

DE DE Original Betriebsanleitung, DE-4

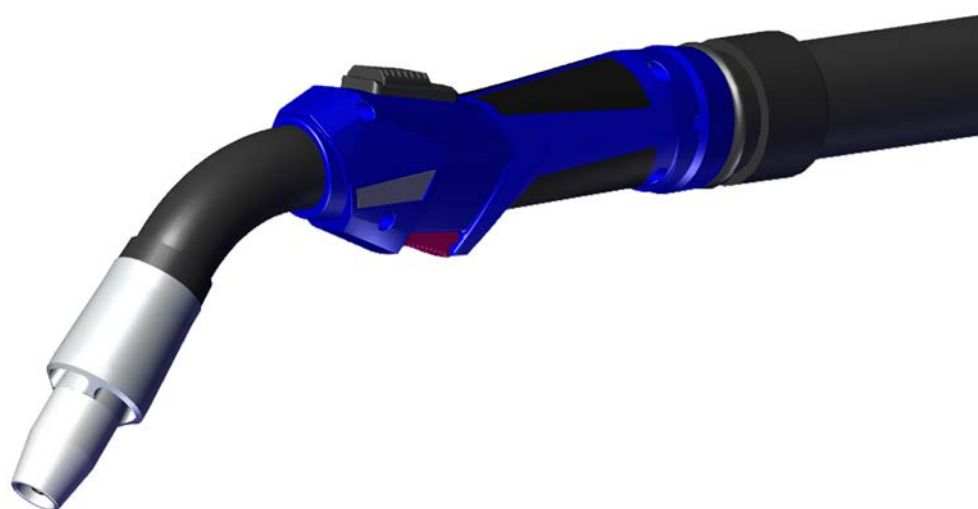
EN EN Original operating instructions, EN-11

FR FR Mode d'emploi d'origine, FR-18

ES ES Manual de instrucciones original, ES-25

xFUME[®] PRO

xFUME[®] COMPACT

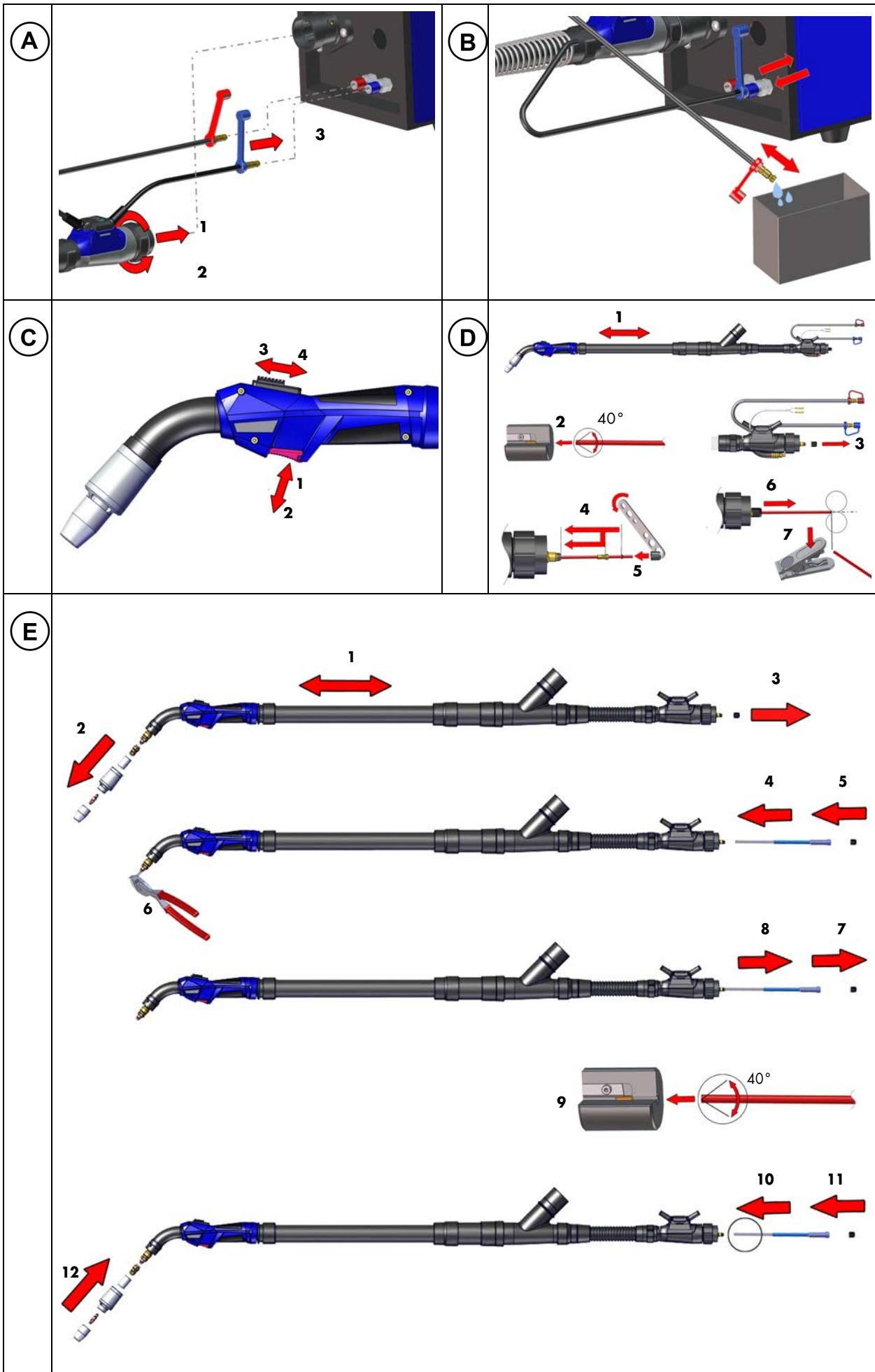


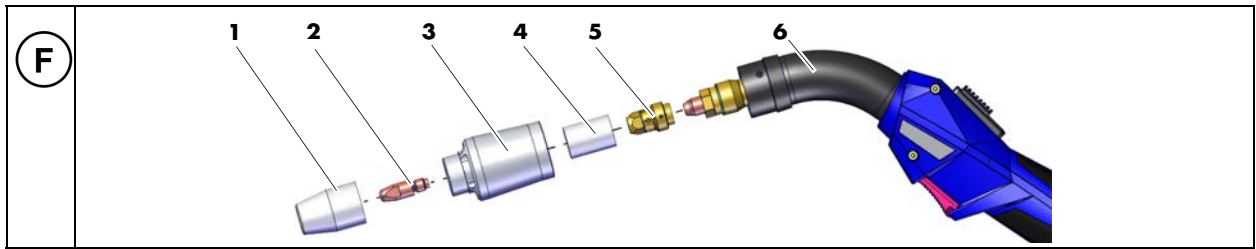
DE MIG/MAG Handschweißbrenner

EN MIG/MAG manual welding torch

FR Torche manuelle de soudage MIG/MAG

ES Antorcha manual de soldadura MIG/MAG





(F) DE Verschleißteile/EN Wear parts/FR Pièces d'usure/ES Piezas de desgaste						
	1	2	3	4	5	6
DE	Gasdüse	Stromdüse	Absaugdüse	Spritzerschutz	Düsenstock	Brennerhals
EN	Gas nozzle	Contact tip	Suction nozzle	Spatter protector	Tip adaptor	Torch neck
FR	Buse gaz	Tube-contact	Buse d'aspiration	Protection anti-grattons	Support tube-contact	Col de cygne
ES	Tobera de gas	Punta de contacto	Tobera de aspiración	Protector contra proyecciones	Porta-puntas	Cuello de antorcha

EN Original operating instructions

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1 Identification

The xFUME® PRO/xFUME® COMPACT fume extraction torches are MIG/MAG welding torches for arc welding equipment used in metal inert gas welding. The devices comply with EN 60974-7 and are not devices that can be used on their own.

1.1 Marking

This product fulfills the requirements that apply to the market to which it has been introduced.

2 Safety

This chapter describes the essential safety requirements and warns of residual hazards that should be kept in mind to operate the product safely.

2.1 Designated use

The device described in these operating instructions may be used only for the purpose and in the manner described in these operating instructions. The device is used to extract welding fumes and dust that is generated during welding. The device can be used to extract welding fumes that contain CMR substances and to extract welding fumes that do not contain CMR substances. When extracting welding fumes that contain CMR substances, the welding torch must be operated together with a suitable W3-certified fume extraction system. Any other use is considered improper. Unauthorized modifications or changes to enhance the performance are not permitted.

These operating instructions describe the xFUME® PRO/xFUME® COMPACT devices only. They may be operated using original ABICOR BINZEL spare parts only. The figures below show the xFUME PRO 501 version of the fume extraction torch.

A corresponding marking has been affixed to the product, if required.

Non-observance of the safety instructions may result in risks to the life and health of personnel, and environmental damage or material damage.

- ▶ Do not exceed the maximum load data as defined by the documentation supplied. Excessive loads lead to irreparable damage.
- ▶ Do not make any constructive changes to this product.
- ▶ Do not use or store the device outdoors where it is wet.
- ▶ During welding work outdoors, use suitable protection against the weather conditions.

2.2 Basic safety instructions

The product has been developed and manufactured in accordance with state-of-the-art technology and the recognized safety standards and regulations. Inevitable technical residual risks to the user, third parties, devices, or other material property are posed by the product. This document describes the essential safety requirements and warns of residual hazards that should be kept in mind to operate the product safely. Detailed product information and product-specific safety instructions are found in the separate operating instructions and in other product-specific documentation. Non-observance of the safety instructions may result in risks to the life and health of personnel, and environmental damage or material damage. The manufacturer will accept no liability for damage caused by non-observance of the documentation.

- ▶ Before using the system for the first time, please read the provided documentation carefully.
- ▶ Do not operate the product unless it is functioning properly and ensure compliance with all documents.
- ▶ Before carrying out specific work, for example, commissioning, operation, transport and maintenance, read the documentation carefully.
- ▶ Use suitable means to protect yourself and bystanders from the hazards listed in the documentation.
- ▶ Store the documentation within easy reach of the device for reference and enclose all documents when passing on the product.
- ▶ Consult the documentation for additional welding components.
- ▶ Information about how to handle gas cylinders can be found in the instructions provided by the gas manufacturer and the relevant local regulations, e.g., regulations that apply to compressed air.
- ▶ Observe the local accident prevention regulations.
- ▶ Only trained specialists should commission, operate, and service the device. Qualified personnel are persons who, based on their special training, knowledge, experience and due to their knowledge of the relevant standards, are able to assess the tasks assigned to them and identify possible dangers.
- ▶ Keep the work area in order. Ensure good lighting of the work area.
- ▶ Switch off the power supply, gas supply, and compressed air supply, and disconnect the mains connection for the entire duration of maintenance, commissioning, and repair activities.
- ▶ For disposal, observe the local regulations, laws, provisions, standards and guidelines.

2.3 Safety instructions for electrical components

- ▶ Check electric tools for damage and for its proper functioning in accordance with its designated use.
- ▶ Do not expose electric tools to rain and avoid a moist or wet environment.
- ▶ Protect yourself from electric shock by using insulating mats and wearing dry clothing.
- ▶ Do not use the electric tools in areas subject to fire or explosion hazards.

2.4 Safety instructions for welding

- ▶ Arc welding may cause damage to the eyes, skin and hearing. Note that other hazards may arise when the device is used with other welding components. Therefore, always wear the prescribed personal protective equipment as defined by local regulations.
- ▶ Any metal vapors, especially lead, cadmium, copper and beryllium are harmful. Ensure sufficient ventilation or extraction. Do not exceed the current occupational exposure limits (OEL).
- ▶ To prevent the formation of phosgene gas, rinse workpieces that have been degreased with chlorinated solvents using clean water. Do not place degreasing baths containing chlorine in the vicinity of the welding area.
- ▶ In connection with various welding torches, there may be other hazards, for example those caused by: electrical current (power supply, internal circuit), welding spatter with regard to combustible or explosive materials, UV radiation from the arc, smoke and vapors.
- ▶ Adhere to the general fire protection regulations and remove flammable materials from the vicinity of the welding work area prior to starting work. Provide appropriate fire extinguishing equipment in the workplace.

2.5 Safety instructions for extraction (according to ISO 21904)

- ▶ Ensure that all components have been properly installed on the fume extraction torch.
- ▶ Ensure that the fume extraction torch is connected to the fume extraction system prior to use.
- ▶ Use the fume extraction torch only with a fume extraction system that has been approved for use in the respective country.
- ▶ Observe the local occupational health and safety regulations and guidelines.
- ▶ Check the volume flow at the suction nozzle using the ABICOR BINZEL suction test pipe. A volume flow that is too high can cause weld defects.
- ▶ Check the extraction hoses at regular intervals, at least once a week, for damage and contamination.
- ▶ Note that if additional hoses or hoses from other manufacturers are used, pressure loss in the fume extraction torch can result.
- ▶ Note that the applied vacuum depends on the geographic altitude of the operation site.

- ▶ Observe the warning signals and indicators on the fume extraction system. Warning signals and indicators can imply a saturated filter or a problem with/damage to the fume extraction torch.
- ▶ Replace the extraction-specific wear parts at regular intervals. The replacement interval required depends on the application conditions.
- ▶ Open the air regulator for only a moment and close it quickly after opening it. The air regulator must be closed to ensure efficient capture of fumes.
- ▶ Observe the instructions on the adapter label for connecting components.

2.6 Safety instructions for personal protective equipment

- ▶ Do not wear loose fitting clothing or jewelry.
- ▶ Use a hair net for long hair.
- ▶ Wear safety goggles, protective gloves and, if required, a breathing mask when the device is in use and when welding.

2.7 Safety instructions for use

- ▶ Do not exceed the maximum load data as defined by the documentation supplied. Excessive loads lead to irreparable damage.
- ▶ Do not make any constructive changes to this device.
- ▶ During welding work outdoors, use suitable protection against the weather conditions.

2.8 Classification of the warnings

The warnings used in the operating instructions are divided into four different levels and shown prior to potentially dangerous work steps. Arranged in descending order of importance, they have the following meanings:

DANGER

Describes an imminent threatening danger. If not avoided, it may cause severe injuries or death.

WARNING

Describes a potentially dangerous situation. If not avoided, this may result in death or serious injuries.

CAUTION

Describes a potentially harmful situation. If not avoided, this may result in slight or minor injuries.

NOTICE

Describes the risk of impairing work results or material damage and indicates irreparable damage to the device or equipment.

2.9 Emergency information

- ▶ In the event of an emergency, immediately disconnect the following supplies: electrical power supply, compressed air supply, coolant supply and shielding gas supply.
- ▶ Consult the documentation for welding components.

3 Product description

3.1 Technical data

Tab. 1 General torch data (EN 60974-7)

Temperature (transport and storage)	-25 °C to +55 °C	Shielding gas (DIN EN ISO 14175)	CO ₂ and mixed gases M21
Temperature (operation)	-10 °C to +40 °C	Wire types	Commercially available round wires
Relative humidity	Up to 90% at 20 °C	Voltage rating	Peak value of 113 V
Type of use	Hand-held	Protection type of the device connections (EN 60529)	IP3X
Type of voltage	DC	Control features in the handle	For 42 V and 0.1 to 1 A
Polarity of the electrodes for DC	Usually positive		

Tab. 2 Product-specific torch data (EN 60974-7 and EN ISO 21904-1)

Type	Type of cooling	xFUME® PRO		xFUME® COMPACT		DC	Wire Ø	Gas flow rate	Volume flow *		Required vacuum at the connector
		Load		Load					For induced velocity 0.35 m/s		
		CO ₂	M21	CO ₂	M21				Suction nozzle	Connector	
		A	A	A	A	%	mm	L/min	m ³ /h	m ³ /h	kPa
25	Air	-	-	250	230	35	0.8-1.2	10-20	46	85	11.4
24	Air	270	250	-	-	60	0.8-1.2	10-20	70	92.8	11.4
36	Air	330	300	-	-	60	0.8-1.2	10-20	58.7	75.8	5.8
501	Liquid	500	450	-	-	100	1.0-1.6	10-20	58.7	81.3	6.6

* When used with welding fume extraction systems of the xFUME series.

The degree to which welding fumes are captured during torch-integrated extraction depends on many factors, such as the

position of the suction nozzle, the welding geometry, and the rate of smoke emission during the welding process. Under optimal conditions, over 95% of the welding fumes can be captured in accordance with ISO 21904-3.

Tab. 3 Cooling data/cable assembly

Cooling data		Cable assembly	
Supply temp.	Max. 40 °C	Standard length L	4.00 m, 5.00 m
Flow	Min. 1.5 L/min	Coolant connection	Plug-in nipple with nom. diam. 5
Flow pressure	Min. 2.5 bar/max. 3.5 bar	Cooling device output	Min. 800 W
		Control lead	2-lead

3.2 Illustrations used

All illustrations can be found at the beginning of the operating instructions.

4 Commissioning

WARNING

Health risk caused by inhaling harmful dust

The device contains harmful dust that can collect on surfaces and penetrate the ambient air as of the first use. It can damage the respiratory tract when inhaled.

- ▶ Check and wear your personal protective equipment.
- ▶ Use the device only in rooms with sufficient ventilation.
- ▶ The provided fume extraction system must be used when operating the device.
- ▶ Immediately remove dust deposits from the environment with a dust class H industrial vacuum cleaner or a damp cloth.
- ▶ Keep the air regulator closed if possible, and then open it only briefly.

- ▶ Carry out all steps in the specified sequence.

4.1 Preparing the welding torch for installation of the cable assembly

- 1 Switch off the power source and unplug the power plug.
- 2 Switch off the gas and compressed air connector.

4.2 Equipping the torch neck

The MIG/MAG manual welding torches are fully equipped upon delivery. Information about replacing wear parts and

about the wire guide can be found here:

⇒ 8 Maintenance and cleaning on page EN-16

4.3 Connecting the cable assembly, Fig. A

- 1 At the wire feeder: Insert the central plug in the connecting socket.
 - 2 At the wire feeder: Secure the cable assembly with the connection nut.
 - 3 Coolant: Connect the flow line (blue) and return line (red).
- ▶ Check the coolant's minimum fill level.

Recommendation: Use ABICOR BINZEL coolant from the BTC range.

- ▶ To prevent damage to the welding machine, do not use deionized or demineralized water.
- ▶ Purge the coolant circuit the first time the equipment is commissioned and with every cable assembly replacement.

4.4 Purging the coolant circuit, Fig. B

- 1 Place the collection receptacle below the coolant return connector (red).
- 2 Loosen the coolant return hose at the coolant recirculator and hold it over a collection receptacle.
- 3 Seal the opening on the coolant return hose. Open and close it multiple times. Repeat this process until the coolant flows into the collection receptacle continuously and without air bubbles.
- 4 Re-connect the return hose to the coolant recirculator.

4.5 Connecting the extraction hose

- ▶ Connect the extraction system's extraction hose to the suction connector on the cable assembly.

4.6 Connecting the shielding gas

- 1 Select the appropriate shielding gas for the welding task at hand.
- 2 Briefly open the gas supply valve and close it again to blow out any contamination at the connector.
- 3 Connect the shielding gas to the welding device according to the manufacturer's instructions.
- 4 Adjust and set the amount of shielding gas for the gas nozzle in use and welding task at hand.

4.7 Feed in wire

⚠ CAUTION

Risk of injury due to entering the device's work area

There is a risk of injury in the device's work area.

- ▶ Check and wear your personal protective equipment.
- ▶ Ensure that no one is in this area when the device is in motion.

- 1 Cut off a small piece of the start of the wire with a cutter to remove any burrs.
- 2 Insert the wire in the wire feeder according to the manufacturer's instructions.
- 3 Press the button to switch off power to the wire feeder until the wire exits the contact tip.
- 4 Cut off any protruding wire.

5 Operational controls on the handle

The button's two-step operating mode is available for the standard welding torch.

Additional operating modes and handle modules depend on the power source and must be purchased separately.

5.1 Button with two-step function, Fig. C

- 1 Press and hold button on handle = start welding.
- 2 Release the button = end welding.

5.2 Air regulator, Fig. C

- 3 Slide the air regulator forward = close, regular flow of exhaust air at the suction nozzle.
- 4 Slide the air regulator back = open, reduced flow of exhaust air at the suction nozzle.

6 Operation

- 1 Open the shielding gas cylinder, switch on the power source.
- 2 Set the welding parameters.
- 3 Start the welding process.

7 Decommissioning

NOTICE

Material damage due to overheating

Liquid-cooled cable assemblies can leak if overheated.

- ▶ Allow the cooling unit to continue to run approximately 5 minutes after welding.

- 1 Stop the welding process.
- 2 Wait until the shielding gas post-flow time has passed and switch off the power supply.
- 3 Close the shielding gas cylinder valve.

8 Maintenance and cleaning

⚠ WARNING

Risk of burns from hot surface

Welding torches become very hot during welding. This may result in serious burns.

- ▶ Allow welding torches to cool down after welding.
- ▶ Wear the correct protective gloves.

⚠ CAUTION

Risk of injury due to unexpected start

If power is supplied during maintenance, cleaning or disassembly, parts can start running unexpectedly and lead to injuries.

- ▶ Switch off the device.
- ▶ Close all supply lines.
- ▶ Disconnect the electrical power supply.

8.1 Replacing wear parts, Fig. F

NOTICE

Material damage through use of unsuitable wear parts and mounting tools

The use of wear parts made by other manufacturers and the improper installation of wear parts can cause material damage to the welding torch and impair work results.

- ▶ Use only original ABICOR BINZEL wear parts.
- ▶ Use the ABICOR BINZEL wrench for assembling and disassembling wear parts.
- ▶ Ensure that wear parts specific to the welding torch are correctly assigned.

- ▶ The order data and ID numbers for the equipment parts and wear parts can be found in the current product catalog.

The torch neck can be fitted with various wear parts depending on the welding task at hand.

The gas nozzle and retaining spring are inserted. All other wear parts are screwed on.

8.2 Selecting and attaching the wire guide

- 1 Select the welding materials appropriate for the welding task at hand.
- 2 Attach the wire guide appropriate for the welding materials you are using.

- ⇒ Steel: Shortening and mounting the spiral liner, Fig. E
- ⇒ Stainless steel, aluminum, copper, nickel: Mounting and shortening the PA liners, Fig. D

8.2.1 Shortening and mounting the spiral liner, Fig. E

- 1 Lay out the cable assembly straight.
 - 2 At the torch neck: Remove wear parts.
 - 3 At the central plug: Unscrew the nut.
 - 4 At the central plug: Remove the spiral liner, replace it with a new one and insert it into the wire conduit as far as it will go.
 - 5 At the central plug: Manually tighten the nut.
 - 6 At the torch neck: Use a cutter to cut off excess spiral liner so it is flush with the outlet opening.
 - 7 At the central plug: Unscrew the nut.
 - 8 Remove the spiral liner again.
 - 9 Deburr and grind down the edge at the spiral liner (angle approx. 40°).
 - 10 At the central plug: Insert the spiral liner in the wire conduit again as far as it will go.
 - 11 At the central plug: Manually tighten the nut.
 - 12 At the torch neck: Mount the wear parts.
- ⇒ 4.3 Connecting the cable assembly, Fig. A on page EN-14

8.2.2 Mounting and shortening the PA liners, Fig. D

- 1 Lay out the cable assembly straight.
 - 2 Sharpen the PA liner with the ABICOR BINZEL sharpener (angle approx. 40°). For PA liners with an outer diameter of 4.0 mm, the capillary tube in the adapter connection must be replaced by a guide tube.
 - 3 At the central plug: Unscrew the nut. Remove the PA liners, replace it with a new one and insert it into the wire conduit as far as it will go.
 - 4 At the central plug: Slide the trunnion and O-ring on the PA liner.
 - 5 At the central plug: Manually tighten the nut.
 - 6 The PA liner must end just before the wire feeder's conveyor rollers. Calculate the maximum excess and mark it on the PA liner.
 - 7 Use the ABICOR BINZEL cutter to cut off the PA liner at the marking and deburr the edge.
- ⇒ 4.3 Connecting the cable assembly, Fig. A on page EN-14