BATTERY/CHARGING SYSTEM

BATTERIE/ CIRCUIT DE CHARGE

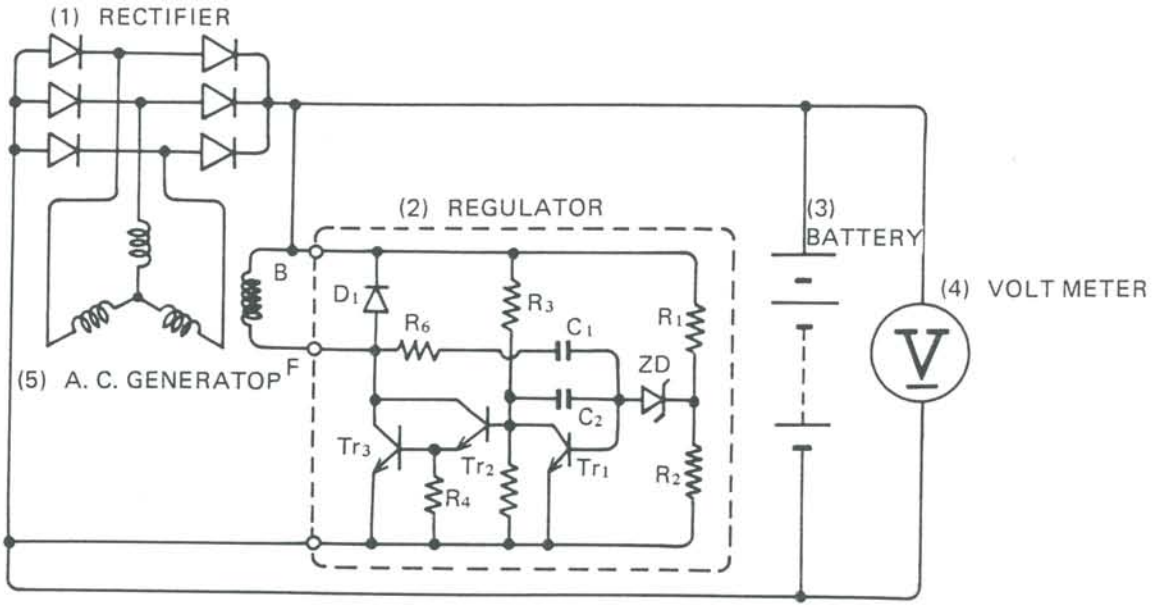
BATTERIE/LADESYSTEM

BATERIA/SISTEMA DE CARGA

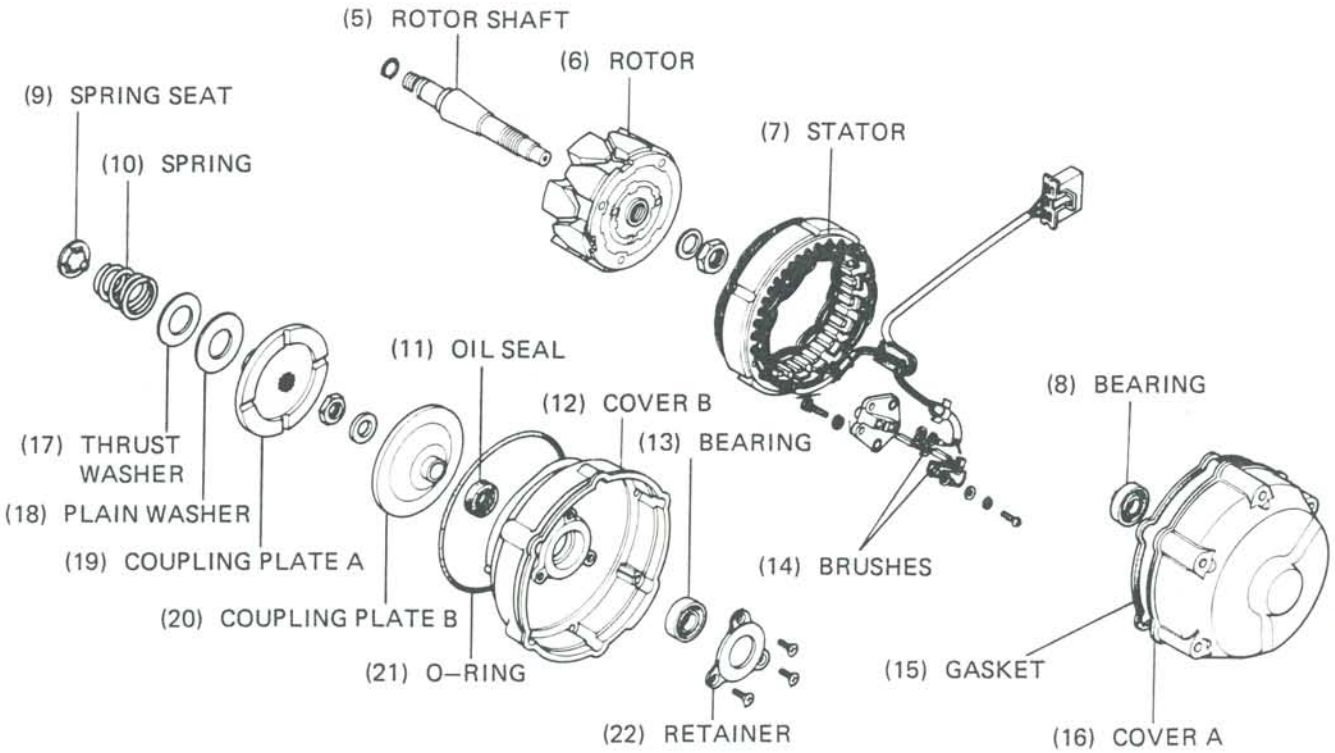
(1) REDRESSEUR
(2) REGULATEUR
(3) BATTERIE
(4) VOLTMETRE
(5) GENERATRICE DE COURANT ALTERNATIF
(6) BATTERIE/CIRCUIT DE CHARGE
(7) STATOR
(8) ROULEMENT
(9) SIEGE DE RESSORT
(10) RESSORT
(11) ANNEAU DE RETENUE D'HUILE
(12) COUVERCLE B
(13) ROULEMENT
(14) BALAIS
(15) GARNITURE
(16) COUVERCLE A
(17) RONDELLE DE BUTEE
(18) RONDELLE PLATE
(19) DISQUE D'ACCOUPLEMENT A
(20) DISQUE D'ACCOUPLEMENT B
(21) JOINT TORIQUE
(22) ANNEAU DE MAINTIEN
(23) GENERATRICE DE COURANT ALTERNATIF

(1) GLEICHRICHTER
(2) REGLER
(3) BATTERIE
(4) VOLTMETER
(5) LICHTMASCHINE
(6) BATTERIE/LADESYSTEM
(5) ROTORWELLE
(6) ROTOR
(7) STATOR
(8) LAGER
(9) FEDERSITZ
(10) FEDER
(11) SIMMERRING
(12) DECKEL B
(13) LAGER
(14) BÜRSTEN
(15) DICHTUNG
(16) DECKEL A
(17) DRUCKZWISCHENLAGSCHEIBE
(18) ZWISCHENLAGSCHEIBE
(19) VERBINDUNGSPLATTE A
(20) VERBINDUNGSPLATTE B
(21) O-RING
(22) ANSCHLAG
(23) LICHTMASCHINE

(1) RECTIFICADOR
(2) REGULADOR
(3) BATERIA
(4) VOLTIMETRO
(5) GENERADOR DE C.A.
(6) BATERIA/SISTEMA DE CARGA
(5) EJE DEL ROTOR
(6) ROTOR
(7) ESTATOR
(8) COJINETE
(9) ASIENTO DEL MUELLE
(10) MUELLE
(11) PRECINTO DEL ACEITE
(12) CUBIERTA B
(13) COJINETE
(14) ESCOBILLAS
(15) JUNTA DE CIERRE
(16) CUBIERTA A
(17) ARANDELA DE PRESION
(18) ARANDELA LISA
(19) PLACA DE ACOPLAMIENTO A
(20) PLACA DE ACOPLAMIENTO B
(21) JUNTA ANULAR
(22) RETENEDOR
(23) GENERADOR DE C.A.



(6) BATTERY/CHARGING SYSTEM



(23) A. C. GENERATOR

SERVICE INFORMATION	16–1
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CHARGING SYSTEM	16–4
A. C. GENERATOR REMOVAL/ INSTALLATION	16–5
VOLTAGE REGULATOR	16–9

SERVICE INFORMATION

WORKING PRACTICE

Battery fluid level should be checked regularly and filled with distilled water when necessary.
When charging the battery, quick-charging should only be done in an emergency; slow-charging is preferred.
Remove the battery from the motorcycle for charging. If battery must be charged on the motorcycle, disconnect the battery cables.
Keep flames or sparks away from a charging battery because it produces hydrogen.
All charging system components can be tested on the motorcycle.

SPECIAL TOOLS

Common tools

Bearing Driver Handle	07749–0010000
Bearing Driver (32 x 35)	07746–0010100
Bearing Driver (37 x 40)	07746–0010200

SPECIFICATIONS

Type		CM, DK, DM, U and SA			E, G, F and ED		
Battery	Capacity	12V 18AH			12V 14AH		
	Specific gravity	1.28/20° C (68°F)					
	Charging rate	1.8 amperes maximum			1.4 amperes maximum		
A. C. generator Capacity		1,000 min^{-1} (rpm)	1,500 min^{-1} (rpm)	5,000 min^{-1} (rpm)	1,000 min^{-1} (rpm)	1,500 min^{-1} (rpm)	5,000 min^{-1} (rpm)
		5A min.	12A min.	24A min.	0A min.	5A min.	17A min.
Voltage regulator		Transistorized non-adjustable regulator					

TROUBLESHOOTING

No Power – Key Turned On:

1. Dead battery
   - Low fluid level
   - Low specific gravity
   - Charging system failure
2. Disconnected battery cable
3. Main fuse burned out
4. Faulty ignition switch

Low Power – Key Turned On:

1. Weak battery
   - Low fluid level
   - Low specific gravity
   - Charging system failure
2. Loose battery connection

Low Power – Engine Running:

1. Battery undercharged
   - Low fluid level
   - One or more dead cells
2. Charging system failure

Intermittent Power:

1. Loose battery connection
2. Loose charging system connection
3. Loose starting system connection
4. Loose connection or short circuit in ignition system
5. Loose connection or short circuit in lighting system

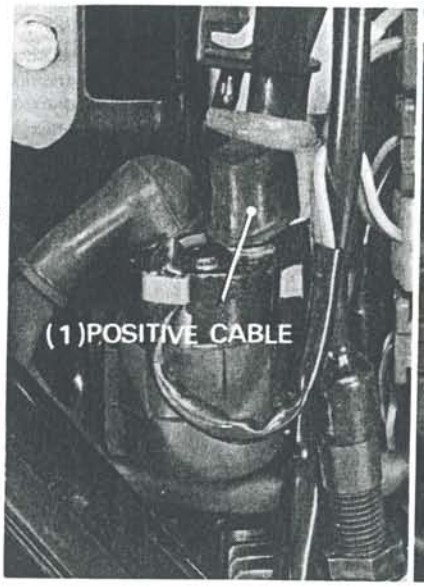
Charging System Failure:

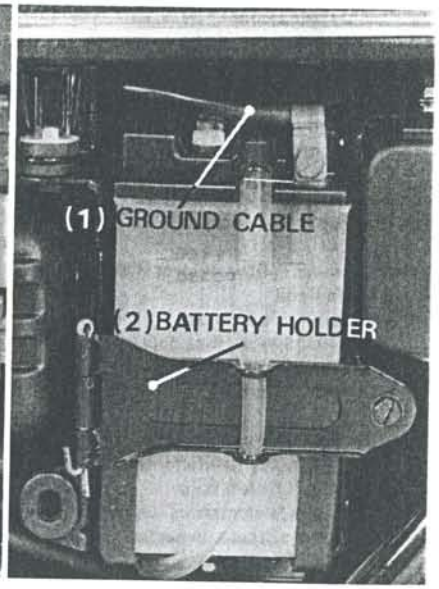
1. Loose, broken, or shorted wire or connection
2. Faulty voltage regulator
3. Faulty silicon rectifier
4. Faulty A.C. generator

BATTERY

REMOVAL

Remove the right and left side covers.
Disconnect the ground cable at the battery terminal.
Disconnect the positive cable at the magnetic switch terminal.
Remove the battery holder.





TESTING SPECIFIC GRAVITY

Test each cell with a hydrometer.

SPECIFIC GRAVITY:
(20°C, 68°F)

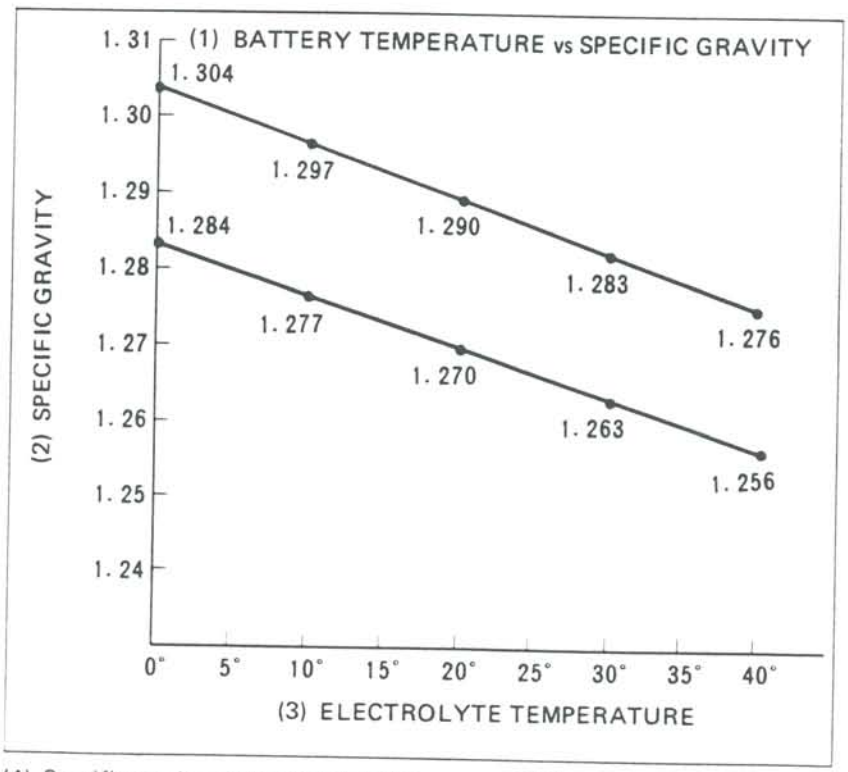
1.27–1.29	Fully charged
Below 1.26	Undercharged

NOTE

- The battery must be recharged if the specific gravity is below 1.23.
- The specific gravity varies with the temperature as shown in the accompanying table.
- Replace the battery if sulfation is evident.
- The battery must be replaced if there are pastes settled on the bottom of each cell.

WARNING

The battery contains sulfuric acid.
Avoid contact with skin, eyes, or clothing.
Antidote: Flush with water and get prompt medical attention.



(4) Specific gravity changes by 0.007 for every 10°C.

BATTERY CHARGING

Connect the charger positive (+) cable to the battery positive (+) terminal.
Connect the charger negative (–) cable to the battery negative (–) terminal.

Type	CM, DK, DM, U, SA	E, G, F, ED
Changing current	1.8 amperes max.	1.4 amperes max.

Charging:
Charge the battery until specific gravity is 1.27–1.29 at 20°C (68°F).

WARNING

- *Before charging a battery, remove the cap from each cell.*
- *Keep flames and sparks away from a charging battery.*
- *Turn power ON/OFF at the charger, not at the battery terminals.*
- *Discontinue charging if the electrolyte temperature exceeds 45°C (113°F).*

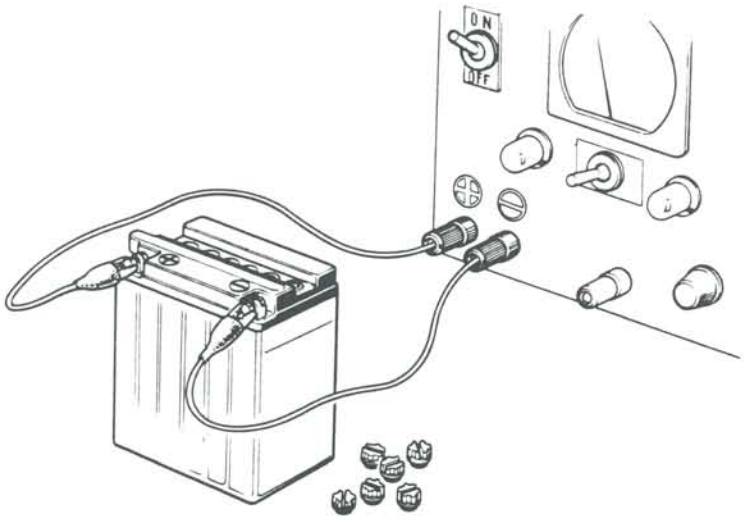
CAUTION

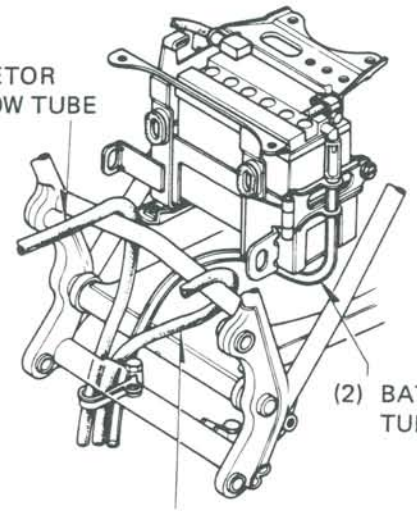
Quick-charging should only be done in an emergency; slow-charging is preferred.

After installing the battery, coat the terminals with clean grease.

CAUTION

Route the breather tube as shown on the battery caution label.





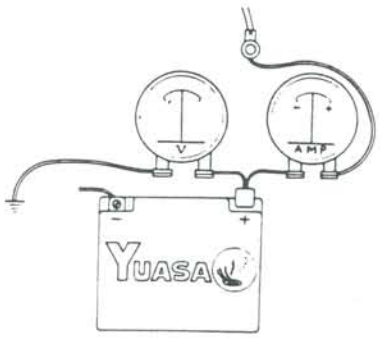
CHARGING SYSTEM

CHARGING OUTPUT TEST

Warm up the engine before taking readings.
Connect a voltmeter and an ammeter to check charging system output.

NOTE

Use a fully charged battery to check the charging system output.

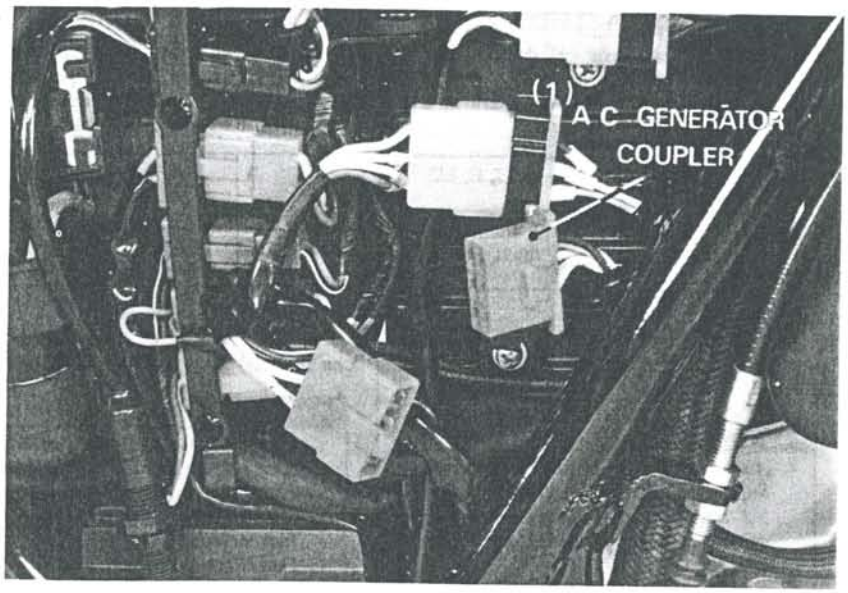


TECHNICAL DATA

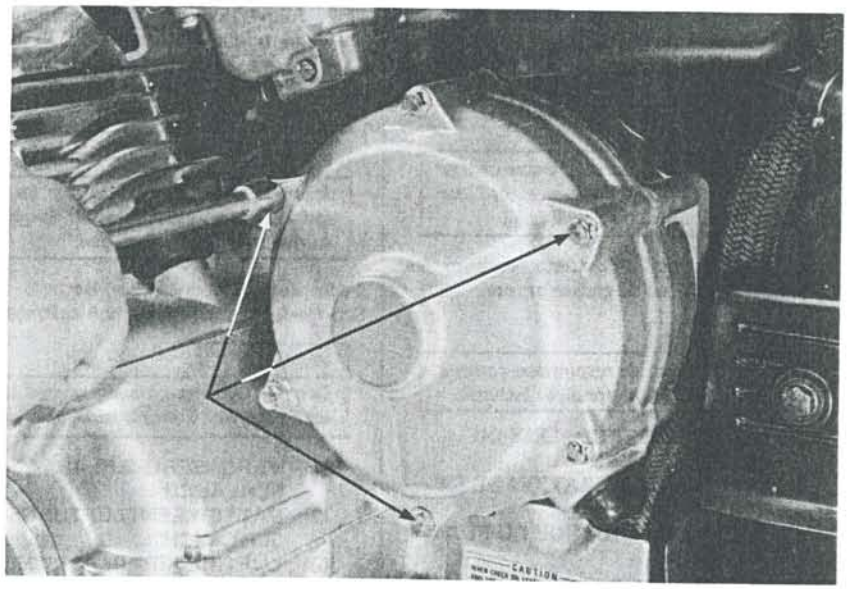
Type	MAIN SWITCH	LIGHTING SWITCH	INITIAL CHARGING	AT 5,000 min^{-1} (rpm)
CM, DK, DM, U, SA	ON	ON (High beam)	1,050 min^{-1} (rpm)	0 amperes minimum/14 volts
E, G, F, ED	ON	ON (High beam)	1,800 min^{-1} (rpm)	0 amperes minimum/14 volts

A.C. GENERATOR REMOVAL/ INSTALLATION

Remove the right side cover and disconnect the A.C. generator coupler.

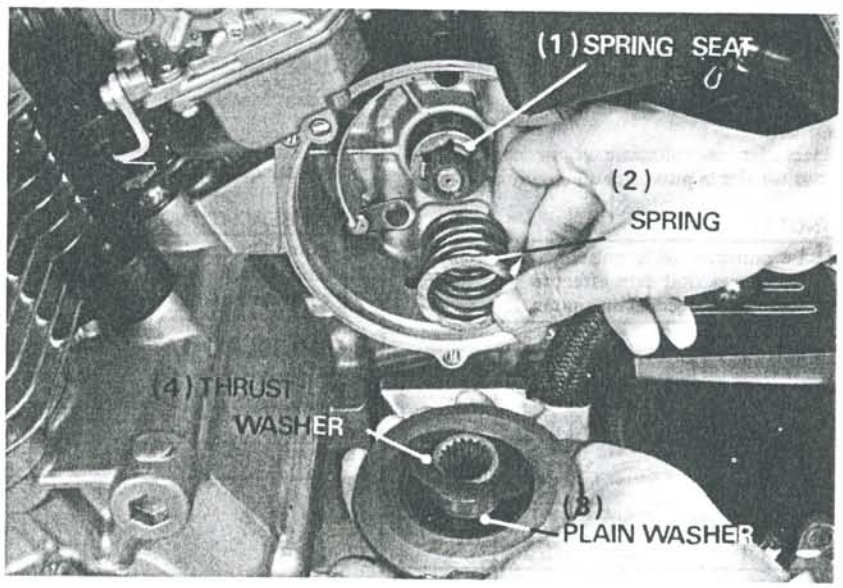


Remove the A.C. generator by loosening three screws.



Remove the A.C. generator clutch spring and washer.

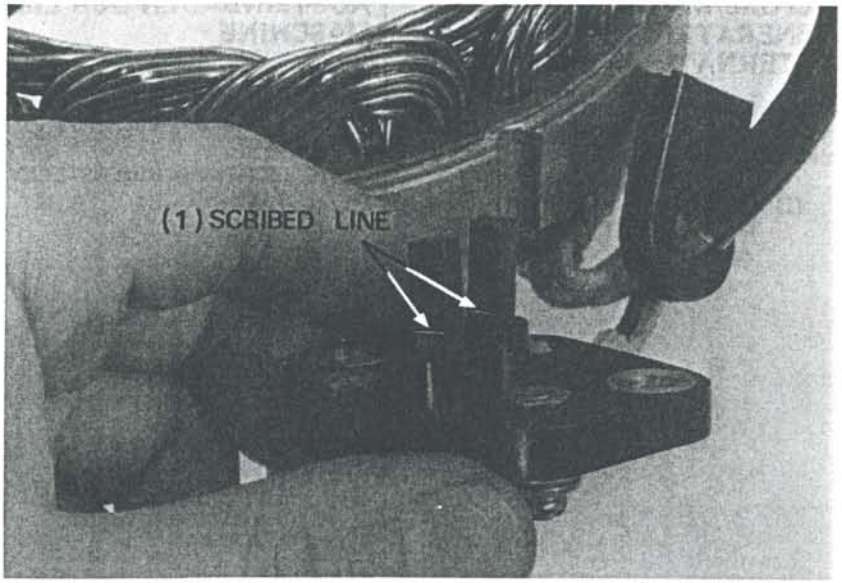
Loosen three bolts and disassemble the A.C. generator. (See page 16–0)



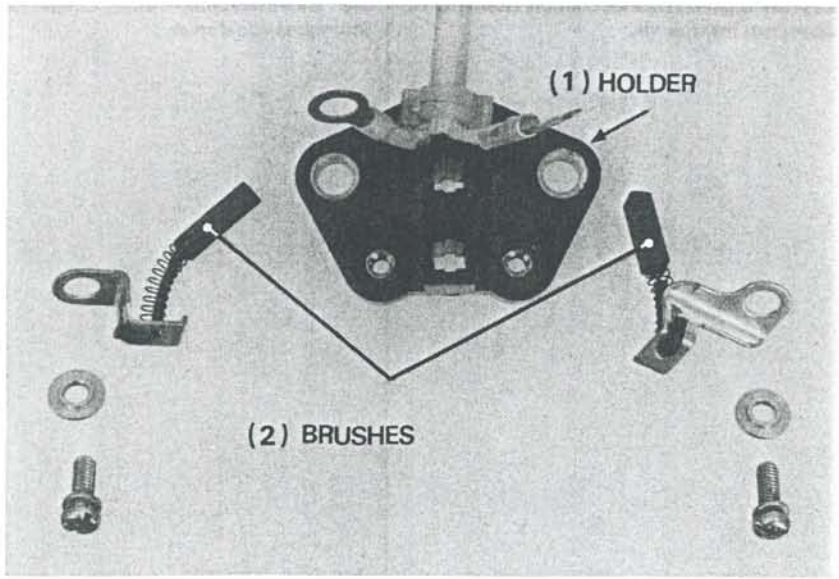
INSPECTION

Inspect the length of each brush as shown.
If it shows wear to the scribed service limit line, replace the brush.

SERVICE LIMIT: Scribed line



Remove and replace the brushes by removing the mounting screws.



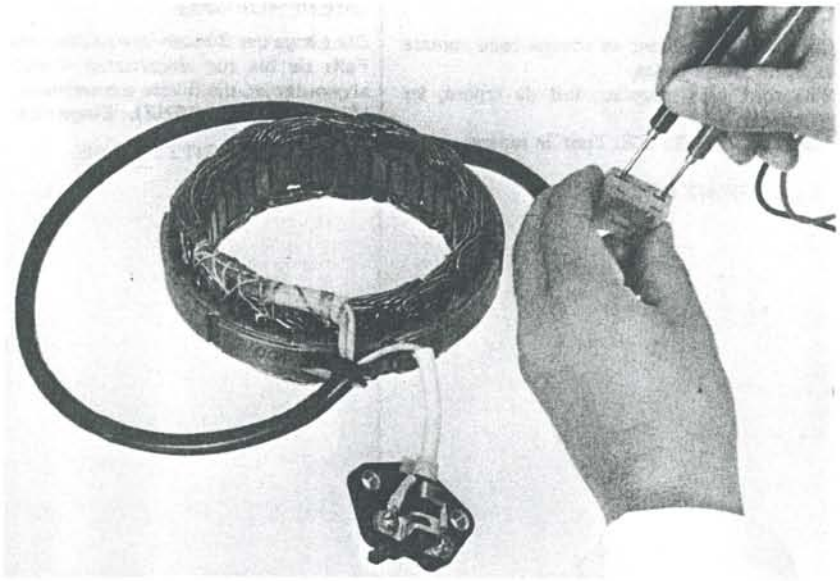
STATOR COIL CONTINUITY TEST

NOTE

It is not necessary to remove the stator to make this test.

Check the yellow leads to the A.C. generator stator for continuity with each other. Replace the stator if any yellow lead is not continuous with the others, or if any lead has continuity to ground.

SPECIFIED RESISTANCE: 0.32–0.40Ω

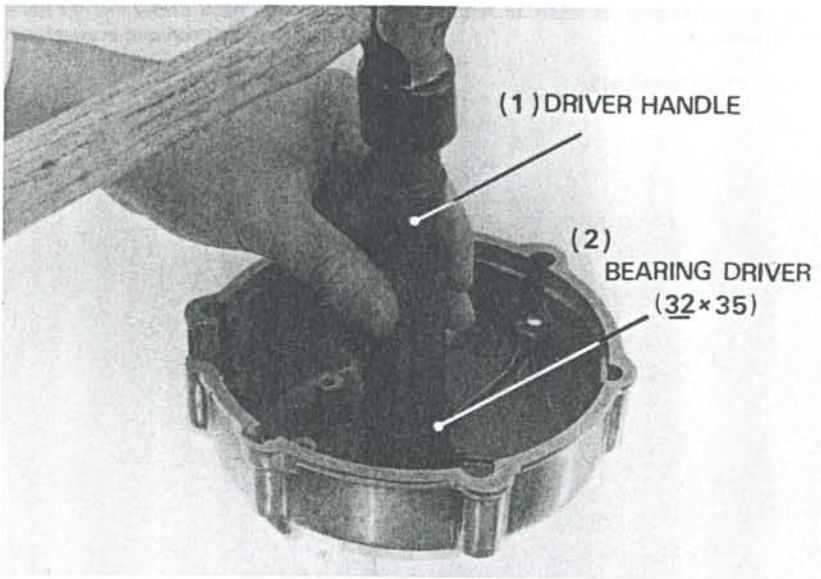


INSTALLATION

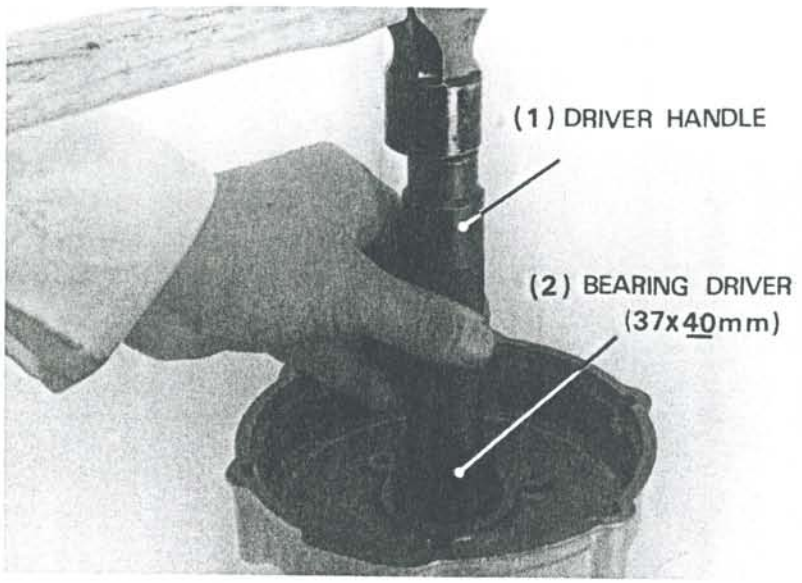
Install a new ball bearing with the bearing driver.

NOTE

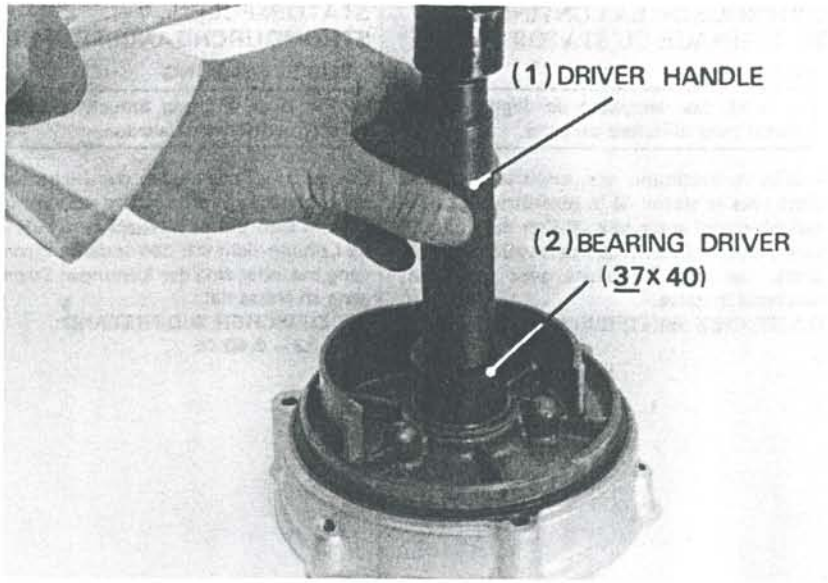
Drive the outer race evenly.



Install a new bearing into A.C. generator housing with the bearing driver.



Install a new oil seal with the bearing driver.



CAUTION

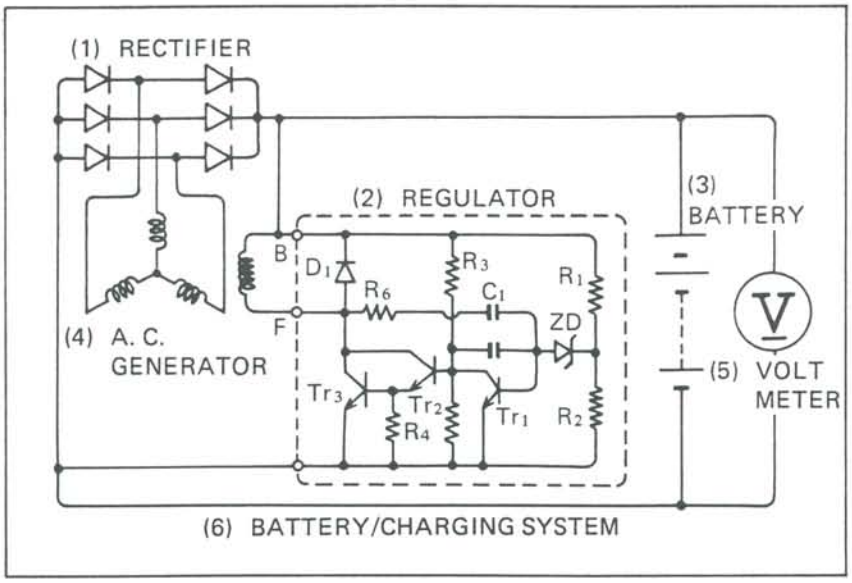
When installing the A. C. generator, apply molybdenum disulfied grease to sliding surface of the couplings of the A. C. generator.

VOLTAGE REGULATOR

VOLTAGE REGULATOR PERFORMANCE TEST

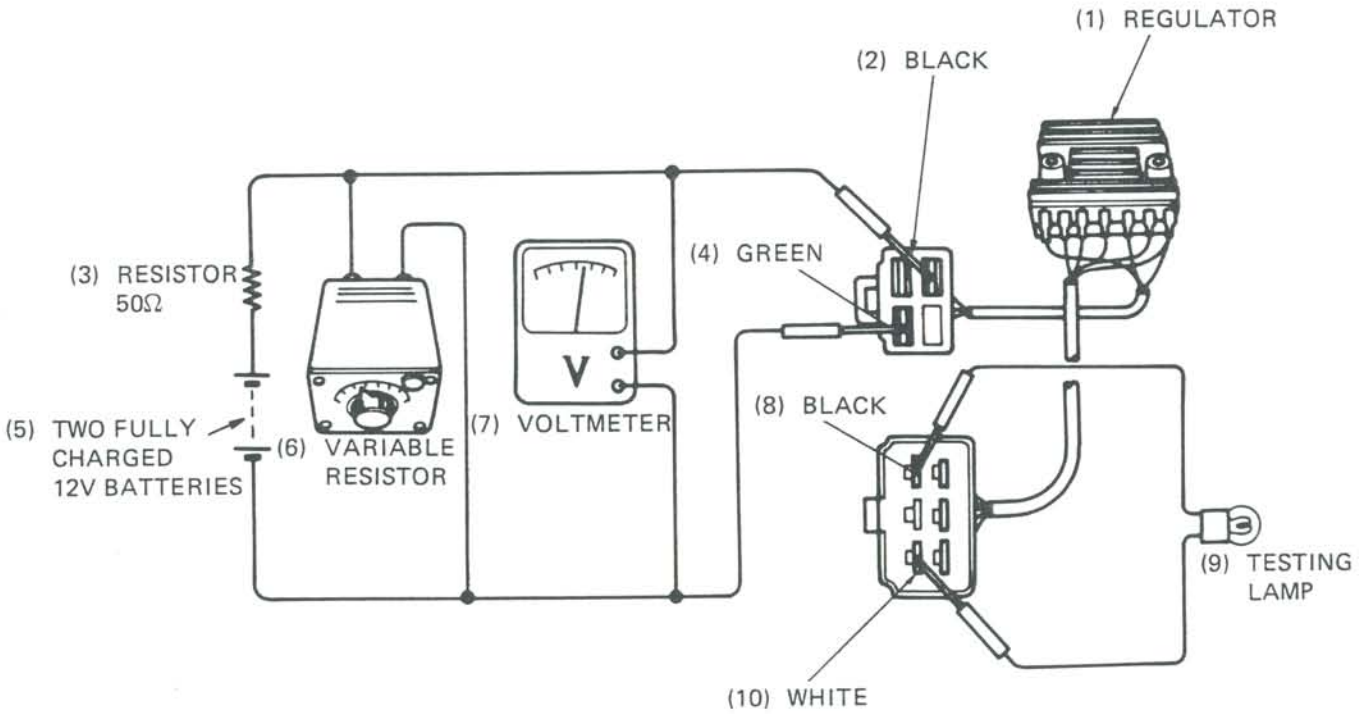
a. Testing with a voltmeter

Connect a voltmeter across the battery.
Check regulator performance with the engine running.
Regulator must cut off the field coil current when battery voltage reaches 14–15V.



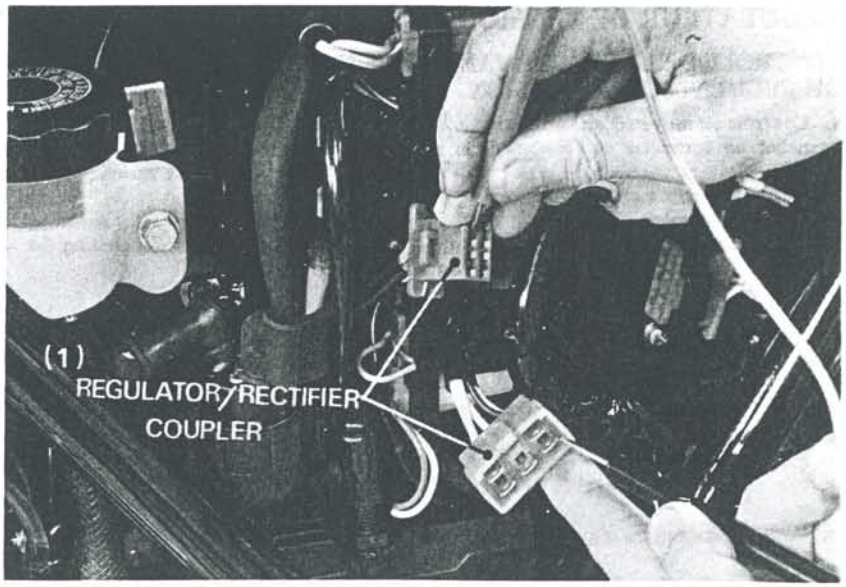
b. Testing with a variable resistor

Connect two 12V batteries in series.
Connect a variable resistor (0–100Ω) across the battery with a 50Ω resistor in between.
Test lamp must go out when voltage reaches 14–15V on the voltmeter by adjusting the variable resistor.



VOLTAGE REGULATOR/ RECTIFIER TEST

Check the resistance between the leads with an ohmmeter.



RESISTANCE IN NORMAL DIRECTION:

Green lead and any yellow lead:	5–40Ω
Red/white lead and any yellow lead:	5–40Ω

RESISTANCE IN REVERSE DIRECTION:

Red/white lead and any yellow lead:	2000Ω min.
Green lead and any yellow lead:	2000Ω min.

