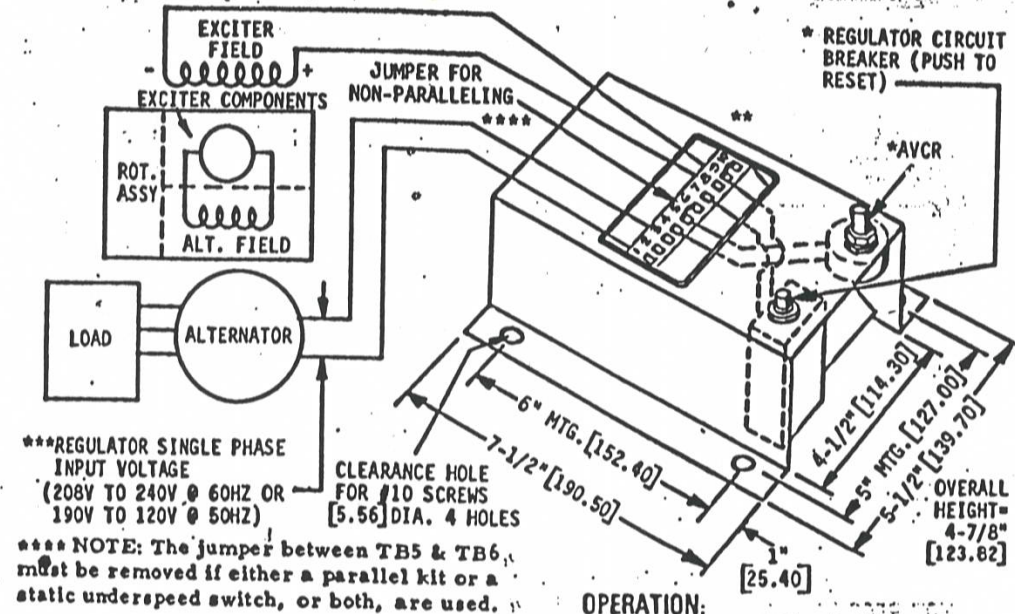


# INSTRUCTIONS

## INSTALLATION AND OPERATION

### INSTALLATION:

### VR-185 VOLTAGE REGULATOR



### OPERATION:

1. For a new installation, turn the AVCR fully counterclockwise so that the line voltage will be at a minimum after the engine is started.
2. Start the driving engine and adjust to rated speed of the generator.  
**CAUTION:** Generators operating with automatic voltage regulators should not be run at less than nameplate speed, unless equipped with underspeed protection. Reduced speed operation may damage the regulator or generator.
3. Adjust the generator voltage to the desired level within the nameplate rating with the AVCR.
4. Close the line switch or circuit breaker.
5. Check amperes, volts, and frequency to be certain values are within nameplate rating. Also, check both voltage and current line balance on three-phase systems.

### Field Flashing

**CAUTION:** The rectifiers in the regulator will be damaged if the generator exciter is flashed wrong. The correct polarity for field flashing is: Battery (+) on regulator terminal 8 and battery (-) on terminal 9.

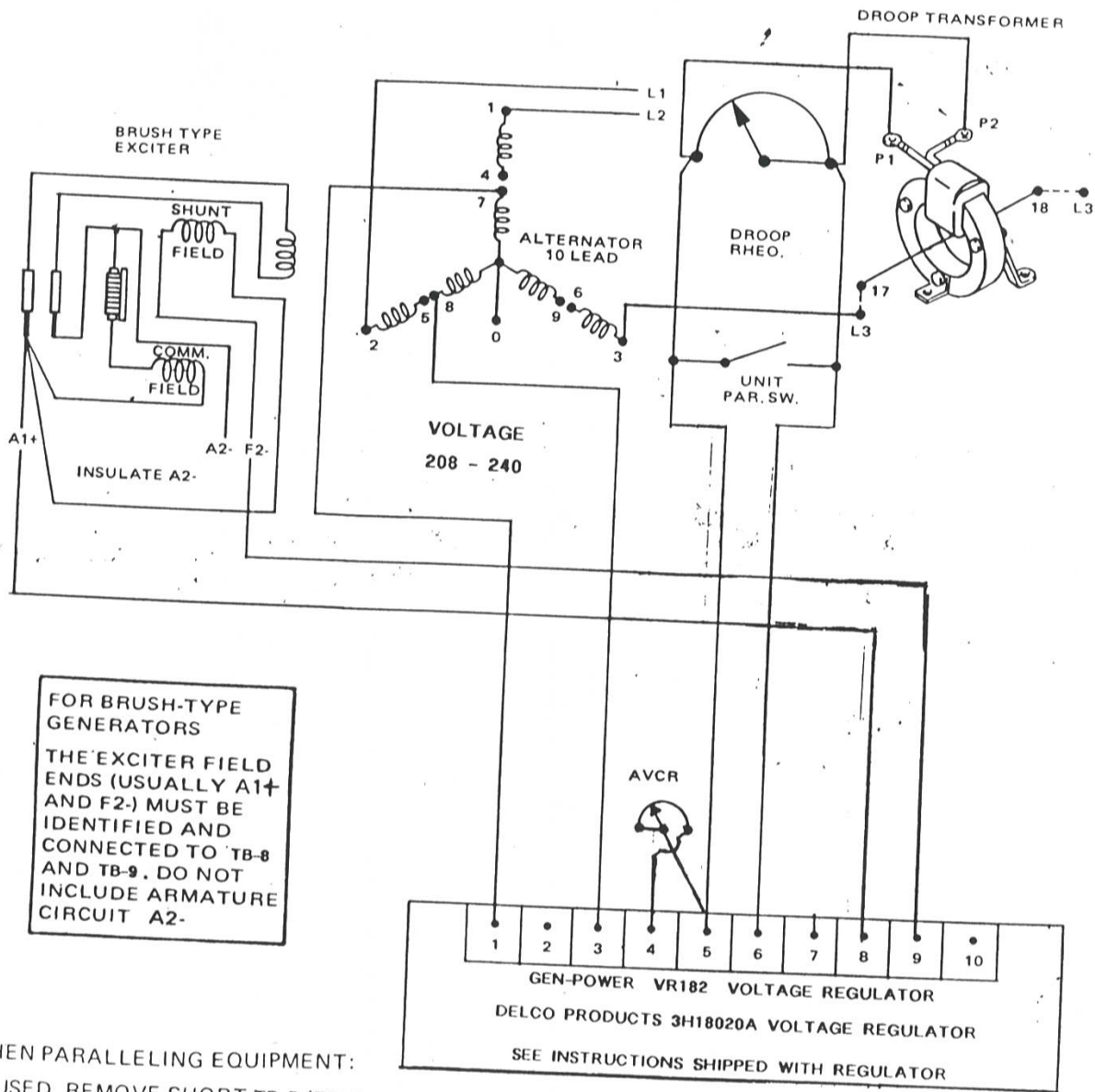
\*The regulator circuit breaker and the automatic voltage control rheostat (AVCR) are normally mounted within the regulator cover. Either or both can be remotely mounted according to application requirements. Observe the terminal board connections as shown.

\*\*Remove the jumper between terminal board number 9 and 10 for generators above 200 kilowatts.

\*\*\*The input voltage to the regulator must be between 208 and 240 volts at 60 hertz or between 190 and 220 volts at 50 hertz.

The regulator can be applied with various standard alternator connections having standard nameplate voltages as shown on back of this sheet.

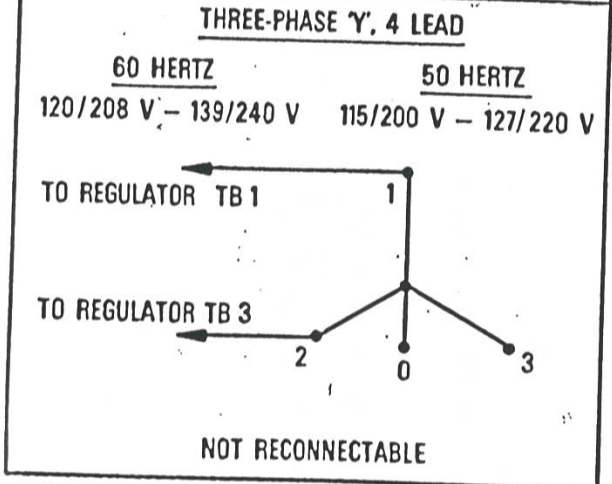
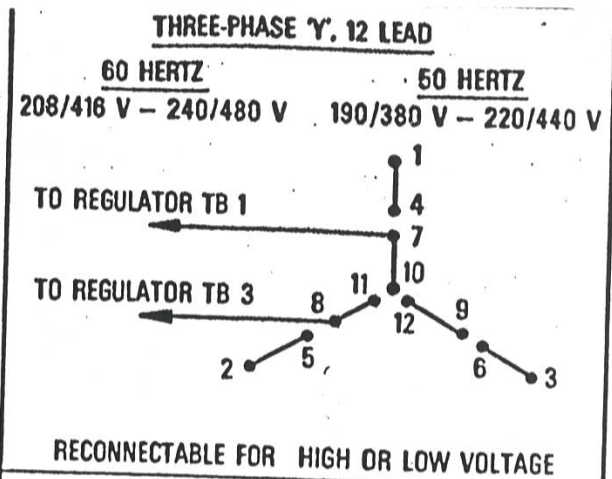
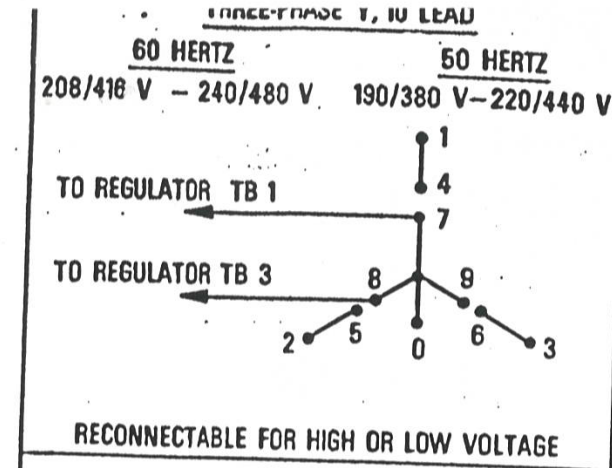
If 208 to 240 volts at 60 hertz or 190 to 220 volts at 50 hertz is not available directly from the alternator, the regulator can still be used if a 400 volt-ampere or greater isolation transformer is used between the regulator and the alternator. The input voltage to the isolation transformer must be the same as the voltage available from the alternator and the output must be between 208 and 240 volts at 60 hertz or 190 to 220 volts at 50 hertz.



FOR BRUSH-TYPE GENERATORS THE EXCITER FIELD ENDS (USUALLY A1+ AND F2-) MUST BE IDENTIFIED AND CONNECTED TO TB-8 AND TB-9. DO NOT INCLUDE ARMATURE CIRCUIT A2-

WHEN PARALLELING EQUIPMENT: IS USED, REMOVE SHORT TB-5 TB-6 IS NOT USED, SHORT TB-5 TO TB-6

TYPICAL DIAGRAM FOR A DELCO PRODUCTS 10-LEAD, BRUSH-TYPE GENERATOR WITH PARALLELING EQUIPMENT



**ACCESSORIES:**

1. **Paralleling Kit** - for 3-phase, wye connected, 10 or 12 lead alternator less than 550 kilowatts.
  - a. Strong short-circuit drive.
  - b. Improved motor starting.
  - c. Increased operating current range of regulator.
2. **Static Underspeed Switch** - To protect the generator-regulator system when the frequency is more than 10% below rated frequency.
3. **Manual Control** - Variable transformer type with automatic manual switch included.
4. **Triple Action Boost (TAB)** - The TAB system improves generator-regulator performance in three ways:
  5. **Battery Build-up Assembly** - Where extremely fast on-the-line operation is required. (For generator sets with electric starter systems.)

When ordering accessories, include the generator model number.

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