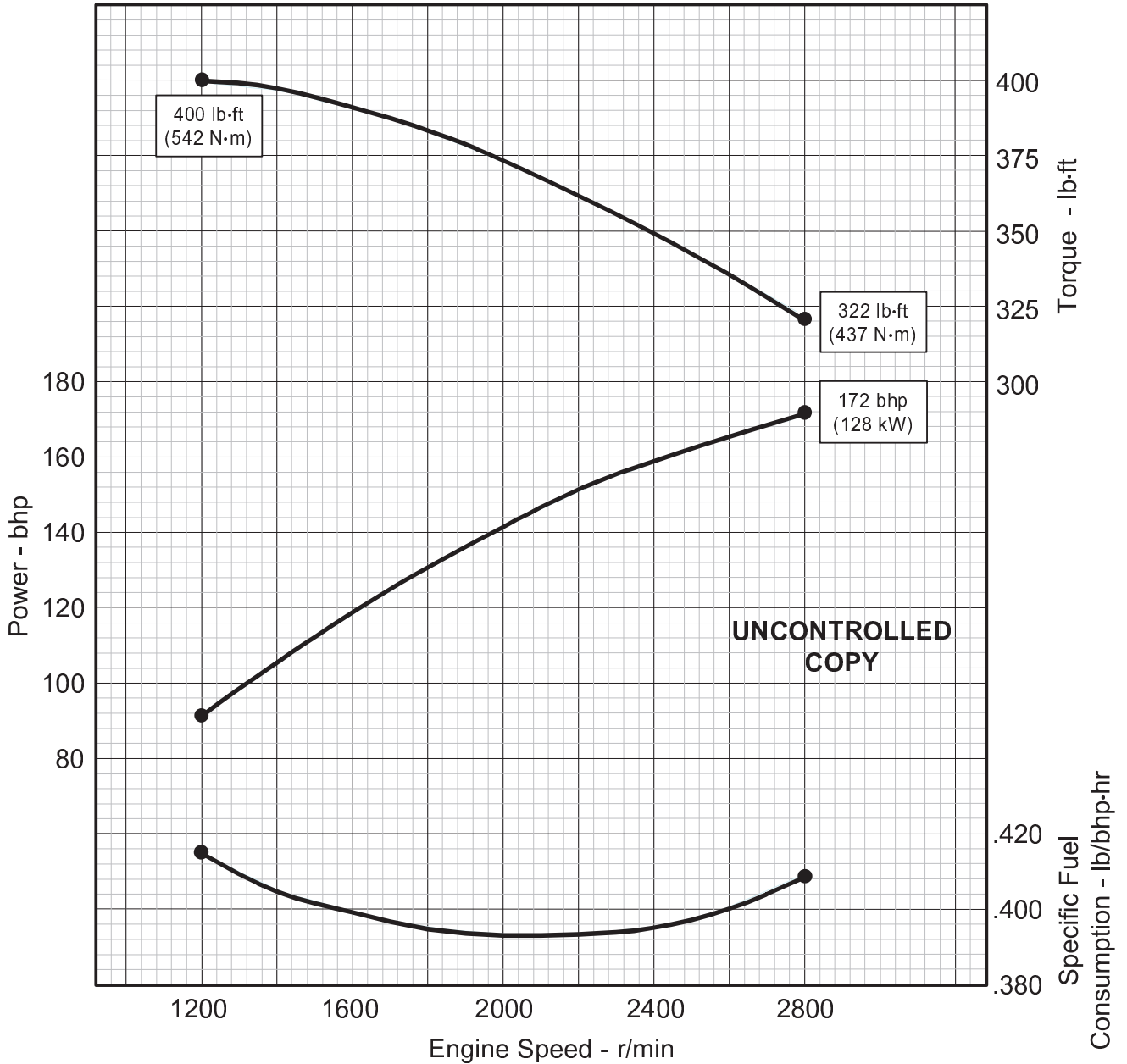




Industrial Power

Model: 6V-53
Rating: 172 bhp @ 2800 r/min
 400 lb·ft @ 1200 r/min



Power output guaranteed within 5% 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. Air intake restriction: 10 in. H ₂ O (2.5 kPa) Exhaust Back Pressure: 15 in. H ₂ O (3.7 kPa)	Conversion Factors: Power: kW = bhp x 0.746 Fuel: kg/kW · hr = lb/bhp · hr x 0.608 Torque: N · m = lb · ft x 1.356	Injector: N40
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Certified by:  T.J. MOORE

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Performance Curve

CONSTRUCTION AND INDUSTRIAL SPECIFICATION SHEET

General Data

Model	5063-5000
Number of Cylinders	6
Bore and Stroke – in. x in. (mm x mm)	3.875 x 4.50 (98 x 114)
Displacement – in. ³ (L)	318 (5.22)
Compression Ratio	21.0:1
Piston Speed – ft/min (m/min)	2100 (640)
Exhaust Valves Per Cylinder	4
Combustion System	DIRECT INJECTION
Engine Type	66.7° VEE 2 CYCLE
Aspiration	TURBOCHARGED

Configuration

Injection Device	MUI
Turbocharger	None
Blower Type	Standard
Blower Drive Ratio	2.49:1
Charge Air Cooling	None
Low Idle Speed – r/min	500
High Idle Speed – r/min	2950
Engine Crankcase Vent System	OPEN

Physical Data

Size:	
Length – in. (mm)	39.6 (1006)
Width – in. (mm)	40.0 (1016)
Height – in. (mm)	37.0 (940)
Weight, Dry – lb (kg)	1485 (674)
Weight, Wet – lb (kg)	1543 (700)
Center of Gravity Distance:	
From R.F.O.B. (x axis) – in. (mm)	7.88 (200)
Above Crankshaft (y axis) – in. (mm)	6.81 (173)
Right of Crankshaft (z axis) – in. (mm)	0
Installation Drawing	Not Available

Mechanical Data

Thrust Bearing Load Limit, Continuous – lb (N)	300 (1334)
Thrust Bearing Load Limit, Intermittent – lb (N)	900 (4003)
Maximum Static Bending Moment at Rear	
Face of Block – lb-ft (N-m)	0
Maximum Weight on Crankshaft – lb (kg)	Not Available
Additional Mechanical Data	E4-5000-32-1

Fuel System

Fuel Injector	N40
Injection Timing Height – in.	1.460
Fuel Consumption – lb/hr (kg/hr)	70.2 (31.8)
Fuel Consumption – gal/hr (L/hr)	10.0 (38.0)
Fuel Spill – lb/hr (kg/hr)	440.4 (199.8)
Fuel Spill – gal/hr (L/hr)	63.0 (238.5)
Total Fuel Flow – lb/hr (kg/hr)	510.6 (231.6)
Total Fuel Flow – gal/hr (L/hr)	73.0 (276.5)
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

Lubrication System

Oil Pressure at Rated Speed – lb/in. ² (kPa)	40 (276)
Oil Pressure at Low Idle – lb/in. ² (kPa)	5 (34.5)
In Pan Oil Temperature – °F (°C)	200 – 250 (93 – 121)
Oil Flow – gal/min (L/min)	24 (91)
Oil Pan Capacity: > 24 Hour Operation	
High Limit – qt (L)	14 (13.2)
Low Limit – qt (L)	10 (9.5)
Total Engine Oil Capacity with Filters – qt (L)	16 (15.1)
Engine Angularity Limits, Front Up – Degrees	15
Engine Angularity Limits, Front Down – Degrees	15
Engine Angularity Limits, Side Tilt – Degrees	5

Electrical System

Recommended Battery Capacity (CCA @ 0°F):	
12 Volt System, Above 32°	950
12 Volt System, Below 32°	1250
24 Volt System, Above 32°	475
24 Volt System, Below 32°	625
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)	5680 (99.9)
Engine Radiated Heat – Btu/min (kW)	1590 (28.0)
Coolant Flow – gal/min (L/min)	87 (329)
Minimum Coolant Flow – gal/min	78 (296)
Thermostat:	Full Blocking
Start to Open – °F (°C)	170 (77)
Fully Open – °F (°C)	187 (86)
Minimum Water Pump Inlet Pressure:	
Rapid Warmup Radiator – in. Hg (kPa)	POSITIVE
Conventional Radiator – in. Hg (kPa)	-3 (-21)
Engine Coolant Capacity – qt (L)	14 (13.2)
Minimum Pressure Cap – lb/in. ² (kPa)	7 (48.3)
Maximum Coolant Pressure	
(Exclusive of Pressure Cap – lb/in. ² (kPa))	20 (137.9)
Maximum Top Tank Temperature – °F (°C)	210 (99)
Minimum Top Tank Temperature – °F (°C)	170 (77)
Minimum Coolant Fill Rate – gal/min (L/min)	3.0 (11.4)
Air Handling Capacity – ft ³ /min (m ³ /min)	0.4 (0.011)
Minimum Drawdown Requirement – qt (L)	4.0 (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)	670 (19.0)
Engine Air Box/Manifold Pressure – in. Hg (kPa)	9.0 (30.4)
Recommended Intake Pipe Outer Diameter:	
Single – in. (mm)	4.0 (102)
Dual – in. (mm)	Not Applicable
Maximum Crankcase Pressure – in. H ₂ O (kPa)	3.0 (0.75)

Exhaust System

Exhaust Flow – ft ³ /min (m ³ /min)	1590 (45.0)
Exhaust Temperature – °F (°C)	815 (435)
Maximum Back Pressure – in. Hg (kPa)	2.5 (8.5)
Recommended Exhaust Pipe Diameter:	
Single – in. (mm)	4.0 (102)
Dual – in. (mm)	3.0 (76)

Performance Data

BMEP – lb/in. ² (kPa)	76.3 (526)
Friction Power:	
Rated Speed – fhp (kW)	75 (56)
Peak Torque Speed – fhp (kW)	22 (16)
Altitude Capability – ft (m)	10000 (3050)
Torque Available at 800 r/min – lb-ft (N-m)	240 (325)

Engine Speed r/min	Rated Power bhp (kW)	Rated Torque lb-ft (N-m)	Rated BSFC lb/bhp-hr (g/kW-hr)
2800	172 (128)	322 (437)	0.409 (249)
2500	163 (122)	343 (465)	0.397 (242)
2200	152 (113)	362 (491)	0.393 (239)
2000	142 (106)	373 (506)	0.393 (239)
1800	131 (98)	383 (519)	0.395 (241)
1500	113 (84)	394 (534)	0.402 (244)
1200	92 (68)	400 (542)	0.415 (253)

Emissions Data

Smoke, Rated Speed – Bosch Number	1.5
Smoke, Peak Torque Speed – Bosch Number	2.0
Noise – dB(A) @ 1	100.5
Additional Noise Data	Not Available
NO _x – g/hr	2780
CO – g/hr	325
HC – g/hr	111
SO _x – g/hr	318

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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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