

# 14.6L



# ENERGY

[Stoic.]
56100040 Rev: 1

General Engine Data <sup>3</sup>														
Type	V-type 4 cycle				Flywheel housing				SAE No.1					
Number of cylinders	8				Flywheel				No. 14					
Aspiration	Turbo Charge Air Cooled				Dry Weight (Fan to Flywheel)				lb	kg	3144	1429		
Firing Order	1-5-7-2-6-3-4-8				Wet Weight (Fan to Flywheel)				lb	kg	3245	1475		
Rotation Viewed from Flywheel	Counter Clockwise				CG From Flywheel Housing Rear Face				in	mm	17.7	449		
Bore	in	mm	5.0	128	CG Above Crank Centerline				in	mm	6.3	159		
Stroke	in	mm	5.6	142	Max Bending Moment @ Rear of Block				lb/ft	N m	8130.08	6000		
Displacement	in <sup>3</sup>	L	891	14.6	Oil Specification				SAE 15W-40 Low Ash Gas engine oil (.25% by wt), API CD/CF or higher					
Compression Ratio	10.5				Engine Oil Capacity <sup>8</sup>				Min	qts	L	26.5	25.0	
Exhaust Manifold Type	Water Cooled Manifold				Max				qts	L	32.9	31.0		
Turbo Exhaust Outlet Pipe Size	in	mm	2.5	65	ECU Oil Pressure Warning <sup>6</sup>				psi	kPa	30	207		
Catalyst Inlet Size	in	mm	3.5039	89	ECU Oil Pressure Shut Down <sup>6</sup>				psi	kPa	25	172		
Catalyst Dp	in-H <sub>2</sub> O	kPa	29.3	7.3	Oil Pressure at 1000 rpm (Idle)				Min	psi	kPa	13	90	
Maximum Allowable Exhaust Back Pressure	in-Hg	kPa	3.0	10.2	Max				psi	kPa	44	300		
Maximum Fuel System Pressure	psi	kPag	1.0	6.9	Max Allowable Oil Temperature				°F	°C	249.8	121		
Maximum Operating pressure to EPR	in-H <sub>2</sub> O	kPa	10.9	2.7	Coolant Capacity (Engine only)				gal	L	9.5	36		
Minimum Operating pressure to EPR	in-H <sub>2</sub> O	kPa	6.8	1.7	Coolant Capacity (Radiator only)				gal	L	22.1	84		
Minimum Gas Supply Pipe Size <sup>5</sup>	2 x 1-1/4" NPT				Radiator Weight (Dry)				lb	kg	1296	589		
Maximum Pressure Drop Across CAC	psi	kPa	1.5	10.5	Standard Thermostat Range									
Maximum Allowable Intake Restriction	Clean Air Filter	in-H <sub>2</sub> O	kPa	5.0	1.2	Normal Operation Temperature <sup>9</sup>				°F	°C	159.8	71	
	Dirty Air Filter	in-H <sub>2</sub> O	kPa	15.0	3.7	Full Open Temperature <sup>9</sup>				°F	°C	185	85	
Spark Plug Part Number	IFR7F-4D				ECU Coolant Temp Warning				°F	°C	219.2	104		
Standard Spark Plug Gap <sup>10</sup>	in	mm	0.015	0.38	ECU Coolant Temp Shutdown				°F	°C	230	110		
Spark Plug Coil - Primary Resistance	Ohms		0.59Ω ± 10%		50°C Ambient Capable <sup>11</sup>				Pass					
Battery Voltage	Volts				24									
Starter Motor Power	HP	kW	9.4	7.0	Max External Coolant Friction Head				psi	kPa	6	40		
					CAC Rise Above Ambient Specified				°F	°C	16.2	9		
Performance Data 60Hz <sup>3,5</sup>					Performance Data 50Hz <sup>3,5</sup>									
Nominal Engine Speed	RPM				1800				RPM				1500	
Mean Piston Speed	ft/min	m/s	1677	8.5	Mean Piston Speed				ft/min	m/s	1397	7		
RPM Range (Min-Max) ISO 8528-5 G1	RPM				1500-1800				RPM				1500-1800	
Charging Alternator Voltage	Volts				24				Volts				24	
Charging Alternator Current	Amps				45				Amps				45	
Water Pump Speed	RPM				3056				RPM				2547	
Total Engine Coolant Flow	gal/min	L/min	139	525	Total Engine Coolant Flow				gal/min	L/min	116	439		
Cooling Fan Power <sup>11</sup>	HP	kW	22	16	Cooling Fan Power <sup>11</sup>				HP	kW	13	10		
Cooling Fan Speed	RPM				1440				RPM				1200	
Cooling Fan Air Flow <sup>11</sup>	SCFM	m <sup>3</sup> /min	29970	849.0	Cooling Fan Air Flow <sup>11</sup>				SCFM	m <sup>3</sup> /min	25698	728		
Standby				NG 60Hz HO		NG 60Hz		NG 50Hz		LP 60Hz		LP 50Hz		
Power Rating <sup>1,2,3,4</sup> Per ISO 3046	HP	kWm	536	400	456	340	369	275	322	240	228	170		
MEP (@ rated Load on NG)	psi	bar	265	18.3	225	15.5	219	15.1	159	11.0	135	9.3		
Fuel Consumption <sup>3,4,7</sup>	lb/hr	kg/hr	185	84	159	72	123	56	125	57	86	39		
BSFC	lb/(hp-hr)	g/(kW-hr)	0.345	210	0.349	213	0.334	204	0.389	237	0.377	230		
Turbine Outlet Temperature	°F	°C	1030	554	1005	541	990	532	1015	546	989	532		
Exhaust Mass Flow (entire engine)	lb/hr	kg/hr	3252	1478	2803	1274	2154	979	1945	884	1279	581		
Exhaust Flow at Turbine Outlet Conditions	ACFM	m <sup>3</sup> /min	1807	51	1531	43	1164	33	1070	30	691	20		
Air Induction System <sup>5</sup>														
Combustion Air required (entire engine)	lb/hr	kg/hr	3067	1394	2644	1202	2031	923	1945	884	1287	585		
Combustion Air Volume Required (entire engine)	ACFM	m <sup>3</sup> /min	635	18	547	16	420	12	403	11	266	8		
Compressor Outlet Temperature <sup>2</sup>	°F	°C	300	149	267	131	224	107	216	102	172	78		
Thermal Balance <sup>5</sup>														
Total Fuel	BTU/min	kW	64064	1126.5	55146	969.7	-	-	43992	773.6	-	-		
Mechanical Power	BTU/min	kW	22748	400	19335	340	-	-	13649	240.0	-	-		
Heat Rejected to Cooling Water at Rated Load	BTU/min	kW	18877	332	16099	283.1	-	-	16603	292.0	-	-		
Heat Rejection CAC at Rated Power	BTU/min	kW	2654	46.7	2006	35.3	-	-	1052	18.5	-	-		
Heat Rejection to Exhaust (LHV to 150C)	BTU/min	kW	15873	279.1	13567	238.6	-	-	9465	166.4	-	-		
Engine Radiated Heat	BTU/min	kW	3912	68.8	4139	72.8	-	-	3223	56.7	-	-		

<sup>1</sup> Standby and overload ratings based on ISO 3046 gross flywheel power.

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

<sup>3</sup> 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.

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

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

<sup>6</sup> >1400RPM.

<sup>7</sup> See PSI Energy Technical Spec. 56300019 - Fuel Standard.

<sup>8</sup> Standard Sump Capacity.

<sup>9</sup> ± 2 degrees Celsius.

<sup>10</sup> ± 0.002" or 0.05mm.

<sup>11</sup> At 1" Static H<sub>2</sub>O Pressure and 125F @ radiator