



4500 H.P. DIESEL LOCOMOTIVE . . DESIGNED AND BUILT BY ELECTRO-MOTIVE DIVISION . . GENERAL MOTORS . . LA GRANGE, ILLINOIS, U. S. A.

## 4500 H. P. DIESEL LOCOMOTIVE

*Designed and Built for*

**NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY**

BY ELECTRO-MOTIVE DIVISION • GENERAL MOTORS • LA GRANGE, ILLINOIS

This General Motors model F3 Diesel locomotive consists of three units, each equipped with one 16-cylinder, V-type, 2-cycle GM Diesel engine having a bore of  $8\frac{1}{2}$ " stroke 10" and a unit fuel injection system. The engines are rated a full 1500 horsepower for propulsion at 800 RPM, providing a total of 4500 horsepower for the locomotive. Each engine is directly coupled to a DC-AC generator. Alternating current powers auxiliary equipment. Direct current is fed through control apparatus to the twelve traction motors—two per truck—geared directly to

the driving axles. There are two four-wheel trucks per unit. Among the special features of this locomotive is the dynamic brake which utilizes the traction motors for braking action. Electric power is generated in the traction motors and dissipated from resistance grids located in the roof of each unit. In many cases, this brake will control the speed of the train down long, mountainous grades without the application of ordinary air brakes. This locomotive represents the finest motive power offered for service in which heavy grades are involved.

### SPECIFICATIONS

#### *DIMENSIONS (per unit)*

Overall length over couplers, lead unit.....	50'-8"
Overall length over couplers, booster unit.....	50'-0"
Maximum width over grab irons.....	10'-7"
Maximum height above rail.....	15'-0"
Distance between truck centers.....	30'-0"
Truck rigid wheel base.....	9'-0"
Wheel diameter.....	40"

#### *SUPPLIES (per unit)*

Fuel oil.....	1200 gals.
Sand.....	16 cu. ft.
Lubricating oil.....	200 gals.
Cooling water, lead unit.....	230 gals.
Cooling water, booster unit.....	215 gals.

#### *WEIGHTS (per unit)*

Total weight, fully loaded, approximately.....	230,000 lbs.
Car body and equipment.....	154,400 lbs.
Trucks (2).....	75,600 lbs.
Maximum tractive effort at rim of wheel at 25% adhesion, per unit.....	57,500 lbs.

