

PowerBoost Voltage Regulator Connection Generator Sets

Several voltage regulators are used on Kohler generator sets. To properly connect the voltage regulator, use one of the following instructions. To determine which instruction is correct for a particular model, identify the part number of the voltage regulator and the model no. of the generator set. An X is used in the following chart to signify *any* prefix letter.

Voltage Reg. Part No.	Kit No.	Type
<u>X</u> -278598	228605	PowerBoost IIIE
<u>X</u> -239753	228604	PowerBoost III
<u>X</u> -239311	228602	PowerBoost (120 Volt)
<u>X</u> -239509	228603	PowerBoost (110 Volt)

WARNING



Accidental starting can cause serious personal injury.

Prevent unit from accidental starting while servicing. Disconnect battery, remove negative (-) lead first. Reconnect negative (-) lead last.

WARNING



Hazardous voltage can cause death or serious injury. The heat sink of the voltage regulator contains high voltage. Do not touch voltage regulator heat sink when testing or electrical shock will occur. (Applies to all voltage regulators except, PowerBoost IIIE.)

PowerBoost IIIE Voltage Regulator Connection

PowerBoost IIIE Voltage Regulator uses a 6-pin in-line connector. This configuration is the easiest to reconnect as there are no individual leads to connect. See Figure 1. After connection is made, it will require adjustment. See Voltage Regulator Adjustment.

An (optional) remote rheostat may be connected between terminals 33 and 66 in applications where fine voltage adjustment is required. The rheostat will provide a 5 Volt adjustment range.

PowerBoost III Voltage Regulator Connection

PowerBoost III requires leads from stator and rotor to be individually connected. See Figure 2. After connection is made, it will require adjustment. See Voltage Regulator Adjustment.

An (optional) remote rheostat may be connected between terminals 33 and 66 in applications where fine voltage adjustment is required. The rheostat will provide a 5 Volt adjustment range.

*Some early 7CKM-RV with PowerBoost III voltage regulators may have a stator with a separate winding 55-66 where lead 66 and 33 are externally connected. See Figure 3 and NOTE below.

NOTE

Stator lead 66 (along with lead 33) must be connected to voltage regulator terminal 33 or generator damage may result.

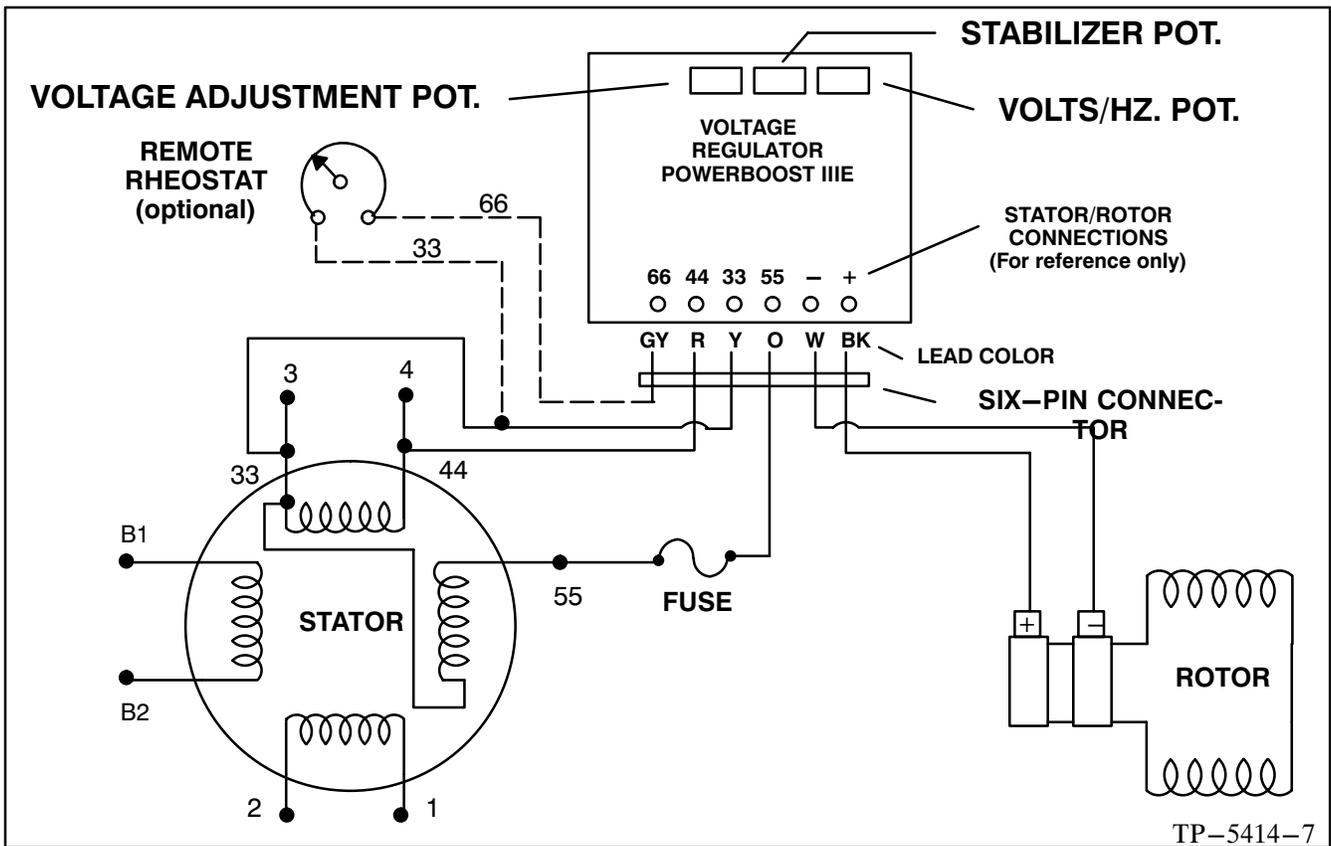


Figure 1. PowerBoost III E Voltage Regulator

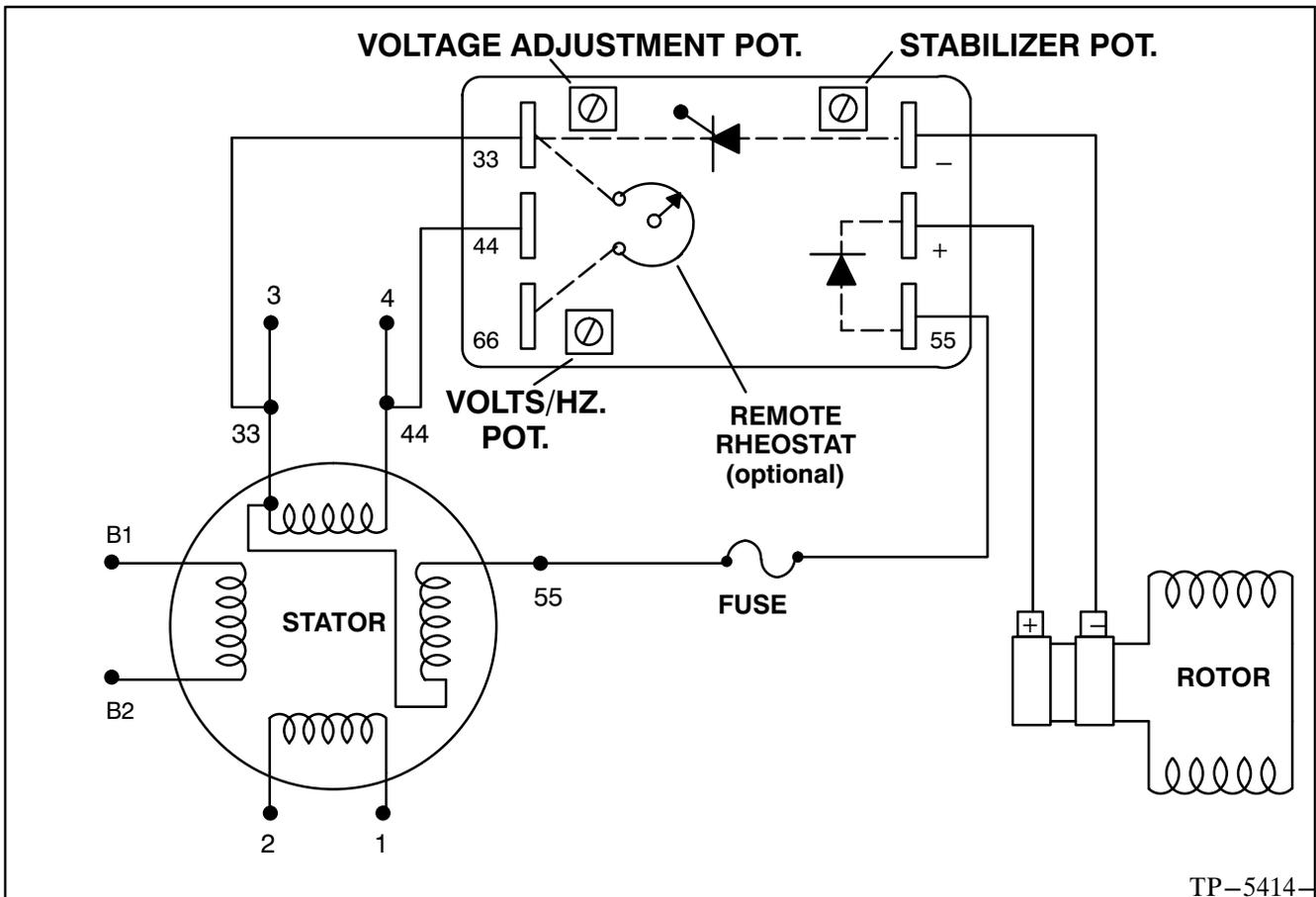


Figure 2. PowerBoost III Voltage Regulator

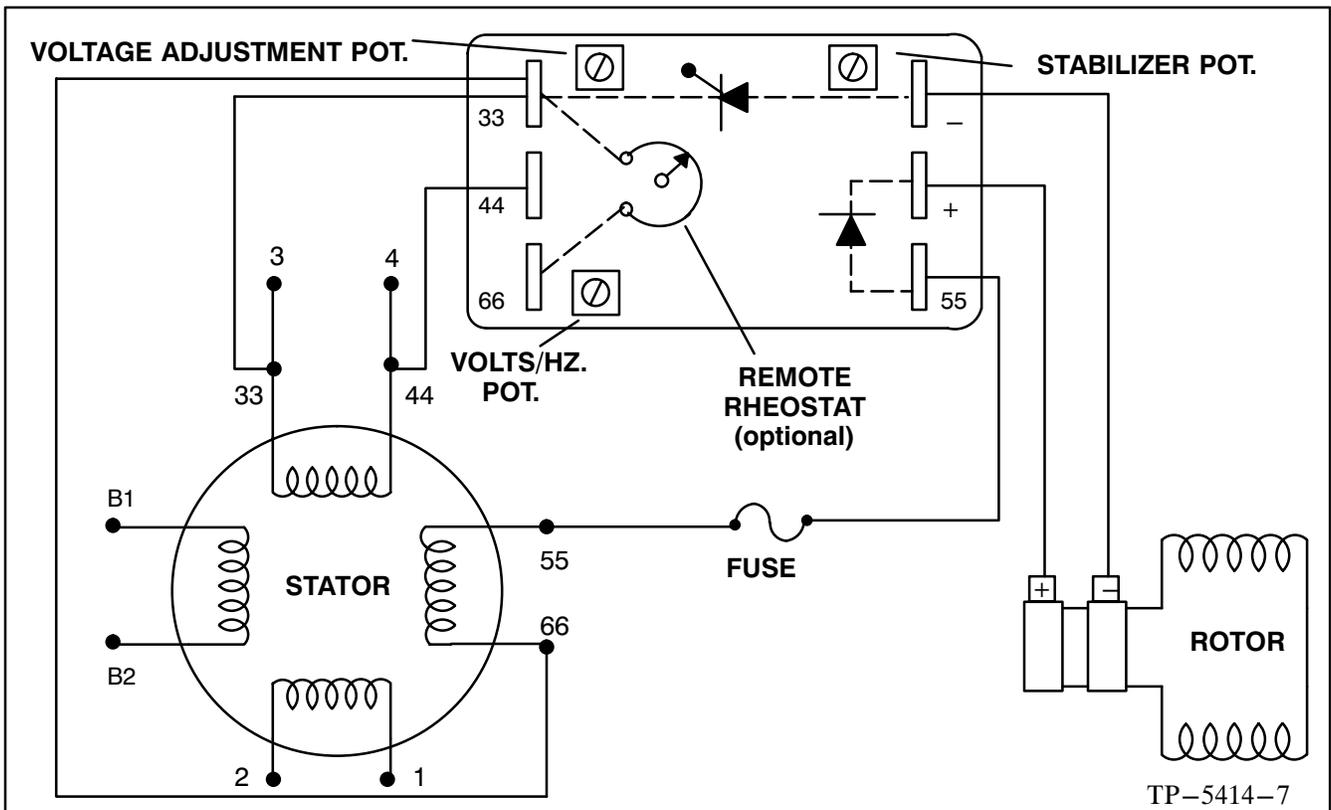


Figure 3. PowerBoost III Voltage Regulator (Early 7CKM-RV only)

PowerBoost (120 Volt/110 Volt) Voltage Regulator Connection

PowerBoost (120 Volt/110 Volt) requires leads from stator and rotor to be individually connected.

The procedure for connection of the 120 Volt and 110 Volt voltage regulators is similar, but the voltage regulators are NOT interchangeable. See Figure 4. After connection is made, no adjustment is required.

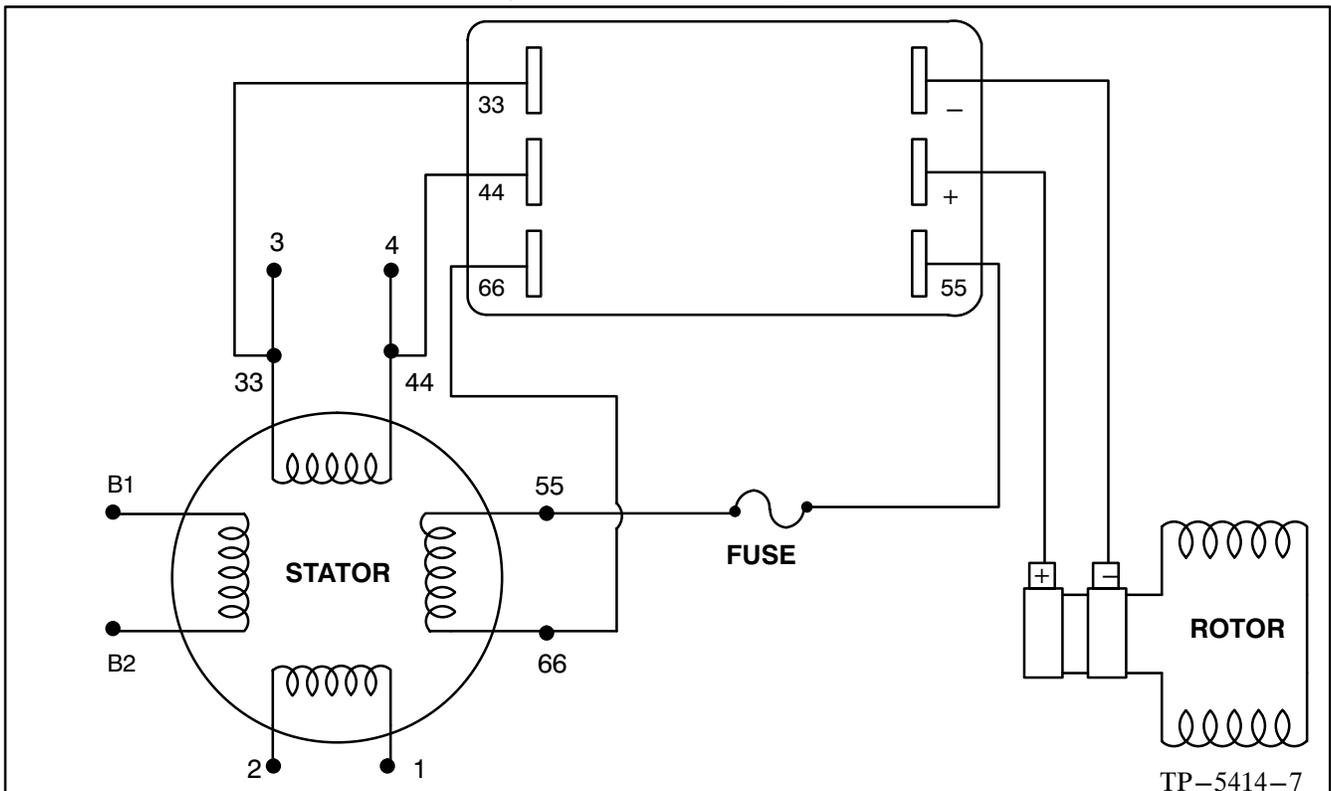


Figure 4. PowerBoost (120 Volt/110 Volt) Voltage Regulator

Voltage Regulator Adjustment

WARNING



Hazardous voltage can cause death or serious injury. The heat sink of the voltage regulator contains high voltage. Do not touch voltage regulator heat sink when testing or electrical shock will occur. (All voltage regulator models, except PowerBoost III E.)

The PowerBoost III E and PowerBoost III voltage regulator monitors generator output to control current flow to the generator field. However, unlike earlier PowerBoost regulators, PowerBoost III E maintains generator output at 120 Volts under load until the generator engine speed drops to a pre-set level (factory setting 56.3 Hz). At this point the regulator allows generator voltage and current to drop to a level sufficient to handle load. When the generator speed returns to normal (60 Hz) as load is accepted, generator output also returns to normal. The voltage regulator is factory set for proper generator operation under a variety of load conditions. Under normal circumstances, no further adjustment is necessary. However, if the regulator is replaced or has been tampered with, readjust according to the following procedure.

Voltage Adjustment Pot. – Adjusts generator output within range of 100–130 Volts.

NOTE

A customer–provided rheostat may be connected across regulator leads/terminals 33 and 66 to adjust generator output voltage from a location remote from the set. The rheostat (10k ohms, 1/2 watt minimum) will provide a 5 Volt adjustment range.

Stabilizer Pot. – ”Fine–tunes” regulator circuitry to reduce light flicker.

Volts/Hz Pot. – Adjustment determines engine speed (Hz) at which generator output voltage will begin to drop.

NOTE

For optimum results, full load should be applied when adjusting voltage regulator.

1. With generator set off, turn remote rheostat (if equipped) to mid–point. Turn **Voltage, Volts./Hz., and Stability pots.** fully counterclockwise. Connect voltmeter and frequency meter to AC circuit or an electrical outlet.
2. Start generator set. Rotate **voltage adjustment pot.** clockwise to increase voltage (counterclockwise to decrease voltage) until desired output voltage is achieved.
3. Rotate **stability pot.** clockwise until minimum light flicker is obtained.
4. Readjust **voltage adjustment pot.** (if necessary).
5. Adjust engine speed to desired cut–in frequency (factory setting 56.3 Hz for 60 Hz operation) as measured on frequency meter.
6. Rotate **Volts/Hz adjustment pot.** clockwise until voltage level begins to drop (as measured on voltmeter). When set to these specifications, the generator will attempt to maintain normal output until engine speed drops below the frequency set in step 5 (as load is applied).
7. Readjust engine speed to normal (60 Hz.).
8. Readjust **voltage adjustment pot.** (if necessary).
9. Readjust **stability pot.** (if necessary).
10. Use remote rheostat (if equipped) to make final voltage adjustments. **STOP GENERATOR SET.**