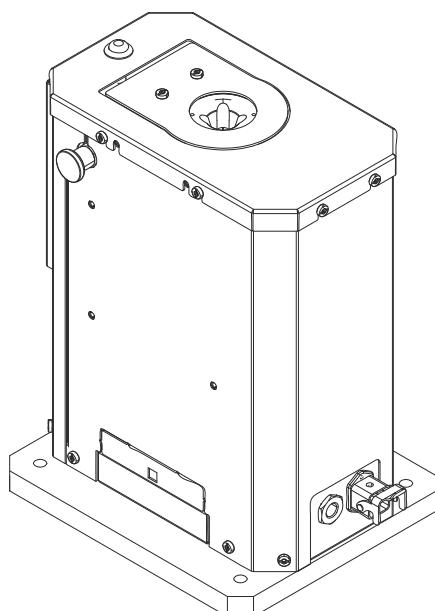




Operating Instructions

Robacta Reamer Braze+



EN-US | Operating instructions



42,0426,0281,EA

010-17062024

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Safety Instructions

Explanation of Safety Instructions



DANGER!

Indicates an immediate danger.

- Death or serious injury may result if appropriate precautions are not taken.



WARNING!

Indicates a possibly dangerous situation.

- Death or serious injury may result if appropriate precautions are not taken.



CAUTION!

Indicates a situation where damage or injury could occur.

- Minor injury or damage to property may result if appropriate precautions are not taken.

NOTE!

Indicates the possibility of flawed results and damage to the equipment.

General

The device has been manufactured using state-of-the-art technology and according to recognized 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 the commissioning, operation, maintenance, and servicing of the device must

- be suitably qualified,
- have knowledge of automated welding and
- have read these Operating Instructions and any system component operating instructions in full and follow them carefully.

The Operating Instructions must always be at hand wherever the device is being used. In addition to the Operating Instructions, all applicable local rules and regulations regarding accident prevention and environmental protection must also be followed.

All safety and danger notices on the device must

- must be kept in a legible state
- not be damaged/mark
- not be removed
- 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 switching on the device, remove any faults that could compromise safety.

Your personal safety is at stake!

Intended Use	<p>The device is to be used exclusively for its intended purpose.</p> <p>The device is intended exclusively for the mechanical cleaning of Fronius robot welding torches in automatic mode. Utilization for any other purpose, or in any other manner, shall be deemed to be "not in accordance with the intended purpose." The manufacturer is not responsible for any damage resulting from improper use.</p> <p>Proper use also means</p> <ul style="list-style-type: none"> - Reading these Operating Instructions in their entirety - Following all instructions and safety rules in these Operating Instructions - Carrying out all the specified inspection and servicing work <p>The device is designed for operation in industry and business. The manufacturer shall not be liable for any damage resulting from use in a living area.</p> <p>The manufacturer shall also not be liable for faulty or incorrect work results.</p>
Environmental Conditions	<p>Operation or storage of the device outside the stipulated area will be deemed as not in accordance with the intended purpose. The manufacturer is not responsible for any damage resulting from improper use.</p> <p>Temperature range of the ambient air:</p> <ul style="list-style-type: none"> - 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) <p>Relative humidity:</p> <ul style="list-style-type: none"> - Up to 50% at 40°C (104°F) - Up to 90% at 20°C (68°F) <p>Ambient air: free of dust, acids, corrosive gases or substances, etc.</p> <p>Altitude above sea level: up to 2000 m (6500 ft.)</p>
Obligations of the Operating Company	<p>The operating company must only allow persons to work with the device if they</p> <ul style="list-style-type: none"> - Are familiar with the basic occupational safety and accident prevention regulations and are trained in handling the device - Have read and understood these Operating Instructions, especially the section "Safety Rules," and have confirmed this with their signature - Are trained according to the requirements for the work results <p>The safety-conscious work of the personnel must be checked regularly.</p>
Obligations of Personnel	<p>All persons who are assigned to work with the device must do the following before beginning the work:</p> <ul style="list-style-type: none"> - Follow the basic regulations for occupational safety and accident prevention - Read these Operating Instructions, especially the section "Safety Rules," and confirm that they have understood and will follow them by signing <p>Before leaving the workplace, ensure that no personal injury or property damage can occur in one's absence.</p>
Particular Hazard Areas	<p>Do not linger in the operating area of the robot.</p>

Always integrate the device into a superordinate safety system in a secured area.

If this area has to be accessed for preparatory or maintenance work, ensure that

- the entire system is shut down for the duration of access to this area
 - and remains shut down to prevent unintended operation, for example, as a result of a control error.
-

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

In addition to these Operating Instructions, the safety rules of the robot manufacturer must be followed.

The human body, and in particular the hands, face and hair, plus items of clothing and all tools, must be kept away from moving components, such as:

- the rotating cleaning head
 - the cleaning head that moves up and down
-

Do not touch the cleaning head immediately after operation – burning hazard. Follow the special safety rules for handling the cleaning head in the Operating Instructions.

Protect the hands, face, and eyes from flying parts (chips, etc.).

Covers must only be opened/removed during maintenance, installation and repair work.

During operation:

- ensure that all covers are closed and all side parts have been mounted properly,
 - keep all covers closed.
-

Personal Protection and Protection of Others

You are exposed to numerous hazards while handling the device. In addition to these Operating Instructions, the safety rules of the manufacturer of the entire welding system must be followed.

Keep persons, especially children, away during the operation of the devices and during the welding process. If persons are in the vicinity, however:

- instruct them about all hazards (crush hazard posed by moving mechanical parts, flying chips or similar, injury hazard due to flying sparks, blinding hazard due to arcs, welding fume hazardous to health, noise exposure, possible hazard due to mains current or welding current, etc.)
 - provide suitable protective equipment or
 - construct suitable protective walls and 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 grid.
-

EMC device classification as per the rating plate or technical data.

EMC Measures	<p>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).</p> <p>If this is the case, then the operating company is obliged to take appropriate action to rectify the situation.</p> <hr/> <p>Check and evaluate possible problems and the interference immunity of equipment in the vicinity according to national and international regulations:</p> <ul style="list-style-type: none"> - Safety devices - Grid power lines, signal lines, and data transfer lines - EMC and telecommunications equipment - Devices for measuring and calibrating <hr/> <p>Supporting measures to avoid EMC problems:</p> <ol style="list-style-type: none"> 1. Grid power supply <ul style="list-style-type: none"> - If electromagnetic interference occurs despite a grid connection that complies with regulations, take additional measures (e.g., use a suitable grid filter). 2. Control lines <ul style="list-style-type: none"> - Keep them as short as possible - Route them close together (also to avoid EMF problems) - Route them far from other lines 3. Equipotential bonding 4. Shield, if necessary <ul style="list-style-type: none"> - Shield other devices in the vicinity - Shield the entire welding installation
EMF measures	<p>Electromagnetic fields may cause health problems that are not yet known:</p> <ul style="list-style-type: none"> - Effects on the health of persons close by, e.g., those with pacemakers and hearing aids - Persons with pacemakers must seek advice from their doctor before staying in the immediate vicinity of the device and the welding process - Keep distances between welding power-leads and the head/torso of the welder as great as possible for safety reasons - Do not carry welding power-leads and hosepacks over your shoulder or wrap them around your body or body parts
Safety Measures at the Setup Location and during Transport	<p>A toppling device can be deadly! Install the device horizontally on a flat, stable surface free of vibration, anchor it securely on the surface, and secure against toppling.</p> <hr/> <p>Special regulations apply in areas at risk of fire or explosion</p> <ul style="list-style-type: none"> - Follow the appropriate national and international regulations. <hr/> <p>Use instructions and checks within the company to ensure that the vicinity of the workplace is always clean and organized.</p> <hr/> <p>Take care to ensure that the applicable national and regional guidelines and accident prevention regulations are observed when transporting the device, especially guidelines concerning hazards during transport and shipment.</p> <hr/> <p>It is essential to conduct a visual inspection of the device to check for damage after it has been transported but before it is commissioned. Have any damage repaired by trained service technicians before commissioning the device.</p>

Safety measures in normal operation	<p>Only operate the device when all safety devices are fully functional. If the safety devices are not fully functional, there is a danger of:</p> <ul style="list-style-type: none"> - Serious or fatal injury to the operator or third parties - Damage to the device and other material assets belonging to the operating company - Inefficient operation of the device <hr/> <p>Safety devices that are not fully functional must be repaired before the device is switched on.</p> <hr/> <p>Never bypass or disable safety devices.</p> <hr/> <p>Before switching on the device, ensure that no one can be put in danger.</p> <hr/> <p>The device must be examined at least once a week for externally detectable damage and functionality of the safety devices.</p>
Maintenance and repair	<p>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.</p> <ul style="list-style-type: none"> - 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. <hr/> <p>The housing screws provide the ground conductor connection for earthing the housing parts.</p> <p>Only use original housing screws in the correct number and tightened to the specified torque.</p>
Safety Inspection	<p>The manufacturer recommends that a safety inspection of the device be performed at least every 12 months.</p> <hr/> <p>A safety inspection by a certified electrician is recommended:</p> <ul style="list-style-type: none"> - after changes - after alterations - after repair, care, and maintenance - at least every 12 months. <hr/> <p>For the safety inspection, follow the appropriate national and international standards and guidelines.</p> <hr/> <p>You can obtain more information about the safety inspection and calibration from your service center. The service center will provide the necessary documents upon request.</p>
Safety Symbols	<p>Devices with CE marking satisfy the essential requirements of the relevant directives (e.g. the low-voltage, electromagnetic compatibility, and machinery directives).</p> <p>Devices marked with the CSA test mark satisfy the requirements of the relevant standards for Canada and the USA.</p>

Copyright

Copyright of these operating instructions remains with the manufacturer.

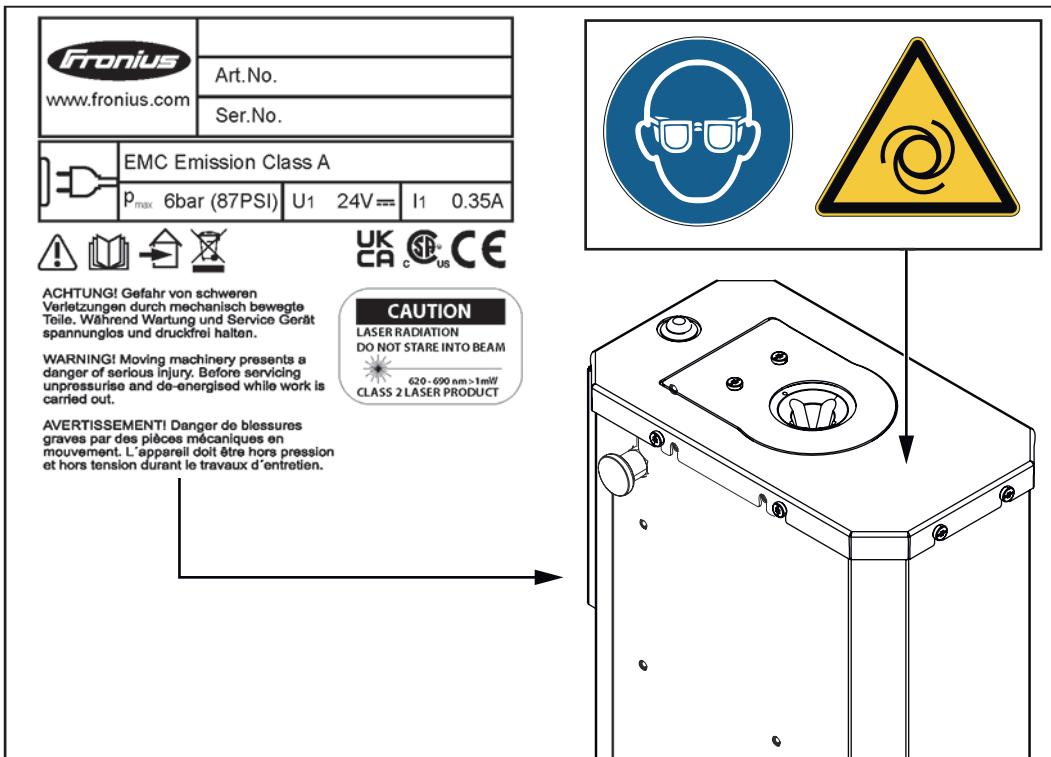
Text and illustrations were accurate at the time of printing, subject to change.
We are grateful for suggestions for improvement and information on any discrepancies in the operating instructions.

General

Warning notices affixed to the device

Warning notices on the cleaning device

The cleaning device has warning notices and a rating plate fitted. These warning notices and the rating plate must not be removed or painted over.



Warning notices on the cleaning device



WARNING! Risk of serious injuries due to:

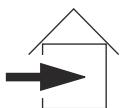
- Moving mechanical parts
- Flying debris (chips, etc.)

During maintenance and servicing, keep the device de-energized and depressurized.



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

- These operating instructions
- All system component operating instructions, especially the safety rules



For indoor use only



Dispose of old devices in accordance with safety rules and not in normal domestic waste



Wear eye protection



Warning of the device switching on automatically

Transport

Transport equipment

Transport the device using the following transport equipment:

- On a pallet using a counterbalanced lift truck
- On a pallet using a lift truck
- Manually



WARNING!

Danger from devices and objects falling.

This can result in severe personal injury and damage to property.

- When transporting the device by counterbalanced lift truck or lift truck, secure the device to prevent it from falling.
- Do not turn, brake, or accelerate in a sudden, jerking manner.

Transport Instructions on the packaging



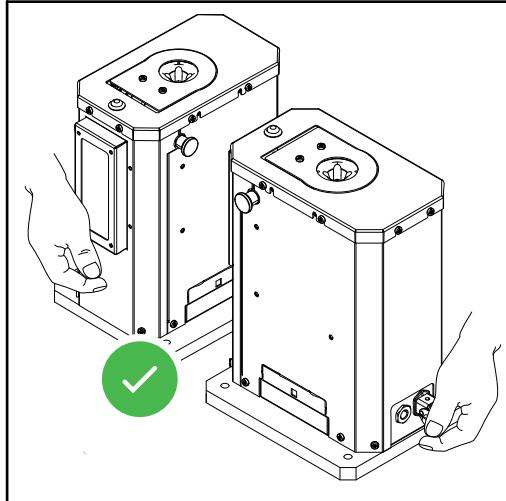
CAUTION!

Danger due to improper transport.

This can result in damage to property.

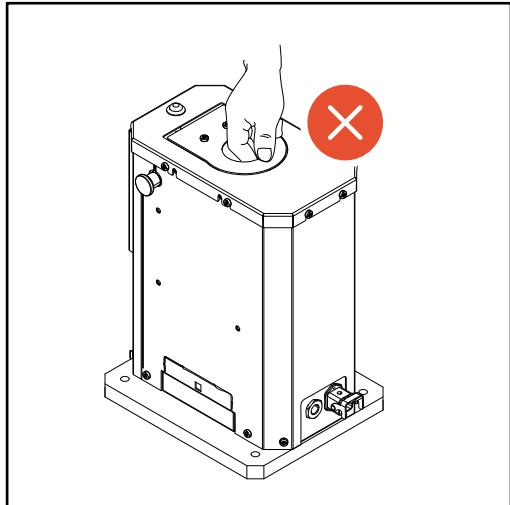
- Follow the transport instructions on the device packaging.

Information about unpacking the device



NOTE!

When lifting the device out of the packaging, hold the device in the position shown.

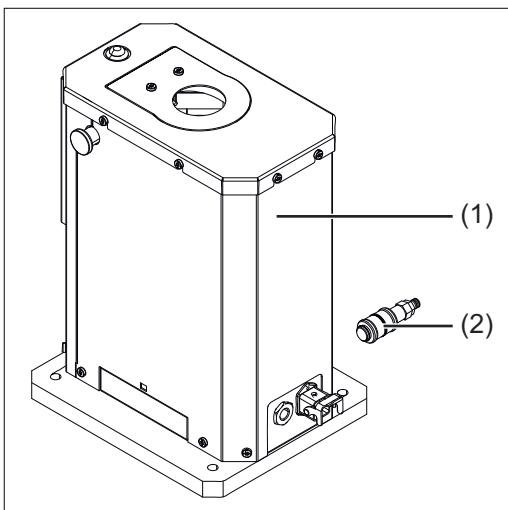


NOTE!

When lifting the device out of the packaging, do not hold the motor cover to lift it.

Scope of Supply

Scope of Supply



- (1) Cleaning device
- (2) Compressed air relief valve

not shown:

- (3) Harting Han6P (X1) connecting plug without cable
- (4) Operating instructions

Available options

- Teach-gauge
- Open collecting container
- V brush
- OPT/i Reamer Braze+ base
- Mounting base 150 mm
- Mounting base 700 mm
- Braze+ wire cutter

Operating controls, connections and mechanical components

Safety

Safety

Please follow the safety rules below when using all the functions described in the "Operating controls, connections, and mechanical components" chapter.



WARNING!

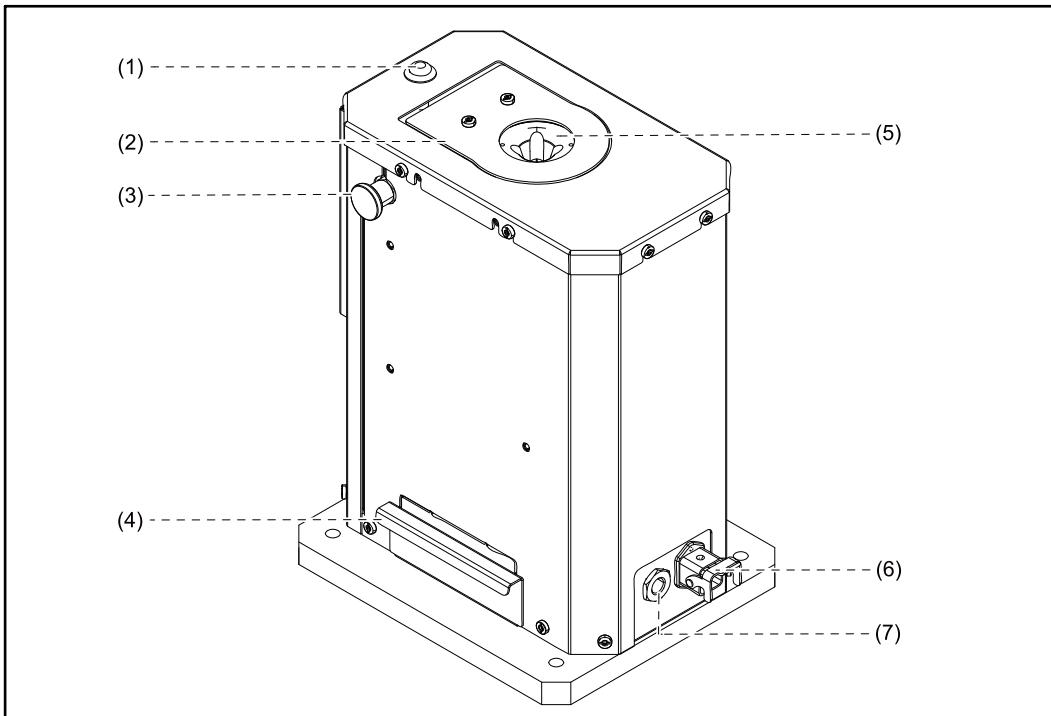
Danger from incorrect operation and work that is not carried out properly.

This can result in serious personal injury and damage to property.

- ▶ All the work and functions described in this document must only be carried out by trained and qualified personnel.
 - ▶ Read and understand this document.
 - ▶ Read and understand all the operating instructions for the system components, especially the safety rules.
-

Operating controls, connections and mechanical components

Operating controls, connections, and mechanical components



- (1) Status indicator
 - illuminates when the device is ready for cleaning
 - does not illuminate when there is a fault or the device is in operation
- (2) Motor cover
- (3) Lock bolt for motor cover
 - locks the motor cover in place (2)
- (4) Collecting container
- (5) Gas nozzle slot for cleaning head
- (6) Harting Han6P (X1) connection socket
 - + 24 V DC power supply



CAUTION!

Danger from overcurrent.

Damage to the power supply for the Harting Han6P connection may result.

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

- (7) Compressed air connection socket
 - supplies 6 bar (86.99 psi) of dry compressed air
 - Thread identification for compressed air connection: G 1/4"

Harting Han6P (X1) Connecting Plug Configuration for the Robot Control

General



CAUTION!

Danger from overcurrent.

Damage to the power supply for the Harting Han6P connection may result.

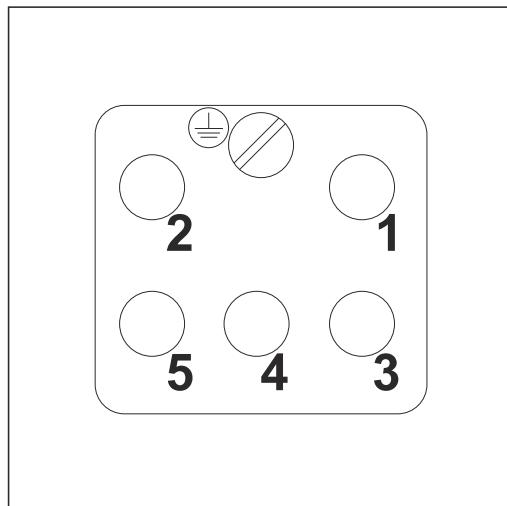
- ▶ Fuse the power supply of the cleaning device with 500 mA slow-blow fuse against overcurrent.

NOTE!

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

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

Harting Han6P (X1) Connecting Plug Configuration



Harting Han6P (X1) connecting plug configuration – cable-side view

Input and output signals on the Robacta Reamer Braze+:

1. start cleaning motor input signal
2. calibrate cleaning head input signal
3. GND
4. + 24 V DC
5. Output signal ready for cleaning

Installation and Startup

Safety

Safety

Please follow the safety rules below when carrying out all the tasks described in the "Installation and commissioning" chapter.



WARNING!

Danger from incorrect operation and work that is not carried out properly.

This can result in serious personal injury and damage to property.

- ▶ All the work and functions described in this document must only be carried out by trained and qualified personnel.
 - ▶ Read and understand this document.
 - ▶ Read and understand all the operating instructions for the system components, especially the safety rules.
-



WARNING!

Danger due to machines starting automatically.

This can result in serious personal injury and damage to property.

- ▶ In addition to these operating instructions, observe the safety rules of the robot manufacturer and welding system manufacturer.
 - ▶ For your personal safety, make sure that all protective measures have been taken in the robot's working area and remain in effect while you are in this area.
-



WARNING!

Danger due to voltage and/or compressed air supply of the cleaning device.

Serious injuries due to moving parts may result (e.g., rotating cleaning head, cleaning head moving up/down, flying parts, chips, activated wire cutter, etc.). If work is required on the cleaning device while the cleaning device is being supplied with voltage and/or compressed air:

- ▶ Ensure that no body parts, such as fingers, hands, and hair, and objects and items of clothing get caught in the cleaning head.
 - ▶ Stay away from the wire cutter.
 - ▶ Wear hearing protection.
 - ▶ Wear protective goggles with side protection.
-

Before installation

Intended Use The cleaning device is used exclusively to mechanically clean Fronius robot welding torches in automatic mode within the limits of technical data, especially to clean the gas nozzle and gas nozzle internal space. Any other use does not constitute proper use. The manufacturer shall not be liable for any damage resulting from such improper use.

Proper use also means

- Reading these Operating Instructions in their entirety
- Following all instructions and safety rules in these Operating Instructions
- Carrying out all the specified inspection and servicing work

Operating personnel, maintenance personnel

WARNING!

Danger due to machines starting automatically.

This can result in severe personal injury and damage to property.

- The device must only ever be operated or maintained by one person.
- Ensure that there is only one person in the device's operating area while it is being worked on.

Setup regulations

The cleaning device has been tested according to protection class IP 21. This means:

- protection against solid foreign bodies larger than Ø 12.5 mm (0.49 in.)
- no protection against penetrating water

The device must not be set up and operated outdoors. The installed electrical components must be protected against direct exposure to moisture.

WARNING!

Danger from devices falling or toppling over.

This can result in serious personal injury and damage to property.

- Always screw the cleaning device to the base.

Specifications for the compressed air supply

To ensure the proper functioning of the cleaning device, fulfill the following specifications for the compressed air supply:

- Set up a compressed air supply using the pressure relief valve and compressed air filter
- Guarantee the compressed air quality in accordance with ISO 8573-1:2001, class 7 4 3, instrument air
 - Solid particle concentration $\leq 10 \text{ mg/m}^3$
 - Pressure dew point steam $\leq + 3^\circ\text{C}$
 - Oil concentration $\leq 1 \text{ mg/m}^3$

Measures to ensure safe operation of the device when operating personnel are untrained	If untrained operating personnel have access to the device, the compressed air supply to the device must be disconnected for the duration of this access in accordance with "Performance Level d" of ISO 13849-1. We recommend FESTO's MS6-SV soft-start and quick exhaust valve for interrupting the compressed air supply as required.
---	---

Permitted Cable Length

NOTE!

The length of the cable between the cleaning device and the robot control must not exceed 15 m (49.21 ft).

Screwing the Cleaning Device to the Solid Surface

Screwing the cleaning device to the base

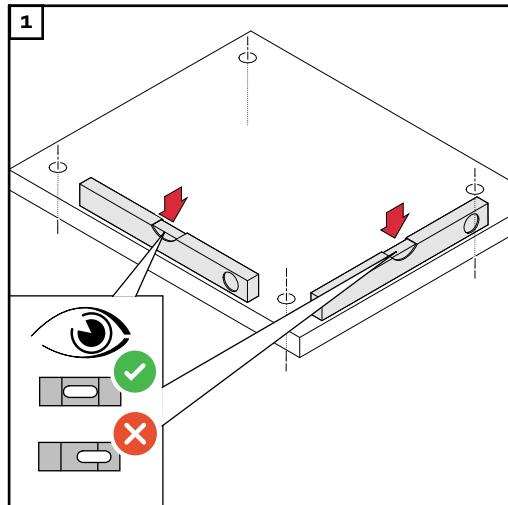


WARNING!

Danger from machines toppling over or falling.

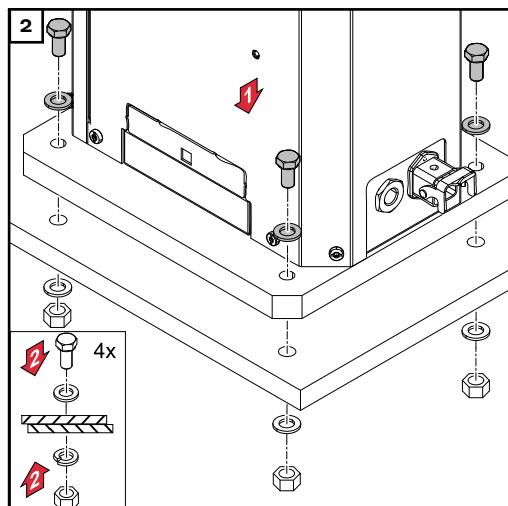
This can result in serious personal injury and damage to property.

- ▶ Depending on the solid surface (base) you have, you may need to use a different mounting material to screw the device in place.
- ▶ The installer is responsible for selecting the proper mounting materials.
- ▶ Position the cleaning device on a level, solid, and vibration-free surface (base).
- ▶ Position the cleaning device so that the robot's approach route to the cleaning position is as short as possible.



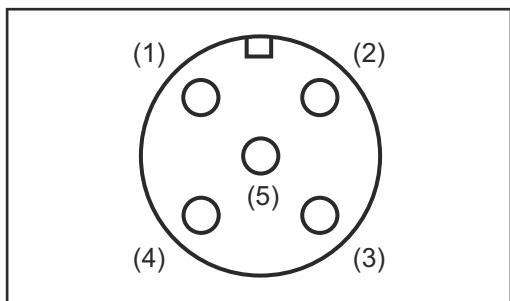
NOTE!

Before installing the cleaning device, ensure that the base for the cleaning device is flat and level.



Installation of optional wire cutter

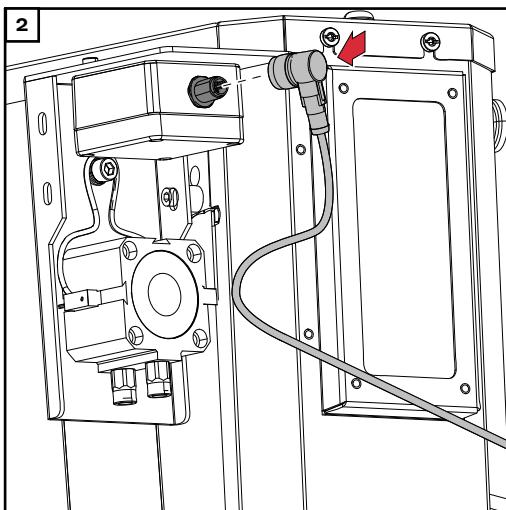
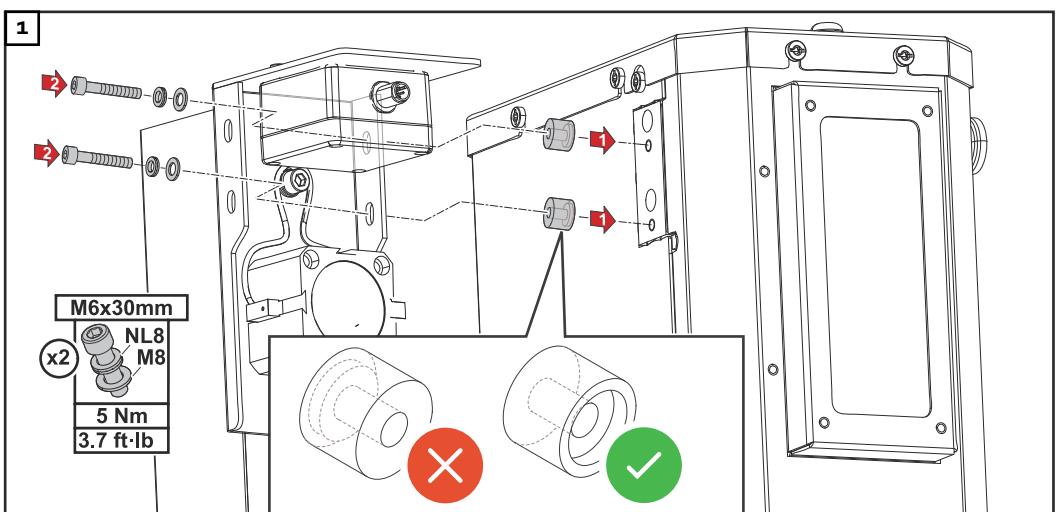
Assignment of the M12x1 connecting plug



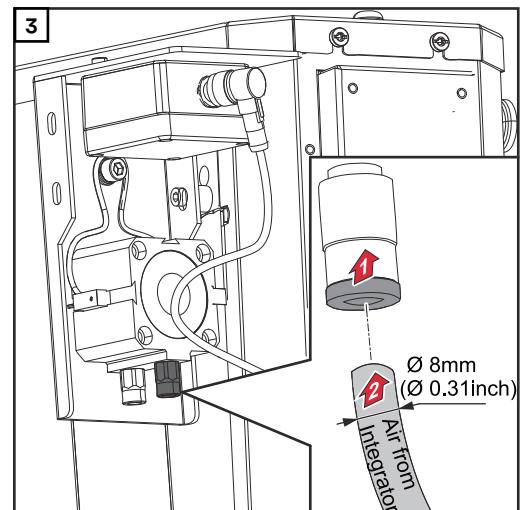
Assignment on the side of the wire cutter

1. Brown - continuous voltage 24 V DC
2. White - cut wire input
3. Blue - 0 V DC
4. Black - wire cutter open input
5. -

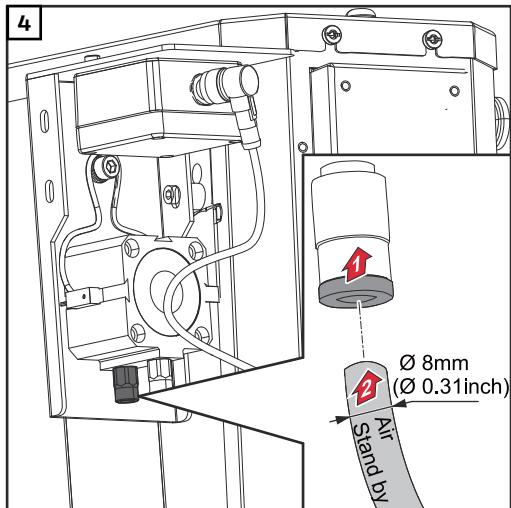
Installing the wire cutter



Connect wire cutter to robot controller



Install compressed air hose from wire cutter



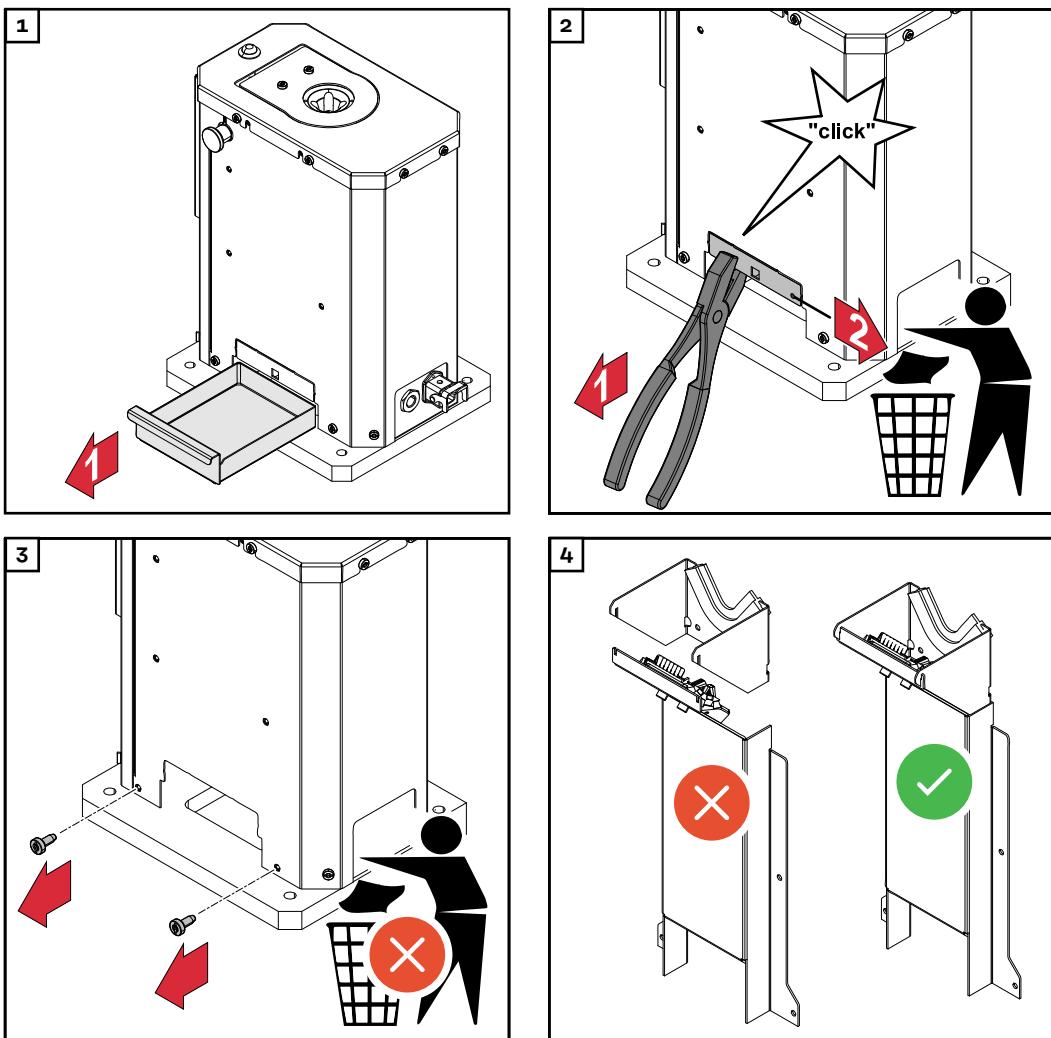
Connect external compressed air supply to wire cutter

NOTE!

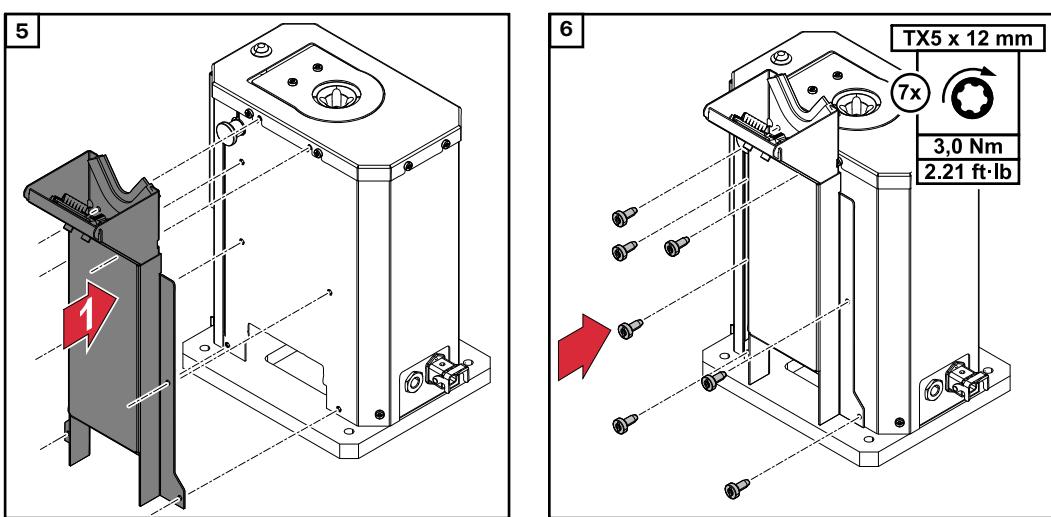
Compressed air and voltage supply as well as signal evaluations are usually provided by the integrator for robot systems, e.g., by means of a valve terminal.

Fitting the optional V brush

**Fitting the optional V brush
(OPT/i V brush
Braze+)**



The screws will be required for the following work steps.



Setting up the Compressed Air Supply

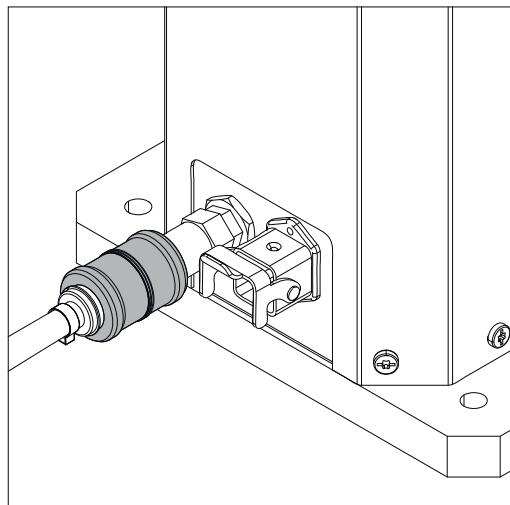
Setting up the cleaning device compressed air supply, compressed air relief valve function

Set up the compressed air supply:

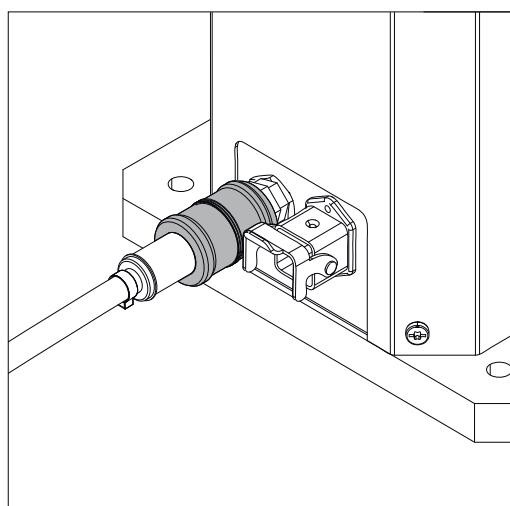
- 1** Disconnect the compressed air supply to the cleaning device and ensure that this compressed air supply remains disconnected while the tasks described below are being carried out on the device
- 2** Screw the supplied compressed air relief valve on to the compressed air connection on the cleaning device
- 3** Connect the compressed air supply to the compressed air relief valve

NOTE!

You can interrupt and restore the compressed air supply to the cleaning device by moving the compressed air relief valve back and forth.



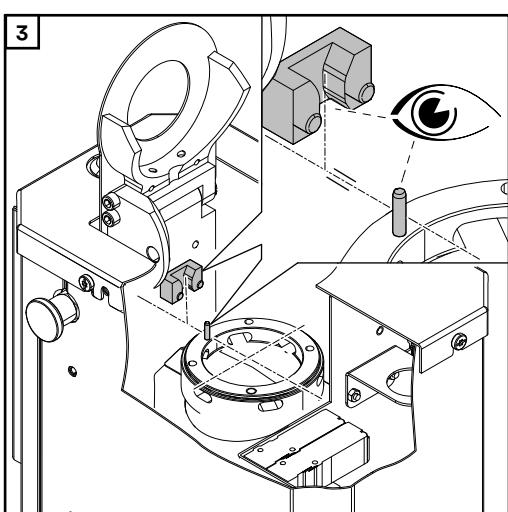
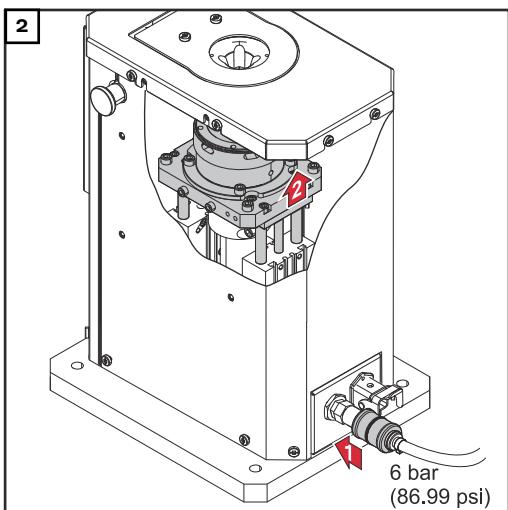
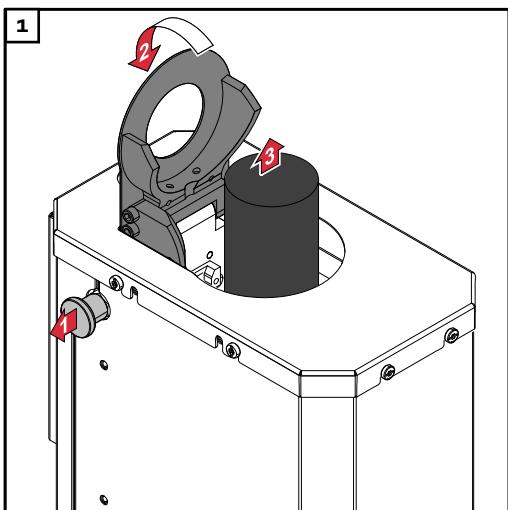
The illustration to the left shows the compressed air relief valve closed = compressed air supply to the device interrupted



The illustration to the left shows the compressed air relief valve open = device is being supplied with compressed air

Cleaning the Cleaning Head

Installing the cleaning head



NOTE!

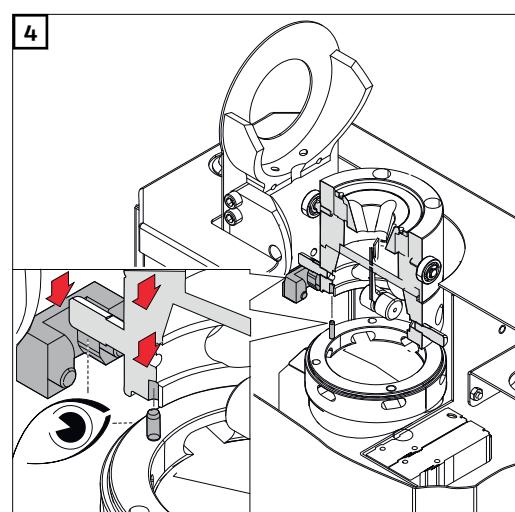
Establishing the compressed air supply will move the cleaning motor into its top position.
This will make it easier to install the cleaning head.

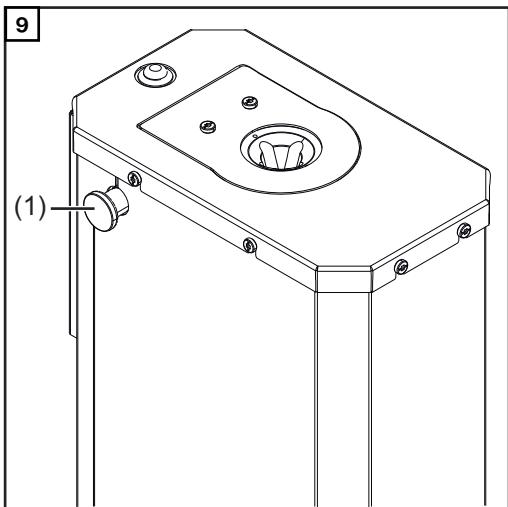
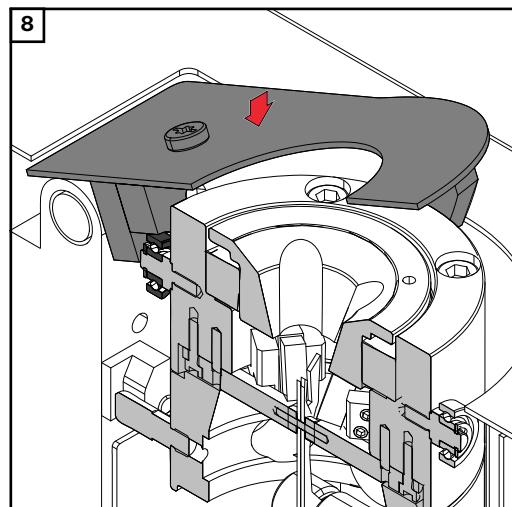
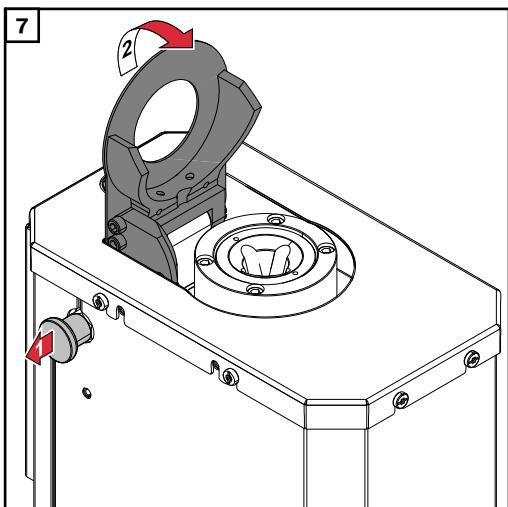
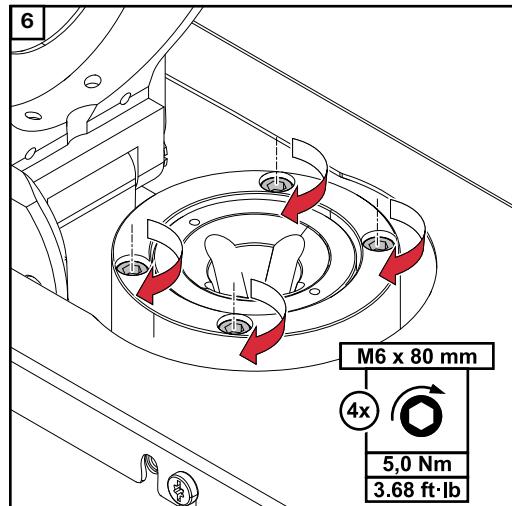
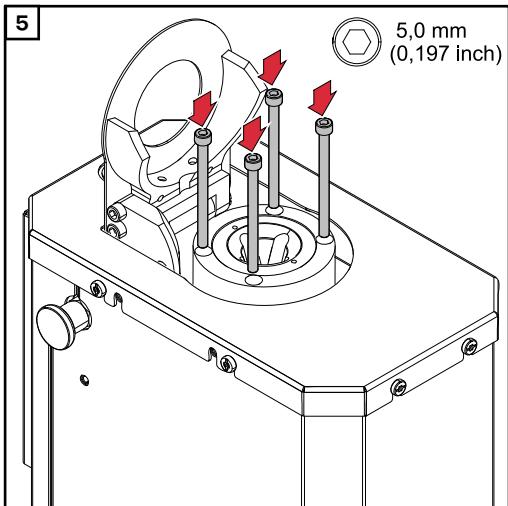
⚠ CAUTION!

Danger due to cleaning head moving up/down.

This can result in crushing injuries.

- ▶ Only open the motor cover when the cleaning motor is in its top position and is no longer moving.





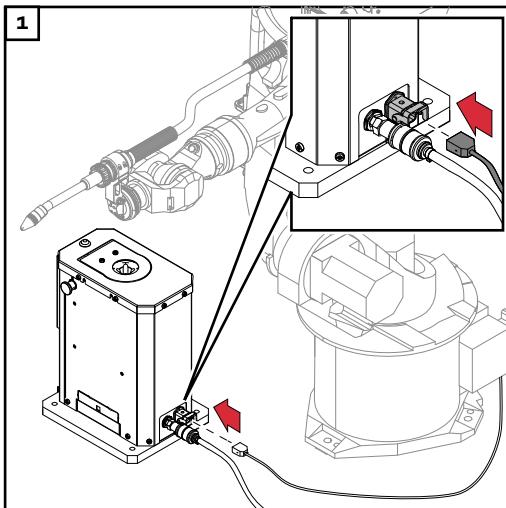
NOTE!

Hearing the locking bolt (1) clicking into place tells you that the motor cover is now closed.

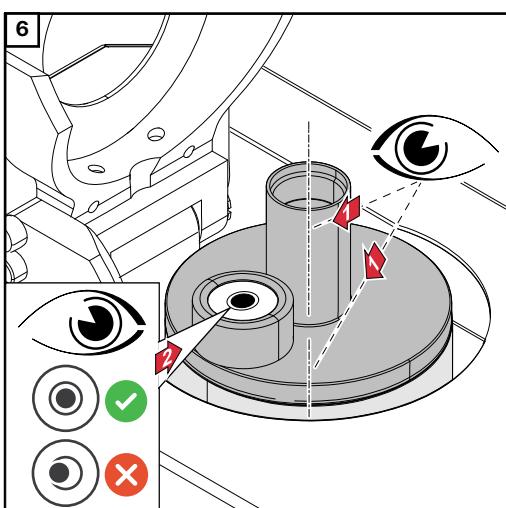
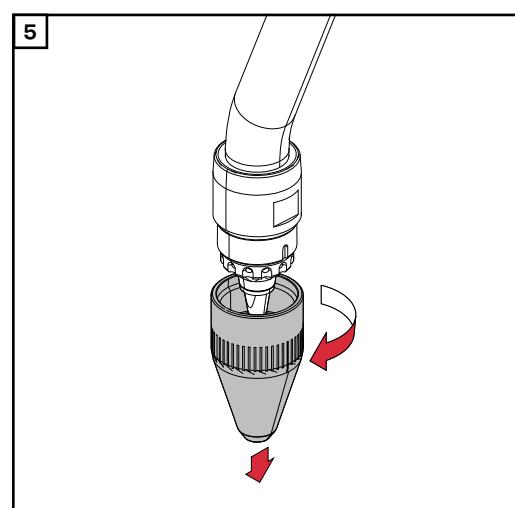
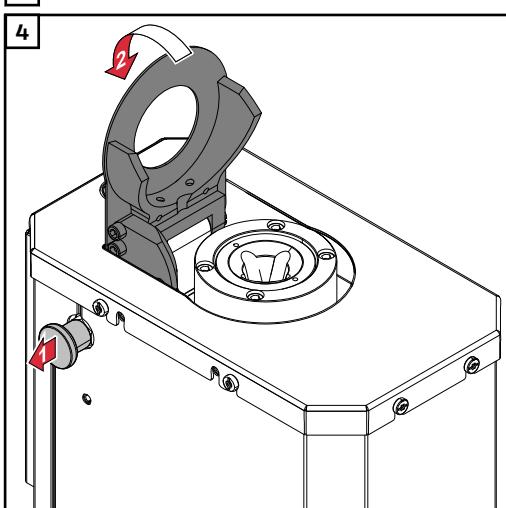
Defining the Welding Torch Cleaning Position

Welding torch cleaning position

Adjust the welding torch cleaning position as shown below:



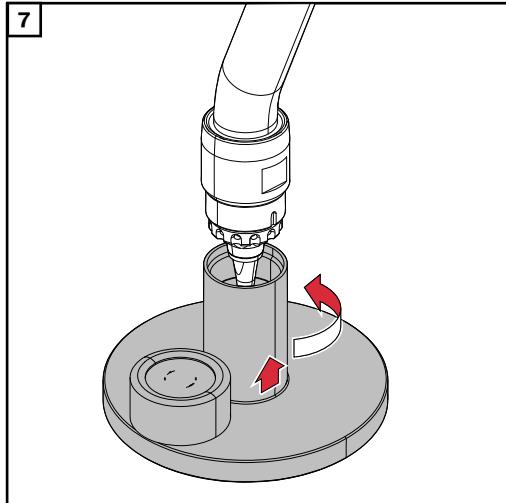
- 2 Set the "Calibrate cleaning head" input signal for one second
 - this will move the cleaning head to the correct starting position
- 3 Deactivate the "Calibrate cleaning head" input signal



NOTE!

Before the set-up process, place the Teach-gauge on the cleaning head, and ensure that the cleaning device has been set up to be straight from a horizontal and vertical perspective. If this is not the case, correct the assembly position.

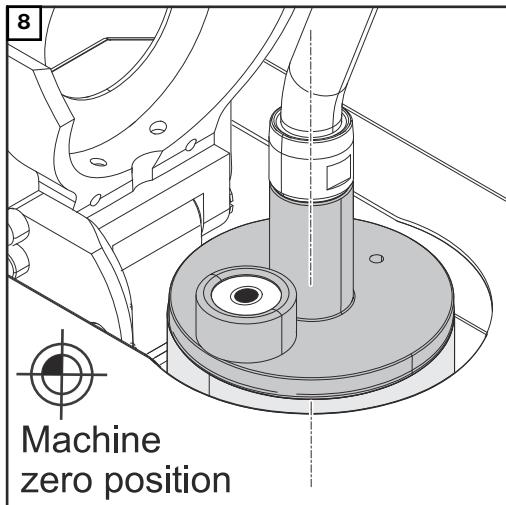
7



NOTE!

Always screw the Teach-gauge tightly up to the torch body.

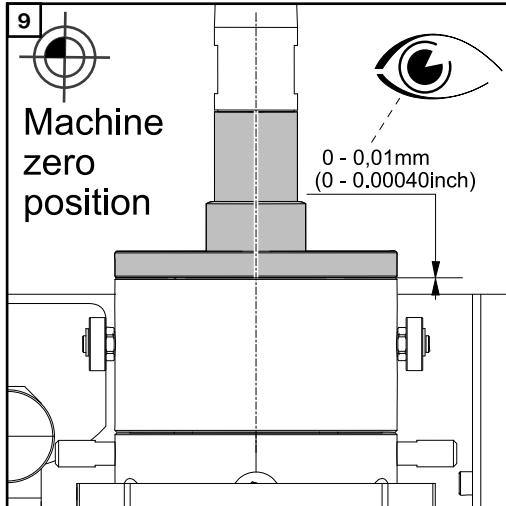
8



NOTE!

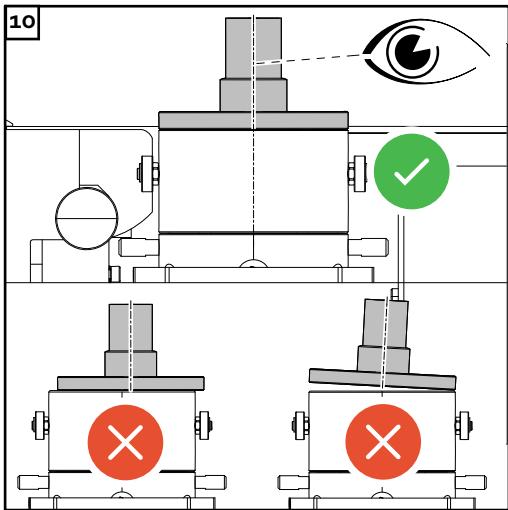
**The diagram opposite shows the end position with Teach-gauge.
Use this position as the starting point
for the program sequence when clean-
ing the welding torch.**

9



NOTE!

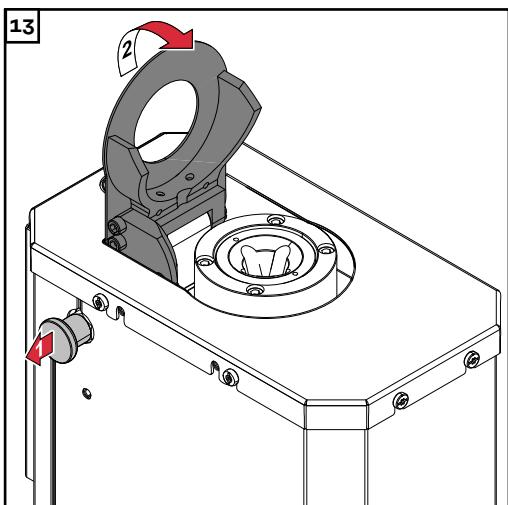
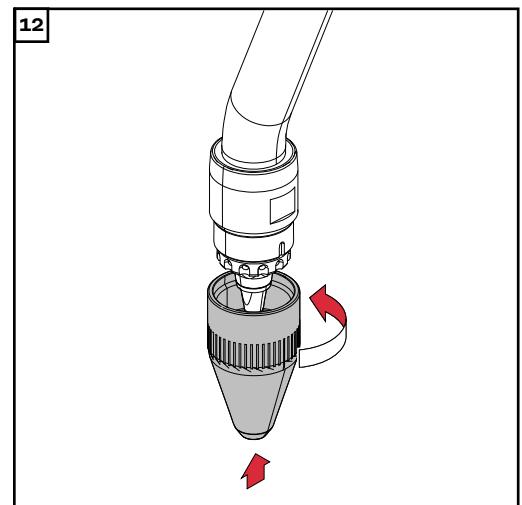
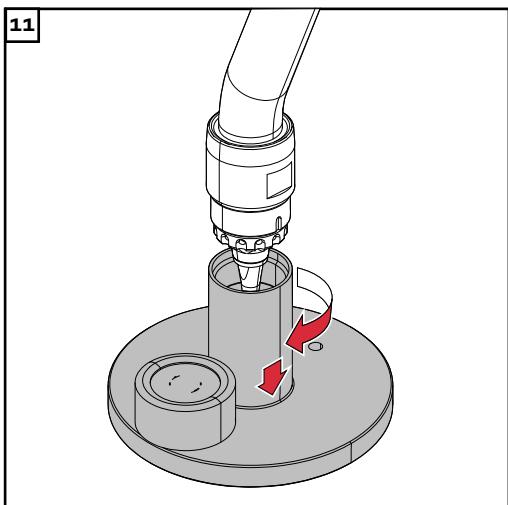
**Ensure that the Teach-gauge is posi-
tioned on the cleaning head with no air
gap.**



NOTE!

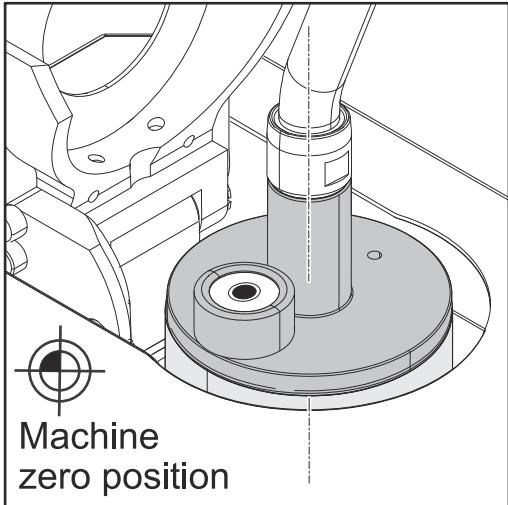
Ensure that the Teach-gauge:

- ▶ is positioned entirely on the cleaning head
- ▶ is positioned precisely in the center of the cleaning head

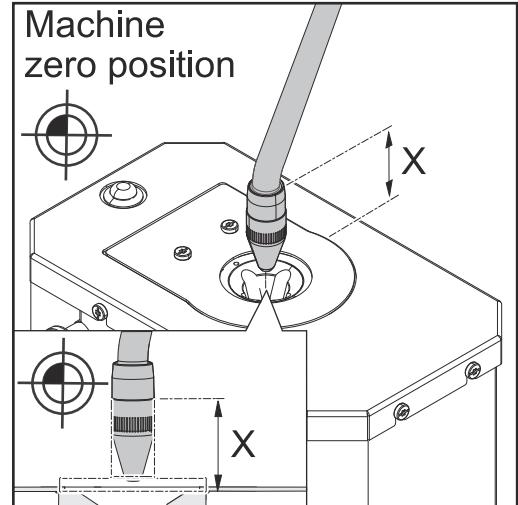


NOTE!

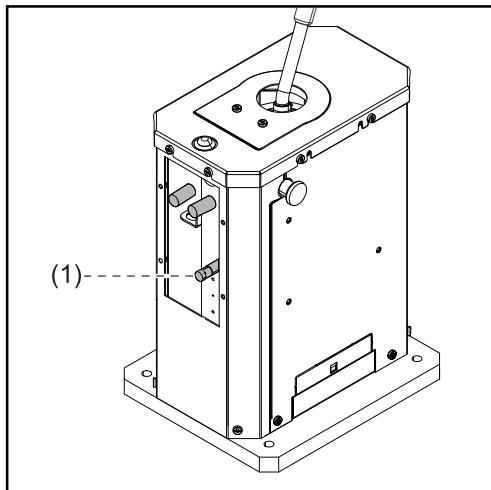
The machine zero position, which is determined using the Teach-gauge, should also be used as the machine zero position with installed gas nozzle when programming the robot.



Machine zero position with installed Teach-gauge (same as machine zero position with installed gas nozzle)



Machine zero position with installed gas nozzle (same as machine zero position with installed Teach-gauge)



NOTE!

The cleaning position of the welding torch is 80.5 mm (3.17 inches) below the machine zero position.
If the cleaning head and welding torch are in the cleaning position, the LED on the sensor illuminates (1).

Start up the Cleaning Device

Requirements for Starting Up

The following requirements must be met in order to start up the cleaning device:

- cleaning device screwed tightly to the solid surface
 - compressed air supply set up
 - cleaning head installed
 - cleaning device connected to the robot control
 - cleaning position of the welding torch defined
 - all covers installed and all safety devices in good order and installed in the location intended
-

Commissioning

An active signal from the robot control starts up the cleaning device.

Cleaning Program Sequence

Safety



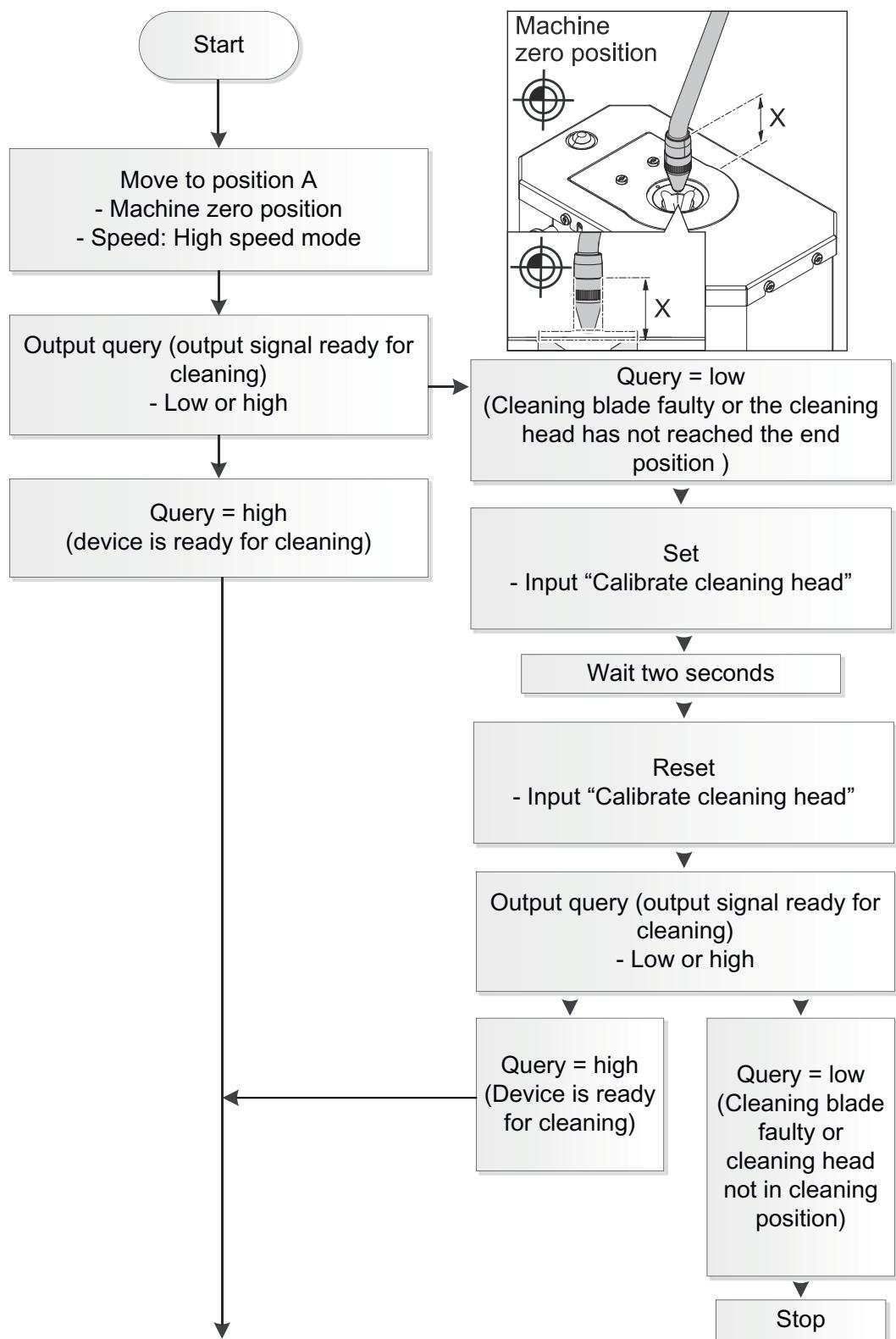
CAUTION!

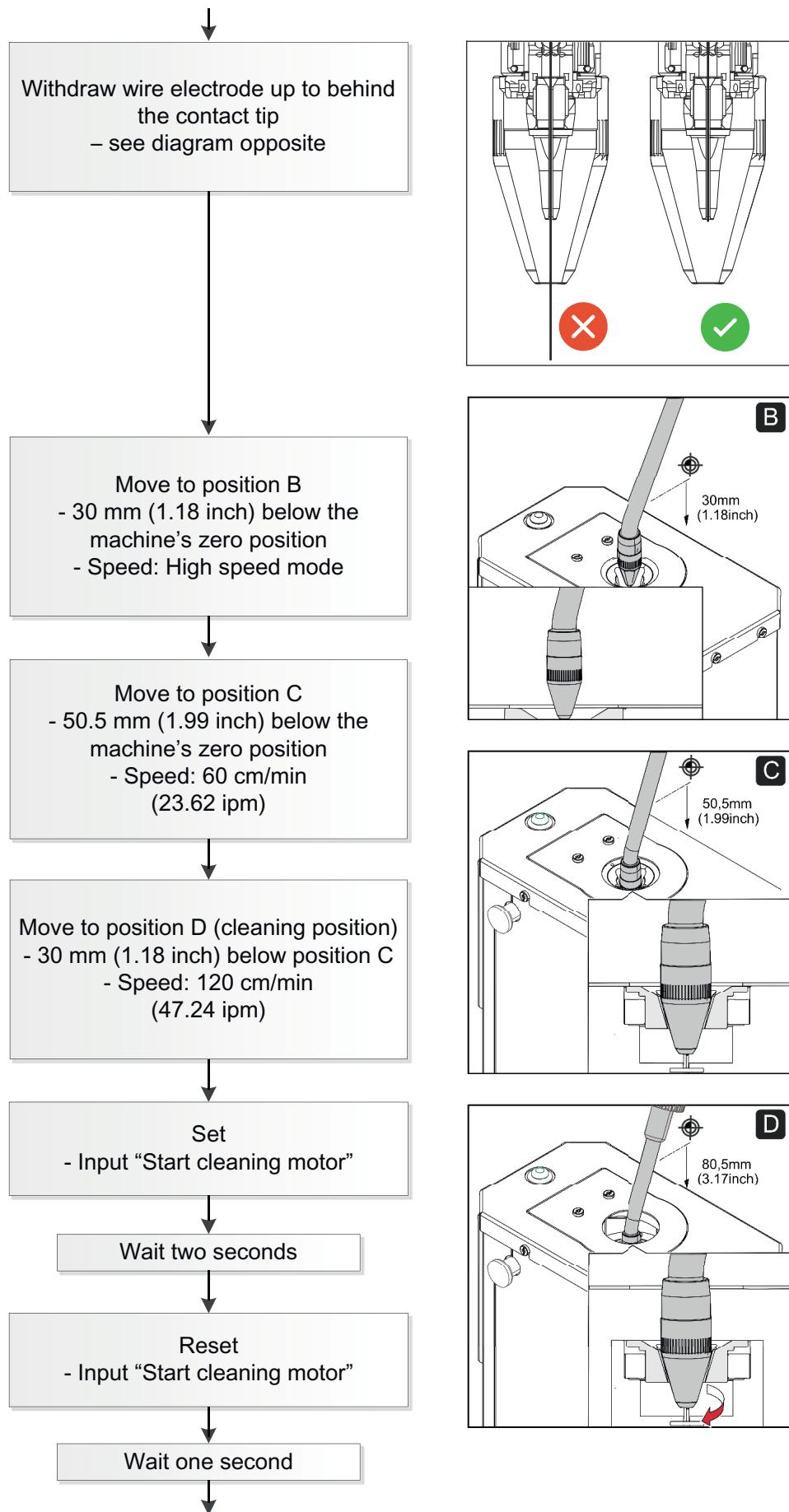
Danger due to improper commissioning.

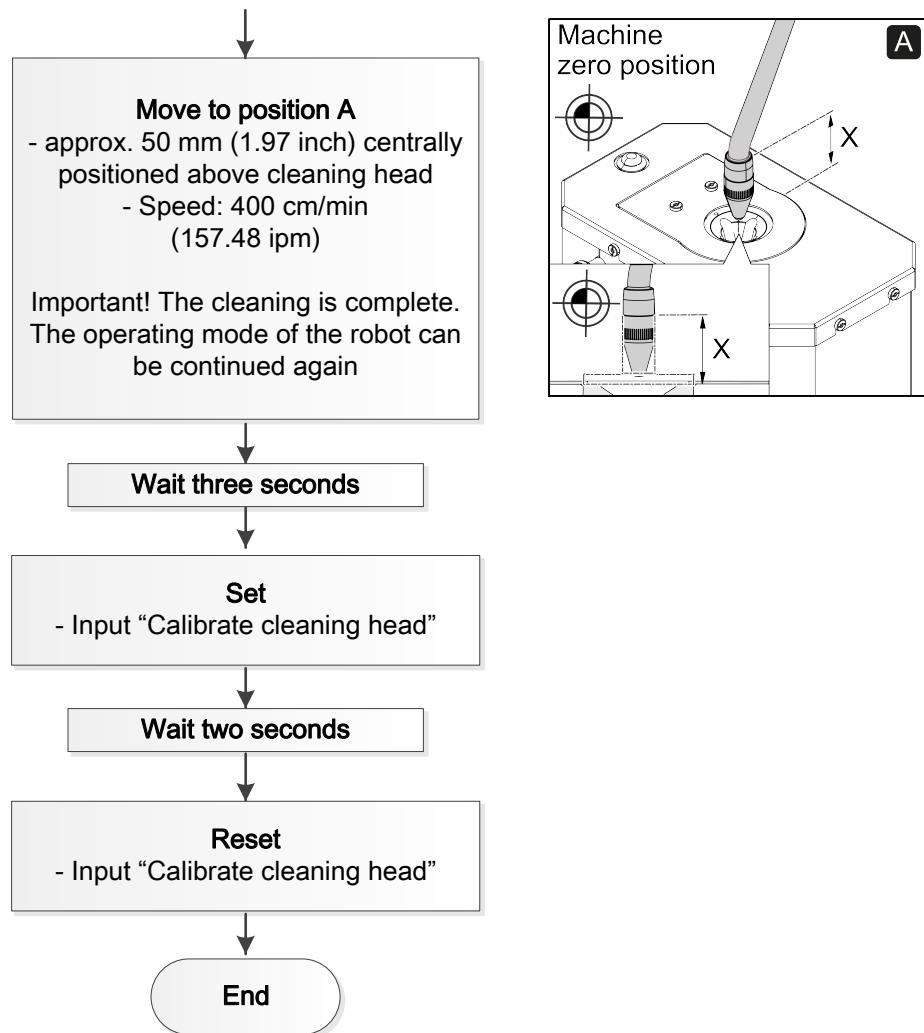
This can result in damage to property.

- ▶ Only start automatic mode once the cleaning device has been installed and commissioned properly.
-

Cleaning pro- gram sequence





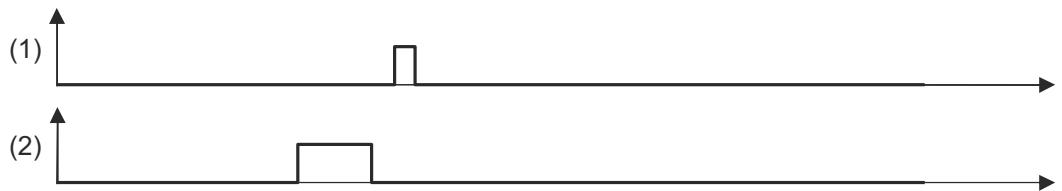


Signal Sequences

Signal Se- quences

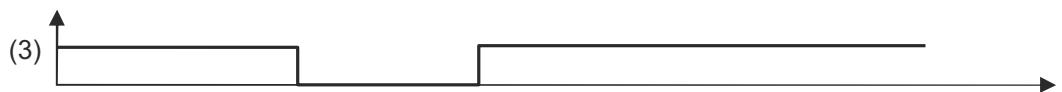
Input signals:

- (1) Calibrate cleaning head
- (2) Start cleaning motor



Output signal:

- (3) Ready for cleaning



Service, maintenance and disposal

Safety

Safety

Follow the safety rules below when carrying out all the tasks described in the "Service, maintenance, and disposal" chapter.



WARNING!

Danger from incorrect operation and work that is not carried out properly.

This can result in serious personal injury and damage to property.

- ▶ All the work and functions described in this document must only be carried out by trained and qualified personnel.
 - ▶ Read and understand this document.
 - ▶ Read and understand all the operating instructions for the system components, especially the safety rules.
-



WARNING!

Danger due to machines starting automatically.

This can result in serious personal injury and damage to property.

- ▶ In addition to these operating instructions, observe the safety rules of the robot manufacturer and welding system manufacturer.
 - ▶ For your personal safety, make sure that all protective measures have been taken in the robot's working area and remain in effect while you are in this area.
-



WARNING!

Danger due to voltage and/or compressed air supply of the cleaning device.

Serious injuries due to moving parts may result (e.g., rotating cleaning head, cleaning head moving up/down, flying parts, chips, activated wire cutter, etc.). If work is required on the cleaning device while the cleaning device is being supplied with voltage and/or compressed air:

- ▶ Ensure that no body parts, such as fingers, hands, and hair, and objects and items of clothing get caught in the cleaning head.
 - ▶ Stay away from the wire cutter.
 - ▶ Wear hearing protection.
 - ▶ Wear protective goggles with side protection.
-



CAUTION!

Danger due to hot cleaning head as a result of operation.

This can result in burns.

- ▶ Before handling the cleaning head, allow it to cool to room temperature (+25°C, +77°F).
-

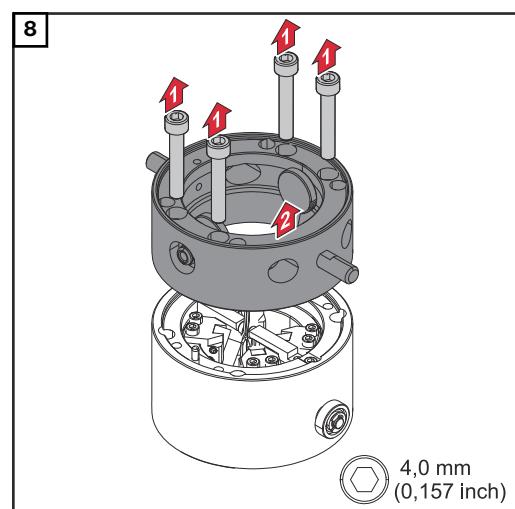
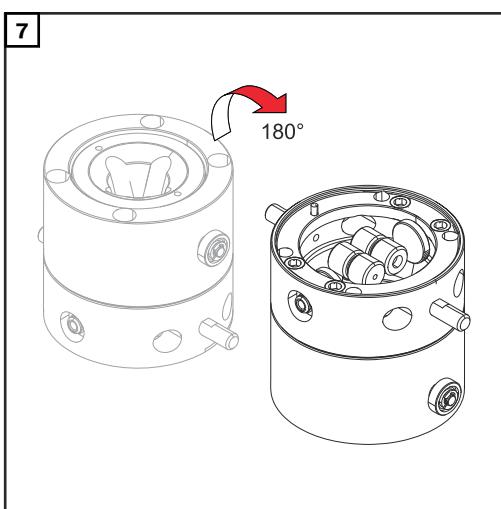
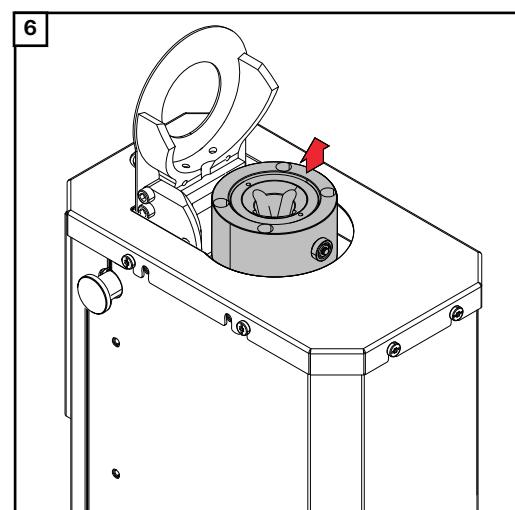
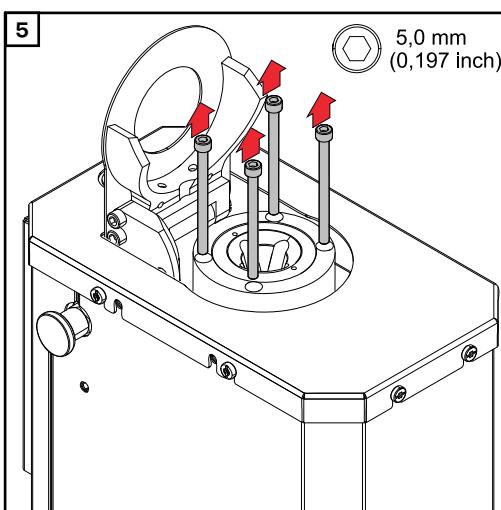
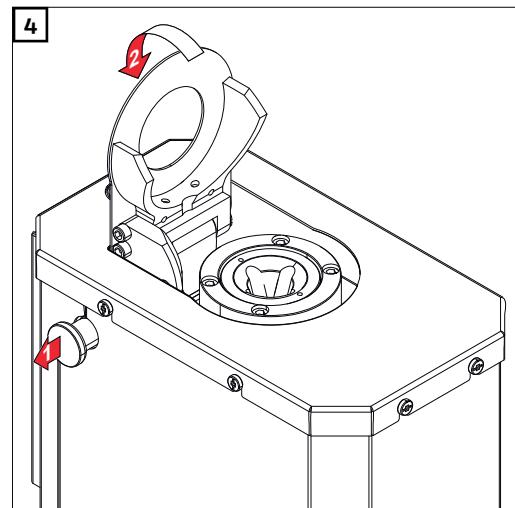
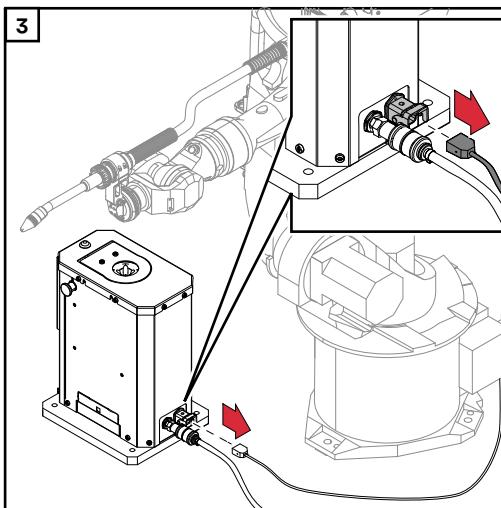
Service, maintenance and disposal

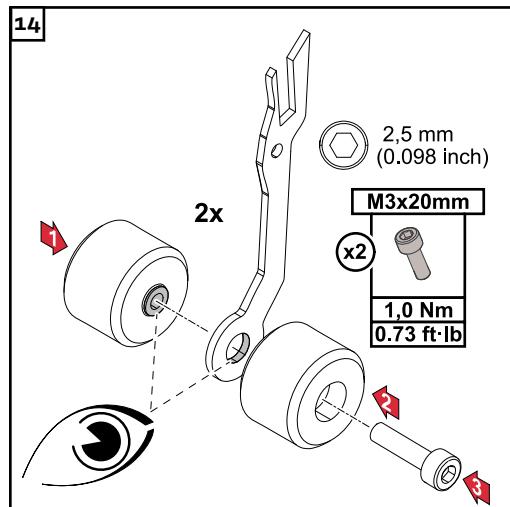
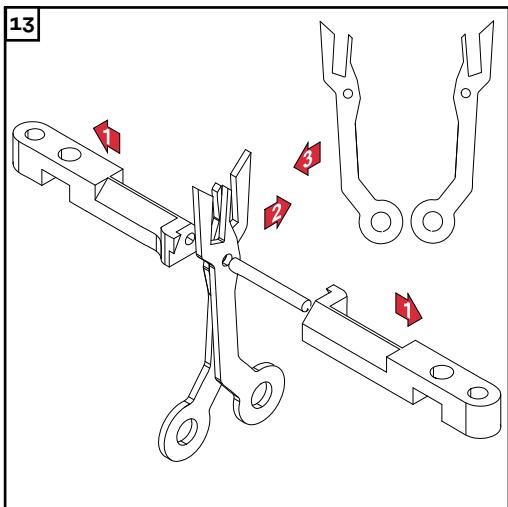
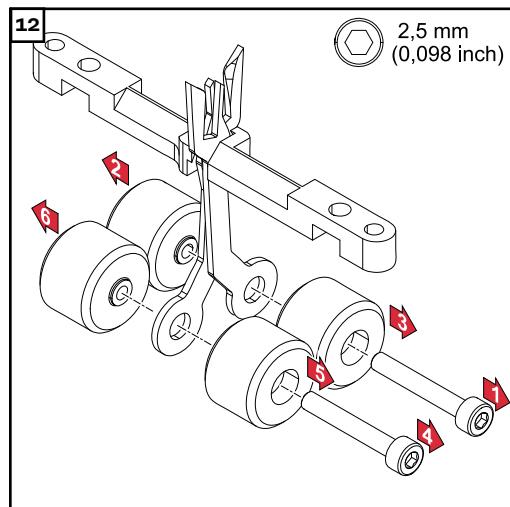
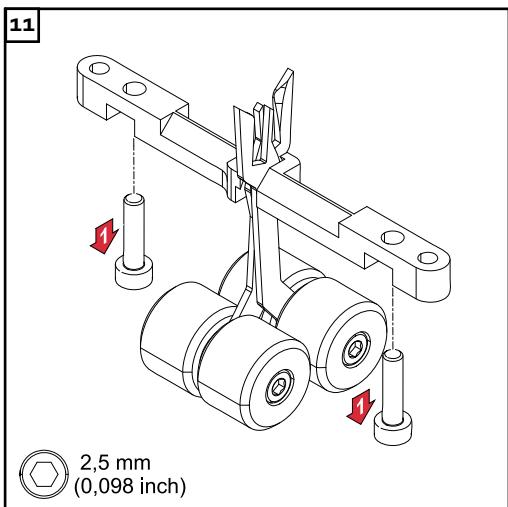
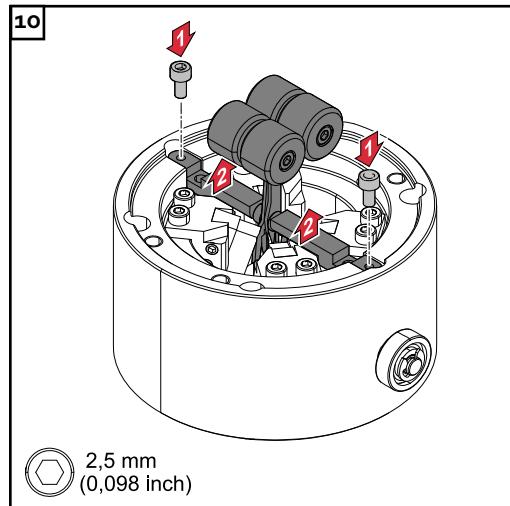
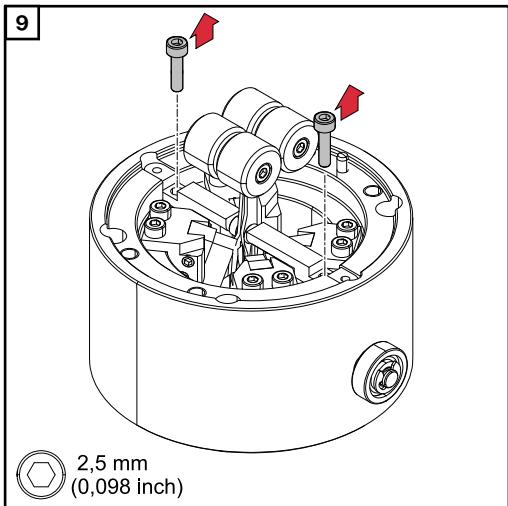
General	The cleaning device does not usually require maintenance. To ensure the cleaning device remains operational over time, there are a number of care and maintenance tasks that need to be carried out, however:
Before Every Start-up	<ul style="list-style-type: none">1 In general, you should visually inspect the cleaning device and ensure that any damage is repaired immediately (before commissioning)
Weekly	<ul style="list-style-type: none">1 Ensure that the cleaning blades can move easily2 Ensure that the cleaning brushes are not worn3 Empty the collecting container
Every 6 months	<ul style="list-style-type: none">1 Open the device and check the pneumatic valves to ensure:<ul style="list-style-type: none">- no leaks- all screws are screwed tightly in place- all screw joints are fixed firmly in place on the pneumatic valves.
Whenever Required	<ul style="list-style-type: none">1 Open the device and<ul style="list-style-type: none">- blast the inside of the device clean with dry and reduced compressed air- lightly oil the guides on the lifting device's lifting cylinder2 Change the cleaning blades—see description below3 Change the cleaning brushes—see description below4 Empty the collecting container

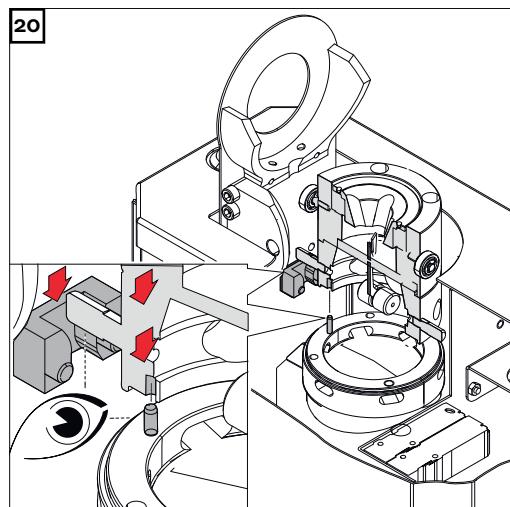
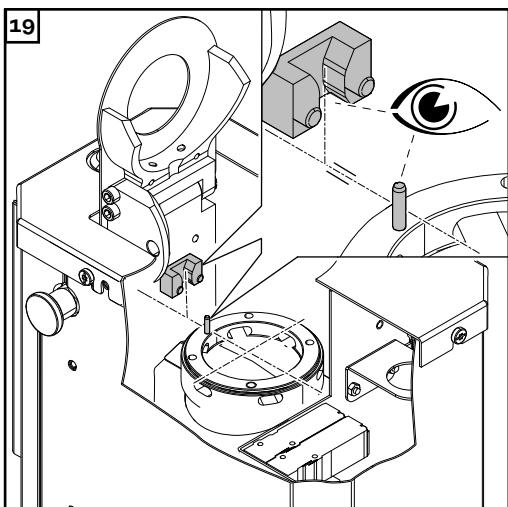
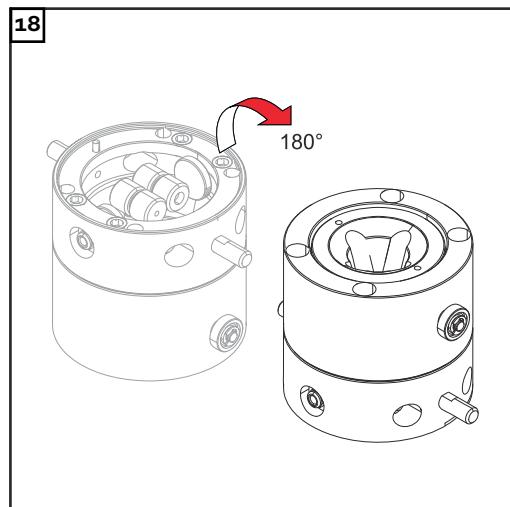
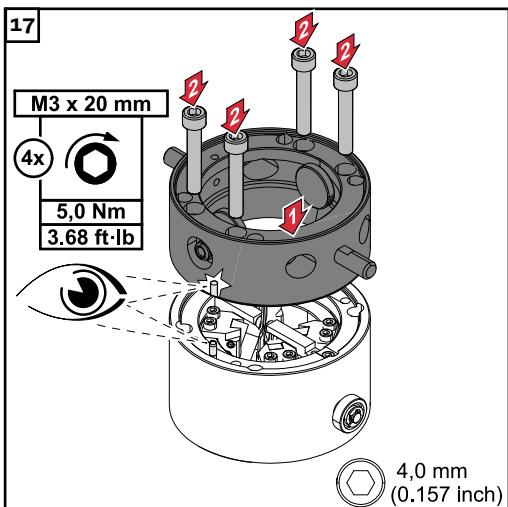
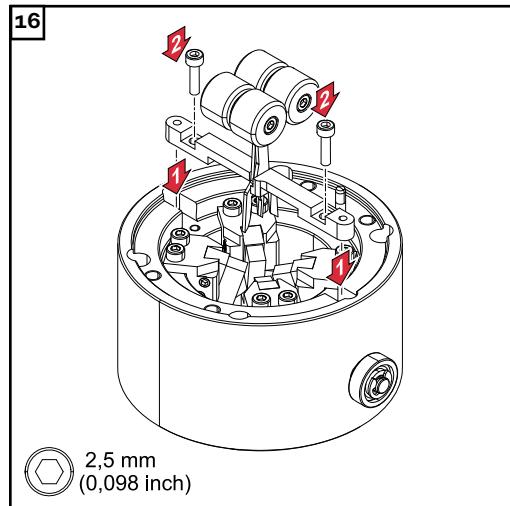
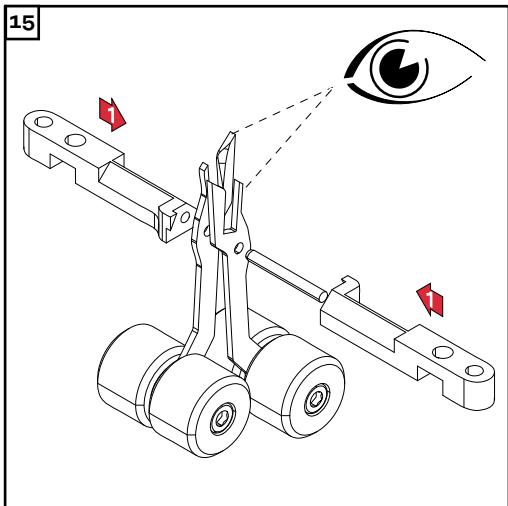
Changing the cleaning blades

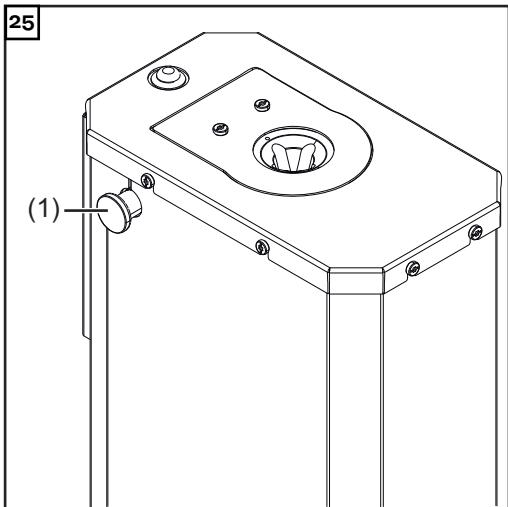
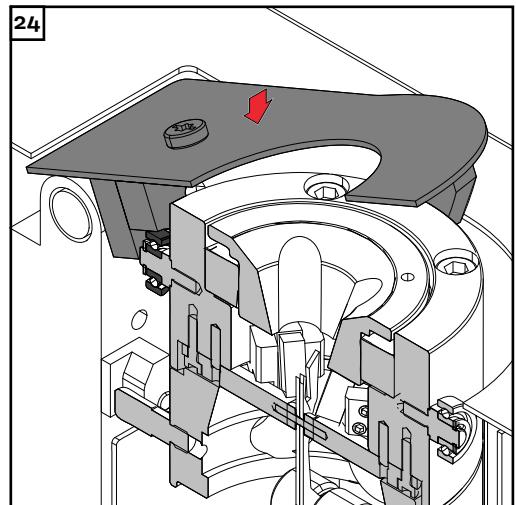
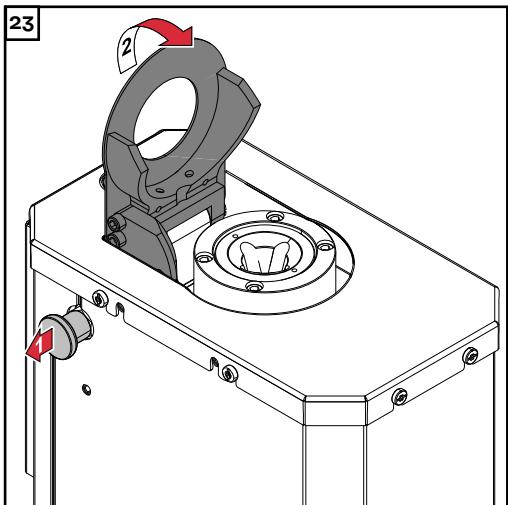
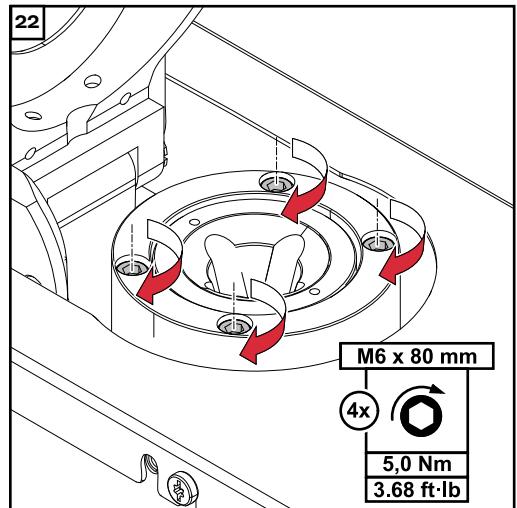
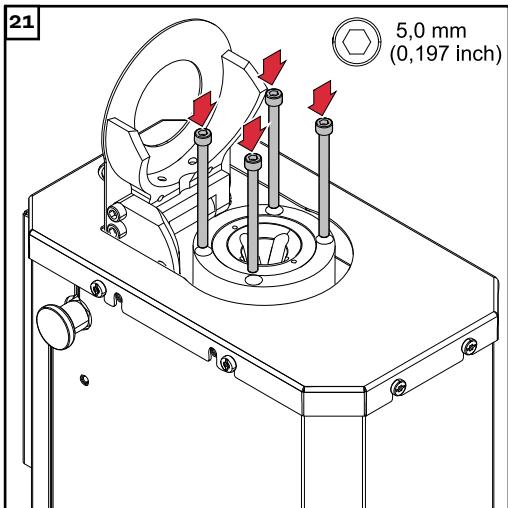
- 1** Set the "Calibrate cleaning head" input signal for one second
- this will move the cleaning head to the correct starting position

- 2** Deactivate the "Calibrate cleaning head" input signal



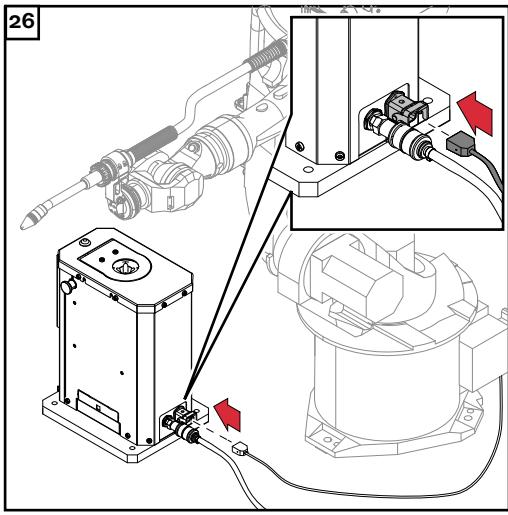






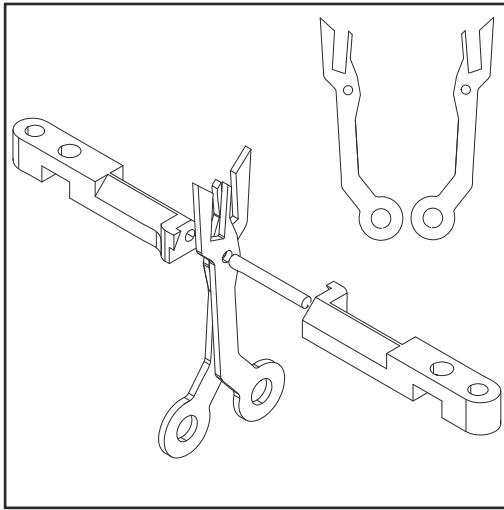
NOTE!

Hearing the locking bolt (1) clicking into place tells you that the motor cover is now closed.

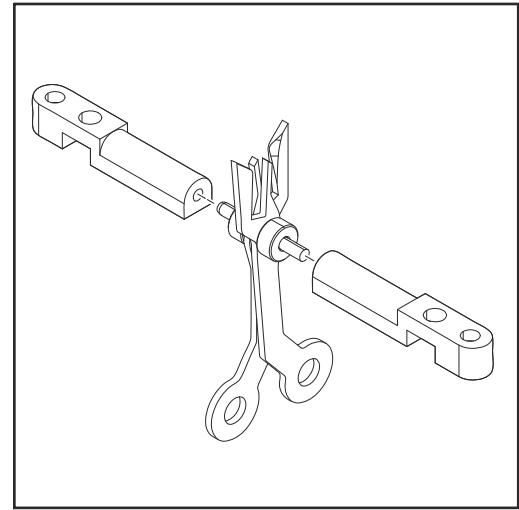


Changing the cleaning blades - blade pairs

As an alternative to changing the cleaning blades as described in the previous section, the single blades can also be replaced by complete blade pairs.

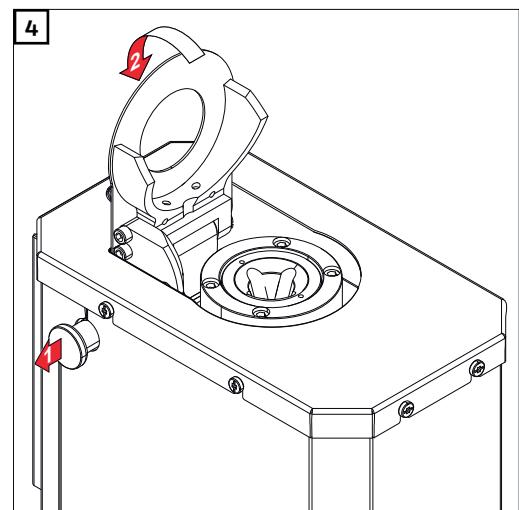
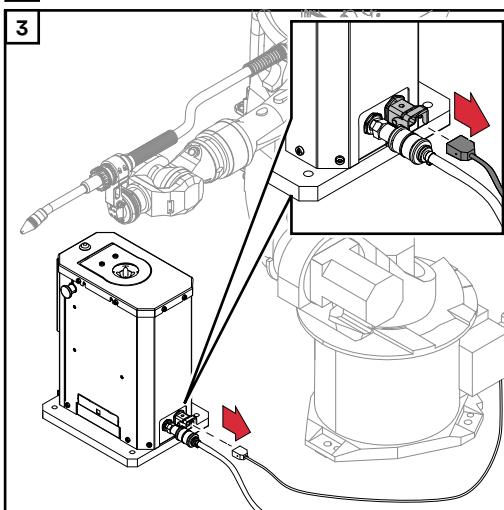


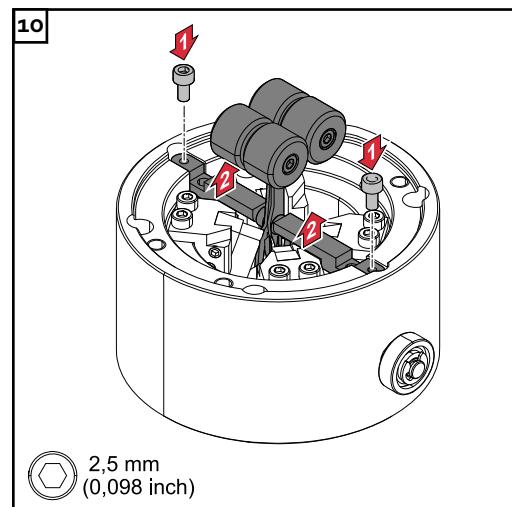
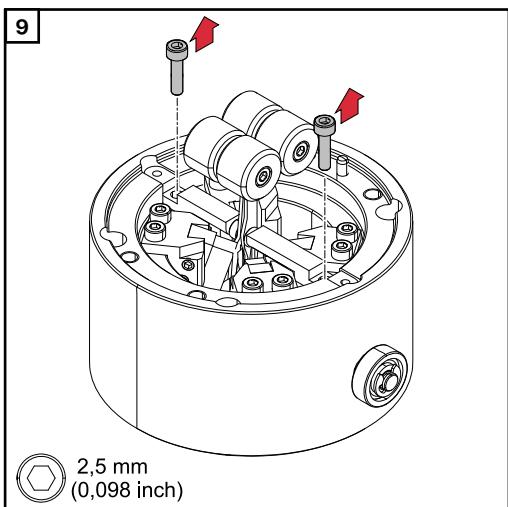
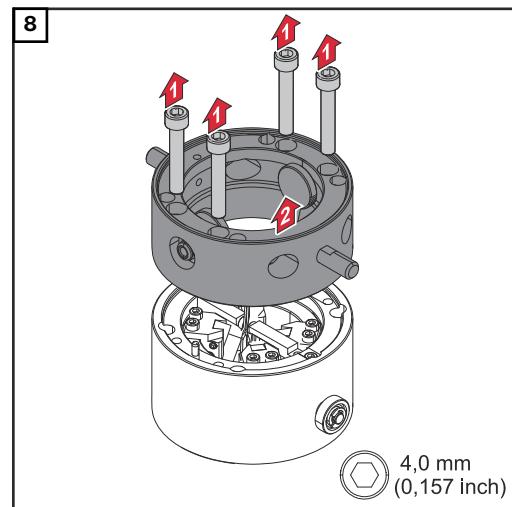
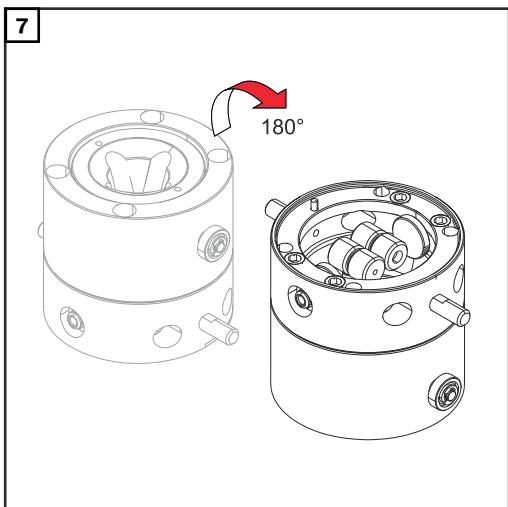
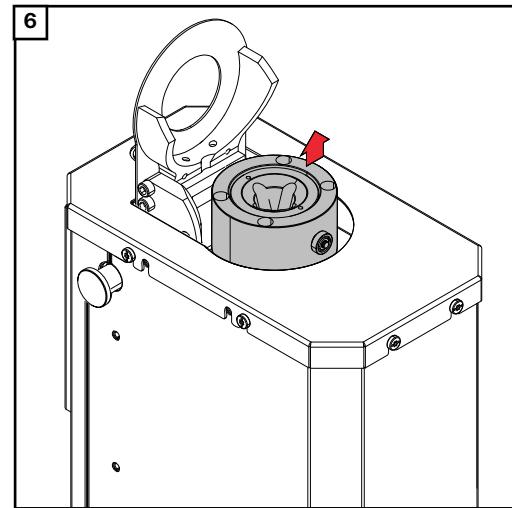
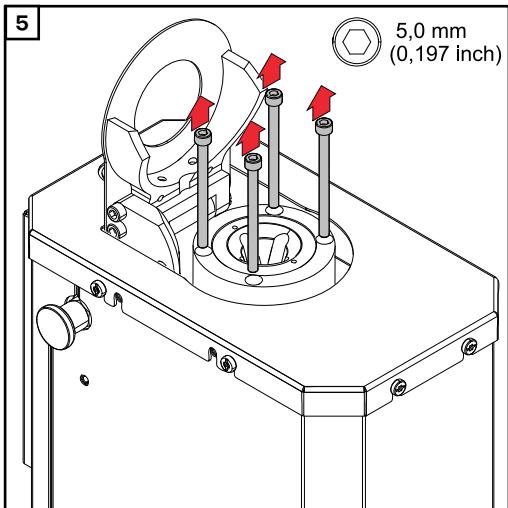
Cleaning blades - single blades

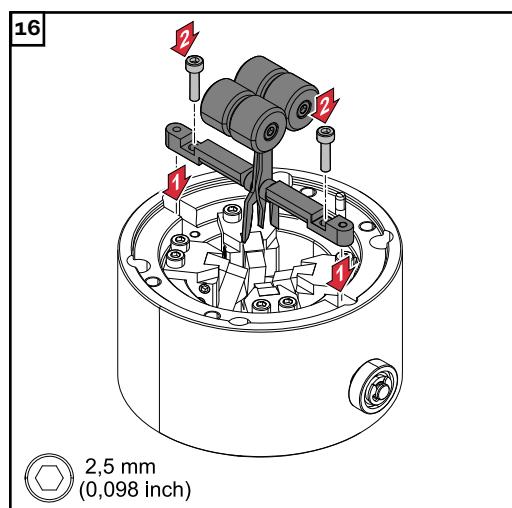
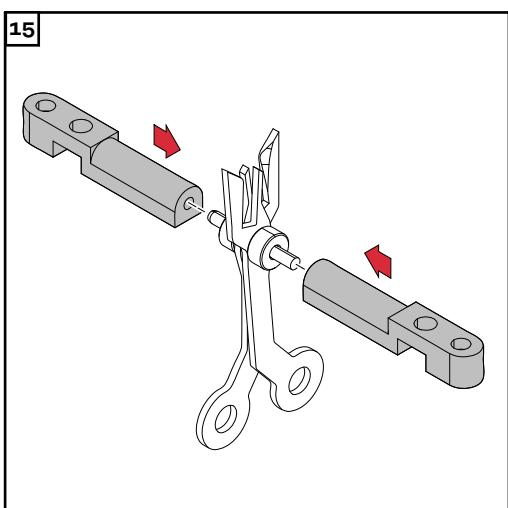
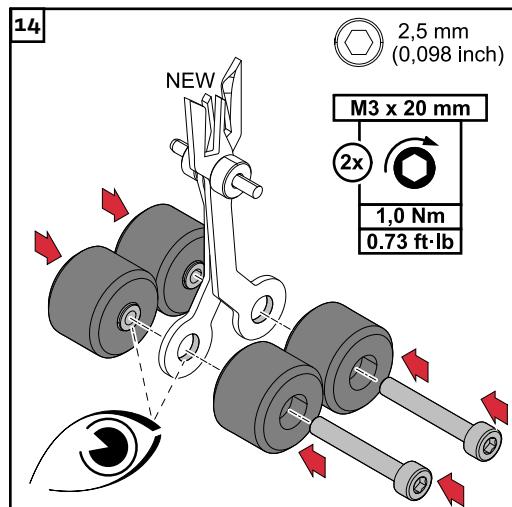
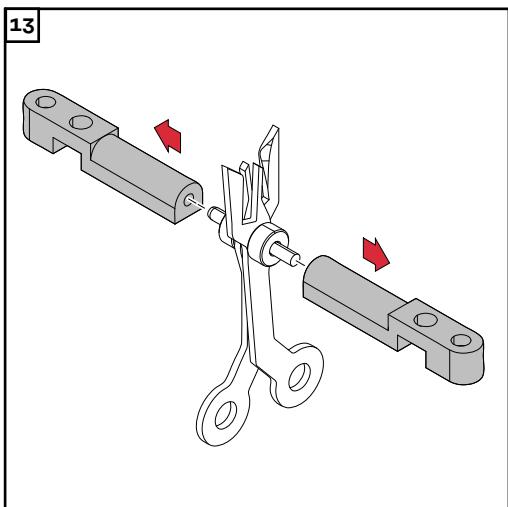
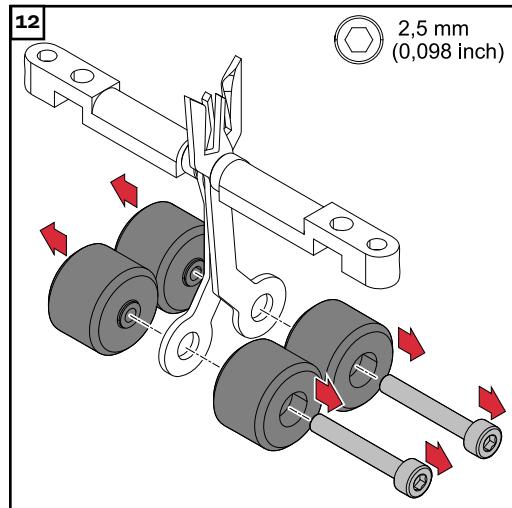
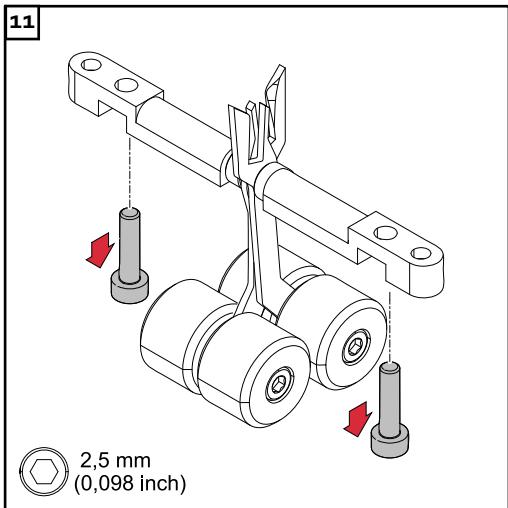


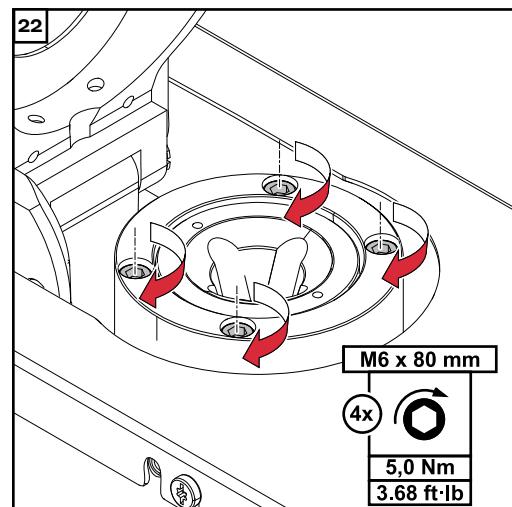
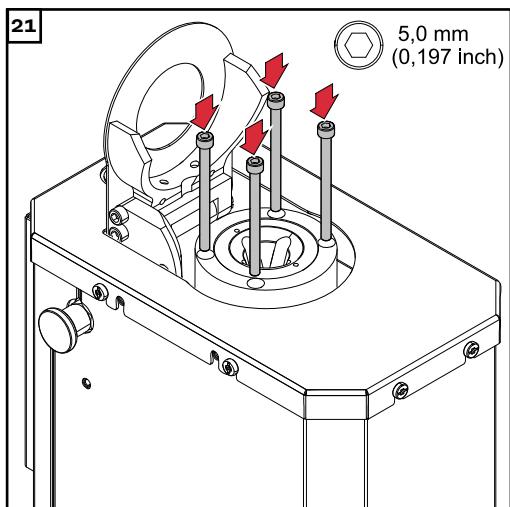
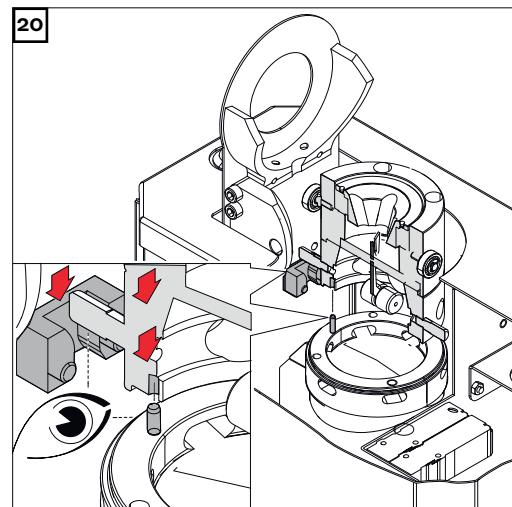
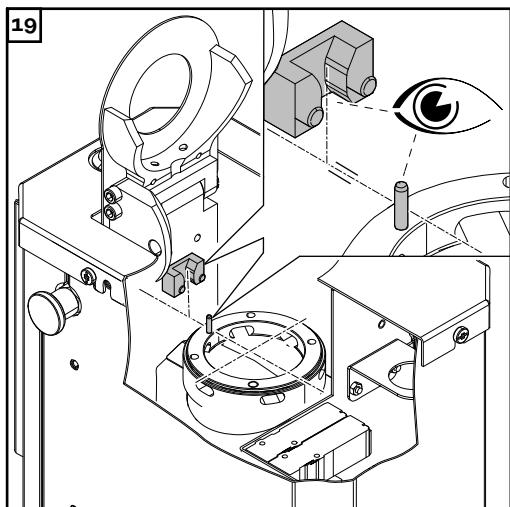
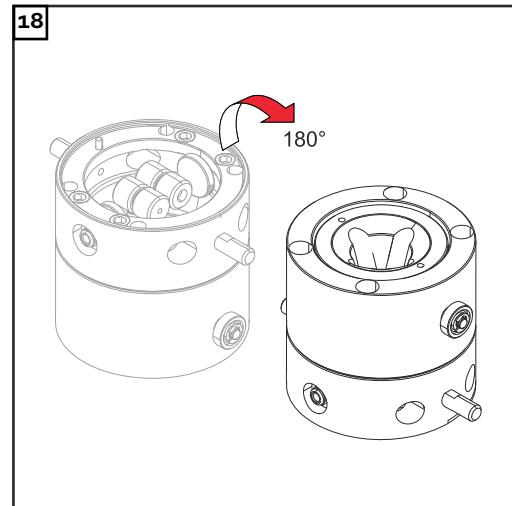
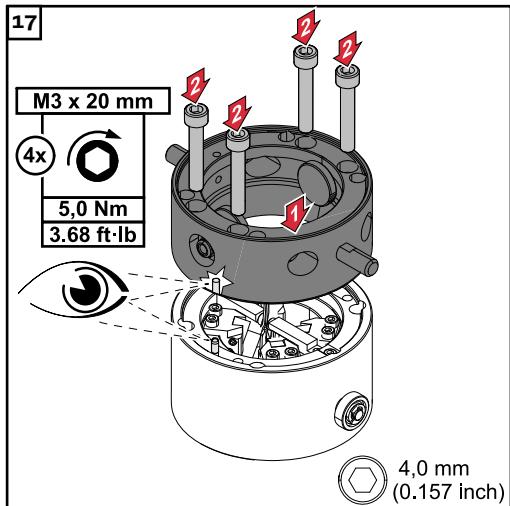
Cleaning blades - blade pairs

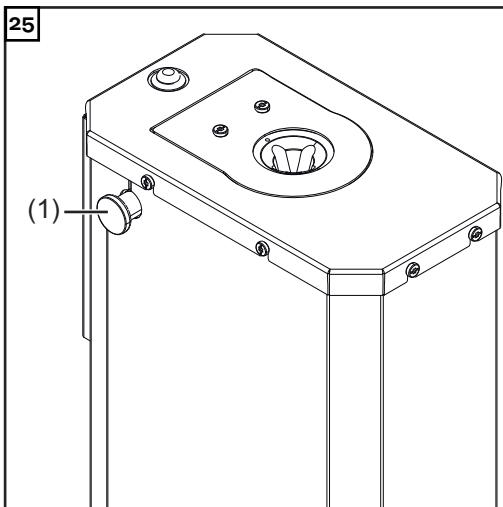
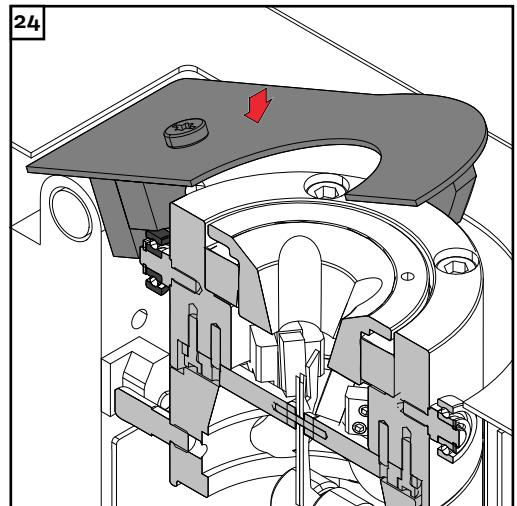
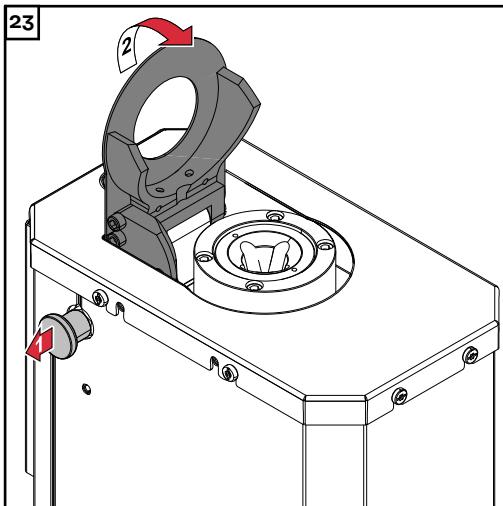
- 1** Set the "Calibrate cleaning head" input signal for one second
 - this will move the cleaning head to the correct starting position
- 2** Deactivate the "Calibrate cleaning head" input signal





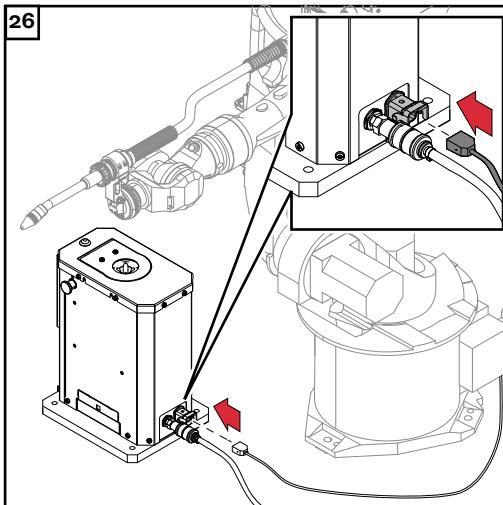






NOTE!

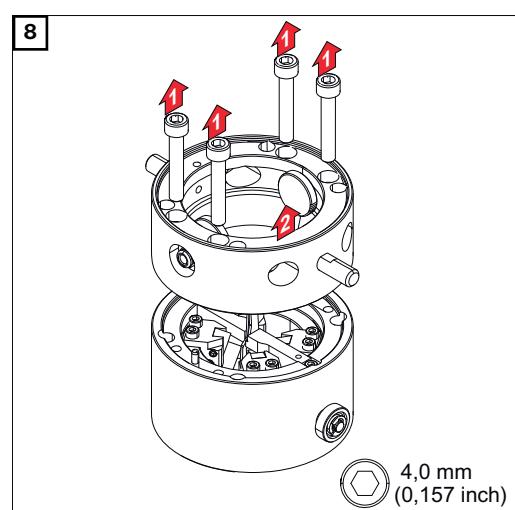
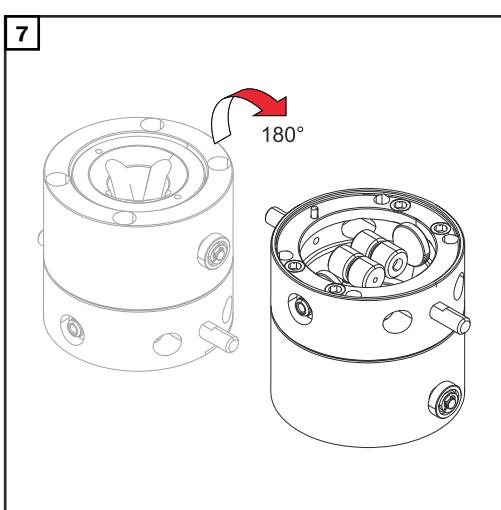
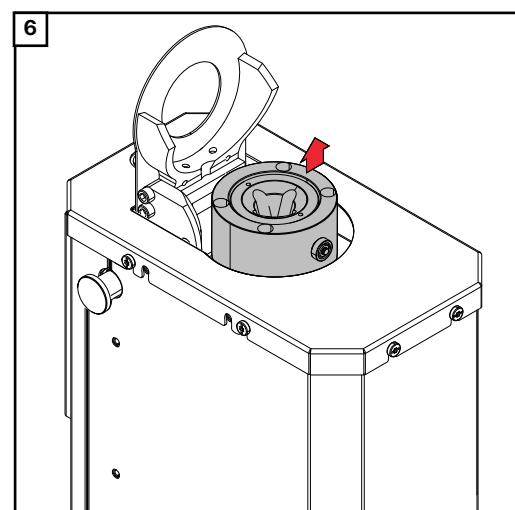
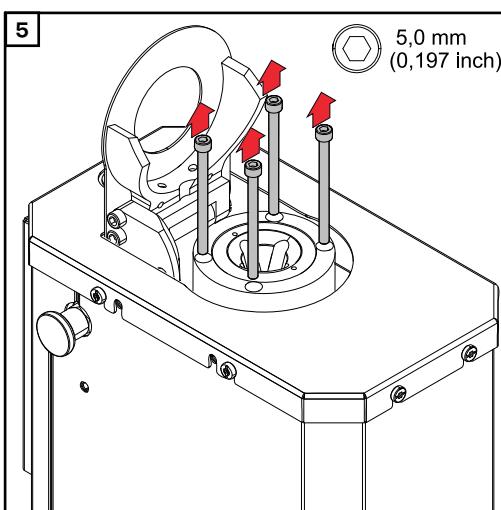
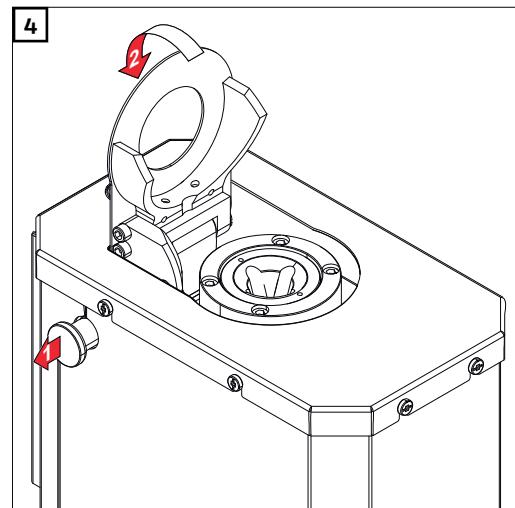
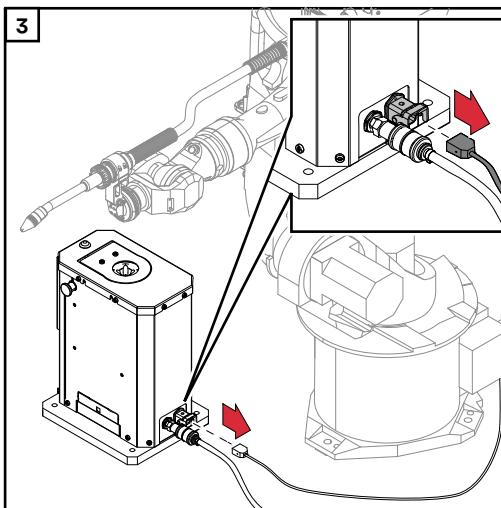
Hearing the locking bolt (1) clicking into place tells you that the motor cover is now closed.

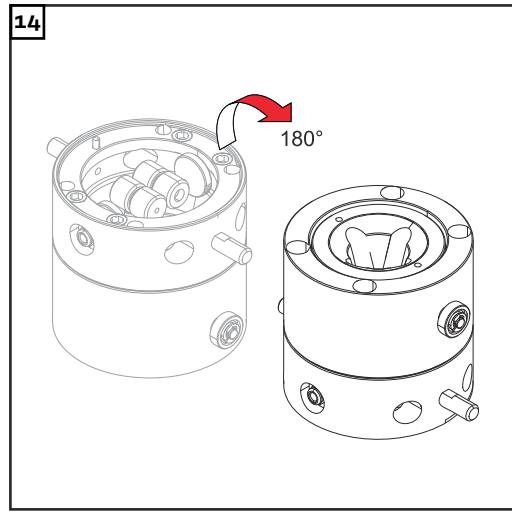
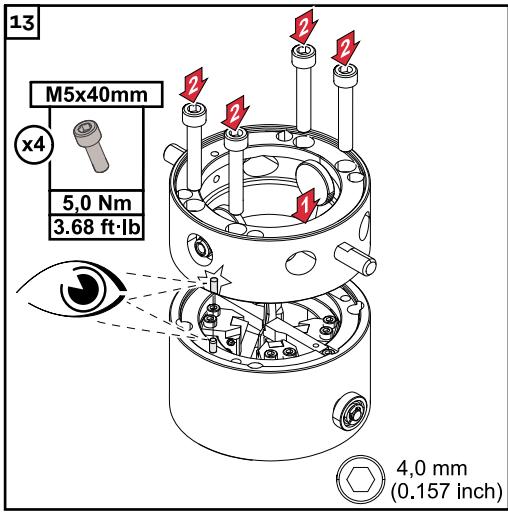
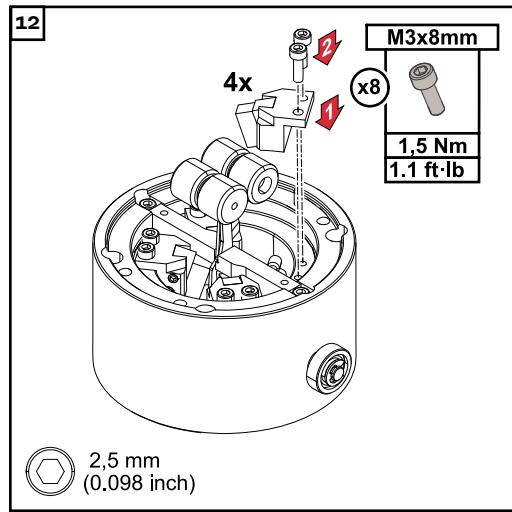
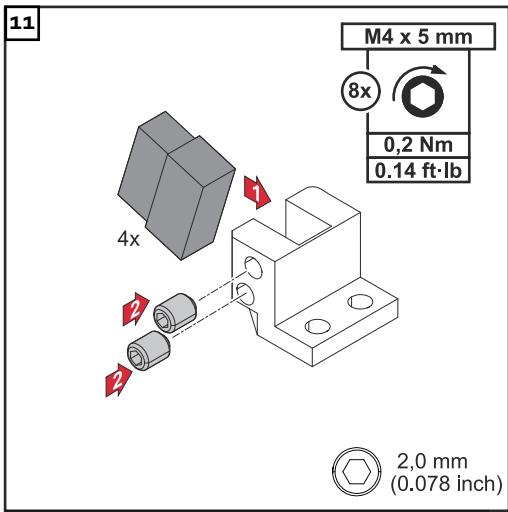
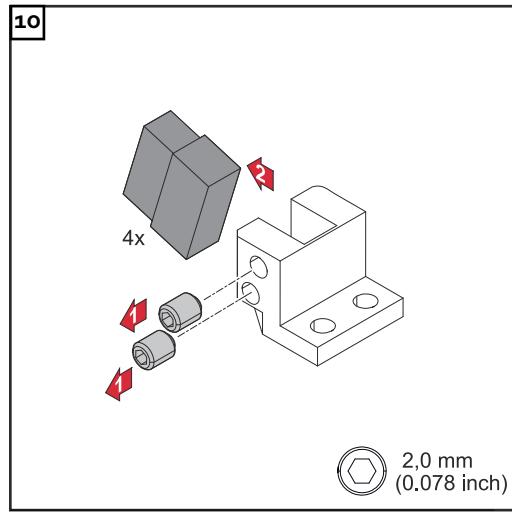
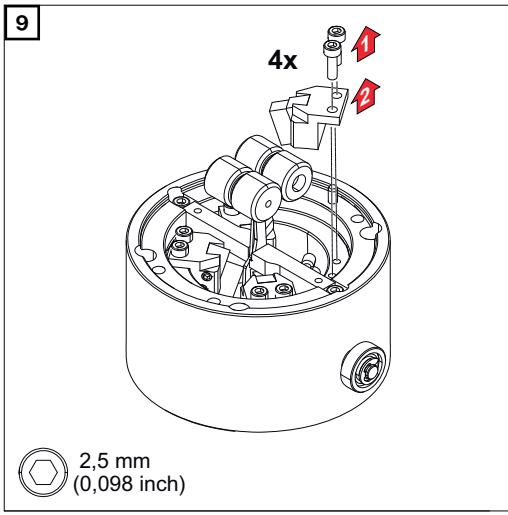


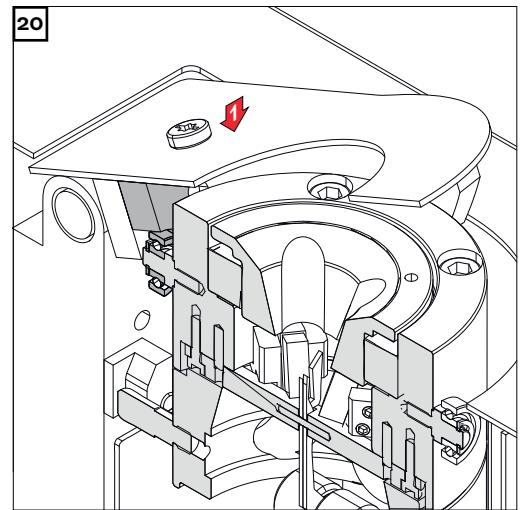
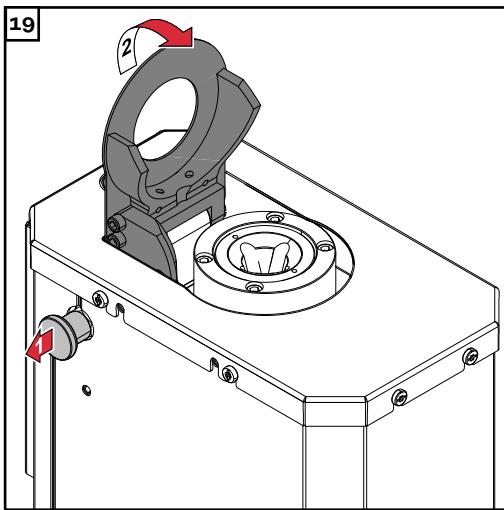
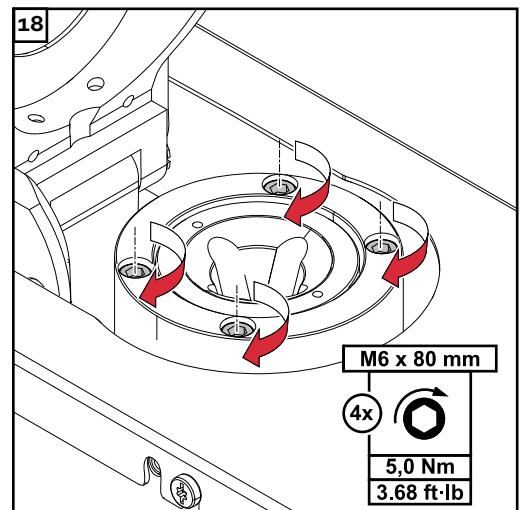
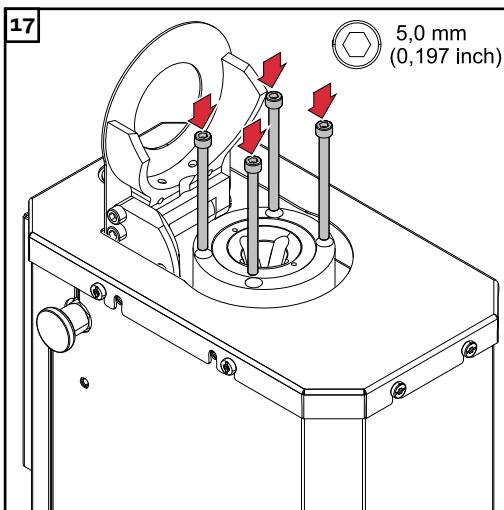
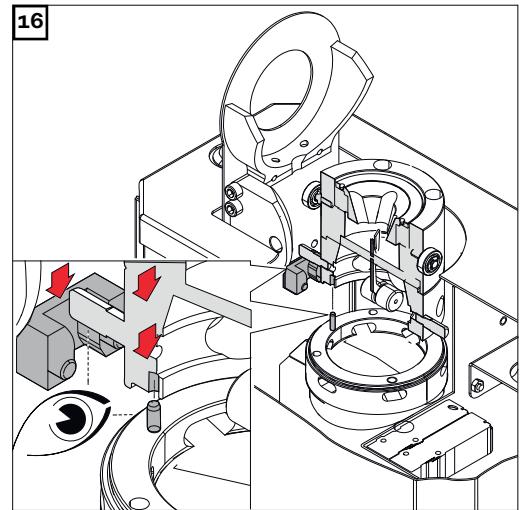
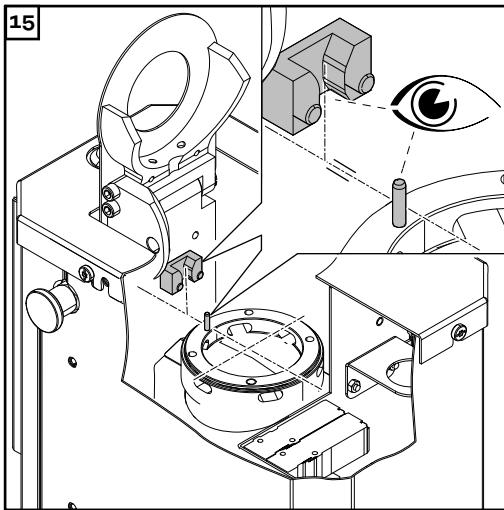
Changing the cleaning brushes

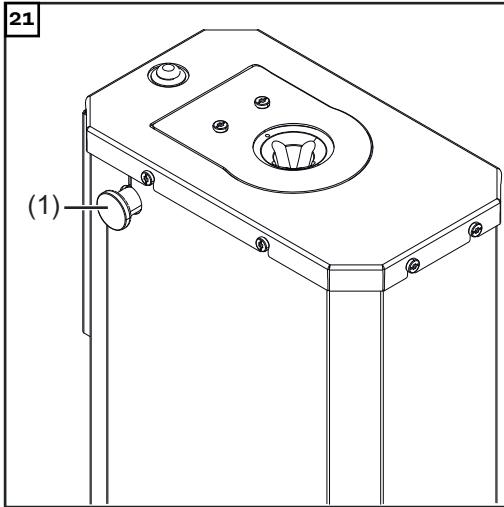
1 Set the "Calibrate cleaning head" input signal for one second
- this will move the cleaning head to the correct starting position

2 Deactivate the "Calibrate cleaning head" input signal



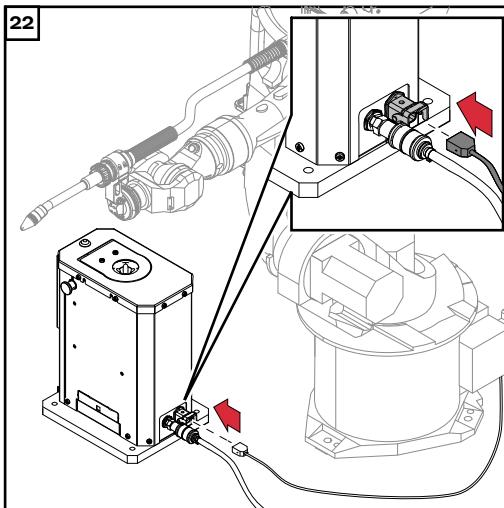




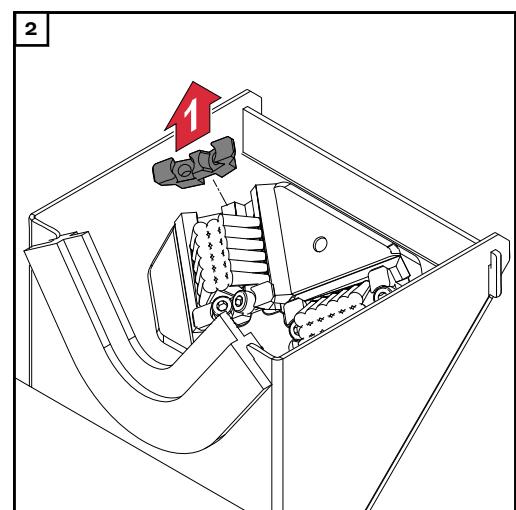
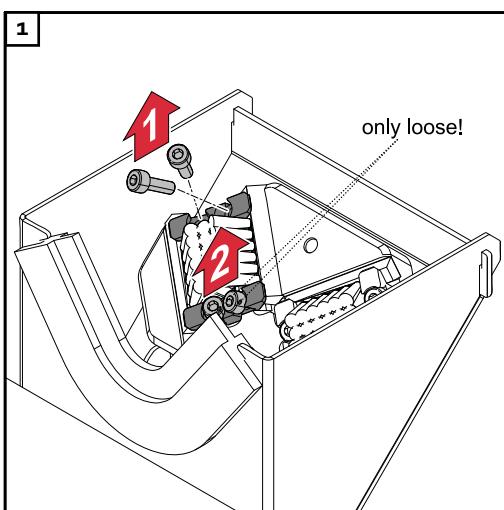


NOTE!

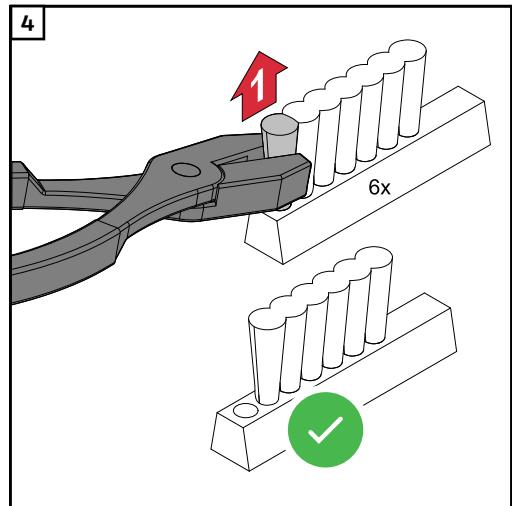
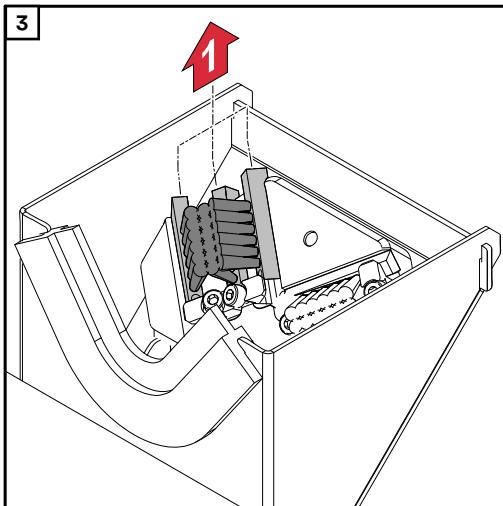
Hearing the locking bolt (1) clicking into place tells you that the motor cover is now closed.



Changing the V brush cleaning brushes

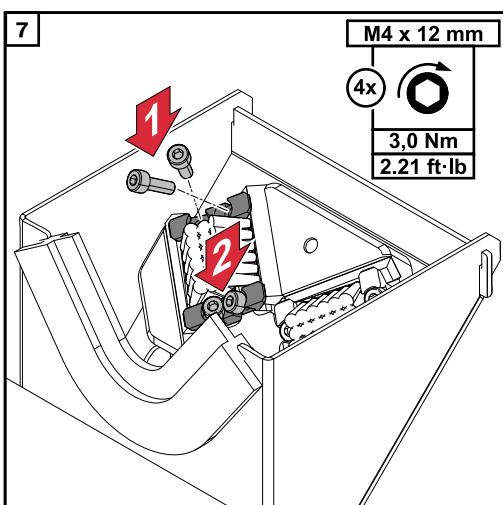
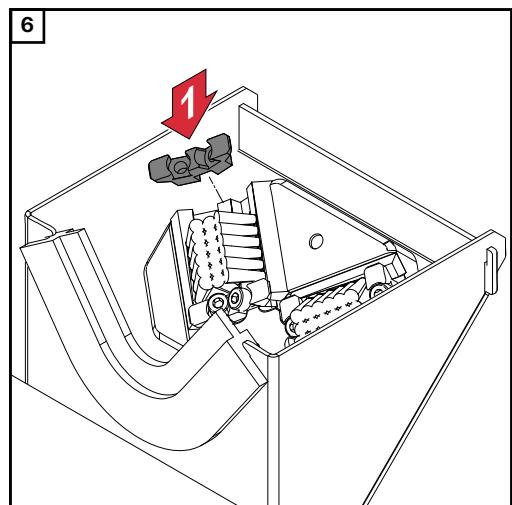
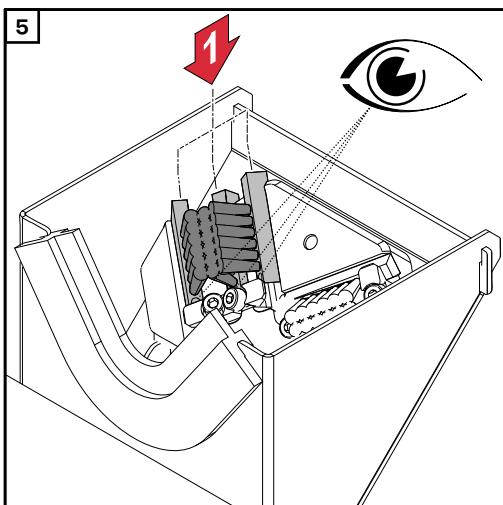


IMPORTANT! Only loosen the screws in step 2!



IMPORTANT! Always change all 6 cleaning brushes!

For each of the 6 new cleaning brushes, remove the first brush bundle, otherwise the cleaning brush cannot be clamped.



Disposal Waste electrical and electronic equipment must be collected separately and recycled in an environmentally sound manner in accordance with the European Directive and national law. Used equipment must be returned to the distributor or through a local authorized collection and disposal system. Proper disposal of the used device promotes sustainable recycling of resources and prevents negative effects on health and the environment.

Packaging materials

- Collect separately
- Observe local regulations
- Crush cardboard boxes

Troubleshooting

Safety

Safety

Follow the safety rules below when carrying out all the tasks described in the "Troubleshooting" chapter.



WARNING!

Danger from incorrect operation and work that is not carried out properly.

This can result in serious personal injury and damage to property.

- ▶ All the work and functions described in this document must only be carried out by trained and qualified personnel.
 - ▶ Read and understand this document.
 - ▶ Read and understand all the operating instructions for the system components, especially the safety rules.
-



WARNING!

Danger due to machines starting automatically.

This can result in serious personal injury and damage to property.

- ▶ In addition to these operating instructions, observe the safety rules of the robot manufacturer and welding system manufacturer.
 - ▶ For your personal safety, make sure that all protective measures have been taken in the robot's working area and remain in effect while you are in this area.
-



WARNING!

Danger due to voltage and/or compressed air supply of the cleaning device.

Serious injuries due to moving parts may result (e.g., rotating cleaning head, cleaning head moving up/down, flying parts, chips, activated wire cutter, etc.). If work is required on the cleaning device while the cleaning device is being supplied with voltage and/or compressed air:

- ▶ Ensure that no body parts, such as fingers, hands, and hair, and objects and items of clothing get caught in the cleaning head.
 - ▶ Stay away from the wire cutter.
 - ▶ Wear hearing protection.
 - ▶ Wear protective goggles with side protection.
-



CAUTION!

Danger from hot cleaning head as a result of operation.

This can result in burns.

- ▶ Before handling the cleaning head, allow it to cool to room temperature (+25°C, +77°F).
-

Troubleshooting

Errors in the Program Sequence

Welding torch has been poorly cleaned or is damaged

Cause: Cleaning blades worn or damaged

Remedy: Change the cleaning blades

Cause: Cleaning brushes worn or damaged

Remedy: Change cleaning brushes

Cause: Incorrect cleaning position

Remedy: Define cleaning position as per the Operating Instructions - see section **Welding torch cleaning position** from page **37**.

Cleaning motor does not move up or down

Cause: Compressed air relief valve closed

Remedy: Open compressed air relief valve

Cause: No signal from robot

Remedy: Check robot program

Cause: Solenoid valve has mechanical fault

Remedy: Contact service team (solenoid valve needs replacing)

Cause: Compressed air controller is faulty

Remedy: Contact service team (compressed air controller needs replacing)

Cause: Seal on lifting cylinder is faulty

Remedy: Contact service team (lifting cylinder needs replacing)

Cleaning motor not working

Cause: Compressed air supply missing.

Remedy: Set up the compressed air supply.

Cause: No signal from robot.

Remedy: Check robot program.

Cause: Cleaning motor has mechanical fault.

Remedy: Contact service team (have cleaning motor replaced).

Cause: Solenoid valve has mechanical fault.

Remedy: Contact service team (have solenoid valve replaced).

CrashBox triggers

Cause: Solenoid valve has mechanical fault

Remedy: Contact service team (solenoid valve needs replacing)

Cause: Compressed air controller incorrectly adjusted

Remedy: Contact service team (compressed air controller needs adjusting)

Cause: Lifting cylinder is faulty

Remedy: Contact service team (lifting cylinder needs replacing)

Technical data

Technical data

Robacta Reamer Braze+

Supply voltage	+ 24 V DC
Rated power	15 W
Nominal pressure	6 bar 86.99 psi
Air consumption	420 l/min 443.81 qt./min
Thread identification for compressed air connection	G 1 1/4"
Standard I/O (X1)	Input: + 24 V DC/max. 360 mA Output: + 24 V DC/max. 20 mA
Cleaning time	4.5 - 6.5 s
Overall cycle time	5.0 - 9.0 s
Protection class	IP 20
Mark of conformity	CE, CSA, UKCA
Safety symbols	S
"Performance Level"	c
EMC emission class	A
Maximum noise emission (LWA)	82 dB (A)
Dimensions l x w x h	324 x 240 x 386 mm 12.76 x 9.45 x 15.2 in.
Weight	18.8 kg 41.47 lb.

Appendix

Declaration of conformity



EU-KONFORMITÄTSERKLÄRUNG 2018 EU-DECLARATION OF CONFORMITY 2018 DÉCLARATION UE DE CONFORMITÉ, 2018

Wels-Thalheim, 2018-05-07

Die Firma

Manufacturer

La compagnie

FRONIUS INTERNATIONAL GMBH

Froniusstraße 1, A-4643 Pettenbach

erklärt in alleiniger Verantwortung,
dass folgendes Produkt:

RA Reamer Braze+
Gasdüsenreinigungsgerät

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

Richtlinie 2014/30/EU
Elektromag. Verträglichkeit

Richtlinie 2006/42/EG
Maschinenrichtlinie

Europäische Normen inklusive
zutreffende Änderungen
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 Schutzanforderungen
zur Einsicht bereit.

Hereby certifies on its sole
responsibility that the following
product:

RA Reamer Braze+
Gas nozzle cleaner

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

Directive 2014/30/EU
Electromag. compatibility

Directive 2006/42/EC
Machinery Directive

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

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

se déclare seule responsable du fait
que le produit suivant:

RA Reamer Braze+
Appareil de nettoyage de buses gaz

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

Directive 2014/30/EU
Électromag. Compatibilité

Directive 2006/42/CE
Directive aux machines

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

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

CE 2018

ppa. T. Herndl, MAS
Member of Board
Chief Technical Officer



 SPARE PARTS
ONLINE

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At www.fronius.com/contact you will find the contact details
of all Fronius subsidiaries and Sales & Service Partners.