Operating instructions

EN

welding torch

SPOTARC TIG 18 W
SPOTARC TIG 26 G

099-500046-EW501 | Observe additional system documents! | 24.01.2017

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.

Dr. Günter-Henle-Straße 8
56271 Mündersbach
Germany

1 Contents

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.

2.1.1 Explanation of icons

Symbol	Description	Symbol	Description
	Indicates technical aspects which the user must observe.		Activate and release/tap/tip
	Switch off machine		Release
	Switch on machine		Press and keep pressed
			Switch
	Wrong		Turn
	Correct		Numerical value – adjustable
	Menu entry		Signal light lights up in green
	Navigating the menu		Signal light flashes green
	Exit menu		Signal light lights up in red
	Time representation (e.g.: wait 4 s/activate)		Signal light flashes red
	Interruption in the menu display (other setting options possible)		
	Tool not required/do not use		
	Tool required/use		

2.2 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.

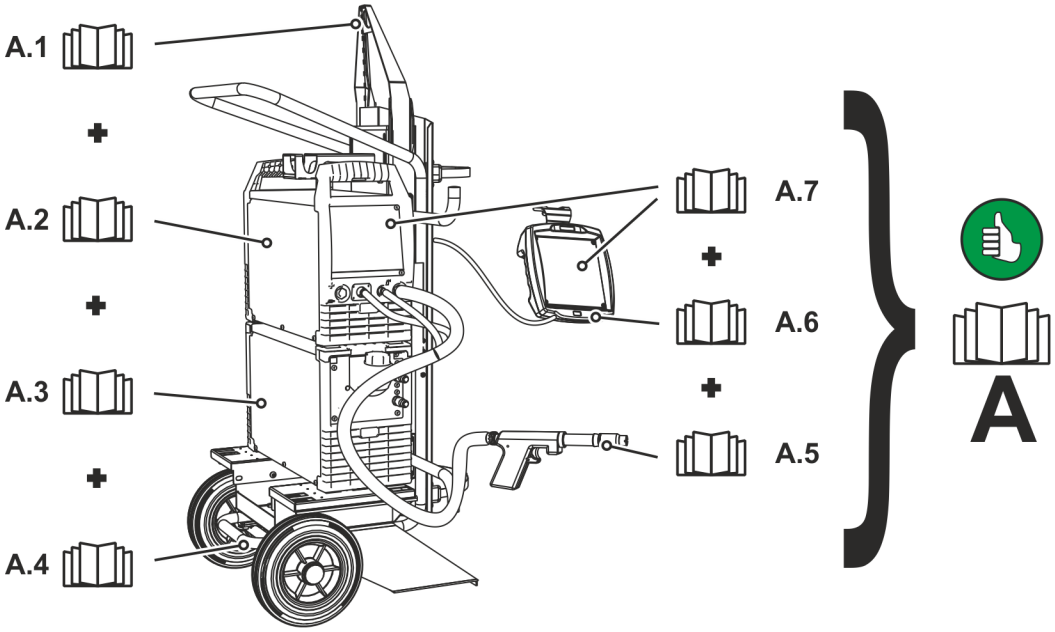

Figure 2-1

Item	Documentation
A.1	Options conversion instructions
A.2	Power source
A.3	Cooling unit, voltage converter, tool box etc.
A.4	Transport cart
A.5	Welding torch
A.6	Remote control
A.7	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

3.1.1 spotArc

Welding torch for TIG welding with arc welding machines.

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 SPOTARC TIG 18/26

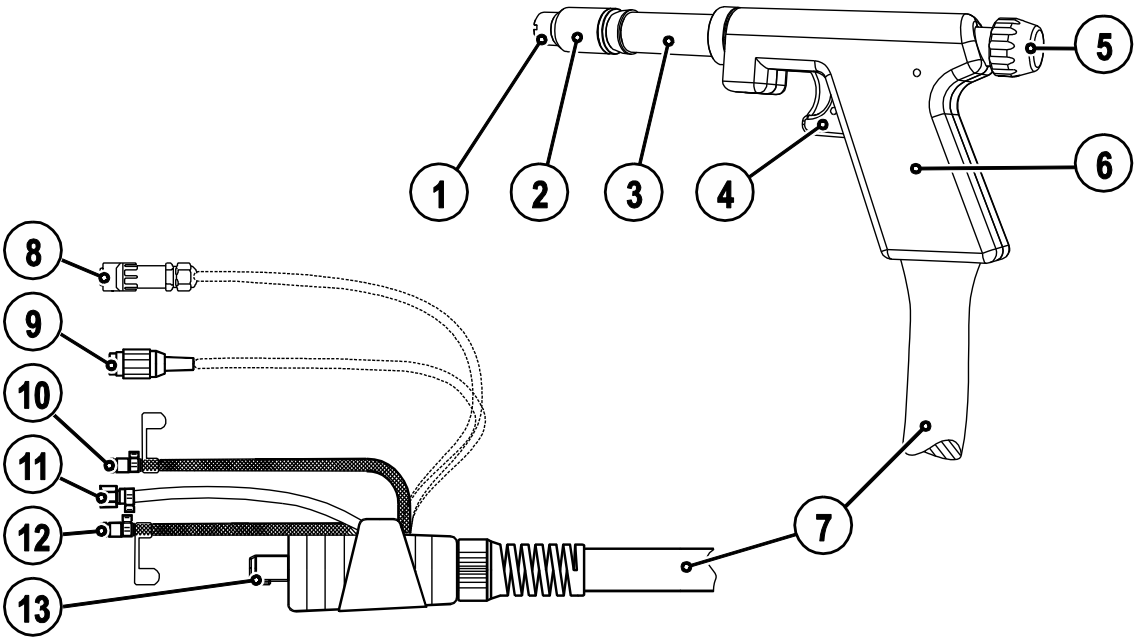

Figure 4-1

Item	Symbol	Description
1		**Spot welding nozzle**
2		**Gas nozzle body**
3		**Welding torch head**
4		**Torch trigger**
5		**Back cap**
6		**Grip plate**
7		**Hose package**
8		**Connector plug, 8-pole** Control lead
9		**Connector plug, 5-pole** Control lead
10		**Quick connect coupling (red)** coolant return
11		**Connecting nipple G¼, shielding gas connection**
12		**Quick connect coupling (blue)** coolant supply
13		**Welding torch decentral connection**

4.1.1 Torch components

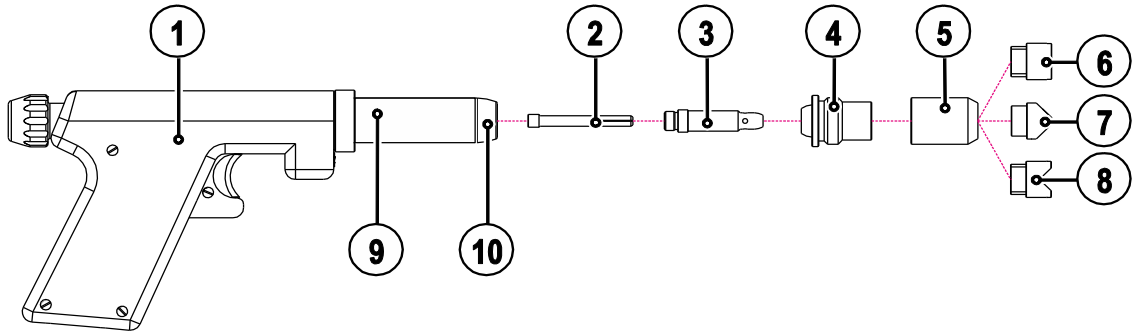

Figure 4-2

Item	Symbol	Description
1		Grip plate
2		Collet
3		Collet casing
4		Gas nozzle
5		Gas nozzle body
6		Spot welding nozzle, flat weld
7		Spot welding nozzle, fillet weld
8		Spot welding nozzle, edge weld
9		Welding torch head
10		Insulation

4.1.2 Setting gauge

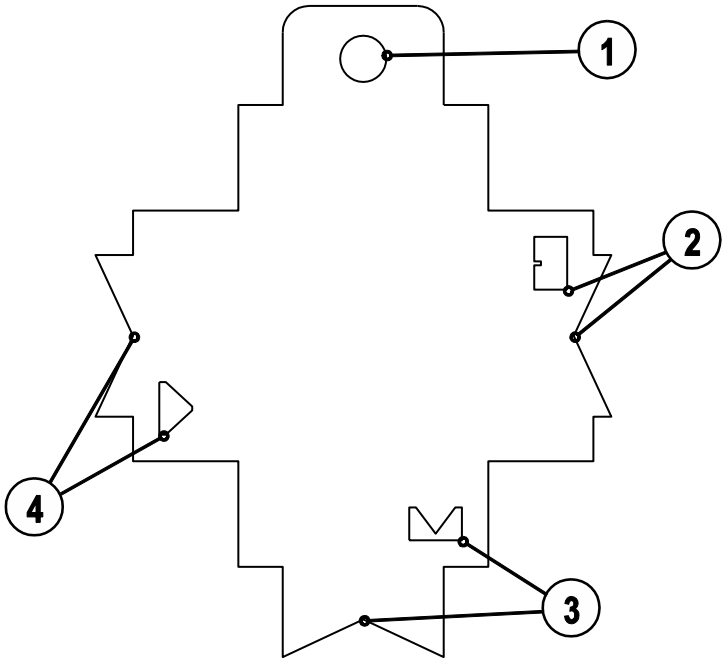

Figure 4-3

Item	Symbol	Description
1		Fixing hole
2		Gauge, flat weld
3		Gauge, edge weld
4		Gauge, fillet weld

5 Design and function

⚠ 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 burning due to incorrect welding current connection!
If the welding current plugs (machine connections) are not locked or if the workpiece connection is contaminated (paint, corrosion), these connections and leads can heat up and cause burns when touched!

- Check welding current connections on a daily basis and lock by turning to the right when necessary.
- Clean workpiece connection thoroughly and secure properly. Do not use structural parts of the workpiece as welding current return lead!

☞ ***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!***

5.1 Transport

⚠ CAUTION

Risk of accidents due to supply lines!
During transport, attached supply lines (mains leads, control cables, etc.) can cause risks, e.g. by causing connected machines to tip over and injure persons!

- Disconnect all supply lines before transport!

5.2 Scope of delivery

The delivery is checked and packaged carefully before dispatch, however it is not possible to exclude the possibility of damage during transit.

Receiving inspection

- Check that the delivery is complete using the delivery note!

In the event of damage to the packaging

- Check the delivery for damage (visual inspection)!

In the event of complaints

If the delivery has been damaged during transport:

- Please contact the last haulier immediately!
- Keep the packaging (for possible checking by the haulier or for the return shipment).

Packaging for returns

If possible, please use the original packaging and the original packaging material. If you have any queries on packaging and protection during transport, please contact your supplier.

5.2.1 Ambient conditions

☞ ***Unusually high quantities of dust, acid, corrosive gases or substances may damage the equipment.***

- ***Avoid high volumes of smoke, vapour, oil vapour and grinding dust!***
- ***Avoid ambient air containing salt (sea air)!***

5.2.1.1 In operation

Temperature range of the ambient air:

- -10 °C to +40 °C

Relative air humidity:

- Up to 50% at 40 °C
- Up to 90% at 20 °C

5.2.1.2 Transport and storage

Storage in an enclosed space, temperature range of the ambient air:

- -25 °C to +55 °C

Relative air humidity

- Up to 90% at 20 °C

5.2.2 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 . 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).

5.2.2.1 Approved coolants overview

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

5.2.2.2 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)

5.3 Setting the position of the spotArc gas nozzle

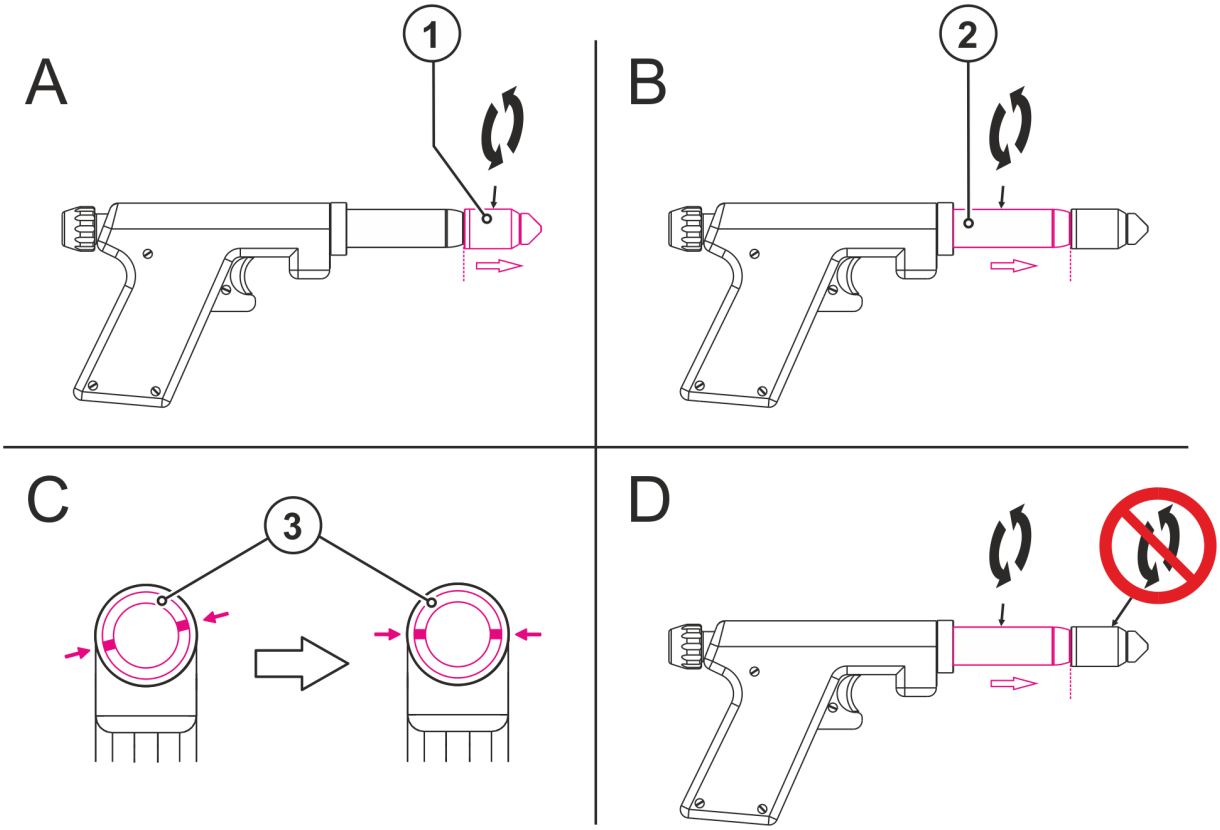

Figure 5-1

Item	Symbol	Description
1		**Gas nozzle body**
2		**Welding torch head**
3		**spotArc gas nozzle**

- Loosen gas nozzle body.
- Loosen torch head.
- Determine position of the spotArc gas nozzle.
- Secure the gas nozzle body and unscrew the torch head (thus locking the gas nozzle body with the torch head).

5.4 Set electrode distance

☞ ***The setting gauge has different gauges on the three sides for the different welding nozzles.***

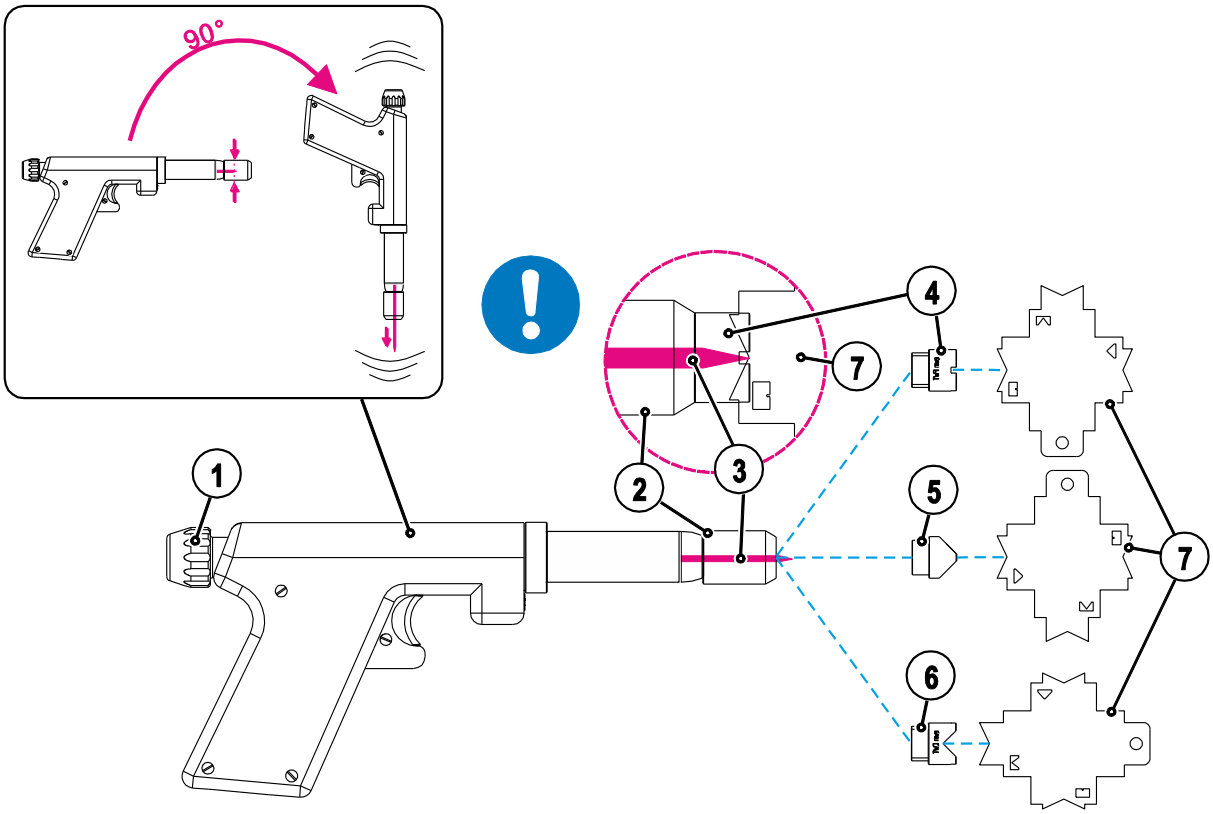

Figure 5-2

Item	Symbol	Description
1		**Back cap**
2		**Gas nozzle body**
3		Tungsten electrode
4		**Spot welding nozzle, flat weld**
5		**Spot welding nozzle, edge weld**
6		**Spot welding nozzle, fillet weld**
7		**Setting gauge**

Use the setting gauge supplied to correctly adjust the distance between electrode tip and welding nozzle.

- Loosen the back cap to check the tungsten electrode mobility.
- Use a spot welding nozzle suitable for the welding task.
- Position the relevant gauge of the setting gauge onto the spot welding nozzle and move the tungsten electrode so that it is flush with the recess of the correct gauge. During the action, the torch should point downwards.
- Secure the tungsten electrode with the back cap.

5.5 spotArc welding

☞ ***The settings for the individual parameters are made on the welding machine. The procedure is described in the operating instructions for the respective welding machine.***

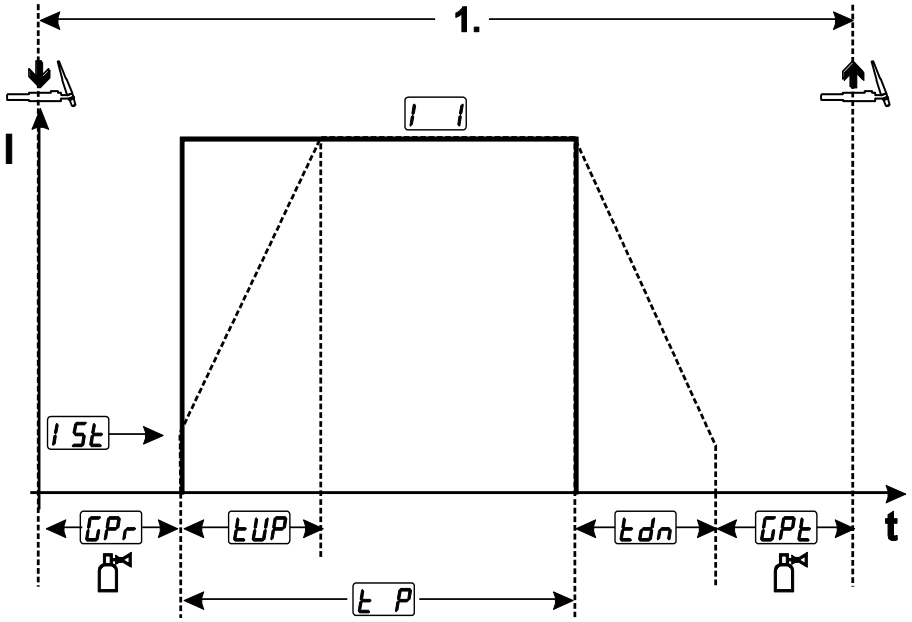

Figure 5-3

Sequence:

- Press and hold torch trigger 1.
- The gas pre-flow time elapses.
- HF ignition pulses jump from the electrode to the workpiece, the arc ignites.
- The welding current flows and immediately assumes the value set for the ignition current I St.
- HF is switched off.
- The welding current increases in the adjusted up-slope time to the main current I 1.

The process ends when the set spotArc.time elapses or by releasing the torch trigger.

When switching on the spotArc function, Automatic pulsing is switched on as well. Any other pulsing variant can be selected as well, or no pulsing at all.

5.6 Setting parameters

Test setup

- **Tungsten electrode:** 3.2 mm (grey – pink)
- **Grounded angle:** 15°
- **Distance:** see setting gauge
- **Gas:** Argon

5.6.1 Stainless steel

Weld seam shape	Plate thickness	Up-slope	Pulse type/welding type	activArc	Spot time	Welding current	Down-slope
Butt weld 	1,0 mm	0,0 s	Automated pulsing	Active	0,5 s	70 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,5 s	140 A	0,3 s
	2,0 mm	0,0 s	Automated pulsing	Active	0,5 s	185 A	0,3 s
	3,0 mm	0,0 s	Automated pulsing	Active	0,5 s	225 A	0,3 s
	4,0 mm	0,0 s	Automated pulsing	Active	0,5 s	250 A	0,3 s
Fillet weld 	1,0 mm	0,0 s	Automated pulsing	Active	0,5 s	150 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,5 s	200 A	0,3 s
	2,0 mm	0,0 s	Automated pulsing	Active	0,5 s	250 A	0,3 s
	3,0 mm	0,0 s	Automated pulsing	Active	0,5 s	270 A	0,3 s
	4,0 mm	0,0 s	Automated pulsing	Active	0,5 s	300 A	0,3 s
Lap weld 	1,0 mm	0,0 s	Automated pulsing	Active	1,3 s	170 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,9 s	300 A	0,3 s
	2,0 mm	0,0 s	Pulsing off	Active	0,2 s	430 A	0,5 s
	1,5 mm	0,0 s	Pulsing off	Active	0,2 s	390 A	0,3 s
	1,0 mm	0,0 s	Pulsing off	Active	0,2 s	290 A	0,3 s
External edge weld 	1,0 mm	0,0 s	Automated pulsing	Active	0,5 s	70 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,5 s	115 A	0,3 s
	2,0 mm	0,0 s	Automated pulsing	Active	0,5 s	160 A	0,3 s
	3,0 mm	0,0 s	Automated pulsing	Active	0,5 s	215 A	0,3 s
	4,0 mm	0,0 s	Automated pulsing	Active	0,5 s	265 A	0,3 s

☞ ***Parameters highlighted in grey can be used with a Tetrix 451 DC or AC/DC machine only.***

5.6.1.1 Steel

Weld seam shape	Plate thickness	Up-slope	Pulse type/welding type	activArc	Spot time	Welding current	Down-slope
Butt weld	0,8 mm	0,0 s	Automated pulsing	Active	0,5 s	80 A	0,3 s
	1,0 mm	0,0 s	Automated pulsing	Active	0,5 s	100 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,5 s	140 A	0,3 s
	2,0 mm	0,0 s	Automated pulsing	Active	0,5 s	180 A	0,3 s
	3,0 mm	0,0 s	Automated pulsing	Active	0,5 s	220 A	0,3 s
	4,0 mm	0,0 s	Automated pulsing	Active	0,5 s	260 A	0,3 s
Fillet weld 	0,8 mm	0,0 s	Automated pulsing	Active	0,7 s	155 A	0,3 s
	1,0 mm	0,0 s	Automated pulsing	Active	0,7 s	175 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,7 s	200 A	0,3 s
	2,0 mm	0,0 s	Automated pulsing	Active	0,7 s	240 A	0,3 s
	3,0 mm	0,0 s	Automated pulsing	Active	0,7 s	270 A	0,3 s
	4,0 mm	0,0 s	Automated pulsing	Active	0,7 s	300 A	0,3 s
Lap weld 	0,8 mm	0,0 s	Automated pulsing	Active	1,0 s	180 A	0,3 s
	1,0 mm	0,0 s	Automated pulsing	Active	1,3 s	200 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	1,3 s	300 A	0,3 s
	2,0 mm	0,0 s	Pulsing off	Active	0,25 s	440 A	0,7 s
	1,5 mm	0,0 s	Pulsing off	Active	0,25 s	370 A	0,3 s
	1,0 mm	0,0 s	Pulsing off	Active	0,11 s	320 A	0,3 s
External edge weld 	0,8 mm	0,0 s	Automated pulsing	Active	0,7 s	80 A	0,3 s
	1,0 mm	0,0 s	Automated pulsing	Active	0,7 s	110 A	0,3 s
	1,5 mm	0,0 s	Automated pulsing	Active	0,7 s	150 A	0,3 s
	2,0 mm	0,0 s	Automated pulsing	Active	0,7 s	180 A	0,3 s
	3,0 mm	0,0 s	Automated pulsing	Active	0,7 s	210 A	0,3 s
	4,0 mm	0,0 s	Automated pulsing	Active	0,7 s	240 A	0,3 s

☞ ***Parameters highlighted in grey can be used with a Tetrix 451 DC or AC/DC machine only.***

6 Maintenance, care and disposal

6.1 General

⚠ DANGER

Incorrect maintenance and testing!

The machine may be cleaned, repaired and tested by skilled and qualified personnel only. A qualified person is one who, due to their training, knowledge and experience, can detect any hazards and possible consequential damage when checking the machine, and can take the necessary safety measures.

- Observe the maintenance instructions > *see 6.3 chapter*!
- The machine may only be put into operation again once the testing has been successful.

Risk of injury due to electrical voltage after switching off!

Working on an open machine can lead to fatal injuries!

Capacitors are loaded with electrical voltage during operation. Voltage remains present for up to four minutes after the mains plug is removed.

1. Switch off machine.
2. Remove the mains plug.
3. Wait for at last 4 minutes until the capacitors have discharged!

⚠ WARNING

Cleaning, testing and repair!

Cleaning, testing and repairing of the welding machine may only be carried out by competent, qualified personnel. A qualified person is one who, because of his or her training, knowledge and experience, is able to recognise the dangers that can occur while testing welding power sources as well as possible subsequent damage, and who is able to implement the required safety procedures.

- In the event of failure of any one of the following tests, the machine must not be operated again until it has been repaired and a new test has been carried out.

Repair and maintenance work may only be performed by qualified authorised personnel; otherwise the right to claim under warranty is void. In all service matters, always consult the dealer who supplied the machine. Return deliveries of defective equipment subject to warranty may only be made through your dealer. When replacing parts, use only original spare parts. When ordering spare parts, please quote the machine type, serial number and item number of the machine, as well as the type designation and item number of the spare part.

Under the specified ambient conditions and normal working conditions this machine is essentially maintenance-free and requires just a minimum of care.

Contamination of the machine may impair service life and duty cycle. The cleaning intervals depend on the ambient conditions and the resulting contamination of the machine. The minimum interval is every six months.

6.2 Cleaning

- Clean the outer surfaces with a moist cloth (no aggressive cleaning agents).
- Purge the machine venting channel and cooling fins (if present) with oil- and water-free compressed air. Compressed air may overspeed and destroy the machine fans. Never direct the compressed air directly at the machine fans. Mechanically block the fans, if required.
- Check the coolant for contaminants and replace, if necessary.

6.3 Maintenance work, intervals

Repair and maintenance work may only be performed by qualified authorised personnel; otherwise the right to claim under warranty is void. In all service matters, always consult the dealer who supplied the machine. Return deliveries of defective equipment subject to warranty may only be made through your dealer. When replacing parts, use only original spare parts. When ordering spare parts, please quote the machine type, serial number and item number of the machine, as well as the type designation and item number of the spare part.

6.3.1 Daily maintenance tasks

6.3.1.1 Visual inspection

- Mains supply lead and its strain relief
- Gas cylinder securing elements
- Check hose package and power connections for exterior damage and replace or have repaired by specialist staff as necessary!
- Gas tubes and their switching equipment (solenoid valve)
- Check that all connections and wearing parts are hand-tight and tighten if necessary.
- Check correct mounting of the wire spool.
- Wheels and their securing elements
- Transport elements (strap, lifting lugs, handle)
- Other, general condition

6.3.1.2 Functional test

- Operating, message, safety and adjustment devices (Functional test)
- Welding current cables (check that they are fitted correctly and secured)
- Gas tubes and their switching equipment (solenoid valve)
- Gas cylinder securing elements
- Check correct mounting of the wire spool.
- Check that all screw and plug connections and replaceable parts are secured correctly, tighten if necessary.
- Remove any spatter.
- Clean the wire feed rollers on a regular basis (depending on the degree of soiling).

6.3.2 Monthly maintenance tasks

6.3.2.1 Visual inspection

- Casing damage (front, rear and side walls)
- Wheels and their securing elements
- Transport elements (strap, lifting lugs, handle)
- Check coolant tubes and their connections for impurities

6.3.2.2 Functional test

- Selector switches, command devices, emergency stop devices, voltage reducing devices, message and control lamps
- Check that the wire guide elements (inlet nipple, wire guide tube) are fitted securely.
- Check coolant tubes and their connections for impurities
- 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.

6.3.3 Annual test (inspection and testing during operation)

☞ ***The welding machine may only be tested by competent, capable personsl. A capable person is one who, because of his training, knowledge and experience, is able to recognise the dangers that can occur while testing welding power sources as well as possible subsequent damage and who is able to implement the required safety procedures.***

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

A periodic test according to IEC 60974-4 "Periodic inspection and test" has to be carried out. In addition to the regulations on testing given here, the relevant local laws and regulations must also be observed.

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!***

6.4.1 Manufacturer's declaration to the end user

- According to European provisions (guideline 2012/19/EU of the European Parliament and the Council of Juli, 4th 2021), 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 is to be placed for disposal or recycling in the waste separation systems provided for this purpose.
- According to German law (law governing the distribution, taking back and environmentally correct disposal of electric and electronic equipment (ElektroG) from 16.03.2005), 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 giving back used equipment or about collections can be obtained from the respective municipal administration office.
- EWM participates in an approved waste disposal and recycling system and is registered in the Used Electrical Equipment Register (EAR) under number WEEE DE 57686922.
- 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

- ↯ Insufficient coolant flow
  - 🛠 Check coolant level and refill if necessary
  - 🛠 Eliminate kinks in conduit system (hose packages)
  - 🛠 Vent coolant circuit
  - 🛠 Check coolant lines for secure connection and lock in place, if required.
  - 🛠 Check correct connection of the welding torch cooling unit
- ↯ Loose welding current connections
  - 🛠 Tighten power connections on the torch and/or on the workpiece
- ↯ 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.

Unstable arc

- ↯ Material inclusions in the tungsten electrode due to contact with filler material or workpiece
  - 🛠 Regrind or replace the tungsten electrode
- ↯ Incompatible parameter settings
  - 🛠 Check settings and correct if necessary
- ↯ Metal vapour on the gas nozzle
  - 🛠 Clean and change gas nozzle

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

8 Technical data

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

8.1 SPOTARC TIG 18/26

Type	TIG 18 W	TIG 26 G
Electrode polarity with DC	Normally negative	
Guide type	Manually operated	
Voltage type	DC or AC	
Duty cycle	100%	60%
Maximum welding current (DC/AC)	400 A–360 A	200 A–160 A
Voltage measurement	113 V peak value	
Max. arc ignition and stabilisation voltage	12 kV	
Electrode types	Standard tungsten electrodes	
Ambient temperature	–10 °C to +40 °C	
Torch input pressure, coolant (minimum to maximum)	2.5–5.0 bar	-
Flow quantity (minimum)	1.2 l/min.–3.5 l/min.	-
Protection rating for the machine connections (EN 60529)	IP3X	
Shielding gas	Shielding gas EN 439	
Gas flow	5–20 l/min.	
Hose package length	4 or 8 m	
Tungsten electrodes	1.6–3.2 mm	
Type of connection	Decentral 35 mm^2, G1/4", 5- or 8-pole	
EMC class	A	
Safety identification	CE	
Constructed to standard	EN 60974-1, -7, -10	

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 SPOTARC TIG 18/26

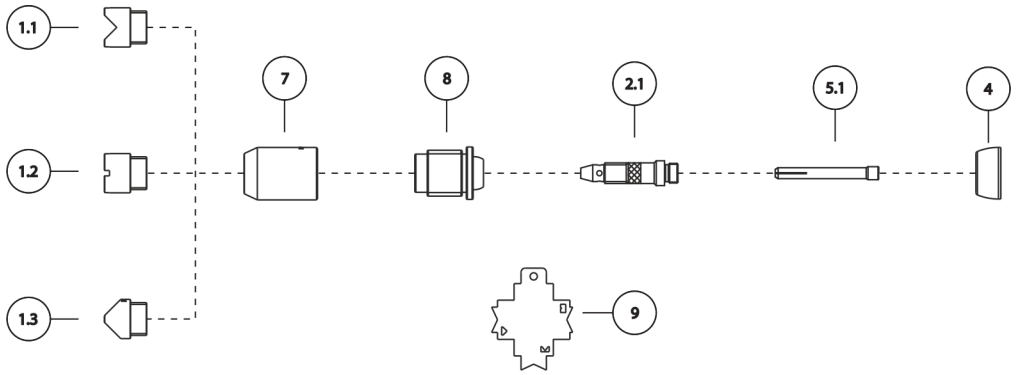

Figure 9-1

Item	Order number	Type	Description
1.1	094-009602-00002	GN CWT	Spot welding nozzle, edge weld
1.2	094-009604-00002	GN FWT	Spot welding nozzle, flat weld
1.3	094-009603-00002	GN HWT	Spot welding nozzle, fillet weld
2.1	094-000936-00000	COLB TIG 17/18/26 D=1.6MM	Collet body
2.1	094-000937-00000	COLB TIG 17/18/26 D=2.0-2.4MM	Collet body
2.1	094-000940-00000	COLB TIG 17/18/26 D=3.2MM	Collet body
2.1	094-001315-00000	COLB TIG 17/18/26 D=4.0MM	Collet body
4	094-019215-00000	ISO 18/26SP	Insulator
5.1	094-000931-00000	COL TIG 17/18/26/18SC D=1.6MM	Collet
5.1	094-000932-00000	COL TIG 17/18/26/18SC D=2.4MM	Collet
5.1	094-000935-00000	COL TIG 17/18/26/18SC D=3.2MM	Collet
5.1	094-001312-00000	COL TIG 17/26/18 D=4.0MM	Collet
7	094-017309-00001	GNC spotArc	Gas nozzle body
8	094-017310-00000	GN 26/18SP	Gas nozzle
9	094-014146-00001	AG SPOTARC	Setting gauge for EWM spotArc torches

10 Appendix A

10.1 Overview of EWM branches

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