



19. IGNITION SYSTEM

SERVICE INFORMATION	19-1
TROUBLESHOOTING	19-2
IGNITION COIL	19-3
TRANSISTORIZED IGNITION SYSTEM (Pulse Generator, Spark Unit)	19-3
SPARK ADVANCER	19-5

SERVICE INFORMATION

GENERAL

- A transistorized ignition system is used and no adjustments are to be made unless the pulse generator screws are loosened. If these screws are loosened, ignition timing for either the No. 1 or No. 4 cylinder must be adjusted.

SPECIFICATIONS

Spark plug	ND	Standard	X27ESR-U
		For cold climate Below 5°C (41°F)	X24ESR-U
	NGK	Standard	DR8ES
		For cold climate Below 5°C (41°F)	DR8ES-L
Spark plug gap			0.6-0.7 mm (0.024-0.028 in)
Ignition timing			At idle 10° (BTDC)
			Full advance 38.5° BTDC/3,200 rpm
Ignition coil			3-point spark test 6 mm (1/4 in) minimum



IGNITION SYSTEM

TROUBLESHOOTING

The ignition system has two sub-systems; one for the No. 1 and No. 4 cylinders and one for No. 2 and No. 3 cylinders. Determine which sub-system is faulty, then proceed to the detailed tests below.

Engine cranks but will not start.

1. Engine stop switch OFF.
2. No spark at plugs.
3. Faulty transistorized spark unit.
4. Faulty pulser generator.

No spark at plug.

1. Engine stop switch OFF.
2. Poorly connected, broken or shorted wires.
 - Between ignition switch and engine stop switch.
 - Between spark unit and engine stop switch.
 - Between spark unit and ignition coil.
 - Between ignition coil and plug.
 - Between spark unit and pulser generator.
3. Faulty ignition coil.
4. Faulty ignition switch.
5. Faulty spark unit.
6. Faulty pulser generator.

Engine starts but runs poorly.

1. Ignition primary circuit.
 - Faulty ignition coil.
 - Loose or bare wire.
 - Intermittent short circuit.
2. Secondary circuit.
 - Faulty spark plug.
 - Faulty spark plug wire.

Timing advance incorrect.

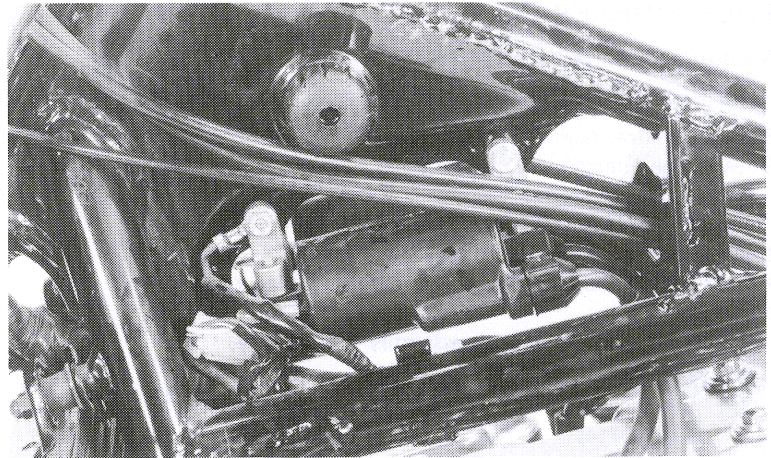
- Centrifugal advancer faulty.



IGNITION COIL

REMOVAL

Remove the fuel tank and disconnect the ignition coil wire leads.
Remove the coils by removing the attaching bolts.



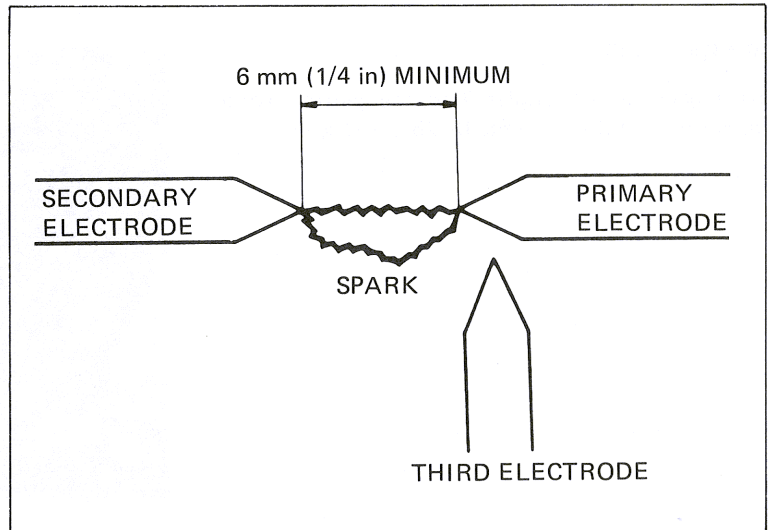
PERFORMANCE TEST

Perform the 3-point spark test with a coil tester.

SERVICE LIMIT: 6 mm (1/4 in) min.

NOTE

Follow the coil tester manufacturers instructions.



TRANSISTORIZED IGNITION SYSTEM

INSPECTION

System

Disconnect the No. 1 and 2 spark plug caps and remove the spark plugs.

Place each spark plug against any convenient engine ground.

Remove the pulse generator cover.

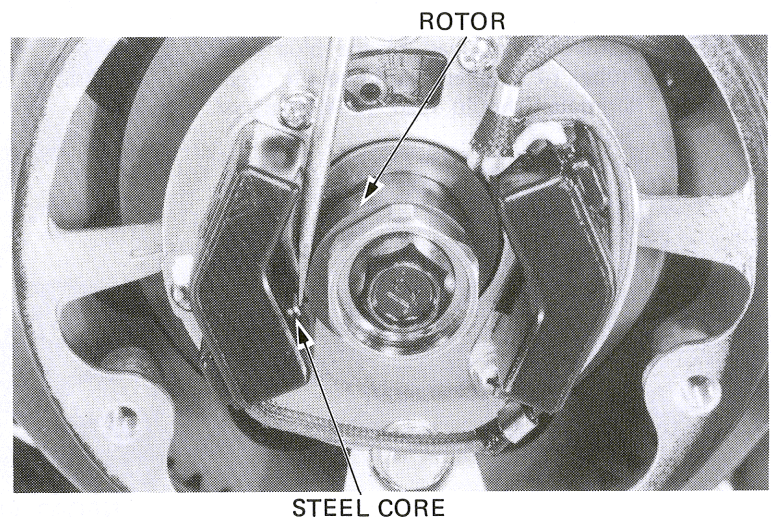
Turn the ignition switch on.

Touch the end of a screwdriver to the rotor and one pulse generator steel core. Repeat this operation several times.

One spark plug should spark.

A good spark to the plug means that the ignition system for that cylinder is in good shape.

Repeat the above for the other pulse coil.



PULSER GENERATOR

Measure the coil resistance.

COIL RESISTANCE: $530 \pm 50 \Omega$ (20°C, 68°F)

Between yellow leads (2, 3 cylinders)

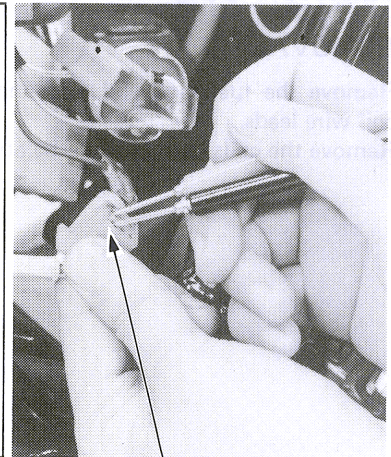
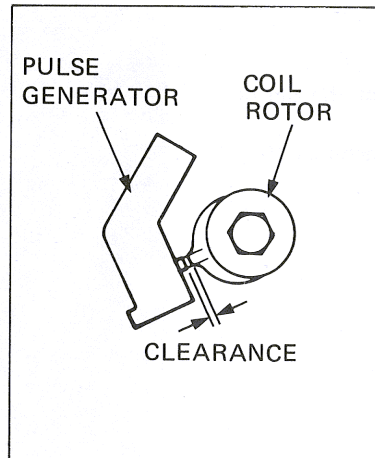
Between blue leads (1, 4 cylinders)

Measure the clearance between the pulser generator steel core and the rotor tooth.

Adjust the clearance by moving the pulser generator coil.

Replace the pulser generator assembly if necessary.

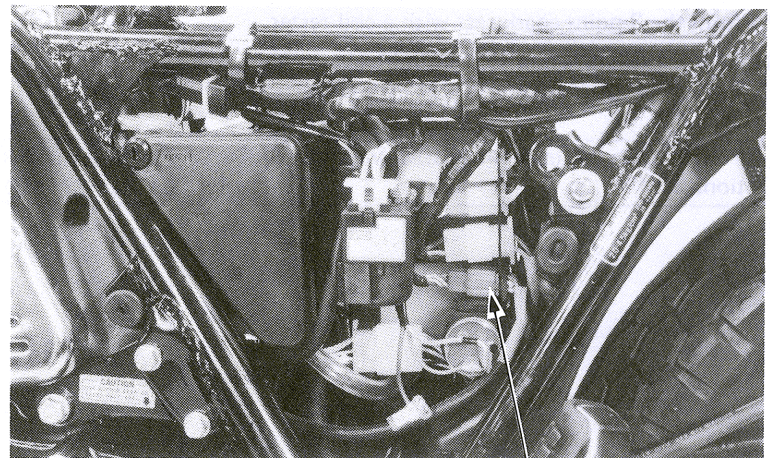
CLEARANCE: 0.4–0.7 mm (0.016–0.027 in)



PULSE
COIL COUPLER

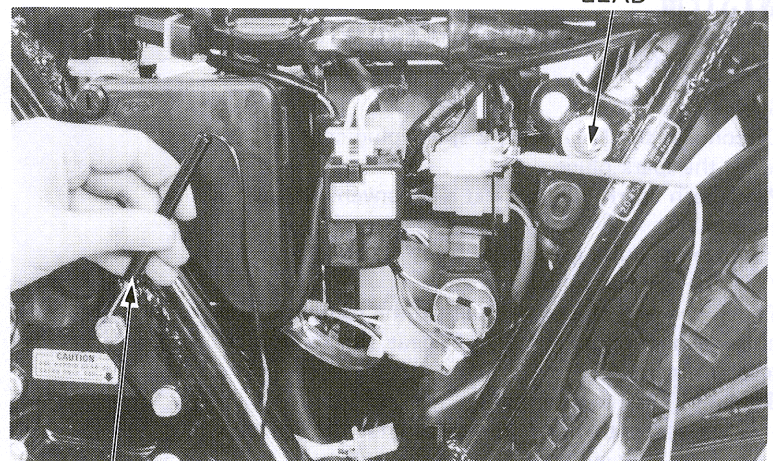
SPARK UNIT

Disconnect the red coupler. Turn the ignition switch on. Set the voltmeter to the 0–25 V DC scale.



RED COUPLER

Touch the positive meter lead to the blue wire (with yellow tube) of coupler A; ground the negative lead: The meter should read 12 V (battery voltage).



POSITIVE
LEAD

NEGATIVE
LEAD

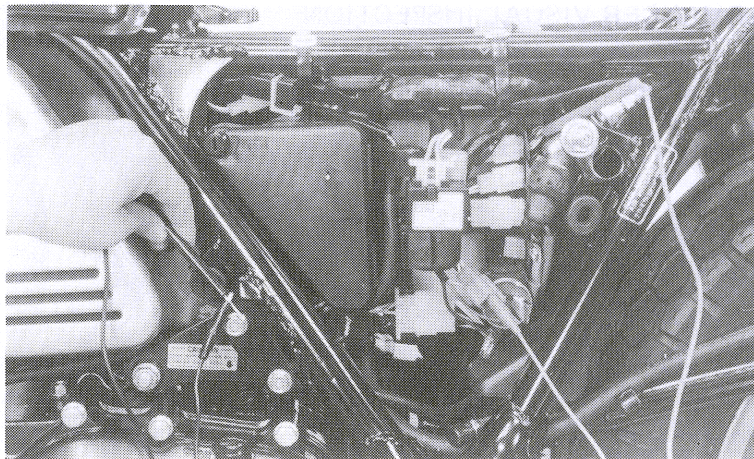


With the voltmeter leads in place, use a jumper wire to ground the blue wire (with white tube) terminal on the male (spark unit) side of the red coupler. Voltage should drop to 0–2 V DC.

Move the positive voltmeter lead to the yellow wire of coupler B. Voltage should be 12 V DC.

Move the jumper lead from the blue wire (with white tube) to the yellow wire (with white tube) terminal of the red coupler. Voltage should drop to 0–2 V DC.

Replace the spark units if they are faulty.



LEFT CRANKCASE COVER

PULSER REPLACEMENT

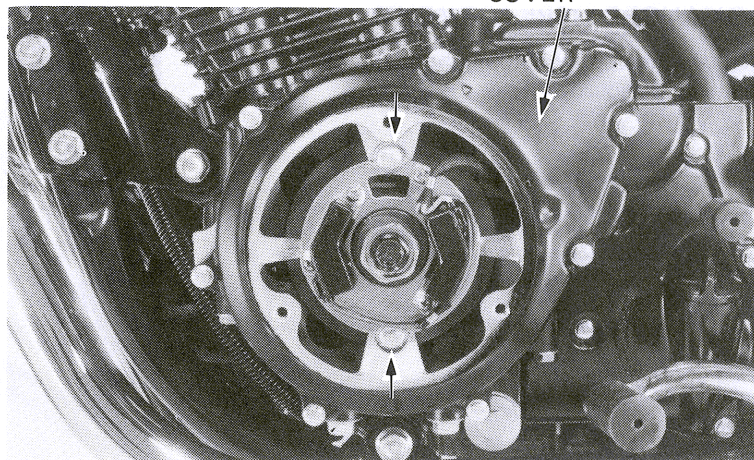
If pulser replacement is necessary, loosen the two pulser base plate screws.

Remove the left crankcase cover.

Remove the left rear crankcase cover.

Replace the pulse generator assembly.

Adjust the ignition timing (Page 3-13).



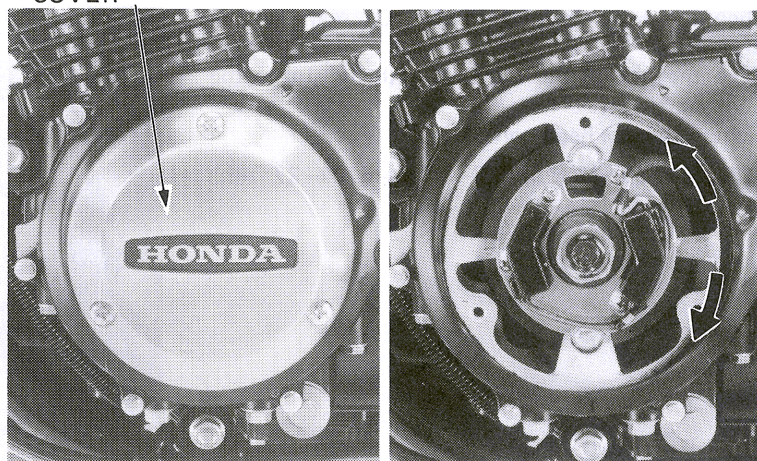
PULSE GENERATOR COVER

SPARK ADVANCER

For the centrifugal advancer test, see page 3-13.

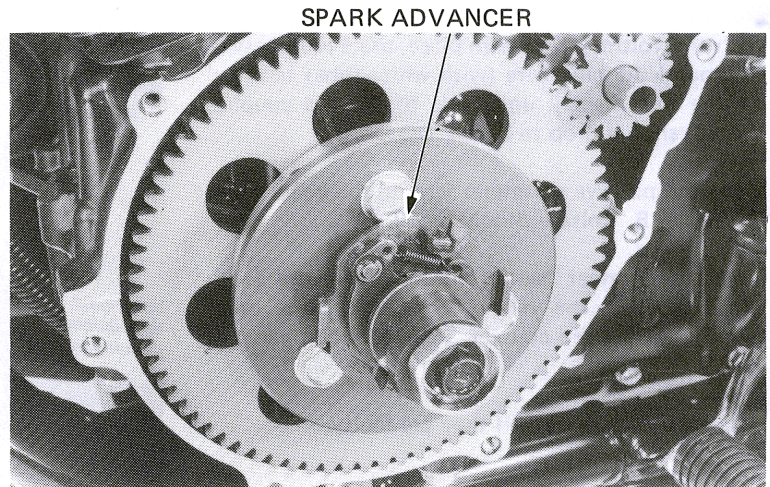
Remove the pulse generator cover screws and cover.

Remove the left crankcase cover screws and cover.



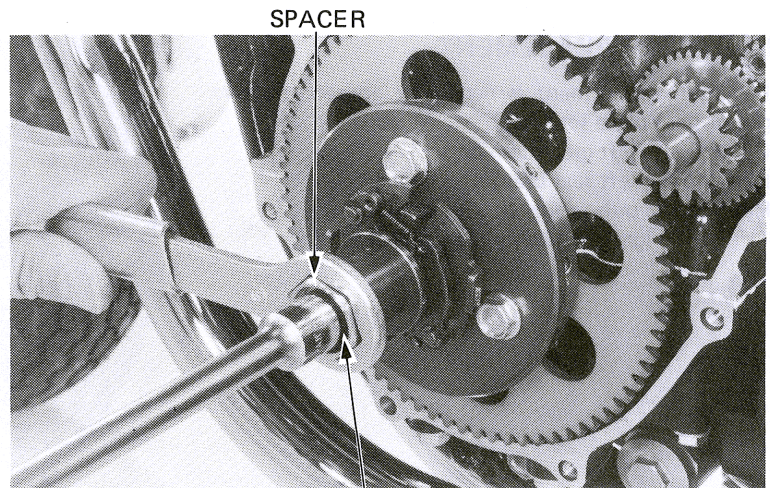
ADVANCER VISUAL INSPECTION

Check the centrifugal advancer cam for sticking. Lubricate the sliding surfaces, and check the spring for loss of tension and advancer pin for excessive wear if the advancer fails to return.



ADVANCER REPLACEMENT

Remove the bolt by holding the spacer.
Remove the advancer.



Align the rotor tooth with the "O" mark on the advancer.
Align the pin on the advancer with the slot in the crankshaft.
Tighten the hex head bolt.

TORQUE: 33–37 N·m (3.3–3.7 kg·m, 24–27 ft·lb)

