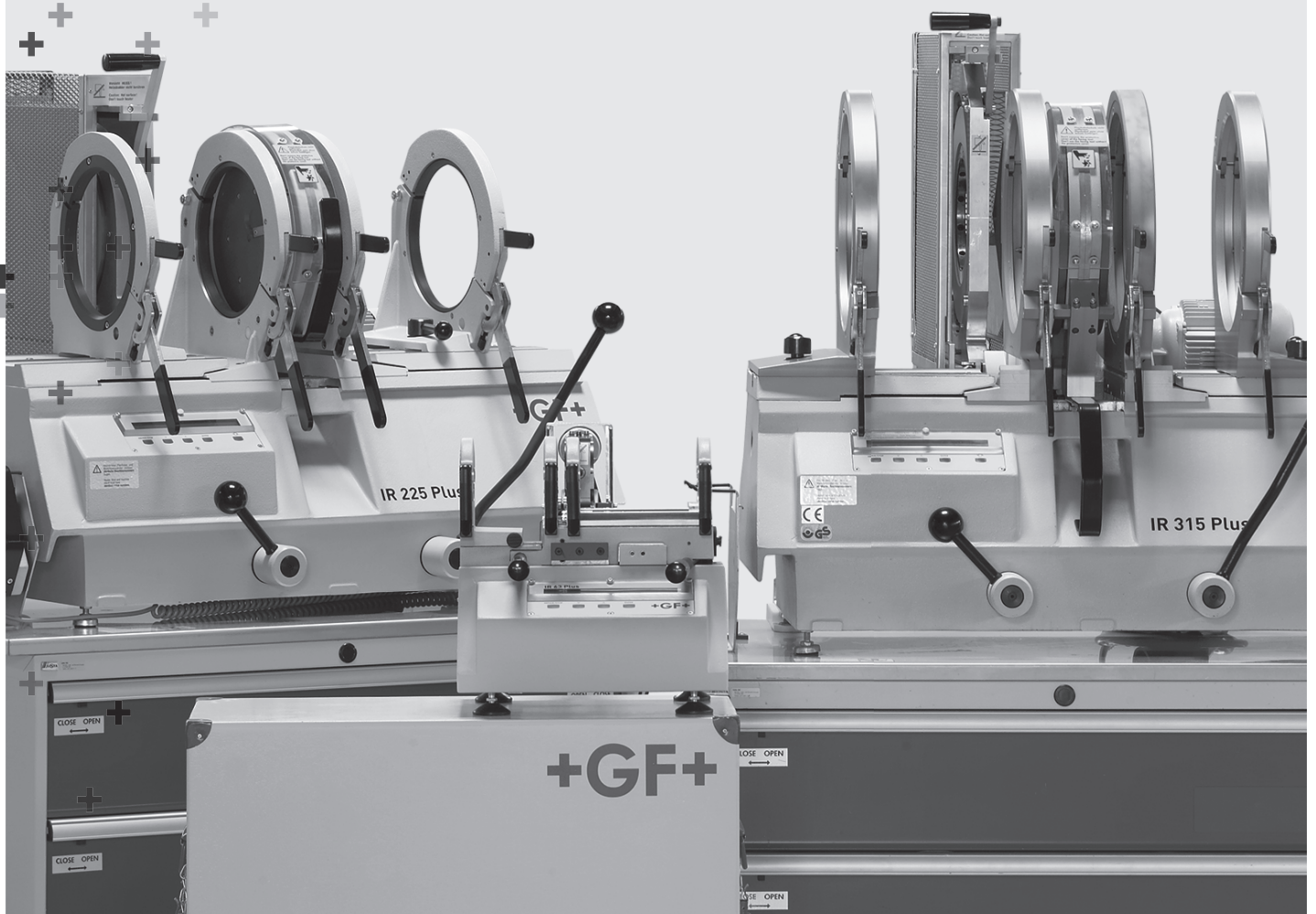


Section 8

Fusion Machines and Tools



Fusion Technology Product Range

	Electrofusion		Socket		Contact Butt or Socket Manual	Contact Butt						Infrared (IR)				Bead and Crevice Free
	Electro Plus	MSA 250	MSE Hand Tool	SG-125		SG-160	MC 110	TM 160	TM 315	TM 400	TM 630	IR 63 Plus*	IR 110 Plus*	IR 225 Plus*	IR 315 Plus*	
PROGEF® Standard	N/A	N/A	16-110	16-125	32-160	20-110	63-160	90-315	125-400	315-630	20-63	20-110	63-225	N/A	N/A	
PROGEF® Natural	N/A	N/A	N/A	N/A	32-90	20-90	N/A	N/A	N/A	N/A	20-63	20-63	75-90	N/A	20-90	
PPro-Seal™	1/2"-3"	1/2"-3"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SYGEF® Plus	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20-63	20-110	63-225	250-315	20-110	
SYGEF®	N/A	N/A	16-63	16-63	32-160	N/A	N/A	N/A	N/A	N/A	20-63	20-110	63-225	250-315	20-110	



IR Fusion Tools

294



BCF Fusion Tools

306



Butt Fusion Tools

315



Electrofusion Tools

327



Cutting, Chamfering and Peeling Tools

331



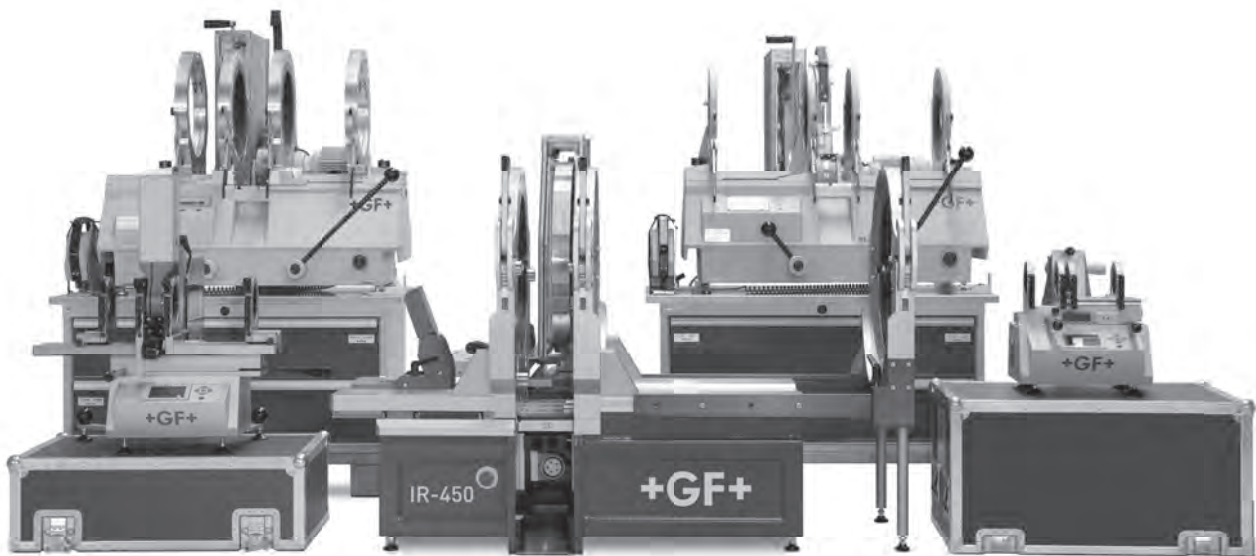
Rental Equipment

338

IR Plus® Infrared Butt Fusion Technology

Features

- Non-contact Infrared heating
- Completely controlled and repeatable fusion process using our proven overlap system
- Minimized and defined weld bead
- Proven reliability and safe high purity fusion system
- Controlled cooling process based on ambient and bead temperature
- Electronic downloading of fusion data
- Integrated interface for label and standard printers (hard copy printout)



Infrared (IR) Plus® Fusion Process Times*

Machine	Product	20	25	32	40	50	63	75	90	110	160	200	225	250	315
IR-63 Plus®	PROGEF® Standard	2:23	2:53	3:41	4:30	5:36	6:59								
	PROGEF® Natural PN 10	2:28	3:19	3:51	4:41	5:50	7:17								
	SYGEF® PN 16	1:48	1:48	2:32	2:32	3:23	3:27								
IR-225 Plus®	PROGEF® Standard						5:00	6:00	7:30	9:00	12:30	15:30	17:30		
	PROGEF® Natural PN 6						N/A	6:00	7:00	8:00					
	SYGEF® PN 10						-	-	3:30	3:45	4:00	5:00	5:30		
	SYGEF® PN 16						3:00	3:00	3:30	4:30					
IR-315 Plus®	SYGEF® PN 10												8:00	10:00	

*All times in minutes:seconds and are approximate based on 68°F / 20°C ambient temperature. Times only account for heating, joining and cooling of products per the GF Fusion Training Program.

IR63 Plus® Fusion Joining Machine and Accessories

D



IR-63 Plus® Fully-Equipped Machine

Model:

- Clamping inserts d 20-63 mm (8 pcs. per dimension)
- End caps PE d 20-63 mm (4 pcs. per dimension)
- Power supply cable 230 V (1 pcs.)
- Extension cable for remote weld device (1 pcs.)
- Extension cable for heater (1 pcs.)
- Extension cable for facing tool (1 pcs.)
- Cleaning brush No. 8 (1 pcs.)
- Hexagon key 3 mm (1 pcs.)
- Hexagon key 4 mm (1 pcs.)
- Heater protection shield (1 pcs.)
- Clamping unit extension (8 pcs.)
- Socket wrench (facing blades) (1 pcs.)
- Screw driver, Size 0 (1 pcs.)
- Accessory Tray (1 pcs.)
- Manual (1 pcs.)
- Fully-equipped fusion jointing machine for welding SYGEF Standard, SYGEF Plus, PROGEF Standard, PROGEF Natural, PROGEF Plus, PE 100, PFA in dimensions d 20-63 mm with integrated remote welding unit, 2 USB interfaces, monochrome display with icons and 12 languages.
- 1-phase AC (50/60 Hz) 230 V L/N/PE
- Machine housing complete (1 pcs.)
- Heater assembly (1 pcs.)
- Remote weld device (1 pcs.)
- Facing tool (1 pcs.)
- Transport box (1 pcs.)
- Pipe stop (1 pcs.)

d-d (mm)	Part No.	USD	weight (lb)
20 - 63	* 790 131 005	35,819.69	110.231

D

Power Converter

Description	Part No.	USD
Power Converter 115/230V AC	* 790 103 095	1,476.68

D

Clamping Inserts



- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (mm)	Part No.	USD	weight (lb)	Pieces
* 25	* 150 131 039	69.43	0.198	1
* 32	* 150 131 040	69.43	0.115	1
* 40	* 150 131 041	69.43	0.163	1
* 50	* 150 131 042	69.43	0.220	1
* 20	* 150 131 038	69.43	0.309	1
* 63	* 150 131 043	69.43	0.077	1

D



Clamping Inserts, IPS

- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (inch)	Part No.	USD	weight (lb)	Pieces
¼	* 790 131 446	69.43	0.126	1
½	* 790 131 447	69.43	0.121	1
¾	* 790 131 448	69.43	0.117	1
1	* 790 131 449	69.43	0.112	1
1 ½	* 150 131 042	69.43	0.220	1
2	* 790 131 450	69.43	0.090	1

D



Replacement Blades for Facing Tool

- A set includes two facing knives. Each facing knife has four blades. The blade may be turned three times before it must be replaced.

d-d (mm)	Part No.	USD	Pieces
20 - 63	* 790 131 045	174.09	2

D



PE Pipe End Caps

- A set includes 4 end caps. The end caps are different for each dimension. The ends of the pipe **must** be closed when welding. The caps prevent heat loss due to airflow in the fusion zone and guarantee optimum fusion results of the pipe components.

d (mm)	Part No.	USD	Pieces
20	* 790 131 030	21.24	4
25	* 790 131 031	21.24	4
32	* 790 131 032	27.05	4
40	* 790 131 033	27.05	4
50	* 790 131 034	27.05	4
63	* 790 131 035	35.34	4

D

Heater Shield

Description	Part No.	USD
Heater Shield IR63	* 790 131 051	51.81

D



Extension Cable clamping carriage

- Extension cable for remote fusion.

d-d (mm)	Weight (kg)	Length (m)	Part No.	USD	weight (lb)	Pieces
20 - 63	0.700	5	* 790 131 047	523.32	1.543	1

D



Extension Cable facing tool

- Extension cable for remote fusion.

d-d (mm)	Length (m)	Part No.	USD	Pieces
20 - 63	5	* 790 131 048	172.02	1

D



Extension Cable heater

- Extension cable for remote fusion.

d-d (mm)	Length (m)	Part No.	USD	Pieces
20 - 63	5	* 790 131 049	618.65	1

D

Power Cord IR63

Description	Part No.	USD
Power Cord IR63	* 150 131 246	49.43

D



Pipe Stop

- The pipe stop defines the allowance when the pipes are clamped into position.

d-d (mm)	Part No.	USD	weight (kg)	Pieces
20 - 63	* 790 131 046	124.35	0.430	1

D

Adjustment Tools

Description	Part No.	USD	weight (lb)
Allen Wrench 3mm	* 150 900 567	2.38	2.866
Allen Wrench 4mm	* 790 131 264	10.36	0.086
T-10 Torx Wrench	* 790 131 129	9.43	0.004

IR-110 Plus® Fusion Joining Machine and Accessories

D



IR-110 Plus Fully-Equipped Machine

Model:

- Fully-equipped fusion joining machine for welding SYGEF® Standard, SYGEF® Plus, PROGEF® Standard, PROGEF® Natural, PROGEF® Plus, PE 100 (PFA/ECTFE on request) in dimensions d 20-110 mm, 2 USB interfaces, monochrome display with icons and 12 languages.
- 1-phase AC (50/60 Hz) 230 V L/N/PE
- Machine housing complete (1 pcs.)
- Heater and facing tool assembly (1 pcs.)
- Transport box (1 pcs.)
- Pipe stop (1 pcs.)
- Clamping inserts d 20-90 mm (8 pcs. per dimension)
- End caps PE d 20-110 mm (4 pcs. per dimension)
- Power supply cable 230 V (1 pcs.)
- Cleaning brush No. 8 (1 pcs.)
- Hexagon keys 4 mm (1 pcs.), 5 mm (1 pcs.), 6 mm (1 pcs.)
- Socket wrench (facing blades) (1 pcs.)
- Accessory Tray (1 pcs.)
- Manual (1 pcs.)

d-d (mm)	Part No.	USD
20 - 110	* 790 132 001	51,336.79



IR-110 A Automated Fusion Machine

Model:

- Fully equipped automated infrared fusion machine with integrated work table, for use in clean room conditions
- Welds SYGEF PVDF (HP / Standard), PROGEF PP (Standard / Natural), PE100 ecoFIT
- Weld dimensions d20-110mm
- User friendly, 12.1" touch screen interface with several languages
- 4 USB interfaces, LAN Ethernet interface, 230V output
- Automated facer, clamping slide and heater
- Integrated video camera and temperature sensors
- Movable clamping units
- Clamping inserts d20-90mm (8 pcs per dimension)
- End caps PE d 20-110 mm (4 pcs. per dimension)
- Shavings collection tray
- Transport box with integrated pallet
- 1-phase AC (50/60 Hz) 230 V L/N/PE
- Power supply cable 230V EU Standard
- Torx key for facing blades (KW3)
- Cleaning brush
- Label printer
- Instruction manual

d-d (mm)	Part No.	USD	weight (kg)
20 - 110	790 164 001	Call	250.000

D



Clamping inserts

- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (mm)	Part No.	USD	Pieces
20	* 790 132 051	106.74	1
25	* 790 132 052	106.74	1
32	* 790 132 053	106.74	1
40	* 790 132 054	106.74	1

table continued on the next page

D

d (mm)	Part No.	USD	Pieces
50	* 790 132 055	106.74	1
63	* 790 132 156	Call	1
75	* 790 132 157	Call	1
90	* 790 132 158	Call	1

D



Clamping inserts PFA Sch. 40 rigid pipe

- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (inch)	Part No.	USD	Pieces
¼	* 790 132 062	150.26	1
½	* 790 132 063	150.26	1
¾	* 790 132 064	150.26	1
1	* 790 132 065	150.26	1
2	* 790 132 066	150.26	1

D



Replacement Blades for Facing Tool

- A set includes two facing knives. Each facing knife has four blades. The blade may be turned three times before it must be replaced.

d-d (mm)	Part No.	USD	Pieces
20 - 110	* 790 132 061	231.09	2

D



PE Pipe End Caps

- A set includes 4 end caps. The end caps are different for each dimension. The ends of the pipe **must** be closed when welding. The caps prevent heat loss due to airflow in the fusion zone and guarantee optimum fusion results of the pipe components.

d (mm)	Part No.	USD	Pieces
20	* 790 131 030	21.24	4
25	* 790 131 031	21.24	4
32	* 790 131 032	27.05	4
40	* 790 131 033	27.05	4
50	* 790 131 034	27.05	4
63	* 790 131 035	35.34	4
75	* 790 133 036	38.86	4
90	* 790 133 037	38.86	4
110	* 790 133 038	48.29	4

D



Pipe Stop

- The pipe stop defines the allowance when the pipes are clamped into position.

d-d (mm)	Part No.	USD	Pieces
20 - 110	* 790 132 059	299.48	1

D



Torx key

- For facing knives on the IR-110 A Automatic.

Description	Part No.	USD
KW 3	* 790 131 129	9.43

IR-225 Plus® Fusion Joining Machine and Accessories

D



IR-225 Plus Fully-Equipped Machine with HP Working Table (HP = High Purity)

Model:

- Fully-equipped fusion jointing machine for welding SYGEF Standard, SYGEF Plus, PROGEF Standard, PROGEF Natural, PROGEF Plus, ecoFIT in dimensions d 63-225 mm, 2 USB interfaces, monochrome display with icons and 12 languages.
- Machine base (1 pcs.)
- Heater assembly (1 pcs.)
- Facing tool (1 pcs.)
- Movable clamping units (1 pcs.)
- Clamping inserts d 63-225 mm (8 pcs. per dimension)
- End caps PE d 63-225 mm (4 pcs. per dimension)
- Transportation lock (1 pcs.)
- Combination ring /open-jaw wrench 13 mm (1 pcs.)
- Cleaning brush (1 pcs.)
- Connecting cable 400V - 230V (1 pcs.)
- Ball for lever (1 pcs.)
- Manual (1 pcs.)
- 1-phase AC (50/60 Hz) 230V L/N/PE or 3-phase AC (50/60 Hz) 400V/230VL1/L2/L3/N/PE
- Working table, HP (1 pcs.)
- Pipe stop (1 pcs.)
- Hexagon key 5 mm (1 pcs.)
- Hexagon key 6 mm (1 pcs.)

d-d (mm)	Part No.	USD
63 - 225	* 790 133 009	73,336.79

D



Pipe Clamp Inserts

- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (mm)	Part No.	USD	Pieces
63	* 790 133 026	181.35	1
75	* 790 133 027	181.35	1
90	* 790 133 028	181.35	1
110	* 790 133 029	181.35	1
160	* 790 133 032	181.35	1
200	* 790 133 033	181.35	1
225	* 790 133 034	181.35	1

D



Pipe Clamp Inserts, IPS

- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (inch)	Part No.	USD	Pieces
2	* 150 900 442	299.48	1
3	* 150 900 443	299.48	1
4	* 150 900 444	299.48	1
6	* 150 900 445	299.48	1
8	* 150 900 446	299.48	1

D



Replacement Blades for Facing Tool

- A set includes two facing knives. Each facing knife has four blades. The blade may be turned three times before it must be replaced.

d-d (mm)	Part No.	USD	Pieces
63 - 225	* 790 133 046	406.22	2

D



Set of end caps

- A set includes 4 end caps. The end caps are different for each dimension. The ends of the pipe **must** be closed when welding. The caps prevent heat loss due to airflow in the fusion zone and guarantee optimum fusion results of the pipe components.

d (mm)	Part No.	USD	Pieces
63	* 790 131 035	35.34	4
75	* 790 133 036	38.86	4
90	* 790 133 037	38.86	4
110	* 790 133 038	48.29	4
160	* 790 133 041	71.71	4
200	* 790 133 042	115.03	4
225	* 790 133 043	188.60	4

D



Pipe Stop

- The pipe stop defines the allowance when the pipes are clamped into position.

d-d (mm)	Part No.	USD	Pieces
63 - 225	* 790 133 047	83.52	1

D

Adjustment Tools

Description	Part No.	USD	weight (lb)
Allen Wrench 5mm	* 24387005	4.77	
Allen Wrench 6mm	* 790 101 238	14.20	0.176
T-25 Torx Wrench	* 790 133 577	15.34	0.020
Open Wrench 13mm	* 790 133 140	28.29	0.110

IR-315 Fusion Machine and Accessories



IR-315 Plus Fusion Machine

Model:

- Fully equipped infrared fusion machine with integrated work table, for use in clean room conditions
- Weld SYGEF PVDF HP / Standard
- Weld dimensions d225 - 315mm
- Monochrome display with icons and several languages
- 2 USB interfaces
- Heating and facing tools
- Clamping head with movable clamping units
- Cooling fan
- Clamping inserts for d225-280mm (8 pcs per dimension)
- End caps PE d20-63 mm (4 pcs. per dimension)
- Pipe Stop
- Transport box with integrated pallet (stainless steel)
- 1-phase AC (50 / 60 Hz), 230 V L/N/PE or 3-phase AC (50/60 Hz) 400 V / 230V L1/L2/L3/N/PE
- Connecting cable 400V - 230V
- Additional tools
- Label printer
- Instruction manual

d-d (mm)	Part No.	USD	weight (kg)
225 - 315	790 134 001	Call	466.000



IR-315 A Automated Fusion Machine

Model:

- Fully equipped automated infrared fusion machine and working table designed for industrial applications and clean room conditions
- Welding of PVDF SYGEF (Standard/Plus), PP PROGEF (Standard/Plus), PE100 ecoFIT (d≤d225 mm)
- Dimensions d110-315 mm
- Automated facer, clamping slide and heater
- Integrated cooling system
- User friendly, 12.1" touch screen interface with several languages
- 4 USB interfaces, LAN Ethernet interface, 230V output
- Integrated video camera and temperature sensors
- Clamping inserts d110-280 mm (8 pcs. per dimension)
- End caps PE d110-315 mm (4 pcs. per dimension)
- Transport cases with integrated Euro-pallet (fusion machine and working table)
- 3-phase AC (50/60 Hz) 400 V L1/L2/L3/N/PE
- Set of facing knives (2 pcs.)
- Torx key (T25) for facing knife
- Hexagon keys (10 mm + 8 mm)
- Fork key (36 mm)
- Cleaning brush
- Label printer (incl. ribbon 24 mm)
- Instruction manual

d-d (mm)	Part No.	USD	weight (kg)
110 - 315	790 165 001	Call	1070.000



Clamping inserts

- The clamping inserts are different for each dimension. They are used to clamp and position the pipe components.

d (mm)	Part No.	USD	weight (kg)	Pieces
110	790 165 010	Call	1.500	1
125	790 165 011	Call	1.400	1
140	790 165 012	Call	1.300	1
160	790 165 013	Call	1.300	1
180	790 165 014	Call	1.200	1
200	790 165 015	Call	1.100	1
225	790 165 016	Call	1.000	1
250	790 165 017	Call	0.900	1
280	790 165 018	Call	0.700	1

D

Set of end caps

- A set includes 4 end caps. The end caps are different for each dimension. The ends of the pipe **must** be closed when welding. The caps prevent heat loss due to airflow in the fusion zone and guarantee optimum fusion results of the pipe components.

d (mm)	Part No.	USD	weight (kg)	Pieces
110	* 790 133 038	48.29	0.180	4
125	790 133 039	Call	0.150	4
140	790 133 040	Call	0.180	4
160	* 790 133 041	71.71	0.045	4
200	* 790 133 042	115.03	0.080	4
225	* 790 133 043	188.60	0.400	4
250	790 134 151	Call	0.400	4
280	790 134 152	Call	0.400	4
315	790 134 153	Call	0.400	4



Set of facing knives

- A set includes two facing knives and ten screws. Each facing knife has four blades. In case of a blunt blade the facing knife may be turned three times before it must be replaced.

d-d (mm)	Part No.	USD	weight (kg)	Pieces
110 - 315	790 165 549	Call	0.100	2

D



Torx key

- For facing knives on the IR-110 A Automatic.

Description	Part No.	USD	weight (kg)
T25	* 790 133 577	15.34	0.009



Cleaning brush

Part No.	USD	weight (kg)
790 133 198	Call	0.055

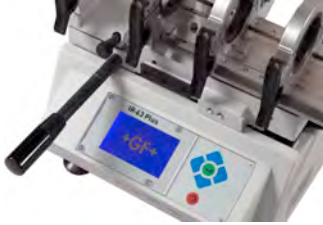
Upgrade Programs for IR Plastic Fusion Joining Machines

D

IR Plus Upgrade Program

Description	Part No.	USD	weight (lb)
Left Side Adjustable Clamping Station	* 790 131 110	1,495.34	5.952
Right Side Adjustable Clamping Station	* 790 131 109	1,580.31	4.828

D



IR 63 Plus Upgrade

In order to give you our existing IR-Plus customers the full benefit of GF fusion tool advantages, we offer a modification kit which enables a reconstruction of all existing IR-Plus machines.

The following modifications are included:

- 2 USB interfaces
- Monochrome display with icons
- New navigation panel
- operator guidance in 12 languages

The upgrade of the new IR-Plus components will be executed by Georg Fischer service centers in the USA (Irvine), Singapore and CSO Schaffhausen.

Part No.	USD	weight (kg)	Type
* 790 131 124	9,740.93	5.170	IR-63 Plus

D



IR 225 Plus Upgrade

In order to give you our existing IR-Plus customers the full benefit of GF fusion tool advantages, we offer a modification kit which enables a reconstruction of all existing IR-Plus machines.

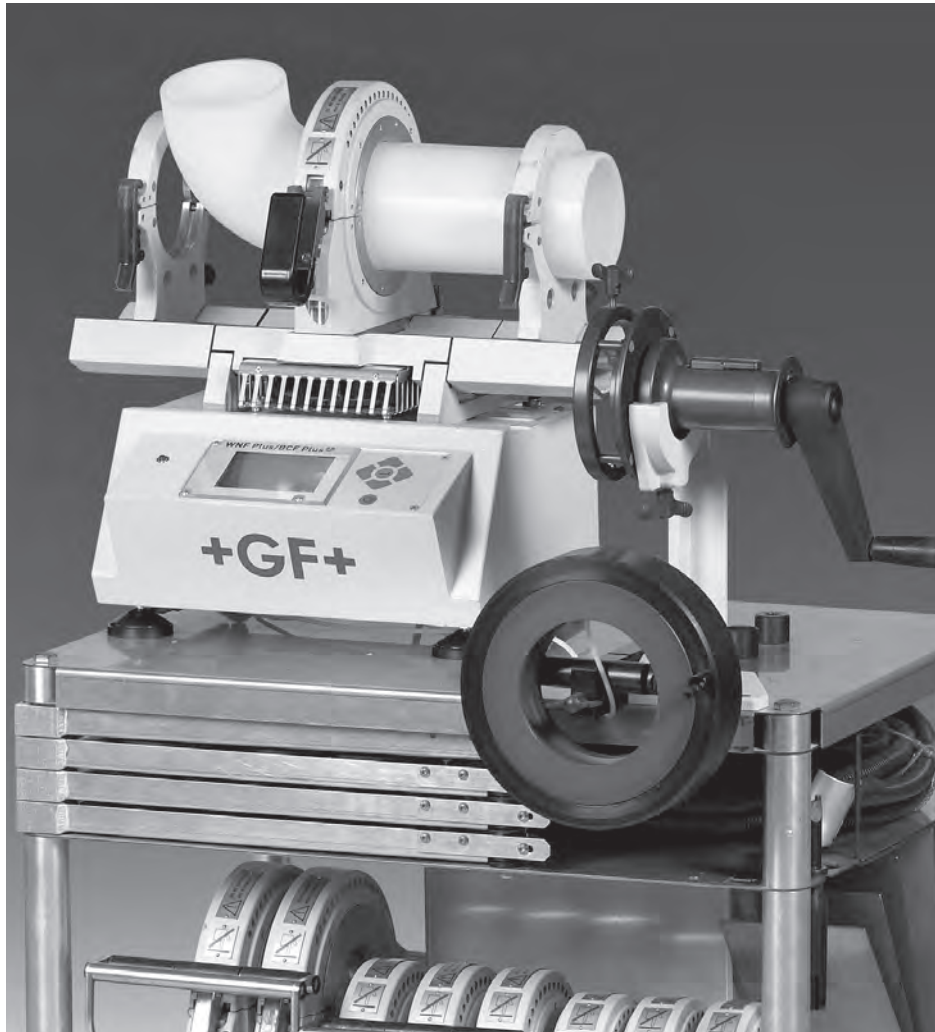
The following modifications are included:

- 2 USB interfaces
- Monochrome display with icons
- New navigation panel
- operator guidance in 12 languages

The upgrade of the new IR-Plus components will be executed by Georg Fischer service centers in the USA (Irvine), Singapore and CSO Schaffhausen.

Part No.	USD	weight (kg)	Type
* 790 133 124	9,896.37	6.650	IR-225 Plus

Bead and Crevice Free (BCF®) Plus Fusion



Evolution of Innovation

Unsurpassed fusion quality

- No beads
- No crevices
- No transitions
- No dead legs and no microorganic deposits
- Very high weld strength
- Very little stress in the fusion zone, therefore less prone to stress cracking
- Controlled and secured manufacturing processes
- Globally accepted certification training for quality control personnel and installers

BCF® Plus Fusion Process Times*

Machine	Product	20	25	32	40	50	63	75	90	110
BCF® Plus	PROGEF® Natural PN 6							13:00	17:00	24:00
	PROGEF® Natural PN 10	6:00	7:00	9:00	11:00	14:00	20:00	16:00	21:00	30:00
	SYGEF® PN 10								15:00	20:00
	SYGEF® PN 16	7:00	7:00	10:00	10:00	12:00	13:00	18:00	24:00	36:00

*All times in minutes:seconds and are approximate based on 68°F/20°C ambient temperature. Times only account for heating and cooling of products per the GF Fusion Training Program.

BCF Plus Plastic Fusion Joining Machine

D



BCF® Plus fully equipped machine d 20 - 63 mm

Fully-equipped machine for bead and crevice free jointing of SYGEF Standard, SYGEF Plus, PROGEF Natural of the dimensions d 20-63 mm with integrated remote welding unit, 2 USB interfaces, monochrome display with icons and 12 languages.

Supply:

1-phase AC (50/60 Hz) 115 / 230 V L/N/PE

Delivery includes:

- Machine housing (1 pcs.) incl. remote welding unit (1 pcs.)
- Transport box (1 pcs.)
- HP working table (1 pcs.)
- Heating stations d 20-63 mm (6 pcs.)
- Clamping units small (2 pcs.) with clamping inserts d 20-63 mm (24 pcs.)
- Facing tool small (1 pcs.) with facing inserts d 20-63 mm (6 pcs.)
- Facing tool support (1 pcs.)
- Hose box (1 pcs.) incl. air hose (1 pcs.)
- Supporting tools small d 20-63 mm (2 pcs.)
- BReT (1 pcs.)
- Hose cutter (1 pcs.)
- Air hose reducer (6-4 mm) (1 pcs.), air hose socket (4-4 mm) (1 pcs.)
- Extension cable (1 pcs.)
- Manual (1 pcs.)

d-d (mm)	Part No.	USD	SP	weight (kg)
20 - 63	* 790 121 002	59,247.67	1	153.000

D

BCF® Plus fully-equipped machine d 20 -110 mm

Fully-equipped machine for bead and crevice free jointing of SYGEF Standard, SYGEF Plus, PROGEF Natural of the dimensions d 20-110 mm with integrated remote welding unit. Bladders to be ordered separately.

Supply:

1-phase AC (50/60 Hz) 115 / 230 V L/N/PE

Delivery includes:

- Machine housing (1 pcs.) incl. remote welding unit (1 pcs.)
- Transport box (1 pcs.)
- HP working table (1 pcs.)
- Heating stations d 20-110 mm (9 pcs.)
- Clamping units small (2 pcs.) with clamping inserts d 20-63 mm (24 pcs.)
- Clamping units big (2 pcs.) with clamping inserts d 75-110 mm (12 pcs.)
- Adapter for clamping unit d 75-110 mm (2 pcs.)
- Facing tool small (1 pcs.) with facing inserts d 20-63 mm (6 pcs.)
- Facing tool big (1 pcs.) with facing inserts d 75-110 mm (3 pcs.)
- Facing tool support (1 pcs.)
- Hose box (1 pcs.) incl. air hose (1 pcs.)
- Supporting tools small d 20-63 mm (2 pcs.)
- Supporting tools big d 75-110 mm (2 pcs.)
- BReT (1 pcs.)
- Hose cutter (1 pcs.)
- Air hose reducer (6-4 mm) (1 pcs.), air hose socket (4-4 mm) (1 pcs.)
- Extension cable (1 pcs.)
- Manual (1 pcs.)

d-d (mm)	Part No.	USD	SP	weight (kg)
20 - 110	* 790 121 001	72,414.51	1	188.000

D

BCF Plus Large Dimension Package d75-110mm

- Heater heads not included
- Adapter for clamping unit d 75-110 mm (2 pcs.)
- Supporting tools tall (2 pcs.)
- Facing tool big (1 pcs.) with facing inserts d 75-110 mm (3 pcs.)
- Clamping units big (2 pcs.) with clamping inserts d 75-110 mm (12 pcs.)
- **Delivery includes:**
- This package is necessary to complete BCF Plus machines which are only equipped for small dimensions d 20-63 mm.

Part No.	USD	d-d (mm)
* 790 121 022	6,451.81	75 - 110

D

BCF® Plus Heating stations

d (mm)	Part No.	USD	weight (kg)	Pieces
20	* 790 121 111	3,225.91	1.818	1
25	* 790 121 112	3,292.23	1.822	1
32	* 790 121 113	3,292.23	1.910	1
40	* 790 121 114	3,423.83	2.396	1
50	* 790 121 115	3,555.44	2.406	1
63	* 790 121 116	3,687.05	2.197	1
75	* 790 121 117	4,608.29	3.600	1
90	* 790 121 118	4,608.29	3.600	1
110	* 790 121 119	4,739.90	3.520	1

D

BCF® Bladder for SYGEF® PVDF

- Only suitable for welding SYGEF® PVDF and not for PROGEF® Natural. **Silver tip.**

d (mm)	Part No.	USD	Pieces
20	* 790 122 041	129.53	1
25	* 790 122 042	129.53	1
32	* 790 122 043	137.82	1
40	* 790 122 044	137.82	1
50	* 790 122 045	155.44	1
63	* 790 122 046	174.09	1
75	* 790 121 047	330.57	1
90	* 790 121 048	344.04	1
110	* 790 121 049	374.09	1

D

BCF Plus Bladder for PROGEF Natural

- Only suitable for welding PROGEF Natural and not for SYGEF PVDF. **Blue bladder head!** d75 - 110 same as bladder for SYGEFY PVDF (silver bladder head):

d (mm)	Part No.	USD	Pieces
20	* 790 122 091	158.55	1
25	* 790 122 092	158.55	1
32	* 790 122 093	168.91	1
40	* 790 122 094	168.91	1
50	* 790 122 095	194.82	1
63	* 790 122 096	220.73	1
75	* 790 121 047	330.57	1
90	* 790 121 048	344.04	1
110	* 790 121 049	374.09	1

D

BCF® Plus Facing Tool

- Inclusive crank handle, mounting material and clamping inserts. Suitable for SYGEF (PVDF) as well as PROGEF Natural.

d-d (mm)	Part No.	USD	Pieces
20 - 63	* 790 121 052	2,238.34	1
75 - 110	* 790 121 053	2,897.41	1

D



BCF® Plus Facing Tool Inserts

- These dimension-specific parts are inserted into the facing tool, in order to be able to face the end of the pipes smoothly and parallel.

d (mm)	Part No.	USD	Pieces
20	* 790 121 061	145.08	1
25	* 790 121 062	145.08	1
32	* 790 121 063	145.08	1
40	* 790 121 064	145.08	1
50	* 790 121 065	145.08	1
63	* 790 121 066	145.08	1
75	* 790 121 067	197.93	1
90	* 790 121 068	197.93	1
110	* 790 121 069	197.93	1

D



BCF® Plus Facing Tool Mounting Plate

- To attach facing tool on workbench

d-d (mm)	Part No.	USD	Pieces
20 - 110	* 790 121 055	659.07	1

D



BCF® Plus Clamp Inserts

d (mm)	Part No.	USD	Pieces
20	* 790 131 038	69.43	1
25	* 790 131 039	69.43	1
32	* 790 131 040	69.43	1
40	* 790 131 041	69.43	1
50	* 790 131 042	69.43	1
63	* 790 131 043	69.43	1
75	* 790 121 036	97.62	1
90	* 790 121 037	97.62	1

D



BCF Plus hose box incl. hose

- For the clean and professional storage of the air hose.

d (mm)	Part No.	USD	Length (m)	Pieces
4	* 790 121 151	737.82	16	1

D



BCF® Plus Hose

d (mm)	Part No.	USD	Length (m)
4	* 790 122 087	37.62	16

D

BCF Air Hose Reducer

Size (mm)	Part No.	USD
4 x 6	* 790 122 103	23.11

D

**BCF® Plus Supporting Tool**

d-d (mm)	Part No.	USD	Pieces
20 - 63	* 790 121 072	527.46	1
75 - 110	* 790 121 073	724.35	1

D

**BCF® Plus Bladder Removal Tool**

Part No.	USD	Pieces
* 790 121 075	145.08	1

D

**Modification Kit**

In order to give our existing BCF Plus customers the full benefit of the advantages we offer a modification kit which enables a reconstruction of all existing BCF Plus machines. The following modifications are included:

- 2 USB interfaces
- Monochrome display with icons
- New navigation panel
- operator guidance in 12 languages

The upgrade of the new BCF Plus components will be executed by Georg Fischer service centres in the USA/Tustin, Singapore and CSO Schaffhausen.

Part No.	USD
* 790 121 124	10,007.25

Accessories for IR and BCF Plastic Fusion Joining Machines

D

**Tangit KS-Cleaning Tissues**

- Wet Tangit cleaning tissues to clean the fusion faces
- One box contains 100 tissues

Part No.	USD	weight (lb)
* 799 298 024	29.43	0.734

D



IR-Plus Win Weld

- The PC data transfer software makes it possible to manage and evaluate easily the recorded fusion data as required.
- **incl. Record card / USB stick**

Standard	Part No.	USD	Description	Pieces
WIN 2000/XP/7	* 790 131 471	899.48	works with USB stick up to max. 2 GB	1

D



BCF[®] Plus Win-Weld Program

- **incl. Record card / USB stick**
- The PC data transfer software makes it possible to manage and evaluate easily the recorded fusion data as required.

Standard	Part No.	USD	Pieces
WIN 2000/XP	* 790 121 471	855.96	1
WIN 95/98/Me/NT	* 790 121 472	855.96	1

D

Step-Up and Down Transformer

Description	Part No.	USD
* Step-Down 480V to 400V	* 150 000 011	4,233.16
* Step-Up 220V to 400V	* 150 000 036	4,233.16

D

Label Printer for IR and BCF machines

Thermal label printer, including 1 ribbon and 1 roll of weld label stickers. Printer is calibrated and ready to connect to IR and BCF machines by USB port.

Part No.	USD	weight (kg)
* 155 131 278	Call	3.856

D



Thermal Transfer Labels

- Label size: 38 x 19 mm
- Specification information available on request from George Fischer.
- The labels are made of white polyester. The printing, as well as the labels themselves, are resistant against:
 - UV resistant
 - Temperatures up to 140 °C (284 °F)
 - Up to 95% humidity
 - Cleaning agents (Isopropylalcohol etc.)
- Two identical labels are printed for each weld. Each roll contains 2500 labels.

Part No.	USD	SP	weight (kg)	Pieces
* 790 131 028	Call	1	0.400	1

D



Thermal Printer Ribbon for TLP-2742 / TLP-2844

- The thermal transfer ribbon is specially suited for printing polyester labels.

Part No.	USD	SP	weight (kg)	Pieces
* 790 131 029	Call	1	0.076	1

Contact Butt Fusion Process Times*

Machine	Product	20	25	32	40	50	63	75	90	110	160	200	225	250	315	355	400	450	500	630
MC 110	PROGEF® Standard	7.00	7.00	7.00	8.00	11.00	12.00	15.00	18.00	21.00	-	-	-	-	-	-	-	-	-	-
TM 160	PROGEF® Standard	-	-	-	8.00	11.00	12.00	15.00	18.00	21.00	29.00	-	-	-	-	-	-	-	-	-
TM 315	PROGEF® Standard	-	-	-	-	-	-	-	18.00	21.00	29.00	35.00	38.00	42.00	52.00	-	-	-	-	-
TM 400	PROGEF® Standard	-	-	-	-	-	-	-	-	-	29.00	35.00	38.00	42.00	52.00	56.00	62.00	-	-	-
TM 630	PROGEF® Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	52.00	56.00	62.00	70.00	75.00	89.00

** All times in minutes.seconds and are approximate based on 68°F/20°C ambient temperature and SDR 11 pipe. Times only account for heating, joining and cooling of products per the GF Fusion Training Program. GF recommends IR Plus fusion for SYGEF PVDF products.

MC 110 Butt Fusion Machine

D



MC 110 Portable Butt Fusion Machine

- Portable butt fusion machine for use in the workshop and on job sites. For fusion jointing of PP and PE pipes and fittings.
- Machine MC 110 complete includes: base machine, 2 base clamping plates (wide), base clamping plate (left narrow), electrically operated planer, heater, table clamp and transport box. Accessories such as reduction clamping inserts not included.

Type	d-d (mm)	Performance
MC 110 with with electric planer and thermostatic heater	20 - 110	115V/1360W

Part No.	USD	weight (kg)
* 790 109 321	4,984.46	31.000

D



Reduction clamping inserts, wide

- Each code number defines 1 half shell. Per wide base clamping plate 2 reduction half-shells are needed.
- 20 - 90 mm

d (mm)	Part No.	USD	SP	weight (kg)
20	* 790 109 326	27.05	0	0.150
25	* 790 109 327	27.05	0	0.139
32	* 790 109 328	27.05	0	0.133
40	* 790 109 329	27.05	0	0.130
50	* 790 109 330	27.05	0	0.113
56	* 790 109 342	27.05	0	0.137
63	* 790 109 331	27.05	0	0.120
75	* 790 109 332	27.05	0	0.110
90	* 790 109 333	27.05	0	0.100

D



Base clamping plate, right narrow

- 110 mm for fitting/pipe joints
- For mounting the narrow reduction clamping inserts
- Freely adjustable (max. 15°)

d (mm)	Part No.	USD
110	* 790 109 310	295.34

D



Planer, electrically operated

- Center of planing radial adjustable.

d-d (mm)	Performance	Part No.	USD
20 - 110	115V/560W	* 790 109 324	1,661.14

D



Heater

- Choice of electronic or thermostatic temperature control
- Including machine mounting
- Control lamps (power, status)
- PTFE coating

d-d (mm)	Description	Performance	Part No.	USD
20 - 110	thermostatic	115V/800W	* 790 109 322	Call

D

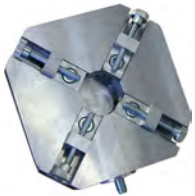


Table clamp

- For correct placement of heater

Part No.	USD
* 790 109 315	82.49

D



Flange adapter clamping unit

- For correct clamping and fusion joining of short end fittings

d-d (mm)	Part No.	USD
25 - 110	* 790 109 316	387.56

D



Replacement blade set for planer

- Blade has 2 cutting edges (1 set = 2 pieces)

Description	Part No.	USD
Short	* 790 118 043	106.74

TM 160-315 CNC

D



TM 160 - 315 CNC Automatic butt fusion machine for construction site

Butt fusion machine join PE, PP and PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with automatic CNC control unit.

Includes transport packaging (wooden crate). Reduction clamp inserts and other accessories must be ordered separately.

- **Base machine**
 - High precision design. Rigid and sturdy machine frame.
 - Good accessibility thanks to 35° inclination.
 - The moving (sliding) 3rd clamp allows easy and time-saving clamping of bends or tees without need of additional tools.
 - Clamps are hinged on top and tilt. Whenever necessary any of the four clamps can be quickly removed.
 - Double-sided heating element designed for easy insertion and removal to ease change-over process.
 - Distance control (potentiometer) mounted in base machine allows safe control the entire work process.
 - Weight: TM 160 = 22 kg, TM 250 = 47 kg, TM 315 = 53 kg
- **Hydraulic Unit**
 - Operator guidance from preparation to the end of the jointing process by use of symbols and graphics.
 - Intuitive data input by touch screen operation (welding standard, material, diameter, SDR, traceability data).
 - Automatic calculation, regulation and control of the fusion parameters - pressure, time and temperature - according to country specific guidelines.
 - 10 freely programmable fusion cycles (e.g. for non-standard pipe dimensions).
 - Selection of language.
 - Operator ID (ISO 12176-3), job number and pipe codes (ISO 12176-4) could be input by means of the barcode scanner (ordered separately).
 - On site check of memorized fusion protocol status directly on the touchscreen.
 - Transfer of memorized fusion protocols to an external PC via USB memory stick (included).
 - Internal aluminum frame providing high rigidity.
 - Internal aluminum frame providing high rigidity.
 - Integrated power outlets for planer and heating element.
 - Accumulator for pressure equalization during the cooling phase.
 - Max operating pressure: 160 bar
 - Weight: 33 kg
- **Planer**
 - Powerful parallel planer for single or double-sided facing of pipe ends.
 - Ergonomic, weight-balanced handling
 - Self-locking mechanism in working position.
 - Safety microswitch prevents undesired start-up.
 - Weight: TM 160 = 7 kg, TM 250 = 14 kg, TM 315 = 17 kg
- **Heating Element**
 - High performance, electronically controlled heating element.
 - High-quality, non-stick PTFE-coating with long service life.
 - Temperature indicator integrated into the handle.
 - Weight: TM 160 = 5.5 kg, TM 315 = 10 kg
 - Input power: 230V/TM 160 = 1200W; TM 250 = 2000W; TM 315 = 2500W
- **Case**
 - For safe storage of planer and heating element.
 - Weight: TM 160 = 4.8 kg, TM 250 = 8 kg, TM 315 = 9 kg

Type	Performance	d-d (mm)	Part No.	USD
TM 160 CNC	230V/2000W	40 - 160	* 790 150 012	26,734.72
TM 315 CNC	230V/3750W	90 - 315	* 790 152 012	33,642.49

TM 400 CNC Butt Fusion Machine

D



TM 400 CNC Automatic butt fusion machine for construction site

Butt fusion machine join PE, PP and PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with automatic CNC control unit.

Includes transport packaging (wooden crate). Reduction clamp inserts and other accessories must be ordered separately.

• Base machine

- High precision design. Rigid and sturdy machine frame.
- Good accessibility thanks to 35° inclination.
- The moving (sliding) 3rd clamp allows easy and time-saving clamping of bends or tees without need of additional tools.
- Clamps are hinged on top and tilt. Whenever necessary any of the four clamps can be quickly removed.
- Double-sided heating element designed for easy insertion and removal to ease change-over process.
- Distance control (potentiometer) mounted in base machine allows safe control the entire work process.

• Weight: 95 kg

• Hydraulic Unit

- Operator guidance from preparation to the end of the jointing process by use of symbols and graphics.
- Intuitive data input by touch screen operation (welding standard, material, diameter, SDR, traceability data).
- Automatic calculation, regulation and control of the fusion parameters - pressure, time and temperature - according to country specific guidelines.
- 10 freely programmable fusion cycles (e.g. for non-standard pipe dimensions).
- Selection of language.
- Operator ID (ISO 12176-3), job number and pipe codes (ISO 12176-4) could be input by means of the barcode scanner (ordered separately).
- On site check of memorized fusion protocol status directly on the touchscreen.
- Transfer of memorized fusion protocols to an external PC via USB memory stick (included).
- Internal aluminum frame providing high rigidity.
- Internal aluminum frame providing high rigidity.
- Integrated power outlets for planer and heating element.
- Accumulator for pressure equalization during the cooling phase.
- Max operating pressure: 160 bar
- Weight: 37 kg

• Planer

- Powerful parallel planer for single or double-sided facing of pipe ends.
- Self-locking mechanism in working position.
- Safety microswitch prevents undesired start-up.

• Heating Element

- High performance, electronically controlled heating element.
- High-quality, non-stick PTFE-coating with long service life.
- Temperature indicator integrated into the handle.
- Input power: 230V/3500W

• Case

- For safe storage of planer and heating element.

Performance	d-d (mm)	Type	Part No.	USD
400 V/5700 W	125 - 400	TM 400 CNC	* 790 153 001	34,392.75

D



Reduction clamping inserts, narrow

- Each code number defines 1 piece of reduction clamping insert

d (mm)	Part No.	USD
160	* 790 112 102	249.74
200	* 790 112 104	249.74
250	* 790 112 106	394.82

D



Reduction clamping inserts, narrow

In order to mount the inserts d 315/d 355/d 400/d 450 to the base clamp d 630, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.

d (mm)	Part No.	USD
315	* 790 127 111	441.45

D



Reduction clamping inserts set

- 4 wide and 4 narrow clamping inserts of each dimension
- 8 wide clamping inserts d 315 mm
- Reductions in inch sizes or special diameters upon request

d-d (mm)	Part No.	USD
125 - 355	* 790 127 156	6,916.06

D



TM 400 Crane

Part No.	USD
* 790 127 028	Call

TM 630 CNC Butt Fusion Machine

D



TM 630 CNC

Type	d-d (mm)	Performance	Part No.	USD
TM 630 CNC	315 - 630	400 V/6300 W	* 790 155 001	46,852.85

D



Reduction clamping inserts set

- 4 wide and 4 narrow clamping inserts d 315, d 355, d 400, d 450
- 8 wide reduction inserts d 500, d 560

Part No.	USD
* 790 117 021	14,611.40

D



Reduction clamping inserts, wide

In order to mount the inserts d 315/d 355/d 400/d 450 to the base clamp d 630, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.

d (mm)	Part No.	USD
315	* 790 116 012	249.74
355	* 790 116 013	249.74
400	* 790 116 014	249.74
450	* 790 116 015	249.74

D



Reduction clamping inserts, narrow

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.

In order to mount the inserts d 315/d 355/d 400/d 450 to the base clamp d 630, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

d (mm)	Part No.	USD
315	* 790 116 020	249.74
355	* 790 116 021	249.74
400	* 790 116 022	249.74
450	* 790 116 023	249.74

Facing Tool Blade Sets for TM 160-630

D



Planer Blades set GF 160

- Blade has 2 cutting edges (1 set = 2 blades)
- Blade has 2 cutting edges (1 set = 2 blades)
- Blade has 2 cutting edges (1 set = 2 pieces)

Type	d-d (mm)	Part No.	USD
WELD 160	40 - 160	* 790 113 056	189.64
WELD 250	75 - 250	* 790 115 024	235.23

D



**Planer Blades set
TM 315 and TM 400**

- Blade has 2 cutting edges (1 set = 2 blades)

d-d (mm)	Part No.	USD
90 - 315	* 790 112 110	275.65

D



**Planer blades set
TM 630**

- Blade has 2 cutting edges (1 set = 2 pieces)

Part No.	USD
* 790 117 041	357.51

Socket Fusion Process Times*

Socket Fusion	Product	16	20	25	32	40	50	63	75	90	110
MSE Handtools or SG 125	PROGEF® Standard	15	15	21	24	38	44	62	68	88	110
	SYGEF® PVDF	14	16	18	26	28	34	44			

*All times in seconds and are approximate based on 68°F/20°C ambient temperature. Times do not account for facing, peeling, and cleaning per the GF Fusion Training program.

SG 125 and MSE63/MSE110 Socket Fusion

D



SG 125 Socket Fusion Machine

- Portable heating element - socket fusion machine for use in the workshop and on job sites.
- For fusion jointing of PP, PE, PB and PVDF pipes and fittings; dimension 20 - 125 mm
- **Base machine**
- Compact, sturdy design, distortion-free machine bed
- Handwheel with torque locking mechanism for the slide movement
- Fast selection of insertion depth according to the pipe dimension
- **Heater**
- With electronic temperature control
- High temperature accuracy over the entire heating surface
- Additional Standard Equipment
- Universal, left and right prismatic clamping devices, complete, for chlamping pipe and fittings. Additional set of prismatic clamping devices for outer clamping of pipes available as an option.
- V-shaped pipe support d 20 - 125 mm
- Back stop
- Machine specific tool set
- Timer to clock fusion times

d-d (mm)	Performance	Part No.	USD	weight (kg)
20 - 125	115 V/1500 W	* 790 310 036	Call	65.000

D



Universal prismatic clamping device, complete

d-d (mm)	Part No.	USD
20 - 125	* 790 310 040	589.64

D



Backstop, complete

d-d (mm)	Part No.	USD
20 - 110	* 790 310 012	196.89

D



V-shaped pipe support, complete

d-d (mm)	Part No.	USD
20 - 110	* 790 310 013	196.89

D



Replacement heating element SG125

d-d (mm)	Description	Performance	Part No.	USD
20 - 125	thermostatic	115 V/1500 W	* 790 310 046	1,020.73

D

MSE 63 Socket fusion tool

- For fusion jointing of PP, PE and PVDF pipes and fittings
- Choice of electronic or thermostatic temperature control
- Support for heating bushes and spigots of d 16 to 63 mm (110 mm)
- Pick up for floor stand or table clamp
- Monitoring and setting of heating element temperature
- High temperature accuracy over the entire heating surface
- T = thermostatic temperature control / E = electronic temperature control

d-d (mm)	Performance	Type	Part No.	USD
16 - 63	115 V/800 W	MSE 63 T	* 790 105 096	318.13
16 - 63	115 V/800 W	MSE 63 E	* 790 105 097	Call
16 - 110	115 V/1500 W	MSE 110 T	* 790 105 126	459.07
16 - 110	115 V/1500 W	MSE 110 E	* 790 105 127	Call

D

MSE 63/MSE 110 - Set - Socket fusion tools

- For fusion jointing of PP, PE and PVDF pipes and fittings
- All devices equipped with on/off switch, mains and temperature control lamp
- Choice of electronic or thermostatic temperature control
- Support for heating bushes and spigots of d 16 to 63 mm (110 mm)
- Pick up for floor stand or table clamp
- Monitoring and setting of heating element temperature
- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life.
- Heating bushes and spigots
- Available as a complete set in a practical metal case
- Table clamp
- Floor stand for MSE 63
- Allen screws and key
- T = thermostatic temperature control / E = electronic temperature control

Performance	d-d (mm)	Type	Part No.	USD
115 V/800 W	16 - 63	MSE 63 T	* 790 105 098	1,244.56
115 V/800 W	16 - 63	MSE 63 E	* 790 105 099	Call
115 V/1500 W	16 - 110	MSE 110 T	* 790 105 128	2,037.31
115 V/1500 W	16 - 110	MSE 110 E	* 790 105 129	Call

D

Heating spigots and bushes

- High-quality, non-stick PTFE-coating with long service life.
- Type B according to DVS 2208-1 (mechanical calibrated pipe ends)
- Always delivered in pairs. For use with MSE 63, MSE 110 and SG 125.

d (mm)	Part No.	USD
16	* 799 300 155	91.71
20	* 799 300 156	98.76
25	* 799 300 157	104.66
32	* 799 300 158	119.17
40	* 799 300 159	130.57
50	* 799 300 160	151.30

table continued on the next page

D

d (mm)	Part No.	USD
63	* 799 300 161	170.98
75	* 799 300 162	196.89
90	* 799 300 163	262.18
110	* 799 300 164	334.72

D



Floor stand for manual fusion tools SSE/MSE

Part No.	USD
* 790 105 063	21.24

D



Metal case

- For butt and socket fusion hand tools

Article	Part No.	USD
MSE 63	* 790 105 089	129.53
MSE 110	* 790 105 090	141.97

D



Table clamp for SSE/MSE

- For correct placement of heater

Part No.	USD	SP	weight (kg)
* 790 109 315	82.49	0	0.660

Electrofusion Process Times

Electrofusion	Product	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
Electro Plus and MSA 250	PPro-Seal™	1:20	1:27	1:32	1:36	1:50	1:30					
	Fuseal®				1:20	1:30	1:40	1:55	3:10	4:00	4:00	5:00
	Fuseal 25/50™				1:26	1:39	1:52	2:10	3:55			

*All times in minutes: seconds and are approximate based in 68° F/20° C ambient temperature. These times are only for the fusion process and do not include the cooling times.

Number of Joints Possible per Cycle

Electrofusion	Product	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
Electro Plus and MSA 250	PPro-Seal™	4	4	4	4	4	4					
	Fuseal®				4	4	4	4	4	2	2	2
	Fuseal 25/50™					4	4	4	4			

Electro Plus & Accessories

D



Electro Plus®

Advantages

- Intuitive user interface
 - Multiple joint capability for speedy installations
 - Integral carrying case for ease of transportation
 - One-button repeat fusion cycle for same size joints
 - Self-diagnostic error detection system
 - Automatic compensation for ambient temperature
- The Electro Plus® fusion machine can be used to join the following piping systems: Fuseal 1½-12", Fuseal Squared 1½-12", Fuseal 25/50 1½-6" and PPro-Seal ½-3".
 This complete machine includes:
 Fusion Power Unit, Hand Held Unit and the Cable Assembly.

Technical Data

Operating Temperature	14°F (-10°C) to 113°F (45°C)
Input Voltage	100-130 V AC / 200-250 V AC
Input Frequency	50Hz - 60 Hz
Output Voltage	0 --28.5 V AC
Output Current	0-50 Amps
Power Consumption	1200 Watts max.
Power Cable Length	5ft. (1.5m)
Fusion Cable Length	18ft. (5.5m)
Remote Cable Length	20ft. (6m)
Dimensions (WxHxD)	22x14x10 inch
Weight	45lbs (20.5kg)

Description	Part No.	USD	weight (lb)
Electro Plus	* 150 000 001	2,487.05	45.195

D



Hand Held Unit

Complete hand held unit with connection cable and protection case.
 This is a replacement unit which can be used on any Electro Plus machine.

Description	Part No.	USD
Hand Held Unit	* 150 000 003	436.27

D



Cable Assembly

Complete cable assembly with connector plug.
 This is a replacement unit which can be used on any Electro Plus machine.

Description	Part No.	USD
Cable Assembly	* 150 000 004	617.62

MSA 330 & Accessories

D



MSA 330 Electrofusion unit with jointing data recording

The MSA 330 electrofusion unit combines high performance in jointing with easy and safe handling. The internal memory has a capacity of 500 jointing records, for data transfer the unit is equipped with an USB interface. The record is delivered as PDF or CSV format, both are manageable with common and free PC software applications. An intuitive operation menu guides you through the complete jointing process. For fusion data input a barcode reader pen or a scanner is connected. The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time. Robust aluminum housing with convenient cable winding and handle for weight balanced transport. The unit is suitable for jointing in series.

Scope of delivery: dedicated transport case, pouch for optical pen or scanner, 2 pairs of angle adapter clips 4,0 mm and 4,7 mm, operation instructions and configuration chart.

Technical Data

Ambient temperature	-10C to +45C
Mains voltage	180 V - 265 V AC
Mains frequency	40 Hz - 70 Hz
Fusion voltage	8 - 48V AC
Fusion current	max. 90 A
Suggested power generator	3,5 kVA (5,0 kVA for fittings with >200mm)
Protection	Class 1 / IP 54
Mains cable	4 m
Fusion cable	4 m
Interface	USB (type A) for PC communication and software updates
Dimensions (WxHxD)	280 x 480 x 320 mm
Weight incl. cables	ca. 21,7 kg
Display	LCD (20 alphanumerical char. x 4 lines), contrast adjustment, blue background, white characters
Languages	10

Description	Part No.	USD weight (lb)
barcode scanner, transport case	* 790 160 005	4,643.52 66.139

MSA 340 & Accessories



ELECTROFUSION PROCESSORS: MSA 340 Processor

- Approval: ISO 12176-2, ISO 12176-3, ISO 12176-4, EN 60335-1 (Safety), EN 61000-6-2 (EMC), EN 610006-4 (EMC)
 - *CSA Only
 - Extension Cord Information: Cord Length - 25' Wire Gauge - #10/3 (6 mm2)
 - Extension Cord Information: Cord Length - 50' Wire Gauge - #8/3 (10 mm2)
- Please call for pricing and availability.



<...>	Description	Voltage	GF Part No.	USD	weight (lb)
	Processor with Case, Scanner Kit, Barcode, Manual and CP Modes	230V	360 029 070	Call	57.012
	Processor with Case, Scanner Kit, Barcode, Manual and CP Modes	115V	360 029 067	Call	57.012



D

Adapter

- Adapters for Electrofusion units with 4 mm connectors. Compatible with electrofusion units MSA 330 and MSA 340

Type	Description	Part No.	USD	weight (lb)
4.0 x 4.7mm	Adapter, white	* 150 000 201	109.84	0.06

D

MSA Barcode Scanner

Compatible with MSA 330 and MSA 340



Part No.	USD	weight (lb)	Description
* 150 000 202	527.46	1.268	Barcode scanner with pouch and instructions

Cutting, Chamfering and Peeling Tools

D



PPC Plastic Pipe Cutter

For cutting plastic pipes d10 - d160. S = wall thickness.

Article	d-d (mm)	Part No.	USD	closest inch (inch)
PPC 63 max. s = 7.2 mm	10 - 63	* 790 109 001	108.81	1/8 - 2
PPC 110 max. s = 12.7 mm	50 - 110	* 790 109 002	231.09	1 1/2 - 4
PPC 160 max. s = 19.0 mm	110 - 160	* 790 109 003	275.65	4 - 6

D



Manual Rotary Pipe Cutter

- Tool for precise and simple right angle cutting of plastic pipe with a wall thickness up to 12 mm PVDF/PVC and up to 20 mm PP/PE. The blade for PP/PE must be ordered separately (Code 790109861). Transport box is included.

Part No.	USD	weight (kg)	d-d (mm)
* 790 109 850	Call	7.000	63 - 200
* 790 109 851	Call	5.000	90 - 315

D



Replacement Cutting Wheels

For plastic pipe cutter

d-d (mm)	Article	Part No.	USD
10 - 63	SR 63 max. s=7.2 mm	* 790 109 011	30.57
50 - 110	SR 110/160 max. s = 12.7 mm	* 790 109 012	50.57
110 - 160	SR 160 max. s = 19.0 mm	* 790 109 013	60.00

D



EX 360E Pipe Cutter

- Voltage / Power: 230V / 1750W
- Voltage / Current: 110V, 120V / 15A

Description	Part No.	USD	weight (lb)
* 75mm - 360mm (3"-14") Pipe Cutter	* 150 100 300	3,319.17	2.2

D

KS 355 Plastic pipe cutter

- For 160 - 355mm diameter pipe with wall thickness 8 - 40mm.
- Unique clamping mechanism. No additional belts, chains or reduction inserts needed.
- Supplied with transport box: Dimensions 700 x 350 x 500 mm; Weight 17.0 kg

d-d (mm)	Part No.	USD	Power
160 - 355	* 790 202 001	4,608.29	1750 W; 230 V; 50/60 Hz

D

KS 355 Saw blade Ø 180x30

Part No.	USD
* 790 202 011	395.85

D

KS 1600 Plastic pipe cutter

- The easy handling and an optimal safety do make the saw indispensable on each construction site
- Motor hand-circular saw with chain guiding
- The machine consists of a motorized hand saw, with guide carriage and tensioning chain for each pipe diameter
- The tensioning chain is to be out around the pipe and tightened by means of the chain tensioner. The carriage is applied with the hand circular saw. The pipe is cut by moving the carriage around the pipe.
- A quick, clean and right angled cut is the result

The KS 1600 is used for cutting plastic pipes fast, cleanly and properly right-angled from diameter 500 mm up to 1600 mm with a wall thickness of max. 60 mm. For each pipe diameter, the appropriate chain length is necessary. The saw is to be put on the tensioned chain as per user manual which serves as a guiding device for the saw over a full 360° turn. The guard plate covers the saw blade also during operation and provides full protection for the user at all times. The KS 1600 basic kit consists of a circular-hand saw, 230 V / 2200 W with carriage, 2 tension chains for d560 mm and d630 mm as well as a chain tensioner. The whole equipment comes in a convenient and robust transport box. The easy handling and the optimal safety features make this tool indispensable on every building site.

Scope of delivery:

1 Circular-hand saw, 1 tensioning chain d560 mm, 1 tensioning chain d630 mm, 1 chain tensioner, 1 hex-wrench size 5, 1 hex-wrench size 6, 1 operating instruction, transport box

Technical data:

Dimension range:d500 - 1600 mm
(In combination with the respective tensioning chain)
Plug: EU-Plug
Voltage:230 V AC
Power: 2200 Watt
Frequency:50-60 Hz
Circular saw blade outer-Ø: 240 mm
RPM: 4100
Sound level: 104 dB (A)
Weight saw: 15.5 kg
Weight KS 1600 Basic Kit: 43.5 kg
Dimensions saw (W x H x D): 790 x 330 x 335 mm
Dimensions Transport Box: 950 x 400 x 395 mm

d-d (mm)	Type	Part No.	USD
500 - 1600	KS 1600 Basic Kit	* 790 109 600	6,673.58

D



KS 1600 Chain Holder

- Chain tensioner is included in the scope of delivery of the KS 1600 Basic Kit (790 109 600).

d-d (mm)	Part No.	USD
500 - 1600	* 790 109 616	661.14

D



KS 1600 Tensioning Chains

- Chains for d560 mm and d630 mm are included in the scope of delivery of the KS 1600 Basic Kit (790 109 600).

d (mm)	Part No.	USD	weight (kg)
500	* 790 109 605	580.31	5.200

D



Chamfering tool

- Chamfering tool with 15° bevel for plastic pipes (PVC, ABS, PP, PB, PE). Coated prism surface suitable for clean room applications. Fast and reliable adjustment to different pipe diameters and wall thickness.

d-d (mm)	Part No.	USD
16 - 200	* 790 309 003	471.50
63 - 400	* 790 309 004	616.58

D



Chamfering tool for PPro-Seal, Fuseal PP and Fuseal 25/50.

Size (inch)	Part No.	USD
½	* 150 309 010	32.85
¾	* 150 309 011	32.85
1	* 150 309 012	33.58
1 ¼	* 150 309 013	36.89

D



Chamfering tool

Chamfering tool for PPro-Seal, Fuseal PP, and Fuseal 25/50. Sizes 1 1/4" to 4".

Part No.	USD	Description
* 150 109 104	115.03	1 1/4" - 4" Chamfering Tool

D



Turbo Scrapers

For use with cordless drills

PE, PVDF Compatible with socket fusion

- Compatible with PE and PVDF material.

Part No.	USD	d (mm)
* 150 201 000	239.38	20
* 150 201 001	239.38	25
* 150 201 002	248.70	32
* 150 201 003	248.70	40
* 150 201 004	259.07	50
* 150 201 005	259.07	63

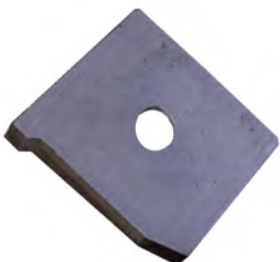
D



Manual pipe peeling tool

d (mm)	Part No.	USD
20	* 799 300 260	151.30
25	* 799 300 270	151.30
32	* 799 300 280	151.30
40	* 799 300 290	207.25
50	* 799 300 300	220.73
63	* 799 300 310	250.78
75	* 799 300 320	282.90
90	* 799 300 330	326.42
110	* 799 300 340	353.37

D



Replacement peeling tool blade

d (mm)	Part No.	USD
20	* 799 300 266	28.29
25	* 799 300 276	28.29
32	* 799 300 286	28.29
40	* 799 300 296	28.29
50	* 799 300 306	28.29

table continued on the next page

D

d (mm)	Part No.	USD
63	* 799 300 316	41.24
75	* 799 300 326	41.24
90	* 799 300 336	58.86
110	* 799 300 346	58.86

D



Rotary Peeler RS

The innovative Rotary Peeler RS is designed for universal peeling of pipe ends for electrofusion couplings, tees and elbows, as well as for electrofusion saddles. Suitable for peeling PE80, PE100, PEX and PP pipes.

Features and Benefits:

Time savings and highest repeatable peeling quality at smallest rotation radius.

Spring loaded peeling blade:

Peeling quality independent of pipe ovality or tolerance

Pivoted mounted peeling blade:

Compensates the shape of coiled pipe

Optimized cutting geometry:

Defined chip thickness with cutting width overlap

One tool per dimension:

Minimized swivel radius for peeling in narrow locations

Peeling length:

No limitation of peeling length

Guidance rolls:

3-point-support for dimensional optimized cutting feed

Time saving:

Tool is always ready for use.

Start the next peeling without having to set the peeling blade back in its original position

Time saving and highest repeatable peeling quality at smallest rotation radius. Eliminates operator errors

when changing dimensions

Included:

1 x Rotary Peeler RS, Transport case, Operating manual, Spare parts list

Article	d (mm)	Part No.	USD
RS 40	40	* 790 136 001	466.32
RS 50	50	* 790 136 002	466.32
RS 63	63	* 790 136 003	491.19
RS 75	75	* 790 136 004	590.67
RS 90	90	* 790 136 005	590.67
RS 110	110	790 136 006	590.67
RS 160	160	* 790 136 009	655.96
RS 225	225	* 790 136 012	756.48
RS 250	250	* 790 136 013	821.76

D



Replacement blade to Rotary Peeler RS

d-d (mm)	Description	Part No.	USD	weight (kg)
40 - 315	Hard metal	* 790 136 100	105.70	0.013

D



Transport cases for Rotary Peeler RS

- Included in the scope of delivery of the Rotary Peeler RS

Article	Part No.	USD	weight (kg)	Description	Dimension (mm)
RSTC 40-110	* 790 136 211	29.95	0.718	for RS 40-RS 110	326 - 222 - 116
RSTC 125-160	* 790 136 212	37.62	1.212	for RS 125-RS 160	437 - 395 - 116
RSTC 180-225	* 790 136 213	75.23	1.796	for RS 180-RS 225	450 - 360 - 132
RSTC 250-315	* 790 136 214	113.99	2.901	for RS 250-RS 315	566 - 435 - 156

D



Peeling tool PT 2

- Scope of delivery: 1 tool (size 1, 2 or 3) in a metal carrying case.
- The rotating Peeling Tool PT 2 are suitable for preparing pipe ends (when installing Electrofusion couplers and fittings). The tool ensures a constant peeling quality on the complete peeling surface and is suitable for PE80, PE100 and PEX pipes.

d-d (mm)	Part No.	USD	Description
63 - 250	* 799 300 752	Call	Size 1, peeling length 140 mm

D



Peeling tool PT 4

- The easy-to-use peeling tools PT 4 are suitable for preparing pipe ends (when installing Electrofusion couplers and fittings). The tools ensure a constant peeling quality on the whole peeled area and are suitable for PE80 and PE100 pipes. There is no tool service arrangement for the PT 4.
- Scope of delivery: 1 tool with exchangeable blade (4 cutting surfaces).

d (mm)	e (mm)	Part No.	USD
20	1.9	* 799 300 704	136.38
25	2.3	* 799 300 706	131.61
32	3.0	* 799 300 708	131.61
40	3.7	* 799 300 709	140.93
50	4.6	* 799 300 710	140.93
63	5.8	* 799 300 711	192.75

D



Double clamp

- The user-friendly Double Clamps are suitable for coupler connections. They are quickly and easily put into position and prevent pullout and pipe movements during the fusion time and cooling time.
- Scope of delivery: 1 tool consisting of 1 beam (compact), 2 V-clamps complete with ratchet and belt.

d-d (mm)	Part No.	USD
63 - 125	* 799 301 484	381.35
110 - 225	* 799 301 486	598.96
225 - 500	* 799 301 488	926.42



D



Quadruple clamp

- The professional Quadruple Clamps are suitable for coupler connections. They are quickly and easily put into position and ensure a stress-free fusion. They prevent pullout and pipe movements during the fusion and cooling times.
- Recommended for difficult site conditions with large installation-induced stresses.
- Scope of delivery: 1 tool consisting of 1 beam (long), 4 V-clamps complete with ratchet and belt.



d-d (mm)	Part No.	USD
63 - 125	* 799 301 459	Call
110 - 225	* 799 301 461	Call
225 - 500	* 799 301 463	Call

Rental Equipment

D



Electro Plus

- Prices are daily, prorated by calendar day, billed by the end of the month
- Complete Electro Plus Fusion Machine

d-d (inch)	Description	Part No.	USD
½ - 12	Electro Plus	R15000001B	15.03

D



MSA 250 / MSA Multi

- Prices are daily, prorated by calendar day, billed by the end of the month
- Includes Cable Assembly, Bar Code Set with Continuity Tester and Carrying Case

d-d (inch)	Description	Part No.	USD
½ - 12	MSA250 SE, 115V AC	R799350500B	15.03
½ - 12	MSA250 EX Multi, 230V AC	R799350520B	15.03
½ - 12	Electrofusion Unit MSA Multi, 230V AC	R790156021B	Call
½ - 12	Electrofusion unit MSA Multi 2.0, 230V	R790156001B	Call

D



MSA 330/340

- Prices are daily, prorated by calendar day, billed by the end of the month
- Includes Cable Assembly, Bar Code Set with Continuity Tester and Carrying Case

Description	Part No.	USD
MSA 330 230V	R790160005B	15.03
MSA 340 230V	R790160012B	15.03
MSA 330 115V	R010011335B	15.03
MSA 340 115V	R150900564B	15.03
New MSA 340 115V	R360290067B	Call
New MSA 340 230V	R360290070B	Call

D



SG110/SG125 Socket Fusion Machines

- Prices are daily, prorated by calendar day, billed by the end of the month
- Rental does not include heater bushings or peeling tools; these items must be purchased separately

d-d (mm)	Description	Part No.	USD
16 - 110	SG110 Socket Fusion Machine	R790310003B	31.09
20 - 90	SG125 Socket Fusion Machine	R790310036B	31.09

D



Contact Butt Fusion Machines

- Prices are daily, prorated by calendar day, billed by the end of the month
- The GF315 is equipped with an automatic heater

d-d (mm)	Description	Part No.	USD
20 - 110	MC110	R790109321B	31.61
40 - 160	TM160	R790114061B	59.07
75 - 250	GF250	R790115030B	79.79
90 - 315	GF315 CNC	R790112030B	108.29
125 - 400	TM 400	R790127069B	119.79
200 - 500	GF500	R790116040B	129.02
315 - 630	TM 630	R790117069B	141.97

D



IR Plus Machines

- Prices are daily, prorated by calendar day, billed by the end of the month
- A power converter (115/230V AC) is included with the IR63 and IR110 machine

d-d (mm)	Description	Part No.	USD
20 - 63	IR63 Plus	R790131005B	87.56
20 - 63	IR 63 with PFA Software and 1/4-2" inserts	R155131005B	100.00
20 - 110	IR110 Plus	R790132001B	103.63
63 - 225	IR225 Plus	R790133009B	113.99
250 - 315	IR315 Plus	R790134001B	141.24
20 - 110	IR-110 A Automated Fusion Machine	R790164001B	Call

D



BCF Plus Machine

- Prices are daily, prorated by calendar day, billed by the end of the month
- Rental includes facing tool and remote head. Rental does not include bladders and air hose which must be purchased separately.

d-d (mm)	Description	Part No.	USD
20 - 63	BCF Plus	R790121002B	99.79
75 - 110	BCF Plus Extension Package	R790121022B	13.47

D



Pipe Cutter Tools

- Prices are daily, prorated by calendar day, billed by the end of the month
- Rental does not include cutting blades, which must be purchased separately

d-d (mm)	Description	Part No.	USD
110 - 250	PPC 250	R790201002B	23.83
110 - 250	PPC 250 HP	R790201011B	18.65
160 - 355	KS 355	R790202001B	24.35
315 - 500	KS 1600	R790109601B	35.23

D

EX 360E Pipe Cutter

- Prices are daily, prorated by calendar day, billed by the end of the month

Part No.	USD	Description
R150100300B	28.50	75mm - 360mm (3" - 14") Pipe Cutter

D

Rotary Peeler RS

- Prices are daily, prorated by calendar day, billed by the end of the month

d (mm)	Part No.	USD
63	R790136003B	5.80
75	R790136004B	5.80
90	R790136005B	6.94
110	R790136006B	6.94
160	R790136009B	8.08
225	R790136012B	9.33
250	R790136013B	9.33

D

Step-Up and Down Transformer

- Prices are daily, prorated by calendar day, billed by the end of the month

Part No.	USD	Description
R150000036B	11.81	Step-Up 220V to 400V
R150000011B	11.81	Step-Down 480V to 400V

D

Double clamp

- Prices are daily, prorated by calendar day, billed by the end of the month

d-d (mm)	Part No.	USD
63 - 110	R799301484B	5.80
110 - 225	R799301486B	6.94
225 - 250	R799301488B	9.33

Machine Rental Agreement

This agreement is made as of the _____ day of _____, 20_____, between Georg Fischer LLC and _____ (Herein named Distributor)

This rental agreement covers the rental of the following products/machines:
_____ Serial Number _____
_____ Serial Number _____
_____ Serial Number _____
_____ Serial Number _____

Other items/accessories: _____

Rental charges begin 7 days after shipping date and end on date machine is received at Georg Fischer and are based on a daily rate prorated by calendar days.

The distributor will be invoiced for rental charges at the end of the starting rental month and each month thereafter until the conclusion of the rental agreement *and* return of rented equipment. Georg Fischer will not assume any responsibility for delays in shipment due to shipping errors, strikes or circumstances beyond its control.

Default Remedies

If Distributor fails to pay any rental payment or other sum due Georg Fischer hereunder in a timely manner or fails to observe, keep or perform any other provision of this agreement required to be observed, kept or performed by Distributor, and does not cure such default within 5 days after notice from Georg Fischer, then Georg Fischer shall have the right to:

- (a) Sue for and recover all rents and other payments then accrued or thereafter accruing under this agreement;
- (b) Take possession of any or all of the items of Equipment covered by this Agreement, without demand or notice to Distributor, wherever the Equipment may be located, without any court order or other process of law, in which event Distributor grants Georg Fischer access and waives any and all damages occasioned by such taking of repossession, including, but not limited to, any damage caused to Distributor's premises in connection with the removal of the Equipment.
- (c) Terminate this Agreement as to any or all items of Equipment covered by this Agreement; or
- (d) Pursue any other available remedy to Georg Fischer at law or in equity.

Obligation of Distributor Continues

Notwithstanding any repossession of any item of Equipment by Georg Fischer or any other action which Georg Fischer may take, Distributor shall be and remain liable for the full performance of all of its obligations under this Agreement.

Availability of Rental Equipment

Georg Fischer does not guarantee the availability of rental equipment and will under no circumstances be liable for any loss of any nature, directly or indirectly arising from the lack

of availability of rental equipment.

Maintenance

During the term of this Agreement, Distributor shall be responsible for maintaining, or causing to be maintained, the Equipment by providing or causing to be provided, routine preventative maintenance and inspection services, to assure proper operation thereof. In addition, Distributor shall be solely responsible for any and all repairs and maintenance required to be made to the Equipment during the term of this Agreement.

Use of Equipment

Distributor shall insure that the Equipment is used in a careful and proper manner and in strict conformity with the purposes and functions for which it was designed and is intended to be used, shall insure compliance in all respect with the operating and routine operator maintenance procedures as described in any manuals relating to the Equipment supplied to Distributor by Georg Fischer and shall comply with and conform to all applicable federal, state and municipal laws, ordinances and regulations relating to the possession, use or operation of the Equipment. In addition, Distributor shall not modify, alter, or change in any way the equipment.

Receipt of Equipment by Distributor

When Equipment is received by the Distributor, it is the responsibility of the Distributor to check the contents and packing slip to determine if all material is correct. Any discrepancies must be reported in writing to a Georg Fischer representative within 7 days after receipt of said Equipment by Distributor.

Return of Rented Equipment

All Equipment must be returned by the designated reshipment date and clearly tagged and identified with the RMA number. The distributor has to inform Georg Fischer about any circumstances that will affect the designated date of reshipment. Such notice has to be given at least 20 days prior to the designated day. The Equipment must be returned in the original container, properly packed and labeled. Lost, damaged, non-repairable shipping containers will be charged to the Distributor according to the Georg Fischer then effective Billing Procedures. The freight carrier must be approved by Georg Fischer. No machines shall be shipped by UPS without specific authorization from Georg Fischer LLC. All BCF and IR-63 machines shall be secured to a shipping pallet for all shipments. All C.O.D.s will be refused. All Equipment must be returned directly to Georg Fischer in Tustin, CA for inspection. A normal rework time of 2 hours is allowed per piece of Equipment. Rework time of more than 2 hours for a piece of Equipment will be charged to the Distributor according to the Georg Fischer then effective Billing Procedures.

Equipment Failure

Georg Fischer reserves the right to repair or replace any rental equipment which fails. When equipment must be returned to Georg Fischer for repairs or replacement before the end of the rental, and these repairs are due to normal wear and tear, Georg Fischer will pay for the surface shipping fees to Georg Fischer and return. Carrier must be a Georg Fischer approved carrier, see Return of Rented Equipment for details.

Insurance

Distributor shall name Georg Fischer as an additional named insured, with respect to the equipment, on Distributor's insurance policies covering all risk or hazards to the equipment.

DISCLAIMER

GEORG FISCHER WILL UNDER NO CIRCUMSTANCES BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY NATURE, DIRECTLY OR INDIRECTLY ARISING FROM ANY INJURY CAUSED TO THE OPERATOR OF THE EQUIPMENT, SO LONG AS THE EQUIPMENT IS IN THE POSSESSION AND/OR CONTROL OF DISTRIBUTOR OR ANY THIRD PARTY.

DISCLAIMER OF WARRANTIES

GEORG FISCHER MAKES NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND WHATSOEVER WITH RESPECT TO THE EQUIPMENT INCLUDING, BUT NOT LIMITED TO: THE MERCHANTABILITY OF ANY ITEM OF EQUIPMENT OR ITS FITNESS FOR ANY PARTICULAR PURPOSE; THE DESIGN OR CONDITION OF ANY ITEM OR EQUIPMENT; THE QUALITY OR CAPACITY OF ANY ITEM OF EQUIPMENT; THE WORKMANSHIP IN ANY ITEM OF EQUIPMENT; COMPLIANCE OF ANY ITEM OF EQUIPMENT WITH THE REQUIREMENTS OF ANY LAW, REGULATION, SPECIFICATION OR CONTRACT PERTAINING THERETO; PATENT INFRINGEMENT; OR PATENT DEFECTS. GEORG FISCHER SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF THE EQUIPMENT FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, SUCH AS LOSS OR PROFITS, LOSS OR PRODUCTION, LOSS OF USE OR LOSS OF CONTRACT, ARISING FOR ANY REASON, INCLUDING DAMAGES RESULTING FROM DEFECTIVE DESIGN, MATERIALS OR WORKMANSHIP OR FROM FAULTY INSTRUCTIONS AND WHETHER SUCH DAMAGES ARE CLAIMED TO ARISE FROM BREACH OF CONTRACT, IN TORT, THE THEORY OF PRODUCT LIABILITY OR OTHERWISE.

General Provisions

Georg Fischer's Inspection Rights

Georg Fischer shall, at any time and all times during regular business hours of Distributor or User, have the right to enter the premises of Distributor or User where the Equipment may be located for the purposes of inspecting the same or observing its operation and use. Distributor shall give Georg Fischer immediate notice of any attempted or actual attachment or other judicial process or levy affecting any of the Equipment.

Ownership of Equipment

Georg Fischer, Distributor and User acknowledge and agree that Distributor or User has no right, title or interest in or to the Equipment except for the rental interest set forth in this Agreement. To the extent necessary to affirm Georg Fischer's ownership interest in the Equipment, Distributor or User shall permit Georg Fischer to affix a label to each item of Equipment indicating Georg Fischer's ownership interest. This Agreement is intended by the parties hereto to create a rental agreement and not a sale, conditional sale, consignment or any other legal relationship. Upon request by Georg Fischer, Distributor or User agrees to execute UCC-1 financing statements, in form satisfactory to Georg Fischer, evidencing the rental of the Equipment pursuant to this Agreement. Georg Fischer, as the owner of the Equipment, shall be entitled to such deductions, credits and benefits as are provided by the Internal Revenue Code of 1986, as amended to the date hereof or at any time hereafter, to an owner of personal property including, without

limitation, any investment tax credit with respect to the Equipment.

No Encumbrances or Liens: Notice

Distributor shall not pledge, encumber, create a security interest in or permit any lien to become effective on or with respect to any of the Equipment. If any of these events take place, Distributor shall be deemed to be in default of this Agreement. Distributor shall immediately notify Georg Fischer of any such liens, charges or other encumbrances of which Distributor has knowledge. Distributor shall immediately pay or satisfy any obligation from which any such lien, charge or encumbrance arises, and shall otherwise keep the Equipment and all right, title and interest therein free and clear of all such liens, charges and encumbrances. Distributor shall deliver to Georg Fischer appropriate satisfactions, waivers or evidence of payment or satisfaction of any such obligation.

Risk of Loss

All risk of loss, damage, theft or destruction of or to the Equipment shall be borne by Distributor. No such loss, damage, theft or destruction of or to the Equipment in whole or in part, shall impair the obligations of Distributor under this Agreement, all of which shall continue in full force and effect; and Distributor, at Georg Fischer's option, shall: (a) place the affected Equipment in good repair, condition and working order; (b) replace the same with like Equipment in good repair, condition and working order; (c) pay Georg Fischer an amount equal to all unpaid rent due and to become due under this Agreement during the term of this Agreement or (d) pay Georg Fischer the full replacement value of the affected Equipment.

Indemnification of Georg Fischer

Distributor shall indemnify and defend and hold Georg Fischer, its officers, directors, shareholders, agents, legal representatives, successors and assigns, and each of them, harmless from and against any and all claims, liabilities, actions, suits, proceeding, damages, judgments, costs and expenses, including attorneys's fees, arising out of, connected with or resulting from:

(a) Distributor's and/or Distributor's employees', agents' or invitees' use or misuse of the Equipment; or (b) the breach by Distributor of any covenant or obligation contained in this Agreement to be performed or observed by Distributor. The terms of this paragraph shall specifically survive the termination of this Agreement.

Governing Law

This Agreement will be construed and enforced in accordance with the internal laws of the State of California without regard to its conflicts law.

Recovery of Litigation Costs

If any arbitration or other legal proceeding is brought for the enforcement of this Agreement, or because of any alleged dispute, breach, default or misrepresentation in connection with or arising out of any of the provisions of this Agreement, the successful or prevailing party will be entitled to recover such party's reasonable attorneys' fees and other costs incurred by such party in such arbitration or other legal proceeding, in addition to any other relief to which such party or parties may be entitled.

Severability

In the event that any provision or any part of any provision of this agreement is held to be illegal, invalid or unenforceable, such illegality, invalidity or unenforceability will not affect the

validity, legality or enforceability of any other provision or part thereof.

Successors and Assigns. This Agreement will not be assignable by either party without the prior written consent of the other party.

Waiver

Failure to insist on compliance with any of the terms, covenants or conditions hereof will not be deemed a waiver of such terms, covenants or conditions, nor will any waiver or relinquishment of any right or power hereunder at any one time or more times be deemed a waiver or relinquishment of such rights or powers at any other time or times.

THIS AGREEMENT is made as of the _____ day of _____, 20____ between Georg Fischer LLC and:

Co: _____

By: _____

Print: _____

and

Georg Fischer: _____

Print: _____

SPECIAL TERMS: _____

Effective start date: _____ End date: _____

Approved by: _____

PO Number: _____

Transformer or converter may be required to operate Georg Fischer welding equipment.
I have read and understand the power requirement for the equipment rented.

