

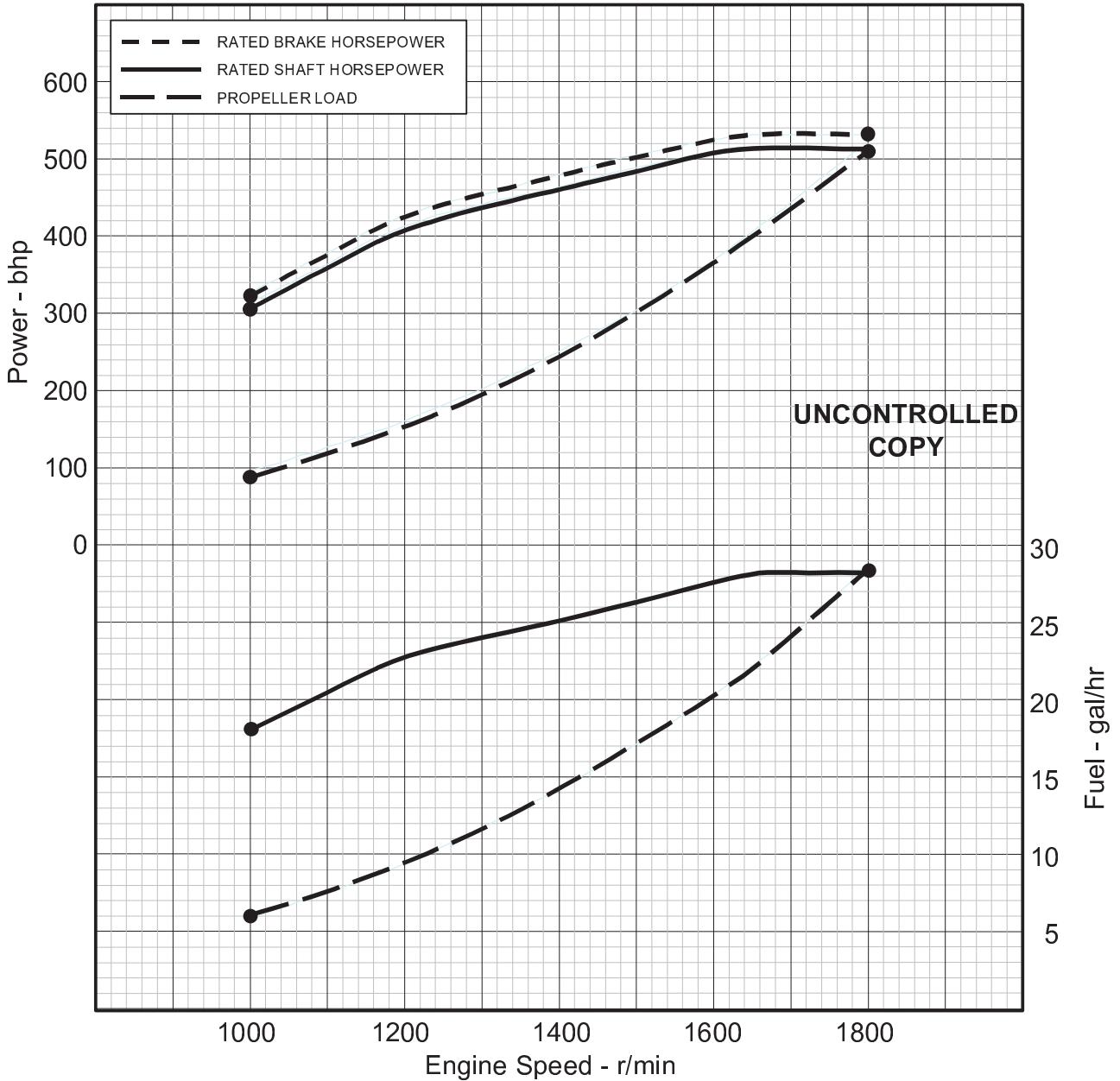


Marine Power

Model: 12-V71TA DDEC®

Rating: 530 bhp (395 kW) @ 1800 r/min
512 shp (382 kW) @ 1800 r/min

Continuous
Net Power



<p>Power output guaranteed within 5% SAE J1228 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. Power rated in accordance with NMMA Procedure 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 = hp x 0.746 Fuel: L/hr = gal/hr x 3.785</p>	<p>Turbo: TV6501 (0.84 A/R) Injector: 5234770 Accessories: DD-518V Gear Alternator: 24V, 65A Raw Water Pump: Keel Cooled</p>
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Certified by: JR Hebringer

Curve No. E4-7122-32-12
Rev. / Date: 2 / 12-18-97
Sheet No. 1 of 2

Performance Curve

MARINE SPECIFICATION SHEET

General Data

Model.....	7122-7K20
Number of Cylinders.....	12
Bore and Stroke – in. x in. (mm x mm).....	4.25 x 5.00 (108 x 127)
Displacement – in. ³ (L).....	852 (13.97)
Compression Ratio.....	17.0:1
Piston Speed – ft/min (m/min).....	1500 (457)
Exhaust Valves.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE – 2 Cycle
Aspiration.....	TURBOCHARGED

Configuration

Injection Device.....	EUI
Turbocharger.....	TV6501 (0.84 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	100% Bypass
Blower Drive Ratio.....	2.05:1
Low Idle Speed – r/min.....	550
Maximum No Load Speed – r/min.....	1900
Engine Crankcase Vent System.....	OPEN

Physical Data

Size:		
Length – in. (mm).....	106.0 (2693)	67.71 (1720)
Width – in. (mm).....	49.68 (1262)	49.68 (1262)
Height – in. (mm).....	63.97 (1625)	63.97 (1625)
Weight, dry – lb (kg).....	8020 (3638)	5020 (2277)
Weight, wet – lb (kg).....	8521 (3865)	5421 (2459)

Center of Gravity Distance:	
From R.F.O. Flange/Blk. (x axis) – in. (mm).....	Not Available
Above Output Shaft (y axis) – in. (mm).....	Not Available
Right of Output Shaft (z axis) – in. (mm).....	Not Available
Installation Drawing.....	Not Available

Mechanical Data

E4-7000-32-1

Marine Gear

Type.....	DD-518-1
Reduction Ratio.....	4.03:1
Lube Oil Capacity – qt (L).....	52.0 (49.2)
(marine gear must use straight viscosity oil)	
Gear Weight, dry – lb (kg).....	2390 (1084)
Center of Gravity Distance:	
From R.F.O. Flange (x axis) – in. (mm).....	11.41 (290)
Above Output Shaft (y axis) – in. (mm).....	6.54 (166)
Right of Output Shaft (z axis) – in. (mm).....	1.77 (45.0)

Fuel System

Fuel Injector Part Number.....	5234770
Injector Timing Height.....	1.520
Fuel Consumption – lb/hr (kg/hr).....	184.6 (83.7)
Fuel Spill Rate gal/hr (L/hr).....	270.0 (1022.1)
Total Fuel Flow gal/hr (L/hr).....	296.4 (1122)
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
Recommended Supply Line I.D. – in.(mm).....	0.5 (12.7)

Lubrication System

Oil Pressure at Rated Speed – lb/in. ² (kPa).....	49-70 (338-483)
Oil Pressure at Low Idle – lb/in. ² (kPa).....	5.0 (34)
In Pan Oil Temperature – °F (°C).....	200 – 250 (93 – 121)
Oil Flow – gal/min (L/min).....	53 (201)
Oil Pan Capacity – at Installation Angle	
High Limit – qt (L).....	0° 15°
Low Limit – qt (L).....	42.0 (39.7) 42.0 (39.7)
Total Engine Oil Capacity with Filters – qt (L).....	32.0 (30.3) 32.0 (30.3)
Maximum Installation Angle – Degrees.....	46.0 (43.5) 46.0 (43.5)
	15.0

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).....	25890 (455.3)
Boost Cooler Heat Rejection – Btu/min (kW).....	Not Applicable
Engine Radiated Heat – Btu/min (kW).....	850 (14.9)
Coolant Flow:	
Fresh Water Flow – gal/min (L/min).....	250 (946)
Raw Water Flow – gal/min (L/min).....	88 (333)
Maximum Water Pump:	
Inlet Restriction – in. Hg (kPa).....	Fresh Water 3.0 (10.2)
Fresh Water Capacity – qt (L).....	Raw Water 5.0 (17.0)
Maximum Coolant Pressure	
(Exclusive of Pressure Cap) – lb/in. ² (kPa).....	17 (117)
Maximum Raw Water Pump Pressure – lb/in. ² (kPa).....	14 (97)
Maximum Top Tank Temperature – °F (°C).....	210 (99)
Recommended Raw Water Pipe I.D.	

Inlet – in. (mm).....	4.0 (152)
Outlet – in. (mm).....	3.0 (76)

Recommended Sea Strainer Size:

(Max. Screen Opening – 2.0 mm)	
Simplex – in.(mm).....	3.0 (76)
Duplex – in.(mm).....	4.0 (102)

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).....	10 (2.5)
Dirty Air Cleaner – in. H ₂ O (kPa).....	15 (3.7)
Engine Air Flow – ft ³ /min (m ³ /min).....	1740 (49.3)
Air Box Pressure – in. Hg (kPa).....	44.7 (15.1)
Recommended Intake Pipe Dia.	
Single – in. (mm).....	8.0 (203)
Dual – in. (mm).....	6.0 (152)
Minimum Net Engine Room Vent Area. – in. ² (cm ²).....	138 (889)
Maximum Crankcase Pressure – in. H ₂ O (kPa).....	3.0 (0.57)

Exhaust System

Exhaust Flow – ft ³ /min (m ³ /min).....	2820 (79.9)
Exhaust Temperature – °F (°C).....	575 (302)
Maximum Back Pressure – in. Hg (kPa).....	1.8 (6.1)
Recommended Exhaust Pipe Diameter:	
Single – in. (mm).....	Dry 8.0 (203)
Dual – in. (mm).....	Wet 10 (254)
	5.0 (127) 8.0 (203)

Performance Data

BMEP – lb/in. ² (kPa).....	136.9 (944)
Friction Power – fhp (kW).....	90 (67)

Engine Speed	Brake Power	Shaft Power	Rated Fuel Usage	Rated BSFC
r/min	bhp (kW)	shp (kW)	gal/hr (L/hr)	lb/bhp-hr (g/kW-hr)
1800	530 (395)	512 (382)	28.4 (107.7)	0.375 (228)
1600	521 (389)	503 (375)	27.5 (104.2)	0.369 (225)
1400	475 (354)	458 (342)	25.1 (95.1)	0.370 (225)
1200	423 (316)	408 (304)	22.8 (86.1)	0.376 (229)
1000	323 (241)	311 (232)	18.3 (69.2)	0.395 (240)

Engine Speed	Prop Load	Prop Fuel Usage	Prop BSFC
r/min	shp (kW)	gal/hr (L/hr)	lb/bhp-hr (g/kW-hr)
1800	512 (382)	28.4 (107.7)	0.375 (228)
1600	360 (268)	20.2 (76.4)	0.378 (230)
1400	241 (180)	14.2 (53.6)	0.393 (239)
1200	152 (113)	9.4 (35.7)	0.412 (251)
1000	88 (65)	5.9 (22.4)	0.439 (267)

Emissions Data

Smoke, Rated Speed – Bosch Number.....	0.2
Noise – dB(A) @ 1.....	105.0
Additional Noise Data.....	Not Available
NO _x – g/hr.....	6940
CO – g/hr.....	595
HC – g/hr.....	77
SO ₂ – g/hr.....	837

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All values are at rated speed and power at SAE J1228 with standard engine hardware, unless otherwise noted.

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