MK RAIL CORPORATION

NORTH COUNTY TRANSIT DISTRICT

F40PHM-2C LOCOMOTIVE

Model Designation F40PHM-2C
Locomotive Type .....(B-B) 0440
Locomotive Horsepower 3000
Control System .....MK-LOC Microprocessor
Diesel Engine
- Model 645E3C
- Type .....Turbocharged
- Number of Cylinders 16
- Cylinder Arrangement .....45° "V"
- Cylinder Bore and Stroke .....9 1/16" x 10"
- Operating Principle .....2 Stroke Cycle, Turbocharged, Unit Injection, Water Cooled
- Full Speed .....904 RPM
- Idle Speed .....318 RPM
- Low Idle Speed .....255 RPM

Main Generator Model AR10/D14
- Traction Alternator (Rectified Output) AR10
- Number of Poles 10
- Nominal Voltage (DC).....600
- Frequency (At 720 RPM) .....60 Hz
- Maximum Continuous Current Rating .....4200 Amperes

Companion Alternator D14
- Nominal Voltage (AC) 215

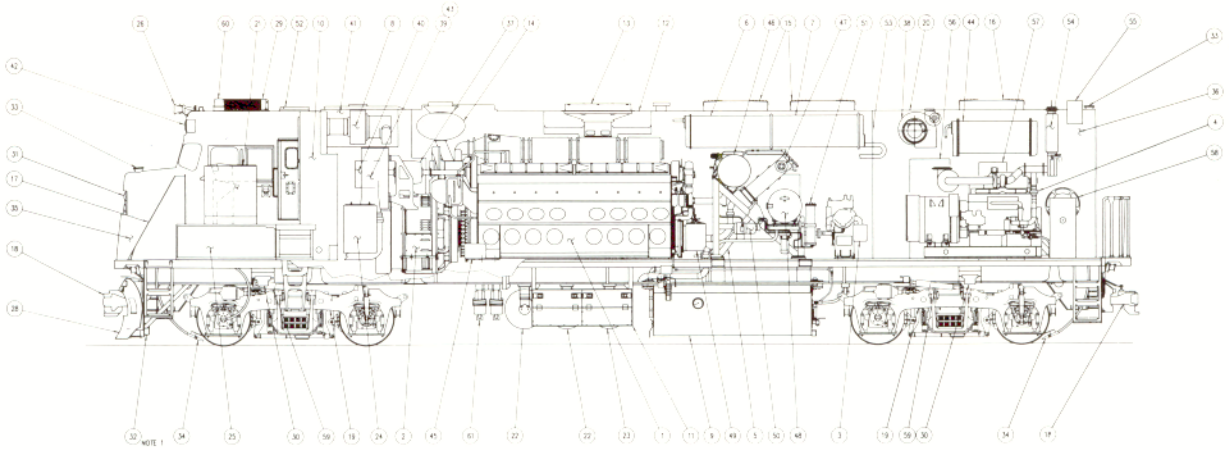
Head End Power
- Diesel Engine
  - Model .....Cummins KTA-19-G2
  - Type .....Watercooled, Turbocharged
  - Cycle .....Four Stroke
  - Number of Cylinders 6
- Alternator Model ...Marathon 571RSL4534
- Available Output 425kW
- Nominal Voltage (AC) 480V
- Max. Continuous Current .....750 Amps per phase
- Frequency (At 1800 RPM) .....60 Hz

Auxiliary Generator Voltage (DC) 74
Rating .....18 kW

Traction Motors
- Model D78
- Number 4
- Maximum Continuous Current Rating .....1050 Amperes

Driving Wheels
- Number.....4 Pair
- Diameter .....40"

Air Compressor .....Model WLN A9
- Type .....2 Stage
- Number of Cylinders 3



1. 16-645-E3C,W/J72 Engine
2. AR10A6/D14 Alternator
3. WLN - A9 Air Compressor
4. 425KW HEP Plant
5. Accessory Rack
6. Main Radiators – 8 row × 55 3/8
7. Main Radiator – 8 row × 83 1/8
8. Inertial Filter Blower
9. 2000 Gal. Fuel Tank
10. High Voltage Cabinet
11. Battery Box Assy.
12. Dynamic Brake Hatch
13. Fan, Grid Blower 36 HP 48"
14. Silencer
15. 48" Q Fan – 9 Blade
16. HEP Cooling Fan – Q Type
17. Collision Post
18. Coupler – Type "F"
19. Truck, F40PH – Low Profile
20. HEP Hatch
21. Console Control Stand
22. Main Air Reservoirs
23. HEP Air Start Reservoir
24. HV Cabinet 3 Filter Box
25. Air Brake Equipment
26. Horn
27. Bell (not shown)
28. Snow Plow
29. Air Cond., Roof Mount
30. Jacking Pad Assy.
31. Headlight Assembly
32. Bracket, Track Receiver
33. Sand Box Filler
34. Nozzle, Sanding
35. Sandbox – Short Hood
36. Sandbox – Endbody
37. Aux. Generator – 18 KW AC
38. HEP Inertial Blower
39. T.M. Blower Assy., 20/8 Single
40. Engine Air Filter
41. Carbody Inertial Filter
42. Strobe Light/Red
43. Housing, T.M. Blower
44. HEP Cooling Radiators – 5 Row
45. Motor 32V Starting
46. Engine Water Tank
47. Lube Oil Cooler
48. Lube Oil Filter
49. Suction Strainer
50. Fuel Pump, 4 CPW
51. Fuel Filter Assy.
52. Antenna, Low Profile
53. HEP Comp. Bulkhead
54. HEP Engine Muffler
55. HEP Engine Water Tank
56. HEP Contactor Cabinet
57. HEP Relay Cabinet
58. Hand Brake Assy.
59. Yaw Damper Assy.
60. Strobe Light, White
61. Air Dryer

Capacity (At 900RPM) .....254 cu. ft./min.
Air Compressor Cooling ...Engine Coolant
Lube Oil Capacity .....10 1/2 gal.

Storage Battery
Number of Cells 32
Voltage 64
Rating (8 Hour) .....500 Amp. hr.

Curve Negotiation Capability

Truck swing limits single curve negotiation to a 27° or 213 ft. radius curve.

Two similar units coupled in multiple limited by coupler swing to a 26° or 222 ft. radius curve (equipped with "F" type couplers).

Locomotive coupled to an 87 ft. passenger car limited by car coupler swing to an 18° or 315 ft. radius curve (equipped with "F" type couplers).

Locomotive coupled to a standard 50 ft. box car limited by car coupler swing to a 19° or 302 ft. radius curve.

Major Dimensions
Height Over Cooling Fan Guard .....15'5 7/8"
Width Over Hand Rails .....10'8 3/4"
Distance Over Coupler Pulling Faces ...64'3"
Loaded Weight on
Rails (Nominal) .....277,000 lbs.
Weight on Drivers 100%

Supplies
Lube Oil Capacity
(increased capacity) .....395 gal.
Cooling System Capacity .....254 gal.
Sand Capacity
Hood End Sand Boxes .....24.5 cu. ft.
Cab End Sand Boxes .....24.5 cu. ft.
Fuel Capacity .....2000 gal.

Air Brakes .....Type 26L-ACDW

Gear Ratio	Top Speed* MPH	Minimum Continuous MPH
57:20	102	16.3

*Based on rated RPM of traction motors.

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