

Wire feed unit
Taurus drive 4L Basic

099-005447-EW501

Observe additional system documents!

14.11.2016

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

1 Contents

1	Contents	3
2	For your safety	5
2.1	Notes on the use of these operating instructions	5
2.2	Explanation of icons.....	6
2.3	Part of the complete documentation.....	7
3	Intended use	8
3.1	Applications.....	8
3.2	Use and operation solely with the following machines	8
3.3	Documents which also apply	9
3.3.1	Warranty.....	9
3.3.2	Declaration of Conformity.....	9
3.3.3	Service documents (spare parts and circuit diagrams).....	9
3.3.4	Calibration/Validation	9
4	Machine description – quick overview	10
4.1	Front view	10
4.2	Rear view.....	11
4.3	Inside view	12
4.3.1	Internal operating elements.....	13
4.4	Machine control – Operating elements.....	14
5	Design and function	15
5.1	Transport and installation	15
5.1.1	Lifting by crane	15
5.1.2	Ambient conditions	15
5.1.2.1	In operation	15
5.1.2.2	Transport and storage.....	15
5.1.3	Notes on the installation of welding current leads.....	16
5.1.3.1	Stray welding currents.....	17
5.1.4	Intermediate hose package connection	18
5.1.5	Shielding gas supply (shielding gas cylinder for welding machine)	19
5.1.5.1	Pressure regulator connection	19
5.1.5.2	Shielding gas volume settings	20
5.1.5.3	Gas test.....	20
5.2	MIG/MAG welding.....	21
5.2.1	Welding torch connection	21
5.2.2	Wire feed	23
5.2.2.1	Open the protective flap of the wire feeder	23
5.2.2.2	Inserting the wire spool	24
5.2.2.3	Changing the wire feed rollers	25
5.2.2.4	Inching the wire electrode	25
5.2.2.5	Spool brake setting	27
5.2.3	Welding task selection.....	28
5.2.4	MIG/MAG functional sequences / operating modes.....	30
5.2.4.1	Explanation of signs and functions	30
6	Maintenance, care and disposal	33
6.1	General	33
6.2	Cleaning.....	33
6.3	Maintenance work, intervals	34
6.3.1	Daily maintenance tasks	34
6.3.1.1	Visual inspection	34
6.3.1.2	Functional test.....	34
6.3.2	Monthly maintenance tasks.....	34
6.3.2.1	Visual inspection	34
6.3.2.2	Functional test.....	34
6.3.3	Annual test (inspection and testing during operation).....	35
6.4	Disposing of equipment	35
6.4.1	Manufacturer's declaration to the end user	35

6.5	Meeting the requirements of RoHS.....	35
7	Rectifying faults.....	36
7.1	Checklist for rectifying faults	36
7.2	Error messages (power source).....	37
7.3	Resetting welding parameters to the factory settings	38
8	Technical data.....	39
8.1	Taurus drive 4L Basic	39
9	Accessories	40
9.1	General accessories	40
9.2	Options.....	40
10	Replaceable parts.....	41
10.1	Wire feed rollers	41
10.1.1	Wire feed rollers for steel wire	41
10.1.2	Wire feed rollers for aluminium wire	41
10.1.3	Wire feed rollers for cored wire.....	41
10.1.4	Conversion kit	42
11	Appendix A.....	43
11.1	Overview of EWM branches.....	43

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	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		

2.3 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.

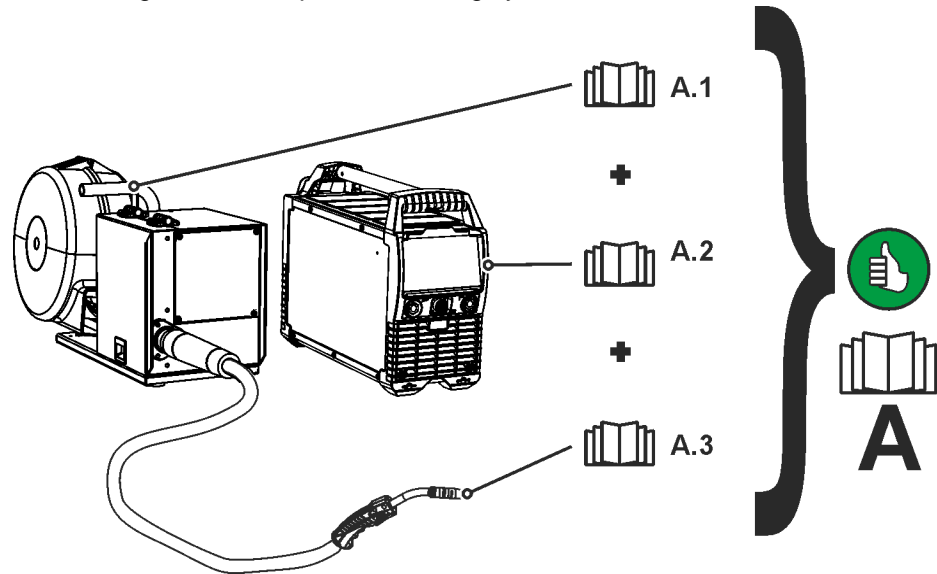


Figure 2-1

Item	Documentation
A.1	Wire feeder
A.2	Power source
A.3	Welding torch
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

Wire feeder to feed wire electrodes for gas-shielded metal-arc welding.

3.2 Use and operation solely with the following machines



A suitable power source (system component) is required in order to operate the wire feed unit!

- Taurus 400 Basic TDG

3.3 Documents which also apply

3.3.1 Warranty



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

3.3.2 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.

3.3.3 Service documents (spare parts and circuit diagrams)

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)!

Original copies of the circuit diagrams are enclosed with the unit.

Spare parts can be obtained from the relevant authorised dealer.

3.3.4 Calibration/Validation

We hereby confirm that this machine has been tested using calibrated measuring equipment, as stipulated in IEC/EN 60974, ISO/EN 17662, EN 50504, and complies with the admissible tolerances. Recommended calibration interval: 12 months

4 Machine description – quick overview

4.1 Front view

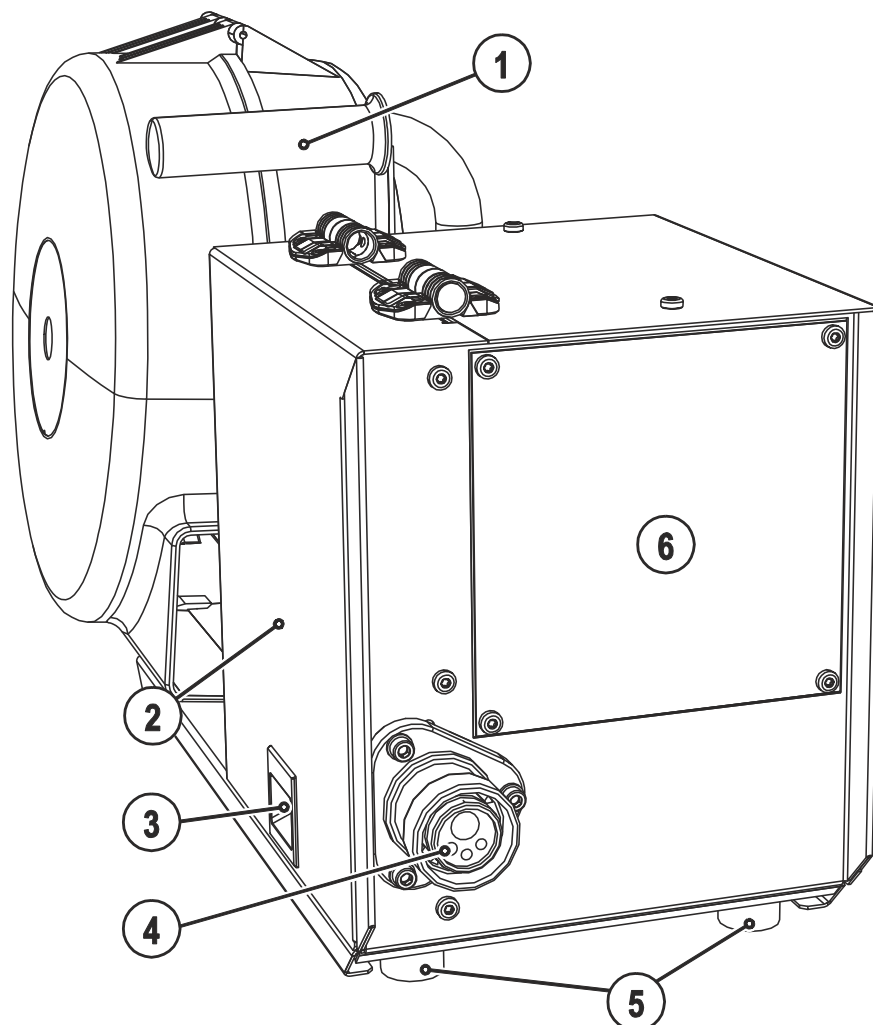


Figure 4-1

Item	Symbol	Description
1		Carrying handle
2		Protective cap Cover for the wire feed mechanism and other operating elements. Depending on the machine series, additional stickers with information on the replacement parts will be located on the inside.
3		Slide latch, lock for the protective cap
4		Welding torch connection (Euro torch connector) Welding current, shielding gas and torch trigger integrated
5		Machine feet
6		Machine control > see 4.4 chapter

4.2 Rear view

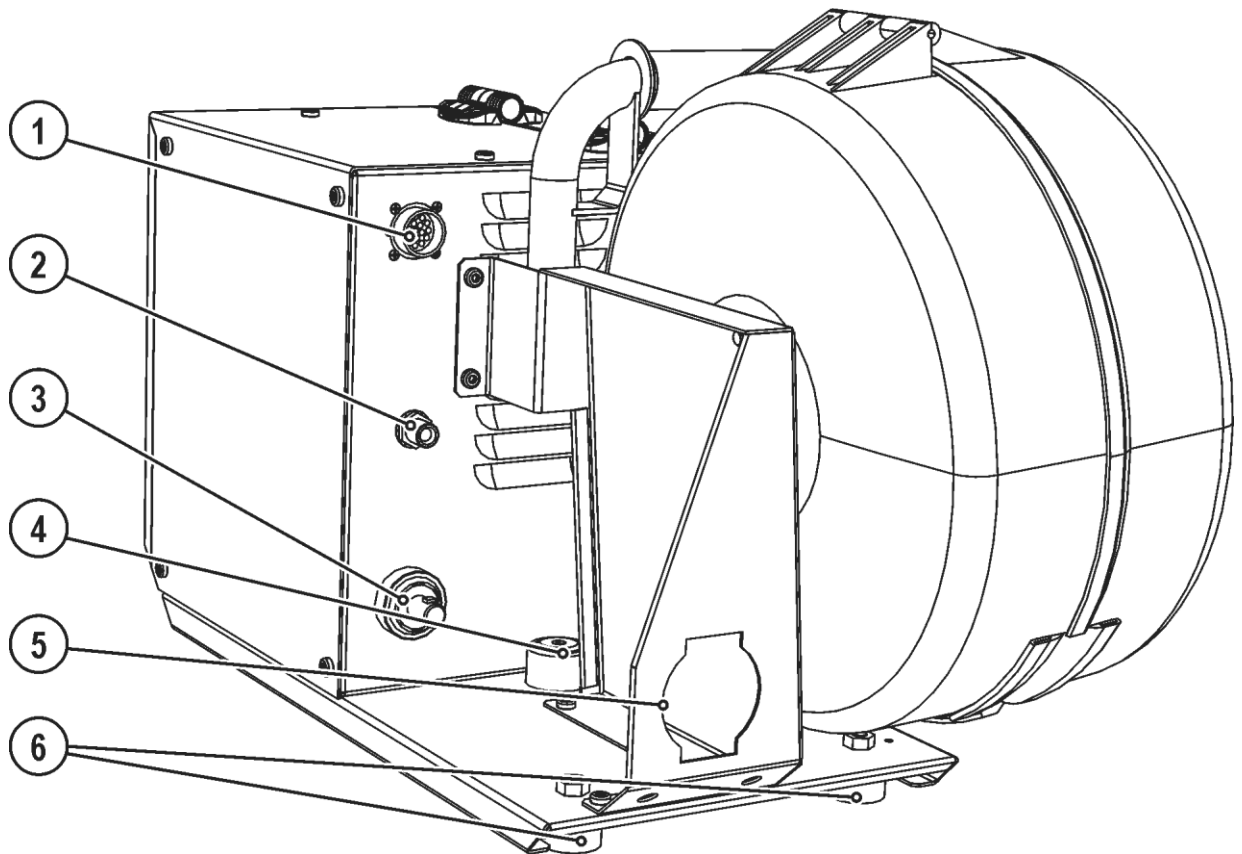


Figure 4-2

Item	Symbol	Description
1		19-pole connection socket (analogue) Wire feed unit control lead connection
2		Connecting nipple G¹/₄, shielding gas connection
3		Connector plug, welding current "+" Welding current connection on wire feed unit
4		Turning mandrel support The wire feeder is placed onto the power source turning mandrel using this support to enable horizontal pivoting of the machine.
5		Intermediate hose package strain relief
6		Machine feet

4.3 Inside view

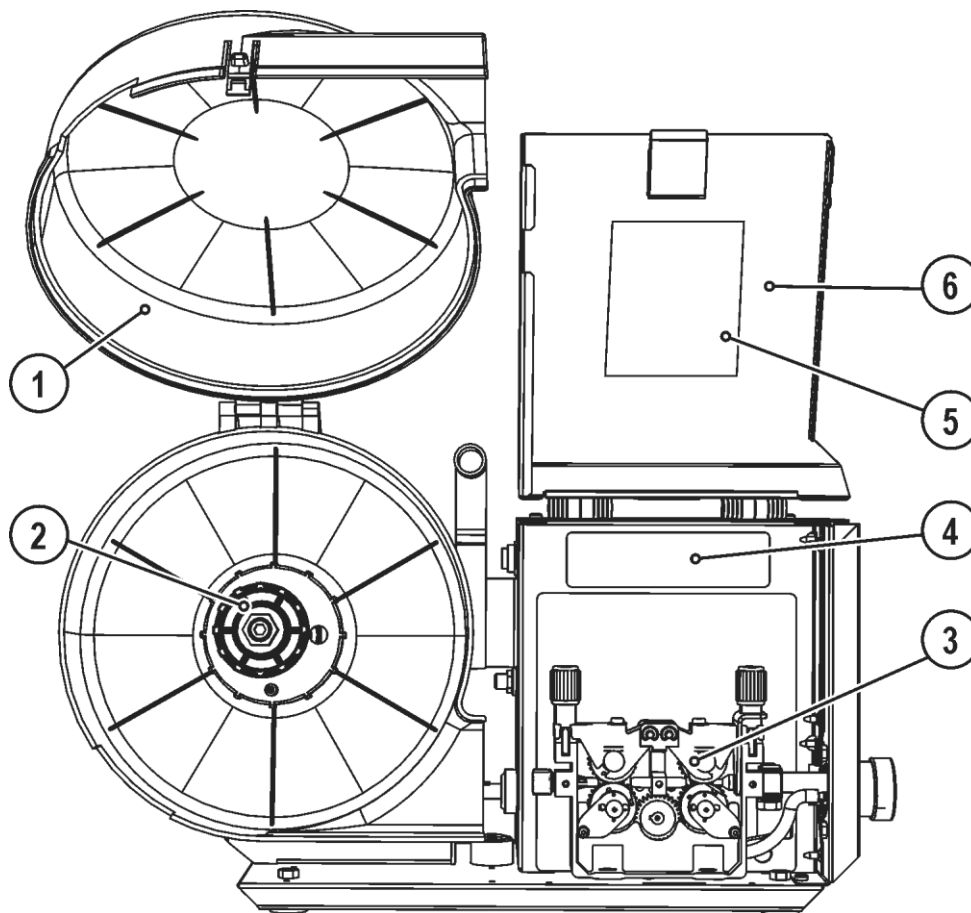


Figure 4-3

Item	Symbol	Description
1		Cover of the wire spool
2		Wire spool holder
3		Wire feed unit
4		Operating elements > see 4.3.1 chapter
5		Label, Wire feed parts subject to wear
6		Protective cap Cover for the wire feed mechanism and other operating elements. Depending on the machine series, additional stickers with information on the replacement parts will be located on the inside.

4.3.1 Internal operating elements

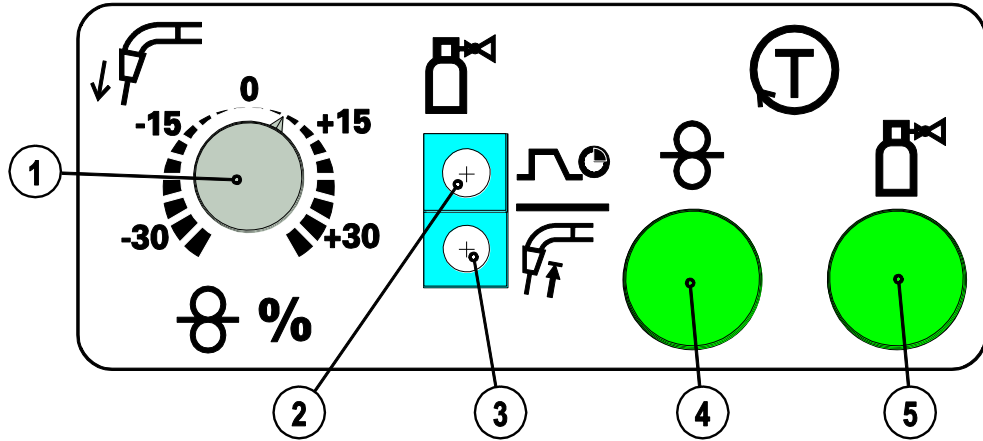


Figure 4-4

All details in percent relate to the values stored in the characteristics.

Item	Symbol	Description
1		Rotary dial, Wire creep +/- 30%
2		"Gas post-flow time" trimmer Setting range 0.2-10 s
3		Trimmer, Burn-back +/- 50%
4		Key Button, Wire inching Currentless wire inching
5		Gas test push-button > see 5.1.5.3 chapter

4.4 Machine control – Operating elements

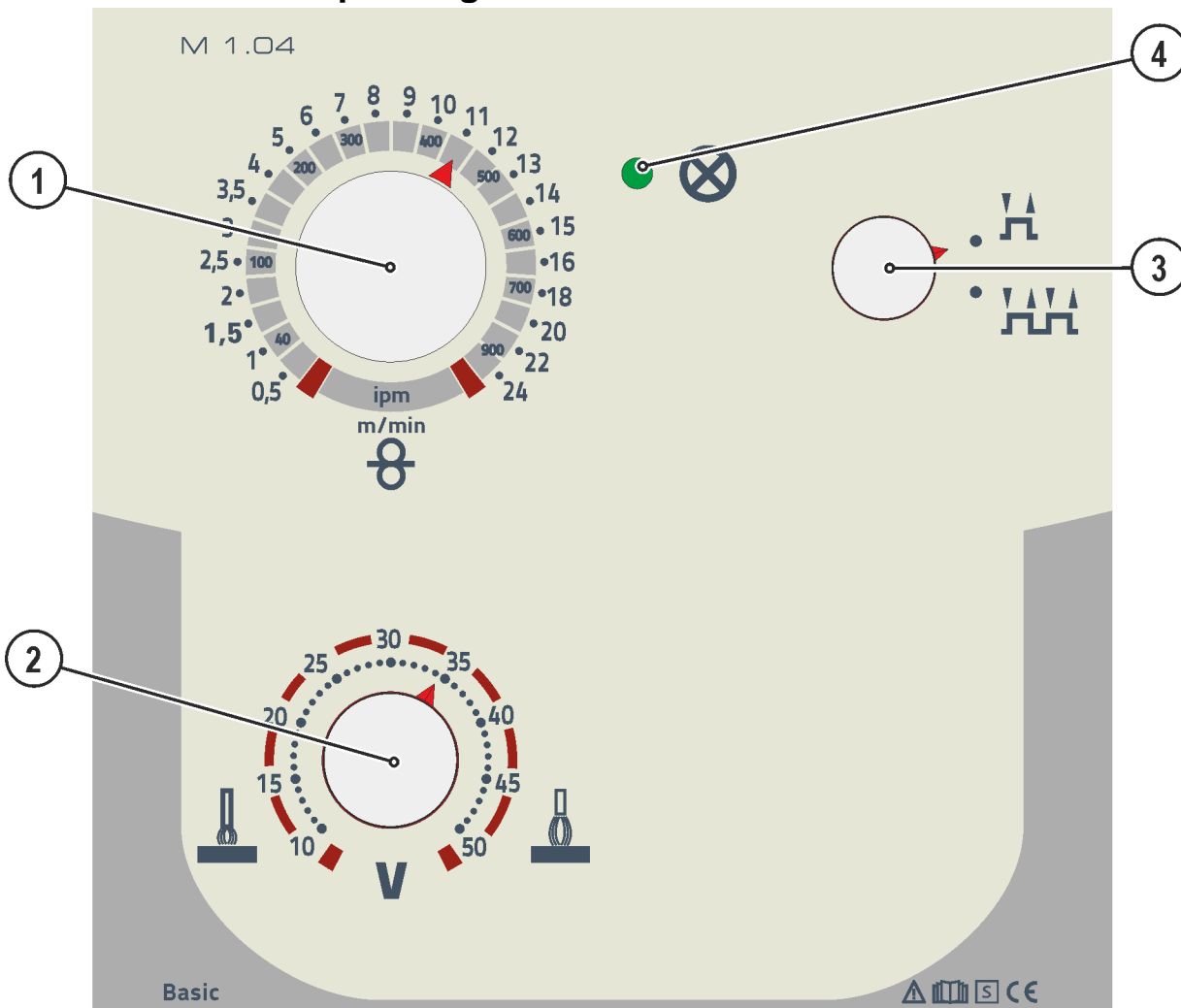


Figure 4-5

Item	Symbol	Description
1		Rotary dial, Wire speed setting Infinite adjustment of the wire speed.
2		Rotary dial, welding voltage Adjustment of the welding voltage from min. to max.
3		Operating mode rotary knob Latched Non-latched
4		Ready for operation signal light Signal light on when the machine is switched on and ready for operation

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!

5.1 Transport and installation

5.1.1 Lifting by crane

⚠ WARNING



Risk of accident due to improper transport of machines that must not be lifted!

Do not lift or suspend the machine! The machine can drop and cause injuries! The handles, straps or brackets are suitable for transport by hand only!

- The machine must not be suspended or lifted using a crane.
- Depending on machine type, equipment for lifting by crane or use while suspended is available as a retrofitting option > see 9 chapter.

5.1.2 Ambient conditions



The machine must not be operated in the open air and must only be set up and operated on a suitable, stable and level base!

- ***The operator must ensure that the ground is non-slip and level, and provide sufficient lighting for the place of work.***
- ***Safe operation of the machine must be guaranteed at all times.***



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)!***

5.1.2.1 In operation

Temperature range of the ambient air:

- -25 °C to +40 °C

Relative air humidity:

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

5.1.2.2 Transport and storage

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

- -30 °C to +70 °C

Relative air humidity

- Up to 90% at 20 °C

5.1.3 Notes on the installation of welding current leads

- Incorrectly installed welding current leads can cause faults in the arc (flickering).**
- Lay the workpiece lead and hose package of power sources without HF igniter (MIG/MAG) for as long and as close as possible in parallel.**
- Lay the workpiece lead and hose package of power sources with HF igniter (TIG) for as long as possible in parallel with a distance of 20 cm to avoid HF sparkover.**
- Always keep a distance of at least 20 cm to leads of other power sources to avoid interferences**
- Always keep leads as short as possible! For optimum welding results max. 30 m (welding lead + intermediate hose package + torch lead).**

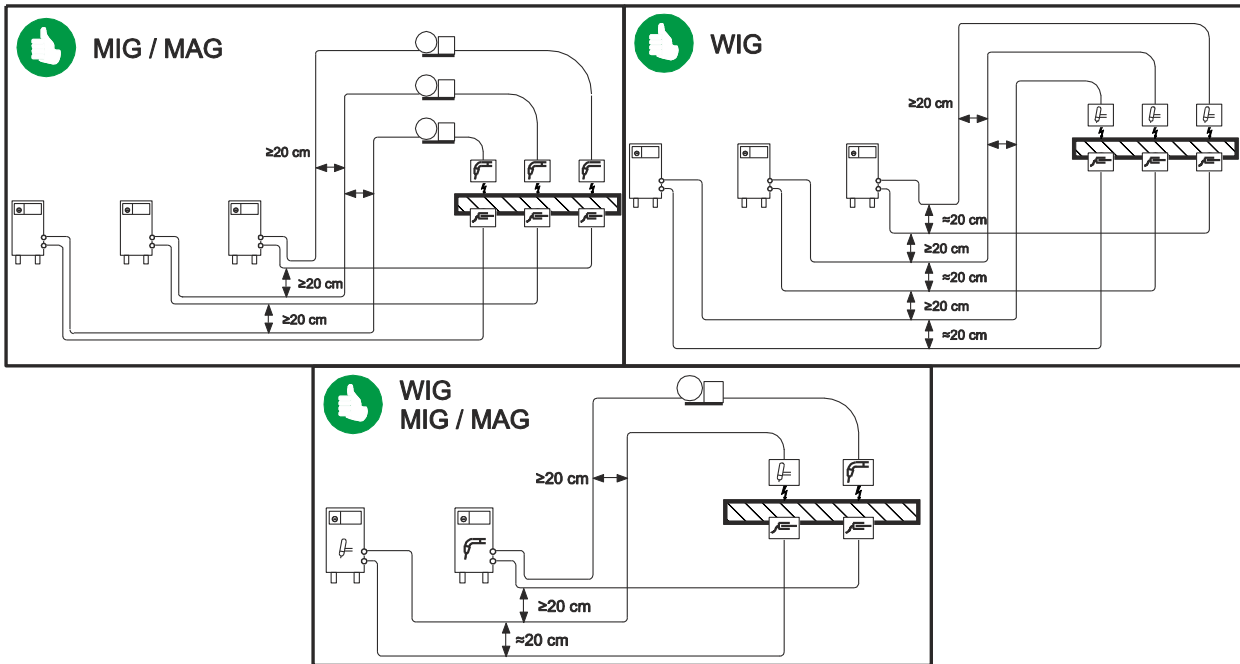


Figure 5-1

- Use an individual welding lead to the workpiece for each welding machine!**

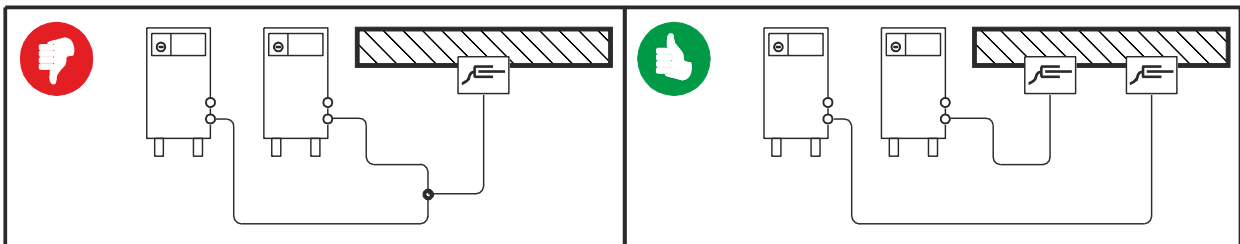


Figure 5-2

- Fully unroll welding current leads, torch hose packages and intermediate hose packages. Avoid loops!
- Always keep leads as short as possible!
- Lay any excess cable lengths in meanders.

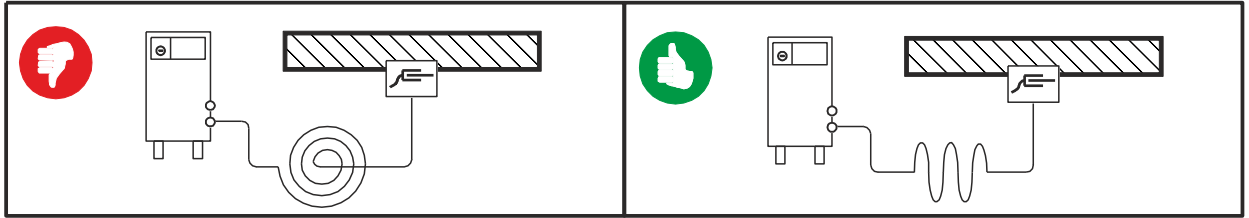


Figure 5-3

5.1.3.1 Stray welding currents

WARNING



Risk of injury due to stray welding currents!

Stray welding currents can destroy protective earth conductors, damage machines and electronic devices and cause overheating of components, leading to fire.

- Check that all welding current connections are firmly secured and electrical connections are in perfect condition.
- Set up, attach or suspend all conductive power source components such as casing, transport vehicles and crane frames so they are insulated.
- Do not place any other electronic devices such as drills or angle grinders on the power source, transport vehicle or crane frames unless they are insulated.
- Always put welding torches and electrode holders on an insulated surface when they are not in use.

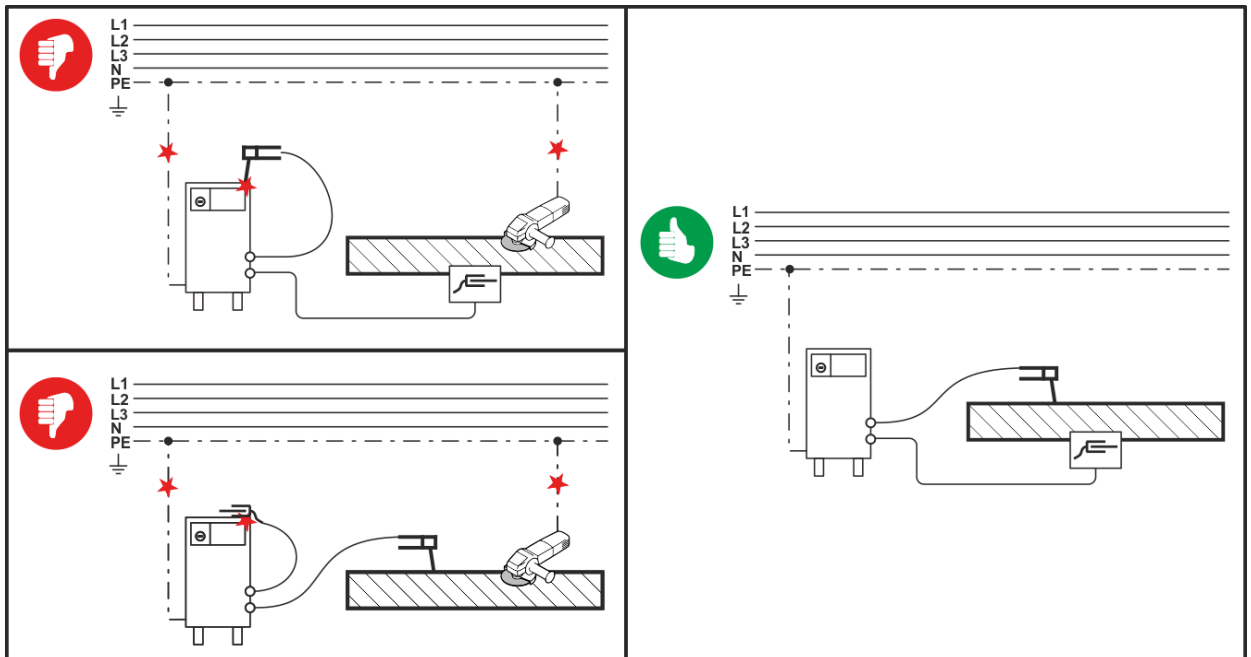


Figure 5-4

5.1.4 Intermediate hose package connection

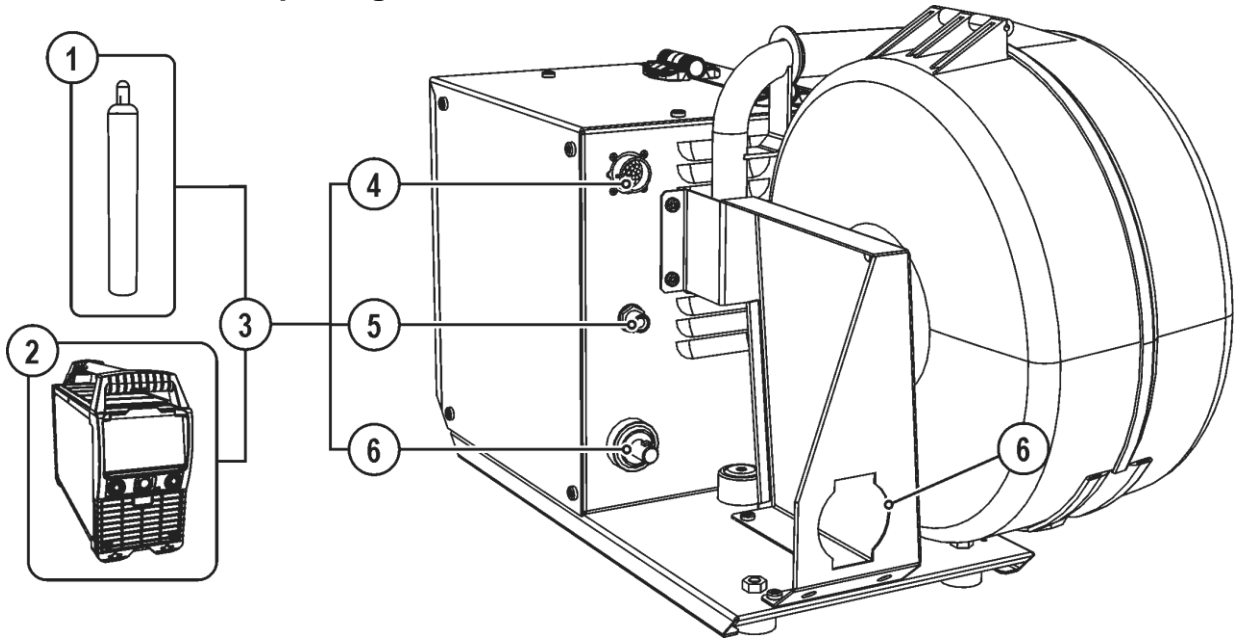


Figure 5-5

Item	Symbol	Description
1		Shielding gas cylinder
2		Power source
3		Intermediate hose package
4		19-pole connection socket (analogue) Wire feed unit control lead connection
5		Connecting nipple G $\frac{1}{4}$, shielding gas connection
6		Connector plug, welding current "+" Welding current connection on wire feed unit
7		Intermediate hose package strain relief

- Insert the end of the hose package through the strain relief of the hose package and lock by turning to the right.
- Insert the plug on the welding current lead into the welding current connection socket "+" and lock.
- Connect crown nut of the shielding gas line to the G $\frac{1}{4}$ " connecting nipple.
- Insert cable plug on the control lead into the 19-pole connection socket and secure with crown nut (the plug can only be inserted into the connection socket in one position).

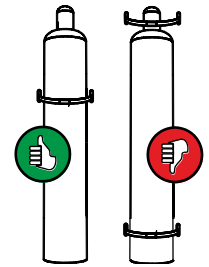
5.1.5 Shielding gas supply (shielding gas cylinder for welding machine)

⚠ WARNING



Risk of injury due to improper handling of shielding gas cylinders! Improper handling and insufficient securing of shielding gas cylinders can cause serious injuries!

- Place shielding gas cylinder into the designated holder and secure with fastening elements (chain/belt)!
- Attach the fastening elements within the upper half of the shielding gas cylinder!
- The fastening elements must tightly enclose the shielding gas cylinder!



An unhindered shielding gas supply from the shielding gas cylinder to the welding torch is a fundamental requirement for optimum welding results. In addition, a blocked shielding gas supply may result in the welding torch being destroyed.

- **Always re-fit the yellow protective cap when not using the shielding gas connection.**
- **All shielding gas connections must be gas tight.**

5.1.5.1 Pressure regulator connection

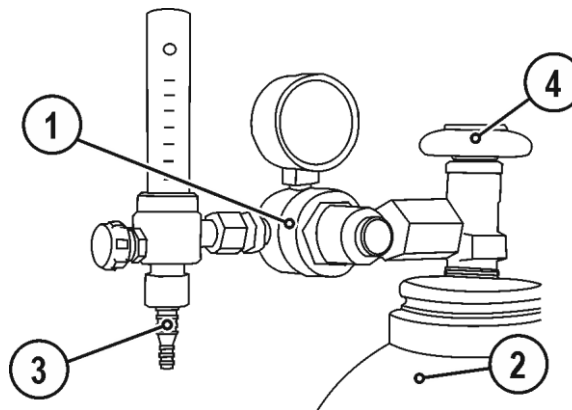


Figure 5-6

Item	Symbol	Description
1		Pressure regulator
2		Shielding gas cylinder
3		Output side of the pressure regulator
4		Cylinder valve

- Before connecting the pressure regulator to the gas cylinder, open the cylinder valve briefly to blow out any dirt.
- Tighten the pressure regulator screw connection on the gas bottle valve to be gas-tight.
- Screw gas hose connection crown nut onto the output side of the pressure regulator.

5.1.5.2 Shielding gas volume settings

⚠ CAUTION



Electric shocks!

When setting the shielding gas quantity, high voltage ignition pulses or open circuit voltage are applied at the welding torch; these can lead to electric shocks and burning on contact.

- Keep the welding torch electrically insulated from persons, animals or equipment during the setting procedure.

If the shielding gas setting is too low or too high, this can introduce air to the weld pool and may cause pores to form. Adjust the shielding gas quantity to suit the welding task!

- Slowly open the gas cylinder valve.
- Open the pressure regulator.
- Switch on the power source at the main switch.
- Trigger gas test > see 5.1.5.3 chapter function (welding voltage and wire feed motor remain switched off – no accidental arc ignition).
- Set the relevant gas quantity for the application on the pressure regulator.

Setting instructions

Welding process	Recommended shielding gas quantity
MAG welding	Wire diameter x 11.5 = l/min
MIG brazing	Wire diameter x 11.5 = l/min
MIG welding (aluminium)	Wire diameter x 13.5 = l/min (100 % argon)
TIG	Gas nozzle diameter in mm corresponds to l/min gas throughput

Helium-rich gas mixtures require a higher gas volume!

The table below can be used to correct the gas volume calculated where necessary:

Shielding gas	Factor
75% Ar/25% He	1.14
50% Ar/50% He	1.35
25% Ar/75% He	1.75
100% He	3.16

5.1.5.3 Gas test

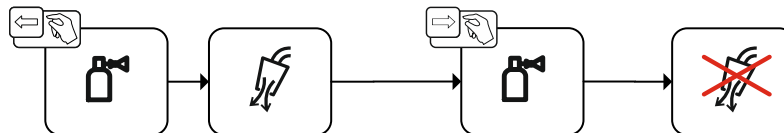


Figure 5-7

5.2 MIG/MAG welding

5.2.1 Welding torch connection



On delivery, the Euro torch connector is fitted with a capillary tube for welding torches with a steel liner. Conversion is necessary if a welding torch with a liner is used!

- ***Operate welding torches with a liner > with a guide tube.***
- ***Operate welding torches with a steel liner > with a capillary tube.***

Depending on the wire electrode diameter or type, either a steel liner or liner with the correct inner diameter must be inserted in the torch!

Recommendation:

- Use a steel liner when welding hard, unalloyed wire electrodes (steel).
- Use a chrome nickel liner when welding hard, high-alloy wire electrodes (CrNi).
- Use a plastic or teflon liner when welding or brazing soft wire electrodes, high-alloy wire electrodes or aluminium materials.

Preparation for connecting welding torches with a liner:

- Push forward the capillary tube on the wire feed side in the direction of the Euro torch connector and remove it there.
- Insert the liner guide tube from the Euro torch connector side.
- Carefully insert the welding torch connector with as yet too long a liner into the Euro torch connector and secure with a crown nut.
- Cut off the liner with a liner cutter > *see 9 chapter* just before the wire feed roller.
- Loosen the welding torch connector and remove.
- Carefully chamfer the cut off end of the liner with a liner sharpener > *see 9 chapter* and sharpen.

Preparation for connecting welding torches with a spiral guide:

- Check that the capillary tube is correctly positioned in relation to the central connector!

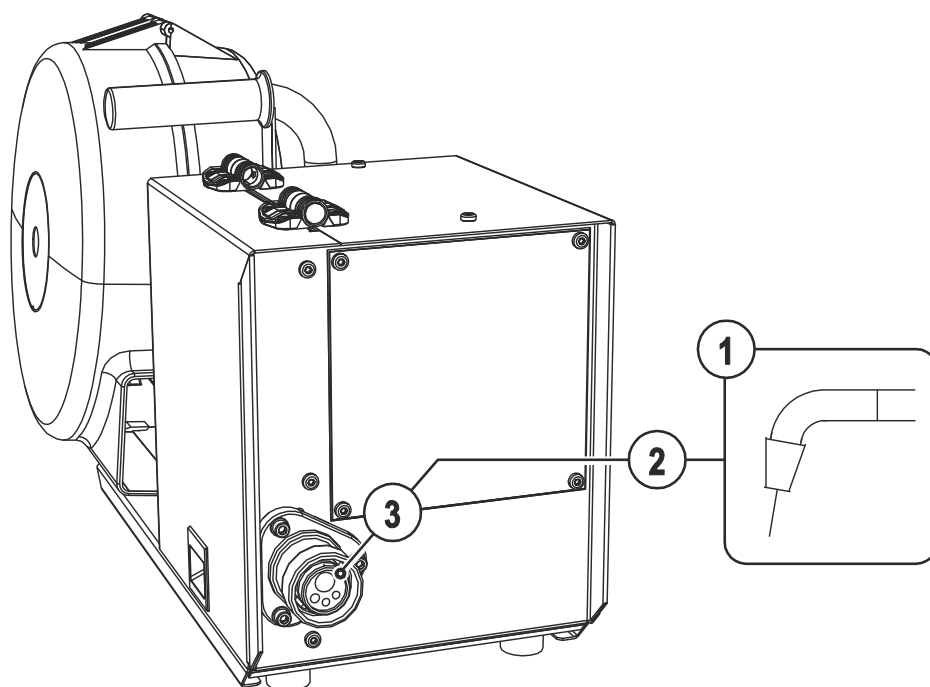



Figure 5-8

Item	Symbol	Description
1		Welding torch
2		Welding torch hose package
3		Welding torch connection (Euro torch connector) Welding current, shielding gas and torch trigger integrated

- Insert the central plug for the welding torch into the central connector and screw together with crown nut.

5.2.2 Wire feed

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!

5.2.2.1 Open the protective flap of the wire feeder



To perform the following steps, the protective flap of the wire feeder needs to be opened. Make sure to close the protective flap again before starting to work.

- Unlock and open protective flap.

5.2.2.2 Inserting the wire spool

⚠ CAUTION



Risk of injury due to incorrectly secured wire spool.

If the wire spool is not secured properly, it may come loose from the wire spool support and fall to the ground, causing damage to the machine and injuries.

- Make sure to correctly fasten the wire spool to the wire spool support.
- Before you start working, always check the wire spool is securely fastened.



Standard D300 wire spool holder can be used. Adapters > see 9 chapter are required when using standardised basket coils (DIN 8559).

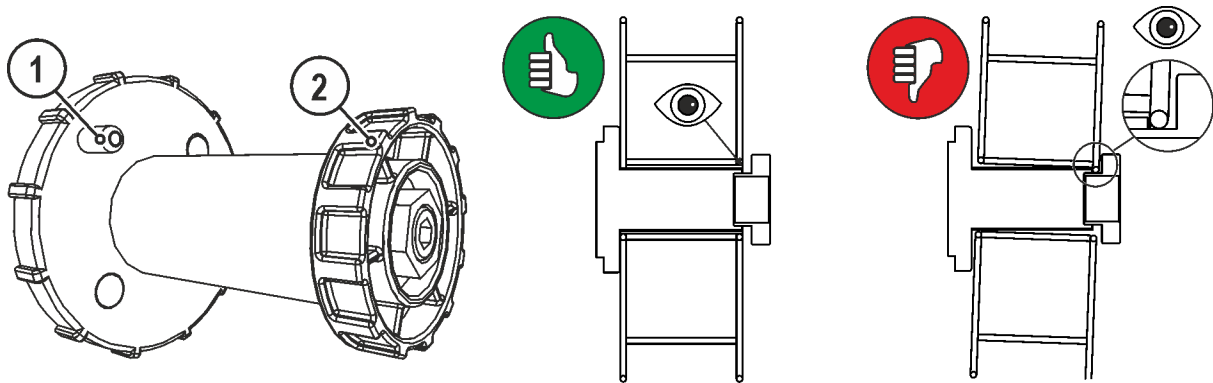


Figure 5-9

Item	Symbol	Description
1		Carrier pin For fixing the wire spool
2		Knurled nut For fixing the wire spool

- Loosen knurled nut from spool holder.
- Fix welding wire reel onto the spool holder so that the carrier pin locks into the spool bore.
- Fasten wire spool using knurled nut.

5.2.2.3 Changing the wire feed rollers



Unsatisfactory welding results due to faulty wire feeding! Wire feed rollers must be suitable for the diameter of the wire and the material.

- **Check the roller label to verify that the rollers are suitable for the wire diameter. Turn or change if necessary!**
- **use V-groove rollers with for steel wires and other hard wires,**
- **use U-groove rollers for aluminium wires and other soft, alloyed wires.**
- Slide new drive rollers into place so that the diameter of the wire used is visible on the drive roller.
- Screw the drive rollers in place with knurled screws.

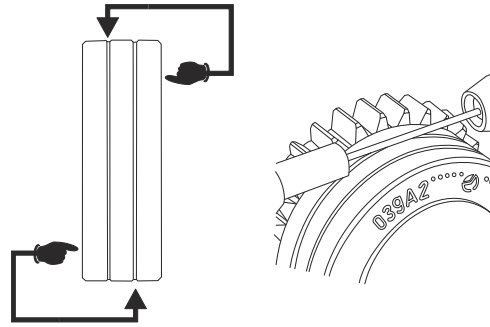


Figure 5-10

5.2.2.4 Inching the wire electrode

CAUTION



Risk of injury due to welding wire escaping from the welding torch!

The welding wire can escape from the welding torch at high speed and cause bodily injury including injuries to the face and eyes!

- Never direct the welding torch towards your own body or towards other persons!



Incorrect contact pressure will cause extensive wear of the wire feed rollers!

- **With the adjusting nuts of the pressure units set the contact pressure so that the wire electrode is conveyed but will still slip through if the wire spool jams.**
- **Set the contact pressure of the front rollers (in wire feed direction) to a higher value!**



The inching speed is infinitely adjustable by simultaneously pressing the wire inching push-button and turning the wire speed rotary knob. The left display shows the wire feed speed selected, the right display shows the current motor current of the wire feed mechanism.

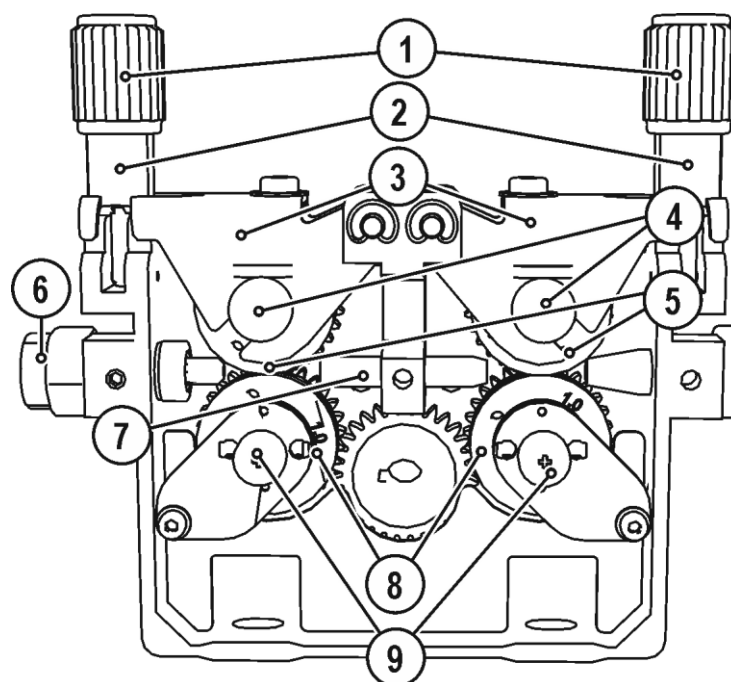


Figure 5-11

Item	Symbol	Description
1		Adjusting nut
2		Feed roll tensioner Fixing the clamping unit and setting the pressure.
3		Clamping unit
4		Knurled screw
5		Pressure roller
6		Wire feed nipple
7		Guide tube
8		Drive roller
9		Axle

- Extend and lay out the torch hose package.
- Unfasten pressure units and fold out (clamping units and pressure rollers will automatically flip upwards).
- Unwind welding wire carefully from the wire spool and insert through the wire inlet nipple over the drive roller grooves and the guide pipe into the capillary tube and Teflon core using guide pipe.
- Press the clamping element with the pressure roller back downwards and fold the wire units back up again (wire electrode should be in the groove on the drive roller).
- Set the contact pressure with the adjusting nuts of the pressure unit.
- Press the wire inching button until the wire electrode projects out of the welding torch.

Automatic inching stop

Touch the welding torch against the workpiece during inching. Inching of the welding wire will stop as soon it touches the workpiece.

5.2.2.5 Spool brake setting

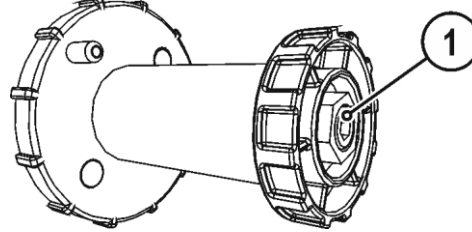


Figure 5-12

Item	Symbol	Description
1		Allen screw Securing the wire spool retainer and adjustment of the spool brake

- Tighten the Allen screw (8 mm) in the clockwise direction to increase the braking effect.



Tighten the spool brake until the wire spool no longer turns when the wire feed motor stops but without it jamming during operation!

5.2.3 Welding task selection



Selection of a welding task involves the interaction of the controls on the welding machine and the wire feed unit. After the basic settings are made on the welding machine, the operating point and other parameters can be set on the wire feed unit.

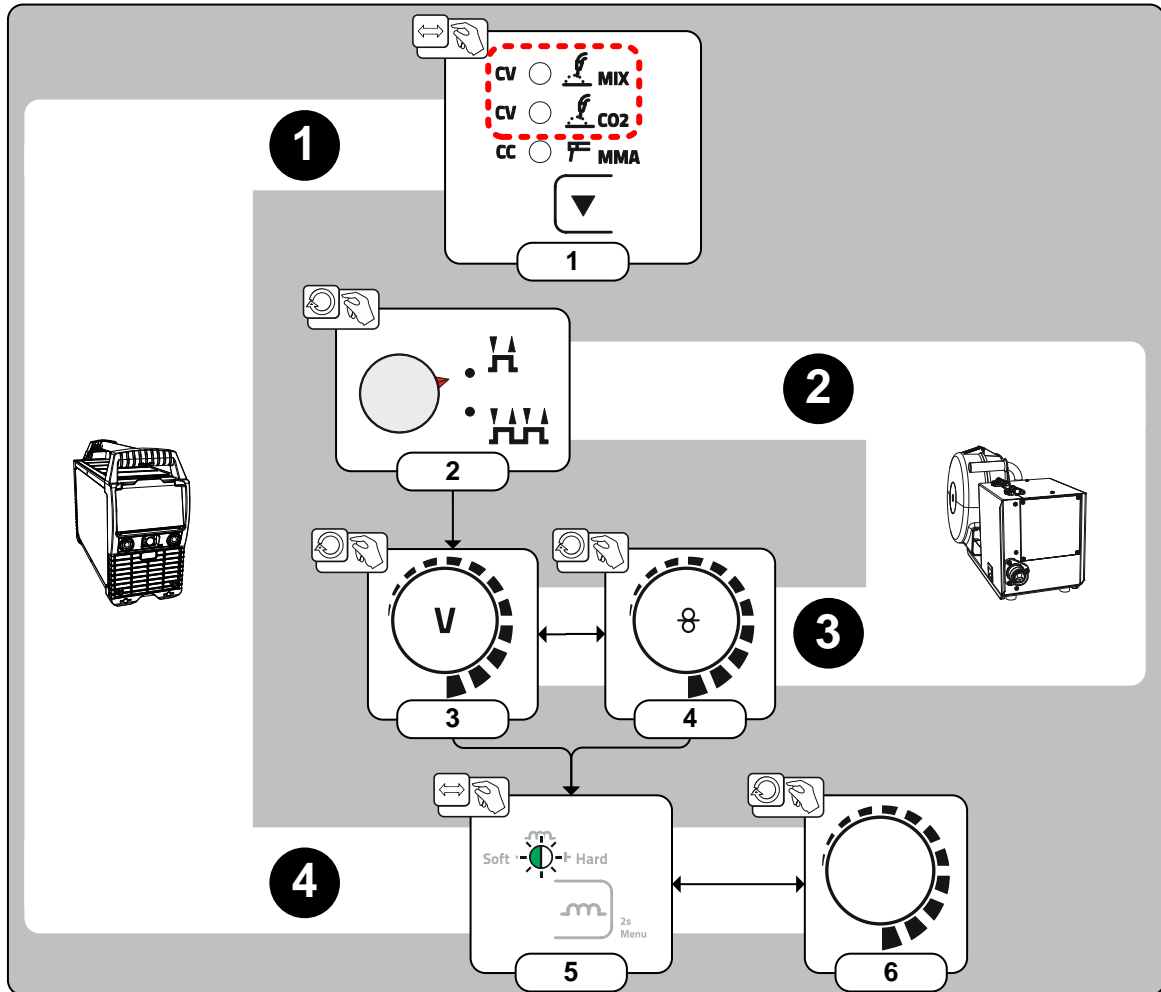


























Figure 5-13

Item	Symbol	Description
1		<p>Welding procedure push-button</p> <p> MIX -- MIG/MAG welding with default constant voltage characteristics "CV constant voltage" for welding with argon and MIX gases.</p> <p> CO2 -- MAG welding with default constant voltage characteristics "CV constant voltage" for welding with 100% CO2.</p> <p> MMA - MMA welding with constant current characteristics "CC constant current".</p>
2		<p>Operating mode rotary knob</p> <p> ----- Latched</p> <p> ----- Non-latched</p>
3		<p>Rotary dial, welding voltage</p> <p>Adjustment of the welding voltage from min. to max.</p>
4		<p>Rotary dial, Wire speed setting</p> <p>Infinite adjustment of the wire speed.</p>
5		<p>Push-button, throttling effect (arc dynamics)</p> <p> Hard ----- Arc is harder and more narrow</p> <p> Soft ----- Arc is softer and wider</p>
6		<p>Welding parameter setting rotary transducer</p> <p>Setting of welding current and other welding parameter and their values</p>

5.2.4 MIG/MAG functional sequences / operating modes

5.2.4.1 Explanation of signs and functions

Symbol	Meaning
	Press torch trigger
	Release torch trigger
	Tap torch trigger (press briefly and release)
	Shielding gas flowing
I	Welding output
	Wire electrode is being conveyed
	Wire creep
	Wire burn-back
	Gas pre-flows
	Gas post-flows
	Non-latched
	Latched
t	Time
PSTART	Ignition program
PA	Main program
PEND	End program

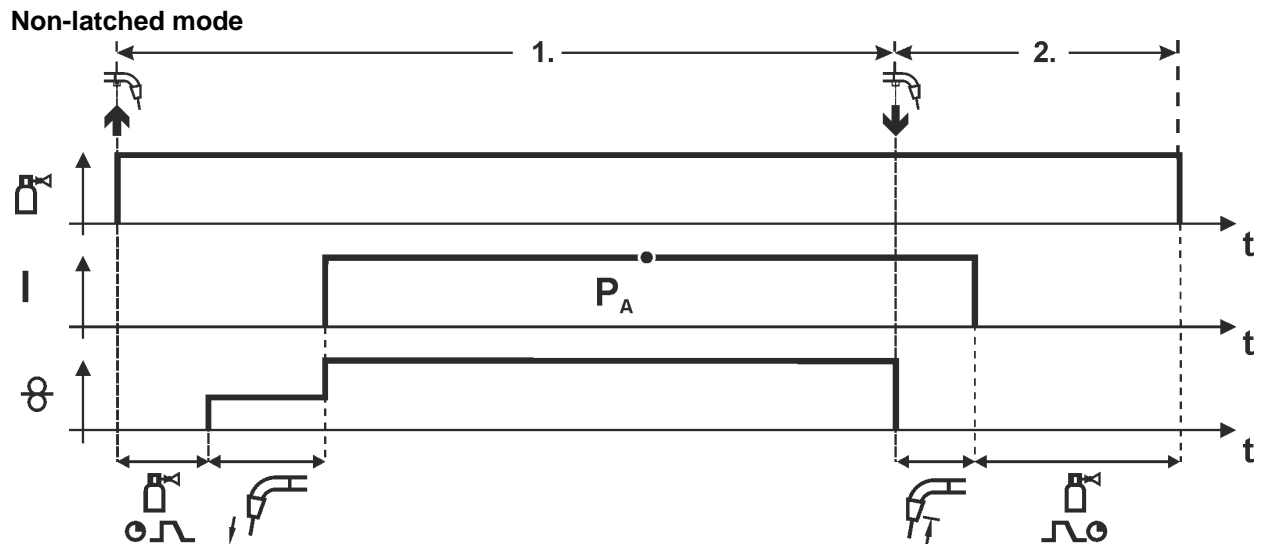


Figure 5-14

Step 1

- Press and hold torch trigger.
- Shielding gas is expelled (gas pre-flows).
- Wire feed motor runs at "creep speed".
- Arc ignites after the wire electrode makes contact with the workpiece; welding current flows.
- Change over to pre-selected wire speed.

Step 2

- Release torch trigger.
- WF motor stops.
- Arc is extinguished after the preselected wire burn-back time expires.
- Gas post-flow time elapses.

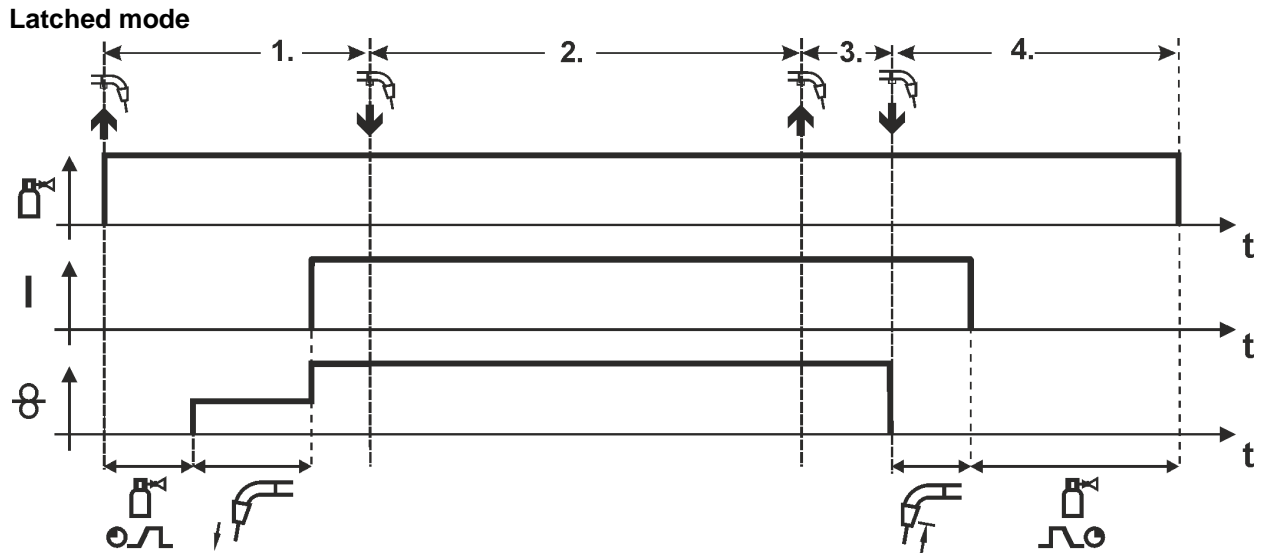


Figure 5-15

Step 1

- Press and hold torch trigger
- Shielding gas is expelled (gas pre-flows)
- Wire feed motor runs at “creep speed”.
- Arc ignites after the wire electrode makes contact with the workpiece; welding current flows.
- Change over to pre-selected WF speed (main program P_A).

Step 2

- Release torch trigger (no effect)

Step 3

- Press torch trigger (no effect)

Step 4

- Release torch trigger
- WF motor stops.
- Arc is extinguished after the preselected wire burn-back time expires.
- Gas post-flow time elapses.

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 least 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 persons!** 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


Wire feed problems

- ↘ Contact tip blocked
 - ✘ Clean, spray with anti-spatter spray and replace if necessary
- ↘ Setting the spool brake > see 5.2.2.5 chapter
 - ✘ Check settings and correct if necessary
- ↘ Setting pressure units > see 5.2.2.4 chapter
 - ✘ Check settings and correct if necessary
- ↘ Worn wire rolls
 - ✘ Check and replace if necessary
- ↘ Wire feed motor without supply voltage (automatic cutout triggered by overloading)
 - ✘ Reset triggered fuse (rear of the power source) by pressing the key button
- ↘ Kinked hose packages
 - ✘ Extend and lay out the torch hose package
- ↘ Wire guide core or spiral is dirty or worn
 - ✘ Clean core or spiral; replace kinked or worn cores

Functional errors

- ↘ All machine control signal lights are illuminated after switching on
- ↘ No machine control signal light is illuminated after switching on
- ↘ No welding power
 - ✘ Phase failure > check mains connection (fuses)
- ↘ Various parameters cannot be set
 - ✘ Entry level is blocked, disable access lock
- ↘ Connection problems
 - ✘ Make control lead connections and check that they are fitted correctly.
- ↘ Loose welding current connections
 - ✘ Tighten power connections on the torch and/or on the workpiece
 - ✘ Tighten contact tip correctly

7.2 Error messages (power source)

 **A welding machine error is indicated by an error code being displayed (see table) on the display on the machine control.**

In the event of a machine error, the power unit is shut down.

 **The display of possible error numbers depends on the machine version (interfaces/functions).**

- If multiple errors occur, these are displayed in succession.
- Document machine errors and inform service staff as necessary.

Error message	Possible cause	Remedy
E 0	Start signal set in the event of errors	Do not press the torch trigger or the foot-operated remote control
E 4	Temperature error	Allow the machine to cool down
E 5	Mains overvoltage	Switch off the machine and check the mains voltage
E 6	Mains undervoltage	
E 7	Electronics error	Switch the machine on and off again.
E 9	Secondary overvoltage	If the error persists, notify service department
E12	Voltage reduction error (VRD)	
E13	Electronics error	
E14	Adjustment error in current recording	Switch off the machine, place the electrode holder in an insulated position and switch the machine back on. If the error persists, notify service department
E15	Error in on of the electronics supply voltages	Switch the machine off and on again. If the error persists, notify service department
E23	Temperature error	Allow the machine to cool down
E32	Electronics error	Switch the machine on and off again. If the error persists, notify service department
E33	Adjustment error in voltage recording	Switch off the machine, place the electrode holder in an insulated position and switch the machine back on. If the error persists, notify service department
E34	Electronics error	Switch the machine on and off again. If the error persists, notify service department
E37	Temperature error	Allow the machine to cool down
E40	Motor fault	Check wire feed unit, switch the machine off and on again, inform the service department if the fault persists.
E55	Failure of a mains phase	Switch off the machine and check the mains voltage
E58	Short circuit in welding circuit	Switch off machine and check welding current leads for correct installation, e.g., put down electrode holder in an electrically insulated manner, disconnect degausser current lead.

7.3 Resetting welding parameters to the factory settings

All customised welding parameters that are stored will be replaced by the factory settings.

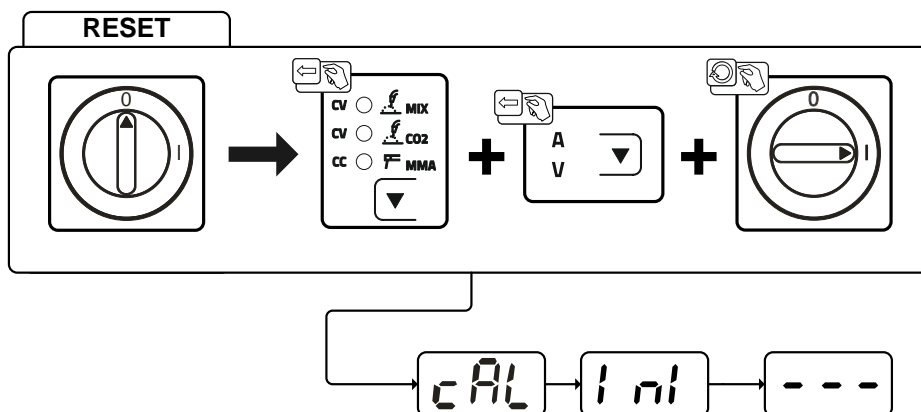


Figure 7-1

Display	Setting/selection
	Calibration The machine will be calibrated for approx 2 seconds each time it is switched on.
	Initialising Keep the push-button pressed until "InI" is shown on the display.

8 Technical data

8.1 Taurus drive 4L Basic

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

Supply voltage	42 VAC
Max. welding current at 60% DC	550 A
Max. welding current at 100% DC	430 A
Protection classification	IP 23
EMC class	A
Safety identification	CE / EAC
Harmonised standards used	IEC 60974-1, -5, -10
Wire feed speed	0.5 m/min. to 25 m/min
Standard roll equipment	1.0 mm and 1.2 mm (for steel wire)
Wire feed mechanism	4 rolls (37 mm)
Torch connector	Euro torch connector
Wire spool diameter	Standardised wire spools up to 300 mm
Dimensions L x W x H	660 x 280 x 380 mm
	26 x 11 x 15 inch
Weight	15 kg
	33.1 lb

9 Accessories



Performance-dependent accessories like torches, workpiece leads, electrode holders or intermediate hose packages are available from your authorised dealer.

9.1 General accessories

Type	Designation	Item no.
AK300	Wire spool adapter K300	094-001803-00001
DM 842 Ar/CO2 230bar 30l D	Pressure regulator with manometer	394-002910-00030
GH 2X1/4" 2M	Gas hose	094-000010-00001
HC PL	Hose cutter	094-016585-00000

9.2 Options

Type	Designation	Item no.
ON CMF drive 4L	Optional retrofit crane suspension for drive 4L	092-002483-00000
ON WAKD2 4L/41L	Optional wheel assembly retrofit kit for drive 4L	090-008151-00000
ON WAKD 4L/41L	Wheel assembly kit for DRIVE 4L	090-008169-00000

10 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.*

10.1 Wire feed rollers

10.1.1 Wire feed rollers for steel wire

Type	Designation	Item no.
FE 2DR4R 0,6+0,8	Drive rollers, 37 mm, steel	092-000839-00000
FE 2DR4R 0,8+1,0	Drive rollers, 37 mm, steel	092-000840-00000
FE 2DR4R 0,9+1,2	Drive rollers, 37 mm, steel	092-000841-00000
FE 2DR4R 1,0+1,2	Drive rollers, 37 mm, steel	092-000842-00000
FE 2DR4R 1,2+1,6	Drive rollers, 37 mm, steel	092-000843-00000
FE/AL 2GR4R	Pressure rollers, smooth, 37mm	092-000844-00000

10.1.2 Wire feed rollers for aluminium wire

Type	Designation	Item no.
AL 4ZR4R 0,8+1,0	Twin rollers, 37 mm, for aluminium	092-000869-00000
AL 4ZR4R 1,0+1,2	Twin rollers, 37 mm, for aluminium	092-000848-00000
AL 4ZR4R 1,2+1,6	Twin rollers, 37 mm, for aluminium	092-000849-00000
AL 4ZR4R 2,4+3,2	Twin rollers, 37 mm, for aluminium	092-000870-00000

10.1.3 Wire feed rollers for cored wire

Type	Designation	Item no.
ROE 2DR4R 0,8/0,9+0,8/0,9	Drive rollers, 37 mm, cored wire	092-000834-00000
ROE 2DR4R 1,0/1,2+1,4/1,6	Drive rollers, 37 mm, cored wire	092-000835-00000
ROE 2DR4R 1,4/1,6+2,0/2,4	Drive rollers, 37 mm, cored wire	092-000836-00000
ROE 2DR4R 2,8+3,2	Drive rollers, 37 mm, cored wire	092-000837-00000
ROE 2GR4R	Pressure rollers, knurled, 37mm	092-000838-00000

10.1.4 Conversion kit

Type	Designation	Item no.
URUE VERZ>UNVERZ FE/AL 4R	Conversion kit, 37mm, 4-roller drive on non-toothed rollers (steel/aluminium)	092-000845-00000
URUE AL 4ZR4R 0,8+1,0	Conversion kit, 37mm, 4-roller drive for aluminium	092-000867-00000
URUE AL 4ZR4R 1,0+1,2	Conversion kit, 37mm, 4-roller drive for aluminium	092-000846-00000
URUE AL 4ZR4R 1,2+1,6	Conversion kit, 37mm, 4-roller drive for aluminium	092-000847-00000
URUE AL 4ZR4R 2,4+3,2	Conversion kit, 37mm, 4-roller drive for aluminium	092-000868-00000
URUE ROE 2DR4R 0,8/0,9+0,8/0,9	Conversion kit, 37mm, 4-roller drive for cored wire	092-000830-00000
URUE ROE 2DR4R 1,0/1,2+1,4/1,6	Conversion kit, 37mm, 4-roller drive for cored wire	092-000831-00000
URUE ROE 2DR4R 1,4/1,6+2,0/2,4	Conversion kit, 37mm, 4-roller drive for cored wire	092-000832-00000
URUE ROE 2DR4R 2,8+3,2	Conversion kit, 37mm, 4-roller drive for cored wire	092-000833-00000

Verschleißteile 4 Rollen-Antrieb Ø = 37mm		St= Stahl Al= Aluminium CrNi= Edelstahl Cu= Kupfer	Wear parts 4-Roller drive system Ø = 37mm
V-Nut: St-, CrNi-, Cu-Draht „Standard V-Nut“, oben unverzahnt und glatt, Rollenbezeichnung: „1,0“		V-groove: St-, CrNi-, Cu wire "Standard V-groove", on the top ungeared and plane, rolls description: "1,0"	
Antriebsrollen- Ø (b): Drive rolls- Ø (b): 0,6 + 0,8 0,8 + 1,0 0,9 + 1,2 1,0 + 1,2 1,2 + 1,6	Ersatzset: Spare set: 092-000839-00000 092-000840-00000 092-000841-00000 092-000842-00000 092-000843-00000		
Gegendruckrollenset (a) Set of counter pressure rolls (a) 092-000844-00000 Umrüstung verzahnt → unverzahnt: conversion geared → ungeared: 092-000845-00000			
U-Nut: Al-, Cu-Draht „Option U-Nut“, oben verzahnt, Rollenbezeichnung: „1,0 A2“		U-groove: Al-, Cu wire "Option U-groove", on the top geared-twin rolls, rolls description: "1,0 A2"	
Antriebsrollen- Ø (a+b): Drive rolls- Ø (a+b): 0,8 + 1,0 1,0 + 1,2 1,2 + 1,6 2,4 + 3,2	Ersatzset: Spare set: 092-000869-00000 092-000848-00000 092-000849-00000 092-000870-00000	Umrüstset: Conversion set: 092-000867-00000 092-000846-00000 092-000847-00000 092-000868-00000	
U-Nut gerändelt: Füll-/Röhrchendraht „Option U-Nut gerändelt“, oben verzahnt, ohne Nut gerändelt, Rollenbezeichnung: „1,0-1,2 R“		knurled U-groove: Cored wire "Option knurled U-groove", on the top geared, without knurled groove, rolls description: "1,0-1,2 R"	
Antriebsrollen- Ø (b): Drive rolls- Ø (b): 0,8 / 0,9 + 0,8 / 0,9 1,0 / 1,2 + 1,4 / 1,6 1,4 / 1,6 + 2,0 / 2,4 2,8 + 3,2	Ersatzset: Spare set: 092-000834-00000 092-000835-00000 092-000836-00000 092-000837-00000	Umrüstset: Conversion set: 092-000830-00000 092-000831-00000 092-000832-00000 092-000833-00000	
Gegendruckrollenset (a): Set of counterpressure rolls (a): 092-000838-00000			

Figure 10-1

11 Appendix A

11.1 Overview of EWM branches

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