



## 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 (11~14 ft-lbs)**

#### Note:

1. Exercise care not to drop the plug gasket.
2. Loose plug will not properly dissipate the heat and may result in engine malfunction.

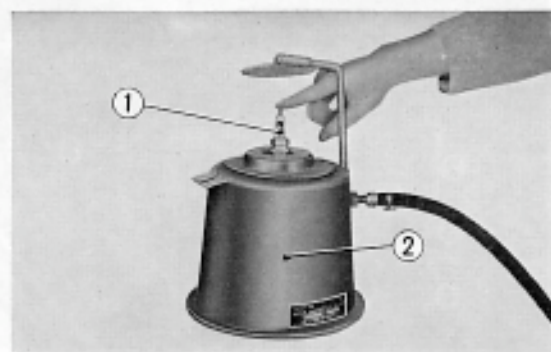


Fig. 276 ① Spark plug ② Spark plug cleaner

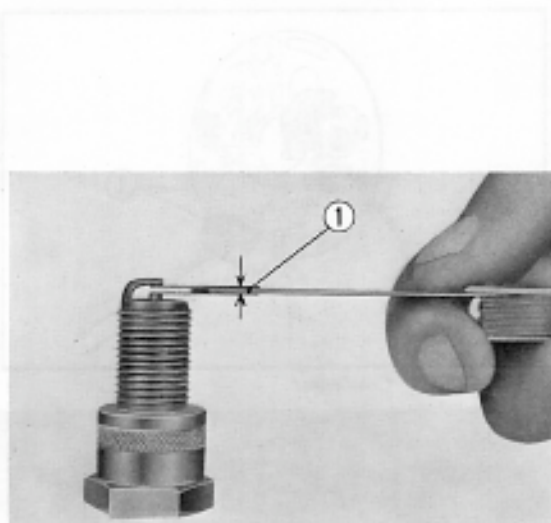


Fig. 277 ① Feeler gauge

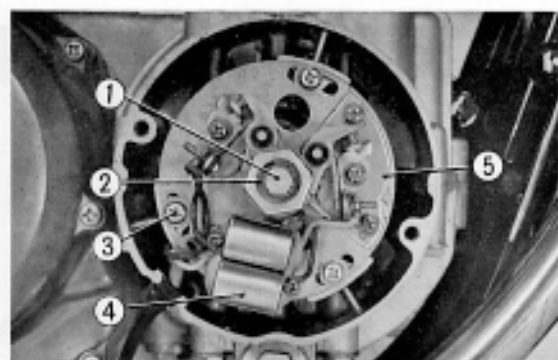


Fig. 278 ① 6mm bolt  
② Special washer  
③ Screws  
④ Condensers  
⑤ Contact breaker plate

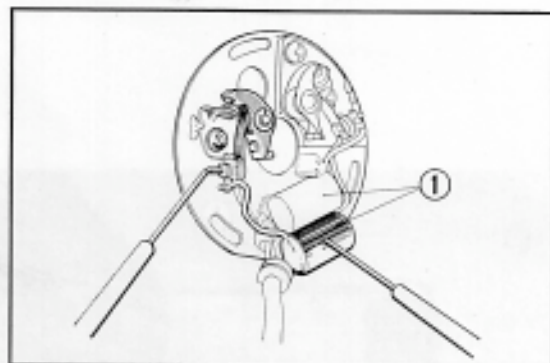


Fig. 279 ① Condenser

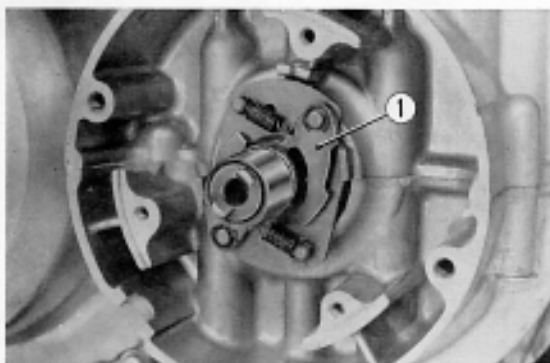


Fig. 280 ① Spark advancer

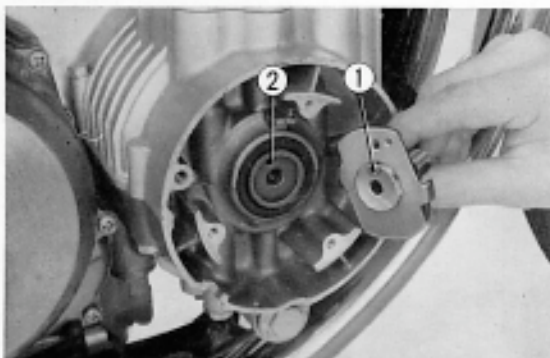


Fig. 281 ① Spark advancer ② Crankshaft

## 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. Unscrew the 6mm bolt, remove the special washer, loosen the base plate mounting screws, and then remove the contact breaker assembly.

### B. Inspection

- For adjustment of the breaker point and ignition timing, refer to the section "Maintenance Operations".
- Condenser  
Measure the capacitance of the condenser using the service tester.

Standard value:  $0.22 \sim 0.26 \mu\text{F}$

#### Note:

The points should be open when testing.

## Spark Advancer

### A. Disassembly

1. Remove the point cover and 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 assure that operation is smooth.
2. Check spring tension, and advancer pin wear.

Standard spring tension:

680~850 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 a constant voltage, the current from the battery to produce the exciter field is regulated to very close limits by the dual contact regulator. The output from the generator 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 13.5 V at the battery terminal), the current flows through the upper contact and 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 12 V, the field coil current is 1.6 A. This produces an output voltage of corresponding strength which is used to charge the battery.

When the battery voltage exceeds approximately 14.5 V, the armature coil pulls the armature away from the upper contacts and closes the lower contacts to insert a  $10\Omega$  resistance into the field coil circuit. The current to the field coil is thus reduced to 0.7 A 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.

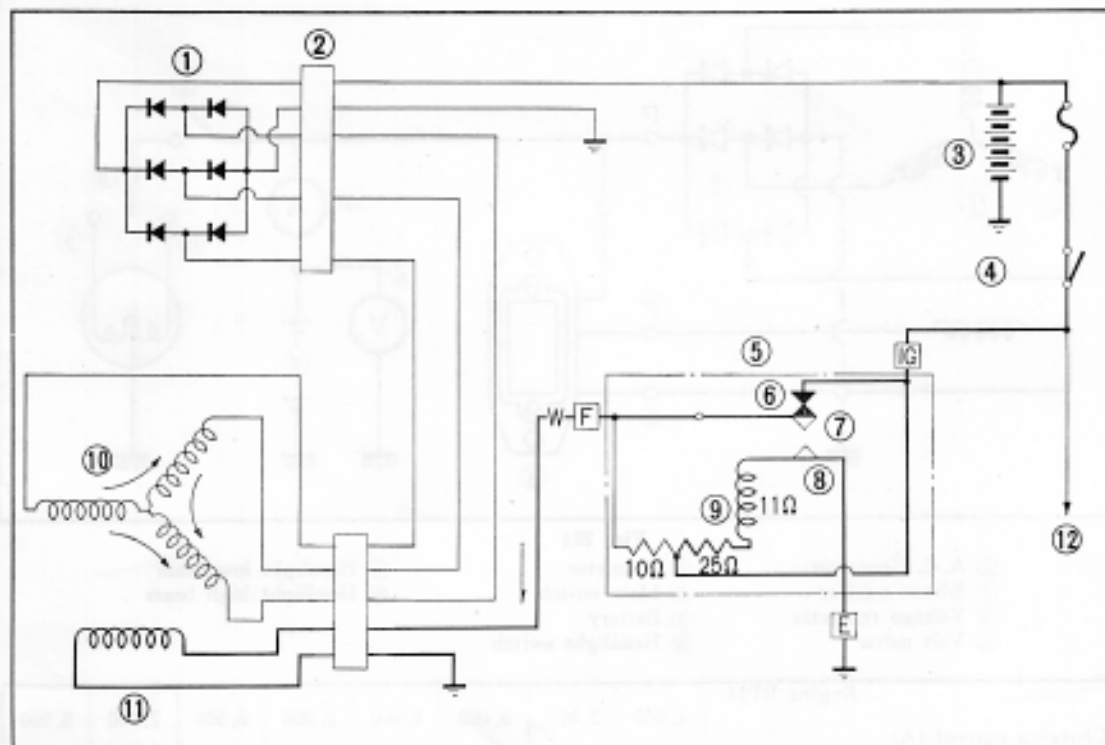


Fig. 282

① Silicon rectifier

② Coupler

③ Battery 12 V, 12 AH

④ Main switch

⑤ Regulator

⑥ Upper contact

⑦ Moving contact

⑧ Lower contact

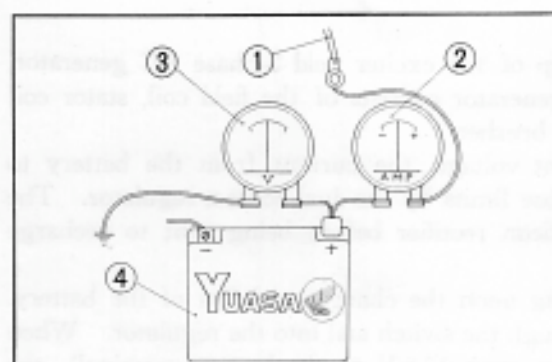
⑨ Relay coil

⑩ Stator coil

⑪ Field coil

⑫ To load





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

Next, connect the  $\ominus$  side of the ammeter to the  $\oplus$  terminal of the battery.

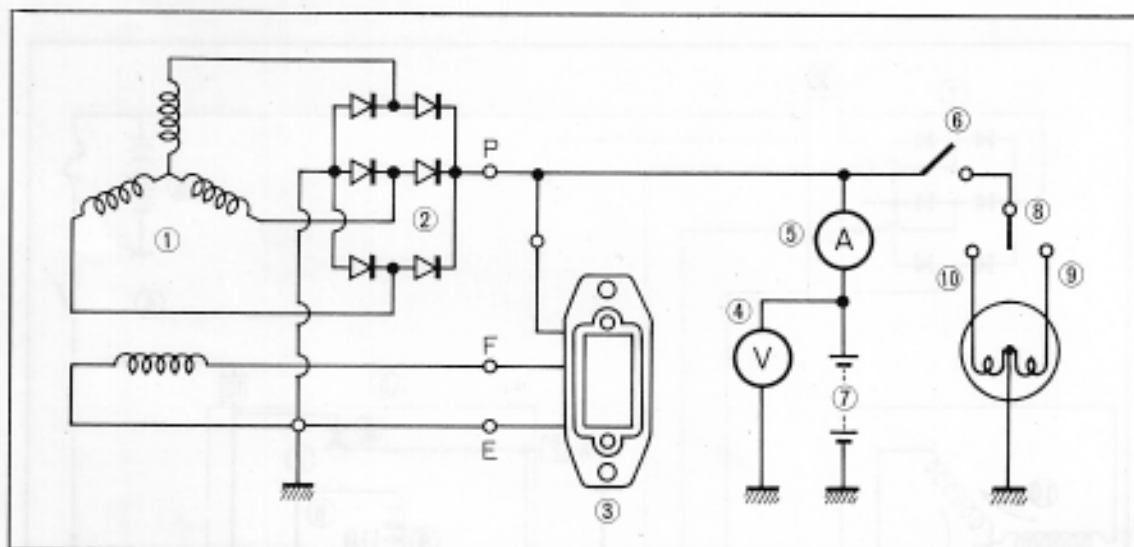
Connect the  $\oplus$  side of the voltmeter to the  $\oplus$  end of the battery cable, and ground the  $\ominus$  side of the voltmeter. (Fig. 282)

4. Start the engine, operate the engine 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   | ⑤ Ammeter          | ⑨ Headlight low beam  |
| ② Silicon rectifier | ⑥ Main switch      | ⑩ Headlight high beam |
| ③ Voltage regulator | ⑦ Battery          |                       |
| ④ Volt meter        | ⑧ 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	1.3	1.0	1.0	0.8	0.6
Night riding	2-3	1	1	1	1	1	1	1
Battery terminal voltage (v)	12	12.4	13.2	14.5	14.5	14.5	14.5	14.5



## A.C. Generator

### Specifications

Type and maker	LD 110-01, Hitachi
Output	150 W
Battery voltage	12 V
Polarity	⊖ ground
Charging speed	1000-9000 rpm
Weight	3 kg (6.6 lbs)

### A. Disassembly

1. Remove the generator cover and pull out the rotor using the rotor puller (special tool No. 07011-21601).
2. Unscrew the three 6mm screws from inside the generator cover and remove the stator coil.
3. Unscrew the three 6mm screws from the outside the generator cover and remove the field 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:  
 $4.9\Omega \pm 10\%$

NOTE: Test may be performed without removing 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 yellow wire. Attach other tester lead to third yellow stator wire.

STANDARD RESISTANCE VALUE:

$0.35\Omega \pm 10\%$  at a.

$0.35\Omega \pm 10\%$  at b.

NOTE: Test may be performed without removing stator.

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

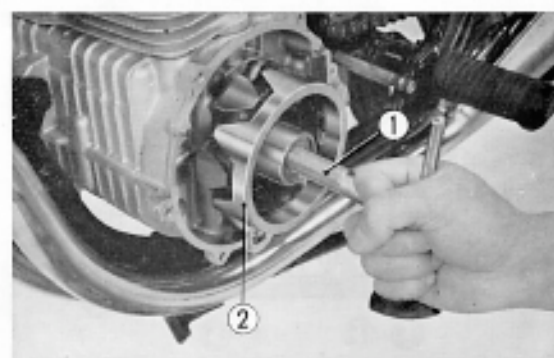


Fig. 285 ① Rotor puller ② Rotor

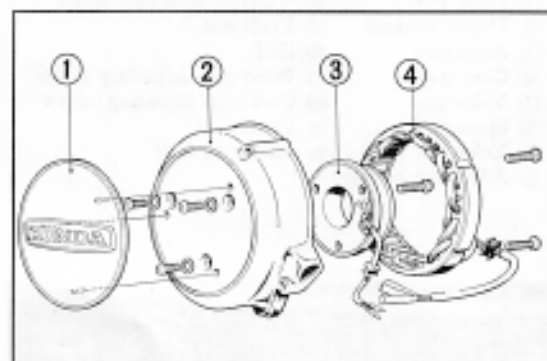


Fig. 286 ① Side cover ② Generator cover ③ Field coil ④ Stator coil

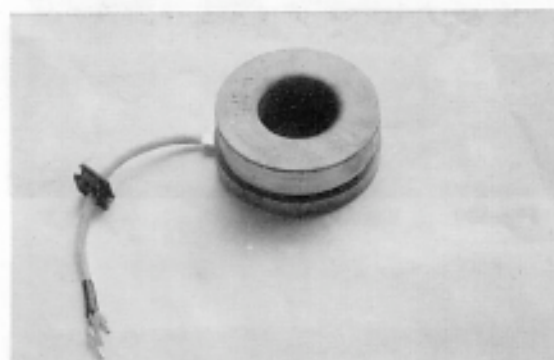


Fig. 287 Field coil

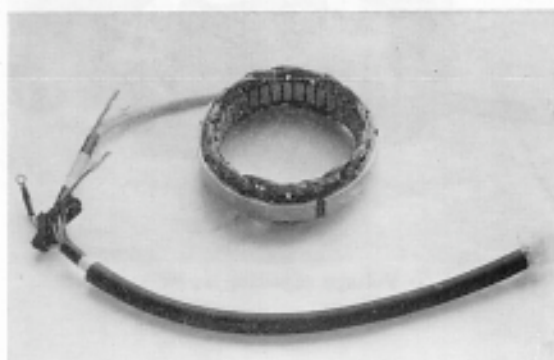


Fig. 288 Stator coil



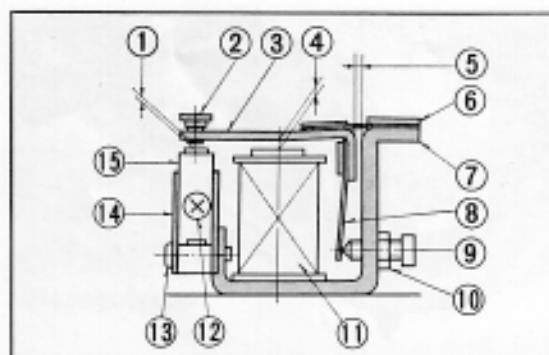


Fig. 289

- |                    |                             |
|--------------------|-----------------------------|
| ① Point gap        | ⑨ Voltage adjusting screw   |
| ② Upper contact    | ⑩ Lock nut                  |
| ③ Armature         | ⑪ Coil                      |
| ④ Core gap         | ⑫ Point gap adjusting screw |
| ⑤ Yoke gap         | ⑬ Core gap adjusting screw  |
| ⑥ Spring           | ⑭ Contact set               |
| ⑦ Yoke             | ⑮ Lower contact             |
| ⑧ Adjusting spring |                             |

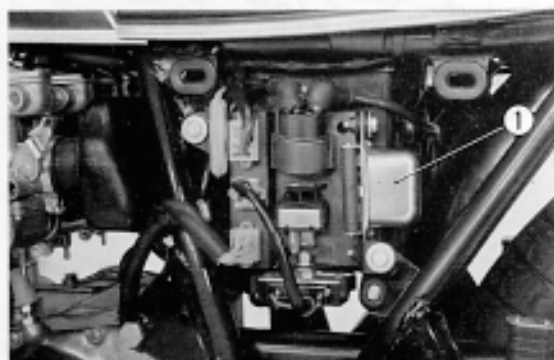


Fig. 290 ① Regulator

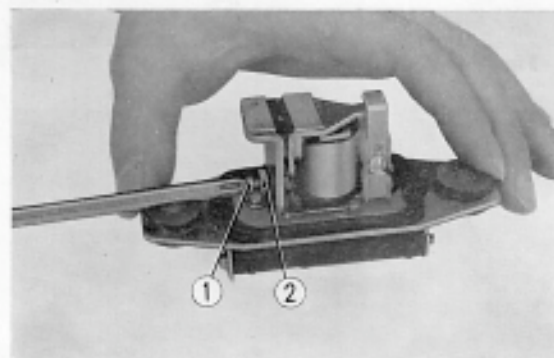


Fig. 291 ① Voltage adjusting screw  
② Lock nut

## Regulator

The regulator is a dual contact type. It maintains a constant voltage by placing the resistance circuit into the field coil circuit when the generating voltage rises to a certain value, and cutting out the resistance circuit when the voltage drops below a set limit.

### A. Disassembly

1. Disconnect the leads at the connectors and unscrew the two 6 mm regulator mounting bolts.
2. Unscrew the two screws and remove the regulator cover.

### B. Inspection and Adjustment

#### Regulating voltage adjustment

1. To adjust for low charge current or low battery voltage, loosen the lock nut on the voltage adjusting screw and turn the adjusting screw clockwise. When the regulator is set too high, turn the adjusting screw counterclockwise.
2. Upon completing the adjustment, recheck regulator performance after installation.

#### Core gap adjustment

Measure the core gap with a feeler gauge. If it requires adjustment, loosen the core gap adjusting screw and move the point body up or down.

Standard core gap value:

0.6~1.0 mm (0.02~0.40 in.)

#### Point gap adjustment

Measure the point gap with a feeler gauge. If it requires adjustment, loosen the point gap adjusting screw and move the lower point up or down. Standard point gap value:

0.2 mm (0.008 in.)

Note: If the points are pitted or fouled, polish with a #500~600 emery paper.

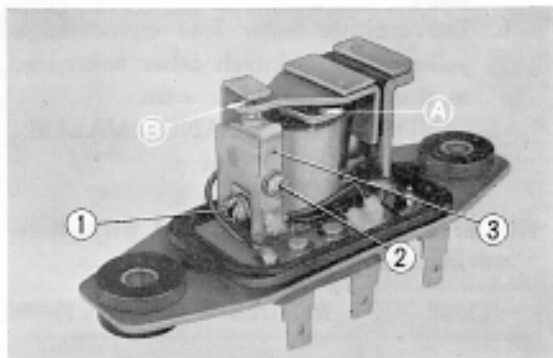


Fig. 292 ④ Core gap  
⑤ Point gap  
① Core gap adjusting screw  
② Point gap adjusting screw  
③ Lower point



## Silicon Rectifier

### Inspection

The condition of the silicon rectifier is tested by disconnecting the electrical connections and testing the rectifying function in both the normal and reverse directions. Continuity in the normal direction only indicates good condition. Continuity in both direction indicates a defective rectifier.

#### Note:

1. Do not use a megger for the test as the high voltage will damage the silicon diodes.
2. Observe the polarity of the battery. Connecting the battery terminals in reverse will shorten the life of the battery as well as causing a large current to flow through the electrical system, causing damage to the silicon rectifier, and also destroying the wire harness.
3. Do not operate the generator at a high RPM with the "P" terminal (red/white cord from the magnetic switch) of the silicon rectifier disconnected. The high voltage generated may damage the silicon rectifier.
4. When charging the battery mounted on the motorcycle from an external source with high charge rate such as a "quick charge", the wiring to the silicon rectifier should be disconnected at the coupler to prevent damage.

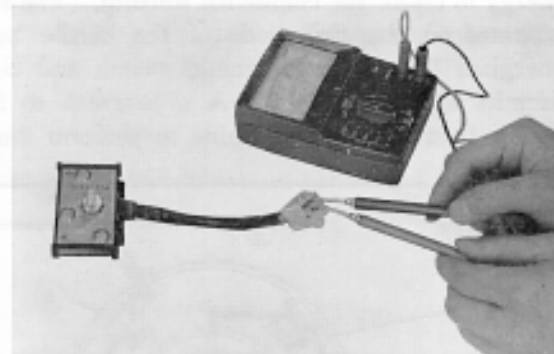


Fig. 293 Silicon rectifier inspection

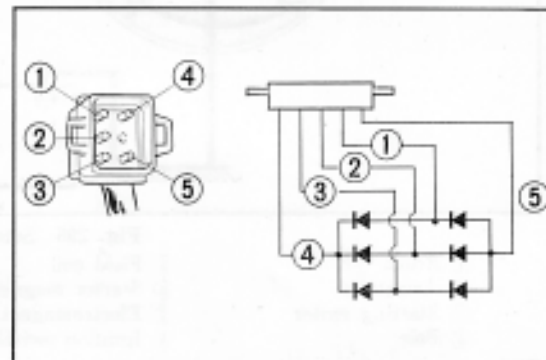


Fig. 294 ①, ②, ③ Yellow  
④ Yellow/White  
⑤ Green



#### 4. STARTING SYSTEM

The starter is a device which converts the electrical energy of the battery to the mechanical energy to crank the engine for starting. The starting circuit consists of a push button switch mounted on the right side of the handle bar which, when the starter button is pressed, energizes the starter magnetic switch and closes the contacts of the starter circuit. This permits approximately 120 A of current to flow from the battery to the starting motor, which then rotates the engine to perform the starting.

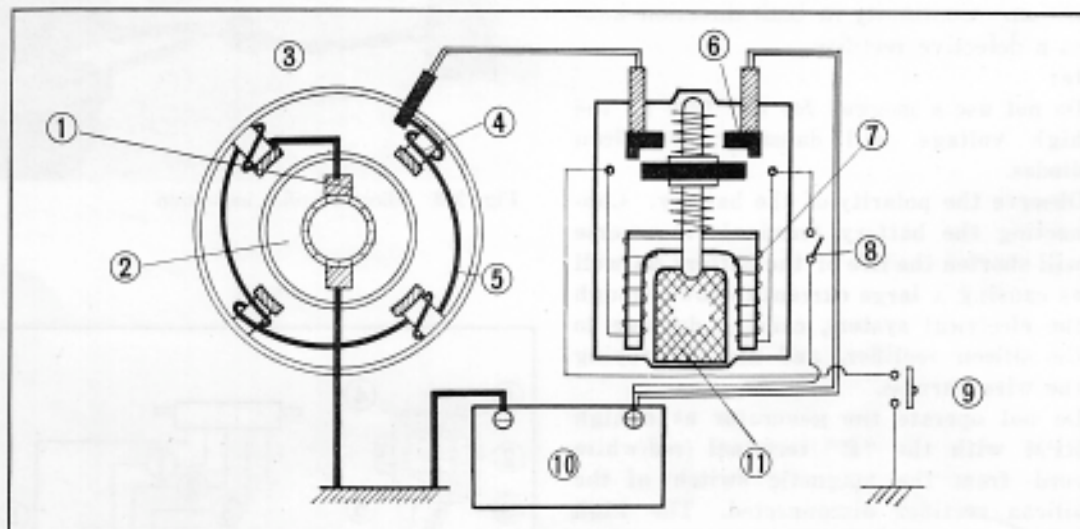


Fig. 295 Starting Circuit

- |                  |                           |                  |
|------------------|---------------------------|------------------|
| ① Brush          | ⑤ Field coil              | ⑨ Starter button |
| ② Armature       | ⑥ Starter magnetic switch | ⑩ Battery        |
| ③ Starting motor | ⑦ Electromagnet           | ⑪ Plunger        |
| ④ Pole           | ⑧ Ignition switch         |                  |

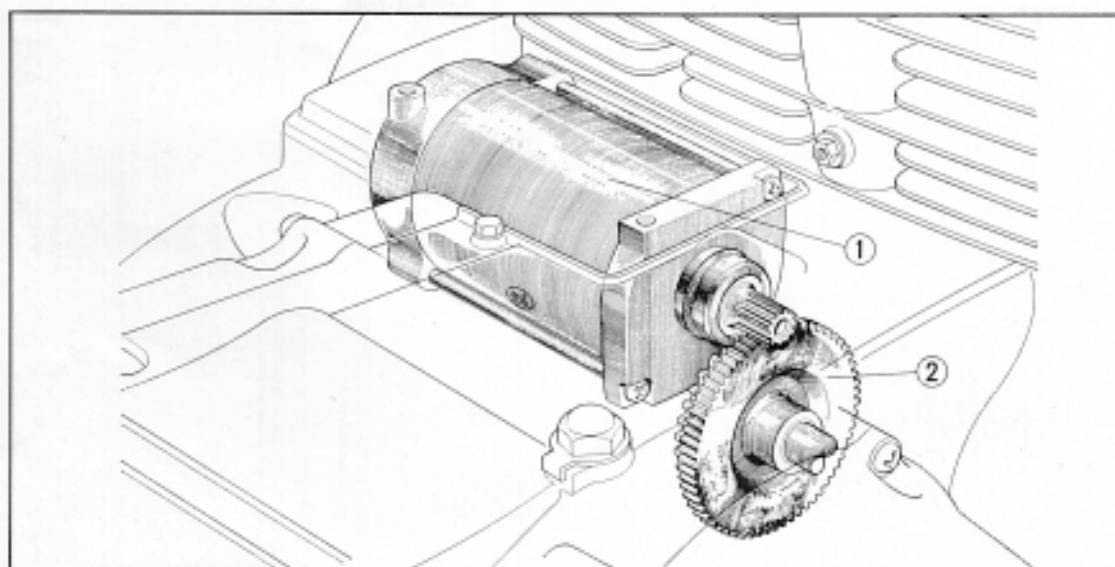


Fig. 296 Starting motor installation

- |                  |                          |
|------------------|--------------------------|
| ① Starting motor | ② Starter reduction gear |
|------------------|--------------------------|





### Starting Motor

The starting motor is mounted on the crankcase behind the cylinder and drives the crankshaft through the starting clutch.

#### Specifications

Rated voltage	12 V
Rated output	0.6 KW
Rated operation	Continuous for 30 seconds

	Without load	With load
Voltage	8.5 V	11 V
Amperage	35 A	120 A
Torque	—	0.12 kg-cm (0.86 ft-lbs)
Revolution	11000~ 20000 rpm	3200 rpm

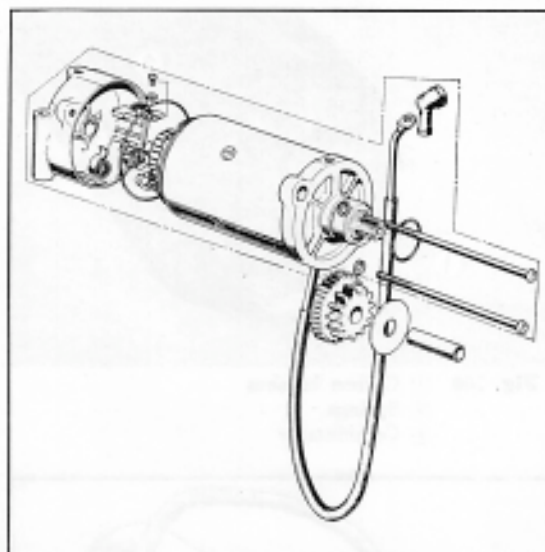


Fig. 297 Starting motor disassembly drawing

#### A. Disassembly

1. Disconnect the starting motor cable at the magnetic switch.
2. Remove the starting motor cover, left crankcase cover and unscrew the two 6 mm starting motor mounting bolts.
3. Starting motor can now be pulled out.
4. Unscrew the two 6 mm screws and remove the starting motor side cover.

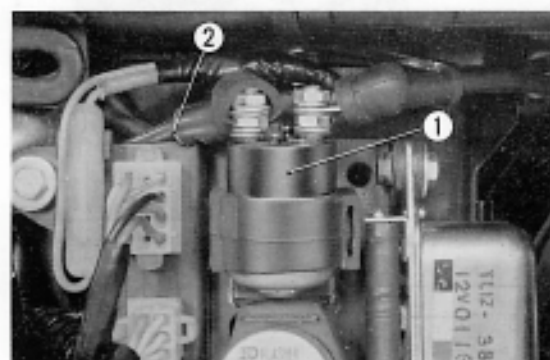


Fig. 298 ① Magnetic switch  
② Starting motor cable

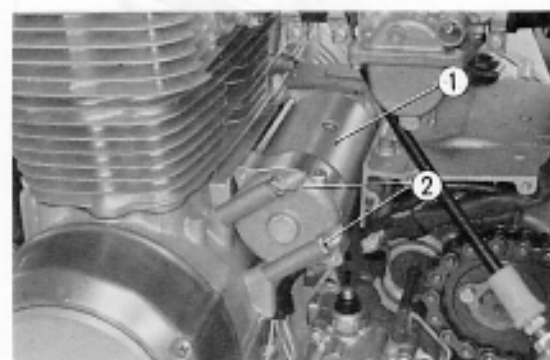


Fig. 299 ① Starting motor  
② 6 mm bolts