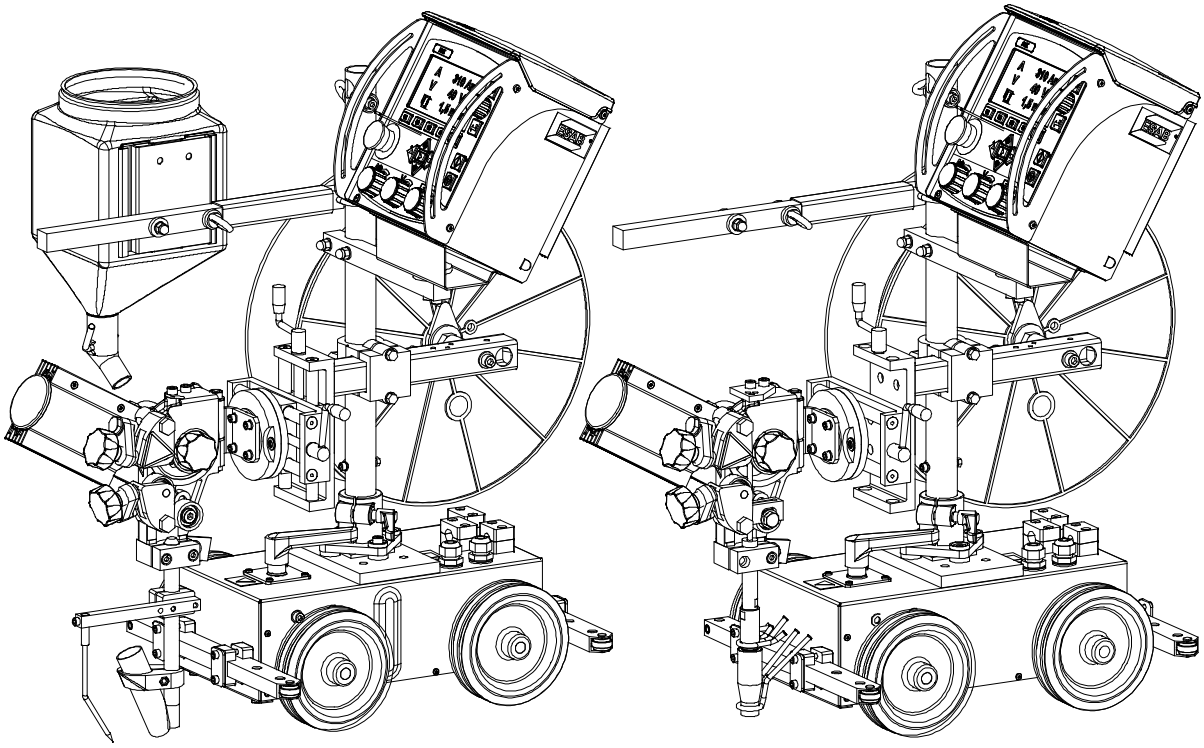
A2 Multitrac

A2TF J1/ A2TF J1 Twin/ A2TG J1/ A2TG J1 4WD



Instruction manual

0449 165 160 2009-10-07

Valid for serial no. 940-xxx-xxxx

DECLARATION OF CONFORMITY

In accordance with
the LV-Directive 2006/95/EC, the Machinery Directive 2006/42/EC, the EMC Directive 2004/108/EC

Type of equipment
Feeder of welding wire in combination with movable Welding Automats and stationary Welding heads, used with control box PEK

Brand name or trade mark Fabrikatnamn eller varumärke
ESAB

Type designation etc.
A2 Multitrac, A2 Tripletrac, A2 S-series, A6 Mastertrac, A6 Mastertrac Tandem, A6 S- series

Manufacturer or his authorised representative established within the EEA
Name, address, telephone No, telefax No:

ESAB AB, Welding Equipment
Esabvägen, SE-695 81 LAXÅ, Sweden
Phone: +46 584 81 000, Fax: +46 584 411 924

The following harmonised standards in force within the EEA have been used in the design:

EN 60974-5, Arc welding equipment – Part 5: Wire feeders
EN 12100-2, Safety of machinery – Part 2: Technical principles
EN 60974-10, Arc welding equipment – Part 10: Electromagnetic compatibility (EMC) requirements

Additional information: Restrictive use, Class A equipment, intended for use in locations other than residential

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the EEA, that the equipment in question complies with the safety requirements stated above.

Date / Datum
Laxå 2009-09-15

Signature / Underskrift

Kent Eimbrodt
Clarification

Position / Befattning
Global Director
Equipment and Automation

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1 SAFETY

Users of ESAB welding equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of welding equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the welding equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the welding equipment must be familiar with:
   - its operation
   - location of emergency stops
   - its function
   - relevant safety precautions
   - welding
2. The operator must ensure that:
   - no unauthorised person is stationed within the working area of the equipment when it is started up.
   - no-one is unprotected when the arc is struck
   - the working area/working range is free from objects.
3. The workplace must:
   - be suitable for the purpose
   - be free from draughts
4. Personal safety equipment
   - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves. **Note!** *Do not use safety gloves when replacing wire.*
   - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns.
5. Protection against other risks
   - Dust particles of a certain size can be harmful to man.
     A ventilation system and extractor should therefore be provided to eliminate this risk.
   - When replacing the wire drum, exercise the greatest caution as the end of the wire could cause personal injury.

6. General precautions

- Make sure the return cable is connected securely.
- Work on high voltage equipment **may only be carried out by a qualified electrician.**
- Appropriate fire extinquishing equipment must be clearly marked and close at hand.
- Lubrication and maintenance must **not** be carried out on the equipment during operation.

Mind the following:

- That the freewheel clutch of the gear shall be in locked position.
- That, if the operator leaves the machine, it ***shall*** be parked with blocks in front of the wheels, in order to prevent the machine from moving unintentionally.
- Make sure that the automatic welding machine is not unstable before start.
- That the placement of the welding head and the wire reel influence the centre of gravity of the machine.
  Too high a centre of gravity means an unstable welding machine.
- That the consumption of wire and flux results in displacement of the weight distribution during the welding.

⚠ ***WARNING, RISK OF CRUSHING!***

Do not use safety gloves when replacing wire, feed rollers and wire bobbins.

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WARNING

ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURER'S HAZARD DATA.

ELECTRIC SHOCK - Can kill

- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from earth and the workpiece.
- Ensure your working stance is safe.

FUMES AND GASES - Can be dangerous to health

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.

ARC RAYS - Can injure eyes and burn skin

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

FIRE HAZARD

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby.

NOISE - Excessive noise can damage hearing

- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risk.

MALFUNCTION

- Call for expert assistance in the event of malfunction.

READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHERS!

2 INTRODUCTION

2.1 General

The ***A2TF J1/ A2TF J1 Twin*** automatic welding machine is designed for Submerged Arc Welding of butt and fillet joints.

The ***A2TG J1/ A2TG J1 4WD*** automatic welding machines are designed for MIG/MAG welding of butt and fillet joints.

All other applications are prohibited.

They are intended for use in combination with ***PEK*** and ESAB's welding power sources ***LAF*** or ***TAF***.

2.2 Welding Method

2.2.1 Submerged Arc Welding (SAW)

For submerged arc welding the ***A2TF J1/ A2TF J1 Twin*** automatic welding machine is always to be used.

- **Submerged arc Light Duty.**

  Submerged arc light duty with a Ø 20 mm connector permits a load SAW to 800 A (100%).

This version can be equipped with feed rollers for single or twin wire welding (twin-arc). A special knurled feed roller is available for flux-cored wire, which guarantees even wire feed without the risk of deformation due to high feed pressure.

2.2.2 MIG/MAG Welding

For MIG/MAG welding use either automatic welding machine ***A2TG J1*** or ***A2TG J1 4WD*** (the ***A2TG J1 4WD*** consists of a four wheel drive wire feed unit).

In MIG/MAG welding the welding bead is shielded by way of shielding gas.

The welding head is water-cooled. The cooling water is supplied by hoses from connections intended for the purpose.

2.3 Definitions

SAW welding	The weld bead is protected by a cover of flux during the welding.
SAW Light duty	Permits welding with lower current load and thin wire.
MIG/MAG welding	The weld bead is protected by shielding gas during welding.
Twin-arc welding	Welding with two wires in one welding head.

2.4 Horizontal Welding

The automatic welding machines are designed for horizontal welding.

They are not to be used for welding on inclined planes.

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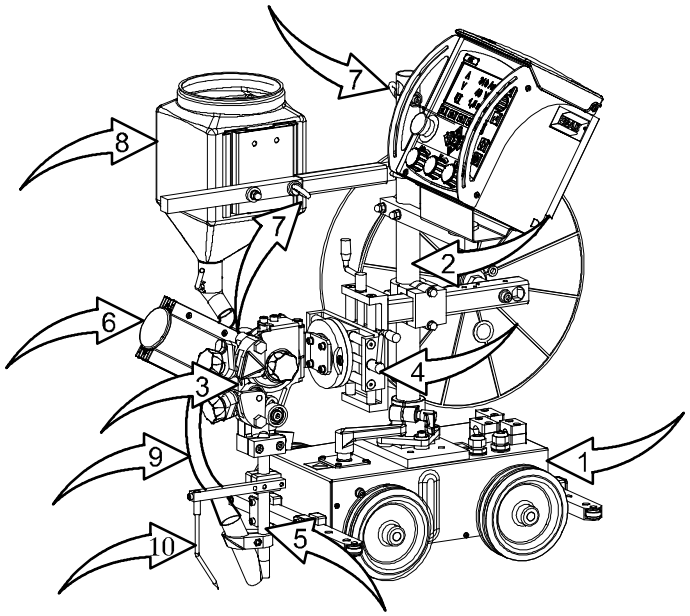
2.5 Technical data

	A2TF J1/ A2TF J1 Twin (SAW)	A2TG J1 (MIG/MAG)
Supply voltage	42 V AC	42 V AC
Permissible load at 100 %:	800 A	600 A
Wire dimensions:		
solid single wire	1.6-4.0 mm	0.8-2.5 mm
cored wire	1.6-4.0 mm	1.2-3.2 mm
solid twin wire	2x1.2-2.0 mm	--
Wire feed speed, max	9 m/min	16 m/min
Brake hub braking torque	1.5 Nm	1.5 Nm
Travel speed	0.1-2.0 m/min	0.1-2.0 m/min
Turning radius for circumferential welding, min	1500 mm	1500 mm
Pipe diameter for internal joint welding, min	1100 mm	1100 mm
Max. weight of wire	30 kg	30 kg
Flux container volume (Not to be filled with preheated flux)	6 l	--
Weight (excl. wire and flux)	47 kg	47 kg
Enclosure class	IP10	IP10
EMC classification	Class A	Class A

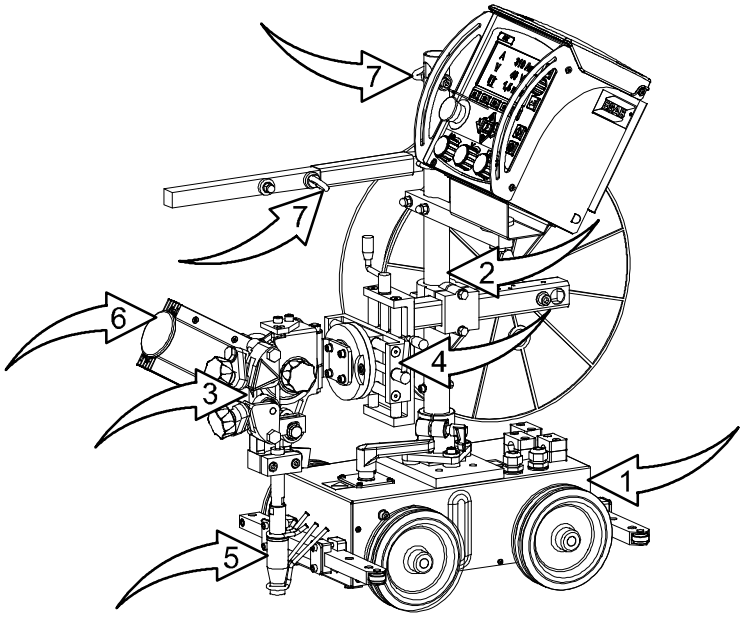
	A2TG J1 4WD (MIG/MAG)	
Type of gas:	**Mix/Ar**	**CO_2**
Supply voltage	42 V AC	42 V AC
Permissible load at 100 %:	600 A	650 A
Wire dimensions:		
Non–alloy / Low–alloy	1.0–1.6 mm	1.0–1.6 mm
Stainless steel	1.0–1.6 mm	
Cored wire	1.0–2.4 mm	1.0–2.4 mm
Aluminium	1.0 – 2.0 mm	
Wire feed speed, max	25 m/min	25 m/min
Brake hub braking torque	1.5 Nm	1.5 Nm
Travel speed	0.1-2.0 m/min	0.1-2.0 m/min
Turning radius for circumferential welding, min	1500 mm	1500 mm
Pipe diameter for internal joint welding, min	1100 mm	1100 mm
Setting range, contact device	±45°	±45°
Max. weight of wire	30 kg	30 kg
Weight (wire excluded):	47 kg	47 kg
Enclosure class	IP10	IP10
EMC classification	Class A	Class A

2.6 Main components A2TF J1/ A2TF J1 Twin (SAW)



1. *Carriage*
2. *Carrier*
3. *Wire feed unit*
4. *Slide kit, manual*
5. *Contact tube*
6. *Wire feed motor*
7. *Wire guide*
8. *Flux hopper*
9. *Flux tube*
10. *Guide pin*

2.7 Main Components A2TG J1/ A2TG J1 4WD (MIG/MAG)



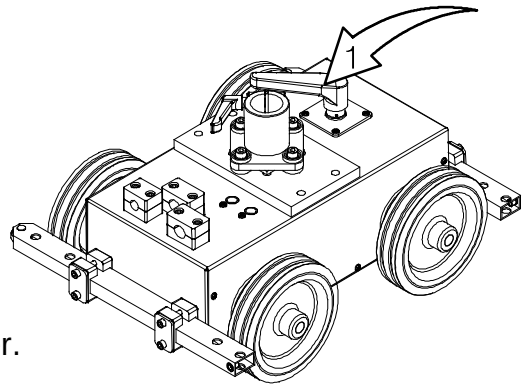
1. *Carriage*
2. *Carrier*
3. *Wire feed unit*
4. *Slide kit, manual*
5. *Connector*
6. *Wire feed motor*
7. *Wire guide*

See on page 11 for a description of the main components.

2.8 Description of Main Components

2.8.1 Carriage

The carriage is provided with 4-wheel drive. The carriage can be secured by way of the locking lever (***1***).



2.8.2 Carrier

The control box, wire feed unit and flux hopper, among other things, are to be fitted on the carrier.

2.8.3 Wire Feed Unit / Wire Feed Unit with four-wheel Drive

The unit is used for guiding and feeding the welding wire down into the contact tube/connector.

2.8.4 Manual Slides

The horizontal and vertical position of the welding head is adjusted by way of linear slides. The angular motion can be freely adjusted using the rotary slide.

2.8.5 Contact Tube / Connector

Transfers welding current to the wire during welding.

2.8.6 Wire Feed Motor

The wire feed motor is used for feeding the welding wire.

2.8.7 Guide Pin

The guide pin is used to help positioning the welding head in the joint.

2.8.8 Flux Hopper / Flux Tube

The flux is filled into the flux hopper and is then transferred to the workpiece through the flux tube.

The amount of flux to be dropped down is controlled by way of the flux valve fitted to the flux hopper.

See “**Refilling with flux** on page 22.

2.8.9 Fine-wire straightener

The unit is used for the straightening of fine wire.

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3 INSTALLATION

3.1 General

The installation must be executed by a professional.

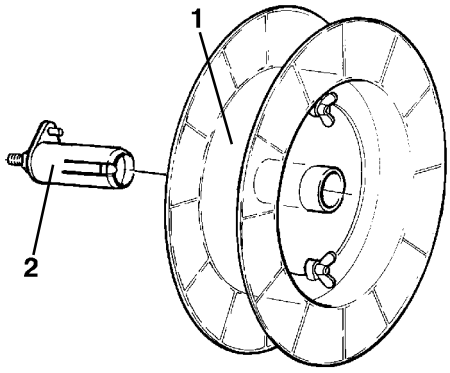
WARNING

Rotating parts can cause injury, take great care.

3.2 Mounting

3.2.1 Wire drum (Accessories)

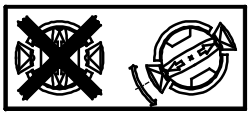
Wire drum (***1***) is mounted on the brake hub (***2***).



WARNING

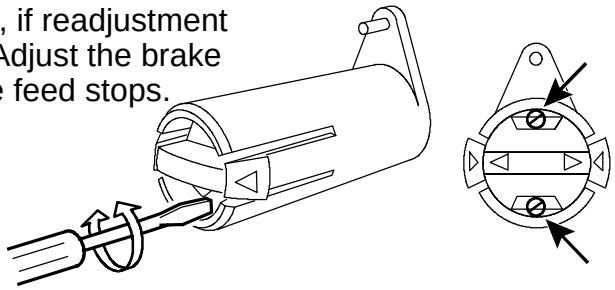
To prevent the reel sliding off the hub:

- *Lock the reel in place by turning the red knob as shown on the warning label attached next to the hub.*



3.3 Adjusting the brake hub

The brake hub is adjusted when delivered, if readjustment is required, follow the instructions below. Adjust the brake hub so that wire is slightly slack when wire feed stops.



- **Adjusting the braking torque:**
  - Turn the red handle to the locked position.
  - Insert a screwdriver into the springs in the hub.

  Turn the springs clockwise to reduce the braking torque

  Turn the springs anticlockwise to increase the braking torque.

  NB: Turn both springs through the same amount.

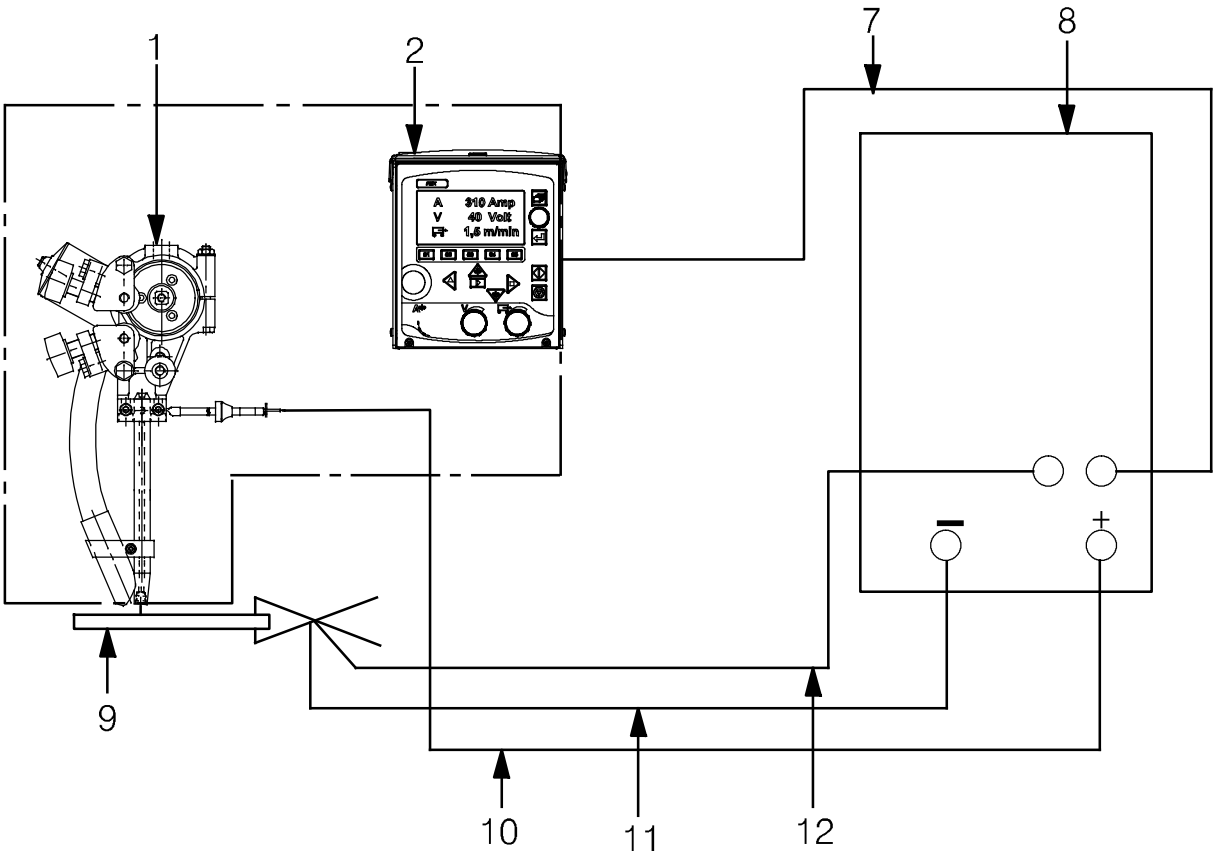
3.4 Connections

3.4.1 General

- The ***PEK*** is to be connected by a qualified person. See instruction manual 0460 948 xxx, 0460 949 xxx, 0459 839 036.
- For the connection of welding power source ***LAF/ TAF,*** see separate instruction manual.

3.4.2 Automatic welding machine A2TF J1/ A2TF J1 Twin (Submerged arc welding, SAW)

1. Connect the control cable (***7***) between the power source (***8***) and the control box ***PEK*** (***2***).
2. Connect the return cable (***11***) between the power source (***8***) and work piece (***9***).
3. Connect the welding cable (***10***) between the power source (***8***) and the automatic welding machine (***1***).
4. Connect the measurement cable (***12***) between the power source (***8***) and workpiece (***9***).



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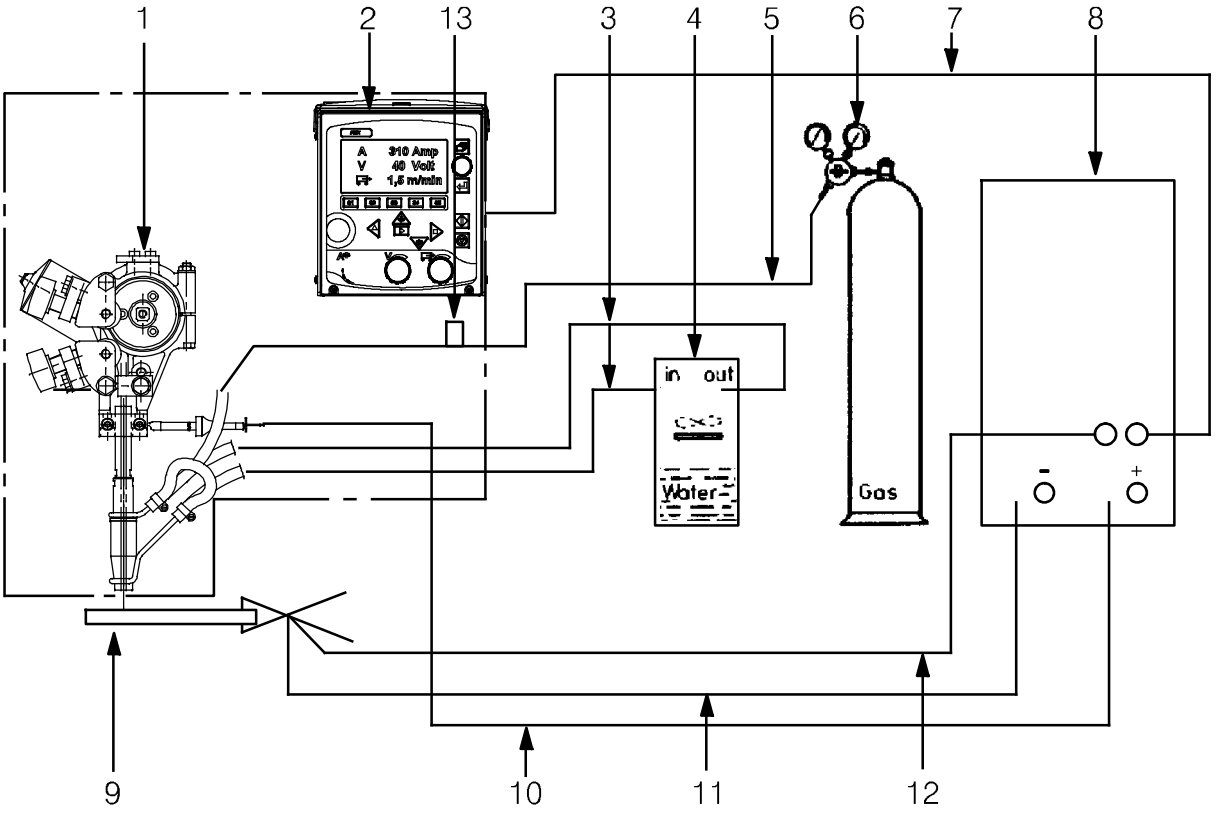
3.4.3 Automatic welding machine A2TG J1 (Gas metal arc welding, MIG/MAG)

1. Connect the control cable (***7***) between the power source (***8***) and control box ***PEK*** (***2***).
2. Connect the return cable (***11***) between the power source (***8***) and work piece (***9***).
3. Connect the welding cable (***10***) between the power source (***8***) and the automatic welding machine (***1***).
4. Connect the gas hose (***5***) between the reducer valve (***6***) and the gas connection (***13***) on the welding machine.
5. Connect the cooling water hoses (***3***) between the cooling unit (***4***) and the automatic welding machine (***1***).
6. Connect the measurement cable (***12***) between the power source (***8***) and workpiece (***9***).



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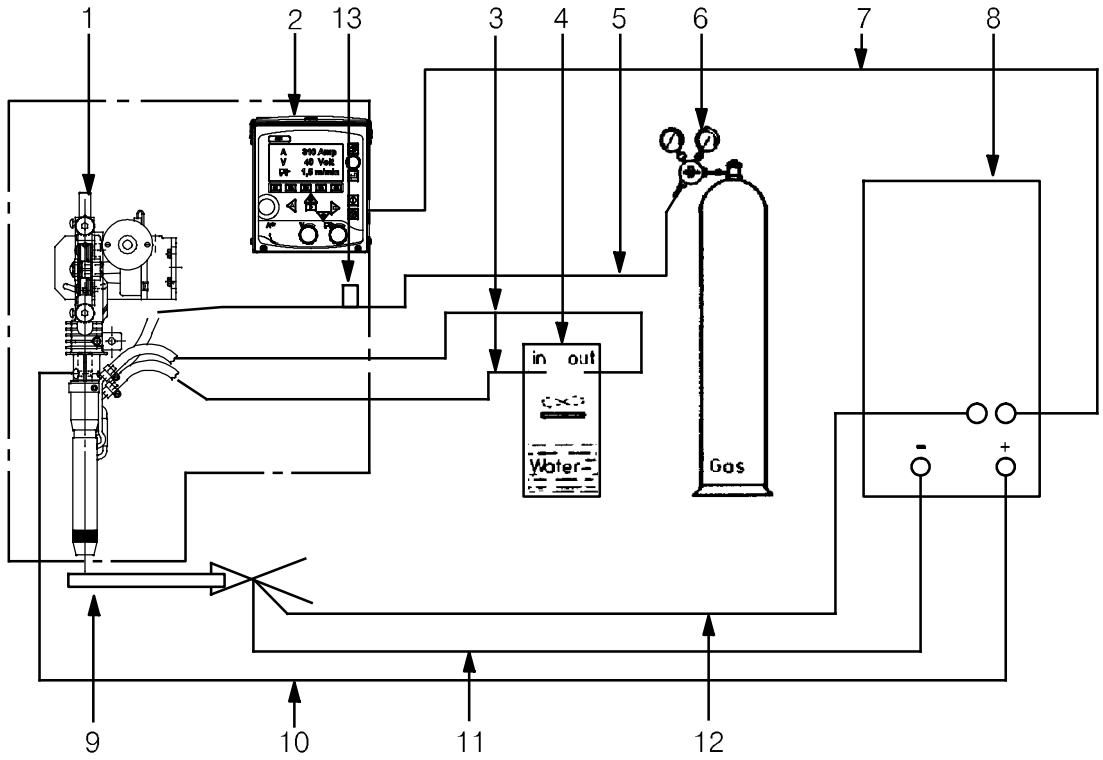
3.4.4 Automatic welding machine A2TG J1 4WD (Gas metal arc welding, MIG/MAG)

1. Connect the control cable (***7***) between the welding power source (***8***) and the ***PEK*** (***2***).
2. Connect the return cable (***11***) between the welding power source (***8***) and the work piece (***9***).
3. Connect the welding cable (***10***) between the welding power source (***8***) and the automatic welding machine (***1***).
4. Connect the gas hose (***5***) between the reduction valve (***6***) and the gas valve on the automatic welding machine (***13***).
5. Connect the hoses for cooling water (***3***) between the cooling unit (***4***) and the automatic welding machine (***1***).
6. Connect the measuring cable (***12***) between the welding power source (***8***) and the work piece (***9***).



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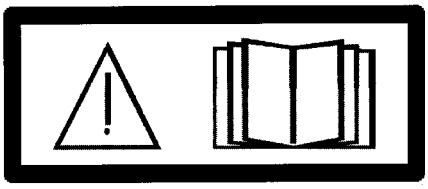
4 OPERATION

4.1 General



WARNING:

Have you read and understood the safety information ?

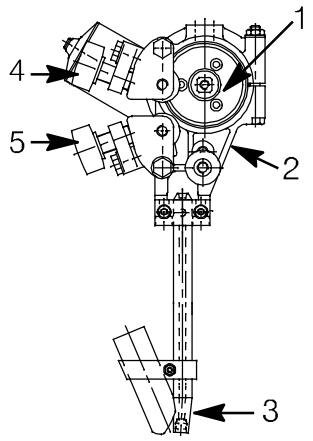
You must not operate the machine before then !

General safety regulations for the handling of the equipment can be found on page 5. Read through before you start using the equipment!

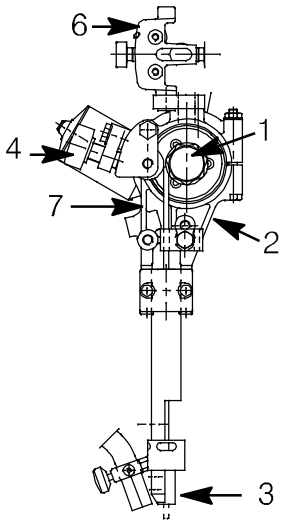
Before welding start, check that the return cable is connected. See page 13- 15.

4.2 Loading the welding wire (A2TF J1/ A2TF J1 Twin, A2TG J1)

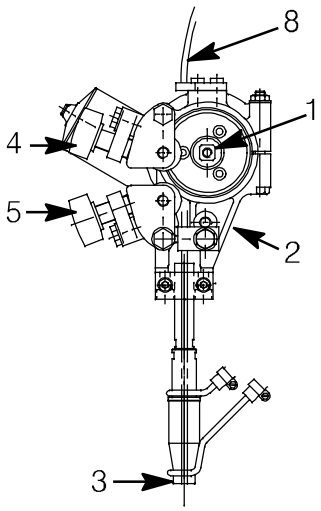
A2TF J1 (SAW)



A2TF J1 Twin (SAW)



A2TG J1 (MIG/MAG)



1. Mount the wire drum according to the instructions on page 12.
2. Check that feed roller (***1***) and contact jaw or contact tip (***3***) are of the correct dimension for the selected wire size.
3. For A2TF J1 Twin and A2TG J1:
   - Feed the wire through the wire guide (***8***).
4. When welding with fine wire:
   - Feed the wire through the fine Wire feed unit (***6***).

     Ensure that the straightener is correctly adjusted so that the wire emerges straight out through the contact jaws or contact tip (***3***).
5. Pull the end of the wire through the straightener (***2***).
   - For a wire diameter greater than 2 mm; straighten out 0.5 m of wire and feed it by hand down through the straightener.
6. Locate the end of the wire in the feed roller (***1***) groove.
7. Set the wire tension on the feed roller with the knob (***4***).
   - ***Note!*** Do not tension more than is required to achieve an even feed.
8. Feed the wire forward 30 mm below the contact tip by pressing  on the control box ***PEK***.
9. Direct the wire by adjusting the knob (***5***).

- ***Always*** use a guide tube (***7***) to ensure even feed of fine wire (1.6 - 2.5 mm).
- For MIG/MAG welding with wire sizes < 1.6 mm, use a guide spiral, which is inserted in the guide tube (***7***).

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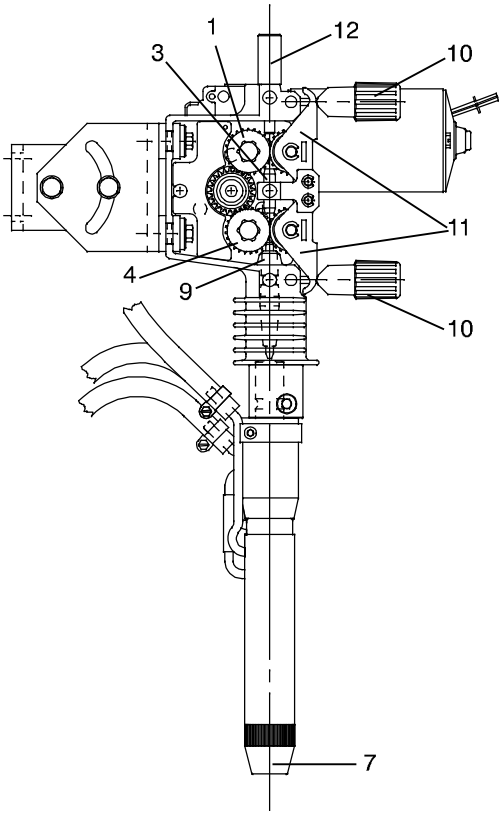
4.3 Loading the welding wire (A2TG J1 4WD)



1. Check that the feed rollers (***1, 4***) and the contact nozzle (***7***) are of the correct dimension for the wire size selected.

   NOTE!
   The feed rollers are marked with their respective groove diameter (D) on the opposite side of the roller.

2. Undo the pressure devices (***10***) and put up the pressure arms (***11***).
3. Put the end of the wire through the wire guide nipple (***12***).
4. Locate the end of the wire in the groove of the feed roller (***1***) and feed it through the intermediate nozzle (***3***).
5. Locate the end of the wire in the groove of the other feed roller (***4***) and feed it through the outlet nozzle (***9***).
6. Put down the pressure arms (***11***) and adjust the wire tension on the feed rollers (***1, 4***) by way of the pressure devices (***10***).

   NOTE! Do not tighten down too hard.

7. Feed the wire forward 30 mm below the contact nozzle by pressing  on the control box ***PEK***.

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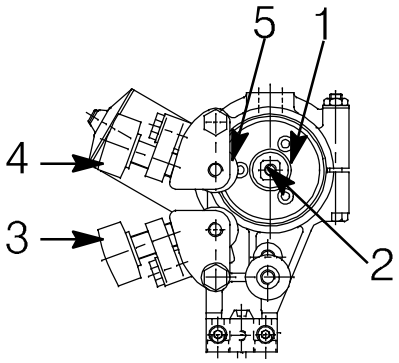
4.4 Changing the feed roller (A2TF J1/A2TF J1 Twin, A2TG J1)

Single wire



- Release the knobs (***3***) and (***4***).
- Release the hand wheel (***2***).
- Change the feed roller (***1***).
  They are marked with their respective wire sizes.

Twin wire (Twin-arc)

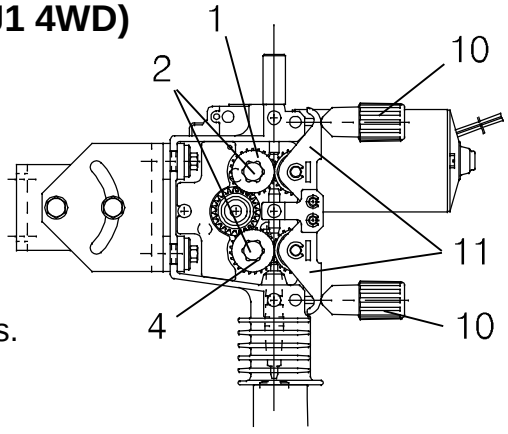
- Change the feed roller (***1***) with twin grooves in the same way as for single wire.
- **NOTE!** The pressure roller (***5***) must also be changed. A special curved pressure roller for twin wire replaces the standard pressure roller for single wire.
- Assemble the pressure roller with special stub shaft
  (order no. 0146 253 001).

Flux-cored wire for knurled rollers (Accessories)

- Change the feed roller (***1***) and pressure roller (***5***) as a pair for the wire size to be used.

  NOTE! A special stub shaft is required for the pressure roller
  (order no. 0212 901 101).
- Tighten the pressure screw (***4***) with moderate pressure to ensure that the flux-cored wire does not deform.

4.5 Changing the feed rollers (A2TG J1 4WD)



- Undo the pressure devices (***10***).
- Put up the pressure arms (**11**).
- Undo the mounting screws (**2**) of the feed rollers.
- Replace the feed rollers (**1, 4**).
- Adjust the wire tension on the new feed rollers.

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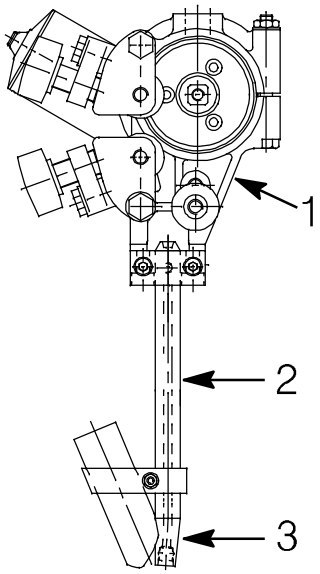
4.6 Contact equipment for Submerged arc welding

4.6.1 For single wire 1.6 - 4.0 mm. Light duty (D20)

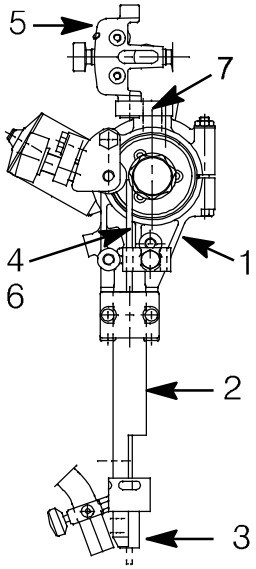


Use automatic welding machine A2TF J1 (SAW) where the following are included:

- Wire feed unit (***1***),
- Connector D20 (***2***)
- Contact tip (***3***) (M12 thread).

Tighten the contact tip (***3***) with a key in order to ensure that a good contact is achieved.

4.6.2 For twin wires 2 x 1.2 - 2.0 mm, Light Twin (D35)

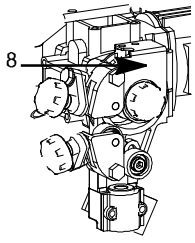


Use automatic welding machine A2TF J1 Twin (SAW) where the following are included:

- Wire feed unit (***1***),
- Connector Twin D35 (***2***)
- Contact tip (***3***) (M6 thread).
- Fine-Wire feed unit (***5***)
- Guide tubes (***4, 6***).

Tighten the contact tip (***3***) with a key in order to ensure that a good contact is achieved.

Accessories:



- Fine-wire straightener (***5***) to be fitted on top of the clamp of the wire feed unit (***1***).

  N.B. When mounting the fine-wire straightener, remove the plate (**7**) if it's exists.
  N.B. The protection plate (***8***) shall not be removed

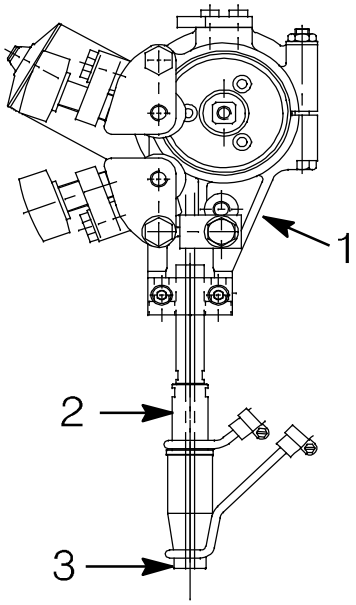
Adjustment of the wires for Twin-arc welding:

- Position the wires in the joint so as to achieve optimal weld quality by rotating the connector. The two wires can be rotated so that they are positioned one after the other along the line of the joint, or in any position up to 90° across the joint, i.e. one wire on each side of the joint.

GB

4.7 Contact equipment for MIG/MAG welding

4.7.1 For single wire 1.6 - 2.5 mm (D35)

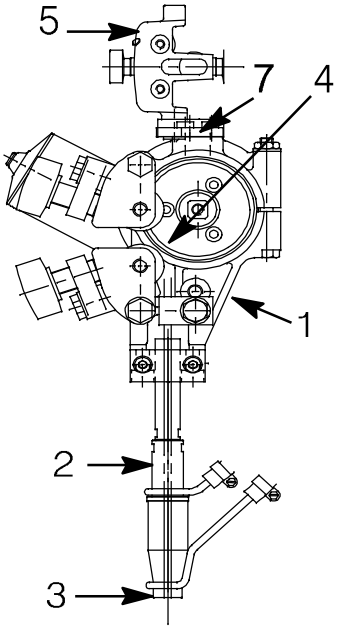


Use automatic welding machine A2TG J1 (MIG/MAG) where the following are included:

- Wire feed unit (***1***),
- Connector D35 (***2***)
- Contact tip (***3***) (M10 thread).

Tighten the contact tip (***3***) with a key in order to ensure that a good contact is achieved.

4.7.2 For single wire < 1.6 mm (D35)



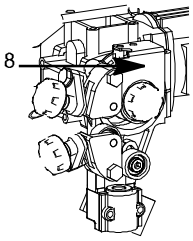
Use automatic welding machine A2TG J1 (MIG/MAG) where the following are included:

- Wire feed unit (***1***),
- Connector D35 (***2***)
- Contact tip (***3***) (M12 thread).
- Guide tubes (***4***).

Tighten the contact tip (***3***) with a key in order to ensure that a good contact is achieved.

Use the following accessories:

- Fine-wire straightener (***5***) to be fitted on top of the clamp of the wire feed unit (***1***).
- Guide spiral to be inserted into the guide tube (***4***).



N.B. When mounting the fine-wire straightener, remove the plate (**7**) if it's exists.
N.B. The protection plate (***8***) shall not be removed

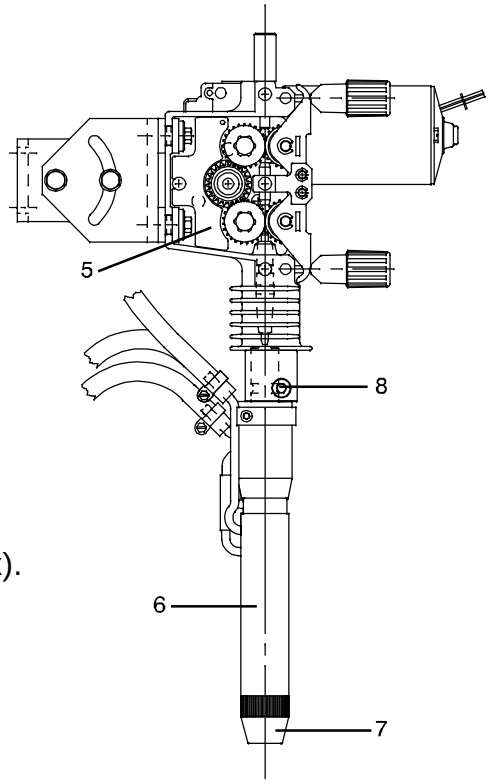
4.7.3 For single wire 1.0 - 2.4 mm (wire feed unit with four-wheel drive)

Use automatic welding machine A2TG J1 4WD (MIG/MAG) where the following are included:

- Wire feed unit (***5***),
- Contact device D35 (***6***)

  Tighten the contact device (***6***) using the Allen screw (***8***).
- Contact nozzle (***7***).

  Tighten the contact nozzle in order to ensure that good contact is achieved.



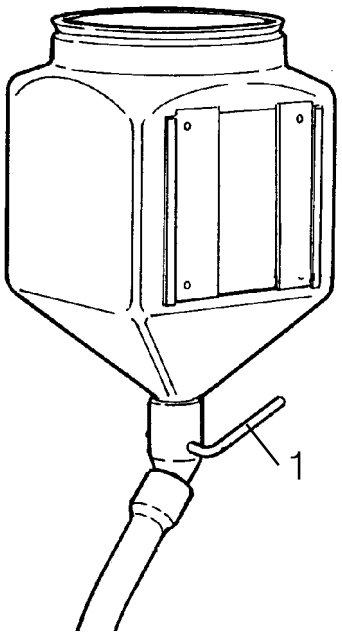
Select a wire guide insert of the correct dimension for the type of wire to be used. See the instruction manual for contact device ***MTW 600*** (0449 006 xxx).

4.8 Refilling with flux powder (Submerged arc welding)

1. Close the flux valve (***1***) on the flux hopper.
2. Remove the cyclone on the flux recovery unit, if fitted.
3. Fill with flux powder.

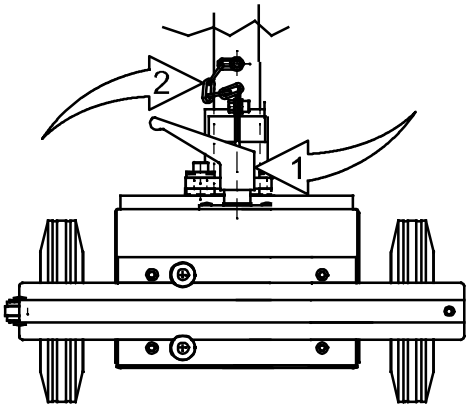
   NOTE! The flux powder must be dry.
4. Position the flux tube so that it does not become kinked.
5. Adjust the height of the flux nozzle above the weld so that the correct amount of flux is delivered.

   Flux coverage should be sufficient so that penetration of the arc does not occur.

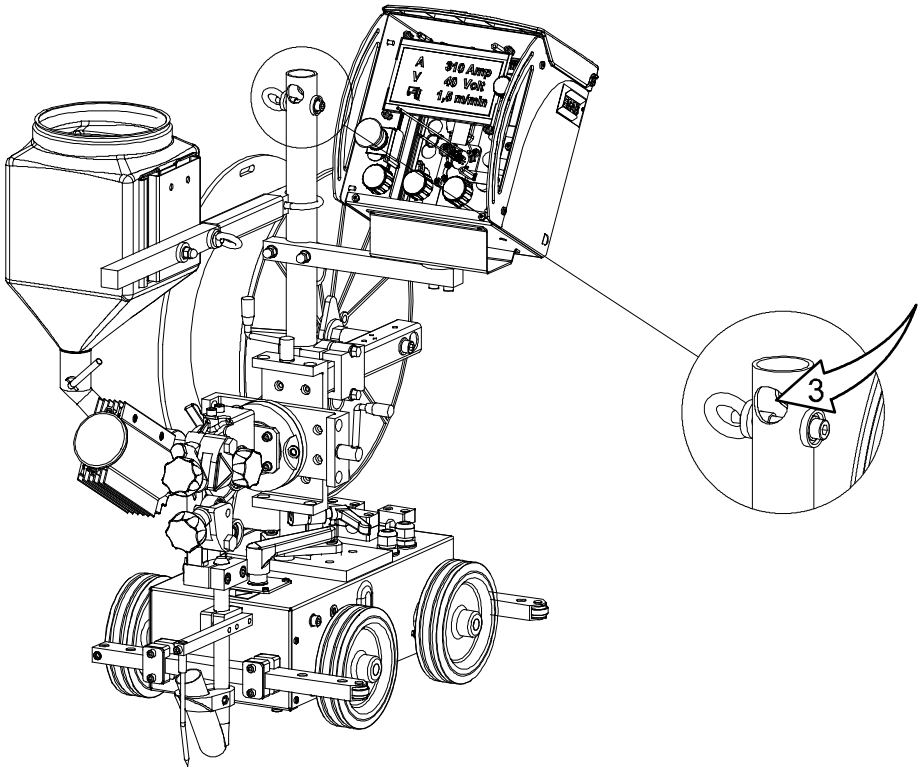


4.9 Transportation of the Automatic Welding Machine

- Disengage the wheels by turning the locking lever (***1***).
- Make sure the safety chain (***2***) is properly fastened; this to prevent an accident happening, if for example the carrier is not adequately locked to the foot clamp of the carriage.



N.B. In case of lifting the automatic welding machine, the lifting eye (***3***) shall be used.



4.10 Conversion of A2TF J1/ A2TF J1 Twin (Submerged-arc) to MIG/MAG welding

Assemble in accordance with the instructions accompanying the conversion kit.

4.11 Conversion of A2TF J1 (submerged-arc welding) to Twin-arc

Assemble in accordance with the instructions accompanying the conversion kit.

5 MAINTENANCE

5.1 General

Note:
All warranty undertakings given by the supplier cease to apply if the customer attempts to rectify any faults on the machine during the warranty period.

NB! Before doing any kind of maintenance work, make sure the mains is disconnected.

For the maintenance of the control box, ***PEK***, see the instruction manual 0460 948 xxx, 0460 949 xxx, 0459 839 036.

5.2 Daily

- Clean flux and dirt off moving parts of the welding machine.
- Check that the contact tip and all electrical cables are connected.
- Check that all bolted joints are tight and that guides and drive rollers are not worn or damaged.
- Check the brake hub braking torque. It should not be so low, that the wire reel continues to rotate when wire feed is stopped and it should not be so great that the feed rollers slip. As a guide, the braking torque for a 30 kg wire reel should be 1,5 Nm.
  To adjust the braking torque see on page 12.

5.3 Periodic

- Inspect the electrode feed unit's electrode control, drive rollers and contact tip.
- Replace worn or damaged components.
- Inspect the slides, lubricate them if they are binding.
- Lubricate the chain.
- **Tensioning the chain between the trolley's front and back axles.**
  - Dismantle the trolley wheels and blanks. Remove the Y flange bearing bolts.
  - Tension the chain by moving the trolley's rear axle parallel in relation to the front axle.
  - Reassemble in the reverse order.
- **Tensioning the chain from the trolley's front axle to the drive motor and gearbox.**
  - Tension the chain by moving the drive motor and gearbox.

6 TROUBLESHOOTING

6.1 General

Equipment

- Instruction manual control box ***PEK,*** 0460 948 xxx, 0460 949 xxx, 0459 839 036.

Check

- that the power supply is connected for the correct mains supply
- that all three phases are supplying the correct voltage (phase sequence is not important)
- that welding cables and connections are not damaged
- that the controls are correctly set
- that the mains supply is disconnected before starting repairs

6.2 POSSIBLE FAULTS

1. Symptom	**Current and voltage readings show large fluctuations.**
Cause 1.1	Contact jaws or nozzle are worn or wrong size.
Action	Replace contact jaws or nozzle.
Cause 1.2	Feed roller pressure is inadequate.
Action	Increase pressure on feed rollers.
2. Symptom	**Wire feed is irregular.**
Cause 2.1	Pressure on feed rollers incorrectly set.
Action	Adjust pressure on feed rollers.
Cause 2.2	Feed rollers wrong size.
Action	Replace feed rollers.
Cause 2.3	Grooves in feed rollers are worn.
Action	Replace feed rollers.
3. Symptom	**Welding cables overheating.**
Cause 3.1	Poor electrical connection.
Action	Clean and tighten all electrical connections.
Cause 3.2	Cross-sectional area of welding cables too small.
Action	Use cables with a larger cross-section or use parallel cables.

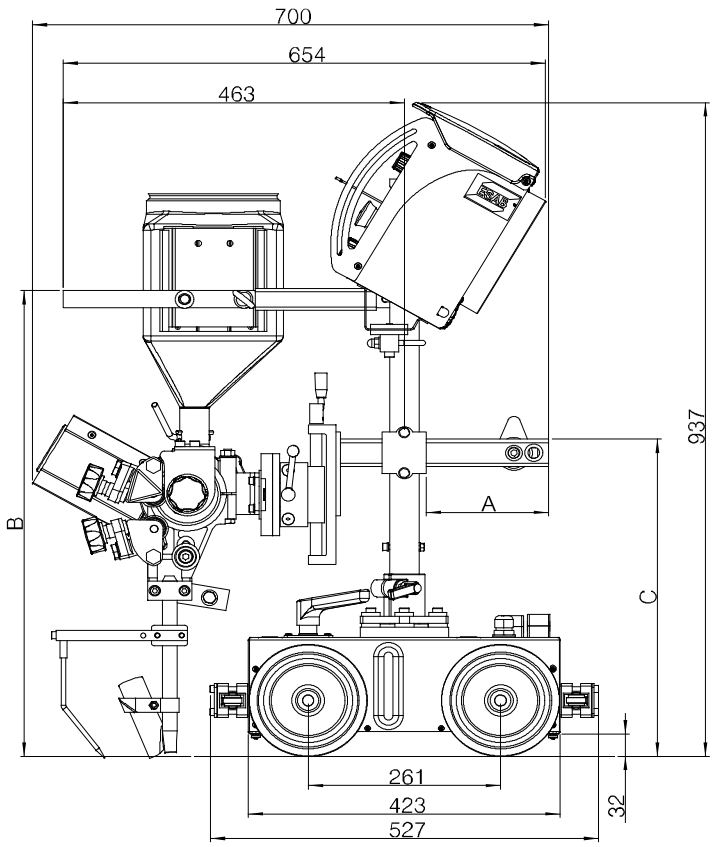
7 ORDERING OF SPARE PARTS

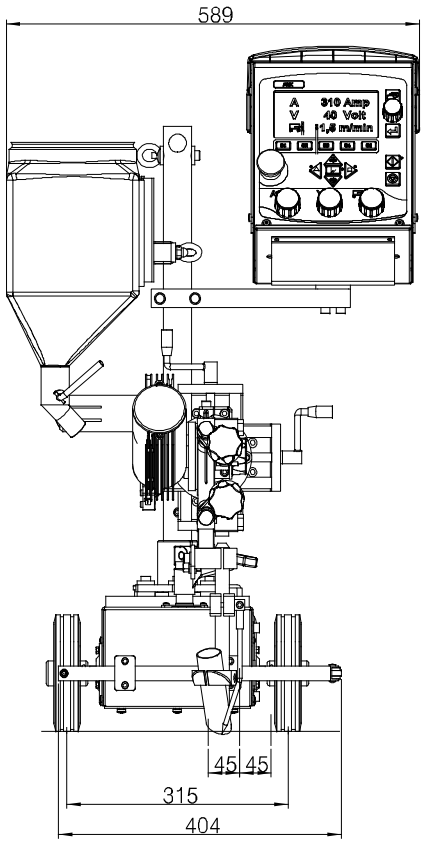
Spare parts are ordered through your nearest ESAB representative, see back cover. When ordering spare parts, please state machine type and number as well as designation and spare part number as shown in the spare parts list on page 29.
This will simplify dispatch and ensure you get the right part.

DIMENSION DRAWING

A2TF J1/ A2TF J1 Twin

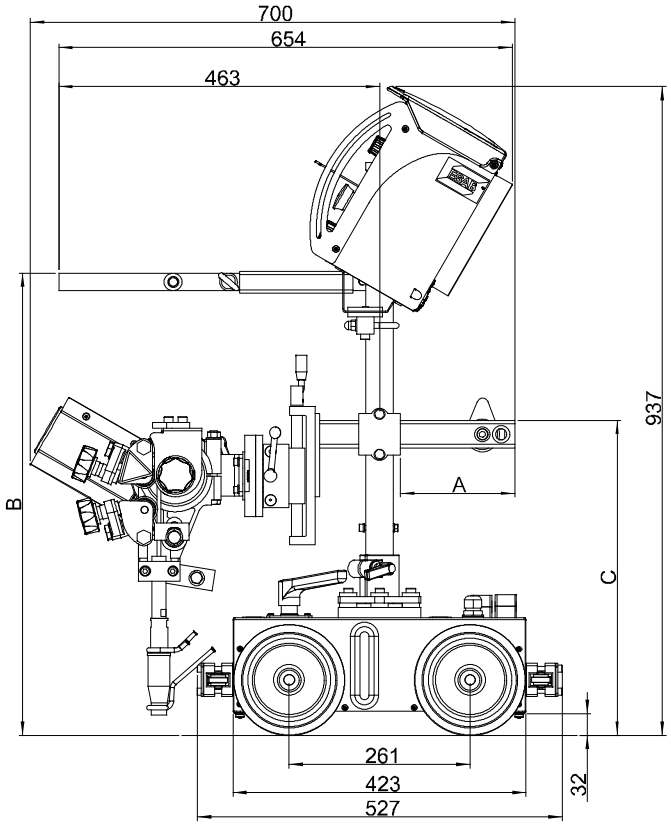
Recommended adjusting		
Measure	Butt joint	Fillet joint
A	165 mm	165 mm
B	668 mm	668 mm
C	455 mm	455 mm

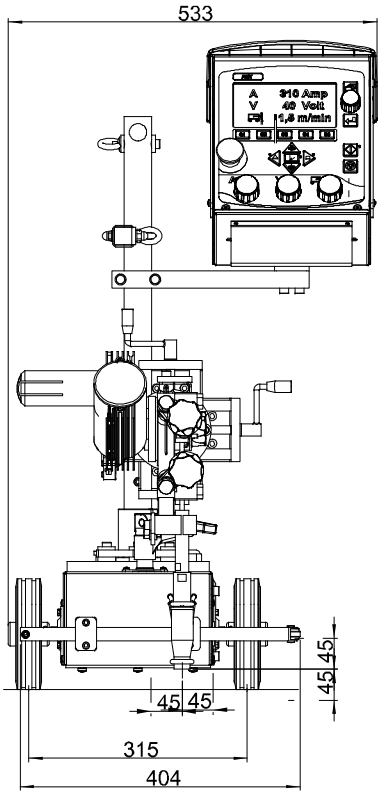




A2TG J1/ A2TG J1 4WD

Recommended adjusting		
Measure	Butt joint	Fillet joint
A	165 mm	165 mm
B	668 mm	668 mm
C	455 mm	455 mm





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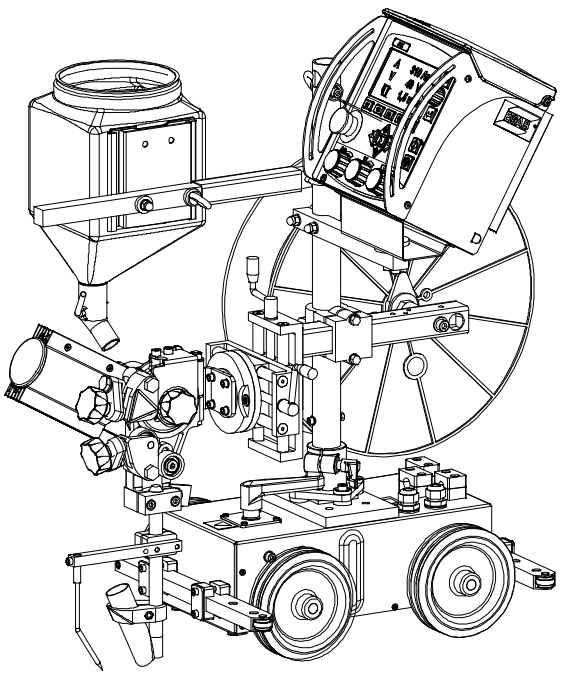
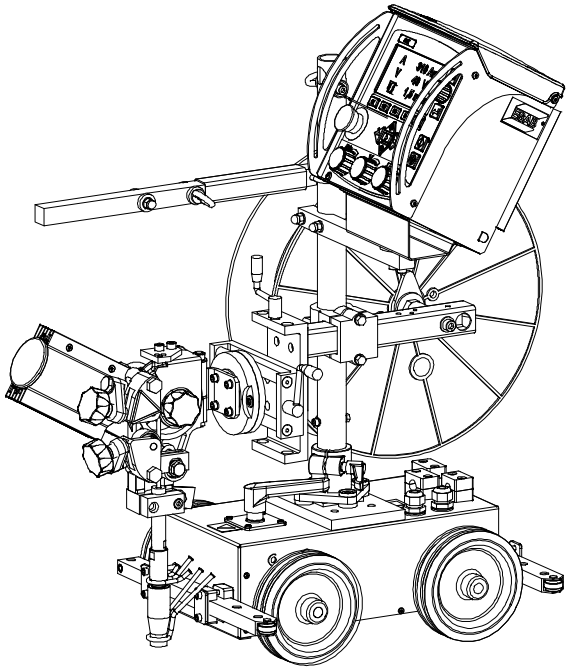
A2TF J1/ A2TF J1 Twin/ A2TG J1/ A2TG J1 4WD

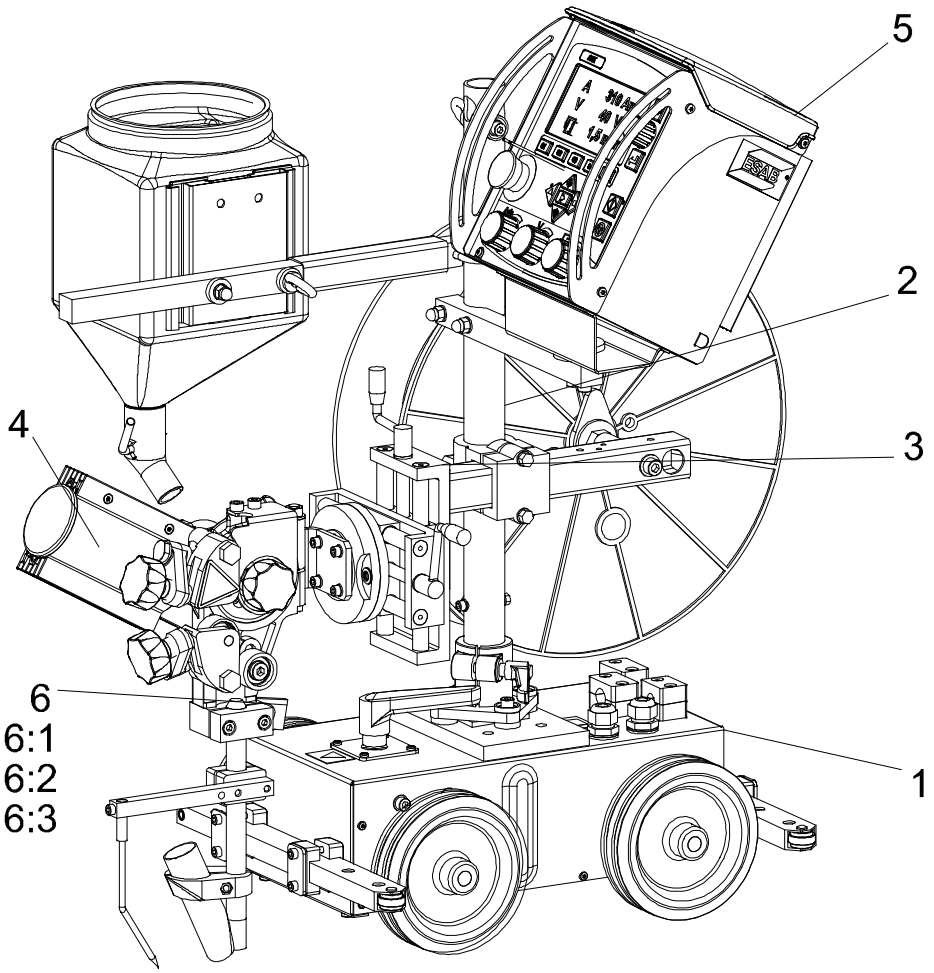
Edition 2009-10-07



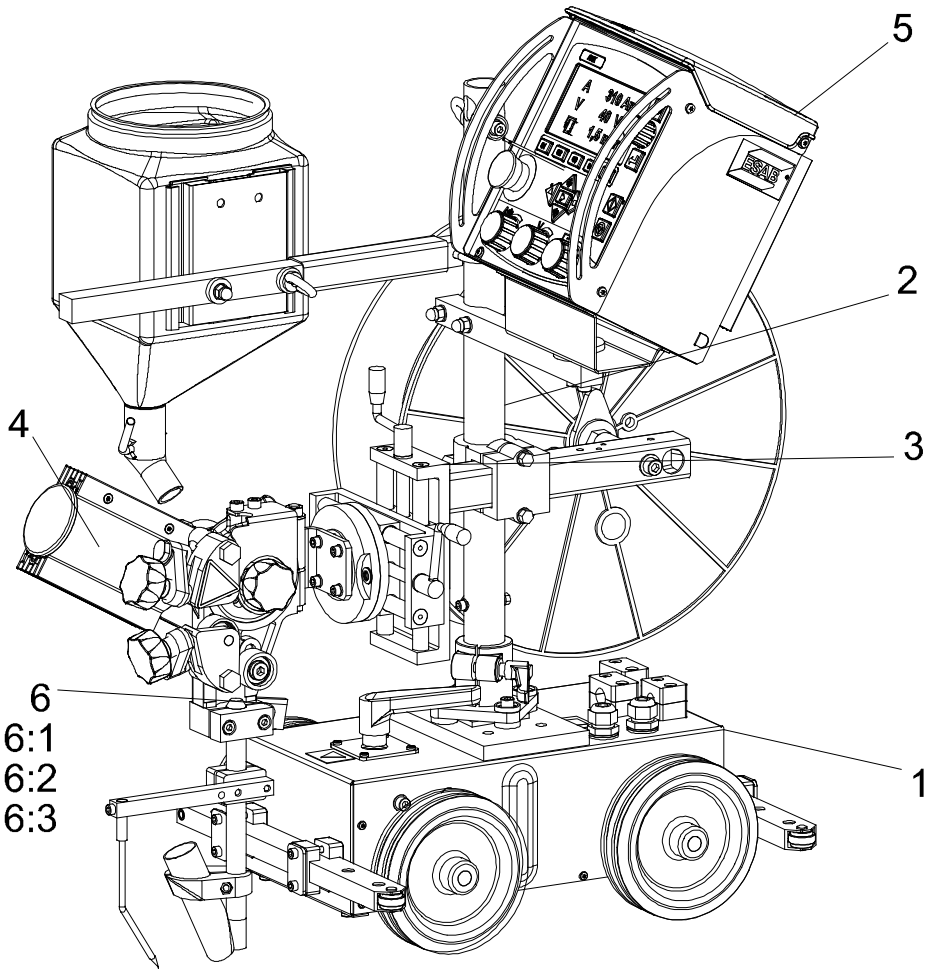


Ordering no.	Denomination	Notes
0461 233 880	A2 Multitrac SAW	A2TF J1 SAW
0461 233 881	A2 Multitrac SAW Twin	A2TF J1 Twin SAW
0461 234 880	A2 Multitrac MIG/ MAG	A2TG J1 MIG/ MAG
0461 234 881	A2 Multitrac MIG/ MAG	A2TG J1 4WD MIG/ MAG

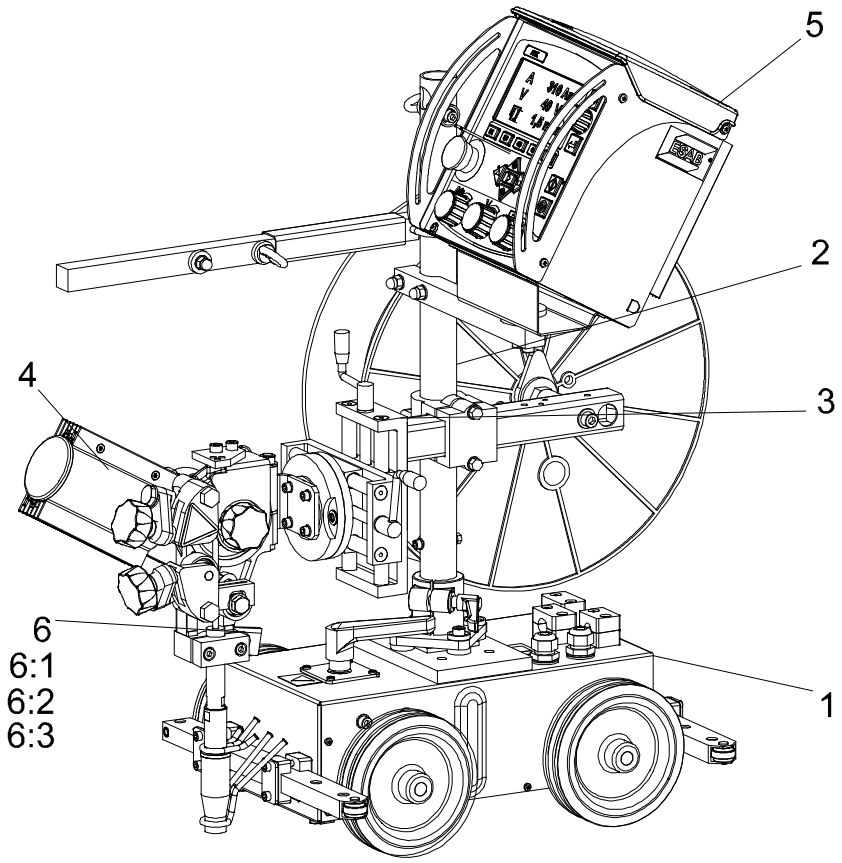
Item no.	Qty	Ordering no.	Denomination	Notes
		0461 233 880	**Automatic welding machine**	**A2TF J1, SAW**
1	1	0449 100 883	Carriage	
2	1	0449 154 880	Carrier	
3	1	0449 152 880	Slide travel kit, manual	90 mm
4	1	0449 150 900	Wire feed unit complete	
5	1	0460 504 880	Control box	PEK
6	1	0449 153 900	Cable kit	L = 1.6 m
6:1	1	0460 909 881	Pulse transducer cable	
6:2	1	0461 249 881	Motor cable	
6:3	1	0461 239 880	Arc welding cable	



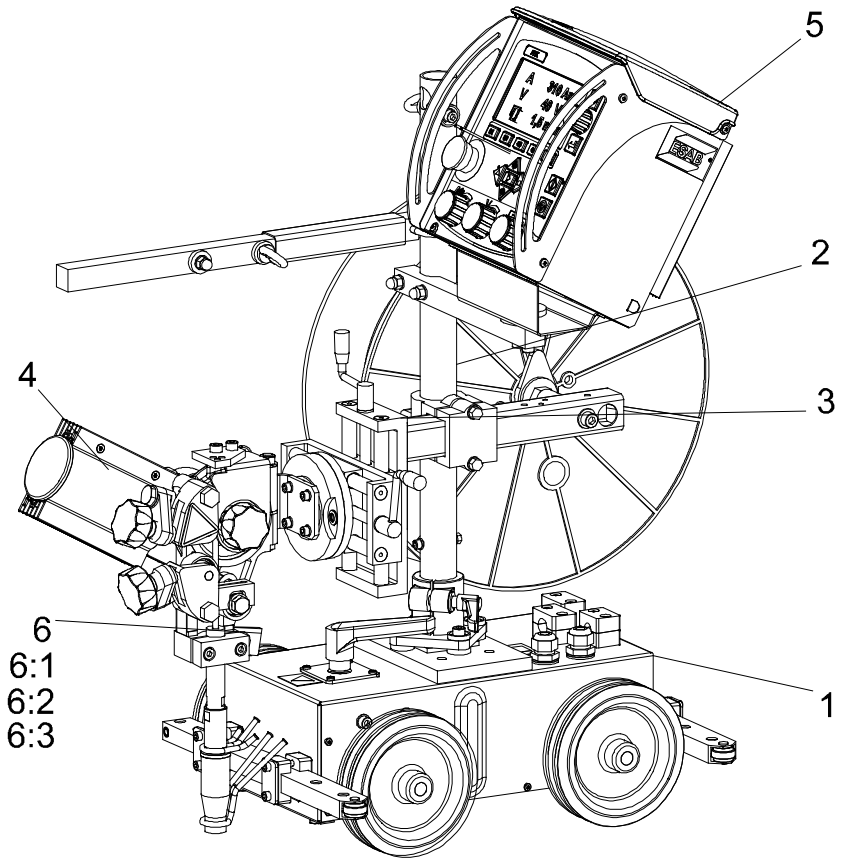
Item no.	Qty	Ordering no.	Denomination	Notes
		0461 233 881	**Automatic welding machine**	**A2TF J1 Twin, SAW**
1	1	0449 100 883	Carriage	
2	1	0449 154 880	Support	
3	1	0449 152 880	Slide travel kit, manual	90 mm
4	1	0449 150 901	Wire feed unit complete	Twin
5	1	0460 504 880	Control box	PEK
6	1	0449 153 900	Cable kit	L = 1.6 m
6:1	1	0460 909 881	Pulse transducer cable	
6:2	1	0461 249 881	Motor cable	
6:3	1	0461 239 880	Arc welding cable	



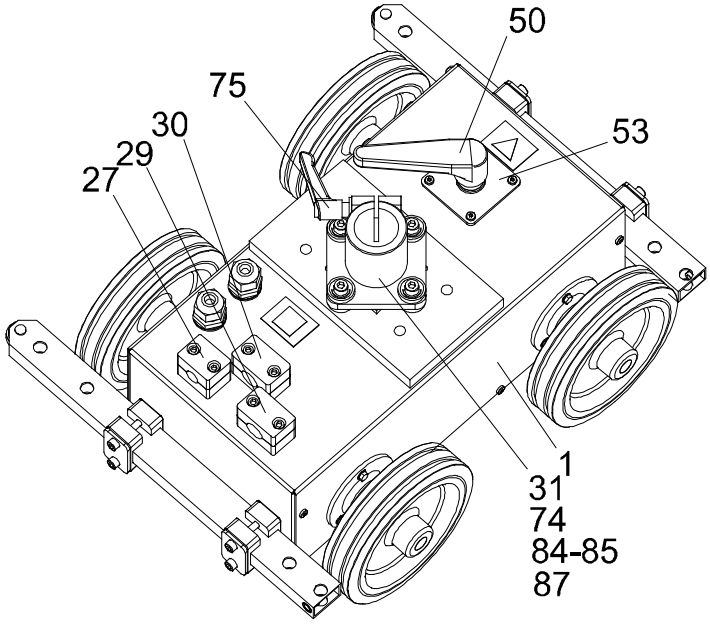
Item no.	Qty	Ordering no.	Denomination	Notes
		0461 234 880	**Automatic welding machine**	**A2TG J1, MIG/ MAG**
1	1	0449 100 883	Carriage	
2	1	0449 154 880	Carrier	
3	1	0449 152 880	Slide travel kit, manual	90 mm
4	1	0449 150 902	Wire feed unit complete	
5	1	0460 504 880	Control box	PEK
6	1	0449 153 900	Cable kit	L = 1,6 m
6:1	1	0460 909 881	Pulse transducer cable	
6:2	1	0461 249 881	Motor cable	
6:3	1	0461 239 880	Arc welding cable	



Item no.	Qty	Ordering no.	Denomination	Notes
		0461 234 881	**Automatic welding machine**	**A2TG J1 4 WD, MIG/ MAG**
1	1	0449 100 883	Carriage	
2	1	0449 154 880	Carrier	
3	1	0449 152 880	Slide travel kit, manual	90 mm
4	1	0449 150 903	Wire feed unit complete	4 WD
5	1	0460 504 880	Control box	PEK
6	1	0449 153 900	Cable kit	L = 1,6 m
6:1	1	0460 909 881	Pulse transducer cable	
6:2	1	0461 249 881	Motor cable	
6:3	1	0461 239 880	Arc welding cable	



Item no.	Qty	Ordering no.	Denomination	Notes
		0449 100 883	**Carriage**	
1	1	0449 087 001	Cover	
9	3	0333 087 005	Y-Flange unit	
12	4	0415 857 001	Rubber wheel	
13	4	0211 102 962	Roll pin	
14	1	0461 241 880	Motor cable	L=1.9 m
15	1	0461 242 880	Pulse transducer cable	L=2,1 m
23	2	0449 205 880	Guide arm complete	
27	1	0413 366 320	Clamp	
29	1	0413 366 105	Clamp	
30	1	0413 366 112	Clamp	
31	1	0449 101 001	Plate	
40	1	0800 185 001	Bearing bushing	
43	1	0449 089 881	Drive unit	
44	1	049 098 001	Shaft with eccentric	
45	1	0449 099 001	Shaft support	
47	1	0449 096 001	Shaft	
50	1	0333 630 001	Adjustable locking lever	
53	1	0449 097 001	Plate	
55	8	0449 206 001	Clamp	
56	4	0191 498 003	Cover plare	
59	2	0333 086 003	Sprocket for carriage	
60	2	0211 102 952	Roll pin	
61	1	0218 201 501	Chain	3/8” x5.7
62	1	0218 201 601	Chain lock	3/8” x5.7
71	3	0449 108 001	Plate	
72	9	0219 504 302	Spring washer	
74	1	0413 539 002	Clamp	
75	1	0193 570 131	Locking lever	
84	4	0163 139 002	Bushing	
85	4	0162 414 002	Insulating pipe	
87	1	0413 527 001	Plate	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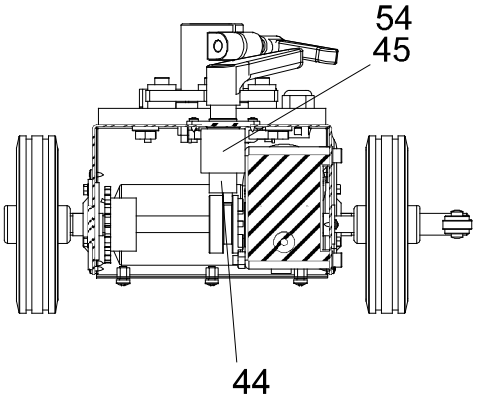
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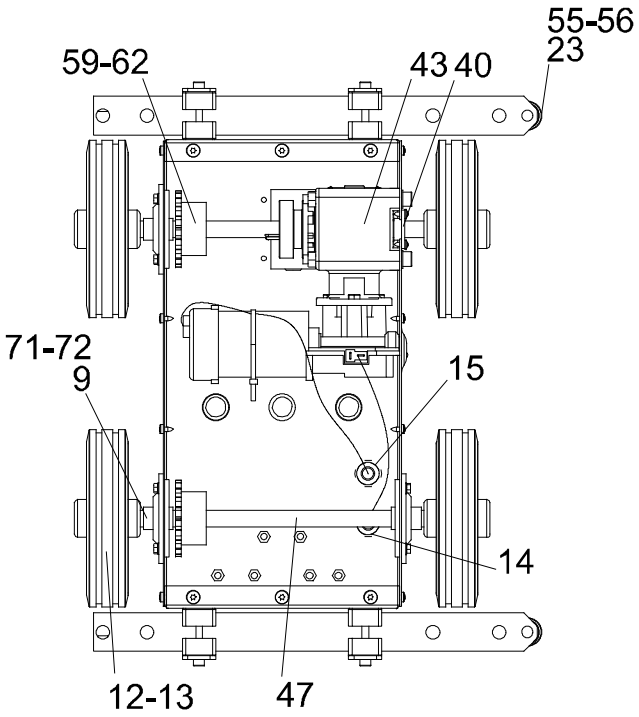
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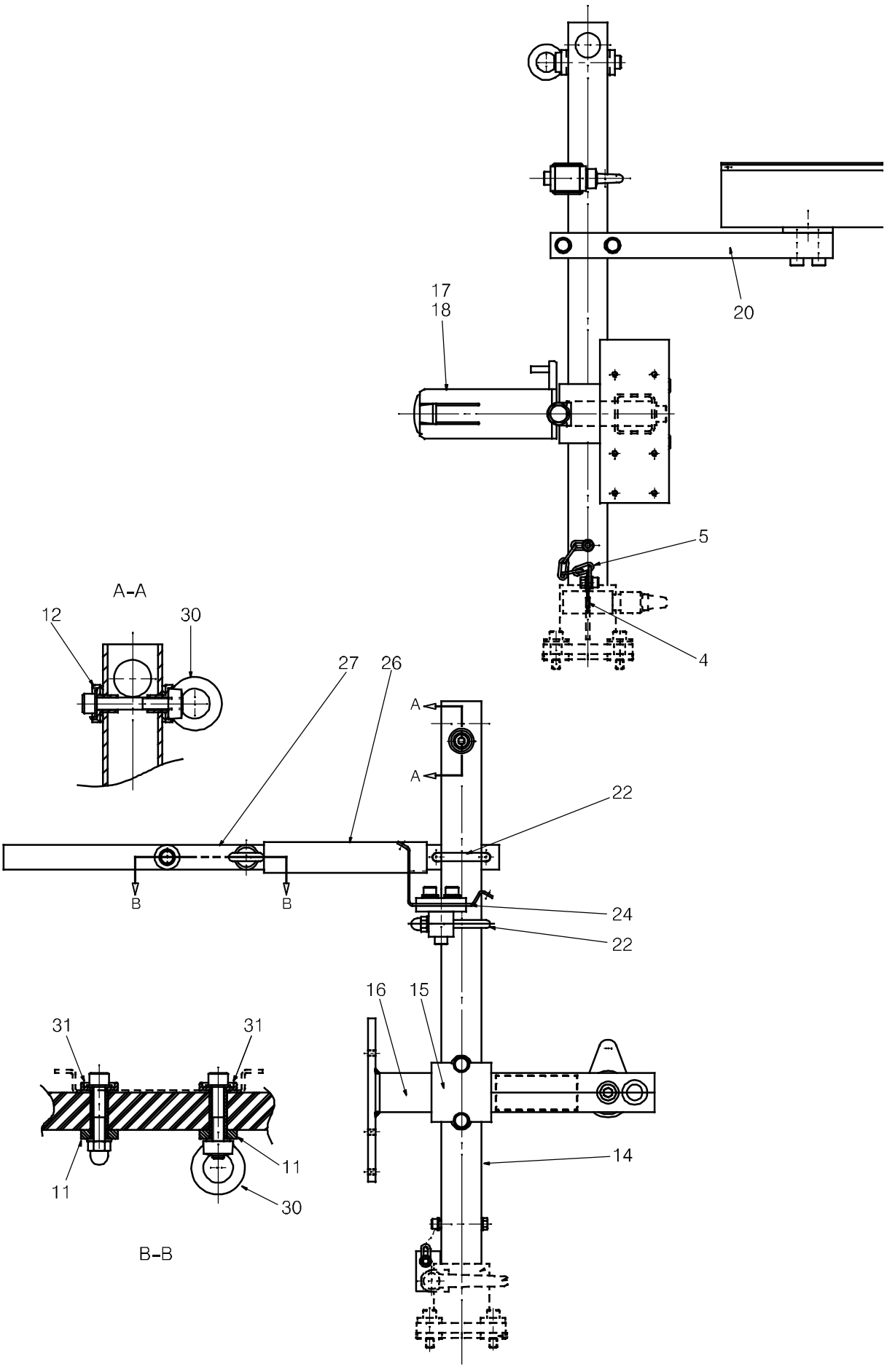
Item no.	Qty	Ordering no.	Denomination	Notes
		0449 154 880	**Carrier**	
4	1	0413 671 001	Chain attachment	
5	1	0413 597 001	Safety chain	
11	6	0163 139 002	Bushing	
12	6	0162 414 002	Insulating tube	
14	1	0413 528 001	Column	
15	1	0413 540 001	Clamp	
16	1	0413 530 880	Arm	
17	1	0146 967 880	Brake hub	
18	1	0413 532 001	Attachment	
20	1	0413 317 002	Handle	
22	2	0156 442 002	Clamp screw	R21 M8
24	1	0334 185 886	Box girder beam complete	
26	1	0413 525 001	Insulating tube	
27	1	0413 317 001	Handle	
30	2	0218 301 113	Lifting eye bolt	
31	2	0162 414 004	Insulating tube	



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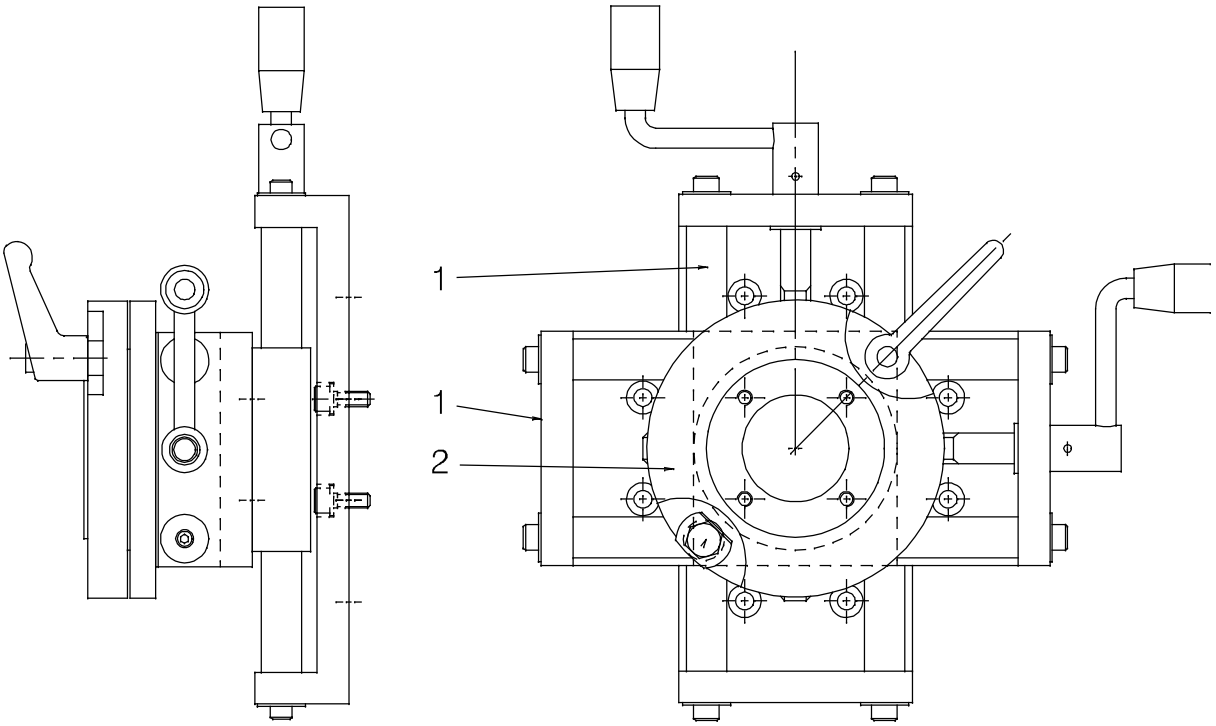
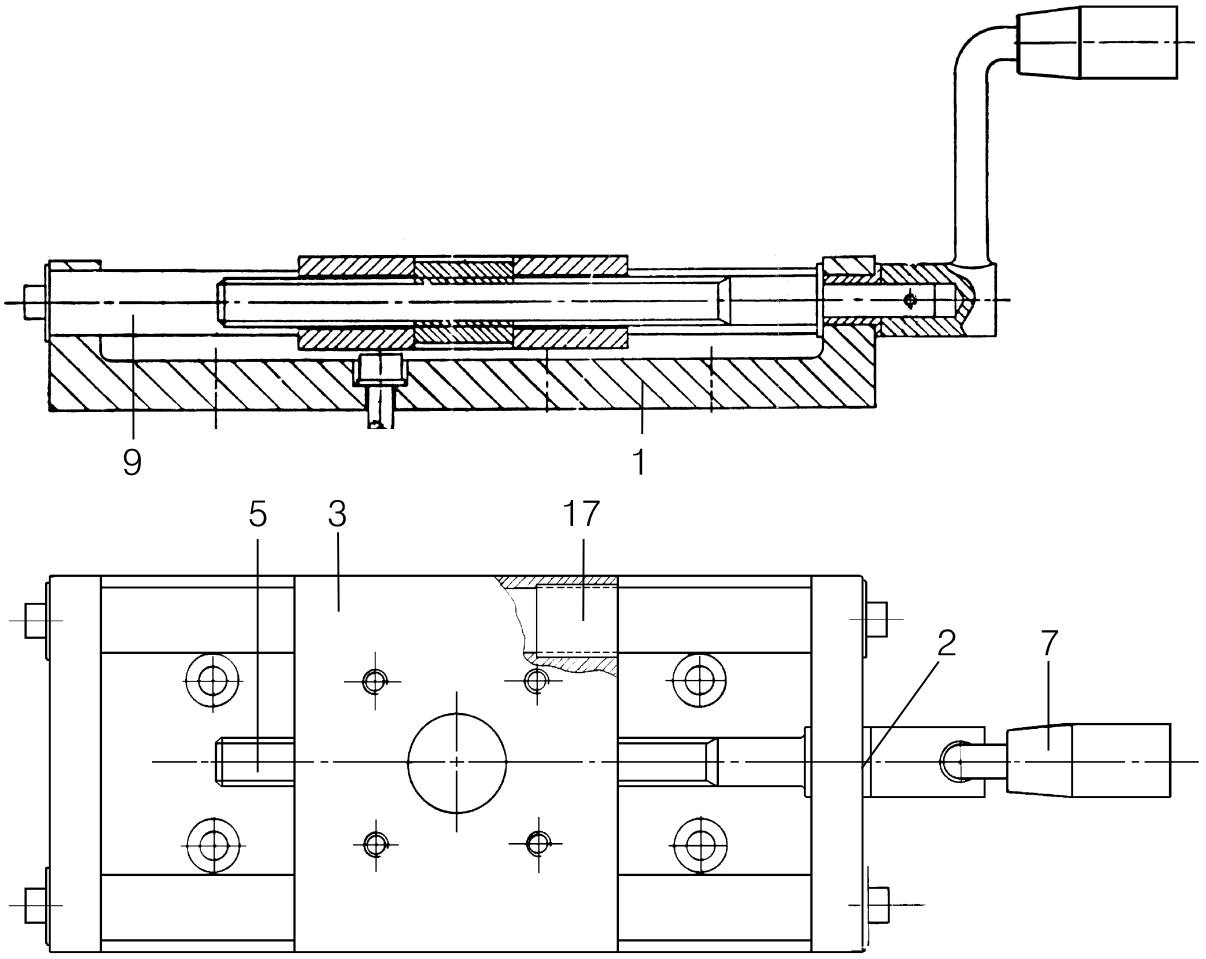
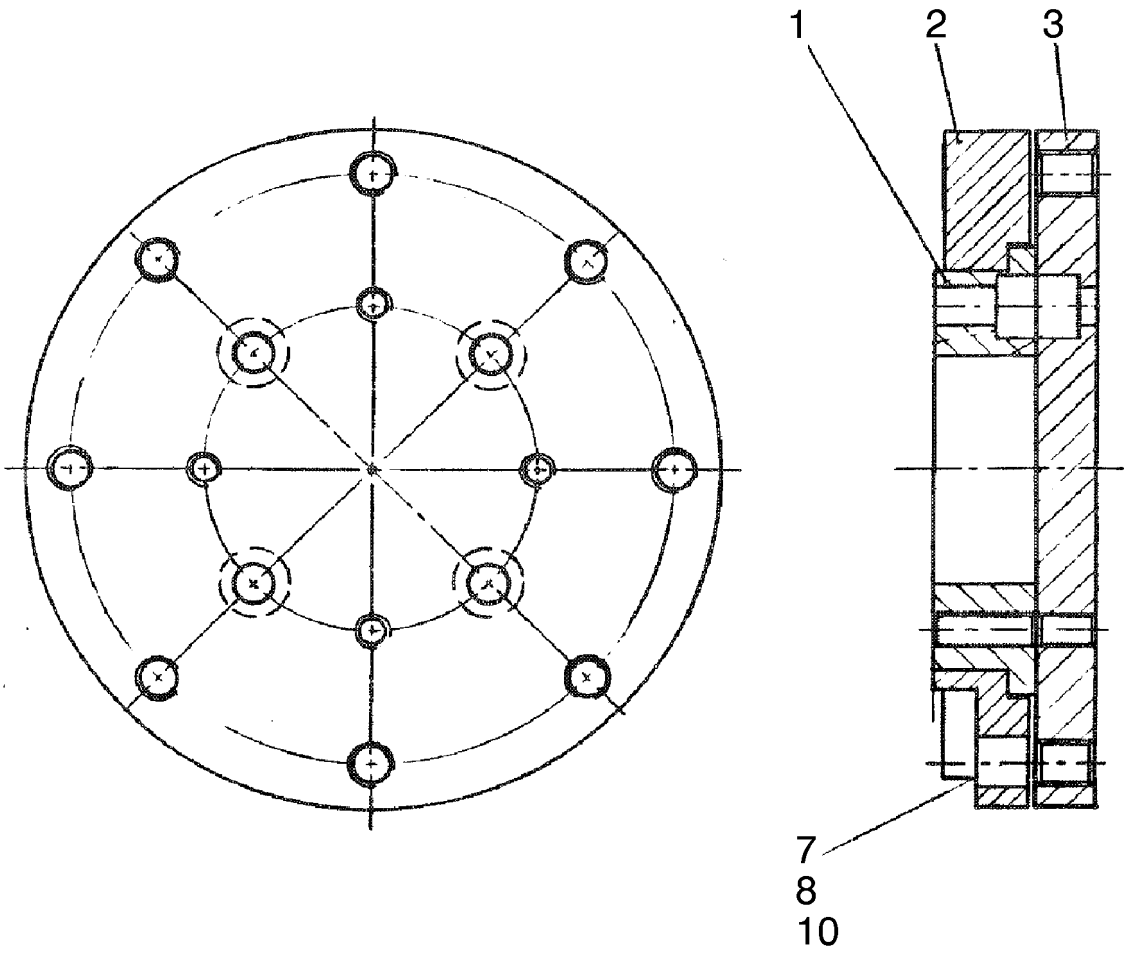
Item no.	Qty	Ordering no.	Denomination	Notes
		0449 152 880	**Slide travel kit**	**Manual**
1	2	0413 518 880	Slide	90 mm
2	1	0413 506 880	Circular slide	



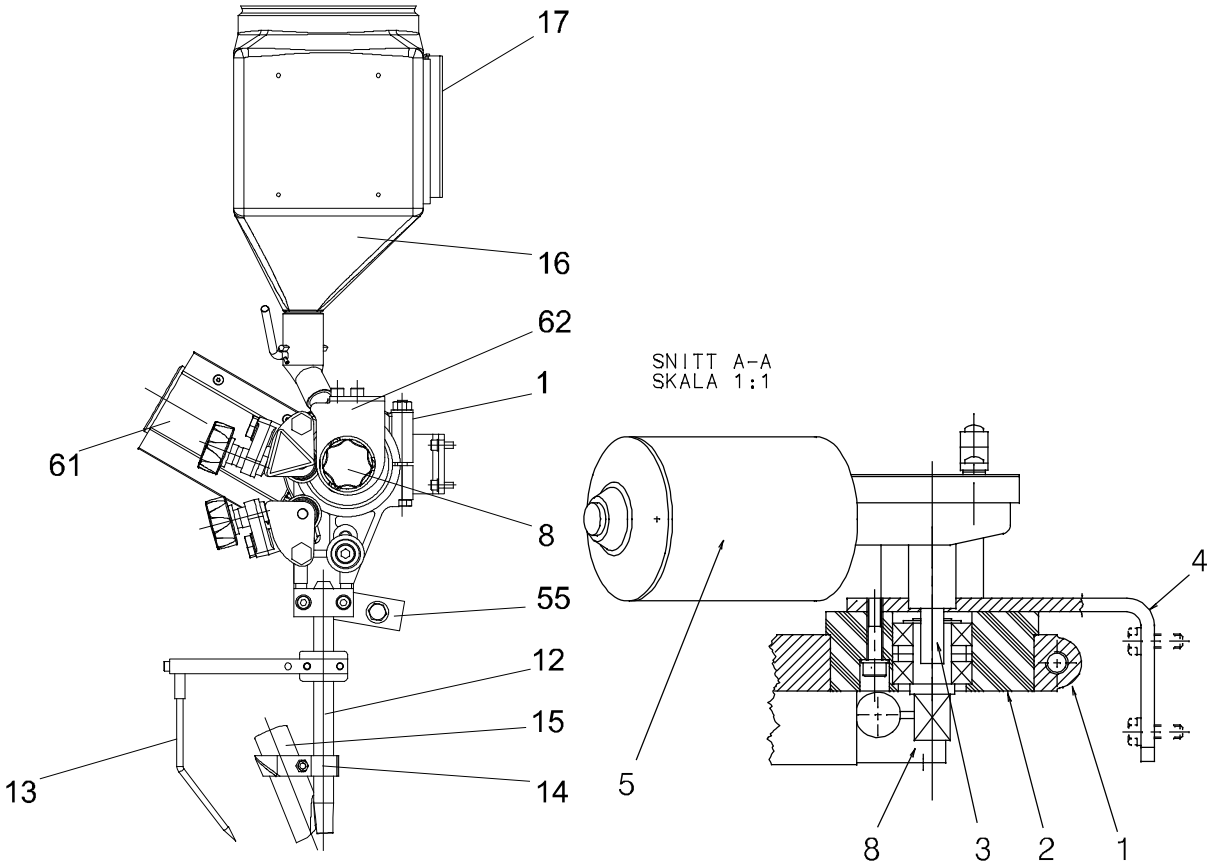
Item	Qty	Orderingno.	Denomination	Remarks
		0413 518 880	**Slide**	
1	1	0413 519 001	Slide profile	
2	1	0413 524 001	Bearing bushing	
3	1	0413 521 001	Runner	
5	1	0413 522 001	Lead screw	
7	1	0334 537 002	Crank	
9	2	0413 523 001	Axis	
17	4	0190 240 107	Bearing	



Item no.	Qty	Ordering no.	Denomination	Notes
		0413 506 880	**Rotary slide**	
1	1	0413 507 001	Flange	
2	1	0413 508 001	Tensioning ring	
3	1	0413 509 001	Flange	
7	2	0219 504 405	Bellleville spring	T = 0.6
8	1	0193 571 105	Locking piece	
10	1	0193 570 123	Locking lever	



Item no.	Qty	Ordering no.	Denomination	Notes
		0449 150 900	**Wire feed unit complete (Right)**	**SAW**
1	1	0147 639 882	Wire feed unit	
2	1	0413 072 881	Bearing housing	
3	1	0215 701 210	Wedge, flat	
4	1	0413 517 001	Bracket for motor	
5	1	0812 312 001	Motor with pulse transducer	
8	1	0218 810 183	Insulated Hand wheel	
12	1	0413 510 001	Contact tube	D20, L = 260 mm
13	1	0416 984 880	Guide pin complete	
14	1	0333 094 880	Clamp for Flux tube	
15	1	0332 948 001	Flux tube	
16	1	0332 994 883	Flux container	
17	1	0413 318 001	Holder	
55	1	0449 475 001	Bar	
61	1	0462 132 880	Protecting cover	
62	1	0449 528 001	Protection plate	



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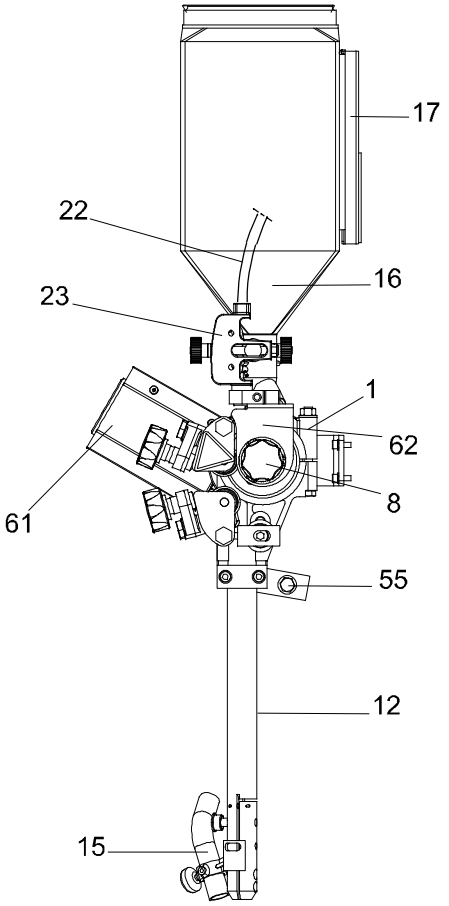
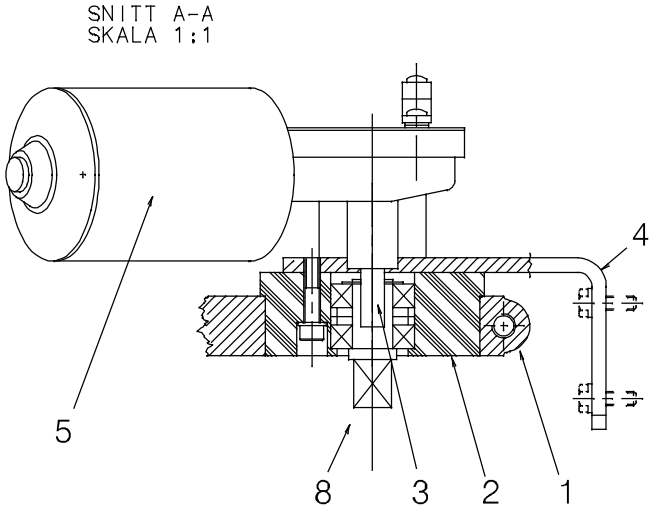
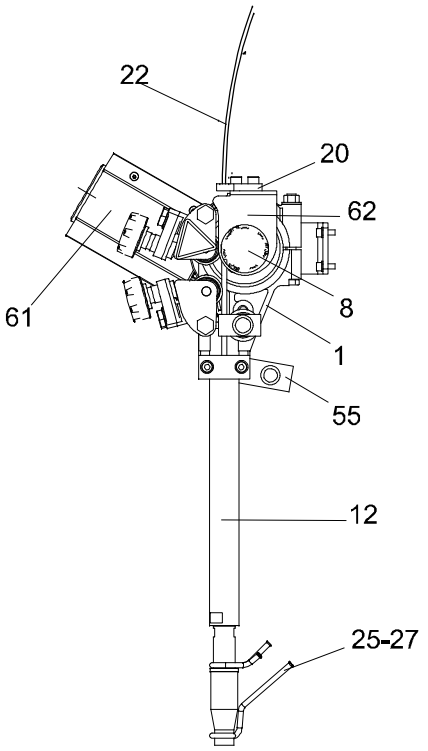
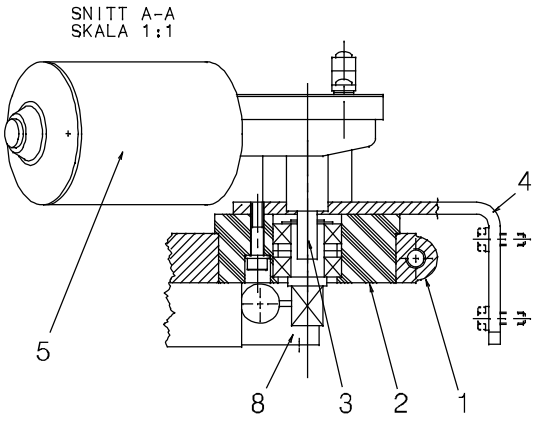
Item no.	Qty	Ordering no.	Denomination	Notes
		0449 150 901	**Wire feed unit complete (Right)**	**UP, Twin**
1	1	0147 639 886	Wire feed unit	Twin
2	1	0413 072 881	Bearing housing	
3	1	0215 701 210	Wedge, flat	
4	1	0413 517 001	Bracket for motor	
5	1	0812 312 001	Motor with pulse transducer	
8	1	0218 810 183	Insulated Hand wheel	
12	1	0333 852 881	Contact device	Twin, L = 275
15	1	0153 299 880	Flux nozzle	
16	1	0332 994 883	Flux container	
17	1	0413 318 001	Holder	
22		0156 800 002	Wire liner	
23	1	0145 787 880	Fine wire straightener	
50	1	0146 967 880	Brake hub	
51	1	0413 532 002	Attachment	
52	2	0154 734 001	Clamp	
55	1	0457 713 001	Bar	
61	1	0462 132 880	Protection cover	
62	1	0449 528 001	Protection plate	



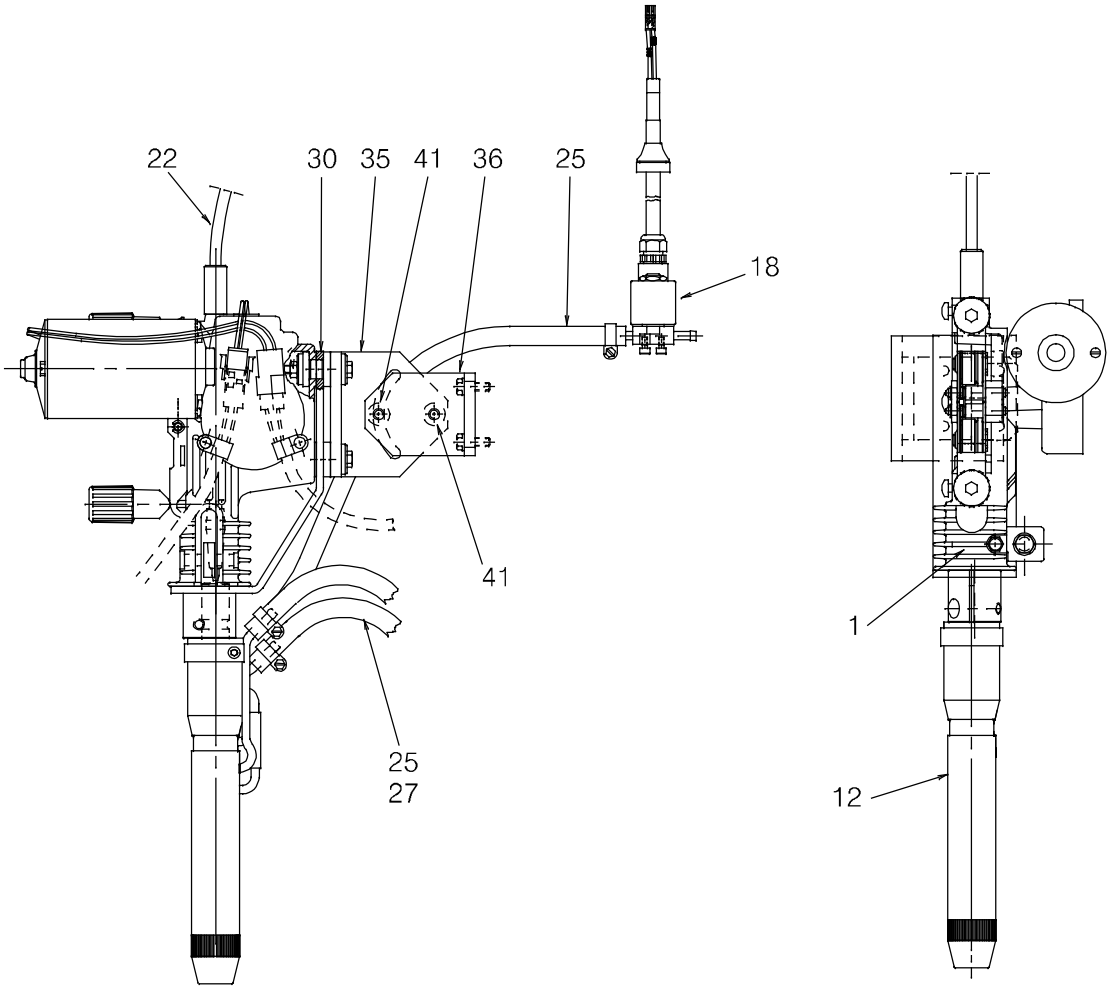


Item no.	Qty	Ordering no.	Denomination	Notes
		0449 150 902	**Wire feed unit complete (Right)**	**MIG/ MAG**
1	1	0147 639 882	Wire feed unit	
2	1	0413 072 881	Bearing housing	
3	1	0215 701 210	Wedge, flat	
4	1	0413 517 001	Bracket for motor	
5	1	0812 312 002	Motor with pulse transducer	
8	1	0218 810 183	Insulated Hand wheel	
11	2	0417 699 001	Rubber clamp	
12	1	0030 465 389	Contact device	
18	1	0461 238 881	Solenoid valve and cable	
20	1	0155 300 001	Plate	
22	1	0156 800 002	Wire liner	
25	1	0333 754 001	Hose	L=2,25m, D 14/ 6.3
26	6	0193761 002	Hose clamp	
27	2	0147 336 880	Hose coupling	
55	1	0449 475 001	Bar	
61	1	0462 132 880	Protection cover	
62	1	0449 528 001	Protection plate	

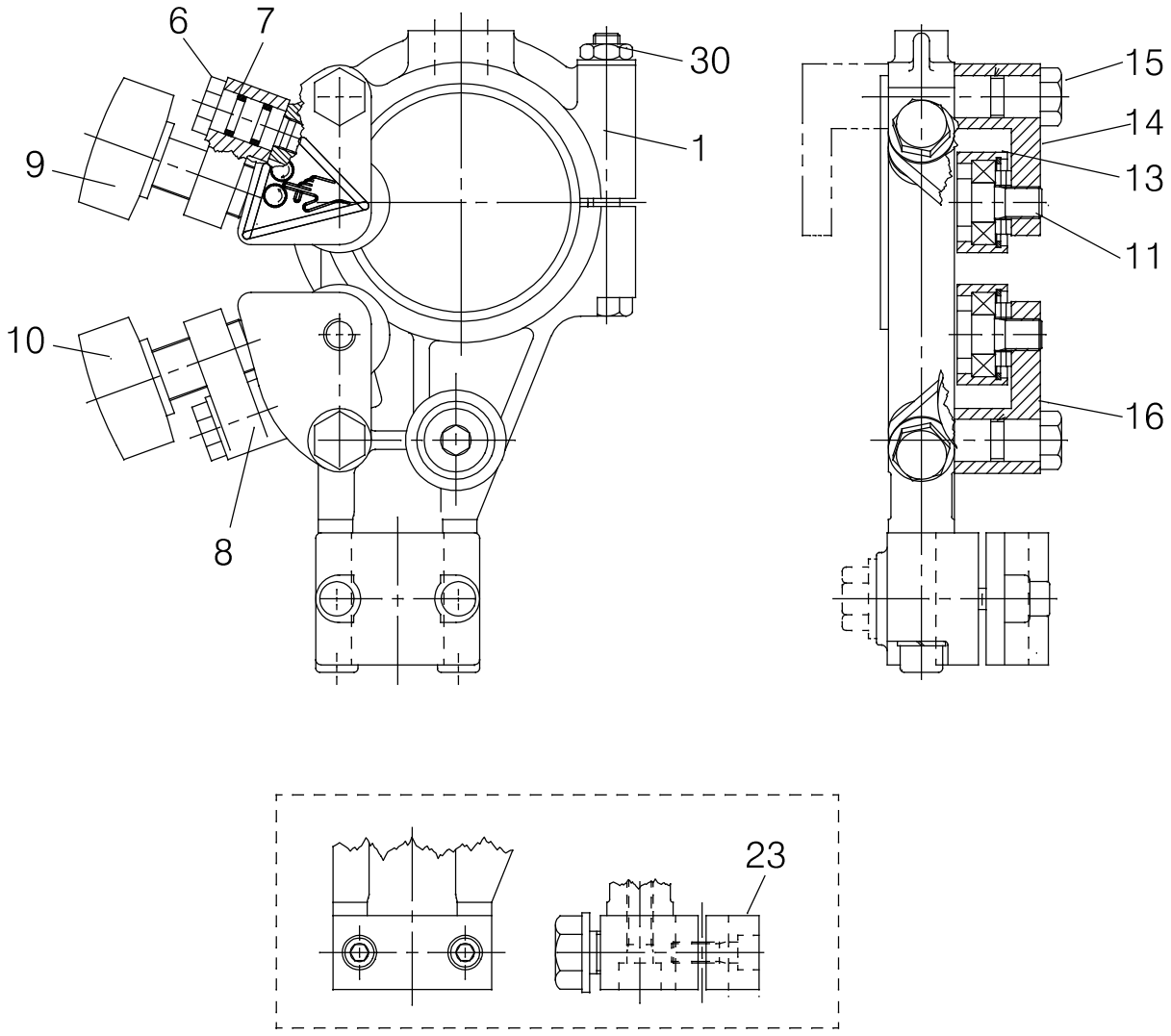




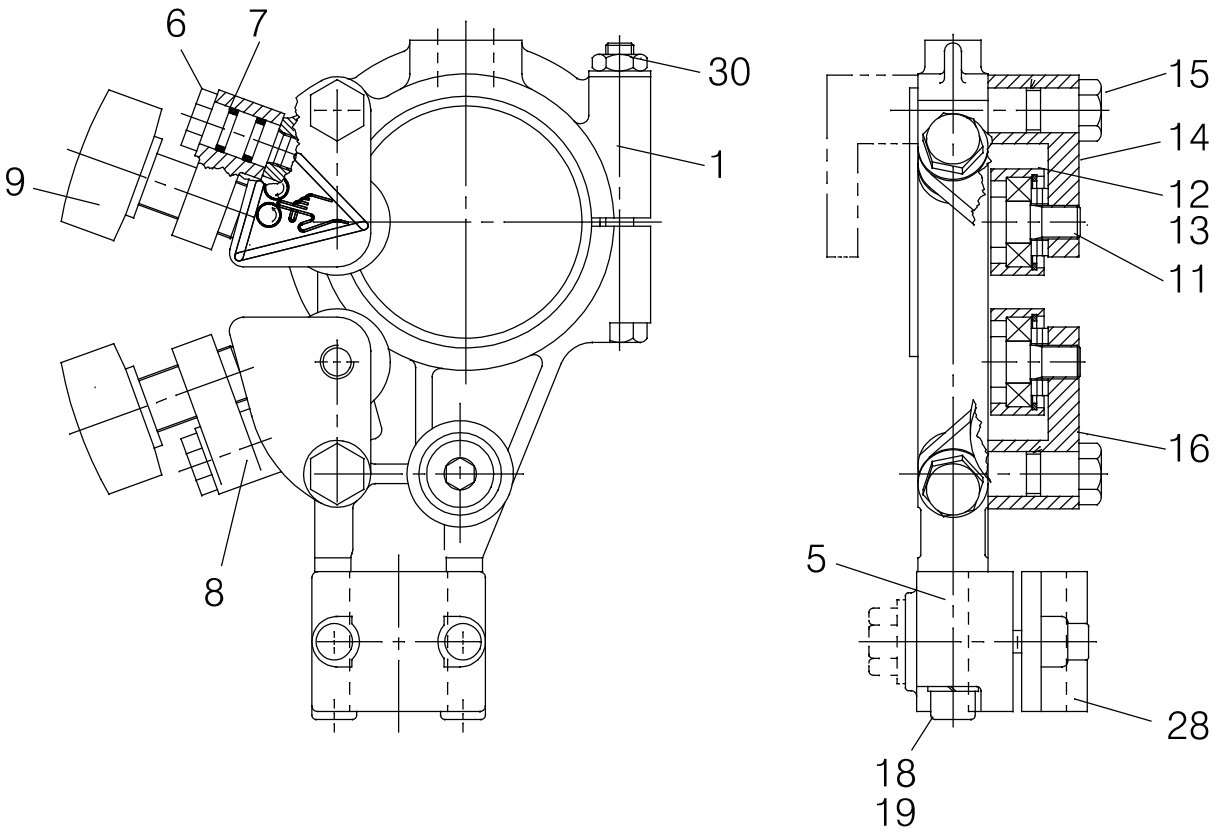
Item no.	Qty	Ordering no.	Denomination	Notes
		0449 150 903	**Wire feed unit complete (Right)**	**4WD, MIG/ MAG**
1	1	0456 424 902	Wire feed unit	
12	1	0457 460 881	Contact device	MTW 600, L=250
18	1	0461 238 881	Solenoid valve and cable	
22		0156 800 002	Wire liner	
25		0333 754 001	Hose	D 14/ 6.3
27	2	0147 336 880	Hose coupling	
30	1	0449 011 001	Support	
35	1	0449 009 002	Motorbracket	
36	1	0449 009 001	Motorbracket	
43	2	0163 139 002	Bushing	
44	2	0162 414 002	Insulating tube	



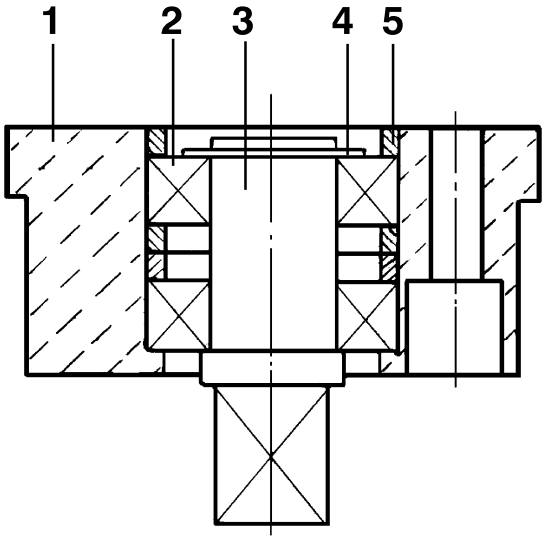
Item	Qty	Orderingno.	Denomination	Remarks
		0147 639 882	**Straightener (right mounted)**	
1	1	0156 449 001	Clamp	
6	2	0212 900 001	Spacer screw	
7	4	0215 201 209	O-ring	D11.3x2.4
8	2	0218 400 801	Pressure roller arm	
9	1	0218 810 181	Handwheel	
10	1	0218 810 182	Handwheel	
11	3	0332 408 001	Stub shaft	
13	3	0153 148 880	Roller	
14	1	0415 498 001	Thrust roller carrier	
15	2	0212 902 601	Spacer screw	
16	1	0415 499 001	Thrust roller carrier	
23	1	0334 571 880	Contact clamp	
30	1	0212 601 110	Nut	M10



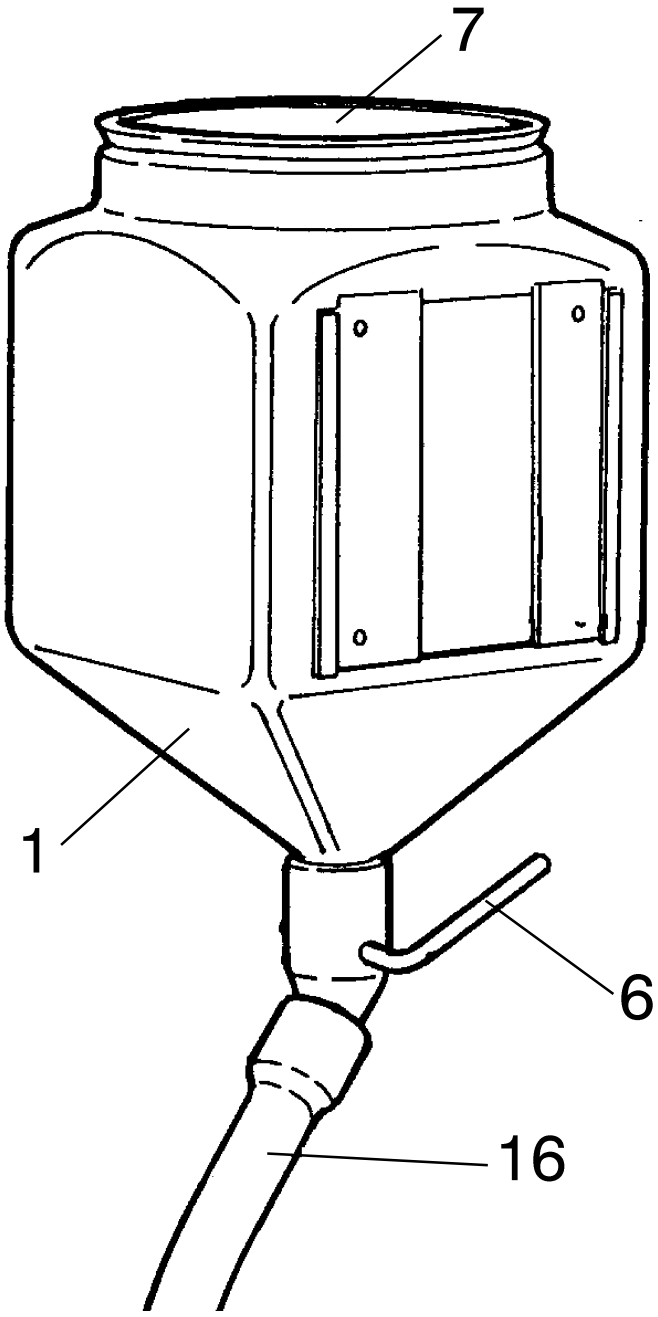
Item no.	Qty	Ordering no.	Denomination	Notes
		0147 639 886	**Straightener (right mounted)**	
1	1	0156 449 001	Clamp	
5	1	0156 530 001	Clamp half	
6	1	0212 900 001	Spacer screw	
7	2	0215 201 209	O-ring	D11.3x2.4
8	1	0218 400 801	Pressure roller arm	
9	1	0218 810 181	Handwheel	
11	1	0332 408 001	Stub shaft	
12	1	0218 524 580	Pressure roller	Twin
13	1	0153 148 880	Roller	
14	1	0415 498 001	Thrust roller carrier	
15	1	0212 902 601	Spacer screw	
19	2	0219 501 013	Spring washer	D18.1/10.2
28	1	0156 531 001	Clamp half	
30	1	0212 601 110	Nut	M10



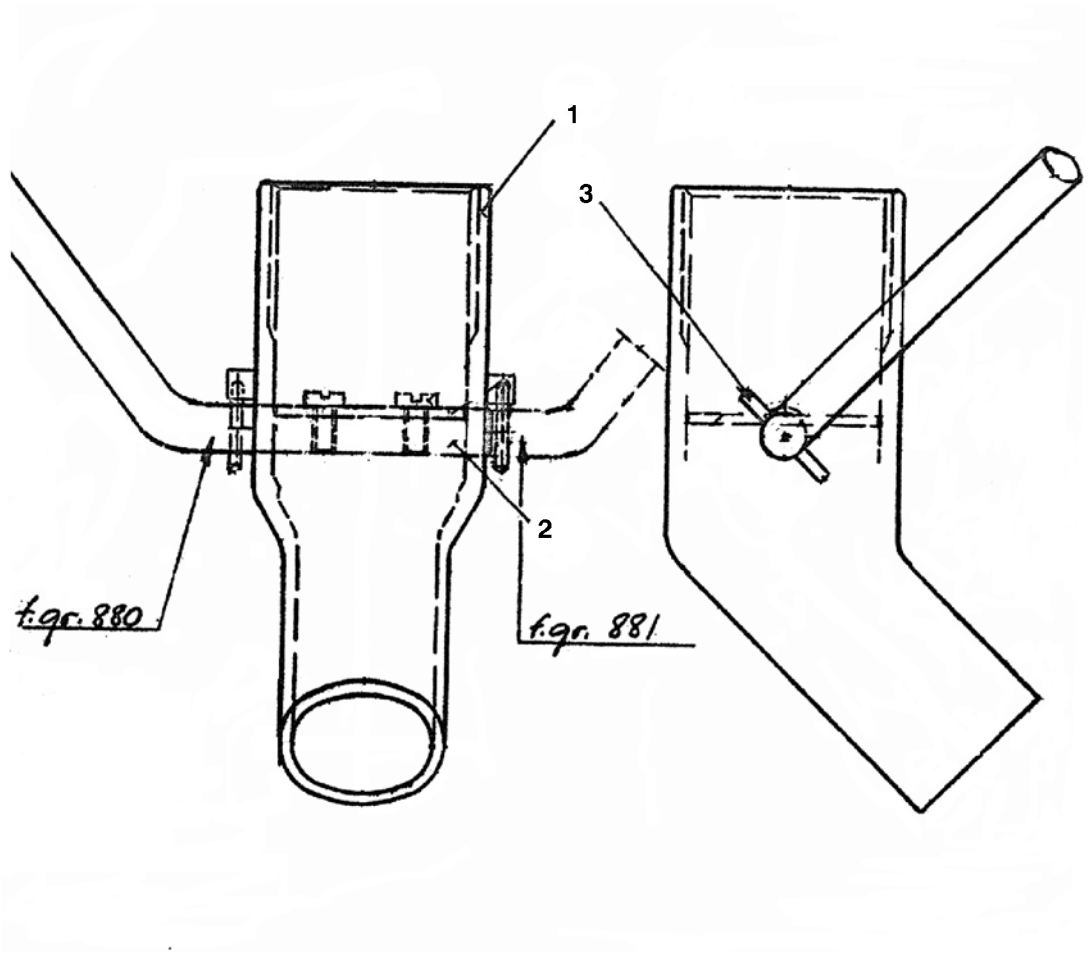
Item	Qty	Orderingno.	Denomination	Notes
		0413 072 881	**Bearing housing with stub shaft**	
1	1	0413 073 002	Searing housing	
2	2	0190 726 003	Ball bearing	
3	1	0334 575 001	Stub shaft	
4	1	0215 701 014	Betaining ring	D17
5	3	0334 576 001	Spacer	



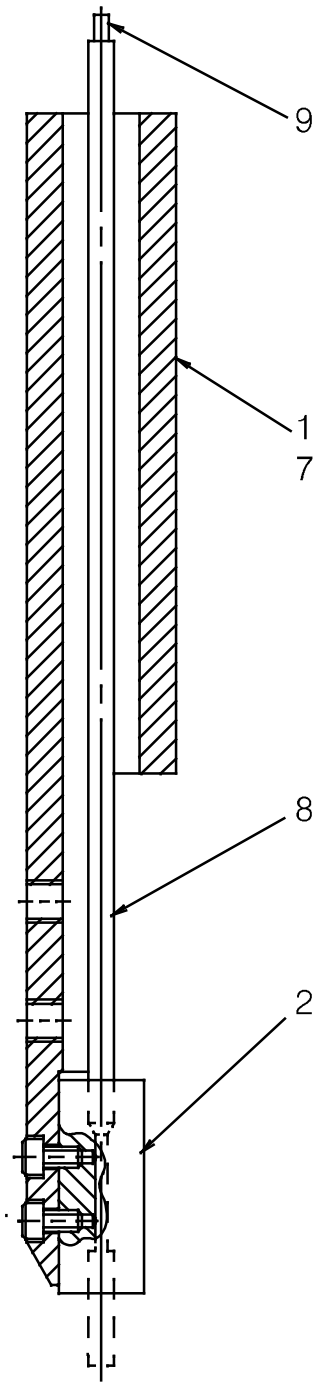
Item	Qty	Orderingno.	Denomination	Remarks
		0332 994 883	**Flux hopper complete**	
1	1	0332 837 001	Hopper for flux	
6	1	0153 347 881	Flux valve	
7	1	00203 017 80	Flux strainer	
16	1	0443 383 002	Flux hose	L= 500



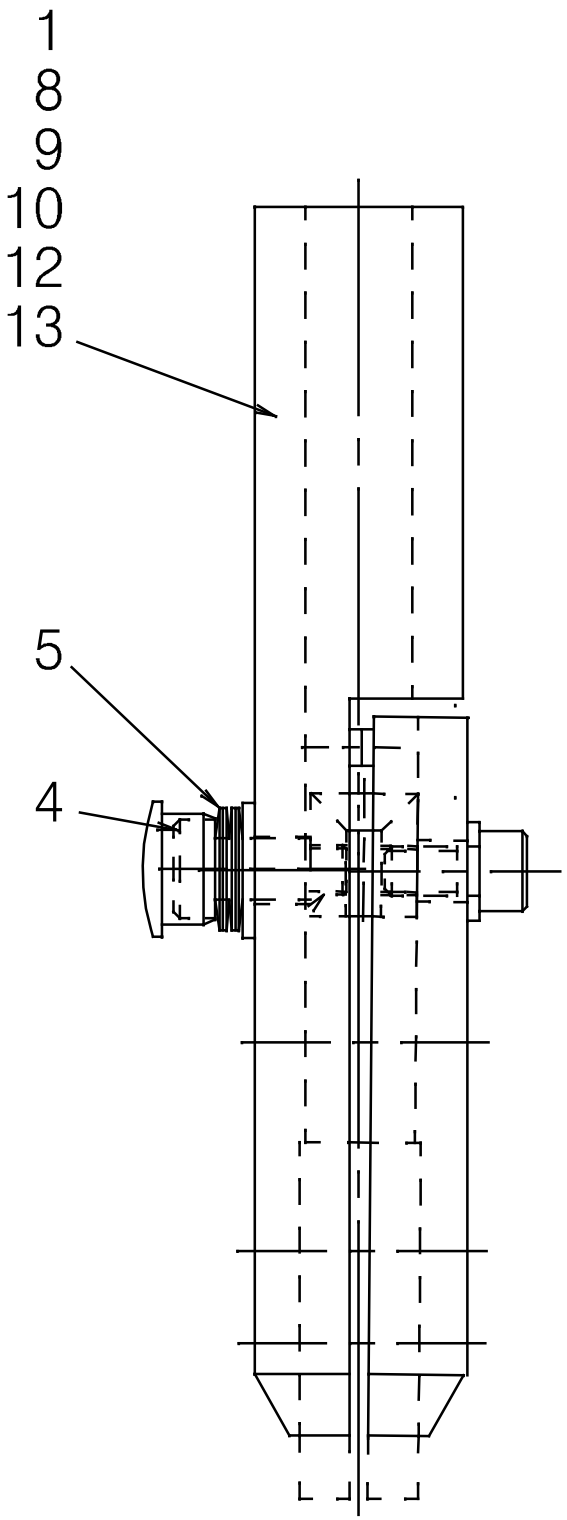
Item no.	Qty	Ordering no.	Denomination	Notes
		0153347880	**Flux valve**	
1	1	0153348001	Outlet	
2	1	0153349001	Shaft	
3	1	0211102938	Roll pin	d 3x20



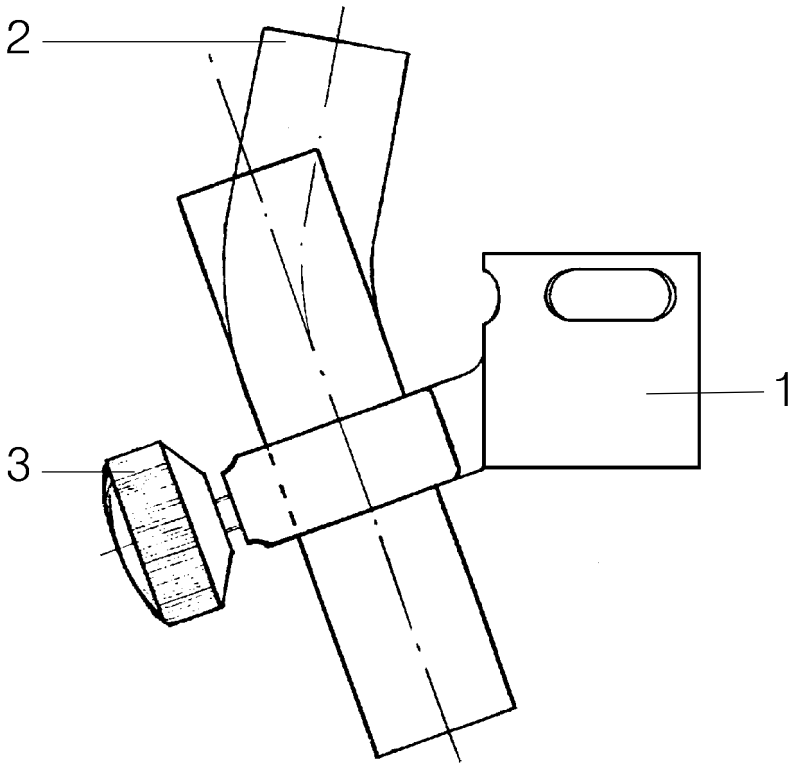
Item no.	Qty	Ordering no.	Denomination	Notes
		0333 852 881	**Connector**	**Twin L=275 A6 UP**
2	1	0333 772 001	Nozzle holder	
7	1	0417 959 881	Contact equipment	L=275, Heavy Duty
8	2	0415 032 001	Guide pipe	
9	2	0334 279 001	Spiral to connector	L=366



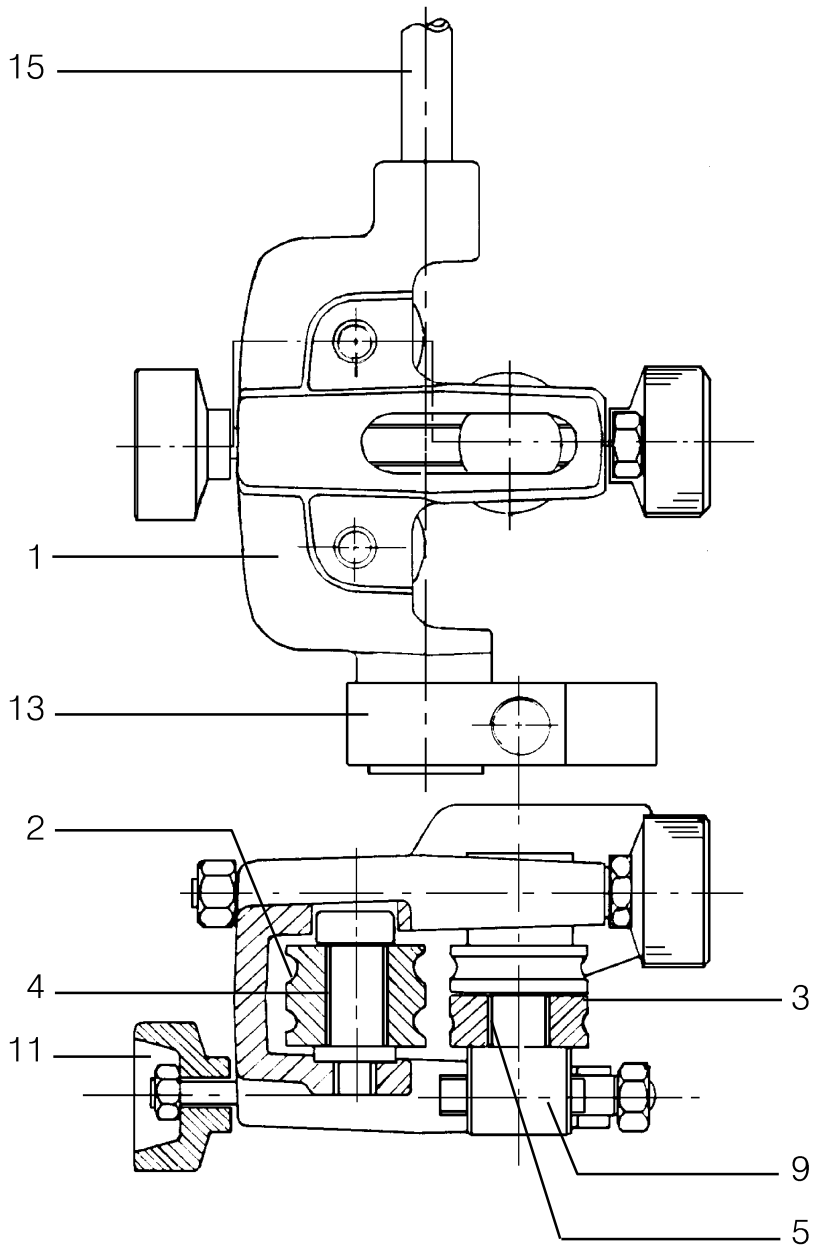
Item no.	Qty	Ordering no.	Denomination	Notes
		0417 959 881	**Contact equipment**	**L=275mm**
4	1	0443 372 001	Screw	
5	4	0219 504 307	Beleville spring	T = 1.1
8	1	0443 344 881	Pipe	L = 275



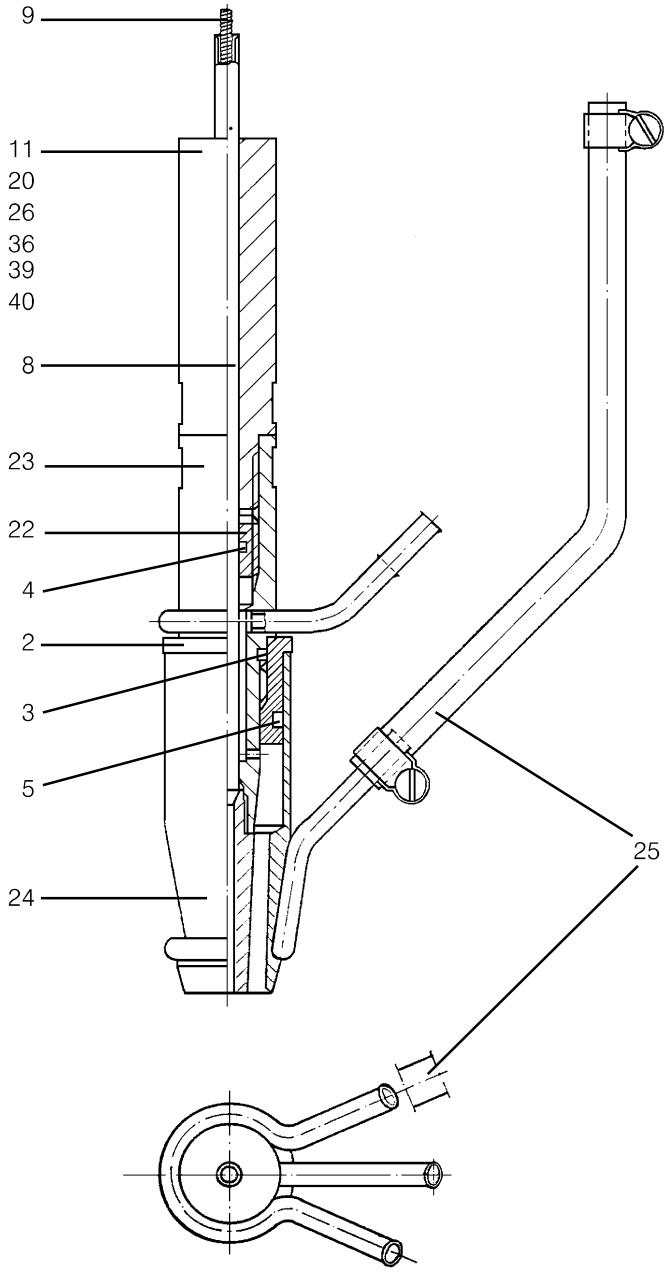
Item no.	Qty	Ordering no.	Denomination	Notes
		0153 299 880	**Flux nozzle**	
1	1	0153 290 002	Pipe holder	
2	1	0153 296 001	Pipe bend	
3	1	0153 425 001	Wheel	



Item no.	Qty	Ordering no.	Denomination	Notes
		0145 787 880	**Fine wire straightener for twin wire**	
1	1	0145 788 001	Case	
2	2	0145 789 001	Roller	
3	2	0145 790 001	Roller	
4	2	0145 791 001	Searing bushing	
5	2	0190 240 103	Bearing bushing	D12/10
6	2	0145 792 001	Screw	
9	2	0145 793 001	Runner	
10	2	0145 796 002	Screw	
11	2	0145 794 001	Knob	
13	1	0145 795 001	Link	
15	1	0151 287 001	Hose	L=600



Item	Qty	Orderingno.	Denomination	Remarks
		0030 465 389	**Connector**	
2	1	0145 226 001	Insulating sleeve	
3	1	0190 680 313	O-ring	OR 15.3x2.4
4	1	0190 680 303	O-ring	OR 5.3x2.4
5	1	0190 680 405	O-ring	OR 22.2x3
8	1	0334 278 880	Insert tube	
9	1	0334 279 001	Spiral	
22	1	0146 099 001	Plug	
23	1	0145 534 882	Contact tube	
24	1	0145 227 882	Gas nozzle	
25	1	0144 998 882	Water hose	
39	1	0040 979 804	Extension	L = 108, D20



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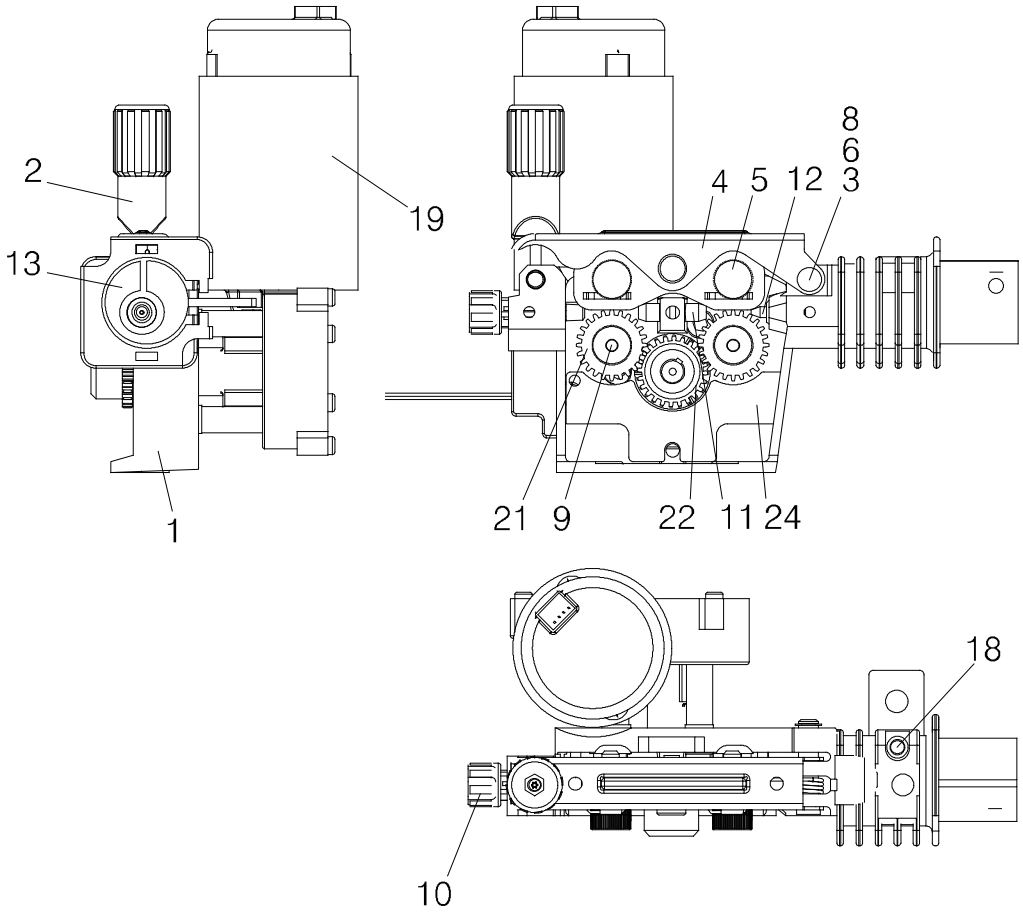
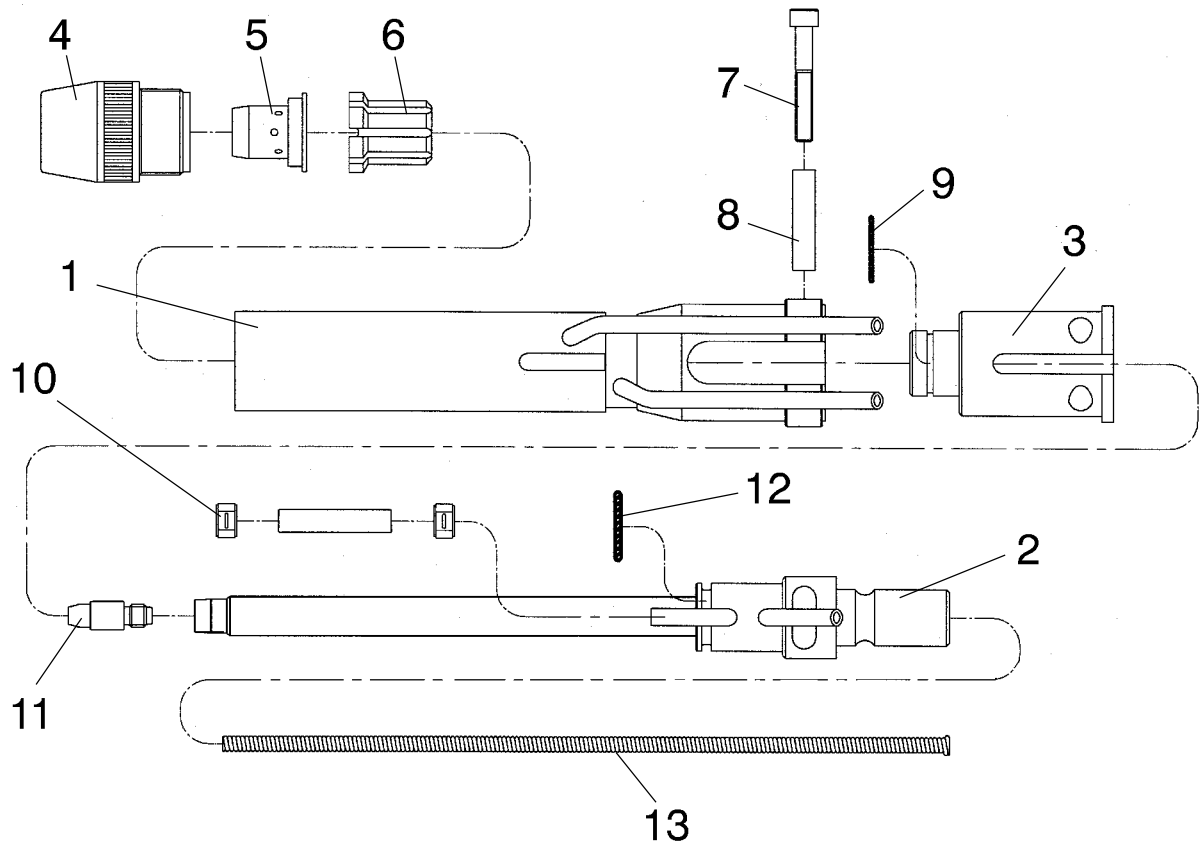
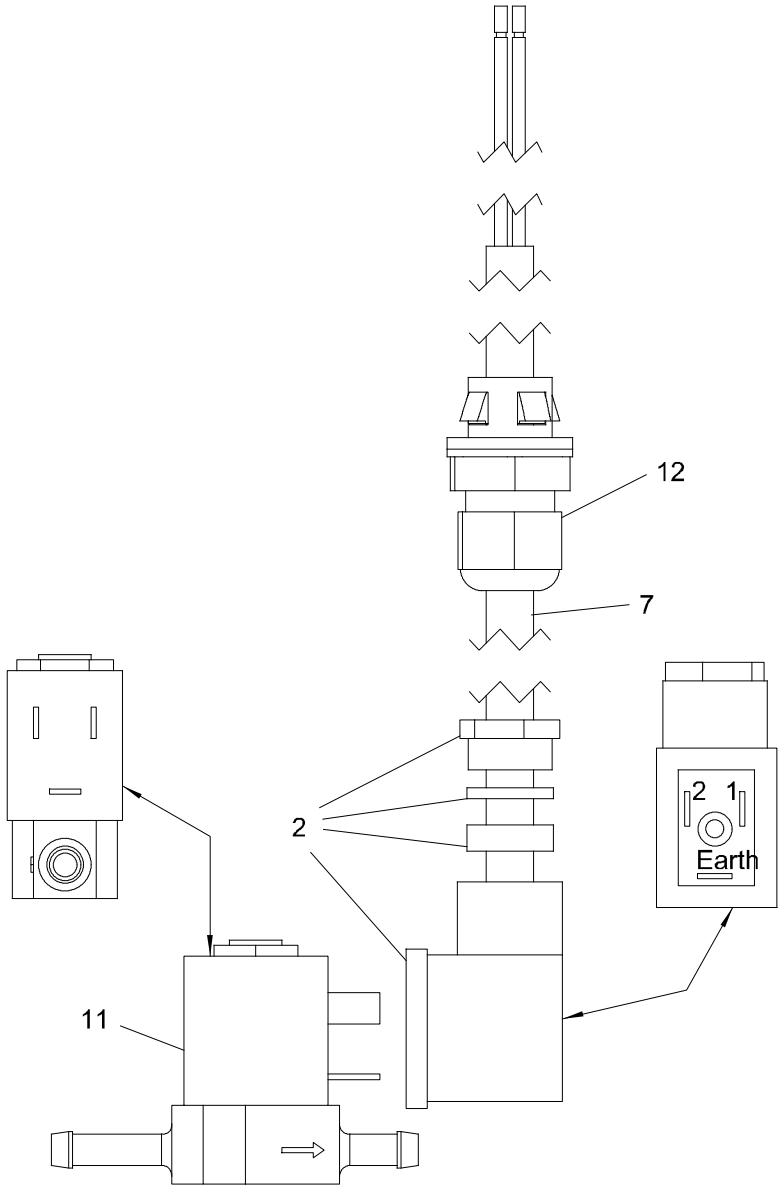
Item no.	Qty	Ordering no.	Denomination	Notes
		0456424902	**Feed unit**	
1	1	0455046003	Gear housing	
2	2	0368749881	Pressure device	
3	1	0458997001	Shaft	
4	1	0459001880	Pressure arm	
5	2	0458999001	Shaft	
6	1	0458993001	Spring	
8	4	0215702706	Locking washer	
9	2	0458722001	Shaft	
10	1	0380351001	Wire guide nipple	
11	1	0455072001	Intermediate nozzle	D13 **(W)**
12	1	0469837880	Outlet nozzle	**(W)**
13	1	0457365001	Current connection	
18	1	0455048001	Insulating tube	
19	1	0455077003	Drive unit with pulse transducer	
21	4	0459441880	Gear wheel	
22	1	0459440001	Motor gear	**(W)**
28	2	0458721001	Locking nut	M6



Item no.	Qty	Ordering no.	Denomination	Notes
		0457 460 881	**Contact device**	**MTW 600, 250 mm**
1	1	0457 457 002	Cooling jacket	
2	1	0457 455 002	Contact tube	
3	1	0457 456 001	Insulation sleeve	
4	1	0457 451 001	Gas nozzle	
5	1	0457 452 001	Spatter protection	
6	1	0457 453 001	Centering sleeve	
7	1	0457 617 001	Allen screw	
8	1	0457 459 001	Insulation sleeve	
9	1	0457 458 001	O-ring	
10	1	0457 616 880	Water hose set	
11	1	0457 625 005	Contact tip	Ø1.2 (W)
	1	0457 625 007	Contact tip	Ø1.5 (W)
	1	0457 625 008	Contact tip	Ø1.6 (W)
	1	0457 625 009	Contact tip	Ø1.8 (W)
12		0457 458 002	O-ring	
13	1	0457 454 002	Wear insert (Steel spiral)	L = 260, wire Ø 1.0-1.6 mm (W)
	1	0457 620 002	Wear insert (Brass tube)	L = 258, wire Ø 2.0-2.4 mm (W)



Item	Qty	Orderingno.	Denomination	Notes
		0461 238 881	**Solenoid valve with cable**	
2	1	0157 259 001	Contact	
3		0262 612 802	Cable	
7	3	0262 613 329	Cable	
11	1	0193 054 002	Solenoid valve	42 V
12	1	0194 269 002	Bushing	



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