



**POWER SOLUTIONS
INTERNATIONAL**

4.5L Naturally Aspirated Stationary NON-EMERGENCY "PRIME"

Date: 3/8/2019

Rev: A

Units		4.5L			
Std	Metric	1500		1800	

General Engine Data

Type	N/A		In-line 4 cycle			
Number of cylinders	N/A		4			
Aspiration	N/A		Naturally Aspirated			
Bore	in	mm	4.1	105	4.1	105
Stroke	in	mm	5.1	130	5.1	130
Displacement	in ³	L	274.6	4.50	274.6	4.50
Compression Ratio	N/A		9.75:1			
RPM Range (Min-Max)	RPM		1500-1800			
Rotation Viewed from Flywheel	N/A		Counter Clockwise			
Firing Order	N/A		1-3-4-2			
Dry Weight (Engine)	lb	kg	1102.3	500	1102.3	500

Gross Prime Power Rating^{1,2,3} Per ISO 3046 at the Flywheel

	HP	KW	HP	KW
LP	63.2	47.1	65.6	48.9
Prime Rating Average Load Factor - LP	47.4	35.3	49.2	36.7
NG	59.3	44.2	67.3	50.2
Prime Rating Average Load Factor - NG	44.5	33.2	50.5	37.6

Please ask a PSI sales representative for information regarding standby power operation

Exhaust System

Type			Air Cooled Manifold			
Non-Emergency Prime Rating Catalyst Configuration for US Certified Product			Single Substrate		Single Substrate	
Maximum allowable Back pressure	in HG	kPa	3.8	15	3.8	15
Exhaust Volumetric Flow at Rated Power @ 1350 F	cfm	m ³ /min	312.8	8.9	338.2	9.6

Air Induction System

Maximum allowable Intake Air Restriction with Air Cleaner						
Clean	inH ₂ O	kPa	14.1	4.0	14.1	4.0
Dirty	inH ₂ O	kPa	24.1	6.0	24.1	6.0
Combustion Air required (volume)	cfm	m ³ /min	57.0	1.6	57.0	1.6

Cooling System

Coolant Capacity						
Engine only	qts	L	8.4	8.0	8.4	8.0
Engine and Radiator	qts	L	20.0	19.0	20.0	19.0
Heat rejected to Cooling water at rated Load	btu/min	kcal/sec	2597.2	10.92	3005.3	12.26
Cracking Temperature	F	C	169	76	169	76
Full Open Temperature	F	C	194	90	194	90

Lubrication System

Oil Specification			SAE 15W-40 Low Ash, API CD/CF or Higher			
Maximum Allowable Oil Temperature	F	C	239	115	239	115
Engine Oil Capacity						
Min	Qts	L	9.5	9	9.5	9
Max	Qts	L	12.7	12	12.7	12

Fuel System

Fuel Consumption @ Rated Load						
NG	lb/hr	kg/hr	22.9	10.4	26.5	12.0
LP	lb/hr	kg/hr	26.5	12.0	28.0	12.7
Maximum EPR Rated Pressure	psi	kPa	1.0	6.9	1.0	6.9
Recommended Maximum Running pressure to Electronic Pressure Regulator (EPR)	inH ₂ O	kPa	10.8	2.7	10.8	2.7
Recommended Minimum Running pressure to EPR	inH ₂ O	kPa	6.8	1.7	6.8	1.7
Minimum NG Supply Pipe Size ⁴			1-1/4" NPT			
Minimum LPG Supply Pipe Size ⁴			1/4" NPT			

¹ Standby and overload ratings based on ISO 3046. See PSI technical standard 3630000A for additional duty cycle and engine rating information

² All ratings are gross flywheel horsepower corrected to 77°F at an altitude of 328feet with no cooling fan or alternator losses using heating value for NG of 1015 BTU/SCF.

³ Production tolerances in engines and installed components can account for power variations of +/- 5%. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations.

⁴ The preceding pipe sizes are only suggestions and piping sizes may vary with temperature, pressure, distance from supply and application of local codes. Gas must be available at adequate volume and pressure for engine at the EPR.

For information not listed in this document, please contact you PSI sales representative



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PSI Technical Standard 36300000A- Engine Rating Guidelines

Emergency Standby Power Rating: Applicable for supplying emergency power for the duration of utility power outage. There is no overload capability for the emergency standby rating. Any use of the generator above the emergency standby rating is prohibited. Any unit operating in parallel with a public utility is not considered emergency standby. Emergency standby engine is applicable to a variable load with a maximum average load factor of 82% and 200 hours of operation per year. Emergency standby rating should only be applied in emergency power outages.

Prime Power Rating: Applicable for supplying electrical power in lieu of commercially purchased power or providing guaranteed standby power. The prime power rating is applicable for variable loads with limited number of operating hours per year. The average power output shall not exceed 75% of the prime power rating. The total time at 100% Prime power shall not exceed 500 hours per year. A 110% overload rating is available one hour in every twelve hours with the total hours at 110% not to exceed 25 hours per year. Maximum number of hours per year is 2500.

Continuous Power Rating: The continuous power rating is applicable for variable loads with unlimited number of operating hours per year. The power output shall not exceed 75% of the prime power rating. There is no overload capability.