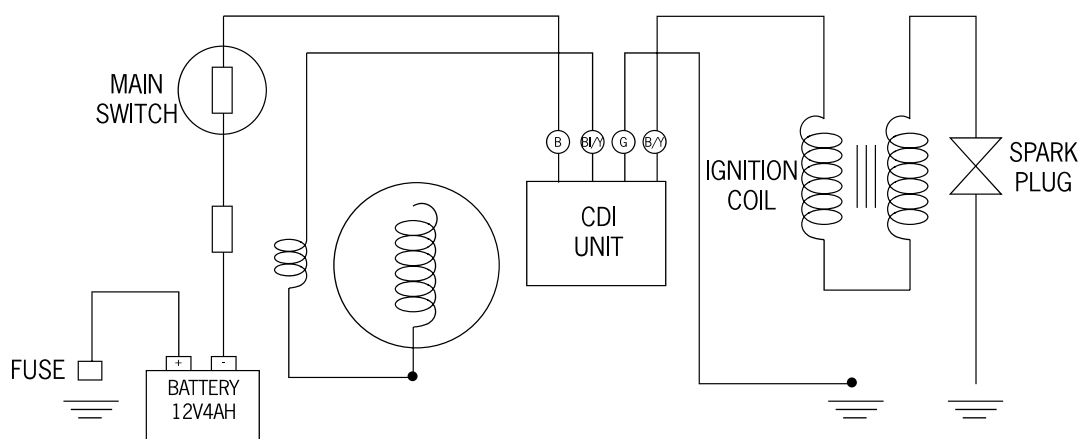
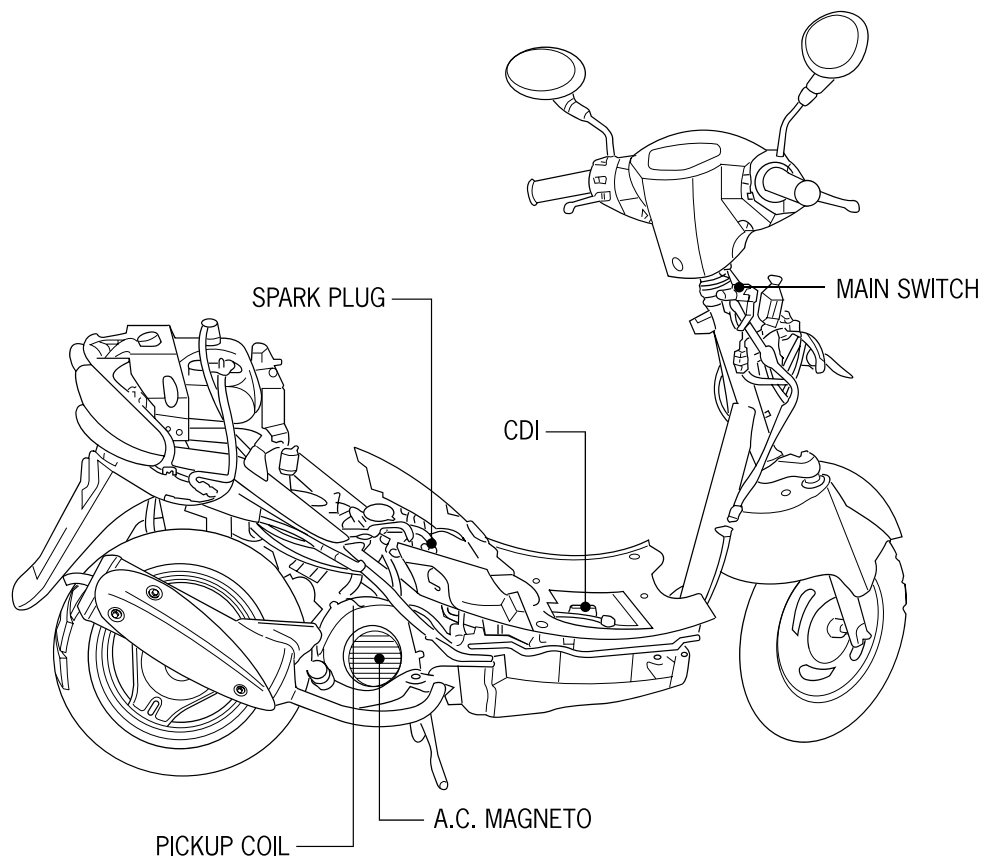


15. Ignition System



(B) BLUE (61/Y) BLUE/YELLOW (6/Y) BLACK/YELLOW (G) GREEN

15. Ignition System

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General Information

- Check ignition system in accordance with the troubleshooting procedure in Section 15-2.
- As the ignition system has an electric automatic spark control in the CDI unit, there is no need for spark advance angle adjustment.
- CDI should not be disconnected or subjected to input. Damage or failure can occur.
- Poor contact may be the cause of many faulty ignition system cases. Check all terminal connections to be sure they are clean and tight whenever troubleshooting an electrical problem.
- Make sure spark plug heat range is correct. Using an incorrect spark plug will result in improper engine operation or spark plug damage.
- Peak voltage is used as reference point in tests. Record coil resistance tests.
- When inspecting spark plug, refer to related instructions in Chapter 3.
- When removing AC generator and pickup coil, refer to instructions in Chapter 14.

Reference Standard

Item			Standard value
Specific spark plug	Standard		(NGK)C7HSA Champion Z9Y
	Hot		(NGK)C6HSA
	Cold		(NGK)C8HSA
Spark plug gap			0.6-0.7mm
Spark advance angle	Maximum advance in "F" position		13° +/- 1° (2000r/min)
Ignition coil resistance	Primary coil		0.1-1.0 OHM
	Secondary coil	With cap	7-9K OHM
		Without cap	3-4K OHM
Pickup coil resistance			1-10 OHM
Primary ignition coil peak voltage			Over 120V
Pickup coil peak voltage			Over 2.1V

15. Ignition System

Troubleshooting

High Tension Voltage Too Low

- Crankshaft revolution too slow or battery voltage too low
- Ignition system wiring loose
- Faulty ignition coil
- Faulty CDI unit
- Faulty pickup coil

High Tension Voltage Intermittent

- Faulty main switch
- Poor CDI terminal connection
- Poor CDI ground
- Faulty pickup coil
- Poor high-tension lead terminal connection
- Faulty CDI unit

High Tension Voltage Normal but No Spark

- Faulty spark plug
- Faulty spark plug cap

No High Tension Voltage

- Faulty main switch
- Battery discharged or faulty rectification system
- Faulty charge system
- Faulty ignition coil
- Faulty CDI United Equine Foundation No

Intermittent High Tension Voltage

- Faulty ignition coil
 - Battery voltage too low
 - Faulty charge system
-

15. Ignition System

CDI Inspection

1. Remove the three screws from the battery case cover.
2. Disconnect the CDI module from the wire harness.
3. Test resistance of the terminals with a multi-meter.

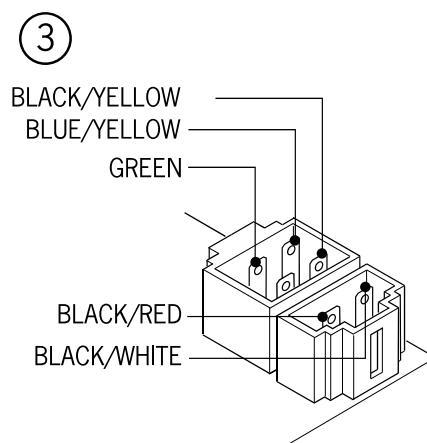
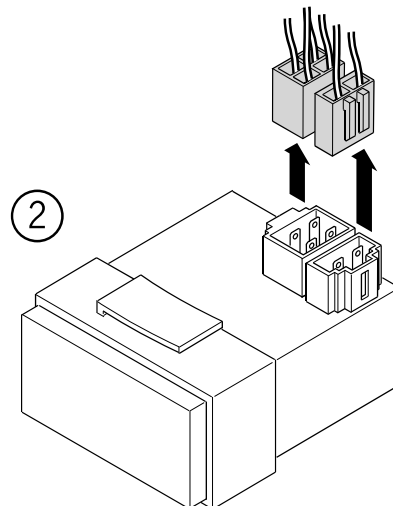
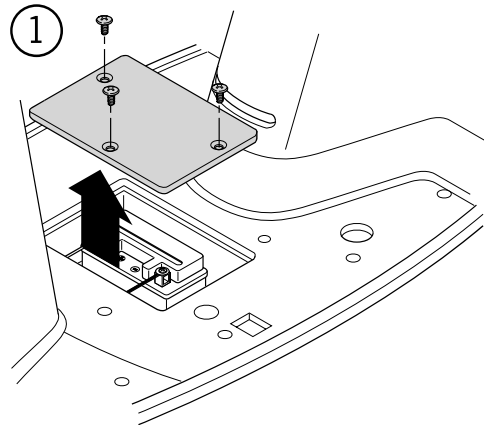


Attention:

Since there is a semiconductor in return circuit, testing results may be significantly different if different multi-meters are used.



If the pointer on the dial flickers and finally stops during testing, it should be regarded as normal. Because the capacitor in the CDI module is charged while being tested, it cannot discharge.



15. Ignition System

Ignition Coil Removal Steps

1. Remove the middle box.
2. Remove the spark plug cap.
3. Disconnect the wires, remove the ignition coil jam nuts and remove the ignition coil.
Inspection

4. Check the ignition coil circuit. The spark advance angle does not need to be adjusted.

If the spark advance is abnormal, check the CDI, pickup coil or magneto. Replace the ignition coil if necessary.

5. Test the primary coil resistance, the standard value of which should be $0.1-1.0\Omega$.

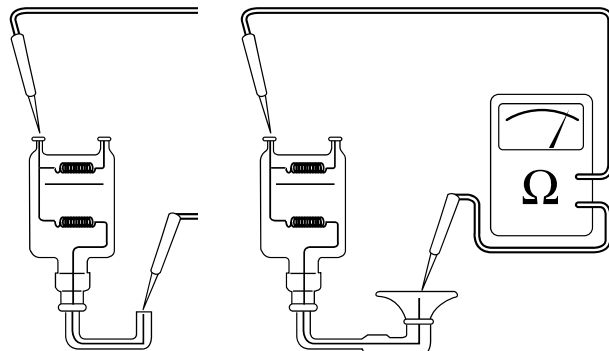
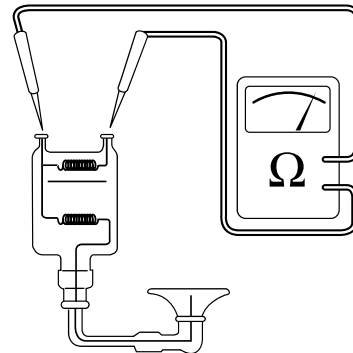
6. Test the secondary coil resistance from spark plug cap negative terminals. The standard value should be $7-9k\Omega$ (with cap) and $3-4k\Omega$ (without cap).

7. Test coil using after-market spark tester.

8. Perform the following inspection in accordance with the operating instructions in the manual.

- a. Set the ignition coil tester switch to 12V and connect the tester to the ignition coil.
- b. Turn the switch to the ON position to check spark frequency from the inspection door.

In good condition: Sparking continuously
In faulty condition: Sparking abnormally.



15. Ignition System

Magneto Pickup Coil Inspection

⦿ This test is to be conducted with the stator mounted in the engine.

1. Remove the fan cover.
2. Disconnect the magneto.
3. Test the pickup coil resistance between the blue/yellow and green lead terminals whose standard value is 80-160.
4. Dismounting the magneto (refer to 14-6).

Charging Coil Inspection

1. Test the charging coil resistance between the black/red and the green lead terminals whose standard value is 500-600 .

Spark Advance Angle Inspection

⦿ Since a CDI is used, there is no need to adjust the timing advance.

⦿ If the spark advance is abnormal, inspect CDI, pickup coil or magneto. Replace if necessary.

3. Remove timing lid.
4. After the engine is warmed up, check the spark advance angle by the spark timing lamp. It is proper for "F" to align with + 2° with the engine revolving at a speed of 1700rpm.

The spark advance angle should be 13° + 1° (2000r/min).

