

## MITSUBISHI BASIC DIESEL GENERATOR SET TECHNICAL SPECIFICATION



**MGS0500P-CN**

MGS Model		MGS0500P-CN	
Frequency (Hz)		50	
Voltage (V)		380 / 400 / 415	
Duty		Standby (ESP)	Prime (PRP)
Rated Output <sup>(1)</sup>	(kVA)	538	488
	(kW)	430	390
Engine model		S612.8EAA310M	
Fuel Consumption <sup>(2)</sup> (liter/h) (% load)	25%	35	32
	50%	58	53
	75%	83	75
	100%	113	102
Generator	model	MGP-L47M8	
Cooling system	(Type)	Closed looped circuit by integral radiator	
Length	(mm)	4600	
Width	(mm)	1600	
Height	(mm)	2100	
Weight (Dry)	(kg)	4655	
	(Wet)	(kg)	4797

## OPERATION CONDITONS

- (1) Ambient Temperature: -25°C to 50°C (coolant heater required below 5°C)  
 Relative Humidity: <90%      Altitude: ≤1000m  
 Please contact technical department for power derating above 40°C or 1000m.
- (2) Tested with GB 19147-2006 #0 diesel (density: 0.835 g/cm<sup>3</sup> at 20°C).
- (3) Installation Location: Outdoors or indoors (with adequate ventilation)

## STANDARD & CERTIFICATIONS

- Certified to standards ISO 9001:2015
- Complies to GB/T2820(ISO8528), IEC60034-1 / BS EN60034-1, ISO3046, ISO3744, IEC60204, IEC60947, GB/T20136, JB/T10303, GB/T4712, GB12699, GB/T12786, GB/T6072, GB/T1859, GB755, GB/T10585, GB7251, GB4208, GB191, GB/T14315 and GB/T16895.6
- Fully compliant with the NFPA110 Standard for Emergency and Standby Power
- Provides 100% load acceptance in one step to meet these demands

## ADVANCED CONTROL PANEL

- Rugged metal sheet with anti-vibrator isolator
- Operator-friendly interface and navigation
- Complete instrument and control accessories to meet a wide range of installation requirements
- Expansion module and custom programming are available for specific customer requirements

## FEATURES

**(1) High Emission Standard:**

Complies with GB20891 China Non-Road T3 emission standards.

**(2) Energy efficiency:** The engine employs the world's most advanced electronically controlled high-pressure common rail fuel injection technology, achieving a maximum injection pressure of 200MPa. This ensures excellent fuel atomization and fuel consumption surpasses the 240g/kWh standard of YD/T-502 for power generation units in the communications industry.

**(3) Ultra-Low Noise:**

High-density flame-retardant sound-absorbing foam.

Residential-grade muffler and customized airflow ducts.

Non-load noise Level at 7m: less than 80 dBA.

**(4) Dual Fuel Tanks:**

Internal and external tanks with a single-handle switch valve; digital fuel level display.

**(5) Voltage Stability ( $\pm 0.5\%$ ):**

Leroy-Somer™ alternator, AREP auxiliary winding + DAVR (Digital Automatic Voltage Regulator).

**(6) Automatic Fuel Bleeding System:**

Self-priming fuel pump to remove air after filter replacement.

**(7) Mobility:**

Lifting points (top/base) and towing holes for narrow spaces.

**(8) Wiring Convenience:**

Right-rear outlet box with copper busbars.

**(9)** The standard configuration features a world-renowned VARTA® valve-regulated lead-acid maintenance-free AGM battery for startup, with a cold start current of 840CCA and exceptional cold resistance. The non-hazardous, flow-free electrolyte allows free transportation, while its cycle life is three times longer than conventional lead-acid batteries.

**(10)** The fuel system is standard equipped with an fuel-water separator to prevent water from entering the engine.

## DIESEL ENGINE

Duty		Standby (ESP)	Prime (PRP)
Net Engine Power (with fan basis)	(kWm)	460	417
Speed	(RPM)	1500	
No. of cylinder		L6	
Bore / stroke	(mm)	130 / 161	
Total displacement	(liter)	12.8	
Compression ratio		16:1	
Injection pump	Type	Common rail	
Governor	Type	ECU	
Frequency regulation		G3 class	
Steady state Frequency band		<0.5%	

## STANDARD PAINTING

- (1) Enclosure: RAL 5023 (Deep blue)  
 (2) Chassis: RAL 9017 (Traffic black)  
 (3) Painting Process:

- MHISH utilizes an advanced automated painting line with sandblasting equipment to ensure superior quality.
- Enclosure Painting: Pretreatment: Henkel (Germany) process. Coating : Premium outdoor- grade powder paint.
- Chassis Powder Coating: Sandblasting + premium outdoor-grade powder paint Coating.

## LUBRICATION SYSTEM

Lubricating oil capacity	(liter)	36
Lubrication system	Type	Pressure-splash
Lubrication Oil filter	Type	Paper element
Lubrication Oil cooler	Type	Water cooled corrugated

## COOLING SYSTEM

Coolant capacity with radiator	(liter)	113
Thermostat		Opens at 77°C Fully opens at 90°C
Maximum Coolant Temperature		98°C (at prime power) 102°C (at standby power)
Cooling fan airflow rate	(m <sup>3</sup> / min)	690
Cooling fan airflow restriction	(Pa)	100

## ELECTRICAL SYSTEM

System voltage	(V)	24 VDC
Starting system		Electric starting
Starter motor capacity		7.5kW x 1
Charging Alternator		28V 55A

## FUEL TANK

Type		Welded sheet metal structure
Capacity		650L / Optional:400L/900L

## BATTERY

Brand/Type:		VARTA / Maintenance-free AGM
Capacity/Model		4 × AGM H3 (840CCA)

## GENSET CONTROL PANEL

- (1) Type: Sheet metal structure, rear-mounted with observation window and control interface.
- (2) Protection Rating: IP54
- (3) Control Panel Configuration:
  - DSE 6120 MKIII auto-start controller (mains failure) × 1
  - Illumination lamp
  - Lamp switch
  - Controller power switch
  - Integrated audible/visual alarm indicator
- Emergency stop button
- (4) Internal Components:
  - Current transformers ×3
  - 800A molded case circuit breaker (3P)
  - Battery charger (24V/6A)

## ALTERNATOR

Alternator	Type	Brushless, AREP excited, self-ventilated and rotating field
Configuration		3 Phase 4 Wire
Protection		IP23
Power factor		0.8 lagging
No of poles		4 poles
Insulation class		Class H
Temperature rise		Class H @125K
AVR	Type	Digital D350
Voltage regulation	0 - 100% load	< ±1.0%
Wave form distortion		< 5% (Non-Distorting Balanced Linear Load)
Unbalance loading		< 25%
Negative phase sequence		< 8%
Overspeed		< 125% of nominal speed

## RATING DEFINITION IN ACCORDANCE WITH ISO8528-1

### ➤ Prime Power (PRP):

For variable load applications with no annual usage hour restrictions.  
The average allowable output power over 24 hours must not exceed 80% of the PRP rating.

### ➤ Standby Power (ESP):

For emergency use during grid failure or testing conditions, with a maximum annual usage of 200 hours.  
The average allowable output power over 24 hours must not exceed 80% of the ESP rating.

## OPTION CONFIGURATION

- Multi-units parallel system
- Water heater
- Anti condensation heater
- 50°C standard condition
- Spare parts
- Trailer
- PMG