HOW TO USE THIS MANUAL

This service manual describes the service procedures for the GL1800/ GL1800A.

Follow the Maintenance Schedule (Section 3) recommendations to ensure that the vehicle is in peak operating condition and emission levels are within the standards set by the California Air Resources Board (CARB).

Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 and 3 apply to the whole motorcycle. Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.
Sections 4 through 22 describe parts of the motorcycle, grouped according to location.

Find the section you want on this page, then turn to the table of contents on the first page of the section.

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedures.

If you don't know the source of the trouble, go to Section 24, Troubleshooting.

Your safety, and the safety of others, is very important. To help you make informed decisions we have provided safety messages and other information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgement. You will find important safety information in a variety of forms including:

- Safety Labels – on the vehicle
- Safety Messages – preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

⚠DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

⚠WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

⚠CAUTION You CAN be HURT if you don't follow instructions.

- Instructions – how to service this vehicle correctly and safely.

CONTENTS

LUBRICATION SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Engine oil capacity	After draining		3.6 liters (3.8 US qt, 3.2 Imp qt)	–
	After draining/filter change		3.7 liters (3.9 US qt, 3.3 Imp qt)	–
	After disassembly		4.6 liters (4.9 US qt, 4.0 Imp qt)	–
Recommended engine oil			Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil or equivalent motor oil API service classification SG or Higher JASO T 903 standard: MA Viscosity: SAE 10W-40	–
Oil pressure (at oil pressure switch)			530 kPa (5.4 kgf/cm^2, 77 psi) at 5,000 rpm/80° C (176° F)	–
Oil pump	Tip clearance		0.15 (0.006)	0.20 (0.008)
	Body clearance	Feed side	0.15 – 0.21 (0.006 – 0.008)	0.35 (0.014)
		Scavenge side	0.15 – 0.22 (0.006 – 0.009)	0.35 (0.014)
	Side clearance		0.02 – 0.09 (0.001 – 0.004)	0.12 (0.005)

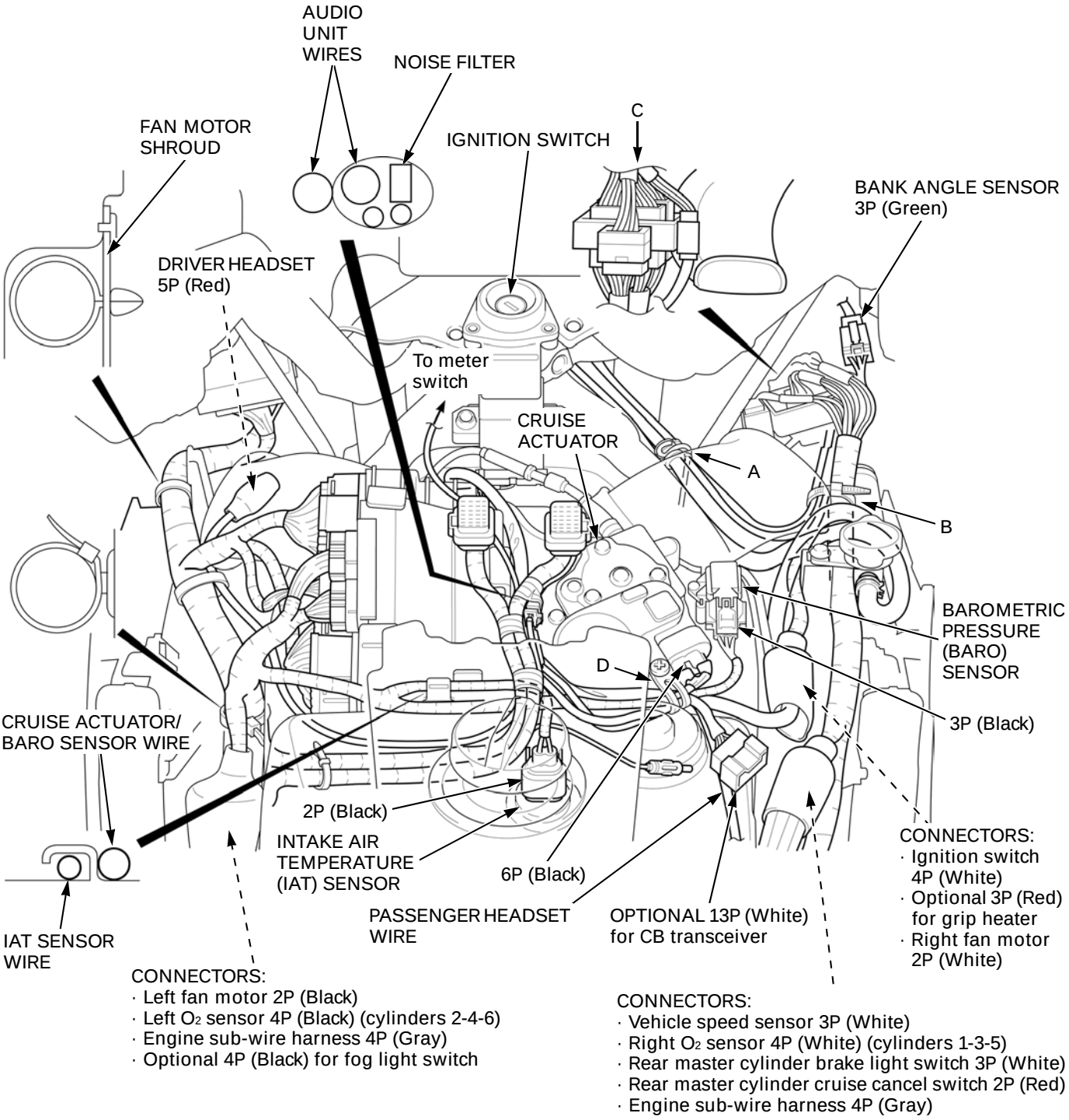
FUEL SYSTEM (Programmed Fuel Injection) SPECIFICATIONS

ITEM	SPECIFICATIONS
Throttle body identification number	GQ61A
Throttle grip free play	2 – 6 mm (1/12 – 1/4)
Intake air temperature sensor resistance (20° C/68° F)	2.2 – 2.7 kΩ
Engine coolant temperature sensor resistance (20° C/68° F)	2.3 – 2.6 kΩ
Throttle sensor resistance (20° C/68° F)	4 – 6 kΩ
Fuel injector resistance (20° C/68° F)	11.1 – 12.3 Ω
Camshaft position sensor peak voltage	0.7 V minimum
Ignition pulse generator peak voltage	0.7 V minimum
Manifold absolute pressure at idle	400 – 450 mm Hg (15.7 – 17.7 in Hg)
Fuel pressure at idle	343 kPa (3.5 kgf/cm^2, 50 psi)
Fuel pump flow (at 12 V)	133 cm^3 (4.5 US oz, 4.7 Imp oz) minimum/10 seconds
Idle speed	700 ± 70 rpm

COOLING SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	3.53 liters (3.73 US qt, 3.11 Imp qt)
	Reserve tank	0.65 liter (0.69 US qt, 0.57 Imp qt)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm^2, 16 – 20 psi)
Thermostat	Begin to open	76 – 80° C (169 – 176° F)
	Fully open	90° C (194° F)
	Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing silicate-free corrosion inhibitors
Standard coolant concentration		1:1 mixture with recommended antifreeze and soft water

After '03:


AUDIO UNIT WIRES
NOISE FILTER
FAN MOTOR SHROUD
IGNITION SWITCH
C
BANK ANGLE SENSOR 3P (Green)
DRIVER HEADSET 5P (Red)
To meter switch
CRUISE ACTUATOR
A
B
BAROMETRIC PRESSURE (BARO) SENSOR
D
3P (Black)
CRUISE ACTUATOR/ BARO SENSOR WIRE
2P (Black)
INTAKE AIR TEMPERATURE (IAT) SENSOR
6P (Black)
PASSENGER HEADSET WIRE
OPTIONAL 13P (White) for CB transceiver
IAT SENSOR WIRE
CONNECTORS:
· Ignition switch 4P (White)
· Optional 3P (Red) for grip heater
· Right fan motor 2P (White)
CONNECTORS:
· Left fan motor 2P (Black)
· Left O2 sensor 4P (Black) (cylinders 2-4-6)
· Engine sub-wire harness 4P (Gray)
· Optional 4P (Black) for fog light switch
CONNECTORS:
· Vehicle speed sensor 3P (White)
· Right O2 sensor 4P (White) (cylinders 1-3-5)
· Rear master cylinder brake light switch 3P (White)
· Rear master cylinder cruise cancel switch 2P (Red)
· Engine sub-wire harness 4P (Gray)

SERVICE INFORMATION

SPECIFICATIONS

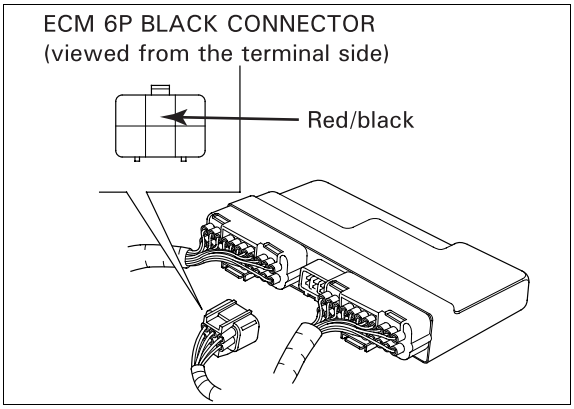
ITEM			SPECIFICATIONS
Throttle grip free play			2 – 6 mm (1/12 – 1/4 in)
Spark plug	Standard		BKR6E-11 (NGK), K20PR-U11 (DENSO)
	For cold climate (below 5°C/41°F)		BKR5E-11 (NGK), K16PR-U11 (DENSO)
	For extended high speed riding		BKR7E-11 (NGK), K22PR-U11 (DENSO)
Spark plug gap			1.00 – 1.10 mm (0.039 – 0.043 in)
Valve clearance	Intake		0.15 ±0.03 mm (0.006 ±0.001 in)
	Exhaust		0.22 ±0.03 mm (0.009 ±0.001 in)
Recommended engine oil			Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil or equivalent motor oil API service classification: SG or higher JASO T 903 standard: MA Viscosity: SAE 10W-40
Engine oil capacity	After draining		3.6 liters (3.8 US qt, 3.2 Imp qt)
	After draining/filter change		3.7 liters (3.9 US qt, 3.3 Imp qt)
	After disassembly		4.6 liters (4.9 US qt, 4.0 Imp qt)
Final drive oil capacity	After draining		120 cm^3 (4.1 US oz, 4.2 Imp oz)
	After disassembly		150 cm^3 (5.1 US oz, 5.3 Imp oz)
Recommended brake fluid			DOT 4 brake fluid
Recommended clutch fluid			DOT 4 brake fluid
Cold tire pressure	Up to 90 kg (200 lbs) load	Front	250 kPa (2.50 kgf/cm^2, 36 psi)
		Rear	280 kPa (2.80 kgf/cm^2, 41 psi)
	Up to maximum weight capacity	Front	250 kPa (2.50 kgf/cm^2, 36 psi)
		Rear	280 kPa (2.80 kgf/cm^2, 41 psi)
Tire size		Front	130/70R18 (63H), 130/70R18M/C (63H)
		Rear	180/60R16 (74H), 180/60R16M/C (74H)
Tire brand		Front	D250F (Dunlop), G707 RADIAL (Bridgestone), G709 RADIAL (Bridgestone)
		Rear	D250 (Dunlop), G704 RADIAL (Bridgestone)
Minimum tread depth		Front	1.5 mm (0.06 in)
		Rear	2.0 mm (0.08 in)

TORQUE VALUES

Cylinder head side cover bolt	10 N·m (1.0 kgf·m, 7 lbf·ft)	
Spark plug	18 N·m (1.8 kgf·m, 13 lbf·ft)	
Cylinder head cover bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Timing hole cap	18 N·m (1.8 kgf·m, 13 lbf·ft)	Apply grease to the threads.
Engine oil drain bolt	34 N·m (3.5 kgf·m, 25 lbf·ft)	
Engine oil filter cartridge	26 N·m (2.7 kgf·m, 20 lbf·ft)	Apply oil to the seal rubber and threads.
Final drive oil filler cap	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Final drive oil drain bolt	20 N·m (2.0 kgf·m, 14 lbf·ft)	
Front brake reservoir cap screw	2 N·m (0.2 kgf·m, 1.4 lbf·ft)	
Clutch reservoir stopper plate screw	2 N·m (0.2 kgf·m, 1.4 lbf·ft)	

5. No. 4 Injector Control Line Short Circuit Inspection

Turn the ignition switch to "OFF."
Disconnect the ECM 6P black connector.
Check for continuity between the Red/black wire terminal of the wire harness side 6P connector and ground.



Is there continuity?

YES – Short circuit in the Red/black wire.

NO – GO TO STEP 6.

6. No. 4 Injector Control Line Continuity Inspection

Check for continuity between the Red/black wire terminals of the No. 4 injector 2P connector and ECM 6P black connector.

Is there continuity?

NO – Open circuit in the Red/black wire.

YES – Replace the ECM with a new one and inspect again.

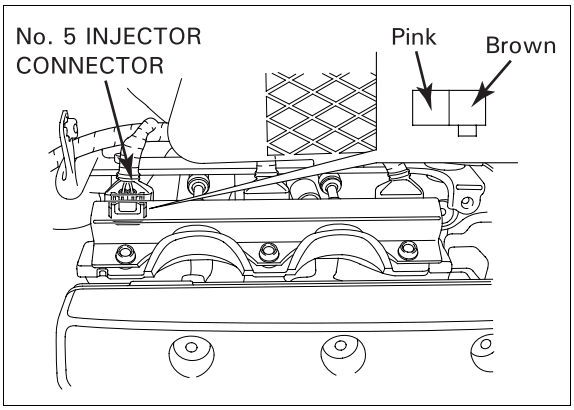
MIL 16 BLINKS (No. 5 INJECTOR)

1. Injector Connection Inspection

Remove the right injector cover (page 5-61).
Turn the ignition switch to "OFF."

Disconnect the No. 5 injector 2P connector.
Check the connector for loose contacts or corroded terminals.

Connect the No. 5 injector 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON."
Check that the MIL blinks.



Is the MIL blinking?

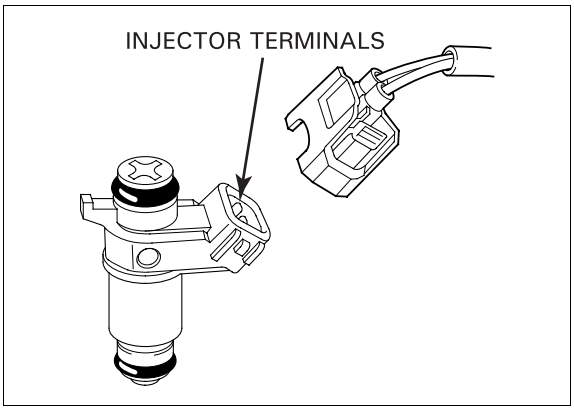
NO – Temporary failure; the system is normal.

YES – GO TO STEP 2.

2. No. 5 Injector Resistance Inspection

Turn the ignition switch to "OFF."
Disconnect the No. 5 injector 2P connector.
Measure the resistance between the No. 5 injector terminals.

Standard: 11.1 – 12.3Ω (at 20°C/68°F)



Is resistance within 11.1 – 12.3Ω (at 20° C/68° F)?

NO – Faulty No. 5 injector.

YES – GO TO STEP 3.

HIGH ENGINE IDLE SPEED

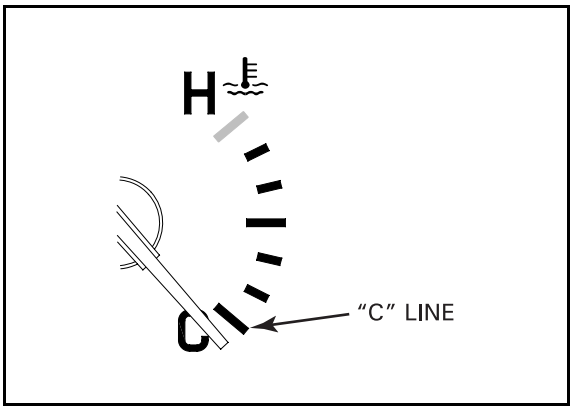
NOTE:

- Make sure that the charging system is in good condition before proceeding.

1. Stop the engine and allow it to cool until the coolant temperature gauge needle moves below the "C" line.
2. Start the engine and let it idle.
   When the radiator cooling fan comes on, stop the engine and restart it.
   After 10 – 20 seconds, check the idle speed.

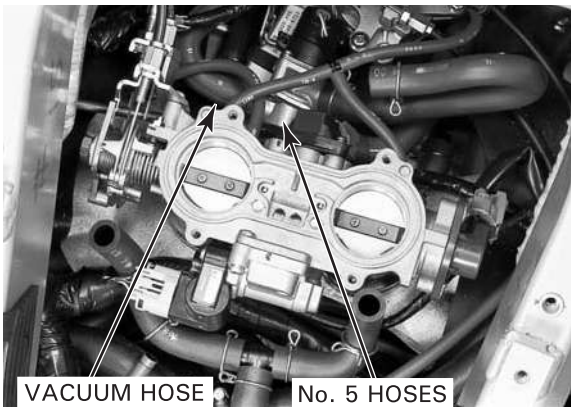
   IDLE SPEED: 700 ±70 rpm

   - If the idle speed is within the specification, the system is OK.
   - If the idle speed is higher than the specification, GO TO STEP 3.



3. Stop the engine and remove the air cleaner housing (page 5-57).
   Check that the No. 5 hoses are connected to the throttle body and purge control solenoid valve, and the vacuum hose is connected to the throttle body and pressure regulator securely.
   Connect the loose hose securely or replace the damaged hose with a new one as necessary.

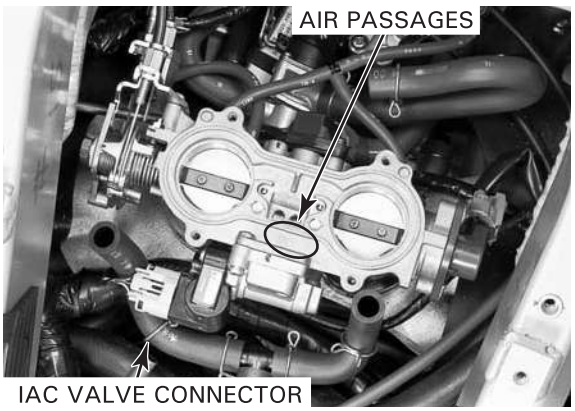
   Connect the loose hose securely or replace the damaged hose with a new one as necessary.



4. Disconnect the IAC valve 3P connector.
   Temporarily install the fuel tank.
   Connect the ECM, IAT sensor and BARO sensor connectors.
   Start the engine, warm it up to normal operating temperature and let it idle.
   Block the air passages in the throttle body with tape and check the idle speed.

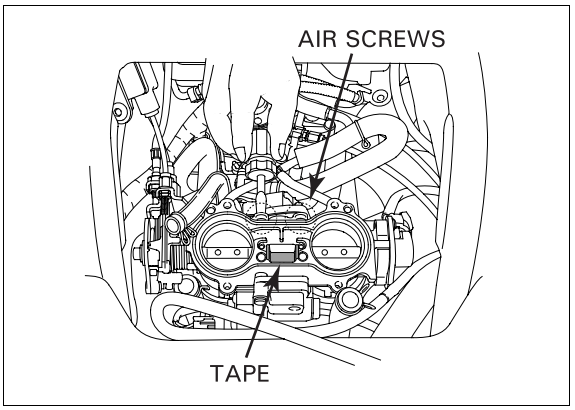
   IDLE SPEED: 500 – 600 rpm

   - If the idle speed is within the specification, GO TO STEP 6.
   - If the idle speed is higher than the specification, GO TO STEP 5.



5. Turn both air screws in an equal number of turns to correct the idle speed.

   - If the air screws are fully closed but the idle speed does not fall within the specification, replace the throttle body with a new one (page 5-58).
   - If the idle speed falls within the specification, GO TO STEP 6.

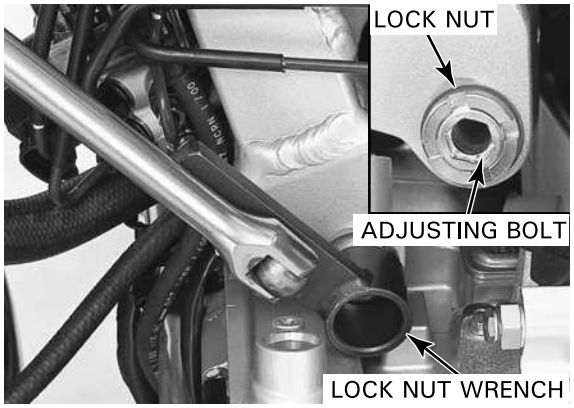


Loosen the left front engine hanger adjusting bolt lock nut using the special tool.

TOOL:

Lock nut wrench	**07908-ME90000 or 07GMA-KT7A200 (U.S.A. only)**

Remove the lock nut.
Loosen the left front engine hanger adjusting bolt.

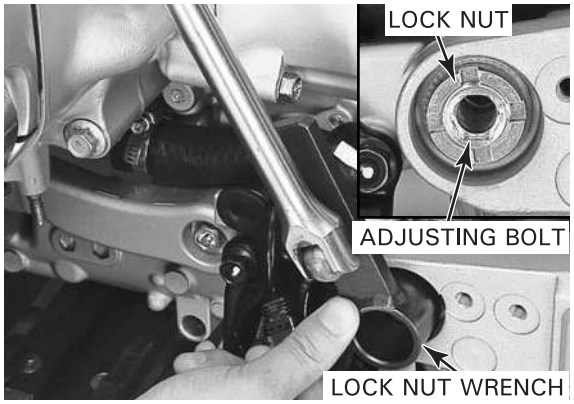


Loosen the left rear engine hanger adjusting bolt lock nut using the special tool.

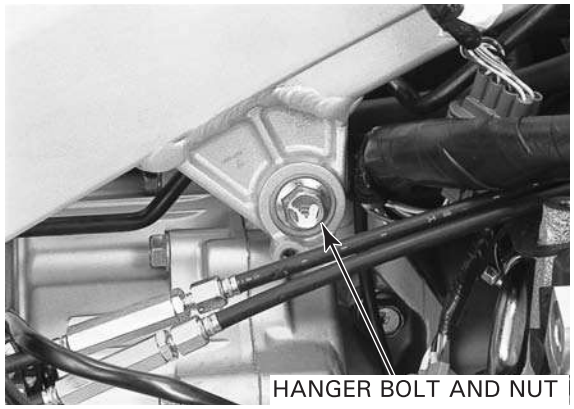
TOOL:

Lock nut wrench	**07908-ME90000 or 07GMA-KT7A200 (U.S.A. only)**

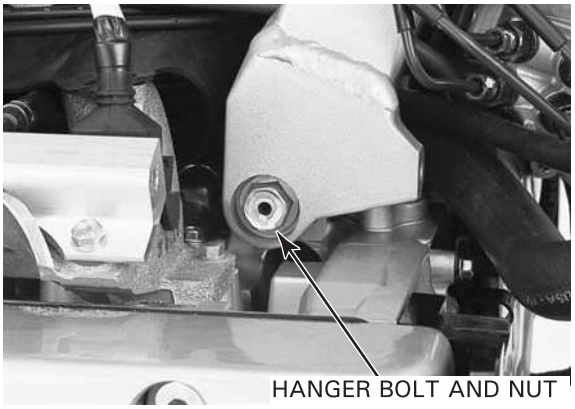
Remove the lock nut.
Loosen the left rear engine hanger adjusting bolt.
Remove the three bolts and left sub-frame.



Remove the right center engine hanger bolt and nut.

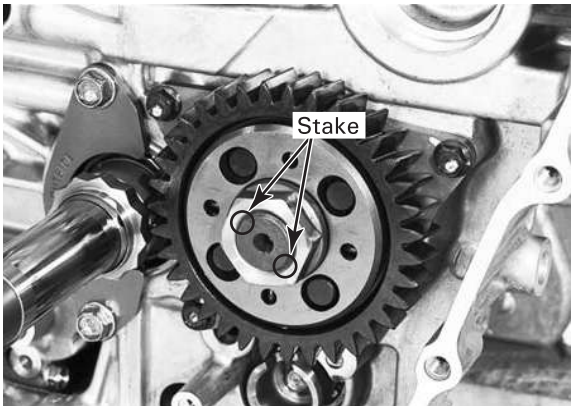


Remove the right front engine hanger bolt and nut.

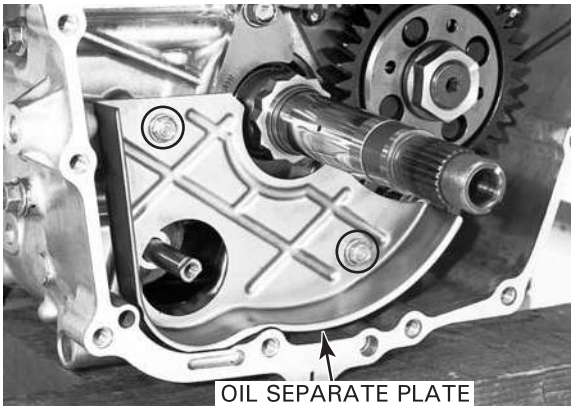


Be careful not to damage the countershaft threads.

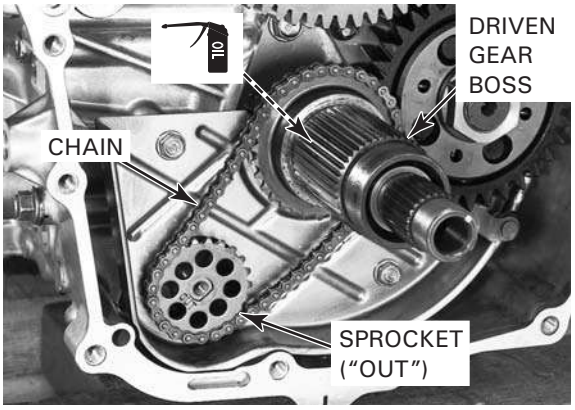
Stake the lock nut into the countershaft groove in two places.



Install the oil separate plate and tighten the two bolts.



Apply engine oil to the needle bearing in the primary driven gear boss.
Install the oil pump driven sprocket, drive chain and driven gear boss as a set with the "OUT" mark of the sprocket facing out.

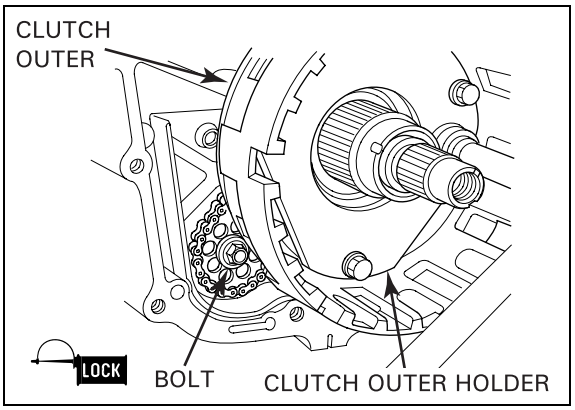


Apply locking agent to the threads of the driven sprocket bolt and install it.

Temporarily install the clutch outer on the driven gear boss.
Hold the clutch outer with the special tool and tighten the sprocket bolt.

TOOL:
Clutch outer holder 07JMB-MN50100

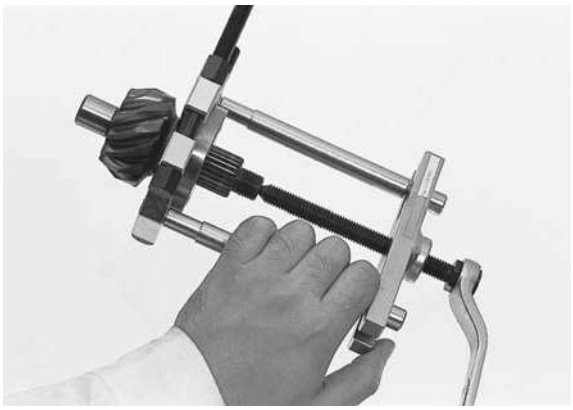
TORQUE: 18 N·m (1·8 kgf·m, 13 lbf·ft)



PINION BEARING/SHIM REPLACEMENT

Pull the pinion bearing from the shaft with a commercially available bearing puller.

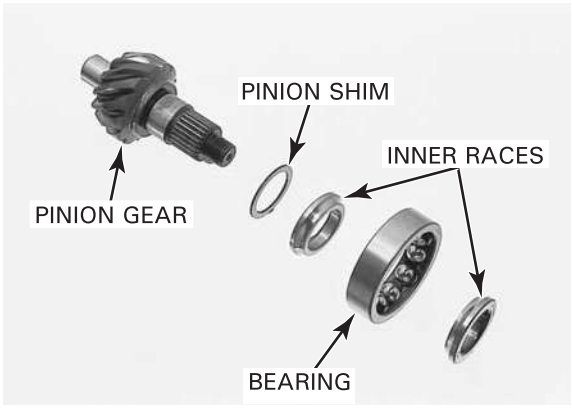
Remove the pinion shim.



Install the shim and a new bearing onto the pinion gear.

NOTE:

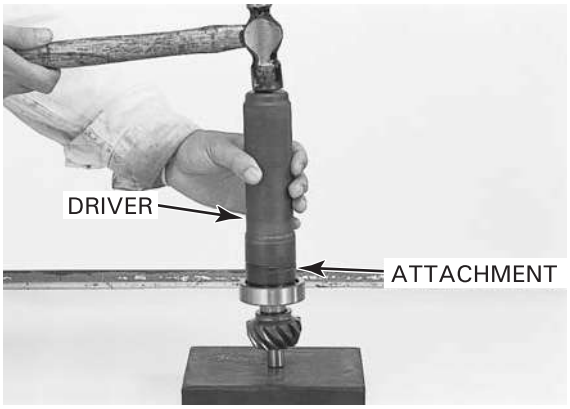
- When the gear set, ring gear bearing, and/or gear case has been replaced, use a 1.50 mm (0.059 in) thick shim for initial reference.



Drive the bearing using the special tools.

TOOLS:

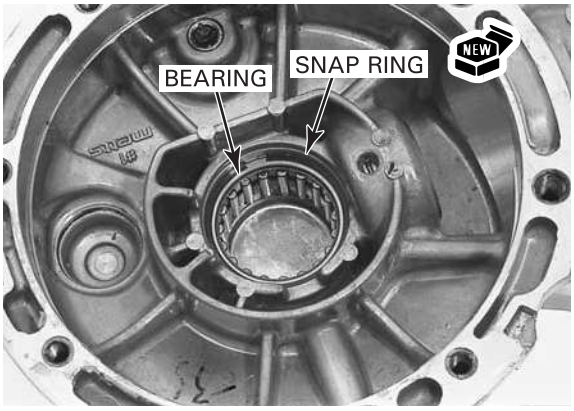
Driver, 40 mm I.D.	**07746-0030100**
Attachment, 25 mm I.D.	**07746-0030200**



CASE BEARING REPLACEMENT

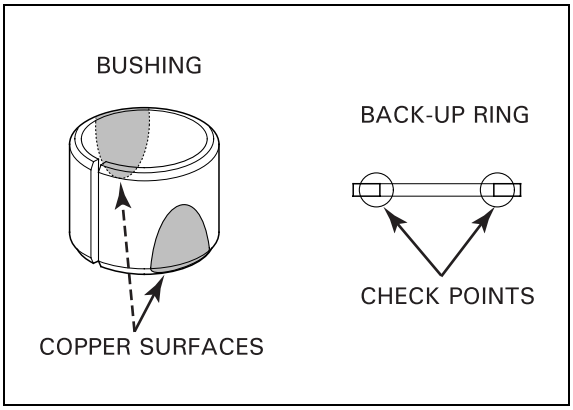
RING GEAR NEEDLE BEARING

Remove the snap ring from the gear case.



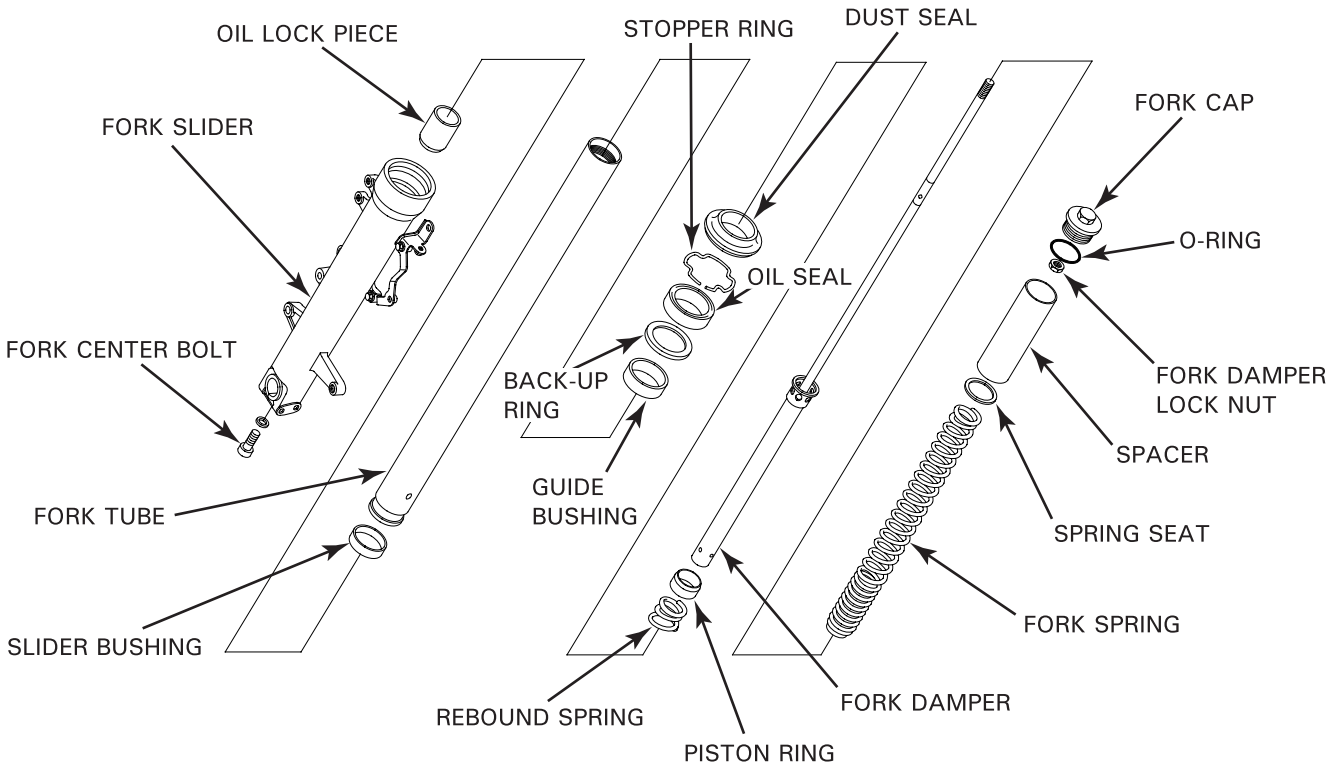
Visually inspect the slider and guide bushings. Replace the bushings if there is excessive scoring or scratching, or if the teflon is worn so that the copper surface appears on more than 3/4 of the entire surface.

Check the back-up ring; replace it if there is any distortion at the points shown.



RIGHT FORK LEG ASSEMBLY

Before assembly, wash all parts with a high flash point or non-flammable solvent and wipe them off completely.



Be careful not to damage the coating of the bushing. Do not spread open the bushing more than necessary.

Install a new slider bushing if the bushing has been removed.

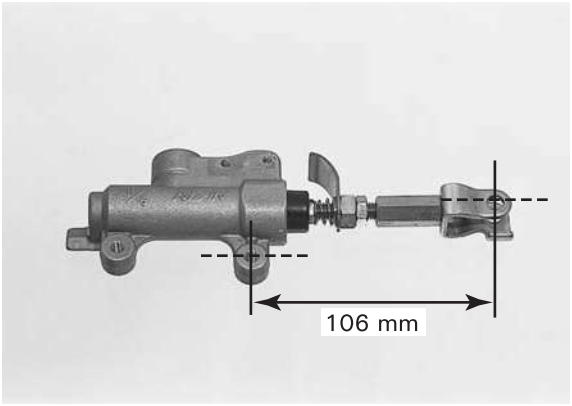
NOTE:

- Remove the burrs from the bushing mating surface, being careful not to peel off the coating.

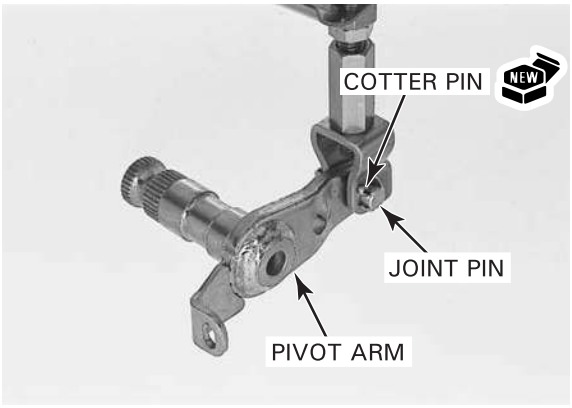
Install the guide bushing and install the back-up ring with its chamfered surface side facing down.
Apply fork fluid to a new oil seal lip.
Install the oil seal with the marked side facing up.
Install the rebound spring onto the fork damper.
Install the fork damper into the fork tube.
Install the oil lock piece onto the damper end.

If the push rod joint is reinstalled, adjust the push rod length so the distance from the center of the lower mounting bolt hole to the center of the joint pin hole is 106 mm (4.2 in) After adjustment, tighten the joint nut.

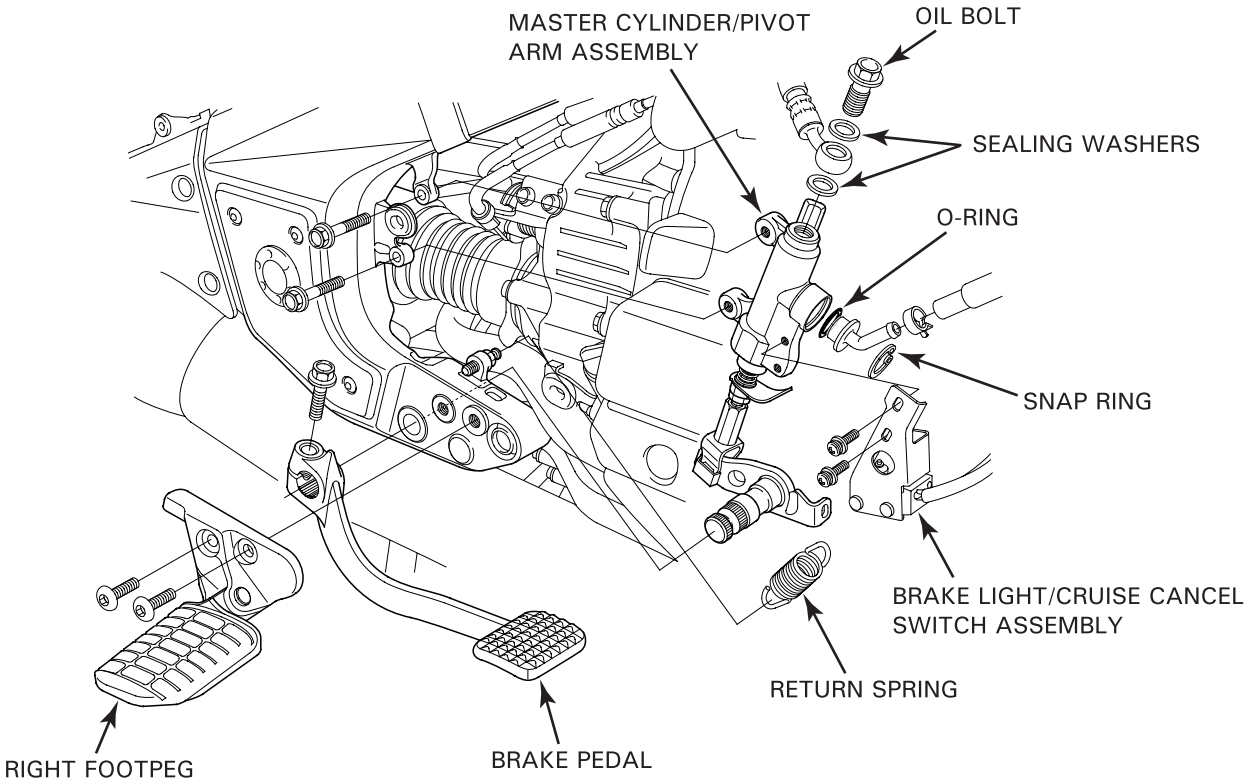
TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)



Install the pivot arm into the master cylinder push rod joint with the joint pin and a new cotter pin.

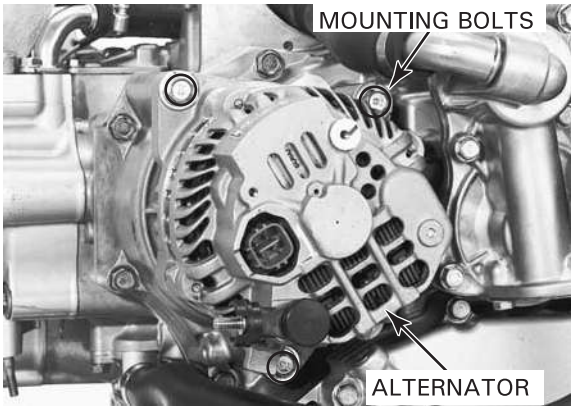


INSTALLATION



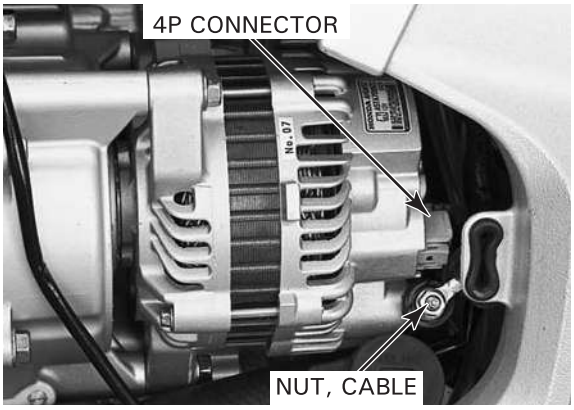
Install the alternator into the rear case and tighten the three mounting bolts.

TORQUE: 29 N·m (3.0 kgf·m, 22 lbf·ft)

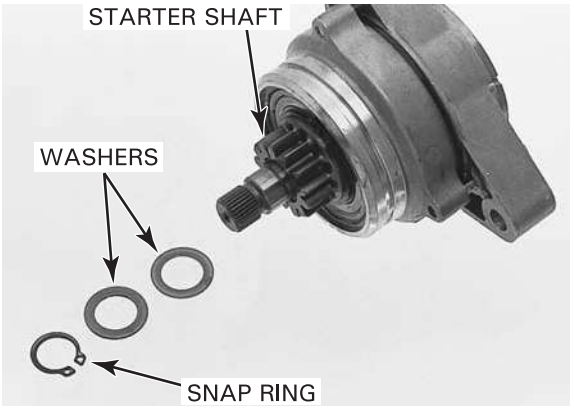


Connect the alternator cable and tighten the terminal nut securely.
Install the rubber cap properly.
Connect the alternator 4P connector.

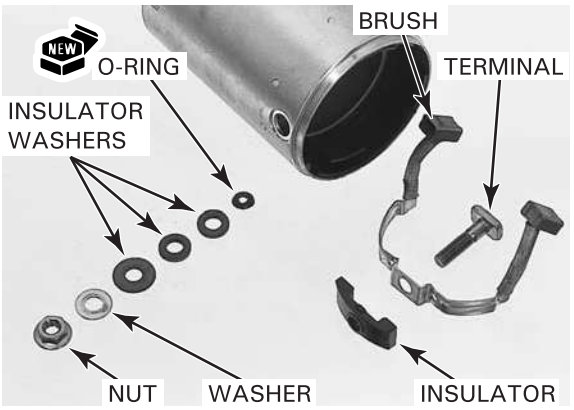
Install the fuel tank (page 5-56).
Install the left engine side cover (page 2-5).



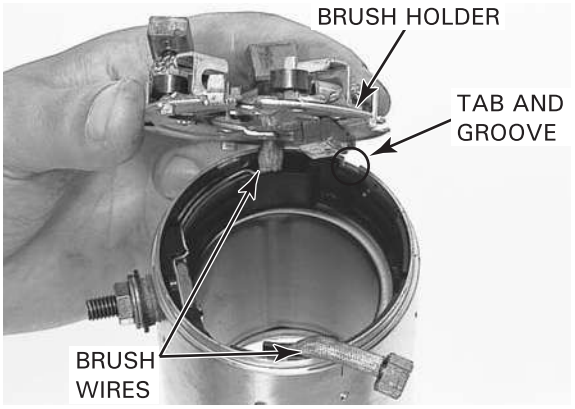
Install the washers and snap ring onto the starter shaft.



Install the following:
- insulator
- insulated brush
- cable terminal
- new O-ring
- insulator washers
- washer
- nut



Install the brush holder, aligning the tab with the groove in the case, and wire grooves with the insulated brush wires.

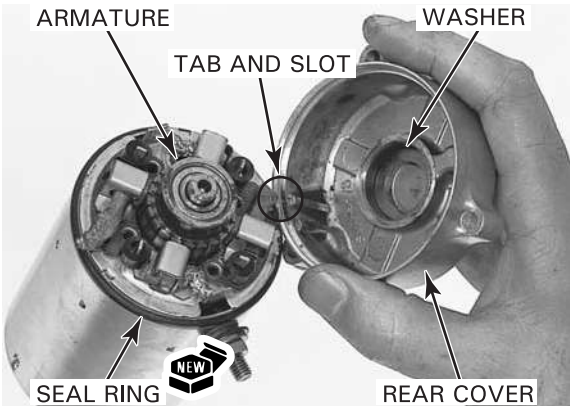


The coil may be damaged if the magnet pulls the armature against the case.

Push and hold the brushes inside the brush holder, and install the armature through the motor case and brush holder.
When installing the armature into the motor case, hold the armature tightly to prevent the magnet of the case from pulling the armature against it.

Install the washer and a new seal ring.

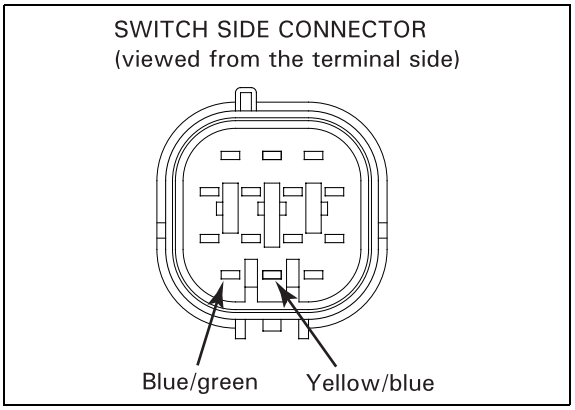
Install the rear cover, aligning the slot with the brush holder tab.



3. Check that the resistance between the Yellow/blue and Blue/green wire terminals varies with the headlight adjusting switch position while operating the switch.

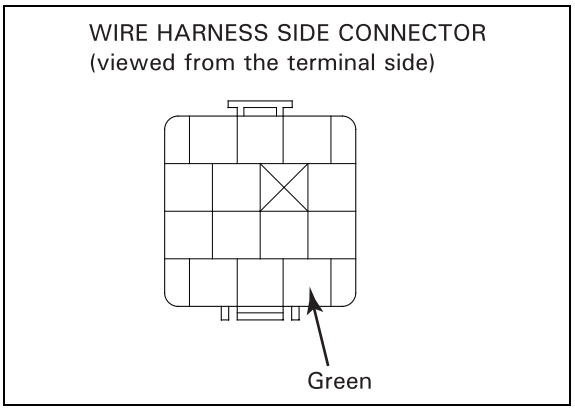
   Clockwise (from Lo to Hi position):
   Resistance increases
   Counterclockwise (from Hi to Lo position):
   Resistance decreases

   - If the measurements are normal, go to step 4.
   - If the measurements are abnormal, replace the panel switch assembly (page 20-32).



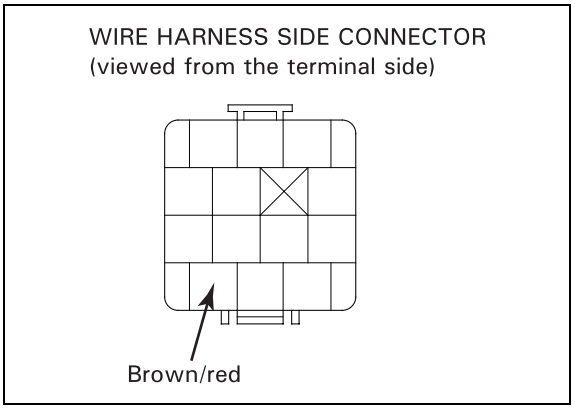
4. Check for continuity between the Green wire terminal of the wire harness side connector and ground.
   There should be continuity.

   - If there is continuity, go to step 5.
   - If there is no continuity, check for an open circuit in the Green wire between the panel switch connector and ground terminal.



5. Start the engine and let it idle.
   Measure the voltage between the Brown/red wire terminal (+) and ground (–).
   There should be battery voltage.

   - If there is battery voltage, the system is OK.
   - If there is no battery voltage, check for:
     – open circuit in the Brown/red wire between the panel switch connector and headlight adjuster relay
     – headlight adjuster relay system



HEADLIGHT ADJUSTER RELAY SYSTEM INSPECTION

1. Turn the ignition switch to “ON” and check that the oil pressure indicator comes on.
   Start the engine and check that the oil pressure indicator goes off.

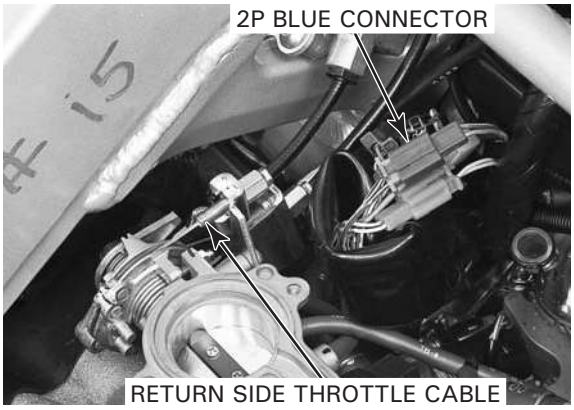
   - If the indicator goes off, go to step 2.
   - If the indicator remains on, check the oil pressure switch (page 20-13).

SWITCH REPLACEMENT

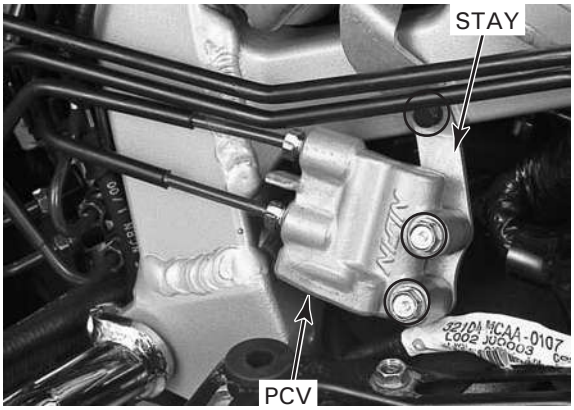
Disconnect the throttle grip cruise cancel switch 2P blue connector.

Remove the return side throttle cable from the cable stay and disconnect it from the throttle drum.

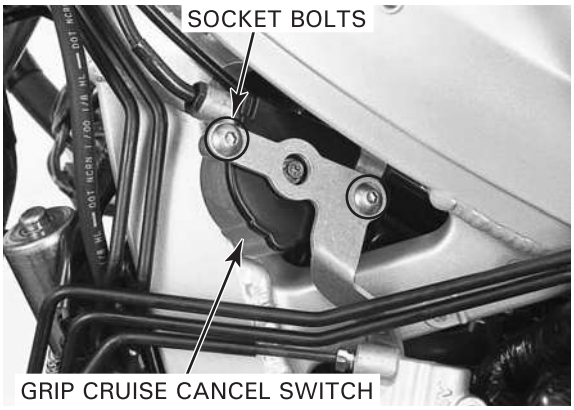
Remove the left radiator (page 6-10).



Remove the two bolts and proportional control valve (PCV) from the stay.
Remove the stay mounting bolt.



Remove the two socket bolts and stay from the cancel switch.



Remove the center bolt and switch cover.