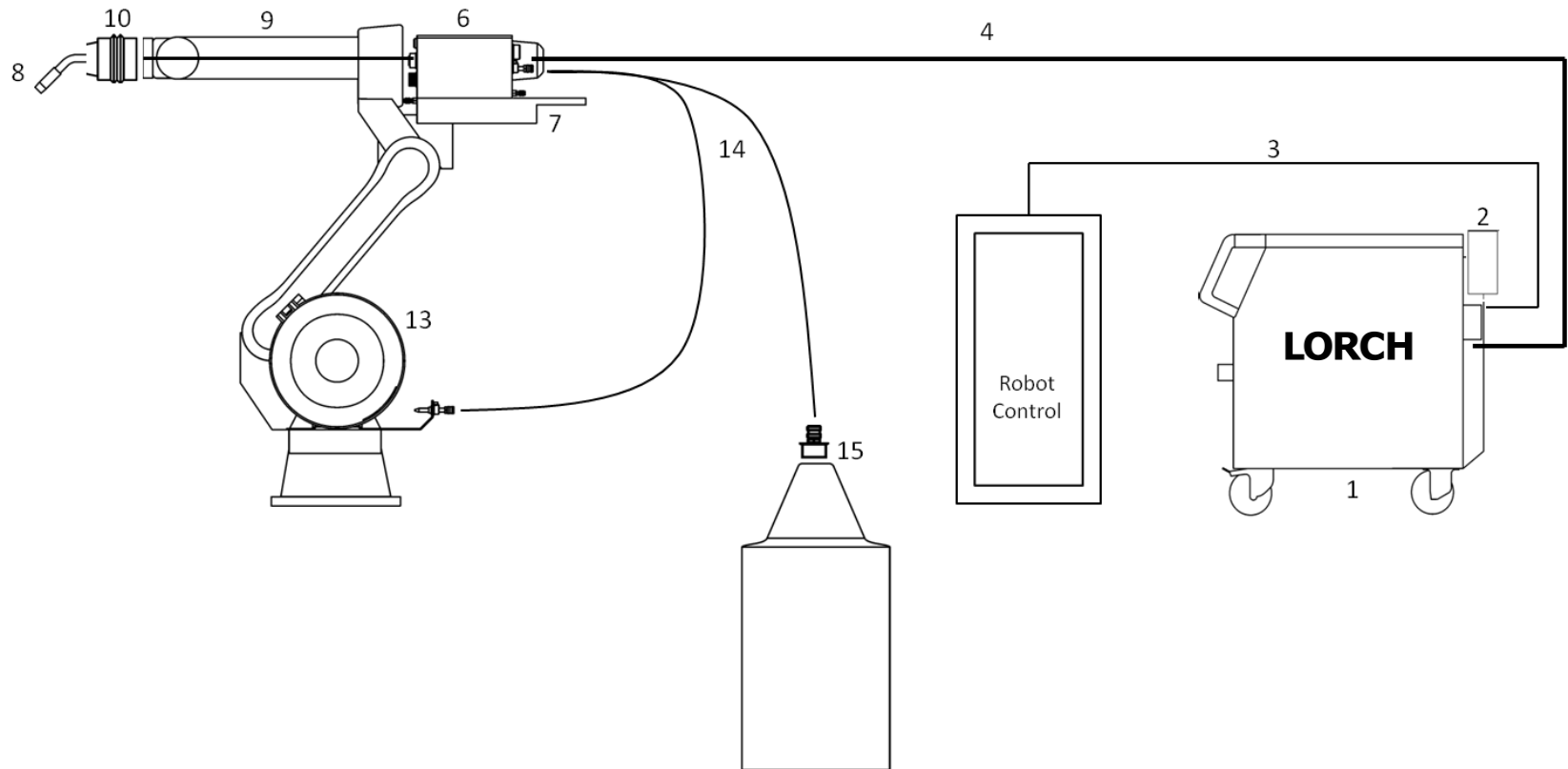


Lorch „Ready-to-Robot“

Referent: M. Willy Berthier

27.08.2013 | Lorch Schweißtechnik GmbH | www.lorch.eu

Ready-to-Robot – System Overview



- We can offer complete systems including torch, wire supply and torch cleaning station
- We focus on the relevant robots of Kuka

List of focused Robots

Kuka KR5arc HW

Kuka KR16arc HW

Kuka KR16 L8arc HW

Kuka KR5arc

Kuka KR6

Kuka KR16

Kuka KR30

LORCH

Power Source

S-RoboMIG – three Models

- Power scheme like on S-Series
 - S3 RoboMIG with I max 320 A
 - S5 RoboMIG with I max 400 A
 - S8 RoboMIG with I max 500 A

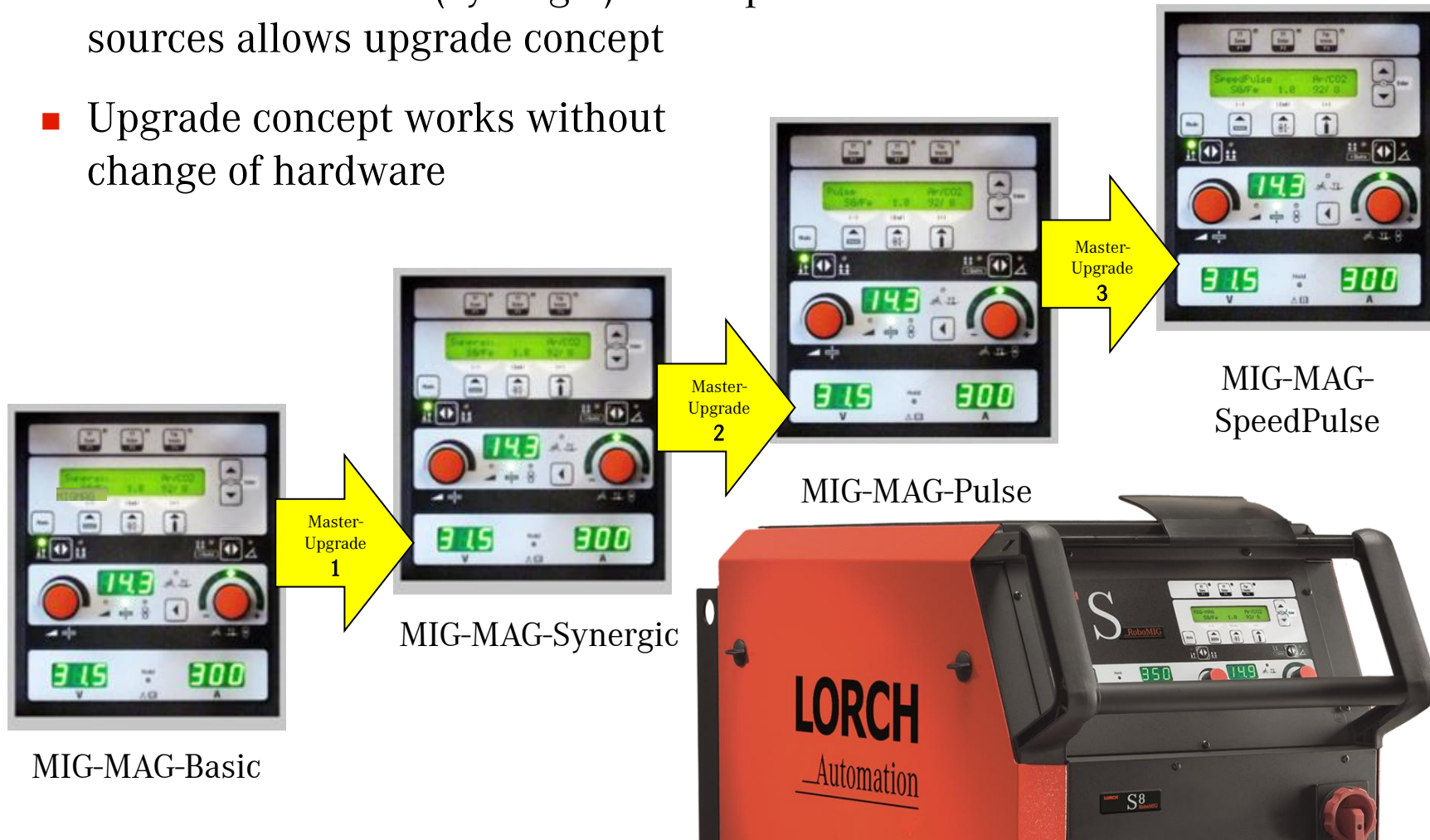


Upgrade-Concept



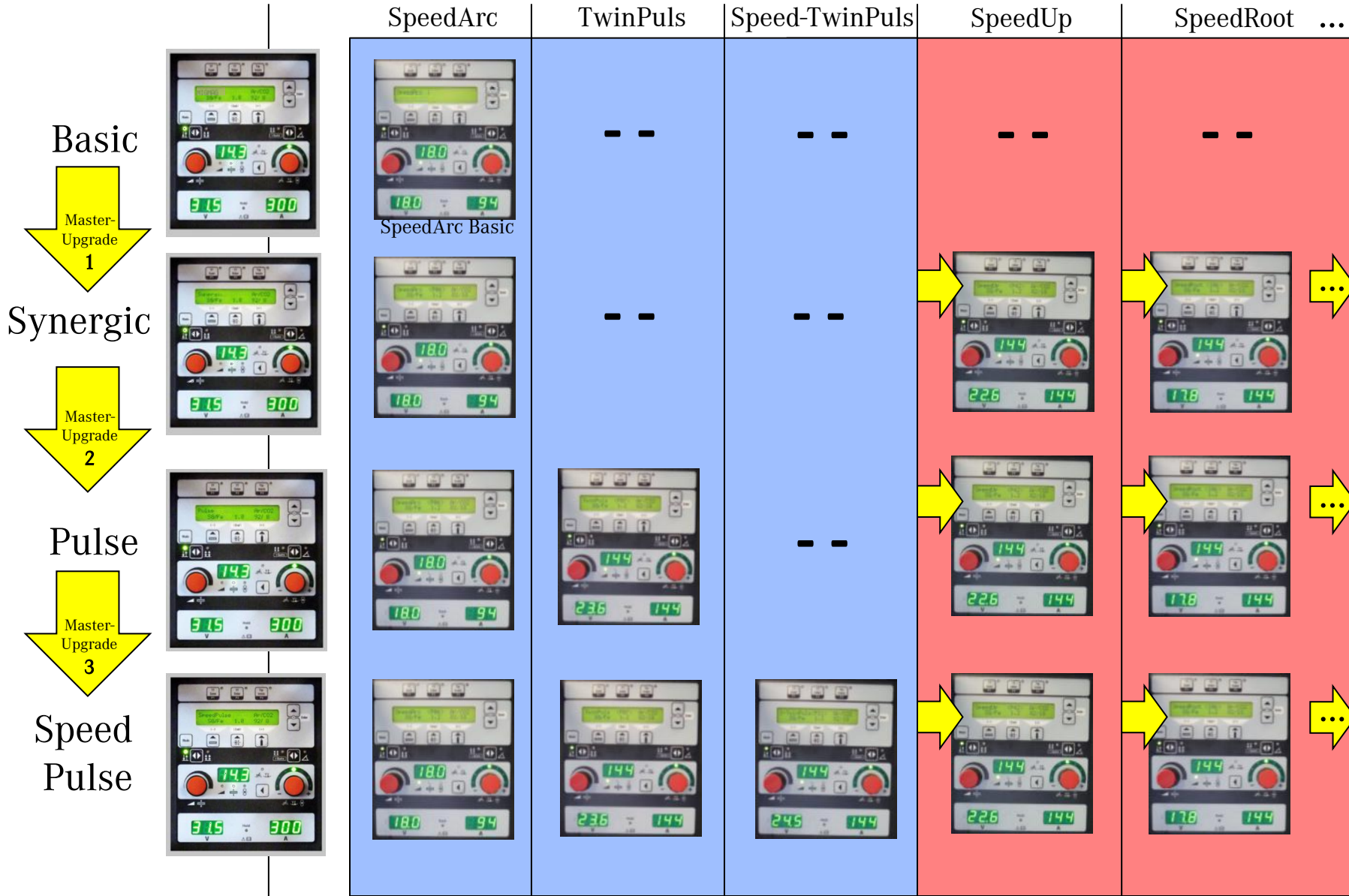
Power Source User Interface

- One user interface (synergic) for all power sources allows upgrade concept
- Upgrade concept works without change of hardware



Upgrade option

Optional processes



Main machine configuration aspects

Power Source

Basic Specification

- Lorch S3 RoboMIG gasgekühlt
- Lorch S3 RoboMIG Remote gasgekühlt
- Lorch S3 RoboMIG wassergekühlt
- Lorch S3 RoboMIG Remote wassergekühlt

- Lorch S5 RoboMIG gasgekühlt
- Lorch S5 RoboMIG Remote gasgekühlt
- Lorch S5 RoboMIG wassergekühlt
- Lorch S5 RoboMIG Remote wassergekühlt

- Lorch S8 RoboMIG gasgekühlt
- Lorch S8 RoboMIG Remote gasgekühlt
- Lorch S8 RoboMIG wassergekühlt
- Lorch S8 RoboMIG Remote wassergekühlt

Master-Version

- Basic
- Synergic
- Pulse
- Lorch SpeedPulse
- Lorch Full-Process

Special Processes

- SpeedArc
- SpeedUp
- SpeedRoot
- SppedCold

Machine Type

- B-Version
- B-Version, prepared BB
- BB-Version

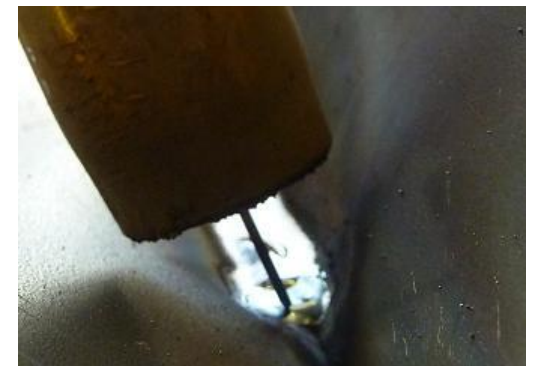
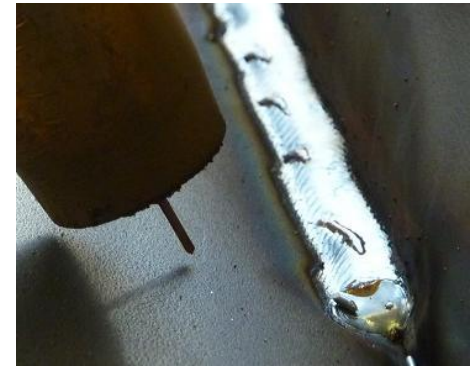
Characteristic curves for S RoboMIG

- CC-curves (constant-current) for standard MIG-MAG
- CV-curves (constant-voltage) for standard MIG-MAG
- New steel programmes for robot welding were made for MIG-MAG, Pulse, SpeedPulse, SpeedArc, SpeedUp, SpeedRoot, SpeedCold

Drahtart	Gasart	Draht	Prog.	Normal CV	Prog.	Normal CC	Pulsen	Prog.	SpeedPulse	Prog.	SpeedArc	Prog.	SpeedUp	Prog.	SpeedRoot	Prog.	SpeedCold	
	Ar/CO2/O2	Ø		min / max		min - max	min - max		min - max		min - max		min - max		min - max		min - max	
SG Fe	CO2	0,9		nicht vorhanden	66	40 - 248												
		1,00	1	48 - 300	59	52 - 280							117	24 - 132	125	24 - 124		
		1,20	2	60 - 400	60	52 - 320								118	40 - 160			
	82/18/0	1,60	65	92 - 500	58	96 - 500												
		1,00	13	52 - 360	4	52 - 352	24 - 352	15	28 - 360	3	52 - 360	41	60 - 128	105	36 - 160	121	32 - 172	
		1,20	55	68 - 448	7	68 - 480	28 - 440 L	21	28 - 460	6	68 - 460	42	72 - 144	106	52 - 208			
		1,60	14	92 - 500	10	116 - 500	40 - 500	100	48 - 500									
		1,00	27	52 - 360	5	52 - 352	24 - 352	18	28 - 368	9	48 - 360	80	64 - 132	108	36 - 160	121	32 - 172	
		1,20	28	72 - 440	8	68 - 480	36 - 440	24	32 - 468	12	72 - 440	95	72 - 152	109	52 - 208			
1,60	16	92 - 500	11	108 - 500	40 - 500	101	48 - 500											
CrNi ER 308	98/2/0	1,00	25	48 - 300	19	60 - 300	24 - 340	35	24 - 360 L	17	56 - 300	96	76 - 128	111	28 - 160	123	28 - 128	
		1,20	30	64 - 420	22	72 - 380	28 - 452	38	32 - 420 L	20	68 - 420	97	92 - 140	112	40 - 168			
CRNi ER 316	98/2/0	1,00	39	48 - 300	33	56 - 352 L	24 - 368 L	72	24 - 360 L	23	52 - 312	98	76 - 132	114	28 - 160	123	28 - 128	
		1,20	44	64 - 420	36	64 - 400 L	32 - 400 L	73	32 - 412 L	26	68 - 420	99	76 - 136	115	40 - 164			
Al Mg 4,5 Mn	Argon	1,00	48	68 - 260	46	68 - 260	16 - 252	74	24 - 260	29	72 - 260							
		1,20	52	72 - 320	50	80 - 360	16 - 348	75	20 - 360	32	76 - 328	94	92 - 228					
		1,60	56	120 - 400	54	96 - 412	36 - 408	102	36 - 400									
Al Mg 5	Argon	1,00	63	68 - 260	45	64 - 252	20 - 260	76	24 - 260	37	72 - 252							
		1,20	64	72 - 328	49	72 - 360	20 - 380	77	20 - 352	40	72 - 340	93	92 - 220					
		1,60	69	124 - 400	53	96 - 412	36 - 408	103	32 - 400									
Al Si 5	Argon	1,00	70	56 - 288	43	56 - 300	24 - 300	78	24 - 300	31	56 - 288							
		1,20	71	56 - 340	47	64 - 348	24 - 340	79	24 - 360	34	56 - 348	92	64 - 228					
		1,60	116	116 - 400	51	84 - 380	28 - 364	119	32 - 388									
Cu Si 3	Argon	0,80	104	36 - 220	61	40 - 220	16 - 240											
		1,00	107	48 - 300	57	52 - 300	20 - 320											
Cu Al 8	Argon	0,80		nicht vorhanden	67	44 - 220	16 - 260											
		1,00		nicht vorhanden	68	56 - 280	16 - 320											

Internal regulation for seam tracking

- Lorch S RoboMIG power sources have a fully integrated software based seam tracking option (cost efficient and upgrade possibilities)
 - On MIG-MAG-Standard
 - And on MIG-MAG-Pulse
- Cost for external additional hardware (ArcSense) do not occur
- Robot control must support this function



Weld Data Documentation



Weld Data Supervision



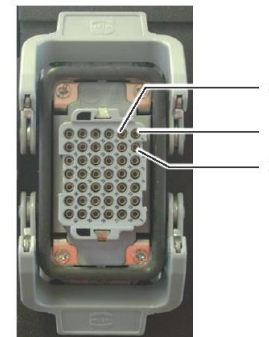
Communication Interface

LorchNet Connector

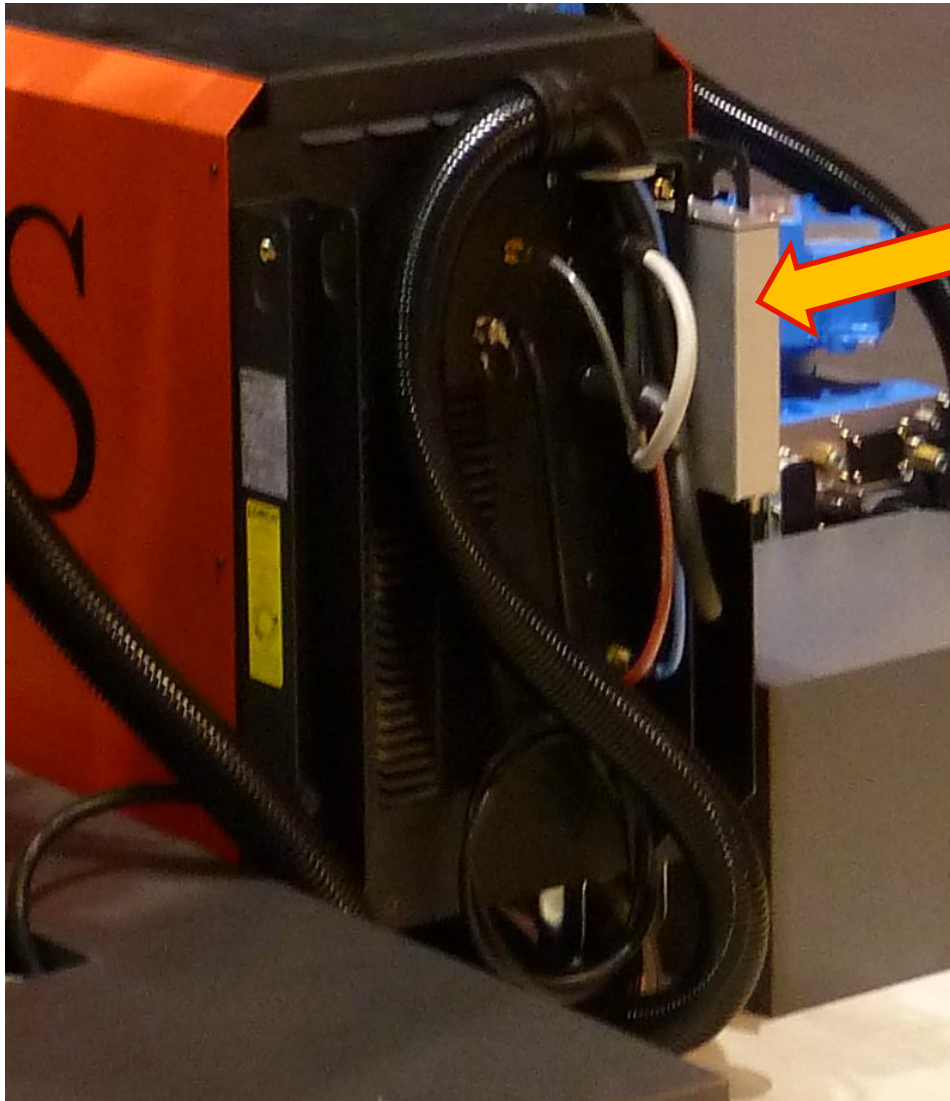
Available for:

- DeviceNet
- ProfiBus
- ProfiNet
- EtherNet/IP
- CANopen
- EtherCat

- analogue/digital Interface (INT06)
also available



Power Source Adaption



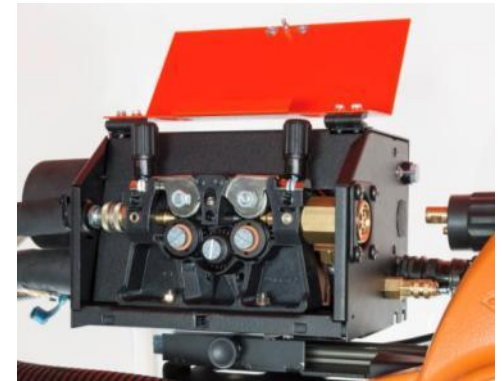
LorchNet-Connector is mounted at the rear of the power source



Easy plug and play with LorchNet cable

New Robo Feeder RF-06

New RoboFeeder RF-06



Optimisation - 1 out of 2



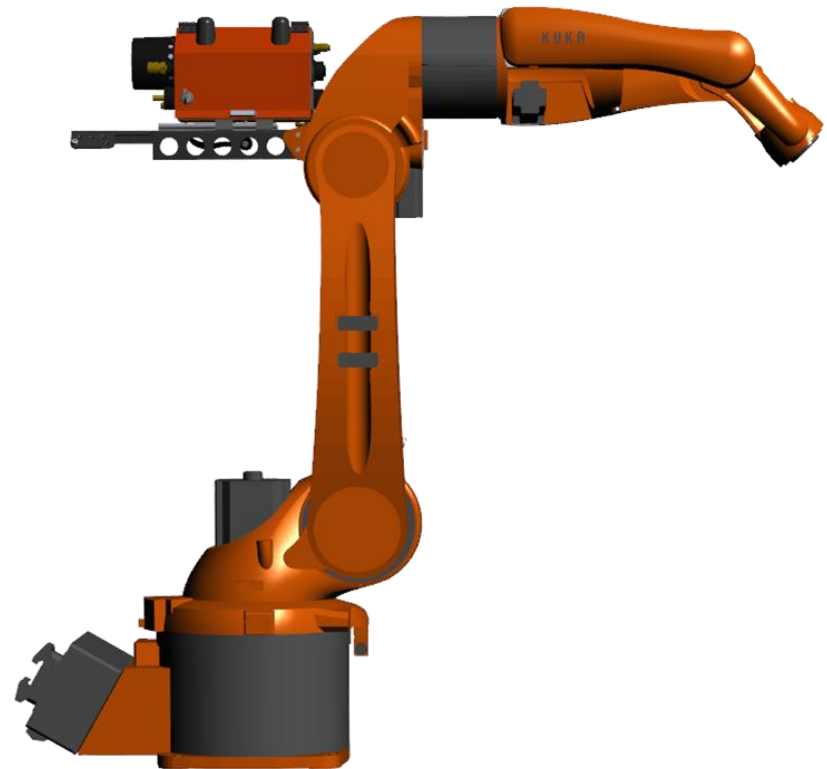
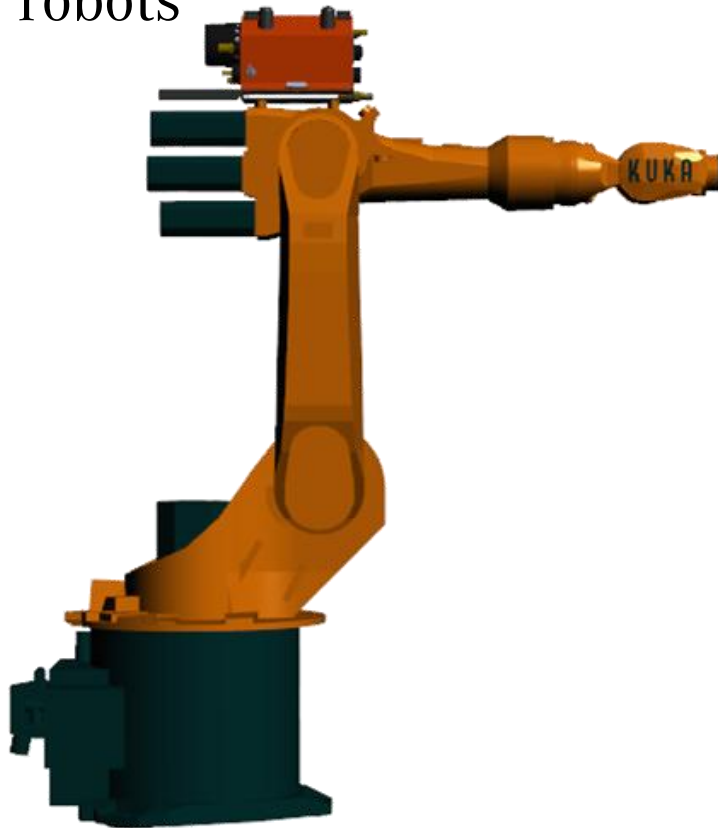
The new RF-06



More compact,
light weight and
and eye catcher

One Feeder for all types of robots

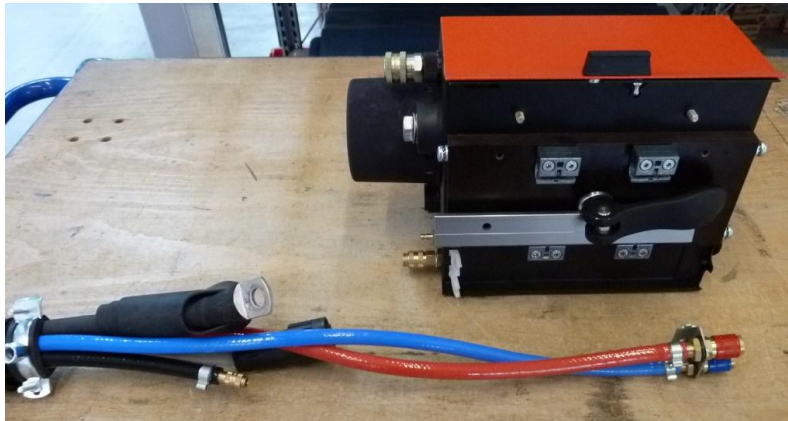
- Works with conventional robots
- Works with hollow wrist robots



- Adaption with several angles and sliding options

New Feature – Gas/Water solution

- Cooling water hose runs outside the unit and clipped and fixed with one screw



RF-06

- Different versions for
 - Standard robot torch
 - PushPull robot torch
 - 4/2- driven rolls
 - 4/4- driven rolls
- Feeder always equipped with Anti colission protection (standard on CanBus, can be changed to an exclusive connection)
- Blow out valve for air
- Wire inching at robot torch is supported (special torch equipment required)
- Opposite version is possible i.e. for BB-Systems (or in future tandem welding solutions)



Security Aspect

- Laminaten paper guarantees fully isolation to robot



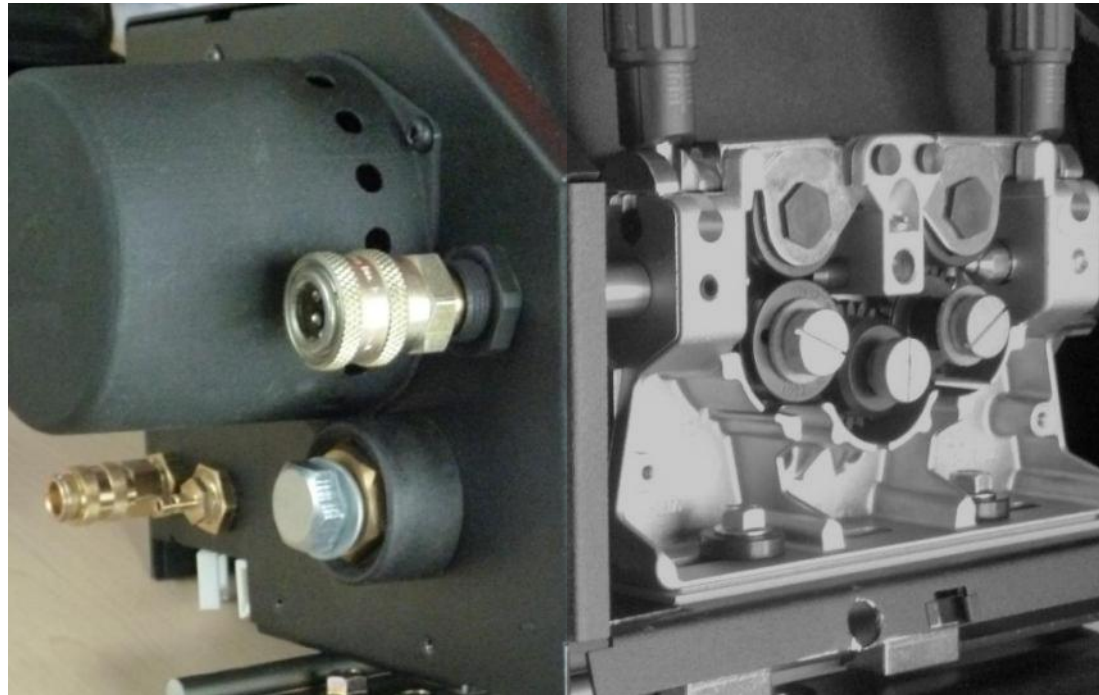
New Feature

- Feeding unit out of reinforced plastic
 - Light weight
 - Additional isolation



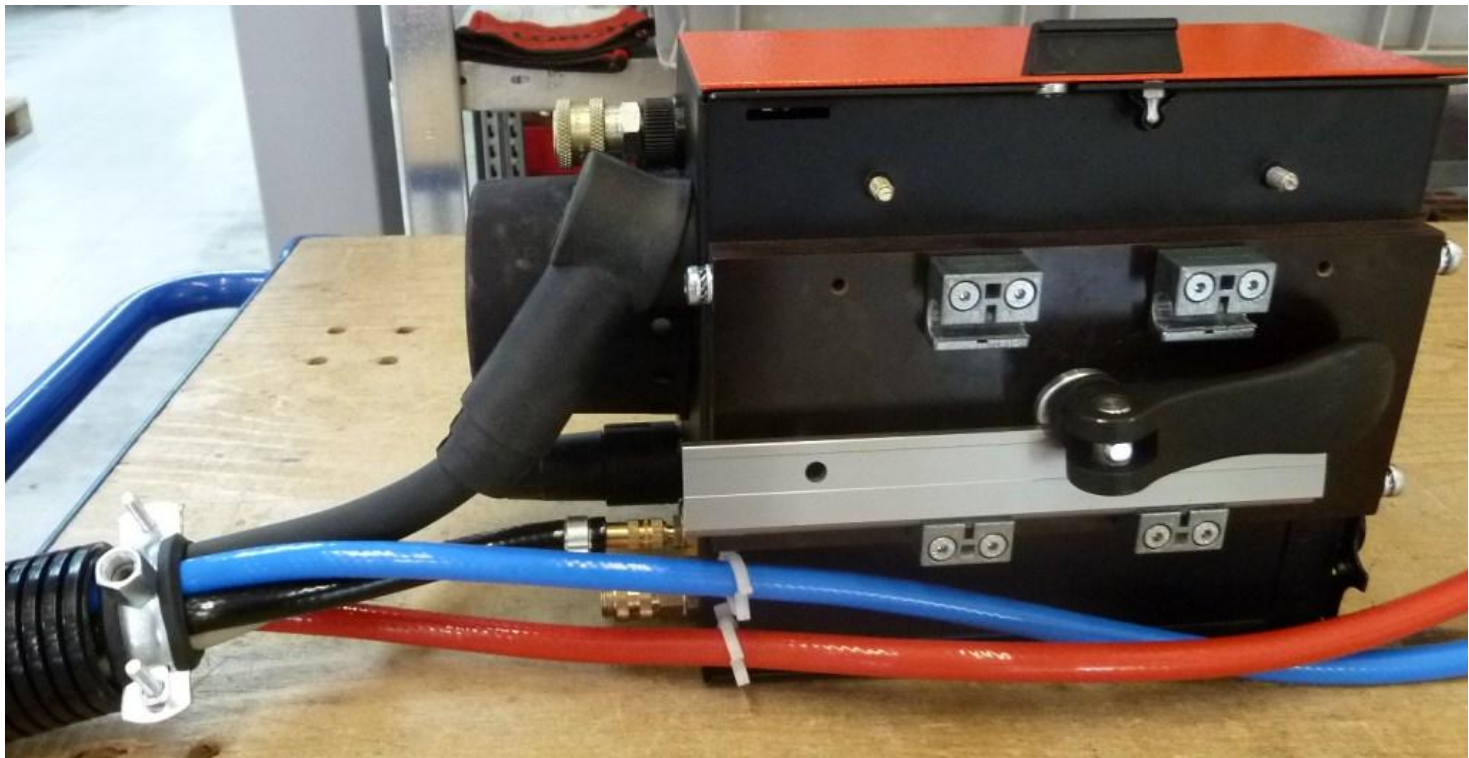
New Feature

- Quick connect for liners



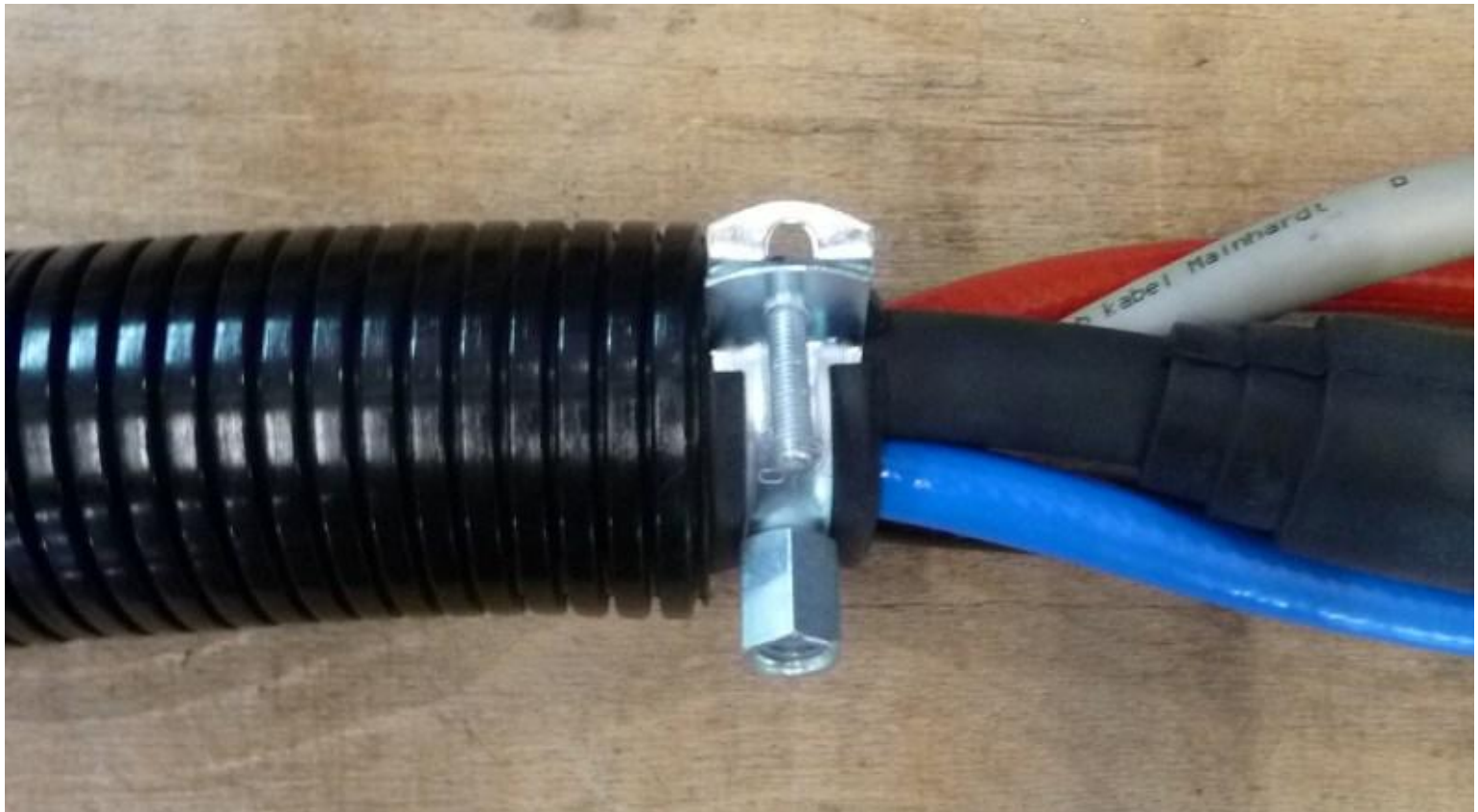
New Features

- Earth cable with screw terminal



New Feature

- New, very stable stress relief



New RoboFeeder RF-06 sliding option



New RoboFeeder RF-06 sliding option



New Feature: Sliding Option



New Feature: Sliding Option



New feature

- Standard: open construction. Could be a problem in smoky environment (oily sheets)
- Optional plastic cover protection (add on) against dust/dirt and misadjustment



New feature

- Optional lock



Mountings are available for these robots

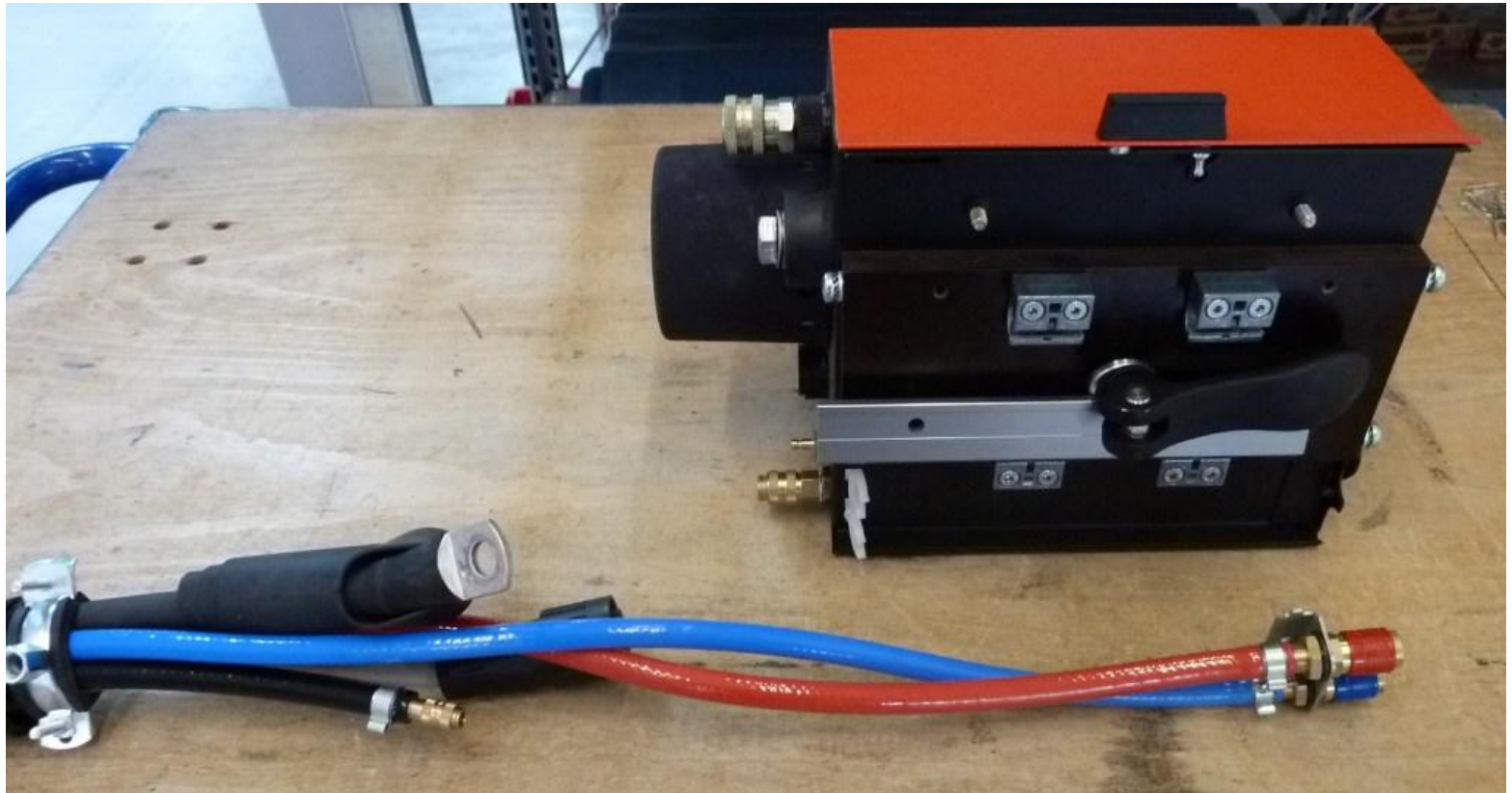
Kuka KR5arc HW	602.1729.0
Kuka KR16arc HW	602.1731.0
Kuka KR16 L8arc HW	602.1731.0

Kuka KR5arc	602.1728.0
Kuka KR6	602.1728.0
Kuka KR16	602.1728.0
Kuka KR30	602.1728.0 + 2x602.1734.0

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New Interpass Hoses

Three types of interpass hoses



Three types of interpass hoses

- Standard rubber hose (mainly for conventional robots)
 - Corrugated tube hose (mainly for hollow wrist robots)
 - Corrugated tube hose with compressed-air pipe for hollow wrist robots
-
- All of them are available in
 - 5m and 10m length
 - Gas and water version
 - 50mm², 70mm² and 95mm²

TBI Robot Torches

Torch necks

- 2 gas cooled versions

RM 42G

Mischgas 350 A / 60 % , 250 A / 100 %

CO2 420 A / 60 % , 300 A / 100 %

RM 62G

Mischgas 420 A / 60 % , 290 A / 100 %

CO2 500 A / 60 % , 340 A / 100 %

- 3 water cooled versions

RM 42W

Mischgas 350 A / 100 %

CO2 420 A / 100 %

RM 62W

Mischgas 450 A / 100 %

CO2 530 A / 100 %

RM 82W

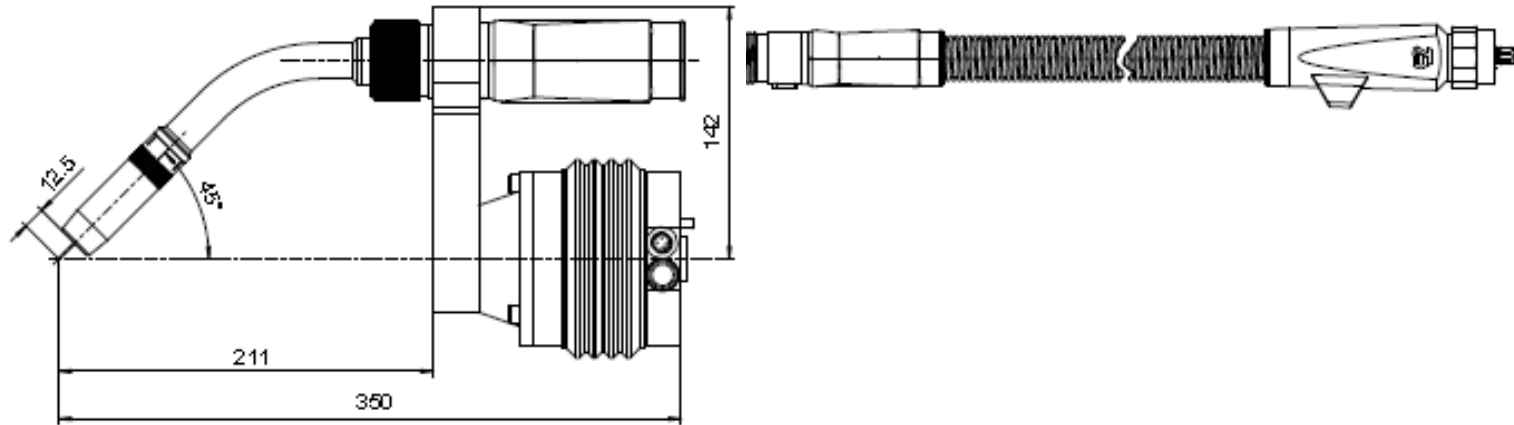
Mischgas 550 A / 100 %

CO2 600 A / 100 %



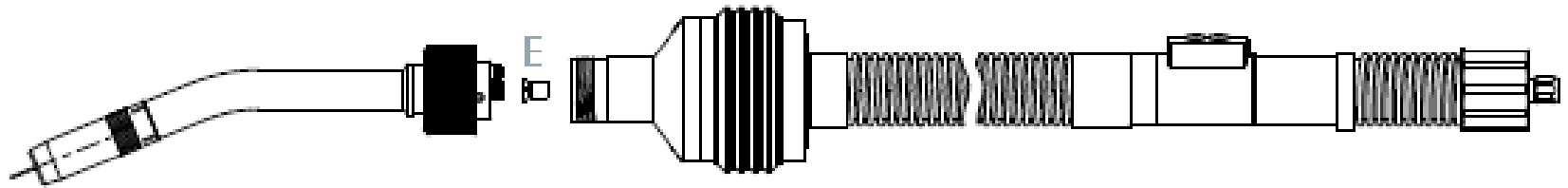
4 different angles of torch necks
(0°, 22°, 36° and 45°)

Conventional System



- Torch neck
- Neck holder
- Collision protection
- Torch hose package

Hollow Wrist System

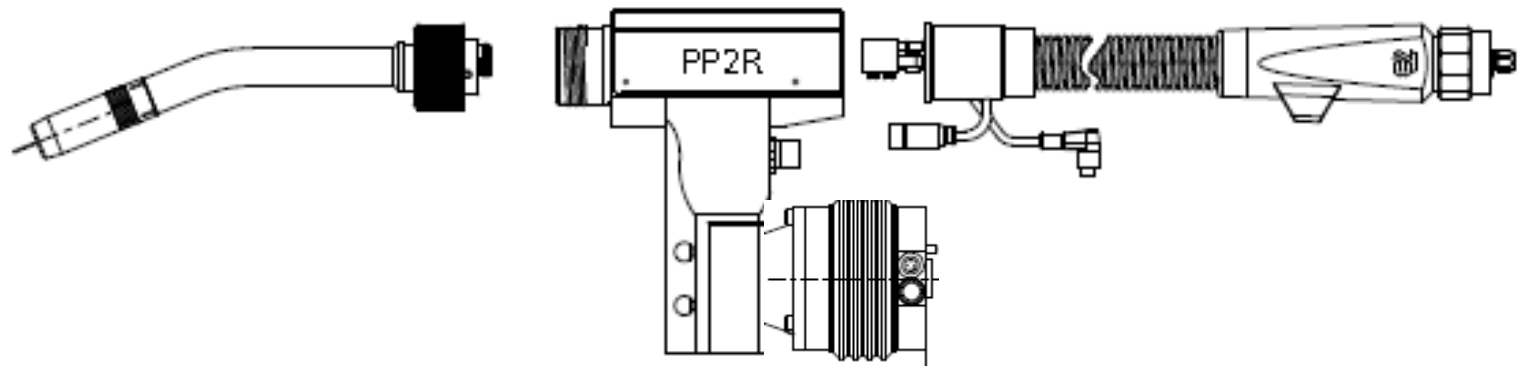


Torch neck

Neck holder with collision protection

Torch hose package (2 versions: Helix and Infiniturn)

Conventional System Push-Pull



Torch neck

Neck holder with PP unit

Collision protection

Torch hose package

Push-Pull option available for

TBI PP-2R Push-Pull
EMK-controlled

TBI PP-2R Push-Pull
analogue controlled

Abicor Binzel MF1 (i = 15:1)

Abicor Binzel WHPP 32/16 22Z (i=13,7:1)

Abicor Binzel WHPP 42/14 24Z (i=17,1:1)

Abicor Binzel WHPP 42/16 22Z (i=13,7:1)

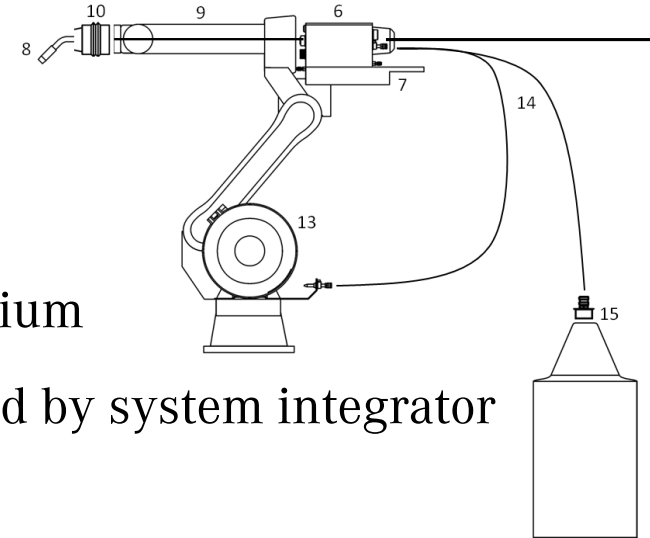
Dinse MEP 200 Push Pull (without tacho)

Simulation for analogue controlled Torches

Wire Feeding Equipment

From Drum/Spool to the Feeder

- We offer parts of the Wire Wizard quick connect guiding system
- 2 different liners – one for steel and stainless steel (black) and one for aluminium
- 3 lengths (1,8m, 6m, 12m) to be shortened by system integrator
- 2 options – out of a drum or from a spool
 - Drum – Drum adapter – optional: end of wire sensor – liner – feeder
 - Spoolholder with adapter – optional: end of wire sensor – liner – feeder
- Spoolholders are available for these robot types:



Kuka KR5arc HW	602.1733.0
Kuka KR16arc HW	602.1732.0
Kuka KR16 L8arc HW	602.1732.0

Kuka KR5arc	602.1733.0
Kuka KR6	602.1732.0
Kuka KR16	602.1732.0

- Further robot types will follow and be offered on request

LORCH

Thank you for your attention