

## Datasheet

### HGM450E Googol Diesel Power Generator

**320kW- 400kVA**  
**360kW- 450kVA**  
**50Hz**

Googol diesel generators are powered by Googol engines which are being manufactured by latest US based technology. Googol engines are known for cost effective reliable power solution.

#### Features

Googol power generators are designed to operate under extreme conditions with low operational and maintenance cost.

Honny power manufacture and test it's products under strict QC rules to insure international manufacturing standard.



#### Equipment

- Engine and alternator mounted on same frame steel skid.
- Build in damper for anti-vibration.
- Compact design, easy to operate and maintain.
- Sino-US Googol brand engine
- Top brand AC alternator
- Full range protections, alarms with auto shutdown features.
- Comply with ISO8628 national standard and ISO9001 quality standard. Specially designed horizontal/vertical, engine driven/electrical radiator. Industrial, Residential silencers
- Catalytic converters
- Heat exchangers
- Special spark arrester silencers
- Standard set for "CE" certification
- Sound & Weatherproof canopy optional
- Spring, seismic anti-vibration mounts
- Advanced facility for FAT.

## Diesel Generator Specification

Genset Model		HGM450E
Genset Prime Output	kW/kVA	320/400
Genset Standby Output	kW/kVA	360/450
Rating Power Factor		0.8
Rating Speed	rpm	1500
Rating Frequency	Hz	50
Rating Voltage	V	400
Engine Model		PTAA13EG3
Displacement	l	12.8
Configuration		6 in line
Genset Size-Open Type (LxWxH)	mm	3150x1150x1600
Genset Weight	kg	2750

## Engine Data in General

Aspiration Type		Turbocharger, air-air aftercooler
Injection Type		Common rail
Configuration		In line
No. of Cylinders		6
Displacement	l	12.8
Bore	mm	128
Stroke	mm	166
Compression Ratio		15.5:1
Piston Speed	m/s	8.3
Rotation Direction (from flywheel)		Counter Clockwise
Number of Flywheel Teeth		160
Flywheel House Size		SAE1-14

## Engine Specification

Engine Model		PTAA13EG3
Speed	rpm	1500
Standby Output ( LTP)	kW	408
Prime Output (PRP)	kW	366
Engine Continuous Power (COP)	kW	292
Fan Quantity		1
All Fans Reduction	kW	14
Engine Net Standby Output ( LTP)	kW	394
Engine Net Prime Output (PRP)	kW	352
Engine Net Continuous Output (COP)	kW	278
Typical Generation Standby Output	kW	360
Typical Generation Prime Output	kW	320
Typical Generation Continuous Output	kW	260
Typical Alternator Efficiency	%	93.2%
Rating Power Factor		0.8
Speed droop (static) elect. Gov.		0-5%
Governing standards to ISO 8528		G3
Max. step load acceptance, 1st step ( % PRP )		55%

## Lubrication System

Lube Oil Specification		AFI-CG4
Oil Capacity	l	40
Max. Permissible Oil Temperature	°C	110
Oil Pressure Warning	kPa	200
Oil Pressure Shutdown	kPa	160
Oil Consumption (as % of fuel consumption )	%	≤0.5

## Electrical System

Charging Alternator Voltage	V	28
Charging Alternator Capacity	A	35
Starting Voltage	V	24
Starting Motor Capacity	kW	1*6.6
Minimum Battery Capacity	Ah	2*150

## Fuel System

Governor Type		Common Rail
Fuel Consumption at 25% of PRP	l/h	25
Fuel Consumption at 50% of PRP	l/h	45
Fuel Consumption at 75% of PRP	l/h	66
Fuel Consumption at 100% PRP	l/h	87
Lowest Fuel Consumption Ratio	g/kW.hr	199

## Intake & Exhaust System

Combustion Air Consumption	m <sup>3</sup> /min	31
Max. Intake Restriction	KPa	5
Exhaust Temperature (Before Turbo)	°C	650
Exhaust Temperature (After Turbo)	°C	502
Max. Exhaust Back Pressure	KPa	5
Exhaust Gas Flow	m <sup>3</sup> /min	36.5
Turbo Bellows Diameter	mm	DN100-150
Exhaust Flange Diameter	mm	DN150

## Cooling System

Coolant Capacity for Engine	l	18
Max. Permissible Temperature	°C	90
Max. Coolant Warning Temperature	°C	95
Max. Coolant Shutdown Temperature	°C	105
Thermostat Open Temperature	°C	71
Radiator Cooling Flow	m <sup>3</sup> /min	410
Flow of Cylinder liner Coolant pump	m <sup>3</sup> /h	19.7
Heat dissipation (engine radiator)	kW	232
Heat dissipation (convection)	kW	35

## Alternator Specification

<b>Generator Model</b>		<b>GP400-4P</b>
Voltage of Genset	V	400
Rating Speed	rpm	1500
Frequency	Hz	50
Capacity @ 0.8PF, H Rise Class	kW	320
Efficiency @ 0.8PF	%	93.4
Duty		S1
Bearing		Single
Insulation		H
Rise Temperature		H
Enclosure		IP23
Over speed	rpm	2250
Excitation System		AVR
AVR Model		SX440
Poles		4

**Performance Parameter**

**Frequency**

Frequency Droop	%	≤5
Steady-state Frequency Band	%	≤0.5
Related Downward Range of Frequency Setting	%	≥2.5
Related Upward Range of Frequency Setting	%	≥+2.5
Change Rate of Frequency Setting	%	0.2 ~ 1

**Transient Frequency Deviation**

100% sudden power decrease	%	≤10
Sudden Power Increase	%	≤7
100% sudden power decrease	%	≤+10
Sudden Power Increase	%	≤-7
Frequency Recovery Time	sec	≤3
Related Frequency Tolerance Band	%	2

**Voltage**

Steady-state Voltage Deviation	%	≤±1
Voltage Unbalance	%	1
Range of Voltage Setting	%	±5
Change Rate of Voltage Setting	%	0.2 ~1

**Transient Voltage Deviation**

100% Sudden Power Decrease	%	≤+20
Sudden Power Increase	%	≤-15
Voltage Recovery Time	s	≤2

**Voltage Waveform & EMC Compatibility**

Sin. Distortion	%	4
Coefficient Variation	%	5
Individual Harmonic Content	%	2
Radio Interference THF	%	≤2

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