# EPS300DXE

**Content :**



**ORIGINAL INSTRUCTION MANUAL**

## 0. INTRODUCTON

Please read this manual carefully before using the generator. If you act as stated in this manual, your generating set will guarantee you a smooth functioning time after time.

First read the engine and alternator manual supplied with each generating set. Here you will find more information about the use, the maintenance and the dangers in case of improper use.

If you have any questions concerning your generating set please contact EUROPOWER Generators through www.europowergenerators.com.

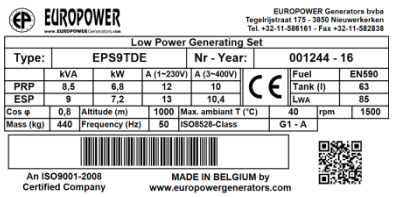
All data in this manual are based on the standard versions of the type EPS300DXE. Generating sets with options can have slightly different data. Contact your dealer for more information.

## 1. SAFETY INSTRUCTIONS

- Read and understand the owner's manual before using the generator, opening it or working on it. This can prevent personal injury or equipment damage. When this manual is not 100% clear to you, please consult an authorised dealer.
- Place the generator on a levelled surface.
  When the generator is tilted, fuel spillage may result.
  Place the generator, when in use, at least 1m away from buildings or other equipments.
  Keep children and pets away from the generator when it is in operation.
- Diesel is extremely flammable and explosive under certain conditions.
  Refuel only in a well-ventilated area with the engine stopped.
  Do not smoke or allow flames or sparks in the area where the engine is refuelled or where diesel is stored.
  Wipe up spilled fuel at once.
  Avoid repeated or prolonged contact with skin or breathing of vapour.
- Use automotive diesel (diesel number 2 according to EN590) with a cetane number of 40 or higher, and with a max. sulphur level of 0,5%.
- It is allowed to use the generating set in the rain (according to EN60529-protection class IP23). This means that the generating set can support water in the form of rain till max. 60° in respect of the perpendicular line. Do not use the generating set in the snow. Only use it in spaces where there is no explosion hazard.
- The generator is a potential source of electrical shocks when misused. Do not operate the generator with wet hands.
- Connections for standby power to a building's electrical system must be made by a qualified electrician and must comply with all applicable laws and electrical codes.
  Never connect the generating set to the public mains or any other electrical power source! Improper connections can allow electrical current from the generator to back feed into the utility lines. Such back feed may electrocute utility company workers, and when utility power is restored, the generator may explode, burn or cause fires in the building's electrical system.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine.
  Be careful not to touch the muffler while it is still hot.
  Let the engine cool down before storing the generator indoors.
  To prevent scalding, pay attention to the warning marks attached to the generator.

- Make sure the generator operates in a well-ventilated room. In case of insufficient cooling and/or ventilation severe damage can occur. Exhaust gases also contain poisonous carbon monoxide.
- Never connect appliances that need more power than the generator can provide. This could seriously damage the generator. Never use the generator when the cover plates are removed from the engine or alternator.
- Do not wear loose clothes near the generator.
- Let maintenance be carried out by trained technicians only. For example, according to art. 233 of the Belgian AREI – General Regulation on Electrical Installations - this means that maintenance can only be carried out by "warned persons" (code BA4) or "authorised persons" (code BA5). If local rules differ, the most rigid of both rules should be followed.
- Never work on the generator while it is still running.
- Be very careful while using a welder on any type of generator. Welders might damage the alternator. Always consult a EUROPOWER specialist first to make sure that the power of the generating set matches the requested power of the welder.
- If the appliance you want to connect is of an electronic kind (computer, radio, TV, plastic welder …), always consult a EUROPOWER specialist first. Such appliances might not work or even break down in combination with some alternators. Alternators with a low harmonic distortion are best suited for connection of electronic appliances.
- Never let a diesel engine run for a long time (= more than 30 min.) at no load or at a very low load (<15%). This can damage the engine severely!

## 2. CE-MARK, NOISE LABEL AND PICTOGRAMS





2.1. CE-marking and noise label: these are examples of a EUROPOWER type indication plate and a noise label. The type indication plate can be found on every generator. The noise label only appears on generators that comply with the European Standard 2000/14/EC. More information on this can be found in the EUROPOWER documentation or on our web site www.europowergenerators.com.

2.2. Pictograms: some of these pictograms are typical for a certain option or special type of generating set. Therefore not all pictograms necessarily appear on the standard generating set.

EP(S)WATER_D

| | | |
|---|---|---|
| (2) |  | Here you can fill the tank with diesel. Remove the fuel filler cap and check the fuel level. Refuel carefully to avoid fuel spillage. Do not fill the tank to the top. You might have to lower the fuel level, depending on operating conditions. After refuelling, reinstall the fuel filler cap and tighten it securely. Spilled fuel causes environmental damage. Wipe up spilled diesel at once. |
| (3) |  | Diesel drain plug. By loosening this plug you can drain the fuel tank if necessary. Spilled diesel causes environmental damage. Wipe up spilled diesel at once. If you will not use the drained diesel again, you have to get rid of it in a correct and environmentally friendly way. Respect the local regulations. Do not pour diesel into the ground or down the drain. |
| (4) |  | Here you can fill the oil by loosening the oil filler cap or dipstick. Fill carefully to avoid oil spillage. Spilled oil should be wiped up immediately in a correct and environmentally friendly way. Respect the local regulations. Do not pour oil onto the ground or down the drain. |
| (5) |  | After removing the hatch, you can refill the radiator.<br>Warning: risk of burns! Stop the generating set en let it cool down before removing the pressure cap. Loosen the pressure cap to release the pressure. Do not refill the radiator when the engine has just run and is still warm. Wait until the engine cooled down and then refill the radiator.<br>Hot coolant and steam can cause a serious and even deathly injury. |
| (11) |  | WARNING! – Electric shock hazard. |
| (12) |  | Never connect the generator to an installation which is also connected to a public mains. Improper connections can allow electrical current from the generator to back feed into the utility lines. Such back feed may electrocute utility company workers, and when utility power is restored, the generator may explode, burn or cause fires in the building's electrical systems. |
| (13) |  | Here an earth pin can be connected. Follow the instructions in this manual concerning the use of an earth pin. |
| (22) |  | WARNING! – Hot surface. Can cause burns. Hot engine and hot exhaust system can cause serious and even lethal injuries. Never work on the generating set before it has sufficiently cooled down. |

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| (23) |  | Do not smoke nor allow sparks or flames near the generating set, the fuel pipe, the fuel filter, the fuel pump or other possible sources of spilled fuel or fuel vapours. |
| (24) |  | Fuel is highly flammable and explosive and you can be burnt or seriously injured when refuelling. Turn the engine off and let it cool down before refuelling. |
| (25) |  | The engine‘s exhaust gases contain poisonous carbon monoxide. You can be killed or seriously hurt. Do not run the engine in a closed environment. The exhaust system should be leak-tight and it should be inspected regularly. |
| (26) |  | Rotating parts can cause serious and even deathly injuries. Do not let the engine run unless all protection covers, shields and grids are in place.<br>Make sure the incoming and outgoing air flow is not obstructed. |
| (27) |  | Only use a hoist according to local safety regulations.<br>Never allow sharp bends in lifting cables and chains.<br>It is strictly forbidden to dwell or stay in the risk zone under a lifted load. Never lift the unit over people or residential areas. Never leave a load hanging on a hoist. Lifting acceleration and retardation shall be kept within safe limits.<br>To lift heavy parts, a hoist of ample capacity, tested and approved according to local safety regulations, shall be used.<br>Lifting hooks, eyes, shackles, etc. shall never be bent and shall only have stress in line with their design load axis.<br>The capacity of a lifting device diminishes when the lifting force is applied at an angle to its load axis.<br>For maximum safety and efficiency of the lifting apparatus all lifting members shall be applied as near to perpendicular as possible.<br>A hoist has to be installed in such a way that the object will be lifted perpendicular.<br>If that is not possible, the necessary precautions must be taken to prevent load-swinging, e.g. by using two hoists, each at approximately the same angle not exceeding 30° from the vertical. |

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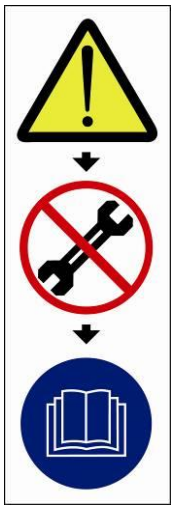
|---|---|---|
| (28) |  | WARNING! – Consult the instruction and maintenance manual of the engine and the alternator before carrying out maintenance.<br>Improper maintenance, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed.<br>Always follow the inspection and maintenance recommendations and schedules mentioned in the instruction and maintenance manual of the engine and the alternator. |

## 3. SHORT DESCRIPTION OF THE GENERATING SET

Type: EPS300DXE
Welding current : 220A DC (60% duty cycle)
Diameter electrode : max. 6 mm
Power : 3 x 400V : 8kVA, 1 x 230V : 3kVA
Alternator : SINCRO ARC300, 3000 rpm, 50Hz, IP23
Engine : KUBOTA D1105, 3-cylinder, 1123 $cm^3$, 3000 rpm, water-cooled
Content of fuel tank : 63 litres
Dimensions : 150 x 64 x 90 cm
Weight : 435 kg
Noise level : LwA 92 (*)

(*)(see also the EC Declaration of Conformity IIA for the "measured sound power level" and the "guaranteed sound power level")

The main components of the generating set are: the water-cooled KUBOTA diesel engine (3000rpm), the alternator, the control panel, the silenced canopy and the chassis.

Engine and alternator specifications can be found in the engine and alternator manual supplied with each generating set.
The specifications of the control panel can be found in chapter 4.

The chassis of the generator serves as fuel tank (capacity 63 litres) and contains the fuel filler cap, the mechanic fuel level meter, the fuel drain cap (for cleaning of fuel tank), 4 fixation holes (for fixed mounting of the genset), the battery support and the fixing support for the (manual) oil drain pump. In the bottom plate of the chassis there is an inspection hole for the oil drain screw on the crank case cover.

The silenced canopy of the generator contains: one central lifting eye, 2 plastic inspection hatches in the top cover for the radiator filler cap and oil filler cap, two doors with lock (for normal maintenance), a control panel, an inspection hatch for the battery, a cold air intake grid, a hot air outlet grid. The exhaust goes through the hot air outlet grid.

## 4. DESCRIPTION OF THE CONTROL PANEL

The control panel of the genset consists of:

- starting key (off/on/glow/start)
- pilot lamp green (contact on/off), lamp lights up when contact is on
- emergency stop
- pilot lamp red (charging current battery), lamp lights up when battery is not being charged
- hour counter
- thermal-magnetic protection
- earth leakage protection (earth pin included)
- voltmeter
- 4 sockets: 1x schuko 16A, 2× 3p CEE 16A and 1x 5p CEE 16A
- Welding terminals + and - (type DIX 35-50mm²)
- welding current selector switch
- welding range selector switch

Further can be found on the back of the control panel:

- 1 relay 12V/25A that guards the oil pressure and cooling water temperature by means of the stop solenoid (engine stops when oil pressure is too low or cooling water temperature is too high)

On the control panel there is space left for the optional mounting of:

- a frequency meter
- 3 amp-meters
- a modular insulation protection control relay (instead of earth leakage protection)
- module Automatic Idle System – AIS (see further)

Other options (such as star-delta switch) are only possible if mounted when the generator is being built, not afterwards.

## 5. USE OF THE GENERATOR

**CAUTION!** The generator is equipped with a 12V electric fuel pump. This pump may not "run dry". If the engine stops because it is out of fuel, turn the contact key to position "OFF" as fast as possible.

5.1.Starting the engine:

- check the oil level
- check whether the radiator is filled with coolant up to the filler cap, check also the coolant level in the expansion tank: the coolant has to reach up to 1cm below the level mark "FULL". If necessary fill it up. The mixture consists of 50% water and 50% antifreeze (working temperature mixture up to -30°C)
- preheat during ± 10 seconds
- start the engine with the starting key
- let the engine run for a few minutes before charging.

5.2.Charging the generator:

5.2.1. Use as generating set:

- turn the range selector welding scale in the position (GEN).
- on the type indication plate of the generator you can find more information about the power/maximum admissible charging current of the generator.
- in case of overload, the thermal-magnetic protection in the control panel shall be switched off after a short period of time. Check the load, reduce it if necessary and switch on the thermal-magnetic protection again.
- in case of short-circuit, the thermal-magnetic protection will switch off immediately! Check what caused the short-circuit and switch on the protection again afterwards.
- never let the diesel engine run for a long time (= more than 30 min.) at no load or at a very low load (<15%). This can damage the engine severely.

**CAUTION:**
Generators with **option** "A.I.S." - Automatic Idle System:

- If the switch for A.I.S. (no.1) is turned into the ON position, the generator will automatically run at idle speed (low speed) when there is no load connected. When the generator is charged with minimum +/- 60 Watt, the engine speed will automatically return to its nominal speed (3000rpm).
  -Similar for the welding part (welding potentiometer at min. 25%): as soon as the user will start welding, the engine speed will be increased to 3000 rpm.
  When there is no longer a load connected (or when the user stopped welding), after +- 30 seconds, the engine will return to idle speed. The Automatic Idle System only reacts to the charges on sockets nr. 2 and 3, not to those on nr. 4 and 5!
- To use the 2 sockets with marks "NO A.I.S" (nr. 4 and 5) and to weld with a smaller welding current percentage than 25%, the AIS has to be switched to OFF. In this case, the engine will have a constant speed of 3000 rpm.

5.2.2. Use as welder:

- Set the welding range selector switch in the right position. (see photo)
- Select the desired welding current value (see photo)
- connect the ground cable (ground rod (-)) and the welding cable (electrode holder (+))


Note: The welding alternator is protected against "over-charge" (continuous welding with too high welding current) by a thermal protection on the stator windings and by a thermal protection on the welding rectifier bridge.
The welding part of the alternator will be automatically switched off. After a cooling down period of a few minutes, the welding part of the alternator will be switched on automatically.

5.2.3. Simultaneous use as generating set and welding generator:

- **ATTENTION! The EPS300DXE can not be used at the same time as generating set and as welding generator. Simultaneous use can seriously damage the welding alternator.**
- **ATTENTION! During welding, the generator sockets are live, but the voltage value is low and unstable. So, for safety reasons, it is recommended to disconnect the user loads during welding.**

5.3.Stopping the generating set:
- let the generating set cool down at no load for a few minutes before stopping the engine.
  Stop the generating set with the starting key.
- in emergency situations you can stop the generating set with the red emergency stop button.

5.4.Cooling:
- make sure that there are no obstructions at the fresh air intake grid, which provides cooling air for the engine and the alternator.
- make sure that the hot cooling air from the engine and the alternator, as well as the exhaust gasses, can easily be abducted.
- never let the generator run in an inappropriately ventilated room!

5.5.Protections:
- engine: oil pressure security and cooling water temperature protection.
- alternator: . thermal-magnetic protection
  . earth leakage protection (with earth pin)
  . 2 thermal protections against overload during welding

5.6.Maintenance (see also chapter 10):

All maintenance parts (air filter, oil drain pump, oil filler cap, oil filter, fuel filters, radiator filler cap, battery) are easily accessible.
For normal maintenance activities, consult the engine manual.
In case of engine or alternator failure, consult your dealer.

5.7.Safety for the users:

The standard version of the generating set is delivered with earth leakage protection and earth pin, and connected following the TN-S electrical scheme.
Note: do not forget to use the earth pin.
For the connection of appliances of class 1 (appliances with earthing)and appliances of class 2 (double insulation, to be recognized by the "double square" pictogram on the appliance), there is no restriction on the number of appliances that can be connected at the same time.
Respect the minimum square (mm²) and maximum length of the cables you are using to assure the correct switching off of the thermal-magnetic protection in case of short-circuit.

The working of the earth leakage protection can only be guaranteed if the added earth pin with 4 metres of earth cable is connected to the generating set (see symbol earthing on the generating set). The earth pin should be driven completely into the soil to guarantee a correct working. The spreading resistance of the earth electrode should be measured by a recognized organism.

**Table: Recommendation of minimum square (mm²) and maximum length of the cables (m) in function of the current (A):**

| | **Cable length** | **Cable length** | **Cable length** |
|---|---|---|---|
| Current (A) | **0 - 50 meter** | **> 50 - 100 meter** | **> 100 - 150 meter** |
| 6 | **1.5mm²** | **1.5mm²** | **2.5mm²** |
| 8 | **1.5mm²** | **2.5mm²** | **4mm²** |
| 10 | **2.5mm²** | **4mm²** | **6mm²** |
| 12 | **2.5mm²** | **6mm²** | **10mm²** |
| 16 | **2.5mm²** | **10mm²** | **10mm²** |
| 18 | **4mm²** | **10mm²** | **10mm²** |
| 24 | **4mm²** | **10mm²** | **16mm²** |
| 26 | **6mm²** | **16mm²** | **16mm²** |
| 36 | **6mm²** | **25mm²** | **25mm²** |
| 50 | **10mm²** | **25mm²** | **35mm²** |

## 6. INCORPORATION OF THE GENERATING SET

Consult your EUROPOWER dealer or EUROPOWER Generators.

## 7. PARTS LIST

This parts list applies to the standard version of the generating set. For generators with options (eg. Insulation protection, remote control,…) there might be small differences! Consult your dealer for parts for these generators.

Article number Description

7.1. GENERATING SET

100000095 eye bolt M24, lifting eye
100000324 lock nut M24 for 100000095
100000424 washer M24 for 100000095
100002000 fuel level meter G/LL43/435 6/4"
110000100 inspection hatch for radiator filler cap and oil filler cap
120000060 silent bloc A 60/60 M10*26.5 SH60
120001043 silent bloc B 40/30 M8*20 ext./M8*11.5 int. SH45
140000912 socket screw 1", tank drain plug

| | |
|---|---|
| 142000006 | banjo 6mm + banjo bolt M10*1 |
| 142000008 | banjo 8mm + banjo bolt M12*1,5 |
| 143000000 | lock with key for door |
| 143000208 | hinge for door |
| 143999001 | sealing profile for door |
| 169999995 | battery 45 Ah (54577) |
| 170000021 | battery clamp + |
| 170000022 | battery clamp - |
| 170000024 | protection cover red for battery clamp + |
| 170000025 | protection cover black for battery clamp – |
| 170091105 | exhaust |
| 186001000 | oil drain pump |
| 186001001 | hose for oil drain pump |
| 199000060 | support diesel pump 12V |
| 199000061 | support diesel pump 12V + stop solenoid (option module A.I.S.) |
| 199000421 | canopy EPS300DXE |
| 199001077 | control panel, plate work |
| 217000322 | ARC300 (AR2MFT)300/250A SAE5/6.5 blind panel 230/400V 8/3kVA |
| 301010261 | D1105BB-STD3 SAE5/6.5 KUBOTA diesel engine complete |
| 400001519 | support for silent bloc B left |
| 400001520 | support for silent bloc B right |
| 909000009 | kit insulation material |
| 910000022 | U-profile Alu 245mm, battery fixation |
| 910000034 | engine support D1105 RIGHT |
| 910000035 | engine support D1105 LEFT |
| 910000442 | chassis EPS300DXE |
| 910999746 | lifting brace EPS300DXE |
| 914001300 | control panel EPS300DXE complete, standard |
| 925000000 | earth pin with 4m cable 16mm² |
| A109 | diesel pump 12V DC |
| A111 | exhaust gasket |
| 1K553-72061 | radiator (K484) |

## 7.2. CONTROL PANEL

| | |
|---|---|
| 110000010 | cover plate 48*48mm |
| 170000037 | fuse 40A U/S EL CONNEX |
| 170000099 | relay 12V 25A break and make contact |
| 170000250 | rail clamp for fuse US-EL C. 1-40A |
| 174000012 | hinged lid 12 modules |
| 174000112 | DIN-RAIL for 12 module secondary frame |
| 180000000 | socket, type Schuko |
| 180000001 | socket, French type |
| 181000007 | rail clamp 16mm² earthing |
| 181002605 | lamp complete LED 12VAC/DC green IP65 (max.20mA) |
| 181002606 | lamp complete LED 12VAC/DC red IP65 (max.20mA) |
| 181002632 | Emergency button red "turn to release" |
| 181002633 | Adaptor for buttons |
| 181002639 | Contact NC |
| 181003010 | thermal-magnetic protection 3 poles 10A, C-character. |
| 181005003 | voltmeter 0-500V (48*48mm) |
| 181030316 | CEE socket 3 poles 16A |
| 181030516 | CEE socket 5 poles 16A |
| 183000009 | earth leakage protection 4 poles, 30mA, 40A |
| 183000010 | hour counter 230V type DIN-rail |

Parts for option module A.I.S.:

| | |
|---|---|
| 100000980 | fork joint M6 |
| 100000981 | knee-joint M6 |
| 170000099 | relay 12V 25A SPDT |

| | |
|---|---|
| 181002002 | support for contact 181002003 and 181002004 |
| 181002003 | contact NG for 181002005 |
| 181002004 | contact NO for 181002005 |
| 181002005 | switch button 0/1 |
| 186000060 | stop solenoid C45 12V + spring |
| 390401051 | ecologizer IADA-1009-FC |

7.3. MAINTENANCE PARTS

| | |
|---|---|
| 217990074 | brush holder with brushes |
| 398011106 | air filter element |
| 398011107 | air filter security element |
| 398111105 | fuel filter |
| 398211105 | oil filter |
| 130000016 | pipe filter |
| A11105012 | fan belt |
| A11505001 | valve cover seal |

## 8. ELECTRICAL SCHEME

See enclosed EUROPOWER electrical schemes and alternator manual.

## 9. BUILDING-IN DIMENSIONS

See enclosed: drawings

## 10. MAINTENANCE

10.1. Alternator:

A periodic check of the alternator is not necessary. A visual control of the different alternator parts at every general generator maintenance will do. Check here also the state of the rotor bearing and the state of the carbon brushes! The expected life time of the brushes is 2500 to 3000 hours.

10.2. Engine:

See engine manual for maintenance intervals.
- in the factory, the radiator has been filled with coolant for use up to -30°C. The specification of this coolant is BS6580/92 – SAE J1034. Only use coolant with this specification!
- the engine has been filled in the factory with 15W40 oil (for temperatures up to -10°C). The minimum specification of this oil has to be API SJ/CF-4.
- if the ambient temperature is lower, 10W40 oil (up to -20°C) or 5W40 oil (up to -30°C) should be used. Here the minimum specification of the oil also has to be API SJ/CF-4.

## 11. TRANSPORT AND STORAGE

To prevent fuel spillage when transporting or during temporary storage, the generator should be secured upright in its normal operating position, with the engine switch in position “OFF”.

When transporting the generators:
- Do not overfill the tank (there may not be any fuel in the filler neck).
- Do not use the generator while it is placed in a vehicle.

- Take the generator off the vehicle and use it in a well-ventilated place.

Before storing the unit for an extended period ( > 2 months):

- Make sure the storage area is free of excessive humidity and dust.
- For diesel generating sets it is better to fill the tank completely before storing the generating set for a long time. In this way you can avoid condensation and corrosion in the diesel tank.
- Refresh the engine oil.
- Remove the battery and connect it to a battery charger. This way you will increase the life span of the battery.