



EN

welding torch

UM 15 G EZA
UM 24 G EZA
UM 25 G EZA
UM 36 G EZA
UM 240 W EZA
UM 401 W EZA
UM 501 W EZA

General instructions

WARNING



Read the operating instructions!

The operating instructions provide an introduction to the safe use of the products.

- Read and observe the operating instructions for all system components, especially the safety instructions and warning notices!
- Observe the accident prevention regulations and any regional regulations!
- The operating instructions must be kept at the location where the machine is operated.
- Safety and warning labels on the machine indicate any possible risks. Keep these labels clean and legible at all times.
- The machine has been constructed to state-of-the-art standards in line with any applicable regulations and industrial standards. Only trained personnel may operate, service and repair the machine.
- Technical changes due to further development in machine technology may lead to a differing welding behaviour.



In the event of queries on installation, commissioning, operation or special conditions at the installation site, or on usage, please contact your sales partner or our customer service department on +49 2680 181-0.

A list of authorised sales partners can be found at www.ewm-group.com.

Liability relating to the operation of this equipment is restricted solely to the function of the equipment. No other form of liability, regardless of type, shall be accepted. This exclusion of liability shall be deemed accepted by the user on commissioning the equipment.

The manufacturer is unable to monitor whether or not these instructions or the conditions and methods are observed during installation, operation, usage and maintenance of the equipment.

An incorrectly performed installation can result in material damage and injure persons as a result. For this reason, we do not accept any responsibility or liability for losses, damages or costs arising from incorrect installation, improper operation or incorrect usage and maintenance or any actions connected to this in any way.

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Germany

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The content of this document has been prepared and reviewed with all reasonable care. The information provided is subject to change; errors excepted.

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2 For your safety

2.1 Notes on the use of these operating instructions

DANGER

Working or operating procedures which must be closely observed to prevent imminent serious and even fatal injuries.

- Safety notes include the "DANGER" keyword in the heading with a general warning symbol.
- The hazard is also highlighted using a symbol on the edge of the page.

WARNING

Working or operating procedures which must be closely observed to prevent serious and even fatal injuries.

- Safety notes include the "WARNING" keyword in the heading with a general warning symbol.
- The hazard is also highlighted using a symbol in the page margin.

CAUTION

Working or operating procedures which must be closely observed to prevent possible minor personal injury.

- The safety information includes the "CAUTION" keyword in its heading with a general warning symbol.
- The risk is explained using a symbol on the edge of the page.

























Special technical points which users must observe.

Instructions and lists detailing step-by-step actions for given situations can be recognised via bullet points, e.g.:

- Insert the welding current lead socket into the relevant socket and lock.

2.2 Explanation of icons

Symbol	Description
	Indicates technical aspects which the user must observe.
	Switch off machine
	Switch on machine
	Wrong
	Correct
	Menu entry
	Navigating the menu
	Exit menu
	Time representation (e.g.: wait 4 s/activate)
	Interruption in the menu display (other setting options possible)
	Tool not required/do not use
	Tool required/use

Symbol	Description
	Activate and release/tap/tip
	Release
	Press and keep pressed
	Switch
	Turn
	Numerical value – adjustable
	Signal light lights up in green
	Signal light flashes green
	Signal light lights up in red
	Signal light flashes red

2.3 Part of the complete documentation



These operating instructions are part of the complete documentation and valid only in combination with all other parts of these instructions! Read and observe the operating instructions for all system components, especially the safety instructions!

The illustration shows a general example of a welding system.

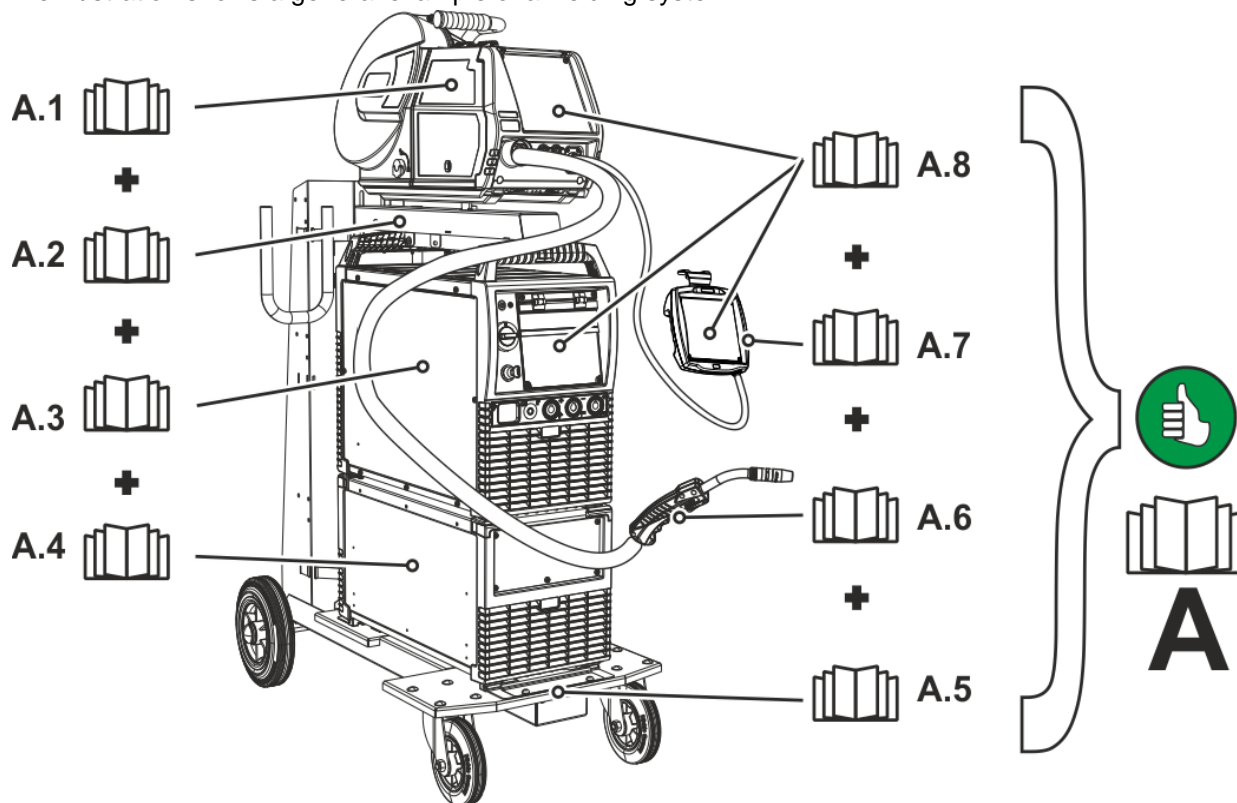


Figure 2-1

Item	Documentation
A.1	Wire feeder
A.2	Conversion instructions
A.3	Power source
A.4	Cooling unit, voltage converter, tool box etc.
A.5	Trolley
A.6	Welding torch
A.7	Remote control
A.8	Control
A	Complete documentation

3 Intended use

WARNING



Hazards due to improper usage!

The machine has been constructed to the state of the art and any regulations and standards applicable for use in industry and trade. It may only be used for the welding procedures indicated at the rating plate. Hazards may arise for persons, animals and material objects if the equipment is not used correctly. No liability is accepted for any damages arising from improper usage!

- The equipment must only be used in line with its designated purpose and by trained or expert personnel!
- Do not improperly modify or convert the equipment!

3.1 Applications

Welding torch for arc welding machines for GMAW.

3.2 Documents which also apply

3.2.1 Warranty



For more information refer to the "Warranty registration" brochure supplied and our information regarding warranty, maintenance and testing at www.ewm-group.com!

3.2.2 Declaration of Conformity



The labelled machine complies with the following EC directives in terms of its design and construction:

- Low Voltage Directive (LVD)
- Electromagnetic Compatibility Directive (EMC)
- Restriction of Hazardous Substance (RoHS)

In case of unauthorised changes, improper repairs, non-compliance with specified deadlines for "Arc Welding Equipment – Inspection and Testing during Operation", and/or prohibited modifications which have not been explicitly authorised by EWM, this declaration shall be voided. An original document of the specific declaration of conformity is included with every product.

3.2.3 Service documents (spare parts)

WARNING



Do not carry out any unauthorised repairs or modifications!

To avoid injury and equipment damage, the unit must only be repaired or modified by specialist, skilled persons!

The warranty becomes null and void in the event of unauthorised interference.

- Appoint only skilled persons for repair work (trained service personnel)!

Spare parts can be obtained from the relevant authorised dealer.

4 Product description – quick reference

4.1 Welding torch

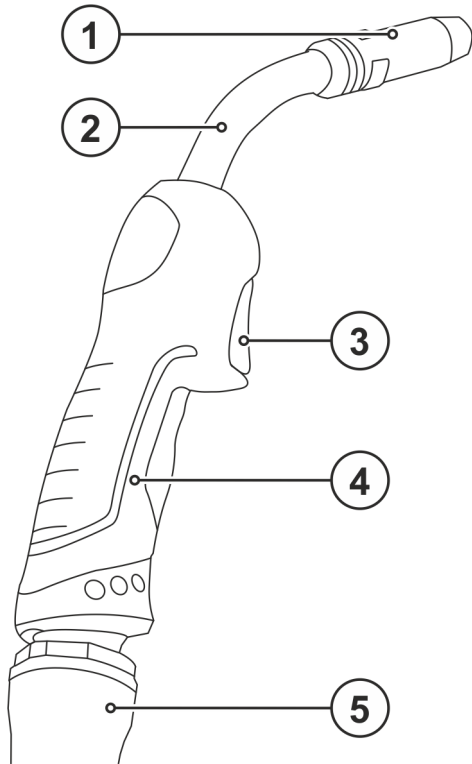


Figure 4-1

Item	Symbol	Description
1		Gas nozzle
2		Torch neck 45°
3		Torch trigger
4		Grip plate
5		Hose package

4.2 UM 15 G , UM 24 G, UM 25 G, UM 36 G

4.2.1 Euro central connection

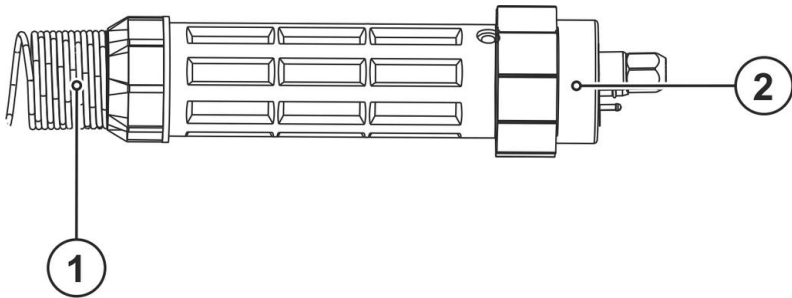



Figure 4-2

Item	Symbol	Description
1		Anti-kink spring
2		Euro central connection Welding current, shielding gas and torch trigger included

4.3 UM 240 W, UM 401 W, UM 501 W

4.3.1 Euro central connection

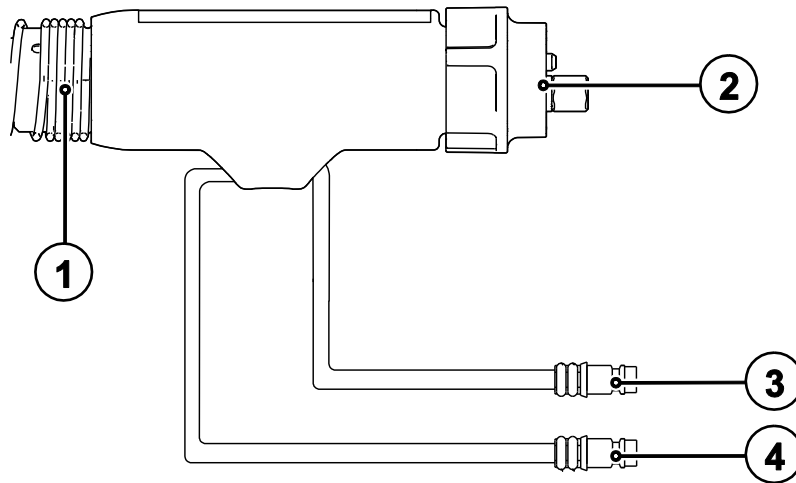



Figure 4-3

Item	Symbol	Description
1		Anti-kink spring
2		Euro central connection Welding current, shielding gas and torch trigger included
3		Quick connect coupling, blue (coolant supply)
4		Quick connect coupling, red (coolant return)

5 Design and function

5.1 General

WARNING



Risk of injury from electric shock!

Contact with live parts, e.g. welding current sockets, is potentially fatal!

- Follow safety instructions on the opening pages of the operating instructions.
- Commissioning may only be carried out by persons who have the relevant expertise of working with arc welding machines!
- Connection and welding leads (e.g. electrode holder, welding torch, workpiece lead, interfaces) may only be connected when the machine is switched off!

CAUTION



Risk of injury due to moving parts!

The wire feeders are equipped with moving parts, which can trap hands, hair, clothing or tools and thus injure persons!

- Do not reach into rotating or moving parts or drive components!
- Keep casing covers or protective caps closed during operation!



Risk of injury due to welding wire escaping in an unpredictable manner!

Welding wire can be conveyed at very high speeds and, if conveyed incorrectly, may escape in an uncontrolled manner and injure persons!

- Before mains connection, set up the complete wire guide system from the wire spool to the welding torch!
- Check wire guide at regular intervals!
- Keep all casing covers or protective caps closed during operation!



Accessory components and the power source itself can be damaged by incorrect connection!

- **Only insert and lock accessory components into the relevant connection socket when the machine is switched off.**
- **Comprehensive descriptions can be found in the operating instructions for the relevant accessory components.**
- **Accessory components are detected automatically after the power source is switched on.**



Protective dust caps protect the connection sockets and therefore the machine against dirt and damage.

- **The protective dust cap must be fitted if there is no accessory component being operated on that connection.**
- **The cap must be replaced if faulty or if lost!**



Read and observe the documentation to all system and accessory components!

5.1.1 Welding torch cooling system



Insufficient frost protection in the welding torch coolant!

Depending on the ambient conditions, different liquids are used for cooling the welding torch > see 5.1.1.1 chapter.

Coolants with frost protection (KF 37E or KF 23E) must be checked regularly to ensure that the frost protection is adequate to prevent damage to the machine or the accessory components.

- The coolant must be checked for adequate frost protection with the TYP 1 frost protection tester.
- Replace coolant as necessary if frost protection is inadequate!



Coolant mixtures!

Mixtures with other liquids or the use of unsuitable coolants result in material damage and renders the manufacturer's warranty void!

- Only use the coolant described in this manual (overview of coolants).
- Do not mix different coolants.
- When changing the coolant, the entire volume of liquid must be changed.



Dispose of the coolant in accordance with local regulations and the material safety data sheets (German waste code number: 70104).

May not be disposed of in household waste.

Prevent entry into sewers.

Absorb with liquid-binding material (sand, gravel, acid-binding agents, universal binding agents, sawdust).

5.1.1.1 Approved coolants overview

Coolant	Temperature range
KF 23E (Standard)	-10 °C to +40 °C
KF 37E	-20 °C to +10 °C

5.1.1.2 Maximal hose package length

	Pump 3.5 bar	Pump 4.5 bar
Machines with or without separate wire feeder	30 m	60 m
Compact machines with additional intermediate drive (example. miniDrive)	20 m	30 m
Machines with separate wire feeder and additional intermediate drive (example: miniDrive)	20 m	60 m

Data as a rule refer to the entire hose package length

including welding torch. The pump output is shown on the type plate (parameter: Pmax).

Pump 3.5 bar: Pmax = 0.35 MPa (3.5 bar)

Pump 4.5 bar: Pmax = 0.45 MPa (4.5 bar)

5.2 Adjusting the welding machine Euro torch connector



On delivery, the Euro torch connector is fitted with a capillary tube for welding torches with steel liners!

5.2.1 Preparation work on the euro torch connector to connect welding torches with plastic liners

- Push forward the capillary tube on the wire feed side in the direction of the euro torch connector and remove at that point.
- Push on the guide pipe from the euro torch connector.
- Carefully insert the central plug for the welding torch, with the still oversized plastic core, into the euro torch connector and screw together with crown nut.
- Use a special cutter or sharp knife to cut off the plastic core shortly before the wire feed roller, making sure not to pinch it.
- Unfasten and remove the central plug on the welding torch.
- Cleanly remove the burr from the separated end of the plastic core!

5.2.2 Preparation work on the central connector to connect welding torches with spiral guides

- Check that the capillary tube is correctly positioned in relation to the central connector!
- Insert the central plug for the welding torch into the central connector and screw together with crown nut.

5.3 Assemble the wire guide



Use the correct wire guide from spool to molten pool!

The wire guide has to be adjusted to the wire electrode type and diameter in order to achieve good welding results!

- Equip the wire feeder according to wire electrode type and diameter!
- Refer to the manufacturer instructions for the right wire feed unit equipment. Refer to Annex 1 in these operating instructions for the right EWM machine equipment.
- Use a steel liner inside the torch hose package to guide hard, unalloyed wire electrodes (steel)!
- Use a plastic liner inside the torch hose package to guide soft or alloyed wire electrodes!

> see 9 chapter



A steel liner is installed at the connection side, whereas a combined liner is installed at the torch side.

5.3.1 Guide spiral



Insert the grinded end towards the contact tip holder to ensure tight fit with the contact tip.



Always make sure the the hose package is straight when replacing the wire guide.

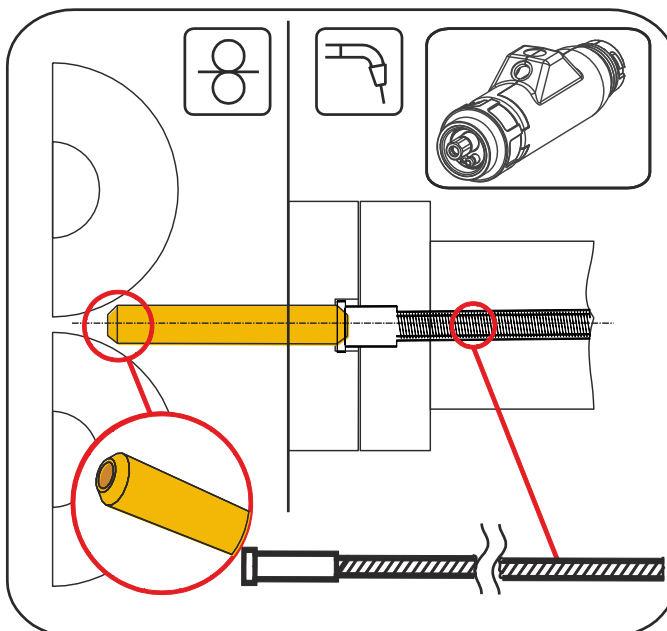


Figure 5-1

1.

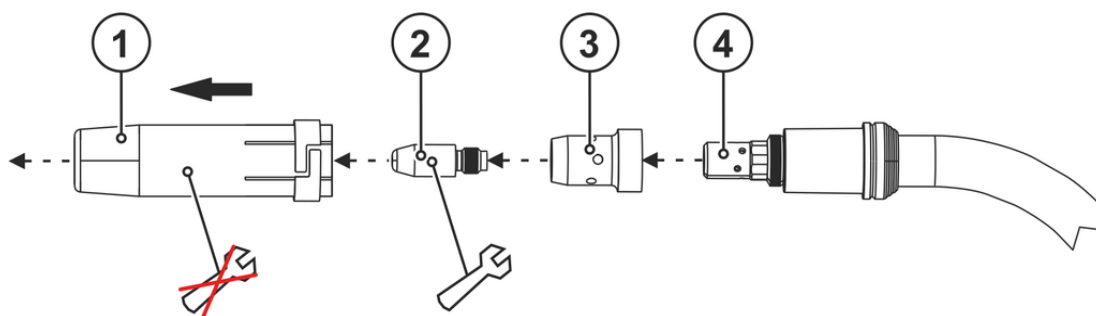


Figure 5-2

2.

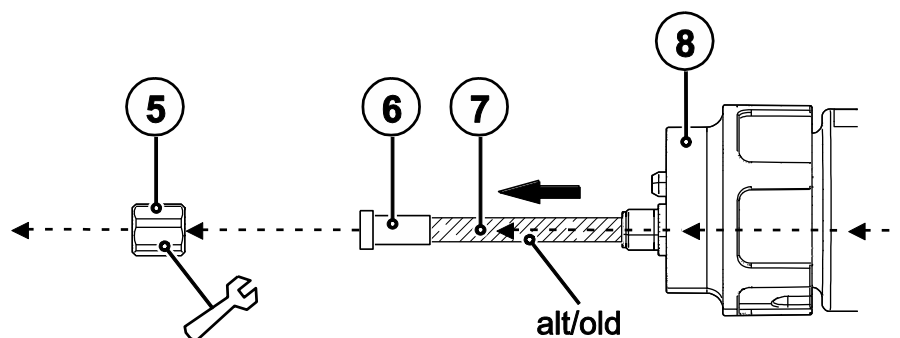


Figure 5-3

3.

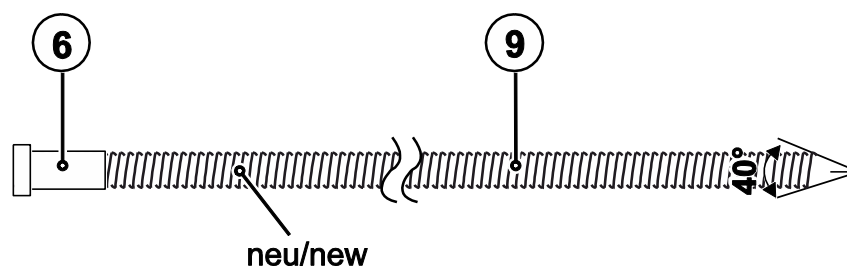


Figure 5-4

4.

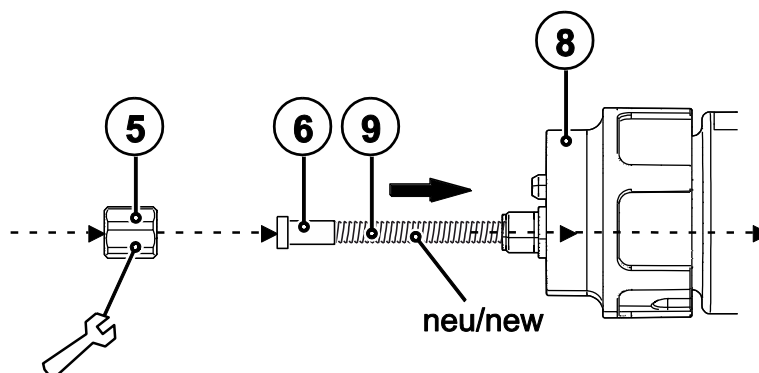


Figure 5-5

5.

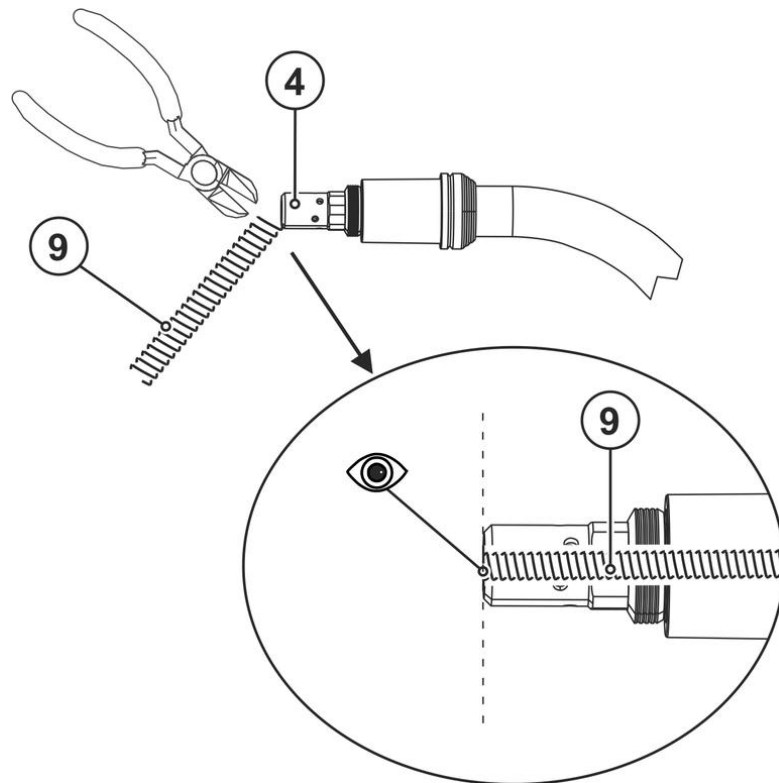


Figure 5-6

6.

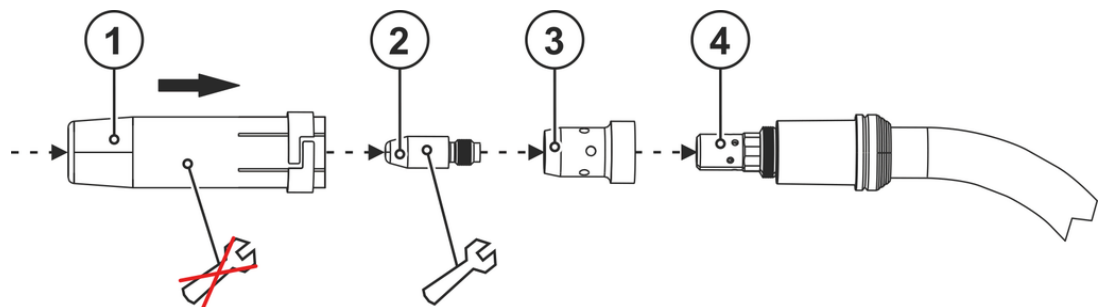


Figure 5-7

7.

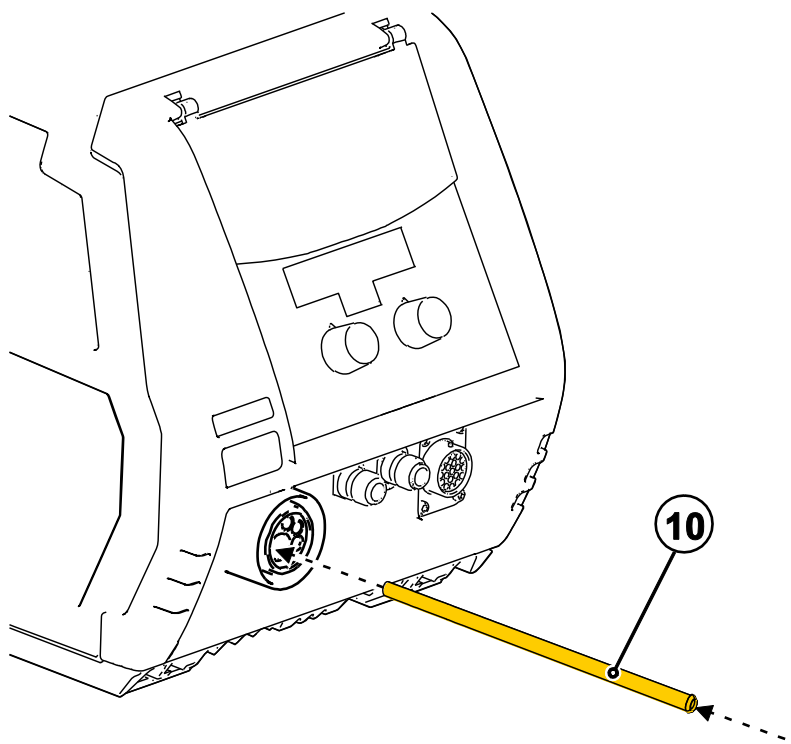



Figure 5-8

Item	Symbol	Description
1		Gas nozzle
2		Contact tip
3		Gas distributor
4		Contact tip holder
5		Crown nut, welding torch central connection (euro)
6		Centring sleeve
7		old spiral guide
8		Euro central connection
9		new spiral guide
10		Capillary tube

3.

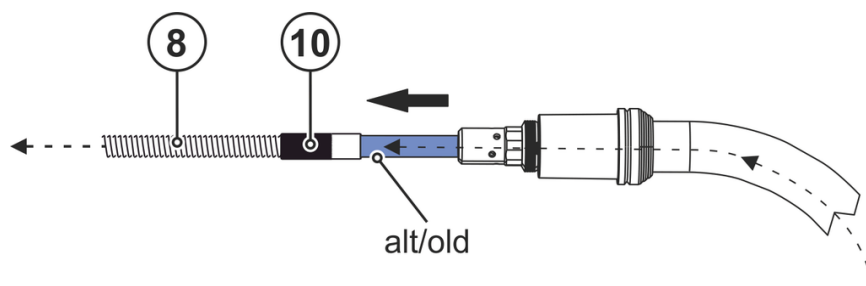


Figure 5-12

4.



Adjust the brass liner.

Material	Length
Aluminium	40 mm
CrNi/high-alloy	200 mm

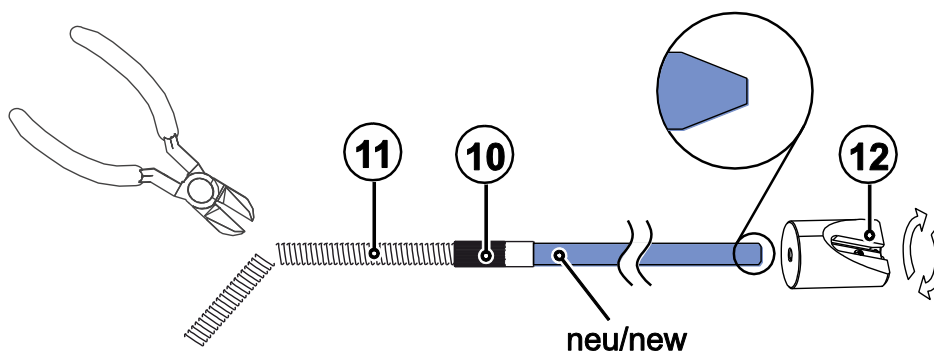


Figure 5-13

5.

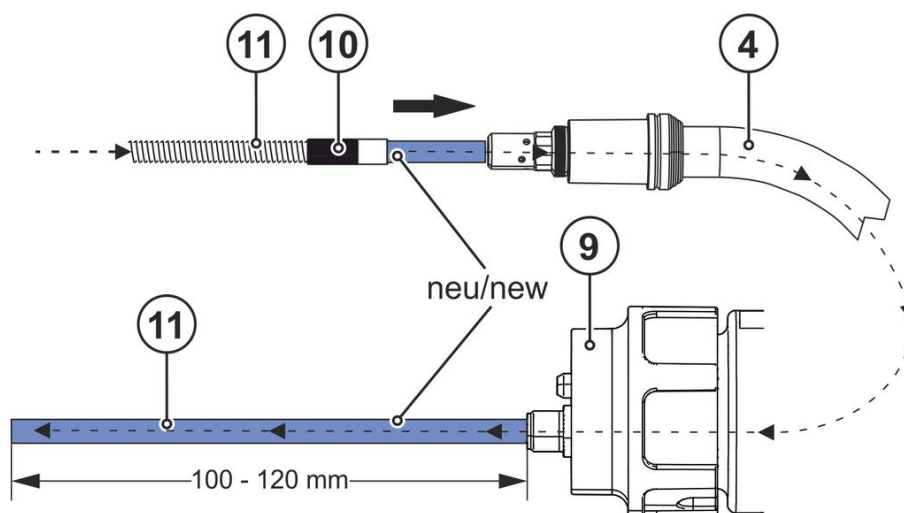


Figure 5-14

6.

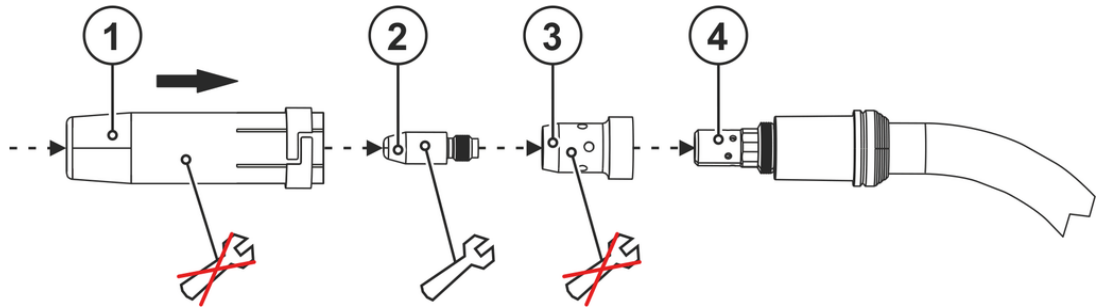


Figure 5-15

7.

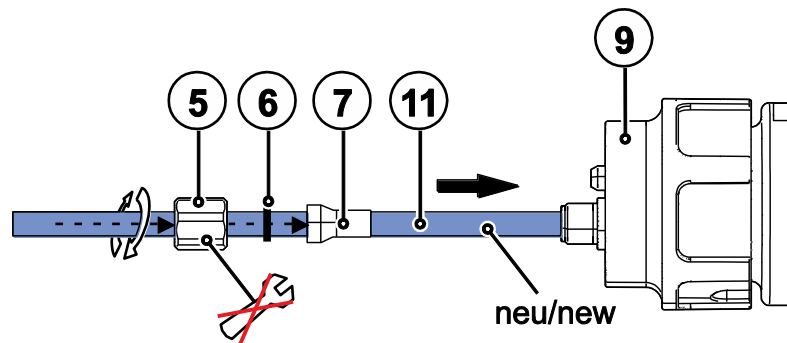


Figure 5-16

8.

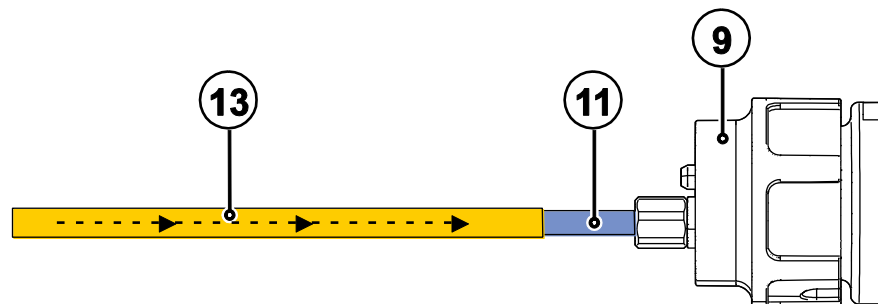



Figure 5-17

Item	Symbol	Description
1		Gas nozzle
2		Contact tip
3		Gas distributor
4		Contact tip holder
5		Crown nut
6		O-ring
7		Collet
8		Combined liner
9		Euro central connection
10		Connecting sleeve
11		New combined liner
12		Liner sharpener
13		Guiding tube for welding torch Euro torch connector

6 Maintenance, care and disposal

CAUTION



Electrical current!

The following work must always be carried out with the power source switched off.

6.1 Maintenance work, intervals

6.1.1 Daily maintenance tasks

- Purge the wire guide from the direction of the Euro torch connector with oil- and condensate-free compressed air or shielding gas.
- Check that coolant connections are tight.
- Check that the welding torch, and where applicable the power source cooling, are functioning correctly.
- Check the coolant level.
- Check torch, hose package and power connections for exterior damage and replace or have repaired by specialist staff as necessary!
- Check the wearing parts in the torch.

6.1.2 Monthly maintenance tasks

- Check the coolant container for sludge deposits and check the coolant for cloudiness. Clean the coolant container if contaminated, and change the coolant.
- If the coolant is dirty, rinse through the welding torch alternately several times with fresh coolant using the coolant return and supply.
- Check that all connections and wearing parts are hand-tight and tighten if necessary.
- Check and clean the welding torch. Deposits in the torch can cause short circuits and have a negative impact on the welding result, ultimately causing damage to the torch.
- Check the wire guide.
- Check that all screw and plug connections and replaceable parts are secured correctly, tighten if necessary.

6.2 Maintenance work



Electric current!

Repairs may only be carried out by authorised specialist staff!

- **Do not remove the torch from the hose package!**
- **Never clamp the torch body in a vice or similar, as this can cause the torch to be irreparably destroyed!**
- **If damage occurs to the torch or to the hose package which cannot be corrected as part of the maintenance work, the entire torch must be returned to the manufacturer**

6.3 Disposing of equipment



Proper disposal!

The machine contains valuable raw materials, which should be recycled, and electronic components, which must be disposed of.

- **Do not dispose of in household waste!**
- **Observe the local regulations regarding disposal!**



6.4 Disposing of equipment



Proper disposal!

The machine contains valuable raw materials, which should be recycled, and electronic components, which must be disposed of.

- ***Do not dispose of in household waste!***
- ***Observe the local regulations regarding disposal!***
- According to European provisions (Directive 2012/19/EU on Waste of Electrical and Electronic Equipment), used electric and electronic equipment may no longer be placed in unsorted municipal waste. It must be collected separately. The symbol depicting a waste container on wheels indicates that the equipment must be collected separately.
This machine has to be disposed of, or recycled, in accordance with the waste separation systems in use.
- According to German law (law governing the distribution, taking back and environmentally correct disposal of electric and electronic equipment (ElektroG)), used machines are to be placed in a collection system separate from unsorted municipal waste. The public waste management utilities (communities) have created collection points at which used equipment from private households can be disposed of free of charge.
- Information about returning used equipment or about collections can be obtained from the respective municipal administration office.
- In addition to this, returns are also possible throughout Europe via EWM sales partners.



6.5 Meeting the requirements of RoHS

We, EWM AG in Mündersbach, Germany, hereby confirm that all products which we supply to you and that are subject to the RoHS directive comply with RoHS requirements (also see applicable EC directives on the Declaration of Conformity on your machine).

7 Rectifying faults

All products are subject to rigorous production checks and final checks. If, despite this, something fails to work at any time, please check the product using the following flowchart. If none of the fault rectification procedures described leads to the correct functioning of the product, please inform your authorised dealer.

7.1 Checklist for rectifying faults



The correct machine equipment for the material and process gas in use is a fundamental requirement for perfect operation!

Legend	Symbol	Description
	↗	Fault/Cause
	✕	Remedy

Welding torch overheated

- ✕ Check coolant flow rate
- ↗ Insufficient coolant flow
 - ✕ Check coolant level and refill if necessary
 - ✕ Eliminate kinks in conduit system (hose packages)
 - ✕ Completely unroll the hose package and the torch hose package
 - ✕ Vent coolant circuit > see 7.2 chapter
- ↗ Loose welding current connections
 - ✕ Tighten power connections on the torch and/or on the workpiece
 - ✕ Screw contact tip holder and gas nozzle tightly into place correctly
 - ✕ Tighten contact tip correctly
- ↗ Overload
 - ✕ Check and correct welding current setting
 - ✕ Use a more powerful welding torch

Functional error with the welding torch operating elements

- ↗ Connection problems
 - ✕ Make control lead connections and check that they are fitted correctly.

Wire feed problems

- ↗ Unsuitable or worn welding torch equipment
 - ✕ Adjust contact tip to wire diameter and -material and replace if necessary
 - ✕ Adjust wire guide to material in use, blow through and replace if necessary
- ↗ Kinked hose packages
 - ✕ Extend and lay out the torch hose package
- ↗ Incompatible parameter settings
 - ✕ Check settings and correct if necessary

Unstable arc

- ↗ Unsuitable or worn welding torch equipment
 - ✕ Adjust contact tip to wire diameter and -material and replace if necessary
 - ✕ Adjust wire guide to material in use, blow through and replace if necessary
- ↗ Incompatible parameter settings
 - ✕ Check settings and correct if necessary

Pore formation

- ✓ Inadequate or missing gas shielding
 - ✗ Check shielding gas setting and replace shielding gas cylinder if necessary
 - ✗ Shield welding site with protective screens (draughts affect the welding result)
- ✓ Unsuitable or worn welding torch equipment
 - ✗ Check size of gas nozzle and replace if necessary
- ✓ Condensation (hydrogen) in the gas tube
 - ✗ Purge hose package with gas or replace
- ✓ Splashes in the gas nozzle
- ✓ Gas distributor out of order or missing

7.2 Vent coolant circuit



To vent the cooling system always use the blue coolant connection, which is located as deep as possible inside the system (close to the coolant tank)!

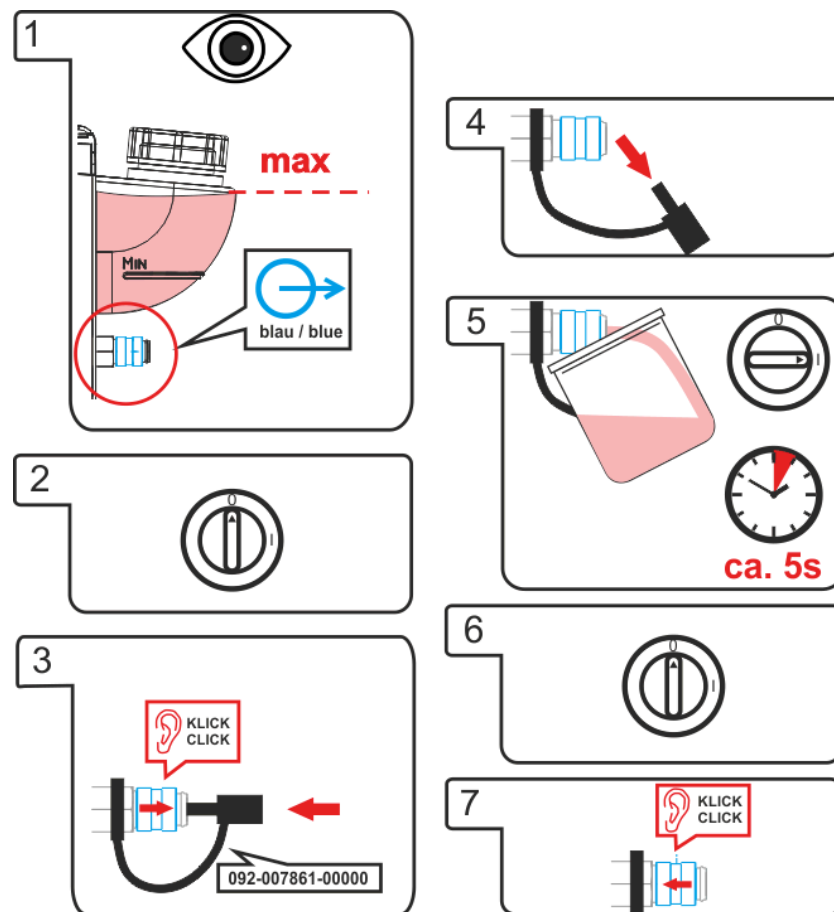


Figure 7-1



Complete the following steps to vent the welding torch:

- **Connect the welding torch to the cooling unit**
- **Switch on the welding machine**
- **Tap the torch trigger**

Venting the welding torch starts and lasts for approx. 5 to 6 minutes.

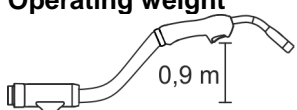
8 Technical data

8.1 UM 15 G , UM 24 G, UM 25 G, UM 36 G

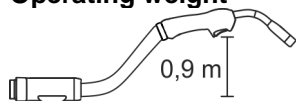


Performance specifications and guarantee only in connection with original spare and replacement parts!

Type	UM 15 G EZA	UM 24 G EZA	UM 25 G EZA	UM 36 G EZA
Welding torch polarity	Usually positive			
Guide type	Manually operated			
Voltage type	DC			
Shielding gas	CO ₂ or mixed gas M21 according to BS EN ISO 14175			
Duty cycle	60%	60%	60%	60%
Maximum welding current M21	150 A	220 A	200 A	270 A
Maximum welding current CO ₂	180 A	250 A	230 A	300 A
Microswitch switching voltage	42 V			
Microswitch switching current	10 mA			
Wire types	Standard round wires			
Wire diameter	0.6–1.0 mm	0.6–1.2 mm		0.8–1.4 mm
Ambient temperature	–25 °C to + 55 °C			
Voltage measurement, manual operation	113 V (peak value)			
Protection classification of the machine connections (EN 60529)	IP3X			
Gas flow	10 to 18 l/min			10 to 20 l/min
Hose package length	3 m/4 m/5 m			
Connection	Euro torch connector			
Safety identification	CE			
Harmonised standards used	IEC 60974-7			
Operating weight	0.64 kg	0.95 kg	0.90 kg	1.34 kg



0,9 m

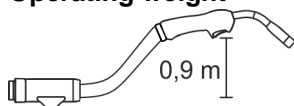


8.2 UM 240 W, UM 401 W, UM 501 W



Performance specifications and guarantee only in connection with original spare and replacement parts!

Type	UM 240 W EZA	UM 401 W EZA	UM 501 W EZA
Welding torch polarity	Usually positive		
Guide type	Manually operated		
Voltage type	DC		
Shielding gas	CO ₂ or mixed gas M21 according to BS EN ISO 14175		
Duty cycle	100 %		
Maximum welding current, M21	270 A	350 A	450 A
Maximum welding current, CO ₂	300 A	400 A	500 A
Microswitch switching voltage	42 V		
Microswitch switching current	10 mA		
Required cooling capacity	Min. 800 W		
Max. flow temperature	40 °C		
Torch input pressure, coolant	2.5 to 3.5 bar (min.–max.)		
Flow quantity (min.)	1 l/min.		
Wire types	Standard round wires		
Wire diameter	0.6 to 1.2 mm	0.8 to 1.6 mm	0.8 to 1.6 mm
Ambient temperature	–25 °C to +55 °C		
Voltage measurement	113 V (peak value)		
Protection rating for the machine connections (EN 60529)	IP3X		
Gas flow	10 to 20 l/min		
Hose package length	3 m/4 m/5 m		
Connection	Euro torch connector		
Safety identification	CE		
Harmonised standards used	IEC 60974-7		
Operating weight	1.03 kg	1.14 kg	1.18 kg



9 Replaceable parts



The manufacturer's warranty becomes void if non-genuine parts are used!

- Only use system components and options (power sources, welding torches, electrode holders, remote controls, spare parts and replacement parts, etc.) from our range of products!
- Only insert and lock accessory components into the relevant connection socket when the machine is switched off.

9.1 UM 15 G

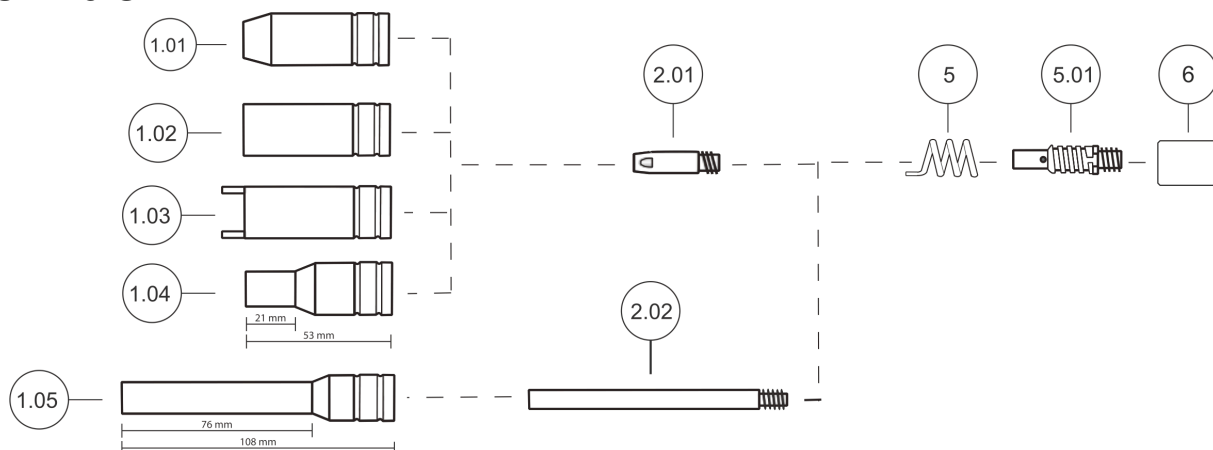


Figure 9-1

Item	Order number	Type	Description
-	394-000469-00000	TTOOL MHS	Centring tool for narrow-gap contact tip
1.01	394-000472-00000	GN Eco Ø=12mm L=53mm UM 15	Gas nozzle, conical
1.01	394-001212-00000	GN Eco Ø=9,5mm L=53mm UM 15	Gas nozzle, highly conical
1.02	394-000211-00000	GN Eco Ø=16mm L=53mm UM 15	Gas nozzle cylindrical
1.03	394-000213-00000	PGD UM15	Spot welding nozzle, plug fitting
1.04	394-002526-00000	SGN 53mm, Ø=10mm	Narrow-gap gas nozzle with cylinder, plug fitting
1.05	394-000212-00000	SGN 108 mm, Ø=10 mm	Narrow-gap gas nozzle with cylinder, plug fitting
2.01	394-001086-00000	CT Eco M6x25 E-Cu Ø=1.0 mm	Contact tip
2.01	394-001087-00000	CT Eco M6x25 E-Cu Ø=0.8mm	Contact tip
2.01	394-003654-00000	CT Eco M6x25 E-Cu Ø=0.6mm	Contact tip
2.02	394-000707-00000	CT M6-L83-AD6 0.8-1.0	Narrow-gap contact tip
5	094-023061-00000	CTH UM 15	Retaining spring
5.01	094-023060-00000	CTH UM 15	Contact tip holder
6	094-023552-00000	18 mm x 15 mm	Stop ring

9.2 UM 24 G

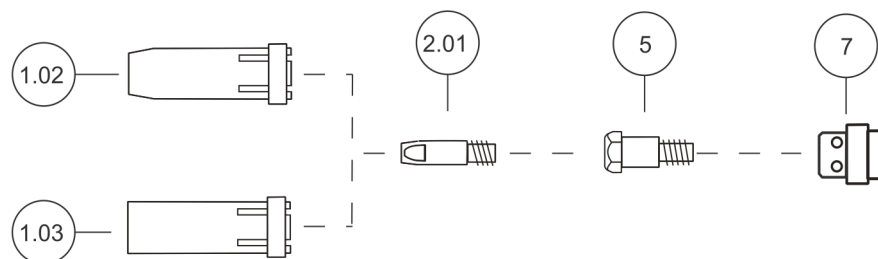


Figure 9-2

Item	Order number	Type	Description
1.02	394-000361-00000	GN Eco Ø=12,5mm L=63,5mm UM 24/240	Gas nozzle, conical
1.02	394-001234-00000	GN Eco Ø=10mm L=63,5mm UM 24/240	Gas nozzle, highly conical
1.03	394-000362-00000	GN Eco Ø=17mm L=63,5mm UM 24/240	Gas nozzle cylindrical
2.01	394-001191-00000	CT Eco M6 E-Cu Ø=0.8mm	Contact tip
2.01	394-001228-00000	CT Eco M6 E-Cu Ø=1.0mm	Contact tip
2.01	394-001229-00000	CT Eco M6 E-Cu Ø=1.2mm	Contact tip
2.01	394-003339-00000	CT Eco M6x28 CuCrZr Ø=1mm	Contact tip
2.01	394-003655-00000	CT Eco M6 E-Cu Ø=0.6mm	Contact tip
2.01	394-005224-00000	CT Eco M6x28 CuCrZr Ø=1.2mm	Contact tip
2.01	394-005407-00000	CT Eco M6x28 CuCrZr Ø=0.8mm	Contact tip
2.01	394-016105-00000	CT Eco M6x28 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016107-00000	CT Eco M6x28 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016108-00000	CT Eco M6x28 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
5	394-000363-00000	CTH Eco M6x26mm UM 24/240	Contact tip holder
7	394-000360-00000	GD Eco L=20 mm, UM 24/240	Gas diffuser

9.3 UM 25 G

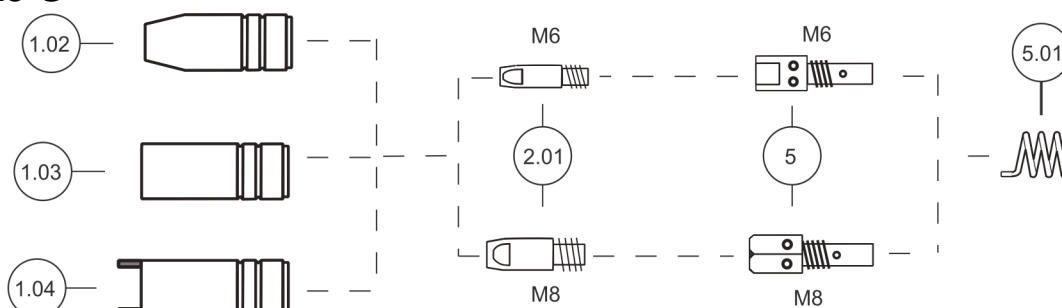


Figure 9-3

Item	Order number	Type	Description
1.02	394-000369-00000	GN Eco Ø=15mm L=57mm UM 25	Gas nozzle, conical
1.02	394-001647-00000	GN Eco Ø=11,5mm L=57mm UM 25	Gas nozzle, highly conical

Item	Order number	Type	Description
1.03	394-000371-00000	GN Eco Ø=18mm L=57mm UM 25	Gas nozzle cylindrical
1.04	394-000373-00000	PGD UM 25	Spot welding nozzle
2.01	394-000447-00000	CT Eco M8x30 E-Cu Ø=0.8mm	Contact tip
2.01	394-000450-00000	CT Eco M8x30 CuCrZr Ø=1mm	Contact tip
2.01	394-000452-00000	CT Eco M8x30 CuCrZr Ø=1.2mm	Contact tip
2.01	394-000941-00000	CT Eco M8x30 E-Cu Ø=1mm	Contact tip
2.01	394-000942-00000	CT Eco M8x30 E-Cu Ø=1.2mm	Contact tip
2.01	394-001191-00000	CT Eco M6 E-Cu Ø=0.8mm	Contact tip
2.01	394-001228-00000	CT Eco M6 E-Cu Ø=1.0mm	Contact tip
2.01	394-001229-00000	CT Eco M6 E-Cu Ø=1.2mm	Contact tip
2.01	394-003339-00000	CT Eco M6x28 CuCrZr Ø=1mm	Contact tip
2.01	394-003655-00000	CT Eco M6 E-Cu Ø=0.6mm	Contact tip
2.01	394-005224-00000	CT Eco M6x28 CuCrZr Ø=1.2mm	Contact tip
2.01	394-005407-00000	CT Eco M6x28 CuCrZr Ø=0.8mm	Contact tip
2.01	394-014024-00000	CT Eco M8x30 CuCrZr Ø=0.8mm	Contact tip
2.01	394-016105-00000	CT Eco M6x28 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016107-00000	CT Eco M6x28 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016108-00000	CT Eco M6x28 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
2.01	394-016115-00000	CT Eco M8x30 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016117-00000	CT Eco M8x30 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016118-00000	CT Eco M8x30 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
5	394-000375-00000	CTH M8x35mm UM 25	Contact tip holder
5	394-001823-00000	CTH Eco M6x35mm UM 25	Contact tip holder
5.01	394-003656-00000	HF UM 25	Retaining spring

9.4 UM 36 G

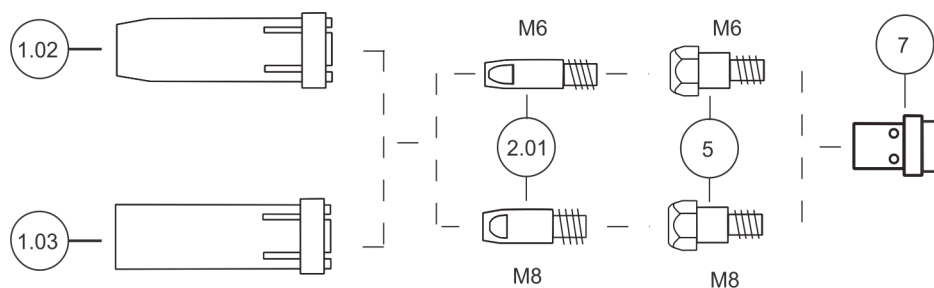


Figure 9-4

Item	Order number	Type	Description
1.02	394-000431-00000	GN Eco Ø=16mm L=84mm UM 36	Gas nozzle, conical
1.02	394-001241-00000	GN Eco Ø=12mm L=84mm UM 36	Gas nozzle, highly conical

Item	Order number	Type	Description
1.03	394-000432-00000	GN Eco Ø=19mm L=84mm UM 36	Gas nozzle cylindrical
2.01	394-000447-00000	CT Eco M8x30 E-Cu Ø=0.8mm	Contact tip
2.01	394-000450-00000	CT Eco M8x30 CuCrZr Ø=1mm	Contact tip
2.01	394-000452-00000	CT Eco M8x30 CuCrZr Ø=1.2mm	Contact tip
2.01	394-000455-00000	CT Eco M8x30 CuCrZr Ø=1.4mm	Contact tip
2.01	394-000941-00000	CT Eco M8x30 E-Cu Ø=1mm	Contact tip
2.01	394-000942-00000	CT Eco M8x30 E-Cu Ø=1.2mm	Contact tip
2.01	394-001191-00000	CT Eco M6 E-Cu Ø=0.8mm	Contact tip
2.01	394-001228-00000	CT Eco M6 E-Cu Ø=1.0mm	Contact tip
2.01	394-001229-00000	CT Eco M6 E-Cu Ø=1.2mm	Contact tip
2.01	394-003339-00000	CT Eco M6x28 CuCrZr Ø=1mm	Contact tip
2.01	394-003655-00000	CT Eco M6 E-Cu Ø=0.6mm	Contact tip
2.01	394-005224-00000	CT Eco M6x28 CuCrZr Ø=1.2mm	Contact tip
2.01	394-005407-00000	CT Eco M6x28 CuCrZr Ø=0.8mm	Contact tip
2.01	394-014024-00000	CT Eco M8x30 CuCrZr Ø=0.8mm	Contact tip
2.01	394-016105-00000	CT Eco M6x28 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016107-00000	CT Eco M6x28 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016108-00000	CT Eco M6x28 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
2.01	394-016115-00000	CT Eco M8x30 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016117-00000	CT Eco M8x30 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016118-00000	CT Eco M8x30 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
5	394-000433-00000	CTH Eco M6x28mm UM 36	Contact tip holder
5	394-000434-00000	CTH Eco M8x28mm UM 36	Contact tip holder
7	394-012572-00000	GD L=32 mm UM 36	Gas diffuser

9.5 UM 240 W

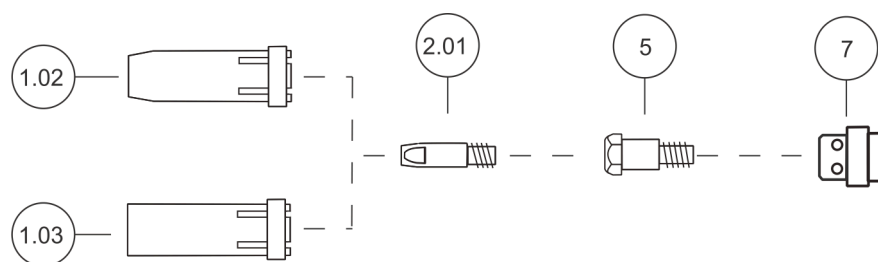


Figure 9-5

Item	Order number	Type	Description
1.02	394-000361-00000	GN Eco Ø=12,5mm L=63,5mm UM 24/240	Gas nozzle, conical

Item	Order number	Type	Description
1.02	394-001234-00000	GN Eco Ø=10mm L=63,5mm UM 24/240	Gas nozzle, highly conical
1.03	394-000362-00000	GN Eco Ø=17mm L=63,5mm UM 24/240	Gas nozzle cylindrical
2.01	394-001191-00000	CT Eco M6 E-Cu Ø=0.8mm	Contact tip
2.01	394-001228-00000	CT Eco M6 E-Cu Ø=1.0mm	Contact tip
2.01	394-001229-00000	CT Eco M6 E-Cu Ø=1.2mm	Contact tip
2.01	394-003339-00000	CT Eco M6x28 CuCrZr Ø=1mm	Contact tip
2.01	394-003655-00000	CT Eco M6 E-Cu Ø=0.6mm	Contact tip
2.01	394-005224-00000	CT Eco M6x28 CuCrZr Ø=1.2mm	Contact tip
2.01	394-005407-00000	CT Eco M6x28 CuCrZr Ø=0.8mm	Contact tip
2.01	394-016105-00000	CT Eco M6x28 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016107-00000	CT Eco M6x28 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016108-00000	CT Eco M6x28 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
5	394-000363-00000	CTH Eco M6x26mm UM 24/240	Contact tip holder
7	394-000360-00000	GD Eco L=20 mm, UM 24/240	Gas diffuser

9.6 UM 401 W / UM 501 W

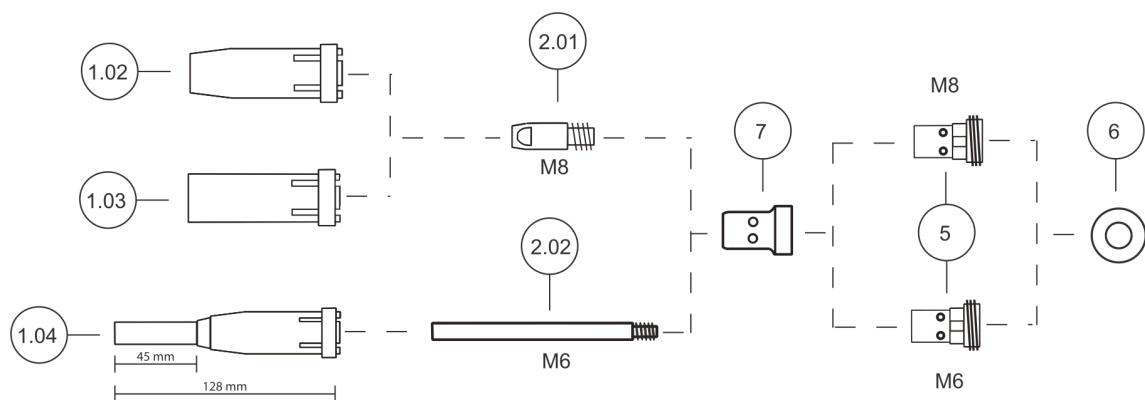


Figure 9-6

Item	Order number	Type	Description
-	394-000469-00000	TTOOL MHS	Centring tool for narrow-gap contact tip
1.02	394-000435-00000	GN Eco Ø=16mm L=76mm UM 401/501	Gas nozzle, conical
1.02	394-000436-00000	GN Eco Ø=14mm L=76mm UM 401/501	Gas nozzle, highly conical
1.03	394-000437-00000	GN Eco Ø=19mm L=76mm UM 401/501	Gas nozzle cylindrical
1.04	394-000711-00000	SGN 128 mm, Ø=11 mm	Narrow-gap gas nozzle
2.01	394-000447-00000	CT Eco M8x30 E-Cu Ø=0.8mm	Contact tip
2.01	394-000450-00000	CT Eco M8x30 CuCrZr Ø=1mm	Contact tip
2.01	394-000452-00000	CT Eco M8x30 CuCrZr Ø=1.2mm	Contact tip
2.01	394-000456-00000	CT Eco M8x30 E-Cu Ø=1.6mm	Contact tip
2.01	394-000458-00000	CT Eco M8x30 CuCrZr Ø=1.6mm	Contact tip

Item	Order number	Type	Description
2.01	394-000941-00000	CT Eco M8x30 E-Cu Ø=1mm	Contact tip
2.01	394-000942-00000	CT Eco M8x30 E-Cu Ø=1.2mm	Contact tip
2.01	394-014024-00000	CT Eco M8x30 CuCrZr Ø=0.8mm	Contact tip
2.01	394-016115-00000	CT Eco M8x30 E-Cu Ø=0,8mm Alu	Contact tip, aluminium welding
2.01	394-016117-00000	CT Eco M8x30 E-Cu Ø=1,0mm Alu	Contact tip, aluminium welding
2.01	394-016118-00000	CT Eco M8x30 E-Cu Ø=1,2mm Alu	Contact tip, aluminium welding
2.01	394-016120-00000	CT Eco M8x30 E-Cu Ø=1,6mm Alu	Contact tip, aluminium welding
2.02	394-000707-00000	CT M6-L83-AD6 0.8-1.0	Narrow-gap contact tip
2.02	394-003059-00000	CT M6 L83 1.2 E-Cu	Narrow-gap contact tip
5	394-000438-00000	CTH Eco M8x25mm UM 401/501	Contact tip holder
5	394-000439-00000	CTH M6x25mm	Contact tip holder
6	394-000761-00000	ISO UM 401/501 Eco	Insulating disk
7	394-000948-00000	GD Eco L=28 mm, UM 401/501	Gas diffuser
7	394-011628-00000	GD Eco Longlife UM 401/501	Gas diffuser, long life

10 Appendix A

10.1 Overview of EWM branches

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