



PLASTIC WELDING

Civil engineering and tunnel construction with Leister.

Powerful and reliable.



Leister delivers performances.

Wherever you need to apply heat, Leister provides the ideal solution. We have been the worldwide leader in the field of plastic welding and hot-air blowers for over 50 years. For several years now we have also been offering innovative and effective laser systems and microsystems. We develop and produce all of our products in Switzerland – so you can always rely on the proverbial Leister quality. And because 98% of our production is exported, therefore, we have established a dense network of service centers throughout the world – guaranteeing excellent service anytime and anywhere.



Leister Corporate Center, Kaegiswil, Switzerland

LEISTER



Plastic Welding

For decades now, we have been the worldwide market leader. The proverbial performance and reliability of our products makes Leister the first choice. Our tools are used in roof sealing systems, floor coverings, plastic sheeting, in earthworks, hydraulic and tunnel engineering, in process equipment manufacturing and for vehicle repair.

NOVOLAS™



Lasersystems

Our innovative solutions for precision welding of plastics open up new production methods in automobile manufacturing, in medical and sensory technology, electronics, as well as in micro-systems technology or in soldering electronic components.

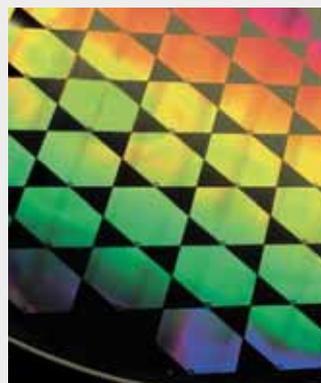
LEISTER



Process heat

Whether for activation, heating, curing, melting, shrinking, welding, sterilization, drying or warming: hot-air is increasingly deployed in industrial processes. Leister customers profit from our extensive engineering knowledge and benefit from our advice in the conceptual design of hot-air applications.

a:etris



Microsystems

In tomorrow's world, the smallest of structures will play a huge role! In order for our customers to keep ahead of the field in the future, we are already developing and producing micro-mechanical sensors and micro-optical components in our cleanroom today.

Leister in action all over the world. Whether it's a landfill site, crab farm, canal or mine: if plastic sheeting needs to be reliably and tightly welded, Leister equipment sets the standard. Here is a small selection of the projects to which Leister has contributed.



Geomembranes in road construction, Switzerland



Crab farm in Thailand



Gas extraction plant in Austria



Canal and artificial lake system in Dubai



The longest railway tunnel in the world, Switzerland



Landfill site in the USA



Chilean mine



Tunnel construction in Germany

When it really matters, you can rely on Leister.

The long-lasting, resilient machines are 100% made in Switzerland. They process PE-HD, PE-LD, PE-C, PVC-P, PP, PFA, ECB, EVA and TPO – basically all current thermoplastics. Simple operation with a clear display. Welding speed and temperature are precisely controlled.



Drive technology designed for the highest demands

Wedge welding machine COMET



Digital temperature and speed display



Ergonomically fitted handles assist in awkward welding situations



Controlled temperature and drive



Double drive and pressure system for constant pressure



Adjustment of welding force for different materials

Possible applications of COMET

Power consumption	1500 W		1200 W		700 W	
	Wedge length	Material thickness	Wedge length	Material thickness	Wedge length	Material thickness
PE-HD, PE-C, PP	70 mm copper	1.5 – 2.0 mm	50 mm copper	0.5 – 1.5 mm	20 mm steel	0.5 – 1.0 mm
PE-LD	70 mm copper	2.0 – 3.0 mm	50 mm copper	1.0 – 2.0 mm	20 mm steel	0.5 – 1.0 mm
PVC-P	70 mm steel	2.0 – 3.0 mm	50 mm steel	1.0 – 2.0 mm		



The handy COMET is suitable for a wide range of uses, including vertical welding.



Perfect welding on steep areas is achievable with the COMET.



The ASTRO can also be adjusted for special liner sheets, such as profiled protective sheets.

Wedge welding machine

COMET

The world's smallest and lightest compact machine with an integrated control box. The special wedge with optimized heat transfer guarantees top welding performance.



- Sophisticated drive technology, designed to meet the highest demands
- Digital display of temperature and speed
- Optional data recording on memory card possible
- Controlled temperature and drive
- User-friendly
- A practical, robust carrying case is included in the delivery

Technical Data		
Voltage	V~	230
Power consumption	W	1500
Frequency	Hz	50 / 60
Temperature	°C	20 – 420
Speed	m/min	0.8 – 3.2
Welding pressure	N	100 – 1000
Material thickness	mm	see chart page 4
Memory card recording		optional
Size (L × W × H)	mm	295 × 250 × 245
Weight	kg	7.5 (with 3 m cord)
Marking of conformity		CE
Approval mark		Ⓢ
Protection class I		Ⓛ

Article no with Euro plug 107.538
Accessories page 14 Further models on request

Wedge welding machine

ASTRO

The world's fastest hot-wedge welding machine welds at up to 5 meters per minute — and, of course, the welding seams are also perfect at this speed.



- High welding performance
- Digital display of temperature, speed and voltage
- Extra-practical one-handle operation
- Steplessly adjustable welding pressure
- Controlled temperature and drive
- A practical, robust carrying case is included in the delivery

Technical Data		
Voltage	V~	230
Power consumption	W	1800
Frequency	Hz	50 / 60
Temperature	°C	20 – 420
Speed	m/min	0.8 – 5.0
Welding pressure	N	100 – 1500
Material thickness	mm	1.5 – 3.0
Size (L × W × H)	mm	430 × 270 × 310
Weight	kg	23.0 (with 3 m cord)
Marking of conformity		CE
Approval mark		Ⓢ
Certification scheme		CCA
Protection class I		Ⓛ

Article no with Euro plug 117.100
Accessories page 14 Further models on request



The COSMO in use on a landfill covering.



Leister equipment cases suitable for use on building sites.

Wedge welding machine

COSMO

With up to 2500 Newton and 2000 Watts heating power, the Leister COSMO is the benchmark for the highest welding force. Moreover, Leister offers a special design with process control and data recording.



- Process control by direct measuring and recording of welding pressure
- Digital display of temperature, speed, pressure and welding length
- Optional speed control
- Welding log for quality assurance
- Controlled temperature and drive
- BAM tested and approved

Technical Data		
Voltage	V~	230
Power consumption	W	2000
Frequency	Hz	50 / 60
Temperature	°C	20 – 450
Speed	m/min	0.5 – 5.0
Welding pressure	N	100 – 2500
Material thickness	mm	1.5 – 3.0
Memory card recording		optional
Printer		optional
Size (L x W x H)	mm	600 x 380 x 450
Weight	kg	32.0 (with 5 m cord)
Marking of conformity		CE
Approval mark		Ⓢ
Protection class I		⊕
Article no with Euro plug		110.271
Accessories page 14		

Combiwedge welding machines

TWINMAT

With a high air flow of 500 l/min and 2500 newton welding force, the TWINMAT produces perfect welding seals, even under humid conditions.



- Process control by direct measuring and recording of welding pressure
- Digital display of temperature, speed, pressure and welding length
- Optional speed control
- Up to 5 mm material thickness for HD-PE
- Controlled temperature and drive
- BAM tested and approved

Technical Data		
Voltage	V~	400
Power consumption	W	5800
Frequency	Hz	50 / 60
Temperature	°C	20 – 620
Speed	m/min	0.5 – 5.0
Welding pressure	N	100 – 2500
Air flow (20°C)	l/min	500
Material thickness	mm	1.5 – 5.0
Memory card recording		optional
Printer		optional
Size (L x W x H)	mm	600 x 690 x 450
Weight	kg	32.0 (with 5 m cord)
Marking of conformity		CE
Approval mark		Ⓢ
Certification scheme		CCA
Protection class II		⊕
Article no with Euro plug		107.475
Accessories page 14		Further models on request



TWINNY T with combi-wedge used to weld a HD-PE liner.



TWINNY T with combi-wedge, welding overhead in a tunnel.



TWINNY S with combi-wedge, welding in a South American mine.

Combiwedge welding machine

TWINNY T

The TWINNY T is ideal even for thin materials in civil engineering and tunnel construction. Easy-to-exchange combiwedges are also available with or without a test channel. The display provides information on all the important welding parameters.



- Easy operation
- High welding speed
- Digital display of temperature and speed
- Optional data recording
- Controlled temperature and drive
- Even under harsh environmental conditions perfect welding results thanks to hot-air system
- A practical, robust carrying case is included in the delivery

Technical Data

Voltage	V~	230
Power consumption	W	2300
Frequency	Hz	50 / 60
Temperature	°C	20 – 560
Speed	m/min	0.8 – 3.2
Welding pressure	N	100 – 1000
Air flow (20°C)	l/min	Stufe 2: 150, Stufe 3: 190
Noise emission level L _{pA}	dB	71
Memory card recording		optional
Size (L × W × H)	mm	340 × 360 × 245
Weight	kg	6.9 – 7.9 (with 3 m cord)
Marking of conformity		CE
Approval mark		GS
Protection class I		⊕

Article no with Euro plug 107.562
Accessories page 14 Further models on request

Combiwedge welding machine

TWINNY S

Low weight and effective version for tunnel construction, the TWINNY S, optimized for overhead welding, is ideal also for thin materials in civil engineering and tunnel construction. Exchangeable combiwedges are also available for welding with or without a test channel.



- Easy operation
- Low weight
- High welding speed
- Stepless adjustable temperature and drive speed
- Even under harsh environmental conditions perfect welding results thanks to hot-air system
- Optimised versions for tunnel and civil engineering available
- A practical, robust carrying case is included in the delivery

Technical Data

Voltage	V~	230		
Power consumption	W	2900		
Frequency	Hz	50 / 60		
Temperature	°C	20 – 600		
Speed	m/min	0.2 – 2.5	0.8 – 4	1.2 – 6
Welding pressure	N	max. 1000	max. 500	max. 500
Air flow (20°C)	l/min	Level 2: 150 Level 3: 190		
Noise emission level L _{pA}	dB	71		
Size (L × W × H)	mm	350 × 390 × 270		
Weight	kg	6.5 – 6.9 (with 3 m cord)		
Marking of conformity		CE		
Approval mark		GS		
Certification scheme		CCA		
Protection class II		⊕		

Article no with Euro plug 119.027 | 119.008 | 128.808
Accessories page 14 Further models on request



TRIAC DRIVE PID welding overhead in the tunnel construction.

Semi automatic welding tool

TRIAC DRIVE PID

Horizontal, vertical, diagonal. This tried and tested semi-automatic welding machine can be used universally. The increased welding speed compared with manual welding gives rise to higher productivity.



- Overlap welding of liner sheeting for civil engineering, tunnel and roof applications
- Small and compact
- Steplessly adjustable speed for high welding seam quality
- Can be used in the most confined spaces
- Different welding seam widths
- A practical, robust carrying case is included in the delivery

Technical Data		
Voltage	V~	230
Power consumption	W	1700
Frequency	Hz	50 / 60
Temperature	°C	20 – 600
Speed	m/min	0.5 – 3
Noise emission level L _{pA}	dB	65
Welding seam width	mm	30 40
Size (L × W × H)	mm	300 × 230 × 380
Weight	kg	4.15 (with 3 m cord)
Marking of conformity	CE	
Approval mark	S	
Certification scheme	CCA	
Protection class I	⊕	
Article no with Euro plug	115.985	
Accessories page 14	Further models on request	

Tensiometer

EXAMO

Is the welding seam closed and can it withstand the requested peeling, tensile and shearing forces? EXAMO performs right on the construction site – quick, reliable and straight forward.



- Designed for construction site conditions
- Handy, robust and light
- Digital display of elongation, peak force, tear force, test speed and position
- With optional data recording on a memory card
- Optional for geotextiles

Technical Data			
Typ		300F	600F
Voltage	V~	230	230
Power consumption	W	200	200
Frequency	Hz	50 / 60	50 / 60
Tensile load	N	4000	4000
Jaw spacing	mm	5 – 300	5 – 600
Range	mm	300	600
Testing speed	mm/min	10 – 300	10 – 300
Sample thickness	mm	max. 7	max. 7
Sample width	mm	max. 40 (60 optional)	max. 40 (60 optional)
Force sensor		yes	yes
USB recording		optional	optional
Size (L × W × H)	mm	750 × 270 × 190 (storage case)	1050 × 270 × 190 (storage case)
Weight	kg	14	17.5
Marking of conformity	CE		CE
Approval mark	S		S
Protection class I	⊕		⊕
Article no with Euro plug	113.060	113.061	113.061



Welding connections using TRIAC PID with push-fit wide slot nozzle.



Welding a patch with TRIAC PID on a building site in Dubai.

Hand tool

TRIAC PID

Thanks to micro-processor controlled temperature and electronic monitoring. The preferred hand tool for welding with high quality.



- Reproducible results thanks to digital display of set and actual temperature
- Welding results independent of voltage fluctuations and ambient temperature
- Adaptor tube with heat protection
- Electronic heating element protection
- Motor shut-off at minimal carbon level
- Suitable for continuous operation
- Multiple replacement of carbon brushes possible

Technical Data

Voltage	V~	230
Power consumption	W	1600
Frequency	Hz	50 / 60
Temperature	°C	50 – 600
Air flow (20°C)	l/min	230
Size (L x Ø)	mm	340 x 90, handle Ø 56
Weight	kg	1.4 (with 3 m cord)
Marking of conformity	CE	
Approval mark	E	
Certification scheme	CCA	
Protection class II	□	

Article no with Euro plug 100.741
Accessories page 14 Further models on request

Hand tool

TRIAC S

The reliable, cost-effective and proven hand tool with steplessly controlled temperature range.



- Adaptor tube with heat protection
- Electronic heating element protection
- Motor shut-off at minimal carbon level
- Multiple replacement of carbon brushes possible
- Suitable for continuous operation
- Insensitive to damp

Technical Data

Voltage	V~	230
Power consumption	W	1600
Frequency	Hz	50 / 60
Temperature	°C	20 – 700
Air flow (20°C)	l/min	230
Size (L x Ø)	mm	340 x 90, handle Ø 56
Weight	kg	1.4 (with 3 m cord)
Marking of conformity	CE	
Approval mark	E	
Certification scheme	CCA	
Protection class II	□	

Article no with Euro plug 100.705
Accessories page 14 Further models on request

A special class of hand extruders.

Not for nothing is Leister the global market leader for equipment for welding geomembranes in civil engineering. In addition to the robust and reliable welding machines, Leister offers top class hand extruders for PE and PP sheeting. They are ideally trimmed for outside use and offer high functionality, unique ergonomics and technical refinement. The different manufactured sizes and amounts of output enable the welding to be adjusted to the individual needs of the user.



Symmetrical handle fixation mountable left and right



Adjustable handhold



User-friendly display

Hand extruder

WELDPLAST S6



Ergonomic handle allows to weld in upright position



Maintenance free blower



"Steering wheel" handle designed by welders



Completely integrated in "bullet proof" housing



WELDPLAST S6 undertaking assembly applications on a landfill site.



The handy WELDPLAST S2 welding vertically.

Digitally regulated hand extruder

WELDPLAST S6

The most powerful hand extruder on the market. It was designed specially for the requirements of civil engineering. The product is a hand extruder with convincing performance and comfortable handling.



- Compact housing design reduces noise and guarantees optimal cooling for the electronics and drive
- Illuminated graphic display
- Microprocessor to regulate the welding process and to monitor the tool
- Menu with function programs
- High-performance preheating
- Both sided twist-free wire intake
- Simple rotatable handle
- Complies with DVS (German Welding Association) standards

Technical Data		
Voltage	V~	230
Power consumption	W	5300
Frequency	Hz	50 / 60
Material		PE / PP
Welding rod	mm	Ø 4 or Ø 5
Output (HDPE)	kg/h	3.9 – 6.0
Size (L x W x H)	mm	821 x 116 x 240 (without welding shoe)
Weight	kg	14 (without cord)
Marking of conformity		CE
Protection class I		⊕

Civil engineering welding shoe and preheating nozzle included in delivery

Article no with Cekon plug 134.318

Accessories page 15

Digitally regulated hand extruder

WELDPLAST S2

Its futuristic design is not only pleasing to the eye: the new WELDPLAST S2 feels great in your hand and will become your indispensable partner. Despite its small size, the compact device produces up to 2.3kg of extrudate an hour.



- Ergonomic design
- Screw extruder with integrated hot air blower for preheating material and welding seam
- 360° rotating welding shoe
- Lower noise, high performance gearbox
- Multifunctional display
- Double-sided, non-twisting wire feed of 3 mm or 4 mm wire
- Maintenance-free blower
- Freely adjustable handgrip
- A practical, robust carrying case is included in the delivery

Technical Data		
Voltage	V~	230
Power consumption	W	3000
Frequency	Hz	50 / 60
Material		PE / PP / PVC on request
Welding rod	mm	Ø 3 or Ø 4
Welding (HDPE Ø 3)	kg/h	PE 0.6 - 1.3 PP 0.5 - 1.2
Welding (HDPE Ø 4)	kg/h	PE 1.0 - 2.3 PP 0.9 - 2.0
Size (L x W x H)	mm	450 x 98 x 260 (without welding shoe)
Weight	kg	5.8 (without cord)
Marking of conformity		CE
Approval mark		Ⓢ
Certification scheme		CCA
Protection class I		⊕

Welding shoe blank included in delivery, PVC and TPO versions on request

Article no with Euro plug 127.215

Accessories page15



The FUSION 3 is particularly suitable for hard-to-reach areas.



Both sided twist-free wire intake



Sturdy, reliable drive unit

Air heated hand extruder
FUSION 3



360° rotating welding shoe



Simple combination of preheating air and plastic heating



The operating grip lies optimally in the hand.



Transport case for Leister hand extruder.



Thanks to its length, the FUSION 3 is particularly suitable for civil engineering applications.

Air heated hand extruder

FUSION 3

With its long and slim construction, the FUSION 3 allows pleasant working even on the ground. For the heating of the plastic mass and pre-heating air, one single hot air ventilator is sufficient.



- Screw extruder with integrated hot air blower for preheating material and welding seam
- Compact and handy
- Integrated electronics for stepless adjustment of the preheating temperature and output quantity
- The motor start-up protection prevents cold start
- 360° rotating welding shoe
- Air flow up to 450 l/min
- Twist-free welding rod feed for 3 mm or 4 mm rod

Technical Data

Technical Data		
Voltage	V~	230
Power consumption	W	3500
Frequency	Hz	50 / 60
Material		PE / PP
Welding rod	Ø mm	3 or 4
Output (HDPE Ø 4)	kg/h	2.0 – 3.5
Size (L x B x H)	mm	670 x 90 x 180 (without welding shoe)
Weight	kg	7.2 (without cord)
Marking of conformity		CE
Approval mark		§
Certification scheme		CCA
Protection class II		□

Article no with Euro plug 118.300
Accessories page 15

Air heated hand extruder

FUSION 3C

Despite its simple and symmetrical construction, the FUSION 3C hand extruder achieves an output of up to 3.5 kg/h. A single hot-air blower is sufficient for heating the plastic filler and preheated air.

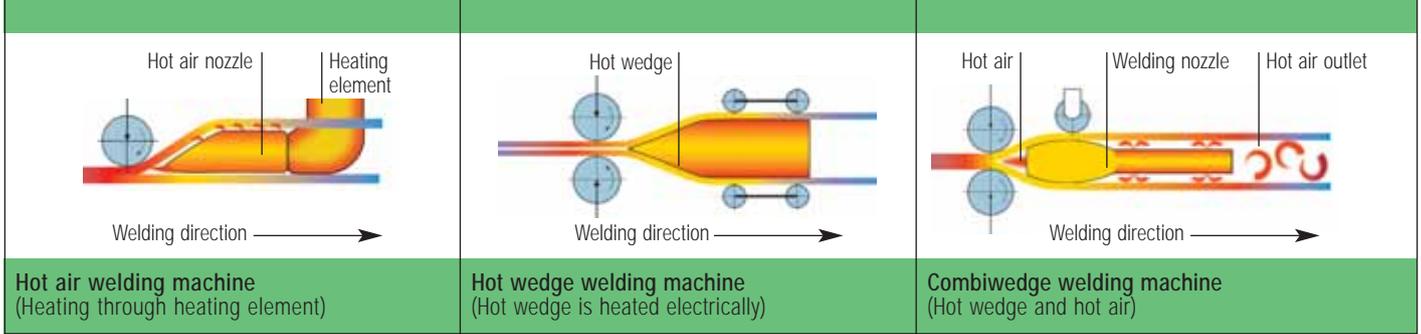


- Screw extruder with integrated hot air blower for preheating material and welding seam
- Discharge quantity up to 3.5kg/h
- Compact and handy
- The motor start-up protection prevents cold start
- Both sided twist-free wire intake
- 360° rotating welding shoe
- Integrated electronics for stepless adjustment of the preheating temperature and output quantity
- A practical, robust carrying case is included in the delivery

Technical Data

Voltage	V~	230
Power consumption	W	2800
Frequency	Hz	50 / 60
Material		PE/PP
Temperature	°C	up to 350
Plastification-Temperature	°C	up to 320
Welding rod	Ø mm	3 or 4
Output PE	kg/h	1.6 – 3.5
Size (L x B x H)	mm	588 x 98 x 225 (without welding shoe)
Weight	kg	6.9 (with 3 m cord)
Marking of conformity		CE
Approval mark		§
Certification scheme		CCA
Protection class II		□

Article no with Euro plug 123.866
Accessories page15



Leister is the only manufacturer to offer all possible types of welding systems worldwide.

Accessories for civil engineering and tunnel construction

	<p>110.051 Test kit for welding fittings</p>		<p>112.974 Cross handle</p> <p>> COMET > TWINNY</p>
	<p>106.950 Welding fitting PE</p>		<p>115.275 Double supporting carrier</p> <p>> TRIAC DRIVE</p>
	<p>110.052 Test kit with injector needle</p>		<p>115.276 Single supporting carrier</p> <p>> TRIAC DRIVE</p>
	<p>109.795 Vacuum bell \varnothing 320 mm</p>		<p>100.517 Short combiwedge, 50 mm with test channel</p> <p>100.518 Short combiwedge, 50 mm without test channel</p> <p>> TWINNY T > TWINNY S</p>
	<p>134.832 Testing and calibration kit</p> <p>> EXAMO</p>		<p>100.525 Long combiwedge, 50 mm with test channel</p> <p>100.526 Long combiwedge, 50 mm, without test channel</p> <p>> TWINNY T > TWINNY S</p>
	<p>106.975 One-arm pressure roller 40 mm, with ball bearings (silicon)</p>		<p>115.283 Overlap welding nozzle 12 mm, with grip, inside, push-fit</p> <p>115.279 Overlap welding nozzle 30 mm, with grip, inside, push-fit</p> <p>115.281 Overlap welding nozzle 38 mm, with grip, inside, push-fit</p> <p>115.699 Overlap welding nozzle 12 mm, without grip, inside, push-fit</p> <p>115.701 Overlap welding nozzle 30 mm, without grip, inside, push-fit</p> <p>115.703 Overlap welding nozzle 38 mm, without grip, inside, push-fit</p> <p>> TRIAC DRIVE</p>
	<p>106.976 Pressure roller 28 mm (PTFE)</p>		<p>115.282 Overlap welding nozzle 12 mm, with grip, outside, push-fit</p> <p>115.278 Overlap welding nozzle 30 mm, with grip, outside, push-fit</p> <p>115.280 Overlap welding nozzle 38 mm, with grip, outside, push-fit</p> <p>115.698 Overlap welding nozzle 12 mm, without grip, outside, push-fit</p> <p>115.700 Overlap welding nozzle 30 mm, without grip, outside, push-fit</p> <p>115.702 Overlap welding nozzle 38 mm, without grip, outside, push-fit</p> <p>> TRIAC DRIVE</p>
	<p>107.123 Wide slot nozzle 20 mm, push-fit</p> <p>> TRIAC PID > TRIAC S</p>		
	<p>107.132 Wide slot nozzle 40 mm, push-fit</p> <p>> TRIAC PID > TRIAC S</p>		
	<p>107.135 Wide slot nozzle 40 mm, PTFE coated push-fit</p> <p>> TRIAC PID > TRIAC S</p>		
	<p>115.274 Pressure roller 12 mm</p> <p>115.176 Pressure roller 30 mm</p> <p>115.712 Pressure roller 38 mm</p> <p>> TRIAC DRIVE</p>		

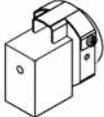
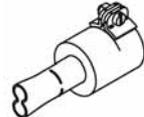
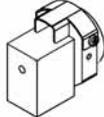
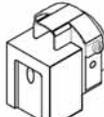
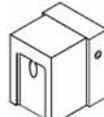
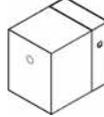


Flawless test welding with the combi-wedge welding machine TWINNY T.



Testing of a welding seam with testing unit and injector needle.

Accessories Hand extruder

	118.094	Welding shoes blank complete 50 × 30 × 38 mm > FUSION 3		117.053	Preheating nozzle small > WELDPLAST S6
	119.214	Welding shoes blank complete 70 × 50 × 47.5 mm > FUSION 3		117.518	Preheating nozzle medium > WELDPLAST S6
	118.890	Welding shoe complete, overlap 25 mm		117.055	Preheating nozzle large > WELDPLAST S6
	119.185	Welding shoe complete, overlap 35 mm > FUSION 3			119.188
		119.190	Welding shoe complete, overlap 35 mm		
		135.901	Welding shoe complete, overlap 40 mm > WELDPLAST S6		
	118.188	Welding rod de-reeler		119.222	Welding shoes blank complete 70 × 50 × 47.5 mm
				119.217	Welding shoes blank complete 50 × 40 × 38 mm > WELDPLAST S6



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Leister Process Technologies is an **ISO 9001:2000** certified enterprise.

Specifications are subject to change without prior notice



Our close worldwide network of more than 120 Sales and Service Centres in more than 60 countries.

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