

# AREBOS

## Plasma Cutter

AR-HE-SGPS40



Please follow all security measures in this user's manual to ensure a secure use.



Thank you for trusting in AREBOS.

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Please read and save these instructions. Read through this user's manual carefully before using product. Protect yourself and others by observing all safety information, warnings and cautions. Failure to comply with instructions could result in personal injury and/or damage to product or property. Please retain instructions for future reference.

# 1. Safety instructions

## 1.1 Safety symbols



By means of a CE marking, it can be recognized that a product complies with the legal requirements of European legal standards and therefore may be traded within the European Community.



**Warning!** Read the safety instructions carefully. Failure to follow the safety precautions could result in serious injury or damage. Keep the operating instructions in a safe place.



Take special care when using this article.

## 1.2 General safety instructions

- Familiarize yourself with the device and its operation.
- **Warning!** For your own safety, observe the safety instructions and the restrictions contained therein. Observe the general accident prevention regulations and all health and safety regulations.
- **Warning!** Only use the device for the appropriate/intended work. Any further use beyond this is not intended. The user/operator and not the manufacturer is liable for any damage or injury of any kind.
- Children and adolescents under the age of 16, as well as persons unfamiliar with this manual, should not use the welder.
- Children are not allowed to use the device. Keep children away from work.
- The manufacturer cannot be held liable if the device is technically modified or if damage occurs as a result of such changes.
- **Attention!** The device must not be opened.
- Store the device only in a dry, clean environment.
- Protect the device from rain, splashing water and moisture.
- Always ensure adequate ventilation. Keep the ventilation slots of the device free.
- **Attention!** Switch off the device during longer work breaks.

- The device is equipped with an overload protection. This switches off when exceeding the switch-on duration of the device.
- **Attention!** After completing work or relocating, always disconnect the power plug.
- Make sure you are working in a safe position.
- **Attention!** Wear full, personal protective equipment!
- **Attention!** Malfunction - if problems occur, rely on professionals!

### 1.3 Flue gas

- **Warning!** Plasma cutting produces flue gases. Therefore, the plasma cutting unit may only be used in well-ventilated halls, outdoors or in closed rooms with strong suction (preferably vacuuming below the cutting zone).
- The cutting area of the workpiece must be cleaned of solvents and degreasers to prevent the formation of toxic gases.
- Cutting lead, also in the form of coatings, galvanized parts, cadmium, "cadmium screws", beryllium and other metals that develop toxic fumes when cutting, is only allowed when provided with respirator mask and equipment, as well as vigorous suction and filtration of toxic gases and vapors.
- Increased caution applies when cutting containers, empty them first and clean them.
- Formation of flue gases or toxic vapors can lead to oxygen deficiency in the breathing air. Always provide enough fresh air (or approved respirator)!

### 1.4 Radiation

- **Warning!** The radiation of the arc can lead to eye damage and skin burns. Do not look into the arc with unprotected eyes. Therefore, a shield or a protective helmet should be used to protect the eyes. Use a welding protection shield with the prescribed DIN protective glass.
- The arc emits not only light and heat rays but also UV rays. These UV rays may have sunburn-like effects on unprotected body sites. The skin must therefore be protected by suitable protective clothing (welding gloves, leather apron, safety shoes).
- With insufficient protection, a glare or burn of the retina, but also after a few hours a very painful conjunctivitis may arise.
- Persons in the vicinity of the arc must be made aware of the dangers and provided with the necessary protection against arc radiation.

### 1.5 Fire

- **Warning!** Flammable substances should be kept away from the cutting zone. They could be ignited by sparks and hot slag.
- Place the device at least 11.81 in (30 cm) away from surrounding objects.
- Do not place the device on a heated surface.
- After finishing your work, check the environment for smoldering and burning.

### 1.6 Electrical hazard

- Before putting the device into operation, have it expertly checked whether the earthing, the neutral conductor and the residual current circuit of your electrical home system comply with the safety regulations and function perfectly (fuse protection, cable cross-section).
- **Warning!** Electric shock can lead to death!
- When cutting, a circuit is created across the burner, the workpiece (all the parts connected to it) and the ground cable, back into the system. This circuit must not be touched or interrupted during cutting. Touching live parts can cause fatal electric shocks or severe burns.
- The device must be powered and protected by a residual current device of not more than 30 mA.

- Plasma cutting causes high voltages. Therefore, special care should be taken when handling plasma cutting equipment.
- Blank areas without or with faulty insulation are life-threatening. Replace damaged cables or hose packages immediately!
- When changing the burner parts, switch off the system at the main switch.
- Before opening the system housing, pull out the mains plug.
- Defective or damaged parts on the burner must be replaced immediately. When replacing parts, switch off the system (main switch to O). Only original burner parts may be used.
- Make sure that the earth cable is always firmly connected to the workpiece.
- In the case of insulation damage to the burner hose package, at the burner head and in the case of damaged power, the operation must be stopped immediately and the damage repaired.
- Cutting blowpipes should not be clamped under the arm or kept close to the body. There is a risk that electrical current can flow through the human body.

### **1.7 Noise**

- **Warning!** Using the plasma cutting blowpipe creates very large noise, which damages the hearing in the long run!
- In continuous use, sufficient hearing protection must be worn.
- Nearby working people are also protected from noise.

### **1.8 Danger of accident through supply lines**

- **Warning!** Improperly installed cables (mains, control, welding cables or intermediate hose packages) can cause tripping hazards.
- Lay the supply lines flat on the ground (avoid looping).
- Avoid laying on walking or conveying paths.

### **1.9 Gas pressure equipment**

- Gas cylinders are under high pressure and represent a danger source. Proper handling of them is absolutely necessary to inquire the gas supplier.
- For example, the bottles must be protected from direct sunlight, open fire and strong temperature fluctuations, e.g. very low temperatures.
- Gas containers and accessories must be kept in perfect condition. Make sure that only approved parts, such as hoses, couplings, pressure reducers, etc. are used.
- Connections must not be lubricated with oil or grease.

### **Special caution: Magnetic fields**

- **Warning!** Persons wearing an electronic life-support device (such as a pacemaker, etc.) should consult their physician before going anywhere near arc, cutting, burn-out or spot welding equipment to ensure that the magnetic fields associated with the high electrical currents do not affect their devices.

## **2. Intended use**

- The plasma cutter is suitable for small and varied applications with excellent cutting results. Almost all conductive metals can be cut. These are for example high-alloyed chrome-nickel steels, all hardened and unhardened tool steels, structural steels up to non-ferrous metals such as aluminum and its compounds, brass, copper, even gray cast iron can be cut with it.
- The device is used to center cut steel cut up to 0.472 in (12 mm).
- Clean cuts that do not require post-processing.

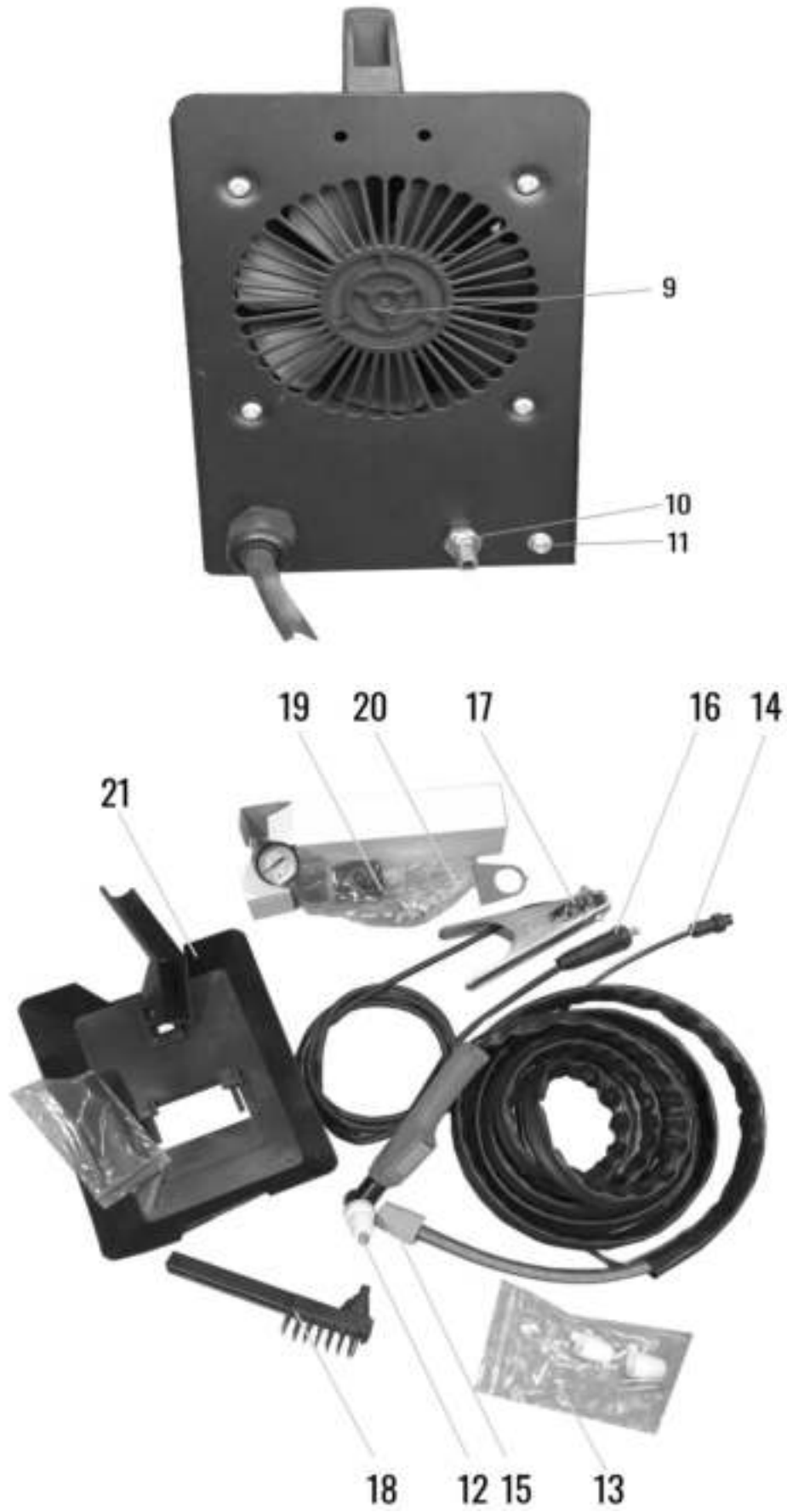
- Only operation with compressed air is permitted. Do not use other gases.
- **Attention!** Never use the device for any other purpose.

### 3. Function

- In the plasma burner, the air is heated by an electric arc to an extremely high temperature. In this case, an electrically conductive plasma is formed, through which the cutting current can flow from the electrode to the workpiece. The cutting nozzle with a small bore laces the cutting stream, thereby causing a highly concentrated plasma cutting jet. This melts metals very quickly and due to its high kinetic energy, the melt is ejected from the saw kerf. It gives a clean and smooth cut.

### 4. Description





1. Handle
2. ON/OFF switch
3. Overload indicator
4. Controller cutting current
5. Overrun switch compressed air
6. Connection ground cable
7. Connection control cable
8. Connection hose package
9. Fan
10. Shop air
11. Ground connection
12. Burner button
13. Burner nozzle
14. Control cable
15. Pressure hose
16. Ground wire
17. Ground terminal
18. Wire brush
19. Maintenance Unit
20. Mounting Accessories
21. Shield

## 5. Technical specifications

<b>Model</b>	<b>AR-HE-SGPS40</b>
Mains connection	230 V, 50 Hz
Input	4,7 kVA
Output current	40 A
Output voltage	96 V
Duty cycle	60 %
Working current	infinitely variable from 20 - 40 A
Max cutting thickness	0.472 in (12 mm)
Compressed air connection	4,5 bar, 120 L/min
Insulation class	F
Protection class	IP21S
Weight	19.9 lbs (9 kg)

## 6. Use

### 6.1 Before commissioning

- Place the plasma cutter in the immediate vicinity of the work area.
- Unnecessarily long supply lines should be avoided.
- The cutting device may only be operated in suitable and well-ventilated rooms (ambient temperature min +5°C/max +40°C). The room must not contain dust, vapors, explosive or flammable gases or acids.



## 6.2 Commissioning

- After you have made all the electrical connections for the power supply and for the cutting circuit, you can put the device into operation.
- Switch on the device at the ON/OFF switch.
- Then set the appropriate cutting current at the rotary switch according to the thickness of the material. You will quickly get a feel for choosing the correct amperage after a few tries.
- Hold the cutting nozzle at a distance of 0.0394 in (1 mm) from the workpiece.
- Now confirm the burner button.
- The HF ignition audibly ignites the arc and the magnet valve releases the compressed air flow.
- Proper posture and guidance of the handle greatly affects the quality and appearance of the cut.
- Always do some test cuts before doing the actual cut.
- Once you have made your cut, release the burner button.
- At the overrun switch, you can set how long the compressed air will continue to flow after the burner button has been released.
- When you have finished working, switch off the appliance, close the compressed air valve on your compressor and disconnect the mains plug.

## 6.3 Compressed air supply

- Connect the compressed air line of your compressor to the connecting piece of the plasma cutter.
- Your compressor should have a capacity of at least 120 liters per minute.
- Observe the information on air volume and pressure in the technical data.
- Always install the supplied maintenance unit in the discharge line.
- It separates emerging condensed water from the compressed air and also functions as a pressure reducer, where you can set the exact working pressure.

## 6.4 Hose package

- Screw the pressure hose of the hose package to the connection flange of the device.
- Plug the plug of the control cable into the connection socket of the device. Lock it by tightening the threaded nut.
- Plug the connection of the ground cable into the socket on the device. By slightly turning it is locked.
- Connect the power cord to a 230 V socket. It is essential to follow the instructions in the general safety instructions.
- Connect the ground terminal directly to the workpiece to be cut.

# 7. Cleaning and maintenance

- **Attention!** Before any maintenance work, please disconnect the device from the power supply.
- Clean the device regularly and thoroughly.
- Free all ventilation holes from dust deposits to ensure unobstructed air circulation for optimal cooling. Use compressed air for this purpose.
- Protect the device from metal dust to prevent interference in the electronics.
- Check all screws and nuts regularly, retighten them if necessary.
- Be sure to protect the hose assembly from external damage (sharp edges, do not drive over

- with other equipment).
- **Attention!** Cutting nozzle and gas sleeve are wear parts and must be renewed from time to time (radiant heat and deposits).
- When using the cutter for a longer time, you must remove the weld spatter from the gas sleeve (high heat) to prevent a short circuit (destruction of both nozzles, burner tube and rectifier possible) between contact and gas nozzle.
- **Attention!** Use jet grease or jet spray before and after use to prevent many spills from forming.
- Regular maintenance is important for the performance and durability of the device.
- **Attention!** Do not use detergents or solutions for cleaning, e.g. petrol, chlorine-based cleaners and household cleaners.

### Transportation

- **Attention!** During transport, non-separated supply lines (power lines, control cables, etc.) can cause hazards, such as: overturn connected devices and damage people! Therefore, disconnect supply lines before transport!
- Secure attachments with suitable means!
- **Danger of accident** due to inadmissible transport of non-craneable devices!
- **Attention!** Craning and hanging the device is not permitted! The device may fall down and injure persons! Handles, straps or brackets are only suitable for transport by hand!
- **Danger of tipping over!** During operation and installation, the device may tip over, injure persons or be damaged.
- Set up or transport the unit on a flat, firm surface!

## 8. Troubleshooting

Problem	Cause	Solution
<b>No function.</b>	<ul style="list-style-type: none"> <li>- Voltage/power connection wrong.</li> <li>- Overload protection starts.</li> </ul>	<ul style="list-style-type: none"> <li>- Have the mains connection checked by a specialist.</li> <li>- Turn off the device and allow it to cool down for a few minutes.</li> </ul>
<b>Device is running, but arc does not ignite.</b>	<ul style="list-style-type: none"> <li>- Burner contaminated.</li> <li>- Burner defective.</li> <li>- Burner button defective.</li> <li>- Control cable defective.</li> <li>- No mass available.</li> <li>- No compressed air available.</li> <li>- Distance between burner/workpiece too large.</li> </ul>	<ul style="list-style-type: none"> <li>- Clean the burner nozzles.</li> <li>- Replace worn burners.</li> <li>- Please have the button checked.</li> <li>- Check the control cable.</li> <li>- Check that the ground terminal is in the correct position.</li> <li>- Check the compressed air connection.</li> <li>- Keep the burner at a distance of 1 mm from the workpiece.</li> </ul>
<b>Device switches off during operation.</b>	<ul style="list-style-type: none"> <li>- Device overheated.</li> <li>- Overload protection starts.</li> </ul>	<ul style="list-style-type: none"> <li>- Turn off the unit, allow it to cool down for a few minutes.</li> <li>- Clean the ventilation slots.</li> </ul>

## 9. Disposal instruction

### 9.1 Disposal of the packaging

- Please make reference to the guidelines and standards for appropriate disposal of the packaging valid in your region. In part, the package may consist of plastic bags - watch this respect, with special care to ensure that this is not out of the reach of children. There is a risk of suffocation!

### 9.2 Disposal of waste equipment

- Equipment must be disposed of in accordance with the rules and regulations of the local waste disposal.

### 9.3 Meaning of the "dustbin"



Protect our environment; electrical appliances do not belong in household waste. Use the provided for the disposal of electrical equipment collection points and enter your electrical and electronic equipment that you no longer use. They help ensure that the potential effects of incorrect disposal on the environment and human health to be avoided. So, do your part to recycle, recycling and other forms of recovery of waste electrical and electronic equipment. Information on where the devices are disposed of, please contact your local authorities or local Governments.

**Our customer service number: +49 (0) 931-45232700**

## EU Declaration of Conformity

We,

Canbolat Vertriebs GmbH, Gneisenaustraße 10-11, 97074 Würzburg, Germany,

Hereby declare that the product named below, seen its design and construction as well as according to our sales, has been complied with the relevant and basic health and safety EU-requirements.

Name of the product: Plasma Cutter

Model Nr.: AR-HE-SGPS40

Art. Nr.: 4260551588013

If the product has any modification not allowed by us, this declaration loses its validity.

Tested acc. to:

EU Standard:

EN 60974-1:2012

EN 60974-10:2014+A1:2015

Date/Manufacturer Signature/Location:

Würzburg, 22.08.2019



Identification of the signatory:

Korhan Canbolat, head of the company

Authorised representative for the technical documentation:

Korhan Canbolat

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