

Master-Feeder-System "MFS V2"



High precision ...

Constant & precise!

MFS V2 - the wire feeder system for highly automated laser welding and brazing equipment.

The level of automation in laser welding continues to rise. Therefore, the demands for a reliable and maintenance-free wire feeding systems are even higher.

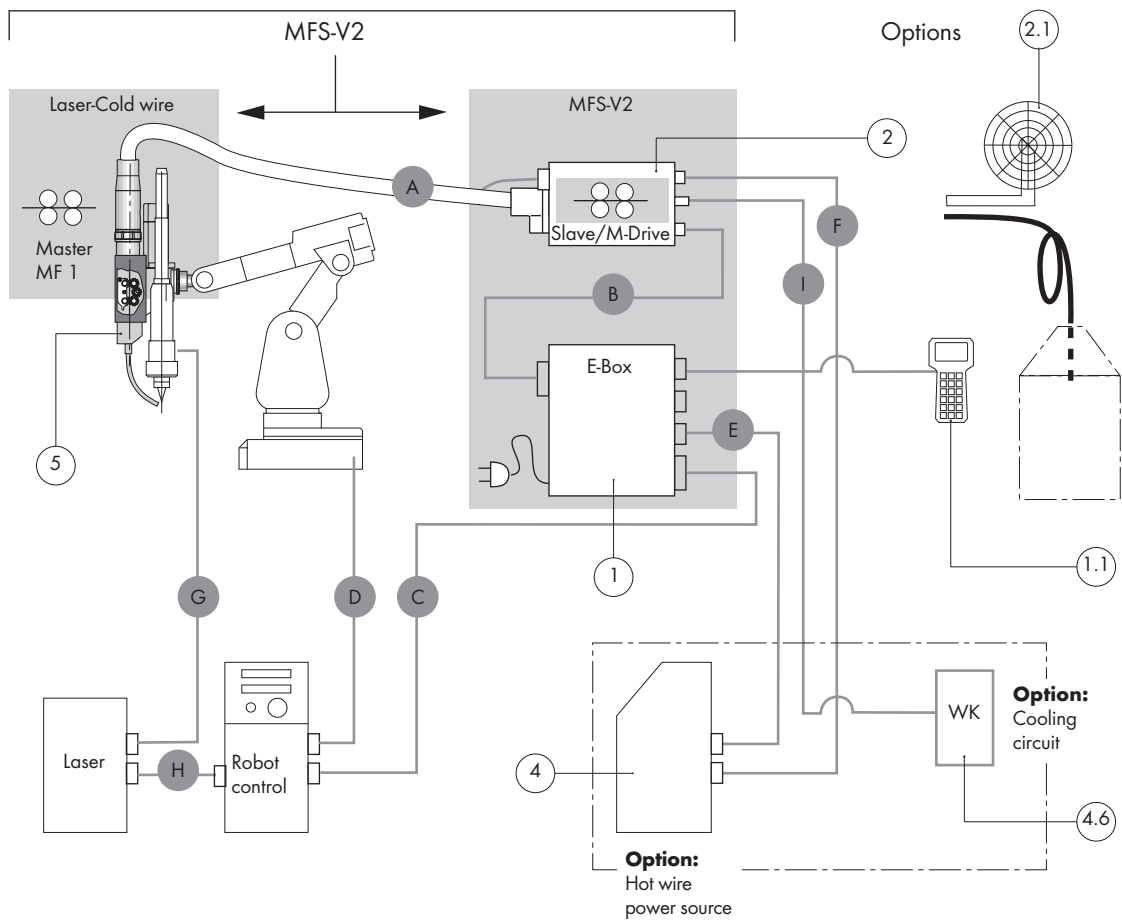
Using large wire diameters, the weld quality is maintained even with large gaps. However, the wire feeding speed will be reduced.

Instability in the wire feeding will become clearly visible in the seams. The consequence is scrap, rework and increasing costs.

The ABICOR BINZEL Master-Feeder-System "MFS V2" provides very stable feeding through its true Push / Push system - with motor technology as well as 4-roll-wire-drives with high efficiency - even in the lower speed range.



System overview MFS-V2



Overview of the control leads:

Pos.	Type	Connection	Reference
A	Cable assembly with control cable	M-Drive ↔ MF 1	see page 5 (n. shown)
B	Control cable	M-Drive ↔ E-Box	see page 3, Pos. 3.1
C	Bus cable / Interface cable	Robot control ↔ E-Box	see page 3, Pos. 3.2
D	Control cable	Robot control ↔ Robot	w/o figure*
E	Control cable	Power source ↔ E-Box	see page 3, Pos. 4.3
F	Power cable	Power source ↔ M-Drive	see page 3, Pos. 4.5
G	Control cable	Laser ↔ Laser head	w/o figure*
H	Control cable	Laser ↔ Robot control	w/o figure*
I	Water hose	Cooling circuit ↔ M-Drive	see page 3, Pos. 4.5

*These control leads are not included in the delivery of ABICOR BINZEL.

Hint:

So far the equipment has successfully been adopted with the following suppliers of power sources:

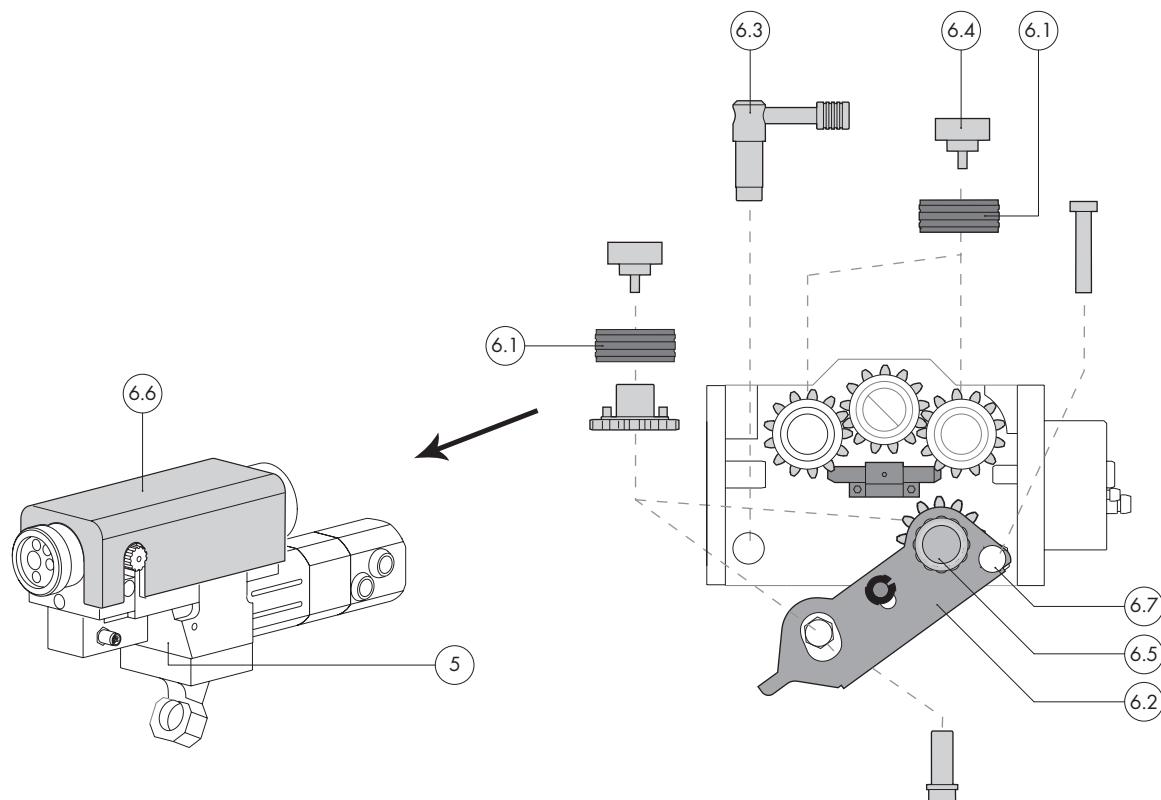
- Kemppi®
- Lorch®
- Lincoln®
- Fronius®
- EWM®

Component	Pos.	Description	Spec.	Part-No.	
E-Box Basic components	1	E-Box analog / digital (230 V, 50 / 60 Hz)		881.3113	
		E-Box Interbus CU (230 V, 50 / 60 Hz)		881.3117	
		E-Box Interbus LWL (230 V, 50 / 60 Hz)		881.3116	
		E-Box Profibus (230 V, 50 / 60 Hz)		881.3115	
		E-Box DeviceNet (115 V, 50 / 60 Hz) ¹		881.3125	
E-Box Accessories	1.1	Hand-held terminal (only for E-Box analog / digital)		881.3147	
		w/o fig. Memory-Stick for reprogramming / rebooting ²		881.3146	
M-Drive Basic components	2	M-Drive		881.3098	
	2.1	Spool carrier M-Drive cpl.		881.3057	
		Insulating plate M-Drive cpl.		881.3151	
		Wire end sensor for M-Drive (only for bus variants)		881.3028	
M-Drive Wear parts and consumables for aluminium wires	w/o fig.	Wire feeding roll 1.0 / 1.0 U-groove for aluminium ³		881.3132	
		Wire feeding roll 1.2 / 1.2 U-groove for aluminium ³		881.3133	
		Wire feeding roll 1.6 / 1.6 U-groove for aluminium ³		881.3134	
M-Drive Wear parts and consumables for steel / CuSi wires	w/o fig.	Wire feeding roll 0.8 / 0.8 V-groove for steel, CuSi ³		881.3139	
		Wire feeding roll 1.0 / 1.0 V-groove for steel, CuSi ³		881.3140	
		Wire feeding roll 1.2 / 1.2 V-groove for steel, CuSi ³		881.3141	
Control cables and Interface cable Basic components	3.1	Control cable (E-Box ↔ M-Drive)	L=5 m	101.0112	
		Control cable (E-Box ↔ M-Drive)	L=8 m	101.0118	
Wire drum connection	3.2	Interface cable (E-Box ↔ Robot open) only for E-Box analog / digital	L=6 m	101.0116	
	w/o fig.	Wire feeding conduit for drum connection green	L=5 m	881.3155	
		Wire feeding conduit for drum connection green	L=10 m	881.3156	
		Wire inlet on M-Drive M10x1 for aluminium		881.3143	
		Wire inlet on M-Drive M10x1 for steel		881.3145	
		Fitting quick-disconnected		177.0012	
		Locking nut		500.0088	
		Inlet unit		881.1253	
		Inlet nipple PVC 4.0 mm		131.0003	
		Inlet nipple PVC 4.7 mm		131.0005	
		Inlet nipple retaining nut M9x0.75		881.1096	
	Hot wire equipment Basic components	4	Hot wire equipment cpl. (consisting of Pos. 4.1 to 4.3)		204.0107
		4.1	Hot wire power source Kemppi® Master MLS2500 400 V		204.0105
4.2		Panel for hot wire power source Kemppi®		204.0106	
4.3		Control lead hot wire power source Kemppi® ↔ E-Box	L=3 m	101.0122	
		Control lead hot wire power source Lincoln® ↔ E-Box	L=3 m	101.0138	
4.4		Control lead hot wire power source open ↔ E-Box (for other manufacturers of power source)	L=3 m	101.0123	
4.5		Cable assembly M-Drive ↔ Power source and cooling circuit	L=5 m	550.0319	
4.6		Coolant recirculator WK 43 (240 V / 415 V / 50 Hz / 0.5 kW) with flow rate shut-off switch		850.0217	

¹ Further bus systems on request. • ² Please specify the programming code. • ³ Wire feeding rolls in the compensator have to be converted.

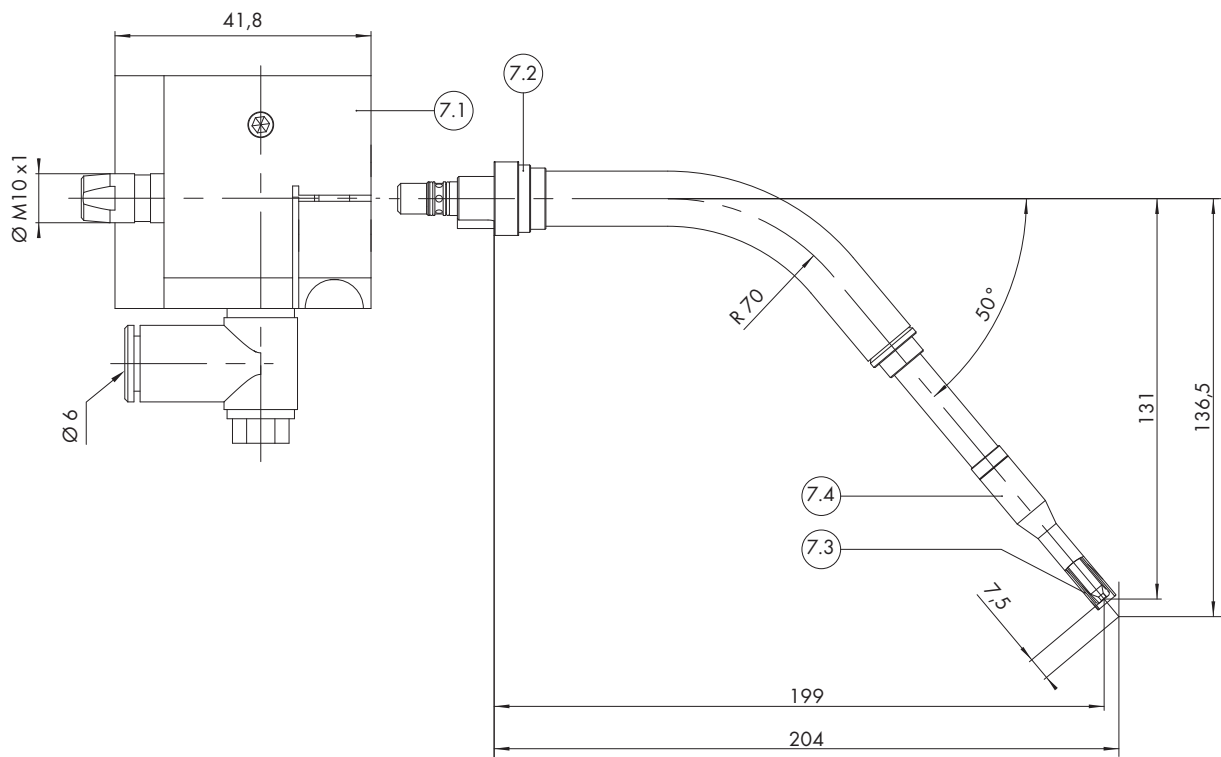
⁴ Wire feeding roll in the compensator in general are for steel and CuSi plain, other wire feeding rolls on request.

Master drives MF-1



Component	Pos.	Description	Spec.	Part-No.
MF-1 Basic components (Rolls-Ø 20 mm, 300 Lines Encoder)	5	Master Feeder MF-1		
		MF-1 (0-10 m, i=30 gearing)		783.5105
		MF-1 (0-20 m, i=15 gearing)		783.5094
		Master Feeder MF-1 with actual wire value transducer		
		MF-1 with actual wire value transducer (0-10 m, i=30 gearing)		783.5110
		MF-1 with actual wire value transducer (0-20 m, i=15 gearing)		783.5125
MF-1 Wear parts and consumables U-groove for aluminium wires	6.1	Wire feeding roll 20 mm, insulated 0.6	4 pcs.	783.5059.4
		Wire feeding roll 20 mm, insulated 0.8	4 pcs.	783.5060.4
		Wire feeding roll 20 mm, insulated 0.9	4 pcs.	783.5061.4
		Wire feeding roll 20 mm, insulated 1.0	4 pcs.	783.5053.4
		Wire feeding roll 20 mm, insulated 1.2	4 pcs.	783.5054.4
		Wire feeding roll 20 mm, insulated 1.6	4 pcs.	783.5055.4
MF-1 Wear parts and consumables V-groove for steel and CuSi wires	6.1	Wire feeding roll 20 mm, insulated 0.6		—
		Wire feeding roll 20 mm, insulated 0.8	4 pcs.	783.5079.4
		Wire feeding roll 20 mm, insulated 0.9	4 pcs.	783.5093.4
		Wire feeding roll 20 mm, insulated 1.0	4 pcs.	783.5080.4
		Wire feeding roll 20 mm, insulated 1.2	4 pcs.	783.5081.4
		Wire feeding roll 20 mm, insulated 1.6	4 pcs.	783.5085.4
		Wire feeding roll plain insulated for use with V-groove as pressure roll	1 pc.	783.5103
MF-1 Wear parts and consumables Others	w/o fig.	Pressure spring for compensator standard		836.0029
		Pressure spring for compensator hard		836.0034
	6.2	Compensator complete		783.5023
	6.3	Clamping lever		783.5065
	6.4	Knurled screw for drive roll		783.5021
	6.5	Knurled screw for compensator roll		783.5560
	6.6	Cover		783.5022
	6.7	Compensator retaining knurled screw		783.5020
	w/o fig.	Wire feeding roll Ø14 for actual wire value transducer		783.5118

Flex-supply cold wire

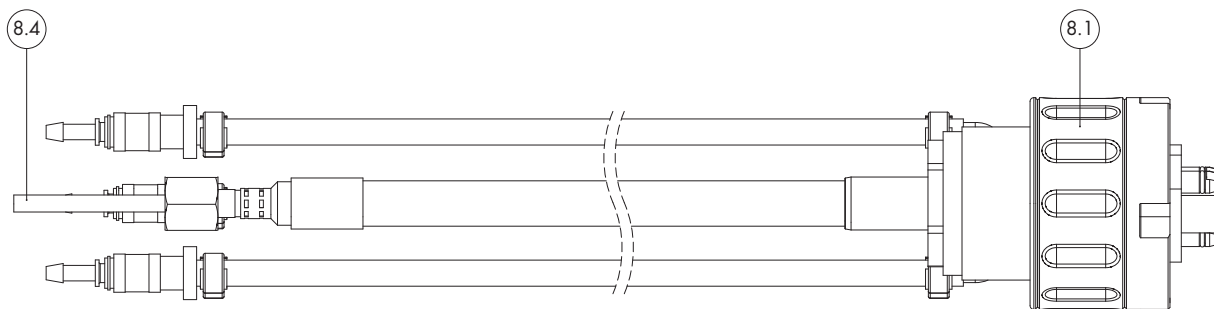


Component	Pos.	Description	Spec.	Part-No.
MFS Cable assemblies M-Drive / MF-1 liquid-cooled; 16-pole round control plug	w/o fig.	Cable assembly for MF-1 without actual wire feed speed value transducer	L=3 m	785.6530
		Cable assembly for MF-1 without actual wire feed speed value transducer	L=4 m	785.6531
		Cable assembly for MF-1 without actual wire feed speed value transducer	L=5 m	785.6532
	w/o fig.	Cable assembly for MF-1 with actual wire feed speed value transducer	L=3 m	785.6538
		Cable assembly for MF-1 with actual wire feed speed value transducer	L=4 m	785.6539
		Cable assembly for MF-1 with actual wire feed speed value transducer	L=5 m	785.6540
		Cable assembly for MF-1 with actual wire feed speed value transducer	L=6 m	785.6541
MFS Cable assemblies Accessories	w/o fig.	Wire inlet guide for Master drive MF-1	L= 40 mm	785.0518
		Outlet nipple for wire inlet guide MF-1		131.0007
		Inlet nipple for PA Liner (2.0 x 4.0 mm)	10 pcs.	131.0003
		Inlet nipple for PA Liner (2.3 x 4.7 mm)	10 pcs.	131.0005
		Inlet nipple for BPL Liner (2.0 x 4.7 mm / 2.4 x 4.7 mm)*	10 pcs.	131.0005
Flex-supply Cold wire with change neck	7.1	Clamping block cpl. (M10x1)		881.2212
	7.2	Laser cold wire feeding tube, 50° bent, x=204, y=136.5		881.2130
		Laser cold wire feeding tube, 50° geb., x=204, y=94.5		881.2131
		Laser cold wire feeding tube, straight, L= 111 mm		881.2158
		Alignment jig for 881.2130 and 881.2131		837.0516
	7.3	Laser feeding tip body		881.2041
	7.4	Gas nozzle**		881.2042
	w/o fig.	Tip body inserts for cold wire insulated Ø 0.8		881.2051
		Tip body inserts for cold wire insulated Ø 1.0		881.2052
		Tip body inserts for cold wire insulated Ø 1.2		881.2045
w/o fig.	Liner sleeve		881.2044	

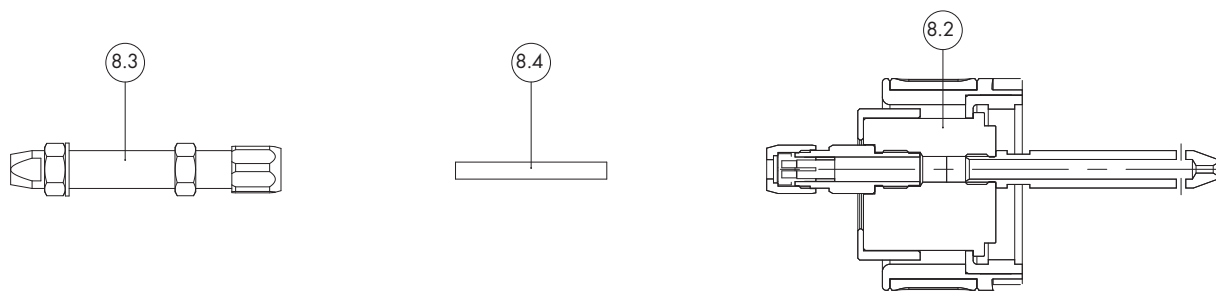
*All cable assemblies are equipped with guide spiral liner 1.0 / 1.2 mm (Bestell-Nr. 131.0005). For other requirements please order separately.

**Equipment on request.

Flex-supply hot and cold wire

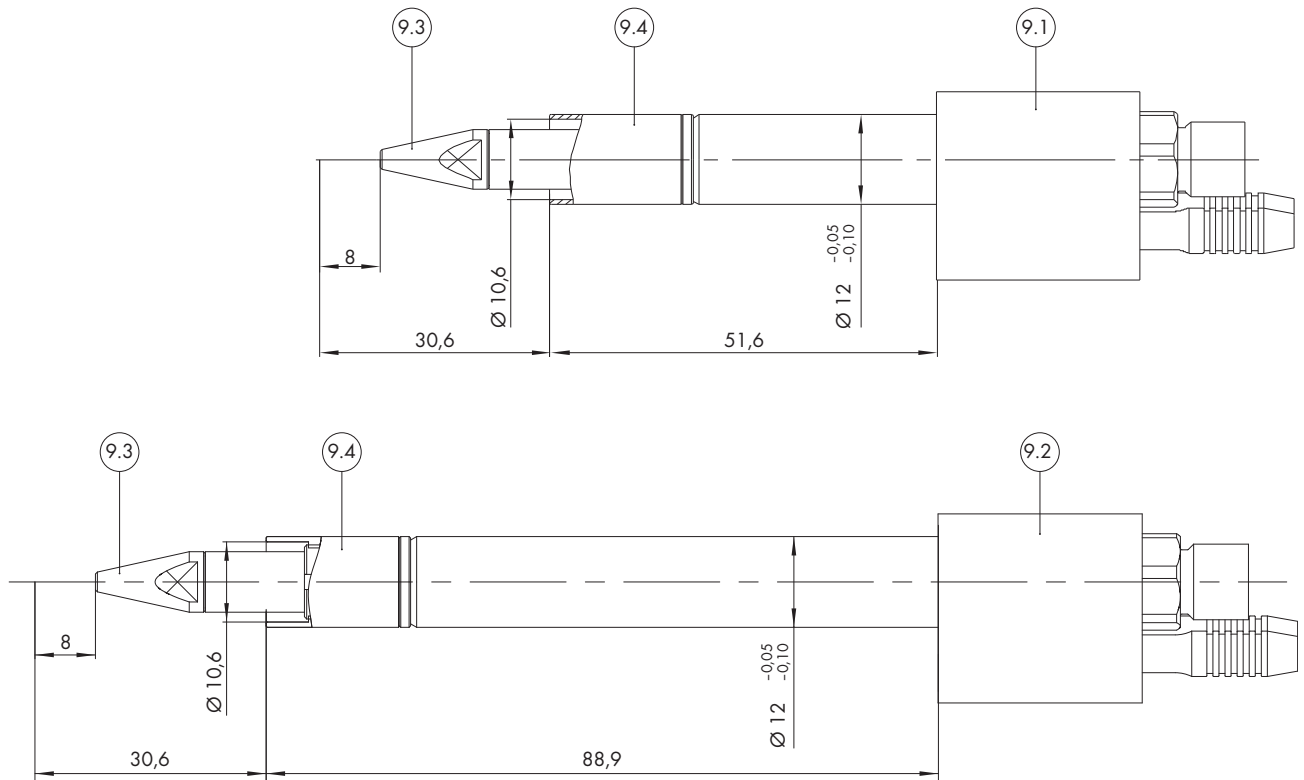


Flex-supply cold wire



Component	Pos.	Description	Spec.	Part-No.
Flex-supply hose external	8.1	Flex-supply cpl. gas / water external hose (M10x1 / M12x1.25 acc. to indication) max. 200 A		881.2185
	w/o fig.	Inlet tube Ms 26 mm MF BG1		131.0010
		Inlet nipple PVC 4.0 mm		131.0003
		Inlet nipple PVC 4.7 mm		131.0005
		Ferrule M9x0.75		881.1096
		O-ring 4x1 mm		165.0002
Flex-supply Cold wire with feeding tube	8.2	Flex-supply cpl. for cold wire feed only		881.2223
	8.3	Feeding tube cpl. for cold wire feed only for contact tips		881.2214
		Wire feeding tip M6 Laser D=1.0		881.1261
		Wire feeding tip M6 Laser D=1.2		881.1262
		Wire feeding tip M6 Laser D=1.6		881.1228
		Contact tip Laser HD D=0.6 mm		881.2207
		Contact tip Laser HD D=0.8 mm		881.2208
		Contact tip Laser HD D=0.9 mm		881.2209
		Contact tip Laser HD D=1.0 mm		881.2166
		Contact tip Laser HD D=1.2 mm		881.2210
		Contact tip Laser HD D=1.6 mm		881.2211
8.4	Carbon-PTFE-Liner with nipple and O-ring Ø 2.0 / 4.0 mm / 3.5 m		127.0005	
	Polyamide-Liner with nipple and O-ring Ø 2.0 / 4.0 mm / 3.5 m grey		128.0012	
	Polyamide-Liner with nipple and O-ring Ø 2.3 / 4.7 mm / 3.5 m grey		128.0020	

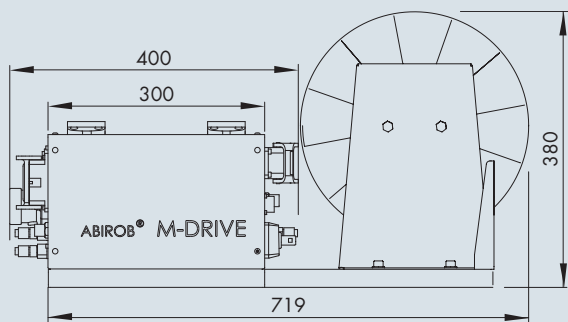
Laser HD-body for hot and cold wire



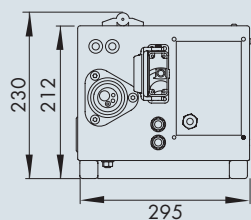
Component	Pos.	Description	Spec.	Part-No.
Flex-supply Hot wire		w/o. fig. Flex-supply ABK cpl. gas local with HD-body / ALO1 1.0 mm*		246.0162
		Flex-supply ABK cpl. gas local with HD-body / ALO3 1.0 mm*		246.0164
		Inlet tube 26 mm, MF-1		131.0010
		Inlet nipple PVC 4.0 mm		131.0003
		Inlet nipple PVC 4.7 mm		131.0005
		Ferrule M9x0.75		881.1096
		O-ring 4x1 mm		165.0002
	Feeding tube Hot wire	9.1	Laser HD-body ALO1 / ALO2*/**	
9.2		Laser HD-body ALO3*/**		881.2181
9.3		Contact tip Laser HD 0.6		881.2207
		Contact tip Laser HD 0.8		881.2208
		Contact tip Laser HD 0.9		881.2209
		Contact tip Laser HD 1.0		881.2166
		Contact tip Laser HD 1.2		881.2210
		Contact tip Laser HD 1.6		881.2211
		w/o. fig. TCP test tip Laser HD		246.0188
9.4		Gas nozzle NW10 Laser HD		881.2176
		w/o. fig. Gasket for gas nozzle (8x1 mm)		165.0003
	Shim set Laser HD		881.2180	
	Wire guide made from special steel		761.0104	
Accessories		w/o. fig. Cable hanger		191.0039
		Electrode wrench for contact tip SW6 M6		191.0103
		Electrode wrench for contact tip SW8 M8		191.0102
		Sharpener for plastic liner		191.0064
		Hose cutter for plastic liner		191.0062
		Blades for liner cutter	10 pcs.	191.0063

*ALO1, ALO2 and ALO3 are laser optics of the company Scansonic®

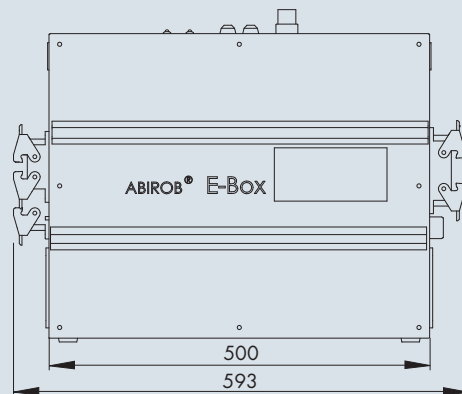
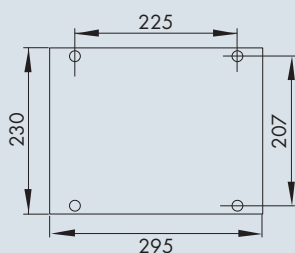
**The fastening of the HD-body has to be built up insulated and is not included in the range of activities of ABICOR BINZEL.



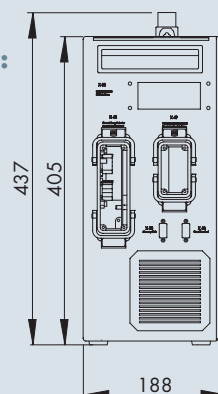
Side view:



Bottom view:



Side view:



Technical data:

M-Drive

Weight:	ca. 13 kg
Supply voltage:	24 V DC
	Duty cycle: 500 A / 600 A max. welding voltage at 100% / 60%
Wire feeding speed	20 m / min.
Standard roll assembly:	Ø 1.2 (steel wire)
Actuation:	4 rolls (Ø 30 mm)
Cable assembly connection:	Central adaptor WZ-2
Protection class:	IP21
Inlet pressure coolant:	5 bar / 70°C
Coolant connection:	Quick couplings NW 5
Inlet pressure gas:	5 bar
Gas connection:	Threaded G 3/8"
Air-blast:	Threaded G 1/4"

E-Box

Weight:	approx. 25 kg
Connection voltage:	230 V / 50 or 60 Hz
Internal operating voltage:	24 V DC
Power demand:	1.5 kW
Protection class:	IP21

Hint:

Due to the high requirements at sensitive wire feeding systems we recommend a detailed consultation with the respective system provider concerning the initial equipment.



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