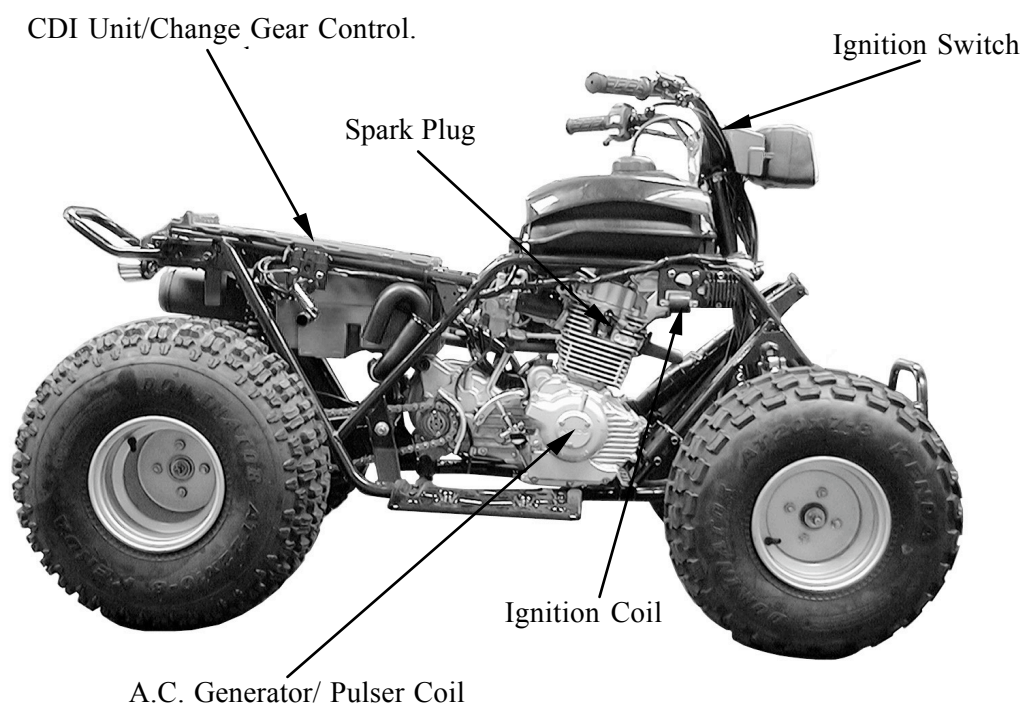


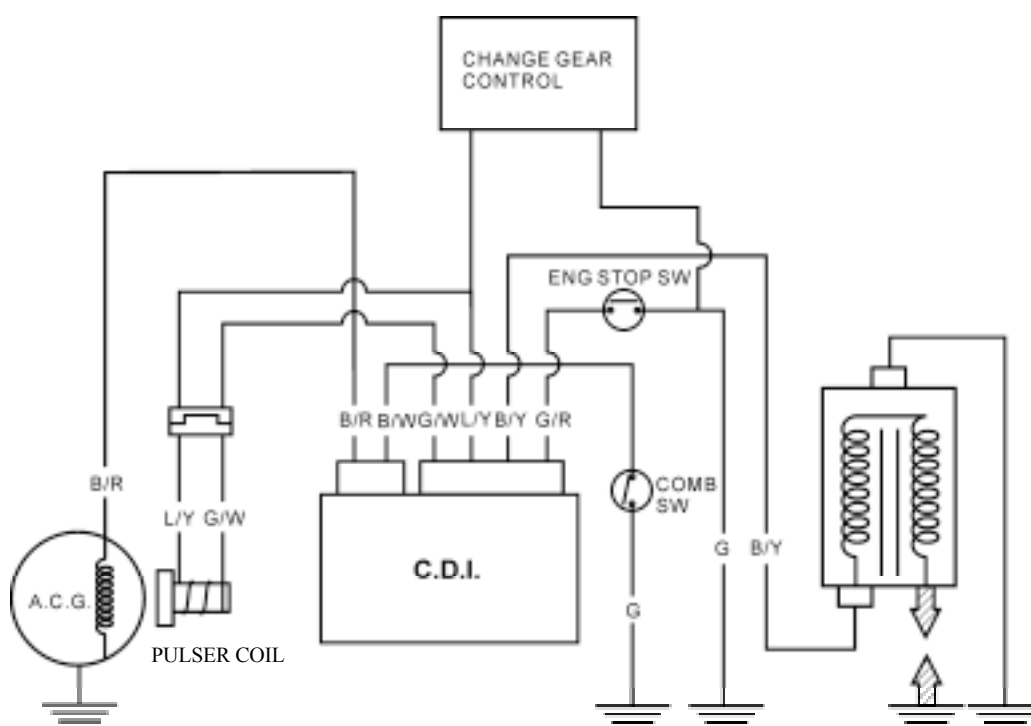
IGNITION SYSTEM

| | |
|---------------------|-------|
| SERVICE INFORMATION | 15- 2 |
| TROUBLESHOOTING | 15- 3 |
| CDI UNIT INSPECTION | 15- 4 |
| IGNITION COIL | 15- 6 |
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15. IGNITION SYSTEM



IGNITION CIRCUIT



15. IGNITION SYSTEM

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Check the ignition system according to the sequence specified in the Troubleshooting.
- The ignition system adopts CDI unit , change gear control and the ignition timing cannot be adjusted.
- If the timing is incorrect, inspect the CDI unit, A.C. generator, change gear control and replace any faulty parts. Inspect the CDI unit with a CDI 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 ignition switch according to the continuity table specified in page 17-5.
- Inspect the spark plug referring to Section 3.

SPECIFICATIONS

| Item | | | Standard | |
|---|--------------------------|---------------|----------------------|-------|
| Spark plug | Standard type | | CR8E | |
| | Hot type | | | |
| | Cold type | | | |
| Spark plug gap | | | 0.6_ | 0.7mm |
| Ignition timing | “F” mark Full advance | | 15°BTDC/1,700±100rpm | |
| Ignition coil resistance | Primary coil | | 0.2_ | 0.3□ |
| | Secondary coil | with plug cap | 3.2_ | 4.8K□ |
| | | plug cap | 4.2_ | 5.2K□ |
| Pulser coil resistance (20℃) | | | 50_ | 60□ |
| Exciter coil resistance (20℃) | | | 100_ | 120□ |
| Ignition coil primary side max. voltage | | | 12V min. | |
| Pulser coil max. voltage | | | 2.1V min. | |

TESTING INSTRUMENT

Kowa Electric Tester

or commercially available electric tester with resistance over 10MΩ/CDV

15. IGNITION SYSTEM

TROUBLESHOOTING

High voltage too low

- Weak battery or low engine speed
- Loose ignition system connection
- Faulty CDI 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 CDI or incorrect ignition timing
- Faulty change gear control unit
- Improperly tightened A.C. generator flywheel

No high voltage

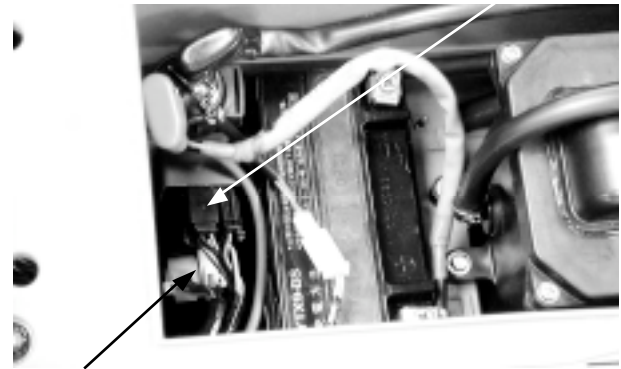
- Faulty ignition switch
- Faulty CDI unit
- Poorly connected or broken CDI ground wire
- Dead battery or faulty regulator/rectifier
- Faulty ignition coil connector
- Faulty pulser coil

15. IGNITION SYSTEM

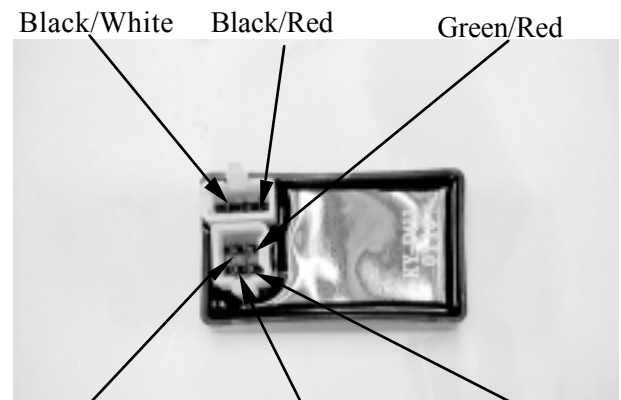
CDI UNIT INSPECTION

Remove the seat.
Disconnect the CDI coupler and remove the CDI unit.
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 Sanwa Electric Tester or Kowa 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.



CDI Unit



Black/White Black/Red Green/Red
Black/Yellow Blue/Yellow Green/White

Testing Range

Use the xK \square range for the Sanwa Tester.

Use the xK \square range for the Kowa Tester.

Unit: K \square

| Probe \oplus (-)Probe | Black/ White | Black/ Red | Blue/ White | Green | Green/ White | Black/ Yellow |
|----------------------------|-----------------|---------------|-----------------------------------|-----------------------------------|------------------------|------------------|
| Black/ White | | ∞ | ∞ | ∞ | ∞ | ∞ |
| Black/ Red | 3-6K | | Needle Swings then ∞ | Needle Swings then ∞ | ∞ | ∞ |
| Blue/ White | 35-42K | 18-22K | | 8-10K | 8-10K | ∞ |
| Green | 15-18K | 4.5-5.5K | 7-9K | | There is continuity | ∞ |
| Green/ White | 15-18K | 4.5-5.5K | 8-9K | There is continuity | | ∞ |
| Black/ Yellow | ∞ | ∞ | ∞ | ∞ | ∞ | |

Note: The readings in this table are taken with a Sanwa Tester.

15. IGNITION SYSTEM

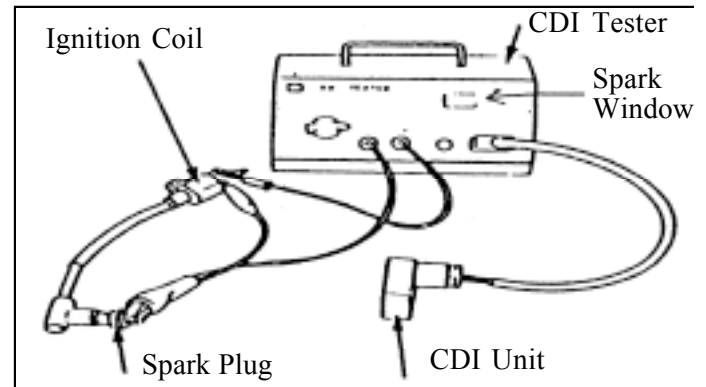
Test the CDI unit using the CDI tester.

- * Operate the CDI tester by following the manufacturer's instructions.

Connect the special connector to the CDI coupler and CDI 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 CDI unit is faulty, replace it with a new one.



Remove the seat.

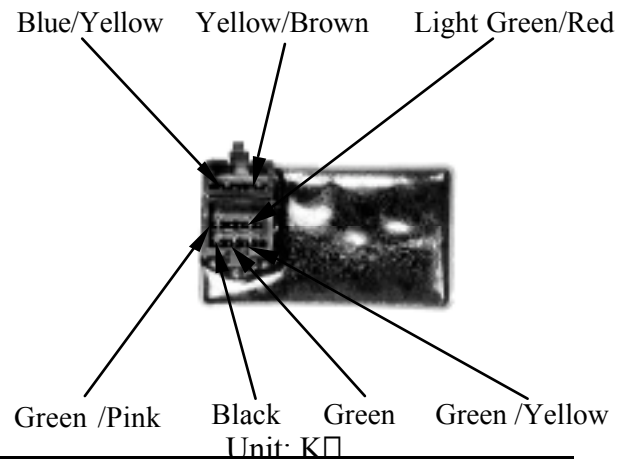
Disconnect the change gear control coupler and remove the change gear control unit.

Measure the resistance between the terminals using the electric tester.

Testing Range

Use the xK□ range for the Sanwa Tester.

Use the xK□ range for the Kowa Tester.



| Probe⊕ (-)Probe | Black | Green | Green/ Yellow | Green/ Pink | Light Green/ Red | Blue/ Yellow | Yellow/ Brown |
|---------------------|-------|---------|------------------|----------------|---------------------|-----------------|------------------|
| Black | | 5-50K | 5-50K | 5-50K | 5-50K | 5-50K | 5-50K |
| Green | ∞ | | 5-50K | 5-50K | 5-50K | 5-50K | 0 |
| Green/ Yellow | ∞ | 5-50K | | 10-50K | 10-50K | 10-50K | 5-50K |
| Green/ Pink | ∞ | ∞ | ∞ | | 0 | ∞ | ∞ |
| Light Green/ Red | ∞ | ∞ | ∞ | 0 | | ∞ | ∞ |
| Blue/ Yellow | ∞ | 50-200K | 50-200K | 50-200K | 50-200K | | |
| Yellow/ Brown | ∞ | 0 | 5-50K | 5-50K | 5-50K | 5-50K | |

Note: The readings in this table are taken with a Sanwa Tester.

IGNITION COIL INSPECTION CONTINUITY TEST

Remove the front cover.
Remove the spark plug cap.
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: 0.2_ 0.3 Ω /20°C

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

Resistance: 3.2_ 4.8K Ω /20°C

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

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.

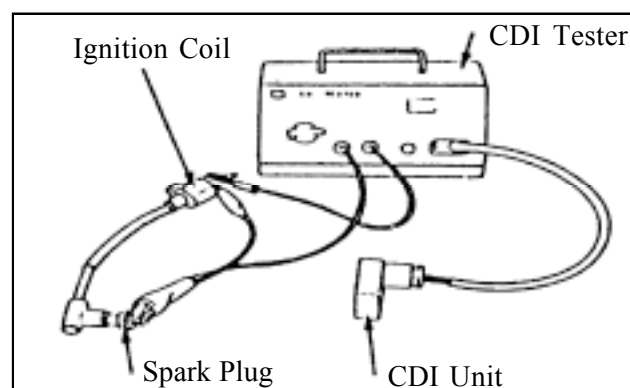
PERFORMANCE TEST

Test the performance with a CDI tester.

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

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

Ignition Coil



15. IGNITION SYSTEM

PULSER COIL

INSPECTION

Remove the front cover.

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

Resistance: 50_ 60 \square



EXCITER COIL

INSPECTION

Disconnect the exciter coil wire coupler and measure the resistance between the black/red wire terminal and ground.

Resistance: 100_ 120 \square

