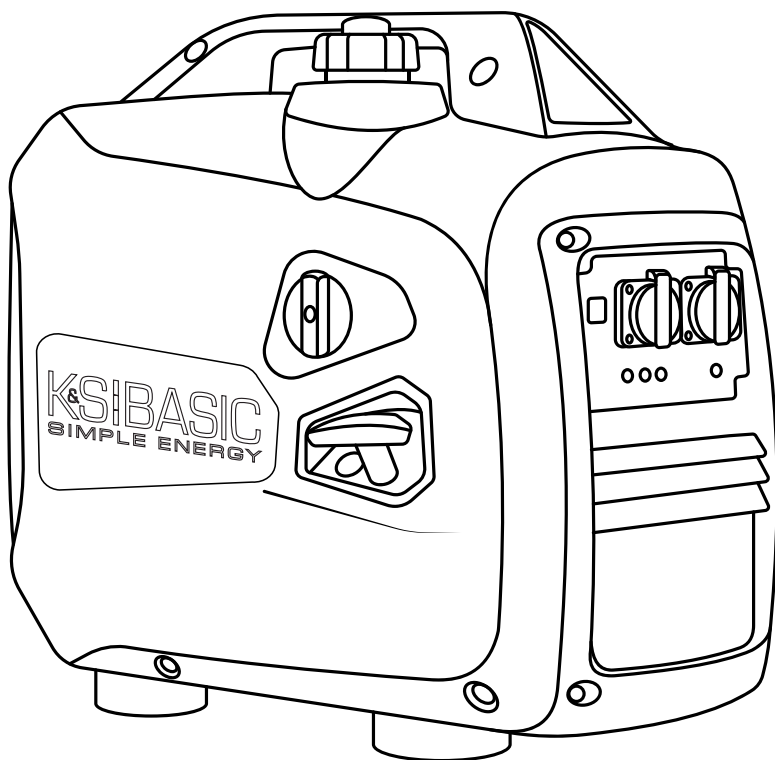


K&S!BASIC

SIMPLE ENERGY

Inverter Generator in Soundproof Housing

KSB 22i S





Thank you for your purchase of **K&S Basic®** products. This manual contains a brief description of safety, use and debugging. More information can be found on the official manufacturer's website in the support section: **konner-sohnen.com/manuals**

You can also go to the support section and download the manual by scanning the QR code, or on the website of the official importer of **K&S Basic®** products: **www.konner-sohnen.com**



Please, read this manual carefully before use!

Manufacturer reserves the right to make alterations into the generators, which may not be reflected in this manual. Pictures and photos of the product may vary from its actual appearance. At the end of this manual, You may find contact information which you are free to use in case of any issues occurrence.

All data, specified in this operation manual is the most up to date for the moment of its publishing. The current list of service centers you can find at the website of official importer: **www.konner-sohnen.com**



ATTENTION – DANGER!



Failure to follow the recommendations marked with this sign may lead to serious injury or death of the operator or third parties.



IMPORTANT!



Useful information while operating the machine.

SAFETY INFORMATION

1

Do not use the generator in rooms with poor ventilation or in conditions of excessive humidity. Do not place the generator in water or on moist soil. Do not expose the generator to rain, snow, as well as to direct sunlight for a long time. Place the generator on a flat, hard surface, away from flammable liquids/gases (at a minimum distance of 1 m). Install the generator at a distance of not less than 1 m from the front control panel and not less than 50 cm on each side, including the upper part of the generator. Keep unauthorized persons, children, and animals away from work area. Wear safety shoes and gloves.



ATTENTION – DANGER!



When installing the generator, pay attention to the capacity of electrical appliances and their starting current, which may be several times higher than the rated current. The generator cannot run in overload conditions when starting consumers with an inrush current higher than the generator's maximum output.



ATTENTION – DANGER!



Pay attention to the number of phases of the generator and the electrical system. A three-phase generator is only suitable for three-phase power consumers. Never connect a three-phase generator to a three-phase home network if there are no three-phase power consumers



ATTENTION – DANGER!



As exhaust gases contain poisonous carbon dioxide (CO₂) and carbon monoxide (CO) gases which are dangerous for life, it is strictly forbidden to install the generator in residential buildings, premises connected to residential buildings by a common ventilation system, other rooms from which exhaust gases may enter living premises.

**ATTENTION – DANGER!****The device generates electricity. Follow safety precautions to avoid electric shock.****IMPORTANT!****The generator should be used as an IT or TN system based on the application. Earthing and additional protective measures such as insulation monitoring or protection against accidental contact (residual current device) must be provided based on the application and the system used.**

The generator produces electricity that may lead to an electric shock while neglecting compliance regulations. K&S Basic generators were initially designed as an IT system with basic protection by insulation of hazardous live parts according to DIN VDE 0100-410. The generator housing is insulated from the current-carrying L and N conductors. The generator must be grounded in all cases, except for an IT system with an insulated neutral wire and bonding. A grounded IT system requires the use of an insulation monitoring device. Further details regarding the use of the generator in IT and TN systems can be found on our website or requested from our technical support. Wires with damaged or spoiled insulation should be replaced. You should also replace worn, damaged or rusty contacts.

**IMPORTANT!****It is forbidden to connect to the generator devices which can generate current pulses and direct energy towards the generator (voltage stabilizers, devices with electronic brakes, on-grid and hybrid inverters, etc.).**

The generator and power consumers form a closed system, with elements affecting each other. This system is physically different from the public network since it is significantly affected by factors such as unbalanced phase load and non-linear current consumption by power consumers that can cause damage to the generator and power consumers connected to it.

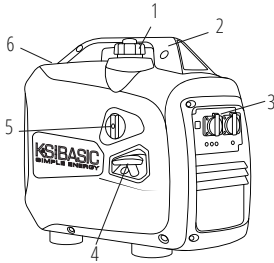
**ATTENTION – DANGER!****Be careful. Do not operate the generator, if you are tired, under the influence of drugs or alcohol. Inattention may cause a serious injury.****IMPORTANT!****Using device for other purposes deprives the right for free warranty.**

PRECAUTIONS WHEN WORKING WITH GASOLINE GENERATOR

1.2

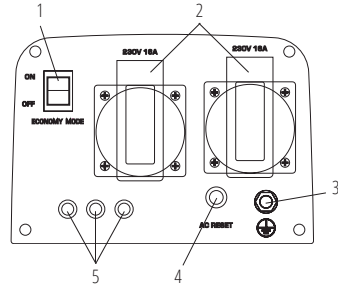
Do not start the generator operation upon presence of electric load! Disconnect the load before you stop the engine. **Only unleaded gasoline is recommended for the generator.** It is forbidden to use kerosene or other fuel types. Before running the generator, it is necessary to define the place and means of its emergency stop. Do not refuel the running generator.

**ATTENTION – DANGER!****Fuel contaminates the land and groundwater. Do not allow the leaking gasoline from the tank!**



- 1. Fuel tank cap air vent
- 2. Carrying handles
- 3. Control panel
- 4. Manual starter
- 5. Air choke
- 6. Maintenance cover (on the other side of the generator)

- 1. Economy mode switch (ECON)
- 2. 2x16A AC outlets
- 3. Earthing bolt
- 4. Reset button
- 5. Oil level indicator, overload indicator, voltage indicator



IMPORTANT!



Manufacturer reserves the right to make changes and/or improvements in design, components set and technical attributes without notice and without incurring obligation. The pictures in this manual are schematic and may not match the parameters of original product.

Model	KSB 22i S
Voltage, V	230
Maximum power, kW	2.0
Nominal power, kW	1.8
Frequency, Hz	50
Current, A (max.)	8.7
Outlets	2*16A
Engine start	manual
Fuel tank volume, l	4
Working time at 50% load (gasoline fuel)*, h	5.0
Noise level Lpa (7m)/Lwa, dB	62/87
Engine model	KSB 100i
Engine volume, cm ³	79.7
Engine type	gasoline, 4 stroke cycle engine
Engine power, hp	3.3
Crankcase volume, l	0.35
Power factor, cos φ	1
Dimensions (L×W×H), mm	510×310×525
Net weight, kg	15.6
Protection class	IP23M
Nominal voltage tolerance – max. 5%	

*Fuel consumption depends on many factors, such as load, fuel quality, season, altitude, technical condition of the generator.

To ensure reliability and increase the engine service life, peak powers may be slightly limited by circuit breakers.

The optimal operating conditions are ambient temperature of 17-25°C, barometric pressure of 0.1 MPa (760 mm Hg), and relative humidity of 50-60%. Under these environmental conditions, the generator can provide maximum performance in terms of the declared specifications.

In the event of deviations from these environmental indicators, the generator performance may vary.

Please note that continuous loads exceeding 80% of the generator's rated power are not recommended in order to extend its service life.

TERMS OF USE OF INVERTER GENERATOR

4

It is recommended to ground the generator before operating it for the first time. Before starting the device, remember that the total power of the connected power consumers should not exceed the nominal power of the generator.



IMPORTANT!



Make sure that the control panel, the blinds and the underside of the inverter are well cooled and protected against the ingress of small solids, dirt, and water. Improper operation of the cooler can cause damage to the motor, inverter or alternator.

GENERATOR OPERATION

5

OIL LEVEL INDICATOR

When the oil level falls below the level required for operation, the oil level indicator lights up, and then the engine stops automatically. The engine will not start until oil is added.

AC INDICATOR

When the generator is running and producing electricity, the AC indicator light is on.

OVERLOAD INDICATOR

The overload indicator lights up when the connected generator is overloaded, the inverter control unit overheats or the AC output voltage rises.

If the overload indicator goes on, the engine will continue to operate, but the generator will no longer produce electricity. In this case, you must perform the following steps:

1. Turn off all connected electrical appliances and stop the engine.
2. Reduce the total power of the connected devices until the nominal power of the generator is reached.
3. Check if the vent grid is clogged. Remove excess dirt or debris, if any.
4. After checking, start the engine.



IMPORTANT!



The overload indicator may light up within several seconds after start-up or when connecting electrical devices requiring a high starting current, such as a compressor or voltage indicator. However, this is not a malfunction.

DC FUSE

The DC protector automatically switches to "OFF" when the current of the operating electrical device is higher than the rated current. To use this equipment again, turn on the DC fuse again by pressing the "ON" button.



IMPORTANT!



If the DC fuse turns off, reduce the load of the connected electrical device. If the DC protector turns off again, stop operation and contact your nearest K&S BASIC® service center.

FUEL TANK CAP AIR VENT

The fuel cap is equipped with a vent for air supply to the fuel tank. When the engine is running, the vent must be in the "ON" position (OPEN). This will allow fuel to enter the carburetor for engine operation. After the generator stops, allow it to cool down and close the air vent on the fuel cap. When the generator is not in use, close the vent to the "OFF" position.

EARTHING BOLT

In all cases, except for an IT system with an insulated neutral wire and bonding, the generator earthing bolt must be connected to the grounding circuit with a flexible copper conductor with a cross-sectional area of at least 6 mm².

CHECK BEFORE GETTING STARTED

6

CHECKING THE FUEL LEVEL

1. Unscrew the fuel cap and check the fuel level in the tank.
2. Fill the fuel tank to the fuel filter level.
3. Tighten the fuel cap securely.
4. For silent models of inverter generator, open the air intake vent on the fuel cap.



IMPORTANT!



Immediately wipe off spilled fuel with a clean, dry, soft cloth, since fuel may deteriorate painted surfaces or plastic parts. Use only unleaded gasoline. The use of leaded gasoline will cause severe damage to internal engine parts.

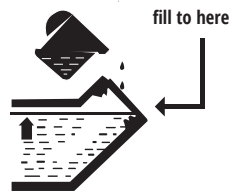
Recommended fuel: Unleaded gasoline

Fuel tank volume: see specifications table.

CHECK THE OIL LEVEL

Generator is transported without the motor oil. Please don't start the engine without filling the sufficient amount of motor oil.

1. Open the service cover (See fig).
2. Unscrew the oil dipstick and wipe it out with a clean cloth.
3. Fill the crankcase with engine oil. The recommended amount of oil for each model is indicated in the specification chart.
4. Insert the dipstick without screwing it in.
5. Check the oil level by a mark on the oil dipstick.
6. Add oil if its level is below the mark on the oil dipstick.
7. Screw on the dipstick.



Recommended engine oil: SAE 10W-30, SAE 10W-40.

Recommended engine oil grade: API Service SE type or higher.

Motor oil quantity: see specifications table.

GETTING STARTED

7

Before starting the engine, make sure that the rated power of power consumers matches with the power of generator. Do not exceed the nominal power of the generator. **Do not connect any devices before you start the engine!**



IMPORTANT!



Do not change the controller settings in terms of the amount of fuel or speed governor (this adjustment was made at the factory). Otherwise, this may result in changes in the engine operation or its failure.



ATTENTION – DANGER!



In the power supply mode, the generator should operate no longer than 1 minute in the range from nominal to maximum power.



ATTENTION – DANGER!



Standby generators should not run continuously (e.g. by adding fuel to the tank or connecting a large fuel tank) or longer than recommended: 4-6 hours for gasoline generators (depending on load).

This material is for informational purposes only and does not constitute a manual for installing the equipment or connecting it to the mains, but we strongly recommend that you read the instructions below. Equipment connection must always be carried out by a certified electrician responsible for the installation and electrical connection of the equipment according to local laws and regulations. The manufacturer assumes no liability for improper connection of the equipment or for any material or physical damage that may result from improper installation, connection or operation of the equipment.

COMMISSIONING

1. Fill the crankcase with engine oil. The recommended amount of oil for each model is indicated in the specification chart.
2. Check oil level with an oil dipstick. It should be between the MIN and MAX marks on the oil dipstick.
3. Check fuel level.
4. Check the air filter for correct installation

IN THE FIRST 20 OPERATING HOURS OF THE GENERATOR, THE FOLLOWING REQUIREMENTS SHOULD BE MET:

1. During commissioning, do not connect power consumers, the power of which exceeds 50% of the nominal (operating) power of the device.
2. After the first 20 operating hours, be sure to change the oil. It is better to drain oil while the engine is still hot after operation to ensure quick and complete oil draining.
3. Check and clean the air filter, fuel filter and spark plug.

ENGINE START



IMPORTANT!



Useful tip: If the engine stalls or does not start, turn the engine switch to the “ON” position, and then pull the manual starter. If the oil level indicator flickers for several seconds, add oil and restart the engine.



IMPORTANT!



Each time you start the generator, be sure to check oil and fuel level.

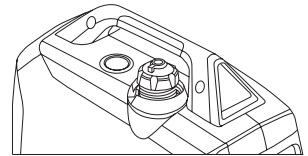
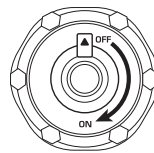


IMPORTANT!

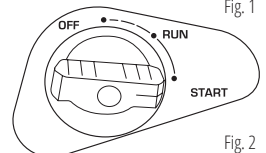


Before starting the generator, connect the ground wire to the ground terminal.

1. Check oil level.
2. Check fuel level.
3. Open the vent on the fuel cap to the “ON” position (fig. 1).
4. Turn the air choke control knob to the “START” position (fig. 2).



5. Pull the manual starter until a slight resistance is felt, then pull it toward you relatively sharply. Slowly turn the manual starter by hand, do not release it abruptly.
6. Turn the air choke control knob to the “RUN” position.





IMPORTANT!



Useful tip: to ensure long-term operation of the generator engine, it is important to observe the following tips:

- Before connecting the load, allow the engine to run for 1-2 minutes to warm it up.
- When disconnecting the load after lengthy operation, do not turn off the generator. Allow the generator to run idle for 1-2 minutes so that it cools down.



ATTENTION – DANGER!



Do not connect two or more devices at a time. The start-up of many devices requires high power. Devices should be connected one at a time according to their power rating. Do not connect any power consumers within the first 2 minutes after the generator has been started.

To drain gasoline from the carburetor, turn off the fuel valve and wait until the generator has cooled down sufficiently. Loosen the 2 screws on the side panel. Loosen drain screw **C** on the carburetor and let the remaining fuel drain through pipe **D** into the dedicated drip pan. Avoid gasoline leaks.



FUNCTIONAL DESCRIPTION OF INVERTER GENERATORS

8

ECON FUNCTION

1. Start the engine.
2. Set the ECON switch to “ON”.
3. Plug the device into an AC outlet.
4. Make sure the AC indicator light is on.
5. Turn on the electrical device.



IMPORTANT!



The ECON switch must be set to “OFF” to increase engine speed to nominal. When connecting multiple power consumers to the generator, be sure to first connect the one with the highest starting current, and the device with the lowest starting current should be connected last.

“ON” MODE

When the ECON switch is in the “ON” position, the control unit monitors the engine speed, reducing it commensurate with the connected load. If the engine speed is not enough to generate electricity to provide the load, the control unit will automatically increase the engine speed.

As a result, fuel consumption is optimized and noise levels are reduced.

“OFF” MODE

The ECON switch must be set back to “OFF” when using electrical devices requiring a high starting current, such as a compressor or submersible pump.



IMPORTANT!



The ECON switch must be set back to “OFF” when using electrical devices requiring a high starting current, such as a compressor or submersible pump.

DISCONNECT ALL DEVICES BEFORE STOPPING THE GENERATOR!

Do not stop the generator with the devices turned on. This may disable the generator or devices connected to it!

TO STOP THE ENGINE, PROCEED AS FOLLOWS:

1. Turn off all devices.
2. Allow the generator to run idle for approx. 1-2 minutes.
3. Set the engine switch to the "OFF" position.
4. Turn the air choke control knob to the "OFF" position (fig. 4).
5. Allow the generator to cool down.
6. Unplug the devices.
7. After the generator stops, allow it to cool down and close the air vent on the fuel cap (set to OFF, as shown in fig. 3).

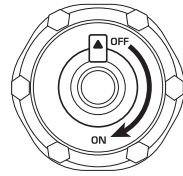


Fig. 3

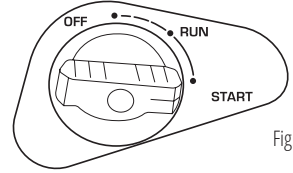


Fig. 4

MAINTENANCE

9

This manual compliance! You can find a list of service center addresses on the website of exclusive importer: www.konner-sohnen.com

TECHNICAL MAINTENANCE WORKS

Unit	Action	At each start	First month or 20 operating hours	Every 3 months or 50 operating hours	Every 6 months or 100 operating hours	Every year or 300 operating hours
Motor oil	Level check	✓				
	Replacement		✓	✓		
Air filter	Check /Cleaning	✓	✓	✓		
	Replacement				✓	
Spark plug	Cleaning		✓	✓		
	Replacement				✓	
Fuel tank	Level check	✓				
	Cleaning					✓
Fuel filter	Check (clean out)		✓	✓		

- If the generator often operates at high temperature or high load, the oil should be replaced every 25 operating hours.
- If the engine often runs in dusty or other harsh conditions, clean the air filter every 10 operating hours.
- If you missed the maintenance time, perform it as soon as possible to save the generator engine.



IMPORTANT!

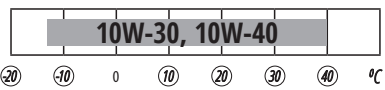


The manufacturer shall not be liable for any damage caused by failure to perform maintenance work.

RECOMMENDED OILS

10

Use oils designed for four-stroke cycle vehicle engines SAE10W-30, SAE10W-40. Motor oils with other viscosity levels, may be used only if the average air temperature in your region does not exceed the limits of the temperature range, specified in the table.



Upon oil level decrease it is necessary to add the required quantity in order to provide the correct generator operation. It is necessary to check the oil levels according to technical maintenance schedule. Further details can be found in the full version of the manual on our website.

TO REPLACE ENGINE OIL, PERFORM THE FOLLOWING ACTIONS:

1. Place the generator on a flat surface.
2. Loosen the screws, remove the cover of generator.
3. Put the drain pan under the machine.
4. Tilt the generator and drain all the oil.
5. Place the generator to a horizontal position and add fresh oil.
6. Install the oil gauge.
7. Install the generator cover back.



AIR FILTER TECHNICAL MAINTENANCE

11

Air filter cleaning is to be performed each 50 hours of the generator operation (every 10 hours in unusually dusty conditions).

CLEANING THE FILTER:

1. Open the clips on the upper cap of the air filter.
2. Remove the sponge filtering element.
3. Remove all dirt deposits inside the hollow case of the air filter.
4. Thoroughly wash the filtering element in warmsoapy water.
5. Dry the sponge filter.
6. Dry filtering element is to be moistened by motor oil and excess oil is to be squeezed out.

SPARK PLUGS TECHNICAL MAINTENANCE

12

Spark plug has to be intact, without soot deposits and to have a correct gap.

SPARK PLUG VERIFICATION:

1. Remove the cap from the spark plug.
2. Remove the spark plug by means of a corresponding spanner.
3. Examine the spark plug. If it is shattered – it is necessary to replace it.
Recommended replacement spark plugs – E5RTC.
4. Measure the gap. It has to be within range 0.7-0.8 mm.
5. In case of repeated use, the spark plug has to be cleaned by means of a metal brush.
After that – set the correct gap.

DAMPER AND FLAME ARRESTER MAINTENANCE

13

The engine and damper will get very hot after the generator has been started. Do not touch the engine or damper with any part of your body or clothing during inspection or repair until they have cooled down.

Remove the screws and then pull the protective cover towards you. Loosen the bolts and remove the cover, screen and flame arrester of the damper. Descale the screen and flame arrester of the damper with a wire brush. Inspect the screen and flame arrester of the damper. Replace them if they are damaged. Replace the flame arrester. Replace the screen and cover of the damper. Replace the cover and tighten the screws.



IMPORTANT!



Match the protrusion of the flame arrester to the hole in the pipe damper.

**IMPORTANT!****Never use gasoline while smoking or in the immediate vicinity of an open flame.**

1. Remove the fuel tank cap and fuel filter.
2. Clean the filter with gasoline.
3. Wipe the filter and replace it.
4. Replace the fuel tank cap.

Make sure that the fuel tank cap is tight.

**IMPORTANT!****The generator must be stored and transported with a closed vent at all times!**

Storage room has to be dry and free from dust deposits. Storage room also has to be locked away from children and animals. It is recommended to store and use the generator at temperature of -20°C to $+40^{\circ}\text{C}$. Avoid direct sunlight, rain on the generator. Information on long-term storage and transportation can be found in the full version of the manual.

To prevent environment damage generator should be separated from ordinary waste. Please recycle them in the safest way, passing it to special place for disposal.

Typical failures	Possible reason	Solution
Engine does not starting	Engine starting swinch set to OFF position	Set the engine starting switch to ON
	Fuel valve set to off position	Turn the valve to ON position
	Air flap is opened	Shut the air flap
	No fuel	Add fuel
	Low-quality or dirty fuel is in engine	Change the fuel
	Sparking plug smoked or corrupted distance between contacts is not nominal	Clean or replace the plug; Set proper distance between contacts
Low engine power / heavy starting	Dirt in fuel tank	Clean the fuel tank
	Dirt in the air filter	Clean the air filter
	Water in a fuel tank/ carburetor; carburetor is jammed	Empty the fuel tank, carburetor
	Distance between contacts of a sparking plug is not nominal	Set proper distance between contacts
Engine overheated	Cooling fins are dirty	Clean the cooling fins
	Air filter is dirty	Clean the air filter
No voltage while working engine	Circuit breaker is active	Turn on the cricuit breaker
	Connected cables are corrupted	Check the cables; if using extension cord, change it
	Plugged device failure	Try to connect other devices
Connected devices are not working while generator is running	Generator is overloaded	Unplug some devices to reduce load
	Short circuit occured in one of the devices connected	Unplug that device to restore the stability of a system
	Air filter is dirty	Clean the air filter
	Repetitions of an engine are lower than nominal	Contact the service center

The international manufacturer warranty is 1 year. The warranty period starts from the date of purchase. In cases when warranty period is longer than 1 year according to local legislation please contact your local dealer. The Seller which sells the product is responsible for granting the warranty. Please contact the Seller for warranty. Within the warranty period, if the product fails because of defects in the production process, it will be exchanged on the same product or repaired.

All faults caused by the manufacturer during the warranty period will be eliminated free of charge. Warranty repair is carried out only if you have a fully completed warranty card, the Buyer's signature of acceptance of the warranty terms, as well as a document supporting the purchase (cash receipt, sales slip or invoice). In the absence thereof, as well as in the event of errors or corrections not authenticated by the seller's seal or illegible inscriptions in the warranty card or tear-off coupon, no warranty repair is carried out, no objections to quality are accepted and the warranty card is withdrawn by the service center as invalid. The device is accepted for repair clean and full.



EC Declaration of Conformity

Nr. 099

The following products have been tested by us with the listed standards and found in compliance with the European Community Machinery Directive 2006/42/EC, Electromagnetic compatibility Directive (EMC) 2014/30/EC, Noise Directive 2000/14/EC.

Manufacturer: DIMAX INTERNATIONAL GmbH
Address: Flinger Broich 203 -FortunaPark- 40235 Dusseldorf, Germany
Product: Inverter generator "K&S BASIC"
Type / Model: KSB 22i S

The statement is based on a single evaluation of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo. The manufacturer should ensure that all product in series production are in conformity with the product sample detailed in this report. The applicant should hold the whole technical report at disposal of the competent all the right.

Applied EC Directives: 2006/42/EC Machinery Directive
2014/30/EC Electromagnetic compatibility Directive (EMC)
2000/14/EC Noise Directive(amended in 2005/88/EC)
(EU) 2016/1628 Non-Road mobile machinery emissions
(EU)2017/654 amended by (EU) 2018/989
(EU)2017/655 amended by (EU) 2018/987
(EU)2017/656 amended by (EU) 2018/988

Applied Standards: EN ISO 8528-13:2016
EN 55012:2007+A1
EN 61000-6-1:2007
00/14/EC
55/88/EC

Gasoline engines KSB 100i, correspond to European Emission Standard Euro V.
This is confirmed by EU TYPE-APPROVAL CERTIFICATE issued by department of transport of Luxembourg.
Technical service responsible for carrying out the test -TÜV Rheinland Luxemburg GmbH.
Date of issue 30/10/2018

2000/14/EC_2005/88/EC Annex VI

For model KSB 22i S Noise measured L_{WA} = 87dB (A)



Issued Date: 2021-10-10
Place of issue: Dusseldorf
General director: Fomin P. *P. Fomin*

DIMAX
International
GmbH
Steuer-Nr.: 103 5722 2493
USt-Id-Nr.: DE29617274

We DIMAX INTERNATIONAL GmbH hereby declare that specified above conforms covering European Parliament and Council Directives, 2006/42/EC of 17 May 2006 Machinery Directive, Electromagnetic compatibility Directive (EMC) 2014/30/EC of 26 February 2014, Noise Directive 2000/14/EC of 8 May 2000. The CE mark above can be used under the responsibility of manufacturer. After completion of an EC declaration of Conformity and compliance with all relevant EC directives.

CONTACTS

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