INDUSTRIAL GAS GENERATORS

THE GREEN SIDE OF ENERGY

SG SERIES

Gas Fuelled Stationary Generator Sets

Generac Industrial Gas revolutionises your idea of energy. The new line-up of industrial natural gas generators deliver long run times, low environmental impact and ease of use with the innovative Power Zone™ control system.

CAPTIVA
A Generac Company

GENERAC | INDUSTRIAL POWER

GENERAC:
GROUP PROFILE

GENERAC | INDUSTRIAL POWER

Founded in 1959, Generac Holdings Inc. is a leading designer and manufacturer of a wide range of power generation equipment and other power products serving the residential, light commercial and industrial markets, with global footprint. Power generation is our primary focus, which differentiates us from our main competitors that also have broad operations outside of the power equipment market. As the only significant market participant focused predominantly on these products, we have one of the widest ranges of products in the marketplace, including residential, commercial and industrial standby generators; as well as portable and mobile generators used in a variety of applications. Other engine powered products that we design and manufacture include light towers which provide temporary lighting for various end markets; commercial and industrial mobile heaters and pumps used in the oil & gas, construction and other industrial markets; and a broad product line of outdoor power equipment for residential and commercial use.

We design, manufacture, source and modify engines, alternators, transfer switches and other components necessary for our products, which are fuelled by natural gas, liquid propane, gasoline, diesel and Bi-Fuel. Our stationary, portable and mobile generators are designed with single-engine outputs ranging between 800W and 3,250kW. We have the ability to expand the power range for certain stationary generator solutions to much larger multi-megawatt systems through an integrated paralleling configuration called Modular Power Systems (MPS).

CAPTIVA:
WHO WE ARE

CAPTIVA
A Generac Company

Captiva was established to meet the growing demand for standby power in India. Headquartered in Kolkata, with a nationwide footprint through its offices and partners, Captiva maintains a strong presence across India.

From its inception, Captiva has been focused on providing buyers with customized power solutions throughout the country with focus on bespoke generators, in addition to standard offerings. We offer end to end solutions, from the concept to commissioning and after sales support, throughout the life of our products.

Our manufacturing facility is well equipped with state-of-the-art plant and machinery necessary to deliver world class quality. The facility boasts of CNC operated sheet metal processing machinery, powder coating machinery, assembly line and testing facility. Our systems and processes are ISO 9001 accredited and are focused towards continuous improvement.

With the goal of presenting a one window solution, we have an established business vertical for Project Management. This vertical undertakes projects by using the latest technology, while maintaining highest level of safety standards: we have successfully completed over 100 projects, with on time record and with zero injury.

In 2019 Generac Group, a global leader in the energy market, acquired a majority stake in Captiva. Being part of Generac, Captiva is now better equipped to access advanced technology and extended resources, endeavouring to be a leader in the Indian market and create delightful experience for our customers.

ENJOY LONG RUN TIMES WITHOUT REFUELLING

Each gas generator is optimised for emergency standby and prime power applications benefitting from reduced maintenance costs and simplified installation possibilities, when compared to traditional diesel gensets.

BACK UP AND PRIME POWER

TECHNOLOGY ADVANTAGES

INSTALLATION SIMPLICITY

REDUCED OPERATING COSTS

LOW EMISSIONS

ARE YOU LOOKING FOR SUSTAINABLE SOLUTIONS?

NO REFUELLING, INSTALL IN REMOTE SITES, LOW CARBON EMISSIONS, GREEN SOLUTION

ARE YOU LOOKING FOR RELIABILITY IN EMERGENCIES?

CLEAN AND RELIABLE POWER, UNLIMITED RUN-TIME, QUICK-START AND BLOCK-LOAD, BACK-UP SOLUTION (LONG BLACK OUTS)

ARE YOU LOOKING FOR ASSITANCE AND QUICK RESPONSE, ANYWHERE, ANYTIME?

PREDICTIVE , NO-REFUELLING, SUITABLE FOR BEHIND-THE-METER PRODUCTION

ECO SUSTAINABILITY

Reliable. Cleaner. Smarter.

THE SMARTEST
FUEL CHOICE

- **Long run times:** Natural gas is supplied by a utility, refuelling is not an issue.
- **Environmentally friendly:** Natural gas-fuelled engines emit fewer nitrogen oxides and particulate matter, while also avoiding the fuel containment, spillage and environmental concerns associated with fuel storage.
- **Fuel reliability:** With natural gas, there's no onsite fuel storage or ongoing maintenance.

0%
NO PARTICULATE MATTER

0%
NO SOX EMISSION

When equipped with the factory-provided 3-way catalyst, compared to traditional untreated Diesel engines!

Long run times during outages: Since natural gas is supplied by a utility with underground pipelines, it is rarely impacted by weather and the flow of fuel is largely secure – they can often run for weeks and months. For diesel generators, the fuel supply typically ends after three days. And during a crisis, fuel deliveries are often delayed or nonexistent.

Low maintenance: In diesel generators, the required low sulfur diesel gas needs to be re-conditioned or polished every 12 months to ensure impurities don't impact fuel flow. This is not a concern with natural gas.

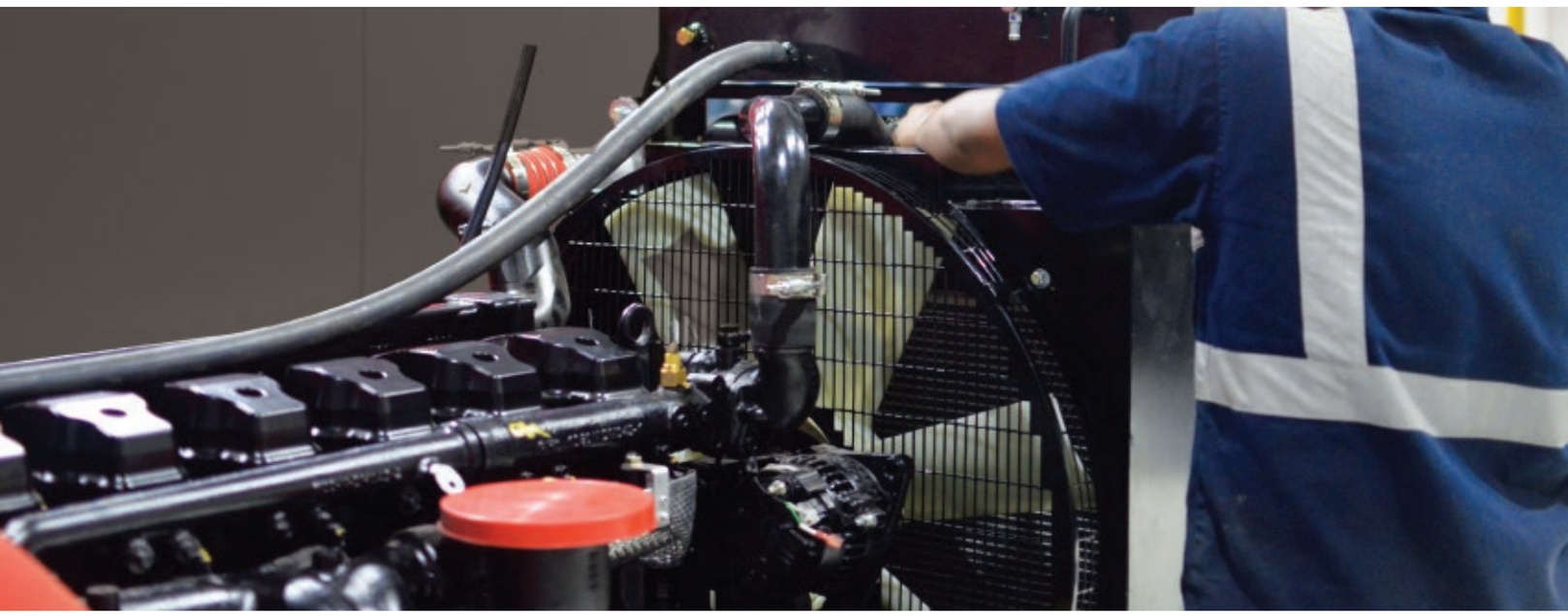
THE ADVANTAGES OF NATURAL GAS VS DIESEL

When compared to traditional diesel generators, gas fuelled power generators provide many benefits, reducing maintenance costs and simplifying installation possibilities, together with other advantages:

- **Lower Total Cost of Ownership**
- **Never run out of fuel**
- **No first-fill fuel costs: pay as you go**
- **Safer fuel, more reliable**
- **Can run with low load. No "wet" stucking**
- **20% lower overall emission, with nil SOx and PM**
- **No particulate matter in the exhaust**
- **Reduced generators installation activity**
- **No risk of fuel spillage / contamination**
- **More reliable: eliminates points of failure in fuel transfer system**

BACK UP AND PRIME POWER

Generac the trusted partner for gas powered solutions



Due to its long run times and installation flexibility natural gas is becoming the preferred fuel choice in many applications. Our natural gas generators are built in-house and go through uncompromising testing and optimisation in our factory to meet your application's demands.

Whether you need back-up, emergency, or prime power, natural gas is the solution.

Generac offers a range of solutions from 8 kW natural gas generators for small businesses to large multimegawatt systems providing prime power. And our innovative Modular Power Systems (MPS) enable you to add generators as your power needs grow, so you don't need to "over-invest" on your initial genset configuration.

1. **HEALTHCARE**
2. **PUBLIC INFRASTRUCTURE**
3. **TRANSPORTATION INFRASTRUCTURE**
4. **COMMERCIAL BUILDINGS**
5. **DATA CENTERS**
6. **TELECOMMUNICATIONS**
7. **FACTORY & INDUSTRY**
8. **CNG FILLING STATION**
9. **RESIDENTIAL BUILDINGS**

VALUE PROPOSITION

Generac's clean burning gaseous fuel generators can be used to meet local code requirements and the unique back-up power needs for every business. Generac gaseous generators are powered by cutting-edge Generac® engines, designed to run on gaseous fuels and optimised for emergency standby applications.

The Generac Technology

Compact:
Small footprint with best power density.

Fast Response:
Complied to G2 governing class.

Single source:
Responsibility, design, testing, service, etc.

Quick Start:
NFPA 110 compliant, 10 seconds starting and loading capabilities.

Smart Controls:
Single unit to fuel optimization and predictive failure.

User Friendly:
In-built multiple connectivity and ease of servicing.
No additional hardware or software needed.

Versatile:
Least affected by temperature, humidity and altitude factors.

Affordable to own:
Low owning & operating cost.

HIGH STANDARDS

Quality

Generac gas engine`s components are selected after a rigorous testing procedure, to ensure that the quality of the final product is not compromised. As the product uses a combustible fuel, we being an attentive company, ensure that the product and application are safe. Indeed, in order to maintain this high level of commitment to our customers, the main components are tested, through 19 extensive tests, before we qualify our selection, to ensure that each component of the final product is compliant with the highest international standard of quality and specification, as follows:

BS5514 and 6271	**SAE J1349**	**NFPA 37, 70, 99,110**	**ISO 3046, 7637, 8528, 9001, 15500**	**NEMA ICS10, MG1, 250, ICS6, AB1**
ANSI C62.41	**CSA C22.2, B149**	**IS 8528 Part 2, Part 4**	**IEC 60034-23**	**ISO 8528-3, Part 3**

Compliance

Generac is committed to be compliant to local norms and statutes, in every place they conduct business. In India, one of the most regulated countries for Gas Generators, Generac has invested in getting every required certification, in order to market its products. Each model on offer in India is compliant to the following certification:

- Component Level Safety Certification as stipulated by PESO.
- Emission Compliance Type Approval Certification as stipulated by CPCB.
- Noise Level Compliance Type Approval Certification as stipulated by CPCB.

CONTROL SYSTEM

Generac’s Powerzone (PZ), is an in-house developed and manufactured controller. PZ is the brain of the machine and it is built for advanced control, to ensure engine safety from failure, abnormalities and abuse.

Features

- Operator Interface
- On-Board Manuals

- Built in Wi-Fi
- Built in Bluetooth

- E-mail Notification

- Built in Web Server
- Customer RJ45 Port
- RS-485 (Modbus RTU)
- Ethernet (Modbus TCP)

- “Pre-Event” History

POWER ZONE®

Digital Control Platform*

- **Integrated (Governor, Ignition, AFR, Paralleling, Protection)**
  Less components, easier to troubleshoot.
- **Predictive Maintenance**
  Improves reliability, reduced down time.
- **Touchscreen display**
  Easy to use, intuitive interface.
- **Data logging and event recording**
  Faster commissioning and performance validation.
- **Wi-Fi, Bluetooth, and LAN communications**
  Flexibility to monitor/control from anywhere.
- **Configurable I/O and PLC**
  Increased flexibility for custom applications.

INTERFACE

On-Board a 7" color resistive touchscreen providing instant access to the most important parameters, ensuring the generator is ready and available at a moment's notice. First to market with built-in Wi-Fi, Bluetooth, and LAN connections. Monitoring and control is always at your fingertips via a mobile connected device: cell phone, tablet, or PC.

- Integrated control for gaseous-fueled generators.
- Manage single units or Modular Power Systems.
- WiFi, Bluetooth and LAN communications.
- Unsurpassed protection and control features.
- Multiple programmable inputs and outputs.
- Remote display and communications capability.
- Alarm / Event logging real-time stamping.
- Robust, intuitive touch-screen.
- MPS paralleling synchronization.
- MPS on-board kW and kVar sharing.

FULLY INTEGRATED

Power Zone has complete control over the engine and the generating set's functions. It includes speed governing, ignition, fuel control, paralleling and protection. All this results in less components and an easy to troubleshoot system.

EASE OF USE

Intuitive icons, "app-like" navigation, and multilingual screens are duplicated across equipment and mobile devices, putting the customer in the Power Zone.

Each Generator has an Integrated Controller and Paralleling Switch PowerManager™ Concurrently manages up to 15 units to simplify the system and increase performance.

How do the Power Zone controllers think?

For starters, it can manage paralleling, automatic transfer switches, and manage the load when the genset is installed in a Modular Power System (MPS) configuration. It is compatible with natural gas and diesel generators.

REDUCED OPERATING COSTS

The right fuel source that can actually reduce maintenance expenses

With today's technology, natural gas systems from Generac, one of the world's largest suppliers of power generation equipment, are actually able to lower capital expenses over a system's lifetime compared to traditional diesel generators.

CASE STUDY: LOWER FUEL COST

Peak shaving	Run hours	AVG load
240 kW	1600 h/year	180 kW

Estimated Diesel-Fuel usage: 90,000 lt. per year

SIGNIFICANT FUEL COST SAVING WITH NATURAL GAS

ELIMINATES REFUELLING COSTS

CLEARS REFUELLING DOWNTIMES

REDUCED MAINTENANCE COSTS

Capital savings: There is no need to install more power than currently needed, since more modules can be added in the future as business grows or power requirements increase.

Installation cost: The capital investment to specify and install two paralleled lower-kW generators compared to one larger-kW generator can be similar. However, paralleled units often have the advantage of greater installation support from the supplier, which offsets some of the initial cost. Their lighter weight makes them easier to move and place on job sites, requiring smaller, less expensive lifting equipment, and the simple design means installation time is decreased.

Fuel cost: The cost of natural gas tends to be significantly lower than that of diesel.

Servicing and maintenance cost: A single paralleled unit can be taken out of service for maintenance or repair while other units remain available should an outage occur. Smaller paralleled generators can also be installed in easy-to-access locations like on rooftops or in parking garages.

COST OF OWNERSHIP

Parameters	Unit	Gas Genset (Generac)	Diesel Genset
OPEX			
Power at 80% Load	kVA	252	252
	KWe	202	202
Per Unit Cost of Power	Rs./KWe	17.8	28.1
OPEX Per Hour	Rs./hr.	**₹3,596.00**	**₹5,761.00**
Annual Maintenance Cost	Rs.	₹60,000.00	₹73,943.00
Maintenance Cost Per Hour	Rs./hr.	₹120.00	₹147.89
Total OPEX Per Hour	Rs./hr.	**₹3,716.00**	**₹5,909.00**
Annual OPEX	Rs.	**₹18,58,000.00**	**₹29,54,618.00**
OPEX Savings Per Year	**Rs.**	**₹10,96,618.00**	**Lower by 30%**

* Per unit cost from Gas is < 30% of Diesel Rising diesel prices, will widen Gap.

STARTS TO PAY YOU BACK IN 2.6 YEARS

The smart long term solution!

Parameters	Unit	Gas Genset (Generac)	Diesel Genset
CAPEX			
Cost of Genset	Rs.	₹55,51,214.00	₹19,25,0000.00 *
Exhaust Stack Installation Cost	Rs.	NA	
Total CAPEX	Rs.	₹55,51,214.00	
Incremental Cost of Environmental (NGT Directive) Compliance	Rs.	**NIL**	**₹6,73,750.00** *
CAPEX with Future Compliance	Rs.	₹55,51,214.00	₹25,98,750.00
Add. CAPEX for Gas	Rs.	**₹29,52,464.00**	

* DG Price is for 320 kVA (Std. Rating)

* CPCB IV Norms + NGT guidelines will have higher impact on diesel than Gas

Return on Additional Investment	Years	2.23	Hours	1115.24

ASSURED POWER WITH GENERAC PARTS

Enhance performance. Simplify maintenance.

BOOST YOUR GENERAC PRODUCT'S PERFORMANCE WITH GENUINE GENERAC PARTS AND ACCESSORIES

We are the only business around that remain open when your gas genset needs parts and maintenance.

Genset Parts are available to maximize convenience and simplify maintenance for years of reliable alternative power. Maintaining your equipment with original equipment manufacturer parts is key to the performance and reliability you count on when the lights go out.

NATURAL GAS FUELLED GENERATOR RANGE

50% Lower Operating Cost vs Diesel Generators

Model	Rating	Duty Type	Fuel Consumption	Dimensions
G007293-0	17 kVA	Standby	**75 % Load:** 3.23	1673 x 677 x 737
SG50	50 kVA	Prime	**75 % Load:** 10.4	3450 x 1200 x 1590
SG55	55 kVA	Standby	**75 % Load:** 11.2	3450 x 1200 x 1590
SG80	80 kVA	Prime	**75 % Load:** 16.4	3450 x 1200 x 1590
SG90	90 kVA	Standby	**75 % Load:** 18.1	3450 x 1200 x 1590
SG150 *[1]	150 kVA	Prime	**75 % Load:** 36.16	3632 x 1280 x 2329
SG160 *[1]	160 kVA	Prime	**75 % Load:** 38.47	3632 x 1280 x 2329
SG250	250 kVA	Prime	**75 % Load:** 48.82	5226 x1700 x 3248
SG285	285 kVA	Prime	**75 % Load:** 56.2	5226 x1700 x 3248
SG315	315 kVA	Standby	**75 % Load:** 60.6	5226 x1700 x 3248
SG400	400 kVA	Prime	**75 % Load:** 87.8	5600 X 2400 X 3078
SG450	450 kVA	Prime	**75 % Load:** 94.8	5600 X 2400 X 3078
SG500	500 kVA	Standby	**75 % Load:** 102.4	5600 X 2400 X 3078
SG750	750 kVA	Standby	**75 % Load:** 136.0	6600x 2400 x 3248
SG1010 *[1]	1010 kVA	Standby	**75 % Load:** 173.7	8356 x 2688 x 3477

*[1] Ratings would be available from June 2023.
*[2] Fuel consumption unit is m3/hr.
*[3] Dimensions are in mm.

MODULAR POWER SYSTEM - MPS

A single generator provides no redundancy and exposes the system to failure.

A paralleled system with multiple smaller generators can provide instead several layers of redundancy, particularly for critical or emergency applications.

Power Zone controller allows the parallel operation of multiple generators running together as one source.

With our Modular Power Systems, Generac has perfected the process of paralleling generators through the use of a special integrated control technology, giving to the customer many strategic advantages.




01
HIGHER RELIABILITY

Redundant System

Smaller generator building blocks provide redundancy and enable the system to operate at a reduced capacity Integrated Controls.

Integrated Controls

Integrated generator controller simplifies complex control systems in conventional switchgear with many single-points of failure.

02
IMPROVED SCALABILITY

On-Gen Paralleling Controls and Switching

On-generator paralleling controls and switching allows additional generators to be commissioned in days rather than weeks or months.

Smaller Building blocks

Integrated generator controller simplifies complex control systems in conventional switchgear with many single-points of failure.

03
IMPROVED FLEXIBILITY

Smaller Building blocks

Smaller building blocks open more options for generator locations (i.e. roof and ground).

Lower mass units can be distributed more easily, particularly for rooftop applications.

04
LOWER LIFECYCLE COST

Integrated Controls

Eliminates expensive paralleling switchgear and reduces part count.

Smaller Building blocks

Smaller engines are less costly per kW and more affordable to install and maintain.

EACH BENEFIT OF MPS SIGNIFICANTLY REDUCES PROJECT RISK


Technical


Financial


Organizational


Schedule

CREDENTIALS

UFLEX
Noida
4 x 315 kVA

ONGC
Agartala
2 x 250 kVA

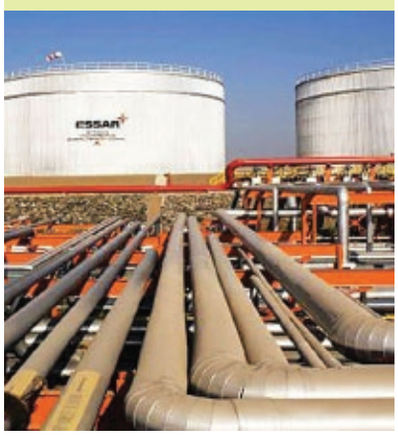
HPCL
Mathura
3 x 250 kVA

BPCL
Noida
2 x 750 kVA

JTEKT

3 x 500 kVA; 7 x 750 kVA

Essar
Durgapur
5 x 250 kVA



Asian Paints
Kasna, Greater Noida
1 x 315 kVA

Atotech
Manesar
2 x 750 kVA

Oil India
Dhuliajan
4 x 250 kVA

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Version: April 2023