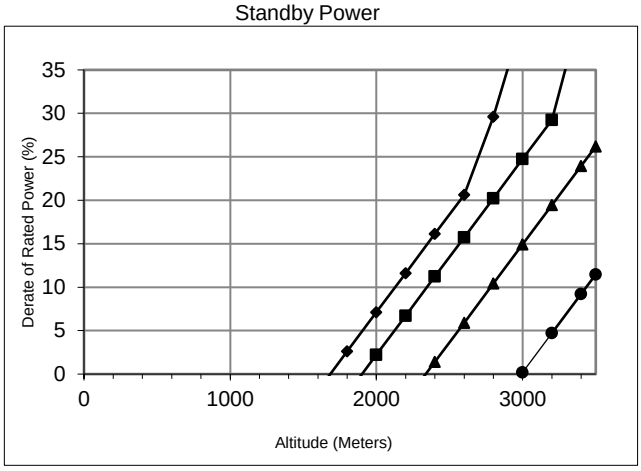
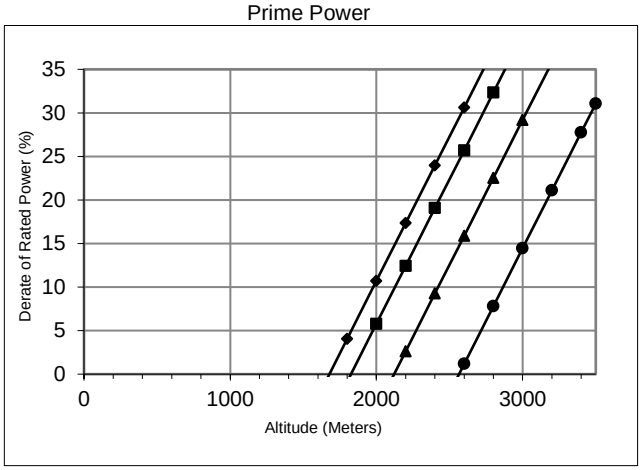
1,500 rpm Power Derate Curves

Standby Power



Prime Power



131 °F (55 °C)
122 °F (50 °C)
104 °F (40 °C)
77 °F (25 °C)

Operation At Elevated Temperature And Altitude:
For Standby Operation above these conditions, derate by an additional 20.1% per 1,000 ft (305 m), and 52.2% per 18 °F (10 °C).
For Prime Operation above these conditions, derate by an additional 10% per 1,000 ft (305 m), and 9.8% per 18 °F (10 °C).
For Continuous Operation above these conditions, derate by an additional N/A% per 1,000 ft (305 m), and N/A% per 18 °F (10 °C).

1,800 rpm Power Derate Curves

Operation At Elevated Temperature And Altitude:
For Standby Operation above these conditions, derate by an additional N/A% per 1,000 ft (305 m), and N/A% per 18 °F (10 °C).
For Prime Operation above these conditions, derate by an additional N/A% per 1,000 ft (305 m), and N/A% per 18 °F (10 °C).
For Continuous Operation above these conditions, derate by an additional N/A% per 1,000 ft (305 m), and N/A% per 18 °F (10 °C).

General Engine Data

Installation Drawing Number		5542564	
Type		Four Cycle; Vee; 12 Cylinder	
Aspiration		Turbocharged and Charge Air Cooled	
Bore x Stroke	in x in (mm x mm)	6.26 x 6.26	(159 x 159)
Displacement	in^3 (L)	2307	(37.8)
Compression Ratio		14.3: 1	
Dry Weight (Approximate)	lbm (kg)	9310	(4223)
Wet Weight (Approximate)	lbm (kg)	9863	(4474)
Aftertreatment Weight (Approximate)	lbm (kg)	N/A	(N/A)
Moment of Inertia of Rotating Components			
with FW6115 Flywheel, SAE 0	in • lbf • sec^2 (kg • m^2)	96.5	(10.9)
Center of Gravity from Rear Face of Block	in (mm)	31.42	(798)
Center of Gravity Above Crankshaft Centerline	in (mm)	9.02	(229)

Engine Mounting

Max Bending Moment at Rear Face of Block	lb • ft (N • m)	4500	(6101)

Exhaust System

Max Allowable Static Bending Moment @ Exhaust Outlet Flange	lb • ft (N • m)	124	(168)
Max Back Pressure, Standby Power, Turbo Outlet (1500/1800rpm)	in Hg (kPa)	3.0 / N/A	(10.1 / N/A)

Air Induction System

Max Intake Air Restriction			
With Normal Duty Air Cleaner and Clean Filter Element	in H_2O (kPa)	15	(3.7)
With Heavy Duty Air Cleaner and Clean Filter Element	in H_2O (kPa)	15	(3.7)
With Dirty Filter Element	in H_2O (kPa)	25	(6.2)
Maximum allowable air temperature rise over ambient at Turbo Compressor inlet (Turbo-charged Engines):	Δ°F (Δ°C)	5	(3)

Cooling System

Jacket Water/ High Temperature Circuit Requirements			
Max Coolant Friction Head External to Engine (1500/1800 rpm)	psi (kPa)	10.0 / N/A	(69 / N/A)
Engine Water Flow at Stated Friction Head External to Engine:			
2.5 psi Friction Head (1500/1800 rpm)	US gpm (L/m)	392 / N/A	(1483 / N/A)
Maximum Friction Head (1500/1800 rpm)	US gpm (L/m)	380 / N/A	(1438 / N/A)
Coolant Capacity - Engine	US gal (L)	37.0	(140.1)
Minimum Pressure Cap Rating at Sea Level	psi (kPa)	14	(97)
Max Static Head of Coolant Above Crankshaft Centerline	ft (m)	60	(18.3)
Max Coolant (Top Tank) Temperature for Standby/Prime Power	°F (°C)	230 / N/A	(110 / N/A)
Thermostat (Modulating) Range	°F (°C)	181 - 203	(83 - 95)
Max Intake Manifold Temp Warning/Shutdown	°F (°C)	190 / 208	(87.7 / 98)
Low Temperature Circuit (LTC) Requirements			
Max Coolant Friction Head External to Engine (1500/1800 rpm)	psi (kPa)	N/A / N/A	(N/A / N/A)
Aftercooler Water Flow at Stated Friction Head External to Engine:			
2.5 psi Friction Head (1500/1800 rpm)	US gpm (L/m)	N/A / N/A	(N/A / N/A)
Maximum Friction Head (1500/1800 rpm)	US gpm (L/m)	N/A / N/A	(N/A / N/A)
Max Coolant Temp into LTC @ 77°F (25°C) Ambient	°F (°C)	N/A	(N/A)
Max Coolant Temperature into LTC @			
Limiting Ambient Conditions for Standby/Prime Power	°F (°C)	N/A / N/A	(N/A / N/A)
Thermostat (Modulating) Range	°F (°C)	N/A - N/A	(N/A - N/A)
Coolant Capacity - Aftercooler	US gal (L)	N/A	(N/A)
Charge Air Cooler Requirements			
Max Allowable Pressure Drop Across Charge Air Cooler and OEM	in Hg (kPa)	3.0 / N/A	(10.09 / N/A)
Max Charge Air Cooler Outlet to Ambient at 77°F (25°C)(CAC dT)	Δ°F (Δ°C)	52	(29)

Lubrication System

Oil Pressure at Minimum Idle Speed	psi (kPa)	20	(138)
Oil Pressure at Governed Speed	psi (kPa)	50 - 70	(345 - 483)
Max Oil Temperature	°F (°C)	248	(120)
Oil Capacity with OP6104: Low - High	US gal (L)	23.0 - 38.0	(87 - 144)
Total System Capacity (With Combo Filter)	US gal (L)	30.9	(117)

Fuel System

Max Fuel Supply Restriction at Fuel Pump Inlet (clean/dirty filter)	in Hg (kPa)	7.1 / 11.2	(24 / 38)
Max Allowable Head on Injector Return Line			
(Consisting of Friction Head and Static Head)	in Hg (kPa)	10	(35)
Max Fuel Inlet Temperature	°F (°C)	158	(70)
Max Supply Fuel Flow (1500/1800 rpm)	US gph (L/hr)	178 / N/A	(673 / N/A)
Max Return Fuel Flow (1500/1800 rpm)	US gph (L/hr)	105 / N/A	(399 / N/A)

Electrical System

System Voltage	volts	24	N/A
Minimum Recommended Battery Capacity			
Cold Soak @ 0 °F (-18 °C)	CCA	1800	N/A
Max Starting Circuit Resistance	ohm	0.002	N/A
Max Current Draw of the System	Amps	N/A	N/A

Cold Start Capability

Unaided Cold Start			
Minimum Cranking Speed	rpm	110	
Minimum Ambient Temp for Unaided Cold Start	°F (°C)	10	(-12)

Performance Data

		STANDBY		PRIME		CONTINUOUS	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Governed Engine Speed	rpm		1500		1500		
Engine Idle Speed	rpm		700-1200		700-1200		
Gross Engine Power Output	bhp (kWm)		1560 (1130)		1371 (1022)		
Brake Mean Effective Pressure	psi (kPa)		694 (4782)		622 (4286)		
Friction Power	hp (kWm)		116 (87)		116 (87)		
Intake Air Flow	ft^3/min (L/sec)		3292 (1554)		3194 (1507)		
Exhaust Gas Temp	°F (°C)		896 (480)		887 (475)		
Exhaust Gas Flow	ft^3/min (L/sec)		7780 (3672)		7529 (3553)		
Air:Fuel Ratio			26.9:1		28.3:1		
Radiated Heat to Ambient	BTU/min (kWm)		6262 (110)		5774 (102)		
Heat to JW Radiator	BTU/min (kWm)		22427 (394)		20531 (361)		
Heat to Exhaust	BTU/min (kWm)		49222 (866)		47049 (827)		
* Heat to Fuel	BTU/min (kWm)		0 (0)		0 (0)		
Heat to Aftercooler Radiator	BTU/min (kWm)		14361 (253)		13393 (236)		
Charge Air Flow	lb/min (kg/min)		230 (104)		224 (101)		
Turbo Comp Outlet Pressure	psi (kPa)		39 (272)		37 (258)		
Turbo Comp Outlet Temp	°F (°C)		390 (199)		378 (192)		

* This is the maximum heat rejection to fuel.

Noise Emissions

Frequency (Hz) Sound Power dB(A) [123]		63	125	250	500	1000	2000	4000	8000	Overall
1500 rpm 50 Hz	Engine [4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Exhaust [5]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1800 rpm 60 Hz	Engine [4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Exhaust [5]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1. The test figures quoted are from a single gen-set test and do not constitute a guarantee of performance for any particular engine. The data is subject to instrumentation, measurement, and engine to engine variability.
2. Test reference procedures ISO 3744 and ANSI S12.34-1998 as applicable.
3. All data are "A" weighted and are rounded to the nearest dB.
4. Engine with "typical Radiator and fan", Sound Power (dB).
5. Engine Exhaust at 1 Meter from open stack, Sound Pressure (dB).