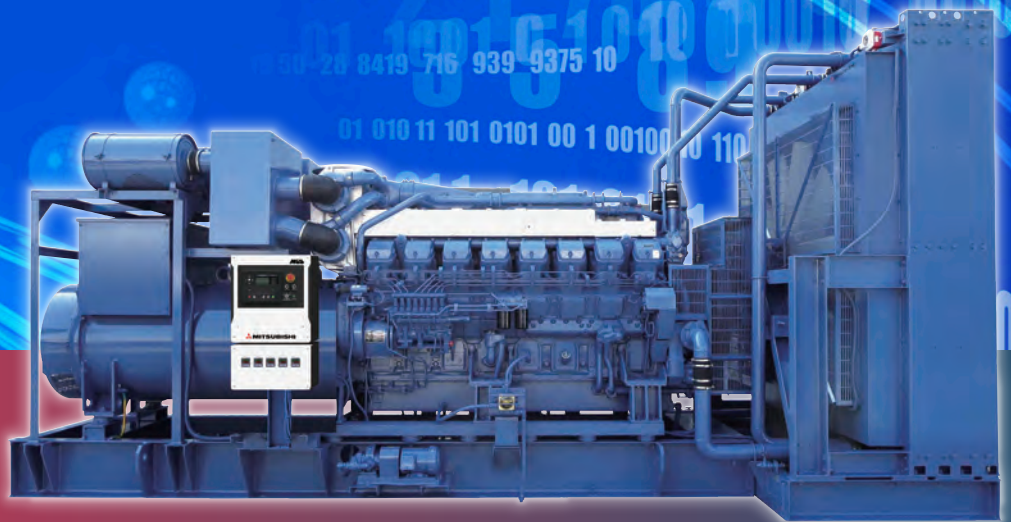


MITSUBISHI GENERATOR SERIES



MGS

for Data Center Power Systems

RELIABILITY AND QUALITY IN POWER GENERATION



Data Center is Core of Every Society

The market environment in recent years surrounding the data center has been being rapidly changing from the form that enterprises and individuals have managed and possessed hardware, software, data, etc. to the form that various information systems of enterprises and individuals are installed in the data center.

Amid these changes in the times, data centers are increasing their presence in modern business scenes, and along with this situation the facility standards that the market seeks at the data center are also changing to severe.

3 Categories of Data Center

Co-locator

Build data center facility to provide server space for third party company

Enterprise

Build data center facility to manage their data that is related to their main business for own company (Ex. Financial institution)

Digitals

Build and manage many large-scale data center facilities to provide their cloud servicing (Ex. Google, Microsoft)

The MHIET Group will develop many power generation systems that requires exclusive specs for the data center to fully support such changes in the business environment.

We will bring together the technologies that the MHIET Group has cultivated over many years and contribute to the stable operation of the data center.

Concept of Diesel Engine Generator Set for Data Centers

- Data centers are operating in 24 hours / 7 days.
- Thus the electric power supply facility is most important for them.
- The demands of diesel engine generator sets from the data centers are mainly 3 points in below.

Startability

- Quick start
- High reliability

Size

- Power ratio
- Footprint

Global Standard

- Apply ISO standard
- Meet requirement of Uptime Institute

Sales Record & Delivery Example

MGS Total Sales Record

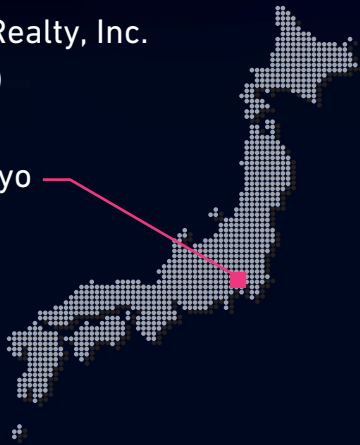
Since the launch of the MGS series, there are over 10,000 units worldwide.

MGS series are our core product which has gained great reliability from customers all over the world



Delivery Example for Data Center

- Company Name
MC Digital Realty, Inc.
(Co-locator)
- Location
Mitaka, Tokyo



- Diesel Generator Sets
2,500kVA (Engine: S16R2-PTAW)
Diesel Generator Sets
N+1 Redundancy

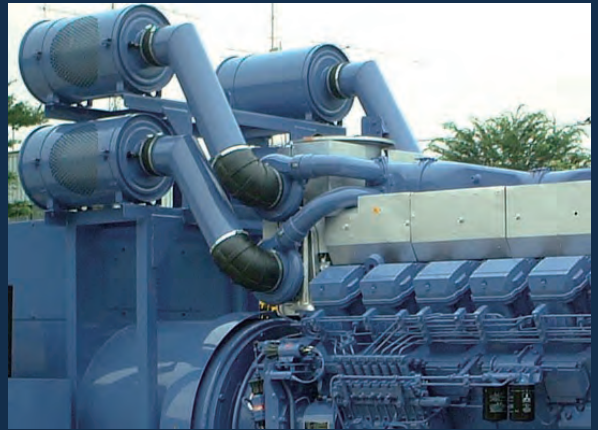
MHIET group Engines and Generator sets are installed in data center facilities around the world including in MC Digital Realty, Inc.



Main Features

Mitsubishi Engines and Turbochargers Make Best Performance of Mitsubishi Gensets

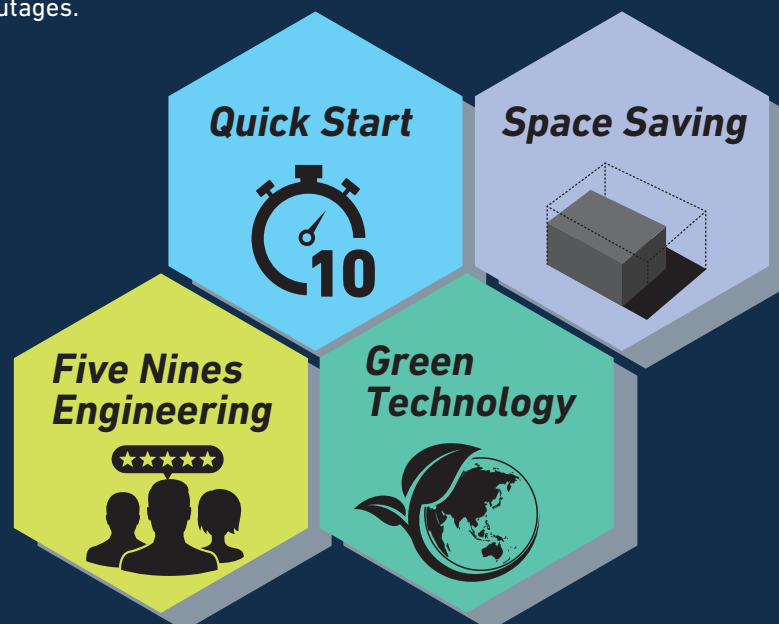
MHIET group has continually introduced upgraded its engine products since the inception of business in 1917, and now the MGS provides a higher generating power rating and more advanced control systems than ever before, with proven reliability based on the continued research and development. The best performance-matched engine system configured with Mitsubishi diesel engines and Mitsubishi turbochargers, which are engineered and manufactured in the same facility, is certain to result in the high productivity and improved fuel economy in the MGS power generation. MGS - All Mitsubishi assembled, tested and supported.



High Reliability and Quality in MGS

It takes no more than 10 seconds from receiving the signal to start reaching the rated voltage and frequency, which minimizes the impact of power outages.

Our compact MGS series makes more space to have servers or other devices in your facilities.



Our ultimate goal is 99.999% availability. MHIET group provides total engineering and service support to accomplish 99.999% availability of your power systems.

Mitsubishi's fuel injector and high-pressure fuel pump make it possible to burn the fuel completely and achieve clean emission gas.

Advanced Features

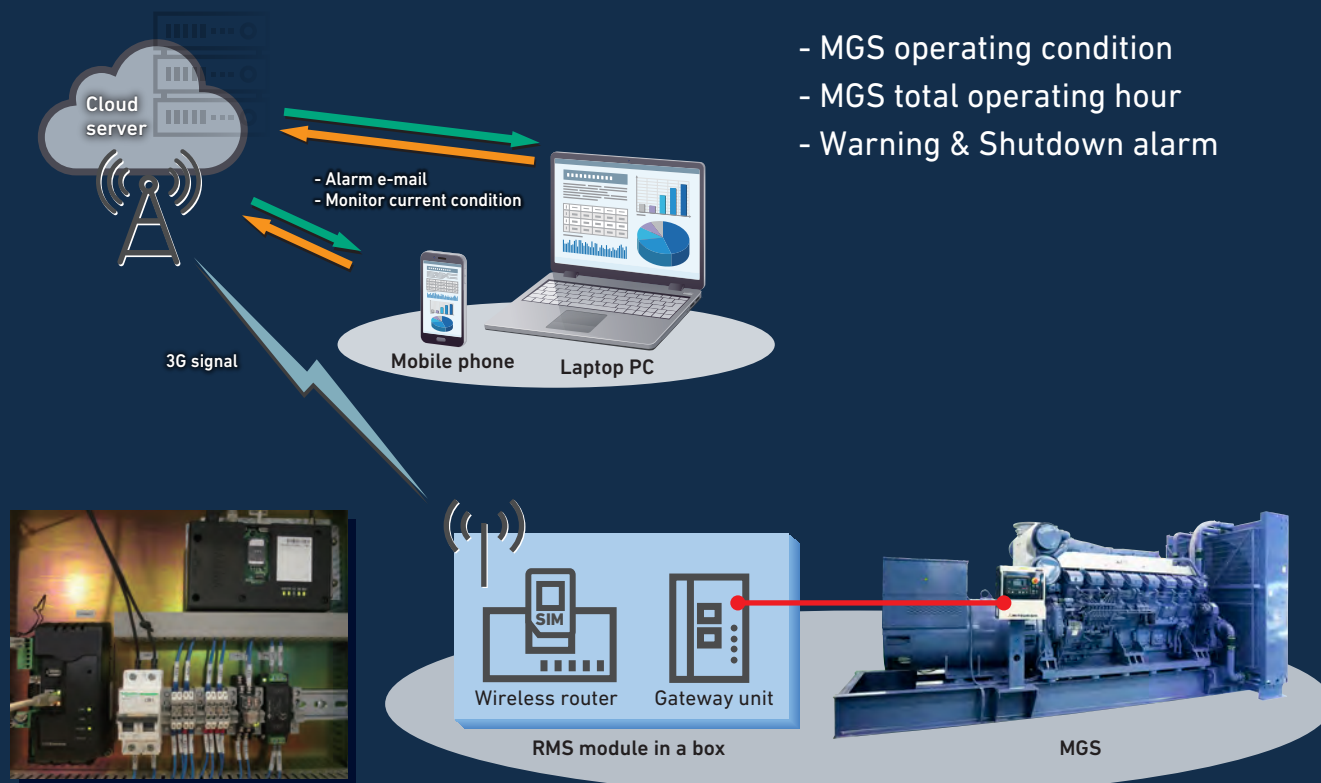
Advanced Solution in 7310 and 7320 Control System

"Full-sized" safety and automatic functions in the series of digital control systems.

Easy human interface in the sophisticated control system makes for an operator-friendly Gen Set.



Remote Monitoring System (RMS)



*In some countries or regions, it is not able to be possible to install a remote monitoring system because of their laws, regulations or other reasons.
*Some devices are needed to install RMS.

Rating Table

Low Voltage

50 Hz/1500 min⁻¹/380-415 V

Generator set	Engine Model	Data Center Power Code: DCP* (kVA)
MGS2800	S16R2-PTAW2-S	2500
MGS2700	S16R2-PTAW	2250
MGS2500	S16R-PTAA2	2035
MGS2000	S16R-PTA2-S	2030
MGS1500	S16R-PTA-S	1810
MGS1400	S12R-PTA2-S	1450
MGS1200	S12R-PTA-S	1362.5

60 Hz/1800 min⁻¹/380 V

Generator set	Engine Model	Data Center Power Code: DCP* (kW)
MGS2500	S16R-PTAA2	1810
MGS2000	S16R-PTA2-S	1730
MGS1500	S16R-PTA-S	1550
MGS1400	S12R-PTA2-S	1280
MGS1200	S12R-PTA-S	1145

60 Hz/1800 min⁻¹/480 V

Generator set	Engine Model	Data Center Power Code: DCP* (kW)
MGS2500	S16R-PTAA2	1820
MGS2000	S16R-PTA2-S	1730
MGS1500	S16R-PTA-S	1550
MGS1400	S12R-PTA2-S	1280
MGS1200	S12R-PTA-S	1150

High Voltage

50 Hz/1500 min⁻¹

Generator set	Engine Model	Data Center Power Code: DCP* (kVA)			
		3.3 kV	6.6 kV	10 kV	11 kV
MGS2800HV	S16R2-PTAW2-S	2500	2500	2500	2500
MGS2700HV	S16R2-PTAW	2250	2250	2250	2250
MGS2500HV	S16R-PTAA2	2010	2010	2010	2005
MGS2000HV	S16R-PTA2-S	2000	2000	2000	2000
MGS1500HV	S16R-PTA-S	1810	1810	1800	1800
MGS1400HV	S12R-PTA2-S	1450	1450	1450	1450
MGS1200HV	S12R-PTA-S	1350	1350	1340	1340

60 Hz/1800 min⁻¹

Generator set	Engine Model	Data Center Power Code: DCP* (kW)			
		3.3 kV	4.16 kV	6.6 kV	13.8 kV
MGS2500HV	S16R-PTAA2	1800	1800	1800	1800
MGS2000HV	S16R-PTA2-S	1700	1700	1700	1700
MGS1500HV	S16R-PTA-S	1500	1500	1460	1500
MGS1400HV	S12R-PTA2-S	1280	1280	1280	1280
MGS1200HV	S12R-PTA-S	1140	1140	1140	1140

*Data Center Power (DCP)

Data center power is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfill that requirement including hardware or software or maintenance plan adaptation.

(ISO 8528-1:2018)

Uptime Institute

Mitsubishi Generator Series comply with the requirement of a Tier III and Tier IV data center facility which shall not have a limitation on consecutive hours of operation when loaded to 'N' demand.

Service Network

The preferred worldwide equipment

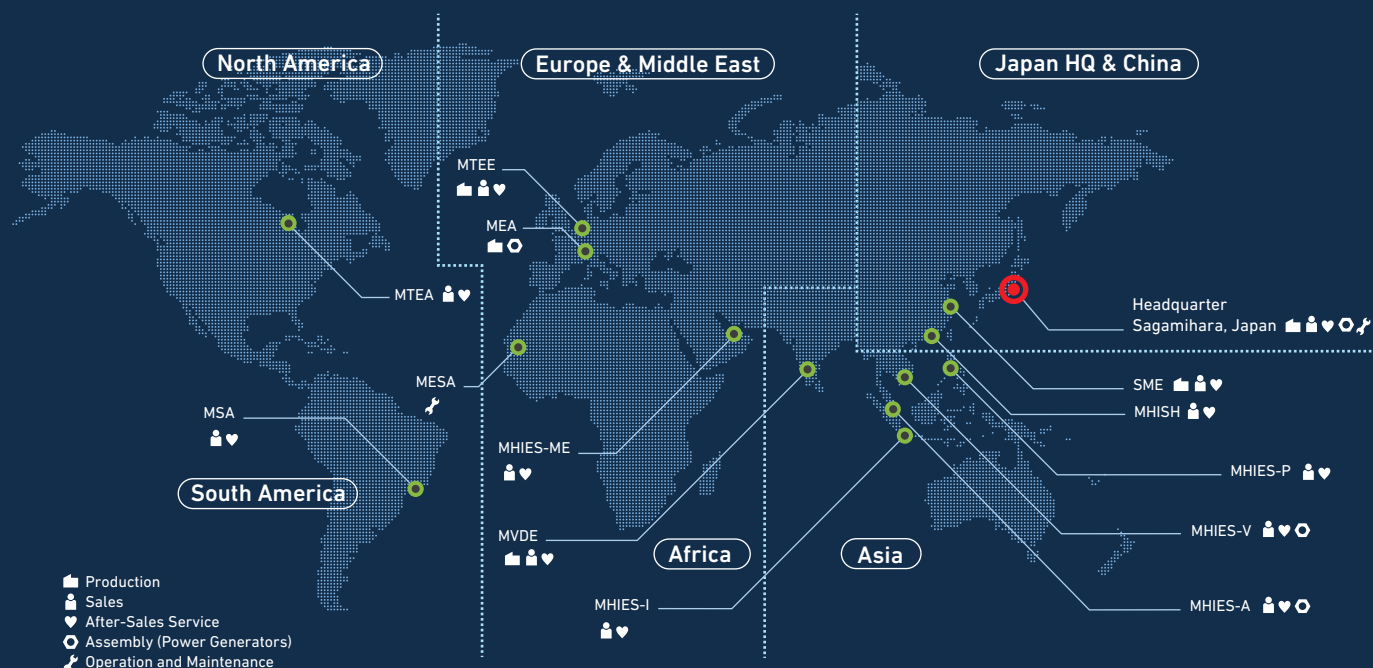
MITSUBISHI GENERATOR SERIES (MGS) - the way to serve customers

- Best available products with the best possible value
- Best quality service support with the sense of urgency
- Beyond the customer's expectation

Your local MGS genset dealer can advise you on the right selection of MGS genset for your application, deliver and install the units properly, and provide daily maintenance on demand, to support higher productivity in economical way.

Well trained and experienced professionals strive for excellence in all they do.

MHIET Group Network



Asia

Mitsubishi Heavy Industries Engine System Asia Pte. Ltd. (MHIES-A)
MHI Engine System Vietnam Co., Ltd. (MHIES-V)
MHI Engine System Philippines, Inc. (MHIES-P)
PT. MHI Engine System Indonesia (MHIES-I)
MHI Engine System Middle East FZE (MHIES-ME)

China

Mitsubishi Heavy Industries (Shanghai) Co., Ltd. (MHISH)
Shanghai MHI Engine Co., Ltd. (SME)

Europe

Mitsubishi Turbocharger and Engine Europe B.V. (MTEE)

North America, South America

Mitsubishi Turbocharger and Engine America, Inc. (MTEA)
MHI Sul Americana Distribuidora de Motores Ltda. (MSA)

Japan HQ

Mitsubishi Heavy Industries Engine & Turbocharger, Ltd. (MHIET)

* If you need to have more information about our group company, please check MHIET website.



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