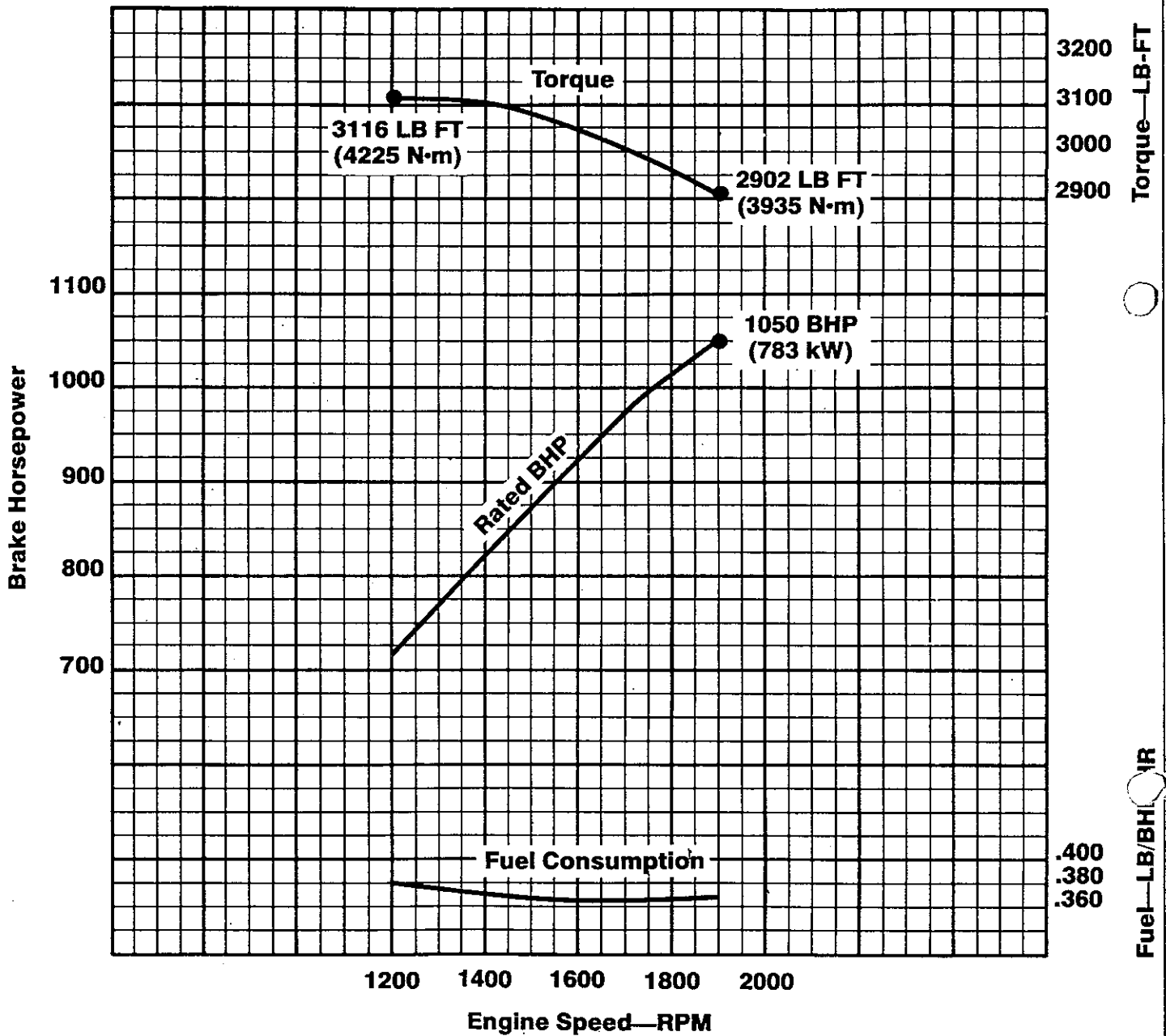




**12V-149T**  
**Industrial**  
**Rated BHP**  
**1050 BHP @ 1900 RPM**  
**3116 LB-FT @ 1200 RPM**  
**Injector: 145**  
**Turbocharger: TV7111 (1.08 A/R)**

**ENGINE PERFORMANCE CURVE**



**Air Intake Restriction - in. H<sub>2</sub>O (kPa) . . 10 (2.5)**

**Exhaust Back Pressure - in. H<sub>2</sub>O (kPa) . . 15 (3.7)**

- Power output guaranteed within 5% at SAE J1349 conditions: 77°F (25°C) air inlet temperature; 29.31 in. Hg (99kPa) dry barometer; 100°F (39°C) fuel inlet temperature (.853 specific gravity at 60°F).
- Conversion factors: Power: kW = bhp × 0.746  
Fuel: kg/kW·hr = lb/bhp·hr × 0.608  
Torque: N·m = lb·ft × 1.356
- Values derived are from currently available data and are subject to change without notice.

**Certified by:**

*Roy Smith*

**Curve No.**  
**E4-9123-32-6**  
**Date: 9-7-83**  
**Rev./Date: 2/6-16-87**  
**Sht. 1 of 3**

# Engine Specification Data

## General Data

Model	9123-7300
Number of Cylinders	12
Bore and Stroke-in (mm)	5.75x5.75 (146x146)
Displacement-in <sup>3</sup> (L)	1792 (29.39)
Compression Ratio	17:1
Piston Speed-ft/min (m/min)	1801 (555)
Valves Per Cylinder	
Intake	None
Exhaust	4
Combustion System	Direct Injection
Engine Type	63.5° VEE - 2 Cycle
Aspiration	Turbocharged

## Configuration

Turbocharger	TV7111 (1.08 A/R)
Charge Air Cooling System	None
Blower Type	Std (Ext. Bypass)
Blower Drive Ratio	2.06:1
Low Idle Speed-r/min	550
High Idle Speed-r/min	750
Thrust Bearing Load Limit	
Continuous-lbf (N)	1100 (4890)
Intermittent-lbf (N)	3300 (14680)
Engine Crankcase Vent System	Open
Maximum Pressure-in H <sub>2</sub> O (kPa)	0.8 (0.20)

## Physical Data

Size	
Length-in (mm)	93 (2362)
Width-in (mm)	62 (1575)
Height-in (mm)	67.5 (1715)
Weight, dry-lb (kg)	9030 (4096)
Weight, wet-lb (kg)	9570 (4341)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in (mm)	31.2 (792.5)
Above Crankshaft (y axis)-in (mm)	16.7 (424.2)
Right of Crankshaft (z axis)-in (mm)	1.8 (45.7)
Installation Drawing	8925445
Maximum Allowable Static Bending Moment at Rear Face of Block	See Eng. Bulletin No. 45
Maximum Allowable Vertical Load at Rear Face of Flywheel-lb(kg)	2050 (930)

## Fuel System

Fuel Injector/Timing	145/2.175
Fuel Injection Pump/Timing	Not Applicable
Fuel Consumption-lb/hr (kg/hr)	383.3 (173.8)
Fuel Consumption-gal/hr (L/hr)	54.8 (207.4)
Fuel Spill Rate-lb/hr (kg/hr)	2203.1 (999.3)
Fuel Spill Rate-gal/hr (L/hr)	315.2 (1193.2)
Total Fuel Flow-lb/hr (kg/hr)	2586.3 (1173.1)
Total Fuel Flow-gal/hr (L/hr)	370.0 (1400.6)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg (kPa)	6.0 (20.3)
Dirty System-in Hg (kPa)	12.0 (40.6)
Fuel Filter Micron Size	
Primary-Micron	30
Secondary-Micron	10

## Lubrication System

Oil Pressure	
Rated Speed-lbf/in <sup>2</sup> (kPa)	48-70 (331-483) #
Low Idle-lbf/in <sup>2</sup> (kPa)	10 (69)
In Pan Oil Temperature-°F (°C)	230 (107.3) max.
Oil Flow-gal/min (L/min)	120 (454.4)
Oil Pan Capacity	
High-qt (L)	120 (454.4)
Low-qt (L)	88 (333.1)
Total Engine Oil Capacity with filters-qt (L)	136 (128.7)
Bypass Oil Filter Orifice-in (mm)	Not Applicable
Engine Angularity Limits	
Front up-degrees	13
Front down-degrees	13
Side tilt-degrees	Not Available

## Emission Data

CO-gm/hr	4190
HC-gm/hr	885
NO <sub>x</sub> -gm/hr	12680
SO <sub>2</sub> -gm/hr	1738
Smoke	
Rated Speed-Bosch Number	0.4
Peak Torque Speed-Bosch Number	1.0
Noise-dB (A) @ 1m	104.3
Certification Approval	Not Applicable

# 30 Plate Oil Cooler

## Cooling System

Engine Heat Rejection-Btu/min (kW)	27830 (489) #
Engine Radiated Heat-Btu/min (kW)	4090 (72)
Coolant Flow-gal/min (L/min)	335 (1268)
Minimum Coolant Flow	95% Rated Flow
Thermostat	
Start to Open-°F (°C)	170 (77.6)
Fully Open-°F (°C)	185 (84.5)
Maximum Water Pump Inlet	
Restriction-in Hg (kPa)	
Conventional System	3 (10.2)
Rapid Warm-up System	0 (0)
Engine Coolant Capacity-qt (L)	148 (140.7)
Minimum Pressure Cap-lbf/in <sup>2</sup> (kPa)	14 (96.5)
Maximum Coolant Pressure (Exclusive of Pressure Cap and/or Head)	
lbf/in <sup>2</sup> (kPa)	30 (207)
Maximum Top Tank Temperature-°F (°C)	200 (93)
Minimum Top Tank Temperature-°F (°C)	10 (5) Below Stat Start to Open Temp.
Minimum Coolant Fill Rate-gal/min (L/min)	5 (18.9)
Cooling Index	
Ram Air Flow-Mile/hr (km/hr)	Not Applicable
Air Handling-Air Injection	
Capacity-ft <sup>3</sup> /min (m <sup>3</sup> /min)	0.8 (0.023)
Air Handling Time	30 Min.
Drawdown-Minimum Requirement	See Eng. Bulletin No. 50

## Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F (°C)	30 (17)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H <sub>2</sub> O (kPa)	20 (4.98)
Clean Air Cleaner-in H <sub>2</sub> O (kPa)	12 (2.99)
Engine Air Flow-ft <sup>3</sup> /min (m <sup>3</sup> /min)	3420 (98.1)
Engine Air Box/Manifold Pressure-in Hg (kPa)	37.0 (125.5)
Recommended Intake Pipe Dia.-in (mm)	10 (254) Single 8 (203) Dual

## Exhaust System

Exhaust Flow-ft <sup>3</sup> /min (m <sup>3</sup> /min)	7360 (207.8)
Exhaust Temperature-°F (°C)	745 (396)
Maximum Allowable Back	
Pressure-in Hg (kPa)	2.5 (8.47)
Recommended Exhaust Pipe Dia.	
Single-in (mm)	10 (254)
Dual-in (mm)	8 (203)
Exhaust Brake Max. Allowable Back	
Pressure-in Hg (kPa)	Not Applicable

## Electrical System

Recommended Battery Capacity (CCA @ 0°F)	
12 Volt System	
Above 32°F (0°C)-A	Not Applicable
Below 32°F (0°C)-A	Not Applicable
24 Volt System	
Above 32°F (0°C)-A	950/Starter
Below 32°F (0°C)-A	1250/Starter
Maximum Allowable Resistance of Starting Circuit	
12 volt system-ohm	Not Applicable
24 volt system-ohm	0.002/Starter

## Performance Data

Power Output-bhp (kW)	1050 (783)
Rated Speed-r/min	1900
Peak Torque-lb ft (N·m)	3116 (4225)
Peak Torque Speed-r/min	1200
BMEP-lbf/in <sup>2</sup> (kPa)	122 (845)
Friction Power	
Rated Speed-hp (kW)	270 (201.4)
Peak Torque Speed-hp (kW)	110 (82.1)
Altitude Capability-ft (m)	16000 (4880)
Torque Available at 800 r/min-lb ft (N·m)	Not Applicable

Engine Speed	Power	Torque	BSFC
r/min	bhp (kW)	lb ft (N·m)	lb/bhp hr (g/kW hr)
1900	1050 (783)	2902 (3935)	.365 (222)
1800	1015 (757)	2962 (4016)	.362 (220)
1600	925 (690)	3036 (4116)	.364 (221)
1500	875 (653)	3064 (4155)	.365 (222)
1400	827 (617)	3102 (4206)	.367 (223)
1200	712 (531)	3116 (4225)	.375 (228)

All values at rated speed and power with standard engine hardware unless otherwise noted.

CURVE NO. E4-9123-32-6  
DATE: 9-7-83  
REV./DATE: 2/6-16-87  
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