



**SPARTAN** Power  
Solutions



# Industrial Range Perkins Series Model SP1650 Generator set



## General Performance Data

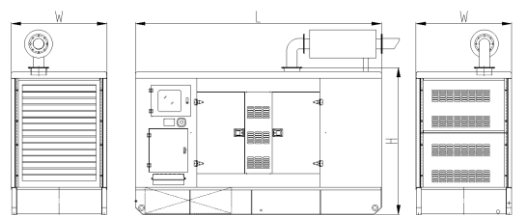
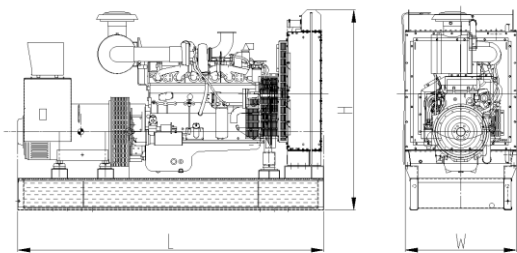
Prime Power	1500KVA/1200KW	Engine	Brand	Perkins
Stand by Power	1650KVA/1320KW		Model	4012-46TAG2A
Frequency/Speed	50Hz/1500rpm	Control module	Deepsea 6120	
Rated Power Factor(cosφ)	0.8	Rated Current	1255A	
Standard Voltage	398V/690V	Capacity of Breaker	1600A	
Phases	3	Starting Voltage	DC24V	

## Fuel consumption

Rated output	Fuel consumption rate	
100%Standby	209g/KW.h	378L/h
100%Prime	207g/KW.h	342L/h
75%Prime	208g/KW.h	252L/h
50%Prime	212g/KW.h	178L/h
25%Prime	-	-

## Standards followed

ISO9001	ISO14001
ISO8528	ISO12100
ISO13849	EN12601
GB12786	GB/T2820
IEC60034	IEC60204
CE	RETIE



## Dimensions and Weights

Type	Open	Silent
Length(mm)	4900	12192
Width(mm)	2200	2438
Height(mm)	2480	2896
Weight(kg)	9050	13200
Base fuel tank volume (L)	/	/

## Engine specification

### Basic parameter

Manufacturer	Perkins
Model	4012-46TAG2A
No. of cylinder	12
Type	4 stroke, Vee 60°
Prime Power	1331kw /1810HP
Standby Power	1459kw /1984HP
Induction system	Turbocharged
Governor	Electronic
Bore x Stroke	160x190mm
Displacement	45.842L
Compression ratio	13:1
Oil Capacity(Total)	177L
Coolant Capacity(Engine only)	207L
Cranking Motor Voltage	DC24V

### Fuel System

Type Injection system	Direct injection
Min. Allowable flow of fuel to fuel pump	378L/h

### Lubrication system

Oil Pressure	
---Min	340KPa
---Rated speed	400KPa
Max. allowable oil temperature	105°C
Oil Pan capacity - Low/High	115/157.5L
Total system capacity	177L
Angularity of oil pan-Front Down	5°

### Air induction system

Maximum allowable intake air restriction	
---with clean filter element	2.0kPa
---with dirty filter element	4.0kPa
---air filter type	Medium duty axial flow

### Exhaust system

Max. allowable back pressure	5.0kPa
Standard exhaust pipe diameter	254mm

### Cooling system

Coolant capacity	
---Engine only	73L
---Total system	207L
---With heat exchanger	-
Standard thermostat(modulating) range	71-85 °C
Max. coolant temperature	100 °C
Max. allowable top tank temperature for stand by/prime power	98 °C

### Electric system

Min. recommended battery capacity (12V)	
---10°C(50°F) & above- 0°F CCA	810A
--- 0°C(32°F) to 10°C(50°F)- 0°F CCA	810A
---18°C(0°F) to 0°C(32°F)- 0°F CCA	810A
Minimum cranking speed	120rpm
Starter(heave,Anode)	DC24V
Battery recharge system, negative ground	55ampere

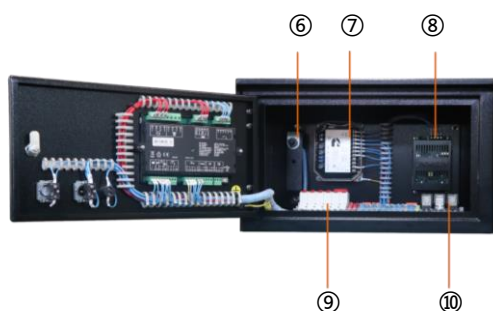
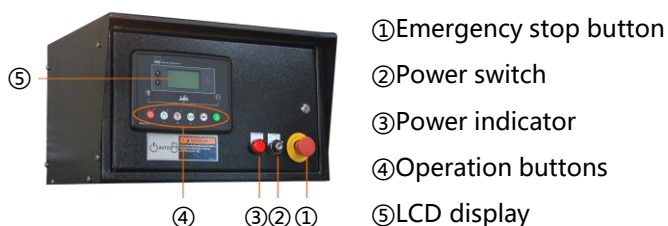
## Alternator specification

Phases	3	Coating	Vacuum impregnation
Poles	4	Insulation class	H
Power factor(cosφ)	0.8	Protection	IP23
Winding connection	Star	Excitation system	Self-excited
Winding pitch	2/3	Bearing	Single Bearing
Voltage regulator type	AVR	Coupling	Flexible disc

# Control system Introduction

## Deepsea 6120 Auto start & auto mains failure control panel

**Deepsea 6120** is an auto mains failure controller for single generator, it can monitor and protect the generator working all the time. it has a LCD display which clearly shows the status of the engine. this controller include seven inputs and six outputs. This controller can also be programmed using the front panel or by using DSE configuration Suite PC software



## Key Features:

- Auto start/stop, load transfer and alarming of generator
- Remote start on or off load
- With hierarchical loading function
- Multiple start/stop cycles can be preset
- 3 phase generator and mains voltage monitoring.
- Generator/load power detection(kW, kVA, kVA<sub>r</sub> PF)
- Overload protection (kW)
- Load current monitoring and protection
- Engine speed protection
- Engine pre-heat
- Engine start idle & stop idle
- Battery voltage monitoring
- Start under the low battery
- 4 active outputs
- 4 digital inputs and 3 analogue inputs.
- 6 Custom digital input
- 6 outputs(4 configurable on magnetic pick-up, 6 configurable on Canbus version)
- DSE2130,DSE2157,DSE2548 expansion module can be connected
- Support 0-10V or 4-20mA oil pressure sensor

## Main features:

- Multi language display
- Mains failure self starting
- The running time of the engine can be recorded to facilitate the maintenance and repair of the unit
- User-friendly set-up and button layout
- LCD display can display multiple parameters at the same time
- Support EFI engine
- IP65 rating (with optional gasket)
- PC and front panel configuration
- 100 event records
- Data recording and trend analysis

## Protection:

- Two sets of protection parameters can be preset
- Normal alarm, electrical trip and shutdown alarm can be set to effectively monitor the engine speed,oil pressure, water temperature and oil level, as well as the frequency, voltage, current and power of the alternator, for complete engine/alternator protection
- Low Oil Pressure
- High water Temperature
- High voltage and low voltage
- Overspeed
- Emergency stop
- Fail to start

## Soundproof Canopy Introduction:

### Standard Type:

- The arc angle structure makes the appearance beautiful and not easy to bump
- High quality coating powder, chemical surface treatment & 100-120um coating thickness greatly improving the anti-corrosion and anti rust level
- Stainless steel hinge & door lock are beautiful and anti-rust
- 2.0mm cold rolled plate used makes the body more solid
- The bottom forklift and loading port design enables easy loading and unloading
- The drainage outlets are all connected to the outside for easy operation
- The sufficient air in & out design ensure long-term and stable operation of the unit
- Isolation net is designed for air inlet, exhaust outlet and muffler outlet to prevent objects from entering the unit
- High density foam used inside effectively reduces noise
- Ceiling Lighting is equipped for easy operation
- The built-in base fuel tank with fuel filler set on the shell facilitates refueling
- Models above medium power range are designed with top hoisting mechanism to facilitate transportation of the unit.

### Imitated container type:

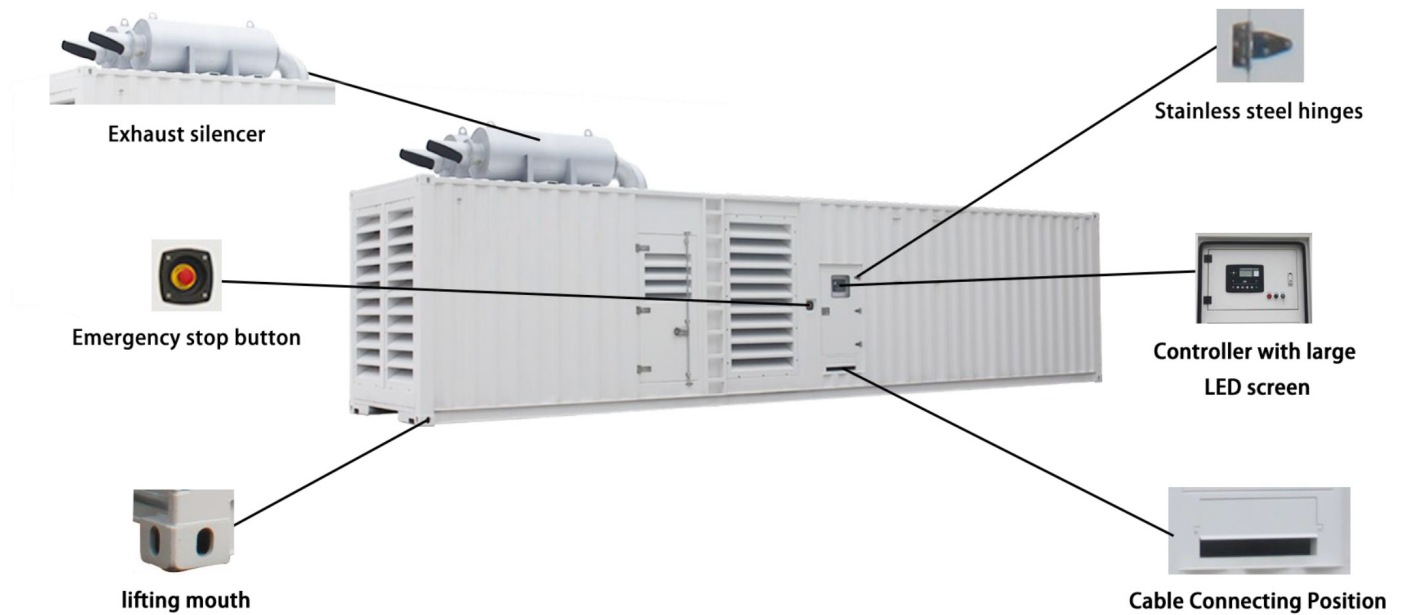
- The shell is made of 3.0mm hot rolled steel plate so as to withstand the lifting capacity of 15-ton without deformation
- The switch cabinet and control panel are respectively set on both sides of the shell for easy maintenance & operation
- The shell looks similar to standard container, and can be loaded into 40HQ container for transportation, which is convenient for shipping
- The lifting eye holes are designed on the top same as the standard container for easy handling
- High density foam used inside effectively reduces noise
- The built-in base fuel tank with fuel filler set on the shell facilitates refueling
- Double emergency stop button set on different surfaces enables quick response to operation requirements
- The shell base is independent from the unit with 3mm thick checkered steel plate floor, which is beautiful & antiskid, and is convenient for overhaul & maintenance of the unit
- The door handle, lock and hinge are all made of stainless steel to avoid rusting
- The air out louver made of the mesh plate with podwer coating and pasted with high-density glass fiber is beautiful and not easy to rust, and can further reduce the noise
- Isolation net is designed for air inlet, exhaust outlet and muffler outlet to prevent objects from entering the unit
- The sufficient air in & out design ensure long-term and stable operation of the unit
- The drainage outlets are all connected to the outside for easy operation
- Ceiling Lighting is equipped for easy operation

### Standard container type:

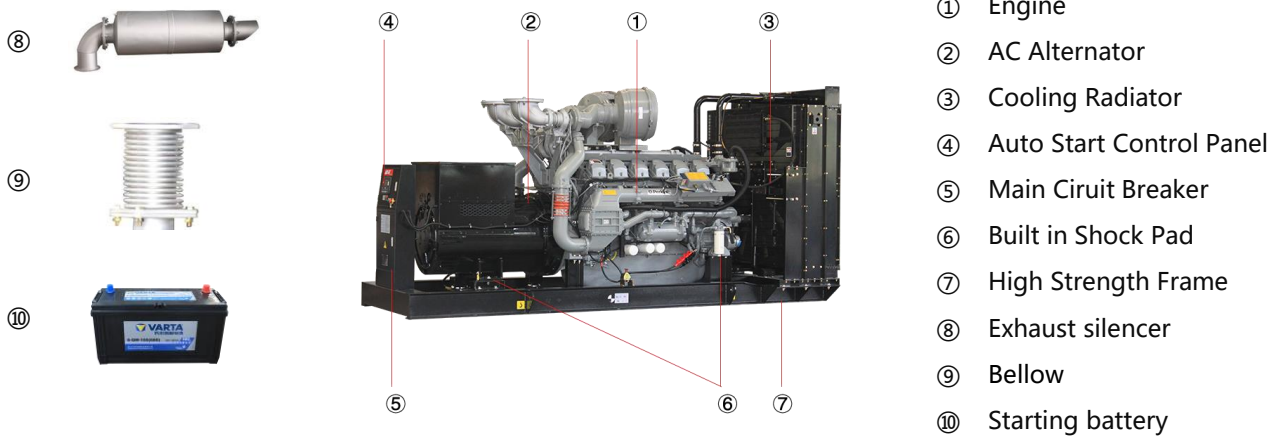
- Can be shipped on board directly during transportation
- The mesh plate with podwer coating and inner pasted with high-density glass fiber is installed inside the shell, which is beautiful and anti-rust, and can further reduce the noise
- 3mm thick checkered steel plate floor is beautiful & antiskid, and is convenient for overhaul & maintenance of the unit
- Double emergency stop button set on different surfaces enables quick response to operation requirements
- The independent daily fuel tank can be designed to put inside to meet requirements of continuous operation
- The fuel filler is set on the shell to facilitate refueling
- The switch cabinet and control panel are respectively set on both sides of the shell for easy maintenance & operation
- The air in & out louver made of the mesh plate with podwer coating and pasted with high-density glass fiber is beautiful and not easy to rust, and can further reduce the noise
- Isolation net is designed for air inlet, exhaust outlet and muffler outlet to prevent objects from entering the unit
- The sufficient air in & out design ensure long-term and stable operation of the unit
- The drainage outlets are all connected to the outside for easy operation
- Ceiling Lighting is equipped for easy operation



## Decomposition diagram introduction of Typical Canopy



## Standard supply scope:






## Optional supply scope:

Genset	Engine	Alternator	Control system
<ul style="list-style-type: none"> <li>• Tool box</li> <li>• Base fuel tank</li> <li>• External daily fuel tank</li> <li>• Trailer</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel heater</li> <li>• Fuel and water separator</li> </ul>	<ul style="list-style-type: none"> <li>• Temp. detector for winding and bearing</li> <li>• PMG</li> <li>• Antirust, mildew and salt fog treatment</li> <li>• Anti condensation heater</li> </ul>	<ul style="list-style-type: none"> <li>• ATS</li> <li>• Synchronization System</li> <li>• Adjustable earth relay</li> </ul>
Breaker	Fuel system	Lub-oil system	Cooling system
<ul style="list-style-type: none"> <li>• ABB</li> <li>• Schneider</li> </ul>	<ul style="list-style-type: none"> <li>• Low fuel level alarm</li> <li>• Auto Fuel Pump</li> <li>• T Valve</li> </ul>	<ul style="list-style-type: none"> <li>• Lub oil heater</li> <li>• Temp.-sensor</li> <li>• Oil drain Pump</li> </ul>	<ul style="list-style-type: none"> <li>• Elec.coolant Heater</li> </ul>



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