# **GGW150G | 9.0L | 150 kW** INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division





# **Codes and Standards**

Not all codes and standards apply to all configurations. Contact factory for details.



BS5514 and DIN 6271

SAE J1349



ISO 3046, 7637, 8528, 9001

NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41

# **ENERGY GENERATION**

PRAMAC ensures superior quality and performance by managing all aspects of production: from design to manufacturing.

PRAMAC can trace its roots back to 1966; from then onwards it has been expanding its activity in the energy and material-handling sector, continuously growing globally with a wide and flexible product range.

In the field of power generation, PRAMAC offers solutions for every kind of power supply demand: portable and industrial generators for stand by and prime power applications and mobile and towable lighting for outdoor needs.

PRAMAC operates through a wide distribution network and provides global coverage even in the most demanding markets.

# **GGW150G | 9.0L | 150 kW** INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division

THAMAO | TOWOT Engineering Divis

# **STANDARD FEATURES**

#### **ENGINE SYSTEM**

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer (Enclosed Units Only)

#### **Fuel System**

- NPT Fuel Connection on Frame
- Primary and Secondary Fuel Shutoff

#### **Cooling System**

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze

#### **Electrical System**

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

#### **ALTERNATOR SYSTEM**

- GENprotect<sup>™</sup>
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Permanent Magnet Excitation
- Sealed Bearing
- Amortisseur Winding
- Full Load Capacity Alternator

#### **GENERATOR SET**

- Internal Genset Vibration Isolation
- Separation of Circuits High/Low Voltage
- Separation of Circuits Multiple Breakers
- Wrapped Exhaust Piping (Enclosed Units Only)
- Standard Factory Testing
- 1 Year Limited Warranty or 1,000 Hours
- Silencer Mounted in the Discharge Hood (Enclosed Units Only)

#### **ENCLOSURE (If Selected)**

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat<sup>™</sup> Textured Polyester Powder Coat Paint

## **CONTROL SYSTEM**



#### Digital H Control Panel- Dual 4x20 Display

#### **Program Functions**

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- All Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)

- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus<sup>®</sup> Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

#### Full System Status Display

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level

- Engine Speed
- Battery Voltage
- Frequency

#### **Alarms and Warnings**

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Low Fuel Pressure
- Engine Overspeed

Alarms and Warnings

Battery Voltage

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Alarms and Warnings Time and Date Stamped

Snap Shots of Key Operation Parameters During

Alarms and Warnings Spelled Out (No Alarm Codes)

60 Hz SPEC SHEET

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# GGW150G | 9.0L | 150 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division

# **CONFIGURABLE OPTIONS**

#### **ENGINE SYSTEM**

- Engine Coolant Heater
- Air Filter Restriction Indicator
- Radiator Stone Guard (Open Set Only)
- Critical Silencer (Open Set Only)

#### **ELECTRICAL SYSTEM**

○ 10A Battery Charger

#### **ALTERNATOR SYSTEM**

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

#### **CIRCUIT BREAKER OPTIONS**

- Main Line Circuit Breaker
- $\circ~$  Shunt Trip and Auxiliary Contact
- Electronic Trip Breaker

#### **GENERATOR SET**

- Extended Factory Testing (3-Phase Only)
- Pad Vibration Isolators

#### ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 321 KMH Wind Load Rating (Contact Factory for Availability)
- $\,\circ\,$  AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch

## **CONTROL SYSTEM**

- 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Indication and Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- 10A Engine Run Relay

# **ENGINEERED OPTIONS**

#### **ENGINE SYSTEM**

- Coolant Heater Ball Valves
- Fluid Containment Pan

#### **ALTERNATOR SYSTEM**

○ 3rd Breaker System

#### **CONTROL SYSTEM**

- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

#### **GENERATOR SET**

- Special Testing
- Battery Box

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# **GGW150G | 9.0L | 150 kW** INDUSTRIAL SPARK-IGNITED GENERATOR SET

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# **APPLICATION AND ENGINEERING DATA**



#### **ENGINE SPECIFICATIONS**

#### General

Make	Generac
Cylinder #	8
Туре	V
Displacement - In <sup>3</sup> (L)	543 (8.9)
Bore - in (mm)	4.49 (114.3)
Stroke - in (mm)	4.25 (107.95)
Compression Ratio	9.9:1
Intake Air Method	Turbocharged/Aftercooled
Number of Main Bearings	5
Connecting Rods	Forged Steel
Cylinder Head	Cast Iron
Cylinder Liners	No
Ignition	High Energy
Piston Type	Aluminum Alloy
Crankshaft Type	Forged Steel
Lifter Type	Hydraulic Roller
Intake Valve Material	Steel Alloy
Exhaust Valve Material	Stainless Steel
Hardened Valve Seats	Yes

Cooling System	
Cooling System Type	Pressurized Closed
Fan Type	Pusher
Fan Speed - RPM	2,386
Fan Diameter - in (mm)	22 (558)

#### Fuel System

Fuel Type	Natural Gas, Propane Vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure - in H <sub>2</sub> O (kPa)	7 - 11 (1.7 - 2.7)

#### Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 10000016949
Battery Voltage	12 VDC
Ground Polarity	Negative

#### Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

#### Lubrication System

Oil Pump Type	Gear Driving
Oil Filter Type	Full-Flow Spin-On Cartridge
Crankcase Capacity - qt (L)	10.0 (9.5)

## **ALTERNATOR SPECIFICATIONS**

Standard Model	K0150124Y21	Standard Excitation	Permanent Magnet
Poles	4	Bearings	Single Sealed
Field Type	Revolving	Coupling	Direct Drive
Insulation Class - Rotor	H	Prototype Short Circuit Test	Yes
Insulation Class - Stator	Н	Voltage Regulator Type	Digital
Total Harmonic Distortion	<5%	Number of Sensed Phases	All
Telephone Interference Factor (TIF)	<50	Regulation Accuracy (Steady State)	±0.25%

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## **OPERATING DATA**



#### **POWER RATINGS**

	Natural Gas	Propane Vapor	
Single-Phase 120/240 VAC @1.0pf	144 kW/144 kVA Amps: 600	134 kW/134 kVA Amps: 558	
Three-Phase 120/208 VAC @0.8pf	150 kW/188 kVA Amps: 521	140 kW/175 kVA Amps: 486	
Three-Phase 120/240 VAC @0.8pf	150 kW/188 kVA Amps: 452	140 kW/175 kVA Amps: 421	
Three-Phase 277/480 VAC @0.8pf	150 kW/188 kVA Amps: 226	140 kW/175 kVA Amps: 211	
Three-Phase 346/600 VAC @0.8pf	150 kW/188 kVA Amps: 181	140 kW/175 kVA Amps: 169	

#### **MOTOR STARTING CAPABILITIES (skVA)**

skVA vs. Voltage Dip					
277/480 VAC	30%	208/240 VAC	30%		
K0150124Y21	326	K0150124Y21	244		
K0200124Y21	478	K0200124Y21	361		
K0200124Y21	478	K0200124Y21	361		
K0250124Y21	630	K0250124Y21	506		
K0300124Y21	790	K0300124Y21	609		

#### **FUEL CONSUMPTION RATES\***

Natural Gas -	- scfh (m³/hr)	Propane Vapor – scfh (m³/hr)		
Percent Load	Standby	Percent Load	Standby	
25%	668 (18.9)	25%	280 (7.9)	
50%	1,127 (31.9)	50%	430 (12.2)	
75%	1,583 (44.8)	75%	573 (16.2)	
100%	2,042 (57.8)	100%	720 (20.4)	

\* Fuel supply installation must accommodate fuel consumption rates at 100% load.

#### COOLING

		Standby
Air Flow (Air Flow Across Radiator)	scfm (m <sup>3</sup> /min)	5,598 (158.5)
Coolant Flow	gpm (Lpm)	27.5 (104.1)
Coolant System Capacity	gal (L)	6.3 (24.0)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)		See Bulletin No. 10000011339
Maximum Radiator Backpressure	in H <sub>2</sub> O (kPa)	0.5 (0.12)

#### **COMBUSTION AIR REQUIREMENTS**

				Standby		
		Flow at Rated F	Power scfm (m <sup>3</sup> /min)	343 (9.7)	-	
ENGINE			EXHAUST			
		Standby				Standby
Rated Engine Speed	RPM	1,800	Exhaust Flow (Rated	Output)	scfm (m <sup>3</sup> /min)	1,206 (34)
Horsepower at Rated kW	hp	228.5	Max. Allowable Back	pressure	inHg (kPa)	0.75 (2.54)
Piston Speed	ft/min (m/min)	1,275 (389)	Exhaust Temp (Rate	d Output - Post Silencer)	°F (°C)	1,440 (782)
BMEP	psi (kPa)	185 (1,277)				

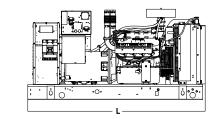
Deration - See Bulletin No. 10000011339. Standby - See Bulletin No. 10000018933. Prime - See Bulletin No. 10000018926.

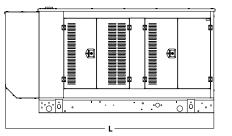
60 Hz SPEC SHEET

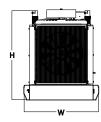
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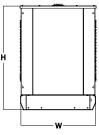
## **DIMENSIONS AND WEIGHTS\***











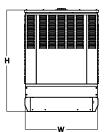
# OPEN SET (Includes Exhaust Flex)

L x W x H - in (mm)	92.9 (2,360) x 40.0 (1,016) x 48.0 (1,218)
Weight - Ibs (kg)	2,543 (1,153)

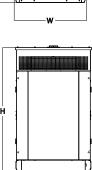
#### WEATHER PROTECTED ENCLOSURE

L x W x H - in (mm)	111.8 (2,840) x 40.5 (1,028) x 56.2 (1,427)
Weight - Ibs (kg)	Steel: 3,072 (1,393) Aluminum: 2,802 (1,271)

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## LEVEL 1 ACOUSTIC ENCLOSURE

L x W x H - in (mm)	129.4 (3,287) x 40.5 (1,028) x 56.2 (1,427)
Weight - Ibs (kg)	Steel: 3,233 (1,466) Aluminum: 2,873 (1,303)

## LEVEL 2 ACOUSTIC ENCLOSURE

L x W x H - in (mm)	111.8 (2,840) x 40.5 (1,028) x 68.6 (1,743)
Weight - Ibs (kg)	Steel: 3,360 (1,524) Aluminum: 2,928 (1,328)

\* Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please contact a PRAMAC Industrial Dealer for detailed installation drawings.

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