

## Voltage Regulator Service Kit 228675

5/7RMY, 5RMOY, 7.5C, and 7.5R Standby Models

3.5/4.5/5.5/7CM, 4.5CKM, and 7.5C RV Models

7.5R and 7.5A Marine Models

1.75/2.25/3.5/5MBM, 1.75/3.5/5MM, 5CM-HS, and 3.5/5TS Portable Models

Voltage regulator kit 228675 replaces the discontinued voltage regulator no. 233833 and kit no. 287978. The discontinued voltage regulator kit made use of a 5-pin voltage regulator and was used on a wide range of models prior to the PowerBoost™ voltage regulator. The early 5-pin voltage regulator was available in two versions, see Figure 1. The new kit has five leads which will connect directly to the existing wiring. The significant differences of the new kit are the appearance of the voltage regulator and the mounting location.

**Accidental starting can cause severe injury or death.** Turn Generator Master Switch to OFF position, disconnect power to battery charger, and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

**(standby)**

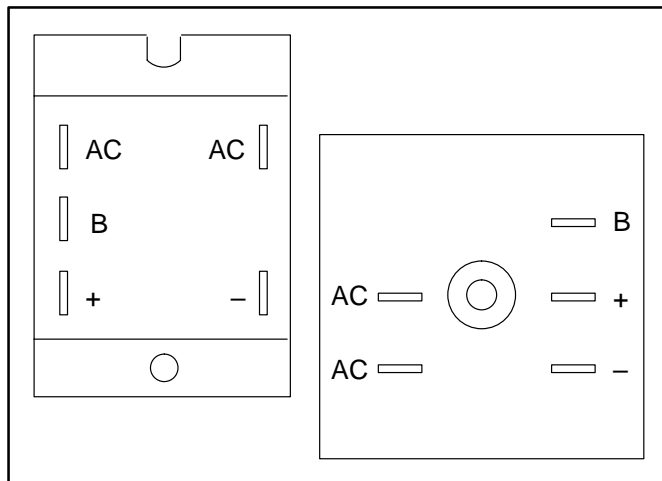


Figure 1. Early Voltage Regulators

**Accidental starting can cause severe injury or death.** Disconnect battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. The generator set can be started by remote start/stop switch unless this precaution is followed.

**(RV)**

**Accidental starting can cause severe injury or death.** Disconnect battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. Place controller MASTER switch to OFF position. The generator set can be started by remote start/stop switch unless this precaution is followed.

**(marine)**



**WARNING**

**Accidental starting.**

**Can cause severe injury or death.** Disconnect battery cables before working on generator set (negative lead first and reconnect it last).

**Accidental starting can cause severe injury or death.** Disconnect the spark plug wire(s), remove battery cables (remove negative lead first and reconnect it last) and disconnect power to battery charger (if equipped) to disable generator set before working on any equipment connected to generator.

**(portable)**

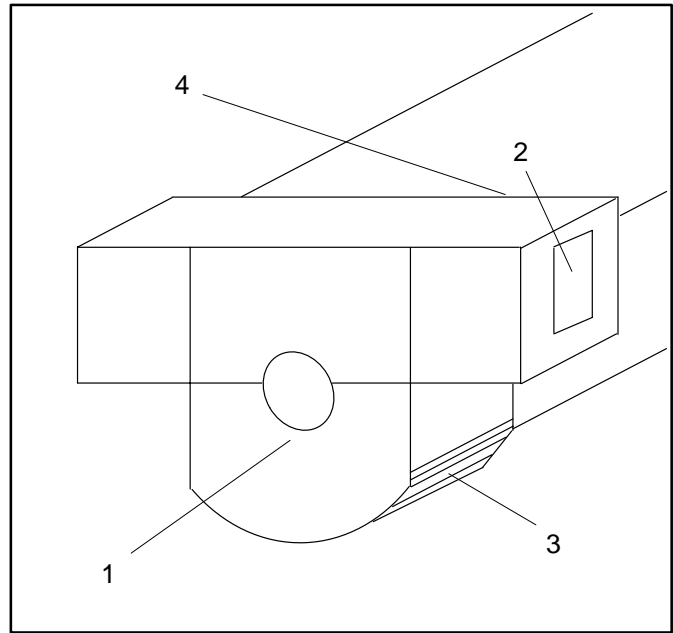
## Installation

1. Disconnect battery, negative lead first (if equipped).
2. Disassemble generator set to access existing voltage regulator. Most models have the voltage regulator mounted in the end bracket. See proper service manual for further information.
3. Label each lead connected to voltage regulator. Disconnect leads from voltage regulator and then remove voltage regulator. Original voltage regulator and hardware will not be reused. Some models use a plate to mount the voltage regulator which is mounted to the side of the end bracket. This plate must be replaced to keep end bracket internal components from being exposed.
4. Select a location near the original location for mounting the new voltage regulator (A-228664). In most cases the voltage regulator will not mount in the original location. If no location is available inside the end bracket, the voltage regulator can be mounted to the outside of the end bracket. See Figures 2 and 3. The mounting location must not interfere with any moving parts, must not be in contact with hot parts, and must not affect clearance for necessary generator set vibration.

Hardware is supplied to mount the voltage regulator in one of two ways. Two 10-24 x 1/2 in. screws (X-50-15) can be directly threaded into the tapped holes of the voltage regulator. Otherwise, use two 6-32 x 3/4 in. screws (X-49-6) and two 6-32 serrated nuts (X-6210-3) can be used to attach the voltage regulator. In some cases, customer-supplied hardware may be required to properly mount voltage regulator.

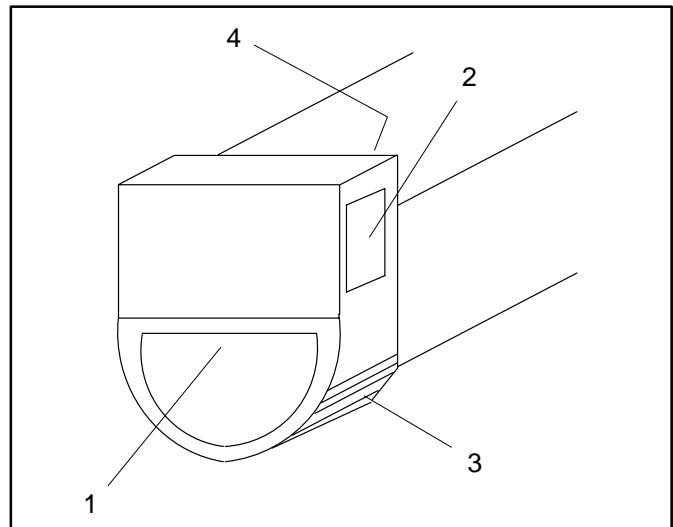
After determining where voltage regulator is to be mounted, mark location for the mounting holes. The center-to-center distance is 2.9 in. (74 mm). See Figure 4. If using the two 10-24 screws, drill two 7/32 in. (6 mm) dia. holes in end bracket. If using the two 6-32 screws and nuts, drill two 5/32 in. (4 mm) dia. holes in end bracket. When drilling holes use care not to damage any components including wiring.

Remove all burrs and chips from generator set. Mount voltage regulator using proper hardware. Remaining hardware will not be used.



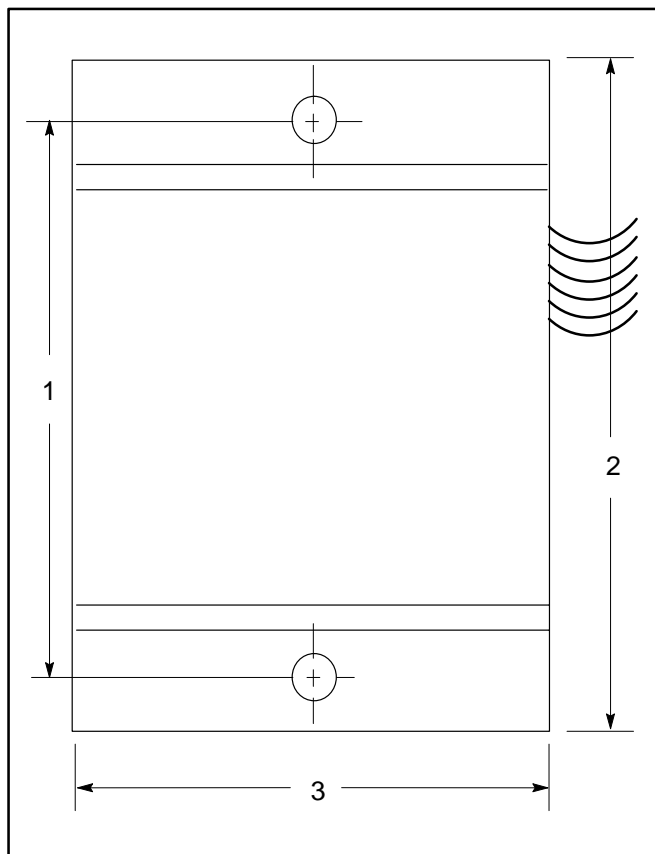
1. End Bracket
2. Mount new voltage regulator on end bracket side
3. Run leads through cooling slots
4. Drill hole for leads on the backside, if necessary

**Figure 2. Mounting New Voltage Regulator (Typical RV, Marine, and Some Standby Models)**



1. End Bracket
2. Mount new voltage regulator on end bracket side
3. Run leads through cooling slots
4. Drill hole for leads on the backside, if necessary

**Figure 3. Mounting New Voltage Regulator (Typical Portable and Some Standby Models)**



1. 2.9 in. (74 mm) (center-to-center)
2. 3.5 in. (89 mm) (length)
3. 2.5 in. (64 mm) (width)

**Figure 4. Voltage Regulator Dimensions (Template)**

5. If voltage regulator was mounted to the outside of the end bracket and no hole is available to run wiring inside, drill a 3/8 in. (9.5 mm) dia. hole through the end bracket for the leads. The cooling slots can be used for this purpose. When drilling a hole use care not to damage any components including wiring. Remove all burrs and chips from generator set. Install grommet (243320) into hole.
6. Use vinyl tubing (D-393-13) to cover leads which are exposed between voltage regulator and cooling slots (or grommet). Cut the vinyl tubing as necessary.
7. Leads from new voltage regulator should be long enough to easily reach existing voltage regulator wiring. Cut any excess from new voltage regulator

leads. Strip 1/4 in. (6 mm) from end of leads and crimp on fully insulated 1/4 in. push-on terminals (X-431-29). If existing terminals are damaged or lead ends are frayed, butt connectors (X-367-3) can be substituted on existing wiring and new voltage regulator leads.

Connect the wiring as follows:

- Two brown leads to AC sensing leads.
- Orange lead to field (+) lead.
- Yellow lead to field (-) lead.
- Grey lead to battery flashing (B) lead.

Use electrical tape or heat shrink tubing (not supplied) to insulate each connection when using the push-on connectors.

8. Use cable ties (X-468-2), as necessary, to secure leads from any moving parts. Secure voltage regulator leads to cooling slots.

**NOTE**

All leads must be secured away from rotor to prevent damage when generator set is running.

9. Reassemble generator set. See service manual for more information.
10. Reconnect battery, negative lead last (if equipped).
11. Disconnect any load connected to the generator set. Start generator set and check that unit has voltage output. STOP generator set.

**PARTS LISTING**

Qty.	Description	Part No.
1	Regulator assembly, voltage	A-228664
1	Grommet	243320
1	Tubing, vinyl	D-393-13
2	Screw, 6-32 x 3/4 in.	X-49-6
2	Screw, 10-24 x 1/2 in.	X-50-15
5	Connector, butt	X-367-3
5	Terminal, 1/4 in. male fully ins.	X-431-29
4	Ties, cable	X-468-2
2	Nut, 6-32 serrated	X-6210-3