



## PSI HD Gaseous Series

## Specification & Application Data



Photo may depict optional equipment.

### Description

HIPOWER® rental generators are an efficient, reliable and versatile source of mobile electrical power. They are designed to operate in the most extreme working conditions. All HIPOWER® Gaseous Rental Generators have a unique combination of innovative design and the use of high quality materials that provide the user with the most dependable power that you can rely on for non-stop power with easy to operate controls.

The generator set is powered by a radiator-cooled, industrial PSI-HD gaseous engine, which meets current Environmental Protection Agency (EPA) non-road exhaust emission regulations, driving a single bearing, four-pole, three-phase alternator, with IP23 protection. The Prime Power kVA rating for generator set is given with a 125 degree C alternator winding temperature rise.

### HIPOWER® Features and Benefits

**PSI-HD Engine:** Long-life, heavy-duty, 4-cycle, gaseous engine from a world renown manufacturer for economy of operation and maximum reliability and durability.

**Cooling:** Radiator with belt driven pusher fan.

**Filtration:** Heavy-duty replaceable element air-cleaner.

**Alternator:** Single bearing, rotating field, self-excited, self-ventilated, 12-wire re-connectable, 60Hz brushless alternator with permanent magnetic generator (PMG) for reduced service and maintenance requirements, with Class H insulation. Automatic voltage regulator (AVR) providing close voltage regulation. Has a high skVA starting capability for electric motor loads.

**Arrangement:** Engine and alternator units are closed coupled together and with mobile style anti-vibration isolators, mounted between the assembly and a heavy-duty steel base. The sturdy base frame has openings allowing for winching, slinging and forklift pockets for ease of handling

### 60Hz Prime Power Ratings kW & kVA

\* LPG rating is for Standby power only.

Voltage VAC	Phase	PF	LPG*		NG	
			kW	kVA	kW	kVA
120/240	1	0.8	193.4	242	224	280
120/208	3	0.8	297.6	372	345	431
120/240 Delta	3	0.8	N.A.	N.A.	N.A	N.A
277/480	3	0.8	297.6	372	345	431
347/600	3	0.8	297.6	372	345	431

**Rating Definitions:** (N.A. = Not available for model designated)

Prime - All Rental Sets are Prime Rated - Prime rating is applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

### HIPOWER® Features and Benefits

**Enclosure:** Fully sound attenuated enclosure, fabricated in 11-gauge steel, powder coated with finish that exceeds 1000-hr salt spray test, curved edges, minimum outside fasteners.

Ample layer of durable sound insulating material placed all around the inside of the container, doors and ducting with metal retainer frames. Can be cleaned by high-pressure water and is oil and fire resistant.

Vertical air discharge for quiet operation.

Wide steel lockable access doors with rubber seals, for easy entrance of all maintenance personnel and any necessary service by technicians, with stainless steel hinges, hardware and fasteners resistant to corrosion.

**Exhaust:** Effective low noise, steel catalytic converter with rain cap.

**Controls:** Digital control panel to operate all manual and automatic start and stop features. Many programmable automatic functions for local and remote controls with LED lights, tamper proof engine hour recorder with analog meters: voltmeter & switch, three (3) ammeters, Hz meter, fuel gauge and battery charge

### HIPOWER® Rental Options

**Voltage Selector Switch:** Three-position, manual voltage selector switch. Lockable in three positions for switching set between 120/240V single phase and 120/208 and 277/480V 3-phase. - NOT AVAILABLE AT 600V CONNECTION.

**Power Distribution:** Consult HIPOWER® regarding the comprehensive range of power distribution accessories available.

**Oil Field heavy duty Rental Skid:** Heavy duty sub base.

(See page 3 for additional options)



### Gaseous Generator Set Specification:

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	plus or minus 1%
Frequency regulation	Ischronous
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications
skVA at 480 volts with 30% voltage dip	1270
Main Line Circuit breaker – amps capacity	1600

### ENGINE

Manufacturer	PSI Heavy Duty
Model	21.9L
EPA certified	Yes
Crankshaft speed	1,800 rpm
Type	LPG/NG fueled, 4-stroke
Ignition	Spark Plug
Aspiration	Turbo Charge Air Cooled
Number of Cylinders	12
Cylinder arrangement	V-type
Displacement CID (liters)	1388 (21.9)
Bore and Stroke ins (mm)	5.04 x 5.59 (128 x 142)
Nominal power	NG 612 hp
Cooling	Liquid
Governor	Electronic
Starting motor & alternator	24 volt
Compression ratio	10.5:1
Air cleaner type	Dry, replaceable cartridge
Exhaust gas flow at full output lb/hr (kg/hr)	4038 (1832)
Exhaust temperature at full load - dry exhaust °F ( °C)	1350 (1077)
Maximum permitted back pressure - in. HG (kPa)	3.0 (10.2)

### Cooling System:

Radiator- cooled cooling air flow - cu. ft./min. (cu. m/min.)	40000 (1133)
Alternator cooling flow - cu. ft./min. (cu. m/min.)	2098 (59)
Combustion air - cu. ft./min. (cu. m/min.)	968 (27)
Total cooling air flow (engine + alternator + combustion)	43066 (1219)
Radiator system capacity, including engine - gallons (L)	50.1 (228)

### Lubrication system:

Oil pan capacity - quarts (L)	42.25 (40.0)
Oil pan capacity with filter - quarts (L)	49.75 (47.1)
Oil filter - quantity and type	1, Replaceable Spin-On
Recommended lubricating oil grade - above 0 ° F (below 0 ° F)	SAE 15W-40 Low Ash (.25 - 5% by wt)
Oil consumption at full load	N.A.
Oil pressure – psi (bars)	94.5 (6.5)

### Engine Electrical System:

Starting motor voltage	24 volt
Battery - AH	200
Maximum battery charge alternator output - amps	45
Cold Cranking Amps - minimum	1000

**HIPOWER Sound Attenuated Enclosure:****Model - AP2**

Noise level - dBA at 23 feet (7 meters)	77
Dimensions - inches	156 x 83 x 100
Dry weight – lbs.	11,576

**Fuel System:** (\*Measured at gen-set fuel inlet, downstream of any dry fuel or filter accessories.)

Fuel type	Natural Gas, vapor withdrawal
Fuel supply line - inlet	2" NPTF
*Natural gas and LPG fuel supply pressure - in. column H <sub>2</sub> O (kPa)	7" - 11" (1.7 - 2.7)

**Prime Rating Fuel consumption:**

LPG - ft <sup>3</sup> /hr (m <sup>3</sup> /hr) at 100% standby rating	N.A.
Natural Gas - ft <sup>3</sup> /hr (m <sup>3</sup> /hr) at 100% standby rating	4460 (126)

**Alternator Specification:**

Manufacturer	Stamford	
Alternator model, winding & AVR model	127/208; 277/480 volts	HCI 434 E N.G.
	600 volts	HCI 434 E N.G.
Voltages	3-phase 120/208, 277/480, 347/600	
Alternator Type	4-pole, rotating field	
Excitation System	Brushless with PMG & AVR MX 341	
Power factor	0.8	
Number of leads	12	
Stator Pitch	2/3	
Insulation	Class H	
Windings – Temperature Rise	120° C	
Enclosure (IEC-34-S)	IP 23	
Bearing	Single, sealed	
Coupling	Flexible disc	
Amortisseur windings	Full	
Voltage regulation – no load to full load with MX341 AVR	plus or minus 1%	
TIF	< 50	
Line harmonics	5% maximum	

**Standard Accessories:** (see back-page for control panel details)

● Radiator with pusher fan	● All rotating components (i.e. fan) protected with metal guards
● Dry air cleaner	● All hot components (i.e. exhaust) protected with metal guards
● Heavy-duty engine start batteries in rack with cables	● Ground connection prepared for ground spike (not supplied)
● Emergency stop switch	● Main line ABB UL listed circuit breaker for overload protection
● Control Panel DSE7310 (See over for details)	● Operation and installation literature
● Two dry contacts for auto-start	● CSA certified
● Steel base for mounting on firm surface such as concrete	● Control panel DSE 7310 MANUAL & AUTO START MODULE

**Optional Accessories:**

<input type="checkbox"/> Rotary voltage selector switch (not available with 600V connection)	<input type="checkbox"/> Interior lights
<input type="checkbox"/> Alternator anti-condensation heaters	<input type="checkbox"/> Shore power receptacle
<input type="checkbox"/> Winterization kit for low ambient temperature	<input type="checkbox"/> Engine Block heater
<input type="checkbox"/> Electric actuator and louvers for air intake and exhaust	<input type="checkbox"/> Control panel heater
<input type="checkbox"/> Snow hoods for air intake and exhaust	<input type="checkbox"/> Three-way 'Quick' connect fuel valve to external fuel supply
<input type="checkbox"/> DOT certified towing trailer	<input type="checkbox"/> Automatic fuel transfer pump

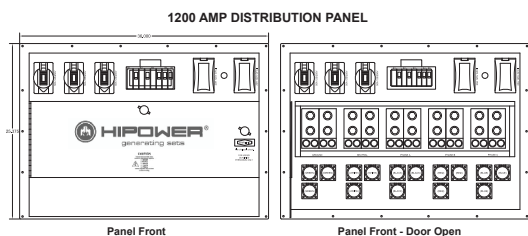
 **Distribution power panel** \*See image RH back-page

NEMA 3R/IP67 0.09" aluminum panel, black powder coated, weather proof rated; individual Square-D QOU branch breakers; 2 x 20A 125V NEMA 5-20 GFCI duplex receptacles/flip cover; 3 x 50A 125/250V CS6369 twist-lock receptacles & Lexan covers; 50A California style twist lock (1Φ only); 3 sets 400A single pin Camlocks rated 400A with snap covers; color coded Camlocks 3Φ - 5W black, red, blue, white & green; pad lockable 1/4 turn door access with cable trap; auxiliary bus bars with mechanical lugs; 2 x dual lug per phase; mechanical lugs up to 600MCM cable

**HIPOWER® DSE 7310 Control Panel:** The DSE model 7310 digital control panel is back-lit with icon LCD text display, and is PC configurable. It works with the engine electronic governor with PLC functionality, protected front panel editing, and includes: manual, automatic and remote (input) start, PC configurable six inputs and four outputs, configurable timers and alarms, generator voltage and Hz display, battery voltage display, engine speed display, multiple engine parameters are monitored simultaneously, comprehensive shutdown or warning on fault condition, engine preheat, LED and LCD alarm indication, tamper-proof hour counter provides accurate information for monitoring and maintenance periods. The module monitors: engine speed, frequency, voltage and engine run hours and also displays the warning and shutdown status

**Engine alarms included:** High coolant temperature, low oil pressure, low coolant level, unexpected shutdown, low fuel level, stop failure, low battery voltage, battery charging alternator failure, over-speed, under-speed, start failure and emergency stop.

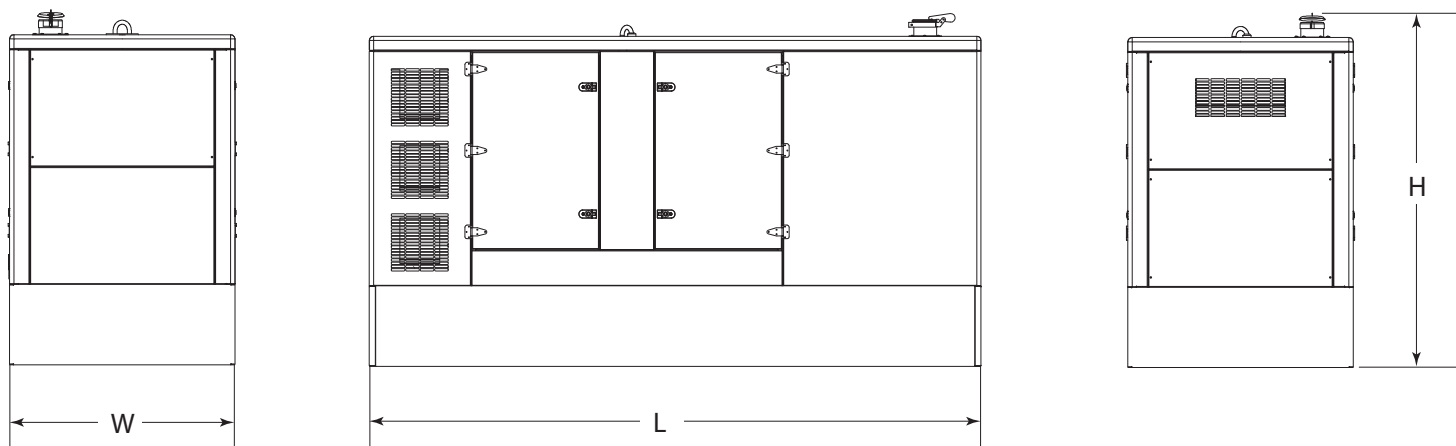
**Alternator alarms included:** Overload, unbalanced voltage, over voltage, under voltage, over frequency, under frequency, short circuit, reverse power, and incorrect phase sequence.



Pictures of Control Panel RH and Distribution Panel LH may include optional equipment and/or accessories

Model HRNG 430 T6

key dimensions and sound levels



Generator Data (L, W & H dimensions in inches)					
Configuration	L = Length	W = Width	H = Height	Net Weight lbs	dBA
Enclosed	178"	83"	93"	11797	77
Enclosed (with oil field heavy duty skid)	190"	93"	105.5"	14298	77

\* All measurements are approximate and for estimation purposes only. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Codes and Standards Compliances used where applicable



- NFPA 99
- NFPA 110
- ISO 8528-5
- ISO 1708A.5
- ISO 3046
- BS5514
- SAE J1349
- DIN6271
- IEE C62.41 TESTING
- NEMA ICS 1

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