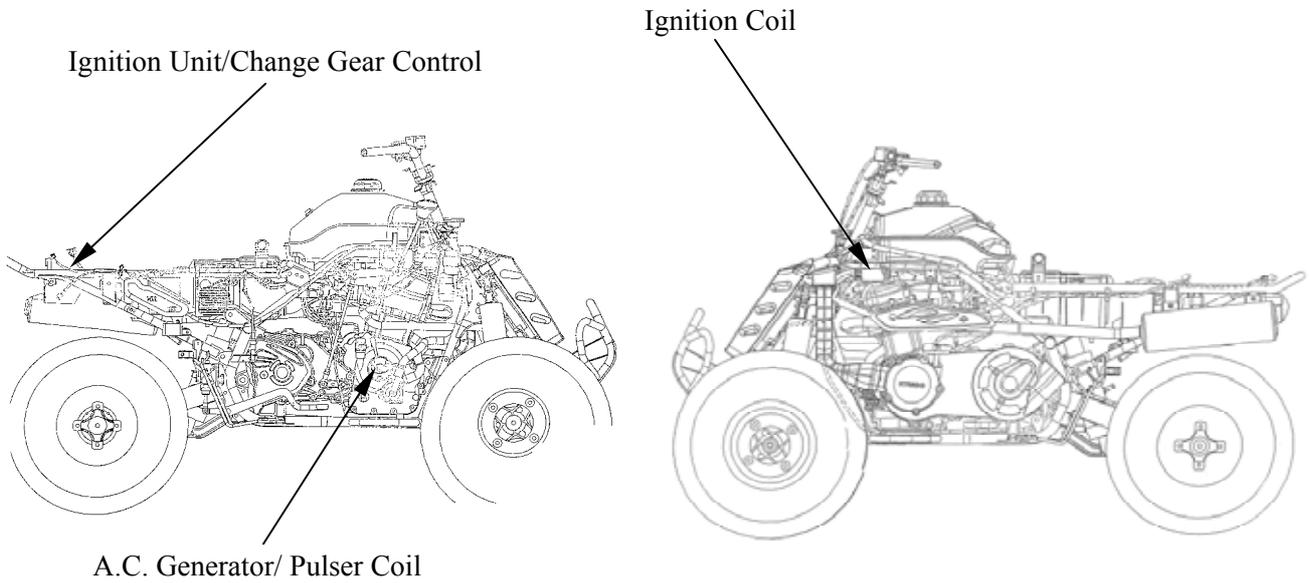


17. IGNITION SYSTEM

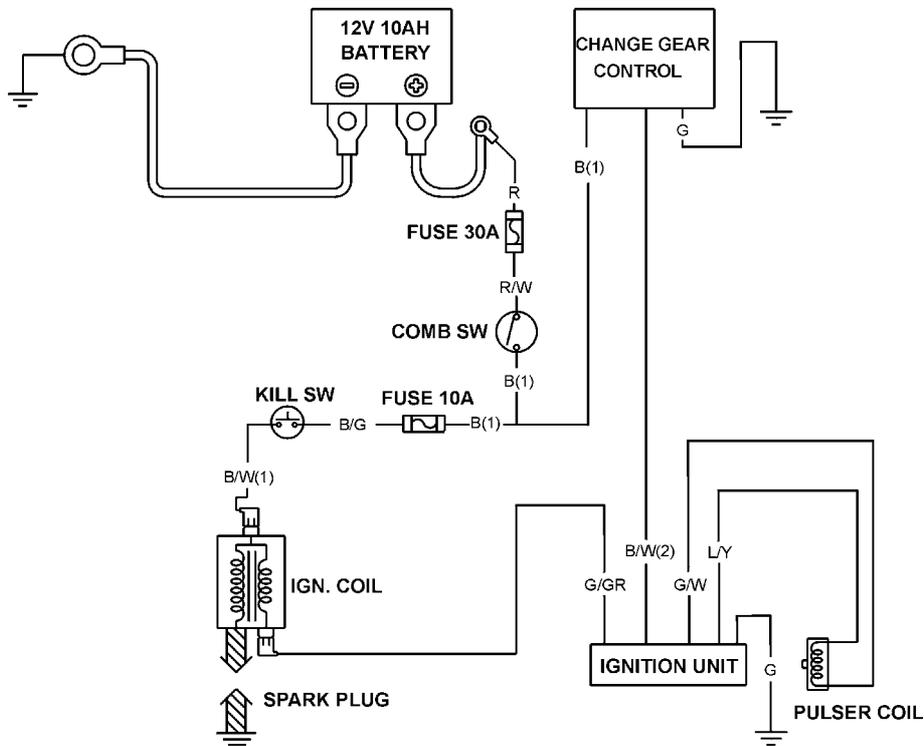
IGNITION SYSTEM

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17. IGNITION SYSTEM



IGNITION CIRCUIT



17. IGNITION SYSTEM

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Check the ignition system according to the sequence specified in the Troubleshooting.
- The ignition system adopts ignition unit, change gear control and the ignition timing cannot be adjusted.
- If the timing is incorrect, inspect the ignition unit, A.C. generator, change gear control and replace any faulty parts. Inspect the ignition unit with a ignition unit tester
- Loose connector and poor wire connection are the main causes of faulty ignition system. Check each connector before operation.
- Use of spark plug with improper heat range is the main cause of poor engine performance.
- The inspections in this section are focused on maximum voltage. The inspection of ignition coil resistance is also described in this section.
- Inspect the spark plug referring to chapter 3.

SPECIFICATIONS

Item		Standard
Spark plug	Standard type	DPR7EA-9
Spark plug gap		0.6~0.7mm
Ignition timing	“F” mark Full advance	5°±1°BTDC/1000RPM
Ignition coil resistance (20°C)	Primary coil	3.4~4.1Ω
	Secondary coil	without plug cap 14.45KΩ with plug cap 19.8KΩ
Pulser coil resistance (20°C)		105~110Ω
Ignition coil primary side max. voltage		14V
Pulser coil max. voltage		1.6V
Exciter coil max. voltage		14V

TESTING INSTRUMENT

Commercially available electric tester with resistance over 10MΩ/CDV.

17. IGNITION SYSTEM

TROUBLESHOOTING

High voltage too low

- Weak battery or low engine speed
- Loose ignition system connection
- Faulty ignition unit

- Faulty ignition coil

- Faulty pulser coil

Normal high voltage but no spark at plug

- Faulty spark plug
- Electric leakage in ignition secondary circuit
- Faulty ignition coil

Good spark at plug but engine won't start

- Faulty ignition unit or incorrect ignition timing
- Faulty change gear control unit
- Improperly tightened A.C. generator flywheel

No high voltage

- Faulty ignition switch
- Faulty ignition unit
- Poorly connected or broken ignition unit ground wire
- Dead battery or faulty regulator/rectifier
- Faulty ignition coil connector
- Faulty pulser coil

17. IGNITION SYSTEM

IGNITION UNIT /CHANGE GEAR CONTROL INSPECTION

Remove the seat. (Refer to the chapter 2)
 Disconnect the ignition unit coupler and remove the ignition unit.
 Disconnect the change gear control coupler and remove the change gear control.
 Measure the resistance between the terminals using the electric tester.

- ***
- Due to the semiconductor in circuit, it is necessary to use a specified tester for accurate testing. Use of an improper tester in an improper range may give false readings.
 - Use a YF-3501 Electric Tester.
 - In this table, “Needle swings then returns” indicates that there is a charging current applied to a condenser. The needle will then remain at “∞” unless the condenser is discharged.

Change Gear Control



Ignition Unit

Ignition Unit



IGNITION UNIT INSPECTION

Testing Range (at 20°C)

Unit: Ω

Probe⊕ (-)Probe	Blue/ Yellow	Green / Gray	Black / White	Green/ White	Black/ Yellow	Green
Blue/ Yellow		∞	10.56M	90.4K	10.56M	46K
Green / Gray	12.73M		∞	12.73M	∞	12.73M
Black / White	∞	∞		∞	999	∞
Green/ White	90.4K	∞	10.56M		10.56M	46K
Black/ Yellow	∞	∞	999	∞		∞
Green	44.4K	∞	10.56M	44.4K	10.56M	

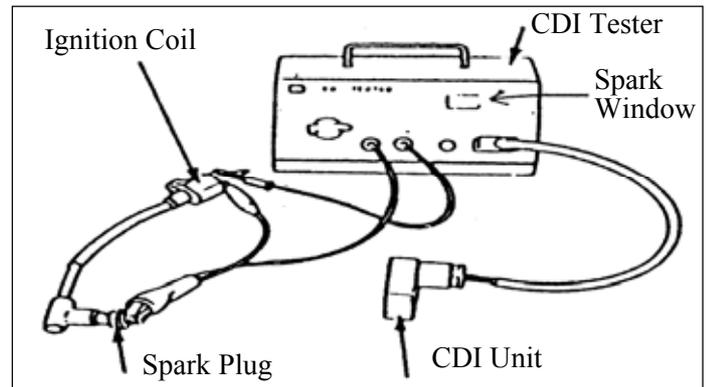
Note: The readings in this table are taken with a YF-3501 Tester.

17. IGNITION SYSTEM

Test the ignition unit using the ignition unit tester.

* Operate the ignition unit tester by following the manufacturer's instructions.

Connect the special connector to the ignition unit coupler and ignition unit tester.



Switch Range	Good CDI	Faulty CDI
1. OFF	No spark	—
2. P	No spark	—
3. EXT	No spark	Good spark
4. ON1	Good spark	No spark
5. ON2	Good spark	No spark

If the ignition unit is faulty, replace it with a new one.

Change Gear Control



CHANGE REAR CONTROL INSPECTION

Testing Range(at 20°C)

Unit: Ω

Probe⊕ (-)Probe	Green	Yellow/ Brown	Light Green/ Red	Green/ Pink	Green/ Yellow	Black/ White	Black
Green		14	∞	∞	7.85M	7.85M	10K
Yellow/ Brown	18		∞	∞	7.85M	7.85M	10K
Light Green/ Red	7.85M	7.85M		11	∞	∞	7.85M
Green/ Pink	7.85M	7.85M	9		∞	∞	7.85M
Green/ Yellow	∞	∞	∞	∞			∞
Black/ White	∞	∞	∞	∞	11		∞
Black	10K	10K	∞	∞	7.85M	7.85M	

Note: The readings in this table are taken with a YF-3501 Tester.

17. IGNITION SYSTEM

IGNITION COIL INSPECTION CONTINUITY TEST

Remove the front fender. (Refer to the chapter 2)

Remove the spark plug cap. (Refer to the chapter 6)

Disconnect the ignition coil wires.

* This test is to inspect the continuity of ignition coil.

Measure the resistance between the ignition coil primary coil terminals.

Resistance: $3.4 \sim 4.1 \Omega / 20^{\circ}\text{C}$



Ignition Coil

Remove the spark plug cap and measure the secondary coil resistance between the spark plug wire and the primary coil terminal.

Resistance:

(with plug cap): $19.8 \text{K}\Omega / 20^{\circ}\text{C}$

(without plug cap): $14.45 \text{K}\Omega / 20^{\circ}\text{C}$

* This test is for reference only. Accurate test should be performed with a CDI tester.



17. IGNITION SYSTEM

Measure the spark plug cap resistance.

Remove the spark plug cap and measure the spark plug resistance.

Resistance: 4.2~5.2K Ω /20°C

- * Measure the resistance in the XK Ω range of the electric tester.

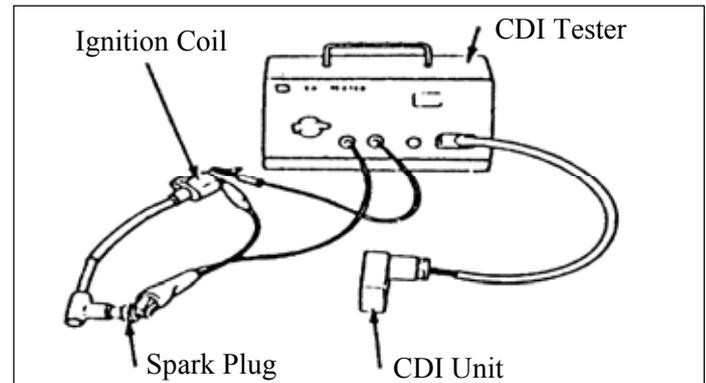


PERFORMANCE TEST

Test the performance with a ignition unit tester.

- *
- Operate the ignition unit tester by following the manufacturer's instructions.
 - Use the special connector to connect the ignition unit.

If the spark is weak, inspect the spark plug and ignition unit. If both of them are normal, replace the ignition coil with a new one.



PULSER COIL

INSPECTION

Remove the front fender. (Refer to the chapter 2)

Disconnect the pulser coil wire coupler and measure the resistance between the blue/yellow and green/white wire terminals.

Resistance: 105~110 Ω /20°C

Refer to the "A.C. GENERATOR/FLYWHEEL" section in the chapter 16 to remove or install.

