

When a-c frequency is correct at no-load and under load, check the a-c voltage reading. Adjustment of the voltage regulator may be required to obtain correct a-c voltage output.

#### **▲ DANGER**

The marine generator produces extremely high and dangerous voltages. Contact with live wires and terminals may result in hazardous and possibly fatal electrical shock. **ONLY PERSONNEL WHO HAVE BEEN THOROUGHLY TRAINED IN THE SERVICING OF MARINE GENERATORS SHOULD ATTEMPT TO TROUBLESHOOT, TEST, REPAIR OR SERVICE A MARINE GENERATOR.**

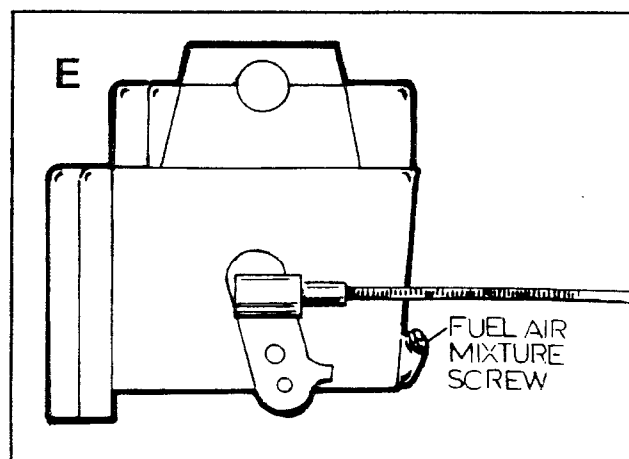
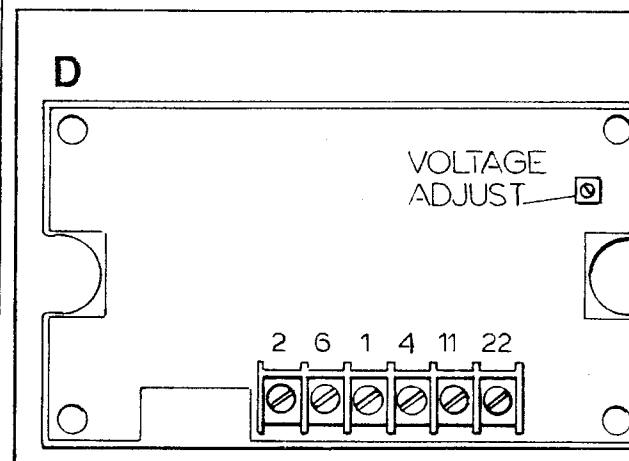
#### **1.5.2- Voltage Regulator Adjustment**

Connect an accurate a-c voltmeter and frequency meter across a-c connection terminal strip terminals 11 and 22. Voltage regulator adjustment should be accomplished under no-load condition. With engine running, check no-load voltage and frequency. If engine governor is properly set but voltage is high or low, adjust the Voltage Regulator's VOLTAGE ADJUST potentiometer as follows:-

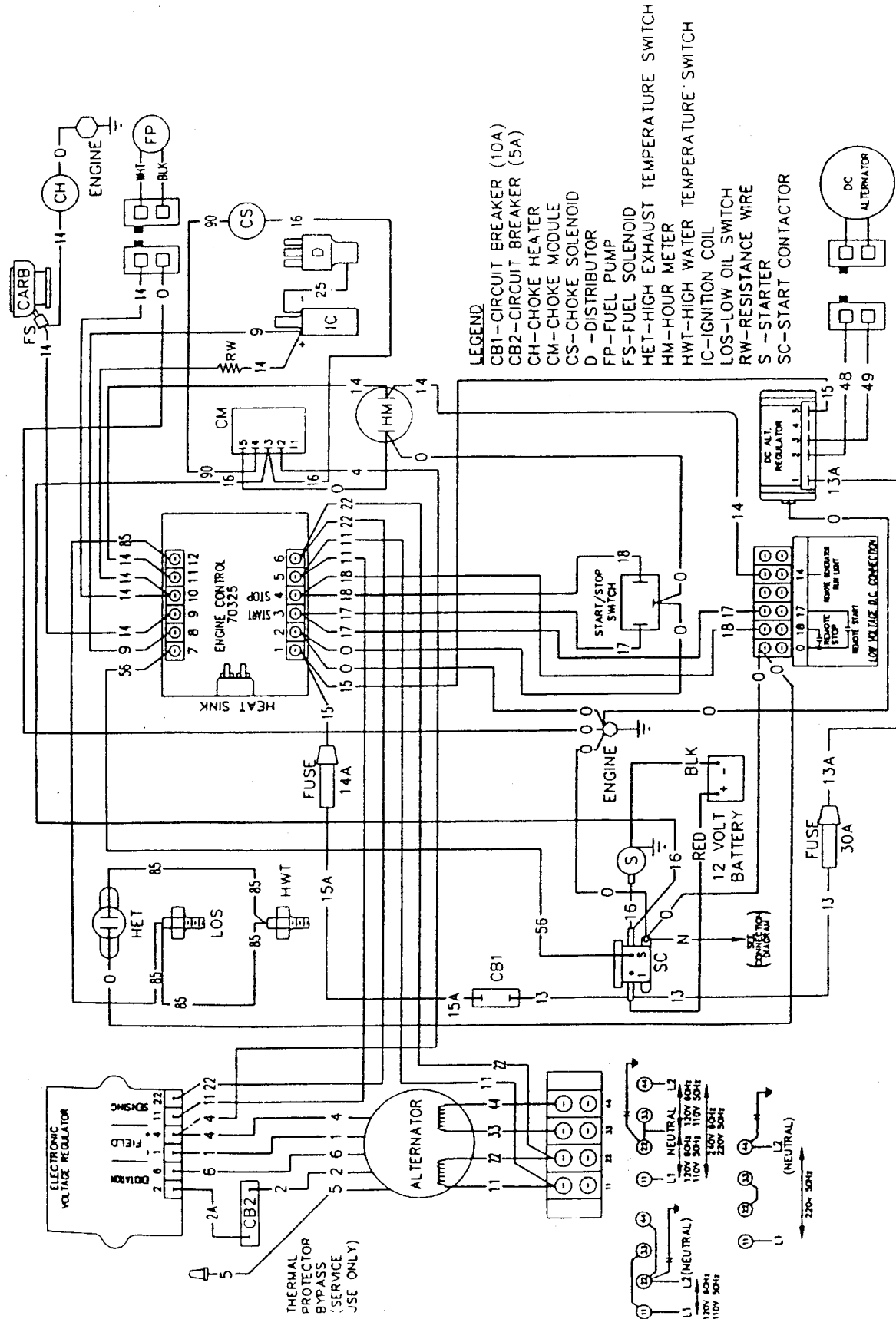
**D** Carefully turn the VOLTAGE ADJUST potentiometer until the connected voltmeter reads as close as possible to 124 volts a-c (60 Hz units); or 111 volts (50 Hz units).

#### **1.5.3- Engine Carburetor Adjustment**

**E** Adjust FUEL-AIR MIXTURE SCREW to obtain the highest possible a-c frequency reading. With engine running and warmed up, turn the SCREW clockwise slowly until frequency just starts to drop. Then, turn the SCREW slowly counterclockwise until frequency again starts to decrease. Finally, turn the SCREW slowly clockwise until highest frequency is obtained.



# WIRING DIAGRAM



# SECTION 1.6 - CONTROL PANEL & CONNECTION BOX REMOVAL

During reassembly of panels or installation of panel components, refer to the applicable WIRING DIAGRAM.

## 1.6.1- Removal of Connection Panel

The connection panel is retained to the STATOR CAN at four places, by means of rubber VIBRATION MOUNTS. Remove the connection panel as follows:-

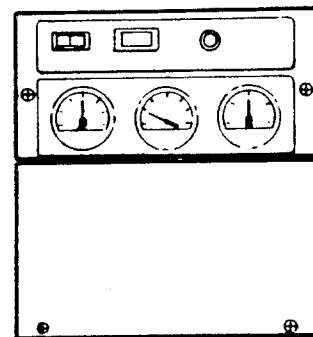
**A** Remove four M5-0.80 x 8mm PAN HEAD SCREWS, LOCKWASHERS and FLATWASHERS that retain the CONNECTION BOX COVER. Then, remove the CONNECTION BOX COVER.

**B** Remove six M5-0.80 x 8mm PAN HEAD SCREWS, LOCKWASHERS and FLATWASHERS that retain the CONTROL PANEL COVER. Disconnect all wires from CONNECTION BOX COVER components, then remove the COVER.

**C** Remove the two M6-1.00 x 8mm HEX SCREWS and LOCKWASHERS that retain the STARTER CONTACTOR to the CONNECTION BOX.

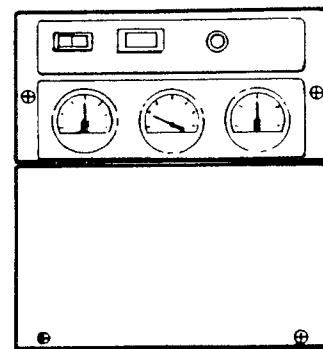
**D** Disconnect terminal ends of all wires from the A.C. POWER OUTPUT CONNECTION TERMINAL STRIP and from the LOW VOLTAGE D.C. CONNECTION TERMINAL STRIP.

**A**



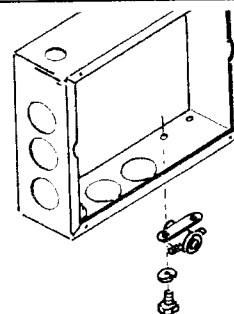
REMOVE 4 SCREWS

**B**

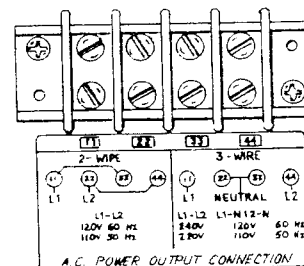
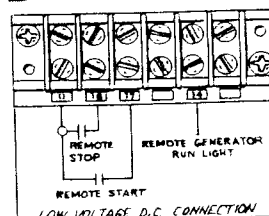


REMOVE 6 SCREWS

**C**



**D**



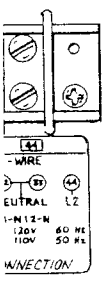
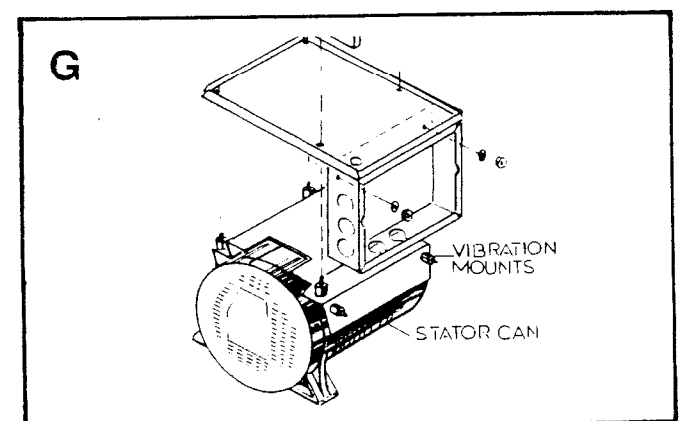
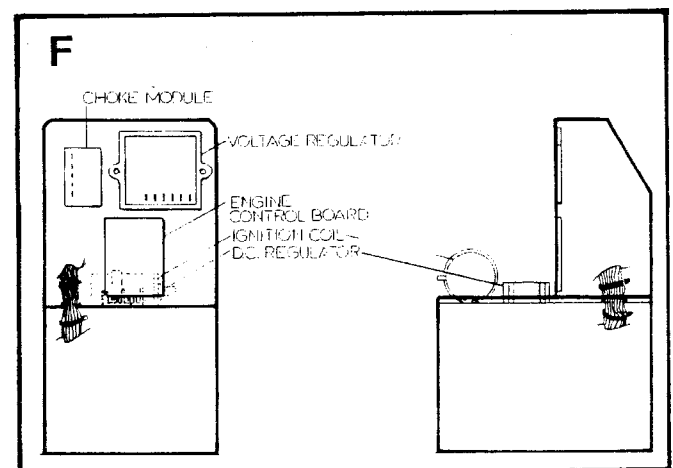
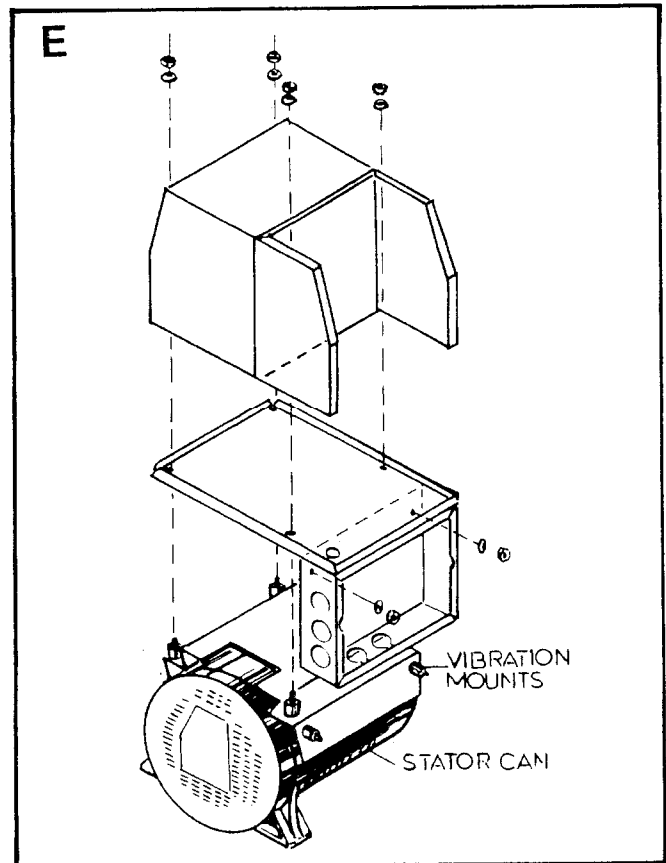
OX

**E** Inside the CONNECTION BOX, locate the HEX NUTS that retain the CONNECTION BOX to the four VIBRATION MOUNTS. Remove the HEX NUTS and WASHERS. Guide all wires through their respective cable clamps and grommets and remove the CONNECTION BOX.

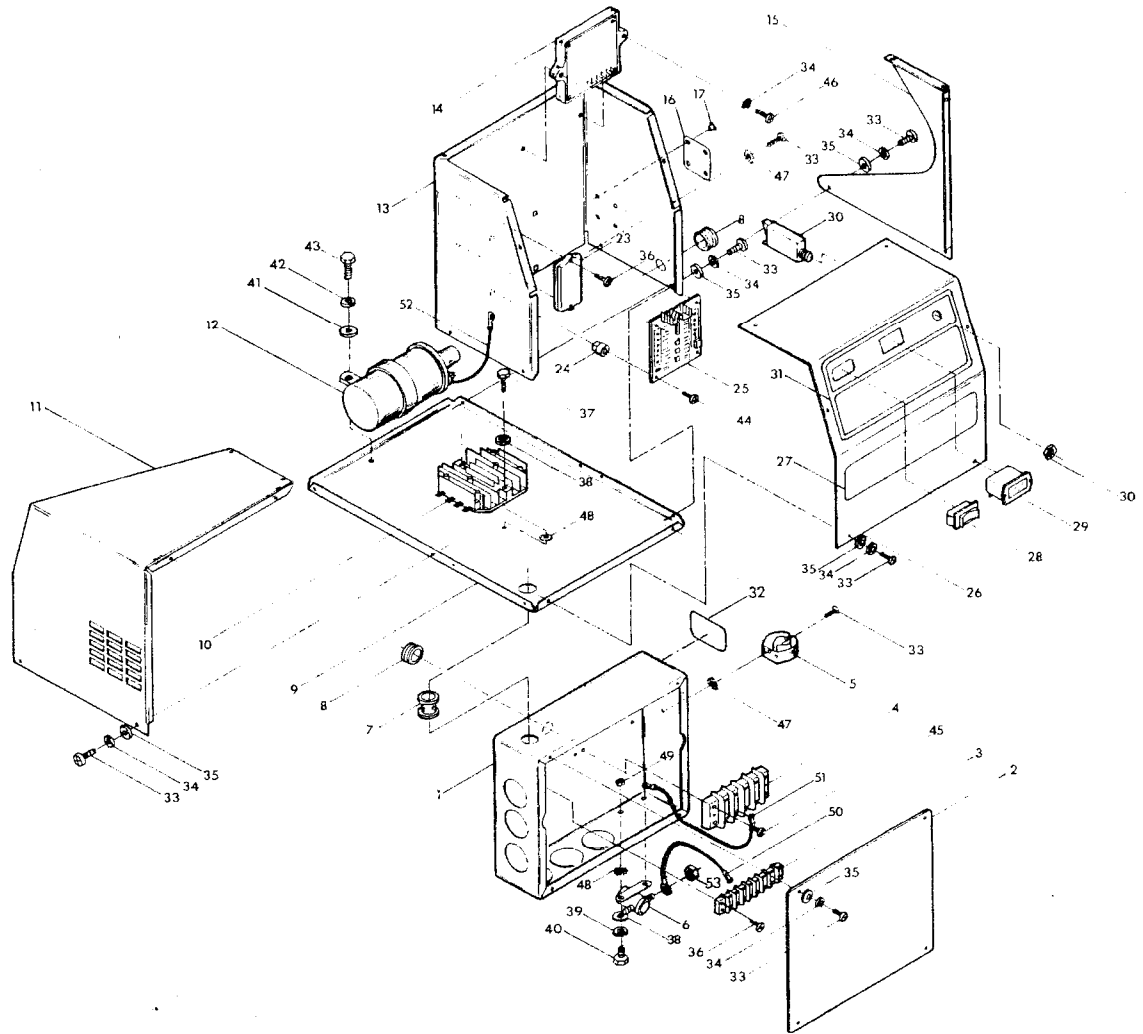
### 1.6.2- Removal of Control Panel Assembly

**F** Disconnect wires from Voltage Regulator, Engine Control Circuit Board, Choke Module, d-c Regulator, and Ignition Coil. Guide these wires carefully through their respective cable clamps or grommets, as necessary to permit CONTROL PANEL removal.

**G** Remove HEX NUTS and WASHERS that retain the BASE PANEL to the four VIBRATION MOUNTS. Check that all wires necessary for Control Panel removal have been disconnected and are out of the way. Then, remove the Control Panel Assembly. The four VIBRATION MOUNTS may then be removed from the STATOR CAN.



# Control Panel and Connection Box Assembly

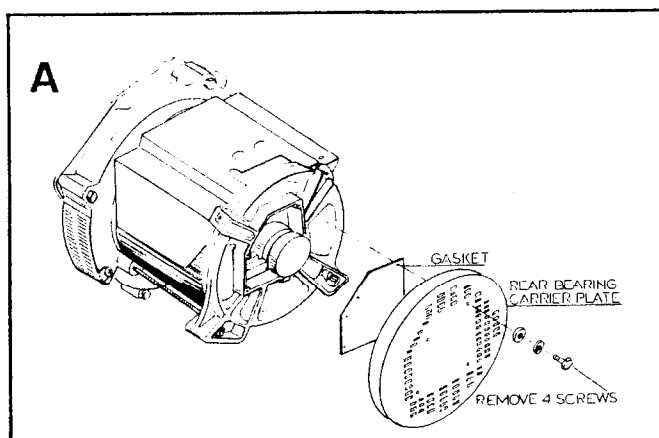


ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	CONNECTION BOX	23	CHOKE MODULE	39	LOCKWASHER- M6
2	COVER	24	SPACER NUT	40	SCREW- M6-1.00
3	TERMINAL STRIP	25	ENGINE CONTROL	41	FLATWASHER- M8
4	TERMINAL STRIP		CIRCUIT BOARD	42	LOCKWASHER- M8
5	SPRING CLIP	26	CONTROL PANEL	43	SCREW- M8-1.25
6	STARTER CONTACTOR	27	DECAL	44	SCREW- M4 x 12
7	GROMMET	28	START/STOP SWITCH	45	SCREW- M5-0.80
8	GROMMET	29	HOURLMETER	46	SCREW- M5-0.80
9	BASE	30	CIRCUIT BREAKER	47	LOCKWASHER- M5
10	D-C REGULATOR	31	DECAL	48	LOCKWASHER- M6
11	COVER	32	DECAL	49	HEX NUT- M6-1.00
12	IGNITION COIL	33	SCREW- M5-0.80	50	STARTER CONTACTOR
13	PANEL ENCLOSURE	34	LOCKWASHER- M5		TO STARTER WIRE
14	AC REGULATOR	35	FLATWASHER- M5	51	NEUTRAL WIRE
15	SIDE PANEL	36	SCREW- M4-0.70	52	COIL TO DISTRIBUTOR
16	DATA PLATE	37	SCREW- M6-1.00		WIRE
17	POP RIVET	38	FLATWASHER- M6	53	HEXNUT- 5/16"-18

## SECTION 1.7 - GENERATOR DISASSEMBLY

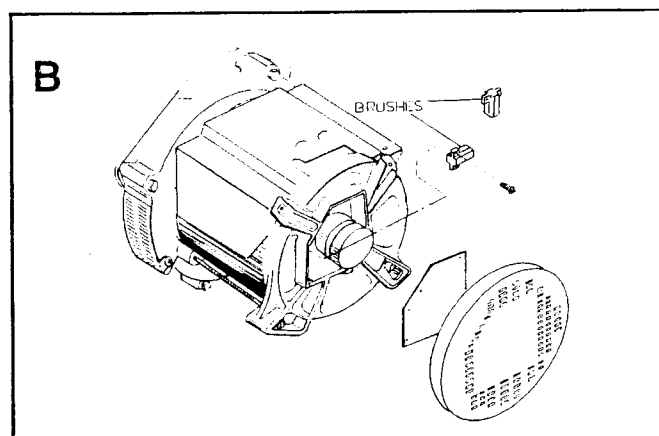
### 1.7.1- Removal of Rear Bearing Carrier Plate

**A** Remove four M6-1.00 x 8mm HEX SCREWS, LOCKWASHERS and FLATWASHERS. Then, remove the REAR BEARING CARRIER PLATE and GASKET.



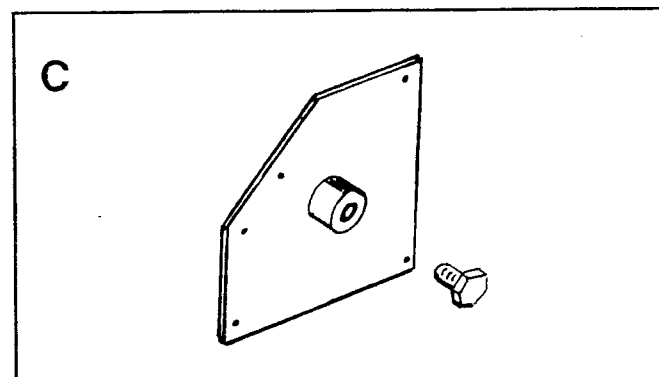
### 1.7.2- Removal of Brush Holders

**B** Remove two M4-0.70 x 12mm SCREWS that retain each BRUSH HOLDER to the REAR BEARING CARRIER. Remove Wires 1 and 4 from each BRUSH HOLDER. Finally, complete remove BRUSH HOLDERS with BRUSHES from the BEARING CARRIER.

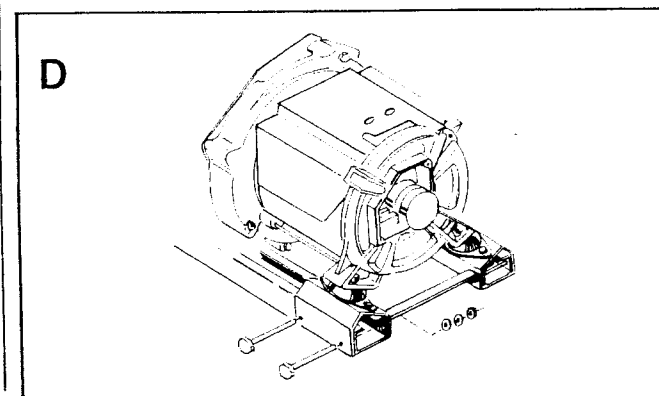


### 1.7.3- Removal of Rear Bearing Carrier

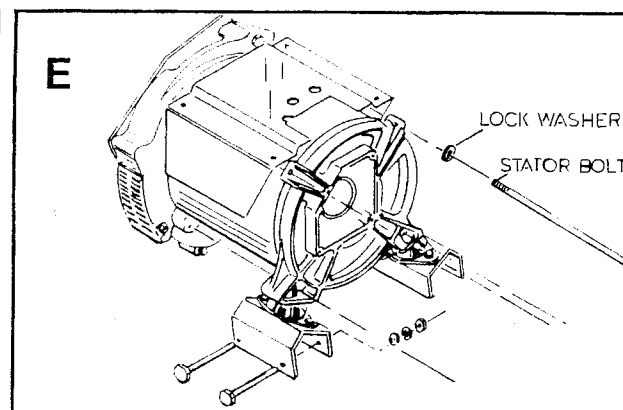
**C** A REAR BEARING CARRIER PULLER (Part No. 91-810008) is required to remove the Rear Bearing Carrier from the Rotor bearing. The plate must be retained to the Rear Bearing Carrier using the same M6-1.00 x 8mm screws that retained the Rear Bearing Carrier Plate.



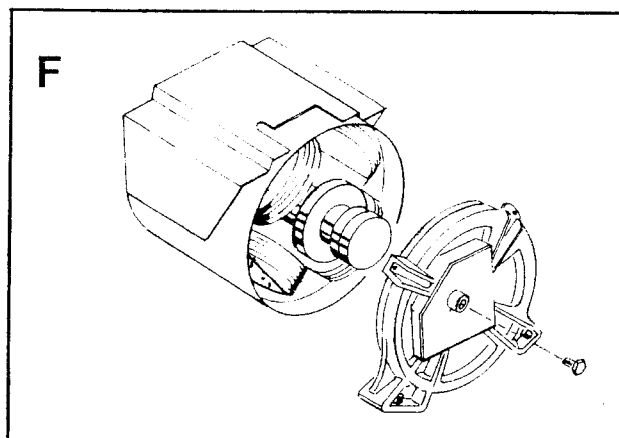
**D** Remove two M8-1.25 HEX NUTS, LOCKWASHERS, FLAT WASHERS and the two M8-1.25 x 20mm BOLTS that retain the ISOLATOR MOUNTING BRACKET to the MOUNTING RAIL. Repeat this procedure for the second ISOLATOR MOUNTING BRACKET.



**E** The STATOR ASSEMBLY is "sandwiched" between the BLOWER HOUSING and the REAR BEARING CARRIER by means of four long STATOR BOLTS. Remove all four STATOR BOLTS, along with four LOCK WASHERS.



**F** Turn the large center bolt in the center of the REAR BEARING CARRIER PULLER counterclockwise until end of bolt is flush with plate. Then, retain the PULLER to the REAR BEARING CARRIER as shown with four M6-1.00 x 8mm SCREWS. Turn the large center bolt clockwise until REAR BEARING CARRIER is free of the Rotor bearing. Finally, remove the REAR BEARING CARRIER. If desired, the two VIBRATION ISOLATORS may be removed from the BEARING CARRIER.

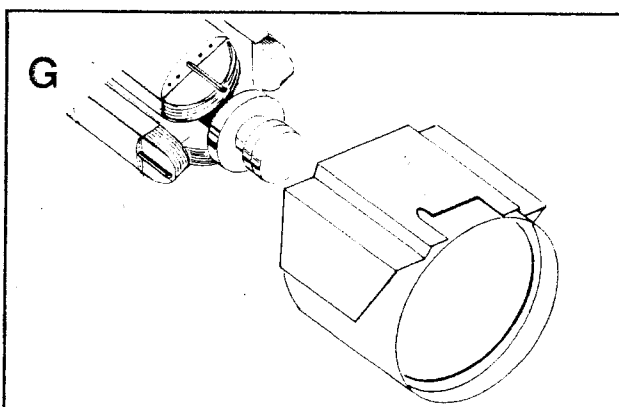


#### 1.7.4- Removal of Stator Assembly

##### **CAUTION**

Use care when removing Stator Assembly. Do not permit the Stator to drop or bump the Rotor Assembly.

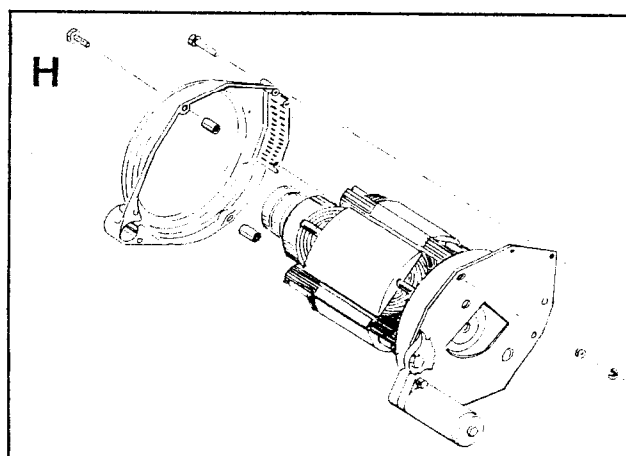
**G** Free the STATOR ASSEMBLY from the BLOWER HOUSING. Then, carefully remove the STATOR ASSEMBLY.



#### 1.7.5- Removal of Blower Housing

**H** Remove the M10-1.50 HEX SCREWS that retain the BLOWER HOUSING to the ENGINE PLATE, along with FLATWASHERS, LOCKWASHERS and HEX NUTS.

**IMPORTANT:** Two of the HEX SCREWS are 55mm long, one is 70mm long. Note position of longest HEX SCREW for reassembly.





## 1.7. 6- Removal of Rotor Assembly

**J** Four M10-1.25 WELD STUDS on the COUPLING PLATE mate with holes in the FAN & RING GEAR. Remove the four WELD STUD HEX NUTS and WASHERS. The ROTOR and the FAN & RING GEAR may then be removed as a unit.

**J**

HEX NUT  
LOCK WASHERS

WELD STUDS

**K** Remove five M10-1.25 x 20mm HEX SCREWS and LOCKWASHERS that retain the COUPLING PLATE to the ENGINE. Remove COUPLING PLATE.

**K**

REMOVE  
FIVE  
HEX BOLTS  
AND  
WASHERS

**L** Remove the M12 x 40mm HEX HEAD BOLT, LOCK-WASHER and ROTOR SHAFT SPACER. Then, remove the FAN & RING GEAR from the ROTOR. Remove KEY from ROTOR SHAFT KEYWAY.

**L**

## 1.7.7- Removal of Engine Plate

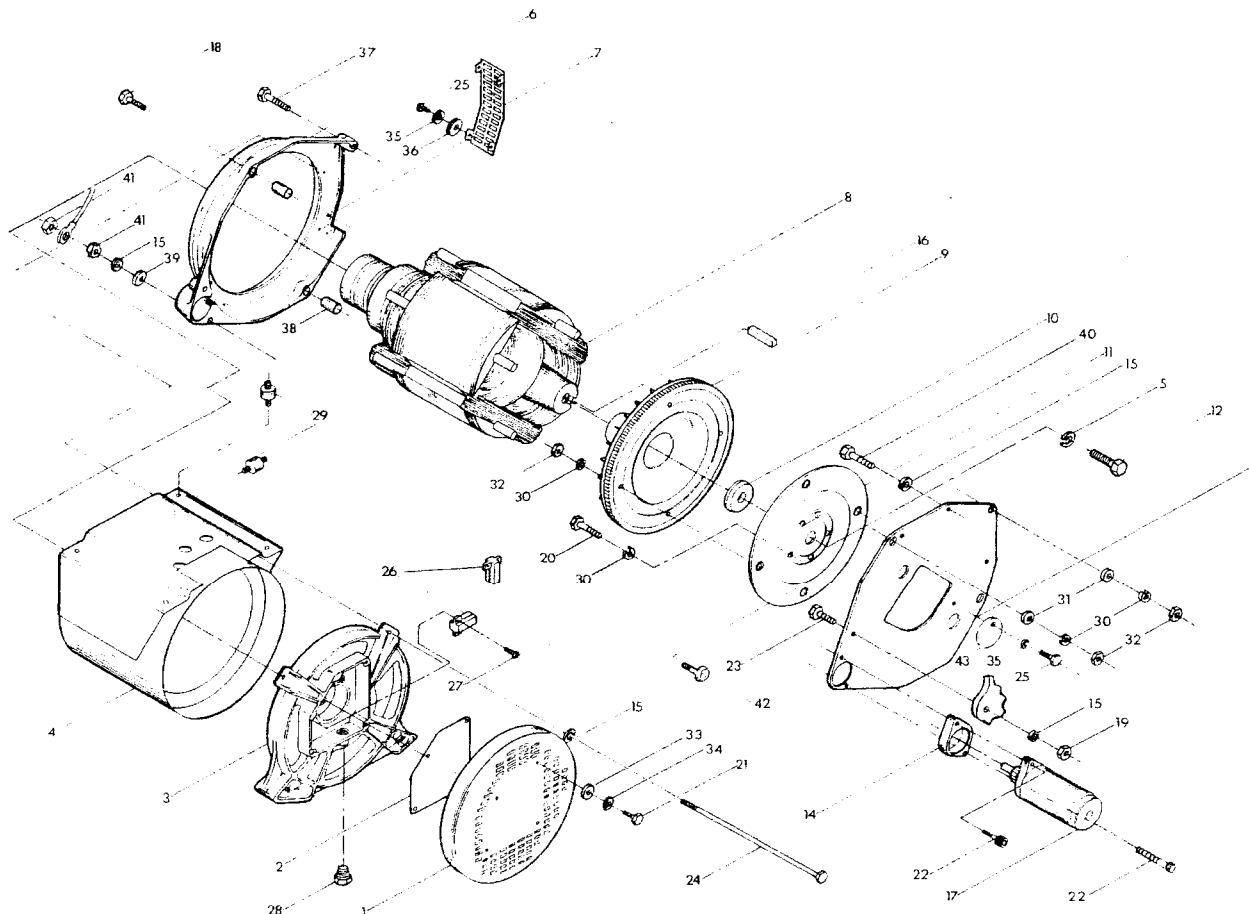
**M** Remove STARTER retaining bolts and remove STARTER. Remove all BOLTS that retain the ENGINE PLATE to the ENGINE. Finally, remove ENGINE PLATE.

**M**



## Exploded View of Generator Assembly

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	REAR BEARING CARRIER PLATE	22	SOCKET HEAD SCREW
2	GASKET	23	HEX SCREW
3	REAR BEARING CARRIER	24	STATOR BOLT
4	STATOR ASSEMBLY	25	PAN HEAD SCREW
5	LOCKWASHER	26	BRUSH HOLDER
6	BLOWER HOUSING	27	PAN HEAD SCREW
7	AIR OUTLET SCREEN	28	REAR BEARING FLAME ARRESTOR
8	ROTOR ASSEMBLY	29	VIBRATION MOUNT
9	FAN & RING GEAR ASSEMBLY	30	LOCKWASHER
10	ROTOR SHAFT SPACER	31	FLATWASHER
11	COUPLING PLATE	32	HEX NUT
12	HEX HEAD BOLT	33	FLATWASHER
13	ENGINE PLATE	34	LOCKWASHER
14	STARTER ADAPTER	35	LOCKWASHER
15	LOCKWASHER	36	FLATWASHER
16	SOCKET HEAD SCREW	37	HEX SCREW
17	STARTER MOTOR	38	DOWEL SLEEVE
18	HEX SCREW	39	FLATWASHER
19	HEX NUT	40	SCREW
20	HEX SCREW	41	HEX NUT
21	HEX SCREW	42	WELD STUD



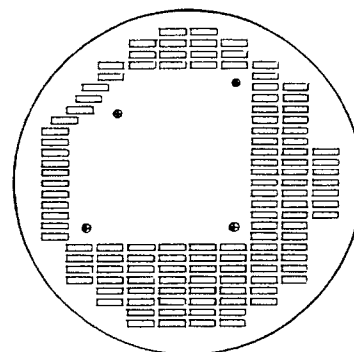
## SECTION 1.8 - COMPONENTS INSPECTION AND TESTING

*Following disassembly of the generator set, component parts should be inspected and tested. Store parts in a clean, dry area, where a steady room temperature will prevent condensation.*

### 1.8.1- Rear Bearing Carrier Plate and Gasket

**A** Clean the Plate in a suitable commercial cleaner, blow dry with compressed air. Carefully inspect the Plate for obvious damage, clogged air slots, etc. Replace Plate, if necessary.

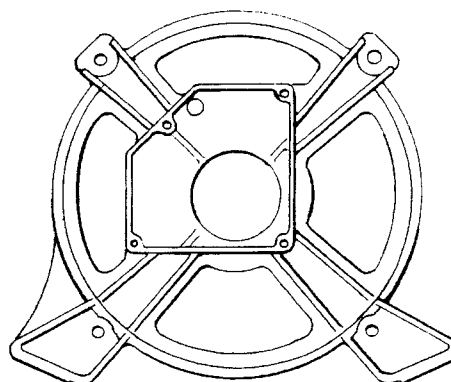
**A**



### 1.8.2- Rear Bearing Carrier

**B** The Rear Bearing Carrier is an aluminum casting. Clean the casting and blow dry with compressed air. Visually inspect the Carrier for cracks, dents and obvious damage. An insert is pressed into the Carrier center bore, to accommodate the Rotor bearing. Use an inside micrometer to check insert bore diameter. Replace Rear Bearing Carrier if insert inside diameter is not within 2.834-2.836 inches (71.996-72.012mm).

**B**



### 1.8.3- Stator Assembly

**C** Clean Stator can exterior surface with a soft brush or cloth. Use clean, dry, low pressure air (not more than 25 psi) to clean Stator interior. Use an ohmmeter to test resistance of Stator power windings (Paragraph 1.4.6 on Page 14). Also test resistance of Stator Excitation Windings (Paragraph 1.4.5 on Page 13). Use a Hi-Pot tester to test condition of Stator insulation as outlined in Paragraph 1.3.1 on Page 8. If insulation resistance is low, Stator may be dried by blowing warm, dry air across it for several hours. DO NOT EXCEED 185° F. (85° C.). If insulation resistance is still excessively low after drying, replace the Stator assembly.

**C**

