



JEC series Manual Installation

JEC Series generators

Please read this instruction manual carefully before installation and first use, and store it in a safe place. If you pass on the product to another person, hand over this instruction manual along with it.

1 Explanation of symboles



DANGER!

Safety instruction: Failure to observe this instruction will cause fatal or serious injury.



WARNING!

Safety instruction: Failure to observe this instruction can cause fatal or serious injury.



CAUTION!

Safety instruction: Failure to observe this instruction can lead to injury. serious injury.



CAUTION!

Failure to observe this instruction can cause material damage and impair the function of the product.



NOTE!

Supplementary information for operating the product.

2 Safety and installation instructions

Please observe the prescribed safety instructions and stipulations from the vehicle manufacturer and service workshops.

The manufacturer accepts no liability for damage in the following cases:.

- · Faulty assembly or connection
- Damage to the product resulting from mechanical influences and excess voltage
- Alterations to the product without express permission from the manufacturer
- · Use for purposes other than those described in the operating manual

Note the following basic safety information when using electrical devices to protect against:

- Electric shock
- Fire hazards
- Injury

2.1 Using the device



WARINING

Installing and repairing the device may only be carried out by gualified personnel who are familiar with the risks involved and the relevant regulations. Inadequate repairs may cause serious hazards. For repair service, please contact the service centre in your country (addresses on the back page).

- Electrical devices are not toys Keep electrical devices out of reach of children or infirm persons. Do not allow them to use electrical devices without supervision.
- People (including children) whose physical, sensory or mental capacities prevent them from using this device safely may not be allowed to operate it without the supervision of a responsible adult.
- Exhaust fumes contain carbon monoxide which is a highly toxic, odourless and colourless gas. Do not inhale any exhaust fumes. Do not leave the generator motor running in a closed garage or in a room without windows.



CAUTION!

Fire hazards

Do not install the generator in a box or room without any openings, but in well-ventilated spaces instead.

- Only operate the generator if you are certain that the housing and the cables are undamaged.
- Install the generator on a stable surface.
- Do not tilt the generator more than 20° from the vertical position.



NOTICE!

- · Only use the device as intended.
- The generator is not suitable for use in water vessels.
- · Do not make any alterations or conversions to the device.
- If a welding operation has be done on the vehicle disconnect all generator cables, otherwise the electronics may be damaged.

2.2 Handling electrical cables



WARINING

• The electrical power supply may only be connected by a gualified electrician



CAUTION!

· Attach and lay the cables so that they cannot be tripped over or damaged.



NOTICE!

- Use cable ducts to lay cables through walls with sharp edges.
- · Do not lay loose or bent cables next to electrically conductive materials (metal).
- · Do not pull on the cables.

Target group for this manual 3

The instructions in this manual are intended for qualified personnel at workshops who are familiar with the guidelines and safety precautions to be applied.

4 Scope of delivery



JEC Series generators

Packing list

| No. | Name | Descripition | quantity | Unit |
|-----|-----------------------------|--|----------|------|
| 1 | Genset JEC 60/80 | | 1 | PCS |
| 2 | Fuel filter | | 1 | PC |
| 3 | Oil drain pipe | | 1 | PCS |
| 4 | Genset output cables | | 2 | PCS |
| 5 | Batery input cables | | 2 | PCS |
| 6 | Remote cable | | 5 | М |
| 7 | Seawater pump power socket | | 1 | PC |
| 8 | Power inverter | | 1 | PC |
| 9 | Steel Gasket +Hexagon Screw | 13*50*3/M12*30 | 4 | PC |
| 10 | Pipe buckle-19 | 13-19mm | 14 | PC |
| 11 | Pipe buckle-38 | 30-50mm | 4 | PC |
| 12 | Leak-proof foot valve | 3m*6 1.5m*1 | 1 | Set |
| 13 | Steel wire water pipe | Inner diameter 20mm 3 meter *5 Inner diameter 20mm 1.5 meter *1 | 1 | SET |
| 14 | Seawater exchanger | Stainless steel | 1 | PC |
| 15 | Air filter | | 1 | Set |
| 16 | Engine oil funnel | | 1 | Set |
| 17 | Seawater pump | Stainless steel | 1 | Set |
| 18 | Control panel | | 1 | PCS |
| 19 | wireless remote | 13*50*3 | 4 | PCS |
| 20 | User manual | | 1 | PCS |
| 21 | Engine manual | | 1 | PCS |
| 22 | Exhaust rubber pipe | Inner diameter 38mm 1.5 meter *1 Inner diameter 38mm 2.0 meter *1 | 1 | Set |
| 23 | Freshwater tank | Plastic | 1 | PCS |
| 24 | Cooling Circulation Pump | DC 12V | 1 | PCS |
| 25 | Water lock | | 1 | PCS |



JEC Series generators

The inside circuit diagram can be found in fig page 7-8.

| Item | Description |
|------|----------------------------------|
| 1 | Control Panel |
| 2 | Inverter box |
| 3 | 3-phase winding |
| 4 | Auxiliary winding |
| 5 | Junction box |
| 6 | Speed control module |
| 7 | 12V Alternator |
| 8 | Regulator_2 |
| 9 | DC 12v cooling water pump |
| 10 | Engine Heating |
| 11 | Fuel pump |
| 12 | Wireless remote control receiver |
| 13 | Shutdown solenoid valve |
| 14 | Oil pressure switch |
| 15 | Speed-regulated DC 12V motor |
| 16 | Starter motor |
| 17 | AC seawater pump |
| 18 | Battery |
| 19 | Water temperature switch |



The inside circuit diagram can be found in fig page 11-12.

| Item | Description |
|------|----------------------------------|
| 1 | Control Panel |
| 2 | Inverter box |
| 3 | 3-phase winding |
| 4 | Auxiliary winding |
| 5 | Junction box |
| 6 | Speed control module |
| 7 | 12V Alternator |
| 9 | DC 12v cooling water pump |
| 10 | Engine Heating |
| 11 | Fuel pump |
| 12 | Wireless remote control receiver |
| 13 | Shutdown solenoid valve |
| 14 | Oil pressure switch |
| 15 | Speed-regulated DC 12V motor |
| 16 | Starter motor |
| 17 | AC seawater pump |
| 18 | Battery |
| 19 | Water temperature switch |

The Junction box circuit diagram in fig. 2, page 7.



| Item | Description |
|------|----------------------------|
| 1 | Engine lead line |
| 2 | Controller (Control panel) |
| | |

7 Outside of Circuit diagrams



| Item | Description |
|------|----------------------------------|
| 1 | Controller (Control panel) |
| 2 | Junction box 12 core line sockit |
| | |

Description

| 1_1 <i></i> 2_1 Blank | |
|-----------------------|--|
| 1_2 2_2 | 3_1 Battery DC 12V Negative (12v Earth) |
| 1_3 2_3 | 3_2 Battery DC 12V Positive (VCC) |
| 1_4 2_9 | 3_13 Stop relay |
| 1_5 2_10 | 3_4 Fuel pump |
| 1_6 2_6 | 3_6 Remote start input |
| 1_7 2_8 | 3_9 Engine water temperature sensor/Fuel level |
| 1_8 2_7 | 3_14 Engine heating(Heating relay) |
| 1_9 2_2 | 3_1 Battery DC 12V Negative (12v Earth) |
| 1 10 2 3 | 3 2 Battery DC 12V Positive (VCC) |
| 1_11 2_4 | 3_5 Start motor relay |
| 1_12 2_12 | 3 11 Generator output (L) |
| 1_13 2_11 | 3 10 Generator output (N) |
| 1_14 2_5 | 3_7 Oil pressure input/Fuel level |

8 Intended use

The JEC JEC series generators are designed for fishing boats, yachts and ship.

The generator can be used for on-board power supply if coupled with fresh water circulation.

The generator produces a pure sine wave voltage of 120-240 V/50-60 Hz which can be connected to the consumer with a total continuous load of 5.6-25kW according to different models. The power qual-ity is also suitable for sensitive consumers (such as Pcs).

The generator can charge a 12 V battery.

JEC Series generators

A label is attached to the generator. This label provides the user and fitter with information on the device specifications.

| Manufactured by USR industries Diesel Generators ISO 8528-13 C E EAN BARCODE | | | | | | |
|---|------------------------------|-------------------|----------------|--|--|--|
| Model: | JEC60M | Engine | Kubota Z482-E3 | | | |
| Rated Power | 5.6kW | Rated Voltage | 240V | | | |
| Max Power | 6.0kW | Rated Frequency | 50Hz | | | |
| Displacement | 479 cc | Rated Speed | 2600 r/min | | | |
| Rated Current | 24.3A | Max. Speed | 3000 r/min | | | |
| Fuel Tank Capacity | | Power Factor | 1.0 | | | |
| Main Cooling Methoed | Water cooling | Maximum Toque | 29.2N.m | | | |
| Combustion Cycle | 2 Cylinders 4-Stroke | Insulation Grade | F | | | |
| Protection Degree | IP23M | Performance Class | G2 | | | |
| Starting Mode | Key Star & Remote control | Net Weight | 186 kg | | | |
| Maximum ambient temperature | 120 ℃ | Serial Number | 20220310756-09 | | | |
| USR Industries Co.,Ltd No.47 Jinshan Village,Songluo Country,Fuan City,Fujian Province,China | | | | | | |

10 Technical description

Installing the generator must be configured according to one of the following options:

- Automatic mode switch, see chapter "Configuring the automatic mode" on page 29.
- Priority circuit which prioritises the 230 V external voltage over the voltage produced by the generator, see chapter "Creating a priority circuit" on page 30.

11 Installation



CAUTION! Beware of injury

The generator may only be installed by qualified personnel from a specialist company. The following information is intended for technicians who are familiar with the guidelines and safety precautions to be applied.

11.1 Note on Installation

Read the installation manual carefully before you install the generator. When installing the generator, note the following:



DANGER! Danger of electrocution

Disconnect all power supplies when working on the generator.



Improper installation of the generator can result in irreparable damage to the device and put the safety of the user at risk.

• Always wear the recommended protective clothing (e.g. protective goggles, gloves).

11.2 Securing the generator

Note on installation location

- Make sure that no combustible objects are stored or installed near the air outlet or the ventilation slots. A distance of at least 50 cm should be kept.
- For a correct ventilation keep a distance of at least 30 cm from the generator's air outlet.
- For safety reasons, note the location of existing wiring harnesses, wires and other components within the installation area, in particular those which are not visible, when installing the generator (when drilling or screwing etc.).

You can secure the generator with the holders supplied in two ways:

External installation

External installation has the following benefits: lower space requirement, fast installation, easy access for maintenance work.

- To ensure the generator is attached securely, use the retaining bracket supplied.
- If the air intake opening of the generator is located behind a vehicle wheel, you need to prevent the wheel from splashing any water into the generator interior when it rains (e.g. by using a splash guard).



Outside Seawater Exchanger Model: JEC60/80

Inside Seawater Exchanger Model: JEC60/80



Outside Seawater Exchanger Model: JEC100 Inverter type



Outside Seawater Exchanger Model: JEC100/120 Speed:1500rpm



Outside Seawater Exchanger Model: JEC150/180 Speed:1500rpm



Outside Seawater Exchanger Model: JEC200/250 Speed:1500rpm



Outside Seawater Exchanger Model: JEC300 Speed:1500rpm



12 Connecting the electrical power to the Generator



DANGER! Danger of electrocution

Make sure there is no voltage at electrically operated components before carrying out work on them!

A

NOTE Observe the applicable guidelines in the country of the consumer.

12.1 Important notes on the electrical connection

- Only a qualified electrician should connect the generator to the electrical power.
- Check that the voltage specification on the type plate is the same as that of the power supply.
- Do not lay the 230 Vw mains cable and the 12 Vg cable together in the same cable duct.
- Do not lay cables which are loose or bent next to electrically conductive material (metal).
- Connect the generator to a power circuit which can supply the necessary current (see chapter "Technical data" on page 32).
- Select the cross-section of the cable as follows:
 - 230 V: 2.5 mm²
 - 12V battery charger: 4.0mm²
 - Battery connection (length < 6 m): 6 mm²
 - Battery connection (length > 6 m): 10 mm²
- Install a manual main switch which can disconnect all the consumers from the generator with the exception of the battery.

13 Internal junction box

Internal junction box as shown

| | Item | Description |
|---|------|---------------------------------------|
| | 1 | Motor connection |
| | 2 | Remote control connection |
| | 3 | Emergency shutdown switch |
| | 4 | DC 12V Circuit Breaker Charge Battery |
| | 5 | Freshwater pump check switch |
| | 6 | Fuel pump check switch |
| Ĩ | 7 | Junction Box |





14.1 Accessories Group Antu The Complete installation diagram as shown in page 29-30

| Item | Description |
|------|--------------------------------|
| 1 | Seawater filter (not provided) |
| 2 | Seawater pump |
| 3 | Seawater cooling Exchanger |
| 4 | Cooling water pump |
| 5 | Battery (not provided) |
| 6 | Fresh water tank |
| 7 | Controller |
| 8 | Generator |
| 9 | Fuel tank (not provided) |
| 10 | Exhaust pipe |
| 11 | Water lock |



15.1 Accessories Group Antu

The Complete installation diagram as shown in page 23-24.

| Item | Description |
|------|--------------------------------|
| 1 | Seawater filter (not provided) |
| 2 | Seawater pump |
| 3 | Cooling water pump |
| 4 | Battery (not provided) |
| 5 | Fresh water tank |
| 6 | Controller |
| 7 | Generator |
| 8 | Fuel tank (not provided) |
| 9 | Exhaust pipe |
| 10 | Water lock |

15.2 Installation Generator



WARNING!

Safety instruction: Only qualified electricians or those with experience in generator installation can install the generator set, otherwise it may cause fatal or serious injury.



CAUTION!

Safety instruction: Failure to observe this instruction can lead to injury. serious injury.



CAUTION!

Failure to observe this instruction can cause material damage and impair the function of the product.

Find a suitable location to install the generator set according to the size of the generator set you ordered.diagram fig.16,page 25.

- Consider that the generator needs enough air to get inside the generator case.
- Different types of generators have different intake parts, please refer to the generator you get.
- If the height of the space is enough, please use the 4 shock-absorbing feet provided with the accessories. The shock-absorbing feet will reduce the vibration of the generator.



15.3 Installation seawater cooling system



NOTE!

The most important thing in the installation of the seawater cooling system is that the pipe buckle of the water pipe must be locked to avoid water leakage.

Please refer to the illustration for installing the seawater cooling system show down in fig.page 37.

- Connect the seawater inlet pipe at the bottom of the cabin to the water inlet of the seawater pump as shown below, and the water outlet of the water pump is connected to the seawater filter.

- Connect outlet of seawater filter to inlet of the seawater exchanger, connect the outlet of the seawater exchanger to the seawater inlet of the generator set, and tighten all the pipe buckles.



15.4 Installation Exhaust and Drainage Systems



NOTE!

The most important thing in the installation of the seawater cooling system is that the pipe buckle of the water pipe must be locked to avoid water leakage.

Exhaust and Drainage Installation show down in fig.page 38.

- Fix the water lock in a suitable position not far from the generator

- Connect the hybrid generator exhaust and drain outlet to the inlet of the water lock, Connect the outlet of the water lock to the cabin drain.



15.3 Installation Fresh Water Cooling Circulation System



WARNING!

Error Tip: The inlet and outlet of seawater and fresh water are prone to installation errors

A

NOTE!

The most important thing in the installation of the seawater cooling system is that the pipe buckle of the water pipe must be locked to avoid water leakage.

Fresh Water Cooling Circulation System show down in fig.page 39.

- Install the pipe fittings firmly according to the following diagrams, install the cooling circulation pump behind the seawater exchanger, and send the cooling fresh water into the generator through the water pump.

- Connect the hot water outlet from the generator to the fresh water tank.



15.4 Connect the fuel line



NOTE!

The USR generator is equipped with a DC12V fuel pump, but the power of the fuel pump is small and the suction range is limited. The installed fuel length cannot exceed 10 meters. If the fuel length exceeds 10 meters, an additional fuel pump needs to be installed.

Install the fuel line show down in fig.page 40.

- The length of the installed fuel cannot exceed 10 meters. If the length of the fuel exceeds 10 meters, an additional fuel pump needs to be installed.

- There are two fuel rod pipes on the generator, one is the fuel inlet pipe and the other is the fuel return pipe. Do not install it wrongly.



15.5 Connect the battery

Connect generator to battery cable show down in fig.page 41.

- 12V battery charger: 10.0mm²
- Battery connection (length < 6 m): 16 mm²
- Battery connection (length > 6 m): 24 mm²
- Make sure that the positive pole + of the red cable is connected to the positive pole of the battery, and that the negative pole - of the black cable is connected to the negative pole of the battery.
- Make sure that the cable connector connected to the battery has been tightened
- A 200A switch must be installed between the generator and the battery cable for debugging and maintenance



NOTE!

Make sure that the cable connector connected to the battery has been tightened. Poor contact will cause the generator to fail start or turn off the fire.

15.6 Installation the Control panel

Install the control panel in a suitable location show down in fig.page 42.

- The length of the 10-pin signal cable is 5m, and the installation position from the controller to the generator should not exceed 5m.
- The opening size is 77*65mm at a suitable position under the seat inside the vehicle

- Insert the wiring heads of the two rows into the corresponding sockets of the controller respectively, and make sure that they have been inserted tightly. Fix the control panel at the opening hole, stick it with glass glue, and make sure that it will not loosen.





NOTE!

To install the controller, make sure that the two rows of connectors have been plugged into the socket of the controller, otherwise the generator will not start or it will stop immediately after it starts.



15.7 Generator output connected to mains power



WARNING!

When the generator is connected, it must be ensured that the generator is stopped to avoid electric shock.otherwise it may cause fatal or serious injury.



WARNING!

If the cable provided by the manufacturer is not long enough, please use a cable with a cross-section more than 6.0mm². When connecting the cable, make sure that the connection is strong. It is best to use an electric iron and solder to solder firmly, otherwise the power will not be smooth. Even cause a fire

► Generator output connected to mains power show down in fig.page 44.

- A protective air switch must be installed between the generator and the main power supply, which is convenient for the debugging and maintenance of the generator.



16 Disposal

Place the packaging material in the appropriate recycling waste bins wherever possible.



If you wish to finally dispose of the product, ask your local recycling centre or specialist dealer for details about how to do this in accordance with the applicable disposal regulations.

17 Technical data

| Generator | JEC40 | JEC60 OX | JEC60 IX | JEC80 OX | JEC80 IX | |
|-----------------------------------|---|-----------------|------------------------|-----------------|--------------|--|
| Voltage | 1-Phase 110-120V~ 60Hz 220-240V~ / 50 -60Hz | | | | | |
| Max power | 4.5kW | 6.0kW | 6.0kW | 8.0kW | 8.0kW | |
| Rated power | 4.0kW | 5.6kW | 5.6kW | 7.2kW | 7.2kW | |
| Rated Speed | 2200-2600rpm | 2200-2800rpm | 2200-2800rpm | 2200-3000rpm | 2200-3000rpm | |
| Battery charger output voltage | 20A 12V | | | | | |
| Operating temp- erature range: | | - | –15°C to +50°C | ; | | |
| Distortion factor | 1% | 1% | 1% | 1% | 1% | |
| Sound level | 63 dB(A) | 65 dB(A) | 65 dB(A) | 66 dB(A) | 66 dB(A) | |
| Fuel pump | DC12V | DC12V | DC12V | DC12V | DC12V | |
| Weight: | 156kg | 176kg | 176kg | 186kg | 186kg | |
| Dimension: | 620*510*540 | 620*510*540 | 720*510*540 | 620*510*540 | 720*510*540 | |
| Engine | Z482 | | | | | |
| Brand | | KUB | OTA Diesel En | gine | | |
| Emission regulation | | EPA/CARB | Tier 4 level + E | EU Stage V | | |
| Туре | | Vertical, water | cooled 4-cycle | e diesel engine | | |
| Cylinders | | | 2 | | | |
| Bore and stroke | | 67.0 x 68 | 8.0 (2.64 x 2.68 |)mm (in) | | |
| Displacement | | 0.4 | 0.479 (29.23)L (cu.in) | | | |
| Aspiration | | N | aturally aspirate | ed | | |
| Stand-by output / speed*1 | 7.5 (10.1) / 3000 kW (HP) / rpm | | | | | |
| Continuous output / speed*2 | 6.9 (9.2) / 3000 kW (HP) / rpm | | | | | |
| Combustion system | indirect injection | | | | | |
| Fuel system | In-line pump | | | | | |
| Inspection/ certification: | CE CALIFORNIA AIR RESOURCES BOARD | | | | | |

17.1 Technical data

| Generator | JEC100 | JEC100 CF | JEC120 | JEC150 | JEC180 | |
|-----------------------------------|---|---|----------------------|------------|---|--|
| Voltage | 1-Phase 110-120V~ 60Hz 220-240V~ / 50 -60Hz | | | | | |
| Max power | 10.0kW | 12.0kW | 13.0kW | 16.0kW | 20.0kW | |
| Rated power | 9.0kW | 10.0kW | 12.0kW | 15.0kW | 18.0kW | |
| Rated Speed | 2200-3000rpm | 1500rpm | 1500rpm | 15000rpm | 15000rpm | |
| Battery charger output voltage | 20A 12V 26A 12V | | | | | |
| Operating temp- erature range: | | –15°C to +50°C | | | | |
| Distortion factor | 1% | 1% | 1% | 1% | 1% | |
| Sound level | 63 dB(A) | 71 dB(A) | 73 dB(A) | 73 dB(A) | 73 dB(A) | |
| Fuel pump | DC12V | DC12V | DC12V | DC12V | DC12V | |
| Weight: | 216kg | 476kg | 486kg | 506kg | 526kg | |
| Dimension: | 640*510*540 | 0 1160*620*700 1260*620*700 1280* | | | 1280*620*700 | |
| Engine | D722-E3 V2203-M-E3 V2403-M-E3 | | | V2403-M-E3 | | |
| Brand | | | KUBOTA Diesel Engine | | | |
| Emission regulation | EPA/CARB Tier 4 level + EU Stage V | | | | | |
| Туре | Vertical, water cooled 4-cycle diesel engine | | | | | |
| Cylinders | 3 | | 2 | 1 | | |
| Bore and stroke | 67.0 x 68.0 (2.64 x 2.68) mm (in) | 67.0 x 68.0 87.0 x 92.4 87.0 x 102.4 (2.64 x 2.68) (3.43 x 3.64) (3.43 x 4.031) mm (in) mm (in) mm (in) | | | 87.0 x 102.4 (3.43 x 4.031) mm (in) | |
| Displacement | 0.719L | | 1.27L | | 1.44L | |
| Aspiration | | N | aturally aspirate | ed | | |
| Stand-by output / speed*1 | 12.2 kW / 3000 rpm | 20.1kW / 3000 rpm 22.0 kW / 3000 rpm | | | 22.0 kW / 3000 rpm | |
| Combustion system | indirect injection | | | | | |
| Fuel system | In-line pump | | | | | |
| Inspection/ certification: | on/ tion: CE CALIFORNIA Air resources board | | | | | |

17.2 Technical data

| Generator | JEC200 | JEC250 | JEC300 | JEC400 | JEC500 | | |
|-----------------------------------|--|---|-----------------------|--|-----------------------|--|--|
| Voltage | 1-Phase 110-120V~ 60Hz 220-240V~ / 50 -60Hz | | | 3-Phase 220V~ 60Hz 380-440V~ / 50 -60Hz | | | |
| Max power | 22.0kW | 27.0kW | 33.0kW | 45.0kW | 55.0kW | | |
| Rated power | 20.0kW | 25.0kW | 30.0kW | 40.0kW | 50.0kW | | |
| Rated Speed | 1500rpm | 1500rpm | 1500rpm | 15000rpm | 15000rpm | | |
| Battery charger output voltage | | 26A 12V | | | | | |
| Operating temp- erature range: | | –15°C to +50°C | | | | | |
| Distortion factor | 1% | 1% | 1% | 1% | 1% | | |
| Sound level | 73 dB(A) | 73 dB(A) | 73 dB(A) | 75 dB(A) | 75 dB(A) | | |
| Fuel pump | DC12V | DC12V | DC12V | DC12V | DC12V | | |
| Weight: | 546kg | 576kg | 686kg | 706kg | 756kg | | |
| Dimension: | 1360*620*700 | 1360*620*750 | 1460*620*750 | 1280*620 |)*700 | | |
| Engine | V2403-M-E3 | V2403-M-T | V3300-M-E3 | V3800DI-T | 4BTA3.9-G2 | | |
| Brand | KUBOTA Diesel Engine Cummins | | | | | | |
| Emission regulation | | EPA/CARB Tier 4 level + EU Stage IIIA | | | | | |
| Туре | | Vertical, water | r cooled 4-cycle | diesel engine | | | |
| Cylinders | | | 4 | | | | |
| Bore and stroke | 87.0 x (3.43) mm (ii | 87.0 x 102.4 (3.43 x 4.031) 98.0 x 110.0 (3.86 x 4.331) 100.0 x 120.0 (3.86 x 4.331) 102 x120 (3.937 x 4.724) mm (in) mm (in) mm (in) mm (in) | | | | | |
| Displacement | 2.43 | 4L | 3.318L | 3.769L | 3.9L | | |
| Aspiration | Naturally aspirated | | | | | | |
| Stand-by output / speed*1 | 26.5 kW / 1500 rpm | 30.5 kW / 1500 rpm | 33.6 kW / 1500 rpm | 49.5kW / 1500 rpm | 22.0 kW / 3000 rpm | | |
| Combustion system | indirect injection | | | | | | |
| Fuel system | | | In-line pump | | | | |
| Inspection/ certification: | CE CALIFORNIA AIR RESOURCES BOARD | | | | | | |



ENERGY & LIGHTING DIESEL GENERATORS



JEC series Manual Installation

JEC Series generators

Please read this instruction manual carefully before installation and first use, and store it in a safe place. If you pass on the product to another person, hand over this instruction manual along with it.

1 Explanation of symboles



WARNING!

Safety instruction: Failure to observe this instruction can cause fatal or serious injury.



CAUTION!

Safety instruction: Failure to observe this instruction can lead to injury. serious injury.



CAUTION!

Failure to observe this instruction can cause material damage and impair the function of the product.



NOTE!

Supplementary information for operating the product.

2 Safety and installation instructions

The manufacturer accepts no liability for damage in the following cases:

- · Damage to the product resulting from mechanical influences and excess voltage
- · Alterations to the product without express permission from the manufacturer
- · Use for purposes other than those described in the operating manual

In particular, the manufacturer will not be liable for any consequential damage, especially consequential damage caused by failure of the generator.

Note the following basic safety information when using electrical devices to protect against:

- Electric shock
- Fire hazards
- Injury

2.1 General safety

WARNING!

Electrical devices are not toys

Keep electrical devices out of reach of children or infirm persons. Do not allow them to use electrical devices without supervision.

- People (including children) whose physical, sensory or mental capacities prevent them from using this device safely may not be allowed to operate it without the supervision of a responsible adult.
- Only use the device as intended.
- Do not make any alterations or conversions to the device.
- Installation, maintenance and repairs of the generator may only be carried out by qualified personnel who are familiar with the risks involved when handling generators as well as the relevant regulations. Inadequate repairs may cause serious hazards. For repair service, please contact the manufacturer's branch office in your country (addresses on the back page).
- Exhaust fumes contain carbon monoxide which is a highly toxic, odourless and colourless gas. Do not inhale any exhaust fumes. Do not leave the generator motor running in a closed garage or in a room without windows.

CAUTION!

- The generator may only be used with the front door closed.
- Remove all flammable materials such as petrol, paints, solvents, etc., from the vicinity of the generator.
- Ensure that hot parts of the generator do not come in contact with any flammable materials.
- Only refuel the generator when it is switched off and in a well-ventilated area. Petrol and liquid gas are highly flammable and can explode.
- Do not refuel the generator when the vehicle engine is running if the tank is in the vicinity of the generator.

2.2 Operating the device safely



WARNING

• Always disconnect the power supply when working on the device.

NOTICE!

• Only operate the device if you are certain that the housing and the cables are undamaged.

3 Operating the device safely

This operating manual is for the user of the generator.

4 Scope of delivery

JEC Series

| Designation | Reference number |
|---------------------|---------------------|
| JEC generator | 6587730278 |
| Installation manual | |
| Operating manual | |
| Other | |

5 Intended use

The JEC JEC series generators are designed for fishing boats, yachts and ship.

The generator can be used for on-board power supply if coupled with fresh water circulation.

The generator produces a pure sine wave voltage of 120-240 V/50-60 Hz which can be connected to the consumer with a total continuous load of 5.6-25kW according to different models. The power qual-ity is also suitable for sensitive consumers (such as Pcs).

The generator can charge a 12 V battery.

6 Technical description

The combustion engine drives the alternator connected to it, which in turn generates AC voltage.

The inverter transforms this AC voltage into a stable voltage of 230 V and 50 Hz. The terminals, the socket for the connection cable to the remote control and the main switch are installed in the internal control panel

The generator has the following features:

- Integrated battery charger for charging the connected battery
- Automatic mode for charging the connected battery automatically (must be configured accordingly when installed)

7 Description of the generator

7.1 Front view



- 01 Push-pull electromagnet
- 02 Exhaust pipe wind hood
- 03 Fan shield
- 04 Alternator cover
- 05 Motor exhaust air guide
- 06 Damping rubber feet
- 07 Engine chassis
- 08 Oil filter plug
- 09 Speed adjustment frame
- 10 Oil drain plug
- 11 Oil filling hole plug

- 12 Inlet hood
- 13 12V DC overload protector
- 14 Wiring board
- 15 Junction box
- 16 Emergency stop switch
- 17 Inverter frame
- 18 Inverter
- 19 Fuel pump relay
- 20 Push-pull electromagnet relay
- 21 Internal control board
- 22 Air filter
- 23 Cylinder head air deflector

7.2 right side view



- 01 Exhaust pipe wind hood
- 02 Fuel pump relay
- 03 Inverter frame
- 04 Inverter
- 05 Start motor relay
- 06 Internal control board
- 07 Excessive fuel tank
- 08 Air filter

7.3 Back view



- 01 Air filter
- 02 Internal control board
- 03 Start motor relay
- 04 Start motor
- 05 Inverter frame
- 06 Fuel pump
- 07 DC12V voltage regulator
- 08 Inverter
- 09 Damping rubber feet
- 10 Generator shell chassis
- 11 Alternator cover

- 12 Mesh air guide sleeve
- 13 Exhaust pipe wind hood
- 14 Excessive fuel tank
- 15 Push-pull electromagnet

7.4 Left side view



- 01 Push-pull electromagnet
- 02 Excessive fuel tank
- 03 Start motor
- 04 Fan shield
- 05 Motor exhaust air guide
- 06 Mesh air guide sleeve
- 07 Exhaust pipe

7.5 View from Above



- 01 Air filter
- 02 Excessive fuel tank
- 03 Level Switch
- 04 Push-pull electromagnet
- 05 Exhaust pipe wind hood

8 Operating the generator



DANGER!

Safety instruction: Failure to observe this instruction will cause fatal or serious injury.



WARNING!

CAUTION!

serious injury.

Safety instruction: Failure to observe this instruction can cause fatal or serious injury.



CAUTION!

 $\ensuremath{\mathsf{Failure}}$ to observe this instruction can cause material damage and impair the function of the product.

Safety instruction: Failure to observe this instruction can lead to injury.

NOTE!

Supplementary information for operating the product.

8.1 Basic notes on operation

NOTICE!

Do not run the generator over 70% of the maximum constant output for the first 50 operating hours (run-in phase).

6

NOTE

Run the generator at a maximum of approx. 75% of the maximum continuous load after the run-in phase.

By doing this you can prolong the service life of the generator and maximise its efficiency.



CAUTION! Beware of injury

Do not insert your fingers or objects into the air nozzles or the intake grille.

Please note the following basic information:

- Always check the oil level before use (chapter "Checking the oil level" on page 21).
- JEC LPG only: Check there are no leaks from the gas supply using a leak detection spray before every use.
- Even small overloads in the long-run will cause the cut-out switch or the fuses to trigger.
- Leave the generator running for a few minutes after use without any consumers before stopping it.
- Abrupt braking, accelerating and driving round bends in the vehicle can cause problems in the generator's pump system and lead to unwanted shutdown.
- If you are not using your generator for a longer period of time, start it up at least every 30 days and leave it running for 15 minutes or more.

8.2 Internal junction box

Internal junction box as shown in fig. page 14.

| Item | Description |
|------|---------------------------------------|
| 1 | Motor connection |
| 2 | Remote control connection |
| 3 | Emergency shutdown switch |
| 4 | DC 12V Circuit Breaker Charge Battery |
| 5 | Freshwater pump check switch |
| 6 | Fuel pump check switch |
| 7 | Junction Box |



8.3 Generator controller (control panel)

the control panel diagram show down in fig.page 15.



| No. | Defined | Description |
|-----|-------------------------------------|---|
| 1 | Manual start button | Push this button, generator will start, and the module comes into manual state |
| 2 | Auto state button | Push this button, Wireless remote control mode |
| 3 | Stop buttn | Push this button, generator will stop, and the module comes into stop state. In the standby mode, if long pressing the button for 3 seconds all LED lights |
| 4 | LCD page button / confirm button | Change the page display, used for LCD and can move the cursor in the parameter Settings and confirm set information |
| 5 | Alarm light | When an alarm occurs, exhibit of lanterns flicker |
| 6 | LCD Display | Show current content |

8.3 Controller function

The meaning of each icon of the controller

| Symbol | Defined | Symbol | Defined |
|-----------------------------|----------------------------------|-----------|---------------------------------|
| مي ر. | Low Oil Press | 0 | Stop state |
| ₿. | Over Speed | <u></u> | Manual states |
| | Under speed | AC | Generator voltage |
| 1 | Emergency Stop | DC | Battery voltage |
| Vt | High voltage | % | Amount of fuel |
| ţV | Low voltage | RPM | Speed units (rpm/minute) |
| ! | Over Crank | kPa | Oil pressure unit |
| (<u>"</u>) | Warning | V | Voltage unit |
| × | Stop alert | Α | Current unit |
| (_) | Stop Failure | % | Fuel level units (Percentage) |
| (<u>©</u>) | Rotation during normal operation | °C | Temperature unit |
| Ø | flywheel tooth number | Hz | Frequency unit |
| [™] X [™] | Battery voltage is abnormal | Н | Total running time |
| !> | External alarm | SET | Parameter setup instructions |
| | Low fuel level | L1-L2 | L1-L2 Line voltage |

8.4 Display discripion

Generate output voltage V, Frequency Hz





Battery voltage.

Engine speed

Oil pressure





Fuel level %,

8.4.1 Operation of Controller



8.4.2 Man start

Start by pressing the start button \bigcirc on the control panel is a manual start. At this time, a small hand \bigcirc will be displayed on the LDC.

8.4.3 AUTO state

- ➤ The generator is in the state of wireless remote control when it leaves the factory, the AUTO light is on.
- When the generator is under manual control, first press the stop button, then press the AUTO button , the generator is in the wireless remote control state, and the wireless remote control can be used to control the switch.

8.4.4 Stop state

When the generator is in the AUTO state, it can be stopped by the wireless remote control, or it can be stopped by the stop button on the control panel

> When in manual mode, press the stop button to stop

In the case of troubleshooting, when the Alarm light 2 is flashing, you can use the stop button to cancel

8.4.5 Alarm light 🖄

Alarm light will flash in the following situations

- Low Oil Pressure: check after the safe delay, the duration of 5 seconds above, the module will alarm and stop engine.
- High Temperature : check after the safe delay, the duration of 10 seconds above, the module will alarm and stop engine.
- Low Fuel Level: When the fuel level is consistently below the preset value of 10 seconds, and issuing fuel level is too low signal, this value is only a warning will not stop.
- Over speed: check after the preheat delay, the duration of 2 seconds above, the module will alarm and stop engine.
- Under speed: check when engine run at full tilt, the duration of 15 seconds above, the module will alarm and stop engine.
- Over Crank: when engine crank fail over the times of configure, the module will alarm and stop engine.
- Stop Failure: when engine is stop fail, the module will warn.
- Battery over voltage: The DC supply has risen above the high volts setting level for the duration of the high battery volts 20 seconds.
- Battery under voltage: The DC supply has low above the under volts setting level for the duration of the low battery volts 20 seconds.
- Emergency Stop: When emergency stop input, ETS solenoid stop immediately output, and then fuel disconnect, preheat and start signal emit emergency stop alarm signal.
- Gen Over Voltage: When the continuous sampling voltage higher than the preset value, at the end of the abnormal delay, signal generator voltage is too high, ouage alarm at the same time.
- Gen Under Voltage: When sampling the voltage is lower than the preset value continuously, at the end of the abnormal delay signal generator voltage is too low, outage alarm at the same time.

9 Inject engine oil, show following in fig.page 19



NOTICE!

No oil is added to the generator when it leaves the factory.



NOTICE!

Inject 1.6L of engine oil labeled SAE 20W-50



Please use SAE 20W-50 engine oil

Open the generator door, find the oil injection port, and unscrew the oil dipstick.

• According to the amount of oil injected into different generator models, there is a sticker on the outer box of each generator to indicate the amount of oil that needs to be added to the generator, until the oil dipstick marks the middle level.

Check whether the oil is also added show down in fig.page 20.

 Press the LCD page button to check whether the oil has been added, ON (1) will appear on the LCD screen after the oil has been added, and OFF (2) will appear if the oil has not been added.



10 Inject gasoline fuel, diagram in fig.page 21.

The fuel tank is not provided by default, this content is only for users who have fuel for the tank



DANGER!

Safety instruction: Gasoline is a flammable and explosive dangerous product. Make sure there is no fire nearby when filling it.



WARNING !

Make sure that the fuel tank and the fuel pipe have been fixed. Make sure that all tubing and pipe clamps are fastened. Make sure that all pipes from the fuel tank to the generator are unblocked.

Inject Gasoline



- > Please use unleaded gasoline above 92#
- The manufacturer provides a 20L fuel tank, Do not overfill when filling gasoline, and do not exceed 98%

Check the fuel level on the control panel



NOTICE!

The fuel level can only display the accurate fuel level when the fuel tank is completely stationary

Check the fuel level on the control panel



- Press the LCD page button, when the oil level is displayed as %, it means the current tank oil level
- When the fuel in the fuel tank is less than 10%, the Alarm light $\angle !$

flash and the low fuel level

icon will appear on the LCD screen.





11

WARNING !

Please check multiple times before starting the generator, the cable wiring is correct, the air intake is sufficient, the exhaust is smooth, and the oil pipeline is unobstructed

Start and control the generator with the control panel



NOTICE!

It usually takes 5-9 times to start the generator for the first time, please be patient and wait

The generator controller is designed to start a group of 1 times, and it will start continuously 1 times until it starts.



DANGER!

Safety instruction: The generator is modulated to start a group of 5 times. During the start of the generator, it is forbidden to perform any operation on the generator. It is forbidden to open the generator cover or reach out to touch the flywheel of the generator, which may cause injury and electric shock.

Control panel button to start the generator: diagram show down in fig.page 23



- The generator is in the state of wireless remote control when it leaves the factory, the AUTO light is on.
- Start by pressing the start button on the control panel is a manual start.
 At this time, a small hand () will be displayed on the LDC.

Press the start button U to start the generator, and you will hear the sound of the starter motor driving the rotor. The generator controller is designed to start a group of 5 times, and it will start continuously 5 times until it starts.



NOTICE!

The new generator needs to run-in with low power for about 20 hours, and the load power should be kept within 2000W

➤ When the generator is not started for the first 5 times, the control panel will display the start failure icon 💥 , then press the stop buttor io to clear the start failure

icon, and then press the start button

to start 5 times until the generator is

started, diagram as following fig.9,page24



The new generator needs to run-in with low power for about 20 hours, and the load power should be kept within 3000W

Control panel button to stop the generator:

- Press the stop button **O** to stop the generator
- > Press the stop button Ond the generator will stop after 11 seconds,

and press the generator again to stop immediately

NOTICE!

Press the stop button and the generator will stop after 11 seconds, and press the generator again to stop immediately

12 Use wireless remote control

NOTICE!

Due to export customs restrictions, there is usually no battery installed inside the wireless remote control

The wireless remote control can only start and stop, and has no other functions. If you need to use the wireless remote control, please install the battery in the wireless remote control.

Press the AUTO button before using the wireless remote control

NOTE!

NOTICE!

This is a self-locking wireless remote control. Just press it once and release it for an operation. Do not press for a long time or press continuously. This will cause the generator to be out of control.

the wireless remote control show down in fig.page25.



- Before using the wireless remote control, first install the 3V battery in the wireless remote control
- Press the AUTO button before using the wireless remote control, At this time, the generator is in the automatic wireless remote control state. The AUTO icon will appear on the LCD screen of the generator (automatic control mode can be used if necessary)
- This is a self-locking wireless remote control. Just press it once and release it for an operation. Do not press for a long time or press continuously. This will cause the generator to be out of control.

LCD screen show down in fig.page 26.

When you press the Start/Stop key of the wireless remote control, the indicator light will light up. You can release it and wait for 10 seconds for the generator

to start. When you press the Start/Stop key again, wait 35 seconds for the generator to stop. Please wait patiently. Don't press continuously, and don't press for a long time to relax

When the generator starts normally, the LCD displays the voltage and frequency



12.1 Operating two generators in parallel (optional)

NOTICE!

The maximum power of two generators in parallel cannot exceed the sum of the rated powers of the two generators.

Without the parallel cable or with a damaged parallel cable the proper operation of the system is not guaranteed, especially in terms of load sharing.

You can independently turn each generator on and off. If the load is more than rated power, you can start both generators in parallel.

In case both generators are turned on: Disconnect the load before switching off the system. $\mathbf{>}$

13 Stopping the generator

There are three modes of stopping the generator show down in fig.page 27.

> When the generator is in the AUTO state, it can be stopped by the wireless remote

control, or it can be stopped by the stop button **O** on the control panel



You can also open the cover of the generator, and use the emergency stop on the junction box to turn off to stop.



14 Generator commissioning

After the generator installation is completed, enter the commissioning stage



WARNING !

Please check multiple times before starting the generator, the cable wiring is correct, the air intake is sufficient, the exhaust is smooth, and the oil pipeline is unobstructed



NOTICE!

It usually takes 5-9 times to start the generator for the first time, please be patient and wait

The generator controller is designed to start a group of 1 times, and it will start continuously 1 times until it starts.



DANGER!

Safety instruction: The generator is modulated to start a group of 5 times. During the start of the generator, it is forbidden to perform any operation on the generator. It is forbidden to open the generator cover or reach out to touch the flywheel of the generator, which may cause injury and electric shock.

14.1 Connect the battery DC12V to the generator

Different models use different battery capacities, please match the battery capacity according to the following models:

JEC40, JEC60, JEC80 Battery 45Ah/DC12V JEC100, JEC120, JEC150 Battery 120Ah/DC12V JEC180, JEC200, JEC250 Battery 150Ah/DC12V JEC300, JEC400, JEC250 Battery 180Ah/DC12V JEC500 Battery 100Ah/DC24V



Please see the picture below for the location of the speed regulating motor

- Turn on the 200A switch and observe whether the speed-regulating motor of the generator can rotate and return to its original position. If it can rotate and return to its original position, it means that your installation is correct.
- Because of the different resistances, the speed-regulating motor sometimes turns to the right and blocks it, and it will not return and will make a buzzing sound, which is normal.



14.2 Fuel pump check

Press the Fuel pump check button with your finger and don't release it, you will hear the sound of the electronic fuel pump turning until the fuel is pumped out, and the fuel will come out continuously in the fuel return pipe.



Press and hold the Fuel pump check button with your finger until the fuel is pumped out, and the fuel will come out continuously from the fuel return pipe, which proves that the fuel pipe of the generator is unblocked and installed correctly.



14.3 Commissioning the cooling circuit system

Press the Fuel pump check button with your finger and don't release it, you will hear the sound of the electronic fuel pump turning until the fuel is pumped out, and the fuel will come out continuously in the fuel return pipe.



- The freshwater pump check button is a self-locking button. When pressed, the finger can be released, and the pump will turn on until it is pressed and released again.
- After pressing the freshwater pump check button, the pump will be turned on until freshwater is delivered from the return pipe to the Freshwater tank. Then the pump will be stopped.



14.4 Fill the sea water pump

Fill the sea water pump with water. Only the water pump filled with water in the pump body can pump the sea water up. The water pump is prohibited from running without water for a long time, and the water pump will be damaged.

5 1 Seawater filter Fresh water tank Not provide 120*120*200mm 420*200*200mi 6 Controlle 3 7 Cooling water pump Generator 2 Seawater pum

15 Start the generator



WARNING!

When the generator is connected, it must be ensured that the generator is stopped to avoid electric shock.otherwise it may cause fatal or serious injury.

► Generator output connected to mains power show down in fig.22,page 29.

- Make sure that the power output switch of the generator is disconnected before starting, and then close the switch when the generator runs smoothly.

- Press the manual start button 0 on the control panel and the generator will start

- This generator has a heating function. When the start button **O** of the control panel is pressed, the engine starts to heat for 3-8 seconds (the heating time can be changed by the USB data cable of the computer), the starter motor starts to rotate and the generator starts. It can take 2-5 times to start the generator for the first time.



JEC Series generators

- ► Open the generator front door.
- > Turn the emergency switch on the junction box to the O position.
- > Disconnect the positive terminal of the supply battery.
- > Take the dipstick out of the filler neck .
- Clean the dipstick with a cloth.
- > Put the dipstick back into the filler neck.
- > Take the dipstick out of the filler neck.
- Check that the oil level is between the notch (maximum filling level) and the tip of the dipstick If not, top up with more oil.
- > Put the dipstick back into the filler neck .
- > Check that the oil level is not above the maximum level.
- > Connect the generator to the positive terminal of the supply battery.
- > Turn the emergency switch on the junction box to the I position.
- Close the generator front door.

16 Changing the oil, diagram in fig.page 37.



CAUTION!

Hot oil can cause burns.



NOTE!

Only dispose of used oil at a specialist recycling station and observe the local laws for environmental protection.

You may use the following oil:

- API SG or SF grade oil for four-stroke engines.
- SAE 10W-30 grade oil (can be used at any temperature).
- Oil with single grade oil viscosity.

Select the appropriate viscosity according to the average temperature on-site.

Change the oil as follows:

- Allow the generator to run until warm so that the oil can drain off faster and completely.
- ► Place a suitable receptacle under the drain plug (1).
- ► Take out the drain plug (1).

- Low oil reminder and replacement:
- ➤ When there is no engine oil or insufficient engine oil, the Alarm light insufficient engine engine oil, the Alarm light insufficient engine engine e



- ► The oil drains off
- ► Pour fresh oil into the nozzle. The amount of oil is: 500ml.

17 Cleaning the generator.

OTICE! Beware of damage

- Do not clean the generator with a high-pressure cleaner. Exposure to water can damage the generator.
- Do not use sharp or hard objects or cleaning agents for cleaning as these may damage the generator.
- To clean the generator, use water with a gentle cleaning agent. Never use petrol, diesel or solvents.
- ► Loosen the screws (1) on both sides
- ► Hold the generator shell (3) and pull out the chassis(2) with the generator
- > Clean the generator with a damp cloth from time to time.
- Remove any dirt from the air vents in the generator at regular intervals. Make sure you do not damage the grilles of the generator in the process.

18 Servicing the air filter



WARNING! Danger of explosions

Do not use diesel oil or solvents with low boiling points for cleaning the air filter. They could ignite or explode.



NOTICE!

Never leave the engine running without an air filter. Otherwise this quickly wears out the engine.

NOTE!

If the air filter is dirty, the air flow to the carburettor is reduced. Check the filter regularly so that the carburettor can function properly. Check this more frequently if the generator is being used in particularly dusty environments.

- Prepare the maintenance work and pull the generator out of the housing slightly: see chapter "Preparing maintenance work".
- Remove the butterfly nut and the filter cover.
- ► Remove the butterfly nut .
- Take out the air filter.

The air filter consists of two parts: a sponge filter and a paper filter.

- Check the condition of both parts of the filter carefully. Replace the damaged filter parts.
- > Clean the undamaged filter parts; see the following section.
- ► Finish the maintenance work, see chapter "Finishing maintenance work".

Cleaning the sponge filter

- > Wash the sponge with a neutral detergent solution and rinse it thoroughly.
- ► Leave the sponge to dry completely.
- > Soak the sponge in fresh engine oil.
- ► Squeeze out the excess oil.

19 Cleaning the air filter, diagram in fig.page 41.

 Knock the dirt off the paper by banging it lightly on a hard surface or use compressed air to blow through the filter.

Do not brush the paper as this will push the dirt into the fibres of the paper filter.

► Change the paper filter if it is heavily soiled.



20 Servicing the generator



NOTE Find your local agent

http://www.usrgenerator.com

20.1 Maintenance table



WARNING!

Only have maintenance work carried out by specialist personnel who are familiar with the relevant regulations. Inadequate maintenance may cause serious hazards.

NOTE

Have the following maintenance work performed at regular intervals or after the specified number of operating hours, whichever is sooner.

| Interval | Inspection/maintenance |
|--------------------------------------|--|
| In the first month or after 20 hours | Change the oil Check the air filter (chapter "Servicing the air filter") |
| Every 3 months or aer 50hours | Check the airfilter (chapter "Servicing the air filter") |
| Every 6 months or aer 100hours | Change the oil Check the spark plug (chapter "Servicing the spark plugs). |
| Once a year or every 300 hours | Check the valves' adjustment. Check the fuel tank and fuel filter. Check the vibration damper (rubber feet). |
| Every two years | JEC Check the petrol supply lines. LPG model Check the gas supply lines. |

20.2 Preparing maintenance work



Note the following for all maintenance work:

- The generator must not be running.
- All the parts must be cooled down.
- Switch the generator to no function with the main switch.
- > Disconnect the positive terminal of the supply battery.
- > Open the generator front door.

For maintenance work, you can take the generator out



WARNING!

The mounting plate with generator is very heavy (> 40 kg) and could fall out the housing if you take it out too far.

- Undo the fastening screws (1).
- Remove the mounting plate (2) with the generator from the housing (3).

18.3 Finishing maintenance work

- > Connect the generator to the positive terminal of the supply battery.
- Switch the generator to standby with the main switch.
- ► Close the generator front door.

21 Troubleshooting

| Fault | Cause | | Remedy | | |
|--------------------------------------|---|---|--|--|----------------|
| The controller | Starter battery is flat. | | Charge the starter battery. | | |
| on when the on/off switch is | Power cable is disconnected or the plug is removed. Generator earth cable is disconnected or the fuse (if available) is blown. | | Contact an authorised workshop | | |
| pressed. | | | | | |
| The starter does | Starter battery is flat. | | Charge the starter battery. | | |
| not work when the start button is | The main switch is at "0". | ≻ | Set the main switch to "I" or "1". | | |
| pressed. | Starter sha is dirty. | ≻ | Clean the starter shaft. | | |
| | Too much oil in the engine. | ≻ | Drain the oil. | | |
| | Inverter is damaged. | | Contact an authorised workshop or agent. | | |
| | Power cable is disconnected or the plug is removed. Generator earth cable is disconnected or the fuse (if available) is blown. Starter is not receiving any p | | | | |
| | | | | | |
| The starter turns | | | | | No petrol/LPG. |
| but the generator does not start. | Spark plug is not receiving any power. | ≻ | Check the electric connections. | | |
| | Carburettor is not receiving any petrol. | ≻ | Clean the carburettor. | | |
| | Air intake is blocked. | > | Check the air filter (see chapter "Servicing the air filter | | |
| | The ambient temperature is below 0°C. | ≻ | Use pure propane gas. | | |
| | Inverter is damaged. | ≻ | Contact an authorised workshop. | | |
| | Power cable is disconnected or the plug is removed. | | | | |

JEC Series generators

| Fault | Cause | Remedy | |
|---|--|--------|--|
| The generator tends to stall. | Too much oil in the engine. | > | Drain the oil. |
| | Load is over Rated power. | ≻ | Reduce the consumers. |
| | Carburettor is not receiving any petrol. | ≻ | Clean the carburettor. |
| | Air intake is blocked. | > | Check the air filter (see chapter "Servicing the air filter |
| | Inverter is damaged. | > | Contact an authorised workshop. |
| | Electromagnet is blocked. | | |
| | Air filter is dirty. | | |
| The generator is | Inverter is damaged. The stepper motor is faulty or the cable disconnected | | Contact an authorised workshop. |
| running but does not supply any voltage. | | | |
| | Electromagnet is blocked. | | |
| | The throttle valve is blocked. | | |
| The generator | Inverter damaged | | Contact an authorised workshop. |
| start up very fast and then the "GENERATOR ALERT"message appears. | The stepper motor is faulty or the cable disconnected | e is | |
| The generated | Inverter damaged | ≻ | Contact an authorised workshop. |
| voltage is unstable. | The stepper motor is faulty or the cable is disconnected | | |

22 Warranty

The statutory warranty period applies. If the product is defective, please contact the service partner in your country.

Our experts will be happy to help you and will discuss the warranty process with you in more detail.

23 Disposal

Place the packaging material in the appropriate recycling waste bins wherever possible.



If you wish to finally dispose of the product, ask your local recycling centre or specialist dealer for details about how to do this in accordance with the applicable disposal regulations.

24 Technical data

| Generator | JEC40 | JEC60 OX | JEC60 IX | JEC80 OX | JEC80 IX | |
|-----------------------------------|---|-----------------|-------------------|-----------------|--------------|--|
| Voltage | 1-Phase 110-120V~ 60Hz 220-240V~ / 50 -60Hz | | | | | |
| Max power | 4.5kW | 6.0kW | 6.0kW 8.0kW 8.0kW | | | |
| Rated power | 4.0kW | 5.6kW | 5.6kW | 7.2kW | 7.2kW | |
| Rated Speed | 2200-2600rpm | 2200-2800rpm | 2200-2800rpm | 2200-3000rpm | 2200-3000rpm | |
| Battery charger output voltage | | | 20A 12V | | | |
| Operating temp- erature range: | | –15°C to +50°C | | | | |
| Distortion factor | 1% | 1% | 1% | 1% | 1% | |
| Sound level | 63 dB(A) | 65 dB(A) | 65 dB(A) | 66 dB(A) | 66 dB(A) | |
| Fuel pump | DC12V | DC12V | DC12V | DC12V | DC12V | |
| Weight: | 156kg | 176kg | 176kg | 186kg | 186kg | |
| Dimension: | 620*510*540 | 620*510*540 | 720*510*540 | 620*510*540 | 720*510*540 | |
| Engine | | | Z482 | | | |
| Brand | | KUB | OTA Diesel En | gine | | |
| Emission regulation | | EPA/CARB | Tier 4 level + E | EU Stage V | | |
| Туре | | Vertical, water | cooled 4-cycle | e diesel engine | | |
| Cylinders | | | 2 | | | |
| Bore and stroke | | 67.0 x 68 | 8.0 (2.64 x 2.68 |)mm (in) | | |
| Displacement | | 0.4 | 79 (29.23)L (cu | ı.in) | | |
| Aspiration | | N | aturally aspirate | ed | | |
| Stand-by output / speed*1 | 7.5 (10.1) / 3000 kW (HP) / rpm | | | | | |
| Continuous output / speed*2 | 6.9 (9.2) / 3000 kW (HP) / rpm | | | | | |
| Combustion system | indirect injection | | | | | |
| Fuel system | | | In-line pump | | | |
| Inspection/ certification: | CE CALIFORNIA AIR RESOURCES BOARD | | | | | |

24.1 Technical data

| Generator | JEC100 | JEC100 CF | JEC120 | JEC150 | JEC180 | |
|-----------------------------------|---|-----------------------|---|-----------------|---|--|
| Voltage | 1-Phase 110-120V~ 60Hz 220-240V~ / 50 -60Hz | | | | | |
| Max power | 10.0kW | 12.0kW | 20.0kW | | | |
| Rated power | 9.0kW | 10.0kW | 12.0kW | 15.0kW | 18.0kW | |
| Rated Speed | 2200-3000rpm | 1500rpm | 1500rpm | 15000rpm | 15000rpm | |
| Battery charger output voltage | 20A 12V | | 26A 12 | 2V | | |
| Operating temp- erature range: | | | –15°C to +50°C | ; | | |
| Distortion factor | 1% | 1% | 1% | 1% | 1% | |
| Sound level | 63 dB(A) | 71 dB(A) | 73 dB(A) | 73 dB(A) | 73 dB(A) | |
| Fuel pump | DC12V | DC12V | DC12V | DC12V | DC12V | |
| Weight: | 216kg | 476kg | 486kg | 506kg | 526kg | |
| Dimension: | 640*510*540 | 1160*6 | 20*700 | 1260*620*700 | 1280*620*700 | |
| Engine | D722-E3 | V2203-M-E3 V2403-M-E3 | | | | |
| Brand | | KUBOTA Diesel Engine | | | | |
| Emission regulation | EPA/CARB Tier 4 level + EU Stage V | | | | | |
| Туре | | Vertical, water | cooled 4-cycle | e diesel engine | | |
| Cylinders | 3 | | 4 | 1 | | |
| Bore and stroke | 67.0 x 68.0 (2.64 x 2.68) mm (in) | | 87.0 x 92.4 (3.43 x 3.64) mm (in) | | 87.0 x 102.4 (3.43 x 4.031) mm (in) | |
| Displacement | 0.719L | | 1.27L | | 1.44L | |
| Aspiration | | N | aturally aspirate | ed | | |
| Stand-by output / speed*1 | 12.2 kW / 3000 rpm | 20.1kW / 3000 rpm | | | 22.0 kW / 3000 rpm | |
| Combustion system | indirect injection | | | | | |
| Fuel system | | In-line pump | | | | |
| Inspection/ certification: | CE CALIFORNIA AIR RESOURCES BOARD | | | | | |

24.2 Technical data

| Generator | JEC200 | JEC250 | JEC300 | JEC400 | JEC500 | | |
|-----------------------------------|--------------------------------------|--|--|----------------------|-----------------------|--|--|
| Voltage | 1-Pha 220-2 | ase 110-120V~ 240V~ / 50 -60H | 3-Phase 220V~ 60Hz 380-440V~ / 50 -60Hz | | | | |
| Max power | 22.0kW | 27.0kW | 33.0kW | 45.0kW | 55.0kW | | |
| Rated power | 20.0kW | 25.0kW | 30.0kW | 40.0kW | 50.0kW | | |
| Rated Speed | 1500rpm | 1500rpm | 1500rpm | 15000rpm | 15000rpm | | |
| Battery charger output voltage | | 26A 12V | | | | | |
| Operating temp- erature range: | | | –15°C to +50°C | ; | | | |
| Distortion factor | 1% | 1% | 1% | 1% | 1% | | |
| Sound level | 73 dB(A) | 73 dB(A) | 73 dB(A) | 75 dB(A) | 75 dB(A) | | |
| Fuel pump | DC12V | DC12V | DC12V | DC12V | DC12V | | |
| Weight: | 546kg | 576kg | 686kg | 706kg | 756kg | | |
| Dimension: | 1360*620*700 | 1360*620*750 | 1460*620*750 | 1280*620 |)*700 | | |
| Engine | V2403-M-E3 | V2403-M-T | V3300-M-E3 | V3800DI-T | 4BTA3.9-G2 | | |
| Brand | | KUBOTA Diesel Engine Cummins | | | | | |
| Emission regulation | | EPA/CARB Tier 4 level + EU Stage IIIA | | | | | |
| Туре | | Vertical, water | cooled 4-cycle | diesel engine | | | |
| Cylinders | | | 4 | | | | |
| Bore and stroke | 87.0 x (3.43 mm (i | 87.0 x 102.4 (3.43 x 4.031) 98.0 x 110.0 (3.86 x 4.331) 100.0 x 120.0 (3.937 x 4.724) 102 x120 (4.016 x 4.724) mm (in) mm (in) mm (in) mm (in) mm (in) | | | | | |
| Displacement | 2.43 | 4L | 3.318L | 3.769L | 3.9L | | |
| Aspiration | Naturally aspirated | | | | | | |
| Stand-by output / speed*1 | 26.5 kW / 1500 rpm | 30.5 kW / 1500 rpm | 33.6 kW / 1500 rpm | 49.5kW / 1500 rpm | 22.0 kW / 3000 rpm | | |
| Combustion system | indirect injection | | | | | | |
| Fuel system | | | In-line pump | | | | |
| Inspection/ certification: | CE CALIFORNIA AIR RESOURCES BOARD | | | | | | |