

## Datasheet

### HGM1650E Googol Diesel Power Generator

**1200kW-1500kVA**

**1320kW-1650kVA**

**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		HGM1650E
Genset Prime Output	kW/kVA	1200/1500
Genset Standby Output	kW/kVA	1320/1650
Rating Power Factor		0.8
Rating Speed	rpm	1500
Rating Frequency	Hz	50
Rating Voltage	V	400
Engine Model		QTA53EG5
Displacement	l	53.1
Configuration		12V
Genset Size-Open Type (LxWxH)	mm	5200x2220x2600
Genset Weight	kg	10500

## Engine Data in General

Aspiration Type		Turbocharger, air-water aftercooler
Injection Type		Common rail
Configuration		Vee
No. of Cylinders		12
Displacement	l	53.1
Bore	mm	170
Stroke	mm	195
Compression Ratio		13.5:1
Piston Speed	m/s	9.75
Rotation Direction (from flywheel)		Counter Clockwise
Number of Flywheel Teeth		218
Flywheel House Size		SAE00-21

## Engine Specification

Engine Model		QTA53EG5
Speed	rpm	1500
Standby Output ( LTP)	kW	1490
Prime Output (PRP)	kW	1332
Engine Continuous Power (COP)	kW	1120
Fan Quantity		1
All Fans Reduction	kW	64
Engine Net Standby Output ( LTP)	kW	1426
Engine Net Prime Output (PRP)	kW	1268
Engine Net Continuous Output (COP)	kW	1071
Typical Generation Standby Output	kW	1320
Typical Generation Prime Output	kW	1200
Typical Generation Continuous Output	kW	1000
Typical Alternator Efficiency	%	95.3%
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 )		50%

## Lubrication System

Lube Oil Specification		AFI-CG4
Oil Capacity	l	180
Max. Permissible Oil Temperature	°C	110
Oil Pressure Warning	kPa	300
Oil Pressure Shutdown	kPa	200
Oil Consumption (as % of fuel consumption )	%	≤0.5

## Electrical System

Charging Alternator Voltage	V	28
Charging Alternator Capacity	A	55
Starting Voltage	V	24
Starting Motor Capacity	kW	1*13
Minimum Battery Capacity	Ah	4*150

## Fuel System

Governor Type		Common Rail
Fuel Consumption at 25% of PRP	l/h	93
Fuel Consumption at 50% of PRP	l/h	163
Fuel Consumption at 75% of PRP	l/h	232
Fuel Consumption at 100% of PRP	l/h	309
Lowest Fuel Consumption Ratio	g/kW.hr	194

## Intake & Exhaust System

Combustion Air Consumption	m <sup>3</sup> /min	137
Max. Intake Restriction	KPa	5
Exhaust Temperature (Before Turbo)	°C	620
Exhaust Temperature (After Turbo)	°C	520
Max. Exhaust Back Pressure	KPa	5
Exhaust Gas Flow	m <sup>3</sup> /min	342
Turbo Bellows Diameter	mm	DN250
Exhaust Flange Diameter	mm	DN250

## Cooling System

Coolant Capacity for Engine	l	100
Max. Permissible Temperature	°C	90
Max. Coolant Warning Temperature	°C	95
Max. Coolant Shutdown Temperature	°C	98
Thermostat Open Temperature	°C	71
Radiator Cooling Flow	m <sup>3</sup> /min	2400
Flow of Cylinder liner Coolant pump	m <sup>3</sup> /h	50
Heat dissipation (engine radiator)	kW	492
Heat dissipation (convection)	kW	82
Coolant Capacity for Engine	l	100
Max. Permissible Temperature	°C	90

## Alternator Specification

<b>Generator Model</b>		<b>GP1563-4P</b>
Voltage of Genset	V	400
Rating Speed	rpm	1500
Frequency	Hz	50
Capacity @ 0.8PF, H Rise Class	kW	1250
Efficiency @ 0.8PF	%	95.3
Duty		S1
Bearing		Single
Insulation		H
Rise Temperature		H
Enclosure		IP23
Over speed	rpm	2250
Excitation System		AVR
AVR Model		MX321
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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