

## STANDARD SPECIFICATION

### Genset Main Technical Data

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

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

Gen-set Model:	QSP280GF	
Engine Model:	2206C-E13TAG2	
Rated power:	280 KW	350KVA
Standby power:	308KW	385KVA

#### Benefits:

- ※ Function stability credibility, service convenient.
- ※ Low operating cost results in optimal economy.
- ※ Gets the job done wherever you are.
- ※ Easy for installation, operation and maintenance.

### General Features:

- Composed of Perkins diesel engine and Stamford or YangKe alternator
- 24V DC start motor and storage battery
- Brush-less, 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
- Canopy: Super silent, Normal silent, trailer.
- Optional open type or super silent type, ATS and Standby power: synchronizing/paralleling system.
- Steel base frame with Anti-Vibration mounting, base fuel tank with flexible rubber fuel lube and level indicator.
- Overall sprayed powder coating.
- 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)

### 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, 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

- ※ YANGKE Company provides one-source responsibility for the generator set and accessories. Each YANGKE 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 dispatch.
- ※ 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.

### CRITERION

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

Specifications may change without notice.

## ENGINE SPECIFICATION

Engine model **2206C-E13TAG2**

### UK Perkins Benefits

**Power to Meet your needs:** Hitting the key power nodes, provide a clean & cost effective power solution.

**State of Art Design:** Common-rail fuel system, high power density, low exhaust emissions with the minimum of heat rejection and excellent fuel economy.

**World-class Product Support:** Network of 4000 distributors and service outlets, easy specify & order part online guides and service tools.

**Long-term Power Solution:** Designed to fully comply with EU Stage II emissions regulations, providing an emissions compliant power solution for the future.



**Perkins®**

#### ENGINE BASIC DATA

NO. of Cylinder & type	6 in line
Air intake way	Turbocharged, Air to Air
Bore*Stroke(mm)	130×157
Cubic Capacity (L)	12.5
BMPE(kpa)	2061
Compression ratio	16.3:1
Rated speed(RPM)	1500
Rated power	324KW /405KVA
Gross power	368KW/460KVA
Piston speed(m/s)	TBD
Engine Coolant flow(L/s)	238
Air intake flow(L/s)	TBD
Exhaust flow(L/s)	67.3
Exhaust temperature (°C)	630
Overall thermal efficiency	38.2%

#### LUBRICANTION SYSTEM

Maximum sump capacity	32.5
Minimum sump capacity	38
Total system oil capacity(L)	40
Normal oil temperature°C	113
Oil pressure at bearings (kPa)	270

#### INDUCTION AIR SYSTEM

Max. air intake restriction (paper element filter)	
Clean filter (kPa)	2.5
Dirty filter (kPa)	6.4

#### EXHAUST SYSTEM

Max.back of pressure (kPa)	10
Diameter of exhaust pipe (mm)	123

#### FUEL SYSTEM

Type of Injection	MEUI
Injection pressure	270MPa
Fuel atomizer	MEUI
Feed pump operation pressure	417kPa
Tolerance on fuel consumption	3%
Maximum suction head	3m
Maximum pressure head	4m
Governor type of pump	Electrical

#### CONSUMPTION

110% (L/h)	308kw/385kva	82
100% (L/h)	280kw/350kva	75
75% (L/h)	210kw/262.5kva	58
50% (L/h)	140kw/175kva	40
25% (L/h)	70kw/87.5kva	18.75

#### COOLING SYSTEM

Coolant capacity (L)	51.4
Max. external system resistance	104
Thermostat operation range (°C)	87-98

#### ELECTRIC SYSTEM

Alternator	12SI
Starter	39MT

## 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	YANGKE
Alternator Model	LSA47.2 VS1	QSW-280-4
Frequency and Speed	50Hz/1500rpm	50Hz/1500rpm
Voltage(V)	400/230	400/230
Prime Capacity(KVA)	350	350
Prime Power(KW)	280	280
Power Efficiency(%)	93.5	93.7
Input Power(KW)	299	324.4
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
Sustained Short Circuit	300%(3IN): 10S	850Amps
Maximum Overspeed	2250min-1	2250min-1

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.

## DIMENSION AND WEIGHT

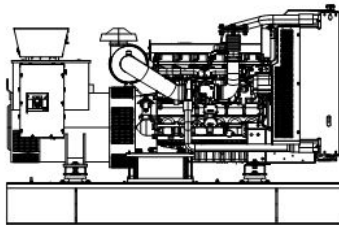
Open frame type

Size (L\*W\*H, mm)

3500×1100×1950

Gross weight:

3300kg



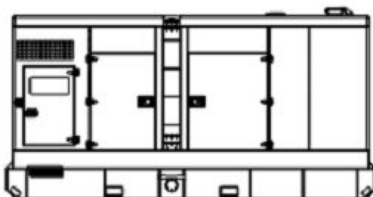
Super silent canopy

Over size (L\*W\*H, mm)

4600×1380×2300

Gross weight:

4900kg



**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 push-button
- ※ 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



HGM170HC



DSE5210



DSE5220

**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

**Warning:**

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

Optional Parts:				
Engine	Alternator	Generator Set	Fuel System	Canyon
<ul style="list-style-type: none"> <li>● Coolant heater</li> <li>● Lubricant Oil heater</li> </ul>	<ul style="list-style-type: none"> <li>● Space heater</li> <li>● AVR PMG with regulator</li> <li>● Anti-damp and anti-corrosion treatment</li> <li>● Anti-condensation</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>● Super silent (65-68Db@7m)</li> <li>● Normal silent (75-78Db@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>● Automatic paralleling control panel</li> <li>● Automatic Transfer 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>



Control



Power-control