Fronius

TÄYDELLISTÄ HITSAUSTA

ROBACTA TX G

/ Operating Instructions
/ Spare Parts List

v.01/2012 ENG

Dear reader,

Introduction

Thank you for the trust you have placed in our company and congratulations on buying this high-quality Fronius product. These instructions will help you familiarise yourself with the product. Reading the instructions carefully will enable you to learn about the many different features it has to offer. This will allow you to make full use of its advantages.

Please also note the safety rules to ensure greater safety when using the product. Careful handling of the product will repay you with years of safe and reliable operation. These are essential prerequisites for excellent results.

Contents

Safety rules

Explanation of safety symbols

DANGER! indicates immediate and real danger. If it is not avoided, death or serious injury will result.

WARNING! indicates a potentially dangerous situation. Death or serious injury may result if appropriate precautions are not taken.

CAUTION! indicates a situation where damage or injury could occur. If it is not avoided, minor injury and/or damage to property may result.

NOTE! indicates a risk of flawed results and possible damage to the equipment.

IMPORTANT! indicates tips for correct operation and other particularly useful information. It does not indicate a potentially damaging or dangerous situation.

If you see any of the symbols depicted in the "Safety rules", special care is required.

General

The device is manufactured using state-of-the-art technology and according to recognised safety standards. If used incorrectly or misused, however, it can cause

- injury or death to the operator or a third party,
- damage to the device and other material assets belonging to the operating company,
- inefficient operation of the device.

All persons involved in commissioning, operating, maintaining and servicing the device must:

- be suitably qualified,
- have sufficient knowledge of welding
- read and follow these operating instructions carefully.

The operating instructions must always be at hand wherever the device is being used. In addition to the operating instructions, attention must also be paid to any generally applicable and local regulations regarding accident prevention and environmental protection.

All safety and danger notices on the device

- must be kept in a legible state
- must not be damaged/marked
- must not be removed
- must not be covered, pasted or painted over.

For the location of the safety and danger notices on the device, refer to the section headed "General remarks" in the operating instructions for the device. Before switching on the device, remove any faults that could compromise safety.
Your personal safety is at stake!

Proper use

The device is to be used exclusively for its intended purpose.

The device is intended solely for the welding processes specified on the rating plate.
Any use above and beyond this purpose is deemed improper. The manufacturer shall not be held liable for any damage arising from such usage.

Proper use also includes:
- carefully reading and following all the instructions given in the operating instructions
- studying and obeying all safety and danger notices carefully
- carrying out all the specified inspection and servicing work.

The device is designed for use in industry and the workshop. The manufacturer accepts no responsibility for any damage caused through use in a domestic setting.

The manufacturer likewise accepts no liability for unexpected or incorrect results.

Environmental conditions

Operation or storage of the device outside the stipulated area will be deemed as "not in accordance with the intended purpose". The manufacturer shall not be liable for any damage resulting from such improper use.

Ambient temperature:
- during operation: 0 °C to + 40 °C (32 °F to 104 °F)
- during transport and storage: -25 °C to +55 °C (-13 °F to 131 °F)

Relative humidity:
- up to 50 % at 40 °C (104 °F)
- up to 90 % at 20 °C (68 °F)

Ambient air: free from dust, acids, corrosive gases and substances, etc.

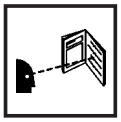
For use at altitudes above sea level: up to 2000 m (6500 ft)

Obligations of the operator

The operator undertakes only to allow persons to work with the device who:
- are familiar with the fundamental instructions regarding safety and accident prevention, and have been instructed how to use the device
- have read and understood these operating instructions, especially the section “safety rules”, and have confirmed as much with their signatures
- are trained to produce the required results.

Checks must be carried out at regular intervals to ensure that operators are working in a safety-conscious manner.

Obligations of personnel



Before using the device, all persons instructed to do so undertake:
- to observe the basic instructions regarding safety at work and accident prevention
- to read these operating instructions, especially the "Safety rules" section and sign to confirm that they have understood them and will follow them.

Before leaving the work area, ensure that people or property cannot come to any harm in your absence.

Specific hazards

Stay out of the working area of the robot.

The device must be incorporated into a higher-level safety system within a secured area.

If this area has to be accessed when setup and maintenance work is carried out, make sure that
- the entire system is switched off for the duration of the work in this area
- and that it is prevented from starting up accidentally, e.g. as the result of a control fault

In addition to these operating instructions, the robot manufacturer's operating instructions and safety rules must also be observed.

Protecting yourself and others

When welding, you expose yourself to numerous dangers. In addition to these operating instructions, the safety rules of the manufacturer of the entire welding system must also be observed.

Keep all persons, especially children, out of the working area while any devices are in operation or welding is in progress. If, however, there are people in the vicinity,
- make them aware of all the dangers and health risks (crushing, injury from cutters and sparks, dazzling by arc, inhaling welding fumes, noise, possible danger from mains or welding current, etc),
- provide suitable protective equipment or
- erect suitable safety screens/curtains.

EMC device classifications

Devices with emission class A:
- are only designed for use in an industrial setting
- can cause conducted and emitted interference in other areas.

Devices with emission class B:
- satisfy the emissions criteria for residential and industrial areas. This also applies to residential areas in which power is supplied from the public low-voltage grid.

EMC device classification according to the rating plate or the technical data.

EMC measures

In certain cases, even though a device complies with the standard limit values for emissions, it may affect the application area for which it was designed (e.g. when there is sensitive equipment at the same location, or if the site where the device is installed is close to either radio or television receivers).
If this is the case, then the operating company is obliged to take appropriate action to rectify the situation.

Check for possible problems, and check and evaluate neighbouring devices' resistance to interference according to national and international requirements:
- Safety features
- power, signal and data transfer lines
- IT and telecommunications devices
- measuring and calibrating devices

Supporting measures for avoidance of EMC problems:

a) Mains supply
- If electromagnetic interference arises despite correct mains connection, additional measures are necessary (e.g. use of a suitable line filter).

b) Control lines
- must be kept as short as possible
- must run close together (to avoid EMF problems)
- must be kept well apart from other leads

c) Equipotential bonding

d) Shielding, if necessary
- shield off other nearby devices
- shield off entire welding installation

EMF measures

Electromagnetic fields may pose as yet unknown risks to health:
- effects on the health of others in the vicinity, e.g. wearers of pacemakers and hearing aids
- wearers of pacemakers must seek advice from their doctor before approaching the device or any welding that is in progress
- for safety reasons, keep distances between the welding cables and the welder's head/torso as large as possible
- do not carry welding cables and hosepacks over the shoulders or wind them around any part of the body

Safety measures at the installation location

A device that topples over can easily kill someone. Place the device horizontally on a level, firm and solid surface and anchor it securely to prevent it toppling over.

Special regulations apply in rooms at risk of fire or explosion
- observe relevant national and international regulations.

Use internal directives and checks to ensure that the workplace environment is always clean and tidy.

Safety measures in normal operation

Only operate the device when all protection devices are fully functional. If the protection devices are not fully functional, there is a risk of
- injury or death to the operator or a third party,
- damage to the device and other material assets belonging to the operator,
- inefficient operation of the device.

Any safety devices that are not functioning properly must be repaired before switching on the device.

Never bypass or disable protective equipment.

Before switching on the device, ensure that no one is likely to be endangered.

Check the device at least once a week for obvious damage and proper functioning of safety devices.

Maintenance and repair

It is impossible to guarantee that bought-in parts are designed and manufactured to meet the demands made on them, or that they satisfy safety requirements. Use only original replacement and wearing parts (also applies to standard parts).
Do not carry out any modifications, alterations, etc. to the device without the manufacturer's consent.
Components that are not in perfect condition must be changed immediately.
When ordering, please give the exact designation and part number as shown in the spare parts list, as well as the serial number of your device.

Safety inspections

The manufacturer recommends that a safety inspection of the device is performed at least once every 12 months.

A safety inspection should be carried out by a qualified electrician
- after any changes are made
- after any additional parts are installed, or after any conversions
- after repair, care and maintenance has been carried out
- at least every twelve months.

For safety inspections, follow the appropriate national and international standards and directives.

Further details on safety inspection and calibration can be obtained from your service centre. They will provide you on request with any documents you may require.

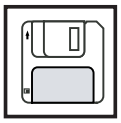
Disposal

Do not dispose of this device with normal domestic waste! To comply with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation as national law, electrical equipment that has reached the end of its life must be collected separately and returned to an approved recycling facility. Any device that you no longer require must either be returned to your dealer or given to one of the approved collection and recycling facilities in your area. Ignoring this European Directive may have potentially adverse affects on the environment and your health!

Safety symbols

Devices with the CSA test mark satisfy the requirements of the relevant standards in Canada and the USA.

Data protection



The user is responsible for the safekeeping of any changes made to the factory settings. The manufacturer accepts no liability for any deleted personal settings.

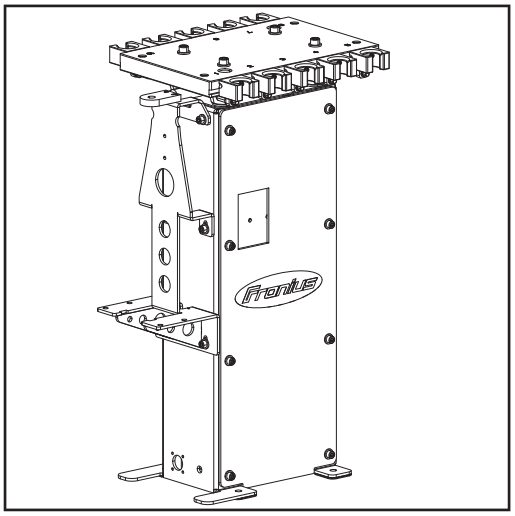
Copyright

The text and illustrations are all technically correct at the time of printing. We reserve the right to make changes. The contents of the operating instructions shall not provide the basis for any claims whatsoever on the part of the purchaser. If you have any suggestions for improvement, or can point out any mistakes that you have found in the instructions, we will be most grateful for your comments.

General information

General

Device concept

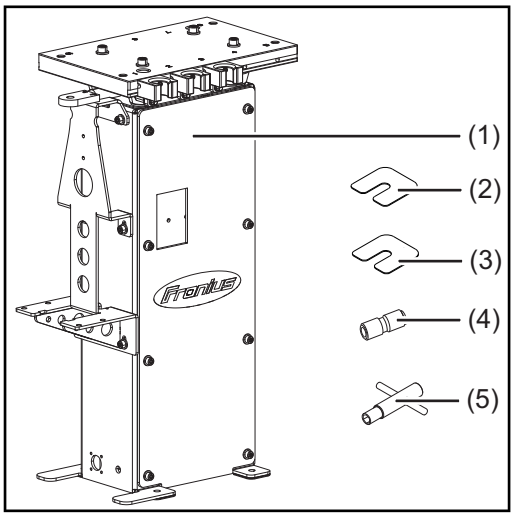


Robacta TX is an automatic torch neck changeover system, comprising:
- Torch neck changeover station
- Torch neck coupling

With Robacta TX, robots are used to automatically place worn torch necks onto the torch neck changeover station and replace them with new torch necks. Even switching between different torch neck geometries is easy with Robacta TX.

In conjunction with a welding torch cleaning device, Robacta TX is converted into a fully autonomous torch neck maintenance station which increases system availability and significantly reduces setup time.

Scope of supply



(1) Torch neck changeover station with 3 torch neck racks
(2) 4 adjustment plates 1 mm (0.04 inch)
(3) 4 adjustment plates 1.5 mm (0.06 inch)
(4) Reduction
(5) Fitting wrench
(6) Operating instructions (not shown)

Information on blow-off function

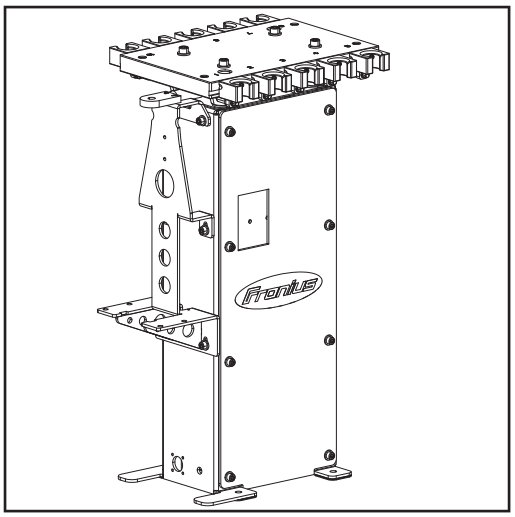
NOTE! The hosepack blow-out line is used to operate Robacta TX G. The blow-out function is therefore not available in conjunction with Robacta TX G.

System components

Necessary system components

To operate the torch neck changeover station, the following system components are also needed in addition to the welding system:

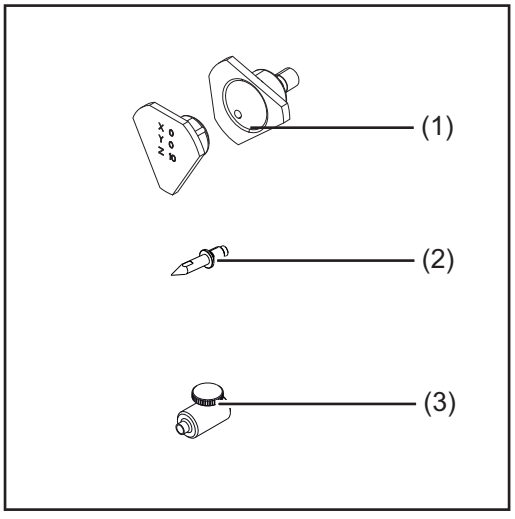
- Robacta TX G torch neck changeover station
- TX G tool kit
- Robacta TX G torch neck coupling
- Robacta MTG 2500 / 3200 / 4000 torch neck
- Hosepacks with blow-out line
- Wire cutter
- Compressed air maintenance unit with filter
- Robot



Torch neck changeover station

The torch neck changeover station is used to:

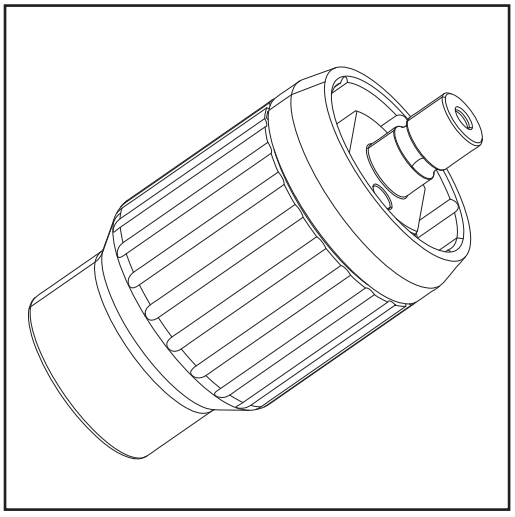
- hold up to 10 torch necks
- hold a welding torch cleaning device
- hold a wire cutter
- hold a TCP measurement system



TX G tool kit

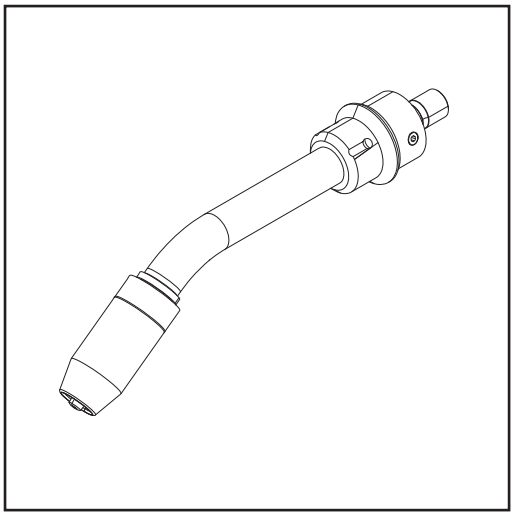
TX G tool kit, comprising

(1) Robot programming aid (2 parts)
(2) 3 TCP tips
(3) Cutting aid

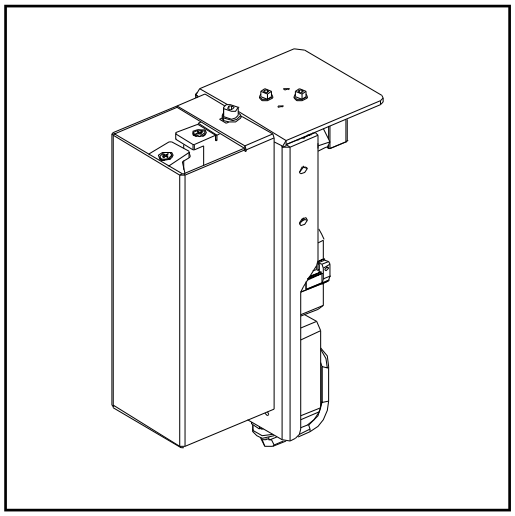


Robacta TX G torch neck coupling

- The torch neck coupling enables the torch neck to be changed



Robacta MTG torch neck



Wire cutter

Contact tip recommendation

NOTE! In conjunction with the torch neck changeover system, we recommend that you use the 'CB' contact tip.

Note on wirefeeding

NOTE! The torch neck changeover system can only be used in conjunction with wirefeeding from the drum coil.

Compatible system components for the overall welding system

Only use the torch neck changeover system in conjunction with the following system components:

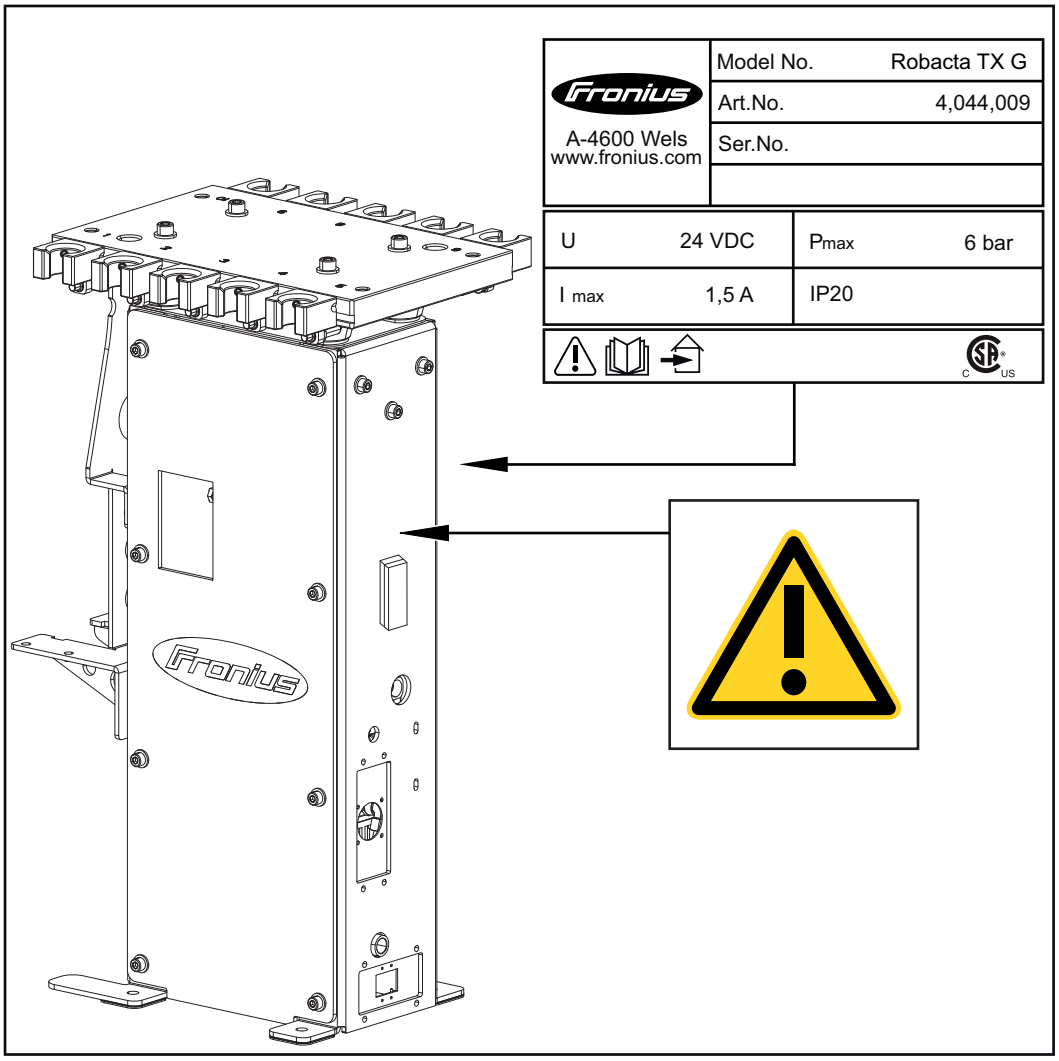
- Any power source from the TS/TPS range
- Any Fronius robot wire-feed unit
- Robacta hosepacks
- Robacta Drive CMT hosepacks
- Robacta Drive hosepacks (only on request from the manufacturer)
- Robacta Reamer V Easy, Robacta Reamer V
- Robacta Reamer brush head for aluminium applications
- Robacta TC range

TCP measurement system	Use a TCP measurement system in order to achieve the best possible accuracy from the welding system and torch neck changeover system.

Warning notices on the device

Warning notices on the device

The device has safety symbols on the rating plate. The safety symbols must not be removed or painted over. The symbols warn against operating the equipment incorrectly, as this may result in serious injury and damage.



WARNING! Risk of severe injury from mechanically powered parts. Keep device free from current and pressure during maintenance and servicing.

Do not use the functions described here until you have thoroughly read and understood the following documents:

- these operating instructions
- all the operating instructions for the system components, especially the safety rules

For indoor use only

WARNING! Risk of severe injury from falling torch necks. Pressing the Unlock/Lock button will release the torch neck from the torch neck coupling, causing it to fall to the ground. When pressing the Unlock/Lock button, make sure that

- the torch neck can be caught with one hand or is safely deposited in a torch neck rack on the torch neck changeover station
- there are no other persons in the working area of the robot

Transport

Transport devices

The device is to be transported by the following devices:
- on pallets using a forklift truck
- on pallets using a lift truck

WARNING! Equipment that falls or topples over can cause serious or even fatal injury.
- Secure the device to prevent it from falling over when transporting on a forklift truck or lift truck
- Do not suddenly change direction, brake or accelerate

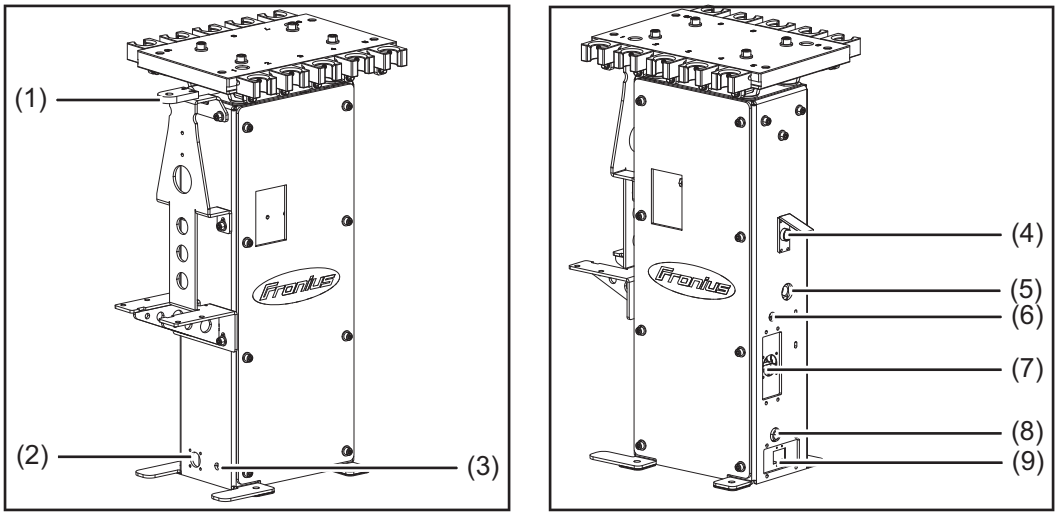
Transport notices on the packaging

CAUTION! Risk of damage due to incorrect transport. Observe the transport notices on the device packaging.

Controls, connections and mechanical components

Control elements and connections

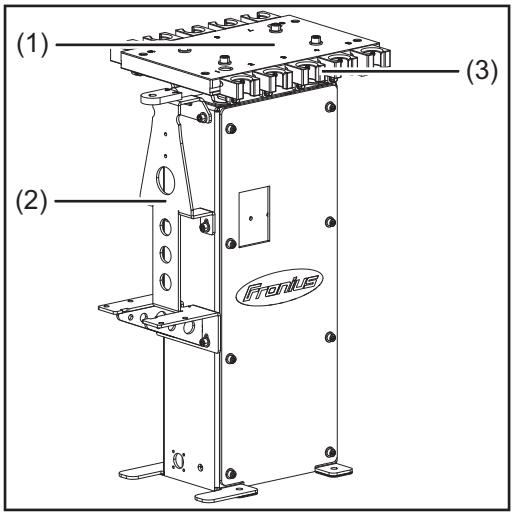
Control elements and connections



No.	Function
(1)	**Wire sensor** checks whether the wire electrode is protruding from the welding torch
(2)	**I/O connection for accessory equipment** supplied with 24 V DC
(3)	**Compressed air connection "C"**
(4)	**Unlock/Lock button** for manual operation of the torch neck coupling **WARNING!** Risk of severe injury from falling torch necks. Pressing the Unlock/Lock button will release the torch neck from the torch neck coupling, causing it to fall to the ground. When pressing the Unlock/Lock button, make sure that - the torch neck can be caught with one hand or is safely deposited in a torch neck rack on the torch neck changeover station - there are no other persons in the working area of the robot
(5)	**Compressed air connection "A"** to supply the torch neck coupling with compressed air
(6)	**External power supply connection "A"** supplied with 24 V DC
(7)	**Robot control connection compartment** for optionally connecting the torch neck changeover station to the robot control via - standard I/O connection for robot control - field bus coupler
(8)	**Compressed air connection "B"** Connection to supply torch neck changeover station with 5.50 - 7.00 bar (79.77 - 101.53 psi) of dry and oil-free compressed air - Size: 3/8“ (0.375 in.)
(9)	**External power supply connection "B", optional only** supplied with 24 V DC

Mechanical components

Mechanical components



No.	Function
(1)	**Rack holder** for holding the torch neck racks
(2)	**Mounting bracket** for attaching accessory equipment
(3)	**Torch neck rack** for holding a torch neck

Pin assignments and signal descriptions

Safety

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

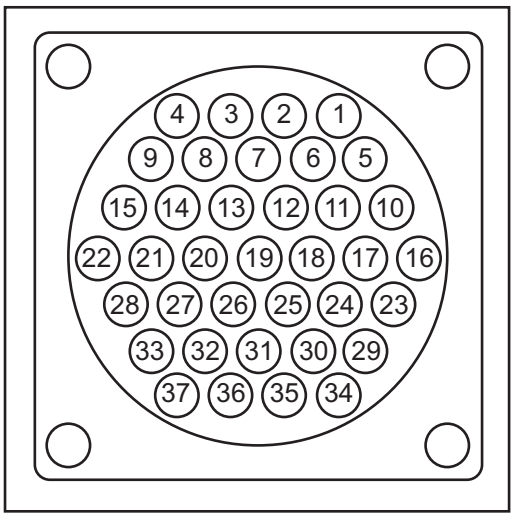
WARNING! Risk of severe injury from mechanically powered parts. The device must remain depressurised and de-energised until installation has been completed.

WARNING! Machines that start up automatically can cause serious injury and damage. The device may only be powered through an Emergency Stop circuit.

Assignment of standard I/O connection for robot control

CAUTION! Risk of damage to connection supply due to overcurrent. Secure supply against overcurrent with a 1.5 A slow-blow fuse.

NOTE! To avoid faults, keep the cable between the torch neck changeover station and the robot control as short as possible.



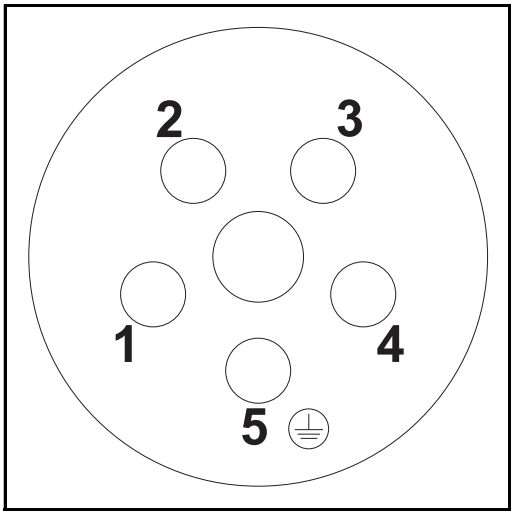
Pin	Input (from the torch neck changeover station to the robot)	Output (from the robot to the torch neck changeover station)	Signal
1		X	+ 24 V
2		X	GND
3	X		Torch neck sensor 1
4	X		Torch neck sensor 2
5	X		Torch neck sensor 3
6	X		Torch neck sensor 4
7	X		Torch neck sensor 5
8	X		Torch neck sensor 6

Pin	Input (from the torch neck changeover station to the robot)	Output (from the robot to the torch neck changeover station)	Signal
9	X		Torch neck sensor 7
10	X		Torch neck sensor 8
11	X		Torch neck sensor 9
12	X		Torch neck sensor 10
13	X		Robacta TX sensor 1 cover
14	X		Robacta TX sensor 2 cover
15		X	Robacta TX valve 1 cover
16		X	Robacta TX valve 2 cover
17	X		'C-Act. 3' signal 1
18	X		Robacta TX chute sensor
19	X		Wire sensor signal
20	X		'C-Sens. 4' signal 2
21	X		'C-Sens. 4' signal 1
22	X		Pressure switch signal
23		X	**NOTE!** Switch the valve via a relay, as the current input of the valve is at least 500 mA. Change torch neck valve 1
24		X	Reserve relay OUT
25	X		'C-Sens. 5' signal 2
26		X	Clamp gas nozzle / motor on / start cleaning
27	X		Gas nozzle free / 'TC Ready'
28	X		Gas nozzle clamped / motor lowered
29	X		Motor turning
30		X	Spray in parting agent
31	X		Fill level of parting agent
32		X	Lifting device up
33	X		Lifting device lowered / 'Cleaning Error'
34	X		Lifting device raised
35		X	Wire cutter
36	X		Wire cutter closed
37	X		Wire cutter open

Assignment of connection to external power supply

CAUTION! Risk of damage to connection supply due to overcurrent. Secure supply against overcurrent with a 1.5 A slow-blow fuse.

NOTE! To avoid faults, keep the cable between the torch neck changeover station and the robot control as short as possible.



1	+ 24 V
2	GND
3	-
4	-
5	-

Signal descriptions

Pin	Signal designation	Signal description
3	Torch neck sensor 1	The respective torch neck is deposited in the corresponding torch neck rack
4	Torch neck sensor 2	
5	Torch neck sensor 3	
6	Torch neck sensor 4	
7	Torch neck sensor 5	
8	Torch neck sensor 6	
9	Torch neck sensor 7	
10	Torch neck sensor 8	
11	Torch neck sensor 9	
12	Torch neck sensor 10	
13	Robacta TX sensor 1 cover	Signal only available as an option. - Robacta TX cover 1 is open
14	Robacta TX sensor 2 cover	Signal only available as an option. - Robacta TX cover 2 is open
15	Robacta TX valve 1 cover	Signal only available as an option. - opens and closes a Robacta TX cover
16	Robacta TX valve 2 cover	Signal only available as an option. - opens and closes a Robacta TX cover
17	'C-Act. 3' signal 1	Reserve signal for actuator
18	Robacta TX chute sensor	Signal only available as an option. - Torch neck has been deposited in the Robacta TX chute
19	Wire sensor signal	Verification whether the wire electrode protrudes from the torch neck after a successful change of the torch neck.
20	'C-Sens. 4' signal 2	Reserve signal for sensor
21	'C-Sens. 4' signal 1	Reserve signal for sensor
22	Pressure switch signal	Compressed air supply to torch neck changeover station is ok. The signal is output within a range of 5.50 - 7.00 bar (79.77 - 101.53 psi).

Pin	Signal designation	Signal description
23	Change torch neck valve 1	**NOTE!** Switch the valve via a relay, as the current input of the valve is at least 500 mA. Activates the torch neck change
24	Reserve relay OUT	Reserve signal for actuator (relay contact)
25	'C-Sens. 5' signal 1	Reserve signal for sensor
26	Clamp gas nozzle / motor on / start cleaning	Signal only available as an option. Activates the gas nozzle clamping device, the motor cleaning cutter/brush head, the cleaning process (Robacta TC devices)
27	Gas nozzle free / 'TC Ready'	Signal only available as an option. "Gas nozzle free" signal for Robacta Reamer V only: - gas nozzle clamping device on welding torch cleaning device is not holding a gas nozzle 'TC Ready' signal for Robacta TC devices only: - welding torch cleaning device is ready
28	Gas nozzle clamped / motor lowered	Signal only available as an option. "Gas nozzle clamped" signal for Robacta Reamer devices only (except for Robacta Reamer aluminium brush head): - A gas nozzle is being held by the gas nozzle clamping device on the welding torch cleaning device "Motor lowered" signal for Robacta Reamer aluminium brush head only: - Brush head motor is lowered
29	Motor turning	Signal only available as an option. "Motor turning" signal for Robacta Reamer V only: - Cleaning cutter motor turning and emitting constant pulses
30	Spray in parting agent	Signal only available as an option. "Spray in parting agent" signal for Robacta Reamer V only: - activates the spraying in of the parting agent
31	Fill level of parting agent	Signal only available as an option. "Fill level of parting agent" signal for Robacta Reamer V only: - Parting agent is in the parting agent container

Pin	Signal designation	Signal description
32	Lifting device up	Signal only available as an option. "Lifting device up" signal for Robacta Reamer V only: - activates the upward movement of the lifting device
33	Lifting device lowered / 'Cleaning Error'	Signal only available as an option. "Lifting device lowered" signal for Robacta Reamer V and Robacta Reamer aluminium brush head only: - Gas nozzle cutter motor is lowered / brush head motor is lowered 'Cleaning Error' signal for Robacta TC devices only: - Error during cleaning
34	Lifting device raised	Signal only available as an option. "Lifting device raised" signal for Robacta Reamer V only: - Lifting device is raised
35	Wire cutter	Signal only available as an option. - activates the wire cutter
36	Wire cutter closed	Signal only available as an option. - Wire cutter is closed
37	Wire cutter open	Signal only available as an option. - Wire cutter is open

Installation and commissioning

Safety

Safety

NOTE! Observe the following safety instructions for all work described in the "Installation and start-up" section.

WARNING! Work that is carried out incorrectly can cause serious injury or damage. The activities described below must only be carried out by trained and qualified personnel. Do not carry out the activities described below until you have fully read and understood the following documents:
- these operating instructions
- all the operating instructions for the system components, especially the safety rules

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

WARNING! Work that is carried out incorrectly can cause serious injury or damage. Before starting work:
- turn the power source mains switch to the "O" position
- disconnect the power source from the mains
- put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again

CAUTION! Risk of injury from sharp flying parts. During the work described below, always wear the following protective equipment:
- Protective goggles with side protection
- Gloves - electrically insulated and providing protection against heat

Before installation and commissioning

Proper use

The device is intended solely for changing gas-cooled Fronius torch necks.

The device is intended solely for use in conjunction with Fronius system components.

Any use above and beyond this purpose is deemed improper. The manufacturer is not liable for any damage, unexpected or incorrect results arising out of such misuse.

Proper use also includes:
- carefully reading and obeying all operating instructions and safety and danger notices
- performing all stipulated inspection and servicing work

The device is designed for use in industry and the workshop. The manufacturer accepts no responsibility for any damage caused through use in a domestic setting.

Operators, maintenance personnel

NOTE! The device must only be used by 1 person at a time. It is also necessary to ensure that no-one else is within the working area of the device when the device is being used.

NOTE! The device must only be serviced by 1 person at a time. It is also necessary to ensure that no-one else is within the working area of the device when the device is being worked on.

Setup regulations

WARNING! If one of these devices falls or topples over, it could cause serious or even fatal injury. Bolt the device to a solid and level surface.

NOTE! The torch neck changeover station must be incorporated into a higher-level safety system within a secured area.

If this area has to be accessed when setup and maintenance work is carried out, make sure that
- the entire system is switched off for the duration of the work in this area
- and that it is prevented from starting up accidentally, e.g. as the result of a control fault

The device is tested to IP 20, meaning:
- protection against penetration by solid foreign bodies with diameters > 12.5 mm (0.49 in.)

Dust
Make sure that metallic dust cannot accumulate directly on the device (from grinding work, for example).

Outdoor operation
The device must not be set up and operated outdoors. The device does not offer protection against penetrating water and is only intended for indoor use.

Compressed air supply requirements

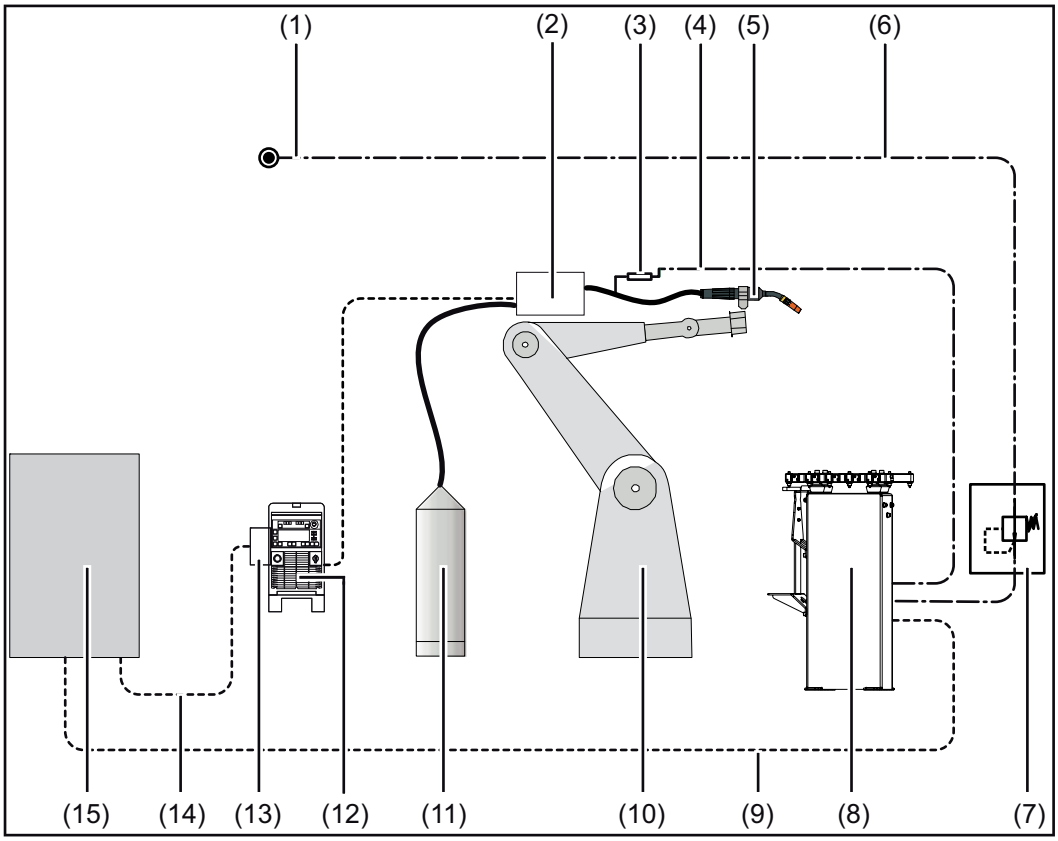
Compressed air supply requirements

To ensure that the torch neck changeover system functions correctly, the following compressed air supply specifications must be met:

- Compressed air is free of oil
- Compressed air is free of dust - no dirt larger than 5 µm
- Compressed air is free of water
- Compressed air supply at 5.50 - 7.00 bar (79.77 - 101.53 psi)
- Minimum inner diameter of compressed air lines 5.5 mm (0.22 in.)

Application example

Application example



NOTE! Irrespective of the overall welding system setup
- adhere to the compressed air specifications
- provide the compressed air supply to the torch neck changeover station as shown

(1)	Compressed air supply line 5.50 - 7.00 bar (79.77 - 101.53 psi)	(9)	Data cable
(2)	Wire-feed unit	(10)	Robot
(3)	Reduction	(11)	Drum coil
(4)	Compressed air supply line from torch neck changeover station to torch neck coupling on the robot 5.50 - 7.00 bar (79.77 - 101.53 psi)	(12)	Power source
(5)	Hosepack with torch neck coupling and Robacta TX torch neck	(13)	Power source interface
(6)	Compressed air supply line for torch neck changeover station 5.50 - 7.00 bar (79.77 - 101.53 psi)	(14)	Data cable
(7)	Compressed air maintenance unit with filter	(15)	Robot control
(8)	Torch neck changeover station with interface		

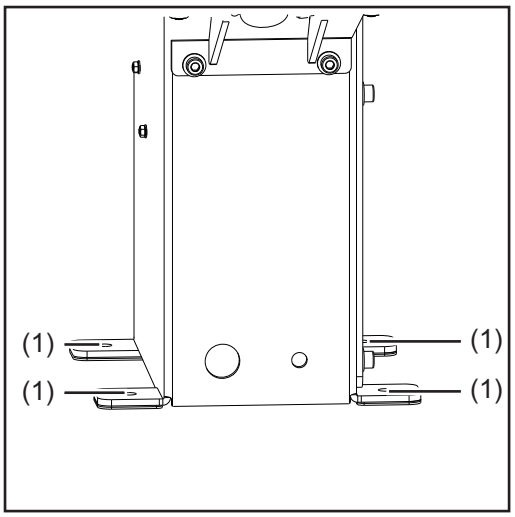
Bolt torch neck changeover station to the underlying surface (foundation)

Safety

WARNING! Risk of severe injury from mechanically powered parts. The torch neck changeover station must remain depressurised and de-energised until installation has been completed.

Bolt torch neck changeover station to the underlying surface (foundation)

NOTE! Depending on the underlying surface (foundation), different wall plugs and screws are needed to bolt down the torch neck changeover station. Wall plugs and screws are therefore not included in the scope of supply of the torch neck changeover station. The installer is responsible for selecting the right wall plugs and screws.



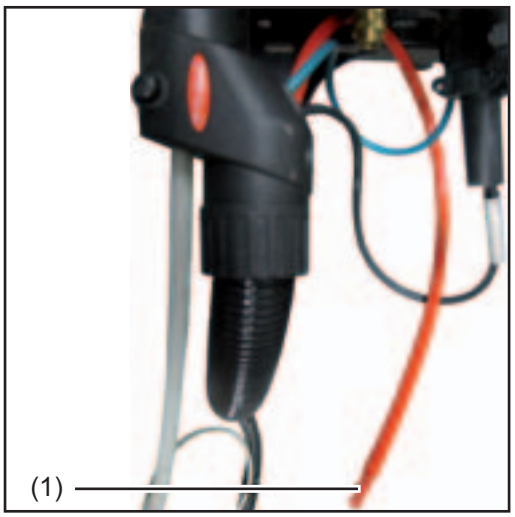
1. Set up torch neck changeover station in a suitable location
2. If necessary, align the torch neck changeover station horizontally and vertically using adjustment plates
3. Bolt the torch neck changeover station bases (1) to the underlying surface (foundation) using four screws
4. Once bolted down, check whether the torch neck changeover station is horizontally and vertically aligned with the underlying surface

Installing the torch neck changeover station

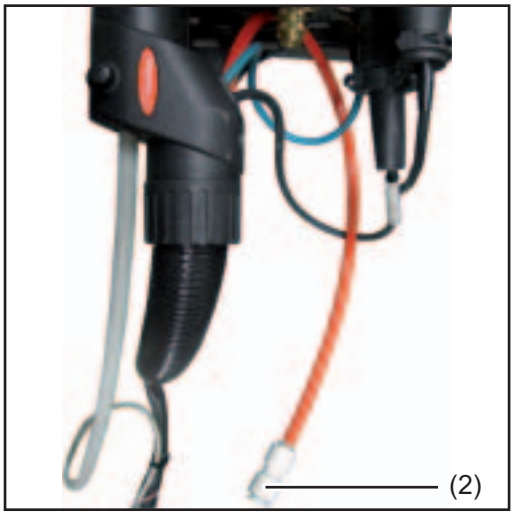
Safety

WARNING! Risk of severe injury from mechanically powered parts. The torch neck changeover station must remain depressurised and de-energised until installation has been completed.

Installing the torch neck changeover station

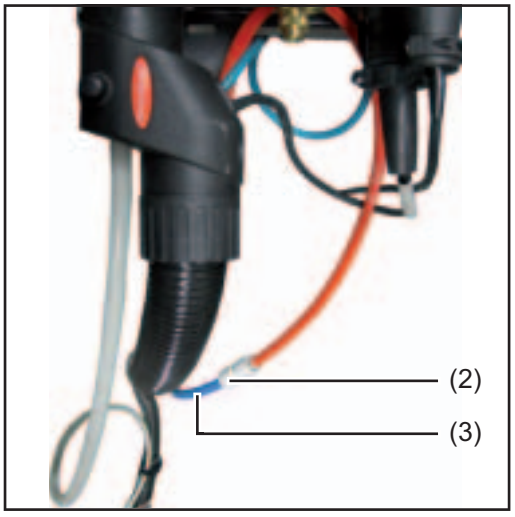


1 Remove blanking plug (1) from the blow-out line of the hosepack being used



2 Insert supplied reduction onto the blow-out line

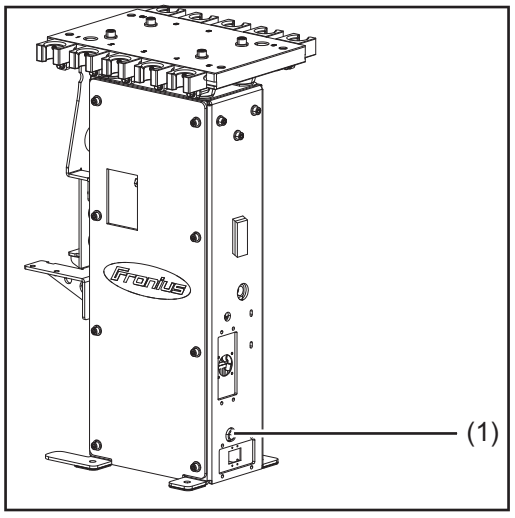
WARNING! Risk of severe injury from ejected torch necks. If the hosepack blow-out line is connected incorrectly, the torch neck can loosen from the torch neck coupling without control during blow-out under high pressure. Only connect the hosepack blow-out line to the torch neck changeover station as described below.



3 Insert compressed air line (3) into compressed air connection "A" on the torch neck changeover station and into the reduction (2)

Establish compressed air supply to the torch neck changeover station

NOTE! When using the maintenance unit option, establish the compressed air supply as per the "Options Robacta TX" fitting instructions, "Maintenance unit" section.



1 Screw a compressed air connection which is suitable for the compressed air line into the compressed air connection "B" (1) on the torch neck changeover station
- Seal the compressed air connection using thread sealant

2 Depressurise the compressed air line and make sure that this compressed air line remains depressurised for the duration of the work on the device

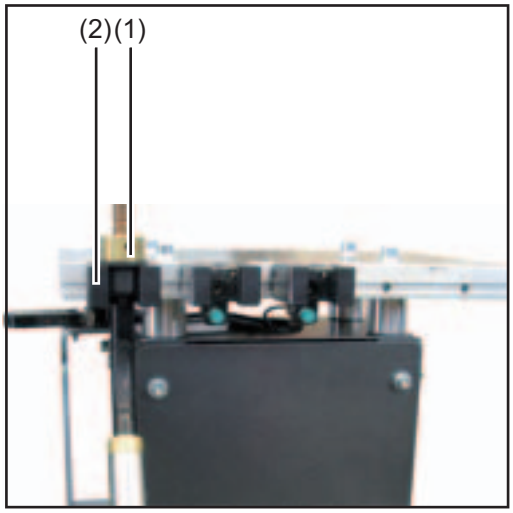
3 Connect compressed air line to compressed air connection "B" (1) on the torch neck changeover station

Checking the torch neck sensor, setting the wire sensor

Safety

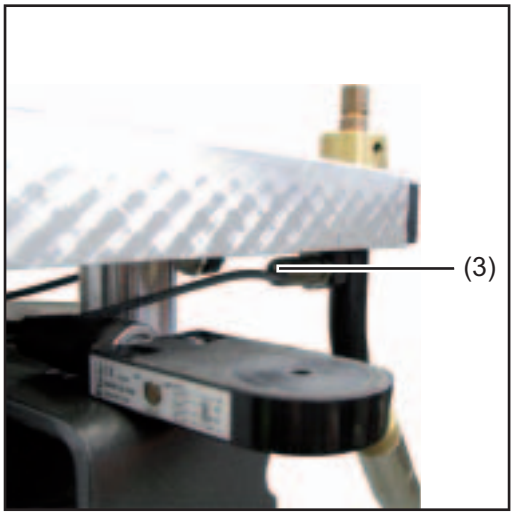
WARNING! Risk of severe injury from mechanically powered parts. The torch neck changeover station must remain depressurised until installation has been completed.

Checking the torch neck sensor



1 Establish a connection with the robot control. Depending on the system configuration:
- using the standard I/O connecting plug for the robot control
- or using a field bus coupler (see "Profinet Robacta TX" operating instructions)

2 Insert torch neck (1) as far as it will go into the torch neck rack (2)

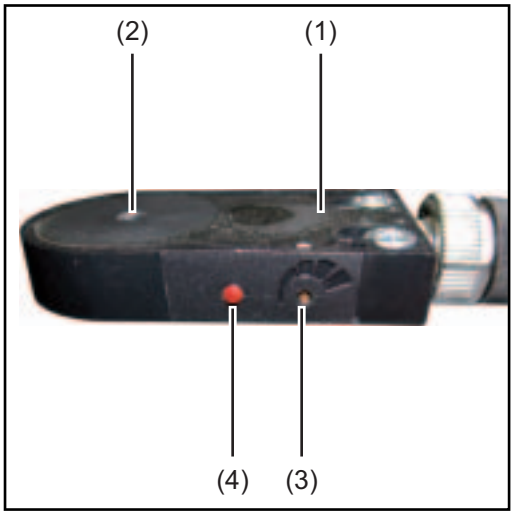


- LED (3) comes on
- A signal is sent to the robot control

If the above points do not apply:

3 Check whether the torch neck sensor is connected to the PC board

Setting the wire sensor



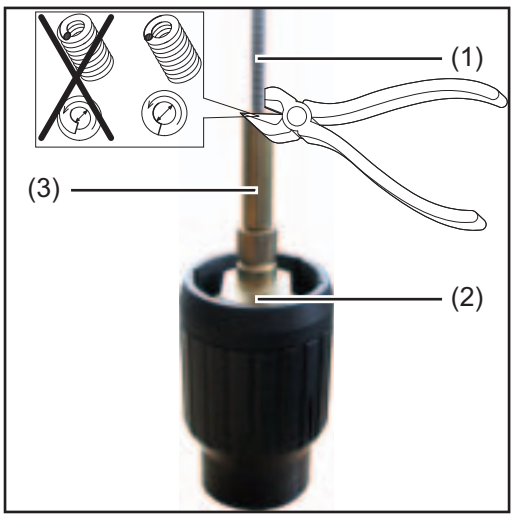
1 Rotate the wire electrode in the opening (2) of the wire sensor (1) during the entire setting process
- LED (4) comes on if the wire sensor (1) detects the wire electrode

2 Turn the adjusting screw (3) in the reverse direction until the LED (4) goes off
- Wire sensor is deactivated

3 Only turn the adjusting screw (3) until the LED (4) comes on again
- Wire sensor (1) is now set at the lowest sensitivity level
- This prevents the wire sensor from being triggered accidentally

Preparing the torch neck coupling for Robacta Drive CMT hosepacks with steel inner liners

Preparing the torch neck coupling for Robacta Drive CMT hosepacks

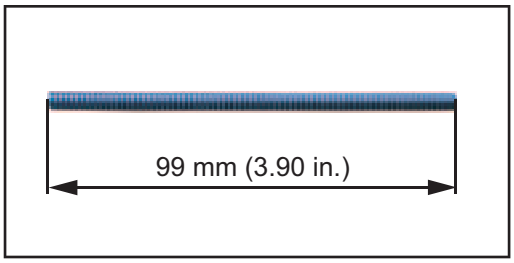


1 Insert the inner liner from the original equipment kit of the hosepack being used (1) as far as it will go into the torch neck coupling (2)

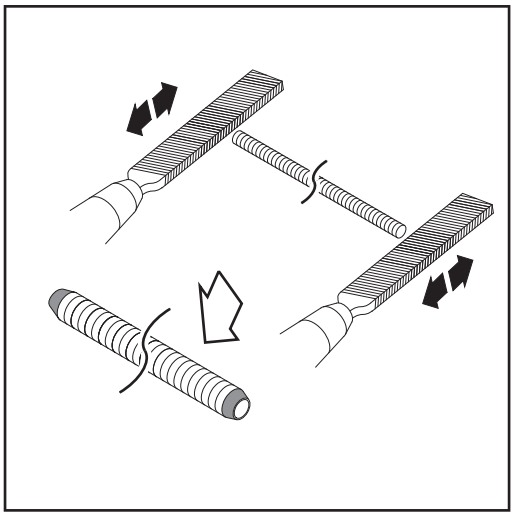
2 Insert cutting pipe (3) of the hosepack being used onto the inner liner
- Item number of the cutting pipe: 42,0001,5910

3 Cut off the inner liner (1) at the end of the cutting pipe (3) using cutting pliers

4 Remove cutting pipe

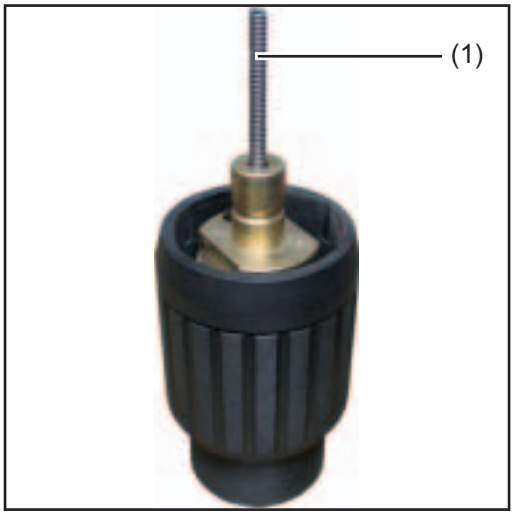


- Once cut, the inner liner must be 99 mm (3.90 in.) long



5 Remove inner liner from the torch neck coupling

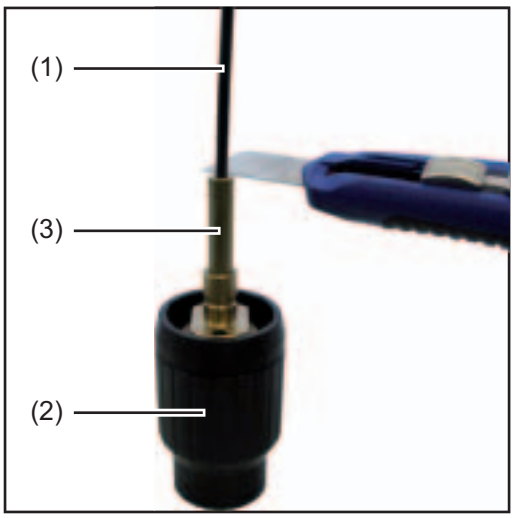
6 Deburr the inner liner at both ends



7 Insert deburred inner liner (1) into the torch neck coupling

Preparing the torch neck coupling for Robacta Drive CMT hosepacks with plastic inner liners

Preparing the torch neck coupling for Robacta Drive CMT hosepacks

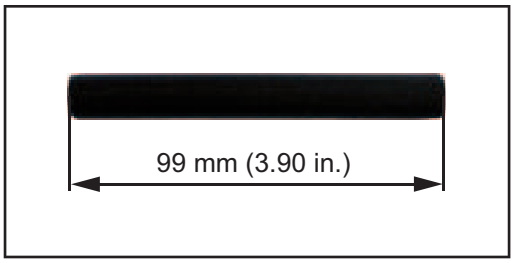


1 Insert the inner liner from the original equipment kit of the hosepack being used (1) as far as it will go into the torch neck coupling (2)

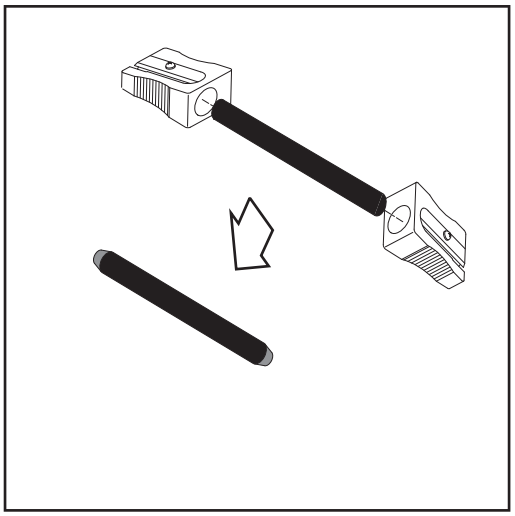
2 Insert cutting pipe (3) of the hosepack being used onto the inner liner
- Item number of the cutting pipe: 42,0001,5910

3 Cut off the inner liner (1) at the end of the cutting pipe (3) using a knife

4 Remove cutting pipe

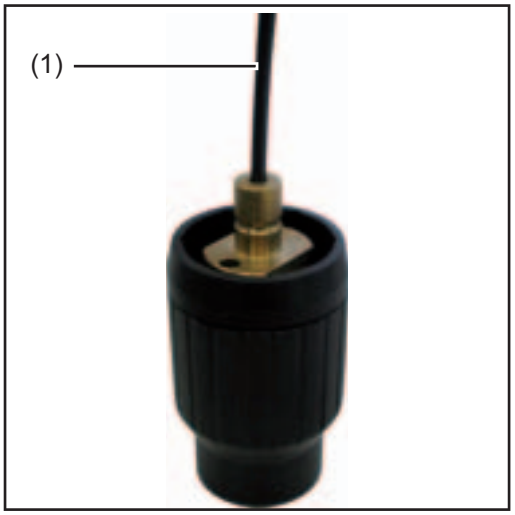


- Once cut, the inner liner must be 99 mm (3.90 in.) long



5 Remove inner liner from the torch neck coupling

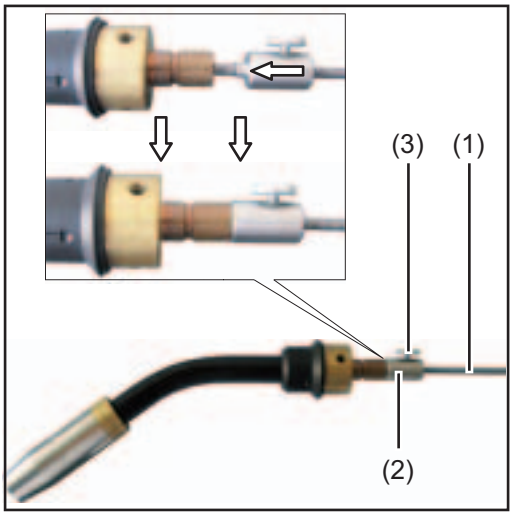
6 Deburr the inner liner at both ends



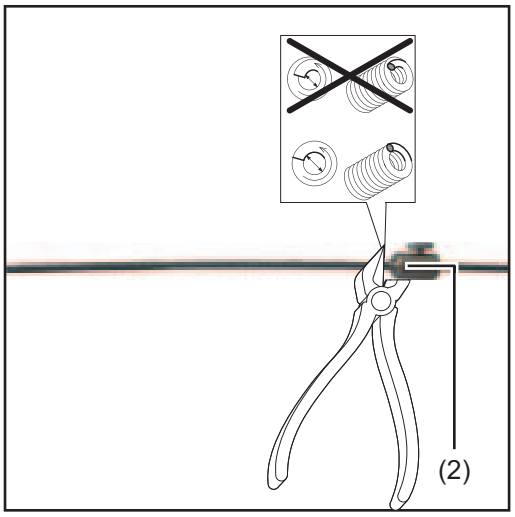
7 Insert deburred inner liner (1) into the torch neck coupling

Preparing torch neck with steel inner liner

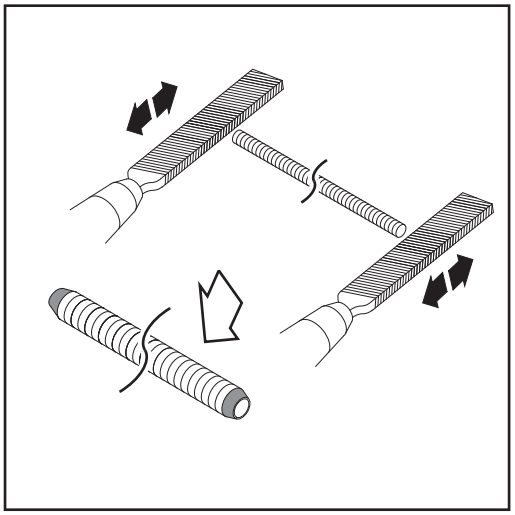
Preparing the torch neck



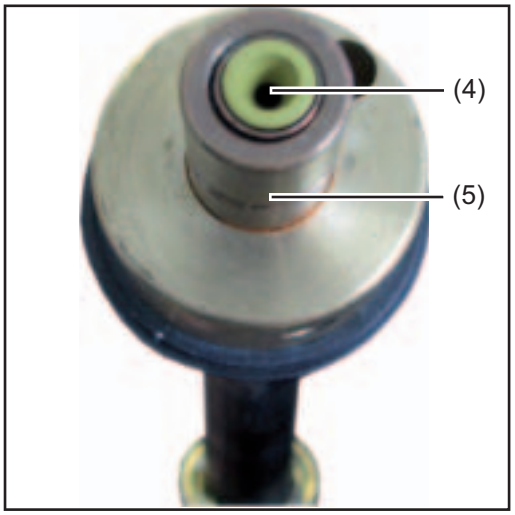
1. Insert the inner liner from the original equipment kit of the hosepack being used (1) as far as it will go into the torch neck
2. Push the cutting aid (2) on as far as it will go onto the inner liner
3. Tighten the locking screw (3) of the cutting aid
4. Pull the inner liner (1) and cutting aid (2) out of the torch neck
   - do not change the position of the cutting aid on the inner liner



5. Cut off the inner liner at the end of the cutting aid (2) using cutting pliers

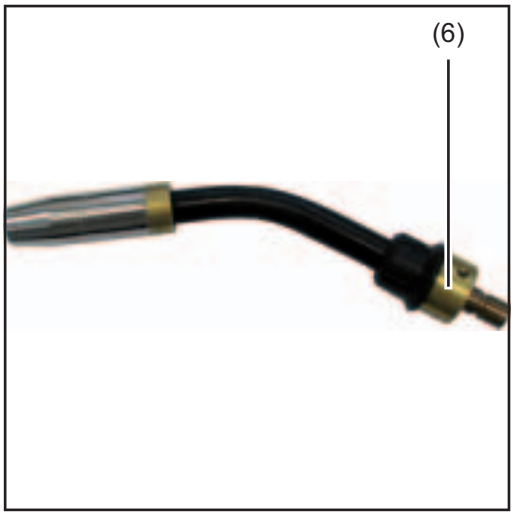


6. Deburr the inner liner at both ends



7 Insert the inner liner into the torch neck

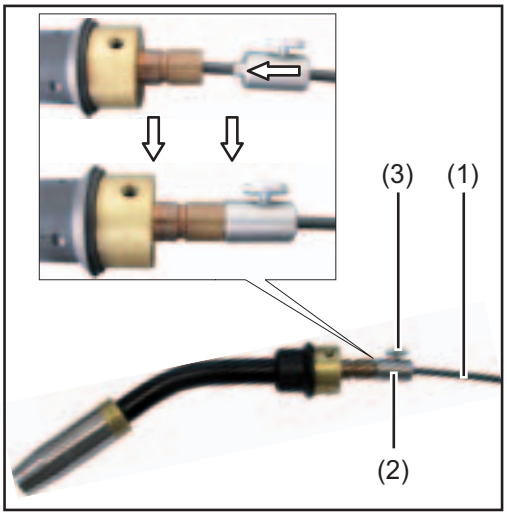
8 Insert the TX inlet/outlet nozzle (4) fully into the torch neck (5)
- Press down the TX inlet/outlet nozzle until you hear a click



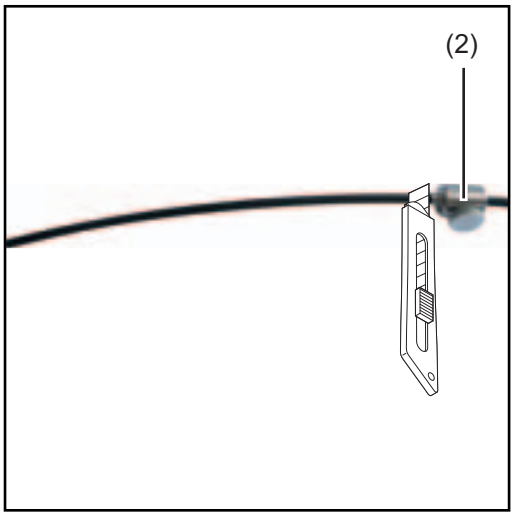
9 Coat the bearing surface (6) on the torch neck with grease
- Item number 400 ml grease cartridge = 40,0009,0151

Preparing the torch neck with plastic inner liner

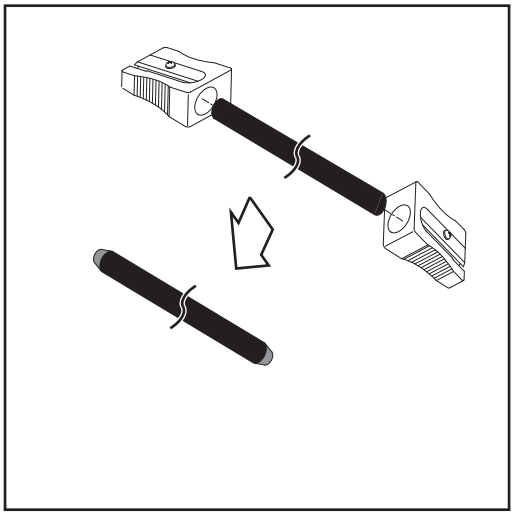
Preparing the torch neck



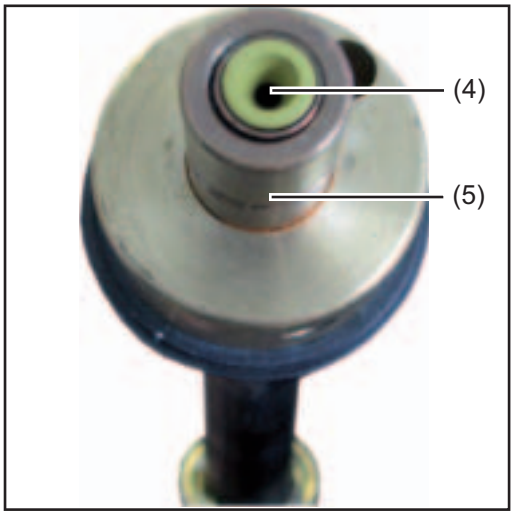
1. Insert the inner liner from the original equipment kit of the hosepack being used (1) as far as it will go into the torch neck
2. Push the cutting aid (2) on as far as it will go onto the inner liner
3. Tighten the locking screw (3) of the cutting aid
4. Pull the inner liner (1) and cutting aid (2) out of the torch neck
   - do not change the position of the cutting aid on the inner liner



5. Cut off the inner liner at the end of the cutting aid (2) using a knife

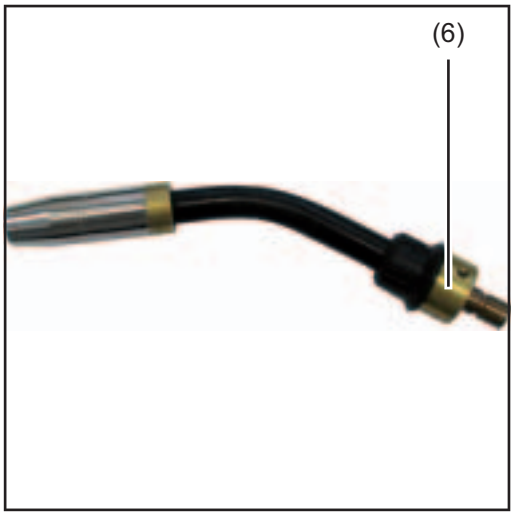


6. Deburr the inner liner at both ends



7 Insert the inner liner into the torch neck

8 Insert the TX inlet/outlet nozzle (4) fully into the torch neck (5)
- Press down the TX inlet/outlet nozzle until you hear a click



9 Coat the bearing surface (6) on the torch neck with grease
- Item number 400 ml grease cartridge = 40,0009,0151

Preparing the inner liner for Robacta hosepacks

Safety

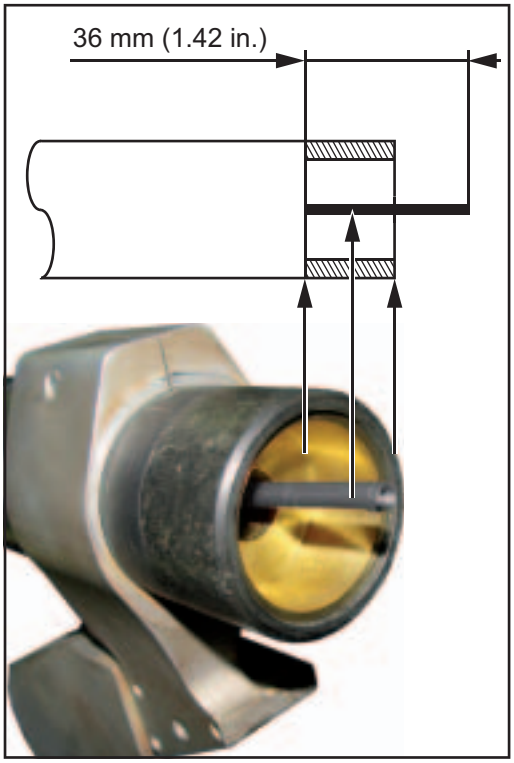
WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

CAUTION! Risk of burns from hot torch neck, hot torch neck coupling and other hot welding torch components. Before carrying out work, allow the torch neck, torch neck coupling and all other welding torch components to cool down to room temperature (+25 °C, +77 °F).

CAUTION! Risk of injury from compressed air escaping unintentionally. The torch neck changeover station must remain depressurised until all work is completed.

Preparing the inner liner for Robacta hosepacks

NOTE! More detailed information about fitting the inner liner can be found in the Robacta hosepack operating instructions.



1. Fit the inner liner as described in the Robacta hosepack operating instructions, but do not cut it yet
2. Cut the inner liner as shown
   - follow the instructions for cutting the inner liner as described in the Robacta hosepack operating instructions
3. Deburr inner liner
   - follow the instructions for deburring the inner liner as described in the Robacta hosepack operating instructions

Preparing the power source

Preparing the power source

1 On the power source being used, create a new job for moving the wire electrode forwards and backwards
- Wire threading speed: 600 cm/min (236.22 ipm)

2 Set filter time for flow watchdog to 25 seconds using RCU 5000 i

Fitting the torch neck coupling

Safety

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

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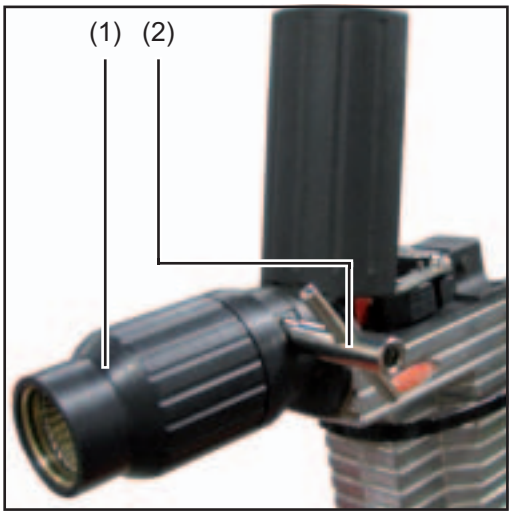
CAUTION! Risk of injury from compressed air escaping unintentionally. The torch neck changeover station must remain depressurised until all work is completed.

Fitting the torch neck coupling

NOTE! When fitting the torch neck coupling, the TCP moves by 66 mm (2.60 in.).



For Robacta Drive and Robacta Drive CMT drive units:

1. Fit torch neck coupling (1) and inner liner onto the drive unit as shown
2. Tighten torch neck coupling (1) using fitting wrench (2)
   - Tightening torque = ca. 5 Nm

For Robacta Drive hosepacks:

1. Fit torch neck coupling (1) without inner liner onto the hosepack as shown
   - The inner liner must have already been properly prepared in the hosepack before the torch neck coupling can be fitted onto the hosepack
2. Tighten torch neck coupling (1) using fitting wrench (2)
   - Tightening torque = ca. 5 Nm

Changing the torch neck manually

Safety

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

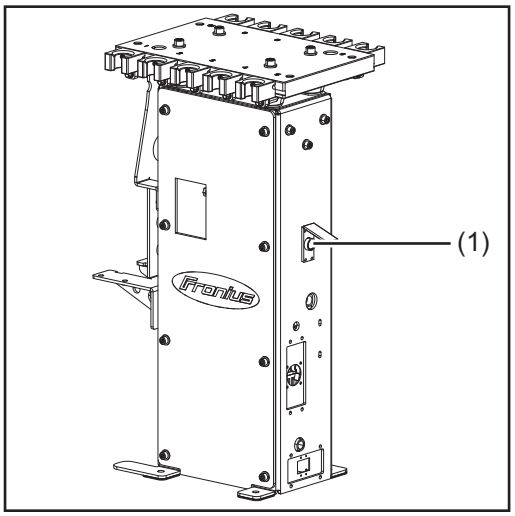
CAUTION! Risk of injury from escaping compressed air and flying parts from the torch neck coupling. When manually changing the torch neck, always wear the following protective equipment:
- Ear protection
- Protective goggles with side protection
- Gloves - electrically insulated and providing protection against heat

CAUTION! Risk of burns from hot torch neck, hot torch neck coupling and other hot welding torch components. Before carrying out work, allow the torch neck, torch neck coupling and all other welding torch components to cool down to room temperature (+25 °C, +77 °F).

Changing the torch neck manually

WARNING! Risk of severe injury from the robot arm and the tip of the robot programming aid. During the course of the whole process:
- carry out all work outside of the robot working area
- make sure that there is no-one else within the robot working area

1 When carrying out the following work, position the robot arm and the torch neck coupling so that
- the Unlock/Lock button on the torch neck changeover station can be pressed with one hand
- the torch neck can be placed onto or removed from the torch neck coupling with the other hand



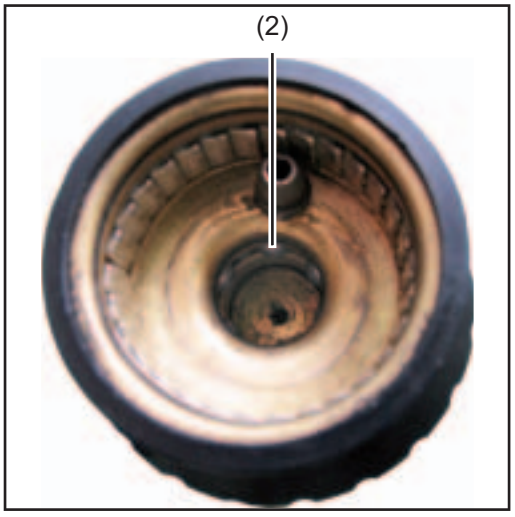
2 Hold the torch neck on the robot arm with one hand

3 Press and hold the Unlock/Lock button (1) on the torch neck changeover station
- Torch neck coupling lock (2) opens

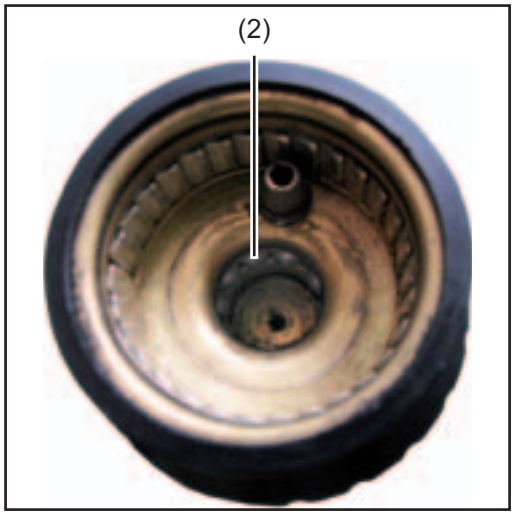
4 Remove torch neck from the torch neck coupling

5 Place torch neck back onto the torch neck coupling, press against the torch neck coupling and hold in this position

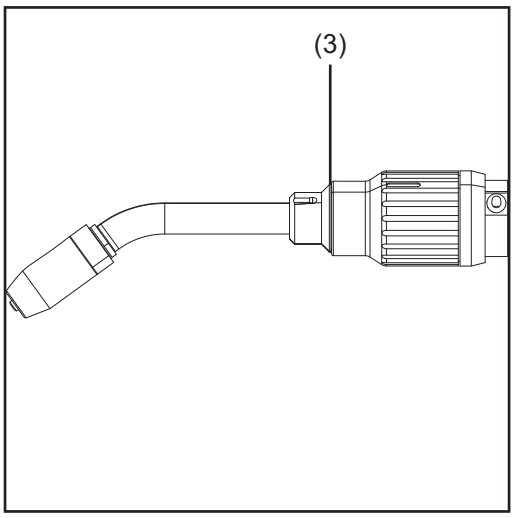
6 Release the Unlock/Lock button on the torch neck changeover station
- Lock closes
- Torch neck is fixed after approx. 5 seconds



Torch neck coupling lock - open



Torch neck coupling lock - closed

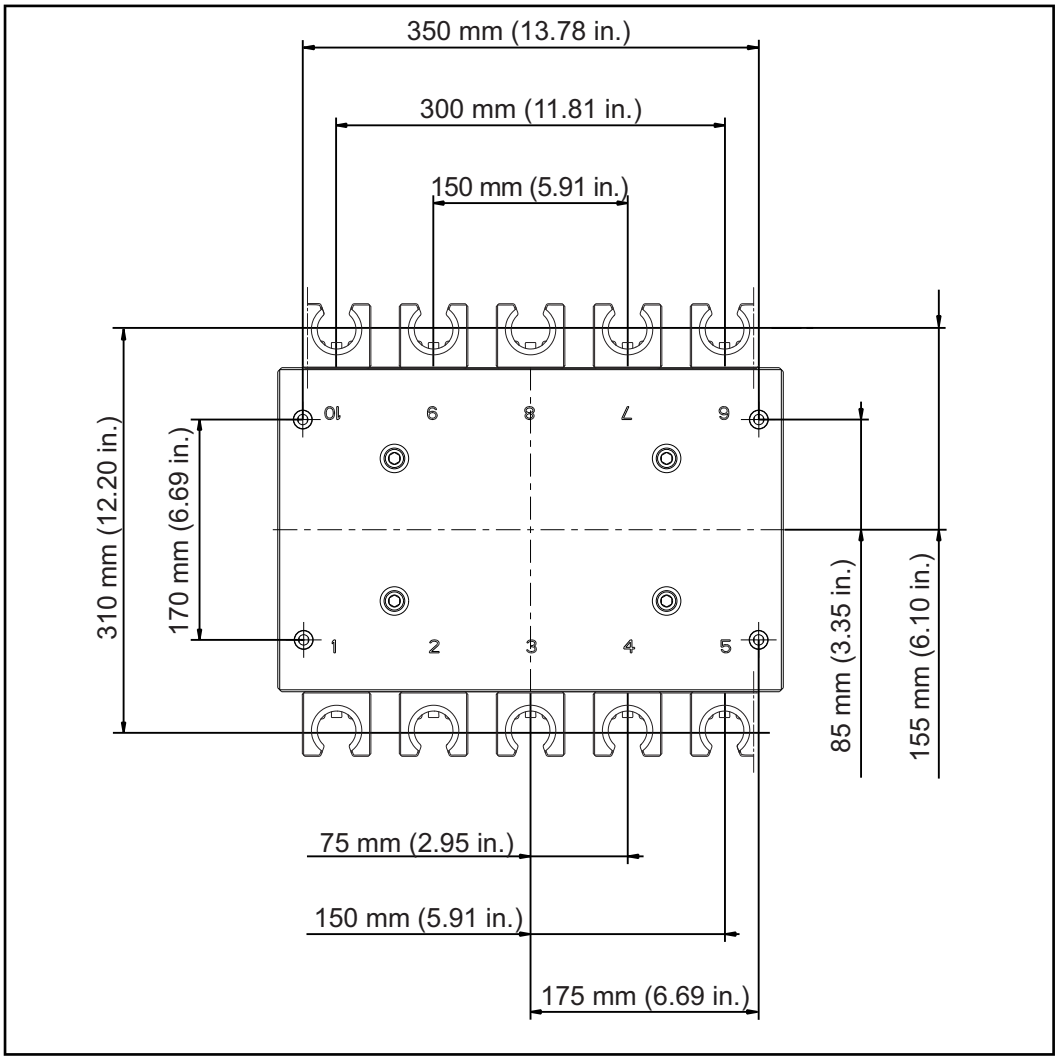


7 Check that the gap (3) between the torch neck and the torch neck coupling is the same around the entire circumference

8 Shake and pull the torch neck with your hand
- if the torch neck does not come off the torch neck coupling, then the connection between the torch neck and the torch neck coupling is ok
- if the torch neck does come off, repeat steps 1 - 8

Setting up the robot

Dimensions of the rack holder including torch neck rack pieces



Safety

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

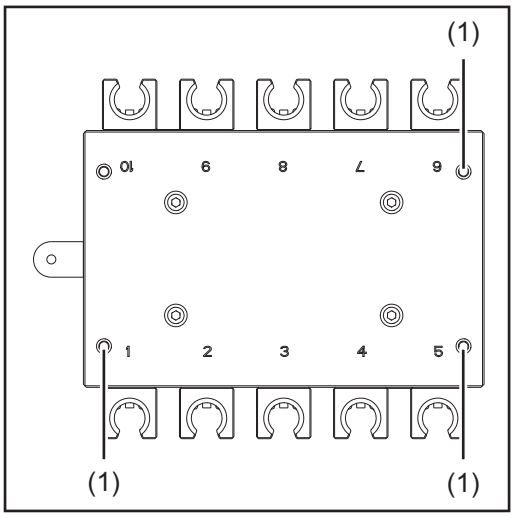
CAUTION! Risk of injury from escaping compressed air and flying parts from the torch neck coupling. During the activities described below, always wear the following protective equipment:

- Ear protection
- Protective goggles with side protection
- Gloves - electrically insulated and providing protection against heat

CAUTION! Risk of burns from hot torch neck, hot torch neck coupling and other hot welding torch components. Before carrying out work, allow the torch neck, torch neck coupling and all other welding torch components to cool down to room temperature (+25 °C, +77 °F).

Determining the TCP of the welding torch, determining the X-axis and Y-axis of the torch neck changeover station

WARNING! Risk of severe injury from protruding TCP tips. During the course of the whole process:
- do not touch the TCP tips
- make sure that no-one else touches the TCP tips

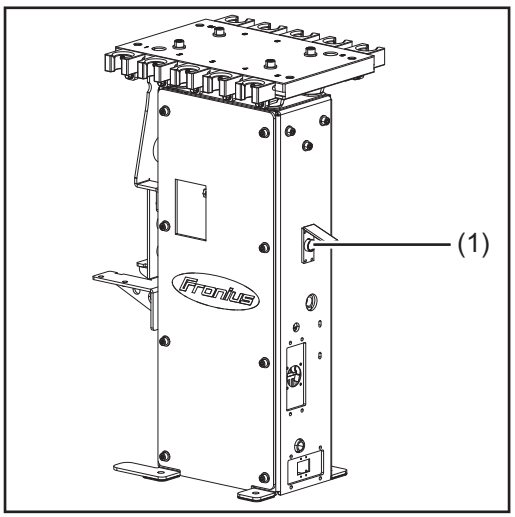


1. Screw 3 TCP tips into the holes (1) of the rack holder
2. Measure TCP of the welding torch being used
3. Determine the X-axis and Y-axis of the torch neck changeover station using the TCP tips and record in the coordinate system of the robot
4. Set up the robot
5. Remove the TCP tips from the rack holder and store in such a way that there is no further risk of injury

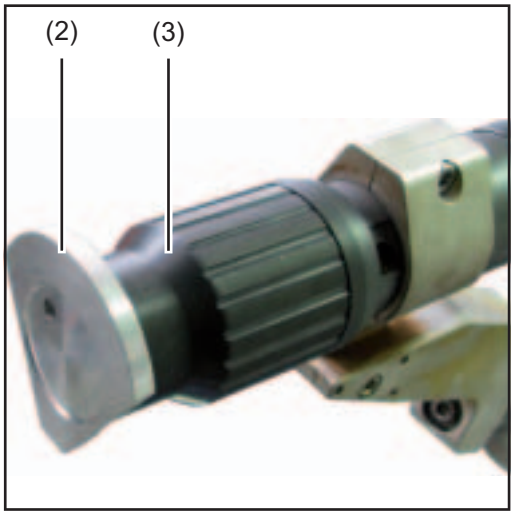
Fitting the robot programming aid

WARNING! Risk of severe injury from the robot arm. During the course of the whole process:
- carry out all work outside of the robot working area
- make sure that there is no-one else within the robot working area

1. When carrying out the following work, position the robot arm and the torch neck coupling so that
   - the Unlock/Lock button on the torch neck changeover station can be pressed with one hand
   - the torch neck can be placed onto or removed from the torch neck coupling with the other hand
2. Hold the torch neck on the robot arm with one hand



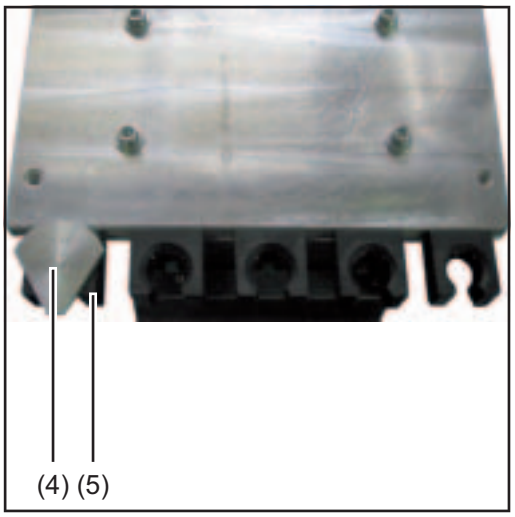
3. Press and hold the Unlock/Lock button (1) on the torch neck changeover station
   - torch neck coupling lock opens
4. Remove torch neck from the torch neck coupling



5 Place the top part of the robot programming aid (2) onto the torch neck coupling (3) and hold

6 Release the Unlock/Lock button on the torch neck changeover station
- torch neck coupling lock closes
- the robot programming aid is fixed after approx. 5 seconds

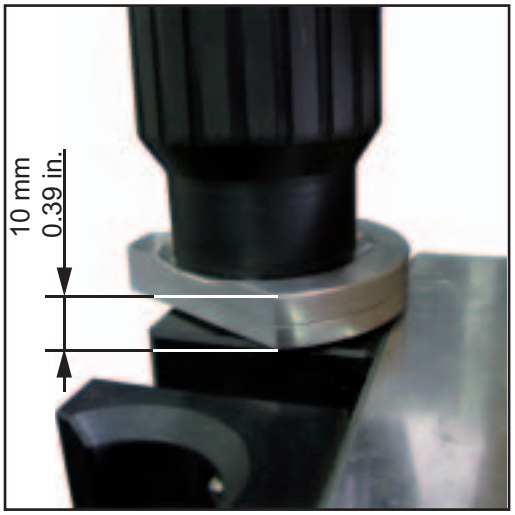
7 Shake and pull the robot programming aid with your hand
- if the robot programming aid does not come off the torch neck coupling, then the connection between the robot programming aid and the torch neck coupling is ok
- if the robot programming aid does come off, repeat steps 1 - 7



8 Insert the bottom part of the robot programming aid (4) into the torch neck rack piece number 1 (5) as shown

Setting up the robot

WARNING! Risk of severe injury from the robot arm. During the course of the whole process:
- carry out all work outside of the robot working area
- make sure that there is no-one else within the robot working area



1 Using the robot, move as close as possible to the robot programming aid in the torch neck changeover station, until both parts of the robot programming aid are lying on top of each other

Check the following:
- both parts of the robot programming aid must be on top of each other around the whole circumference
- the edges of both parts of the robot programming aid must be flush to each other

NOTE! The end position has not been reached yet.

2 In the robot program, program the position that has been arrived at on the Z-axis 10 mm (0.39 in.) lower
- end position reached

3 Save this position for later use as position G in the program sequence
- see "Program sequence" section

4 Create robot program for this torch neck rack position as per the program sequence

5 Carry out steps 1 - 4 for all other torch neck rack positions

Start-up

Prerequisites for start-up

The following prerequisites must be fulfilled for the start-up:

- When using a Robacta Drive or Robacta Drive CMT hosepack, the torch neck coupling has been prepared
- When using a Robacta hosepack, the inner liner has been prepared
- All torch necks have been prepared
- Torch neck changeover station bolted to the underlying surface
- Torch neck changeover station installed
- All torch neck sensors checked, wire sensor set
- Torch neck coupling mounted onto robot
- Torch neck change performed manually
- Robot set up using robot programming aid

Start-up

The torch neck changeover station is started up by an active signal from the robot control.

Program sequence

Program sequence

Speed data for the program sequence

A list of all speeds and corresponding units in the program sequence:

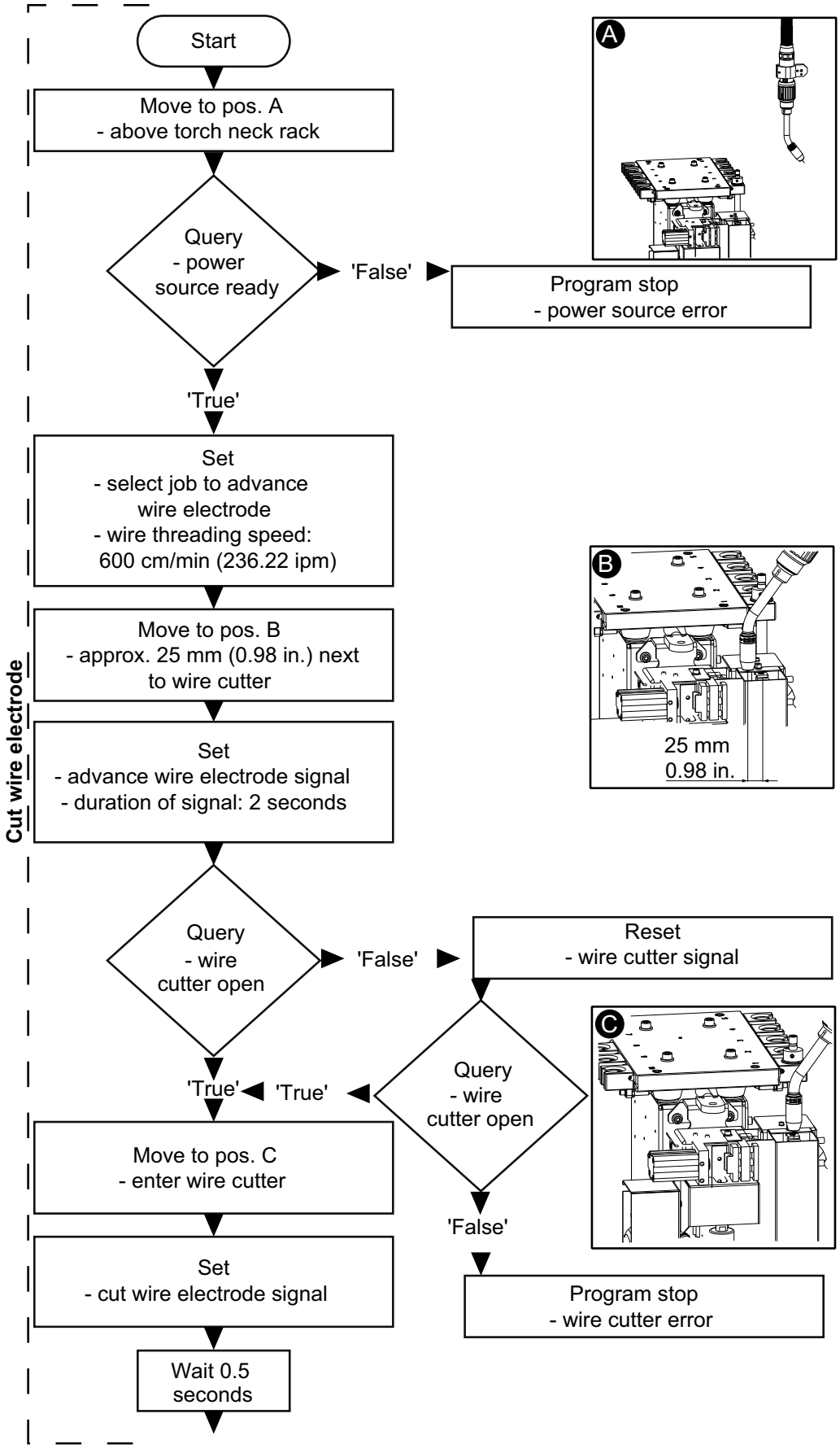
cm/min		m/s		ipm
1000	=	0.17	=	393.70
600	=	0.1	=	236.22
100	=	0.017	=	39.37
70	=	0.012	=	27.56
50	=	0.008	=	19.69
35	=	0.006	=	13.78
30	=	0.005	=	11.81

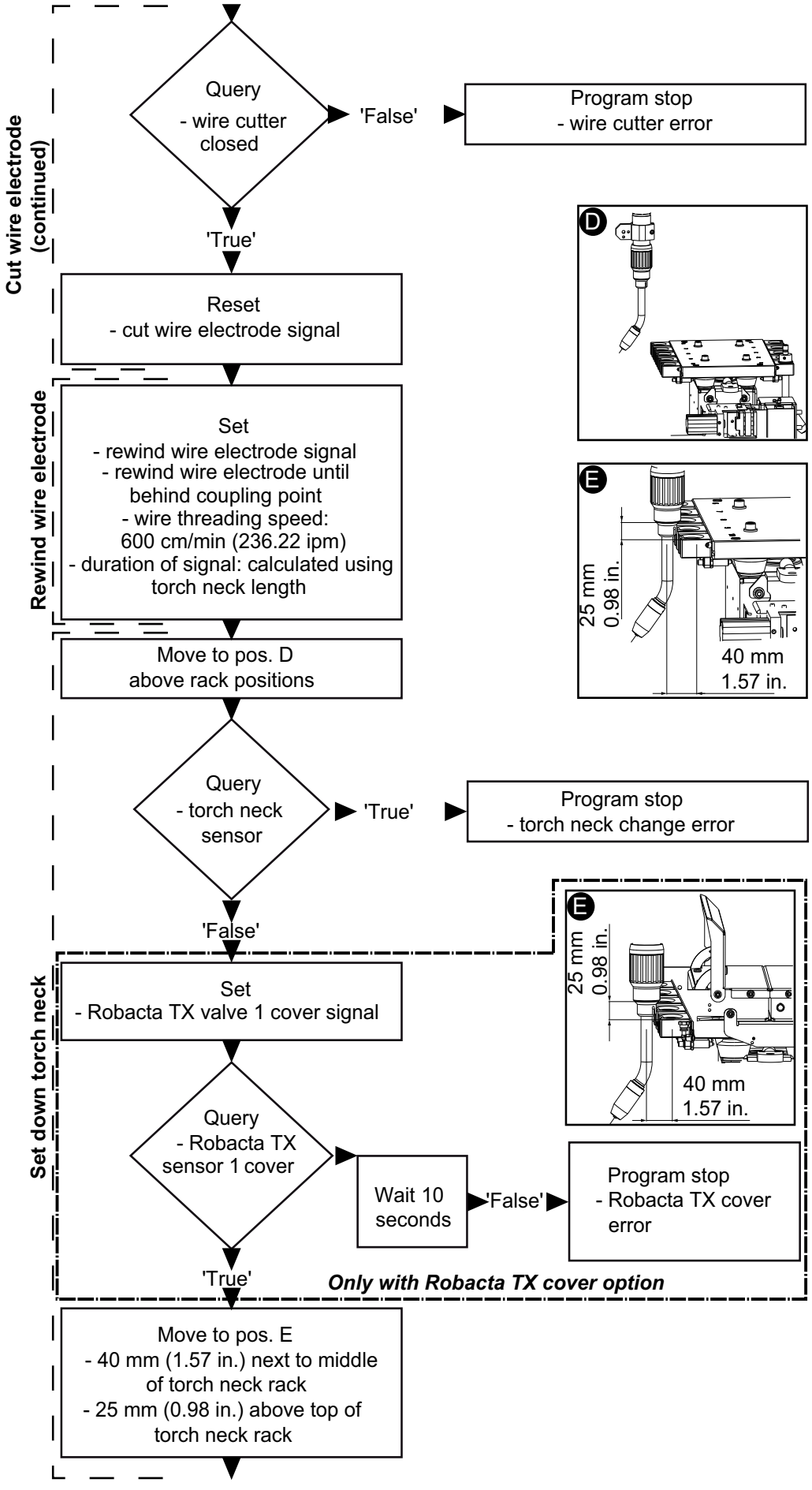
Subprograms in the program sequence

To facilitate programming, the program sequence is split into the following subprograms:

- cut wire electrode
- wind back wire electrode
- set down torch neck
- pick up torch neck
- unwind wire electrode

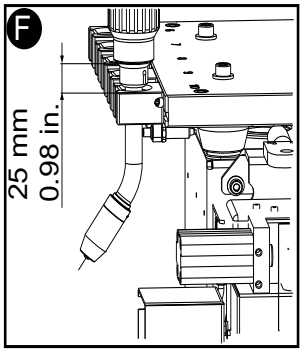
Program sequence




Cut wire electrode (continued)
Query
- wire cutter closed
'False'
Program stop
- wire cutter error
'True'
Reset
- cut wire electrode signal
Rewind wire electrode
Set
- rewind wire electrode signal
- rewind wire electrode until behind coupling point
- wire threading speed: 600 cm/min (236.22 ipm)
- duration of signal: calculated using torch neck length
D
E
25 mm
0.98 in.
40 mm
1.57 in.
Move to pos. D
above rack positions
Query
- torch neck sensor
'True'
Program stop
- torch neck change error
'False'
Set down torch neck
Set
- Robacta TX valve 1 cover signal
Query
- Robacta TX sensor 1 cover
Wait 10 seconds
'False'
Program stop
- Robacta TX cover error
'True'
Only with Robacta TX cover option
Move to pos. E
- 40 mm (1.57 in.) next to middle of torch neck rack
- 25 mm (0.98 in.) above top of torch neck rack

Set down torch neck (continued)

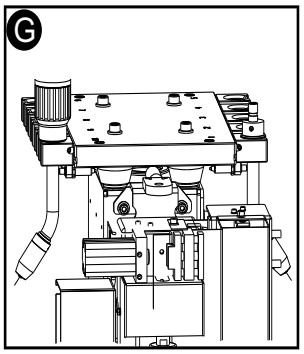
Move to pos. F
- move 25 mm (0.98 in.) above middle of torch neck rack
- speed: max. 100 cm/min (39.37 ipm)



Move to pos. G
- move down into torch neck rack speed: max. 50 cm/min (19.69 ipm)

Query
- pressure switch

'False' ▶ Program stop
- torch neck change error

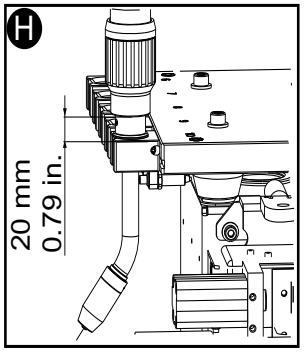


'True'

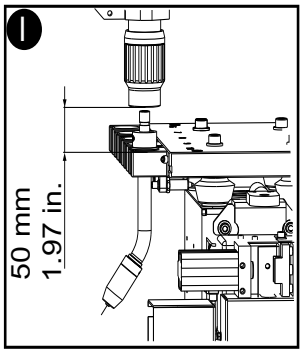
Set
- change torch neck signal

Wait 1.5 seconds

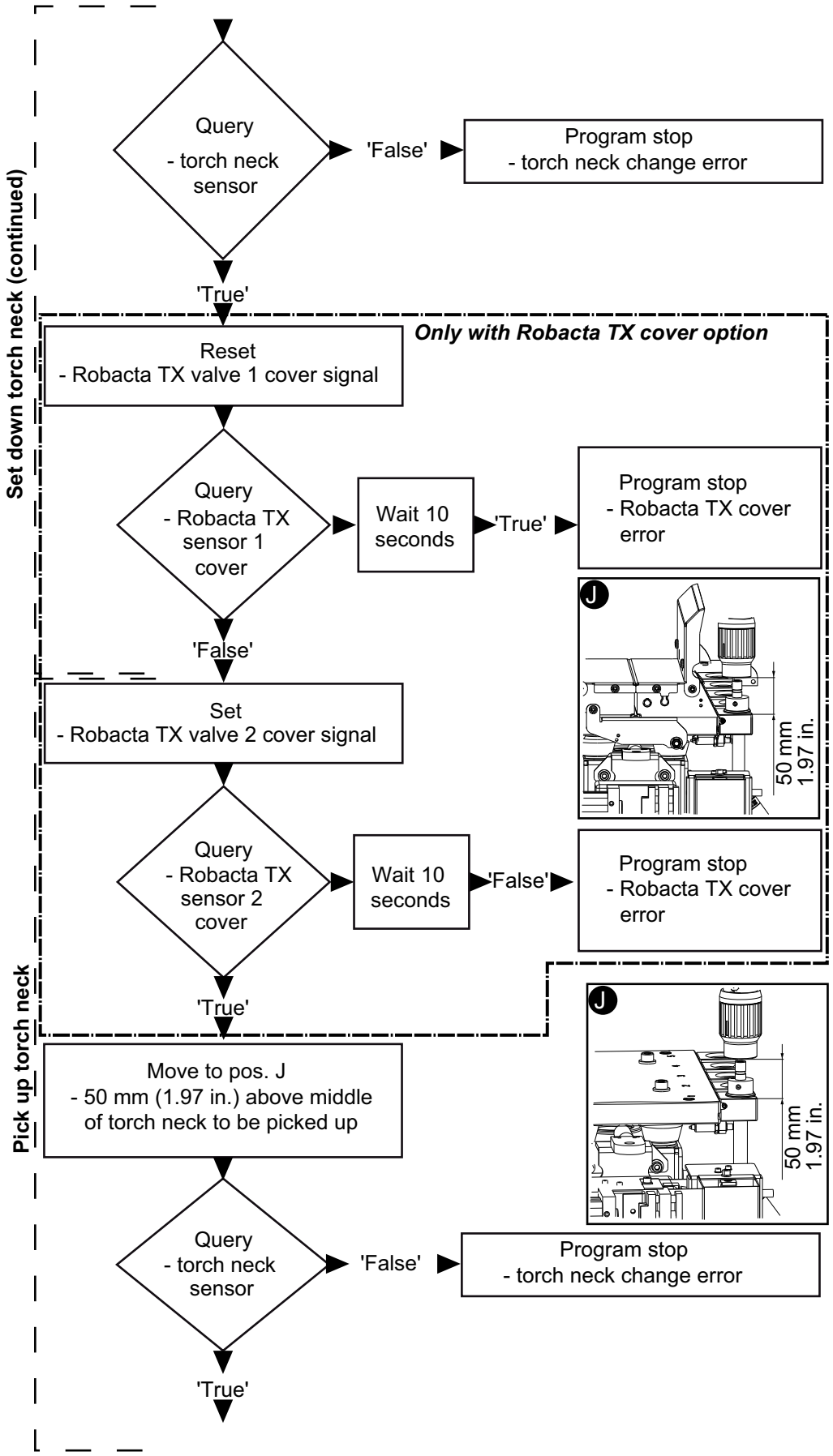
Move to pos. H
- raise 20 mm (0.79 in.) above middle of torch neck rack
- speed: max. 30 cm/min (11.81 ipm)

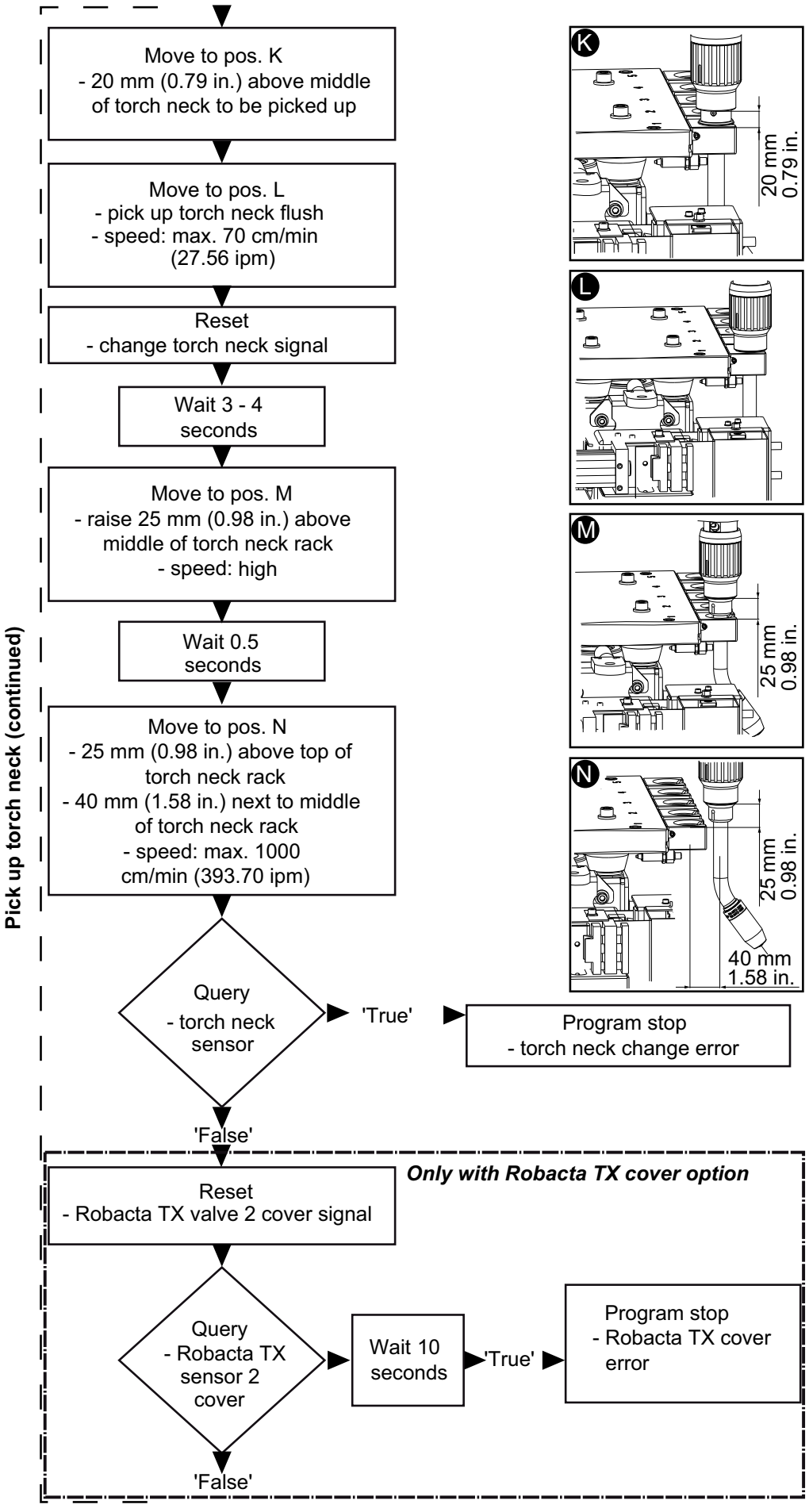


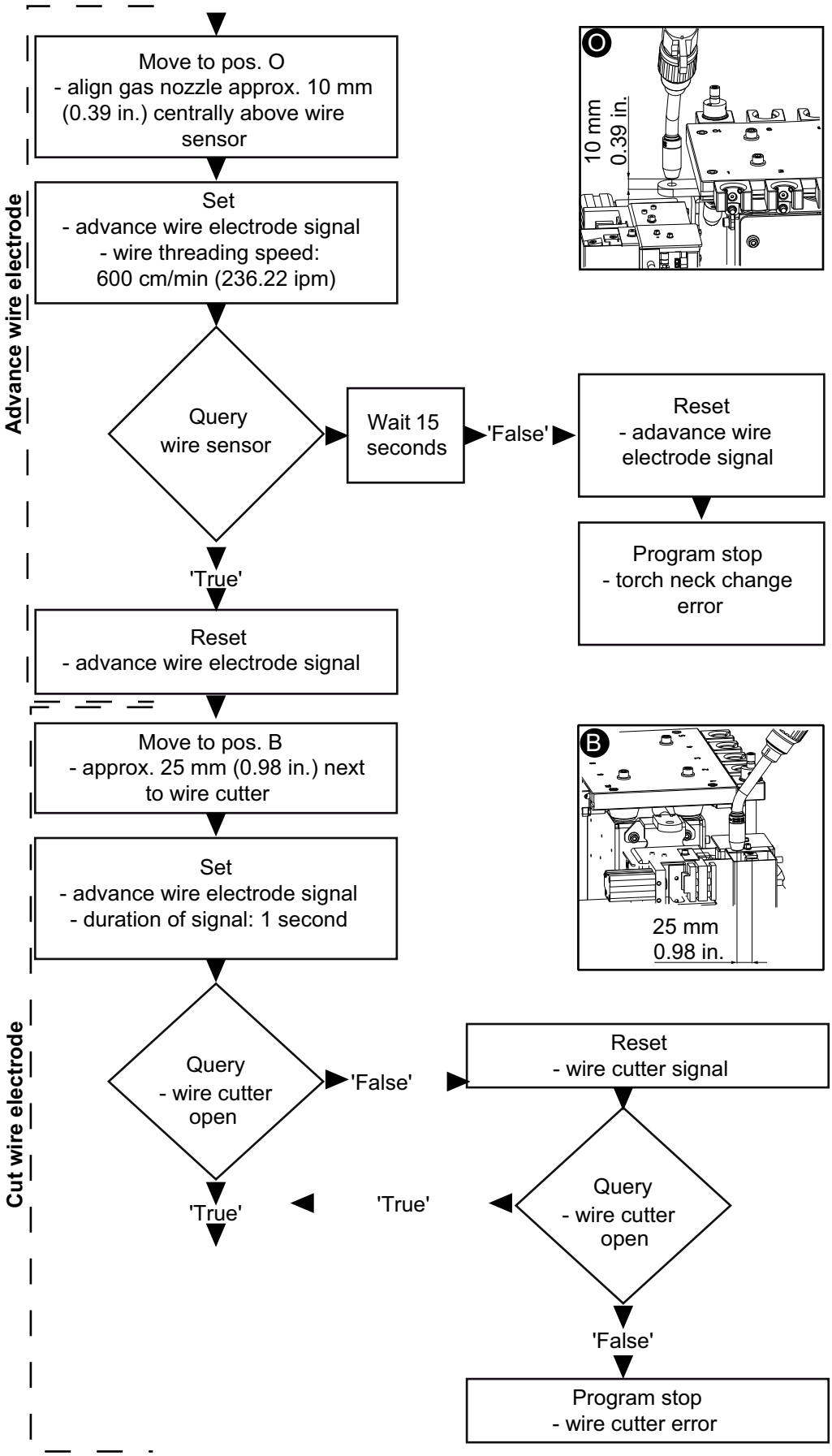
Move to pos. I
- raise 50 mm (1.97 in.) above middle of torch neck rack
- speed: high

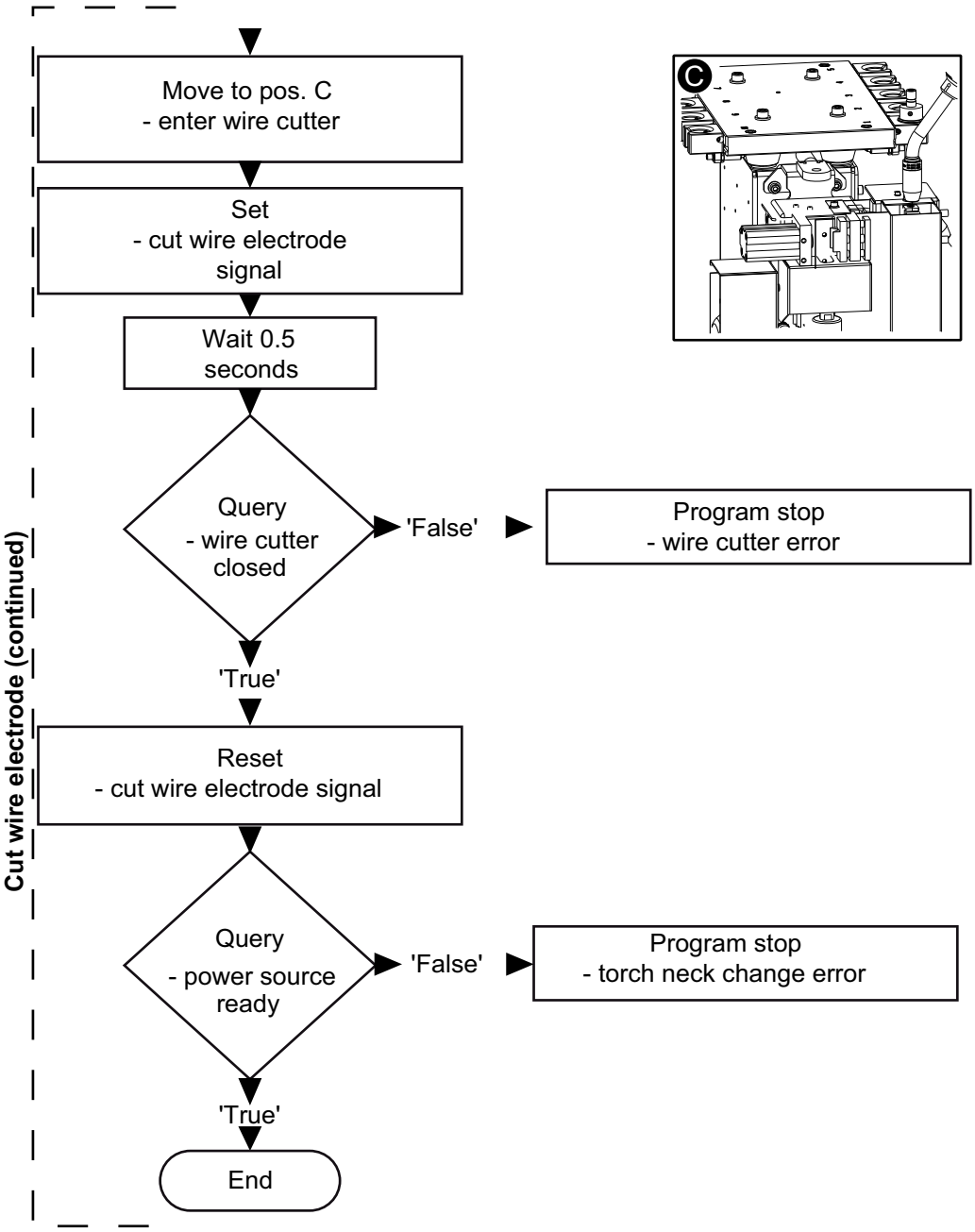


Wait 0.5 seconds


Set down torch neck (continued)
Query
- torch neck sensor
'False'
Program stop
- torch neck change error
'True'
Only with Robacta TX cover option
Reset
- Robacta TX valve 1 cover signal
Query
- Robacta TX sensor 1 cover
Wait 10 seconds
'True'
Program stop
- Robacta TX cover error
'False'
J
50 mm
1.97 in.
Set
- Robacta TX valve 2 cover signal
Query
- Robacta TX sensor 2 cover
Wait 10 seconds
'False'
Program stop
- Robacta TX cover error
'True'
Pick up torch neck
Move to pos. J
- 50 mm (1.97 in.) above middle of torch neck to be picked up
J
50 mm
1.97 in.
Query
- torch neck sensor
'False'
Program stop
- torch neck change error
'True'


Pick up torch neck (continued)
Move to pos. K
- 20 mm (0.79 in.) above middle of torch neck to be picked up
Move to pos. L
- pick up torch neck flush
- speed: max. 70 cm/min (27.56 ipm)
Reset
- change torch neck signal
Wait 3 - 4 seconds
Move to pos. M
- raise 25 mm (0.98 in.) above middle of torch neck rack
- speed: high
Wait 0.5 seconds
Move to pos. N
- 25 mm (0.98 in.) above top of torch neck rack
- 40 mm (1.58 in.) next to middle of torch neck rack
- speed: max. 1000 cm/min (393.70 ipm)
Query
- torch neck sensor
'True'
Program stop
- torch neck change error
'False'
Only with Robacta TX cover option
Reset
- Robacta TX valve 2 cover signal
Query
- Robacta TX sensor 2 cover
Wait 10 seconds
'True'
Program stop
- Robacta TX cover error
'False'
K
20 mm
0.79 in.
L
M
25 mm
0.98 in.
N
25 mm
0.98 in.
40 mm
1.58 in.


Move to pos. O
- align gas nozzle approx. 10 mm (0.39 in.) centrally above wire sensor
O
10 mm
0.39 in.
Advance wire electrode
Set
- advance wire electrode signal
- wire threading speed:
600 cm/min (236.22 ipm)
Query
wire sensor
Wait 15
seconds
'False'
Reset
- adavance wire
electrode signal
Program stop
- torch neck change
error
'True'
Reset
- advance wire electrode signal
Move to pos. B
- approx. 25 mm (0.98 in.) next to wire cutter
B
25 mm
0.98 in.
Set
- advance wire electrode signal
- duration of signal: 1 second
Cut wire electrode
Query
- wire cutter
open
'False'
Reset
- wire cutter signal
'True'
'True'
Query
- wire cutter
open
'False'
Program stop
- wire cutter error


Cut wire electrode (continued)
Move to pos. C
- enter wire cutter
Set
- cut wire electrode signal
Wait 0.5 seconds
Query
- wire cutter closed
'False'
Program stop
- wire cutter error
'True'
Reset
- cut wire electrode signal
Query
- power source ready
'False'
Program stop
- torch neck change error
'True'
End
C

Troubleshooting

Safety

Safety

NOTE! Observe the following safety instructions for all work described in the "Troubleshooting" section.

WARNING! Work that is carried out incorrectly can cause serious injury or damage. The activities described below must only be carried out by trained and qualified personnel. Do not carry out the activities described below until you have fully read and understood the following documents:
- these operating instructions
- all the operating instructions for the system components, especially the safety rules

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

WARNING! Risk of severe injury from mechanically powered parts. The torch neck changeover station must remain depressurised and de-energised until all work is completed.

WARNING! Work that is carried out incorrectly can cause serious injury or damage. Before starting work:
- turn the power source mains switch to the "O" position
- disconnect the power source from the mains
- put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again

CAUTION! Risk of injury from sharp flying parts. During the work described below, always wear the following protective equipment:
- Protective goggles with side protection
- Ear protection
- Gloves - electrically insulated and providing protection against heat

CAUTION! Risk of burns from hot torch neck, hot torch neck coupling and other hot welding torch components. Before carrying out work, allow the torch neck, torch neck coupling and all other welding torch components to cool down to room temperature (+25 °C, +77 °F).

Troubleshooting

Troubleshooting

Torch neck coupling does not open	
Cause:	Compressed air supply to torch neck changeover station briefly too low
Remedy:	Change torch neck manually (see operating instructions, "Manually changing the torch neck" section)

Torch neck coupling does not open	
Cause:	Compressed air supply of torch neck changeover station too low
Remedy:	Ensure compressed air supply is as per the specifications in the operating instructions

Care, maintenance and disposal

Safety

Safety

NOTE! Observe the following safety instructions for all work described in the "Care, maintenance and disposal" section.

WARNING! Work that is carried out incorrectly can cause serious injury or damage. The activities described below must only be carried out by trained and qualified personnel. Do not carry out the activities described below until you have fully read and understood the following documents:
- these operating instructions
- all the operating instructions for the system components, especially the safety rules

WARNING! Machines that start up automatically can cause serious injury and damage. In addition to these operating instructions, the safety rules issued by the manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place for the duration of your stay within the working area of the robot.

WARNING! Work that is carried out incorrectly can cause serious injury or damage. Before starting work:
- turn the power source mains switch to the "O" position
- disconnect the power source from the mains
- put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again

CAUTION! Risk of injury from escaping compressed air and sharp flying parts. During the work described below, always wear the following protective equipment:
- Protective goggles with side protection
- Ear protection
- Gloves - electrically insulated and providing protection against heat

CAUTION! Risk of burns from hot torch neck, hot torch neck coupling and other hot welding torch components. Before carrying out work, allow the torch neck, torch neck coupling and all other welding torch components to cool down to room temperature (+25 °C, +77 °F).

Maintenance for each torch neck service, at least weekly

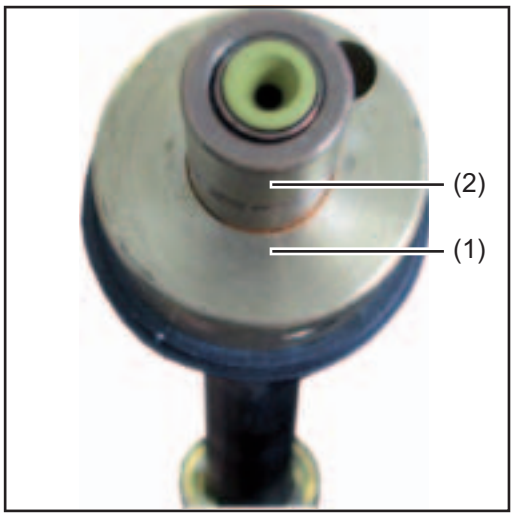
Preparation

1. When carrying out the following work, position the robot arm so that
   - the Unlock/Lock button on the torch neck changeover station can be pressed with one hand
   - the torch neck can be removed from or placed onto the torch neck coupling with the other hand
2. Feed out the wire electrode from the hosepack
3. Hold torch neck with one hand
4. Press the Unlock/Lock button on the torch neck changeover station
   - torch neck coupling lock opens
5. Remove torch neck from the torch neck coupling
6. Depressurise the compressed air line of the torch neck changeover station and make sure that this compressed air line remains depressurised for the duration of the work on the device
7. De-energise the torch neck changeover station

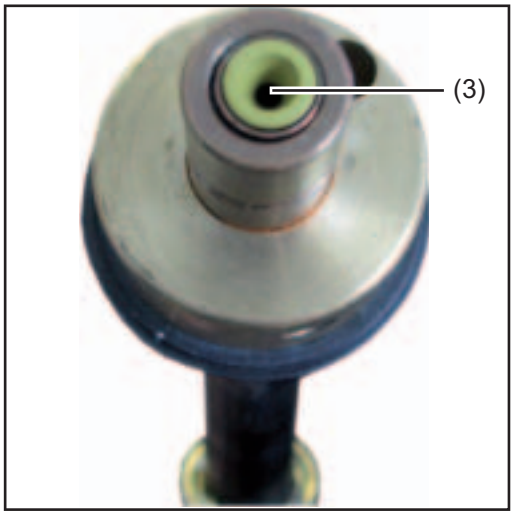
Safety

CAUTION! Risk of injury from compressed air escaping unintentionally. The torch neck changeover station must remain depressurised and de-energised until all work is completed.

Checking the torch neck for damage and wear



- Check surface (1) for damage
- Check wire guide pin (2) for damage
  - If the torch neck is damaged, send the torch neck to the manufacturer's service department.



- Check the TX inlet/outlet nozzle (3) for wear and replace if necessary

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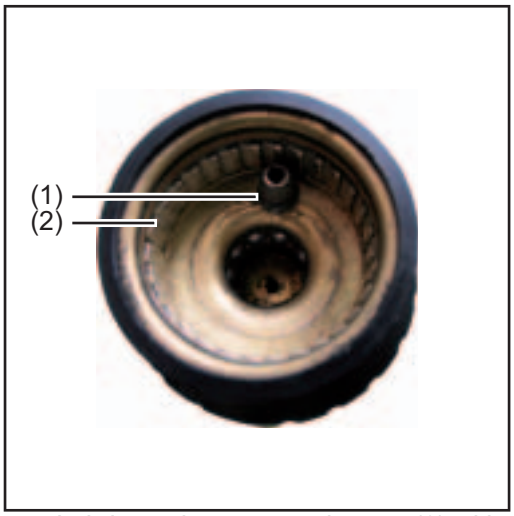
Servicing the torch neck coupling



- Check torch neck coupling for dirt
  - If dirty, clean the torch neck coupling and eliminate the cause of the dirt
- Check the torch neck coupling for damage
  - If damaged, send the torch neck coupling to the manufacturer's service department
- Check the O-ring (1) for damage and replace if necessary
- Lubricate the contact element (2) with grease
  - Item number for grease: 40,0009,0151

For Robacta Drive and Robacta Drive CMT hosepacks only:

- Check the inner liner in the torch neck coupling for wear and damage and replace if necessary

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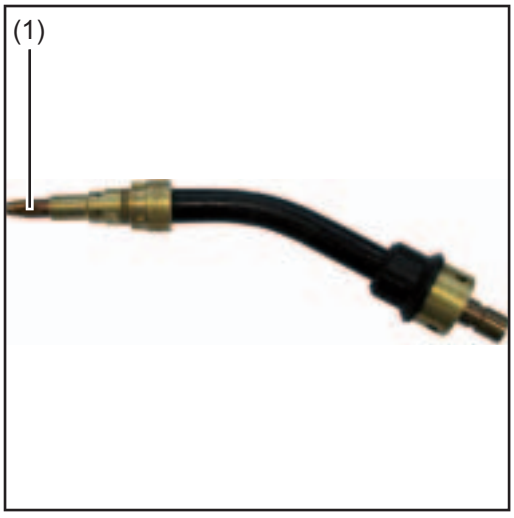
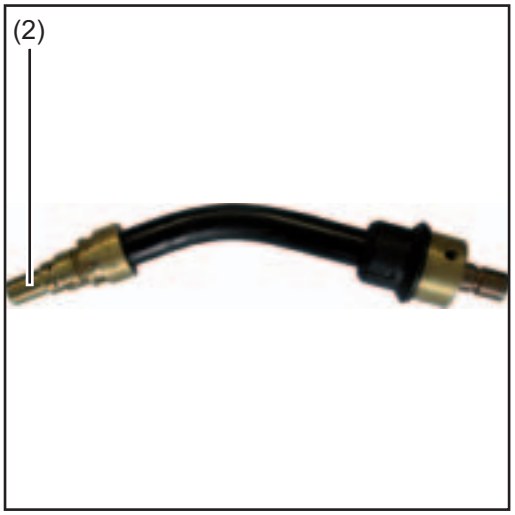
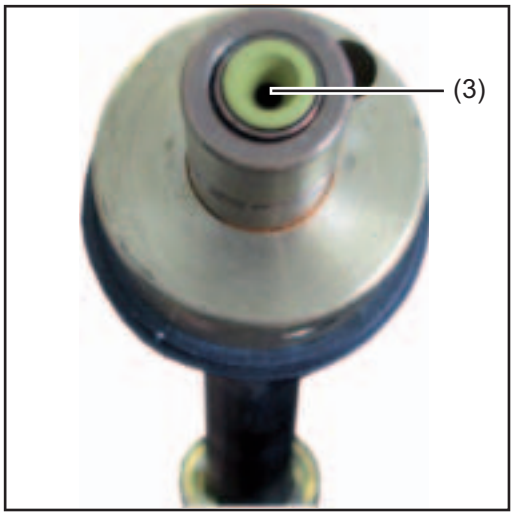
Changing the steel inner liner in the torch neck



1. Remove the gas nozzle from the torch neck
2. Unscrew the contact tip (1) from the torch neck

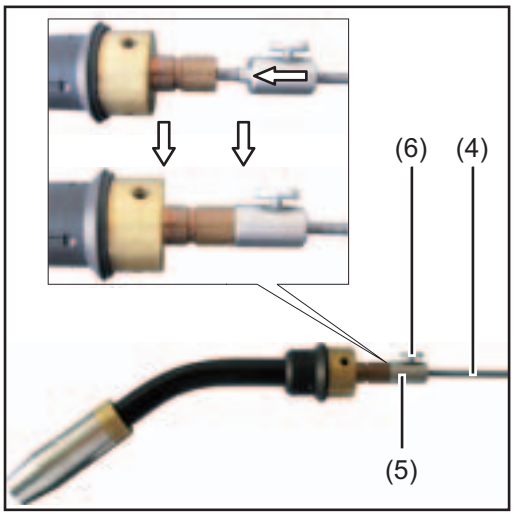


3 Unscrew the nozzle fitting (2) from the torch neck



4 Remove the inner liner and TX inlet/ outlet nozzle (3) from the torch neck
- Keep TX inlet/outlet nozzle for re-fitting at a later stage

5 Fit the nozzle fitting, contact tip and gas nozzle back on again

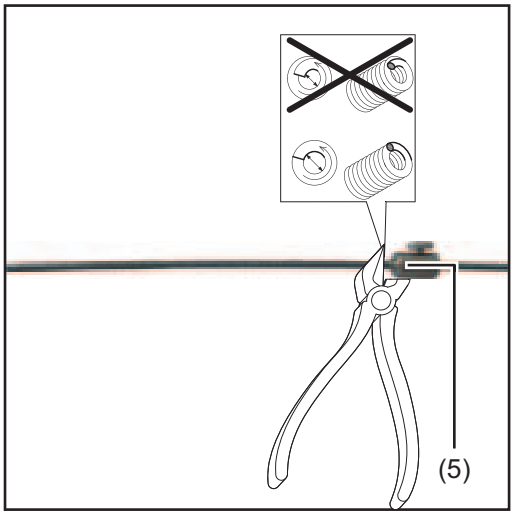


6 Insert inner liner (4) as far as it will go into the torch neck

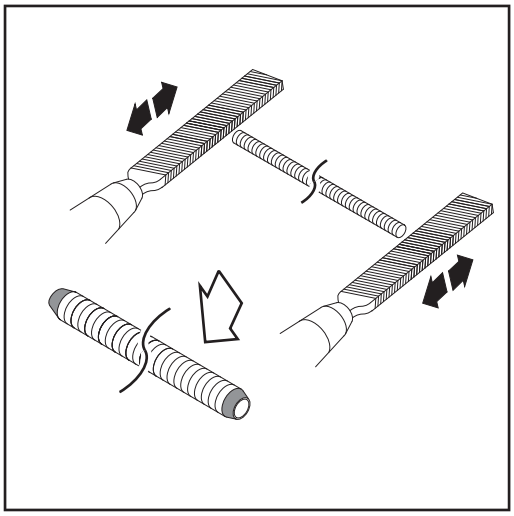
7 Push the cutting aid (5) on as far as it will go onto the inner liner

8 Tighten the locking screw (6) of the cutting aid

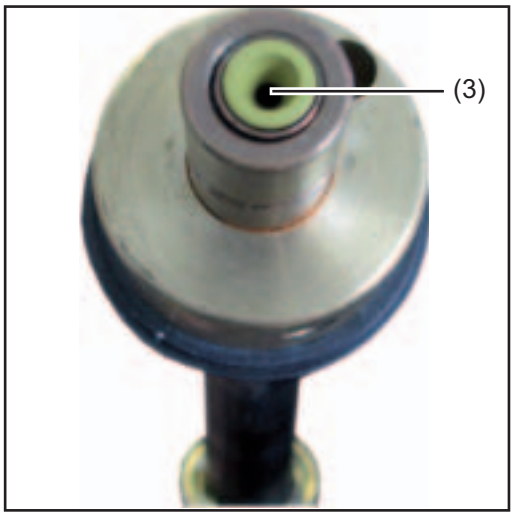
9 Pull the inner liner (4) and cutting aid (5) out of the torch neck
- do not change the position of the cutting aid on the inner liner



10 Cut off the inner liner at the end of the cutting aid (5) using cutting pliers



11 Deburr the inner liner at both ends

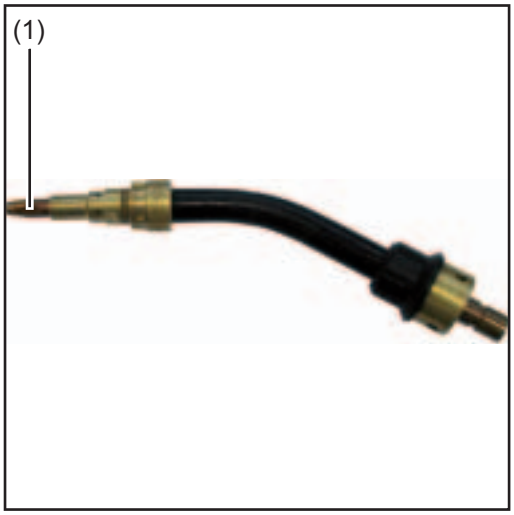


12 Insert the inner liner into the torch neck

NOTE! Replace the TX inlet/outlet nozzle if:
- no click is heard when fitting
- the TX inlet/outlet nozzle is worn

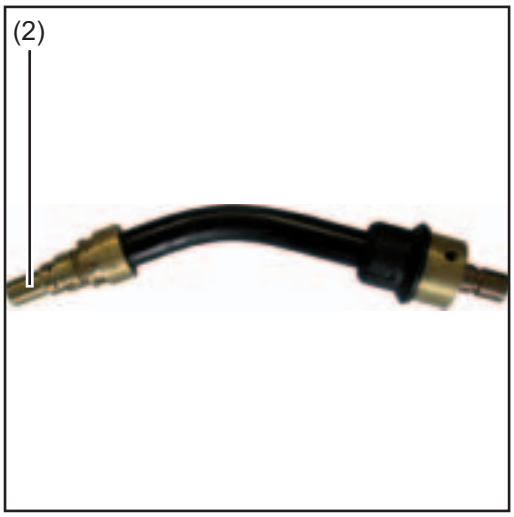
13 Insert the TX inlet/outlet nozzle (3) fully into the torch neck
- Press down the TX inlet/outlet nozzle until you hear a click

Changing the plastic inner liner in the torch neck

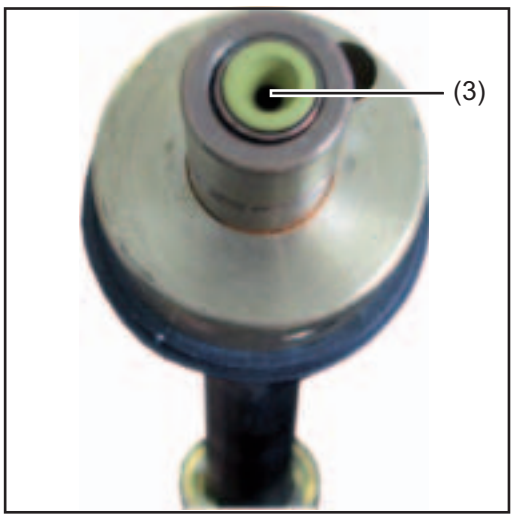


1 Remove the gas nozzle from the torch neck

2 Unscrew the contact tip (1) from the torch neck

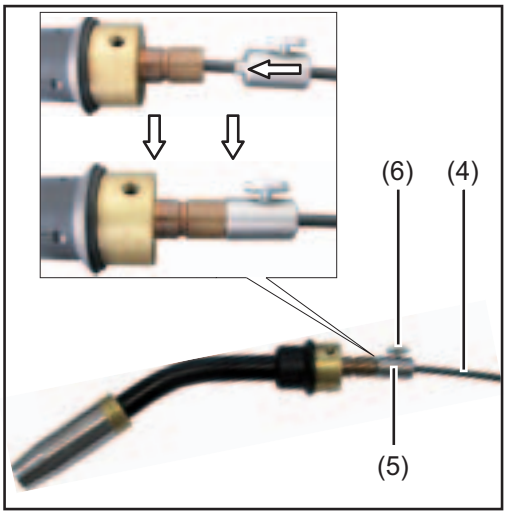


3 Unscrew the nozzle fitting (2) from the torch neck



4 Remove the inner liner and TX inlet/ outlet nozzle (3) from the torch neck
- Keep TX inlet/outlet nozzle for re-fitting at a later stage

5 Fit the nozzle fitting, contact tip and gas nozzle back on again

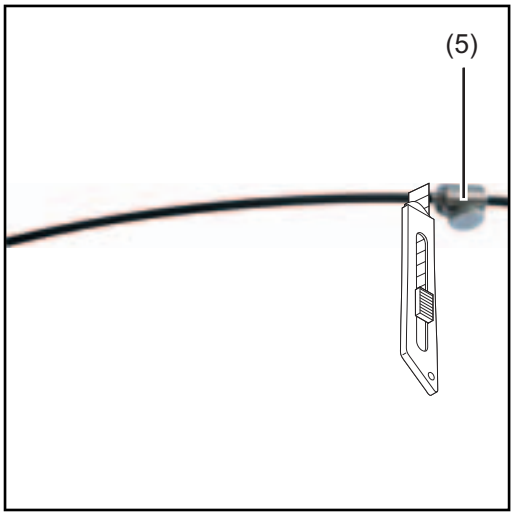


6 Insert inner liner (4) as far as it will go into the torch neck

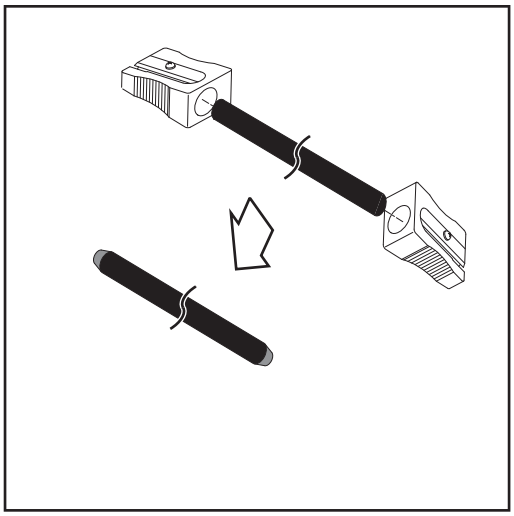
7 Push the cutting aid (5) on as far as it will go onto the inner liner

8 Tighten the locking screw (6) of the cutting aid

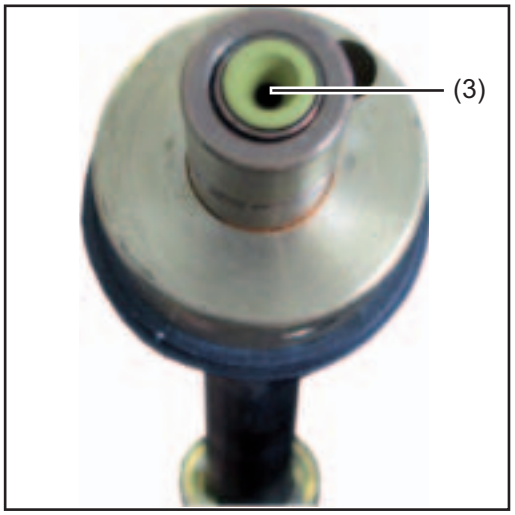
9 Pull the inner liner (4) and cutting aid (5) out of the torch neck
- do not change the position of the cutting aid on the inner liner



10 Cut off the inner liner at the end of the cutting aid (5) using a knife



11 Deburr the inner liner at both ends



12 Insert the inner liner into the torch neck

NOTE! Replace the TX inlet/outlet nozzle if:
- no click is heard when fitting
- the TX inlet/outlet nozzle is worn

13 Insert the TX inlet/outlet nozzle (4) fully into the torch neck
- Press down the TX inlet/outlet nozzle until you hear a click

---

And finally...

1 Thread the wire electrode into the hosepack

2 Establish the compressed air and power supply to the torch neck changeover station

3 Place the torch neck correctly onto the torch neck coupling

Perform maintenance at least once every month - replace inner liner in the torch neck coupling

Preparation

1 When carrying out the following work, position the robot arm so that
- the Unlock/Lock button on the torch neck changeover station can be pressed with one hand
- the torch neck can be removed from or placed onto the torch neck coupling with the other hand

2 Feed out the wire electrode from the hosepack

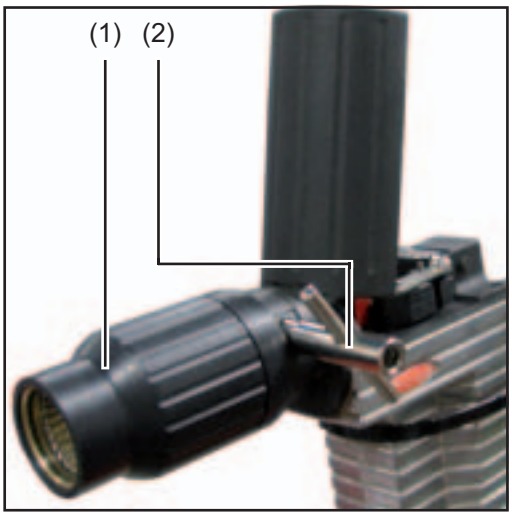
3 Hold torch neck with one hand

4 Press the Unlock/Lock button on the torch neck changeover station
- torch neck coupling lock opens

5 Remove torch neck from the torch neck coupling

6 Depressurise the compressed air line of the torch neck changeover station and make sure that this compressed air line remains depressurised for the duration of the work on the device

7 De-energise the torch neck changeover station

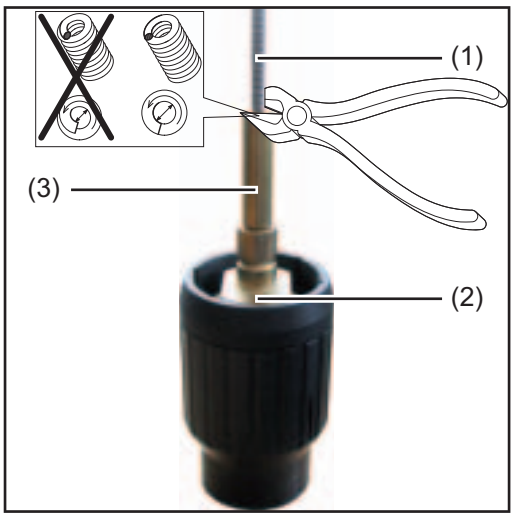


8 Remove the torch neck coupling (1) from the robot arm using the fitting wrench (2)

Safety

CAUTION! Risk of injury from compressed air escaping unintentionally. The torch neck changeover station must remain depressurised and de-energised until all work is completed.

Replacing the steel inner liner of the torch neck coupling for Robacta Drive CMT hosepacks



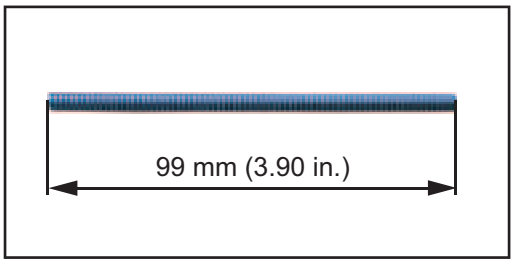
1 Remove old inner liner from torch neck coupling

2 Insert new inner liner (1) as far as it will go into the torch neck coupling (2)

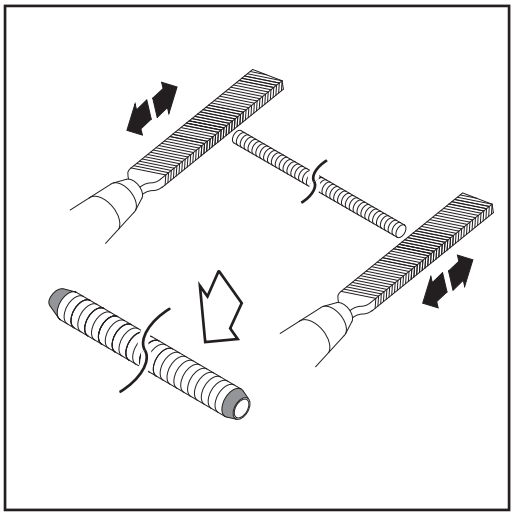
3 Insert cutting pipe (3) of the hosepack being used onto the inner liner
- Item number of the cutting pipe: 42,0001,5910

4 Cut off the inner liner (1) at the end of the cutting pipe (3) using cutting pliers

5 Remove cutting pipe

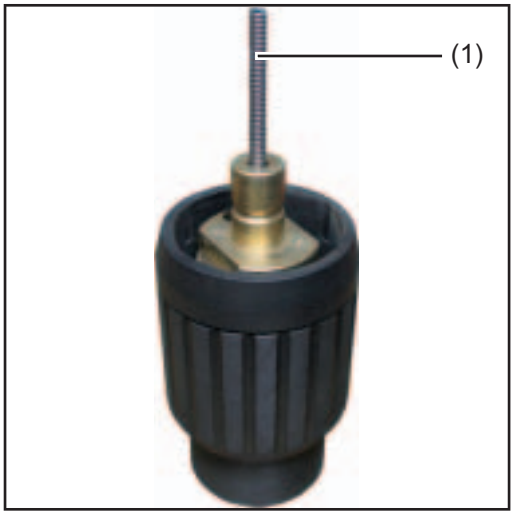


- Once cut, the inner liner must be 99 mm (3.90 in.) long



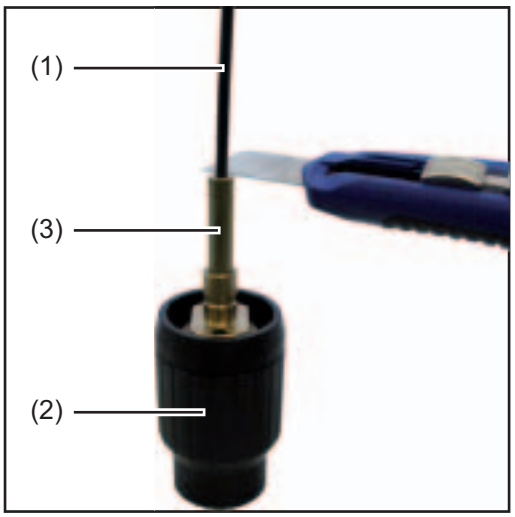
6 Remove inner liner from the torch neck coupling

7 Deburr the inner liner at both ends



8 Insert deburred inner liner (1) into the torch neck coupling

Replacing the plastic inner liner of the torch neck coupling for Robacta Drive CMT hosepacks



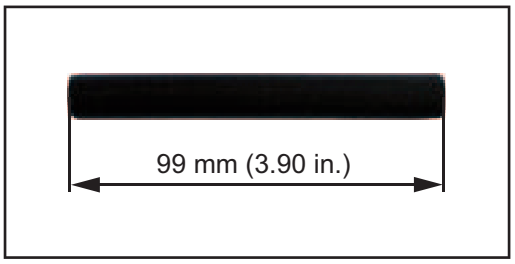
1 Remove old inner liner from torch neck coupling

2 Insert new inner liner (1) as far as it will go into the torch neck coupling (2)

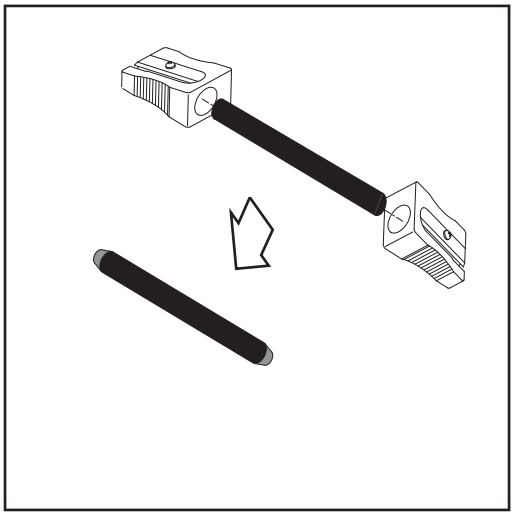
3 Insert cutting pipe (3) of the hosepack being used onto the inner liner
- Item number of the cutting pipe: 42,0001,5910

4 Cut off the inner liner (1) at the end of the cutting pipe (3) using a knife

5 Remove cutting pipe

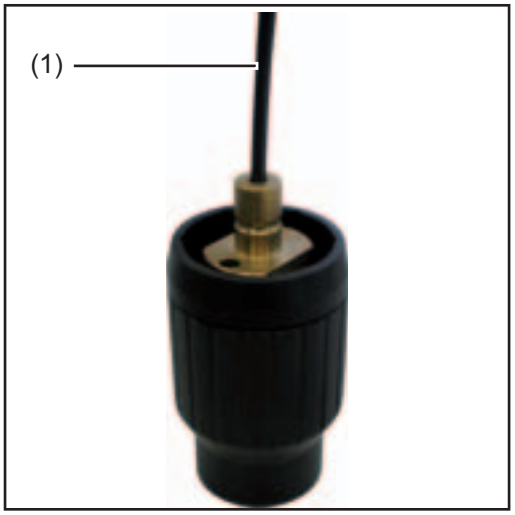


- Once cut, the inner liner must be 99 mm (3.90 in.) long



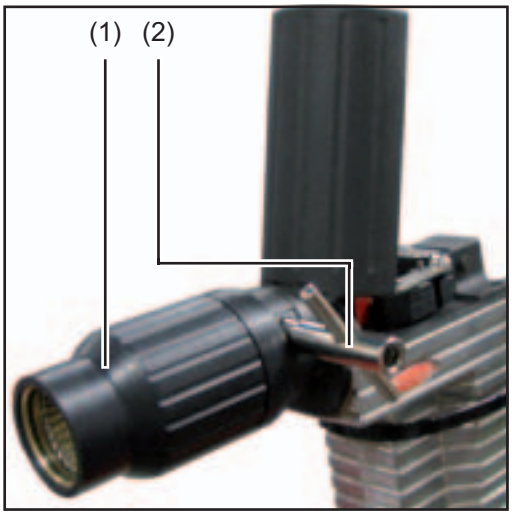
6 Remove inner liner from the torch neck coupling

7 Deburr the inner liner at both ends



8 Insert deburred inner liner (1) into the torch neck coupling

And finally...



1. Place the torch neck coupling (1) onto the drive unit or hosepack as shown
2. Tighten torch neck coupling (1) using fitting wrench (2)
   - Tightening torque = ca. 5 Nm
3. Thread the wire electrode into the hosepack
4. Establish the compressed air and power supply to the torch neck changeover station
5. Place the torch neck correctly onto the torch neck coupling

Replacing the torch neck sensor

Preparation

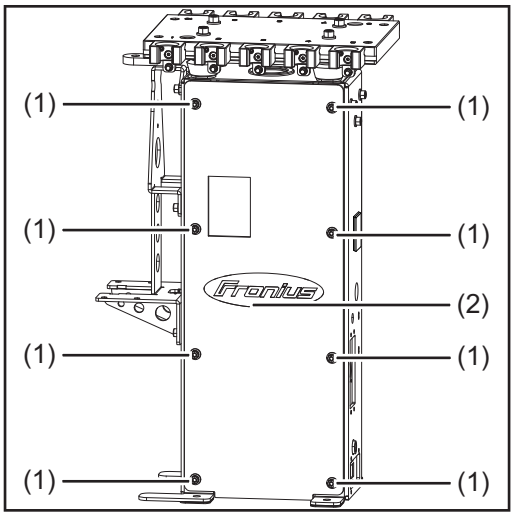
1 Depressurise the compressed air line of the torch neck changeover station and make sure that this compressed air line remains depressurised for the duration of the work on the device

2 De-energise the torch neck changeover station

Safety

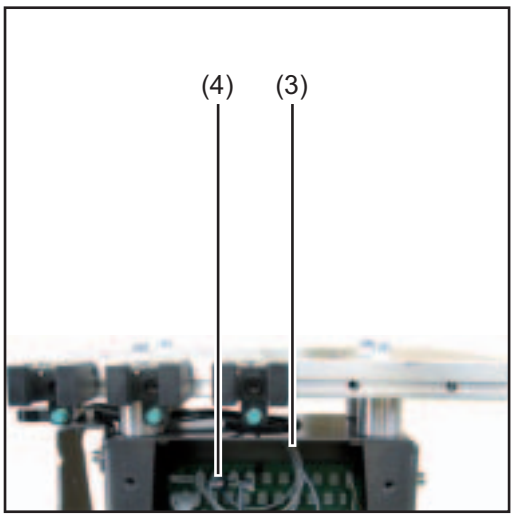
CAUTION! Risk of injury from compressed air escaping unintentionally. The torch neck changeover station must remain depressurised and de-energised until all work is completed.

Remove the old torch neck sensor



1 Undo the 8 screws (1)

2 Remove cover (2)

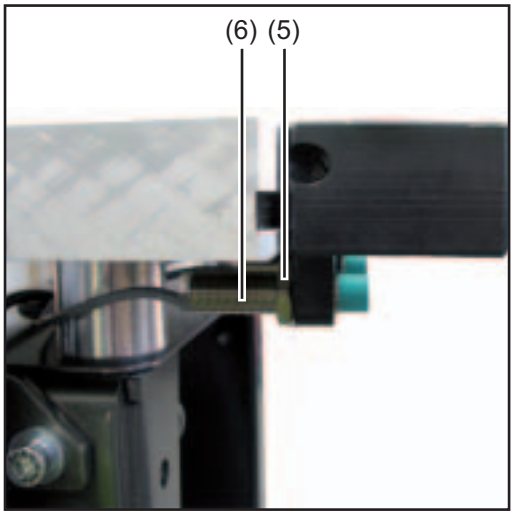


3 Remove the cable tie (3)

4 Unplug the plug from the PC board according to the position of the rack holder. In this case (4)

Example:

- Torch neck rack mounted at position 1 on the rack holder - unplug the plug of the torch neck sensor at the ‘X2 sensor 1‘ connection on the PC board in the torch neck changeover station

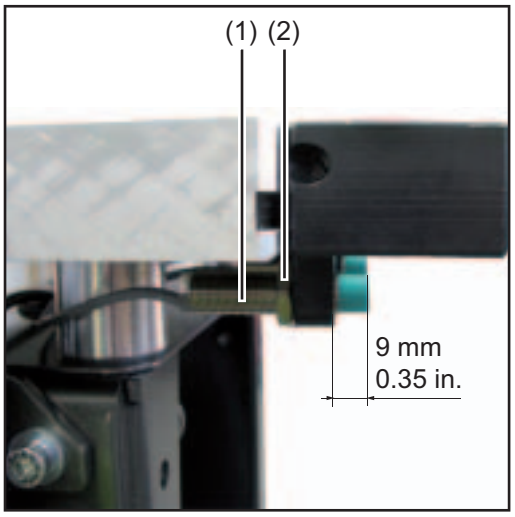


5 Undo nut (5)
- using a 17 mm flat spanner

6 Feed out the sensor cable from the torch neck changeover station

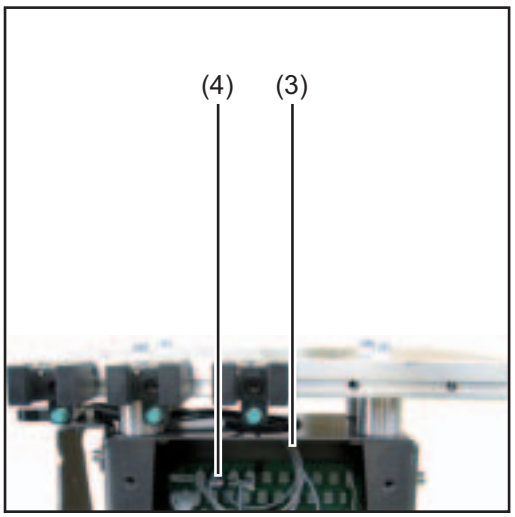
7 Unscrew the torch neck sensor (6) from the torch neck rack

Fitting the new torch neck sensor



1 Screw the new torch neck sensor (1) into the torch neck rack until it reaches the dimension shown

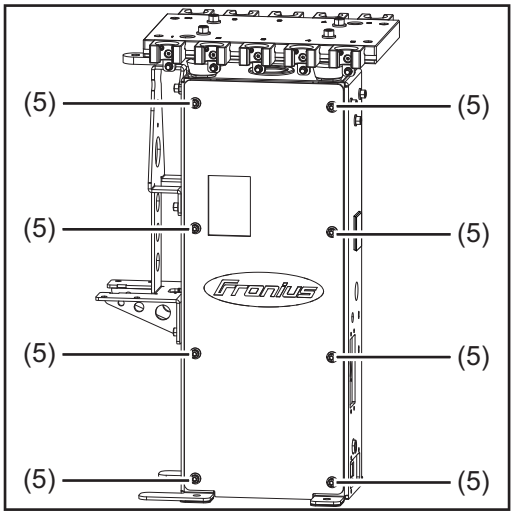
2 Tighten nut (2)
- using a 17 mm flat spanner



3 Plug in the sensor plug into the PC board according to the position of the rack holder. In this case (4)

Example:
- Torch neck rack mounted at position 1 on the rack holder - plug in the plug of the torch neck sensor at connection ‘X2 sensor 1‘ on the PC board in the torch neck changeover station

4 Fix sensor cable using cable tie (3) as shown



5 Place cover onto the torch neck changeover station and secure with 8 screws (5)

And finally...

1 Establish the compressed air and power supply to the torch neck changeover station

Disposal

Disposal	Dispose of in accordance with the applicable national and local regulations.

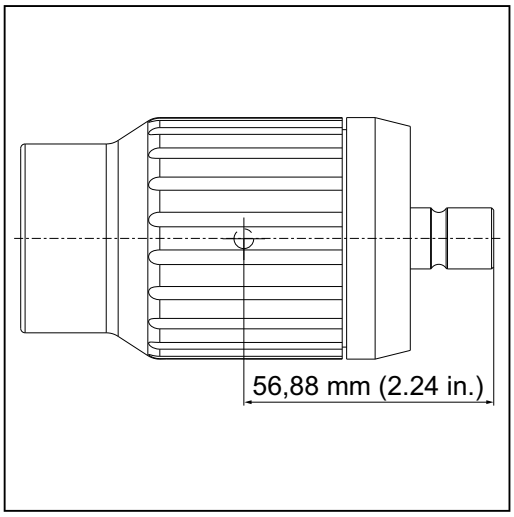
Technical data

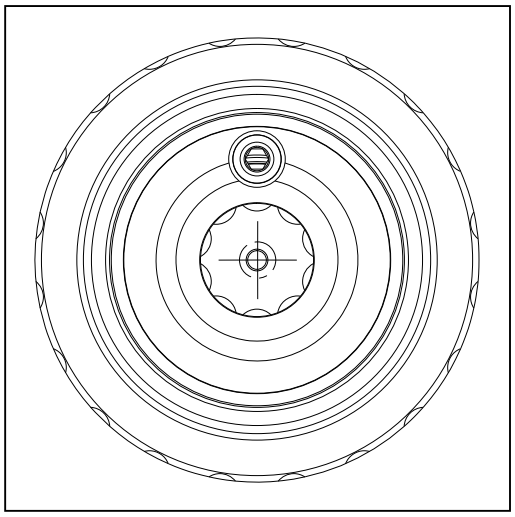
Technical data

Torch neck changeover station

Supply voltage	+ 24 V DC
Nominal pressure	8 bar 116.03 psi
Standard I/O	Input: + 24 V DC/ max. 1.5 A
Total cycle time	25 - 30 s
Degree of protection	IP 20
EMC emission class	A
Dimensions l x w x h	477 x 759 x 785 mm 18.78 x 29.88 x 30.91 in.
Weight	60 kg 132.28 lb.

Torch neck coupling



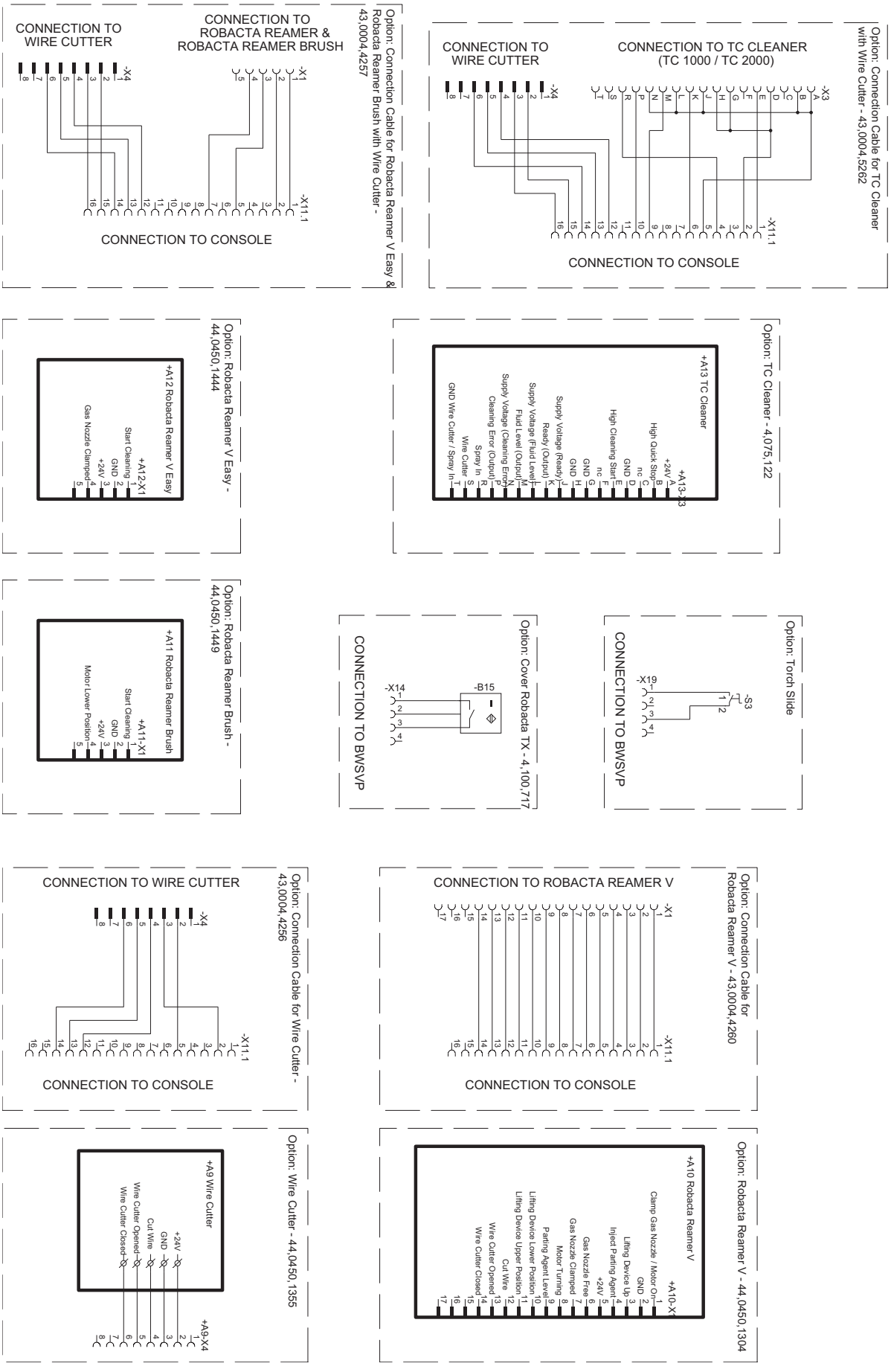


Weight	0.73 kg 1.61 lb.

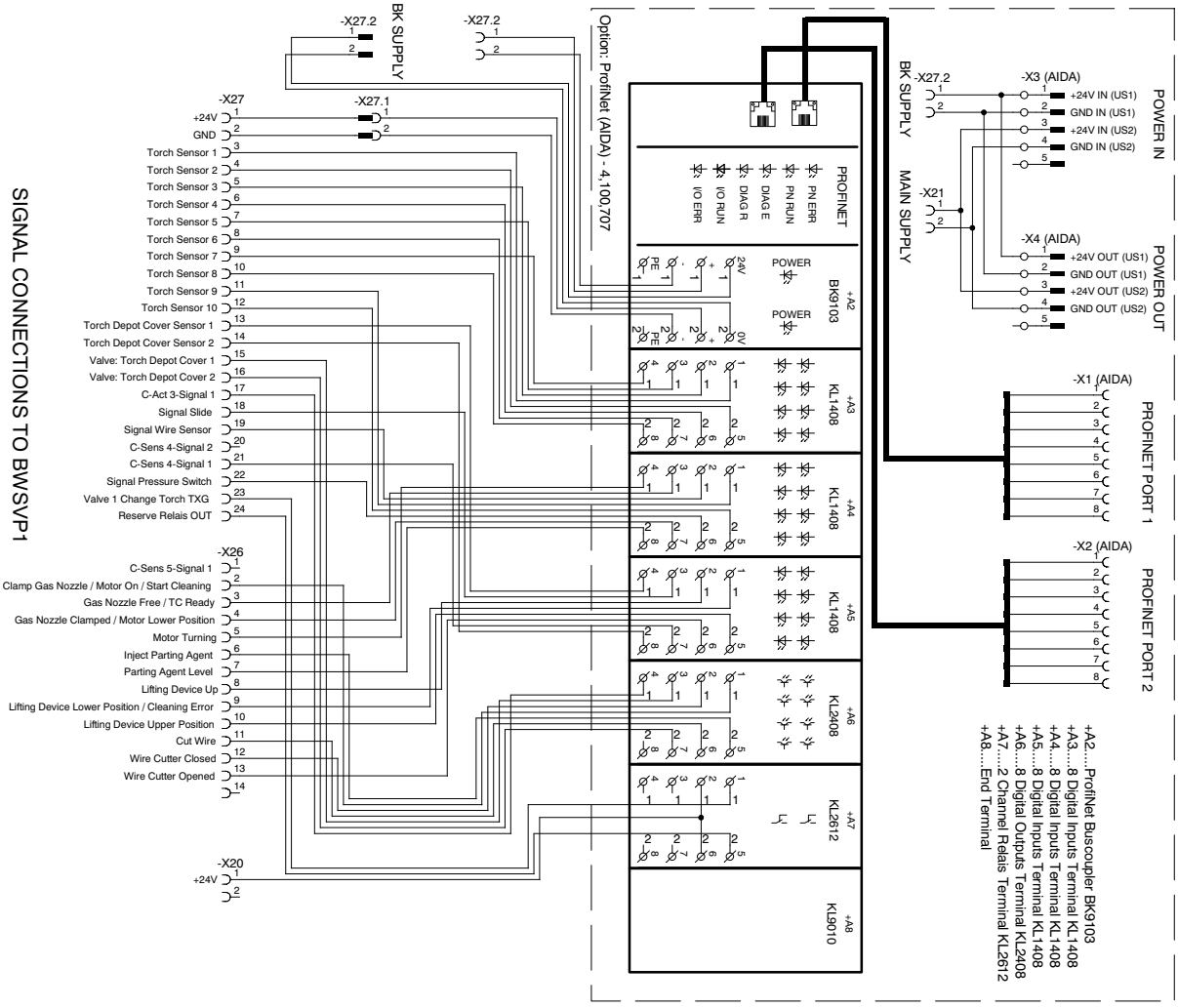
Appendix

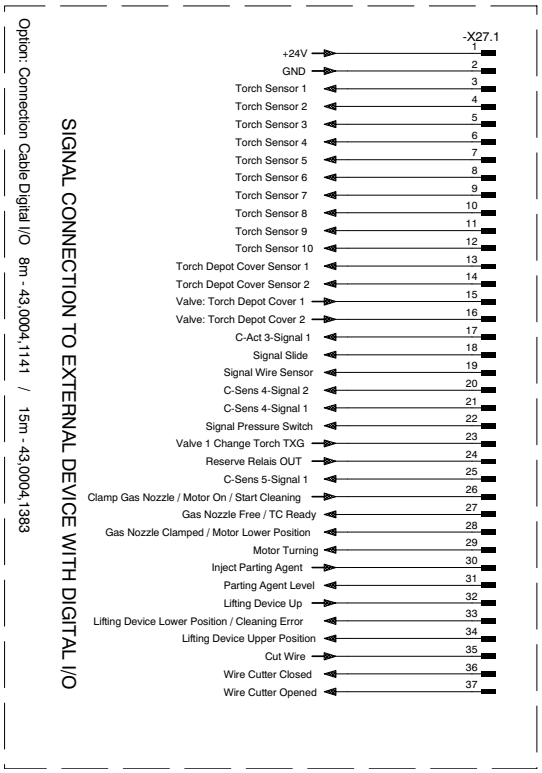
Circuit diagram: Robacta TX G - Timing

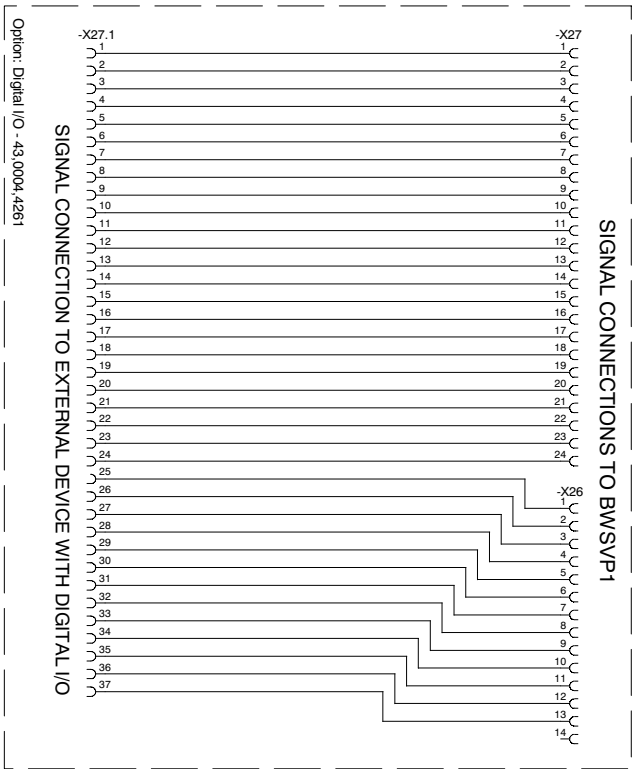
Circuit diagram: Accessory equipment



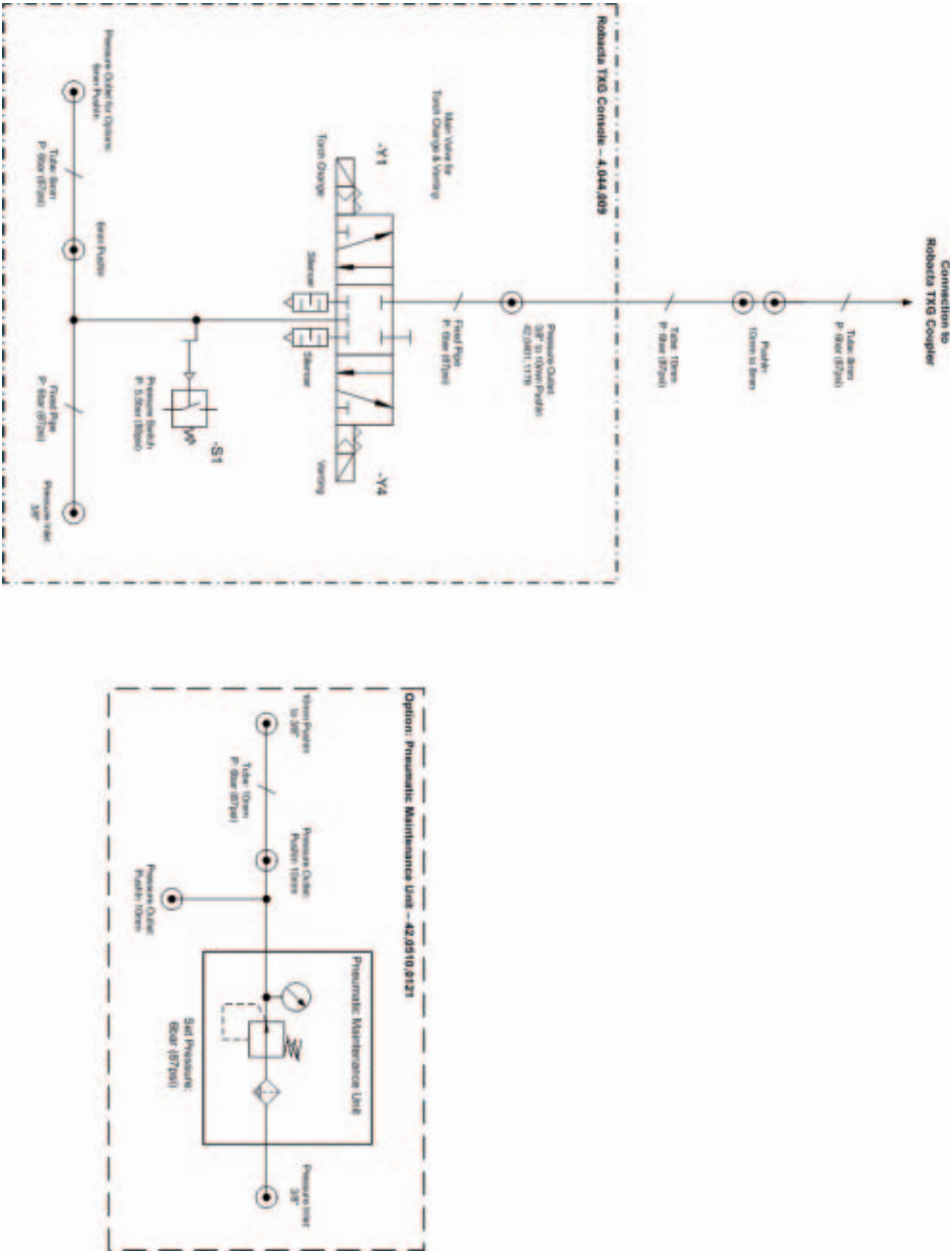
Circuit diagram: Device communication







Pneumatic diagram



Declaration of installation

EU-EINBAUERKLÄRUNG 2011
EC DECLARATION OF INCORPORATION 2011
PROHLASENI O ZABUDOVANI NEUPLNEHO STROJNIHO ZARIZENI 2011

Wels-Thalheim, 2011-04-08

Die Firma / Manufacturer / Společnost

FRONIUS INTERNATIONAL GMBH
Günter Fronius Straße 1, A-4600 Wels-Thalheim

Hiermit erklären wir, dass folgendes Produkt:

Standkonsole TX

den unten angeführten, grundlegenden Anforderungen einer „unvollständigen Maschine“ im Sinne der Maschinenrichtlinie 2006/42/EG entspricht. Das Produkt ist ausschließlich zum Einbau in eine Maschine oder unvollständige Maschine vorgesehen und entspricht daher noch nicht sämtlichen Anforderungen der Maschinenrichtlinie. Die Inbetriebnahme des Produkts ist solange untersagt, bis festgestellt wurde, dass die Maschine, in die das o. g. Produkt eingebaut wird, allen grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG entspricht. Die speziellen technischen Unterlagen gemäß Anhang VII Teil B wurden erstellt.

Richtlinie 2006/42/EG
Maschinenrichtlinie
Anhang I: EN ISO 12100
EN 61000-6-2
EN 61000-6-4

Dokumentationsverantwortlicher:
(technische Dokumentation)

Ing. Josef Feichtinger
Günter Fronius Straße 1
A - 4600 Wels-Thalheim

We hereby declare that the following product:

Standkonsole TX

conforms to the essential requirements listed below of "partly completed machinery" within the meaning of the Machinery Directive, 2006/42/EU. The product is intended exclusively for installation in machinery or partly completed machinery. It therefore does not yet fully conform to all the requirements of the Machinery Directive. It is not permitted to commission the product until it is has been established that the machinery in which the above product is installed conforms to all the requirements of the Machinery Directive, 2006/42/EU. The special technical documents according to Annex VII Part B have been created.

Directive 2006/42/EC
Machinery Directive
Annex I: EN ISO 12100
EN 61000-6-2
EN 61000-6-4

person responsible for documents:
(technical documents)

Ing. Josef Feichtinger
Günter Fronius Straße 1
A - 4600 Wels-Thalheim

Tímto prohlašujeme, že následující výrobek:

Standkonsole TX

odpovídá níže uvedeným základním požadavkům „neúplného strojního zařízení“ ve smyslu směrnice o strojních zařízeních 2006/42/ES. Výrobek je určen výhradně k vestavbě do strojního zařízení nebo neúplného strojního zařízení, a proto ještě nesplňuje veškeré požadavky směrnice o strojních zařízeních. Výrobek nesmí být uveden do provozu, dokud nebude ověřeno, že strojní zařízení, do kterého má být výše uvedený produkt instalován, splňuje všechny základní požadavky směrnice o strojních zařízeních 2006/42/EG. Zvláštní technické podklady podle přílohy VII, část B byly vytvořeny.

Směrnice 2006/42/ES
Směrnice pro strojní zařízení
Annexe I: EN ISO 12100
EN 61000-6-2
EN 61000-6-4

Pracovník odpovědný za dokumentaci:
(technická dokumentace)

Ing. Josef Feichtinger
Günter Fronius Straße 1
A - 4600 Wels-Thalheim

2011

ppa. Mag.Ing.H.Hackl

DE German Deutsch EN English English CS Czech České

DICHIARAZIONE DI INCORPORAZIONE DI QUASI-MACCHINE, 2011
DECLARACION DE INCORPORACION DE UNA CUASI MAQUINA, 2011
DECLARAÇÃO DE INCORPORAÇÃO DE UMA QUASE-MÁQUINA, 2011

Wels-Thalheim, 2011-04-08

Costruttore	La empresa	A empresa

FRONIUS INTERNATIONAL GMBH
Günter Fronius Straße 1, A-4600 Wels-Thalheim

Con la presente si dichiara che il seguente prodotto:	Mediante la presente declaramos que el siguiente producto:	Declaramos que o seguinte produto:
Standkonsole TX	Standkonsole TX	Standkonsole TX
è conforme ai requisiti fondamentali di seguito elencati relativi a una "macchina incompleta" ai sensi della Direttiva Macchine 2006/42/CE. Il prodotto è previsto esclusivamente per essere montato in una macchina o in una macchina incompleta e pertanto non è conforme a tutti i requisiti della Direttiva Macchine. La messa in funzione del prodotto è pertanto vietata fino a quando non viene determinato che la macchina in cui il prodotto summenzionato viene montato è conforme a tutti i requisiti fondamentali della Direttiva Macchine 2006/42/CE. È stato redatto il fascicolo tecnico specifico ai sensi dell'Allegato VII, parte B.	cumple los requisitos fundamentales, indicados a continuación, de una "máquina incompleta", tal y como se define en la directiva sobre máquinas 2006/42/CE. El producto está previsto exclusivamente para su montaje en una máquina o en una máquina incompleta, por lo que aún no cumple todos los requisitos de la directiva sobre máquinas. Queda prohibida la puesta en servicio del producto hasta que conste que la máquina en la que se instala el producto anteriormente indicado cumple todos los requisitos fundamentales de la directiva sobre máquinas 2006/42/CE. Se ha elaborado la documentación técnica especial según el anexo VII parte B.	corresponde aos requisitos fundamentais abaixo listados de uma "Máquina incompleta" na acepção da diretriz de máquinas 2006/42/CE. O produto destina-se apenas ao CI, conjunto de instalação, em uma máquina ou máquina incompleta e, portanto, ainda não corresponde a todos os requisitos da diretriz de máquinas. A colocação em funcionamento do produto é proibida até que seja constatado que a máquina, na qual o produto acima será instalado, corresponde a todos os requisitos fundamentais da diretriz de máquinas 2006/42/CE. O suporte técnico especial em conformidade com o anexo VII parte B foi elaborado.
Direttiva 2006/42/CEE Direttiva Macchina **Allegato I: EN ISO 12100** **EN 61000-6-2** **EN 61000-6-4**	Directiva 2006/42/CE Directiva sobre máquinas **Annexo I: EN ISO 12100** **EN 61000-6-2** **EN 61000-6-4**	Directiva 2006/42/CE Directiva Máquinas **Anexo I: EN ISO 12100** **EN 61000-6-2** **EN 61000-6-4**
responsabile tecnico: (fascicolo tecnico)	responsable técnico: (expediente técnico)	responsável técnico: (processo técnico)
Ing. Josef Feichtinger Günter Fronius Straße 1 A - 4600 Wels-Thalheim	Ing. Josef Feichtinger Günter Fronius Straße 1 A - 4600 Wels-Thalheim	Ing. Josef Feichtinger Günter Fronius Straße 1 A - 4600 Wels-Thalheim

2011

ppa. Mag.Ing.H.Hackl

IT Italian Italiano ES Spanish Español PT Portuguese Português

EU-EINBAUERKLÄRUNG 2011
EC DECLARATION OF INCORPORATION 2011
DECLARATION D' INCORPORATION DE U.E., 2011

Wels-Thalheim, 2011-04-08

Die Firma	Manufacturer	La compagnie

FRONIUS INTERNATIONAL GMBH
Günter Fronius Straße 1, A-4600 Wels-Thalheim

Hiermit erklären wir, dass folgendes Produkt:	We hereby declare that the following product:	Nous déclarons par la présente que le produit suivant:
Standkonsole TX	Standkonsole TX	Standkonsole TX
den unten angeführten, grundlegenden Anforderungen einer „unvollständigen Maschine“ im Sinne der Maschinenrichtlinie 2006/42/EG entspricht. Das Produkt ist ausschließlich zum Einbau in eine Maschine oder unvollständige Maschine vorgesehen und entspricht daher noch nicht sämtlichen Anforderungen der Maschinenrichtlinie. Die Inbetriebnahme des Produkts ist solange untersagt, bis festgestellt wurde, dass die Maschine, in die das o. g. Produkt eingebaut wird, allen grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG entspricht. Die speziellen technischen Unterlagen gemäß Anhang VII Teil B wurden erstellt.	conforms to the essential requirements listed below of "partly completed machinery" within the meaning of the Machinery Directive, 2006/42/EU. The product is intended exclusively for installation in machinery or partly completed machinery. It therefore does not yet fully conform to all the requirements of the Machinery Directive. It is not permitted to commission the product until it is has been established that the machinery in which the above product is installed conforms to all the requirements of the Machinery Directive, 2006/42/EU. The special technical documents according to Annex VII Part B have been created.	répond aux exigences essentielles indiquées ci-dessous, relatives à celles d'une « quasi-machine » au sens de la directive machines 2006/42/CE. Le produit est exclusivement prévu pour un montage dans une machine ou une quasi-machine et ne répond donc pas encore à toutes les exigences de la directive machines. La mise en service du produit est interdite jusqu'à ce qu'il soit constaté que la machine dans laquelle le produit précité a été monté, est en conformité avec toutes les exigences de la directive machines 2006/42/CE. Les documents techniques spéciaux, conformément à l'annexe VII Partie B, ont été élaborés.
Richtlinie 2006/42/EG Maschinenrichtlinie **Anhang I: EN ISO 12100** **EN 61000-6-2** **EN 61000-6-4**	Directive 2006/42/EC Machinery Directive **Annex I: EN ISO 12100** **EN 61000-6-2** **EN 61000-6-4**	Directive 2006/42/CE Directive aux machines **Annexe I: EN ISO 12100** **EN 61000-6-2** **EN 61000-6-4**
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2011

ppa. Mag.Ing.H.Hackl

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