General Features:
- Composed of YUCHAI diesel engine and Stanford or Leroy Somer alternator
- 24V DC start motor and storage battery
- Brushless, Self-excited, IP23, insulation class H alternator
- Engine cooling system: water-cooled
- Key start panel control system as standard, digital auto-start panel is optional
- 10-hour operation base tank
- Optional open type or silent type
- All generating sets are gone through rigorous testing before being released to the market place, including 50% load, 75% load, 100% load, 110% load and all protection function (over-speed stop, high water temperature, low oil pressure, battery charging failure, emergency stop)

Genset Main Technical Data

<table>
<thead>
<tr>
<th>Genset Model</th>
<th>Genset Specification</th>
<th>Engine Specification</th>
<th>Alternator Model Marathon /Engga</th>
</tr>
</thead>
<tbody>
<tr>
<td>YC12G</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rated Power</strong></td>
<td><strong>Standby Power</strong></td>
<td><strong>Cons. 100% (g/kW.h)</strong></td>
<td><strong>Engine Model</strong></td>
</tr>
<tr>
<td>KW</td>
<td>KVA</td>
<td>KW</td>
<td>KVA</td>
</tr>
</tbody>
</table>

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.
※ 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, Delf, 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 YUCHAI global service network.

Specifications may change without notice. 2/6  http://www.ycgenset.com
YC12G

**Reliable Performance**

**Voltage regulation**
Voltage regulation maintained with in ±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**
- Change load from 0-100%, Frequency/Speed Droop Ratio within 5%
- Load from 25-100%, any steady load Frequency/Speed undulation with in 0.25%
- Effect factor of telecom
- TIF(MAMG1-22) better than 50
- THF(BS EN60034) better than 2%

**Engine Features**
Compact Engine, light weight, strong power, long time service

**Criterion**
- ISO8528, GB/T2820, ISO3046, BS4999, BS5514, BS5000

**Dimension and Weight**

### Open Type

Overall size (L*W*H)
1450 x 750 x 1250

**Weight: 620kg**

### Super Silent Type

Overall size (L*W*H)
2100 x 1050 x 1550

**Weight: 780kg**

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### ENGINE SPECIFICATION

**Features:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Model</td>
<td>YC2108D</td>
</tr>
<tr>
<td>Number of Cylinders</td>
<td>2</td>
</tr>
<tr>
<td>Cylinder Arrangement</td>
<td>Vertical in-line</td>
</tr>
<tr>
<td>Cycle</td>
<td>4 stroke</td>
</tr>
<tr>
<td>Aspiration</td>
<td>Natural</td>
</tr>
<tr>
<td>Bore x Stroke (mm x mm)</td>
<td>108 x 120</td>
</tr>
<tr>
<td>Displacement (Liter)</td>
<td>2.199</td>
</tr>
<tr>
<td>Prime Power/Speed (kW/rpm)</td>
<td>18 / 1500</td>
</tr>
<tr>
<td>Standby Power/Speed (kW/rpm)</td>
<td>21 / 1500</td>
</tr>
<tr>
<td>Speed Governor</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Cooling System</td>
<td>Water-cooled</td>
</tr>
<tr>
<td>Speed Stability (%)</td>
<td>≤5%</td>
</tr>
</tbody>
</table>

**Fuel Consumption at 1500RPM**

<table>
<thead>
<tr>
<th>Power (%)</th>
<th>Prime Power (kW)</th>
<th>Prime Power (KVA)</th>
<th>Fuel Consumption (g/kW.h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110%</td>
<td>13.5KW</td>
<td>17KVA</td>
<td>248g/kW.h</td>
</tr>
<tr>
<td>100%</td>
<td>12KW</td>
<td>22.5KVA</td>
<td>225g/kW.h</td>
</tr>
<tr>
<td>75%</td>
<td>9KW</td>
<td>11.5KVA</td>
<td>169g/kW.h</td>
</tr>
<tr>
<td>50%</td>
<td>6KW</td>
<td>7.5KVA</td>
<td>113g/kW.h</td>
</tr>
<tr>
<td>25%</td>
<td>N/A</td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Starter Motor**

|                   | 24V                      |

### ALTERNATOR SPECIFICATION

**Brand**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Marathon</th>
<th>Engga</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternator Model</td>
<td>GM12-4</td>
<td>EG164-DQ</td>
</tr>
<tr>
<td>Frequency and Speed</td>
<td>50Hz/1500rpm</td>
<td>50Hz/1500rpm</td>
</tr>
<tr>
<td>Voltage (V)</td>
<td>400/230</td>
<td>400/230</td>
</tr>
<tr>
<td>Prime Capacity (KVA)</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Prime Power (KW)</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Power Efficiency (%)</td>
<td>79.2</td>
<td>82.4</td>
</tr>
<tr>
<td>Input Power (KW)</td>
<td>15.1</td>
<td>19.4</td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>±0.5%</td>
<td>±0.5%</td>
</tr>
<tr>
<td>Voltage Regulator</td>
<td>AVR</td>
<td>AVR</td>
</tr>
<tr>
<td>Rated Power Factor</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Stator Winding</td>
<td>2/3</td>
<td>2/3</td>
</tr>
<tr>
<td>Maximum Overspeed</td>
<td>1875min⁻¹</td>
<td>1875min⁻¹</td>
</tr>
</tbody>
</table>

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 and 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 brushless 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.

Specifications may change without notice.


**CONTROL SYSTEM**

1. **Standard: HGM170HC 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**

   (**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

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## Optional Parts:

<table>
<thead>
<tr>
<th>Engine</th>
<th>Alternator</th>
<th>Generator Set</th>
<th>Fuel System</th>
<th>Canopy</th>
</tr>
</thead>
</table>
| ● Coolant heater  
● Lubricant Oil heater | ● Space heater  
● AVR PMG with regulator  
● Anti-damp and anti-corrosion treatment  
● Anti-condensation heater | ● Tools with the machine | ● Low fuel level alarm  
● Automatic fuel feeding system | ● Super silent (65-68Db@7m)  
● Normal silent (75-78Db@7m) |

<table>
<thead>
<tr>
<th>Lubricating System</th>
<th>Exhaust Gas System</th>
<th>Cooling System</th>
<th>Control Panel</th>
<th>Output Voltage</th>
</tr>
</thead>
</table>
| ● Oil with the machine | ● Protection board from hotness  
● Low frequency silencer | ● Front heat protection  
● 50°C radiator  
● Coolant(-30°C) | ● Remote controller  
● Automatic paralleling control panel  
● Automatic Transfer/changeover Switch (ATS) | ● 440/254V  
● 416/240V  
● 220/127V  
● 208/120V |

Circuit Breaker  
Paralleling/synchronizing System  
ATS  
Super silent canopy

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