



<http://www.ycgenset.com>

## GENSET MODEL: JM1450G 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:	JM1450G	
Rated power:	1450 KW	1812 KVA
Standby power:	1600 KW	2000 KVA
Engine Model:	12V4000G63	
Alternator:	LSA51.2 S55	
Electrical type:	Electrical	

#### General Features:

- Composed of Cummins strong powerful diesel engine and Stamford 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.
- 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 **12V4000G63**



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 Sylinder & type	12 Vee type
Air intake way	Turbocharged
Bore*Stroke(mm)	170*210
Displacement (L)	57.2
Displacement per cylinder (L)	4.77
Compression ratio	16.5 : 1
Rated speed(RPM)	1500
Rated power(KW)	1575 (1969KVA)
Gross power(KW)	1733 (2166KVA)
Electronic Governor type	ADEC & SAM
Piston speed(m/s)	10.5
Mean effective pressure(kPa)	22
Intake air depression(mbar)	15 / 50
Exhaust back pressure	30 / 85

### FUEL SYSTEM

Fuel Injection System	Electronic
Pressure at return connection	0.5 bar (max)
Fuel supply flow(L/h) max	600
Fuel return flow(L/h) max	300

### COMBUSTION AIR/EXHAUST GAS

Burning capacity(m <sup>3</sup> /min)	120
Max back pressure (kPa)	8.5
Exhaust temperature (°C)	450
Exhaust flow (m <sup>3</sup> /min)	306
Cooling way	Water-air cooling

### 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)	500-600
Lubrication system capacity(L)	260
Operating temperature (°C)	85-95

### CONSUMPTION

110% (L/h)	1600KW / 2000KVA	400
100% (L/h)	1450KW / 1812KVA	358
75% (L/h)	1088KW / 1360KVA	270
50% (L/h)	725KW / 906KVA	186
25% (L/h)	363KW / 454KVA	106

Oil consumption(% of fuel consumption per hour)	0.3%
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### COOLING SYSTEM

Coolant temperature (°C)	100
Coolant capacity (L)	200
Coolant flow rate (m <sup>3</sup> /h)	56
Coolant pump, inletpressure(bar)	0.4 / 1.52
Height above engine, max (m)	15
Operating pressure (bar)	2.5
Thermostat temperature (°C)	79

### ELECTRIC SYSTEM

Battery	2*12V
Startor motor (V)	24V, 19KW
Start attempt duration, mas.(s)	30
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	LSA51.2 S55	PI 734E
Frequency and Speed	50Hz/1500rpm	50Hz/1500rpm
Voltage(V)	400/230	400/230
Prime Capacity(KVA)	1800	1900
Prime Power(KW)	1440	1520
Power Efficiency(%)	95.7	96.4
Input Power(KW)	1505	1577
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	2250min <sup>-1</sup>	2250min <sup>-1</sup>
Sustained Short Circuit	300%(3IN): 10S	6250Amps
Cooling Air(m <sup>3</sup> /s)	2.5	2.69

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 paralleling with mains or other generators, standard 2/3 pitch stator windings avoid excessive neutral currents.

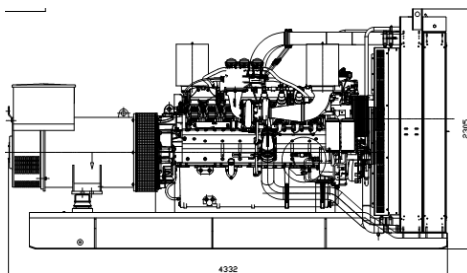
Backed by worldwide service network.

## DIMENSION AND WEIGHT

Open frame type

Size (L\*W\*H, mm) 6200\*2150\*2400

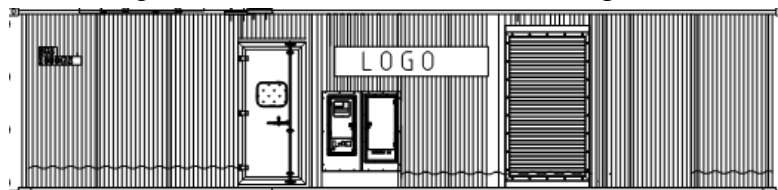
Gross weight: 13800 kgs



Soundproof canopy

Over size (L\*W\*H, mm) 12192\*2438\*2896

Gross weight: 20000 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)

Digital Auto-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	Canony
<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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