6. ELECTRICAL

1. GENERAL DESCRIPTION

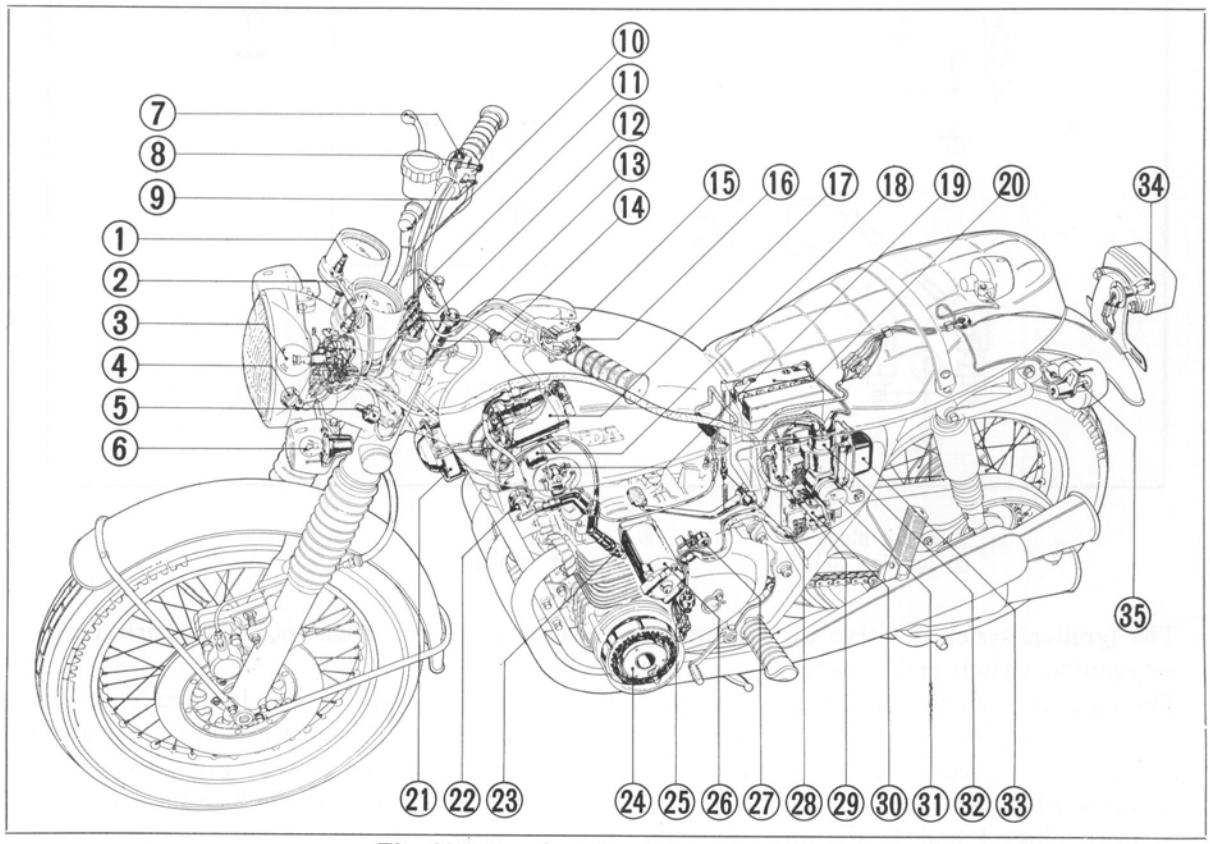

Fig. 269 Complete electrical system diagram

① Tachometer pilot lamp
② Speedometer pilot lamp
③ Head light
④ Position lamp (except USA type)
⑤ Front brake stop switch
⑥ Front winker lamp
⑦ Emergency switch
⑧ Head light switch
⑨ Starter switch
⑩ High beam pilot lamp
⑪ Neutral lamp
⑫ Oil warning lamp
⑬ Winker pilot lamp
⑭ Speed warning lamp (except USA type)
⑮ Winker switch
⑯ Horn button
⑰ Ignition coil
⑱ Speed warning system (except USA type)
⑲ Contact breaker assembly
⑳ Battery
㉑ Horn
㉒ Main switch
㉓ Spark plug
㉔ AC generator
㉕ Oil pressure switch
㉖ Starting motor
㉗ Neutral switch
㉘ Rear brake stop switch
㉙ Fuse holder
㉚ Silicon rectifier
㉛ Winker relay
㉜ Magnetic switch
㉝ Voltage regulator
㉞ Tail/stop lamp
㉟ Rear winker lamp

2. IGNITION SYSTEM

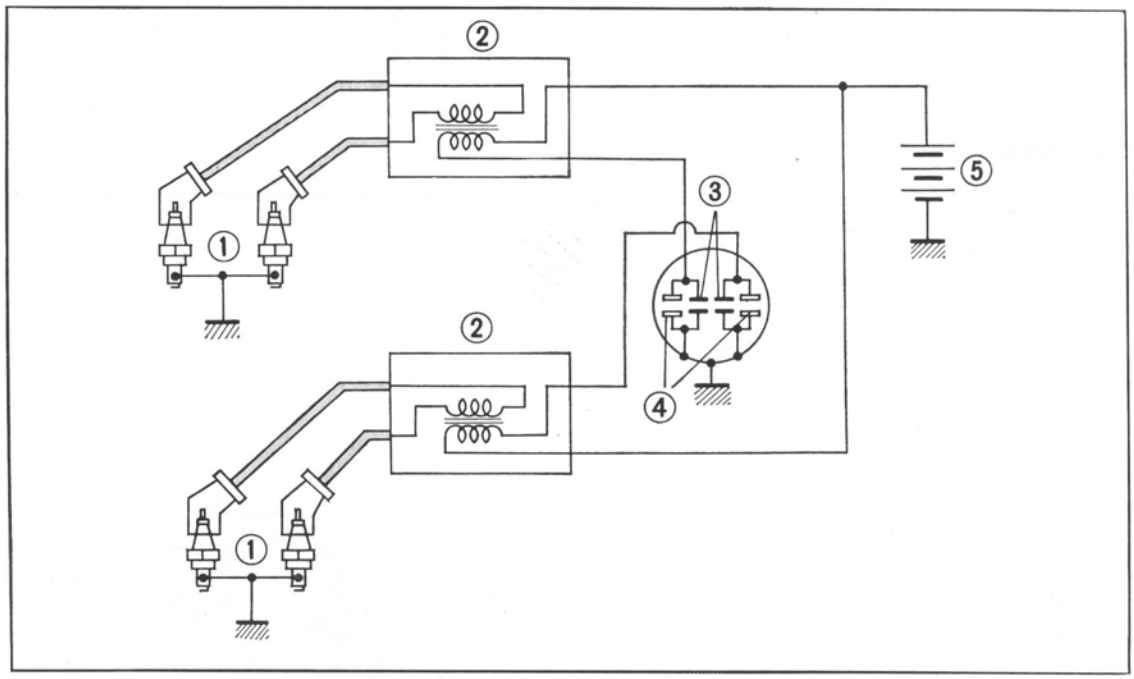

Fig. 270

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

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 circuit is completed by grounding through the contact breaker. 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 ES, DENSO X 22 ES 0. 6~0. 7 mm (0. 023~0. 027 in.)
Contact breaker Point gap Spring force	0. 3~0. 4 mm (0. 012~0. 016 in.) 680~850 g (1. 43~1. 87 lbs.)
Condenser Capacity Insulation resistance	0. 24 μF±10% Over 10 MΩ (1, 000 megger)
Spark advancer Start of advance (crankshaft speed) Full advance (crankshaft speed) Advance angle	 1, 150 rpm 2, 300~2, 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 13,000 turns of wire is wound on top of the primary coil. Each secondary coil has two high tension cords to two spark plugs.

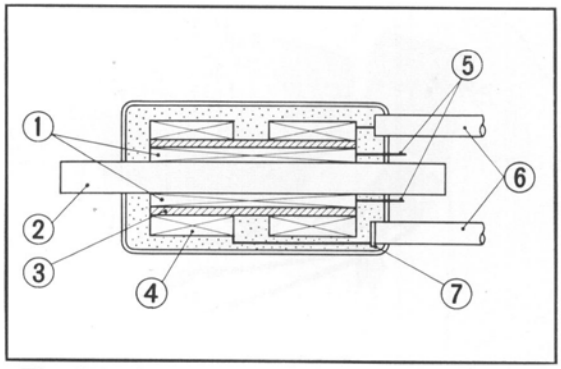

Fig. 271 ① Primary coil
② Iron core
③ Bobbin
④ Secondary coil
⑤ Primary terminal
⑥ High tension cord
⑦ High tension terminal

A. Disassembly

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

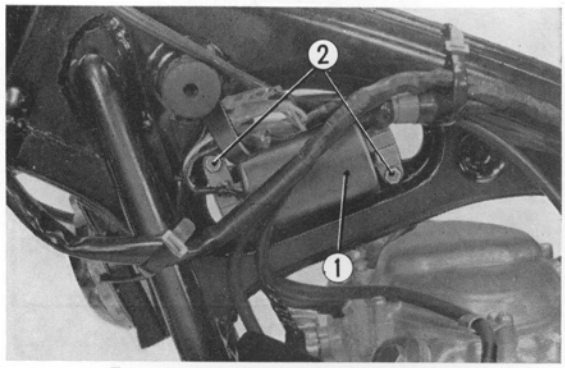

Fig. 272 ① Ignition coil ② Bolts

B. Inspection

1. Ignition coil continuity test
   Primary coils:
   Check for continuity between the terminals of the primary coil.
   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.

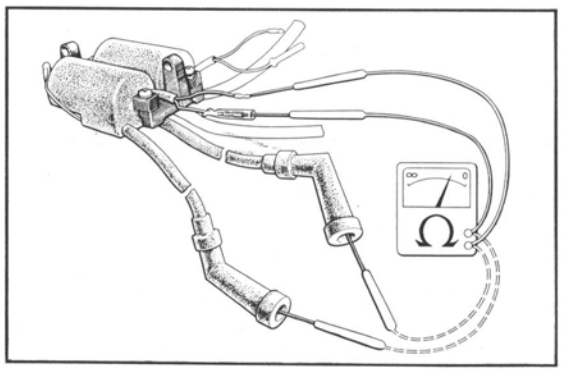

Fig. 273 Ignition coil continuity test

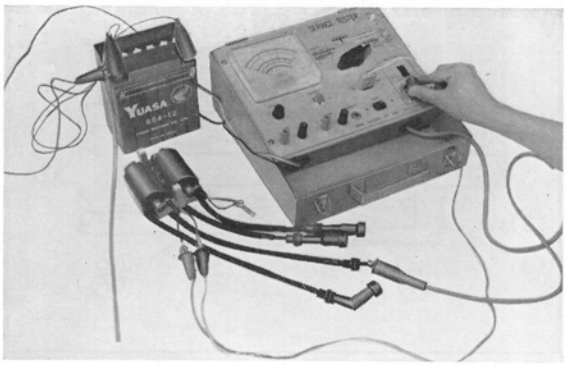

Fig. 274 Ignition coil performance test

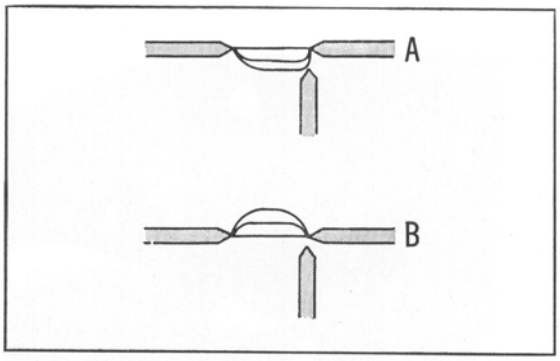

Fig. 275 Spark performance

Ignition coil perfomance 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 12 V 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 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 and then 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. 274, the connection to the primary coil is reversed.

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.**

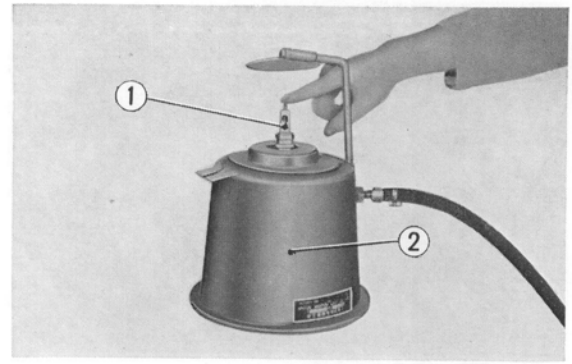

Fig. 276 ① Spark plug ② Spark plug cleaner

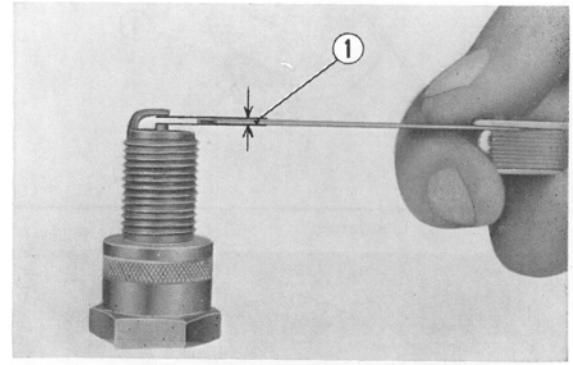

Fig. 277 ① Feeler gauge

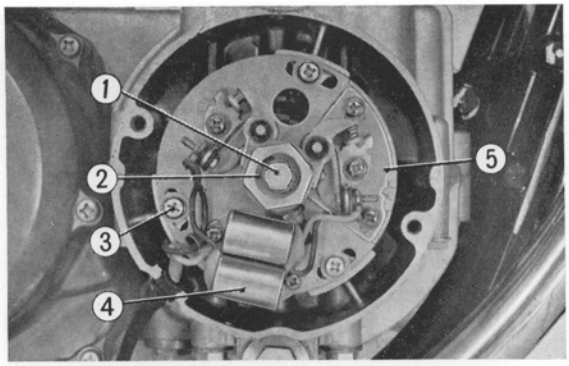

Fig. 278 ① 6mm bolt
② Special washer
③ Screws
④ Condensers
⑤ Contact breaker plate

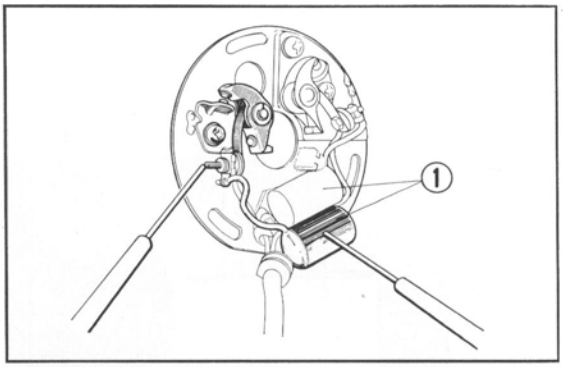

Fig. 279 ① Condenser

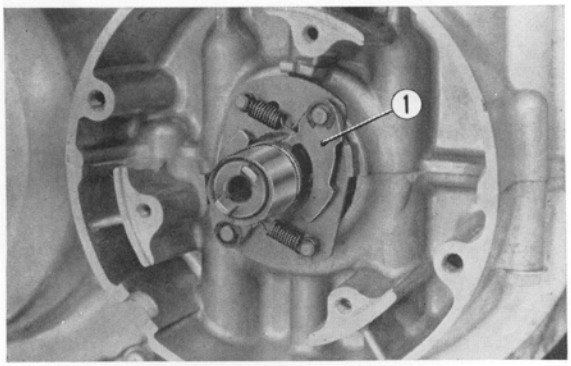

Fig. 280 ① Spark advancer

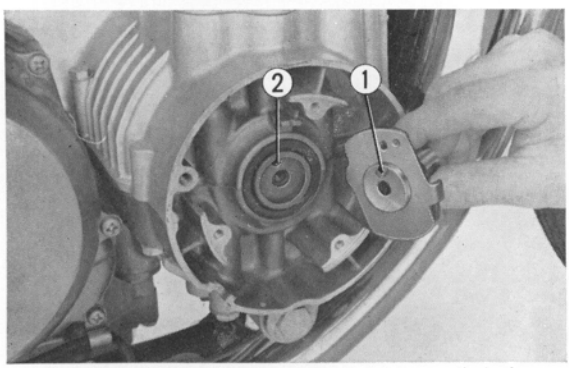

Fig. 281 ① Spark advancer ② Crankshaft

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: **0.22~0.26 μF**

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:
   680~850gr. (1.43~1.87lbs)

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 CB 500 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 Ω 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.

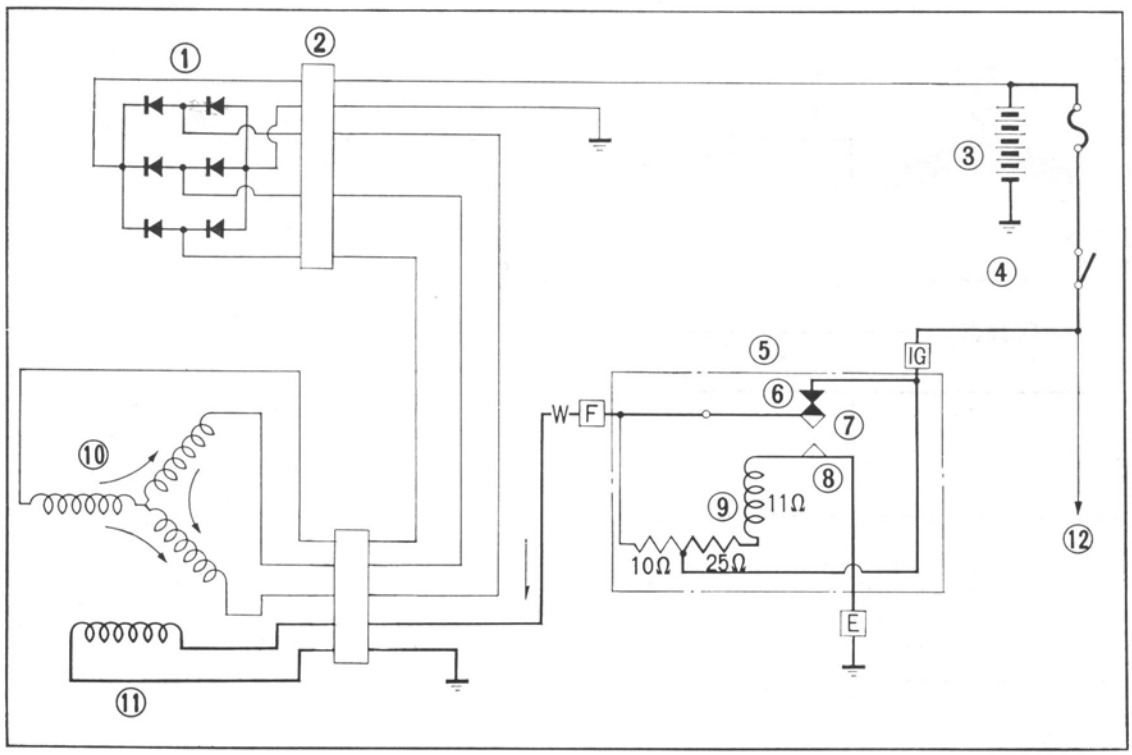

Fig. 282

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

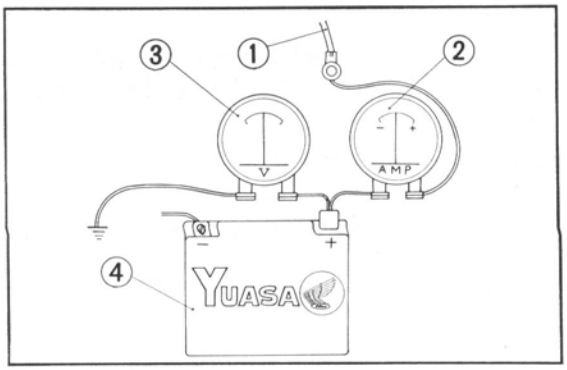

Fig. 283 ① Red/white lead ③ Voltmeter
② Ammeter ④ Battery

Charging Test

1. Perform the test using 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. 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.

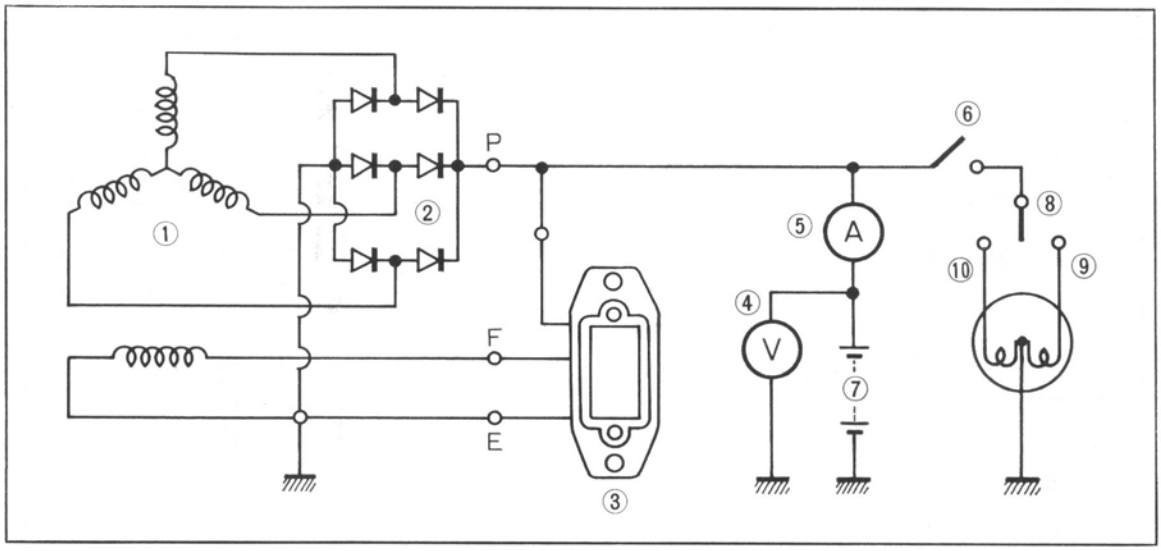

Fig. 284

① A. C. Generator
② Silicon rectifier
③ Voltage regulator
④ Volt meter
⑤ Ammeter
⑥ Main switch
⑦ Battery
⑧ Headlight switch
⑨ Headlight low beam
⑩ Headlight high beam

Engine RPM / Charging current (A)	1, 000	2, 000	3, 000	4, 000	5, 000	6, 000	7, 000	8, 000
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 6 mm screws from inside the generator cover and remove the stator coil.
3. Unscrew the three 6 mm screws from the outside the generator cover and remove the field coil.

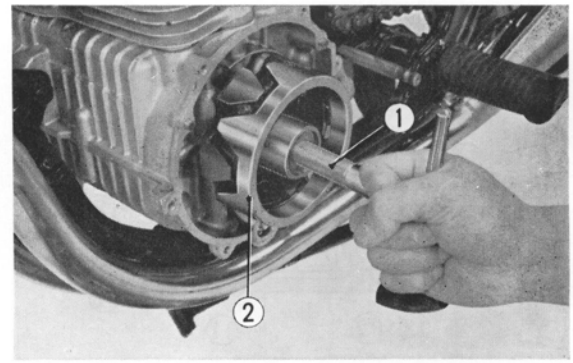

Fig. 285 ① Rotor puller ② Rotor

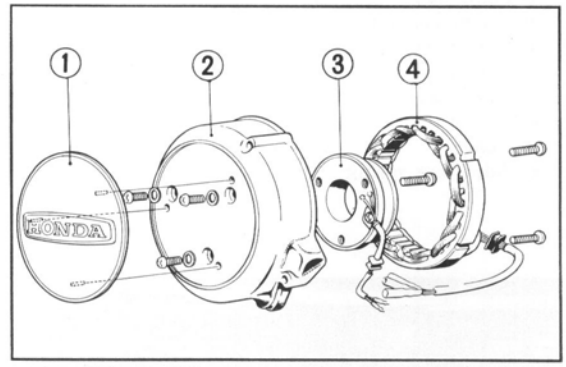

Fig. 286 ① Side cover ② Generator cover ③ Field coil ④ Stator coil

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 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:
   0.35Ω ±10% at a.
   0.35Ω ±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

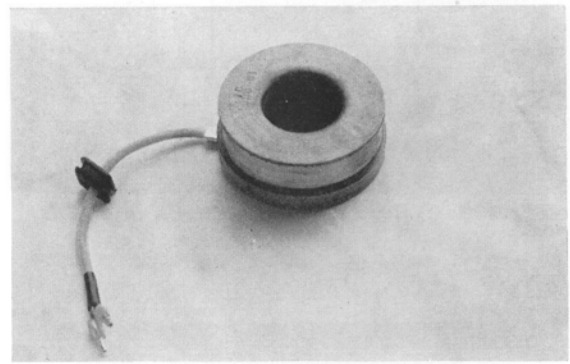

Fig. 287 Field coil

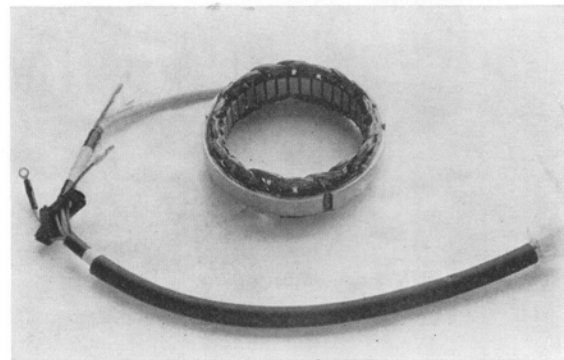

Fig. 288 Stator coil

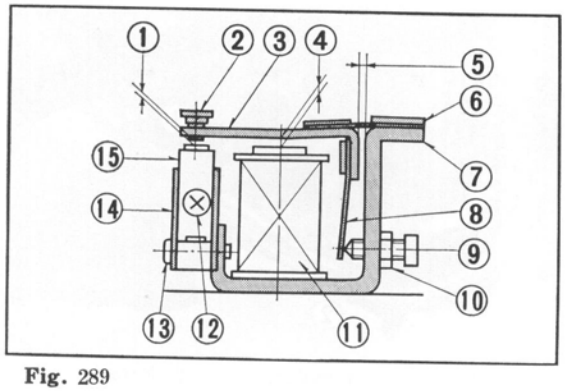

Fig. 289

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

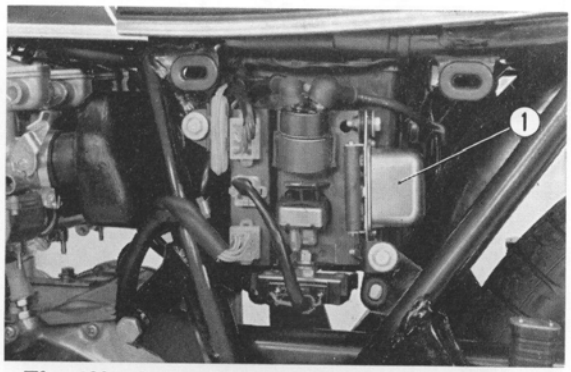

Fig. 290 ① Regulator

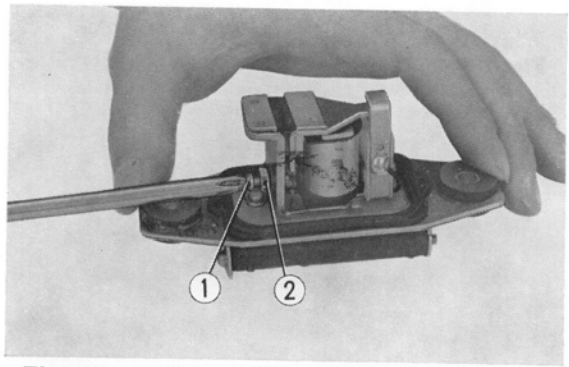

Fig. 291 ① Voltage adjusting screw
② Lock nut

Regulator

The regulator is a dual contact type. If 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.

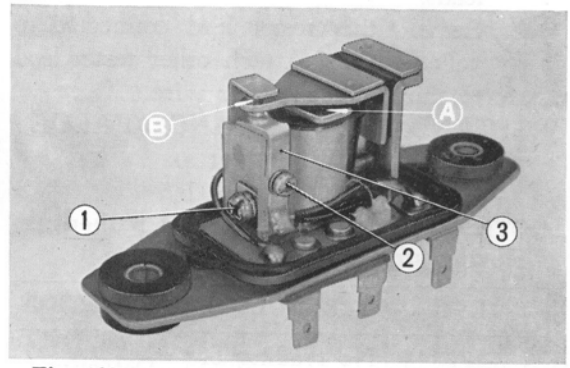

Fig. 292 Ⓐ Core gap
Ⓑ Point gap
① Core gap adjusting screw
② Point gap adjusting screw
③ Lower point

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.**

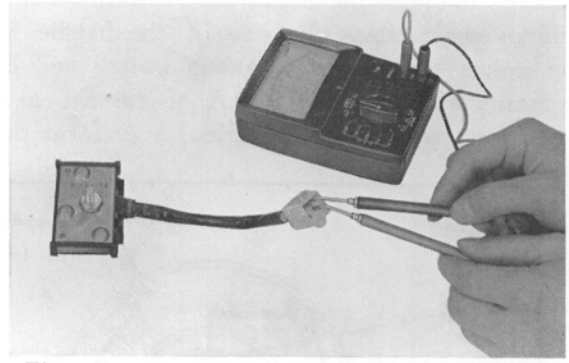

Fig. 293 Silicon rectifier inspection

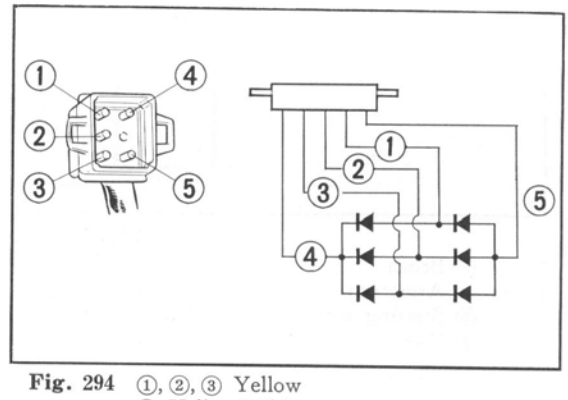

Fig. 294 ①, ②, ③ Yellow
④ Yellow/White
⑤ Green

4. STARTING SYSTEM

The starter is a device which converts the electrical energy of the battery to the mechnical 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.

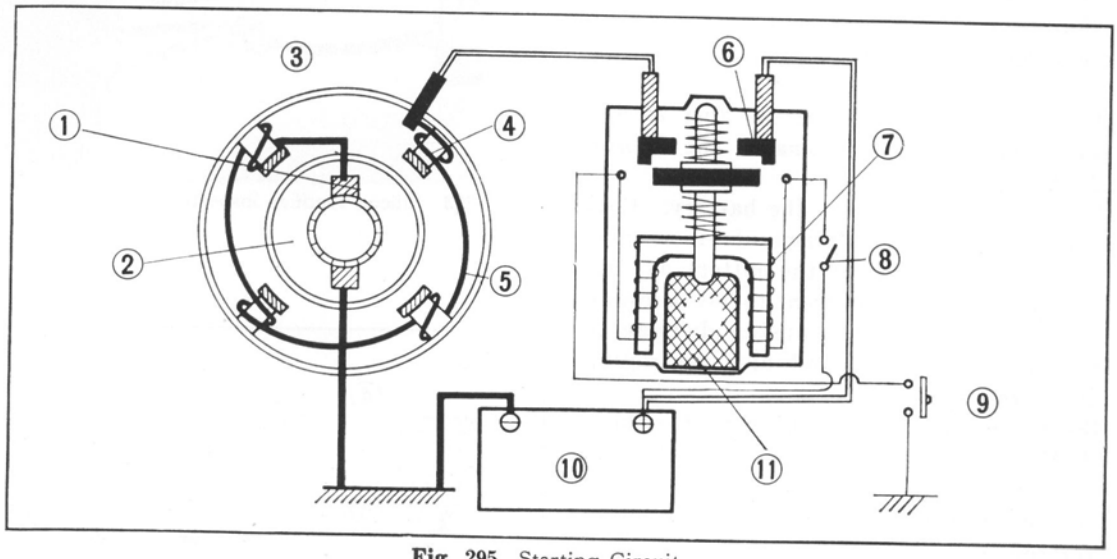

Fig. 295 Starting Circuit

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

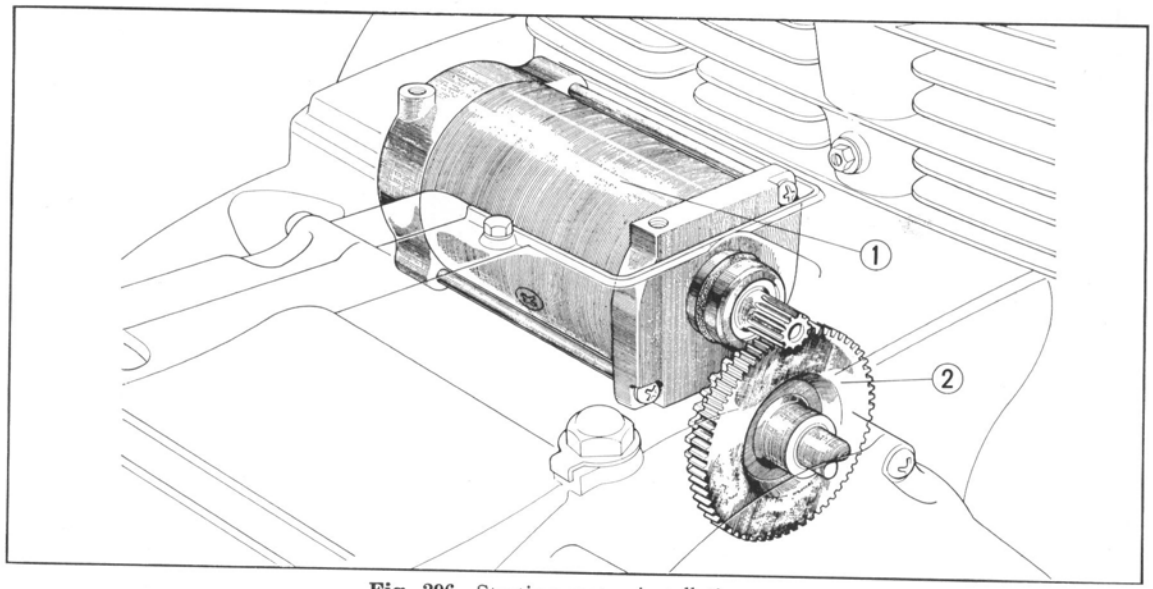

Fig. 296 Starting motor installation

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

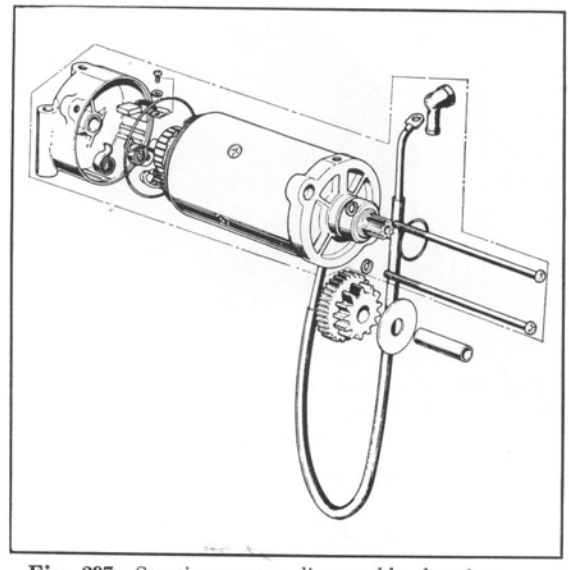

Fig. 297 Starting motor disassembly drawing

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.

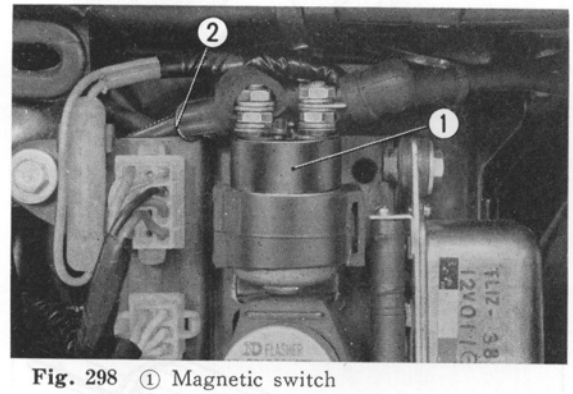

Fig. 298 ① Magnetic switch
② Starting motor cable

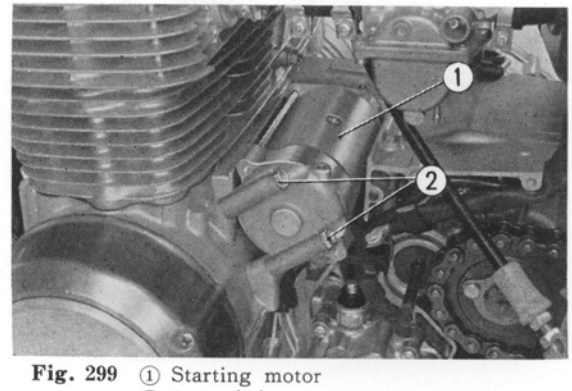

Fig. 299 ① Starting motor
② 6 mm bolts

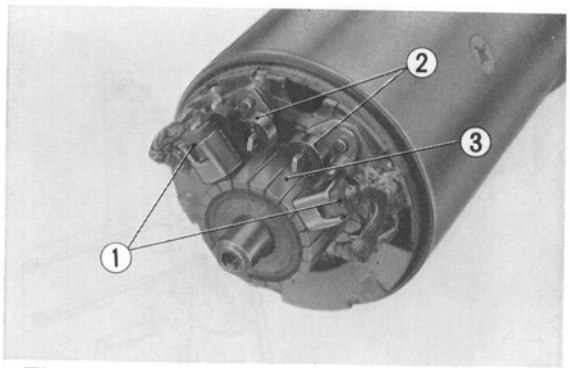

Fig. 300 ① Carbon brushes
② Springs
③ Commutator

B. Inspection

1. Carbon brush inspection
   Worn carbon brush, pitted or rough contact surface and weakened brush spring will cause starting difficulty, therefore, they should be replaced.
2. Commutator cleaning
   Dirty commutator will give poor starting motor performance.
   Surface of the commutator should be polished with a fine grade emery paper and completely washed before reassembly.

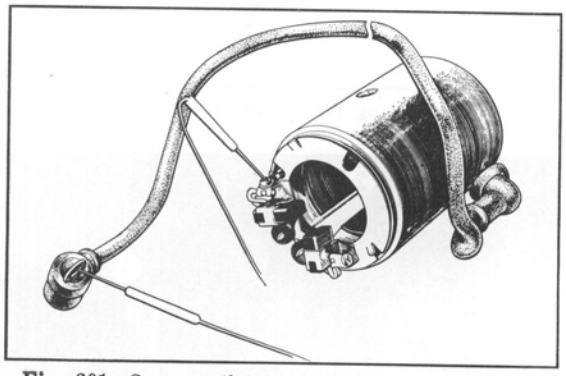

Fig. 301 Stator coil inspection

3. Stator coil inspection
   Check continuity between the brush wired to the stator coil and the starting motor cable. Lack of continuity indicates an open stator coil and should be replaced.

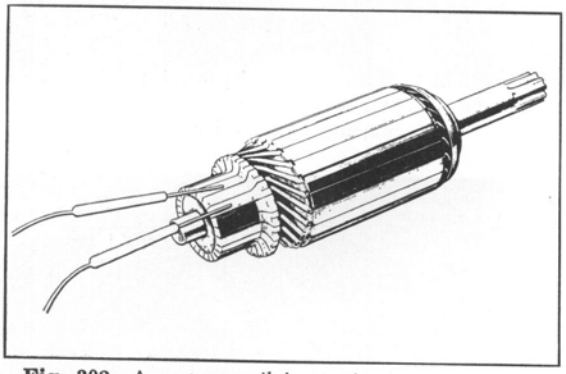

Fig. 302 Armature coil inspection

4. Armature coil inspection
   A grounded armature coil will render the starting motor inoperative.
   Perform a continuity test between the commutator and the core. A continuity condition indicates a grounded stator coil and should be replaced.

Starter Magnetic Switch

The starting motor requires a large current of approximately 100 A to operate. To minimize resistance, a large cable is used for wiring, also, a switch with heavy duty contacts is required. Sparking across the contacts will result, as well as resistance depending upon the contact pressure, when the contacts are opened suddenly to shut off the flow of large current. To cope with these conditions, a magnetic switch is used separately which is operated electrically by a small current through a push button starter switch.

Inspection

1. Primary coil continuity test.
   If there is no continuity, the primary coil is open.
   - If a clicking noise is heard when a 12 V battery is connected to the two leads of the coil, the primary coil is satisfactory.
2. After long use, the magnetic switch contacts will become pitted or burnt from the large current which flows across it, and gradually build up resistance which may prevent the current from flowing. Connect 12 V to the primary coil leads of the magnetic switch. If there is no continuity across the switch contacts, the switch is defective.

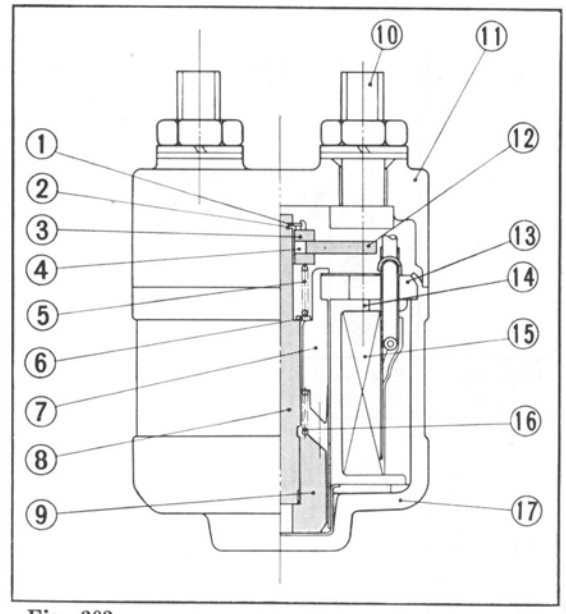

Fig. 303

① Stopper
② Stopper holder
③ Washer
④ Roller A
⑤ Contact spring
⑥ Flat washer
⑦ Plunger holder
⑧ Plunger shaft
⑨ Plunger
⑩ Contact bolt
⑪ Case
⑫ Contact plate
⑬ Yoke
⑭ Coil bobbin
⑮ Coil complete
⑯ Return spring
⑰ Body

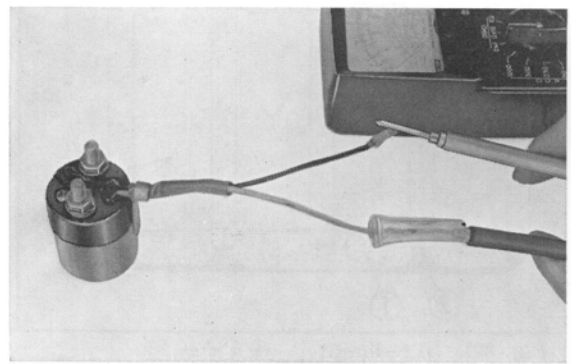

Fig. 304 Primary coil continuity test

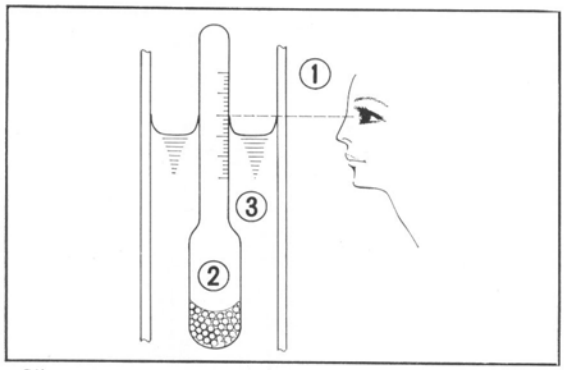

Fig. 305 ① Eye level ③ Electrolyte
② Hydrometer

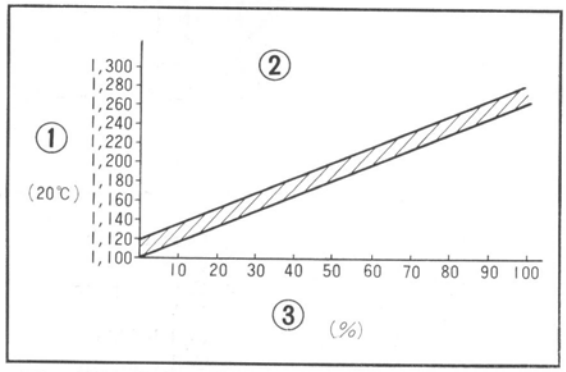

Fig. 306 ① Specific gravity
② Relation between specific gravity
③ Residual charge (%)

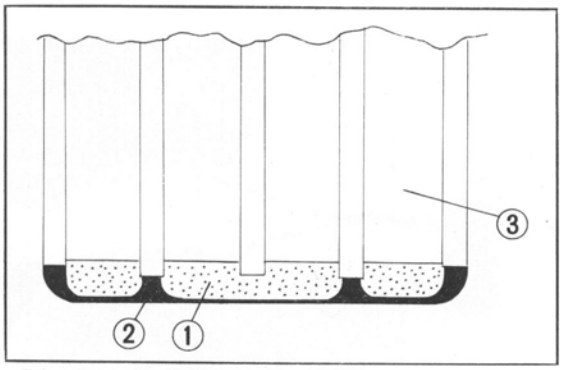

Fig. 307 ① Sediment ③ Plates
② Battery case

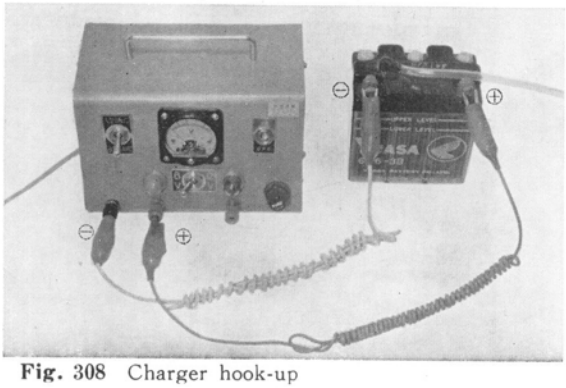

Fig. 308 Charger hook-up

Battery

A. Specification

Type	12N 12 A-4 A·1
Voltage	12 V
Capacity	12 AH

B. Specific gravity measurement

Battery electrolyte is measured with a bulb type hydrometer. When the specific gravity is below 1.200 (at 20°C), the battery should be recharged.

When making a reading, the hydrometer should be held vertical with the electrolyte liquid level, held at the eye level and the value on the floating scale read at point where the liquid separates from the stem of the float.

C. Inspection and replenishment

1. Electrolyte in each cell of the battery should be inspected every half month to a month, and distilled water added to bring the level to the upper mark whenever the electrolyte level is below the level mark.
2. Whenever there is rapid lowering of the electrolyte level, the charging system should be inspected.
3. Periodically measure the specific gravity. After adding distilled water, allow the battery to be charged and the electrolyte sufficiently agitated before making the measurement.
4. Primary battery troubles are due to corrosion around the connetors and terminals causing poor contact, separation of the battery paste, and sulfation (battery which is left in a discharged condition for a long period will have lead sulfate formed on the plates and recharging will not restore it to its original condition), therefore, the inspection should be performed periodically and thoroughly.

Note:
When sediment are formed at the bottom as shown in the figure, the battery should be replaced.

D. Battery charging

(Caution)

1. Refrain from charging the battery at a fast rate (quick charge) as it shortens battery life. When rapid charging is necessary, limit the charging rate to maximum of 2.0 A.
2. Hydrogen gas is generated during the charging process, therefore, keep fire away.
3. After battery charging is completed, wash the battery with water to remove spilled electrolyte, and apply grease to the terminals.

5. ELECTRICAL EQUIPMENTS

1. Main switch inspection
   With the switch in both ON and OFF positions check to see that the continuity conditions in the chart below are satisfied. The switch is defective if there is no continuity where specified, or if there is continuity where not specified.

		BAT	IG	TL_1	TL_2
Color of cords		Red	Black	Brown/white	Brown
Key position	OFF				
	1	○——	——○	○——	——○
	2	○——			——○

2. Front stop switch inspection
   Apply tester lead probes to the terminals of the front stop switch cords (black, green/yellow), operate brake lever and check for continuity.
   - Take into consideration the lever play **2~5 mm (0.08~0.2 in.)**.
     The stop light should come on when the brake lever travels beyond the play in the lever.
3. Rear stop switch inspection
   After making sure that the stop switch spring is disconnected, apply tester lead probes to the switch terminals (green/yellow, black cords) and check for continuity. When the brake pedal is depressed 20 mm (0.8 in.) at the front end of the pedal, the stop light should come on at this point.
   Adjustment.
   If the stop light is late in coming on, turn the adjuster nut clockwise, and if too early, turn counterclockwise.
4. Horn Inspection
   - Check for continuity across the horn lead terminals.
   - Alternate method is to connect the horn to a fully charged 12 V battery and check its operation.

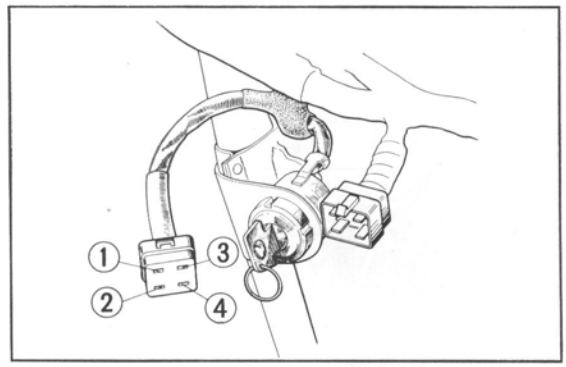

Fig. 309 ① Black ③ Brown ② Brown/white ④ Red

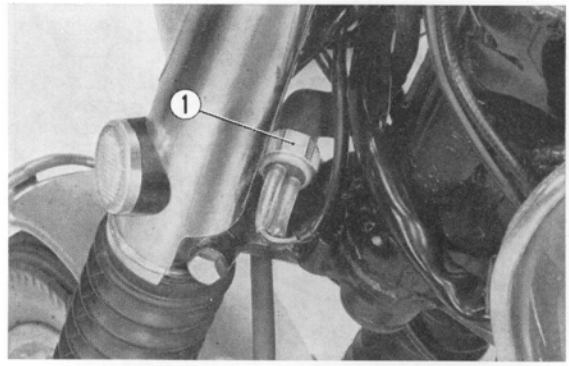

Fig. 310 Front stop switch inspection ① Front stop switch

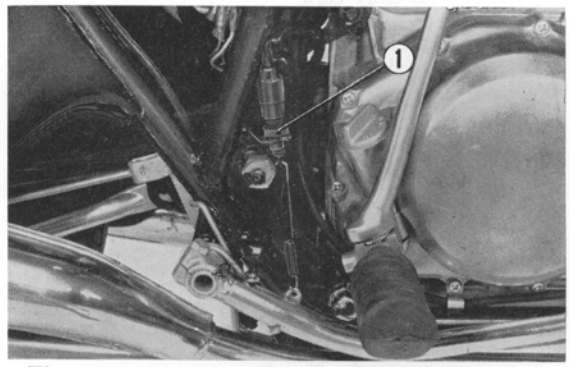

Fig. 311 ① Rear stop switch adjuster nut

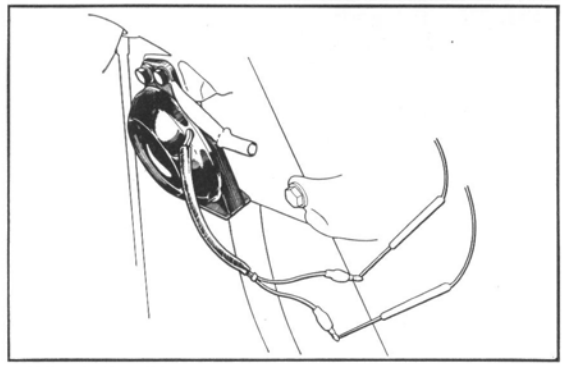

Fig. 312 Horn continuity test

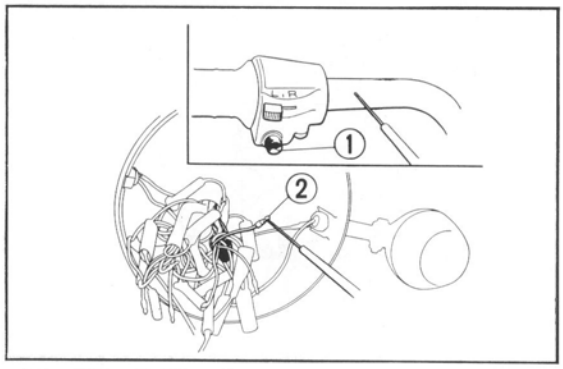

Fig. 313 ① Horn button
② Light green cord

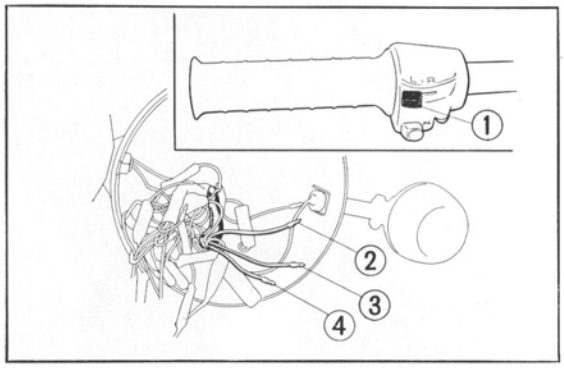

Fig. 314 ① Winker switch
② Light blue cord
③ Gray cord
④ Orange cord

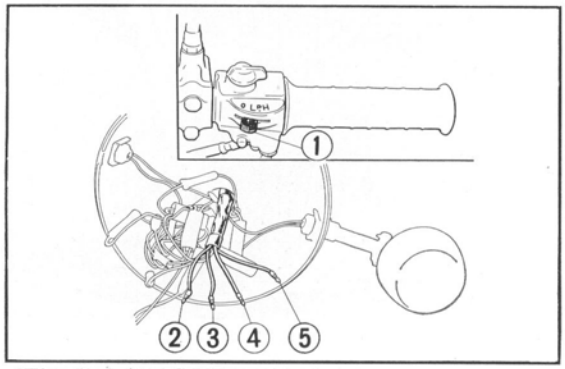

Fig. 315 ① Lighting switch
② Black cord
③ Blue cord
④ Brown/white cord
⑤ White cord

5. Horn button inspection
With the tester lead probes contact the light green cord terminal within the head light case and the the handle bar, and then press the horn button to check for continuity. If continuity exists, the horn button is satisfactory.

6. Winker switch inspection.
Disconnect the winker switch wiring within the head light case. Check continuity between the gray cord terminal and orange cord terminal (left winker), and between the gray cord terminal and light blue cord terminal (right winker) respectively of the winker switch. Continuity for the respective tests should exist according to the switch connections shown in the table below.

Knob	Blue cord	Gray cord	Orange cord
R	○—	—○	
OFF (center)			
L		○—	—○

7. Lighting switch inspection.
Inspect for broken wire and defective contact between the respective switch cords, using a tester. Continuity between the different cords should exist in accordance with the switching position table shown below. If continuity exists where not indicated the switch is defective.

Cord color		IG Black	HB Blue	TL Brown/white	LB White
ON	H	○—	—○—	—○	
	P	○—		—○	
	L	○—		—○—	—○
OFF					

8. Emergency switch and starter switch inspection

Inspect for broken wire and defective contact between the respective switch cords. Continuity between the different cords should exist in accordance with the switching position table shown below.
If continuity exist where not indicated, the switch is defective.

Emergency switch		
Cord color	Black	Black/white
ON	○	○
OFF		

Starter switch		
Cord color		Yellow/red
ON	○	○
OFF		

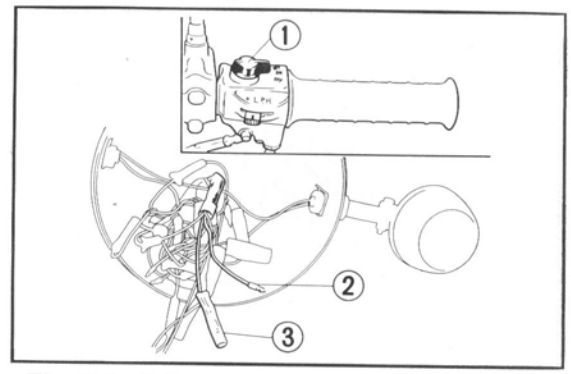

Fig. 316 ① Emergency switch ② Black ③ Black/white

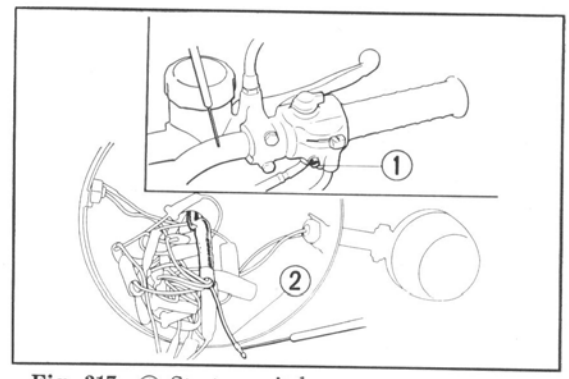

Fig. 317 ① Starter switch ② Yellow/red

9. Oil pressure switch inspection

Lubricating oil is supplied under pressure of **4~6 kg/cm²** (**56.8~85.3 lbs/in.²**) by the oil pump to various parts of engine. When the oil pressure drops, the oil supply becomes insufficient. The oil system is designed so that when the oil pressure drops below **0.5 kg/cm²** (**7 lbs/in.²**), the oil pressure switch operates and the warning lamp comes on.
Check the oil pressure switch for continuity without starting the engine and with the main switch on. If there is continuity, the switch is satisfactory. It is normal for the warning lamp to go out when the engine is started.
If the warning lamp does not go out after starting, and the pressure switch is satisfactory, the oil system should be inspected for trouble.

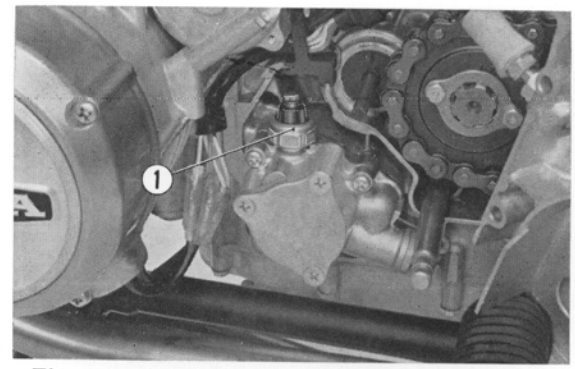

Fig. 318 ① Oil pressure switch

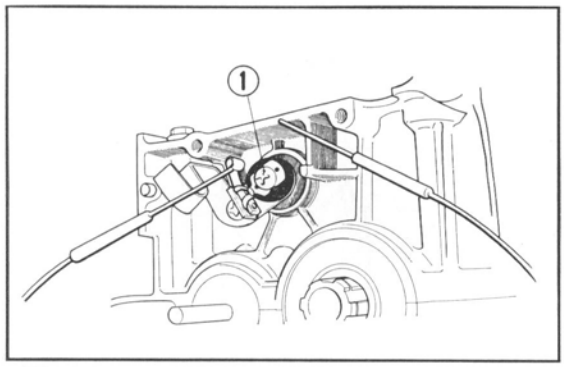

Fig. 319 Neutral switch inspection
① **Neutral switch**

10. Neutral switch inspection
The neutral switch is mounted on the left side of the upper crankcase. When the transmission is in neutral, the switch becomes grounded and the neutral pilot lamp comes on. Position the transmission in neutral, remove the left crankcase cover and check the continuity of the neutral switch. The switch is satisfactory if there is continuity.