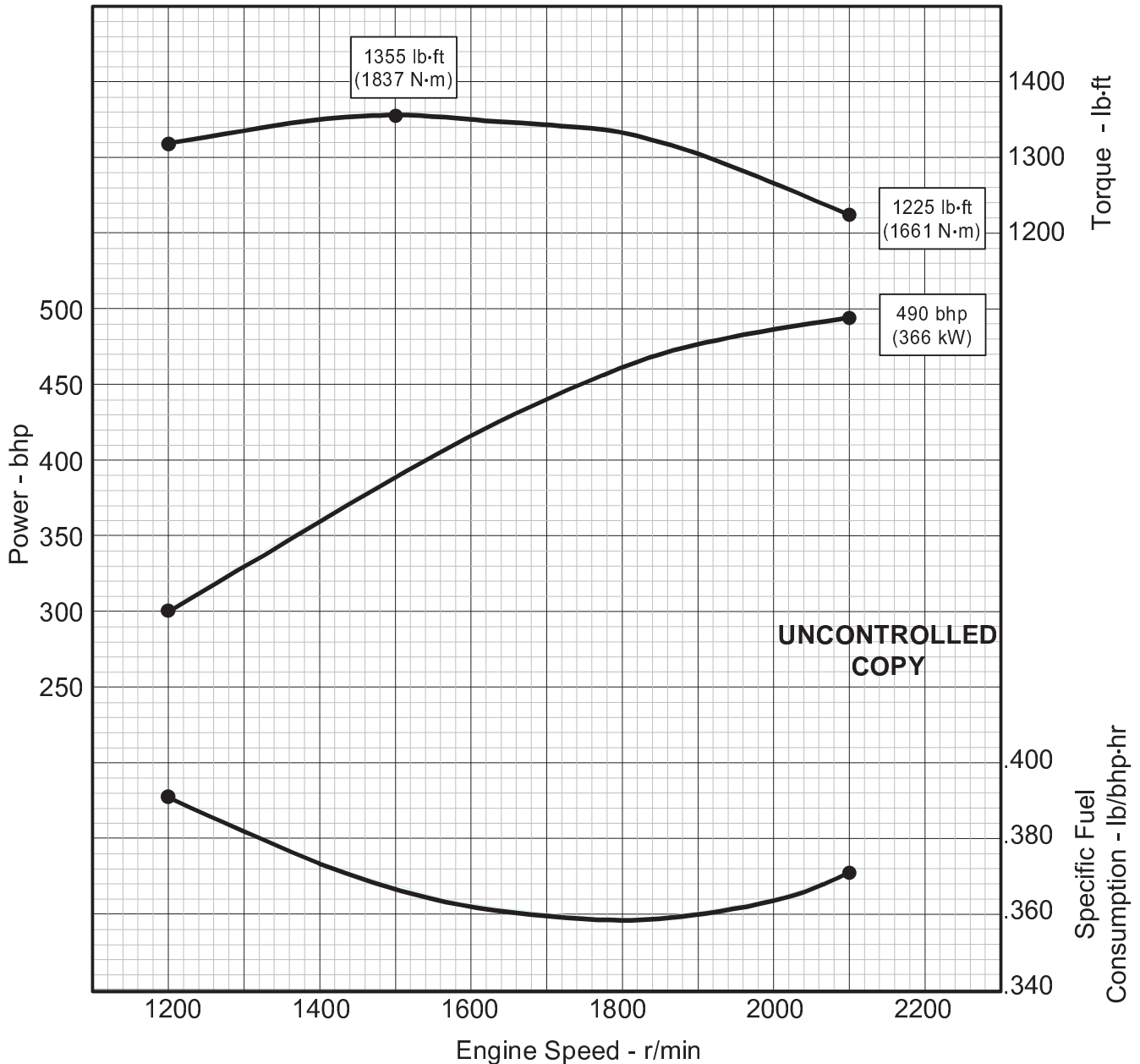




Industrial Power

Model: 8V-92TA

Rating: 490 bhp @ 2100 r/min
1355 lb-ft @ 1500 r/min



| | | |
|--|--|--|
| <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: TW8401 (1.19 A/R) Injector: 9A98</p> |
|--|--|--|

Certified by: *JR Schringer*

Curve No. E4-8083-32-29
Rev. / Date: 1 / 1-8-98
Sheet No 1 of 2

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 DEG VEE 2 CYCLE |
| Aspiration | TURBOCHARGED |

Configuration

| | |
|------------------------------|-------------------|
| Injection Device | MUI |
| Turbocharger | TW8401 (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 | 9A98 |
| Injection Timing Height – in. | 1.470 |
| Fuel Consumption – lb/hr (kg/hr) | 181.8 (82.5) |
| Fuel Consumption – gal/hr (L/hr) | 26.0 (98.4) |
| Fuel Spill – lb/hr (kg/hr) | 431 (196) |
| Fuel Spill – gal/hr (L/hr) | 61.7 (234) |
| 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) | 21540 (378.8) |
| Engine Radiated Heat – Btu/min (kW) | 1420 (24.9) |
| 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) | 1300 (36.8) |
| Engine Air Box/Manifold Pressure – in. Hg (kPa) | 45.0 (152) |
| 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) | 2630 (74.5) |
| Exhaust Temperature – °F (°C) | 590 (310) |
| 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) | 125.0 (862) |
| 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) | 650 (881) |

| Engine Speed r/min | Rated Power bhp (kW) | Rated Torque lb-ft (N-m) | Rated BSFC lb/bhp-hr (g/kW-hr) |
|-----------------------|-------------------------|-----------------------------|-----------------------------------|
| 2100 | 490 (366) | 1225 (1661) | 0.371 (226) |
| 1950 | 477 (356) | 1285 (1742) | 0.363 (221) |
| 1800 | 457 (341) | 1333 (1807) | 0.359 (218) |
| 1600 | 412 (307) | 1352 (1833) | 0.363 (221) |
| 1500 | 387 (289) | 1355 (1837) | 0.368 (224) |
| 1400 | 359 (268) | 1347 (1826) | 0.374 (228) |
| 1200 | 300 (224) | 1313 (1780) | 0.391 (238) |

Emissions Data

| | |
|---|---------------|
| Smoke, Rated Speed – Bosch Number | 1.0 |
| Smoke, Peak Torque Speed – Bosch Number | 0.8 |
| Noise – dB(A) @ 1 | 99 |
| Additional Noise Data | Not Available |
| NO _x – g/hr | 2720 |
| CO – g/hr | 2620 |
| HC – g/hr | 128 |
| SO ₂ – g/hr | 800 |

UNCONTROLLED COPY

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

Curve No. E4-8083-32-29
Rev./ Date: 1 / 1-8-98
Sheet No. 2 of 2