

Fig. 4 ① Breaker arm slipper ② Cam

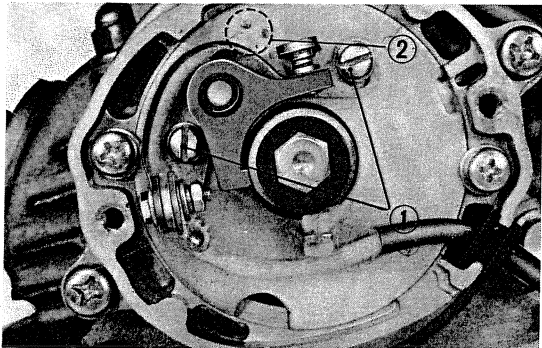


Fig. 5 ① Breaker arm retaining screws ② Adjusting position

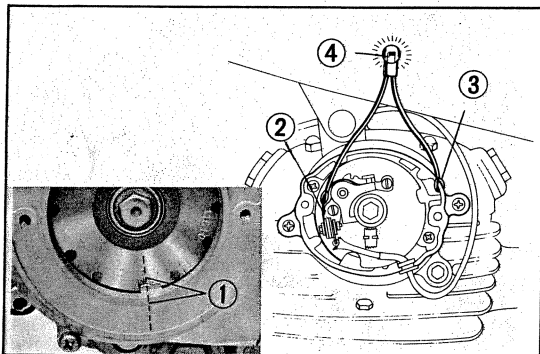


Fig. 6 ① "F" aligning mark ② Breaker arm spring
③ Ground to earth ④ Bulb

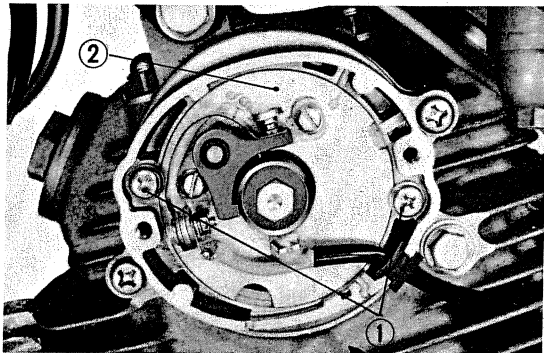


Fig. 7 ① Base plate mounting screw ② Base plate

3. BREAKER POINT AND IGNITION TIMING ADJUSTMENT

Adjust breaker point gap, before performing the ignition timing adjustment.

A. Breaker point gap

- 1) Remove the point and dynamo covers. Turn the crankshaft with the pin spanner provided as a service tool until the breaker arm slipper is on the highest point of cam lobe. (Fig. 4)
- 2) Measure point gap using a thickness gauge. The gap should be 0.3–0.4 mm (0.012–0.016 in.).
- 3) If it is necessary to make adjustment, loosen the breaker arm retaining screws, insert a screwdriver in the adjusting screw slot, and pry to adjust to the above value. Retighten the screw securely after setting is made. (Fig. 5)
- 4) Check the ignition. When the point contact surfaces are pitted or dirty, grind contacts with a point file or oil stone to remove transfer or contamination. If the metal build-up on the point is greater than 0.5 mm (0.02 in.), it should be replaced.

B. Ignition timing adjustment

- 1) Disconnect the contact breaker cord (green cord) at the connector and connect a 12V–3W lamp across the line. (Fig. 6)
- 2) Set the combination switch to "ON" position.
- 3) Turn the rotor slowly until the lamp goes out and check the position of "F" mark on the rotor against the index mark on the L. crankcase. If they are in line, the ignition timing is correct. (Fig. 6)
- 4) If ignition timing is required for adjustment, loosen two base plate mounting screws and move the base plate. Turning the base plate clockwise will retard the timing and counter clockwise will advance it. Tighten the screw after adjustment is made. (Fig. 7)

1. GENERATING SYSTEM

The charging system is an A.C. generator (magnetic single phase A.C. generator) which consists of the stator and rotor. The A.C. generator is rectified by the selenium rectifier and is used to charge the battery.

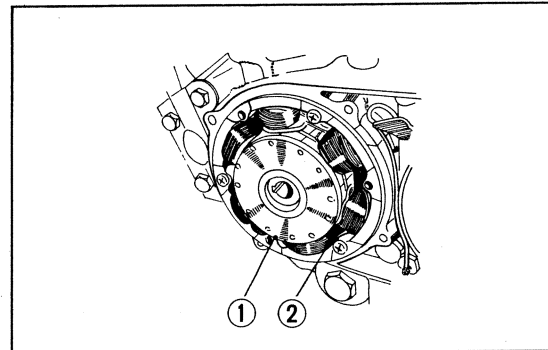


Fig. 148 ① Rotor ② Stator

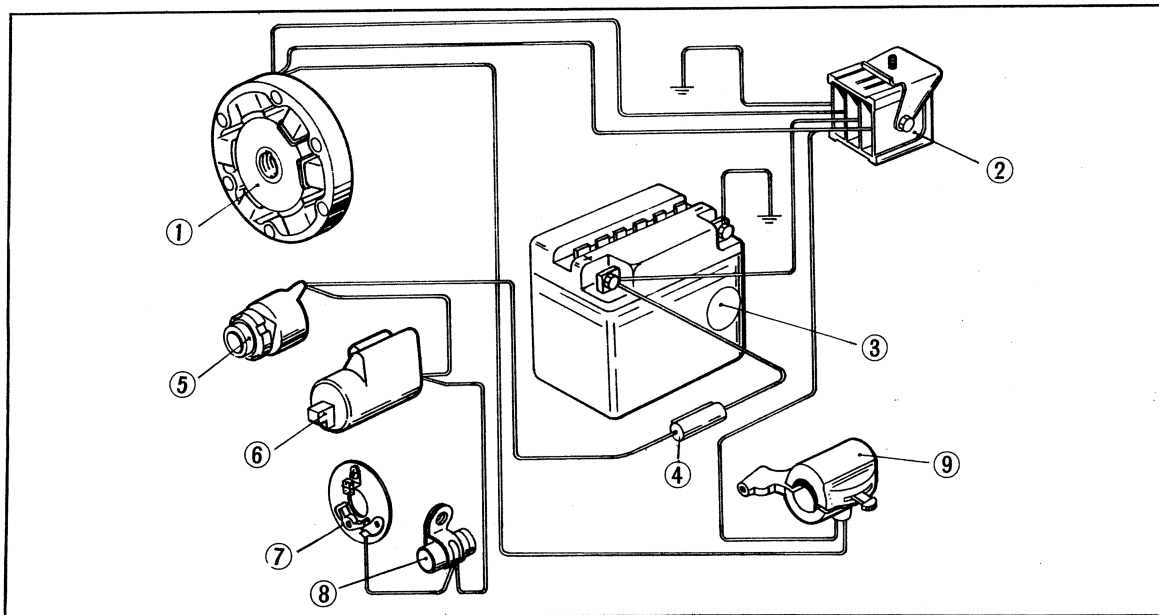


Fig. 149 ① A.C. generator ② Selenium rectifier ③ Battery ④ Fuse ⑤ Combination switch ⑥ Ignition coil ⑦ Brake points ⑧ Condenser ⑨ Lighting switch

A.G. GENERATING SPECIFICATIONS

Type & manufacturer	Rotary type. Kokusan Denki or Nippon Denki
Output	6V50W (at 5,000 rpm in night)
Battery voltage	6V-6A
Changing rpm	500-12,000 rpm
Polarity of ground	⊖
weight	1.45kg (3.20 lbs)

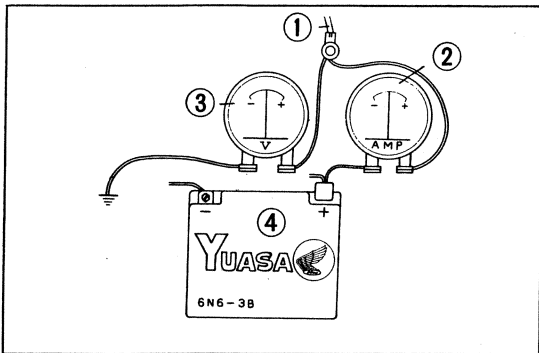


Fig. 150 Charging test
 ① Red/white wire harness ② Ammeter
 ③ Voltmeter ④ Battery

2. CHARGING SYSTEM

A. Charging test

- 1) Use the ammeter-and-voltmeter.
- 2) Measure the specific gravity of the electrolyte in battery. If it is below 1.26 (corrected to 20°C.), recharge the battery. Its normal value is 1.28 (corrected to 20°C) Perform the following test.
- 3) Disconnect the red/white wire harness terminal from the ⊕ terminal of the battery and connect it to the ⊖ terminal of the ammeter. Connect the ⊕ terminal of battery to the ⊖ terminal of ammeter. Connect the red/white wire harness to the ⊕ terminal of the voltmeter and ground the ⊖ terminal of the voltmeter to earth.
- 4) Start the engine and perform the following two tests in both the day and night operation mode. (Fig. 150)
- 5) Measure the battery voltage and charging current. If they are less than values shown in the following table, check or replace the stator, selenium rectifier, ignition coil and condenser with new one.

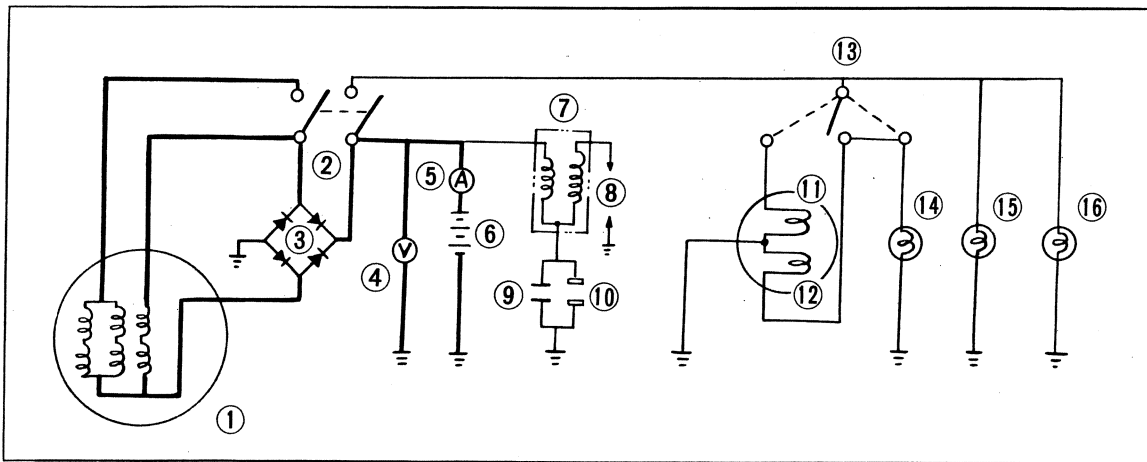


Fig. 151 ① A.C. generator ② Lighting switch ③ Selenium rectifier ④ Voltage meter ⑤ Ammeter ⑥ Battery 6V-6AH ⑦ Ignition coil ⑧ Spark plug ⑨ Condenser ⑩ Contact breaker ⑪ Headlight high beam ⑫ Headlight low beam ⑬ Dimmer switch ⑭ Highbeam pilot light ⑮ Tail/stop light ⑯ Meter light

	Lighting switch		Dimmer switch	Initial charging r.p.m.		5000 r.p.m.	
				r.p.m.	Battery Voltage	Charging current	Battery Voltage
100cc Series	Day	OFF	OFF	1000 r.p.m.	6.8 V	1.3 A	7.8 V
		ON	HB (high beam)	3500 r.p.m.	6.8 V	1.3 A	7.8 V
	Night	ON	LB (low beam)	2200 r.p.m.	6.8 V	1.3 A	7.2 V
125cc Series	Dry	OFF	OFF	1000 r.p.m.	6.8 V	1.7 A	7.9 V
	Night	ON	LB (low beam)	2000 r.p.m.	6.8 V	1.3 A	7.8 V

B. Inspection

1) Stator coil test

Perform a continuity test on the three stator coil harnesses (orange, white, yellow) with a tester to determine the condition of the coil and also inspect for exterior damage. Replace with new one if there is not continuity or damaged. (Fig. 152)

Note:

Do not test on a metal bench.

2) Selenium rectifier test

Check the continuity in the normal direction and also in the reverse direction by applying tester lead probes to green and pink leads, pink and red/white leads, green and yellow leads, and yellow and red/white leads respectively and alternately as shown in the figure. The rectifier is in good condition if continuity exists only in one direction. If there is continuity in both directions or no continuity in either direction when tested, the rectifier is defective and should be changed. (Fig. 153-154)



Fig. 152 Stator coil test
① Stator coil

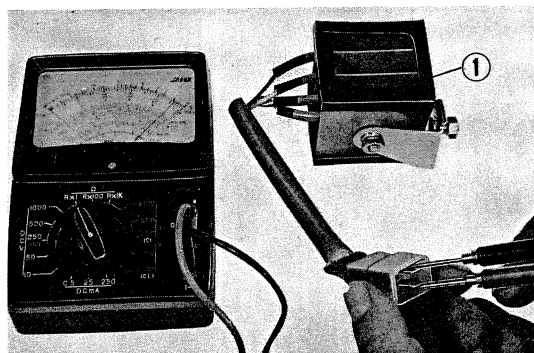


Fig. 153 Selenium rectifier continuity test
① Selenium rectifier

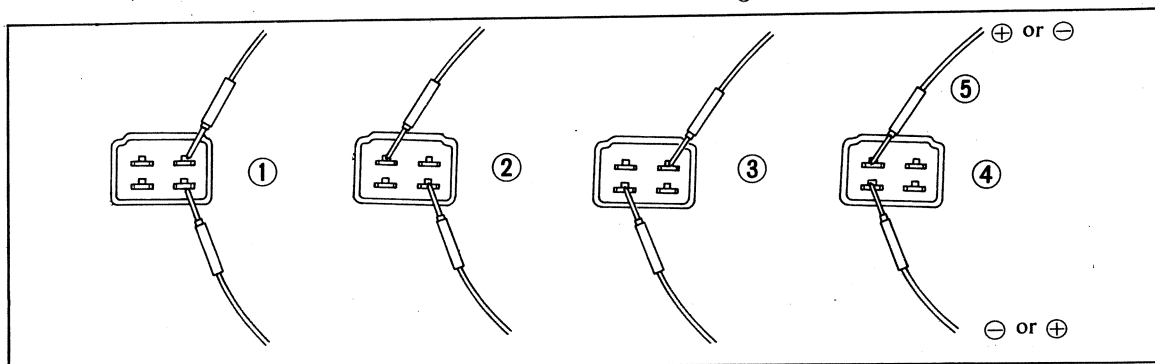


Fig. 154 ① Green and pink leads ② Pink and red/white leads ③ Green and yellow leads ④ Red/white and yellow leads
⑤ Tester leads

3. IGNITION SYSTEM

1) Ignition coil test

- ① Perform functional test of the ignition coil to determine its condition. When poor starting is experienced, the cause may also be found by testing the spark plug, contact breaker points, condenser, etc.
- ② Check the ignition coil using the service tester.
- ③ Connect the battery power source to the tester and ground the grounding lead. (Fig. 156)

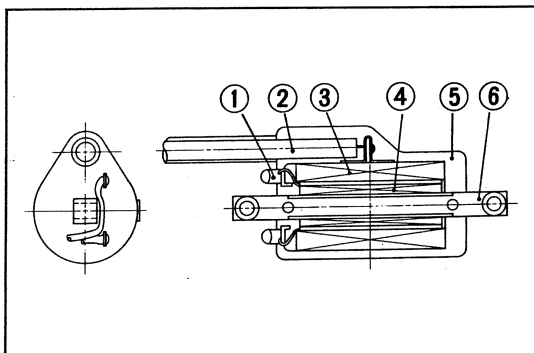


Fig. 155 ① Secondary coil terminal ② Ignition cord
③ Secondary coil ④ Primary coil ⑤ Body ⑥ Core

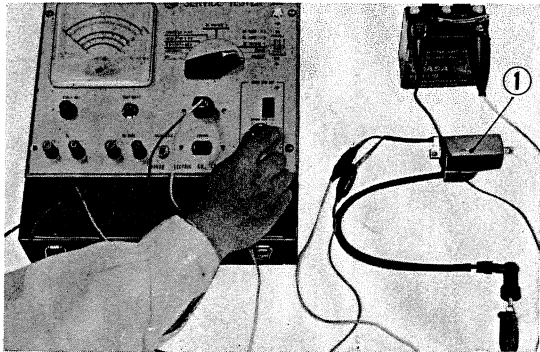


Fig. 156 Ignition coil test
① Ignition coil

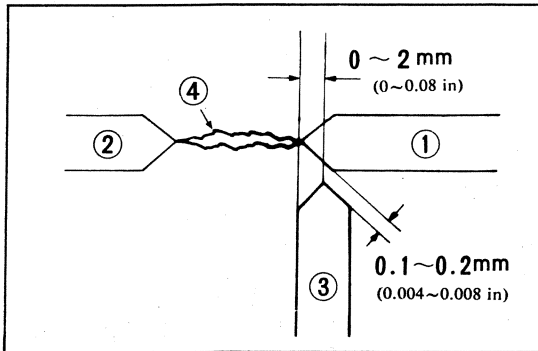


Fig. 157 ① No.1 electrode ② No.2 electrode
③ No.3 electrode ④ Spark

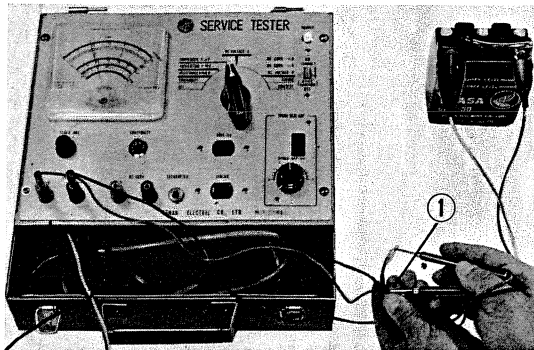


Fig. 158 Condenser test
① Condenser

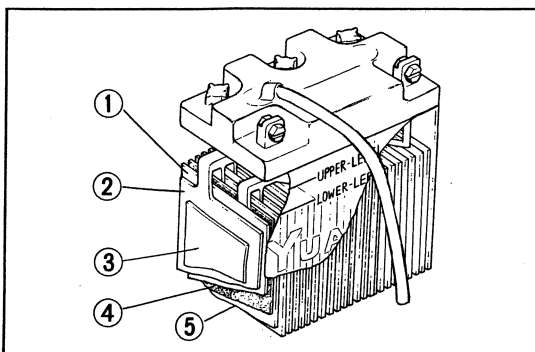


Fig. 159 Battery construction
① Separator plate ② Cathode plate ③ Separator plate
④ Glass mat ⑤ Anode plate

- ④ Connect the ignition primary cord to the tester and connect the opposite terminal end to the primary terminal of the coil. Connect the white lead with (∧) type plug to the blue terminal of the ignition coil (primary side) and the red tester lead to the black terminal of the ignition coil. (Fig. 156)
- ⑤ Connect the red tester high tension cord to the high tension cord of the ignition coil.
- ⑥ Turn the selector knob to the COIL TEST position.
- ⑦ Adjust the three point spark tester to maintain maximum distance of spark by turning the control knob while observing the spark condition and then measure the spark distance.
- ⑧ If the spark plug distance is less than 6 mm (0.24 in.), the spark plug is un-serviceable.

2) Condenser test (Fig. 158)

- 1) Connect the 6V battery power source to the tester.
- 2) Turn the selector knob to the "CONDENSER" position.
- 3) Apply one of the tester lead probes to the condenser body, and then read the meter indication. If it measures between 0.21-0.26 μ F, the condenser is satisfactory. Condenser indicating less than 0.21 μ F should be replaced.

4. BATTERY

A. Construction

The construction and name of the component parts are shown in the figure. The type of battery having the specifications shown below is installed in these models. (Fig. 159)

Type	6N6-3B
Voltage	6V
Capacity	6AH (at 10 hr rate)
Changing current	0.6A
Specific gravity of electrolyte (when fully charged)	1.260-1.280 at 20°C (68°F)

B. Inspection and Servicing

1) Measure the specific gravity of the battery electrolyte with a hydrometer and if it is below 1.200 (corrected to 20°C), the battery should be recharged. The specific gravity is calibrated on the stem of the float and the reading is taken at the fluid level with the float buoyant. (Fig. 160)

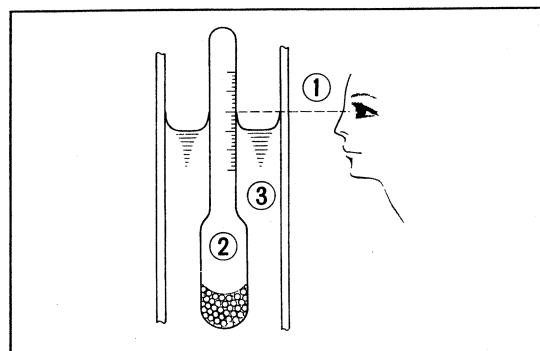


Fig. 160 ① Eye level ② Hydrometer ③ Battery electrolyte

2) If any cell is found to be below the lower level mark on the battery case, add distilled water to bring the level up to the upper level mark. If the electrolyte evaporation rate is unusually great, the charging system should be checked for possible malfunction. If the battery case is cracked or damaged, replace with new one.

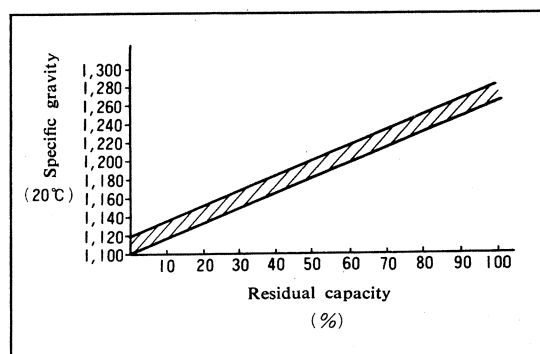


Fig. 161 Relation between specific gravity of battery electrolyte and electrical capacity

3) Check the poor battery connection due to corrosion of the connector and terminal, flaking of the paste from vibration and sulfation. The flaked paste remains on bottom remarkably, replace with new one. (Fig. 162)

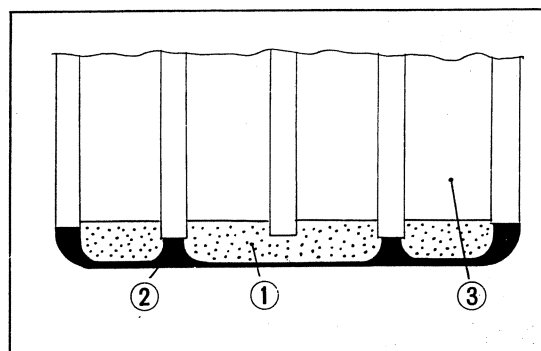


Fig. 162 ① Flaked paste ② Bottom ③ Cathode plate

C. Battery Charging

- 1) Quick-charge method of charging the battery will seriously effect the battery service life, therefore, it is recommended that this method not be used. When the rapid charge is required, the battery should be recharged at a rate of 0.2 AH.
- 2) During the charging process, hydrogen gas will be generated, therefore, open flame should be kept away.
- 3) After the recharging is completed, the battery should be washed with water to remove spilled electrolyte and the terminals coated with grease.

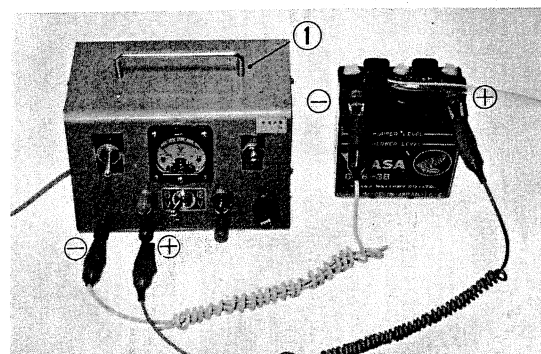


Fig. 163 Battery charging
① Battery charger

	Normal charge	Rapid charge
Charging current rate	0.6AH	2.0AH max.
Checking for full charge	(1) Specific gravity: 1.260-1.280 (20°C: 68°F) maintained constant (2) 0.2AH→0.6AH (3) 7.5V→8.3V	(1) Specific gravity: 1.260-1.280 maintained at 20°C(68°F) (2) Voltage: When large volume of gas is emitted from the battery (in about 2-3 hours for fully discharged battery), reduce charging rate to 0.2A. Battery is fully charged when a voltage of 7.5V is maintained.
Charging duration	By this method, a battery with specific gravity of electrolyte below 1.220 at 20°C (68°F) will be fully charged in approximately 12-13 hours.	By this method, battery with specific gravity of electrolyte below 1.220 at 20°C (68°F) will be fully charged approximately 1-2 hours.
Remarks		When the charging is urgent, quick charging method may be used, however, the recommended charging current rate should be under 2.0A.

Note: Battery should not be charged near open fire.
Terminals should be cleaned with clean water. Apply grease.

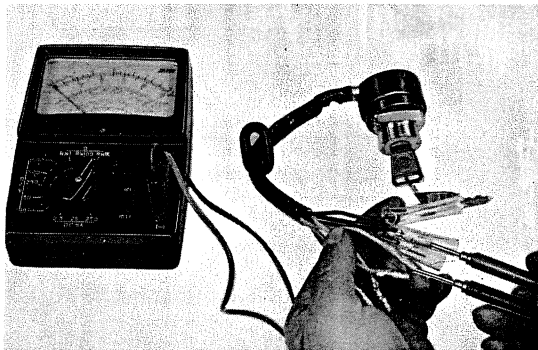


Fig. 164 Combination switch continuity test

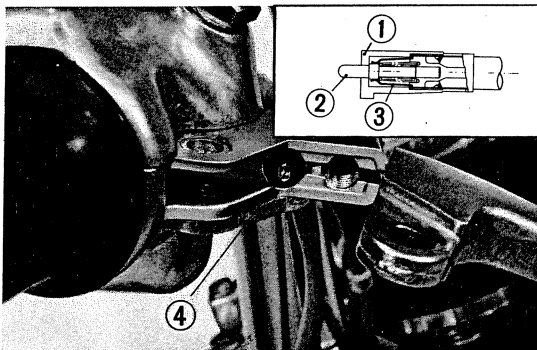


Fig. 165 ① Switch case ② Shaft ③ Contact plate
④ Front stop switch

5. AUXILIARY ELECTRICAL EQUIPMENT

A. Inspection

1) Combination switch (Fig. 164)

If continuity exists in any other leads than those shown below, first make sure the wiring harness is connected correctly. If the wiring is correct, the switch is defective. Check by the testing conductivity of wires with the switch in each positions. Replace with new one if the conductivity is not correct.

CB100, CL100, CB125S, CD125S, SL100, SL125

	BAT	IG ₁	IG ₂	HO	SW	WL ₁	WL ₂	BAT	IG
OFF					○—○—○				
ON	○—○—○			○—○				○—○	

2) Front stoplight switch (Fig. 165)

Check the front stop light switch for continuity by applying the tester lead probe to the black and green/yellow-green switch lead and depress the brake lever. If there is no continuity, the switch is defective.

Also check the action of switch manually.

Note:

- Check brake lever for excess play.
- Light should only operate by the brake lever.

3) Rear stop switch

Check the rear stop switch spring for disengagement. Apply tester lead probes to the green/yellow and black lead to check continuity.

The light should come on when the brake pedal is depressed 2cm (0.78 in.).

Turning the adjuster nut clockwise will delay the switch engagement. (Fig. 166)

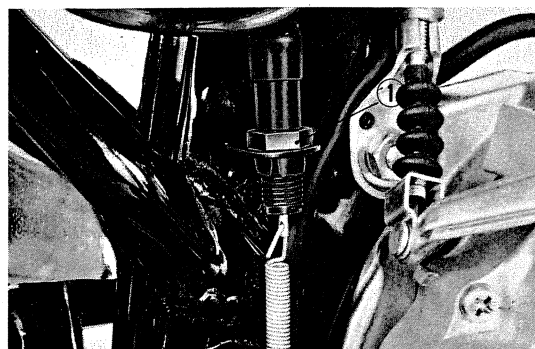


Fig. 166 Rear stop switch
① Adjuster nut

4) Horn

Connect a 6V battery to the horn to test its operation.

The sound volume can be adjusted with the adjusting screw provided on the back of the horn. (Fig. 167)

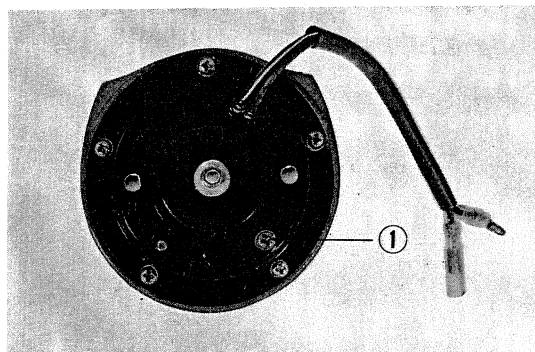


Fig. 167 Horn
① Volume adjusting screw

5) Horn button switch

Check the continuity of the switch by applying the tester lead probes to the light green cord within the headlight case and to the handle bar. Continuity should exist when the button is pressed. (Fig. 168)

6) Turn signal switch

Disconnect the turn signal switch leads in the headlight case and check the continuity by connecting the gray switch lead to one of the tester probes and applying the other tester lead probe to the blue and orange switch leads alternately and operating the switch. If continuity exist in both positions, the switch is satisfactory. However, if there are continuity in the position other than shown on the chart, the switch is defective. If the both turn signal lamps on one side do not light up or if all lamps on both side light up, the switch or wiring is defective. If the switch and wiring are not defective and no turn signal lamps turn on, the relay is defective. Replace the relay with new one. (Fig. 169)

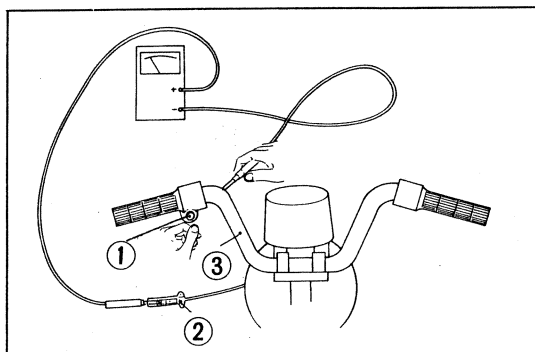


Fig. 168 ① Horn button switch ② Horn button switch lead ③ Handle bar

Knob position	Blue cord	Gray cord	Orange cord
Right side	○	—○	
Left side			○ —○

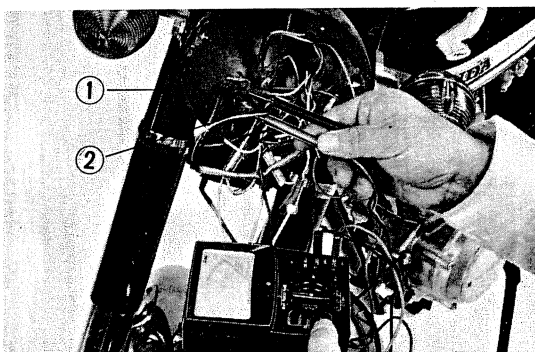


Fig. 169 Turn signal switch continuity test
① Gray lead ② Blue lead

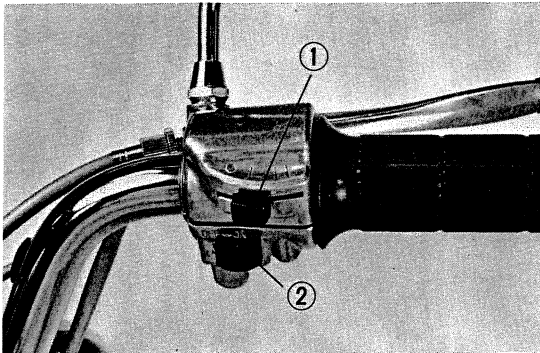


Fig. 170 ① Dimmer switch ② Lighting switch

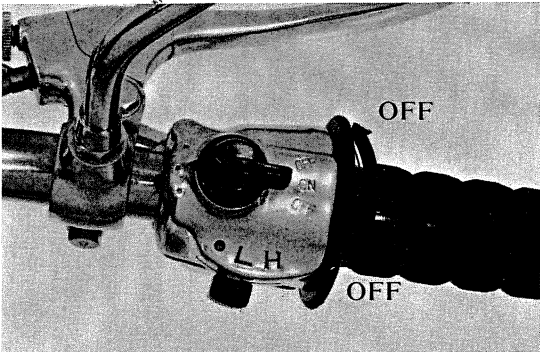


Fig. 171 Emergency switch

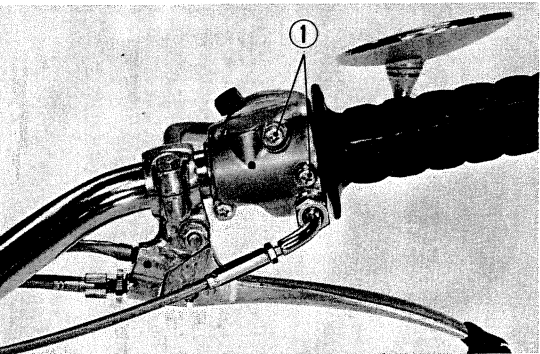


Fig. 172 Emergency switch removal
① Switch mounting screws

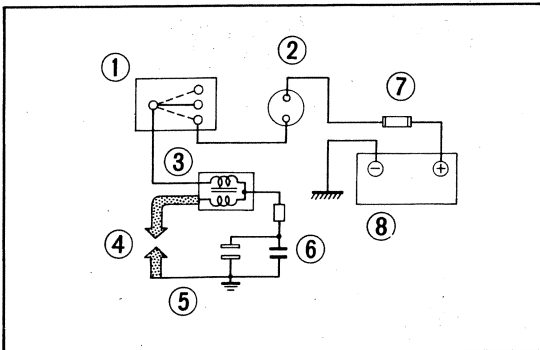


Fig. 173 Emergency switch operation
① Emergency switch ② Main switch ③ Ignition coil ④ Spark plug ⑤ Contact breaker ⑥ Condenser ⑦ Fuse 15A ⑧ Battery 6V-6AH

7) Lighting and dimmer switch

Check the continuity of switch with the tester in accordance with the table below. (Fig. 170)

	H	TL	L	IG	DY	SE
Off						
Low		○—○	○—○	○—○	○—○	○—○
(N)	○—○	○—○	○—○	○—○	○—○	○—○
High	○—○	○—○	○—○	○—○	○—○	○—○
Color of	Blue	Brown	White	Black	White/ Yellow	Yellow

8) Emergency switch (SL 100 U.S.A. Type).

Construction

The emergency ignition switch (kill button) is provided to insure safe riding and shutting off the engines operation when the motorcycle is overturned or when trouble develops in the throttle system. (Fig. 171)

Disassembly

- ① Loosen two switch mounting screws and separate the upper and lower halves. (Fig. 172)
- ② Disconnect the throttle cable from the throttle cable connector on the bottom of the switch housing.
- ③ Disconnect the wirings within the headlight case and remove the switch assembly.

Inspection

Start the engine, first make sure the engine can be stopped by switching off the emergency switch. If the respective switch positions are not functioned properly, the switch or wiring is defective.

If the wiring is correct, check by the testing conductivity of wires with the switch. If the conductivity is not correct, replace with new one.

Reassembly

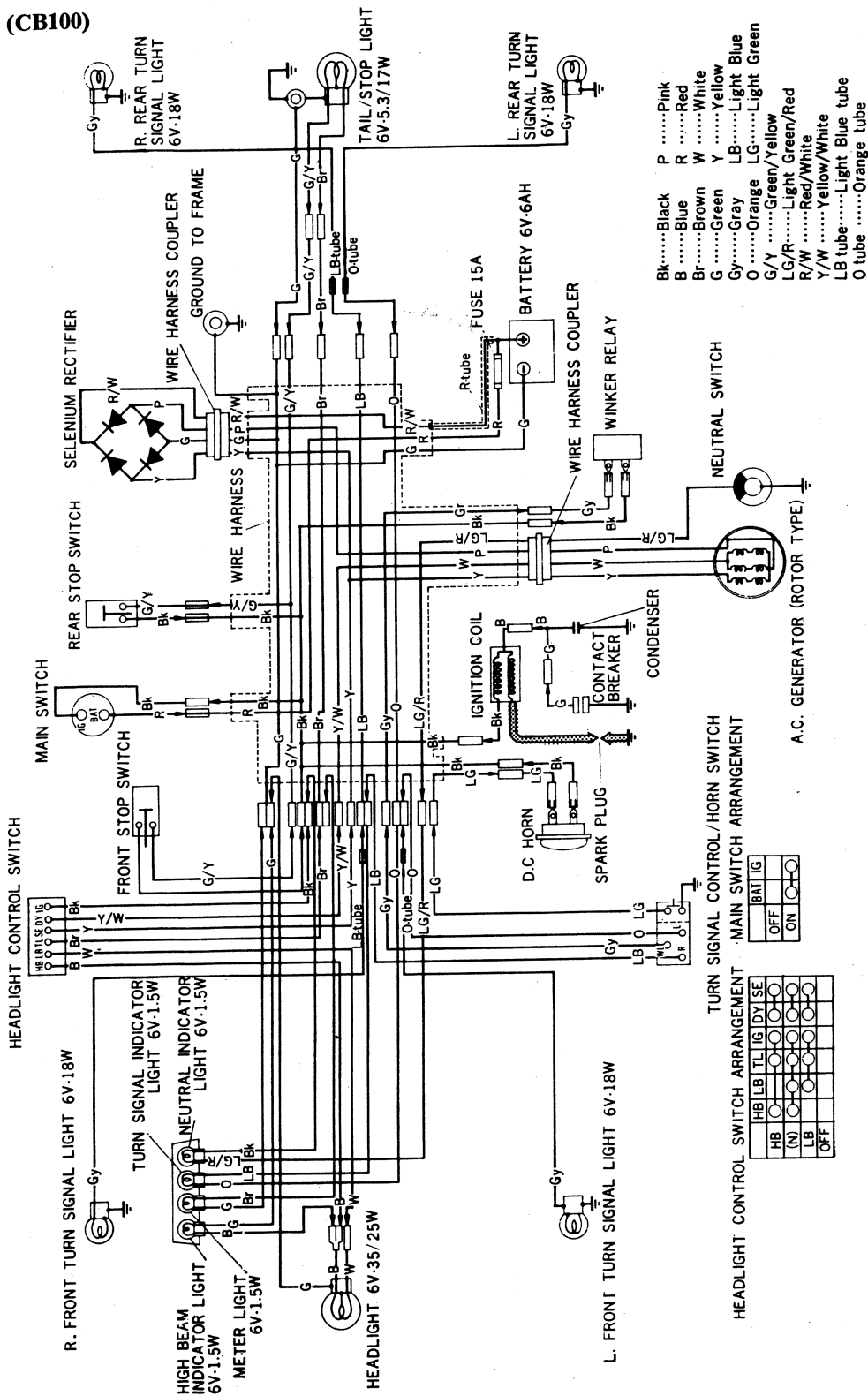
Perform assembly in the reverse order of disassembly. Check switch operation.

Operation

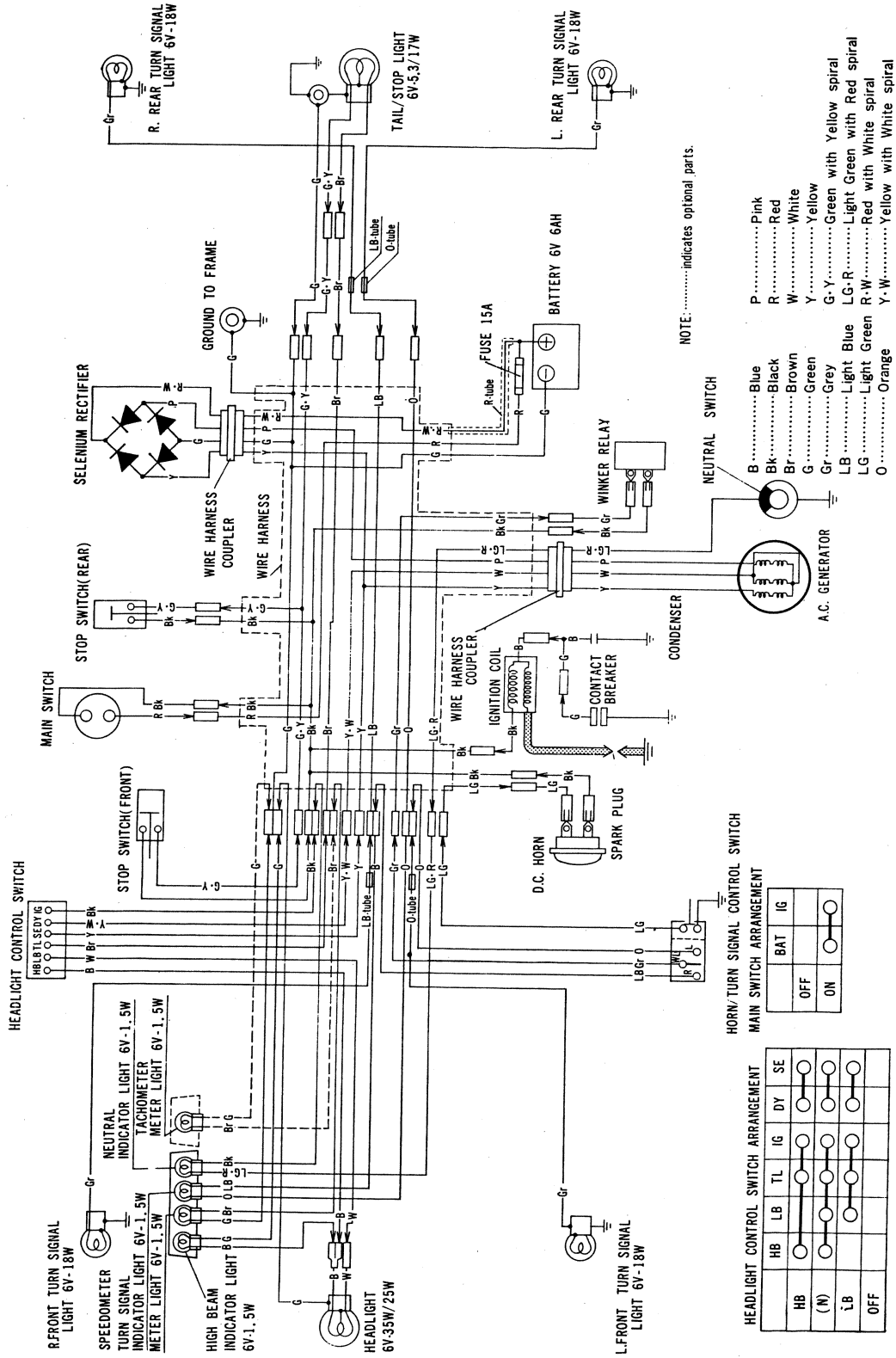
The operational principle of the emergency ignition switch is shown by the illustration. Even if ignition switch is ON, the primary circuit can be opened by operation of the switch. (Fig. 173)

WIRING DIAGRAM

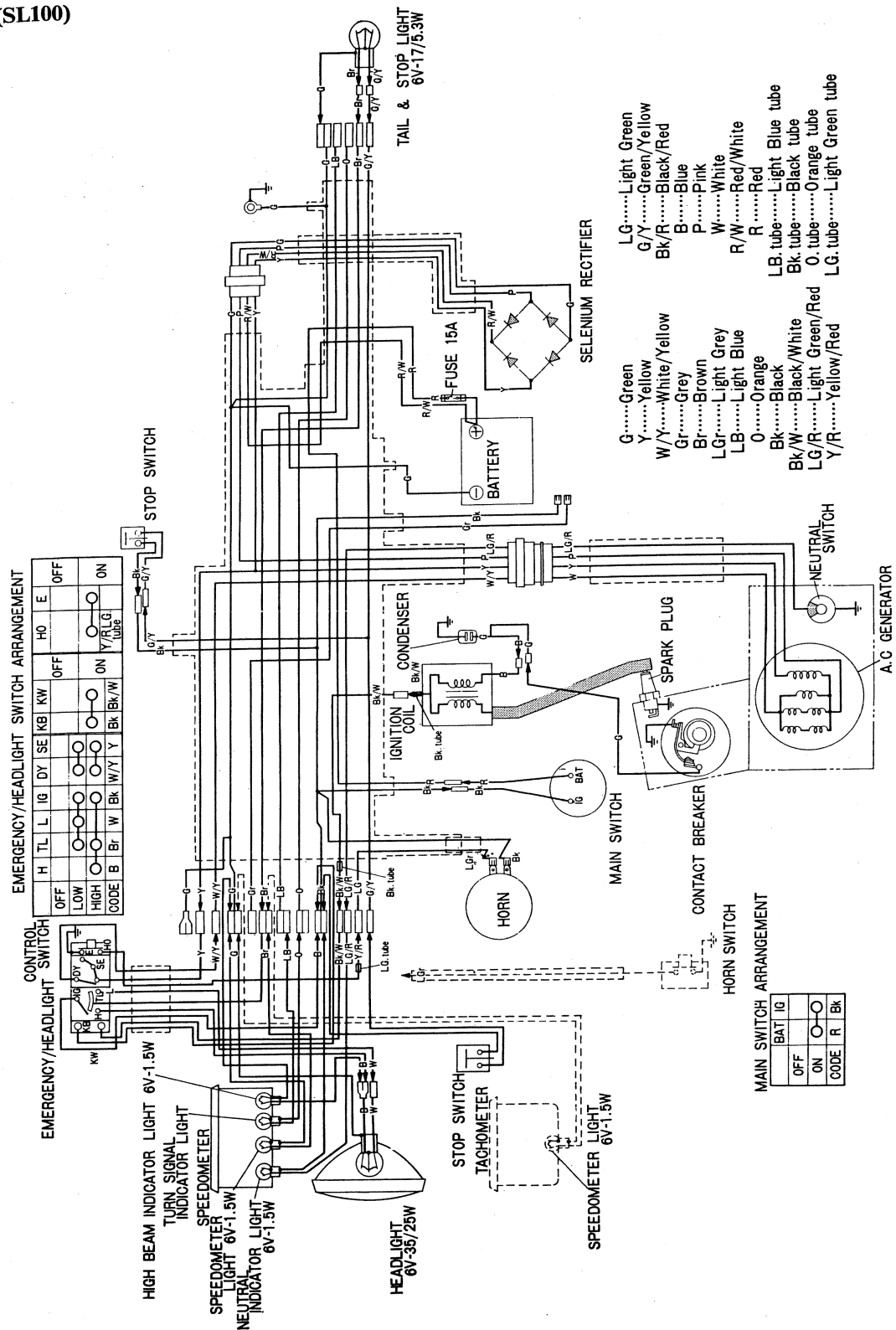
(CB100)



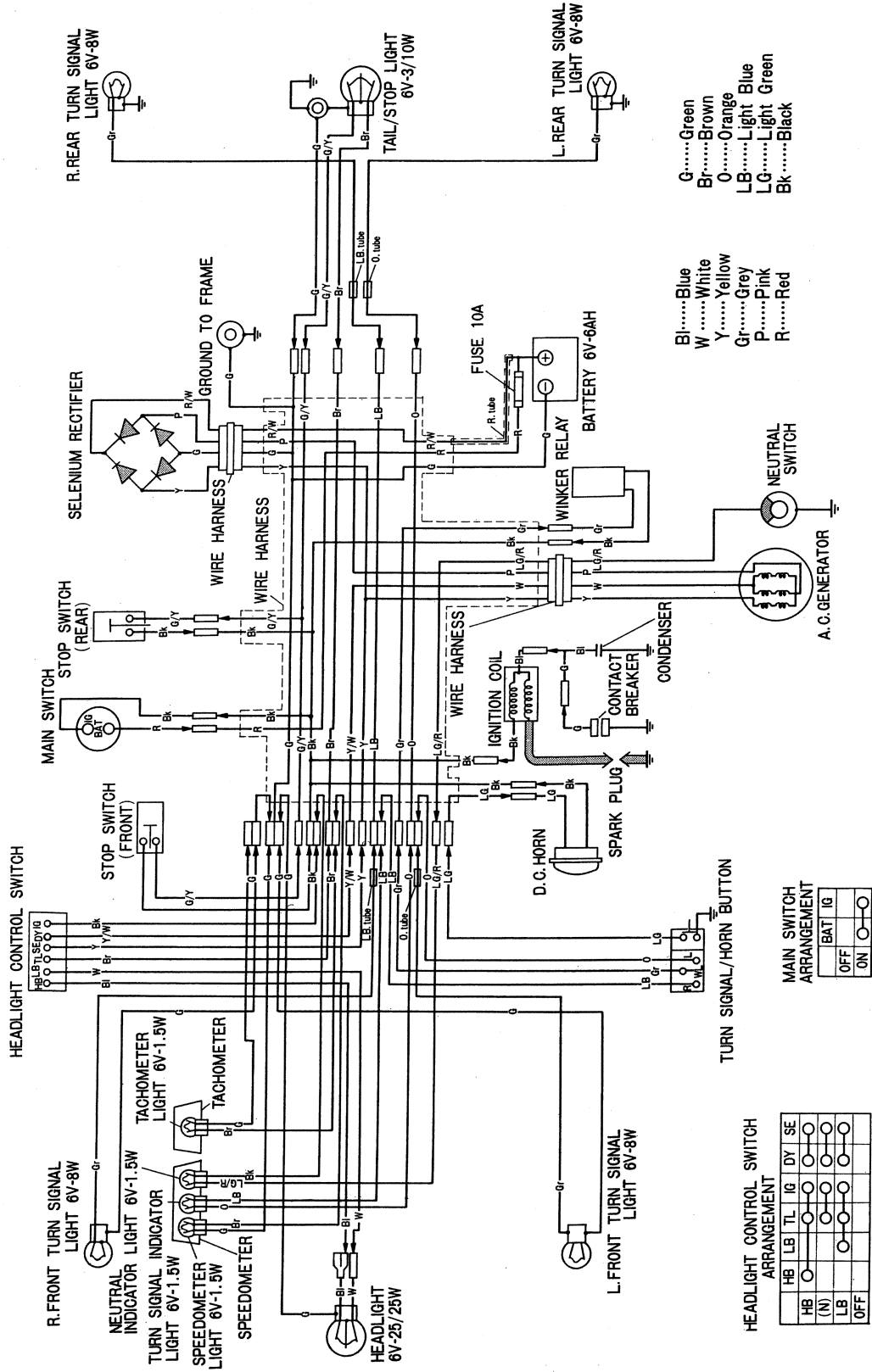
(CL100)



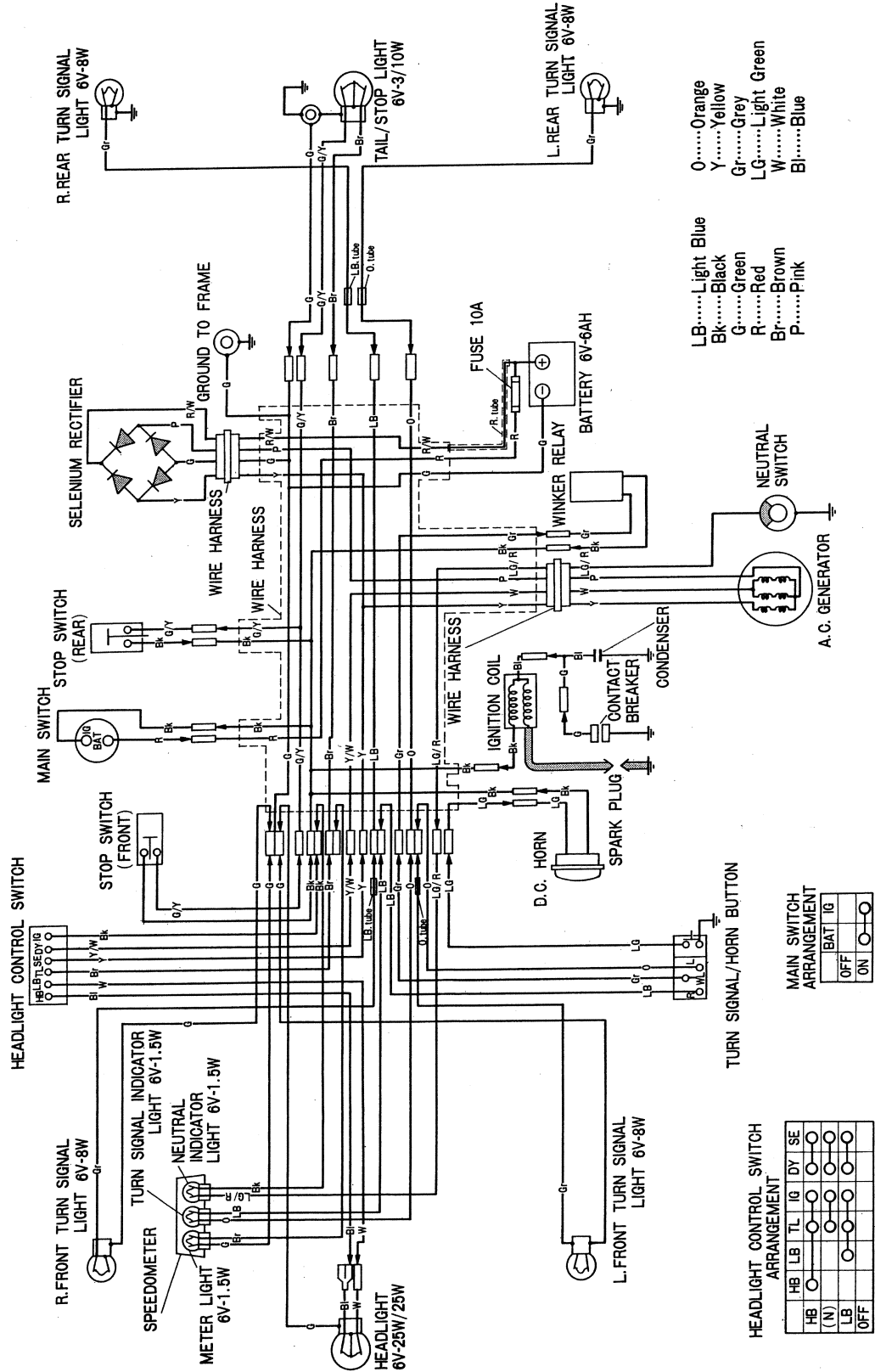
(SL100)



(CB125S)



(CD125S)



- O.....Orange
- Y.....Yellow
- Gr.....Grey
- L.G.....Light Green
- W.....White
- Bl.....Blue
- LB.....Light Blue
- Bk.....Black
- G.....Green
- R.....Red
- Br.....Brown
- P.....Pink

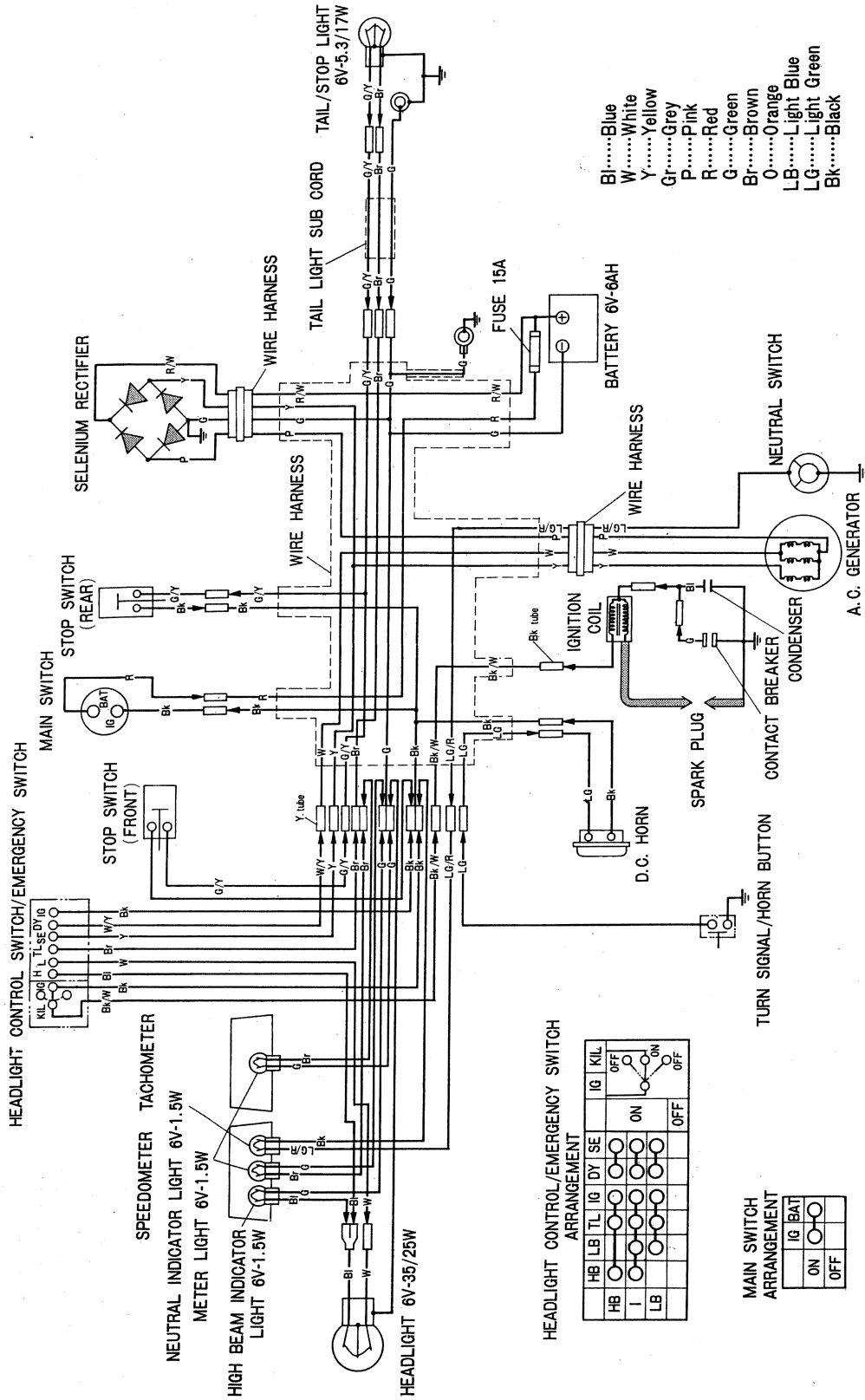
MAIN SWITCH ARRANGEMENT

BAT	IG
OFF	ON

HEADLIGHT CONTROL SWITCH ARRANGEMENT

HB	LB	TL	IG	DY	SE
HB	LB	TL	IG	DY	SE
(N)					
LB					
OFF					

(SL125)



- Bl.....Blue
- W.....White
- Y.....Yellow
- Gr.....Grey
- P.....Pink
- R.....Red
- G.....Green
- Br.....Brown
- O.....Orange
- LB.....Light Blue
- LG.....Light Green
- Bk.....Black

HEADLIGHT CONTROL/EMERGENCY SWITCH ARRANGEMENT

HB	LB	TL	IG	SE	IG	KIL
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	OFF
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON	OFF
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	OFF

MAIN SWITCH ARRANGEMENT

<input type="checkbox"/>	IG	BAT
<input type="checkbox"/>	ON	<input type="checkbox"/>
<input type="checkbox"/>	OFF	<input type="checkbox"/>

● ELECTRICAL SYSTEM

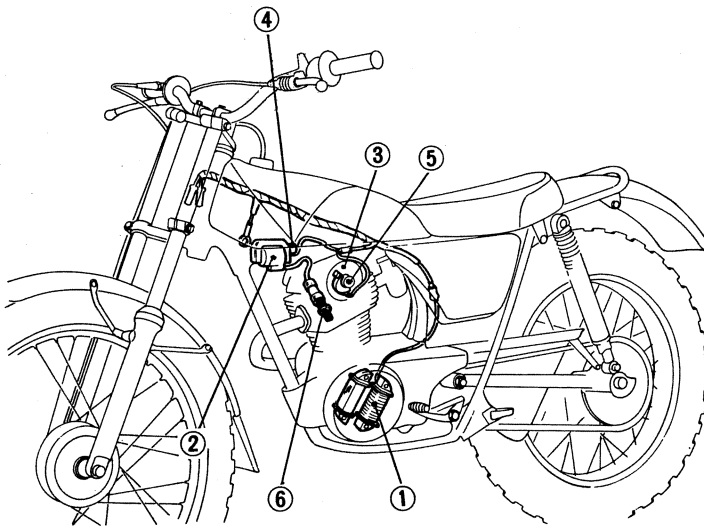
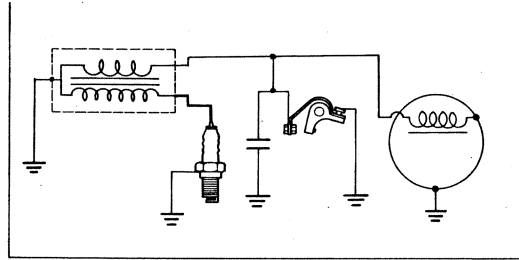


Fig. 44

- ① Generator coil
- ② Ignition coil
- ③ Contact breaker
- ④ Condenser
- ⑤ Spark advancer
- ⑥ Spark plug

Referring to the illustration above, the ignition system consists of the generator, ignition coil, contact breaker, condenser, spark advance mechanism and spark plug to ignite the air-fuel mixture in the engine cylinder.

Technical Data

Ignition coil	Spark length (3-needle)	7mm min @ 500 rpm
Spark plug	Type	D-8ESL (NGK) X-24ES (DENSO)
	Gap	0.6 to 0.7mm
Contact breaker	Point pressure	800 ± 100g
	Point gap	0.35mm ± 0.05mm
Condenser	Capacity	0.24 μF
	Insulation resistance	10MΩ (by 1000V Megger)
Spark advancer	Advance angle	8.5° ± 1.5°
	Camshaft rpm at 1° advance	1100 ± 100 rpm
	Engine rpm at full advance	2000 ± 100 rpm

1. GENERATOR

The generator is fundamentally an A.C. generator, with the rotor built in the engine flywheel. The design is essentially the same as that used on SL250S. Current available at the generator operates the ignition system to supply high-voltage surges to the spark plug in the engine cylinder.

2. A.C. GENERATOR

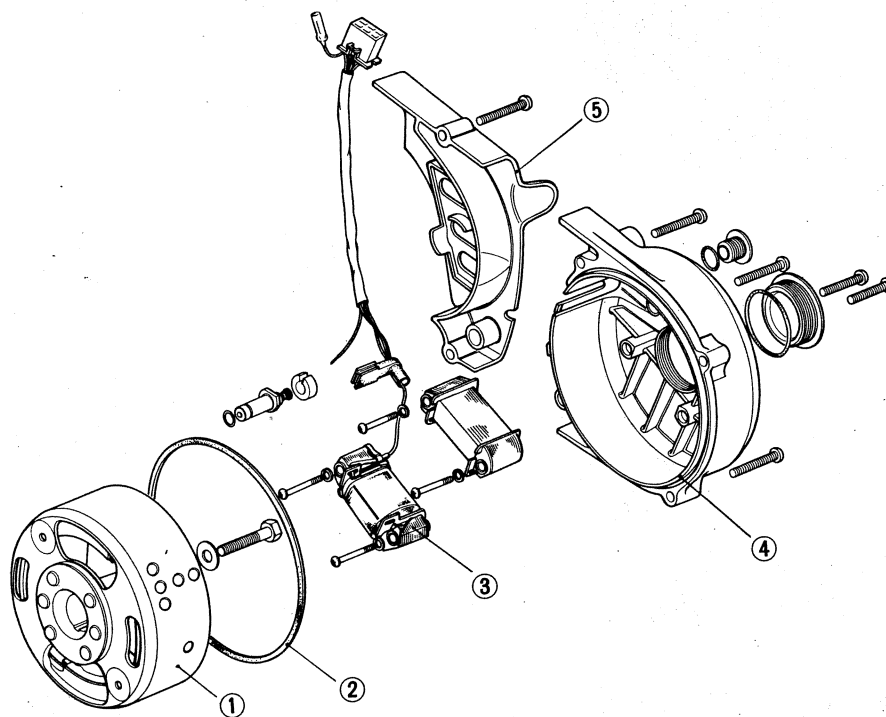


Fig. 45

- ① Flywheel
- ② Oil seal
- ③ Primary coil
- ④ Left crankcase cover
- ⑤ Left crankcase rear cover

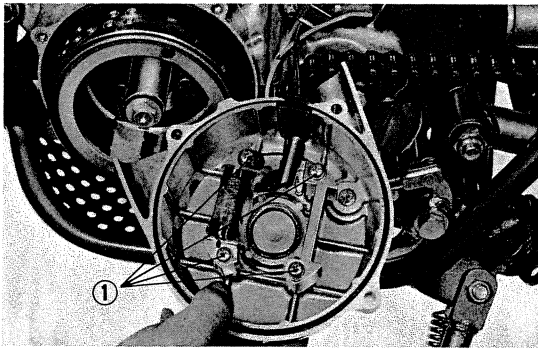


Fig. 46 ① Stator mounting bolt

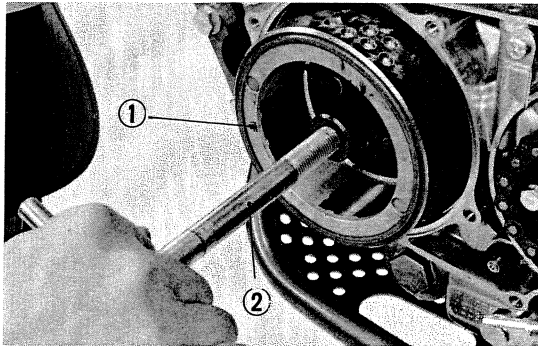


Fig. 47 ① Flywheel ② Flywheel extractor

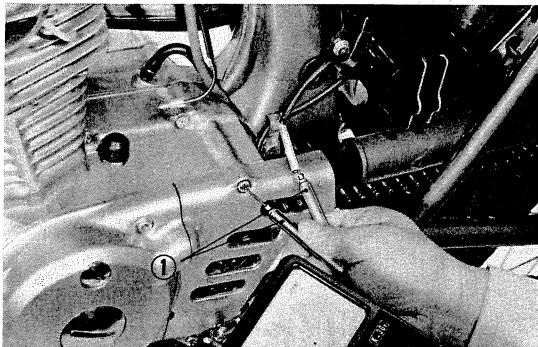


Fig. 48 ① Tester probes

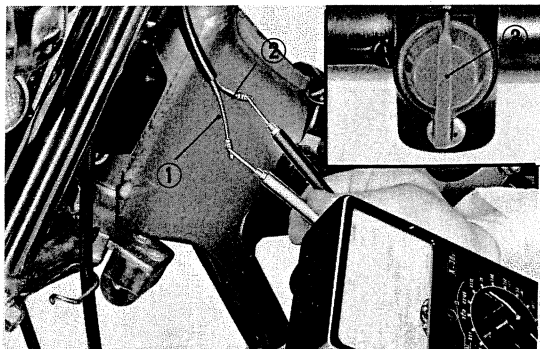


Fig. 49 ① Black/White ② Green ③ Mainswitch

A. Removal

- 1) Remove the two crankcase covers, front and rear, from the left side of the engine.
- 2) Remove the stator by loosening off the attaching bolts.
- 3) Remove the primary coil by loosening off the Stator mounting bolt (Fig. 47)

- 4) With the help of tool "Flywheel Extractor 07011-20001," remove the flywheel while lightly tapping it around with the right hand. (Fig. 48)

B. Stator Inspection

When failure to start is due to broken stator coil, this can be checked with a tester. To make this check, disconnect the stator cord, black stripes on white ground, at the wiring connector. Hold a test prod against the connector, and the other against the metal part of the stator. If continuity exists, it indicates the stator coil is not broken or discontinued.

● INSPECTION OF ELECTRICAL ACCESSORIES

1. MAIN SWITCH

If the engine fails to stop with the ignition switch in OFF, the likelihood is that the switch is internally short-circuited. The ignition switch test is made by first disconnecting the primary lead (black/white) and that of the neutral switch and then checking continuity between the lead with a tester. If continuity exists when the kill switch is turned on, it is probable that the switch is defective, calling for replacement.

TL 125 WIRING DIAGRAM

