

# SifGun Evolution Extraction Torch

**EXTEVOMT1504**

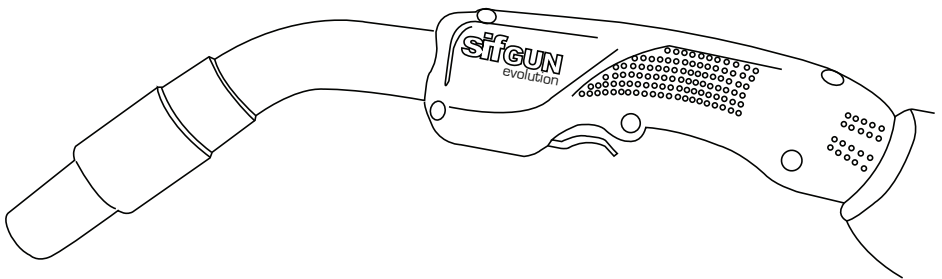
**EXTEVOMT2504**

**EXTEVOMT3504**

**EXTEVOMT5004**

**EXTEVOMT4002R**

Operation instructions



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## 1. The SifGun Evolution Fume Extraction Torch

Thank you for purchasing a quality product from WELDABILITY SIF. For your own safety, please read these operating instructions carefully before operating this product. The owner of the product must make this operating manual available to each operator and ensure the operator has read and fully understands the instructions prior to use. Keep the operating manual in a safe place for future reference.

This operating manual contain both water and gas cooled extraction welding torches. Please refer to the current spare parts list for further details on the particulars of your welding torch, such as torch assembly, connectors and torch heads. This product conforms to the requirements of IEC 60974-7.

Refer also to the operating instructions for the fume extraction unit, the power source and any other device connected to the torch.

The welding torch is only to be used by experienced personnel. It is not allowed for untrained persons to install, handle or maintain our welding torches. Welding torches must be checked regularly in order to guaranty optimum life time expectancy.

The user is fully responsible for possible defects arising out of misuse, inadequate maintenance, damage, poor repair, or modifications by other parties than the original manufacturer, or their authorised service centres.

The welding torch is a component of a complete welding system. The torch will generate an electric arc when connected with the appropriate welding machine. Ensure that you read the welding machine's instructions thoroughly before using our welding torches.

The manufacturer reserves the right, whenever necessary and without prior notice, to amend these instructions as a result of clerical or printing errors, incorrect information, or the addition of improvements.



**WARNING**

READ THESE SAFETY INSTRUCTIONS CAREFULLY.

Failure to observe these safety instructions can lead to serious injury and/or damage to the product. Only trained operators with relevant knowledge of MIG/MAG welding should use this product.

All WELDABILITY SIF products are manufactured under constant supervision during production. Our welding torches are tested for proper functionality after assembly. Improper or unauthorised use carries the risk of:

- Causing harm to operator's body and life
- Causing harm to the product itself and/or other property
- Preventing efficient operation of the product

The following symbols are used in this operating manual.



Danger of material damage or unsafe conditions. You may get injured when ignoring this symbol.



Flammable agents



Indicates danger for your eyes. To prevent eye injury, always wear eye protection when this symbol is used.



Indicates danger for your hands. To prevent hand injury, always wear welding gloves when this symbol is used.



Indicates a potential hazard for the respiratory tract. Always wear suitable respiratory protection when this symbol is used.

All WELDABILITY SIF products are manufactured using the relevant technology and in accordance with approved safety regulations. To avoid injuries when using your SifGun Evolution torch the following safety requirements must be carefully observed:



**Danger of personal injury:** The operator must wear appropriate protective gear. Protect the working zone from air flow. Do not weld on painted surfaces. Do not weld on wet surfaces. Never place your face, hand or other body parts in front of the contact tip while feeding the wire electrode.



**Danger for the hands:** Your skin must not get in contact with the welding torch! Always put on welding gloves before welding.



**Danger of material damage or personal injury:** Make sure that the torch cable assembly is not twisted and does not chafe against sharp edges. Damaged insulation of the cable assembly must be repaired by a qualified technician immediately.

All control wires must be protected against over-tension to avoid damages to all peripheral devices, such as robots, handling equipment, electronic contour units, power sources or wire feeders.

Do not roll over this product with forklifts or similar.

Do not fix the torch in a vice.

In case of an accident, disconnect the supplies of electric power, compressed air and shielding gas immediately. In addition to this manual, always observe all safety instructions and the relevant accident prevention regulations. Ensure you follow and appropriate method statements, developed from a thorough risk assessment.

### 3. Technical specifications

The SifGun Evolution welding torches are designed for a maximum open-circuit DC voltage of 113V (maximum voltage). Prior to welding, please make sure that your power supply complies with this specification. The SifGun evolution welding torches are designed for indoor use only. Do not use the welding torch at ambient temperatures exceeding 40°C (104°F).

The welding torches operate exclusively in the MIG and MAG processes. For safety reasons, WELDABILITY SIF does not authorize any modification or post-manufacturing alteration to the torch. The alteration will void manufacturing warranty automatically. Fume extraction welding torches are to be used with a mobile or centralized extraction unit.

SifGun Evolution fume extraction torches must be used with the leather protection mounted on the torch assembly (supplied).

The water cooled torches have to be connected to a cooling system. Attach the blue hose of the Euro-Connector to the output of the cooling system and the red hose to the cooling system return. Please refer also to the operation manual of the cooling system.

#### 3.1 Risks when operating the torch



##### **Danger for your eyes**

Injuries can be caused by metal filings, electrode fragments or weld spatter while blowing the liner. Always wear eye protection for those operations.



##### **Fire and explosion hazard by sparks**

Do not weld near to inflammable materials or liquids. Store those materials outside the welding zone. Avoid fire risks caused by sparks or hot pieces and keep fire sources monitored. Ensure the availability of fire extinguishers and their correct functioning.



##### **Danger for your ears because of the noise (sound pressure level)**

Always wear ear protection.

#### 3.2 Authorised operators

The SifGun Evolution welding torches must only be operated by trained competent persons who are aware of the relevant safety instructions. The owner of the product must make this operating manual available to each operator and ensure the operator has read and fully understands the instructions prior to use. Any use by untrained persons is not permitted.

### 3.3 Technical data

Parameters for automatic and manual welding torches according to EN 60974-7:

Welding technique	MIG/MAG
Max. open-circuit voltage	U <sub>o</sub> = 113V
Voltage class	L
Wire feed rate	1 - 30 m/min
Control wires	bipolar (0,5 mm <sup>2</sup> )
Connection	Euro Connector
Welding method	Trigger operated

All values are based on a torch assembly length of 4m. For longer torch assemblies or pulsed welding, mentioned values decrease.

Torch type	Cooling	Duty factor 60%		Ø wire guide(mm)	Ø wire electrode(mm)
		CO <sup>2</sup>	AR + CO <sup>2</sup> 20%		
EXTEVOMT1504	AIR	150A	120A	40	0.8 - 1.2
EXTEVOMT2504	AIR	230A	200A	40	0.8 - 1.2
EXTEVOMT3504	AIR	340A	300A	40	1.0 - 1.2
EXTEVOMT5004	WATER	500A	440A	40 / 50	1.2 - 1.6

## **4. Instructions for use**

According to the customer's specifications, the extraction welding torch can be configured with different gas nozzles, contact tips and gas diffusers. Any welding operation at high power should be performed with a gas nozzle of a large inner diameter.

At low power, gas nozzles of smaller inner diameter should be used. For aluminum welding, you must use drive rollers with specially formed grooves in the wire feed system. Use a special capillary liner with wire electrodes made of aluminium and stainless steel.

## **5. Installation**

### **5.1 Preparation for welding**

Prior to welding, please make sure that the torch head is correctly equipped with a contact tip and a gas nozzle. Make sure that the welding current does not exceed permitted values. Please refer to the related operating manuals for further information about the power source, the wire feeder, the gas cylinder and cables. Refer to the existing technical literature for further information about welding processes and application techniques.

The fume extraction welding torch features a compact connector (standard EURO-connector) with a clamping nut. Always make sure that the clamping nut is well tightened. A loose contact may cause heating of the torch assembly.

When using water cooled welding torches, connect the blue and red hose (blue: water output, red: water return) to the corresponding connectors on the power supply or wire feeder.



## **5.2 Insertion of the liner**

From the EURO-connector, insert the liner into the torch assembly until it sticks out of the torch head. Close the wire feeder protection and turn on the power supply. Press the 'inch' button of the wire feeder until the wire electrode emerges from the contact tip of the torch head.

**Attention!** The wire electrode feed out can cause bodily injuries! When activating the trigger, electric tension may occur. If the torch head touches conducting materials, welding may be activated unintentionally

Wire feed rate may be adjusted by using the potentiometer of the power supply. When changing the wire electrode diameter, make sure to change the contact tip as well.

## **5.3 Connection of the torch assembly (water-cooled torches)**

Make sure that the minimum quantity of cooling liquid for the cooler is adhered to.

Attach the blue hose of the Euro-Connector to the output of the cooling system and the red hose to the cooling system return.

Make sure to follow the instructions regarding cooling liquid as indicated by the manufacturer of the power source.

Bleed the cooling circuit before the first use of the torch assembly.

## 5.4 Controlling the shielding gas

Make sure that all shielding gas connections are airtight.

The nature and the quantity of shielding gas depends on the welding application and on the gas nozzle type. Set in accordance with your welding procedure (WPS).

Loosen the drive rollers and cut the wire electrode flush with the gas nozzle using a cutter.

Slightly open the gas cylinder valve and push the torch trigger or the gas test button on your wire feeder: shielding gas comes out. Place the flowmeter in a vertical position on the gas nozzle (Fig. 1) and adjust the gas volume on the regulator.



**Attention:** Poor gas protection leads to poor welding quality.

## **5.5 Connection of extraction unit**

The SifGun Evolution extraction torches must be connected to an extraction unit to ensure extraction of welding fumes.

All indicated values apply only under the use with a fume extraction unit.

Connect the torch to an extraction unit by a flexible hose with a length which does not exceed 10m. On the torch side, the hose is connected to the T-piece besides the EURO-connector using the multi-diameter reducer part supplied, which you must cut to size. On the extraction unit side, the hose is connected to the sleeve of the filtration housing (there may be two entries for the connection of two welding torches on the same extraction unit on a twin entry extraction unit).

Please refer to the extraction unit operation manual for further information.

## **5.6 Deactivation**

After welding, only deactivate the power source after shielding gas flow has stopped. Turn off the shielding gas supply. When using the extraction unit in automatic mode, make sure to only switch off the unit after the automatic end of extraction. In manual mode, we recommend keeping the extraction unit turned on for a couple of minutes after welding to cool down the extraction torch.

## 6. Maintenance

### **Risk of bodily injuries:**

Before performing any inspection or maintenance, always unplug the welding torch. Make sure that the power supply cannot be turned on by anyone else. Risks of bodily injuries from flying particles.

### **Always wear appropriate protective wear, safety goggles and respiratory protection!**

Due to the use of high-quality components, our extraction torches need little maintenance. In order to optimize efficiency and to ensure continued functionality of the torch we recommend regular maintenance. Individual checks and maintenance tasks should be performed at regular intervals, depending on the conditions under which the welding torch is operated. We recommend the creation of individual maintenance schedules for each user individually. All regular and scheduled maintenance of the welding torch should be recorded.

### **To help ensure trouble-free functioning, the following inspections should be made at regular intervals:**

- General visual inspection of the welding torch for any sign of damage or wear.
- Check all removable connectors to ensure that they are properly situated.

Replace the following items as needed:

- Insulating inserts
- Contact tips,
- Gas nozzle and all other consumables.
- To avoid leakage, check the connectors and connecting hoses. Avoid undue torsion and traction on the torch.
- Depending on the wire quality, remove any abraded wire and change the liner regularly.

### **6.1 Changing the liner**

Loosen the knurled nut holding the liner on the EURO-connector using MIG helper pliers (ET001W). Pull out the old liner and blow out the liner with compressed air (max. 6 bar). Press the liner all the way into the torch assembly until it rests against the contact tip and hold it there. Now gently tighten the knurled nut on the EURO-connector and cut the liner close to the EURO-connector. According to the wire diameter, we recommend the use of the installation tool from WELDABILITY SIF. Attention: If the clamping screw which secures the liner is fastened too tight, it will deform the liner and impede the feeding of the wire.

## 6.2 Water-cooled welding torch

Thermodynamic equilibrium is set up between the welding torch and the cooling system. The heat absorbed by the torch head (depending on welding current) is transported by the cooling liquid to the cooler. In case of cooler malfunction or blockage overheating may occur and deteriorate the welding torch. The maximum permissible welding currents given on the "technical data" page are applicable under the following conditions: Direct coupling via the supply line to the cooling system. Welding torch length of 4m. An efficient cooling system with clean cooling fins and filters. Ambient temperature of 20°C (68°F).

Check the filling level of the cooling system and replenish the coolant as necessary. Check the cooling circuits for leaks regularly.

Always prevent coolant liquid from entering the wire guide. Water leaking can adversely affect the quality of welding.

### **Parameters for water-cooled manual or robotic welding torches according to EN 60974-7.**

Minimum water flow rate:	1, 1 l/min
Pump pressure:	2, 5 – 6 bar
Cooling power:	800W

## 7. Spare parts

Product	Description	Image	150	250	350	400	500
EXTEVOMT202514	Gas nozzle Ø14						
EXTEVOMTEN203514T	Tellurium gas nozzle 350 Ø14						
EXTEVOMTEN200016T	Tellurium gas nozzle 400 Ø16						
EXTEVOMT320100	Gas nozzle insulating sleeve 250						
EXTEVOMTEN320200	Gas nozzle insulating sleeve 350						
EXTEVOMTEN320300	Gas nozzle insulating sleeve 400						
EXTEVOMT601815	Gas diffuser						
EXTEVOMT600300	Gas diffuser 350						
EXTEVOMT610300	Gas diffuser 400						
EXTEVOMTEN720100	Diffuser insulator						
EXTEVOTEN710200	Diffuser insulator 500						
EXTEVOMTEN7001	Insulated nozzle holder 250						
EXTEVOMT900400	Insulated nozzle holder 350						
EXTEVOMT900300	Insulated nozzle holder 500						
EXTEVOMTEN7003C	Fume Shroud Cone 250						
EXTEVOMTEN8003C	Fume Shroud Cone 350						
EXTEVOMTEN9003C	Fume Shroud Cone 500						
EXTEVOMT1203550	Fume Tube 250/350						
EXTEVOMT1204060	Fume Tube 500						

## 8. Warranty

Final determination of suitability of any welding material is the sole responsibility of the user.

Warranty claims can only be upheld given:

- Use for intended purposes
- Proper operation
- Use of original components and spare parts from WELDABILITY SIF
- Observance of safety instructions

Any repairs must be performed by WELDABILITY SIF or its authorised service centre only.

The warranty covers manufacturing faults, but not damage from natural wear and tear, improper use or overloading. Wearing parts are excluded from the warranty. WELDABILITY SIF is not liable for damages caused by using our products. Only use original spare parts and components from WELDABILITY SIF

In case of unauthorized modifications, repairs or changes, the legal and contractual guarantee for property damage and product liability lapses.

### 8.1 Transportation and packaging

In case of damage or complaints during warranty, please contact your WELDABILITY SIF distributor or contact WELDABILITY SIF directly - see [www.weldability-sif.com](http://www.weldability-sif.com)

### 8.2 Recycling and disposal

#### EU countries

Do not discard electrical appliances with ordinary waste. As per EU directive 2002/96/EC regarding old electrical and electronic appliances and as implemented in national law, used electrical appliances must be collected separately and recycled in an eco-friendly manner.

#### Other countries

Some of the torches new materials can be reused. Reusing some parts of raw materials from used products is an important way of helping to protect the environment. Contact your local authority if you require information on local recycling points.

