



<http://www.ycgenset.com>

## GENSET MODEL: JM640G TECHNICAL DATE SHEET



ISO14001:2004



ISO9001:2000

**YICHEONG POWER GENERATOR**

## STANDARD SPECIFICATION

### Genset Main Technical Data

#### 3P, 50Hz@1500RPM, 400/230V

(380/220V and 415/240V are for optional)

Genset Model: JM640G

Rated power:

640 KW          800 KVA

Standby power:

704 KW          880 KVA

Engine Model: 12V2000G65

Alternator: LSA49.1 M75

Electrical type: Electrical

Fuel capacity (L) 900 L (6h)

#### General Features:

- Composed of Cummins strong powerful diesel engine and Stanford or Leroy Somer alternator.
- 24V DC start motor and storage battery.
- Brushless, Self-excited, IP23, H insulation.
- Engine cooling system: water-cooled.
- Key start panel control system as standard, digital auto-start panel is optional.
- Canopy: Soundproof canopy
- Optional open type or super silent type, ATS and synchronizing/paralleling system.
- All generating sets are gone through rigorous testing before being released to the market place, including 50%, 75%, 100%, 110% load and all protection function (over-speed stop, high water temperature, low oil pressure, battery charging failure, emergency stop).

#### Benefits:

- ※ Reliable service working, powerful generator with attractive appearance.
- ※ Low running cost (diesel fuel & oil, maintenance and operation)
- ※ Easy for commissioning, operation and maintenance.

#### ASSEMBLY

- ※ The engine and alternator are close coupled by means of an SAE flange. A full torsional analysis has been carried out to guarantee no harmful vibration will occur. Engine with radiator and alternator are on common spraying powder mounting.
- ※ Anti-vibration pads are affixed between engine alternator feet and the base frame. Thus ensuring complete vibration isolation of the rotating assemblies and enabling the machine to be placed on an uneven surface without any detrimental effects.
- ※ For durability and corrosion resistance, all iron and steel surfaces of canopy fabrications have been treated for coating by grit blast cleaning. Then covered by special three layers painting which provides an excellent corrosion resistant surface.

#### CONTROL SYSTEM AND PROTECTION

- ※ Controllers are available for all applications. It contains Deep Sea, ComAp or other famous brands. According to their different functions, the control systems can be specified into key start controller model, automatic start control model and PCRC three remote control systems. See controller features inside.

#### WARRANTY

- ※ YICHEONG Company provides one-source responsibility for the generator set and accessories. Each YICHEONG generating set has been got through 2 hours Load test for running 0%, 25%, 50%, 75%, 100% and 110% load, all protective devices and control function are simulated and checked before despatch.
- ※ Engine and Alternator are guaranteed for a period of 12 months from the date of commissioning or 18 months from shipping, whichever occurs first.
- ※ Convenience for operation and maintenance, backed by MTU global service network.

#### CRITERION

- ※ ISO8528, GB/T2820, ISO3046, BS4999, BS5514, BS5000
- ※ EN12601: 2001, EN60034-22: 1997, EN60204-1: 2006
- ※ ISO9001: 2000, ISO14001: 2004, SGS, TLC

## ENGINE SPECIFICATION

Engine model **12V2000G65**



The history of MTU can be traced back to the 18th century of mechanical times. Following its good traditions, MTU comes out top among manufacturers of engines in the world owing to its unexampled advanced technology. The high quality of MTU engines is identical with the concept of reliably, advanced technology, high-class performance, environmental consciousness and long service life which is put forward by Yicheong.

### ENGINE BASIC DATA

NO. of Syylinder & type	12 Vee type
Air intake way	Turbocharged
Bore*Stroke(mm)	130*150
Displacement (L)	23.88
Displacement per cylinder(L)	1.99
Compression ratio	16.0 : 1
Rated speed(RPM)	1500
Rated power(KW)	695 (868KVA)
Gross power(KW)	765 (956KVA)
Electronic Governor type	ADEC & SAM
Piston speed(m/s)	7.5
Mean effective pressure(kPa)	23.3
Intake air depression(mbar)	15 / 50
Exhaust back pressure	30 / 85

### FUEL SYSTEM

Injection	PLD
Fuel supply flow(L/h) max	480
Fuel return flow(L/h) max	210

### COMBUSTION AIR/EXHAUST GAS

Air intake flow (m <sup>3</sup> /min)	1014
Burning capacity(m3/min)	54
Max back pressure (kPa)	8.5
Exhaust temperature (°C)	555
Exhaust flow (m3/min)	150
Cooling way	air-air intercooler

### Benefit:

- Top running capacity with unexampled advanced technology.
- Low fuel consumption. PLD with electrical injection system.
- Engines meet all relevant exhaust emission standards.
- High performance, long maintenance intervals & service life.

### ADEC(Advanced Diesel Engine Controller):

- Controlling engine,
- Monitoring operating status,
- Controlling the injection quality and engine speed,
- Indication of faulty operation (Display, SAM, MTU Dialog Unit),
- Communication with other electronic components via CAN, with ESCM system (Engine Site Condition Management).

### LUBRICANTION SYSTEM

Oil pressure @ rated speed (kpa)	620-750
Lubrication system capacity(L)	77
Operating temperature (°C)	88-98

### CONSUMPTION

110% (L/h)	704KW / 880KVA	182
100% (L/h)	640KW / 800KVA	165
75% (L/h)	480KW / 600KVA	124
50% (L/h)	320KW / 400KVA	85
25% (L/h)	160KW / 200KVA	47

Oil consumption(% of fuel consumption per hour)	0.5%
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### COOLING SYSTEM

Coolant temperature (°C)	95
Coolant capacity (L)	164
Coolant flow rate (m <sup>3</sup> /h)	40
Coolant pump, inletpressure(bar)	0.4 / 1.52
Height above engine, max (m)	15.2
Operating pressure (bar)	2.2
Thermostat temperature (°C)	97

### ELECTRIC SYSTEM

Battery	2*12V
Startor motor (V)	24V, 9KW
Start attempt duration, mas.(s)	6
Startor, power requirement at firing speed (A)	800

## ALTERNATOR SPECIFICATION

### Reliable performance

#### Voltage regulation

Voltage regulation maintained with in  $\pm 0.5\%$  as follow:

- Power factor between 0.8-1.0 lagging.
- From no load to full load, any steady load.
- Speed droop variation under 5%.

#### Frequency/Speed undulation

- 0-100% load, Frequency/Speed Droop Ratio  $< 5\%$ .
- 25-100% load, any steady load undulation  $< 0.25\%$ .

#### Effect factor of telecom

- TIF(MAMG1-22) $< 50$ ; THF(BS EN60034)  $< 2\%$

Brand	LEROY SOMER	STAMFORD
Alternator Model	LSA49.1 M75	HCI634G
Frequency and Speed	50Hz/1500rpm	50Hz/1500rpm
Voltage(V)	400/230	400/230
Prime Capacity(KVA)	800	810
Prime Power(KW)	640	648
Power Efficiency(%)	94.4	94.4
Input Power(KW)	678	686
Voltage Regulation	$\pm 0.5\%$	$\pm 0.5\%$
Voltage regulator	AVR	AVR
Rated Power Factor	0.8	0.8
Stator Winding	2/3	2/3
Maximum Overspeed	$2250\text{min}^{-1}$	$2250\text{min}^{-1}$
Sustained Short Circuit	300%(3IN): 10S	2900Amps
Cooling Air( $\text{m}^3/\text{s}$ )	1.1	1.614

Alternators meet the requirement of BSEN 60034 and the relevant section of other international standards such as BS5000, VDE0530, NEMA MG1-32, IEC34, CSA22.2-100, As1359, and other standards & certifications can be considered on request.

The 2/3 pitch design avoids excessive neutral currents. With the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion. Brushless alternator with pilot exciter for excellent load response.

Class H insulation, easy parallelling with mains or other generators, standard 2/3 pitch stator windings avoid excessive neutral currents.

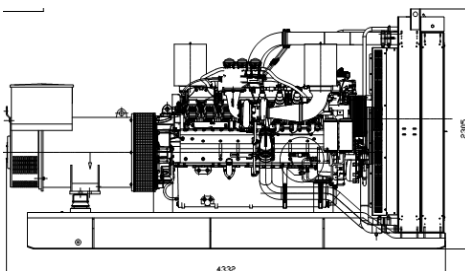
Backed by worldwide service network.

## DIMENSION AND WEIGHT

Open frame type

Size (L\*W\*H, mm) 4200\*1600\*2250

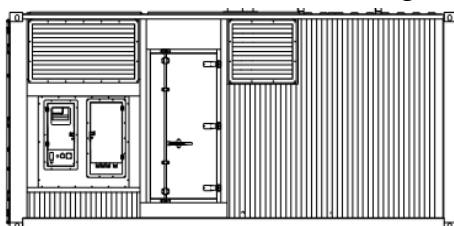
Gross weight: 6900 kgs



Soundproof canopy

Over size (L\*W\*H, mm) 6058\*2438\*2591

Gross weight: 11800 kgs





## CONTROL SYSTEM

### 1.Standard: DSE702K Key Start

Providing the standard functions as follows:

(Also can be made according to the customers' special requirements)

- ※ Start/Stop controller
- ※ Ampere meter
- ※ Voltmeter and selector switch
- ※ Frequency meter/Water temperature gauge/Oil pressure gauge/  
Hour counter/Battery voltage meter
- ※ Emergency stop pushbutton
- ※ Alarm System: Over speed, High Engine Temperature, Low Oil Pressure, Charge Failure.
- ※ Protection System: Over speed, High Engine Temperature, Low Oil Pressure, Emergency Stop. And the other protection function presetting.

### 2.Option:Deep Sea DSE5210 Digital Auto Start

### 3.Option:Deep Sea DES5220 Digital Auto Start (AMF) (Option assembled with the ATS)

DigitalAuto-start Generator controller integrating digital, intelligent and network techniques is used for automatic control system of diesel generator. It can carry out functions including automatic start/stop, data measure and alarming. Optionally assembled with the ATS, it can carry out auto-switching between the outer power and generating set power.(AMF)

#### Functions:

- ※ Automatic Start/Stop
- ※ 3 start attempts failure and Automatic Crank Disconnect
- ※ Parameters display(V/A/Hz/Hour)
- ※ Engine monitoring and protection
- ※ Charge alternator exciting and Charge alternator fail alarm
- ※ Running hour counting
- ※ Settings can be adjustable via key buttons on front panel

#### Shutdown:

- ※ Loss of Speed Signal
- ※ Alternator Under/Over Voltage
- ※ Alternator Under/Over Frequency
- ※ Mains Under/Over Voltage
- ※ Mains Under/Over Frequency
- ※ Under/Over Speed
- ※ Low Oil Pressure
- ※ High Engine Temperature



DSE702K



DSE5210



DSE5220

#### Warning:

- ※ Alternator Under/Over Voltage
- ※ Alternator Under/Over Frequency
- ※ Mains Under/Over Voltage
- ※ Mains Under/Over Frequency
- ※ Under/Over Speed
- ※ Low Oil Pressure Pre-Alarm
- ※ High Engine Temp. Pre-Alarm
- ※ High/Low Battery Voltage
- ※ Over-current
- ※ Periodic maintenance

## Optional Parts:

Engine	Alternator	Generator Set	Fuel System	Canopy
<ul style="list-style-type: none"> <li>● Heater 2KW&amp;4KW (Coolant &amp; Lube Oil)</li> <li>● Battery Charger 3.5A &amp; 7A</li> </ul>	<ul style="list-style-type: none"> <li>● AVR PMG with regulator</li> <li>● Anti-damp and anti-corrosion treatment</li> <li>● Anti-condensation heater</li> </ul>	<ul style="list-style-type: none"> <li>● Tools with the machine</li> </ul>	<ul style="list-style-type: none"> <li>● Low fuel level alarm</li> <li>● Automatic fuel feeding system</li> </ul>	<ul style="list-style-type: none"> <li>● Soundproof (75Db@7m)</li> </ul>
Lubricating System	Exhaust Gas System	Cooling System	Control Panel	Output Voltage
<ul style="list-style-type: none"> <li>● Oil with the machine</li> </ul>	<ul style="list-style-type: none"> <li>● Protection board from hotness</li> <li>● Low frequency silencer</li> </ul>	<ul style="list-style-type: none"> <li>● Front heat protection</li> <li>● 50°C radiator</li> <li>● Coolant(-30°C)</li> </ul>	<ul style="list-style-type: none"> <li>● Remote controller</li> <li>● Auto-paralleling control panel</li> <li>● Auto Transfer /changeover Switch (ATS)</li> </ul>	<ul style="list-style-type: none"> <li>● 440/254V</li> <li>● 416/240V</li> <li>● 220/127V</li> <li>● 208/120V</li> </ul>



Circuit Breaker



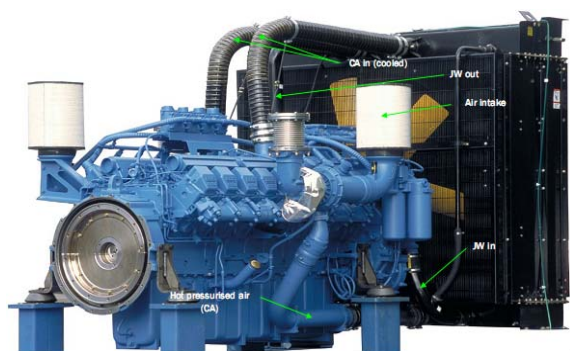
Paralleling/synchronizing System



ATS



Soundproof canopy



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