WELDING SYSTEMS

Modular and flexible.

Weld Package Power Clutch

For robot types with outer cable dress

Solutions for: ABB • FANUC • KUKA • YASKAWA/MOTOMAN

The Power Clutch Weld Package: DCT power source • Weld process controller • Robot interface • Wire feeder• Wire guidance • Cable bundle • Control cable • Torch system • Torch necks • Consumables

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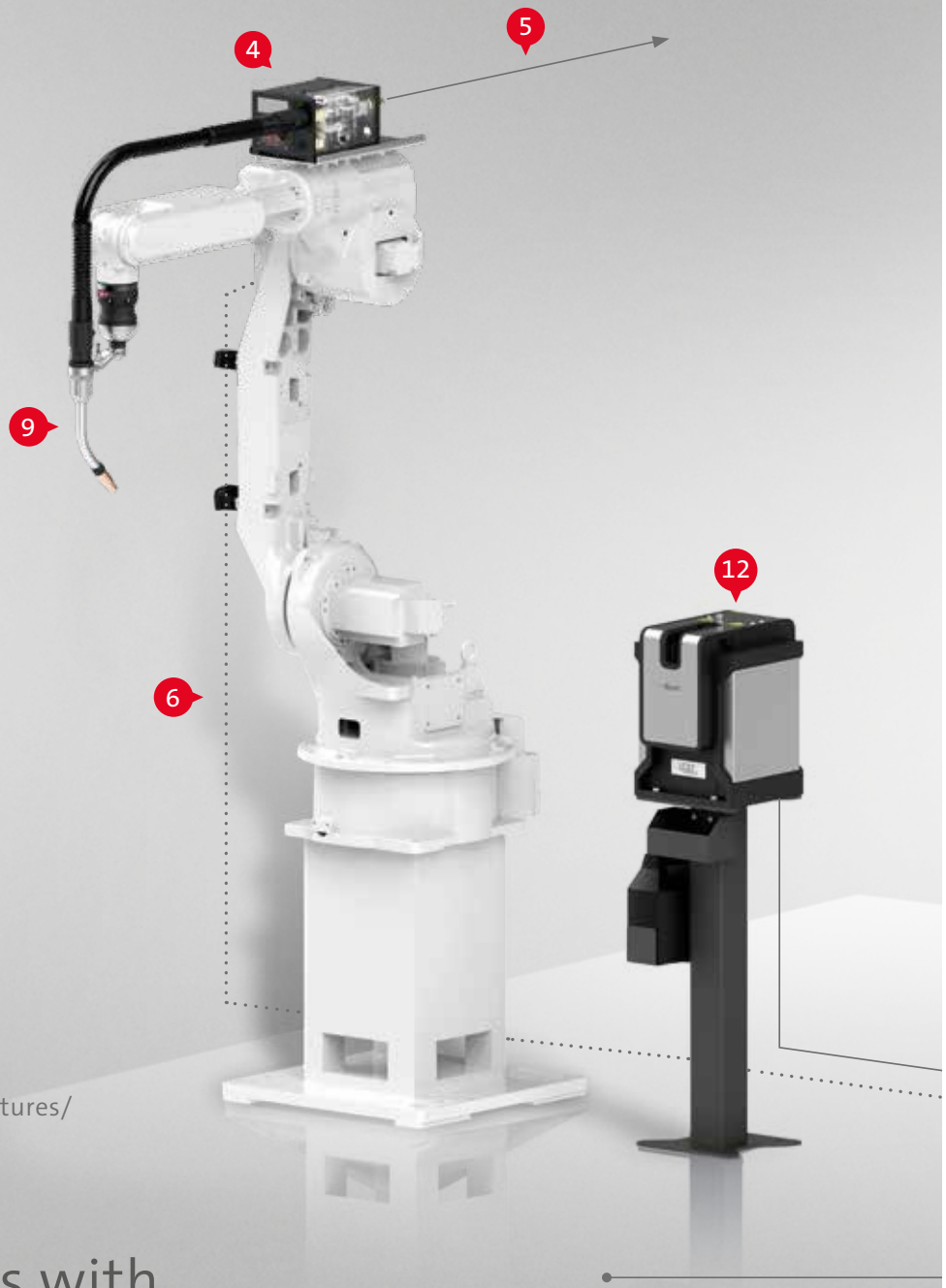
SKS Weld Package: System design



1. DCT power source
2. Weld process controller + Software
3. Robot interface
4. Wire feeder
5. Wire guidance
6. Cable bundle
7. Ground cable
8. Control cable
9. Torch system Power Clutch
10. Torch necks/ Consumables
11. Gas nozzles/ Reamer blades
12. TCP dimensions/Checking fixtures/ eReam

For installations with outer cable dress.

This brochure contains information about the SKS Weld Package, the torch system **Power Clutch**, as well as consumables and spare parts. There are various features of the welding machine components and torch systems available depending on the robot system and the welding task.

The **Power Clutch Weld Package** can be used with common industrial robots, such as **ABB, FANUC, KUKA** and **YASKAWA/MOTOMAN**.

The complete SKS Power Clutch Weld Package is designed for the following welding processes, materials and power range:

Processes:	MIG/MAG (GMAW), Pulse, MIG Brazing
Wire materials:	High-alloy steels, low-alloy steels, aluminum and copper alloys, nickel-based materials
Wire diameter:	0.8-1.6 mm
Max. power:	420 A - 60 % duty cycle/40 °C, air-cooled

1 Power source

Power source LSQ5

ALTERNATIVE

Power source LSQ3

OPTION

Accessories: Wall mount for LSQ5

Space-saving design that makes for easy cleaning/ maintenance.

LSQ5 power source with Direct Control Technology DCT

The LSQ5 ensures the optimum arc energy. It uniquely adjusts to different weld processes. Unlike conventional power sources with inverter technology, the LSQ5 with Direct Control Technology controls its switching transistors without any fixed clock frequency according to the needs of the weld process. Without any delay, the energy needed for the process is provided instantly. The flexible fine tuning is done by a central processor. The CPU continuously analyzes the weld process and current/voltage values on the basis of data obtained and optimally drives the switching transistors of the power section. This results in an extremely high efficiency and a low temperature development.
The power source can be configured with only two buttons and four LED indicators. For world-wide usage, voltages can be configured without opening the power source.

LSQ3 power source with Direct Control Technology (DCT)

The LSQ3 offers enough power reserves for special weld tasks like chassis and exhaust parts and other thin sheet metal applications.
LSQ3: 340 A at 60 % duty cycle/40 °C, 3 x 400 V
LSQ3A: 340 A at 60 % duty cycle/40 °C, 3 x 480 V

Overview of power sources

DESCRIPTION	PART-NO.
LSQ5	**77-1185-00**
LSQ3	**77-1184-00**
LSQ3A	**77-1184-10**
LSQ5-CCC	**77-1185-60**
LSQ3-CCC	**77-1184-40**

The main benefits are:

- DCT provides a speed regulation up to ten times higher compared to conventional inverter technology. This leads to excellent control behavior and shorter response times.
- The weld properties are substantially improved. Software replaces hardware: Fewer components also increase the reliability in continuous operation.

Specifications:

DESCRIPTION	LSQ5(-CCC)	LSQ3(-CCC)	LSQ3A
Performance	420 A - 60% duty cycle/40 °C (400 A)	340 A - 60% duty cycle/40 °C	340 A - 60% duty cycle/40 °C
Processes	MIG/MAG (GMWA), Pulse, MIG Brazing		
Weight	49 kg	37 kg	37 kg
Primary voltage	3 x 400 (480) V	3 x 400 V	3 x 480 V
Wall mounting	Yes (optional)	Yes (integrated)	Yes (integrated)
Conformities	CE, CSA, UL (CCC)	CE (CCC)	CE
Dimensions	450 x 400 x 540 mm	450 x 330 x 540 mm	450 x 330 x 540 mm

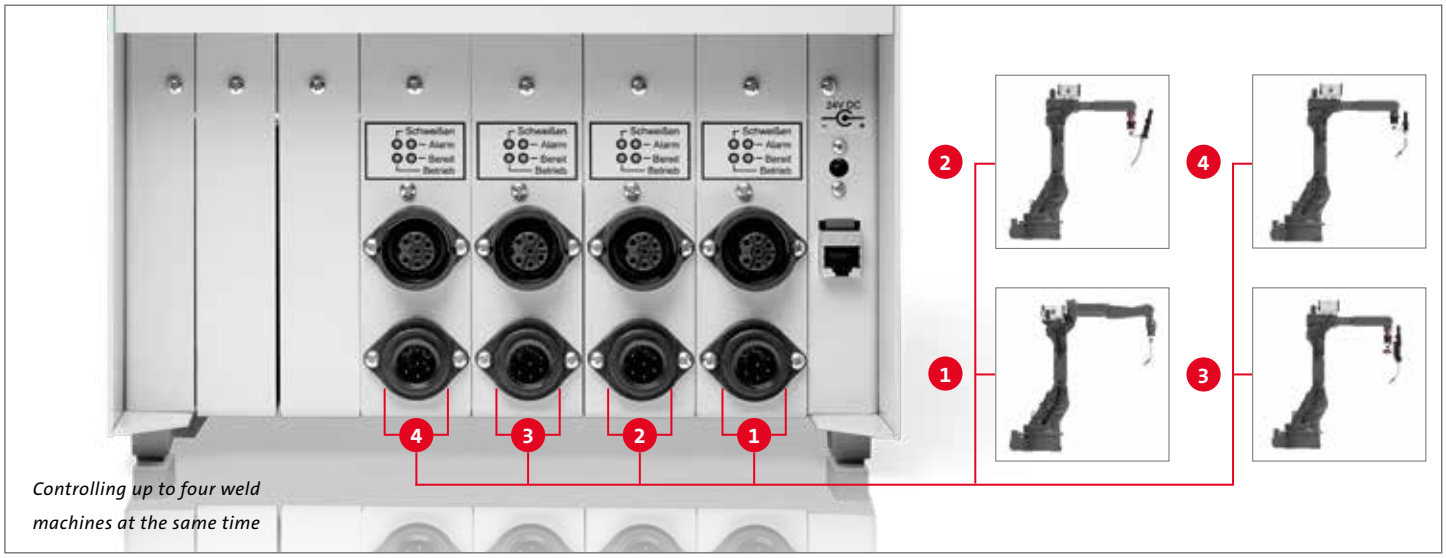
Wall mount

DESCRIPTION	PART-NO.
Wall mount for LSQ5	**77-1180-01**
Wall mount for LSQ3	**integrated**
Wall mount for LSQ3A	**integrated**

Innovative Control Concepts with Touch Screen.

With the new Q84r and the compact Q84s up to four weld machines can be controlled centrally.

The new Q84r and Q84s are equipped with a touch screen, an innovative usability concept and an advanced visualization technology for much easier operating. The user interfaces have the look and feel of the Q8Tool4 software. Individual weld process controllers are in card slots in the Q84r/s. This new weld process controller concept can host up to four weld process controller cards. Each card independently controls a weld machine. As an alternative to the Q84r/s weld process controllers, the Q80 has been developed to control a single weld machine.



Controlling up to four weld machines at the same time

2 Weld process controller

Weld process controller Q84r

Weld process controller Q84s

Please note:

The Q84r/s can be equipped with up to four weld process controller cards.

Weld process controller Q84r/s

The universal weld process controllers Q84r and Q84s calculate the optimal parameters for each welding process. Only basic data such as material, wire type, wire feed speed and type of gas must be entered. The Q84r is equipped with a 10" touch screen, the space-saving Q84s with a 7" touch screen. For wall mounting the display of the Q84s can be rotated by an angle of 180°.

- Processes/features: MIG/MAG (GMAW), I-Pulse, U-Pulse, KF-Pulse, Synchroweld, RWDE, NWDE
- Programs: 992 (x4)
- General functions: Display and saving of readings, alarms
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring, motor current, gas and water monitoring
- Easy to network via Ethernet: Traceability
- Ports: RJ45-Ethernet, SPW-Bus, SD card slot
- Remote Control/Administration: Q8Tool, VNC client

Overview weld process controller

DESCRIPTION	PART-NO. (Q84s)	PART-NO. (Q84r)
Q84r/s with one weld card	77-7410-00	77-7310-00
Q84r/s with two weld cards	77-7420-00	77-7320-00
Q84r/s with three weld cards	77-7430-00	77-7330-00
Q84r/s with four weld cards	77-7440-00	77-7340-00

Overview Q84r/s mounting kits

DESCRIPTION	PART-NO.
Bracket for Q84r for mounting onto power source LSQ5	77-7240-01
Bracket for Q84s for mounting onto power source LSQ5	77-7240-06
Bracket for Q84r for wall mounting	77-7240-02
Bracket for Q84r mounting in the robot cabinet	77-7240-05

Overview Q84r/s replacement parts and accessories

DESCRIPTION	PART-NO.
Touchpen for Q80 / Q84r/s weld process controller (replacement part)	77-7240-03
Connection cable for Q84r/s 5m with open end for external power supply (option)	77-3305-00
Plug for external power supply of Q84r/s (replacement part)	77-7240-96
SD card for Q80 / Q84r/s weld process controller (replacement part)	91-8-6
USB adapter for SD cards for Q80 / Q84r/s weld process controller	91-8-1

ALTERNATIVE

Weld process controller Q80 front view

Weld process controller Q80 back view

Weld process controller Q80

The Q80 is the alternative to the Q84r/s. It has the same functionality/features as a single weld card of the Q84r/s - optimized for a single weld machine. With the universal Q80 all parameters and values needed for the weld task can be optimally calculated.

- Processes/features/general functions see Q84r/s
- Easy to network via Ethernet: up to traceability
- Ports: RJ45-Ethernet, SPW-Bus, SD card slot
- Wall mounting capability
- Remote Control / Administration: Q8Tool

Overview weld process controller

DESCRIPTION	PART-NO.
Q80	77-7260-00

Overview Q80 mounting kits

DESCRIPTION	PART-NO.
Bracket for mounting onto power source LSQ5	77-7240-06

Overview Q80 replacement parts and accessories

DESCRIPTION	PART-NO.
Touchpen for Q80 / Q84r/s weld process controller (replacement part)	77-7240-03
SD card for Q80 / Q84r/s weld process controller (replacement part)	91-8-6
USB adapter for SD cards for Q80 / Q84r/s weld process controller	91-8-1

2 Weld process controller

ALTERNATIVE

Weld process controller Q6pw

Weld process controller Q4

Weld process controller Q4 as integrated solution into the power source

Weld process controller Q6pw and Q4

The perfect solution for local administration – the weld process controllers Q6pw and Q4 provide all basic functions of the Q80. The controllers can be administrated over the USB port with the Q8TOOL4 software. As a small and compact solution for the cost-optimized application, the Q4 is integrated into the power sources LSQ3 or LSQ5.

- Processes/features: MIG/MAG (GMAW), I-Pulse, U-Pulse, KF-Pulse
- Programs: 186
- General functions: Display and saving of readings, alarms
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring,motor current, gas and water monitoring
- Ports: RS232 (Q6pw only), SPW-Bus (Q6pw only), USB

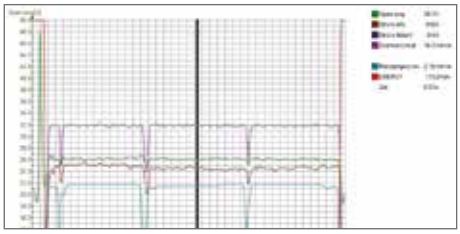
Overview weld process controller

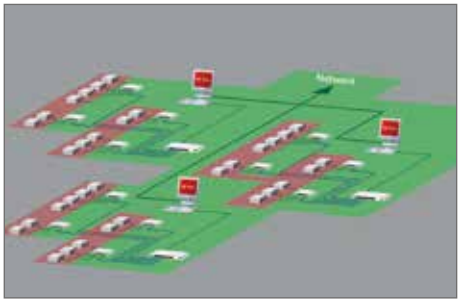
DESCRIPTION	PART-NO.
Q6pw	**77-7230-00**
Q4/LSQ5	**77-1185-20**
Q4/LSQ3	**77-1184-20**
Q4/LSQ3A	**77-1184-30**
Q4/LSQ5-CCC	**77-1185-21**
Q4/LSQ3-CCC	**77-1184-21**

Please note:

The Q4 weld process controller is integrated into the front of the power source and is delivered with the power source.

2a Software/IT





Q8Tool software

The Q8Tool software provides accurate and comprehensive process monitoring. The user can store weld parameters for documentation on a PC and/or administrate them. It offers basic functions such as reading, modifying and documenting of weld parameters. Additionally, new weld parameters can be created and transferred to the universal weld process controllers. The weld data is portable and the installation of further control units on new equipment is easy. Also, the software allows reading and exporting of measurements and alarms. Graphical and numerical recording of measures helps defining and optimizing parameters for new parts. Users have a powerful tool for analyzing and documenting their weld results.

Network

The weld process controller units can easily be networked via Ethernet ports: Time savings through centralized administration of all controllers within the corporate network. There is a central backup of all welding parameters, management of user rights and access, process monitoring up to traceability. The Q8Tool software is provided free of charge with the weld process controller. No additional hardware or software is required.

Perfect integration.

Interfacing all industrial robot types.

A

B

With the universal interface solution, weld process controllers can be connected with all industrial robot types. Users basically have two options for connecting robots with weld process controllers: The connection can be realized with the interface UNI 5 or by integrating into a given field bus environment with a field bus solution.

Standard application

Robot controllers or overall system controllers (e.g. PLC) use digital or analog signals to communicate with the weld process controller. The interface UNI 5 translates these signals for the welding machine. With just one interface, a variety of digital encodings and analog levels can be processed. The interface UNI 5 comes with a preconfigured connection kit for easy installation.

Field bus application

Field bus systems exchange signals via serial communication. The field bus master, usually the robot controller or overall system controller, bundles and processes the signals of the connected field bus, including the welding machine. Standard field bus systems are e.g., Interbus-S, Profibus DP or DeviceNet. The field bus interface FB5 translates the field bus signals for the welding machine using a standardized protocol. It makes no difference which type of field bus system is used. The signals are always at the same place on the field bus. This makes the preparation of the robot or system controller much easier.

3 Robot interface

A

Robot interface UNI 5

The interface connects the welding equipment with all industrial robot types. With its high degree of standardization, the UNI 5 is the perfect choice for connecting the weld process controller (e.g. Q80) with an industrial robot. The UNI 5 comes preprogrammed and configured for different robot types. Configuration to a particular robot type is handled easily by programming the interface with two buttons for the given robot type.

Overview of robot interfaces

DESCRIPTION	PART-NO.
For robot type-ABB	
UNI 5A for IRC5	**77-8011-08**
For robot type-FANUC	
UNI 5A for RJ3iC	**77-8001-84**
For robot type-KUKA	
UNI 5A for KR C2	**77-8011-08**
For robot type-YASKAWA/MOTOMAN	
UNI 5C (Synchroweld over RS232) for NX 100 / DX 100 / DX 200	**77-8013-00**

ALTERNATIVE

B

Field bus application

Various field bus types are supported (e.g. Profibus DP, DeviceNet). The field bus interface has drilled bore holes for flexible mounting within the weld cell. Two additional mounting kits provide easy installation at the power source or into the cabinet. Additionally, external power can be connected to the interface. More details on solutions for the specific field bus types are available on request.

Overview FB5 interfaces

DESCRIPTION	PART-NO.
Interbus-S (copper line)	**77-3-1**
Profibus DP	**77-3-2**
DeviceNet	**77-3-3**
EtherCAT	**77-3-4**
Profinet IRT (copper line)	**77-3-5**
Profinet IRT (LWL 2 ports)	**77-3-6**
Interbus-S (LWL FSMA)	**77-3-7**
Ethernet/IP	**77-3-8**

Cabinet mounting

DESCRIPTION	PART-NO.
Mounting kit for cabinet	**77-1182-02**
Control cable with bracket	**77-3102-02**

Power source mounting

DESCRIPTION	PART-NO.
Mounting kit for power source	**77-1182-03**

Optional power supply (24V)

DESCRIPTION	PART-NO.
Connection cable 2.0 m (with open end)	**77-1182-04**

OPTION

SYNCHROWELD

Synchroweld unites the weld system and robot by a communication protocol (RWDE). This technology allows the weld system to get the actual robot speed and automatically adjusts the weld parameters accordingly. The result is a constant energy per unit length. At the same time, the programming effort can be significantly reduced.

Please note:

Further information on Synchroweld with ABB, Fanuc, KUKA, Yaskawa/Motoman can be found in our Synchroweld brochure.

Strong, lightweight and precise.

The PF5 wire feeder.

Smaller and with less weight accompanied by improved efficiency over conventional wire feeders the PF5 goes along with the steady development of arc welding robots.

ALTERNATIVE

PF5 with integrated gas flow sensor

Power Feeder PF5

Modern motor, gear and control technology provide a strong performance and highest possible precision. The robust plastic housing is electrically insulated. As a "lightweight" the PF5 is the perfect choice for the new generation of robots with inner cable dress.
The industrial proven Power Feeder PF5 is available with an additional monitoring functionality: an integrated gas-flow sensor. The weld process controller displays the gas flow values, and can also be triggered to an alarm, in case of a non-defined gas flow rate.

Overview PF5

DESCRIPTION	PART-NO.
PF5 L	10-2-8
PF5 L with integrated gas flow sensor	10-2-108

Technical data

Weight	3.8 kg
Motor	70W
Wire feeding speed	2.5 - 25 m/min
Roll diameter	0.8 - 1.6 mm

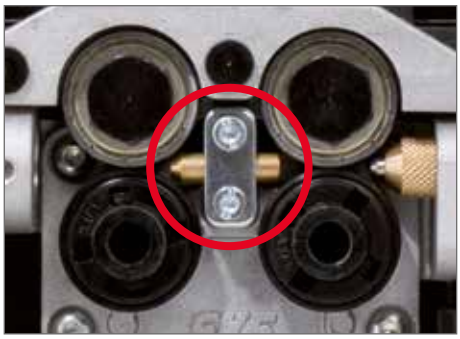
Shielding Gas Saver

The benefit of the shielding gas saver is its pre-regulated working pressure of 1.2 bar / 17 psi (common 4.5 bar / 65 psi). Therefore the ram pressure is reduced, i.e. there are key benefits of the shielding gas saver at ignition of the welding torch and an improved gas saving. The shielding gas saver ensures a constant gas flow during the welding task.

Shielding Gas Saver

DESCRIPTION	PART-NO.
Shielding Gas Saver	93-62-5

4 Wire feeder



Center guides

Available in two versions: For steel or aluminum wires

Overview of center guides

DESCRIPTION	PART-NO.
Wire-ø mm for steel wire	12-2-1-15
Wire-ø mm for aluminum	12-2-1-19

Drive roll for wire feeder

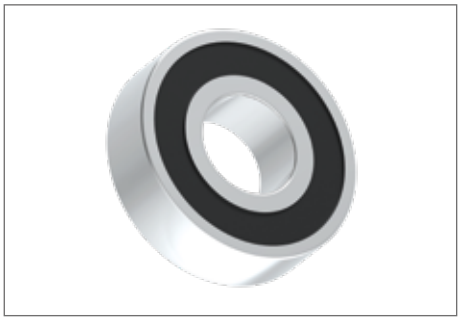
For wire diameters 0.8-1.6 mm (V-groove for steel and U-groove for aluminum)

Overview of four roller drive rolls

DESCRIPTION	PART-NO.
Wire-ø 0.8 mm, V-groove	12-2-3-08
Wire-ø 0.9 mm, V-groove	12-2-3-09
Wire-ø 1.0 mm, V-groove	12-2-3-10
Wire-ø 1.2 mm, V-groove	12-2-3-12
Wire-ø 1.4 mm, V-groove	12-2-3-14
Wire-ø 1.6 mm, V-groove	12-2-3-16
Wire-ø 1.2 mm, U-groove	12-2-3-112
Wire-ø 1.6 mm, U-groove	12-2-3-116

Please note:

Two drive rolls per system are needed.



Pressure roll

Pressure roll for wire feeder.

Pressure roll

DESCRIPTION	PART-NO.
Pressure roll	12-2-3-0
Locating bolt for pressure roll	12-13-5
Pressure roll for aluminum wire, U-groove 1.2 mm	12-2-5-112
Pressure roll for aluminum wire, U-groove 1.6 mm	12-2-5-116
Locating bolt for pressure roll U-groove	12-2-1-23
Knurled screw for pressure roll U-groove	12-2-1-24

Please note:

Two pressure rolls and two locating bolts are needed per system.

Wire feeder brackets

Wire feeder bracket for PF5 with holes and screws for installation

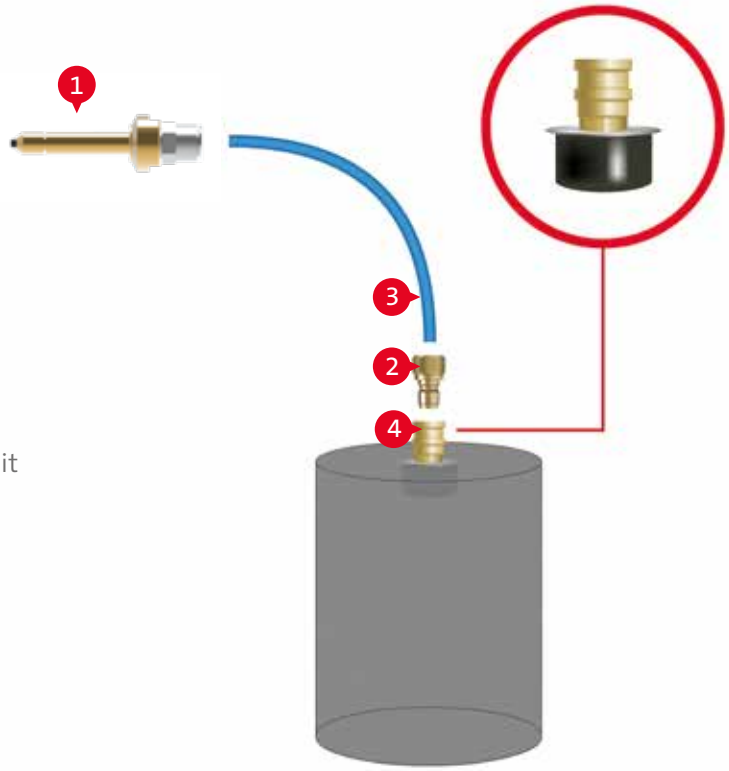
Overview of wire feeder brackets

DESCRIPTION	PART-NO.
For robot type-ABB	
IRB 1600	14-2-3
IRB 2400	14-2-4
IRB 2600	14-2-7
For robot type-FANUC	
M10iA/7L	on request
M10iA/8L	on request
M10iA/12	14-4-2
M10iA/12S	on request
For robot type-KUKA	
KR6 R1820	14-3-2
KR8 R1620	14-3-2
KR8 R2010	14-3-2
KR10 R1420	14-3-2
For robot type-YASKAWA/MOTOMAN	
HP 20F	14-1-16
MH 6F	14-1-16
MH 12	14-1-26
MH 24	14-1-16

Please note:

Wire feeder brackets for further robot types are available on request.

5 Wire guidance polymer for aluminum wires



1. Wire inlet body with quick coupling
2. Connection nipple for polymer conduit
3. Polymer conduit
4. Drum connector with ceramic inlay

Please note:

Further information can be found in our brochure "Wire guidance" (DOC-0193EN).

With the new SKS polymer guidance, the high efficiency of the whole system extends up to the drum.

Advantages of polymer wire guidance

- Extraordinary good glide properties reduces motor load
- Minimized abrasive wear and reduced dirt in wire feeder and torch system
- Lightweight design and a high inherent stability for easy installation
- Length can be freely chosen by the customer
- Cost optimized exchange: only the polymer conduit must be changed, connectors are reuseable.
- Optimized materials for longer life and reduced downtimes

Wire inlet body, Connection nipple, Polymer conduit and Connection for wire drum

Wire inlet body with quick coupling

DESCRIPTION	PART-NO.
Wire Inlet body with quick lock and polymeric inlet	10-2-0-63
Polymeric inlet (spare part)	10-2-0-63-2
Inset for aluminum wire	10-2-0-57-3

Connection nipple for polymer conduit

DESCRIPTION	PART-NO.
Connection nipple	44-40-3

Polymer wire conduit

DESCRIPTION	PART-NO.
Polymer wire conduit, blue, per meter	44-9-1

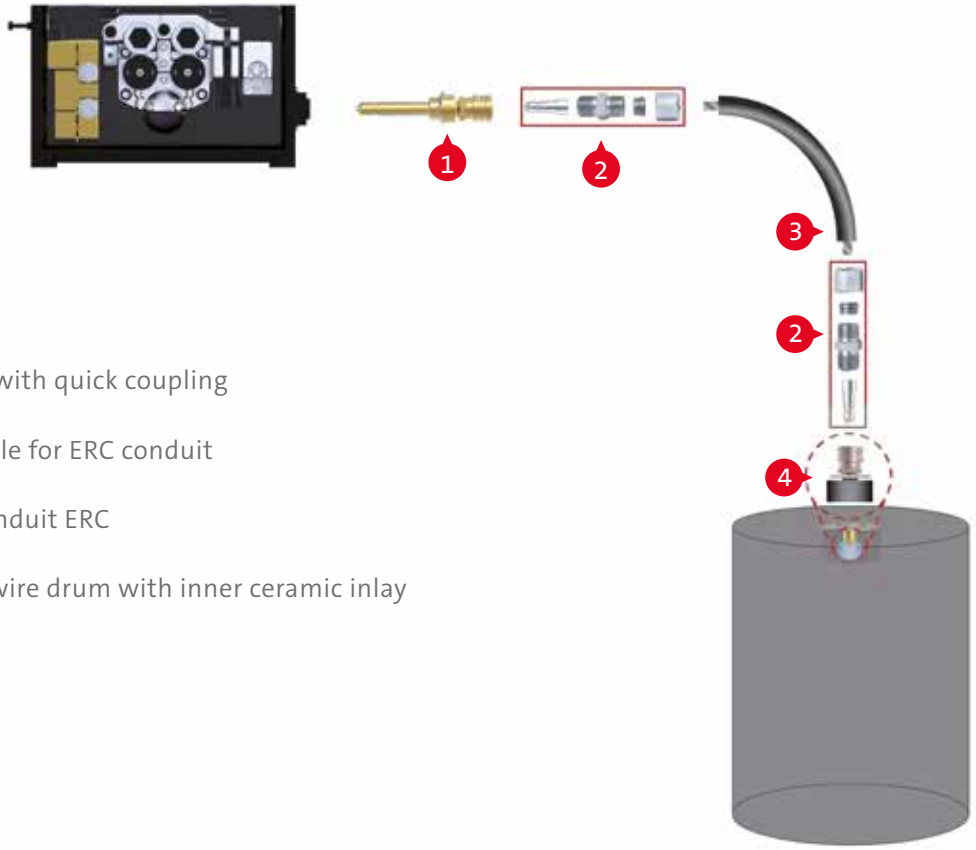
Connection for wire drum

DESCRIPTION	PART-NO.
Drum connector with ceramic inlay	44-40-1

OPTION

DESCRIPTION	PART-NO.
Strain-Relief for wire guidance	14-10-6

5 Wire guidance ERC for steel and stainless steel wire materials



1. Wire inlet body with quick coupling
2. Connection nipple for ERC conduit
3. Polymer wire conduit ERC
4. Connection for wire drum with inner ceramic inlay

With the ERC wire guidance for steel/stainless steel, the high efficiency of the whole system extends up to the drum.

Advantages

- Very good inherent stability due to thick polyethylene insulating jacket
- Good sliding properties
- Reduced wear by using flat wire for monocoil core
- Suitable for steel and stainless steel wires

Wire guidance ERC

DESCRIPTION	PART-NO.
Wire inlet body with quick coupling	10-2-0-61
Connection nipple for ERC conduit	44-70-2
Polymer wire conduit ERC / per meter	44-70-1
Drum connector with ceramic inlay	44-40-1

OPTION

DESCRIPTION	PART-NO.
Strain Relief for wire guidance	14-10-6
Strain Relief spring for wire guidance	44-70-3

Please note:

Two connection nipples are necessary.

ALTERNATIVE

Wire inlet bodies for additional systems

Beside the wire inlet body for the SKS wire guidance, inlet bodies for additional systems are available.

Overview of wire inlet bodies for additional systems

DESCRIPTION	PART-NO.
M10 with internal thread for ESAB	10-2-0-50
with 9.6 mm bore hole	10-2-0-52
with 13 mm bore hole	10-2-0-53
with PG9 thread	10-2-0-56
with 1/4" internal thread	10-2-0-60

Aluminum inlets for wire inlet bodies

DESCRIPTION	PART-NO.
for types 50/52/53/54/59/60/61	10-2-0-57-3
for types 51/55/56	10-2-0-58-3

6 Cable bundles

Cable bundles: Power source to wire feeder PF5

Coaxial power cable 72 mm² with internal gas flow, control cable L700, disconnect cable, corrugated tube and cable holder. Air-cooled version.

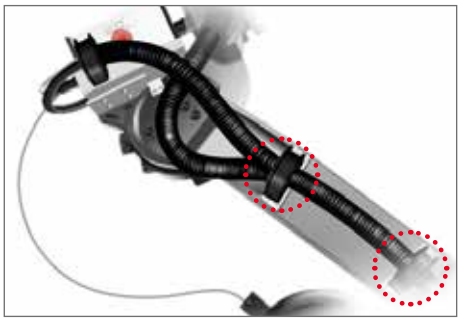
Overview of cable bundles

Length	PART-NO.
5 m	20-4-5
7 m	20-4-7
10 m	20-4-10

Please note:

Further lengths available on request

6a Cable bundles: Clamping set



Mounting cable bundle: Clamping set

Provides perfect installation of the cable bundle for all different robot types. Undesired cable movements are prevented. This results in higher lifetime.

Overview of cable bundle clamping sets

DESCRIPTION	PART-NO.
For robot type-ABB	
IRB 1600	91-3-0-41-10
IRB 2400	not available
IRB 2600	91-3-0-41-11
For robot type-KUKA	
KR6 R1820	91-3-0-41-17
KR8 R1620	91-3-0-41-17
KR8 R2010	91-3-0-41-12
KR10 R1420	91-3-0-41-17

DESCRIPTION	PART-NO.
For robot type-FANUC	
M10iA/7L	91-3-0-41-6
M10iA/8L	91-3-0-41-15
M10iA/12	91-3-0-41-6
M10iA/12S	on request
For robot type-YASKAWA/MOTOMAN	
HP 20F	91-3-0-41-4
MH 6F	91-3-0-41-3
MH 12	91-3-0-41-14
MH 24	91-3-0-41-14

ALTERNATIVE

DESCRIPTION	PART-NO.
Mounting for WF-bracket for external guided cable bundle	14-10-10

Please note:

Clamping sets for further robot types are available on request.

Dividable cable bundles

ALTERNATIVE

PARTS OF THE DIVIDABLE CABLE BUNDLE

Connection from power source to connection bracket

LENGTH	PART-NO.
5 m	20-7-5
7 m	20-7-7
10 m	20-7-10

Connection bracket

DESCRIPTION	PART-NO.
Connection bracket	20-6-0-3

Connection from connection bracket to wire feeder PF5

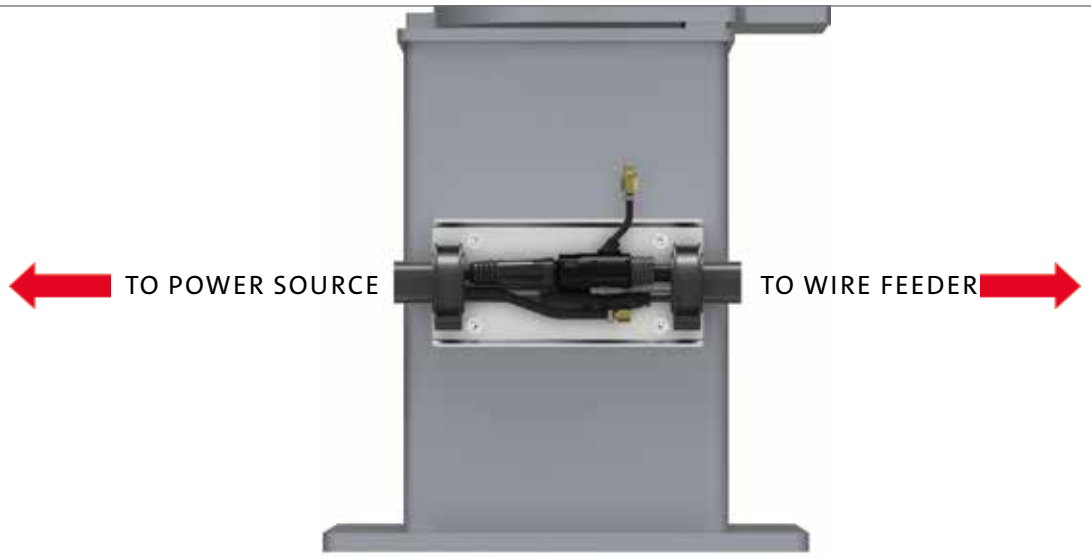
LENGTH	PART-NO.
3 m	20-6-3
5 m	20-6-5
7 m	20-6-7

Please note:

Further lengths available on request

Cable bundle with separation between power source and wire feeder PF5

The moving parts of the cable bundle (next to the robot) are separated from the non-moving parts (power source). In case of maintenance work, only the moving parts have to be changed. The quick and easy replacement concept results in time and cost savings.



7 Ground cable

Please note:

Further lengths available on request

Ground cable with 70 mm² connector and cable plug

Cables with larger diameters are available on request

Overview of ground cables

LENGTH	PART-NO.
6 m	228078106
10 m	228078100

8 Control cable

Please note:

For the Power Clutch system three control cables are needed. One control cable is already included in the cable bundle.

Please note:

Further lengths available on request

Control cable: L700/SPW-bus

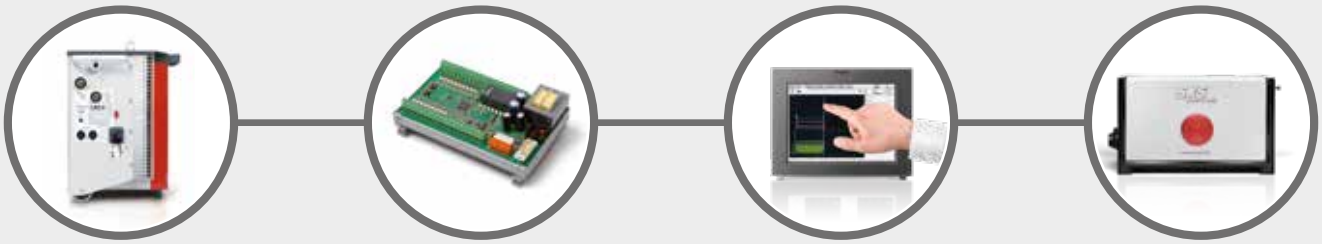
Standard control cable to connect the components:
Weld process controller, power source, robot interface, wire feeder.

Overview of control cables

LENGTH	PART-NO.
0.5 m	541031050
1 m	541031001
2 m	541031002
3 m	541031003
5 m	541031005
7 m	541031007
10 m	541031000
12 m	541031012
15 m	541031015

PLUG & PLAY: CONTROL CABLE L700

The advantages of a system concept are revealed by its details: One standard control cable (L700) connects all system components (power source, robot interface, weld process controller and wire feeder) within the welding system.
The system is expandable: Other components can be integrated at any time into an existing system. New devices are automatically detected.



POWER SOURCE ROBOT INTERFACE WELD PROCESS CONTROLLER WIRE FEEDER

Power Clutch: New precision.

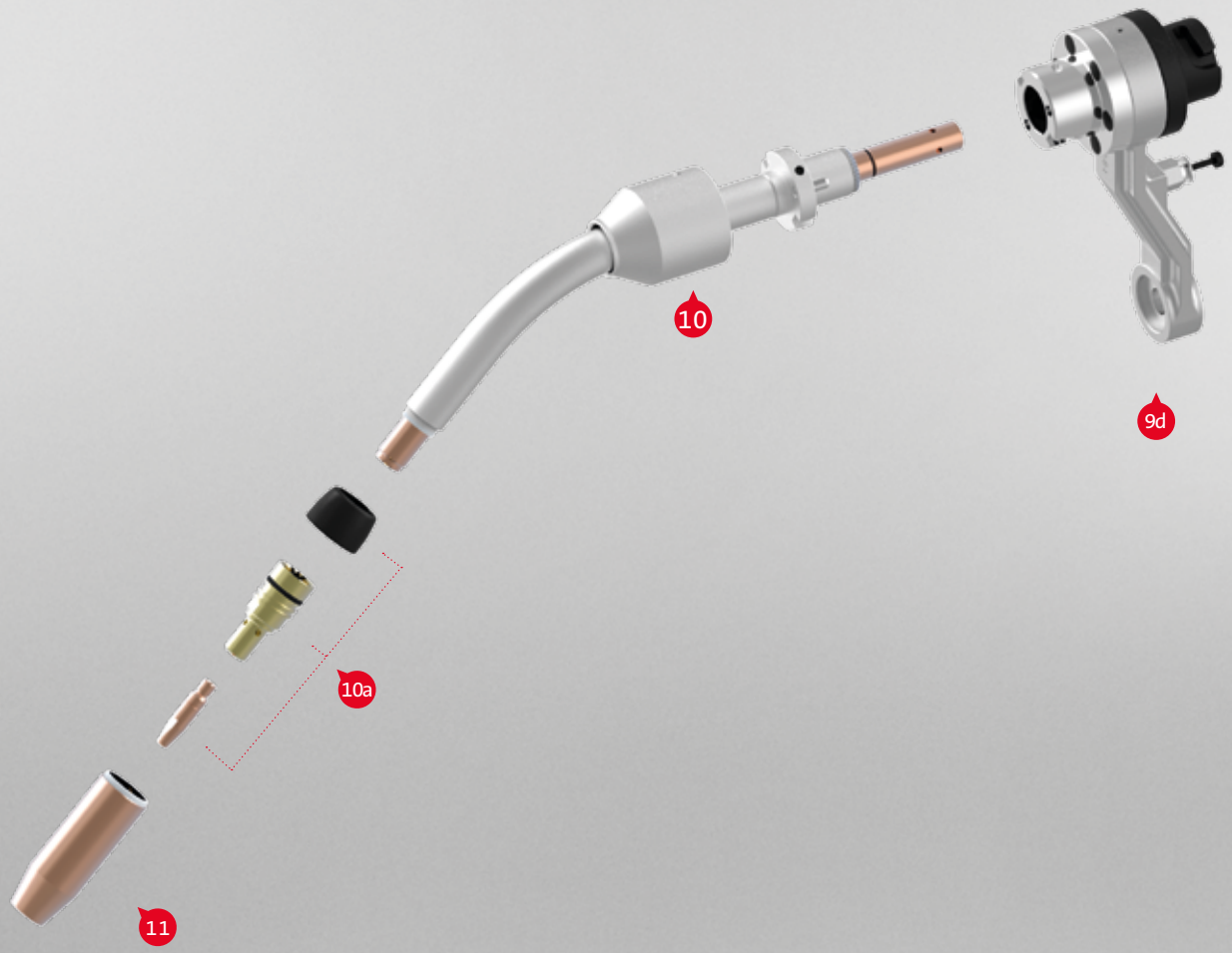
For all industrial robots with outer cable dress.

The Power Clutch torch system perfects the interaction of welding machines and robots with outer cable dress. The SKS Power Clutch torch system consists of the Power Clutch, a mounting flange for each robot type, the torch cable and the torch neck with consumables.
The changing of the torch neck is designed to be tool-free. This allows for a TCP accuracy of ± 0.2 mm when changing torch necks.

The complete SKS Power Clutch Weld Package is designed
for the following welding processes, materials and power range:

Processes:	MIG/MAG (GMAW), Pulse, MIG Brazing
Wire materials:	High-alloy steels, low-alloy steels, aluminum and copper alloys, nickel-based materials
Wire diameter:	0.8-1.6 mm
Max. power:	420 A - 60 % duty cycle/40 °C, air-cooled

Power Clutch torch system parts overview



The Power Clutch torch system can be configurated with different gas nozzles for standard applications or heavy duty applications.

9 Torch system Power Clutch: Parts overview

9a Collision protection Power Clutch 9b Power Clutch robot flange

9c Torch cable with Power Pin connector 9d Torch mounting arm 10 Torch neck

10a Consumables 11 Gas nozzle

9a Torch system

Collision protection for welding robots with outer cable dress

The SKS collision protection is based on the Power Joint concept, continuing the modular structure of the SKS components. This ensures the same high precision TCP accuracy in the Power Clutch as found in SKS Power Joint systems.

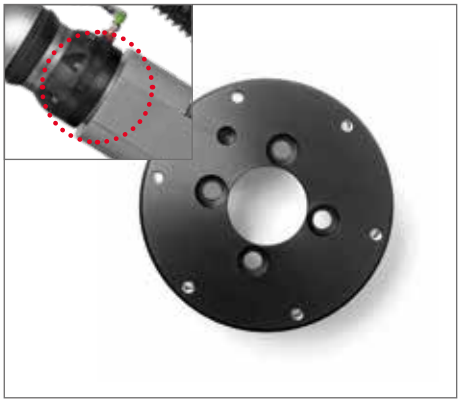
Power Clutch

DESCRIPTION	PART-NO.
Power Clutch 2	71-17

Technical data

Collision protection	deflection 10°
Reset accuracy	± 0.2 mm with TCP 400 mm
Weight	1.5 kg

9b Torch system: Installation



Power Clutch robot flange

With the robot flange the Power Clutch torch system is mounted simply and safely on the sixth robot axis.

Overview of robot flanges

DESCRIPTION	PART-NO.
For robot type-ABB	
IRB 1600	63-4-13
IRB 2600	63-4-5
For robot type-FANUC	
M10iA / M20iA / M10iA 6L / M20iA 10L	63-4-8
For robot type-KUKA	
KR5 arc	63-4-1
KR16	63-4-3
For robot type-YASKAWA/MOTOMAN	
SSF2000 / HP20 / HP6 / MH6	63-4-1

Please note:

Robot flanges for further robot types are available on request.

9c Torch system: Torch cable/Accessories

Please note:

Torch cable for further robot types available on request

Torch cable

High flexible coaxial cable 72 mm² with Power Pin and torch connector including switch-off cable for the robot.

Overview recommended torch cable lengths for robots

DESCRIPTION	PART-NO.
For robot type-ABB	
IRB 1600	61-5-075
IRB 2400	61-5-09
IRB 2600	61-5-10

DESCRIPTION	PART-NO.
For robot type-FANUC	
M10iA/7L	61-5-10
M10iA/8L	on request
M10iA/12	61-5-09
M10iA/12S	61-5-09

DESCRIPTION	PART-NO.
For robot type-KUKA	
KR6 R1820	61-5-10
KR8 R1620	61-5-09
KR8 R2010	61-5-12
KR10 R1420	61-5-09

DESCRIPTION	PART-NO.
For robot type-YASKAWA/MOTOMAN	
HP 20F	61-5-10
MH 6F	61-5-09
MH 12	61-5-10
MH 24	61-5-10

Overview of torch cables

LENGTH	PART-NO.
0.75 m	61-5-075
0.9 m	61-5-09
1.0 m	61-5-10
1.2 m	61-5-12

LENGTH	PART-NO.
1.5 m	61-5-15
1.8 m	61-5-18
2.0 m	61-5-20
2.4 m	61-5-24

Liner for torch cable

For the following diameters and filler materials:

Steel, bronze (wire-ø 0.8 - 1.0 mm)

LENGTH	PART-NO.
2.0 m	44-20-0810-20
3.5 m	44-20-0810-35

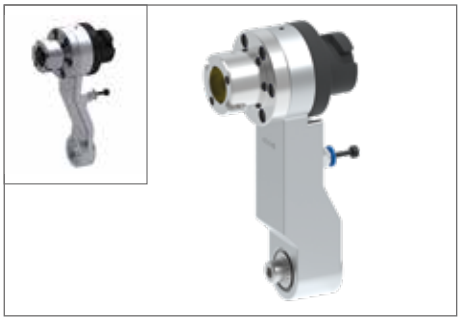
Steel, bronze (wire-ø 1.2 - 1.6 mm)

LENGTH	PART-NO.
2.0 m	44-20-1216-20
3.5 m	44-20-1216-35

Aluminum (wire-ø 1.2 - 1.6 mm)

DESCRIPTION	PART-NO.
per meter	91-68-47025-25E
sleeve	44-30-7
Power Pin cap	61-2-0-2-7

9d Torch system: Torch mounting arm

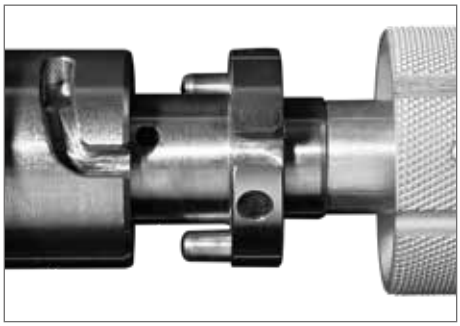


Power Clutch water-cooled: Torch mounting arm

The precise torch mounting arm with air blast connector and proven bayonet quick-change connectors for torch cable and torch neck

Torch mounting

DESCRIPTION	PART-NO.
reinforced Power Clutch torch mounting arm	62-5-15
Power Clutch torch mounting arm	62-5-1



Torch necks for Power Clutch

With the innovative bayonet lock system, the SKS torch neck can be replaced quickly. This unique tool-free quick change system is also highly precise with TCP accuracy of ± 0.2 mm.

Overview torch necks — **Application recommendations**

Type	PART-NO.	TCP length [mm]	angle [°]	Steel/CrNi	Al*
standard dressing air-cooled	58-1-00-400-1	467.5	0	√	√
	58-1-22-350-1	411.5	22	√	√
	58-1-22-400-1	461.5	22	√	√
	58-4-330-500-1	500.0	30	O	O
	58-1-130-450-1	511.5	30	O	O
	58-1-35-400-1	461.5	35	√	X
	58-1-45-350-1	411.5	45	√	X
	58-1-45-400-1	461.5	45	√	X
	58-1-45-450-1	511.5	45	√	X
	58-4-345-450-1	450.0	45	√ √	√ √
	58-4-345-567-1	567.0	45	√	√

Type	PART-NO.	TCP length [mm]	angle [°]	Steel/CrNi	Al
ZK	58-1-245-400-1	461.5	45	√	X

√ √ Recommended standard torch neck
√ Recommended
O Special design: application specific
X Not recommended

*** Please note:**

For aluminum applications SKS recommends a Frontpull torch system

INFO: TORCH NECK

SKS offers a special torch neck (up to 250 A, ZK-HeavyDuty up to max. 300 A) for welding components with tight accessibility.
The special torch neck needs a smaller insulator (ZK) and a more compact gas nozzle (ZK). Standard Power Lock contact tips can be used.

TCP drawings can be found on the next to last page (torch necks).

Clamping cap for SKS single wire torch necks

Tool-free assembly with bayonet quick-change system

Clamping cap

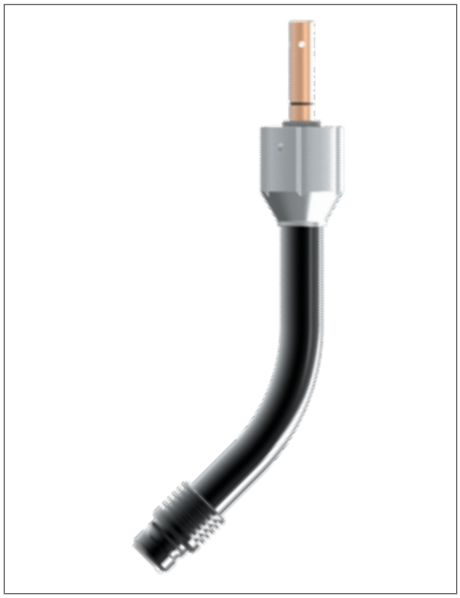
DESCRIPTION	PART-NO.
Clamping cap	71-3-25

Insulator for SKS torch necks

Overview insulator

DESCRIPTION	PART-NO.
Standard	58-1-5
ZK type	43-6-4-2
ZK heavy duty type	43-6-4-3

10 HQX Torches: Torch necks/Accessories



Torch necks for Power Clutch

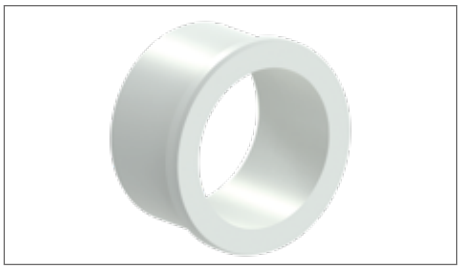
Overview torch necks — **Application recommendations**

Type	PART-NO.	TCP length [mm]	angle [°]	Steel/CrNi	Al*
HQX-dressing air-cooled	58-1-622-350-1	411.5	22	√	√
	58-1-622-400-1	461.5	22	√	√
	58-1-635-400-1	461.5	35	√	X
	58-1-645-350-1	411.5	45	√	X
	58-1-645-400-1	461.5	45	√	X
	58-4-6345-450-1	450.0	45	√ √	√ √
	58-4-6345-567-1	567.0	45	√	√

√ √ Recommended standard torch neck
√ Recommended
o Special design: application specific
x Not recommended

*** Please note:**

For aluminum applications SKS recommends a Frontpull torch system



Insulator for SKS torch necks

Insulator

DESCRIPTION	PART-NO.
HQX Insulator for single wire torch necks	58-1-14

10a Torches: Consumables

Lock: Retaining head

Retaining heads for heavy duty applications with thread for threaded gas nozzles for simple and safe installation

Overview of retaining heads

DESCRIPTION	PART-NO.
High performance retaining head Power Lock standard	43-9-2
High performance retaining head Power Lock with 6 holes (AL-application)	43-9-4
High performance retaining head HQX Power Lock Plus with 6 holes (Fe-/Al-application)	43-20-3
High performance retaining head Power Lock (ZK-Version)	43-8-6
High performance retaining head Power Lock Plus	43-16-2
High performance retaining head Power Lock Plus (ZK-Version)	43-24-1

Please note:

An overview of gas nozzles with dimensions can be found on the next pages.

Power Lock: Contact tips

- Tapered design for high TCP reproducibility
- Improved heat transfer extends lifetime
- Improved power transition: constant arc quality

Overview of contact tips (also for ZK type)

Wire-ø	Steel applications		Stainless steel applications		Aluminum applications	
	Power Lock	Power Lock Plus	Power Lock	Power Lock Plus	Power Lock	Power Lock Plus
0.8 mm	40-4-5-0.8E	40-6-5-0.8E	40-4-7-0.8S	40-6-7-0.8S	———	———
0.9 mm	40-4-5-0.9E	40-6-5-0.9E	40-4-7-0.9S	40-6-7-0.9S	———	———
1.0 mm	40-4-5-1.0E	40-6-5-1.0E	40-4-7-1.0S	40-6-7-1.0S	———	———
1.2 mm	40-4-5-1.2E	40-6-5-1.2E	40-4-7-1.2S	40-6-7-1.2S	40-4-7-1.2AL	40-6-7-1.2AL
1.4 mm	———	———	40-4-7-1.4S	40-6-7-1.4S	———	———
1.6 mm	———	———	40-4-7-1.6S	40-6-7-1.6S	40-4-7-1.6AL	40-6-7-1.6AL

Please note:

An overview of gas nozzles with dimensions can be found on the next page.

Please note:

Further information can be found in our brochure "Consumables" (DOC-0135EN).

Gas nozzles with thread

Standard gas nozzles

13 mm bottle shaped	PART-NO.
short	41-19-13-BS
flush	41-19-13-BF
long	41-19-13-BR
13 mm tapered	**PART-NO.**
short	41-19-13-TS
flush	41-19-13-TF
long	41-19-13-TR
15 mm bottle shaped	**PART-NO.**
short	41-19-15-BS
flush	41-19-15-BF
long	41-19-15-BR
16 mm tapered	**PART-NO.**
short	41-19-16-TS
flush	41-19-16-TF
long	41-19-16-TR

Heavy Duty gas nozzles

13 mm	PART-NO.
flush, bottle shaped	41-20-13-BF
long, tapered	41-20-13-TR
16 mm tapered	**PART-NO.**
short	41-20-16-TS
flush	41-20-16-TF
long	41-20-16-TR

ZK type

13 mm bottle shaped	PART-NO.
short	41-21-13-BS
flush	41-21-13-BF
15 mm bottle shaped	**PART-NO.**
short	41-21-15-BS
flush	41-21-15-BF
13+15 mm Heavy Duty/tapered	**PART-NO.**
13 mm, flush	41-22-13-TF
15 mm, flush	41-22-15-TF

Gas nozzles with thread (HQX)

HQX gas nozzles

16 mm bottle shaped	PART-NO.
short	41-16-16-BS
16 mm tapered	**PART-NO.**
short	41-16-16-TS
flush	41-16-16-TF
long	41-16-16-TR

Tool for contact tips

For replacement of contact tips: Fast exchange of contact tip without removing the gas nozzle

contact tips

DESCRIPTION	PART-NO.
Mounting tool SW6 for contact tips (Power Lock)	51-9001-00
Mounting tool SW7 for contact tips (Power Lock Plus)	51-9002-00

Programming tips

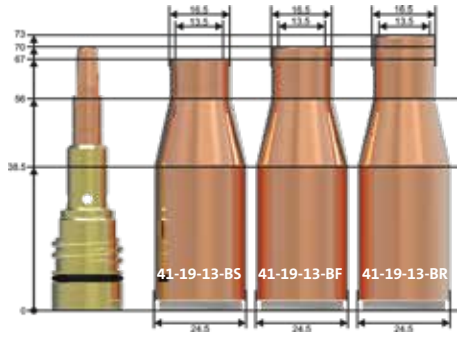
Power Lock programming tips for precise seam programming

Overview of programming tips

Stickout	PART-NO.
12 mm (Power Lock)	65-6
15 mm (Power Lock)	65-7
20 mm (Power Lock)	65-8
12 mm (Power Lock Plus)	65-11
15 mm (Power Lock Plus)	65-12

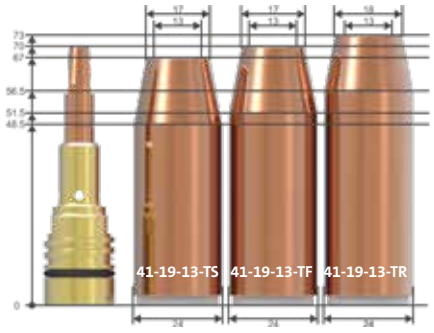
11 Gas nozzles: Overview dimensions

13 mm bottle-shaped



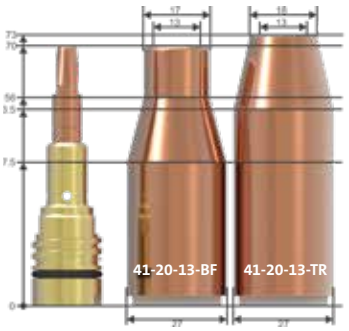
Gas nozzle PART-NO.	41-19-13-BS	41-19-13-BF	41-19-13-BR
Reamer Blade:			
Power Lock			
(UNF 3/8" x 24) PART-NO.	66-13-S	66-13-F	66-13-R
(M10 x 1) eReam PART-NO.	67-13-S	67-13-F	67-13-R
Power Lock Plus			
(UNF 3/8" x 24) PART-NO.	68-13-S	68-13-F	68-13-R
(M10 x 1) eReam PART-NO.	69-13-S	69-13-F	69-13-R

13 mm tapered



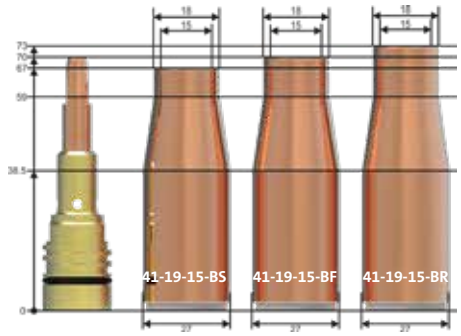
Gas nozzle PART-NO.	41-19-13-TS	41-19-13-TF	41-19-13-TR
Reamer Blade:			
Power Lock			
(UNF 3/8" x 24) PART-NO.	66-13-S	66-13-F	66-13-R
(M10 x 1) eReam PART-NO.	67-13-S	67-13-F	67-13-R
Power Lock Plus			
(UNF 3/8" x 24) PART-NO.	68-13-S	68-13-F	68-13-R
(M10 x 1) eReam PART-NO.	69-13-S	69-13-F	69-13-R

13 mm Heavy Duty



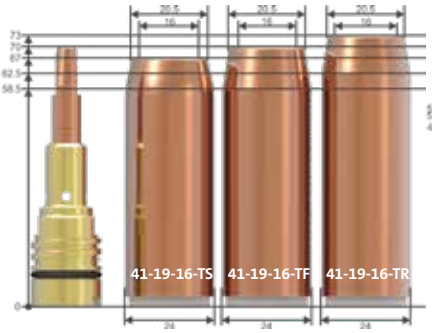
Gas nozzle PART-NO.	41-20-13-BF	41-20-13-TR
Reamer Blade:		
Power Lock		
(UNF 3/8" x 24) PART-NO.	66-13-F	66-13-R
(M10 x 1) eReam PART-NO.	67-13-F	67-13-R
Power Lock Plus		
(UNF 3/8" x 24) PART-NO.	68-13-F	68-13-R
(M10 x 1) eReam PART-NO.	69-13-F	69-13-R

15 mm bottle-shaped



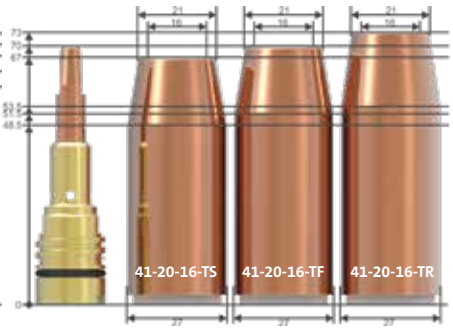
Gas nozzle PART-NO.	41-19-15-BS	41-19-15-BF	41-19-15-BR
Reamer Blade:			
Power Lock			
(UNF 3/8" x 24) PART-NO.	66-15-S	66-15-F	66-15-R
(M10 x 1) eReam PART-NO..	67-15-S	67-15-F	67-15-R
Power Lock Plus			
(UNF 3/8" x 24) PART-NO.	68-15-S	68-15-F	68-15-R
(M10 x 1) eReam PART-NO.	69-15-S	69-15-F	69-15-R

16 mm tapered



Gas nozzle PART-NO.	41-19-16-TS	41-19-16-TF	41-19-16-TR
Reamer Blade:			
Power Lock			
(UNF 3/8" x 24) PART-NO.	66-16-S	66-16-F	66-16-R
(M10 x 1) eReam PART-NO.	67-16-S	67-16-F	67-16-R
Power Lock Plus			
(UNF 3/8" x 24) PART-NO.	68-16-S	68-16-F	68-16-R
(M10 x 1) eReam PART-NO.	69-16-S	69-16-F	69-16-R

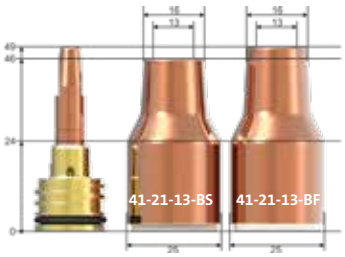
16 mm Heavy Duty



Gas nozzle PART-NO.	41-20-16-TS	41-20-16-TF	41-20-16-TR
Reamer Blade:			
Power Lock			
(UNF 3/8" x 24) PART-NO.	66-16-S	66-16-F	66-16-R
(M10 x 1) eReam PART-NO.	67-16-S	67-16-F	67-16-R
Power Lock Plus			
(UNF 3/8" x 24) PART-NO.	68-16-S	68-16-F	68-16-R
(M10 x 1) eReam PART-NO.	69-16-S	69-16-F	69-16-R

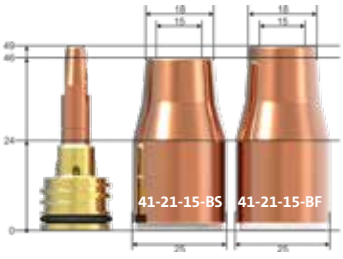
ZK type:

13 mm bottle-shaped



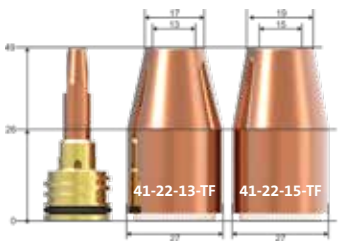
Gas nozzle PART-NO.	41-21-13-BS	41-21-13-BF
Reamer Blade:		
Power Lock		
(UNF 3/8" x 24) PART-NO.	66-13-ZK-S	66-13-ZK-F
(M10 x 1) eReam PART-NO.	67-13-S	67-13-F
Power Lock Plus		
(UNF 3/8" x 24) PART-NO.	68-13-ZK-S	68-13-ZK-F
(M10 x 1) eReam PART-NO.	69-13-S	69-13-F

15 mm bottle-shaped



Gas nozzle PART-NO.	41-21-15-BS	41-21-15-BF
Reamer Blade:		
Power Lock		
(UNF 3/8" x 24) PART-NO.	66-15-ZK-S	66-15-ZK-F
(M10 x 1) eReam PART-NO.	67-15-ZK-S	67-15-ZK-F
Power Lock Plus		
(UNF 3/8" x 24) PART-NO.	68-15-ZK-S	68-15-ZK-F
(M10 x 1) eReam PART-NO.	69-15-ZK-S	69-15-ZK-F

13+15 mm Heavy Duty/tapered



Gas nozzle PART-NO.	41-22-13-TF	41-22-15-TF
Reamer Blade:		
Power Lock		
(UNF 3/8" x 24) PART-NO.	66-13-ZK-F	66-15-ZK-F
(M10 x 1) eReam PART-NO.	67-13-F	67-15-ZK-F
Power Lock Plus		
(UNF 3/8" x 24) PART-NO.	68-15-ZK-F	68-15-ZK-F
(M10 x 1) eReam PART-NO.	69-15-F	69-15-ZK-F

Dimensions in mm.

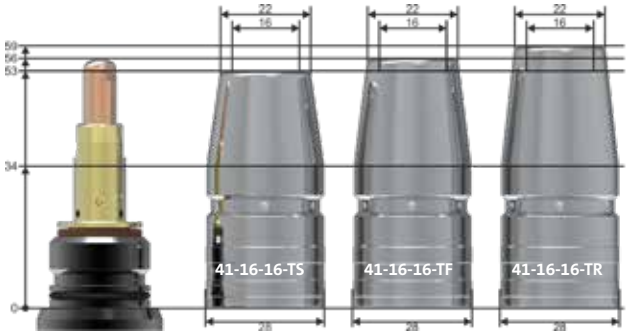
Further gas nozzles, reamer blades and torch necks can be found in our consumables brochure.

11 Gas nozzles: Overview dimensions

HQX Version

16 mm bottle-shaped

16 mm tapered

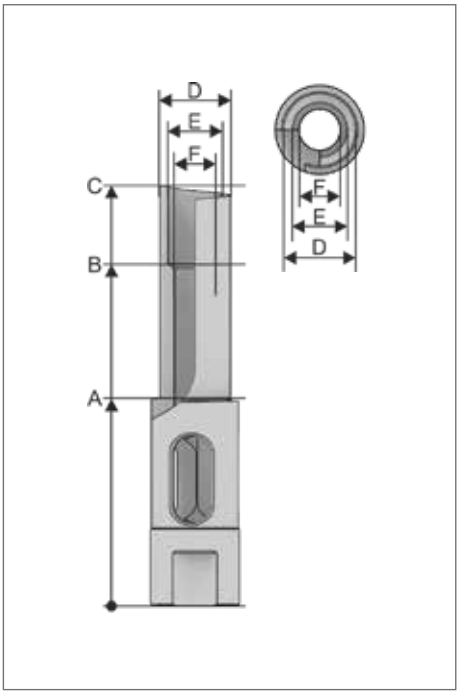


Gas nozzle PART-NO.	41-16-16-BS	41-16-16-TS	41-16-16-TF	41-16-16-TR
Reamer Blade: Power Lock Plus				
(UNF 3/8" x 24) PART-NO.	68-16-HD-S	68-16-HD-S	68-16-HD-F	68-16-HD-R
(M10 x 1) eReam PART-NO.	69-16-HD-S	69-16-HD-S	69-16-HD-F	68-16-HD-R

Dimensions in mm.

Further gas nozzles, reamer blades and torch necks can be found in our consumables brochure.

11a Gas nozzles: Reamer blades



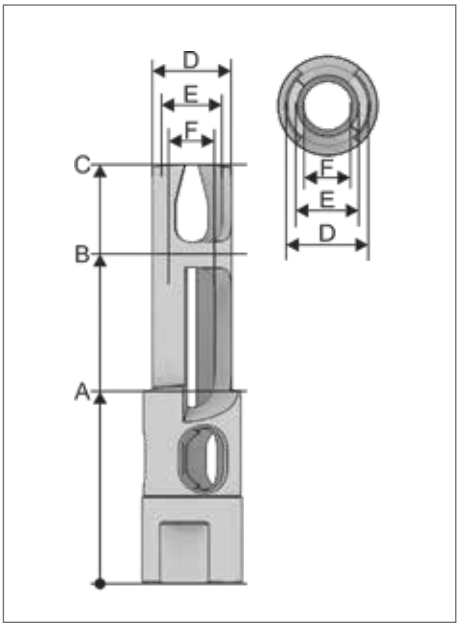
Standard torch neck – Power Lock

Reamer blade (internal thread UNF 3/8“ x 24)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	66-13-S	66-13-F	66-13-R
15 mm	66-15-S	66-15-F	66-15-R
16 mm	66-16-S	66-16-F	66-16-R

Dimensions

A	B	C	D	E	F	PART-NO.
44	-	67	12.5	9	-	66-13-S
44	-	70	12.5	9	-	66-13-F
44	-	73	12.5	9	-	66-13-R
45	68	85	14.5	11.8	9	66-15-S
45	71	88	14.5	11.8	9	66-15-F
45	74	91	14.5	11.8	9	66-15-R
45	68	85	15.5	11.8	9	66-16-S
45	71	88	15.5	11.8	9	66-16-F
45	74	91	15.5	11.8	9	66-16-R

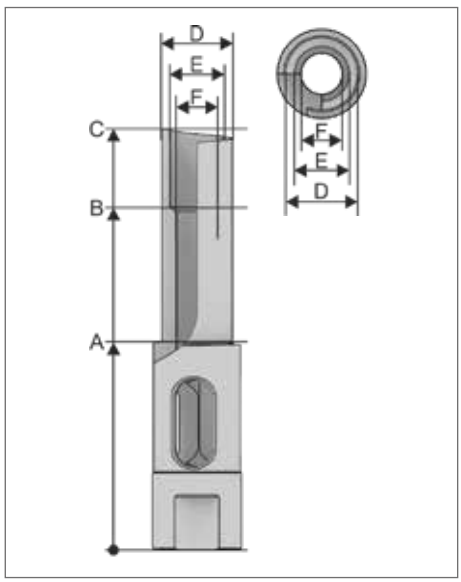


Reamer blade (internal thread M10 x 1 – eReam)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	67-13-S	67-13-F	67-13-R
15 mm	67-15-S	67-15-F	67-15-R
16 mm	67-16-S	67-16-F	67-16-R

Dimensions

A	B	C	D	E	F	PART-NO.
55	-	78	12.5	9	-	67-13-S
55	-	81	12.5	9	-	67-13-F
55	-	84	12.5	9	-	67-13-R
38	61	78	14.5	11.8	9	67-15-S
38	64	81	14.5	11.8	9	67-15-F
38	67	84	14.5	11.8	9	67-15-R
38	61	78	15.5	11.8	9	67-16-S
38	64	81	15.5	11.8	9	67-16-F
38	67	84	15.5	11.8	9	67-16-R



Please note:
Dimensions in mm.

Standard torch neck – Power Lock Plus

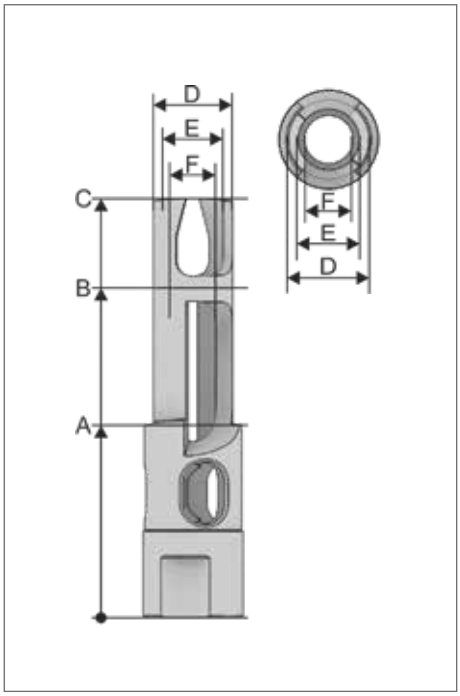
Reamer blade (internal thread UNF 3/8“ x 24)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	68-13-S	68-13-F	68-13-R
15 mm	68-15-S	68-15-F	68-15-R
16 mm	68-16-S	68-16-F	68-16-R

Dimensions

A	B	C	D	E	F	PART-NO.
55.5	-	67	12.5	9	-	68-13-S
52.5	-	67	12.5	9	-	68-13-F
49.5	-	67	12.5	9	-	68-13-R
51	63	91	14.5	11.8	9	68-15-S
48	63	91	14.5	11.8	9	68-15-F
45	63	91	14.5	11.8	9	68-15-R
51	63	91	15.5	11.8	9	68-16-S
48	63	91	15.5	11.8	9	68-16-F
45	63	91	15.5	11.8	9	68-16-R

11a Gas nozzles: Reamer blades



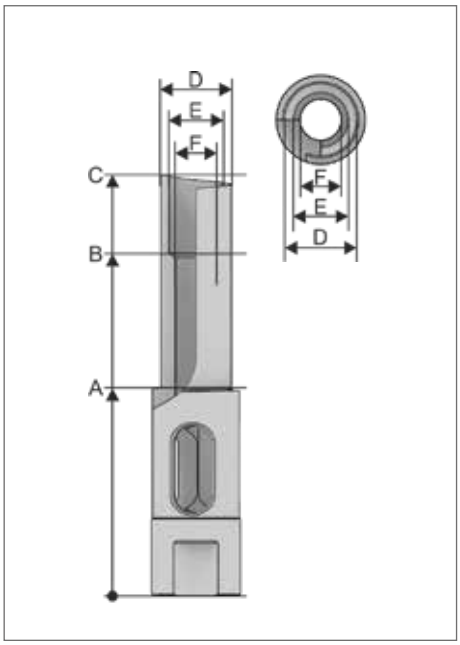
Standard torch neck – Power Lock Plus

Reamer blade (internal thread M10 x 1 – eReam)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	69-13-S	69-13-F	69-13-R
15 mm	69-15-S	69-15-F	69-15-R
16 mm	69-16-S	68-16-F	68-16-R

Dimensions

A	B	C	D	E	F	PART-NO.
66.5	-	78	12.5	9	-	69-13-S
66.5	-	81	12.5	9	-	69-13-F
66.5	-	84	12.5	9	-	69-13-R
38	50	78	14.5	11.8	9	69-15-S
38	53	81	14.5	11.8	9	69-15-F
38	56	84	14.5	11.8	9	69-15-R
38	50	78	15.5	11.8	9	69-16-S
38	53	81	15.5	11.8	9	69-16-F
38	56	84	15.5	11.8	9	69-16-R



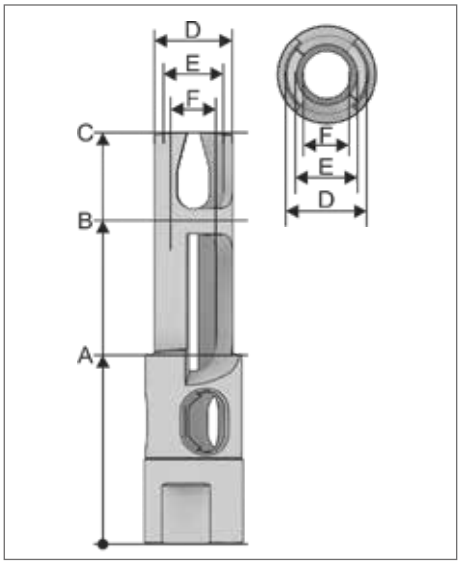
ZK-Series – Power Lock

Reamer blade (internal thread UNF 3/8“ x 24)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	66-13-ZK-S	66-13-ZK-F	-
15 mm	66-15-ZK-S	66-15-ZK-F	-

Dimensions

A	B	C	D	E	F	PART-NO.
54	-	77	12.5	9	-	66-13-ZK-S
51	-	77	12.5	9	-	66-13-ZK-F
45	68	77	14.5	11.8	9	66-15-ZK-S
42	68	77	14.5	11.8	9	66-15-ZK-F



Reamer blade (internal thread M10 x 1 – eReam)

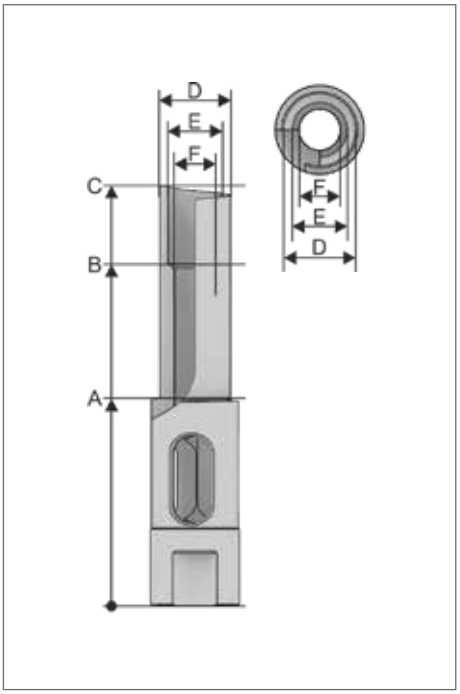
Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	67-13- S	67-13-F	-
15 mm	67-15-ZK-S	67-15-ZK-F	-

Dimensions

A	B	C	D	E	F	PART-NO.
55	-	78	12.5	9	-	67-13-S
55	-	81	12.5	9	-	67-13-F
46	69	78	14.5	11.8	9	67-15-ZK-S
46	72	81	14.5	11.8	9	67-15-ZK-F

Please note:
Dimensions in mm.

11a Gas nozzles: Reamer blades



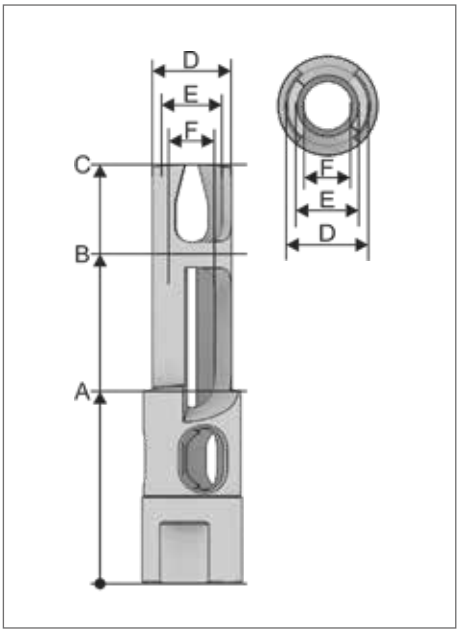
ZK-Series – Power Lock Plus

Reamer blade (internal thread UNF 3/8“ x 24)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	68-13-ZK-S	68-13-ZK-F	-
15 mm	68-15-ZK-S	68-15-ZK-F	-

Dimensions

A	B	C	D	E	F	PART-NO.
65.5	-	77	12.5	9	-	68-13-ZK-S
62.5	-	77	12.5	9	-	68-13-ZK-F
45	58	77	14.5	11.8	9	68-15-ZK-S
42	58	77	14.5	11.8	9	68-15-ZK-F

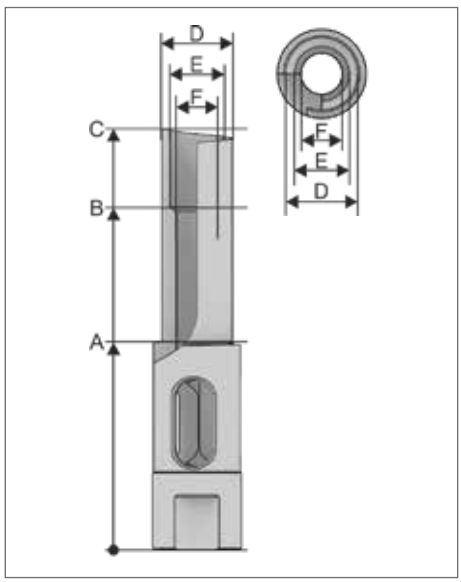


Reamer blade (internal thread M10 x 1 – eReam)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
13 mm	69-13- S	69-13-F	-
15 mm	69-15-ZK-S	69-15-ZK-F	-

Dimensions

A	B	C	D	E	F	PART-NO.
66.5	-	78	12.5	9	-	69-13-S
66.5	-	81	12.5	9	-	69-13-F
46	59	78	14.5	11.8	9	69-15-ZK-S
46	62	81	14.5	11.8	9	69-15-ZK-F



Please note:
Dimensions in mm.

HQX-Series – Power Lock Plus

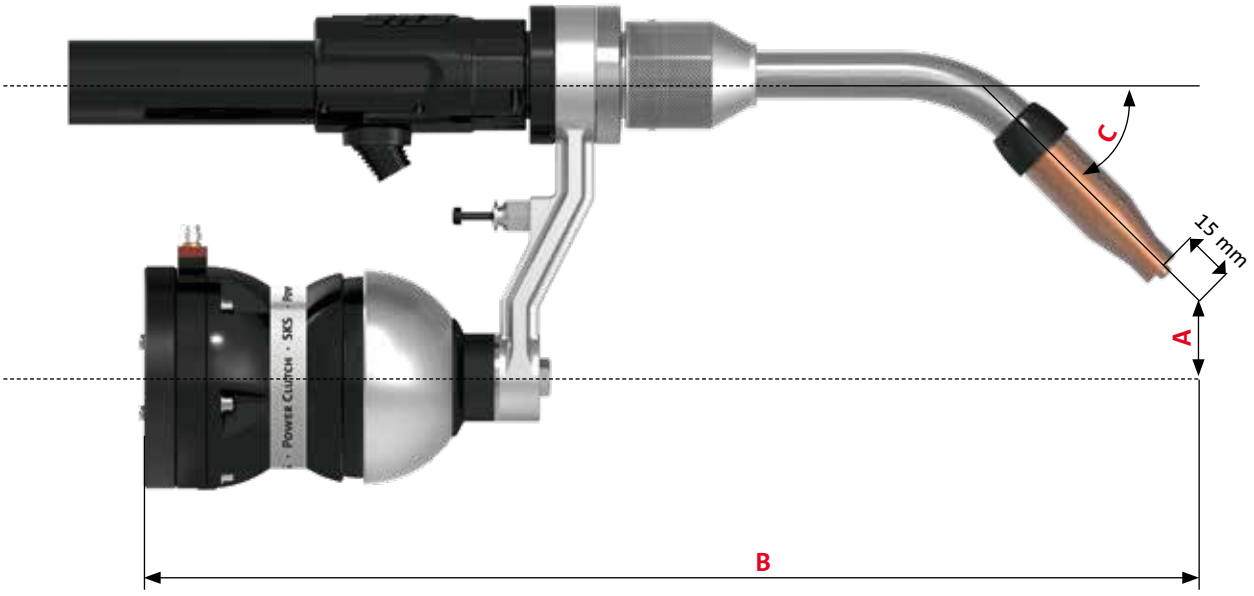
Reamer blade (internal thread UNF 3/8“ x 24)

Reamer blade	short	flush	long
Inner diameter of the gas nozzle	PART-NO.	PART-NO.	PART-NO.
16 mm	68-16-HD-S	68-16-HD-F	68-16-HD-R

Dimensions

A	B	C	D	E	F	PART-NO.
49.5	62	85	15.5	12.8	9	68-16-HD-S
46.5	62	85	15.5	12.8	9	68-16-HD-F
43.5	62	85	15.5	12.8	9	68-16-HD-R

12 Torches: TCP dimensions



Overview torch necks standard dressing air-cooled

Standard dressing	HQX	A	B	C
PART-NO.	PART-NO.	(distance in mm)	(TCP length in mm)	(angle in °)
58-1-00-400-1	on request	120	461,5	0
58-1-22-350-1	58-1-622-350-1	75	411,5	22
58-1-22-400-1	58-1-622-400-1	75	461,5	22
58-4-330-500-1	on request	0	500,0	30
58-1-130-450-1	on request	120	511,5	30
58-1-35-400-1	58-1-635-400-1	50	461,5	35
58-1-45-350-1	58-1-645-350-1	30	411,5	45
58-1-45-400-1	58-1-645-400-1	30	461,5	45
58-1-45-450-1	on request	30	511,5	45
58-4-345-450-1	58-4-6345-450-1	0	450,0	45
58-4-345-567-1	58-4-6345-567-1	0	567,0	45

Overview torch necks ZK type

Standard dressing	A	B	C
PART-NO.	(distance in mm)	(TCP length in mm)	(angle in °)
58-1-245-400-1	58	461,5	45

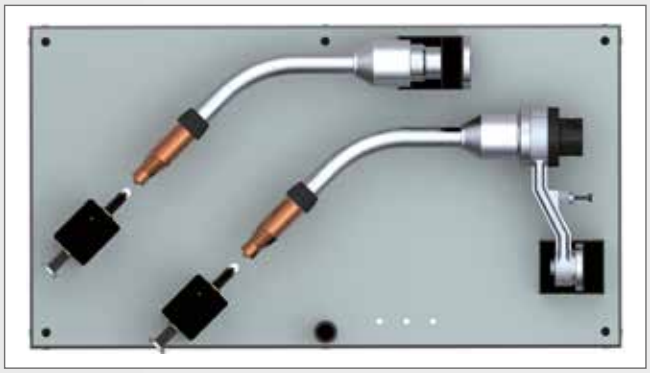
Please note:

Dimensions in mm.

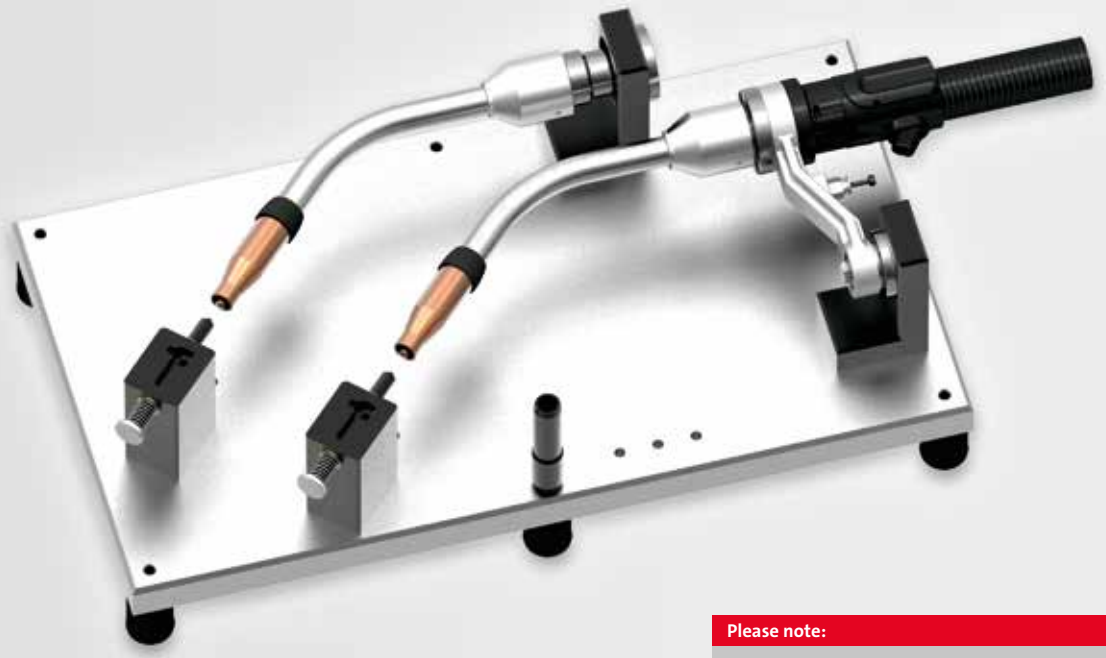
Torches: Checking fixtures

To check TCP of torch necks and complete torch.

Checking fixtures are provided for all listed torch necks with Power Clutch torch system. Please contact us for detailed information.



Top view checking fixture



Please note:

Further iInformation can be found in our brochure "Checking fixtures" (DOC-0137EN).

WELDING SYSTEMS

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