HAHN & SOHN

OPERATING INSTRUCTIONS

WARRANTY LETTER

H IG 2000
H IG 3000
H IG 3500
H IG 3500E
H IG 7000

OPERATING INSTRUCTIONS FOR INVERTER POWER UNITS:
H IG 2000, H IG 3000, H IG 3500, H IG 3500E, H IG 7000.

Home

Thank you for your trust and congratulations on making the right choice. The power plant you have purchased has:

- a modern, four-stroke, fuel-efficient petrol engine,
- robust, aesthetic construction.

The power unit has been designed and manufactured in accordance with the safety regulations of the European Union. Use it in accordance with its intended use, following the instructions in the operating manual. Please familiarise yourself with the contents of this manual. In case of any doubts, contact Hahn & Sohn GmbH or your authorized regional representative before putting the equipment into operation.

Please also read the Warranty Card. The Warranty Card describes the basic user obligations, which, if followed, will ensure the good condition of the equipment and protect against loss of warranty. If the user does not comply with the instructions in this manual, Hahn & Sohn GmbH will not be liable (under warranty) for any resulting damage. In this case, Hahn & Sohn GmbH is also not liable for injury or death to the operator or other persons.

There are a number of warnings, e.g. in the form of warning labels, both in the instructions and on the device. Ignoring these warnings can cause a serious accident.

The manual contains information current as of the date of printing. It may vary slightly from the appearance of the device and its parameters due to the continuous development of the product and the introduction of improvements. The user is obliged to draw attention to these differences.

This manual must be attached to the power pack and sold with it.

INITIAL GUIDE

revision 3.0
dated 02.06.2021

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1. Safety instructions

WARNING

- Read the operating instructions carefully. Follow the instructions contained therein and use the equipment correctly. This will ensure the correct functioning of the power pack and prevent damage to it.

WARNING

- The exhaust contains compounds that are toxic to humans and animals. Never use the unit in enclosed rooms without proper ventilation.

WARNING

- The power pack damper heats up to a high temperature while the machine is running and stays hot for a long time after the machine is stopped. Wait for complete cooling before storing or moving. To prevent burns, do not touch the muffler or the motor while the motor is running or shortly after it has stopped.

WARNING

- Only connect cables compatible with the power sockets of the power centres. Plugging in a different cable may cause electric shock.

WARNING

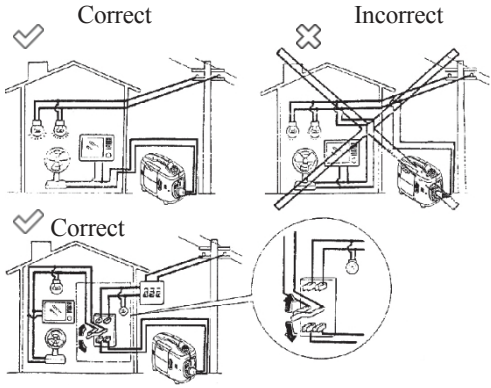
- Gasoline is a flammable substance. Refuel only in a well-ventilated area with the engine stopped.
- Do not use fire, cigarettes, etc. during refuelling.
- Be careful not to spill fuel while filling the tank. If spillage during refuelling, immediately wipe any spillages.

WARNING

- H IG power plants belong to the group of inverter power plants. Inverter power plants can operate continuously only for the time specified in the catalogues.

⚠ WARNING

- Do not connect the power pack directly to the domestic mains. Such wiring may cause the power pack to explode, burn or set the wiring on fire. The power generator can only supply the domestic mains if the mains is adapted and the power generator is connected to the switchboard in such way that it will be disconnected immediately when the mains supply is restored. Such adaptation of the domestic network may only be carried out by a professional company. Such modification cannot be carried out independently.

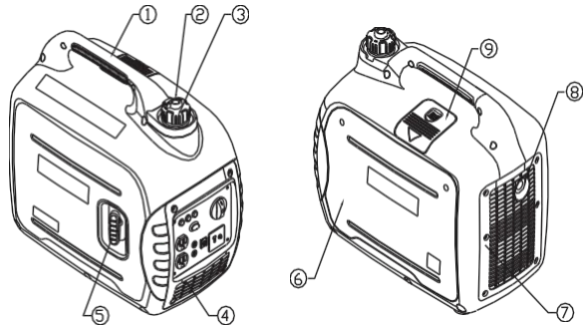


⚠ WARNING

- Always carry out the activities (described in the instructions) to prevent accidents and damage to the equipment.
- Place the power unit at least 1 metre away from walls and other equipment.
- Operate the power pack with the control .
- If the power pack is tilted, fuel may leak.
- Read the instructions on how to switch off the power station quickly in an emergency.
- Do not allow a person who is not familiar with the operating instructions to use the power pack.
- Keep the power unit out of the reach of children and animals while working.
- Store the power pack out of reach of children and animals.
- Keep your hands away from the moving parts of the device to prevent injuries.
- The power unit is a potential source of electric shock - do not touch the unit with wet hands. Do not use the power pack in rain or snow. Secure the equipment against getting wet.

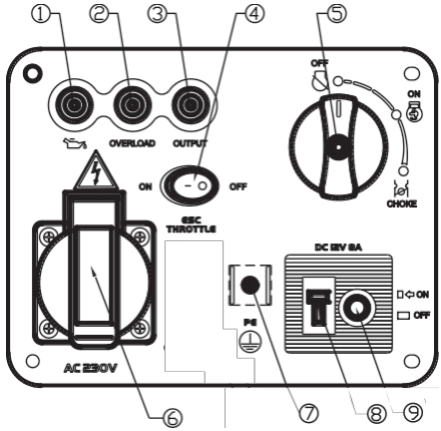
2. Design elements of the power plant

a) H IG2000/3000 (using H IG2000 as an example)



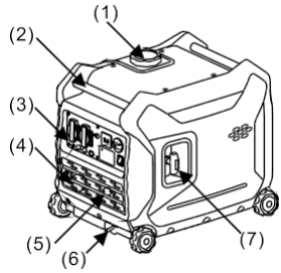
1. Handle
2. Tank venting
3. Fuel filler plug
4. Control panel
5. Manual starter
6. Side cover
7. Back cover
8. Silencer
9. Spark plug cover

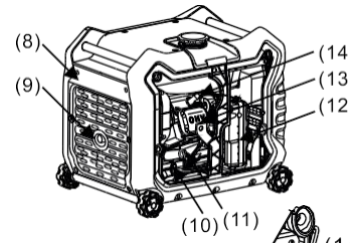
Control panel

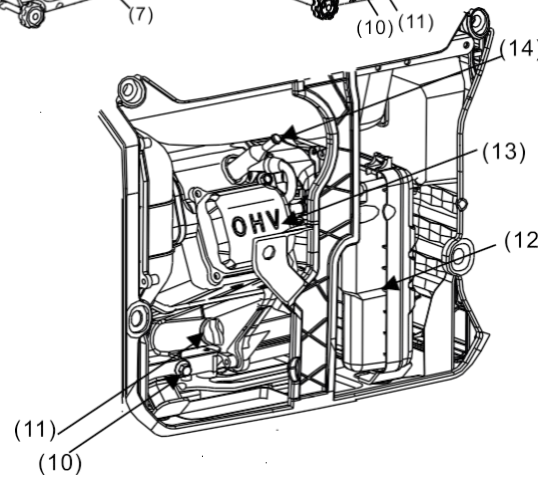


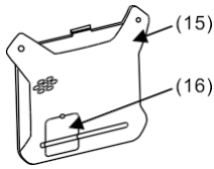
1. Low oil level warning light
2. Overload indicator light
3. AC output indicator light
4. SMART switch (ESC)
5. Switch (start/stop/fuel valve/silencer)
6. AC socket
7. Grounding clamp
8. DC output
9. DC protection

b) H IG3500
1. Fuel filler plug
2. Handle
3. Control panel
4. Cover
5. Accumulator
6. Brake
7. Manual starter
8. Cover
9. Silencer
10. Oil drain screw
11. Oil filling plug
12. Air filter
13. Carburetor
14. Spark plug
15. Left view of the cover
16. Gauge for checking the oil level



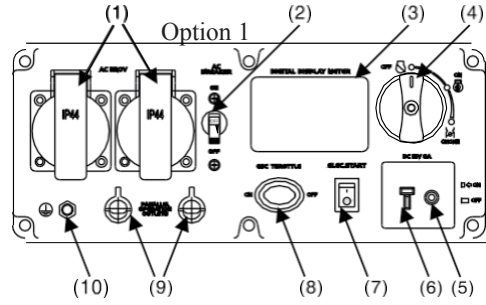


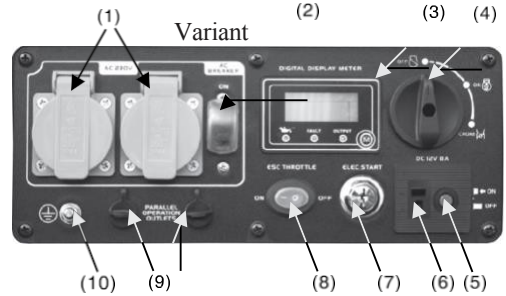




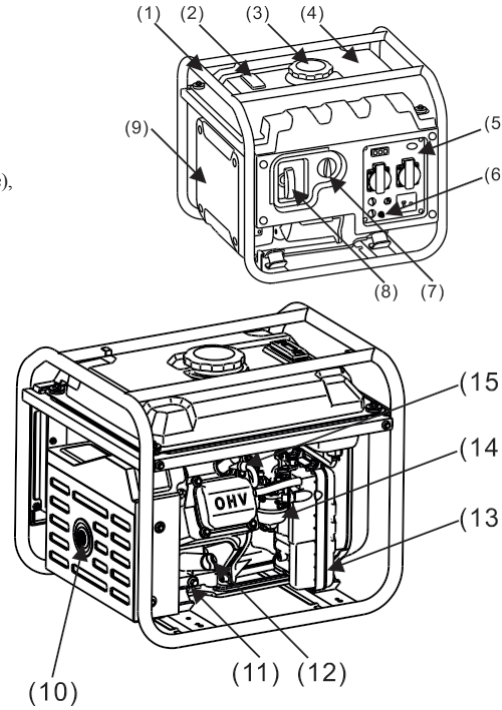
Control panel 230V

1. AC socket
2. AC mains switch
3. Digital display
4. Switch (start/stop/fuel valve/silencer)
5. DC protection
6. DC socket
7. Electric starter switch/Switch box
8. SMART switch (ESC)
9. Socket for parallel operation with the same model
10. Grounding clamp

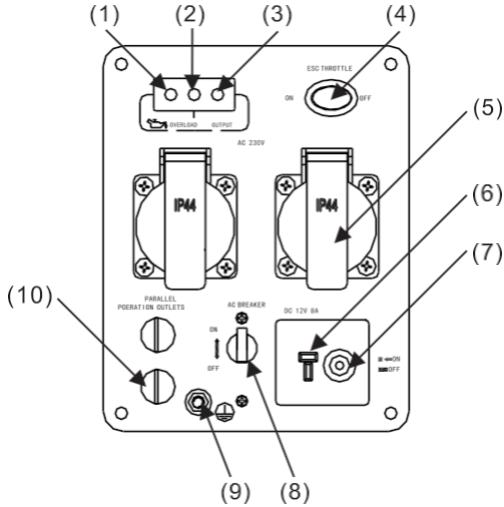




c) H IG3500E
1- frame,
2- fuel level gauge,
3- filler plug,
4- fuel ,
5- control panel,
6- grounding clamp,
7- switch (start/stop/fuel valve/ choke),
8- the manual start handle,
9- view of the cover,
10- the muffler,
11- oil drain screw,
12- oil filler plug,
13- air filter,
14- carburetor,
15- a spark plug.



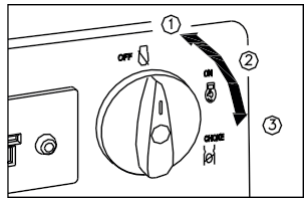
Control panel



1- Oil shortage warning light,
2- overload indicator light,
3- AC output light,
4- SMART switch (ESC),
5- AC outlet,
6- DC protection,
7- DC socket,
8- overload protection,
9- grounding clamp,
10- socket for parallel operation with the same model

2.3. Check

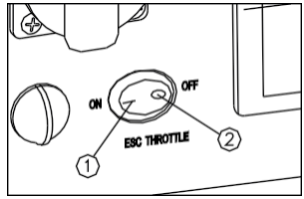
2.3.1. 3-in-1 switch



1. Work switch in "OFFposition position "1". Ignition off, fuel sealed. Engine will not start.
2. Work switch in "ON" position position "2". Ignition on, fuel open, choke off.
3. Work switch in position "CHOKE" position "3". Ignition on, fuel open, choke on.

The choke is not necessary to start a warm engine.

2.3.2. ESC (Engine smart control)

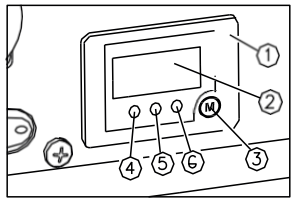


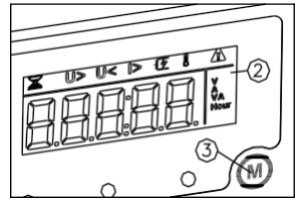
1. Switch in position "ON" - position "1". The unit controlling the engine speed according to the connected generator load is switched on. The result is a reduction in fuel consumption and less noise.
2. Switch in the "OFF" position - position "2". The motor operates at rated speed regardless of the connected load.

The switch of the ESC motor control unit must be in the "OFF" position powered electrical equipment such as compressors, submersible pumps have a high starting current.

2.3.3. Digital display (H IG3500/H IG3500E)

1. Multimeter
2. Liquid crystal display
3. Button to select the displayed parameter
4. Oil warning light
5. Overload indicator light
6. AC indicator light

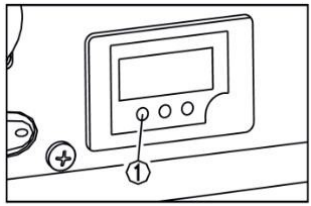




During normal operation, the button is used to switch screens displaying data such as voltage, current, power, run time. In case of emergency situations:

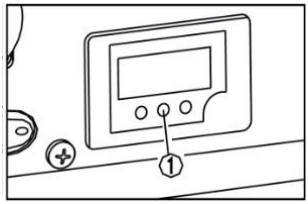
1. For> - AC or DC voltage too high, the display shows the AC or DC mark (alternatively, the AC or DC mark and a numeric value),
2. For< - AC or DC voltage too low, the display shows the AC or DC mark (alternatively, the AC or DC mark and a numeric value),
3. I> - overload of the power pack current output,
4. - a short circuit at the output of the power pack,
5. - overheating of the power pack,
6. - maintenance term.

2.3.4. Oil light (red)



If the oil level drops below the set value, the red warning light comes on and the engine stops automatically. The engine will not start until the oil is topped up to the appropriate level.
If the engine stops and cannot be started, switch the engine switch to the "ON" position and pull the hand starter handle. If the oil light flashes for several seconds, the engine oil quantity is insufficient. Top up the oil and start the power unit.

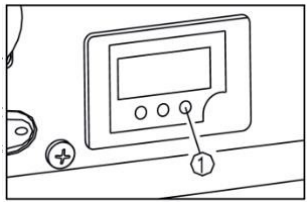
2.3.5. Overload indicator light (red)



The overload light will illuminate if any of the appliances are overloaded, the inverter unit overheats, or the voltage at the AC outputs increases. Subsequently, the circuit fuse is activated, interrupting current generation (motor continues to run, AC overload light - green goes out, overload light - red stays on).

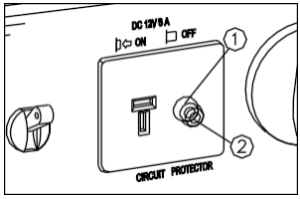
Procedure:
1. Switch off all appliances and stop the engine.
2. Reduce the load on appliances.
3. Check air inlet clearance.
4. Start the engine again.

2.3.6. AC indicator light (green)



The light will come on when the engine starts if the voltage parameters are correct.

2.3.7. DC protection



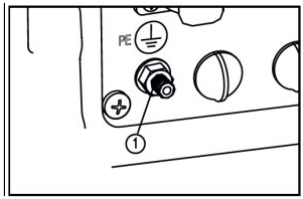
The DC fuse will automatically switch to the "OFF" position if appliances are connected to the generator and the current increases above the rated current.
To reset the DC protection, press the fuse button to the ON position.

ATTENTION

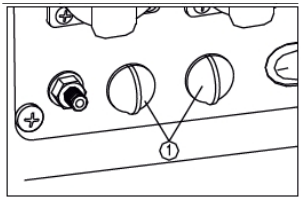
Reduce the load on appliances below the rated output of the generator when the DC protection trips. If the fuse trips repeatedly, shut down the equipment immediately and contact authorized service.

2.3.8. Earthing

Connect the ground to terminal (1) on the power pack.
Always ground the power pack before working.



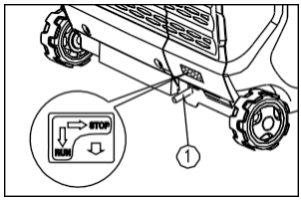
2.3.9. Parallel socket (optional)



The parallel socket allows the parallel connection of two power units of the same type and power (e.g. H IG3500 from H IG3500E) with special cables in case of the need to supply appliances with a higher current consumption. (In case of parallel operation, the rated power is 5.6 kVA and the rated current is 60A/100V, 50A/120V, 26A/230V.)

1. It is strictly forbidden to connect power plants with different power outputs. This may cause damage to both power centres, which is not covered by the warranty.
2. It is prohibited to use AC and DC sockets (on the panels of the power units) when the power units are connected in parallel.
3. When using a parallel cable, take care not to overload the connected power units.

2.3.10. Brake



Switch the brake switch to the "STOP" position during operation and after stopping the power unit. Before moving the machine, switch the brake switch to the "RUN" position.

3. Pre-commissioning operations

⚠ ATTENTION

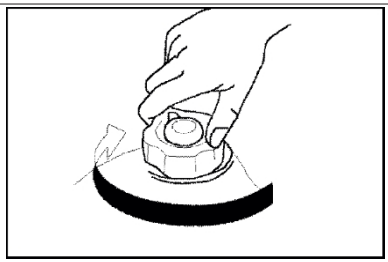
- Before each use of the equipment, carry out the check only with the engine stopped.

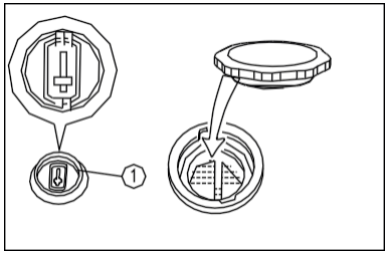
3.1. Check the fuel level

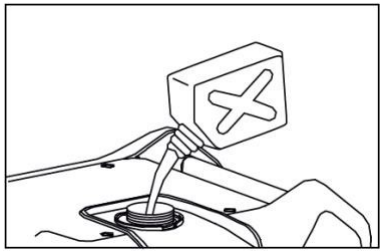
The recommended fuel is unleaded petrol Pb95/E5. If the fuel level is low, top up to the upper level. Do not use any fuel additives. Do not mix petrol with engine oil or diesel fuel. Avoid all contamination of the fuel, especially water and sand. After refuelling, tighten the fuel filler plug properly.

⚠ ATTENTION

- Gasoline is a flammable and explosive substance. Refuel only in a well-ventilated area with the engine stopped. Do not smoke near petrol and avoid sparks. Be careful not to overfill the tank when refuelling - there must be no fuel in the neck of the tank. Tighten the filler plug carefully after refuelling. Take care not to spill petrol during refuelling. If you do spill fuel on the central unit, wipe all wet parts dry before putting the unit into operation. Avoid contact of gasoline with your skin, do not breathe gasoline fumes. Store petrol out of the reach of children and animals.







1 - fuel level indicator

Recommended fuel: unleaded petrol Pb95/E5
Fuel capacity: H IG2000/3000:4L, H IG3500/E:10 L

3.2. Check the oil level

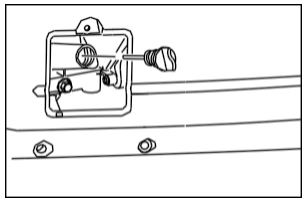
⚠ ATTENTION

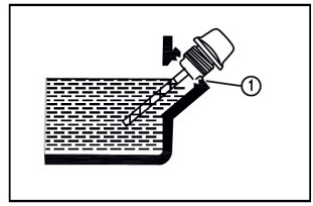
- Using low quality oil, used oil or oil designed for two-stroke engines shortens the life of the equipment. Using equipment with insufficient oil can cause serious damage to the equipment.

Use good quality oil for 4-stroke engines. Shell, Castrol, Mobil, etc. In Polish conditions it is best to use mineral oil SAE 15W-40. SAE 10W-30.

Type of oil	Temperature range
10W-30	-25°C - 30°C
15W-40	-15°C - 40°C

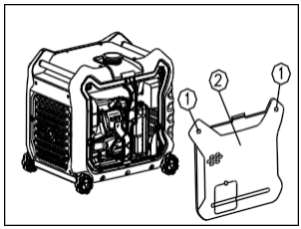
Checking the oil level
Switch off the power pack if it is running. Unscrew the oil fill plug with dipstick and wipe dry. Reinsert the oil dipstick (without screwing it in) into the oil filler plug, remove and check the oil level on the dipstick. If the oil level is low, add oil to the correct level. If the oil level is high, drain the excess using a syringe with a rubber hose.



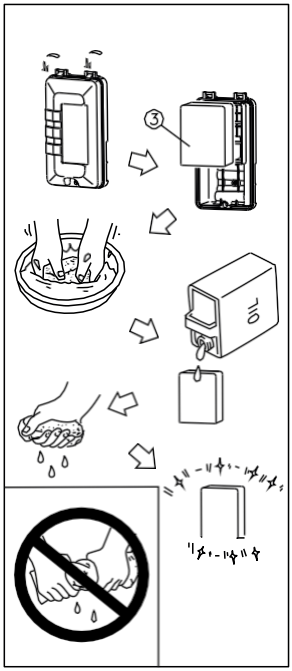


oil quantity: H IG 2000 : 0.35L, H IG 3000/3500/3500E: 0.6L

3.3. Check the air filter
Unscrew the covers (1) and remove the cover (2).



Remove the agitation filter cover and remove the filter cartridge (3). Clean the filter cartridge (if OK) with solvent and then dry or replace with a new one. After cleaning/replacing the oil filter cartridge, wet it and squeeze out the excess oil. To prevent damage, the filter cartridge must be moistened only, and no oil must drip from it. Place the filter cartridge in its original location. Install the air filter cover in its original position.



⚠ ATTENTION

■

Never run the engine without an air filter, as dirt will enter the engine and cause it to seize or wear out quickly.

4. Commissioning of the power plant

⚠ATTENTION

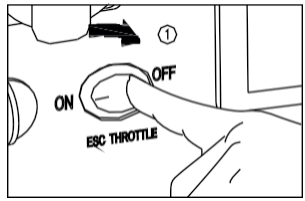
- The power unit can be used with rated load in normal climatic conditions: ambient temperature 25° C, barometric pressure 100 kPa, relative humidity 30%. The power output of the power unit according to temperature, altitude (lower air pressure at higher altitudes) and humidity. The power plant performance decreases when temperature, humidity and altitude are higher than in normal climatic conditions. In addition, the load should be reduced when using the power generator in enclosed rooms.

⚠ATTENTION

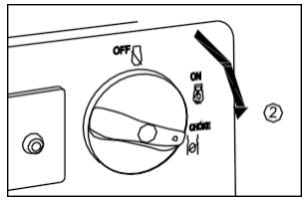
- Disconnect all equipment from the AC and DC outlets before starting the power unit.

4.1. For commissioning the power plant:

1. Switch the ESC switch to the "OFF" position.

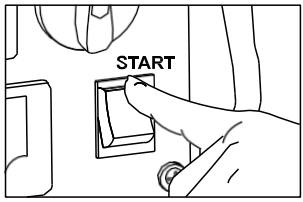


2. Switch the 3-in-1 switch to the CHOCK position.

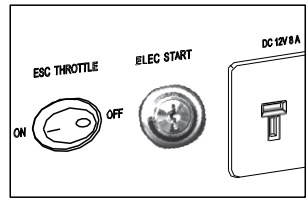


If you start a warm engine, there is no need to engage the choke. In this caseswitch the switch to the ON position immediately.

3. Electric start



Option 1



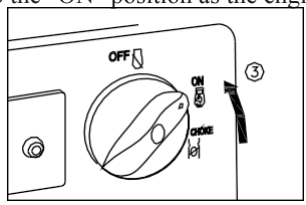
Option 2

Option 1: For electric start, switch the engine switch on the control panel to the "ON" position or press START. If the engine does not start within 3 seconds, release the START button and wait 10 seconds before trying again - this will prevent the starter from burning out.
Option 2: Turn the key in the switch box. After starting the engine, release the key (it will automatically return to the ON position). Do not use the starter when trying to start for more than 3 seconds. If the attempt to start was unsuccessful, wait approximately 10 seconds before attempting again. Failure to follow this recommendation may cause damage to the starter. After several unsuccessful attempts, continue to start the engine manually to prevent the battery from completely draining.
4. Manual starting
Slowly pull the hand starter handle to the first resistance, then pull hard.

⚠ ATTENTION

- Do not let go of the handle, hold it in your hand after starting the engine and slowly allow it to return to the machine. If you loosely let go of the hand starter handle, it may cause damage to the hand starter handle or to the power pack.

5. If you started the engine with the choke on, gradually move the switch from the "CHOKE" position to the "ON" position as the engine warms up.



⚠ ATTENTION

- When starting the engine with the ESC button in the "ON" position without load: at ambient temperature below 0° C, the engine will run at rated speed (3600 rpm) for 5 minutes until the engine warms up, at
  ambient below 5° C for 3 minutes. After this time, the ESC unit functions properly when the ESC switch is in the "ON" position.

5. Operation of the power plant

ATTENTION

- The duration of use of the power pack with maximum load must not exceed 30 minutes. Do not use full power for continuous operation. Do not exceed
- any limits specified in the instructions.
- Do not modify the power unit or use it for any purpose other than intended use.

ATTENTION

- To prevent electric shock, the power unit must be earthed. Connect the ground wire (strong) to the ground terminal on the power pack panel on one side and to the ground on the other side. In field conditions, bury a steel caterpillar at least 0.5 m deep and at least 3 m long in the ground and connect the power pack earthing wire to it.
- The connection of the power unit to the house network must be carried out by a professional company in compliance with all electrical engineering principles. Unprofessional connection of the power unit to the house network can cause electrical fires, explosion and burning of the power unit. Installation into the house network may only be carried out by a form or person with a SEP authorisation up to a minimum of 1 kV.

⚠ATTENTION

- Do not connect multiple power units unless they are adapted to do so by the manufacturer.
- Do not mount the extension on the shock absorber. If necessary, install a flue gas extraction.

⚠ATTENTION

- If it is necessary to use an extension, make sure that it has adequate insulation - an outer sheath.
- The length of the extension must not exceed 60 m with a conductor cross-section of 1.5 mm2. For longer distances, use an extension cord with a larger wire cross-section (consult an experienced electrician).
- Keep the power unit out of the reach of children, animals and unauthorised
- persons. Most equipment has a higher starting power - remember this.

5.1. Connecting appliances to AC sockets

⚠ ATTENTION

- Before connecting electrical equipment to AC outlets, make sure they are switched off.
- Make all connected electrical equipment, including wires and plugs, they're in good .
- Make that the total load is less than the rated capacity of the power pack.
- Make sure load current is less than the rated current of the socket. that
- the power pack is earthed. If the electrical equipment is not earthed, the power pack must always be earthed.

1. Start the engine.
2. Switch the ESC switch to the "ON" position.
3. Plug the device into an AC power outlet.
4. Make AC indicator light is on.
5. Switch on the connected electrical equipment.

⚠ ATTENTION

- The ESC switch must be in the "OFF" position before the engine speed can be increased to the rated .

Most devices with motor drive during start-up have higher electrical parameters than the rated ones. If the red overload light does not go out after this time, contact Hahn & Sohn GmbH or your authorized regional representative.
When connecting several electrical appliances, connect the appliance with the highest starting current first and the appliance with the lowest starting current last.
If the power pack is overloaded or there is a short circuit in the connected equipment, the red overload light will come on. After approximately 4 seconds, the power to the connected devices will be disconnected and the green AC light will go out. Stop the device and determine the cause of the problem. Determine if the cause is a short circuit in the connected equipment or an overload, repair and return the equipment to service.

⚠ ATTENTION

- The nominal DV voltage is 12V.

⚠ ATTENTION

- First start the engine and connect the power pack to the battery for charging.
- Before starting to charge the battery, make sure that the DC protection is switched on.

1. Start the engine.
2. Connect the red wire of the battery charger to the positive (+) terminal of the battery.
3. Connect the black wire of the battery charger to the negative (-) terminal of the battery.
4. Switch the ESC switch to the "OFF" position to start charging the battery.

⚠ ATTENTION

- Connect the battery charger wires to the battery terminals carefully so that they do not become disconnected due to engine vibration or other factors.

- The DC protection switches off automatically if the current flows more than the rated value while the battery is charging. In this case, to continue charging the battery, switch the DC protection to the "ON". If the DC protection switches off again to the "OFF" position, discontinue charging and contact Hahn & Sohn GmbH or your authorized regional representative.

- Measure the electrolyte density to determine if the battery is fully charged. When fully charged, the electrolyte density is 1.26 - 1.28 g/cm^3.

- It is advisable to check the electrolyte density at least every hour to avoid overcharging the battery.
- Observe all possible safety precautions when charging the battery. Avoid sparks and the use of fire in the battery charging area.
- The electrolyte in the battery is an acid solution, it is toxic and dangerous and can cause serious burns. Avoid contact of electrolyte with skin, eyes and clothing. In the event of contact of electrolyte with the body, remove stained clothing immediately, but do not remove items of clothing that have adhered to the body - leave this to professional medical attention. Wash the site of contamination with plenty of clean running water. In case of staining, wash with 1% sodium bicarbonate solution (baking soda) or ordinary soap (alkaline reaction) to neutralize the acid. The use of any ointments is prohibited. Treat the injured area with a sterile dressing and seek immediate medical attention.

5.3 Parallel AC operation (optional)

Before connecting the device to both power centres, make sure that it is in good condition and that its electrical parameters do not exceed those of the socket. During parallel operation, the ESC switch on both power units must be in the same position.

1. Using the cable for parallel operation, connect the power units according to the instructions supplied with the cable set.
2. Start the engines and make the green AC light on each power pack is on.
3. Plug the device into an AC power outlet.
4. Switch on the connected device.

⚠ ATTENTION

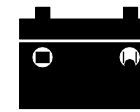
- Make sure the devices are in good condition. Damaged equipment or power cord can cause electric shock.
- If the device malfunctions, slows down or stops suddenly, turn it off immediately. Disconnect the equipment and check whether the cause is the equipment or the power unit exceeding its rated load.
- Ensure that the electrical parameters of the equipment do not exceed the rated parameters of the power pack. Never allow the equipment to operate with parameters exceeding the rated values for more than 30 minutes.
- It is not possible to connect different models of power centres for parallel operation. Do not disconnect the cable for parallel operation while the power pack is in operation.
- The cable must be disconnected for parallel operation while one power unit is in operation.
- Significant overloading of the power pack causing the red overload light to illuminate continuously can lead to damage to the power pack.
- Short-term overloads of the power pack causing the red light to illuminate briefly can shorten the life of the power pack.
- During continuous operation, the rated output of the power plant must not be exceeded.
- The rated power in parallel operation is 6 kW.

5.4 Scope of application

⚠ ATTENTION

- When using the power pack, make sure that the total load does not exceed the rated power of the power pack, otherwise the power pack may be damaged.
- Simultaneous use of AC and DC sockets is possible, but the total power should not exceed the rated power.

The following table shows the performance of the device when used alone.

AC				DC 
Effect	1	0.8 - 0.95	0.4 - 0.75 (efficiency 0.85)	
3500i	< 3000W	< 2400W	< 1200W	Rated voltage 12 V Rated current 8 A

Example:

Rated power of the power plant		3000VA
	Effect	
AC	1.0	~3000W
	0.8	~2400W
DC	--	96W(12V/8A)

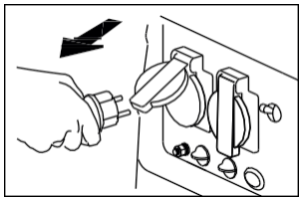
The overload light will illuminate if the total power exceeds the usage range.

⚠ATTENTION

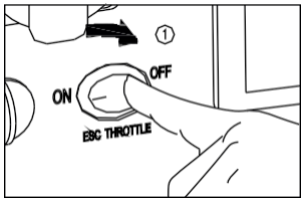
- Do not overload the power pack. The total load from all electrical equipment must not exceed the rated capacity of the power pack. Overloading can damage the power pack.
- In the case of power supply to delicate devices, electronic controllers, PCs, electronic computers, microprocessor devices, battery chargers, it is recommended to maintain sufficient distance from the power station to avoid interference from the motor.
- Also ensure that interference/electrical noise from the motor does not interfere with other electrical equipment near the power unit.
- Some electrical equipment or common electric motors have a high starting current and must not be used even if they belong to the range of use listed in the table above.

6. Switching off the aggregate

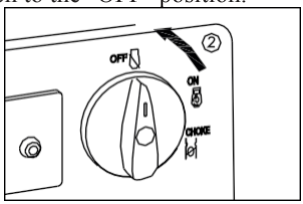
1. Switch off all appliances.
2. Disconnect all appliances.



3. Switch the ESC switch to the "OFF" position.



4. Switch the 3-in-1 switch to the "OFF" position.



7. Service and inspections

The aim of regular inspections and adjustments is to keep the power plant in the best possible condition.

⚠ DANGER

■ Switch off the engine before .

The following table lists the mandatory checks and inspections of the power unit. Compliance with these recommendations will extend the life of the equipment and protect against loss of warranty. Failure to follow the recommendations in the table may result in loss of warranty.
In the following table, the following indications are used: X
- indicates an obligation to carry out the activities within the specified timeframe,
X(1) - indicates that the activity needs to be performed more frequently than recommended if the equipment is operating in conditions with elevated humidity,

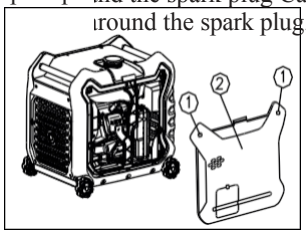
X(2) - means that the activity must be performed at the Warrantor's location or at an Authorized Regional Representative of the .

Activities		How often to perform?			
		Interval	The first month or 20 mth	Every six months or 100 mth	Every twelve months or 300 mth
Spark plug	If necessary, inspection, cleaning and replacement	X			
Fuel	Checking fuel levels and leaks	X			
Fuel lines	If necessary, inspection, replacement	X			
Engine oil	Checking the oil level	X			
	Replacement		X	X	
Air filter	Check	X			
	Cleaning and replacement if necessary			X (1)	
Shock absorber cover	If necessary, inspection, cleaning and replacement			X	
Spark Catcher	If necessary, inspection, cleaning and replacement			X	
Fuel filter	Cleaning and replacement if necessary				X
Crankcase vent hose	If necessary, inspection, replacement				X

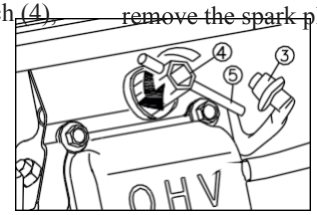
Head of the cylinder	Cleaning, more frequently if necessary				X (2)
The will of the valves	Check, adjust if necessary				X (2)
Facilities/Companions	Inspection, repair if necessary				X (2)
Locations where faults have been found during use		X			

7.1 Checking the spark plug

Unscrew the screws (1), remove the remove the cover of the power pack (2) spark plug cable from the spark plug and the spark plug Carefully remove the dirt (3). around the spark plug.



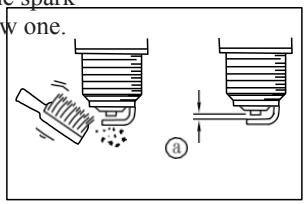
Using the candle wrench (4) remove the spark plug by turning it to the lef remove



See

e dirt, if necessary replace the lamps

Check the condition of the spark plug and remove for a new one.



Check the electrode spacing using a pair gauge. The distance should be about 0.6 - 0.7 mm.

ATTENTION

- Recommended spark plugs:
  BPR6ES/BP6ES (NGK) F7RTC/F7TC

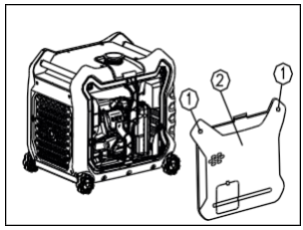
Screw in the spark plug using the spanner with a torque of approx. 20 Nm. Fit the cable end to the spark plug and the cover. If a torque wrench is not available, screw the spark plug into the engine head to the stop. After screwing in the new spark plug by hand, tighten the wrench 1/4 - 1/2 turn. If you are installing an old spark plug, tighten only 1/8 turn of the wrench.

7.2. Carburettor adjustment

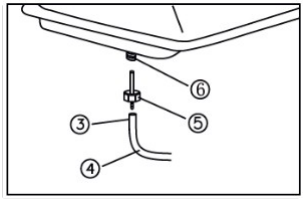
Carburettor adjustment must be carried out by an authorised service technician with the necessary knowledge and equipment.

7.3. Fuel filter

1. Unscrew the cover screws (1) and remove the cover (2).

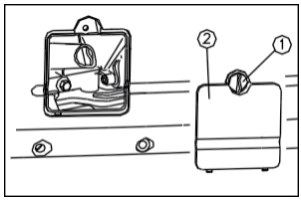


2. Drain the fuel from the tank. Hold and slide the pipe sleeve (3) down, remove the fuel line (4) connecting to the fuel tank. Remove the fuel filter (5). Clean the filter with a non-flammable solvent or a solvent with a higher flammable temperature, then dry. Reinstall the fuel filter into the main nozzle (6) of the fuel tank. Then fit the fuel hose into the main nozzle (6) of the fuel tank and fit the hose clamp (3).



7.4. Oil change

Place the power pack on a flat surface and warm up the engine for a few minutes. Unscrew the screw (1) and remove the engine oil sight glass (2).



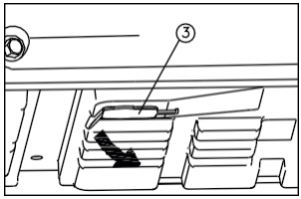
⚠ ATTENTION

- Remember to turn the ignition switch to the OFF position and close the fuel tap before replacing.

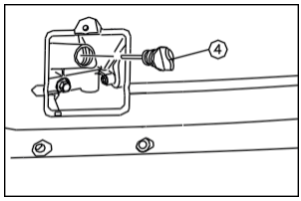
⚠ HELP

- Drain the oil while the engine is still warm. This will allow the used oil to drain out of the engine better. Be careful not to burn yourself. However, do not drain the oil immediately after stopping the engine.

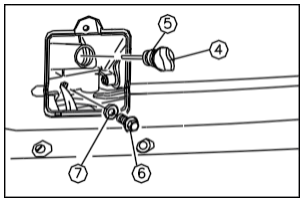
Lift and tilt the power pack. Remove the blanking plate (3) located on the bottom plate of the device.



Remove the oil filler plug (4).



Remove the oil filler plug (4). Place the used oil container under the engine, unscrew the oil drain screw, drain the oil from the oil tank. Check the condition of the oil fill plug (4), O-ring (5), oil drain plug (6) and its seal (7). If any of the parts are damaged, replace them with new ones.



Screw in the oil drain screw with the seal. Add new oil to the appropriate level, then screw in the oil filler plug. Fit the plug located on the bottom plate of the device and the engine oil level sight glass.

⚠ ATTENTION

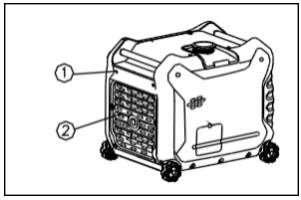
- Do not tilt the machine when refilling the oil, you may overfill the engine, which will lead to engine damage.

7.5. Air filter

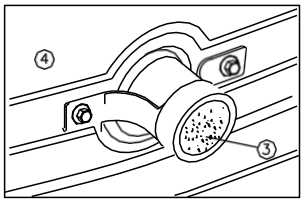
For a description of the activities associated with inspection, cleaning, and air filter replacement, see Chapter 3. Operations prior to commissioning.

7.6. Check the shock absorber

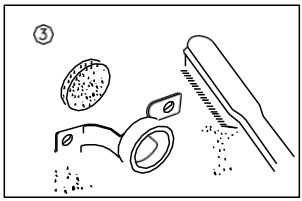
Unscrew the 6 screws (1) and remove the grille (2).



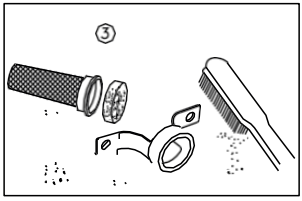
Remove the damper cover (3) and the screws (4) of damper cover.



Remove dirt from the silencer screen, e.g. with a wire .



Common



USDA

Check the muffler screen and spark arrestor, replace if necessary. Install the muffler spark arrestor.

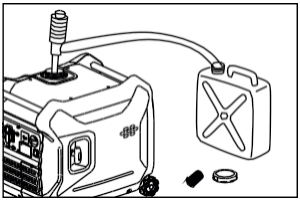
⚠ ATTENTION

- Never use an engine without a proper muffler with a spark arrestor in the woods! This can cause a fire.

8. Transport and storage

Long-term storage of equipment requires measures to prevent damage to the power pack.

8.1. Fuel discharge



1. Switch the 3-in-1 switch to the "OFF" position.
2. Unscrew the fuel filler plug and remove the filter. Drain the fuel into a suitable container using a commercially available manual siphon. Reinstall the fuel filler plug.

3. Start the engine and let it run until stops. The engine will stop after about 20 minutes after the fuel has been used.

⚠ ATTENTION

- Do not connect any electrical equipment at this time - work without load.
- The running time of the engine depends on the amount of fuel in the tank.

⚠ DANGER

- Gasoline is flammable, avoid sparks in its vicinity, avoid contact of gasoline with fire.

4. Unscrew the drain screw at the carburettor and drain the fuel.
5. Switch the 3-in-1 switch to the "OFF" position.
6. Screw in the drain screw.

8.2. Engine

Do the following to protect the engine against corrosion.

1. Slowly pull on the hand starter handle until you feel resistance. Leave in this position, this will help protect the engine and valves from corrosion.
2. Clean the engine block and spray with an anti-corrosion agent.
3. Store the power pack in a dry, well-ventilated and covered place.
4. Store and transport upright as if working, do not tilt.

⚠ DANGER

During transport of the power pack:

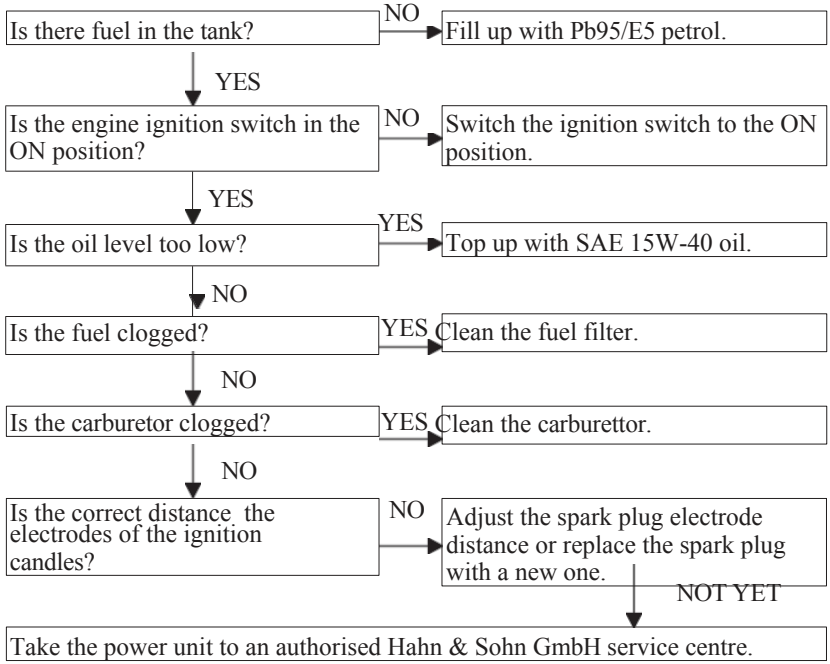
- Do not pour too much fuel into the tank - there must be no fuel in the tank neck.
- Never use the power pack in the vehicle, remove the power pack and use in a well-ventilated area.
- Do not leave the power pack in the vehicle for long periods of time, where high temperatures can develop when the sun heats it up. The power pack may explode.
- If the road is uneven and the car is , bleed before transporting all the fuel from the power plant.
- The appliance must be securely fastened with the ignition switch in the OFF position and the fuel filler plug tightened securely.

⚠ ATTENTION

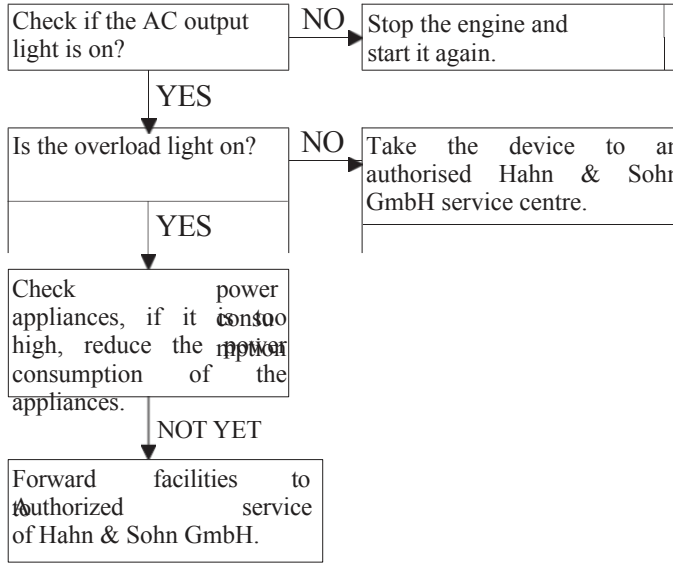
- Store the power pack in a sheltered location to protect it from direct atmospheric influences. To keep the equipment in good condition, clean it of dust and other dirt and preserve it after work. Switch off the equipment and allow it to cool completely before transporting and storing.
  - storing or transporting hot equipment can cause a fire or accident. Before transportation, it should be thoroughly secured against any mechanical damage and movement during transportation. Failure to properly secure the equipment prior to transport may cause a serious accident. Commissioning the equipment after transportation other than as described in this manual may cause damage or destruction of the equipment which is not covered by warranty.

9. Possible problems and solutions

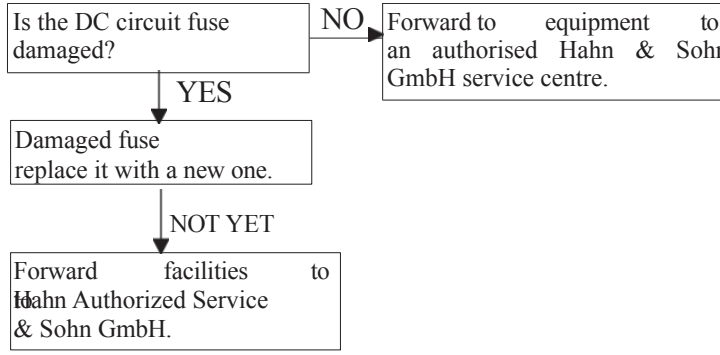
Engine won't start



The power plant is not working (does not produce current)



No voltage at DC output



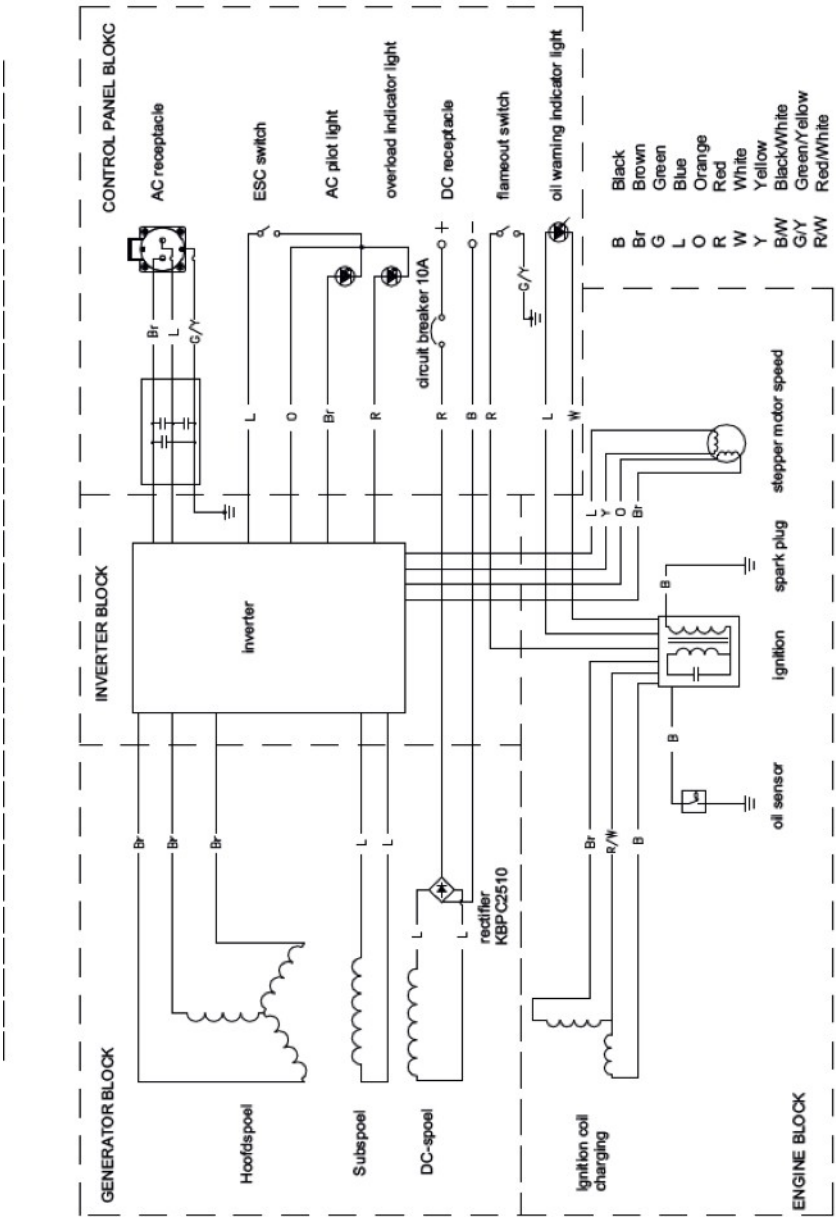
10. Technical parameters

Model		H IG2000	H IG3000
Generator	Type	Inverter	
	Frequency	50 Hz	
	Voltage	230 V	
	Maximum performance	1.8 kVA	2.5 kVA
	Rated power	1.6 kVA	2.3 kVA
	Effect	1,0	
	DC output	12V/8A	12V/8.3A
Engine	Type	Single-cylinder, air-cooled, OHV	
	Stroke volume	79 cm³	182 cm³
	Fuel	Petrol Pb95/E5	
	Fuel tank volume	4,2 L	4,5 L
	Duration of continuous operation	≈4 h	
	Volume of the oil sump	0,35 L	0,6 L
	Starting	Handheld	
Dimensions / weight	Dimensions	499x285x455	565x339x467
	Weight	21 kg	27 kg

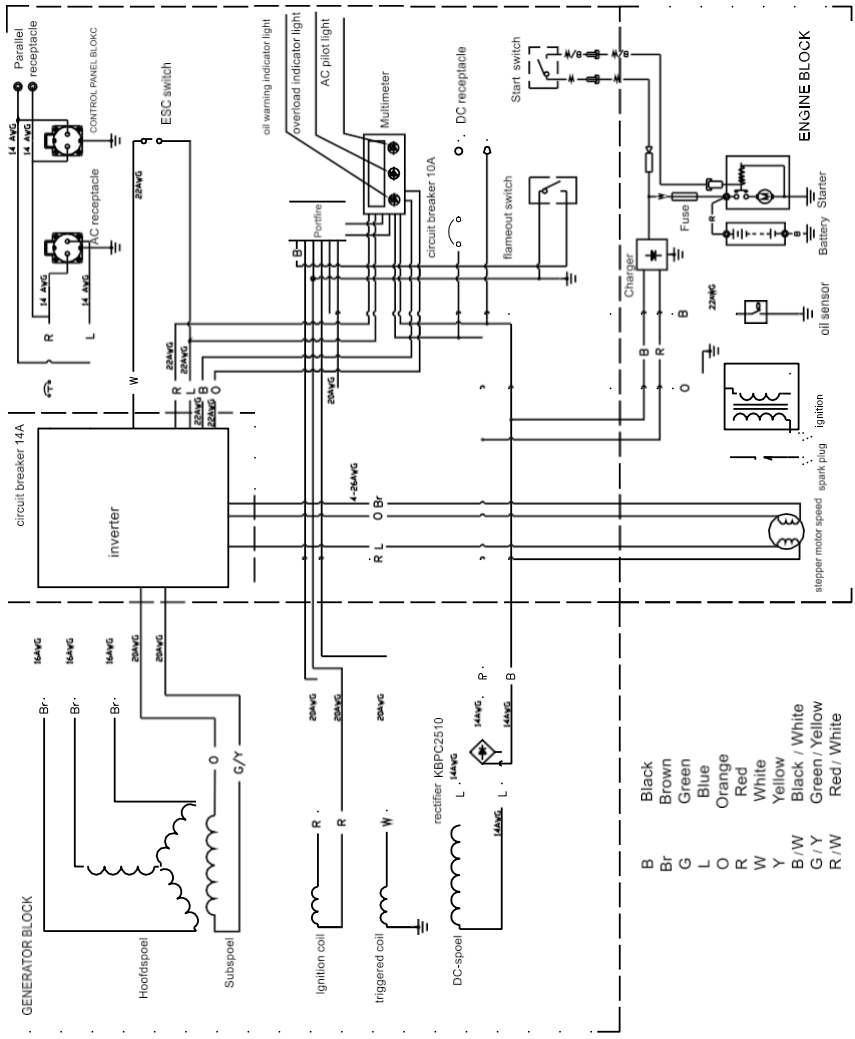
Model		H IG3500	H IG3500E	H IG7000
Generator	Type	Inverter		
	Frequency	50 Hz		
	Voltage	230 V		
	Maximum performance	3.3 kVA		7.0 kVA
	Rated power	3.0 kVA		6.0 kVA
	Effect	1,0		
	DC output	12V/8A		
Engine	Type	Single-cylinder, 4-stroke, air-cooled, OHV		
	Stroke volume	212 cm³		
	Fuel	Petrol Pb95/E5		
	Fuel tank volume	10,0 L	9.0 L	25,0 L
	Duration of continuous operation	5,5 h	6,0 h	6,5 h
	Volume of the oil sump	0,6 L		1,45 L
	Starting	Handheld	Manual/Electric	
Dimensions / weight	Dimensions	578x440x510	484x420x417	950x765x773
	Weight	45 kg	34 kg	130 kg

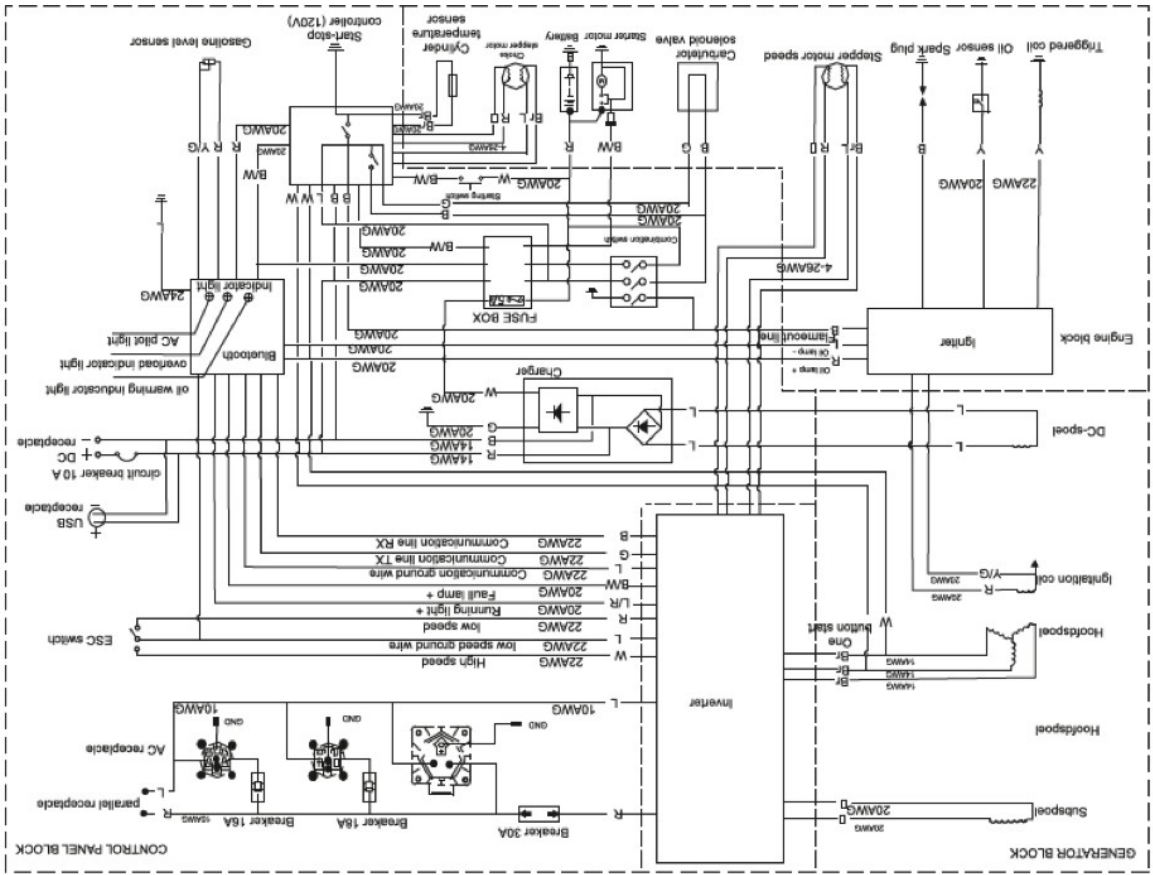
11. Electrical diagram

H IG 2000



H IG 3000, H IG 3500, H IG 3500E




B Black
Br Brown
G Green
L Blue
O Orange
R Red
W White
Y Yellow
B/W Black/White
G/Y Green/Yellow
R/W Red/White
Triggered coil
Oil sensor
Spark plug
Stepper motor speed
Carburetor solenoid valve
Starter motor
Battery
Cylinder temperature sensor
Start-stop controller (12V)
Gasoline level sensor
Engine block
Ignitor
Flameout line
FUSE BOX
Charger
Bluetooth
overload indicator light
oil warning inductor light
AC pilot light
indicator light
circuit breaker 10 A
receptacle
USB receptacle
ESC switch
low speed
High speed
Running light +
Fault lamp +
Communication line TX
Communication line RX
Communication ground wire
low speed ground wire
Ignition coil
Hoofdspoel
Subspoel
DC-spoel
inverter
Breaker 30A
Breaker 15A
Breaker 15A
AC receptacle
parallel receptacle
CONTROL PANEL BLOCK
GENERATOR BLOCK

H IG 7000

12. Declaration of conformity

ES prohlášení o shodě

Číslo prohlášení o shodě:
01/105409/2019

HAHN & SOHN

Aktualizováno dne:
08/03/2019

Výrobce: Adresa výrobce:	Hahn & Sohn GmbH Auf der Schanze 20 93413 Cham
Notifikovaná osoba: Adresa notifikované osoby:	SOCIETE NATIONALE DE CERTIFICATION ET D'HOMOLOGATION S.A.R.L. (SNCH), 2a. Kalchesbruck, L-1652, Luxembourg 0499

Druh zařízení
Model/Typ:

Electric power plant H IG 2000

Změřená hladina akustického výkonu:	88 **dB/A**
Garantovaná hladina akustického výkonu:	95 **dB/A**

Hahn & Sohn GmbH, Auf der Schanze 20 93413 Cham, na vlastní odpovědnost prohlašuje, že zařízení, kterého se týká toto prohlášení, splňuje požadavky uvedené ve Sbírce Zákonů:

- č. 263 Sb. poz. 2202 ze dne 21.12.2005
- č. 199 Sb. poz. 1228 ze dne 21.10.2008
- č. 2016 Sb. poz. 806 ze dne 2.6.2016
- č. 2016 Sb. poz. 542 ze dne 13.4.2016

- Směrnice o emisích hluku 2000/14/ES, se změnami 2005/88/ES (hodnocení *shody dle přílohy č. VII*)
- Směrnice o strojních zařízeních 2006/42/ES
- Nízkonapěťová směrnice 2014/35/EU
- Směrnice o elektromagnetické kompatibilitě 2014/30/EU

Díky výše uvedené shodě výrobky byly uvedeny do obratu na trhu Evropské Unie

Osoba oprávněná k přípravě a zhotovení technické dokumentace:

Ing. Richard Janovský
ul. Miańki Szlak 52,**80-717 Gdańsk,**

ES prohlášení o shodě pozbývá platnosti, pokud zařízení bude upraveno, přestavěno, nebo bude použito v rozporu s Návodem k obsluze.

In Cham on 08.03.2019

Gdańsk dne 08.03.2019

VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

Ing. Richard Janovský
VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

CE

ES prohlášení o shodě

Číslo prohlášení o shodě:
01/105410/2019

HAHN & SOHN

Aktualizováno dne:
08/03/2019

Výrobce: Adresa výrobce:	Hahn & Sohn GmbH Auf der Schanze 20 93413 Cham
Notifikovaná osoba: Adresa notifikované osoby:	SOCIETE NATIONALE DE CERTIFICATION ET D'HOMOLOGATION S.A.R.L. (SNCH), 2a. Kalchesbruck, L 1852, Luxembourg 0499

Druh zařízení
Model/Typ:

H IG 3000 power plant

Změřená hladina akustického výkonu:	**88dB/A**
Garantovaná hladina akustického výkonu:	**95dB/A**

Hahn & Sohn GmbH, Auf der Schanze 20 93413 Cham, na vlastní odpovědnost prohlašuje, že zařízení, kterého se týká toto prohlášení, splňuje požadavky uvedené ve Sbírce Zákonů:

• č. 263 Sb. poz. 2202 ze dne 21.12.2005	- Směrnice o hluku 2000/14/ES, se změnami 2005/88/ES *(hodnocení shody dle přílohy č. VII)*
• Č. 199 Sb. poz. 1228 ze dne 21.10.2008	- Směrnice o strojních zařízeních 2006/42/ES
• č. 2016 Sb. poz. 806 ze dne 02.06.2016	- Nízkonapěťová směrnice 2014/35/EU
• č. 2016 Sb. poz. 542 ze dne 13.04.2016	- Směrnice o elektromagnetické kompatibilitě 2014/30/EU

Díky výše uvedené shodě výrobky byly uvedeny do obratu na trhu Evropské Unie

Osoba oprávněná k přípravě a zhotovení technické dokumentace:
Ing. Richard Janovský
ul. Mialki Szlak 52,80-717 Gdańsk,

ES prohlášení o shodě pozbývá platnosti, pokud zařízení bude upraveno, přestavěno, nebo bude použito v rozporu s Návodem k obsluze.

In Cham on 08.03.2019

Gdańsk dne 8.3.2019

VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

Ing. Richard Janovský
VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

CE

ES prohlášení o shodě

Číslo prohlášení o shodě:
01/105411/2019

HAHN & SOHN

Aktualizováno dne:
08/03/2019

Výrobce: Adresa výrobce:	Hahn & Sohn GmbH Auf der Schanze 20 93413 Cham
Notifikovaná osoba: Adresa notifikované osoby:	SOCIETE NATIONALE DE CERTIFICATION ET D'HOMOLOGATION S.A.R.L. (SNCH), 2a. Kalchesbruck, L-1852, Luxembourg 0499

Druh zařízení
Model/Typ:

Power Plant
H IG 3500, H IG 3500 E

Změřená hladina akustického výkonu:	**88 dB/A**
Garantovaná hladina akustického výkonu:	**96 dB/A**

Hahn & Sohn GmbH, Auf der Schanze 20 93413 Cham, na vlastní odpovědnost prohlašuje, že zařízení, kterého se týká toto prohlášení, splňuje požadavky uvedené ve Sbírce Zákonů:

- č. 263 Sb. poz. 2202 ze dne 21.12.2005 - Směrnice o hluku 2000/14/ES, se změnami 2005/88/ES *(hodnocení shody dle přílohy č. VII)*
- č. 199 Sb. poz.1228 ze dne 21.10.2008 - Směrnice o strojních zařízeních 2006742/ES
- č. 806/2016 Sb. ze dne 02.06.2016 - Nízkonapěťová směrnice 2014/35/EU
- č. 542/2016 Sb. ze dne 13.04.2016 - Směrnice o elektromagnetické kompatibilitě 2014/30/EU

Díky výše uvedené shodě výrobky byly uvedeny do obratu na trhu Evropské Unie

Osoba oprávněná k přípravě a zhotovení technické dokumentace:

Ing. Richard Janovský
ul. Miałki Szlak 52, 80-717 Gdańsk,

ES prohlášení o shodě pozbývá platnosti, pokud zařízení bude upraveno, přestavěno, nebo bude použito v rozporu s návodem k obsluze.

In Cham on 08.03.2019

VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

Ing. Richard Janovský
VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

CE

ES prohlášení o shodě

Číslo prohlášení o shodě:
01/105413/2019

HAHN & SOHN

Aktualizováno dne:
04/11/2019

Výrobce: Adresa výrobce:	Hahn & Sohn GmbH Auf der Schanze 20 93413 Cham
Notifikovaná osoba: Adresa notifikované osoby:	SOCIETE NATIONALE DE CERTIFICATION ET D'HOMOL0GATION S.A.R.L (SNCH), 2a. Kalchesbruck, L-1852, Luxembourg 0499

Druh zařízení
Model/Typ:

Electric power plant H IG 7000

Změřená hladina akustického výkonu:	**92 dB/A**
Garantovaná hladina akustického výkonu:	**96 dB/A**

Hahn & Sohn GmbH, Auf der Schanze 20 93413 Cham, na vlastní odpovědnost prohlašuje, že zařízení, kterého se týká toto prohlášení, splňuje požadavky uvedené ve Sbírce Zákonů:

• č. 263 Sb. poz. 2202 ze dne 21.12.2005	- Směrnice o hluku 2000/14/ES, se změnami 200S/88/ES *(hodnocení shody dle přílohy č. VII)*
• Č. 199 Sb. poz 1228 ze dne 21.10.2008	- Směrnice o strojních zařízeních 2006/42/ES
• Č. 806/2016 Sb. ze dne 02.06.2016	- Nízkonapěťová směrnice 2014/35/EU
• Č. 542/2016 Sb. ze dne 13.04.2016	- Směrnice o elektromagnetické kompatibilitě 2014/30/EU

Díky výše uvedené shodě výrobky byly uvedeny do obratu na trhu Evropské Unie

Osoba oprávněná k přípravě a zhotovení technické dokumentace:

Ing. Richard Janovský
ul. Miałki Szlak 52, 80-717

ES prohlášení o shodě pozbývá platnosti, pokud zařízení bude upraveno, přestavěno, nebo bude použito v rozporu s návodem k obsluze.

In Cham on 08.03.2019

Gdańsk dne 4.11.2019

VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

Ing. Richard Janovský
VEDOUCÍ ODDĚLENÍ
TECHNICKÉ DOKUMENTACE

CE

WARRANTY LETTER

The equipment is subject to warranty if purchased from Hahn & Sohn GmbH or an authorized regional representative of Hahn & Sohn GmbH. The warranty is valid for 1 year from the time of purchase in the case of commercial use, 2 years in the case of consumer use. The warranty applies exclusively to manufacturing and material defects. The warranty does not include:

- *mechanical damage due to improper operation,*
- *repairs not carried out professionally or repairs carried out non-original spare parts,*
- *consumable parts such as: switches, capacitors, fuses, V-belts, etc.*

Have the power unit and ATS connected to the grid by a professional company or persons with a current SEP certificate. Missing date, stamp, signature including SEP authorization number in the Warranty Certificate, deprives the purchaser of warranty rights on the equipment.

Claims will not be accepted if unsuitable engine oils and fuels are used. Overloading the power unit may damage it. It is not permitted to overload the power unit by more than 75% of its output power in continuous operation. This is unacceptable and will invalidate the warranty.

In the event of equipment failure, it must be delivered to the **place of purchase or the Warrantor's Service Center.** The cost of delivery of the equipment to the place of purchase or the Service Centre shall be borne by the Customer. The claim will not be accepted in case of damage caused by reasons independent of the manufacturer.

Service centre of the provider: Hahn & Sohn GmbH
Auf der Schanze 20
93413 Cham
Tel. +490 9944 890 9 896
Mob. +490 163 02 44 737
E-Mail info@hahn-profis.de Web
www.hahn-profis.de

Regular checks and inspections, including engine oil and air filter changes as recommended by the Warrantor, are a condition of the warranty for power unit:

- *oil checks and top-ups daily or max. every 8 hours of operation,*
- *oil and filter change: first after 50 mth or 3 months from the date of purchase, whichever comes first, further changes within the warranty period after 100 mth or 3 months of operation from the date of the last service, whichever comes first, documented in the authorized service network of the Warrantor (in case of intensive use of the power generator or operation in an environment with increased dust levels after 50 mth, max. If the motor is equipped with a timing belt, replacement is required after 700 hours of operation of the equipment. The warranty provider reserves the right to refuse a claim in case of use of oils other than mineral SAE15W- 40 during the warranty period.*
- *Changing the air filter and oil filter in the same timeframe as the engine oil change,*

-oil service during the warranty period is paid by the user.
Failure to document the above activities will void the warranty. Documentation of the above inspections, including a record of the types of oils, filters, service stamp and date of service, must be made each time in the "Warranty Repairs and Out-of-Warranty Service" section of the 's Operator's Manual or the Machine Manufacturer's Operator's Manual.

NO SILICONE OR OTHER ADDITIVES IN FUELS AND OILS!

Our services and supplies do not include:
- installation, commissioning,
- training in the range of operation and service.

Performing any repairs during the warranty period outside of an authorized service will void the warranty.
In the case of an accepted claim, the warranty is extended by the repair period. Claims without presentation of this warranty certificate including proof of purchase will not be accepted.

The warranty provider undertakes to rectify the fault reported under warranty within 30 days from the date of delivery of the equipment.
Failure to collect the equipment from the warranty provider's service department within a period of more than three months from the date of notification of acceptance shall entitle the customer to storage charges.
The guarantee does not exclude, limit or suspend the rights of the buyer under the regulations on liability for defects in the sold item.

.....	.....
Type of device	Device ID No.
.....	.....
Panel model	Panel identification number
.....	.....
Quality control	Date of sale (signature, date and seller's stamp)
.....	.....
Date of installation	SEP authorisation number and stamp of the person carrying out the connection
.....	
Name of the company/name and surname of the person carrying out the installation	

INSPECTIONS, ADJUSTMENTS AND CHECKS

Description of inspection, adjustment, repair (range of activities)	Number of working hours	Date and signature of service technician

INSPECTIONS, ADJUSTMENTS AND CHECKS

Description of inspection, adjustment, repair (range of activities)	Number of working hours	Date and signature of service technician

Central distributor and warranty provider Hahn & Sohn GmbH
Auf der Schanze 20
93413 Cham
Tel: **+490 9944 890 9 896**
www.hahn-power.de

Hahn a syn s.r.o. Lelkova 186/4,
747 21 Kravaře
www.hahn-power.cz