

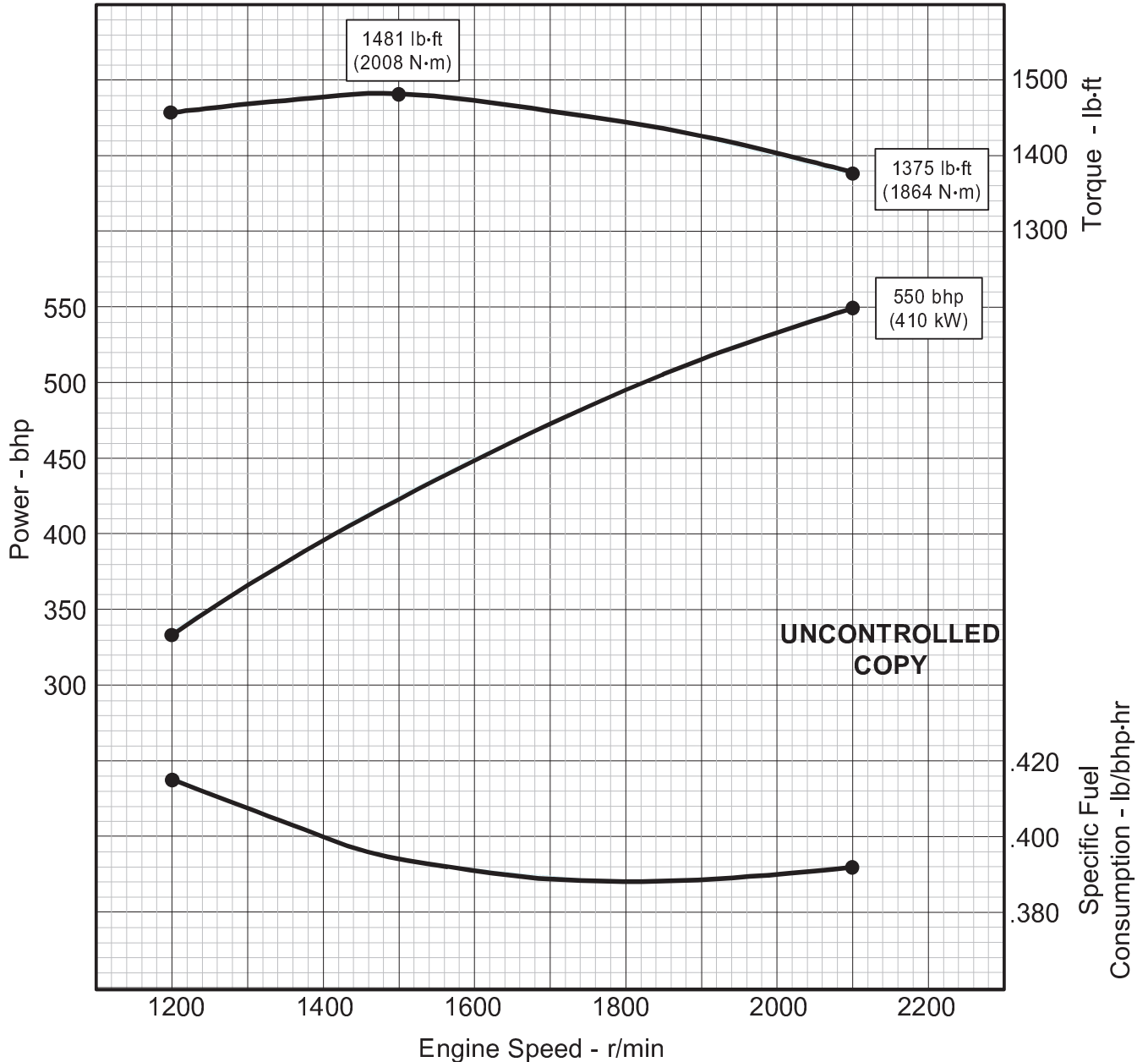
DETROIT DIESEL



Industrial Power

Model: 8V-92TA

Rating: 550 bhp @ 2100 r/min
1481 lb-ft @ 1500 r/min



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<p>Power output guaranteed within 5% at SAE J1995 conditions: 77°F (25°C) air inlet temperature; 29.31 in. Hg (99kPa) dry barometer; 100°F (38°C) fuel inlet temperature; .853 specific gravity at 60°F (15°C); Air intake restriction: 10 in. H₂O (2.5 kPa) Exhaust Back Pressure: 15 in. H₂O (3.7 kPa)</p>	<p><i>Conversion Factors:</i> Power: kW = bhp x 0.746 Fuel: kg/kW·hr = lb/bhp·hr x 0.608 Torque: N·m = lb·ft x 1.356</p>	<p>Turbo: TW8403 (1.19 A/R) Injector: M15</p>
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Certified by: *JR Schringer*

Curve No. E4-8083-32-27
Rev. / Date: 3 / 12-18-97
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Performance Curve

CONSTRUCTION AND INDUSTRIAL SPECIFICATION SHEET

General Data

Model	8083-7473
Number of Cylinders	8
Bore and Stroke – in. x in. (mm x mm)	4.84 x 5.00 (123 x 127)
Displacement – in. ³ (L)	736 (12.1)
Compression Ratio	18.0:1
Piston Speed – ft/min (m/min)	1750 (533)
Exhaust Valves Per Cylinder	4
Combustion System	DIRECT INJECTION
Engine Type	63.5° VEE 2 CYCLE
Aspiration	TURBOCHARGED

Configuration

Injection Device	MUI
Turbocharger	TW8403 (1.19 A/R)
Blower Type	Midi Bypass
Blower Drive Ratio	1.95:1
Charge Air Cooling	JWAC
Low Idle Speed – r/min	500
High Idle Speed – r/min	2250
Engine Crankcase Vent System	OPEN

Physical Data

Size:	
Length – in. (mm)	43.0 (1092)
Width – in. (mm)	48.0 (1219)
Height – in. (mm)	49.0 (1245)
Weight, dry – lb (kg)	2585 (1098)
Weight, wet – lb (kg)	2664 (1208)
Center of Gravity Distance:	
From R.F.O.B. (x axis) – in. (mm)	13.3 (338)
Above Crankshaft (y axis) – in. (mm)	11.4 (290)
Right of Crankshaft (z axis) – in. (mm)	0.0 (0.0)
Installation Drawing	8928842 (Ref.)

Mechanical Data

Thrust Bearing Load Limit, Continuous – lb (N)	600 (2670)
Thrust Bearing Load Limit, Intermittent – lb (N)	1800 (8007)
Maximum Static Bending Moment at Rear	
Face of Block – lb-ft (N·m)	1000 (1356)
Maximum Weight on Crankshaft – lb (kg)	800 (363)
Additional Mechanical Data	E4-8000-32-1

Fuel System

Fuel Injector	M15
Injection Timing Height – in.	1.470
Fuel Consumption – lb/hr (kg/hr)	215.1 (97.6)
Fuel Consumption – gal/hr (L/hr)	30.8 (117)
Fuel Spill – lb/hr (kg/hr)	398 (181)
Fuel Spill – gal/hr (L/hr)	56.9 (215)
Total Fuel Flow – lb/hr (kg/hr)	613 (278)
Total Fuel Flow – gal/hr (L/hr)	87.7 (332)
Maximum Fuel Inlet Temperature – °F (°C)	140 (60)
Maximum Fuel Pump Suction:	
Clean System – in. Hg (kPa)	6 (20.3)
Dirty System – in. Hg (kPa)	12 (41)
Fuel Filter Size, Primary – microns	30
Fuel Filter Size, Secondary – microns	12
Smoke Control Device	Modulator @ 0.490

Lubrication System

Oil Pressure at Rated Speed – lb/in. ² (kPa)	49-70 (338-483)
Oil Pressure at Low Idle – lb/in. ² (kPa)	5 (34)
In Pan Oil Temperature – °F (°C)	200 – 250 (93 – 121)
Oil Flow – gal/min (L/min)	37 (140)
Oil Pan Capacity: > 24 Hour Operation	
High Limit – qt (L)	25 (24)
Low Limit – qt (L)	19 (18)
Total Engine Oil Capacity with Filters – qt (L)	27 (26)
Engine Angularity Limits, Front Up – degrees	20
Engine Angularity Limits, Front Down – degrees	30
Engine Angularity Limits, Side Tilt – degrees	5

Electrical System

Recommended Battery Capacity (CCA @ 0°F):	
12 Volt System, Above 32°	1900
12 Volt System, Below 32°	2500
24 Volt System, Above 32°	950
24 Volt System, Below 32°	1250
Maximum Resistance of Starting Circuit:	
12 Volt System – ohms	0.0012
24 Volt System – ohms	0.002

Cooling System

Engine Heat Rejection – Btu/min (kW)	22750 (400.0)
Engine Radiated Heat – Btu/min (kW)	925 (16.3)
Coolant Flow – gal/min (L/min)	214 (810)
Minimum Coolant Flow – gal/min	193 (729)
Thermostat:	Full Blocking
Start to Open – °F (°C)	177 (81)
Fully Open – °F (°C)	197 (92)
Minimum Water Pump Inlet Pressure:	
Rapid Warmup Radiator – in. Hg (kPa)	POSITIVE
Conventional Radiator – in. Hg (kPa)	-3 (-21)
Engine Coolant Capacity – qt (L)	29 (27)
Minimum Pressure Cap – lb/in. ² (kPa)	9 (62)
Maximum Coolant Pressure	
(Exclusive of Pressure Cap – lb/in. ² (kPa)	14 (97)
Maximum Top Tank Temperature – °F (°C)	210 (99)
Minimum Top Tank Temperature – °F (°C)	160 (71)
Minimum Coolant Fill Rate – gal/min (L/min)	3 (11.4)
Air Handling Capacity – ft ³ /min (m ³ /min)	0.8 (0.023)
Minimum Drawdown Requirement – qt (L)	4 (3.8)
Deaeration Time – minutes	30

Air System

Maximum Temperature Rise	
(Ambient Air to Engine Inlet) – °F (°C)	30 (16.7)
Maximum Air Intake Restriction:	
Clean Air Cleaner – in. H ₂ O (kPa)	12 (3.0)
Dirty Air Cleaner – in. H ₂ O (kPa)	20 (5.0)
Engine Air Flow – ft ³ /min (m ³ /min)	1450 (41.1)
Engine Air Box/Manifold Pressure – in. Hg (kPa)	39.5 (206)
Recommended Intake Pipe Outer Diameter:	
Single – in. (mm)	6.0 (152)
Dual – in. (mm)	Not Applicable
Maximum Crankcase Pressure – in. H ₂ O (kPa)	3.5 (0.87)

Exhaust System

Exhaust Flow – ft ³ /min (m ³ /min)	2970 (84.1)
Exhaust Temperature – °F (°C)	640 (338)
Maximum Back Pressure – in. Hg (kPa)	2.5 (8.5)
Recommended Exhaust Pipe Diameter:	
Single – in. (mm)	6.0 (152)
Dual – in. (mm)	Not Applicable

Performance Data

BMEP – lb/in. ² (kPa)	141.0 (866)
Friction Power:	
Rated Speed – fhp (kW)	106 (79)
Peak Torque Speed – fhp (kW)	56 (42)
Altitude Capability – ft (m)	10000 (3050)
Torque Available at 800 r/min – lb-ft (N·m)	710 (963)

Engine Speed	Rated Power	Rated Torque	Rated BSFC
r/min	bhp (kW)	lb-ft (N·m)	lb/bhp·hr (g/kW·hr)
2100	550 (410)	1376 (1866)	0.391 (238)
1950	524 (391)	1412 (1914)	0.389 (236)
1800	495 (369)	1444 (1958)	0.388 (236)
1600	448 (334)	1471 (1994)	0.391 (238)
1500	423 (316)	1481 (2008)	0.393 (239)
1400	394 (294)	1478 (2004)	0.399 (242)
1200	333 (248)	1457 (1975)	0.415 (252)

Emissions Data

Smoke, Rated Speed – Bosch Number	1.0
Smoke, Peak Torque Speed – Bosch Number	0.7
Noise – dB(A) @ 1	100
Additional Noise Data	Not Available
NO _x – g/hr	3055
CO – g/hr	2940
HC – g/hr	144
SO ₂ – g/hr	976

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All values are at rated speed and power at SAE J1995 with standard engine hardware, unless otherwise noted.

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