

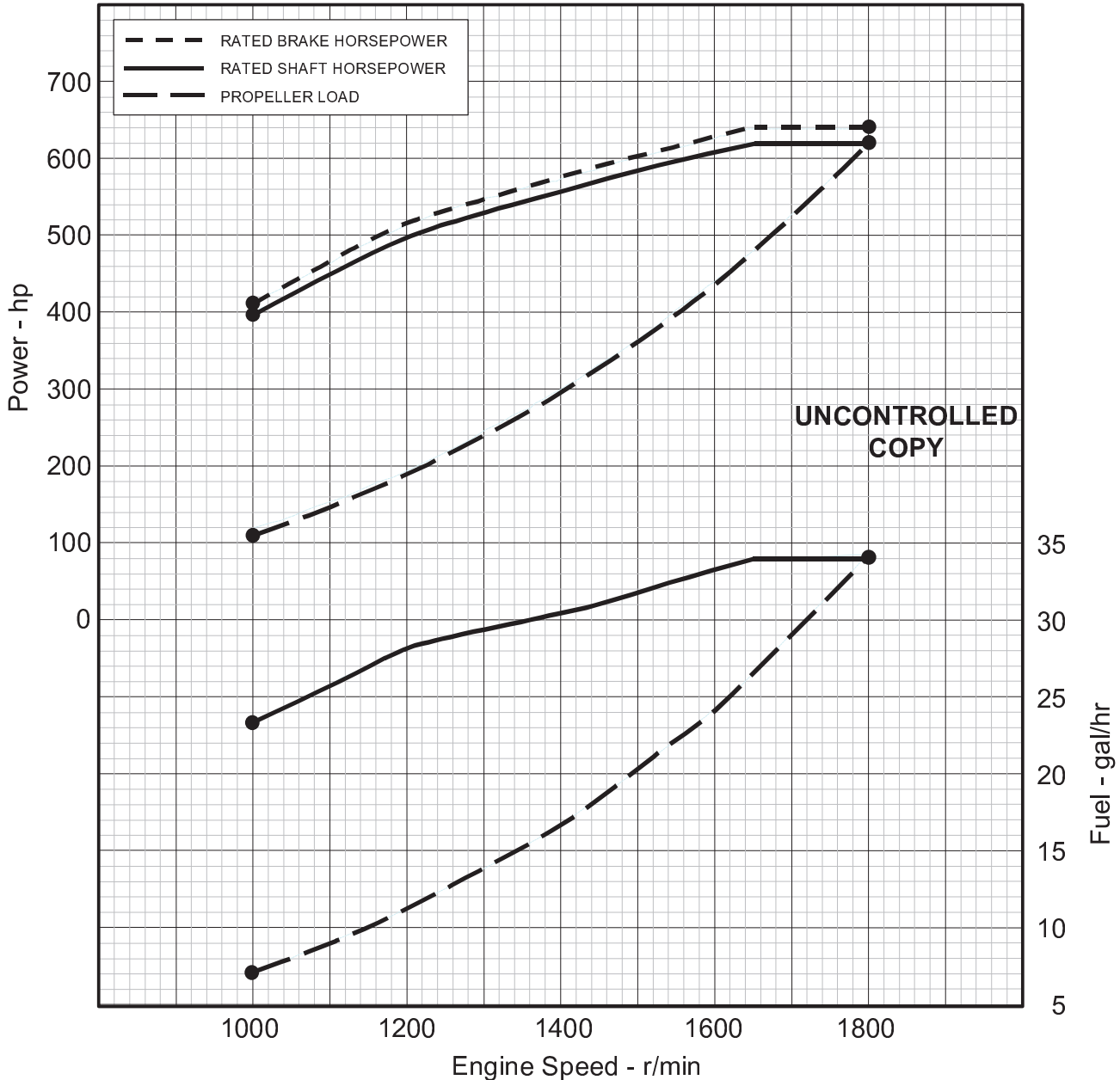


## Marine Power

**Model:** 12V-92TA DDEC®

**Rating:** 640 bhp (477 kW) @ 1800 r/min  
620 shp (463 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. H<sub>2</sub>O (2.5 kPa) Exhaust Back Pressure: 15 in. H<sub>2</sub>O (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><b>Turbo:</b> TV6501 (0.84 A/R) <b>Injector:</b> 5234915 <b>Accessories:</b> DD-520-1 Gear <b>Alternator:</b> 24V, 65A <b>Raw Water Pump:</b> Not Included</p>
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Certified by: *JR Schringer*

**Curve No.** E4-8122-32-9  
**Rev. / Date:** 3 / 12-23-97  
**Sheet No.** 1 of 2

## Performance Curve

# MARINE SPECIFICATION SHEET

## General Data

Model.....	8122-7K20, -7K21
Number of Cylinders.....	12
Bore and Stroke – in. x in. (mm x mm).....	4.84 x 5.00 (123 x 127)
Displacement – in. <sup>3</sup> (L).....	1104 (18.09)
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.....	2000
Engine Crankcase Vent System.....	Closed

## Physical Data

Size:	WITH GEAR	WITHOUT GEAR
Length – in. (mm).....	100.6 (2556)	75.6 (1920)
Width – in. (mm).....	49.7 (1263)	49.7 (1263)
Height – in. (mm).....	51.0 (1296)	51.0 (1296)
Weight, dry – lb (kg).....	8020 (3638)	5020 (2277)
Weight, wet – lb (kg).....	8526 (3867)	5427 (2462)

### Center of Gravity Distance:

From R.F.O.Flg/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

SK-10629

## Mechanical Data

E4-8000-32-1

## Marine Gear

Type.....	DD520-1V
Reduction Ratio.....	4.03:1
Lube Oil Capacity– qt (L).....	52.8 (50.0)
(marine gear must use straight viscosity oil)	
Gear Weight, Dry – lb (kg).....	3000 (1361)
Center of Gravity Distance:	
From Mounting Face (x axis) – in. (mm).....	14.0 (356)
Above Output Shaft (y axis) – in. (mm).....	5.27 (134)
Right of Output Shaft (z axis) – in. (mm).....	1.98 (50.3)

## Fuel System

Fuel Injector – Part Number.....	5234915
Injection Timing Height – in. ....	1.520
Fuel Consumption – lb/hr (kg/hr).....	239.4 (108.6)
Fuel Spill Rate gal/hr (L/hr).....	280.0 (1060)
Total Fuel Flow gal/hr (L/hr).....	314.3 (1190)
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).....	0.75 (19.05)

## Lubrication System

Oil Pressure at Rated Speed – lb/in. <sup>2</sup> (kPa).....	49-70 (338-483)
Oil Pressure at Low Idle – lb/in. <sup>2</sup> (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).....	42.0 (39.7) 42.0 (39.7)
Low Limit – qt (L).....	34.0 (32.2) 34.0 (32.2)
Total Engine Oil Capacity with Filters – qt (L).....	53.0 (50.2) 53.0 (50.2)
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):.....	28440 (500.1)
Engine Radiated Heat – Btu/min (kW).....	2200 (38.7)
Coolant Flow:	
Fresh Water Flow – gal/min (L/min).....	325 (1230)
Raw Water Flow – gal/min (L/min).....	83 (314)
Maximum Water Pump:	<b>Fresh Water</b> <b>Raw Water</b>
Inlet Restriction – in. Hg (kPa).....	3.0 (10.2) 5.0 (17.0)
Fresh Water Capacity – qt (L).....	145 (137.2)
Maximum Coolant Pressure	
(Exclusive of Pressure Cap) – lb/in. <sup>2</sup> (kPa).....	17 (117.2)
Maximum Raw Water Pump Pressure – lb/in. <sup>2</sup> (kPa).....	10 (6.9)
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 <sub>2</sub> O (kPa).....	12 (3.0)
Dirty Air Cleaner – in. H <sub>2</sub> O (kPa).....	20 (5.0)
Engine Air Flow – ft <sup>3</sup> /min (m <sup>3</sup> /min).....	1740 (49.3)
Air Box Pressure – in. Hg (kPa).....	51.5 (173.9)
Recommended Intake Pipe Outer Diameter:	
Single – in. (mm).....	8.0 (203)
Dual – in. (mm).....	6.0 (152)
Minimum Net Engine Room Vent Area, – in. <sup>2</sup> (cm <sup>2</sup> ).....	167 (879)
Maximum Crankcase Pressure – in. H <sub>2</sub> O (kPa).....	2.8 (0.70)

## Exhaust System

Exhaust Flow – ft <sup>3</sup> /min (m <sup>3</sup> /min).....	3410 (96.6)
Exhaust Temperature – °F (°C).....	570 (299)
Maximum Back Pressure – in. Hg (kPa).....	1.8 (6.1)
Recommended Exhaust Pipe Diameter:	<b>Dry</b> <b>Wet</b>
Single – in. (mm).....	10.0 (254) 12.0 (305)
Dual – in. (mm).....	8.0 (203) 10.0 (254)

## Performance Data

BMEP – lb/in. <sup>2</sup> (kPa).....	127.6 (879)
Friction Power– fhp (kW).....	116 (87)

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	640 (477)	620 (463)	34.3 (129.7)	0.374 (228)
1650	640 (477)	620 (463)	34.0 (128.8)	0.371 (226)
1500	602 (449)	583 (435)	31.8 (120.3)	0.369 (224)
1350	560 (418)	542 (404)	29.9 (113.1)	0.373 (227)
1200	514 (383)	497 (371)	28.1 (106.4)	0.382 (232)
1000	408 (304)	394 (294)	23.3 (88.1)	0.399 (243)

Engine Speed	Prop Load	Prop Fuel Usage	Prop BSFC
r/min	shp (kW)	gal/hr (L/hr)	lb/bhp-hr (g/kW-hr)
1800	620 (463)	34.3 (129.7)	0.374 (228)
1650	478 (356)	26.5 (100.4)	0.375 (228)
1500	359 (268)	20.2 (76.6)	0.380 (231)
1350	262 (195)	15.2 (57.5)	0.390 (237)
1200	184 (137)	11.2 (42.4)	0.407 (248)
1000	106 (79)	7.1 (26.9)	0.439 (267)

## Emissions Data

Smoke – Bosch Number.....	0.1
Noise – dB(A) @ 1.....	104.0
Additional Noise Data.....	Not Available
NO <sub>x</sub> – g/hr.....	7350
CO – g/hr.....	420
HC – gh/r.....	146
SO <sub>2</sub> – g/hr.....	1086

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Sheet No. 2 of 2

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

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