

[Stoic.]
561000XX Rev: 1

General Engine Data ⁵										
Type	V-Series				Flywheel housing		SAE No.0			
Number of cylinders	16				Flywheel		SAE No.18			
Aspiration	Charged Cooled Forced Induction				Dry Weight (Fan to Flywheel)		lb	kg	12125	5500
Firing Order	1 - 7 - 12 - 14 - 4 - 16 - 2 - 8 - 11 - 13 - 3 - 5 - 10 - 6 - 9 - 15				Wet Weight (Fan to Flywheel)		lb	kg	12693	5757
Rotation Viewed from Flywheel	Counter Clockwise				CG From Rear Face of Block		in	mm	37.5	952
Bore	in	mm	5.906	150	CG Above Crank Centerline		in	mm	8	211
Stroke	in	mm	7.283	185	Oil Specification		SAE 15W-40 Low Ash Gas engine oil (.25-.5% by wt), API CD/CF or higher			
Displacement	in ³	L	3192	52.3	Engine Oil Capacity ⁸					
Compression Ratio	10.5 : 1				Min		qts	L	120	114
Exhaust Manifold Type	Water Cooled				Max		qts	L	181	171
Turbo Exhaust Outlet Pipe Size	in	mm	3.50	89	ECU Oil Pressure Warning ⁶		psi	kPa	57	393
Catalyst Inlet Size (O.D)	in	mm	6.00	152.4	ECU Oil Pressure Shut Down ⁶		psi	kPa	47	324
Catalyst Dp	in-H ₂ O	kPa	33	8.3	Oil Pressure at 1000 rpm (Idle)					
Maximum Allowable Exhaust Back Pressure	in-Hg	kPa	3.8	13	Min		psi	kPa	53	365
Maximum Fuel System Pressure	psi	kPag	29.0	200.0	Max		psi	kPa	82	565
Maximum Operating pressure to MFG	in-H ₂ O	kPa	11.0	2.7	Max Allowable Oil Temperature		°F	°C	250	121
Minimum Operating pressure to MFG	in-H ₂ O	kPa	7.0	1.7	Coolant Capacity (Engine only)		gal	L	26.4	100.0
Minimum Gas Supply Pipe Size ⁵	in	mm	3	76	Coolant Capacity (Radiator only)		gal	L	39	147.6
Maximum Pressure Drop Across CAC	psi	kPa	1.5	10.3	Standard Thermostat Range					
Max Allowable Intake Restriction					Normal Operation Temperature ⁹		°F	°C	176	80
Clean Air Filter	in-H ₂ O	kPa	5.2	1.3	Full Open Temperature ⁹		°F	°C	198	92
Dirty Air Filter	in-H ₂ O	kPa	15.0	3.7	ECU Coolant Temp Warning		°F	°C	220	104
Spark Plug Part Number	Denso GK3-5				ECU Coolant Temp Shutdown		°F	°C	230	110
Standard Spark Plug Gap ¹⁰	in	mm	0.012	0.3	50°C Ambient Capable ¹¹		Pass			
Spark Plug Coil - Primary Resistance	Ohms		0.59Ω ± 10%		Max External Coolant Friction Head		psi	kPa	8.70	60
Battery Voltage	Volts		24		CAC Rise Above Ambient Specified		F	C	27	15
Starter Motor Power (2X Starters)	HP	kW	13.4	10.0						

Performance Data 60Hz ^{3,5}										
Nominal Engine Speed	RPM		1800		Water Pump Speed		RPM		3472	
Mean Piston Speed	ft/min	m/s	2185	11.1	Engine Coolant Flow		gal/min	L/min	600	2274
RPM Range (Min-Max) ISO 8528-5 G1	RPM		1778 - 1823		Cooling Fan Power ¹¹		HP	kW	91.6	68
Charging Alternator Voltage	Volts		28		Cooling Fan Speed		RPM		1206	
Charging Alternator Current	Amps		55		Cooling Fan Air Flow ¹¹		SCFM	m ³ /min	68200	1931

NG 60hz Standby Load	Load		100%		75%		50%		25%	
	HP	kWm	1603	1195	1200	895	801	598	400	298
Power Rating ^{1,2,3,4} Per ISO 3046	HP	kWm	1603	1195	1200	895	801	598	400	298
MEP (@ rated Load on NG)	psi	bar	221	15.2	165	11.4	110	7.6	55	3.8
Fuel Consumption ^{3,4,7}	lb/hr	kg/hr	610	277	438	199	318	144	195	89
BSFC	lb/(hp-hr)	g/(kW-hr)	0.380	231	0.365	222	0.397	241	0.488	297
Turbine Outlet Temperature	°F	°C	1186	641	1096	591	1093	589	1084	585
Exhaust Mass Flow (entire engine)	lb/hr	kg/hr	10202	4628	7292	3308	5297	2403	3253	1475
Exhaust Flow at Turbine Outlet Conditions	ACFM	m ³ /min	6242	177	4223	120	3062	87	1870	53

Air Induction System ⁵										
Combustion Air required (entire engine)	lb/hr	kg/hr	9592	4351	6855	3109	4979	2258	3058	1387
Combustion Air Volume Required (entire engine)	ACFM	m ³ /min	2437	69	1643	47	1164	33	710	20
Compressor Outlet Temperature ²	°F	°C	388	198	329	165	260	127	174	79

Thermal Balance ⁵										
Total Fuel	BTU/min	kW	210425	3700	151130	2658	109733	1930	67356	1184
Mechanical Power	BTU/min	kW	67958	1195	50908	895	33986	598	16950	298
Heat Rejected to Cooling Water at Rated Load	BTU/min	kW	65001	1143	50966	896	41547	731	30724	540
Heat Rejection CAC at Rated Power	BTU/min	kW	12909	227	5800	102	3334	59	1422	25
Heat Rejection to Exhaust	BTU/min	kW	57722	1015	37543	660	27182	478	16545	291
Engine Radiated Heat	BTU/min	kW	6834	120	5914	104	3684	65	1715	30

¹ Standby and overload ratings based on ISO 3046 gross flywheel power.

² Technical data based on ISO 3046-1 standards of 77°F(25°C), absolute pressure 14.5Psia(100kPa) and 30% relative humidity.

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

⁴ All fuel and thermal calculations unless otherwise noted are done at ISO 3046 rated load using LHV for NG of 48.17 MJ/kg.

⁵ All values in the following section are provided for informational purpose only and are non-binding.

⁶ >1400RPM.

⁷ See PSI Energy Technical Spec. 56300019 - Fuel Standard.

⁸ Standard Sump Capacity.

⁹ ± 2 degrees Celsius.

¹⁰ ± 0.002" or 0.05mm.

¹¹ At 0.5 in-H₂O of Package Restriction at STP.

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Firing Order	1 - 7 - 12 - 14 - 4 - 16 - 2 - 8 - 11 - 13 - 3 - 5 - 10 - 6 - 9 - 15				Wet Weight (Fan to Flywheel)			lb	kg	12693 5757	
Rotation Viewed from Flywheel	Counter Clockwise				CG From Rear Face of Block			in	mm	37.5 952	
Bore	in	mm	5.906	150	CG Above Crank Centerline			in	mm	8 211	
Stroke	in	mm	7.283	185	Oil Specification			SAE 15W-40 Low Ash Gas engine oil (.25-.5% by wt), API CD/CF or higher			
Displacement	in ³	L	3192	52.3	Engine Oil Capacity ⁸						
Compression Ratio	10.5 : 1				Min			qts	L	120 114	
Exhaust Manifold Type	Water Cooled				Max			qts	L	181 171	
Turbo Exhaust Outlet Pipe Size	in	mm	3.50	89	ECU Oil Pressure Warning ⁶			psi	kPa	57 393	
Catalyst Inlet Size (O.D)	in	mm	6.00	152.4	ECU Oil Pressure Shut Down ⁶			psi	kPa	47 324	
Catalyst Dp	in-H ₂ O	kPa	33	8.3	Oil Pressure at 1000 rpm (Idle)						
Maximum Allowable Exhaust Back Pressure	in-Hg	kPa	3.8	13	Min			psi	kPa	53 365	
Maximum Fuel System Pressure	psi	kPag	29.0	200.0	Max			psi	kPa	82 565	
Maximum Operating pressure to MFG	in-H ₂ O	kPa	11.0	2.7	Max Allowable Oil Temperature			°F	°C	250 121	
Minimum Operating pressure to MFG	in-H ₂ O	kPa	7.0	1.7	Coolant Capacity (Engine only)			gal	L	26.4 100.0	
Minimum Gas Supply Pipe Size ⁵	in	mm	3	76	Coolant Capacity (Radiator only)			gal	L	39 147.6	
Maximum Pressure Drop Across CAC	psi	kPa	1.5	10.3	Standard Thermostat Range						
Max Allowable Intake Restriction					Normal Operation Temperature ⁹			°F	°C	176 80	
Clean Air Filter	in-H ₂ O	kPa	5.2	1.3	Full Open Temperature ⁹			°F	°C	198 92	
Dirty Air Filter	in-H ₂ O	kPa	15.0	3.7	ECU Coolant Temp Warning			°F	°C	220 104	
Spark Plug Part Number	Denso GK3-5				ECU Coolant Temp Shutdown			°F	°C	230 110	
Standard Spark Plug Gap ¹⁰	in	mm	0.012	0.3	50°C Ambient Capable ¹¹			Pass			
Spark Plug Coil - Primary Resistance	Ohms		0.59Ω ± 10%		Max External Coolant Friction Head			psi	kPa	8.70 60	
Battery Voltage	Volts				CAC Rise Above Ambient Specified			F	C	27 15	
Starter Motor Power (2X Starters)	HP	kW	13.4	10.0							
Performance Data 60Hz ^{3,5}											
Nominal Engine Speed	RPM		1800		Water Pump Speed			RPM		3472	
Mean Piston Speed	ft/min	m/s	2185	11.1	Engine Coolant Flow			gal/min	L/min	600 2274	
RPM Range (Min-Max) ISO 8528-5 G1	RPM		1778 - 1823		Cooling Fan Power ¹¹			HP	kW	91.6 68	
Charging Alternator Voltage	Volts		28		Cooling Fan Speed			RPM		1206	
Charging Alternator Current	Amps		55		Cooling Fan Air Flow ¹¹			SCFM	m ³ /min	68200 1931	
LPG 60hz Standby Load		Load		100%		75%		50%		25%	
Power Rating ^{1,2,3,4} Per ISO 3046	HP	kWm	1061	791	796	594	531	396	261	194	
MEP (@ rated Load on NG)	psi	bar	146	10.1	110	7.6	73	5.0	36	2.5	
Fuel Consumption ^{3,4,7}	lb/hr	kg/hr	430	195	323	146	239	108	156	71	
BSFC	lb/(hp-hr)	g/(kW-hr)	0.405	246	0.405	246	0.450	274	0.597	363	
Turbine Outlet Temperature	°F	°C	1167	631	1113	601	1098	592	1073	579	
Exhaust Mass Flow (entire engine)	lb/hr	kg/hr	6755	3064	5066	2298	3804	1725	2486	1128	
Exhaust Flow at Turbine Outlet Conditions	ACFM	m ³ /min	4087	116	2966	84	2205	62	1419	40	
Air Induction System ⁵											
Combustion Air required (entire engine)	lb/hr	kg/hr	6325	2869	4744	2152	3564	1617	2330	1057	
Combustion Air Volume Required (entire engine)	ACFM	m ³ /min	1488	42	1095	31	820	23	534	15	
Compressor Outlet Temperature ²	°F	°C	327	164	255	124	199	93	144	62	
Thermal Balance ⁵											
Total Fuel	BTU/min	kW	142898	2513	107190	1885	79490	1398	51712	909	
Mechanical Power	BTU/min	kW	45004	791	33756	594	22533	396	11048	194	
Heat Rejected to Cooling Water at Rated Load	BTU/min	kW	49775	875	40665	715	33422	588	26124	459	
Heat Rejection CAC at Rated Power	BTU/min	kW	6919	122	3171	56	1904	33	926	16	
Heat Rejection to Exhaust	BTU/min	kW	37654	662	26664	469	19616	345	12447	219	
Engine Radiated Heat	BTU/min	kW	3546	62	2935	52	2015	35	1165	20	

¹ Standby and overload ratings based on ISO 3046 gross flywheel power.² Technical data based on ISO 3046-1 standards of 77°F(25°C), absolute pressure 14.5Psia(100kPa) and 30% relative humidity.³ Production tolerances in engines and installed components can account for power variations of ± 5%. Altitude, temperature and excessive intake restrictions should be applied to power calculations.⁴ All fuel and thermal calculations unless otherwise noted are done at ISO 3046 rated load using LHV for LPG 46.38 MJ/kg.⁵ All values in the following section are provided for informational purpose only and are non-binding.⁶ >1400RPM.⁷ See PSI Energy Technical Spec. 56300019 - Fuel Standard.⁸ Standard Sump Capacity.⁹ ± 2 degrees Celsius.¹⁰ ± 0.002" or 0.05mm.¹¹ At 0.5 in-H₂O of Package Restriction at STP.