



**K. S. Jha CI/Electrical,  
IRIMEE**

# INTRODUCTION

1400 HHP Diesel Electric Multiple Units uses DC Traction system deriving power supply from Diesel-Alternator set with associated Rectifier unit and Traction Motors.

# CIRCUIT CLASSIFICATION

- ▶ POWER CIRCUIT
- ▶ AUXILIARY CIRCUIT
- ▶ ENGINE CIRCUIT
- ▶ CONTROL CIRCUIT

# AUXILIARY CIRCUIT

## POWER SOURCE

- Auxiliary alternator with regulator cum rectifier unit  
18.5kW, 122volts $\pm$ 5% DC over the entire speed range from  
no load to full load (700 to 1800 RPM)
- Battery – Sealed type lead acid (VRLA)  
120Ah, 110 volts

# AUXILIARY CIRCUIT

## Auxiliary loads

- ▶ Light circuit contactors
- ▶ Lights
- ▶ Fan circuit contactors
- ▶ Fans
- ▶ Main Rectifier blower motor
- ▶ Speedometer
- ▶ Head light

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# AUXILIARY CIRCUIT

## Auxiliary loads

- ▶ Tail light
- ▶ Flasher unit
- ▶ [Signal bell](#)
- ▶ [Emergency bell](#)
- ▶ [Passenger Alarm indication light](#)
- ▶ Head code
- ▶ Hand lamp socket

# AUXILIARY CIRCUIT

Normal power source

- from Auxiliary Alternator for all loads.

Emergency power source (engine OFF condition)

- from battery for all loads except restricted lights in a formation and Fans (100%).

# AUXILIARY CIRCUIT

## Lights and Fans circuit

- [Latch type 'set' and 'trip' contactors](#)
- MCBs
- Toggle switches

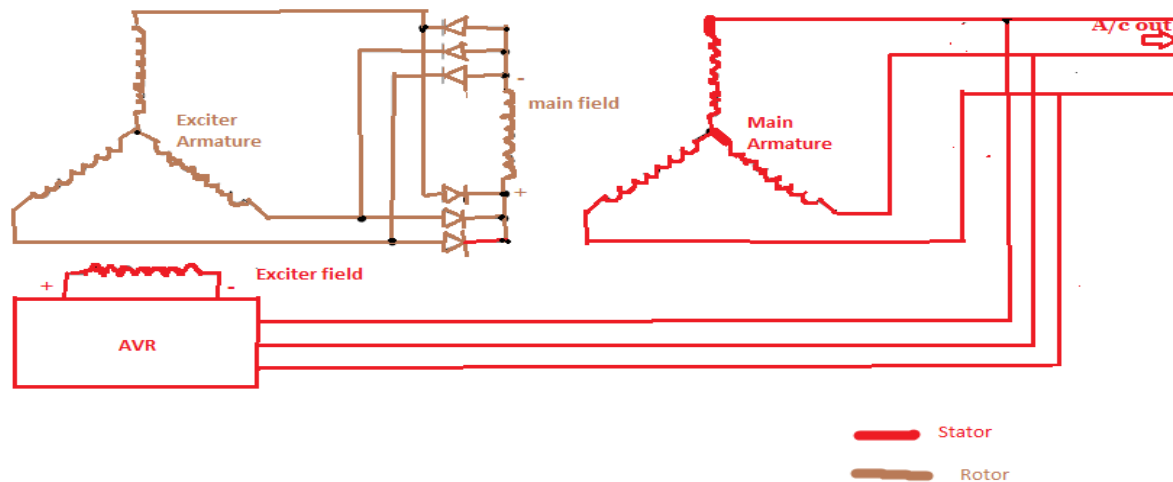
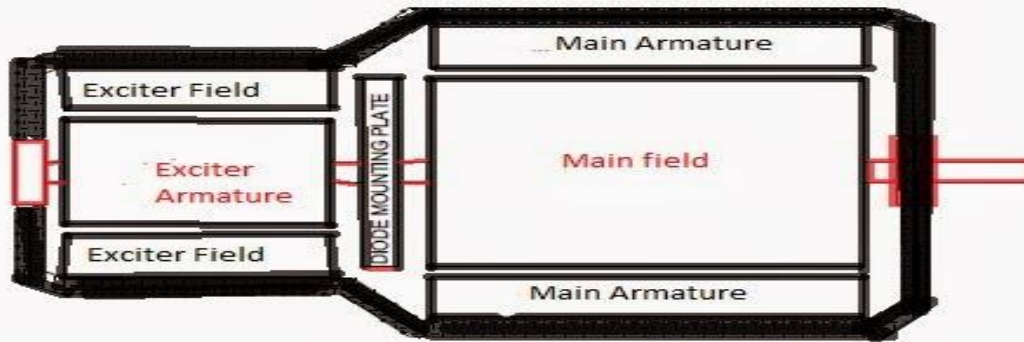


# AUXILIARY CIRCUIT

## Other circuits

- ON/OFF control through toggle switches
- Protection using MCBs

# Circuit Diagram of Brushless Alternator





**THANK YOU**