SKS
WELDING SYSTEMS

WELD PACKAGE
FRONT PULL 8i

The Weld Package for your Welding Tasks from the Power Source to the Contact Tip

AIR-COOLED

CONTENT

Power Source • Weld Process Controller • Software • Interface • Wire Feeder Unit • Wire Guidance • Cable Bundle • Control Cable • Torch System • Torch Necks • Consumables

WELDING PROCESSES

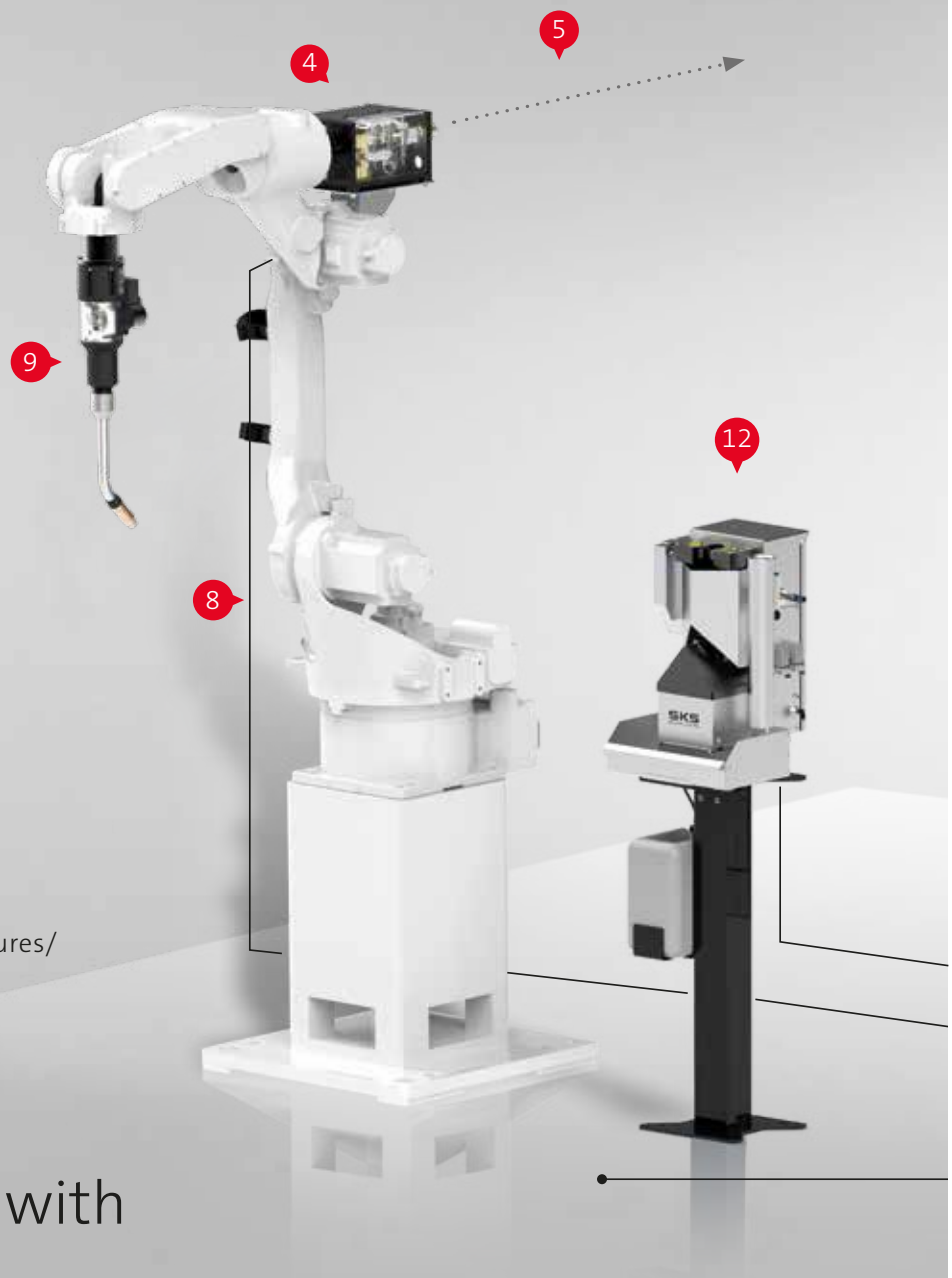
GMAW
Pulse
MIG-Brazing
microMIG
microMIG-cc

STEEL

SKS Weld Package: System design

The Frontpull 8i Weld Package contains:

- A Integrated solution: power source, weld process controller and interface in one device
- 1 Power Source
- 2 Weld Process Controller and Software/IT
- 3 Robot Interface
- 4 Frontpull Module
- 5 Wire Guidance
- 6 Ground Cable
- 7 Control Cable
- 8 Cable Bundle
- 9 Torch System Frontpull 8i
- 10 Torch Neck/ Consumables
- 11 Reamer Blades
- 12 TCP Dimensions/Checking Fixtures/ Torch Cleaning Stations



For installations with inner cable dress.

This brochure contains information about the SKS Weld Package, the torch system Frontpull 8i. 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 **Frontpull 8i Weld Package** can be used with all common industrial robots.

Frontpull 8i – air-cooled for steel applications

Processes:	microMIG, microMIG-cc, KF-pulse, Puls, MIG brazing, GMAW
Wire materials:	high-alloy steels, low-alloy steels
Compatibility:	for all common industrial robots
Weight:	4.0 kg
Max. power:	420 A – 60 % duty cycle/40 °C, air-cooled
Wire diameter:	0.8-1.6 mm
TCP accuracy:	± 0.2 (400 mm)

LSQ COMPACT

The LSQ COMPACT IoT was designed as an integrated welding system, combining the weld process controller, Fieldbus interface, and power supply into one unit, resulting in a compact size with fewer external connections – for easy installation. Even with its compact size and integrated design, this machine is powerful and incorporates 35 years of technological knowledge. Whether you are welding thick aluminum plates or thin stainless steel, a process is available to support your specific needs. All processes are unlocked and readily available. You do not need an additional license or passcode to use them.

Up Front Pricing:

No hidden costs for welding processes and software functions.

A Integrated Solution LSQ COMPACT

Compact: All in One, All Inclusive. Compatible with
SKS Weld Packages: Power Clutch, Power Joint and Frontpull.

POWER SOURCE
+ PROCESS CONTROLLER
+ ROBOT INTERFACE

420 A
60% DUTY CYCLE
AT 40°C

READY FOR GLOBAL USE
CE, UL & CCC CERTIFIED

MATERIALS:

steel
low- & high-alloy steel
copper alloys
galvanized steel
aluminum*

INCLUDES THE WELDING PROCESSES AND FUNCTIONS:

GMAW
I-pulse
KF-pulse
microMIG*
microMIG-cc*
MMT-x*
DP-Fast
MIG-Brazing
Synchroweld
AutoComp

MQTT
OPC UA**
+ TRACEABILITY

Q8 TOOL

FREE WELD DATA DOCUMENTATION & MANAGEMENT

* Only in combination with Frontpull torch system. Further information can be found in the Frontpull Weld Package
** Only available in LSQ COMPACT IoT

A Integrated Solution LSQ COMPACT

LSQ3 COMPACT Lite

LSQ5 COMPACT IoT

Integrated power source

The LSQ COMPACT Lite and IoT are available with LSQ 3 and LSQ 5 power sources to provide the best solution for your application. The technical data can be found on the following pages.

Integrated weld process controller

While the LSQ COMPACT Lite is designed for maximum cost efficiency, the LSQ COMPACT IoT offers additional features such as the Internet of Things (IoT), MQTT, and OPC UA support. This advanced weld process controller enables extended real-time monitoring and analysis of welding processes, resulting in improved quality assurance and more precise control of the process.

Specifications	Lite	IoT
Operation via	buttons	touch screen
Programs	15.872	15.872
Ports	USB, SD card slot	Ethernet, SD card slot
MQTT / OPC UA	No	Yes
Remote Control	Q8Tool	Q8Tool, VNC client

Integrated interface

With the included Fieldbus Interface FB5 the system can be perfectly integrated into existing Fieldbus environments. Various Fiedbus types are available e.g. EtherNet/IP, Profinet CU.

Overview LSQ COMPACT	Part-No.
LSQ5 COMPACT Lite	**77-1185-71x**
LSQ3 COMPACT Lite	**77-1184-78x**
LSQ5 COMPACT IoT	**77-1185-77x**
LSQ3 COMPACT IoT	**77-1184-81x**
LSQ5 CCC COMPACT Lite	**77-1185-73x**
LSQ3 CCC COMPACT Lite	**77-1184-73x**
LSQ5 CCC COMPACT IoT	**77-1185-79x**
LSQ3 CCC COMPACT IoT	**77-1184-79x**

Please note:

Various field bus types available. Please enter the number you require in place of the x:
1 = EtherNet/IP | 2 = Profinet CU | 3 = EtherCAT

Option

Accessories: Wall mount for LSQ5
Space-saving design that makes for easy cleaning/ maintenance.

Wall mount

Overview of wall mounts	Part-No.
Wall mount for power source LSQ5 and LSQ5 COMPACT	**77-1180-01**
Wall mount for power source LSQ3 and LSQ3 COMPACT	**integrated**

1 Power source

LSQ5 power source

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 worldwide usage, voltages can be configured without opening the power source.

Alternative

LSQ3 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.

Overview of power sources	Part-No.
DCT power source LSQ5 Direct-Control-Technology	**77-1185-00**
DCT power source LSQ3 Direct-Control-Technology	**77-1184-50**
DCT power source LSQ5-CCC Direct-Control-Technology	**77-1185-60**
DCT power source LSQ3-CCC Direct-Control-Technology	**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	LSQ5 (-CCC)	LSQ3 (-CCC)
Performance	420 A - 60% duty cycle/40 °C (400 A)	340 A - 60% duty cycle/40 °C
Processes and functions	GMAW, I-pulse, KF-pulse, microMIG*, microMIG-cc*, MMT-x*, DP-Fast, MIG-Brazing, Synchroweld, AutoComp	
Weight	49 kg	37 kg
Primary voltage	3 x 400 (480) V	
Wall mounting	Yes (optional)	Yes (integrated)
Conformities	CE, CSA, UL (CCC)	CE (CCC)
Dimensions	450 x 400 x 540 mm	450 x 330 x 540 mm

* Only in combination with Frontpull torch system. Further information can be found in the Frontpull Weld Package.

Innovative Control Concepts with Touch Screen.

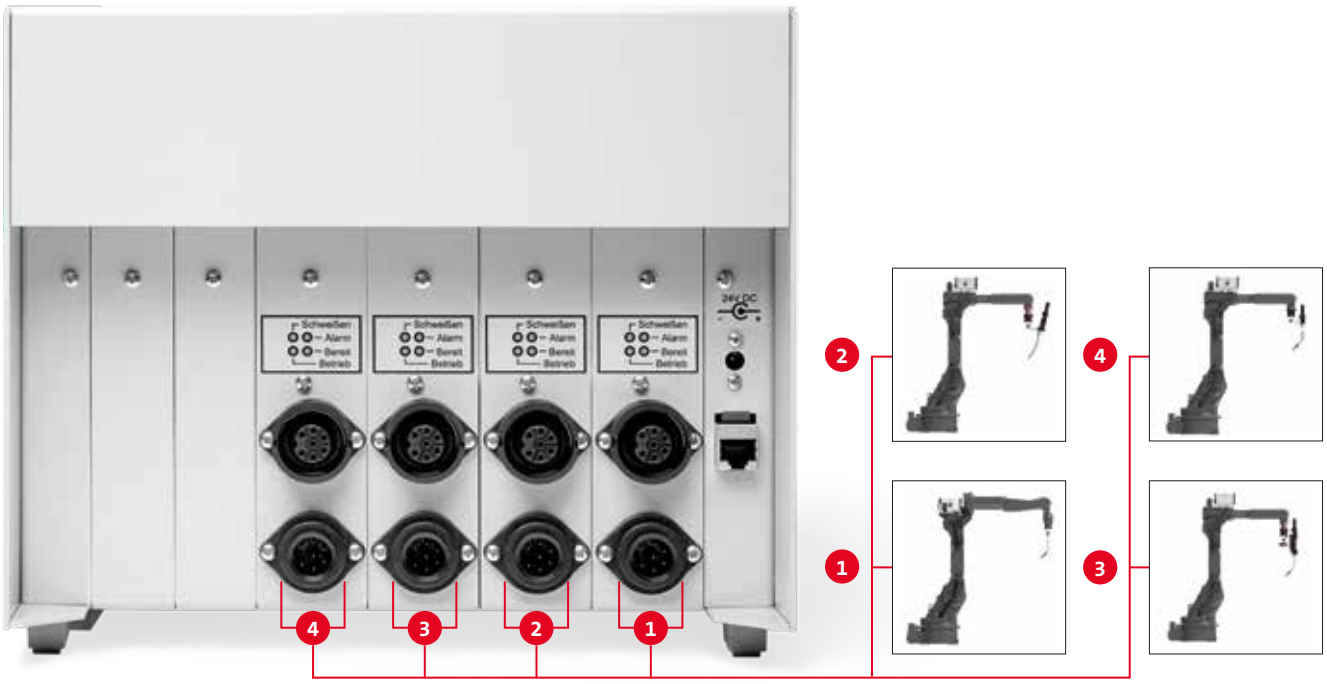
With the new Q84r and the compact Q84s up to four weld machines can be controlled centrally.

- **Parameter settings** completely integrated in the SKS software
- **Documentation** of measurements + TCP speed

- All settings on a single screen
- All measurements on a single screen
- All SKS welding processes and functions available
- Ready to use Industry 4.0 protocols (MQTT + OPC UA) and data traceability!

Q8 TOOL

2 Weld process controller



Controlling up to four weld machines at the same time

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.

Q84r weld process controller

Q84r Weld process controller

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 and functions: GMAW, I-pulse, KF-pulse, microMIG*, microMIG-cc*, MMT-x*, DP-Fast, MIG Brazing, Synchroweld, AutoComp
- Programs: 15.872 (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
- Supports MQTT / OPC UA

Overview weld process controllers	Part-No.(Q84s)	Part-No. (Q84r)
Q84s/r weld process controller with one weld card	**77-7410-001**	**77-7310-001**
Q84s/r weld process controller with two weld cards	**77-7420-001**	**77-7320-001**
Q84s/r weld process controller with three weld cards	**77-7430-001**	**77-7330-001**
Q84s/r weld process controller with four weld cards	**77-7440-001**	**77-7340-001**

Overview Q84r/s mounting kits	Part-No.
Bracket for Q84r for mounting onto power source LSQ3/5	**77-7240-01**
Mounting brackets for Q80/Q84s for mounting onto power source LSQ3/5	**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 accessories	Part-No.
Connection cable for Q84r/s 5m with open end (optional)	**77-3305-00**
Plug for external power supply of Q84r/s	**77-7240-96**
USB adapter for SD/microSD cards	**91-8-1**

Overview Q84r/s replacement parts	Part-No.
Touchpen for Q80 / Q84r/s weld process controller (spare part)	**77-7240-03**
SDHC card 8GB for Q84r/Q84s/Q80 weld process controllers	**91-8-6**

* Only in combination with Frontpull torch system. Further information can be found in the Frontpull Weld Package.

2 Weld process controller

Q80 weld process controller – front view

Q80 weld process controller – 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/functions/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
- Supports MQTT / OPC UA

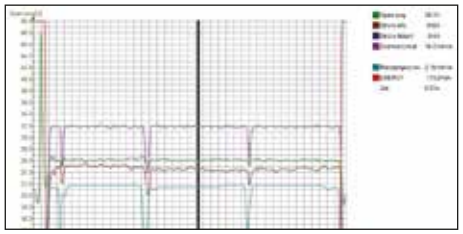
Overview weld process controller	Part-No.
Q80 weld process controller	**77-7260-001**

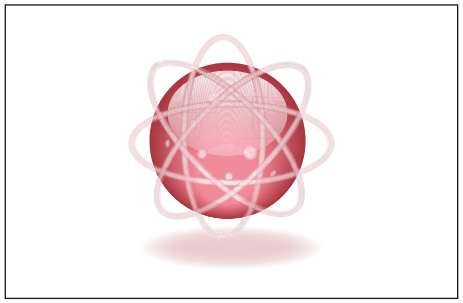
Overview Q80 mounting kits	Part-No.
Bracket for mounting onto power source LSQ5	**77-7240-06**

Overview Q80 accessories	Part-No.
USB adapter for SD-/microSD card	**91-8-1**

Overview Q80 replacement parts	Part-No.
Touchpen for Q80 / Q84r/s weld process controller (replacement part)	**77-7240-03**
SDHC card 8GB for Q84r/Q84s/Q80 weld process controllers	**91-8-6**

2 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.

By the use of Fieldbus Interface FB5 the system can be perfectly integrated into existing Fieldbus environments. For analog and digital environments the universal interface UNI5 is available on request.

Standard application

Fieldbus systems exchange signals via serial communication. The Fieldbus master, usually the robot controller or overall system controller, bundles and processes the signals of the connected Fieldbus, including the welding machine. Standard Fieldbus systems are e.g., Interbus-S, Profibus DP or DeviceNet.

The Fieldbus interface FB5 translates the Fieldbus signals for the welding machine using a standardized protocol. It makes no difference which type of Fieldbus system is used. The signals are always at the same place on the Fieldbus. This makes the preparation of the robot or system controller much easier.

3 Robot interface

FB5 Fieldbus Interface: mounting onto the power source

FB5 Fieldbus Interface: mounting onto the cabinet

Fieldbus application

Various Fieldbus types are supported (e.g. Profibus DP, DeviceNet). The Fieldbus 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 Fieldbus types are available on request.

Overview FB5 interfaces	Part-No.
Fieldbus interface FB5 Interbus-S (copper line)	**77-3-1**
Fieldbus interface FB5 Profibus DP	**77-3-2**
Fieldbus interface FB5 DeviceNet	**77-3-3**
Fieldbus interface FB5 EtherCAT	**77-3-4**
Fieldbus interface FB5 Profinet IRT (copper line)	**77-3-5**
Fieldbus interface FB5 Profinet IRT (LWL 2 Port)	**77-3-6**
Fieldbus interface FB5 Interbus-S (LWL FSMA)	**77-3-7**
Fieldbus interface FB5 Ethernet/IP	**77-3-8**

Cabinet mounting	Part-No.
Mounting kit for cabinet	**77-1182-02**
Cabinet cable 2m FB5 with device plug and cable socket	**77-3102-02**

Power source mounting	Part-No.
Bracket for FB5/Q6pw for mounting onto LSQ3/5	**77-1182-03**

Optional power supply (24V)	Part-No.
Connection cable 2.0 m (with open end)	**77-1182-04**

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 and laser power within defined limits. 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 can be found in our Synchroweld brochure.

Frontpull 8 Module

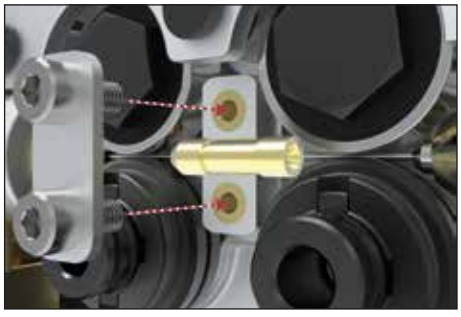
Modular standard.

The Frontpull module uses the proven industrial strength housing of the PF6 wire feeder. The installation is easy because the wire feeder brackets also fit the Frontpull module.

Frontpull 8 Module with integrated gas flow sensor

The motor control board is included in the module. The wire feeder mechanics are located in the torch. This separation protects the electronics from the noise of the welding process. The PF6 proven power pin block connection technology is also used in the Frontpull module to reach the most possible standardization.
The Frontpull module 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.

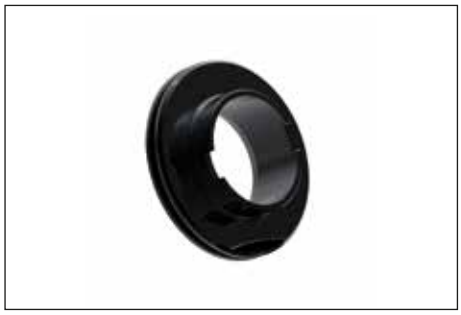
Overview of Frontpull 8 Module	Part-No.
FPM8 Frontpull 8 Module with integrated gas flow sensor	**10-15-300**
Shielding Gas Saver ECO GS40 ¼", adjustable	**93-62-5**



Center guide

The center guide ensures a defined routing of the welding wire within the four roll drive.

Overview center guide	Part-No.
Center guide for PF5/6 wire feeder, wire-ø 0.8 - 1.6 mm for steel wire	**12-2-1-15**



Please note:

Two drive rolls per system are needed.

Please note:

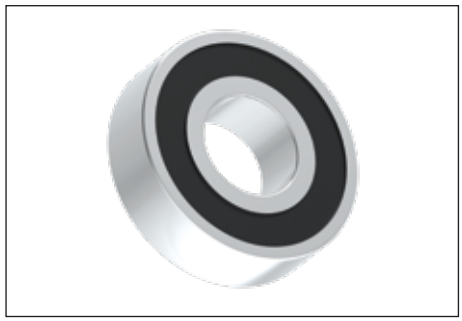
Drive rolls for wires in inch sizes available on request.

Drive roll

Our drive rolls are available in several groove shapes for different welding filler materials.
(V-groove for steel and knurled U-groove for filler wire applications).

Overview of drive rolls	Part-No.
Wire-ø 0.8 mm, V-groove	**12-2-4-08**
Wire-ø 0.9 mm, V-groove	**12-2-4-09**
Wire-ø 1.0 mm, V-groove	**12-2-4-10**
Wire-ø 1.2 mm, V-groove	**12-2-4-12**
Wire-ø 1.4 mm, V-groove	**12-2-4-14**
Wire-ø 1.6 mm, V-groove	**12-2-4-16**

Overview of drive rolls	Part-No.
Filler Wire-ø 1.0 mm, U-groove	**12-2-4-310**
Filler Wire-ø 1.2 mm, U-groove	**12-2-4-312**
Filler Wire-ø 1.6 mm, U-groove	**12-2-4-316**



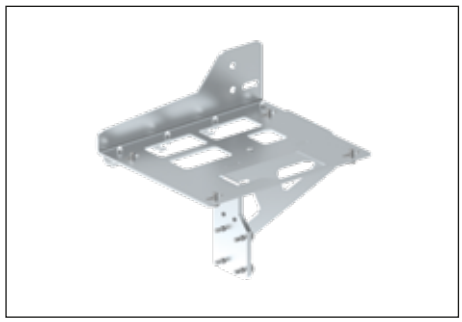
Please note:

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

Pressure roll

The pressure roll ensures a defined pressure of the welding wire into the specific groove shape of the drive roll.

Overview pressure rolls	Part-No.
Pressure roll – DIN 625 T1 for PF5/6 wire feeder series	**12-2-3-0**
Locating bolt for pressure roll on two/four roller drive	**12-13-5**



Please note:

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

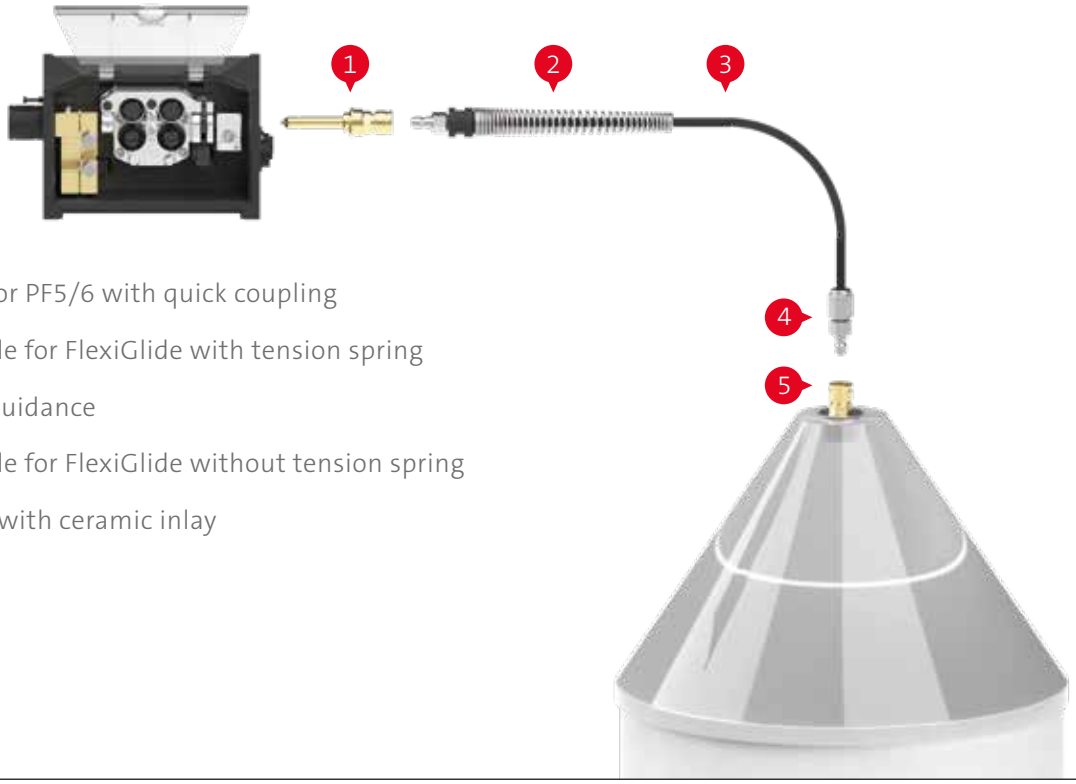
Wire feeder bracket

Wire feeder bracket with holes and mounting material for quick and easy installation.

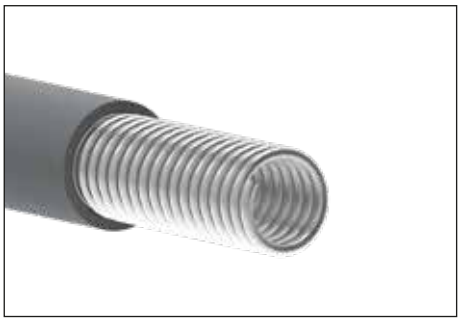
Overview of wire feeder brackets	Part-No.
For robot type-ABB (single wire)	
IRB 1600iD-4/1.5 / IRB 1660iD-6/1.55	**14-12-5**
IRB 2600iD-15/1.85 / IRB 2600iD-8/2.00	**14-12-10**
For robot type-FANUC (single wire)aht)	
AM 100iD / AM 120iD / M-10iD/8L / M-20iD/12L	**14-14-9**

For robot type-KUKA (single wire)	
KR 6 R1840-2 HW / KR 8 R1440-2 HW / KR 8 R1640-2 HW	**14-13-8**
KR 8 R2100-2 HW	**14-13-9**
For robot type-YASKAWA (single wire)	
AR1440 / AR2010 / GP12 / GP25-12	**14-11-30**

5 FlexiGlide wire guidance



1. Wire inlet body for PF5/6 with quick coupling
2. Connection Nipple for FlexiGlide with tension spring
3. FlexiGlide Wire Guidance
4. Connection Nipple for FlexiGlide without tension spring
5. Drum connector with ceramic inlay



FlexiGlide Wire Guidance

Please note:

Furhter information can be found in our brochures "FlexiGlide" (PIN-0168) and "Wire guidance" (DOC-0193).

SKS Wire guidance FlexiGlide with a high limit of elasticity and very low friction. The constructive design, a coil made from chrome/nickel spring steel with a plastic coating, creates robustness, resulting in a high lifetime.

Benefits with FlexiGlide:

- Optimized for use in robotic applications
- High lifetime
- Very low friction
- Flame retardant and abrasion resistent

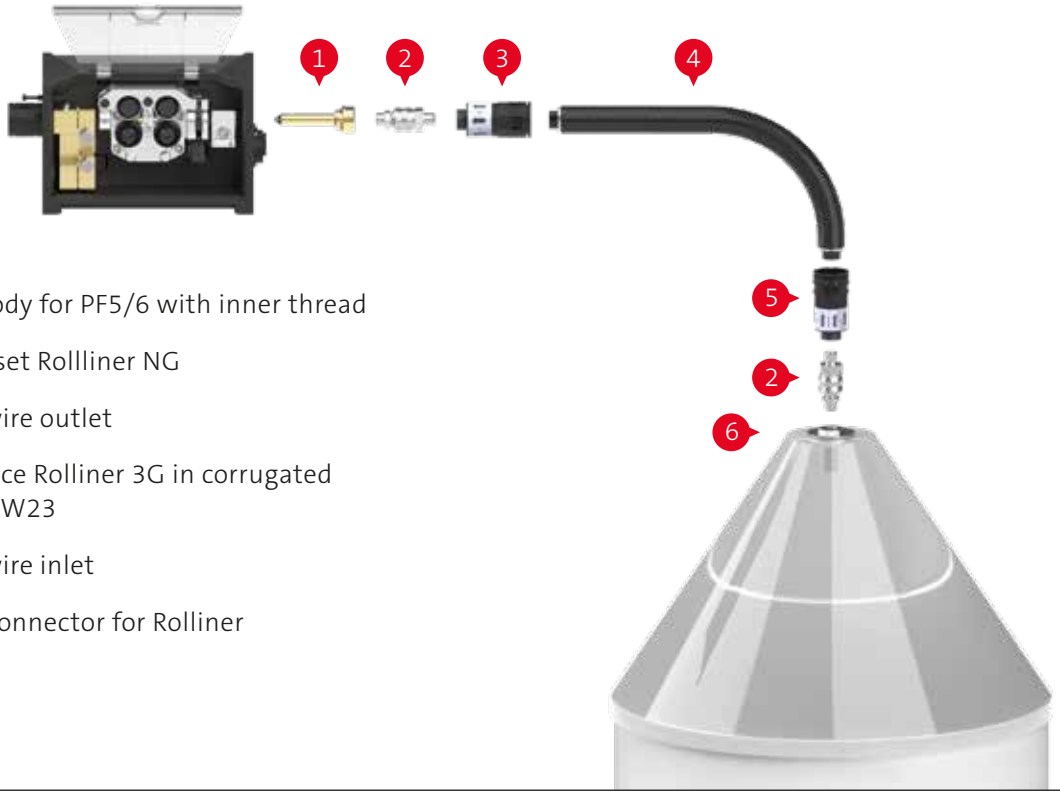
FlexiGlide wire guidance

Overview of FlexiGlide wire guidance	Part-No.
Wire Inlet Body for PF5/6 with Quick-Connector	**10-2-0-61**
Connection Nipple insulated for FlexiGlide with tension spring	**44-3-11**
FlexiGlide wire guidance, Type B, per meter	**44-3-1**
Connection Nipple for FlexiGlide without tension spring	**44-3-4**
Drum Connector with ceramic inlet	**44-40-1**

Option

Overview strain-relief on wire guidance	Part-No.
Strain-relief for wire guidance on wire feeder bracket	**14-10-6**
Through-Wall Mount for wire guidance FlexiGlide incl. suspension	**44-3-8**
Wall Duct for FlexiGlide wire guidance	**44-3-9**

5 Rolliner 3G wire guidance



1. Wire inlet body for PF5/6 with inner thread
2. Connection set Rollliner NG
3. Connector wire outlet
4. Wire Guidance Rolliner 3G in corrugated tube black NW23
5. Connector wire inlet
6. Wire drum connector for Rolliner

Rolliner 3G Wire guidance is suitable for all applications where higher wire feeding requirements are needed.

Benefits:

- Optimized sliding properties with roller-supported wire guidance
- High flexibility due to segmentation of roller parts
- Suitable for use in harsh environments
- Universally application (steel, stainless steel, filler wire, aluminum)

Overview of Rolliner 3G wire guidance	Part-No.
Wire inlet body for PF5/6 with ¼" NPTF inner thread	**10-2-0-60**
Connection set Rollliner NG for drum or wire feeder	**44-60-21**
Connector wire outlet for Rolliner 3G	**44-60-42**
Mounting clip for Rolliner 3G	**44-60-45**
Wire Guidance Rolliner 3G per meter	**44-60-40**
Corrugated tube PUR black NW23 per meter	**91-3-2**
Connector wire inlet for Rolliner 3G	**44-60-41**
Wire drum connector for Rolliner NG	**44-60-30**

Option

Overview of strain-relief on wire guidance	Part-No.
Strain-relief wire guidance for Rolliner	**14-10-8**
Clamping Piece Rollliner 3G on Cable Bundle -A-	**44-60-48**

Please note:

Two connection sets are needed.

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	Part-No.
Wire inlet body for PF5/6 with M10 internal thread for ESAB	**10-2-0-50**
Wire inlet body for PF5/6 with 9.6 mm bore hole	**10-2-0-52**
Wire inlet body for PF5/6 with 13 mm bore hole	**10-2-0-53**
Wire inlet body for PF5/6 with PG9 thread	**10-2-0-56**
Wire inlet body for PF5/6 with internal thread ¼" NPTF	**10-2-0-60**

6 Ground cable

Please note:

Further lengths and diameters available on request

Ground cable with 70 mm² connector and cable plug

The use of highly pure copper reduces the electric resitance supporting the welding process. Manufactured as of DIN VDE 0285-525-2-81 / DIN EN 50525-2-81.

Overview of ground cables	Part-No.
Ground cable 70 mm² 6 m with DIX plug and cable lug	**228078106**
Ground cable 70 mm² 10 m with DIX plug and cable lug	**228078100**

Option

Overview of ground cables	Part-No.
Ground cable 95 mm² 6 m with DIX plug and cable lug	**228080106**
Ground cable 95 mm² 10 m with DIX plug and cable lug	**228080110**

7 Control cable

Please note:

For the Frontpull 8i system three control cables are needed. One control cable is already included in the cable bundle.

Please note:

Further lengths available on request.

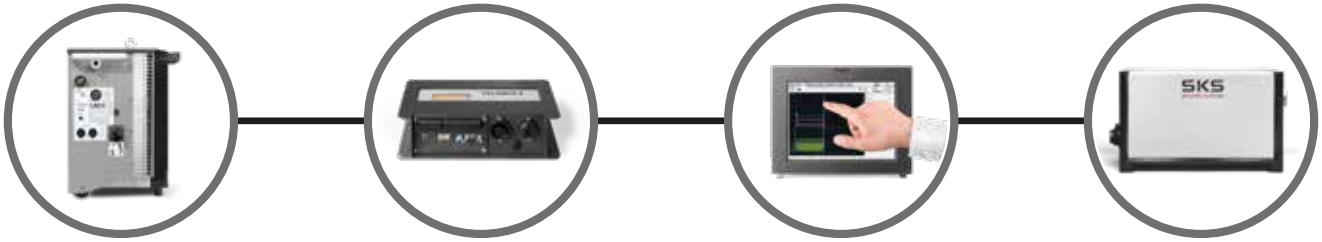
Control cable: L700/SPW-Bus

One cable to connect power source, weld process controller, interface and frontpull module. By use of one cable stock and installation is simplified. The power is supplied via this cable. An external supply is not neccesary.

Overview of control cables	Part-No.
Control cable 0.5m L700/SPW-Bus	**541031050**
Control cable 1m L700/SPW-Bus	**541031001**
Control cable 2m L700/SPW-Bus	**541031002**
Control cable 3m L700/SPW-Bus	**541031003**
Control cable 5m L700/SPW-Bus	**541031005**
Control cable 7m L700/SPW-Bus	**541031007**
Control cable 10m L700/SPW-Bus	**541031000**
Control cable 12m L700/SPW-Bus	**541031012**
Control cable 15m L700/SPW-Bus	**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 Frontpull module) 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 | Frontpull Module

8 Cable bundles

Cable bundles: Power source to Frontpull Module

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

Overview of cable bundles	Part-No.
Cable bundle 72mm² 5m -A- LSQ-PF5/6	**20-4-5**
Cable bundle 72mm² 7m -A- LSQ-PF5/6	**20-4-7**
Cable bundle 72mm² 10m -A- LSQ-PF5/6	**20-4-10**

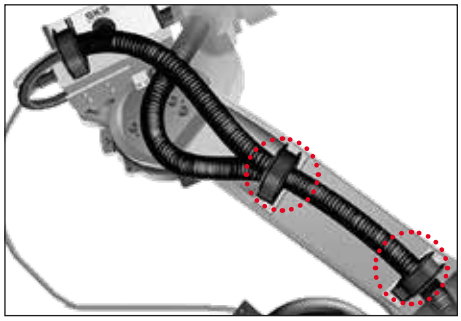
Alternative

Overview of cable bundles with air-blast function	Part-No.
Cable bundle 72mm² 5m -A- LSQ-PF5/6 with air-blast function	**20-19-5**
Cable bundle 72mm² 7m -A- LSQ-PF5/6 with air-blast function	**20-19-7**
Cable bundle 72mm² 10m -A- LSQ-PF5/6 with air-blast function	**20-19-10**
Air blast valve for mounting on the wire feeder bracket	**93-50**

Please note:

Further lengths available on request.

8 Cable bundles: Clamping set



Mounting cable bundle: clamping set -A-

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

Overview of clamping sets	Part-No.
For robot type-ABB	
IRB 1600iD-4/1.5 / IRB 1660iD-6/1.55	**91-3-0-41-10**
IRB 2600iD-15/1.85 / IRB 2600iD-8/2.00	**91-3-0-41-11**
For robot type-FANUC	
AM 100iD / AM 120iD	**91-3-0-41-23 (optional 91-3-0-41-30)**
M-10iD/8L / M-20iD/12L	**91-3-0-41-23 (optional 91-3-0-41-30)**
For robot type-KUKA	
KR 6 R1840-2 HW / KR 8 R1440-2 HW / KR 8 R1640-2 HW / KR 8 R2100-2 HW	**91-3-0-41-12**
For robot type-YASKAWA	
AR1440 / AR2010 / GP12 / GP25-12	**91-3-0-41-22**

Please note:

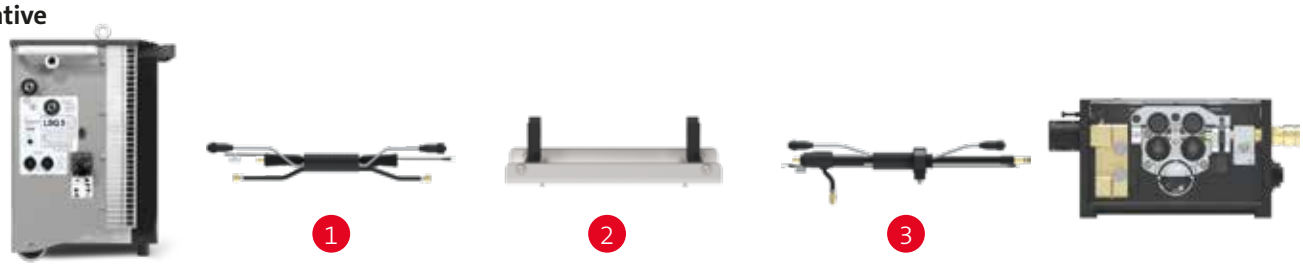
Clamping sets for further robot types are available on request.

Alternative

Mounting for WF-bracket	Part-No.
Mounting for WF-bracket for external guided cable bundle	**14-10-10**

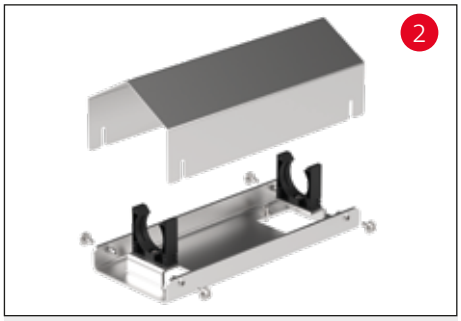
8 Dividable cable bundles

Alternative



70 mm² Connection from power source to connection bracket -A-

Length	Part-No.	Part-No. (with air-blast function)
5 m	**20-7-5**	**20-21-5**
7 m	**20-7-7**	**20-21-7**
10 m	**20-7-10**	**20-21-10**



Connection bracket for cable bundles (PF5/6) -A-

	Part-No.
Connection bracket	**20-6-0-3**

Connection 72 mm² from connection bracket to PF5/6 -A-

Length	Part-No.	Part-No. (with air-blast function)
3 m	**20-6-3**	**20-20-3**
5 m	**20-6-5**	**20-20-5**
7 m	**20-6-7**	**20-20-7**

Please note:

Further lengths available on request.

Please note:

For use of the air blast function the air blast valve (Part-No. 93-50) is required.

Cable bundle with separation between power source and wire feeder PF6

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.

Highest precision with unprecedented freedom of motion.

Frontpull 8i for hollow wrist robots with inner cable dress.

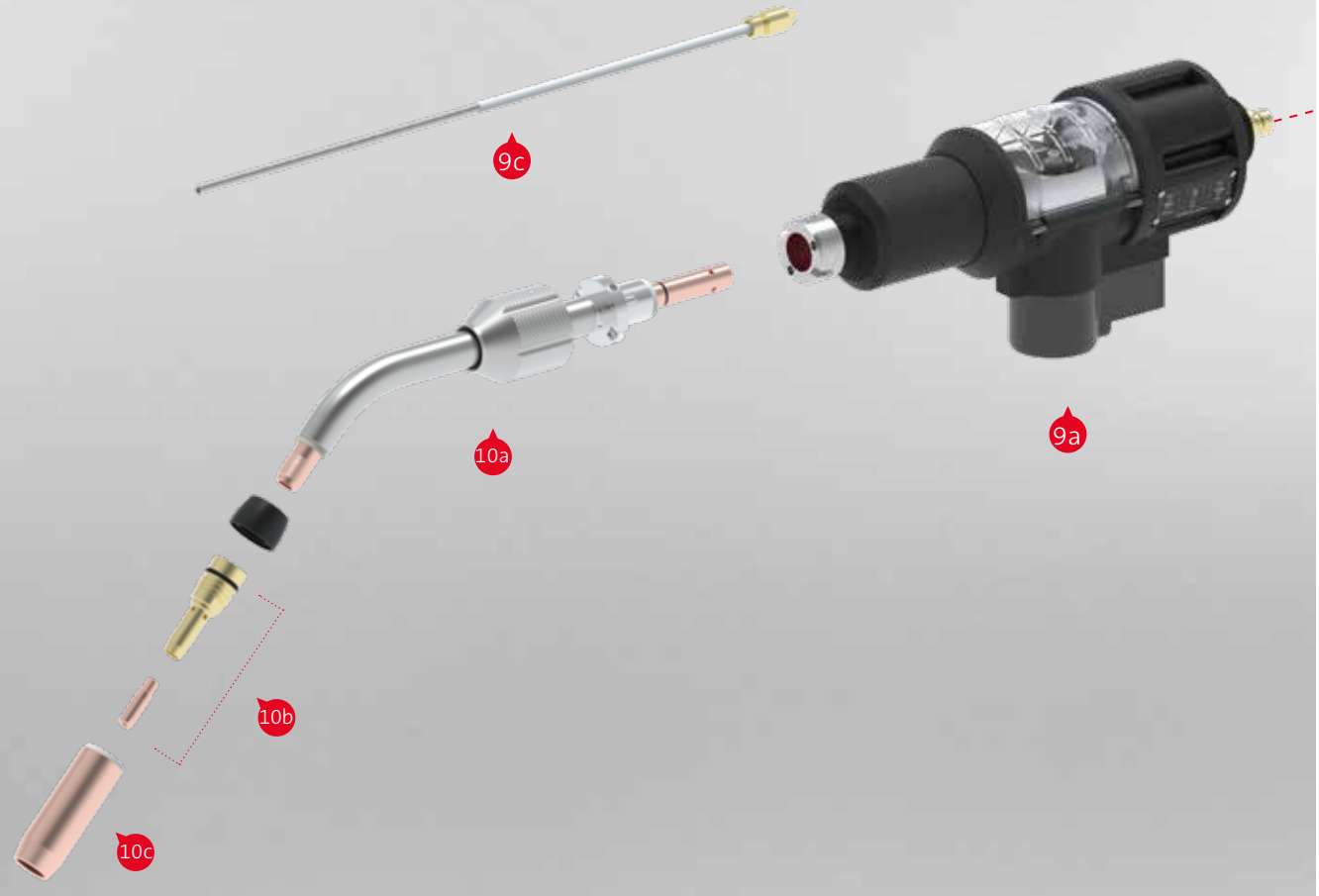
The Frontpull 8i torch system perfects the interaction of welding machines and robots with inner cable dress. A single rotary joint, endlessly rotatable, transmits electrical energy and all media such as gas, air and wire. This reduces torch cable movement (no twisting/no torsional stress) and therefore increases the lifetime of the torch cable. The lack of reorientations also saves airtime because the torch reaches every position in the shortest possible path. Additionally, the wire feeding unit, integrated into the torch system, provides highest precision next to the process. The integrated collision detection with deflection provides a stop signal for the robot in case of collision.

Frontpull 8i – air-cooled for steel applications

Processes:	microMIG, microMIG-cc, KF-pulse, Puls, MIG brazing, GMAW
Wire materials:	high-alloy steels, low-alloy steels
Compatibility:	for all common industrial robots
Weight:	4.0 kg
Max. power:	420 A – 60 % duty cycle/40 °C, air-cooled
Wire diameter:	0.8-1.6 mm
TCP accuracy:	± 0.2 (400 mm)

9 Torch System Frontpull 8i: Parts Overview

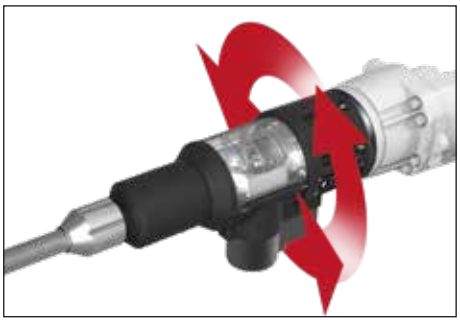
All parts of the Frontpull 8i Lite torch system at a glance.



9a Torch Body Frontpull 8i 9b Robot Mounting 9c Torch Cable and Accessories
10a Torch Neck 10b Consumables 10c Gas Nozzle

9 Torch System Frontpull 8i: Parts Overview

9a Torch system: Torch Body Frontpull 8i and Accessories



Frontpull 8i for welding robots with inner cable dress

A single rotary joint, endlessly rotatable, transmits electrical energy and all media such as gas, air and wire. This reduces torch cable movement (no twisting/no torsional strain) and therefore increases the lifetime of the cable. The lack of reorientations also saves airtime because the torch reaches every position in the shortest possible path. The integrated collision detection with deflection provides a stop signal for the robot in case of collision.

Frontpull 8i	Part-No.
Frontpull 8i	**10-28**

Technical data	
Welding current	420 A - 60 % ED
Weight	3.8 kg

Drive roll

Our drive rolls are available in several groove shapes for different welding filler materials. (V-groove for steel and knurled U-groove for filler wire applications).

Overview drive rolls	Part-No.
Wire-ø 0.8 mm, V-groove	**12-2-4-08**
Wire-ø 0.9 mm, V-groove	**12-2-4-09**
Wire-ø 1.0 mm, V-groove	**12-2-4-10**
Wire-ø 1.2 mm, V-groove	**12-2-4-12**
Wire-ø 1.4 mm, V-groove	**12-2-4-14**
Wire-ø 1.6 mm, V-groove	**12-2-4-16**

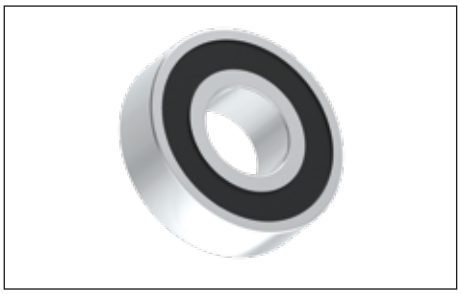
Overview drive rolls	Part-No.
Filler wire-ø 1.0 mm, U-groove	**12-2-4-310**
Filler wire-ø 1.2 mm, U-groove	**12-2-4-312**
Filler wire-ø 1.6 mm, U-groove	**12-2-4-316**

Please note:

Drive rolls for wires in inch sizes available on request.

Please note:

One drive roll per system is needed.



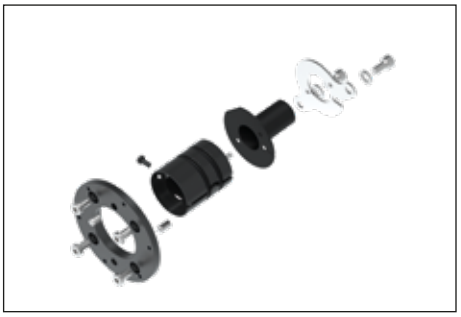
Pressure roll

The pressure roll ensures a defined pressure of the welding wire into the specific groove shape of the drive roll.

Overview pressure roll	Part-No.
Pressure roll, DIN 625 T1 for PF5/6 wire feeder series	**12-2-3-0**
Locating bolt for pressure roll on two/four roller drive	**12-13-5**

Please note:

One pressure roll and one locating bolt are needed per system.



Please note:

Mounting kits for further robot types are available on request.

Mounting kit for Frontpull 8i

Overview of mounting kits	Part-No.
For robot type-ABB	
IRB 1600iD-4/1.5	**10-14-0-3**
IRB 1660iD-6/1.55 / IRB 2600iD-15/1.85 / IRB 2600iD-8/2.00	**10-14-0-9**
For robot type-FANUC	
AM 100iD / M10iD/8L / M-20iD/12L	**10-14-0-19**
AM 120iD	**10-14-0-21**
For robot type-KUKA	
KR 6 R1840-2 HW / KR 8 R1440-2 HW / KR 8 R1640-2 HW / KR 8 R2100-2 HW	**10-14-0-15**
For robot type-YASKAWA	
AR1440 / AR2010 / GP12 / GP25-12	**10-14-0-14**

Please note:

Torch cables for further robot types are available on request.

Please note:

Connection cable length = torch cable length + 0.8 m

Torch cable with outer cable dress for Frontpull 8i torch system

High flexible coaxial cable 72 mm² with air blast tube, disconnection cable and Power Pin

Overview of recommended torch cable lengths for robots	Part-No.
for robot type-ABB	
IRB 1600iD-4/1.5	**61-9-1800**
IRB 1660iD-6/1.55	**61-9-100-6**
IRB 2600iD-15/1.85	**61-9-2600-15**
IRB 2600iD-8/2.00	**61-9-2600-8**
for robot type-FANUC	
AM 100iD	**61-9-100**
AM 120iD	**61-9-120**
M-10iD/8L	**61-80-120-10**
M-20iD/12L	**61-9-M20iD-12L**
for robot type-KUKA	
KR 6 R1840-2 HW	**61-9-MH24**
KR 8 R1440-2 HW / KR 8 R1640-2 HW	**61-9-1420**
KR 8 R2100-2 HW	**61-9-120**
for robot type-YASKAWA	
AR 1440 / GP 12	**61-9-1440**
AR 2010 / GP 25-12	**61-9-2010**

Overview of control cables	
Length	**Part-No.**
for robot type-ABB	
1,2 m	**77-2013-06**
1,2 m	**77-2013-06**
1,2 m	**77-2013-06**
1,5 m	**77-2013-061**
for robot type-FANUC	
1,5 m	**77-2013-061**
1,2 m	**77-2013-06**
1,5 m	**77-2013-061**
1,7 m	**77-2013-063**
for robot type-KUKA	
1,2 m	**77-2013-06**
1,2 m	**77-2013-06**
1,2 m	**77-2013-06**
for robot type-YASKAWA	
1,2 m	**77-2013-06**
1,5 m	**77-2013-061**
Velcro® tape for mounting (10 pcs.)	**571040310**

Frontpull liner for steel wire

For the following wire diameters:

Wire-ø 0.8 - 1.6 mm	
Overview of liners	**Part-No.**
Frontpull liner 2.0 m for steel wire 0.8-1.6 mm	**44-22-1216-20**
Frontpull liner 3.5 m for steel wire 0.8-1.6 mm	**44-22-1216-35**
Frontpull liner 5.0 m for steel wire 0.8-1.6 mm	**44-22-1216-50**
Liner retainer for liner 1.2-1.6mm with O-ring	**44-30-3**
Inset for Frontpull steel liner	**44-30-16**

Wire guidance for torch neck

Overview of liners	Part-No.
Frontpull wire guidance (white) for torch neck, wire ø 0.8 mm	**58-4-11-500-08**
Frontpull wire guidance (white) for torch neck, wire ø 1.0 mm	**58-4-11-500-10**
Frontpull wire guidance (red) for torch neck, wire ø 1.2 mm	**58-4-11-500-12**
Frontpull wire guidance (red) for torch neck, wire ø 1.6 mm	**58-4-11-500-16**

Torch necks for Frontpull 8i

SKS torch necks are available in different geometries and for a wide range of applications. With its innovative bajonet 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. Their design concept allows them to be used in areas where market standard torch necks would already require water cooling.

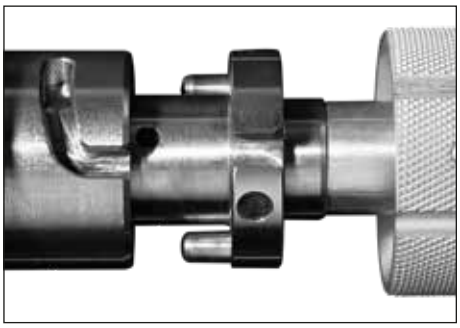
Overview of torch necks — **Application recommendations**

Type	Part-No.	angle [°]	TCP length [mm]	steel/CrNi
standard dressing air-cooled	**58-1-00-400-1**	0	530.0	√
	58-1-22-350-1	22	480.0	√
	58-1-22-400-1	22	530.0	√
	58-4-330-500-1	30	568.5	O
	58-1-130-450-1	30	580.0	O
	58-1-35-400-1	35	530.0	√
	58-1-45-350-1	45	480.0	√
	58-1-45-400-1	45	530.0	√ √
	58-1-45-450-1	45	580.0	√
	58-4-345-450-1	45	518.5	√
	58-4-345-567-1	45	635.5	√

Type	Part-No.	angle [°]	TCP length [mm]	steel/CrNi
ZK	**58-1-245-400-1**	45	530.0	√

√ √ Recommended standard torch neck
√ Recommended
O Special design: application specific

Please note:
For information about aluminum application please see our brochures "Frontpull 8i Aluminum".



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).

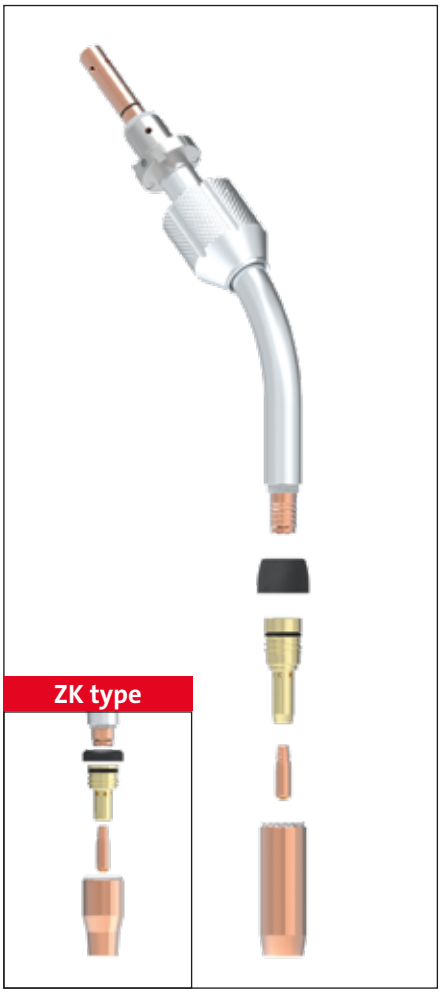
Clamping cap for SKS single wire torch necks

Tool-free assembly with bayonet quick-change system

Clamping cap	Part-No.
Clamping cap	**71-3-25**

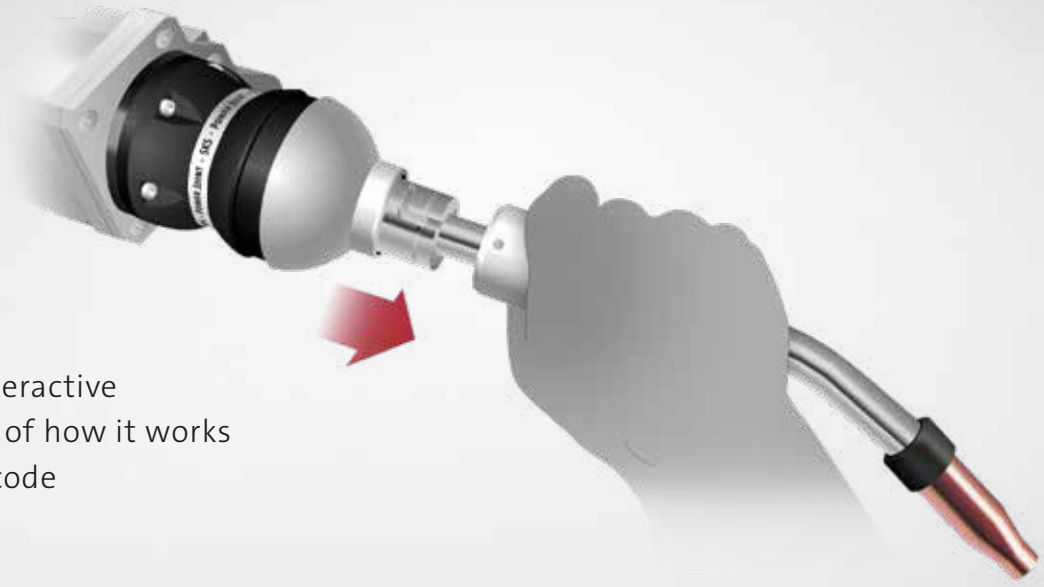
Isolator für SKS Brennerhälse

Overview of insulators	Part-No.
Torch neck insulator	**58-1-5**
Torch neck insulator ZK-HD	**43-6-4-3**



10a Torch neck

Torch neck change with the SKS bayonet locking concept



Find an interactive animation of how it works in the QR code

Please note:

Animation using the example of a standard torch neck in the Power Joint Weld Package.

10b Consumables

Please note:

An overview with dimensions can be found on the page after next.

Power Lock Plus: retaining head

Heavy duty retaining head with thread for threaded gas nozzles for simple and safe installation

Overview of retaining heads	Part-No.
Heavy duty retaining head Power Lock Plus (6 holes)	**43-16-6**
Heavy duty retaining head Power Lock Plus - ZK (6 holes)	**43-24-1**

10b Consumables

Please note:

Contact tips for wires in inch sizes available on request.

Power Lock Plus: Contact tip

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

Overview of contact tips	Part-No.
Contact tip Power Lock Plus for wire-ø 0.8 mm, E-Cu	**40-6-5-0.8E**
Contact tip Power Lock Plus for wire-ø 0.9 mm, E-Cu	**40-6-5-0.9E**
Contact tip Power Lock Plus for wire-ø 1.0 mm, E-Cu	**40-6-5-1.0E**
Contact tip Power Lock Plus for wire-ø 1.2 mm, E-Cu	**40-6-5-1.2E**
Contact tip Power Lock Plus for wire-ø 0.8 mm, HD-CuCrZr	**40-6-7-0.8S**
Contact tip Power Lock Plus for wire-ø 0.9 mm, HD-CuCrZr	**40-6-7-0.9S**
Contact tip Power Lock Plus for wire-ø 1.0 mm, HD-CuCrZr	**40-6-7-1.0S**
Contact tip Power Lock Plus for wire-ø 1.2 mm, HD-CuCrZr	**40-6-7-1.2S**
Contact tip Power Lock Plus for wire-ø 1.4 mm, HD-CuCrZr	**40-6-7-1.4S**
Contact tip Power Lock Plus for wire-ø 1.6 mm, HD-CuCrZr	**40-6-7-1.6S**

10c Gas nozzle

Please note:

An overview 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	Part-No.
13 mm bottle shaped	
short	**41-19-13-BS**
flush	**41-19-13-BF**
long	**41-19-13-BR**
13 mm tapered	
short	**41-19-13-TS**
flush	**41-19-13-TF**
long	**41-19-13-TR**
15 mm bottle shaped	
short	**41-19-15-BS**
flush	**41-19-15-BF**
long	**41-19-15-BR**
16 mm tapered	
short	**41-19-16-TS**
flush	**41-19-16-TF**
long	**41-19-16-TR**

Heavy Duty gas nozzles	Part-No.
13 mm	
flush, bottle shaped	**41-20-13-BF**
long, tapered	**41-20-13-TR**
16 mm tapered	
kurz	**41-20-16-TS**
flush	**41-20-16-TF**
long	**41-20-16-TR**

ZK type gas nozzles	Part-No.
13 mm bottle shaped	
short	**41-21-13-BS**
flush	**41-21-13-BF**
15 mm bottle shaped	
short	**41-21-15-BS**
flush	**41-21-15-BF**
13+15 mm Heavy Duty/tapered	
13 mm flush	**41-22-13-TF**
15 mm flush	**41-22-15-TF**

Tools and accessories

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

Overview of tools and accessories	Part-No.
Mounting tool SW7 for contact tip (Power Lock Plus)	**51-9002-00**
Stopper-Key for drive rolls (Std & Lite)	**93-100-3-3**
SKS Multitool for single wire torch systems	**47-11**

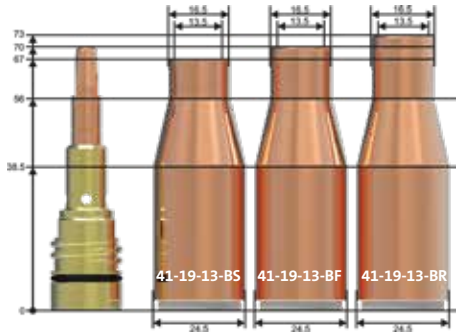
Programming tips

Programming tips for precise seam programming

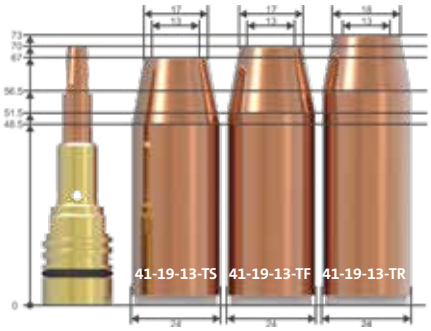
Overview of programming tips	Part-No.
Stickout	
10 mm (Power Lock Plus)	**65-17**
12 mm (Power Lock Plus)	**65-11**
15 mm (Power Lock Plus)	**65-12**
18 mm (Power Lock Plus)	**65-24**

10c Gas nozzles: Overview dimensions

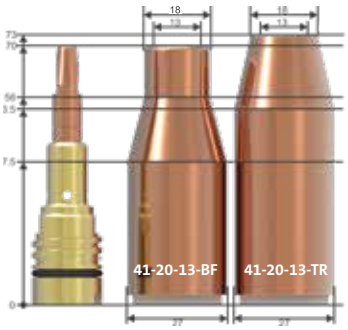
13 mm bottle-shaped



13 mm tapered

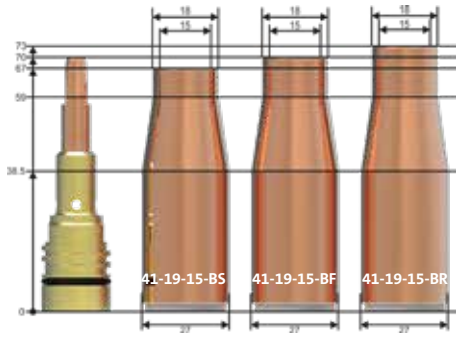


13 mm Heavy Duty

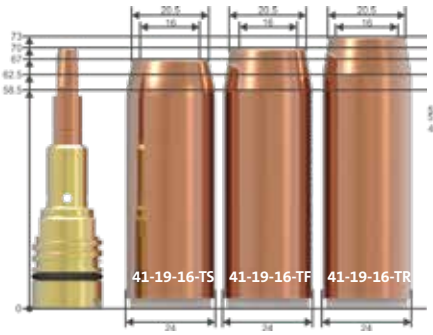


Gas nozzle Part-No.	41-19-13-BS	41-19-13-BF	41-19-13-BR	41-19-13-TS	41-19-13-TF	41-19-13-TR	41-20-13-BF	41-20-13-TR	
Reamer Blade:									
Power Lock Plus									
(UNF 3/8" x 24) Part-No.	82-2-1-13-S	82-2-1-13-F	82-2-1-13-R	82-2-1-13-S	82-2-1-13-F	82-2-1-13-R	82-2-1-13-F	82-2-1-13-R	
(M10 x 1) eReam 2.0 Part-No.	82-2-2-13-S	82-2-2-13-F	82-2-2-13-R	82-2-2-13-S	82-2-2-13-F	82-2-2-13-R	82-2-2-13-F	82-2-2-13-R	

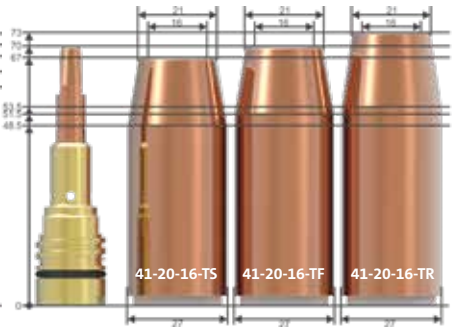
15 mm bottle-shaped



16 mm tapered



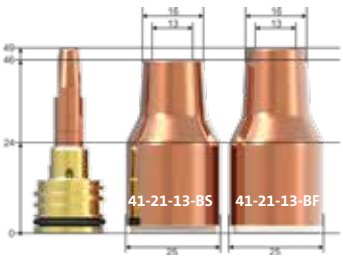
16 mm Heavy Duty



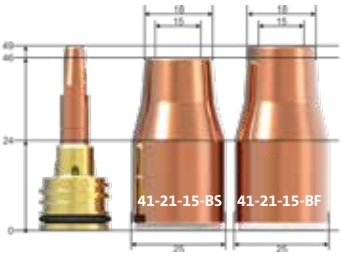
Gas nozzle Part-No.	41-19-15-BS	41-19-15-BF	41-19-15-BR	41-19-16-TS	41-19-16-TF	41-19-16-TR	41-20-16-TS	41-20-16-TF	41-20-16-TR
Reamer Blade:									
Power Lock Plus									
(UNF 3/8" x 24) Part-No.	82-2-1-15-S	82-2-1-15-F	82-2-1-15-R	82-2-1-16-S	82-2-1-16-F	82-2-1-16-R	82-2-1-16-S	82-2-1-16-F	82-2-1-16-R
(M10 x 1) eReam 2.0 Part-No.	82-2-2-15-S	82-2-2-15-F	82-2-2-15-R	82-2-2-16-S	82-2-2-16-F	82-2-2-16-R	82-2-2-16-S	82-2-2-16-F	82-2-2-16-R

ZK type:

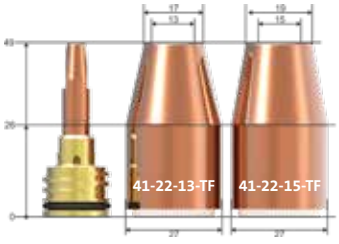
13 mm bottle-shaped



15 mm bottle-shaped



13+15 mm Heavy Duty/tapered



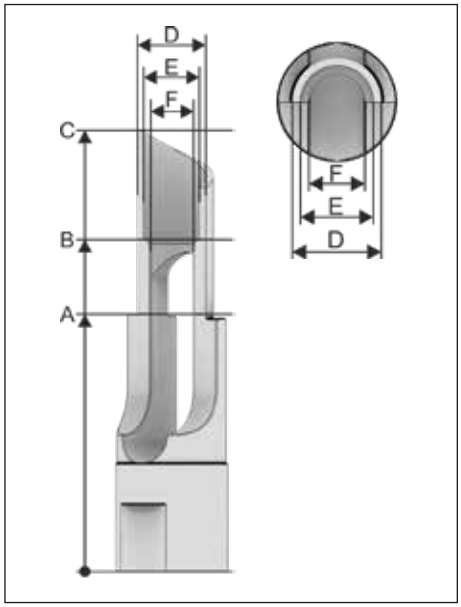
Gas nozzle Part-No.	41-21-13-BS	41-21-13-BF	41-21-15-BS	41-21-15-BF	41-22-13-TF	41-22-15-TF
Reamer Blade:						
Power Lock Plus						
(UNF 3/8" x 24) Part-No.	82-6-1-13-S	82-6-1-13-F	82-6-1-15-S	82-6-1-15-F	82-6-1-13-F	82-6-1-15-F
(M10 x 1) eReam 2.0 Part-No.	82-6-2-13-S	82-6-2-13-F	82-6-2-15-S	82-6-2-15-F	82-6-2-13-F	82-6-2-15-F

Please note:

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

Please note:

Dimensions in mm.

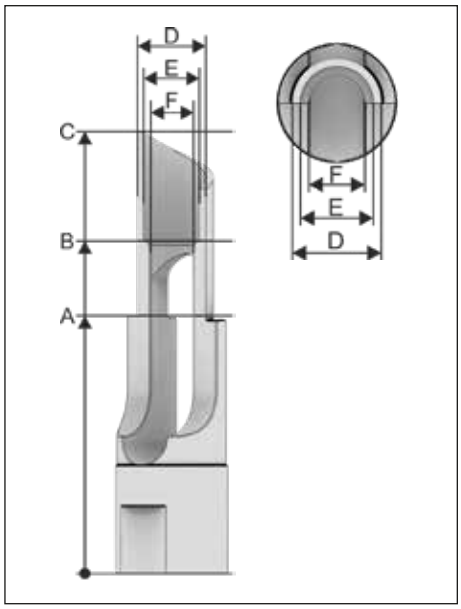


Reamer blade (internal thread UNF 3/8“ x 24)

For pReam cleaning station

Overview of reamer blades	Part-No.	Part-No.	Part-No.
Inner diameter of the gas nozzle	**short**	**flush**	**long**
13 mm	**82-2-1-13-S**	**82-2-1-13-F**	**82-2-1-13-R**
15 mm	**82-2-1-15-S**	**82-2-1-15-F**	**82-2-1-15-R**
16 mm	**82-2-1-16-S**	**82-2-1-16-F**	**82-2-1-16-R**

Dimensions						Part-No.
A	**B**	**C**	**D**	**E**	**F**	
13 mm inner diameter						
55.5	-	67	12.5	9	-	**82-2-1-13-S**
52.5	-	67	12.5	9	-	**82-2-1-13-F**
49.5	-	67	12.5	9	-	**82-2-1-13-R**
15 mm inner diameter						
51	63	91	14.5	11.8	9	**82-2-1-15-S**
48	63	91	14.5	11.8	9	**82-2-1-15-F**
45	63	91	14.5	11.8	9	**82-2-1-15-R**
16 mm inner diameter						
51	63	91	15.5	11.8	9	**82-2-1-16-S**
48	63	91	15.5	11.8	9	**82-2-1-16-F**
45	63	91	15.5	11.8	9	**82-2-1-16-R**



Reamer blade (internal thread M10 x 1)

For eReam 2.0 cleaning station

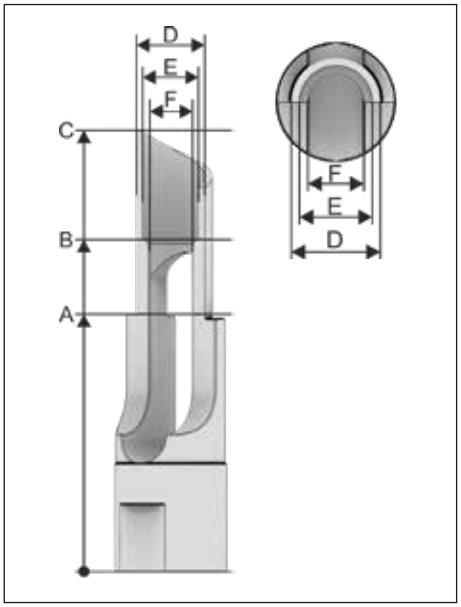
Overview of reamer blades	Part-No.	Part-No.	Part-No.
Inner diameter of the gas nozzle	**short**	**flush**	**long**
13 mm	**82-2-2-13-S**	**82-2-2-13-F**	**82-2-2-13-R**
15 mm	**82-2-2-15-S**	**82-2-2-15-F**	**82-2-2-15-R**
16 mm	**82-2-2-16-S**	**82-2-2-16-F**	**82-2-2-16-R**

Dimensions						Part-No.
A	**B**	**C**	**D**	**E**	**F**	
13 mm inner diameter						
66.5	-	78	12.5	9	-	**82-2-2-13-S**
66.5	-	81	12.5	9	-	**82-2-2-13-F**
66.5	-	84	12.5	9	-	**82-2-2-13-R**
15 mm inner diameter						
38	50	78	14.5	11.8	9	**82-2-2-15-S**
38	53	81	14.5	11.8	9	**82-2-2-15-F**
38	56	84	14.5	11.8	9	**82-2-2-15-R**
16 mm inner diameter						
38	50	78	15.5	11.8	9	**82-2-2-16-S**
38	53	81	15.5	11.8	9	**82-2-2-16-F**
38	56	84	15.5	11.8	9	**82-2-2-16-R**

Please note:

Dimensions in mm.

11 Reamer blades: ZK type

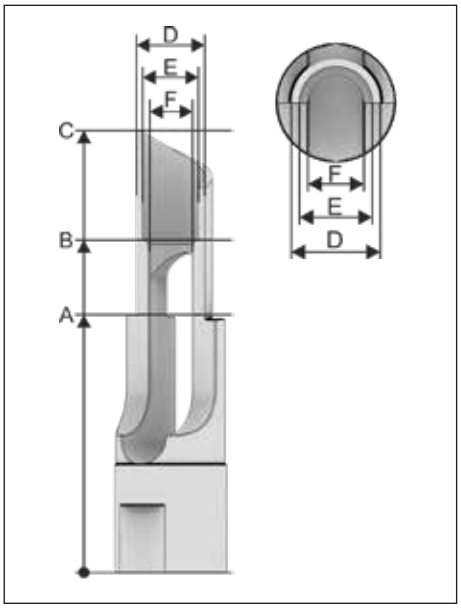


Reamer blade ZK series Power Lock Plus (internal thread UNF 3/8“ x 24)

For pReam cleaning station

Overview of reamer blades	Part-No.	Part-No.	Part-No.
Inner diameter of the gas nozzle	**short**	**flush**	**long**
13 mm	**82-6-1-13-S**	**82-6-1-13-F**	-
15 mm	**82-6-1-15-S**	**82-6-1-15-F**	-

Dimensions						Part-No.
A	**B**	**C**	**D**	**E**	**F**	
13 mm inner diameter						
45	-	77	12.5	11.8	9	**82-6-1-13-S**
42	-	77	12.5	11.8	9	**82-6-1-13-F**
15 mm inner diameter						
45	-	77	14.5	11.8	9	**82-6-1-15-S**
42	-	77	14.5	11.8	9	**82-6-1-15-F**



Reamer blade ZK series Power Lock Plus (internal thread M10 x 1)

For eReam 2.0 cleaning station

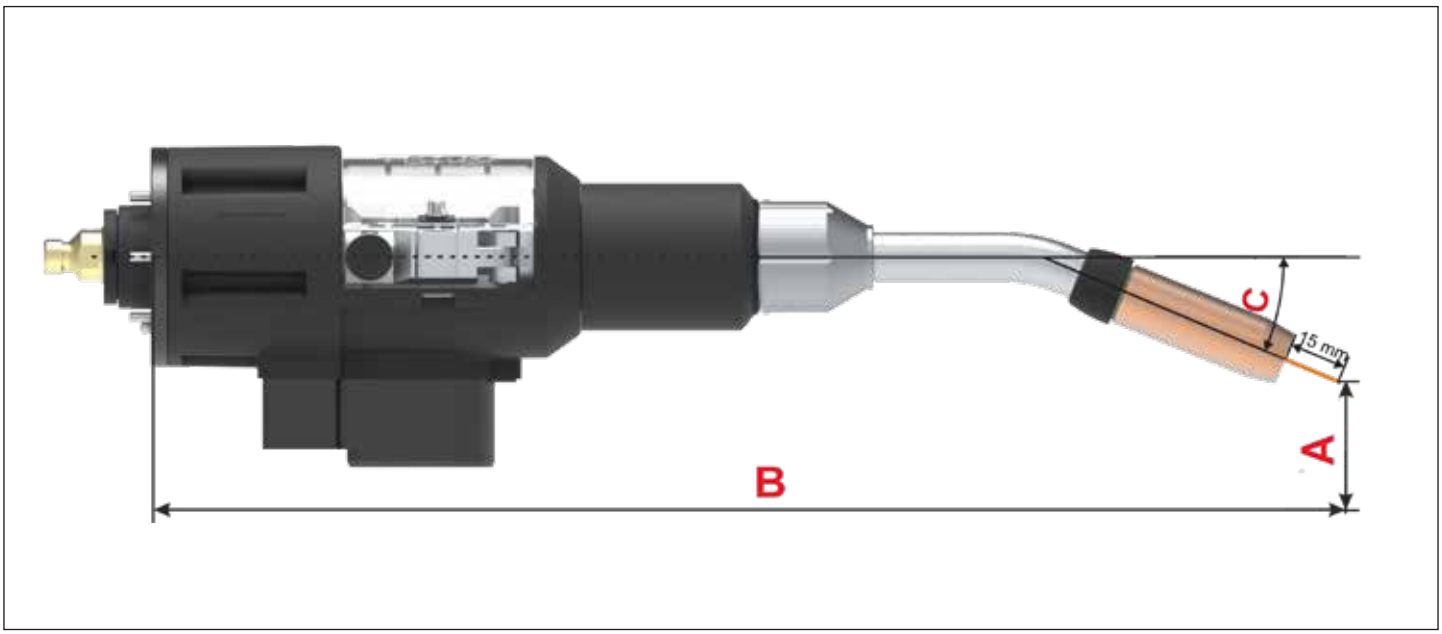
Overview of reamer blades	Part-No.	Part-No.	Part-No.
Inner diameter of the gas nozzle	**short**	**flush**	**long**
13 mm	**82-6-2-13-S**	**82-6-2-13-F**	-
15 mm	**82-6-2-15-S**	**82-6-2-15-F**	-

Dimensions						Part-No.
A	**B**	**C**	**D**	**E**	**F**	
13 mm inner diameter						
45	-	77	12.5	11.8	9	**82-6-2-13-S**
42	-	77	12.5	11.8	9	**82-6-2-13-F**
13 mm inner diameter						
45	-	77	14.5	11.8	9	**82-6-2-15-S**
42	-	77	14.5	11.8	9	**82-6-2-15-F**

Please note:

Dimensions in mm.

12 TCP dimensions



Please note:
Maßangaben in mm.

Overview of standard torch necks

standard dressing	A	B	C
Part-No.	(distance in mm)	(TCP length in mm)	(angle in °)
58-1-00-400-1	0	530.0	0
58-1-22-350-1	45	480.0	22
58-1-22-400-1	45	530.0	22
58-4-330-500-1	120	568.5	30
58-1-130-450-1	0	580.0	30
58-1-35-400-1	70	530.0	35
58-1-45-350-1	90	480.0	45
58-1-45-400-1	90	530.0	45
58-1-45-450-1	90	580.0	45
58-4-345-450-1	120	518.5	45
58-4-345-567-1	120	635.5	45

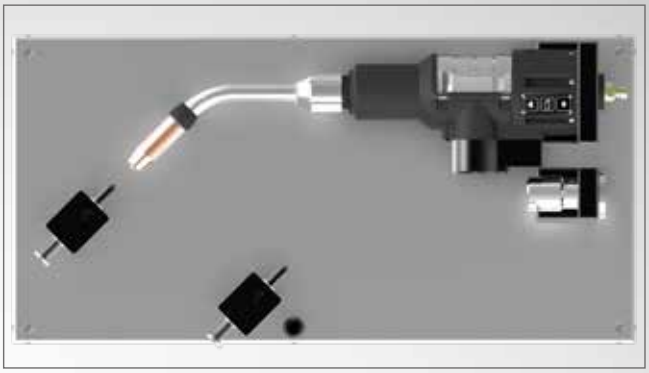
Overview ZK type torch necks

standard dressing	A	B	C
Part-No.	(distance in mm)	(TCP length in mm)	(angle in °)
58-1-245-400-1	90	530.0	45

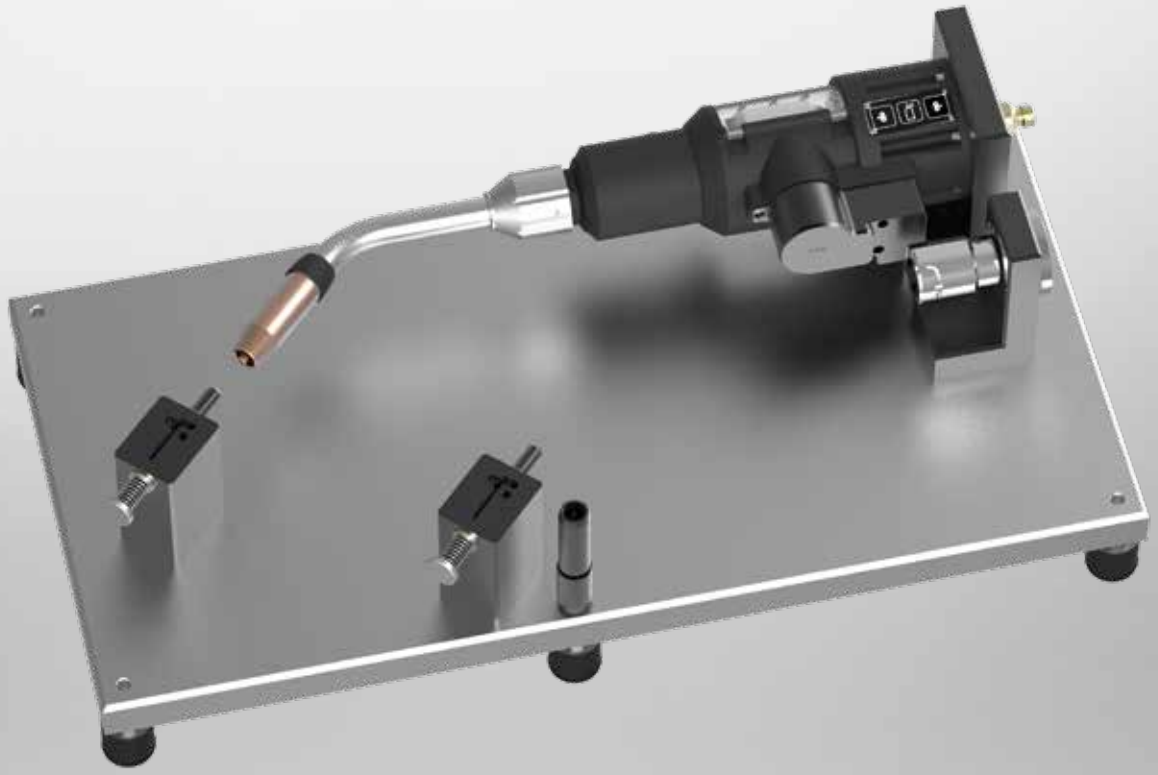
Checking fixtures

To check TCP of torch necks and complete torch.

Checking fixtures are provided for all listed torch necks with Frontpull 8i 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).

eReam 2.0 for a precise cleaning of the torch frontend

Pure Electric.

For further information please scan this QR code:

Please note:

Further information can be found in our eReam 2.0 brochure (DOC-0205EN).

pReam: pneumatic cleaning station

Further information can be found here:

SKS

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Subject to change.