

11. DRIVE CHAIN INSPECTION AND ADJUSTMENT

1. Check the drive chain slack by raising and lowering the chain at the midpoint between the sprockets. The normal slack is 1~2cm ($\frac{3}{8}$ ~ $\frac{1}{2}$ in.).
2. Adjust by loosening the rear axle nut and turning the adjusting bolts on both sides.

Note:

The marks on both adjusters should be at the same location when the chain is properly adjusted.



Fig. 38 ① Park stop bolt ⑤ Adjusting bolt
② Mark ⑥ Lock nut
③ Axle nut ⑦ Loosen
④ Center pin ⑧ Tighten

12. BATTERY ELECTROLYTE INSPECTION

Remove the right side cover and check the electrolyte level. The level should be at the upper limit.

1. If the level is low, open the seat and remove the tool tray to add distilled water to the battery.
2. Remove the six battery filler caps and fill each cell with water to the upper limit.



Fig. 39 ① Upper limit ② Lower limit

13. FRONT FORK OIL REPLACEMENT

1. Remove the fork bolt and drain bolt, and drain the oil.

Accurate the forks up and down to drain the oil completely.

2. Flush the interior with solvent.

Note:

Do not use gasoline for flushing.

3. Tighten the drain bolt securely and add clean oil to the fork through the top of the fork pipe.

Recommended oil: **AFT**

Capacity: 160 cc (5.4 ozs)



Fig. 40 ① Fork bolts



Fig. 41 ① Drain bolt



Fig. 42 ① Compression gauge

14. COMPRESSION PRESSURE CHECK

1. Remove the spark plugs.
2. Insert the end of the compression gauge into the spark plug hole.
3. Set both the throttle and choke to the fully open position and kick the kick starter.

Standard compression pressure:

12 kg/cm² (170.67 psi)

Note:

- Open the throttle and choke fully so that the correct compression pressure will be indicated on the gauge.
- Continue the kicking until the compression reading is at the maximum. The reading will increase with each kick.
- To obtain the correct pressure reading, perform the measurement after warming the engine up.

(Low compression pressure)

When the compression pressure is below 10 kg/cm² (142.23 psi), the probable causes are leaks around the valves and piston rings, or from the head and cylinder gaskets.

Adjust the valve tappet clearances, or disassemble the engine and inspect the piston rings and gaskets.

(High compression pressure)

When the pressure is greater than 12 kg/cm² (170.67 psi), the probable cause is excessive carbon deposits on the combustion chamber, piston head and the valves. Disassemble the head and cylinder to remove the carbon.

6. ELECTRICAL

I. GENERAL DESCRIPTION

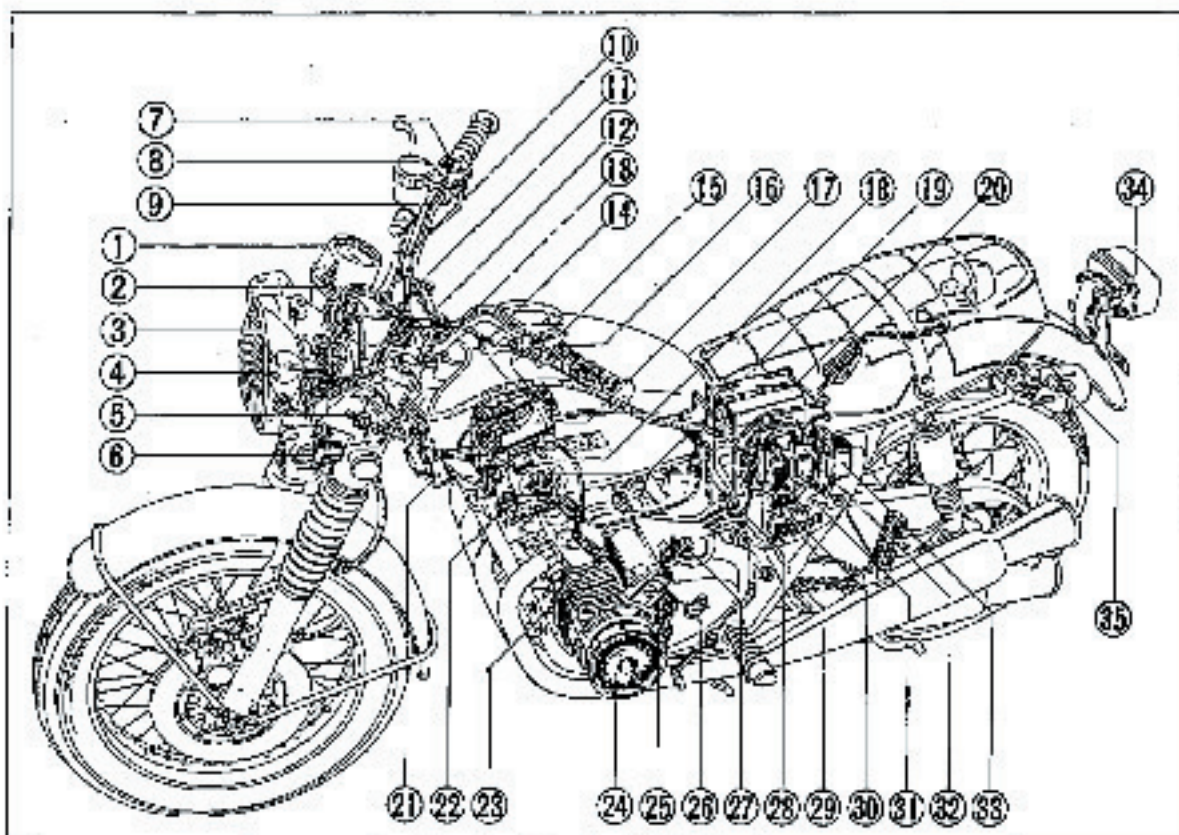


Fig. 20 Complete electrical system diagram

- | | |
|--|----------------------------|
| ① Tachometer pilot lamp | ⑩ Contact breaker assembly |
| ② Speedometer pilot lamp | ⑪ Battery |
| ③ Head light | ⑫ Horn |
| ④ Position lamp (except USA type) | ⑬ Vain switch |
| ⑤ Front brake stop switch | ⑭ Spark plug |
| ⑥ Front winker lamp | ⑮ AC generator |
| ⑦ Emergency switch | ⑯ Oil pressure switch |
| ⑧ Head light switch | ⑰ Starting motor |
| ⑨ Starter switch | ⑱ Neutral switch |
| ⑪ High beam pilot lamp | ⑲ Rear brake stop switch |
| ⑫ Neutral lamp | ⑳ Fuse holder |
| ⑬ Oil warning lamp | ㉑ Silicon rectifier |
| ⑭ Winker pilot lamp | ㉒ Winker relay |
| ⑮ Speed warning lamp (except USA type) | ㉓ Magnetic switch |
| ⑯ Winker switch | ㉔ Voltage regulator |
| ⑰ Horn button | ㉕ Taillamp lamp |
| ⑱ Ignition coil | ㉖ Rear winker lamp |
| ㉑ Speed warning system (except USA type) | |

2. IGNITION SYSTEM

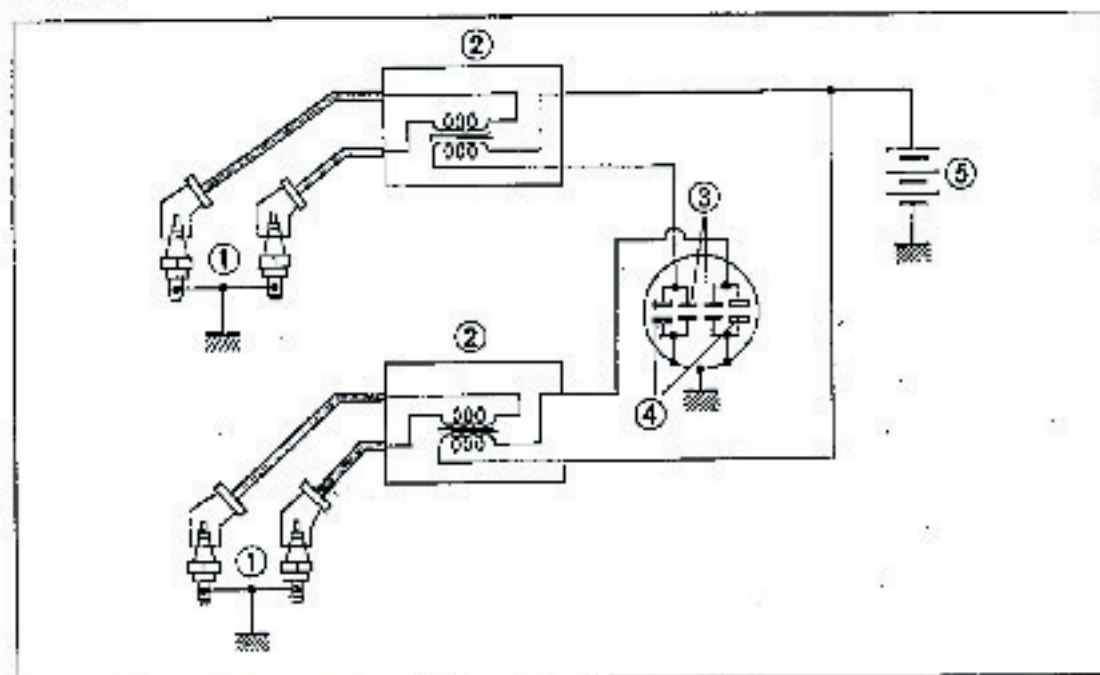


Fig. 270

- ① Spark plugs ③ Condensers ⑤ Battery
② Ignition coils ④ Contact breaker

The ignition system consists of two ignition coils, two contact breakers, four spark plugs, an ignition switch and a battery.

The current from the battery flows through the primary winding of the ignition coil, and the circuit is completed by grounding through the contact breaker. The contact breaker is contained in the contact breaker housing at the right end of the crankshaft. There are two contact breakers which are 180° out of phase. One of the breakers furnishes high voltage current to spark plugs 1 and 4; the other breaker furnishes current to plugs 2 and 3. The contact breakers ignite the spark plugs in a firing sequence of 1, 2, 4 and 3 which is indicated on the high tension plug cords. Since no distributor is used, the construction is simple and the system is easy to service.

SERVICE DATA

Ignition coil 3 point spark gap opening	7 mm min. (0.27 in.)
Spark plug Type (standard) Plug gap	NGK D-7 BS, DENSO X 22 B5 1.3~0.7 mm (0.028~0.028 in.)
Contact breaker Point gap Spring force	1.3~0.4 mm (0.052~0.016 in.) 660~850 g (1.43~1.87 lbs.)
Condenser Capacity Insulation resistance	0.24 μ F \pm 10% Over 10 M Ω (1,000 megger)
Spark advance Start of advance (crankshaft speed) Full advance (crankshaft speed) Advance angle	1,500 rpm 2,500~2,500 rpm 25°

Ignition Coil

The ignition coil consists of a primary coil with 420 turns of copper wire wound around an iron core of laminated silicon steel sheets. A secondary coil with 18,000 turns of wire is wound on top of the primary coil. Each secondary coil has two high tension cords to two spark plugs.

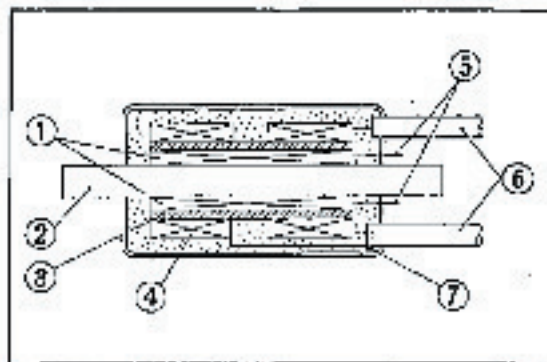


Fig. 271 ① Primary coil
② Iron core
③ Bobbin
④ Secondary coil
⑤ Primary terminal
⑥ High tension cord
⑦ High tension terminal

A. Disassembly

1. Open the seat and remove the fuel tank.
2. Disconnect the ignition coil leads (yellow, blue and black/white).
3. Loosen the two ignition coil mounting bolts, and separate the ignition coil from the frame.

B. Inspection

1. Ignition coil continuity test

Primary coils:

Check for continuity between the primary coil terminals.

Right coil: yellow and black/white leads

Left coil: blue and black/white leads

Secondary coils

Check for continuity between the terminals of the high tension cords.

If there is no continuity, the coil is open and must be replaced.



Fig. 272 ① Ignition coil ② Bolts

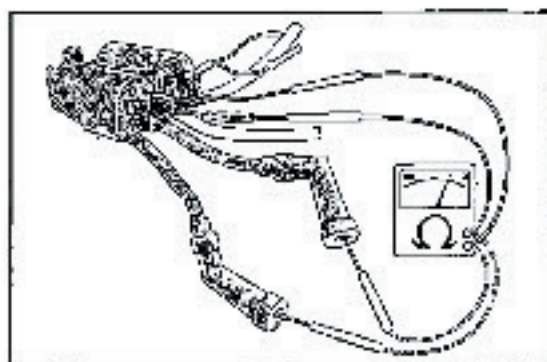


Fig. 273 Ignition coil continuity test

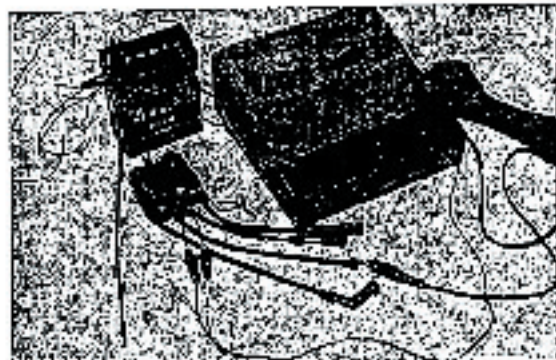


Fig. 274 Ignition coil performance test

Ignition coil performance test

Coil may test satisfactorily for continuity but it may not perform satisfactorily due to deterioration from long use, therefore, performance should be checked to determine its condition.

Connect the service tester power cord to a 12V battery and ground the ground cable. Connect the ignition primary test lead to the tester and connect the opposite terminal ends to the primary terminals of the coil. Connect the red test lead to the black terminal of the ignition coil and the white test lead to the yellow cord of the left coil (to the blue cord for the right coil).

Position the selector knob to COIL TEST. Adjust the three point spark tester to the maximum distance spark is maintained.

Measure this distance. The coil is satisfactory if the distance is greater than 7 mm. (0.27 in.)

Note:

Since a dual sparking ignition coil is used, note the spark condition. If the spark appears as B in Fig. 275, the connection to the primary coil is reversed.

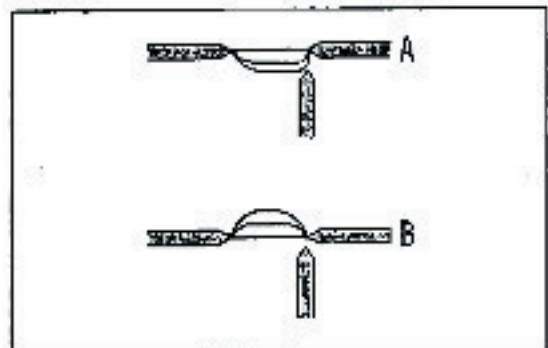


Fig. 275 Spark performance

Spark plug

A. Removal

1. Remove any dirt from around the spark plug by using compressed air.
2. Remove the spark plugs with a plug wrench.

B. Inspection

Inspect the spark plug for worn electrodes, excessive gap, fouled condition and damaged porcelain insulator.

1. Clean dirty spark plug with a plug cleaner or wire brush.
2. Measure the electrode gap with a feeler gauge and, if necessary, adjust to the specified gap.
Standard gap: 0.6~0.7 mm (0.023~0.027 in.)
3. Replace the spark plug if the porcelain insulator is damaged, or the gasket if it is damaged or distorted.

Standard spark plug: D-7ES (NGK), X22ES (DENSO)

C. Reinstallation

1. Install the spark plugs in the reverse order of removal.
Torque: 1.5~2.0 kg-m (11~14ft-lbs)

Note:

1. Do not drop the plug gasket.
2. A loose plug will not properly dissipate the heat and may result in engine malfunction.

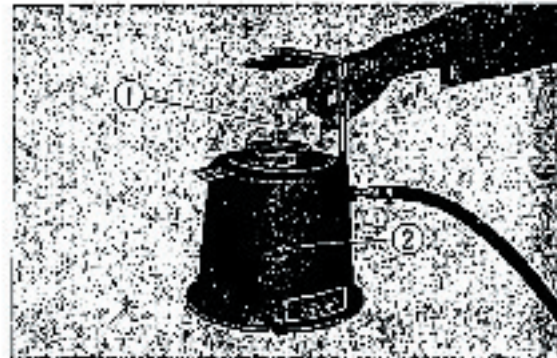


Fig. 276 ① Spark plug ② Spark plug cleaner

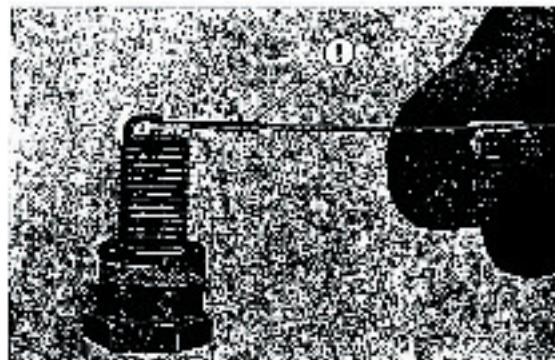


Fig. 277 ① Feeler gauge



Fig. 278 ① 6mm bolt
② Special washer
③ Screws
④ Condenser
⑤ Contact breaker plate

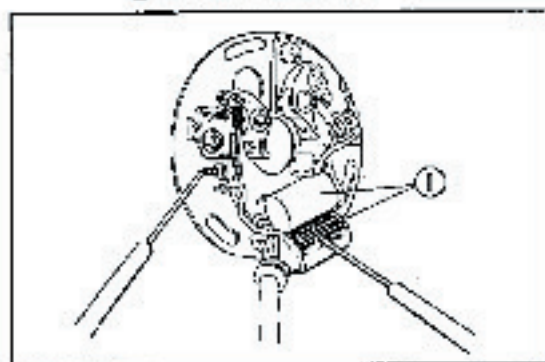


Fig. 279 ① Condenser



Fig. 280 ① Spark advancer



Fig. 281 ① Spark advancer ② Crankshaft

Contact Breaker and Condenser

A. Disassembly

1. Remove the point cover.
2. Disconnect the leads (yellow, blue) at the connectors located at the center of the frame.
3. Loosen the 6 mm bolt, remove the special washer, loosen the base plate mounting screws, and then remove the contact breaker assembly.

B. Inspection

- For adjustment of breaker point and ignition timing, refer to the "Maintenance Operations" section.
- Condenser
Measure the capacitance of the condenser using the service tester.
Standard value: 0.22~0.26 μ F

Note:

The points should be open when testing.

Spark Advancer

A. Disassembly

1. Remove the point cover and the contact breaker assembly.
2. Remove the spark advancer from the spark advancer shaft.

B. Inspection

1. Clean dust and foreign matters from friction surfaces, and make sure operation is smooth.
2. Check spring tension and advancer pin wear.

Standard spring tension:

880~850 gr. (1.43~1.87 lbs)

C. Reassembly

1. Install the dowel pin by aligning the hole.
2. Reassemble in the reverse order of removal.

3. CHARGING SYSTEM

The charging system for the CB500 is made up of the exciter field 3-phase AC generator, rectifier, voltage regulator and the fuse. The generator consists of the field coil, stator coil and the rotor; it does not contain slip rings or brushes.

In order for the stator coil to produce constant voltage, the current from the battery to produce the exciter field is regulated to very close limits by the dual contact regulator. The generator output is rectified by the silicon rectifier before being sent to recharge the battery. The generator performs two functions depending upon the charge condition of the battery. The electrical current from the battery flows through the switch and into the regulator. When the battery voltage is lower than normal (less than 13.5V at the battery terminal), the current flows through the upper contact to the field coil. The strength of the magnetic field is dependent upon the strength of the battery voltage. When the battery terminal voltage is 12V, the field coil current is 1.6A. This produces an output voltage of corresponding strength which is used to charge the battery.

When the battery voltage exceeds approximately 14.5V, the armature coil pulls the armature away from the upper contacts and closes the lower contacts, to insert a 10Ω resistance into the field coil circuit. The current to the field coil is thus reduced to 0.7A and, consequently, a lower voltage is produced by the generator, limiting the amount of charge to the battery. This function of inserting or removing the resistance into the generator field coil is performed by the voltage regulator in accordance with the charge condition of the battery.

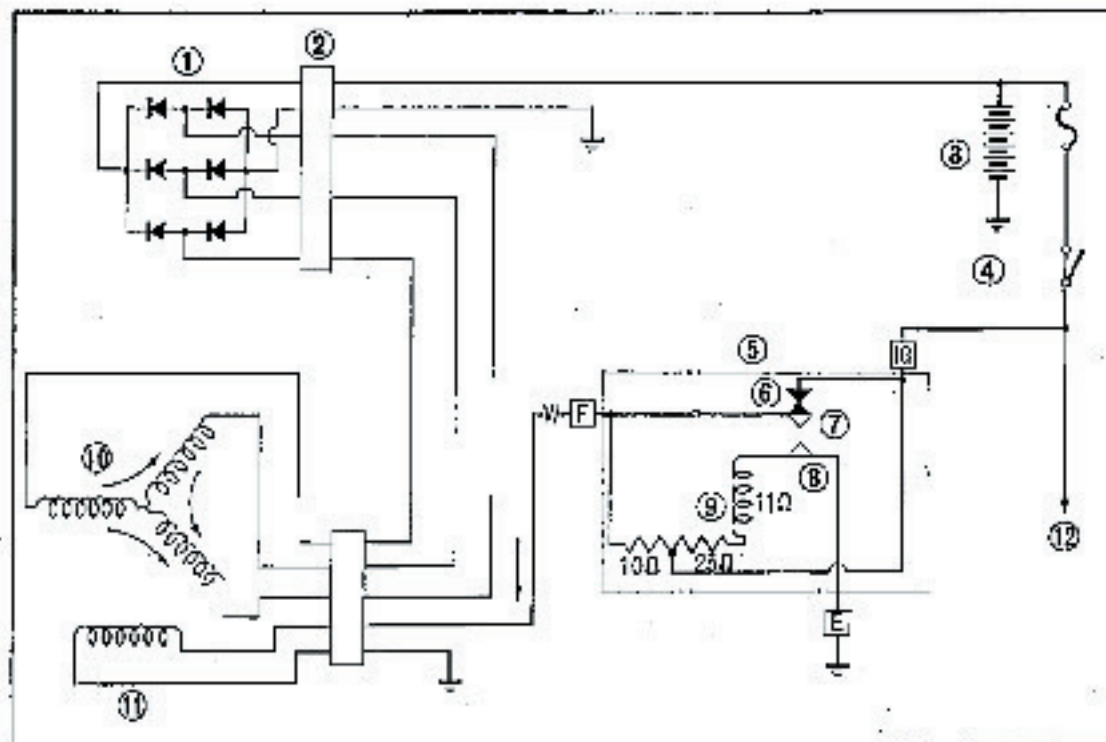


Fig. 352

- | | | |
|-----------------------|------------------|---------------|
| ① Silicon rectifier | ⑤ Regulator | ⑩ Rotor coil |
| ② Coupler | ⑥ Upper contact | ⑪ Stator coil |
| ③ Battery 12 V, 12 AH | ⑦ Moving contact | ⑫ Field coil |
| ④ Main switch | ⑧ Lower contact | ⑬ To load |

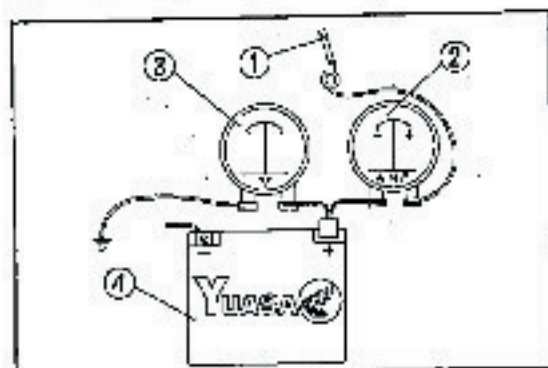


Fig. 283 ① Red/white lead ② Voltmeter
③ Ammeter ④ Battery

Charging Test

1. Perform the test using the ammeter and voltmeter.
2. The battery charge condition is determined by measuring the specific gravity of the battery electrolyte. If the specific gravity is lower than 1.26 (at 20°C/68°F), recharge the battery so that the specific gravity is up to 1.26~1.28 (at 20°C/68°F), and then perform the following test.
3. Disconnect the battery cable from the (+) terminal of the battery, and connect it to the (-) side of the ammeter.

Next, connect the (-) side of the ammeter to the (+) terminal of the battery.

Connect the (+) side of the voltmeter to the (+) end of the battery cable, and ground the (-) side of the voltmeter. (Fig. 283)

4. Start the engine, operate it under both the NIGHT RIDING and DAY RIDING conditions and check to see if the measured values conform to those specified in the table below.

If the values are less than those specified, adjust the regulator.

Note:

The charge condition of the battery may cause the charge current to vary slightly.

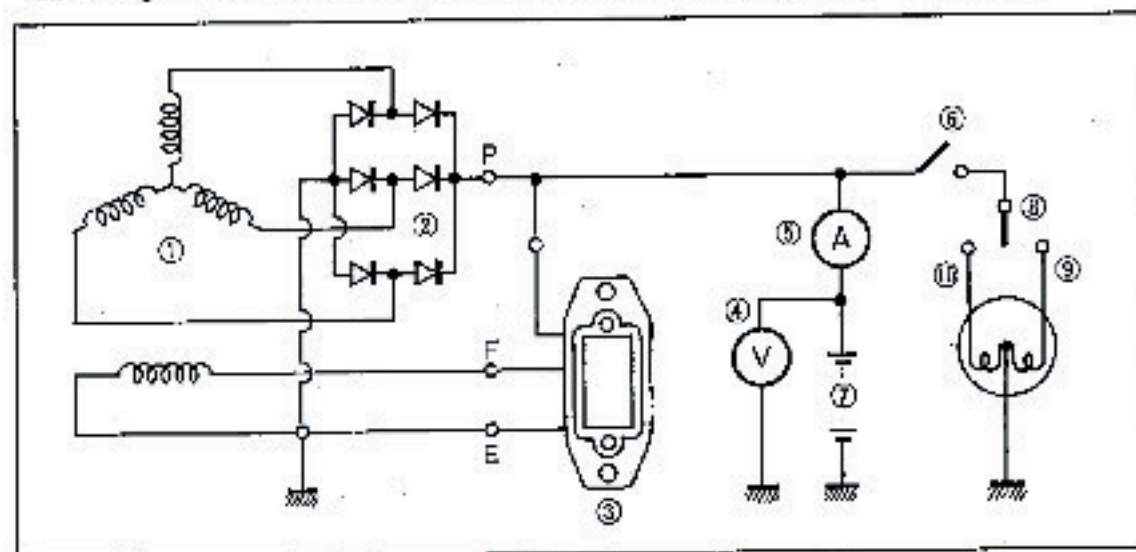


Fig. 284

- | | | |
|---------------------|--------------------|-----------------------|
| ① A.C. Generator | ④ Ammeter | ⑧ Headlight low beam |
| ② Silicon rectifier | ⑤ Main switch | ⑨ Headlight high beam |
| ③ Voltage regulator | ⑥ Battery | |
| ④ Voltmeter | ⑦ Headlight switch | |

Engine RPM	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000
Charging current (A)								
Day riding	6.5	0	2.4	1.8	1.0	1.0	0.8	0.6
Night riding	2-8	1	1	1	1	1	1	1
Battery terminal voltage (V)	12	12.4	13.2	14.5	14.5	14.6	14.5	14.5

A.C. Generator

Specifications

Type and manufacturer	LD 110-01, Hitachi
Output	150 W
Battery voltage	12 V
Polarity	⊖ ground
Charging speed	1000-8000 rpm.
Weight	3 kg (5.6 lbs)



Fig. 285 ① Rotor pulley ② Rotor

A. Disassembly

1. Remove the generator cover and pull the rotor out, using the rotor pulley (Special Tool No. 07933 2100000).
2. Loosen the three 6mm screws from inside the generator cover and remove the stator coil.
3. Loosen the three 8mm screws from the outside the generator cover and remove the field coil.

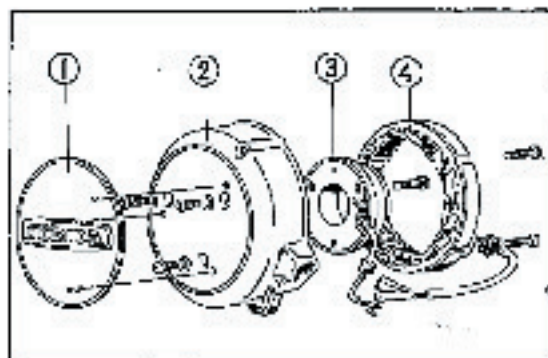


Fig. 286 ① Side cover ② Generator cover
③ Field coil ④ Stator coil

B. Inspection

1. Field coil resistance test
Check resistance between the two field coil leads (White, Green) using the Service Tester OHMS function.
STANDARD RESISTANCE VALUE:
4.9Ω ± 10%

NOTE: Test may be performed without removing the field coil.

2. Stator coil resistance test
 - a. Check resistance between any two of the three yellow alternator (stator) leads.
 - b. Leave either tester lead connected to the yellow wire. Attach another tester lead to the third yellow stator wire.

STANDARD RESISTANCE VALUE:

0.35Ω ± 10% at a.

0.35Ω ± 10% at b.

NOTE: Test may be performed without removing the stator.

TEST	RESULT	INDICATION
1 (field coil)	No reading or low reading	Defective
2 (stator) a or b	No reading or low reading	Defective

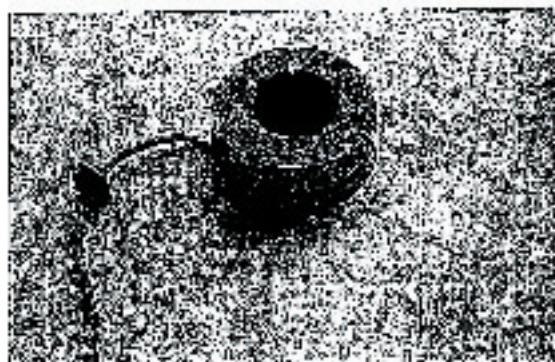


Fig. 287 Field coil



Fig. 288 Stator coil