SKS
WELDING SYSTEMS

COBOT
WELD PACKAGE
FRONTPULL

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

AIR-COOLED

CONTENT

Power Source • Wire Feeder Unit • Wire Guidance • Ground Cable • Cable Bundle • Clamping Pieces • Torch System

WELDING PROCESSES

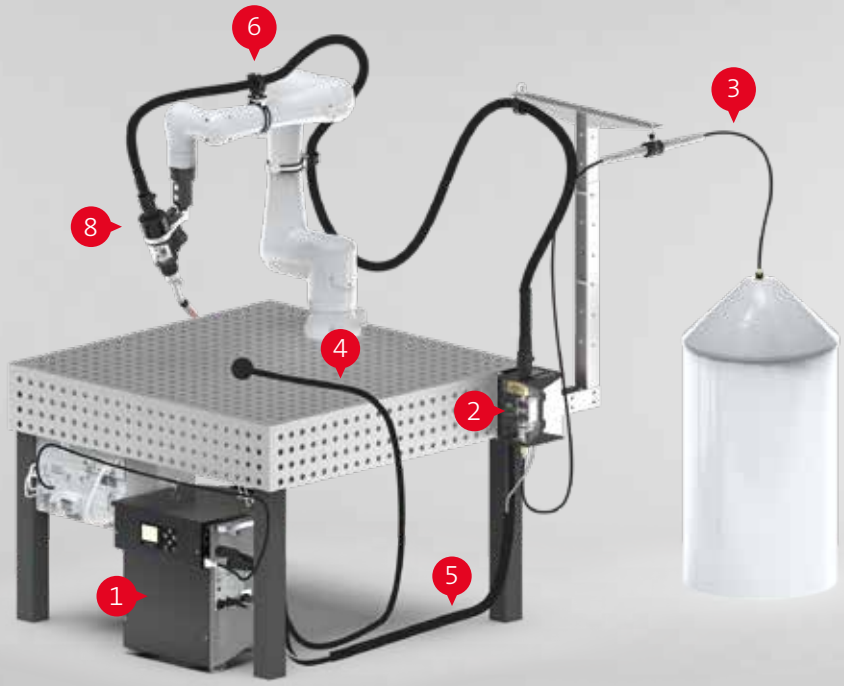
GMAW
Pulse
MIG-Brazing
microMIG
microMIG-cc

STEEL

Example of a stationary setup

The Cobot Frontpull Weld Package contains:

1. LSQ COMPACT
2. Frontpull Module
3. Wire Guidance
4. Ground Cable
5. Cable Bundle
6. Clamping Pieces
7. Trolley
8. Torch System Frontpull
9. Torch Necks / Consumables
10. Alternative with extended funcionality



For installations with outer cable dress.

This brochure contains information on the complete SKS Weld Package with all system components, the Cobot Frontpull torch system and ordering information on consumables and spare parts. Depending on the robot system and welding task, various performance features of the welding machine components and the torch system are available. The **Cobot Frontpull Weld Package** can be used with all common cobots.

Example of a mobile setup

The Cobot Frontpull Weld Package contains:

1. LSQ COMPACT
2. Frontpull Module
3. Wire Guidance
4. Ground Cable
5. Cable Bundle
6. Clamping Pieces
7. Trolley
8. Torch System Frontpull
9. Torch Necks / Consumables
10. Alternative with extended funcionality

Cobot Frontpull – air-cooled for steel applications

Processes:	microMIG, microMIG-cc, KF-pulse, Pulse, MIG-Brazing, GMAW
Wire Materials:	high-alloy steels, low-alloy steels
Compatibility:	for all common cobots
Weight:	4 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)

1 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

Perfect integration.

Interfacing all cobots.

Fieldbus systems exchange signals via serial communication. The Fieldbus master, usually the cobot 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.

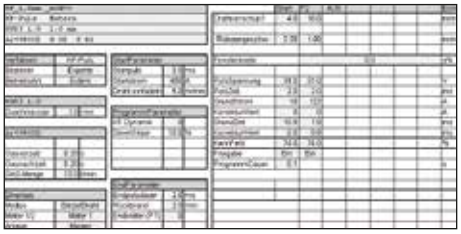
The Fieldbus interface FB5 translates the Fieldbus signals for the welding machine using a standardized protocol. It makes no difference which type of Fieldbus system is used. The signals are always at the same place on the Fieldbus. This makes the preparation of the cobot or system controller much easier.

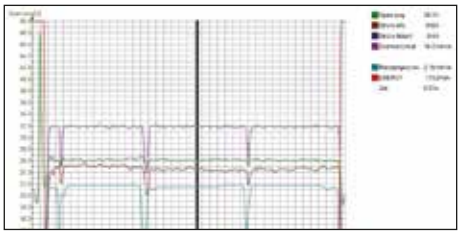
SYNCHROWELD

Synchroweld unites the weld system and cobot 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 can be found in our Synchroweld brochure.





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.

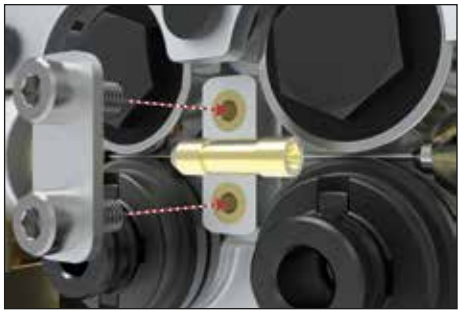
Frontpull 8 Module

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.

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.

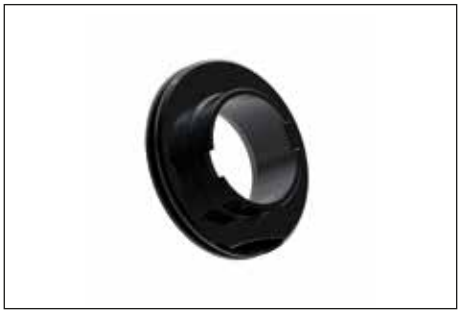
Overview of Frontpull 8 Module	Part-No.
Frontpull Module FPM8 with integrated gas flow sensor	**10-15-300**
Shielding Gas Saver ECO GS40 ¼", adjustable	**93-62-5**



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, steel wire-Ø 0.8-1.6mm	**12-2-1-15**



Please note:

Two drive rolls per system are needed.

Please note:

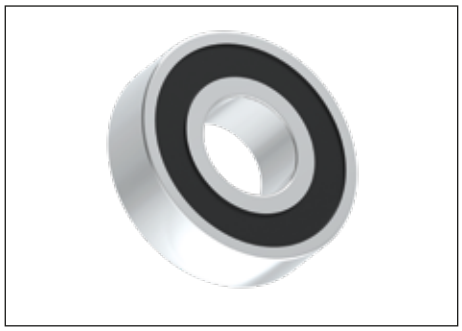
Drive rolls for wires in inch sizes available on request.

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 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:

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.

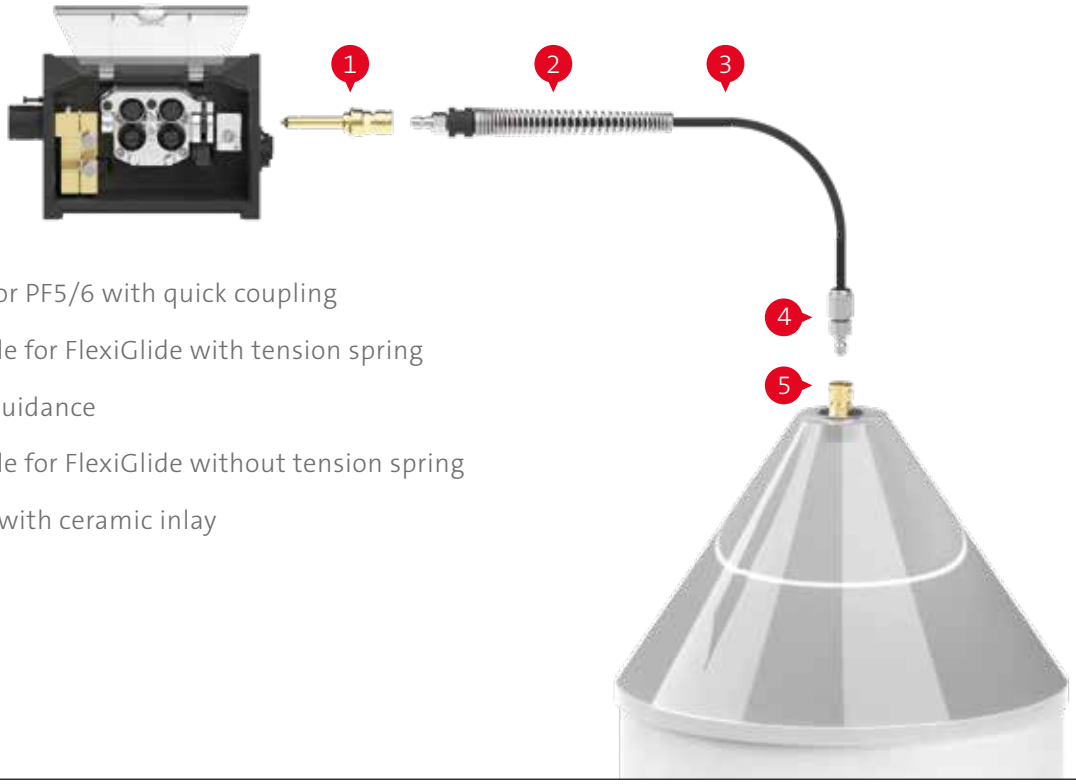
Overview pressure rolls	Part-No.
Pressure roll – DIN 625 T1 for PF5/6 wire feeder series	**12-2-3-0**
Locating bolt for pressure roll on two/four roller drive	**12-13-5**

Universal wire feeder bracket

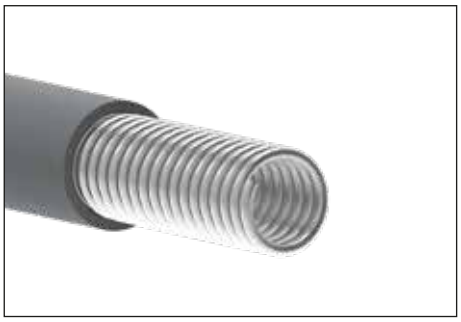
Wire feeder bracket with holes and mounting material for quick and easy installation.

Overview universal wire feeder bracket	Part-No.
Universal wire feeder bracket	**14-19-1**

3 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**

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**

4 Ground cable

Please note:

Further lengths and diameters available on request

Ground cable with 70 mm² connector and cable lug

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 ground cables	Part-No.
Ground cable 70 mm² 1 m with DIX plug and cable lug	**228078101**
Ground cable 70 mm² 3 m with DIX plug and cable lug	**228078103**
Ground cable 70 mm² 5 m with DIX plug and cable lug	**228078105**

Option

Overview ground cables	Part-No.
Ground cable 95 mm² 1 m with DIX plug and cable lug	**228080101**
Ground cable 95 mm² 3 m with DIX plug and cable lug	**228080103**
Ground cable 95 mm² 5 m with DIX plug and cable lug	**228080105**

5 Cable bundle

Cable bundle: 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 cable bundles	Part-No.
Cable bundle 72mm² 1m -L- LSQ-PF5/6	**20-40-1**
Cable bundle 72mm² 3m -L- LSQ-PF5/6	**20-40-3**
Cable bundle 72mm² 5m -L- LSQ-PF5/6	**20-40-5**

Please note:

Further lengths available on request.

6 Clamping pieces

Please note:

Clamping sets for other robot types available on request.

Clamping pieces

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

Overview clamping pieces	Part-No.
For robot type-ABB	
CRB 15000 series	**93-110-2 + 93-110-3**

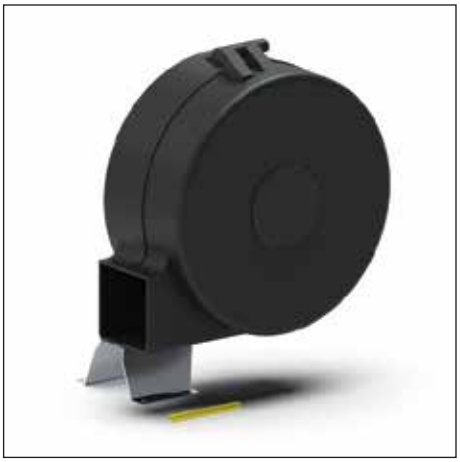
For robot type-UNIVERSAL ROBOTS	
UR10e	**93-110-3 + 93-110-5**
UR20	**on request**

For robot type-FANUC	
CRX-5iA	**93-110-3 + 93-110-5**
CRX-10iA	**93-110-3 + 93-110-5**

For robot type-YASKAWA	
HC10DTP	**93-110-2 + 93-110-3**
HC20DTP	**on request**

Overview clamping pieces	Part-No.
Clamping pieces 75mm NW29	**93-110-11**
Clamping pieces 75mm NW29 with rotary flange	**93-110-12**
Clamping pieces 86mm NW29	**93-110-4**
Clamping pieces 86mm NW29 with rotary flange	**93-110-5**
Clamping pieces 108mm NW29	**93-110-3**
Clamping pieces 108mm NW29 with rotary flange	**93-110-2**

7 Trolley



Please note:

When using the spool holder, the wire inlet body 10-2-0-52 is also required.

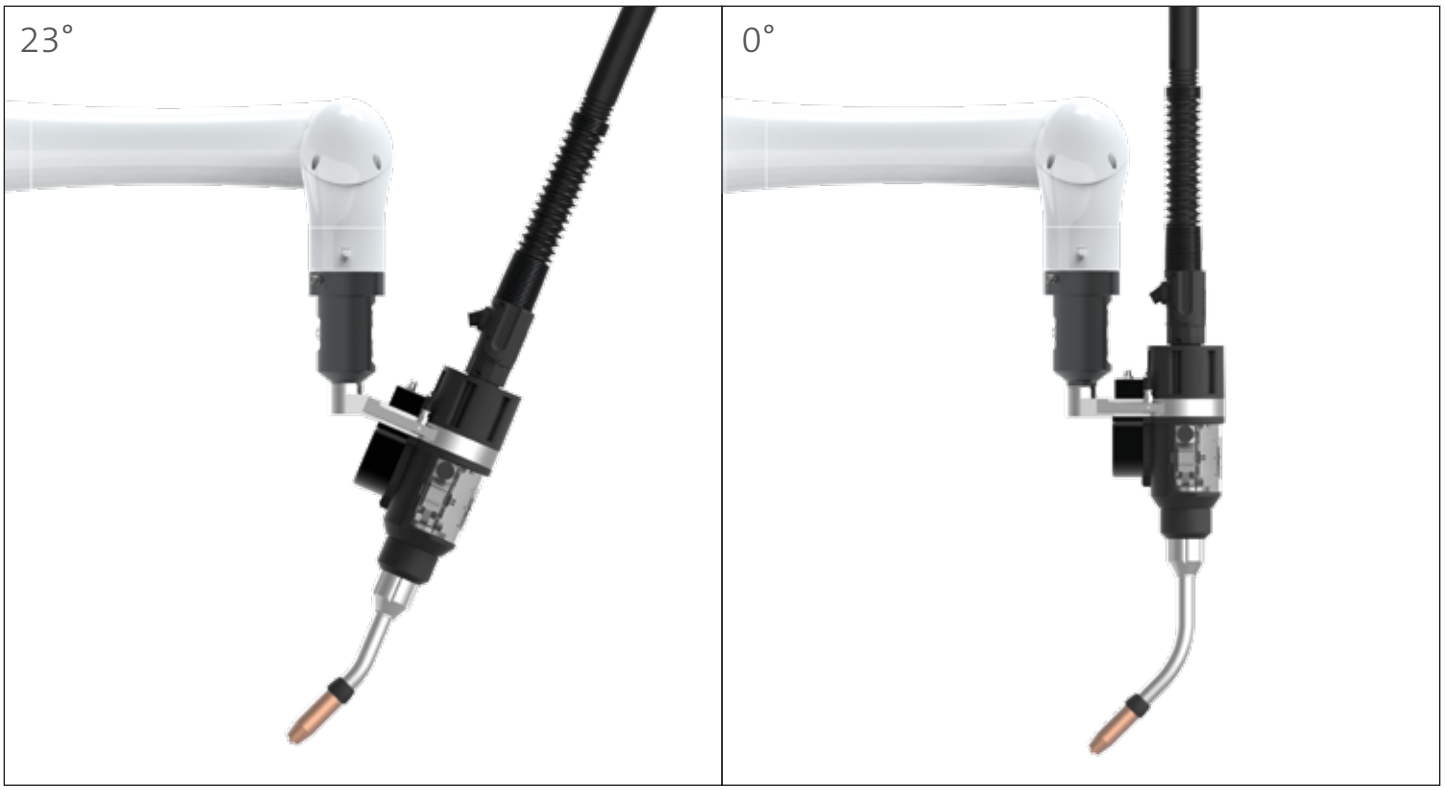
Trolley

- for gas bottles up to 50 Litres
- for mounting of power source and wire feeder unit

Overview trolley	Part-No.
Trolley	**24-10**
Spool holder for trolley	**15-110-3**

Welding evolution: Spatter-free ignition.

The Cobot Frontpull 8 torch system.



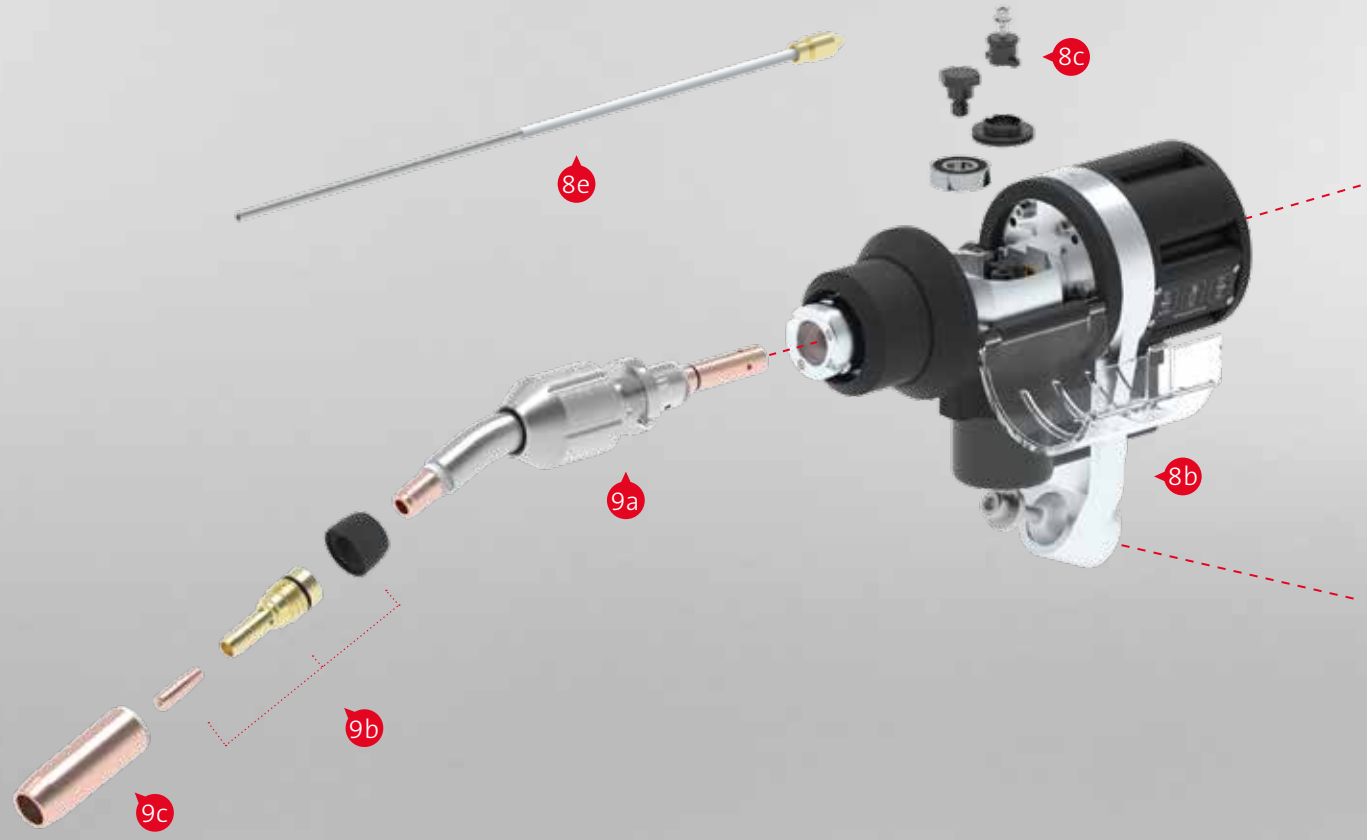
The latest innovation from SKS is the new Cobot Frontpull torch system, in which wire feeder and torch system are merged into a single unit. The result: support of spatter-free ignition, high feeding precision close to the welding process and almost spatter-free welding joints, as well as a high level of reliability through the use of standardized motor technology.

Cobot Frontpull – air-cooled for steel applications

Processes:	microMIG, microMIG-cc, KF-pulse, Pulse, MIG-Brazing, GMAW
Wire Materials:	high-alloy steels, low-alloy steels
Compatibility:	for all common cobots
Weight:	4 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)

8 Torch system Cobot Frontpull: Parts overview

All parts of the
Cobot Frontpull torch
system at a glance.



8a Cobox 8b Torch body and mounting arm 8c Accessories torch body
8d Cobot Mounting 8e Torch cable and accessories 9a Torch neck
9b Consumables 9c Gas nozzle

8 Torch system Cobot Frontpull: Parts overview

8a Torch system: Cobox

Cobox

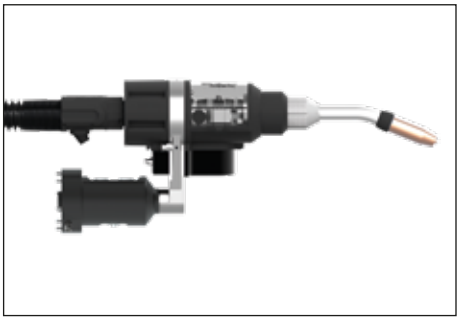
The Cobox is the connection between the mounting flange and the torch mounting arm and has three freely programmable color-coded buttons for simplified operation of the cobot.

Overview	Part-No.
Cobox	**93-116-1**

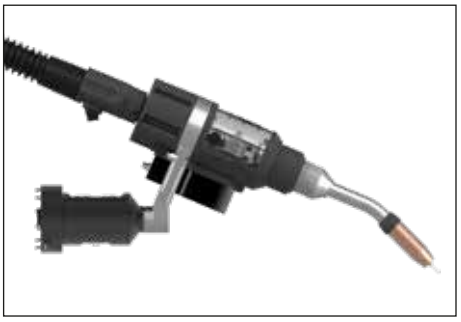
Alternative

Overview	Part-No.
Solid Mount "long"	**93-33**
Solid Mount "short"	**93-52**

8b Torch system: Torch body and mounting arm



Frontpull 8 (0° version)



Frontpull 8 (23° version)

Frontpull 8 torch system including mounting arm

With a weight of only 2.5 kilograms, the Frontpull 8 torch supports the new generation of robots. The requirement for a fast acceleration and high response speeds are implemented. A wire feeding support unit has been placed in an external box to save weight at the foremost robot axis. The Frontpull 8 torch provides the most accurate wire feeding closest to the process. The "Lift-Arc" spatter-free ignition routine and a spatter reduced welding process provide an additional quality improvement. With the microMIG/microMIG-cc Technology (MMT) the Frontpull 8 torch provides heat-reduced welding, virtually spatter-free.

Frontpull 8	Part-No.
Frontpull 8 with torch body and mounting arm (23° version)	**10-15**
Frontpull 8 with torch body and mounting arm (0° version)	**10-16**

Advantages:

- Standard components (power sourcce, weld process controller)
- Standard SKS torches and consumables can be used
- The wire feeder is at the sixth robot axis providing for a highly precise wire feeding
- The Frontpull 8 torch system is based on the proven SKS Power Joint and Power Feeder design
- Supports spatter-free ignition
- High reliability – No synchronization problems

Technical data	
Weight	app. 2.5 kg
Wire feeding speed	0 - 25 m/min

8c Torch system: Accessories torch body

Please note:

One drive roll per system is needed.

Drive roll

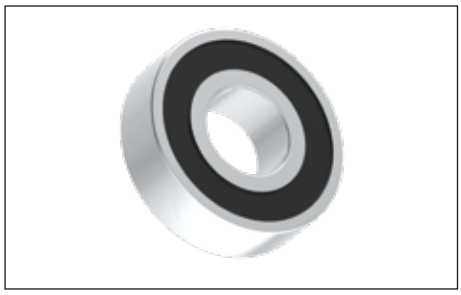
Our drive rolls are available in several groove shapes for different welding filler materials. (V-groove for steel and knurled U-groove for filler wire applications).

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 pressure roll and one locating bolt are needed per system.

Pressure roll

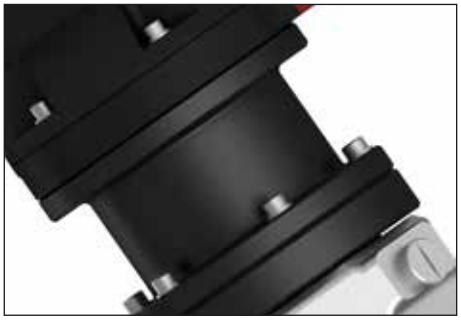
The pressure roll ensures a defined pressure of the welding wire into the specific groove shape of the drive roll.

Overview pressure 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**

8d Torch system: Cobot mounting

Please note:

Isolation flanges for further cobots are available on request.



Isolation flange

Overview isolation flange	Part-No.
For robot type-ABB	
CRB 15000 series	**63-2-3**
For robot type-FANUC	
CRX series	**63-2-3**
For robot type-UNIVERSAL ROBOTS	
UR10e	**63-2-3**
UR20	**63-2-28**
For robot type-YASKAWA	
HC10DTP	**63-2-29**
HC20DTP	**63-2-3**

TCP extension

The TCP-extension increases the freedom of accessibility and depth of immersi n into the weld part/fixture

Overview TCP extension	Part-No.
TCP extension 35 mm (for 0° version)	**93-57**

Torch cable, outer cable dress for Frontpull 8 torch system

High flexible coaxial cable 72 mm² incl. air blast tube and Power Pin connector.

Overview torch cables	Part-No.
0.75 m	**61-5-075-1**
0.9 m	**61-5-09-1**
1.0 m	**61-5-10-1**
1.1 m	**61-5-11-1**
1.2 m	**61-5-12-1**
1.5 m	**61-5-15-1**
1.8 m	**61-5-18-1**
2.0 m	**61-5-20-1**
2.4 m	**61-5-24-1**
2.7 m	**61-5-27-1**
3.0 m	**61-5-30-1**
3.5 m	**61-5-35-1**
4.0 m	**61-5-40-1**

Control cable for Frontpull 8 torch system

Connection between Frontpull 8 torch and Frontpull module

Overview control cables	Part-No.
1.2 m	**77-2013-06**
1.5 m	**77-2013-061**
1.7 m	**77-2013-063**
1.8 m	**77-2013-064**
1.9 m	**77-2013-065**
2.0 m	**77-2013-066**
2.3 m	**77-2013-062**
2.6 m	**77-2013-067**
2.8 m	**77-2013-068**
3.2 m	**77-2013-069**
3.5 m	**77-2013-070**
4.3 m	**77-2013-071**
4.8 m	**77-2013-072**

Velcro® tape for mounting (10 pcs.)	**571040310**

Please note:

Connection cable length = torch cable length + 0.8 m

Frontpull liner for steel wire

For the following wire diameters:

Wire-ø 0.8 - 1.6 mm

Overview 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**

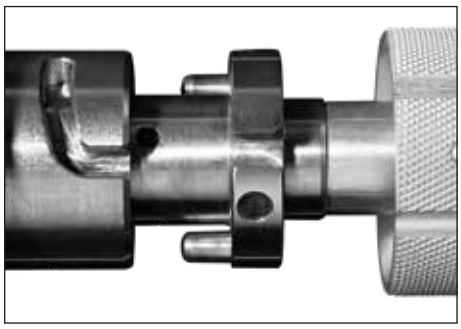
Wire guidance for torch neck

Overview 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

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 torch necks		
Type	**Part-No.**	**angle [°]**
standard dressing air-cooled	**58-1-00-400-1**	0
	58-1-22-350-1	22
	58-1-22-400-1	22
	58-4-330-500-1	30
	58-1-130-450-1	30
	58-1-35-400-1	35
	58-1-45-350-1	45
	58-1-45-400-1	45
	58-1-45-450-1	45
	58-4-345-450-1	45
	58-4-345-567-1	45

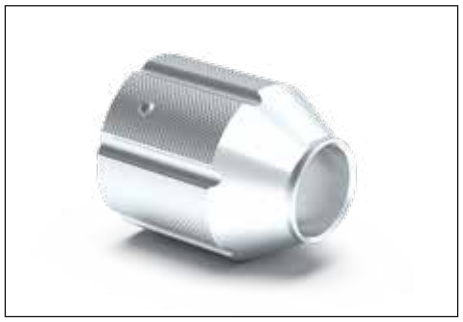


Please note:

For information about aluminum application please see our brochure "Cobot Frontpull Aluminum"

Hinweis:

TCP dimensions for specific torch sytem configurations are available on request.



Clamping cap for SKS single wire torch necks

Tool-free assembly with bayonet quick-change system

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

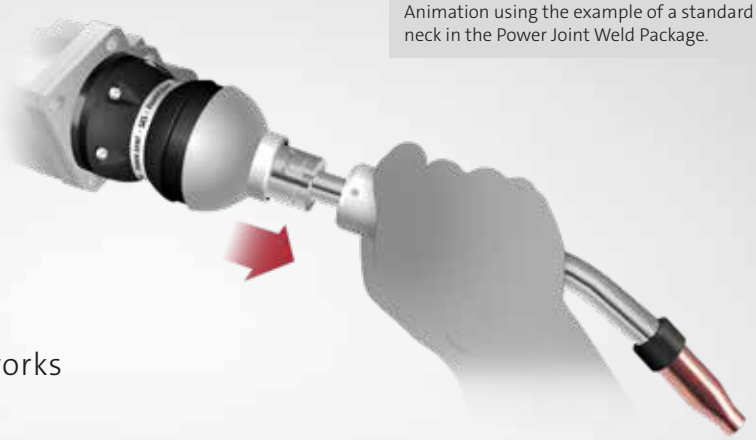
Insulator for SKS torch necks

Overview insulator	Part-No.
Torch neck insulator	**58-1-5**

Torch neck change with the SKS bayonet locking concept

Please note:

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



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

Please note:

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

Power Lock Plus: retaining head

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

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

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 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**

Tools and accessories

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

Overview tools and accessories	Part-No.
Mounting tool SW7 for contact tips (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 programming tips	Part-No.
Stickout	
12 mm (Power Lock Plus)	**65-11**
15 mm (Power Lock Plus)	**65-12**

9c Gas nozzle

Please note:

An overview with dimensions can be found below.

Please note:

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

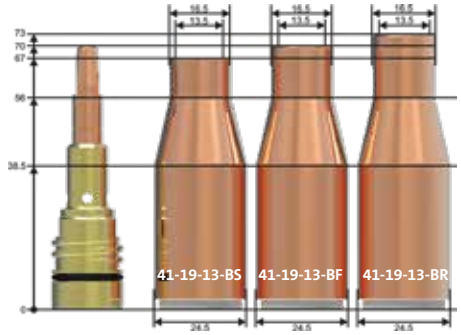
Gas nozzles with thread

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	
short	**41-20-16-TS**
flush	**41-20-16-TF**
long	**41-20-16-TR**

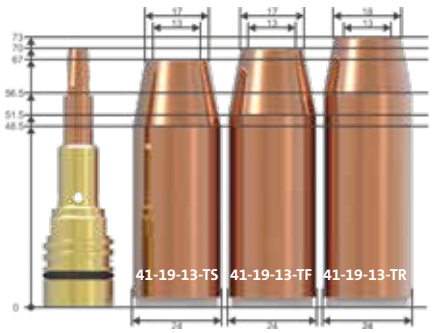
9c Gas nozzles: Overview dimensions

13 mm bottle shaped



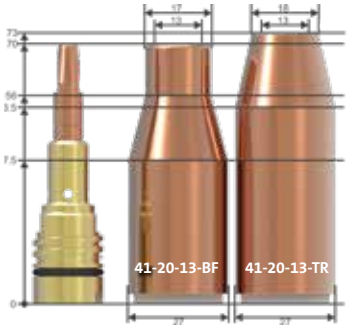
Gas nozzle Part-No. 41-19-13-BS 41-19-13-BF 41-19-13-BR

13 mm tapered



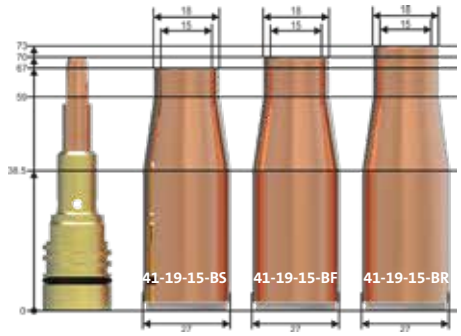
41-19-13-TS 41-19-13-TF 41-19-13-TR

13 mm Heavy Duty



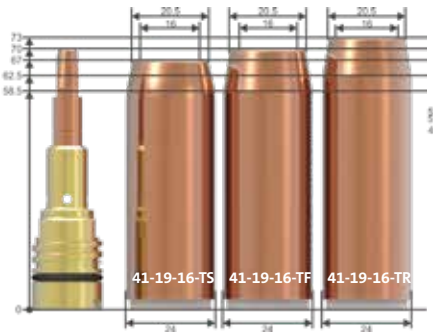
41-20-13-BF 41-20-13-TR

15 mm bottle shaped



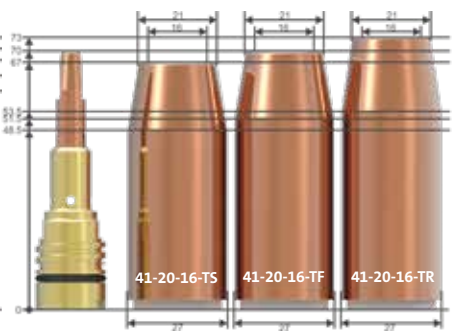
Gas nozzle Part-No. 41-19-15-BS 41-19-15-BF 41-19-15-BR

16 mm tapered



41-19-16-TS 41-19-16-TF 41-19-16-TR

16 mm Heavy Duty



41-20-16-TS 41-20-16-TF 41-20-16-TR

Please note:

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

Please note:

Dimensions in mm.

10 Alternative with extended funcionality: Power source

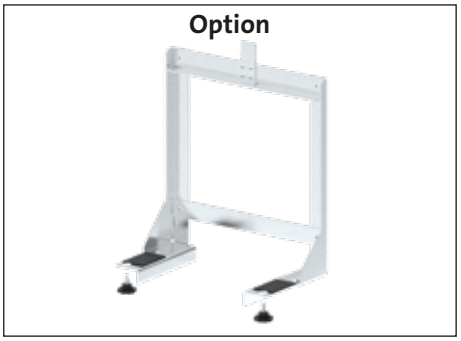
For additional documentation, tracebility features as well as Industry 4.0 enablement, setup with LSQ3/5, Q80/Q84r/s and FB5 Interface is available.

LSQ5 power source

Alternative

LSQ3 power source

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 power sources	Part-No.
DCT power source LSQ5 Direct-Control-Technology	**77-1185-00**
DCT power source LSQ3 Direct-Control-Technology	**77-1184-00**
DCT power source LSQ3A (3x480V) Direct-Control-Technology	**77-1184-10**
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)	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		GMAW, 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

Overview wall mount	Part-No.
Wall mount for LSQ5	**77-1180-01**

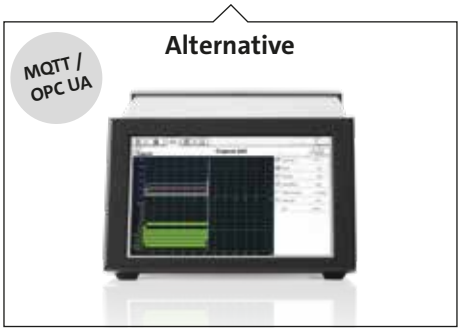
10 Alternative with extended funcionality: Weld process controller

Q84r weld process controller

Q84s weld process controller

Please note:
Die Q84r/s kann mit bis zu vier Schweißkarten bestückt werden.

Alternative



Q80 weld process controller – front view


Q80 weld process controller – back view

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
- 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
- Supports MQTT and OPC UA

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

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

Overview Q84r/s replacement parts	Part-No.
Touchpen for Q80 / Q84r/s weld process controller	**77-7240-03**
SD card for Q80 / Q84r/s weld process controller	**91-8-6**

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
- Supports MQTT and OPC UA

Overview weld process controller	Part-No.
Weld process controller Q80	**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 cards for Q80 / Q84r/s	**91-8-1**

Overview Q80 replacement parts	Part-No.
Touchpen for Q80 / Q84r/s weld process controller	**77-7240-03**
SD card for Q80 / Q84r/s weld process controller	**91-8-6**

Software Integration:
Zentrale Verwaltung aller Parameter und Prozesse

- **Parameter settings of the laser** completely integrated in the SKS software
- **Documentation** of all measures and the robot TCP speed

Q8 TOOL

- 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!

Please note:

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

Please note:

Further lengths available on request.

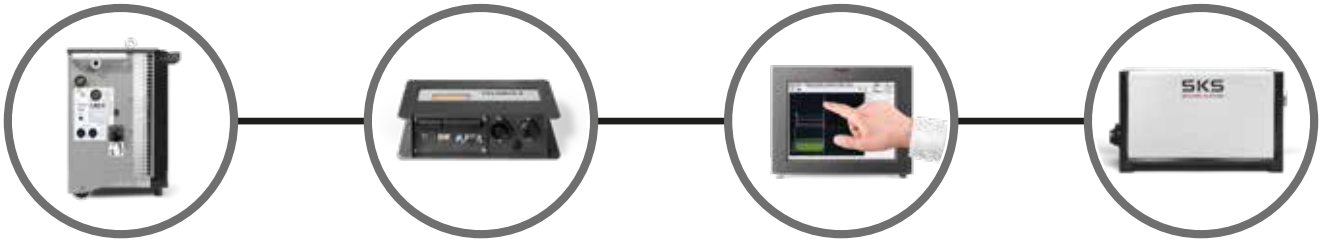
Control cable: L700/SPW-Bus

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 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

Perfect integration.

Interfacing all cobots.

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 cobot 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 cobot or system controller much easier.

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**

SKS
WELDING SYSTEMS

Contact:
sales@de.sks-welding.com

SKS Welding Systems GmbH
Marie-Curie-Str. 14 | 67661 Kaiserslautern | Germany | Phone +49 6301 7986-0

www.sks-welding.com

/sksweldingsystems
/DesignTechnologyPerformance
@sks_welding_systems
/sks-welding-systems

DOC-0223EN | SKSde 24OCT24.bp.jw.v1.0.0

Subject to change.