Welding torch cleaning and changing devices

Fronius International, PM Welding torches 13.8.2021

Overview

- Welding torch cleaning devices
  - Solutions for Steel
  - Solutions for Aluminum and CuSi
  - TCP testing device
  - Gas volume control

- Changing devices
  - Robacta CTC Contact tip Changer
  - Robacta TX/i Torch Exchange System

Welding torch cleaning devices

You have the cleaning job....

...We have the solution

Welding material	Steel		Aluminium and CuSi
Cleaning type	Milling	Magnetic	Brush
Products	Robacta Reamer V Easy Robacta Reamer Comfort Robacta Reamer V70 Robacta Reamer Single / Twin	Robacta TC 2000	Robacta Reamer Alu brush head Robacta Reamer Alu brush

Solutions for steel

You have the cleaning job....

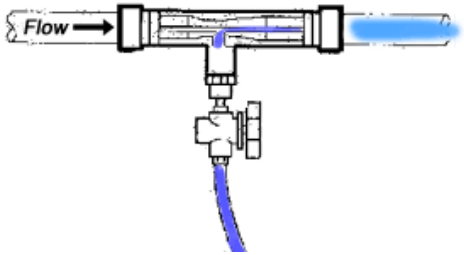
...We have the solution

Welding material	**Steel**	
Cleaning type	Milling	Magnetic
Products	Robacta Reamer V Easy Robacta Reamer Comfort Robacta Reamer V70	Robacta TC 2000

Robacta Reamer V Easy

Price-optimised basic version

Robacta Reamer V Easy for steel applications



- **Mechanical cleaning with milling tool**

- Spray system **V** (**V**enturi-Valve)
  - Compressed air is mixed with the release agent and applied to the wear parts via the injection nozzle

- Release agent spraying through gas nozzle milling tool - targeted application to the wear parts of the welding torch

- Cleans and sprays in one position – Time saving

Robacta Reamer V Easy for steel applications

- The removable plastic container makes it easy to top up the parting agent (fill level: 1 litre)
- Request position clamping fixture cylinder possible – open/closed
- Manual activation of cleaning unit possible – for testing purpose
- Collection vessel for welding spatter

Robacta Reamer V Easy for steel applications

Gas nozzle clamping

Adapter for
gas nozzle milling tool

Holder for
parting agent

Gas nozzle clamping fixture
cylinder

Gas nozzle milling tool

Spray nozzle

Lifting cylinder

Pneumatic motor

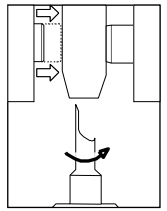
Function overview

Cycle time:
4 - 7,5 seconds

Wire cutting

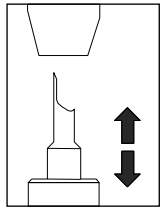
Monitor cutting

Position torch in clamping device
Activate clamping device, motor ON



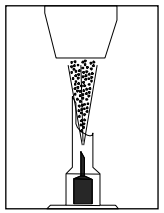
Monitor clamping/motor ON

Lifting movement of gas nozzle milling tool
Cleaning ON (app. 3 – 5 sec)



Monitor clamping/motor ON

Spraying of anti spatter fluid



Monitor filling level

Technical data

Cleaning unit	Robacta Reamer V Easy
Supply voltage	+24 V DC
Nominal output	3,2 W
Performance-Level	C
Compressed air supply	max. 6 bar bei 7,3 l/min
Compressed air consumption	420 l/min
Protection	IP 21
Dimensions (l x b x h)	165 x 245 x 350 mm
Weight	10 kg
Parting agent tank capacity	1 l
Parting agent tank capacity	CE, CSA
Cleaning time	3,0 – 5,0s
Duration of complete cycle	4,0 – 7,5s

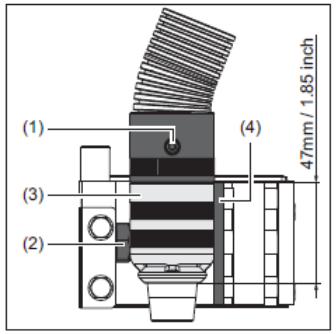
Options

- Different milling tools

- 44,0450,1447 electrical wire cutter

- 44,0450,1152 Mounting socket

- 42,0411,0230 Conversion kit for Exento Robotics



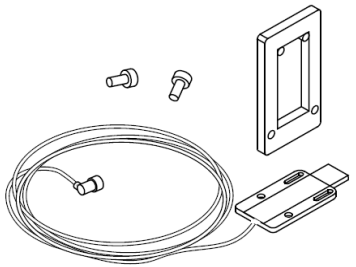
Options

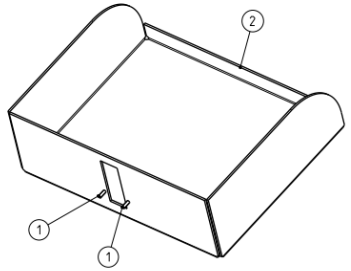
Anti spatter fluid

– 42,0411,8042 Anti spatter fluid for spraying (10 l)
– 42,0411,8080 Anti spatter fluid Robacta Reamer (200l)
    – 42,0411,8081 Discharge tap

Suction directly from the canister

– 42,0300,3007 Suction line
– BE2,0201,4098 Tray 10l for canister & sensor
– 43,0002,0474 Level sensor





Robacta Reamer V Easy

Control options

Variant 1)

With Standard I/O

Socket and plug included

Cable to the robot must be assembled independently

Variant 2) with interface – oder optionally

4,044,060

PROFINET®

4,044,061

PROFIBUS®

4,044,064

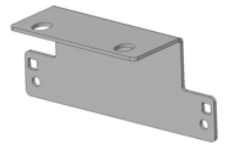
EtherNet/IP™

4,044,062

EtherCAT®

4,044,063

DeviceNet™



Connection cable (order separately)
/ 43,0004,6172 Connection cable Harting 6- pole - Bus 0,35m
/ Connection for electric wire cutter included
Holding plates (order separately)
/ 45,1200,0311 Holding plate UniBox
/ 45,1200,0312 Holding plate Reamer

Example configuration

Article number	Description
44,0450,1444	Robacta Reamer V Easy
44,0450,1152	Mounting socket
42,0411,8042	Anti spatter fluid
44,0450,1447	Electrical wire cutter (In combination with Robacta CTC, the wire cutter of the CTC can be used.)

Robacta Reamer Comfort

Robacta Reamer Comfort

- **Mechanical cleaning** with milling tool
- **Separate sealed** anti spatter fluid injection position
  - Excess anti spatter fluid is collected
  - No contamination in the robotic cell caused by the spraying of anti spatter fluid
- Only **one cable** to the robot or interface
- **Level sensor** cleaning liquid
- Connection for wire cutter
- **Tool for TCP control** integrated as standard:
  - No welding errors caused by TCP displacement
  - Contact tip wear detection - can be combined with Robacta CTC - Contact tip changer
  - Checking the TCP of the complete welding system (welding torch, crash box, robot, ...)

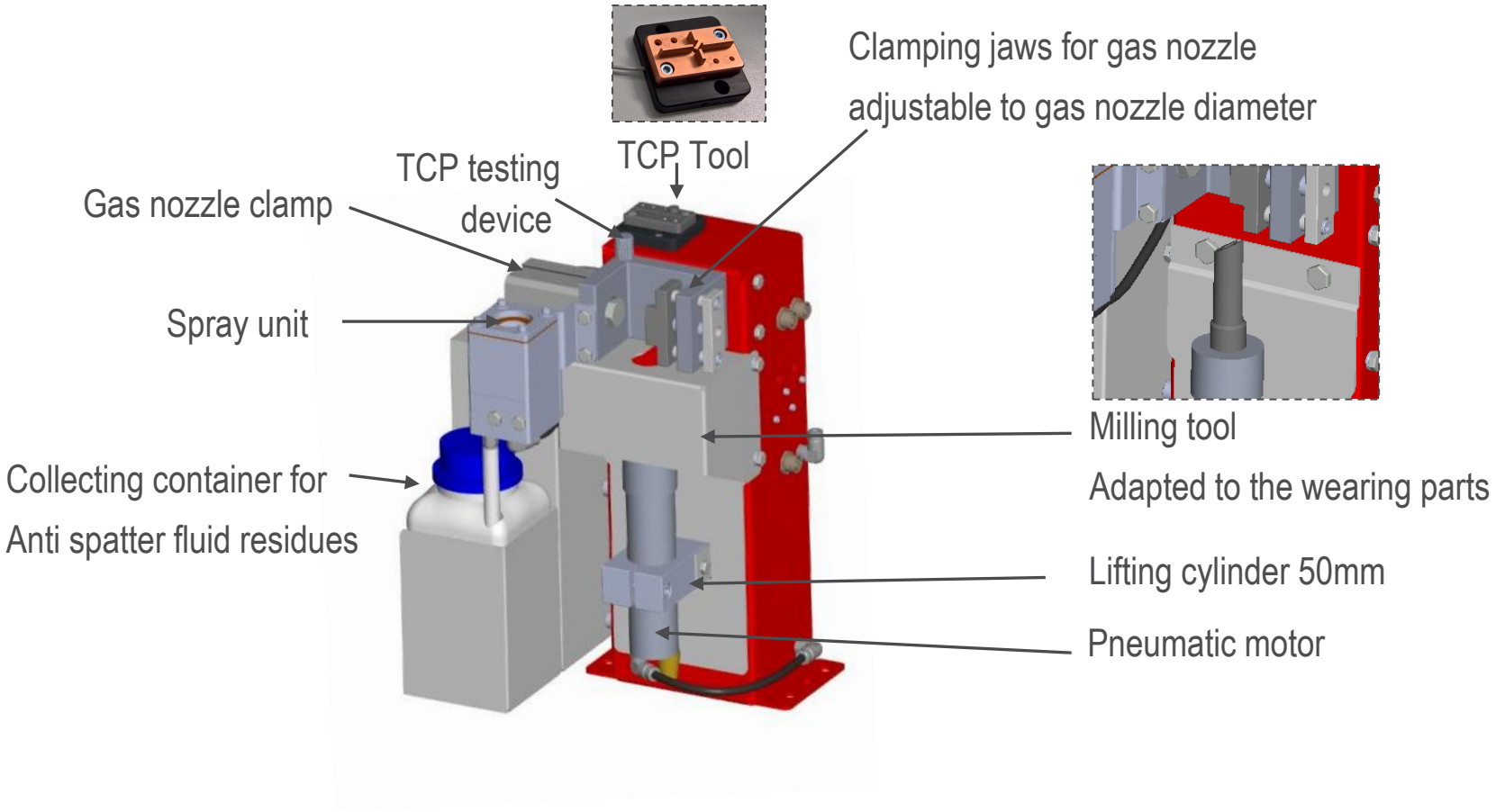
Option wire cutter

Robacta Reamer Comfort

- Easy refilling of the anti spatter fluid due to removable plastic container (1 litre)
- Status check of clamping cylinder position possible - open/closed
- Manual activation of the unit - for test purposes
- Defined dirt discharge into catch basins

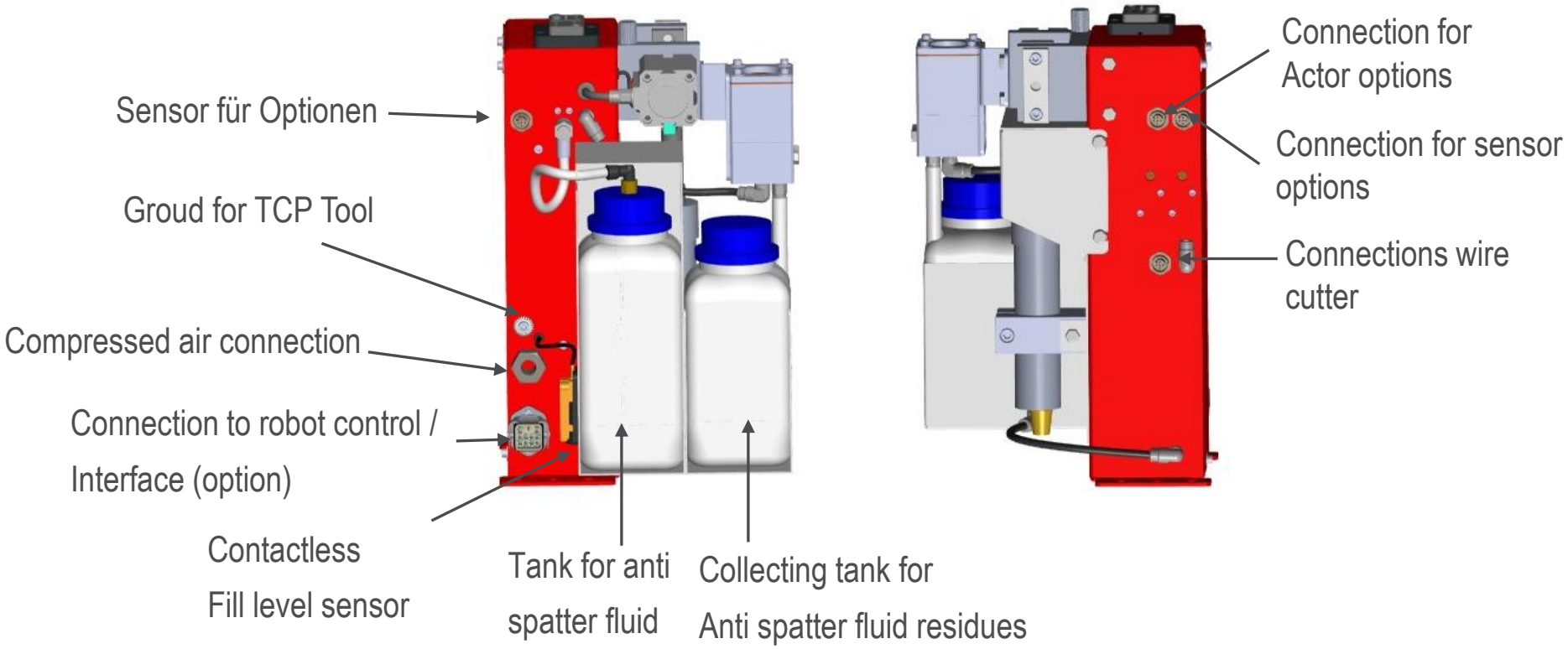
Robacta Reamer Comfort

Setup



Robacta Reamer Comfort

Setup



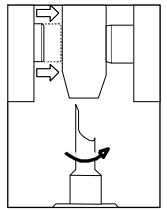
Function overview

Cycle time:
5 - 9 seconds

Wire cutting

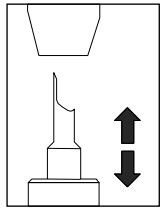
Monitor cutting

Position torch in clamping device
Activate clamping device, motor ON



Monitor
clamping/motor ON

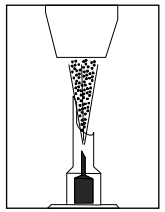
Lifting movement of gas nozzle milling tool
Cleaning ON (app. 3 – 5 sec)



Monitor
clamping/motor ON

Positioning of the torch body in the injection unit

Spraying of anti spatter fluid



Monitor filling level

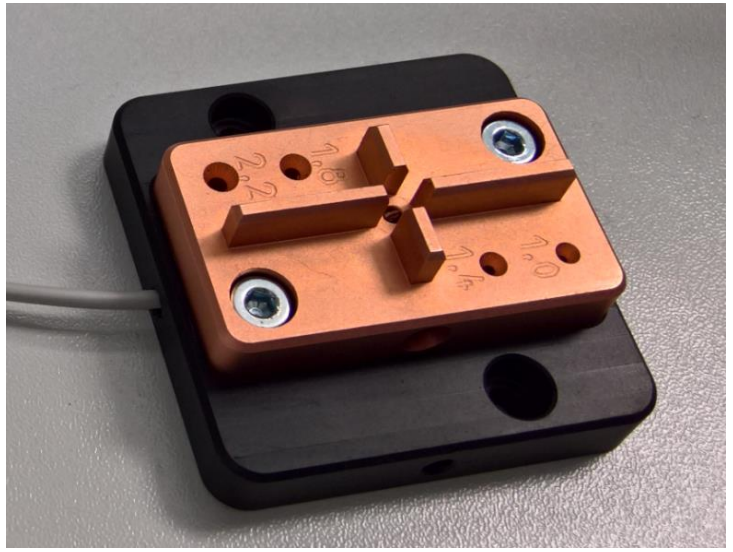
Robacta Reamer Comfort (42,0411,0333)

Technical data

Cleaning device	Robacta Reamer V Comfort
Supply voltage	+24 V DC
Nominal output	2,4 W
Cleaning time	4,5 – 6,5 sec.
Duration of complete cycle	5,0 – 9,0 sec.
Performance-Level	C
Compressed air supply	max. 6 bar at 7,3 l/sec
Compressed air consumption	420 l/min
Protection	IP 21
Dimensions (l x b x h)	230 x 250 x 370 mm
Weight	11,2 kg
Anti spatter fluid tank capacity	1 l
Marks of conformity	CE, CSA

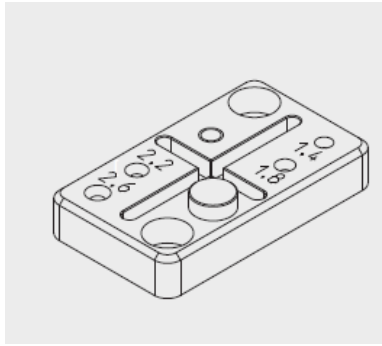
TCP testing device

- Tool for TCP control integrated as standard:
  - No welding errors caused by TCP displacement
  - Contact tube wear detection - can be combined with Robacta CTC - Contact tip changer
  - Checking the TCP of the complete welding system (welding torch, crash box, robot, ...)
- Cost-effective alternative to 3D surveying sensors
- Also available as individual part: 4,001,003,CK Opt/i TSS TCP Touch Sense

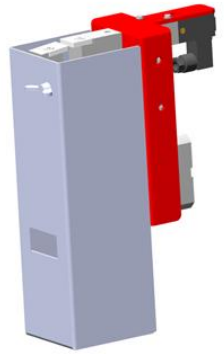


TCP testing device

- Different bores for different wear out limits:
- 1,4mm / 1,8mm / 2,2mm / 2,6mm

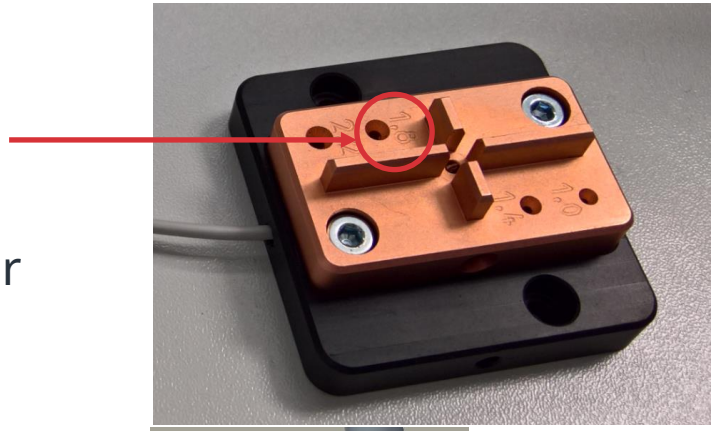


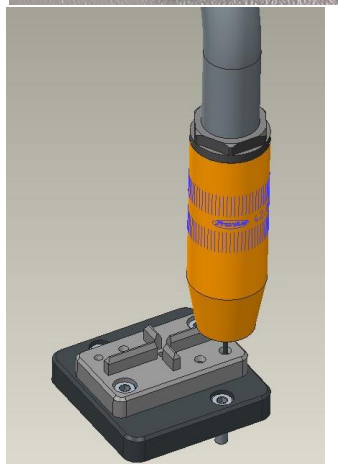
- **System requirements**
  - TPS/i with touch mode
  - Electrical wire cutter
  - Or wire cutters from Robacta CTC
  - no bending of the wire

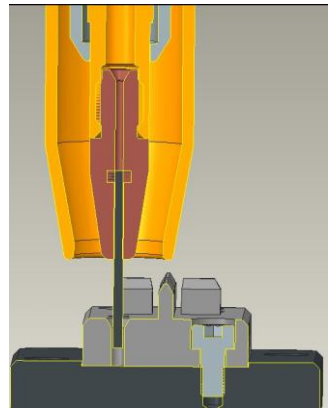


Function

- Mount new contact tip
- Adjust stickout
- Choose your correct bore (wire diameter + accepted tolerance of your production)
- E.g. wire diameter 1,0mm + tolerance +/-0,4mm = 1,8mm
- Teach the wire to the middle of the hole (0-position) – no contact between wire and plate
- Programming of two different wear out detection bores possible:
  - Warning if small bore detects a wear out (e.g. 1,0mm + tolerance +/-0,2mm = 1,4)
  - Stop if second bore detects wear out (e.g. 1,0mm + tolerance +/-0,4mm = 1,8)

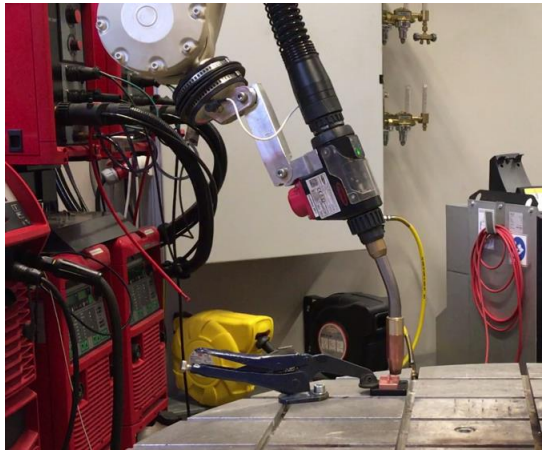






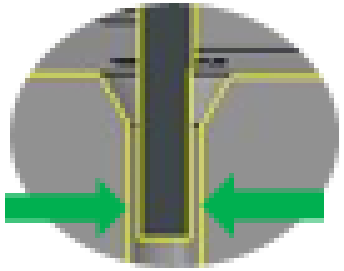
Function

TCP Test



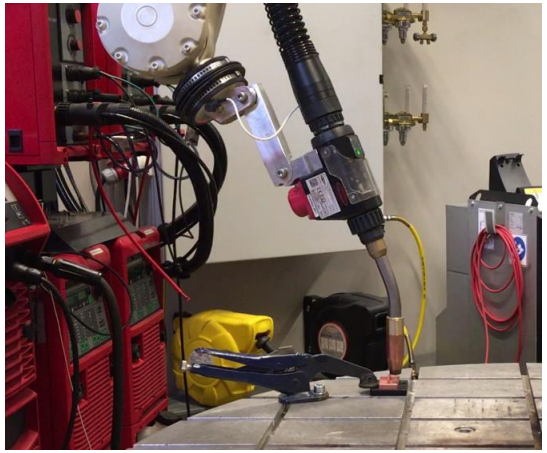
No contact

No contact



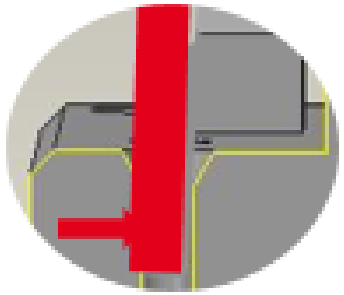
TCP OK
Production can be continued

TCP Test



Contact

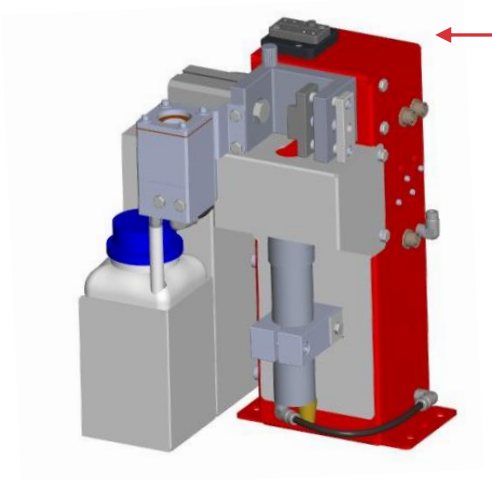
Contact

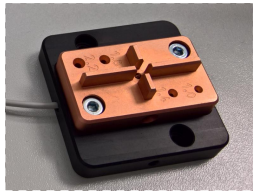


TCP not OK
Warning or contact tip change

Combination with Robacta CTC – Contact Tip Changer

- The Robacta Reamer Comfort with the TCP tool can be optimally combined with the Robacta CTC.
- Step 1: Cutting the wire
- Step 2: TCP control with TCP Tool
- Step 3: Cleaning of wear parts with Robacta Reamer Comfort
- Step 4: automated contact tip change, if a TCP deviation is detected





TCP Tool

Robacta Reamer Comfort

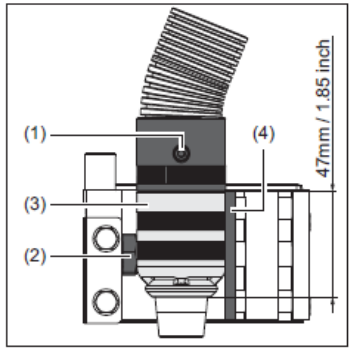
Options

- Different milling tools

- 44,0450,1447 Electrical wire cutter

- 44,0450,1152 Montagesockel

- 42,0411,0230 Conversion kit for Exento Robotics



Robacta Reamer V Comfort Control options

Variant 1)

With Standard I/O

Socket and plug included

Cable to the robot must be assembled independently

Variant 2) with interface – oder optionally

4,044,060

PROFINET®

4,044,061

PROFIBUS®

4,044,064

EtherNet/IP™

4,044,062

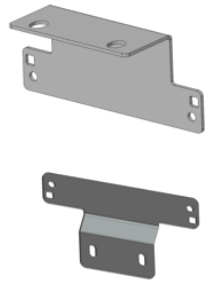
EtherCAT®

4,044,063

DeviceNet™

Connection cable (order separately)
/ 43,0004,6173 Connection cable Harting 12- pole - Bus 0,35m

Holding plates (order separately)
/ 45,1200,0311 Holding plate UniBox
/ 45,1200,0312 Holding plate Reamer



Options

Anti spatter fluid

– 42,0411,8042 Anti spatter fluid for spraying (10 l)
– 42,0411,8080 Anti spatter fluid Robacta Reamer (200l)
    – 42,0411,8081 Discharge tap

Suction directly from the canister

– 42,0300,3007 Suction line
– BE2,0201,4098 Tray 10l for canister & sensor
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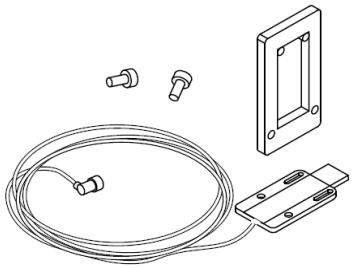
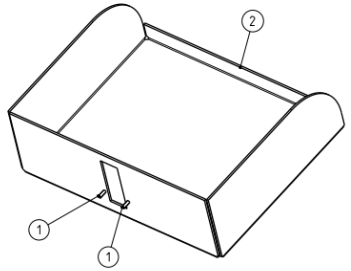




Options

- 44,0450,1174 Cylinder switch
- Connection to the wire cutter to monitor the function of the wire cutter

Configuration

Article number	
42,0411,0333	Robacta Reamer V Comfort
44,0450,1152	Mounting socket
42,0411,8042	Anti spatter fluid
44,0450,1447	Electrical wire cutter (in combination with Robacta CTC, the wire cutter from CTC can be used)

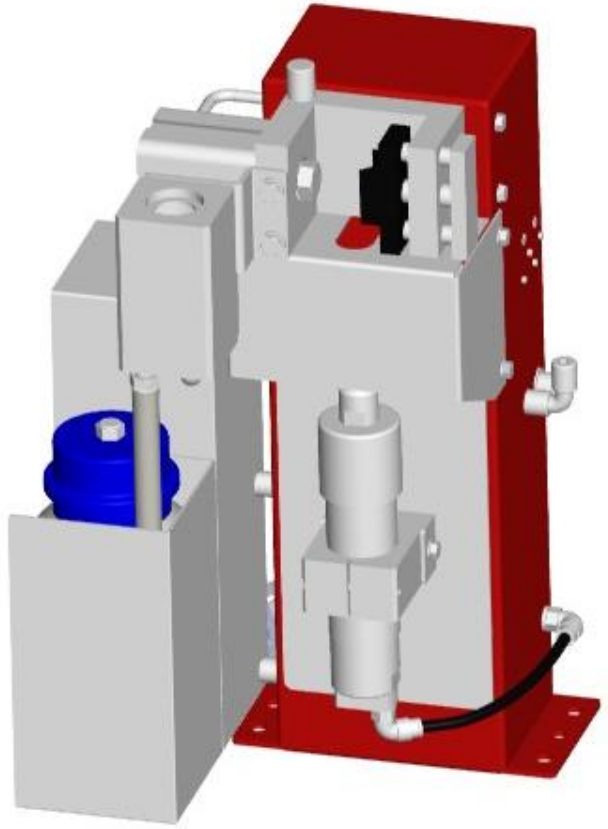
Advantages Robacta Reamer V Comfort

	Robacta Reamer V Comfort	Robacta Reamer V Easy
Spray in anti spatter fluid	Via separate, sealed unit reduces the contamination	Through the milling tool
Separate collection tank for anti spatter fluid residues	Yes, this reduces contamination in the robot cell	no
TCP Tool	Included as standard	Can be ordered as an option No mounting option on the device provided
Connection to the robot	Only one cable to the robot or to the interface (option), also for 3 additional options	Separate cabling from Robacta Reamer, electric wire cutter (option) Interface (option)
Possibility for additional sensors (e.g. wire end sensor)	yes 2x Sensor 1x Actor	no

Robacta Reamer V 70

Robacta Reamer V 70

- Mechanical cleaning with milling cutter
- With **70mm lifting function,** which is required for cleaning the MTB 400i G R with sleeve system wear parts.
- Separate sealed anti spatter fluid injection position.
  - Excess release agent is collected
- Connections for wire cutter

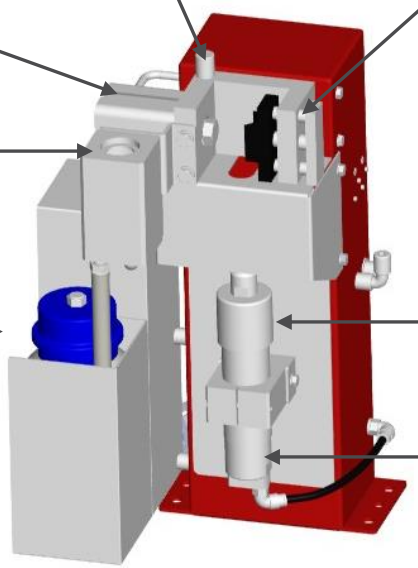


Robacta Reamer V 70

- Easy refilling of the anti spatter fluid through removable plastic container (1 litre)
- Monitoring of clamping cylinder position possible - open/closed
- Manual activation of the unit - for test purposes
- Defined dirt discharge into collecting basin

Robacta Reamer V 70

Device setup



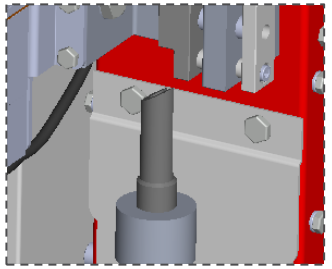
Clamping jaws for gas nozzle
adjustable to gas nozzle diameter

TCP testing device

Gas nozzle clamping fixture

Injection unit

Collection container for
Release agent residues

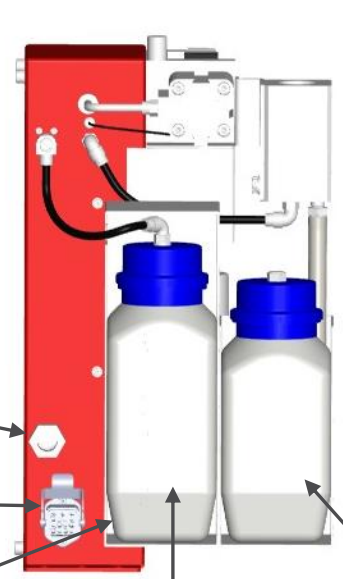


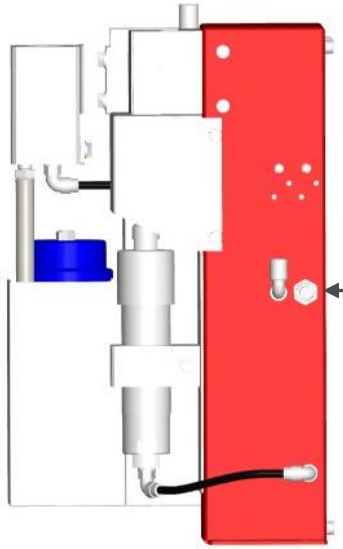
Milling tool
Matched to the wear parts

Lifting
cylinder70mm
Pneumatic motor

Robacta Reamer V 70

Device setup





Compressed air connection

Connection to robot control / Interface (option)

Option: Contactless Fill level sensor

Tank for anti spatter fluid

Collecting tank for Anti spatter fluid residues

Connector wire cutter

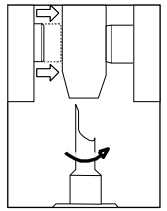
Function overview

Cycle time:
5 - 9 seconds

Wire cutting

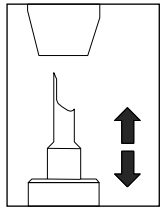
Monitor cutting

Position torch in clamping device
Activate clamping device, motor ON



Monitor
clamping/motor ON

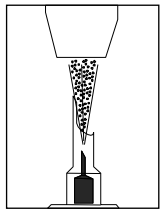
Lifting movement of gas nozzle milling tool
Cleaning ON (app. 3 – 5 sec)



Monitor
clamping/motor ON

Positioning of the torch body in the injection unit

Spraying of anti spatter fluid



Monitor filling level

Robacta Reamer V70

Technical data

Cleaning device	Robacta Reamer V70
Supply voltage	+24 V DC
Nominal output	2,4 W
Cleaning time	4,5 – 6,5 sek
Duration of complete cycle	5,0 – 9,0 sek
Performance-Level	C
Compressed air supply	6 bar
Compressed air consumption	420 l/min
Protection class	IP 21
Dimensions (l x b x h)	255 x 245 x 390 mm
Weight	10,5 kg
Anti spatter fluid tank capacity	1 l
Marks of conformity	CE, CSA

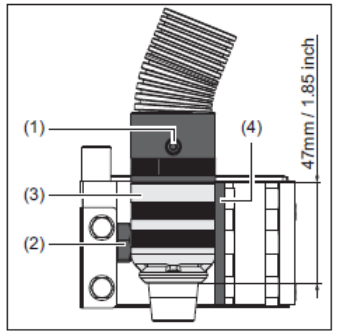
Options

- Different milling tools

- 44,0450,1447 Electrical wire cutter

- 44,0450,1152 Montagesockel

- 42,0411,0230 Conversion kit for Exento Robotics



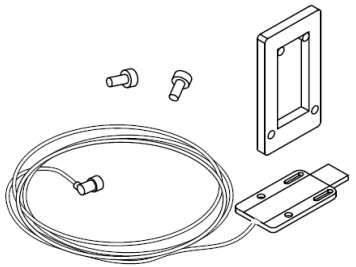
Options

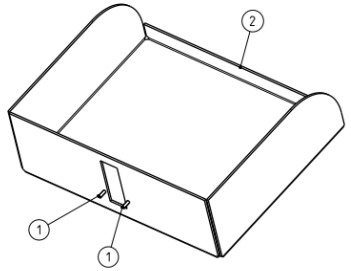
Anti spatter fluid

– 42,0411,8042 Anti spatter fluid for spraying (10 l)
– 42,0411,8080 Anti spatter fluid Robacta Reamer (200l)
    – 42,0411,8081 Discharge tap

Suction directly from the canister

– 42,0300,3007 Suction line
– BE2,0201,4098 Tray 10l for canister & sensor
– 43,0002,0474 Level sensor





Robacta Reamer V70

Ansteuerung

Variant 1)

With Standard I/O

Socket and plug included

Cable to the robot must be assembled independently

Variant 2) with interface – order optionally

4,044,060

PROFINET®

4,044,061

PROFIBUS®

4,044,064

EtherNet/IP™

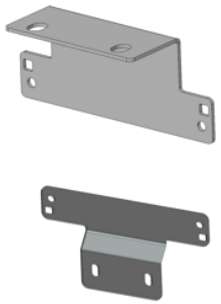
4,044,062

EtherCAT®

4,044,063

DeviceNet™

Connection cable (order separately)
/ 43,0004,6173 connection cable Harting 12- polig - Bus 0,35m
Holding plates (order separately)
/ 45,1200,0311 Holding plate UniBox
/ 45,1200,0312 Holding plate Reamer



Configuration

Article number	Description
44,0450,1961	Robacta Reamer V 70 Han12P
44,0450,1152	Mounting socket
42,0411,8042	Anti spatter fluid
44,0450,1447	Electrical wire cutter

You have the cleaning job....

...We have the solution

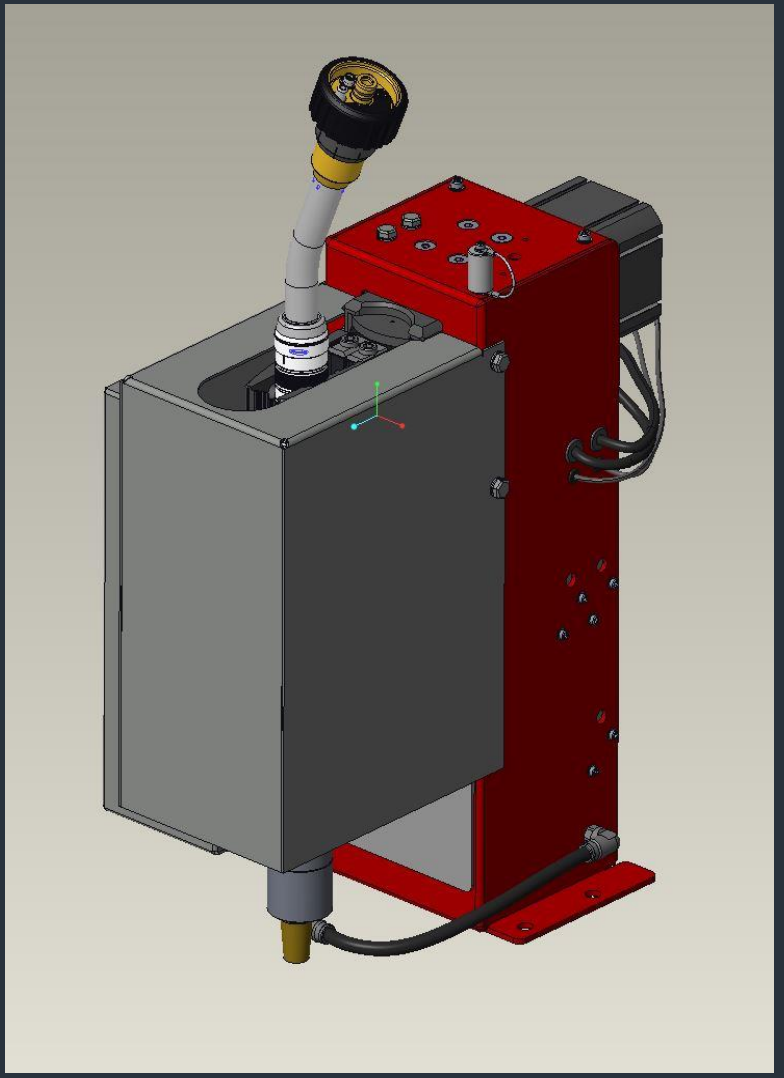
Welding material	**Steel**	
Cleaning type	Milling tool	Magnetic
Products	Robacta Reamer V Easy Robacta Reamer Comfort	Robacta TC 2000

Robacta Reamer Single / Twin

Ready for Twin

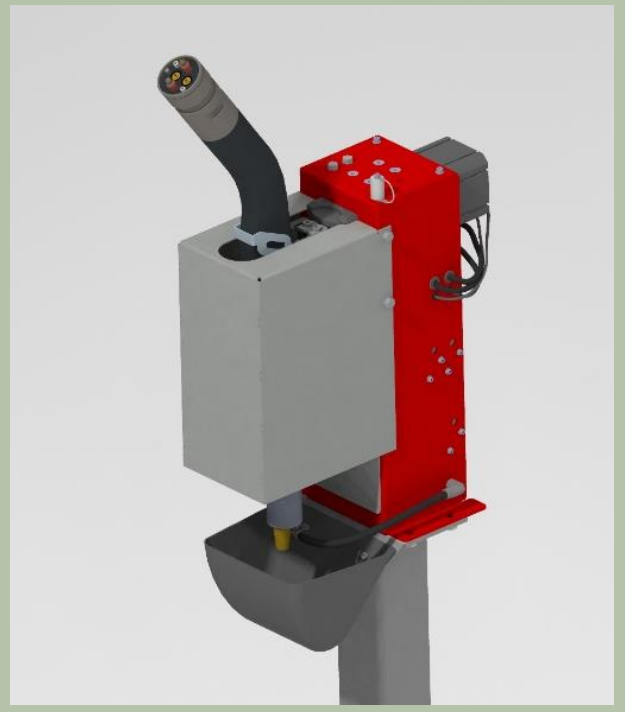
Robacta Reamer Single / Twin

- With the Robacta Reamer Twin/Single it is possible to reliably clean the gas nozzle end face with a matched gas nozzle milling tool. The result is a significant increase in the service life of the wear parts.
- After the cleaning process, a release agent spray nozzle sprays release agent into the interior of the gas nozzle and onto the front of the gas nozzle to prevent new dirt deposits.
- The clamping device fixes the single and twin gas nozzles during the cleaning process.
- The cleaning is done by means of a milling tool.
- The possible contact tip angle for cleaning with Twin torch bodies is 0°, 4°, 8° and 11,5°

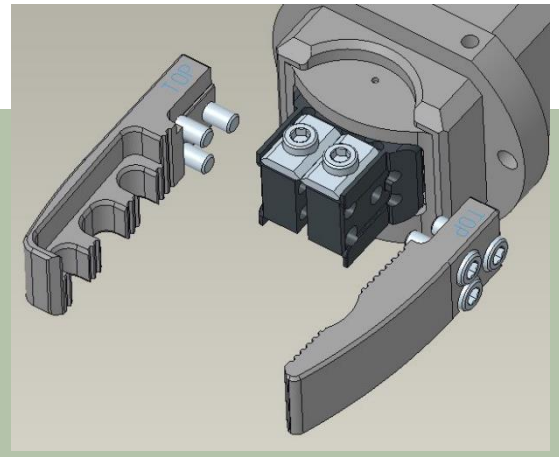


Robacta Reamer Single / Twin

- The diameters of the Twin and Single gas nozzles must be matched.
- The Robacta Reamer Twin/Single is designed for use in automation and robotic applications and can be used for a wide range of materials.
- The voltage and control signals are connected to the robot controller via a 12-pin Harting connector.
- For twin torch bodies with 0° and 4° with sleeve as well as spatter guard system, the face of the gas nozzle is cleaned with the milling tool.
- For 8° and 11.5° contact tip angles, cleaning the face by means of the milling tool alone is not optimal. In this case, a brush can be optionally mounted on the gas nozzle milling cutter.

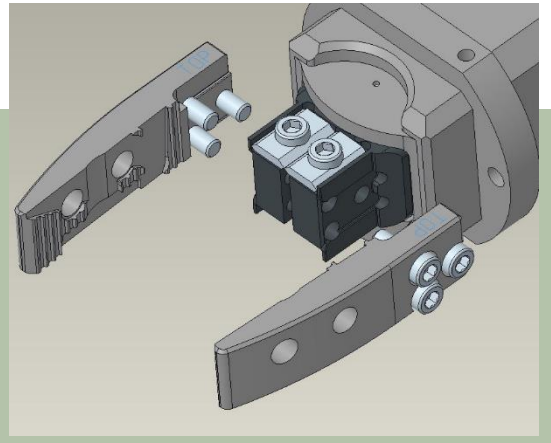


Clamping Jaws



Clamping jaws TPS

42,0411,0369 Clamping jaws TPS



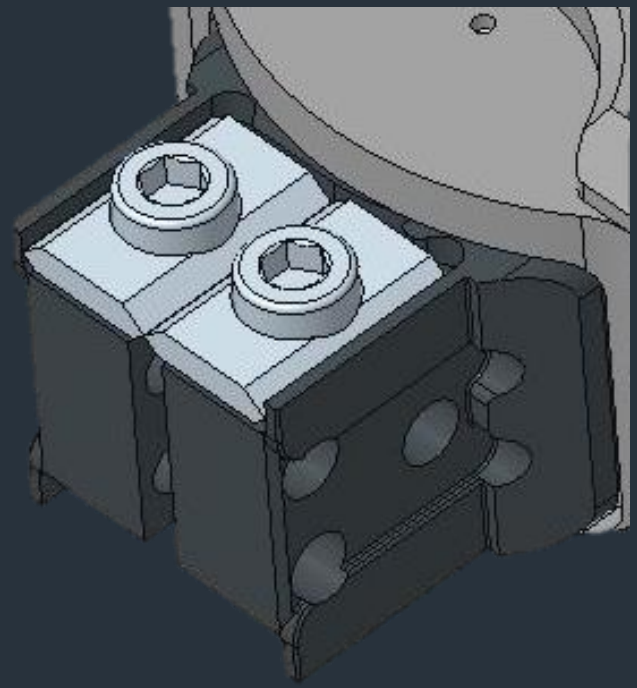
Clamping jaws TPS/i

42,0411,0372 Clamping jaws
Set Single/Twin TPS/i

Must be ordered separately, clamping jaws are not included

Wire Cutter

- The wire cutter is integrated as standard
- Only one signal is necessary for clamping the gas nozzle and cutting the wire
- The blades are indexable inserts and are designed to cut 2x1.6 mm.
- The following signal monitors are available:
  - Gas nozzle clamped or wire cutter closed
  - Gas nozzle free/wire cutter open
  - Cleaning Motor top / below
- An M12x1 socket for 2x actuator/sensor is available as an option, which can be controlled via the 12-pin Harting connector.



TCP/Touch Sense & article numbers

- TCP tip with protective cap is standard.
- Touch Sense is available as an option with item number 4,001,003 ck.

Article Numbers of the Robacta Reamer Twin/Single

- 42,0411,0381 Robacta Reamer Single/Twin

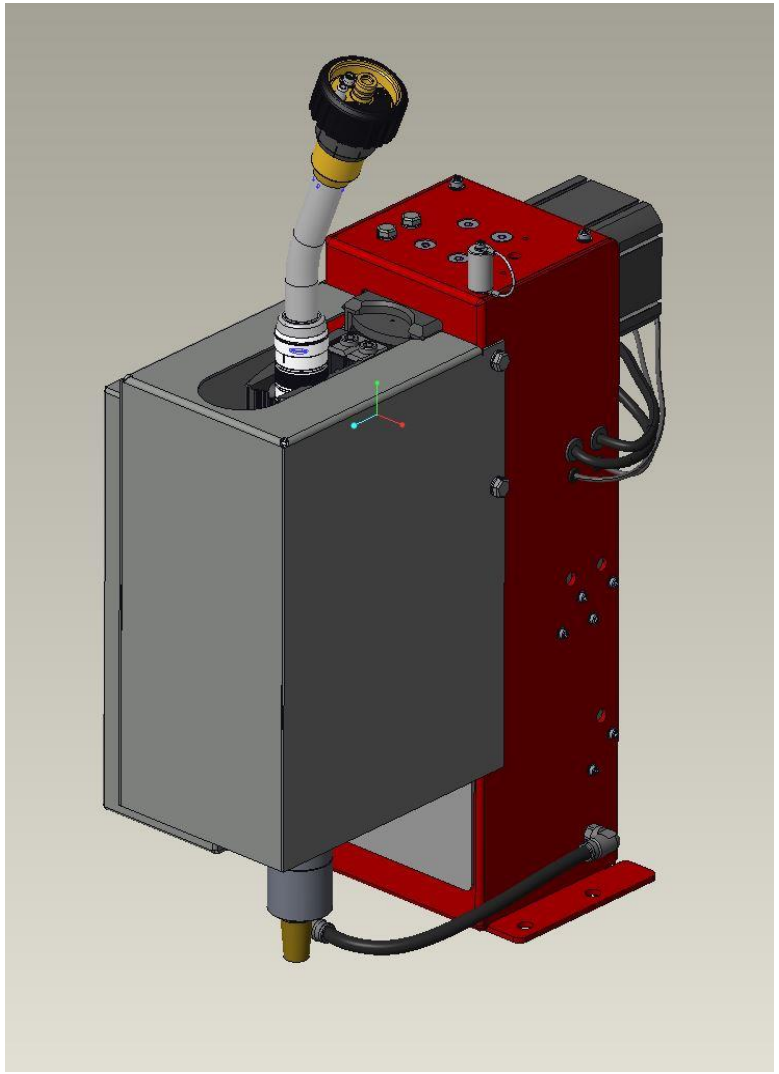
- 42,0411,0372 Clamping Jaw Set Single/Twin TPS/i
- 42,0411,0369 Clamping Jaw TPS
- 44,0450,1152 Mounting Socket for Robacta Reamer Single/Twin
- 42,0411,8042 Anti Spatter Fluid Robacta Reamer 10 L
- 42,0300,3007 Suction Line 1 m – 0,42 m
- 4,001,003,ck OPT/i TSS TCP Touch Sense

Advantages

Advantages Single / Twin compared to the old device Robacta Reamer V Twin

1 cleaning device for all applications

- **Cleaning of single and twin welding torches with just one device**
- **Twin: all contact tip angles can be cleaned with just one device**
  → Easier storage
  → Easy conversion possible
- Mounting option for Touch Sense option
- Can be combined with the TSS/i

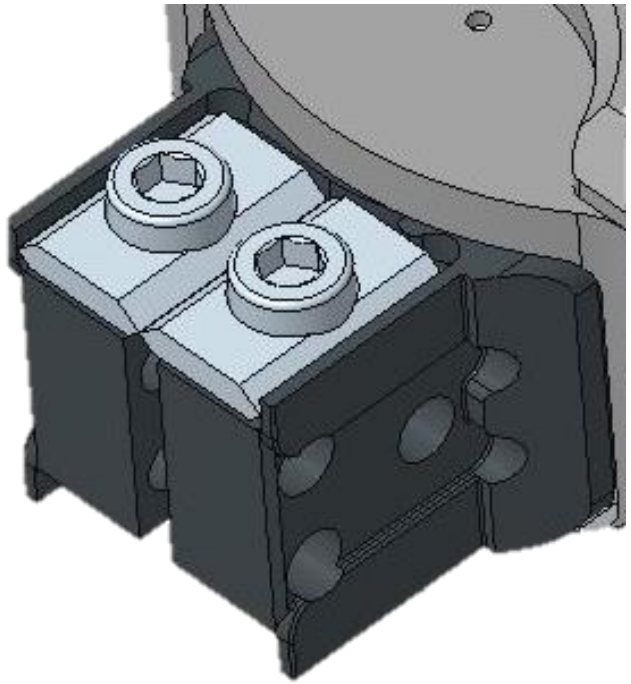


Advantages

Advantages Single / Twin compared to the old device Robacta Reamer V Twin

Wire cutter is integrated in the clamping system

- less travel length
- Shorter cleaning times
- **Calculation example savings:**
  The calculation was carried out under the following assumptions:
  - 1 second saving per cleaning cycle
  - 10 min. cleaning interval
  - 96x cleaning cycles per day, 24,000 cleaning cycles per year
  - Savings of 6.7 hours per year
  - Cost of robot : 75 euros / hour
  - **Savings of €500 per year**



Robacta TC 2000

Robacta TC 2000

- **Touchless cleaning**
  - Spatter build-up is removed electromagnetically, meaning that no damage is done to the surfaces of the wearing parts.
  - Has no influence on the tool centre point (TCP), ensuring that the end of the welding wire is precisely positioned.
- **Enhanced profitability**
  - High availability of the robot installations
  - Gas nozzle has a service life 10times longer than if it were cleaned mechanically.
  - No service-intensive mechanical cleaning components or wearing parts are needed.
- **Versatile and compact**
  - Can be integrated into any existing robot welding cell and available for nearly any torch geometry
  - Compact design for space-saving deployment

Robacta TC 2000

- Monitoring of anti spatter liquid tank fill-level
- Constant, defined force on spatter ring
- Self-test performed to check whether cleaning was carried out
- Parting agent level kept constant by automatic top-up (only when parting agent tank is in use (Dip-In))
- Integral spatter drawer
- "Quick stop" function (activate/deactivat cleaning unit)

Setup Robacta TC 2000

Parting agent tank for
Dip-In

Opening for welding torch cleaning
with cover brush

Two magnet coils

Display

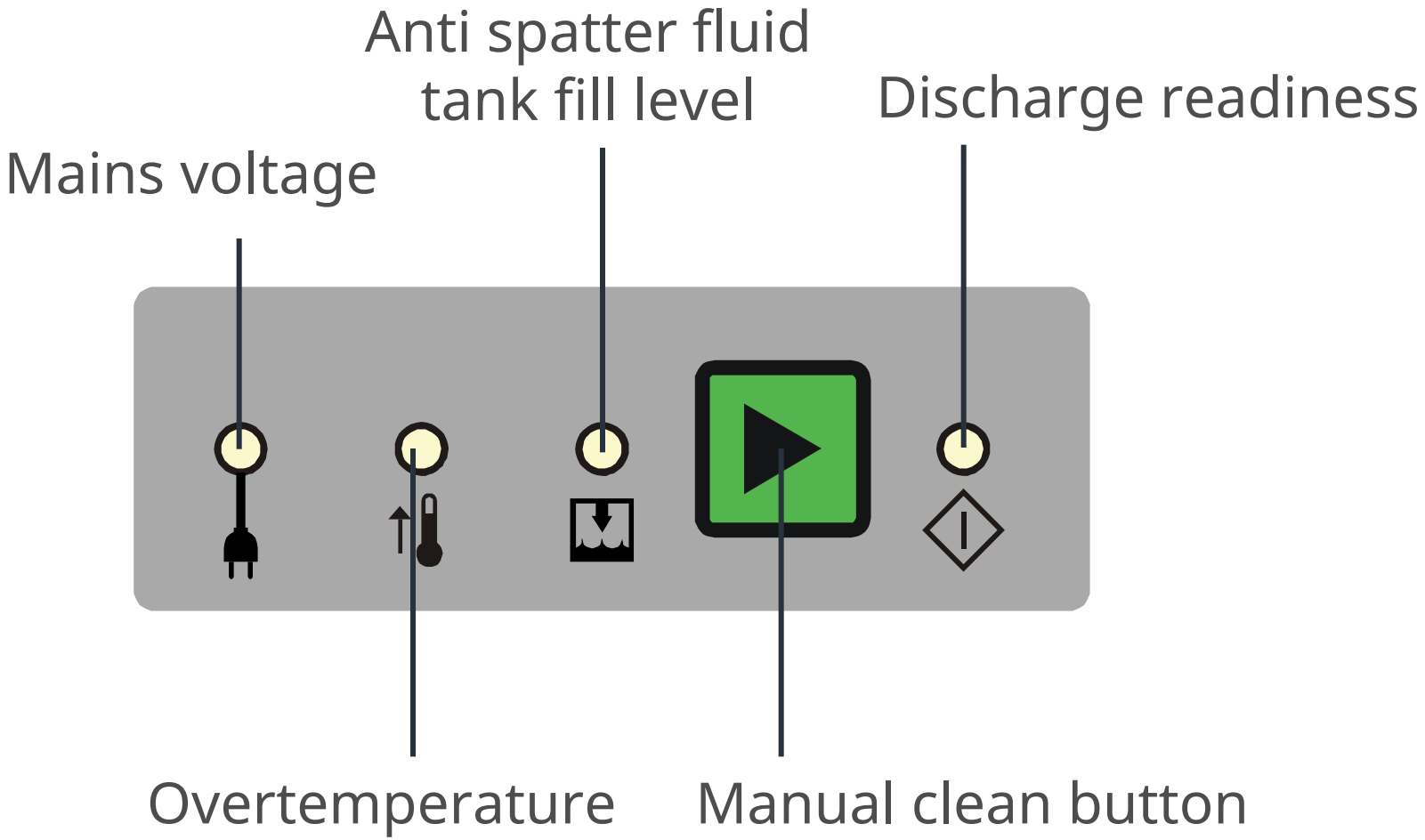
Connection
robot control

Connection parting
agent Spray-In

Function overview magnetic cleaning

- Two magnet coils clean the contact tip, the front and the inner area of the gas nozzle in one cycle.
- Applicable from 20 seconds cycle time
- Full cleaning power from 50 seconds
- The cleaning power has a magnetic flux density of up to 4.7 Tesla.
- The force applied in this way gives a standard plain washer a mass equivalent to approx. 3 kg (6.61 lb).

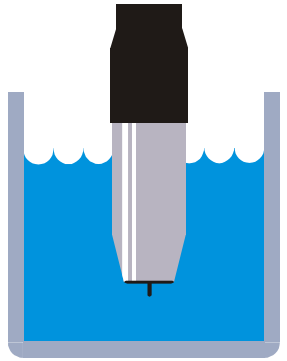
Display Robacta TC 2000



Anti spatter fluid Dip-In / Spray-In

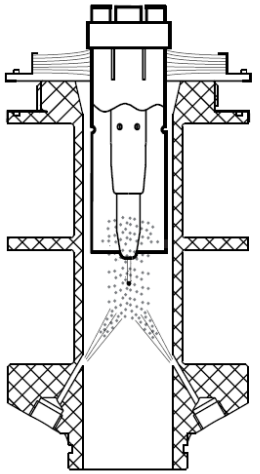
Dip-In:

- For dipping the torch
- Recommended for **gas-cooled torches** - fast cool down of wear parts
- Separation of the bond between steel spatter and copper gas nozzle due to different thermal expansion.
- After cleaning, the excess anti spatter fluid is blown off by means of nozzles (compressed air) integrated in the coil.



Spray-In:

- Anti spatter fluid is sprayed through the cleaning coil onto the welding torch
- Recommended for water-cooled torches due to lower heat absorption



Anti spatter fluid

- **Anti spatter fluid (Dip-In): TC Cool +**
  - 42,0411,0300 anti spatter fluid RA TC Cool + 1l
  - 42,0411,0301 anti spatter fluid RA TC Cool + 5l
  - 42,0411,0302 anti spatter fluid RA TC Cool + 20l
  - 42,0411,0303 anti spatter fluid RA TC Cool + 200l

Anti spatter fluid (Spray-In): Robacta Reamer

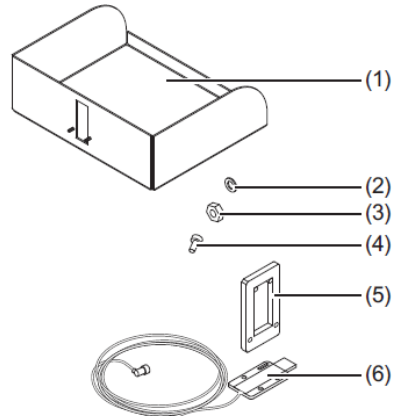
- 42,0411,8042 anti spatter fluid Robacta Reamer 10L spray in
- 42,0411,8080 anti spatter fluid Robacta Reamer 200l

- **Discharge tap for 200l drum:**
  - 42,0411,8081 Discharge tap

Anti spatter fluid

- 42,0300,3007 Suction line

- 4,100,884 I-kit level spray system



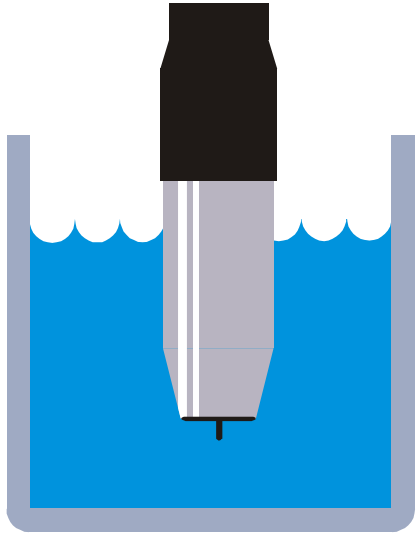
Function overview Dip-In

Wire cutting

Dip the wearing parts into the anti spatter fluid tank (Dip In)

Wearing parts and steel spatter ring cool down rapidly

The steel spatter is separated from the copper gas nozzle due to their different rates of thermal expansion



Function overview:

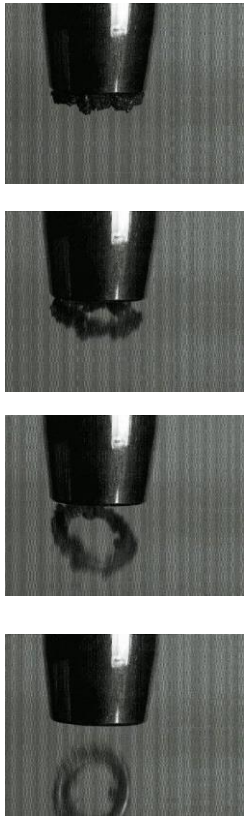
Removing of steel spatter ring

Welding torch positioned in the cleaning coil

Current pulse generates magnetic field

Force effect of magnetic field on steel spatter

Steel spatter removed from the contact tip, the front and the inner area of gas nozzle

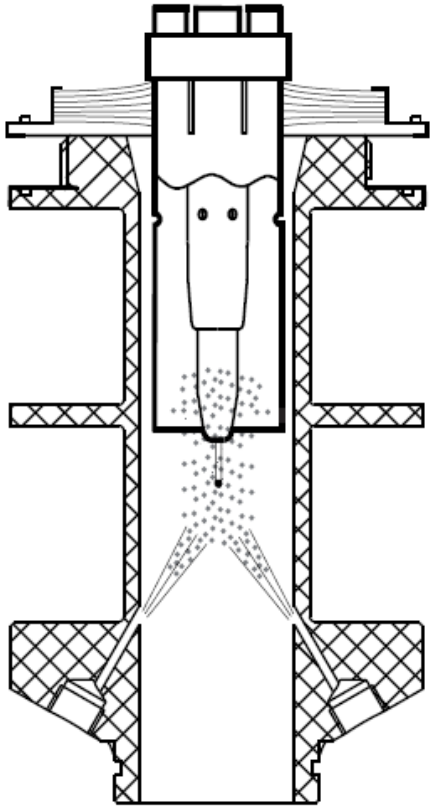


Function overview Spray-In

Welding torch positioned in the cleaning coil

Welding anti spatter fluid sprayed on

The inside of the torch is completely wetted by parting agent



Technical data

Torch cleaning device	**Robacta TC 2000**
Mains voltage	230 V
Mains voltage tolerance	± 10%
Mains frequency	50/60 Hz
Nominal output	180 W
Mains fuse protection (slow-blow)	10 A
Compressed air supply	6 bar 86.99 psi
Minimum cycle time	Ab 20 sek.
Discharge current	1500-1950 A
Discharge voltage	470 V
Capacity parting agent tank	0,75l 0.20 gal.
Protection class	IP 23
Dimensions l x b x h	330 x 250 x 422 mm 12.99 x 9.84 x 16.61 inch
Weight (without "dip-in" parting agent)	24,5 kg
Marks of conformity	CE, CSA

Accessories Robacta TC 2000

- 4,045,916 Mounting socket 150mm
- 4,045,907 Mounting socket 700mm
- 44,0450,1447 Electrical wire cutter
- 4,100,885 Wire cutter assembly set

Robacta TC2000

Control options

Variant 1)

With Standard I/O

Socket and plug included

Cable to the robot must be assembled independently

Variant 2) with interface – order optionally

4,044,060

PROFINET®

4,044,061

PROFIBUS®

4,044,064

EtherNet/IP™

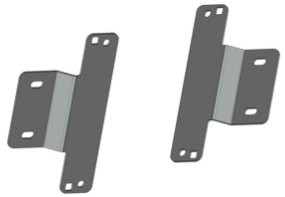
4,044,062

EtherCAT®

4,044,063

DeviceNet™

Connection cable (order separately)
/ 43,0004,6175 connection cable Amphenol 17-pole-Bus 0,35m
Holding plates (order separately)
/ 2x 45,1200,0311 holding plate UniBox

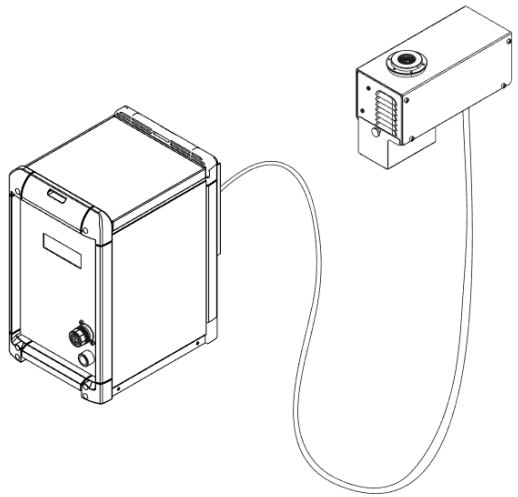


Configuration TC 2000

Artikelnummer	
4,075,123	Robacta TC 2000
4,045,907	Mounting socket 700mm
42,0300,3007	Suction line 1,0m – 0,42m
4,100,885	Wire cutter assembly set
44,0450,1447	Electrical wire cutter
42,0411,8042	Anti spatter fluid spray in

Robacta TC 2000 external

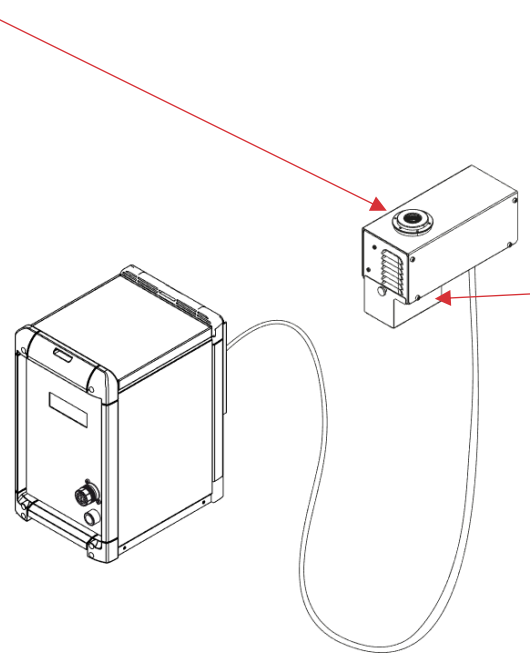
- Robacta TC 2000 with external cleaning unit
- Suitable for applications with limited space due to small cleaning unit
- Improved accessibility to the cleaning station



- **Base device:**
  - 4,075,123,632 Robacta TC 2000 ext.
  - 4,075,123,802 Robacta TC 2000 ext. US
- **Cleaning unit:**
  - 4,044,040 Cleaning Unit TC 2000
  - 4,044,043 Cleaning Unit TC 2000 ø35 für MTB 700i W R
  - 4,044,042 Cleaning Unit TC 2000 Twin

Robacta TC 2000 extern

- **Cleaning coil with anti-spatter fluid spray in and brush cover**
- for cleaning
- for spraying of anti-spatter fluid



Collection container for welding residues

Basic device TC 2000 ext.
External control via Standard I/O – device can be entirely remote-controlled

Hose pack L=2,7m

Configuration TC 2000 external

Article number	
4,075,123,632	Robacta TC 2000 exernal
4,044,040	Cleaning unit TC 2000
4,045,907	Mounting socket 700mm
42,0300,3007	Suction line 1,0m – 0,42m
44,0450,1447	Electrical wire cutter
42,0411,8042	Anti spatter fluid spray in

Solutions for Aluminum and CuSi

Fronius

You have the cleaning job....

...We have the solution

Welding material	Aluminium and CuSi
Cleaning type	Cleaning with brush
Products	Robacta Reamer Alu brush head Robacta Reamer Alu brush

Robacta Reamer Alu brush head

Recommended cleaning system for aluminium / CuSi

Robacta Reamer Alu brush head

for Aluminium and CuSi

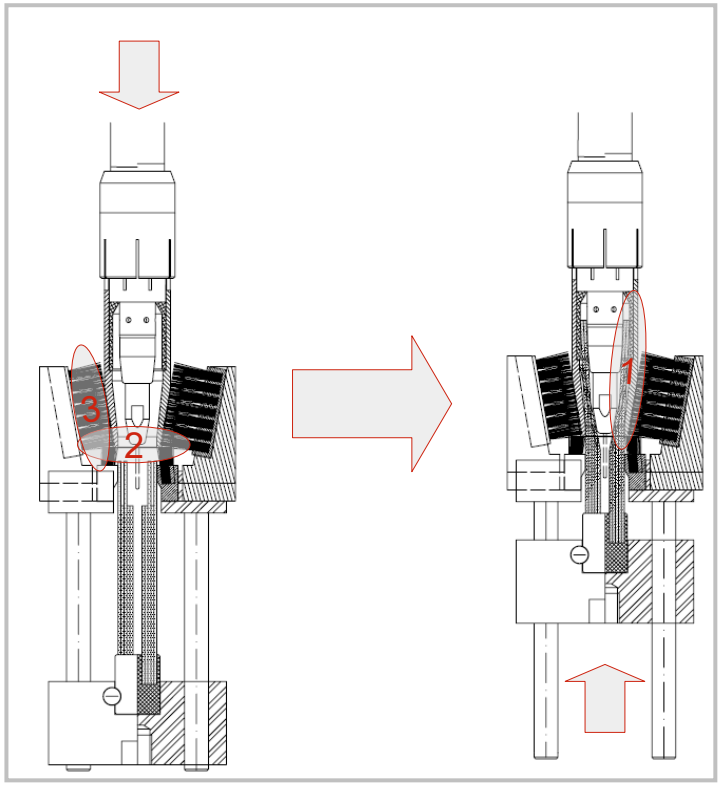
- Cleaning with brush head in the **inner and outer area** of the gas nozzle
- Optimum coverage of gas nozzle and contact tip
- Exact adjustment of the cleaning areas to the soiling
  - due to two different settings of the contact pressure
  - Result: considerable minimization of brush wear and tear
- Adapter (Quick-Change) for quick change of cleaning brushes
- All brushes can be changed without tools
- Brush head is designed for applications up to 250°C gas nozzle temperature

Robacta Reamer Alu brush head

Cleaning area and process

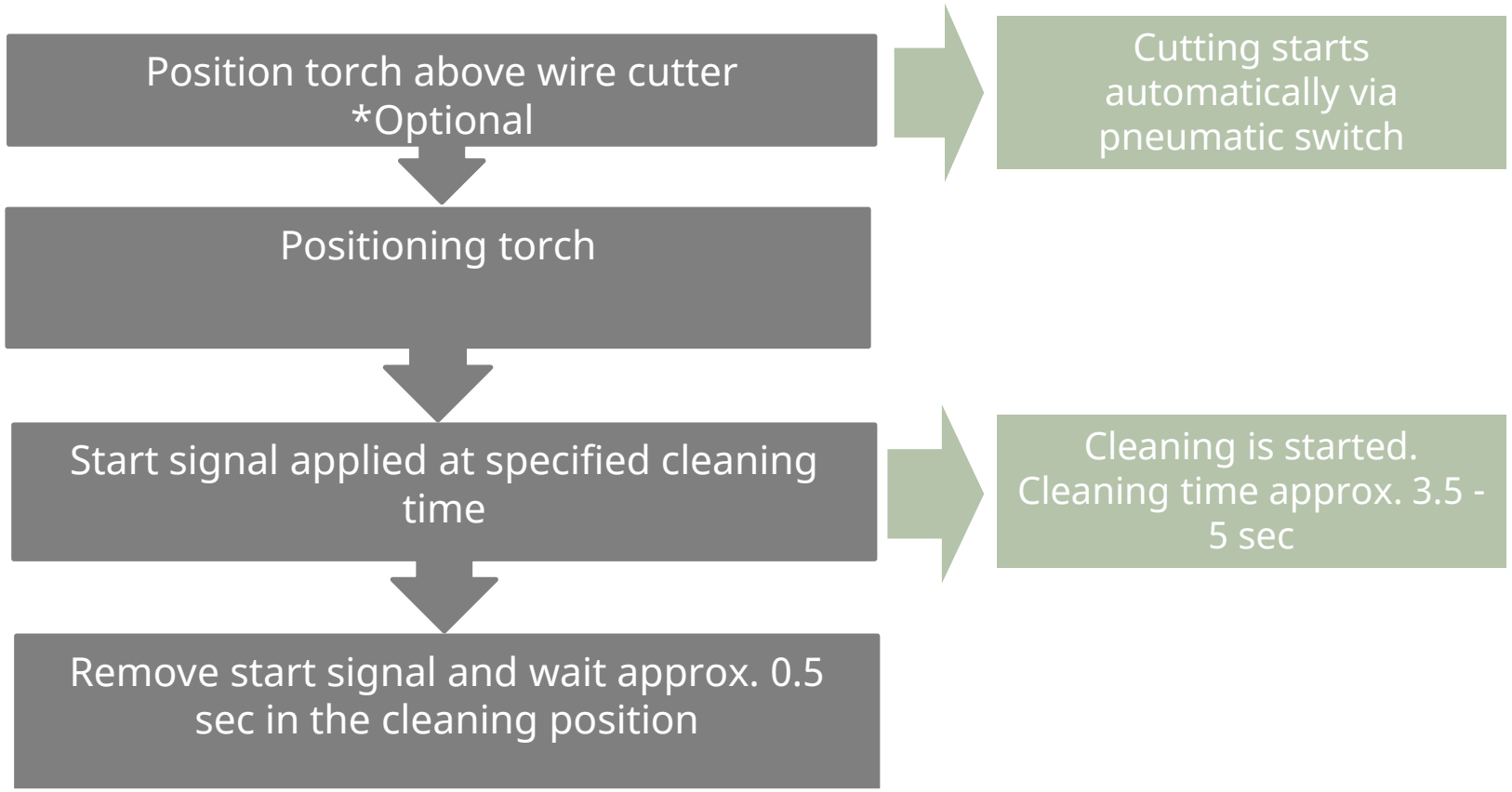
– **Left:** welding torch in cleaning position: rotates to clean the front and outside of the gas nozzle ((2) and (3) respectively).

– **Right:** the lifting and rotating motion lifts the central brushes, which clean the contact tip (1).



Function overview

Cycle time
4 - 7,5 seconds



Robacta Reamer Alu brush head

Setup

Brush head

Gas purging nozzle – spatter cleaning of brushes

Connection compressed air for wire cutter

Lifting cylinder

Pneumatic motor

Catch basin for welding spatter

Connection compressed air

Connection robot control

Robacta Reamer Alu brush head

Technical data

Cleaning unit	Robacta Reamer Alu brush head
Supply voltage	+24 V DC
Engine rpm	900 U/min
Nominal output	3,2 W
Cleaning time	3 – 5 sek
Duration of complete cycle	4 -7,5 sek
Performance-Level	C
Compressed air supply	max. 6 bar bei 7,3 l/min
Compressed air consumption	420 l/min
Protection	IP 21
Dimensions l x w x h	165 x 245x 350 mm
Weight without parting agent	10 kg
Marks of conformity	CE, CSA

Specially coated gas nozzle

- Use of specially coated Fronius gas nozzles recommended
- Particularly smooth surface due to special coating
- Minimised adhesion of aluminium weld spatter to the gas nozzle

Options

- 44,0450,1447 electrical wire cutter
- 44,0450,1152 Mounting socket
- 44,0350,3442 Brush head for Braze +

Robacta Reamer brush head

Control options

Variant 1)

With Standard I/O

Socket and plug included

Cable to the robot must be assembled independently

Variant 2) with interface – order optionally

4,044,060

PROFINET®

4,044,061

PROFIBUS®

4,044,064

EtherNet/IP™

4,044,062

EtherCAT®

4,044,063

DeviceNet™

Connection cable (order separately)
/ 43,0004,6172 connection cable Harting 6- pole - Bus 0,35m
/ Connection for electrical wire cutter included

Configuration

Article number	
44,0450,1449	Robacta ReamerAlu brush head
44,0350,3058	Brush head Alu Robacta Reamer
44,0450,1152	Mounting socket for Robacta Reamer/Alu/V
44,0450,1447	Electrical wire cutter

Robacta Reamer Alu brush

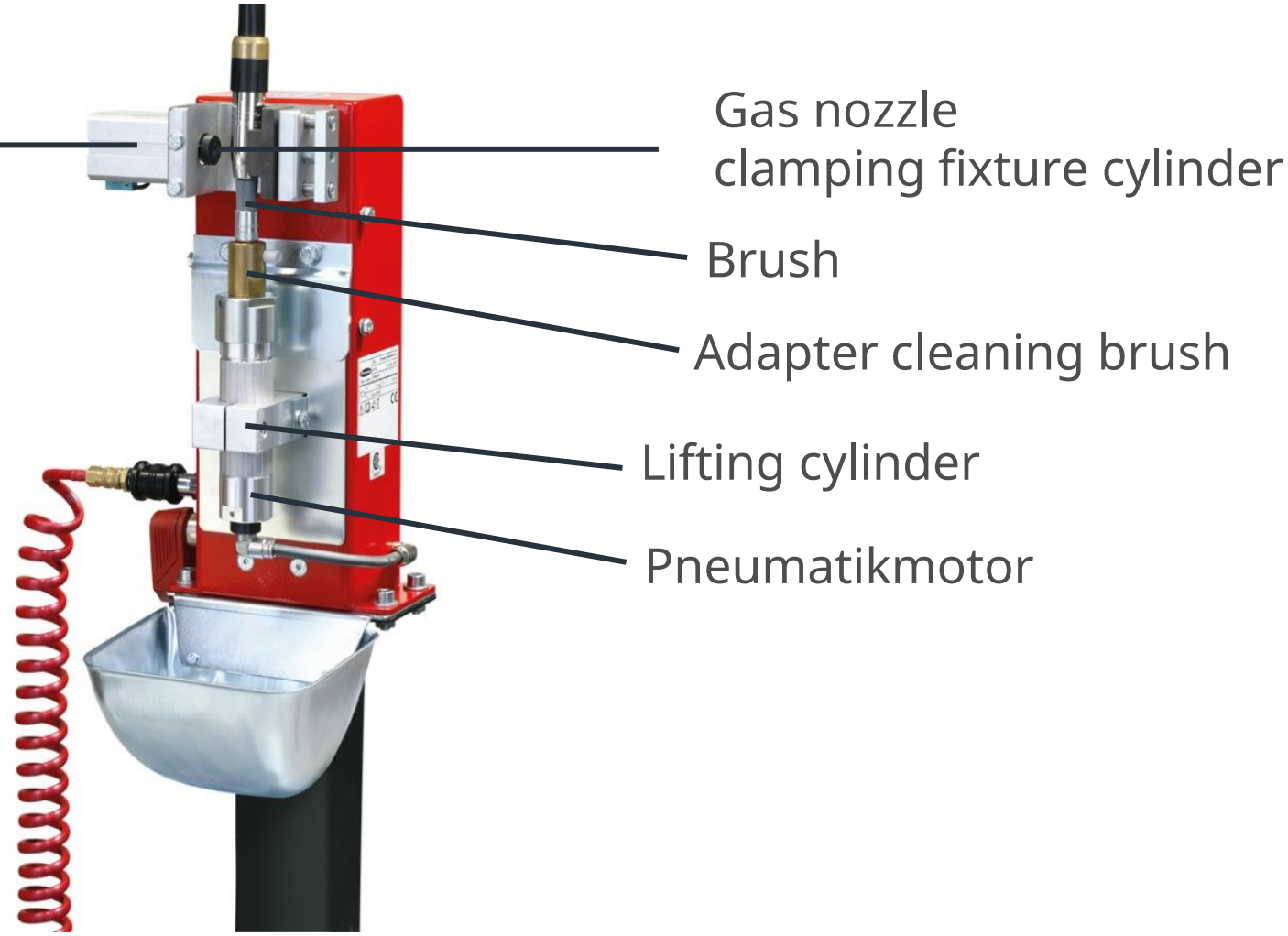
cost optimized variant

Robacta Reamer Alu brush

- Cleaning of ware parts with a brush
- Cleaning brush – Optimum adaption on the part contour
- Minimal wear of gas nozzle coating
- Adapter with rapid replacement system (Quick Change)
- Collection vessel for welding spatter

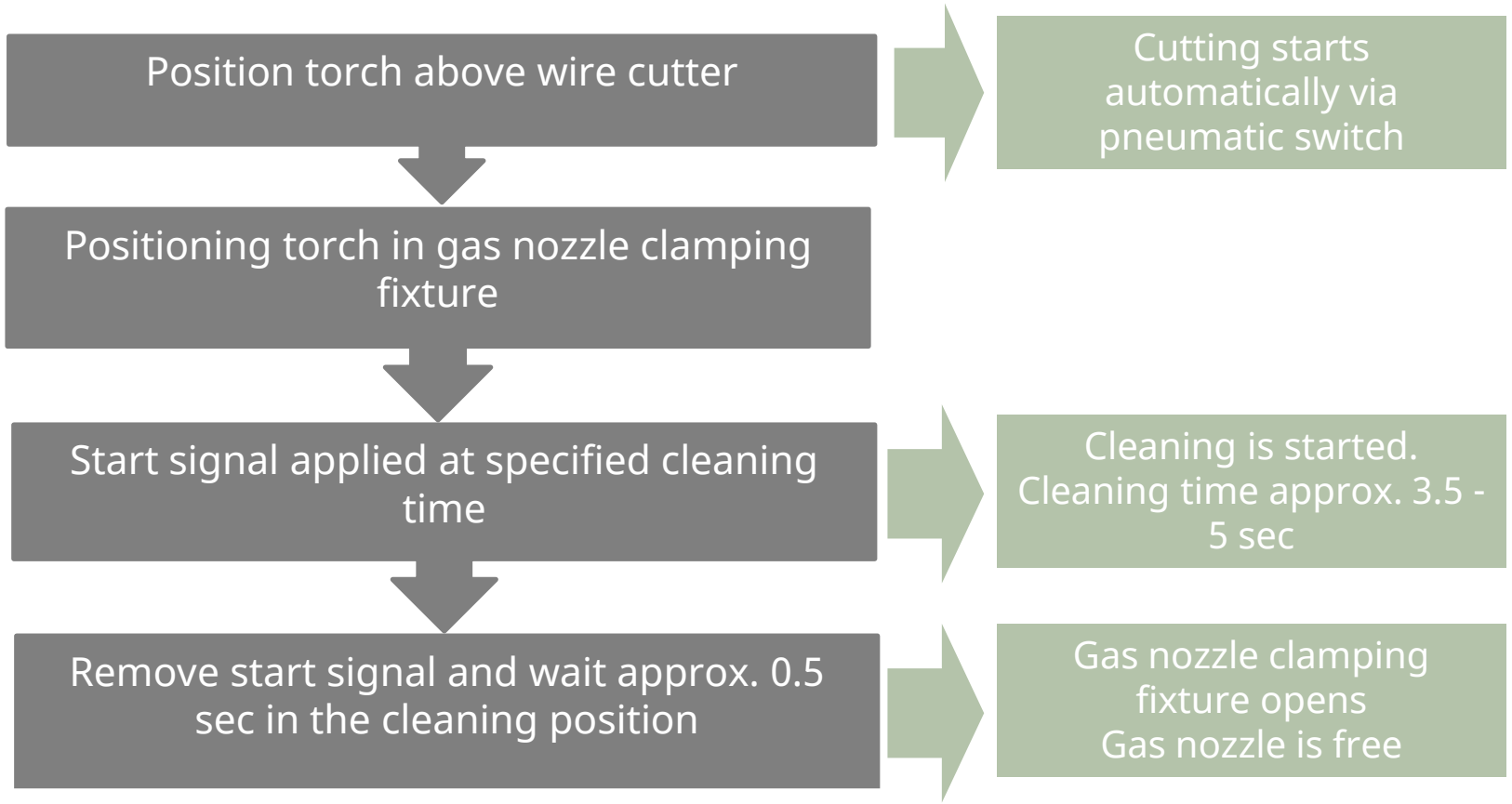
Robacta Reamer Alu brush

Setup



Function overview

Cycle time:
4-7,5 seconds



Technical data

Cleaning unit	Robacta Reamer Alu brush
Supply voltage	+24 V DC
Engine rpm	900 U/min
Nominal output	3,2 W
Cleaning time	3 – 5 sek
Duration of complete cycle	4 -7,5 sek
Performance-Level	C
Compressed air supply	max. 6 bar at 7,3 l/min
Compressed air consumption	420 l/min
Protection	IP 21
Dimensions l x w x h	170 x 165 x 280 mm
Weight without parting agent	9 kg
Marks of conformity	CE, CSA

Specially coated gas nozzle

- Use of specially coated Fronius gas nozzles recommended
- Particularly smooth surface due to special coating
- Minimised adhesion of aluminium weld spatter to the gas nozzle

Options

- 44,0450,1447 electrical wire cutter

- 44,0450,1152 Mounting socket

Robacta Reamer brush

Control options

Variant 1)

With Standard I/O

Socket and plug included

Cable to the robot must be assembled independently

Variant 2) with interface – order optionally

4,044,060

PROFINET®

4,044,061

PROFIBUS®

4,044,064

EtherNet/IP™

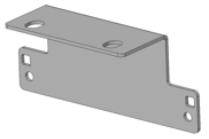
4,044,062

EtherCAT®

4,044,063

DeviceNet™

Connection cable (order separately)
/ 43,0004,6172 connection cable Harting 6- pole - Bus 0,35m
/ Connection for electrical wire cutter included
Holding plates (order separately)
/ 45,1200,0311 Holding plates UniBox
/ 45,1200,0312 Holding plates Reamer



Configuration

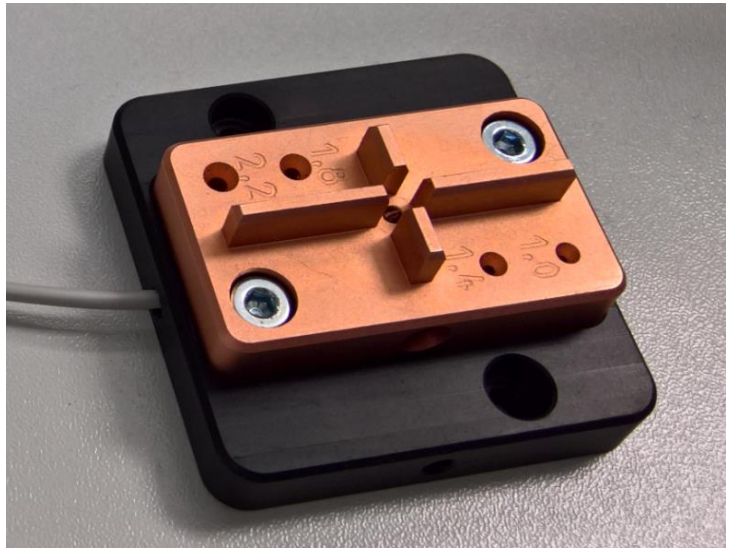
Artikelnummer	
44,0450,1227	Robacta Reamer Alu brush without wire cutter
44,0350,2267	Adapter brush ø25x36mm
44,0450,1228	Cleaning brush ø16x35
44,0450,1152	Mounting socket for Robacta Reamer/Alu/V
44,0450,1447	Electrical wire cutter

Options

TCP testing device

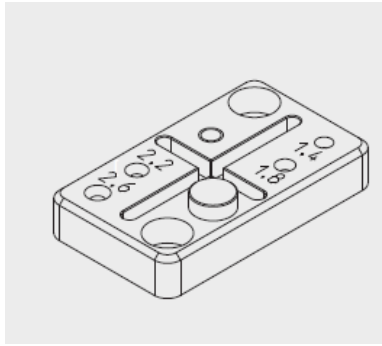
TCP testing device

- Tool for TCP control integrated as standard:
  - No welding errors caused by TCP displacement
  - Contact tube wear detection - can be combined with Robacta CTC - Contact tip changer
  - Checking the TCP of the complete welding system (welding torch, crash box, robot, ...)
- Cost-effective alternative to 3D surveying sensors

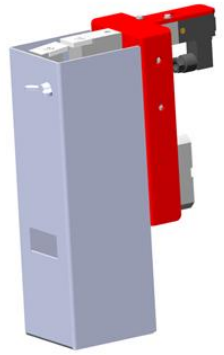


TCP testing device

- Different bores for different wear out limits:
- 1,4mm / 1,8mm / 2,2mm / 2,6mm

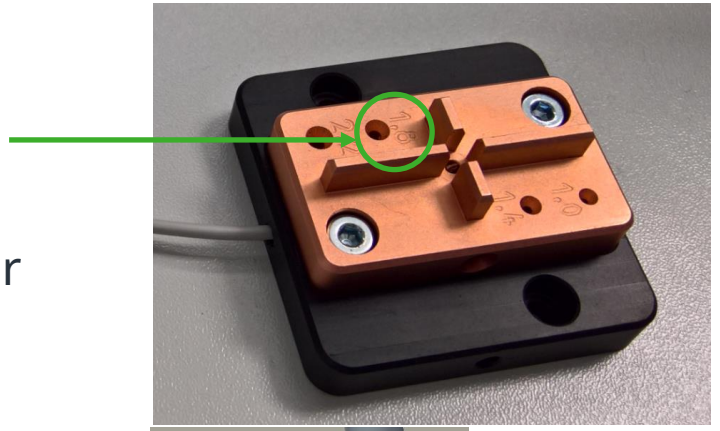


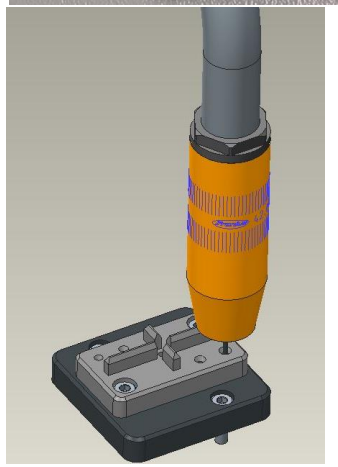
- **System requirements**
  - TPS/i with touch mode
  - Electrical wire cutter
  - Or wire cutters from Robacta CTC
  - no bending of the wire

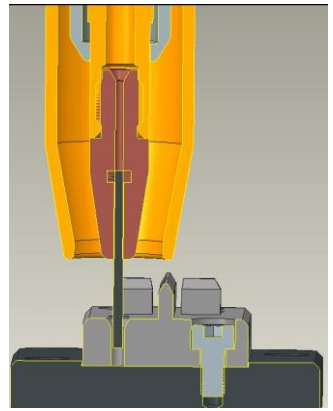


Function

- Mount new contact tip
- Adjust stickout
- Choose your correct bore (wire diameter + accepted tolerance of your production)
- E.g. wire diameter 1,0mm + tolerance +/-0,4mm = 1,8mm
- Teach the wire to the middle of the hole (0-position) – no contact between wire and plate
- Programming of two different wear out detection bores possible:
  - Warning if small bore detects a wear out (e.g. 1,0mm + tolerance +/-0,2mm = 1,4)
  - Stop if second bore detects wear out (e.g. 1,0mm + tolerance +/-0,4mm = 1,8)

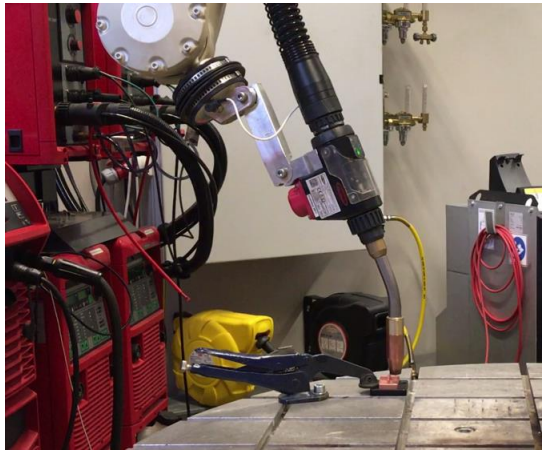






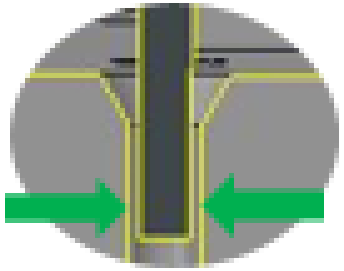
Function

TCP Test



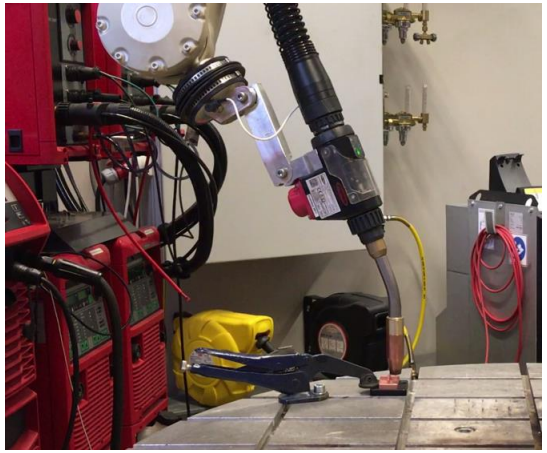
No contact

No contact



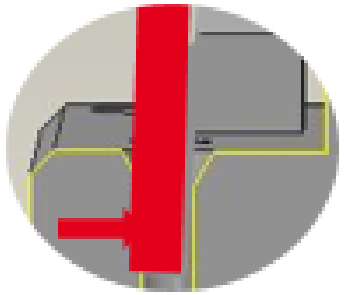
TCP OK
Production can be continued

TCP Test



Contact

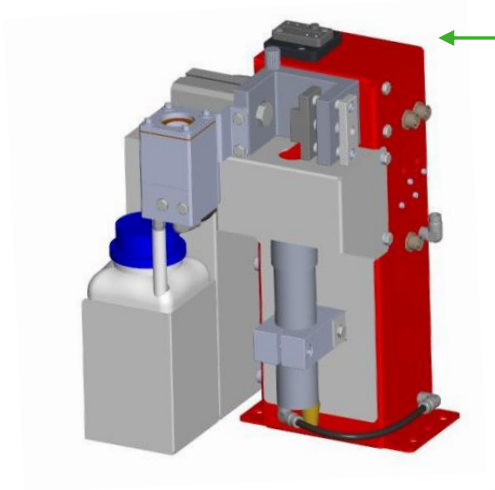
Contact

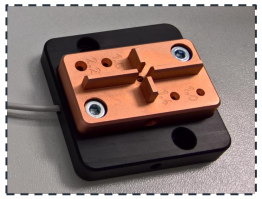


TCP not OK
Warning or contact tip change

Combination with Robacta CTC – Contact Tip Changer

- The Robacta Reamer Comfort with the TCP tool can be optimally combined with the Robacta CTC.
- Step 1: Cutting the wire
- Step 2: TCP control with TCP Tool
- Step 3: Cleaning of wear parts with Robacta Reamer Comfort
- Step 4: automated contact tip change, if a TCP deviation is detected





TCP Tool

Gas volume control

Gas volume control

- Automatic gas quantity control for checking the protective gas quantity directly at the gas nozzle
- Despite the frequent presence of shielding gas measuring devices upstream and inside a robot cell, it is not guaranteed that the desired amount of shielding gas actually arrives at the welding point.
- With the device, the protective gas quantity is queried and controlled directly at the robot gas nozzle.
- The device detects whether too much or too little shielding gas arrives at the weld seam. The safety of the welding process increases.

Gas volume control Basic

42,0411,0240

- The amount of protective gas can be measured cyclically and automatically.

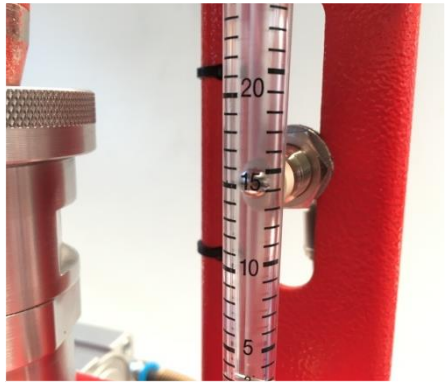
- For this purpose, the gas nozzle is moved centrally onto a replaceable, temperature-resistant seal and presses a spring-mounted aluminium cylinder approx. 1-2mm into the spring travel. Sealing is achieved by the compressive force of the spring.

Gas volume control Basic

42,0411,0240

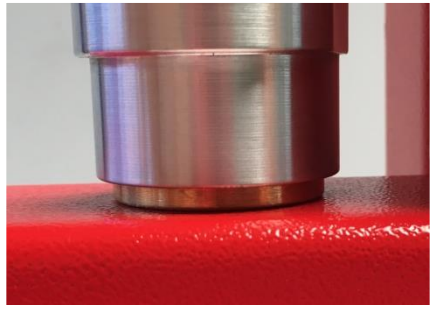
- A height-adjustable initiator is attached to a measuring tube, which is set to the desired amount of protective gas and detects a floating ball.

- Protective gas flows out of the torch during the check. If the set protective gas quantity is reached during the measurement, is not exceeded and is maintained for a period of time, the 24VDC initiator gives an input to the robot. The desired gas quantity is present. This must be programmed accordingly.

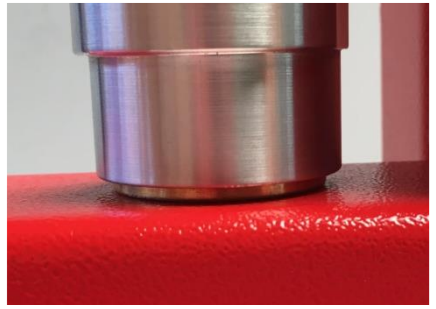


Spring travel

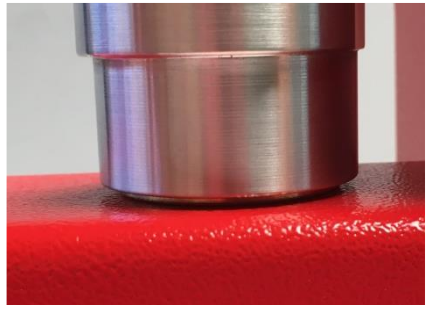
- The aluminium cylinder has a spring travel of approx. 4mm. The gas nozzle is inserted into the sealing ring and presses the aluminium cylinder approx. 1-2mm into the spring travel. Sealing is achieved by the compressive force of the spring.



Spring travel



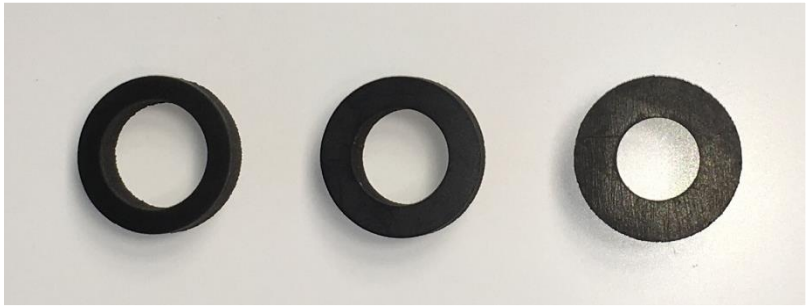
1-2mm pressed into spring



pushed through - wrong

Sealing the gas nozzle diameter

- For sealing, the gas nozzle is moved into the sealing ring in the rear conical area so that no dirt enters the unit. Three sealing rings with inner diameters of 18mm, 21mm and 24mm are available for this purpose. (included as standard)



Mounting examples

Gas volume control Basic mounted on Robacta Reamer

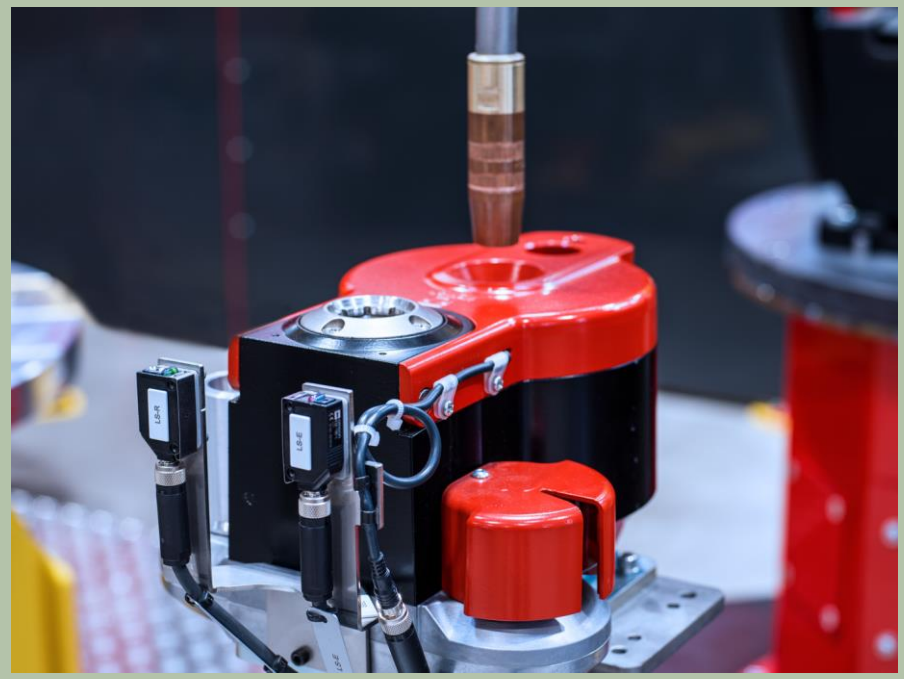
Technical data

Gas volume control Basic

Control:	24 VDC
Current:	I max. = 0,1A
Switching output:	one robot input
Hysteresis:	none, see tolerance
Tolerance to scale:	+/- 1,25 l/min.
Gas volume:	up to 20 Liters/min.
Gas types:	CO_2 and Argon

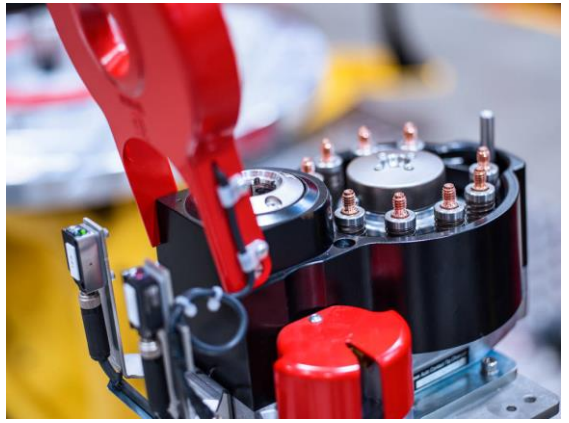
Changing

Robacta CTC Contact tip Changer

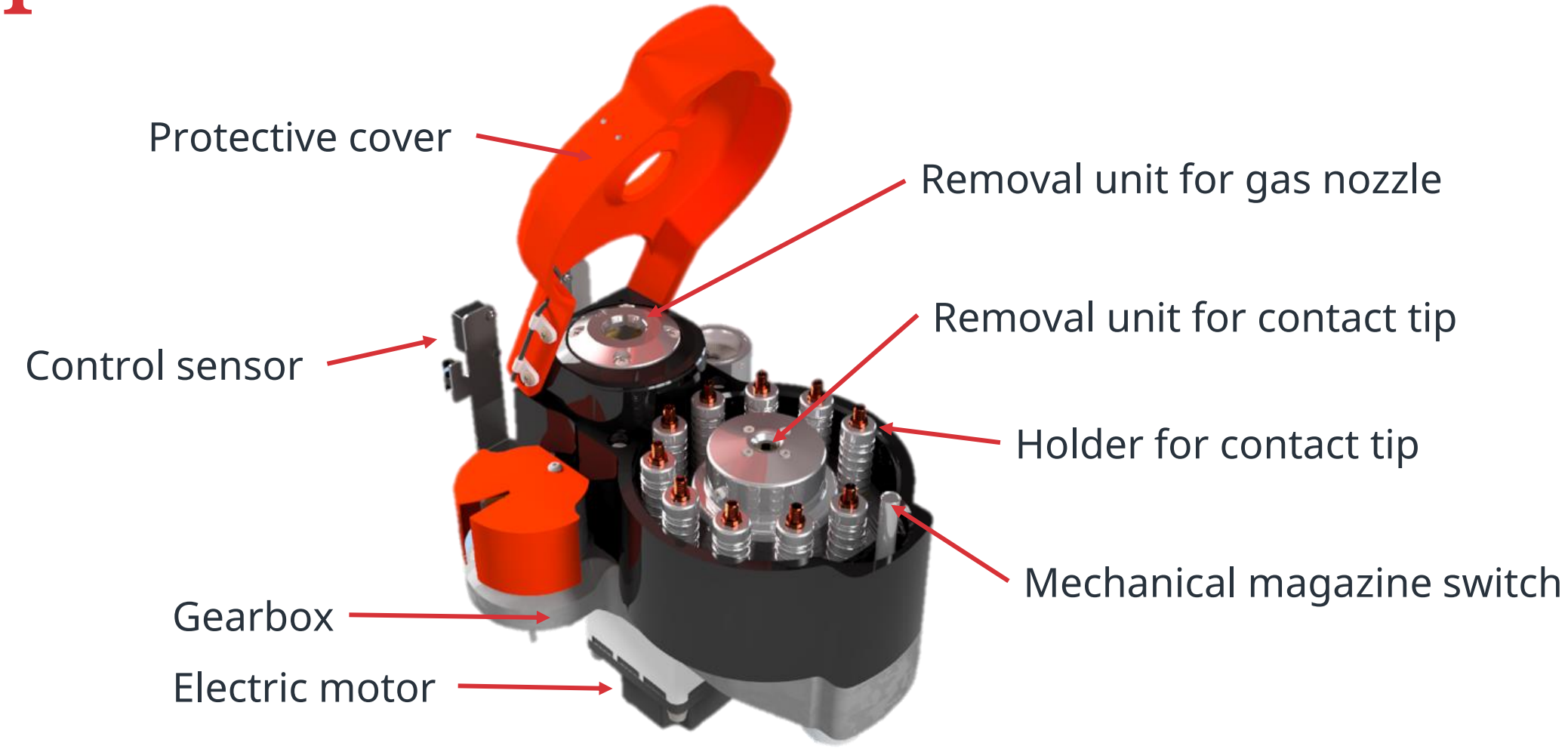


Robacta CTC – Contact Tip Changer Increased productivity

- Automated changing of contact tip
- No need to stop the production for manual replacing of contact tips
- Up to 10 contact tips can be loaded
- Changing of contact tip in around 50 seconds
- Change cycle is adapted to the contact tip wear
- Contact tip is mounted with the specific torque
- Attention: no automated changing of gas nozzle

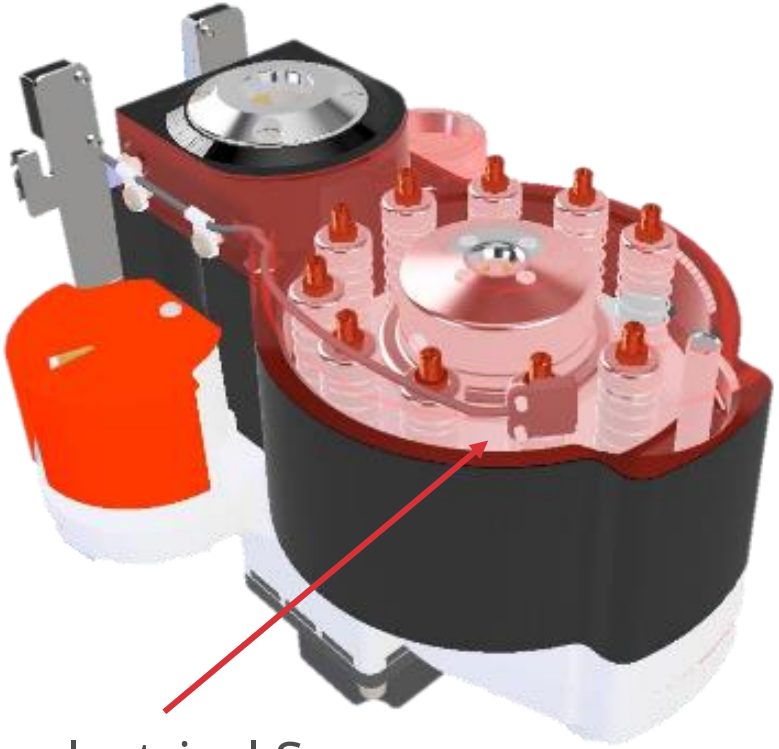


Robacta CTC – Contact Tip Changer Setup



Robacta CTC – Contact Tip Changer Setup

Robacta CTC – Contact Tip Changer Sensors



Photoelectrical Sensor:
/ Magazine check
/ Cover open

Photoelectrical Sensor:
/ Control sensor
/ Accuracy: +/- 0,5mm

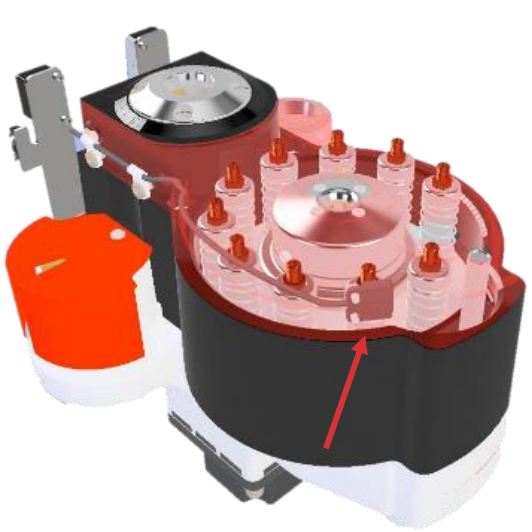
Robacta CTC – Contact Tip Changer Sensors

2 Photoelectrical Sensor ensure, that

... the contact tip change was carried out

... contact tips are in the magazin

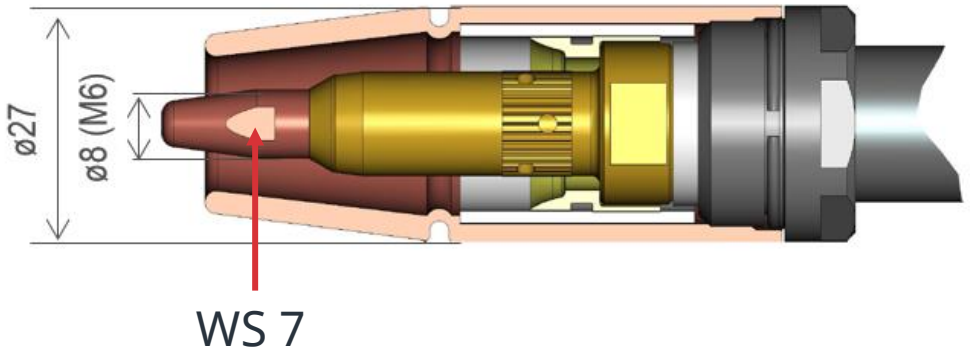
... the cover is closed to avoid collisions



Robacta CTC – Contact Tip Changer Variants

- Contact tip M6 ø8 (WS 7) / gas nozzle ø25
- Contact tip M6 ø8 (WS 7) / gas nozzle ø27
- Contact tip M8x1,5 ø10 (WS 8) / gas nozzle ø25
- Contact tip M8x1,5 ø10 (WS 8) / gas nozzle ø27

Example MTB 500S



- Removal unit for gas nozzle and contact tip are adjusted to the diameters and torques.

- Different gas nozzle lengths are compensated by using spacers

Robacta CTC – Contact Tip Changer Variants

- 4,050,001 Robacta CTC ø25 M6
- 4,050,002 Robacta CTC ø25 M8x1,5
- 4,050,003 Robacta CTC ø27 M6
- 4,050,004 Robacta CTC ø27 M8x1,5

CE certification
Supply voltage: 200-240V

- 4,050,001,800 Robacta CTC ø25 M6 US
- 4,050,002,800 Robacta CTC ø25 M8x1,5 US
- 4,050,003,800 Robacta CTC ø27 M6 US
- 4,050,004,800 Robacta CTC ø27 M8x1,5 US

UL certification
Supply voltage: 120V

Robacta CTC – Contact Tip Changer Available for following torch bodies

Gas cooled

MTB 320i G R

MTB 330i G R

MTB 400i G R

MTB 500S G R

MTB 500S G R US

Water cooled

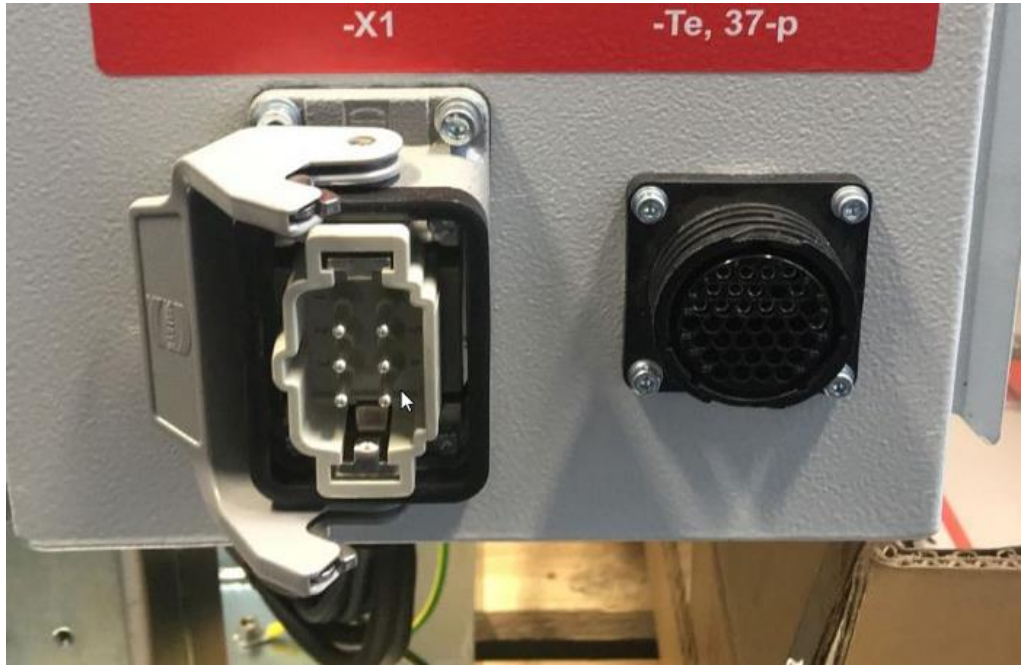
MTB 330i W R

MTB 400i W R

MTB 500i W R

Robacta CTC – Contact Tip Changer Technical data

- Supply voltage: 200-240V
- US Variants: 120V
- Control voltage: 24V
- Engine power: 60W
- Power unit: electrical
- Connectors:

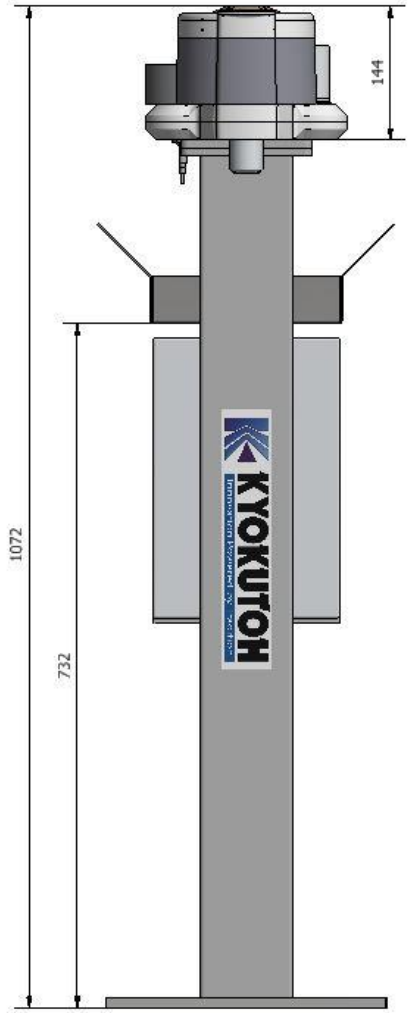


6-pin Harting plug for power supply

37-pin connector for the interface or directly to the robot

Robacta CTC – Contact Tip Changer Dimensions

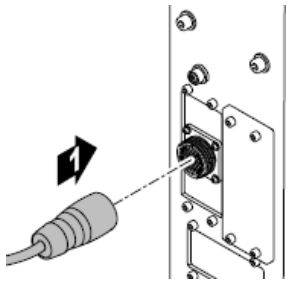
- Mounting socket 900mm is included



Robacta CTC – Contact Tip Changer Control

Variant 1)

With standard I/O



Connection cable for Standard I/O – order as option

43,0004,1141 connection cable to robot 8m
43,0004,1383 connection cable to robot 15m

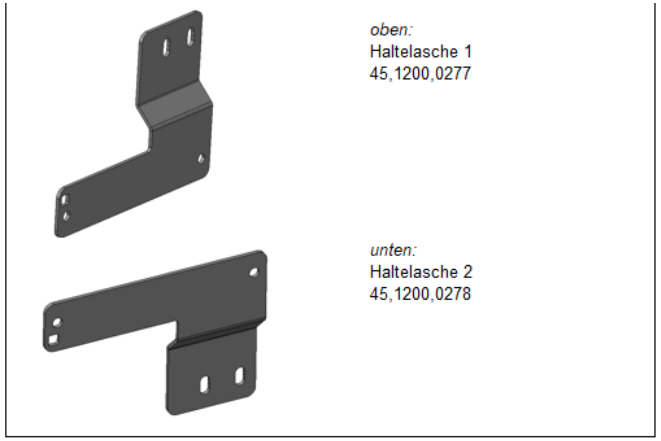
Variant 2) with Interface – order as option

4,044,060	Robacta FB 8I_8O ProfiNet	PROFINET®
4,044,061	Robacta FB 8I_8O Profibus	PROFIBUS®
4,044,062	Robacta FB 8I_8O EtherCAT	EtherCAT®
4,044,063	Robacta FB 8I_8O DeviceNet	DeviceNet™
4,044,064	Robacta FB 8I_8O EtherNET/IP	EtherNet/IP™

Holding plates and connection cable

… have to be ordered separately

Holding plates



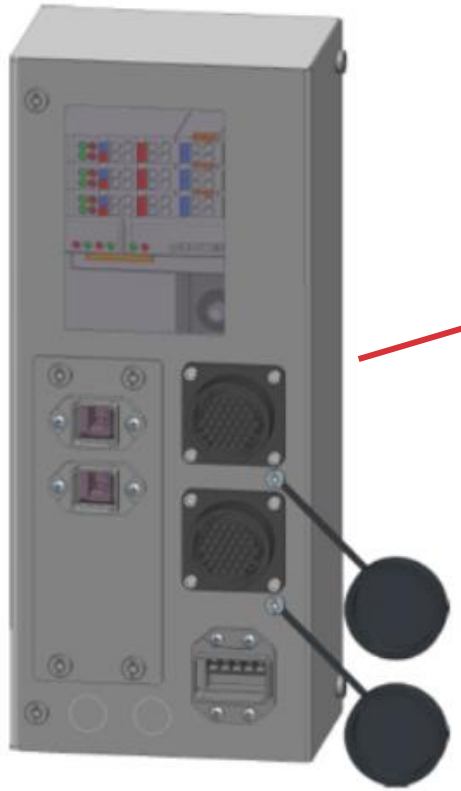
Connection cable:

43,0004,6142 Connection cable Bus CTC 0,5m
43,0004,6271 Connection cable Bus CTC 1,0m
43,0004,6272 Connection cable Bus CTC 1,5m

Dual Interface

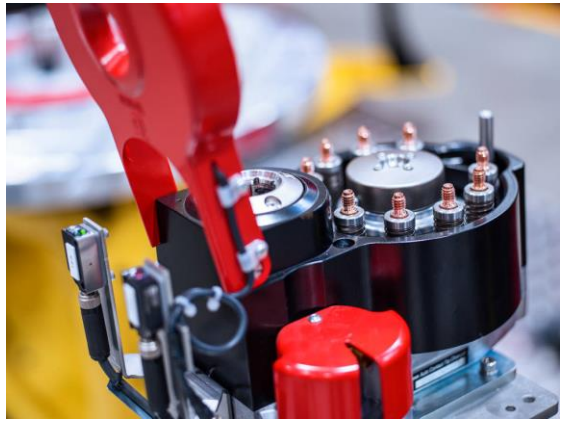
- Control two devices with one interface
- Space-saving because only one housing is required
- Lower investment costs

- Part number:
  - 4,101,345,CK OPT/i Robacta FB 16I_16O



Robacta CTC – Contact Tip Changer

- Product of company Tipman/Kyokutoh
- Exclusiv Sales from Fronius, when Fronius welding torch is used
- For WESCABA and CEE (except Russia, Belarus and Cyprus)

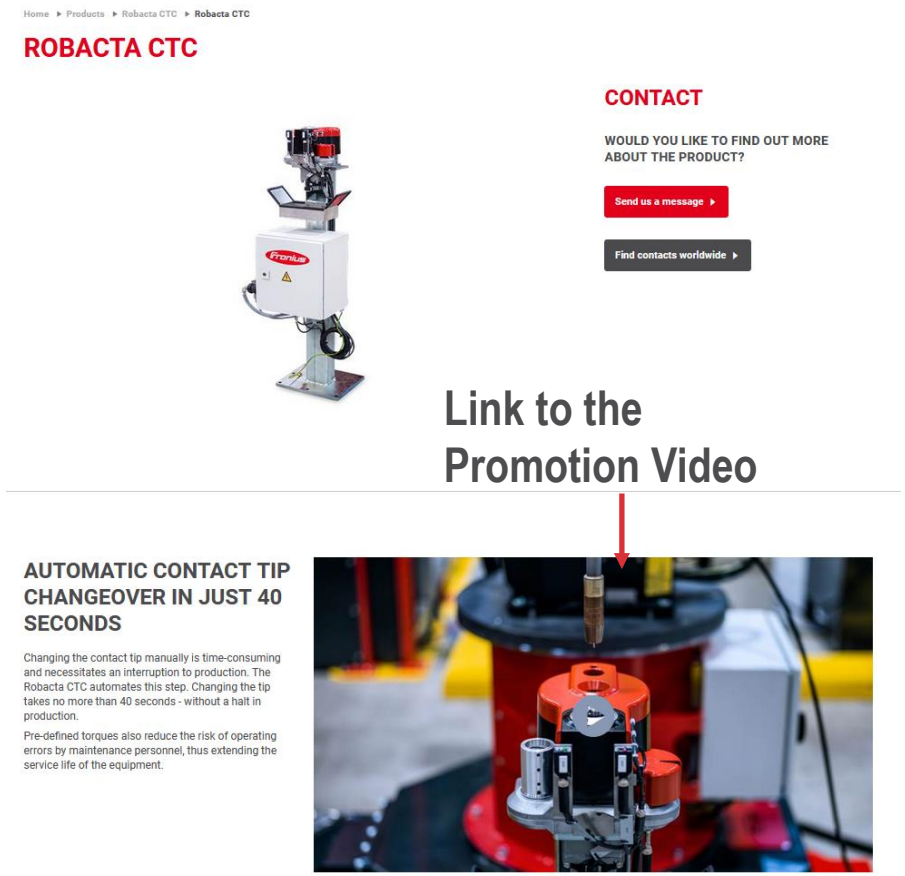


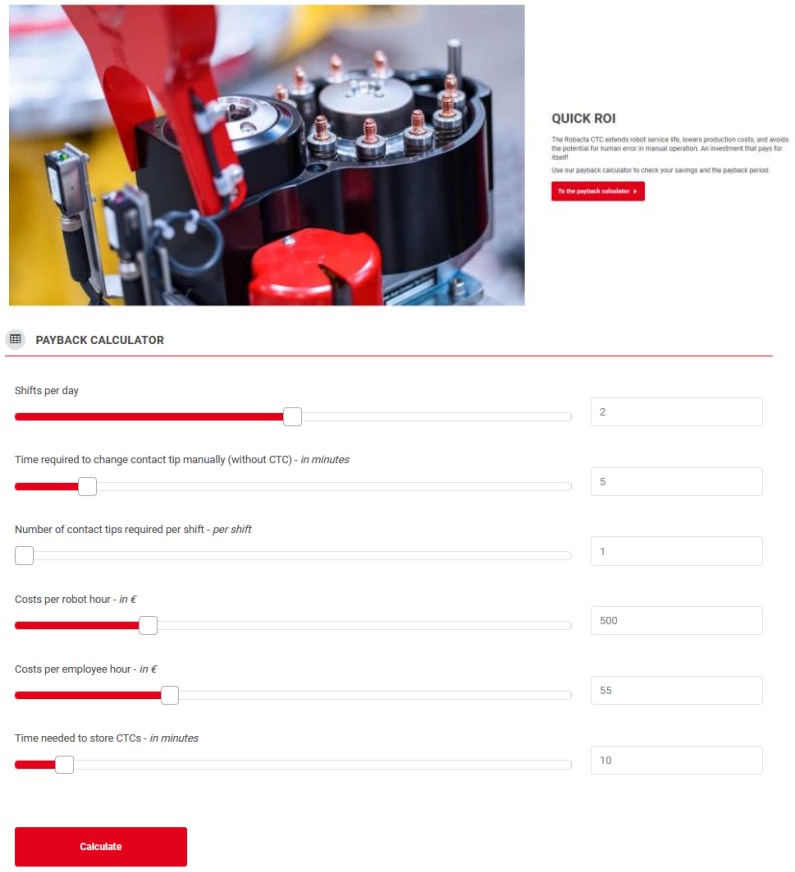
Pros and Cons Robacta TX/i, Robacta CTC

Robacta CTC	Torch body exchange station Robacta TX/i
-- No fully serviced torch body - only the contact tip is new	+ Fully serviced torch body (contact tip, gas nozzle, nozzle stock,...)
+ No one has to replace the contact tip manually	-- Manual change of contact tip in the service area
+ Defined torque - no incorrect operation	-- Defined torque must be ensured by the operator
+ Customer only has to invest in 1-2 torch bodies	-- In order to change the same number of contact tips as with the CTC, customer has to invest in 10 complete torch bodies.
	+ Changing of torch body geometry possible
	+ Also suitable for Contec

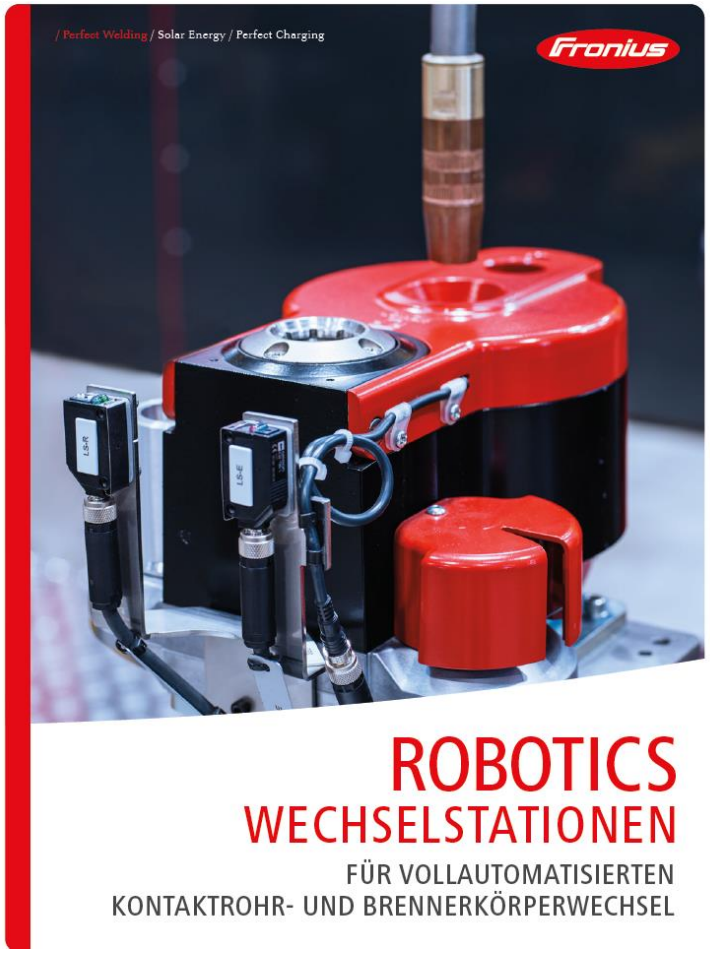
Website - with payback calculator

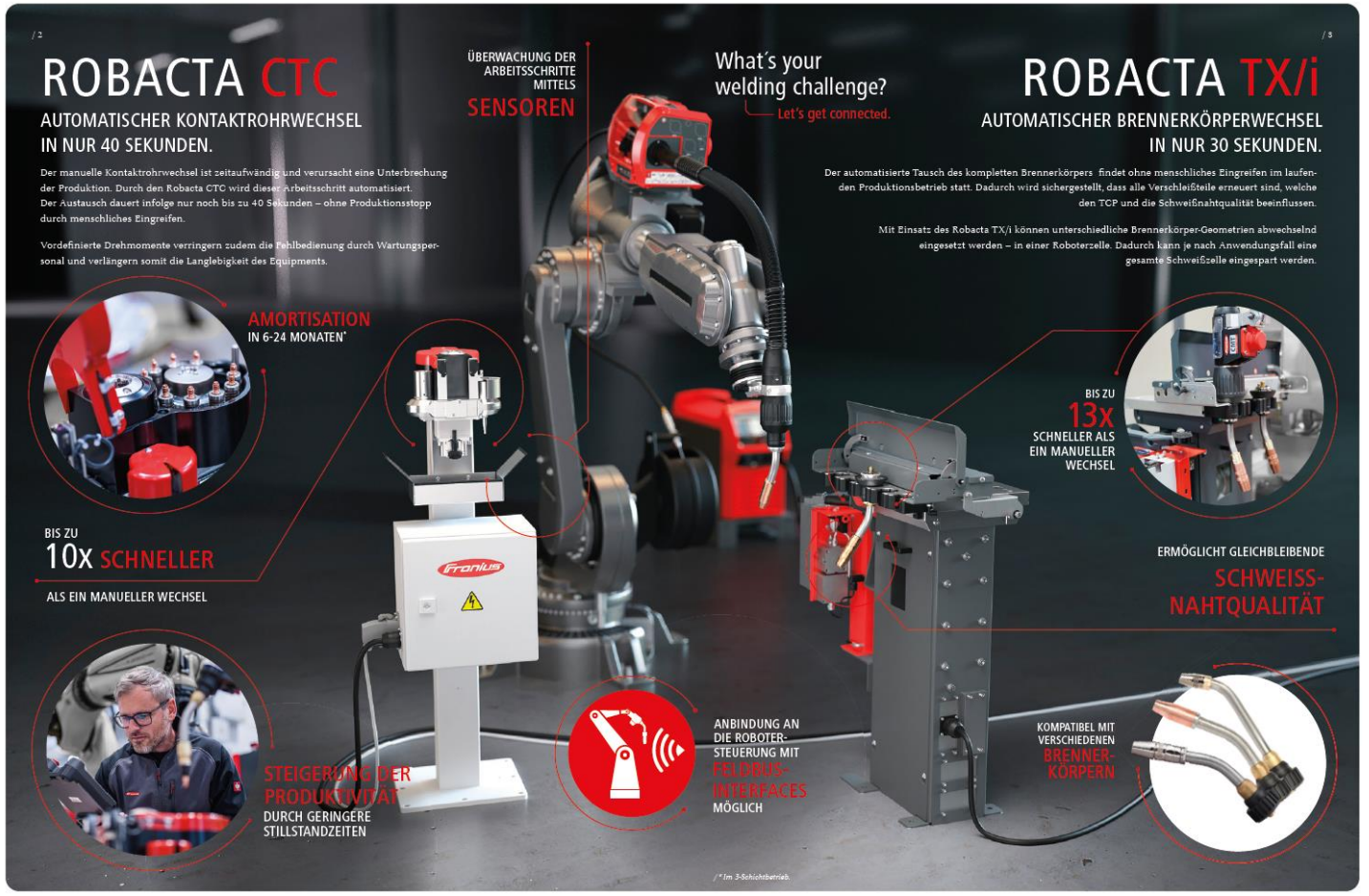
https://www.fronius.com/en/welding-technology/product-information/mig-mag-robot-welding-torches/robotics-change-stations?referer=products





Brochure


/ Perfect Welding / Solar Energy / Perfect Charging
Fronius
ROBOTICS
WECHSELSTATIONEN
FÜR VOLLAUTOMATISIERTEN
KONTAKTROHR- UND BRENNERKÖRPERWECHSEL


/ 2
ROBACTA CTC
AUTOMATISCHER KONTAKTROHRWECHSEL
IN NUR 40 SEKUNDEN.
Der manuelle Kontaktrohrwechsel ist zeitaufwändig und verursacht eine Unterbrechung der Produktion. Durch den Robacta CTC wird dieser Arbeitsschritt automatisiert.
Der Austausch dauert infolge nur noch bis zu 40 Sekunden – ohne Produktionsstopp durch menschliches Eingreifen.
Vordefinierte Drehmomente verringern zudem die Fehlbedienung durch Wartungspersonal und verlängern somit die Langlebigkeit des Equipments.
ÜBERWACHUNG DER ARBEITSSCHRITTE MITTELS
SENSOREN
AMORTISATION
IN 6-24 MONATEN*
BIS ZU
10x SCHNELLER
ALS EIN MANUELLER WECHSEL
STEIGERUNG DER PRODUKTIVITÄT
DURCH GERINGERE STILLSTANDZEITEN
What´s your welding challenge?
Let's get connected.
ANBINDUNG AN DIE ROBOTER-STEUERUNG MIT FELDBUS-INTERFACES MÖGLICH
/* Im 3-Schichtbetrieb.
/ 3
ROBACTA TX/i
AUTOMATISCHER BRENNERKÖRPERWECHSEL
IN NUR 30 SEKUNDEN.
Der automatisierte Tausch des kompletten Brennerkörpers findet ohne menschliches Eingreifen im laufenden Produktionsbetrieb statt. Dadurch wird sichergestellt, dass alle Verschleißteile erneuert sind, welche den TCP und die Schweißnahtqualität beeinflussen.
Mit Einsatz des Robacta TX/i können unterschiedliche Brennerkörper-Geometrien abwechselnd eingesetzt werden – in einer Roboterzelle. Dadurch kann je nach Anwendungsfall eine gesamte Schweißzelle eingespart werden.
BIS ZU
13x
SCHNELLER ALS EIN MANUELLER WECHSEL
ERMÖGLICHT GLEICHBLEIBENDE
SCHWEISS-NAHTQUALITÄT
KOMPATIBEL MIT VERSCHIEDENEN
BRENNER-KÖRPERN

Videos

- Promotion Video
- Link

- Video of the complete process
- Link

Teaching

- Correct teaching is very important for the device to function well during operation.

→ please check operation instruction

Configurations

- **Example configuration 1 -- Control with Standard I/O:**
- 4,050,001 Robacta CTC Ø25 M6 (Basic device, different versions available)
- 43,0004,1141 Standard I/O cable 8m (Connection cable CTC – robot Controller, 8/15m available)
- 38,0003,0017 Socket insert Harting HAN 6 (230V plug)
- 38,0003,0040 cable socket harting HAN 6 (230V plug)
- 38,0004,0044 cable gland PG21 (230V plug)

- **Example configuration 2: -- Control with fieldbus Interface:**
- 4,050,001 Robacta CTC Ø25 M6 (Basic device, different versions available)
- 4,044,060 Robacta FB 8I/8O ProfiNet (Interface Box, different versions available)
- 43,0004,6142 connection cable Bus 0,5m (connection cable CTC – Interface Box, 0,5/1/1,5m)
- 45,1200,0277 Retaining strap 1 BY
- 45,1200,0278 Retaining strap 2 BY
- 38,0003,0017 Socket insert Harting HAN 6 (230V plug)
- 38,0003,0040 cable socket harting HAN 6 (230V plug)
- 38,0004,0044 cable gland PG21 (230V plug)

Link to the configuration guide

Robacta TX/i Torch Exchange System

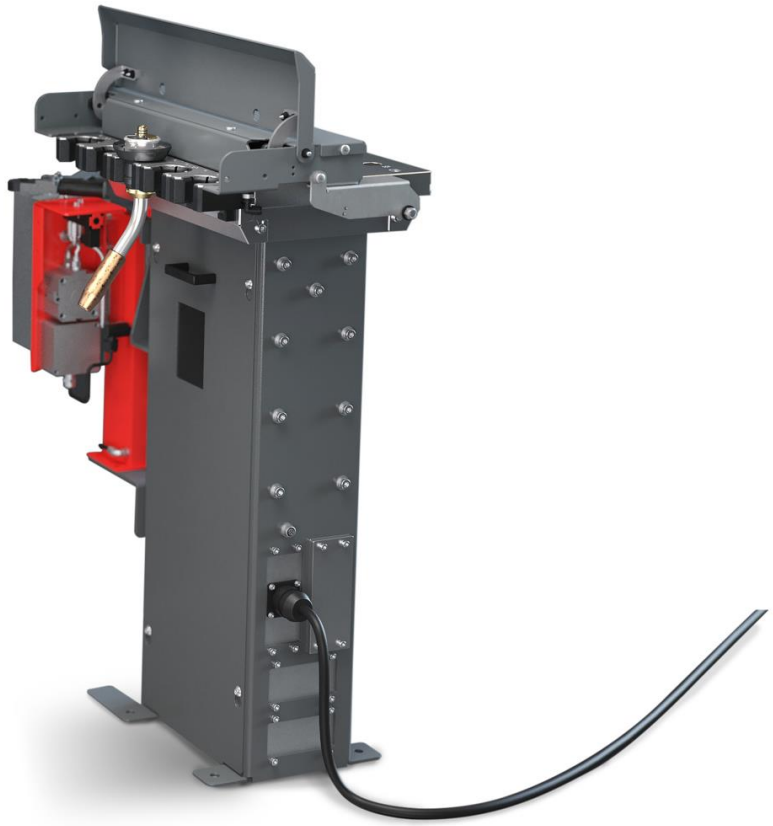
Robacta TX/i– TorcheXchange System

- Change of the torch body incl. all wearing parts in **only 30 seconds**

  → **up to 13x faster** than a manual change

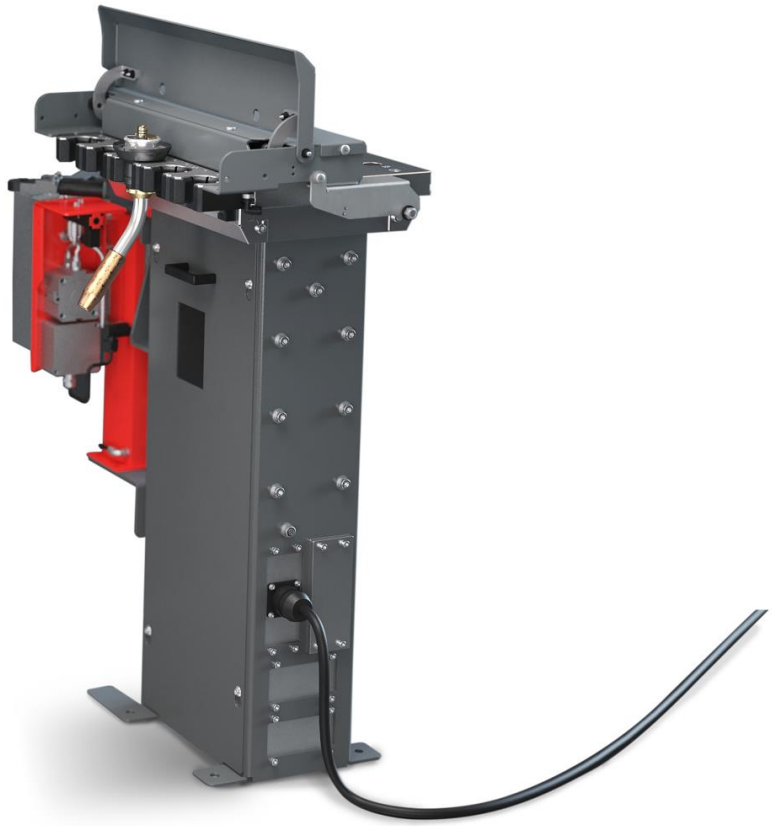
- Change of **10 torch bodies** without manual intervention during ongoing production operation

- **Up to 100 % system availability** due to timely and automated replacement of wearing parts
  - Independent of service times (shift change)
  - Defined times, e.g. during part changes
  - This enables **constant weld seam quality**

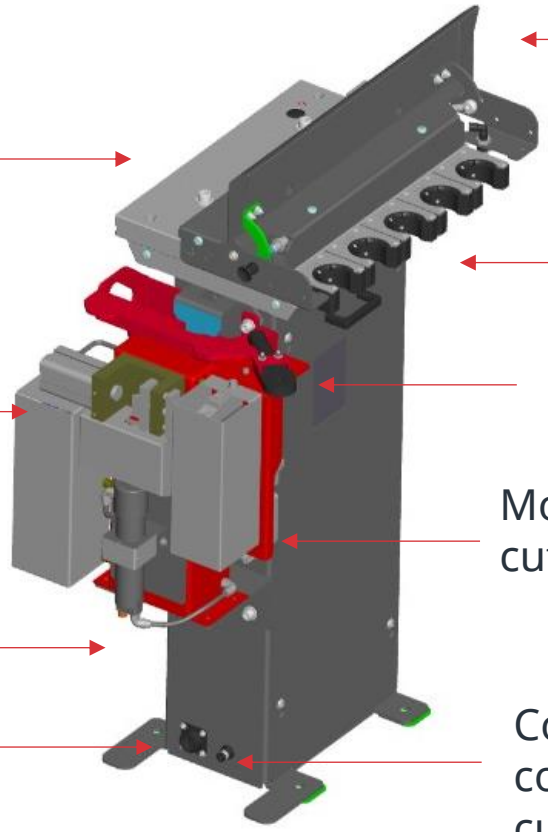


Robacta TX/i– TorcheXchange System

- **Different torch geometries** can be used alternately
- **Different components** can be welded in one robot cell
- Depending on the application, **an entire welding cell can be saved**.



Robacta TX/i– TorcheXchange System



Space for a further 5 torch body trays (optional)

Pneumatic cover to protect against contamination (optional)
Covers 5 torch bodies

5x torch body trays (3 pc. included as standard)

Mounting option for Robacta Reamer

Wire end sensor

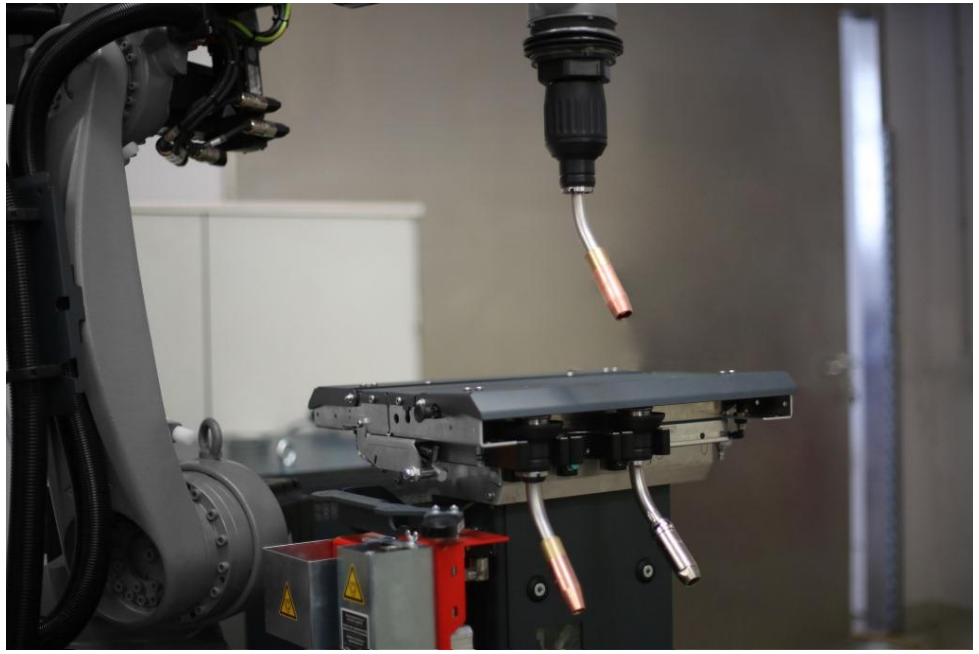
Mounting option for wire cutter

Compressed air connection

Connection I/O for wire cutter or cleaning system

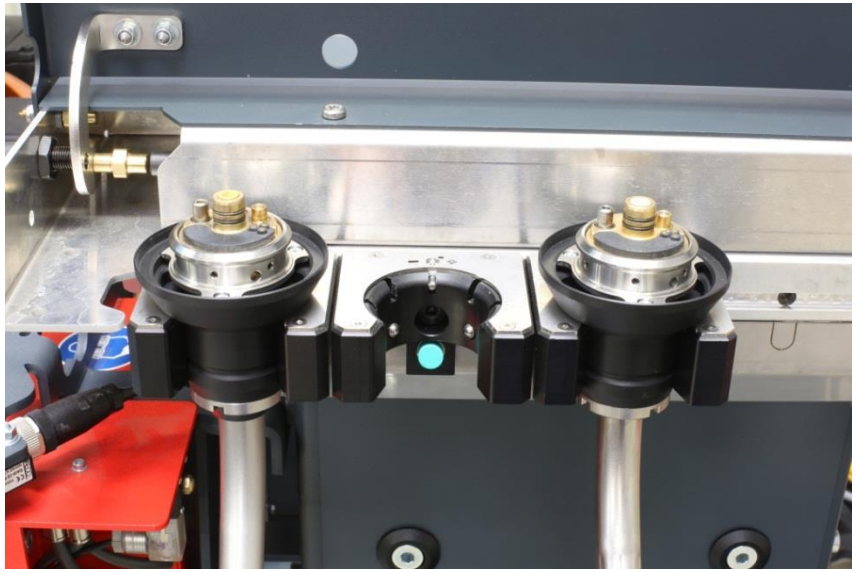
Compressed air connection for wire cutter or cleaning device

Process torch body change



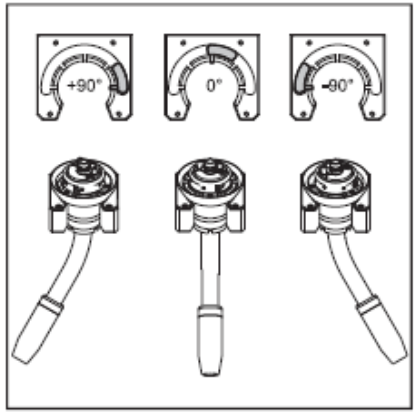
Torch body trays

Torch body trays with locating pin (for positioning the torch body)



5 different storage positions possible:

-90°, -45°, 0°, +45°, +90°



Control option = Mandatory option

Variant 1)

With standard I/O
43,0004,4261

Connection cable for Standard I/O – order as option
43,0004,1141 connection cable to robot 8m
43,0004,1383 connection cable to robot 15m

Variant 2) with interface – order as option

4,100,707

PROFINET®

4,100,127

PROFIBUS®

4,100,539

EtherCAT®

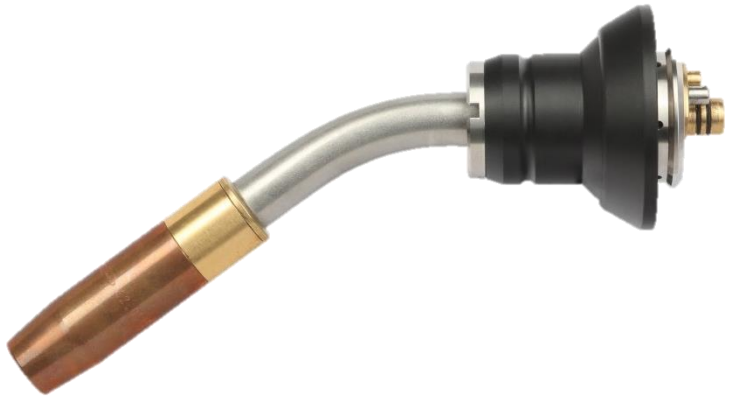
4,100,331

DeviceNet™

Blind cover
Preparation for the installation of an interface

Torch body

TXi Version ... ,636



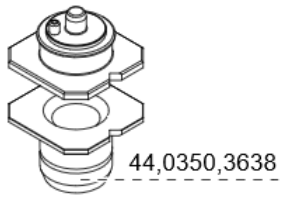
Exchange coupling

- Control for torch change works with an electrical Signal via iRob (digital Output from the Robot)
- Pneumatic activation of the span piston (> 5bar)
- Blow out High-End possible
- Mechanical unlocking possible
- Information from TorchDevice ID are guided through the coupling
- TCP-displacement: 47mm at retrofitting
- When using TX / i or WireBrake, a stronger magnetic collision box must be used.

Tool set (included as standard)

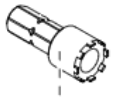
– **Content:**

– Programming aid



– Assembly tool for interchangeable coupling

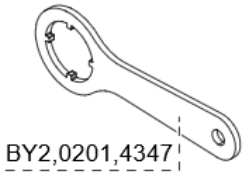
– 3 TCP tips



– Bit inserts for waterstop

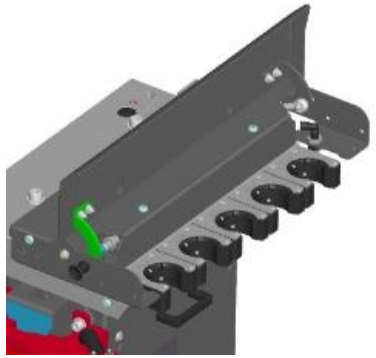
– Inner liner cutting aid

– Key for torch body



Options

- 4,100,727 Cover RA TX pneumatic for max. 5 torch bodies (order 2 pcs. if fully equipped)



- 44,0350,3634 Torch tray TX/i W/G (up to 7 additional torch trays can be retrofitted)

Options

- **44,0450,1355 electrical wire cutter**

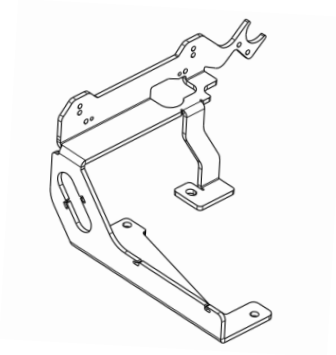
- **Cleaning device**

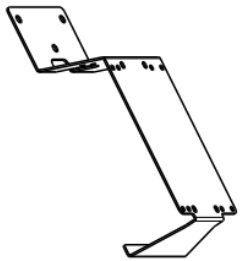
- **Connection cable**
  - 43,0004,4260 cable Reamer V / wire cutter
  - 43,0004,5262 cable TC1000/2000 / wire cutter
  - 43,0004,5714 cable Reamer V Easy / Reamer brush / wire cutter / with Harting plug 6-pole
  - 43,0004,4356 cable wire cutter TX

Options

- **Recommended option: Filter for compressed air and compensation of pressure fluctuations.**
  - 42,0510,0121 Filter-regulator AW30 F03H G3/8‘‘ incl. manifold

- **Holder for TCP Sensor**
  - BY2,0201,4185 Holding angle Advintec TX_i
  - BP2,0201,6335 Holding Evaluation unit Advintec
  - 43,0004,5303 Supply cable Leoni TCP





System requirements

- 4,100,867,IK/CK Option blow out 16 bar for wire feeder
- Oder 4,101,034,IK/CK Option blow out 16 bar for SB 60i

- **Compressed air quality**
  - Compressed air free of oil
  - Compressed air free of dust - no impurities larger than 5 µm
  - Compressed air free of water
  - Inner diameter of compressed air lines min. 5.5 mm (0.22 in.)

System requirements

- Compressed air: TX/i can be operated with a system pressure of 5 - 16 bar

- **Robacta TX/i low**
- for system pressures from 5 - 7.5 bar
- with venting throttle in the torch body coupling

- **Robacta TX/i high**
- for system pressures from 8 - 16 bar
- without venting throttle in the torch body coupling

- At a pressure of 8 bar or more, the torch body coupling must be converted from TX/i low to TX/i high. Therefore, the vent throttle is removed.

Good to know

- Automatic cooling circuit shutdown when changing is implemented from software version xxx.

Configuration example watercooled

- 4,044,024 Robacta TX 10i/G/W console
  - Mandatory option: 43,0004,4261 E-Set Standard I/O
  - Option: 4,100,727 Cover RA TX pneumatic max. 5 torch bodies
- 44,0350,5116 OPT/i MHP coupling TXi W
- 43,0004,1141 robot connection cable 8m
- 44,0450,1355 wire cutter with protective cover - electrical
- 43,0004,4256 Cable wire cutter / TX
- 42,0510,0121 Filter-Regulator AW30 F03H G3/8‘‘ incl. manifold

Tip: Article numbers which are recorded as an option for the stand console are mounted and checked

Configuration example gascooled

- 4,044,024 Robacta TX 10i/G/W console
  - Mandatory option: 43,0004,4261 E-Set Standard I/O
  - Option: 4,100,727 Cover RA TX pneumatic max. 5 torch bodies
- 44,0350,5115 OPT/i MHP coupling TXi G
- 43,0004,1141 robot connection cable 8m
- 44,0450,1355 wire cutter with protective cover - electrical
- 43,0004,4256 Cable wire cutter / TX
- 42,0510,0121 Filter-Regulator AW30 F03H G3/8‘‘ incl. manifold

Tip: Article numbers which are recorded as an option for the stand console are mounted and checked