

Please, read this manual  
carefully before use!

Owner's Manual



# HEAVY DUTY diesel generator

**DIESEL GENERATOR**

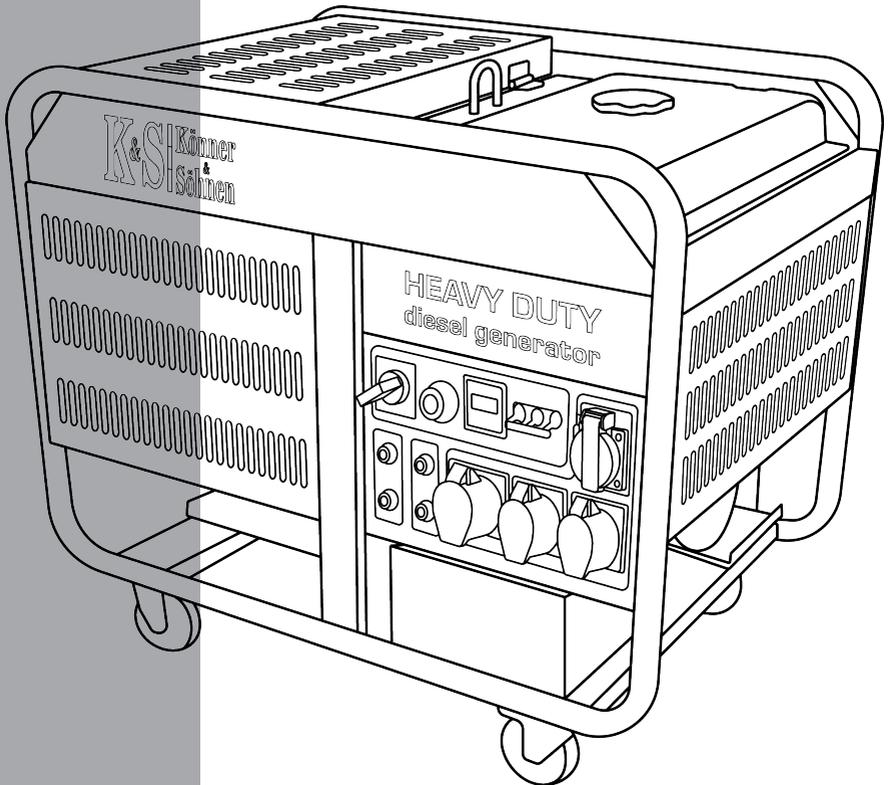
**KS 14100HDE ATSR**

**KS 14100HDE 1/3 ATSR**

**SILENT DIESEL GENERATOR**

**KS 14200HDES ATSR**

**KS 14200HDES 1/3 ATSR**



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## Abbreviations and acronyms:

|     |                                   |
|-----|-----------------------------------|
| KS  | Electric generator                |
| D   | Diesel                            |
| E   | Electric start                    |
| S   | Soundproof housing                |
| 1/3 | Single- and three-phase operation |
| H   | HEAVY DUTY                        |

## PREFACE

Thank you for your purchase of TM **Könner & Söhnen** HEAVY DUTY series diesel generator. It is professional machinery with an increased service life and is therefore suitable for heavy-duty operation.

HEAVY DUTY series diesel generator engines have a service life of more than 3,000 operating hours subject to observance of the rules of generator operation and the maintenance schedule.

This manual contains safety instructions, a description of the use and commissioning of **Könner & Söhnen** generators and procedures for their maintenance.

The generator manufacturer may make some modifications that may not be reflected in this manual, namely, the manufacturer reserves the right to make changes in the product design, configuration and construction. The images and drawings in this manual are for reference only and may differ from the actual components and inscriptions on the products.

Contact information that you are free to use in case of any problems can be found at the end of this manual. All information in this manual is correct to the best of our knowledge and belief at the date of its publication.



**IMPORTANT!**



**In order to ensure equipment integrity and avoid possible injuries, we recommend that you read this manual before operating the generator.**

### **NOTE!**

**Do not operate single-phase and three-phase circuit breakers at the same time to prevent electric shock and avoid damage to your electrical devices and the generator!**

(Circuit breakers are shown in Figs. 3 and 4)

The current list of service centers can be found on the official importer's website:

[www.ks-power.de](http://www.ks-power.de)

# DIESEL GENERATOR USE AND SAFETY PRECAUTIONS

*Read this manual carefully before operating the generator.*

## **Work Area**

- Do not use the generator near flammable gases, liquids or dust. During operation of the generator, its exhaust system becomes very hot. This may cause fire or explosion of these materials.
- Keep the work area clean and well lit to avoid injuries.
- Keep unauthorized persons, children and animals away from the running generator.

## **Electrical Safety**

- The generator produces electricity that can cause electric shock in the event of failure to observe safety precautions.
- Avoid operating the generator in high-humidity environments. Do not allow moisture to enter the generator, as this increases the risk of electric shock.
- Avoid direct contact with grounded surfaces (pipes, radiators, etc.).
- Be careful when working with the power cord. Replace it immediately in case of damage, as damaged power cord increases the risk of electric shock.
- All generator connections to the mains supply must be carried out by a certified electrician in accordance with all electrical codes and regulations.
- Connect the electric generator to the protective ground before operation.
- Do not connect/disconnect the generator to/from power consumers while standing in water, on wet or damp soil.
- Do not touch live parts of the generator.
- Only connect the generator to the power consumers that correspond to the electrical specifications and power rating of the generator.
- Keep all electrical equipment dry and clean. Replace damaged or worn wiring. Worn, damaged, or rusted terminals must be replaced as well.

## **Personal Safety**

- Do not operate the generator when you are tired or under the influence of potent drugs, alcohol or medication. During operation, inattention can cause serious injury.
- Avoid inadvertent start-up. Make sure the power switch is set to OFF when turning off the generator.
- Make sure there are no foreign objects on the generator when it is turned on.
- Always keep proper footing and balance when starting the generator.
- Do not overload the generator; use it for its intended purpose only.
- Do not operate the generator in areas with poor ventilation. Exhaust gases contain poisonous carbon monoxide, which is life threatening!

### Operating and Maintaining the Generator

- Before preoperational check, make sure the generator is on a flat, level surface and the engine switch is in the OFF position.
- Check the connection of moving parts, inspect for damaged parts that affect the operation of the generator. Eliminate damage before use.
- Use only recommended oils and fuels for maintenance and repair. The use of other oils, consumables and spare parts deprives you of the right to warranty service.
- The generator must be maintained by trained and qualified personnel only. For the nearest service center, please contact your local dealer or refer to the current list of service centers on the importer's official website:  
**[www.ks-power.de](http://www.ks-power.de)**
- Store the generator in a dry, well-ventilated area if you are not using it.



**IMPORTANT!**

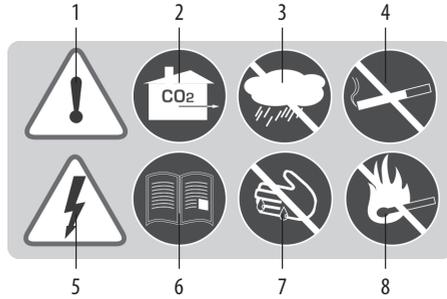


**The generator runs on diesel fuel.  
Do not use gasoline or kerosene as fuel!**

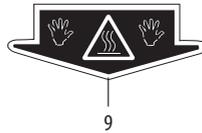
### **NOTE!**

**Do not operate single-phase and three-phase circuit breakers at the same time to prevent electric shock and avoid damage to your electrical devices and the generator!**  
(Circuit breakers are shown in Figs. 3 and 4)

# SYMBOLS



1. Be careful when operating the device! Observe the safety instructions in this manual.
2. Operate the generator only in well-ventilated indoor spaces or outdoors. Exhaust gases contain CO<sub>2</sub>, whose vapors are life threatening.
3. Do not operate or store the device in high-humidity environments.
4. Do not smoke while operating the generator!
5. The device generates electricity. Observe safety precautions to avoid electric shock.
6. Read this manual carefully before operating the device.
7. Do not touch the generator with wet or dirty hands.
8. Observe fire safety regulations; do not operate the generator near open flame.



9. Do not touch! The generator dampener becomes hot during operation.



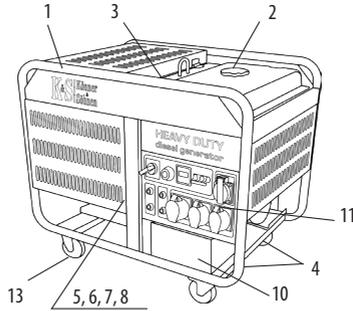
The device bears information about the guaranteed noise level.

|  |                            |   |   |   |
|--|----------------------------|---|---|---|
| <b>K&amp;S Könnor &amp; Söhne</b><br>TRADITIONELLE DEUTSCHE QUALITÄT   | <b>12V</b><br><b>36 AH</b> |   |   |   |
|  |                            |   |   |   |
| <p><b>DE</b> Wenn die Generatoranlage drei Monate lang nicht in Betrieb war, überprüfen Sie vor dem Starten die Batteriespannung. Wenn die Spannung niedriger als 12 V ist, laden Sie extern durch Anschließen des Ladegeräts. Sonst wird die niedrige Anlaufspannung den Generator brennen.</p> <p><b>EN</b> If generator was not used for 3 months, check the battery voltage before starting. If the voltage is lower than 12V, charge the battery with externally connected charger. Otherwise it will burn the generator with low voltage starting.</p> |                            | <p><b>PL</b> Jeśli agregat prądowłoczy nie działa przez trzy miesiące, sprawdź napięcie akumulatora przed uruchomieniem. Gdy napięcie jest niższe niż 12 V, doładuj zewnętrznie podłączając ładowarkę; w przeciwnym razie: niskie napięcie początkowe spowoduje spaleni generatora.</p> <p><b>UA</b> Якщо генератор не використовувався протягом трьох місяців, перевірте заряд акумуляторної батареї перед запуском. Якщо заряд менше 12В, підзарядьте акумулятор зовнішнім зарядним пристроєм. Інакше генератор може згорти під час запуску через низьку напругу.</p> |   |   |
|  |                            | 4   | 5 | 6 |

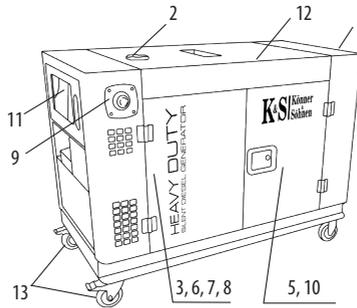
1. Wear protective rubber gloves when handling the battery. The battery contains a dangerous acid electrolyte. If electrolyte comes into contact with skin or face, rinse immediately with plenty of water and seek medical advice.
2. Do not operate the generator near open flame.
3. Keep children away from the generator work area.
4. Note! The battery releases explosive hydrogen while charging!
5. Read this manual carefully before operating the device.
6. Wear safety goggles when operating the generator.

# DIESEL GENERATOR OVERVIEW, CONFIGURATION, COMPONENTS

Fig. 1



1. Reinforced frame
2. Fuel tank
3. Air filter
4. Antivibration mounts
5. Fuel filter
6. Oil filter
7. Oil dipstick
8. Oil drain hole
9. Engine safety switch
10. Battery
11. Control panel
12. Soundproof housing
13. Wheels

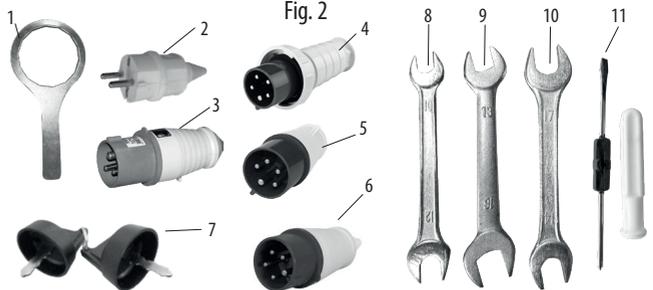


## IMPORTANT!

The manufacturer reserves the right to make changes in the product design, configuration and construction. The images in this manual are for reference only and may differ from the actual components and inscriptions on the products.

### Complete set:

1. Generator
2. Packaging
3. Owner's manual
4. Optional equipment:



1. Oil filter key;
2. 230V plug. 16 A/ (2P+PE);
3. 230V plug. 32A (2P+E);
4. 230V plug. 63 A (3P+E+N) - for models: 14100HDE ATSR, 14200HDES ATSR;
5. 400V plug. 16A (3P+E+N) - for models: KS 14100HDE1/3 ATSR, KS 14200HDES 1/3 ATSR;
6. 400V plug. 32 A (3P+N+PE) - for models: KS 14100HDE 1/3 ATSR, KS 14200HDES 1/3 ATSR;
7. 2x ignition keys;
8. 10x12 mm open end wrench;
9. 13x16 mm open end wrench;
10. 14x17 mm open end wrench;
11. 6.0 mm PH2 offset screwdriver.

# GENERATOR SPECIFICATIONS

| Modell  | KS 14100 HDE<br>ATSR                                   | KS 14100 HDE<br>1/3 ATSR                   | KS 14200 HDES<br>ATSR                  | KS 14200 HDES<br>1/3 ATSR                                |
|---|--|--|--|--|
| Voltage (V)   | 230  | 230  | 400                                    | 230  |
| Max power required  | 12 kW  | 9 kW                                       | 12.5 kVA                               | 12 kW  |
| Nominal power   | 11 kW  | 8.5 kW                                     | 11.8 kVA                               | 11 kW  |
| Power factor, cosφ  | 1.0  | 1.0  | 0.8                                    | 1.0  |
| Frequency (Hz)  | 50   |  |  | 50   |
| Maximum current (A)   | 52.17  | 39.13                                      | 18.06                                  | 52.17  |
| Outlets   | 1*63A<br>1*32A<br>2*16A                                | 1*32A (3P)<br>1*16A (3P)<br>1*32A<br>1*16A | 1*63A<br>1*32A<br>2*16A<br>Kontaktband | 1*32A (3P)<br>1*16A (3P)<br>1*32A ; 1*16A<br>Kontaktband |
| Fuel tank volume, L   | 32   |  |  | 28   |
| LED display   | voltage, frequency, working hours                      |  |  | voltage, frequency, working hours                        |
| Noise level LPA/LWA, dB   | 71/96  |  |  | 72/97  |
| Power output DC, V/A  | 12/8.3   |  |  | 12/8.3   |
| Engine model  | KS 1020HD  |  |  | KS 1020HD  |
| Engine type   | diesel powered two-cylinder,<br>four-stroke air-cooled |  |  | diesel powered two-cylinder,<br>four-stroke air-cooled   |
| Engine power hp/kW  | 21/15.45   |  |  | 21/15.45   |
| Crank case volume, L  | 3  |  |  | 3  |
| Engine capacity, cm <sup>3</sup>                                  | 997  |  |  | 997  |
| Power output controller   | intelligent voltage stabilization system AVR           |  |  |  |
| Uruchomienie  | Elektro  |  |  | Elektro  |
| Accumulator, Ah   | 36   |  |  | 36   |
| ATS output  | +  |  |  | +  |
| The diameter of the frame   | 32 mm, round   |  |  | soundproof anti-vandal housing                           |
| Net dimensions<br>(L*W*H), mm                                     | 950*640*900  |  |  | 1250*650*890   |
| Gross dimensions<br>(L*W*H), mm                                   | 1000*690*1020  |  |  | 1300*700*1010  |
| Net weight, kg  | 220  |  |  | 325  |
| Gross weight, kg  | 240  |  |  | 345  |
| Protection class  | IP23M  |  |  | IP23M  |
| Dopuszczalne odchylenie napięcia znamionowego – nie więcej niż 5% |  |  |  |  |

To ensure the reliability of the generator and increase its lifespan, the peak capacities may be slightly limited by circuit breakers.

The optimum 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 such ambient conditions, the generator can guarantee maximum performance in terms of the stated specifications. In case of deviations from the above ambient values, the performance of the generator can be different.

Please note that in order to preserve the lifespan of the generator, continuous loads should not exceed 80% of the rated power.

## NOTE!

**Do not operate single-phase and three-phase circuit breakers at the same time to prevent electric shock and avoid damage to your electrical devices and the generator!**

(Circuit breakers are shown in Figs. 3 and 4)

# TERMS OF USE OF DIESEL GENERATOR

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 rated power of the generator.

Types of Power Consumers and Start-up Current

There are two types of power consumers (electrical devices connected to the generator): active and reactive. Active power consumers include all power consumers, whose power input is converted into heat (heaters).

Reactive power consumers include all power consumers equipped with an electric motor. When starting the engine, start-up current occur briefly, the magnitude of which is based on the engine design and purpose. The magnitude of occurring start-up currents should be considered when selecting a generator.

Most electric tools have a start-up current ratio of 2-3. This means that the operation of such tools requires a generator, the power of which is 2-3 times the power of the connected power consumer. Power consumers such as compressors, pumps, washing machines have the highest start-up current ratio.

## CHECK BEFORE GETTING STARTED

### Checking the fuel level

1. Unscrew the fuel cap and check the fuel level in the tank.
2. Fill fuel to the level of the fuel filter and make sure there is no air in the fuel system.
3. Tighten the fuel cap securely.

### Checking the oil level (Fig. 2)

1. Unscrew the oil dipstick and wipe it out with a clean cloth.
2. Insert the dipstick without screwing it in.
3. Check the oil level by a mark on the oil dipstick.
4. Add oil if its level is below the mark on the oil dipstick.
5. Tighten the oil dipstick.



Fig. 2

Be sure to charge the battery before operating the models equipped with electric starters. Charge the battery with an optional charger (not included), or allow the generator to operate at 50% load for at least one hour when operating for the first time.



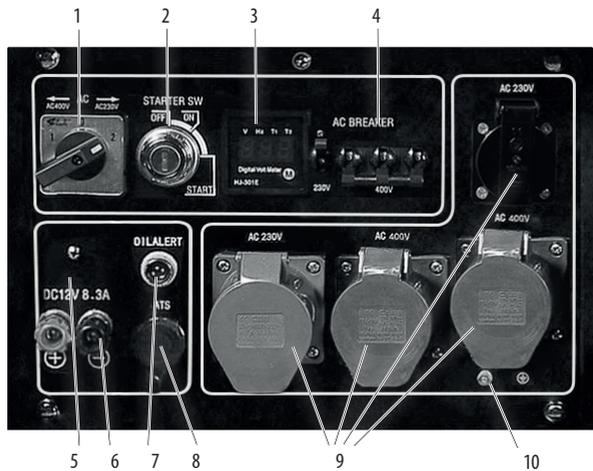
**IMPORTANT!**



**The type of diesel fuel must comply with the operating season!**

## CONTROL PANEL

Fig. 3



- |   |                            |
|---|----------------------------|
| 1. Single-/three-phase switch<br>(position 1 - 400 V, position 0 (OFF),<br>position 2 - 230 V)  | 4. Circuit breakers        |
| 2. Ignition switch  | 5. Fuse for 12 V connector |
| 3. LED display for models KS 14100HDE<br>ATSR and KS 14100HDE 1/3 ATSR<br>(Fig. 4) and Multifunction control unit<br>for models KS 14200HDES ATSR<br>and KS 4200HDES 1/3 ATSR (Fig. 5); | 6. 12 V connector          |
|   | 7. Oil level indicator     |
|   | 8. ATS output              |
|   | 9. Outlets                 |
|   | 10. Ground connector.      |

# LED display

for models KS 14100HDE ATSR and KS 14100HDE 1/3 ATSR

Fig. 4

To select the indicators, press (M) button. The selection of indicators is cyclic. The selected mode is highlighted by the corresponding icon.



(V) - this mode displays the voltage level of the generator in volts



(Hz) - this mode displays the frequency of the generator in Hertz



(T1) - this mode displays the generator operation time from start-up in minutes.



(T2) - this mode displays the total operating hours of the generator.

# Multifunction control unit

for models KS 14200HDES ATSR and KS 14200HDES 1/3 ATSR

Fig. 5



## CONTROL PANEL.

### MAIN FUNCTIONS OF CONTROL BUTTONS.

|   |   |
|---|---|
|    | <p>Generator start-up.<br/>Generator manual start-up.</p>   |
|    | <p>Automatic mode.<br/>Press this button to switch the control unit to automatic mode.</p>  |
|  | <p>Manual mode.<br/>Press this button to switch the control unit to manual mode.<br/>Press and hold down this button to disable the manual mode.</p>  |
|  | <p>Generator stop.<br/>Pressing this button stops the generator in the manual operation mode. With the cooling operation enabled, pressing this button will immediately turn off the generator.</p> |

|   |  |
|---|--|
|   | Up.<br>Scrolls page up or increases a parameter value.   |
|  | Down.<br>Scrolls page down or decreases a parameter value.   |
|  | Reset.<br>In case of malfunction of the generator, the system is blocked; press this button to delete the error message: the user can turn off the generator if the error message is displayed.    |
|  | Escape.<br>Press this button to move one menu level up and cancel the parameter change.  |
|  | Enter.<br>Press this button on the home page to enter the main menu.<br>Press this button in the main menu to open a submenu.<br>Press this button in the submenu to enable the changed parameter. |

### LED INDICATORS

|   |       |   |
|---|-------|---|
|   | Red   | Generator malfunction                       |
|   | Off   | Normal generator operation                  |
|  | Green | LED glows steadily: manual mode enabled.    |
|  | Green | LED glows steadily: automatic mode enabled. |

DESCRIPTION OF SYMBOLS

|   |  |
|---|--|
|  | <p><b>Warning!</b><br/>This symbol indicates a possible risk of injury, death, or serious damage to equipment if safety precautions for device installation, operation, or maintenance are not observed.</p> |
|  | <p><b>Caution!</b><br/>This symbol indicates a possible risk of injury or damage to equipment if safety precautions for device installation, operation, or maintenance are not observed.</p>                 |
|  | <p><b>Note!</b><br/>System status message or help message.</p>   |

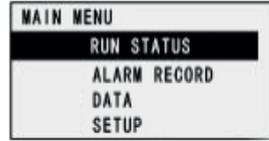
SAFETY PRECAUTIONS

|   |   |
|---|---|
|   | <p><b>Warning!</b><br/><b>Failure to observe the instructions below may result in serious injury, death, or serious damage to equipment.</b></p> <p>The control unit must be installed, operated and maintained by qualified personnel who have received appropriate training in operation of high voltage equipment. Measuring devices must be installed in accordance with local and national electrical codes and regulations.</p> <ul style="list-style-type: none"> <li>• The engine and other devices must be equipped with speed limiters to prevent damage to power control equipment, which can lead to accidents or damage.</li> <li>• Speed limiters must be completely independent of the power source of the power control system. At the same time, provision should be made for emergency shutdown in the event of overtemperature and oil pressure drop.</li> </ul> |
|  | <p><b>Caution!</b><br/>First turn off the generator, and then turn off the battery.<br/>The control unit uses electrically induced components to prevent damage to such components.<br/>It is strictly forbidden to open the back cover of the control unit and touch electronic components on the boards or wires.</p>   |

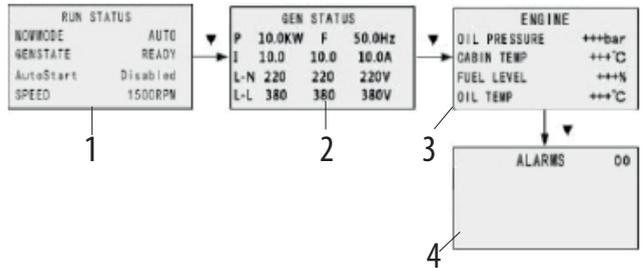
## DISPLAY

Press the «  » button on the home page to enter the main menu, as shown in the figure.

### GENERAL DISPLAY MENU:



### SUBMENU:



#### 1. RUN STATUS/CURRENT STATUS

|                            |                          |
|----------------------------|--------------------------|
| NOWMODE/CURRENT MODE       | AUTO/AUTOMATIC MODE      |
| GENSTATE/GENERATOR STATUS  | READY/READY FOR USE      |
| AUTOSTART/ AUTOMATIC START | DISABLED/DISABLED STATUS |
| SPEED/SPEED                | 1500RM/1500 RPM          |

#### 2. GEN STATUS/GENERATOR PARAMETERS

|     |        |   |            |
|-----|--------|---|------------|
| P   | 10.0KW | F | 50Hz       |
| I   | 10.0   |   | 10.0 10.0A |
| L-N | 220    |   | 220 220V   |
| L-L | 220    |   | 220 220V   |

#### 3. ENGINE/ENGINE

|                                  |        |
|----------------------------------|--------|
| OIL PRESSURE / OIL PRESSURE      | +++bar |
| CABIN TEMP / HOUSING TEMPERATURE | +++ °C |
| FUEL LEVEL / FUEL LEVEL          | +++%   |
| OIL TEMP / OIL TEMPERATURE       | +++ °C |

#### 4. ALARMS/ALARM MESSAGES

Press the «  » or «  », button to check the data or parameters in real time.

MAIN MENU PARAMETERS ARE GIVEN IN THE TABLE BELOW

| First level menu                                  | Second level menu  |
|---|--|
| Current status                                    | Current status   |
| NOWMODE / CURRENT MODE                            | AUTO / AUTOMATIC<br>MAN / MANUAL<br>OFF / DISABLED   |
| GENSTATE / GENERATOR STATUS                       | NOT READY / NOT READY<br>READY / READY<br>PRESTART / PRESTART<br>CRANKING / STARTER<br>CRANK INT / INTERVAL BETWEEN AUTOMATIC START-UPS OF THE GENERATOR<br>START IDLE / IDLE START<br>RUNNING / IN OPERATION<br>ONLOAD / LOADED<br>COOLING / COOLING<br>STOPPING / SHUTDOWN |
| AUTOSTART/RMTSTAR<br>AUTOMATIC/REMOTE<br>START-UP | ENABLED / ON<br>DISABLED / OFF   |
| SPEED / ROTATIONAL<br>SPEED                       | Current engine speed e.g. / Current engine speed (for example,1500 RPM/1500 REVOLUTIONS PER MINUTE)  |

## GETTING STARTED

**Before starting the engine** make sure that the power rating of tools or power consumers corresponds to that of the generator. Do not exceed the rated power of the generator. **Do not connect any devices before the engine start!**



**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. Any modifications in the generator design deprive the user of the right to warranty service!**



**ATTENTION - DANGER!**



**In the power supply mode, the generator should operate no longer than 30 minutes in the range from rated to maximum power.**

### Commissioning

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 rated (operating) power of the device.
2. Be sure to change the oil after the first 20 operating hours. It is better to drain oil while the engine is still hot after operation to ensure quick and complete oil draining.

### Use care when the generator is running:

- You can operate the generator if the voltmeter shows a value of 230 V +/-10% (50 Hz); and a value of 400 V +/-10% (50 Hz) for three-phase generators.
  - Monitor the voltmeter and stop the generator if the value is too high.
  - Only connect to a DC outlet to charge the battery. When charging batteries, pay attention to the correct polarity (plus/+ to plus/+, minus/- to minus/-).
  - First connect the charger cable to the battery and only then to the generator.
- The generator should be connected to the mains supply by a skilled electrician. Connection errors can cause serious damage to equipment.
- Do not use a voltage of 12 V concurrently with 230 V (400 V for three-phase generators).

### To stop the engine, proceed as follows:

1. Disconnect all the devices connected to the generator, set the circuit breaker to OFF.
2. Allow the generator to operate at idle for 3 minutes so that the alternator cools down.
3. Set the ignition key to OFF.
4. For models KS 14200HDES ATSR and KS 14200HDES 1/3 ATSR, engines have safety switches (Fig. 1, no. 9). Use it only in an emergency.

## STARTING THE GENERATOR

- Do not connect any power consumers to the generator before the engine start.
- Connect the terminals to the battery and pay attention to the correct polarity (plus/+ to plus/+, minus/- to minus/-).
- Set the ignition key to ON.
- Turn the key clockwise to the START position.
- After a successful start, release the key and it will automatically return to the ON position.
- If the engine doesn't start after pressing and holding down the key in the START position for 5 seconds, wait 15 seconds before the next attempt to start. Lengthy operation of the engine start system may discharge the battery. While the generator is running, leave the key in the ON position.
- After three minutes of the generator operation, switch the circuit breaker (circuit breaker Fig. no. 4) to the upper position (ON).



**IMPORTANT!**



**If the engine does not start after three or four attempts, this may mean that air has entered the fuel system. Remove air from the fuel system (drain diesel fuel together with excess air).**



**ATTENTION - DANGER!**



**Do not connect of two or more devices simultaneously.  
The start-up of many devices requires high power.  
Devices should be connected in turn according to their power rating.  
Do not connect any power consumers within the first 3 minutes  
after the generator start.**

Before connecting devices to the generator, make sure that they are in good condition. If the device that was connected suddenly stopped or failed, immediately disconnect the power using a circuit breaker (Fig. 3, no. 4), disconnect the device and check it.



**IMPORTANT!**



**Disconnect all devices before stopping the generator! Do not stop the generator if it has any devices connected to it.  
This may disable the generator!**

**Connecting Power Consumers**

After switching on the generator, make sure that the voltmeter readings correspond to the nominal ones (230V +/-5% @ 50 Hz for single-phase generator and 400V +/-5% 50 Hz for three-phase generator).

**KS 14100 HDE 1/3 ATSR та KS 14200 HDES 1/3 ATSR diesel generator models are suitable for 230 V power consumers (single-phase generators) and 400 V power consumers (three-phase generators). Mode switching is allowed only when no power consumers are connected.**

**Using as a three-phase generator:**

The three-phase diesel generator should have the power distributed to all three phases, and the power must be balanced at all phases. The power at each of the three phases must not exceed 1/3 of the total power of the generator. The balance tolerance should not exceed 20%.

If only 1 or 2 phases are loaded, the generator will fail. The total power and total current at all three phases must not exceed the normal load and amperage of the generator.



**IMPORTANT!**



**Failure to comply with these requirements may damage the primary and secondary windings and the AVR unit.**



**IMPORTANT!**



**If the overload resulted in automatic operation of the generator circuit breaker, reduce the load. Repeated power-on of the generator is possible 5 minutes after disabling.**

**NOTE!**

**Do not operate single-phase and three-phase circuit breakers at the same time to prevent electric shock and avoid damage to your electrical devices and the generator!**

(Circuit breakers are shown in Figs. 3 and 4)

## MAINTENANCE

Maintenance work listed in section «Maintenance» should be performed on a regular basis. If you cannot perform maintenance work on your own, please contact the authorized service center to request the required maintenance work.



**IMPORTANT!**



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

**The manufacturer shall not be liable for the following damages:**

- Damage resulting from the use of non-original spare parts;
- Corrosive damage and other effects of improper storage of equipment;
- Damage caused by maintenance work performed by unskilled technicians

**Observe the instructions in this manual!**

The generator must be maintained, operated and stored in accordance with the instructions in this manual. The manufacturer shall not be liable for damage and loss caused by failure to comply with safety and maintenance regulations.

This primarily applies to:

- The use of lubricants, fuels and motor oils not authorized by the manufacturer;
- Tampering with the product design;
- The misuse of equipment;
- Indirect losses caused by operation of the product with defective parts.

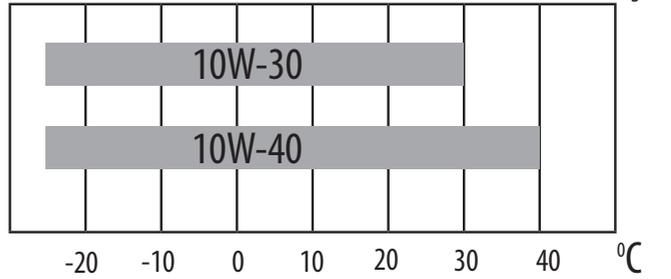
## RECOMMENDED MAINTENANCE SCHEDULE

| Unit        | Action                        | At each start | Commissioning   | Every 3 months or 50 operating hours           | Every 6 months or 100 operating |
|-------------|-------------------------------|---------------|---|--|---------------------------------|
| Motor oil   | Level check                   | ✓             |   |  |                                 |
|             | Check for oil leakage         | ✓             |   |  |                                 |
|             | Replacement                   |               | ✓<br>First replacement<br>After 20<br>operating hours | ✓<br>From the second<br>replacement<br>onwards |                                 |
| Air filter  | Inspection,<br>cleaning       |               | ✓   | ✓  |                                 |
|             | Replacement                   |               |   |  | ✓                               |
| Oil filter  | Inspection,<br>cleaning       |               | ✓   | ✓  |                                 |
|             | Replacement                   |               |   |  | ✓                               |
| Fuel tank   | Level check                   | ✓             |   |  |                                 |
|             | Inspection,<br>cleaning       |               | ✓   |  | ✓                               |
| Fuel filter | Inspection,<br>cleaning       |               | ✓   |  |                                 |
|             | Replacement                   |               |   |  | ✓                               |
| Battery     | Check voltage<br>(min. 12.3V) | Monthly       |   |  |                                 |

## RECOMMENDED OILS

Motor oil significantly affects the engine performance and is the main factor that determines its service life. Use semi-synthetic motor oil intended for four stroke diesel engines that comply with API CF Grade SAE 10W-30 or SAE 10W-40.

Motor oils with a different grade shown in the table can be used only if the average air temperature in your area does not fall outside the specified temperature range. Oil viscosity to SAE and API is indicated on the label.



**Replacing or adding motor oil**

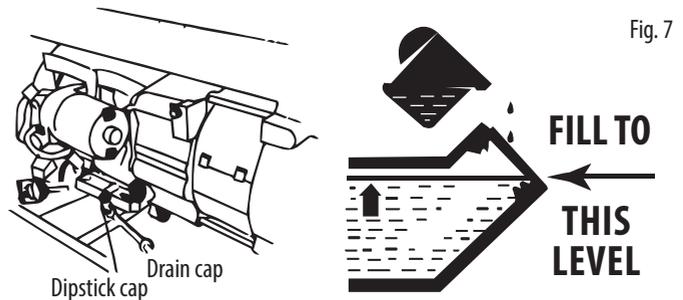
If the oil level drops, fresh oil must be added to ensure proper operation of the generator. Check the oil level according to the maintenance schedule.

**To drain oil, proceed as follows:**

1. Place an oil drain tray under the engine.
2. Unscrew the drain cap located on the engine under the dipstick cap with a wrench.
3. Wait for the oil to drain.
4. Replace the drain cap and tighten securely.

**To add oil, proceed as follows:**

1. Make sure the generator is mounted on a flat, level surface.
2. Unscrew the dipstick cap on the engine.
3. Use a funnel (not included) to pour the recommended motor oil into the crankcase. After filling, the oil level should be close to the top of the oil filler.



## AIR FILTER MAINTENANCE

The air filter should be checked for contamination from time to time. Regular maintenance of the air filter is necessary to maintain sufficient air flow in the carburetor. The maintenance intervals should be shorter when operating the generator in dusty environments.



**ATTENTION - DANGER!**



**Do not start the engine with without the air filter or filter element.  
Otherwise, ingress of dirt and dust will cause rapid wear of engine parts.  
In this case, failure is not subject to warranty repair.**



**IMPORTANT!**



**Replace the air filter every 100 operating hours of the generator  
(every 50 hours in dirty conditions).**

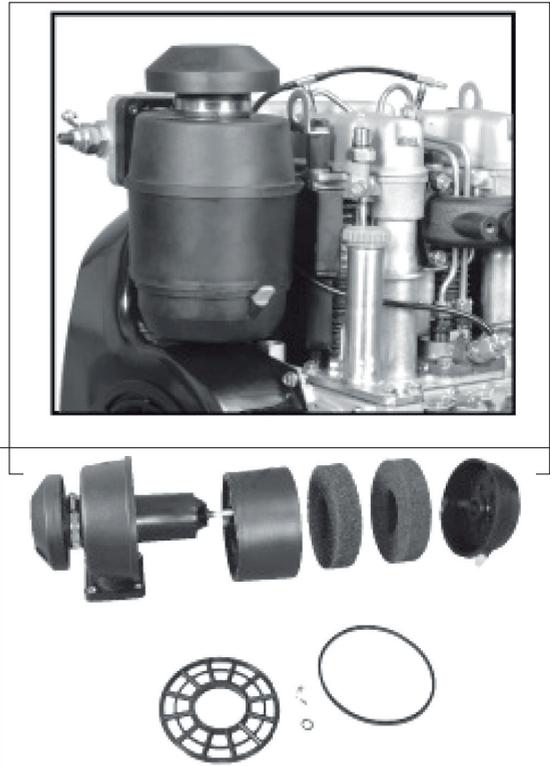


Fig. 8

## FUEL FILTER REPLACEMENT AND CLEANING

The **TM Könnert & Söhne** diesel generator uses two types of fuel filters. They prevent debris from diesel fuel from penetrating the engine.

**Coarse fuel filter (located in the tank filler).** The filter should be removed for cleaning every 500 operating hours after the probable ingress of solid particles in it. Never use water to clean the filter.

1. Unscrew the fuel cap.
2. Remove the fuel filter.
3. Clean the filter with diesel fuel.
4. Replace the filter in the fuel tank.

### Fuel Filter in the Fuel Line

This filter must be changed every 100 operating hours. It is located under the fuel tank on the fuel hose through which fuel enters the engine from the tank. To replace it:

1. Loosen the metal brackets of the hose that is located next to the fuel valve to drain the fuel into the container.
2. Drain the fuel into a dedicated container.
3. Loosen the metal brackets on both sides of the fuel filter.
4. Remove the filter.
5. Install a new filter according to the arrow shown on it. Insert the filter in the fuel flow direction.
6. Tighten the brackets on the fuel hose.

Fig. 9



# BATTERY MAINTENANCE AND CHARGING

For **TM Könnert & Söhne** models with electric start, check the battery voltage from time to time. The battery used in the generator should have a voltage of 12 V; if the voltage is lower, charge the battery using an external charger.

To avoid battery discharge, it is recommended to run the generator for 30 minutes at least once a month. If the generator is not used for a long time, disconnect the battery from the terminals. The battery supplied with the generator requires no supplementary maintenance and activation.

## GENERATOR STORAGE

The generator must be stored in a dry, well-ventilated area that is free from dust. Keep away from children.

### Generator Long-term Storage

If the generator will not be used for a long time, it is recommended to:

- Drain the fuel into the tank.
- Drain the engine oil.
- Pull the manual starter until a slight resistance is felt so that the inlet and drain valves get closed.
- Remove the negative terminal of the battery (for models with electric start only).
- Clean the generator from dirt and dust.

When starting the generator after long-term storage, proceed as above in the reverse order.



**IMPORTANT!**



**Please note that multiple unsuccessful attempts to start the generator using the electric start may discharge the batteries; therefore, be sure to fully charge the battery before operation.**

# REGULAR INSPECTION AND MAINTENANCE OF THE GENERATOR

It is essential to regularly inspect and maintain the generator to ensure serviceability and long-term operation of the generator engine. Inspection types and intervals are given in the table below.



**ATTENTION - DANGER!**



- **Stop the engine before performing any maintenance work.**
- If it is necessary for the engine to be running, make sure that the area is ventilated. Engine exhaust gases contain poisonous carbon monoxide.**
- **After operation, wipe the generator with a cloth to prevent fire or corrosion.**

## TROUBLESHOOTING

| Fault  | Probable cause                                | Remedy   |
|--|---|--|
| Engine will not start  | Engine switch set to OFF                      | Set the engine switch to ON  |
|  | No fuel in the tank                           | Add fuel   |
|  | Engine contains dirty or old fuel             | Replace fuel in the tank and fuel line                                 |
| Reduced engine power /troubled engine start                        | Fuel tank is dirty                            | Clean the fuel tank  |
|  | Fuel filter is clogged                        | Replace the fuel filter  |
|  | Air filter is dirty                           | Replace the air filter   |
|  | Water or air in the fuel line                 | Bleed the fuel line  |
| Engine overheating   | Cooling fins are contaminated                 | Clean the cooling fins   |
|  | Air filter is dirty                           | Replace the air filter   |
| Engine starts, but no output voltage                               | Circuit breaker tripped                       | Set the circuit breaker to ON  |
|  | Connection cables of poor quality             | Check cables for normal operation; replace, if extension cable is used |
|  | Faulty connected device                       | Try connecting another device  |
| Generator works, but does not support connected electrical devices | Device overload                               | Try to connect less equipment  |
|  | Short circuit of one of the connected devices | Try disconnecting the faulty device.                                   |
|  | Air filter is dirty                           | Replace the air filter   |
|  | Insufficient engine speed                     | Contact the service center   |

## AVERAGE POWER CONSUMPTION OF DEVICES

| Device             | Power (W) |
|--------------------|-----------|
| Iron               | 500-1100  |
| Hair dryer         | 450-1200  |
| Coffee machine     | 800-1500  |
| Electric cooker    | 800-1800  |
| Toaster            | 600-1500  |
| Heater             | 1000-2000 |
| Vacuum cleaner     | 400-1000  |
| Radio              | 50-250    |
| Grill              | 1200-2300 |
| Baking oven        | 1000-2000 |
| Fridge             | 100-150   |
| TV set             | 100-400   |
| Perforator         | 600-1400  |
| Drill              | 400-800   |
| Freezer            | 100-400   |
| Grinder            | 300-1100  |
| Circular saw       | 750-1600  |
| Crank gear         | 650-2200  |
| Jigsaw             | 250-700   |
| Planer             | 400-1000  |
| Compressor         | 750-3000  |
| Water pump         | 750-3900  |
| Bench saw          | 1800-4000 |
| Electric mower     | 750-3000  |
| Electric motors    | 550-5000  |
| Fans               | 750-1700  |
| High pressure unit | 2000-4000 |
| Air conditioner    | 1000-5000 |

**WARRANTY TERMS:**

HEAVY DUTY diesel generators are covered by a two-year warranty from the date of purchase, which is confirmed by record and seal of the seller in the warranty card. 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.

Within the warranty period, the product owner is entitled to free repair of the defective product due to defect in workmanship or materials used in production. Warranty service can be carried out only in authorized service centers specified in the warranty card or on the official importer's website: [www.ks-power.com.ua](http://www.ks-power.com.ua). The product is accepted for repair clean and full. Product delivery for after-sales service shall be borne by the buyer.

**WARRANTY DOES NOT APPLY:**

- If the user has failed to comply with the instructions in this manual.
- If the product features damaged or missing identification stickers or labels, serial numbers, etc.
- If product malfunction was due to improper transportation, storage and maintenance.
- In case of mechanical damages (cracks, chips, impact and fall marks, deformation of housing, power cord, plug or any other components), including those resulting from the freezing of water (ice formation), provided there are foreign objects inside the unit.
  - If the product has been improperly installed and connected to the mains supply or misused.
  - If the claimed malfunction cannot be diagnosed or demonstrated.
- If proper operation of the product can be restored following cleaning from dust and dirt, appropriate adjustment, maintenance, oil change, etc.
  - If the product is used for business related purposes.
  - If faults are detected which have been caused by product overload. Signs of overload are molten or discolored parts as a result of high temperatures, damaged cylinder or piston surfaces, degraded piston rings or connecting rod bushes.
    - The warranty does not cover the failure of the product automatic voltage regulator due to careless handling or mishandling.
      - If faults are detected which have been caused by instability of the user's power grid.
      - If there are faults caused by contamination or fouling such as contamination of the fuel, oil or cooling system.
      - If electrical cables or plugs show signs of mechanical or thermal damage.
      - In the event of foreign liquids and objects, metal chips, etc. inside the product.
      - If the malfunction resulted from the use of non-original spare parts and materials, oils, etc.
      - If there are two or more faulty units that are not interconnected.
      - If the damage was caused by natural factors such as dirt, dust, humidity, high or low temperature, natural disasters.
        - To quick-wear parts and components (spark plugs, nozzles, pulleys, filter and safety elements, batteries, removable devices, belts, rubber seals, clutch springs, axles, manual starters, oils, gear).
        - To preventive maintenance (cleaning, greasing, washing), installation and adjustment.
  - If the product was tampered with, independently repaired or modified.
  - In case of malfunctions resulting from normal wear and tear as a result of long-term use (end of life).
  - If product operation was not stopped and continued after detecting a malfunction.
  - Batteries supplied with equipment are covered by a warranty of three months.





# EC Declaration of Conformity

Nr. 025

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, Low Voltage Directive 2006/95/EC, Electromagnetic Compatibility Directive (EMC) 2014/30/EU Annex II, Noise Directive 2000/14/EC.

Manufacturer: DIMAX INTERNATIONAL GmbH  
Address: Hauptstr. 134, 51143 Cologne, Germany  
Product: Diesel Generator "Könner & Söhnen"  
Type/ Model: KS 14100HDE-ATSR, KS 14100HDE-1/3 ATSR,  
KS 14200HDES-ATSR, KS 14200HDES-1/3 ATSR

The statement is based on a single evaluation of one sample 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  
2006/95/EC Low Voltage Directive  
Electromagnetic Compatibility Directive (EMC) 2014/30/EU Annex II  
2000/14/EC Noise Directive

Applied Standards: EN 12601:2010, EN 60204-1:2006  
EN ISO 8528-13:2016, IEC 60034-1:2010, EN55012:2007+A1:2009

## 2000/14/EC \_2005/88/EC Annex VI

For model: KS 14100HDE-ATSR, KS 14100HDE-1/3 ATSR  
Noise: measured  $L_{WA} = 94$  dB (A), guaranteed  $L_{WA} = 96$  dB (A)  
For model: KS 14200HDES-ATSR, KS 14200HDES-1/3 ATSR  
Noise: measured  $L_{WA} = 70,5$  dB (A), guaranteed  $L_{WA} = 72$  dB (A)



Issued Date: 2018-06-15  
Place of issue: Warsaw city  
Technical expert: Homenco A.

DIMAX  
International  
GmbH

Steuer-Nr.: 103 5722 2493  
USt-IdNr.: DE29617274

We DIMAX INTERNATIONAL GmbH hereby declare that specified above conforms covering European Parliament and Council Directives, 2006/42/EC of May 2006 Machinery Directive, 2006/95/EC Low Voltage Directive of 26 February 2014, Electromagnetic compatibility Directive (EMC) 2014/30/EU Annex II of December 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.

## CONTACT US

Germany

[ks-power.de](http://ks-power.de)

[info@dimaxgroup.de](mailto:info@dimaxgroup.de)

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Poland

[ks-power.pl](http://ks-power.pl)

[info.pl@dimaxgroup.de](mailto:info.pl@dimaxgroup.de)

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Ukraine

[ks-power.com.ua](http://ks-power.com.ua)

[sales@ks-power.com.ua](mailto:sales@ks-power.com.ua)

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