1.6 SPECIFICATIONS

◆ 1.6.1 GENERATOR

Model	8kW	10kW	12kW	14kW	16kW	17kW	20kW
Rated Maximum Power Capacity (Watts*)	7,000 NG 8,000 LP	9,000 NG 10,000 LP	12,000 NG 12,000 LP	13,000 NG 14,000 LP	16,000 NG 16,000 LP	16,000 NG 17,000 LP	18,000 NG 20,000 LP
Rated Voltage	120/240						
Rated Maximum Load Current (Amps)							
120 Volts** (NG/LP)	58.3/66.6	75.0/83.3	100.0/100.0	108.3/116.6	133.3/133.3	133.3/141.6	150.0/166.6
240 Volts (NG/LP)	29.2/33.3	37.5/41.6	50.0/50.0	54.2/58.3	66.6/66.6	66.6/70.8	75.0/83.3
Main Circuit Breaker	35 Amp	45 Amp	50 Amp	60 Amp	65 Amp	65 Amp	100 Amp
Circuits*** 50A, 240V	-	-	-	1	1	1	-
40A, 240V	-	-	1	1	1	1	-
30A, 240V	1	1	1	-	-	-	-
20A, 240V	-	1	-	1	1	1	-
20A, 120V	1	3	3	4	5	5	-
15A, 120V	5	3	5	4	5	5	-
Phase	1						
Number of Rotor Poles	2						
Rated AC Frequency	60 Hz						
Battery Requirement	Group 26R, 12 Volts and 350 CCA Minimum	Group 26R, 12 Volts and 525 CCA Minimum					
Weight (unit only in lbs.)	340	387	439	439	439	455/421	450
Enclosure	Steel	Steel	Steel	Steel	Steel	Steel/Aluminum	Aluminum
Normal Operating Range	-20° F (-28.8° C) to 77° F (25° C)						

* Maximum wattage and current are subject to and limited by such factors as fuel Btu content, ambient temperature, altitude, engine power and condition, etc. Maximum power decreases about 3.5 percent for each 1,000 feet above sea level; and also will decrease about 1 percent for each 6 C (10 F) above 16 C (60 F) ambient temperature.

** Load current values shown for 120 volts are maximum TOTAL values for two separate circuits. The maximum current in each circuit must not exceed the value stated for the 240 volts.

*** Circuits to be moved must be protected by same size breaker. For example, a 15 amp circuit in the main panel must be a 15 amp circuit in the transfer switch.

◆ 1.6.2 ENGINE

Model	8 kW	10 kW	12/14/16/17 kW	20 kW
Type of Engine	GH-410	GT-530	GT-990	GT-999
Number of Cylinders	1	2	2	2
Rated Horsepower @ 3,600 rpm	14.8	18	32	36
Displacement	410cc	530cc	992cc	999cc
Cylinder Block	Aluminum w/Cast Iron Sleeve			
Valve Arrangement	Overhead Valves			
Ignition System	Solid-state w/Magneto			
Recommended Spark Plug	RC14YC	BPR6HS	RC14YC	RC12YC
Spark Plug Gap	0.76 mm (0.030 inch)	0.76 mm (0.030 inch)	1.02 mm (0.040 inch)	0.76 mm (0.030 inch)
Compression Ratio	8.6:1	9.5:1	9.5:1	9.5:1
Starter	12 VDC			
Oil Capacity Including Filter	Approx. 1.5 Qts	Approx. 1.7 Qts	Approx. 1.7 Qts	Approx. 1.7 Qts
Recommended Oil Filter	Part # 070185F			
Recommended Air Filter	Part # 0G3332	Part # 0E9581	Part # 0C8127	Part # 0G5894
Operating RPM	3,600			

1.7 SYSTEM SET LED

The "System Set" LED (single cylinder) or "Ready to Run" on the display (v-twin) is ready when all of the following conditions are true:

1. The AUTO/OFF/MANUAL switch is set to the AUTO position.
2. The utility voltage being supplied to the unit is being sensed by the PCB. If the utility sense voltage is not connected to the unit or if it is below approximately 150-160 volts AC, then the system set light will flash rapidly (8kW). This indicates that if the AUTO/OFF/MANUAL switch is placed in the Auto position, the generator will start.
3. No alarms are present, for example, low oil pressure, high temperature, etc.

1.8 FUEL REQUIREMENTS AND RECOMMENDATIONS

With LP gas, use only the vapor withdrawal system. This type of system uses the vapors formed above the liquid fuel in the storage tank.

The engine has been fitted with a fuel carburetion system that meets the specifications of the 1997 California Air Resources Board for tamper-proof dual fuel systems. The unit will run on natural gas or LP gas, but it has been factory set to run on natural gas. Should the primary fuel need to be changed to LP gas, the fuel system needs to be reconfigured. See the reconfiguring the Fuel System section for instructions on reconfiguration of the fuel system.

Recommended fuels should have a Btu content of at least 1,000 Btus per cubic foot for natural gas; or at least 2,520 Btus per cubic foot for LP gas. Ask the fuel supplier for the Btu content of the fuel.

Required fuel pressure for **natural gas is five (5) inches to seven (7) inches water column (0.18 to 0.25 psi); and for liquid propane, 10 inches to 12 inches of water column (0.36 to 0.43 psi). The primary regulator for the propane supply is NOT INCLUDED with the generator.**

NOTE:

All pipe sizing, construction and layout must comply with NFPA 54 for natural gas applications and NFPA 58 for liquid propane applications. Once the generator is installed, verify that the fuel pressure NEVER drops below four (4) inches water column for natural gas or 10 inches water column for liquid propane.

Prior to installation of the generator, the installer should consult local fuel suppliers or the fire marshal to check codes and regulations for proper installation. Local codes will mandate correct routing of gaseous fuel line piping around gardens, shrubs and other landscaping to prevent any damage.

Special considerations should be given when ins ing the unit where local conditions include flood tornados, hurricanes, earthquakes and unst ground for the flexibility and strength of piping their connections.

Use an approved pipe sealant or joint compound all threaded fitting.

All installed gaseous fuel piping must be purged leak tested prior to initial start-up in accordance local codes, standards and regulations.

1.9 FUEL CONSUMPTION

Unit	Nat. Gas		LP Vapor	
	1/2 Load	Full Load	1/2 Load	Full Lo
7/8 kW	77	140	0.94/34	1.68/6
9/10 kW	102	156	1.25/46	1.93/7
12/12 kW	152	215	1.53/56	2.08/7
13/14 kW	156	220	1.56/58	2.30/8
16/16 kW	183	261	1.59/58	2.51/9
16/17 kW	183	261	1.61/59	2.57/9
18/20 kW	206	294	1.89/69	2.90/1

* Natural gas is in cubic feet per hour.
** LP is in gallons per hour/cubic feet per hour.
*** Values given are approximate.

Verify that gas meter is capable of providing enou fuel flow to include household appliances.

◆ 1.9.1 BTU FLOW REQUIREMENTS - NATURAL GAS

BTU flow required for each unit based on 1000 B per cubic foot.

- 7kW — 140,000 BTU/Hour
- 9kW — 156,000 BTU/Hour
- 12kW — 215,000 BTU/Hour
- 13kW — 220,000 BTU/Hour
- 16kW — 261,000 BTU/Hour
- 18kW — 294,000 BTU/Hour

⚠ DANGER ⚠

Gaseous fuels such as natural gas and liquid propane (LP) gas are highly explosive. Even th slightest spark can ignite such fuels and cause an explosion. No leakage of fuel is permitted. Natural gas, which is lighter than air, tends to collect in high areas. LP gas is heavier than air and tends to settle in low areas.