



ELECTRICAL ANALYSIS INSPECTION

CAUTION:

All measuring instruments should be handled with special care or the correct measurement is impossible.

On an instrument powered by dry batteries, the latter should be checked for voltage periodically and replaced, if necessary.

NOTE:

"○—○" indicates the terminals between which there is a continuity of electricity; i.e., a closed circuit at the respective switch position.

Peak voltage measurement

NOTE:

- The coil output varies greatly at cranking speed.
- Cranking a cold engine with the plugs in and a weak battery does not enable proper readings.



Digital multimeter:
J-39299/90890-06752
Peak volt adapter:
YU-39991/90890-03169

Low resistance measurement

When measuring a resistance of 10 Ω or less using the digital tester, the correct measurement cannot be obtained because of the tester's internal resistance.

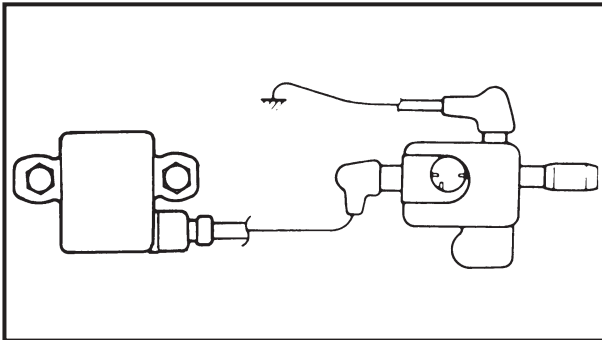
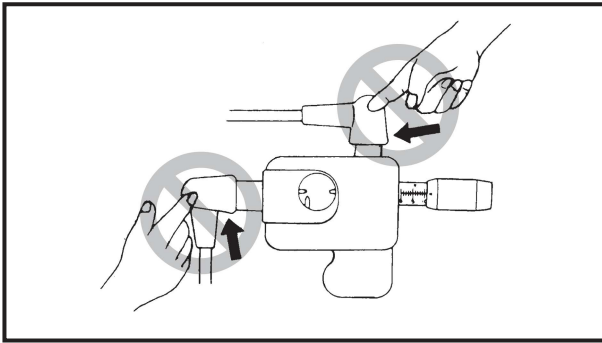
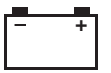
To obtain the correct value, subtract this internal resistance from the displayed measurement.



Correct value =
Displayed measurement –
Internal resistance

NOTE:

The internal resistance of the tester can be obtained by connecting both of its terminals.



IGNITION SPARK GAP

⚠ WARNING

- While checking the spark be careful not to touch any connection of lead wires of the "Ignition spark gap tester".
- When doing the spark test, take special care not to allow leakage from the plug cap which has been removed.

This check is likely to produce sparks, so be sure that no flammable gas or fluid is present.

1. Ignition spark gap:

- 1) Connect the spark plug cap to the spark gap tester.



Spark gap tester:
YM-34487/90890-06754

- 2) Remove the spark plugs from the engine.
- 3) Crank the engine and check the sparks from the ignition system through the discharge window.
- 4) If the spark is weak, measure the CDI SYSTEM PEAK VOLTAGE.

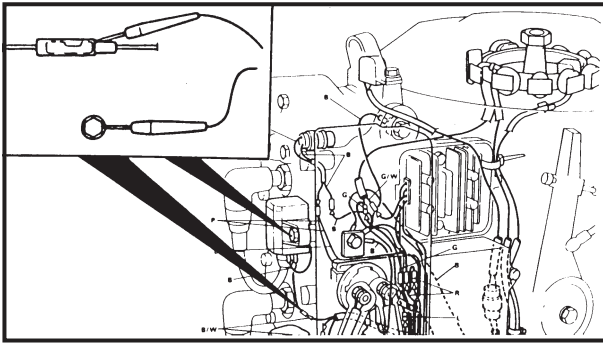
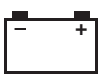
CDI SYSTEM PEAK VOLTAGE

⚠ WARNING

While taking CDI unit check be careful not to touch any connection of lead wires of the "Digital tester".

NOTE:

- If there is no spark or the spark is weak, continue with the CDI test.
- If a good spark is obtained, the problem is not with the CDI system, but possibly the spark plug or other component is defective.



1. CDI unit output:

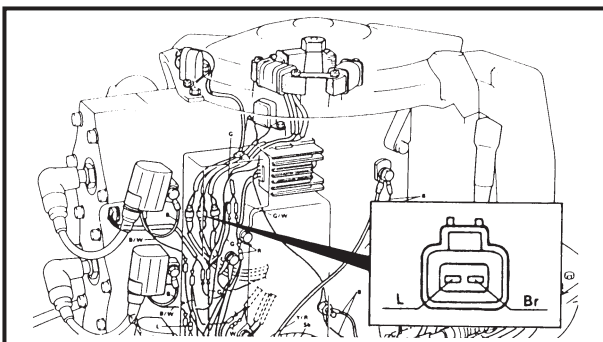
- 1) Connect the tester to the CDI unit as shown.
- 2) Set the tester dial to specification.
- 3) Crank or start the engine.
- 4) Measure all the CDI unit output.
- 5) If the output is beyond specification, replace the ignition coil.
- 6) If the output is below specification, measure the charge coil output.

50, 60, 70 hp

 CDI unit Output peak voltage (minimum) B/W – B				
r/min	Cranking		1,500	3,500
	Open	Connect		
V	—	#1, 3: 105 #2: —	145	105

75, 80, 90 hp

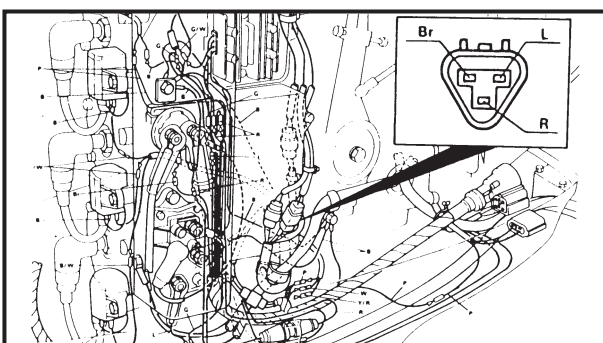
 CDI unit Output peak voltage (minimum) B/W – B				
r/min	Cranking		1,500	3,500
	Open	Connect		
V	—	#1, 3: 130 #2: —	155	130



2. Charge coil output:

- 1) Disconnect the charge coil coupler. Connect the 2/3 pins test harness.

	
50, 60, 70 hp 2 pins test harness: YB-38831/90890-06767	
75, 80, 90 hp 3 pins tester harness: YB-06443/90890-06757	



- 2) Connect the tester to the measurement terminal.
- 3) Set the tester dial to specification.
- 4) Crank or start the engine.
- 5) Measure the charge coil output.
- 6) If the output is below specification, replace the charge coil.
- 7) If the output is beyond specification, measure pulser coil output.



50, 60, 70 hp



Charge coil
Output peak voltage (minimum)
Br – L

r/min	Cranking		1,500	3,500
	Open	Connect		
V	110	120	160	120

75, 80, 90 hp



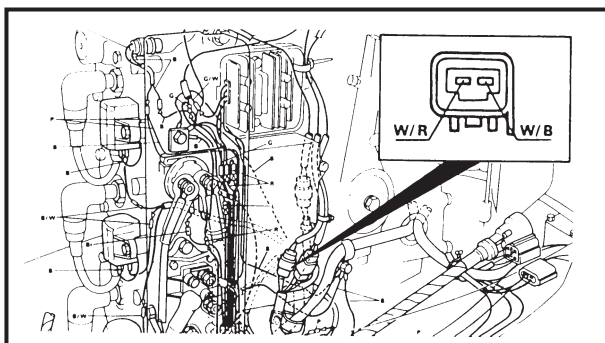
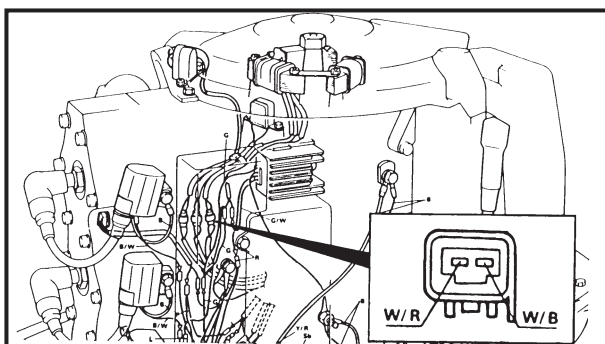
Charge coil
Output peak voltage (minimum)
R – Br

r/min	Cranking		1,500	3,500
	Open	Connect		
V	55	60	170	150



Charge coil
Output peak voltage (minimum)
R – L

r/min	Cranking		1,500	3,500
	Open	Connect		
V	90	100	135	135



3. Pulser coil output:

- 1) Disconnect the pulse coil couple.
Connect the 2 pins test harness.



2 pins test harness:
YB-38831/90890-06767

- 2) Connect the tester to the measurement terminal.
- 3) Set the tester dial to specification.
- 4) Crank or start the engine.
- 5) Measure the pulser coil output.
- 6) If the output is beyond specification, replace CDI unit.
- 7) If the output is below specification, replace pulser coil.



50, 60, 70 hp



Pulser coil
Output peak voltage (minimum)
W/R – W/B

r/min	Cranking		1,500	3,500
	Open	Connect		
V	4.5	2.5	6.5	10

75, 80, 90 hp



Pulser coil
Output peak voltage (minimum)
W/R – W/B

r/min	Cranking		1,500	3,500
	Open	Connect		
V	7.0	5.0	14	20

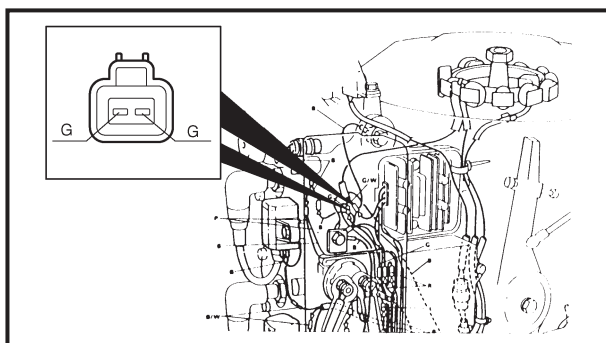
4. Lighting coil output:

- 1) Disconnect the lighting coil coupler.
Connect the 2 pins test harness.



2 pins test harness:
YB-38831/90890-06767

- 2) Connect the tester to the measurement terminal.
- 3) Set the tester dial to specification.
- 4) Start the engine.
- 5) Measure the lighting coil output.
- 6) If the output is beyond specification, replace rectifier/regulator.
- 7) If the output is below specification, replace lighting coil.



50, 60, 70 hp



Lighting coil
Output peak voltage (minimum)
G – G

r/min	Cranking		1,500	3,500
	Open	Connect		
V	8.5	8.0	25	25

75, 80, 90 hp



Lighting coil
Output peak voltage (minimum)
G – G

r/min	Cranking		1,500	3,500
	Open	Connect		
V	10	10	25	25