

Engine Specification Data

General Data

Model	9123-7301
Number of Cylinders	12
Bore and Stroke-in (mm)	5.75x5.75 (146x146)
Displacement-in ³ (L)	1792 (29.39)
Compression Ratio	16:1
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	JWIC
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 ₂ O (kPa)	0.8 (0.20)

Physical Data

Size	
Length-in (mm)	93 (2362)
Width-in (mm)	62 (1575)
Height-in (mm)	70 (1778)
Weight, dry-lb (kg)	9110 (4132)
Weight, wet-lb (kg)	9650 (4377)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in (mm)	31.8 (807.7)
Above Crankshaft (y axis)-in (mm)	16.0 (406.4)
Right of Crankshaft (z axis)-in (mm)	1.8 (45.7)
Installation Drawing	8925268
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	150/2.205
Fuel Injection Pump/Timing	Not Applicable
Fuel Consumption-lb/hr (L/hr)	396.8 (167.7)
Fuel Consumption-gal/hr (L/hr)	56.8 (215.0)
Fuel Spill Rate-lb/hr (kg/hr)	2189.5 (993.1)
Fuel Spill Rate-gal/hr (L/hr)	313.2 (1185.6)
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 ² (kPa)	48-70 (331-483)#
Low Idle-lbf/in ² (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	3200
HC-gm/hr	810
NO _x -gm/hr	13480
SO _x -gm/hr	1677
Smoke	
Rated Speed-Bosch Number	1.3
Peak Torque Speed-Bosch Number	1.1
Noise-dB (A) @ 1m	105
Certification Approval	Not Applicable

30 Plate Oil Cooler

Cooling System

Engine Heat Rejection-Btu/min (kW)	29950 (527)#
Engine Radiated Heat-Btu/min (kW)	4190 (74)
Coolant Flow-gal/min (L/min)	380 (1438)
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 (140.1)
Minimum Pressure Cap-lbf/in ² (kPa)	14 (96.5)
Maximum Coolant Pressure (Exclusive of Pressure Cap and/or Head)-lbf/in ² (kPa)	30 (207)
Maximum Top Tank Temperature-°F (°C)	200 (93)
Minimum Top Tank Temperature-°F (°C)	10 (5) Below Start Start to Open Temp.
Minimum Coolant Fill Rate-gal/min (L/min)	5 (18.9)
Ram Air Flow-Mile/hr (km/hr)	Not Applicable
Air Handling-Air Injection	
Capacity-ft ³ /min (m ³ /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 ₂ O (kPa)	20 (4.98)
Clean Air Cleaner-in H ₂ O (kPa)	12 (2.99)
Engine Air Flow-ft ³ /min (m ³ /min)	3300 (95)
Engine Air Box/Manifold Pressure-in Hg (kPa)	34.3 (116)
Recommended Intake Pipe Dia.-in (mm)	10 (254) Single 8 (203) Dual

Exhaust System

Exhaust Flow-ft ³ /min (m ³ /min)	7070 (200)
Exhaust Temperature-°F (°C)	740 (390)
Maximum Allowable Back Pressure-in Hg (kPa)	2.5 (8.47) Dirty
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)	1130 (843)
Rated Speed-r/min	1900
Peak Torque-lb ft (N·m)	3178 (4309)
Peak Torque Speed-r/min	1400
BMEP-lbf/in ² (kPa)	131 (903)
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 r/min	Power		BSFC	
	bhp (kW)	Torque lb ft (N·m)	lb/bhp hr	(g/kW hr)
1900	1130 (843)	3124 (4236)	.352	(214)
1800	1080 (806)	3151 (4273)	.353	(215)
1600	965 (720)	3168 (4296)	.357	(217)
1500	907 (677)	3175 (4305)	.361	(220)
1400	847 (632)	3178 (4309)	.364	(221)
1200	712 (531)	3116 (4225)	.379	(230)

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

CURVE NO. E4-9123-32-3
DATE: 6-10-83
REV./DATE: 2/6-16-87
SHT. 2 OF 3