

Machines & Tools

Product Range International 2016



Machines and Tools for Utility Applica- tions





Utility Range

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Designed to make your job easier

Electrofusion Units

MSA 4.0, MSA 2.1 and MSA 2.0



Utility Range

Differentiation in the MSA family

	MSA 230	MSA 330	MSA 2.0	MSA 340	MSA 2.1	MSA 2 MULTI	MSA 4.0	MSA 4.1
Material	PE	PE/PP	PE/PP	PE/PP	PE/PP	PE/PP/ PB/PVDF	PE/PP	PE/PP
Electrical data								
Type of protection	IP54	IP54	IP65	IP54	IP65	IP65	IP65	IP65
Main switch	√	√		√	√	√	√	√
Output voltage	39-40V	8-48V	8-48V	8-48V	8-48V	3.6-40V	8-48V	8-48V
Output current max (A)	90	90	90	90	90	90	110	110
Display	Alphanum.	Alphanum.	Graphic	Alphanum.	Graphic	Graphic	Big Graphic	Big Graphic
Data and operation control								
Protocols on board	350	500	350	1000	500	500	5000	5000
Export protocols	√	√		√	√	√	√	√
PDF fusion documentation		√		√	√	√	√	√
Language support	9	11	Any	11	Any	Any	32	32
Mechanical data								
Weight (kg)	19	23	11.9	23	11.9	11.9	12.5	12.5
Mains cable length (m)	4	4	4	4	4	4	4	4
Fusion cable length (m)	3	4	3	4	4	4	4	4
Functions								
Operator code/job number	√	√		√	√	√	√	√
Manual/barcode fusion data	√	√	√	√	√	√	√	√
Traceability				√			√	√
GPS				√			√	√
Workflow configuration		√		√	√	√	√	√
WeldinOne compatibility	√	√		√	√	√	√	√
QR unitary code							Optional	√
Wireless scanner								√
Online services apps								√
Mobile network comm.								√



MSA 4.1

Electrofusion Unit with full traceability, GPS functions and wireless scanner

High performance, light electro-fusion unit based on inverter technology, providing a complete documentation of the welding including operator badge, job codes, full traceability data (ISO 12176) and GPS coordinates added automatically to each fusion record.

All is meant to simplify the job: the barcode scanner, for long distance reading, the cooling system to joint in series, the icon system, to keep the interaction between user and machine intuitive, the configurable workflow to fit all needs, from the simplest to the most plenty of details.

Operator identity, job identification and fitting data are captured using a wireless scanner, with 1D (for barcode labels on the fitting) and 2D (in case of Unitary QR code availability). The wireless scanner is based on a rugged mobile phone with a software application installed for reading the barcode and giving evidence of the barcode type (operator, fusion data, traceability...). The wireless device can be used also for communication purposes as well as for accessing to GFPS online web services

The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time.

The internal memory has a capacity of 5000 jointing records, which can be retrieved using a USB memory stick. The fusion protocols are delivered as PDF, CSV files (both manageable with standard and free PC software applications). For a more sophisticated usage, a BIN file is also available, compatible with the MSA Welding Book to sort, filter out and combine protocols and photos captured from multiple MSA units.

Robust aluminum die casting enclosures and comfortable plastic handle ensure a weight balanced carrying.

Rental time period programmable by the machine owner, unit blocks on expiring date, reset by a dynamic code can be activated.

Scope of delivery: transport case, wireless scanner as rugged mobile phone with battery charger, 2 pairs of angle adapters (clips 4,0 mm and 4,7 mm), operation instructions, START/STOP badge, configuration chart and mini Welding Book CD including Rental Guardian application.

Technical Data:

- Mains frequency: 50-60 Hz
- Fusion data input mode: bar code, manual
- Mains voltage: 230 V (190V - 265V)
- Suggested power generators: 3.5 kVA
- Welding technique: Voltage controlled
- Fusion voltage: 8-48 V
- Fusion current: 110 A (max)
- Fittings range: d16-1400 mm
- USB Port: Type A
- Operating temperature: -20°C to +50°C
- Internal memory capacity: 5000 protocols
- Protocols format: PDF, CSV and BIN (compatible with MSA Welding Book)
- Protection factor: Class 1 / IP 65
- Mains cable: 4 m
- Fusion cable: 4 m
- Dimensions: 280 x 420 x 280 mm
- Weight: ca. 12.8 kg
- Display: Graphical LCD, adjustable contrast
- Languages support: 27

Type	Description	Code	Weight (kg)
MSA 4.1	2D wireless scanner (QR code reading)	790 156 013	13.000



MSA 4.0 Electrofusion Unit with full traceability and GPS functions

High performance, light electro-fusion unit based on inverter technology, providing a complete documentation of the welding including operator badge, job codes, full traceability data (ISO 12176) and GPS coordinates added automatically to each fusion record.

All is meant to simplify the job: the barcode scanner, for long distance reading, the cooling system to joint in series, the icon system, to keep the interaction between user and machine intuitive, the configurable workflow to fit all needs, from the simplest to the most plenty of details.

The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time.

For operator identity card, job identification and fusion data input a 1D (or 2D in case of Unitary QR code availability) barcode scanner is connected.

The internal memory has a capacity of 5000 jointing records, which can be retrieved using a USB memory stick. The fusion protocols are delivered as PDF, CSV files (both manageable with standard and free PC software applications). For a more sophisticated usage, a BIN file is also available, compatible with the MSA Welding Book to sort, filter out and combine protocols and photos captured from multiple MSA units.

Robust aluminum die casting enclosures and comfortable plastic handle ensure a weight balanced carrying.

Rental time period programmable by the machine owner, unit blocks on expiring date, reset by a dynamic code can be activated.

Scope of delivery: transport case, scanner, 2 pairs of angle adapters (clips 4,0 mm and 4,7 mm), operation instructions, START/STOP badge, configuration chart and mini Welding Book CD including Rental Guardian application.

Technical Data:

- Mains frequency: 50-60 Hz
- Fusion data input mode: bar code, manual
- Mains voltage: 230 V (190V - 265V)
- Suggested power generators: 3.5 kVA
- Welding technique: Voltage controlled
- Fusion voltage: 8-48 V
- Fusion current: 110 A (max)
- Fittings range: d16-1400 mm
- USB Port: Type A
- Operating temperature: -20°C to +50°C
- Internal memory capacity: 5000 protocols
- Protocols format: PDF, CSV and BIN (compatible with MSA Welding Book)
- Protection factor: Class 1 / IP 65
- Mains cable: 4 m
- Fusion cable: 4 m
- Dimensions: 280 x 420 x 280 mm
- Weight: ca. 12.8 kg
- Display: Graphical LCD, adjustable contrast
- Languages support: 27

Type	Description	Code	Weight (kg)
MSA 4.0	1D barcode scanner	790 156 011	13.000
MSA 4.0	2D barcode scanner (QR code reading)	790 156 012	13.000



MSA 2.1 Automatic Electrofusion Unit with protocols retrieval

The MSA 2.1 automatic electro fusion unit combines light weight and high efficiency, thanks to its inverter technology and furthermore provides fusion documentation in PDF. The unit is extremely fast and simple, with three basic operations required to operator: connect, scan, start the fusion. It is robust, safe and ergonomic.

All is meant to simplify the job: the barcode scanner, for long distance reading, the cooling system to joint in series, the icon system, to keep the interaction between user and machine intuitive. The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time.

The unit has 500 protocols permanently stored in the internal memory. The user can copy the fusion reports in an USB stick to print them out in PDF format.

Scope of delivery includes: transport box, 1 pair of angle adapter clips 4.0 mm, 1 pair of angle adapter clips 4.7 mm, operating instructions and START/STOP badge. The mini Welding Book is available as option.

Technical Data:

- Operating temperature: -20°C to +50°C
- Fusion data input mode: bar code, manual
- Mains voltage: 230 V (190V - 265V)
- Mains frequency: 50-60 Hz
- Welding technique: Voltage controlled
- Fusion voltage: 8-42 V (48 V)
- Fusion current: 90 A (max)
- Suggested power generators: 3.5 kVA
- Internal memory capacity: 500 protocols
- Fittings range: d16-1200 mm
- Protocols format: PDF and binary (compatible with mini Welding Book)
- USB Port: Type A
- Protection factor: Class 1 / IP 65
- Mains cable: 4 m
- Fusion cable: 4 m
- Weight: ca. 11.9 kg
- Display: Graphical LCD, adjustable contrast
- Languages support: all

	Type	Code	Weight (kg)
Barcode scanner, transport case		790 156 002	20.000
Barcode scanner, transport case, mini Welding Book		790 156 003	13.000



MSA 2.0
Automatic Electrofusion Unit

The MSA 2.0 automatic electro fusion unit combines light weight and high efficiency, thanks to its inverter technology. The unit is extremely fast and simple, with three basic operations required to operator: connect, scan, start the fusion.

The MSA 2.0 has 350 protocols permanently stored in the internal memory.

It is robust, safe and ergonomic.

All is meant to simplify the job: the barcode scanner, for long distance reading, the cooling system to joint in series, the icon system, to keep the interaction between user and machine intuitive.

The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time.

Scope of delivery includes: transport box, 1 pair of angle adapter clips 4.0 mm and operating instructions.

Technical Data:

- Operating temperature: -20°C to +50°C
- Mains frequency: 50-60 Hz
- Mains voltage: 230 V (190V - 265V)
- Fusion current: 90 A (max)
- Suggested power generators: 3.5 kVA
- Welding technique: Voltage controlled
- Fusion voltage: 8-42 V (48 V)
- Fittings range: d16-1200 mm
- Fusion data input mode: bar code, manual
- Internal memory capacity: 350 protocols
- USB Port: Type A
- Protection factor: Class 1 / IP 65
- Mains cable: 4 m
- Fusion cable: 3 m
- Dimensions: 280 x 420 x 280 mm
- Weight: ca. 11.9 kg
- Display: Graphical LCD, adjustable contrast
- Languages support: all

Type	Code	Weight (kg)
Barcode scanner, transport case	790 156 001	20.000



**Shipbuilding and Industry MSA 2 MULTI
Automatic Electrofusion Unit for PE/PP/PVDF/PB**

The MSA 2 MULTI automatic electro fusion unit combines light weight and high efficiency, thanks to its inverter technology. The unit is suitable for welding PE, PP, INSTAFLEX PB d125-225, Fuseal d1 1/2"-12" and PPro-Seal 1/2"-3".

It is robust, safe and ergonomic.

All is meant to simplify the job: the barcode scanner, for long distance reading, the cooling system to joint in series, the icon system, to keep the interaction between user and machine intuitive. The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time.

The unit has 500 protocols permanently stored in the internal memory. The user can copy the fusion reports in an USB stick to print them out in PDF format.

Scope of delivery includes: 1 pair of angle adapter clips 4.0 mm, operating instructions, START/STOP badge, USB memory stick and robust transport case

Technical Data:

- Operating temperature: -20°C to +50°C
- Fusion data input mode: bar code, manual
- Mains voltage: 230 V (190V - 265V)
- Mains frequency: 50-60 Hz
- Welding technique: Voltage controlled
- Fittings range: d16-630 mm , 1/2"-12"
- Fusion voltage: 3.6-40 V
- Fusion current: 90 A (max)
- Suggested power generators: 3.5 kVA
- USB Port: Type A
- Protection factor: Class 1 / IP 65
- Mains cable: 4 m
- Fusion cable: 3 m
- Weight: ca. 11.9 kg
- Display: Graphical LCD, adjustable contrast

Type	Code	Weight (kg)
Full package plus mini Welding Book	790 156 021	20.000
Full package plus mini Welding Book, SeaDrain adapters and barcodes	790 156 022	20.000



MSA 340 Traceability Electrofusion unit with GPS function

High performance electrofusion unit providing an entire documentation of fusion and traceability data (ISO 12176) including GPS coordinates added automatically to each fusion record. The internal memory has a capacity of 1000 jointing records, for data transfer the unit is equipped with an USB interface. The record is delivered as PDF or CSV format, both are manageable with common and free PC software applications. An intuitive operation menu guides you through the complete jointing process. For fusion data input a barcode scanner is connected. The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and indication of cooling time. Robust aluminum housing with convenient cable winding and handle for weight balanced transport. The unit is suitable for jointing in series. Rental time period programmable by the machine owner, unit blocks on expiring date, reset by password.

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

Technical Data

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

	description	Code	Weight (kg)
	Barcode scanner, transport box	790 160 007	30.000
	Barcode scanner, transport box, mini Welding Book	790 160 027	30.000



MSA 330 Electrofusion unit with jointing data recording

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

Scope of delivery: dedicated transport case, 2 pairs of angle adapter clips 4,0 mm and 4,7 mm, operation instructions and configuration chart.

Technical Data

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

description	Code	Weight (kg)
Barcode scanner, transport case	790 160 005	30.000

MSA 230



MSA 230 Electrofusion unit with jointing data recording

Monovalent electrofusion unit (fusion voltage 39,0 – 40,0 Volt) equipped with barcode scanner for automated data entry. Recording of jointing data and operator identification code. Easy to handle, robust machine for the whole range of ELGEF fittings. The Polybrand version supports the input of fusion barcodes from non GF fittings requiring a fusion tension between 39,0 to 40,0 Volt. Reliable process by controlled energy output, including ambient temperature correction factor. Suitable for jointing in series. Easy interaction by choosing the favourite language of the operator. To the "All-In" version a cable drum for safe and time-saving cable storage is already assembled, also the data transfer cable is in the scope of delivery. No need for dedicated software, therefore no XP/VISTA compatibility issues. Inclusive 1 pair of straight adapter clips 4.0 -> 4.7 mm, operating instructions.

Technical Data

Fusion data entry	barcode or manual
Ambient temperature	-10°C to +45°C
Mains voltage	230 V (190 - 265 V)
Mains frequency	50 Hz (40 ÷ 70 Hz)
Fusion voltage	39 ÷ 40 V AC
Internal Fuse	75 A (max. 90 A)
Power consumption	2.75 kW (max. 3.5 kW)
Power plug	Schuko
Protection	IP 54, Class 1
Interfaces	RS 232
Memory capacity	350 records
Mains cable	4 m
Fusion cable	3 m
Dimensions (WxHxD)	280 x 480 x 240 mm
Weight incl. cables	ca. 19 kg
Display	LCD graphic, background light
Size display (WxH)	60 x 17 mm
Character size	2.95 x 5.5 mm
Languages	EN, FR, DE, IT, PL, SP, RO, TR

Type	Code	Weight (kg)
MSA 230 Standard Scanner	790 128 029	22.000
MSA 230 All-In Scanner	790 128 030	23.000



MSA 230 Basic
Manual Electrofusion unit with jointing data recording

Monovalent electrofusion unit (fusion voltage 39,0 – 40,0 Volt) with manual data entry and recording of jointing data and operator identification code. Easy to handle, robust machine for the whole product range of ELGEF fittings (diameter up to dn 630).
 Reliable process by controlled energy output, including ambient temperature correction factor. Suitable for jointing in series. Easy interaction by choosing the favourite language of the operator. Scope of delivery includes: 1 pair of straight adapter clips 4.0 -> 4.7 mm, operating instructions. To read out the fusion protocols the data transfer cable (790 128 112) is required. No need for dedicated software, therefore no XP/VISTA compatibility issues.

Technical Data

Fusion data entry	manual
Ambient temperature	-10°C - +45°C
Mains voltage	230 V (190 - 265 V)
Mains frequency	50 Hz (40 ÷ 70 Hz)
Fusion voltage	39 ÷ 40 V AC
Internal Fuse	75 A (max. 90 A)
Power consumption	2.75 kW (max. 3.5 kW)
Protection	IP 54, Class 1
Interfaces	RS 232
Memory capacity	350 records
Mains cable	4 m
Fusion cable	3 m
Dimensions (WxHxD)	280 x 480 x 240 mm
Weight incl. cables	ca. 19 kg
Display	LCD graphic, background light
Size display (WxH)	60 x 17 mm
Character size	2.95 x 5.5 mm
Languages	EN, FR, DE, IT, PL, SP

Type	Code	Weight (kg)
MSA 230 Basic	790 128 006	22.000

MSA Accessories



WeldinOne

Software applications to assist installers during welding and asset maintenance
The applications are suitable for all GF electrofusion, butt fusion and InfraRED machines able to generate fusion protocols at the end of the jointing.

- The **Welding Book** creates PDF books including the protocols automatically captured by the machine, the maps for the welding place and the photos of scraping activities and proper alignment.
- The **Barcode Generator** creates operator badge, job number, tools identifier to support the installation companies in tracking their work.
- The **MSA Configurator** graphically creates different configurations for the MSA 4.0 and MSA 4.1, to be downloaded, via USB stick, on these machines. Furthermore, it can create the barcodes used to configure the MSAplus family workflow.

Type	Code	Weight (kg)
WeldinOne	790 160 201	0.100



mini-Welding Book

Software application to assist the installer to manage the welding results: PDF creation in local language from protocols exported by MSA/BF/IR machines Automatic merge of photos and fusion protocols Combination of fusion protocols retrieved from more than one unit Filter of fusion protocols per date, type of error, etc...

Type	Code	Weight (kg)
mini-Welding Book	790 156 030	0.050



Holster for PDA

- Holster for MSA 4.1 rugged PDA, with magnetic flap and belt clip.

Description	Code	Weight (kg)
Holster for rugged PDA	790 156 197	0.100



MSA Rent Guardian

- Software application to unlock the MSA 330&340 when rental time is expired
- Generation of enabling code

Type	Code	Weight (kg)
MSA Rent Guardian	790 160 154	0.160



Geothermal cables kit

- Ability to joint in parallel 2 couplers of a Y fitting
- Welding voltage: 0 – 48 Volt
- Welding current: 40 A (max.)
- Content of delivery: 2 cables, pouch, protection caps, operation manual
- Recommended in combination with ELGEF fittings
- Compatible with all MSA Units
- Connector: 4 mm (90°)
- Cable length: 290 mm

Code Weight

	(kg)
790 160 176	0.385



Data Transfer Cable

- RS 232 data transfer from MSA 230 to PC

Type Code Weight

		(kg)
MSA 230	790 128 112	0.125



Transport Box

- Large, robust transport box

Type Dimension Code Weight

	(mm)		(kg)
MSA 230	320x310x510	790 128 121	6.300
MSA 330 / MSA 340	370x350x520	790 160 010	8.000
MSA 2 / MSA 4	315x315x525	790 156 228	4.000



Barcode Scanner

Barcode scanner for automatic fusion and traceability data reading of fittings and pipes

Description Code Weight

		(kg)
Standard MSA230/MSA330/MSA340 scanner and cable	790 128 119	0.250
MSAplus scanner and cable	790 160 227	0.019
MSA330/MSA340 rugged scanner and cable	790 160 225	0.019
MSA 2.0 barcode scanner	790 156 160	0.250
MSA 2.1 and MSA 4.0 1D barcode scanner	790 156 260	0.250
MSA 4.0 2D barcode scanner	790 156 261	0.250
MSA 4.1 rugged PDA	790 156 214	0.250



Adapter

- Adapters for Electrofusion units with 4 mm connectors.

Type Code Weight Description

		(kg)	
4,0 mm	799 350 340	0.058	Angle adapter, black
4,7 mm	799 350 341	0.057	Angle adapter, grey
4,7 mm	799 350 462	0.014	Adapter, white



SeaDrain/FUSEAL cable adapters

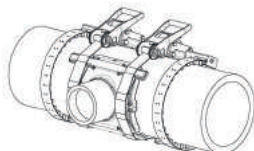




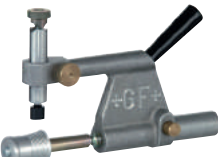

- Ability to joint in parallel up to 4 coils, for SeaDrain, SeaDrain PLUS, Fuseal, PPRo-Seal and Fuseal 25/50
- Compatible with all MSA Units

Type	Code	Weight (kg)
4 leads cable, 0.6m length	790 156 184	0.400
4 leads cable, 1.6m length	790 156 195	0.400

Utility Range

Peeling Tools

Working Range

Size	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	1200	1400	1600	1800	2000	
 Topload																																		
 RST 1000																																		
 RS																																		
 RTC 710																																		
 PT 2																																		
 PT 1																																		
 PT 4																																		



Rotary Peeler RS

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

Features and your advantage:

Spring loaded peeling blade:Peeling quality independent 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

Peeling length:No limitation of peeling length

Guidance rolls:3-point-support for dimensional optimized cutting feed

Time saving:Tool is always ready for use, it can be used for the next peeling without having to set 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 when changing dimension

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

d (mm)	Article	Code	Weight (kg)
40	RS 40	790 136 001	1.310
50	RS 50	790 136 002	1.310
63	RS 63	790 136 003	1.310
75	RS 75	790 136 004	1.540
90	RS 90	790 136 005	1.540
110	RS 110	790 136 006	1.540
125	RS 125	790 136 007	1.730
140	RS 140	790 136 008	1.730
160	RS 160	790 136 009	1.730
180	RS 180	790 136 010	2.030
200	RS 200	790 136 011	2.030
225	RS 225	790 136 012	2.030
250	RS 250	790 136 013	2.440
280	RS 280	790 136 014	2.440
315	RS 315	790 136 015	2.440



Transport cases for Rotary Peeler RS

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

Article	Code	Weight (kg)	Description	Dimension (mm)
RSTC 40-110	790 136 211	0.718	for RS 40-RS 110	326 - 222 - 116
RSTC 125-160	790 136 212	1.212	for RS 125-RS 160	437 - 395 - 116
RSTC 180-225	790 136 213	1.796	for RS 180-RS 225	450 - 360 - 132
RSTC 250-315	790 136 214	2.901	for RS 250-RS 315	566 - 435 - 156



Replacement blade to Rotary Peeler RS

d-d (mm)	Description	Code	Weight (kg)
40 - 315	Hard metal	790 136 100	0.013

Tools for preparing pipe surfaces



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	Weight (kg)	Description
20 - 90	799 150 382	2.261	Basic Tool PT 1 E

Pipe inserts for peeling tool PT 1 E



d (mm)	e (mm)	Code	Weight (kg)	Description
20	1.9	799 300 739	0.220	Pipe Insert SDR 11
20	3.0	799 300 741	0.262	Pipe Insert SDR 7
25	2.3	799 300 740	0.280	Pipe Insert SDR 11
25	3.0	799 300 742	0.290	Pipe Insert SDR 9
32	3.0	799 300 743	0.312	Pipe Insert SDR 11
40	3.7	799 300 744	0.341	Pipe Insert SDR 11
40	1.8	799 300 760	0.220	Pipe Insert SDR 26
50	4.6	799 300 745	0.472	Pipe Insert SDR 11
50	2.0	799 300 761	0.220	Pipe Insert SDR 26
56	2.2	799 300 762	0.588	Pipe Insert SDR 26
63	3.8	799 300 725	0.663	Pipe Insert SDR 17
63	5.8	799 300 746	0.602	Pipe Insert SDR 11
63	2.5	799 300 763	0.220	Pipe Insert SDR 26
75	4.5	799 300 727	0.690	Pipe Insert SDR 17
75	6.9	799 300 747	0.644	Pipe Insert SDR 11
75	2.9	799 300 764	0.220	Pipe Insert SDR 26
90	5.4	799 300 748	0.892	Pipe Insert SDR 17
90	8.2	799 300 749	0.796	Pipe Insert SDR 11

Replacement blade for peeling tool PT 1 E



d-d (mm)	Code	Weight (kg)	Description
20 - 90	799 150 383	0.028	Replacement blade, 1 piece

PT 1 E



Peeling tool PT 2

- Scope of delivery: 1 tool (size 1, 2 or 3) in a metal carrying case.
- 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.

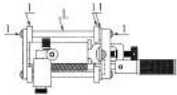
d-d (mm)	Code	Weight (kg)	Description
63 - 250	799 300 752	7.500	Size 1, peeling length 140 mm
110 - 400	799 300 755	3.900	Size 2, peeling length 150 mm
110 - 500	799 300 756	10.500	Size 3, peeling length 175 mm



PT 2

Replacement blade for peeling tool PT 2

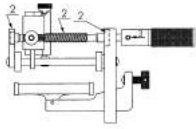
d-d (mm)	Code	Weight (kg)	Description
63 - 500	799 150 355	0.008	Replacement blade, 1 piece



Spindles repair kit for peeling tool PT 2

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

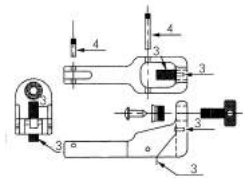
d-d (mm)	Code	Weight (kg)
90 - 250	799 150 360	1.000
110 - 400	799 150 361	0.420
110 - 500	799 150 362	1.000



Feed repair kit feed for peeling tool PT 2

- Consisting of 1 carriage bolt, 1 guide unit and 1 guide end plate

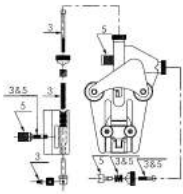
d-d (mm)	Code	Weight (kg)
90 - 250	799 150 363	0.500
110 - 400	799 150 364	0.346
110 - 500	799 150 365	0.500



Screws and springs repair kit for peeling tool PT 2

- Consisting of 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	Weight (kg)
90 - 500	799 150 369	0.079



Tool holder repair kit for peeling tool PT 2

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

d-d (mm)	Code	Weight (kg)
90 - 500	799 150 370	0.069

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.
- Scope of delivery: 1 tool with exchangeable blade (4 cutting surfaces).

e (mm)	d (mm)	Code	Weight (kg)	Description
1.9	20	799 300 704	0.303	Pipe Insert SDR 11
3.0	20	799 300 705	0.296	Pipe Insert SDR 7
2.3	25	799 300 706	0.320	Pipe Insert SDR 11
3.0	25	799 300 707	0.314	Pipe Insert SDR 9
3.0	32	799 300 708	0.340	Pipe Insert SDR 11
3.7	40	799 300 709	0.437	Pipe Insert SDR 11
4.6	50	799 300 710	0.502	Pipe Insert SDR 11
5.8	63	799 300 711	0.541	Pipe Insert SDR 11

Replacement blade for peeling tool PT 4



PT 4

d-d (mm)	Piece	Code	Description
20 - 63	1	799 150 275	Replacement blade with 4 cutting surfaces

Peeling tool RTC-710



The peeling tool RTC-710 is suitable for preparing 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 deburring knife, 1 accessories bag.

d-d (mm)	Code	Weight (kg)	Description
355 - 710	799 300 757	31.400	max. working-range 530 mm

Replacement blade for peeling tool RTC-710



d-d (mm)	Piece	Code	Weight (kg)	Description
355 - 710	1	799 300 586	0.020	Replacement blade, 1 piece



Rotary peeling tool RST 1000

- The flexible peeling tool RST 1000 is suitable for preparing welding zones of saddle and coupler jointings for Electrofusion fittings
- To ensure the constant removal of the oxidation layer for PE80 and PE100, a long lasting peeling blade made of carbide is used
- Easy-to-hinge chain links enable the staged operation of pipes d250 to d1000 mm
- Compensation for ovality and variable pipe diameters with loaded spring component in the chain
- Scope of delivery includes: various chain links, spare blade, transport box

d-d (mm)	Code	Weight (kg)
250 - 1000	799 300 799	10.552



Transportbox RST 1000 with inlays

- Included in the scope of delivery of the Rotary Peeler RST 1000

d-d (mm)	Code	Weight (kg)
250 - 1000	799 300 806	0.250



Replacement blade for rotary peeling tool RST 1000

d-d (mm)	Code	Weight (kg)	Description
250 - 1000	799 300 802	0.001	Replacement blade in carbide



Hand scraper

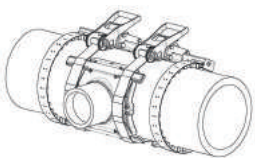



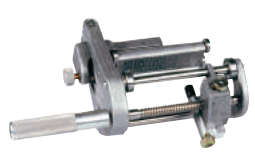


- The Hand Scraper can be used to prepare the fusion zone on PE80 pipes.

Code	Weight (kg)	Description
799 198 094	0.143	Hand scraper with long handle

Utility Range

Peeling Tools

Working Range

Size	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	1200	1400	1600	1800	2000					
 <p>Topload</p>																																						
 <p>RST 1000</p>																																						
 <p>RS</p>																																						
 <p>RTC 710</p>																																						
 <p>PT 2</p>																																						
 <p>PT 1</p>																																						
 <p>PT 4</p>																																						



Multiple use assembly tool branch saddle d140mm

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

d (mm)	Code	Weight (kg)
140	193 281 027	0.724



Swivel clamp

- The Swivel Clamp centralises pipes with dimensions from d63 to 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.

d-d (mm)	Code	Weight (kg)
63 - 180	799 350 358	12.260



Double clamp

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

d-d (mm)	Code	Weight (kg)
63 - 125	799 301 484	3.506
110 - 225	799 301 486	7.918
225 - 500	799 301 488	14.735



Quadruple clamp

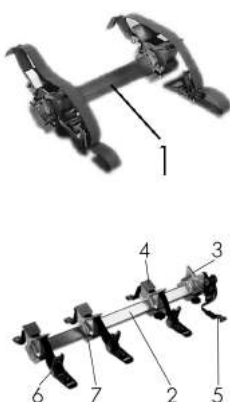


- The professional Quadruple Clamps are suitable for coupler connections. They are quickly and easily put into position and ensure a stress-free fusion. They prevent pullout and pipe movements during the fusion and cooling times.
- Recommended for difficult site conditions with large installation-induced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



d-d (mm)	Code	Weight (kg)
63 - 125	799 301 459	7.142
110 - 225	799 301 461	16.490
225 - 500	799 301 463	28.500

Spare parts for clamps



Pos	Dimension (mm)	Code	Weight (kg)	Description
1	63-125, 45mm	799 900 414	1.700	square support short
	110-225, 60mm	799 900 405	3.500	square support short
	225-500, 80mm	799 900 394	6.000	square support short
2	63-125, 45mm	799 900 413	3.600	square support long
	110-225, 60mm	799 900 404	6.500	square support long
	225-500, 80mm	799 900 387	11.500	square support long
4	63-125	799 900 421	0.977	prism wide
	110-225	799 900 423	2.000	prism wide
	225-500	799 900 425	4.500	prism wide
	63-125	799 150 312	0.270	ratch 25/15/0.7
	110-225	799 150 313	0.232	ratch 25/25/0.7
	110-225	799 150 315	0.496	ratch 35/35/1.1
	225-500	799 150 319	1.415	ratch 50/50/2.1
7		799 150 314	0.050	clamping screw

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	Weight (kg)
20	799 301 536	0.658
25	799 301 537	0.471
32	799 301 538	0.756
40	799 301 539	1.079
50	799 301 540	1.326
63	799 301 541	1.618



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	Weight (kg)
20 - 63	799 301 575	0.782



Inserts for multi clamp

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



d-d (mm)	Code	Weight (kg)	Description
25 - 20	799 150 385	0.488	Inserts, Sets
32 - 20	799 150 386	0.500	Inserts, Sets
32 - 25	799 150 387	0.520	Inserts, Sets
40 - 32	799 150 388	0.500	Inserts, Sets
50 - 40	799 150 389	0.500	Inserts, Sets
63 - 32	799 150 390	0.520	Inserts, Sets
63 - 40	799 150 391	0.520	Inserts, Sets
63 - 50	799 150 392	0.520	Inserts, Sets



Clamping device topload 400

- This clamp and mounting tool is used for top-load Saddles on pipes of dimensions d 280 - 400 mm.
- Scope of delivery: 1 base mounting clamp, 1 bracket, 2 clamping screws, 2 ratchet straps, 1 transport box

d-d (mm)	Code	Weight (kg)
280 - 400	799 350 475	20.000



Clamping device topload 630

- This clamp and mounting tool is used for top-load Saddles on pipes of dimensions d 280 - 400 mm and branch fittings for dimensions d 280 mm – 630 mm.
- Scope of delivery: 1 base mounting clamp, 1 clamping attachment, 1 bracket, 2 clamping screws, 2 ratchet straps, 1 transport box

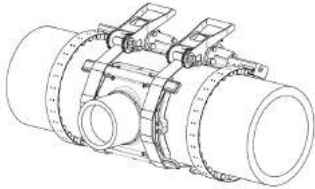
d-d (mm)	Code	Weight (kg)
280 - 630	799 350 477	28.275



Clamping attachment toplevel 630

- Clamping attachment as single part for extension of Topload tool 400 (799 350 475)
- Suitable for Branch fittings dimension d 280 mm – 630 mm

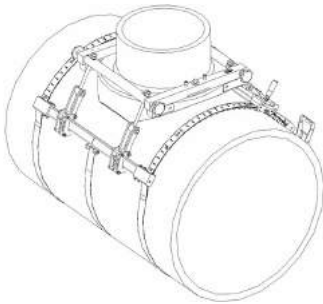
d-d (mm)	Code	Weight (kg)
280 - 630	799 350 476	5.000



Installation set Topload TL 225

- Suitable for branch saddle d315-1000mm with spigot outlet d160/d225
- Use of set is mandatory for the installation of branch saddles
- Set includes frame with tension belts, peeling tool, clamp and transport box
- Patent pending

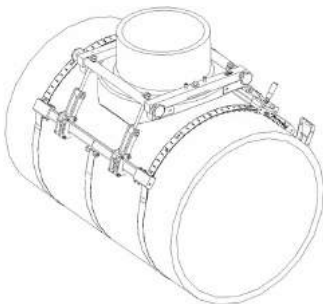
Code	Weight (kg)
799 300 807	48.000



Installation set Topload TL 315

- Suitable for branch saddle d500-2000mm with spigot outlet d315
- Use of set is mandatory for the installation of branch saddles
- Set includes frame with tension belts, peeling tool, clamp for outlet d315mm and transport box
- For outlet d500 the clamp TL 500 is to be used, is not included in scope of delivery
- Patent pending

Code	Weight (kg)
799 300 808	104.000



Installation set Topload TL 500

- Suitable for branch saddle d500-2000mm with spigot outlet d500
- Use of set is mandatory for the installation of branch saddles
- Set includes frame with tension belts, peeling tool, clamp for outlet d315mm/500mm and transport box
- Patent pending

Code	Weight (kg)
799 300 809	124.000



Clamp set Topload TL 500

- Suitable for branch saddle d500-2000mm with spigot outlet d500
- Complementary set to Installation set Topload TL 315 for clamping branch saddles with outlet d500mm
- Use of set is mandatory for the installation of branch saddles
- Set includes clamp for spigot outlet d500 and transport box

Code	Weight (kg)
799 300 813	19.500



Accessories / single parts for Installation set Topload

Code	Weight (kg)	Description
799 300 923	18.500	Transport box TL 225 (860x700x180)
799 300 820	14.000	Frame TL 225 incl. tension belt up to 1000mm
799 300 835	5.600	Peeling tool TL 225
799 300 920	9.900	Clamp TL 225
799 300 831	0.066	Peel cutter TL



Core cutter set for PE pipes

- Suitable for drilling of pressureless PE pipes
- Set includes core cutter, centre drill, adapter SDS max, ejector rod and transport box
- Suitable for branch saddle with spigot outlet (193135402 - 748)
- Core cutter is specially developed for plastic material
- Enables quick drilling
- Cutout stays in the core cutter

Technical information

Core cutter	L = 300 mm d = spigot outlet fitting in mm d1 = spot boring diameter in mm Max. wall thickness = 120 mm
Pilot drill	d = 14mm, L = 400 mm
Ejector rod	d = 12mm, L = 500 mm
Connection drill machine	SDS max
Connection core cutter	G 1/2" (female thread) d160, 225, 315 G 1 1/4" (female thread) d500
Machine suggestion	Effective power minimum 1000 watt Rotation speed 100-200 rpm

d (mm)	d1 (mm)	Code	Weight (kg)	Description
160	123	799 198 101	7.200	Core cutter set in transport box
225	172	799 198 102	10.000	Core cutter set in transport box
315	238	799 198 103	13.400	Core cutter set in transport box
500	420	799 198 104	34.000	Core cutter set in transport box



Transport box for Core cutter set

- Suitable for core cutter set (799198101 - 104)

d (mm)	Code	Description
160	799 198 121	Transport box 160; 565x170x180mm
225	799 198 122	Transport box 225; 565x220x230mm
315	799 198 123	Transport box 315; 280x280x565mm
500	799 198 124	Transport box 500; 465x465x565mm

Accessories for Core cutter set

- Suitable for core cutter set (799198101 - 104)

Code	Description
799198133	Pilot drill d = 14mm; L = 365 mm
799198131	Ejector rod d = 12mm; L = 500 mm
799198138	Adaptor 1 1/4" UNC-R- 1/2"
799198105	Adaptor drill chuck 13
799198106	Adaptor thread
799 198 107	Adaptor SDS-max





Drill stand for Core cutter set

- Suitable for safe and guided drilling of pressureless PE pipes
- Set includes drill stand, drilling machine, extension arm and standtracks
- Suitable for branch saddle with spigot outlet (193135402 - 748)
- Suitable for core cutter set (799198101 - 104)
- Tension belts for the fixation of the drill stand onto the PE pipe are not included in scope of delivery
- Use of Core cutters 160/225/315 requires additionally adaptor 1 1/4" - 1/2" (799198138)
- In case of using the pilot drill for core cutters 160/225/315 adaptor 1/2" M - 1/2" F (799198106) is required

Code	Description
799198137	Drill stand BS400 with vulcanised-rubber bonded standtracks. Extension arm suitable for branch saddle 4-drift drill machine D38-BB



Pipe gauge

- Pipe gauge enables check of pipe ovality on existing pipelines
- Applicable on any user-defined spot within the pipeline
- Strongly recommended for all installations of brach saddles on pipes d315mm and above (193135402-748)
- Plug gauge (799350659) for exact measuring of out-of roundness deviations is not included in scope of delivery
- Material: aluminium

d (mm)	Code	Weight (kg)
315	799 350 660	0.271
355	799 350 661	0.255
400	799 350 662	0.257
450	799 350 663	0.245
500	799 350 664	0.334
560	799 350 665	0.324
630	799 350 666	0.319
710	799 350 667	0.310
800	799 350 668	0.311
900	799 350 669	0.425
1000	799 350 670	0.420
1200	799 350 671	0.413
1400	799 350 672	0.410
1600	799 350 673	0.407
2000	799 350 674	0.403



Pipe gauge set

- Pipe gauge set enables check of pipe ovality on existing pipelines
- Applicable on any user-defined spot within the pipeline
- Strongly recommended for all installations of brach saddles on pipes d315mm and above (193135402-748)
- Scope of delivery: Pipe gauges of listed dimension range; plug gauge (799350659) for exact measuring of out-of roundness deviations
- Each with 1 pipe gauge per main dimension
- Material: aluminium

d (mm)	d1 (mm)	Code	Weight (kg)	Description
315	450	799 350 681	0.800	Pipe gauge set 1; 4 pipe gauges, 1 plug gauge
500	630	799 350 682	1.070	Pipe gauge set 2; 3 pipe gauges, 1 plug gauge
710	1000	799 350 683	1.610	Pipe gauge set 3; 4 pipe gauges, 1 plug gauge
1200	2000	799 350 684	1.810	Pipe gauge set 4; 4 pipe gauges, 1 plug gauge
315	2000	799 350 685	12.200	Pipe gauge set complete; 15 pipe gauges, 1 plug gauge, 1 transport box



Single parts for pipe gauge

- Suitable for pipe gauge (799350660 - 685)

d (mm)	d1 (mm)	Code	Description
315	2000	799 350 659	For exact measuring of out-of roundness deviations
		799 350 686	Empty transport box for all pipe gauge set (1+2+3+4)

Tapping tools



Assembly and tapping key for saddles

- Combination tool for tapping and tightening of fixation screws.

Type	Code	Weight (kg)	Description
8/10/17	799 198 047	0.798	For all saddles



Tapping key for saddles

- With adjustable tapping depth.

Type	Code	Weight (kg)	Description
WS - 10	799 198 080	0.114	for Monobloc d 40 mm and d 50 mm
WS - 17	799 198 079	0.556	for Monobloc d 63 mm, d 90 - 160 mm and all Duobloc saddles
WS - 12.7	799 198 091	0.600	for socket with cutter



Hexagon key for saddles and branch fittings

- For tightening fixation screws.

Type	Code	Weight (kg)	Description
SW8	799 150 378	0.129	For all saddles and branch fittings



Tapping Adapter for 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).

Type	Code	Weight (kg)	Description
S 54	799 100 061	0.785	for Tapping Tee d 32 mm
S 67	799 100 062	1.011	for Tapping Tee d 63 mm



Pressure test cap for 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**
- M For Monobloc d 40 and 50 mm (outlets d 20 - 32 mm)
- S 54 For all saddles with rotatable outlet (outlets d 20 - 40 mm) i.e. Tapping Tee d 20 - 40 mm.
- S 67 For all Saddles with rotatable outlet (outlets d 50 and 63 mm) i.e. Tapping Tee d 63 mm.

Type	Code	Weight (kg)	Description
M	799 199 282	0.116	for Monobloc d 40 mm and d 50 mm
S 54	799 199 283	0.260	for Tapping Tee d 20 - 40 mm
S 67	799 199 286	0.430	for Tapping Tee outlet d 63 mm
MB	799 199 287	0.037	for Monobloc d63-160 mm



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	Weight (kg)	Description
39	799 198 012	0.215	accessories Basic Tool Box



PE repair plug

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

d (mm)	Code	Weight (kg)
30	799 199 088	0.012
39	799 199 089	0.019



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	Weight (kg)	s (mm)	G (inch)
16 - 25	799 150 007	0.342	19	30
32 - 40	799 150 008	0.496	27	38
50 - 63	799 150 009	0.690	27	47

Squeeze off and rerounding tools



Re-rounding tool

- Enables mechanical re-rounding of out-of-roundness PE pipes for fusion preparation
- Recommended for installation of electrofusion couplers and electrofusion saddles
- We generally recommend the use of 2 re-rounding tools (1 x left and 1 x right of the installed fitting)
- Facilitates the installation and improves connection quality
- Pipe ovality before re-rounding max. 6% at +20°C (3% at ambient temperature of 0°C)
- Required ringspanner is not included in scope of delivery

¹ Material: Galvanized steel, Scope of delivery: 2 x Crossbar, 2 x Spindle, 2 x Nut AF 30, 2 x Spindle protection, Transport box

² Material: Aluminium, Scope of delivery: 2 x Crossbar, 2 x Spindle, 2 x Nut AF 55, 2 x Spindle protection

	d (mm)	d1 (mm)	Code	Weight (kg)	L (mm)	B (mm)	H (mm)
1	280	450	799 350 688	25.000	650	290	260
1	450	630	799 350 689	38.000	830	290	260
1	630	900	799 350 690	49.000	1100	290	260
2	900	1400	799 350 695	192.300	2000	650	600
2	1400	2000	799 350 696	254.200	2650	650	600



Re-rounding tool

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

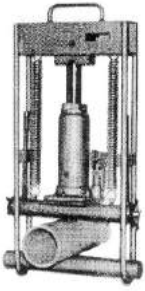
d (mm)	Code	Weight (kg)	Description
25	799 199 127	0.577	Type nut cracker
32	799 199 128	0.500	Type nut cracker
40	799 199 129	1.500	Type nut cracker
50	799 199 130	1.616	Type nut cracker
63	799 199 131	0.742	Type hinged collar
75	799 199 132	0.791	Type hinged collar
90	799 199 133	1.690	Type hinged collar
110	799 199 134	1.537	Type hinged collar
125	799 199 135	1.917	Type hinged collar
160	799 199 137	2.318	Type hinged collar
180	799 199 138	2.493	Type hinged collar
200	799 199 139	2.500	Type split collar
225	799 199 140	3.361	Type split collar
250	799 199 141	1.872	Type split collar



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	Weight (kg)	Description
20 - 63	799 350 107	4.901	S1 for PE pipes SDR 11



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	Weight (kg)	Description
63 - 180	799 350 108	36.500	S2 for PE pipes SDR 11 and SDR 17



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	Weight (kg)	Description
160 - 250	799 350 270	60.000	A25 for PE pipes SDR 11 and SDR 17

Accessories for job sites



KS Tangit Cleaner

- Special cleaner for plastic fusion connections in the material of PP, PE, PVDF and PB
- DVGW approved
- DW 5290 BR 0464

Size	Code	Weight (kg)
1 liter	799 298 023	0.872



Tangit KS-Cleaning Tissues

- Special cleaner for plastic fusion connections in the material of PP, PE, PVDF and PB
- DVGW approved
- DW 5290 BR 0464

Contents	Code	Weight (kg)
1 dispenser with 100 tissues	799 298 024	0.333



Marker

Type	Code	Weight (kg)
silver	799 350 364	0.010



Roller support 315

- For pipes 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	Weight (kg)
20 - 315	790 109 110	4.500



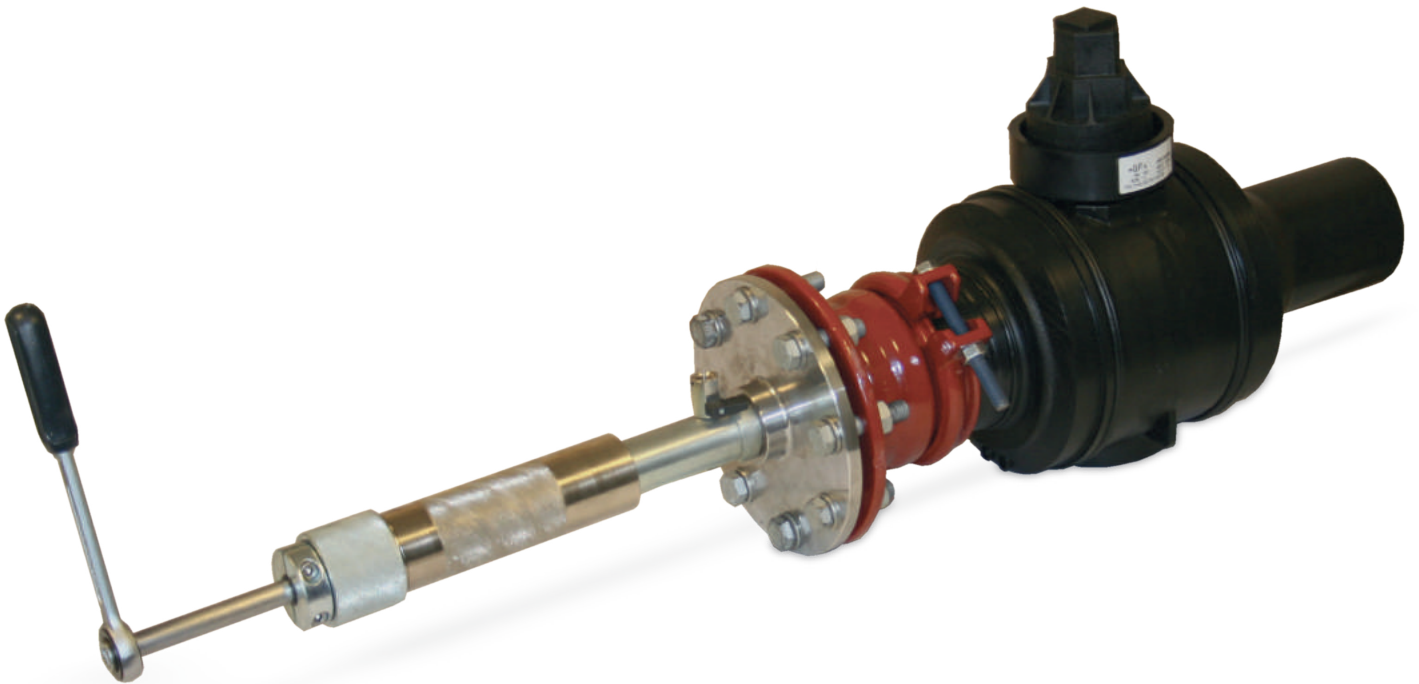
Roller support 630

- Up to d 630 mm, with base plate, galvanised
- **adjustable height** (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	Weight (kg)
110 - 630	790 109 109	3.943

Machines and Tools

Drilling Device W 410



W410 drilling device (3/4" - 8")



Basic Drilling Device W410 including ratchet (all accessories to be added)

Description	Code	Weight (kg)
basic device including ratchet	709 700 100	7.800



Drill shafts

Model:

- Drill shafts to be selected depending on build up length of your configuration

Description	Code	Weight (kg)
drill shaft 620 mm	709 700 010	1.200
drill shaft 775 mm	709 700 021	1.500
drill shaft 920 mm	709 700 022	1.780
drill shaft 1070 mm	709 700 023	2.070



Mandrel combined with pilot drill

Model:

- mandrel including special pilot drill 6mm with dual retention wires

Description	Code	Weight (kg)
hole saw mandrel 9/16 inch - 1 3/16 inch with retain pilot drill	709 701 260	0.085
hole saw mandrel 1 1/4 inch - 6 inch with retain pilot drill	709 701 261	0.206



Flange adaptors

Model:

- Suitable for flange to flange connections
- Not included flange bolts / gasket
- Flange adaptor for W410
- Suitable for MULTI/JOINT® flange adaptor / connection to PE spigot

Description	Drilling pattern	Code	Weight (kg)
flange adaptor DN50	PN16	709 702 045	1.850
flange adaptor DN65	PN16	709 702 046	2.400
flange adaptor DN80	PN16	709 702 047	3.090
flange adaptor DN100	PN16	709 702 048	3.840
flange adaptor DN150	PN16	709 702 050	6.530
flange adaptor DN200	PN10	709 702 051	8.800



Pilot drill

Model:

- pilot drill 6 mm with dual retention wires

Description	Code	Weight (kg)
pilot drill 6 mm with dual retention wires	709 800 006	0.042



Cup drill
PE chipless Ø45, Ø60, Ø63, Ø80 and Ø84 mm

Model:

- Maximum PE pipe d630 SDR11
- Suitable for under pressure drilling
- Push rod for coupon release out of the cup drill
- For demanding drillings on PE

Description	Code	Weight (kg)
PE cup drill chipless 45 mm x 60 mm	709 810 410	0.510
PE cup drill chipless 60 mm x 60 mm	709 810 412	0.580
PE cup drill chipless 63 mm x 60 mm	709 810 414	0.590
PE cup drill chipless 80 mm x 60 mm	709 810 415	0.880
PE cup drill chipless 84 mm x 60 mm	709 810 416	0.910
PE cup drill chipless 45 mm x 120 mm	709 810 420	0.800
PE cup drill chipless 60 mm x 120 mm	709 810 422	0.890
PE cup drill chipless 63 mm x 120 mm	709 810 424	0.890
PE cup drill chipless 80 mm x 120 mm	709 810 425	1.340
PE cup drill chipless 84 mm x 120 mm	709 810 426	1.370
PE cup drill push rod	709 700 024	0.400



Heavy duty transport / storage box for W410 drilling device

Model:











- Including: hex key 3 mm, hex key 6 mm and screwdriver
- Outside dimension transport / warehouse box: 120 x 40 x 40 cm

Code	Weight (kg)	Description
709 706 414	4.500	Heavy duty transport / storage box for W410 drilling device

Utility Range

Butt Fusion Machines

Working Range

Size	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	1200	1400	1600	
 TM 160																																
 TM 250																																
 TM 315																																
 GF 400																																
 KL 500 GF 500																																
 KL 630 GF 630																																
 GF800																																
 GF1000																																
 GF1200																																
 GF1600																																

Butt fusion machines 160 - 315 mm

TM 160 - 250 - 315 ECO Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Separate remote temperature controller for the heating element (TM ECO).

Temperature controller integrated in the heating element handle (TM ECO S).

Including transport packaging (carton pallet); reduction clamping inserts and other accessories to be ordered separately.

115 V on request (TM ECO)

• BASE MACHINE

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• Weight: TM 160 = 22 kg, TM 250 = 47 kg, TM 315 = 53 kg

• HYDRAULIC UNIT

- Compact construction with protection frame
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Integrated interface for welding recorder
- Max operating pressure: TM 160 = 100 bar; TM 250 - 315 = 160 bar
- Weight: 22 kg

• PLANER

- Powerful parallel planer for single or double-sided facing of pipe ends
- Ergonomic, weight-balanced handling
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: TM 160 = 7 kg; TM 250 = 14 kg; TM 315 = 17 kg

• HEATING ELEMENT

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: TM 160 = 5.5 kg; TM 250 = 8 kg; TM 315 = 10 kg
- Input power: 230 V / TM 160 = 1200 W; TM 250 = 2000 W; TM 315 = 2500 W

• CASE

- For safe storage of planer and heating element
- Weight: TM 160 = 4.8 kg; TM 250 = 8 kg; TM 315 = 9 kg



Type	d-d (mm)	Performance	Code	Weight (kg)
TM 160 ECO	40 - 160	230V/1900W	790 150 010	64.000
TM 250 ECO	75 - 250	230V/3270W	790 151 010	144.000
TM 315 ECO	90 - 315	230V/3870W	790 152 010	113.000
TM 160 ECO S	40 - 160	230V/1900W	790 150 009	64.000
TM 250 ECO S	75 - 250	230V/3270W	790 151 013	101.000
TM 315 ECO S	90 - 315	230V/3870W	790 152 028	113.000

TM 160 - 250 - 315 TOP
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

TOP hydraulic unit with integrated control panel and power outlets.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.



• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- Weight: TM 160 = 22 kg, TM 250 = 47 kg, TM 315 = 53 kg

• **HYDRAULIC UNIT**

- Shock-absorbing plastic housing in attractive design
- Internal aluminium frame providing high rigidity and resistance
- Intuitive control panel provided with digital indication of hydraulic pressure, electronic heating element temperature controller, 2-channel welding timer
- Precise pressure setting and fine adjusting
- Push-button operation of machine carriage
- Integrated power outlets for planer, heating element
- Accumulator for pressure equalization during the cooling phase
- Integrated interface for welding recorder
- Max operating pressure: 160 bar
- Weight: 31 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Ergonomic, weight-balanced handling
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: TM 160 = 7 kg; TM 250 = 14 kg; TM 315 = 17 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: TM 160 = 5.5 kg; TM 250 = 8 kg; TM 315 = 10 kg
- Input power: 230 V / TM 160 = 1200 W; TM 250 = 2000 W; TM 315 = 2500 W

• **CASE**

- For safe storage of planer and heating element
- Weight: TM 160 = 4.8 kg; TM 250 = 8 kg; TM 315 = 9 kg

Type	d-d (mm)	Performance	Code	Weight (kg)
TM 160 TOP	40 - 160	230V/1900W	790 150 011	126.000
TM 250 TOP	75 - 250	230V/3270W	790 151 011	114.000
TM 315 TOP	90 - 315	230V/3870W	790 152 026	206.000



TM 160 - 250 - 315 WR
Butt fusion machine for construction site
with Welding Recorder

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

TOP hydraulic unit with integrated control panel and power outlets.

Including the WR 200 welding recorder to ensure the jointing quality according to country specific standards. The user is guided through all preparation and fusion steps. The complete fusion sequence is supervised and recorded for later printout or transfer to a PC.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- Weight: TM 160 = 22 kg, TM 250 = 47 kg, TM 315 = 53 kg

• **HYDRAULIC UNIT**

- Shock-absorbing plastic housing in attractive design
- Internal aluminium frame providing high rigidity and resistance
- Intuitive control panel provided with digital indication of hydraulic pressure, electronic heating element temperature controller, 2-channel welding timer
- Precise pressure setting and fine adjusting
- Push-button operation of machine carriage
- Integrated power outlets for planer, heating element
- Accumulator for pressure equalization during the cooling phase
- Integrated interface for welding recorder
- Max operating pressure: 160 bar
- Weight: 31 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Ergonomic, weight-balanced handling
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: TM 160 = 7 kg; TM 250 = 14 kg; TM 315 = 17 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: TM 160 = 5.5 kg; TM 250 = 8 kg; TM 315 = 10 kg
- Input power: 230 V / TM 160 = 1200 W; TM 250 = 2000 W; TM 315 = 2500 W

• **CASE**

- For safe storage of planer and heating element
- Weight: TM 160 = 4.8 kg; TM 250 = 8 kg; TM 315 = 9 kg

Type	d-d (mm)	Performance	Code	Weight (kg)
TM 160 WR	40 - 160	230V/1910W	790 150 015	136.000
TM 160 WR CYRILLIC	40 - 160	230V/1910W	790 150 016	136.000
TM 250 WR	75 - 250	230V/3280W	790 151 015	210.000
TM 250 WR CYRILLIC	75 - 250	230V/3280W	790 151 016	210.000
TM 315 WR	90 - 315	230V/3880W	790 152 025	224.000
TM 315 WR CYRILLIC	90 - 315	230V/3880W	790 152 016	224.000



TM 160 - 250 - 315 CNC
Automatic butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with automatic CNC control unit.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- The distance control (potentiometer) mounted into the base machine grants control and safety throughout the complete working process
- Weight: TM 160 = 22 kg, TM 250 = 47 kg, TM 315 = 53 kg

• **HYDRAULIC UNIT**

- Operator guidance from preparation to the end of the jointing process by use of symbols and graphics
- Intuitive data input by touch screen operation (welding standard, material, diameter, SDR, notes)
- Automatic calculation, regulation and control of the fusion parameters - pressure, time and temperature - according to country specific guidelines
- 10 freely programmable fusion cycles (e.g. for non standard pipe dimensions)
- Selection of language
- Operator ID (ISO 12176-3), job number and pipe codes (ISO 12176-4) could be input by means of the barcode scanner (to be ordered separately)
- On site check of the memorized fusion protocols status directly on the touchscreen
- Transfer of memorized fusion protocols to an external PC via USB memory stick (included)
- Fusion protocols compatible with Welding Book application
- Shock-absorbing plastic housing in attractive design
- Internal aluminium frame providing high rigidity and resistance
- Integrated power outlets for planer, heating element
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 160 bar
- Weight: 33 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Ergonomic, weight-balanced handling
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: TM 160 = 7 kg; TM 250 = 14 kg; TM 315 = 17 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: TM 160 = 5.5 kg; TM 250 = 8 kg; TM 315 = 10 kg
- Input power: 230 V / TM 160 = 1200 W; TM 250 = 2000 W; TM 315 = 2500 W

• **CASE**

- For safe storage of planer and heating element
- Weight: TM 160 = 4.8 kg; TM 250 = 8 kg; TM 315 = 9 kg

Type	d-d (mm)	Performance	Code	Weight (kg)
TM 160 CNC	40 - 160	230V/2000W	790 150 012	125.000
TM 250 CNC	75 - 250	230V/3150W	790 151 012	195.000
TM 315 CNC	90 - 315	230V/3750W	790 152 012	215.000



TM / GF CNC Barcode Scanner with pouch

- The pouch could be easily fixed to the handle of the hydraulic unit
- Input of additional information like operator identification badge or traceability codes of the pipes and fittings

Type	Code	Weight (kg)
TM / GF CNC Barcode scanner	790 151 052	0.370



TM 250 - 315 CNC AHE
Automatic butt fusion machine for construction site
with heating element ejection system

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with automatic CNC control unit.

Automatic ejection system for the heating element.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- The heating element is removed automatically during the change-over phase
- The distance control (potentiometer) mounted into the base machine grants control and safety throughout the complete working process
- Weight: TM 250 = 54 kg, TM 315 = 60 kg

• **HYDRAULIC UNIT**

- Operator guidance from preparation to the end of the jointing process by use of symbols and graphics
- Intuitive data input by touch screen operation (welding standard, material, diameter, SDR, notes)
- Automatic calculation, regulation and control of the fusion parameters - pressure, time and temperature - according to country specific guidelines
- 10 freely programmable fusion cycles (e.g. for non standard pipe dimensions)
- Selection of language
- Operator ID (ISO 12176-3), job number and pipe codes (ISO 12176-4) could be input by means of the barcode scanner (to be ordered separately)
- On site check of the memorized fusion protocols status directly on the touchscreen
- Transfer of memorized fusion protocols to an external PC via USB memory stick (included)
- Fusion protocols compatible with Welding Book application
- Shock-absorbing plastic housing in attractive design
- Internal aluminium frame providing high rigidity and resistance
- Integrated power outlets for planer, heating element
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 160 bar
- Weight: 33 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Ergonomic, weight-balanced handling
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: TM 250 = 14 kg; TM 315 = 17 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: TM 250 = 15 kg; TM 315 = 19 kg
- Input power: 230 V / TM 250 = 2000 W; TM 315 = 2500 W

• **CASE**

- For safe storage of planer and heating element
- Weight: TM 250 = 9 kg; TM 315 = 10 kg

Type	d-d (mm)	Performance	Code	Weight (kg)
TM 250 CNC	75 - 250	230V/3150W	790 151 071	143.000
TM 315 CNC	90 - 315	230V/3750W	790 152 071	160.000

TM 160 - 250 - 315 Accessories



TM 160 Reduction clamping inserts

- d 40 - 140 mm
- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.
- Reductions in inch sizes or special diameters upon request

d (mm)	narrow Code	Weight (kg)	wide Code	Weight (kg)
40	790 114 027	0.318	790 114 023	0.280
50	790 114 016	0.323	790 114 009	0.326
63	790 114 017	0.281	790 114 010	0.293
75	790 114 018	0.276	790 114 011	0.290
90	790 114 019	0.256	790 114 012	0.277
110	790 114 020	0.227	790 114 013	0.260
125	790 114 021	0.192	790 114 014	0.265
140	790 114 022	0.134	790 114 015	0.178



TM 250 Reduction clamping inserts

- d 75 - 225 mm
- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.
- Reductions in inch sizes or special diameters upon request

d (mm)	narrow Code	Weight (kg)	wide Code	Weight (kg)
75	790 115 029	0.768	790 115 028	0.902
90	790 115 016	0.719	790 115 008	0.940
110	790 115 017	0.734	790 115 009	0.841
125	790 115 018	0.661	790 115 010	0.829
140	790 115 019	0.762	790 115 011	0.647
160	790 115 020	0.574	790 115 012	0.727
180	790 115 021	0.561	790 115 013	0.676
200	790 115 022	0.479	790 115 014	0.733
225	790 115 023	0.385	790 115 015	0.477



TM 315 Reduction clamping inserts

- d 90 - 280 mm
- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.
- Reductions in inch sizes or special diameters upon request

d (mm)	narrow Code	Weight (kg)	wide Code	Weight (kg)
90	790 112 098	1.265	790 112 088	1.000
110	790 112 099	1.220	790 112 089	0.945
125	790 112 100	1.215	790 112 090	0.957
140	790 112 101	1.139	790 112 091	0.950
160	790 112 102	1.080	790 112 092	0.980
180	790 112 103	1.006	790 112 093	0.931
200	790 112 104	0.945	790 112 094	0.880
225	790 112 105	0.833	790 112 095	0.940
250	790 112 106	0.712	790 112 096	0.754
280	790 112 107	0.562	790 112 097	0.750



TM 160 - 250 - 315 Reduction clamping inserts-set

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

d-d (mm)	Code	Weight (kg)
40 - 140	790 114 156	17.000
75 - 225	790 115 156	63.000
90 - 280	790 112 156	78.000



TM 160 - 250 - 315 Chamfered upper clamp

- Necessary for welding short-leg bends having diameters equal of the machine dimension: e.g. bend Ø250 mm with a TM 250
- Left: bend is clamped left from the heating element position
- Right: bend is clamped right from the heating element position

Type	Left Code	Right Code	Weight (kg)
TM 160	790 150 205	790 150 206	0.800
TM 250	790 151 205	790 151 206	1.822
TM 315	790 152 205	790 152 206	2.681



TM 160 - 250 - 315 Flange adapter clamping units

- For correct clamping and fusion jointing of short-ended stub ends

d-d (mm)	Code	Weight (kg)
40 - 160	790 319 007	5.800
75 - 250	790 115 044	5.594
90 - 315	790 112 073	11.000



TM 160 - 250 - 315 Pipe lifter

- Convenient movement of the welded pipes through the base machine
- Lifting the pipes out of the clamps or inserts, to let the bead pass without blocking
- Supporting the welded pipes on height adjustable rollers
- The pipe lifter could be easily assembled to the base machine
- The delivery contains one left and one right pipe lifter and one lever

Type	Code	Weight (kg)
TM 160	790 150 050	9.000
TM 250	790 151 050	11.000
TM 315	790 152 050	12.500



TM 250 - 315 Pressure Shut-Off Valve

- Time saving in the butt fusion process, by working with 2 base machines
- Enabling to disconnect the base machine under pressure from the hydraulic unit during the cooling time
- Close the pressure valve, release pressure at the hydraulic unit, disconnect the hoses from the base machine. Keep the joint cooling down
- Use the cooling time for pipe preparation and welding of the next join by connecting the hydraulic unit hoses to a second base machine

Type	Code	Weight (kg)
TM 250 - 315	790 151 002	1.500

Butt fusion machines 400 mm



GF 400 Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets (type 400 V).

Separate remote temperature controller for the heating element (type 230 V).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• BASE MACHINE

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• Weight: 95 kg

• HYDRAULIC UNIT

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 160 bar

• Weight: 41 kg
• Input power: 230 V / 1100 W

• PLANER

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

• Weight: 47 kg
• Input power: 230 V / 1100 W

• HEATING ELEMENT

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle

• Weight: 16 kg
• Input power: 230 V / 3500 W

• CONTROL BOX

- Only with type 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
- Integrated power outlets for all machine components, only 1 plug to the generator

• Weight: 15 kg

• CASE

- For safe storage of planer and heating element
- Weight: 30 kg



Type	d-d (mm)	Performance	Code	Weight (kg)
GF 400, 400 V	125 - 400	400 V/5700 W	790 127 010	243.000
GF 400, 230 V	125 - 400	230 V/5700 W	790 127 001	355.000



GF 400, 230 V
Butt fusion machine for construction site

- High quality, long-lasting heating element butt fusion machine for fusion jointing PP and PE pipes and fittings. For complete pressure range up to SDR 11.
- Machine complete with remote control
- Including transport packaging (wooden crate), without accessories and without reduction inserts

d-d (mm)	Performance	Code	Weight (kg)
125 - 400	230 V/5700 W	790 127 001	355.000



GF 400 CNC
Automatic butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.
 Hydraulically operated with automatic CNC control unit.
 Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

- **BASE MACHINE**
 - High precision design, distortion-free and sturdy machine frame
 - Good accessibility thanks to 35° inclination
 - The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
 - Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
 - Double-sided heating element pull-off mechanism to optimise the change-over phase
 - The distance control (potentiometer) mounted into the base machine grants control and safety throughout the complete working process
 - Weight: 95 kg
- **HYDRAULIC UNIT**
 - Operator guidance from preparation to the end of the jointing process by use of symbols and graphics
 - Intuitive data input by touch screen operation (welding standard, material, diameter, SDR, notes)
 - Automatic calculation, regulation and control of the fusion parameters - pressure, time and temperature - according to country specific guidelines
 - 10 freely programmable fusion cycles (e.g. for non standard pipe dimensions)
 - Selection of language
 - Operator ID (ISO 12176-3), job number and pipe codes (ISO 12176-4) could be input by means of the barcode scanner (to be ordered separately)
 - On site check of the memorized fusion protocols status directly on the touchscreen
 - Transfer of memorized fusion protocols to an external PC via USB memory stick (included)
 - Fusion protocols compatible with Welding Book application
 - Shock-absorbing plastic housing in attractive design
 - Internal aluminium frame providing high rigidity and resistance
 - Integrated power outlets for planer, heating element
 - Accumulator for pressure equalization during the cooling phase
 - Max operating pressure: 160 bar
 - Weight: 37 kg
- **PLANER**
 - Powerful parallel planer for single or double-sided facing of pipe ends
 - Self-locking mechanism in working position
 - Safety microswitch to prevent undesired start-up
 - Weight: 47 kg
- **HEATING ELEMENT**
 - High performance, electronically controlled heating element
 - High-quality, non-stick PTFE-coating with long service life
 - Temperature indicator integrated into the handle
 - Weight: 16 kg
 - Input power: 230 V / 3500 W
- **CASE**
 - For safe storage of planer and heating element
 - Weight: 30 kg

d-d (mm)	Performance	Code	Weight (kg)
125 - 400	400 V/5700 W	790 153 001	205.000



Reduction clamping inserts

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
 - We recommend 4 wide and 4 narrow half shells.
 - Reductions in inch sizes or special diameters upon request
- 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)	narrow Code	Weight (kg)	wide Code	Weight (kg)
125	790 112 100	1.215	790 112 090	0.957
140	790 112 101	1.139	790 112 091	0.950
160	790 112 102	1.080	790 112 092	0.980
180	790 112 103	1.006	790 112 093	0.931
200	790 112 104	0.945	790 112 094	0.880
225	790 112 105	0.833	790 112 095	0.940
250	790 112 106	0.712	790 112 096	0.754
280	790 112 107	0.562	790 112 097	0.750
315	790 127 111	1.830	790 127 101	1.830
355	790 127 112	1.830	790 127 102	1.830



Reduction clamping inserts-set

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

d-d (mm)	Code	Weight (kg)
125 - 355	790 127 156	95.000



Chamfered upper clamp

- Necessary for welding short-leg bends having diameters equal of the maximum machine dimension
- Right: bend is clamped right from the heating element position

Description	Code	Weight (kg)
Right	790 127 113	7.000



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

d (mm)	Code	Weight (kg)
400	790 127 045	24.600



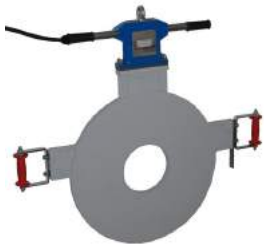
Crane

- The crane is easily and fast installed and mounted to the base machine
- Rotating crane arm
- Weight compensator included

Code	Weight (kg)
790 127 028	85.000

Butt fusion machines 500 mm

GF 500 Butt fusion machine for construction site



Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets.

Performance: PE up to d 500 mm SDR 11; PP up to d 500 mm SDR 26.

Special type **GF 500 PP** available with enhanced performance to work with PP pipes and fittings up to d 500 mm SDR 11.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• BASE MACHINE

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• WEIGHT

Weight: 169 kg

• HYDRAULIC UNIT

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 160 bar
- Weight: 41 kg

• PLANER

- Powerful parallel planer for single or double-sided facing of pipe ends
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: 58 kg

• HEATING ELEMENT

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: 26 kg
- Input power: 400 V / 4000 W

• 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
- Integrated power outlets for all machine components, only 1 plug to the generator
- Weight: 15 kg
- **CASE**
- For safe storage of planer and heating element
- Weight: 38 kg

Type	Description	d-d (mm)	Performance	Code	Weight (kg)
GF 500	Standard	200 - 500	400 V/6250 W	790 116 040	475.000
GF 500 PP	Enhanced performance for PP applications	200 - 500	400 V/7000 W	790 154 006	475.000



GF 500 CNC
Automatic butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with automatic CNC control unit.

Performance: PE up to d 500 mm SDR 11; PP up to d 500 mm SDR 26.

Special type **GF 500 CNC PP** available with enhanced performance to work with PP pipes and fittings up to d 500 mm SDR 11.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 35° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Clamps are hinged on the top side and tilting. Whenever necessary, the four clamps can be quickly removed
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- The distance control (potentiometer) mounted into the base machine grants control and safety throughout the complete working process

Weight: 169 kg

• **HYDRAULIC UNIT**

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

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: 58 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: 26 kg
- Input power: 400 V / 4000 W

• **CASE**

- For safe storage of planer and heating element
- Weight: 38 kg

Type	Description	d-d (mm)	Performance	Code	Weight (kg)
GF 500 CNC	Standard	200 - 500	400 V/6300 W	790 154 001	364.000
GF 500 CNC PP	Enhanced performance for PP applications	200 - 500	400 V/7000 W	790 154 007	475.000



KL 500
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit (Hydromat).

Separate remote temperature controller for the heating element (KL TOP2).

Control box with integrated temperature controller and power outlets (KL TOP1).

Performance: PE up to d 500 mm SDR 11; PP up to d 500 mm SDR 26.

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.



• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• Weight: 157 kg

• **HYDRAULIC UNIT**

- Compact and robust, with full closed cast aluminium housing (Hydromat)
- Precise pressure setting and fine adjusting

- Joystick operation of machine carriage

- Clearly visible, vibration-free pressure gauge with precision scaling

- Accumulator for pressure equalization during the cooling phase

- Max operating pressure: 160 bar

- Weight: 31 kg

- Input power: 230 V / 1500 W

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends

- Self-locking mechanism in working position

- Safety microswitch to prevent undesired start-up

- Weight: 58 kg

- Input power: 400 V / 750 W

• **HEATING ELEMENT**

- High performance, electronically controlled heating element

- High-quality, non-stick PTFE-coating with long service life

- Temperature indicator integrated into the handle

- Weight: 26 kg

- Input power: 400 V / 4000 W

• **CONTROL BOX**

- Only with KL TOP1

- 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

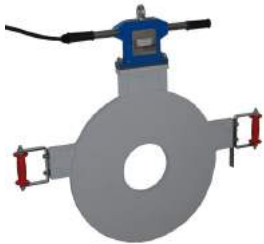
- Integrated power outlets for all machine components, only 1 plug to the generator

- Weight: 15 kg

• **CASE**

- For safe storage of planer and heating element

- Weight: 38 kg



Type	d-d (mm)	Performance	Code	Weight (kg)
KL 500 TOP2	200 - 500	400 V/6250 W	790 140 010	312.000
KL 500 TOP1	200 - 500	400 V/6250 W	790 340 000	470.561



KL 500 TOP2 Butt fusion machine for construction site

- Compact and robust heating element-butt fusion machine for fusion jointing PP and PE pipes and fittings. For complete pressure range up to PN 16.
- Machine provided with Hydromat hydraulic unit and remote control
- Including transport packaging (wooden crate), without accessories and without reduction inserts

d-d (mm)	Performance	Code	Weight (kg)
200 - 500	400 V/6250 W	790 140 010	312.000



Reduction clamping inserts

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.
- Reductions in inch sizes or special diameters upon request

d (mm)	narrow Code	Weight (kg)	wide Code	Weight (kg)
200	790 116 016	3.714	790 116 008	3.650
225	790 116 017	3.443	790 116 009	3.640
250	790 116 018	3.700	790 116 010	3.569
280	790 116 019	3.891	790 116 011	3.612
315	790 116 020	3.622	790 116 012	3.698
355	790 116 021	3.267	790 116 013	3.727
400	790 116 022	2.383	790 116 014	3.836
450	790 116 023	2.273	790 116 015	3.276



Reduction clamping inserts-set

- 4 wide and 4 narrow clamping inserts of each dimension

d-d (mm)	Code	Weight (kg)
250 - 450	790 116 156	165.000
200 - 450	790 116 157	241.000



Chamfered upper clamp

- Necessary for welding short-leg bends having diameters equal of the maximum machine dimension
- Left: bend is clamped left from the heating element position
- Right: bend is clamped right from the heating element position

description	Code	Weight (kg)
Right	790 116 268	7.330
Left	790 116 269	7.330



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

d (mm)	Code	Weight (kg)
500	790 116 045	22.000



Crane

- The crane is easily and fast installed and mounted to the base machine
- Rotating crane arm
- Weight compensator included

Code	Weight
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(kg)

790 116 066	66.579
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Butt fusion machines 630 mm



GF 630

Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets.

Performance PE up to d 630 mm SDR 9; PP up to d 630 mm SDR 17.6

For proper handling of the heating element and planer we recommend the assembling of the hoist unit (to be ordered separately).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• BASE MACHINE

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase

Weight: 222 kg

• HYDRAULIC UNIT

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 200 bar

Weight: 41 kg

• PLANER

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

Weight: 99 kg

• HEATING ELEMENT

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle

Weight: 39 kg

Input power: 400 V / 8000 W

• 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
- Integrated power outlets for all machine components, only 1 plug to the generator

Weight: 27 kg

• CASE

- For safe storage of planer and heating element

Weight: 55 kg



d-d (mm)	Performance	Code	Weight (kg)
315 - 630	400 V/11000 W	790 117 032	617.000



GF 630 CNC
Automatic butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with automatic CNC control unit.

Performance: PE up to d 630 mm SDR 11; PP up to d 630 mm SDR 17.6

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- The distance control (potentiometer) mounted into the base machine grants control and safety throughout the complete working process

• Weight: 222 kg

• **HYDRAULIC UNIT**

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

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up
- Weight: 99 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: 39 kg
- Input power: 400 V / 8000 W

• **CASE**

- For safe storage of planer and heating element
- Weight: 55 kg

d-d (mm)	Performance	Code	Weight (kg)
315 - 630	400 V/11000 W	790 155 001	615.000



KL 630
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit (Hydromat).

Separate remote temperature controller for the heating element (KL TOP2).

Control box with integrated temperature controller and power outlets (KL TOP1).

Performance: PE up to d 630 mm SDR 11; PP up to d 630 mm SDR 17.6

For proper handling of the heating element and planer we recommend the assembling of the hoist unit (to be ordered separately).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.



• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- Weight: 222 kg

• **HYDRAULIC UNIT**

- Compact and robust, with full closed cast aluminium housing (Hydromat)
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 160 bar
- Weight: 31 kg
- Input power: 230 V / 1500 W

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up
- Weight: 99 kg
- Input power: 400 V / 1500 W

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: 39 kg
- Input power: 400 V / 8000 W

• **CONTROL BOX**

- Only with KL TOP1
- 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
- Integrated power outlets for all machine components, only 1 plug to the generator
- Weight: 27 kg

• **CASE**

- For safe storage of planer and heating element
- Weight: 55 kg

Type	d-d (mm)	Performance	Code	Weight (kg)
KL 630 TOP2	315 - 630	400 V/11000 W	790 345 012	454.000
KL 630 TOP1	315 - 630	400 V/11000 W	790 345 000	478.000



KL 630 TOP2 Butt fusion machine for construction site

- Compact and robust heating element-butt fusion machine for fusion jointing PP and PE pipes and fittings. For complete pressure range up to PN 16.
- Machine provided with Hydromat hydraulic unit and remote control
- Including transport packaging (wooden crate), without accessories and without reduction inserts

d-d (mm)	Performance	Code	Weight (kg)
315 - 630	400 V/11000 W	790 345 012	454.000



Reduction clamping inserts

- We recommend 4 wide and 4 narrow half shells.
 - Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
 - Reductions in inch sizes or special diameters upon request
- In order to mount the inserts d 315/d 355/d 400/d 450 to the base clamp d 630, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

d (mm)	narrow Code	Weight (kg)	wide Code	Weight (kg)
315	790 116 020	3.622	790 116 012	3.698
355	790 116 021	3.267	790 116 013	3.727
400	790 116 022	2.383	790 116 014	3.836
450	790 116 023	2.273	790 116 015	3.276
500	790 117 238	3.700	790 117 012	4.500
560	790 117 239	3.800	790 117 013	4.900



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

Code	Weight (kg)
790 124 029	153.000



Reduction clamping inserts-set

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

d-d (mm)	Code	Weight (kg)
315 - 560	790 117 021	201.000



Chamfered upper clamp

- Necessary for welding short-leg bends having diameters equal of the maximum machine dimension

Code	Weight (kg)
790 345 233	10.490



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

d (mm)	Code	Weight (kg)
630	790 117 029	29.000



Hoist unit, complete

- Consisting of frame work, rotating arm and motor
- The column is divided in two parts
- Assembling: mount the lower column to the base machine, insert a bolt into the hinge, raise up the upper part including the rotating arm, fix the hinge with 4 screws
- Motor 400 V / 3 Ph with 2 hoisting speeds
- Maximum lifting weight 250 kg

Code	Weight (kg)
790 117 102	137.000



Lifting cylinder

- Accessory to crane GF/KL 630
- Raising up the crane structure hydraulically by assembling the cylinder to the column
- Hydraulic unit of the GF/KL 630 connected to the cylinder during installing the crane

Code	Weight (kg)
790 117 094	13.000



GF 800
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets.

For proper handling of the heating element and planer we recommend the assembling of the hoist unit (to be ordered separately).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• Weight: 690 kg

• **HYDRAULIC UNIT**

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 200 bar

• Weight: 41 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

• Weight: 185 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle

• Weight: 56 kg

• Input power: 400 V / 12000 W

• **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
- Integrated power outlets for all machine components, only 1 plug to the generator

• Weight: 29 kg

• **CASE**

- For safe storage of planer and heating element

• Weight: 226 kg



d-d (mm)	Performance	Code	Weight (kg)
500 - 800	400 V/15000 W	790 123 025	1244.000



Reduction clamping inserts

- d 500 - 710 mm
 - Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
 - Reductions in inch sizes or special diameters upon request
- 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)	narrow Code	Weight (kg)	wide Code	Weight (kg)
500	790 117 238	3.700	790 117 012	4.500
560	790 117 239	3.800	790 117 013	4.900
630	790 123 219	9.000	790 123 011	11.000
710	790 123 220	9.000	790 123 012	12.500



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

d-d (mm)	Code	Weight (kg)
500 - 800	790 123 029	120.000



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	Weight (kg)
790 123 016	270.000



GF 1000
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets.

For proper handling of the heating element and planer we recommend the assembling of the hoist unit (to be ordered separately).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• Weight: 1238 kg

• **HYDRAULIC UNIT**

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 200 bar

• Weight: 41 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

• Weight: 308 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle

• Weight: 88 kg

• Input power: 400 V / 15000 W

• **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
- Integrated power outlets for all machine components, only 1 plug to the generator

• Weight: 29 kg

• **CASE**

- For safe storage of planer and heating element

• Weight: 341 kg



d-d (mm)	Performance	Code	Weight (kg)
630 - 1000	400 V/19500 W	790 124 025	2053.000



Reduction clamping inserts

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
 - Reductions in inch sizes or special diameters upon request
- 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)	narrow Code	Weight (kg)	wide Code	Weight (kg)
630	790 123 219	9.000	790 123 011	11.000
710	790 123 220	9.000	790 123 012	12.500
800			790 124 011	18.000
900			790 124 012	19.000



Reduction clamping inserts-set

- 8 wide clamping inserts dn 710, 800, 900 mm

Code	Weight (kg)
790 355 019	0.001



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	Weight (kg)
790 124 016	300.000



GF 1200
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets.

For proper handling of the heating element and planer we recommend the assembling of the hoist unit (to be ordered separately).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase

• Weight: 1346 kg

• **HYDRAULIC UNIT**

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Max operating pressure: 200 bar

• Weight: 41 kg

• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up

• Weight: 335 kg

• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle

• Weight: 101 kg

• Input power: 400 V / 16000 W

• **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
- Integrated power outlets for all machine components, only 1 plug to the generator

• Weight: 29 kg

• **CASE**

- For safe storage of planer and heating element

• Weight: 412 kg



d-d (mm)	Performance	Code	Weight (kg)
710 - 1200	400 V/20500 W	790 125 025	2258.000



Reduction clamping inserts

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
 - Reductions in inch sizes or special diameters upon request
- In order to mount the inserts d 710, the reduction clamping insert d 800 mm, code 790 124 011, must also be used
- 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)	narrow Code	Weight (kg)	wide Code	Weight (kg)
710	790 125 030	9.000	790 125 028	12.500
800			790 124 011	18.000
900			790 124 012	19.000
1000			790 125 011	20.000



Reduction clamping inserts-set

- 8 wide clamping inserts dn 800, 900, 1000 mm

Code	Weight (kg)
790 360 019	0.001



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

Code	Weight (kg)
790 125 029	231.000



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	Weight (kg)
790 125 016	308.000



GF 1600
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP pipes and fittings for pressure piping systems on building sites and in trenches.

Hydraulically operated with manual control unit.

Control box with integrated temperature controller and power outlets.

For proper handling of the heating element and planer we recommend the assembling of the hoist unit (to be ordered separately).

Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.



• **BASE MACHINE**

- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- Removable outer clamp to fix bulky short-end fittings or to reduce machine length and weight (narrow working space / easier transportation)
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- Pressure cylinders separated from the guiding shafts for easier maintenance on site
- Weight: 3350 kg

• **HYDRAULIC UNIT**

- Compact and robust, with full closed metal housing and two handles for carrying
- Precise pressure setting and fine adjusting
- Joystick operation of machine carriage
- Clearly visible, vibration-free pressure gauge with precision scaling
- Accumulator for pressure equalization during the cooling phase
- Integrated interface for welding recorder
- Max operating pressure: 200 bar
- Weight: 80 kg



• **PLANER**

- Powerful parallel planer for single or double-sided facing of pipe ends
- Planer with Stop mechanism for safety
- Safety microswitch to prevent undesired start-up
- Weight: 935 kg



• **HEATING ELEMENT**

- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: 415 kg
- Input power: 400 V / 47000 W

• **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
- Integrated power outlets for all machine components, only 1 plug to the generator
- Assembled on the storage case for easier transportation
- Weight: 29 kg

• **CASE**

- For safe storage of planer and heating element
- Integrated power cables winder
- Weight: 795 kg



d-d (mm)	Performance	Code	Weight (kg)
1000 - 1600	400 V/55000 W	790 146 001	6900.000



Reduction clamping inserts, wide

- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- Reductions in inch sizes or special diameters upon request

d (mm)	Code	Weight (kg)
1000	790 146 147	92.667
1200	790 146 148	78.163
1400	790 146 149	62.295



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

Code	Weight (kg)
790 146 019	333.000



Reduction clamping inserts-set

- 8 wide clamping inserts dn 1000, 1200, 1400 mm

Description	Code	Weight (kg)
d 1000 mm	790 146 031	92.591
d 1200 mm	790 146 032	78.088
d 1400 mm	790 146 033	61.645
d 1000 - 1200 - 1400 mm	790 146 030	1860.000



Electric hoist unit

- Hoist capacity 1000 kg
- Arm length 4 m, pivoting, back/forward, max. column height from floor 6.16 m, 2 hoisting speeds (2.5 m/min and 5.5 m/min)

Code	Weight (kg)
790 146 018	1270.000



Trolley for hydraulic unit

- For easier transportation on site, including support for WR 200 welding recorder

Code	Weight (kg)
790 146 020	25.000

WR 200



WR 200 Welding Recorder for butt fusion machines

The WR 200 assists the welder to ensure the quality of the butt-fusion jointing according to country specific standards. The user is guided through all preparation and fusion steps. The selection of the fusion data like the used material, welding standard, diameter and wall thickness (SDR) is supported by a menu. The complete fusion sequence is supervised and recorded. The welding protocols can be directly printed out at jobsite by means of the on-board printer or easily exported via USB stick to any personal computer for further management. The recorder is protected by a robust plastic case of IP 65 protection class. The power and connecting cables are stored in a separate box. The WR 200 can be connected to hydraulically operated butt-fusion machines for construction site, even by later retrofitting of machines in service centres.

Description:

- Intuitive user guidance menu
- Welding standard selection e.g. DVS, UNI, WIS, ISO
- Welding process customisable: 4 user-defined cycles available
- Additional data input as: operator-ID, job and order number, joint number, GPS coordinates from an independent device
- On-board printer for direct print out of welding protocols at jobsite
- USB interface for welding protocols transfer
- Internal memory capacity: 250 protocols
- Selection of operator language
- Battery support for an autonomy of 10 hours (no data loss during power interruption)
- "Rent Guardian" function to set and control the rental period of the unit
- Available protocols format: TXT for easy printout, CSV for database management with SUVI® WIN-WELD software (included)
- Fully compatible with butt-fusion machines already working with former welding recorder models SUVI® 50 and WR 100
- Working temperature range: -10°C to +50°C

	Type	Performance	Dimensions	Code	Weight (kg)
WR 200		230 V	350x300x250 mm	790 119 401	5.000
WR 200 CYRILLIC		230 V	350x300x250 mm	790 119 425	5.500



Machines equipped with WR 200

Type	Performance	Code	Weight (kg)
TM 160 WR	230V/1910W	790 150 015	136.000
TM 160 WR CYRILLIC	230V/1910W	790 150 016	136.000
TM 250 WR	230V/3280W	790 151 015	210.000
TM 250 WR CYRILLIC	230V/3280W	790 151 016	210.000
TM 315 WR	230V/3880W	790 152 025	224.000
TM 315 WR CYRILLIC	230V/3880W	790 152 016	224.000
GF 400 WR	400V/5710W	790 127 015	350.000
GF 400 WR	230V/5710W	790 127 020	350.000
GF 400 WR CYRILLIC	230V/5710W	790 127 021	350.000
GF 500 WR	400V/6260W	790 116 075	475.000
GF 500 WR CYRILLIC	400V/6260W	790 116 074	475.000
KL 500 TOP 1 WR	400V/6260W	790 340 008	475.000
KL 500 TOP 2 WR	400V/6260W	790 340 035	475.000
KL 500 TOP 2 WR CYRILLIC	400V/6260W	790 340 036	475.000
GF 630 WR	400V/11010W	790 117 075	600.000
GF 630 WR CYRILLIC	400V/11010W	790 117 074	600.000
KL 630 TOP 1 WR	400V/11010W	790 345 008	600.000
KL 630 TOP 1 WR CYRILLIC	400V/11010W	790 345 011	600.000
KL 630 TOP 2 WR	400V/11010W	790 345 035	600.000
GF 800 WR	400V/15010W	790 123 075	1550.000
GF 800 WR CYRILLIC	400V/15010W	790 123 074	1550.000
GF 1000 WR	400V/19510W	790 124 075	3000.000
GF 1000 WR CYRILLIC	400V/19510W	790 124 074	3000.000
GF 1200 WR	400V/20510W	790 125 075	3210.000
GF 1200 WR CYRILLIC	400V/20510W	790 125 074	3210.000
GF 1600 WR	400V/55000W	790 146 002	6900.000
GF 1600 WR CYRILLIC	400V/55000W	790 146 003	6900.000










Machines with retrofitting for WR 200

Type	Performance	Code	Weight (kg)
GF 400	400V/5710W	790 127 019	355.000
GF 400	230V/5710W	790 127 018	355.000
GF 500	400V/6260W	790 116 072	498.000
KL 500 TOP 1	400V/6260W	790 340 007	470.000
KL 500 TOP 2	400V/6260W	790 140 021	460.000
GF 630	400V/11010W	790 117 071	617.000
KL 630 TOP 1	400V/11010W	790 345 003	627.000
KL 630 TOP 2	400V/11010W	790 345 013	617.000
GF 800	400V/15010W	790 123 073	1545.000
GF 1000	400V/19510W	790 124 073	2528.000
GF 1200	400V/20510W	790 125 073	2932.000

Utility Range

Work Shop Machines

Working Range

Size	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	
 WM 315																													
 T Fitting																													
 Y Fitting																													
 WM 630																													
 T-Fitting																													
 Y-Fitting																													
 WM 1200																													
 T Fitting																													
 Y Fitting																													



WM 315 FC
Workshop butt fusion machine
with narrow Fitting Clamps

- Machine for jointing segmented fittings like bends for applications with pressure piping systems
- Equipped with narrow clamping units for fittings
- Maximum jointing angle 30°
- Dimensional range d90 - 315 mm
- To produce T and Y fittings in the dimensional range d90 - 250 mm, 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 clamping units are mounted on supports, each of which can be adjusted transversely
- Each clamping unit can be turned up to 15°
- Each clamping unit is provided with a complete set of reductions d90 - 280 mm
- 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
- Including transport packaging, without accessories

d-d (mm)	Performance	Code	Weight (kg)
90 - 315	400 V/4620 W	790 118 014	465.000



WM 315 CNC FC
Automatic workshop butt fusion machine
with narrow Fitting Clamps

- Machine for jointing segmented fittings like bends for applications with pressure piping systems
- Fully automated fusion process by the use of state of the art PLC and touch screen
- Equipped with narrow clamping units for fittings
- Maximum jointing angle 30°
- Dimensional range d90 - 315 mm
- To produce T and Y fittings in the dimensional range d90 - 250 mm, special accessories are required
- **Machine description**
- Highest flexibility in the pipe preparation process
- The heating element is removed automatically during the change-over phase
- 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 clamping units are mounted on supports, each of which can be adjusted transversely
- Each clamping unit can be turned up to 15°
- Each clamping unit is provided with a complete set of reductions d90 - 280 mm
- Precision heating element with electronic temperature control (3000 W)
- High-quality PTFE coating with long service life
- 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
- Including transport packaging, without accessories

d-d	Performance	Code	Weight
(mm)			(kg)
90 - 315	400 V/4620 W	790118016	465.000



WM 315 PC
Workshop butt fusion machine
with wide Pipe Clamps

- Machine for jointing segmented fittings like bends for applications with pressure piping systems
- Equipped with wide clamping units for pipes
- Maximum jointing angle 45°
- Dimensional range d90 - 315 mm
- To produce T and Y fittings in the dimensional range d90 - 250 mm, dedicated 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 clamping units are mounted on supports, each of which can be adjusted transversely
- Each clamping unit can be turned up to 22.5°
- Each clamping unit is provided with a complete set of reductions d90 - 280 mm
- 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
- Including transport packaging, without accessories

d-d	Performance	Code	Weight
(mm)			(kg)
90 - 315	400 V/4620 W	790 118 060	465.000



WM 315 CNC PC
Automatic workshop butt fusion machine
with wide Pipe Clamps

- Machine for jointing segmented fittings like bends for applications with pressure piping systems
- Fully automated fusion process by the use of state of the art PLC and touch screen
- Equipped with wide clamping units for pipes
- Maximum jointing angle 45°
- Dimensional range d90 - 315 mm
- To produce T and Y fittings in the dimensional range d90 - 250 mm, special accessories are required
- **Machine description**
- Highest flexibility in the pipe preparation process
- The heating element is removed automatically during the change-over phase
- 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 clamping units are mounted on supports, each of which can be adjusted transversely
- Each clamping unit can be turned up to 22.5°
- Each clamping unit is provided with a complete set of reductions d90 - 280 mm
- Precision heating element with electronic temperature control (3000 W)
- High-quality PTFE coating with long service life
- 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
- Including transport packaging, without accessories

d-d (mm)	Performance	Code	Weight (kg)
90 - 315	400 V/4620 W	790 118 009	465.000

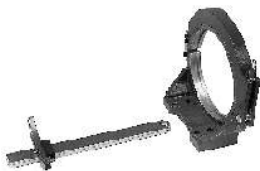
WM 315 accessories



Flange adapter clamping unit

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

d-d (mm)	Code	Weight (kg)
90 - 315	790 118 031	16.000



Base clamping unit for fittings with adapter ring, wide

- For clamping fittings of d315 mm as well as for fastening reduction clamping inserts for fittings d90 to 280 mm. Guide shaft for pipe support und back stop, with pipe support d315 mm
- Each clamping unit can be turned up to 15°
- L = left
- R = right

d (mm)	Type	Code	Weight (kg)
315	L	790 118 011	15.000
315	R	790 118 012	15.000



Reduction clamping inserts, narrow

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

d (mm)	Code	Weight (kg)
90	790 112 098	1.265
110	790 112 099	1.220
125	790 112 100	1.215
140	790 112 101	1.139
160	790 112 102	1.080
180	790 112 103	1.006
200	790 112 104	0.945
225	790 112 105	0.833
250	790 112 106	0.712
280	790 112 107	0.562



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	Weight (kg)
315	790 118 028	0.741



Set of pipe supports

d-d (mm)	Code	Weight (kg)
90 - 280	790 118 025	6.700



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

d-d (mm)	Code	Weight (kg)
90 - 250	790 118 032	120.000



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

d-d (mm)	Code	Weight (kg)
90 - 250	790 118 033	179.000



Back stop

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

Code	Weight (kg)
790 118 026	4.000



WM 630

- # Machine for jointing segmented fittings like bends from d315 - 630 mm for high pressure applications
- # To produce T and Y fittings from d315 - 500 mm, 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 each of which can be adjusted transversely to the pipe axis
- # Each clamping tool can be turned max. 22.5° and assembled with a set of reductions d315 - 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)
- # Including transport packaging, without accessories

d-d (mm)	Performance	Code	Weight (kg)
315 - 630	400 V / 15600 W	790 108 020	2300.000



WM 630 CNC
Automatic workshop butt fusion machine

- # Machine for jointing segmented fittings like bends from d315 - 630 mm for high pressure applications
- # To produce T and Y fittings from d315 - 500 mm, 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 each of which can be adjusted transversely to the pipe axis
- # Each clamping tool can be turned max. 22.5° and assembled with a set of reductions d315 - 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)
- # Including transport packaging, without accessories

d-d (mm)	Performance	Code	Weight (kg)
315 - 630	400 V/15600 W	790 108 101	2300.000

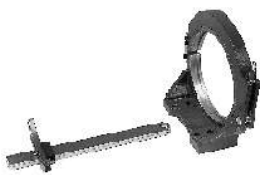
WM 630 accessories



Flange adapter clamping unit

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

d-d (mm)	Code	Weight (kg)
315 - 630	790 108 031	194.000



Base clamping unit for fittings

- For clamping fittings of d500 mm as well as for the reduction clamping inserts for fittings of d315 to 450 mm. Guide shaft for pipe support and back stop, with pipe support d500 mm
- L = left
- R = right

d (mm)	Type	Code	Weight (kg)
630	L	790 108 017	150.000
630	R	790 108 018	150.000



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 to the base clamp d 630, the reduction clamping insert d 500 mm, code 790 117 012, must also be used

Code	Weight (kg)
790 116 012	3.698
790 116 013	3.727
790 116 014	3.836
790 116 015	3.276
790 117 012	4.500
790 117 013	4.900



Set of pipe supports

d-d (mm)	Code	Weight (kg)
315 - 450	790 108 025	6.000
315 - 560	790 108 009	16.000



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

d-d (mm)	Code	Weight (kg)
315 - 500	790 108 032	491.000



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

d-d (mm)	Code	Weight (kg)
315 - 500	790 108 033	770.000



Back stop

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

Code	Weight (kg)
790 108 026	32.000



WM 1200
Workshop butt fusion machine

- # Machine for jointing segmented fittings like bends from d630 - 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 d630 - 900 mm, 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 each of which can be adjusted transversely to the pipe axis
- # Each clamping tool can be turned max. 22.5° and assembled with a set of reductions d630 - 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)
- # Including transport packaging, without accessories

d-d (mm)	Performance	Code	Weight (kg)
630 - 1200	400 V/41000 W	790 126 001	1500.000

WM 1200 accessories



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

d-d (mm)	Code	Weight (kg)
630 - 900	790 126 011	4620.000



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

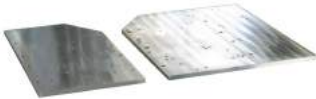
d-d (mm)	Code	Weight (kg)
630 - 900	790 126 012	5500.000



X-fitting clamping unit

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

d-d (mm)	Code	Weight (kg)
630 - 900	790 126 013	2900.000



Base Plate T-Y-X pieces

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

Code	Weight (kg)
790 126 014	1000.000

Tools for installation of plastic pipes



PPC Plastic pipe cutter

For cutting plastic pipes d10 - d160

d-d (mm)	Article	Code	Weight (kg)	Closest inch (inch)
10 - 63	PPC 63, s max. = 7.2mm	790 109 001	0.865	1/8 - 2
50 - 110	PPC 110, s max. = 12.7mm	790 109 002	1.624	1 1/2 - 4
110 - 160	PPC 160, s max. = 19.0mm	790 109 003	2.212	4 - 6



Replacement cutting wheels

For plastic pipe cutter

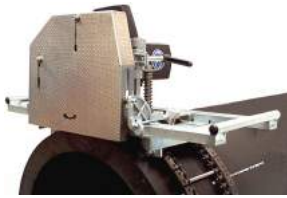
d-d (mm)	Article	Code	Weight (kg)
10 - 63	SR 63 max. s=7,2 mm	790 109 011	0.004
50 - 110	SR 110/160 max. s=12,7 mm	790 109 012	0.015
110 - 160	SR 160 max. s=19,0 mm	790 109 013	0.023



KS 355 Plastic pipe cutter

- The KS 355 is the ideal tool for right-angled cuts with no misalignment of PE, PP and PVC pipes
- Unique clamping mechanism, no additional tools like belts, chains or reduction inserts necessary
- Weight of the saw: 13,0 kg
- Supplied with transport box: Dimension 700 x 350 x 500 mm; Weight 17,0 kg

d-d (mm)	Code	Weight (kg)	Power
160 - 355	790 202 001	35.000	1750 W; 230 V; 50/60 Hz



Plastic pipe cutter

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

The KS 1600 is used for cutting plastic pipes fast, cleanly and properly right-angled from diameter 500 mm up to 1600 mm with a wall thickness of max. 60 mm. For each pipe diameter, the appropriate chain length is necessary. The saw is to be put on the tensioned chain as per user manual which serves as a guiding device for the saw over a full 360° turn.

The guard plate covers the saw blade also during operation and provides full protection for the user at all times.

The KS 1600 basic kit consists of a circular-hand saw, 230 V / 2200 W with carriage, 2 tension chains for d560 mm and d630 mm as well as a chain tensioner. The whole equipment comes in a convenient and robust transport box.

The easy handling and the optimal safety features make this tool indispensable on every building site.

Scope of delivery:

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

Technical data:

Dimension range:	d500 –1600 mm (In combination with the respective tensioning chain)
Plug:	EU-Plug
Voltage:	230 V AC
Power:	2200 Watt
Frequency:	50-60 Hz
Circular saw blade outer-Ø:	240 mm
RPM:	4100
Sound level:	104 dB (A)
Weight saw:	15, 5 kg
Weight KS 1600 Basic-Kit:	43,5 kg
Dimensions saw (WxHxD):	790 x 330 x 335 mm
Dimensions Transport-Box:	950 x 400 x 395 mm

d-d (mm)	Type	Code	Weight (kg)
500 - 1600	KS 1600 Basic Kit	790 109 600	43.000



Chain tensioner

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

d-d (mm)	Code	Weight (kg)
500 - 1600	790 109 616	0.400



Replacement saw blade for KS 1600

	description	Code	Weight (kg)
	Saw Blade 240X3,0X30, 18 teeth punched	790 109 618	0.653



Chamfering tools

Tool for beveling (15° angle) the outer diameter of the thermoplastic pipes (PVC, ABS, PB, PP, PE). Sliding surface out of industrial felt.

d-d (mm)	Code	Weight (kg)
40 - 200	790 309 001	1.607
50 - 315	790 309 002	3.265



Chamfering tools

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

d-d (mm)	Code	Weight (kg)
16 - 200	790 309 003	1.024
63 - 400	790 309 004	2.548



Outer bead remover

d-d (mm)	Code	Weight (kg)
110 - 160	790 109 241	1.240
140 - 250	790 109 242	1.950
180 - 315	790 109 243	2.090
280 - 450	790 109 244	2.700

Machines and Tools for Industrial Applications



Industry Range








Contents

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Industry Range

IR and BCF Machines

Working Range

Size	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	
 <p>IR 63</p>																						
 <p>IR 110</p>																						
 <p>IR 225</p>																						
 <p>IR 315</p>																						
 <p>IR 450</p>																						
 <p>BCF 63</p>																						
 <p>BCF 110</p>																						



IR-63 Plus® Fully-Equipped Machine

Model:

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

d-d (mm)	Code	Weight (kg)
20 - 63	790 131 005	50.000



Clamping inserts

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

d (mm)	Code	Weight (kg)	Pieces
20	790 131 038	0.090	1
25	790 131 039	0.090	1
32	790 131 040	0.052	1
40	790 131 041	0.074	1
50	790 131 042	0.100	1
63	790 131 043	0.035	1



Set of facing knives

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

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 131 045	0.016	2



Set of end caps

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

d (mm)	Code	Weight (kg)	Pieces
20	790 131 030	0.040	4
25	790 131 031	0.010	4
32	790 131 032	0.088	4
40	790 131 033	0.005	4
50	790 131 034	0.005	4
63	790 131 035	0.023	4



Pipe stop

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

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 131 046	0.430	1



Heater protection shield

- Protects the heater from plastic chips during the facing process.

Code	Weight (kg)	Pieces
790 131 051	0.205	1



Extension cable for facing tool

- The extension cable enables the fusion e. g. under the ceiling.

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 131 048	0.438	1



Extension cable for heater

- The extension cable enables the fusion e. g. under the ceiling.

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 131 049	0.767	1



**Extension cable
for clamping slide**

- The extension cable enables the fusion e. g. under the ceiling.

d-d (mm)	Code	Weight (lb)	Pieces
20 - 63	790 131 047	1.764	1



IR-110 Plus Fully-Equipped Machine

Model:

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

d-d (mm)	Code	Weight (kg)
20 - 110	790 132 001	75.000



Clamping inserts

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

d (mm)	Code	Weight (kg)	Pieces
20	790 132 051	0.108	1
25	790 132 052	0.106	1
32	790 132 053	0.104	1
40	790 132 054	0.100	1
50	790 132 055	0.095	1
63	790 132 156	0.085	1
75	790 132 157	0.087	1
90	790 132 158	0.064	1



Clamping inserts PFA Sch. 40 rigid pipe

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

d (inch)	Code	Weight (kg)	Pieces
¼	790 132 062	0.109	1
½	790 132 063	0.107	1
¾	790 132 064	0.106	1
1	790 132 065	0.103	1
2	790 132 066	0.088	1



Set of facing knives

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

d-d (mm)	Code	Weight (kg)	Pieces
20 - 110	790 132 061	0.007	2



Set of end caps

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

d (mm)	Code	Weight (kg)	Pieces
20	790 131 030	0.040	4
25	790 131 031	0.010	4
32	790 131 032	0.088	4
40	790 131 033	0.005	4
50	790 131 034	0.005	4
63	790 131 035	0.023	4
75	790 133 036	0.095	4
90	790 133 037	0.028	4
110	790 133 038	0.180	4



Pipe stop

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

d-d (mm)	Code	Weight (kg)	Pieces
20 - 110	790 132 059	0.700	1



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

Model:

- Fully-equipped fusion jointing machine for welding SYGEF Standard, SYGEF Plus, PROGEF Standard, PROGEF Natural, PROGEF Plus, ecoFIT in dimensions d 63-225 mm, 2 USB interfaces, monochrome display with icons and 12 languages.
- Machine base (1 pcs.)
- Heater assembly (1 pcs.)
- Facing tool (1 pcs.)
- Movable clamping units (1 pcs.)
- Clamping inserts d 63-225 mm (8 pcs. per dimension)
- End caps PE d 63-225 mm (4 pcs. per dimension)
- Transportation lock (1 pcs.)
- Combination ring /open-jaw wrench 13 mm (1 pcs.)
- Cleaning brush (1 pcs.)
- Connecting cable 400 V - 230 V (1 pcs.)
- Ball for lever (1 pcs.)
- Manual (1 pcs.)
- 1-phase AC (50/60 Hz) 230 V L/N/PE or 3-phase AC (50/60 Hz) 400 V/230 V L1/L2/L3/N/PE
- Working table, HP (1 pcs.)
- Pipe stop (1 pcs.)
- Hexagon key 5 mm (1 pcs.)
- Hexagon key 6 mm (1 pcs.)

d-d (mm)	Code	Weight (kg)
63 - 225	790 133 009	453.000



Clamping inserts

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

d (mm)	Code	Weight (kg)	Pieces
63	790 133 026	0.700	1
75	790 133 027	0.400	1
90	790 133 028	0.691	1
110	790 133 029	0.644	1
125	790 133 030	0.500	1
140	790 133 031	0.600	1
160	790 133 032	0.600	1
180	790 133 463	0.560	1
200	790 133 033	0.700	1
225	790 133 034	0.270	1



Pipe stop

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

d-d (mm)	Code	Weight (kg)	Pieces
63 - 225	790 133 047	0.150	1



Set of facing knives

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

d-d (mm)	Code	Weight (kg)	Pieces
63 - 225	790 133 046	0.125	2



Set of end caps

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

d (mm)	Code	Weight (kg)	Pieces
63	790 131 035	0.023	4
75	790 133 036	0.095	4
90	790 133 037	0.028	4
110	790 133 038	0.180	4
125	790 133 039	0.150	4
140	790 133 040	0.180	4
160	790 133 041	0.045	4
180	790 133 494	0.095	4
200	790 133 042	0.080	4
225	790 133 043	0.400	4



IR-315 Plus Fully-Equipped Machine with HP Working Table (HP = High Purity)

Fully-equipped fusion jointing machine for welding SYGEF and SYGEF Plus, in dimensions d 225-315 mm, 2 USB interfaces, monochrome display with icons and 12 languages. **Supply:** 1-phase AC (50/60 Hz) 230 V L/N/PE or 3-phase AC (50/60 Hz) 400 V/230 V L1/L2/L3/N/PE **Delivery includes:** Machine base (1 pcs.) Heater assembly (1 pcs.) Facing tool (1 pcs.) Working table, HP (1 pcs.) Movable clamping units (1 pcs.) Clamping inserts d 225-315 mm (8 pcs. per dimension) End caps PE d 225-315 mm (4 pcs. per dimension) Transportation lock (1 pcs.) Pipe stop (1 pcs.) Hexagon key 5 mm (1 pcs.) Hexagon key 6 mm (1 pcs.) Combination ring /open-jaw wrench 13 mm (1 pcs.) Cleaning brush (1 pcs.) Connecting cable 400 V - 230 V (1 pcs.) Ball for lever (1 pcs.) Manual (1 pcs.)

d-d (mm)	Code	Weight (kg)
225 - 315	790 134 001	466.000



IR-450 Fully-Equipped Machine

Model:

- Fully-equipped semi automated fusion jointing machine for welding SYGEF Plus in dimension d 315-450, USB interfaces and touch screen with icons
- **Only a rental pool machine**

d-d (mm)	Code
315 - 450	



IR-Plus Win Weld

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

	Code	Weight (kg)	Description	Pieces
Only works on XP	790 131 471	0.150	works with USB stick up to max. 2 GB	1

BCF fusion machines



BCF Plus fully equipped machine d 20 - 63 mm

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

Supply:

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

Delivery includes:

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

d-d (mm)	Code	Weight (kg)
20 - 63	790 121 002	153.000



BCF Plus fully-equipped machine d 20 - 110 mm

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

Supply:

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

Delivery includes:

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

d-d (mm)	Code	Weight (kg)
20 - 110	790 121 001	188.000



BCF Plus Heating stations

d (mm)	Code	Weight (kg)	Pieces
20	790 121 111	1.818	1
25	790 121 112	1.822	1
32	790 121 113	1.910	1
40	790 121 114	2.396	1
50	790 121 115	2.406	1
63	790 121 116	2.197	1
75	790 121 117	3.600	1
90	790 121 118	3.600	1
110	790 121 119	3.520	1



BCF Bladder for SYGEF PVDF

- Only suitable for welding SYGEF PVDF and not for PROGEF Natural. **Silver bladder head!**

d (mm)	Code	Weight (kg)	Pieces
20	790 122 041	0.014	1
25	790 122 042	0.020	1
32	790 122 043	0.037	1
40	790 122 044	0.078	1
50	790 122 045	0.132	1
63	790 122 046	0.138	1
75	790 121 047	0.203	1
90	790 121 048	0.265	1
110	790 121 049	0.552	1



BCF Plus Bladder for PROGEF Natural

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

d (mm)	Code	Weight (kg)	Pieces
20	790 122 091	0.038	1
25	790 122 092	0.021	1
32	790 122 093	0.040	1
40	790 122 094	0.050	1
50	790 122 095	0.105	1
63	790 122 096	0.138	1
75	790 121 047	0.203	1
90	790 121 048	0.265	1
110	790 121 049	0.552	1



BCF Plus facing tool

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

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 121 052	2.339	1
75 - 110	790 121 053	3.000	1



BCF Plus clamping inserts for the facing tool

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

d (mm)	Code	Weight (kg)	Pieces
20	790 121 061	0.160	1
25	790 121 062	0.146	1
32	790 121 063	0.135	1
40	790 121 064	0.125	1
50	790 121 065	0.100	1
63	790 121 066	0.050	1
75	790 121 067	0.300	1
90	790 121 068	0.200	1
110	790 121 069	0.090	1



BCF Plus facing tool mounting plate

- To fix the facing tool on the workbench.

d-d (mm)	Code	Weight (kg)	Pieces
20 - 110	790 121 055	1.200	1



BCF Plus clamping units

- The clamping units are adjustable, so that all types of pipes and fittings can be clamped.

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 121 034	0.600	1
75 - 110	790 121 035	0.900	1



BCF Plus clamping inserts

- The clamping inserts are suitable for the clamping units of the BCF Plus machine. They are used to clamp the piping components.
- **No** clamping inserts are needed for **d 110 mm!**

d (mm)	Code	Weight (kg)	Pieces
20	790 131 038	0.090	1
25	790 131 039	0.090	1
32	790 131 040	0.052	1
40	790 131 041	0.074	1
50	790 131 042	0.100	1
63	790 131 043	0.035	1
75	790 121 036	0.143	1
90	790 121 037	0.095	1



BCF Plus adapter for clamping unit d 75-110 mm

- The adapter makes it possible, to insert clamping inserts with d 20-63 mm in clamping units with d 75-110 mm to be able to clamp pipes and fittings with d 20-63 mm with these clamping units.

d-d (mm)	Code	Weight (kg)	Pieces
75 - 110	790 121 038	0.250	1



BCF Plus hose box incl. hose

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

d (mm)	Code	Weight (kg)	Length (m)	Pieces
4	790 121 151	1.114	16	1



BCF Plus hose

- Connection hose for the BCF Plus bladder.

d (mm)	Code	Weight (kg)	Length (m)
4	790 122 087	0.121	16



BCF Plus supporting tool

- Helpful to fix 45°- angle components.

d-d (mm)	Code	Weight (kg)	Pieces
20 - 63	790 121 072	0.542	1
75 - 110	790 121 073	0.942	1



BCF Plus bladder/ hose remove tool (BReT)

- Helpful to remove bladders easily.

Code	Weight (kg)	Pieces
790 121 075	0.079	1



BCF Plus extension cable

- The extension cable enable the fusion e. g. under the ceiling.

Code	Weight (kg)	Length (mm)
790 122 989	1.000	8

Accessories BCF Plus machines



Hose cutter

d-d (mm)	Code	Weight (kg)	Pieces
4 - 6	790 122 106	0.031	1



Socket for compressed air hose

d (mm)	Code	Weight (kg)	Pieces
4	790 122 104	0.002	1



BCF Plus Win Weld

- **incl. Recordcard / USB stick**
- The PC data transfer software makes it possible to manage and evaluate easily the recorded fusion data as required.
- Works with USB stick up to max. 2 GB

	Code	Weight (kg)	Pieces
Only works on XP	790 121 471	0.080	1

Accessories for the IR Plus and BFC Plus Machines



Thermal Printer Ribbon for TLP-2742 / TLP-2844

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

Code	Weight (kg)	Pieces
790 131 029	0.076	1



Thermal Transfer Labels

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

Code	Weight (kg)	Pieces
790 131 028	0.400	1



Power supply lead

Performance	Code	Weight (kg)	Pieces
230V	790 122 246	0.301	1
115V	790 122 248	0.188	1



KS Tangit Cleaner

- Special cleaner for plastic fusion connections in the material of PP, PE, PVDF and PB
- DVGW approved
- DW 5290 BR 0464

Size	Code	Weight (kg)
1 liter	799 298 023	0.872



Cleaning tissue KO-TON-R

Minimum order quantity 100 pieces


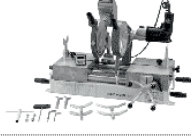








- This cleaning tissue is suitable for the cleaning of the welding zone of piping components, because it is lint free and clean room checked.

Code	Weight (kg)
790 122 085	0.005

Industry Range

Industry Fusion Machines

Working Range

Size	16	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	
SG 125 																				
SG 160 																				
IM 250 																				
IM 315 																				
MC 110 																				
PSO 701 																				
Weld 160 																				
Weld 250 																				
SSE 																				
MSE 																				

Socket fusion machine



SG 125 Socket fusion machine

- Portable heating element - socket fusion machine for use in the workshop and on job sites.
- For fusion jointing of PP, PE, PB and PVDF pipes and fittings; dimension 20 - 125 mm
- **BASE MACHINE**
- Compact, sturdy design, distortion-free machine bed
- Handwheel with torque locking mechanism for the slide movement
- Fast selection of insertion depth according to the pipe dimension
- **HEATER**
- With electronic temperature control
- High temperature accuracy over the entire heating surface
- **ADDITIONAL STANDARD EQUIPMENT**
- Universal, left and right prismatic clamping devices, complete, for clamping pipe and fittings. Additional set of prismatic clamping devices for outer clamping of pipes available as an option.
- V-shaped pipe support d 20 - 125 mm
- Back stop
- Machine specific tool set
- Timer to clock fusion times
- Including transport packaging, without accessories

d-d (mm)	Performance	Code	Weight (kg)
20 - 125	230 V/1500 W	790 310 034	65.000
20 - 125	115 V/1500 W	790 310 036	65.000



Heating spigots and bushes

- For socket fusion systems in PP, PE and PVDF
- Always delivered in pairs (also usable for SG 110, SG 125, not for SG 160)
- Type B according to DVS 2208-1 (mechanical calibrated pipe ends)

d (mm)	Code	Weight (kg)
20	799 300 156	0.090
25	799 300 157	0.154
32	799 300 158	0.211
40	799 300 159	0.309
50	799 300 160	0.434
63	799 300 161	0.594
75	799 300 162	0.981
90	799 300 163	1.452
110	799 300 164	2.008
125	799 300 165	2.200



Set heating spigots and bushes Type B

- For socket fusion systems in PP, PE and PVDF
- Always delivered in pairs (also usable for SG 110, SG 125, not for SG 160)
- Type B according to DVS 2208-1 (mechanical calibrated pipe ends)

d-d (mm)	Code	Weight (kg)
20 - 125	790 310 023	8.600



Manual pipe peeling and chamfering tools

d (mm)	Code	Weight (kg)
20	799 300 260	0.087
25	799 300 270	0.080
32	799 300 280	0.099
40	799 300 290	0.240
50	799 300 300	0.244
63	799 300 310	0.507
75	799 300 320	0.680
90	799 300 330	1.006
110	799 300 340	1.355



1 set face chucks

- For back and front prismatic clamping device (set of 2 pieces)

Code	Weight (kg)
790 310 018	1.100



Universal prismatic clamping device, complete

- For correct clamping of long pipes, fittings
- 1 set = 2 pieces (1 back and 1 front prismatic clamping device) for mounting on left or right side, as well as for inner and outer mounting

d-d (mm)	Code	Weight (kg)
20 - 125	790 310 040	3.300



Backstop, complete

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

Code	Weight (kg)
790 310 012	0.600



V-shaped pipe support, complete

d-d (mm)	Code	Weight (kg)
20 - 125	790 310 041	0.700



Heating element

d-d (mm)	description	Performance	Code	Weight (kg)
20 - 125	electronic	230 V/1500 W	790 310 043	2.700
20 - 125	thermostatic	230 V/1500 W	790 310 044	2.700
20 - 125	thermostatic	115 V/1500 W	790 310 046	2.700



Tempil sticks

Temperature (°C)	Code	Weight (kg)	Color
253	761 066 796	0.012	yellow
274	761 066 797	0.014	red



Gloves

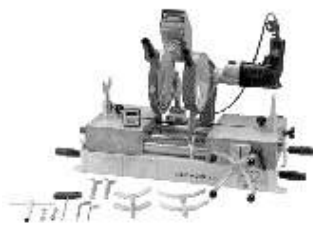
Code	Weight (kg)
761 066 799	0.115



Special transport crate

Code	Weight (kg)
790 310 099	26.000

Socket and butt fusion machines



SG 160 Combined butt and socket fusion machine for industrial applications

Mobile, very compact and universal plastic fusion machine for PP, PE and PVDF pipes and fittings for use in the workshop and on job sites.

Butt fusion d 32 - 160 mm, all pressure ratings up to PE/PP SDR 11; PVDF SDR 21.

Socket fusion d 16 - 110 mm

Base machine

- high precision, distortion-free and robust machine base
- handwheel for easy moving of machine carriage
- exact pressure adjustment via direct load transfer
- hardened, hard-chrome plated guide shafts for extreme loads
- handle for safe transport of machine
- All clamping possibilities for base clamping plates, pipe supports, back stop and prismatic clamping devices.

Planer

- planing device made of light cast aluminium
- optimised cutting geometry for even and chatter-free planing
- powerful parallel planer, swivels in and out for single or double-sided facing of pipe ends 620 W
- integrated pick up for easy mounting of calibration tools for machining of pipe ends in socket fusion

Heater

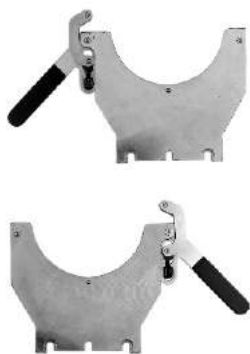
- high-performance and precision heater with electronic temperature control 1500 W
- high accuracy of +/- 4C over the entire heating surface
- heater temperature can be set exactly with digital LCD
- high quality, non-stick, easy to change PTFE fabric

Additional standard equipment on the basic model

- V-shaped pipe supports d 16 - 160 mm for fittings
- timer to clock fusion times
- tool set specified to machine
- Including transport packaging, without accessories

d-d	Performance	Code	Weight
(mm)			(kg)
16 - 160	230 V	790 103 031	44.900
16 - 160	115 V	790 103 033	45.000

SG 160 Accessories



Base clamping plates

- In order to improve the quality of the fusion joint, and for reliable clamping of long pipes, we recommend using the maximum number of clamping devices.
- For welding of long pipes we recommend to use the outer left and outer right base clamping plates as well.
- L = left
- R = right

d	Type	Code	Weight
(mm)			(kg)
160	L	790 103 010	2.508
160	R	790 103 011	2.549



Inserts, left/right

- For base clamping plate or bracket
- Left or right

d (mm)	Code	Weight (kg)
32	790 103 019	0.315
40	790 103 020	0.303
50	790 103 021	0.302
63	790 103 022	0.277
75	790 103 023	0.250
90	790 103 024	0.219
110	790 103 025	0.178
125	790 103 026	0.132
140	790 103 027	0.079



Clamping bracket, left/right

- For base clamping plate or bracket
- L = left
- R = right

* Threaded clamping bracket, for mounting inserts d 32 - 140 mm. An additional insert must be used instead of clamping brackets d 32 - 140 mm, i.e. twice the number of inserts listed must be ordered.

d (mm)	Type	Code	Weight (kg)
32	L	790 103 039	1.076
40	L	790 103 040	0.530
50	L	790 103 041	0.537
63	L	790 103 042	0.531
75	L	790 103 043	0.530
90	L	790 103 044	0.580
110	L	790 103 045	0.580
125	L	790 103 046	0.606
140	L	790 103 047	0.650
*	160 L	790 103 048	0.669
32	R	790 103 059	0.530
40	R	790 103 060	0.530
50	R	790 103 061	0.530
63	R	790 103 062	0.530
75	R	790 103 063	1.042
90	R	790 103 064	1.174
110	R	790 103 065	0.590
125	R	790 103 066	0.605
140	R	790 103 067	0.530
*	160 R	790 103 068	0.679



Back stop

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

d-d (mm)	Code	Weight (kg)
20 - 250	790 101 045	1.394



Clamping bracket, right

- For base clamping plate or bracket
- R = right

Code	Weight (kg)
790 103 059	0.530
790 103 060	0.530
790 103 061	0.530
790 103 062	0.530
790 103 063	1.042
790 103 064	1.174
790 103 065	0.590



Prismatic clamping device

- Prismatic clamping device for pick up of clamping jaws for exact alignment of fusion components
- L = left
- R = right
- *Horizontal adjustable

Type	Code	Weight (kg)
L	790 103 080	5.849
R	790 103 081	5.839



Clamping jaws

- For prismatic base units, left/right
- Each code number defines 1 piece prismatic clamping device. For socket fusion 4 pieces are needed.

d (mm)	Code	Weight (kg)
16-32 / 90-110	790 103 085	0.310
30-50 / 50-90	790 103 086	0.330



Depth stop, complete

- Warrants the correct insertion depth of the pipe in the fittings socket
- Built-in spring for easier removal of fusion components from the heater. Damage to the plastic fusion surfaces is prevented.

Code	Weight (kg)
790 103 090	0.610



Stiffener plate

- Warrants consistent heat transfer from heater plate to heating bush 110 mm
- Is recommended for socket fusion in the dimension 110 mm
- For heating bush d 110 mm

d (mm)	Code	Weight (kg)
110	790 101 098	0.264



Calibration tool

- For mechanical, standardised calibration of pipe ends in PE, PP and PVDF (to be used with planer)
- easy and time-saving removal of oxide film
- Consistent peeling quality over the entire pipe circumference

d (mm)	Code	Weight (kg)
20	790 103 160	0.950
25	790 103 161	0.950
32	790 103 162	0.950
40	790 103 163	0.930
50	790 103 164	0.950
63	790 103 165	1.000
75	790 103 166	1.150
90	790 103 167	1.250
110	790 103 168	1.344



Heating spigots and bushes

- 1 pair is always delivered
- Aluminium, PTFE coated

d (mm)	Code	Weight (kg)
16	790 101 086	0.390
20	790 101 087	0.110
25	790 101 088	0.110
32	790 101 089	0.110
40	790 101 090	0.330
50	790 101 091	0.170
63	790 101 092	0.310
75	790 101 093	1.164
90	790 101 094	1.688
110	790 101 095	2.071



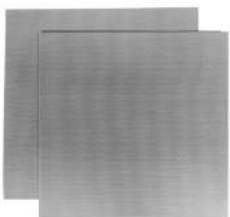
Gloves

Code	Weight (kg)
761 066 799	0.115



Tempil sticks

Temperature (°C)	Code	Weight (kg)	Color
253	761 066 796	0.012	yellow
274	761 066 797	0.014	red



SG 160 1 Set PTFE fabric sheets

- (set of 2 pieces)
- High-quality, easy to replace, non-stick PTFE fabric for the heater

d (mm)	Code	Weight (kg)
160	790 103 306	0.023



SG 160 1 Set planer blades

- (1 set = 2 blades)

Code	Weight (kg)
790 103 548	0.039



Special transport crate

- Compact and sturdy for proper transportation and safe storage
- Multifunctional, can be used as a workbench for ergonomic working position
- Two integrated drawers to store all accessories
- Dimensions 1 m height x 1,2 m length x 0.8 m width

Code	Weight (kg)
790 103 099	108.000

IM 160



IM 160 Butt fusion machine for industrial applications

- Butt fusion machine for PP, PE, PB and PVDF pipes and fittings for industrial applications with pressure piping systems.
- Compact and sturdy design for use in the workshop and on jobsites.
- Designed to provide the highest flexibility to adapt to different sizes or shapes of fittings.
- Dimensional range: d40 - 160 mm, from SDR 41 up to SDR 11 with PE, PP d160 mm; d32 mm available as optional.
- **BASE MACHINE**
 - High precision, distortion-free and robust machine base
 - Handwheel for easy moving of machine carriage
 - Exact pressure adjustment via direct spring load transfer
 - Fast-locking base clamping plates, right and left, d 160 mm
 - Weight (including planer and heater): 53 kg
- **PLANER**
 - Load transfer via robust chain drive
 - Optimized cutting geometry for even and chatter-free planing
 - Swivel mounted for ergonomic handling
 - Mechanical stop to provide single sided planing and defined facing depth
- **HEATER**
 - High performance, electronically controlled heating element
 - High accuracy of +/- 4°C over the entire heating surface
 - High quality, non-stick PTFE coating
 - Metal sheet cover to protect the heating plate in idle position
 - The heating element can be used as manual fusion tool
- **ADDITIONAL STANDARD EQUIPMENT**
 - Complete reduction clamping inserts set d 40 - 140 mm
 - V-shaped pipe support with inserts d 40 - 140 mm
 - Timer to clock fusion times
 - Machine specific tool set
 - Wooden transport crate, usable as working bench, also available as special version made of coated plywood with aluminium profiles, optimized design for pallet truck handling and storage drawer for reduction inserts and tools

d-d (mm)	Performance	Description	Code	Weight (kg)
40 - 160	230 V/1700 W	Standard transport crate	790 141 001	123.000
40 - 160	230 V/1700 W	Special transport crate	790 141 003	157.000
40 - 160	115 V/1700 W	Standard transport crate	790 141 008	123.000
40 - 160	115 V/1700 W	Special transport crate	790 141 009	157.000



Reduction clamping inserts d32

- Complete set d 32 mm for 2 clamping plates and 2 pipe supports

d (mm)	Code	Weight (kg)
32	790 141 033	2.500

Y-branches base clamping plates

- For clamping Y-branches in all possible positions
- Special upper reduction inserts must be used for Y-branches (code 790 141 036)
- L = left
- R = right



d (mm)	Type	Code	Weight (kg)
160	L	790 141 035	3.500
160	R	790 141 034	3.500



Y-branches upper reduction inserts set

- To be mounted in the upper half-clamp for Y-branches
- Dedicated to a single clamping plate: 1 insert for each dimension

d-d (mm)	Code	Weight (kg)
32 - 140	790 141 036	5.400



Back-stop

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

Code	Weight (kg)
790 141 061	1.919



Special transport crate

- Optimized design for pallet truck handling, with storage drawer for reduction inserts and tools

Code	Weight (kg)
790 141 065	93.000



Set of replacement blades for planer

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

Code	Weight (kg)
790 113 056	0.059

IM 250



IM 250 Butt fusion machine for industrial applications

- Butt fusion machine for PP, PE, PB and PVDF pipes and fittings for industrial applications with pressure piping systems.
- Extremely sturdy design for use in the workshop and on job sites.
- Designed to provide the highest flexibility to adapt to different sizes or shapes of fittings.
- Angular jointing provided up to 30° (2x15°) for prefabrication of segmented fittings.
- Dimensional range: d75 - 250 mm, from SDR 41 up to SDR 11 with PE, PP d250 mm.
- 115 V on request!
- **BASE MACHINE**
 - High precision, distortion-free and robust machine base
 - Integrated swivel tables for angular jointing up to 30° (2x15°)
 - Handwheel for easy moving of machine carriage
 - Exact pressure adjustment via direct spring load transfer
 - Fusion pressure is maintained with a user friendly fast-locking handle
 - Optional outer, horizontally removable clamping devices available
 - Weight (with planer and heater): 152 kg
- **PLANER**
 - Optimized cutting geometry for even and chatter-free planing
 - Swivel mounted for ergonomic handling
 - Mechanical stop to provide single sided planing and defined facing depth
 - Integrated safety switch to prevent unintentional start-up
 - Self-locking mechanism in working position
- **HEATER**
 - High-performance and precision heater with electronic temperature control (2000 W)
 - High accuracy of +/- 4°C over the entire heating surface
 - High quality, non-stick PTFE coating
 - Pull-off mechanism to automatically detach the heating plate from pipe ends
 - Metal sheet cover to protect the heating plate in idle position
 - Integrated thermometer for fast visual check of plate temperature
- **ADDITIONAL STANDARD EQUIPMENT**
 - Reduction clamping inserts set d 75-250 mm
 - Reduction pipe supporting inserts set d 75-250 mm
 - Timer to clock fusion times
 - Machine specific tool set

d-d (mm)	Performance	Description	Code	Weight (kg)
75 - 250	230 V / 3000 W	Without transport crate	790 142 005	220.000
75 - 250	230 V / 3000 W	With standard transport crate	790 142 001	265.000
75 - 250	230 V / 3000 W	With special transport crate	790 142 003	283.000



IM 250 - D

Butt fusion machine for industrial applications

- Butt fusion machine for PP, PE, PB and PVDF pipes and fittings for industrial applications with pressure piping systems.
- Equipped with a load cell and digital display for easy viewing and precise indication of the welding force.
- Extremely sturdy design for use in the workshop and on job sites.
- Designed to provide the highest flexibility to adapt to different sizes or shapes of fittings.
- Angular jointing provided up to 30° (2x15°) for prefabrication of segmented fittings.
- Dimensional range: d75 - 250 mm, from SDR 41 up to SDR 11 with PE, PP d250 mm.
- 115 V on request!
- **BASE MACHINE**
 - High precision, distortion-free and robust machine base
 - Integrated swivel tables for angular jointing up to 30° (2x15°)
 - Handwheel for easy moving of machine carriage
 - Exact pressure adjustment via direct spring load transfer
 - Digital display for force indication
 - Fusion pressure is maintained with a user friendly fast-locking handle
 - Optional outer, horizontally removable clamping devices available
 - Weight (with planer and heater): 152 kg
- **PLANER**
 - Optimized cutting geometry for even and chatter-free planing
 - Swivel mounted for ergonomic handling
 - Mechanical stop to provide single sided planing and defined facing depth
 - Integrated safety switch to prevent unintentional start-up
 - Self-locking mechanism in working position
- **HEATER**
 - High-performance and precision heater with electronic temperature control (2000 W)
 - High accuracy of +/- 4°C over the entire heating surface
 - High quality, non-stick PTFE coating
 - Pull-off mechanism to automatically detach the heating plate from pipe ends
 - Metal sheet cover to protect the heating plate in idle position
 - Integrated thermometer for fast visual check of plate temperature
- **ADDITIONAL STANDARD EQUIPMENT**
 - Reduction clamping inserts set d 75-250 mm
 - Reduction pipe supporting inserts set d 75-250 mm
 - Timer to clock fusion times
 - Machine specific tool set

d-d (mm)	Performance	Description	Code	Weight (kg)
75 - 250	230 V / 3000 W	With standard transport crate	790 142 002	152.000
75 - 250	230 V / 3000 W	With special transport crate	790 142 004	283.000



Outer base clamping devices

d (mm)	Type	Code	Weight (kg)
250	L	790 142 030	15.710
250	R	790 142 031	15.710



Reduction clamping inserts set

- Dedicated to a single clamping device: 2 clamping inserts of each dimension.

d-d (mm)	Code	Weight (kg)
75 - 225	790 142 032	16.800



Back stop

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

Code	Weight (kg)
790 142 061	3.175



Tool box

- Wooden case designed for storage and transportation of machine standard reduction inserts set and tools.

Code	Weight (kg)
790 142 066	22.017



Special transport crate

- Especially designed for easy transportation of the machine with standard equipment and complete accessories set, providing the most comfortable working position for the operator.

Code	Weight (kg)
790 142 065	131.000



Set of replacement blades for planer

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

Code	Weight (kg)
790 115 024	0.083



IM 315 Butt fusion machine for industrial applications

- Butt fusion machine for PP, PE, PB and PVDF pipes and fittings for industrial applications with pressure piping systems.
- Extremely sturdy design for use in the workshop and on job sites.
- Designed to provide the highest flexibility to adapt to different sizes or shapes of fittings.
- Angular jointing provided up to 30° (2x15°) for prefabrication of segmented fittings.
- Dimensional range: d90-315 mm, from SDR 41 up to SDR 11 with PE,PP d315 mm
- 115 V on request!
- **BASE MACHINE**
 - High precision, distortion-free and robust machine base
 - Integrated swivel tables for angular jointing up to 30° (2x15°)
 - Handwheel for easy moving of machine carriage
 - Exact pressure adjustment via direct spring load transfer
 - Fusion pressure is maintained with a user friendly fast-locking handle
 - Inner left and right clamping elements, for picking up reduction clamping inserts d 90-315 mm, with fast-locking handle
 - Optional outer, horizontally removable clamping devices available
 - Weight (including planer and heater): 169 kg
- **PLANER**
 - Optimized cutting geometry for even and chatter-free planing
 - Swivel mounted for ergonomic handling
 - Mechanical stop to provide single sided planing and defined facing depth
 - Integrated safety switch to prevent unintentional start-up
 - Self-locking mechanism in working position
- **HEATER**
 - High-performance and precision heater with electronic temperature control (2500W)
 - High accuracy of +/- 4°C over the entire heating surface
 - High quality, non-stick PTFE coating
 - Pull-off mechanism to automatically detach the heating plate from pipe ends
 - Metal sheet cover to protect the heating plate in idle position
 - Integrated thermometer for fast visual check of plate temperature
- **ADDITIONAL STANDARD EQUIPMENT**
 - Reduction clamping inserts set d 90-315 mm
 - Pipe supports for picking up reduction supporting inserts d 90-315 mm
 - Reduction pipe supporting inserts set d 90-315 mm
 - Timer to clock fusion times
 - Machine specific tool set

d-d (mm)	Performance	Description	Code	Weight (kg)
90 - 315	230 V / 3500 W	Without transport crate	790 143 005	152.000
90 - 315	230 V / 3500 W	With standard transport crate	790 143 001	152.000
90 - 315	230 V / 3500 W	With special transport crate	790 143 003	366.000



IM 315 - D Butt fusion machine for industrial applications

- Butt fusion machine for PP, PE, PB and PVDF pipes and fittings for industrial applications with pressure piping systems.
- Equipped with a load cell and digital display for easy viewing and precise indication of the welding force.
- Extremely sturdy design for use in the workshop and on job sites.
- Designed to provide the highest flexibility to adapt to different sizes or shapes of fittings.
- Angular jointing provided up to 30° (2x15°) for prefabrication of segmented fittings.
- Dimensional range: d90-315 mm, from SDR 41 up to SDR 11 with PE,PP d315 mm
- 115 V on request!
- **BASE MACHINE**
 - High precision, distortion-free and robust machine base
 - Integrated swivel tables for angular jointing up to 30° (2x15°)
 - Handwheel for easy moving of machine carriage
 - Exact pressure adjustment via direct spring load transfer
 - Digital display for force indication
 - Fusion pressure is maintained with a user friendly fast-locking handle
 - Inner left and right clamping elements, for picking up reduction clamping inserts d 90-315 mm, with fast-locking handle
 - Optional outer, horizontally removable clamping devices available
 - Weight (including planer and heater): 169 kg
- **PLANER**
 - Optimized cutting geometry for even and chatter-free planing
 - Swivel mounted for ergonomic handling
 - Mechanical stop to provide single sided planing and defined facing depth
 - Integrated safety switch to prevent unintentional start-up
 - Self-locking mechanism in working position
- **HEATER**
 - High-performance and precision heater with electronic temperature control (2500W)
 - High accuracy of +/- 4°C over the entire heating surface
 - High quality, non-stick PTFE coating
 - Pull-off mechanism to automatically detach the heating plate from pipe ends
 - Metal sheet cover to protect the heating plate in idle position
 - Integrated thermometer for fast visual check of plate temperature
- **ADDITIONAL STANDARD EQUIPMENT**
 - Reduction clamping inserts set d 90-315 mm
 - Pipe supports for picking up reduction supporting inserts d 90-315 mm
 - Reduction pipe supporting inserts set d 90-315 mm
 - Timer to clock fusion times
 - Machine specific tool set

d-d (mm)	Performance	Description	Code	Weight (kg)
90 - 315	230 V / 3500 W	With standard transport crate	790 143 002	152.000
90 - 315	230 V / 3500 W	With special transport crate	790 143 004	283.000



Outer base clamping devices

d (mm)	Type	Code	Weight (kg)
315	L	790 143 030	15.867
315	R	790 143 031	15.867



Reduction clamping inserts set

- Dedicated to a single clamping device: 2 clamping inserts of each dimension.

d-d (mm)	Code	Weight (kg)
90 - 280	790 143 032	17.500



Back stop

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

Code	Weight (kg)
790 142 061	3.175



Tool box

- Wooden case designed for storage and transportation of machine standard reduction inserts set and tools.

Code	Weight (kg)
790 143 066	27.187



Special transport crate

- Especially designed for easy transportation of the machine with standard equipment and complete accessories set, providing the most comfortable working position for the operator.

Code	Weight (kg)
790 143 065	148.125



Set of replacement blades for planer

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

Code	Weight (kg)
790 112 110	0.129

Machines for low and non pressuer applications

MC 110



MC 110 Portable butt fusion machine

- Portable butt fusion machine for use in the workshop and on job sites. For fusion jointing of PP and PE pipes and fittings as well as prefabrication of segments in the size range d 20 - 110 mm and up to SDR 11.
- Machine MC 110 complete includes: machine mounting, base machine, 2 base clamping plates (wide), base clamping plate (left narrow) , table clamp and transport box. Depending on the configuration chosen, the planer can be electrically or manually operated, and the heater can be electronic or thermostatic controlled.
- Including transport packaging, without accessories

	Type	d-d (mm)	Performance	Code	Weight (kg)
MC 110 with electric planer, electronic heater		20 - 110	230V/1360W	790 109 347	31.000
MC 110 with electric planer, thermostatic heater		20 - 110	230V/1360W	790 109 303	31.000
MC 110 with electric planer, thermostatic heater		20 - 110	115V/1360W	790 109 321	31.000
MC 110 with manual planer, electronic heater		20 - 110	230V/800W	790 109 348	28.000
MC 110 with manual planer, thermostatic heater		20 - 110	230V/800W	790 109 301	31.000
MC 110 with manual planer, thermostatic heater		20 - 110	115V/800W	790 109 320	31.000



Base clamping plate, right narrow

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

d (mm)	Code	Weight (kg)
110	790 109 310	0.945



Set reduction clamping inserts

- The set for the wide clamps contains 4 half shells of each dimension
- The set for the narrow clamp contains 2 half shells of each dimension

d-d (mm)	wide Code	Weight (kg)	narrow Code	Weight (kg)
20 - 90	790 300 019	4.532	790 300 029	3.478



Reduction clamping inserts

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

d (mm)	wide Code	Weight (kg)	narrow Code	Weight (kg)
20	790 109 326	0.150	790 109 334	0.263
25	790 109 327	0.139	790 109 335	0.279
32	790 109 328	0.133	790 109 336	0.136
40	790 109 329	0.130	790 109 337	0.258
50	790 109 330	0.113	790 109 338	0.239

table continued on the next page

d (mm)	wide Code	Weight (kg)	narrow Code	Weight (kg)
56	790 109 342	0.137	790 109 343	0.115
63	790 109 331	0.120	790 109 339	0.108
75	790 109 332	0.110	790 109 340	0.193
90	790 109 333	0.100	790 109 341	0.148



Flange adapter clamping unit

- For correct clamping and fusion jointing of short-ended stub ends

d-d (mm)	Code	Weight (kg)
25 - 110	790 109 316	1.630



Set of replacement blades for planer

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

Code	Weight (kg)
790 118 043	0.045

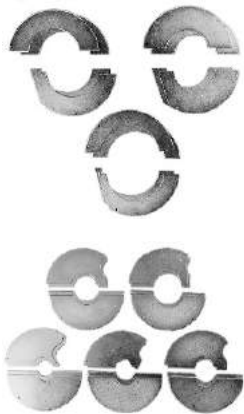


PSO 701

Butt fusion machine for sanitary applications

- Compact and mobile butt fusion machine for PE and PP and fittings for the use in the workshop and on the building site. Perfect for sanitary installations and wastepipes. The wooden box is usable as working bench as well as for transportation.
- Pressure adjustment via direct load transfer (max. force 100 kp). SDR 11 d 160 mm (PE and PP)
- Planer and heating element could be swivelled in and out
- High performance heating element thermostatic controlled (PTFE coated)
- The heating element can be used as manual fusion tool
- Fast-locking base clamping plates, right and left, d 160 mm
- Complete reduction clamping inserts set d 40 - 140 mm
- V-shaped pipe support with inserts d 40 - 140 mm
- Machine specific tool set

d-d (mm)	Performance	Code	Weight (kg)
40 - 160	230 V/1360 W	790 301 000	95.000



Reduction clamping inserts

- 1 Code Nr. includes 4 half-shells

d (mm)	Code	Weight (kg)
40	790 113 031	1.380
50	790 113 032	1.395
56	790 113 033	1.385
63	790 113 034	1.360
75	790 113 035	1.290
90	790 113 036	1.170
110	790 113 037	1.055
125	790 113 038	0.885
140	790 113 039	0.795

Set reduction clamping inserts

- Set reduction inserts dn 40 – 140 mm

Code	Weight (kg)
790 301 006	10.500



Inserts for pipe support

- 1 Code Nr. Includes 2 supports

d (mm)	Code	Weight (kg)
40	790 113 041	0.570
50	790 113 042	0.545
56	790 113 043	0.520
63	790 113 044	0.520
75	790 113 045	0.500
90	790 113 046	0.460
110	790 113 047	0.370
125	790 113 048	0.340
140	790 113 049	0.275

Set inserts for pipe support

- Set inserts dn 40 – 140 mm

Code	Weight
	(kg)
790 113 050	4.100



1 Set planer blades

- (1 set = 2 blades)

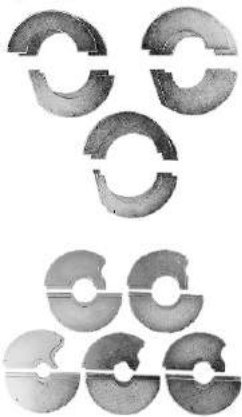
Code	Weight
	(kg)
790 113 056	0.059



WELD 160
Butt fusion machine for plumbing
and drainage applications

- Economical, lightweight plastic fusion machine for PE pipes and fittings for mobile use. Suitable for plumbing installations, roof drainage systems and drainage pipes.
- Base machine for butt fusion d 40 up to 160 mm. PE max. d 160 mm SDR 26, PP max. d 160 mm SDR 17,6. Sliding carriages, pressure device 600 N scale. Support for heating element.
- Fast-locking base clamping plates, right and left, d 160 mm
- Complete reduction clamping inserts set d 40 - 140 mm
- V-shaped pipe support with inserts d 40 - 140 mm
- Compact planer with reversible plates.
- Heating element thermostatic controlled, PTFE coated, electric cable with plug. Can also be used as a manual tool.
- Steel frame used for operation and transportation protection.

d-d (mm)	Performance	Code	Weight (kg)
40 - 160	230 V/1350 W	790 301 020	55.000



Reduction clamping inserts

- 1 Code Nr. includes 4 half-shells

Code	Weight (kg)
790 113 031	1.380
790 113 032	1.395
790 113 033	1.385
790 113 034	1.360
790 113 035	1.290
790 113 036	1.170
790 113 037	1.055
790 113 038	0.885
790 113 039	0.795

Set reduction clamping inserts

- Set reduction inserts dn 40 – 140 mm

d-d (mm)	Code	Weight (kg)
40 - 140	790 301 006	10.500



Inserts for pipe support

- 1 Code Nr. Includes 2 supports

Code	Weight (kg)
790 113 041	0.570
790 113 042	0.545
790 113 043	0.520
790 113 044	0.520
790 113 045	0.500
790 113 046	0.460
790 113 047	0.370
790 113 048	0.340
790 113 049	0.275

Set inserts for pipe support

- Set inserts dn 40 – 140 mm

d-d (mm)	Code	Weight (kg)
40 - 140	790 113 050	4.100



Set of replacement blades for planer

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

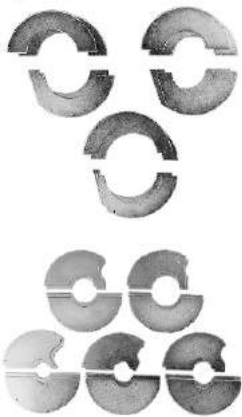
Type	Code	Weight (kg)
WELD 160	790 113 056	0.059
WELD 250	790 115 024	0.083



WELD 250
Butt fusion machine for plumbing
and drainage applications

- Economical, lightweight plastic fusion machine for PE pipes and fittings for mobile use. Suitable for plumbing installations, roof drainage systems and drainage pipes.
- Base machine for butt fusion d 90 up to 250 mm. PE max. d 250 mm SDR 33, PP max. d 250 mm SDR 26. Sliding carriages, pressure device 1000 N scale. Support for heating element.
- Fast-locking base clamping plates, right and left, d 250 mm
- Complete reduction clamping inserts set d 90 - 225 mm
- V-shaped pipe support with inserts d 90 - 225 mm
- Compact planer with reversible plates.
- Heating element thermostatic controlled, PTFE coated, electric cable with plug. Can also be used as a manual tool.
- Steel frame used for operation and transportation protection.

d-d (mm)	Performance	Code	Weight (kg)
90 - 250	230 V/2070 W	790 311 020	100.000



Reduction clamping inserts

- 1 Code Nr. includes 4 half-shells

d (mm)	Code	Weight (kg)	Weight (kg)
90	790 311 050	0.001	3
110	790 311 051	0.001	3
125	790 311 052	0.001	2
140	790 311 053	0.001	2
160	790 311 054	0.001	2
180	790 311 055	0.001	2
200	790 311 056	0.001	2
225	790 311 057	0.001	1

Set reduction clamping inserts

- Set reduction inserts dn 90 – 225 mm

d-d (mm)	Code	Weight (kg)
90 - 225	790 311 071	0.001



Inserts for pipe support

- 1 Code Nr. Includes 2 supports

d (mm)	Code	Weight (kg)	Weight (kg)
90	790 311 060	0.001	1
110	790 311 061	0.001	1
125	790 311 062	0.001	1
140	790 311 063	0.001	1
160	790 311 064	0.001	1
180	790 311 065	0.001	1
200	790 311 066	0.001	1
225	790 311 067	0.001	1

Set inserts for pipe support

- Set inserts dn 90 – 225 mm

d-d (mm)	Code	Weight (kg)	Weight (kg)
90 - 225	790 311 072	0.001	1



1 set planer blades

- (set of 2 blades)

Code	Weight (kg)
790 115 024	0.083

Manual fusion tools



SSE Butt fusion tools

- All devices equipped with on/off switch, mains and temperature control lamp
- Choice of electronic or thermostatic temperature control
- Heating element diameter 120 mm, 200 mm and 300 mm
- The SSE 120 heater plate is bent 45°
- Pick up for floor stand or table clamp
- High-quality, non-stick PTFE-coating with long service life
- Monitoring and setting of heating element temperature
- High temperature accuracy over the entire heating surface
- T = thermostatic temperature control / E = electronic temperature control

Type	d (mm)	Performance	Code	Weight (kg)
SSE 120 T	110	230 V/400 W	790 105 051	3.300
SSE 120 E	110	230 V/400 W	790 105 058	2.400
SSE 200 T	180	230 V/800 W	790 105 052	3.000
SSE 200 E	180	230 V/800 W	790 105 059	3.000
SSE 300 T	280	230 V/1500 W	790 105 053	4.780
SSE 300 E	280	230 V/1500 W	790 105 060	5.640



SSE 200 Butt fusion toolset

- All devices equipped with on/off switch, mains and temperature control lamp
- Choice of electronic or thermostatic temperature control
- Pick up for floor stand or table clamp
- High-quality, non-stick PTFE-coating with long service life
- Monitoring and setting of heating element temperature
- High temperature accuracy over the entire heating surface
- Available as a complete set in a practical metal case
- Heating element-diameter 200 mm
- Table clamp
- T = thermostatic temperature control / E = electronic temperature control

Type	d (mm)	Performance	Code	Weight (kg)
SSE 200 T	180	230 V/800 W	790 105 054	7.800
SSE 200 E	180	230 V/800 W	790 105 061	7.700



SSE 300 Butt fusion toolset

- All devices equipped with on/off switch, mains and temperature control lamp
- Choice of electronic or thermostatic temperature control
- Pick up for floor stand or table clamp
- High-quality, non-stick PTFE-coating with long service life
- Monitoring and setting of heating element temperature
- High temperature accuracy over the entire heating surface
- Available as a complete set in a practical metal case
- Heating element-diameter 300 mm
- Table clamp
- T = thermostatic temperature control / E = electronic temperature control

Type	d (mm)	Performance	Code	Weight (kg)
SSE 300 T	280	230 V/1500 W	790 105 055	12.200
SSE 300 E	280	230 V/1500 W	790 105 062	12.500



MSE 63/MSE 110 Socket fusion tool

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

d-d (mm)	Type	Performance	Code	Weight (kg)
16 - 63	MSE 63 T	230 V/800 W	790 105 081	1.700
16 - 63	MSE 63 E	230 V/800 W	790 105 082	1.800
16 - 63	MSE 63 E	115 V/800 W	790 105 097	2.145
16 - 110	MSE 110 T	230 V/1500 W	790 105 083	3.200
16 - 110	MSE 110 E	230 V/1500 W	790 105 084	3.200
16 - 110	MSE 110 E	115 V/1500 W	790 105 127	3.200



MSE 63/MSE 110 Socket fusion toolset

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

d-d (mm)	Type	Performance	Code	Weight (kg)
16 - 63	MSE 63 T	230 V/800 W	790 105 085	8.700
16 - 63	MSE 63 E	230 V/800 W	790 105 086	8.700
16 - 63	MSE 63 E	115 V/800 W	790 105 099	9.979
16 - 110	MSE 110 T	230 V/1500 W	790 105 087	17.700
16 - 110	MSE 110 E	230 V/1500 W	790 105 088	16.523
16 - 110	MSE 110 E	115 V/1500 W	790 105 129	18.000

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790 101 089	115	790 105 055	133	790 109 342	126	790 114 021	49
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790 101 094	115	790 105 062	133	790 109 616	87	790 115 008	49
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790 151 012	47	790 310 023	109	799 150 365	23	799 300 270	110
790 151 013	44	790 310 034	109	799 150 369	23	799 300 280	110
790 151 015	46, 73	790 310 036	109	799 150 370	24	799 300 290	110
790 151 016	46, 73	790 310 040	110	799 150 378	35	799 300 300	110
790 151 050	50	790 310 041	110	799 150 382	22	799 300 310	110
790 151 052	47	790 310 043	110	799 150 383	22	799 300 320	110
790 151 071	48	790 310 044	110	799 150 385	29	799 300 330	110
790 151 205	50	790 310 046	110	799 150 386	29	799 300 340	110
790 151 206	50	790 310 099	111	799 150 387	29	799 300 586	24
790 152 010	44	790 311 020	131	799 150 388	29	799 300 704	24
790 152 012	47	790 311 050	131	799 150 389	29	799 300 705	24

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General Condition of Supply of Georg Fischer Piping Systems Limited, Schaffhausen

1 General

- 1.1 These General Conditions shall apply to all Products supplied by Georg Fischer Piping Systems Limited («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

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 2010 of the ICC, or latest version) including standard packing. All supplementary costs such as the cost of carriage, insurance, export-, transit- and import- licences 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 outstanding 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 impractical 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 (6) months, either party may cancel the contract forthwith.
Georg Fischer shall not be liable for any damage or loss of any kind whatsoever resulting from the reform, 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 (1) 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 a penalty amounting to 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 than the penalty forfeited.

11 Packing

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 2010 ICC, or 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 (6) 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 seven (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 undertakes to repair or replace at its discretion, as quickly as possible and free of charge, all Products supplied which demonstrably suffer from faulty design, materials or workmanship, from faulty operating or installation instructions or which become defective or unusable due to faulty advice.
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. Replaced parts shall become property of Georg Fischer, unless Georg Fischer waives such claim.
- 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 rescind the contract or to demand a reduction of the contract price if
- the repair or replacement of the defective Product is impossible
 - the defective Product is not repaired or replaced within a reasonable period
 - Georg Fischer refuses the repair or replacement or if for reasons attributable to Georg Fischer the repair or replacement is delayed.
- 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 up to CHF 1'000'000 per occurrence.
 - warranty or damage claims - contrary to Section 15.6 - are time-barred five (5) years from the date of installation or seven (7) years from the production date, whichever is earlier.

16 Limitation of Liability

The rights and remedies of the customer shall be exclusively governed by these General Conditions of Supply and shall be in lieu of any remedies at law. All further claims for damages, reduction of the purchase price, termination of or rescission of 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, third party recovery claims and other direct or indirect or consequential damages.
This limitation of liability equally applies to the extent Georg Fischer is liable for acts or omissions of its employees or third parties engaged for the performance of its obligations. It does not apply in case of unlawful intent or gross negligence on the part of Georg Fischer's management and in case of Georg Fischer's statutory liability, in particular under applicable product liability laws.

17 Severability

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 The contract shall be governed by Swiss law without regard to conflict of law provisions that would require the application of another law.
- 18.3 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.

Worldwide at home

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