

MIG/MAG-Welding Torch Push-Pull *Plus*



The "long-range torch" with the *Plus* ...

The welding torches of the Push-Pull *Plus* series – especially developed for aluminium welding requirements and the use of thin wires – makes problem-free and constant wire feed possible, even with longer cable assemblies. A powerful sturdy pull motor with potentiometer guarantees exact speed regulation. For an optimum wire feed without frictional loss, the contact pressure of the feeding rollers can be regulated precisely and easily directly on the handle. The ergonomic handle ensures optimum and low-fatigue handling.

The screw-type torch necks can be replaced quickly. They are available as either straight or 45° angled versions. A special interface between the handle and the torch neck makes it possible to turn the necks by up to 360°. All torches, air and liquid-cooled for capacities of up to 400 A, are based on the tried-and-trusted "MB" torch neck structure.

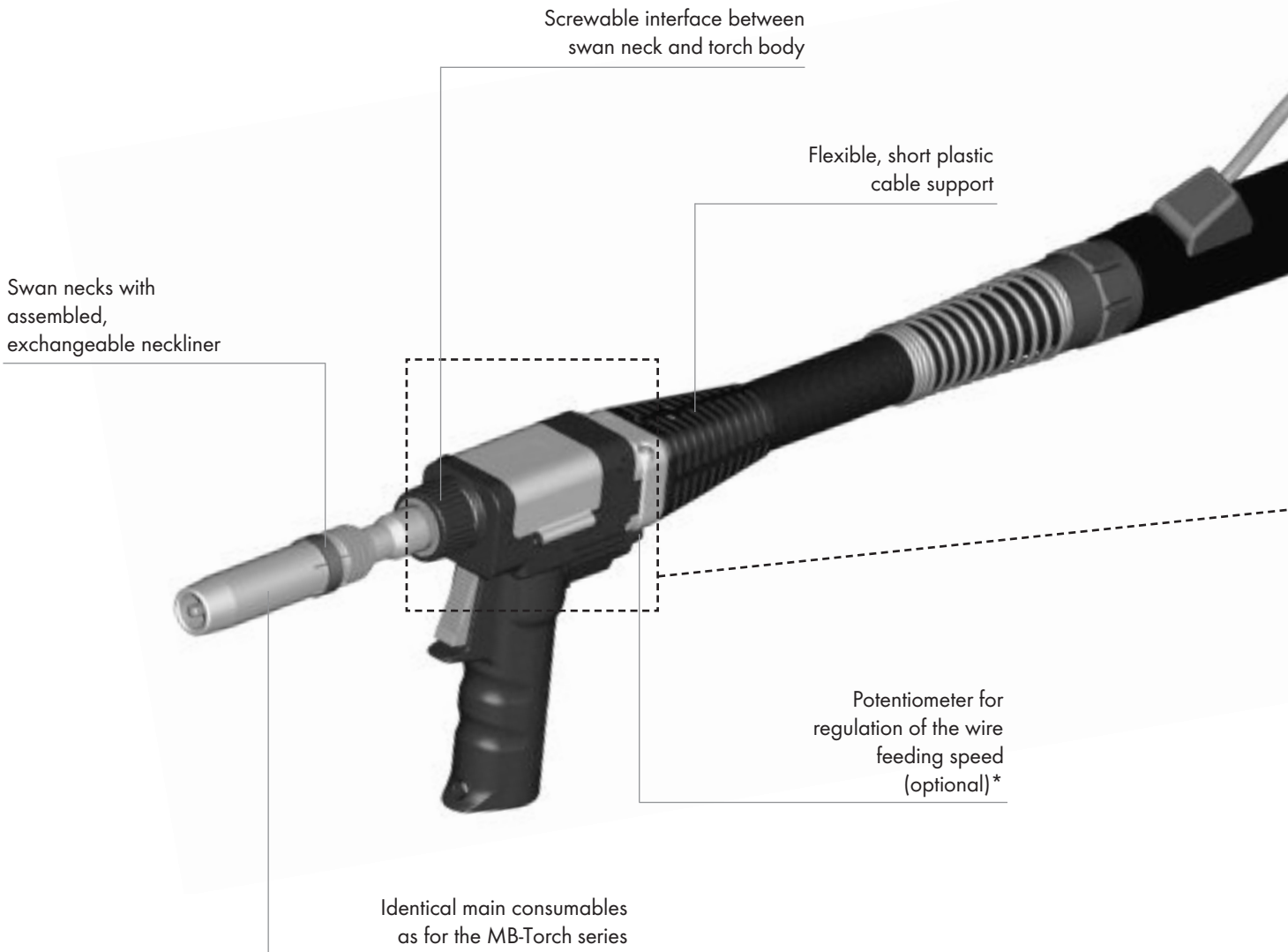
The main areas of application for these welding torches include shipbuilding, container and tank manufacture etc., as well as in construction of automobile and railway vehicles. Wherever exact and constant wire feeding is absolutely essential.

The Features:

- Constant and problem-free wire feeding thanks to a powerful pull motor
- Precise contact pressure regulation of the wire feeding rollers directly on the torch
- Optionally available with potentiometer for speed regulation
- Wearing parts are identical to those of the tried-and-trusted MB torch series – minimised stocking
- Optimum torch cooling – long tool lives
- Sturdy design – long service life



System Overview
MIG/MAG-Welding Torches Push-Pull Plus



Technical Data (EN 60 974-7):

MIG/MAG-Welding Torch Push-Pull Plus 36 D

Cooling: air-cooled
 Rating: 300 A CO₂
 270 A Mixed Gases M21
 Duty cycle: 60 %
 Wire size: Ø 0.8 - 1.2 mm

MIG/MAG-Welding Torch Push-Pull Plus 401 D

Cooling: liquid-cooled**
 Rating: 400 A CO₂
 350 A Mixed Gases M21
 Duty cycle: 100 %
 Wire size: Ø 0.8 - 1.6 mm

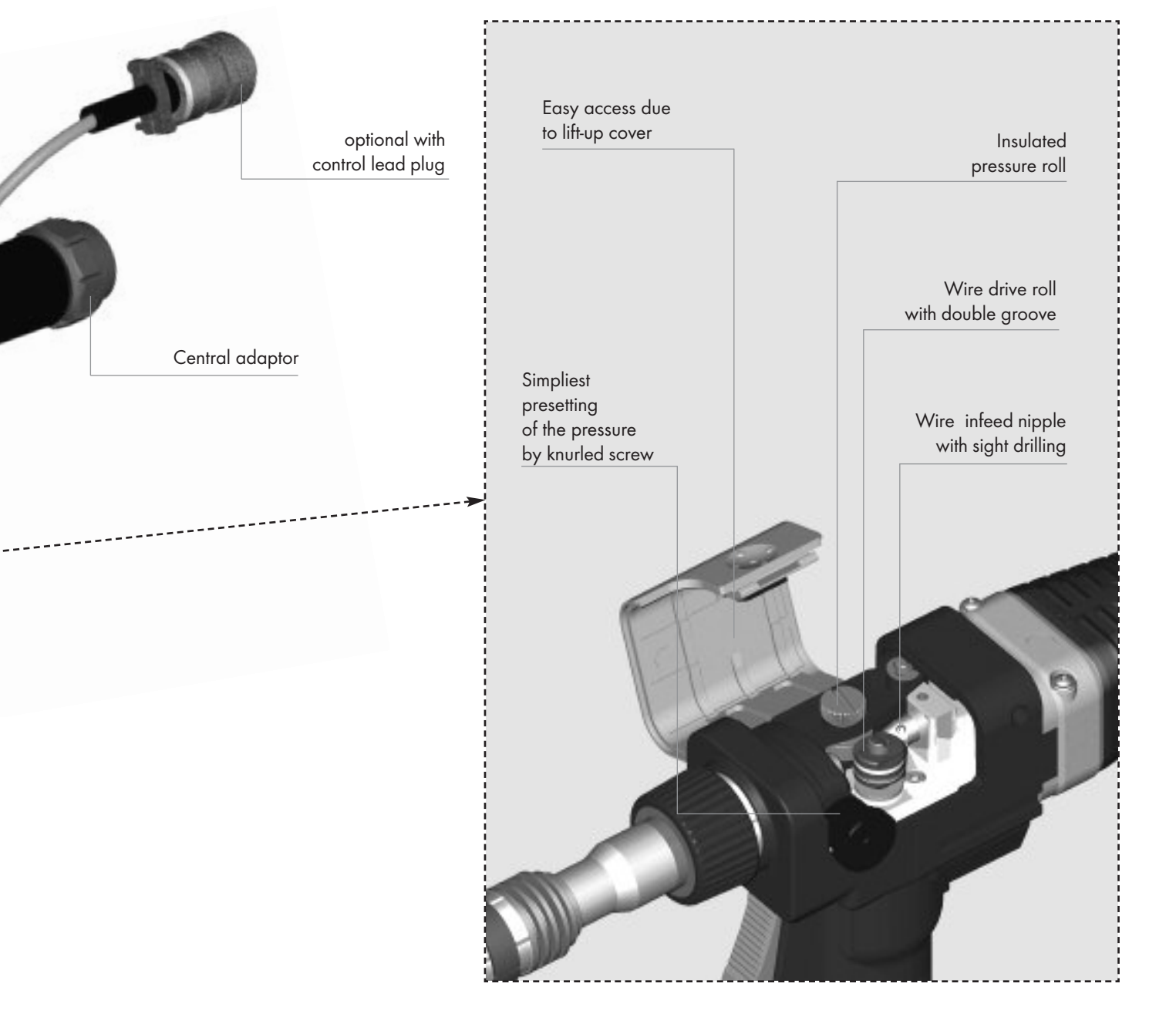
**** Note for liquid-cooled torches:**

To protect the cable assembly components from excessive heat build up we recommend a post welding cooling cycle of at least four minutes.

General advice:

At pulsed arc the duty cycles decrease up to 35%.

The Push-Pull Plus cable assemblies complete, which are equipped with the 48 V motor, correspond to the wire feeding characteristic of the 42 V variant of the „PP“ series. However they are more powerful.



Order advice:

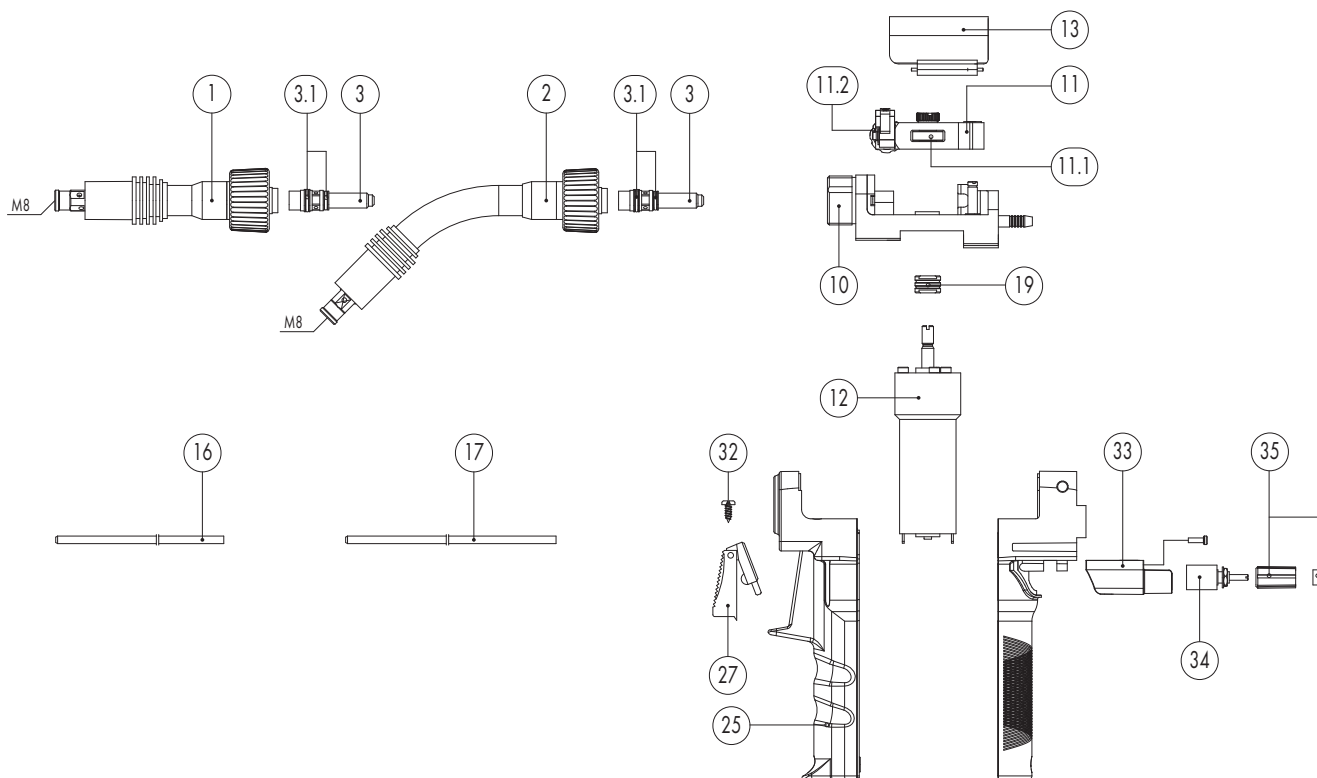
The initial equipment of the complete torches Push-Pull *Plus* contains the following wear parts:

Wear parts for Push-Pull <i>Plus</i>	36 D	401 D
Description	Part-No.	Part-No.
Contact tip holder M8 (short)	142.0020	142.0022
Gas diffuser	014.0261	030.0145
Contact tip M8 E-Cu; Ø 1.2	140.0442	140.0442
Gas nozzle, conical; NW Ø 16.0	145.0078	145.0085
Neckliner	149.0195	149.0199
PA liner	128.0019	128.0019
Wire drive roll Ø 1.2/ 1.2 U-groove	085.0024	085.0024

Other wear parts can be ordered separately.

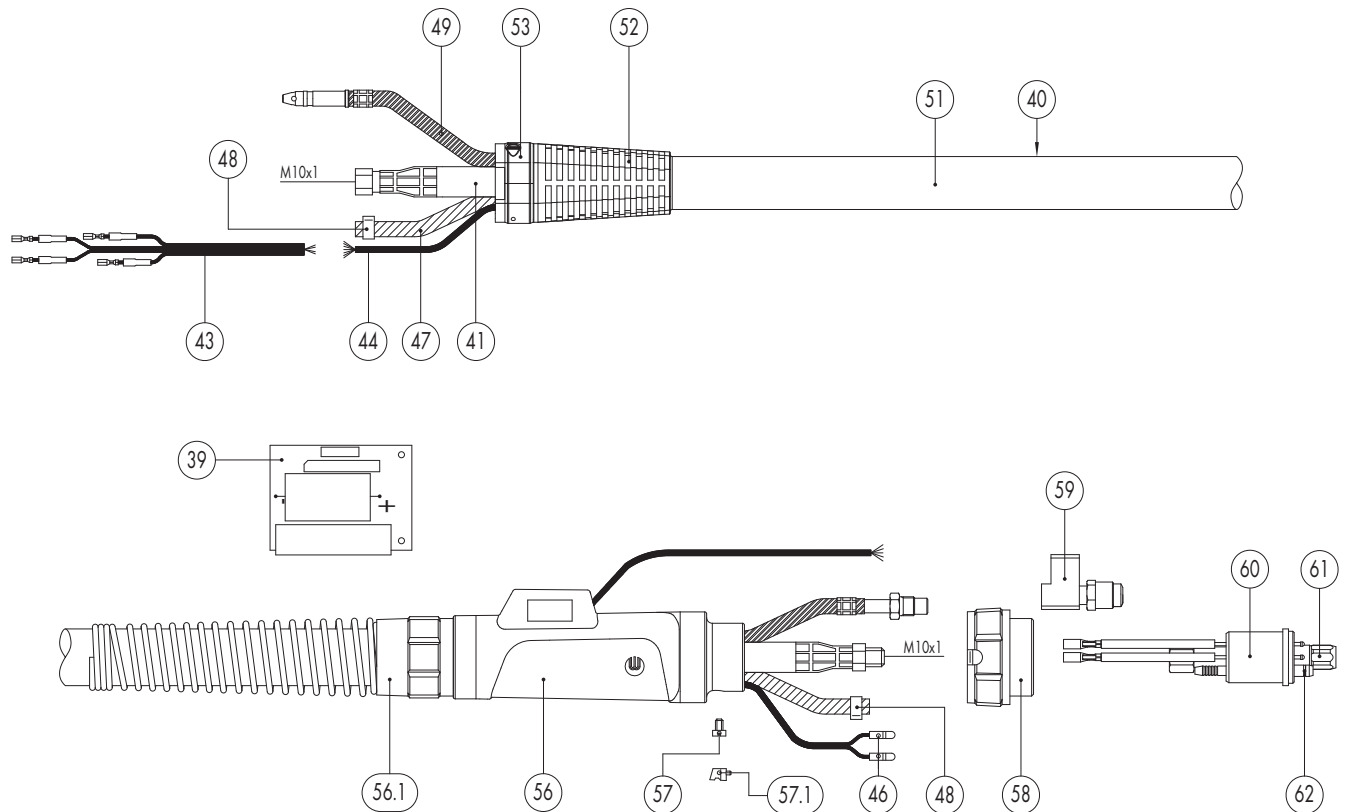
*For complete torches with potentionmeter we need the additional indication of the required resistance value.

Push-Pull Plus 36 D air-cooled



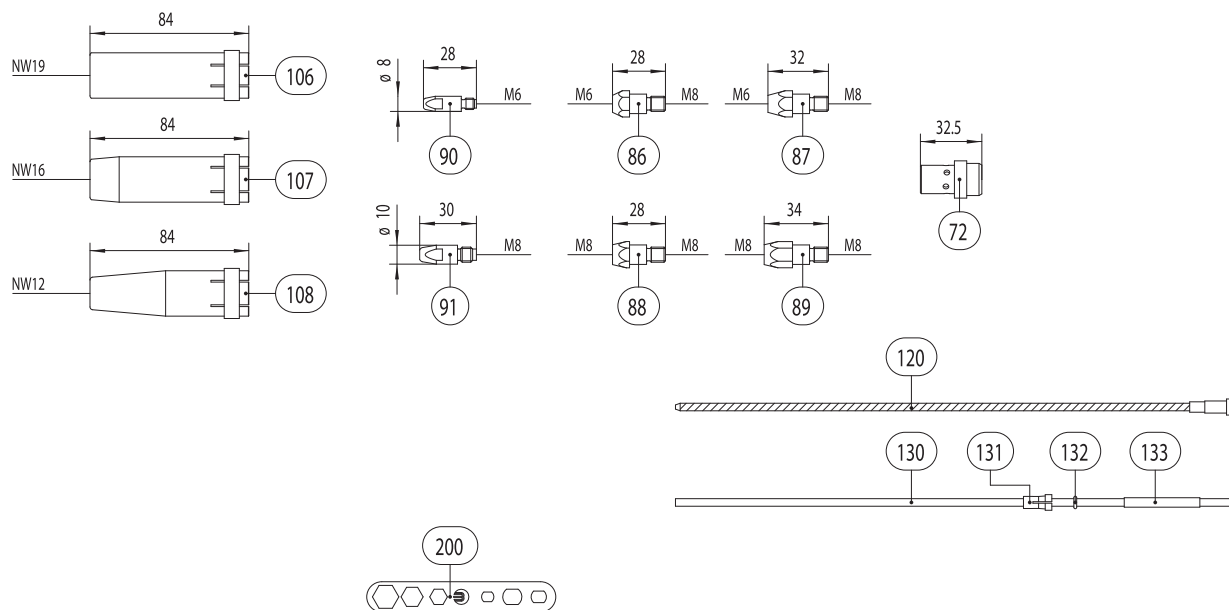
Component	Pos.	Description	Indication	Part-No.
Push-Pull Plus Torch complete		Push-Pull Plus 36 D; straight; 48 V motor; central adaptor GZ-2; 8.00 m		085.0036
		Push-Pull Plus 36 D; 45° bent; 48 V motor; central adaptor GZ-2; 8.00 m		085.0037
		Push-Pull Plus 36 D; straight; 48 V motor poti; central adaptor GZ-2; 8.00 m		085.0038
		Push-Pull Plus 36 D; 45° bent; 48 V motor poti; central adaptor GZ-2; 8.00 m		085.0039
Swan neck	1	Swan neck Push-Pull Plus 36 D; straight		085.0007
	2	Swan neck Push-Pull Plus 36 D; 45° bent		085.0009
	3	Nipple with thread		085.0010
	3.1	Wear parts set gasket rings		085.0029
Torch body, gear motor and equipment	10	Torch adaptor cpl.		085.0019
	11	Pressure trigger cpl.		085.0018
	11.1	Pressure roll		085.0042
	11.2	Pressure button cpl.		085.0043
	12	Gear motor 24 V DC with flange for wire drive roll		085.0015
	12	Gear motor 48 V DC with flange for wire drive roll		085.0027
	13	Cover cpl.		400.1186
	16	Neckliner brass for Push-Pull Plus 36 D straight for wire Ø 1.2-1.6 mm	L=144 mm	149.0195
	17	Neckliner brass for Push-Pull Plus 36 D 45° bent for wire Ø 1.2-1.6 mm	L=196 mm	149.0196
		Brass-liner CuZn 37; 2.2 x 4.4 mm (up to wire Ø 1.6 mm)	50 m	120.0041
		Brass-liner CuZn 37; 1.8 x 4.4 mm (up to wire Ø 1.2 mm)	50 m	120.0018
	19	Drive roll for wire Ø 0.8	U-groove	085.0022.1
	Drive roll for wire Ø 0.9	U-groove	085.0026.1	
	Drive roll for wire Ø 1.0	U-groove	085.0023.1	
	Drive roll for wire Ø 1.2	U-groove	085.0024.1	
	Drive roll for wire Ø 1.6	U-groove	085.0025.1	

Push-Pull Plus 36 D air-cooled



Component	Pos.	Description	Indication	Part-No.
Handle	25	Handle cpl. incl. mounting screws and extension material		085.0017
	27	Trigger 2-pole		185.0100
	32	Sheet metal screw 2.9x6.5	20 pcs.	079.0003
	33	Potentiometerhousing cpl.		085.0016
	34	Potentiometer	1.0 K-Ohm	187.0077
		Potentiometer	2.0 K-Ohm	187.0078
		Potentiometer	5.5 K-Ohm	187.0076
		Potentiometer	10.0 K-Ohm	187.0075
		Potentiometer	20.0 K-Ohm	187.0079
	35	Potentiometer knob cpl.		085.0041
Printed circuit board	39	Printed circuit board for 42 V motor		080.0009
Cable assemblies	40	Cable assembly cpl. for 8.0 m with 7-pole control leads without central adaptor GZ-2		085.0040
	41	Power cable cpl. Type 35		118.0074
	43	Control lead cpl. 4-pole 0.4 m	0.4 m	101.0054
	44	Control lead 7-pole 0.34 qmm	100 m	100.0034
	46	Plug	20 pcs.	175.0004
	47	Hose 30 black Ø 4.9x1.5 mm	100 m	109.0040
	48	Hose clamp Ø 8.2 mm	20 m	173.0005
	49	Wire conduit cpl. for 8.0 m		156.0273
	51	Fabrics hose 28x1.5 mm	40 m	107.0091
	52	Cable support		400.1188
	53	Cable support fastening cpl.		400.1247
	56	Cable support machine side big cpl. ND 31		500.0342
	56.1	Cable support spring big ND 31		500.0274
	57	Pan head screw M4x6	20 pcs.	000.0552
	57.1	Sealing cap	20 pcs.	500.0251
	58	Adaptor nut M33x2		500.0213
	59	Powerfitting cpl. M14x1		500.0460

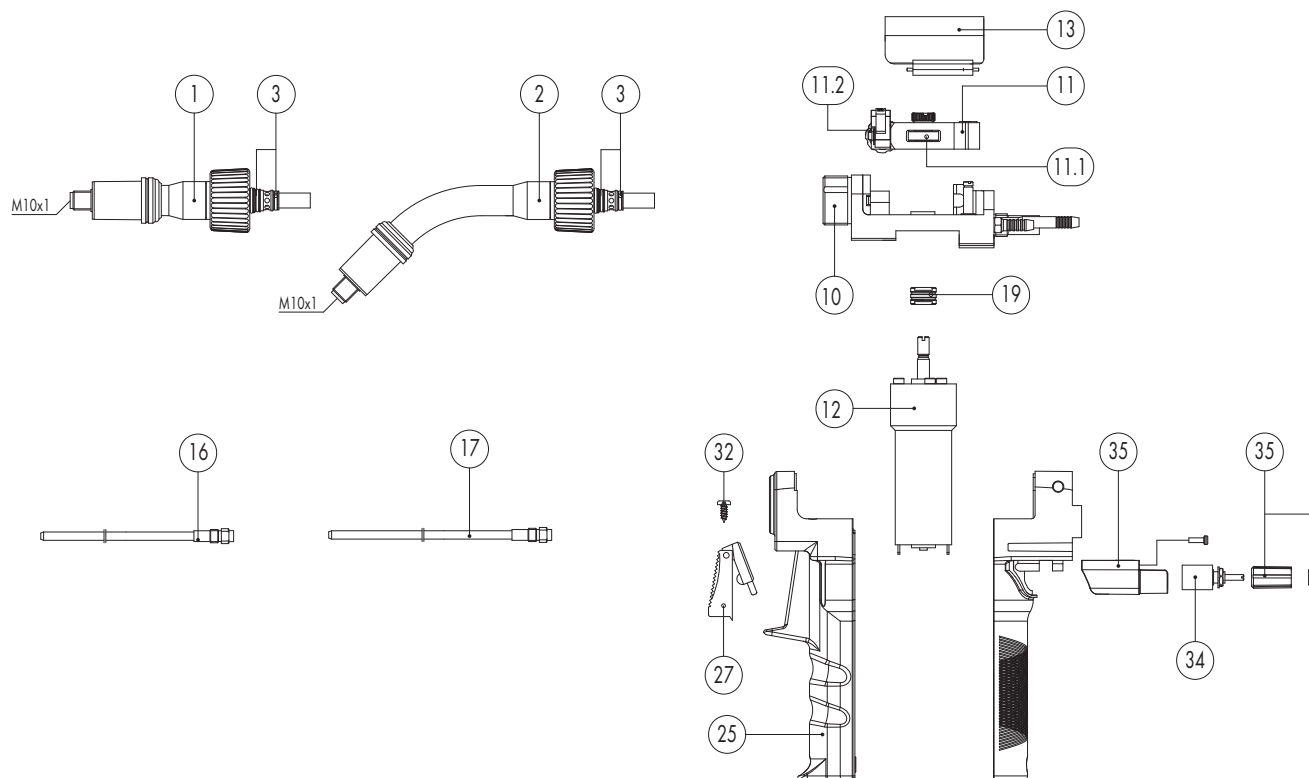
Push-Pull Plus 36 D air-cooled



Component	Pos.	Description	Indication	Part-No.
Wear parts	60	Central adaptor GZ-2 M14x1		501.0018
	61	Coupling nut M10x1	10 pcs.	501.0082
	62	O-ring 4x1	20 pcs.	165.0002
	72	Gas diffuser, white	10 pcs.	014.0261
		Gas diffuser, long life	10 pcs.	014.0026
		Gas diffuser, ceramic	10 pcs.	014.0023
	86	Contact tip holder M6; 26.0 mm (short)	10 pcs.	142.0005
	87	Contact tip holder M6; 32.0 mm (long)	10 pcs.	142.0011
	88	Contact tip holder M8; 28.0 mm (short)	10 pcs.	142.0020
	89	Contact tip holder M8; 34.0 mm (long)	10 pcs.	142.0024
	90	Contact tip M6 E-Cu; Ø 0.8 (8x28)	10 pcs.	140.0051
		Contact tip M6 E-Cu; Ø 1.0 (8x28)	10 pcs.	140.0242
		Contact tip M6 E-Cu; Ø 1.2 (8x28)	10 pcs.	140.0379
		Contact tip M6 CuCrZr; Ø 0.8 (8x28)	10 pcs.	140.0054
		Contact tip M6 CuCrZr; Ø 1.0 (8x28)	10 pcs.	140.0245
		Contact tip M6 CuCrZr; Ø 1.2 (8x28)	10 pcs.	140.0382
		Contact tip M6 E-Cu; Ø 0.8 for alu wire (8x28)	10 pcs.	141.0001
		Contact tip M6 E-Cu; Ø 1.0 for alu wire (8x28)	10 pcs.	141.0006
		Contact tip M6 E-Cu; Ø 1.2 for alu wire (8x28)	10 pcs.	141.0010
	91	Contact tip M8 E-Cu; Ø 0.8 (10x30)	10 pcs.	140.0114
		Contact tip M8 E-Cu; Ø 1.0 (10x30)	10 pcs.	140.0313
		Contact tip M8 E-Cu; Ø 1.2 (10x30)	10 pcs.	140.0442
		Contact tip M8 CuCrZr; Ø 0.8 (10x30)	10 pcs.	140.0117
		Contact tip M8 CuCrZr; Ø 1.0 (10x30)	10 pcs.	140.0316
		Contact tip M8 CuCrZr; Ø 1.2 (10x30)	10 pcs.	140.0445
		Contact tip M8 E-Cu; Ø 0.8 for alu wire (10x30)	10 pcs.	141.0003
		Contact tip M8 E-Cu; Ø 1.0 for alu wire (10x30)	10 pcs.	141.0008
		Contact tip M8 E-Cu; Ø 1.2 for alu wire (10x30)	10 pcs.	141.0015

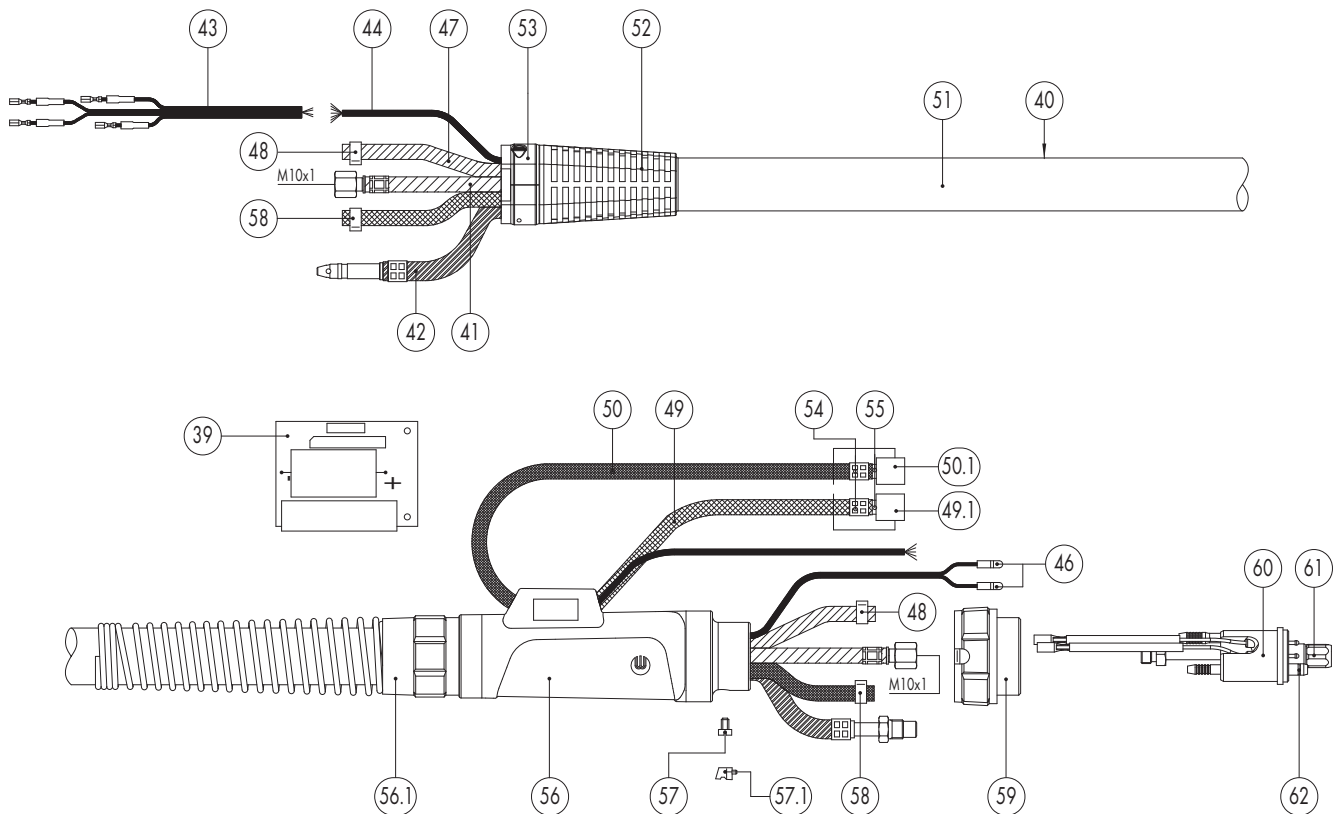
Component	Pos.	Description	Indication	Part-No.
Wear parts	106	Gas nozzle; cylindrical; ND Ø 19.0	10 pcs.	145.0045
	107	Gas nozzle; conical; ND Ø 16.0	10 pcs.	145.0078
	108	Gas nozzle; conical; ND Ø 12.0	10 pcs.	145.0126
	120	Guide spiral liner blank; 2.0/4.5; for wire Ø 0.8-1.2; for 8.00 m		122.0040
		Guide spiral liner insulated; 2.0/4.5; for wire Ø 0.8-1.2; for 8.00 m		124.0169
	130	PTFE core liner 2.0/4.0; red; wire electrode Ø 0.8-1.2; for 8.00 m		126.0030
		PTFE carbon core liner 2.0/4.0; wire electrode Ø 0.8-1.2; for 8.00 m		127.0009
		Polyamid core liner 2.0/4.0; wire Ø electrode 0.8-1.2; for 8.00 m		128.0019
	131	Nipple for core liner at Ø 4.0	20 pcs.	131.0001
	132	O-ring 3.5x1.5	20 pcs.	165.0008
	133	Guide tube for core liners up to Ø 4.0 (200 mm)		129.0461
	200	Spanner		191.0001

Push-Pull Plus 401 D liquid-cooled



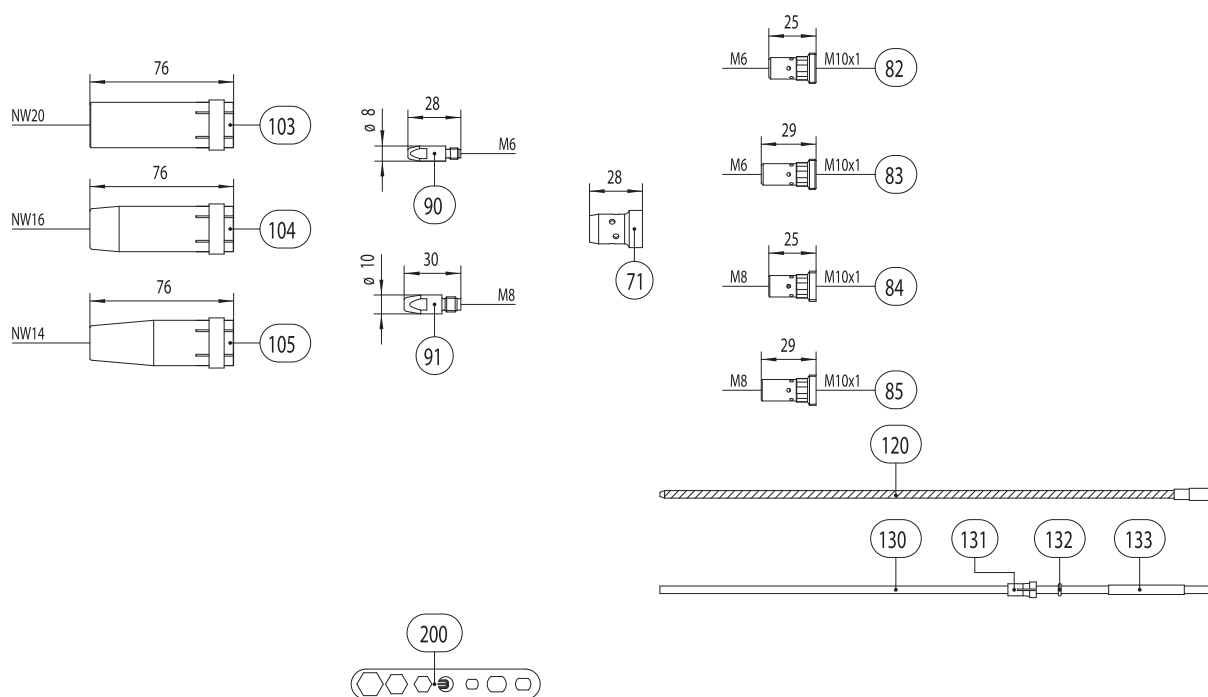
Component	Pos.	Description	Indication	Part-No.
Push-Pull Plus Torch complete		Push-Pull Plus 401 D; straight; 48 V motor; central adaptor WZ-2; 8.00 m		095.0025
		Push-Pull Plus 401 D; 45° bent; 48 V motor; central adaptor WZ-2; 8.00 m		095.0026
		Push-Pull Plus 401 D; straight; 48 V motor poti; central adaptor WZ-2; 8.00 m		095.0021
		Push-Pull Plus 401 D; 45° bent; 48 V motor poti; central adaptor WZ-2; 8.00 m		095.0022
Swan neck	1	Swan neck Push-Pull Plus 401 D; straight		095.0002
	2	Swan neck Push-Pull Plus 401 D; 45° bent		095.0015
	3	Wear parts set gasket rings		095.0001
Torch body, gear motor and equipment	10	Torch adaptor cpl.		095.0032
	11	Pressure trigger cpl.		085.0018
	11.1	Pressure roll		085.0042
	11.2	Pressure button cpl.		085.0043
	12	Gear motor 24 V DC with flange for wire drive roll		085.0015
	12	Gear motor 48 V DC with flange for wire drive roll		085.0027
	13	Cover cpl.		095.0009
	16	Neckliner brass for Push-Pull Plus 401 D straight for wire Ø 1.2-1.6 mm	L=137mm	149.0199
	17	Neckliner brass for Push-Pull Plus 401 D 45° bent for wire Ø 1.2-1.6 mm	L=197mm	149.0200
		Brass-liner CuZn 37; 2.2 x 4.4 mm (up to wire Ø 1.6 mm)	50 m	120.0041
		Brass-liner CuZn 37; 1.8 x 4.4 mm (up to wire Ø 1.2 mm)	50 m	120.0018
	19	Drive roll for wire Ø 0.8	U-groove	085.0022.1
		Drive roll for wire Ø 0.9	U-groove	085.0026.1
	Drive roll for wire Ø 1.0	U-groove	085.0023.1	
	Drive roll for wire Ø 1.2	U-groove	085.0024.1	
	Drive roll for wire Ø 1.6	U-groove	085.0025.1	
Handle	25	Handle cpl. incl. mounting screws and extension material		085.0017
	27	Trigger 2-pole		185.0100
	32	Sheet metal screw 2.9x6.5	20 pcs.	079.0003
	33	Potentiometerhousing cpl.		085.0016

Push-Pull Plus 401 D liquid-cooled



Component	Pos.	Description	Indication	Part-No.
Handle	34	Potentiometer	1.0 K-Ohm	187.0077
		Potentiometer	2.0 K-Ohm	187.0078
		Potentiometer	5.5 K-Ohm	187.0076
		Potentiometer	10.0 K-Ohm	187.0075
		Potentiometer	20.0 K-Ohm	187.0079
		35	Potentiometer knob cpl.	
Printed circuit board	39	Printed circuit board for 42 V motor		080.0009
Cable assemblies & Wear parts	40	Cable assembly cpl. for 8.0 m with 7-pole control leads without central adaptor GZ-2		095.0031
	41	Power cable cpl. PVC 8.00 m		115.0043
	42	Wire conduit cpl. for 8.00 m		156.0273
	43	Control lead cpl. 4-pole 0.4 m	0.4 m	101.0054
	44	Control lead 7-pole 0.34 qmm	100 m	100.0034
	46	Plug	20 pcs.	175.0004
	47	Hose 30 black Ø 4.9x1.5 mm	100 m	109.0040
	48	Hose clamp Ø 8.2 mm	20 m	173.0005
	49	Hose 47 blue Ø 5.5x1.5	100 m	109.0057
	49.1	Fastener cap blue		501.2424
	50	Water hose 0.60 m		103.0114
	50.1	Fastener cap red		501.2423
	51	Fabrics hose 28x1.5 mm	40 m	107.0091
	52	Cable support		400.1188
	53	Cable support fastening cpl.		400.1247
	54	Hose clamp Ø 9.0	20 pcs.	173.0001
	55	Plug nipple ND 5 mm / Ø 6.0		501.0114
	56	Cable support machine side big cpl. ND 31		500.0342
	56.1	Cable support spring big ND 31		500.0274
	57	Pan head screw M4x6	20 pcs.	000.0552
	57.1	Sealing cap	20 pcs.	500.0251

Push-Pull Plus 401 D liquid-cooled



Component	Pos.	Description	Indication	Part-No.
Cable assemblies & Wear parts	58	Hose clamp \varnothing 9.5 mm	20 pcs.	173.0002
	59	Adaptor nut M33x2		500.0213
	60	Central adaptor WZ-2 M10x1		501.0015
	61	Coupling nut M10x1	10 pcs.	501.0082
	62	O-ring 4x1	20 pcs.	165.0002
Wear parts	71	Gas diffuser, white	10 pcs.	030.0145
		Gas diffuser, long life	10 pcs.	030.0037
		Gas diffuser, ceramic	10 pcs.	030.0190
	82	Contact tip holder M6; 25.0 mm (short)	10 pcs.	142.0008
	83	Contact tip holder M6; 29.0 mm (long)	10 pcs.	142.0013
	84	Contact tip holder M8; 25.0 mm (short)	10 pcs.	142.0022
	85	Contact tip holder M8; 29.0 mm (long)	10 pcs.	142.0027
	90	Contact tip M6 E-Cu; \varnothing 0.8 (8x28)	10 pcs.	140.0051
		Contact tip M6 E-Cu; \varnothing 1.0 (8x28)	10 pcs.	140.0242
		Contact tip M6 E-Cu; \varnothing 1.2 (8x28)	10 pcs.	140.0379
		Contact tip M6 E-Cu; \varnothing 1.4 (8x28)	10 pcs.	140.0516
		Contact tip M6 E-Cu; \varnothing 1.6 (8x28)	10 pcs.	140.0555
		Contact tip M6 CuCrZr; \varnothing 0.8 (8x28)	10 pcs.	140.0054
		Contact tip M6 CuCrZr; \varnothing 1.0 (8x28)	10 pcs.	140.0245
		Contact tip M6 CuCrZr; \varnothing 1.2 (8x28)	10 pcs.	140.0382
		Contact tip M6 CuCrZr; \varnothing 1.4 (8x28)	10 pcs.	140.0519
		Contact tip M6 CuCrZr; \varnothing 1.6 (8x28)	10 pcs.	140.0558
		Contact tip M6 E-Cu; \varnothing 0.8 for alu wire (8x28)	10 pcs.	141.0001
		Contact tip M6 E-Cu; \varnothing 1.0 for alu wire (8x28)	10 pcs.	141.0006
		Contact tip M6 E-Cu; \varnothing 1.2 for alu wire (8x28)	10 pcs.	141.0010
		Contact tip M6 E-Cu; \varnothing 1.6 for alu wire (8x28)	10 pcs.	141.0020
	91	Contact tip M8 E-Cu; \varnothing 0.8 (10x30)	10 pcs.	140.0114
		Contact tip M8 E-Cu; \varnothing 1.0 (10x30)	10 pcs.	140.0313

Component	Pos.	Description	Indication	Part-No.
Wear parts	91	Contact tip M8 E-Cu; Ø 1.2 (10x30)	10 pcs.	140.0442
		Contact tip M8 CuCrZr; Ø 1.4 (10x30)	10 pcs.	140.0533
		Contact tip M8 E-Cu; Ø 1.6 (10x30)	10 pcs.	140.0587
		Contact tip M8 CuCrZr; Ø 0.8 (10x30)	10 pcs.	140.0117
		Contact tip M8 CuCrZr; Ø 1.0 (10x30)	10 pcs.	140.0316
		Contact tip M8 CuCrZr; Ø 1.2 (10x30)	10 pcs.	140.0445
		Contact tip M8 CuCrZr; Ø 1.4 (10x30)	10 pcs.	140.0536
		Contact tip M8 CuCrZr; Ø 1.6 (10x30)	10 pcs.	140.0590
		Contact tip M8 E-Cu; Ø 0.8 for alu wire (10x30)	10 pcs.	141.0003
		Contact tip M8 E-Cu; Ø 1.0 for alu wire (10x30)	10 pcs.	141.0008
		Contact tip M8 E-Cu; Ø 1.2 for alu wire (10x30)	10 pcs.	141.0015
		Contact tip M8 E-Cu; Ø 1.6 for alu wire (10x30)	10 pcs.	141.0022
	103	Gas nozzle; cylindrical; NW Ø 20.0	10 pcs.	145.0051
	104	Gas nozzle; conical; ND Ø 16.0	10 pcs.	145.0085
	105	Gas nozzle; conical; NW Ø 14.0	10 pcs.	145.0132
	120	Guide spiral liner blank; 2.0/4.5; for wire Ø 0.8-1.2; for 8.00 m		122.0040
		Guide spiral liner insulated; 2.0/4.5; for wire Ø 0.8-1.2; for 8.00 m		124.0169
		Guide spiral liner blank; 2.5/4.5; for wire Ø 1.4-1.6; for 8.00 m		122.0065
	130	PTFE core liner 2.0/4.0; red; wire electrode Ø 0.8-1.2; for 8.00 m		126.0030
		PTFE liner 2.7/4.7; yellow; wire Ø 1.4-1.6; for 8.00 m		126.0047
		PTFE carbon core liner 2.0/4.0; wire electrode Ø 0.8-1.2; for 8.00 m		127.0009
		Carbon PTFE liner 2.7/4.7; wire Ø 1.4-1.6; for 8.00 m		127.0014
		Polyamid core liner 2.0/4.0; wire Ø electrode 0.8-1.2; for 8.00 m		128.0019
		Polyamid core liner 2.3/4.7; wire Ø 1.4-1.6; for 8.00 m		128.0023
	131	Nipple for core liner at Ø 4.0	20 pcs.	131.0001
		Nipple for core liner at Ø 4.7	20 pcs.	131.0002
	132	O-ring 3.5x1.5	20 pcs.	165.0008
133	Guide tube for core liners up to Ø 4.0 (200 mm)		129.0461	
200	Spanner		191.0001	



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