

21. SWITCHES

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SERVICE INFORMATION

GENERAL

- Some wires have different colored bands around them near the connector. These are connected to other wires which correspond with the band color.
- All plastic plugs have locking tabs that must be released before disconnecting, and must be aligned when reconnecting.
- The following color codes used are indicated throughout this section and on the wiring diagram.

B = Blue
Bk = Black
Br = Brown

G = Green
Gr = Grey
LB = Light Blue

LG = Light Green
O = Orange
P = Pink

R = Red
W = White
Y = Yellow

- To isolate an electrical failure, check the continuity of the electrical path through the part. A continuity check can usually be made without removing the part from the motorcycle. Simply disconnect the wires and connect a continuity tester or volt-ohmmeter to the terminals or connections.
- A continuity tester is useful when checking to find out whether or not there is an electrical connection between the two points. An ohmmeter is needed to measure the resistance of a circuit, such as when there is a specific coil resistance involved, or when checking for high resistance caused by corroded connections.

SWITCHES

OIL PRESSURE SWITCH

Drain the engine oil.

Disconnect the oil pressure switch lead and remove the switch.

Check for continuity while applying pressure to the switch.

Replace the switch if necessary.

Apply a liquid sealant to the switch threads before installing the switch.

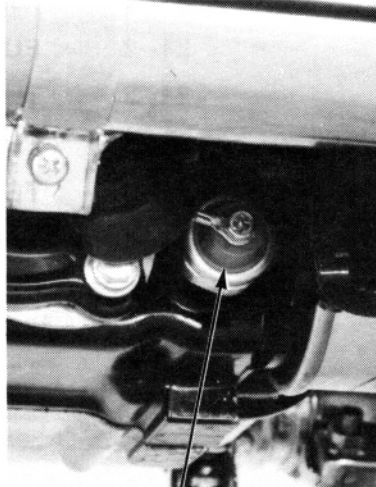
Screw the switch in the crankcase and leave two threads from the bottom. Then tighten it to the specified torque.

TORQUE: 15–20 N·m (1.5–2.0 kg·m, 11–14 ft·lb)

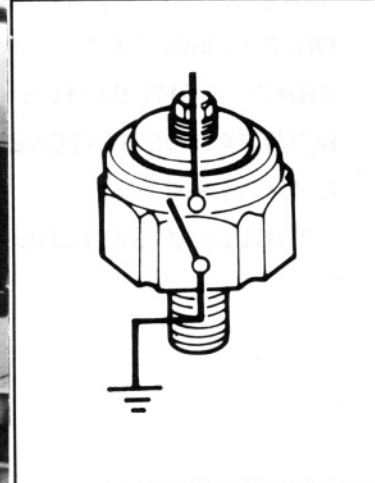
NOTE:

Do not overtighten the switch to prevent the crankcase from damage.

CONTINUITY: BELOW
 $0.3 \pm 0.1 \text{ kg/cm}^2$ ($4.3 \pm 1.4 \text{ psi}$)



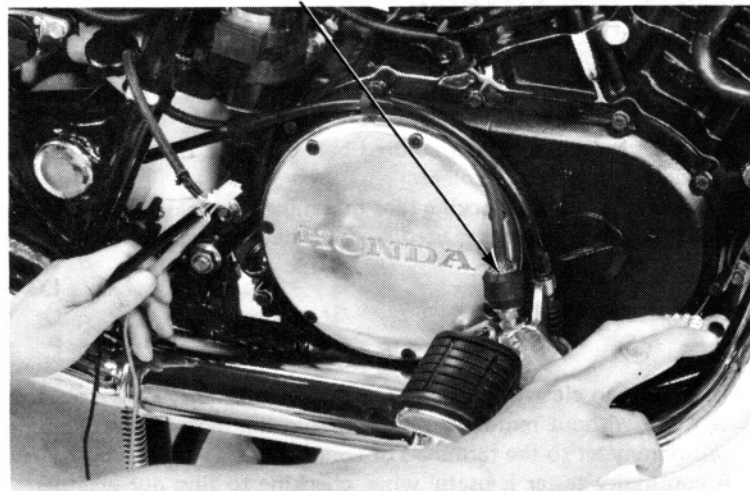
OIL PRESSURE SWITCH



REAR BRAKE LIGHT SWITCH

BRAKE LIGHT SWITCH

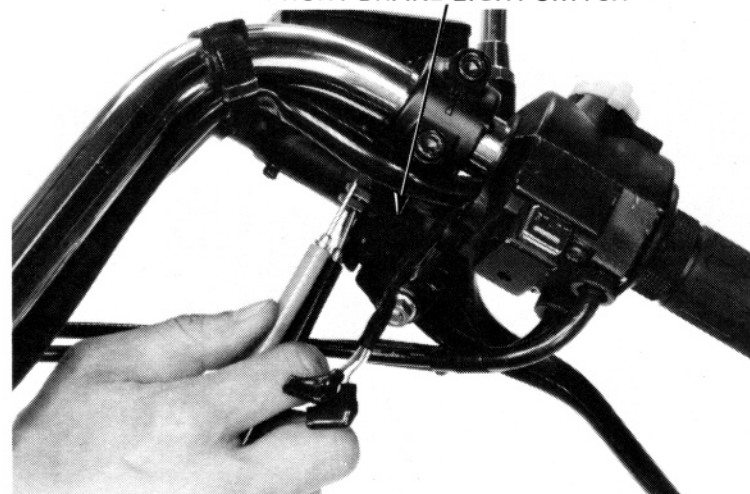
Check the rear brake light switch for continuity with the rear brake applied.



FRONT BRAKE LIGHT SWITCH

Check the front brake light switch for continuity with the front brake applied.

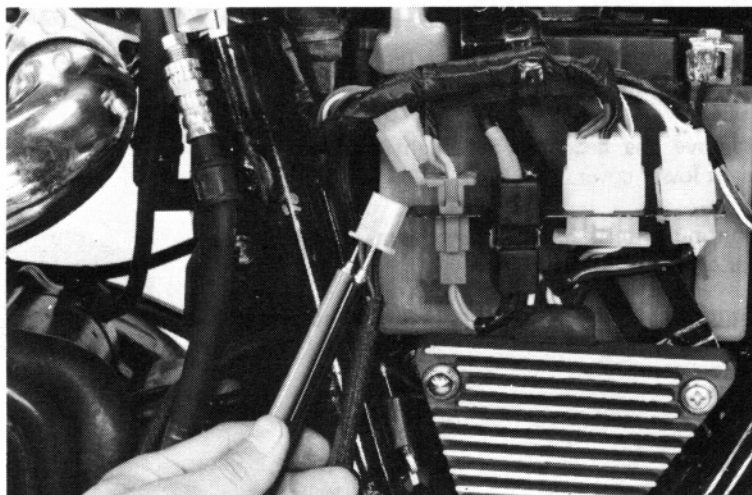
Replace the switches if necessary.



NEUTRAL/OD SWITCHES

Remove the left side cover and disconnect the neutral/OD switch coupler.

Color code	Lg/R	G/O
Position		
1st		
N	○-----○	○-----○
2nd		
3rd		
4th		
5th		
OD		○-----○



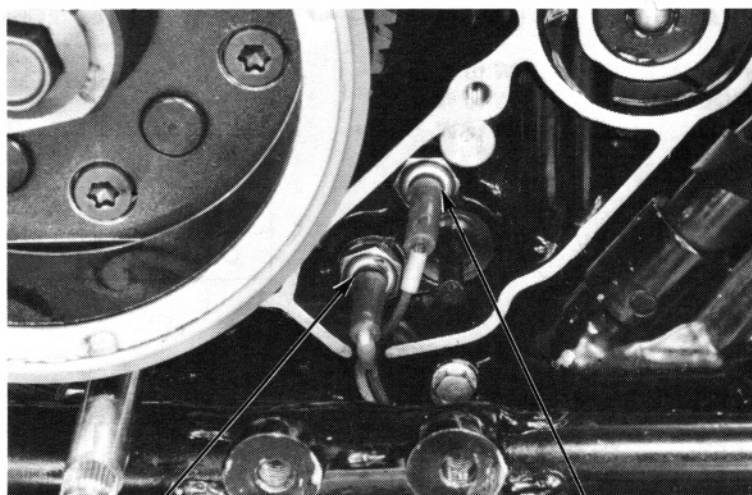
REMOVAL/INSTALLATION

Remove the alternator cover (page 8-2).

Disconnect the wire from the switch and remove the switch.

Install the neutral and OD switches in the reverse order of removal.

TORQUE: 10–14 N·m (1.0–1.4 kg-m, 7–10 ft-lb)

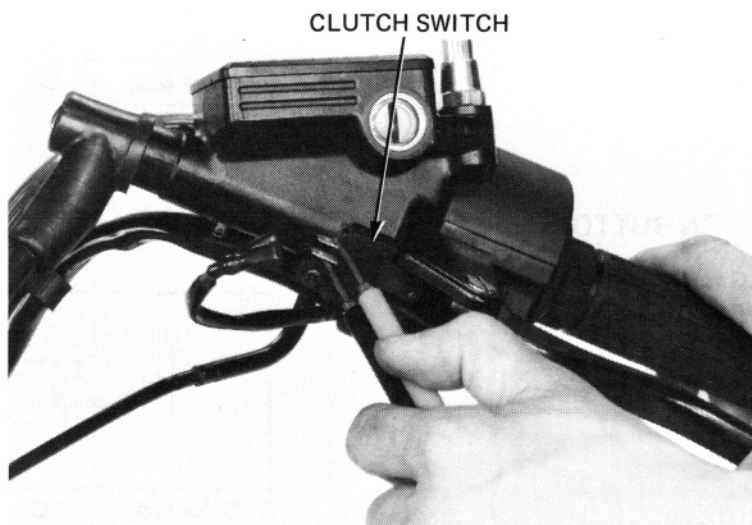


NEUTRAL SWITCH

OD SWITCH

CLUTCH SWITCH

Check continuity of the clutch lever (safety) switch with the clutch released and applied. Replace if necessary.



CLUTCH APPLIED: CONTINUITY
CLUTCH RELEASED: NO CONTINUITY

SWITCHES

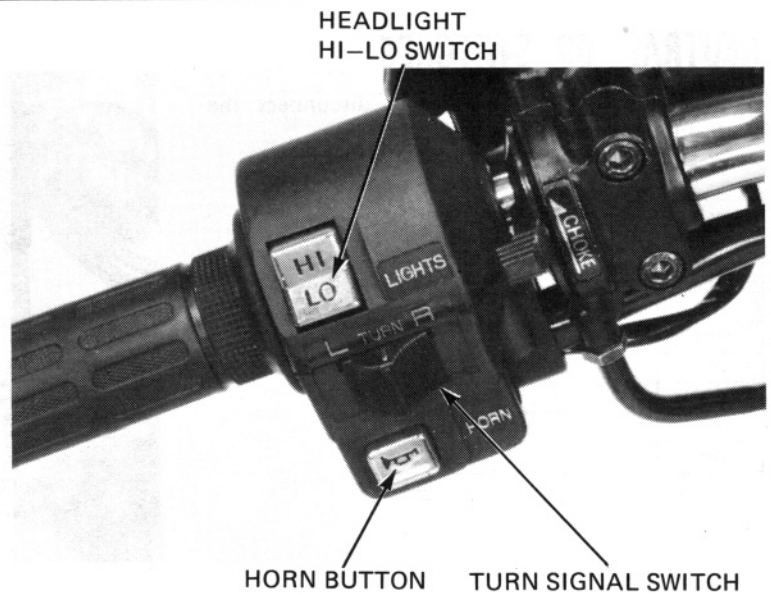
HANDLEBAR SWITCHES

The handlebar cluster switches (lights, turn signals, horn, etc.) must be replaced as assemblies.

Remove the headlight, headlight case and instrument lower cover.

Continuity tests for the components of the handlebar cluster switches follow:

Continuity should exist between the color coded wires in each chart.



HEADLIGHT HI-LOW SWITCH

HI: B/W to B
MIDDLE (N): B/W to W to B
LO: B/W to W

Headlight Hi-Low Switch

	HL	Hi	Lo
Hi			
(N)			
Lo			
Color code	B/W	B	W

TURN SIGNAL SWITCH

LEFT: Gr to O, Br/W to LB/W
OFF: Br/W to LB/W and O/W
RIGHT: Gr to LB, Br/W to O/W

Turn Signal Switch

	W	L	R	TL	PR	PL
LEFT						
OFF						
RIGHT						
Color code	Gr	O	LB	Br/W	LB/W	O/W

HORN BUTTON

LG to W/G with button depressed
 No continuity with button released

Horn Button

	Ho	E
Color code	LG	W/G

STARTER BUTTON

Bk to Y/R with button pushed in.
Bk/R to B/W with button out.

Starter Button

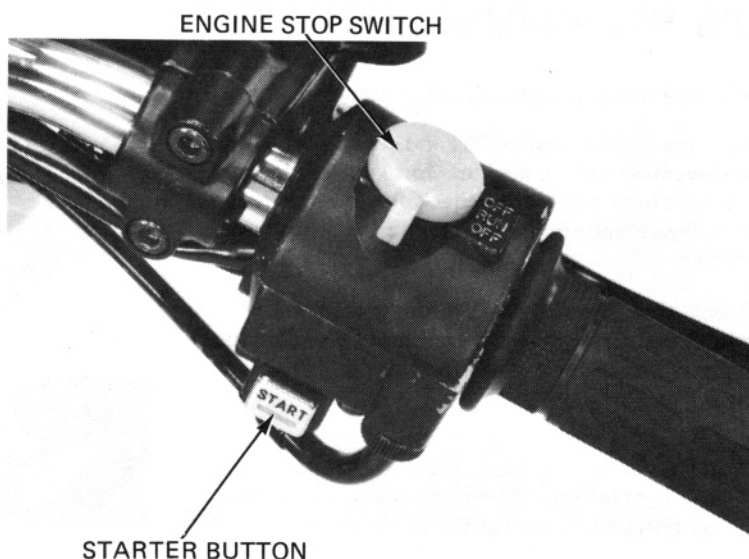
	BAT ₂	ST	BAT ₅	HL
OUT			○—○	
START	○—○			
Color code	Bk	Y/R	Bk/R	B/W

ENGINE STOP SWITCH

RUN: Bk to Bk/W
OFF: No continuity

Engine Stop Switch

	BAT ₂	IG
OFF		
RUN	○—○	
OFF		
Color code	Bk	Bk/W



IGNITION SWITCH

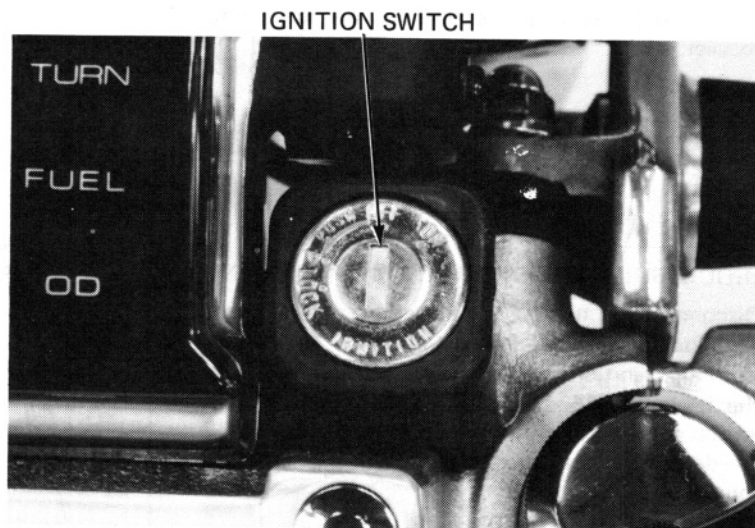
Remove the headlight, headlight case and instrument lower cover and disconnect the ignition switch coupler.

Check continuity of terminals on the ignition switch coupler in each switch position.

SWITCH POSITION

LOCK: No continuity
OFF: No continuity
ON: R to Bk, Br/W to Br — continuity
PARK: Br to R — continuity

Terminal Position	PA	BAT ₁	IG	TL ₁	TL ₂
ON		○—○		○—○	
OFF					
P	○—○				
LOCK					
Color code	Br	R	Bk	Br/W	Br



SWITCHES

LOW FUEL WARNING LIGHT

Place the motorcycle on its center stand.

Turn the ignition switch ON and check that the low fuel warning light comes on for 1 to 4 seconds. If the light does not go on, check for a blown fuse or bulb, loose connection or open circuit in the wire harness.

Check that the low fuel warning light comes on within 60 seconds after the ignition switch has been turned ON with the amount of fuel in the fuel tank below 1.7 liters (0.45 US gal).

NOTE

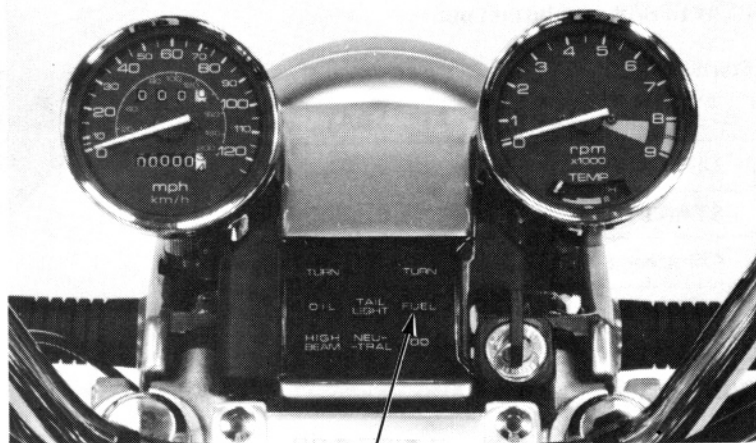
The light will not go on immediately after the ignition switch is turned ON.

If the light does not go on within 60 seconds, replace the sensor.

Check that the low fuel warning light will not light when the ignition switch is turned ON when the amount of fuel in the fuel tank is more than 6.5 liters (1.72 US gal).

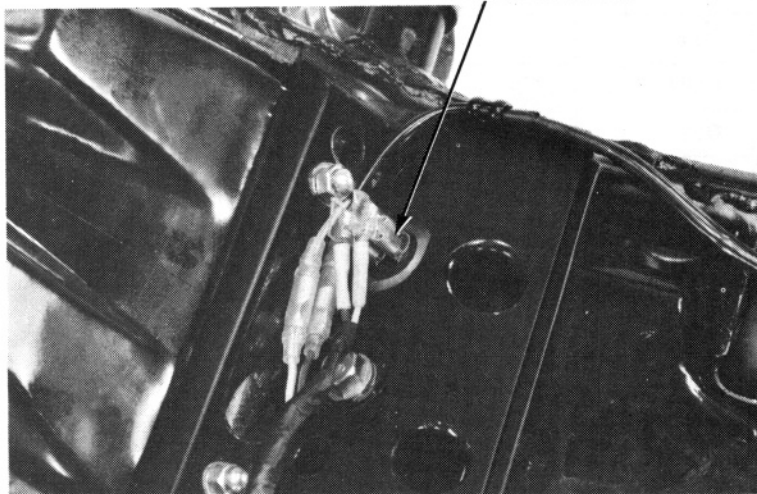
If the warning light goes on, check for a short circuit in the wire harness or coupler.

Replace the fuel reserve sensor if shorts are not found.



LOW FUEL WARNING LIGHT

FUEL RESERVE SENSOR

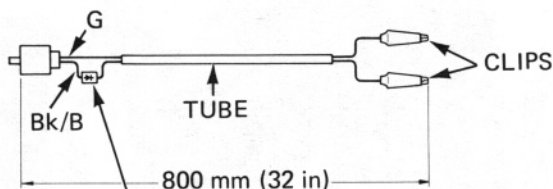


FUEL PUMP

WARNING

Do not allow flames or sparks near gasoline.

Fabricate the special test wire harness as shown and connect it between the battery and the fuel pump coupler.



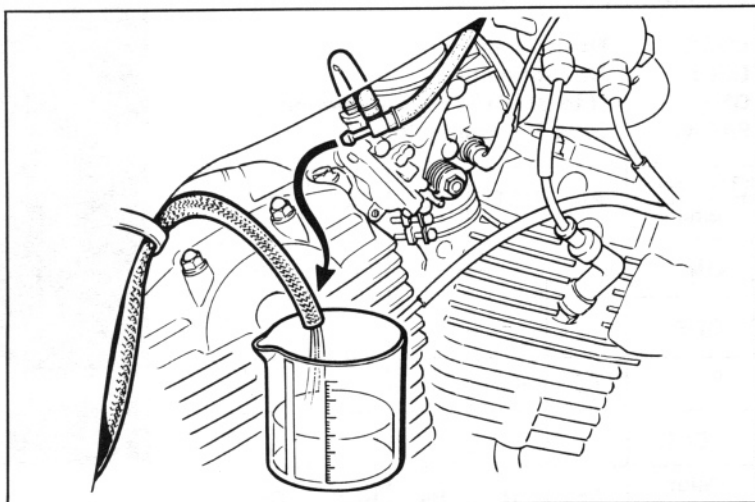
DIODE (SHINDENGEN SIR 20 OR EQUIVALENT)

Disconnect the fuel tube at the carburetor and hold a graduated beaker under the tube.

Turn the ignition switch on and let fuel flow into the beaker for 5 seconds, then turn the ignition switch off. Multiply the amount in the beaker by 12 to determine the fuel pump flow capacity per minute.

FUEL PUMP FLOW CAPACITY:

614 cc (22 oz) \pm 10%/minute

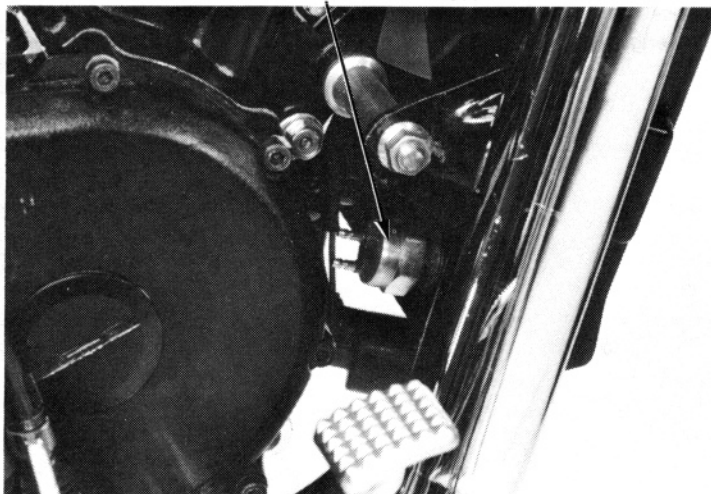


THERMOSTATIC SWITCH

The cooling fan motor is actuated by the thermostatic switch located in the left tank of the radiator.

Run the engine until coolant temperature reaches 80–102°C (176–216°F). The fan motor should start running. The fan motor should stop when the coolant temperature drops to 93–97°C (200–207°F).

THERMOSTATIC SWITCH

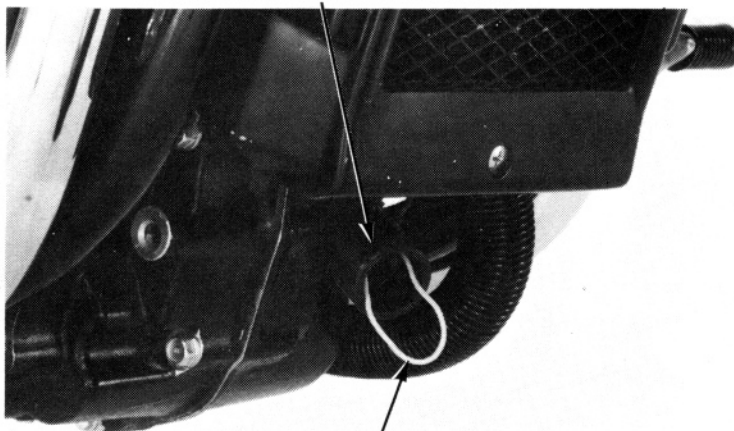


If the fan motor does not start, disconnect the black and green leads from the thermostatic switch and short them together with a jumper wire as shown.

Turn the ignition switch on. The cooling fan motor should start running. If it starts, replace the fan thermostatic switch and retest.

If it does not start, check for battery voltage from the black lead (positive) to the black/blue lead (negative) of the fan motor coupler. If there is no voltage, check for a blown or faulty fuse, loose terminals or connectors, or an open circuit.

THERMOSTATIC SWITCH LEADS

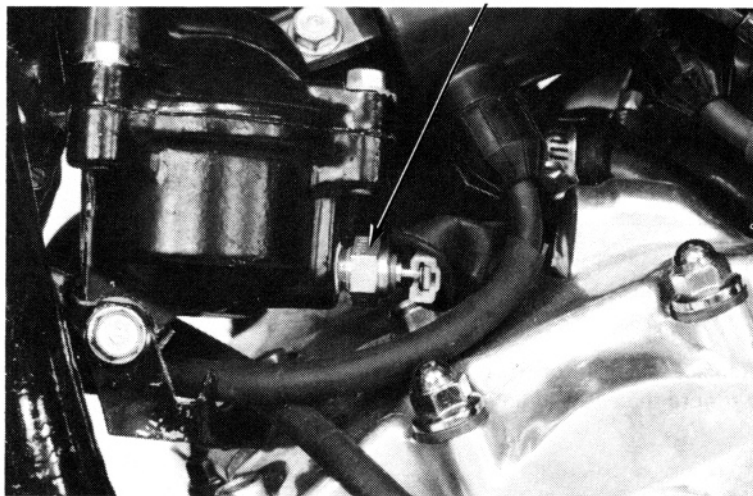


JUMPER WIRE

TEMPERATURE SENSOR

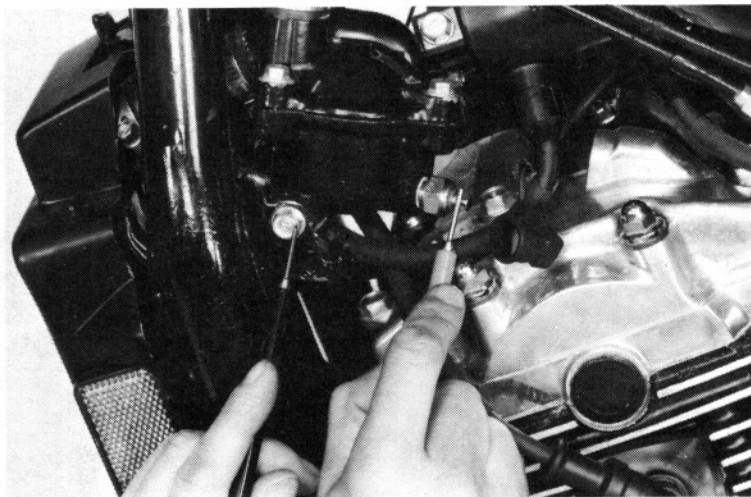
TEMPERATURE SENSOR

Disconnect the green/blue wire from the temperature sensor.

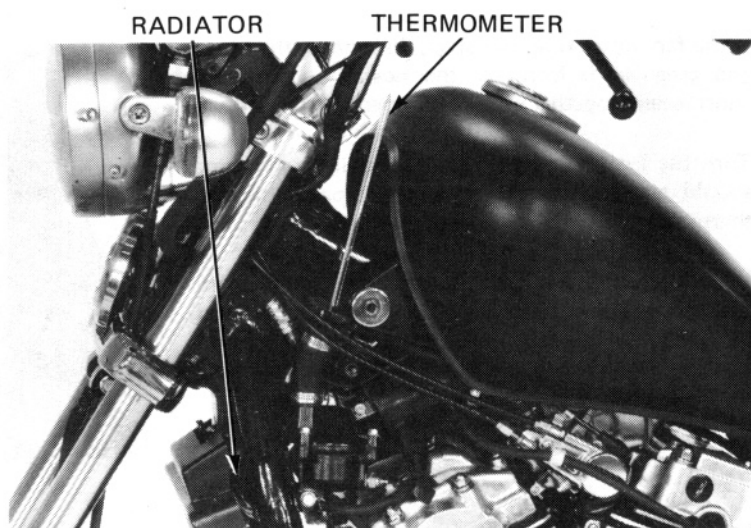


SWITCHES

With the engine cold, use an ohmmeter to measure resistance between the temperature sensor terminal and the engine.



Check the temperature of the coolant.



Run the engine and measure the change in resistance of the sensor with the engine at the operating temperatures in the chart.

Temperature	60°C (140°F)	85°C (185°F)	110°C (230°F)	120°C (248°F)
Resistance (Ohms)	104.0	43.9	20.3	16.1

Replace the sensor if it is out of specifications by more than 10% at any temperature listed.

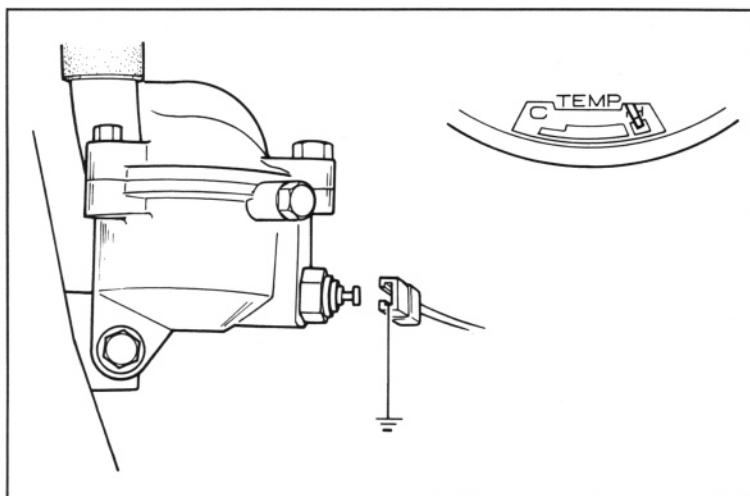
TEMPERATURE GAUGE

Disconnect the wire from the temperature sensor and short it to ground.

Turn the ignition switch to ON. The temperature gauge needle should move all the way to the right.

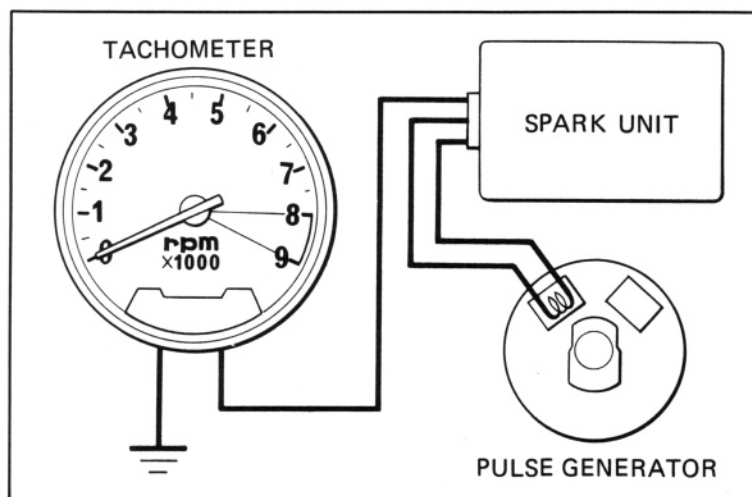
CAUTION

Do not leave the temperature sensor wire grounded for longer than a few seconds or the temperature gauge will be damaged.



TACHOMETER

If the tachometer does not indicate properly, check and repair the No. 1 cylinder ignition system.



If the problem still appears, check continuity between the yellow wire terminal of the wire harness tachometer coupler and the yellow wire terminal of the No. 1 cylinder ignition coil and repair the circuit if necessary.

If there is continuity, replace the tachometer with a new one.

WIRE HARNESS
TACHOMETER COUPLER

NO. 1 IGNITION COIL

