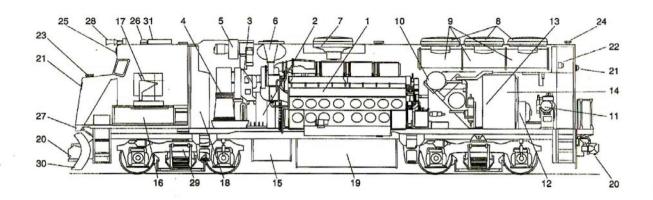
EMD F 40 PH-2 Diagram



1.	16-645 E3B Engine	12.	800kW Delco Head End Power	22.	Front/Rear Marker Lights
	AR 10 A9/D 14 Alternator Main	n 12.	Plant w/Gear Box	23.	Front Sand Fill
2.	Generator w/Companion Alternator	13.	HEP Contractor Cabinet	24.	Rear Sand Fill
3.	18kW Auxiliary Generator	14.	HEP Relay Cabinet	25.	Number Boards
4.	Equipment Blower	15.	Battery Compartment	26.	Strobe Light
5.	Inertial Filters, Blower & Hatch	16.	Air Brake Compartment	27.	Ditch Lights
6.	Exhaust Stack & Silencer	17.	Control Stand	28.	5-Chime Horn
7.	Dynamic Brake Grid Fan	18.	"Dash-Two" Electric Control Cabinet	29.	Two Axle Truck Assembly (Both Front & Rear)
8.	Cooling Fan	19.	2,000 – 2,900 Gallon Fuel Tank		(Both Front & Real)
9.	Radiators	20	Coupler/Draft Gear (Both Front	30.	Snow Plow
10.	Equipment Rack	20.	& Rear) Assembly	31.	Air Conditioner
11.	WBO Air Compressor	21.	Front/Rear Head Lights		

EMD F 40 PH-2 Locomotive Specifications

Model Designation F 40 PH-2 Locomotive							
Locomotive Type (B-B) 0440	EMD F 40 PH-2 Locomotive						
Locomotive Horsepower	Model Designation	F 40 PH-2					
Control System DASH-II Air Brake Type 26L Gear Ratio 57:20 Top Speed 103 MPH Minimum Continuous Speed 16:5 MPH Diesel Engine Model 16-645E3B 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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW		(B-B) 0440					
Air Brake Type 26L Gear Ratio 57:20 Top Speed 103 MPH Minimum Continuous Speed 16.5 MPH Diesel Engine Model 16-645E3B 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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR 10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nomial Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18 kW <tr< td=""><td>Locomotive Horsepower</td><td>3000</td></tr<>	Locomotive Horsepower	3000					
Gear Ratio 57:20 Top Speed 103 MPH Minimum Continuous Speed 16:5 MPH Diesel Engine Model 16-645E3B 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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes		DASH-II					
Gear Ratio 57:20 Top Speed 103 MPH Minimum Continuous Speed 16:5 MPH Diesel Engine Model 16-645E3B 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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes		26L					
Minimum Continuous Speed Diesel Engine Model 16-645E3B 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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg	Gear Ratio						
Model		A STATE AND ADDRESS TO A STATE AND ADDRESS AS					
Model 16-645E3B 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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR	Minimum Continuous Speed	16.5 MPH					
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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nomial Voltage (AC) 215 Auxiliary Generator D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor							
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 Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR	\$8,50,5048 200, 5049	1 200 Mg - Hot 6000000 1 May 27 St					
Cylinder Arrangement 45 "V" Cylinder Bore and Stroke 9 - 1/16" x 10" Operating Principle 2 Stroke Cycle, Turbocharged, Unit Injection, Water Cooled Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor <		<u> </u>					
Cylinder Bore and Stroke 9 - 1/16" x 10" Operating Principle 2 Stroke Cycle, Turbocharged, Unit Injection, Water Cooled Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO	Number of Cylinders						
Operating Principle 2 Stroke Cycle, Turbocharged, Unit Injection, Water Cooled Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO							
Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO	Cylinder Bore and Stroke	12 100 100 100 100 100 100 100					
Maximum Speed 893 RPM Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO	Onarating Principle	2 Stroke Cycle, Turbocharged, Unit Injection,					
Idle Speed (Normal) 410 RPM Idle Speed (Low) 255 RPM Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating 4200 Amperes Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO		() WE SEE THE PROPERTY OF THE SEE THE					
Traction Alternator							
Traction Alternator Traction Alternator AR10 Maximum Continuous Current Rating Number of Poles Normal Voltage (DC) Frequency (at 720 RPM) Companion Alternator Nominal Voltage (AC) Auxiliary Generator Auxiliary Generator Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating Model Bloomberg Bearings Timken Timken TM Support Standard or BTR Model WBO	* \ /						
Traction Alternator Maximum Continuous Current Rating Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Model Bloomberg Bearings Timken Timken Tymore Standard or BTR Air Compressor Model WBO		I have be also did.					
Maximum Continuous Current Rating Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Traction	Alternator					
Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Musiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO	Traction Alternator	AR10					
Number of Poles 10 Normal Voltage (DC) 600 Frequency (at 720 RPM) 60Hz Companion Alternator D14 Nominal Voltage (AC) 215 Auxiliary Generator Musiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Model WBO	Maximum Continuous Current Rating	4200 Amperes					
Frequency (at 720 RPM) Companion Alternator Nominal Voltage (AC) Auxiliary Generator Auxiliary Generator Auxiliary Generator Model Voltage (DC) Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Number of Poles	10					
Companion Alternator Nominal Voltage (AC) 215 Auxiliary Generator Auxiliary Generator Auxiliary Generator Model D14 Voltage (DC) 74 Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Normal Voltage (DC)	600					
Nominal Voltage (AC) Auxiliary Generator Auxiliary Generator Model Voltage (DC) Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO		60Hz					
Auxiliary Generator Auxiliary Generator Model Voltage (DC) Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Companion Alternator	4-52 50 50					
Auxiliary Generator Model Voltage (DC) Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO		215					
Voltage (DC) Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Auxiliary	Generator					
Rating 18kW Traction Motors Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO		D14					
Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Voltage (DC)	107 0					
Model D77 or D78 Maximum Continuous Current Rating 1050 Amperes Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Rating	18kW					
Maximum Continuous Current Rating1050 AmperesTruck AssembliesModelBloombergBearingsTimkenTM SupportStandard or BTRAir CompressorModelWBO	Traction	n Motors					
Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Model	D77 or D78					
Truck Assemblies Model Bloomberg Bearings Timken TM Support Standard or BTR Air Compressor Model WBO	Maximum Continuous Current Rating	1050 Amperes					
Bearings Timken TM Support Standard or BTR Air Compressor Model WBO							
TM Support Standard or BTR Air Compressor Model WBO	Model	Bloomberg					
TM Support Standard or BTR Air Compressor Model WBO	Bearings	Timken					
Air Compressor Model WBO		Standard or BTR					
Model WBO							
Drive Shaft							
DIII V	Drive	Shaft					
Type 2 Stage	Type	2 Stage					
Number of Cylinders 3		3					
Air Compressor Cooling Water	Air Compressor Cooling	Water					
Lube Oil Capacity 10.5 Gal.	Lube Oil Capacity	10.5 Gal.					
Capacity (at 900 RPM) 254 cu. ft./min.	Capacity (at 900 RPM)	254 cu. ft./min.					

Storage Battery						
32						
64						
500 Amps. Hr.						
Head End Generator						
Delco No. 2801458						
800kW						
480						
1200Amperes per phase						
60Hz						
Major Dimensions						
262,000 lbs.						
15' 6"						
10' 8-5/8"						
56' 2"						
Distance Over Coupler Pulling Faces 56' 2" Supplies						
243 Gal						
254 Gal.						
~ 2,000 - 2,900 Gal.						
Front: 13 Cu. Ft. / Rear: 13 Cu. Ft.						