



Product-Information

F4MB-XL Plasma-Spray Gun

Dear customer,

The machines and systems from Clerici Engineering AG feature highest standards in quality, design and technical optimal solutions. These products convince you with the best value pricing. Constant development and product innovations guarantee, that our products are state of the art in technology and safety.

Our **F4-MB_XL Plasma-Spray Gun** is a machine mounted (robot), multi-purpose, air plasma spray gun for external coatings.

The **F4-MB_XL** can be operated with different gases, e.g. argon, hydrogen, helium and nitrogen or respectively a combination of these gases. Other nozzles are available for special gas mixtures.

The **F4-MB_XL** allows the use of different coating materials, e.g. metals, alloys, carbides, composites, ceramics, blends

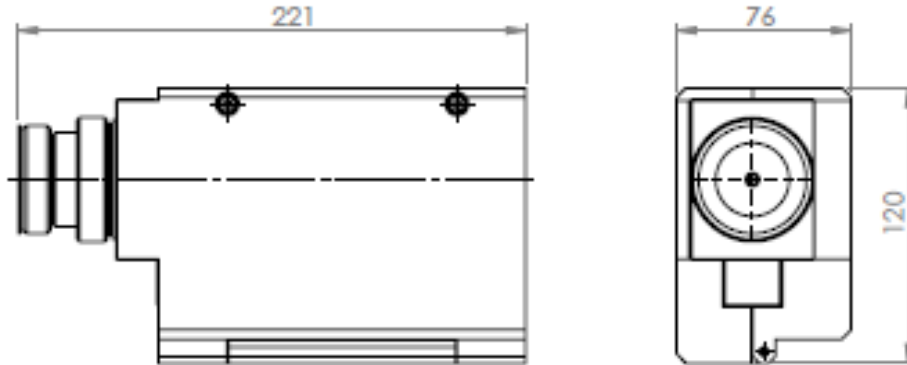
When operating the **F4-MB_XL** with a Clerici-Engineering AG MP-X thermal spray system, all important settings like electrical power, plasma gas pressure and flow, gun cooling water temperature and flow and air pressure are constantly monitored and controlled, and can be set to the right values.

The **F4-MB_XL** is designed for easy, versatile and safe operation. The gun hose connections are marked with red (+) and blue (-) to avoid cross-connection and are within the plastic gun cover. Thus the operator is protected from electrical shock.

Features and Benefits of the **F4-MB_XL**

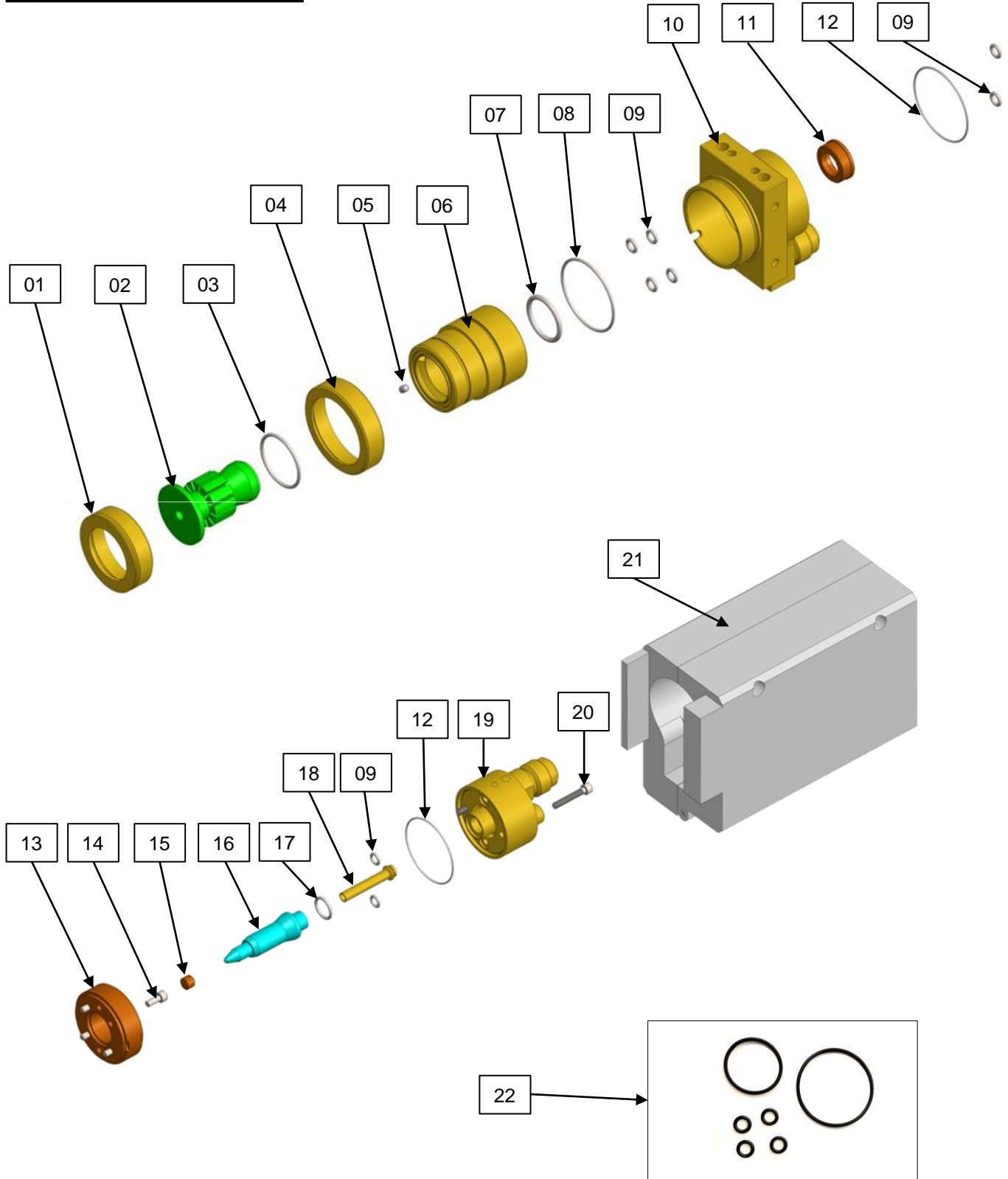
- Power capability up to 55kW.
- High heat output capabilities – plasma gas temperatures up to 16000°C (28830°F).
- High plasma gas velocity – in excess of 3000 m/s (10000 ft/s).
- High particle velocities – up to 610m/s (2000 ft/s).
- Long life hardware – tungsten-tipped electrode and tungsten-lined nozzle, therefore up to 5 times longer lifetime than unlined copper nozzles (with proper cooling).
- Fixed powder injection holders – enables proper injection angle and distance into the plasma spray.
- Simple configuration – the F4-MB can spray a wide range of material powders with a single nozzle / electrode configuration.
- Simple maintenance – Nozzle, electrode and O-ring packages are available for easy gun maintenance.

Technical Specifications



F4-MB_XL	
Power	
Power rating	max. 55kW
Gas Quality	
Argon (Ar)	min. 99.95%
Helium (He)	min. 99.995%
Hydrogen (H2)	min. 99.995%
Nitrogen (N2)	min. 99.7%
Cooling Water Requirements	
Inlet temperature	15 to 25°C 59 to 77°F
Inlet pressure	13.5 bar 196 psi
Flow	10 to 14 l/min 2.6 to 3.7 gal/min
Water hardness	max. 0.28°D / 0.35°E / 0.5°F (0.05 mmol/l)
Conductivity	max. 5µS
Spray rate	
	40 to 80 g/min 0.09 to 0.18 lb/min
Typical efficiency	50 to 80%
Weight	
	3.17kg 6,989 lb
Compatibility	
Connection	MP-X Thermal spray system / All APS thermal spray systems
Powder feeders	MP-X Thermal spray system / All APS powder feeders

Spare Parts List



Spare Parts List

Position	Description	Art.-No.	Quantity
	F4_XL Plasma Gun compl.	CE-000817	
01	F4_Front secure ring	CE-000873	1
02	F4_Nozzle Ø6mm WLa20	CE-001362	1
03	O-Ring Ø29.87x1.78 (Viton)	CE-001229	1
04	F4_Rear secure ring	CE-000874	1
05	Grub screw M4x5	CE-000948	1
06	F4_Anode body	CE-000875	1
07	O-Ring Ø23.47x2.62 (Viton)	CE-001228	1
08	O-Ring Ø42.00x1.50 (NBR)	CE-000146	1
09	O-Ring Ø5.28x1.78 (NBR)	CE-000866	8
10	F4_XL Center body	CE-000876	1
11	F4_Gas distribution ring	CE-000869	1
12	O-Ring Ø44.00x1.00 (NBR)	CE-000208	2
13	Insulator assembly	CE-000870	1
14	Hex socket head cap screw M4x10 stainless steel	CE-001230	4
15	Insulation screw M8x1	CE-000872	4
16	F4_Cathode WLa20	CE-001363	1
17	O-Ring Ø12.42x1.78 (NBR)	CE-000207	1
18	F4_Cooling water tube	CE-000891	1
19	F4_XL Rear gun body	CE-000877	2
20	Hex socket head cap screw M4x25 stainless steel	CE-001533	2
21	F4_XL Gun cover	CE-000868	1
22	SET_O-Ring for F4_XL Plasma Gun	CE-002001	1

Accessory Parts

Powder injector holder

75°/75°

CE-000828

75°/90°

CE-000829

90°/90°

CE-000826

90°/90°/90°/90°

CE-000830

90°/90°/75°/105°

CE-000831

75°/90°/105°/105°

CE-000884

90°/90°/105°/105°

CE-000885

105°/105°

CE-000886

100°/100°

CE-000887

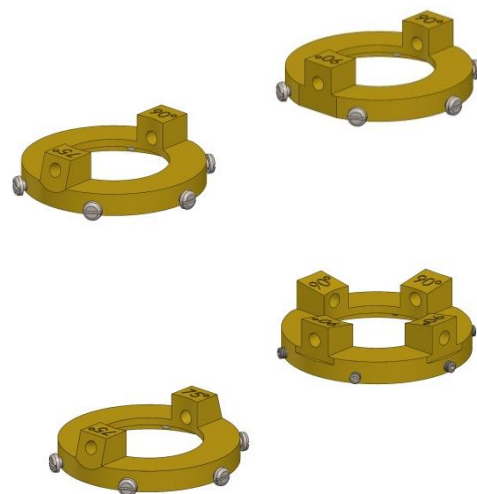
90°/100°

CE-000888

90°/105°

CE-000889

90°/90°/75°/75°

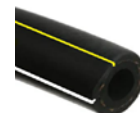
CE-000980


Connections for PTFE-tube 6x4 metrical system

Female connector G1/8« – 6x4

CE-000153

 PTFE tube 4.0x6.0mm with 20% carbon
XX-m

CE-001065-XX


Powder injector G1/8"

Ø1.5

CE-000749

Ø1.8

CE-000750

Ø2.0

CE-000751


Powder injector G1/8" bent 15°

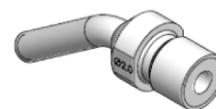
Ø1.5

CE-000757

Ø1.8

CE-000758

Ø2.0

CE-000759


Powder injector G1/8" bent 35°

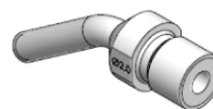
Ø1.5

CE-000760

Ø1.8

CE-000761

Ø2.0

CE-000762


Accessory Parts

Connections for Piranha® powder hose 3/16" conical system

Piranha® hose 3/16",4.8mm XXm inkl. Fitting CE-002197-XX



Piranha® hose 3/16",4.8mm XXm

CE-001330-XX



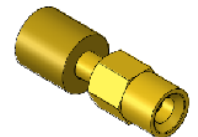
Connecting piece powder hopper

CE-001192



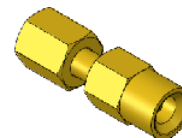
Interface piece Powder hose to powder hopper

CE-001191



Interface piece Powder hose to powder injector conical

CE-001190



Powder injector 7/16-20 UNF

Ø1.5

CE-000752

Ø1.8

CE-000753

Ø2.0

CE-000754



Distance ring set

CE-000832



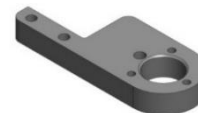
Adjusting tool for F4 burner electrode

CE-000843



Gun holder

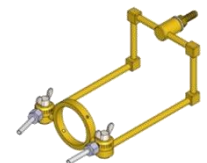
CE-000792



F4 Air Jet

F4_Air cooling / Air-Jets

CE-000478



F4_Nozzle 50mm to Air Jet

CE-000481

F4_Nozzle 75mm to Air Jet

CE-000479

F4_Nozzle 100mm to Air Jet

CE-000480



Plasma gas burner hose, 5m

CE-001121



Accessory Parts

SET Burner Hose 7/8" Typ C +/-

SET Burner Hose 7/8" Typ C +/- à 1m
 SET Burner Hose 7/8" Typ C +/- à 2m
 SET Burner Hose 7/8" Typ C +/- à 3m
 SET Burner Hose 7/8" Typ C +/- à 4m
 SET Burner Hose 7/8" Typ C +/- à 5m
 SET Burner Hose 7/8" Typ C +/- à 6m
 SET Burner Hose 7/8" Typ C +/- à 7m
 SET Burner Hose 7/8" Typ C +/- à 8m
 SET Burner Hose 7/8" Typ C +/- à 9m
 SET Burner Hose 7/8" Typ C +/- à 10m
 SET Burner Hose 7/8" Typ C +/- à 11m
 SET Burner Hose 7/8" Typ C +/- à 12m

CE-001700-01
 CE-001700-02
 CE-001700-03
 CE-001700-04
 CE-001700-05
 CE-001700-06
 CE-001700-07
 CE-001700-08
 CE-001700-09
 CE-001700-10
 CE-001700-11
 CE-001700-12



Burner Hose 7/8" Typ C Plus +

Burner Hose 7/8" Typ C + à 1m
 Burner Hose 7/8" Typ C + à 2m
 Burner Hose 7/8" Typ C + à 3m
 Burner Hose 7/8" Typ C + à 4m
 Burner Hose 7/8" Typ C + à 5m
 Burner Hose 7/8" Typ C + à 6m
 Burner Hose 7/8" Typ C + à 7m
 Burner Hose 7/8" Typ C + à 8m
 Burner Hose 7/8" Typ C + à 9m
 Burner Hose 7/8" Typ C + à 10m
 Burner Hose 7/8" Typ C + à 11m
 Burner Hose 7/8" Typ C + à 12m

CE-001600-01
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 CE-001600-05
 CE-001600-06
 CE-001600-07
 CE-001600-08
 CE-001600-09
 CE-001600-10
 CE-001600-11
 CE-001600-12



Burner Hose 7/8" Typ C Minus -

Burner Hose 7/8" Typ C - à 1m
 Burner Hose 7/8" Typ C - à 2m
 Burner Hose 7/8" Typ C - à 3m
 Burner Hose 7/8" Typ C - à 4m
 Burner Hose 7/8" Typ C - à 5m
 Burner Hose 7/8" Typ C - à 6m
 Burner Hose 7/8" Typ C - à 7m
 Burner Hose 7/8" Typ C - à 8m
 Burner Hose 7/8" Typ C - à 9m
 Burner Hose 7/8" Typ C - à 10m
 Burner Hose 7/8" Typ C - à 11m
 Burner Hose 7/8" Typ C - à 12m

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