

DETROIT DIESEL

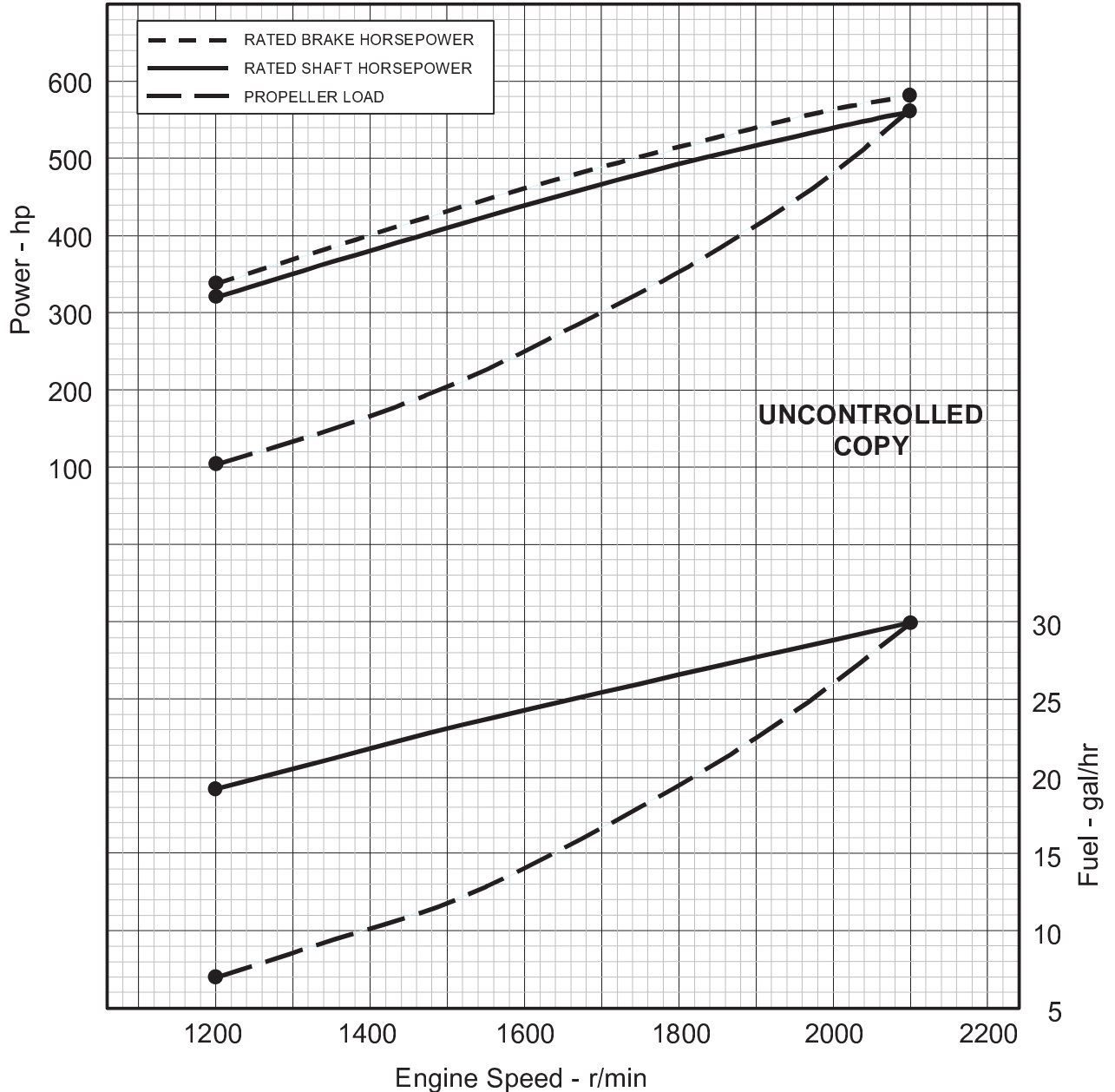


Marine Power

Model: 12V-71TA

Rating: 585 bhp (436 kW) @ 2100 r/min
560 shp (418 kW) @ 2100 r/min

Intermittent
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>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</p>	<p>Turbo: TW73 (1.03 A/R) Injector: 7C75 Accessories: DD514EV Gear Alternator: 24V, 65A Raw Water Pump: Included</p>
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Certified by: T. MOORE

Curve No. E4-7122-32-7
Rev. / Date: 2 / 11-2-98
Sheet No. 1 of 2

Performance Curve

MARINE SPECIFICATION SHEET

General Data

Model.....	7122-7601
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).....	1750 (533)
Exhaust Valves.....	4
Combustion System.....	Direct Injection
Engine Type.....	63.5° VEE 2 Cycle
Aspiration.....	Turbocharger

Configuration

Injection Device.....	MUI
Turbocharger.....	TW73 (1.03 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	100% Bypass
Blower Drive Ratio.....	1.95:1
Low Idle Speed – r/min.....	550
Maximum No Load Speed – r/min.....	2250
Engine Crankcase Vent System.....	OPEN

Physical Data

Size:	WITH GEAR	WITHOUT GEAR
Length – in. (mm).....	84.8 (2154)	72.95 (1853)
Width – in. (mm).....	49.7 (1262)	49.70 (1262)
Height – in. (mm).....	52.4 (1330)	52.4 (1330)
Weight, dry – lb (kg).....	Not Available	Not Available
Weight, wet – lb (kg).....	Not Available	Not Available
Center of Gravity Distance:		
From R.F.O. Flange (x axis) – in. (mm).....	Not Available	Not Available
Above Output Shaft (y axis) – in. (mm).....	Not Available	Not Available
Right of Output Shaft (z axis) – in. (mm).....	Not Available	Not Available
Installation Drawing.....	Not Available	Not Available

Mechanical Data

E4-7000-32-1

Marine Gear

Type.....	DD-514EV
Reduction Ratio.....	2.50:1
Lube Oil Capacity – qt (L).....	24 (23)
(marine gear must use straight viscosity oil)	
Gear Weight, dry – lb (kg).....	1155 (524)
Center of Gravity Distance:	
From R.F.O. Flange (x axis) – in. (mm).....	10.42 (265)
Above Output Shaft (y axis) – in. (mm).....	5.06 (129)
Right of Output Shaft (z axis) – in. (mm).....	1.98 (50.0)

Fuel System

Fuel Injector.....	7C75
Injector Timing Height – in.	1.460
Fuel Consumption – lb/hr (kg/hr).....	208.9 (94.8)
Fuel Spill Rate gal/hr (L/hr).....	108.0 (408.8)
Total Fuel Flow gal/hr (L/hr).....	137.9 (521.9)
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).....	64 (242)
Oil Pan Capacity – at Installation Angle	0° 15°
High Limit – qt (L).....	42.0 (39.7) 38.0 (36.0)
Low Limit – qt (L).....	32.0 (30.3) 28.0 (26.5)
Total Engine Oil Capacity with Filters – qt (L).....	46.0 (43.5) 42.0 (39.7)
Maximum Installation Angle – Degrees.....	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).....	21920 (385.5)
Engine Radiated Heat – Btu/min (kW).....	960 (16.9)
Coolant Flow:	
Fresh Water Flow – gal/min (L/min).....	200 (757)
Raw Water Flow – gal/min (L/min).....	100 (379)
Maximum Water Pump:	Fresh Water Raw Water
Inlet Restriction – in. Hg (kPa).....	3.0 (10.2) 5.0 (17.0)
Fresh Water Capacity – qt (L).....	140 (132)
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).....	12 (3.0)
Dirty Air Cleaner – in. H ₂ O (kPa).....	20 (5.0)
Engine Air Flow – ft ³ /min (m ³ /min).....	1560 (44.2)
Air Box Pressure – in. Hg (kPa).....	30.2 (102.0)
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).....	150 (966)
Maximum Crankcase Pressure – in. H ₂ O (kPa).....	2.0 (0.5)

Exhaust System

Exhaust Flow – ft ³ /min (m ³ /min).....	3050 (86.4)
Exhaust Temperature – °F (°C).....	590 (310)
Maximum Back Pressure – in. Hg (kPa).....	2.5 (8.4)
Recommended Exhaust Pipe Diameter:	Dry Wet
Single – in. (mm).....	8.0 (203) 10 (254)
Dual – in. (mm).....	5.0 (127) 8.0 (203)

Performance Data

BMEP – lb/in. ² (kPa).....	129.6 (894)
Friction Power – fhp (kW).....	116 (87)

Engine Speed r/min	Brake Power bhp (kW)	Shaft Power shp (kW)	Rated Fuel Usage gal/hr (L/hr)	Rated BSFC lb/bhp-hr (g/kW-hr)
2100	585 (436)	560 (418)	29.9 (113.2)	0.357 (217)
1950	553 (412)	529 (395)	28.3 (106.9)	0.357 (217)
1800	516 (385)	493 (368)	26.6 (100.5)	0.360 (219)
1500	431 (322)	412 (307)	23.0 (87.2)	0.373 (227)
1200	336 (250)	320 (238)	19.2 (72.6)	0.399 (243)

Engine Speed r/min	Prop Load shp (kW)	Prop Fuel Usage gal/hr (L/hr)	Prop BSFC lb/bhp-hr (g/kW-hr)
2100	560 (418)	29.9 (113.2)	0.357 (217)
1950	448 (334)	24.2 (91.5)	0.360 (219)
1800	353 (263)	19.3 (72.9)	0.363 (221)
1500	204 (152)	11.6 (43.9)	0.375 (228)
1200	104 (78)	6.7 (25.4)	0.414 (252)

Emissions Data

Smoke, Rated Speed – Bosch Number.....	0.3
Noise – dB(A) @ 1.....	105
Additional Noise Data.....	Not Available
NO _x – g/hr.....	Not Available
CO – g/hr.....	Not Available
HC – g/hr.....	Not Available
SO ₂ – g/hr.....	950

**UNCONTROLLED
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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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