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TRANSISTORIZED IGNITION SYSTEM (Pulser Generator, Spark Unit)	19-3
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SERVICE INFORMATION

GENERAL INSTRUCTIONS

- A TRANSISTORIZED IGNITION SYSTEM is used and no adjustments are to be made unless the pulser generator screws are loosened. If these screws are loosened, ignition timing for either the No. 1 or No. 4 cylinder must be adjusted.
- For spark plug information, see page 3-3.

SPECIFICATIONS

[Canada Model]

Spark plug	ND	Standard	X27ES-U	[X27ESR-U]
		For cold climate Below 5°C (41°F)	X24ES-U	[X24ESR-U]
	NGK	Standard	D9EA	[DR8ES]
		For cold climate Below 5°C (41°F)	D8EA	[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/3,100 rpm
Ignition coil			3-point spark test	6 mm (1/4 in) minimum



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

- Engine stop switch OFF
- No spark at plugs
- Faulty transistorized spark unit
- Faulty pulser generator

No spark at plug

- Engine stop switch OFF
- 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
- Faulty ignition coil
- Faulty ignition switch
- Faulty spark unit
- Faulty pulser generator

Engine starts but runs poorly

- Ignition primary circuit
 - Faulty ignition coil
 - Loose or bare wire
 - Intermittent short circuit
- Secondary circuit
 - Faulty plug
 - Faulty high tension wire

Timing advance incorrect

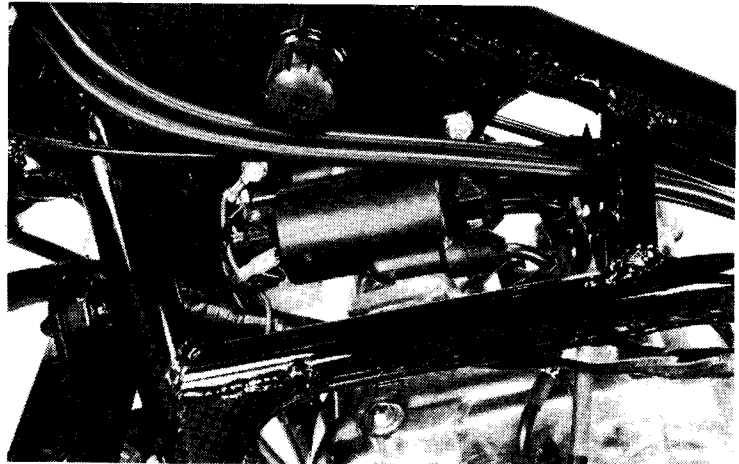
- Centrifugal advancer faulty



IGNITION COIL

REMOVAL

Remove the fuel tank.
Disconnect the wire leads.
Remove the coils by removing the attaching bolts.



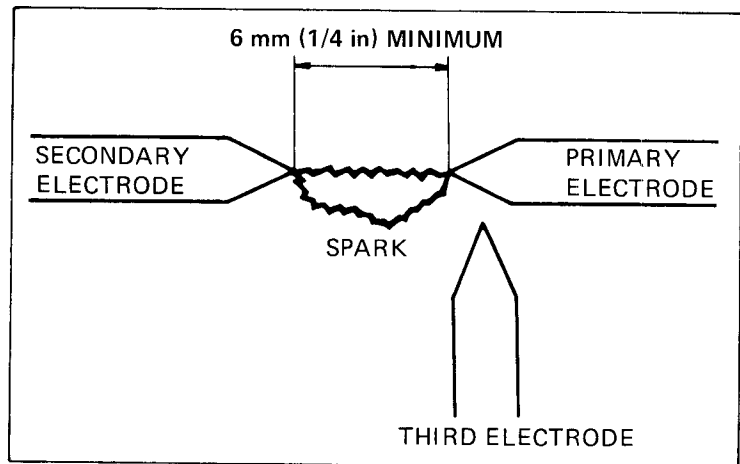
PERFORMANCE TEST

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.

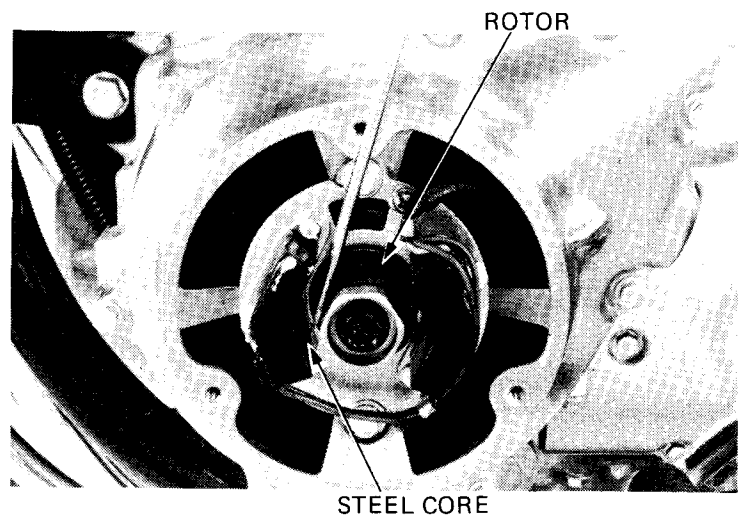


TRANSISTORIZED IGNITION SYSTEM

INSPECTION

System

Disconnect the No. 1 and 2 plugs.
Hold each plug against any convenient engine ground.
Remove the pulser generator cover.
Turn the ignition switch on.
Touch the end of a screwdriver to the rotor and one pulser generator steel core.
Repeat this operation several times.
A good spark to the plug means that the ignition system for that cylinder is in good shape.
Repeat the above for the other pulser coil.



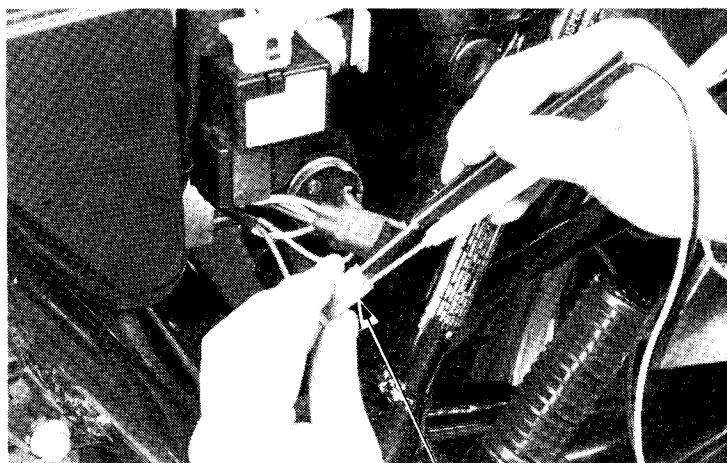


Pulser generator

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)

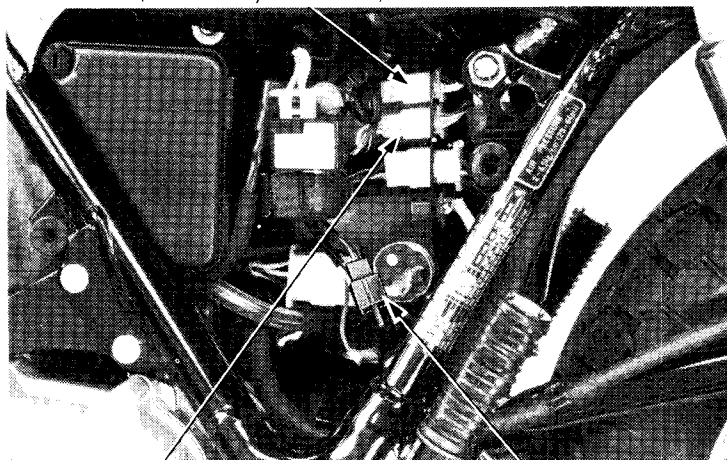


**PULSER
COIL COUPLER**

Spark unit

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

**COUPLER A
(blue wire/yellow tube)**

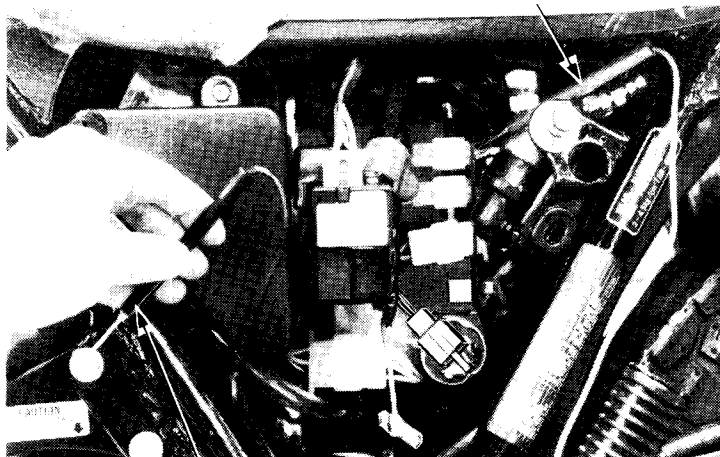


**COUPLER B
(YELLOW WIRE)**

**RED COUPLER
(Spark unit side)**

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

**POSITIVE
LEAD**



**NEGATIVE
LEAD**

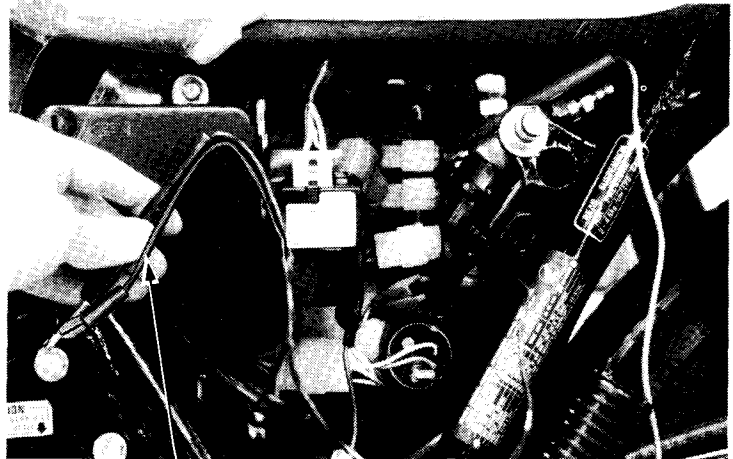


With the voltmeter leads in place, use a jumper wire to ground the blue wire (with white tube) terminal on the male (spark unit) side of the red coupler. Voltage should drop to 0-2V DC.

Move the positive voltmeter lead to the yellow wire of coupler B. Voltage should be 12V 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 0-2V DC.

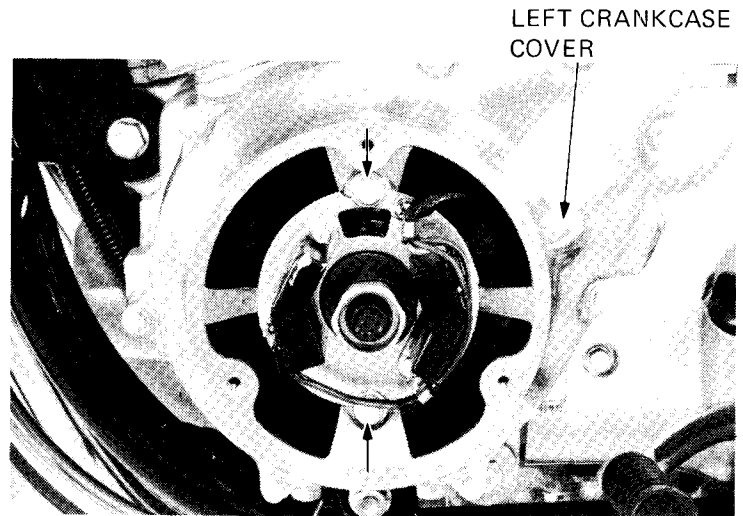
Replace the spark units if they are faulty.



JUMPER
WIRE

PULSER REPLACEMENT

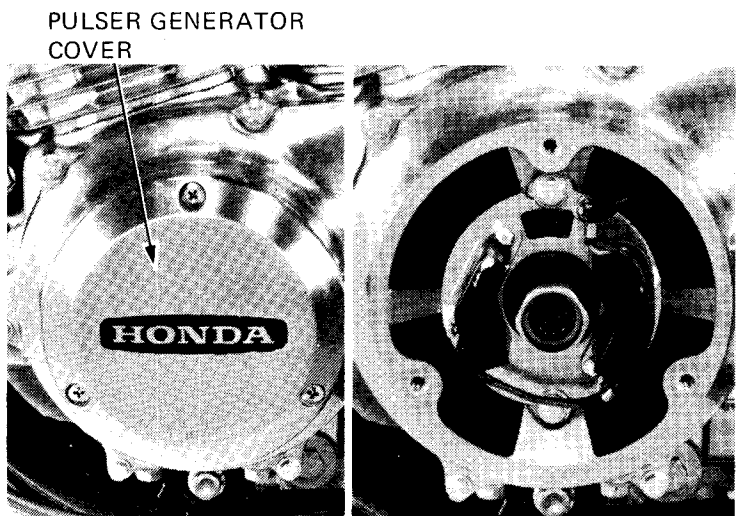
If pulser replacement is necessary, loosen the two pulser base plate screws.
Remove the left crankcase cover.
Remove the left rear crankcase cover.
Replace the pulser generator assembly.
Adjust the ignition timing (Page 3-4).



LEFT CRANKCASE
COVER

SPARK ADVANCER

For advancer function test, see Page 3-13.
Remove the pulser generator cover screws and cover.
Remove the left crankcase cover screws and cover.



PULSER GENERATOR
COVER

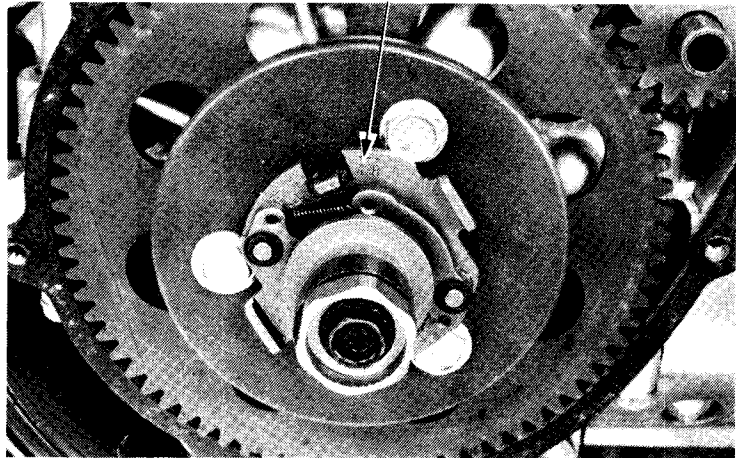


ADVANCER VISUAL INSPECTION

Check the mechanical 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.

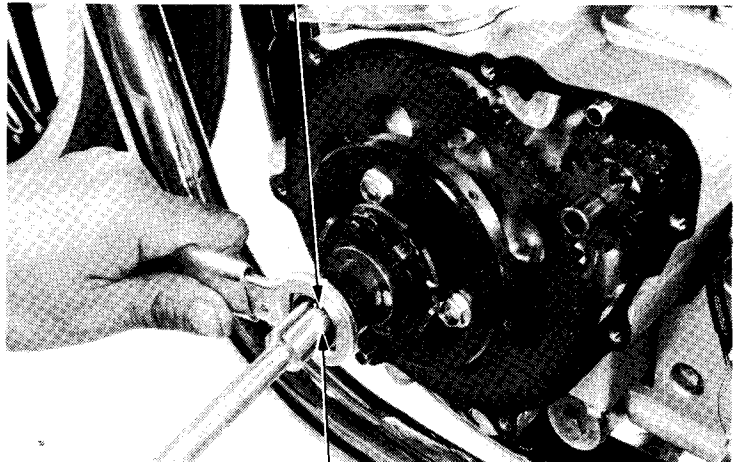
SPARK ADVANCER



ADVANCER REPLACEMENT

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

SPACER



ALLEN HEAD BOLT

Align the rotor tooth with the "O" mark on the advancer.

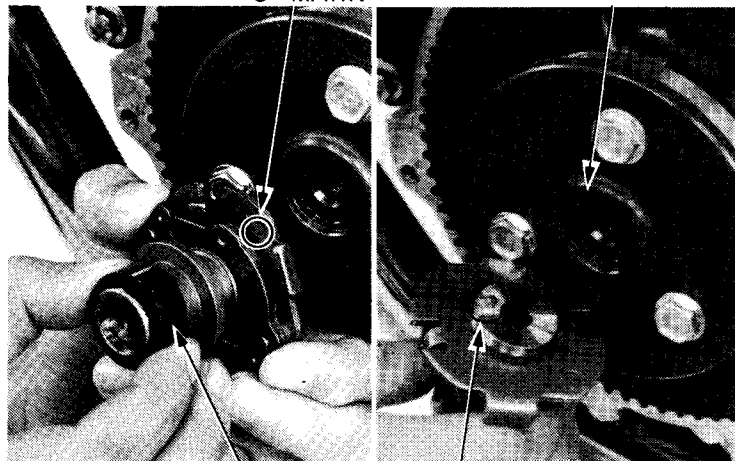
Align the pin on the advancer with the slot in the crankshaft.

Tighten the hex. head bolt.

TORQUE: 3.3–3.7 kg-m, (24–27 ft-lb)

"O" MARK

SLOT



ROTOR TOOTH

PIN