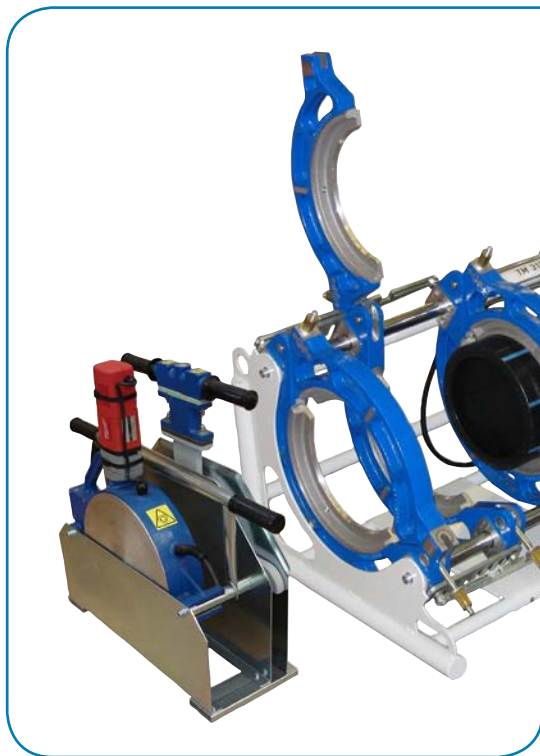


**Product Range  
International  
2008**

Distribution  
Machines & Tools



**+GF+**

**GEORG FISCHER  
PIPING SYSTEMS**



# Table of Contents

	Page
<hr/>	
<b>Machines &amp; Equipment for Electro Fusion</b>	
MSA Plus 400	8
MSA Plus 350	9
MSA Plus 300	10
MSA Plus 250	11
MSA 210	12
Tools and Accessories	13
<hr/>	
<b>Machines &amp; Equipment for Butt Fusion</b>	
TM – Line	37
GF – Line	45
WM – Line	95
Additional Tools and Accessories	108
<hr/>	





Truly all-terrain

The new MSA Plus  
Electrofusion Units

# MSA Plus overview



MSA Plus 250

MSA Plus 300

MSA Plus 350

MSA Plus 400

Temperature-dependent energy control	○	○	○	○
Wide input voltage range (180 - 264 V)	●	●	●	●
Suitable for generator operation	○	○	○	○
Automatic fusion data recording via barcode pen/scanner	●	●	●	●
For series and long-run fusion	○	○	○	○
Dust and spray water protected (IP 65)	●	●	●	●
Maximum protection from electrical hazards, protection class 1	○	○	○	○
Light, robust aluminum housing	●	●	●	●
Sturdy transport box	○	○	○	○
Active housing cooling	●	●	●	●
Manual entry of fusion time	○	○	○	○
Indication of fusion time and fusion energy	●	●	●	●
Menu guidance in more than 27 languages		○	○	○
Programmable maintenance intervals		●	●	●
User guidance		○	○	○
Individual configuration		●	●	●
Log book software MSA WIN-WELD			○	○
Internal safety protocol storage			●	●
Fusion data logging			○	○
Memory card for 1700 welds				●
Complete traceability of individual piping components according to ISO 12176-4)				○

# Technical data

Technical data	MSA Plus 250	MSA Plus 300	MSA Plus 350	MSA Plus 400
Input voltage range	180 - 264 V AC			
Frequency range	45 - 65 Hz			
Current consumption	16 A			
Power rating	3500 W			
Output voltage	8 - 42 V (48 V)			
Output current	0.5 - 90 .			
Safety cutout upstream	16 A surge-proof			
Protection class	IP 65			
Protection rating	1			
Housing	aluminum			
Active housing cooling	yes			
Connecting cable	3 m			
Fusion cable	3 m			
Weight (operational, incl. cable)	11.5 kg			
Dimensions (W/H/T)	284/440/195			
Processable barcodes	Code I 2/5 Code 128 C			
Working temperature range	-10°C to +45°C			
Automatic temperature compensation	yes			
Fusion current monitoring	yes			
Coil short-circuit recognition	yes			
Display	LED 7- Seg x 4 N	LCD graphic	LCD graphic	LCD graphic
Documentation of fusion data	-	-	yes	yes
Documentation of traceability data	-	-	-	yes
Internal data storage	-	-	yes, 2500	yes, 2500
External data storage, memory card	-	-	-	yes, 1700
USB interface type A	-	yes	yes	yes
USB interface type B	-	yes	yes	yes
Protocolling software MSA WIN-WELD	-	-	yes	yes
Data transmission cable	-	-	optional	optional
Memory card	-	-	-	yes, 32 MB
Welder pass (configurable as mandatory entry)	-	-	yes	yes
Manual fusion data entry	yes			
Language versions	-	27	27	27
Angle plug 4.0 mm	yes			
Barcode scanner	optional			
Transport box (aluminum/wood)	yes			
Recommended generator power	3.5 kVA			
Norms: CE, EN 55014, EN 50081-1, EN 50082-1, EN 61000-3-3, EN 60335-1, EN 60335-2-45	yes			

# Machines & Equipment for Electro Fusion

## Electrofusion Units

### MSA Plus 400 Traceability Electrofusion Unit with USB interfaces



**NEW, environmental friendly manufactured electrofusion unit according EU directive 2002/95/EU (RoHS).**

Professional electrofusion unit for traceability of piping system components from raw material to completed electrofusion joint (to ISO 12176). The MSA units with the unique inverter technology and the active cooling system for trouble-free operation from generator or mains supply. Suitable for jointing in series. The unit is equipped with compact flash memory card (exchangeable data carrier), barcode reader pen or optional barcode scanner. The unit is robust, light and easy to use. The menu has up to 27 different languages. Inclusive 1 transport case, 1 USB memory stick, 1 pair of angle adapter clips 4.0 mm, operating instructions, configuration card and Software MSA WIN-WELD.

For printer or PC communication the USB cable (799350619) is required.

#### Technical Data

Ambient temperature	-10 °C - +45 °C
Mains voltage	180 V - 264 V AC
Mains frequency	45Hz - 65 Hz
Fusion voltage	8 - 42 (48) V AC
Fusion current	max. 80 A
Power	max. 3500 W
Protection	1 / IP 65
Interfaces	USB (type A) for printer communication and to load software updates USB (type B) for PC communication
Mains cable	3 m
Fusion cable	3 m
Dimensions (WxHxD)	284 x 440 x 195 mm
Weight incl. cables	ca. 11,5 kg, light-weight aluminium housing
Display	LCD graphic, background light, contrast adjustment
Size display (WxH)	132 x 39 mm
Type size	8 mm
Languages	Brasilian, Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Hungarian, Italian, Latvian, Lithuanian, Malaysian, Norwegian, Polish, Portuguese, Rumanian, Russian, Slovakian, Slovenian, Spanish, Swedish, Turkish
Warranty	24 months

Type	Code	kg	Description
MSA Plus 400	<b>799 350 580</b>	16.800	barcode reader pen, transport case
MSA Plus 400	<b>799 350 581</b>	16.800	barcode scanner, transport case
MSA Plus 400	<b>799 350 585</b>	16.800	CH power plug with barcode reader pen, transport case

PF 2 51 306 003



# Machines & Equipment for Electro Fusion



## MSA Plus 350 Record Electrofusion Unit with USB interfaces



**NEW, environmental friendly manufactured electrofusion unit according EU directive 2002/95/EU (RoHS).**

Professional electrofusion unit for recording jointing data of electrofusion components as a basis for electronic joint recording. The MSA units with the unique inverter technology and the active cooling system for trouble-free operation from generator or mains supply. Suitable for jointing in series. The unit is equipped with barcode reader pen, optional with barcode scanner. The unit is robust, light and easy to use. The menu has up to 27 different languages. Inclusive transport box, 1 USB memory stick, 1 pair of angle adapter clips 4.0 mm, operating instructions, configuration card and Software MSA WIN-WELD.

To read out the fusion protocols the USB cable (799 350 619) or the USB memory stick (799 350 622) required.

### Technical Data

Ambient temperature	-10 °C - +45 °C
Mains voltage	180 V - 264 V AC
Mains frequency	45Hz - 65 Hz
Fusion voltage	8 - 42 (48) V AC
Fusion current	max. 80 A
Power	max. 3500 W
Protection	1 / IP 65
Interface	USB (type A) for printer communication and to load software updates USB (type B) for PC communication
Mains cable	3 m
Fusion cable	3 m
Dimensions (WxHxD)	284 x 440 x 195 mm
Weight incl. cables	ca. 11,5 kg, light-weight aluminium housing
Display	LCD graphic, background light, contrast adjustment
Size display (WxH)	132 x 39 mm
Type size	8 mm
Languages	Brasilian, Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Hungarian, Italian, Latvian, Lithuanian, Malaysian, Norwegian, Polish, Portuguese, Rumanian, Russian, Slovakian, Slovenian, Spanish, Swedish, Turkish
Warranty	24 months

Type	Code	NRF	kg	Description
MSA Plus 350	<b>799 350 570</b>	<b>183 35 98</b>	16.800	barcode reader pen, transport case
MSA Plus 350	<b>799 350 571</b>	<b>246 28 52</b>	16.800	barcode scanner, transport case
MSA Plus 350	<b>799 350 575</b>		16.800	CH Power plug, with barcode reader, transport case

PF 2 51 306 003

# Machines & Equipment for Electro Fusion



## MSA Plus 300 Automatic Electrofusion Unit with USB interfaces



**NEW, environmental friendly manufactured electrofusion unit according EU directive 2002/95/EU (RoHS).**

Automatic electrofusion unit with barcode reader pen, optional with barcode scanner. The MSA units with the unique inverter technology and the active cooling system for trouble-free operation from generator or mains supply. Suitable for jointing in series. The unit is robust, light and easy to use. The menu has up to 27 different languages. Inclusive transport box, 1 pair of angle adapter clips 4.0 mm, operating instructions and configuration card.

To load software updates the USB memory stick (799 350 622) is required.

### Technical Data

Ambient temperature	-10 °C - +45 °C
Mains voltage	180 V - 264 V AC
Mains frequency	45Hz - 65 Hz
Fusion voltage	8 - 42 (48) V AC
Fusion current	max. 80 A
Power	max. 3500 W
Protection	1 / IP 65
Interfaces	USB (type A) to load software updates USB (type B) for PC communication
Mains cable	3 m
Fusion cable	3 m
Dimensions (WxHxD)	284 x 440 x 195 mm
Weight incl. cables	ca. 11,5 kg, light-weight aluminium housing
Display	LCD graphic, background light, contrast adjustment
Size display (WxH)	132 x 39 mm
Type size	8 mm
Languages	Brasilian, Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Hungarian, Italian, Latvian, Lithuanian, Malaysian, Norwegian, Polish, Portuguese, Rumanian, Russian, Slovakian, Slovenian, Spanish, Swedish, Turkish
Warranty	24 months

Type	Code	NRF	kg	Description
MSA Plus 300	<b>799 350 560</b>	<b>183 35 96</b>	16.800	barcode reader pen, transport case
MSA Plus 300	<b>799 350 561</b>	<b>246 28 51</b>	16.800	barcode scanner, transport case
MSA Plus 300	<b>799 350 565</b>		16.800	CH Power plug, with barcode reader pen, transport case

PF 2 51 306 003

# Machines & Equipment for Electro Fusion



## MSA Plus 250 Automatic Electrofusion Unit



**NEW, environmental friendly manufactured electrofusion unit according EU directive 2002/95/EU (RoHS).**

Automatic electrofusion unit with barcode reader pen, optional with barcode scanner. The MSA units with the unique inverter technology and the active cooling system for trouble-free operation from generator or mains supply. Suitable for jointing in series. The unit is robust, light and easy to use. Single push-button operation, display shows fusion time and energy consumed. Inclusive transport box, 1 pair of angle adapter clips 4.0 mm and operating instructions.

### Technical Data

Ambient temperature	-10 °C - +45 °C
Mains voltage	180 V - 264 V AC
Mains frequency	45Hz - 65 Hz
Fusion voltage	8 - 42 (48) V AC
Fusion current	max. 80 A
Power	max. 3500 W
Protection	1 / IP 65
Mains cable	3 m
Fusion cable	3 m
Dimensions (WxHxD)	284 x 440 x 195 mm
Weight incl. cables	ca. 11,5 kg, light-weight aluminium housing
Display	LED 1 x 4 N, 7 Segments
Size display (WxH)	50 x 18 mm
Type size	14 mm
Warranty	24 months

Type	Code	kg	Description
MSA Plus 250	<b>799 350 550</b>	16.800	barcode reader pen, transport case
MSA Plus 250	<b>799 350 551</b>	16.800	barcode scanner, transport case
MSA Plus 250	<b>799 350 555</b>	16.800	CH Power plug, barcode reader pen, transport case

PF 2 51 306 002

# Machines & Equipment for Electro Fusion

## MSA 210 Manual Electrofusion Unit



Monovalent electrofusion unit with easy manual entry of fusion time by the operator according to the fitting requirements. The unit can be used on the product range of +GF+ electrofusion fittings up to a nominal diameter of 500 mm SDR 17. Suitable for jointing in series, temperature excess protected. The unit stores the last fusion time and generates a consecutive fusion counter. A buzzer indicates the start and the end of the fusion cycle.

### Technical Data

Ambient temperature	-10°C - +40°C
Mains voltage	180 V - 250 V AC
Mains frequency	45 Hz - 65 Hz
Fusion voltage	39,5 V
Internal Fuse	20 A
Power consumption	max. 2750 W
Protection	IP 65
Mains cable	4 m
Fusion cable	3 m
Connector	4,0 mm / 90
Dimensions (WxHxD)	270 x 480 x 150 mm
Weight incl. cables	ca. 21 kg
Display	LED 1 x 4 N, 7 segments
Size display	50 x 18 mm
Type size	14 mm
Warranty	12 months

Description	Code	kg	
Standard edition	<b>790 128 001</b>	21.000	

PF 3 10 588 100

## Adapter



- Adapters for electrofusion units with 4 mm connectors.
- Compatible with electrofusion units MSA 210, MSA 250-400 and MSA Plus 250-400.

Type	Code	kg	Description	
4,0 mm	<b>799 350 340</b>	0.055	Angle adapter, black	
4,7 mm	<b>799 350 341</b>	0.055	Angle adapter, grey	
4,0 mm	<b>799 350 461</b>	0.055	Adapter, black	
4,7 mm	<b>799 350 462</b>	0.055	Adapter, white	

PF 2 51 306 001

# Machines & Equipment for Electro Fusion

## Tools and Accessoires



### Software MSA WIN WELD

#### General functions:

- Reading and management of fusion data
  - Sort- and filter functions
  - Issue single records, collected records
  - Reading and formatting of memory cards
  - Reading and management of traceability data, according ISO 12176-4
  - Export functions for conversion to conventional data base files, Excel or Access
  - Installed languages: German, English, French, Italian, Dutch, Croatian, Spanish
  - Creating individual barcodes
  - Individual configuration of fusion devices
- Professional software for analysis and data management of electrofusion data, traceability data and for configuration barcodes (Z functions).
  - Compatibility with MSA 350/MSA Pus 350 (fusion data) and MSA 400/MSA Plus 400 (fusion and traceability data).
  - The software is suitable for Windows ME/NT4/2000/XP.
  - Scope of delivery: CD-ROM, installation guide (manuals and additional information on CD-ROM)

Code	kg	Description
799 350 365	0.180	Software for MSA 350-400 and MSA Plus 350-400

PF 2 51 306 001



### Software PIPE WIN WELD / SUVI WIN WELD

- Professional software for analysis and documentation of installed piping systems or of a defined part of it: Pipe book. With PIPE WIN WELD it is possible to create a complete electronic documentation of the installed pipes and pipe connection elements. The software works with the data bases of MSA WIN WELD and SUVI WIN WELD. The software makes it possible to work with data from other manufacturers (CSV module for data transfer).
- The software is suitable for Windows ME/NT4/2000/XP.
- Delivery: CD-ROM, USB hardlock (PIPE WIN-WELD, PIPE WIN-WELD CSV), installation guide (manuals and additional information on CD-ROM)

Type	Code	kg	Description
PIPE CSV	790 119 301	0.180	Complete package incl. CSV module for data transfer, USB hardlock
PIPE	790 119 302	0.180	Complete package, USB hardlock
SUVI	790 119 303	0.180	Complete package

PF 3 25 117 312



### Transport Cases MSA Fusion Units

#### Note:

- Large Transport Case for MSA 250-400, MSA Plus 250-400 Units and accessories (barcode scanner, manuals)

Dimension	Code	kg	Description
300x330x200 mm	799 350 401	5.540	Transport Case MSA
325x470x215 mm	799 350 472	5.540	Transport Case large MSA Plus

PF 2 51 306 004

# Machines & Equipment for Electro Fusion

## Cables and Data Carriers (MSA 350 - 400)



PF 2 51 306 001

- PC data transmission cable: to transfer fusion data directly to a PC.
- Printer transmission cable: serial/parallel interface adapter cable to provide data print-outs directly from a printer.
- Supplementary memory card: to be used as an exchangeable data carrier. A memory card is supplied with MSA 400 control units.

Type	Code	kg	Description
MSA 350/MSA 400	<b>799 350 385</b>	0.095	Data transmission cable (PC connection)

## Interface Adaptor Cable (MSA 350 - 400)



PF 2 51 306 001

Type	Code	kg	Description
MSA 350-400	<b>799 350 387</b>	0.042	Serial-/parallel interface adapter cable, serial RJ 45/Centronics 36 (printer connection)

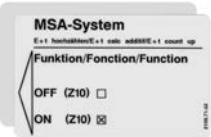
## Memory Cards (MSA 350 - 400)



PF 2 51 306 001

Type	Code	kg	Description
MSA 350-400	<b>799 350 395</b>	0.020	Memory card (record card 256 kB capacity for 400 Fusions protocols)

## Z Function Cards for MSA 2000/3000



PF 2 51 306 999

Type	Code	kg	Pieces	Description
MSA 2000/3000	<b>173 281 189</b>	0.494	100	Master card (Z3) coded
MSA 2000/3000	<b>173 281 190</b>	0.004	100	Order card (Z4) uncoded
MSA 2000/3000	<b>173 281 191</b>	0.005	100	Service card (Z6) uncoded
MSA 2000/3000	<b>173 281 192</b>	0.005	100	Memory card (Z8) uncoded
MSA 3000	<b>799 350 344</b>	0.500	100	Operator card settings (Z22) uncoded
MSA 2000/3000	<b>173 281 247</b>	0.242	1	Identification card set

## Barcode Reader Pen for MSA and MSA Plus



PF 2 51 306 001

- Compatible with MSA 250-400 and MSA Plus 250-400 electrofusion control units. (As additional component. A bar code reader pen or scanner is provided with all MSA 250-400 and MSA Plus 250-400 units.

Code	kg	Description
<b>799 350 335</b>	0.165	Barcode reader pen
<b>799 350 337</b>	0.046	Pouch for pen suitable for MSA 500/3000

## Barcode Scanner for MSA and MSA Plus



PF 2 51 306 001

- Robust, handy barcode scanner with a high reading performance made for the construction site. Quick, safe and professional!  
Compatible with MSA 250-400 and MSA Plus 250-400 electrofusion control units.

Code	kg	Description
<b>799 350 419</b>	0.350	Barcode scanner with pouch and instructions

# Machines & Equipment for Electro Fusion



## USB memory stick



- Memory stick to update MSA Plus 300-400 fusion units with new software and languages
- Compatibility with MSA Plus 300-400

PF 2 51 306 005

Type	Code	kg	Description
MSA Plus 300-400	<b>799 350 622</b>	0.300	Memory stick (for software or languages updates)



## USB cable



- PC and printer transmission cable to transfer fusion data directly to PC or to printer
- Compatibility with MSA Plus 350-400

PF 2 51 306 005

Type	Code	kg	Description
MSA Plus 350-400	<b>799 350 619</b>	0.300	USB cable (type A/B) for printer and PC connection



## Compact flash card



- Memory card type I to record fusion and traceability data
- Reliable and resistant data carrier for industrial use
- Compatibility with MSA Plus 400
- In connection with the PCMCIA-CF Adapter (799 350 623) this compact flash card is **unsuitable for MSA 400 units!**

PF 2 51 306 005

Type	Code	kg	Description
MSA Plus 400	<b>799 350 621</b>	0.050	Memory card (32 MB capacity for 1700 fusion protocols)



## Card reader



- To read in fusion and traceability data from the compact flash card (799 350 621) in the PC via USB (type A) interface
- Flexible card reader with slots for different cards



PF 2 51 306 005

Type	Code	kg	Description
MSA Plus 400	<b>799 350 620</b>	0.200	multiple card reader



## Adapter Card PCMCIA-CF



- To read in fusion and traceability data from the compact flash card (799 350 621) in the PC via PCMCIA slot
- Can only be used for compact flash cards type I

PF 2 51 306 005

Type	Code	kg	Description
MSA Plus 400	<b>799 350 623</b>	0.100	Adapter Card PCMCIA-CF

# Machines & Equipment for Electro Fusion

## Tools for preparing pipe surfaces

### Rotary Peeler RS

This innovative Rotary Peeler RS is designed to use for universal peeling at the pipe end for electrofusion couplings, tees and elbows and as well as for electrofusion saddles. Suitable for peeling of pipes made out of PE80, PE100, PEX, PP.



#### Feature and your advantage:

- Spring loaded peeling blade:**Independent peeling quality of pipe ovality or tolerances
- Pivoted mounted peeling blade:**To compensate 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
- Divisible tool:**Peeling for saddles with the same tool
- Peeling length:**No limitation of peeling length
- Guidance rolls:**3 point support for dimensional optimized cutting feed, time saving
- Time saving:**Tool is always ready to use, it can be used for the next peeling without setting the peeling blade back in its origin position

**Your advantage:**Time saving and highest repeatable peeling quality at smallest rotation radius. No operator errors possible for change of dimension

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

Article	d [mm]	Code	LVI	kg
RS 40	40	790 136 001	183 35 53	2.096
RS 50	50	790 136 002	183 35 54	1.250
RS 63	63	790 136 003	183 35 55	2.038
RS 75	75	790 136 004	183 35 56	1.450
RS 90	90	790 136 005	183 35 57	1.450
RS 110	110	790 136 006	183 35 58	1.450
RS 125	125	790 136 007	183 35 59	1.650
RS 140	140	790 136 008	183 35 60	1.650
RS 160	160	790 136 009	183 35 61	1.650
RS 180	180	790 136 010	183 35 62	1.850
RS 200	200	790 136 011	183 35 63	1.850
RS 225	225	790 136 012	183 35 64	1.850
RS 250	250	790 136 013	183 35 65	2.150
RS 280	280	790 136 014	183 35 66	2.150
RS 315	315	790 136 015	183 35 67	2.150

PF 3 25 879 100



### Replacement blade to Rotary Peeler RS

d-d [mm]	Code	kg
40 - 315	790 136 112	0.090

PF 3 25 118 906



### Transport cases for Rotary Peeler RS

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

Article	description	Dimension	Code
RSTC 40-110	for RS 40-RS 110	326x222x116 mm	790 136 211
RSTC 125-160	for RS 125-RS 160	437x395x116 mm	790 136 212
RSTC 180-225	for RS 180-RS 225	450x360x132 mm	790 136 213
RSTC 250-315	for RS 250-RS 315	566x435x156 mm	790 136 214

PF 3 25 879 100



# Machines & Equipment for Electro Fusion

9 300 725



PF 2 51 305 004

## Peeling Tool PT 1 E

- The rotating Peeling Tool PT 1 E is suitable for preparing pipe ends with diameters d 20 - 90 mm (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.
- Scope of delivery: 1 basic tool in a plastic carrying case, without pipe inserts. The case has sufficient space for approximately 6 pipe inserts.

d-d [mm]	Code	NRF	kg	Description
20 - 90	<b>799 150 382</b>	<b>246 28 54</b>	3.400	Basic Tool PT 1 E

9 300 725



PF 2 51 305 004

## Pipe Inserts for Peeling Tool PT 1 E

d [mm]	e [mm]	Code	NRF	kg	Description
20	1.9	<b>799 300 739</b>	<b>246 28 55</b>	0.220	Pipe Insert SDR 11
20	3.0	<b>799 300 741</b>	<b>246 28 56</b>	0.220	Pipe Insert SDR 7
25	2.3	<b>799 300 740</b>	<b>246 28 57</b>	0.230	Pipe Insert SDR 11
25	3.0	<b>799 300 742</b>	<b>246 28 58</b>	0.230	Pipe Insert SDR 9
32	3.0	<b>799 300 743</b>	<b>246 28 59</b>	0.230	Pipe Insert SDR 11
40	3.7	<b>799 300 744</b>	<b>246 28 61</b>	0.230	Pipe Insert SDR 11
50	4.6	<b>799 300 745</b>	<b>246 28 62</b>	0.350	Pipe Insert SDR 11
63	3.8	<b>799 300 725</b>	<b>246 28 63</b>	0.475	Pipe Insert SDR 17
63	5.8	<b>799 300 746</b>	<b>246 28 64</b>	0.475	Pipe Insert SDR 11
75	4.5	<b>799 300 727</b>	<b>246 28 65</b>	0.601	Pipe Insert SDR 17
75	6.9	<b>799 300 747</b>	<b>246 28 66</b>	0.601	Pipe Insert SDR 11
90	5.4	<b>799 300 748</b>	<b>246 28 67</b>	0.834	Pipe Insert SDR 17
90	8.2	<b>799 300 749</b>	<b>246 28 68</b>	0.220	Pipe Insert SDR 11

## Accessories for Peeling Tool PT 1 E

- Replacement blade.



PT 1 E

PF 2 51 305 004

d-d [mm]	Piece	Code	kg	Description
20 - 90	1	<b>799 150 383</b>	0.150	Replacement blade, 1 piece

9 300 750



PF 2 51 305 004

## Peeling Tool PT 2

- The rotating Peeling Tools 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.
- Scope of delivery: 1 tool (size 1, 2 or 3) in a case (size 1 in aluminium, size 2 and 3 in plastic).

d-d [mm]	Code	LVI	kg	Description
90 - 250	<b>799 300 753</b>	<b>183 35 76</b>	5.100	Size 1, peeling length 140 mm
110 - 400	<b>799 300 755</b>	<b>246 28 71</b>	7.320	Size 2, peeling length 150 mm
110 - 500	<b>799 300 756</b>	<b>183 35 78</b>	11.000	Size 3, peeling length 175 mm

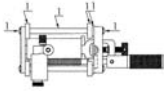
# Machines & Equipment for Electro Fusion

## Spare Parts for PT 2 Peeling Tool

- Firm metal knife usable on four sides

d-d [mm]	Piece	Code	kg	Description
90 - 500	1	<b>799 150 355</b>	0.008	Replacement blade, 1 piece Tool holder
90 - 500	1	<b>799 150 321</b>	0.100	

PF 2 51 305 004

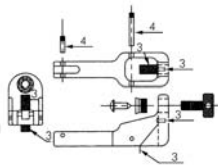


## Repair kit spindles for peeling tool PT 2

- Comprising 1 main spindle, 1 fixing bolt, 1 end plate, 2 rollers and 1 spacing disk

d-d [mm]	Code	kg
90 - 250	<b>799 150 360</b>	1.000
110 - 400	<b>799 150 361</b>	0.420
110 - 500	<b>799 150 362</b>	1.000

PF 2 51 305 004

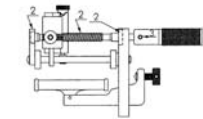


## Repair kit screws and springs for peeling tool PT 2

- Comprising 1 assembly screw long, 1 clamping screw, 1 handle, 1 screw for flat spring, 1 screw for cutting plate, 1 nut for feed, 1 flat spring, 1 spring for rapid adjustment and 1 clamping spring

d-d [mm]	Code	kg
90 - 500	<b>799 150 369</b>	0.300

PF 2 51 305 004

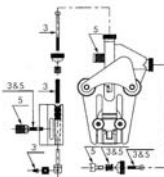


## Repair kit feed for peeling tool PT 2

- Comprising 1 carriage bolt, 1 guide unit and 1 guide end plate

d-d [mm]	Code	kg
90 - 250	<b>799 150 363</b>	0.500
110 - 400	<b>799 150 364</b>	0.346
110 - 500	<b>799 150 365</b>	0.500

PF 2 51 305 004



## Repair kit tool holder for peeling tool PT 2

- Complete comprising:
  - 1 feed nut,
  - 1 nut for feed,
  - 1 spring for rapid adjustment,
  - 1 washer
  - 1 fixing screw

d-d [mm]	Code	kg
90 - 500	<b>799 150 370</b>	0.069

PF 2 51 305 004

# Machines & Equipment for Electro Fusion

9 300 700



## 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).

e [mm]	d [mm]	Code	kg	Description
1.9	20	<b>799 300 704</b>	0.271	Pipe Insert SDR 11
3.0	20	<b>799 300 705</b>	0.255	Pipe Insert SDR 7
2.3	25	<b>799 300 706</b>	0.308	Pipe Insert SDR 11
3.0	25	<b>799 300 707</b>	0.290	Pipe Insert SDR 9
3.0	32	<b>799 300 708</b>	0.340	Pipe Insert SDR 11
3.7	40	<b>799 300 709</b>	0.380	Pipe Insert SDR 11
4.6	50	<b>799 300 710</b>	0.436	Pipe Insert SDR 11
5.8	63	<b>799 300 711</b>	0.540	Pipe Insert SDR 11

PF 2 51 305 004

9 300 700



PT 4

PF 2 51 305 999

## Accessories for Peeling Tool PT 4

- Replacement blade.

d-d [mm]	Piece	Code	kg	Description
20 - 63	1	<b>799 150 275</b>	0.006	Replacement blade with 4 cutting surfaces



## Peeling Tool RTC-710



The peeling tool RTC-710 is suitable to prepare pipe ends in big dimensions (d 355-710 mm). The tool ensures a constant peeling quality on the complete peeling surface of max. 530 mm length and is suitable for PE 80 and PE 100 pipes.

Scope of delivery: 1 Scraper arm, 1 Self-centering chuck base, 2 Aluminium transport cases, 1 screwdriver, 1 spare blade, 1 span cleaning knife, 1 accessories bag.

d-d [mm]	Code	LVI	kg	Description
355 - 710	<b>799 300 757</b>	<b>183 35 79</b>	16.000	max. working-range 530 mm

PF 2 51 305 001

9 198 033



PF 2 51 305 002

## Hand Scraper

- The Hand Scraper can be used to prepare the fusion zone on PE80 pipes.

Code	kg	Description
<b>799 198 094</b>	0.100	with long handle

# Machines & Equipment for Electro Fusion

## Clamps and installation aids

### Multiple use Assembly Tool Branch fitting d140mm

- Only to be used with Branch Fitting d140mm
- Delivered as complete Kit including screws and belt



PF 2 51 336 001

d [mm]	Code	kg	
140	<b>193 281 027</b>	0.740	

9 350 358

### Swivel Clamp

- The Swivel Clamp centralises pipes with dimensions from d 63 - 180 mm automatically. Suitable for coupler connections as well as reductions and bends. The 15° adjustment makes an exact positioning from 15° to 90° possible.



PF 2 51 305 008

d-d [mm]	Code	kg	
63 - 180	<b>799 350 358</b>	18.000	

# Machines & Equipment for Electro Fusion

9 301 475



## 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 vee-clamps complete with ratchet and belt.

d-d [mm]	Code	NRF	kg
63 - 125	<b>799 301 484</b>	<b>246 28 88</b>	2.795
110 - 225	<b>799 301 486</b>	<b>246 28 89</b>	10.000
225 - 500	<b>799 301 488</b>	<b>246 28 91</b>	15.000



PF 2 51 305 008

9 301 450



## 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 vee-clamps complete with ratchet and belt.

d-d [mm]	Code	NRF	kg
63 - 125	<b>799 301 459</b>		6.900
110 - 225	<b>799 301 461</b>	<b>246 28 92</b>	19.000
225 - 500	<b>799 301 463</b>	<b>246 28 93</b>	28.500



PF 2 51 305 008

9 301 525



## Twin Clamp

- The easy-to-use Twin Clamp is suitable for coupler connections on straight or coiled pipe. The clamps prevent pullout and pipe movements during the fusion and cooling time.
- Scope of delivery: 1 complete tool.

d [mm]	Code	kg
20	<b>799 301 536</b>	0.498
25	<b>799 301 537</b>	0.471
32	<b>799 301 538</b>	0.756
40	<b>799 301 539</b>	0.876
50	<b>799 301 540</b>	1.167
63	<b>799 301 541</b>	1.438

PF 2 51 305 003

# Machines & Equipment for Electro Fusion

9 301 575



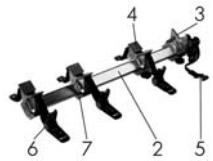
PF 2 51 305 008

## Multi Clamp

- This tool is quick and easy to use and is suitable for straight forward connections to straight lengths of pipe or saddle branch outlets with electrofusion couplers.
- Scope of delivery: 1 tool without accessories.

d-d [mm]	Code	kg	
20 - 63	<b>799 301 575</b>	1.409	

## Spare parts for clamps



PF 2 51 305 999

Pos	Dimension	Code	kg	Description
1	63-125, 45mm	<b>799 900 414</b>	1.700	square support short
	110-225, 60mm	<b>799 900 405</b>	3.500	square support short
	225-400, 80mm	<b>799 900 394</b>	6.000	square support short
2	63-125, 45mm	<b>799 900 413</b>	3.600	square support long
	110-225, 60mm	<b>799 900 404</b>	6.500	square support long
4	225-400, 80mm	<b>799 900 387</b>	11.500	square support long
	63-125	<b>799 900 421</b>	0.977	prism wide
	110-225	<b>799 900 423</b>	2.000	prism wide
7	225-400	<b>799 900 425</b>	4.500	prism wide
	63-125	<b>799 150 312</b>	0.270	ratch 25/15/0.7
	110-225	<b>799 150 313</b>	0.232	ratch 25/25/0.7
	110-225	<b>799 150 315</b>	0.496	ratch 35/35/1.1
	225-400	<b>799 150 319</b>	1.415	ratch 50/50/1.5
		<b>799 150 314</b>	0.050	clamping screw

9 301 575

## Inserts for Multi Clamp

- The inserts are easily and quickly exchanged. A set consists of 4 inserts, each insert with 2 different dimensions.



PF 2 51 305 008

d-d [mm]	Code	kg	Description
25 - 20	<b>799 150 385</b>	0.806	Inserts, Sets
32 - 20	<b>799 150 386</b>	0.520	Inserts, Sets
32 - 25	<b>799 150 387</b>	0.520	Inserts, Sets
40 - 32	<b>799 150 388</b>	0.520	Inserts, Sets
50 - 40	<b>799 150 389</b>	0.520	Inserts, Sets
63 - 32	<b>799 150 390</b>	0.520	Inserts, Sets
63 - 40	<b>799 150 391</b>	0.520	Inserts, Sets
63 - 50	<b>799 150 392</b>	0.520	Inserts, Sets

9 370 000

## Clamp for coiled pipe

- These clamps are easily mounted on coiled pipes. They hold the pipes in position during the fusion time and cooling phase.
- Scope of delivery: 1 tool with clamp and belt.



PF 2 51 305 008

d-d [mm]	Code	kg	
25 - 63	<b>799 370 007</b>	4.000	
63 - 125	<b>799 370 011</b>	10.000	

# Machines & Equipment for Electro Fusion

## Clamping device Topload 400



PF 2 51 305 008

- This clamp and mounting tool is used to top-load Saddles onto pipes of dimensions d 280 - 400 mm.
- Scope of delivery: 1 basis mounting clamp, 1 bracket, 2 clamping screws, 2 ratchet scraps, 1 transport-box

d-d [mm]	Code	kg	
280 - 400	<b>799 350 475</b>	25.000	

## Clamping device Topload 630



PF 2 51 305 008

- This clamp and mounting tool is used to top-load Saddles onto pipes of dimensions d 280 - 400 mm and Branchfittings for dimension d 280 mm – 630 mm.
- Scope of delivery: 1 basis mounting clamp, 1 clamping attachment, 1 bracket, 2 clamping screws, 2 ratchet scraps, 1 transport-box

d-d [mm]	Code	kg	
280 - 630	<b>799 350 477</b>	35.000	

9 150 090

## Spring Clamp for ELGEF® 24 V Reinforcing Saddles



PF 2 51 305 002

- The Spring Clamp is used to install ELGEF® 24 V reinforcing saddles d 40 - 225 mm. The tool ensures a constant jointing pressure during the entire fusion cycle.

d-d [mm]	Code	kg	
40 - 225	<b>799 150 090</b>	1.289	

# Machines & Equipment for Electro Fusion

## Tapping Tools



### Assembly and Tapping Key for ELGEF® Plus Saddles

- Combination tool for tapping and tightening of fixation screws.

PF 2 51 305 009

Type	Code	NRF	kg	Description
8/10/17	<b>799 198 047</b>	<b>246 28 95</b>	0.803	For all saddles



### Tapping Key for ELGEF® Plus Saddles

- With adjustable tapping depth.

PF 2 51 305 999

Type	Code	kg	Description
10	<b>799 198 080</b>	0.120	for Monobloc d 40 mm and d 50 mm
17	<b>799 198 079</b>	0.555	for Monobloc d 63 mm and all Duobloc saddles
12.7	<b>799 198 091</b>	0.600	for socket with cutter



### Hexagon Key for ELGEF® Plus Saddles and Branch Fittings

- For tightening fixation screws.

PF 2 51 305 009

Type	Code	kg	Description
SW8	<b>799 150 378</b>	0.152	For all saddles and branch fittings



### Tapping Adapter for ELGEF® Plus Saddles

- The Adapter is used for gas-free tapping under pressure. Type S 54 for tapping saddles with rotatable outlet d 20 - 40 mm (Tapping Tee d 32 mm). Type S 67 for tapping saddles with rotatable outlet d 50 - 63 mm (Tapping Tee d 63 mm).

PF 2 51 305 002

Type	Code	kg	Description
S 54	<b>799 100 061</b>	0.813	for Tapping Tee d 32 mm
S 67	<b>799 100 062</b>	1.011	for Tapping Tee d 63 mm



### Pressure Test Cap for ELGEF® Plus Tapping Saddles

- "The cap has a Rp 3/8"" connection thread and is made from galvanised steel."
- **Overview of Tapping Adapter types and Pressure Test Cap**
- Typ Bezeichnung description
- M For Monobloc d 40 and 50 mm (outlets d 20 - 32 mm)
- S 54 For Monobloc d 63 (outlets d 20 - 32 mm) and all saddles with rotatable outlet (outlets d 20 - 40 mm) i.e. Tapping Tee d 32 mm.
- S 67 For all Saddles with rotatable outlet (outlets d 50 and 63 mm) i.e. Tapping Tee d 63 mm.

PF 2 51 305 002

Type	Code	kg	Description
M	<b>799 199 282</b>	0.119	for Monobloc d 40 mm and d 50 mm
S 54	<b>799 199 283</b>	0.283	for Monobloc d 63 mm and Tapping Tee d 32 mm
S 67	<b>799 199 286</b>	0.461	for Tapping Tee d 63 mm



# Machines & Equipment for Electro Fusion

## Cutter for PE Pipes



- This cutter is suitable for PE pipes and can be used on pipes of up to d 225 mm with a wall thickness of up to 21 mm.

d [mm]	Code	kg	Description
30	<b>799 198 013</b>	0.131	accessories Basic Tool Box
39	<b>799 198 012</b>	0.215	accessories Basic Tool Box
50	<b>799 198 057</b>	0.278	accessories Basic Tool Box

PF 2 51 305 002

## PE Repair Plug



- PE Repair Plugs are suitable for use with ELGEF® 24 V PE Reinforcement Saddles 53 127 000.

d [mm]	Code	kg
30	<b>799 199 088</b>	0.012
39	<b>799 199 089</b>	0.019

PF 2 51 305 002

## Hexagon Key for PVC Saddles



- The Hexagon Key is suitable for tapping water and gas mains under pressure.
- Scope of delivery: 1 hexagon key, protective cover, without rotating pin.

d-d [mm]	Code	kg	s [mm]	G [inch]
16 - 25	<b>799 150 007</b>	0.345	19	30
32 - 40	<b>799 150 008</b>	0.496	27	38
50 - 63	<b>799 150 009</b>	0.690	27	47

PF 2 51 305 002

## Rotating pin for Hexagon Key

description	Code	kg
10x350 mm	<b>799 150 011</b>	0.220

PF 2 51 305 002

# Machines & Equipment for Electro Fusion

## Squeeze-off and Rerounding tools

9 350 107



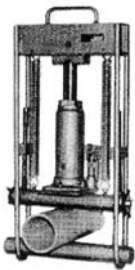
PF 2 51 305 005

### Squeeze-off Tool, Type S1

- This mechanical device is used to squeeze-off PE pipes during repair and extension work. In order not to over-stress the pipe, the tool is equipped with adjustable end stops for SDR 11 (ISO S5) pipes. Due to different wall thickness` of the pipes, the squeezing degree may differ up to 0,8.

d-d [mm]	Code	kg	Description
20 - 63	<b>799 350 107</b>	4.449	S1 for PE pipes SDR 11

9 350 108



PF 2 51 305 005

### Squeeze-off Tool, Type S2

- This mechanical device is used to squeeze off PE pipes during repair and extension work. In order not to over-stress the pipe, the tool is equipped with adjustable end stops for SDR 11 (ISO S5) and SDR 17 (ISO S8) pipes.

d-d [mm]	Code	kg	Description
63 - 180	<b>799 350 108</b>	35.800	S2 for PE pipes SDR 11 and SDR 17

9 350 270



PF 2 51 305 005

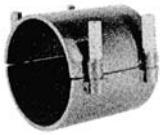
### Squeeze-off Tool, A25

- This mechanical device is used to squeeze off PE pipes during repair and extension work. In order not to over-stress the pipe, the tool is equipped with adjustable end stops for SDR 11 (ISO S5) and SDR 17 (ISO S8) pipes.

d-d [mm]	Code	kg	Description
160 - 250	<b>799 350 270</b>	60.000	A25 for PE pipes SDR 11 and SDR 17

# Machines & Equipment for Electro Fusion

9 350 110



## Re-rounding Clamp

- Re-rounding Clamps are used to re-round squeezed-off pipes. They can be left on the squeezed-off part of the pipe as a support if so desired.

d [mm]	Code	kg	
63	<b>799 350 113</b>	3.000	
75	<b>799 350 114</b>	3.600	
90	<b>799 350 115</b>	3.500	
110	<b>799 350 116</b>	5.750	
125	<b>799 350 117</b>	5.690	
160	<b>799 350 118</b>	7.500	
180	<b>799 350 119</b>	27.000	
200	<b>799 350 120</b>	27.500	
225	<b>799 350 121</b>	11.595	
250	<b>799 350 172</b>	34.000	

PF 2 51 305 005



## Re-rounding Tool

- Re-rounding tools are used to re-round oval pipes during fusion as well as during the cooling time.

d [mm]	Code	kg	
25	<b>799 199 127</b>	0.750	
32	<b>799 199 128</b>	0.500	
40	<b>799 199 129</b>	1.500	
50	<b>799 199 130</b>	1.250	
63	<b>799 199 131</b>	1.250	
75	<b>799 199 132</b>	1.500	
90	<b>799 199 133</b>	1.500	
110	<b>799 199 134</b>	2.000	
125	<b>799 199 135</b>	2.000	
160	<b>799 199 137</b>	2.250	
180	<b>799 199 138</b>	3.000	
200	<b>799 199 139</b>	2.500	
225	<b>799 199 140</b>	3.000	
250	<b>799 199 141</b>	3.630	

PF 2 51 305 005



## Pressure Pad Kit



- Complete kit of assembly equipment
- Consists of 3 air pressure pads, control unit with manifold, pressure hoses, strap corset, detailed instruction leaflets and transport case
- For operation with pressurized air up to 10 bar according to EN 292
- Tool for dual use: Pipe re-rounding and fusion pressure reinforcement

d-d [mm]	Code	LVI	kg	
560 - 630	<b>799 301 561</b>	<b>183 35 87</b>	47.900	

PF 2 51 305 005

# Machines & Equipment for Electro Fusion

## Miscellaneous Tools

### By-pass Unit, complete



PF 2 51 305 006

- The By-pass Unit (Series II) suits ELGEF® Plus Stop-off saddles 53 149 200. Scope of delivery: pressure guage, valve, snap coupling, tee with lock nut, screw cap and sealing plug. The matching connecting parts for a By-pass line are PE pipes d 40 x 3.7 with PE pipe assembly PVP 1 1/4" 721506950 (PN10) or PE pipe d 40 x 2.3 with PE pipe assembly PVP 1 1/4 721506952 (PN6).

Code	kg
799 150 376	1.064

### Stop-off Bag with Coupling



- The Stop-off bags (Series II) can be used with the By-pass Unit (Series II) and are suitable for stopping-off gas mains with a maximum operating pressure of 1 bar.

d [mm]	Code	kg	SDR 11	SDR 17	e [mm]
63	799 100 082	0.156	X	X	3,6-6,6
75	799 100 083	0.156	X	X	4,3-7,8
90	799 100 084	0.174	X	X	5,1-9,3
110	799 100 085	0.206	X	X	6,3-11,2
125	799 100 086	0.208	X	X	7,1-12,8
140	799 100 087	0.270	X	X	8,3-12,7
160	799 100 088	0.273	X	X	9,1-16,3
180	799 100 089	0.250	X	-	16,4-18,3
180	799 100 090	0.281	-	X	10,2-11,5
200	799 100 091	0.397	X	-	18,2-20,3
200	799 100 092	0.414	-	X	11,4-12,8
225	799 100 093	0.407	X	-	20,5-22,8
225	799 100 094	0.372	-	X	12,8-14,3
250	799 100 095	0.423	-	X	14,2-15,9
250	799 100 096	0.431	X	-	22,8-25,3
315	799 100 097	0.565	-	-	7,7-11,2
315	799 100 098	0.541	X	X	17,9-43,5

PF 2 51 305 006

### Transition Coupling



PF 2 51 305 006

- Transition Couplings to convert earlier By-pass Units (Series I, Code no. 799150142) to second series stop-off bags (Code no. 799100082 to 098).

Code	kg
799 150 374	0.010

### Connecting Nipple



PF 2 51 305 006

- To convert earlier By-pass Units (Code no. 799100042 to 057) to later By-pass Units (Series II, Code no. 799150376).

Code	kg
799 150 375	0.010

# Machines & Equipment for Electro Fusion

## KS Tangit Cleaner

- Special cleaning agent for plastic fusion connections with PP, PE, PVDF and PB.



PF 2 28 473 002

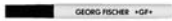
Code	kg	
799 298 023	0.890	

5311

## Tangit KS-Cleaning Tissues



Code	kg	
799 298 024	3.245	



## Marker

PF 2 55 338 999

Type	Code	kg	
silver	799 350 364	0.012	

# Machines & Equipment for Electro Fusion

## Accessories for job sites



### Roller support 315

- Up to d 315 mm, with base plate, galvanised
- The piping can be pulled with little effort
- Protects pipes from damage
- Reduces resistance during fusion
- Maximum load 300 kg

d-d [mm]	Code	kg	
20 - 315	<b>790 109 110</b>	4.000	

PF 3 25 117 328



### Support 750

- Up to d 750 mm, with base plate, galvanised
- **height adjustable** (60 mm)
- The piping can be pulled with little effort
- Protects pipes from damage
- Reduces resistance during fusion
- Maximum load 1000 kg

d-d [mm]	Code	kg	
110 - 750	<b>790 109 109</b>	4.115	

PF 3 25 117 328



### Alignment Tool

- To align and position pipes in the dimension range d 110 - 400 mm. The pipes are clamped in the vice, the axial movement takes place by a chain drive. The chain is totated by the ratched (square 19 mm).

Article	Code	kg	
Alignment Tool	<b>790 109 108</b>	15.000	
Ratch	<b>790 109 107</b>	1.220	

PF 3 25 117 325

# Machines & Equipment for Electro Fusion

## PPC Plastic pipe cutter and KS 355

### PPC Plastic pipe cutter



PF 3 25 117 309

- For cutting plastic pipes d10 - d160

d-d [mm]	Article	Code	kg
10 - 63	PPC 63, s max. = 7.2mm	<b>790 109 001</b>	0.710
50 - 110	PPC 110, s max. = 12.7mm	<b>790 109 002</b>	1.400
110 - 160	PPC 160, s max. = 19.0mm	<b>790 109 003</b>	2.220

### Replacement cutting wheels



PF 3 25 117 909

- for plastic pipe cutter

d-d [mm]	Article	Code	kg
10 - 63	SR 63 max. s=7,2 mm	<b>790 109 011</b>	0.004
50 - 110	SR 110/160 max. s=12,7 mm	<b>790 109 012</b>	0.017
110 - 160	SR 160 max. s=19,0 mm	<b>790 109 013</b>	0.023



PF 3 25 129 760

### Plastic pipe cutter

- The KS 355 is the ideal tool for simple right angle precision cutting of PVC, PE and PP pipes, Size range d 160 to 355 mm with a wall thickness up to 40 mm. Including transport box.
- Unique clamping mechanism, no additional tools like belts, chains or reduction inserts necessary

d-d [mm]	Code	kg
160 - 355	<b>790 202 001</b>	15.400



PF 3 25 119 107

### Saw blade Ø 180x30

Code	kg
<b>790 202 011</b>	0.485

# Machines & Equipment for Electro Fusion

## KS 1600

### Plastic pipe cutter



The KS 1600 is prepared to cut plastic-pipes from diameter 355 mm up to 1600 mm with a wall thickness of max. 60 mm, fast, clean and properly right-angled. For each pipe-diameter the appropriate chain length is necessary. The saw is to put on the tensioned chain as per user manual and 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 all the time.

The KS 1600 Basis-Kit consists of a hand-circular saw, 230 V / 2200 W with carriage, 2 tension chains for d 560 mm and d 630 mm as well as a chain tensioner. The whole equipment is to be placed easily into the convenient and robust transport box.

The easy handling and the optimal safety factor do make this tool indispensable on each building site.

#### Scope of delivery:

1 Hand-circular saw, 1 tensioning chain d 560 mm, 1 tensioning chain d 630, 1 chain tensioner, 1 hex-wrench size 5, 1 hex-wrench size 6, 1 operating instruction, transport-box

#### Technical data:

Dimension range:	355 –1600 mm (By usage of 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 (WxHxD):	790 x 330 x 335 mm
Dimensions Transport-Box:	950 x 400 x 395 mm

d-d [mm]	Type	Code	kg	
355 - 1600	KS 1600 Basic Kit	<b>790 109 600</b>	43.000	

### Saw blade

description	Code	kg	
Saw Blade 240X3,0X30, 18 teeth punched	<b>790 109 618</b>	0.653	

PF 3 25 119 106



# Machines & Equipment for Electro Fusion



## Chain tensioner

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

PF 3 25 119 106

d-d [mm]	Code	kg	
355 - 1600	<b>790 109 616</b>	0.430	



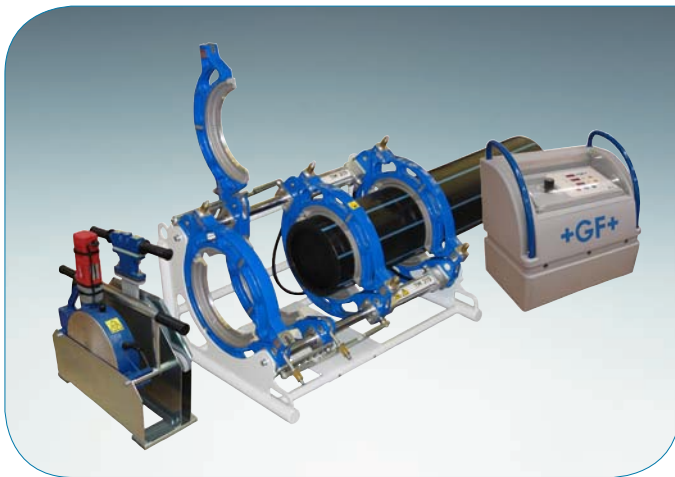
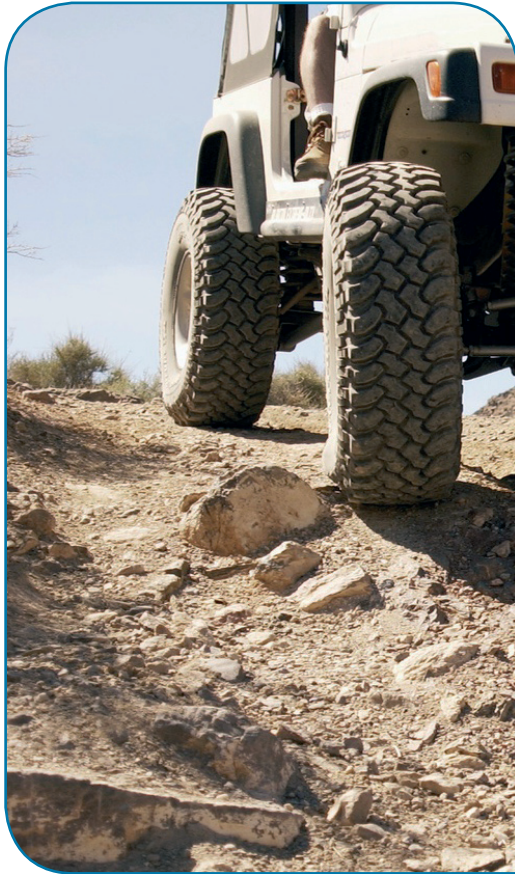
## Tensioning Chains

- Chain d 560 and d 630 mm are included in the scope of delivery of the KS 1600 Basic-Kit (790 109 600).

PF 3 25 119 106

d [mm]	Code	kg	
355	<b>790 109 602</b>	3.700	
400	<b>790 109 603</b>	4.100	
450	<b>790 109 604</b>	4.700	
500	<b>790 109 605</b>	5.200	
560	<b>790 109 606</b>	5.600	
630	<b>790 109 607</b>	6.630	
710	<b>790 109 608</b>	7.900	
800	<b>790 109 609</b>	8.600	
900	<b>790 109 610</b>	10.174	
1000	<b>790 109 611</b>	11.000	
1100	<b>790 109 612</b>	12.000	
1200	<b>790 109 613</b>	13.500	
1400	<b>790 109 614</b>	15.500	
1600	<b>790 109 615</b>	17.800	





Truly all-terrain ▶

Butt-fusion machines for use on site in tough conditions

Perfect welding equipment for PE and PP pipes in Gas & Water distribution



# Machines & Equipment for Butt Fusion

## TM 160 - 315 ECO Butt fusion machine



### TM 160 - 315 ECO Machine complete

- Flexible and user-friendly heating element butt fusion machine for fusion jointing PE, PP, PB and PVDF pipes and fittings on building sites and in trenches
- Consisting of: lightweight ECO hydraulic unit, flexible base machine, powerful planer, high performance heating element with electronic temperature control box, storage case for the planer and heater
- Including transport packaging (carton pallet), without accessories and without reduction inserts

Type	d-d [mm]	Performance	Code	kg
TM 160 ECO	40 - 160	230V/1900W	<b>790 150 010</b>	81.000
TM 250 ECO	75 - 250	230V/3270W	<b>790 151 010</b>	139.000
TM 315 ECO	90 - 315	230V/3870W	<b>790 152 010</b>	155.000

PF 3 10 597 011



### TM 160 - 315 Basic machine

- Tubular frame providing increased rigidity and easy movement of the machine on the ground
- 4 lifting lugs
- Metal shield providing protection of the main welding area
- The movable (sliding) 3rd clamp allows easy and time saving fixing of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- Clamps are hinged on the top side and tilting, whenever necessary the four clamps can be quickly removed
- Quick-action and drip-proof oil connections located in protected position
- By rotating of the base machine a second operating position available

Type	d-d [mm]	Code	kg
TM 160	40 - 160	<b>790 150 001</b>	25.000
TM 250	75 - 250	<b>790 151 001</b>	50.000
TM 315	90 - 315	<b>790 152 001</b>	57.000

PF 3 10 571 100



### TM 160 - 315 ECO Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Reliable torque transmission via robust worm-gear device
- Ergonomic, weight balanced handling
- Optimised cutting geometry for even and chatter-free planing
- Safety switch to prevent undesired start-up
- Self-locking mechanism in working position

Type	d-d [mm]	Performance	Code	kg
TM 160 ECO	40 - 160	230V/630W	<b>790 150 014</b>	10.000
TM 250 ECO	75 - 250	230V/1200W	<b>790 151 014</b>	16.000
TM 315 ECO	90 - 315	230V/1200W	<b>790 152 014</b>	19.000

PF 3 10 571 500

# Machines & Equipment for Butt Fusion



## TM 160 - 315 Heating element

- High performance, electronic controlled heating element
- Uniform temperature distribution over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator placed into the handle
- Easy placement in the correct working position with automatic heater release mechanism

d-d [mm]	Performance	Code	kg
40 - 160	230V/900W	<b>790 114 004</b>	5.500
75 - 250	230V/1700W	<b>790 115 004</b>	9.000
90 - 315	230V/2300W	<b>790 112 083</b>	11.700

PF 3 10 571 500



## TM 160 - 315 Case

- For safe storage of planer and heating element

d-d [mm]	Code	kg
40 - 160	<b>790 114 006</b>	7.500
75 - 250	<b>790 115 005</b>	14.000
90 - 315	<b>790 325 006</b>	18.500



## TM 160 - 315 ECO Hydraulic unit

- Clearly visible, vibration-free pressure gauge with precision scaling
- Compact construction with protection frame
- Fine adjustment of pressure
- High pressure constance during cooling phase
- Fix attached hydraulic hose

Type	Performance	Code	kg
TM 160 ECO	230V/370W	<b>790 150 013</b>	21.000
TM 250 - 315 ECO	230V/370W	<b>790 152 009</b>	21.000

PF 3 10 571 500



## Temperature controller

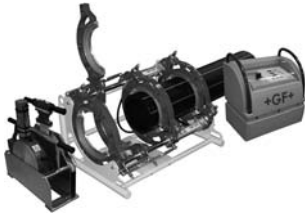
- Electronic temperature control
- Accurate adjustment (set point) of heating element temperature
- Digital display of current and set-point temperature

Type	Performance	Code	kg
TM 160- 315 ECO	230V/3000W	<b>790 152 006</b>	2.000

PF 3 10 572 500

# Machines & Equipment for Butt Fusion

## TM 160 - 315 TOP Butt fusion machine



### TM 160- 315 TOP Machine complete

- High quality, flexible and user-friendly heating element butt fusion machine for fusion jointing PE, PP, PB and PVDF pipes and fittings on building sites and in trenches
- Consisting of: innovative TOP hydraulic unit, flexible base machine, powerful planer, high performance heating element, storage case for the planer and heater
- Including transport packaging (wooden crate), without accessories and without reduction inserts

Type	d-d [mm]	Performance	Code	kg	
TM 160 TOP	40 - 160	230V/1900W	<b>790 150 011</b>	131.000	
TM 250 TOP	75 - 250	230V/3270W	<b>790 151 011</b>	180.000	
TM 315 TOP	90 - 315	400V/3870W	<b>790 152 011</b>	214.000	

PF 3 10 597 011



### TM 160 - 315 TOP Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Reliable torque transmission via robust worm-gear device
- Optimised cutting geometry for even and chatter-free planing
- Ergonomic, weight balanced handling
- Safety microswitch to prevent undesired start-up
- Self-locking mechanism in working position

Type	Performance	Code	kg	
TM 160 TOP	230V/630W	<b>790 150 000</b>	10.000	
TM 250 TOP	230V/1200W	<b>790 151 000</b>	16.000	
TM 315 TOP	230V/1200W	<b>790 152 000</b>	19.000	

PF 3 10 571 500



### TM 160 - 315 TOP Hydraulic unit

- Interface for welding recorder WR 100 already installed
- Shock absorbing plastic housing in attractive design
- Intuitive control panel provided with digital indication of hydraulic pressure, electronic heating element temperature controller, 2-channel welding timer
- Operation of machine carriage executed through push-buttons
- Pressure release button for safe changeover from equalization to heat soak phase
- Integrated power outlets for planer, heating element
- Internal aluminium frame providing high rigidity and resistance
- Precise pressure setting and fine adjusting
- Additional power socket (230V-AC)

Type	Performance	Code	kg	
TM 160 - 250 TOP	230V/370W	<b>790 151 004</b>	30.000	
TM 315 TOP	400V/370W	<b>790 152 004</b>	30.000	

PF 3 10 571 500



### Hydraulic hose package

- Flexible hydraulic hoses, with drip-proof, quick action coupling

Type	Code	kg	
TM 160 - 315 TOP	<b>790 152 003</b>	4.000	

# Machines & Equipment for Butt Fusion

## TM 160 - 315 WR



### TM 160 - 315 WR Machine complete

- Welding Recorder WR 100 configured to the machine and calibrated to the TOP hydraulic unit
- High quality, flexible and user-friendly heating element butt fusion machine for fusion jointing PE, PP, PB and PVDF pipes and fittings on building sites and in trenches
- Consisting of: innovative TOP hydraulic unit, flexible base machine, powerful planer, high performance heating element, storage case for the planer and heater
- Including transport packaging (wooden crate), without accessories and without reduction inserts

Type	Performance	Code	kg	
TM 160 WR	230V/1910W	<b>790 150 015</b>	136.000	
TM 250 WR	230V/3280W	<b>790 151 015</b>	185.000	
TM 315 WR	400V/3880W	<b>790 152 015</b>	219.000	

PF 3 10 597 011



### WR 100 welding recorder

The WR 100 supports you to ensure the quality of the jointing done according to the country specific standards. The concept of the fusion data recording device enables configuration and retrofitting of hydraulically operated butt-fusion machines for field applications, appropriate listing see next page.

The whole fusion sequence is recorded and can be retraced later. The user is guided through all the fusion steps. The selection of the fusion data like the used material, diameter and wall thickness (SDR) is supported by a menu. The highly accurate recording device WR100 controls the fusion process according to the valid national guideline (e.g. DVS, WIS or UNI). Hard plastic PE case IP65 locates a printer on board.

#### Performance:

- Easy configuration by operator to the different GF/KL machines
- Internal memory fusion protocol with a capacity up to 100 records
- Easy user guidance
- Battery support for data recording (8 hours), no data loss during power interruption
- Configuration: User identity, Job site and order no.
- Different menu languages
- Country specific fusion parameter
- Interchangeable with SUVI® 50 data logger

#### Data Processing:

- Individual print out directly from serial on board printer
- Collective and individual print out directly from WR 100 to external printer (only HP) (parallel interface 790 119 402)
- Collective and individual protocol download to PC using the hyper terminal communicator of windows (serial interface 790 119 403)

Power connector: Schuko, 16A

Working temperature range: -10°C up to +50°C

Including connecting cables to butt fusion machine

Performance	Dimensions [mm]	Code	kg	
230 V	350x300x150 mm	<b>790 119 401</b>	6.000	

PF 3 25 132 100



# Machines & Equipment for Butt Fusion

## TM Accessories



### TM 160 Reduction clamping inserts, wide

- d 40 - 140 mm
- Each code number defines 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]	Code	kg	
40	<b>790 114 023</b>	0.300	
50	<b>790 114 009</b>	0.320	
63	<b>790 114 010</b>	0.300	
75	<b>790 114 011</b>	0.300	
90	<b>790 114 012</b>	0.280	
110	<b>790 114 013</b>	0.245	
125	<b>790 114 014</b>	0.265	
140	<b>790 114 015</b>	0.180	

PF 3 25 117 316



### TM 160 Reduction clamping inserts, narrow

- d 40 - 140 mm
- Each code number defines 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]	Code	kg	
40	<b>790 114 027</b>	0.300	
50	<b>790 114 016</b>	0.310	
63	<b>790 114 017</b>	0.310	
75	<b>790 114 018</b>	0.280	
90	<b>790 114 019</b>	0.255	
110	<b>790 114 020</b>	0.225	
125	<b>790 114 021</b>	0.200	
140	<b>790 114 022</b>	0.140	

PF 3 25 117 316

### TM 160 Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
40 - 140	<b>790 114 156</b>	17.000	
75 - 225	<b>790 115 156</b>	48.000	
90 - 280	<b>790 112 156</b>	78.000	

PF 3 25 117 316



### TM 160 Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

Code	kg	
<b>790 319 007</b>	5.400	
<b>790 115 044</b>	7.900	
<b>790 112 073</b>	10.100	

PF 3 10 571 500

# Machines & Equipment for Butt Fusion



## TM 250 Reduction clamping inserts, wide

- d 75 - 225 mm
- Each code number defines 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]	Code	kg	
75	<b>790 115 028</b>	0.815	
90	<b>790 115 008</b>	0.835	
110	<b>790 115 009</b>	0.825	
125	<b>790 115 010</b>	0.785	
140	<b>790 115 011</b>	0.735	
160	<b>790 115 012</b>	0.695	
180	<b>790 115 013</b>	0.660	
200	<b>790 115 014</b>	0.715	
225	<b>790 115 015</b>	0.465	

PF 3 25 117 305



## TM 250 Reduction clamping inserts, narrow

- d 75 - 225 mm
- Each code number defines 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]	Code	kg	
75	<b>790 115 029</b>	0.740	
90	<b>790 115 016</b>	0.715	
110	<b>790 115 017</b>	0.690	
125	<b>790 115 018</b>	0.680	
140	<b>790 115 019</b>	0.625	
160	<b>790 115 020</b>	0.595	
180	<b>790 115 021</b>	0.520	
200	<b>790 115 022</b>	0.455	
225	<b>790 115 023</b>	0.390	

PF 3 25 117 305

## TM 250 Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
75 - 225	<b>790 115 156</b>	48.000	

PF 3 25 117 305



## TM 250 Special clamping bracket tapered

- For clamping of fittings d 250 mm
- For left-sided mounting (stationary side) with shell adapter
- Version for right-sided mounting (slide)
- L = left
- R = right

d [mm]	Type	Code	kg	
250	L	<b>790 115 025</b>	1.825	
250	R	<b>790 115 026</b>	1.560	

PF 3 25 117 305

# Machines & Equipment for Butt Fusion



PF 3 25 117 305

## TM 250 Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d [mm]	Code	kg	
250	<b>790 115 045</b>	9.600	



## TM 315 Reduction clamping inserts, wide

- d 90 - 280 mm
- Each code number defines 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]	Code	kg	
90	<b>790 112 088</b>	1.000	
110	<b>790 112 089</b>	1.050	
125	<b>790 112 090</b>	0.988	
140	<b>790 112 091</b>	0.975	
160	<b>790 112 092</b>	1.062	
180	<b>790 112 093</b>	0.988	
200	<b>790 112 094</b>	0.937	
225	<b>790 112 095</b>	0.975	
250	<b>790 112 096</b>	0.937	
280	<b>790 112 097</b>	0.800	

PF 3 25 117 307



## TM 350 Reduction clamping inserts, narrow

- d 90 - 280 mm
- Each code number defines 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]	Code	kg	
90	<b>790 112 098</b>	0.995	
110	<b>790 112 099</b>	1.285	
125	<b>790 112 100</b>	1.245	
140	<b>790 112 101</b>	1.205	
160	<b>790 112 102</b>	1.135	
180	<b>790 112 103</b>	1.010	
200	<b>790 112 104</b>	0.950	
225	<b>790 112 105</b>	0.865	
250	<b>790 112 106</b>	0.770	
280	<b>790 112 107</b>	0.560	

PF 3 25 117 307

## TM 350 Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
90 - 280	<b>790 112 156</b>	78.000	

PF 3 25 117 307

# Machines & Equipment for Butt Fusion



## TM 350 Special clamping bracket tapered

- For clamping of fittings 315 mm
- For left-sided mounting (stationary side) with shell adapter
- Version for right-sided mounting (slide)
- L = left
- R = right

d [mm]	Type	Code	kg	
315	L	790 112 111	2.780	
315	R	790 112 112	2.335	

PF 3 25 117 307



## TM 350 Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d-d [mm]	Code	kg	
90 - 315	790 112 038	15.400	

PF 3 25 117 307

# Machines & Equipment for Butt Fusion

## GF 160 CNC Butt fusion machine



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - Controlling of the cooling phase according to the ambient temperature (CTC)
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatic control of planing with even-out function
  - Automatically controlled temperature of the heating element
  - User-friendly operation (keyboard)
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Configuration of specific fusion parameters according to national guidelines
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
40 - 160	230 V/1850 W		<b>790 114 069</b>	119.000	
40 - 160	115 V/1850 W		<b>790 114 068</b>	119.000	
40 - 160	230 V/1850 W	Russian	<b>790 114 067</b>	119.000	
40 - 160	230 V/1850 W	Chinese	<b>790 114 178</b>	119.000	

PF 3 25 133 610

# Machines & Equipment for Butt Fusion

## GF 160 CNC with automatic heating element



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The fully automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - Controlling of the cooling phase according to the ambient temperature (CTC)
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatically controlled fusion cycle with built-in linear measurement unit (safety)
  - Automatically controlled temperature of the heating element
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - 6 languages, variable
  - Configuration of specific fusion parameters according to national guidelines
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features same as for manually operated machines
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features as for manual versions
  - In the **fully automatic** version, the heating element is inserted manually by the operator and after the heat soak phase automatically removed from the working position.
- Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
40 - 160	230 V/1850 W		<b>790 114 191</b>	122.000	
40 - 160	230 V/1850 W	Russian	<b>790 114 179</b>	122.000	
40 - 160	230 V/1850 W	Chinese	<b>790 114 184</b>	129.000	

PF 3 25 133 610

# Machines & Equipment for Butt Fusion

## GF 160 Accessories



### Reduction clamping inserts, wide

- d 40 - 140 mm
- Each code number defines 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]	Code	kg	
40	<b>790 114 023</b>	0.300	
50	<b>790 114 009</b>	0.320	
63	<b>790 114 010</b>	0.300	
75	<b>790 114 011</b>	0.300	
90	<b>790 114 012</b>	0.280	
110	<b>790 114 013</b>	0.245	
125	<b>790 114 014</b>	0.265	
140	<b>790 114 015</b>	0.180	

PF 3 25 117 316



### Reduction clamping inserts, narrow

- d 40 - 140 mm
- Each code number defines 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]	Code	kg	
40	<b>790 114 027</b>	0.300	
50	<b>790 114 016</b>	0.310	
63	<b>790 114 017</b>	0.310	
75	<b>790 114 018</b>	0.280	
90	<b>790 114 019</b>	0.255	
110	<b>790 114 020</b>	0.225	
125	<b>790 114 021</b>	0.200	
140	<b>790 114 022</b>	0.140	

PF 3 25 117 316

### Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
40 - 140	<b>790 114 156</b>	17.000	

PF 3 25 117 316



### Special clamping bracket tapered

- For clamping of fittings d 160 mm
- For left-sided mounting (stationary side) with shell adapter
- Version for right-sided mounting (slide)
- L = left
- R = right

d [mm]	Type	Code	kg	
160	L	<b>790 114 025</b>	0.820	
160	R	<b>790 114 026</b>	0.680	

PF 3 25 117 316

# Machines & Equipment for Butt Fusion



## 1 Set planer blades

- (1 set = 2 blades)

d-d [mm]	Code	kg	
40 - 160	<b>790 113 056</b>	0.080	

PF 3 25 117 311



# Machines & Equipment for Butt Fusion

## GF 250 CNC Butt fusion machine



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - Controlling of the cooling phase according to the ambient temperature (CTC)
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatic control of planing with even-out function
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
75 - 250	230 V/2490 W		<b>790 115 069</b>	175.000	
75 - 250	115 V/2490 W		<b>790 115 068</b>	175.000	
75 - 250	230 V/2490 W	Russian	<b>790 115 067</b>	175.000	
75 - 250	230 V/2490 W	Chinese	<b>790 115 178</b>	175.000	

PF 3 25 125 610

# Machines & Equipment for Butt Fusion

## GF 250 CNC Butt fusion machine with automatic heating element



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - Controlling of the cooling phase according to the ambient temperature (CTC)
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatically controlled fusion cycle with built-in linear measurement unit (safety)
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - User-friendly operation (keyboard)
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Base machine**
  - Built-in linear measurement unit for accurate slide positioning (safety, control of the fusion pressure build-up, control of the automatic fusion steps)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - In the **fully automatic** version, the heating element is inserted manually by the operator and after the heat soak phase automatically removed from the working position.
- Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
75 - 250	230 V/2490 W		<b>790 115 191</b>	175.000	
75 - 250	115 V/2490 W		<b>790 115 194</b>	175.000	
75 - 250	230 V/2490 W	Russian	<b>790 115 179</b>	175.000	
75 - 250	230 V/2490 W	Chinese	<b>790 115 184</b>	175.000	

PF 3 25 125 610

# Machines & Equipment for Butt Fusion

## GF 250 Accessoires



### Reduction clamping inserts, wide

- d 75 - 225 mm
- Each code number defines 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]	Code	kg	
75	<b>790 115 028</b>	0.815	
90	<b>790 115 008</b>	0.835	
110	<b>790 115 009</b>	0.825	
125	<b>790 115 010</b>	0.785	
140	<b>790 115 011</b>	0.735	
160	<b>790 115 012</b>	0.695	
180	<b>790 115 013</b>	0.660	
200	<b>790 115 014</b>	0.715	
225	<b>790 115 015</b>	0.465	

PF 3 25 117 305



### Reduction clamping inserts, narrow

- d 75 - 225 mm
- Each code number defines 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]	Code	kg	
75	<b>790 115 029</b>	0.740	
90	<b>790 115 016</b>	0.715	
110	<b>790 115 017</b>	0.690	
125	<b>790 115 018</b>	0.680	
140	<b>790 115 019</b>	0.625	
160	<b>790 115 020</b>	0.595	
180	<b>790 115 021</b>	0.520	
200	<b>790 115 022</b>	0.455	
225	<b>790 115 023</b>	0.390	

PF 3 25 117 305

### Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
75 - 225	<b>790 115 156</b>	48.000	

PF 3 25 117 305

# Machines & Equipment for Butt Fusion



## Special clamping bracket tapered

- For clamping of fittings d 250 mm
- For left-sided mounting (stationary side) with shell adapter
- Version for right-sided mounting (slide)
- L = left
- R = right

d [mm]	Type	Code	kg
250	L	<b>790 115 025</b>	1.825
250	R	<b>790 115 026</b>	1.560

PF 3 25 117 305



## Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d [mm]	Code	kg
250	<b>790 115 045</b>	9.600

PF 3 25 117 305



## 1 Set planer blades

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

d-d [mm]	Code	kg
75 - 250	<b>790 115 024</b>	0.060

PF 3 25 117 305

# Machines & Equipment for Butt Fusion

## GF 315 CNC Butt fusion machine



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - Controlling of the cooling phase according to the ambient temperature (CTC)
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatic control of planing with even-out function
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
90 - 315	230 V/4170 W		<b>790 112 069</b>	213.000	
90 - 315	115 V/4170 W		<b>790 112 068</b>	213.000	
90 - 315	230 V/4170 W	Russian	<b>790 112 067</b>	213.000	
90 - 315	230 V/4170 W	Chinese	<b>790 112 178</b>	213.000	

PF 3 25 127 610

# Machines & Equipment for Butt Fusion

## GF 315 CNC Butt fusion machine with automatic heating element



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - Controlling of the cooling phase according to the ambient temperature (CTC)
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatically controlled fusion cycle with built-in linear measurement unit (safety)
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - User-friendly operation (keyboard)
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
  - Technical features as for manual versions
  - Barcode reader for pipe code (logbook recording. Optional)
- **Base machine**
  - Built-in linear measurement unit for accurate slide positioning (safety, control of the fusion pressure build-up, control of the automatic fusion steps)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - In the **fully automatic** version, the heating element is inserted manually by the operator and after the heat soak phase automatically removed from the working position.
- Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
90 - 315	230 V/4170 W		<b>790 112 191</b>	213.000	
90 - 315	115 V/4170 W		<b>790 112 194</b>	213.000	
90 - 315	230 V/4170 W	Russian	<b>790 112 179</b>	213.000	
90 - 315	230 V/4170 W	Chinese	<b>790 112 184</b>	213.000	

PF 3 25 127 610

# Machines & Equipment for Butt Fusion

## GF 315 Accessories



### Reduction clamping inserts, wide

- d 90 - 280 mm
- Each code number defines 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]	Code	kg	
90	<b>790 112 088</b>	1.000	
110	<b>790 112 089</b>	1.050	
125	<b>790 112 090</b>	0.988	
140	<b>790 112 091</b>	0.975	
160	<b>790 112 092</b>	1.062	
180	<b>790 112 093</b>	0.988	
200	<b>790 112 094</b>	0.937	
225	<b>790 112 095</b>	0.975	
250	<b>790 112 096</b>	0.937	
280	<b>790 112 097</b>	0.800	

PF 3 25 117 307



### Reduction clamping inserts, narrow

- d 90 - 280 mm
- Each code number defines 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]	Code	kg	
90	<b>790 112 098</b>	0.995	
110	<b>790 112 099</b>	1.285	
125	<b>790 112 100</b>	1.245	
140	<b>790 112 101</b>	1.205	
160	<b>790 112 102</b>	1.135	
180	<b>790 112 103</b>	1.010	
200	<b>790 112 104</b>	0.950	
225	<b>790 112 105</b>	0.865	
250	<b>790 112 106</b>	0.770	
280	<b>790 112 107</b>	0.560	

PF 3 25 117 307

### Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
90 - 280	<b>790 112 156</b>	78.000	

PF 3 25 117 307

# Machines & Equipment for Butt Fusion



## Special clamping bracket tapered

- For clamping of fittings 315 mm
- For left-sided mounting (stationary side) with shell adapter
- Version for right-sided mounting (slide)
- L = left
- R = right

d [mm]	Type	Code	kg
315	L	790 112 111	2.780
315	R	790 112 112	2.335

PF 3 25 117 307



## Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d-d [mm]	Code	kg
90 - 315	790 112 038	15.400

PF 3 25 117 307



## 1 Set planer blades

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

d-d [mm]	Code	kg
90 - 315	790 112 110	0.115

PF 3 25 117 307



# Machines & Equipment for Butt Fusion

## GF 400 Butt fusion machine



### GF 400

- High quality, long-lasting heating element butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. For complete pressure range up to PN 16.
- Machine complete with remote control
- The GF butt fusion machines could be assembled with the welding recorder WR 100 or configured as a CNC machine with the SUVI® 400.
- Including transport packaging, without accessories and without reduction inserts

PF 3 25 870 100

d-d [mm]	Performance	Code	kg
125 - 400	230 V/5700 W	<b>790 127 001</b>	210.000



### Machine GF 400 complete, 400 V

- The GF400 butt fusion machine could be assembled with the welding recorder WR 100 or configured as a CNC machine with the SUVI® 400. The different versions are listed on the following pages
- High quality, long-lasting heating element butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. For complete pressure range up to PN 16.
- Assembled with control box to supply all components with power, only 1 power connection required !
- Including transport packaging, without accessories and without reduction inserts

PF 3 25 870 100

d-d [mm]	Performance	Code	kg
125 - 400	400 V/5700 W	<b>790 127 010</b>	210.000



### Basic machine

- High precision design, distortion-free and sturdy machine bed
- Good accessibility thanks to 35° inclination
- Hardened and hard chrome-plated guide shafts for extreme loads
- Smooth-running cylinder guides with mechanical seals
- Hydraulic connections protected and integrated in base clamping unit for more flexibility when clamping piping components
- Heater release mechanism to optimize the changeover phase
- For the purpose of welding bends and T-pieces the 2. clamping element is fast and without losing stability on the guiding shafts relocatable
- Double clamping device for secure hold and exact radial and axial alignment of components
- Machine specific tool set

PF 3 25 117 332

d-d [mm]	Code	kg
125 - 400	<b>790 127 002</b>	95.000



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Right-angled facing due to wide bedding, with side stop for single-sided facing
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

PF 3 25 117 332

d-d [mm]	Performance	Code	kg
125 - 400	230 V/1100 W	<b>790 127 003</b>	39.000

# Machines & Equipment for Butt Fusion



PF 3 25 117 332

## Heating element

- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Easy placement in the correct working position with heater release mechanism

d-d [mm]	Performance	Code	kg
125 - 400	230 V/3500 W	<b>790 127 004</b>	15.000



PF 3 25 117 332

## Hydraulic unit

- Compact and robust with two handles for carrying
- Precise hydraulic control for consistent fusion pressure
- Variable, fine adjustment of pressure
- Clearly visible, vibration-free pressure gauge with precision scaling
- Memory for automatic pressure equalization during the cooling phase
- Easy level control and refilling of hydraulic oil

Performance	Code	kg
400 V/1500 W	<b>790 127 006</b>	40.000

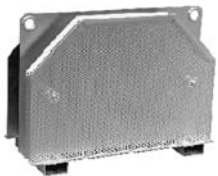


PF 3 25 117 332

## Control box

- Contains all safety and functional components such as static relay, FI protective switch, temperature control
- Compact unit in steel box with enamel-coated protective frame

Performance	Code	kg
400 V	<b>790 127 008</b>	15.500



PF 3 25 117 332

## Case

- For safe storage of planer and automatic heating element

Code	kg
<b>790 127 005</b>	29.000

# Machines & Equipment for Butt Fusion

## GF 400 CNC Butt fusion machine



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatic control of planing with even-out function
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
125 - 400	230 V/5510 W		<b>790 127 069</b>	200.000	
125 - 400	230 V/5510 W	Russian	<b>790 127 070</b>	200.000	

PF 3 25 870 610

# Machines & Equipment for Butt Fusion

## GF 400 Accessories

### Hoist unit



PF 3 25 117 332

- For carrying the weight compensator mounted at the backside of the basic machine
- Weight compensator included

Code	kg	
790 127 026	50.000	



### Reduction clamping inserts, wide

- d 125-355 mm
- Each code number defines 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 125/d 140/d 160/d 180/d 200/d 225/d 250/d 280, the reduction clamping insert d 315 mm, code 790 127 101, must also be used

d [mm]	Code	kg	
125	790 112 090	0.988	
140	790 112 091	0.975	
160	790 112 092	1.062	
180	790 112 093	0.988	
200	790 112 094	0.937	
225	790 112 095	0.975	
250	790 112 096	0.937	
280	790 112 097	0.800	
315	790 127 101	1.810	
355	790 127 102	1.650	

PF 3 25 117 332



### Reduction clamping inserts, narrow

- d 125-355 mm
- Each code number defines 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 125/d 140/d 160/d 180/d 200/d 225/d 250/d 280, the reduction clamping insert d 315 mm, code 790 127 101, must also be used

d [mm]	Code	kg	
125	790 112 100	1.245	
140	790 112 101	1.205	
160	790 112 102	1.135	
180	790 112 103	1.010	
200	790 112 104	0.950	
225	790 112 105	0.865	
250	790 112 106	0.770	
280	790 112 107	0.560	
315	790 127 111	1.180	
355	790 127 112	0.910	

PF 3 25 117 332

# Machines & Equipment for Butt Fusion

## Reduction clamping inserts-set

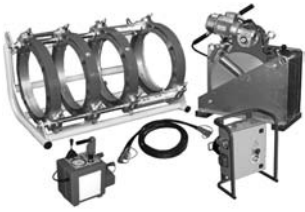
- 4 wide and 4 narrow clamping inserts of each dimension
- 8 wide clamping inserts d 315 mm

d-d [mm]	Code	kg	
125 - 355	<b>790 127 156</b>	30.000	

PF 3 25 117 332

# Machines & Equipment for Butt Fusion

## KL 500 TOP1 Butt fusion machine



### Machine complete

- Compact and robust heating element-butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. For complete pressure range up to PN 16.
- Control box containing electronic temperature control and power distribution for heating element and planer
- The butt fusion machine could be assembled with the welding recorder WR 100.
- Machine provided with Hydromat hydraulic unit
- Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Code	kg	
200 - 500	400 V/6250 W	<b>790 340 000</b>	475.000	

PF 3 10 574 100



### Basic machine

- Double clamping device for secure hold and exact radial and axial alignment of components
- Good accessibility thanks to 45° inclination
- drip-proof quick action coupling for the connection of the hydraulic hoses

d-d [mm]	Code	kg		
200 - 500	<b>790 340 001</b>	159.000		

PF 3 10 574 500



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Load transfer via maintenance-free, robust chain
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg	
200 - 500	400 V/750 W	<b>790 340 002</b>	55.000	

PF 3 10 574 500



### Heating element

- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Easy placement in the correct working position with heater release mechanism

d-d [mm]	Performance	Code	kg	
200 - 500	400 V/4000 W	<b>790 116 004</b>	26.000	

PF 3 25 117 306

# Machines & Equipment for Butt Fusion

## Control box



PF 3 25 117 306

- 400 V
- Contains all safety and functional components such as static relay, FI protective switch, temperature control
- Compact unit in steel box with enamel-coated protective frame

Code	kg	
790 116 038	15.500	

# Machines & Equipment for Butt Fusion

## KL 500 TOP2 Butt fusion machine



### Machine complete

- Machine provided with Hydromat hydraulic unit and remote control
- Compact and robust heating element-buttt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. For complete pressure range up to PN 16.
- The butt fusion machine could be assembled with the welding recorder WR 100.
- Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Code	kg
200 - 500	400 V/6250 W	<b>790 140 010</b>	312.000

PF 3 10 574 100



### Basic machine

- Double clamping device for secure hold and exact radial and axial alignment of components
- Good accessibility thanks to 45° inclination
- drip-proof quick action coupling for the connection of the hydraulic hoses

d-d [mm]	Code	kg
200 - 500	<b>790 340 001</b>	159.000

PF 3 10 574 500



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Load transfer via maintenance-free, robust chain
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg
200 - 500	400 V/750 W	<b>790 340 002</b>	55.000

PF 3 10 574 500



### Heating element

- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Easy placement in the correct working position with heater release mechanism

d-d [mm]	Performance	Code	kg
200 - 500	400 V/4000 W	<b>790 116 004</b>	26.000

PF 3 25 117 306



### Remote control

- Electronic temperature control
- Accurate adjustment of heating element temperature

Code	kg
<b>790 340 003</b>	5.000

PF 3 10 574 500



# Machines & Equipment for Butt Fusion



## Case

- For safe storage of planer and heating element

Code	kg	
790 116 006	41.000	



## Hydromat

- Clearly visible, vibration-free pressure gauge with precision scaling
- Fine adjustment of pressure
- High pressure constance during cooling phase

Performance	Code	kg	
230 V/1500 W	790 340 005	29.000	

PF 3 10 574 500

# Machines & Equipment for Butt Fusion

## KL 500 Accessories



### Reduction clamping inserts, wide

- Each code number defines 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 200/d 225, the reduction clamping insert 790 116 015 must also be used

d [mm]	Code	kg
200	<b>790 116 008</b>	4.160
225	<b>790 116 009</b>	3.300
250	<b>790 116 010</b>	3.300
280	<b>790 116 011</b>	3.500
315	<b>790 116 012</b>	3.600
355	<b>790 116 013</b>	3.700
400	<b>790 116 014</b>	3.400
450	<b>790 116 015</b>	3.500

PF 3 25 117 306



### Reduction clamping inserts, narrow

- Each code number defines 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 200/d 225, the reduction clamping insert 790 116 015 must also be used

d [mm]	Code	kg
200	<b>790 116 016</b>	3.680
225	<b>790 116 017</b>	4.100
250	<b>790 116 018</b>	4.100
280	<b>790 116 019</b>	3.800
315	<b>790 116 020</b>	3.500
355	<b>790 116 021</b>	3.200
400	<b>790 116 022</b>	2.500
450	<b>790 116 023</b>	2.500

PF 3 25 117 306

### Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg
250 - 450	<b>790 116 156</b>	162.000

PF 3 25 117 306

### Hoist unit

- Hoist unit (consists of frame and swivel arm)

Code	kg
<b>790 140 026</b>	22.000

PF 3 25 117 334

# Machines & Equipment for Butt Fusion

## Weight compensator to hoist unit

- For heating element, planer weight is partly compensated
- For hoist unit 790 116 026



PF 3 25 117 306

Code	kg	
790 116 027	12.500	



PF 3 25 117 306

## Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d [mm]	Code	kg	
500	790 116 045	19.000	



PF 3 25 117 306

## 1 Set planer blades

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

Code	kg	
790 116 041	0.700	

# Machines & Equipment for Butt Fusion

## GF 500 Butt fusion machine

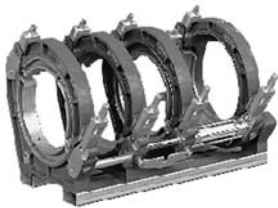


### Machine GF 500 complete

- High quality, long-lasting heating element butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. Size range d 200-500 mm, for complete pressure range up to PN 16.
- The GF500 butt fusion machine could be assembled with the welding recorder WR 100 or configured as a CNC machine with the SUVI® 400. The different versions are listed on the following pages
- Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Code	kg
200 - 500	400 V/6250 W	<b>790 116 040</b>	498.000

PF 3 25 126 200



### Basic machine

- High precision design, distortion-free and sturdy machine bed
- Good accessibility thanks to 35° inclination
- Hardened and hard chrome-plated guide shafts for extreme loads
- Smooth-running cylinder guides with mechanical seals
- Hydraulic connections protected and integrated in base clamping unit for more flexibility when clamping piping components
- Heater release mechanism to optimize the changeover phase
- For the purpose of welding bends and T-pieces the 2. clamping element is fast and without losing stability on the guiding shafts relocatable
- Double clamping device for secure hold and exact radial and axial alignment of components
- Machine specific tool set

d-d [mm]	Code	kg
200 - 500	<b>790 116 002</b>	174.000

PF 3 25 126 200



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Right-angled facing due to wide bedding, with side stop for single-sided facing
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg
200 - 500	400 V/750 W	<b>790 116 003</b>	53.600

PF 3 25 117 306



### Heating element

- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Easy placement in the correct working position with heater release mechanism

d-d [mm]	Performance	Code	kg
200 - 500	400 V/4000 W	<b>790 116 004</b>	26.000

PF 3 25 117 306

# Machines & Equipment for Butt Fusion



## Hydraulic unit

- Compact and robust with two handles for carrying
- Precise hydraulic control for consistent fusion pressure
- Variable, fine adjustment of pressure
- Clearly visible, vibration-free pressure gauge with precision scaling
- Memory for automatic pressure equalization during the cooling phase
- Easy level control and refilling of hydraulic oil

PF 3 25 117 306

Performance	Code	kg
400 V/1500 W	<b>790 116 039</b>	38.000



PF 3 25 117 306

## Control box

- 400 V
- Contains all safety and functional components such as static relay, FI protective switch, temperature control
- Compact unit in steel box with enamel-coated protective frame

Code	kg
<b>790 116 038</b>	15.500

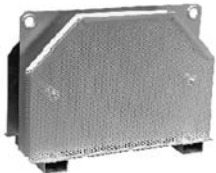


PF 3 25 117 307

## Hydraulic hose package

- Flexible hydraulic hoses, with drip-proof, quick action coupling

Code	kg
<b>790 112 085</b>	4.250



PF 3 25 117 306

## Case

- For safe storage of planer and automatic heating element

Code	kg
<b>790 116 006</b>	41.000

# Machines & Equipment for Butt Fusion

## GF 500 CNC Butt fusion machine



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatic control of planing with even-out function
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
200 - 500	400 V/6250 W		<b>790 116 069</b>	476.000	
200 - 500	400 V/6250 W	Russian	<b>790 116 067</b>	476.000	
200 - 500	400 V/6250 W	Chinese	<b>790 116 178</b>	476.000	

PF 3 25 126 610

# Machines & Equipment for Butt Fusion

## GF 500 Accessories



### Reduction clamping inserts, wide

- Each code number defines 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 200/d 225, the reduction clamping insert 790 116 015 must also be used

d [mm]	Code	kg	
200	<b>790 116 008</b>	4.160	
225	<b>790 116 009</b>	3.300	
250	<b>790 116 010</b>	3.300	
280	<b>790 116 011</b>	3.500	
315	<b>790 116 012</b>	3.600	
355	<b>790 116 013</b>	3.700	
400	<b>790 116 014</b>	3.400	
450	<b>790 116 015</b>	3.500	

PF 3 25 117 306



### Reduction clamping inserts, narrow

- Each code number defines 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 200/d 225, the reduction clamping insert 790 116 015 must also be used

d [mm]	Code	kg	
200	<b>790 116 016</b>	3.680	
225	<b>790 116 017</b>	4.100	
250	<b>790 116 018</b>	4.100	
280	<b>790 116 019</b>	3.800	
315	<b>790 116 020</b>	3.500	
355	<b>790 116 021</b>	3.200	
400	<b>790 116 022</b>	2.500	
450	<b>790 116 023</b>	2.500	

PF 3 25 117 306

### Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d [mm]	Code	kg	
250 - 450	<b>790 116 156</b>	162.000	

PF 3 25 117 306

### Hoist unit

- Hoist unit (consists of frame and swivel arm)

Code	kg	
<b>790 116 026</b>	22.000	

PF 3 25 117 334

# Machines & Equipment for Butt Fusion

## Weight compensator to hoist unit

- For heating element, planer weight is partly compensated
- For hoist unit 790 116 026



PF 3 25 117 306

Code	kg	
790 116 027	12.500	



PF 3 25 117 306

## Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d [mm]	Code	kg	
500	790 116 045	19.000	



PF 3 25 117 306

## 1 Set planer blades

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

Code	kg	
790 116 041	0.700	



# Machines & Equipment for Butt Fusion

## KL 630 TOP1 Butt fusion machine



### Machine complete

- Control box containing electronic temperature control and power distribution for heating element and planer
- Compact and robust heating element-butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. For complete pressure range up to PN 16.
- The butt fusion machine could be assembled with the welding recorder WR 100.
- Machine provided with Hydromat hydraulic unit
- Including transport packaging, without accessories and without reduction inserts

PF 3 10 575 100

d-d [mm]	Performance	Code	kg
315 - 630	400 V/11000 W	<b>790 345 000</b>	627.000



### Basic machine

- Double clamping device for secure hold and exact radial and axial alignment of components
- Good accessibility thanks to 45° inclination
- drip-proof quick action coupling for the connection of the hydraulic hoses

PF 3 10 573 100

d-d [mm]	Code	kg
315 - 630	<b>790 117 002</b>	225.000



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Load transfer via maintenance-free, robust chain
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg
315 - 630	400 V/1500 W	<b>790 117 003</b>	98.000



### Heating element

- High performance, electronic controlled heating element
- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Additional thermometer for fast check of the fusion temperature

PF 3 10 573 500

d-d [mm]	Performance	Code	kg
315 - 630	400 V/8000 W	<b>790 117 004</b>	36.000

# Machines & Equipment for Butt Fusion

## Control box

- 400 V
- Contains all safety and functional components such as static relay, FI protective switch, temperature control
- Compact unit in steel box with enamel-coated protective frame



PF 3 25 117 319

Code	kg	
790 117 038	14.000	

# Machines & Equipment for Butt Fusion

## KL 630 TOP2 Butt fusion machine



### Machine complete

- Machine provided with Hydromat hydraulic unit and remote control
- Compact and robust heating element-buttt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. For complete pressure range up to PN 16.
- The butt fusion machine could be assembled with the welding recorder WR 100.
- Including transport packaging, without accessories and without reduction inserts

PF 3 10 575 100

d-d [mm]	Performance	Code	kg
315 - 630	400 V/11000 W	<b>790 345 012</b>	627.000



### Basic machine

- Double clamping device for secure hold and exact radial and axial alignment of components
- Good accessibility thanks to 45° inclination
- drip-proof quick action coupling for the connection of the hydraulic hoses

PF 3 10 573 100

d-d [mm]	Code	kg
315 - 630	<b>790 117 002</b>	225.000



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Load transfer via maintenance-free, robust chain
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg
315 - 630	400 V/1500 W	<b>790 117 003</b>	98.000



### Heating element

- High performance, electronic controlled heating element
- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Additional thermometer for fast check of the fusion temperature

PF 3 10 573 500

d-d [mm]	Performance	Code	kg
315 - 630	400 V/8000 W	<b>790 117 004</b>	36.000

# Machines & Equipment for Butt Fusion



## Remote control

- Electronic temperature control
- Accurate adjustment of heating element temperature

Code	kg	
790 340 003	5.000	



## Case

- For safe storage of planer and heating element

Code	kg	
790 117 006	55.000	

# Machines & Equipment for Butt Fusion

## KL 630 Accessories



### Reduction clamping inserts, wide

- Each code number defines 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, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

d [mm]	Code	kg	
315	<b>790 116 012</b>	3.600	
355	<b>790 116 013</b>	3.700	
400	<b>790 116 014</b>	3.400	
450	<b>790 116 015</b>	3.500	
500	<b>790 117 012</b>	4.600	
560	<b>790 117 013</b>	4.300	

PF 3 25 117 319



### Reduction clamping inserts, narrow

- Each code number defines 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, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

d [mm]	Code	kg	
315	<b>790 116 020</b>	3.500	
355	<b>790 116 021</b>	3.200	
400	<b>790 116 022</b>	2.500	
450	<b>790 116 023</b>	2.500	



### Hoist unit, complete

- Hoist unit (consists of frame and swivel arm)
- Arm length 2m, pivoting, back/forward, max. column height from floor 3.30m
- Electrical unit 400 V / 600 W
- Hoist capacity 250 kg
- 2 hoisting speeds (1,7 m/min. and 7.0 m/min.)

Code	kg	
<b>790 117 023</b>	196.000	

PF 3 25 117 319



### Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d [mm]	Code	kg	
560	<b>790 117 029</b>	27.000	

PF 3 25 117 319

# Machines & Equipment for Butt Fusion



## 1 Set planer blades

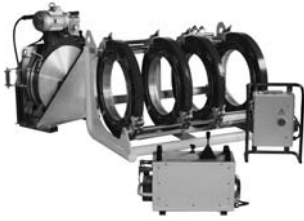
- Blade has 2 cutting edges (1 set = 2 blades)

PF 3 25 117 319

Code	kg	
790 117 041	0.470	

# Machines & Equipment for Butt Fusion

## GF 630 Butt fusion machine



### Machine GF 630 complete

- High quality, long-lasting heating element butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings. Size range d 315-630 mm, for complete pressure range up to PN 16.
- The GF630 butt fusion machine could be assembled with the welding recorder WR 100 or configured as a CNC machine with the SUVI® 400. The different versions are listed on the following pages.
- Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Code	kg
315 - 630	400 V/11000 W	<b>790 117 001</b>	589.000

PF 3 25 136 100



### Basic machine

- High precision design, distortion-free and sturdy machine bed
- Good accessibility thanks to 45° inclination
- Hardened and hard chrome-plated guide shafts for extreme loads
- Smooth-running cylinder guides with mechanical seals
- Hydraulic connections protected and integrated in base clamping unit for more flexibility when clamping piping components
- Heater release mechanism
- Double clamping device for secure hold and exact radial and axial alignment of components
- Machine specific tool set

d-d [mm]	Code	kg
315 - 630	<b>790 117 002</b>	225.000

PF 3 25 136 100



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Right-angled facing due to wide bedding, with side stop for single-sided facing
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg
315 - 630	400 V/1500 W	<b>790 117 003</b>	98.000

PF 3 25 117 319



### Heating element

- High performance heating element with electronic, continuously adjustable temperature control
- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Easy placement in the correct working position with heater release mechanism

d-d [mm]	Performance	Code	kg
315 - 630	400 V/8000 W	<b>790 117 004</b>	36.000

PF 3 25 117 319

# Machines & Equipment for Butt Fusion



## Hydraulic unit

- Compact and robust with two handles for carrying
- Precise hydraulic control for consistent fusion pressure
- Variable, fine adjustment of pressure
- Clearly visible, vibration-free pressure gauge with precision scaling
- Memory for automatic pressure equalization during the cooling phase
- Easy level control and refilling of hydraulic oil

Code	kg	
790 116 039	38.000	



## Control box

- 400 V
- Contains all safety and functional components such as static relay, FI protective switch, temperature control
- Compact unit in steel box with enamel-coated protective frame

Code	kg	
790 117 038	14.000	

PF 3 25 117 319



## Case

- For safe storage of planer and automatic heating element

Code	kg	
790 117 006	55.000	

PF 3 25 117 319



# Machines & Equipment for Butt Fusion

## GF 630 CNC Butt fusion machine



### Machine complete

- For fusion jointing of PP and PE pipes and fittings. The automatic CNC, hydraulically-operated butt fusion machines are designed for applications in gas and water distribution piping systems as well as for use in trenches, outdoors or in the workshop.
- The CNC control unit (SUVI® 400) controls and regulates the complete fusion process according to the approved national guidelines (e.g. DVS guidelines).
- All fusion parameters (set/actual comparison) are recorded on a memory card and can be called up and shown on the display. External fusion data processing is easy with the exchangeable memory card or with the build-in interface for the PC, printer or laptop. The integrated error analysis system recognizes deviations from the defined parameters and interrupts the fusion cycle while simultaneously recording the error source.
- **SUVI® 400 CNC - Control unit**
  - This unit consists of the hydraulic and the control unit with data recording
  - Automatic control of planing with even-out function
  - Automatically controlled temperature of the heating element
  - Automatically controlled facing process
  - Minimal weight of complete CNC control unit with two handles for carrying
  - Tamper-safe, easy data recording with exchangeable memory card (256 kB)
  - Clear overview, 2-line LCD with backlighting
  - Temperature sensor for accurate recording of ambient temperature
  - Serial interface (RS 232, 9-in) to connect PCs or laptops
  - Parallel standard printer interface (Centronics)
  - Safe two-handed operation according to TÜV for machine carriage movement
  - Barcode reader for data input (optional)
- **Base machine**
  - Technical features as for manual versions
  - Position measurement of the carriage (safety, process monitoring)
- **Planer, Heating element, Hydraulic hose package, Case, Tool set**
  - Technical features same as for manually operated machines
  - Including transport packaging, without accessories and without reduction inserts

d-d [mm]	Performance	Type	Code	kg	
315 - 630	400 V/11000 W		<b>790 117 069</b>	613.000	
315 - 630	400 V/11000 W	Russian	<b>790 117 067</b>	613.000	
315 - 630	400 V/11000 W	Chinese	<b>790 117 178</b>	613.000	

PF 3 25 136 610

# Machines & Equipment for Butt Fusion

## GF 630 Accessories



### Reduction clamping inserts, wide

- Each code number defines 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, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

d [mm]	Code	kg
315	<b>790 116 012</b>	3.600
355	<b>790 116 013</b>	3.700
400	<b>790 116 014</b>	3.400
450	<b>790 116 015</b>	3.500
500	<b>790 117 012</b>	4.600
560	<b>790 117 013</b>	4.300

PF 3 25 117 319



### Reduction clamping inserts, narrow

- Each code number defines 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, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

d [mm]	Code	kg
315	<b>790 116 020</b>	3.500
355	<b>790 116 021</b>	3.200
400	<b>790 116 022</b>	2.500
450	<b>790 116 023</b>	2.500



### Hoist unit, complete

- Hoist unit (consists of frame and swivel arm)
- Arm length 2m, pivoting, back/forward, max. column height from floor 3.30m
- Electrical unit 400 V / 600 W
- Hoist capacity 250 kg
- 2 hoisting speeds (1,7 m/min. and 7.0 m/min.)

Code	kg
<b>790 117 023</b>	196.000

PF 3 25 117 319



### Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d [mm]	Code	kg
560	<b>790 117 029</b>	27.000

PF 3 25 117 319



### 1 Set planer blades

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

Code	kg
<b>790 117 041</b>	0.470

PF 3 25 117 319

# Machines & Equipment for Butt Fusion

## GF 800 Butt fusion machine



### Machine GF 800 complete

- Robust heating element-butt fusion machine for fusion jointing PP and PE pipes and fittings. Size range d 500-800 mm.
- The GF 800 butt fusion machine could be assembled with the welding recorder WR 100
- Including transport packaging (carton pallet), without accessories and without reduction inserts

PF 3 25 136 200

d-d [mm]	Performance	Code	kg
500 - 800	400 V/15000 W	<b>790 123 001</b>	1546.000



### Basic machine

- Heater release mechanism
- High precision design, distortion-free and sturdy machine bed
- Good accessibility thanks to 45° inclination
- Hardened and hard chrome-plated guide shafts for extreme loads
- Smooth-running cylinder guides with mechanical seals
- Hydraulic connections protected and integrated in base clamping unit for more flexibility when clamping piping components
- Double clamping device for secure hold and exact radial and axial alignment of components
- Machine specific tool set

PF 3 25 136 200

d-d [mm]	Code	kg
500 - 800	<b>790 123 002</b>	690.000



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends 400 V/1500 W
- Load transfer via maintenance-free chain drive
- Right-angled facing due to wide bedding, with side stop for single-sided facing
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

PF 3 25 117 322

d-d [mm]	Performance	Code	kg
500 - 800	400 V/1500 W	<b>790 123 003</b>	175.000



### Heating element

- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life
- Easy placement in the correct working position with heater release mechanism

PF 3 25 117 322

d-d [mm]	Performance	Code	kg
500 - 800	400 V/12000 W	<b>790 123 004</b>	56.000

# Machines & Equipment for Butt Fusion



## Hydraulic unit

- Compact and robust with two handles for carrying
- Precise hydraulic control for consistent fusion pressure
- Variable, fine adjustment of pressure
- Clearly visible, vibration-free pressure gauge with precision scaling
- Memory for automatic pressure equalization during the cooling phase
- Easy level control and refilling of hydraulic oil

PF 3 25 117 319

Performance	Code	kg
400 V/1500 W	<b>790 123 005</b>	38.000



## Control box

- 400 V
- Contains all safety and functional components such as static relay, FI protective switch, temperature control
- Compact unit in steel box with enamel-coated protective frame

PF 3 25 117 319

Code	kg
<b>790 123 009</b>	29.000



## Hydraulic hose package

- Flexible hydraulic hoses, with drip-proof, quick action coupling

PF 3 25 117 322

Code	kg
<b>790 123 006</b>	6.000



## Case

- For safe storage of planer and automatic heating element

PF 3 25 117 322

Code	kg
<b>790 123 007</b>	230.000

# Machines & Equipment for Butt Fusion

## GF 800 Accessories



### Reduction clamping inserts, wide

- d 500 - 710 mm
- Each code number defines 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.

In order to mount the inserts d 500/d 560, the reduction clamping insert d 630, code 790 123 011 must also be used

d [mm]	Code	kg	
500	<b>790 117 012</b>	4.600	
560	<b>790 117 013</b>	4.300	
630	<b>790 123 011</b>	11.000	
710	<b>790 123 012</b>	9.500	

PF 3 25 117 322



### Electric Hoist unit

- Hoist capacity 500 kg
- Arm length 2m, pivoting, back/forward, max. column height from floor 4.65 m, 2 hoisting speeds (2.5 m/min. and 5.5 m/min.)

Code	kg	
<b>790 123 016</b>	270.000	

PF 3 25 117 322



### Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

d-d [mm]	Code	kg	
500 - 800	<b>790 123 029</b>	120.000	

PF 3 25 117 322



### 1 Set planer blades

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

Code	kg	
<b>790 117 041</b>	0.470	

PF 3 25 117 319

# Machines & Equipment for Butt Fusion

## GF 1000 Butt fusion machine



### Machine GF 1000 complete

- High quality, long-lasting heating element butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings.
- The GF 1000 butt fusion machine could be assembled with the welding recorder WR 100
- Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Code	kg	
710 - 1000	400 V/19500 W	<b>790 124 001</b>	2528.000	

PF 3 25 136 300



### Basic machine

- High precision design, distortion-free and sturdy machine bed
- Heater release mechanism
- Good accessibility thanks to 45° inclination
- Hardened and hard chrome-plated guide shafts for extreme loads
- Smooth-running cylinder guides with mechanical seals
- Hydraulic connections protected and integrated in base clamping unit for more flexibility when clamping piping components
- Double clamping device for secure hold and exact radial and axial alignment of components
- Machine specific tool set

d-d [mm]	Code	kg		
710 - 1000	<b>790 124 002</b>	1240.000		

PF 3 25 136 300



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Right-angled facing due to wide bedding, with side stop for single-sided facing
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg	
710 - 1000	400 V/3000 W	<b>790 124 003</b>	325.000	

PF 3 25 117 323



### Heating element

- High performance heating element with electronic, continuously adjustable temperature control
- High temperature accuracy over the entire heating surface
- High-quality, non-stick PTFE-coating with long service life

d-d [mm]	Performance	Code	kg	
710 - 1000	400 V/15000 W	<b>790 124 004</b>	82.000	

PF 3 25 117 323

# Machines & Equipment for Butt Fusion



## Hydraulic unit

- Compact and robust with two handles for carrying
- Precise hydraulic control for consistent fusion pressure
- Variable, fine adjustment of pressure
- Clearly visible, vibration-free pressure gauge with precision scaling
- Memory for automatic pressure equalization during the cooling phase
- Easy level control and refilling of hydraulic oil

Performance	Code	kg	
400 V/1500 W	<b>790 123 005</b>	38.000	



## Case

- For safe storage of planer and automatic heating element

Code	kg	
<b>790 124 006</b>	345.000	

PF 3 25 117 323

# Machines & Equipment for Butt Fusion

## GF 1000 Accessories



### Reduction clamping inserts, wide

- Each code number defines 1 piece of reduction clamping insert. Per machine and dimension maximum 8 reduction clamping inserts are needed.

In order to mount the inserts d 710, the reduction clamping insert d 800 mm, code 790 124 011, must also be used

d [mm]	Code	kg	
710	<b>790 123 012</b>	9.500	
800	<b>790 124 011</b>	19.400	
900	<b>790 124 012</b>	20.000	



PF 3 25 137 100

### Electric hoist unit

- Hoist capacity 500 kg
- Arm length 2m, pivoting, back/forward, max. column height from floor 4.65 m, 2 hoisting speeds (2.5 m/min. and 5.5 m/min.)

Code	kg	
<b>790 124 016</b>	300.000	



PF 3 25 117 323

### Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

Code	kg	
<b>790 124 029</b>	170.000	



PF 3 25 137 100

### 1 Set planer blades

- (1 set = 4 blades)

Code	kg	
<b>790 124 021</b>	1.300	



# Machines & Equipment for Butt Fusion

## GF 1200 Butt fusion machine



### Machine GF 1200 complete

- High quality, long-lasting heating element butt fusion machine for fusion jointing PP, PE and PVDF pipes and fittings.
- The GF 1200 butt fusion machine could be assembled with the welding recorder WR 100.
- Including transport packaging (carton pallet), without accessories and without reduction inserts

d-d [mm]	Performance	Code	kg
800 - 1200	400 V/20500 W	<b>790 125 001</b>	2932.000

PF 3 25 136 400



### Basic machine

- High precision design, distortion-free and sturdy machine bed
- Heater release mechanism
- Good accessibility thanks to 45° inclination
- Hardened and hard chrome-plated guide shafts for extreme loads
- Smooth-running cylinder guides with mechanical seals
- Hydraulic connections protected and integrated in base clamping unit for more flexibility when clamping piping components
- Double clamping device for secure hold and exact radial and axial alignment of components
- Tool set specified to machine

d-d [mm]	Code	kg
800 - 1200	<b>790 125 002</b>	1340.000

PF 3 25 136 400



### Planer

- Powerful parallel planer for single or double-sided facing of pipe ends
- Load transfer via maintenance-free chain drive
- Right-angled facing due to wide bedding, with side stop for single-sided facing
- Optimised cutting geometry for even and chatter-free planing
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

d-d [mm]	Performance	Code	kg
800 - 1200	400 V/3000 W	<b>790 125 003</b>	452.000

PF 3 25 117 324



### Heating element

- High performance heating element with electronic, continuously adjustable temperature control
- High temperature accuracy over the entire heating surface

d-d [mm]	Performance	Code	kg
800 - 1200	400V/16000 W	<b>790 125 004</b>	94.000

PF 3 25 117 324

# Machines & Equipment for Butt Fusion



## Hydraulic unit

- Compact and robust with two handles for carrying
- Precise hydraulic control for consistent fusion pressure
- Variable, fine adjustment of pressure
- Clearly visible, vibration-free pressure gauge with precision scaling
- Memory for automatic pressure equalization during the cooling phase
- Easy level control and refilling of hydraulic oil

Performance	Code	kg	
400 V/1500 W	<b>790 123 005</b>	38.000	



## Case

- For safe storage of planer and automatic heating element

Code	kg	
<b>790 125 006</b>	420.000	

PF 3 25 117 324

# Machines & Equipment for Butt Fusion

## GF 1200 Accessories



### Reduction clamping inserts, wide

- Each code number defines 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.

In order to mount the inserts d 800/d 900, the reduction clamping insert d 1000, code 790 125 011, must also be used.

d [mm]	Code	kg	
800	<b>790 124 011</b>	19.400	
900	<b>790 124 012</b>	20.000	
1000	<b>790 125 011</b>	20.500	

PF 3 25 117 323



### Electric Hoist unit

- Hoist capacity 500 kg
- Arm length 2m, pivoting, back/forward, max. column height from floor 4.65 m, 2 hoisting speeds (2.5 m/min. and 5.5 m/min.)

Code	kg	
<b>790 125 016</b>	308.000	

PF 3 25 117 324



### Flange adapter clamping unit

- For correct clamping and fusion jointing of short end fittings

Code	kg	
<b>790 125 029</b>	260.000	

PF 3 25 117 324



### 1 Set planer blades

- (1 set = 4 blades)

Code	kg	
<b>790 125 021</b>	1.600	

PF 3 25 137 100

# Machines & Equipment for Butt Fusion

## SUVI® System Accessories

### Software PIPE WIN WELD / SUVI WIN WELD



- Professional software for analysis and documentation of installed piping systems or of a defined part of it: Pipe book. With PIPE WIN WELD it is possible to create a complete electronic documentation of the installed pipes and pipe connection elements. The software works with the data bases of MSA WIN WELD and SUVI WIN WELD. The software makes it possible to work with data from other manufacturers (CSV module for data transfer).
- The software is suitable for Windows ME/NT4/2000/XP.
- Delivery: CD-ROM, USB hardlock (PIPE WIN-WELD, PIPE WIN-WELD CSV), installation guide (manuals and additional information on CD-ROM)

Type	Code	kg	Description
PIPE CSV	<b>790 119 301</b>	0.180	Complete package incl. CSV module for data transfer, USB hardlock
PIPE	<b>790 119 302</b>	0.180	Complete package, USB hardlock
SUVI	<b>790 119 303</b>	0.180	Complete package

PF 3 25 117 312



### Barcode reader pen

Code	kg	Description
<b>799 350 335</b>	0.165	Barcode reader pen

PF 2 51 306 001



### CTC Cooling Time Control

- Controlling of the cooling phase according to the ambient temperature (CTC)
- Reduction of the process time for PE up to 50% in comparison to DVS
- Currently available for GF 160/250/315 with SUVI® 400
- Access code to unlock the CTC fusion parameter

Code	kg
<b>790 119 274</b>	0.002

PF 3 25 117 312



### Memory Card

description	Code	kg
1024 kB/734 records	<b>790 119 157</b>	0.030

PF 3 25 117 312

# Machines & Equipment for Butt Fusion

## WR 100



### WR 100 Fusion welding recording device

The WR 100 supports you to ensure the quality of the jointing done according to the country specific standards. The concept of the fusion data recording device enables configuration and retrofitting of hydraulically operated butt-fusion machines for field applications, appropriate listing see next page.

The whole fusion sequence is recorded and can be retraced later. The user is guided through all the fusion steps. The selection of the fusion data like the used material, diameter and wall thickness (SDR) is supported by a menu. The highly accurate recording device WR100 controls the fusion process according to the valid national guideline (e.g. DVS, WIS or UNI). Hard plastic PE case IP65 locates a printer on board.

#### Performance:

- Easy configuration by operator to the different GF/KL machines
- Internal memory fusion protocol with a capacity up to 100 records
- Easy user guidance
- Battery support for data recording (8 hours), no data loss during power interruption
- Configuration: User identity, Job site and order no.
- Different menu languages
- Country specific fusion parameter
- Interchangeable with SUVI<sup>®</sup> 50 data logger

#### Data Processing:

- Individual print out directly from serial on board printer
- Collective and individual print out directly from WR 100 to external printer (only HP) (parallel interface 790 119 402)
- Collective and individual protocol download to PC using the hyper terminal communicator of windows (serial interface 790 119 403)

Power connector: Schuko, 16A

Working temperature range: -10°C up to +50°C

Including connecting cables to butt fusion machine

Performance	Dimensions [mm]	Code	kg	
230 V	350x300x150 mm	<b>790 119 401</b>	6.000	

PF 3 25 132 100

# Machines & Equipment for Butt Fusion

## Machines fitted with WR 100

AHE = automatic heating element



Description	Performance	Code	kg	
KL 500 TOP 1 WR 100	400 V	<b>790 340 008</b>	475.000	
KL 500 TOP 2 WR 100	400 V	<b>790 340 035</b>	475.000	
KL 630 TOP 1 WR 100	400 V	<b>790 345 008</b>	600.000	
KL 630 TOP 2 WR 100	400 V	<b>790 345 035</b>	600.000	
GF 400 WR 100	400 V	<b>790 127 015</b>	350.000	
GF 400 WR 100	230 V	<b>790 127 020</b>	350.000	
GF 500 WR 100	400 V	<b>790 116 075</b>	475.000	
GF 630 WR 100	400 V	<b>790 117 075</b>	600.000	
GF 800 WR 100	400 V	<b>790 123 075</b>	1550.000	
GF 1000 WR 100	400 V	<b>790 124 075</b>	3000.000	
GF 1200 WR 100	400 V	<b>790 125 075</b>	3210.000	

PF 3 10 575 600

## Accessories

description	Code	kg	
Serial/parallel printer cable (WR 100-Printer)	<b>790 119 402</b>	0.400	
Serial Data transfer cable (WR100-PC)	<b>790 119 403</b>	0.250	

PF 3 25 117 312

# Machines & Equipment for Butt Fusion

## WM 315 Workshop butt fusion machine

### Machine WM 315



- Machine for jointing segmented fittings like bends from d 90 - 315 mm for high pressure applications
- To produce T and Y fittings from d 90 - 250 mm the special accessories are required

#### Machine description:

- Distortion - free, sturdy machine frame
- Electric and hydraulic components separated in the frame
- Control panel assembled with pressure adjustment valve, pressure selection switch (planing or fusion pressure), gauge, joy stick and emergency stop
- The main clamping tools are mounted on supports which could each be adjusted transverse to the pipe axis
- Each clamping tool is max. 22,5° turnable and assembled with a set of reductions d 90 - 280mm
- Precision heating element with electronic temperature control (3000 W)
- High - quality, PTFE coating with long service life
- Heating element pull off mechanism
- Powerful planer (1200 W) with optimized cutting geometry for even and chatter-free planing
- Load transfer via robust chain drive
- Mechanical stops to provide single sided planing and accurate facing depth
- Planer is secured with a mechanical locking system and a micro switch

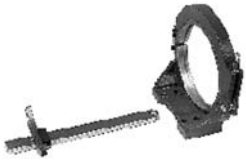
d-d [mm]	Performance	Code	kg	
90 - 315	400 V/4620 W	790 118 060	464.000	

PF 3 25 135 100

# Machines & Equipment for Butt Fusion

## WM 315 Accessories

### Base clamping unit left for fittings with adapter ring, wide



- For clamping fittings of 315 mm as well as for fastening reduction clamping inserts for fittings 90 to 280 mm, Guide shaft for pipe support und back stop, with pipe support 315 mm
- L = left
- R = right

d [mm]	Type	Code	kg
315	L	<b>790 118 011</b>	15.700
315	R	<b>790 118 012</b>	15.700

PF 3 25 117 318



### Clamping insert, narrow, d 315

- For clamping of elbows, flange adapters, etc., d = 315 mm, 1 piece = 1 Alu-half-shell
- Each code number defines 1 piece reduction clamping insert. Per outer base clamping unit 2 reduction clamping inserts are needed.

d [mm]	Code	kg
315	<b>790 118 028</b>	0.850

PF 3 25 117 318



### Set of pipe supports

d-d [mm]	Code	kg
90 - 280	<b>790 118 025</b>	6.700

PF 3 25 117 318



### Reduction clamping inserts, narrow

- d 90 - 280 mm
- Each code number defines 1 piece of reduction clamping insert.

d [mm]	Code	kg
90	<b>790 112 098</b>	0.995
110	<b>790 112 099</b>	1.285
125	<b>790 112 100</b>	1.245
140	<b>790 112 101</b>	1.205
160	<b>790 112 102</b>	1.135
180	<b>790 112 103</b>	1.010
200	<b>790 112 104</b>	0.950
225	<b>790 112 105</b>	0.865
250	<b>790 112 106</b>	0.770
280	<b>790 112 107</b>	0.560



### Back stop

- Prevents the components from slipping out of the clamping device during fusion.

Code	kg
<b>790 118 026</b>	5.200

PF 3 25 117 318



# Machines & Equipment for Butt Fusion



PF 3 25 117 318

## Flange adapter clamping unit

- For centric fusion of flange adapters
- Easy, correct attachment of clamping unit in the basic machine
- Including packaging

d-d [mm]	Code	kg	
90 - 315	<b>790 118 031</b>	25.000	



PF 3 25 117 318

## T-fitting clamping unit

- For the rational manufacturing of 90° T-fittings in the sizes d 90 to 250 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Integrated eyelets for lifting
- **Complete** with reduction clamping inserts d 90 - 225 mm
- Including packaging

d-d [mm]	Code	kg	
90 - 250	<b>790 118 032</b>	140.000	



PF 3 25 117 318

## Y-fitting clamping unit

- For the rational manufacturing of 30° to 45° Y-fittings in the sizes d 90 to 250 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Complete with reduction clamping inserts d 90 - 225 mm
- Including packaging

d-d [mm]	Code	kg	
90 - 250	<b>790 118 033</b>	174.000	



PF 3 25 117 318

## Set planer of blades

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

description	Code	kg	
long	<b>790 118 042</b>	0.085	
short	<b>790 118 043</b>	0.045	

# Machines & Equipment for Butt Fusion

## WM 500 Plus Workshop butt fusion machine

### Machine WM 500 Plus



- Machine for jointing segmented fittings like bends from d 250 - 500 mm for high pressure applications
- To produce T and Y fittings from d 250 - 400 mm the special accessories are required

#### Machine description:

- Distortion - free, sturdy machine frame
- Electric and hydraulic components separated in the frame
- Control panel assembled with pressure adjustment valve, pressure selection switch (planing or fusion pressure), selection switch for single or double sided planing process, gauge, joy stick and emergency stop
- The main clamping tools are mounted on supports which could each be adjusted transverse to the pipe axis
- Each clamping tool is max. 22,5° turnable and assembled with a set of reductions d 250 - 450 mm
- Hydraulically opening and closing of the upper clamping tools, manual locking with bolts and nuts
- Precision heating element with electronic temperature control (10000 W)
- High - quality, PTFE coating with long service life
- Insertion hydraulically operated
- Powerful planer (1100 W) with optimized cutting geometry for even and chatter-free planing
- Load transfer via robust chain drive
- Insertion hydraulically operated
- During the planing process each slide could be moved separately (single sided planing)

d-d [mm]	Performance	Code	kg	
250 - 500	400 V/13600 W	<b>790 120 020</b>	1700.000	

PF 3 25 137 100

# Machines & Equipment for Butt Fusion

## WM 500 Plus Accessories



### Reduction clamping inserts, narrow

- Each code number defines 1 piece of reduction clamping insert.

d [mm]	Code	kg	
250	<b>790 116 018</b>	4.100	
280	<b>790 116 019</b>	3.800	
315	<b>790 116 020</b>	3.500	
355	<b>790 116 021</b>	3.200	
400	<b>790 116 022</b>	2.500	
450	<b>790 116 023</b>	2.500	



### Reduction clamping inserts, wide

- Each code number defines 1 piece of reduction clamping insert.

d [mm]	Code	kg	
250	<b>790 116 010</b>	3.300	
280	<b>790 116 011</b>	3.500	
315	<b>790 116 012</b>	3.600	
355	<b>790 116 013</b>	3.700	
400	<b>790 116 014</b>	3.400	
450	<b>790 116 015</b>	3.500	

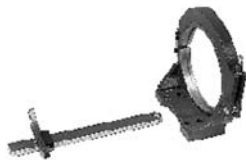


### Back stop

- Prevents the components from slipping out of the clamping device during fusion.

Code	kg	
<b>790 108 026</b>	34.000	

PF 3 25 117 321



### Base clamping unit 500 mm for fittings

- For clamping fittings of 500 mm as well as for the reduction clamping inserts for fittings of 250 to 450 mm, Guide shaft for pipe support and back stop, with pipe support 500 mm
- L = left
- R = right

d [mm]	Type	Code	kg	
500	L	<b>790 120 011</b>	109.000	
500	R	<b>790 120 012</b>	112.000	

PF 3 25 117 320



### Set of pipe supports

d-d [mm]	Code	kg	
250 - 450	<b>790 120 025</b>	10.700	

PF 3 25 117 320

# Machines & Equipment for Butt Fusion



PF 3 25 117 320

## Flange adapter clamping unit

- For centric fusion of flange adapters
- Easy, correct attachment of clamping unit in the basic machine
- Including packaging

d-d [mm]	Code	kg	
250 - 500	<b>790 120 031</b>	73.000	



PF 3 25 117 320

## T-fitting clamping unit

- For the rational manufacturing of 90° T-fittings in the sizes d 250 to 400 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Complete with reduction clamping inserts d 250 - 355 mm
- Including packaging

d-d [mm]	Code	kg	
250 - 400	<b>790 120 032</b>	415.000	



PF 3 25 117 320

## Y-fitting clamping unit

- For the rational manufacturing of 30° to 45° Y-fittings in the sizes d 250 to 400 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Complete with reduction clamping inserts d 250 - 355 mm
- Including packaging

d-d [mm]	Code	kg	
250 - 400	<b>790 120 033</b>	610.000	



PF 3 25 117 320

## 1 Set planer blades

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

Code	kg	
<b>790 117 041</b>	0.470	

# Machines & Equipment for Butt Fusion

## WM 630 Plus Workshop butt fusion machine

### Machine WM 630 Plus



- Machine for jointing segmented fittings like bends from d 315 - 630 mm for high pressure applications
- To produce T and Y fittings from d 315 - 500 mm the special accessories are required

#### Machine description:

- Distortion - free, sturdy machine frame
- Electric and hydraulic components separated in the frame
- Control panel assembled with pressure adjustment valve, pressure selection switch (planing or fusion pressure), selection switch for single or double sided planing process, gauge, joy stick and emergency stop
- The main clamping tools are mounted on supports which could each be adjusted transverse to the pipe axis
- Each clamping tool is max. 22,5° turnable and assembled with a set of reductions d 315 - 560 mm
- Hydraulically opening and closing of the upper clamping tools, manual locking with bolts and nuts
- Precision heating element with electronic temperature control (12000 W)
- High - quality, PTFE coating with long service life
- Insertion hydraulically operated
- Powerful planer (1100 W) with optimized cutting geometry for even and chatter-free planing
- Load transfer via robust chain drive
- Insertion hydraulically operated
- During the planing process each slide could be moved separately (single sided planing)

d-d [mm]	Performance	Code	kg	
315 - 630	400 V/15600 W	<b>790 108 020</b>	1870.000	

PF 3 25 138 100

# Machines & Equipment for Butt Fusion

## Machine WM 630 CNC



- Machine for jointing segmented fittings like bends from d 315 - 630 mm for high pressure applications
- To produce T and Y fittings from d 315 - 500 mm the special accessories are required

### Machine description:

- Fully automated fusion process by the use of state of the art PLC and touch screen
- Highest flexibility in the pipe preparation process
- Data storage and transfer via USB to the PC
- Data management by SUVI® WIN-WELD
- Distortion - free, sturdy machine frame
- Electric and hydraulic components separated in the frame
- The main clamping tools are mounted on supports which could each be adjusted transverse to the pipe axis
- Each clamping tool is max. 22,5° turnable and assembled with a set of reductions d 315 - 560 mm
- Hydraulically opening and closing of the upper clamping tools, manual locking with bolts and nuts
- Precision heating element with electronic temperature control (12000 W)
- High - quality, PTFE coating with long service life
- Insertion hydraulically operated
- Powerful planer (1100 W) with optimized cutting geometry for even and chatter-free planing
- Load transfer via robust chain drive
- Insertion hydraulically operated
- During the planing process each slide could be moved separately (single sided planing)

d-d [mm]	Performance	Code	kg	
315 - 630	400 V/15600 W	<b>790 108 101</b>	2300.000	

PF 3 25 138 100

# Machines & Equipment for Butt Fusion

## WM 630 Plus Accessories



### Reduction clamping inserts, narrow

- Each code number defines 1 piece of reduction clamping insert.

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

d [mm]	Code	kg	
315	<b>790 116 020</b>	3.500	
355	<b>790 116 021</b>	3.200	
400	<b>790 116 022</b>	2.500	
450	<b>790 116 023</b>	2.500	



### Reduction clamping inserts, wide

- Each code number defines 1 piece of reduction clamping insert.

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

d [mm]	Code	kg	
315	<b>790 116 012</b>	3.600	
355	<b>790 116 013</b>	3.700	
400	<b>790 116 014</b>	3.400	
450	<b>790 116 015</b>	3.500	



PF 3 25 117 321

### Set of pipe supports

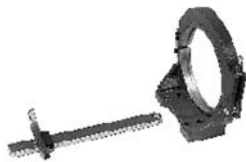
d-d [mm]	Code	kg	
315 - 450	<b>790 108 025</b>	6.000	



### Back stop

- Prevents the components from slipping out of the clamping device during fusion.

Code	kg	
<b>790 108 026</b>	34.000	



### Base clamping unit for fittings

- For clamping fittings of 500 mm as well as for the reduction clamping inserts for fittings of 315 to 450 mm, Guide shaft for pipe support and back stop, with pipe support 500 mm
- L = left
- R = right

d [mm]	Type	Code	kg	
500	L	<b>790 108 011</b>	141.000	
500	R	<b>790 108 012</b>	141.000	

PF 3 25 117 321

# Machines & Equipment for Butt Fusion



PF 3 25 117 321

## Flange adaptor clamping unit

- For centric fusion of flange adapters
- Easy, correct attachment of clamping unit in the basic machine
- Including packaging

d-d [mm]	Code	kg	
315 - 630	<b>790 108 031</b>	235.000	



PF 3 25 117 321

## T-fitting clamping unit

- For the rational manufacturing of 90° T-fittings in the sizes d 315 to 500 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Integrated eyelets for lifting
- Complete with reduction clamping inserts
- Including packaging

d-d [mm]	Code	kg	
315 - 500	<b>790 108 032</b>	613.000	



PF 3 25 117 321

## Y-fitting clamping unit

- For the rational manufacturing of 30° to 45° Y-fittings (branches) in the sizes d 315 - 500 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Integrated eyelets for lifting
- Complete with reduction clamping inserts
- Including packaging

d-d [mm]	Code	kg	
315 - 500	<b>790 108 033</b>	770.000	



PF 3 25 117 321

## 1 Set planer blades

- (1 set = 4 blades)

Code	kg	
<b>790 108 043</b>	0.500	



# Machines & Equipment for Butt Fusion

## WM 1200 Workshop butt fusion machine

### Machine WM 1200 with SUVI® 50



- Machine for jointing segmented fittings like bends from d 630 - 1200 mm for high pressure applications
- Professional data recording and operator guidance granted by the use of SUVI® 50
- To produce T and Y fittings from d 630 - 900 mm the special accessories are required

#### Machine description:

- Dimensions: 2400 L x 1400 W x 2070 H in mm
- Distortion - free, sturdy machine frame
- Hardened, hard chrome plated linear guide rails for extreme loads
- Electric and hydraulic components separated in the frame
- Moveable control panel assembled with potentiometer to adjust the fusion and the planing pressure, selection switch for single or double sided planing process, gauge, Open, Close and pressure release button, emergency stop
- The data recorder SUVI® 50 is a component of the control panel
- The main clamping tools are mounted on supports which could each be adjusted transverse to the pipe axis
- Each clamping tool is max. 22,5° turnable and assembled with a set of reductions d 630 - 1000 mm
- Hydraulically opening and closing of the upper clamping tools
- Hydraulic locking mechanism of the main clamping tools
- Precision heating element with electronic temperature control (30000 W)
- High - quality, PTFE coating with long service life
- Insertion hydraulically operated
- High speed extraction to grant fast change over times
- Powerful planer (2200 W) with optimized cutting geometry for even and chatter-free planing
- Load transfer via robust chain drive
- Insertion hydraulically operated
- During the planing process each slide could be moved separately (single sided planing)

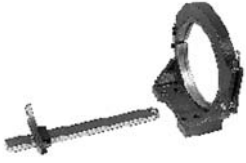
d-d [mm]	Performance	Code	kg	
630 - 1200	400 V/41000 W	<b>790 126 001</b>	8300.000	

PF 3 25 871 100

# Machines & Equipment for Butt Fusion

## WM 1200 Accessories

### Base clamping unit 500 mm for fittings



- For clamping fittings of 500 mm as well as for the reduction clamping inserts for fittings of 315 to 450 mm, Guide shaft for pipe support and back stop, with pipe support 500 mm
- L = left
- R = right

PF 3 25 117 321

d [mm]	Type	Code	

### Set of pipe supports



PF 3 25 117 321

d-d [mm]	Code	

### Back stop



- Prevents the components from slipping out of the clamping device during fusion.

Code	kg	
790 108 026	34.000	

### Flange adaptor clamping unit



PF 3 25 117 321

- For centric fusion of flange adapters
- Easy, correct attachment of clamping unit in the basic machine
- Including packaging

d-d [mm]	Code	

### T-fitting clamping unit



- For the rational manufacturing of 90° T-fittings in the sizes d 630 - 900 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Integrated eyelets for lifting
- Complete with reduction clamping inserts
- Including packaging

PF 3 25 117 334

d-d [mm]	Code	kg	
630 - 900	790 126 011	2926.000	

# Machines & Equipment for Butt Fusion



## Y-fitting clamping unit

- For the rational manufacturing of 30° to 45° Y-fittings (branches) in the sizes d 630 - 900 mm
- Three-piece, precise clamping tool for easy mounting on the machine bed
- Integrated eyelets for lifting
- Complete with reduction clamping inserts
- Including packaging

PF 3 25 117 334

d-d [mm]	Code	kg	
630 - 900	<b>790 126 012</b>	2910.000	

## X-fitting clamping unit

- To weld a X-piece the T-piece unit is necessary

PF 3 25 117 334

d-d [mm]	Code	kg	
630 - 900	<b>790 126 013</b>	2900.000	

## Base Plate T-Y-X pieces

- To mount the T-Y-X pieces to the support plate

PF 3 25 117 334

Code	kg	
<b>790 126 014</b>	1000.000	



## 1 Set planer blades

- 4 blades mounted on each planer disk
- (1 set = 4 blades)

Code	kg	
<b>790 126 043</b>	0.500	

# Machines & Equipment for Butt Fusion

## PPC Plastic pipe cutter and KS 355

### PPC Plastic pipe cutter

- For cutting plastic pipes d10 - d160



PF 3 25 117 309

d-d [mm]	Article	Code	kg
10 - 63	PPC 63, s max. = 7.2mm	<b>790 109 001</b>	0.710
50 - 110	PPC 110, s max. = 12.7mm	<b>790 109 002</b>	1.400
110 - 160	PPC 160, s max. = 19.0mm	<b>790 109 003</b>	2.220

### Replacement cutting wheels

- for plastic pipe cutter



PF 3 25 117 909

d-d [mm]	Article	Code	kg
10 - 63	SR 63 max. s=7,2 mm	<b>790 109 011</b>	0.004
50 - 110	SR 110/160 max. s=12,7 mm	<b>790 109 012</b>	0.017
110 - 160	SR 160 max. s=19,0 mm	<b>790 109 013</b>	0.023

### Plastic pipe cutter

- The KS 355 is the ideal tool for simple right angle precision cutting of PVC, PE and PP pipes, Size range d 160 to 355 mm with a wall thickness up to 40 mm. Including transport box.
- Unique clamping mechanism, no additional tools like belts, chains or reduction inserts necessary



PF 3 25 129 760

d-d [mm]	Code	kg
160 - 355	<b>790 202 001</b>	15.400

### Saw blade Ø 180x30

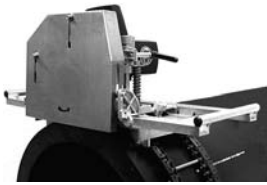


PF 3 25 119 107

Code	kg
<b>790 202 011</b>	0.485

# Machines & Equipment for Butt Fusion

## KS 1600



### Plastic pipe cutter

The KS 1600 is prepared to cut plastic-pipes from diameter 355 mm up to 1600 mm with a wall thickness of max. 60 mm, fast, clean and properly right-angled. For each pipe-diameter the appropriate chain length is necessary. The saw is to put on the tensioned chain as per user manual and 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 all the time.

The KS 1600 Basis-Kit consists of a hand-circular saw, 230 V / 2200 W with carriage, 2 tension chains for d 560 mm and d 630 mm as well as a chain tensioner. The whole equipment is to be placed easily into the convenient and robust transport box.

The easy handling and the optimal safety factor do make this tool indispensable on each building site.

#### Scope of delivery:

1 Hand-circular saw, 1 tensioning chain d 560 mm, 1 tensioning chain d 630, 1 chain tensioner, 1 hex-wrench size 5, 1 hex-wrench size 6, 1 operating instruction, transport-box

#### Technical data:

Dimension range:	355 –1600 mm (By usage of 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 (WxHxD):	790 x 330 x 335 mm
Dimensions Transport-Box:	950 x 400 x 395 mm

d-d [mm]	Type	Code	kg	
355 - 1600	KS 1600 Basic Kit	<b>790 109 600</b>	43.000	

PF 2 51 305 006

### Saw blade

description	Code	kg	
Saw Blade 240X3,0X30, 18 teeth punched	<b>790 109 618</b>	0.653	

PF 3 25 119 106

# Machines & Equipment for Butt Fusion

## Chain tensioner



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

d-d [mm]	Code	kg	
355 - 1600	<b>790 109 616</b>	0.430	

PF 3 25 119 106

## Tensioning Chains



- Chain d 560 and d 630 mm are included in the scope of delivery of the KS 1600 Basic-Kit (790 109 600).

d [mm]	Code	kg	
355	<b>790 109 602</b>	3.700	
400	<b>790 109 603</b>	4.100	
450	<b>790 109 604</b>	4.700	
500	<b>790 109 605</b>	5.200	
560	<b>790 109 606</b>	5.600	
630	<b>790 109 607</b>	6.630	
710	<b>790 109 608</b>	7.900	
800	<b>790 109 609</b>	8.600	
900	<b>790 109 610</b>	10.174	
1000	<b>790 109 611</b>	11.000	
1100	<b>790 109 612</b>	12.000	
1200	<b>790 109 613</b>	13.500	
1400	<b>790 109 614</b>	15.500	
1600	<b>790 109 615</b>	17.800	

PF 3 25 119 106

# Machines & Equipment for Butt Fusion

## Saws



### BS 450 Belt saw size range d 90 - 450 mm

- For exact cutting of PE, PP, PVC and PVDF plastic pipes, size range d 90 - 450 mm
- Pipe cutter with sturdy tubular steel stand and integrated V-bed
- Variable clamping system for fastening the pipe in the V-bed
- Angles from 0° to 45° to one side can be freely adjusted
- Easy to disassemble into subcomponents and transport to job sites
- Spring-resilient lowering of saw bow
- Easy saw blade replacement system with centering mechanism
- Application: up to d 160 PN 10, up to d 250 PN 6, up to d 450 PN 3,2

PF 3 25 129 700

d-d [mm]	Code	kg
90 - 450	<b>790 109 045</b>	160.000



### BS 630 Belt saw

- Angles from 0° to 45° to one side can be freely adjusted
- For exact cutting of PE, PP, PVC and PVDF pipes, size range d 100 - 315 mm and 200 - 630 mm
- Pipe cutter with sturdy tubular steel stand
- Variable clamping system for fastening the pipe in the V-bed
- Spring-resilient lowering of saw bow
- Easy saw blade replacement system with centering mechanism

PF 3 25 129 700

d-d [mm]	Code	kg
110 - 630	<b>790 109 047</b>	340.000

### BS Wearing Parts

- Saw belt for

PF 3 25 119 105

Article	Code	kg
BS 450	<b>790 109 046</b>	0.400
BS 630	<b>790 109 048</b>	0.500

### Other Belt saws

Code
on request

# Machines & Equipment for Butt Fusion

## Tools for pipeline construction



### Outer bead remover

- Usable for clean and fast removal of the outer bead in butt fusion application
- With clamped pipes in the machine
- including transportation case

d-d [mm]	Code	kg	
110 - 160	<b>790 109 241</b>	1.850	
140 - 250	<b>790 109 242</b>	1.950	
180 - 315	<b>790 109 243</b>	2.697	
280 - 450	<b>790 109 244</b>	2.700	

PF 3 25 117 330

### Replacement blades

d-d [mm]	Code	kg	
110 - 160	<b>790 109 233</b>	0.004	
140 - 315	<b>790 109 234</b>	0.020	

PF 3 25 117 330



# Machines & Equipment for Butt Fusion

## Accessories for job sites



### Roller support 315

- Up to d 315 mm, with base plate, galvanised
- The piping can be pulled with little effort
- Protects pipes from damage
- Reduces resistance during fusion
- Maximum load 300 kg

PF 3 25 117 328

d-d [mm]	Code	kg	
20 - 315	<b>790 109 110</b>	4.000	



### Support 750

- Up to d 750 mm, with base plate, galvanised
- **height adjustable** (60 mm)
- The piping can be pulled with little effort
- Protects pipes from damage
- Reduces resistance during fusion
- Maximum load 1000 kg

PF 3 25 117 328

d-d [mm]	Code	kg	
110 - 750	<b>790 109 109</b>	4.115	



### Alignment Tool

- To align and position pipes in the dimension range d 110 - 400 mm. The pipes are clamped in the vice, the axial movement takes place by a chain drive. The chain is totated by the ratched (square 19 mm).

PF 3 25 117 325

Article	Code	kg	
Alignment Tool	<b>790 109 108</b>	15.000	
Ratch	<b>790 109 107</b>	1.220	

# Machines & Equipment for Butt Fusion

## Miscellaneous accessories org

### Timer with 2 stop times



PF 3 25 117 316

Code	kg	
790 114 028	0.100	

### KS Tangit Cleaner

- Special cleaning agent for plastic fusion connections with PP, PE, PVDF and PB.



PF 2 28 473 002

Code	kg	
799 298 023	0.890	

5311

### Tangit KS-Cleaning Tissues



Code	kg	
799 298 024	3.245	



### Marker

PF 2 55 338 999

Type	Code	kg	
silver	799 350 364	0.012	

# Index

Code	Page
173 281 189	14
173 281 190	14
173 281 191	14
173 281 192	14
173 281 247	14
193 281 027	20
790 108 011	103
790 108 012	103
790 108 020	101
790 108 025	103
790 108 026	99
790 108 031	104
790 108 032	104
790 108 033	104
790 108 043	104
790 108 101	102
790 109 001	31
790 109 002	31
790 109 003	31
790 109 011	31
790 109 012	31
790 109 013	31
790 109 045	111
790 109 046	111
790 109 047	111
790 109 048	111
790 109 107	30
790 109 108	30
790 109 109	30
790 109 110	30
790 109 233	112
790 109 234	112
790 109 241	112
790 109 242	112
790 109 243	112
790 109 244	112
790 109 600	32
790 109 602	33
790 109 603	33
790 109 604	33
790 109 605	33
790 109 606	33
790 109 607	33
790 109 608	33
790 109 609	33
790 109 610	33
790 109 611	33
790 109 612	33
790 109 613	33
790 109 614	33
790 109 615	33
790 109 616	33
790 109 618	32
790 112 038	44
790 112 067	53
790 112 068	53
790 112 069	53
790 112 073	41
790 112 083	38
790 112 085	69
790 112 088	43
790 112 089	43
790 112 090	43
790 112 091	43
790 112 092	43
790 112 093	43
790 112 094	43

Code	Page
790 112 095	43
790 112 096	43
790 112 097	43
790 112 098	43
790 112 099	43
790 112 100	43
790 112 101	43
790 112 102	43
790 112 103	43
790 112 104	43
790 112 105	43
790 112 106	43
790 112 107	43
790 112 110	56
790 112 111	44
790 112 112	44
790 112 156	41
790 112 178	53
790 112 179	54
790 112 184	54
790 112 191	54
790 112 194	54
790 113 056	48
790 114 004	38
790 114 006	38
790 114 009	41
790 114 010	41
790 114 011	41
790 114 012	41
790 114 013	41
790 114 014	41
790 114 015	41
790 114 016	41
790 114 017	41
790 114 018	41
790 114 019	41
790 114 020	41
790 114 021	41
790 114 022	41
790 114 023	41
790 114 025	47
790 114 026	47
790 114 027	41
790 114 028	114
790 114 067	45
790 114 068	45
790 114 069	45
790 114 156	41
790 114 178	45
790 114 179	46
790 114 184	46
790 114 191	46
790 115 004	38
790 115 005	38
790 115 008	42
790 115 009	42
790 115 010	42
790 115 011	42
790 115 012	42
790 115 013	42
790 115 014	42
790 115 015	42
790 115 016	42
790 115 017	42
790 115 018	42
790 115 019	42
790 115 020	42

Code	Page
790 115 021	42
790 115 022	42
790 115 023	42
790 115 024	52
790 115 025	42
790 115 026	42
790 115 028	42
790 115 029	42
790 115 044	41
790 115 045	43
790 115 067	49
790 115 068	49
790 115 069	49
790 115 156	41
790 115 178	49
790 115 179	50
790 115 184	50
790 115 191	50
790 115 194	50
790 116 002	68
790 116 003	68
790 116 004	62
790 116 006	65
790 116 008	66
790 116 009	66
790 116 010	66
790 116 011	66
790 116 012	66
790 116 013	66
790 116 014	66
790 116 015	66
790 116 016	66
790 116 017	66
790 116 018	66
790 116 019	66
790 116 020	66
790 116 021	66
790 116 022	66
790 116 023	66
790 116 026	71
790 116 027	67
790 116 038	63
790 116 039	69
790 116 040	68
790 116 041	67
790 116 045	67
790 116 067	70
790 116 069	70
790 116 075	94
790 116 156	66
790 116 178	70
790 117 001	79
790 117 002	73
790 117 003	73
790 117 004	73
790 117 006	76
790 117 012	77
790 117 013	77
790 117 023	77
790 117 029	77
790 117 038	74
790 117 041	78
790 117 067	81
790 117 069	81
790 117 075	94
790 117 178	81
790 118 011	96

# Index

Code	Page
790 118 012	96
790 118 025	96
790 118 026	96
790 118 028	96
790 118 031	97
790 118 032	97
790 118 033	97
790 118 042	97
790 118 043	97
790 118 060	95
790 119 157	92
790 119 274	92
790 119 301	13
790 119 302	13
790 119 303	13
790 119 401	40
790 119 402	94
790 119 403	94
790 120 011	99
790 120 012	99
790 120 020	98
790 120 025	99
790 120 031	100
790 120 032	100
790 120 033	100
790 123 001	83
790 123 002	83
790 123 003	83
790 123 004	83
790 123 005	84
790 123 006	84
790 123 007	84
790 123 009	84
790 123 011	85
790 123 012	85
790 123 016	85
790 123 029	85
790 123 075	94
790 124 001	86
790 124 002	86
790 124 003	86
790 124 004	86
790 124 006	87
790 124 011	88
790 124 012	88
790 124 016	88
790 124 021	88
790 124 029	88
790 124 075	94
790 125 001	89
790 125 002	89
790 125 003	89
790 125 004	89
790 125 006	90
790 125 011	91
790 125 016	91
790 125 021	91
790 125 029	91
790 125 075	94
790 126 001	105
790 126 011	106
790 126 012	107
790 126 013	107
790 126 014	107
790 126 043	107
790 127 001	57
790 127 002	57

Code	Page
790 127 003	57
790 127 004	58
790 127 005	58
790 127 006	58
790 127 008	58
790 127 010	57
790 127 015	94
790 127 020	94
790 127 026	60
790 127 069	59
790 127 070	59
790 127 101	60
790 127 102	60
790 127 111	60
790 127 112	60
790 127 156	61
790 128 001	12
790 136 001	16
790 136 002	16
790 136 003	16
790 136 004	16
790 136 005	16
790 136 006	16
790 136 007	16
790 136 008	16
790 136 009	16
790 136 010	16
790 136 011	16
790 136 012	16
790 136 013	16
790 136 014	16
790 136 015	16
790 136 112	16
790 136 211	16
790 136 212	16
790 136 213	16
790 136 214	16
790 140 010	64
790 140 026	66
790 150 000	39
790 150 001	37
790 150 010	37
790 150 011	39
790 150 013	38
790 150 014	37
790 150 015	40
790 151 000	39
790 151 001	37
790 151 004	39
790 151 010	37
790 151 011	39
790 151 014	37
790 151 015	40
790 152 000	39
790 152 001	37
790 152 003	39
790 152 004	39
790 152 006	38
790 152 009	38
790 152 010	37
790 152 011	39
790 152 014	37
790 152 015	40
790 202 001	31
790 202 011	31
790 319 007	41
790 325 006	38

Code	Page
790 340 000	62
790 340 001	62
790 340 002	62
790 340 003	64
790 340 005	65
790 340 008	94
790 340 035	94
790 345 000	73
790 345 008	94
790 345 012	75
790 345 035	94
799 100 061	24
799 100 062	24
799 100 082	28
799 100 083	28
799 100 084	28
799 100 085	28
799 100 086	28
799 100 087	28
799 100 088	28
799 100 089	28
799 100 090	28
799 100 091	28
799 100 092	28
799 100 093	28
799 100 094	28
799 100 095	28
799 100 096	28
799 100 097	28
799 100 098	28
799 150 007	25
799 150 008	25
799 150 009	25
799 150 011	25
799 150 090	23
799 150 275	19
799 150 312	22
799 150 313	22
799 150 314	22
799 150 315	22
799 150 319	22
799 150 321	18
799 150 355	18
799 150 360	18
799 150 361	18
799 150 362	18
799 150 363	18
799 150 364	18
799 150 365	18
799 150 369	18
799 150 370	18
799 150 374	28
799 150 375	28
799 150 376	28
799 150 378	24
799 150 382	17
799 150 383	17
799 150 385	22
799 150 386	22
799 150 387	22
799 150 388	22
799 150 389	22
799 150 390	22
799 150 391	22
799 150 392	22
799 198 012	25
799 198 013	25

# Index

Code	Page
799 198 047	24
799 198 057	25
799 198 079	24
799 198 080	24
799 198 091	24
799 198 094	19
799 199 088	25
799 199 089	25
799 199 127	27
799 199 128	27
799 199 129	27
799 199 130	27
799 199 131	27
799 199 132	27
799 199 133	27
799 199 134	27
799 199 135	27
799 199 137	27
799 199 138	27
799 199 139	27
799 199 140	27
799 199 141	27
799 199 282	24
799 199 283	24
799 199 286	24
799 298 023	29
799 298 024	29
799 300 704	19
799 300 705	19
799 300 706	19
799 300 707	19
799 300 708	19
799 300 709	19
799 300 710	19
799 300 711	19
799 300 725	17
799 300 727	17
799 300 739	17
799 300 740	17
799 300 741	17
799 300 742	17
799 300 743	17
799 300 744	17
799 300 745	17
799 300 746	17
799 300 747	17
799 300 748	17
799 300 749	17
799 300 753	17
799 300 755	17
799 300 756	17
799 300 757	19
799 301 459	21
799 301 461	21
799 301 463	21
799 301 484	21
799 301 486	21
799 301 488	21
799 301 536	21
799 301 537	21
799 301 538	21
799 301 539	21
799 301 540	21
799 301 541	21
799 301 561	27
799 301 575	22
799 350 107	26

Code	Page
799 350 108	26
799 350 113	27
799 350 114	27
799 350 115	27
799 350 116	27
799 350 117	27
799 350 118	27
799 350 119	27
799 350 120	27
799 350 121	27
799 350 172	27
799 350 270	26
799 350 335	14
799 350 337	14
799 350 340	12
799 350 341	12
799 350 344	14
799 350 358	20
799 350 364	29
799 350 365	13
799 350 385	14
799 350 387	14
799 350 395	14
799 350 401	13
799 350 419	14
799 350 461	12
799 350 462	12
799 350 472	13
799 350 475	23
799 350 477	23
799 350 550	11
799 350 551	11
799 350 555	11
799 350 560	10
799 350 561	10
799 350 565	10
799 350 570	9
799 350 571	9
799 350 575	9
799 350 580	8
799 350 581	8
799 350 585	8
799 350 619	15
799 350 620	15
799 350 621	15
799 350 622	15
799 350 623	15
799 370 007	22
799 370 011	22
799 900 387	22
799 900 394	22
799 900 404	22
799 900 405	22
799 900 413	22
799 900 414	22
799 900 421	22
799 900 423	22
799 900 425	22
on request	111



# General Condition of Supply of Georg Fischer Piping Systems (Switzerland) Limited, Schaffhausen

## 1 General

- 1.1 These General Conditions shall apply to all Products supplied by Georg Fischer to the Purchaser. They shall also apply to all future business even when no express reference is made to them
- 1.2 Any deviating or supplementary conditions especially Purchaser's general conditions of purchase and verbal agreements shall only be applicable if accepted in writing by Georg Fischer.
- 1.3 The written form shall be deemed to be fulfilled by all forms of transmission, evidenced in the form of text, such as telefax, e-mail, etc.

## 2 Tenders

- 2.1 Tenders shall only be binding if they contain a specifically stated period for acceptance.

## 3 Scope of Delivery

- 3.1 Georg Fischer's product range is subject to change.
- 3.2 The confirmation of order shall govern the scope and execution of the contract.

## 4 Data and Documents

- 4.1 Technical documents such as drawings, descriptions, illustrations and data on dimensions, performance and weight as well as the reference to standards are for information purposes only. They are not warranted characteristics and are subject to change.
- 4.2 All technical documents shall remain the exclusive property of Georg Fischer and may only be used for the agreed purposes or as Georg Fischer may consent.

## 5 Confidentiality, Protection of Personal Data

- 5.1 Each party shall keep in strict confidence all commercial or technical information relating to the business of the other party, of which it has gained knowledge in the course of its dealing with the other party. Such information shall neither be disclosed to third parties nor used for other purposes than those for which the information has been supplied.
- 5.2 In the context of the contractual relation with the Purchaser personal data may be processed. The Purchaser agrees to the disclosure of said data to third parties such as foreign subcontractors and suppliers etc.

## 6 Local Laws and Regulations, Export Controls

- 6.1 The Purchaser shall bring to the attention of Georg Fischer all local laws and regulations at the place of destination which bear connection with the execution of the contract and the adherence to relevant safety regulations and approval procedures.
- 6.2 In case of re-exports, Purchaser shall be responsible for compliance with pertinent export control regulations.

## 7 Price

- 7.1 Unless agreed otherwise, the prices shall be deemed quoted net ex works (according to Incoterms of the ICC, latest version) including standard packing. All supplementary costs such as the cost of carriage, insurance, export-, transit- and importlicences etc. shall be borne by the Purchaser. The Purchaser shall also bear the costs of all taxes, fees duties etc. connected with the contract.
- 7.2 If the costs of packing, carriage, insurance, fees and other supplementary costs are included in the tender price or contract price or are referred to specifically in the tender or confirmation of order, Georg Fischer reserve the right to revise their prices accordingly should any change occur in the relevant tariffs.

## 8 Terms of Payment

- 8.1 The Purchaser shall make payment in the manner agreed by the parties without any deductions such as discounts, costs, taxes or dues.
- 8.2 The Purchaser may only withhold or off-set payments due against counter claims which are either expressly acknowledged by Georg Fischer or finally awarded to the Purchaser. In particular, payment shall still be made when unessential items are still out-standing provided that the Products already delivered are not rendered unusable as a result.

## 9 Retention of Title

- 9.1 The Products shall remain the property of Georg Fischer until the Purchaser shall have settled all claims, present and future, which Georg Fischer may have against him.
- 9.2 Should the Purchaser resell Products to which title is reserved, in the ordinary course of business, he shall hereby be deemed to have tacitly assigned to Georg Fischer the proceeds deriving from their sale together with all collateral rights, securities and reservations of title until all claims held by Georg Fischer shall have been settled. Until revoked by Georg Fischer, this assignment shall not preclude Purchaser's right to collect the assigned receivables.
- 9.3 To the extent the value of the Products to which title is reserved together with collateral securities exceeds Georg Fischer's claims against the Purchaser by more than 20%, Georg Fischer shall re-assign the above proceeds to Purchaser at his request.

## 10 Delivery

- 10.1 The term of delivery shall commence as soon as the contract has been entered into, all official formalities such as import and payment permits have been obtained and all essential technical issues have been settled. The term of delivery shall be deemed duly observed when, upon its expiry, the Products are ready for despatch.
- 10.2 Delivery is subject to the following conditions, i.e. the term of delivery shall be reasonably extended:
  - a) if Georg Fischer are not supplied in time with the information necessary for the execution of the contract or if subsequent changes causing delays are made by the Purchaser.
  - b) if Georg Fischer are prevented from performing the contract by force majeure. Force majeure shall equally be deemed to be any unforeseeable event beyond Georg Fischer's control which renders Georg Fischer's performance commercially unpractical or impossible, such as delayed or defective supplies from sub contractors labour disputes, governmental orders or regulations, shortages in materials or energy, serious disturbances in Georg Fischer's works, such as the total or partial destruction of plant and equipment or the breakdown of essential facilities, serious disruptions in transport facilities, e.g. impassable roads.  
Should the effect of force majeure exceed a period of six months, either party may cancel the contract forthwith.  
Georg Fischer shall not be liable for any damage or loss of any kind whatsoever resulting therefrom, any suspension or cancellation being without prejudice to Georg Fischer's right to recover all sums due in respect of consignments delivered and costs incurred to date.
  - c) if the Purchaser is in delay with the fulfilment of his obligations under the contract, in particular, if he does not adhere to the agreed conditions of payment or if he has failed to timely provide the agreed securities.
- 10.3 If for reasons attributable to Georg Fischer the agreed term of delivery or a reasonable extension thereof is exceeded, Georg Fischer shall not be deemed in default until the Purchaser has granted to Georg Fischer in writing a reasonable extension thereof of not less than one month which equally is not met.  
The Purchaser shall then be entitled to the remedies provided at law, it being however understood that, subject to limitations of Art. 16, damage claims shall be limited to max. 10% of the price of the delayed delivery.
- 10.4 Part shipments shall be allowed and Georg Fischer shall be entitled to invoice for such partial deliveries.
- 10.5 If the Purchaser fails to take delivery within a reasonable time of Products notified as ready for despatch, Georg Fischer shall be entitled to store the Products at the Purchaser's expense and risk and to invoice them as delivered. If Purchaser fails to effect payment, Georg Fischer shall be entitled to dispose of the Products.
- 10.6 Should Purchaser cancel an order without justification and should Georg Fischer not insist on the performance of the contract, Georg Fischer shall be entitled to liquidated damages in the amount of 10% of the contract price, Georg Fischer's right to prove and claim higher damages remaining reserved. Purchaser shall be entitled to prove, that Georg Fischer has suffered no or a considerably lower damage.

## 11 Packing

- 11.1 If the Products are provided with additional packing over and above the standard packing, such packing shall be charged additionally.

## 12 Passing of Risk

- 12.1 The risk in the Products shall pass to the Purchaser as soon as they have left Georg Fischer's works (EX WORKS, Incoterms ICC, latest version), even if delivery is made carriage-paid, under similar clauses or including installation or when carriage is organized and managed by Georg Fischer.
- 12.2 If delivery is delayed for reasons beyond Georg Fischer's control, the risk shall pass to the Purchaser when he is notified that the Products are ready for despatch.

## 13 Carriage and Insurance

- 13.1 Unless agreed otherwise, the Purchaser shall bear the cost of carriage.
- 13.2 The Purchaser shall be responsible for transport insurance against damage of whatever kind. Even when such insurance is arranged by Georg Fischer it shall be deemed taken out by the order of and for the account of the Purchaser and at his risk.
- 13.3 Special requests regarding carriage and insurance shall be communicated to Georg Fischer in due time. Otherwise carriage shall be arranged by Georg Fischer at their discretion, but without responsibility, by the quickest and cheapest method possible.  
In case of carriage-paid delivery transport arrangements shall be made by Georg Fischer. If the Purchaser specifies particular requirements, any extra costs involved shall be borne by him.
- 13.4 In the event of damage or loss of the Products during carriage the Purchaser shall mark the delivery documents accordingly and immediately have the damage ascertained by the carrier. Not readily ascertainable damages sustained during carriage shall be notified to the carrier within six days after receipt of the Products.

## 14 Inspection, Notification of Defects and Damages

- 14.1 The Products will be subject to normal inspection by Georg Fischer during manufacture. Additional tests required by the Purchaser shall be agreed upon in writing and shall be charged to the Purchaser.
- 14.2 It shall be a condition of Georg Fischer's obligation under the warranties stated hereinafter that Georg Fischer be notified in writing by the Purchaser of any purported defect immediately upon discovery. Notice concerning weight, numbers or apparent defects is to be given latest within 30 days from receipt of the Products, notice of other defects immediately latest within 7 working days after discovery, in any event within the agreed warranty period.
- 14.3 Purchaser shall not dispose of allegedly defective Products until all warranty and/or damage claims are finally settled. At its request, defective Products are to be placed at Georg Fischer's disposal.
- 14.4 At its request, Georg Fischer shall be given the opportunity to inspect the defect and/or damage, prior to commencement of remedial work, either itself or by third party experts.

## 15 Warranty

- 15.1 At the written request of the Purchaser, Georg Fischer undertake to repair or replace at their discretion, as quickly as possible and free of charge all Products supplied which demonstrably suffer from faulty design, materials or workman-ship or from faulty operating or installation instructions.  
In order to protect employees from toxic or radioactive substances which may have been transported through defective parts returned to Georg Fischer's sales organisation, said parts must be accompanied by a Material Safety Disclosure Form. The form may be obtained from Georg Fischer's local sales company or via [www.piping.georgfischer.com](http://www.piping.georgfischer.com).  
Replaced parts shall become property of Georg Fischer.
- 15.2 For Products which are manufactured to specifications, drawings or patterns supplied by the Purchaser, Georg Fischer's warranty shall be restricted to proper materials and workmanship.
- 15.3 The Purchaser shall be entitled to cancel the contract or to demand a reduction in the contract price if also a second attempt to repair or replace the Products has failed.
- 15.4 For Products or essential components manufactured by a third party and supplied by Georg Fischer under this contract, Georg Fischer's warranty is limited to the warranty provided by said third party.
- 15.5 This warranty shall not apply to damage resulting from normal wear and tear, improper storage and maintenance, failure to observe the operating instructions, overstressing or overloading, unsuitable operating media, unsuitable construction work or unsuitable building ground, improper repairs or alterations by the Purchaser or third parties, the use of other than original spare parts and other reasons beyond Georg Fischer's control.
- 15.6 No action or claim may be brought by the Purchaser on account of any alleged breach of warranty or any other obligation of Georg Fischer after the expiration of twelve (12) months from receipt of the Products by the end user or at the latest within eighteen (18) months of the Products being despatched by Georg Fischer.
- 15.7 In case of Products for use in domestic installations or in utilities
  - Georg Fischer will assume the costs of dismantling the defective Product and restoring the damaged object as well as, in case of negligence, all other direct damages caused by the defective Product (damage to property and injury to or death of persons) up to CHF 1 000 000 per occurrence.
  - the statute of limitations for warranty or damage claims - contrary to Section 15.6 - will be 5 years from the date of installation.

## 16 Limitation of Liability

- 16.1 All cases of breach of contract and the relevant consequences as well as all rights and claims on the part of the customer, irrespective of what ground they are based, are exhaustively covered by these general conditions of supply. In particular, any claims not expressly mentioned for damages, reduction of price, termination of or withdrawal from the contract are excluded. In no case whatsoever shall the customer be entitled to claim damages other than compensation for costs of remedying defects in the supplies. This in particular refers, but shall not be limited, to loss of production, loss of use, loss of orders, loss of profit and other direct or indirect or consequential damage. This exclusion of liability, however, does not apply to unlawful intent or gross negligence on the part of Georg Fischer and in case of strict liability under applicable product liability statutes, but does apply to unlawful intent or gross negligence of persons employed or appointed by Georg Fischer to perform any of its obligations.

## 17 Severability

- 17.1 Should any term or clause of these General Conditions in whole or in part be found to be unenforceable or void, all other provisions shall remain in full force and effect and the unenforceable or void provision shall be replaced by a valid provision, which comes closest to the original intention of the unenforceable or invalid provision.

## 18 Place of Performance and Jurisdiction

- 18.1 Place of performance for the Products shall be the Georg Fischer works from which the Products are despatched.
- 18.2 Any civil action based upon any alleged breach of this contract shall be filed and prosecuted exclusively in the courts of Schaffhausen, Switzerland.  
Georg Fischer however reserves the right to file actions in any court having jurisdiction over controversies arising out of or in connection with the present contract.
- 18.3 The contract shall be governed by Swiss law without regard to conflict of law provisions that would require the application of another law.

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The technical data is not binding. They neither constitute expressly warranted characteristics nor guaranteed properties nor a guaranteed durability. They are subject to modification. Our General Terms of Sale apply.

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