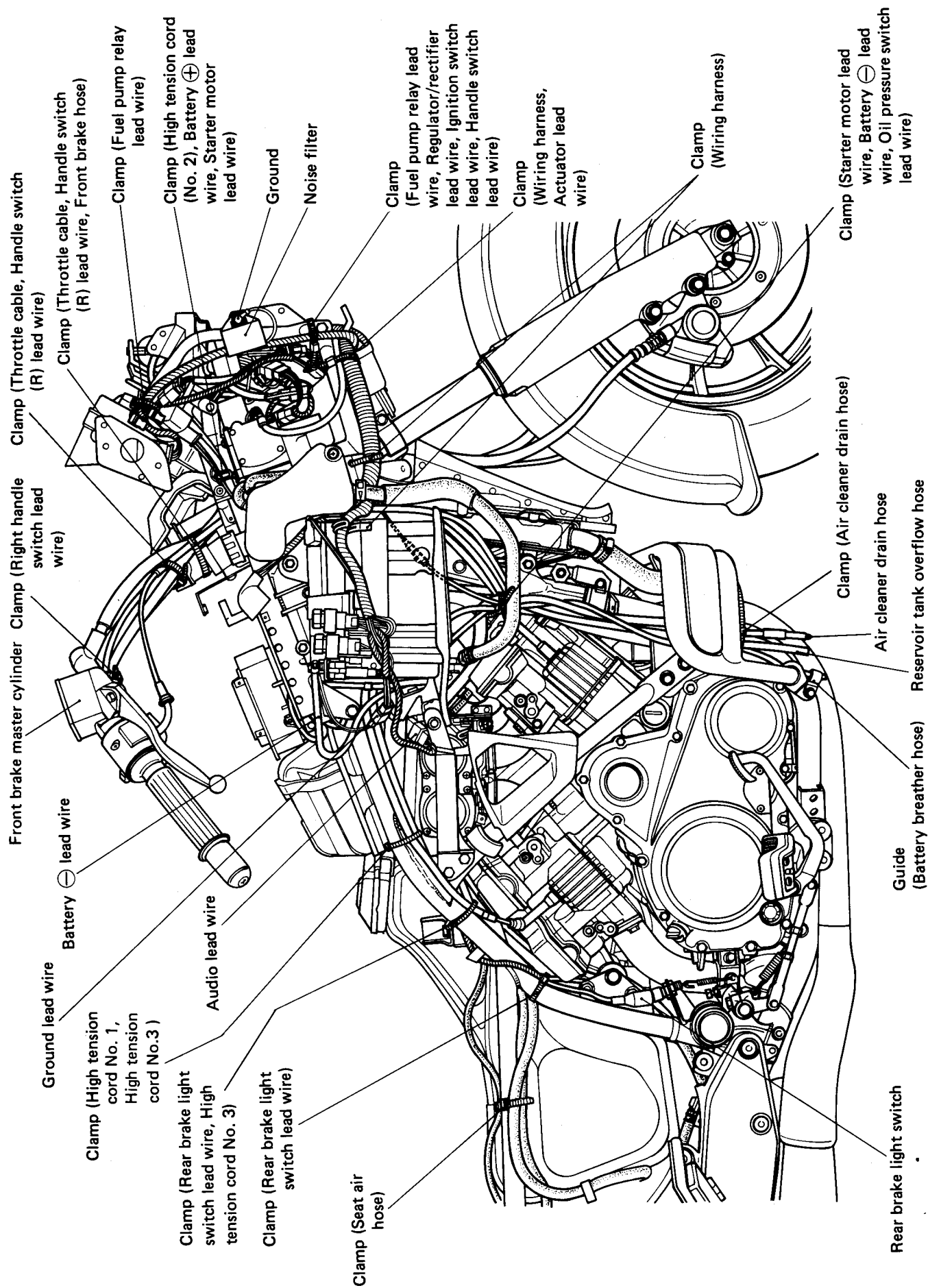
Ignitor

Clamp (Wiring harness, Ignitor lead wire)

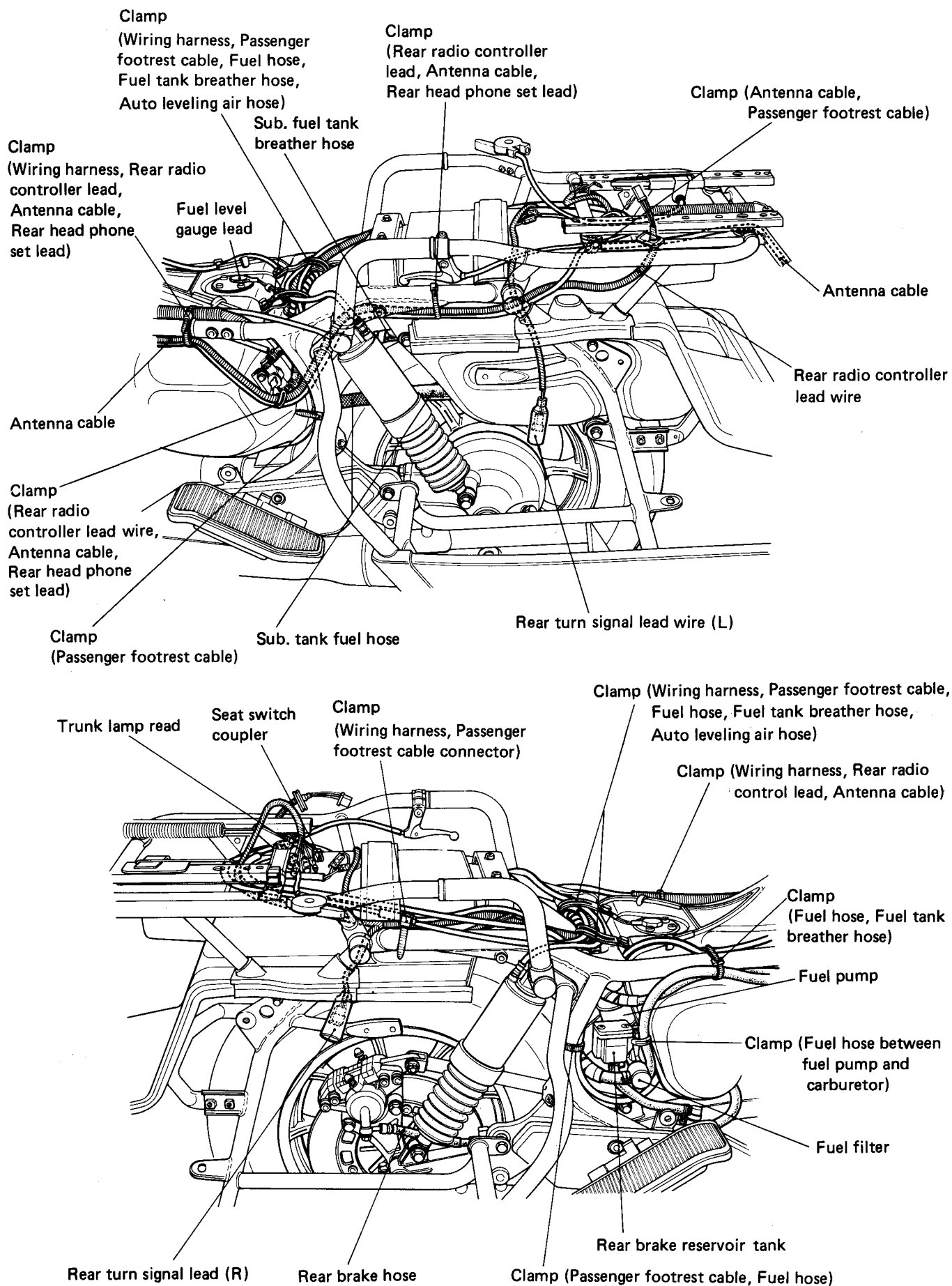
Ignition coil lead wire

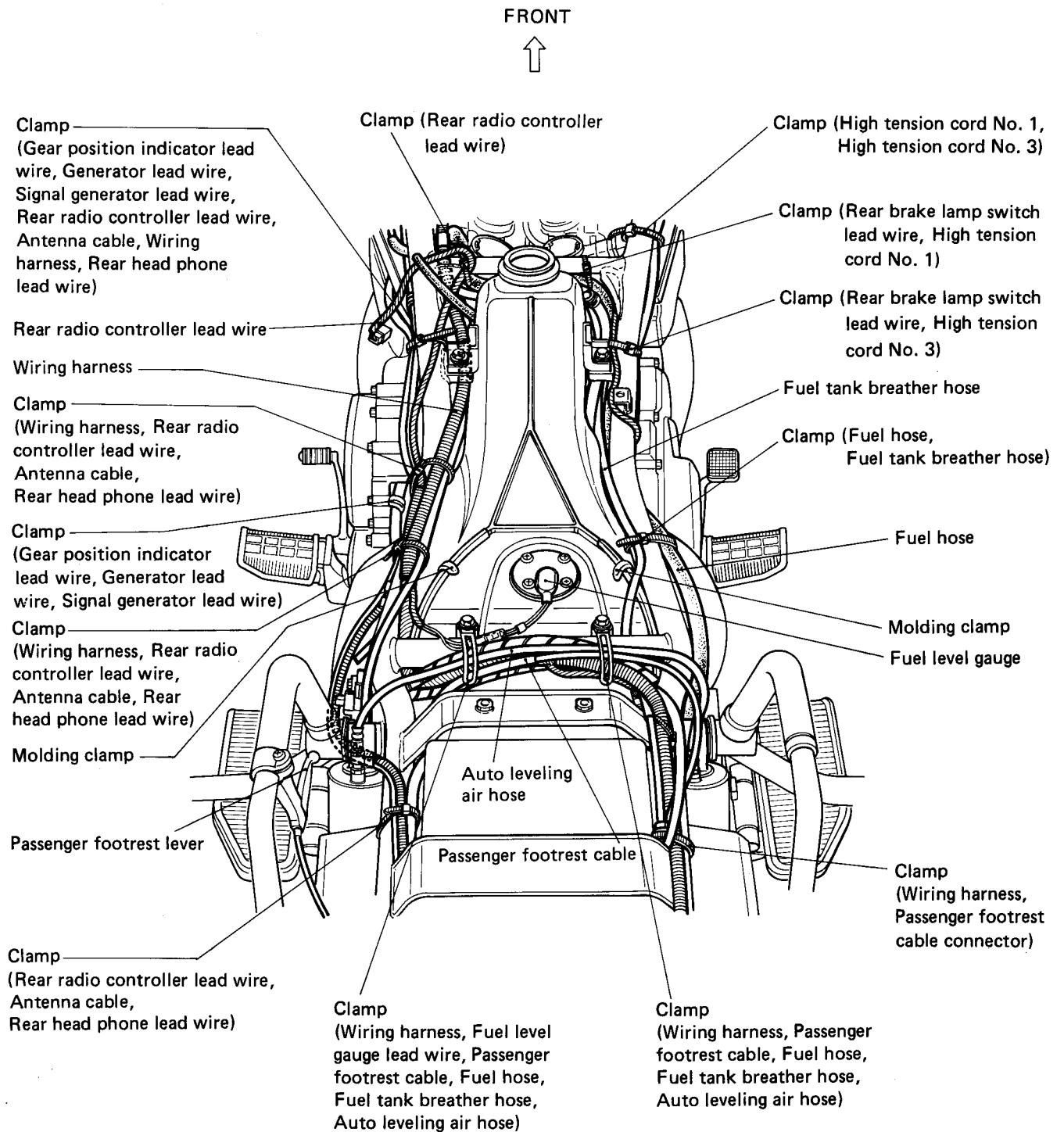
CB back up switch lead wire

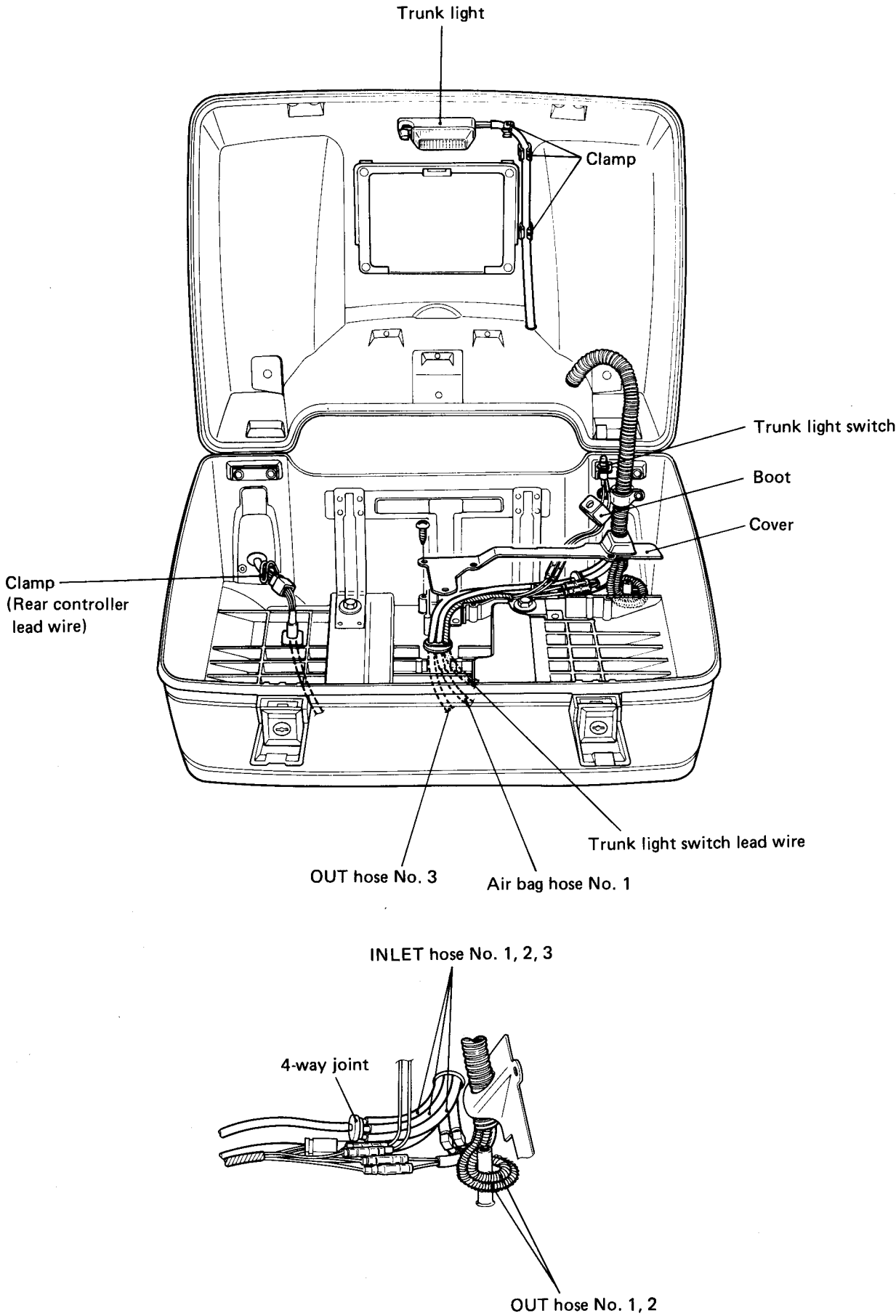




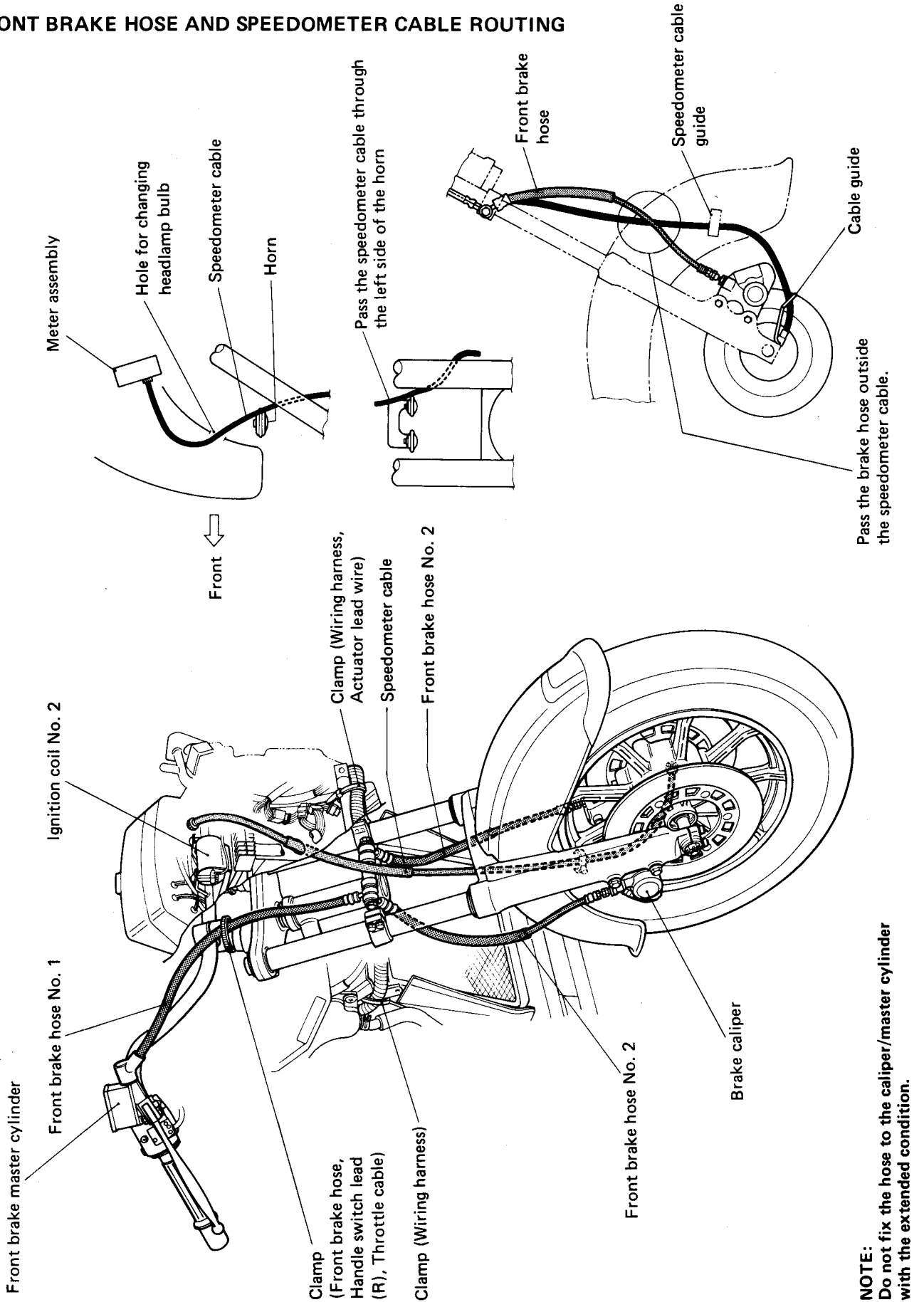
10-17 SERVICING INFORMATION



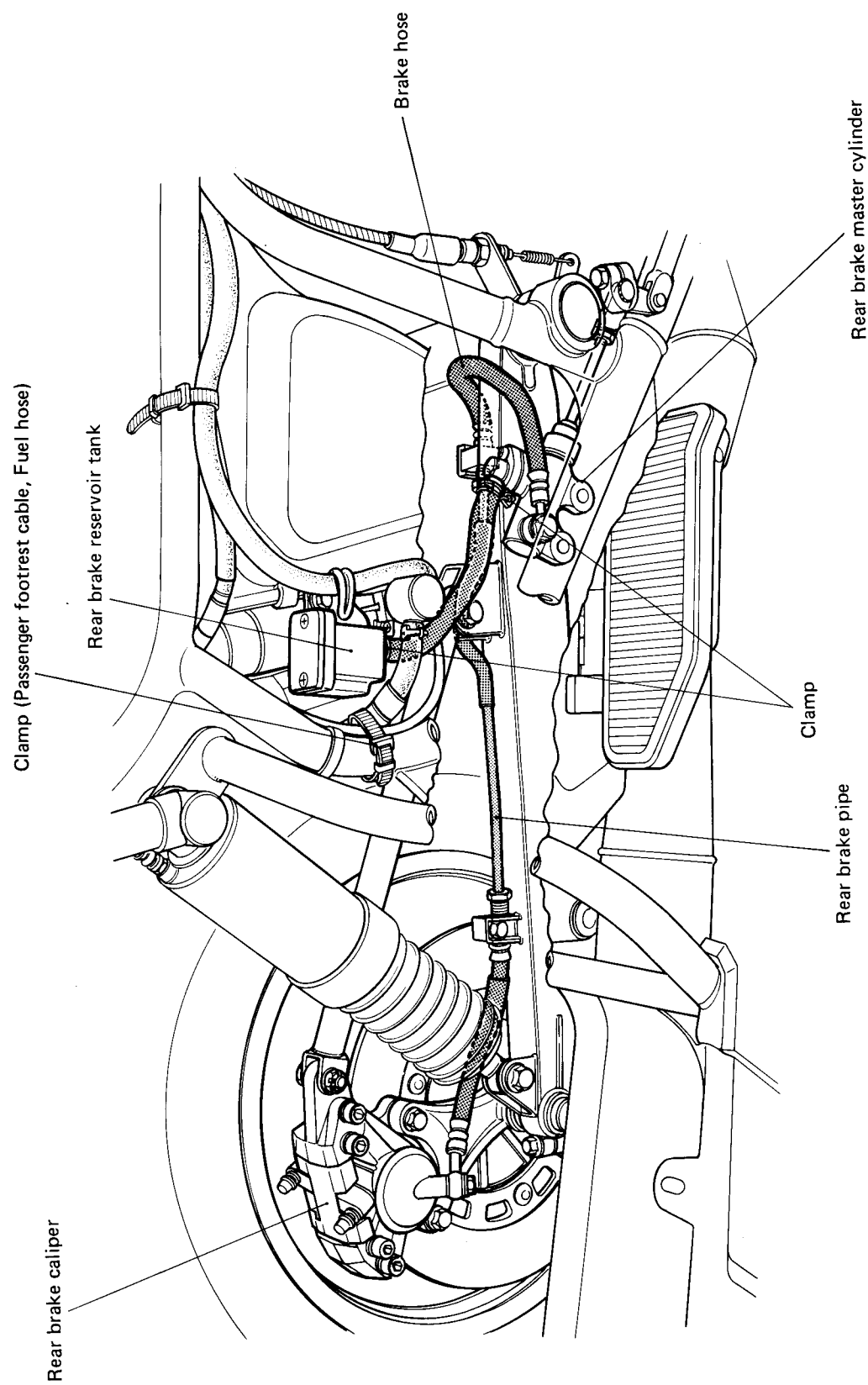




FRONT BRAKE HOSE AND SPEEDOMETER CABLE ROUTING

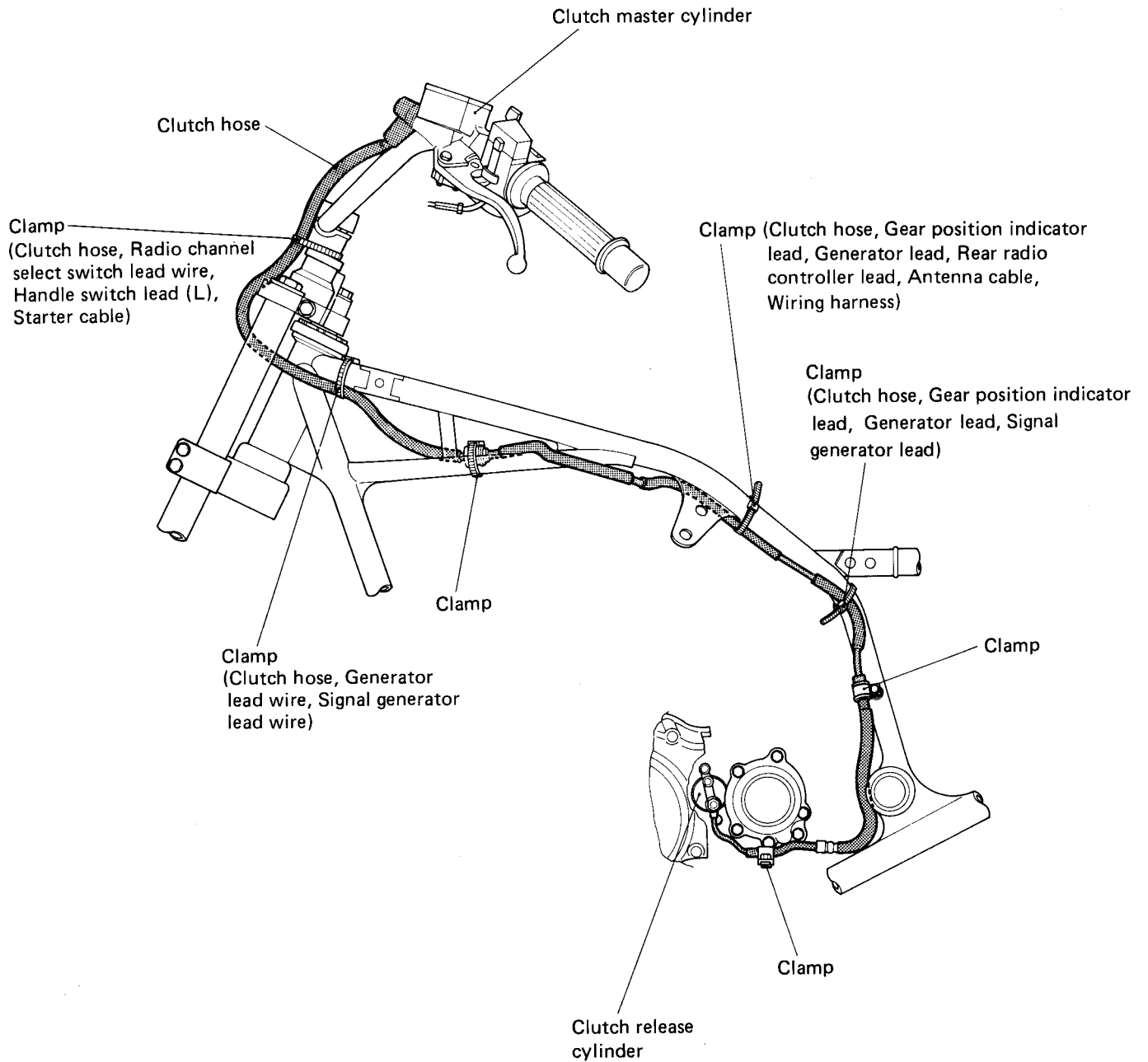


REAR BRAKE HOSE ROUTING

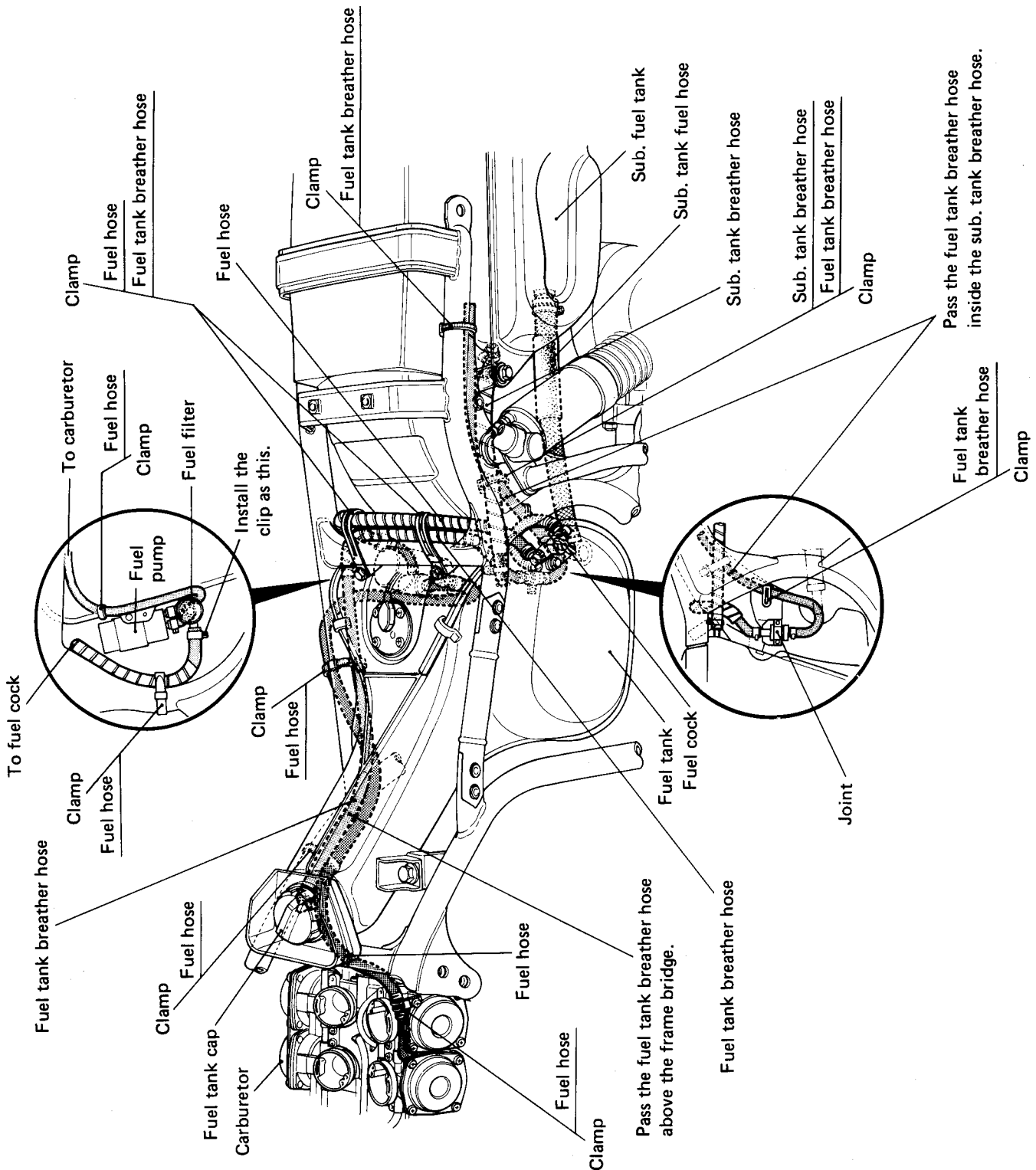


NOTE:
Do not fix the hose to the caliper/master cylinder with the extended condition.

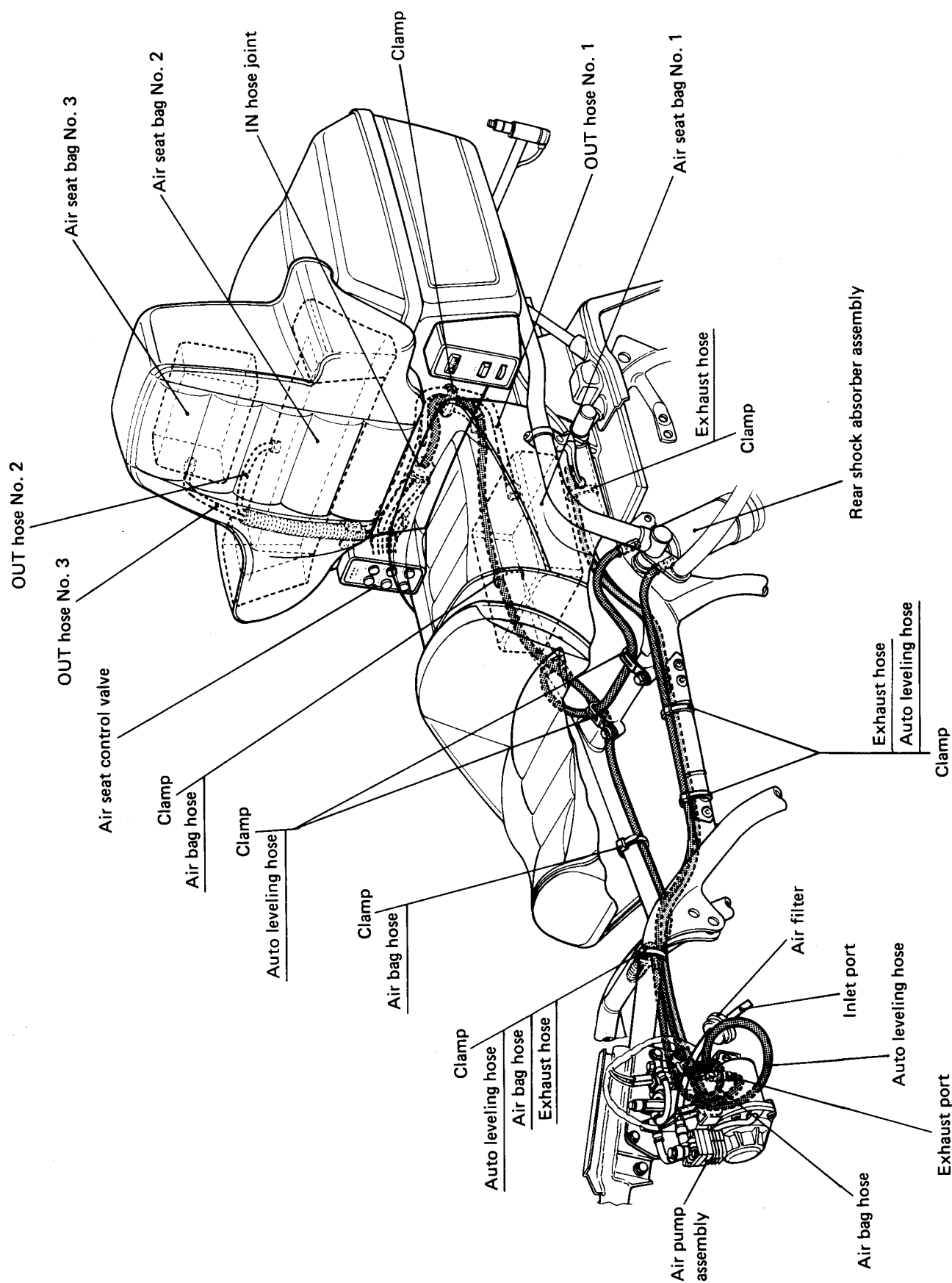
CLUTCH HOSE ROUTING



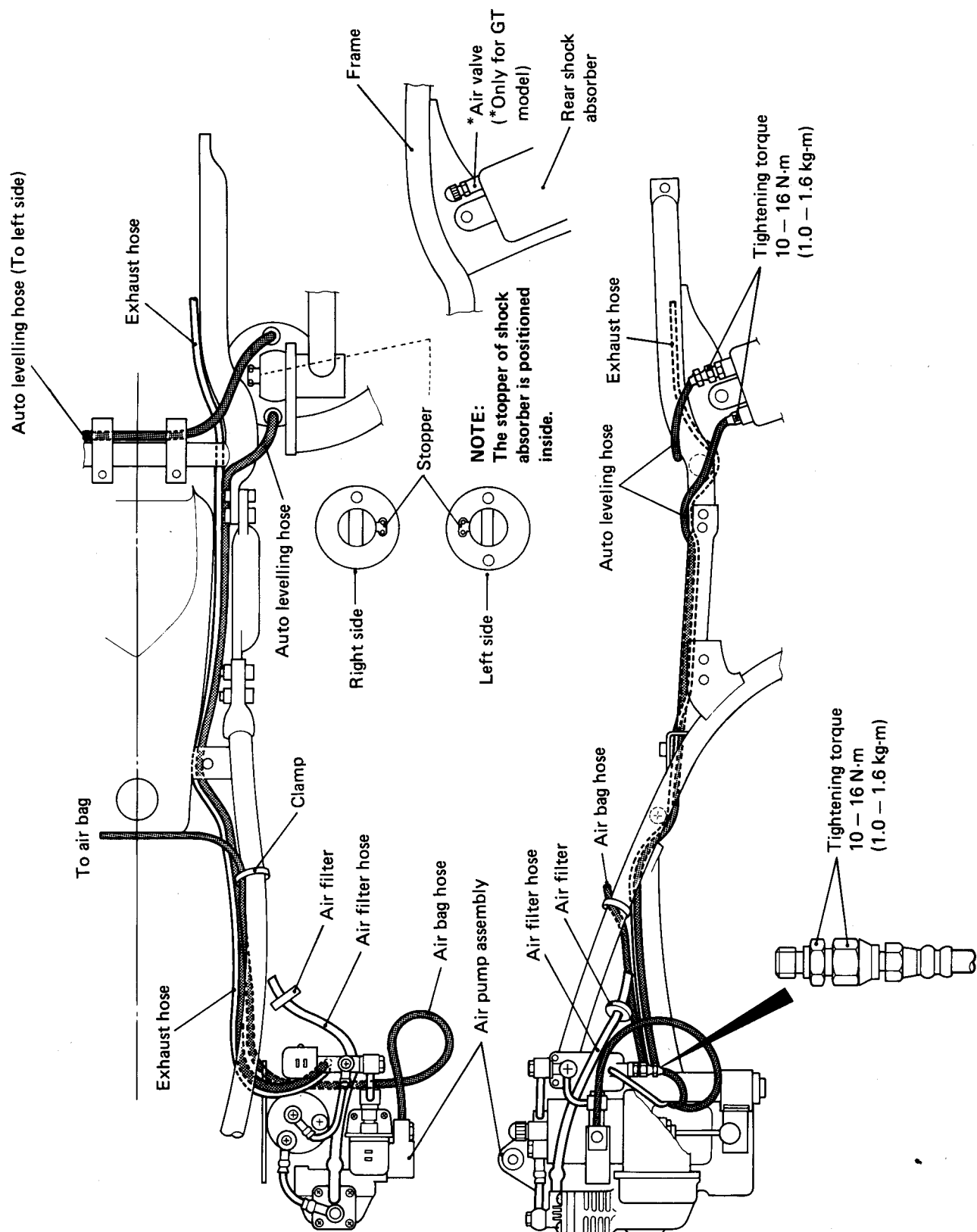
FUEL HOSE AND FUEL TANK BREATHER HOSE ROUTING



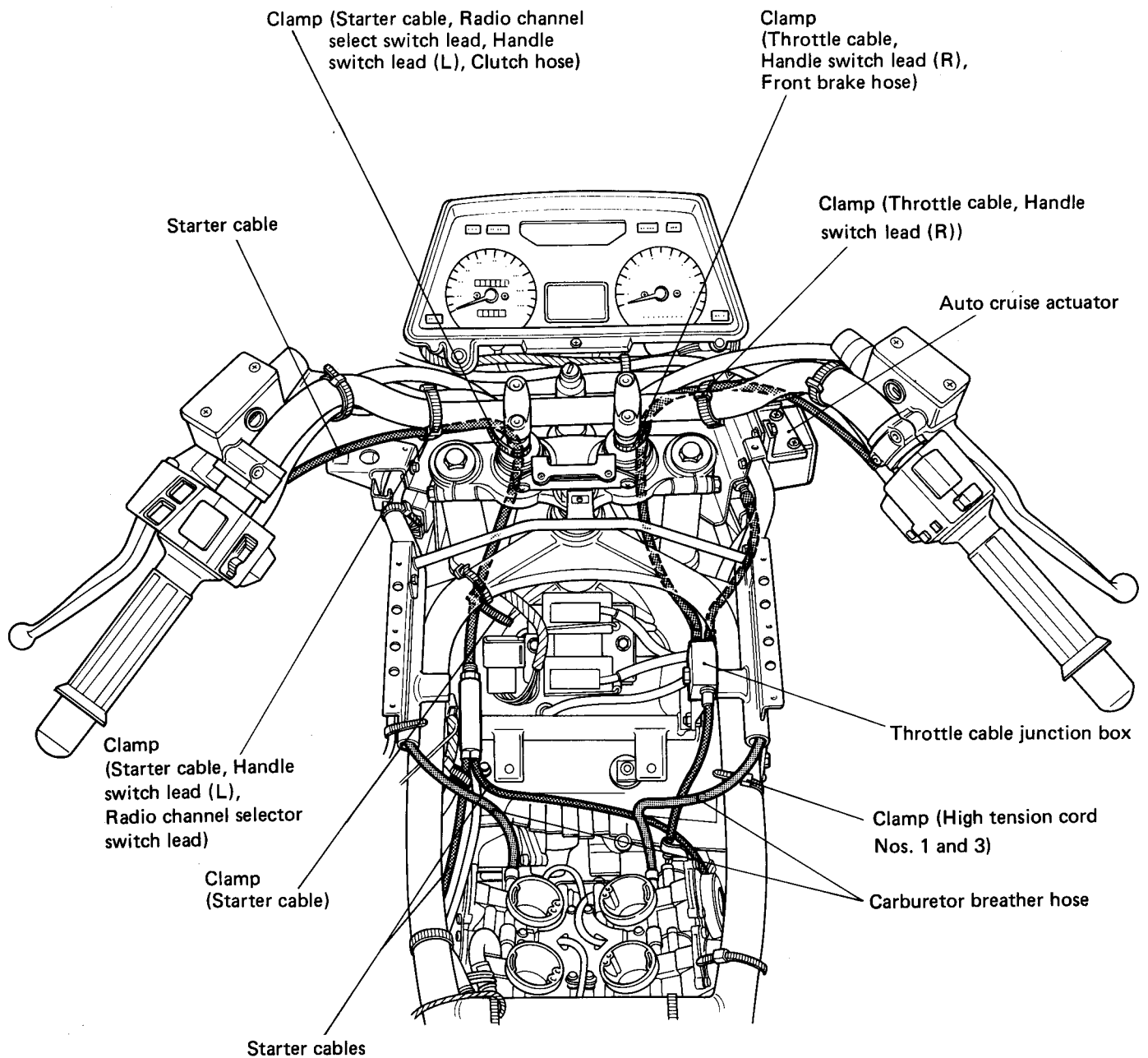
AIR PUMP HOSE ROUTING



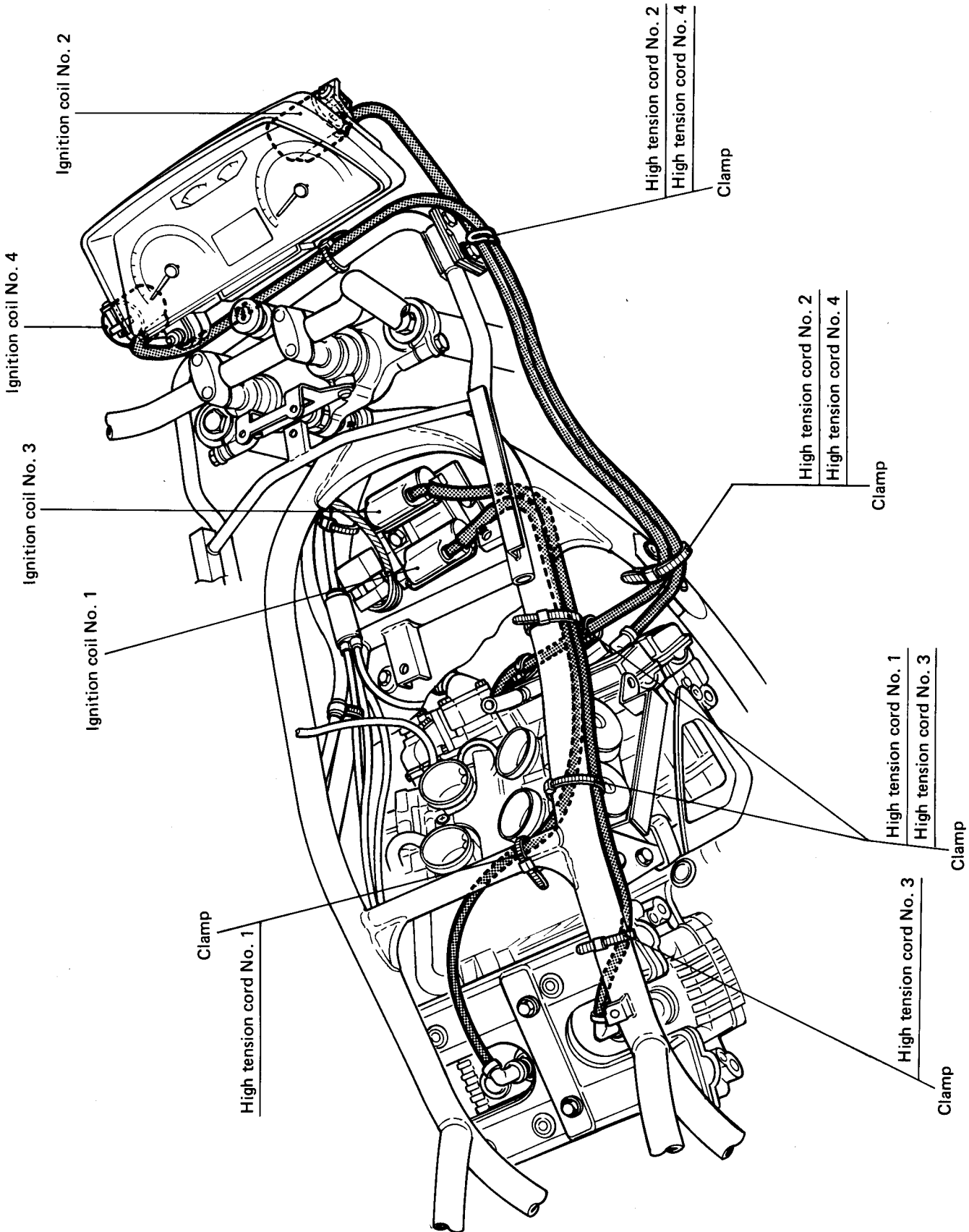
AUTO LEVELING AIR HOSE ROUTING



THROTTLE AND STARTER CABLE ROUTING



HIGH TENSION CORD ROUTING

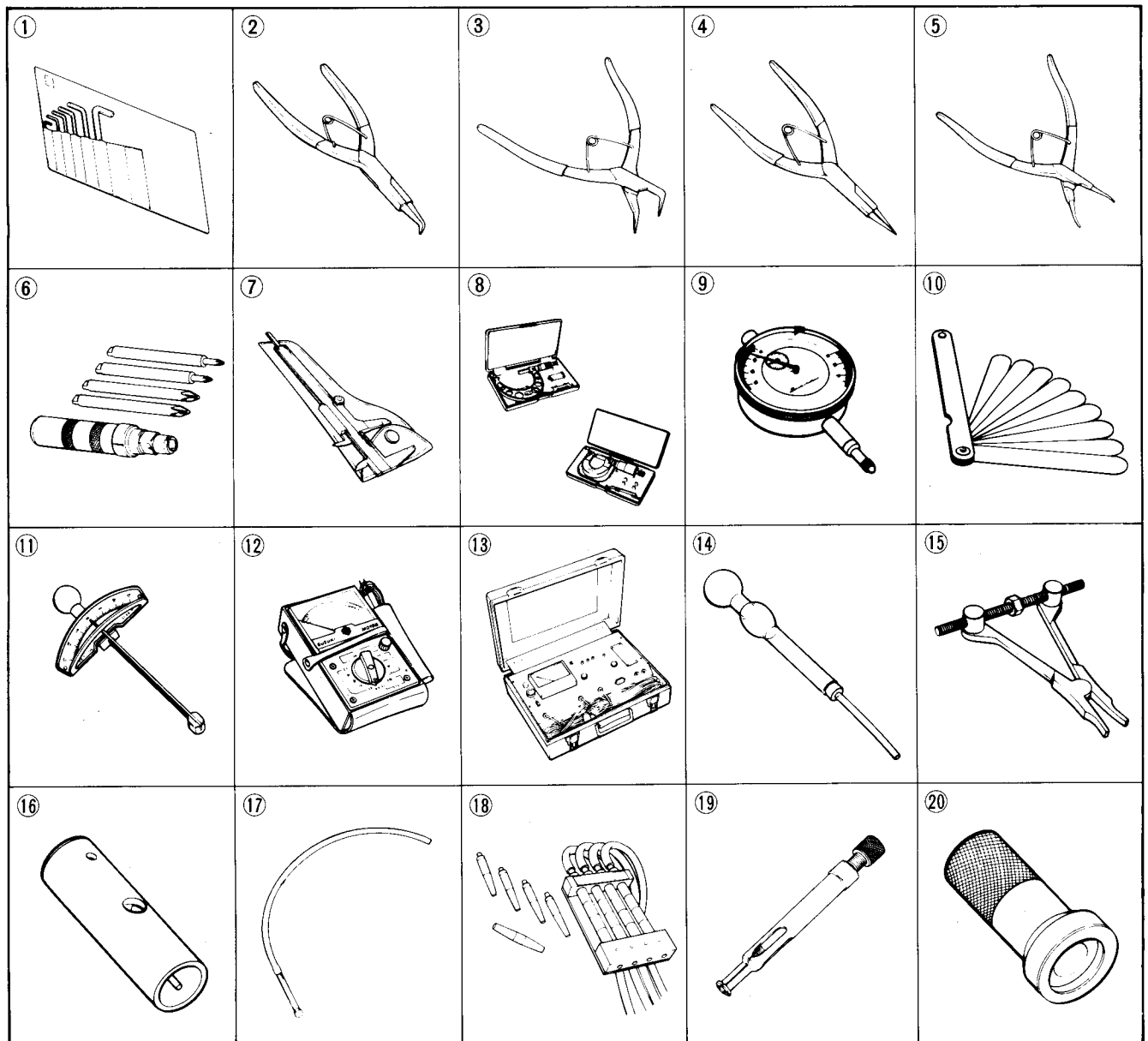


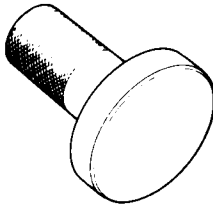
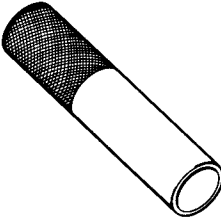
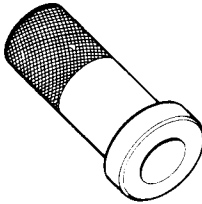
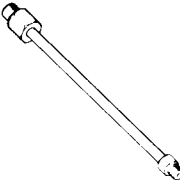
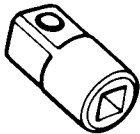

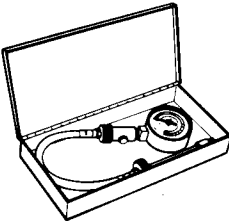
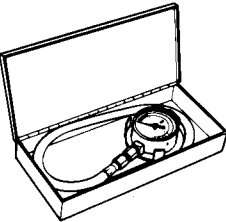
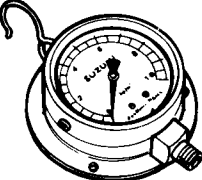
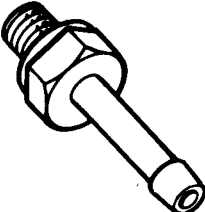
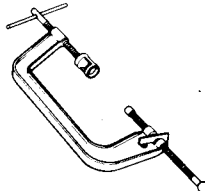
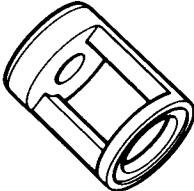
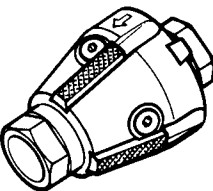
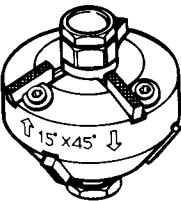
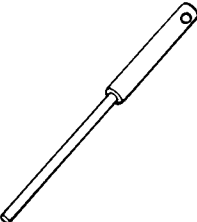
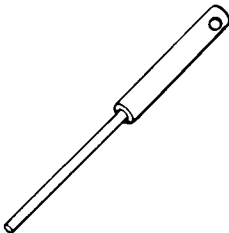
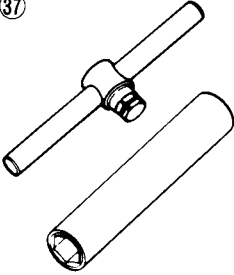
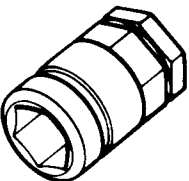

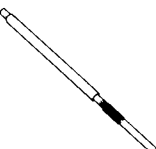

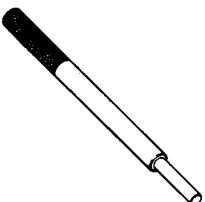
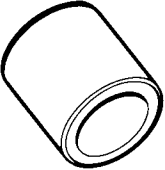
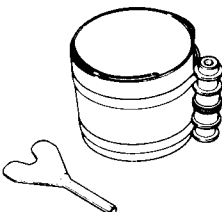

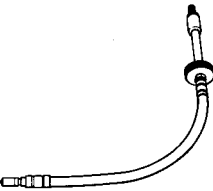
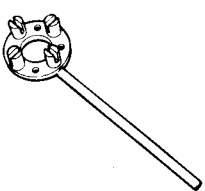
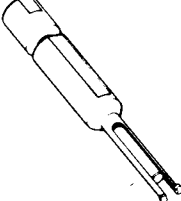


SPECIAL TOOLS

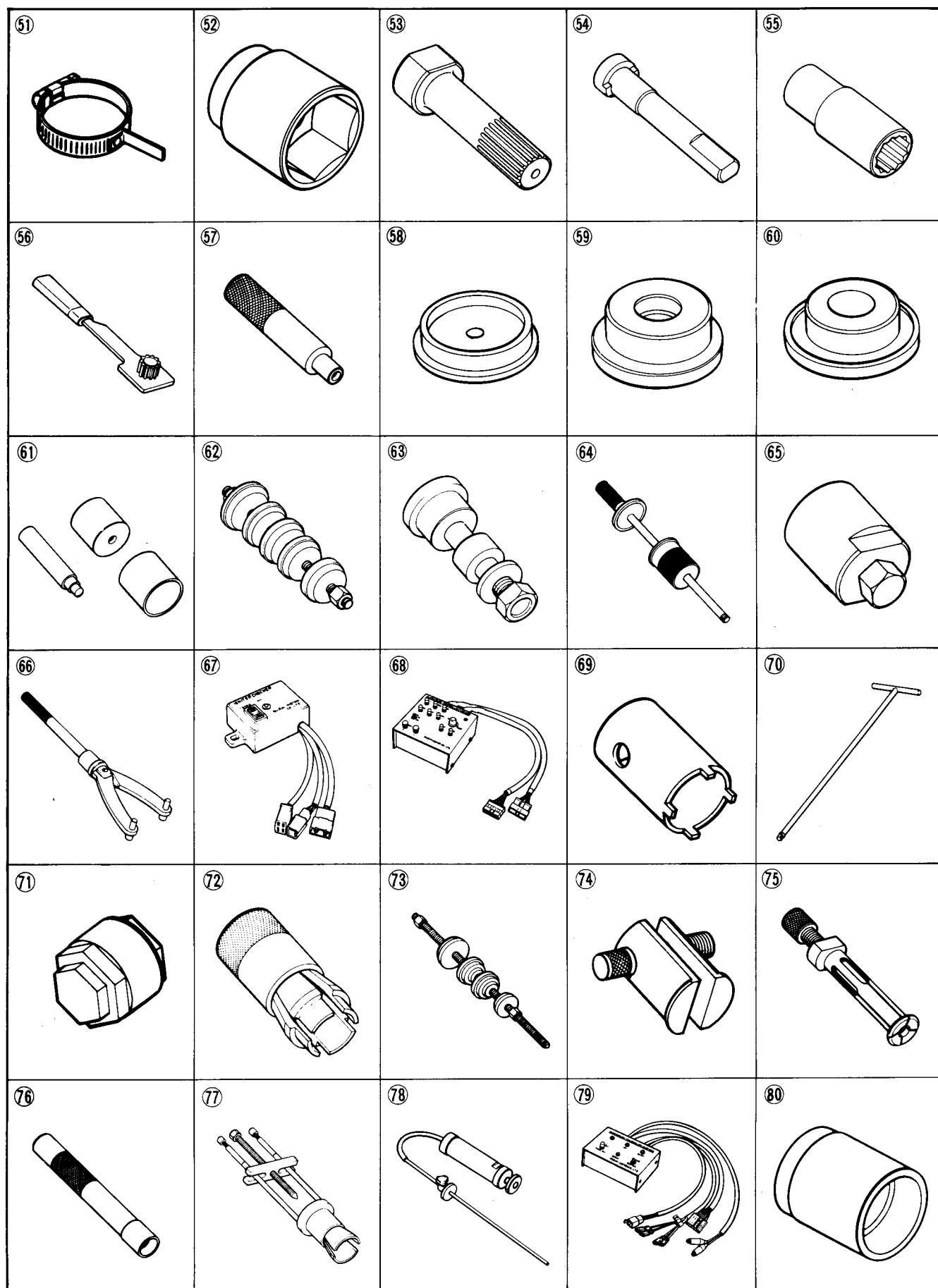
ITEM	PART NO.	PART NAME
1	09900-00401	"L"-type hexagon wrench (Not available in USA)
2	09900-06104	Snapping pliers
3	09900-06105	Snapping pliers
4	09900-06107	Snapping pliers
5	09900-06108	Snapping pliers
6	09900-09003	Impact driver set
7	09900-20101	Vernier calipers
8	09900-20204	Micrometer (75 – 100 mm)
	09900-20205	Micrometer (0 – 25 mm)
9	09900-20606	Dial gauge (1/100 mm)
10	09900-20803	Thickness gauge
11	09900-21107	Torque wrench (0 – 15 kg-cm)
12	09900-25002	SUZUKI pocket tester
13	09900-28106	Electro tester
14	09900-28403	Hydrometer
15	09912-34510	Cylinder disassembling tool
16	09913-10710	Air bleeding tool
17	09913-10730	Fuel level gauge
18	09913-13121	Carburetor balancer
19	09913-60710	Bearing remover (27 – 45 mm)
20	09913-70122	Bearing installer (O.D.: 50 mm)
21	09913-75510	Bearing installer (O.D.: 70.5 mm)
22	09913-84510	Bearing installer (O.D.: 38 mm)
23	09913-85210	Bearing installer (O.D.: 62 mm) (Not available in USA)
24	09915-17410	Oil pressure gauge adaptor
25	09915-24550	Adaptor socket 12.7 x 6.3 mm (Not available in USA)
26	09915-47320	Oil filter wrench
27	09915-64510	Compression gauge
28	09915-74510	Oil pressure gauge
29	09915-77330	Oil pressure gauge (meter 0 – 10 kg/cm ²)
30	09915-94511	Adaptor
31	09916-14510	Valve lifter
32	09916-14910	Valve lifter attachment
33	N-116	Valve seat cutter head
34	N-209	Valve seat cutter head
35	N-100-10	Solid pilot

ITEM	PART NO.	PART NAME
36	N-140-50	Solid pilot
37	N-503	T-handle
38	N-503-1	Adaptor
39	09916-34541	Reamer handle
40	09916-34570	Valve guide reamer
41	09916-34580	Valve guide hole reamer (10.8 mm)
42	09916-44310	Valve guide remover
43	09916-44920	Valve guide installer attachment
44	09916-77310	Piston ring compressor
45	09916-84510	Tweezers
46	09918-02410	Compression gauge adaptor
47	09920-53722	Clutch sleeve hub holder
48	09921-20210	Bearing remover
49	09923-73210	Bearing puller (12 – 18 mm)
50	09923-74510	Bearing puller (20 – 38 mm)
51	09924-34510	Backlash measuring tool (27 – 50 mm)
52	09924-52410	Bevel gear nut socket (41 mm)
53	09924-52420	Secondary driven bevel gear holder
54	09924-52430	Secondary drive bevel gear holder
55	09924-62420	22 mm long socket
56	09924-64510	Final drive gear coupling holder
57	09924-74510	Bearing and oil seal installer handle
58	09924-74520	Oil seal installer and remover
59	09924-74530	Bearing installer
60	09924-74550	Oil seal installer
61	09924-74570	Final driven gear bearing installer and remover
62	09924-84510	Bearing installer set
63	09924-94510	Bearing installer
64	09930-30102	Sliding shaft
65	09930-30720	Rotor remover
66	09930-40113	Rotor and sprocket holder
67	09930-70710	Ignitor checker
68	09932-32410	Auto cruise control checker
69	09940-14911	Steering nut socket wrench
70	09940-34520	"T" handle
71	09940-34581	Attachment "F"
72	09940-50112	Fork oil seal installer

ITEM	PART NO.	PART NAME
73	09941-34513	Steering race and swing arm bearing installer
74	09941-54911	Bearing outer race remover
75	09941-64510	Bearing and oil seal remover (30 — 45 mm)
76	09941-74910	Steering bearing installer
77	09941-84510	Steering bearing inner race remover
78	09943-74111	Fork oil level gauge
79	09960-32410	Auto leveling checker
80	09960-42410	Bearing installer



21	22	23	24	25
				
26	27	28	29	30
				
31	32	33	34	35
				
36	37	38	39	40
				
41	42	43	44	45
				
46	47	48	49	50
				



TIGHTENING TORQUE

ENGINE

ITEM		N·m	kg·m	lb·ft
Camshaft journal holder bolt		23 – 27	2.3 – 2.7	16.5 – 19.5
Cylinder head bolt		46 – 51	4.6 – 5.1	33.5 – 37.0
Cylinder head cover bolt		13 – 15	1.3 – 1.5	9.5 – 11.0
Cylinder head nut		8 – 12	0.8 – 1.2	6.0 – 8.5
Con-rod bearing cap bolt		49 – 53	4.9 – 5.3	35.5 – 38.5
Crankcase bolt	12 mm	60 – 70	6.0 – 7.0	43.5 – 50.5
	10 mm	45 – 55	4.5 – 5.5	32.5 – 40.0
	8 mm	24	2.4	17.5
	6 mm	13	1.3	9.5
	8 mm Allen bolt	20 – 28	2.0 – 2.8	14.5 – 20.0
	6 mm Allen bolt	12 – 16	1.2 – 1.6	8.5 – 11.5
Oil pressure regulator		25 – 30	2.5 – 3.0	18.0 – 21.5
Oil pan bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Engine oil drain plug		20 – 25	2.0 – 2.5	14.5 – 18.0
Rotor bolt		150 – 170	15.0 – 17.0	108.5 – 123.0
Oil pump bolt		7 – 9	0.7 – 0.9	5.0 – 6.5
Idler shaft driven sprocket bolt		50 – 60	5.0 – 6.0	36.0 – 43.5
Water pump bolt		7 – 11	0.7 – 1.1	5.0 – 8.0
Water pump drive sprocket bolt		50 – 60	5.0 – 6.0	36.0 – 43.5
Water pump drain plug		10 – 14	1.0 – 1.4	7.0 – 10.0
Clutch sleeve hub nut		50 – 70	5.0 – 7.0	36.0 – 50.5
Clutch spring bolt		11 – 13	1.1 – 1.3	8.0 – 9.5
Cam chain tensioner bolt		20 – 25	2.0 – 2.5	14.5 – 18.0
Chain tensioner adjuster bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Cam chain tensioner spring holder		20 – 25	2.0 – 2.5	14.5 – 18.0
Cam chain guide bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Exhaust pipe clamp bolt		20 – 25	2.0 – 2.5	14.5 – 18.0
Muffler mounting bolt		27 – 43	2.7 – 4.3	19.5 – 31.0
Radiator mounting bolt		7 – 9	0.7 – 0.9	5.0 – 6.5
Engine mounting bolt (Front & Rear lower)		70 – 88	7.0 – 8.8	50.0 – 64.0
Engine mounting (Rear upper)		60 – 72	6.0 – 7.2	43.5 – 52.0
Down tube mounting bolt	④	60 – 65	6.0 – 6.5	43.5 – 47.0
	⑤	30 – 35	3.0 – 3.5	21.5 – 25.5
Engine mounting bracket bolt		18 – 28	1.8 – 2.8	13.0 – 20.0

SHAFT DRIVE

ITEM	N-m	kg-m	lb-ft
Secondary driven bevel gear nut	120 – 150	12.0 – 15.0	87.0 – 108.5
Secondary driven bevel gear housing bolt	20 – 26	2.0 – 2.6	14.5 – 19.0
Secondary drive bevel gear nut	120 – 150	12.0 – 15.0	87.0 – 108.5
Secondary drive bevel gear housing bolt	6 mm	8 – 12	0.8 – 1.2
	8 mm	20 – 26	2.0 – 2.6
Secondary gear case bolt	20 – 26	2.0 – 2.6	14.5 – 19.0
Final drive bevel gear nut	90 – 130	9.0 – 13.0	65.0 – 94.0
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
Final drive bevel gear coupling nut	90 – 110	9.0 – 11.0	65.0 – 79.5
Final driven bevel gear adjuster lock nut	40 – 60	4.0 – 6.0	29.0 – 43.5

CHASSIS

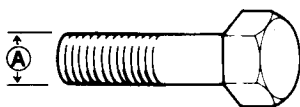
ITEM	N-m	kg-m	lb-ft
Steering stem head nut	30 – 40	3.0 – 4.0	21.5 – 29.0
Front fork upper clamp bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
Front fork lower clamp bolt	20 – 25	2.0 – 2.5	14.5 – 18.0
Front fork cap bolt	15 – 30	1.5 – 3.0	11.0 – 21.5
Front fork damper rod bolt	34 – 46	3.4 – 4.6	24.5 – 33.5
Front axle nut	36 – 52	3.6 – 5.2	26.0 – 37.5
Front axle clamp nut	15 – 25	1.5 – 2.5	11.0 – 18.0
Front brake master cylinder bolt	5 – 8	0.5 – 0.8	3.6 – 6.0
Front caliper mounting bolt	25 – 40	2.5 – 4.0	18.0 – 29.0
Front caliper housing bolt	30 – 36	3.0 – 3.6	21.5 – 26.0
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
Handlebar holder nut	30 – 40	3.0 – 4.0	21.5 – 29.0
Handlebar clamp bolt	25 – 30	2.5 – 3.0	18.0 – 21.5
Disc plate bolt (Front & Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0
Auto level hose mounting nut	10 – 16	1.0 – 1.6	7.0 – 11.5
Air compressor hose union bolt	7 – 9	0.7 – 0.9	5.0 – 6.5
Front foot rest bolt	27 – 43	2.7 – 4.3	19.5 – 31.0
Rear axle nut	85 – 115	8.5 – 11.5	61.5 – 83.0
Rear wheel driven joint bolt	8 – 12	0.8 – 1.2	6.0 – 8.5
Rear shock absorber nut (Upper & Lower)	20 – 30	2.0 – 3.0	14.5 – 21.5
Rear shock absorber air valve	7 – 9	0.7 – 0.9	5.0 – 6.5
Rear swingarm pivot bolt	3.5 – 4.5	0.35 – 0.45	2.5 – 3.0
Rear swingarm pivot nut	110 – 130	11.0 – 13.0	79.5 – 94.0

ITEM	N·m	kg·m	lb·ft
Rear caliper mounting bolt	25 – 40	2.5 – 4.0	18.0 – 29.0
Brake pedal link nut	15 – 25	1.5 – 2.5	11.0 – 18.0
Rear caliper housing bolt	28 – 32	2.8 – 3.2	20.0 – 23.0
Brake pedal link arm bolt	10 – 15	1.0 – 1.5	7.0 – 11.0
Rear torque link nut (Front & Rear)	20 – 30	2.0 – 3.0	14.5 – 21.5
Rear brake master cylinder bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
Rear brake rod lock nut	15 – 25	1.5 – 2.5	11.0 – 18.0
Rear axle clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Clutch master cylinder bolt	5 – 8	0.5 – 0.8	3.5 – 6.0

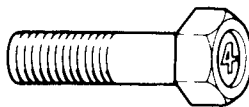
TIGHTENING TORQUE CHART

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

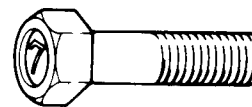
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kg·m	lb·ft	N·m	kg·m	lb·ft
4	1.0 – 2.0	0.1 – 0.2	0.7 – 1.5	1.5 – 3.0	0.15 – 0.3	1.0 – 2.0
5	2.0 – 4.0	0.2 – 0.4	1.5 – 3.0	3.0 – 6.0	0.3 – 0.6	2.0 – 4.5
6	4.0 – 7.0	0.4 – 0.7	3.0 – 5.0	8.0 – 12.0	0.8 – 1.2	6.0 – 8.5
8	10.0 –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



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA**VALVE + GUIDE**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.0 (1.18)	—
	EX.	26.0 (1.02)	—
Valve lift	IN	7.0 (0.28)	—
	EX.	6.0 (0.24)	—
Lash-adjuster plunger stroke	0–0.2 (0–0.008)		—
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.	5.000–5.012 (0.1969–0.1973)	—
Valve stem O.D.	IN.	4.965–4.980 (0.1955–0.1961)	—
	EX.	4.950–4.965 (0.1949–0.1955)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	3.3 (0.13)
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	—		34.5 (1.36)
Valve spring tension	9.4–11.0 kg (20.7–24.3 lbs) at length 31.5 mm (1.24 in)		—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	32.652–32.692 (1.2855–1.2871)	32.36 (1.274)
	EX.	32.065–32.105 (1.2624–1.2640)	31.77 (1.251)
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	0.150 (0.0060)
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)

ITEM	STANDARD		LIMIT
Cam chain 20-pitch length	————		161.0 (6.34)
Cam chain pin (at aligning mark)	Front	18th pin	————
	Rear	18th pin	————
Idler chain 20-pitch length	————		161.0 (6.34)
Idler chain pin (at aligning mark)	29th pin		————
Cylinder head distortion	————		0.10 (0.004)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure	10—14 kg/cm ² (142—200 psi)			8 kg/cm ² (114 psi)
Compression pressure difference	————			2 kg/cm ² (28 psi)
Piston to cylinder clearance	0.045—0.055 (0.0018—0.0022)			0.120 (0.0047)
Cylinder bore	81.000—81.015 (3.1890—3.1896)			81.085 (3.1923)
Piston diam.	80.950—80.965 (3.1870—3.1876) Measure at 14 mm (0.6 in) from the skirt end.			80.880 (3.1842)
Cylinder distortion	————			0.10 (0.004)
Piston ring free end gap	1st	R	Approx. 10.5 (0.41)	8.4 (0.33)
	2nd	R	Approx. 11.7 (0.46)	9.4 (0.37)
Piston ring end gap	1st	R	0.20—0.35 (0.008—0.014)	0.70 (0.028)
	2nd	R	0.20—0.35 (0.008—0.014)	
Piston ring to groove clearance	1st	————		0.18 (0.007)
	2nd	————		0.15 (0.006)
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—0.00469)		————
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

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	0.10–0.25 (0.004–0.010)		0.30 (0.012)
Conrod big end width	19.95–20.00 (0.785–0.787)		—
Crank pin width	40.10–40.15 (1.579–1.581)		—
Conrod big end oil clearance	0.032–0.056 (0.0013–0.0022)		0.0090 (0.0035)
Crank pin O.D.	39.976–40.000 (1.5739–1.5748)		—
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	39.976–40.000 (1.5739–1.5748)		—
Crankshaft thrust bearing thickness	Left side	2.850–3.000 (0.112–0.118)	—
	Right side	2.925–2.950 (0.115–0.116)	—
Crankshaft thrust clearance	0.045–0.100 (0.0018–0.0039)		—
Crankshaft journal holder width	24.05–24.13 (0.947–0.950)		—
Crankshaft journal width	30.00–30.05 (1.181–1.183)		—
Crankshaft runout	—		0.05 (0.002)

OIL PUMP + FUEL PUMP + WATER PUMP

Unit: mm (in)

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.756 (72/41 × 37/35)	—
Oil pressure (at 60°C, 140°F)	Above 5.0 kg/cm ² (71 psi) Below 8.0 kg/cm ² (114 psi) at 3 000 r/min.	—
Fuel pump discharge	Over 500 ml/min.	—
Fuel pump resistance	1–2 Ω	—
Water pump drive chain 10-pitch length	—	64.5 (2.54)

CLUTCH

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive plate thickness	No.1	2.72–2.88 (0.104–0.116)	2.42 (0.095)
	No.2	3.45–3.55 (0.128–0.140)	2.58 (0.102)
Drive plate claw width	15.8–16.0 (0.62–0.63)		15.0 (0.59)

ITEM	STANDARD	LIMIT
Driven plate distortion	—	0.1 (0.004)
Clutch spring free length	—	34.0 (1.34)
Clutch master cylinder bore	14.000–14.043 (0.5512–0.5529)	—
Clutch master cylinder piston diam.	13.957–13.984 (0.5495–0.5506)	—
Clutch release cylinder bore	38.100–38.162 (1.5000–1.5024)	—
Clutch release cylinder piston diam.	38.042–38.075 (1.4977–1.4990)	—

THERMOSTAT + RADIATOR + FAN

ITEM	STANDARD	LIMIT
Thermostat valve opening temperature	75.0 ± 1.5°C (167 ± 2.7°F)	—
Thermostat valve lift	Over 8 mm (0.13 in) at 90°C (194°F)	—
Radiator cap valve release pressure	0.90 ± 0.15 kg/cm ² (12.8 ± 2.1 psi, 90 ± 15 kPa)	—
Electric fan thermo-switch operating temperature	ON	105 ± 3°C (221 ± 5.4°F)
	OFF	Approx. 98°C (208.4°F)
Electric fan relay resistance	Approx. 70 Ω	—
Thermo-gauge resistance	27.4 Ω at 100°C (212°F)	—

TRANSMISSION

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	1.756 (72/41)	—
Secondary reduction ratio	1.000 (16/16)	—
Final reduction ratio	2.666 (32/12)	—
Gear ratios	Low	2.750 (33/12)
	2nd	1.684 (32/19)
	3rd	1.250 (25/20)
	4th	1.000 (25/25)
	Top	0.851 (23/27)
Shift fork groove clearance	0.10–0.30 (0.004–0.012)	0.50 (0.020)
Shift fork groove width	5.5–5.6 (0.217–0.220)	—
Shift fork thickness	5.3–5.4 (0.209–0.213)	—

SHAFT DRIVE

Unit: mm (in)

ITEM	STANDARD	LIMIT
Secondary bevel gear backlash	0.05–0.32 (0.002–0.013)	—

ITEM	STANDARD		LIMIT
Final bevel gear backlash	Drive side	0.03–0.64 (0.001–0.025)	—
	Driven side	0.02–0.35 (0.0008–0.0138)	
Secondary drive bevel gear preload	3–7 kg-cm (2.6–6.1 lb-in)		—
Secondary driven bevel gear preload	3–7 kg-cm (2.6–6.1 lb-in)		—

CARBURETOR

ITEM	SPECIFICATION	
Carburetor type	MIKUNI BDS33SS	
Bore size	33 mm (1.30 in)	
I.D. No.	24A10	
Idle r/min.	950 \pm 100 r/min.	
Fuel level	17.0 \pm 0.5 mm (0.67 \pm 0.02 in)	
Float height	11.5 \pm 1.0 mm (0.45 \pm 0.04 in)	
Main jet (M.J.)	#105	
Main air jet (M.A.J.)	0.6 mm	
Jet needle (J.N.)	5D24	
Needle jet (N.J.)	Y-7	
Throttle valve (Th.V.)	#125	
Pilot jet (P.J.)	#25	
By pass (B.P.)	0.8 mm, 0.8 mm, 0.8 mm	
Pilot outlet (P.O.)	0.7 mm	
Valve seat (V.S.)	1.5 mm	
Starter jet (G.S.)	#25	
Pilot screw (P.S.)	PRE-SET	
Pilot air jet (P.A.J.)	PRE-SET	
Throttle cable play	2–3 mm (0.08–0.12 in)	
Choke cable play	0.5–1.0 mm (0.02–0.04 in)	

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	7° B.T.D.C. Below 1 500 \pm 250 r/min. and 35° B.T.D.C. Above 3 000 \pm 250 r/min.		
Firing order	1-3-2-4		
Spark plug	Type	N.D.: X22EPR-GL	
	Gap	0.6–0.7 (0.024–0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	50–200 Ω		P–Lg/R, Gr–Bl/W

10-41 SERVICING INFORMATION

ITEM	STANDARD		LIMIT
Ignition coil resistance	Primary	2—6 Ω	O/W—W or B/Y
	Secondary	10—25 k Ω	Plug cap— W or B/Y
Generator no-load voltage	More than 90 V (AC) at 5 000 r/min.		
Regulated voltage	14—15 V at 5 000 r/min.		
Starter motor	Brush length	Limit: $\frac{6}{(0.24)}$	MITSUBA
	Commutator under-cut	Limit: $\frac{0.2}{(0.008)}$	
Starter relay resistance	2—6 Ω		
Battery	Type designation	SY50-N18L-A	
	Capacity	12V72kC(20Ah)/10HR	
	Standard electrolyte S.G.	1.28 at 20°C (68°F)	
Battery level sensor voltage	Over 3.0V (DC)		
Fuse size	Headlight	10 A	
	Signal	10 A	
	Ignition	10 A	
	Tail	10 A	
	Power source	10 A	
	CB	3 A	GD
	Audio	3 A, 5 A	GD
	ALC	10 A	GD
Circuit breaker	30 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Tail/Brake light		8/23
Turn signal light		23
Combination meter light		3.4
Turn signal indicator light		3.4
High beam indicator light		1.7
Neutral indicator light		3.4
Oil pressure indicator light		3.4
Cluse indicator light		3.4
Licence light		8
Travel trunk light		5

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	Above 15 (0.6)		—
Brake disc thickness	Front (R. & L.)	5.0 ± 0.2 (0.197 ± 0.008)	4.5 (0.18)
	Rear	6.7 ± 0.2 (0.264 ± 0.008)	6.0 (0.24)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	15.870–15.913 (0.6248–0.6265)	—
	Rear	12.700–12.743 (0.5000–0.5017)	—
Master cylinder piston diam.	Front	15.827–15.854 (0.6231–0.6242)	—
	Rear	12.657–12.684 (0.4983–0.4994)	—
Brake caliper cylinder bore	Front (R. & L.)	42.850–42.926 (1.6870–1.6900)	—
	Rear	45.000–45.076 (1.7717–1.7746)	—
Brake caliper piston diam.	Front (R. & L.)	42.770–42.820 (1.6839–1.6858)	—
	Rear	44.930–44.980 (1.7689–1.7709)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axel runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	130/90-16 67H	—
	Rear	150/90-15 74H	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITME	STANDARD	LIMIT	NOTE
Front fork stroke	150 (5.9)	—	
Front fork spring free length	—	454 (17.9)	
Front fork oil level	121 (4.8)	—	
Rear wheel travel	106 (4.2)	—	

REAR SHOCK ABSORBER AIR PRESSURE (GT model only)

	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
Empty saddle bags and travel trunk	150—200	1.5—2.0	21—28	300—350	3.0—3.5	43—50
Full saddle bags and travel trunk	200—300	2.0—3.0	28—43	350—450	3.5—4.5	50—64

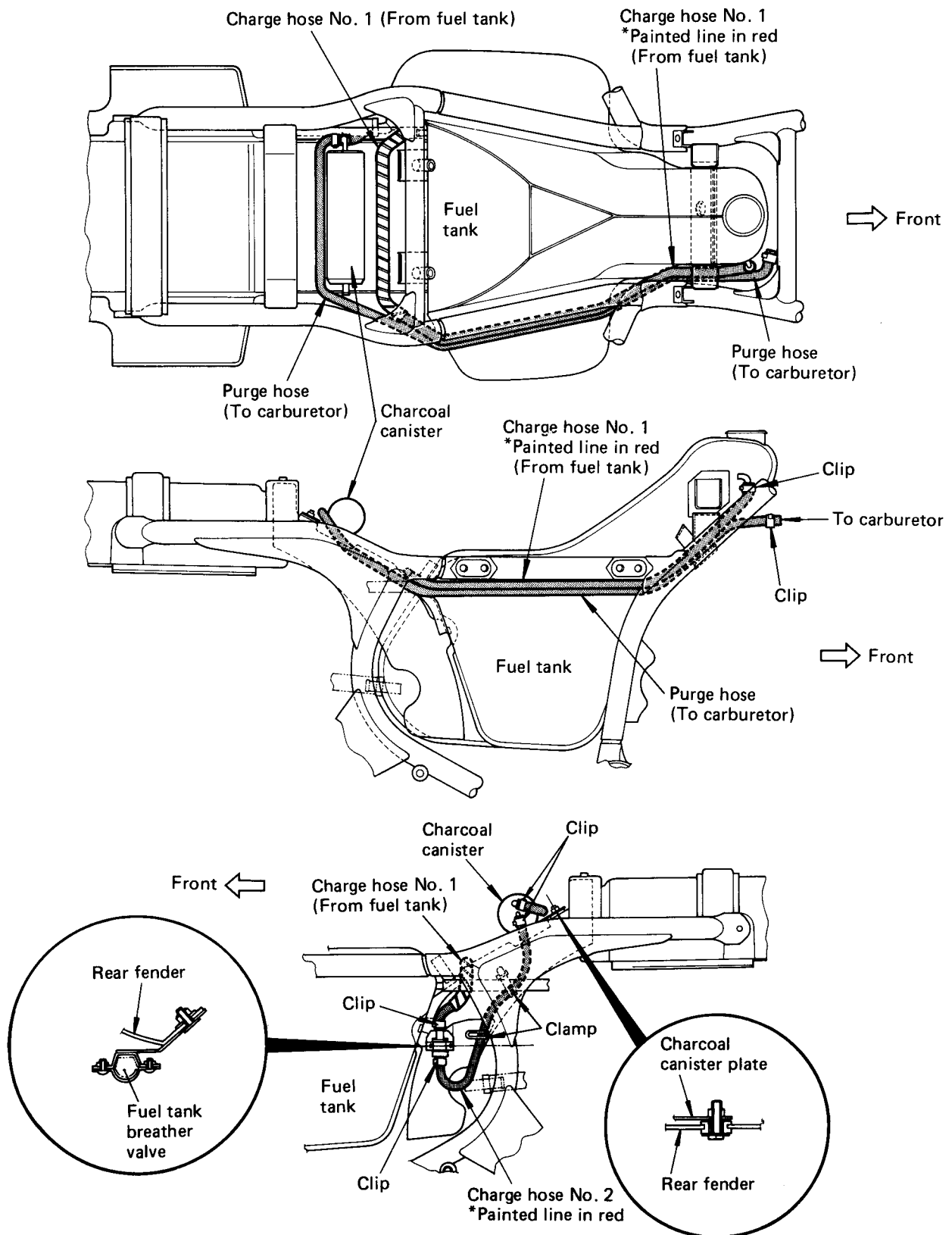
TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	225	2.25	32	225	2.25	32
REAR	280	2.80	40	280	2.80	40

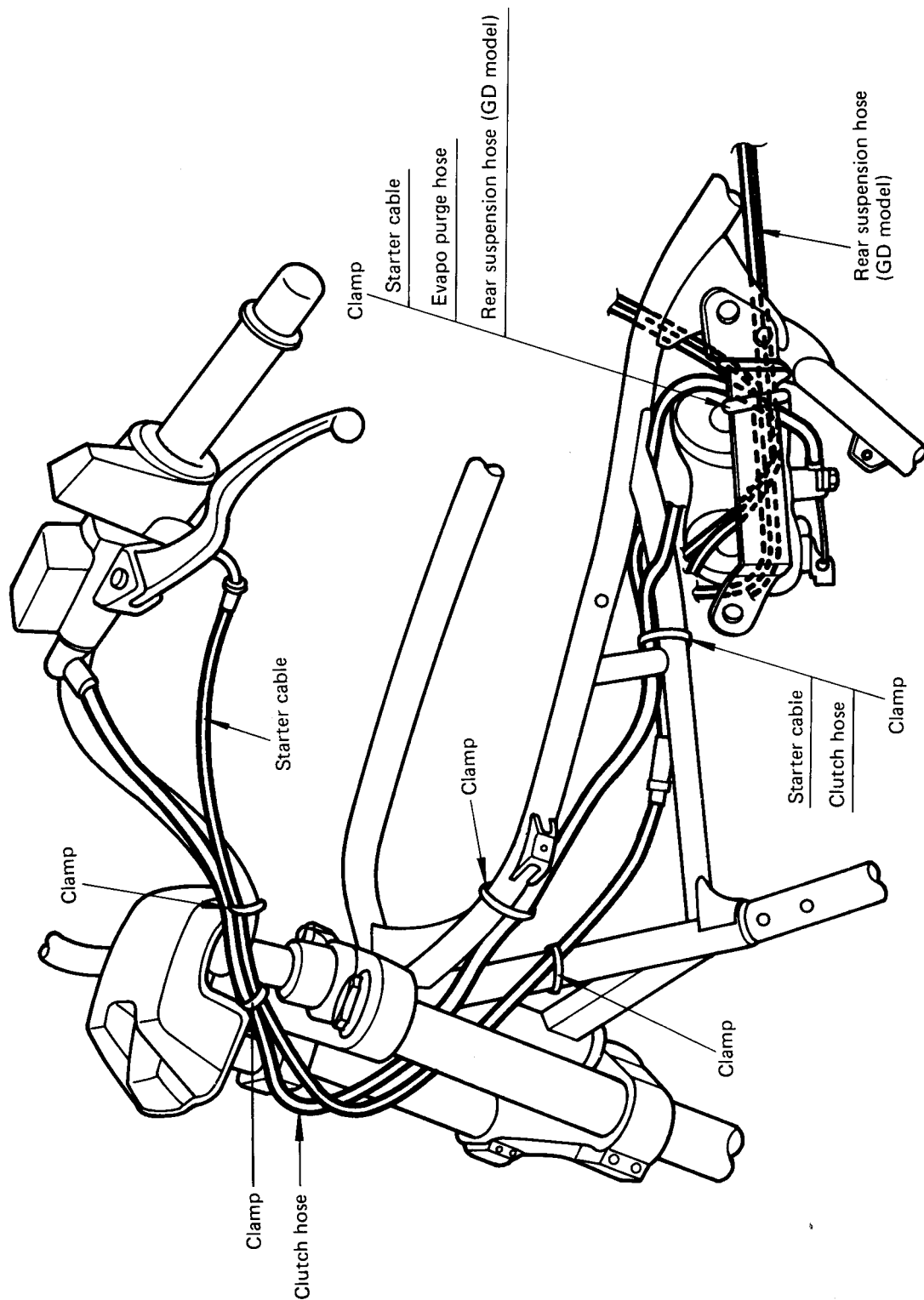
FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead gasoline type is recommended.		
Fuel tank including reserve	23 L (6.1 US gal)		
Engine oil type and grade	SAE 10W/40, API, SE or SF		
Engine oil capacity	Change	3 200 ml (3.4 US qt)	
	Filter change	3 700 ml (3.9 US qt)	
	Overhaul	4 200 ml (4.4 US qt)	
Front fork oil type	Fork oil #15		
Front fork oil capacity (each leg)	407 ml (13.8 US oz)		
Bevel gear and propeller shaft oil type	SAE 90 hypoid gear oil with GL-5 under API classification		
Bevel gear oil capacity	Secondary	330—350 ml (11.2—11.8 US oz)	
	Final	330—350 ml (11.2—11.8 US oz)	
Brake and clutch fluid type	DOT3 or DOT4		
Coolant including reservoir tank	3.55 L (0.94 US gal)		
reservoir tank	0.45 L (0.48 US qt)		

VAPOR HOSE ROUTING



VAPOR HOSE CLAMP POSITION



10-46 SERVICING INFORMATION

NOTE:

Hose routing has been changed as follows. Routing illustrations for the early type are shown in the pages 10-17 and 10-23. Pages 10-44 and 10-45 are exclusive for CA model.

FUEL HOSE AND FUEL TANK BREATHER HOSE ROUTING

