



Power Solution Supplier

- . Diesel & Gas Power Generators
- . Power Plant
- . Transformer Substation
- . CHP & CCHP System



Guangdong Honny Power-Tech Co., Ltd

GENERATOR FEATURE

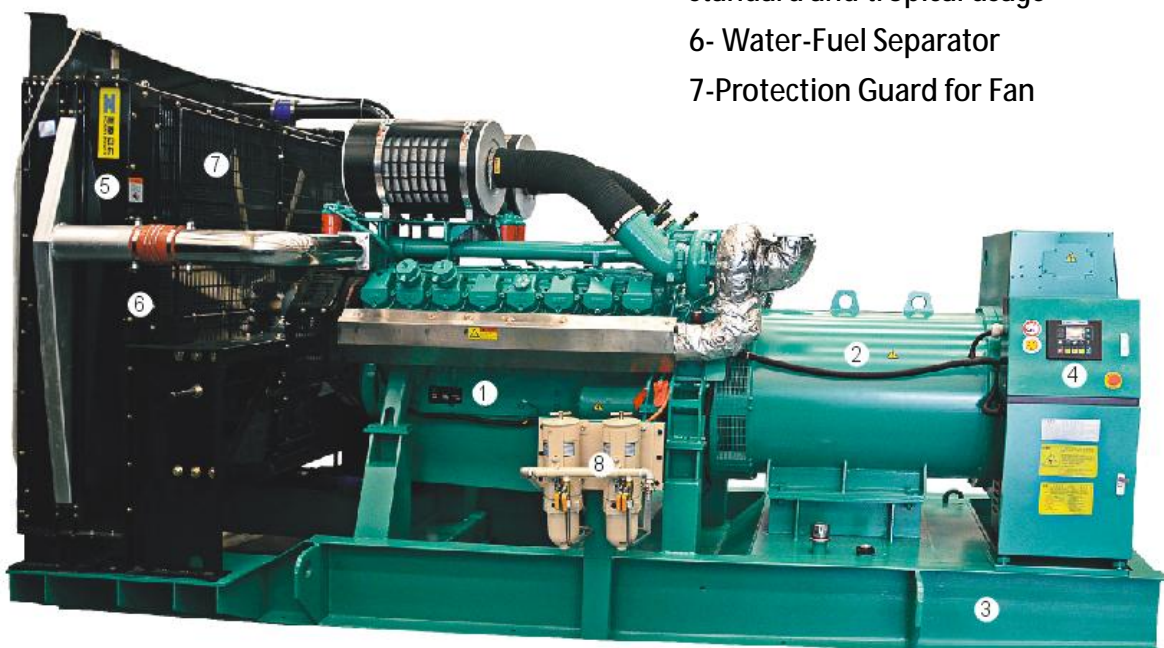
- Engine and alternator shall be mounted on a same frame steel skid.
- Built-in damper for anti-vibration.
- Small size, low weight, easy to operating, installation and maintenance.
- World most famous brand diesel engine, Googol based on USA
- World famous brand AC alternator
- Advanced and reliable controller: Auto start, AMF & Remote control by PC with RS232/485
- Full range protect function and alarm shutdown feature.
- Comply with ISO8528 national standard and ISO9001 quality standard.

Standard Accessories:

- Exhaust Silencer
- Flexible Pipe
- Start Battery & Cables
- MCCB Breaker
- Operation Manual
- ACB is optional for over 1600A

Complete Generator Set:

- 1- Diesel Engine
- 2- Generator
- 3- Heavy duty base skid
- 4- Advanced Control system suitable for various conditions by Key start, Auto start, AMF, Sync module.
- 5-Cooling system with radiator, remote, standard and tropical usage
- 6- Water-Fuel Separator
- 7-Protection Guard for Fan



CONTROL SYSTEM

Standard Controller-AMF



- LCD Display Measure**
- Mains Volts L1-N, L2-N, L3-N
 - Mains Volts L1-L2, L2-L3, L3-L1
 - Mains Frequency Hz
 - Generator Volts L1-N, L2-N, L3-N
 - Generator Volts L1-L2, L2-L3, L3-L1
 - Generator Amps L1, L2, L3
 - Generator Frequency Hz
 - Generator KVA Total
 - Generator KW Total
 - Power Factor PF
 - Engine Speed RPM
 - Engine Oil Pressure
 - Engine Temperature
 - Plant Battery Volts
 - Engine Running Hours

Operation Mode

LCD display for measuring parameter, Operating keys and running status LED indicate. The module have STOP/RESET, MAN, AUTO, TEST operating modes.

LED Indicating

- | | |
|------------------|------------------------|
| Charge Fail | Auto Running Mode |
| Fail to Start | Man Running Mode |
| Low Oil Pressure | Test Running Mode |
| High Temperature | Stop/Fail to Stop |
| Over Speed | Start & Running Output |
| Emergency Stop | Mute |

Multiple Alarm

- | | |
|-------------------------|-----------------------------|
| Charge Failure | Low Oil Pressure Alarm/Stop |
| High Voltage Alarm/Stop | High Temperature Alarm/Stop |
| Low Voltage Alarm/Stop | Over Speed Alarm/Stop |
| Over Current Alarm/Stop | Less Speed Alarm/Stop |
| Fail to Start | Emergency Stop |

Auto Sync & Parallel Controller

The module is equipped with synchronize and load sharing capacities, to include auto sync control, volts, frequency matching with built in sync scope and closing onto dead bus facility included. Direct and flexible outputs from the module are provided to allow connection to the most commonly used speed governors and auto voltage regulators (AVR).

Advanced multi-set communication port allowing up to 16 units generators to KW and Kvar load share with Dead Bus control. Use CANBUS communication protocol



Operation Modes

- Automatic mains failure/ATS
- Island operation
- Fixed power/base load
- Peak shaving
- Load takeover
- Mains power export
- Multiple gen-set load sharing (128)

Applications

- Control of up to 16 gen-sets
- Control of up to 8 bus tie breakers
- Load-dependent start/stop operation
- Priority selection of gen-sets
- Ground relay control
- Plant division into sections for individual functionality
- Multiple gen-sets, load management
- Multi-master system

Honny Googol Series Diesel Generators



GOOGOL GENERATORS

50Hz, 1500rpm

25kVA-345kVA



Genset Model	Prime Power (kW/kVA)	Standby Power (kW/kVA)	Fuel Consumption (g/kWh)	Diesel Engine Model	Bore x Stroke (mm)	Qua. Of Cylinder	Dimension Size L x W x H (mm)	Weight (kg)	Noise (dBA)
HGM28	20/25	22/27.5	240	Y495D	95 x 105	4L	1700x700x1200	750	102
HGM33	24/30	26/32.5	237	Y4100D	100 x 118	4L	1700x700x1200	750	102
HGM39	28/35	30.8/38.5	235	Y4102D	101 x 118	4L	1800x700x120	800	102
HGM55	40/50	44/55	225	Y4102ZLD	102 x 118	4L	1800x700x1200	800	102
HGM63	45/56	50/62.5	220	Y4105ZLD	105 x 118	4L	2000x700x1200	850	102
HGM90	64/80	72/90	218	CT400G1	105 x 125	6L	2100x850x1350	950	102
HGM110	80/100	88/110	212	CTA400G1	105 x 125	6L	2200x850x1350	1150	102
HGM125	90/112.5	100/125	212	CTA400G1	105 x 125	6L	2300x850x1350	1200	102
HGM143	104/130	114/142.5	212	CTA400G3	105 x 130	6L	2300x850x1350	1250	102
HGM155	112/140	124/155	210	CTA400G5	105 x 130	6L	2400x1000x1400	1350	102
HGM206	150/187.5	165/206	208	D590G1	126 x 130	6L	2900x1000x1650	2400	102
HGM278	200/250	222/277.5	203	DTA590G1	126 x 130	6L	2950x1100x1650	2500	102
HGM345	250/312.5	276/345	203	DTA700G1	126 x 155	6L	3000x1150x1650	2600	102

60Hz, 1800rpm, 30kVA-385VA

Genset Model	Prime Power (kW/kVA)	Standby Power (kW/kVA)	Fuel Consumption (g/kWh)	Diesel Engine Model	Bore x Stroke (mm)	Qua. Of Cylinder	Dimension Size L x W x H (mm)	Weight (kg)	Noise (dBA)
HGM33	24/30	26.4/33	240	Y495D	95 x 105	4L	1700x700x1200	750	102
HGM39	28/35	30.8/38.5	237	Y4100D	100 x 118	4L	1700x700x1200	750	102
HGM41	30/37.5	33/41	235	Y4102D	101 x 118	4L	1800x700x120	800	102
HGM63	46/57.5	50/62.5	225	Y4102ZLD	102 x 118	4L	1800x700x1200	800	102
HGM75	56/70	60/75	220	Y4105ZLD	105 x 118	4L	2000x700x1200	850	102
HGM100	70/87.5	80/100	218	CT400G2	105 x 125	6L	2100x850x1350	950	102
HGM125	90/112.5	100/125	212	CTA400G2	105 x 125	6L	2200x850x1350	1150	102
HGM138	100/125	110/137.5	212	CTA400G2	105 x 125	6L	2300x850x1350	1200	102
HGM165	120/150	132/165	212	CTA400G4	105 x 125	6L	2300x850x1350	1250	102
HGM180	132/165	144/180	210	CTA400G6	105 x 130	6L	2400x1000x1400	1350	102
HGM220	160/200	176/220	208	D590G2	126 x 130	6L	2900x1000x1650	2400	102
HGM303	220/242	242/303	203	DTA590G2	126 x 130	6L	2950x1100x1650	2500	102
HGM385	280/350	308/385	203	DTA700G2	126 x 155	6L	3000x1150x1650	2600	102

Honny Googol Series Diesel Generators



GOOGOL GENERATORS

50Hz, 1500rpm

325kVA-3300kVA



Genset Model	Prime Power (kW/kVA)	Standby Power (kW/kVA)	Fuel Consumption (l/h)	Diesel Engine Model	Bore x Stroke (mm)	Qua. Of Cylinder	Dimension Size L x W x H (mm)	Weight (kg)	Noise (dBA)
HGM358	260/325	286/357.5	72	PTA780-G1	128 x 166	6L	3000x1230x1540	2550	102
HGM390	280/350	312/390	77	PTA780-G3	128 x 166	6L	3000x1230x1540	2600	102
HGM413	300/375	330/412.5	82	PTA780-G5	128 x 166	6L	3000x1230x1540	2700	102
HGM450	320/400	360/450	88	PTAA780-G1	128 x 166	6L	3200x1230x1540	2750	102
HGM500	360/450	400/500	97	PTAA780-G3	128 x 166	6L	3200x1230x1540	2750	102
HGM550	400/500	440/550	107	PTAA780-G5	128 x 166	6L	3500x1350x1540	2950	102
HGM552	400/500	442/552.5	113	PTAA890-G1	128 x 142	8V	3000x1250x2000	3000	102
HGM625	450/562.5	500/625	130	PTAA1120-G1	128 x 142	10V	3200x1250x2000	3300	102
HGM688	500/625	550/687.5	143	PTAA1120-G3	128 x 142	10V	3200x1250x2000	3400	102
HGM775	560/700	620/775	156	PTAA1340-G3	128 x 142	12V	3500x1250x2000	3900	102
HGM825	600/750	660/825	167	PTAA1340-G5	128 x 142	12V	3500x1250x2000	4150	102
HGM880	640/800	704/880	173	PTAA1780-G3	128 x 142	16V	4200x1780x2100	5500	108
HGM1000	720/900	800/1000	190	PTAA1780-G5	128 x 142	16V	4200x1780x2100	5800	102
HGM1100	800/1000	880/1100	205	PTAA1780-G7	128 x 142	16V	4200x1780x2100	5800	102
HGM1002	720/900	802/1002	183	QTA2160G1C	170 x 195	8V	4400x1900x2300	7500	108
HGM1110	800/1000	888/1110	205	QTA2160-G1	170 x 195	8V	4400x1900x2300	7600	108
HGM1250	900/1125	1000/1250	224	QTA2160-G5	170 x 195	8V	4400x1900x2300	8200	108
HGM1375	1000/1250	1100/1375	249	QTA2160-G7	170 x 195	8V	4600x1920x2580	8500	108
HGM1400	1000/1250	1120/1400	250	QTA3240-G1	170 x 195	12V	5100x2190x2600	10300	108
HGM1675	1200/1500	1340/1675	299	QTA3240-G5	170 x 195	12V	5100x2190x2600	10900	108
HGM1875	1350/1688	1500/1875	335	QTA3240-G7	170 x 195	12V	5400x2190x2700	11050	108
HGM2063	1500/1875	1650/2063	354	QTA3240-G9	170 x 195	12V	5400x2190x2700	11600	108
HGM2200	1600/2000	1760/2200	379	QTA4320-G3	170 x 195	16V	6000x2600x2800	15500	108
HGM2500	1800/2250	2000/2500	424	QTA4320-G5	170 x 195	16V	6000x2600x2800	15800	108
HGM2750	2000/2500	2200/2750	490	QTA4320-G7	170 x 195	16V	6200x2600x3200	16500	108
HGM2752	2000/2500	2202/2752	492	QTA5400-G1	170 x 195	20V	6800x2600x3500	18500	108
HGM3025	2200/2750	2420/3025	523	QTA5400-G3	170 x 195	20V	6800x2600x3500	19000	108
HGM3300	2400/3000	2640/3300	570	QTA5400-G5	170 x 195	20V	7000x2600x3700	19500	108

NOTE: 1. Rating Frequency 50Hz, 1500RPM, P.F. 0.8, Voltage 380/220V, 400/230V, 415/240V.
 2. Environment Condition: 1000 meter altitude, 40° C temperature.
 3. All above parameters are only for reference. If any change, no notify separately.

Honny Googol Series Diesel Generators



GOOGOL GENERATORS

50Hz, 1500rpm

344kVA-2750kVA

Genset Model	Prime Power (kW/kVA)	Standby Power (kW/kVA)	Fuel Consumption (l/h)	Diesel Engine Model	Bore x Stroke (mm)	Qua. Of Cylinder	Dimension Size L x W x H (mm)	Weight (kg)	Noise (dBA)
HGM388/6	275/344	300/375	80	PTA780-G2	128 x 166	6L	3000x1230x1540	2350	102
HGM413/6	300/375	330/412.5	86	PTA780-G4	128 x 166	6L	3000x1230x1540	2400	102
HGM450/6	320/400	360/450	92	PTA780-G6	128 x 166	6L	3000x1230x1540	2500	102
HGM500/6	360/450	400/500	102	PTAA780-G2	128 x 166	6L	3200x1230x1540	2750	102
HGM550/6	400/500	440/550	112	PTAA780-G4	128 x 166	6L	3200x1230x1540	2750	102
HGM625/6	450/562.5	500/625	130	PTAA890-G2	128 x 142	8V	3000x1250x2000	3000	102
HGM688/6	500/625	550/687.5	145	PTAA1120-G2	128 x 142	10V	3200x1250x2000	3300	102
HGM825/6	600/750	660/825	171	PTAA1340-G2	128 x 142	12V	3300x1250x2000	3500	102
HGM900/6	640/800	720/900	187	PTAA1340-G4	128 x 142	12V	3500x1250x2000	3800	102
HGM1100/6	800/1000	880/1100	221	PTAA1780-G2	128 x 142	16V	4400x1900x2300	5500	105
HGM1250/6	900/1125	1000/1250	244	PTAA1780-G4	128 x 142	16V	4400x1900x2300	5800	105
HGM1650/6	1200/1500	1320/1650	300	QTA3240-G2	170x195	12V	5100x2190x2600	10900	108
HGM1875/6	1360/1700	1500/1875	338	QTA3240-G4	170x195	12V	5100x2190x2600	11050	108
HGM2063/6	1500/1875	1650/2062.5	356	QTA3240-G6	170x195	12V	5400x2190x2600	11600	108
HGM2500/6	1800/2250	2000/2500	425	QTA4320-G2	170x195	16V	6000x2600x2800	15800	108
HGM2750/6	2000/2500	2200/2750	490	QTA4320-G4	170x195	16V	6200x2600x2800	16500	108

NOTE: 1. Rating Frequency 60Hz, 1800RPM, P.F. 0.8, Voltage 220/127V, 440/254V, 480/277V.
 2. Environment Condition: 1000 meter altitude, 40° C temperature.
 3. All above parameters are only for reference. If any change, no notify separately.

Honny Googol Series HV-Diesel Generators



High Voltage Generator

Application:

- . Single Genset Output to Load with ATS for Grid
- . Single Genset Synchronized onto Grid
- . Multi-Genset Paralleling
- . Multi-Genset Paralleling and Synchronized onto Grid
- . Multi-Genset Paralleling by Bus Coupling

Optional for MV/HV Generator

- . VCB Panel with Vacuum Breaker
- . Bus PT Panel
- . Earth Ground Panel
- . Grid Incoming Panel
- . Bus Couple Panel
- . Output Feeder
- . MCC Transformer
- . 110V DC Panel
- . Integrated Relay Protection
- . Differential Protection
- . DCS System



50Hz, 1500rpm, 500kW-2400kW

Genset Model	Prime Power (kW/kVA)	Standby Power (kW/kVA)	Fuel Consumption (l/h)	Diesel Engine Model	Voltage Level	Dimension Size L x W x H (mm)	Weight (kg)
HGM688HV11	500/625	550/687.5	137	PTAA1340G1	6.3/6.610/10.5/11kV	4000x1400x1900	5200
HGM825HV11	600/750	660/825	162	PTAA1780G1	6.3/6.610/10.5/11kV	5000x1780x2100	5800
HGM1000HV11	720/900	800/1000	191	PTAA1780G5	6.3/6.610/10.5/11kV	5000x1780x2100	6500
HGM1100HV11	800/1000	880/1100	205	QTA2160G1	6.3/6.610/10.5/11kV	5200x2190x2400	8800
HGM1250HV11	900/1125	1000/1250	224	QTA2160G5	6.3/6.610/10.5/11kV	5200x2190x2400	9500
HGM1375HV11	1000/1250	1100/1375	249	QTA3240G1	6.3/6.610/10.5/11kV	5800x2190x2600	11000
HGM1650HV11	1200/1500	1320/1650	296	QTA3240G5	6.3/6.610/10.5/11kV	5800x2190x2600	12000
HGM1925HV11	1400/1750	1540/1925	332	QTA3240G7	6.3/6.610/10.5/11kV	6000x2190x2600	12000
HGM2063HV11	1500/1875	1650/2063	371	QTA3240G9	6.3/6.610/10.5/11kV	6000x2190x2600	13500
HGM2200HV11	1600/2000	1760/2200	379	QTA4320G3	6.3/6.610/10.5/11kV	6500x2600x2950	15500
HGM2500HV11	1800/2250	2000/2500	421	QTA4320G5	6.3/6.610/10.5/11kV	7000x2600x3150	16500
HGM2750HV11	2000/2500	2200/2750	495	QTA4320G7	6.3/6.610/10.5/11kV	7000x2600x3150	19500
HGM2752HV11	2000/2500	2200/2750	496	QTA5400G1	6.3/6.610/10.5/11kV	8300x2600x3550	19500
HGM3025HV11	2200/2750	2420/3025	547	QTA5400G3	6.3/6.610/10.5/11kV	8300x2600x3550	20500
HGM3300HV11	2400/3000	2640/3300	570	QTA5400G5	6.3/6.610/10.5/11kV	8300x2600x3550	22500

- NOTE: 1. Voltage can be designed by customer for 3kV, 6kV, 10kV system and adjustable.
 2. Rating Frequency 50Hz, 1500RPM, P.F. 0.8.
 3. Environment Condition: 1000 meter altitude, 40° C temperature.
 4. All above parameters are only for reference. If any change, no notify separately.

Honny Googol Series Middle-Speed Generators



GOOGOL GENERATORS

60Hz, 1200rpm, 1250kVA-2500kVA

Genset Model		HGM1375SG/6	HGM1600SG/6	HGM2063SG/6	HGM2500SG/6
Genset Standby Output	kW/kVA	1100/1375	1280/1600	1650/2062.5	2000/2500
Genset Prime Output	kW/kVA	1000/1250	1120/1400	1500/1875	1800/2250
Rating Power Factor		0.8	0.8	0.8	0.8
Rating Frequency/Speed	Hz/rpm	60/1200	60/1200	60/1200	60/1200
Engine Rating based on ISO3046					
Engine Model		QTA3240-SG2	QTA3240-SG4	QTA4320-SG2	QTA5400-SG2
Speed	rpm	1200	1200	1200	1200
Standby Output (LTP)	kW	1221	1421	1818	2220
Prime Output (PRP)	kW	1110	1266	1665	2000
Engine Continuous Power (COP)	kW	1000	1116	1332	1668
Type		Turbocharger, air-water aftercooler, Direct Injection			
Injection Type					
Configuration		Vee-12	Vee-12	Vee-16	Vee-20
Displacement	l	53.1	53.1	70.8	88.5
Bore x Stroke	mm	170 x 195	170 x 195	170 x 195	170 x 195
Compression Ratio		13.5:1	13.5:1	13.5:1	13.5:1
Piston Speed	m/s	7.8	7.8	7.8	7.8
Number of Flywheel Teeth		218	218	218	218
Flywheel House Size		SAE00-21	SAE00-21	SAE00-21	SAE00-21
Lube Oil Specification		API-CF4	API-CF4	API-CF4	API-CF4
Oil Capacity	l	180	180	240	300
Max. Permissible Oil Temperature	°C	110	110	110	110
Oil Pressure Shutdown	kPa	200	200	200	200
Coolant Capacity for Engine	l	100	100	140	200
Max. Coolant Shutdown Temperature	°C	98	98	98	98
Radiator Cooling Flow	m³/min	2544	2880	2750	3000
Flow of Cylinder liner Coolant pump	m³/h	38	38	64	64
Flow of aftercooler Coolant pump	m³/h	36	36	60	60
Fuel Consumption at 75% of PRP	l/h	186	212	279	334
Fuel Consumption at 100% of PRP	l/h	245	279	368	441
Lowest Fuel Consumption Ratio	g/kW.hr	185	184	185	184
Combustion Air Consumption	m³/min	111	127	182	222
Max. Intake Restriction	KPa	2	2	2	2
Exhaust Temperature (After Turbo)	°C	450	470	485	460
Max. Exhaust Back Pressure	KPa	2	2	2	2
Exhaust Gas Flow	m³/min	278	317	455	555
Exhaust Flange Diameter	mm	2*DN250	2*DN250	2*DN250	2*DN250
Charging Alternator Capacity	A	55	55	55	55
DC System Voltage	V	24	24	24	24
Starting Motor Capacity	kW	13	13	2*13	2*13
Minimum Battery Capacity (Ref. Varta)	Ah	4*120	4*120	6*120	6*120
Genset Size-Open Type	mm	5700x2220x2800	5700x2220x2800	6200x2220x2900	8000x2600x3500
Remote Radiator Size	mm	4500x2200x2560	4500x2200x2560	5000x2200x2560	5600x2200x2560
Genset Weight	kg	12500	13000	14000	19000

NOTE: 1. Rating Frequency 60Hz, 1200RPM, P.F. 0.8, Voltage, 440/254V, 480/277V.
2. Environment Condition: 1000 meter altitude, 40° C temperature.
3. Suitable for continuous operation on power plant



Natural Gas & Biogas



Gas Generators 20-200kW, 50Hz

Genset Model		HGGM25	HGGM63	HGGM100	HGGM150	HGGM200
Engine Model		R240G1	R360G1	R590G1	RTA590G1	RTA700G1
Rating Speed	rpm	1500	1500	1500	1500	1500
Frequency	Hz	50	50	50	50	50
Generator Output (PRP)	kW	20	50	80	120	160
Power Factor		0.8	0.8	0.8	0.8	0.8
Gas Engine Parameter						
Engine Output (PRP)	kW	27	65	96	150	200
Air Ratio	λ	1.45	1.50	1.60	1.60	1.60
Configuration		4 In line	6 In line	6 In line	6 In line	6 In line
Displacement	l	3.9	5.9	9.7	9.7	11.6
Bore	mm	102	102	126	126	126
Stroke	mm	120	120	130	130	155
Compression Ratio		12:1	12:1	11.5:1	11.5:1	11.5:1
Piston Speed	m/s	6	6	6.5	6.5	7.8
Number of Flywheel Teeth		159	159	139	139	139
Flywheel House Size		SAE3-11.5	SAE3-11.5	SAE1-14	SAE1-14	SAE1-14
System Parameter						
Oil Capacity	l	10.9	14	18	18	20
Max. Allowed Oil Temperature	°C	120	120	110	110	110
Oil Pressure Warning	kPa	160	160	200	200	200
Oil Pressure Shutdown	kPa	80	80	160	160	160
Coolant Capacity for Engine	l	7.2	9.9	40	40	50
Max. Coolant Temperature	°C	103	103	100	100	100
Flow of Coolant pump (JW)	m ³ /h	7.9	10	14	14	20
Air Cooling Flow	m ³ /min	120	360	400	420	440
Max. Exhaust Temperature	°C	550	550	550	550	550
Exhaust Flow	kg/h	350	500	600	660	720
Exhaust Flange Diameter	mm	80	80	100	100	125
Charging Alternator Capacity	A	40	40	35	35	35
Starting Voltage	V	24	24	24	24	24
Thermal Balance						
Electrical Efficiency	%	30	31.5	32.0	32.5	32.5
Mechanical Efficiency	%	34.5	36.5	35.1	35.4	35.3
Thermal Efficiency	%	38.0	38.0	39.0	39.0	40.0
Total Efficiency	%	68.0	69.5	71.0	71.5	72.5
Gas Consumption	MJ/kWh	12.00	11.43	11.25	11.08	11.08
Generator Parameter-Marathon						
Generator Model		GM-32-4	MP-58-4	MP-104-4	MP-140-4A	MP-180-4A
Generator Prime Output	kW	32	58	104	140	160
Generator Efficiency @ 0.8PF		87.0%	86.4%	91.1%	91.7%	92.1%
Genset Dimension						
Genset Size- L * W *H	mm	2000*1000*1200	2400*1100*1500	2800*1100*1500	2800*1100*1500	3100*1200*1650
Genset Weight	kg	800	2000	2400	2500	2600

Standard Supply Scope:

- . Googol Gas engine with alternator, 400V, 1500rpm, 50Hz
- . Ignition System: Ignition controller, Ignition coil, Spark plug, High pressure wires, Sensor
- . Gas Train: Ball Valve, Gas filter, Gas Regulator, Gas Control Valve
- . Air/Gas Mix System: Air/gas mixer, Controller, Pressure sensor, NOx sensor
- . Governor System: Governor controller, Throttle, Sensor
- . NOx Emission @ 100% load $\leq 500\text{mg}/\text{Nm}^3$



Natural Gas & Biogas



Gas Generators 204-500kW, 50Hz

Genset Model		HGGM255	HGGM315	HGGM375	HGGM400	HGGM500	HGGM565	HGGM625
Engine Model		RTA780G1	RTA780G3	RTA890G3	RTA1120G1	RTA1340G1	RTA1340G3	RTA1780G1
Rating Speed	rpm	1500	1500	1500	1500	1500	1500	1500
Frequency	Hz	50	50	50	50	50	50	50
Generator Output (COP)	kW	204	252	300	320	400	452	500
Power Factor		0.8	0.8	0.8	0.8	0.8	0.8	0.8
Gas Engine Parameter								
Engine Output (COP)	kW	228	280	320	363	446	478	561
Configuration		6 In line	6 In line	8 Vee	10 Vee	12 Vee	12 Vee	16 Vee
Displacement	l	12.8	12.8	14.6	18.3	21.9	21.9	29.2
Bore	mm	128	128	128	128	128	128	128
Stroke	mm	166	166	142	142	142	142	142
Compression Ratio		11:1	11:1	12:1	12:1	12:1	12:1	12:1
Piston Speed	m/s	8.3	8.3	7.1	7.1	7.1	7.1	7.1
Number of Flywheel Teeth		160	160	160	160	160	160	160
Flywheel House Size		SAE1-14	SAE1-14	SAE1-14	SAE1-14	SAE1-14	SAE1-14	SAE0-18
System Parameter								
Oil Capacity	l	28	28	36	36	48	48	70
Max. Oil Temperature	°C	110	110	110	110	110	110	110
Oil Pressure Shutdown	kPa	160	160	160	160	160	160	160
Engine Coolant Capacity	l	18	18	36	42	44	44	60
Max. Coolant Shutdown Temp.	°C	95	95	95	95	95	95	95
Max. Intercooler Outlet Temp.	°C	50	50	50	50	50	50	50
Flow of Coolant pump (JW)	m³/h	20	20	20	26	26	26	26
Flow of Coolant pump (LT)	m³/h	14	14	20	14	14	14	14
Max. Exhaust Temperature	°C	500	500	500	500	500	500	500
Exhaust Flow	kg/h	776	776	1150	1232	1520	1520	1520
Exhaust Flange Diameter	mm	1*125	1*125	2*125	2*125	2*125	2*125	2*125
Alternator Capacity	A	35	35	35	35	35	35	35
Starting Voltage	V	24	24	24	24	24	24	24
Thermal Balance								
JW Coolant Heat	±8% kW	122	155	142	184	220	240	280
Exhaust Heat up to 120°C	±8% kW	142	160	161	208	265	290	310
Electrical Efficiency	%	34.5	35	35.0	34.0	35.5	36.0	36.0
Mechanical Efficiency	%	36.9	37.4	37.5	35.7	37.4	37.9	37.9
Thermal Efficiency	%	48.6	44.0	47.2	47.5	45.7	46.0	46.0
Total Efficiency	%	83.1	79.0	82.2	81.5	81.2	82.0	82.0
Gas Consumption	MJ/kWh	10.43	10.29	10.29	10.59	10.14	10.00	10.00
Generator Parameter								
Generator Model		GP294-4P	GP350-4P	GP400-4P	GP500-4P	GP563-4P	GP625-4P	GP688-4P
Generator Prime Output	kW	235	280	320	400	450	500	550
Generator Efficiency		93.5%	93.5%	93.4%	95.2%	95.0%	95.0%	95.0%
Genset Dimension								
Genset Size- L * W * H	mm	3100*1300*1700	3600*1200*1700	3300*1500*2000	3500*1500*2000	3600*1500*2000	3600*1500*2000	4800*2000*2300
Genset Weight	kg	2500	3000	3500	3900	4300	4500	5500

Standard Supply Scope:

- . Googol Gas engine with alternator, 400V, 1500rpm, 50Hz
- . Ignition System: Ignition controller, Ignition coil, Spark plug, High pressure wires, Sensor
- . Gas Train: Ball Valve, Gas filter, Gas Regulator, Gas Control Valve
- . Air/Gas Mix System: Air/gas mixer, Controller, Pressure sensor, NOx sensor
- . Governor System: Governor controller, Throttle, Sensor
- . NOx Emission @ 100% load ≤500mg/Nm3



Natural Gas & Biogas



Gas Generators 600-1452kW, 50Hz

Genset Model		HGGM750	HGGM900	HGGM1350	HGGM1550	HGGM1815
Engine Model		JTA2160G1	JTA2160G3	JTA3240G3	JTA4320G1	JTA4320G3
Rating Speed	rpm	1500	1500	1500	1500	1500
Frequency	Hz	50	50	50	50	50
Generator Output (COP)	kW	600	720	1080	1240	1452
Power Factor		0.8	0.8	0.8	0.8	0.8
Gas Engine Parameter						
Engine Output (COP)	kW	648	771	1129	1331	1506
Air Ratio	λ	1.65	1.7	1.7	1.65	1.7
Configuration		8 Vee	8 Vee	12 Vee	16 Vee	16 Vee
Displacement	l	35.4	35.4	53.1	70.8	70.8
Bore	mm	170	170	170	170	170
Stroke	mm	195	195	195	195	195
Compression Ratio		12:1	12:1	12:1	12:1	12:1
Piston Speed	m/s	9.75	9.75	9.75	9.75	9.75
Number of Flywheel Teeth		218	218	218	218	218
Flywheel House Size		SAE00-18	SAE00-18	SAE00-21	SAE00-21	SAE00-21
System Parameter						
Oil Capacity	l	160	160	180	240	240
Max. Allowed Oil Temperature	°C	110	110	110	110	110
Oil Pressure Shutdown	kPa	200	200	200	200	200
Coolant Capacity for Engine	l	70	70	100	140	140
Max. Coolant Temperature	°C	100	100	100	100	100
Max. Intercooler Outlet Temperature	°C	40.5	40.5	40.5	40.5	40.5
Flow of Coolant pump (JW)	m³/h	48	48	48	80	80
Flow of Coolant pump (LT)	m³/h	45	45	45	75	75
Max. Exhaust Temperature	°C	500	500	500	500	500
Exhaust Flow	kg/h	3264	3896	5523	6891	7887
Exhaust Flange Diameter	mm	1*250	1*250	1*250	1*250	1*250
Charging Alternator Capacity	A	55	55	55	55	55
Starting Voltage	V	24	24	24	24	24
Thermal Balance						
JW Coolant Heat	±8% kW	329	392	586	675	776
CAC Intercooler Heat	±8% kW	53	63	94	109	126
Exhaust Heat up to 120°C	±8% kW	318	378	564	668	768
Electrical Efficiency	%	38	38.5	39.5	38.5	39.5
Mechanical Efficiency	%	40.2	40.4	41.2	40.2	41.1
Thermal Efficiency	%	44.3	44.6	44.4	44.5	44.9
Total Efficiency	%	82.3	83.1	83.9	83.0	84.4
Gas Consumption	MJ/kWh	9.47	9.35	9.11	9.35	9.11
Generator Parameter						
Generator Model		GP800-4P	GP1025-4P	GP1563-4P	GP1688-4P	GP1900-4P
Generator Prime Output	kW	640	820	1250	1350	1520
Generator Efficiency @ 0.8PF		94.5%	95.2%	95.8%	95.7%	96.0%
Genset Dimension						
Genset Size- L * W * H	mm	3800*1600*2400	3800*1600*2400	4200*1600*2400	4600*1600*2400	4600*1600*2400
Vertical Radiator- L * W * H	mm	3500*2200*2400	3500*2200*2400	5500*2200*2400	5500*2200*2400	5500*2200*2400
Genset Weight	kg	7350	7650	10500	13500	13500

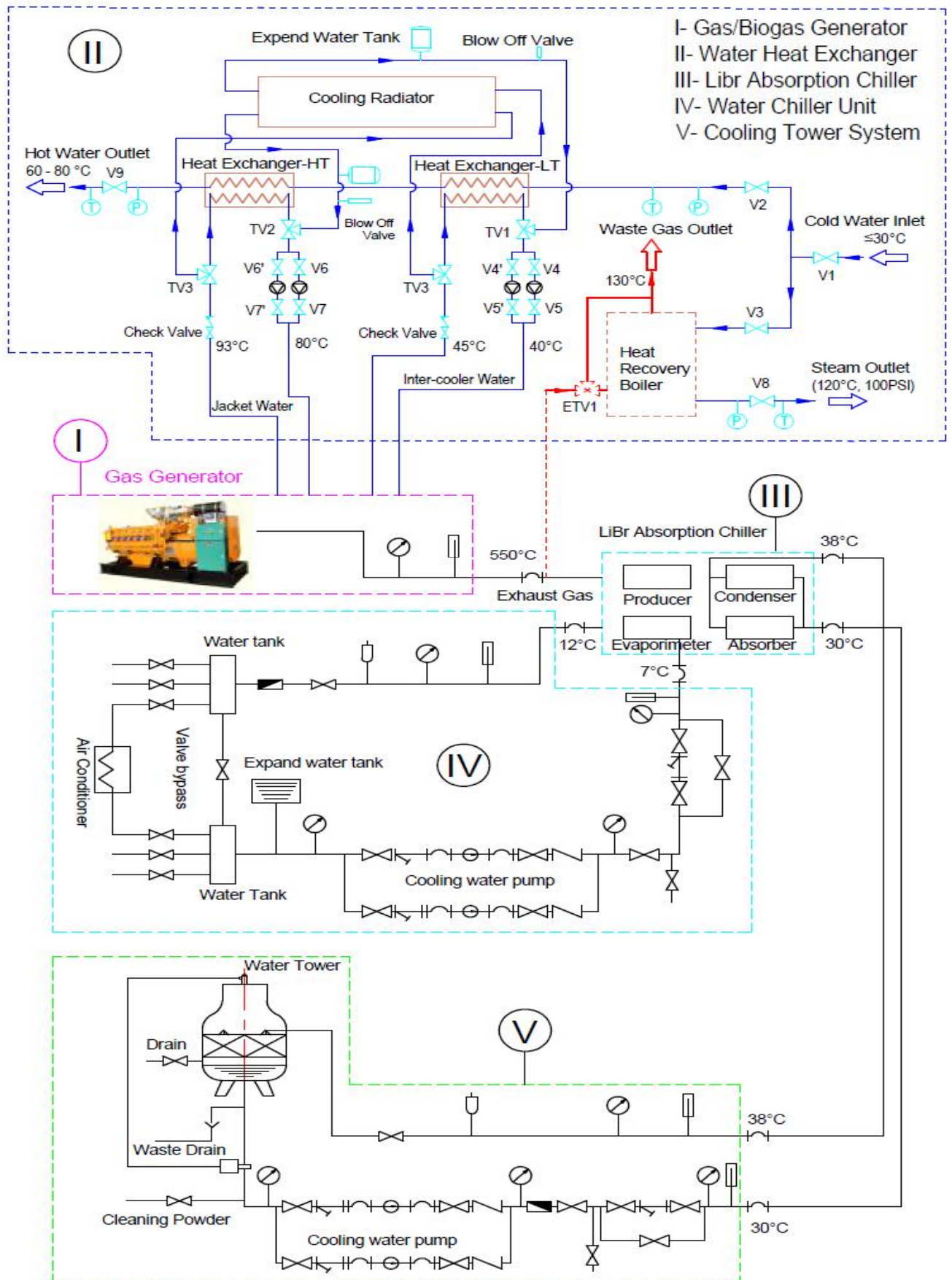
Standard Supply Scope:

- . Googol Gas engine with alternator, 400V, 1500rpm, 50Hz
- . Ignition System: Ignition controller, Ignition coil, Spark plug, High pressure wires, Sensor
- . Gas Train: Ball Valve, Gas filter, Gas Regulator, Gas Control Valve
- . Air/Gas Mix System: Air/gas mixer, Controller, Pressure sensor, NOx sensor
- . Governor System: Governor controller, Throttle, Sensor
- . NOx Emission @ 100% load ≤500mg/Nm³

Gas Generators CHP & CCHP



Honny Googol Series Gas Generator 20-1500kW





Dual Fuel Generator 800-2000kW, 50Hz

Genset Model		HDGM1100	HDGM1375	HDGM1650	HDGM2200	HDGM2750
Rating Speed	rpm	1500	1500	1500	1500	1500
Frequency	Hz	50	50	50	50	50
Generator Continuous Output (COP)	kW	720	900	1100	1500	1800
Generator Prime Output (PRP)	kW	800	1000	1200	1600	2000
Generator Standby Output (LTP)	kW	880	1100	1320	1760	2200
Power Factor		0.8	0.8	0.8	0.8	0.8
Gas Engine Parameter						
Engine Model		QTA2160BG1	QTA3240BG1	QTA3240BG3	QTA4320BG1	QTA5400BG1
Engine Continuous Output (COP)	kW	800	964	1178	1637	1865
Engine Prime Output (PRP)	kW	877	1088	1309	1740	2166
Engine Standby Output (LTP)	kW	961	1193	1435	1908	2374
Configuration		8 Vee	12 Vee	12 Vee	16 Vee	20 Vee
Displacement	l	35.4	53.1	53.1	70.8	88.5
Bore	mm	170	170	170	170	170
Stroke	mm	195	195	195	195	195
Compression Ratio		13.5:1	13.5:1	13.5:1	13.5:1	13.5:1
Piston Speed	m/s	9.75	9.75	9.75	9.75	9.75
Number of Flywheel Teeth		218	218	218	218	218
Flywheel House Size		SAE00-18	SAE00-21	SAE00-21	SAE00-21	SAE00-21
System Parameter						
Oil Capacity	l	160	180	180	240	300
Max. Allowed Oil Temperature	°C	110	110	110	110	110
Oil Pressure Warning	kPa	300	300	300	300	300
Oil Pressure Shutdown	kPa	200	200	200	200	200
Coolant Capacity for Engine	l	70	100	100	140	200
Max. Coolant Warning Temperature	°C	93	93	93	93	93
Max. Coolant Shutdown Temperature	°C	97	97	97	97	97
Flow of Coolant pump	m³/h	48/45	48/45	48/45	80/75	80/75
Max. Exhaust Temperature	°C	545	520	575	530	510
Exhaust Flow	m³/min	225	269	323	481	560
Exhaust Flange Diameter	mm	250	2*250	2*250	2*250	2*250
Charging Alternator Capacity	A	55	55	55	55	55
Starting Voltage	V	24	24	24	24	24
Fuel & Gas Consumption						
Fuel Consumption at 75% Load	l/h	46	57	69	91	107
Gas Consumption at 75% Load	m³/h	122	152	184	246	286
Fuel Consumption at 100% Load	l/h	61	76	92	122	143
Gas Consumption at 100% Load	m³/h	163	203	245	328	382
Genset Dimension						
Length x Width x Height	mm	4600x2190x2300	5200x2190x2580	5200x2190x2580	5600x2190x2800	6500x2800x3350
Genset Weight	kg	7650	10500	11500	13500	16500

Standard Supply Scope:

- . Googol Gas engine with alternator, 400V, 1500rpm, 50Hz
- . Governor System: Governor controller, Throttle, Sensor
- . Max. Gas Proportion: 70%

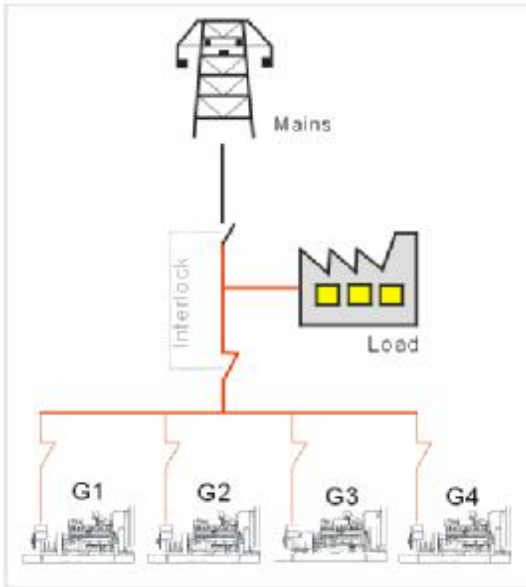
- . Air/Gas Mix System: Air/gas mixer, Controller, Pressure sensor
- . Gas Train: Ball Valve, Gas filter, Gas Regulator, Gas Control Valve

Power & Transformer Substation

Power & Transformer Station will include city supply incoming panel, Step-up transformer, LV distribution, Emergency generator. The generator will be silent type for outdoor using, and all city incoming panel, transformer, and LV distribution system will be installed into one container with air conditioner and heater, fire protection, Light and acoustic alarming



Parallel & ATS, Distribution System



Parallel System:

Powerful function, full electrical protecting system ensuring the safety for the generator sets.

Auto sharing the load system

Auto synchronization system

Perfect electric unit, meter, indicator, and fault alarm system

Perfect operating control system

Communication system



ATS- Auto Transfer Switch

For emergency power usage in building, Auto transfer switch (ATS) is essential. ATS can automatic transfer load from Mains power supplying to Emergency power

In normal, when the Main power supplying failure or voltage drop below 80% of normal voltage, ATS will auto start Emergency generator set after a preset time of 0-10 sec (adjustable according to the users). Once generator reach at rated speed, the ATS will transfer the load to emergency generator sets Automatically without operator operation.



Silent & Container Type, Mobile, Pump Driving, Marine Application



Silent Gas Generator



Silent Diesel Generator



Mobile Generator



Container Generator



Marine Generator



Water & Oil Pumping Set