OPERATING INSTRUCTIONS

ESE 808 DBG ES DUPLEX SILENT	**Article No. 113007**
ESE 1308 DBG ES DUPLEX SILENT	**Article No. 113008**
ESE 1408 DBG ES DUPLEX SILENT	**Article No. 113022**



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General note:

The illustrations in these operating instructions do not always comply completely with the actual design, in particular with regard to the colour, and are to be considered as the depiction of basic principles.

We reserve the right to modifications in terms of ongoing technical development.

Technical modifications after printing these operating instructions are not considered.

1 General information



These operating instructions must be read carefully and understood before using the generator.

These operating instructions are intended to make you familiar with the basic operation of the generator.

These operating instructions contain important information for using the generator safely and appropriately.

Complying with this this information helps to:

- Avoid hazards
- Reduce repair costs and downtime
- Increase the reliability and service life of the generator.

However, not only these operating instructions but also the laws, regulations, guidelines, and standards applicable in the country of use and at the site of operation must be observed.

These operating instructions only describe the generator operation.

A copy of these operating instructions must be available to the operating personnel at all times.

1.1 Further documents

In addition to these operating instructions, the following documents are relevant for the generator:

- Operating instructions and maintenance instructions for the engine (Briggs & Stratton Corporation)
- Important safety information and instructions for: engine selection, engine installation, engine operation (Briggs & Stratton Corporation)
- Briggs & Stratton Service Germany (Briggs & Stratton Corporation)
- Wiring diagram of the generator
- Handling procedure battery

1.2 Safety symbols

The safety symbol represents a source of danger. The safety symbols in the work area of the machine/plant and the entire technical documentation correspond to the Council Directive 92/58/EEC - Minimum requirements for the provision of safety and/or health signs at work.



General hazard

This warning sign indicates activities where several causes can lead to risks.



Potentially explosive materials

This warning symbol indicates activities during which there is an explosive hazard, possibly with lethal consequences.



Dangerous electrical voltage

This warning symbol indicates activities during which there is the danger of electric shock, possibly with lethal consequences.



Poisonous substances

This warning symbol indicates activities during which there is the danger of poisoning, possibly with lethal consequences.



Warning of environmentally damaging substances

This warning sign indicates activities during which the environment could be endangered, possibly with catastrophic consequences.



Hot surfaces

This warning symbol indicates activities during which there is the danger of burns, possibly with lasting consequences.

Notes

2 General Safety Regulations



This section describes the basic safety regulations for operating the generator.

Whoever operates the generator or works with it must read this chapter and comply with its regulations in practice.

2.1 Intended use

The generator complies with the state of scientific and technical knowledge as well as the applicable safety regulations at the time of placing on the market in the context of its intended use.

It was not possible to avoid foreseeable misuse or residual risks through design measures without limiting the intended functionality.

Hazards are therefore averted by means of special warning signs either directly on the generator and/or in the technical documentation.

2.1.1 Intended use

The generator produces electricity in place of the power grid, in order to supply a mobile distribution system.

The generator may only be used outdoors within the indicated voltage, output, and nominal RPM ranges (see model plate).

You are also permitted to use it on a vehicle extension or swivelling platform in both extended and swung out states, providing that the air circulation is uninterrupted on all sides of the generator and that the exhaust gases are dispersed correctly. This is especially relevant as access to the side with the instrument panel and the side with the exhaust gas connection must be unrestricted.

The method that will be used to install the generator on these parts of a vehicle requires written approval from the distributor that supplied the generator.

The generator may neither be connected to other energy distribution systems (e.g. public power supply) nor to other energy generation systems (e.g. other generators).

The generator may not be used in explosion-prone environments.

The generator may not be used in fire-prone environments.

The generator must be operated according to the specifications in the technical documentation.

Any non-intended use or any activity on the generator not described in these operating instructions are considered forbidden incorrect use outside the legal limits of the manufacturer's liability.

2.1.2 Foreseeable incorrect use or inappropriate handling

Foreseeable incorrect use or inappropriate handling of the generator nullifies the manufacturer's EU Declaration of Conformity and automatically revokes the operating licence.

Foreseeable incorrect use or inappropriate handling include:

- Operation in explosion-prone environments
- Operation in fire-prone environments
- Operation in confined areas
- Operation from a vehicle platform that has not been swung out
- Operation without the necessary safety redundancies
- Operation in existing power supply networks
- Refuelling when hot
- Refuelling during operation
- Spraying with high-pressure cleaners or fire-extinguishing equipment
- Safety equipment removal
- Incorrect vehicle installation

- Non-compliance with maintenance intervals
- Failure to measure and test for early damage identification
- Failure to replace wearing parts
- Incorrectly performed maintenance or repair work
- Defectively performed maintenance or repair work
- Unintended use

2.1.3 Residual risks

Before commencing design and planning, the residual risks of theESE 808 / 1308 DBG ES DUPLEX SILENT generator were analysed and evaluated by means of a hazard analysis in accordance with EN 1050.

Structurally unavoidable residual risks during the entire service life of theESE 808 / 1308 DBG ES DUPLEX SILENT generator can be:

- Risk of death
- Risk of injury
- Environmental hazard
- Material damage to the generator
- Material damage to other property
- Limited performance or functionality

You can avoid existing residual risks by observing and following these guidelines:

- The special warning notices on the generator
- The general safety instructions given in these operating instructions
- The specific warnings given in these operating instructions
- The specific standing instructions (the relevant operational conditions) issued by fire-brigades, civil defence and other relief organisations

Risk of death

Risk of death to persons at the generator can be caused by:

- Incorrect use
- Inappropriate handling
- Missing protective equipment
- Defective or damaged electrical components

- Fuel vapours
- Engine exhaust
- Too large a distribution network configuration

Risk of injury

Risk of injury to persons at the generator can be caused by:

- Inappropriate handling
- Transport
- Hot components
- Recoiling starter rope on the engine

Environmental hazard

Environmental hazards involving the generator may be caused by:

- Inappropriate handling
- Operating fluids (fuel, lubricants, engine oil, etc.)
- Exhaust gas emission
- Noise emission
- Fire hazard
- Leaking battery acid

Material damage to the generator

Material damage to the generator can occur through:

- Inappropriate handling
- Overloading
- Overheating
- Too low/high oil level of the engine
- Non-compliance with the operating and maintenance specifications
- Unsuitable operating fluids
- Unsuitable hoisting gear

Material damage to other property

Material damage to other property in the operating range of the generator can occur through:

- Inappropriate handling
- Over and/or undervoltage
- Incorrect installation in a vehicle

Limits to performance or functionality

The generator's performance or functionality can be limited by:

- Inappropriate handling

- Inappropriate maintenance or repair work
- Unsuitable operating fluids
- An installation altitude higher than 100 meters above sea level
- An ambient temperature exceeding 25°C
- Too large a distribution network configuration

Only appropriately authorised personnel may work with or on the generator.

The authorised operating personnel must:

- Be at least 18 years old.
- Be trained in first aid and able to provide it.
- Be familiar with the accident prevention regulations and generator safety instructions and able to apply them.
- Have read the chapter "General Safety Regulations".
- Have understood the content of the " General Safety Regulations ".
- Be able to put the content of the " General Safety Regulations " chapter to practical use.
- Be trained and instructed according to the rules of conduct in the event of malfunctions occurring.
- Have the physical and mental abilities to carry out his responsibilities, tasks, and activities on the generator.
- Be trained and instructed in his responsibilities, tasks, and activities on the generator.
- Have understood the technical documentation concerning his responsibilities, tasks, and activities on the generator and be able to implement these in practice.

2.2 Personal protective equipment

This personal protection equipment must be worn during all activities at the generator described in these operating instructions:

- Hearing protection
- Protective gloves
- Hard hat
- Protective shoes
- Fireproof protective clothing (in areas where the danger of fire is high)

2.3 Danger zones and work areas

The danger zones work areas on the generator are determined by the activities to be performed within the individual life cycles:

Life cycle	Activity	Danger zone	Work area
Transport	In the vehicle	Within a radius of 1.0 m	none
	By the operating personnel		Within a radius of 1.0 m
Operation	Setting up		
	Operating	Within a radius of 5. m	
	Refuelling	Within a radius of 2.0 m	
Service and maintenance	Cleaning	Within a radius of 1.0 m	
	Shutting down		
	Maintenance		

Table 2.1: Danger zones and work areas on the generator

These labels must be attached to the generator and kept in a clearly legible condition:

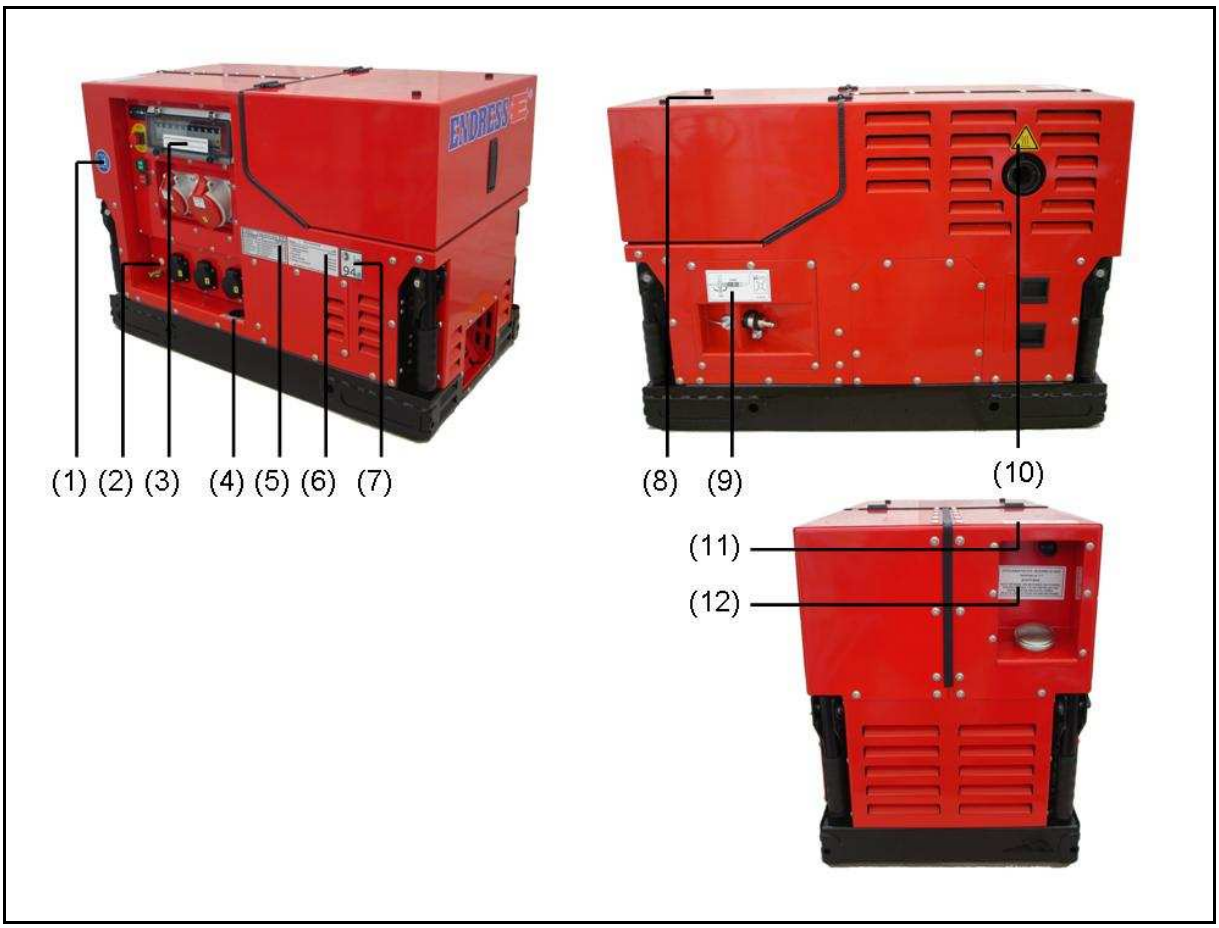


Fig. 2-1: Labels on the generator

1	Read operating instructions	7	Noise emission
2	Earthing	8	Short operating instructions (on the upper side of the hood)
3	Distribution network	9	Third party fuelling
4	Tank fill level	10	Hot surface
5	Model plate	11	Choke
6	Engine maintenance	12	Fuel

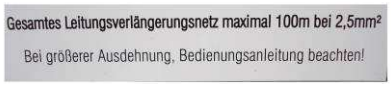
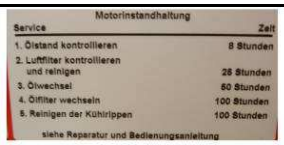
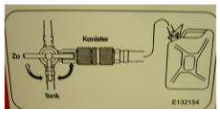
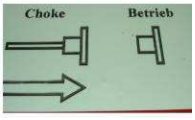
Label	Designation
	Read operating instructions
	Earth
	Cable extension
	Tank fill level
	Model plate
	Maintenance interval for the engine
	Noise emission
	Short operating instructions
	Third party fuelling
	Hot surface
	Choke
	Fuel

Table 2.2: Labels on the generator

2.4 General safety instructions

The generator's construction may not be modified in any way.

The engine's nominal rpm has been set in the factory and may not be changed.

All protective covers must be at hand and functional.

All labels on the generator must be in place and in clearly legible condition.

The operational reliability and functionality must be checked before and after each use/operation.

The generator must be used only outdoors with sufficient ventilation.

Do not use open flames, lights, or spark-inducing devices in the generator’s danger area.

Protect the generator against moisture and precipitation (rain, snow) during operation.

Protect the generator against dirt and foreign matter during operation.

The authorised personnel are responsible for the operational reliability of the generator.

The authorised personnel are responsible for safeguarding the generator against unauthorised operation.

The authorised personnel are obligated to observe the applicable accident prevention regulations.

The authorised personnel are obligated to obey the safety and work instructions of superiors and/or safety officers.

The authorised personnel are obligated to wear personal protective equipment.

Only authorised personnel may remain in the generator's danger zone.

Smoking is absolutely prohibited in the generator's danger zone.

Open flames and light are prohibited in the generator's danger zone.

Consumption of alcohol, drugs, medications, or other mind-altering substances is prohibited.

The authorised personnel must be familiar with the generator components and their function and know how to use them.

Transport

The generator may only be transported after it has cooled down.

The generator may only be transported in a vehicle after being fastened in place correctly (on the transport device).

The generator may only be lifted by the provided carrying handles.

The generator must be carried by at least as many persons as there are handles provided.

Setting up

The generator may only be set up on sufficiently firm ground.

The generator may only be set up on even ground.

Generating electricity

The electrical safety must be checked before each start-up.

Do not cover the equipment during use.

Do not obstruct or block the air supply.

Do not use starting aids.

Appliances must not be connected during start-up.

Only tested and authorised cables may be used for the power network.

It is prohibited to establish a connection between existing neutral conductors, potential equalisation conductors and/or equipment components (safety-separated circuit).

The entire drawn output must not exceed the maximum nominal output of the generator.

Do not operate the generator without a sound damper.

It is prohibited to operate the generator without air filters and with an open air filter cover.

Refuelling

It is prohibited to refill the fuel tank of the generator during operation.

It is prohibited to refill the fuel tank of the generator when it is still hot.

Use filling aids for refuelling.

Cleaning

It is prohibited to clean the generator during operation.

It is prohibited to clean the generator when it is still hot.

Maintenance and repair work

Operating personnel may only carry out maintenance or repair work described in these operating instructions.

All other maintenance or repair tasks may only be carried out by specially trained and authorised specialists.

Always remove the ignition key and the spark plug sockets before beginning maintenance and/or repair work.

The maintenance intervals specified in these operating instructions must be observed.

It is prohibited to service the generator during operation.

It is prohibited to service the generator when it is still hot.

Decommissioning

The generator should be put out of service if it is not required for more than 30 days.

Store the generator in a dry, locked room.

Use a petrol additive to prevent resinous residues in the fuel system.

Documentation

One copy of these operating instructions must always be kept in the generator's manual compartment.

The operating instructions and the maintenance instructions for the engine (Briggs & Stratton Corporation) are integral parts of this instruction manual.

Environmental protection

The packaging material must be recycled according to the environmental protection regulations applicable at the place of work.

The workplace must be protected against contamination by leaking operating fluids.

Used or remaining operating fluids must be recycled according to the environmental protection regulations applicable at the place of work.

Notes

3 ESE 808 /1308 /1408 DBG ES Duplex Silent

The components and functionality of the generator are described in this section.

3.1 Components on the operating and engine side

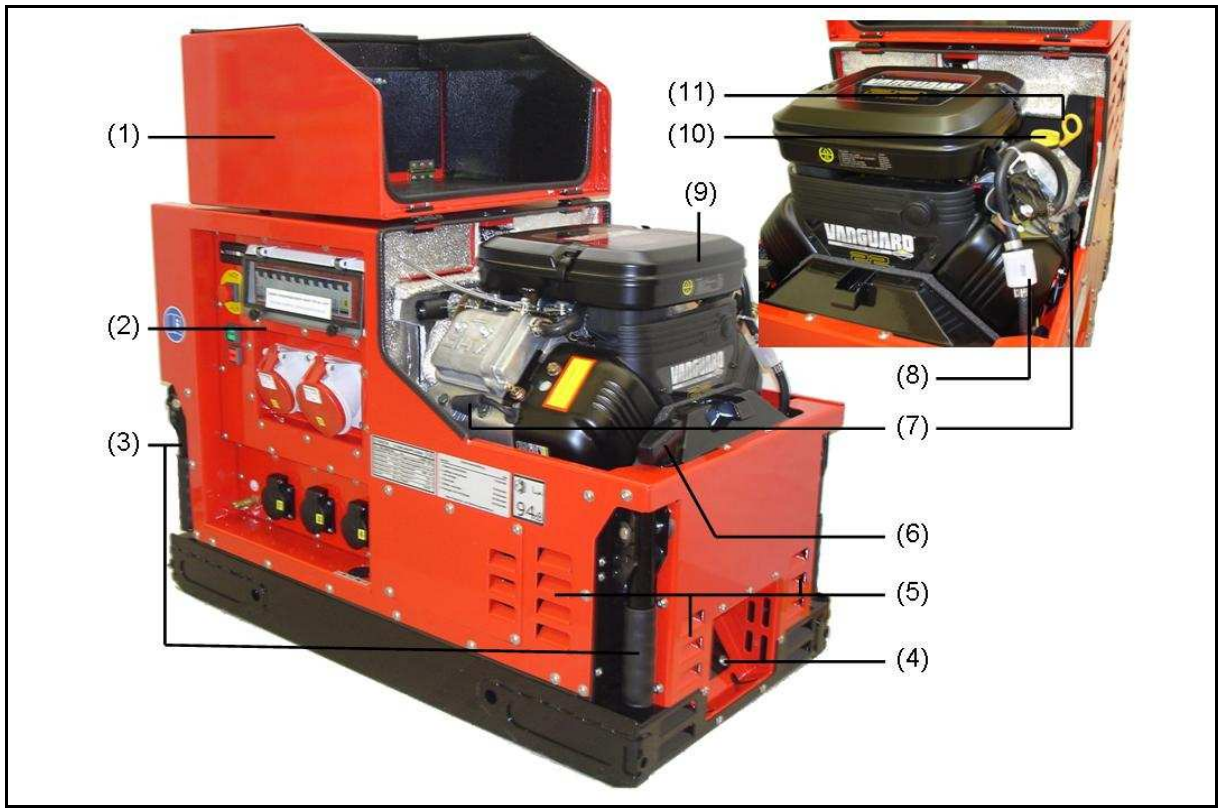


Fig. 3-1: Components of the operating and generator side

1 Protective cover
2 Control panel
3 Transport grips
4 Power socket for external starting (Nato socket), a special accessory
5 Air intakes / cooling vents (always keep clear)
6 Manually operated starter
7 Spark plugs
8 Fuel filter
9 Air filter
10 Oil filler neck
11 Dipstick

3.2 Components on the exhaust and generator side

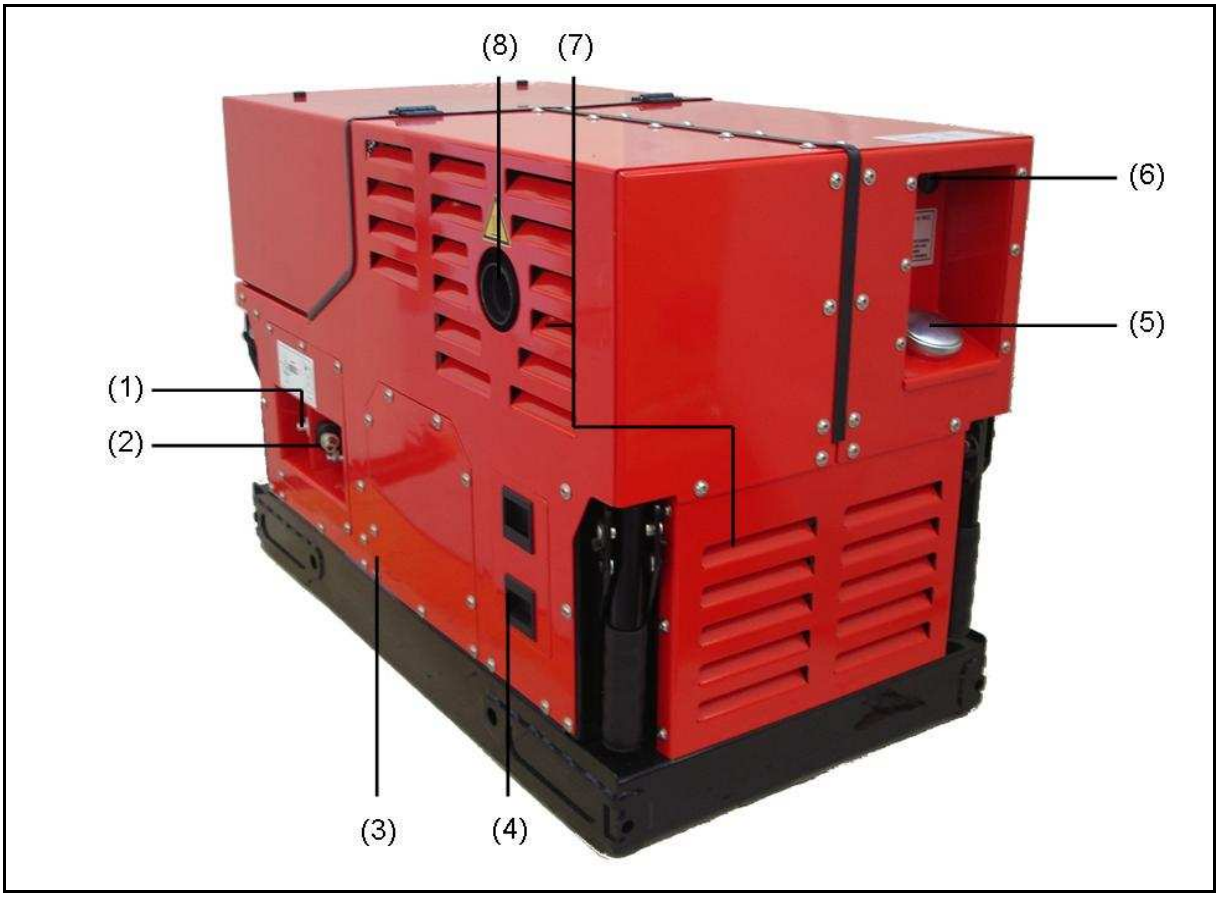


Fig. 3-2: Exhaust and engine side components

1	Fuel cock three-way stopcock	5	Tank cover
2	Connection coupling for third party fueling	6	Choke
3	Access to the battery	7	Air intakes / cooling vents (always keep clear)
4	Storage compartment	8	Exhaust

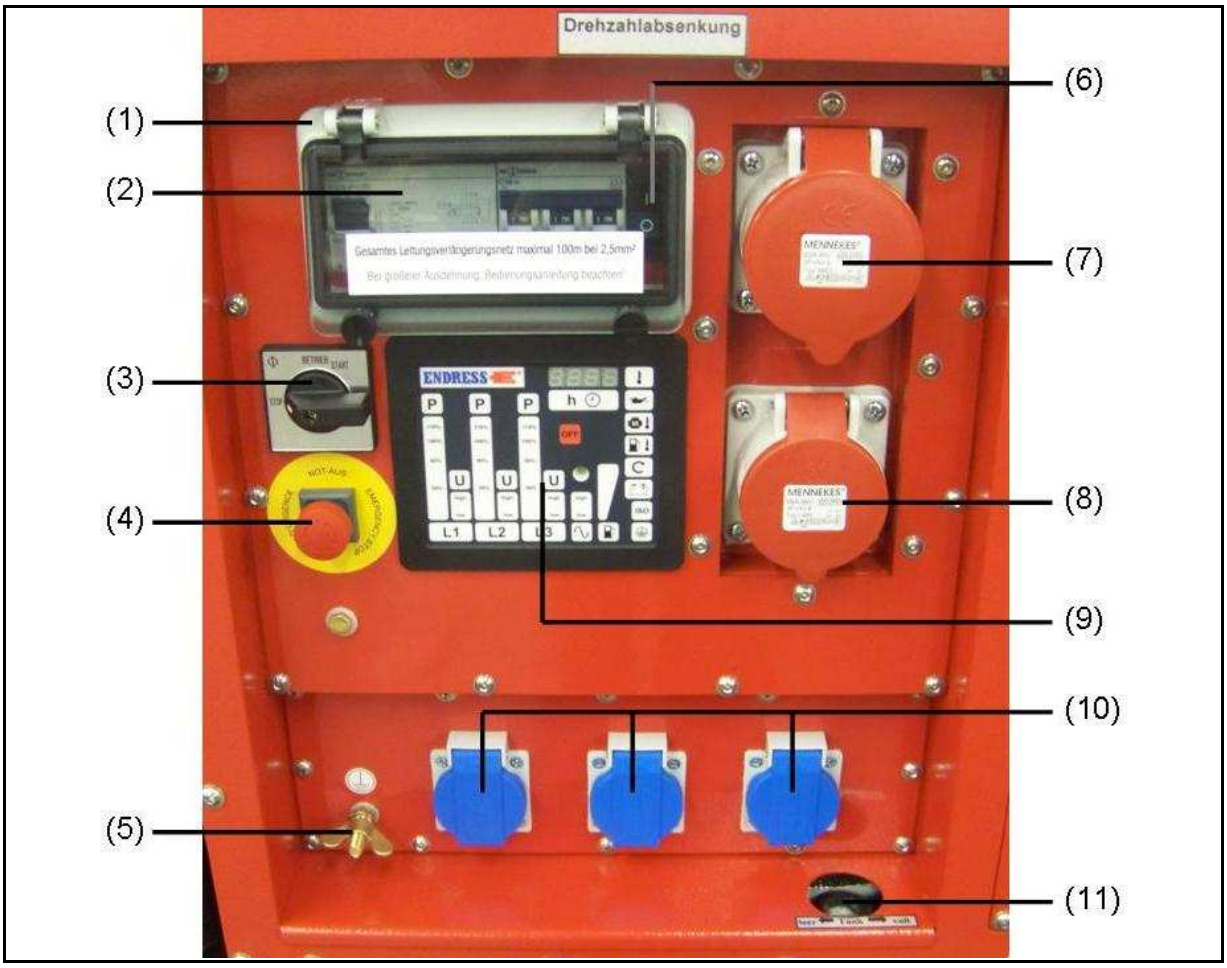


Fig. 3-3: Electrical compartment components

1	Hinged window	7	Power socket 400 V / 16A 5-pin *(for 808)* Power socket 400 V / 32A 5-pin *(for 1308)*
2	Line circuit breaker	8	Power socket 230 V / 16A 3-pin *(for 808)* Power socket 400 V / 16A 5-pin *(for 1308)*
3	START-STOP switch	9	Multifunction display
4	EMERGENCY-STOP switch	10	Power socket 230 V / 16A / 1~
5	Earth screw	12	Tank level indicator
6	Speed lowering switch		

3.3 Accessory components

3.3.1 Standard accessories

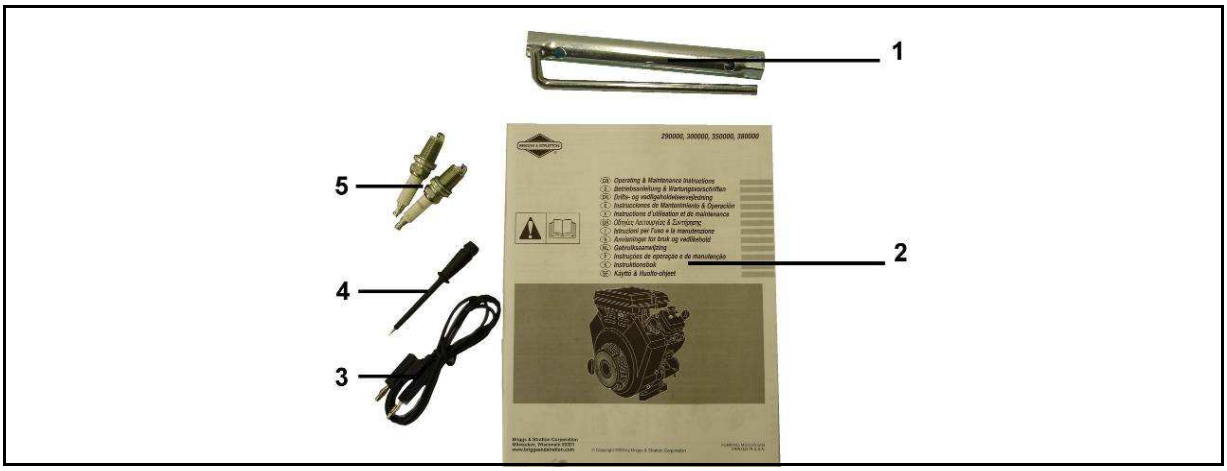


Fig. 3-4: Components of the standard accessories

1	Spark plug wrench	4	Test probes
2	User information (operating instructions for the engine, as well as these operating instructions)	5	Spark plugs (2)
3	Testing cable		

3.3.2 Special accessories



Fig. 3-5: Components of the special accessories

1	Fuelling device	3	Exhaust hose DN 50 – 1500 mm according to DIN 14572
2	20 litre standard container		

3.4 Function and mode of operation

The synchronous alternator is firmly coupled to the drive engine. The aggregate is installed in a stable frame and equipped with flexible, low-vibration suspension elements.

Splash-proof, shockproof and CEE sockets with a nominal voltage of 230V and/or 400V / 50 Hz supply the power.

An integrated voltage regulator controls the voltage of the alternator in the nominal speed range of the generator.

The generator is designed for mobile operation with one or several electrical consumers (safety-separated circuit according to VDE 100, Part 551). The protective conductor of the ground contact socket assumes the function of the potential equalisation line.

Notes

4 Operation



The operation of the generator is described in this section.

4.1 Transporting the generator

Proceed as follows to transport the generator.

Requirements

The following requirements must be fulfilled:

- The generator must be turned off
- The generator must have cooled down
- The installed fuel valve is in the “OFF” position
- The fuelling device (a special accessory see 3.3.2) is disconnected
- Exhaust hose (a special accessory see 3.3.2) is not attached
- At least one person per carrying handle



CAUTION!

A slipping or falling device can crush hands or feet.

- Take the weight into account — about 135 / 150 kg.
- Carry the generator using at least one person per carrying handle.
- Only lift the generator by the carrying handles.
- Lift / lower the generator evenly.
- Walk slowly.

Carrying the generator

1. Unfold carrying handles.
2. Lift generator evenly.
3. Carry generator to place of work.
4. Lower generator evenly.
5. Fold carrying handles.

✓ The generator has been carried to its place of work.

4.2 Setting up the generator

Proceed as follows to set up the generator.

Requirements

The following requirements must be fulfilled:

- An even and firm underground outdoors
- There are no inflammable materials at the place of work
- There are no explosive materials at the place of work



CAUTION!

Leaking engine oil and petrol can contaminate the soil and groundwater.

- Prevent leaking of engine oil and petrol.

Setting up the generator

The generator is set up as follows:

1. Prepare the work site.
2. Transport the generator to the work site.
3. Attach the exhaust hose if necessary (a special accessory see 3.3.2)

✓ The generator is set up and ready for use.

4.3 Refuelling the generator

Proceed as follows to refuel the generator.

Requirements

The following requirements must be fulfilled:

- Switched off generator (see 0)
- The device must be cooled down.
- Sufficient ventilation must be available.
- Appliances switched off or disconnected



CAUTION!

Leaking engine oil and petrol can burn or explode!

- Prevent leaking of engine oil and petrol.
- Generator is switched off.
- Generator has cooled down.
- Avoid open flames and sparks.



CAUTION!

Leaking engine oil can contaminate the soil and groundwater.

- Do not fill the tank completely.
- Use filling aid.



CAUTION!

The wrong fuel destroys the engine.

- Only refuel with lead-free regular grade petrol ROZ 91.

Refuelling the device

Refuel the generator as follows:

1. Set the fuel cock to "closed“ *(Fig. 5-12-(1))* as necessary.
2. Unscrew tank cover.
3. Insert filler aid into the filler neck.
4. Fill in petrol.
5. Remove filler aid.
6. Screw on tank cap

✓ The device is refuelled.

4.4 Starting the generator

Requirements The following requirements must be fulfilled:

- Electrical reliability has been checked (see 6.3)
- Fuel tank has been filled (see 4.3)
- A possibly connected fuelling device (special accessory)
- Sufficient oil level (fill with engine oil before initial use, see the engine operating and maintenance instructions)
- Sufficient air supply/ventilation
- Fit push-on exhaust gas pipe (special accessory) if needed
- A connected and operational starter battery
- Appliances switched off or disconnected



CAUTION!

Operating fluids can burn or explode.

- Prevent leaking of engine oil and petrol.
- Do not use starting aids.
- Avoid open flames and sparks.



CAUTION!

Exhaust gases can cause fatal asphyxiation.

- Provide for sufficient ventilation.
- Use an exhaust gas pipe.
- Only operate the generator outdoors.



CAUTION!

Hot parts can ignite flammable and explosive materials.

- Avoid flammable materials at the work location.
- Avoid explosive materials at the work location.



CAUTION!

Heat or moisture destroys the device.

- Avoid overheating (sufficient ventilation).
- Avoid moisture.

Starting the engine **Start the engine as follows:**



Fig. 4-1: Starting the engine

ELECTRICAL START

1. Pull on the manually-operated choke *(Fig. 4-1-(2))* (completely for a cold engine / appropriately less for a warm engine) and hold firmly.
2. Turn the START-STOP switch *(Fig. 4-1-(1))* completely into the position "START“ until the engine starts and then release.

✓ The engine starts.

NOTE Only activate the starter briefly (max. 5-10 seconds). Never start or run the engine with the battery disconnected.

3. Bring the choke *(Fig. 4-1-(2))* into the basic position again.

✓ The engine has started.

NOTE The electrical consumers can be connected and/or hooked up after a warming-up phase of about one minute.

alternatively upon failure of the electrical start:

(the hand start can be achieved more easily by two people)

HAND START

1. Covering hood *(Fig. 3-1-(1))* completely open.
2. Pull on the manually-operated choke *(Fig. 4-1-(2))* (completely for a cold engine / appropriately less for a warm engine) and hold firmly.
3. For model ESE 1308 / 1408 the manual fuel pump *(see Fig. 4-2-(1))* must be actuated 3x.
4. Set the START-STOP switch *(Fig. 4-1-(1))* to position "1".
5. Advance engine at the handgrip of the reversing starter *(Fig. 4-1-(3))*.

NOTE Support oneself with one hand on the device grip in order to simplify advancing the engine.

✓ The engine starts.

6. Bring the choke into the basic position.

✓ The engine has started.

CAUTION!

Generators with remote controls are fitted with an automatic choke. It is not necessary to use the manual choke.

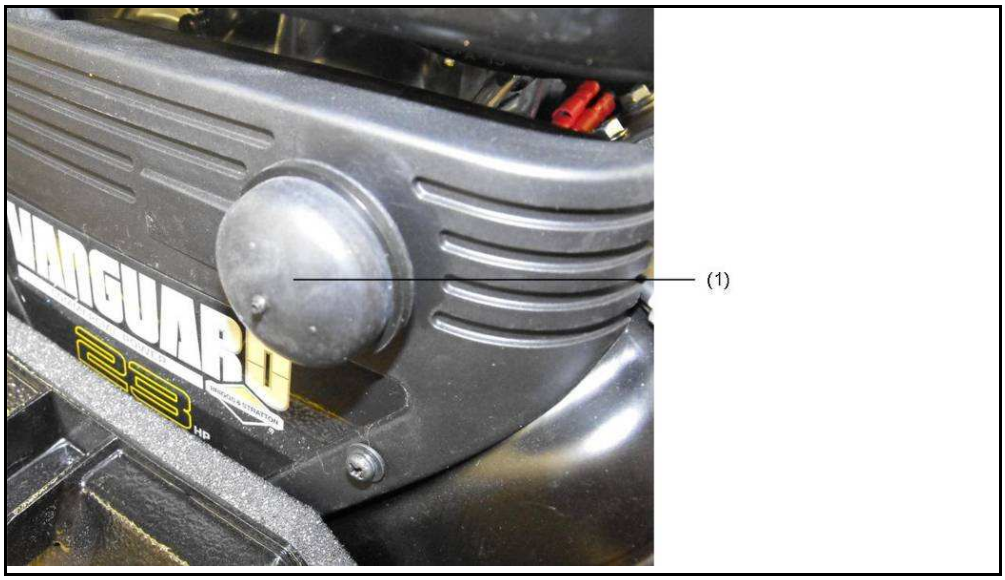


Fig. 4-2: Emergency start

4.5 Switching the generator off

Proceed as follows to shut down the generator.



CAUTION!

Hot parts can ignite flammable and explosive materials.

- Avoid flammable materials at the work location.
- Avoid explosive materials at the work location.
- Allow generator to cool down.

Switching the generator off Electrical start

The generator is switched off as follows:

1. Switch off or disconnect consumers.
2. Continue to run the engine for about two minutes.
3. Set the START-STOP switch *(Fig. 4-1-(1))* to position "0".

Note

We request that you only switch off the device using the EMERGENCY-STOP switch in an emergency. Switch off using the EMERGENCY-STOP switch only interrupts the ignition so it is still possible for fuel to ignite in the silencer due to residual amounts of fuel in the carburettor.

4.6 Connecting appliances

Proceed as follows to connect appliances to the generator.

Requirements

The following requirements must be fulfilled:

- Generator has been started (see 0)
- Appliance is switched off



CAUTION!

Electric shocks cause injury or death.

- Do not earth the generator.
- Do not connect protective conductor to an existing potential equalisation line.
- Do not connect the generator to an existing electrical grid.

Connecting appliances

You can connect up the consumers/appliances using shockproof *(Fig. 4-3-(2))* or CEE sockets *(Fig. 4-3-(1))*.

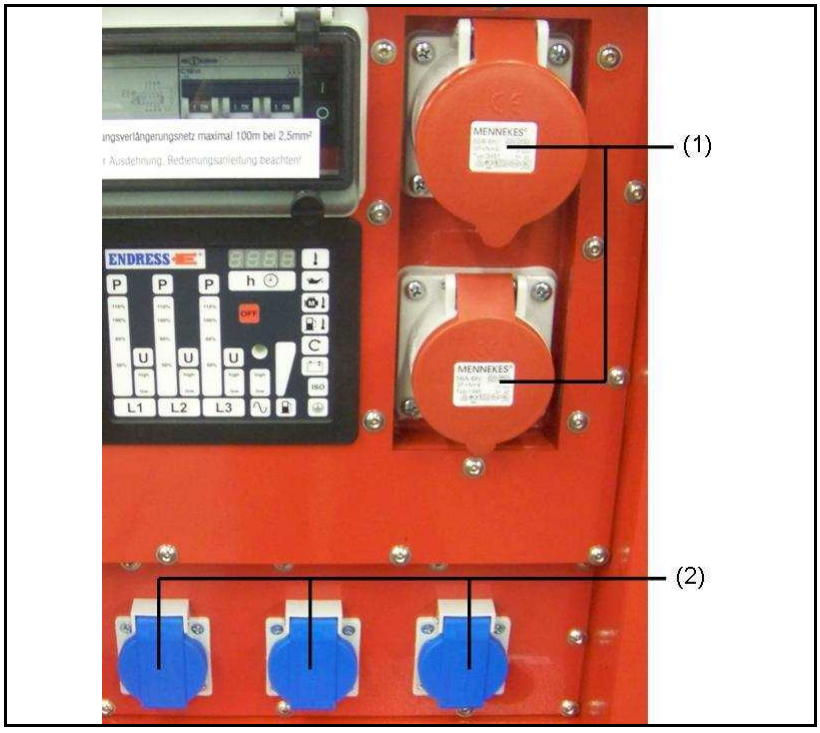


Fig. 4-3: Connecting appliances

4.7 Putting the generator out of service

The generator should be put out of service if it is not required for more than 30 days. Use a cloth to cover the generator.

NOTE The correct putting out of service procedure is described in the engine's operating manual and maintenance instructions (Briggs & Stratton Corporation) *(Fig. 3-4-(2))*.

Notes

5 Special fittings / using accessories

5.1 FI protection switch

The FI protection switch option can only be supplied by the factory.

The FI protection switch (RCD) is a protective measure against dangerous body currents according to DIN VDE 0100-551.

Earthing requirements:

1. The assembly's earthing connection clamps must be connected to the earthing spike by at least 16mm² of earthing cable (green/yellow). The spike must be driven into the ground. BG Bau recommends earthing resistance of ≤ 50Ω (see BGI 867).
2. Alternatively, a proper earthing device conforming to VDE 0100-540 can be used (such as the main earthing line in buildings).

Attention:

1. The effectiveness of this protective measure must be checked at least once a month by an electrical expert or, if suitable measuring and testing devices are available, by an electrotechnically trained person under the guidance and supervision of an electrical expert.
2. Additionally, every work day, the user must check the mechanical operation of the release by activating the test button on the residual current protection device (RCD) *(see Fig.* 5-1 *10))*.

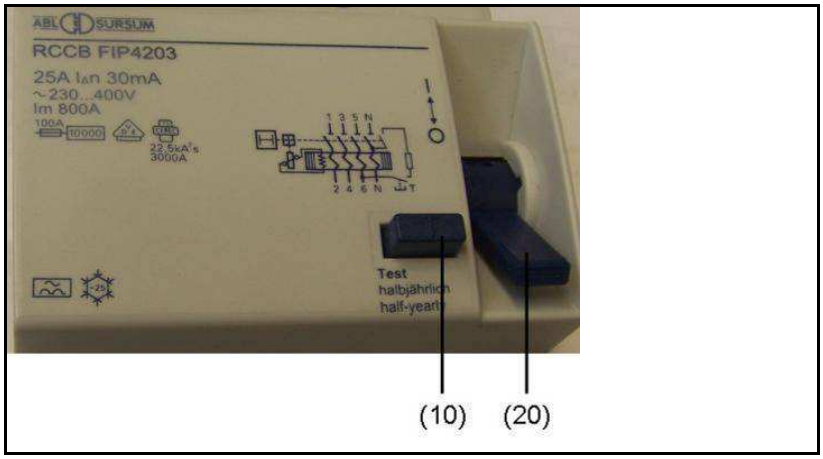


Fig. 5-1: FI protection switch

Checking the FI protection switch:

1. The generator must have been started (see 0).
2. Put the protection switch *(see Fig. 5-1 (20))* into position 1.
3. Activate the test switch *(see Fig. 5-1 (10))* .

✓ The switch position displays the result *(see Fig. 5-1 (20))*:

Symbol	Meaning
Position I	Switch does not trigger. FI protection switch is defective.
Position 0	Switch triggers. FI protection switch is working properly.

Table 5.1: FI protection switch test

✓ The device has been inspected according to DIN VDE 0100-551.

5.2 Monitoring the operating condition using the multifunctional display

All LEDs light up for about 2 seconds to allow checking as soon as the START-STOP switch is set to the position "Operate“. The normal operational lighting is then shown afterwards for about 30 seconds. If the engine is not started within this period the E-MCS 3.0 goes into energy saving mode and the indicator goes dark. To bring the E-MCS 3.0 back into a ready-to-operate condition again, the START-STOP switch must first be turned into the position "STOP“. The display intensity depends on the ambient light level.

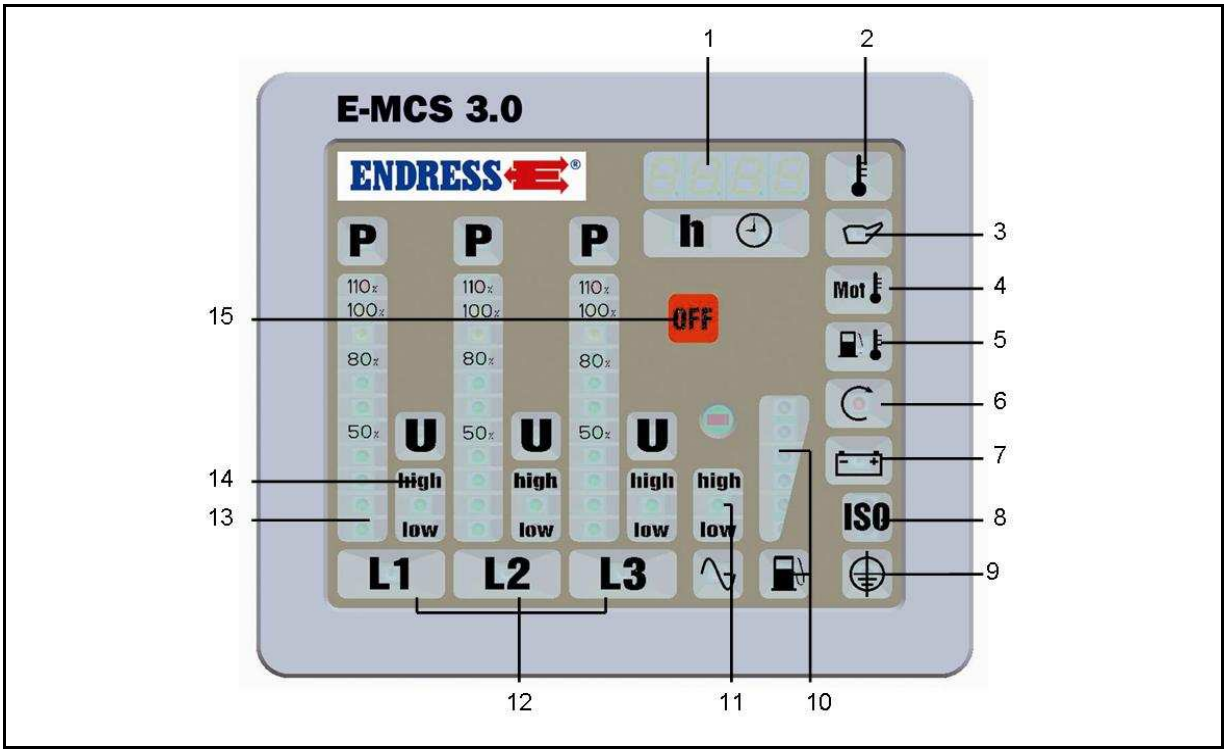


Fig. 5-2: Multi-functional display

Operating hours: Displayed *(see Fig. 5-2-(1))* when the generator starts or is activated for 30 seconds when the START / STOP switch is turned to the “Operate” position.

Ambient temperature: If the display is red *(see Fig. 5-2-(2))* whilst the generator is running then the engine temperature is too high and the generator must be switched off.

(Only active if the special “Warning signal II” option is fitted!)

Oil pressure:

If the display is red *(seeFig. 5-2-(3))* whilst the generator is running then the oil pressure is too low and the generator must be switched off.

Engine temperature: If the display is red *(see Fig. 5-2-(4))* whilst the generator is running then the engine temperature is too high and the generator must be switched off.
(Only active if the special "Warning signal II" option is fitted!)

Fuel temperature: If the display is red *(see Fig. 5-2-(5))* whilst the generator is running then the engine temperature is too high and the generator must be switched off.
(Only active if the special "Warning signal II" option is fitted!)

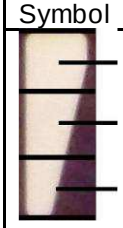
Phase sequence: If the display is red *(see Fig. 5-2-(6*)) then the generator's phase sequence is wrong. The phase sequence is correct if it does not light up.

Battery charge check: If the display is red *(see Fig. 5-2-(7))* then the alternator's recharging function is not working.

Insulation monitoring: If the display is red or yellow *(see Fig. 5-2-(8))* then an insulation fault exists. (see Chapter 0 Insulation monitoring)
(Only active if the insulation monitoring system has been ordered!)

Protective earthing conductor test: If the display is green *(see Fig. 5-2-(9))* during the protective earth lead test then the protective earth leads for the attached devices are OK. If the protective earth lead function is not available, the display remains blank.

Fuel tank filling level: The display *(see Fig. 5-2-(10))* gives a rough indication of the contents of tank.

Symbol	Display	Significance
	3 segments light up green	There are more than 6 litres in the tank
	2 segments light up green	There are between 3 and 6 litres in the tank
	1 segment lights up green	There are less than 3 litres in the tank; it is necessary to refuel!

The lowest segment flashes red for 10 minutes after changing from 2 lit up segments to 1 segment. The engine can stop at any time if there is a lack of fuel.

Attention: The lowest segment will flash again green for 10 minutes if the engine is restarted without refuelling. The tank could be already empty!

Frequency: If the display is green *(see Fig. 5-2-(11))* then the frequency is within the correct range (47.5 – 52.5 Hz).
If the "high" display is red then the frequency is too high. If the "low" display is red then the frequency is too low.

L1, L2 & L3 phases: The single L1 to L3 phases *(see Fig. 5-2-(12))* are displayed separately:

Voltage (U) *(see Fig. 5-2-(14)):*
If the field is green then the voltage is OK.
If “high” or “low” is displayed in red then the voltage is too high or too low.

Load (P) *(see Fig. 5-2-(13))*:
The utilisation will be displayed in 10% steps for 3-phase loads. 10 - 80% green, 80 - 100% yellow and 100 - 110% red.

If the display is red for 1-phase utilisation (asymmetric load) then the load should be distributed evenly over the 3 existing phases.

EMERGENCY-STOP button: If the “OFF” symbol is red *(see Fig. 5-2-(15))* then the EMERGENCY-STOP button has been pressed.

5.3 Insulation monitoring with E-MCS 3.0

The insulation monitoring option can only be supplied by the factory.

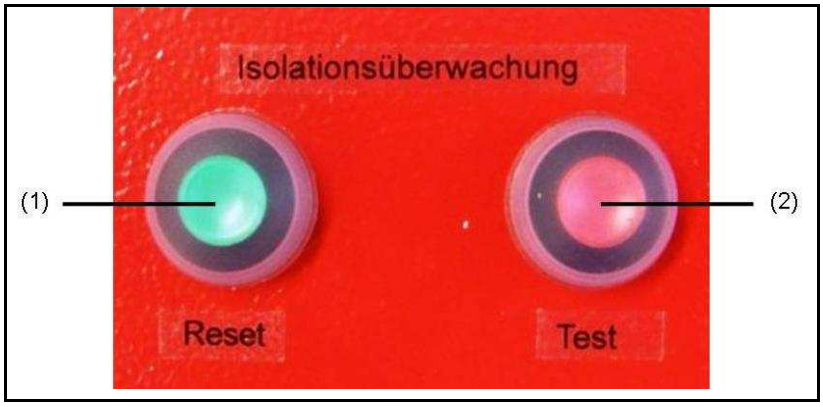


Fig. 5-3: Insulation monitoring with E-MCS 3.0

5.3.1 Insulation monitoring without switching off

Requirements

The following requirements must be fulfilled:

- Generator has been started (see 0)

Testing the insulation monitoring:

1. Unplug the consumer
2. Press the test button *(see Fig. 5-3-(2))*

✓ The displayed symbol *(see Fig. 5-2-(8))* indicates the result:

Symbol	Meaning
Yellow	Insulation monitoring is OK
Stays off	Insulation monitoring is defective

Table 5.2: Insulation monitoring without switching off

✓ The insulation monitoring test has been run.

3. The reset button *(see Fig. 5-3-(1))* must be pressed after the test has been completed so that the unit can be used again.

Insulation monitoring whilst running:

1. Plug in the consumer and switch on.

✓ The displayed symbol *(see Fig. 5-2-(8))* indicates the result:

Symbol	Meaning
Yellow	Insulation fault (≤ 23 kΩ)
Stays off	Connected unit is OK

Table 5.3: Insulation monitoring whilst running without switching off

✓ If an insulation fault exists and the unit was previously OK when tested without a consumer connected up to it (see insulation monitoring above), then the insulation fault has been caused by the consumer.

2. The reset button *(see Fig. 5-3-(1))* must be pressed after switching off and disconnecting the consumer so that the unit can be used again.

5.3.2 Insulation monitoring plus switching off

Requirements

The following requirements must be fulfilled:

- Generator has been started (see 0)

Testing the insulation monitoring:

1. Unplug the consumer
2. The circuit breaker must be in Pos. 1.
3. Press the test button *(see Fig. 5-3-(2))*

✓ The displayed symbol *(see Fig. 5-2-(8))* and the position of the circuit breaker indicate the result:

Symbol	Result	Meaning
Red	Circuit breaker jumps to Pos. 0 and the generator cuts out	Insulation monitoring is OK
Stays off	Circuit breaker stays in Pos. 1 and the generator continues to run	Insulation monitoring is defective

Table 5.4: Insulation monitoring plus switching off

✓ The insulation monitoring test has been run.

4. The circuit breaker must be returned to Pos. 1 after the test has been completed and the generator must be restarted so that it can be used again.

Insulation monitoring whilst running:

1. Plug in the consumer and switch on.

✓ The displayed symbol *(see Fig. 5-2-(8))* and the position of the circuit breaker indicate the result:

Symbol	Meaning
Red	Insulation fault ($\leq$23 kΩ)
Yellow	Insulation fault ($\leq$34.5kΩ)
Stays off	Connected unit is OK

Table 5.5: Insulation monitoring whilst running without switching off

✓ If an insulation fault exists and the unit was previously OK when tested without a consumer connected up to it (see above), then the insulation fault has been caused by the consumer.

2. The circuit breaker must be returned to Pos. 1 after switching off and the consumer has been disconnected and the generator must be restarted so that it can be used again.

5.4 Insulation monitoring without E-MCS 3.0

The insulation monitoring option can only be supplied by the factory.

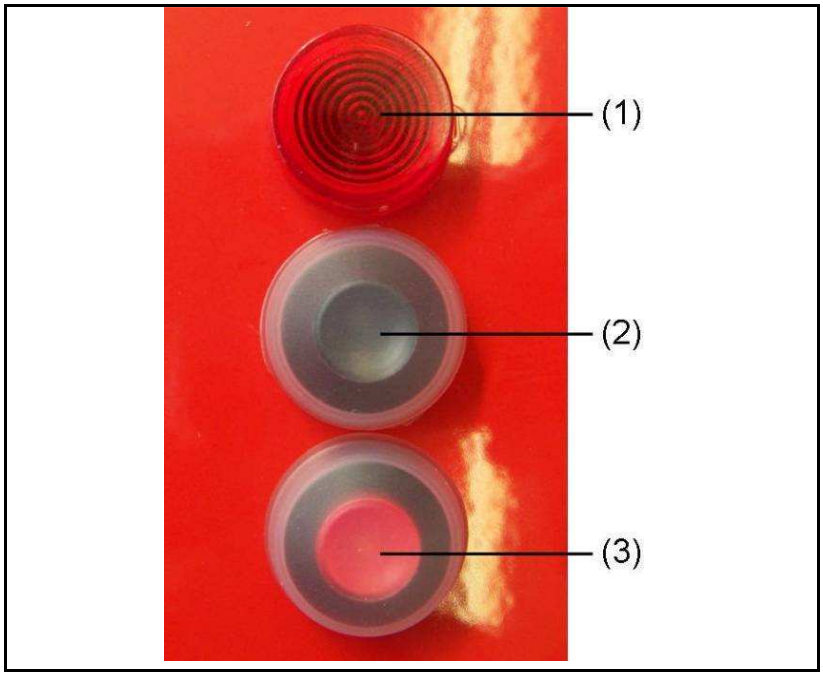


Fig. 5-4: Insulation monitoring without E-MCS 3.0

5.4.1 Insulation monitoring without switching off

Requirements

The following requirements must be fulfilled:

- Generator has been started (see 0)

Testing the insulation monitoring:

1. Unplug the consumer

Press the test button *(see Fig. 5-4-*(3)*)*

✓ The lamp *(see Fig. 5-4-(1))* indicates the result:

Lamp	Meaning
Red	Insulation monitoring is OK
Stays off	Insulation monitoring or lamp is defective

Table 5.6: Insulation monitoring without switching off

✓ The insulation monitoring test has been run.

2. The reset button *(see Fig. 5-4-(2))* must be pressed after the test has been completed so that the unit can be used again.

Insulation monitoring whilst running:

1. Plug in the consumer and switch on.

✓ The lamp *(see Fig. 5-4-(1))* indicates the result:

Lamp	Meaning
Red	Insulation fault ($\leq$23 kΩ)
Stays off	Connected unit is OK

Table 5.7: Insulation monitoring whilst running without switching off

✓ If an insulation fault exists and the unit was previously OK when tested without a consumer connected up to it (see above), then the insulation fault has been caused by the consumer.

2. The reset button *(see Fig. 5-4-(2))* must be pressed after switching off and disconnecting the consumer so that the unit can be used again.

5.4.2 Insulation monitoring plus switching off

Requirements

The following requirements must be fulfilled:

- Generator has been started (see 0)

Testing the insulation monitoring:

1. Unplug the consumer
2. The circuit breaker must be in Pos. 1.
3. Press the test button *(see Fig. 5-4-(3))*

✓ The lamp *(see Fig. 5-4-(1))* and the position of the circuit breaker indicates the result:

Lamp	Result	Meaning
Red	Circuit breaker jumps to Pos. ‘0’	Insulation monitoring is OK
Stays off	Circuit breaker stays in Pos. ‘1’	Insulation monitoring is defective

Table 5.8: Insulation monitoring plus switching off

✓ The insulation monitoring test has been run.

4. The reset button *(see Fig. 5-4-(2))* must be pressed after the switching off and the circuit breaker must be turned back to Pos. 1 so that the unit can be used again.

Insulation monitoring whilst running:

1. Plug in the consumer and switch on.

✓ The lamp *(see Fig. 5-4-(1))* and the position of the circuit breaker indicates the result:

Lamp	Result	Meaning
Red	Circuit breaker jumps to Pos. '0'	Insulation fault ($\leq$23 kΩ)
Red	Circuit breaker stays in Pos. '1'	Insulation fault ($\leq$34.5kΩ)
Stays off	Circuit breaker stays in Pos. '0'	Connected unit is OK

Table 5.9: Insulation monitoring whilst running without switching off

✓ If an insulation fault exists and the unit was previously OK when tested without a consumer connected up to it (see above), then the insulation fault has been caused by the consumer.

2. The reset button must be pressed after switching off and disconnecting the consumer *(see Fig. 5-4-(2))* and the circuit breaker must be turned to Pos. 1 so that the unit can be used again.

5.5 Speed lowering in idle

Proceed as follows to operate the generator with idling speed reduction.

Requirements

The following requirements must be fulfilled:

- Generator is ready for operation
- Generator has been started (see 0)

Switching the idling speed reduction on



Fig. 5-5: Idling speed reduction rocker switch

Switch the idling speed reduction on as follows:

Move the rocker switch *(Fig. 5-5-(1))*into the 'I' position.

✓ Idling speed reduction is activated.

ATTENTION!

The idling speed reduction is active for about 5 minutes after engine start and then lowers the rotational speed of the engine, in as far as no load is engaged, to about 1800 rpm. The engine speed will be increased to the nominal speed as soon as a load is switched on. The motor always runs within the nominal speed range if the rocker switch is in the OFF position.

Switching idling speed reduction off

Switch the idling speed reduction off as follows:

1. Turn the rocker switch into position – 0 – OFF.

✓ Idling speed reduction is switched off.

5.6 Remote start device

Proceed as follows to operate the generator using the remote start device.

Requirements

The following requirements must be fulfilled:

- Generator is ready for operation

CAUTION!

Generators with remote controls are fitted with an automatic choke. You do not have to use the manual choke during an electrical start.

Connecting up a remote start device

Connect up the remote start device as follows (with the Harting socket):

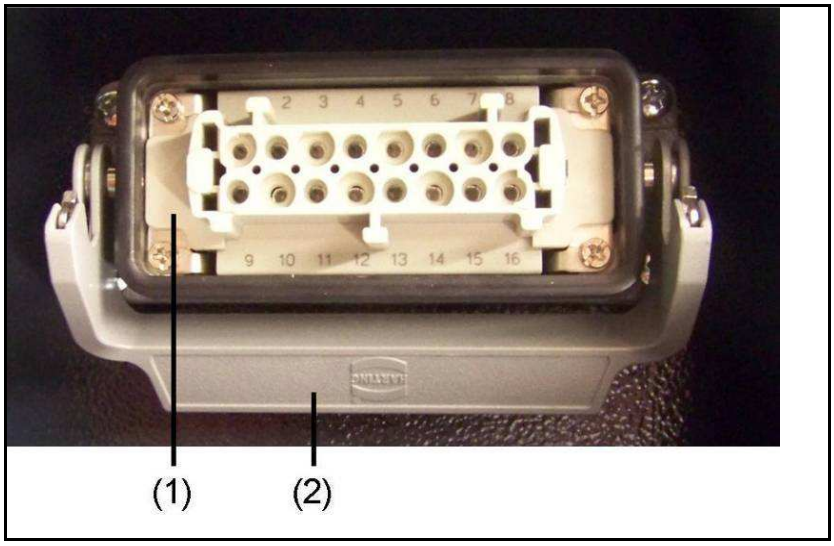


Fig. 5-6: Remote start device with Harting plug

Note

Battery charging retention might occur simultaneously when using the remote start device.

1. Fold away any protective caps on the remote start socket after unlocking the clip *(Fig. 5-6-(2))*.
2. Plug the remote start operating status / generator connecting cable into the remote start socket *(Fig. 5-6-(1))* and then use the clip *(Fig. 5-6-(2))* to secure it in place.

✓ Remote start device is ready for use.

Disconnecting the remote start device

Disconnect the remote start device as follows:

1. Release the clip and then pull the remote start operating status / generator connecting cable plug out.
2. Fold down any protective caps onto the remote start socket and lock in place with the clip.

✓ Remote start device is disconnected.

Connecting up a remote start device

Connect up the remote start device as follows (with the CAN plug):

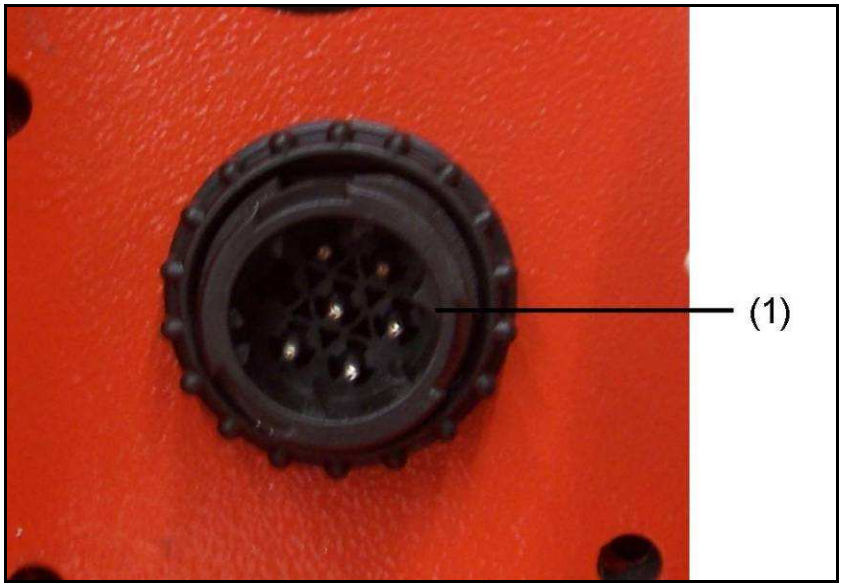


Fig. 5-7: Remote start device with CAN plug

Note

Battery charging retention might occur simultaneously when using the remote start device.

1. Insert plug for the remote start operating status / generator connecting cable into the remote start socket and lock in place by turning to the right.

✓ Remote start device is ready for use.

Disconnecting the remote start device

Disconnect the remote start device as follows:

1. Release the plug by turning to the left and then pull the remote start operating status / generator connecting cable plug out.

✓ Remote start device is disconnected.

5.7 External start device

Proceed as follows to operate the generator using the external start device.

Requirements

The following requirements must be fulfilled:

- Generator is ready for operation

Connecting up an external start device

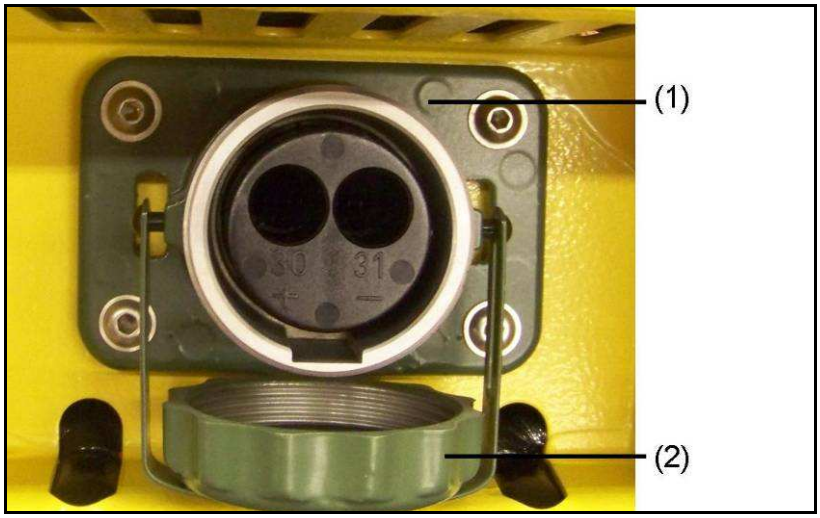


Fig. 5-8: Connecting up an external start device

Connect up the external start device as follows:

1. Unscrew cover (*Fig. 5-8*-(2) on the external start socket (*Fig. 5-8*-(1)).
2. Insert plug for the external energy source connecting cable (e.g. starter battery) / external start socket into the external start socket and lock in place by turning to the right.

✓ External start device is ready for use.

✓ The engine can be started using the electrical start.

Disconnecting the external start device

Disconnect the external start device as follows:

1. Release the plug by turning to the left and then pull the external energy source / external start socket plug out.
2. Screw protective cap for the external start socket back on again.

External start device is disconnected.

5.8 Battery charge conservation

Proceed as follows to charge the starter battery for the generator over the battery charge conservation device.

Requirements

The following requirements must be fulfilled:

- Generator is ready for operation

Connecting up the battery charge conservation device

Connect up the battery charge conservation device (charge current socket A DIN 14690) as follows:



Fig. 5-9: Connecting up the battery charge conservation device

1. Unscrew cover (*Fig. 5-9-*(2)) for socket (*Fig. 5-9-*(1)) for the starter battery charge conservation device.
2. Insert plug for the external energy source (e.g. a battery charging device) / charge conservation device socket connecting cable and lock in place by turning to the right.

✓ The battery charge conservation device is ready to operate.

Disconnect the battery charge conservation device as follows:

1. Release the plug by turning to the left and then pull the plug for the external energy source (e.g. a battery charging device) / charge conservation device socket connecting cable out.
2. Screw on protective cap (*Fig. 5-9-*(2)) for charge conservation device socket.

✓ The charge conservation device is disconnected

Connecting up the battery charge conservation device

Connect up the battery charge conservation device (charge current socket BEOS) as follows:

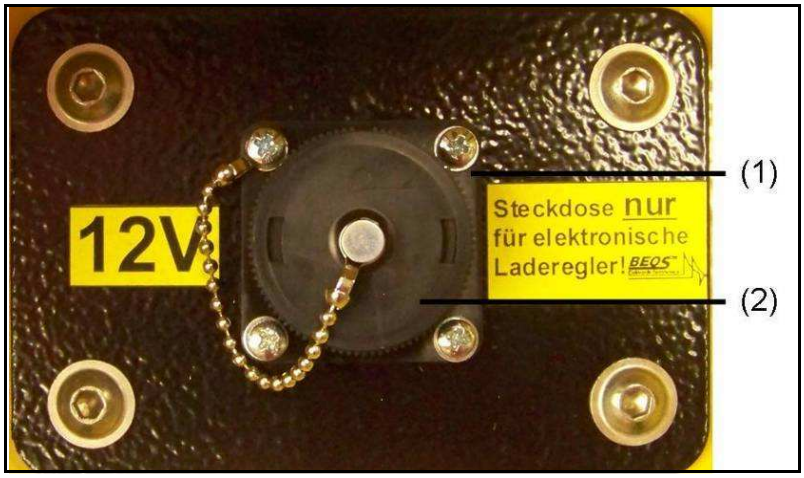


Fig. 5-10: Connecting up the battery charge conservation device

1. Unscrew cover (*Fig. 5-10*-(2)) for socket (*Fig. 5-10*-(1)) for the starter battery charge conservation device.
2. Insert plug for the external energy source (e.g. a battery charging device) / charge conservation device socket connecting cable and lock in place by turning to the right.

✓ The battery charge conservation device is ready to operate.

Disconnect the battery charge conservation device as follows:

1. Release the plug by turning to the left and then pull the plug for the external energy source (e.g. a battery charging device) / charge conservation device socket connecting cable out.
2. Screw on protective cap (*Fig. 5-10*-(2)) for charge conservation device socket.

✓ The charge conservation device is disconnected

Connecting up the battery charge conservation device

Connect up the battery charge conservation device (MagCode socket) as follows:

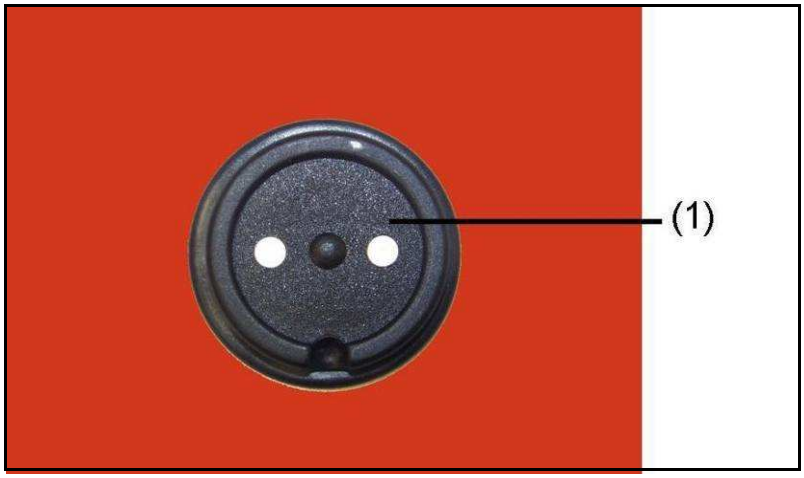


Fig. 5-11: Connecting up the battery charge conservation device

1. Put plug for the external energy source (e.g. a battery charging device) / charge conservation device socket connecting cable in place.

✓ The battery charge conservation device is ready to operate.

Disconnect the battery charge conservation device as follows:

1. Pull off plug for the external energy source (e.g. a battery charging device) / charge conservation device socket connecting cable.

✓ The charge conservation device is disconnected

5.9 3-way fuel tap / fueling device

Proceed as follows to use the fuelling device with the generator.

Requirements

These requirements must be fulfilled:

- Generator is ready for operation
- 3-way fuel tap

In the course of supplying fuel you can select between the devices own tank and the fueling device.



Fig. 5-12: 3-way fuel tap

Switch position	Operation
1	CLOSED
2	OWN TANK
3	EXTERNAL FUELLING

Table 5.10: Switchingpositions of the 3-way fuel tap

Establish a connection to the fuel supply system as follows:

1. Set the fuel tap to the desired fuelling mode.

✓ The fuel supply is established.



CAUTION!

Leaking engine oil and petrol can contaminate the soil and groundwater.

- Do not fill the canister completely.
- Allow the fueling device to drain off.



CAUTION!

The wrong fuel destroys the engine.

- Only refuel with lead-free regular grade petrol ROZ 91.

Connect up fueling device



Fig. 5-13: Connect up fueling device

Note The canister may stand at a maximum of 0.5 m below the level of fuel pump.

Connect up fueling device:

Connect up fueling device as follows:

1. Pull off cover plugs from quick-action coupling.
2. Place quick-action coupling (*Fig. 5-13*-(2)) on the external fuelling connection (*Fig. 5-13*-(1)).
3. The quick-action coupling engages.

✓ The fuelling device is attached.

Disconnect fueling device:

Disconnect fueling device from the generator by:

1. Pulling back the knurled sleeve on the quick-action coupling (*Fig. 5-13*-(2)).

✓ The coupling is released.

2. Pull off quick-action coupling with hose from the connector.
3. Insert the cover plugs again on the quick-action coupling.

✓ The fuelling device is disconnected from the generator.

Connect up canister

Connect the canister to the fueling device as follows:

1. Open sealing cap on the canister.
2. Introduce hose.
3. Engage catch on the fueling device.

✓ The canister is attached.

Changing the canister during operation

Change an empty canister during operation as follows:

1. Place the full canister next to the empty canister.
2. Open sealing cap on the full canister.
3. Set the fuel cock to own tank (*Fig. 5-13*-(2)).

✓ The engine is supplied with fuel over its own tank.

4. Loosen the fuelling device latch on the canister.
5. Remove hose.
6. Introduce hose into the full canister.
7. Engage catch on the fueling device.

✓ The canister is attached.

8. Set the fuel cock to "external fueling“ (*Fig. 5-13*-(3)).

✓ The empty canister is exchanged.

5.10 Exhaust hose

Proceed as follows to use the exhaust hose with the generator.

Requirements

The following requirements must be fulfilled:

- Generator is ready for operation



CAUTION!

Exhaust gases can cause fatal asphyxiation.

- Provide for sufficient ventilation.
- Use an exhaust gas hose.
- Only operate the generator outdoors.

Connecting up the exhaust hose

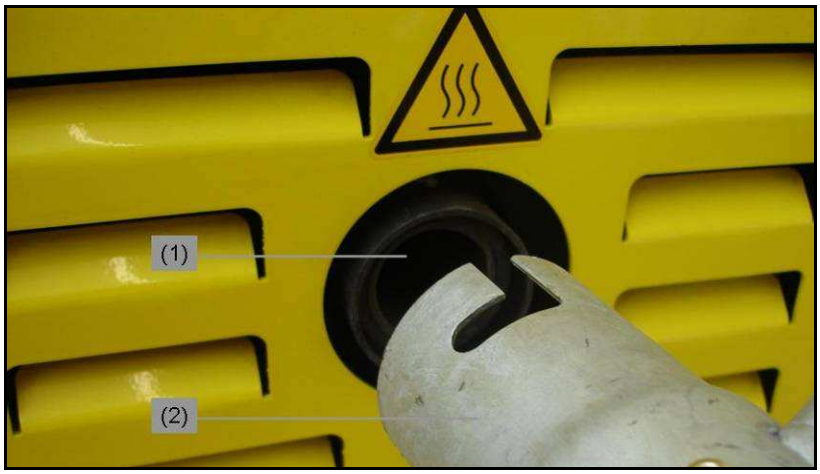


Fig. 5-14 Connecting up the exhaust hose

Connect up the exhaust hose as follows:

4. Push the exhaust hose's grip with the larger opening onto the muffler's connection.
2. Turn the exhaust hose to the right to lock it in place.

✓ Exhaust hose is now plugged in.

Disconnecting the exhaust hose

Disconnect the exhaust hose from the generator by:

5. Turn the exhaust hose grip to the left.
6. Pull the exhaust hose off the muffler's exhaust hose connection.

✓ Exhaust hose is now disconnected.

6 Maintenance

Maintenance of the generator is described in this section.

Only personnel of the manufacturer may carry out maintenance or repair work not described in this section.

6.1 Maintenance plan

The maintenance work specified in this summary must be carried out after the indicated time intervals.

Maintenance work	Time interval in operating hours [h]					
	after 8 h	every 8 h / daily	every 25 h / annually	every 50 h / annually	every 100 h / annually	annually
Check the electrical safety	**before each start-up**					
Check the oil level		X				
Changing the oil	X			(X)[1)]		
Change oil filter					X	
Clean air filter			(X)[2)]			
Clean area around mufflers, linkages, and springs		X				
Exchange spark plugs						X
Change the fuel filter						X
Check fit of screws, nuts, and bolts					X	
Check condition and tightness of the fuel hoses and connections.					X	

Table 6.1: Generator maintenance plans

1) When operating under a heavy load or at high environmental temperatures at short intervals.

2) Clean more frequently when used in a dusty environment or in the presence of foreign particles in the air or for longer use in high, dry grass.

6.2 Maintenance work

Only authorised personnel may carry out maintenance tasks.

Perform all work in the maintenance plan according to the information in the motor's operating and maintenance manual (*Fig. 3-4-*(2)). These operating and maintenance instructions of the engine manufacturer are an integral component of these operating instructions.

6.2.1 Engine oil



CAUTION!

Leaking engine oil can contaminate the soil and groundwater.

- Use an oil collection pan.
- Recycle used engine oil.



DANGER!

Engine oil can be hot — risk of burns.

- Allow engine to cool.

Requirements

The following requirements must be fulfilled:

- The engine should ideally be slightly warm (allow a cold engine to run for 5 min., then stop it and allow it to cool for 2 min.).



Fig. 6-1: Dipstick

Check the oil level

Check the oil level as follows:

1. Pull out dipstick (*Fig. 6-1-*(2)) and wipe off with a clean cloth.

2. Reinsert the dipstick and take it out again. Drain off some of the oil if the level is above the upper mark and refill with oil if the level is under the lower mark (see below).

✓ The oil level has been checked.

Refilling with oil

Pour in oil as follows:

1. Remove oil screw plug (*Fig. 6-1-*(1)). Pull out the dipstick for easier filling with oil (*Fig. 6-1-*(2)) .

2. Fill with oil using a filling aid.

3. Check oil level and add oil if necessary.

✓ The engine has been refilled with oil.

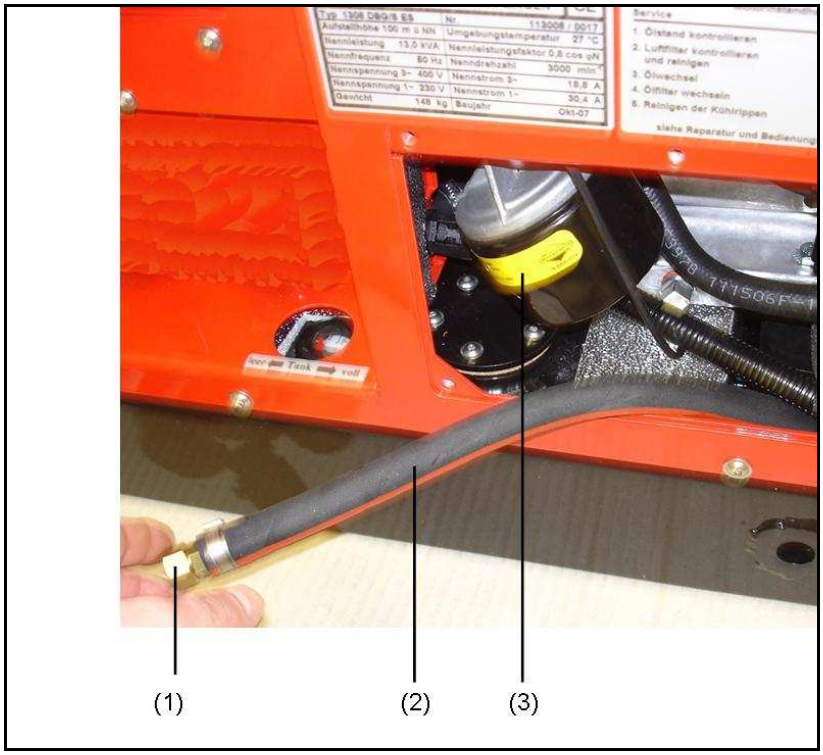


Fig. 6-2: Change the oil

Changing the oil

1. Unscrew the oil filter side plate (*Fig. 3-1*-(4)) on the generator.
2. Pull out oil drainage hose (*Fig. 6-2*-(2)) completely.
3. Direct oil drainage hose into an oil collection container.
4. Turn the screw plug (*Fig. 6-2*-(1)) and drain off the oil into the collection container.
5. Then pour in new oil as already described.

✓ The engine oil has been changed.



CAUTION!

The oil escapes immediately after unscrewing the oil drainage screw.

Change oil filter

The procedure is as described in the operating instructions for the engine. The side plate (*Fig. 3-1*-(4)) of the generator must be unscrewed for this purpose.

6.2.2 Replacing the starter battery

1. Unscrew the battery holder.
2. Remove the battery from the battery compartment.
3. Unscrew the battery cable. Push the protective terminal caps back for this purpose and loosen the screws. Always disconnect the cable from the NEGATIVE terminal first and then disconnect the cable from the POSITIVE terminal.

✓ Battery is disconnected.



Fig. 6-3: Replacing the battery

4. Prepare a new battery.
5. The battery cables must first be screwed onto the POSITIVE terminal, then onto the NEGATIVEterminal and then put on the terminal caps.
6. Put the battery back into the battery compartment.
7. Put the battery holder back.

✓ The battery has been replaced.



CAUTION!

A highly explosive electrolytic gas mixture develops from gassing when charging batteries.

- Flames, sparks, an open light and smoking are prohibited.
- Avoid sparks when handling cables and electrical devices, as well as electrostatic discharge.
- Avoid short-circuits.



CAUTION!

The Endress battery is maintenance-free throughout its entire service life.

- Never open the battery — this may destroy it.

6.2.3 Replacing fuses

Replacing fuses (only for the special accessory external start socket, socket, charging retention and/or remote start device)

1. Open the fuse holder.
2. Replace a fuse
3. Close the fuse holder

✓ The fuse has been replaced.

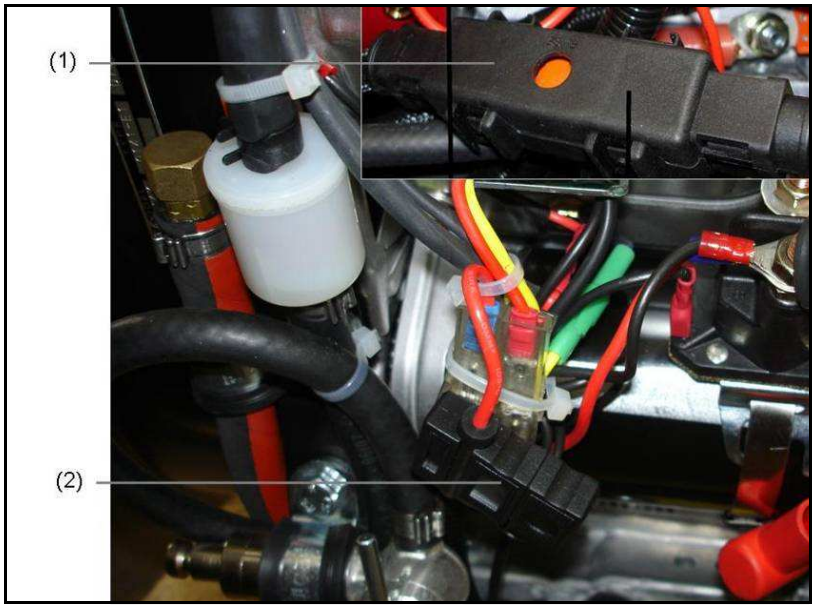


Fig. 64: Replacing a fuse

Fuse type	Amperes	needed for
2	20	Remote start device
2	15	Charging retention socket
1	150	External start (Nato) socket

Table 6.2: Location of the fuses

6.3 Check the electrical safety

Only appropriately authorised personnel may check the electrical safety.

The electrical reliability must be checked in accordance with the applicable VDE regulations, EN and DIN standards and especially the current version of the BGV A3 accident prevention regulations.

7 Troubleshooting



This section describes problems during operation that authorized personnel can repair.

Each occurring problem is described with its possible cause and the respective corrective measure.

The authorised personnel must immediately shut down the generator and inform the responsible and authorised service personnel if a problem cannot be solved with the aid of the following table.

Malfunction	Possible cause	Correction
No or insufficient voltage available during idling.	The engine's rpm was subsequently readjusted.	Call service staff.
	The electronic controller has been altered.	Call service staff.
	The electronic controller is defective.	Call service staff.
Strong voltage fluctuations occur.	The engine runs irregularly.	Call service staff.
	The speed control works erratically or insufficiently.	Call service staff.
The engine does not start.	The engine is being operated incorrectly.	Follow the engine operating manual.
	Maintenance of the engine was inadequate.	Follow the engine maintenance instructions.
	The oil level monitor goes on.	Check oil level and refill if necessary.
	Oil pressure switch plug is loose.	Check fit of the oil pressure plug.
	Too little fuel in the tank.	Refuel.
	The fuel filter is clogged.	Exchange the fuel filter.
	Bad fuel in the tank.	Call service staff.
	The ignition cable does not have any connection to the spark plug.	Attach ignition cable to the spark plug.
	The choke is not activated in a cold condition.	Actuate choke.
	The EMERGENCY-STOP button is pressed and locked in place.	Unlock the EMERGENCY-STOP button.

Malfunction	Possible cause	Correction
	The battery connecting cables are unclamped.	Clamp or screw on the battery connecting cables.
Starter battery has no output.	Battery is discharged.	Charge battery.
	Battery is defective.	Exchange battery.
	Battery terminals are oxidized.	Clean battery terminals and if necessary apply terminal grease.
Starter battery is not being charged.	Alternator / charge regulator defective.	Call service staff.
The engine does not turn.	Engine defective.	Call service staff.
The engine smokes.	Too much oil in the engine.	Drain excess oil.
	Paper element of the air filter is dirty or oil-soaked.	Clean paper element or replace if necessary.
	Foam element of the air filter is dirty or dry.	Clean foam element and if necessary moisten.
The engine turns briefly and then shuts down.	Too little fuel in the tank.	Refuel.
	Ventilation holes on tank cover are clogged.	Clean ventilation holes.
	The oil level is too low.	Add oil.
	The fuel filter is clogged.	Exchange the fuel filter.
The engine splutters.	The 20 litre standard container is empty.	Change the canister
	The refuelling device's sieve is blocked.	Clean the sieve.
	Carburettor/fuel filter/tank are covered with resin.	Call service staff.
The power output is insufficient.	The electronic controller has been altered.	Call service staff.
	The electronic controller is defective.	Call service staff.
	Maintenance of the engine was inadequate.	Follow the engine maintenance instructions.
	Too much power is drawn.	Reduce power draw.
The generator runs jerkily.	The generator is loaded beyond the nominal output.	Reduce power draw.
The red lamp on the load meter lit up.	Too much power is being taken off / the load is being taken off on one one side.	3~: reduce power take-off / 1~: Distribute the load evenly
The oil pressure is too low.	Too little engine oil in the engine.	Refill engine oil.
The protective conductor test lamp does not light up.	The test cable is not inserted properly.	Insert the test cable properly.

Malfunction	Possible cause	Correction
	The test tip is not touching a metallic blank location on the consumer.	Hold the test tip on a metallic blank location
	Test lamp is defective	Call service staff.
	The protective conductor is defective.	Disconnect the consumer from the generator.
	The protective conductor is missing.	Select the consumer with a protective conductor.
Faults on the special equipment		
The engine does not start in remote start mode.	The remote start equipment connecting plug is not inserted properly.	Insert the remote start equipment connecting plug correctly.
	The automatic choke lifting magnet is defective.	Call service staff.
	The remote start equipment fuse is defective.	Replace the fuse.
The engine does not start in external start mode.	The external start equipment plug is not inserted properly.	Insert the external start equipment plug correctly.
	The high performance external start fuse is defective.	Replace the fuse.
The battery is not charging in charge retention mode.	The charge retention plug is not inserted properly.	Insert the charge retention plug correctly.
	The charge retention fuse is defective.	Replace the fuse.
Idling speed reduction does not work.	Rocker switch is in the OFF position.	Set the rocker switch to the ON position.
	The engine does not run for 5 minutes.	Wait for the minimum running time since an engine start.
	There is a load / electrical consumer switched in.	Switch off load / electrical consumer.
	The lifting magnet for speed lowering in idle is defective.	Call service staff.

Table 7.1: Problems during generator operation

Notes

8 Technical specifications

The technical specifications concerning use of the generator are described in this section.

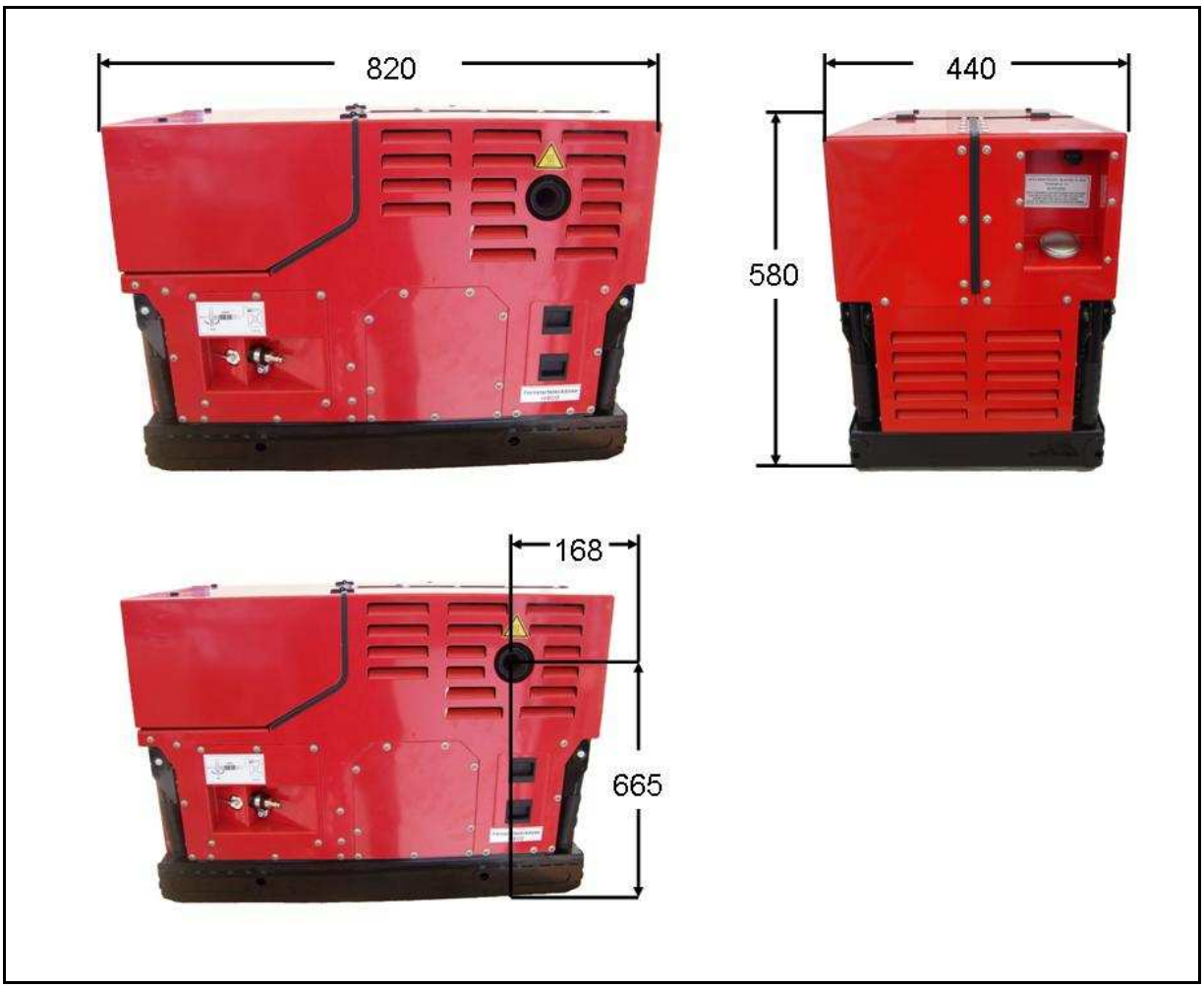


Fig. 8-1: Generator dimensions

Technical specifications

Designation	Value			Unit
Type	ESE 808 DBG ES DUPLEX Silent	ESE 1308 DBG ES DUPLEX Silent	ESE 1408 DBG ES DUPLEX Silent	
Nominal output 400V / 3~	8.0	13.0	14.0	[kVA]
Nominal output 230V / 1~	5.0	7.0	7.0	[kVA]
Nominal power factor V3~	0.8	0.8	0.8	[cosφ]
Nominal power factor V1~	0.9	0.9	0.9	[cosφ]
Nominal frequency	50	50	50	[Hz]
Nominal speed	3000	3000	3000	[min^{-1}]
Nominal voltage 3~	400	400	400	[V]
Nominal voltage 1~	230	230	230	[V]
Rated current 3~	12.3	18.8	20.2	[A]
Rated current 1~	21.7	30.4	30.4	[A]
Voltage tolerance (idling – nominal output)	+ 5	+ 5	+ 5	[%]
Weight (ready for use)	132	150	150	[kg]
Tank capacity (lead-free normal ROZ91 fuel)	20	20	20	[l]
Length	820	820	820	[mm]
Width	440	440	440	[mm]
Height	580	580	580	[mm]
Sound power level LWA*	92	93	93	[db (A)]
Sound power level LPA at 7 m	67	68	68	[db (A)]
Sound pressure at the work place (1.6m above the machine 1m away) *	84	85	85	[db (C)]
Protection Class (generator)	IP54	IP54	IP54	

Table 8.1: Generator technical data

** measured at a distance of 1 m and a height of 1.6 m in accordance with ISO 3744 (Part 10)*

*** measured in accordance with ISO 3744 (Part 10)*

Ambient conditions

Designation	Value	Unit
Setting up height above sea level	< 100	[m]
Temperature	< 25	[°C]
relative air humidity	< 30	[%]

Table 8.1: Ambient conditions of the generator

Reduced output

Output reduction	for each additional	Unit
1 %	100	[m]
4 %	10	[°C]

Table 8.2: Generator performance reduction in relation to the ambient conditions

Distribution network

Line	max. conduit length	Unit
HO 7 RN-F (NSH öu) 1.5 mm^2	60	[m]
HO 7 RN-F (NSH öu) 2.5 mm^2	100	[m]

Table 8.3: Maximum conduit length of the distribution network as a function of the cable cross-section



The general limitation of 100 m for the overall length was selected in the interest of safe handling during practical use. Larger dimensioning of the distribution network is only to be undertaken by a qualified electrician or trained personnel.

Notes

9 Replacement parts

The replacement parts needed to run the generator are described in this section.

The generator is divided into these component groups:

- Frame with covers, tank and engine
- Generator and electronics
- Standard accessories
- Special accessories
- Special equipment

9.1 Sound-absorbing hood

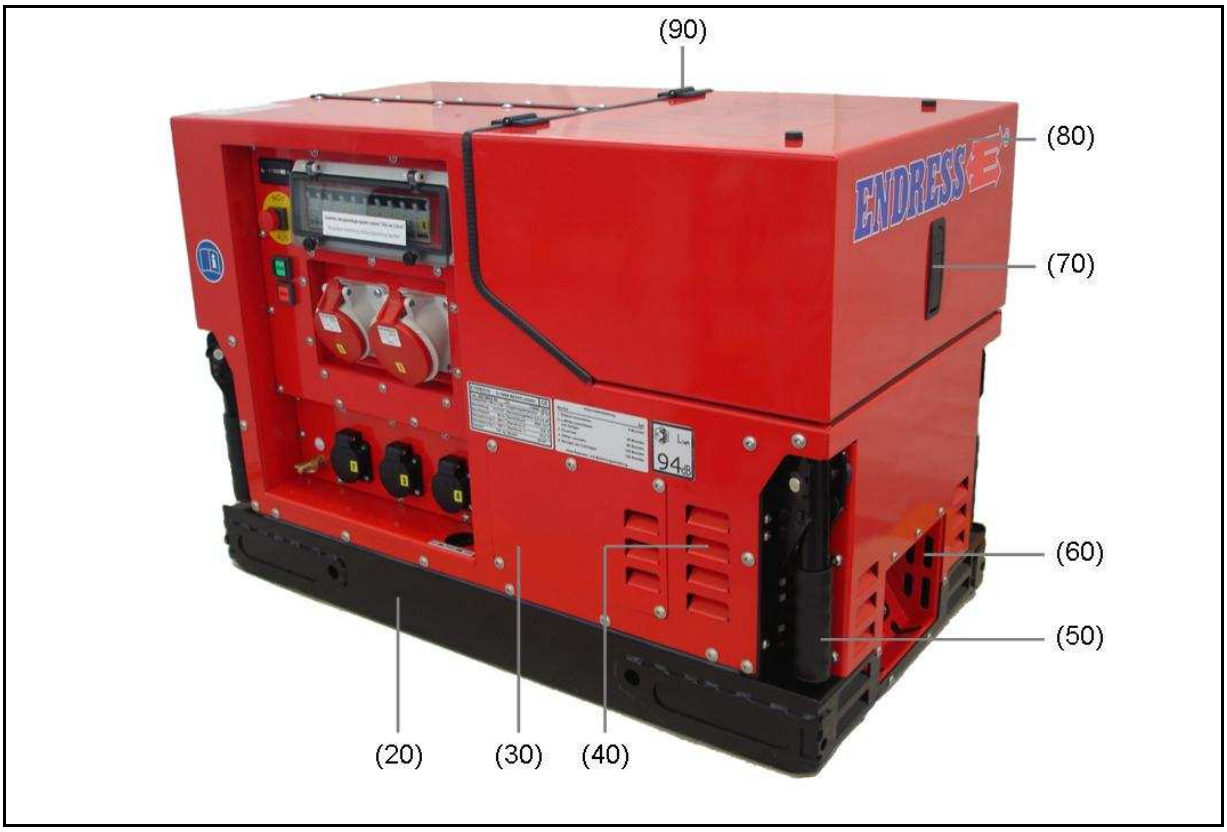


Fig. 9-1: Sound-absorbing hood

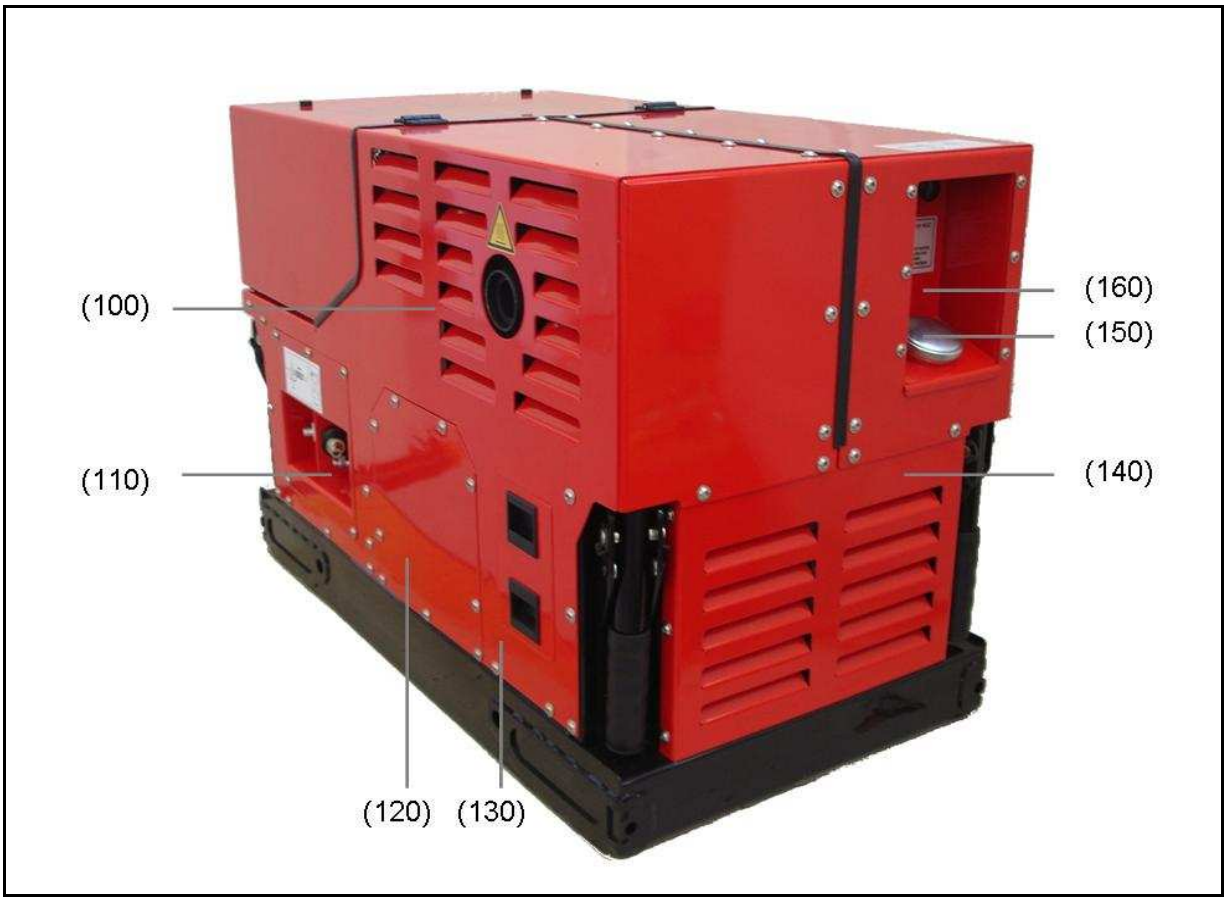


Fig. 9-2: Alternator and exhaust side replacement parts

Position	Part number	Quantity	Item designation
10	E130044	1	Sound-absorbing hood complete. (includes the complete frame)
20	E502440/91	1	Floor assembly complete. RAL 9005
30	E502582/11	1	Oil filter cover safety guard in RAL1012
40	E502510/11	1	Side part of the right safety guard in RAL1012
50	E500741/91	4	Carrying handle for retaining plate in RAL 9005
	E133175	4	Carrying handle
	E500741/01	4	Carrying handle for bolt, in black RAL 9005
	E133169	8	KL fuses, nominal dimension 16
60	E502567/31	1	Charge current plug holder in RAL3000
	E501717/91	1	Blind cover for combination holder
70	E133601	1	Adjustable lever lock
80	E502574/31	1	Cover for front safety guard RAL 3000
90	E100641	2	Screw-on hinge, 1056-U6
100	E502551/31	1	Side part of the left safety guard in RAL3000

110	E502585/31	1	Fueling holder safety guard in RAL3000
120	E500826/31	1	Battery cover panelling safety guard in RAL3000
130	E500848/31	1	Storage compartment cover in RAL 3000
	E133090	2	Engaging snap lock
140	E502530/31	1	Rear wall panelling in RAL 3000
150	E130510	1	Bayonet tank cap, Gr. 40
160	E502531/31	1	Tank support safety guard RAL 3000

Table 9.1: Replacement parts for the frame with covers

9.2 Engine

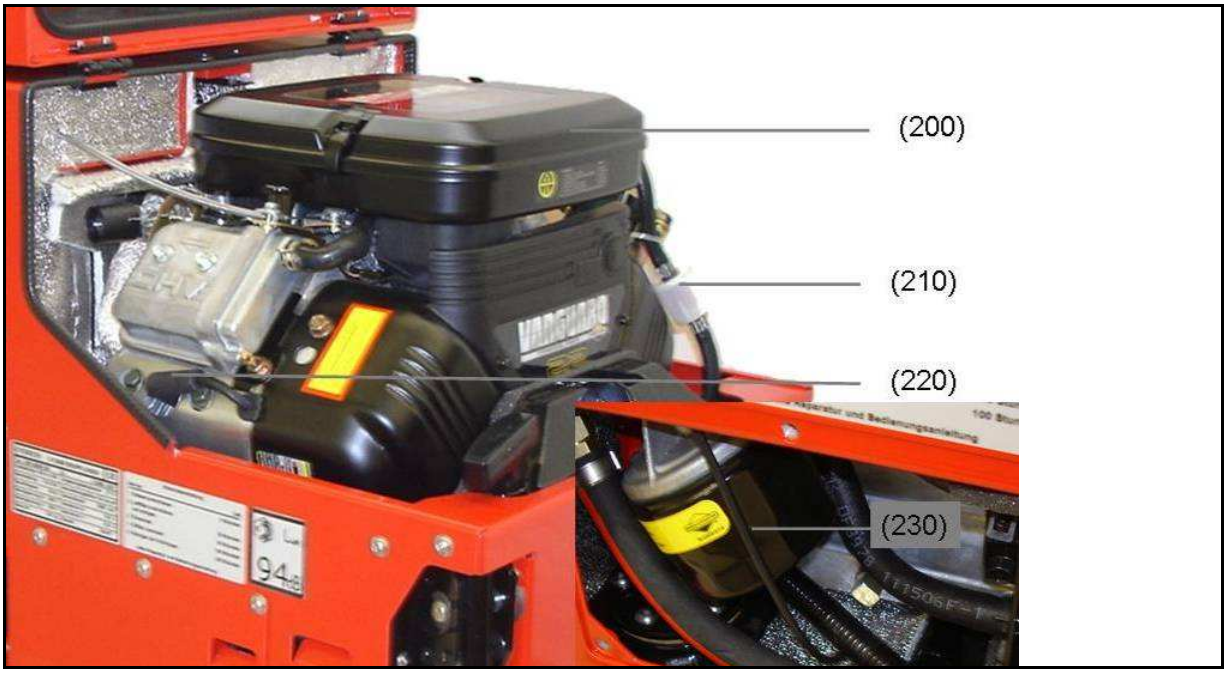


Fig. 9-3: Replacement parts for the engine

Position	Part number	Quantity	Item designation
	E133415	1	Engine B&S 16HP/ES cooler clean (for the 808)
	E133429	1	Engine B&S 22HP/ES cooler clean (for the 1308)
200	692519	1	Air filter insert
210	E130804	1	Fuel filter
	E100265	2	12/8 Cobra hose clamps
220	E130472	2	Champion QC 12YC spark plugs
230	492932S	1	Oil filter

Table 9.2: Replacement parts for the engine

9.3 Control panel and electronics

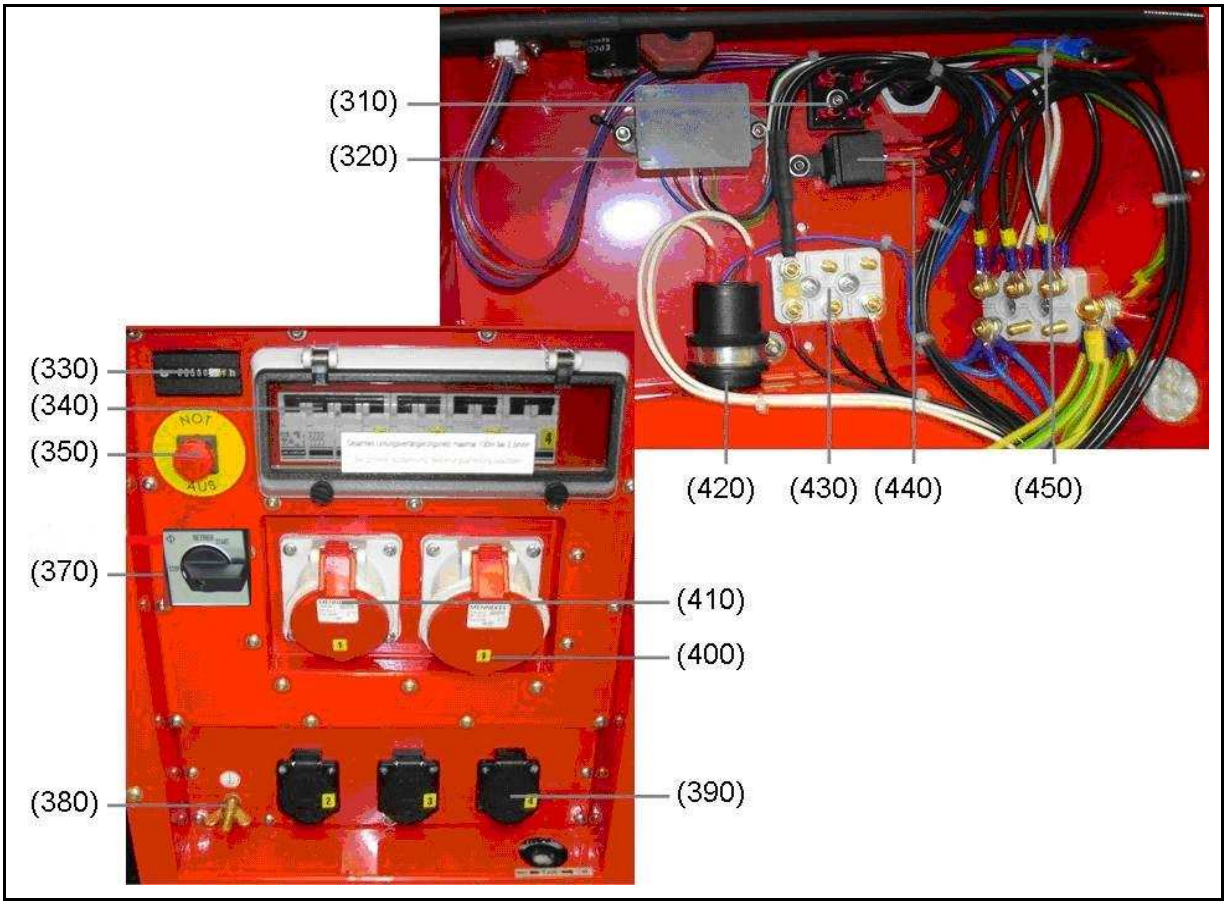


Fig. 9-4: Replacement parts Generator and electronics

Position	Part number	Quantity	Item designation
	E130960	1	Gen syn. 9 kVA IP 54 50Hz (for the 808)
	E131285	1	Gen syn. 13 kVA IP 54 50Hz (for the 1308)
310	E132679	1	10A bridge rectifier
320	E131799	1	EFXY3R2 interference elimination filter
330	E130470	1	Operating hour counter
340	E132072	3	2B16 circuit breaker (808)
	E131445	1	2B16 circuit breaker (808)
	E132072	1	2C16 circuit breaker (1308)
	E131445	1	4C16 circuit breaker (1308)
350	E132976	1	EMERGENCY-STOP button:25 x 25
	E130674	1	EMERGENCY-STOP sign
370	E131540	1	ON/OFF switch
380	E130564	1	Hexagon bolt M 8 x 40

Position	Part number	Quantity	Item designation
	E130565	2	Hexagon nut M 8
	E130566	1	U washer 8.4 for M 8
	E130567	1	Lock washer NG 8
	E131225	2	Contact discs M 8 vz.
	E130284	1	"Earth sign" sticker
390	E100039	3	250V / 16A shockproof socket
400	E130619	1	CEE socket 400V/16A 5P (808)
	E130620	1	CEE socket 400V/32A 5P (1308)
410	E130619	1	CEE socket 400V/16A 5P (for the 1308)
	E130618	1	CEE socket 230V/16A 5P (for the 808)
420	E130760	1	Oil monitoring 2-cyl. B&S
430	E100076	1	6-pin motor terminal board
440	E132667	1	Changer relay with holder (for the 1308)
450	E130060	1	Condenser (1308)

Table 9.3: Replacement parts for an engine with an exhaust and fuel system

9.4 Fuses

Only for the devices remote start, battery charge retention or external start.

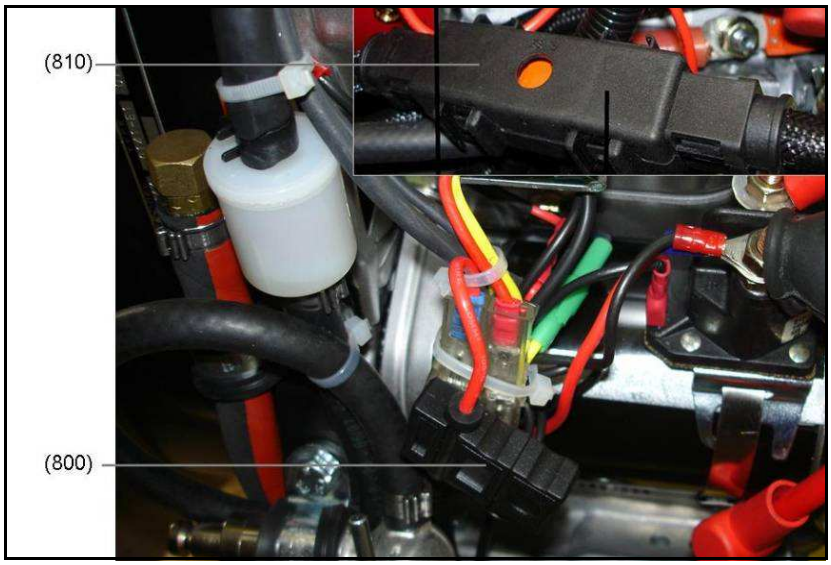


Fig. 9-5: Replacement parts for fuses

Position	Part number	Quantity	Item designation
800	E132672	1	Flat fuse holder
	E132680	1	Flat fuse insert 20 A, DIN 72581 Part 3
	E132735	1	Flat fuse insert 15 A, DIN 72581 Part 3
810	E133255	1	Fuse holder for a high performance fuse
	E130915	1	150 A high performance fuse

Table 9.4: Replacement parts for fuses

9.5 Accessories amd markings



Fig. 9-6: Replacement parts for accessories

Position	Part number	Quantity	Item designation
900	E130472	2	Champion 12YC spark plugs (no other type may be used)
910	E130545	1	Test probes
920	E130446	1	100 cm measuring line
930		1	Engine operating manual B&S
940	E130534	1	Spark plug wrench
1000	E100592	1	Fueling device (special accessory)
1010	E100593	1	20 litre canister, Nato standard (special accessory)
1020	E130473	1	DN 50 exhaust hose according to DIN 14572 (special accessory)

Table 9.5: Replacement parts for accessories / special accessories

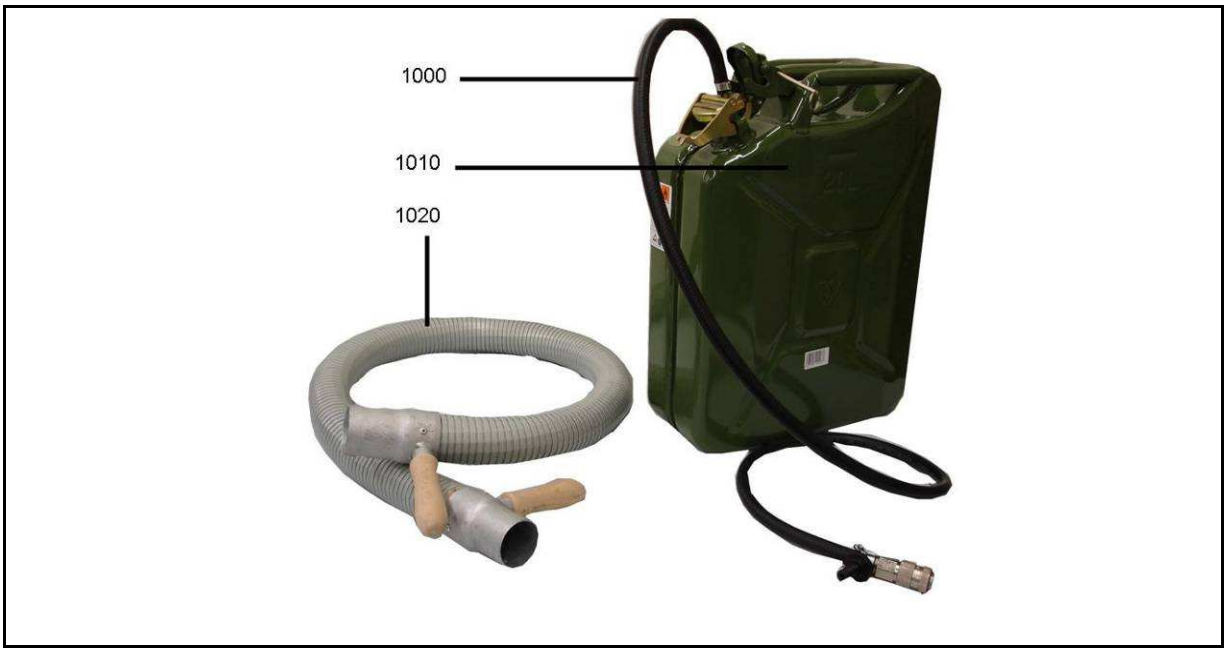


Fig. 9-7: Replacement parts forspecial accessories

CE **EG-Konformitätserklärung** Declaration of Conformity	ENDRESS	Declaration de conformité européenne Declaración de conformidad

Name und Anschrift der Person, die die technischen Unterlagen aufbewahrt Name and adress of the person who keeps the technical documentation Nom et adresse de la personne qui garde la documentation technique Nombre y direccion del encargado de la documentacion tecnica	Hans Braun ENDRESS Elektrogerätebau GmbH Neckartenzlinger Straße 39 D - 72658 Bempflingen

KRAFTSTROMGENERATOR

Power Generator , Generateur d`alimentation, Grupo electrogeno

Handelsbezeichnung Trade name Dénomination commerciale Nombre comercial	Artikel-Nr : Order-nr. Numéro d'article número del artículo
ESE 808 DBG ES Silent	**113007**
ESE 1308 DBG ES Silent	**113008**
ESE 1408 DBG ES Silent	**113022**

erklären in alleiniger Verantwortung, dass obigesProdukt auf das sich diese Erklärung bezieht folgenden einschlägigen Richtlinien und Normen entspricht
declare under our sole responsibility that the product to which this declaration relates is in conformity with the following relevant regulations
declarons sous notre seule responsabilité, que le produit auquel se refère cette déclaration est conforme aux normes suivantes
declara bajo responsabilidad propia, que el producto al que se refiere esta declaración, es conforme a las siguientes normas o directrice

2006 / 42 / EG	**EN 55012**
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2004 / 108 / EG	**EN 60335-1**
2002 / 88 / EG	**EN 60204-1**
2000 / 14 / EG	**EN 12601**
2005 / 88 / EG	

einschließlich nachfolgender Änderungen und Ergänzungen
and subsequent modification and integrations
et aux modifications successives at intégrations
y sucesivas modificas y integraciones

Gemessener Schalleistungspegel LWA Measured sound power level LWA Niveau de puissance sonore mesuré LWA Nivel de potencia sonora medida LWA		Garantierter Schalleistungspegel LWA Guaranteed sound power level LWA Niveau de puissance sonore garanti en LWA Nivel de potencia sonora garantizada LWA	
88 dB(A)	Art.-Nr:	89 dB(A)	Art.-Nr: 113007
92 dB(A)	Art.-Nr:	93 dB(A)	Art.-Nr: 113008
92 dB(A)	Art.-Nr:	93 dB(A)	Art.-Nr: 113022

Messverfahren entsprechend ISO 3744 (Teil10)
measuring procedure according to ISO 3744 (partl10)
procédé de repérage conformément à ISO 3744 (partl10)
el procedimiento de medición conforme a ISO 3744 (parte10)

Bewertungsverfahren zur Feststellung der Übereinstimung nach 2000/14/EC Anlage VIII. (Benachrichtigte Stelle:)
conformity assesment procedure according to 2000/14/EC procedure VIII. (notified body)
procede d`evaluation de conformite 2000/14/EC procedure VIII. (organisme avise:)
Bewertungsverfahren zur Feststellung der Übereinstimung nach 2000/14/EC Beilage VIII. (Benachrichtigte Stelle:)

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Bempflingen, Februar 2011	Christian Weissinger Geschäftsführer