TS 8/75

Open welding head

User manual

POLYSOUDE

THE ART OF WELDING

Product	TS 8/75
Study	2341
Reference	Refer to the Polysoude price list
Manual	PN-0810095
Redactor	SBR

Document revision

Review	Modifications	Date	Apply from serial number :
Rev. 0	Original issue		**1014801**
Rev. 1	Addition: Range of diameter of cones		
Rev. 2	Further information on the supply of the compressed air		
Rev. 3	Update : Rotating wire feeder and self-supporting system		
Rev. 4	Update : Duty cycles	10/2011	
Rev. 5	Update Dimension ratings, balancer and equipment compatibility, chapter electrode,	03/2012	**1314841**
Rev. 6	Update : Electrical drawing Addition : Chapter «Change clamping»	06/2012	**1314842**
Rev. 7	Update : Electrical drawing Update : Illustration of consumables	07/2012	
Rev. 8	Adding clamping circuit connection and circuit gas welding Update electrical drawing and accessories kit	10/2012	
Rev. 9	Adding the procedure «Installing the tie rod»	11/2012	
Rev. 10	Update : *Gas lens assembly and Clamping circuit* FNC 1308-046 1308-038	10/2013	
Rev. 11	*Update wiring diagrams and information on the dates of versions (FNC 1309-013)*	12/2013	
Rev. 12	*Update electrical drawing 0023001500*	06/2014	
Rev. 13	Adding the serial number from which the revision is applicable.	09/2014	**/**
Rev. 14	Update following return methods: visual, torches codes, characteristic rotating slide wire feeder.	10/2014	**/**

When printing onto paper, this user manual must be printed on both sides of the page in order to make it easier to understand and more legible.

This manual must be delivered to users.

Contents

1. Safety instructions

Warning: Protect yourself and others from injury – Read and follow these precautions.

1. 1. Hazards associated with arc welding

The symbols reproduced below are used throughout this Technical Manual in order to draw your attention and identify the potential hazards. When you see one of these symbols, **refer to the safety instructions in the following section 'Recommendations'.**
This equipment must only be installed, used, maintained and repaired by qualified persons.
While it is in use, anyone not working with the equipment must be kept well away.

1. 2. Meaning of the symbols

	**Risk of electric shocks.**		**Risk of serious injury caused by rotating parts.**
	**Risk of inhaling fumes or gases.**		**Risk of explosion.**
	**Risk of burns to the eyes or the skin due to heat radiation.**		**Risk of exposure to magnetic fields.**
	**Warning: hot surfaces – Risk of burns.**		**Danger caused by noise.**
	**Risk of burns to the eyes or the skin due to flying sparks.**		**Read the instructions.**
	**Risk of excessive heat or fire.**		**Safety goggles must be worn.**
	**Safety boots must be worn.**		**Safety helmets must be worn.**
	**Fall hazard.**		**Refer to the recommendations below in order to take the necessary precautions to avoid any hazard.**

1. 3. Recommendations

Risk of electric shocks.

The electrical components include the electrode, the welding circuit, the input circuit and the internal circuits, the welding wire and the metal parts in contact with it, the wire spool and the housing for the welding wire feed rollers. The slightest contact with these parts may cause an electric shock or even electrocution when the machine is switched on.
Factors increasing the risk of electric shock: Moisture in the immediate area, working on an electrically-conductive surface, inadequate earthing, poor maintenance of the equipment, unsafe working methods.
Preventing risks:

- Avoid any contact with live wire spools.
- In the case of water-cooled torches, inspect the torch at regular intervals in order to identify any leaks; take care to prevent condensation.
- Do not coil the cables around your body.
- Before replacing the electrode, ensure that it is no longer live.
- Switch off the machine before carrying out any maintenance or repair operations or while it is not in use.
- Wear safety gloves, clothing, aprons and boots which are dry and free from holes.
- Insulate the component and the earth by means of mats or other means of providing sufficient insulation if the welder is required to work on metal surfaces or structures.
- This machine must be installed and earthed in accordance with its User Manual and with national, local and municipal codes of practice.
- The return cable must be attached correctly (clean contact surface, cable securely fastened, as close as possible to the area to be welded).
- Do not use damaged, worn or bare (uninsulated) cables which are of insufficient size or not properly assembled. If this is the case, they must be replaced immediately.
- The welding station must be correctly earthed.
- If the component to be welded has to be earthed, use a separate cable.
- Use the appropriate connectors.

Note the no-load voltage, which is limited to 80 V r.m.s. for alternating current or 113 V for direct current (the voltage required to strike the arc). The maximum value for plasma cutting power sources is: 500 V.

Risk of inhaling fumes or gases.

Welding generates fumes and gases which are hazardous to health. Do not inhale the fumes.
Origin of the fumes and gases: Base metal, filler metal, coating (flux) with welding by coated electrode, shielding gas, solvents and materials covering the metal to be welded.

In order to prevent risks:

- Use breathing apparatus, such as filtering masks, assisted-ventilation masks, inducted air masks and disposable masks.
- Avoid chlorinated solvents.
- Ensure that the components are completely dry before welding.
- Do not work alone!
- Trap the fumes and gases at source.
- Remove paint, oil or any other surface coating.

Risk of burns to the eyes or the skin due to radiation.

Les rayonnements de l’arc de soudage sont susRadiation from arc welding is liable to cause burns to the eyes and the skin.

Identifying the risks: Exposure to the radiation emitted by the arc, generating intense visible and invisible rays (ultraviolet and infrared), reflection of the rays while welding metals such as aluminium and stainless steel, arc strike, sparks, pin-holes created by the tip of a tungsten electrode.

In order to prevent risks:

- Wear gloves or leather gauntlets to protect your hands and lower arms.
- Wear an apron or gaiters to protect your legs, knees and forefoot.
- Wear a mask (headband-type, handheld or electronic mask) or goggles fitted with a suitable filter.
- Use safety shields to protect nearby workers.
- Tie a scarf around your neck and button the neck of the protective clothing.

Warning: hot surfaces – Risk of burns.

Do not touch welded or flame-cut components with bare hands. If such components have to be handled, use the appropriate tools and/or wear welders' gloves, thick and insulated, to prevent any burns. Allow the components to cool before handling them or welding them.

Risk of burns to the eyes or the skin due to flying sparks.

- Wear gloves or leather gauntlets to protect your hands and lower arms.
- Wear an apron or gaiters to protect your legs, knees and forefoot.
- Wear a mask (headband-type, handheld or electronic mask) or goggles fitted with a suitable filter.
- Use safety shields to protect nearby workers.
- Wear garments with long cotton or woollen sleeves, preferably free from any traces of oil or grease. Do not wear clothing made from synthetic fabrics.
- Tie a scarf around your neck and button the neck of the protective clothing.
- Wear welders' safety boots.

Risk of excessive heat or fire.

- Maintain the equipment at the electrical workstation in good operating condition, particularly the cables carrying the feed and return current.
- Maintain a minimum distance of 6 metres between the welding equipment and any greasy, inflammable or dust-laden materials.
- Use safety shields to protect nearby workers.

Risk of explosion.

These risks are associated with the use and handling of gas cylinders and flying sparks.

- Do not use damaged cylinders.
- Store the cylinders in a well-ventilated area and restrict access to anyone other than authorised personnel.
- Never exceed a temperature of 55 ºC while storing or using the cylinders.
- Clearly identify empty cylinders to distinguish them from full ones.
- Protect the cylinders from extremes of temperature (ice, sunlight, sparks, etc.).
- Check the connectors and hoses at regular intervals.
- Use protective shields.

Risk of serious injury caused by rotating parts.

- Do not place your hands near fans or any moving parts.
- Keep all safety shields closed or in the 'safety' position.

Risk of exposure to magnetic fields.

The distance between the welding circuit and the brain is of fundamental importance.

- Never coil the cables around your body and certainly not around your shoulders.
- Advise your immediate superior if you are wearing a heart pacemaker. The interference generated by the circuit requires special protective measures, which must be applied in consultation with the company doctor.

The operator must ensure that no-one is exposed to the hazardous area.

Fig.3.1 - TS 8/75 welding head with fixed on-board wire feeder

2. General Information

2. 1. Reference documents

PN-0810094	Illustrated parts lists for the TS 8/75 welding head
PN-0110001	User manual for Polyfil-3 wire feeder
PN-0509076	User manual for P6 power source

2. 2. Applicable directives

2006/42/EC	Machinery Directive
2004/108/EC	Electromagnetic compatibility
2006/95/EC	Electrical equipment designed to be used within certain voltage limits

3. General presentation

3. 1. Introduction

The TS 8/75 welding head is an open head. It is designed for cold wire TIG orbital welding of tubes onto plate with or without filler metal. The TS 8/75 head can weld tubes with an inside diameter of 8mm up to an outside diameter of 75mm. The head is introduced and centred within the tube by means of a centrer. During welding, the head is fixed. The torch turns around the tube.

The TS 8/75 offers many possibilities. Several tools and options are available for welding all types of application.

It is compact and easy to use thanks to its ergonomic, avant-garde design. A double grip contains built-in controls for welding and clamping. Adjustments to the wire and support legs are simplified.

It is fitted as standard with an AVC (Arc voltage control) It is supplied with an on-board filler wire feeder and can be coupled to an external wire feeder of the Polyfil-3 type.

Using its built-in air-controlled clamping, an operator can use several heads simultaneously.

3. 2. Classification of the machine

The machine complies with the requirements of directives 2006/42/EC "Machinery", 2006/95/EC "Electrical equipment designed for use within certain voltage limits" and 2004/108/EC "Electromagnetic compatibility".

3. 3. Environment and conditions of use

This equipment is designed for use in workshops, in a non-explosive atmosphere.
When operating the machine, the following conditions must be observed:

- Ambient air temperature -10° to +40°C. When using an external cooling unit, refer to the technical documentation of it.
- Relative humidity:
  - Up to 50% at 40°C.
  - Up to 80% at 20°C.

The ambient air shall not contain abnormal quantities of dust, acids, gas or corrosive substances. Fumes due to welding are considered to be normal.
Examples of abnormal conditions of use:

- Abnormal corrosive smoke.
- Excessive oil vapour.
- Shaking and vibration.

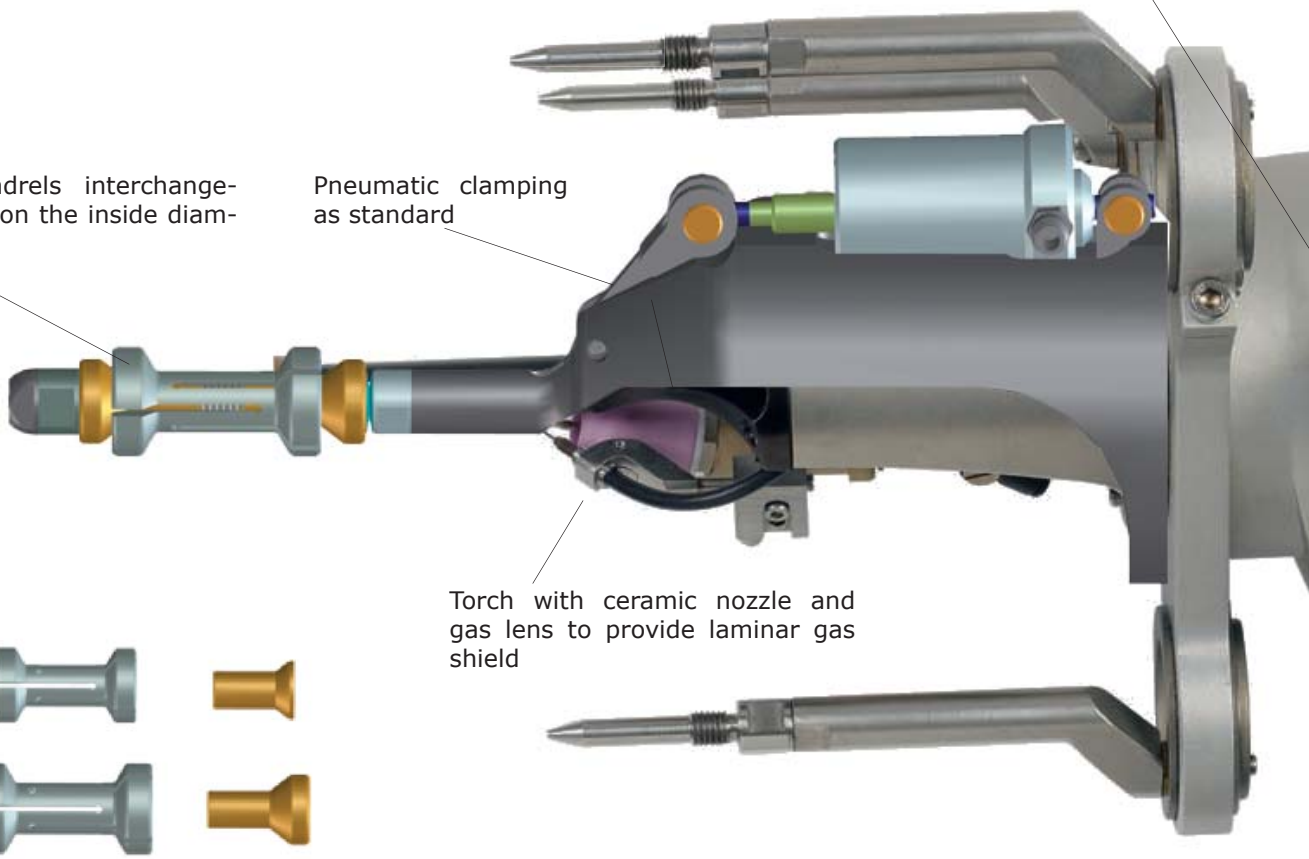
Ensure that air can enter and leave when using the equipment.
It is prohibited to preheat the parts to be welded.

Option: Centrer holder and 2-ball centrer for non-standard diameters from 10.5 to 60mm

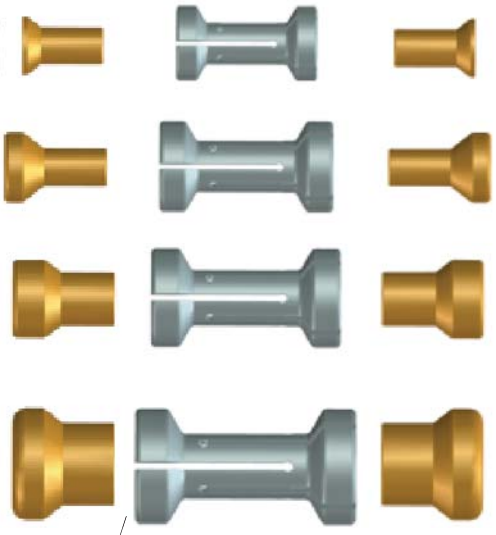
Thanks to the closed circuit water cooling system, these heads suit applications with high duty cycles

Expansion mandrels interchangeable depending on the inside diameter

Pneumatic clamping as standard



Torch with ceramic nozzle and gas lens to provide laminar gas shield



Expansion mandrels for internal diameters 15 to 40mm.

Wire guides with simplified adjusting mechanism

Fig.3.2 - Composition of a TS 8/75 welding head

Distributor

The distributor supplies the welding tool with coolant, gas and weld current. It allows the internal wire sheath to be passed through.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

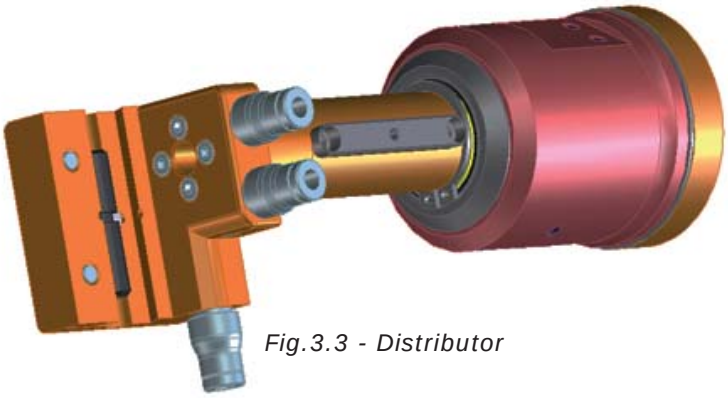


Fig.3.3 - Distributor

Drive unit

This guides and drives the welding tool. Transmission is via a worm and gear-wheel assembly.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Fig.3.4 - Drive

Fig.3.6 - Motor drive

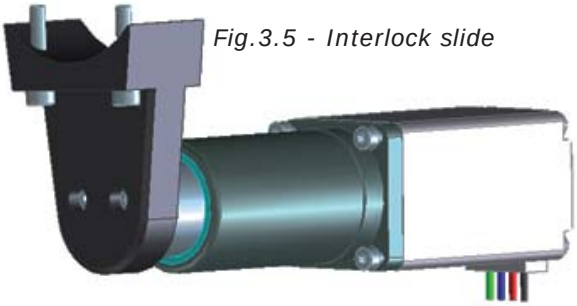


Fig.3.5 - Interlock slide

Interlock slide

The head is fitted with an interlock slide. This allows the arc voltage (AVC) or programmed height to be adjusted by a motor drive system. This can be used for automatically setting the distance between the workpiece and the electrode for flush tube welds based on the arc voltage (AVC).

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Motor drive

The motor consists of a DC motor-gearbox unit which provides a welding speed range of 50 to 150mm/min. An encoder, integral with the motor, informs the Polysoude welding power source of the actual position of the torch so allowing the welding sequence (management of sector stops/starts) to be controlled. This encoder also enables the forward speed of the torch to be controlled with a precision of 1%.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Housing

The housing consists of a casing fitted with a removable arm and control grips. The assembly is ergonomic and facilitates the manipulation and use of the TS 8/75 head.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

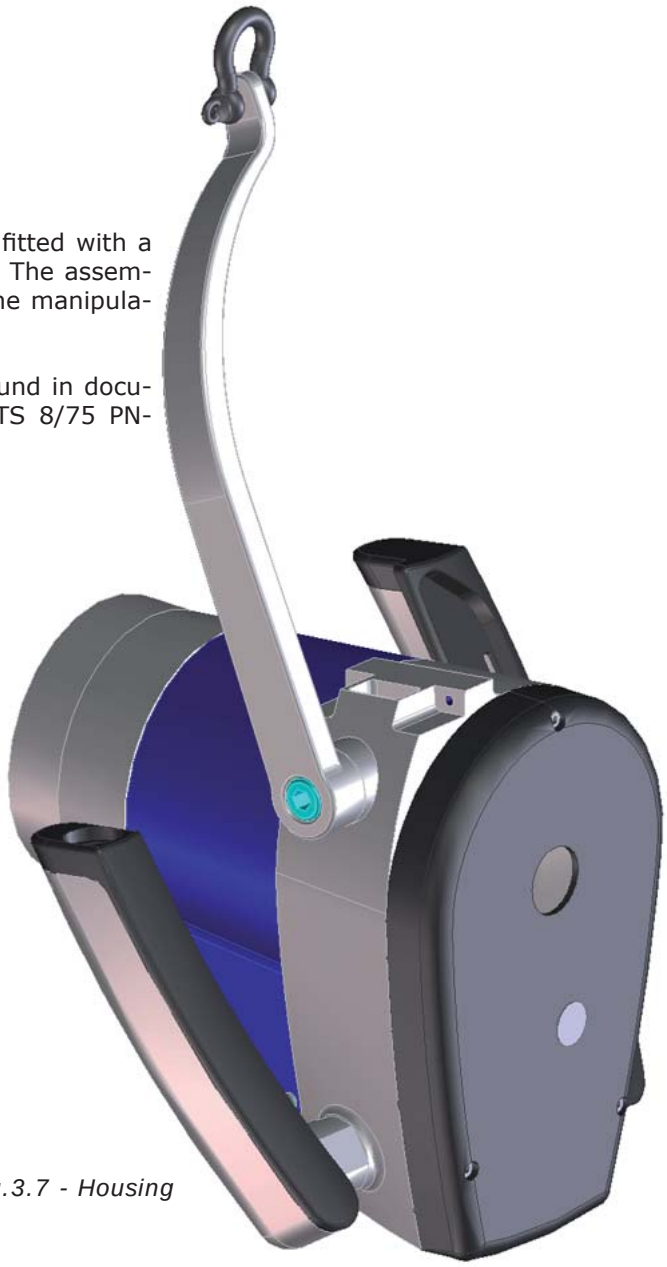


Fig.3.7 - Housing

Connection and cable/pipe bundle

These assemblies supply the TS 8/75 welding head, via the power source, with welding gas, electricity, compressed air and coolant. They connect the various controls to the power source.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Fig.3.8 - Connection and cable/pipe bundle

Front bearing and legs

The assembly is made up of 3 support legs. The adjustment on the support legs allows the welded plate and TS 8/75 support plate to be set parallel so as to keep a constant distance between electrode and workpiece and electrode and tube. Adjusting the positions of the legs is simple. It is done by rotation. Furthermore, the legs are reversible. They have two positions, short and long. The long leg position is used for protruding tube applications. The short leg position is used for the other applications. It is possible to change the tube - plate distance by changing the legs or inserting shims.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

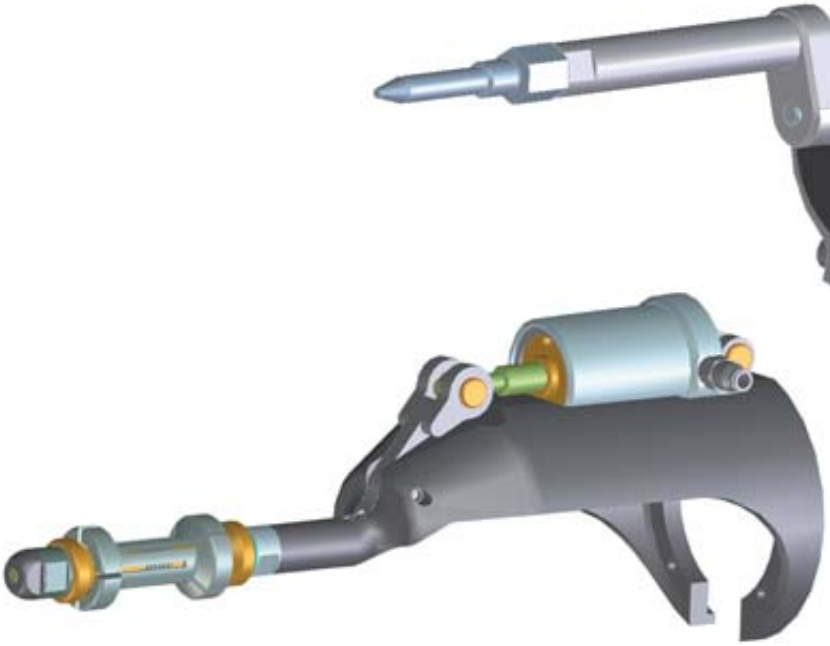


Fig.3.9 - Pneumatic self-securing mechanism

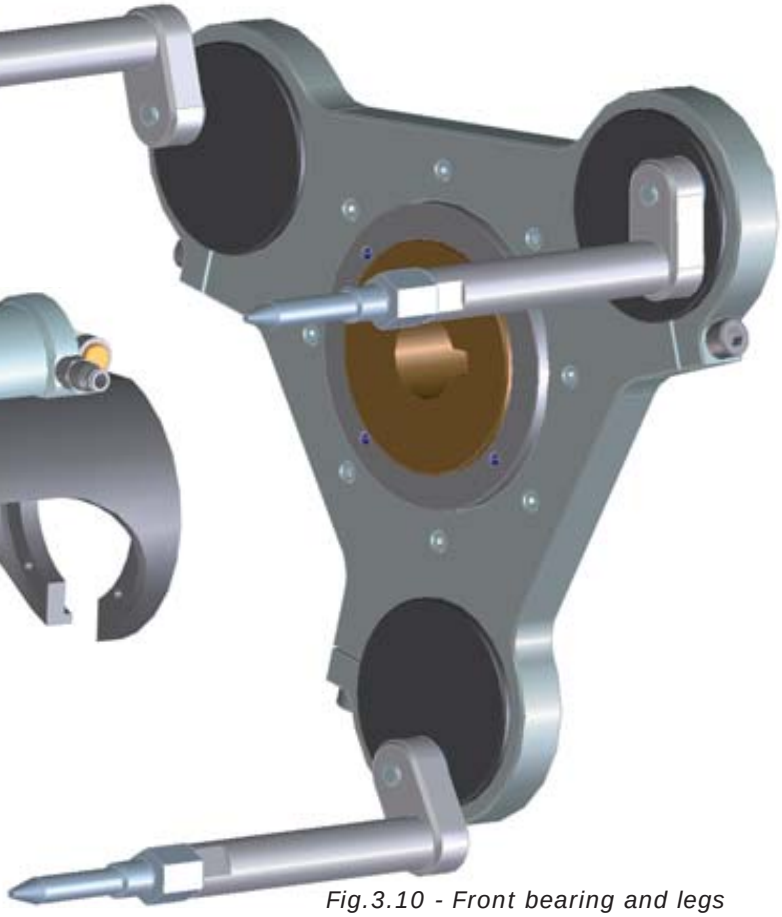


Fig.3.10 - Front bearing and legs

Pneumatic self-securing mechanism

The pneumatic self-securing mechanism for the TS 8/75 is standard. It is fixed to the support plate. The air cylinder holds the welding head in position during the welding cycle.
This system in no way substitutes for the use of a balancer for the manipulation and installation of the welding head on the plate.

Expansion mandrels are used with the self-securing system. Each mandrel is specific to the diameter of the tube to be welded. Specify the tube diameter in the order.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Centrer holder and 2-ball centrers

The TS 8/75 is fitted with a centrer-holder and a 2-ball centrer. This system replaces the pneumatic self-securing system.
The centrer holder is an optional extra. It is ordered according to the inside diameter of the tubes to be welded.

- A 2-ball centrer holder of diameter 6.5mm for tube diameters 10.5 to 15mm.
- A 2-ball centrer holder of diameter 8mm for tube diameters 15 to 60mm.

The centrer holder must be ordered with the corresponding 2-ball centrers. They are available in any diameter.

For tubes with an inside diameter of 8 to 10.5mm, the TS 8/75 can be fitted with a one-piece centrer holder (optional extra).

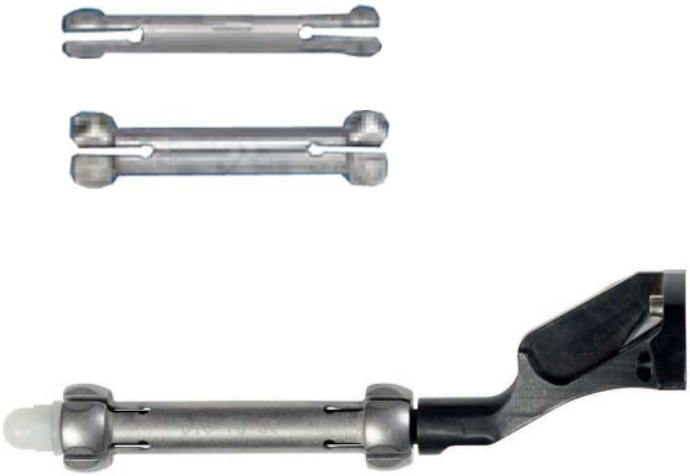


Fig.3.11 - Centrer holder and 2-ball centrers

Fig.3.12 - Built-in centrer holder

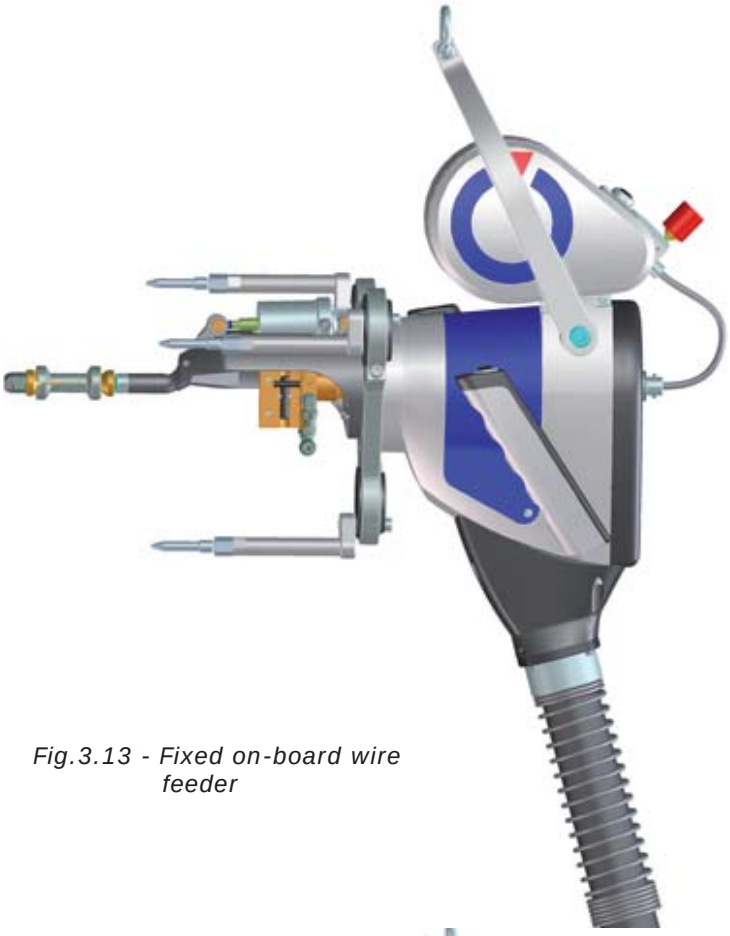


Fig.3.13 - Fixed on-board wire feeder

Fixed on-board wire feeder

The fixed on-board wire feeder is positioned above the TS 8/75. The spool level is easy to control. The wire sheath is short. The wire feeder has been designed to be simple to use with easy adjustments.
The fixed on-board wire feeder supplies the welding tool with filler wire. It is designed to regularly advance the wire during the welding cycle. It is made up of a simplified wire feeder mechanism, a motor drive system, a spool support and a wire straightener. It is designed to hold a 1.5 kg spool.

Its illustrated parts lists can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

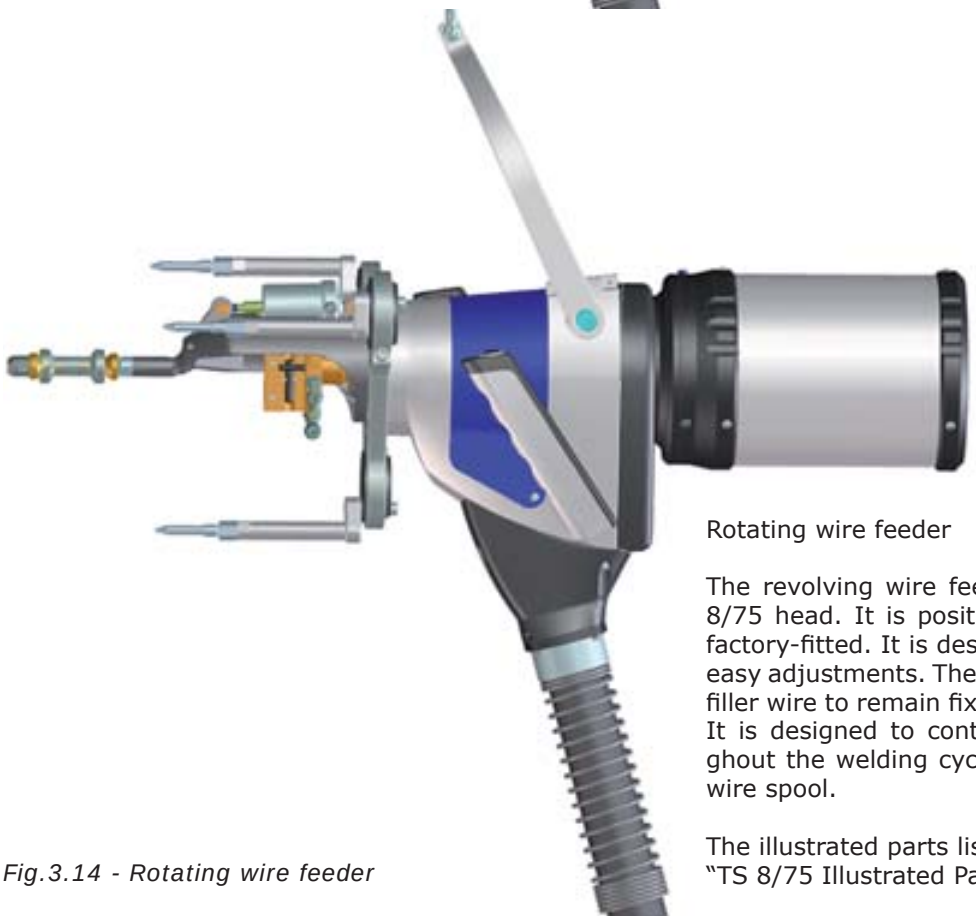


Fig.3.14 - Rotating wire feeder

Rotating wire feeder

The revolving wire feeder is an option with the TS 8/75 head. It is positioned behind the head and is factory-fitted. It is designed to be simple to use with easy adjustments. The rotating wire feeder allows the filler wire to remain fixed relative to the welding tool. It is designed to control the filler wire feed throughout the welding cycle. It accommodates a 1.5 kg wire spool.

The illustrated parts list is reproduced in document "TS 8/75 Illustrated Parts Lists PN-0810094".

Polyfil-3 wire sheath

The Polyfil-3 wire sheath connects the external Polyfil-3 feeder to the TS 8/75 head.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

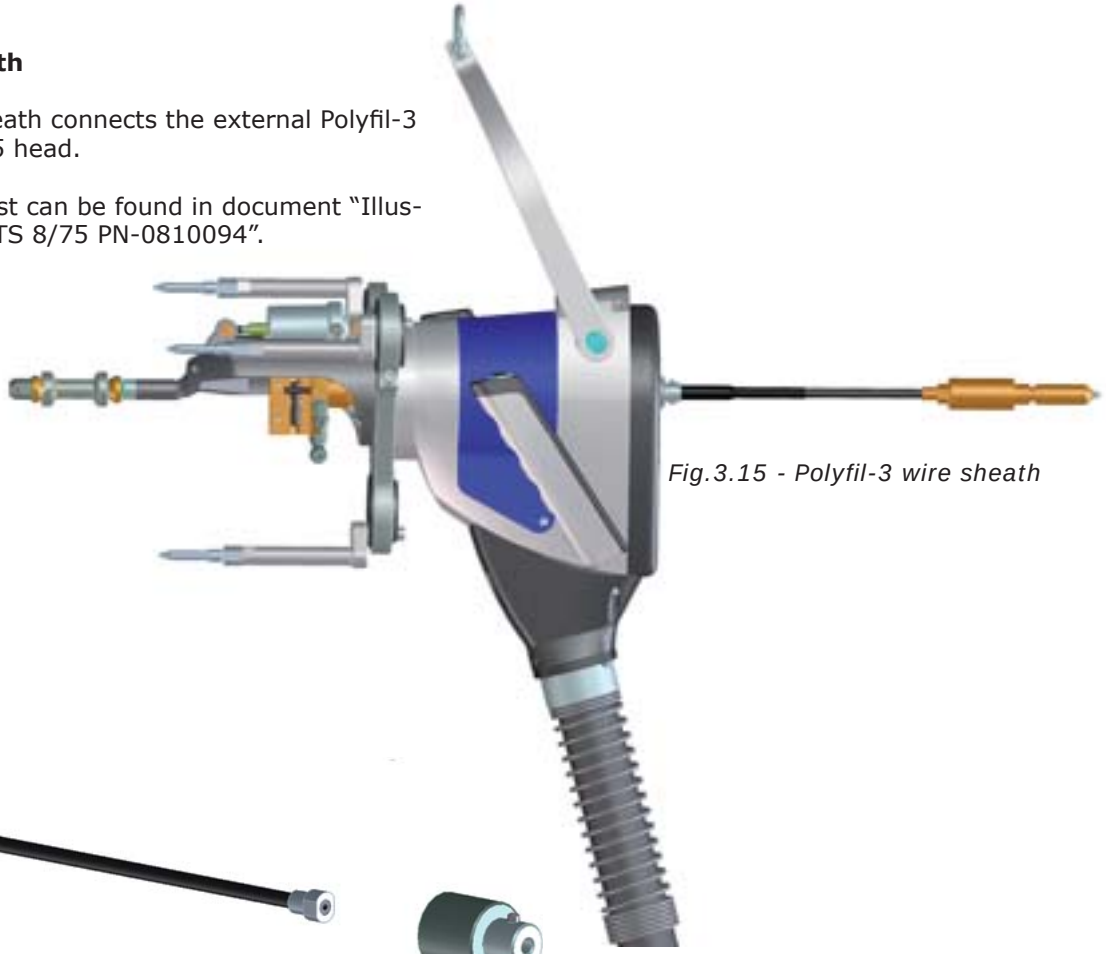


Fig.3.15 - Polyfil-3 wire sheath

Fig.3.16 - Internal wire sheath and wire attachment

Internal wire sheath

The internal wire sheath makes the connection between the wire attachment and the welding tool. It is common to the fixed on-board and external wire feeder versions.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Wire attachment

The wire attachment is very simple to use. It is used to fix the wire sheath from the fixed or rotating on-board wire feeder or the external wire feeder.

Its illustrated parts list can be found in document "Illustrated parts lists for TS 8/75 PN-0810094".

Fig.3.17 - Polyfil -3 wire feeder

The welding tools

There are a relatively large number of application areas. The use of the TS 8/75 welding head is justified by the need to obtain very high quality welds which are infinitely reproducible.
The various tube-to-plate configurations are as follows:

- Protruding tube (Fig.3.18).
- Recessed tube (Fig.3.19).
- Flush tube (Fig.3.20).
- Tube at back of plate (Fig.3.21).
- Internal welding (Fig.3.22).
- Double plate welding (Fig.3.23).

The TS 8/75 welding head is delivered without a torch. A large range of suitable tools is shown in the catalogue.

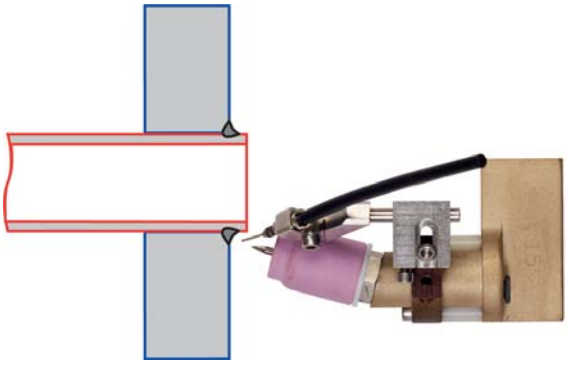


Fig.3.18 - Protruding tube

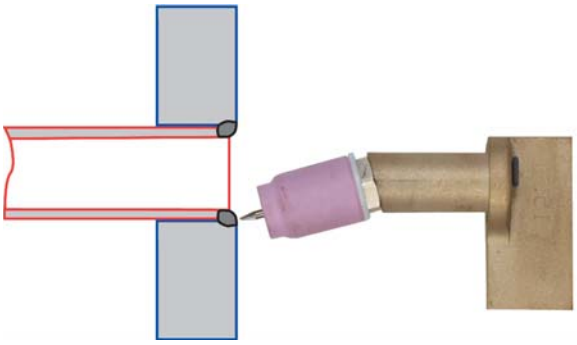


Fig.3.19 - Recessed tube

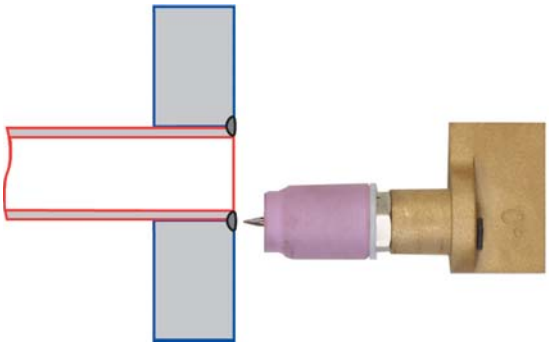


Fig.3.20 - Flush tube

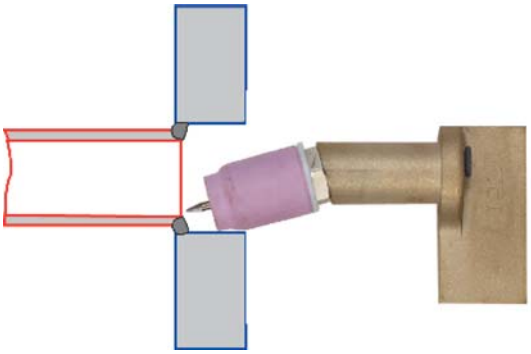


Fig.3.21 - Tube at back of plate

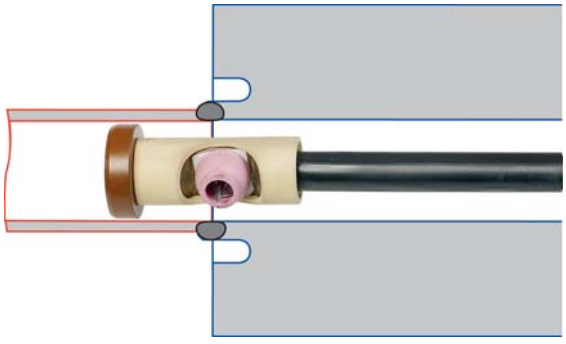


Fig.3.22 - Internal welding

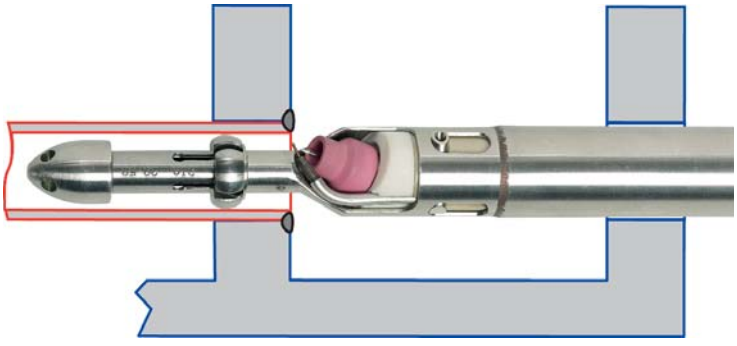


Fig.3.23 - Double plate welding

Air-cooled torches

Air-cooled torches are fitted with a slide, a torch, a gas lens assembly and a wire adjuster. This slide is used to adjust the position of the torch. The angles of the torches and wire necks for each of the torch kits allows the tools to be presented preset. The wire electrode adjustments are defined according to the torch kit models. All the operator has to do is to fine-tune the position of the wire.

There are 6 models in the catalogue:

Application	Description	Order Code	Reference
Recess welding tool	Air-cooled torch, -15°	0023411735	Fig.3.24 - 1
Recess welding tool	Air-cooled torch, -5°	0023411730	Fig.3.24 - 2
Flush welding tool	Air-cooled torch, 0°	0023411710	Fig.3.24 - 3
Flush welding tool	Air-cooled torch, +5°	0023411715	Fig.3.24 - 4
Protrusion welding tool	Air-cooled torch, +15°	0023411720	Fig.3.24 - 5
Protrusion welding tool	Air-cooled torch, +30°	0023411725	Fig.3.24 - 6

Their illustrated parts lists can be found in document “Illustrated parts lists for TS 8/75 PN-0810094”.

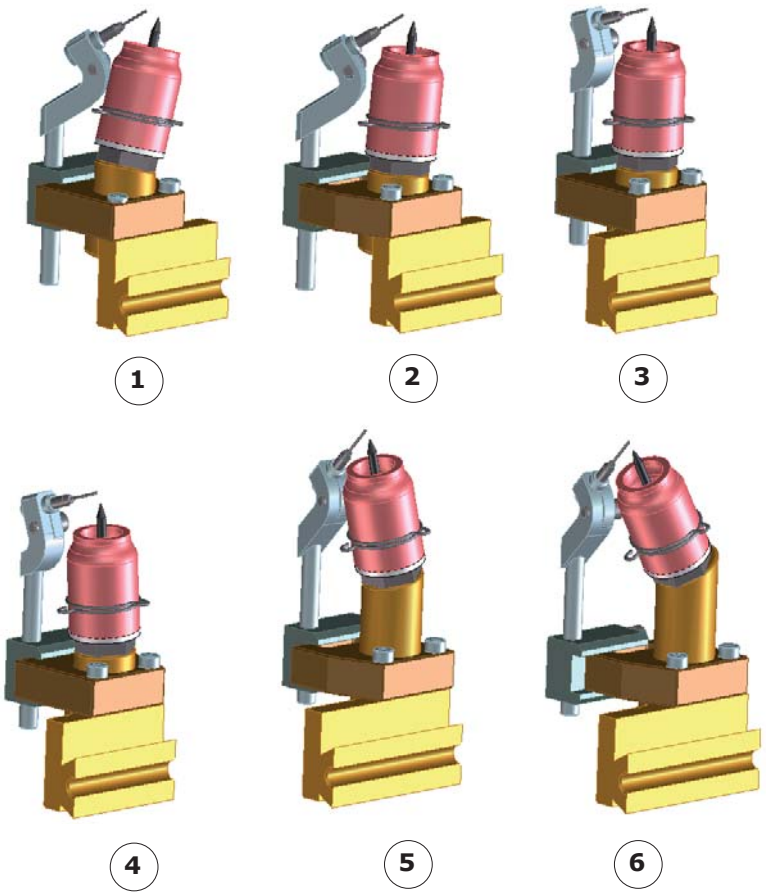


Fig.3.24 - Range of air-cooled torches

Water-cooled torches

In addition to the equipment with air-cooled torches, water-cooled torches are fitted with a circuit allowing the torch to be cooled by water for applications with a high duty cycle.

There are 6 models in the catalogue:

Application	Description	Order Code	Reference
Recess welding tool	Water-cooled torch, -15°	0023411765	Fig.3.25 - 1
Recess welding tool	Water-cooled torch, -5°	0023411760	Fig.3.25 - 2
Flush welding tool	Water-cooled torch, 0°	0023411740	Fig.3.25 - 3
Flush welding tool	Water-cooled torch, +5°	0023411745	Fig.3.25 - 4
Protrusion welding tool	Water-cooled torch, +15°	0023411750	Fig.3.25 - 5
Protrusion welding tool	Water-cooled torch, +30°	0023411755	Fig.3.25 - 6

Their illustrated parts lists can be found in document “Illustrated parts lists for TS 8/75 PN-0810094”.

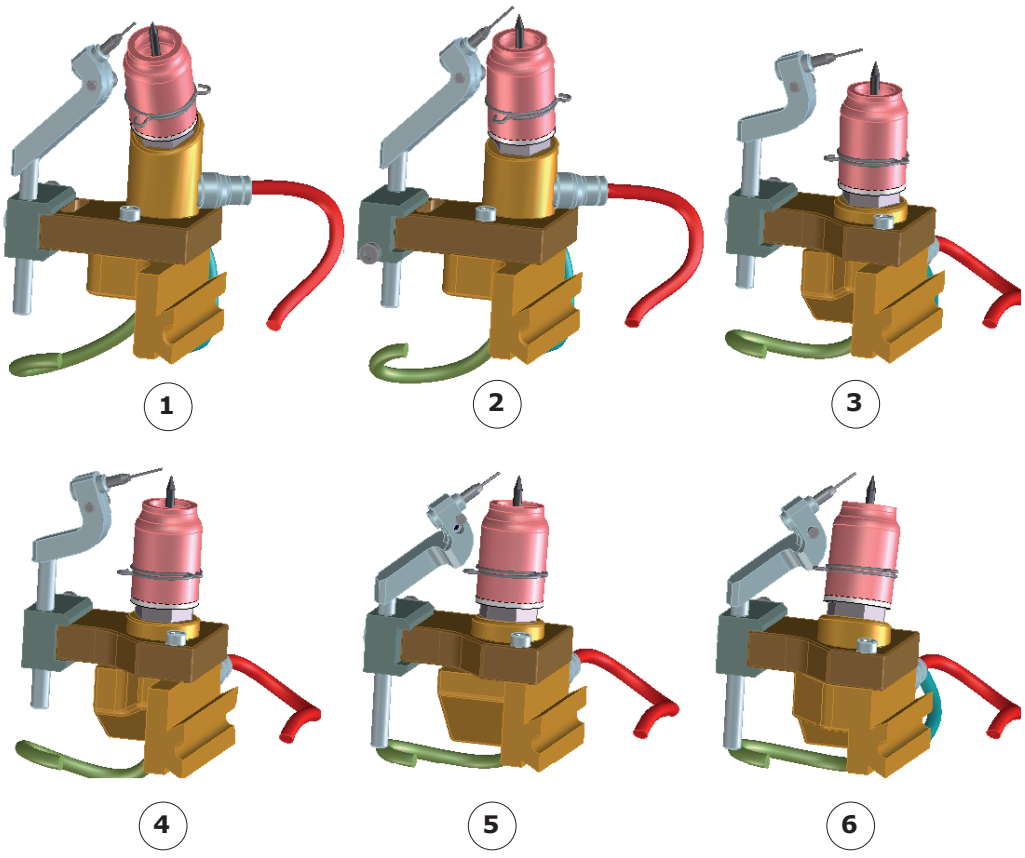


Fig.3.25 - Range of water-cooled torches

Description	Reference
TS 8/75 with pneumatic clamping and centring system for tube 15 mm ≤ I.D. ≤ 40 mm	
TS 8/75 – manual adjustment distance electrode/tubesheet (torch with slide to be ordered separately), for use with an external wire feeder POLYFIL-2 or POLYFIL-3	00 2341 0002
TS 8/75 – manual adjustment distance electrode/tubesheet (torch with slide to be ordered separately), with integrated, "fixed" wire feeder, Spool Ø 100 mm	00 2341 0003
TS 8/75 – motorised adjustment distance electrode/tubesheet (AVC) (torch with slide to be ordered separately) to use with an existing external wire feeder POLYFIL-2 or POLYFIL-3	00 2341 0005
TS 8/75 – motorised adjustment distance electrode/tubesheet (AVC) (torch with slide to be ordered separately) with integrated, "fixed" wire feeder, Spool Ø 100 mm	00 2341 0004
TS 8/75 – motorised adjustment distance electrode/tubesheet (AVC) (torch with slide to be ordered separately) with integrated, "rotating" wire feeder, Spool Ø 100 mm	00 2341 0007
TS 8/75 with simple centering system with centring mandrel for tubes 10 mm ≤ I.D. ≤ 60 mm	
TS 8/75 – manual adjustment distance electrode/tubesheet (torch with slide to be ordered separately) for use with an external wire feeder POLYFIL-2 or POLYFIL-3	00 2341 0012
TS 8/75 – manual adjustment distance electrode/tubesheet (torch with slide to be ordered separately), with integrated, "fixed" wire feeder, Spool Ø 100 mm	00 2341 0013
TS 8/75 – motorised adjustment distance electrode/tubesheet (AVC) (torch with slide to be ordered separately) with integrated, "fixed" wire feeder, Spool Ø 100 mm	00 2341 0014
TS 8/75 – motorised adjustment distance electrode/tubesheet (AVC) (torch with slide to be ordered separately) to use with an existing external wire feeder POLYFIL-2 or POLYFIL-3	00 2341 0015

Fig.3.26 - TS 8/75 Welding head

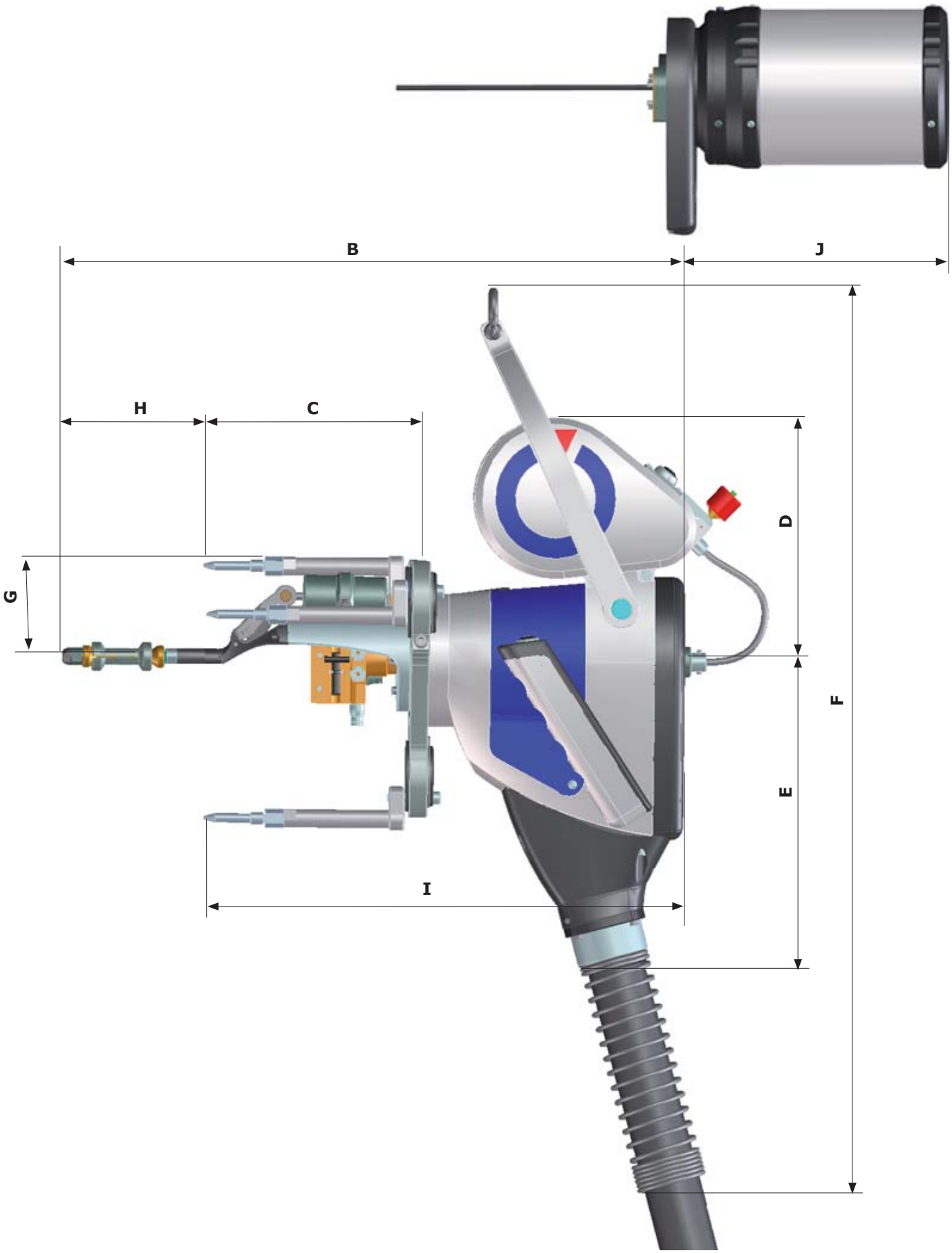
3. 4. Technical data

Dimensions and weight	
Overall dimensions	See dimensional drawings below
Estimated weight without the cable/pipe bundle and wire spool (kg)	7
Length of bundle (m)	9
Duty cycle air cooled torches	
Average I (A)	190
Maxi peak I (A)	250
Duty cycle water cooled torches	
Average I (A)	***Awaiting tests***
Maxi peak I (A)	***Awaiting tests***
Ambient noise	
In welding mode pursuant to directive 2006/42/EC (dBA)	<70
Gas	
Gas used	Argon and mixes
Pneumatic circuit	
Pressure (bar)	6 to 8 *
Tube	
Inside diameter of the tube - min. (mm)	8
Outside diameter of the tube - max. (mm)	60
Outside diameter of the tube - max. with option (mm)	75
Motor drive	
Min. - max. welding speed (mm/min.)	50 - 150
Slide - Arc Voltage Control (AVC) with standard wire feeder	
Travel (mm)	20
Speed (mm/min.)	500
Slide - Arc Voltage Control (AVC) with rotating wire feeder	
Travel (mm)	16
Speed (mm/min.)	500
Air-driven centring and clamping	
Central air control - inside diameter of tube (mm)	from 15 to 40
Simple centring	
With 2-ball centrers - inside diameter of tube (mm)	from 10.50 to 60
Small diameter centring (option)	
Built-in centrer - inside diameter of tube (mm)	from 8 to 10.50

Cooling	
Torches	Air
	Water, closed circuit
Standard wire feeder	
Type of wire feeder	Fixed on-board
Wire feed speed (mm/min.)	1154
Wire spool (dia. mm - Kg)	100 - 1.5
Wire diameter (mm)	0.8
Motor	Direct current + encoder
Rotating wire feeder (option)	
Type of wire feeder	Rotating, on-board
Wire feed speed (mm/min.)	1154
Wire spool (dia. mm - Kg)	100 - 1.5
Wire diameter (mm)	0.8
Motor	Direct current + encoder
Tube configuration	
Flush	Standard
Recessed	Max. 2mm
Protruding	Max. 13mm
Inside welding	Optional
Rear of plate welding	Optional

3. 5. Overall dimensions

Dimen-sions	Simple 2-ball centrer	Centring/clamp-ing air-controlled
A	205	205
B	417	443
C	148	148
D	161	161
E	202	202
F	583	583
G	66	66
H	70	96
I	318	318
J	206	206


B
J
H
C
G
D
F
E
I

3. 6. Equipment compatibility

TheTS 8/75 welding head is compatible with the P6 mobile power source, PS 406-2 power source and the PC series power sources. The power source supplies the TS 8/75 with welding current, gas and coolant. It controls the Rotation and AVC movements and the filler wire feed. To know the standard axis configuration to equipments Polysoude, see the memo „Axis Configuration Standard".

Warning: With PS 406-2 power source and the PC serie power source, the clamp head pneumatic function and remote control wire on top are not active

The operator must respect the choice of axe types specified by Polysoude.
In case of non-compliance with this choice, there is a high risk of destruction of equipment.

4. Installation

4. 1. Handling

All installation and maintenance operations must be carried out with the machine disconnected from the power supply.
Always manipulate the welding head using the locations provided (the grips and the arm). Never use other parts of the machine to provide a grip for handling. There is a risk that the equipment will be damaged or destroyed.

The TS 8/75 head is delivered in a case with protectors. This packaging is specific to the machine. The case must be kept for use each time the head is transported in order to prevent damage.
When the welding head is not used and removed from its support, it should be stored on a suitable support away from any impacts (or in its case).

4. 2. Installation on site

The complete installation must be fitted with a power supply isolation switch that can be locked.
In order to prevent people tripping over and damaging the equipment, provision must be made for appropriate routing of cables.

4. 3. Connecting the bundle to the power source

The user is responsible for the installation and use of the arc welding equipment in accordance with the manufacturer's instructions. If electromagnetic interference is detected it must be the responsibility of the user of the arc welding equipment to resolve matters, with technical assistance from the manufacturer (extract of standard EN 60974-10 2008 – Annex A.).

Before using the machine, check the bundle. Too sharp an angle can pinch the cooling liquid and gas hoses. Limit this angle to 90° for optimum operation.

The TS 8/75 welding head must be connected to the Polysoude power source with the power turned off.
The installation is started by means of the power on switch on the power source.

The TS 8/75 welding head is delivered with a 9-metre long bundle.

Refer-ence	Description	Reference	Description
1	Electrode current connector Important: do not reverse the + (Red) and the - (Black)	6	Welding gas connector
2	10-pin male plug Torch rotation	7	37-pin male plug Interlock
3	8-pin male plug Wire feed (integrated wire feeder)	8	Compressed air connector Self-securing system (Minimum 6 bar usage pressure)
4	Water return connector	9	Manual control socket
5	Water feed connector		

Fig.4.1 - TS 8/75 connecting pipe/cable bundle

Bundle and connection options:

- Bundle extension of 15 meters.
- Switch box allowing 2 welding heads to be connected simultaneously (without AVC).

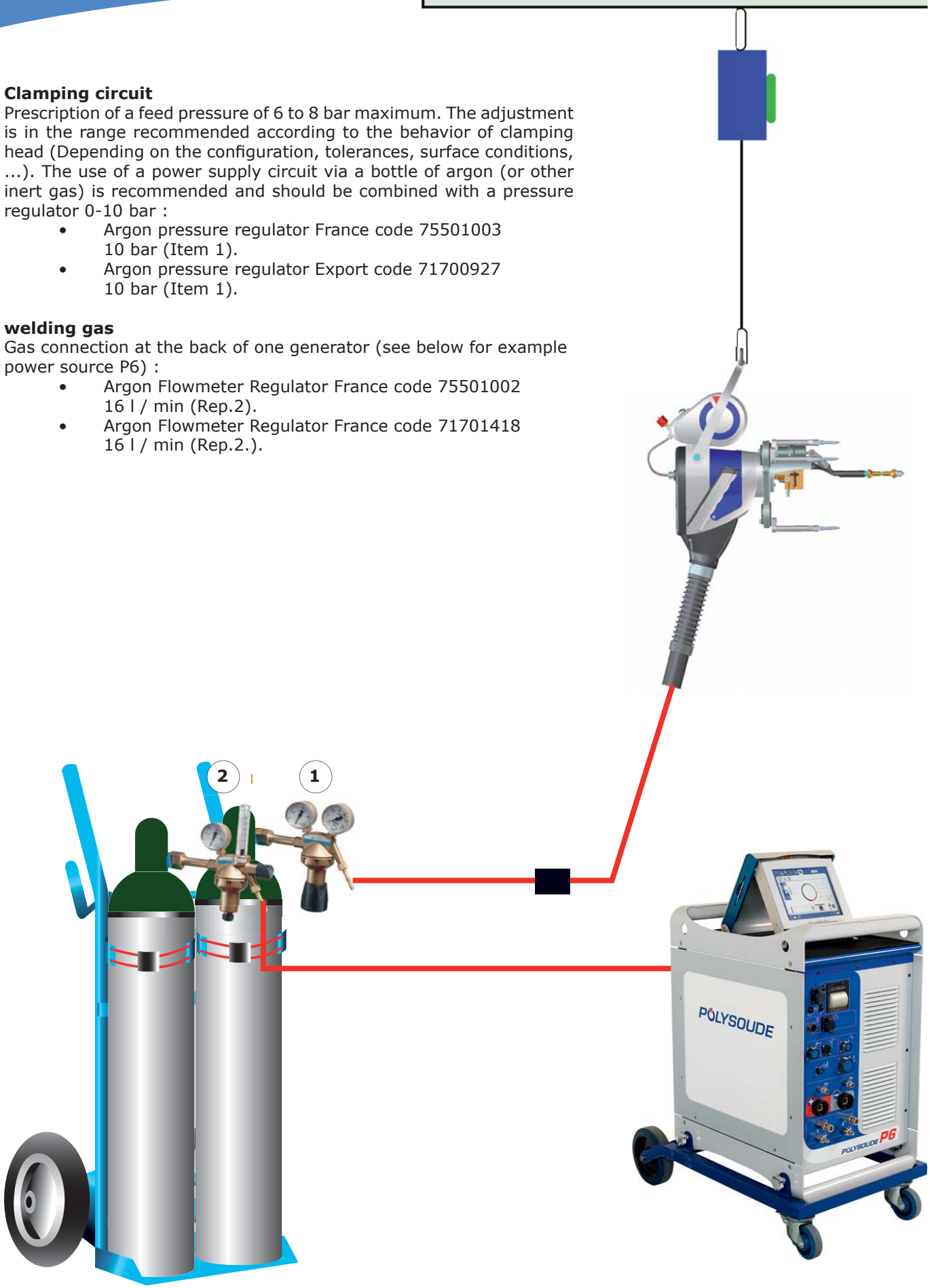
Fig.4.2 - Switching box

Clamping circuit
Prescription of a feed pressure of 6 to 8 bar maximum. The adjustment is in the range recommended according to the behavior of clamping head (Depending on the configuration, tolerances, surface conditions, ...). The use of a power supply circuit via a bottle of argon (or other inert gas) is recommended and should be combined with a pressure regulator 0-10 bar :

- Argon pressure regulator France code 75501003
  10 bar (Item 1).
- Argon pressure regulator Export code 71700927
  10 bar (Item 1).

welding gas
Gas connection at the back of one generator (see below for example power source P6) :

- Argon Flowmeter Regulator France code 75501002
  16 l / min (Rep.2).
- Argon Flowmeter Regulator France code 71701418
  16 l / min (Rep.2.).



5. Use

5. 1. Precautions for use

This machine must only be used by personnel who are qualified to perform the tasks involved, in accordance with the rules governed by the French Labour Code.

Operators are strongly advised to protect themselves by wearing suitable helmets, gloves and boots.

When welding particularly large parts whose shape creates a confined space or a tank, the operator must make sure that the oxygen content (between 19.5 and 23% of ambient air) is sufficient before intervening. The use of an oxygen analyser is strongly advised.
Remember that below 18%, a feeling of dizziness may occur, leading to asphyxia.
In addition, the operator must be monitored by a third person located outside the work area who is able to alert the first-aiders in the event of an emergency.

The sensors situated on the various parts of the welding head must not be modified (positions, settings, connections, etc.).
Risk of serious injury to operators.
There is a risk that the equipment will be damaged or destroyed.

5. 2. Balancer

It is essential to use a type K22 / 625 (supplied by Polysoude) balancer when installing the TS 8/75 welding head. The tension must be regulated so that the head remains in equilibrium at the tubes to be welded.

During welding, the balancer must always be vertical relative to the head and the tube to be welded. This is achieved by using a beam boom giving lateral movement to the balancer.

If a balancer is not used, there is a risk the clamping system will be damaged and of the head falling while being released.

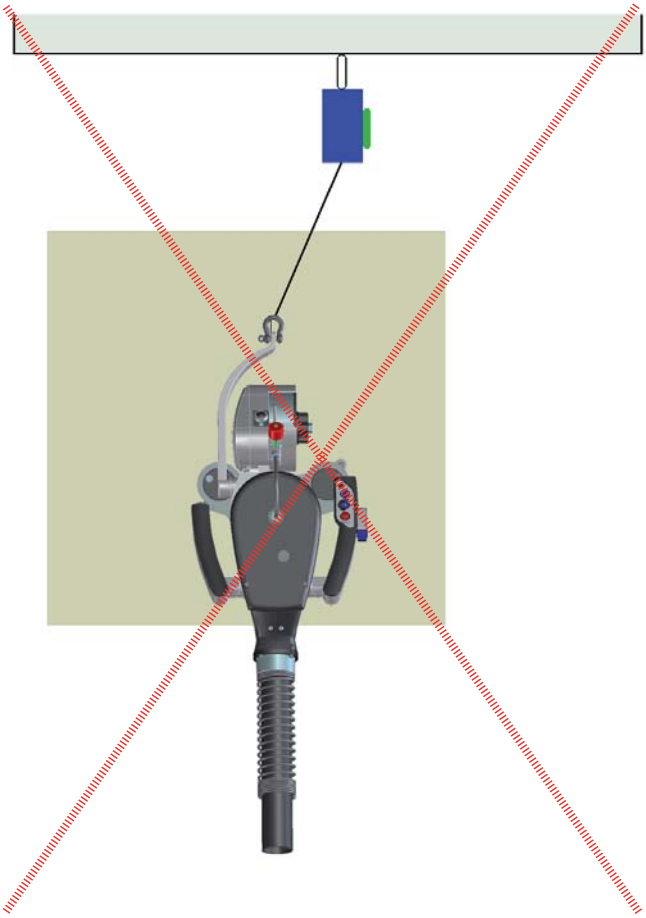


Fig.5.1 - Balancer positioned incorrectly

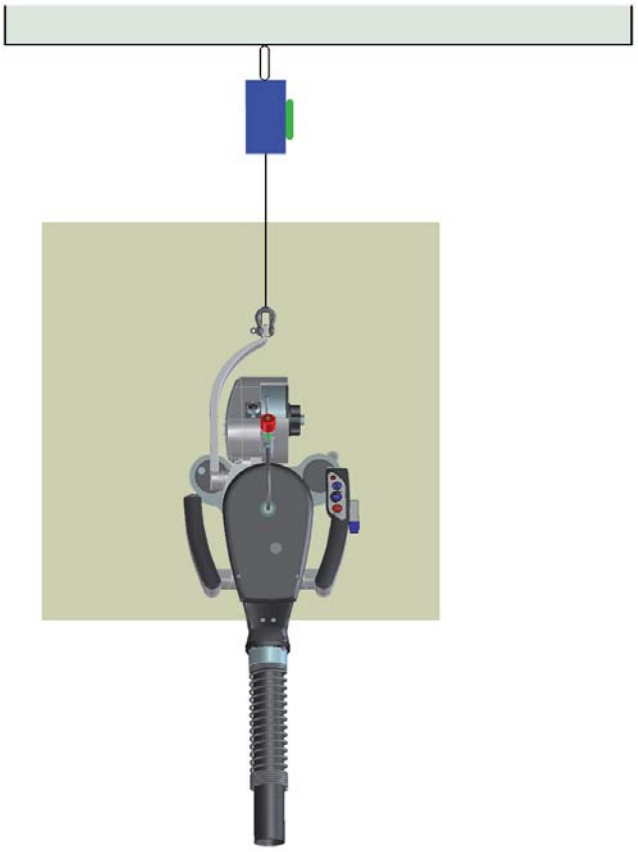


Fig.5.2 - Balancer positioned correctly

5. 3. Integrated controls

The TS 8/75 is fitted with integrated controls. The operator configures the cycle along four or five axes (current, gas, rotation, cooling circuit, input of material) on the power source. The operator then tests, starts and stops the cycle from the TS 8/75 head. These controls are particularly ergonomic and necessary if the operator is controlling several heads.

Refer-ence	In-cycle operation	Off-cycle operation
1	Power on indicator lights	Power on indicator lights
2	Start cycle	-
3	Weld current downslope	Rotation
4	Stop	Test water and gas
5	-	Feed wire for installation and adjustments
6	Clamping - releasing	Clamping - releasing

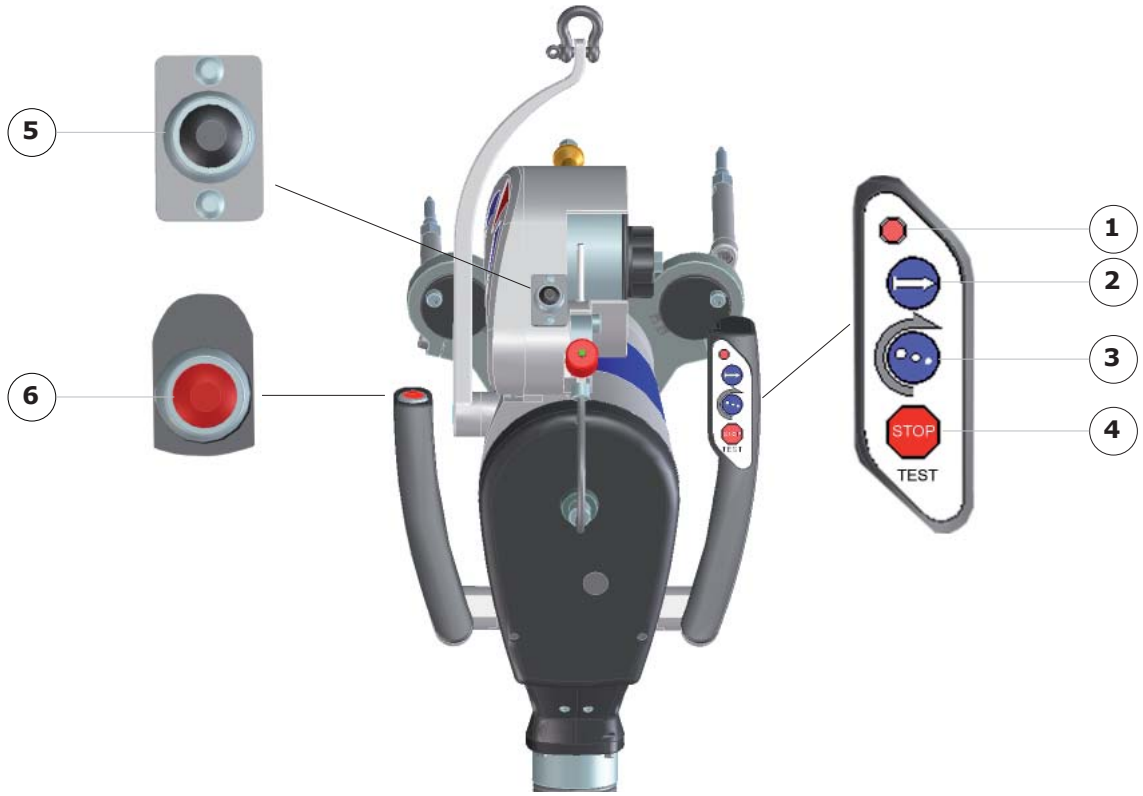


Fig.5.3 - Built-in controls

5. 4. Wire feeder assemblies

Three wire feeders can be used with the TS 8/75:

- Fixed on-board feeder (Fig.5.4).
- Rotating wire feeder (Fig.5.5).
- Rotating on-board feeder (Fig.5.6).
- External Polyfil-3 feeder (Fig.5.7).

Fig.5.4 - Fixed on-board feeder

Fig.5.5 - Rotating wire feeder

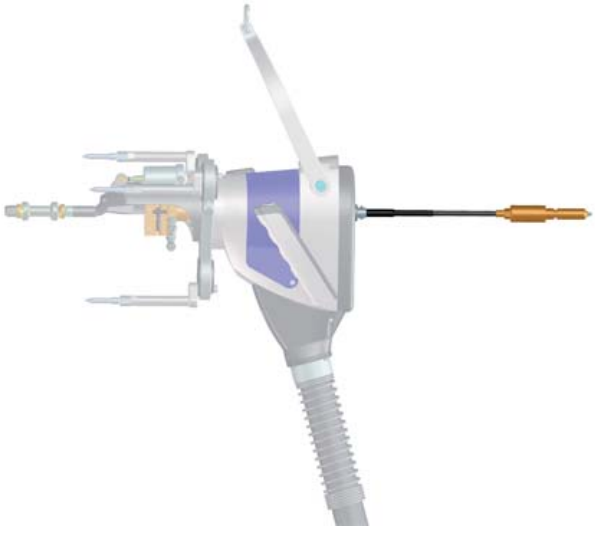


Fig.5.6 - Polyfil-3 wire sheath

Fig.5.7 - Polyfil-3 wire feeder

5. 4. 1. Using a Polyfil-3 wire feeder.

The TS 8/75 head must be fitted with a Polyfil-3 wire sheath - Order code 0023411901, when using the Polyfil-3 external wire feeder.

Where the TS 8/75 head is fitted with an on-board wire feeder:

- Remove the wire feeder.
- Put the plug (Fig.5.8 - 1) in place.

Then:

- Insert the Polyfil-3 sheath (Fig.5.8 - 2) in the wire attachment (Fig.5.8 - 3).
- Fix using the 2 set screws.

- Then refer to the user manual for the Polyfil-3 wire feeder, PN-0110001.

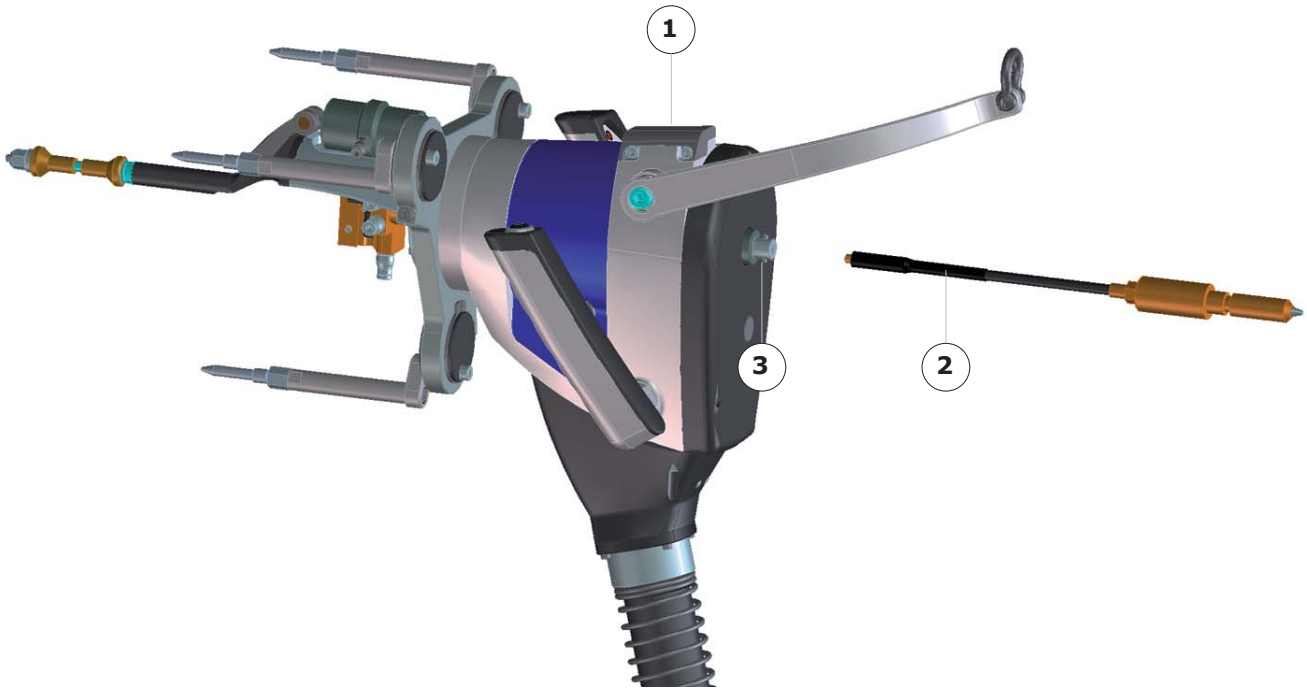


Fig.5.8 - Polyfil-3 wire sheath

5. 4. 2. Fixed on-board wire feeder

Composition

Refer-ence	Description	Refer-ence	Description
1	Wire dispenser mechanism	5	Wire sheath
2	Motor drive	6	Wire feed pushbutton
3	Spool holder	7	Wire clamping knob
4	Wire feed sheath	8	Spare wire clamp knob

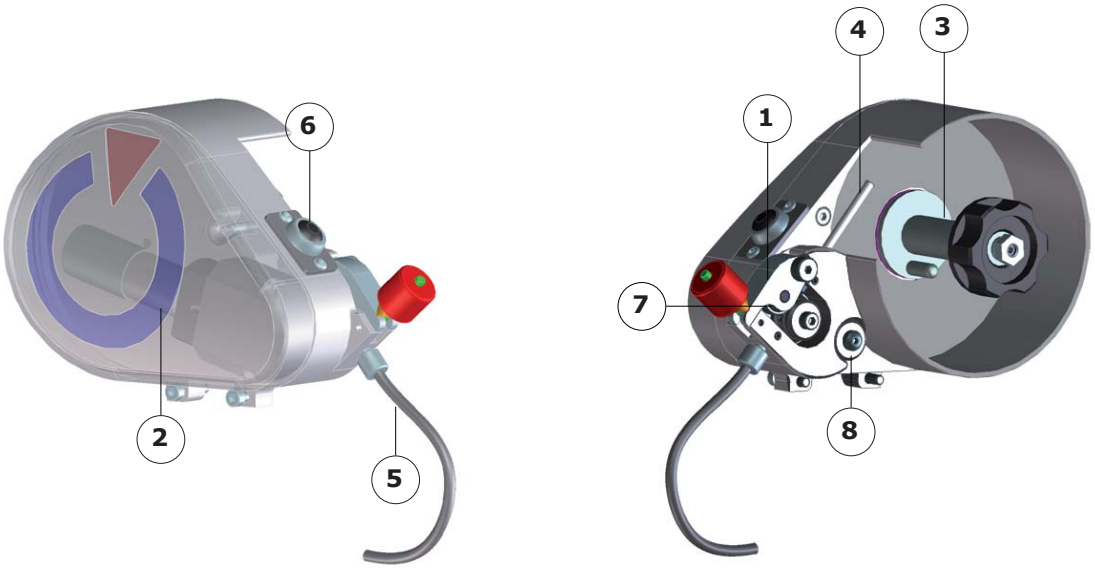


Fig.5.9 - Fixed on-board feeder

Fitting the wire spool

Before changing the spool, disconnect the wire sheath from the feeder.
Cut off and remove the rest of the wire in the wire sheaths.

- Remove any burrs from the end of the wire, so that it cannot damage the cable sheaths and wire clamping knob as it is fed through.
- Loosen the spool holder clamping knob (Fig.5.10 - 1).
- Place the wire spool on the support (Fig.5.10 - 2) ensuring it is correctly indexed (Fig.5.10 - 3).
- Insert the wire in the internal wire sheath (Fig. 5.10 - 4).
- Tighten the clamping knob.

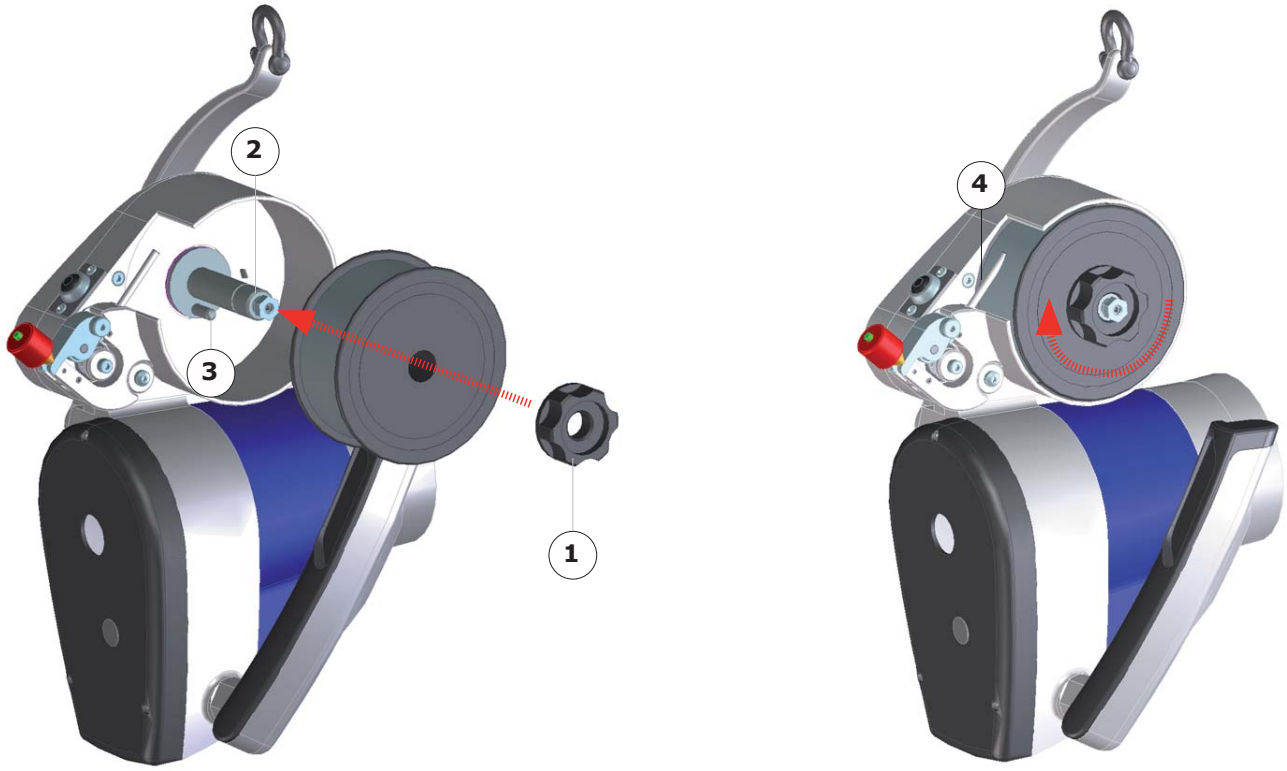


Fig.5.10 - Fitting the wire spool

Inserting the wire in the wire feeder

- Loosen the adjusting knob (Fig.5.11 - 1) of the feeder mechanism.
- Tilt the adjusting knob so as to free the pressure arm (Fig.5.11 - 2).
- Pivot the pressure arm.
- Pay out a few centimetres of wire.
- Insert the wire into the opening in the tip of the wire sheath (Fig.5.11 - 3).
- Replace the pressure arm, taking care that the wire is in place in the groove of the wire knob (Fig.5.11 - 4).
- Put the adjusting knob in place and tighten slightly.
- Insert the wire into the tip of the wire sheath.

The wire knob must be appropriate to the wire diameter. The wire must be in the groove of the knob.

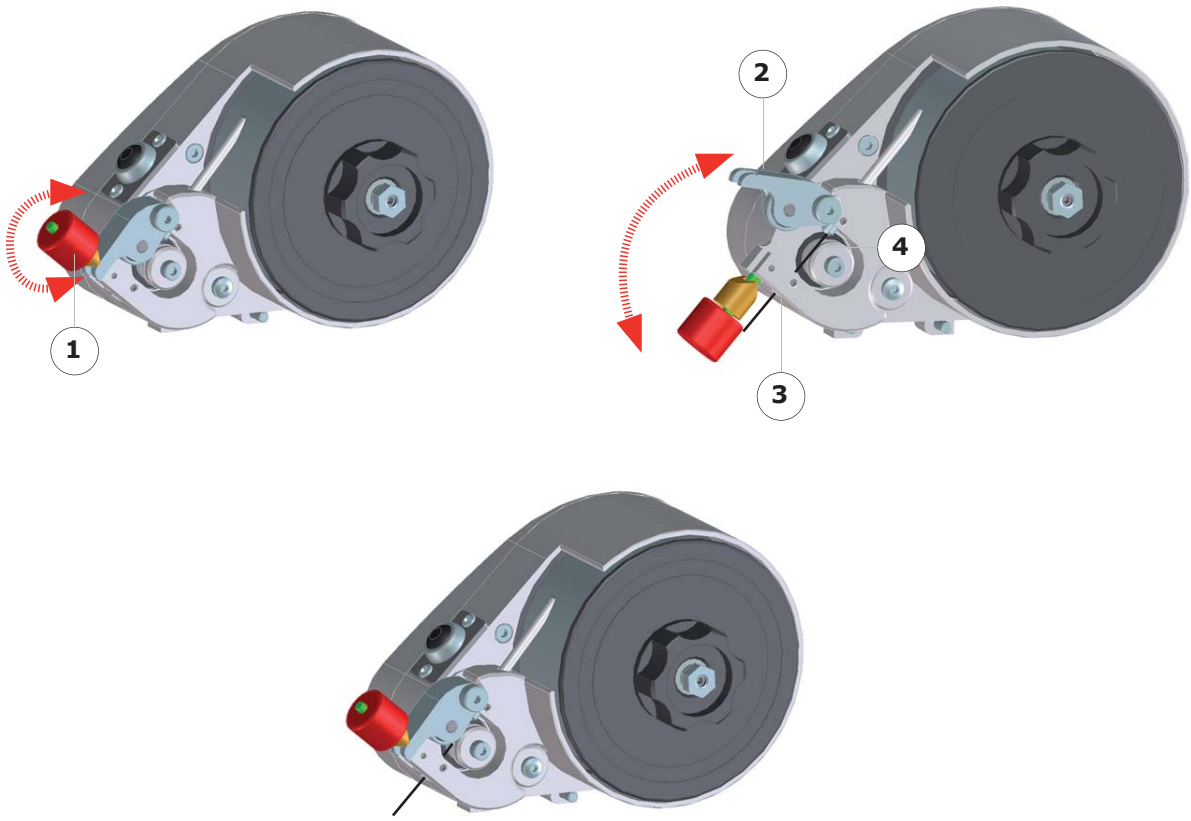


Fig.5.11 - Inserting the wire in the feeder

Fitting the wire sheath

- Place the tip of the wire sheath (Fig.5.12 - 1) in its opening.
- Lock the wire sheath using the set screw (Fig.5.12 - 2).
- Press the pushbutton (Fig.5.12 - 6) to feed the wire.

This operation must not be carried out while operating. The wire can move very quickly. Keep your hands away. Direct the wire in such a way that it cannot hit you. Run the wire at slow speed.

- Insert the wire into the wire attachment (Fig.5.12 - 4).
- Place the wire sheath (Fig.5.12 - 3) into the wire attachment (Fig.5.12 - 4).
- Fasten the wire sheath using the 2 set screws (Fig.5.12 - 5).

Fig.5.12 - Fitting the wire sheath

5. 4. 3. Rotating wire feeder

Composition

Refer-ence	Description	Refer-ence	Description
1	Feeder mechanism	6	Removable housing
2	Motor drive	7	Wire feeder support cover assembly
3	Spool holder	8	Roller for wire
4	Wire feeder input sheath	9	Pressure arm
5	Wire feeder output sheath	10	Wire clamping knob

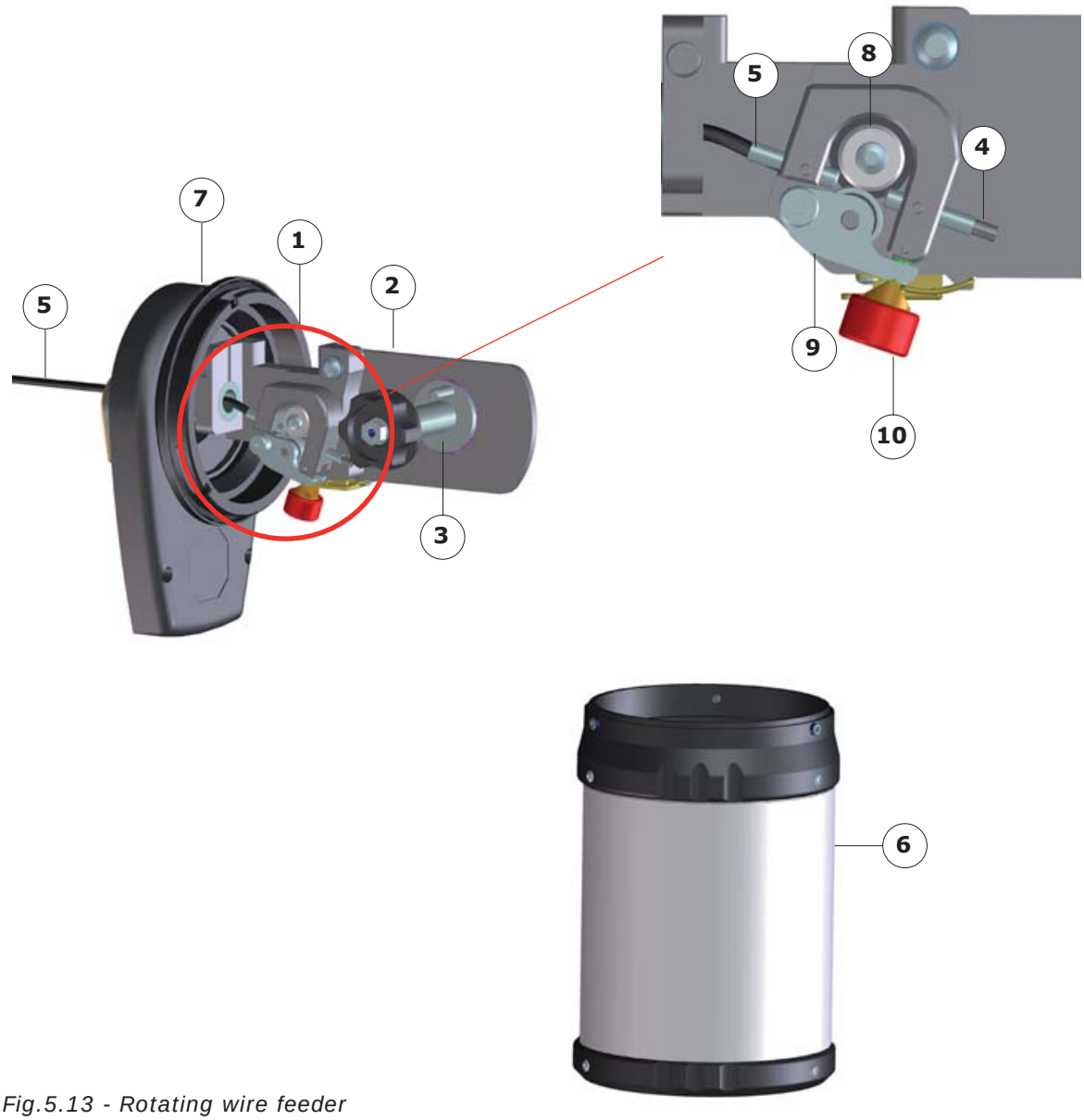


Fig.5.13 - Rotating wire feeder

Inserting a wire spool on a rotating wire feeder

- The head is placed flat on a support.
-
- Turn the removable housing (Fig.5.14 - 1) and remove it to access the spool holder.

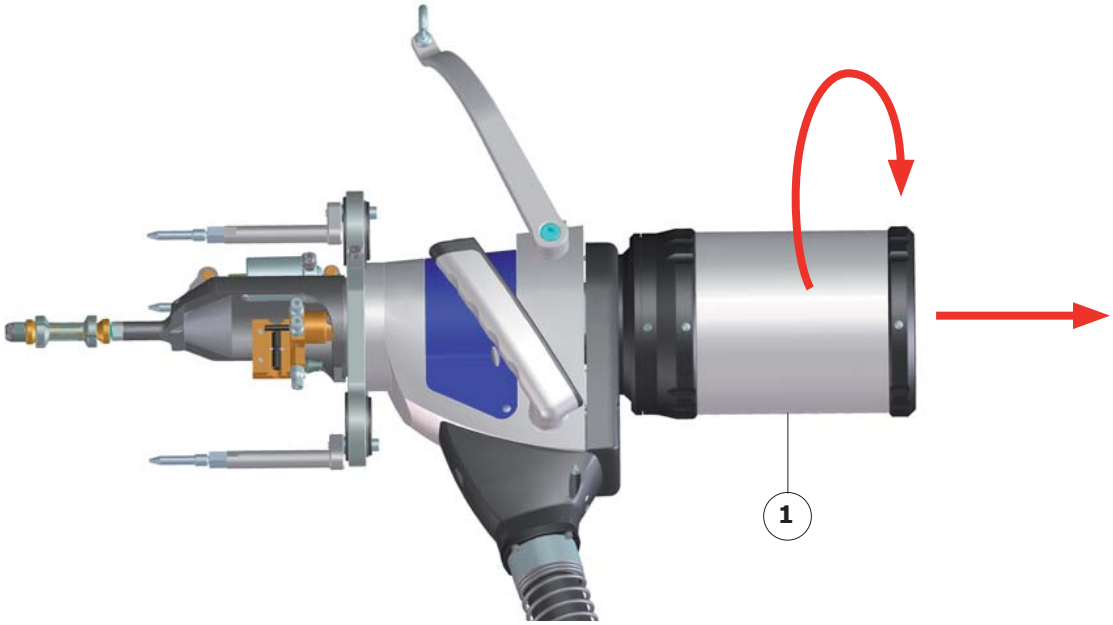


Fig.5.14 - Accessing the spool of the rotating wire feeder

- Unhook the toggle fastener (Fig.5.15 - 1).
- Tilt the wire feeder holder (Fig.5.15 - 2) to facilitate access to the wire feeder mechanism.
- Loosen the clamping knob on the spool holder (Fig. 5.15 - 3).

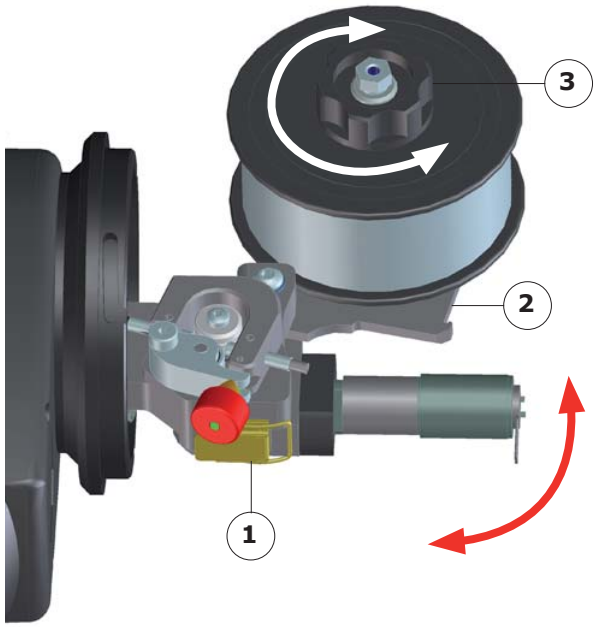


Fig.5.15 - Tilting the spool holder

- Cut and remove any wire remaining in the wire sheaths and remove the empty spool.
- Place the wire spool (Fig. 5.16 - 1) on the holder (Fig. 5.16 - 2), respecting the indexing (Fig.5.16 - 3).
- Tighten the clamping knob (Fig.5.16 - 4).
- Remove any burrs from the end of the wire from the new spool, so that it cannot damage the wire sheaths or roller for wire as it is fed through.
- Insert the wire into the wire feeder input sheath (Fig.5.16 - 5).

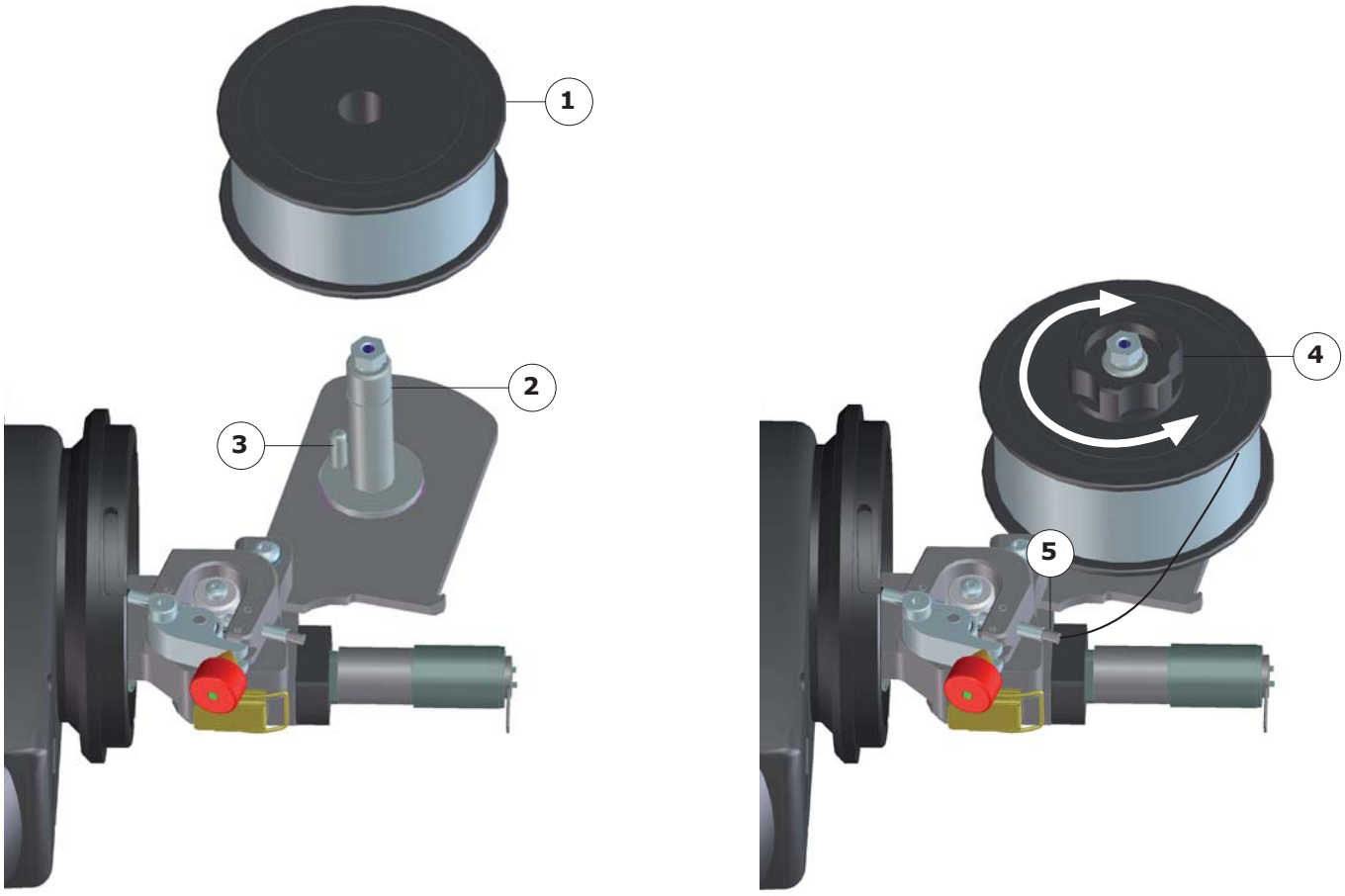


Fig.5.16 - Inserting a wire spool on the rotating wire feeder

Inserting the wire in the rotating wire feeder

- Unscrew and tilt the wire feeder mechanism clamping knob (Fig.5.17 - 1).
- Pivot the clamping arm (Fig.5.17 - 2).
- The wire is in the wire feeder input sheath, manually pay out a few centimetres of wire.
- Insert the wire into the end-piece (Fig.5.17 - 3) of the wire feeder output sheath.
- Replace the clamping arm taking care that the wire is positioned in the groove of the roller for wire (Fig.5.17 - 4).
- Replace the clamping knob and lightly tighten.
- Replace the spool holder and fix it in place using the toggle fastener.
- Carry out a test and pay out a few centimetres of wire.

It is essential that the roller for wire should match the diameter of the wire. The wire must be in the groove of the roller.

- The spool brake may be adjusted by adjusting the calibration nut (Fig.5.17 - 5) and setting the position using the locking screw (Fig 5.17 - 6) as required. Excessive tightening could cause the wire to feed incorrectly. Insufficient tightening could allow the spool to rotate after the wire feeder has come to rest.
- Replace the removable housing.

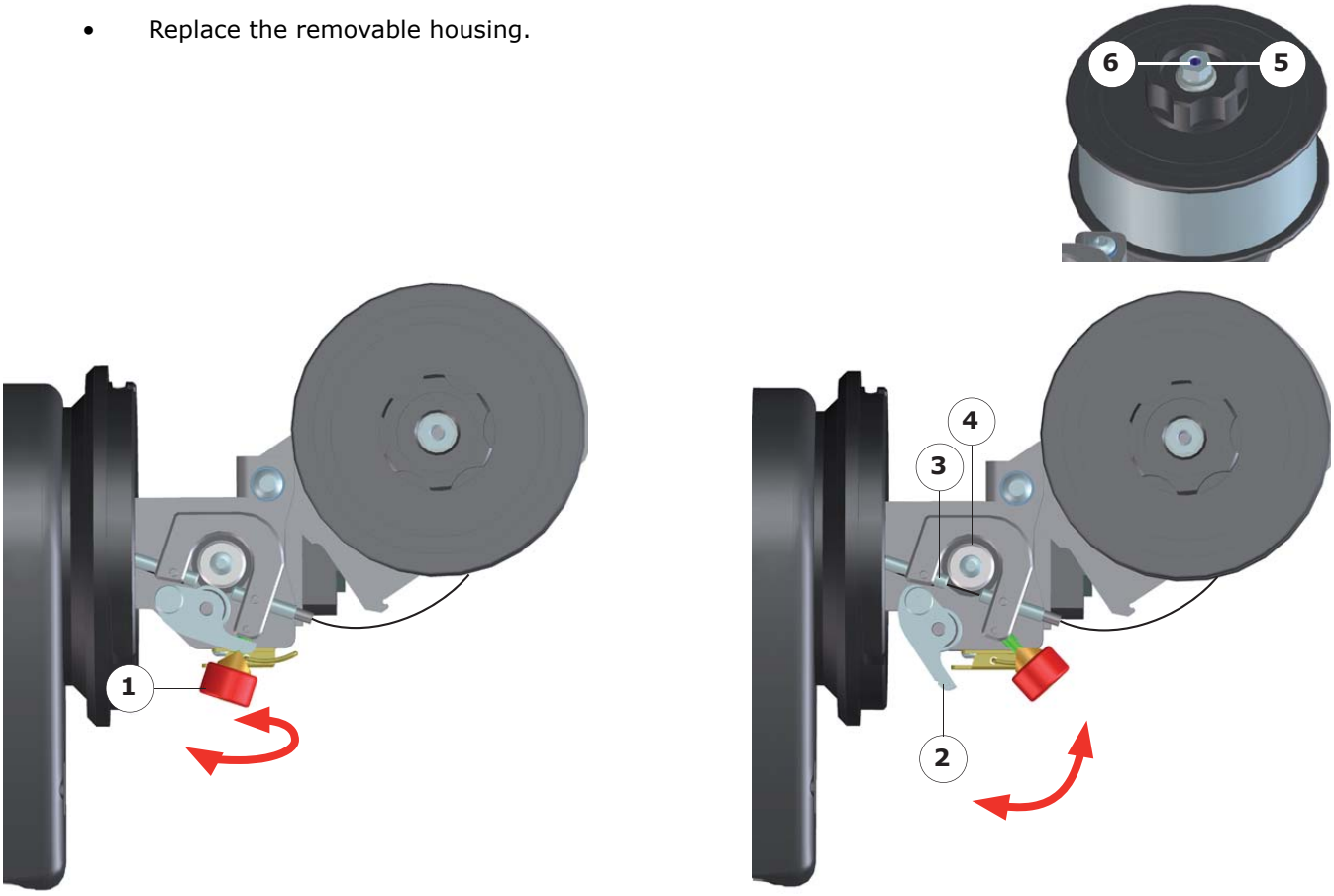


Fig.5.17 - Inserting the wire into the rotating wire feeder

Changing the wire sheaths for the rotating wire feeder

- The head is laid flat on a support, the removable housing has been taken off and the spool holder released.
- Cut and remove any wire remaining in the wire sheaths.
- For the wire feeder input sheath (Fig.5.18 - 1):
  - Loosen the set screw (Fig. 5.18 - 2).
  - Remove the wire sheath.
  - Replace the new wire sheath and fix it in place using the screw.
- For the wire feeder output sheath (Fig.5.18 - 3):
  - Loosen the set screw (Fig. 5.18 - 4).
  - Release the Teflon sheath from the head and remove the wire sheath.
  - Insert the Teflon sheath into the head.
  - Replace the new wire sheath and fix it in place using the screw.
- Replace the wire into the wire feeder mechanism as described previously

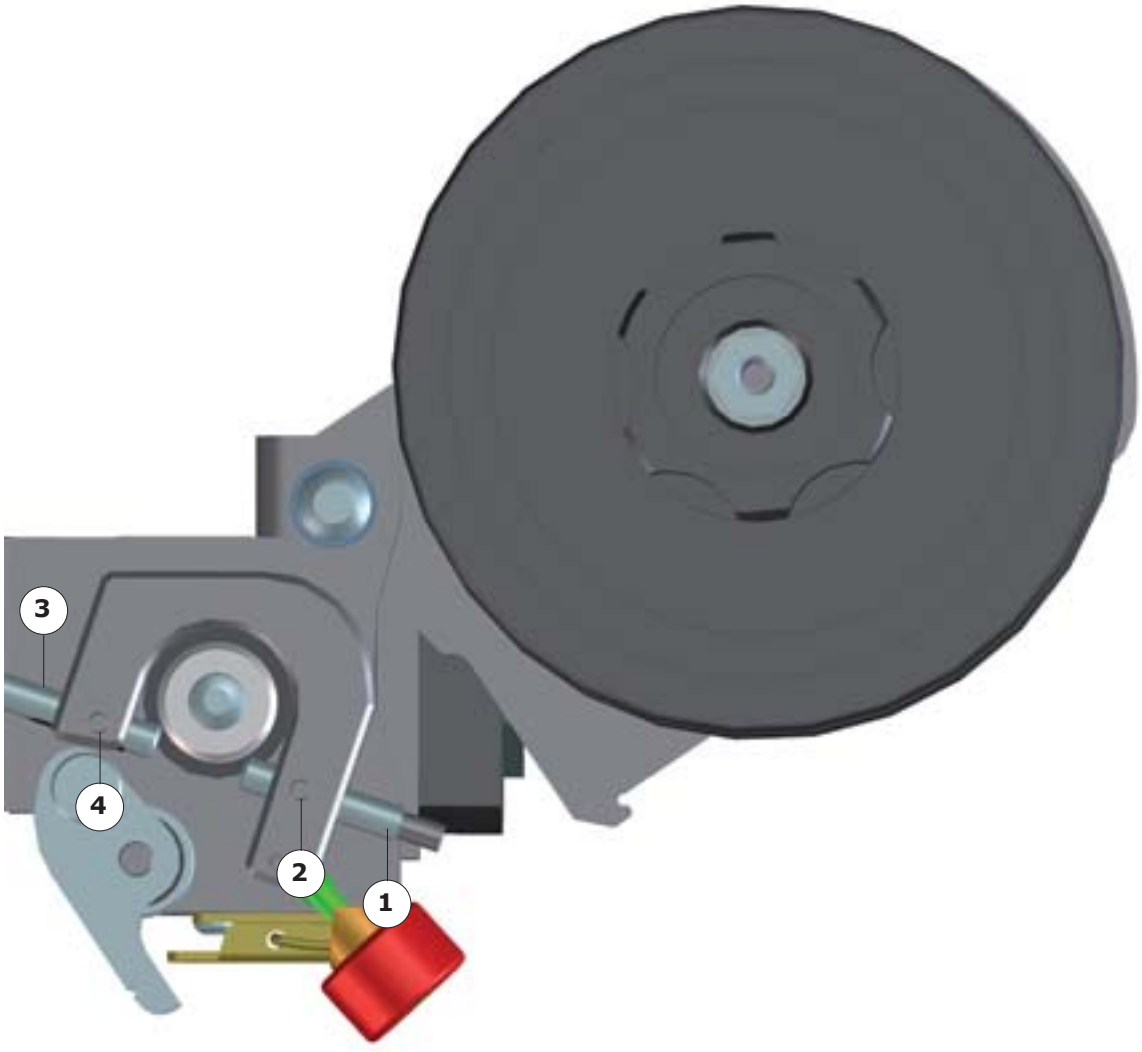


Fig.5.18 - Changing the wire sheaths on the rotating wire feeder

5. 5. Torch kits

5. 5. 1. Make-up of a torch kit

There are two types of torch kit:

- Air-cooled torch kits.
- Water-cooled torch kits.

Torch kits consist of:

- A torch (Fig. 5.19 - 1).
- A wire insulator (Fig.5.19 - 2).
- A gas lens assembly (Fig.5.19 - 3).
- A wire adjustment (Fig.5.19 - 4).

The angles of the torches and wire necks for each of the torch kits allows the tools to be presented preset. The wire/electrode adjustments are defined according to the torch kit types. All the operator has to do is to fine-tune the position of the wire.

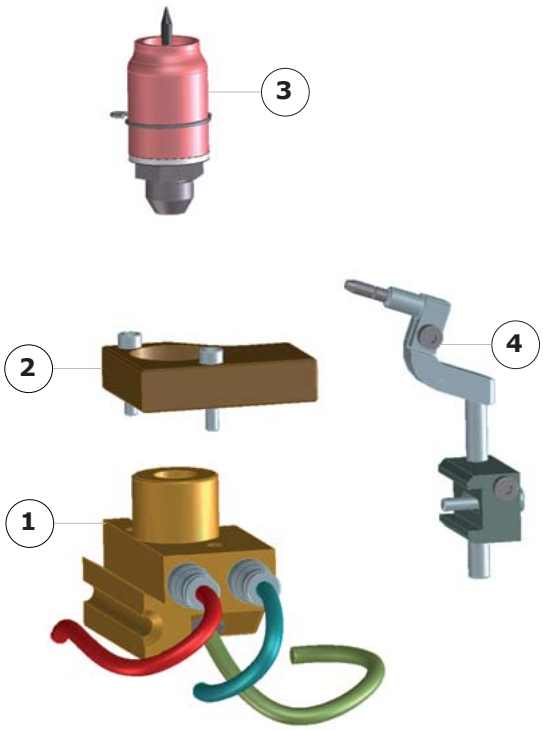


Fig.5.19 - Composition of a torch kit

5. 5. 2. Installing a torch kit

- The two screws (Fig.5.20 - 3) must be unscrewed.
- Insert the torch kit (Fig.5.20 - 1) into the distributor slide (Fig.5.20 - 2).
- Tighten the two screws to lock the position of the torch kit.

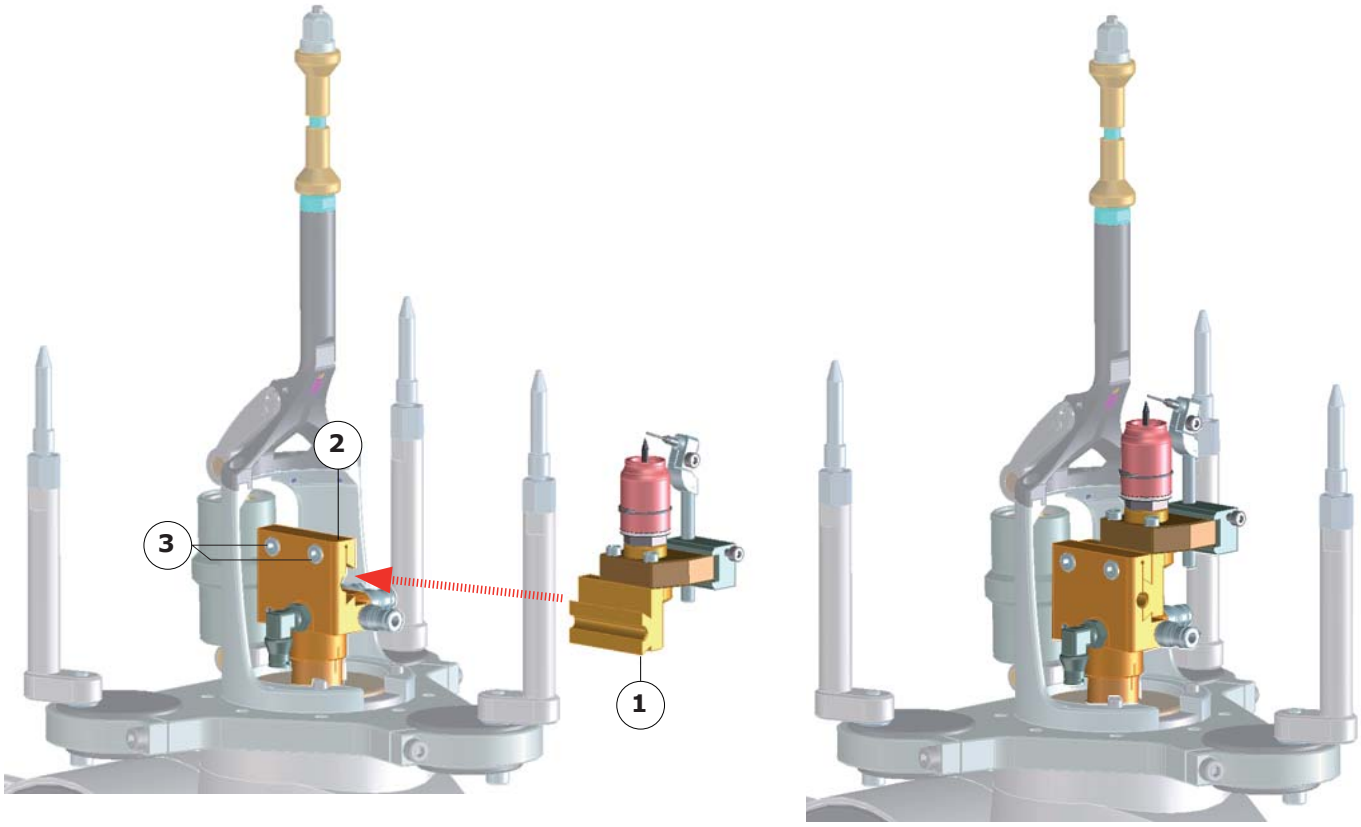


Fig.5.20 - Installing a torch kit

5. 5. 3. Connecting an air-cooled torch kit

Once in place, connect the torch kit to the TS 8/75 head.

- Gas feed (Fig.5.21 - 1).
- Using a hose, make a loop by connecting the coolant circuit feed (Fig.5.21 - 2) up to the return (Fig.5.21 - 3).

The torch kit is supplied with welding current via the current collector, by contact.

5. 5. 4. Connecting a water-cooled torch kit

Once in place, connect the torch kit to the TS 8/75 head.

- Gas feed (Fig.5.22 - 1).
- Cooling system feed (Fig.5.22 - 2).
- Cooling system return (Fig.5.22 - 3).

The torch kit is supplied with welding current via the current collector, by contact.

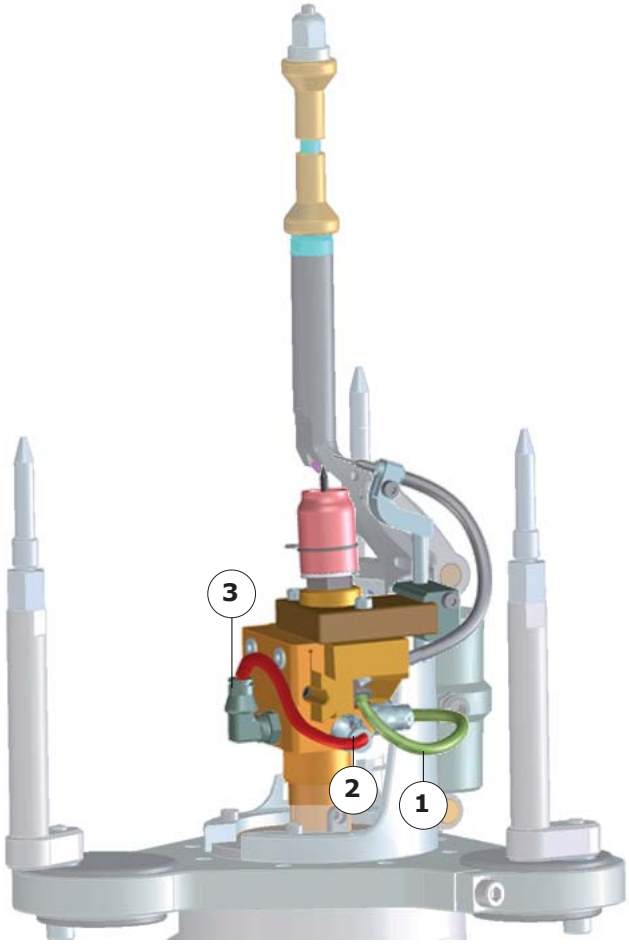


Fig.5.21 - Connecting an air-cooled torch kit

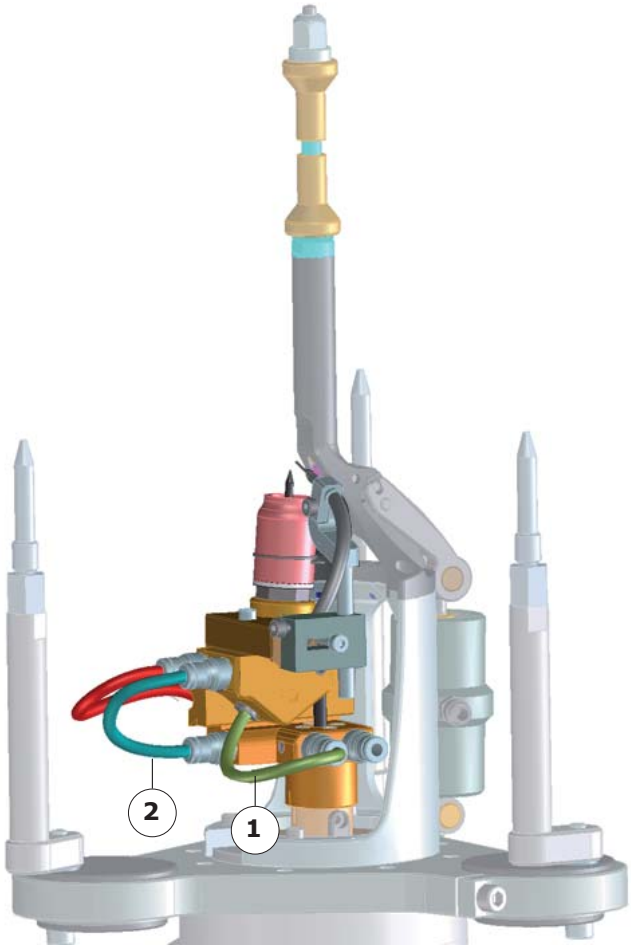


Fig.5.22 - Connecting a water-cooled torch kit

To disconnect a coupler correctly:
Press on the collar (shown red and labelled 1 in the picture).
Then pull off the coupler (shown in blue and labelled 2 in the picture) to disconnect it.
Do not pull on the coupler directly.

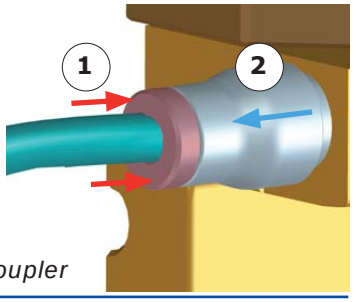


Fig.5.23 - Disconnecting a coupler

5. 5. 5. Connecting the wire adjustment.

Screw the internal wire sheath (Fig.5.24 - 1) onto the tip of the wire adjustment sheath (Fig.5.24 - 2)

5. 5. 6. Wire nozzle

- Once the wire is in place in the wire adjustment mechanism, tighten the wire nozzle (Fig.5.24 - 3) to the tip of the sheath.
- The length of free wire between the electrode and the wire contact tube must be between 8 and 10mm maximum.

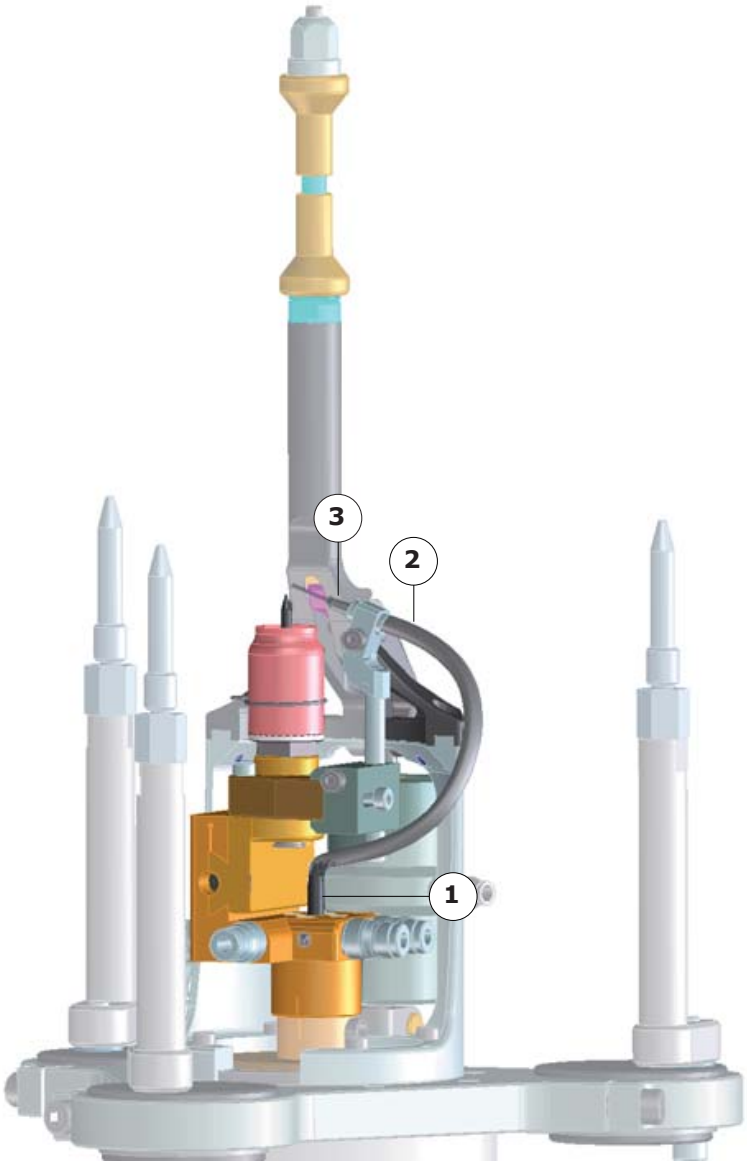


Fig.5.24 - Connecting the wire adjustment system

5. 5. 7. Adjusting the diameter to be welded

- Loosen the screws (Fig.5.25 - 4) beforehand.
- The diameter to be welded is adjusted using the torch kit slide (Fig.5.25 - 1).
- Using a no. 3 Allen key, adjust the position of the adjusting screw (Fig.5.25 - 2). To make it easier, place the tube on the centrer in order to view the position of the electrode relative to the tube.
- Once adjustment has been carried out, tighten the dovetail (Fig.5.25 - 3) using the two screws (Fig.5.25 - 4). Tightening is important in order to ensure there is good electrical contact for the welding operation.

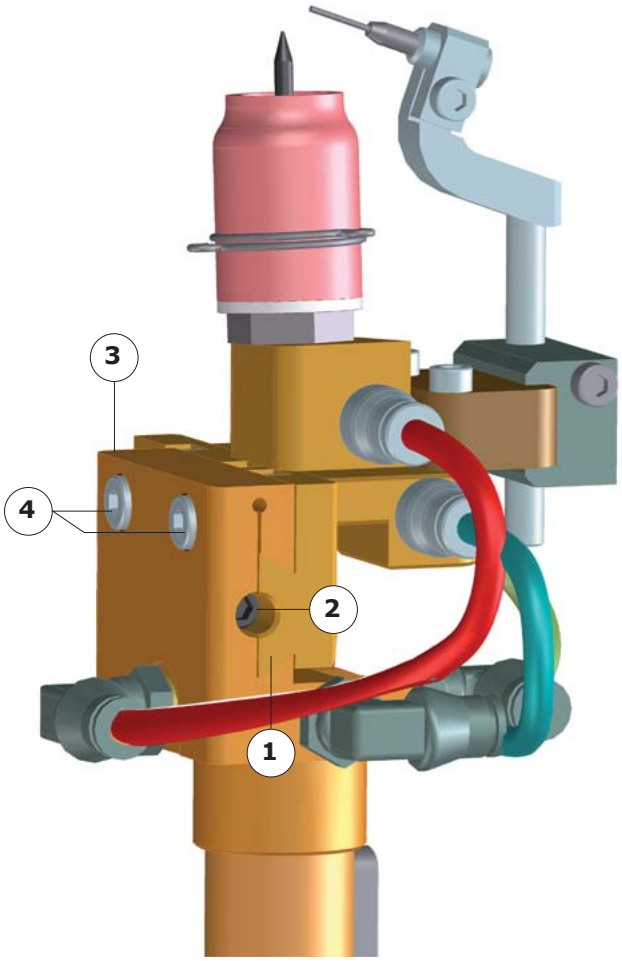


Fig.5.25 - Adjusting the diameter to be welded

5. 5. 8. Adjustments to the wire feed

The wire guides are in a pre-determined position:

- 75° for flush tube applications (Fig.5.26).
- 55° for recessed tube applications (Fig.5.27).
- 45° for protruding tube applications (Fig.5.28).

It is possible to adjust the position of the wire feed along 2 axes.

- Axial adjustment (Fig.5.29 - 1).
- Radial adjustment (Fig.5.29 - 2).

To carry out an adjustment, loosen the screw and adjust the position. Tighten the screw to lock the chosen position.
When carrying out axial adjustment, be careful with the angular offset associated with possible rotation of the axis.
The base adjustment values for the various application scenarios are shown opposite.

Fig.5.26 - Wire adjustment 45°

Fig.5.27 - Wire adjustment 55°

Fig.5.28 - Wire adjustment 75°

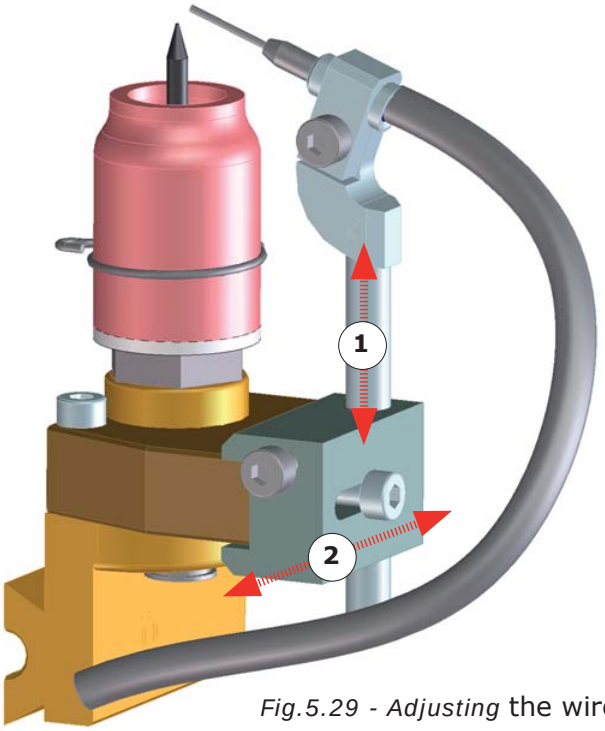
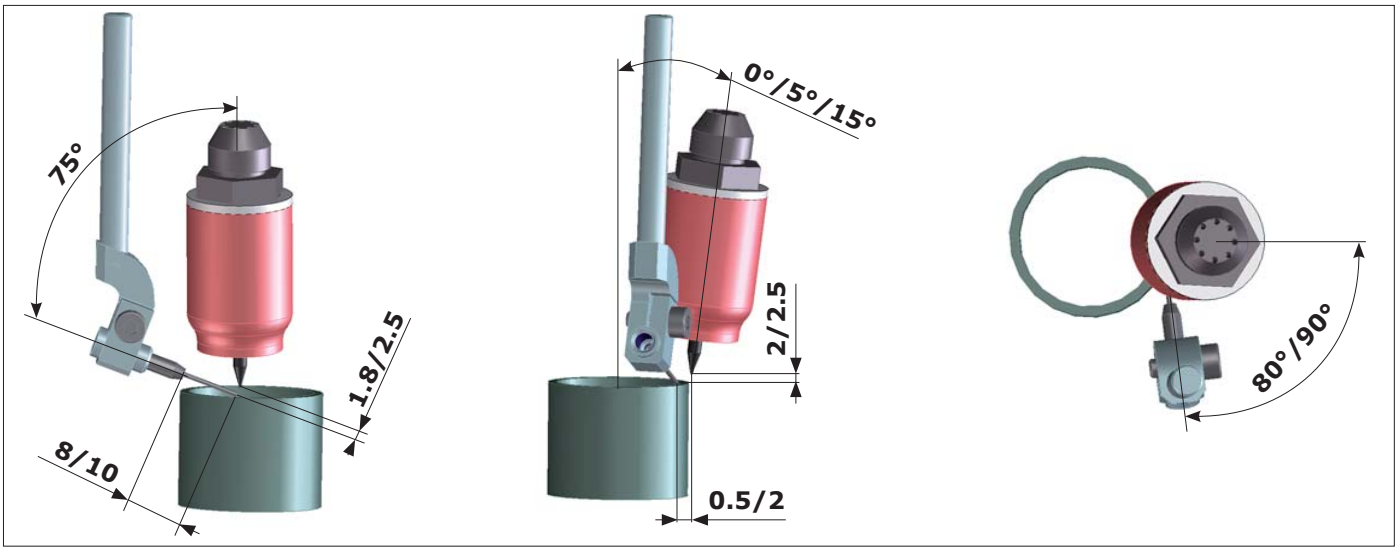
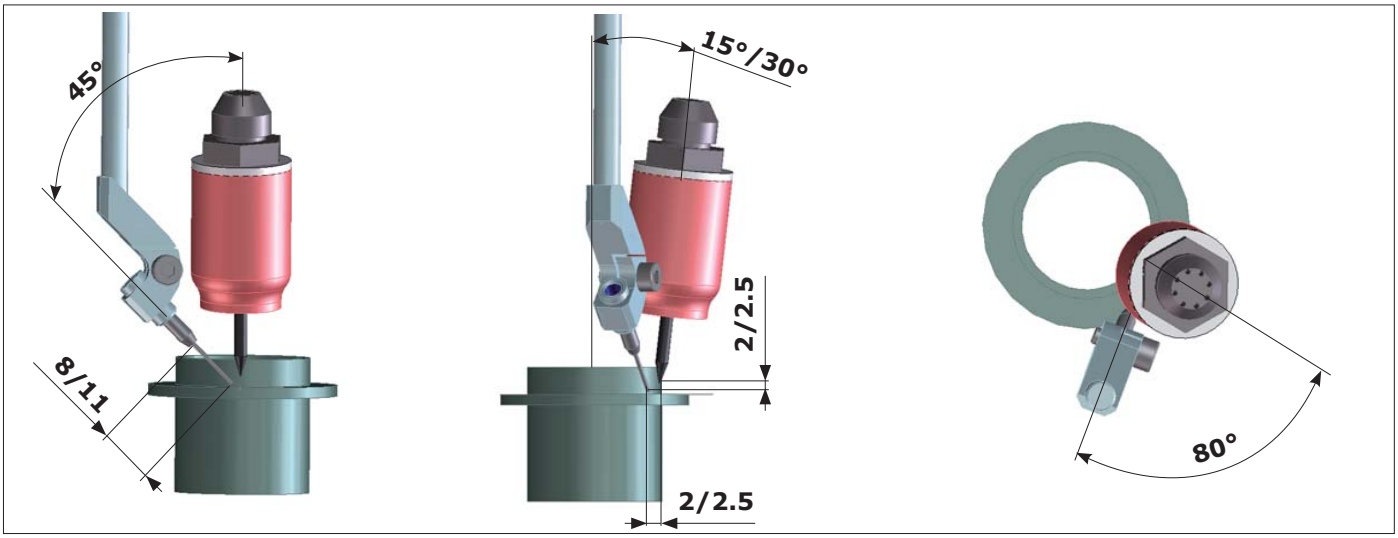


Fig.5.29 - Adjusting the wire feed

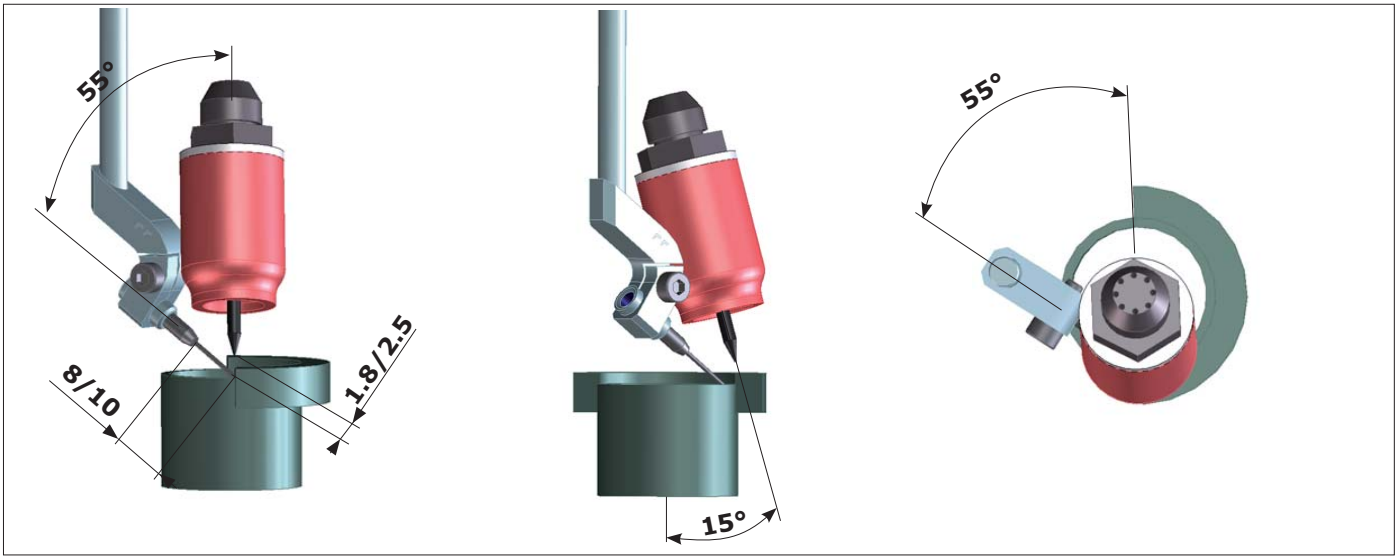
Flush tubes



Protruding tubes



Recessed tubes



5. 5. 9. Gas lens assembly

The gas lens assembly is adjusted as indicated in figure 5.30. The electrode chuck must be positioned with the slots on the point side of the electrode.

Item	Order Code	Description
1	**62300115**	Ceramic nozzle, 9 mm dia.
	62300117	Ceramic nozzle, dia. 11
2	**29820160**	Gas lens, 2.4 mm dia.
3	**62410024**	Electrode dia. 2.4
4	**62325105**	O-ring
5	**29820170**	Electrode clamping chuck, dia. 2.4
6	**11410127**	Torch adaptor

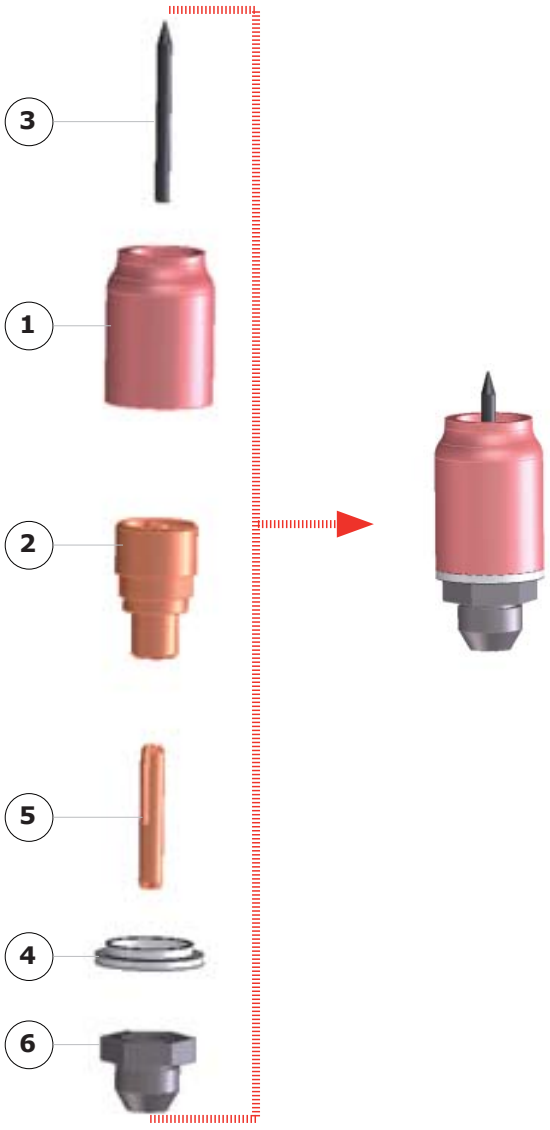


Fig.5.30 - Gas lens assembly

5. 5. 10. Ignition aid

The ignition aid located on the nozzle is used to facilitate ignition.
Its braid must be connected to a grounded metal part, insulated from the torch. Under no circumstances must the braid be in contact with the torch.

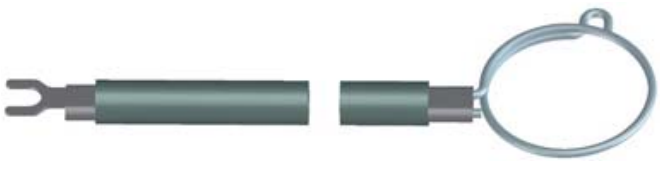


Fig.5.31 - Ignition aid

5. 6. The electrode

The electrodes are fragile and must be handled carefully.
In order to obtain a good weld and avoid premature wear of the electrodes, it is essential that they are perfectly clean. Avoid contact between the filler metal and the electrode otherwise the latter will deteriorate rapidly.
The electrode supplied by Polysoude is made of tungsten alloy with additional elements such as lanthane. It produces an easier strike and greater stability of the arc. To maintain a stable and concentrated welding arc, tungsten electrode must have a conical end. The diameter of the electrode, its trimming angle and diameter of the flattened tip depend on the intensity of the welding current.
Electrodes used for the same application must have a constant geometry in order to guarantee repeatability of results. This is essential when using equipment with the AVC function. The end of the electrode must always incorporate a flat surface. The shape of the end of the electrode is a determining factor for striking the arc (this must be checked at regular intervals).
The diameter and the shape of the tip of the electrode are dependent on the intensity of the welding current. Grinding must be carried out along the centreline of the electrode. The use of a bench grinder ensures that the operation is straightforward, fast and to a high standard. The length and the diameter of the electrode must be compatible with the type of gas lens and the thickness of the tube. Each electrode can withstand a maximum current.
Mean values for grinding the electrode.

Current intensity (A)	Electrode diameter (mm)	Grinding angle (θ°)	Flat surface φ (mm)
60 - 210	2.4	30°	0.1 to 0.4

Electrodes must always be replaced preventatively in order to reduce weld defects. For certain extreme applications, the electrode must be replaced after every weld.

The ranges of current intensity (A) are given as an indication for use in DC, DCEN (direct current electrode negative) under argon. In order to avoid damage to the installation, these intensities must be considered with the duty cycles of the torch (and / or lance), please refer to the technical data.

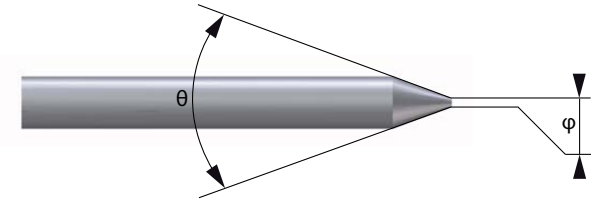


Fig.5.32 - Grinding the electrode

The length by which the electrode protrudes has no influence on the electrical parameters of the weld (except the height of the arc is using AVC). Depending on the position of the tube relative to the plate, the length by which the electrode protrudes must be adjusted. Furthermore, this projecting length is limited to ensure a high shielding quality. The more the welding area is confined, the greater this distance can be, as the emitted gas does not escape immediately.

Rule for calculating the length of the electrode:
L = 9 + Length of nozzle "B" + Electrode protrusion length "S"

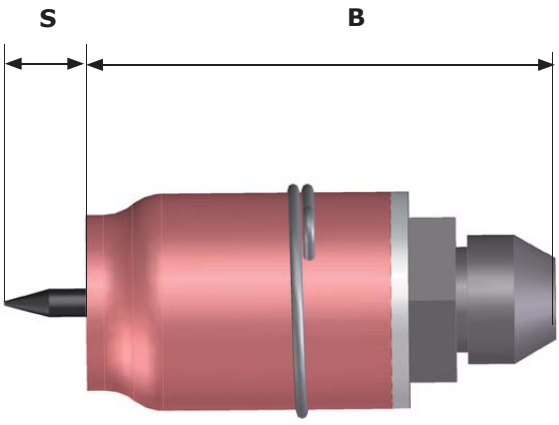


Fig.5.33 - Position of electrode

In all cases, the actual length of the electrode must not be less that the theoretical length L minus 10.

5. 7. Front bearing and legs

The adjustment on the support legs allows the welded plate and TS 8/75 support plate to be set parallel so as to keep a constant distance between electrode and workpiece, and electrode and tube.
The legs must be positioned so as to always rest on the plate in an area where there is no weld or drilled hole.

It is important to check that the legs do not interfere with the torch while it is rotating (2 to 3 mm minimum).

Each support leg is adjusted by rotation along 2 axes and can be reversed.

5. 7. 1. Rotating the ring + support leg assembly

- Slightly loosen the screw (Fig.5.34 - 3) to release the ring.
- Pivot the ring (Fig.5.34 - 1) + leg assembly (Fig.5.34 - 2) to the required position.
- Tighten the screw to lock the position.

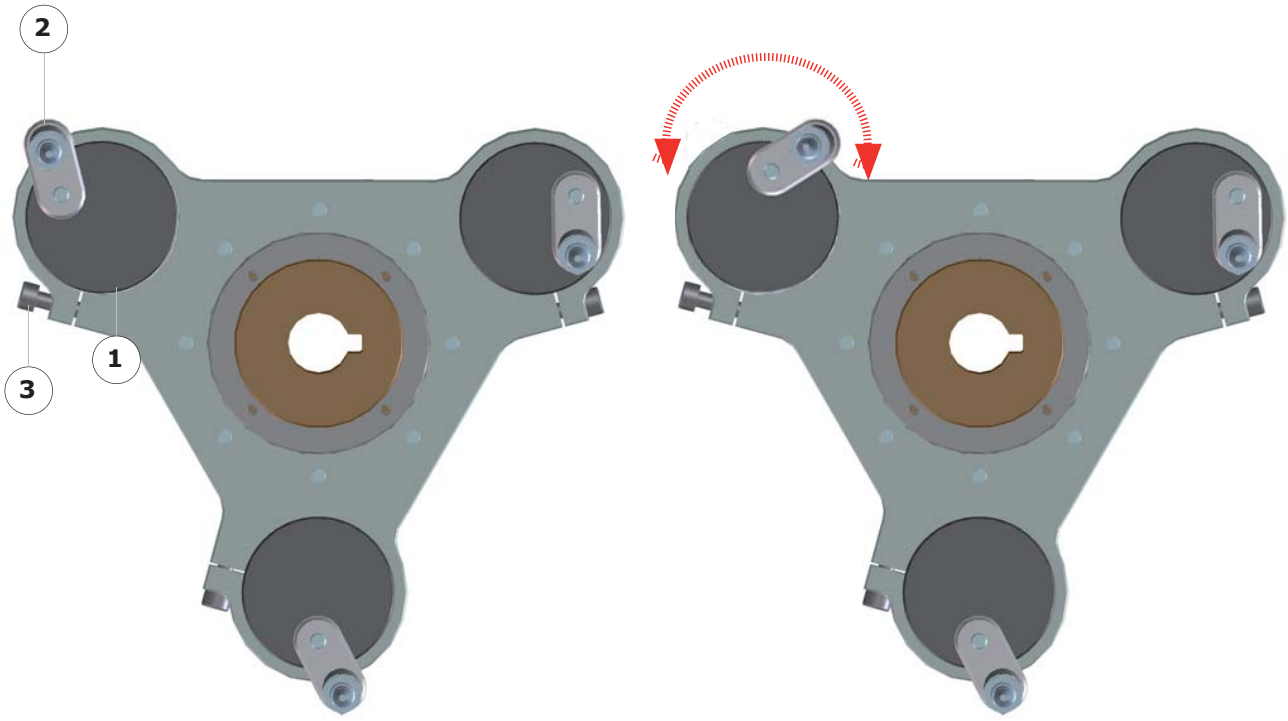


Fig.5.34 - Adjusting the ring + support leg assembly

5. 7. 2. Rotating the strut + support leg assembly:

- Slightly loosen the screw (Fig.5.35 - 3) to release the strut.
- Pivot the strut (Fig.5.35 - 2) + leg assembly (Fig.5.35 - 1) to the required position.
- Tighten the screw to lock the position.

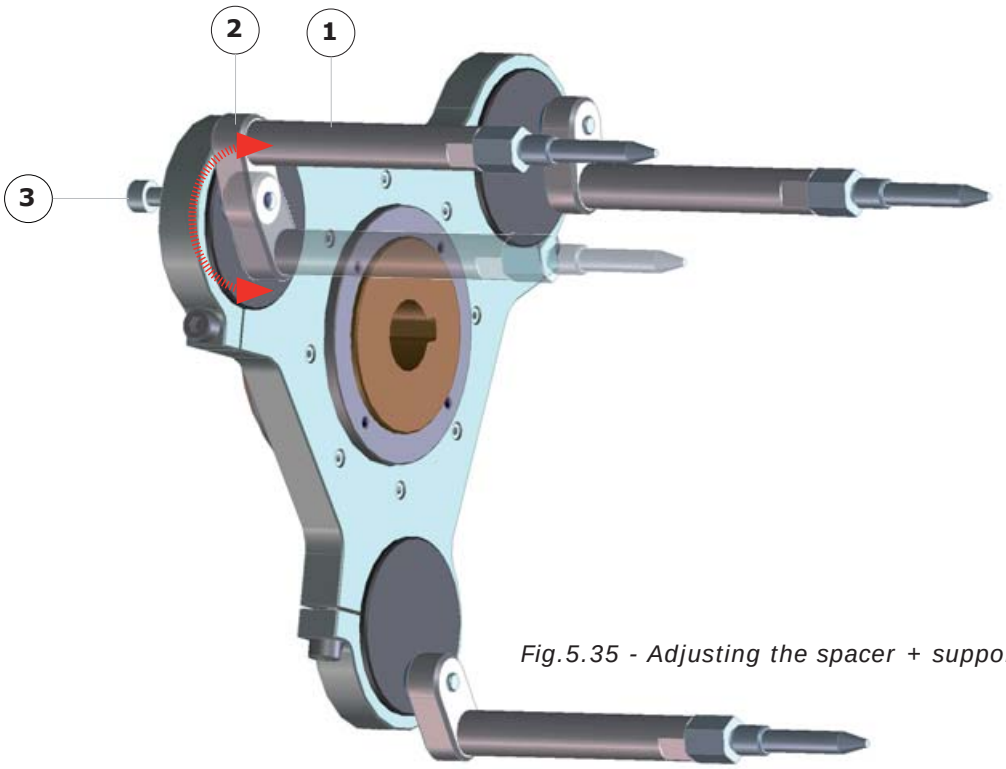


Fig.5.35 - Adjusting the spacer + support leg assembly

5. 7. 3. Reversible support legs

The support legs can be reversed. They have a long side and short side. The long side is used for welding applications involving protruding tubes. The short side is for all the other applications

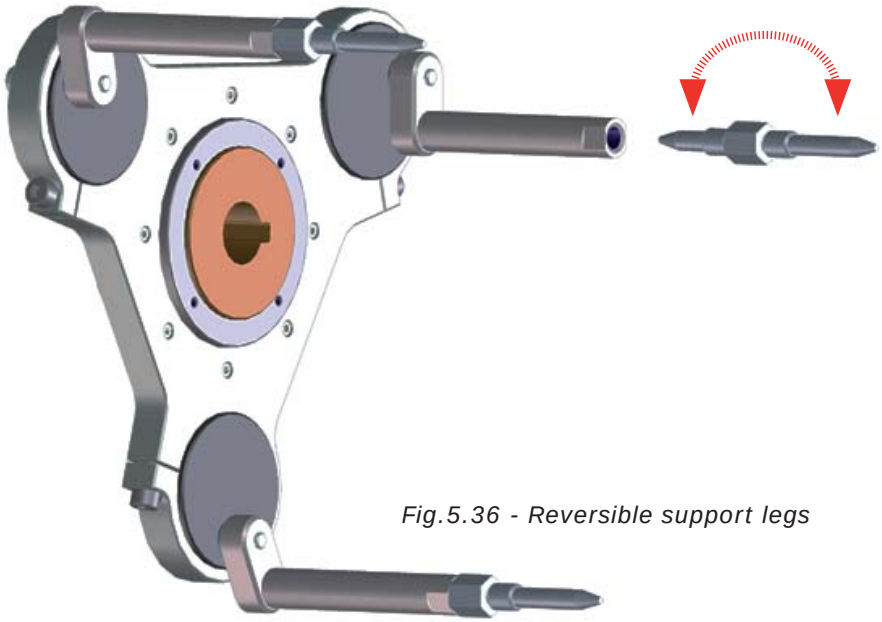


Fig.5.36 - Reversible support legs

5. 7. 4. Definition table

	Order	Type	Electrode length (mm)	Turning diameter with pneumatic self-securing (mm)	Electrode/Plate distance (mm)
Recessed by 2mm					
-15°	0023411735	Air cooled	8	25 to 60	-6/+14
-5°	0023411730	Air cooled	8	15 to 40	-6/+14
-15°	0023411765	Water cooled	8	25 to 60	-6/+14
-5°	0023411760	Water cooled	8	15 to 40	-6/+14
Flush					
0°	0023411710	Air cooled	8	15 to 60	-6/+14
5°	0023411715	Air cooled	8	15 to 60	-6/+14
0°	0023411740	Water cooled	8	15 to 60	-6/+14
5°	0023411745	Water cooled	8	15 to 60	-6/+14
Protruding 5mm					
15°	0023411720	Air cooled	8	15 to 60	-7/+13
30°	0023411725	Air cooled	8	15 to 40	-7/+13
15°	0023411750	Water cooled	8	15 to 60	-7/+13
30°	0023411755	Water cooled	8	15 to 40	-7/+13

	Order	Type	Electrode length (mm)	Locator Integral	Simple centrer 2 balls	Electrode/Plate distance (mm)
Recessed by 2mm						
-15°	0023411735	Air cooled	8	N/A	25 to 60	-6/+14
-5°	0023411730	Air cooled	8	N/A	15 to 40	-6/+14
-15°	0023411765	Water cooled	8	N/A	25 to 60	-6/+14
-5°	0023411760	Water cooled	8	N/A	15 to 40	-6/+14
Flush						
0°	0023411710	Air cooled	8		10 to 60	-6/+14
5°	0023411715	Air cooled	8		10 to 60	-6/+14
0°	0023411740	Water cooled	8		10 to 60	-6/+14
5°	0023411745	Water cooled	8		10 to 60	-6/+14
Protruding 5mm						
15°	0023411720	Air cooled	8		10 to 60	-7/+13
30°	0023411725	Air cooled	8		10 to 40	-7/+13
15°	0023411750	Water cooled	8		10 to 60	-7/+13
30°	0023411755	Water cooled	8		10 to 40	-7/+13

5. 8. Pneumatic self-securing mechanism

Pneumatic clamping is carried out in the tube to be welded.
The use of the self-securing device is subject to certain conditions. The tube is of seamless quality, or a welded rolled tube with no extra internal thickness due to the weld bead.
The centreline distance between the centrer carrier and the tube to be welded is constant at +/- 0.2mm.
In this case, the welding procedure will have to accept concentricity defects of the same order of magnitude.

5. 8. 1. Coupling

The self-securing system (Fig.5.37 - 1) is coupled to the compressed air circuit (Fig.5.37 - 2) via the TS 8/75 head distributor.

Firstly, replace the plug in place on the distributor by the straight coupling supplied with the pneumatic self-supporting system.

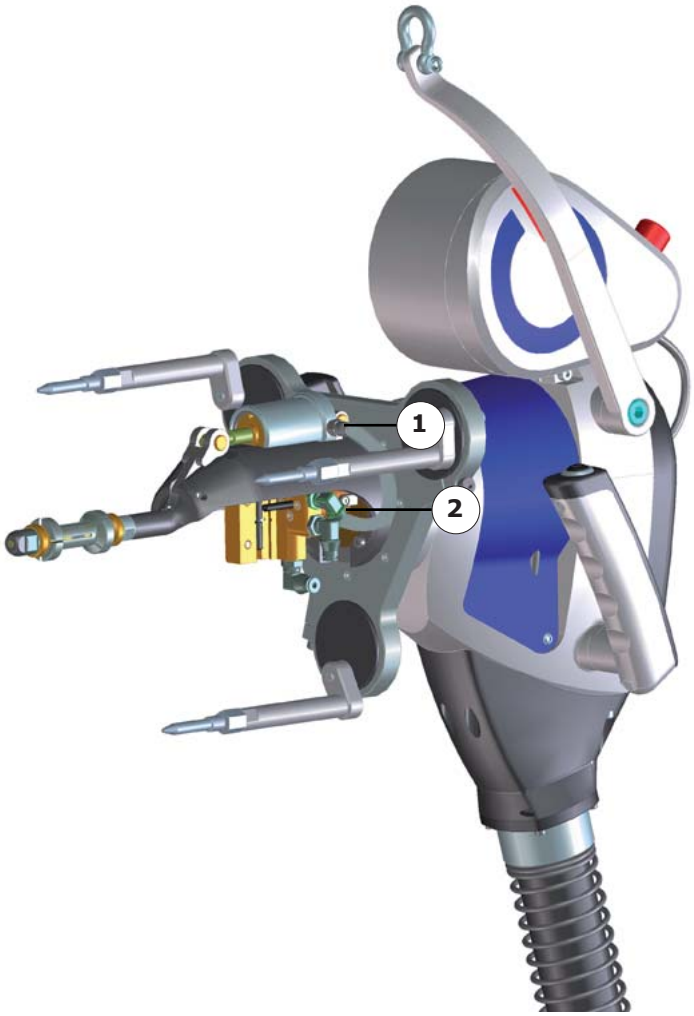


Fig.5.37 - Self-securing mechanism

5. 8. 2. Expansion mandrels

Each mandrel is specific to the diameter of the tube to be welded.
They can be interchanged depending on the application.
The mandrels have a retraction dimension of 1.5 mm.
Installing an expansion mandrel:

- Place the 2 spring washers (Fig.5.38 - 1) (see configuration detail) and an axial stop (Fig.5.38 - 3) on the tie rod (Fig.5.38 - 2).
- Insert the rear part of the cone (Fig.5.38 - 4) and the compression spring (Fig.5.38 - 5).
- Put the mandrel in place (Fig.5.38 - 6).
- Put the front part of the cone (Fig.5.38 - 7) and the second axial stop (Fig.5.38 - 8) in place.
- Tighten the nut (Fig.5.38 - 9) and the locknut (Fig.5.38 - 10).
- Tighten the nut and the locknut so as to adjust the end of the tie rod to the edge of the locknut (see detail below).

Range of diameter of cones

Inside diameter of the tube	Type of cones
15mm to 18mm	Cones 0023411534
18mm to 22mm	Cones 0023411520
22mm to 30mm	Cones 0023411532
30mm to 40mm	Cones 0023411533

The nut must be screwed against so that the pulling rod is flush against the nut. Once it is all possible in case the tube is just a bit larger than the clamp, tighten a little more against the clamping nut to be effective.

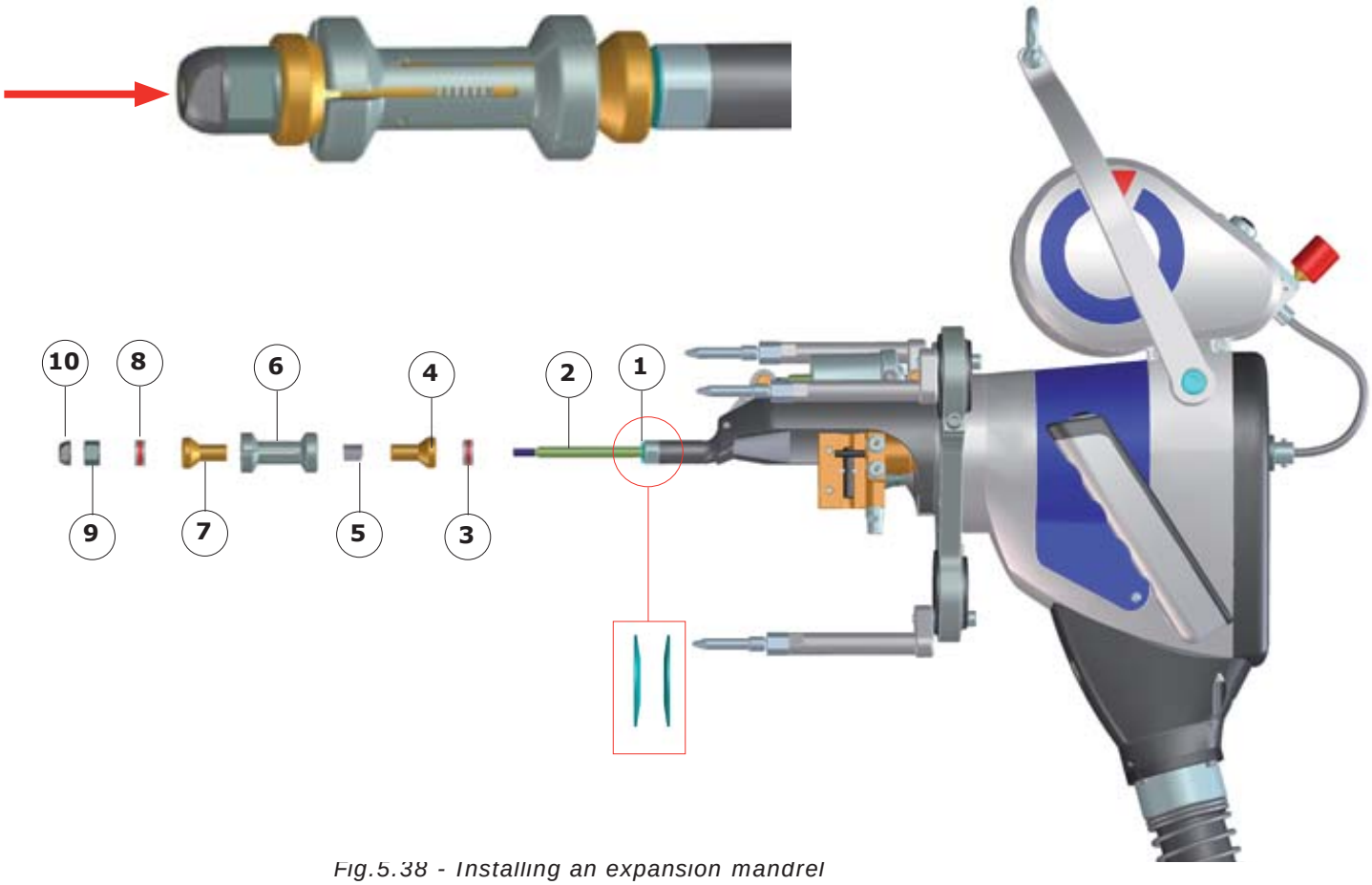


Fig.5.38 - Installing an expansion mandrel

5. 8. 3. *Positioning and clamping a tube*

The TS 8/75 head must be placed on a balancer. Under no circumstance may the self-securing system substitute for the use of a balancer.

Before positioning and clamping the head inside the tube, move the torch back. This risks banging into the workpiece during these operations.

Before starting a welding cycle, ensure that the support legs do not interfere with the rotation of the cylinder.
If clamping is performed while the mandrel is not fully inserted into the tube, it can deform.

- The welding head is installed on a balancer. Carry out the tension adjustment so that the head remains in equilibrium in the tubes to be welded.
- Insert the expansion mandrel into the tube to be welded (Fig.5.39 - 1).
- Lay the support legs flat against the plate (Fig.5.39 - 2).
- Operate the clamping mechanism by pressing the button (Fig.5.39 - 3).

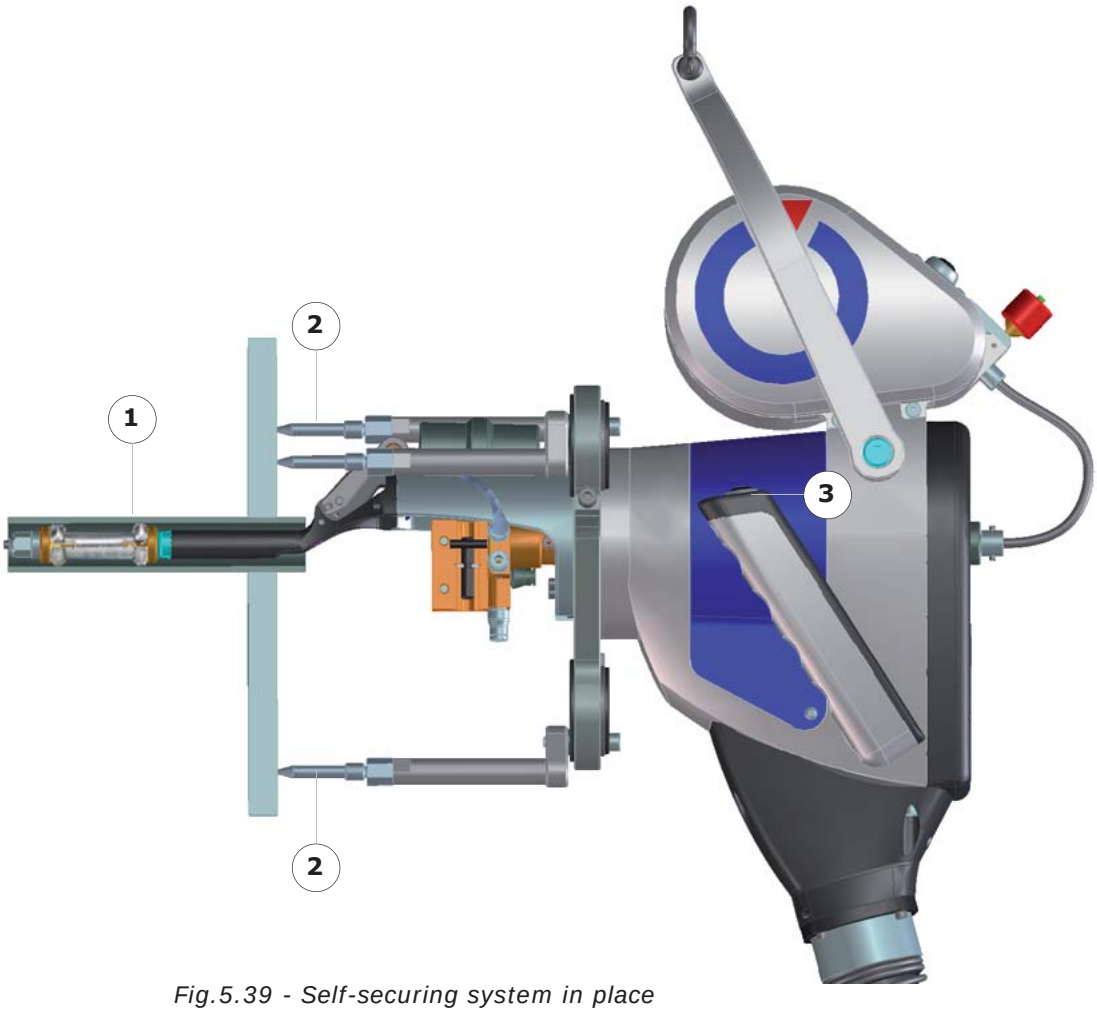


Fig.5.39 - Self-securing system in place

When used with the pneumatic clamping, it is necessary to disengage the head to the tube before shutdown the power source. The head may move too much when the pneumatic clamping stops.

If the weld collapses or there is a problem blocking the self-supporting system, proceed as follows to decouple the mandrel and cone assembly from the rest of the TS 8/75 head self-supporting system.

- Push the control switch to deactivate the pneumatic clamping
- The mandrel (Fig.5.40 - Rep.1) retracts but keeps blocked into the tube
- Using a key, completely unscrew the bush nut (Fig.5.40 - Rep.2) from the tie rod.
- Pull on the TS 8/75 head behind in order to remove it from the clamping.
- Then remove the different clamping elements that are inside the tube.
- Check that the spare parts have not been damaged.

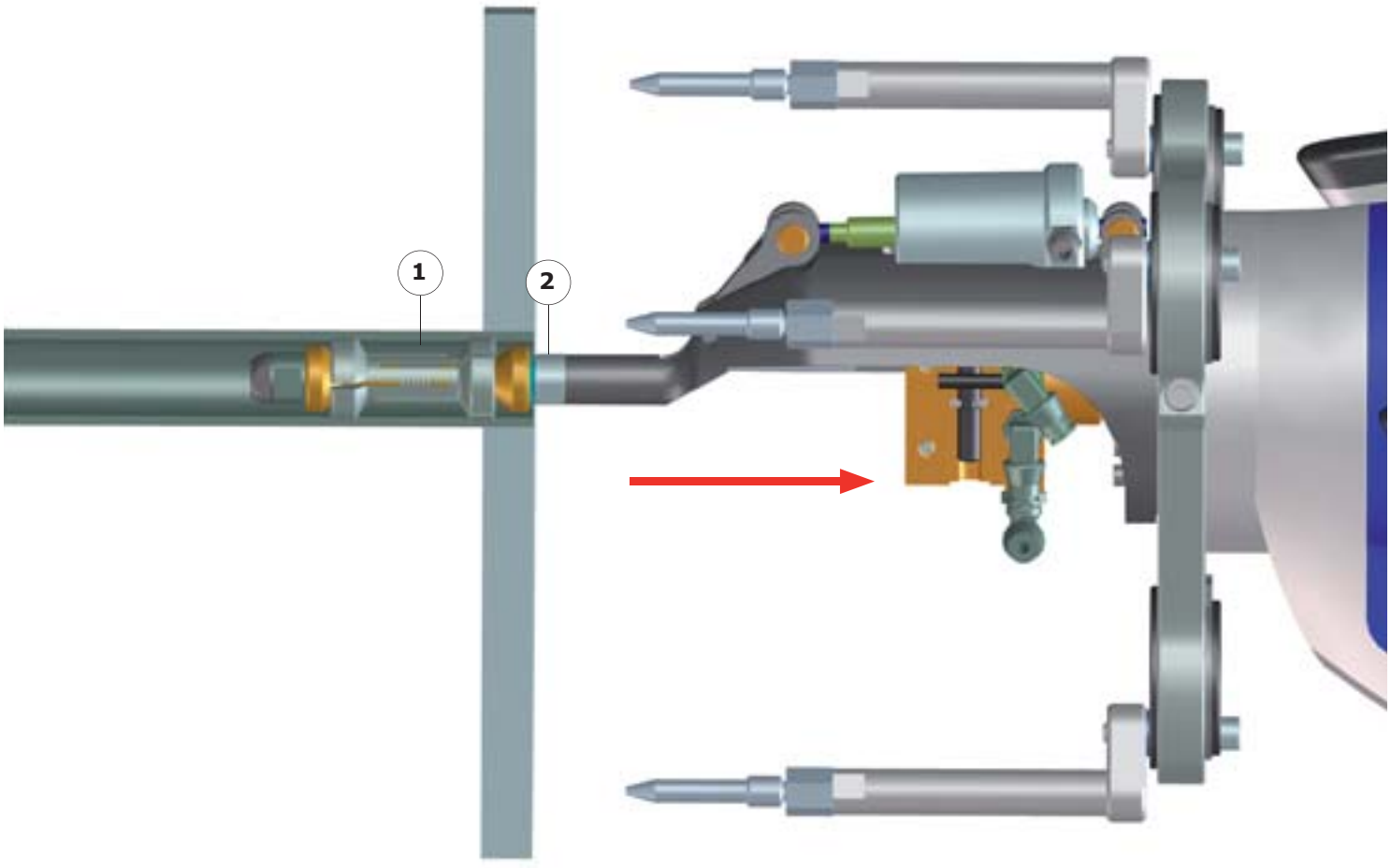


Fig.5.40 - Blocked clamping mechanism

- To reassemble the tie rod, begin by lightly tighten the tie rod in the support tie rod. Half net about (Fig.5.41 - Rep.1).
- Then tighten the bush nut (Fig.5.41-Rep.2).
- Tighten the bush nut on the bell.
- Check that the tie Rod at the Ø is flush with the nut (Fig.5.41 - Rep.3).
- Then proceed to assemble the various elements, as described in chapter «Expansion mandrels».

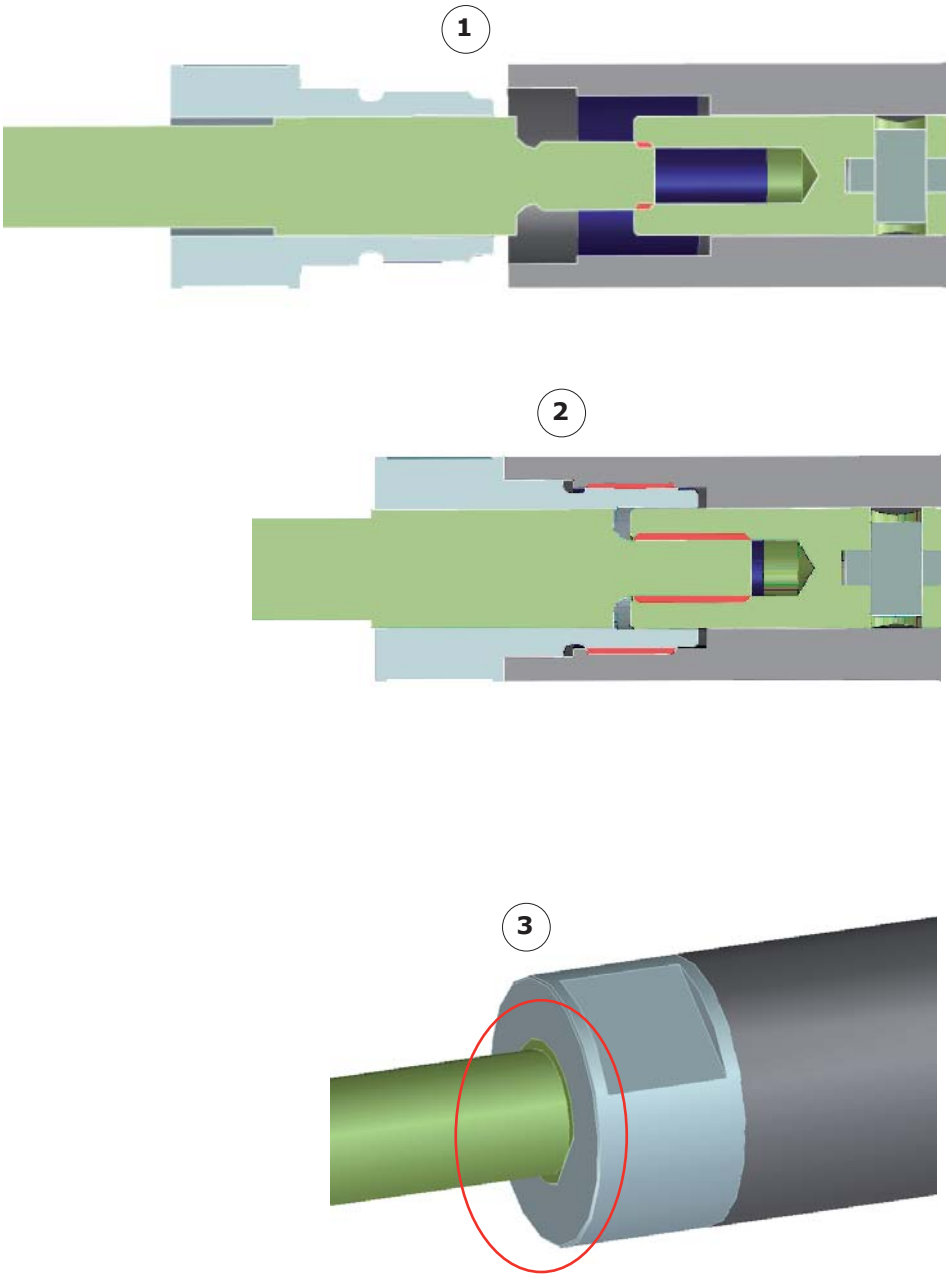


Fig.5.41 - Installing the tie rod

5. 9. Centrer holder and centrers (option)

If a centrer holder is used, the shaft of the centrer holder is fixed to the bell.

The centrer holder shaft must be pressing against the two outside surfaces of the bell.

The centrer is manufactured for the application. Its size is calculated to enable centring relative to the inside diameter of the tube to be carried out correctly. The inside diameter of the tube is engraved on the centrer.

Depending on the inside diameter of the tube to be welded, the centrers differ by their bore. The table below lists the existing centrers.

Inside diameter of the tube	Type of centrer
> 10.5mm and < 15mm	2-ball centrer, shaft dia. 6.5 (Fig.5.42 - 1)
> 15mm and < 30mm	2-ball centrer, shaft dia. 8.0 (Fig.5.42 - 2)
> 30mm	2-ball centrer, shaft dia. 8 (Fig.5.42 - 3) and 2 spacers (Fig.5.42 - 4)

Where the tubes are expanded, you must take into account the expansion depth in order to control the centrer. Depending on the position of the centrer, this may have one ball in an expanded diameter and one in the non-expanded tube diameter.

The tube must be seamless of have a penetration which does not protrude into the inside diameter, otherwise the centring and therefore welding will be compromised.

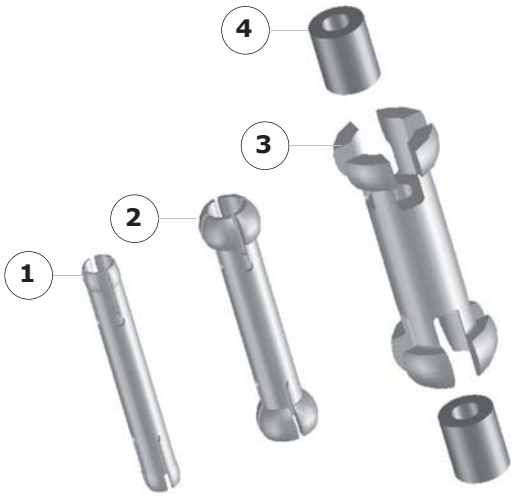


Fig.5.42 - Centrers

5. 10. Change clamping

- Disconnect the air supply of pneumatic clamping (Fig.5.43 - Rep.1) and place the cap on the port.
- Remove the pneumatic clamping.
- Fitting the shielding box (Fig.5.43 - Rep.2)and Centrer holder (Fig.5.43 - Rep.3).
- Fitting the centrer (Fig.5.43 - Rep.4) to the shaft carrier.
- Tighten the nut (Fig.5.43 - Rep.5) without forgetting the washer.
- The centre must be inserted a certain way round. The rounded side is on the torch side and facilitates the removal of the centrer.

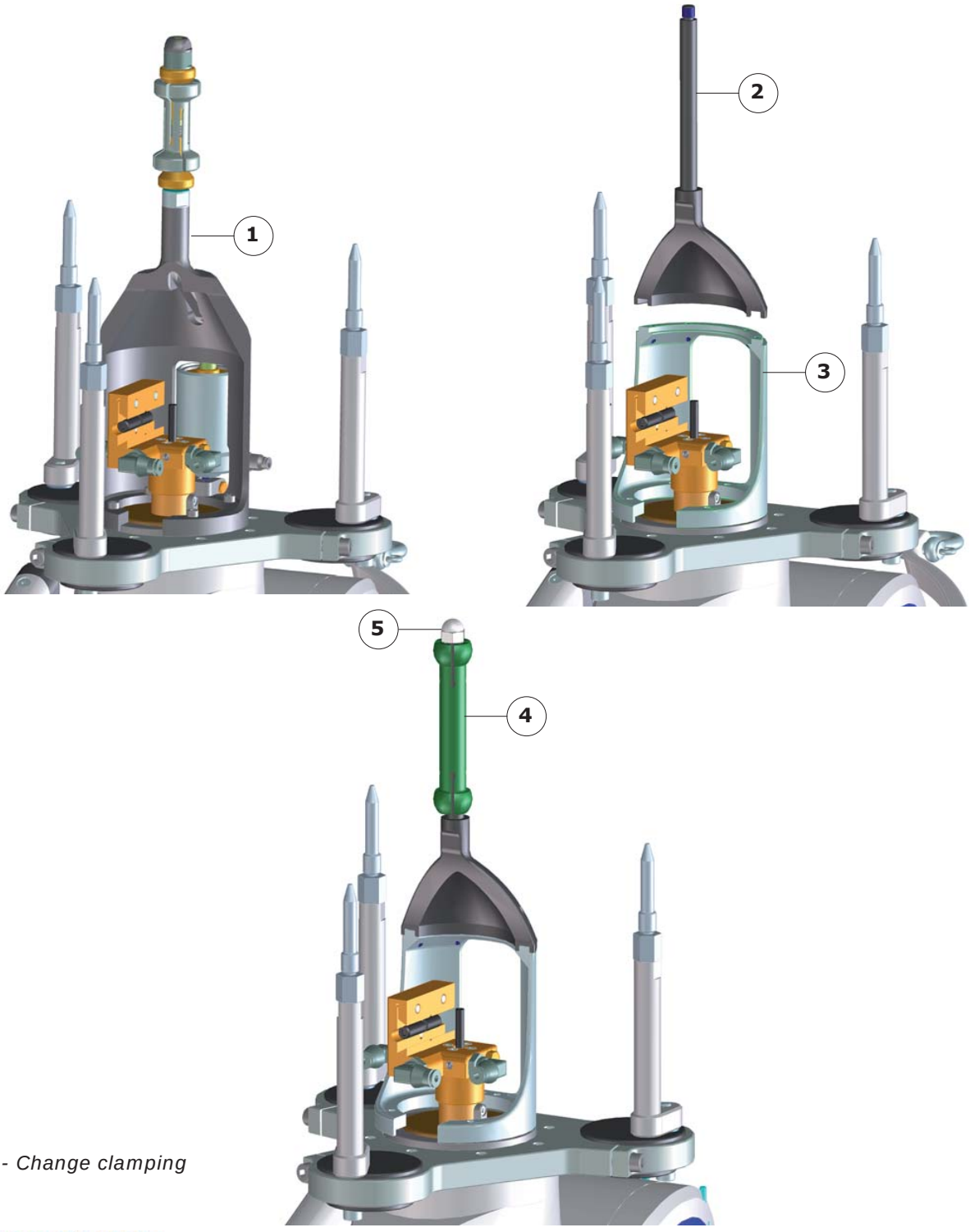


Fig.5.43 - Change clamping

6. Maintenance and troubleshooting

6. 1. Nonprogrammable parameters

The result and the quality of a weld is influenced considerably by non-programmable adjustments.
Not taking these parameters into consideration leads to a lowering of performance and weld quality. It is important to pay attention to the non-programmable parameters:

- Gas lens: Type and size.
- Ceramic nozzle: Type, diameter, length.
- Electrode: Type, diameter, length, quality, preparation.
- Wire: Diameter, casting number, wire arrival angle, impact point.
- Temperature between passes.
- Earthing cables: Position and connection.

The preparation of workpieces and in particular the bevels is particularly important. To obtain the order number for a part, please refer to document PN-0810094 “Illustrated parts lists” for the TS 8/75 head.

6. 2. Troubleshooting guide

Function	Nature of the incident	Possible causes
Welding current	Not striking	Earth not connected Braid cut No welding gas No ignition aid No cooling Faulty electrode Remote control in "without arc" position
Gas	Poor shielding	Unsuitable gas flow Gas lens in poor condition Electrode too long Gas cylinder empty
Rotation	No rotation	Electrical connections not made Defective motor Drive pin broken Programming error
	Speed not set No pulses	Encoder defective Electronic command fault
	Rotation less than 360°	Programming error Drive damaged Drive pin broken
Wire	No wire	Wire switch in incorrect position on the remote control Dispenser disengaged Wire sheath blocked Worn Teflon liner Programming error
	Speed not set	Defective pulse sensor Electronic command fault
Servo-control (AVC)	Electrode does not move	Servo-control motor fault Incorrect connections Sticking point on slide Programming error Electronic fault

6. 3. Routine maintenance operations

6. 3. 1. Preventive maintenance

Hose inspection	
Frequency	Operation
Every 3 months	Machine switched off, isolating switch locked. Inspecting the hoses: • Clean all the hoses using a brush or cloth. • Inspect all the visible circuits. • Check that none of the hoses are too sharply curved or pinched and check for kinks, tears or bulges. • Check that none of the hoses are rubbing against a moving part of the machine (safety guard, etc.) • Check that none of the hoses are perished or worn. • Check that there is no seepage or noise; these are symptoms of leakage and, therefore, damage to the internal lining. • Check that the connectors and unions are tight.

Trace abnormal noises	
Frequency	Operation
Every 3 months	Machine switched on and operating Axis movement: • Move the axis in a positive or negative direction within the physical limits of the machine. • Pay particular attention to any suspicious noises (creaking, abrasion, noise caused by abnormal vibrations, etc.). • Repeat the operation on all the axes.
Every 3 months	Machine switched on and operating Motors: • No abnormal noise should be generated while the machine is in operation: rumbling, scraping, creaking or any other unusual noise. • Also check that no unusual noise is emanating from the motor.

General inspection of the motors	
Frequency	Operation
Every 3 months	Machine switched off, isolating switch locked. • Check the absence of dust and grease on the motor. • Check the general condition of the motor: - There must be no sign of impact on the motor casing or on its fins (if any). - The breather cover must not be broken and its grille must not be obstructed or clogged. • Check the multiple conductor cable on the motor. It must not be crushed or pinched and the insulation must not be damaged. • Check the points of attachment of the motor.

Look for leaks in the circuit	
Frequency	Operation
Every 3 months	Machine switched on and operating Reminder: Symptoms of a leak • Noise. • Drips. • Seepage. • Pools of liquid. • Frequent and abnormal topping-up.
Every 3 months	Machine switched off, isolating switch locked. Visually check the following sensitive items: • All pipework accessories (connectors, tee-pieces, elbows, plugs, valves, etc.) • All application components.

Check the electronic connectors	
Frequency	Operation
Every 3 months	Machine switched off, isolating switch locked. • Check that the connections are tight. • Check that there is no sign of overheating of the wiring between the components.

Check the pinion gears	
Frequency	Operation
Every 3 months	Machine switched off, isolating switch locked. • Clean all the gear teeth with solvent applied with a brush. Remove any traces of grease or debris of any kind. • Check the condition of the pinion gear: it must not be oxidised and its surface treatment must be undamaged. • Check the contact surfaces: report any signs of uneven wear, burrs or sharp edges. • Check the point of attachment: there should be no axial or radial free play in the pinion gear while it is being moved by hand (if possible). • Lubricate the pinion gear or the crown wheel, using a brush to apply the grease recommended by the manufacturer.

Inspecting the torch	
Frequency	Operation
Depending on use.	Machine switched off, isolating switch locked. • Check the general condition of the gas lens nozzle and the torch.

6. 4. Recommended lubricants

For the O rings	For all motor-driven movements	For mechanical contacts	For electrical contacts
KF:2301 silicon grease	Molykote BR2 Plus	Molykote BR2 Plus	E452 gel

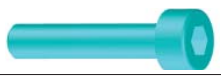
6. 5. Repairs and servicing

The **Polysoude Field Support Service** is available to help you with solving any problems with the machine and to supply any spare parts you may require.
When you order a spare part, do not forget to quote **its order code** as shown in the illustrated parts lists, document PN-0810094, as well as **the serial number of your machine**.
Furthermore, some subassemblies require factory settings. Some components cannot be supplied separately but are included in their preset and ready-to-fit subassemblies.

6. 6. Accessories kit

The wear parts on the dispenser and torch, whose role is to guide and feed the welding wire, must be appropriate to the nature and diameter of the welding wire used. In addition, their wear may alter the welding quality. It is therefore necessary to regularly check their state and replace them if necessary.

BOITE DE CONSOMMABLES - CONSUMABLES BOX - VERSCHLEIßTEILE-BOX
TS 8/75 PN : 29809813

Code Commande Order number Bestellnummer	Qté kit Kit qty Anz. kit	Désignation Description Bezeichnung	Photo Photo Abbildung	Qté à commander Qty to order Bestellmenge
29820170	**3**	Pince longue Ø2.4 chuck Ø2.4 Spannhüle lang Ø2.4		
62325105	**2**	Joint épaulé Téflon Shoulder pivot Schulterdichtung		
25610560	**3**	Buse guide fil Ø0,8 Wire nozzle Ø0.8 Drahtdüse Ø0,8		
62410024	**3**	Electrode Ø2.4 Electrode Ø2.4 Elektrode Ø2.4		
29820160	**3**	Diffuseur long Ø2.4 Long gas lens Ø2.4 Gasline lang Ø2.4		
62300117	**2**	Buse céramique Ø11 L26 Ceramic nozzle Ø11 L26 Keramikdüse Ø11 L26		
62300115	**1**	Buse longue Ø9 Long nozzle Ø9 Düse, lang Ø9		
75501229	**1**	Ecrou borgne PA 6.6 DE 4 Cap nut PA 6.6 DE 4 Hutmutter PA 6,6 AD 4		
75501231	**1**	Ecrou borgne PA 6.6 DE 6 Cap nut PA 6.6 DE 6 Hutmutter PA 6,6 AD 6		
75501230	**2**	Rondelle M PA 6.6 DE 4.2/10/0.8 Washer M PA 6.6 DE 4.2/10/0.8 Scheibe M PA 6,6 AD 4,2/10/0,8		
75501232	**2**	Rondelle M PA 6.6 DE 6.2/14/1.2 Washer M PA 6.6 DE 6.2/14/1.2 Scheibe M PA 6,6 AD 6,2/14/1,2		
9003020406	**2**	Vis CHc M4x6 Screw, hex skt head, M4x6 Zylinderschraube mit Innensechskant M4x6		
9003020408	**2**	Vis CHc M4x8 Screw, hex skt head, M4x8 Zylinderschraube mit Innensechskant M4x8		
9003020312	**4**	Vis CHc M3x12 Screw, hex skt head, M3x12 Zylinderschraube mit Innensechskant M3x12		
9003100312	**2**	Vis Hc M3x4 bout cuvette Set screw hex skt M3x4 cup point Gewindestift mit Innensechskant und Ringschneide, M3x4		
9003120308	**1**	Vis CHc M3x8 Screw, hex skt head, M3x8 Zylinderschraube mit Innensechskant M3x8		
9003120316	**1**	Vis CHc M3x16 Screw, hex skt head, M3x16 Zylinderschraube mit Innensechskant M3x16		
9003120320	**1**	Vis CHc M3x20 Screw, hex skt head, M3x20 Zylinderschraube mit Innensechskant M3x20		

BOITE DE CONSOMMABLES - CONSUMABLES BOX - VERSCHLEIßTEILE-BOX
TS 8/75 PN : 29809813

Code Commande Order number Bestellnummer	Qté kit Kit qty Anz. kit	Désignation Description Bezeichnung	Photo Photo Abbildung	Qté à commander Qty to order Bestellmenge
62811004	**1**	Tournevis 4x75 Screwdriver 4x75 Schraubendreher 4x75		
62200000	**1**	Boite accessoires Box tools Zubehörbox		
11699916	**1**	Clé plate 10 10 open wrench 10er-Schraubenschlüssel		
11699912	**1**	Clé plate Réf. 34.14 Wrench Ref.34.14 Schraubenschlüssel Best-Nr. 34.14		
11699920	**1**	Clé plate Réf. 34.11 Wrench Ref.34.11 Schraubenschlüssel Best-Nr. 34.11		
62899998	**1**	Jeu de clés allen BTR wrench assembly BTR Schlüsselsatz		

Intention de commande / Intention of order / Bestellung

Société (Company, Firma) :.....

Responsable Commande (Purchaser, Einkäufer) :.....

Adresse facturation (Invoice address, Rechnungsanschrift)

.....

.....

.....

.....

Pays (Country, Land) :.....

Tel :.....

Fax :.....

N° TVA (VAT-N°, ID-N°) :.....

Date (Date, Datum) :.....

Adresse livraison (Delivery address, Lieferanschrift)

.....

.....

.....

.....

Pays (Country, Land) :.....

Tel :.....

Fax :.....

N° de commande (Order number, Bestellnummer) :.....

Date de livraison (Delivery date, Liefertermin) :.....

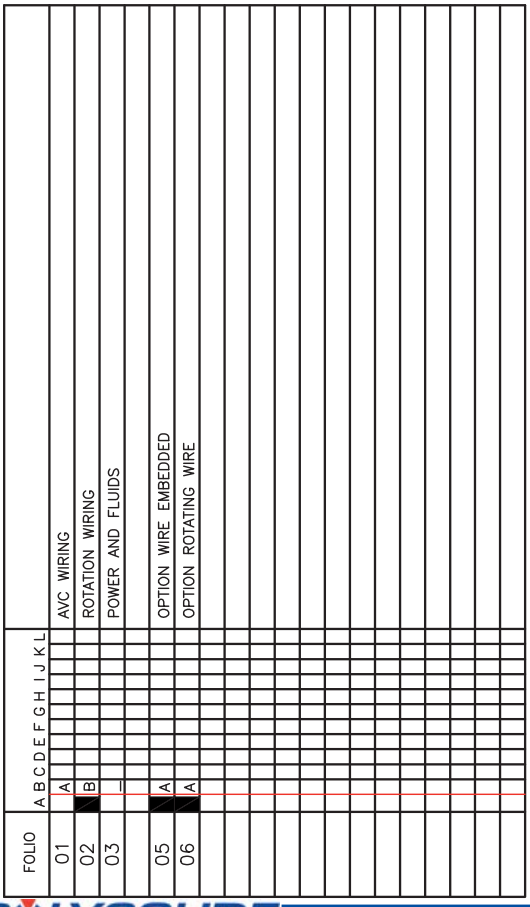
Polysoude S.A.S. ZI du Bois Briand 2 rue Paul Beaupère F - 44300 NANTES
Tél. : +33 (0) 2 40 68 11 00 Fax : + 33 (0) 2 40 68 11 88 www.polysoude.com e-mail : info@polysoude.com
Fax SAV : + 33 (0) 2 40 68 57 02 e-mail SAV : SAV-ADV@polysoude.com

7. Electrical drawings

0023416000 wiring diagrams for TS 8/75 welding heads - Serial numbers between 1014801 and 1314841.

0023001500 wiring diagrams for welding heads TS 8/75 - Serial number from 1314842.

7. 1. Electrical drawing 0023001500



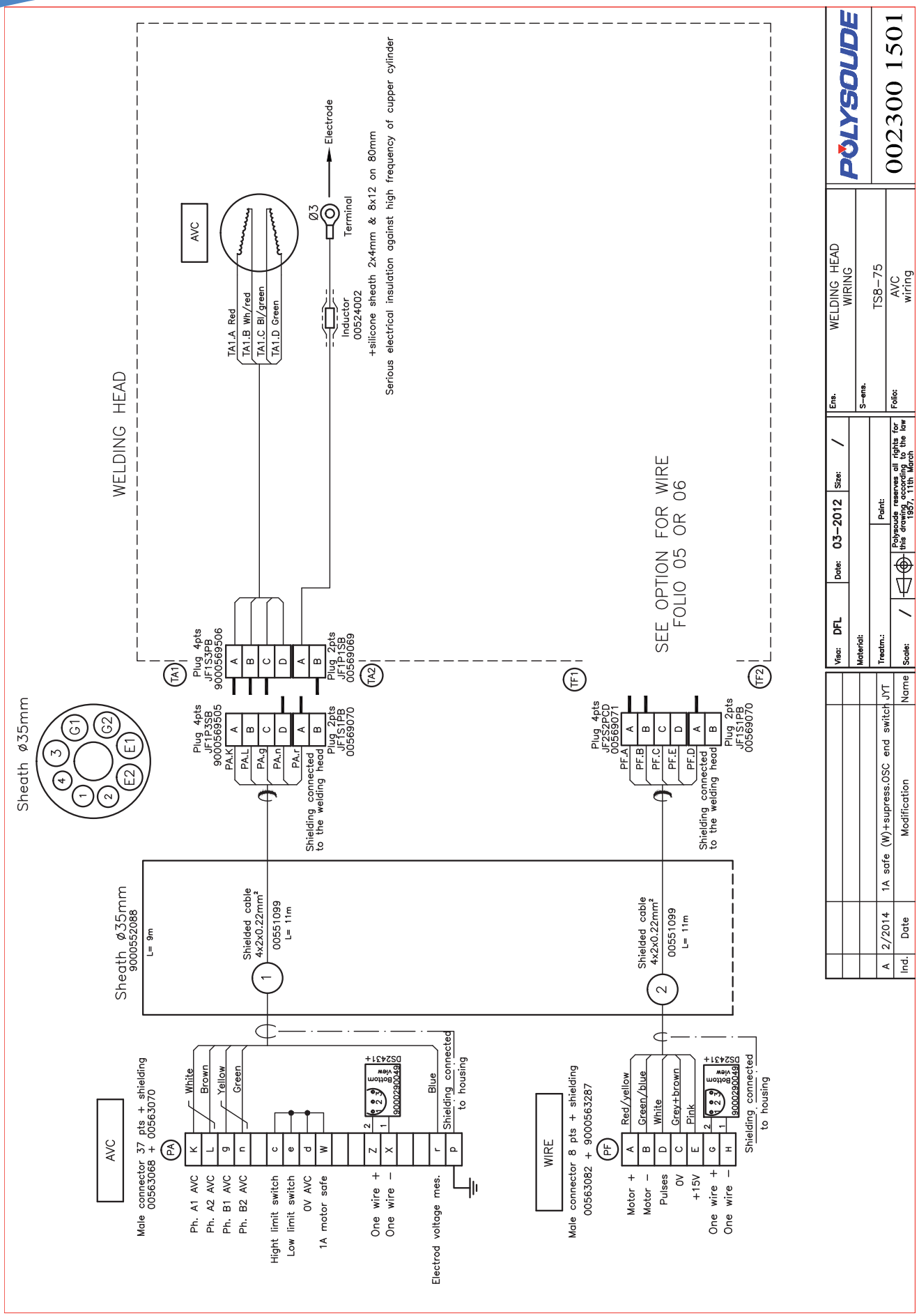
TS8/75

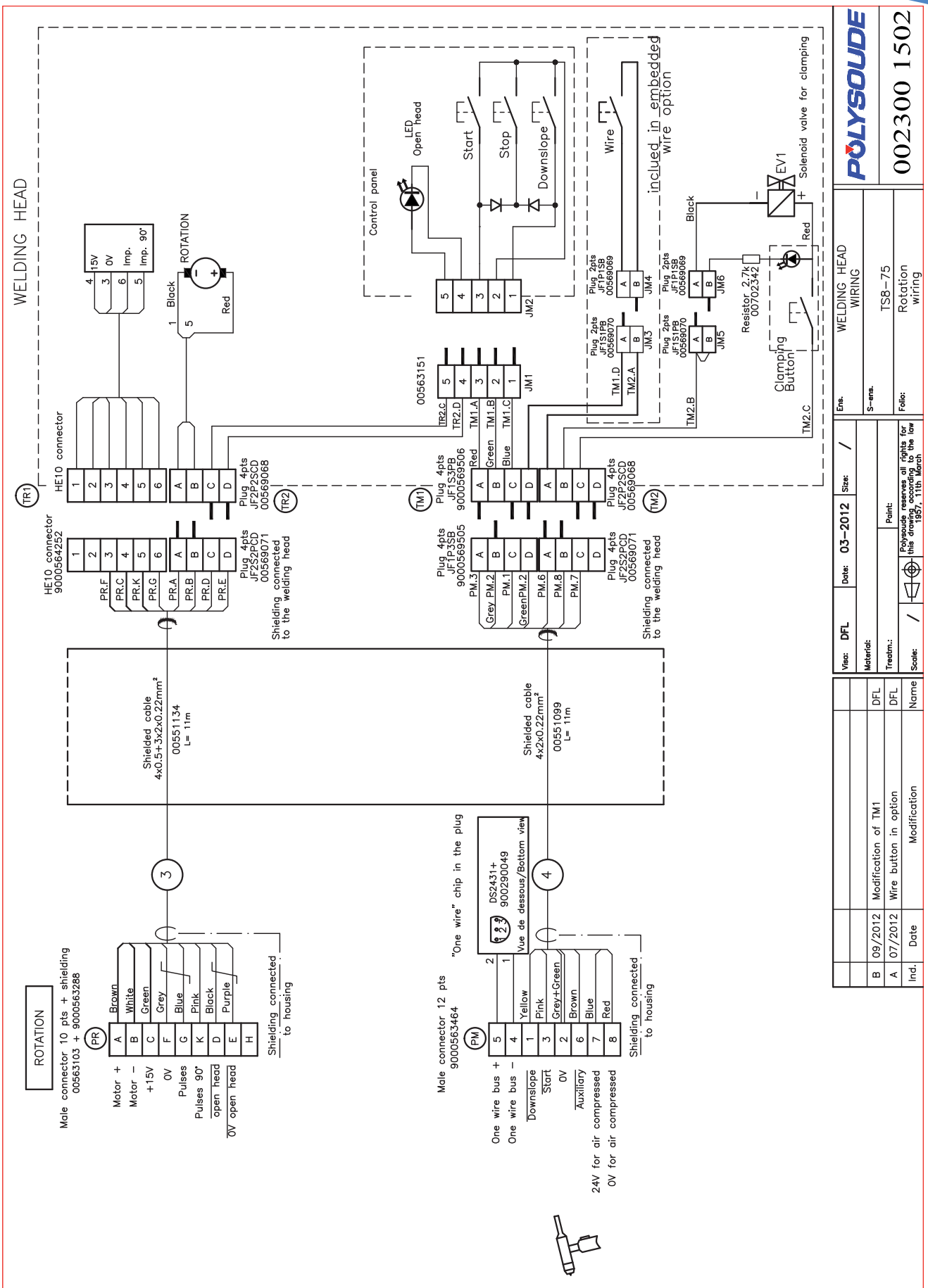
BUNDLE

0023001500

REVISION: B

POLYSOUDE

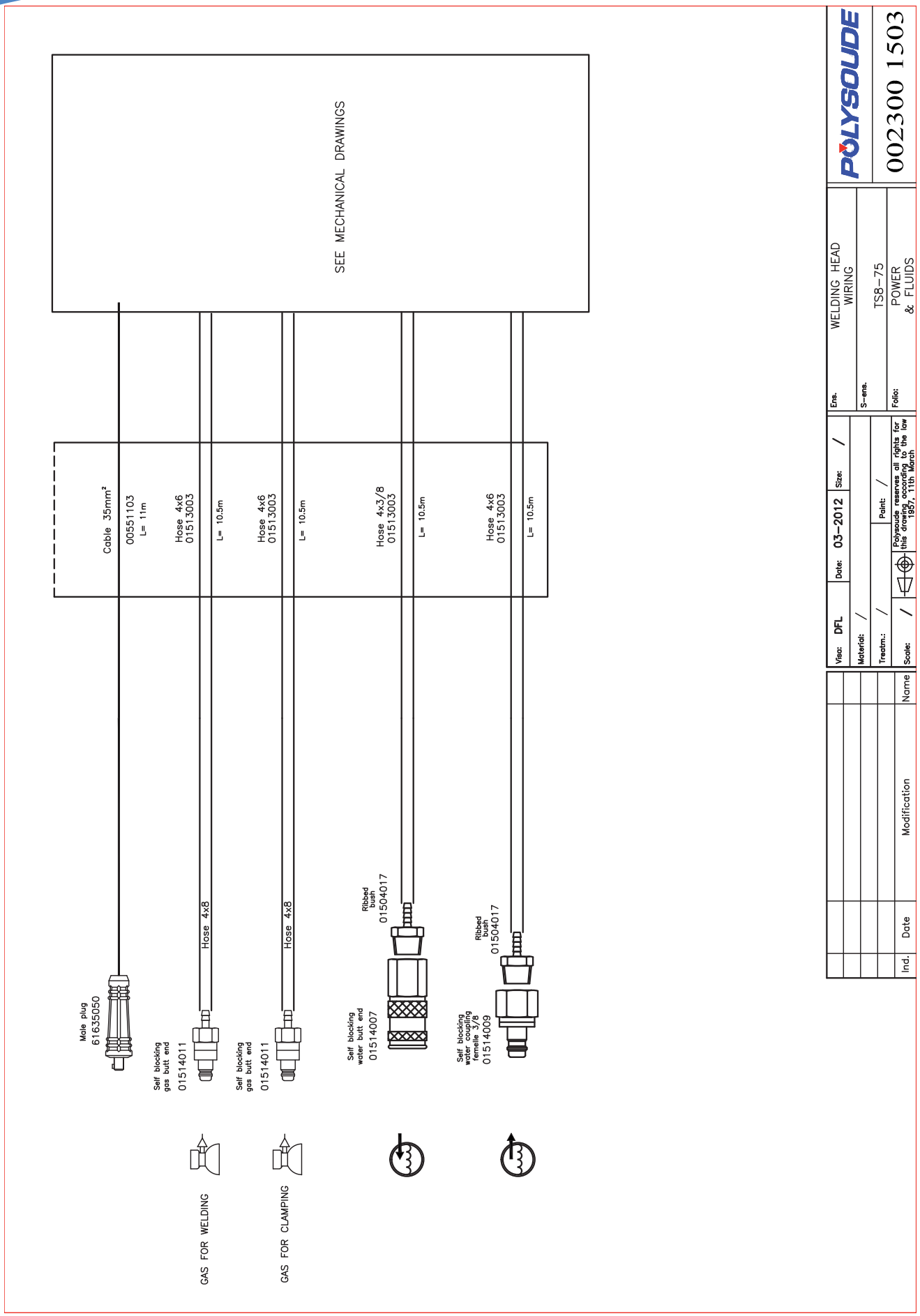

WELDING HEAD
AVC
TA1.A Red
TA1.B Wh/red
TA1.C Bl/green
TA1.D Green
Ø3
Terminal
Electrode
Inductor
00524002
+silicone sheath 2x4mm & 8x12 on 80mm
Serious electrical insulation against high frequency of cupper cylinder
Plug 4pts
JF1S3PB
9000569506
Plug 2pts
JF1P1SB
00569069
TA1
TA2
Plug 4pts
JF1P3SB
9000569505
PA.K
PA.L
PA.g
PA.n
PA.r
Plug 2pts
JF1S1PB
00569070
Shielding connected
to the welding head
Sheath ø35mm
G1
G2
E1
E2
1
2
3
4
SEE OPTION FOR WIRE
FOLIO 05 OR 06
TF1
TF2
Plug 4pts
JF2S2PCD
00569071
PF.A
PF.B
PF.C
PF.E
PF.D
Plug 2pts
JF1S1PB
00569070
Sheath ø35mm
9000552088
L= 9m
Shielded cable
4x2x0.22mm²
00551099
L= 11m
1
2
AVC
Male connector 37 pts + shielding
00563068 + 00563070
PA
White
Brown
Yellow
Green
Blue
Shielding connected
to housing
DS2431+
Bottom
View
9000290049
Ph. A1 AVC
Ph. A2 AVC
Ph. B1 AVC
Ph. B2 AVC
Hight limit switch
Low limit switch
0V AVC
1A motor safe
One wire +
One wire –
Electrod voltage mes.
WIRE
Male connector 8 pts + shielding
00563082 + 9000563287
PF
Red/yellow
Green/blue
White
Grey+brown
Pink
Motor +
Motor –
Pulses
0V
+15V
One wire +
One wire –
Shielding connected
to housing
Visa: DFL
Date: 03-2012
Size: /
Material:
Treatm.:
Point:
Scale: /
Polysoude reserves all rights for this drawing according to the law 1957, 11th March
Ens.
WELDING HEAD
WIRING
S-ens.
TS8-75
Folio:
AVC
wiring
POLYSOUDE
002300 1501
Ind.
Date
Modification
Name
A
2/2014
1A safe (W)+supress.OSC end switch JYT



Ind.	Date	Modification	Name
B	09/2012	Modification of TM1	DFL
A	07/2012	Wire button in option	DFL

Visa: DFL | Date: 03-2012 | Size: / | Ens. | WELDING HEAD WIRING
Material: | S-ens. | TS8-75
Treatm.: | Paint: | Folio: | Rotation wiring
Scale: / | Polysoude reserves all rights for this drawing, according to the law 1957, 11th March

POLYSOUDE
002300 1502



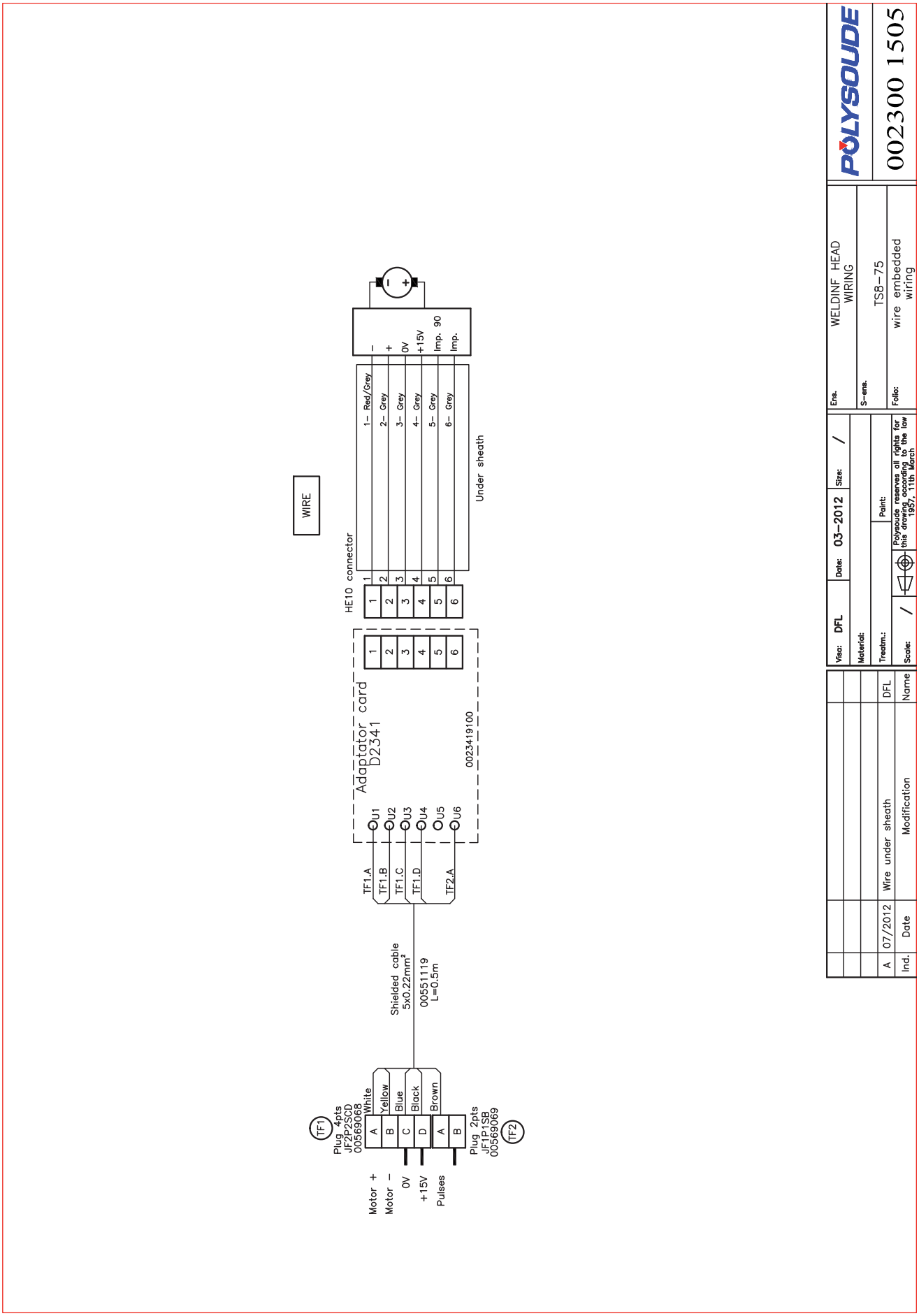
Ind.	Date	Modification	Name

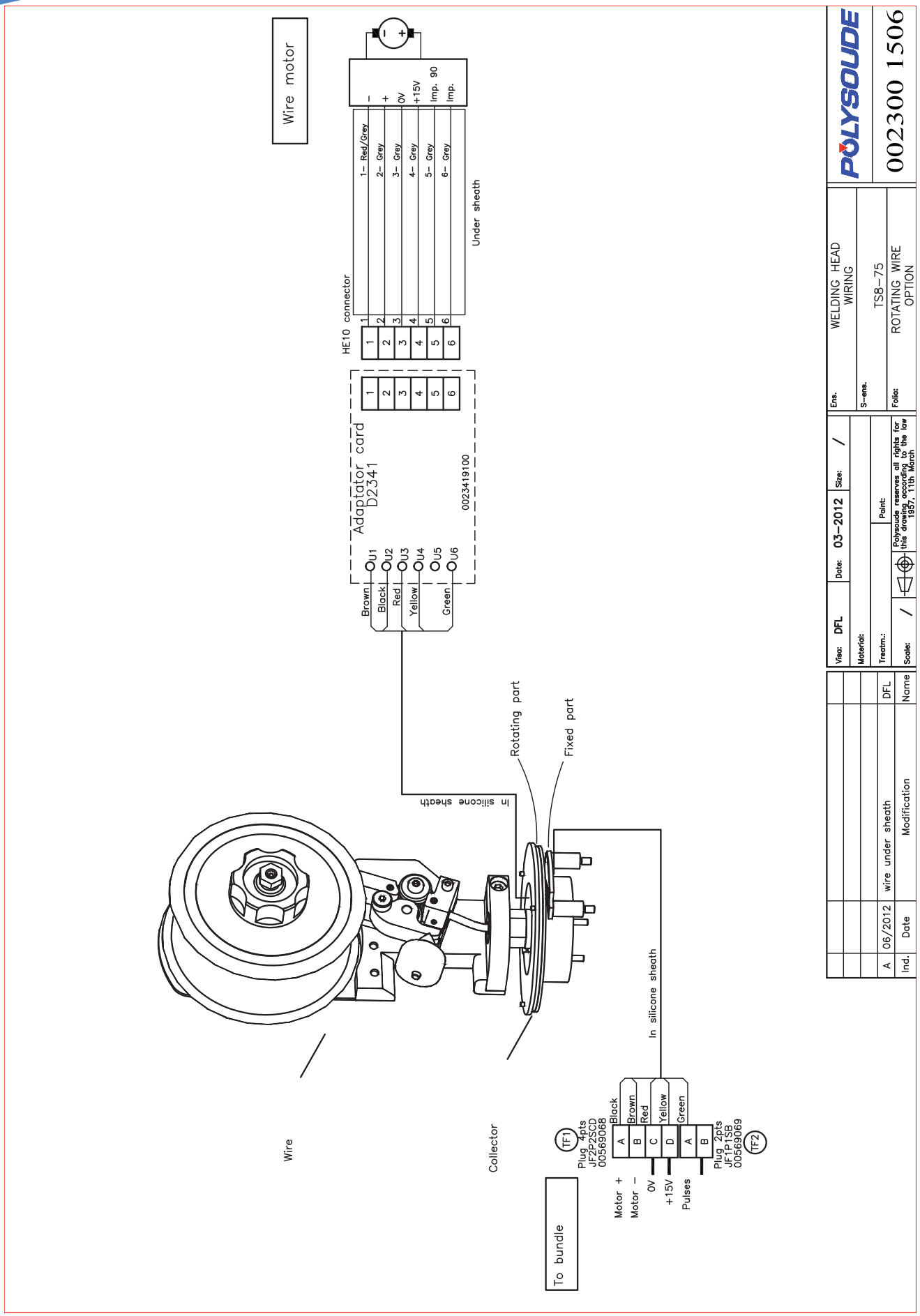
Visa: DFL | Date: 03-2012 | Size: /
Material: /
Treatm.: / | Paint: /
Scale: / | Polysoude reserves all rights for this drawing according to the law 957, 11th March

Ens. WELDING HEAD WIRING
S-ens. TS8-75
Folio: POWER & FLUIDS

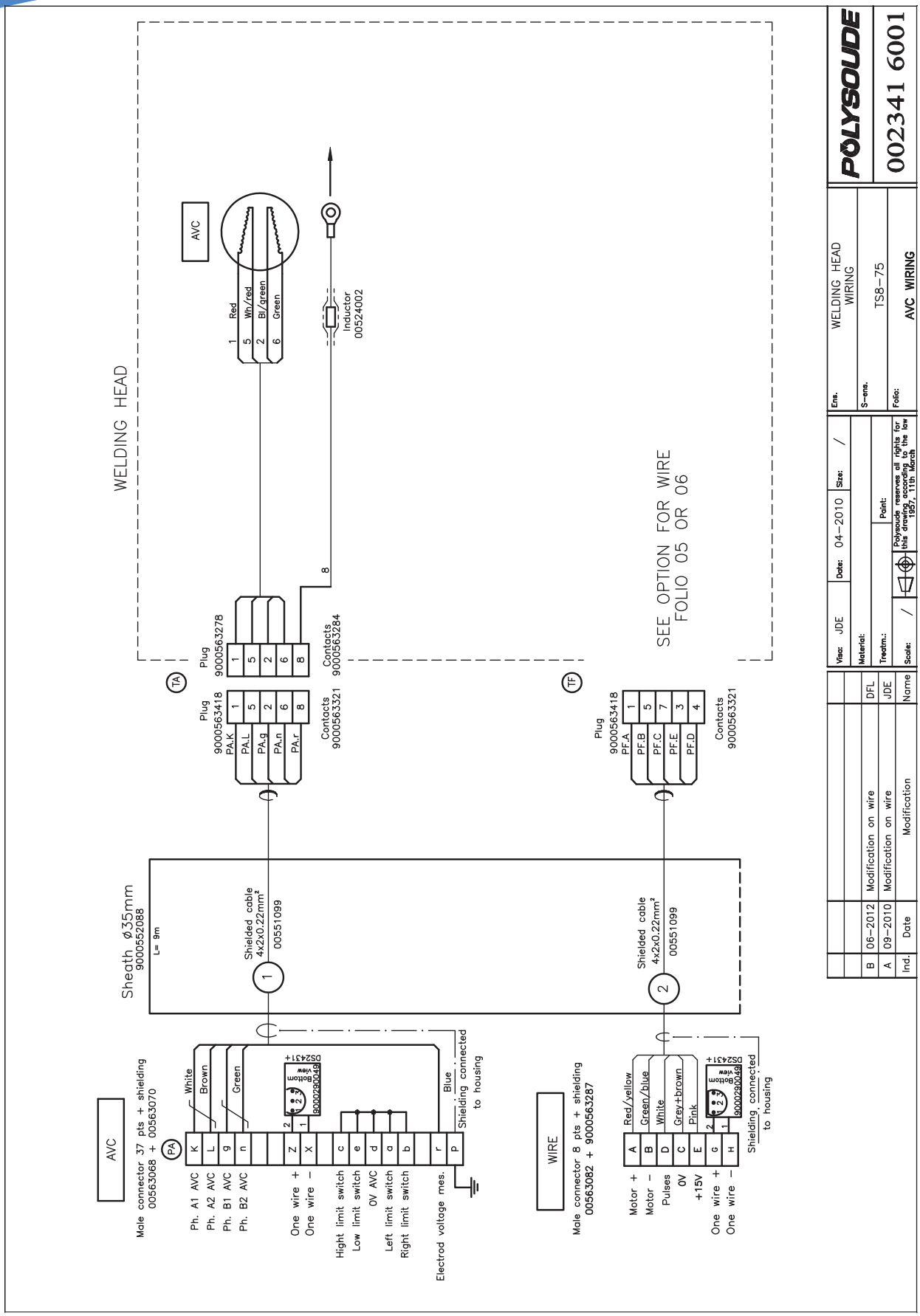
POLYSOUDE

002300 1503


WIRE
HE10 connector
1– Red/Grey
2– Grey
3– Grey
4– Grey
5– Grey
6– Grey
– + 0V +15V Imp. 90 Imp.
Under sheath
Adaptator card D2341
U1 U2 U3 U4 U5 U6
TF1.A TF1.B TF1.C TF1.D TF2.A
0023419100
Shielded cable 5x0.22mm²
00551119 L=0.5m
Plug 4pts JF2P2SCD 00569068
White Yellow Blue Black Brown
A B C D
Motor + Motor – 0V +15V Pulses
Plug 2pts JF1P1SB 00569069
A B
TF1 TF2
Visa: DFL
Date: 03-2012
Size: /
Material:
Treatm.:
Point:
Scale: /
Polysoude reserves all rights for this drawing, according to the law 1957, 11th March
Ens.
S-ens.
Folio:
WELDINF HEAD WIRING
TS8-75
wire embedded wiring
POLYSOUDE
002300 1505
Ind. Date Name
A 07/2012 Wire under sheath DFL
Modification


Wire motor
HE10 connector
1– Red/Grey
2– Grey
3– Grey
4– Grey
5– Grey
6– Grey
–
+
0V
+15V
Imp. 90
Imp.
Under sheath
Adaptator card
D2341
0023419100
U1
U2
U3
U4
U5
U6
Brown
Black
Red
Yellow
Green
In silicone sheath
Rotating part
Fixed part
Wire
Collector
To bundle
TF1
Plug 4pts
JF2P2SCD
00569068
TF2
Plug 2pts
JF1P1SB
00569069
Motor +
Motor –
0V
+15V
Pulses
In silicone sheath
Ind.
Date
Modification
Name
A
06/2012
wire under sheath
DFL
Visa: DFL
Date: 03–2012
Size: /
Material:
Treatm.:
Paint:
Scale: /
Polysoude reserves all rights for this drawing according to the law 1957, 11th March
Ens.
WELDING HEAD WIRING
S–ens.
TS8–75
Folio:
ROTATING WIRE OPTION
POLYSOUDE
002300 1506

7. 2. Electrical drawing 0023416000



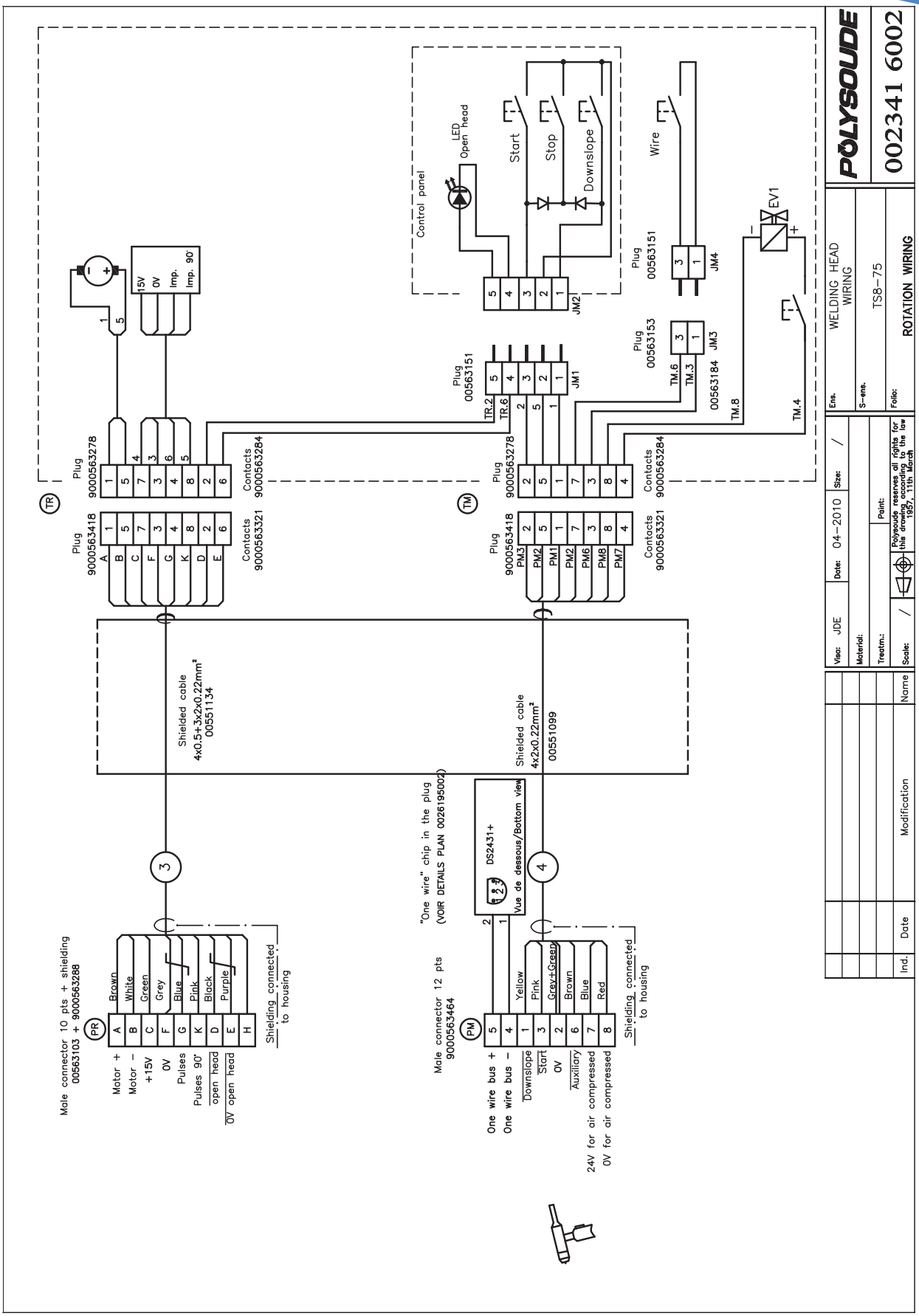
Ind.	Date	Modification	Name
A	09–2010	Modification on wire	JDE
B	06–2012	Modification on wire	DFL

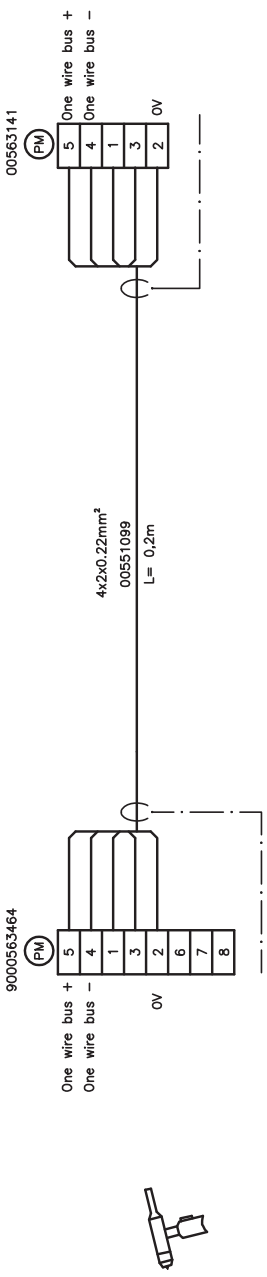
Ens.	WELDING HEAD WIRING
S-ens.	TS8–75
Folio:	AVC WIRING

Visa: JDE | Date: 04–2010 | Size: / | Material: | Treatm.: | Point: | Scale: /

POLYSOUDE

002341 6001


POLYSOUDE
002341 6002
WELDING HEAD WIRING
TS8-75
ROTATION WIRING
Control panel
LED Open head
Start
Stop
Downslope
Wire
EV1
Plug 00563151
Plug 00563153
Plug 00563184
JM1
JM2
JM3
JM4
TM.2
TM.6
TM.3
TM.8
TM.4
Plug 9000563278
Contacts 9000563284
Plug 9000563418
Contacts 9000563321
Shielded cable 4x0.5+3x2x0.22mm² 00551134
Shielded cable 4x2x0.22mm² 00551099
"One wire" chip in the plug (VOIR DETAILS PLAN 0026195002)
DS2431+
Vue de dessous/Bottom view
Male connector 10 pts + shielding 00563103 + 9000563288
Male connector 12 pts 9000563464
Motor +
Motor –
+15V
0V
Pulses 90° open head
0V open head
Shielding connected to housing
One wire bus +
One wire bus –
Downslope
Start
0V
Auxiliary
24V for air compressed
0V for air compressed
Ind.
Date
Modification
Name
Scale:
Treatm.:
Material:
Visa: JDE
Date: 04-2010
Size:
Point:
Ens.
S-ens.
Folio:



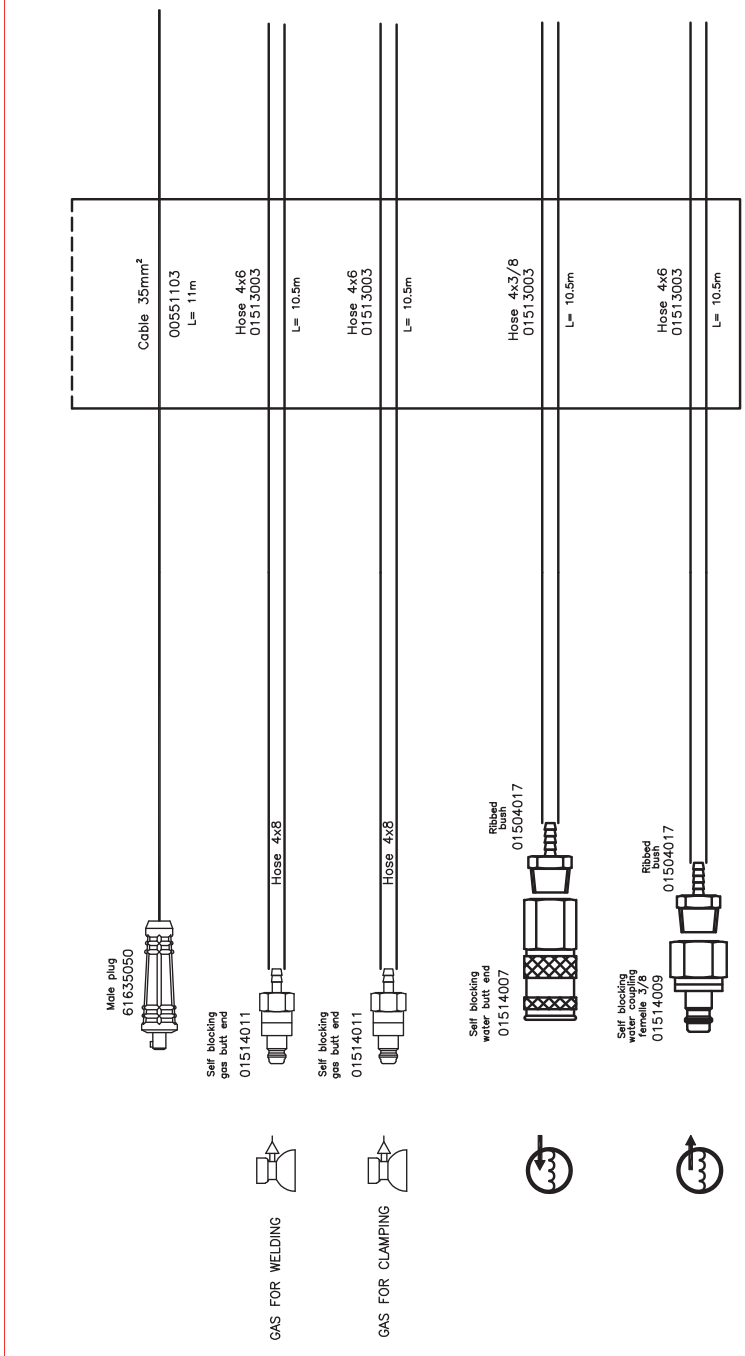
Ind.	Date	Modification	Name

Visa: PFA
Date: 04-2010
Size: /
Material:
Treatm.:
Point:
Scale: /
Polysoude reserves all rights for this drawing according to the law 1957, 11th March

Ens.: WLEDING HEAD WIRING
S-ens.: TS8-75
Folio: PLUG ADAPTATOR 12 PTS TO 5PTS

POLYSOUDE

002341 6003

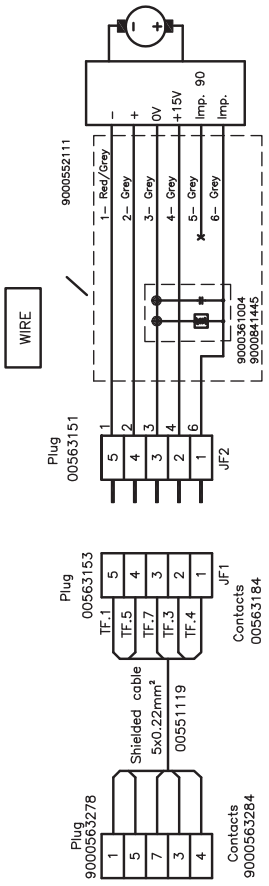


Ind.	Date	Modification	Name
B	06/2012	Creation	DFL

Visa: DFL | Date: 03-2012 | Size: /
Material: /
Treatm.: / | Paint: /
Scale: / | Polysoude reserves all rights for this drawing, according to the law 1957, 11th March

Ens. WELDING HEAD WIRING
S-ens. TS8-75
Folio: POWER & FLUIDS

POLYSOUDE 0023416004

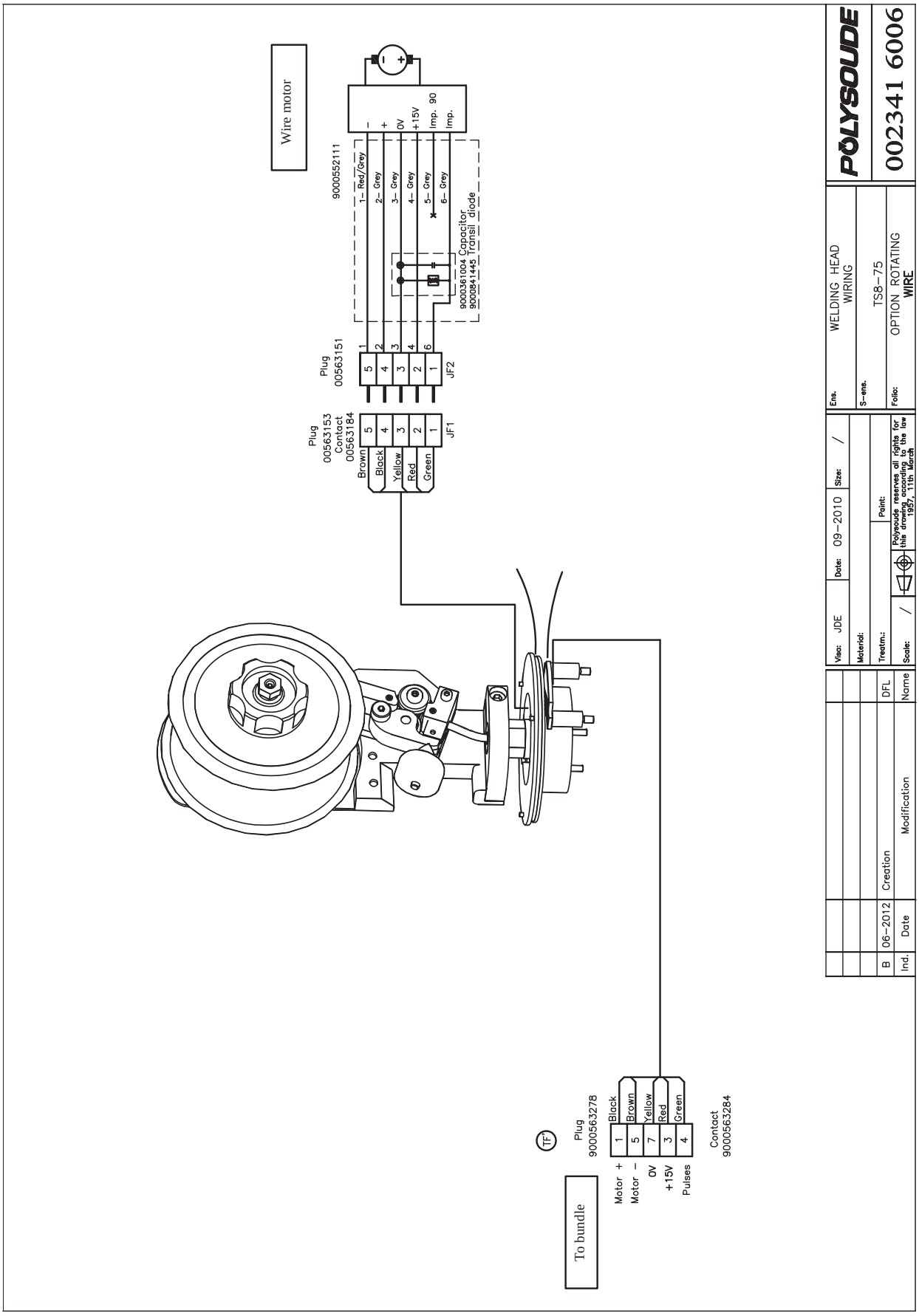


Ind.	Date	Modification	Name
B	06–2012	Creation	DFL

Visa: JDE | Date: 09–2010 | Size: /
Material:
Treatm.: | Point:
Scale: / | Polysoude reserves all rights for this drawing, according to the law 1957, 11th March

Ens. WELDING HEAD WIRING
S–ens. TS8–75
Folio: OPTION WIRE EMBEDDED

POLYSOUDE 002341 6005


Wire motor
9000552111
1– Red/Grey
2– Grey
3– Grey
4– Grey
5– Grey
6– Grey
–
+
0V
+15V
Imp. 90
Imp.
9000361004 Capacitor
9000841445 Transil diode
Plug
00563151
JF2
Plug
00563153
Contact
00563184
JF1
Brown
Black
Yellow
Red
Green
To bundle
Plug
9000563278
Motor +
Motor –
0V
+15V
Pulses
Black
Brown
Yellow
Red
Green
Contact
9000563284
POLYSOUDE
002341 6006
Ens.
WELDING HEAD WIRING
S-ens.
TS8-75
Folio:
OPTION ROTATING WIRE
Visa: JDE
Date: 09-2010
Size: /
Material:
Treatm.:
Paint:
Scale: /
Polysoude reserves all rights for this drawing according to the law 1957, 11th March
Ind.
Date
Modification
Name
B
06-2012
Creation
DFL

8. End of service life - Recycling the machine

Our machines incorporate electrical and electronic components which must be recycled in accordance with EC Directive 2002/96/CE. Any item of equipment which is declared obsolete or out of service must be sent to approved recycling companies in order to reduce the amount of ultimate waste disposal. A number of solutions may be deployed, including:

- Re-use
- Recycling
- Any other form of recovery (including energy recovery) of WEEE (Waste Electrical and Electronic Equipment).

9. Equipment Return form

RETURN OF EQUIPMENT

(Please fill out and join this sheet when returning equipment to POLYSOUDE)

Reseller / Person in charge : .....

Customer / Person in charge / Tel. : .....

EQUIPMENT RETURNED :

❑ Power source Type : ..... Serial number : .....

❑ Welding head Type : ..... Serial number : .....

❑ Wire feeder Type : ..... Serial number : .....

❑ Other (*specify designation*) : .....
↳ taken from :

- ❑ Power source Type : ..... Serial number : .....
- ❑ Welding head Type : ..... Serial number : .....
- ❑ Wire feeder Type : ..... Serial number : .....
- ❑ Other(*to be specified*) : ..... Serial number : .....

REASON FOR RETURN :

❑ Return of loan equipment
❑ Return of demonstration / fair equipment
❑ Return of hired equipment
❑ Return after exchange
❑ Deficient delivery / incorrect order
❑ Return for modification (*to be specified*) : .....
❑ Return for revision
❑ Return for calibration

❑ Return for repair
to be specified : ❑ systematically occurring error
❑ occasionally occurring error

Description of breakdown :

.....

.....

.....

.....

❑ Other issue *(to be specified)* : .....

Date : ..... Signature: .....

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Société par actions simplifiée, au capital de 4 105 452 Euro,
R.C.S. Nantes B 858 800 931
TVA N° : FR 64858800931 - a member of Global Welding Technologies AG

List of illustrations

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www.polysoude.com info@polysoude.com

ISO 9001
BUREAU VERITAS
Certification

Translation of original instructions

POLYSOUDE : Related services

Guidance and technical support
A welding application specialist in your area will advise you on the welding process and appropriate equipment for your application.

Maintenance / Repair
Maintenance and repair operations can be carried out at the Polysoude plant as well as on site by our service network.

Commissioning / Training
A complete training program will enable you to start using the equipment immediately and in the best way possible.

Rental service
Increase the flexibility of your production! A large range of equipment is available for rental from our hire fleet.

Your partners worldwide

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