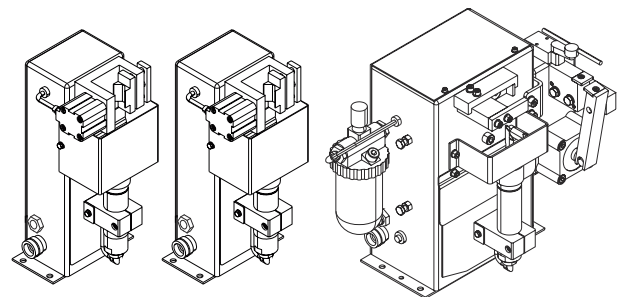


# Operating Instructions

**Robacta Reamer Alu Edition**  
**Robacta Reamer Alu 3000upm**  
**Robacta Reamer Twin**



**EN** | Operating Instructions





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# Safety rules

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## Explanation of safety notices

### **DANGER!**

**Indicates immediate danger.**

- ▶ If not avoided, death or serious injury will result.
- 

### **WARNING!**

**Indicates a potentially hazardous situation.**

- ▶ If not avoided, death or serious injury may result.
- 

### **CAUTION!**

**Indicates a situation where damage or injury could occur.**

- ▶ If not avoided, minor injury and/or damage to property may result.
- 

### **NOTE!**

**Indicates a risk of flawed results and possible damage to the equipment.**

---

## 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!**

<b>Proper use</b>	<p>The device is to be used exclusively for its intended purpose.</p> <hr/> <p>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.</p> <hr/> <p>Proper use includes:</p> <ul style="list-style-type: none"> <li>- carefully reading these operating instructions</li> <li>- following all the instructions and safety rules in these operating instructions</li> <li>- performing all stipulated inspection and maintenance work</li> </ul> <hr/> <p>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.</p> <hr/> <p>The manufacturer likewise accepts no liability for inadequate or incorrect results.</p>
<b>Environmental conditions</b>	<p>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.</p> <hr/> <p>Ambient temperature range:</p> <ul style="list-style-type: none"> <li>- during operation: 0 °C to + 40 °C (32 °F to 104 °F)</li> <li>- during transport and storage: -25 °C to +55 °C (-13 °F to 131 °F)</li> </ul> <hr/> <p>Relative humidity:</p> <ul style="list-style-type: none"> <li>- up to 50 % at 40 °C (104 °F)</li> <li>- up to 90 % at 20 °C (68 °F)</li> </ul> <hr/> <p>Keep ambient air free from dust, acids, corrosive gases and substances, etc.</p> <hr/> <p>Can be used at altitudes of up to 2000 m (6500 ft)</p>
<b>Obligations of the operator</b>	<p>The operator must only allow persons to work with the device who:</p> <ul style="list-style-type: none"> <li>- are familiar with the fundamental instructions regarding safety at work and accident prevention and have been instructed in how to use the device</li> <li>- have read and understood these operating instructions, especially the section "safety rules", and have confirmed as much with their signatures</li> <li>- are trained to produce the required results.</li> </ul> <hr/> <p>Checks must be carried out at regular intervals to ensure that operators are working in a safety-conscious manner.</p>
<b>Obligations of personnel</b>	<p>Before using the device, all persons instructed to do so undertake:</p> <ul style="list-style-type: none"> <li>- to observe the basic instructions regarding safety at work and accident prevention</li> <li>- to read these operating instructions, especially the "Safety rules" section and sign to confirm that they have understood them and will follow them.</li> </ul> <hr/> <p>Before leaving the workplace, ensure that people or property cannot come to any harm in your absence.</p>
<b>Specific hazards</b>	

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 cleaning cutter / rotating cleaning brushes
  - lifting device moving up/down
  - extending/retracting gas nozzle clamping device
  - wire cutter
- 

Do not touch cleaning cutter / cleaning brush immediately after use - risk of burns. Observe the special safety rules in the operating instructions for handling the cleaning cutter / cleaning brush.

---

Protect hands, face and eyes against flying parts (shavings, etc.) and compressed air/parting agent mixture escaping from the parting-agent injection 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 cleaning cutter / cleaning brush, flying shavings and similar matter, escaping compressed air/parting agent mixture, 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 applicable directives (e.g. low-voltage and electromagnetic compatibility directives, machinery directive).

Devices with the CSA test mark satisfy the requirements of the relevant standards in 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



**Principle**

Robacta Reamer devices are welding torch cleaning devices that are used for automatic cleaning of MIG/MAG welding torches. These devices can be relied upon to clean the interior and front of gas nozzles on torches of many different shapes, thereby significantly extending the service life of these wearing parts. With the Robacta Reamer Twin, an even application of parting agent prevents re-accumulation of dirt.

---

**Device concept**

A lifting cylinder for the lifting device, as well as all pneumatic components, form part of the robust steel housing. On the outside are the cleaning motor and the clamping device for the gas nozzle on the welding torch.

The Robacta Reamer Twin is fitted with a wire cutter and parting agent nebuliser as standard.

During the cleaning process, both wire electrodes are shortened to a defined length for the next welding process.

The wire cutter is an optional extra with the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm.

For professional installation, a stable fitting base is available for all devices.

---

**Application areas**

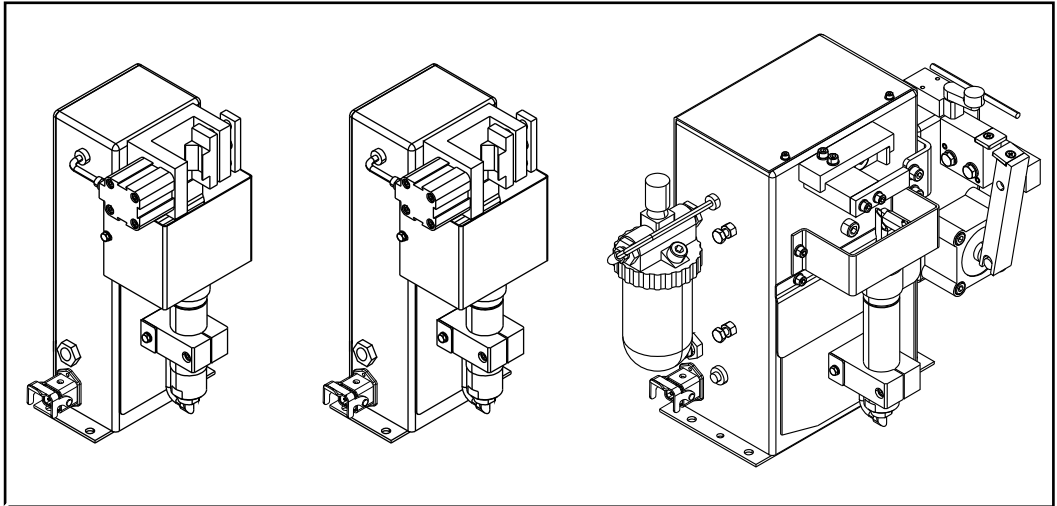
Devices from the Robacta Reamer series are intended exclusively for use in robot and other automated applications.

The devices were designed for use in the automobile and component supply industry, equipment construction, chemical plant construction and machine and rail vehicle manufacturing.

The Robacta Reamer Twin can be used for processing steel and aluminium materials.

The Robacta Reamer Alu Edition and the Robacta Reamer Alu 3000upm are intended exclusively for aluminium applications.

**Illustration of  
the various  
device types**



*Robacta Reamer Alu Edition, Robacta Reamer Alu 3000upm, Robacta Reamer Twin*

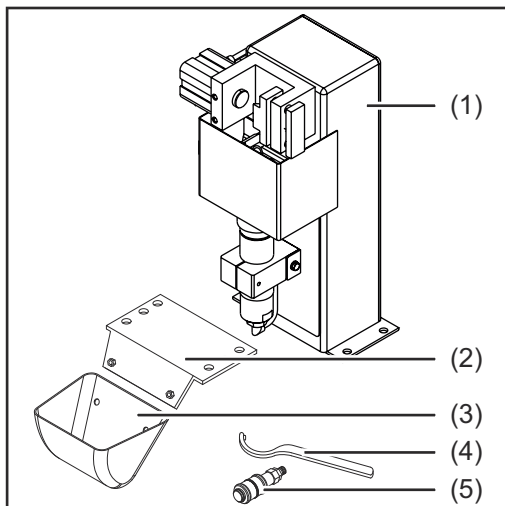


# Scope of supply and options

## General

The cleaning devices can be used in conjunction with various options. This makes it possible to optimise various procedures in the welding process, as necessitated by the particular field of application.

## Robacta Reamer Alu Edition scope of supply



### NOTE!

The cleaning brush and adapter for the cleaning brush are not included in the scope of supply.

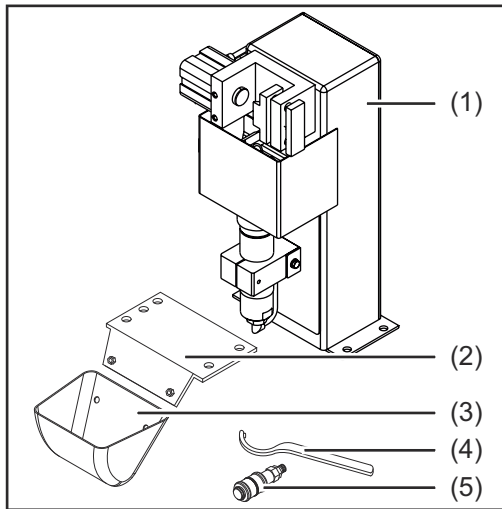
- (1) Robacta Reamer Alu Edition cleaning device
- (2) Spatter tray retainer
- (3) Spatter tray
- (4) Tightening key for cleaning motor
- (5) Compressed air relief valve

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

- Robacta Reamer Alu Edition options
- Fitting base
- Wire cutter

**Robacta Reamer  
Alu 3000upm  
scope of supply**



**NOTE!**

**The cleaning cutter and adapter for the cleaning cutter are not included in the scope of supply.**

- (1) Robacta Reamer Alu 3000upm cleaning device
- (2) Spatter tray retainer
- (3) Spatter tray
- (4) Tightening key for cleaning motor
- (5) Compressed air relief valve

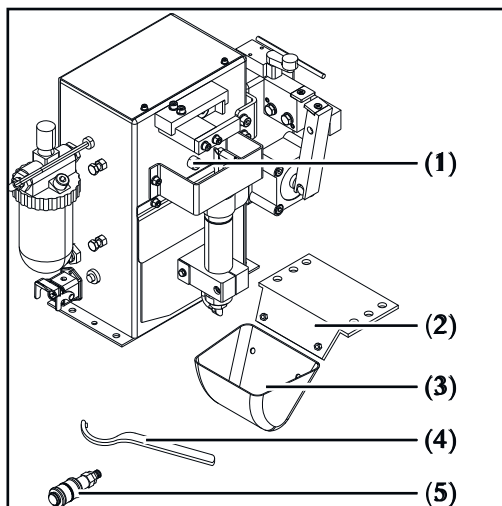
not shown:

- (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

**Robacta Reamer  
Alu 3000upm  
options**

- Fitting base
- Wire cutter

**Robacta Reamer  
Twin scope of  
supply**



**NOTE!**

**The "Robacta Reamer" parting agent (item number 42,0411,8042) and the cleaning cutter are not part of the scope of supply.**

- (1) Robacta Reamer Twin cleaning device with wire cutter and parting agent nebuliser
- (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) Filling funnel for parting agent
- (9) Fixings for assembling the cleaning device:
  - 4 screws
  - 4 washers
  - 4 lock washers
  - 4 nuts

- 
- Robacta Reamer** - Fitting base  
**Twin options** - Cleaning cutter adjustment aid  
- Parting agent - spray unit

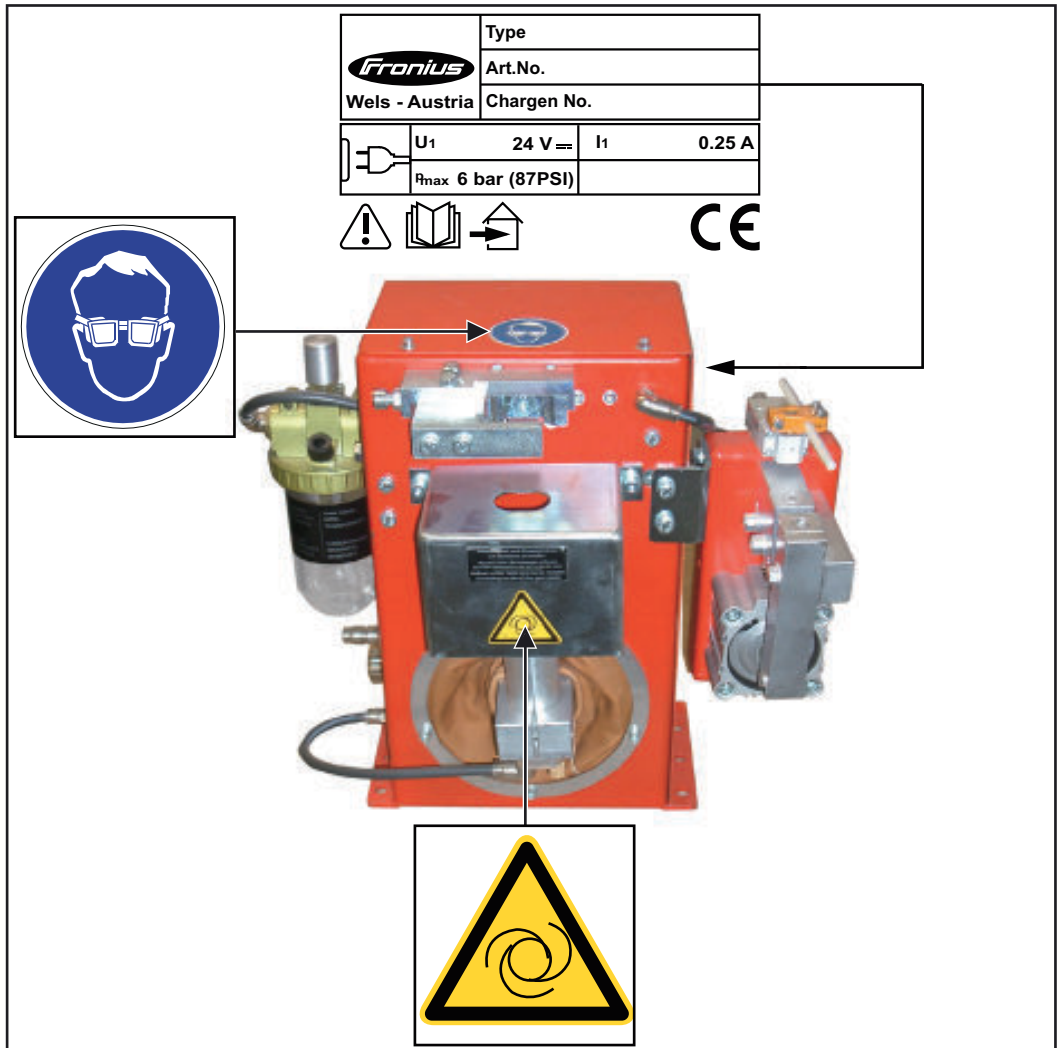
# Warning notices on the device

## 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.

The locations of the warning notices are shown on the Robacta Reamer Twin as an example. On the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm the warning notices are in the same location.



Warning notices on the cleaning device



**WARNING!** Risk of serious injury from:

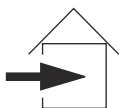
- mechanically powered parts
- compressed air/parting agent mixture escaping from the parting agent spray nozzles
- flying parts (shavings, etc.)

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!**

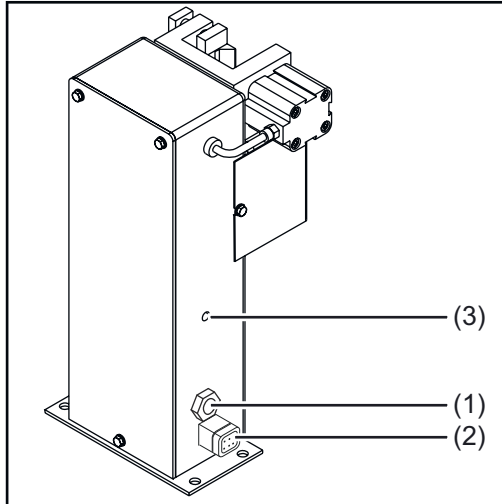
**Operating the equipment incorrectly can cause serious injury and damage.**

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:

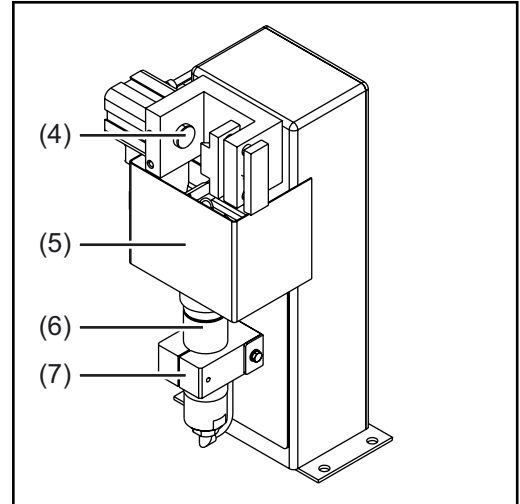
- ▶ these operating instructions
  - ▶ all the operating instructions for the system components, especially the safety rules
-

# Control elements, connections and mechanical components of the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm

## Control elements, connections and mechanical components



Side view



Front view

- (1) **Compressed air connection**  
for a dry compressed air supply at 6 bar (86.99 psi)  
Thread identification compressed air connection: G 1/4"
- (2) **Harting Han6P connection socket (X1)**  
for a + 24 V DC supply



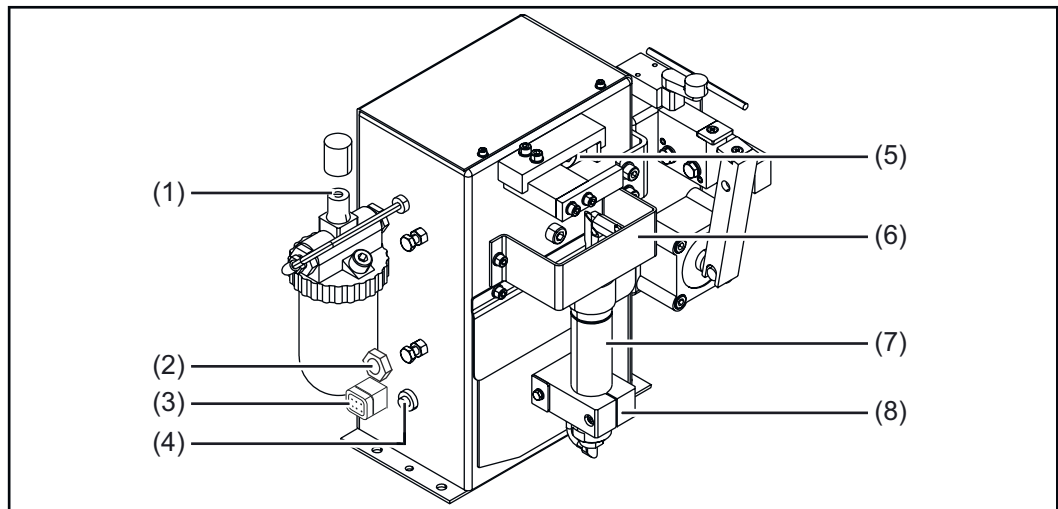
### **CAUTION!**

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

- (3) **"Cleaning" screw**  
for manually checking the following functions:
  - Cleaning motor ON/OFF
  - Lifting device UP/DOWN
  - Gas nozzle clamping device extending/retracting
- (4) **Gas nozzle clamping device**  
holds the gas nozzle in place during cleaning
- (5) **Protective covering**
- (6) **Cleaning motor**  
drives the cleaning brush / cleaning cutter
- (7) **Lifting device**  
lifts the cleaning motor and the cleaning brush / cleaning cutter to the cleaning position ready to commence cleaning

# Robacta Reamer Twin control elements, connections and mechanical components

Control elements, connections and mechanical components

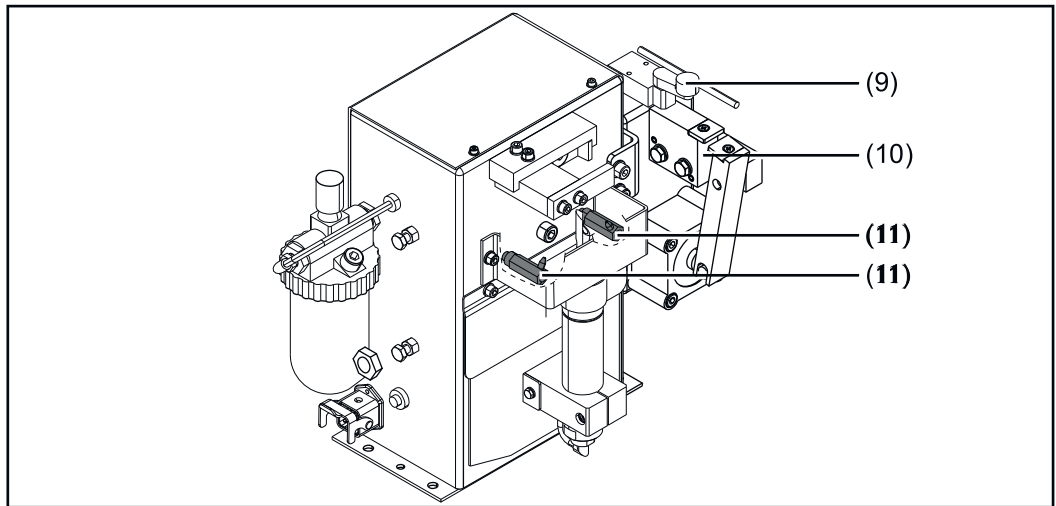


- 
- (1) **Parting agent adjuster**  
for setting the spray amount on the parting agent spray nozzles
- 
- (2) **Compressed air connection**  
for a dry compressed air supply at 6 bar (86.99 psi)  
Thread identification compressed air connection: G ¼"
- 
- (3) **Harting Han6P connection socket (X1)**  
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.

- 
- (4) **"Cleaning" button**  
for manually checking the following functions:
- Cleaning motor ON/OFF
  - Compressed air and parting agent supply to parting agent spray nozzles (compressed air/parting agent mixture is sprayed out of the parting agent spray nozzles)
  - Lifting device UP/DOWN
  - Gas nozzle clamping device extending/retracting
- 
- (5) **Gas nozzle clamping device**  
holds the gas nozzle in place during cleaning
- 
- (6) **Protective covering**
- 
- (7) **Cleaning motor**  
drives the cleaning cutter
- 
- (8) **Lifting device**  
lifts the cleaning motor and the cleaning cutter to the cleaning position ready to commence cleaning
-



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**(9) Wire cutter valve lever**  
activates the wire cutter

---

**(10) Wire cutter**

---

**(11) Parting agent spray nozzles**  
sprays the parting agent into the interior and onto the front of the gas  
nozzles using compressed air

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

## General

### CAUTION!

#### Danger from overcurrent.

Damage to the Harting Han6P connection supply may result.

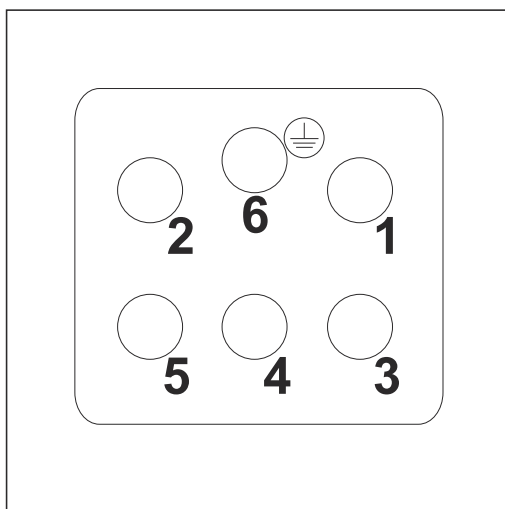
- ▶ Secure the power supply of the cleaning device against overcurrent with a 500 mA slow-blow fuse.

### 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. Gas nozzle free 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 shoddy workmanship 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 manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place while you are in the working area of the robot.

### **WARNING!**

#### **Risk of serious injury from:**

- ▶ mechanically powered parts
- ▶ flying parts (shavings, etc.)
- ▶ compressed air/parting agent mixture escaping from the parting-agent injection nozzles
- ▶ Before performing work on the cleaning device or any connected system components:
- ▶ disconnect the customer 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 cleaning cutter / rotating cleaning brush
- ▶ lifting device moving up/down
- ▶ extending/retracting gas nozzle clamping device
- ▶ activated wire cutter
- ▶ flying parts (shavings, etc.)
- ▶ compressed air/parting agent mixture escaping from the parting-agent injection 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, any objects and all clothing away from the cleaning cutter / cleaning brush, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection 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 cleaning cutter / cleaning brush, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection 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

### **On the Robacta Reamer Alu Edition, Robacta Reamer Alu 3000upm:**

- 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

### **On the Robacta Reamer Twin:**

- 3** Briefly press the valve lever on the cleaning device wire cutter to the side by more than 15° using a tool

- If the cleaning device wire cutter does not respond to the movement of the valve lever, the cleaning device (including the wire cutter) is depressurised
- If the wire cutter responds to the movement of the valve lever, the cleaning device (and therefore also the wire cutter) 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

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## 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

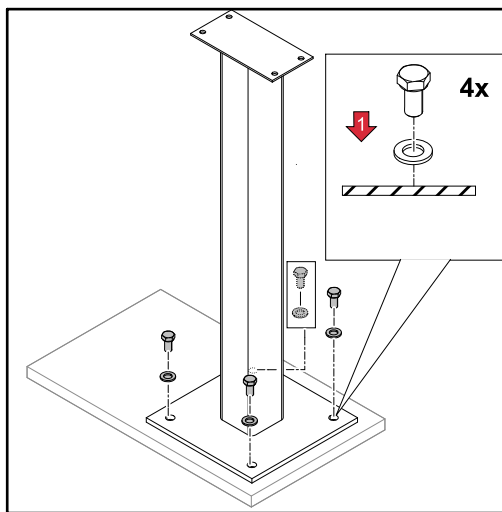
## Screwing the cleaning device and installation stand to the underlying surface

### **WARNING!**

#### **Danger from machines falling or toppling over.**

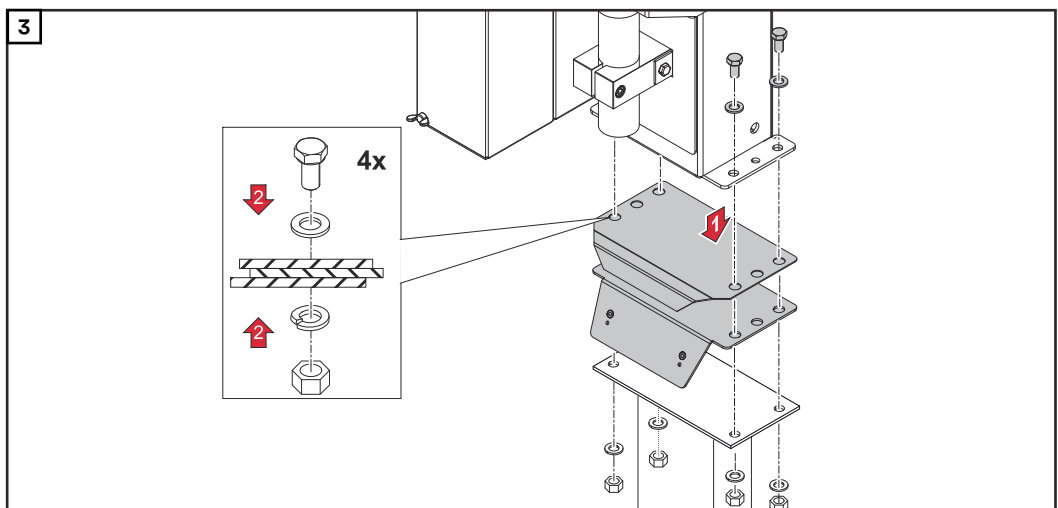
This can result in serious injury and damage to property.

- ▶ 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.

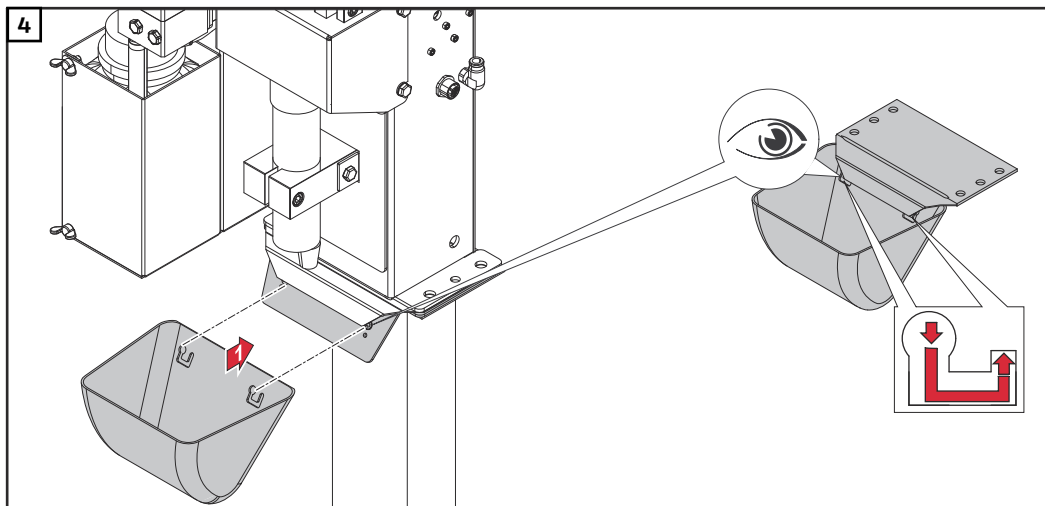


- 1** Place the optionally available installation stand on a level, firm and vibration-free surface (foundation)
  - Position the installation stand in such a way that the distance the robot has to travel to the cleaning device on the installation stand is as short as possible
- 2** Tightly screw the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

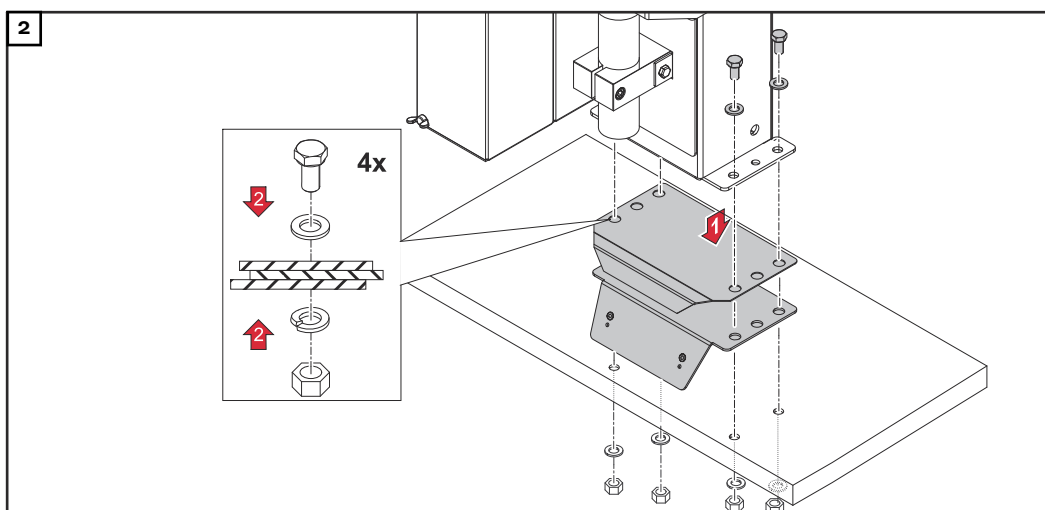
#### **WARNING!**

#### **Danger from machines falling or toppling over.**

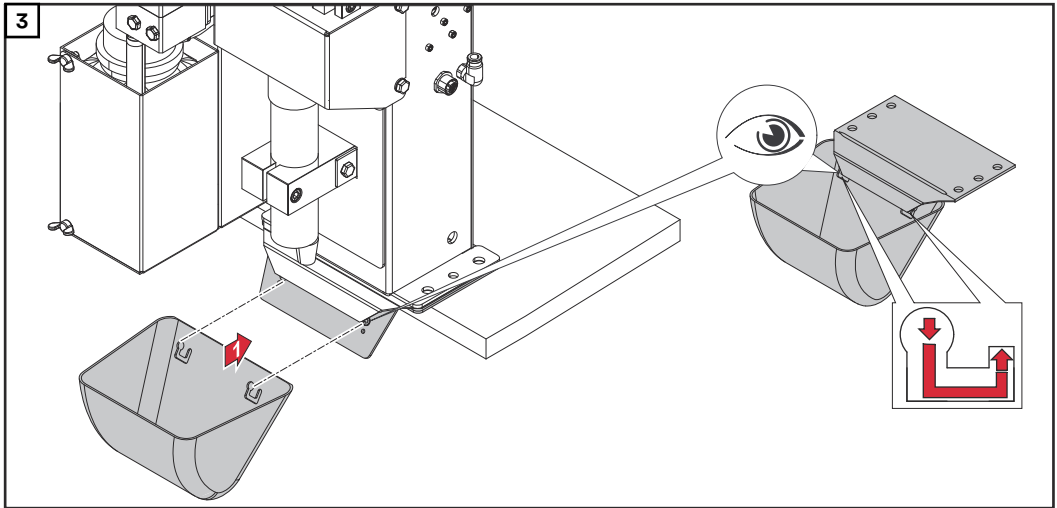
This can result in serious injury and damage to property.

- ▶ 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

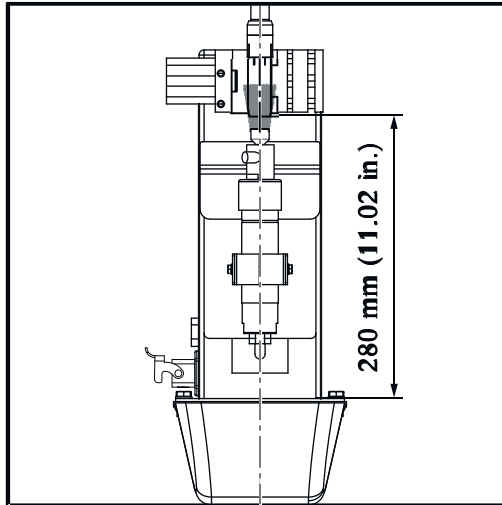


Attach the spatter tray retainer as shown

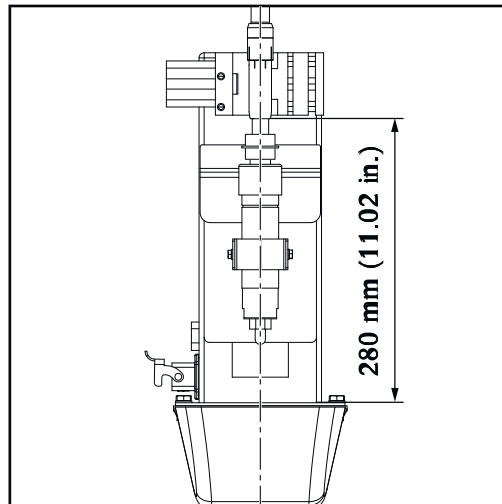


# Torch cleaning position

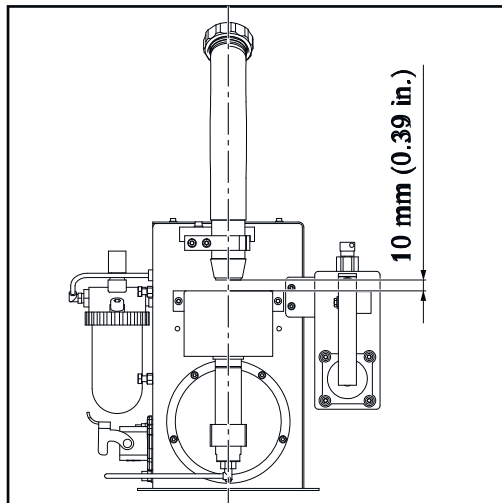
Welding torch cleaning position  
- Robacta Reamer Alu Edition



Welding torch cleaning position  
- Robacta Reamer Alu 3000upm



Welding torch cleaning position  
- Robacta Reamer Twin



**NOTE!**

Ensure that the coolant lines on the gas nozzle cannot be damaged by the extending/retracting gas nozzle clamping device.

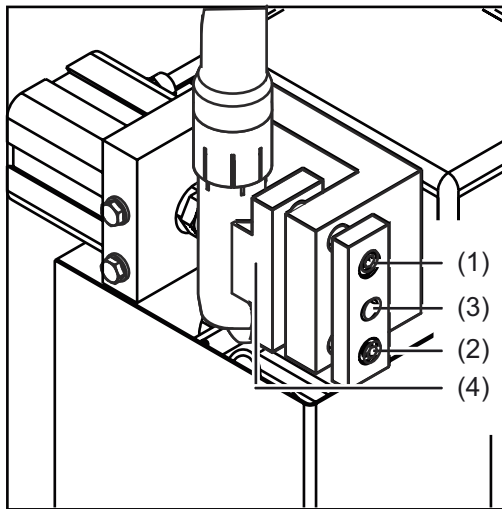
# Adjusting the gas nozzle clamping device on the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm

## Adjusting the gas nozzle clamping device

### NOTE!

The gas nozzle clamping device must be adjusted so that no bearing pressure is transferred to the robot.

The gas nozzle must only be clamped onto the cylindrical surface.



- 1 Loosen Allen screws on the guide bolts (1) and (2)
- 2 Move the welding torch to the cleaning position
  - centrally with respect to the cleaning motor
- 3 Using the adjusting screw (3), position the clamping device (4) so that the clamping device is on the gas nozzle

- 4 Tighten Allen screws on the guide bolts (1) and (2)

### NOTE!

The gas nozzle must be clamped centrally over the cleaning motor.

# Fitting the cleaning brush on the Robacta Reamer Alu Edition

## Fitting the cleaning brush

### CAUTION!

A cleaning brush that has become very hot through use can cause severe burns. Before handling the cleaning brush, allow cleaning brush to cool to room temperature (+25°C, +77 °F).

### NOTE!

**Only use the device manufacturer's contact tips, gas nozzles and cleaning brushes.**

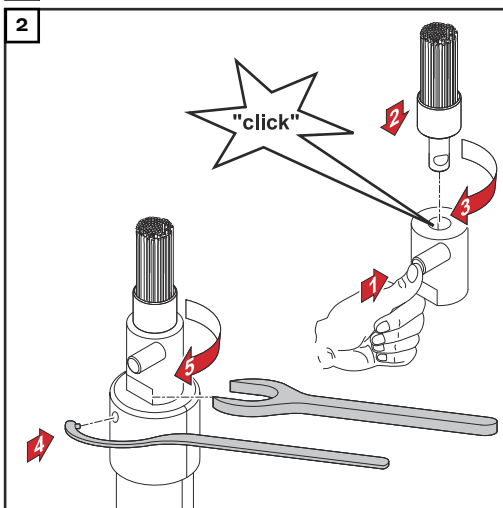
If other manufacturers' products are used, trouble-free operation of the device cannot be guaranteed. The manufacturer accepts no liability for damage resulting from the use of other manufacturers' contact tips, gas nozzles or cleaning brushes.

### NOTE!

**The cleaning brush and adapter are not included in the scope of supply.**

Consult the device manufacturer's spare parts list for the appropriate cleaning brush.

- 1 Remove the protective covering from the cleaning device



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

# Fitting the cleaning cutter on the Robacta Reamer Alu 3000upm

## Fitting the cleaning cutter

### CAUTION!

A cleaning cutter that has become very hot through use can cause severe burns. Before handling cleaning cutters, allow cleaning cutter to cool to room temperature (+25°C, +77 °F).

### NOTE!

**Only use the device manufacturer's contact tips, gas nozzles and cleaning cutters.**

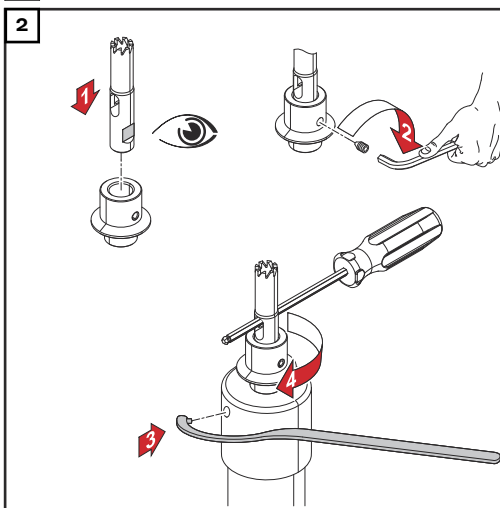
If other manufacturers' products are used, trouble-free operation of the device cannot be guaranteed. The manufacturer accepts no liability for damage resulting from the use of other manufacturers' contact tips, gas nozzles or cleaning cutters.

### NOTE!

**The cleaning cutter and adapter are not included in the scope of supply.**

Consult the device manufacturer's spare parts list for the appropriate cleaning cutter and adapter.

- 1 Remove the protective covering from the cleaning device



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

# Fitting the cleaning cutter on the Robacta Reamer Twin

## Fitting the cleaning cutter

### CAUTION!

#### **Danger due to cleaning cutter that has become very hot through use.**

This can result in severe burns.

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

### CAUTION!

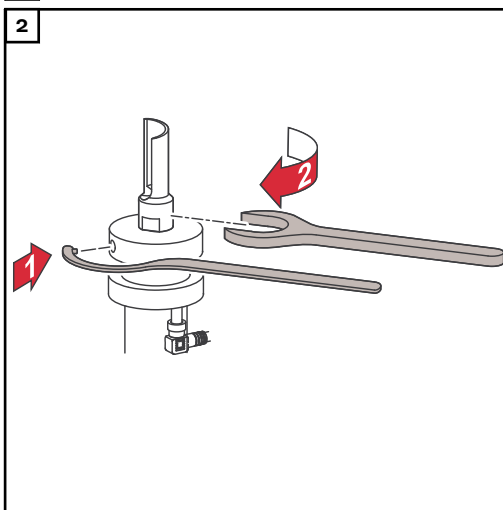
#### **Danger from incompatible wearing parts.**

This can result in damage to property and malfunctions.

- ▶ Only use the device manufacturer's contact tips, gas nozzles and cleaning cutters. No liability is accepted for damage caused by the use of contact tips, gas nozzles or cleaning cutters from third-party manufacturers.

The cleaning cutter is not part of the scope of suppl.. Consult the manufacturer's spare parts list for the appropriate cleaning cutter: <https://spareparts.fronius.com/>

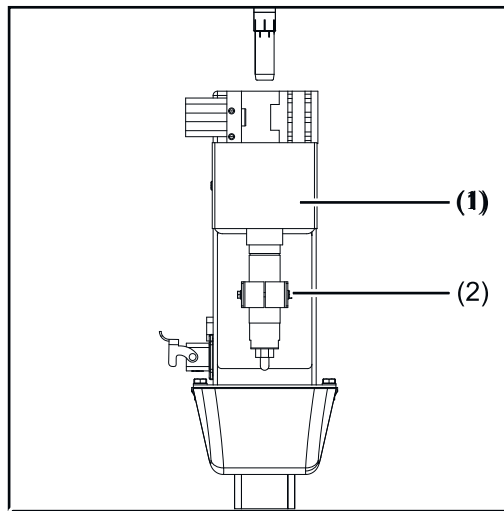
- 1 Remove the protective covering from the cleaning device



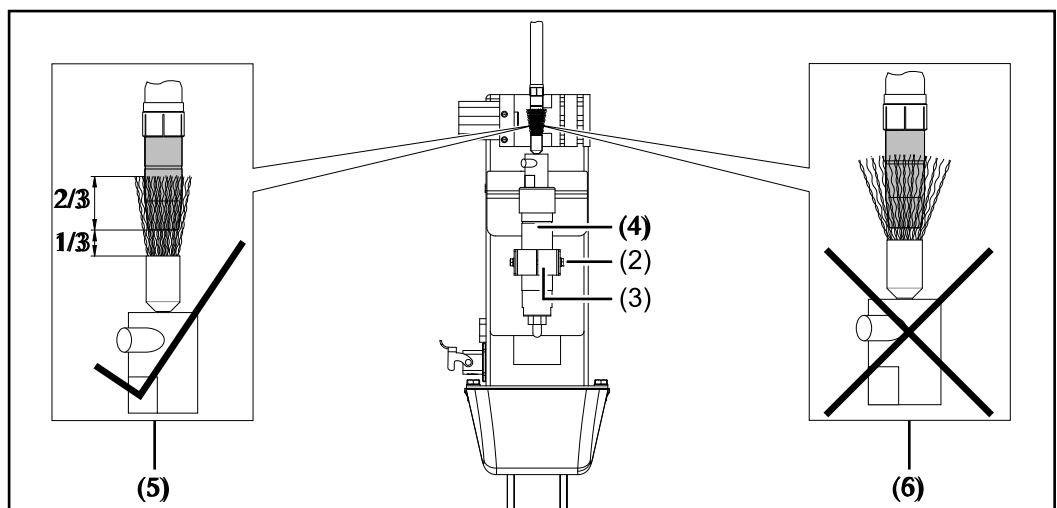
- 3 Fit the protective covering to the cleaning device in its original position

# Adjusting the Robacta Reamer Alu Edition lifting device

## Adjusting the lifting device



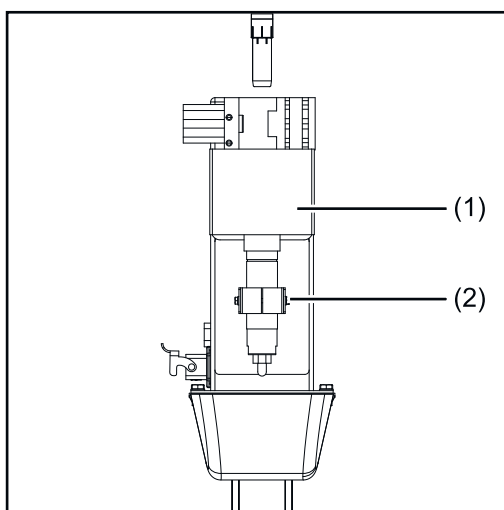
- 1** Remove protective covering (1)
- 2** Ensure that the lifting device is in its lowest position
- 3** Loosen screw (2) on the lifting device
- 4** Move the welding torch to the cleaning position



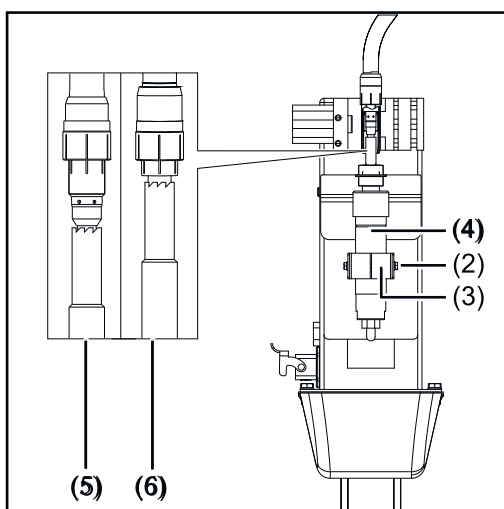
- 5** Push the lifting device (3) by hand into its highest position and hold in place
- 6** Manually push cleaning motor (4) and cleaning brush to the cleaning position
  - see diagram (5) - correct adjustment
  - see diagram (6) - incorrect adjustment
- 7** Fix cleaning motor (4) in this position in the lifting device (3) - tighten screw (2) on the lifting device
- 8** Carry out function test - push lifting device by hand to its highest position
  - Check that lifting device is adjusted correctly - see diagram (5). If the correct adjustment is not given, readjust the lifting device
- 9** Fit the protective covering to the cleaning device in its original position

# Adjusting the Robacta Reamer Alu 3000upm lifting device

## Adjusting the lifting device



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



- 6 Push the lifting device (3) by hand into its highest position and hold in place
- 7 Manually push cleaning motor (4) and cleaning cutter to the cleaning position
  - see diagram (5) for welding torch and spatter guard
  - see diagram (6) for welding torch and insulating sleeve

### NOTE!

**The cleaning cutter must not touch any welding torch components.**

- 8 Fix cleaning motor (4) in this position in the lifting device (3) - tighten screw (2) on the lifting device
- 9 Carry out function test on unfitted gas nozzle - push lifting device by hand to its highest position
  - The cleaning cutter must close around the contact tip without touching it. If the cleaning cutter touches welding torch components, readjust the lifting device
- 10 Fit gas nozzle to torch neck
- 11 Carry out function test on fitted gas nozzle - push lifting device by hand to its highest position
  - The cleaning cutter must be inserted into the gas nozzle gently, without touching it. If the cleaning cutter touches welding torch components, re-adjust the lifting device
- 12 Fit the protective covering to the cleaning device in its original position

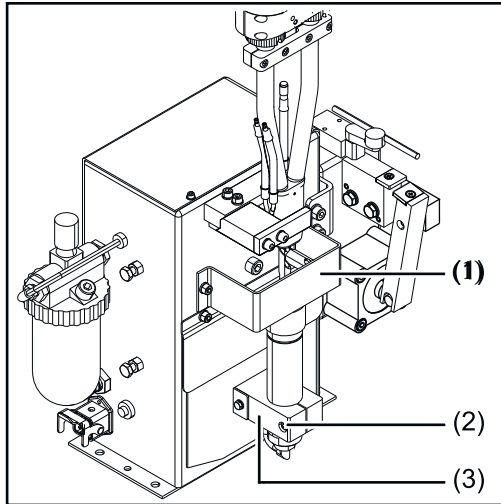
# Adjusting the Robacta Reamer Twin lifting device

## Adjusting the lifting device

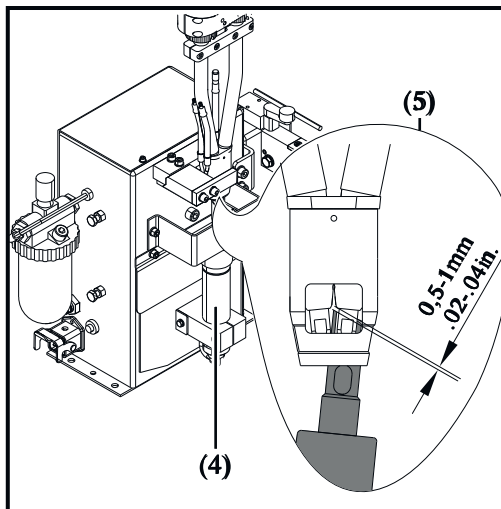
It is recommended that one of the following adjustment aids is used to adjust the lifting device:

- Robacta Twin 900 adjustment aid, item no. 42,0001,5560

An adjustment aid is not necessary when the gas nozzle is open, as the welding torch is clamped above the gas nozzle. The gas nozzle can be removed beforehand. The bracket must be back in the starting position. When the gas nozzle is mounted, the bracket must be closed.



- 1 Remove the protective cover (1)
- 2 Ensure that the lifting device is in its lowest lift position
- 3 Loosen the screw (2) on the lifting device
- 4 Move the welding torch to the cleaning position (including fitted adjustment aid)
- 5 Push the lifting device (3) by hand into its highest lift position and hold in place



- 6 Push the cleaning motor (4) and cleaning cutter by hand into the cleaning position (5)

### NOTE!

**The cleaning cutter must not touch any welding torch components.**

- 7 Fix the cleaning motor (4) in this position in the lifting device - tighten the screw (2) on the lifting device
- 8 Fit the protective cover to the cleaning device in its original position



# Starting up the Robacta Reamer Twin parting agent nebuliser

## Starting up the parting agent nebuliser

### NOTE!

Only use "Robacta Reamer" parting agent (item number 42,0411,8042).

The composition of this parting agent is designed specifically for the cleaning device. If other manufacturers' products are used, trouble-free operation cannot be guaranteed.

### NOTE!

Use the parting agent - spray unit option to achieve sufficient wetting of the entire Twin welding torch interior.

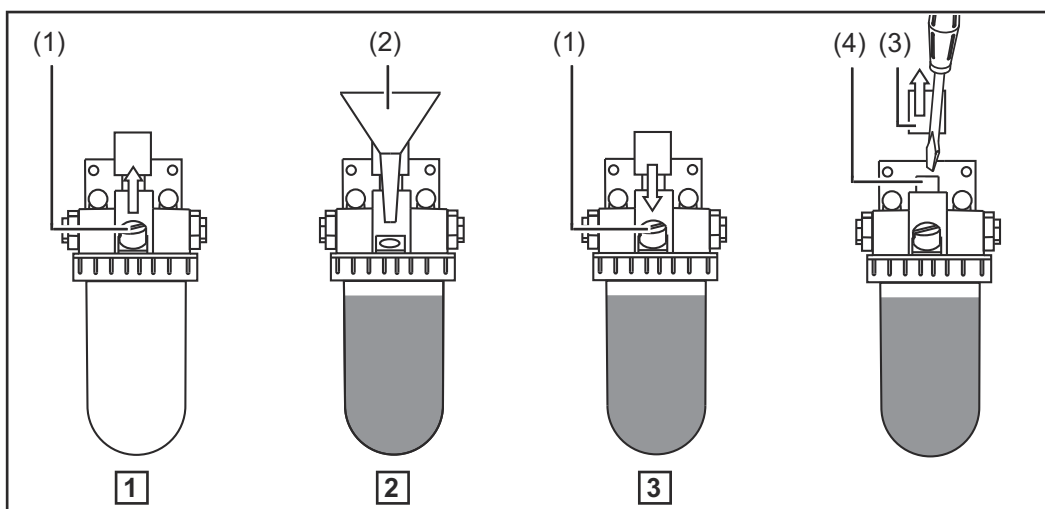
With the parting agent - spray unit option, the parting agent is sprayed through the blow out line directly into the welding torch interior.

- 1 Open the sealing plug (1)
- 2 Fill with "Robacta Reamer" parting agent using the filling funnel (2)
- 3 Close the sealing plug (1)

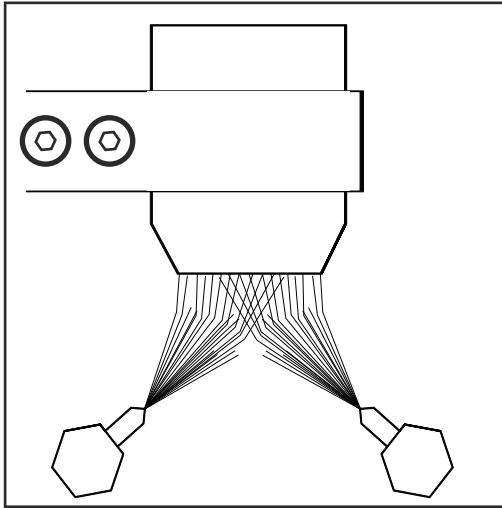
### NOTE!

If the spray amount is not sufficient after starting up the cleaning device, increase it as required:

- ▶ by adjusting the spray time using the robot control - a spray time of ~ 0.7 seconds is recommended
- ▶ or by using the parting agent adjuster (4): remove the safety clamp (3), use a screwdriver to set the parting agent adjuster (4) so that the welding torch interior is coated with a thin layer of parting agent (0.2-0.5 ml) after the spraying action is complete



Correct adjustment of the parting agent spray nozzles on the Robacta Reamer Twin



**NOTE!**

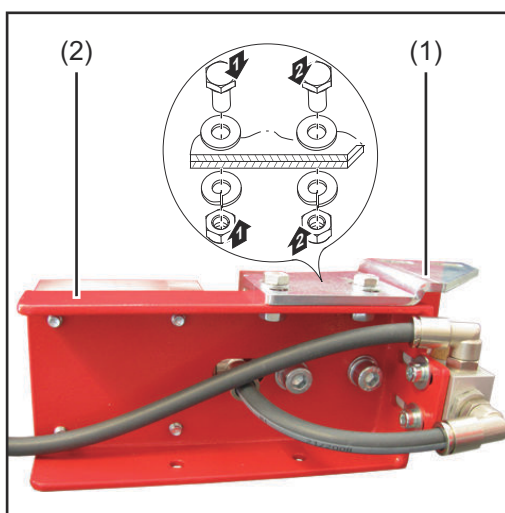
Both spray jets of parting agent must meet in front of the gas nozzle, so that they fully enter the nozzle.

# Installing mechanically-controlled wire cutter on the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm (optional)

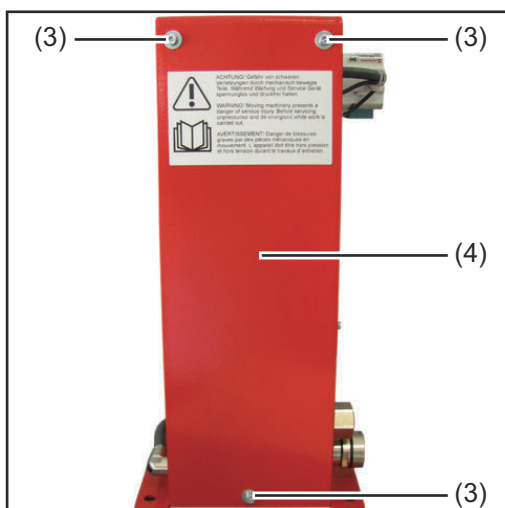
## Installing the mechanically-controlled wire cutter

### NOTE!

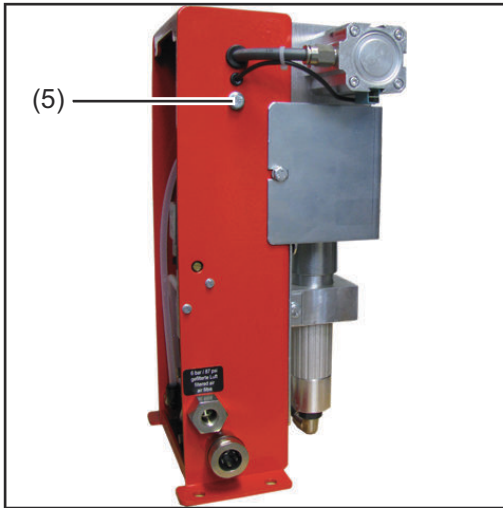
Installation of the wire cutter is shown for the Robacta Reamer Alu Edition. The wire cutter is installed in exactly the same way on the Robacta Reamer Alu 3000upm.



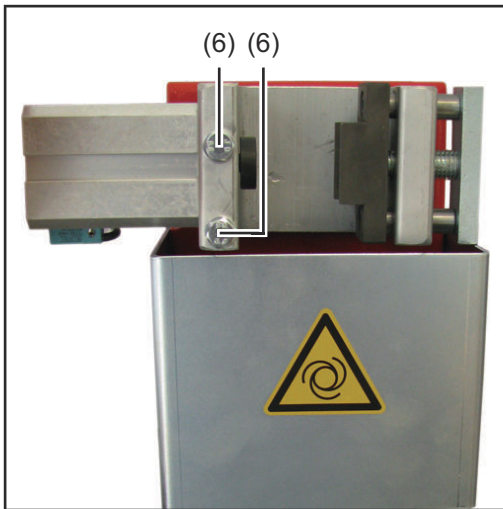
- 1 Position the mounting bracket (1) on the wire cutter (2) as shown and screw into place as described - using the fixings supplied



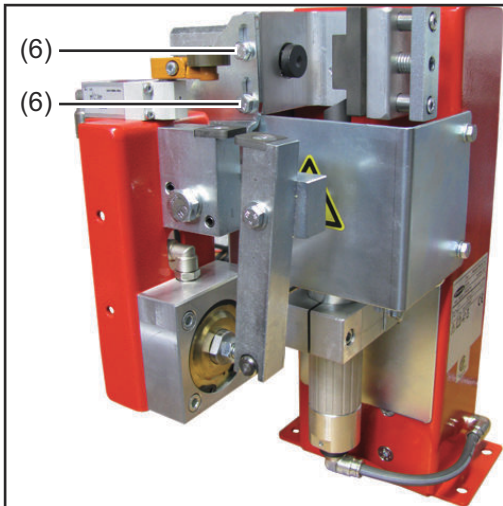
- 2 Undo 3 screws and washers (3)
- 3 Remove cleaning device housing cover (4)



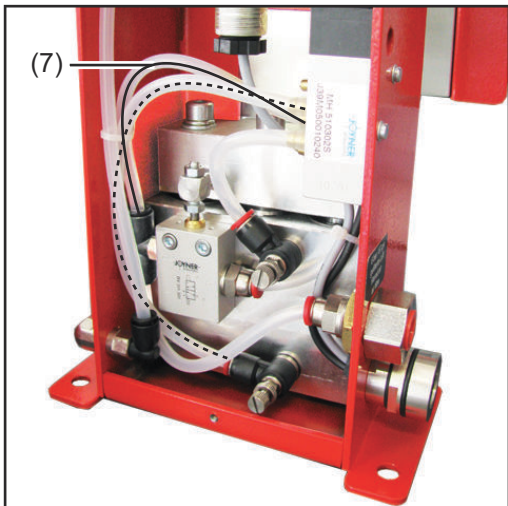
4 Remove screw (5)



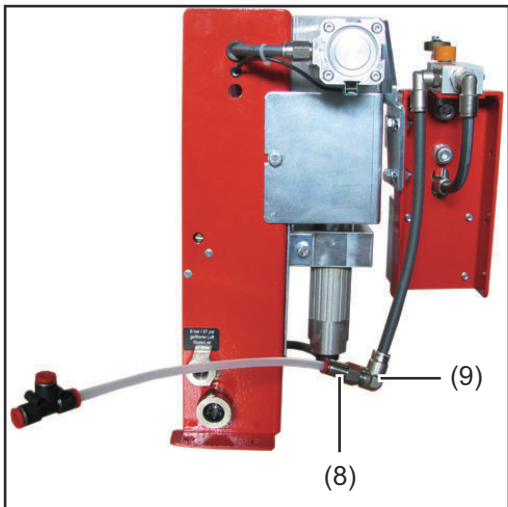
5 Undo screws and washers (6)  
- Keep the screws and washers for future use



6 Screw the wire cutter to the cleaning device using the previously removed screws and washers (6)

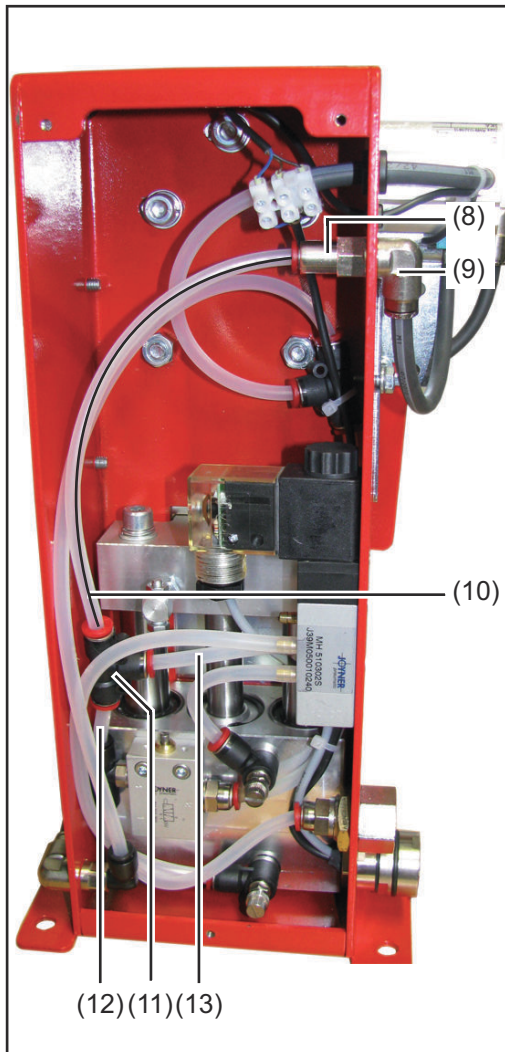


7 Cut through the compressed air hose (7) in the interior of the cleaning device housing in the position shown



8 Detach compressed air connection (8) from compressed air connection (9)

9



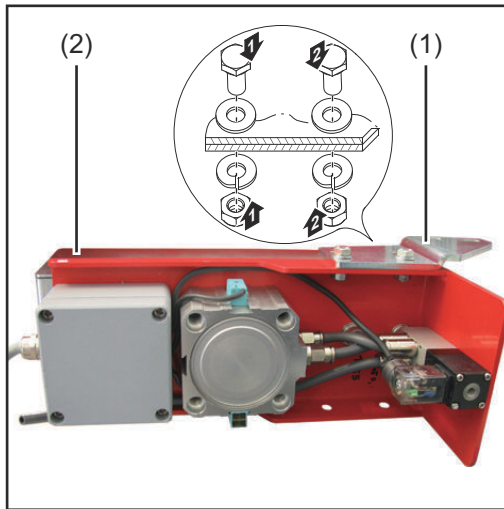
- 10** Attach the wire cutter compressed air connection (9) to compressed air connection (8) on the cleaning device housing, as shown
- 11** Insert the compressed air hose (10) firmly into the compressed air distributor (11)
- 12** Insert the two loose ends (12) and (13) of the previously cut compressed air hose firmly into the compressed air distributor (11) as shown
- 13** Fit the cleaning device housing cover (4) to the cleaning device in its original position

# Installing the electrically-controlled wire cutter on the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm (optional)

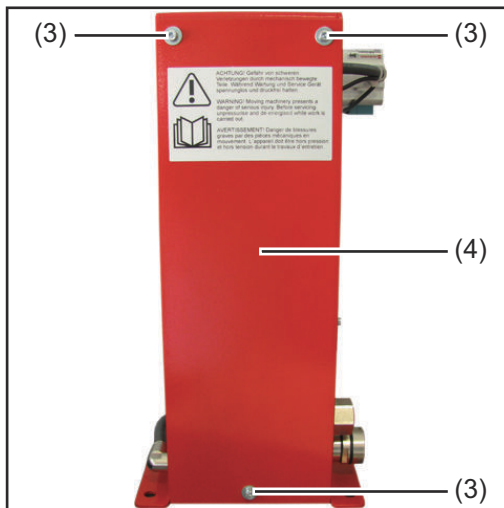
## Installing the electrically-controlled wire cutter

**NOTE!**

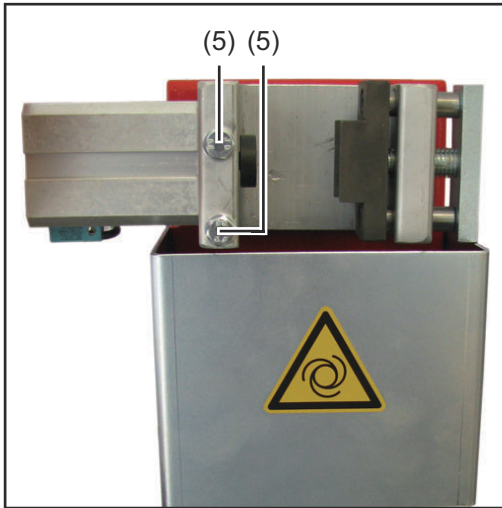
Installation of the wire cutter is shown for the Robacta Reamer Alu Edition. The wire cutter is installed in exactly the same way on the Robacta Reamer Alu 3000upm.



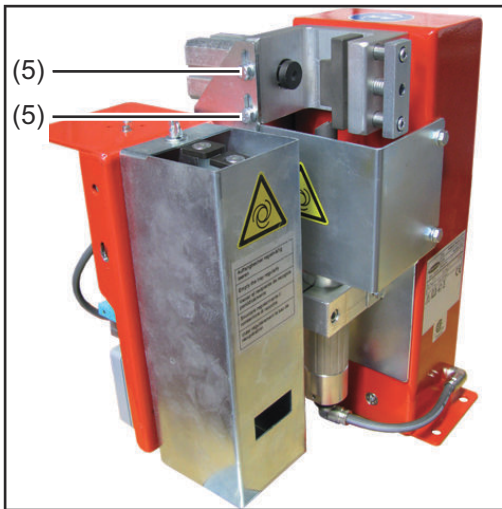
- 1 Position the mounting bracket (1) on the wire cutter (2) as shown and screw into place as described - using the fixings supplied



- 2 Undo 3 screws and washers (3)
- 3 Remove cleaning device housing cover (4)



- 4 Undo screws and washers (5)
  - Keep the screws and washers for future use



- 5 Screw the wire cutter to the cleaning device using the previously removed screws and washers (5) as shown
- 6 Fit the cleaning device housing cover (4) to the cleaning device in its original position

**NOTE!**

The wire cutter must be supplied with compressed air from a separate supply line.

**NOTE!**

The wire cutter electrical connection must be connected to the robot control.



# Wire cutter function

## Maximum wire diameter

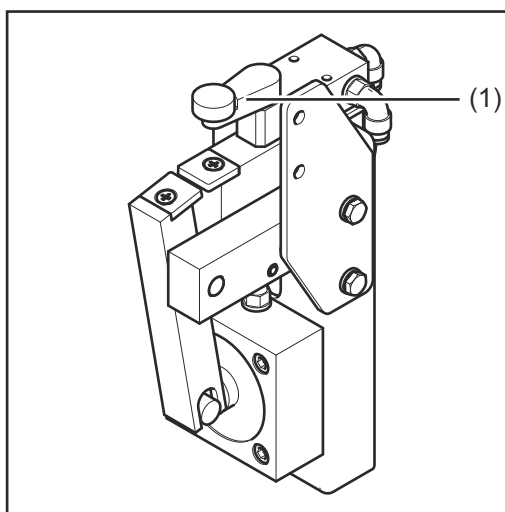
Wire electrodes with a diameter of up to 1.6 mm (0.063 in.) can be cut with an electrically or mechanically-controlled wire cutter.

Two wire electrodes with a diameter of up to 1.6 mm (0.063 in.) can be cut in the case of twin applications.

## 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.**

## 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.

# Installing the compressed air supply

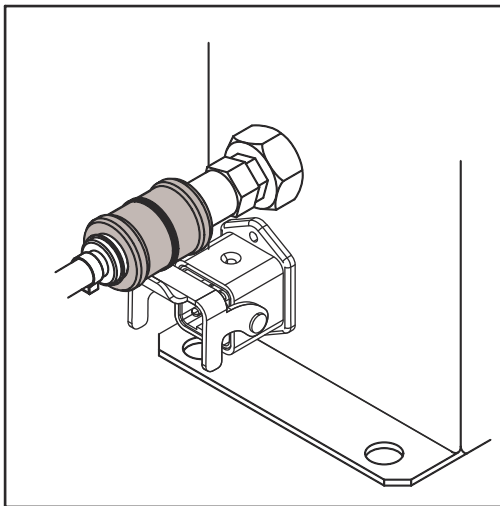
## Establishing the compressed air supply for the cleaning device, function of the compressed air relief valve

To establish the compressed air supply:

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

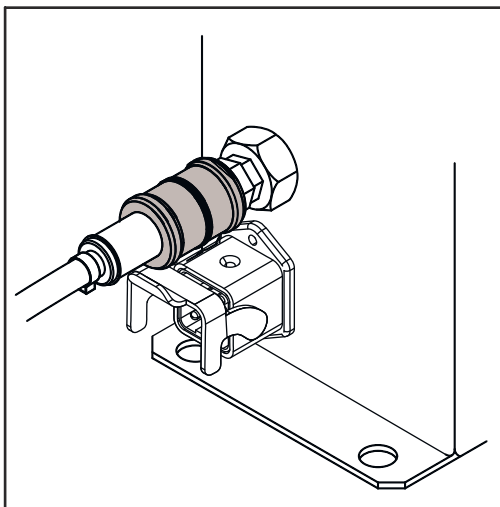
The compressed air supply to the cleaning device can be broken and re-established by moving the compressed air relief valve forwards and backwards - see description below.

The diagram below shows the compressed air relief valve in the closed position = no compressed air supply to the device:



*Compressed air relief valve closed*

The diagram below shows the compressed air relief valve in the open position = compressed air is being supplied to the device:



*Compressed air relief valve open*

# Starting up the cleaning device

---

<b>Prerequisites for start-up</b>	<p>The following requirements must be met before the cleaning device is started up:</p> <ul style="list-style-type: none"><li>- If present, the cleaning device installation stand is bolted to underlying surface</li><li>- Cleaning device is bolted to underlying surface</li><li>- Only on the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm: gas nozzle clamping device is adjusted</li><li>- Cleaning cutter / cleaning brush has been fitted</li><li>- Lifting device has been adjusted</li><li>- On the Robacta Reamer Twin: Parting agent nebuliser has been started up</li><li>- Compressed air supply has been established</li><li>- Cleaning device is connected to robot control</li><li>- All covers are fitted and all safety devices are intact and in their proper place</li></ul>
-----------------------------------	---

---

<b>Start-up</b>	<p>The cleaning device starts up when there is an active signal from the robot control.</p>
-----------------	---

# Programme sequence and signal waveform on the Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm

Cleaning programme sequence

## ⚠ CAUTION!

### Risk of damage.

Do not start in automated mode until the cleaning device has been properly installed and started up.

## NOTE!

### Not coating the interior of the welding torch may result in permanent soiling of the torch when welding begins.

Always wet the interior of the welding torch with the manufacturer's parting agent before starting automatic operation.

Start



Wire cutter option

### Start from position C

- approx. 25 mm (0.98 in.) next to wire cutter
- Speed: high speed mode



### Start from position D

- approx. 25 mm (0.98 in.) Enter wire cutter
- Speed: 10 cm/s (236.22 ipm)



Wait 0.5 sec.



Pos. C

25mm  
0.98inch

Pos. D

**Start from position A**  
- approx. 50 mm (1.97 in.) above centre of cleaning motor  
- Speed: high speed mode



**Query output (Gas nozzle free output signal)**  
- Low or High



**Query = High**  
(Gas nozzle free)



**Start from position B (cleaning position)**  
- Enter gas nozzle clamping device  
- Speed: 10 cm/s (236.22 ipm)



**Set**  
- Blow compressed air through welding torch



**Set**  
- Input "Begin cleaning"



**Wait 3 sec.**



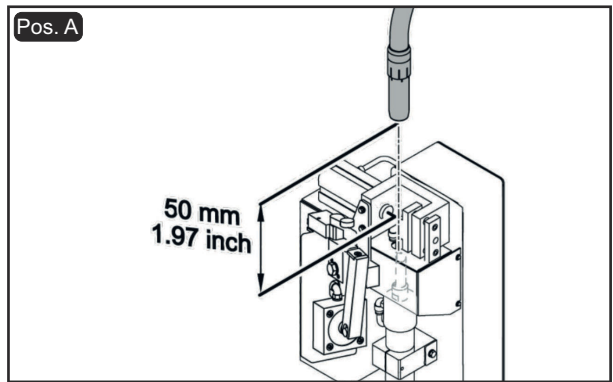
**Reset**  
- Input "Begin cleaning"



**Reset**  
- Blow compressed air through welding torch



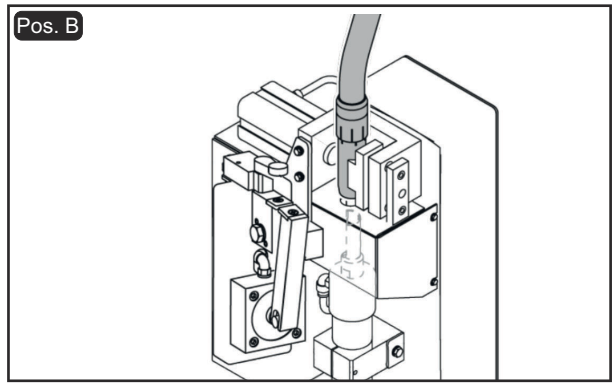
**Wait 1.5 sec.**

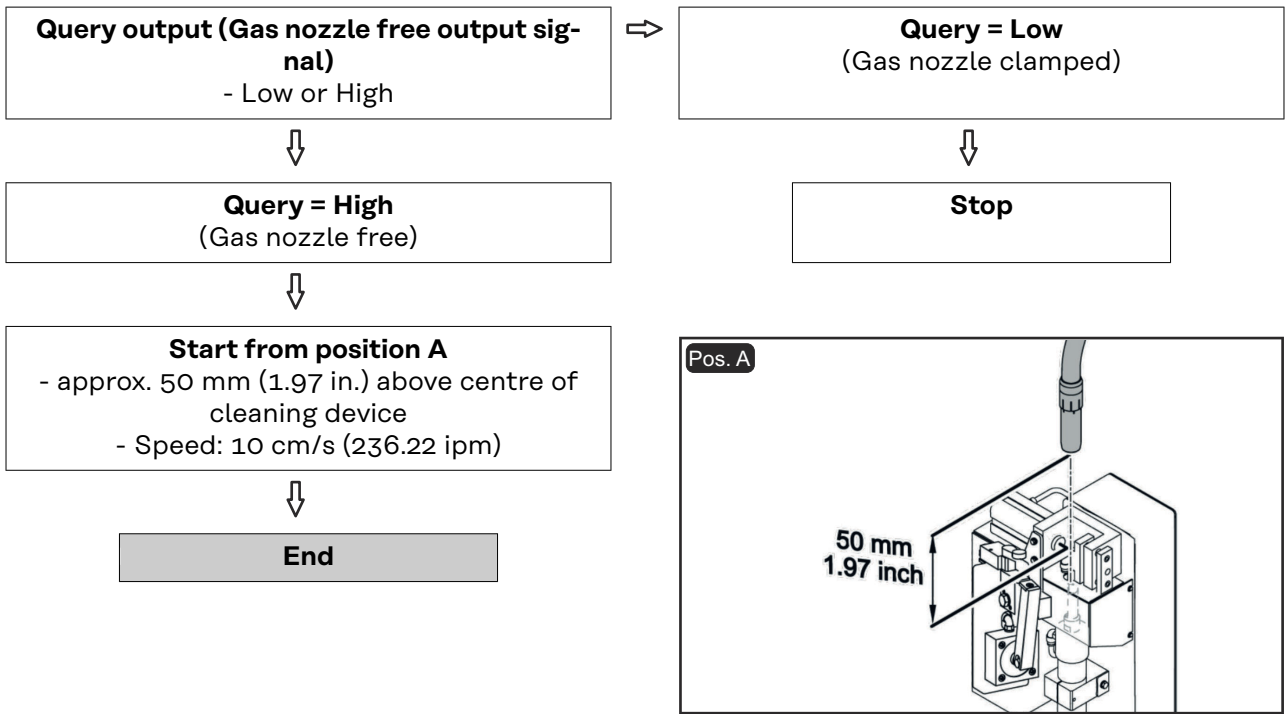


**Query = Low**  
(Gas nozzle clamped)

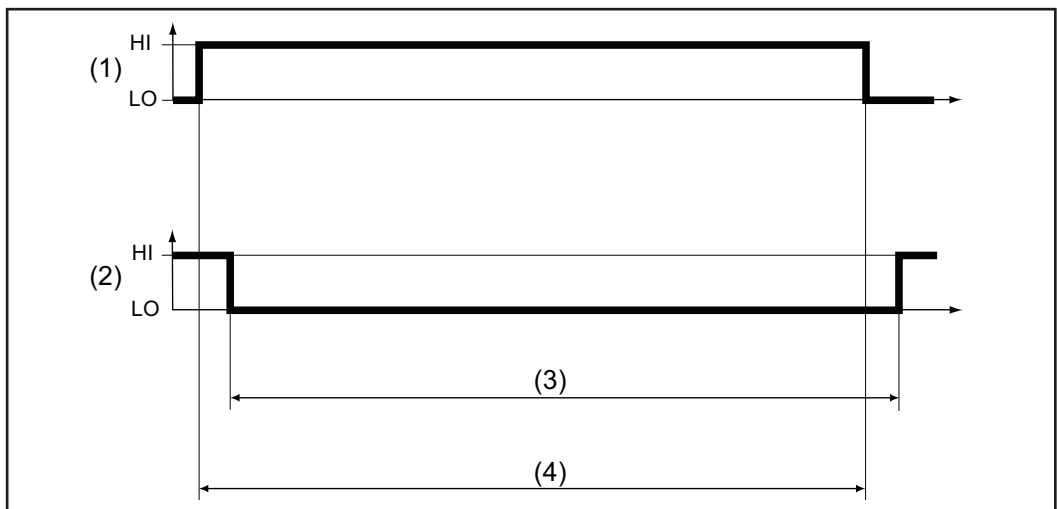


**Stop**





**Signal waveform**



No.	Meaning
(1)	Input "Begin cleaning"
(2)	Output "Gas nozzle free"
(3)	Gas nozzle free
(4)	Cleaning time: 3.0 - 5.0 seconds

# Robacta Reamer Twin programme sequence and signal waveform

Cleaning programme sequence

**⚠ CAUTION!**

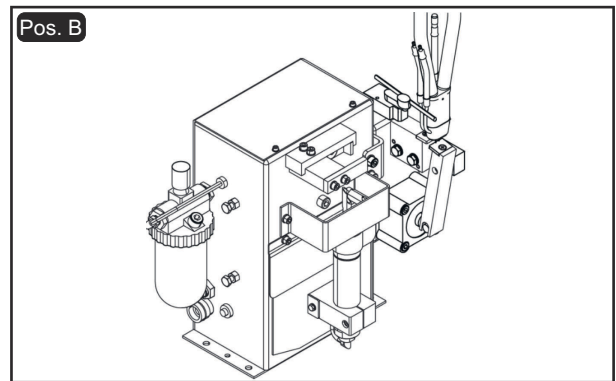
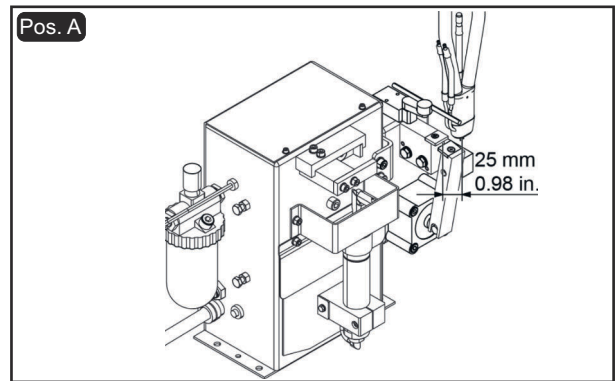
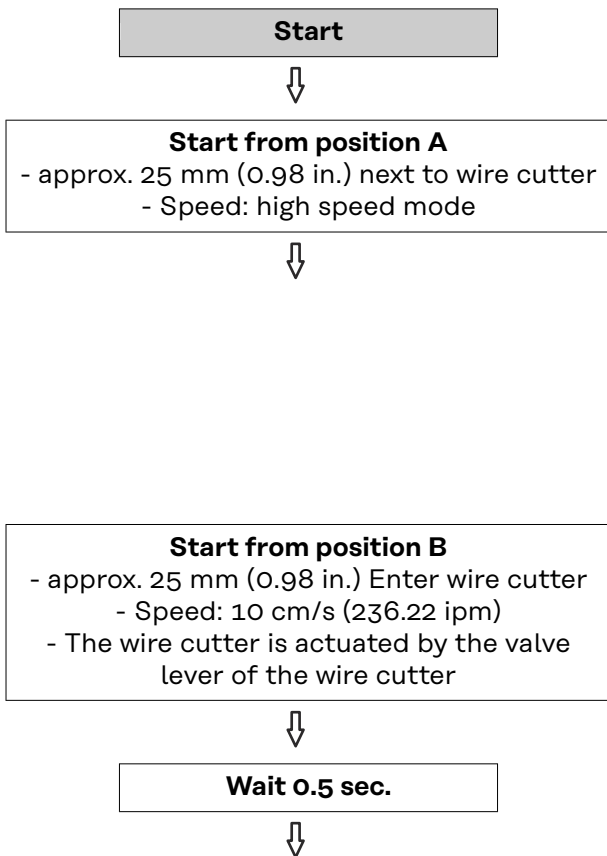
**Risk of damage.**

Do not start in automated mode until the cleaning device has been properly installed and started up.

**NOTE!**

**Not coating the interior of the welding torch may result in permanent soiling of the torch when welding begins.**

Always wet the interior of the welding torch with the manufacturer's parting agent before starting automatic operation.



**Start from position C**  
 - approx. 50 mm (1.97 in.) above centre of cleaning device  
 - Speed: high speed mode



**Query output (Gas nozzle free output signal)**  
 - Low or High



**Query = High**  
 (Gas nozzle free)



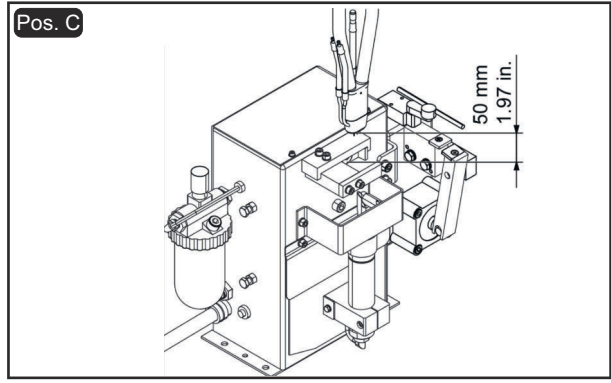
**Start from position D (cleaning position)**  
 - Enter gas nozzle clamping device  
 - Speed: 10 cm/s (236.22 ipm)



**Reset**  
 - Blow compressed air through welding torch



**Set**  
 - Input "Begin cleaning"



**Query = Low**  
 (Gas nozzle clamped)



**Reset**  
 - Input "Begin cleaning"



**Query output (Gas nozzle free output signal)**  
 - Low or High

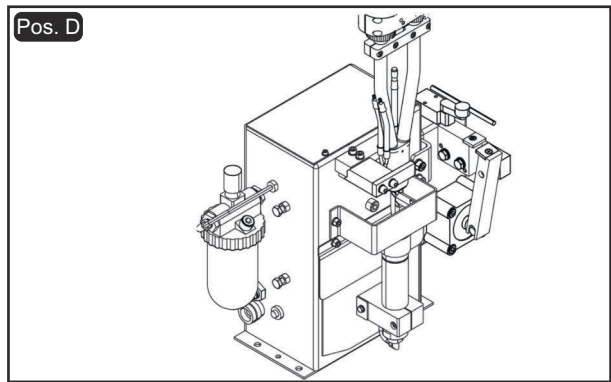


**Query = High**  
 (Gas nozzle free)

**Query = Low**  
 (Gas nozzle clamped)



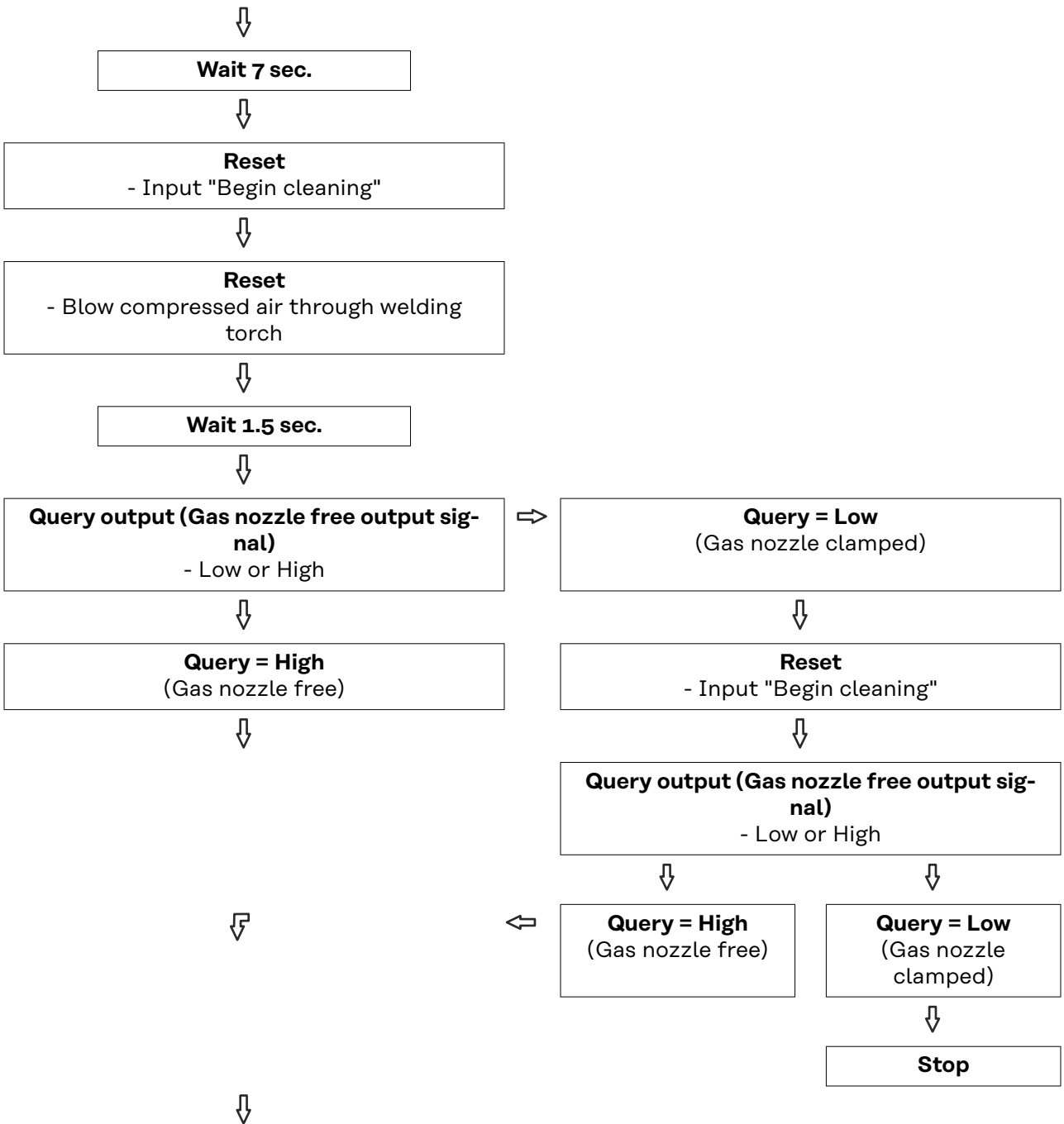
**Stop**





**Cleaning procedure**

- Input "Begin cleaning"
- Gas nozzle clamping device clamps the gas nozzle
- Cleaning cutter cleans the first side of the welding torch for approx. 3 sec.
- Cleaning motor moves to the starting position
- Gas nozzle clamping device opens for approx. 0.5 sec. to allow the cleaning motor to move to the second side of the welding torch
- Gas nozzle clamping device clamps the gas nozzle again
- Cleaning cutter cleans the second side of the welding torch for approx. 3 sec.
- Cleaning motor moves to the starting position
- Gas nozzle clamping device opens for approx. 0.5 sec. to allow the cleaning motor to move to the first side of the welding torch - at this time the "Begin cleaning" signal must be reset

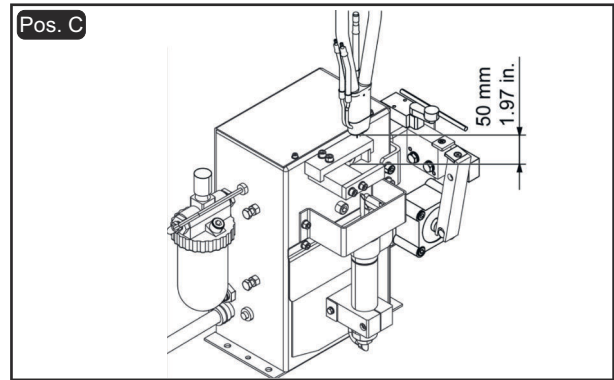


**Start from position C**

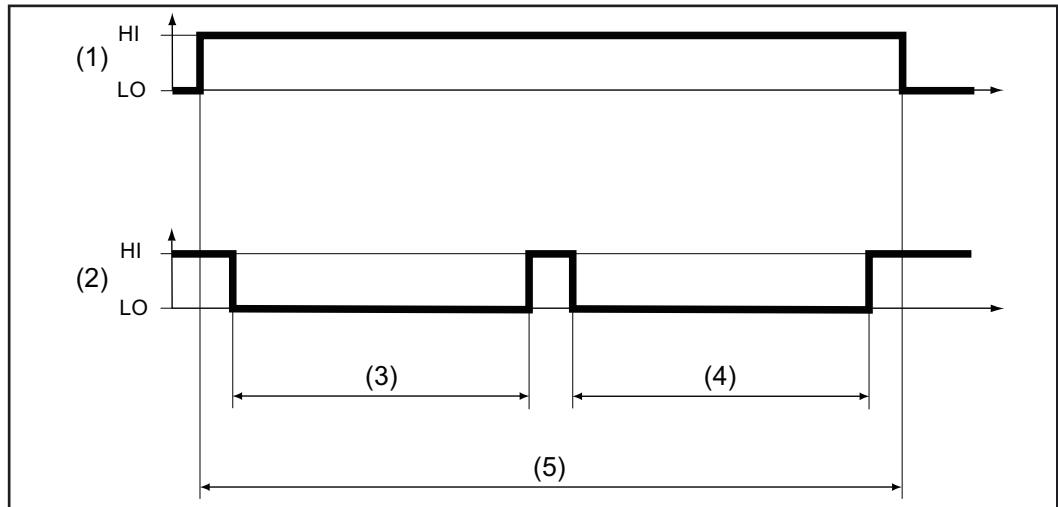
- approx. 50 mm (1.97 in.) above centre of cleaning device
- Speed: 10 cm/s (236.22 ipm)



**End**



**Signal waveform**



No.	Meaning
(1)	Input "Begin cleaning"
(2)	Output "Gas nozzle released"
(3)	Gas nozzle released (Cleaning, page 1)
(4)	Gas nozzle released (Cleaning, page 2)
(5)	Cleaning time: 7.0 - 7.5 seconds

# **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 shoddy workmanship 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 manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place while you are in the working area of the robot.

### **WARNING!**

#### **Risk of serious injury from:**

- ▶ mechanically powered parts
- ▶ flying parts (shavings, etc.)
- ▶ compressed air/parting agent mixture escaping from the parting-agent injection nozzles
- ▶ Before performing work on the cleaning device or any connected system components:
- ▶ disconnect the customer 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 cleaning cutter / rotating cleaning brush
- ▶ lifting device moving up/down
- ▶ extending/retracting gas nozzle clamping device
- ▶ activated wire cutter
- ▶ flying parts (shavings, etc.)
- ▶ compressed air/parting agent mixture escaping from the parting-agent injection 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, any objects and all clothing away from the cleaning cutter / cleaning brush, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection nozzles
- ▶ wear ear protection
- ▶ wear protective goggles with side protection



## CAUTION!

**A cleaning cutter / cleaning brush that has become very hot through use can cause severe burns.**

Before handling the cleaning cutter / cleaning brush, allow cleaning cutter / cleaning brush to cool to room temperature (+25°C, +77°F).

### 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 cleaning cutter / cleaning brush, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection 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

### On the Robacta Reamer Alu Edition, Robacta Reamer Alu 3000upm:

- 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

**On the Robacta Reamer Twin:**

- 3** Briefly press the valve lever on the cleaning device wire cutter to the side by more than 15° using a tool
- If the cleaning device wire cutter does not respond to the movement of the valve lever, the cleaning device (including the wire cutter) is depressurised
  - If the wire cutter responds to the movement of the valve lever, the cleaning device (and therefore also the wire cutter) 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**
- Only Robacta Reamer Twin: Check fill level in parting agent container and top up if necessary
  - Check the cleaning cutter / cleaning brushes for wear and replace if necessary
  - Empty the cleaning device spatter tray
  - If fitted, empty the wire cutter tray
  - Perform a general visual inspection on the device
- 

**Daily**

 **CAUTION!**

**Danger from cleaning agents containing solvents.**

This can result in damage to property.

- ▶ Only use solvent-free cleaning products on the cleaning device.
- 

- 1 Remove parting agent deposits and dirt from device
- 

**Weekly**

**NOTE!**

**Only use solvent-free cleaning products on the parting agent container.**

---

Only Robacta Reamer Twin:

- Check parting agent container for soiling and clean if necessary
  - Blow through the suction filter in the parting agent container using compressed air from the inside outwards through the suction hose (see "Starting up the Robacta Reamer Twin parting agent nebuliser")
- 

**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
- 

**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 shoddy workmanship 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 manufacturers of the robot and welding systems must also be observed. For your personal safety, ensure that all protective measures have been taken and will remain in place while you are in the working area of the robot.

### **WARNING!**

#### **Risk of serious injury from:**

- ▶ mechanically powered parts
- ▶ flying parts (shavings, etc.)
- ▶ compressed air/parting agent mixture escaping from the parting-agent injection nozzles
- ▶ Before performing work on the cleaning device or any connected system components:
- ▶ disconnect the customer 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 cleaning cutter / rotating cleaning brush
- ▶ lifting device moving up/down
- ▶ extending/retracting gas nozzle clamping device
- ▶ activated wire cutter
- ▶ flying parts (shavings, etc.)
- ▶ compressed air/parting agent mixture escaping from the parting-agent injection 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, any objects and all clothing away from the cleaning cutter / cleaning brush, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection nozzles
- ▶ wear ear protection
- ▶ wear protective goggles with side protection



## CAUTION!

**A cleaning cutter / cleaning brush that has become very hot through use can cause severe burns.**

Before handling the cleaning cutter / cleaning brush, allow cleaning cutter / cleaning brush to cool to room temperature (+25°C, +77°F).

### 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 cleaning cutter / cleaning brush, lifting device, gas nozzle clamping device, wire cutter and parting-agent injection 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

### On the Robacta Reamer Alu Edition, Robacta Reamer Alu 3000upm:

- 3 Briefly turn the "Cleaning" screw on the cleaning device 90° to the right, then turn it straight back to its original position
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**On the Robacta Reamer Twin:**

- 3 Briefly press the valve lever on the cleaning device wire cutter to the side by more than 15° using a tool
- If the cleaning device wire cutter does not respond to the movement of the valve lever, the cleaning device (including the wire cutter) is depressurised
  - If the wire cutter responds to the movement of the valve lever, the cleaning device (and therefore also the wire cutter) 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

# Troubleshooting

---

## Errors in program sequence

---

### Parting agent does not spray (Robacta Reamer Twin only)

Parting agent container is full

Cause: Not enough spray

Remedy: Adjust spray amount

Cause: Parting agent spray nozzles are blocked

Remedy: Clean parting agent spray nozzles

If cleaning does not rectify problem, contact After-Sales Service - replace parting agent spray nozzles

Cause: No signal from robot

Remedy: Check connection to robot control

---

### Welding torch is poorly cleaned or damaged

Cause: Lifting device not adjusted properly

Remedy: Adjust lifting device

Cause: Gas nozzle clamped in wrong position (not on Robacta Reamer Twin)

Remedy: Adjust gas nozzle clamping device (not on Robacta Reamer Twin)

Cause: Cleaning cutter / cleaning brush not suited to welding torch shape

Remedy: Fit the correct cleaning cutter / fit correct cleaning brush

Cause: Cleaning cutter / cleaning brush worn

Remedy: Replace cleaning cutter / cleaning brush

---

### Cleaning cutter collides with a contact tip or gas nozzle (Robacta Reamer Twin only)

Cause: Incorrect swivel mechanism stop angle

Remedy: Contact After-Sales Service - Adjust the swivel mechanism stop angle

---

### 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: Faulty sealing in lifting cylinder

Remedy: Contact After-Sales Service - replace lifting cylinder

---

**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 - replace cleaning motor

---





# Technical data



## Technical data

### Robacta Reamer Alu Edition and Robacta Reamer Alu 3000upm

Supply voltage	+ 24 V DC
Nominal output	3.2 W
Nominal pressure	6 bar 86.99 psi
Air consumption	420 l/min 443.81 qt./min
Thread identification compressed air connection	G ¼"
Harting Han6P (X1)	Input: + 24 V DC / max. 150 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
Max. noise emission (LWA)	82 dB (A)
Dimensions l x w x h	170 x 165 x 280 mm 6.69 x 6.50 x 11.02 in.
Weight (without optional wire cutter)	9 kg 19.84 lb.

### Robacta Reamer Twin

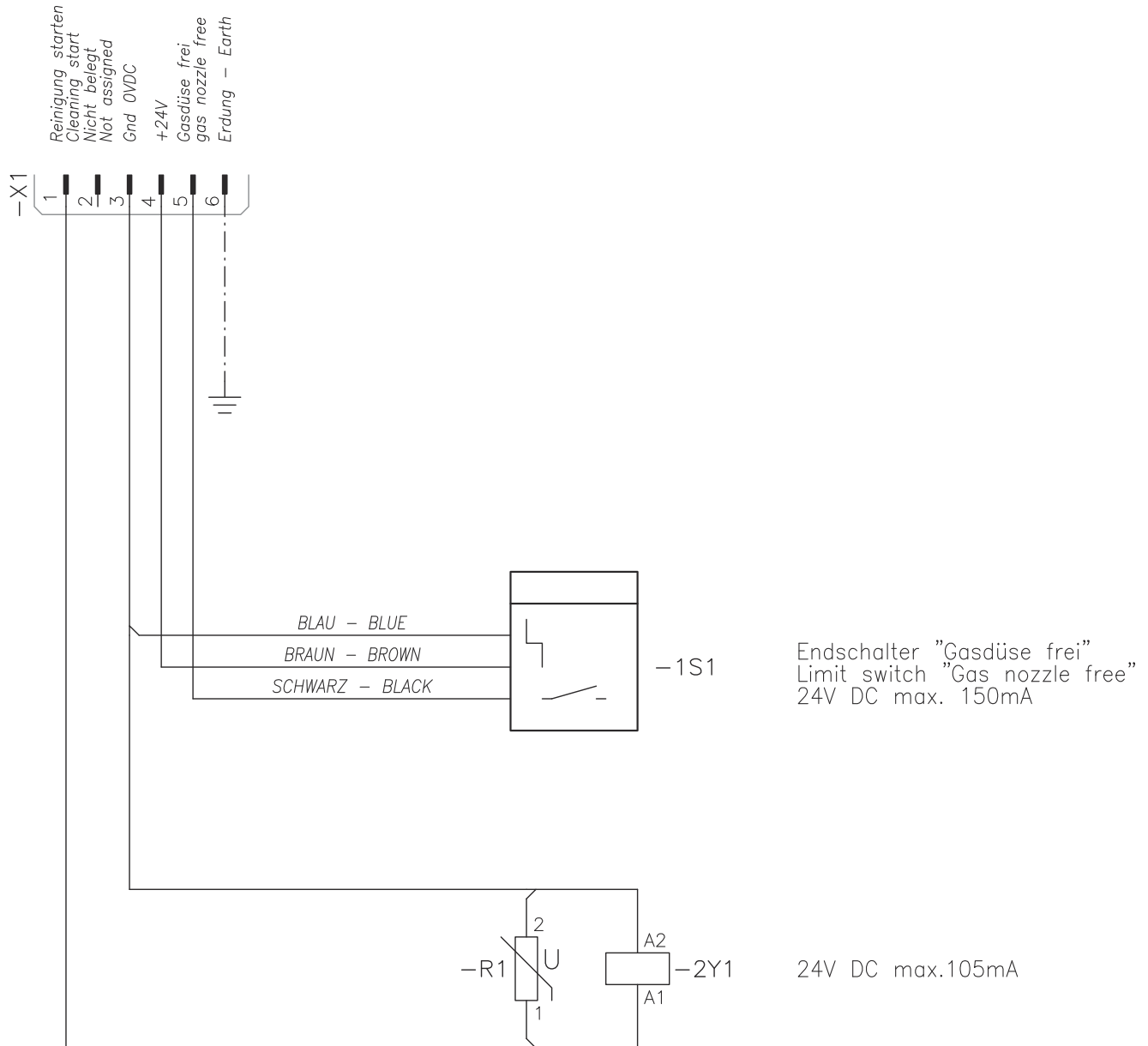
Supply voltage	+ 24 V DC
Nominal output	6 W
Nominal pressure	6 bar 86.99 psi
Air consumption	420 l/min 443.81 qt./min
Thread identification compressed air connection	G ¼"
Harting Han6P (X1)	Input: + 24 V DC / max. 300 mA Output: + 24 V DC / max. 30 mA
Cleaning time	7.0 - 7.5 s
Total cycle time	8.5 - 10 s
Parting agent container capacity	0.25 l .07 gal. (US)
Degree of protection	IP 21
Mark of conformity	CE, CSA

Max. noise emission (LWA)	82 dB (A)
Dimensions l x w x h	325 x 220 x 350 mm 12.80 x 8.66 x 13.78 in.
Weight (without parting agent and optional wire cutter)	17 kg 37.48 lb.

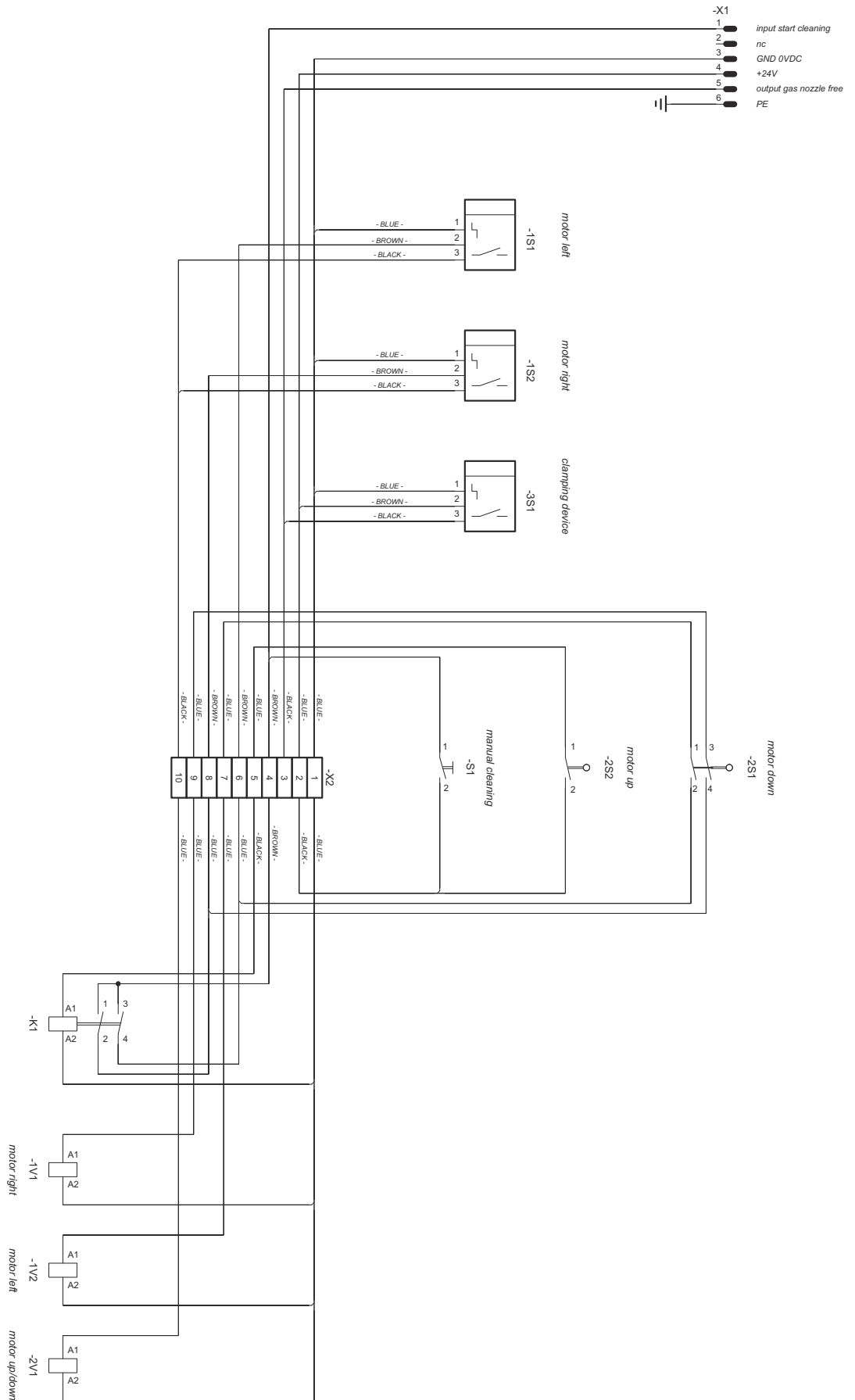
# Appendix



# Circuit diagram Robacta Reamer, Robacta Reamer Alu Edition, Robacta Reamer Alu Edition 3000rpm

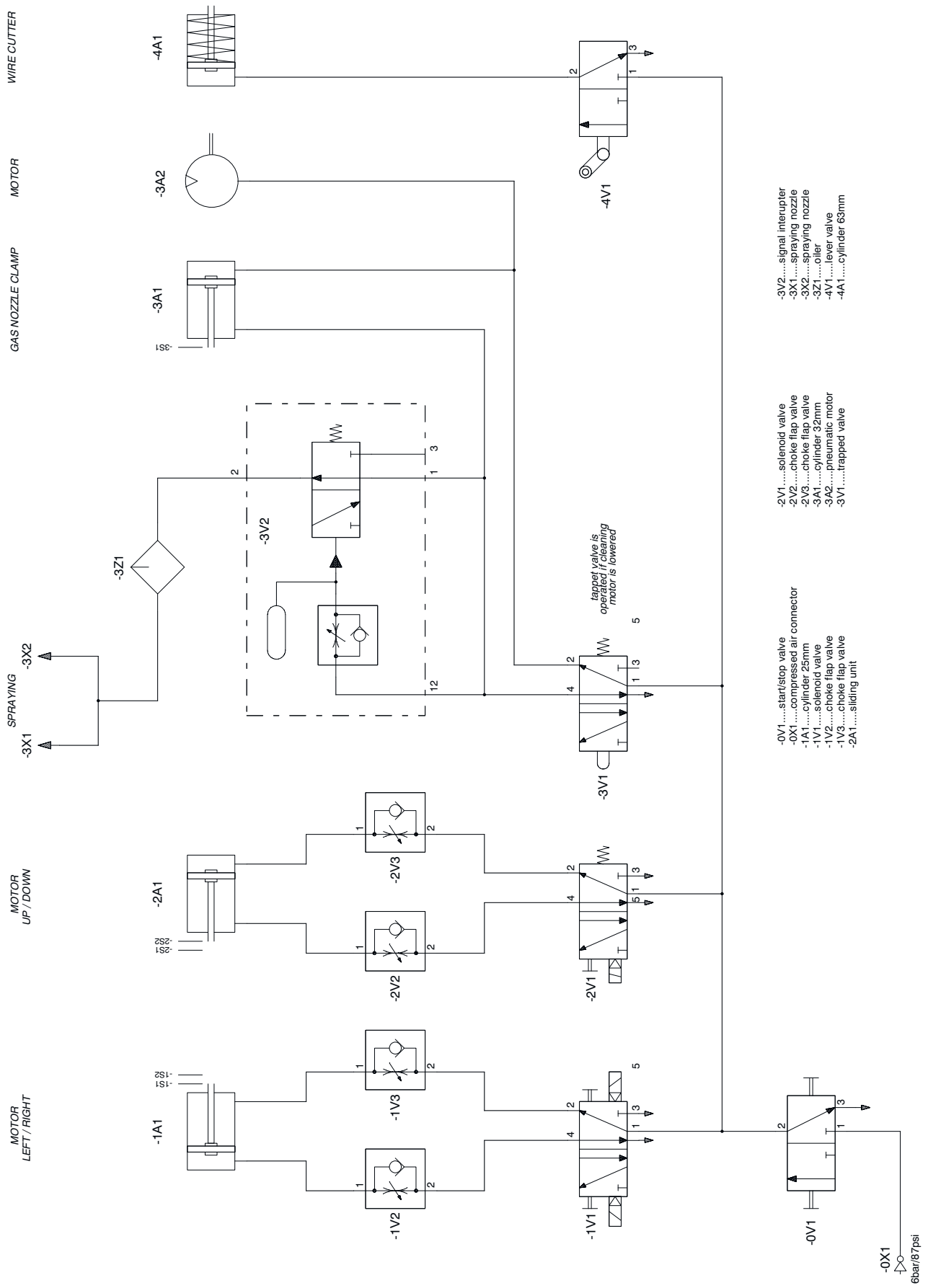


# Circuit diagram Robacta Reamer Twin





# Robacta Reamer Twin pneumatic diagram



# Declarations 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 Alu  
3000upm  
Gasdüsenreinigungsgerät

Robacta Reamer Alu  
3000upm  
Gas nozzle cleaner

Robacta Reamer Alu  
3000upm  
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)

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

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**CE 2016**

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

DE German

Deutsch

EN English

English

FR French

Française



**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 Twin**  
Gasdüsenreinigungsgerät

**Robacta Reamer Twin**  
Gas nozzle cleaner

**Robacta Reamer Twin**  
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)

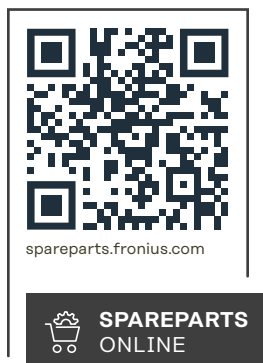
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ppa. Mag.Ing.H.Hackl  
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