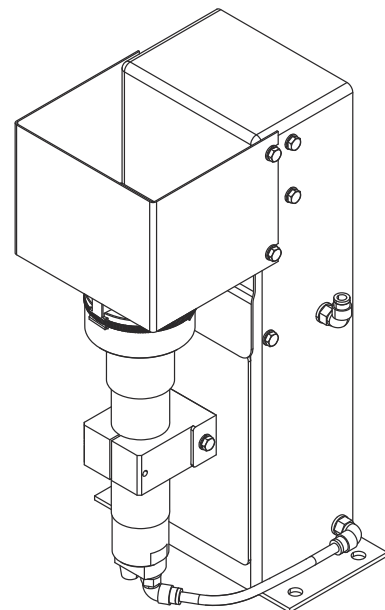


Operating Instructions

**Robacta Reamer brush head for aluminium ap-
plications**



EN | Operating Instructions



Contents

Safety rules.....	6
General.....	6
Proper use.....	6
Environmental conditions.....	6
Obligations of the operator.....	7
Obligations of personnel.....	7
Specific hazards.....	7
Protecting yourself and others.....	8
EMC Device Classifications.....	8
EMC measures.....	8
EMF measures.....	9
Safety measures at the installation location and during transport.....	9
Safety measures in normal operation.....	9
Commissioning, maintenance and repair.....	10
Safety inspection.....	10
Disposal.....	10
Safety symbols.....	11
Copyright.....	11
General	13
General.....	15
General.....	15
Device concept.....	15
Application areas.....	15
Scope of supply.....	16
Options.....	16
Warning notices on the cleaning device.....	16
Transport.....	18
Transport devices.....	18
Transport notices on the packaging.....	18
Controls, connections and mechanical components	19
Safety.....	21
Safety.....	21
Controls, connections and mechanical components.....	22
Control elements, connections and mechanical components.....	22
Harting Han6P connecting plug pin assignment (X1) for robot control.....	24
General.....	24
Harting Han6P connecting plug pin assignment (X1).....	24
Installation and commissioning	25
Safety.....	27
Safety.....	27
Ensuring that the cleaning device is depressurised.....	28
Before commissioning.....	29
Proper use.....	29
Operators, maintenance personnel.....	29
Setup regulations.....	29
Compressed air supply specifications.....	29
Measures for the safe operation of the device with untrained personnel.....	30
Screwing the cleaning device to the underlying surface.....	31
Screwing the cleaning device and installation stand to the underlying surface.....	31
Screwing the cleaning device to the underlying surface.....	32
Adjusting and fitting the standard brush head.....	34
General.....	34
Adjusting the brush head.....	34
Fitting the brush head.....	35
Adjusting and fitting the Braze+ brush head.....	36

General.....	36
Adjusting the brush head.....	36
Fitting the brush head.....	37
Torch cleaning position.....	38
Cleaning position of the welding torch - standard brush head.....	38
Cleaning position of the welding torch - Braze+ brush head.....	38
Adjusting the position of the cleaning motor (with standard brush head).....	39
Adjusting the position of the cleaning motor.....	39
Adjusting the position of the cleaning motor (with Braze+ brush head).....	40
Adjusting the position of the cleaning motor.....	40
Installation and function of mechanically-controlled wire cutter (option).....	41
How the mechanically controlled wire cutter works.....	41
Maximum wire diameter.....	41
Installing the mechanically-controlled wire cutter.....	41
Installation and function of electrically-controlled wire cutter (option).....	43
How the electrically-controlled wire cutter works.....	43
Maximum wire diameter.....	43
Installing the electrically-controlled wire cutter.....	43
Installing the compressed air supply.....	44
Establishing the compressed air supply for the cleaning device, function of the compressed air relief valve.....	44
Manually checking the cleaning device functions.....	45
Safety.....	45
Checking functions manually.....	45
Starting up the cleaning device.....	46
Prerequisites for start-up.....	46
Start-up.....	46
Cleaning program and signals.....	47
Sicherheit.....	47
Cleaning program sequence.....	48
Signal inputs and outputs.....	50
Care, maintenance and disposal	51
Safety.....	53
Safety.....	53
Ensuring that the cleaning device is depressurised.....	54
Care, maintenance and disposal.....	55
General.....	55
Before each start-up.....	55
Daily.....	55
Every 6 months.....	55
As necessary.....	55
Changing the end brushes (standard brush head only).....	55
Changing the round brush.....	56
Changing the diagonal brushes.....	56
Disposal.....	57
Troubleshooting	59
Safety.....	61
Safety.....	61
Ensuring that the cleaning device is depressurised.....	62
Troubleshooting.....	63
Errors in program sequence.....	63
Technical data	65
Technical data.....	67
Robacta Reamer brush head for aluminium applications.....	67
Appendix	69
Circuit diagram: Robacta Reamer brush head for aluminium applications.....	71

Pneumatics diagram of Robacta Reamer brush head for aluminium applications..... 72
Circuit diagram: Wire cutter 73
Declaration of conformity 74



Safety rules

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 automated welding, and
 - read and carefully follow these operating instructions as well as the operating instructions for all system components.
-

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 in a legible state,
 - must not be damaged,
 - 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" in the operating instructions for the device.

Before commissioning the device, rectify any faults that could compromise safety.

This is for your personal safety!

Proper use

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

The device is intended solely for the mechanical cleaning of Fronius robot welding torches in automatic mode.

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 includes:

- carefully reading these operating instructions
 - following all the instructions and safety rules in these operating instructions
 - performing all stipulated inspection and maintenance 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 inadequate 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 held liable for any damage arising from such usage.

Ambient temperature range:

- 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)

Keep ambient air free from dust, acids, corrosive gases and substances, etc.

Can be used at altitudes of up to 2000 m (6500 ft)

Obligations of the operator

The operator must only allow persons to work with the device who:

- are familiar with the fundamental instructions regarding safety at work and accident prevention and have been instructed in 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 workplace, 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

If untrained operators have access to the device, its compressed air supply must be disconnected for the duration of work in accordance with "Performance Level d" of the ISO 13849-1 standard.

In addition to these operating instructions, the safety rules issued by the robot manufacturer must also be observed.

Keep your body, especially your hands, face, hair, clothing and all tools away from moving parts, such as:

- rotating brush head
- lifting device moving up/down
- wire cutter

Protect hands, face and eyes against flying parts (shavings, etc.) and compressed air escaping from the cleaning nozzles.

Covers may only be opened/removed for the duration of any maintenance, installation or repair work.

During operation

- Ensure that all covers are closed and fitted properly
 - Keep all covers closed
-

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 from mechanically-powered parts, injury from brush head, flying shavings and similar matter, escaping compressed air, flying sparks, dazzling by arc, inhaling of harmful 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 in emission class A:

- Are only designed for use in industrial settings
 - Can cause line-bound and radiated interference in other areas
-

Devices in emission class B:

- Satisfy the emissions criteria for residential and industrial areas. This is also true for residential areas in which the energy is supplied from the public low-voltage mains.
-

EMC device classification as per the rating plate or 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 operator 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 devices
 - Power, signal and data transfer lines
 - IT and telecommunications devices
 - Measuring and calibrating devices
-

Supporting measures for avoidance of EMC problems:

1. Mains supply
 - If electromagnetic interference arises despite correct mains connection, additional measures are necessary (e.g. use a suitable line filter).
2. 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
3. Equipotential bonding
4. Shield, 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 persons in the vicinity, e.g. those with pacemakers and hearing aids
- Individuals with pacemakers must seek advice from their doctor before approaching the device or any welding that is in progress
- For safety reasons, maintain as large a distance as possible between the welding power-leads and the head/torso of the welder
- Do not carry welding power-leads and hosepacks over the shoulders or wind them around any part of the body

Safety measures at the installation location and during transport

A device toppling over could 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 clearly laid out.

When transporting the device, observe the relevant national and local guidelines and accident prevention regulations. This applies especially to guidelines regarding the risks arising during transport.

After transporting the device, it must be visually inspected for damage before commissioning. Any damage must be repaired by trained service technicians before commissioning the device.

Safety measures in normal operation

Only operate the device if all safety devices are fully functional. If the safety 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 safety devices.

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.

- Only use suitable original parting agent from the manufacturer.
 - Observe the information on the parting agent safety data sheet when handling parting agent. The parting agent safety data sheet may be obtained from your service centre or downloaded from the manufacturer's website.
 - Do not mix the manufacturer's parting agent with other parting agents.
 - If damage results from using a different parting agent, the manufacturer accepts no liability. In addition, no warranty claims will be entertained.
 - Used parting agent must be disposed of properly in accordance with the relevant national and international regulations.
-

Commissioning, maintenance and repair

It is impossible to guarantee that bought-in parts are designed and manufactured to meet the demands made of them, or that they satisfy safety requirements.

- Use only original spare 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 replaced 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.
-

The housing screws provide the ground conductor connection for earthing the housing parts.

Only use original housing screws in the correct number and tightened to the specified torque.

Safety inspection

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

Waste electrical and electronic equipment must be collected separately and recycled in an environmentally-friendly way, in accordance with the European Directive and national legislation. Used equipment must be returned to the distributor or disposed of via an approved local collection and disposal facility. Correct disposal of used equipment promotes the sustainable recycling of material resources. Failing to dispose of used equipment correctly can lead to adverse health and/or environmental impacts.

Packaging materials

Separate collection according to material. Check your local authority regulations. Crush containers to reduce size.

Safety symbols

Devices with the CE mark satisfy the essential requirements of the low-voltage and electromagnetic compatibility directives (e.g. relevant product standards of the EN 60 974 series).

Fronius International GmbH hereby declares that the device is compliant with Directive 2014/53/EU. The full text on the EU Declaration of Conformity can be found at the following address: <http://www.fronius.com>

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

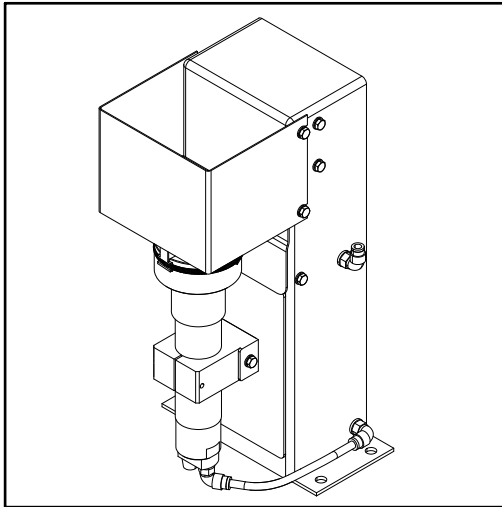
Copyright

Copyright of these operating instructions remains with the manufacturer.

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

General



The cleaning device automatically cleans MIG/MAG welding torches, which are used to weld aluminium materials. This device allows you to clean the inside, front and outside of the gas nozzle across a wide range of torch geometries. The result is a significant increase in the service life of wearing parts.

Device concept

A brush head is used to clean the welding torch. The brush head is equipped with different brush types, giving optimal cleaning results. All brushes can be replaced without the need for any tools.

Welding residues are blown away from the welding torch and brush head by two cleaning nozzles.

A stable installation stand is available for the cleaning device.

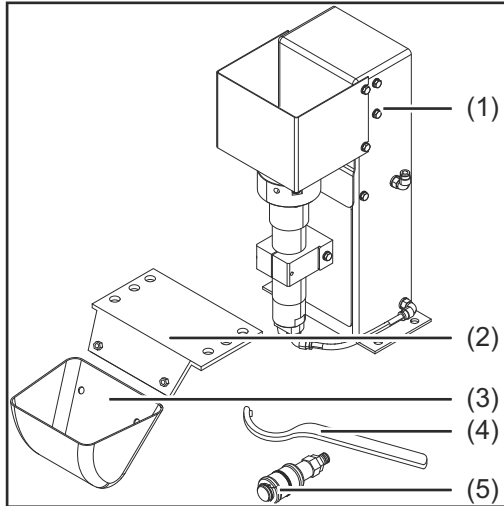
Application areas

The cleaning device is ideal for use in robot and other automated applications.

The main application areas are:

- Automobile and component supply industry
- Equipment construction
- Chemical plant construction
- Machine and tracked vehicle manufacturing
- Construction machinery and special vehicles

Scope of supply



NOTE!

The brush head is not part of the scope of supply.

- (1) Robacta Reamer brush head cleaning device for aluminium applications
- (2) Spatter tray retainer
- (3) Spatter tray
- (4) Tightening key for cleaning motor
- (5) Compressed air relief valve

Not shown:

- (6) Harting Han6P connecting plug (X1) without cable
- (7) Operating instructions
- (8) Fixings for assembling the cleaning device:
 - 4 screws
 - 4 washers
 - 4 lock washers
 - 4 nuts

Options

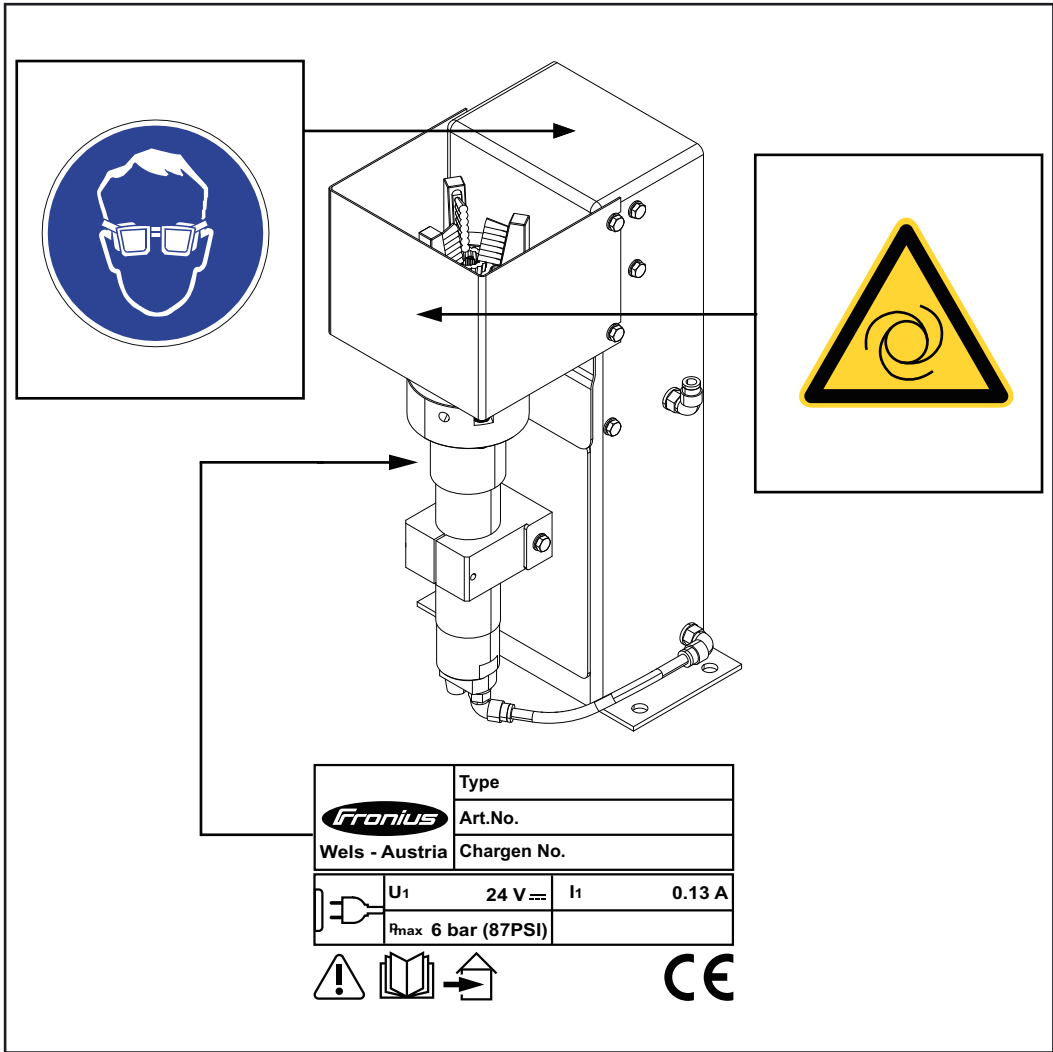
The following options are available for the cleaning device:

- Installation stand
- Wire cutter

Warning notices on the cleaning device

NOTE!

The cleaning device is fitted with warning notices and a rating plate.
The warning notices and rating plate must not be removed or painted over.



Warning notices on the cleaning device



WARNING! Risk of serious injury from:

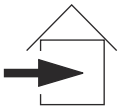
- mechanically powered parts
- compressed air escaping from the cleaning nozzles
- flying parts (shavings, etc.)

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



Wear eye protection



Notice warning of automatic start-up of the device:

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
- Manual



WARNING!

Danger from machines and objects falling.

This can result in serious injury and damage to property.

- ▶ Secure the device to prevent it from falling over when transporting on a forklift truck or lift truck.
 - ▶ Avoid sudden changes in direction, braking or acceleration.
-

Transport notices on the packaging



CAUTION!

Danger due to improper transport.

This can result in damage to property.

- ▶ Observe the transport notices on the device packaging.
-

Controls, connections and mechanical components

Safety

Observe the following safety instructions for all work described in the "Control elements, connections and mechanical components" section.



WARNING!

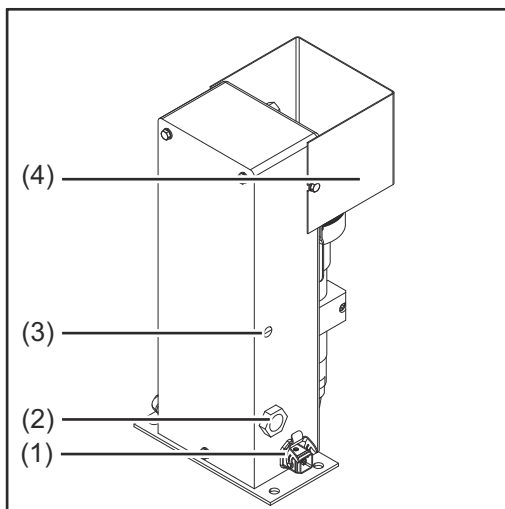
Operating the equipment incorrectly can cause serious injury and damage.

The functions described must only be used by trained and qualified personnel. Do not use the functions described here until you have thoroughly read and understood the following documents:

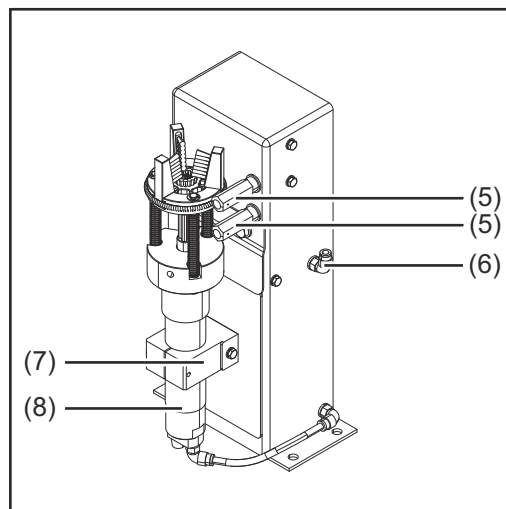
- ▶ these operating instructions
 - ▶ all the operating instructions for the system components, especially the safety rules
-

Controls, connections and mechanical components

Control elements, connections and mechanical components



Side view



Front view

No.	Function
-----	----------

- | | |
|-----|---|
| (1) | Harting Han6P connection socket (X1)
for a 24 V DC supply |
|-----|---|



CAUTION!

Risk of damage to Harting Han6P connection (X1) supply due to overcurrent.
Secure supply against overcurrent with a 500 mA slow-blow fuse.

- | | |
|-----|--|
| (2) | Compressed air connection
for a dry compressed air supply at 6 bar (86.99 psi)
Thread identification compressed air connection: G ¼"
For more details on compressed air conditions, see section Compressed air supply specifications on page 29 |
| (3) | "Cleaning" screw
for manually checking the following functions: <ul style="list-style-type: none"> - Cleaning motor ON/OFF - Supply of compressed air to the cleaning nozzles (compressed air emerges from cleaning nozzles) - Lifting device UP/DOWN |
| (4) | Protective covering |
| (5) | Cleaning nozzles
for cleaning the brush head and welding torch using compressed air |
| (6) | Compressed air connection for the wire cutter option |

-
- (7) **Lifting device**
lifts the cleaning motor with the brush head to the cleaning position ready to commence cleaning
-
- (8) **Cleaning motor**
drives the brush head
-

Harting Han6P connecting plug pin assignment (X1) for robot control

General

CAUTION!

Danger from overcurrent.

Damage to the Harting Han6P connection supply may result.

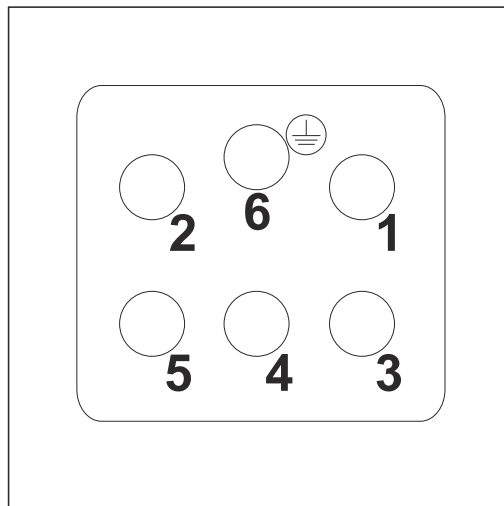
- ▶ Secure the power supply of the cleaning device against overcurrent with a 500 mA slow-blow fuse.

NOTE!

To avoid malfunction, keep the cable length between the cleaning device and robot control as short as possible.

The Harting Han6P connecting plug (X1) for connecting the cleaning device to the robot control is included in the scope of supply. The cable harness must be adapted to the connection technology on the robot control.

Harting Han6P connecting plug pin assignment (X1)



Harting Han6P connecting plug pin assignment (X1) - cable-end view

Input and output signals on the Robacta Reamer Alu brush head:

1. Start cleaning input signal (cleaning motor ON, lifting device UP, compressed air supply to cleaning nozzles ON)
2. Not assigned
3. GND
4. + 24 V DC
5. Cleaning motor DOWN output signal
6. Earthing

(see circuit diagrams in appendix)

Installation and commissioning

Safety

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

WARNING!

Incorrect operation or poorly executed work can cause serious injury or damage.

All activities described in these operating instructions may only be carried out by trained and qualified personnel. All functions described in these operating instructions may only be used by trained and qualified personnel. Do not carry out any of the work or use any of the functions described 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 manufacturer of the robot and welding system must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place while you are in the working area of the robot.

WARNING!

Risk of serious injury from:

- ▶ mechanically powered components
- ▶ flying parts (shavings, etc.)
- ▶ compressed air escaping from the cleaning nozzles
- ▶ Before performing work on the cleaning device or any connected system components:
 - ▶ disconnect the customer's compressed air and power supplies from the cleaning device and the connected system components, and ensure that they remain disconnected until work is complete
 - ▶ ensure that the cleaning device is depressurised - please see the "Ensuring that the cleaning device is depressurised" section below for the relevant instructions



WARNING!

Whenever the cleaning device and connected system components are supplied with voltage and/or compressed air, a risk of serious injury exists from:

- ▶ rotating brush head
- ▶ lifting device moving up/down
- ▶ activated wire cutter
- ▶ flying parts (shavings, etc.)
- ▶ compressed air escaping from the cleaning nozzles

If work has to be performed on the cleaning device while it is being supplied with voltage and/or compressed air:

- ▶ keep your body, especially your hands, face, hair, tools and all clothing away from the brush head, brush head lifting device, wire cutter and cleaning nozzles
 - ▶ wear ear protection
 - ▶ wear protective goggles with side protection
-

Ensuring that the cleaning device is depressurised

Attempt to briefly activate the cleaning device without any compressed air supply to check whether the cleaning device is depressurised. Proceed as follows:

- 1** Take protective measures:
 - The brush head, brush head lifting device, wire cutter and cleaning nozzles could start up. Therefore keep your body, especially your hands, face and hair, any objects and all clothing away from the parts referred to above
 - wear ear protection
 - wear protective goggles with side protection
- 2** Ensure that the cleaning device has been disconnected from the compressed air supply
- 3** Briefly turn the "Cleaning" screw on the cleaning device 90° to the right, then turn it straight back to its original position
 - If the cleaning device does not respond to the turning of the screw, the cleaning device is depressurised
 - If the cleaning device responds to the turning of the screw, the cleaning device is still connected to a compressed air supply. If this is the case, you must disconnect the cleaning device from the compressed air supply and check again that the cleaning device is depressurised before starting work

Before commissioning

Proper use

The cleaning device is to be used exclusively for cleaning Fronius robot welding torches, especially the gas nozzle and its interior, in automatic mode and within the scope of the technical data. 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 includes:

- carefully reading these operating instructions
- following all the instructions and safety rules in these operating instructions
- performing all stipulated inspection and maintenance work

Operators, maintenance personnel

WARNING!

Risk of machines starting automatically.

This can result in serious injury and damage to property.

- ▶ 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.
- ▶ 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 serviced.

Setup regulations

The cleaning device is tested to protection class IP 21, meaning:

- Protection against penetration by solid foreign bodies with diameters > 12.5 mm (0.49 in.)
- No protection against the ingress of water

The device must not be set up and operated outdoors. The built in electrical parts must be protected from direct wetting.

WARNING!

Danger from machines falling or toppling over.

This can result in serious injury and damage to property.

- ▶ Always secure the cleaning device to the underlying surface.

Compressed air supply specifications

To ensure that the cleaning device functions correctly, the following compressed air supply specifications must be met:

- Establish compressed air supply using a pressure limiter and compressed air filter
- Provide compressed air quality conforming to ISO 8573-1:2001, class 7 4 3, instrument air
 - Solid particle concentration $\leq 10 \text{ mg/m}^3$
 - Vapour pressure dew point $\leq + 3^\circ\text{C}$
 - Oil concentration $\leq 1 \text{ mg/m}^3$

Measures for the safe operation of the device with untrained personnel

If untrained operators have access to the device, its compressed air supply must be disconnected for the duration of work in accordance with 'Performance Level d' of the ISO 13849-1 standard.

To ensure that the compressed air supply is interrupted as required, MS6-SV pressure build-up and pressure relief valves from FESTO are recommended.

Screwing the cleaning device to the underlying surface

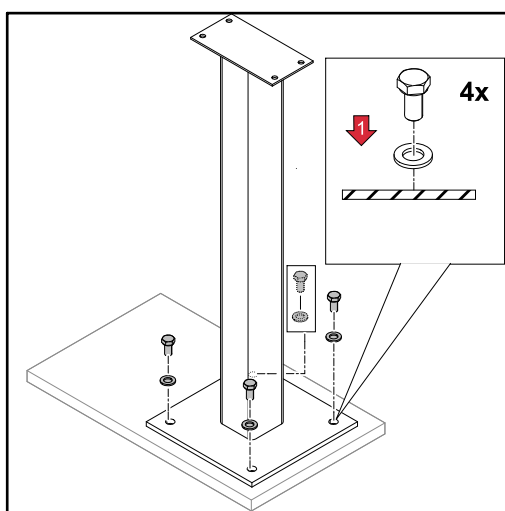
Screwing the cleaning device and installation stand to the underlying surface

WARNING!

Danger from machines falling or toppling over.

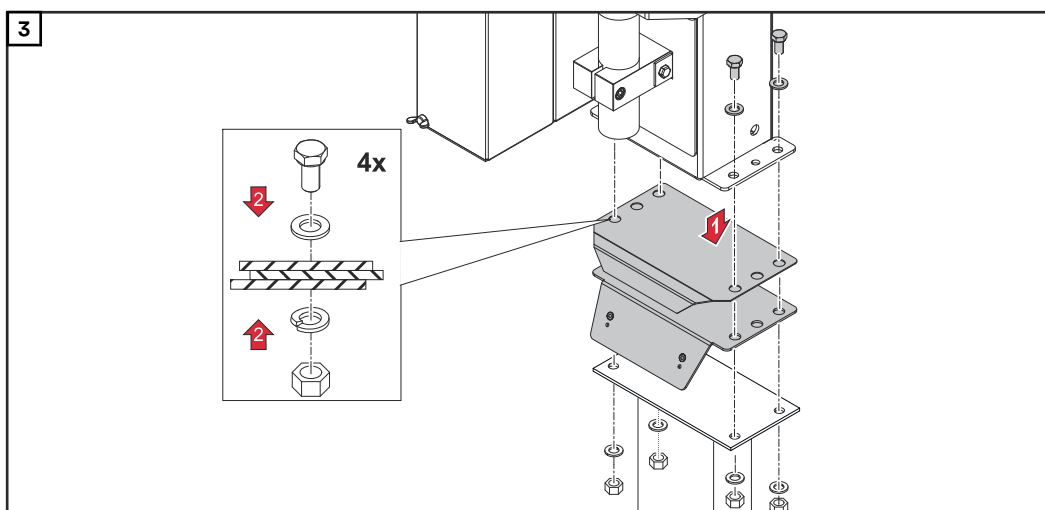
This can result in serious injury and damage to property.

- ▶ Always secure the installation stand to the underlying surface.
- ▶ The screws for fastening the installation stand are not included in the scope of supply of the installation stand. The installer is responsible for selecting the right type of screws or bolts.
- ▶ Always secure the cleaning device to the installation stand.

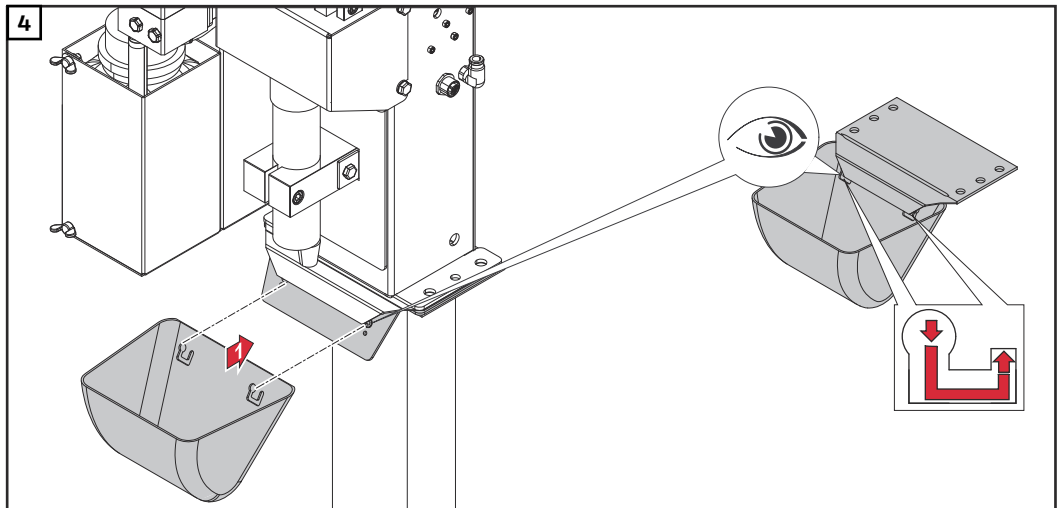


- 1** Place the optionally available installation stand on a level, firm and vibration-free surface (foundation)
 - Position the installation stand in such a way that the distance the robot has to travel to the cleaning device on the installation stand is as short as possible
- 2** Tightly screw the installation stand to the surface (foundation) using the selected mounting materials

Screw on the cleaning device and the spatter tray retainer using the fixings supplied with the cleaning device.



Place components on the installation stand and secure



Attach the spatter tray retainer as shown

Screwing the cleaning device to the underlying surface

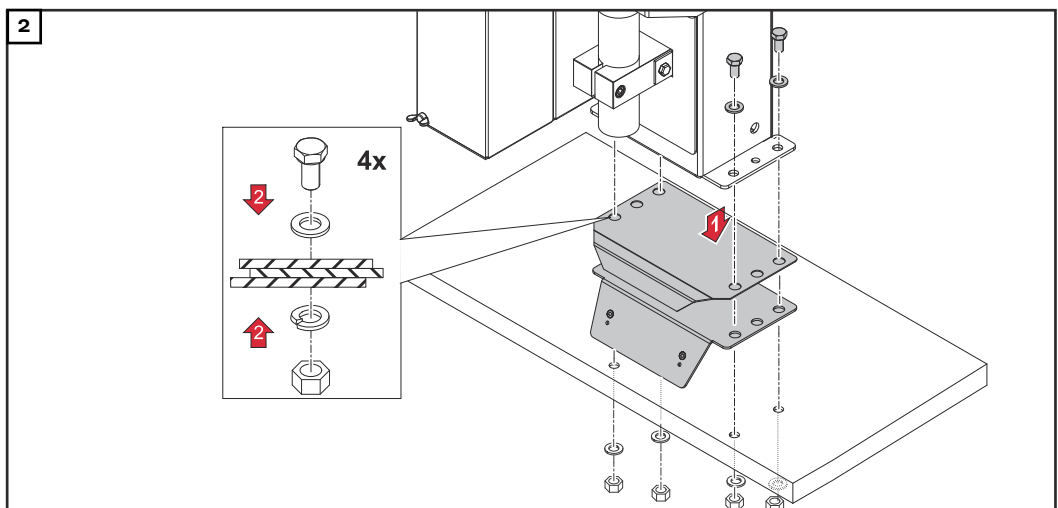
WARNING!

Danger from machines falling or toppling over.

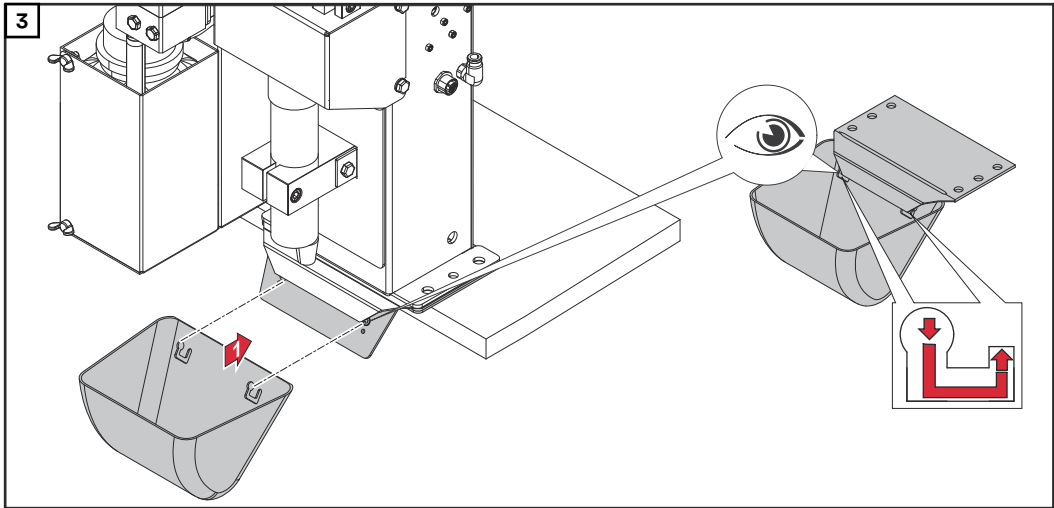
This can result in serious injury and damage to property.

- ▶ Always secure the cleaning device to the underlying surface.
- ▶ If the underlying surface thickness is less than 5 mm (0.197 in.), use the fixings supplied with the cleaning device for fastening.
- ▶ If the underlying surface thickness is greater than 5 mm (0.197 in.), do not use the fixings supplied for fastening. In this situation the installer is responsible for selecting the right type of fixing.

- 1 Place the cleaning device and the spatter tray retainer on a level, firm and vibration-free surface (foundation).
 - Position the cleaning device in such a way that the distance the robot has to travel to the cleaning position is as short as possible.



Place components on the underlying surface and secure



Attach the spatter tray retainer as shown

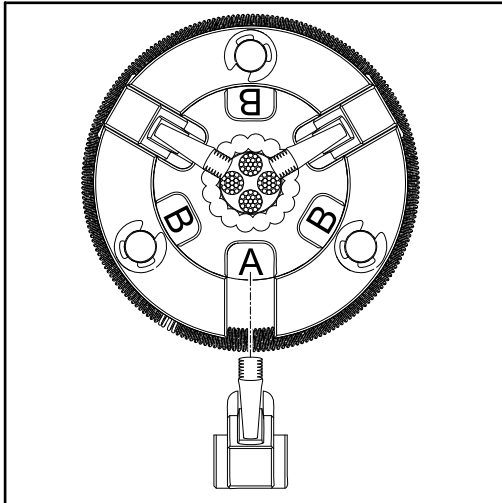
Adjusting and fitting the standard brush head

General

NOTE!

The following information applies to the use of the manufacturer's contact tips, gas nozzles and brush head.

If other manufacturers' products are used, trouble-free operation of the device cannot be guaranteed. The manufacturer accepts no liability for damage arising from the use of other manufacturers' contact tips, gas nozzles or brush heads.



The brush head has two different settings (A and B) to modify the distance between the diagonal brushes according to the type of gas nozzle being used.

NOTE!

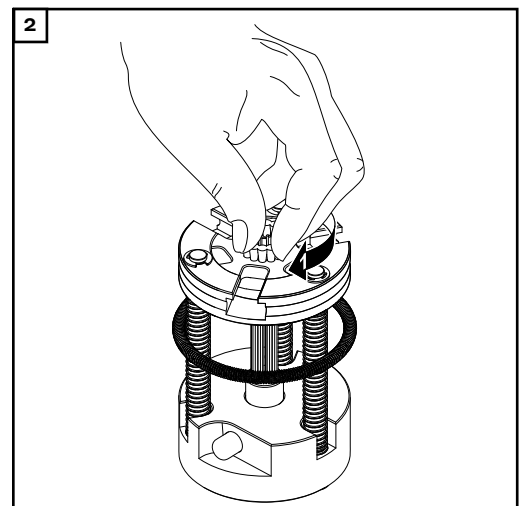
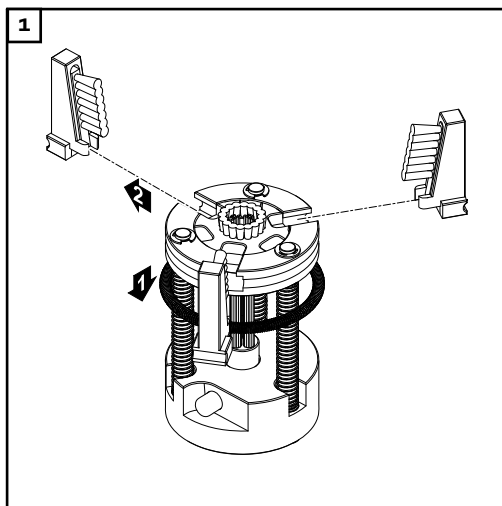
The following list of settings is intended as a guide only.

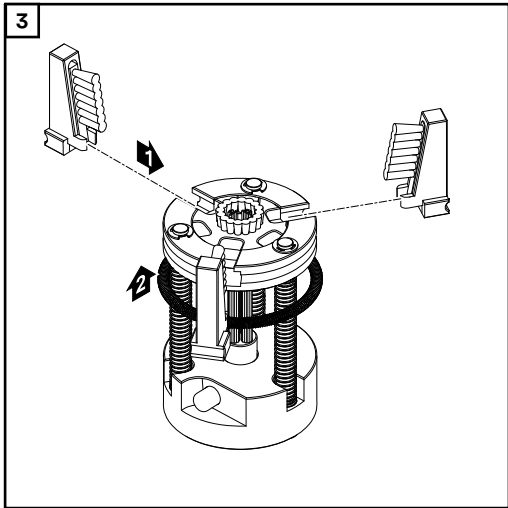
Setting A for:
standard gas nozzles with an outer diameter up to 23 mm (0.91 inch)

Setting B for:
standard gas nozzles with an outer diameter from 24 mm (0.95 inch) upwards

Adjusting the brush head

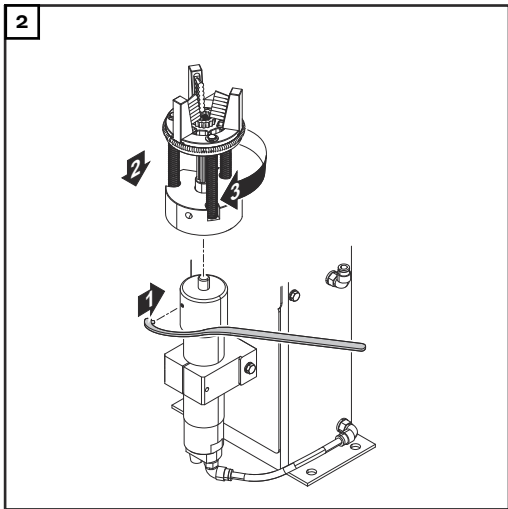
Adjust the brush head as follows:





Fitting the brush head

1 Remove the protective covering from the cleaning device



3 Fit the protective covering to the cleaning device in its original position

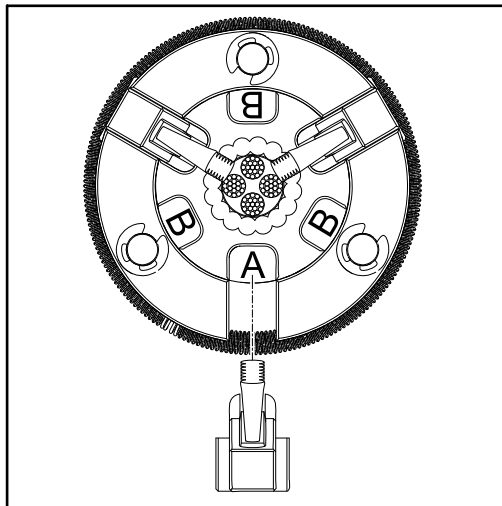
Adjusting and fitting the Braze+ brush head

General

NOTE!

The following information applies to the use of the manufacturer's contact tips, gas nozzles and brush head.

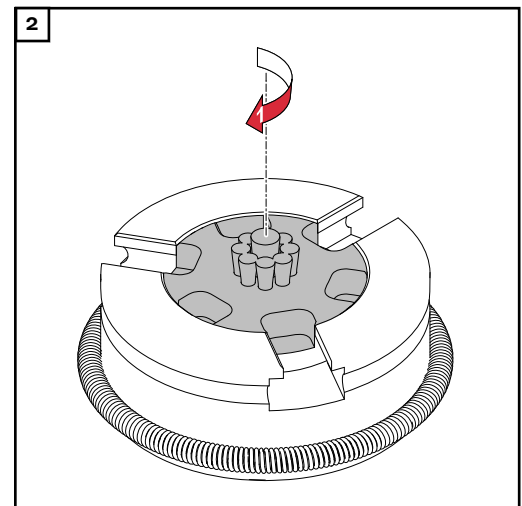
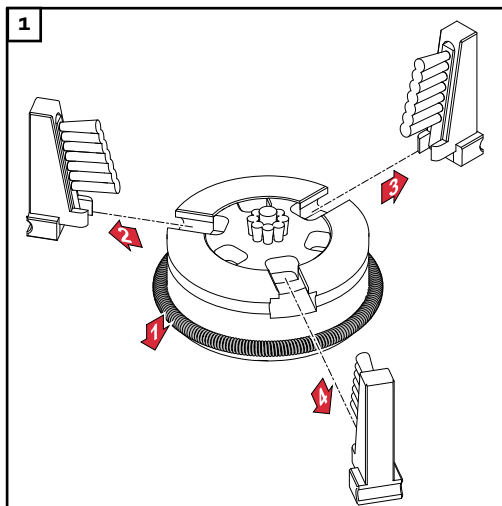
If other manufacturers' products are used, trouble-free operation of the device cannot be guaranteed. The manufacturer accepts no liability for damage arising from the use of other manufacturers' contact tips, gas nozzles or brush heads.

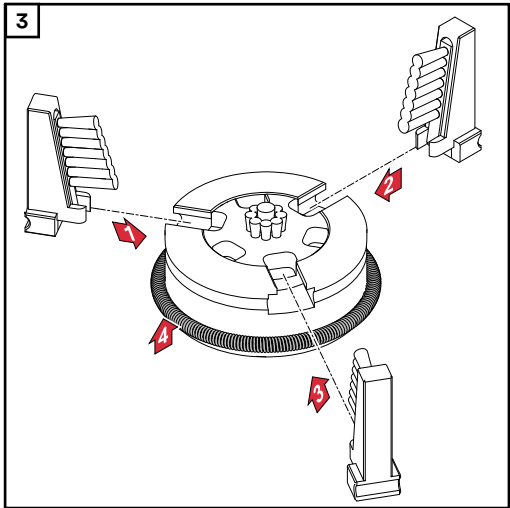


The brush head has two different settings (A and B) to modify the distance between the diagonal brushes according to the type of gas nozzle being used.

Adjusting the brush head

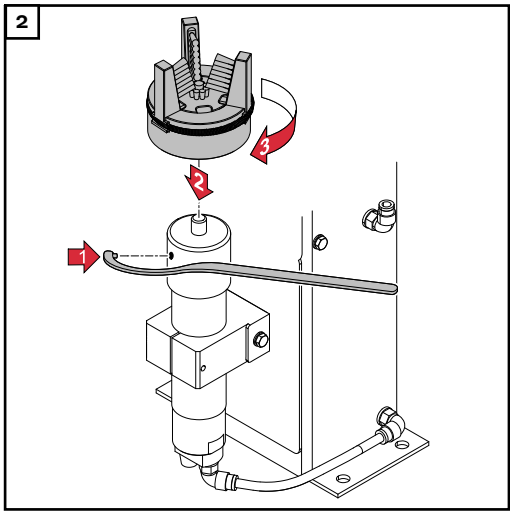
Adjust the brush head as follows:





Fitting the brush head

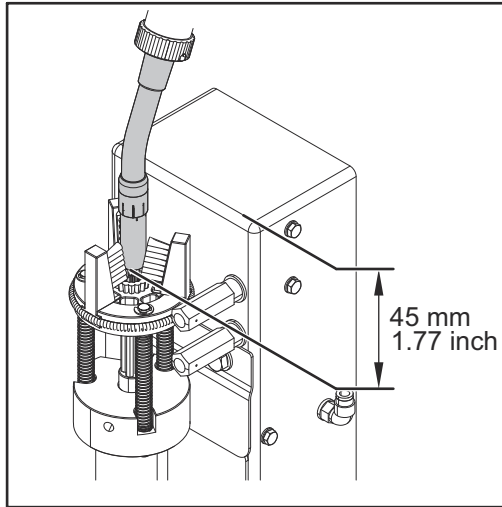
1 Remove the protective covering from the cleaning device



3 Fit the protective covering to the cleaning device in its original position

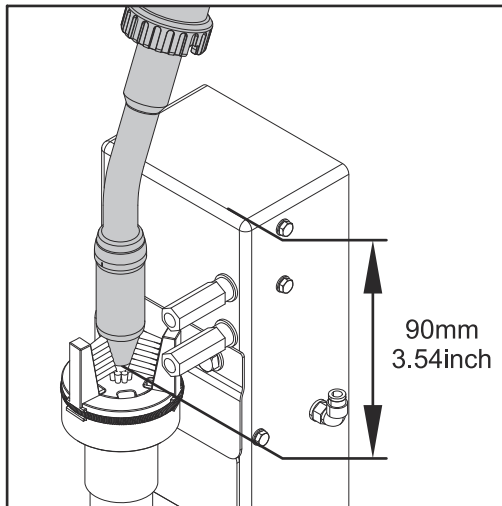
Torch cleaning position

Cleaning position of the welding torch - standard brush head



- End of gas nozzle is approx. 45 mm (1.77 in.) beneath upper edge of cleaning device housing, positioned centrally with respect to the cleaning motor

Cleaning position of the welding torch - Braze + brush head

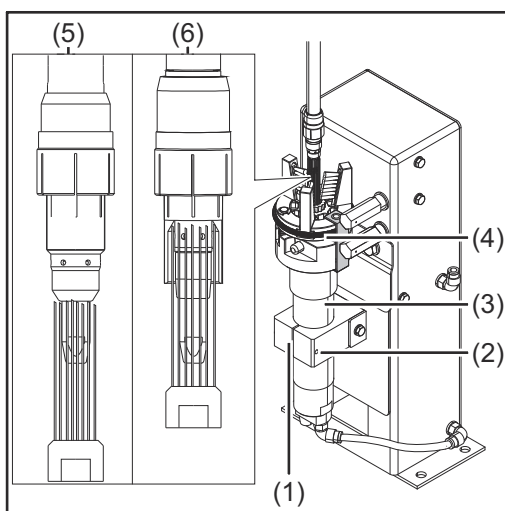
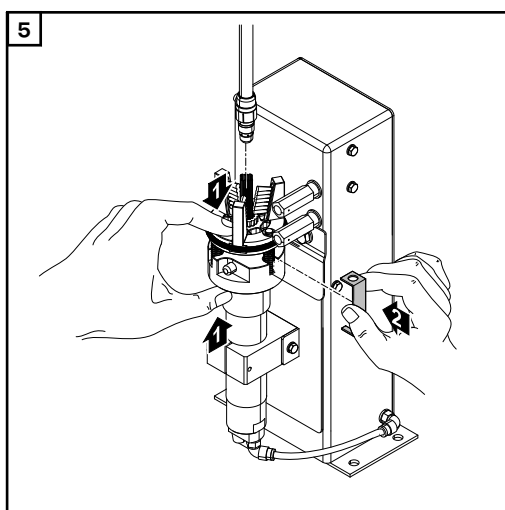


- End of gas nozzle is approx. 90 mm (3.54 in.) beneath upper edge of cleaning device housing, positioned centrally with respect to the cleaning motor

Adjusting the position of the cleaning motor (with standard brush head)

Adjusting the position of the cleaning motor

- 1 Remove the protective covering from the cleaning device
- 2 Ensure that the lifting device (1) is in its lowest position
- 3 Move the welding torch to the cleaning position
- 4 Remove the gas nozzle from the torch body



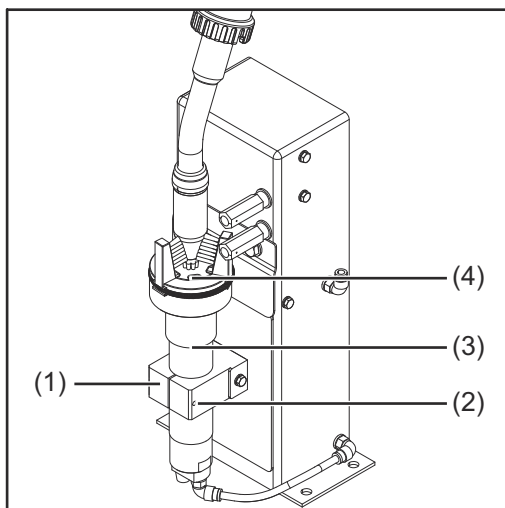
- 6 Loosen screw (2) on the lifting device (1)
- 7 Manually push the lifting device (1) into its highest lift position and hold in place
- 8 Manually push the cleaning motor (3) and brush head (4) into the cleaning position
 - see diagram (5) for welding torch with spatter guard
 - see diagram (6) for welding torch with insulating sleeve

- 9 Fix the cleaning motor (3) in this position in the lifting device (1) - tighten the screw (2) on the lifting device (1)
- 10 Fit the gas nozzle to the torch body
- 11 Press brush head together and pull off bracket
- 12 Fit the protective covering to the cleaning device in its original position

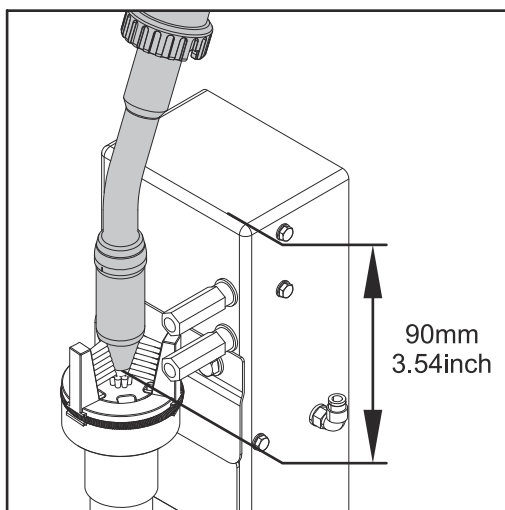
Adjusting the position of the cleaning motor (with Braze+ brush head)

Adjusting the position of the cleaning motor

- 1 Remove the protective covering from the cleaning device
- 2 Ensure that the lifting device (1) is in its lowest position
- 3 Move the welding torch to the cleaning position



- 4 Loosen screw (2) on the lifting device (1)
- 5 Manually push the lifting device (1) into its highest lift position and hold in place



- 6 Manually push the cleaning motor (3) and brush head (4) into the cleaning position

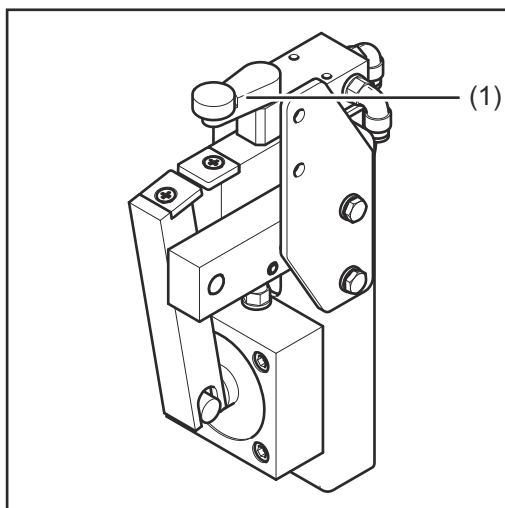
- 7 Fix the cleaning motor (3) in this position in the lifting device (1) - tighten the screw (2) on the lifting device (1)
- 8 Fit the protective covering to the cleaning device in its original position

Installation and function of mechanically-controlled wire cutter (option)

How the mechanically-controlled wire cutter works

NOTE!

If you change over to a new welding torch, the mechanically controlled wire cutter must be reset!



If a torch body pushes the valve lever (1) to the side by more than 15° with the gas nozzle, the wire cutter is activated and the wire electrode is cut.

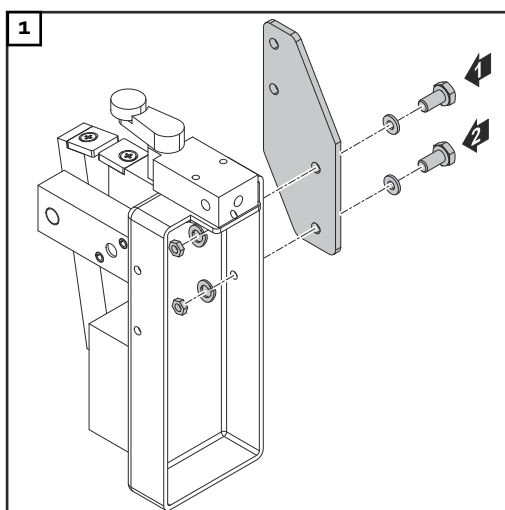
NOTE!

The wire electrode is cut while the torch body is moving.

Maximum wire diameter

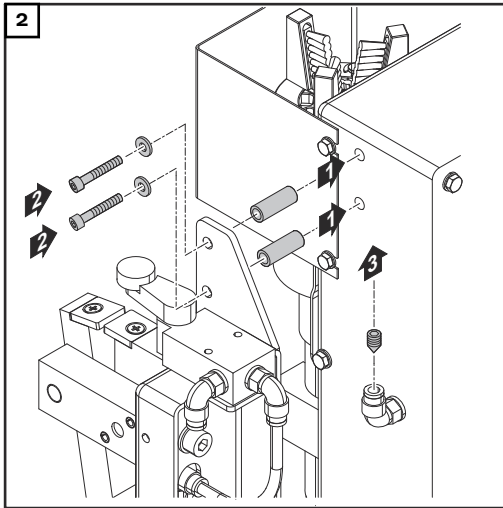
Wire electrodes with a diameter of up to 1.6 mm (0.063 in.) can be cut by the wire cutter.

Installing the mechanically-controlled wire cutter



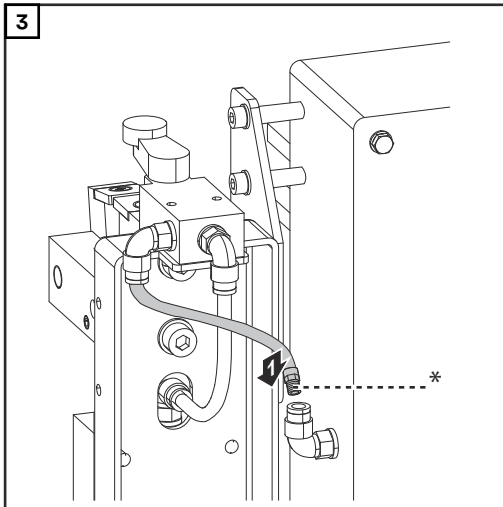
NOTE!

Use the fixings supplied with the wire cutter for the assembly shown.



NOTE!

Use the fixings supplied with the wire cutter for the assembly shown.



* Use a suitable adapter to connect the wire cutter compressed air hose to the cleaning device.

Installation and function of electrically-controlled wire cutter (option)

How the electrically-controlled wire cutter works

The electrically-controlled wire cutter opens and closes when there is an active signal from the robot control.

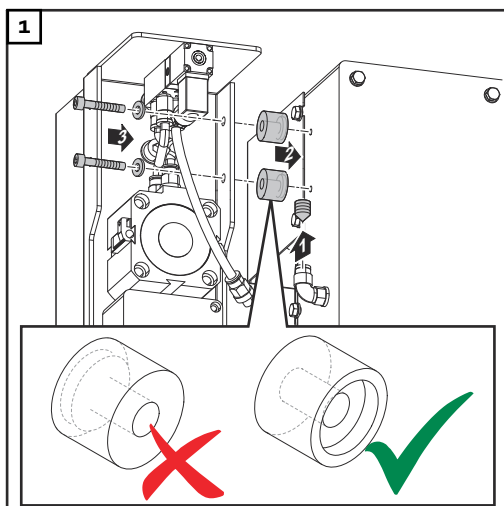
Maximum wire diameter

Wire electrodes with a diameter of up to 1.6 mm (0.063 in.) can be cut by the wire cutter.

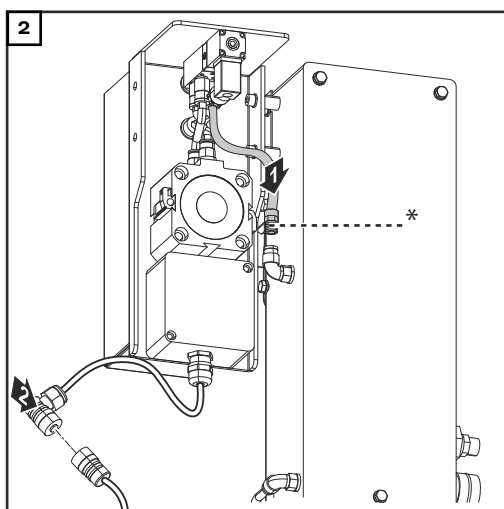
Installing the electrically-controlled wire cutter

NOTE!

Use the fixings supplied with the wire cutter for the work described below.



Ensure that the recesses in the spacers face the cleaning device.



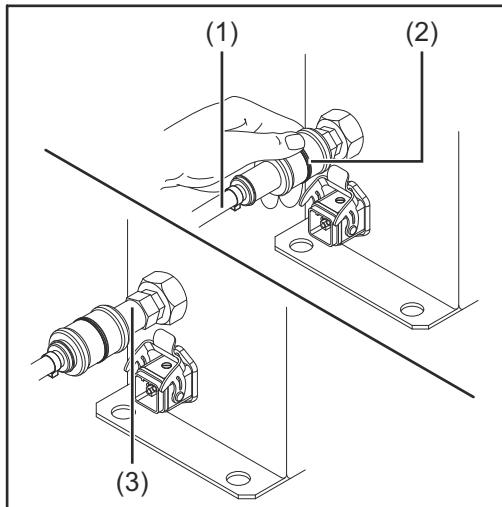
* Use supplied adapter to connect the wire cutter compressed air hose to the cleaning device.

NOTE!

The wire cutter must be controlled electrically by the robot control.

Installing the compressed air supply

Establishing the compressed air supply for the cleaning device, function of the compressed air relief valve



Function of the compressed air relief valve

To establish the compressed air supply:

- 1** Depressurise the compressed air supply line (1) and ensure that it remains depressurised for the duration of the work on the device
- 2** Screw the supplied compressed air relief valve tightly to the compressed air connection on the cleaning device
- 3** Connect the compressed air supply line (1) to the compressed air relief valve

Function of the compressed air relief valve:

- Valve open (2):

compressed air is being supplied

- Valve closed (3):

compressed air is not being supplied

Manually checking the cleaning device functions

Safety

WARNING!

For the following tasks, the cleaning device must be supplied with compressed air. This results in danger from the rotating cleaning cutter, cleaning motor moving up/down, gas nozzle clamping device moving out/in, flying parts (chips, etc.), compressed air/parting agent mixture escaping from the parting-agent injection nozzle.

This can result in serious injury and damage to property.

- ▶ Keep your body, especially your hands, face, hair, any objects and all clothing away from the cleaning cutter, cleaning motor, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection nozzle..
- ▶ Wear ear protection!
- ▶ Wear protective goggles with side protection.

Checking functions manually

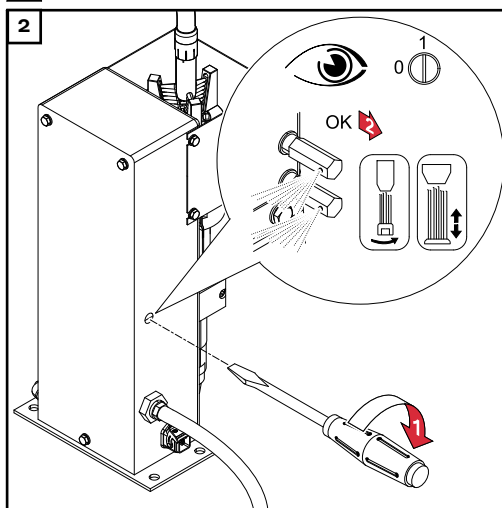
NOTE!

Functions are deactivated if the slot on the "Cleaning" screw is horizontal.

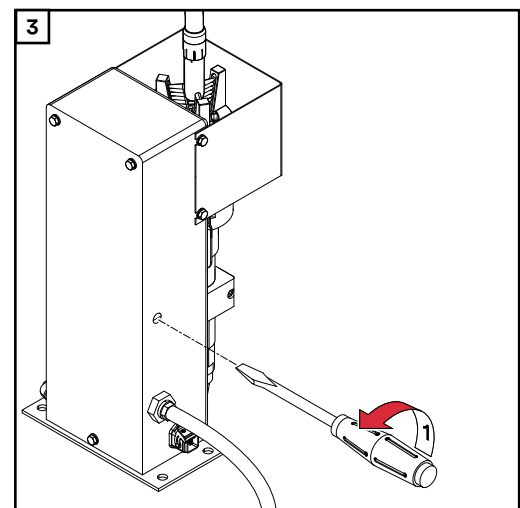
The following must be checked when the functions are being performed:

- function of the cleaning motor (cleaning motor OFF/ON)
- correct setting of the cleaning motor (lifting device moves UP/DOWN)
 - Standard brush head: for more details, see section [Adjusting the position of the cleaning motor \(with standard brush head\)](#) from page 39
 - Braze+ brush head: for more details, see section [Adjusting the position of the cleaning motor \(with Braze+ brush head\)](#) from page 40
- function of the cleaning nozzles (compressed air emerges from cleaning nozzles)

- 1 Establish the compressed air supply to the welding torch cleaning device



Checking functions manually



Deactivating the functions

Starting up the cleaning device

Prerequisites for start-up	<p>The following requirements must be met before the cleaning device is started up:</p> <ul style="list-style-type: none">- If present, the cleaning device installation stand is screwed to the underlying surface- The cleaning device is screwed to the underlying surface- Brush head is fitted- Position of the cleaning motor has been set- Compressed air supply has been established- Functions have been checked manually- Cleaning device is connected to the robot control- All coverings are fitted and all safety devices are intact and in their proper place
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Start-up	<p>The cleaning device starts up when there is an active signal from the robot control.</p>
-----------------	---

Cleaning program and signals

Sicherheit



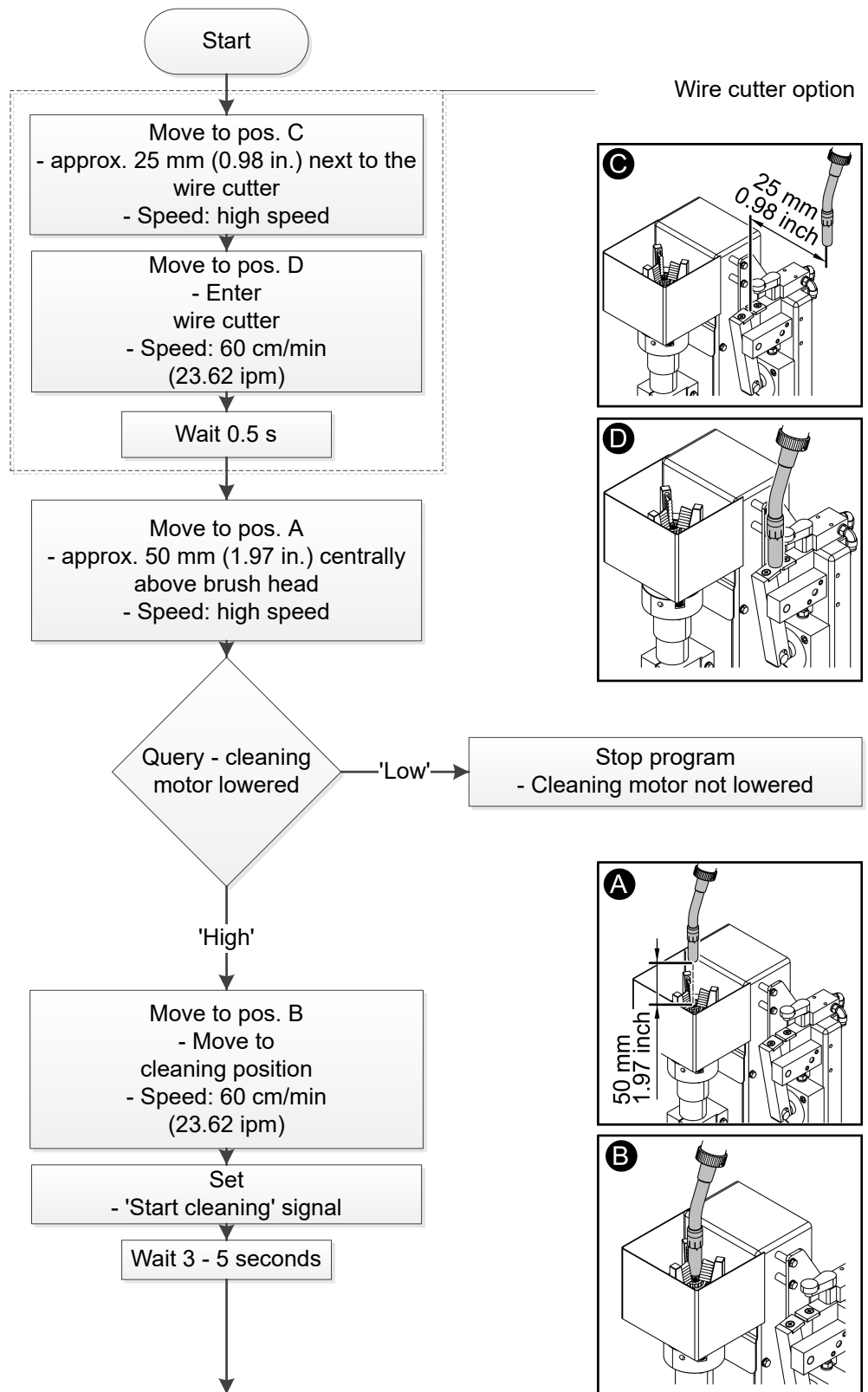
VORSICHT!

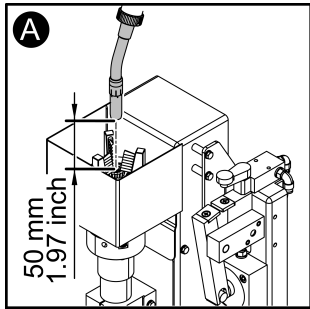
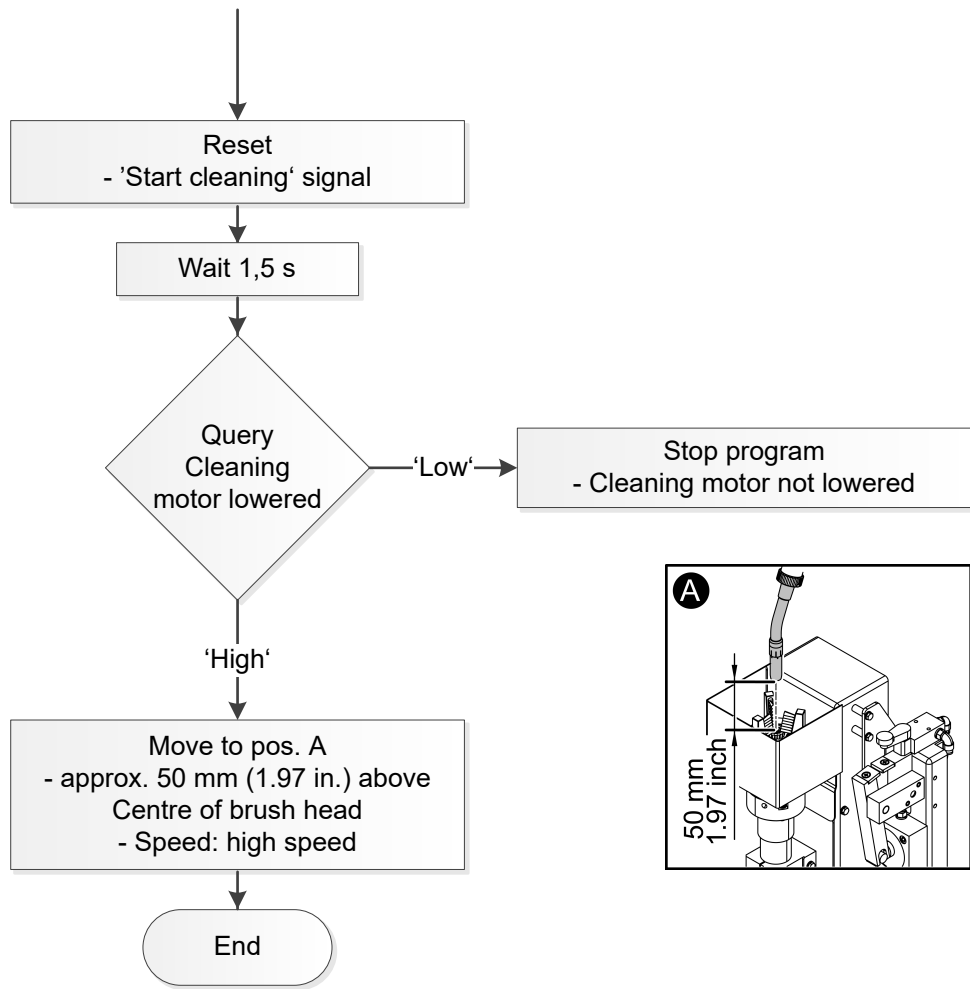
Gefahr durch unsachgemäße Inbetriebnahme.

Sachschäden können die Folge sein.

- ▶ Den automatisierten Betrieb erst starten, wenn das Reinigungsgerät ordnungsgemäß installiert und in Betrieb genommen wurde.
-

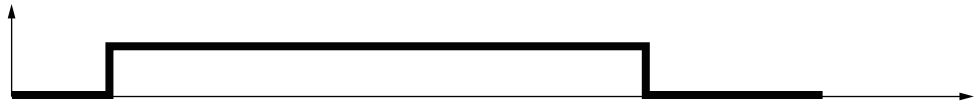
Cleaning program sequence



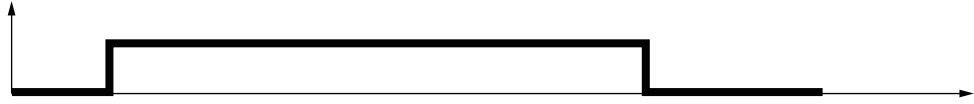


**Signal inputs
and outputs**

Signal input „start cleaning (cleaning motor ON, lifting device UP, compressed air supply to cleaning nozzles ON)“:



Signal output „cleaning motor down“:



Care, maintenance and disposal

Safety

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

WARNING!

Incorrect operation or poorly executed work can cause serious injury or damage.

All activities described in these operating instructions may only be carried out by trained and qualified personnel. All functions described in these operating instructions may only be used by trained and qualified personnel. Do not carry out any of the work or use any of the functions described 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 manufacturer of the robot and welding system must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place while you are in the working area of the robot.

WARNING!

Risk of serious injury from:

- ▶ mechanically powered components
- ▶ flying parts (shavings, etc.)
- ▶ compressed air escaping from the cleaning nozzles
- ▶ Before performing work on the cleaning device or any connected system components:
 - ▶ disconnect the customer's compressed air and power supplies from the cleaning device and the connected system components, and ensure that they remain disconnected until work is complete
 - ▶ ensure that the cleaning device is depressurised - please see the "Ensuring that the cleaning device is depressurised" section below for the relevant instructions



WARNING!

Whenever the cleaning device and connected system components are supplied with voltage and/or compressed air, a risk of serious injury exists from:

- ▶ rotating brush head
- ▶ lifting device moving up/down
- ▶ activated wire cutter
- ▶ flying parts (shavings, etc.)
- ▶ compressed air escaping from the cleaning nozzles

If work has to be performed on the cleaning device while it is being supplied with voltage and/or compressed air:

- ▶ keep your body, especially your hands, face, hair, tools and all clothing away from the brush head, brush head lifting device, wire cutter and cleaning nozzles
 - ▶ wear ear protection
 - ▶ wear protective goggles with side protection
-

Ensuring that the cleaning device is depressurised

Attempt to briefly activate the cleaning device without any compressed air supply to check whether the cleaning device is depressurised. Proceed as follows:

- 1** Take protective measures:
 - The brush head, brush head lifting device, wire cutter and cleaning nozzles could start up. Therefore keep your body, especially your hands, face and hair, any objects and all clothing away from the parts referred to above
 - wear ear protection
 - wear protective goggles with side protection
- 2** Ensure that the cleaning device has been disconnected from the compressed air supply
- 3** Briefly turn the "Cleaning" screw on the cleaning device 90° to the right, then turn it straight back to its original position
 - If the cleaning device does not respond to the turning of the screw, the cleaning device is depressurised
 - If the cleaning device responds to the turning of the screw, the cleaning device is still connected to a compressed air supply. If this is the case, you must disconnect the cleaning device from the compressed air supply and check again that the cleaning device is depressurised before starting work

Care, maintenance and disposal

General

The cleaning device generally needs no maintenance. However, to keep the cleaning device in good working condition for years to come, several points on care and maintenance must be observed.

Before each start-up

- Check the cleaning brushes on the brush head and replace worn brushes
- Empty the cleaning device spatter tray
- If fitted, empty the wire cutter tray
- Carry out a general visual inspection of the cleaning device and wire cutter

Daily

- Remove any dirt deposits from device

Every 6 months

- 1 Open the device and check the pneumatic valves for
 - Leaks
 - The secure seating of all screws
 - The secure seating of all screw joints on the pneumatic valves

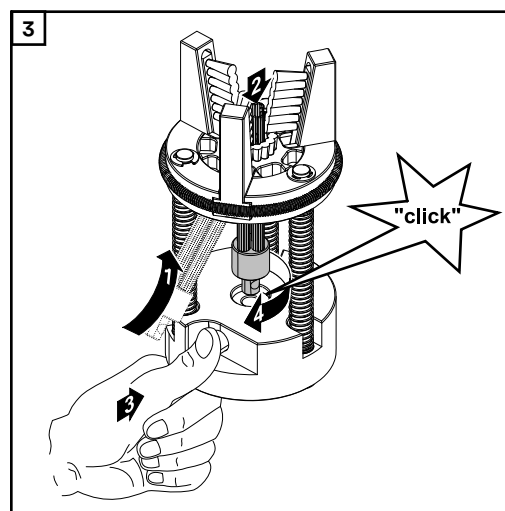
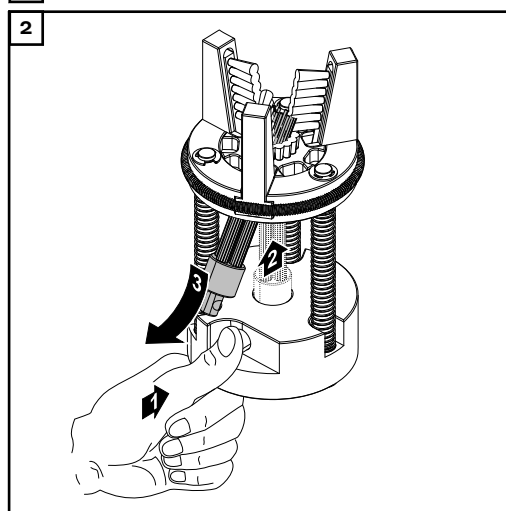
As necessary

Open the device and

- 1 Clean inside of device using dry reduced compressed air
- 2 Lightly oil the lifting device cylinder guides
- 3 Restore the original condition of the device

Changing the end brushes (standard brush head only)

- 1 Remove the protective covering from the cleaning device



- 4 Fit the protective covering to the cleaning device in its original position

Changing the round brush

NOTE!

In the process described below for changing the round brush, a standard brush head is shown.

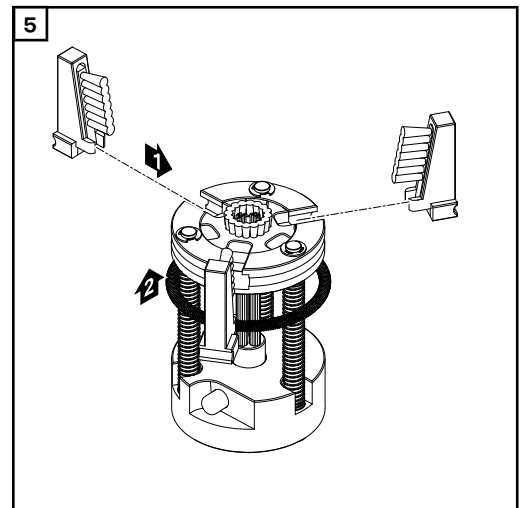
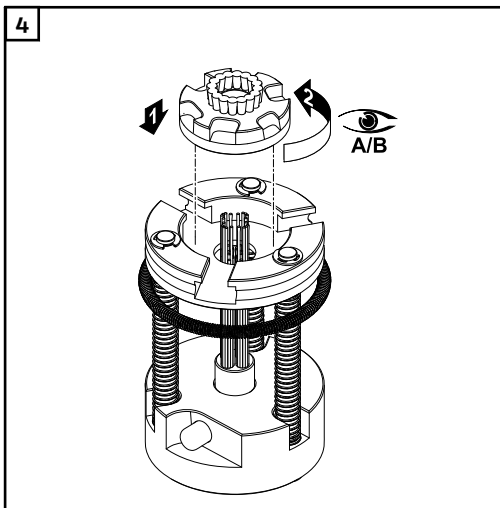
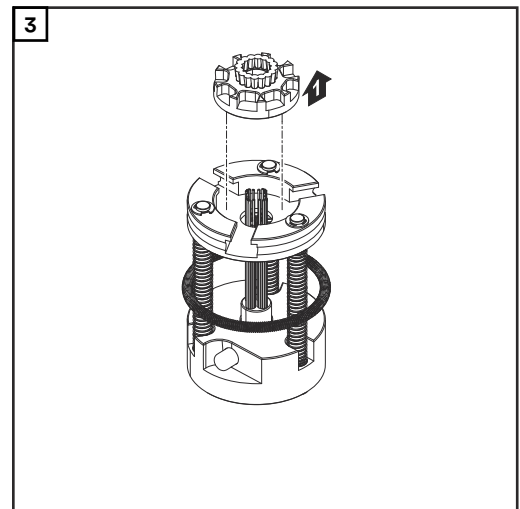
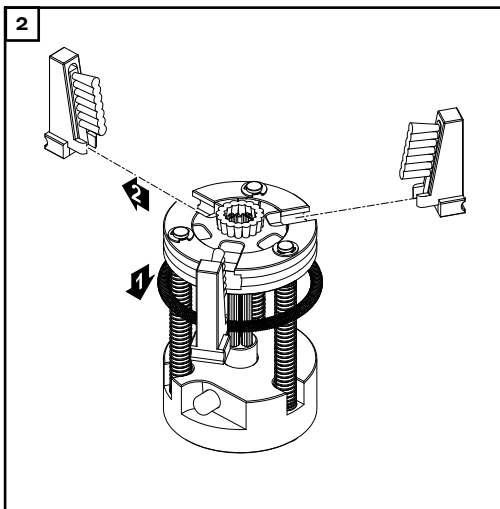
The process is identical for aBraze+ brush head.

NOTE!

Before changing the brush, note the setting of the brush head (A or B) and be sure to use this setting during assembly.

This will ensure that the correct clearance is maintained between the diagonal brushes after the brush has been changed.

- 1 Remove the protective covering from the cleaning device



- 6 Fit the protective covering to the cleaning device in its original position

Changing the diagonal brushes

NOTE!

In the process described below for changing a diagonal brush, a standard brush head is shown.

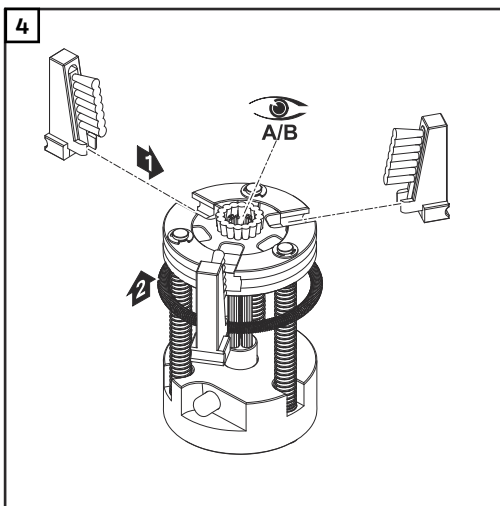
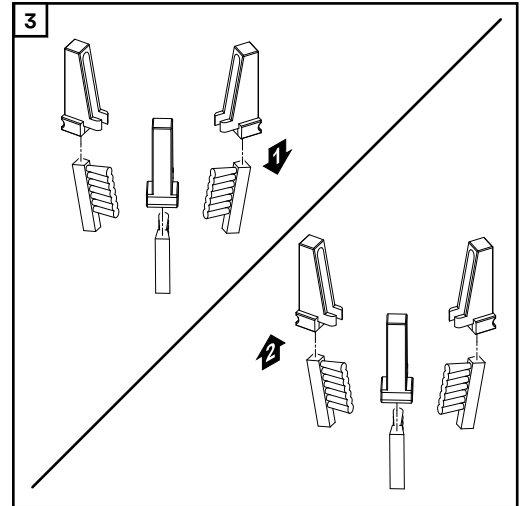
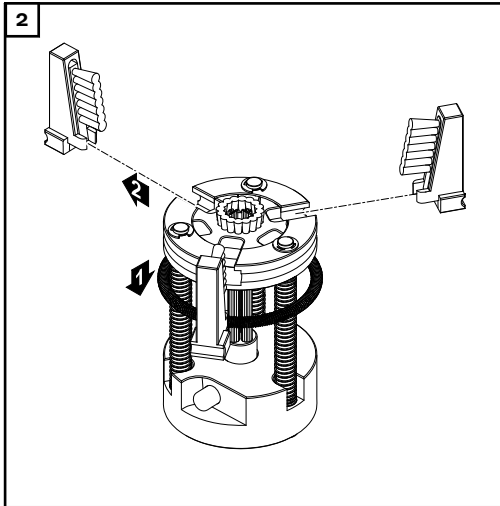
The process is identical for aBraze+ brush head.

NOTE!

Before changing the brushes, note the setting of the brush head (A or B) and be sure to use this setting during assembly.

This will ensure that the correct clearance is maintained between the diagonal brushes after the brush has been changed.

1 Remove the protective covering from the cleaning device



5 Fit the protective covering to the cleaning device in its original position

Disposal

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

Troubleshooting

Safety

Observe the following safety rules for all work described in the "Troubleshooting" section.

WARNING!

Incorrect operation or poorly executed work can cause serious injury or damage.

All activities described in these operating instructions may only be carried out by trained and qualified personnel. All functions described in these operating instructions may only be used by trained and qualified personnel. Do not carry out any of the work or use any of the functions described 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 manufacturer of the robot and welding system must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place while you are in the working area of the robot.

WARNING!

Risk of serious injury from:

- ▶ mechanically powered components
- ▶ flying parts (shavings, etc.)
- ▶ compressed air escaping from the cleaning nozzles
- ▶ Before performing work on the cleaning device or any connected system components:
 - ▶ disconnect the customer's compressed air and power supplies from the cleaning device and the connected system components, and ensure that they remain disconnected until work is complete
 - ▶ ensure that the cleaning device is depressurised - please see the "Ensuring that the cleaning device is depressurised" section below for the relevant instructions



WARNING!

Whenever the cleaning device and connected system components are supplied with voltage and/or compressed air, a risk of serious injury exists from:

- ▶ rotating brush head
- ▶ lifting device moving up/down
- ▶ activated wire cutter
- ▶ flying parts (shavings, etc.)
- ▶ compressed air escaping from the cleaning nozzles

If work has to be performed on the cleaning device while it is being supplied with voltage and/or compressed air:

- ▶ keep your body, especially your hands, face, hair, tools and all clothing away from the brush head, brush head lifting device, wire cutter and cleaning nozzles
 - ▶ wear ear protection
 - ▶ wear protective goggles with side protection
-

Ensuring that the cleaning device is depressurised

Attempt to briefly activate the cleaning device without any compressed air supply to check whether the cleaning device is depressurised. Proceed as follows:

- 1** Take protective measures:
 - The brush head, brush head lifting device, wire cutter and cleaning nozzles could start up. Therefore keep your body, especially your hands, face and hair, any objects and all clothing away from the parts referred to above
 - wear ear protection
 - wear protective goggles with side protection
- 2** Ensure that the cleaning device has been disconnected from the compressed air supply
- 3** Briefly turn the "Cleaning" screw on the cleaning device 90° to the right, then turn it straight back to its original position
 - If the cleaning device does not respond to the turning of the screw, the cleaning device is depressurised
 - If the cleaning device responds to the turning of the screw, the cleaning device is still connected to a compressed air supply. If this is the case, you must disconnect the cleaning device from the compressed air supply and check again that the cleaning device is depressurised before starting work

Errors in program sequence

Welding torch is poorly cleaned or damaged

Cause: Position of the cleaning motor has been set incorrectly

Remedy: Adjust the position of the cleaning motor

Cause: Worn cleaning brushes on cleaning head

Remedy: Replace cleaning brushes on cleaning head

Lifting device is not moving up or down

Cause: Compressed air relief valve closed

Remedy: Open compressed air relief valve

Cause: No signal from robot

Remedy: Check connection to robot control

Cause: Mechanical fault on solenoid valve

Remedy: Contact After-Sales Service (arrange for solenoid valve to be replaced)

Cause: Choke valve not adjustable, or faulty

Remedy: Contact After-Sales Service (arrange for choke valve to be replaced)

Cause: Faulty sealing in lifting cylinder

Remedy: Contact After-Sales Service (arrange for lifting cylinder to be replaced)

Cleaning motor does not work

Cause: Compressed air relief valve closed

Remedy: Open compressed air relief valve

Cause: No signal from robot

Remedy: Check connection to robot control

Cause: Mechanical fault on cleaning motor

Remedy: Contact After-Sales Service (arrange for cleaning motor to be replaced)

Cause: Mechanical fault on solenoid valve

Remedy: Contact After-Sales Service (arrange for solenoid valve to be replaced)

Technical data

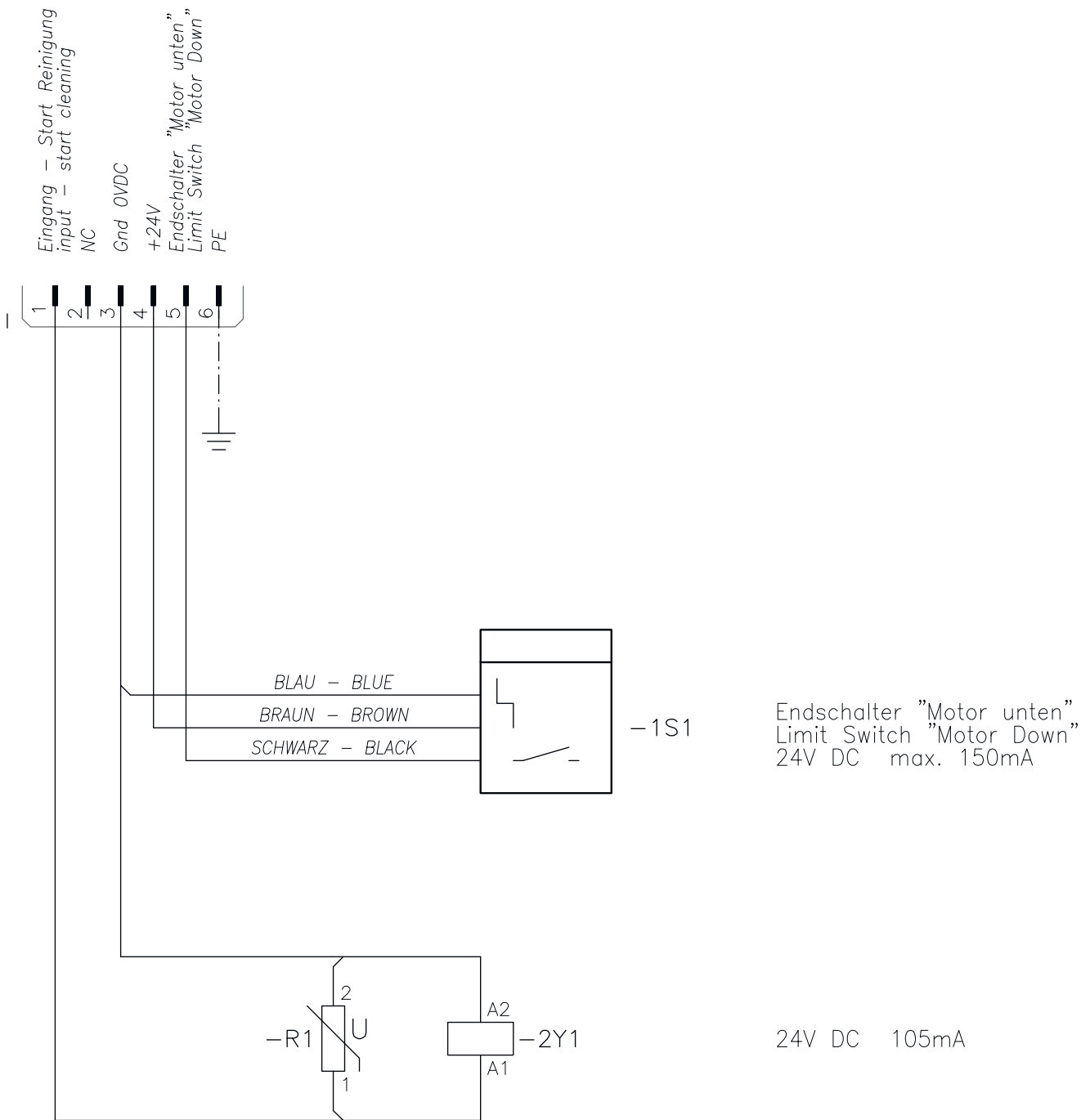
Technical data

Robacta Reamer brush head for aluminium ap- plications

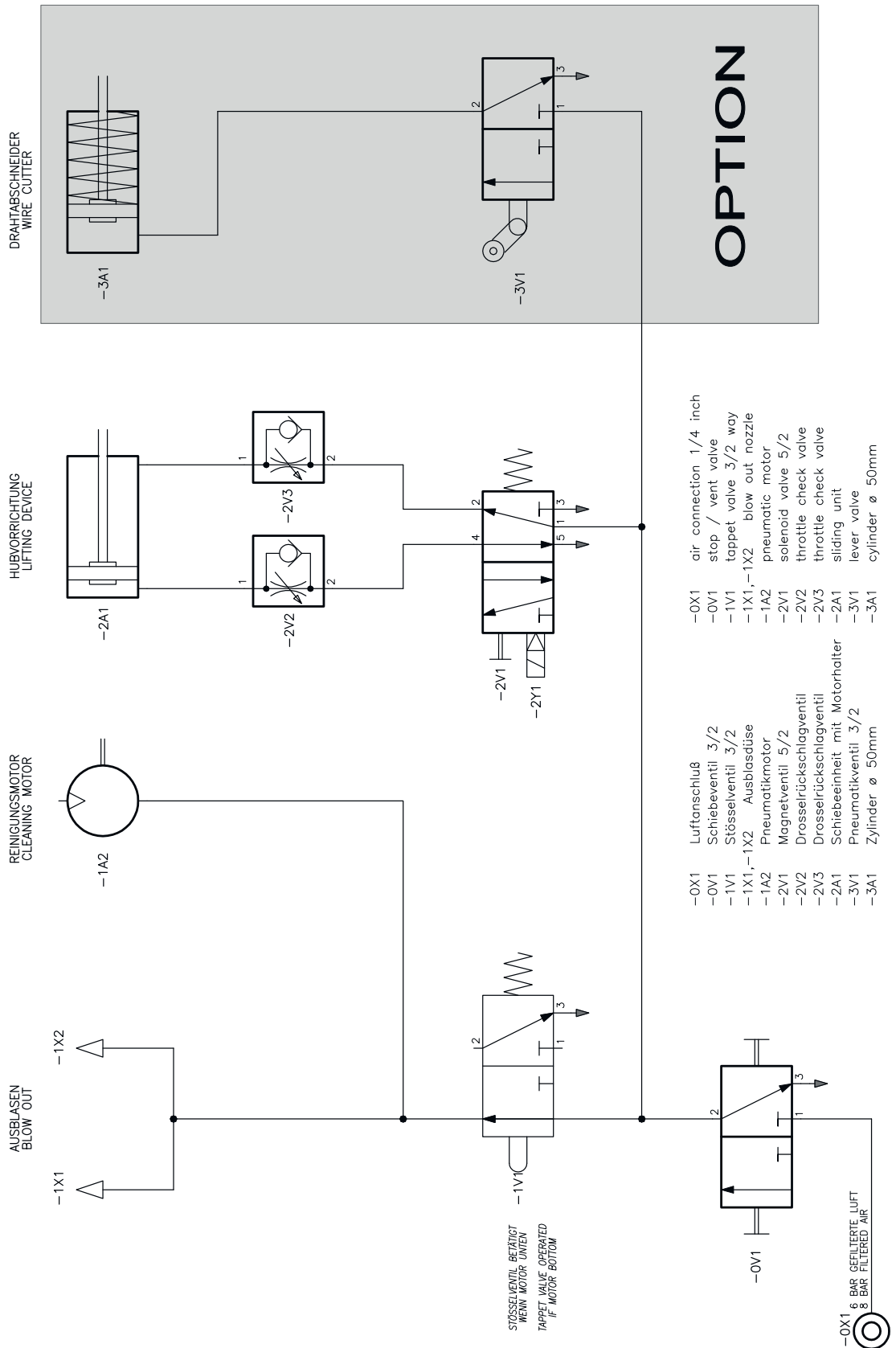
Supply voltage	+ 24 V DC
Nominal output	2.4 W
Nominal pressure	6 bar 86.99 psi
Air consumption	420 l/min 443.81 qt./min
Thread identification compressed air connection	G ¼ "
Max. noise emission (LWA)	82 dB (A)
Standard I/O	Input: + 24 V DC/ max. 100 mA Output: + 24 V DC / max. 30 mA
Cleaning time	3.0 - 5.0 s
Total cycle time	4.0 - 7.5 s
Degree of protection	IP 21
Mark of conformity	CE, CSA
Safety symbols	S
Dimensions l x w x h	165 x 245 x 350 mm 6.50 x 9.65 x 13.78 in.
Weight (without optional wire cutter)	10 kg 22.05 lb.

Appendix

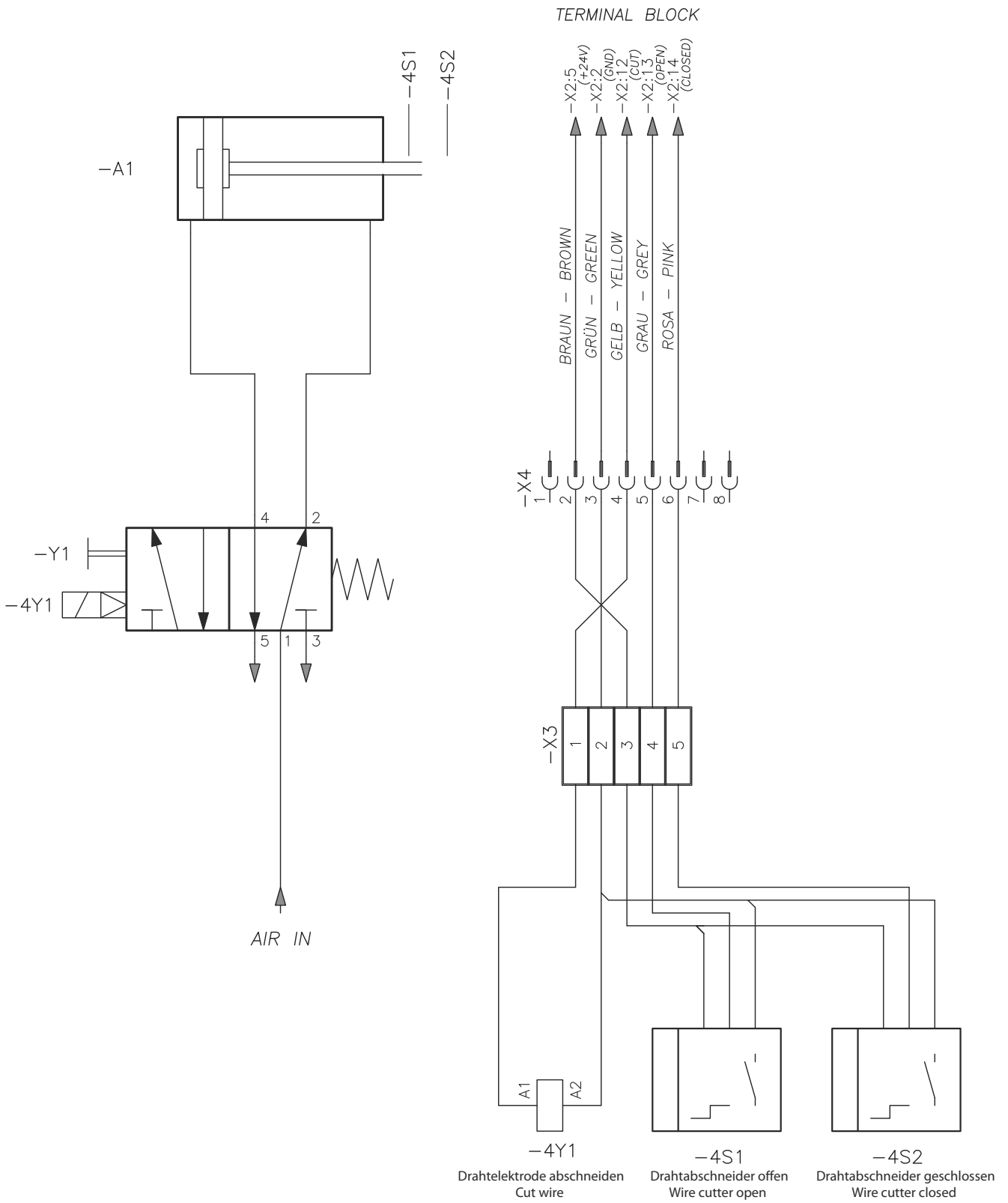
Circuit diagram: Robacta Reamer brush head for aluminium applications



Pneumatics diagram of Robacta Reamer brush head for aluminium applications



Circuit diagram: Wire cutter



Declaration of conformity



EU-KONFORMITÄTSERKLÄRUNG 2016 EU-DECLARATION OF CONFORMITY 2016 DÉCLARATION UE DE CONFORMITÉ, 2016

Wels-Thalheim, 2016-07-07

Die Firma

Manufacturer

La compagnie

FRONIUS INTERNATIONAL GMBH

Froniusstraße 1, A-4643 Pettenbach

erklärt in alleiniger Verantwortung,
dass folgendes Produkt:

Hereby certifies on its sole
responsibility that the following
product:

se déclare seule responsable du fait
que le produit suivant:

**Robacta Reamer Bürstenkopf
Alu**
Gasdüsenreinigungsgerät

**Robacta Reamer Bürstenkopf
Alu**
Gas nozzle cleaner

**Robacta Reamer Bürstenkopf
Alu**
Appareil de nettoyage de buses gaz

auf das sich diese Erklärung
bezieht, mit folgenden Richtlinien
bzw. Normen übereinstimmt:

which is explicitly referred to by this
Declaration meet the following
directives and standard(s):

qui est l'objet de la présente
déclaration correspondent aux
suivantes directives et normes:

Richtlinie 2014/30/EU
Elektromag. Verträglichkeit

Directive 2014/30/EU
Electromag. compatibility

Directive 2014/30/UE
Électromag. Compatibilité

Richtlinie 2006/42/EG
Maschinenrichtlinie

Directive 2006/42/EC
Machinery Directive

Directive 2006/42/CE
Directive aux machines

Europäische Normen inklusive
zutreffende Änderungen
EN ISO 12100:2010
EN 61000-6-2:2005+AC:2005
EN 61000-6-4:2007+A1:2011

European Standards including
relevant amendments
EN ISO 12100:2010
EN 61000-6-2:2005+AC:2005
EN 61000-6-4:2007+A1:2011

Normes européennes avec
amendements correspondants
EN ISO 12100:2010
EN 61000-6-2:2005+AC:2005
EN 61000-6-4:2007+A1:2011

Die oben genannte Firma hält
Dokumentationen als Nachweis der
Erfüllung der Sicherheitsziele und
die wesentlichen Schutzanforder-
ungen zur Einsicht bereit.

Documentation evidencing
conformity with the requirements of
the Directives is kept available for
inspection at the above
Manufacturer.

En tant que preuve de la satisfaction
des demandes de sécurité la
documentation peut être consultée
chez la compagnie susmentionnée.

Dokumentationsverantwortlicher:
(technische Dokumentation)

person responsible for documents:
(technical documents)

responsable documentation:
(technique documentation)

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A - 4600 Wels-Thalheim

CE 2016

ppa. Mag.Ing.H.Hackl
Member of Board
Chief Technology Officer

DE German

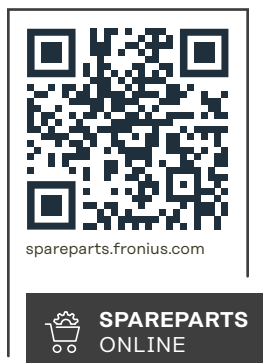
Deutsch

EN English

English

FR French

Française



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