Pre-insulated solutions

Second issue | 07/2022

LOGSTOR FlexPipe Handbook

Kingspan®

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Introduction

LOGSTOR FlexPipe systems are especially suitable for distribution networks for community heating.

The technical solutions for pipelines for community heating are in general the same as the ones for district heating, where LOGSTOR FlexPipes are well-known and widely used due to their many advantages.

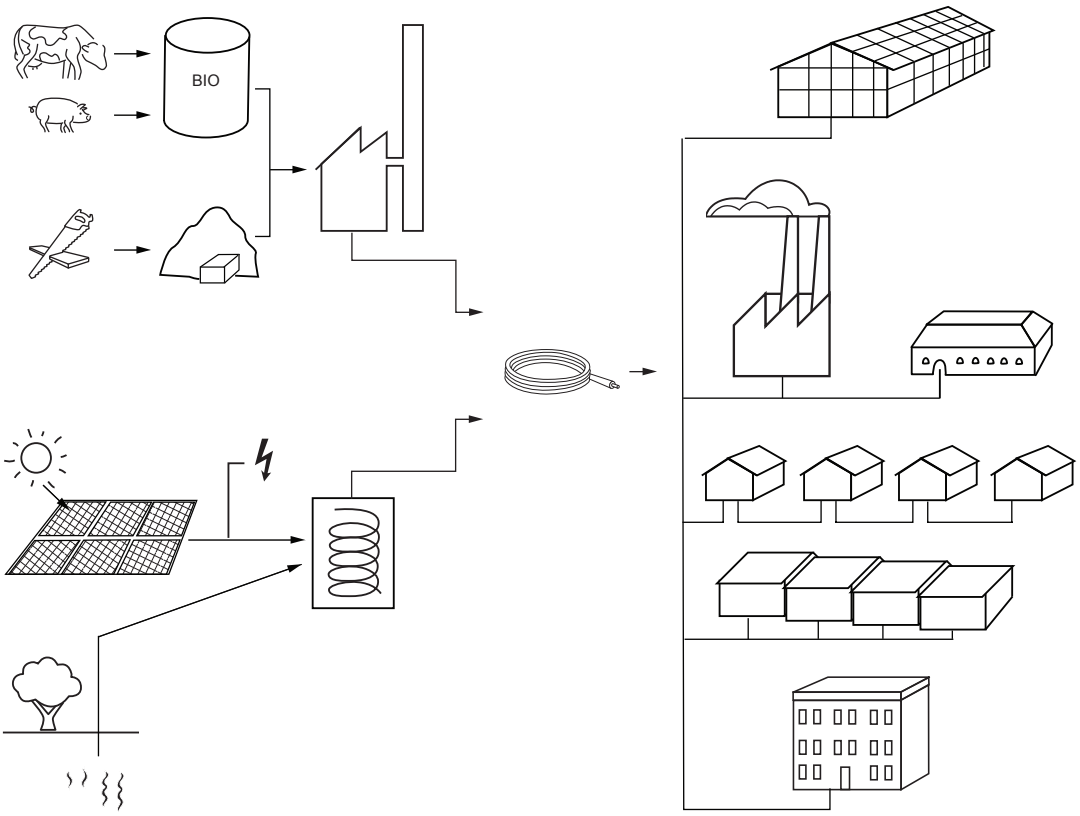
In this handbook you will find information which are typically required to design and establish community heating plants.

This handbook is based on excerpts from LOGSTOR catalogues and manuals. Please refer to these for further information.

FlexPipe for community heating

Typical use

System types:	Distribution:	Consumers:
Biogas	LOGSTOR FlexPipes	Horticultural farms
Landfill gas		Terraced and cluster houses
Biomass (Wood chips/straw)		Detached houses
Heat pumps (Air/ground)		Schools
Industry		Sports centres
Geothermal energy		Small- and medium-sized entreprises
Solar system		Villages



Symbol key

Symbol	Unit	Definition
A	mm^2	Cross-sectional area
D	mm	Diameter casing
d	mm	Diameter service pipe
s	mm	Wall thickness
L	mm	Length
P	bar	Internal overpressure
R	mm	Bend radius
T_f	°C	Flow temperature
T_r	°C	Return temperature
T_s	°C	Soil temperature
H	m	Soil cover from top of casing pipe to top of surface
λ	W/mK	Thermal conductivity (Lambda-value)

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Introduction

Application

The long flexible pipes are especially suitable for:

- Branch pipes without joints
- Passage of vegetation and other obstacles
- Hilly areas
- Tunnelling and thrust boring

Which FlexPipe system to choose is determined by the application, operating conditions, and tradition.

FlexPipe type	Materials			Application		Pressure bar	Continuous operating temperature °C	Max. temperature (short-term)	Surveillance
	Service pipe	Insulation	Outer casing	District Heating	District Cooling				
PexFlextra	PEXa	PUR	HDPE	x	x	6	85	95	
AluFlextra	Alupex	PUR	HDPE	x	x	10	90	95	
SteelFlex	Steel	PUR	LDPE	x	x	25	120	130	x
CuFlex	Copper	PUR	LDPE	x	x	16	120	130	x

Max. coil lengths, FlexPipe

SteelFlex

Dimension	Standard length m	Fixed length 10 -90 m	Max. length m
20/90	50, 100	-	200
28/90	50, 100	-	200

CuFlex

Dimension	Standard length m	Fixed length 10 -90 m	Max. length m
15/90	100	x	100
18/90	100	x	100
22/90	100	x	100
28/90	100	x	100
35/90	100	x	100
35/110	100	x	100
18x18/90	100	x	100
18x18/110	100	x	100
22x22/90	100	x	100
22x22/110	100	x	100
28x28/110	100	x	100
28x28/125	100	x	100

Max. coil lengths, FlextraPipe

PexFlextra

Dimension	Standard length m	Fixed length 10 -90 m	Max. length m
20/90	100	x	500
25/90	100	x	500
32/90	100	x	500
40/90	100	x	500
40/110	100	x	400
50/110	100	x	400
50/125	100	x	300
63/125	100	x	300
63/140	100	x	200
75/140	100	x	200
75/160	100	x	150
90/160	30, 50, 70, 100	-	100
90/180	30, 50, 70, 100	-	100
110/180	30, 50, 70, 100	-	100
20x20/110	100	x	400
25x25/110	100	x	400
25x25/125	100	x	300
32x32/110	100	x	400
32x32/125	100	x	200
40x40/125	100	x	200
40x40/140	100	x	200
50x50/160	100	x	150
50x50/180	100	x	150
63x63/180	100	x	150

AluFlextra

Dimension	Standard length m	Fixed length 10 -90 m	Max. length m
20/90	100	x	500
20/110	100	x	400
26/90	100	x	500
26/110	100	x	400
32/90	100	x	500
32/110	100	x	400
32/125	100	x	300
16x16/110	100	x	400
16x16/125	100	x	300
20x20/110	100	x	400
20x20/125	100	x	300
20x20/140	100	x	200
26x26/110	100	x	400
26x26/125	100	x	300
26x26/140	100	x	200
32x32/125	100	x	300
32x32/140	100	x	200
20x16/110	100	x	400
20x16/125	100	x	300
20x16/140	100	x	200
26x20/125	100	x	300
26x20/140	100	x	200

Expansion

PexFlextra, Aluflextra, and CuFlex

As regards buried FlexPipe-systems with PEX or AluPex service pipe it is not necessary to make allowance for expansion, because the system is fixed by the friction against the surrounding soil, and the expansion is absorbed in the flexible service pipe.

On transition from steel it must be ensured that large movements from the steel system are not transferred to the FlexPipe system. This is ensured by making the transition from steel by branching or after a bend.

The main pipe expansion is absorbed in foam pads in accordance with the design rules described in the manuals ”Design” and ”Design with TwinPipes”.

On transition to FlexPipe in immediate continuation of a steel pipeline, the length of the steel pipeline must not exceed 2 m. However, a length of 14 m is allowed for PexFlextra.

SteelFlex

In straight pipe runs SteelFlex can be installed without making allowance for expansion. It can however be necessary to reduce stresses at branching points and movements towards buildings. This can be done by absorbing the expansion by means of curves and bends, established during the installation of the flexible pipe.

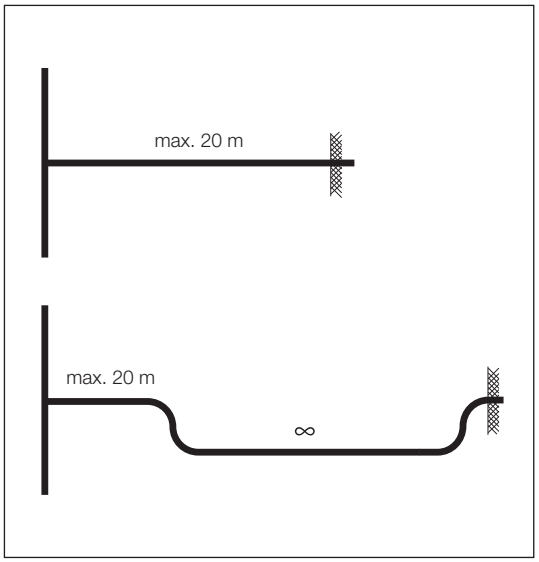
When branching with SteelFlex perpendicular to the main pipe, the distance to a bend or a house entry pipe must not exceed 20 m.

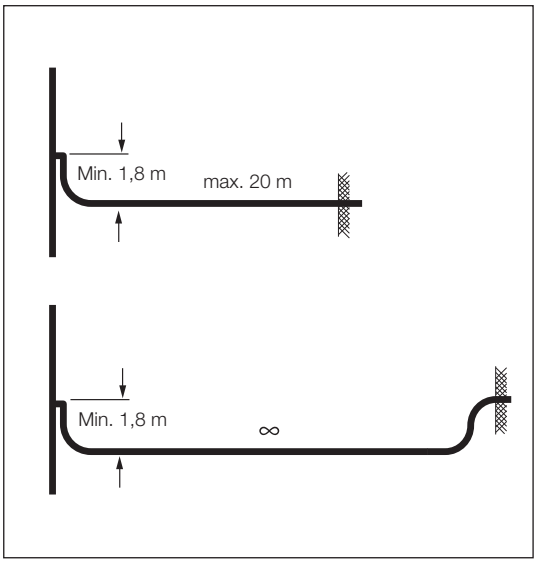
In connection with parallel branching the parallel SteelFlex length must be at least 1.8 m (2 x R_{min}).

It must always be ensured that the expansion of the branch towards the consumer is absorbed in the pipe system before the basement or that the consumer’s installation can withstand the expansion. The expansion can be absorbed by means of a Z-bend with min. radius of curvature immediately before the basement.

When branching from a steel main pipe it must be ensured that movements in the main pipe are not transferred to the branch pipe. Branching with SteelFlex must not be done, if the movement exceeds 56 mm.

The movement in the branch must be secured with foam pads in accordance with design rules for steel single pipe and TwinPipe.





Curves

At temperatures down to 5°C FlexPipes can be bent on site to the minimum bending radius, R_{min} stated in the table. The flexibility depends on the pipe temperature.

At temperatures below 5°C the outer casing must be heated to lukewarm with a gas burner, before uncoiling or bending the pipe.

On installation it may be necessary to secure the position of the pipes e.g. by means of partial backfilling.

Outer casing	Single pipe			TwinPipe		
	Smooth casing Flex	Corrugated casing Flextra		Smooth casing Flex	Corrugated casing Flextra	
D mm	R_{min} mm	R_{min} mm		R_{min} mm	R_{min} mm	
	5°C and 23°C	5°C	23°C	5°C and 23°C	5°C	23°C
90	10 x D	8 x D	6 x D	10 x D	10 x D	7 x D
110						
125						7 x D*
140						10 x D
160		10 x D	8 x D	-		
180	-		10 x D			

* Service pipe ø 32 mm and larger: 9 x D

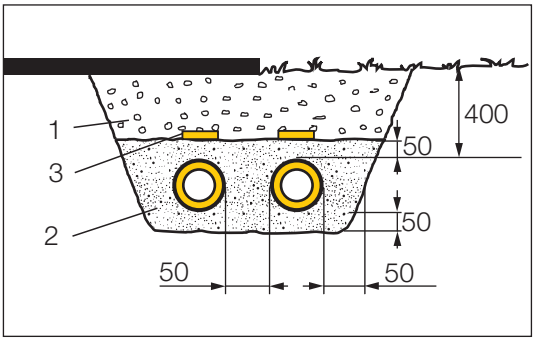
Trench

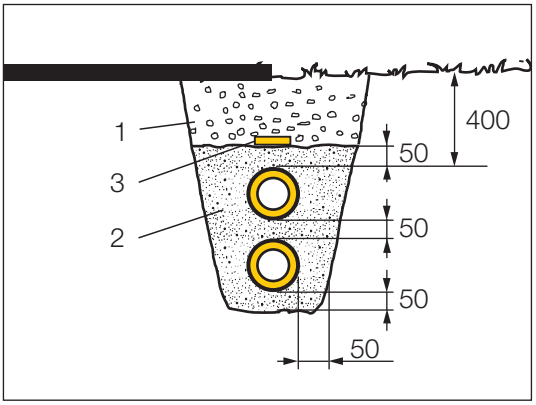
FlexPipe is installed in excavated trenches or by means of tunnelling. In connection with tunnelling FlexPipe with corrugated casing must be in a conductor pipe.

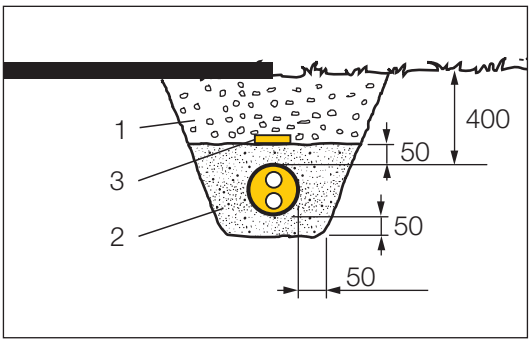
In connection with installation in trench minimum 50 mm compressed friction material must encircle the pipes all the way round.

The trench is filled up with minimum 400 mm backfill material measured from the top of the pipe to the underside of the asphalt/concrete or to unpaved area.

1. Backfill material
2. Friction material
3. Warning tape/net







Friction material

The following specifications apply to the friction material under normal conditions:

Max. grain size:	≤ 10 mm
Purity:	The material must not contain harmful quantities of plant residues, humus, clay or silt lumps(max. 2%).
Grain shape:	Large sharp-edged grains, which may damage pipes or joints, must be avoided.

Careful and homogeneous compression is required.

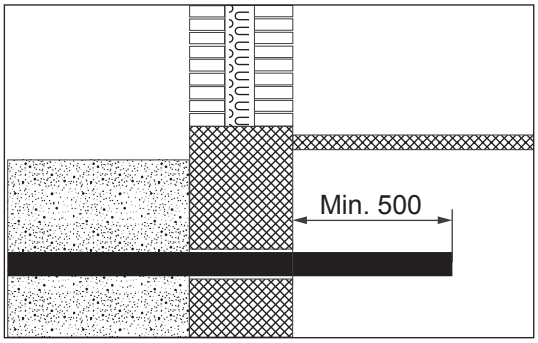
Lead-in through basement

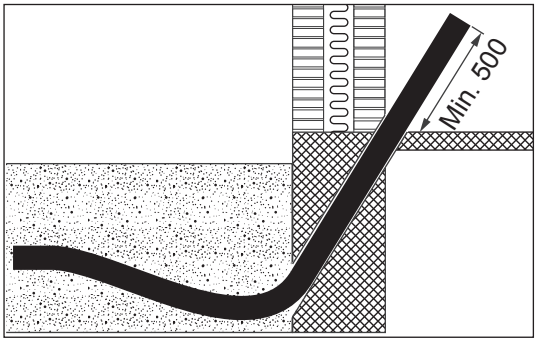
As for house connection through basement the pipe must be led through the basement in the same work procedure as installation and backfilling.

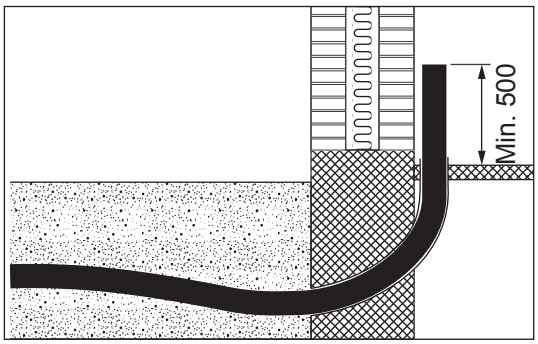
The pipe is terminated min. 500 mm from the interior wall to ensure sufficient lenght to prepare the pipe end.

As for new build an inlet pipe can be cast, so the FlexPipe can be led through it later without further ado.

As for bore in the basement with wall entry sleeve, the hole diameter must be 4 mm minor than the seal ring diameter. If the construction is subject to water pressure, a type of wall entry sleeve is recommended which is fixed to the inside or outside of the wall, and squeezes the PE casing.







Heat loss

Introduction

This section contains general as well as product specific rules for designing and dimensioning with PexFlextra, and AluFlextra.

Conditions

The following conditions apply to the tables in this section, so the tables are only guiding:

- Flow temperature	80°C
- Return temperature	40°C
- Soil temperature	10°C
- Soil cover	0.6 m
- Distance between pipes (single pipes)	0.1 m
- Lambda value of the soil	1.2 W/mK (The lamdba value of the soil depend on the installation site: Dry sand = 1.0 W/mK and moist soil up to 1.5-2.0 W/mK)
- Lambda value of PUR insulation	0.022 W/mK

For exact calculations with other conditions go to LOGSTOR Calculator on www.logstor.com.

PexFlextra

The heat loss is the total heat loss for flow/return.

Pair of pipes:

Series 1			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
40	90	0.1582	15.82
50	110	0.1647	16.47
63	125	0.1871	18.71
75	140	0.2037	20.37
90	160	0.2215	22.15
110	180	0.2596	25.96

Series 2			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
20	90	0.0882	8.82
25	90	0.1029	10.29
32	90	0.1260	12.6
40	110	0.1301	13.01
50	125	0.1425	14.25
63	140	0.1621	16.21
75	160	0.1714	17.14
90	180	0.1889	18.89

TwinPipes:

Series 1			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
25/25	110	0.0793	7.93
32/32	110	0.1091	10.91
40/40	125	0.1244	12.44
50/50	160	0.1138	11.38
63/63	180	0.1434	14.34

Series 2			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
20/20	110	0.0645	6.45
25/25	125	0.0684	6.84
32/32	125	0.0883	8.83
40/40	140	0.1001	10.01
50/50	180	0.0947	9.47

AluFlextra

The heat loss is the total heat loss for flow/return.

Pair of pipes:

Series 1			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
32	90	0.1260	12.6

Series 2			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
20	90	0.0882	8.82
26	90	0.1059	10.59
32	110	0.1073	10.73

Series 3			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
20	110	0.0787	7.87
26	110	0.0926	9.26
32	110	0.0974	9.74

TwinPipes:

Series 1			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
26/26	110	0.0827	8.27

Series 2			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
16/16	110	0.0549	5.49
20/20	110	0.0645	6.45
26/26	125	0.0708	7.08
32/32	125	0.0883	8.83

Series 3			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
16/16	125	0.0496	4.96
20/20	125	0.0573	5.73
26/26	140	0.0631	6.31
32/32	140	0.0763	7.63

Double pipes:

Series 2			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
16/20	110	0.0595	5.95
20/26	125	0.0637	6.37

Series 3			
Service pipe ø mm	Outer casing ø mm	U-value W/mK	Heat loss W/m
16/20	125	0.0533	5.33
20/26	140	0.0575	5.75

Pressure loss charts

General

In order to establish the correct pipe dimension it is necessary to know the water flow and the maximum allowable pressure loss.

Small pipelines are often dimensioned after the available pressure difference, thereby minimising the dimension and the heat loss as much as possible as well as assuring the consumer the highest possible flow temperature.

In addition, it must be ensured that the water speed will not be too high.

For flexible pipelines it is recommended that the speed does not exceed 2 m/s in couplings and that the speed in house connections does not exceed 1 m/s to minimise the risk of noise.

It is recommended that the system is dimensioned after the available pressure difference. In case it is not known, a value corresponding to 150 Pa/m is often used.

As a dimensioning tool LOGSTOR Calculator can be used. It is available on: www.logstor.com/calculator.

As an alternative to a hand calculation the graphs in the following can be used.

Inter-related values between output (kW) and cooling as well as water flow (kg/h) appear from the graphs. The required output is found with the inter-related cooling, or the water flow can be found after the formula:

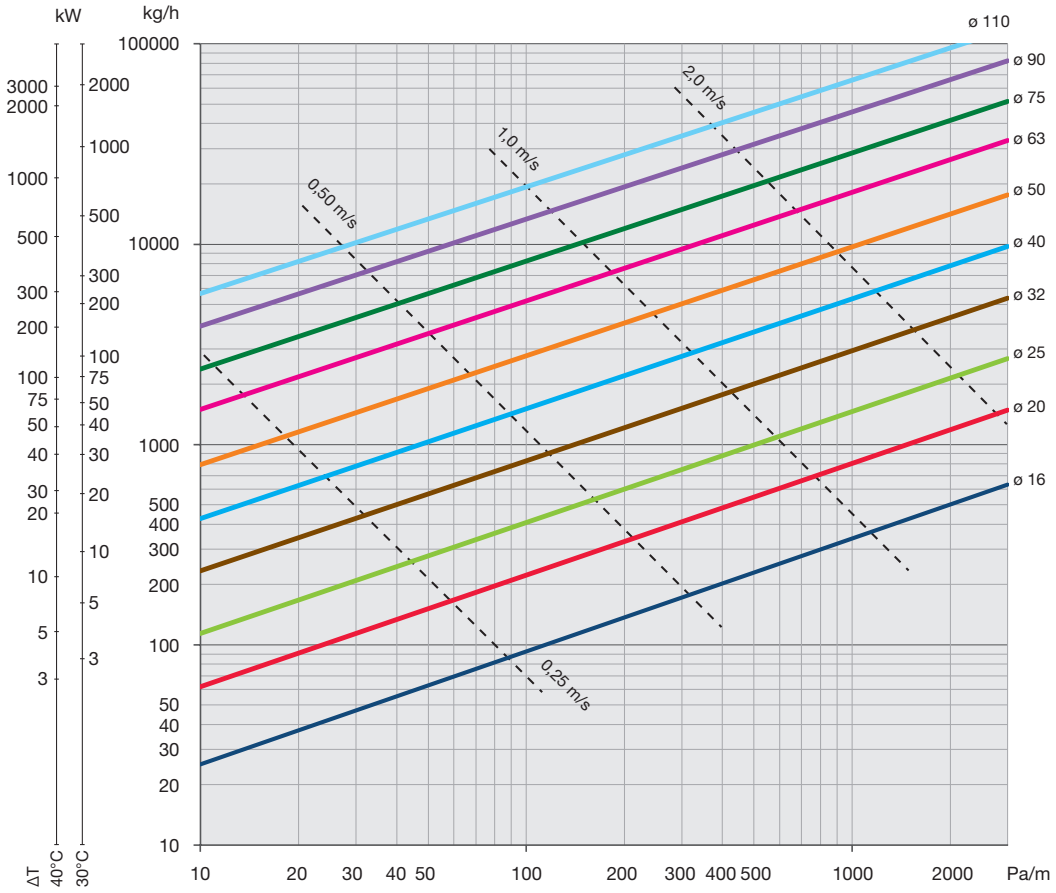
$$q \cong \frac{Q \cdot 860}{\Delta T}$$

q = Mass flow [kg/h]
Q = Output [kW]
ΔT = Cooling

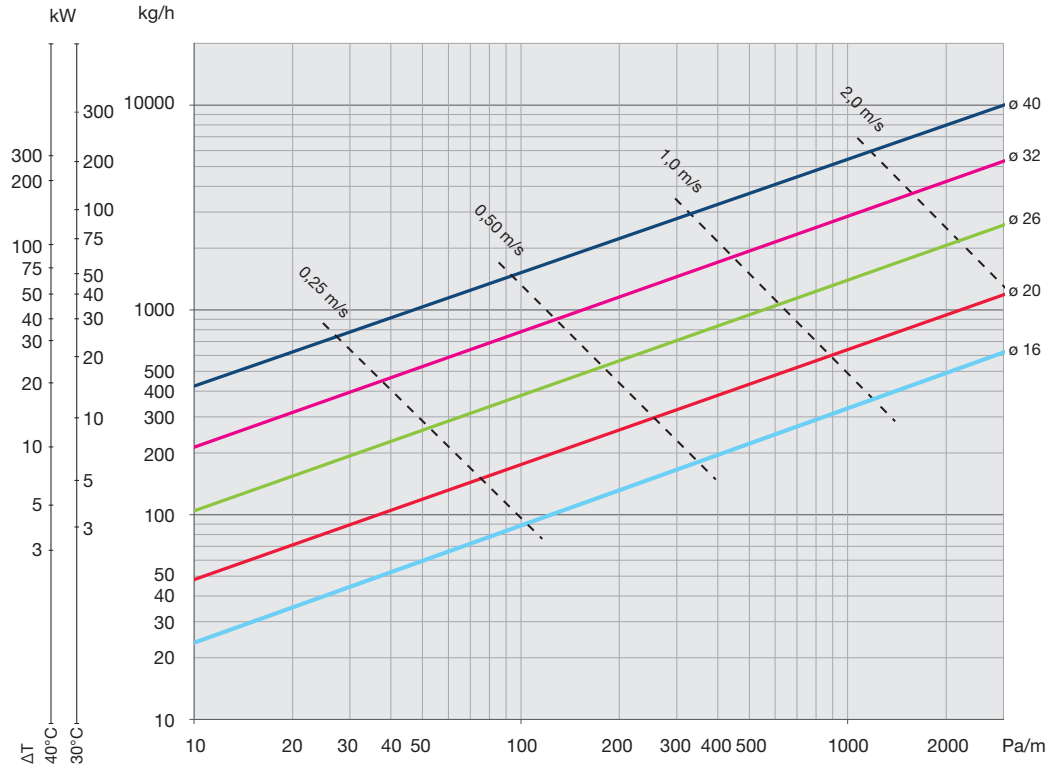
The following graphs are based on:
Water temperature of 80°C for heat pipes.
Absolute PEX roughness = 0.01 mm

Pressure loss charts

PexFlextra



AluFlextra



FlexPipes
Products

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General

Application

The LOGSTOR flexible PEX system is used within District Heating for distribution and transmission pipelines.

Due to the properties of the PEX service pipe, expansion must not be taken into consideration. The flexibility, low weight, and long lengths make the installation quicker and more inexpensive. PexFlextra is especially suitable for:

- branch pipes without joints
- passage of vegetation and other obstacles
- hilly areas

The pipe system complies with the requirements in EN15632-2 for a minimum design service life of 30 years at the following operational conditons:

Operating temperature:	80°C for 29 years
Maximum operating temperature:	90°C for 7760 hours
	95°C for 1000 hours
Malfunction:	100°C for 100 hours
Maximum operating pressure:	6 bar

Other pressure and temperature profiles than the above are possible. Please contact LOGSTOR for a calculation of the estimated service life.

PexFlextra can be combined with the other LOGSTOR systems provided that the above temperatures and pressure are observed.

To join PEX service pipes in buried systems press couplings are used. For jointing in buildings, chambers, and cabinets compression couplings can be used.

Description

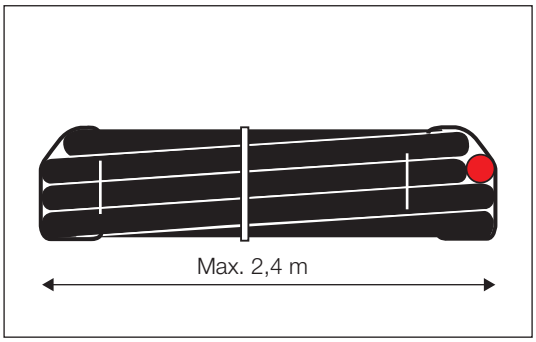
The standard coil length is 100 m.

Fixed lengths can be ordered to measure in lengths of min. 10 m and max. 90 m.

Corrugated casings with 90 and 110 PEXa are, however, as a standard delivered in 30, 50, 70, and 100 m and are usually not delivered in fixed lengths.

Always delivered without free ends.

All pipes are produced in accordance with EN15632-1 and EN15632-2.



Materials

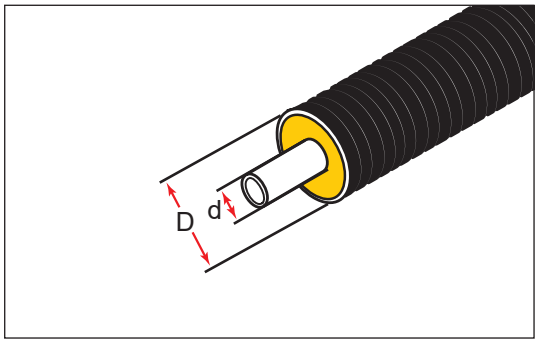
Service pipe:	PEXa with external EVOH oxygen diffusion barrier, preventing oxygen ingress. The material complies with the requirements in EN ISO 15875.
Insulation:	Polyurethane foam Average thermal conductivity λ_{50} = 0.022 W/mK

Outer casing:

Corrugated, PexFlextra: Polyethylene, PE-HD with co-extruded EVOH diffusion barrier.

Pipes - corrugated casings

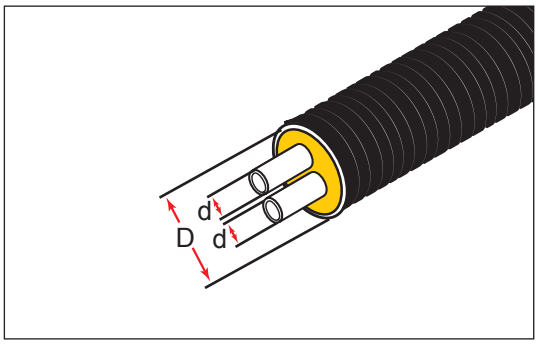
PexFlextra single pipe



Component No. 2100

PEX service pipe		Volume	Series 1			Series 2		
			Outer casing			Outer casing		
d mm	Wall thick-ness mm	l/m	D mm	Wall thick-ness mm	Weight kg/m	D mm	Wall thick-ness mm	Weight kg/m
20	2.0	0.201				90	1.5	1.2
25	2.3	0.327				90	1.5	1.2
32	2.9	0.539				90	1.5	1.3
40	3.7	0.835	90	1.5	1.4	110	1.5	1.8
50	4.6	1.307	110	1.5	2.0	125	1.5	2.3
63	5.8	2.075	125	1.5	2.6	140	1.5	3.1
75	6.8	2.961	140	1.5	3.4	160	1.5	3.9
90	8.2	4.254	160	1.5	4.4	180	1.5	5.0
110	10.0	6.362	180	1.5	5.7			

PexFlextra TwinPipe



Component No. 2190

PEX service pipe		Volume	Series 1			Series 2		
			Outer casing			Outer casing		
d mm	Wall thick-ness mm	l/m	D mm	Wall thick-ness mm	Weight kg/m	D mm	Wall thick-ness mm	Weight kg/m
20/20	2.0	0.402				110	1.5	1.7
25/25	2.3	0.654	110	1.5	1.7	125	1.5	2.1
32/32	2.9	1.078	110	1.5	1.9	125	1.5	2.2
40/40	3.7	1.669	125	1.5	2.4	140	1.5	3.0
50/50	4.6	2.615	160	1.5	3.8	180	1.5	4.4
63/63	5.8	4.150	180	1.5	5.0			

Distance between service pipes: 12 mm

Preinsulated fittings

General

For PexFlextra and PexFlex preinsulated fittings with service pipes in PEX can be used.

Preinsulated fittings with PEX service pipe are delivered without free pipe ends. The service pipe must not be shortened.

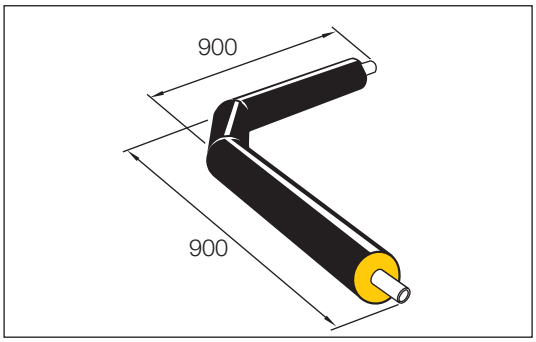
T-pieces with PEX service pipe are made with press couplings, embedded in the insulation.

Alternatively, preinsulated fittings with steel service pipe from single pipe or TwinPipe can be used. Press couplings with weld end are bought separately and welded on site.

90° bend

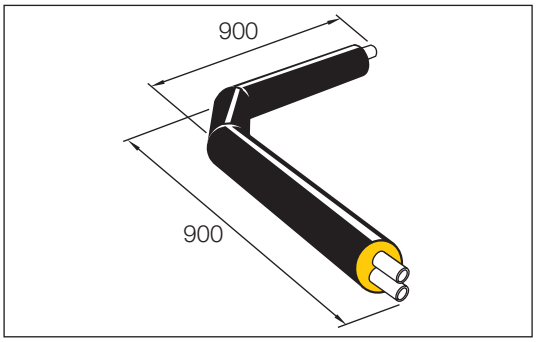
Single pipe
Component No. 2500

d mm	D mm	
	Series 1	Series 2
20		90
25		90
32		90
40	90	110
50	110	125
63	125	140
75	140	160
90	160	180
110	180	



TwinPipe
Component No. 2590

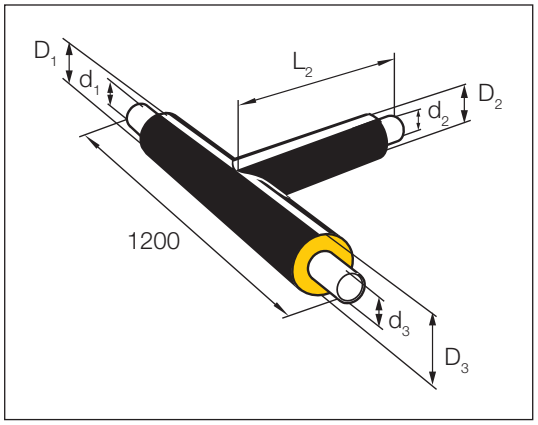
d mm	D mm	
	Series 1	Series 2
20/20		110
25/25	110	125
32/32	110	125
40/40	125	140
50/50	160	180
63/63	180	



T-piece, straight

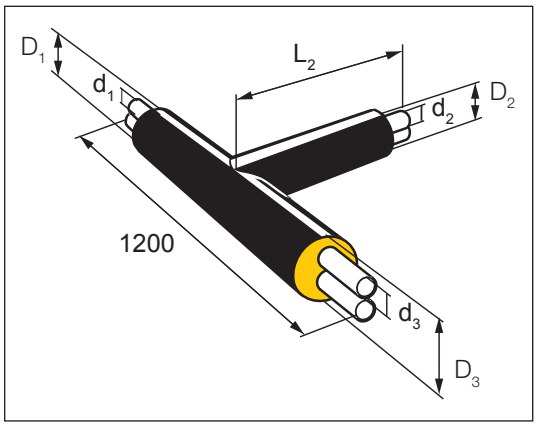
Single pipe
Component No. 3400

d_1	D_1	d_2	D_2	d_3	D_3	L_2
32	90	32	90	25	90	450
40	110	32	90	32	90	500
50	125	40	110	40	110	500
63	140	50	125	50	125	500
75	140	63	125	63	125	500
75	160	63	140	75	160	500
90	180	63	140	63	140	500
90	180	63	140	90	180	500
90	180	90	180	90	180	500
110	180	110	180	110	180	500



TwinPipe
Component No. 3490

d_1	D_1	d_2	D_2	d_3	D_3	L_2
40/40	140	32/32	125	32/32	125	500
50/50	180	40/40	140	40/40	140	500
63/63	180	40/40	140	40/40	140	600
63/63	180	50/50	180	50/50	180	500
63/63	180	25/25	125	63/63	180	600
63/63	180	40/40	140	63/63	180	600



Press couplings, type MP

General

Used to connect PEX service pipes.

Use special tools to install the press coupling, type MP (Multipress), see section 17.5 Tools for FlexPipe.

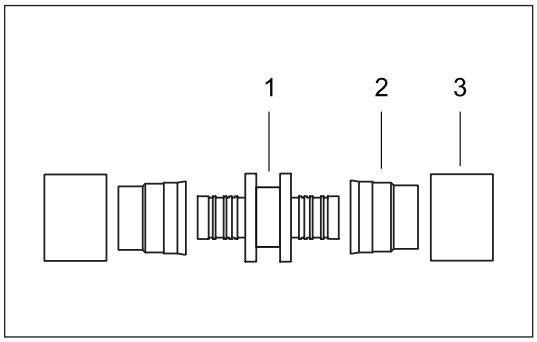
Press coupling are made of brass or red brass.

Weld ends for transition to steel are made in S235JR.

Press coupling, straight

Press coupling for straight PEX-PEX joints:

1. Supporting bush
2. Squeezing ring
3. Press ring



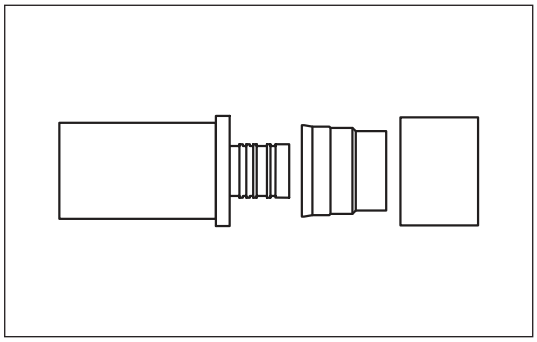
Component No. 6000.

Coupling end 1	Coupling end 2								
	20	25	32	40	50	63	75	90	110
20	x								
25	x	x							
32		x	x						
40			x	x					
50				x	x				
63					x	x			
75						x	x		
90							x	x	
110								x	x

Press couplings, type MP

Press coupling, weld

Press coupling with weld end for transition to steel pipe.

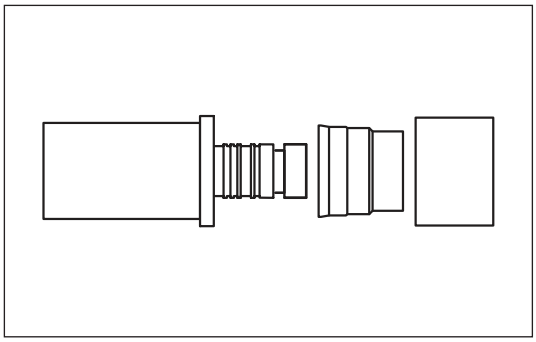


Component No. 6000.

Steel	PEX								
	20	25	32	40	50	63	75	90	110
26.9	x	x							
33.7	x	x	x						
42.4				x					
48.3				x	x				
60.3						x			
76.1							x		
88.9								x	
114.3									x

Press coupling, weld, closed

Closed press coupling with weld end.



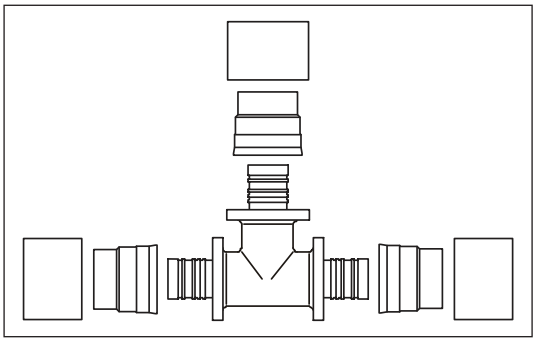
Component No. 6000.

Steel	PEX							
	20	25	32	40	50	63	75	90
26.9	x	x						
33.7			x					
42.4				x				
48.3					x			
60.3						x		
76.1							x	
88.9								x

Press couplings, type MP

Press coupling, tee

The base unit of the press coupling is made in one piece.

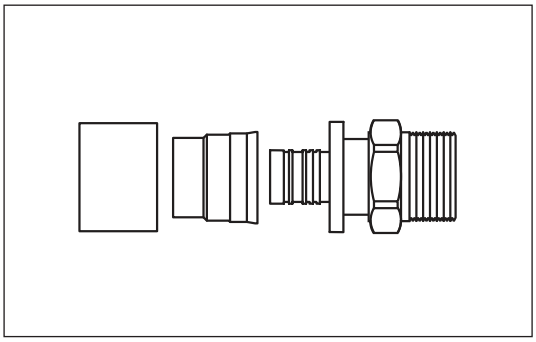


Component No. 6060.

d_1, mm	d_2, mm					
	20	25	32	40	50	63
20	x					
25	x	x				
32	x	x	x			
40	x	x	x	x		
50	x	x	x	x	x	
63	x	x	x	x	x	x
75		x	x	x	x	x
90		x	x	x	x	x
110		x	x	x	x	x

Press coupling, male

Press coupling with male end for termination in a cabinet or a building.



Component No. 6000.

Thread	PEX								
	20	25	32	40	50	63	75	90	110
¾”	x	x	x						
1”		x	x						
1¼”			x	x					
1 ½”					x				
2”						x			
2½”							x		
3”								x	
4”									x

Press couplings, type JT

General

Used to connect PEX service pipes.

Use special tools to install the press coupling, type JT (Jentro) see section 17.5 Tools for FlexPipe.

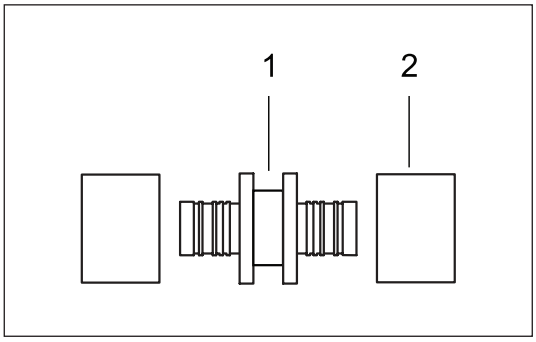
Press couplings are made of brass or red brass.

Weld ends for transition to steel is made in S235JR.

Press coupling, straight

Press coupling for straight PEX-PEX connections:

1. Supporting bush
2. Press ring



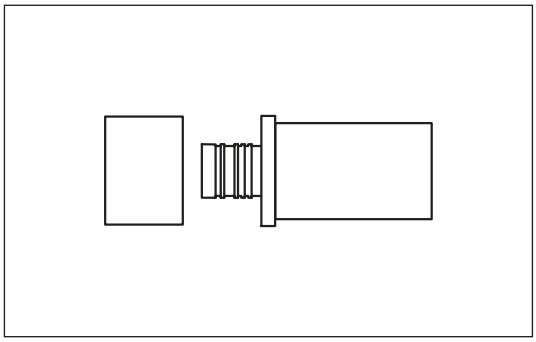
Component No. 6008.

Coupling end 1	Coupling end 2							
	25	32	40	50	63	75	90	110
25	x							
32	x	x						
40	x	x	x					
50		x	x	x				
63		x	x	x	x			
75			x	x	x	x		
90					x	x	x	
110					x	x	x	x

Press couplings, type JT

Press coupling, weld

Press coupling with weld end for transition to steel pipe.

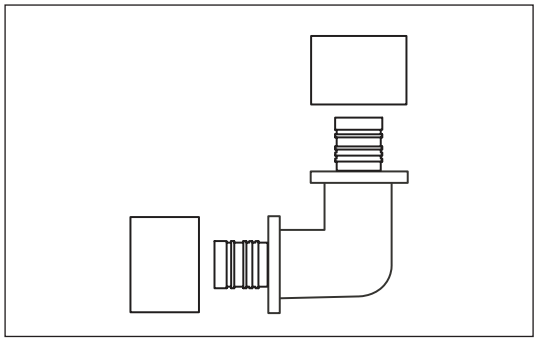


Component No. 6008.

	PEX							
Steel	25	32	40	50	63	75	90	110
26.9	x							
33.7		x						
42.4			x					
48.3				x				
60.3					x			
76.1						x		
88.9							x	
114.3								x

Press coupling, 90°

90° elbow with press coupling in both ends.



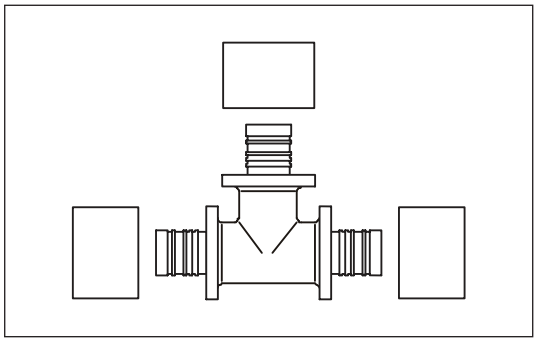
Component No. 6008.

	Coupling end 2							
Coupling end 1	25	32	40	50	63	75	90	110
25	x							
32		x						
40			x					
50				x				
63					x			
75						x		
90							x	
110								x

Press couplings, type JT

Press coupling, tee

The base unit of the press coupling is made in one piece.



Component No. 6068.

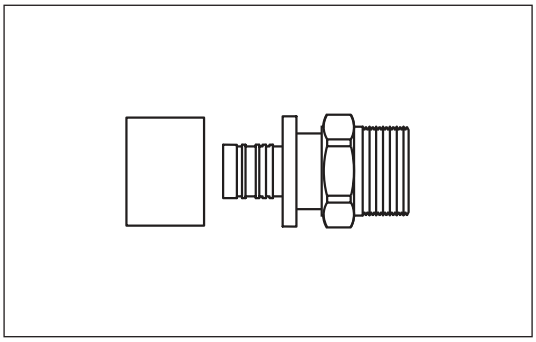
Main pipe d_1- d_3 mm	Branch d_2, mm							
	25	32	40	50	63	75	90	110
25-25	x	x						
32-32	x	x						
40-40	x	x	x					
50-50	x	x	x	x				
63-63	x	x	x	x	x			
75-75	x	x	x	x	x	x		
90-90	x	x	x	x	x		x	
110-110	x	x	x	x	x			x

Other combinations of dimensions can be delivered.

Press couplings, type JT

Press coupling, male

Press coupling with male thread for termination in a cabinet or a building.



Component No. 6008.

Thread	PEX							
	25	32	40	50	63	75	90	110
¾”	x	x						
1”	x	x						
1¼”			x	x				
1 ½”				x				
2”					x			
2½”						x		
3”							x	
4”								x

Compression couplings

General

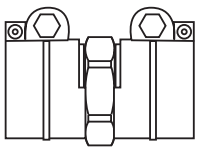
Compression couplings are used to join PEX service pipes.

Compression couplings are made of brass.

Compression coupling, straight

Compression coupling for PEX-PEX joints.

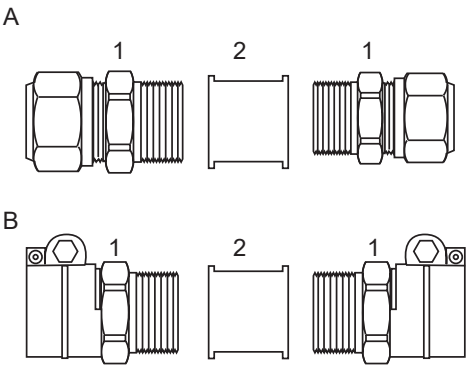
Dimension 25-110 mm



Compression coupling for reduction of PEX-PEX joints.

1. Coupling with male thread
2. Double female coupling

A. Dimension 25-32
B. Dimension 40-110



Component No. 6100.

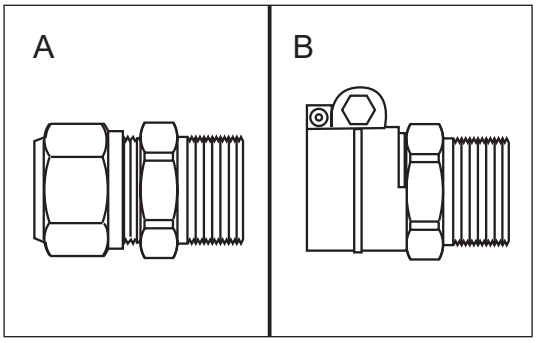
Coupling end 1	Coupling end 2							
	25	32	40	50	63	75	90	110
25	x							
32	x	x						
40	x	x	x					
50		x	x	x				
63			x	x	x			
75				x	x	x		
90					x	x	x	
110						x	x	x

Compression couplings

Compression coupling, male

Compresion coupling with male end for termination in a cabinet or a building.

A. Dimension 20-32 mm
B. Dimension 40-110 mm



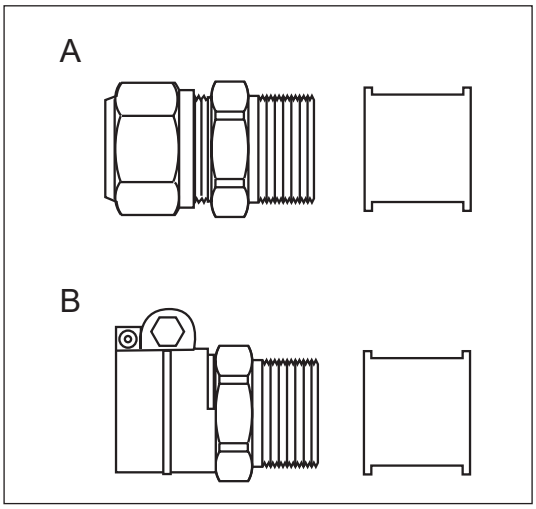
Component No. 6100.

	PEX								
Thread	20	25	32	40	50	63	75	90	110
¾”	x	x							
1”		x	x						
1¼”			x	x					
1 ½”					x				
2”						x	x		
3”								x	x

Compression coupling, female

Compression coupling with female end for termination in a cabinet or a building.

A. Dimension 25-32 mm
B. Dimension 40-110 mm

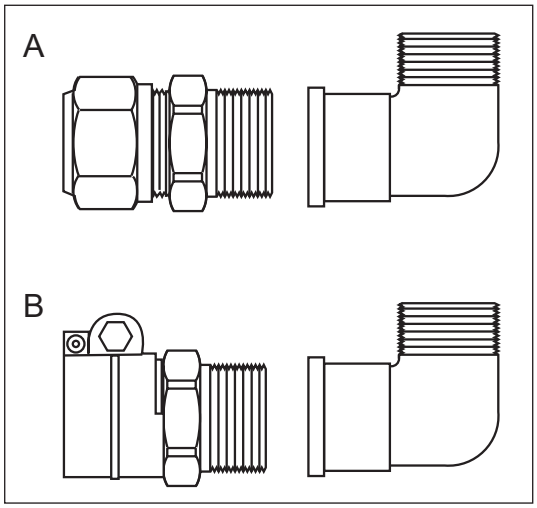


Component No. 6100.

	PEX							
Thread	25	32	40	50	63	75	90	110
1”	x	x						
1¼”			x					
1 ½”				x				
2”					x	x		
3”							x	x

Compression coupling, union elbow, male

A. Dimension 20-32 mm
B. Dimension 40-110 mm

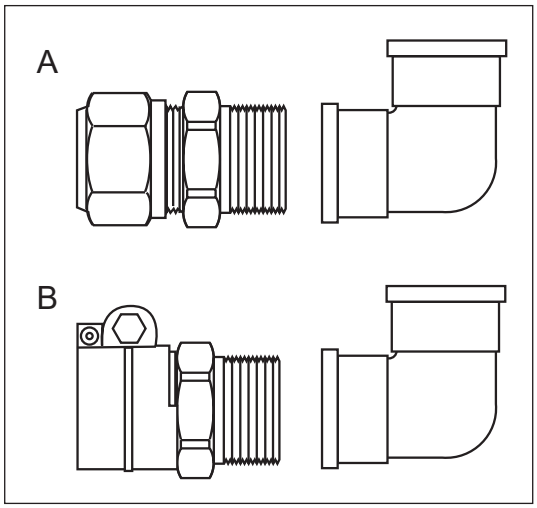


Component No. 6100.

Thread	PEX								
	20	25	32	40	50	63	75	90	110
¾”	x								
1”		x	x						
1¼”			x	x					
1 ½”					x				
2”						x	x		
3”								x	x

Compression coupling, union elbow, female

A. Dimension 25-32 mm
B. Dimension 40-110 mm



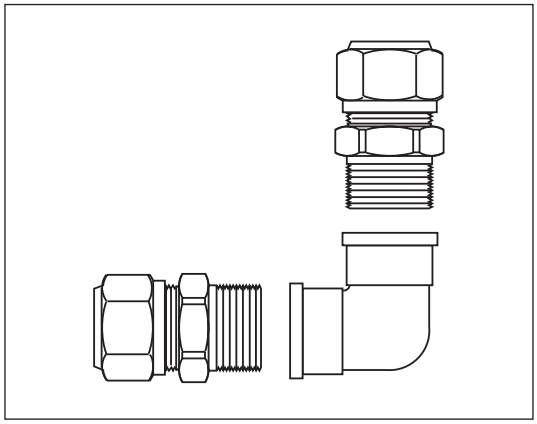
Component No. 6100.

Thread	PEX							
	25	32	40	50	63	75	90	110
1”	x	x						
1¼”			x					
1 ½”				x				
2”					x	x		
3”							x	x

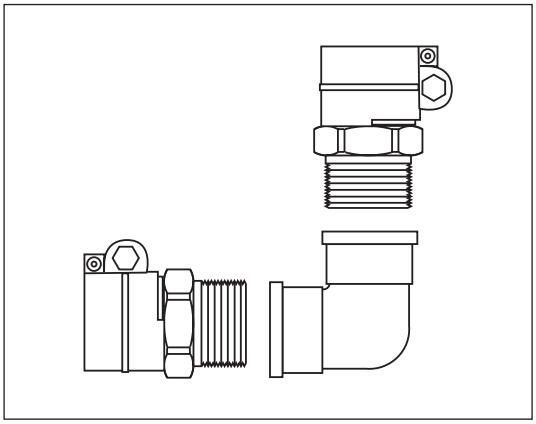
Compression couplings

Compression coupling, union elbow, PEX

Dimension 25-32 mm



Dimension 40-110 mm



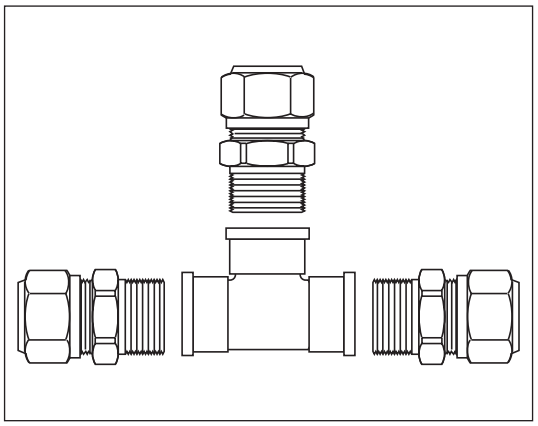
Component No. 6100.

Coupling end 1	Coupling end 2							
	25	32	40	50	63	75	90	110
25	x							
32		x						
40			x					
50				x				
63					x			
75						x		
90							x	
110								x

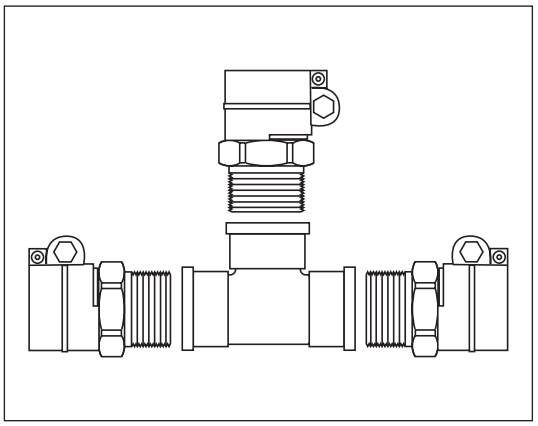
Compression couplings

Compression coupling, tee

Dimension 20-32 mm



Dimension 40-110 mm



Component No. 6160.

d_1,mm - d_3, mm	d_4, mm								
	20	25	32	40	50	63	75	90	110
20 - 20	x								
25 - 20	x								
25 - 25	x	x							
32 - 20	x	x	x						
32 - 25	x	x	x						
32 - 32	x	x	x						
40 - 20	x	x	x	x					
40 - 25	x	x	x	x					
40 - 32	x	x	x	x					
40 - 40	x	x	x	x					
50 - 20	x	x	x	x	x				
50 - 25	x	x	x	x	x				
50 - 32	x	x	x	x	x				
50 - 40	x	x	x	x	x				
50 - 50	x	x	x	x	x				
63 - 25		x	x	x	x	x			
63 - 32		x	x	x	x	x			
63 - 40		x	x	x	x	x			
63 - 50		x	x	x	x	x			
63 - 63		x	x	x	x	x			
75 - 32			x	x	x	x	x		
75 - 40			x	x	x	x	x		
75 - 50			x	x	x	x	x		
75 - 63			x	x	x	x	x		
75 - 75			x	x	x	x	x		
90 - 40				x	x	x	x	x	
90 - 50				x	x	x	x	x	
90 - 63				x	x	x	x	x	
90 - 75				x	x	x	x	x	
90 - 90				x	x	x	x	x	
110 - 50					x	x	x	x	x
110 - 63					x	x	x	x	x
110 - 75					x	x	x	x	x
110 - 90					x	x	x	x	x
110 - 110					x	x	x	x	x

Contents

General

Application

AluFlextra is used within District Heating for distribution and transmission pipelines.

Due to the properties of the AluPEX service pipe, expansion must not be taken into consideration. The flexibility, low weight, and long lengths make the installation quicker and more inexpensive. AluFlextra is especially suitable for:

- branch pipes without joints
- passage of vegetation and other obstacles
- hilly areas

The pipe system complies with the requirements in EN15632-2 for a minimum design service life of 30 years at the following operational conditions:

Operating temperature:	80°C for 29 years
Maximum operating temperature:	90°C for 7760 hours
	95°C for 1000 hours
Malfunction:	100°C for 100 hours
Maximum operating pressure:	10 bar

AluFlextra can be combined with the other LOGSTOR systems provided that the above temperatures and pressure are observed.

AluPEX-service pipes are joined with press couplings.

For pipe systems with AluFlextra preinsulated steel fittings from the bonded pipe system or TwinPipes with press couplings which are welded onto one or more pipe ends can be used Press couplings with weld end are bought separately and welded on site.

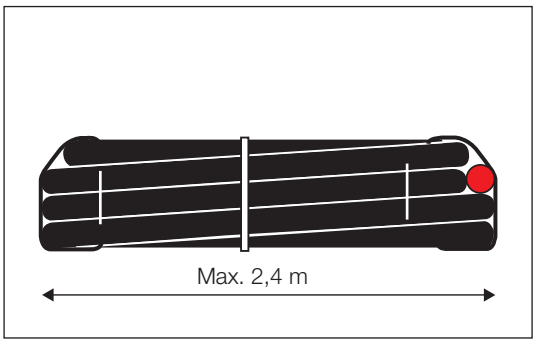
Description

The standard coil length is 100 m.

Fixed lengths can be ordered to measure in lengths of min. 10 m and max. 90 m.

Delivered without free ends.

All pipes are produced in accordance with EN15632-1 and EN15632-2.

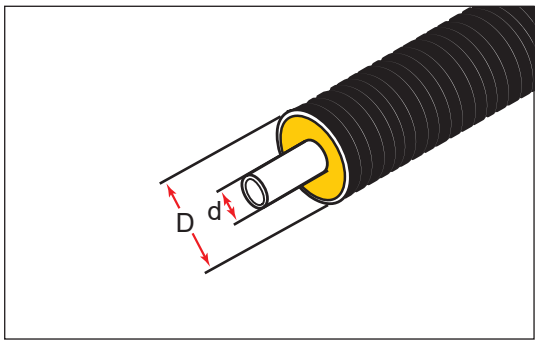


Materials

Service pipe:	Multilayer PE-RT/aluminium/PE-RT or PEX/aluminium/PEX The material complies with the requirements in EN ISO 21003-2.
Insulation:	Polyurethane foam Average thermal conductivity λ_{50} = 0.022 W/mK
Outer casing: Corrugated AluFlextra:	Polyethylene, PE-HD with co-extruded EVOH diffusion barrier.

Pipes - corrugated casing

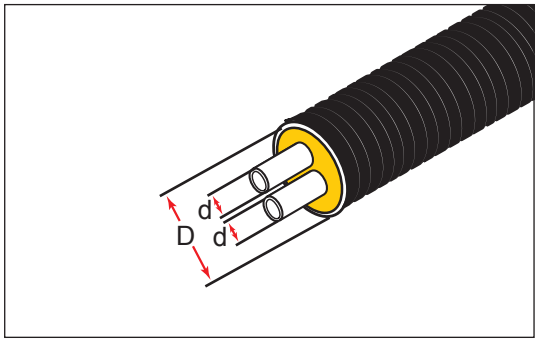
AluFlextra single pipe



Component No. 2100

Alupex service pipe		Volume	Series 1			Series 2			Series 3		
			Outer casing			Outer casing			Outer casing		
d mm	Wall thk mm	l/m	D mm	Wall thk mm	Weight kg/m	D mm	Wall thk mm	Weight kg/m	D mm	Wall thk mm	Weight kg/m
20	2.5	0.177				90	1.5	1.3	110	1.5	1.7
26	3.0	0.314				90	1.5	1.4	110	1.5	1.7
32	3.0	0.531	90	1.5	1.4	110	1.5	1.8	125	1.5	2.2

AluFlextra TwinPipe



Component No. TwinPipe: 2190
Double pipe: 2191

Alupex service pipe		Volume	Series 1			Series 2			Series 3		
			Outer casing			Outer casing			Outer casing		
d mm	Wall thk mm	l/m	D mm	Wall thk mm	Weight kg/m	D mm	Wall thk mm	Weight kg/m	D mm	Wall thk mm	Weight kg/m
TwinPipe											
16/16	2.2	0.211				110	1.5	1.7	125	1.5	2.1
20/20*	2.5	0.353				110	1.5	1.9	125	1.5	2.3
26/26	3.0	0.628	110	1.5	2.0	125	1.5	2.4	140	1.5	2.8
32/32	3.0	1.062				125	1.5	2.5	140	1.5	3.0
Double pipe											
20/16*	2.5/2.2					110	1.5	1.8	125	1.5	2.1
26/20	3.0/2.5					125	1.5	2.2	140	1.5	2.8

Distance between service pipes: 12 mm.
* Also available in series 4 with casing diameter 140 mm.

Press couplings, type MP

General

Used for permanent jointing of Alupex service pipes.

Use special tools to install the press couplings, type MP (Multipress), see section 17.5 Tools for FlexPipe.

Outer casings are joined with casing joints with insulation shells with flexible cores or casing joints for foaming.

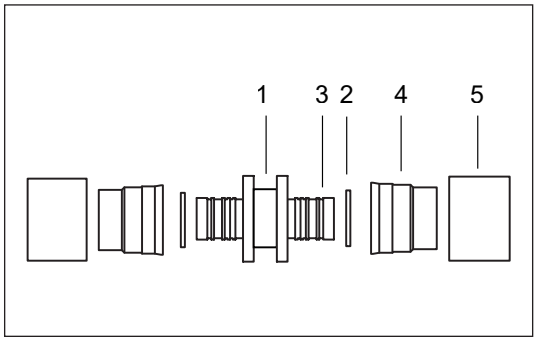
Press coupling are made of brass or red brass.

Weld ends for transition to steel are made in S355J2.

Press coupling, straight

Press coupling for straight AluPEX-AluPEX joints:

1. Supporting bush
2. Insulating ring
3. O-ring
4. Squeezing ring
5. Press ring



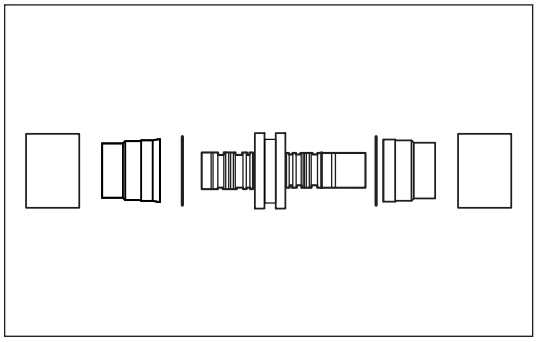
Component No. 6001.

	Coupling end 2			
Coupling end 1	16	20	26	32
16	x			
20	x	x		
26		x	x	
32			x	x

Press coupling, straight, closed

Press coupling for straight Alupex - Alupex closed joints.

The O-ring for the closed press end is delivered in a bag. The O-ring is installed at the end, when the closed end has been cut off.



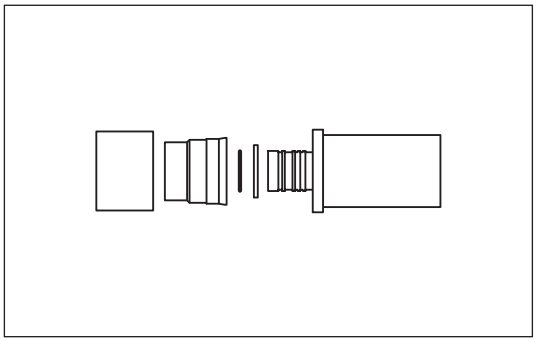
Component No. 6001.

	Coupling end 2			
Coupling end 1	16	20	26	32
16	x			
20		x		
26			x	
32				x

Press couplings, type MP

Press coupling, weld

Press coupling with weld end for transition to steel pipe.

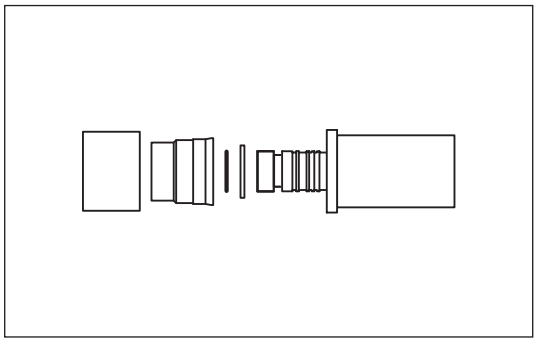


Component No. 6001.

Alupex	Steel	
	26.9	33.7
16	x	
20	x	
26	x	x
32		x

Press coupling, weld, closed

Closed press coupling with weld end.



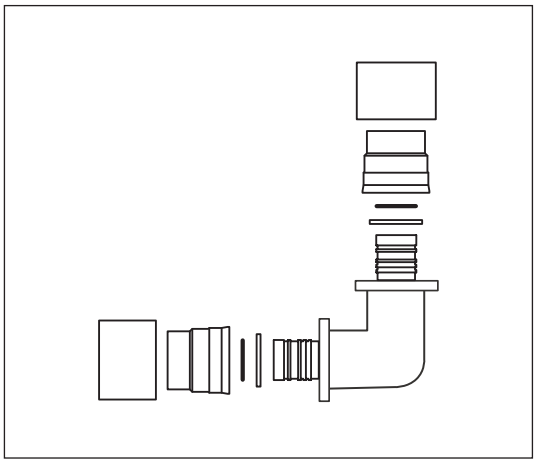
Component No. 6001.

Alupex	Steel	
	26.9	33.7
16	x	
20	x	
26	x	
32		x

Press coupings, type MP

Press coupling, 90°

90° elbow with press coupling in both ends.

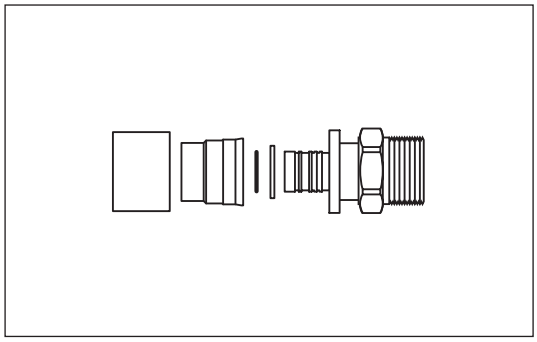


Component No. 6001.

Coupling end 1	Coupling end 2			
	16	20	26	32
16	x			
20		x		
26			x	
32				x

Press coupling, male

Press coupling with male thread for termination in a cabinet or a building.



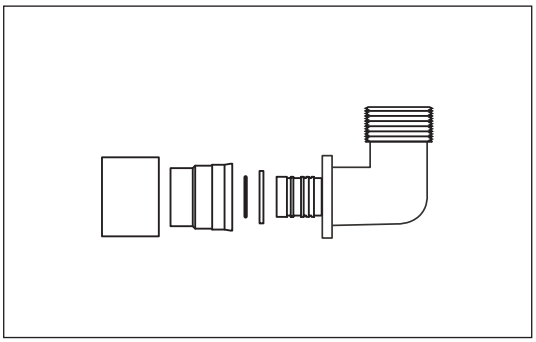
Component No. 6001.

Alupex	Thread		
	½"	¾"	1"
16	x	x	
20		x	
26		x	
32			x

Press couplings, type MP

Press coupling, 90°, male

Press coupling with male thread for termination in a cabinet or a building.

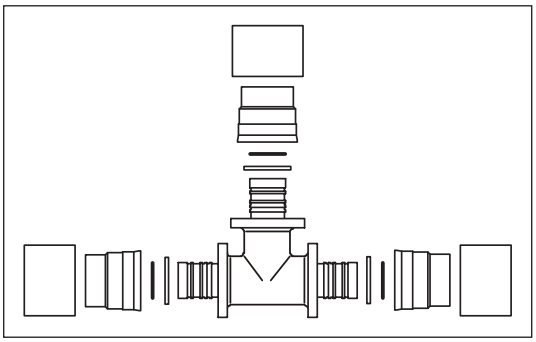


Component No. 6001.

Alupex	Thread		
	½"	¾"	1"
16	x		
20		x	
26		x	
32			x

Press coupling, tee

The base unit of the press coupling is made in one piece.



Component No. 6062.

Main pipe d_1- d_3 mm	Branch d_2, mm			
	16	20	26	32
16-16	x	x		
20-20	x	x	x	x
26-20		x	x	x
26-26	x	x	x	x
32-20		x	x	
32-26		x	x	x
32-32	x	x	x	x

Contents

General

Application

SteelFlex is used within District Heating for distribution and transmission pipelines.

The long lengths make SteelFlex especially suitable for:

- branch pipes without joints
- passage of vegetation and other obstacles
- hilly areas

The pipe system complies with the requirements in EN15632-4 for a minimum design service life of 30 years at the following operational conditions:
Continuous operation with hot water at up to 120°C and at individual time intervals with a peak temperature up to 140°C. The sum of these individual time intervals shall not exceed 300 hours a year.
Operating pressure max.: 25 bar

SteelFlex can be combined with the other LOGSTOR systems.

The steel service pipes are joined by means of welding. Branches which are at least one dimension smaller than the main pipe can be welded directly onto the main pipe.

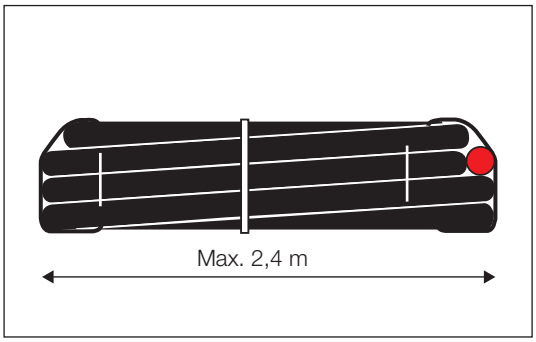
For dimensioinal changes weld reductions are used.

Description

The standard coil length is 50 or 100 m.

Always delivered without free ends.

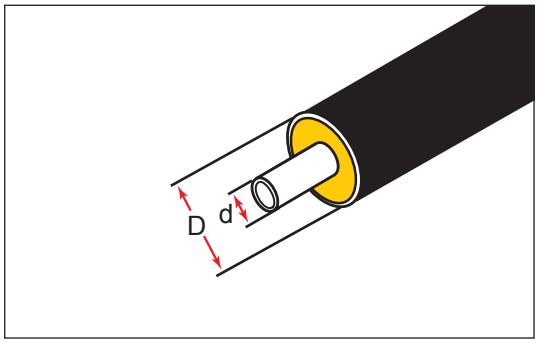
All pipes are produced in accordance with EN15632-4.



Materials

Service pipe:	Welded steel pipe E195 or E155, + N, S2 in accordance with EN 10305-3.
Insulation:	Polyurethane foam Blowing agent: Cyclopentane Average thermal conductivity λ_{50} = 0.022 W/mK
Outer casing:	Polyethylene, PE-LD with internal aluminium diffusion barrier.

Pipes

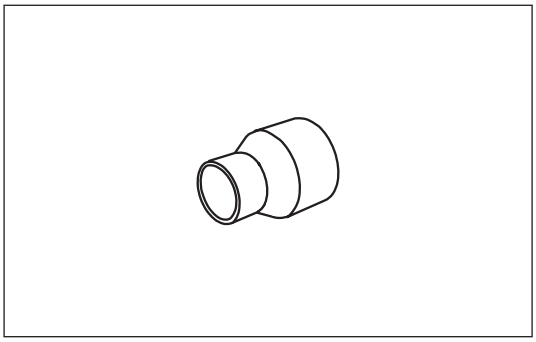


Component No. 2100

Service pipe		Volume	Outer casing		
d mm	Wall thickness mm	 l/m	D mm	Wall thickness mm	Weight kg/m
20	2.0	0,201	90	2.5	2.0
28	2.0	0,452	90	2.5	2.3

Weld reduction

For transition between SteelFlex and an ordinary steel pipe.

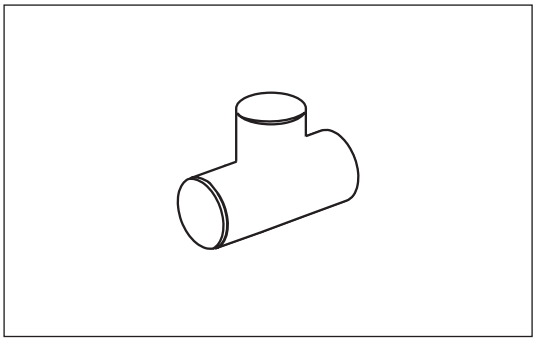


Component No. 1006.

Pipe end 1 Ord. steel pipe	Pipe end 2 SteelFlex	
	20	28
26.9	x	
33.7	x	x

Weld tee

Used with weld reductions for branching from SteelFlex to SteelFlex.



Component No. 1007.

Main pipe d_1 mm	Branch d_2, mm 33,7
33.7	x

Contents

General

Application

CuFlex is used within District Heating for distribution and transmission pipelines.

Due to the properties of the soft copper pipe, allowance must not be made for expansion. The flexibility, low weight, and long lengths make the installation quicker and more inexpensive. CuFlex is especially suitable for:

- branch pipes without joints
- passage of vegetation and other obstacles
- hilly areas

The pipe system complies with the requirements in EN15632-2 for a minimum design service life of 30 years at the following operational conditions:
Continuous operation with hot water at up to 120°C and at individual time intervals with a peak temperature up to 140°C. The sum of these individual time intervals shall not exceed 300 hours a year.
Operating pressure max.: 16 bar.

CuFlex can be combined with the other LOGSTOR systems.

As for preinsulated fittings with copper service pipe, see the Product Catalogue section 7 ”The copper pipe system”.

Copper service pipes are joined with solder joint fittings or press couplings.

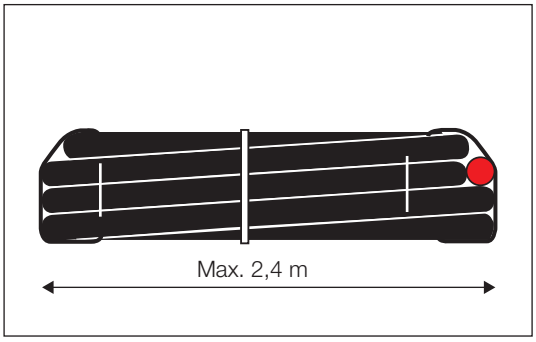
Description

The standard coil length is 100 m.

Fixed lengths can be ordered to measure in lengths of min. 10 m and max. 90 m.

Delivered without free ends.

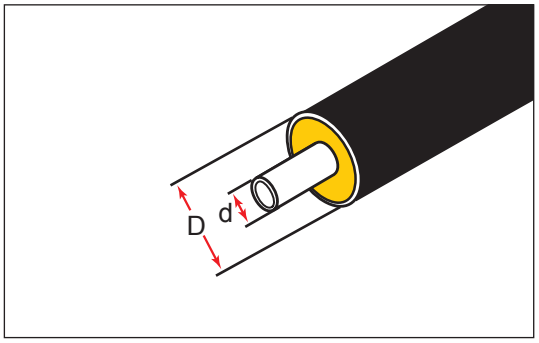
All pipes are produced in accordance with EN15632-4.



Materials

Service pipe:	Soft annealed copper Cu-DHP-CV024A-H40 after EN 12449. Tolerances after EN 1057.
Insulation:	Polyurethane foam Blowing agent: Cyclopentane Average thermal conductivity λ_{50} = 0.022 W/mK
Outer casing:	Polyethylene, PE-LD with internal aluminium diffusion barrier.

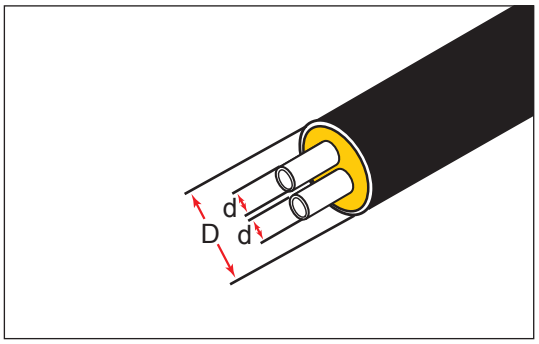
Single pipe



Component No. 2100

Service pipe		Volume	Series 1			Series 2		
			Outer casing			Outer casing		
d mm	Wall thk mm	l/m	D mm	Wall thk mm	Weight kg/m	D mm	Wall thk mm	Weight kg/m
15	1.0	0.133				90	2.5	1.5
18	1.0	0.201				90	2.5	1.6
22	1.0	0.314				90	2.5	1.7
28	1.2	0.515				90	2.5	2.0
35	1.5	0.835	90	2.5	2.4	110	2.5	2.8

TwinPipe



Component No. 2190

Service pipe		Volume	Series 1			Series 2		
			Outer casing			Outer casing		
d mm	Wall thk mm	l/m	D mm	Wall thk mm	Weight kg/m	D mm	Wall thk mm	Weight kg/m
18/18	1.0	0.402	90	2.5	2.0	110	2.5	2.4
22/22	1.0	0.628	90	2.5	2.2	110	2.5	2.6
28/28	1.2	1.029	110	2.5	3.2	125	2.5	3.6

Distance between service pipes: 12 mm

Solder joint fittings

General

Solder joint fittings for joining CuFlex service pipes are designed to transfer axial forces, arising in the pipe system.

The solder joint fittings have stop for the max insertion depth.

The material is Cu-DHP after EN 12449.

Dimensions and tolerances are in accordance with EN 1254-1.

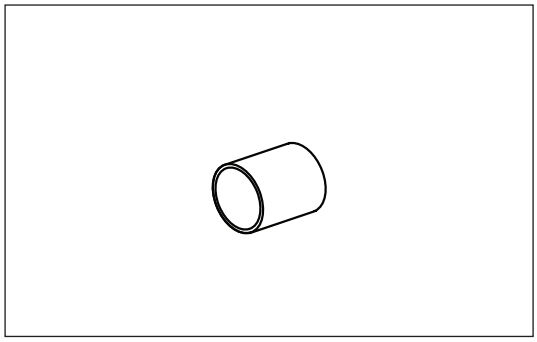
Soldered with silver solder with at least 5% silver. Prior to soldering a calibration mandrel is used to calibrate the copper pipes.

Weld ends are made of P235 TR1/TR2 in accordance with EN 10217-1 or P235GH in accordance with EN 20117-2.

Solder joint fitting, straight

Component No. 1100.

d, mm	15	18	22	28	35

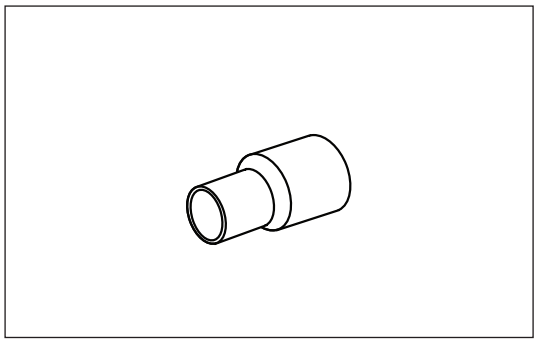


Solder reduction, male/female

Never reduce more than a single dimension.

Component No. 1100.

d_1, mm	18	22	28	35
d_2, mm	15	18	22	28

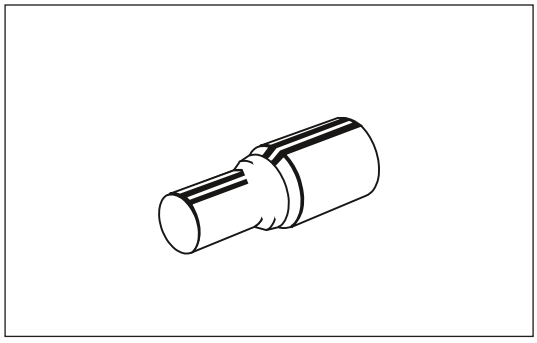


Transition fitting

Steel-copper transition fitting is welded onto the steel pipe and soldered on the copper pipe with a straight solder joint fitting.

Component No. 6880.

d_{Cu}, mm	15	18	22	28	35
d_{St}, mm	26,9	26,9	26,9	33,7	42,4



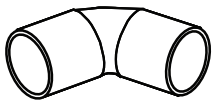
Solder joint fittings

Solder elbow fitting

45° and 90° angle.

Component No. 1100.

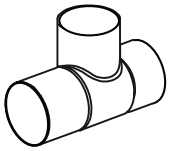
d, mm	15	18	22	28	35
45°	x	x	x	x	x
90°	x	x	x	x	x



Solder tee fitting

Component No. 1100.

Main pipe d_1, mm	Branch d_2, mm				
	15	18	22	28	35
15	x				
18	x	x			
22	x	x	x		
28	x	x	x	x	
35	x	x	x	x	x



Saddle pipe piece

The saddle pipe piece is soldered directly onto the main pipe.

Component No. 1100.

Main pipe d_1, mm	Branch d_2, mm			
	15	18	22	28
22	x	x		
28	x	x	x	
35		x	x	x

Press couplings, type MP

General

Copper service pipes are connected with press couplings. Use special tools to install the press coupling, see section 17.5 Tools for FlexPipe.

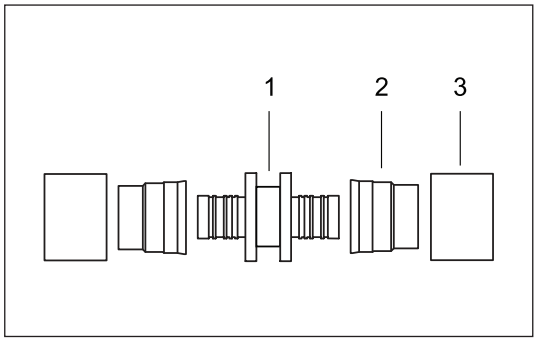
Press coupling are made of brass or red brass.

Weld ends are made in S355J2.

Press coupling, straight

Press coupling for straight Cu-Cu joints:

1. Supporting bush
2. Squeezing ring
3. Press ring

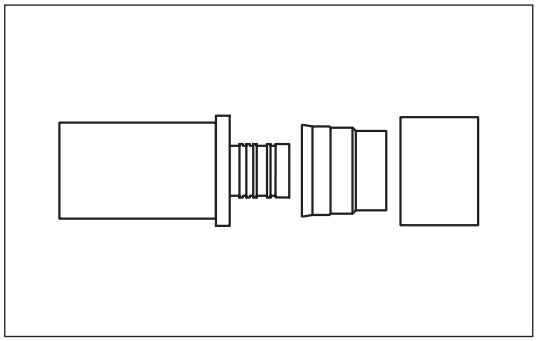


Component No. 6000.

Coupling end 1	Coupling end 2				
	15	18	22	28	35
15	x				
18		x			
22		x	x		
28		x	x	x	
35					x

Press coupling, weld

Press coupling with weld end for transition to steel pipe.

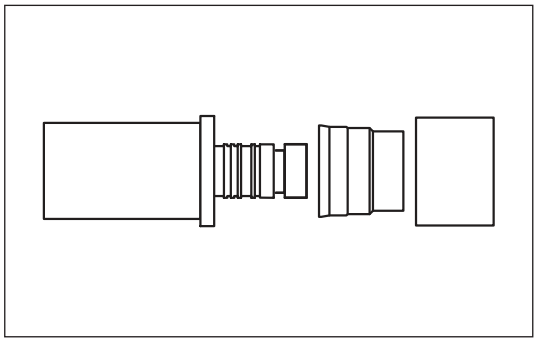


Component No. 6000.

	Copper				
Steel	15	18	22	28	35
26.9	x	x	x	x	
33.7				x	
42.4					x

Press coupling, weld, closed

Closed press coupling with weld end.



Component No. 6000.

	Copper		
Steel	18	22	28
26.9	x	x	
33.7			x

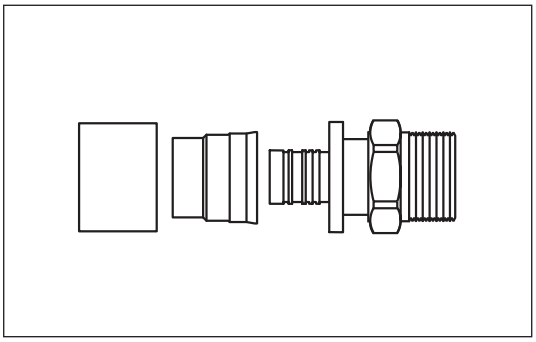
Press couplings, type MP

Press coupling, male

Press coupling with male thread for termination in a cabinet or a building.

Component No. 6000.

Thread	Copper pipe 15	18	22	28
½"	x	x	x	
¾"		x	x	
1"			x	x



Contents

FXJoint

Application

Shrink sleeve in cross-linked PE with insulation shells in polyurethane (PUR).

PEX or AluPex service pipes are delivered with insulation shells with flexible core to ensure space for the coupling.

The shrink sleeve can be used for reduction. The dimensional limits appear from below table. Allowing for the insulation shells, order the largest dimension.

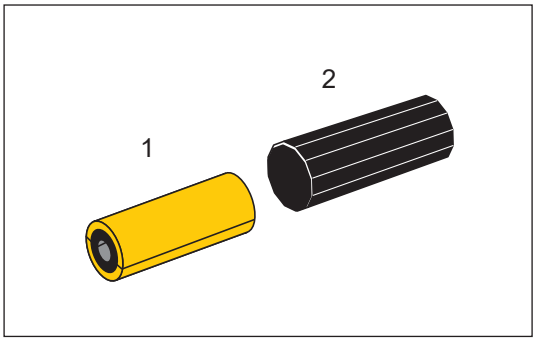
Major reductions can be carried out by combining two sleeves – a small and a big one.

Description

The FXJoint consists of:

1. Insulation shells
2. Shrink sleeve with integrated mastic

Note! Insulation shells and shrink sleeve are ordered separately.



Component No. 5057, shrink sleeve with integrated mastic

Component No. 5321, flexible insulation shells

Outer casing D, mm			90	110	125	140	160	180
Sleeve dimensional limits, mm			77-125			125-180		
Sleeve length, mm			555			565		
Service pipe, d mm								
PexFlextra	AluFlextra	SteelFlex						
20	20	20	x					
25	26	25	x					
32	32	28	x					
40			x	x				
50				x	x			
63					x	x		
75						x	x	
90							x	x
110								x

SX-WPJoint

Application

Shrink sleeve made of cross-linked PE (PEX) for foaming. The sleeve is shrinkable at both ends, and the foam holes are sealed with weld plugs.

Pre-install the shrink sleeve on the pipe prior to welding the service pipe together.

The shrink sleeve can as a standard be reduced by one dimensional offset. See below table.

When installed on pipes with corrugated casing the sleeve ends are sealed with additional collars to be ordered separately.

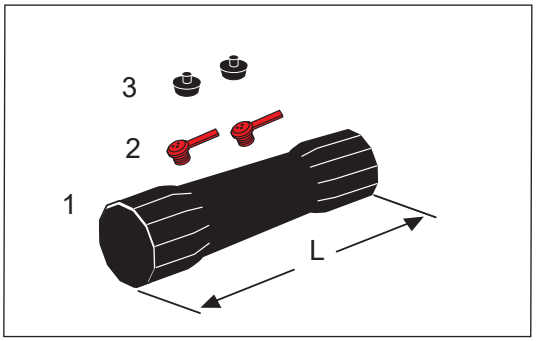
Description

The SX-WPJoint consists of:
1. Shrink sleeve with integrated mastic
2. Venting plugs
3. Weld plugs

Delivered in white PE-foil.

Store the shrink sleeve vertically.

Max. temperature during transport and storage: 60° C



Component No. 5031

Outer casing D_1, mm	Outer casing D_2, mm					
	90	110	125	140	160	180
90	x					
110	x	x				
125		x	x			
140			x	x		
160				x	x	
180					x	x

L = 650 mm

Materials

Sleeve:	Cross-linked PE (PEX)
Mastic:	PIB-based mastic
Venting plugs:	Polypropylen
Weld plugs:	HDPE

Accessories

To be foamed with foam pack, component No. 0700.

When ordering state insulation series, and that foam pack must be included in the delivery.

Collar for corrugated casing, component No. 5500. Order 2 pcs. per joint.

C2LJoint

Application

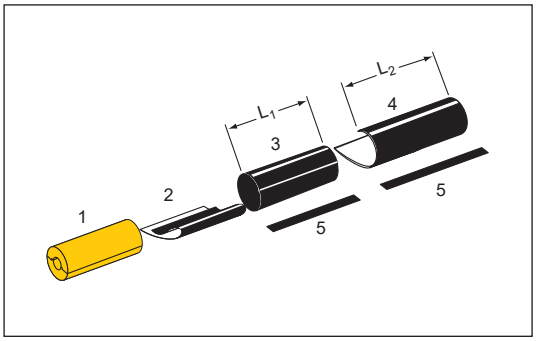
Open shrink sleeve in PE with insulation shells in PUR. Prior to installation the shrink sleeve is cut longitudinally.

I.a. for repair of pipes with SteelFlex service pipe.

Description

The C2LJoint consists of:

1. Insulation shell
2. Shrink film
3. Shrink sleeve
4. Shrink wrap
5. Closure patches



Component No. 5035

SteelFlex service pipe d, mm	Outer casing D, mm
20	90
28	90

L_1 = 650 mm
L_2 = 900 mm

Materials

Shrink sleeve:	HDPE
Insulation shells:	PUR
Shrink film:	PEX with PIB-based mastic
Shrink wrap:	PEX with PIB-based mastic and hotmelt

C2FJoint

Application

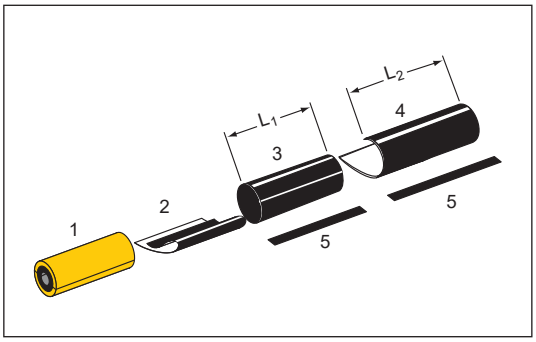
Open shrink sleeve in PE with insulation shells in PUR with flexible core. Prior to installation the shrink sleeve is cut longitudinally.

I.a. for repair of pipes with PEX or AluPex service pipe.

Description

The C2FJoint consists of:

1. Insulation shell
2. Shrink film
3. Shrink sleeve
4. Shrink wrap
5. Closure patches



Component No. 5060

Service pipe d, mm		Outer casing D, mm					
PexFlextra	AluFlextra	90	110	125	140	160	180
20	20	x					
25	26	x					
32	32	x					
40		x	x				
50			x	x			
63				x	x		
75					x	x	
90						x	x
110							x

L_1 = 500 mm
L_2 = 640 mm

Materials

Shrink sleeve:	HDPE
Insulation shells:	PUR
Shrink film:	PEX with PIB-based mastic
Shrink wrap:	PEX with PIB-based mastic and hotmelt

Y-Joint

Application

Y-Joint is used as a means of transition from TwinPipe to single pipe.
All 3 ends of the joint are shrinkable and embedded with mastic.

Y-Joint is double sealed.

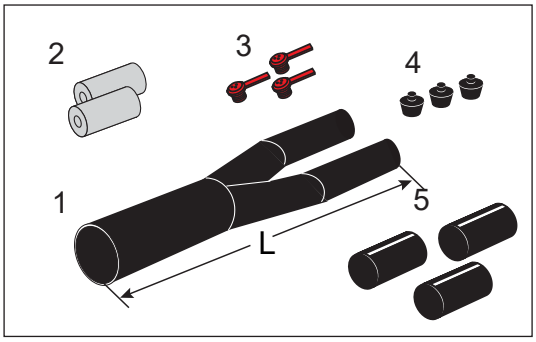
Description

Y-Joint consists off:

1. Sleeve with integrated sealing compound
2. Pipe insulation
3. Venting plugs
4. Weld plugs
5. Collars

Sleeve and accessories are delivered in a bag.

Max. temperature during transport and storage: 40°C.



Component No. 5930

Outer casing, mm		Service pipe, mm			
D_1	D_2	16-22	25-28	32-35	40-42
90	66	X			
90	77	X			
90	90	X			
110	66	X			
110	77	X	X	X	
110	90	X	X	X	
110	110	X	X	X	
125	77		X	X	
125	90		X	X	X
125	110		X	X	X
140	90			X	X
140	110		X	X	X
140	125			X	

Y-Joint length: 900 mm

Pipe insulation length: 250 mm

Materials

Y-Joint:	HDPE
Venting plugs:	Polypropylen
Weld plugs:	HDPE
Collars:	PEX with mastic

Accessories

To be foamed with foam packs, component No. 0700.
When ordering state insulation series, and that delivery must include foam packs.

T-joint straight

Application

T-joint straight is used to branch on FlexPipes. Available with insulation shells or for foaming.

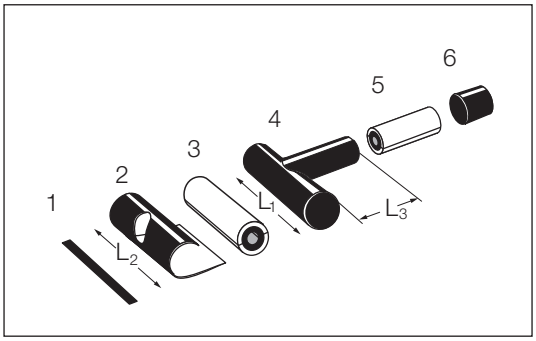
T-joint straight with insulation shells can be used for single pipe FlexPipes with PEX, AluPex or steel service pipe.

T-joint straight for foaming can be used for all FlexPipes.

Description

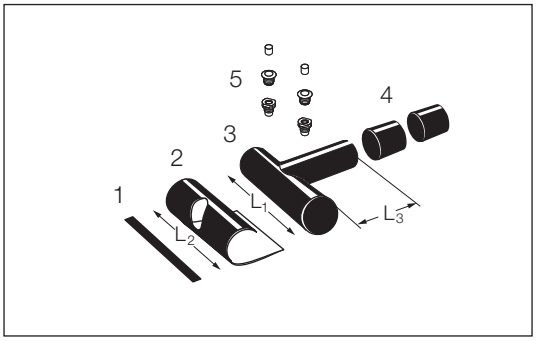
T-joint straight with insulation shells consists of:

1. Closure patch
2. Shrink wrap
3. Insulation shell
4. T-shoe
5. Insulation shell
6. Collar



T-joint straight for foaming consists of:

1. Closure patch
2. Shrink wrap
3. T-shoe
4. Collars
5. Venting and expansion plugs



Component No. 5140

Main pipe D_1 mm	Branch D_2, mm					
	90	110	125	140	160	180
90	x					
110	x	x				
125	x	x	x			
140	x	x	x	x		
160	x	x	x	x	x	
180	x	x	x	x	x	x

L_1 = 400 mm
L_2 = 650 mm
L_3 = 300 mm

T-joint straight

Materials

T-shoe:	HDPE
Venting plugs:	Polypropylen
Collars:	PEX with PIB-based mastic
Shrink wrap:	PEX with PIB-based mastic and hotmelt

Accessories

To be foamed with foam packs, component No. 0700.
When ordering state insulation series, and that delivery must include foam packs.

TXJoint

Application

T-joint for foaming, used to branch perpendicular to the main pipe.

The T-joint is made of PE and the shrink sleeve of cross-linked PE (PEX).

If it is to be used in connection with hot tapping, this must be stated when ordering.

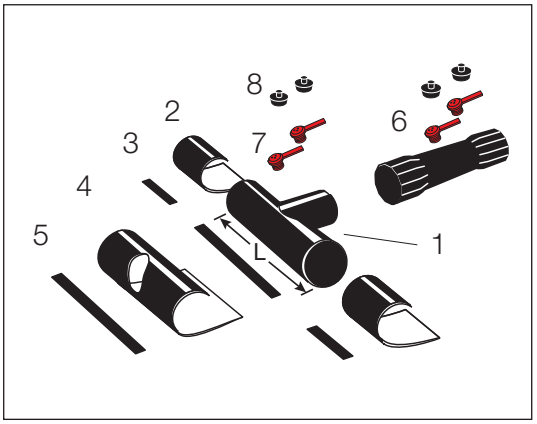
Installation on pipes with corrugated casing requires that the branch be sealed with an extra collar, which is ordered separately.

As a standard TXJoint is sealed on the T-shoe. The branch can be double sealed by installing open wrap on transition between T-shoe and SX-WPJoint and collar towards the flexible pipe.

Description

The TXJoint consists of:

1. Main pipe joint
2. Open collars
3. Closure patches
4. Shrink wrap
5. Closure patch
6. SX-WPJoint
7. Venting plugs
8. Expansion plugs



The branch pipe piece of the T-shoe is one dimension larger than the dimension of the pipe to connect to. The SX-WPJoint then reduces to the dimension of the pipe to connected to.

Component No. 5191

Main pipe D_1 mm	Branch D_2, mm					
	90	110	125	140	160	180
125	x	x				
140	x	x	x			
160	x	x	x	x		
180	x	x	x	x	x	
200	x	x	x	x	x	x
225	x	x	x	x	x	x
250	x	x	x	x	x	x
280	x	x	x	x	x	x
315	x	x	x	x	x	x
355	x	x	x	x	x	x
400	x	x	x	x	x	x
450	x	x	x	x	x	x
500	x	x	x	x	x	x
560	x	x	x	x	x	x
630	x	x	x	x	x	x
710	x	x	x	x	x	x

Length of main pipe joint = 600 mm
Length of shrink wrap = 900 mm
Length of shrink sleeve = 650 mm

TXJoint

Materials

T-shoe, base pipe:	HDPE
SX-WP:	Cross-linked PE, PEX
Mastic:	PIB-based mastic
Venting plugs:	Polypropylene
Weld plugs:	HDPE
Shrink wrap:	PEX with PIB-based mastic and hotmelt

Accessories

Shrink wrap incl. closure patch for transition between T-shoe and SX-WPJoint, component No. 5400. Order 1 pc. per casing joint.

Collar for transition from SX-WPJoint to flexible pipe, component No. 5500. Order 1 pc.

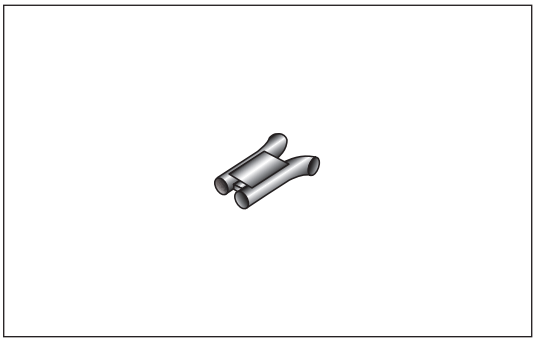
Hot tapping valve, component No. 4280

To be foamed with foam packs, component No. 0700.
When ordering state insulation series, and that delivery must include foam packs.

Reinforcement plate to reinforce the main pipe, if necessary, component No. 5426.

Connecting pipe

The connecting pipe ensures the correct distance between the service pipes of the branch.



Component No. 0262

Main pipe d_1 mm	Branch d_2,mm						
	26.9	33.7	42.4	48.3	60.3	76.1	88.9
2 x 42.4	x	x					
2 x 48.3	x	x	x				
2 x 60.3	x	x	x	x			
2 x 76.1	x	x	x	x	x		
2 x 88.9	x	x	x	x	x	x	
2 x 114.3	x	x	x	x	x	x	x
2 x 139.7	x	x	x	x	x	x	x
2 x 168.3	x	x	x	x	x	x	x
2 x 219.1	x	x	x	x	x	x	x

SXT-WPJoint

Application

T-joint for foaming. Made of cross-linked PE (PEX) with flanges and bolts in acid-resistant steel AISI 316 L. The T-joint is shrinkable and the foam holes are sealed with weld plugs.

The SXT-WPJoint can be used to branch perpendicular to or parallel with the main pipe.

The SXT-WPJoint can be used together with a hot tapping valve. The insulation thickness around the valve casing will be thinner.

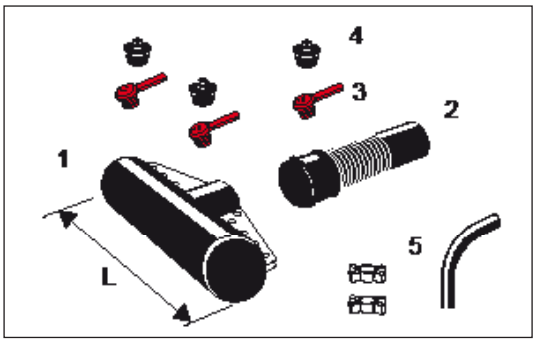
Installation on FlextraPipe with corrugated casing requires that the branch be secured with an extra collar, which is ordered separately.

Description

The SXT-WPJoint consists of:

1. Main pipe joint
2. Branch pipe joint
3. Venting plugs
4. Weld plugs
5. Connecting piece with spacers

Max. temperature during transport and storage: 60°C.



Component Nos.: Main pipe joint 5210
Branch pipe joint 5211

Main pipe D_1, mm	Branch D_2, mm						
	90	110	125	140	160	180	200
90	x						
110	x	x					
125	x	x	x				
140	x	x	x	x			
160	x	x	x	x			
180	x	x	x	x	x		
200	x	x	x	x	x	x	
225	x	x	x	x	x	x	x
250	x	x	x	x	x	x	x
280	x	x	x	x	x	x	x
315	x	x	x	x	x	x	x

Connecting piece

Component No. 5251

Connect. piece Ø mm	Radius, mm	
	45°	90°
26.9	140	140
33.7	140	140
42.4	140	140
48.3	140	140
60.3	150	150
76.1	190	190
88.9	222	165
114.3	170	170

SXT-WPJoint

Materials

Shrink sleeve:	Crosslinked PE, PEX
Mastic:	PIB-based mastic
Venting plugs:	Polypropylene
Weld plugs:	HDPE.
Flanges and bolts:	Acid-resistant steel AISI 316L

Accessories

When branching from steel main pipe with FlextraPipe with corrugated casing, order 1 pc. component No. 5500 per joint.

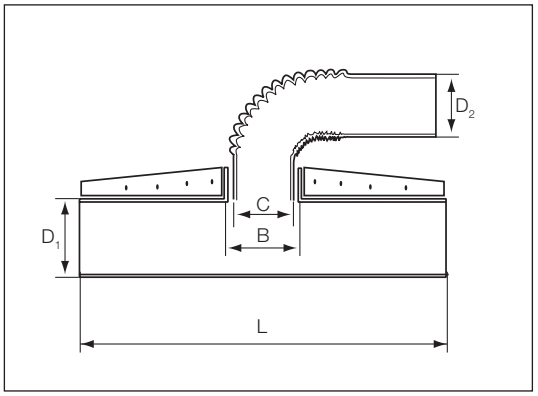
To be foamed with foam packs, component No. 0700.
When ordering state insulation series, and that delivery must include foam packs.

Reinforcement plate to reinforce the main pipe, if necessary, component No. 5426.

Measurements and combinations

The connecting piece of the main pipe fits several branch pipe joints and the branch pipe joint fits several branch dimensions.

The possible combinations appear from below table.



Main pipe joint			Branch pipe joint D_2, mm					
			77-90	90-110	110-125	125-140	140-160	180-200
D_1, mm	B, mm	L, mm	C, mm					
90	115	680	105					
110	135	680	125	125				
125	155	680	144		144			
140	170	680	160		160	160		
160	170	680	160		160	160		
180	190	680	180		180	180	180	
200	170	680	160		160	160		
	230	720					220	220
225	170	680	160		160	160		
	230	720					220	220
250	170	680	160		160	160		
	230	720					220	220
280	170	680	160		160	160		
	230	720					220	220
315	170	680	160		160	160		
	230	720					220	220

TSJoint

Application

T-joint for foaming, used to branch perpendicular to or parallel with the main pipe. The main pipe is made of weldable PE and the branch of cross-linked PE (PEX). The T-joint is shrinkable.

The main pipe is extrusion welded longitudinally, and then the ends are either shrunk onto the mastic tape and sealed with open shrink sleeves or welded with weld strips like the EWJoint.

The branch is shrunk onto the embedded mastic and sealed with a collar.

Foam holes are sealed with weld plugs in the main pipe and with expansion plugs in the branch.

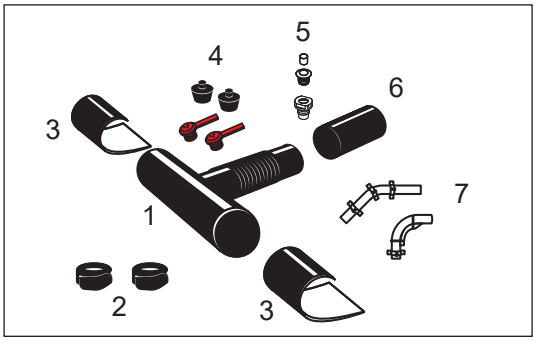
The TSJoint can be used together with a hot tapping valve. The insulation thickness around the valve casing will be thinner.

TSJoint main pipe ø450 mm can be used as a saddle solution for outer casing ø355 - ø560 mm.

Description

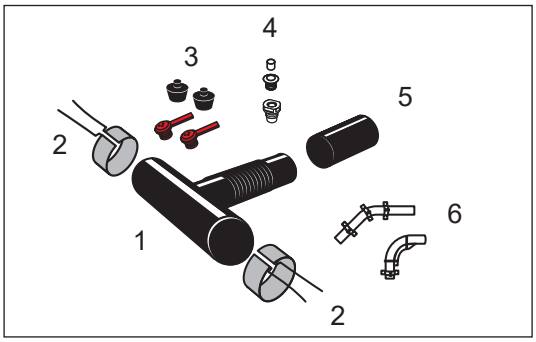
The TSJoint with mastic consists of:

1. T-joint
2. Mastic tape
3. Open shrink sleeves
4. Venting and weld plugs
5. Venting and expansion plugs
6. Collar
7. 45° or 90° connecting piece



The TSJoint EW consists of:

1. T-joint
2. Weld strips
3. Venting and weld plugs
4. Venting and expansion plugs
5. Collar
6. 45° or 90° connecting piece



Max. temperature during transport and storage: 40°C.

Component No. 5202

Branch	Main pipe D_1, mm											
D_2, mm	125	140	160	180	200	225	250	280	315	355	400	450
90-125	x*	x	x	x	x	x	x	x	x	x	x	x
140-160					x	x	x	x	x	x	x	x

Length T-joint main pipe = 650 mm

* Max branch ø110 mm.

Weld strip

Weld strips are ordered separately. Component No. 5556.

Connecting piece

To ensure correct positioning of the branch pipe joint the connecting piece is delievered with spacers, fitting the relevant branch pipe. Outer casing dimension D_2 is therefore to be stated when ordering.

Component No. 5250

Connecting piece Ø mm	For branch casing D_2, mm	Radius, mm	
		45°	90°
26.9	90 110 125	140	140
33.7	90 110 125	140	140
42.4	110 125	140	140
48.3	110 125	140	140
60.3	125	150	150

Component No. 5251

Connecting piece Ø mm	For branch casing D_2, mm	Radius, mm	
		45°	90°
42.4	140	140	140
48.3	140	140	140
60.3	140 160	150	150
76.1	140 160	190	190
88.9	160	222	165

Materials

T-shoe, base pipe:	HDPE
T-shoe, branch:	Cross-linked PE, PEX
Venting plug, base pipe:	Polypropylene
Venting plug, branch:	LDPE
Weld plugs:	HDPE
Collar:	PEX with PIB-based mastic
Sealing strip:	PIB-based
Weld strip:	Electro-plated net

Accessories

To be foamed with foam packs, component No. 0700.
When ordering state insulation series, and that delivery must include foam packs.

Reinforcement plate to reinforce the main pipe, if necessary, component No. 5426.

Contents

End fitting

Application

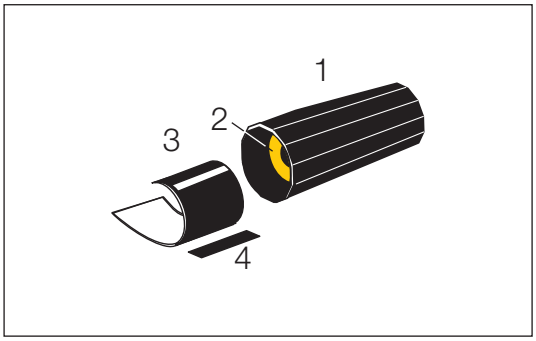
End fitting with closed end for temporary termination in the ground. The outmost part of the end fitting is shrinkable.

End fitting with insulation shells can be used for single pipes, whereas TwinPipes and double pipes must be foamed.

Description

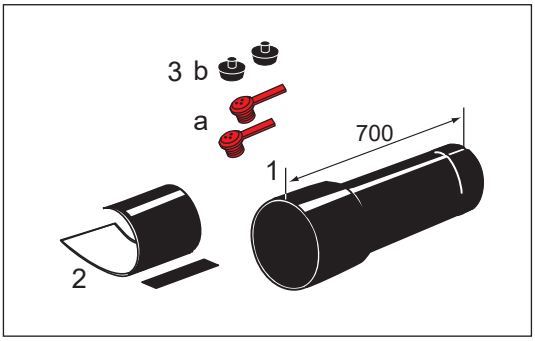
End fitting with insulation shells consists of:

1. Closed shrink sleeve
2. Insulation shells
3. Open collar
4. Closure patch



End fitting for foaming consists of:

1. End fitting, drifted
2. Shrink wrap with closure patch
3. Venting plugs
4. Weld plugs



Component No. 5700

Outer casing D, mm	90	110	125	140	160	180
Fitting length, mm	450	450	450	450	450	700
Foaming + disposable valve	700	700	700	700	700	-

Materialer

End fitting with insulation shells:	Cross-inked PE, PEX
End fitting for foaming:	HDPE
Shrink wrap:	PEX with PIB-based mastic and hotmelt
Venting plugs:	Propylene
Weld plugs:	HDPE

Accessories

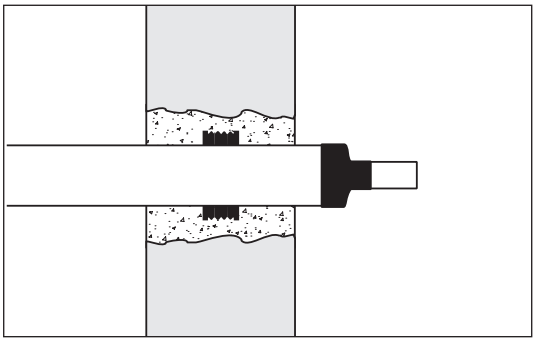
To be foamed with foam packs, component No. 0700.
When ordering state insulation series, and that delivery must include foam packs.

Wall entry sleeve

Application

Where pipes are installed through masonry - at wells, footings etc. - wall entry sleeves are installed as a seal against water ingress. Exposed to groundwater pressure the wall entry sleeves may not be watertight. In such cases please contact LOGSTOR.

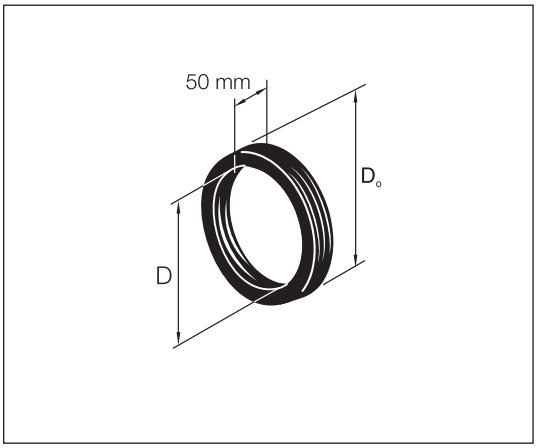
If sealing rings which can withstand large axial movements or radon-tight sealing rings are required, please contact LOGSTOR.



Description

The wall entry sleeves allow minor axial expansion movements at the entry point.

Note! D_e - 2x 18 mm is smaller than the nominal diameter, so the sleeve fits tightly around the outer casing.



Component No. 5800

Outer casing D, mm	90	110	125	140	160	180
Outer diameter D_o, mm	124	142	158	173	191	209

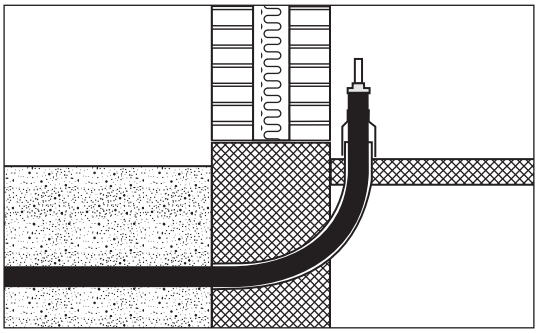
Inlet pipe

Application

For embedding in new constructions to enable later introduction of FlexPipes without disadvantages to the construction.

Inlet pipes are made of HDPE.

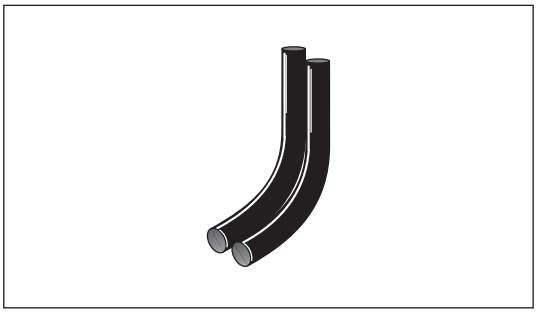
Expanded end to ensure a good connection to any enstension pipe.



Description

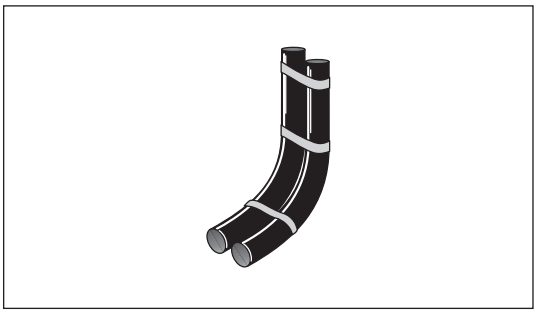
Double inlet pipe - fix

The pipes are fixed side by side at a fixed distance of approx. 15 mm.

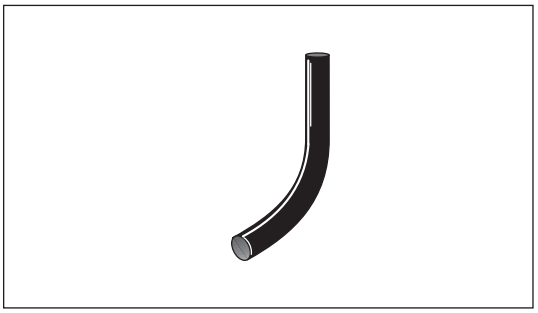


Double inlet pipe - flexible

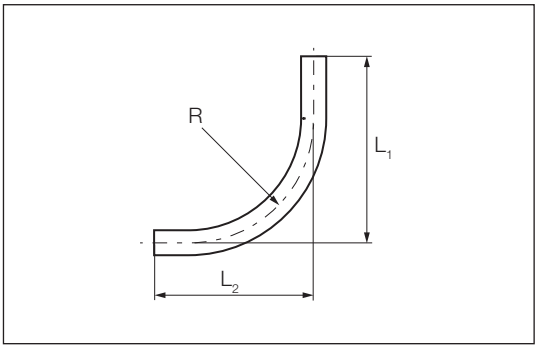
The inlet pipes are joined with flexible rubber bands and can therefore be placed at random in relation to each other.



Single inlet pipe



Component No. 1236



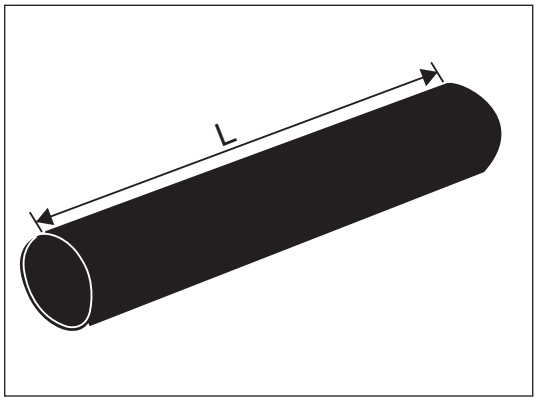
For casing D, mm	125	140	160	180
For FlexPipe D, mm	90	110	125	140
Radius R, mm	800	800-900	900-1000	1000-1100
L_1, mm	1050	1250	1350	1400
L_2, mm	900	1000	1100	1250

Inlet pipe

Description,
continued

Extension pipe

Used to extend inlet pipe. Adjusted on site.

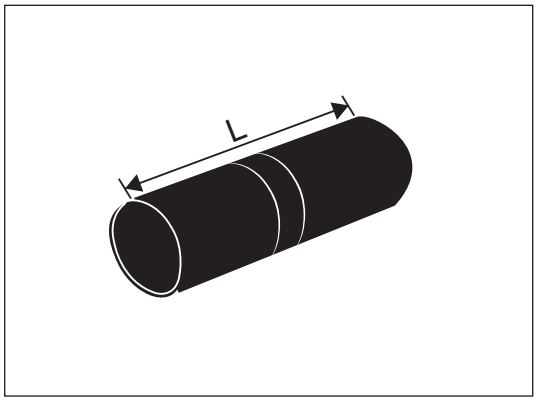


Component No. 1236

ø D, mm	L, m
110	6
125	6
140	6
160	6
180	6

HDPE sleeve for extension pipe

Used to join extension pipes, when more than one extension pipe is required.



Component No. 1236

ø D, mm	L, mm ±5
110	220
125	220
140	220
160	220
180	260

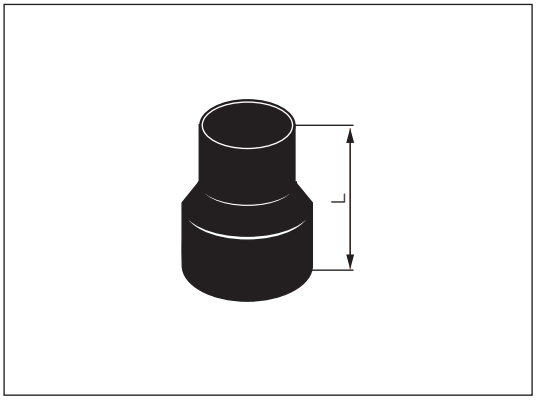
Sealing reduction

Application

For sealing between inlet ppe and outer casing.

Description

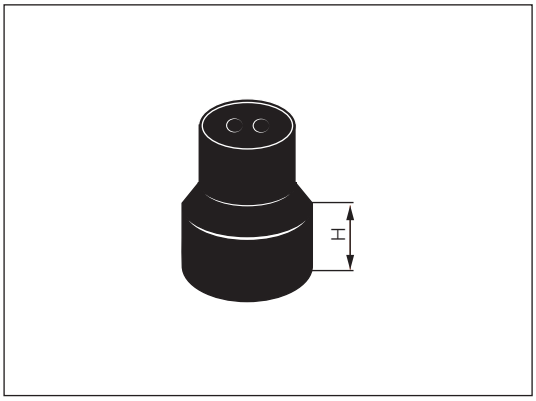
Sealing reduction



Component No. 1236

For outer casing D, mm	90	110	125	140
For inlet pipe, mm	125	140	160	180
L, mm	200	200	200	200

Sealing reduction incl protection cap



Component No. 1236

Service pipe D, mm	20-20	20-20	26-26
Outer casing D, mm	110	125	125
Inlet pipe, mm	140	160	160
H, mm	200	200	200

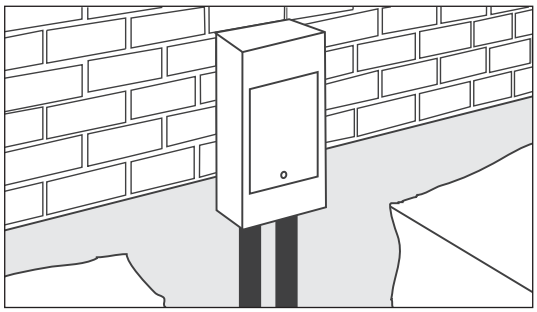
Inlet box

Application

For sealing external pipe introduction through wall.

The box has no back side and bottom.

Box type with cover enables valve operation through external cover with lock.

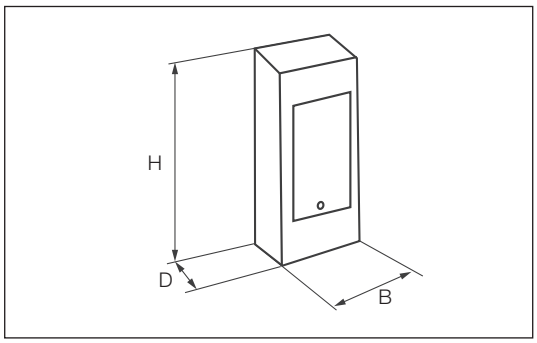


Description

Colour: light grey.

Component No. 8900

Type	Product No.	Measurements, mm		
		H	B	D
wo cover	8900 0800 340 000	825	350	200
with cover	8900 0600 290 000	600	290	160



Extra cover for type with cover can be ordered:
Product No. 89000600220010.

Protective cap

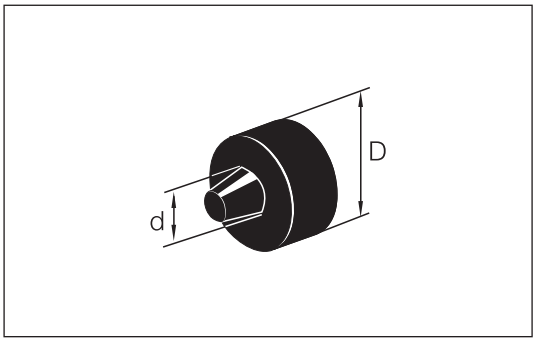
Application

For indoor sealing of the insulation end. Applicable on all FlexPipes.

Protective cap is delivered with a conical service pipe nozzle which is adjustable on location to the relevant service pipe.

Made of silicone and can be used at temperatures up to 140°C.

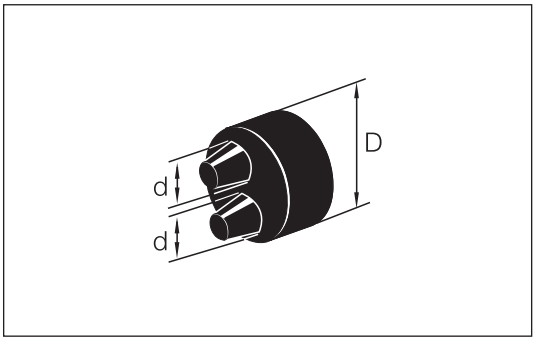
Single pipe



Component No. 1230

Product No.	Service pipe d, mm	Outer casing D, mm					
		90	110	125	140	160	180
1230 0090 000 000	16-40	x					
1230 0110 000 000	16-50		x				
1230 0125 000 000	20-63			x			
1230 0140 000 000	50-75				x		
1230 0160 000 000	75-90					x	
1230 0180 000 000	90-110						x

TwinPipe and double pipe



Component No. 1230

Product No.	Service pipe d_1/d_2, mm	Outer casing D, mm					
		90	110	125	140	160	180
1230 0090 000 001	15-28/15-28	x					
1230 0110 000 001	16-32/16-32		x				
1230 0125 000 001	16-50/16-50			x			
1230 0140 000 001	16-50/16-50				x		
1230 0160 000 001	32-50/32-50					x	
1230 0180 000 001	50-63/50-63						x

End cap

Application

For termination in buildings, inspection chambers, concrete ducts etc. to protect the insulation end against moisture ingress. Applicable on pipes with steel or copper service pipe.

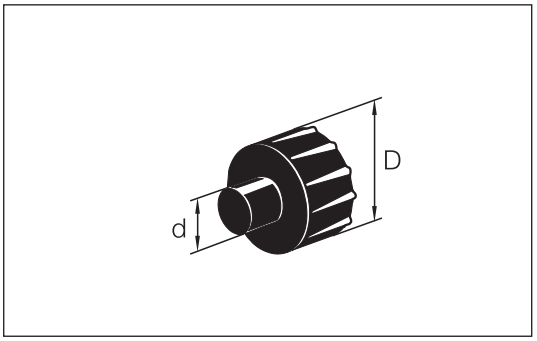
The end cap has embedded mastic and is shrunk onto the service pipe and outer casing.

Made of cross-linked PE (PEX) and can be used at temperatures up to 130°C.

Single pipe

Component No. 5600

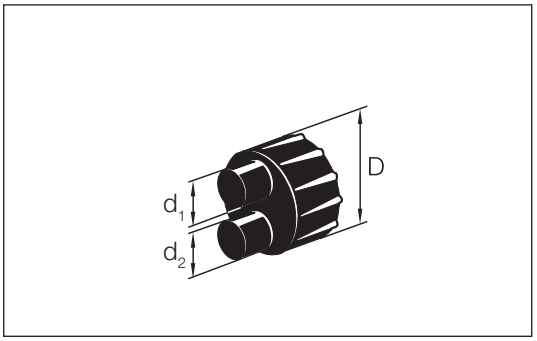
Service pipe d, mm	Outer casing D, mm		
	90	110	125
12-26	x		
25-40	x		
25-50			x
26-42	x	x	



TwinPipe and double pipe

Component No. 5600

Service pipe d_1/d_2, mm	Outer casing D, mm	
	90-128	125-140
12-22/12-22	x	
28-54/22-42		x



Materials

End cap: Cross-linked PE with embedded mastic

Valves and mountings

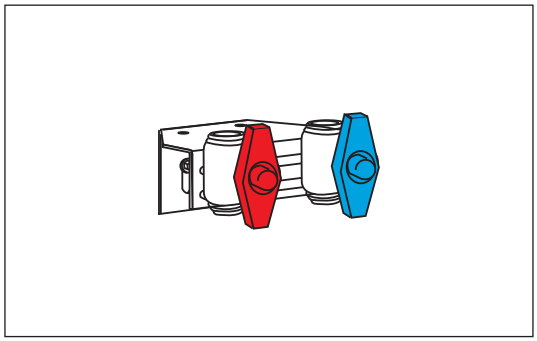
Twin valves

Used in buildings, installed on adjustable wall mountings. The valves are delivered with internal thread at both ends or with internal thread and weld end with red and blue T-handle.

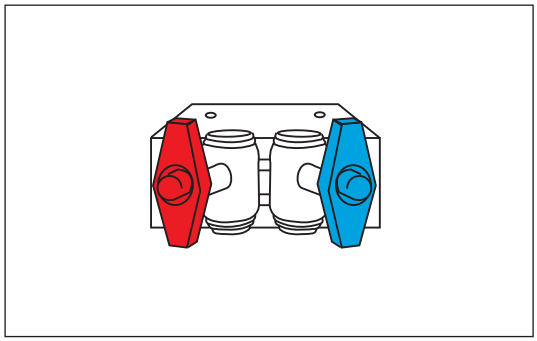
Broen Ballomax

Component No. 4260

For pipe pair:



For TwinPipe:



Pipe pair

Dimension	Thread	Pipe, mm	Valve ends		
			Female/female	Weld/female	Weld/weld
20	3/4”	26.9	X	X	X
25 - 32	1”	33.7	X	X	
40	1 1/4”	42.4	X	X	

TwinPipe

Dimension	Thread	Pipe, mm	Valve ends	
			Female/female	Weld/female
20	3/4”	26.9	X	X
25 - 32	1”	33.7	X	X
40	1 1/4”	42.4	X	

CuFlex:

Pipe pair

Dim.	Thread	Valve ends	
		copper/female	copper/copper
18	1/2”	X	
22	3/4”	X	X
28	1”	X	

TwinPipe

Dimension	Thread	Valve ends
		copper/female
18	1/2”	X
22	3/4”	X
28	1”	X

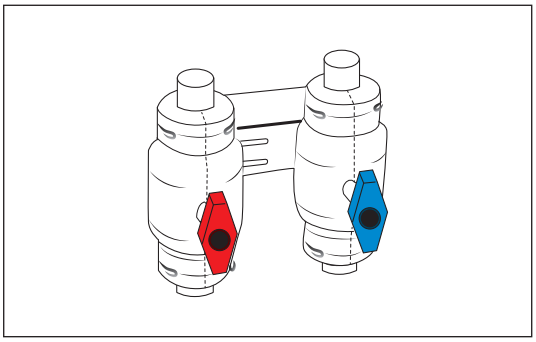
Broen Ballomax, ***continued***

Insulation shells for Broen Ballomax are made of black polyurethane.
Max. temperature: 130°
Thermal conductivity: 0.029 W/mk

1 set consists of 2 + 2 shells and spacers for installation on the mounting.

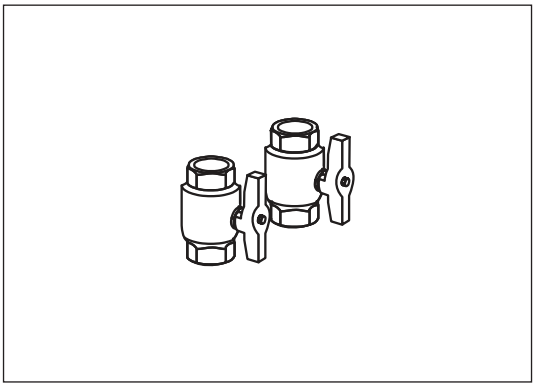
Component No. 4262

Product Nos.	Dimension
42620026000001	3/4" (26.9)
42620033000001	1" (33.7)



Single valves

Delivered with red or blue handle.

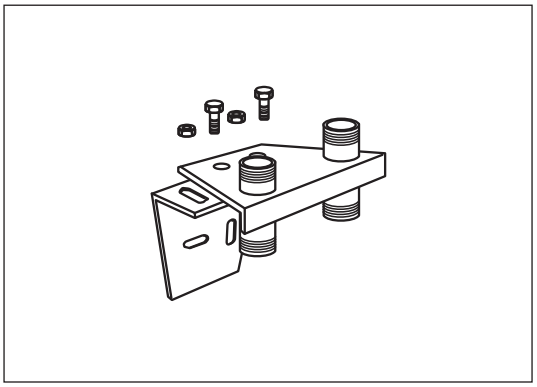


Component No. 0005

Male thread	3/4"	1"	1 ¼"

Mounting for single valves

Mounting for installing valves in buildings.



Component No. 4262

Male thread	3/4"	1"	1 ¼"

Products - Foam pack
Contents

Introduction

Joints in the pipe system are best insulated with our foam packs. It is an easy-to-apply method according to which a two-component foam liquid, after mixing and filling, forms an effective insulation with the same properties as in the rest of the pipe system.

Contents

Description

Application

Foam packs are used to insulate joints.

Foam packs are easy to apply and the fitter does not come into contact with the liquids. After mixing and filling in the two foam liquids, an efficient insulation is formed which has the same properties as the rest of the pipe system. Foam packs comply with the requirements to materials in EN 253.
If 2 foam packs are required per casing joint, preparations must be made, so they can be filled into the joint immediately after each other. It may be an advantage to be 2 persons to carry out the task.
If 3 or 4 foam packs are required per casing joint, 2 foam packs must be filled in simultaneously. This requires that an additional venting hole be drilled. Remember to order an additional plug set.

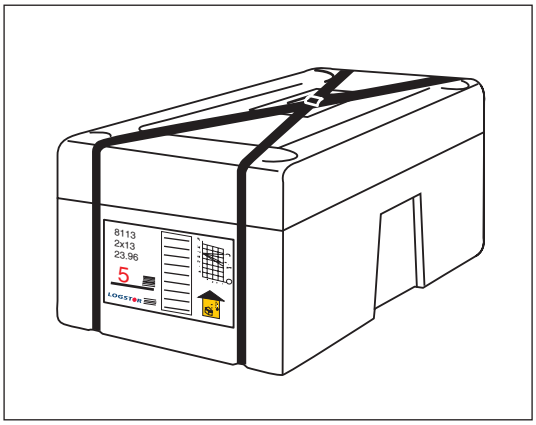
Foam packs have a time limit for use of 12 months counting from the stated production week, provided they are stored correctly.

Description

Foam packs are supplied in insulation boxes. The box i.a. contains a foam pack folder, from which it appears which foam pack size to use for which casing joint, as well as a leaflet with addresses and safety precautions.
The total weight of the foam packs and the box is max. 20 kg.
Foam packs are not returnable.

Component No. 0700

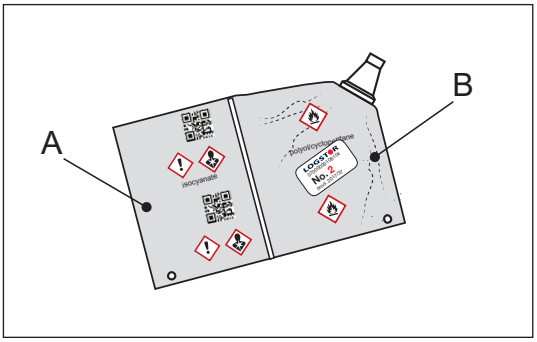
Foam pack size	No. of packs per box
0	28
0.5	28
1	28
2	27
3	24
4	21
5	20
6	17
7	14
8	12
9	9
10	8
11	6
12	4
13	3



The foam pack is marked with isocyanate (A) and polyol/cyclopentane (B), respectively, as well as their hazard symbols.

Scanning the QR code on the bag with a mobile phone gives direct access to safety information.

Product No., foam pack No., and production week also appear from the bag.



Description

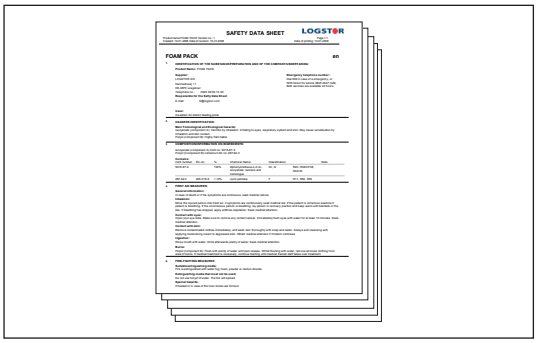
Materials

The insulation box:	Polystyrene foam (EPS)
Foam pack:	Multi-ply plastic bag with diffusion-tight aluminium foil for liquid A and B. Liquid A: Isocyanate. MDI Liquid B: Polyol and cyclopentan

Material Safety Data Sheet

A detailed MSDS for foam pack is available on our website www.logstor.com.

The MSDS includes16 items with information.


SAFETY DATA SHEET

LOGSTOR

FOAM PACK

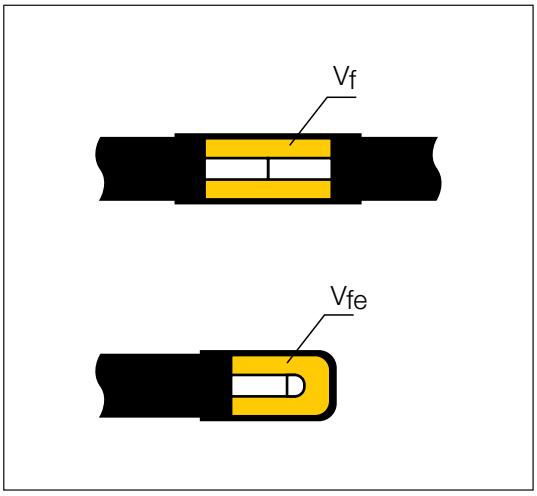
Foam pack sizes

Foam volume

The volume of the cavity to foam decides which foam pack size to choose.

To ensure the quality of the finished insulation the foam volume limits in below table must be observed.

Size and number of foam packs for a specific casing joint appear from the foam pack folder for single pipe and TwinPipe which is available on LOGSTOR's website www.logstor.com and in the insulation box.



Foam pack No.	Liters per bag	Alternative			Foam volume. litre			
					V_f		V_{fe}	
					min.	max.	min.	max.
0	0,14				1.0	1.5	2.2	2.7
0.5	0,23				1.5	2.6	2.7	4.6
1	0,32				2.6	3.7	4.6	6.7
2	0,39				3.7	4.6	6.7	8.3
3	0,48				4.6	5.8	8.3	10.4
4	0,58	2x1			5.7	6.9	10.4	12.5
5	0,71	1+2	2x2		6.9	8.6	12.5	15.4
6	0,87	2+3	2x3	1+4	8.6	10.6	15.4	19.1
7	1,07	3+4	1+5	2+5	10.5	12.9	19.1	23.2
8	1,31	4+5	2+6	3+6	12.9	15.9	23.2	28.6
9	1,6	5+6	3+7	4+7	15.9	19.4	28.6	35.0
2x6		5+7	3+8	0+9	17.3	21.9	34.7	38.2
10	1,98	6+7	5+8	2+9	19.8	25.1	38.2	43.7
11	2,48	6+9	3+10	4+10	25.0	32.4	43.7	55.1
2x9		8+10	5+11	6+11	31.8	41.2	55.1	70.0
12	3,71	8+11			38.0	49.2	70.0	83.6
10+11		5+12			44.9	58.1	83.6	98.7
13	4,95	2x11	8+12		51.0	65.9	98.7	112.1
10+12		5+13			57.8	74.9	112.1	127.3
10+13		2x9+12			70.8	91.6	127.3	155.8
12+13					89.0	115.1	155.8	195.7
2x13		11+2x12			101.9	131.9	195.7	224.2
2x12+13					127.0	164.3	224.2	279.3
3x13					152.9	197.8	279.3	336.3
2x12+2x13					177.9	230.2	336.3	391.4
4x13					203.8	263.8	391.4	448.4

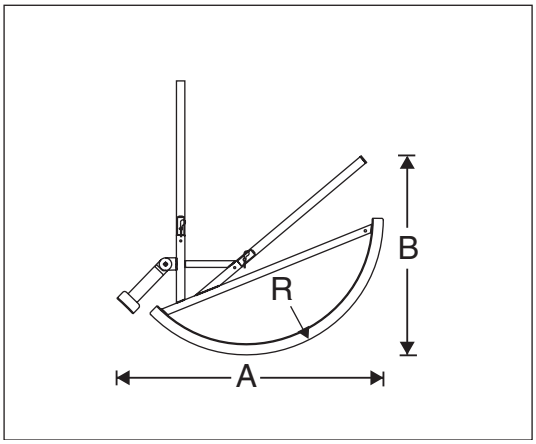
Contents

Tools for transport and laying

Bending tool

For bending FlexPipes.

The two handles can be dismantled.



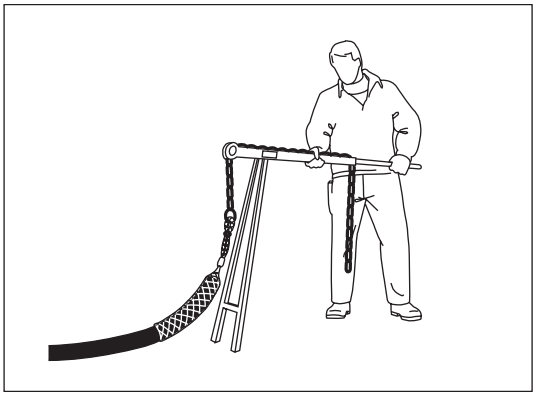
Casing D, mm	Product No.	A mm	B mm	R mm
90	9050 0000 019 013	1340	695	700

Pulling tool

For house entry through inlet pipe embedded in concrete or tilted bore in the base pulling tool and pulling sleeve are used.

Outer casing dimension 90 mm

Product Nos:
Pulling tool: 9050 0000 007 887
Pulling sleeve: 9050 0000 047 001

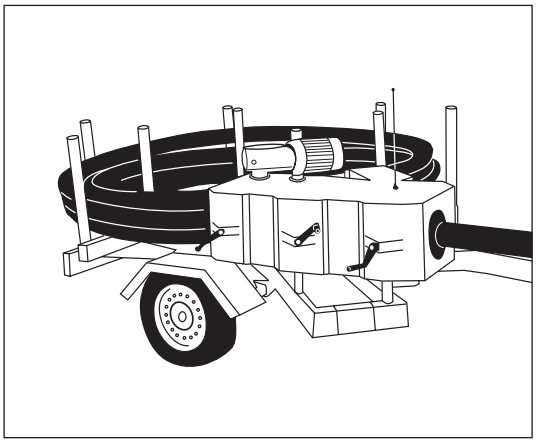


Transport and uncoiling

For transport and uncoiling of FlexPipes a FlexPipe wagon with motorized straightener and remote control is used.

Especially recommended for major dimensions and a higher number of house entries

Contact LOGSTOR for referral to external supplier.



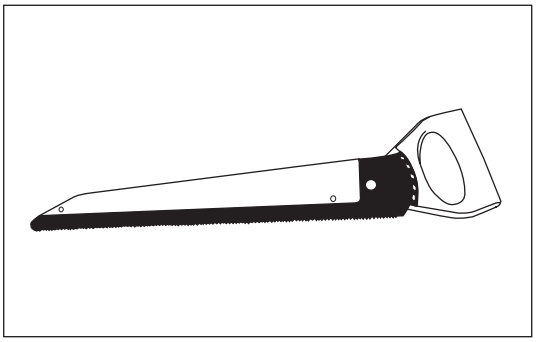
Tools for shortening and calibration

Eclipse saw

An eclipse saw with depth guard is used to cut outer casings and insulation.

The depth guard prevents that the service pipe and surveillance wires are damaged, when cutting the outer casing.

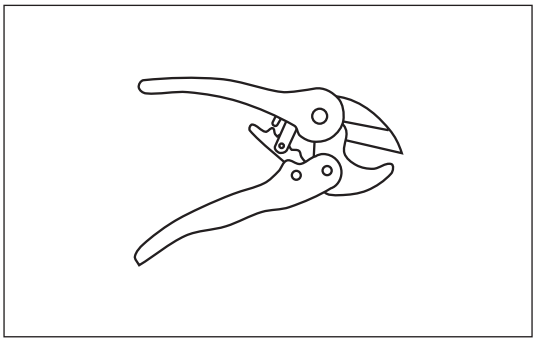
Product No.: 9000 0000 003 002



PEX scissors

For perpendicular cutting PEx and Alupex service pipes.

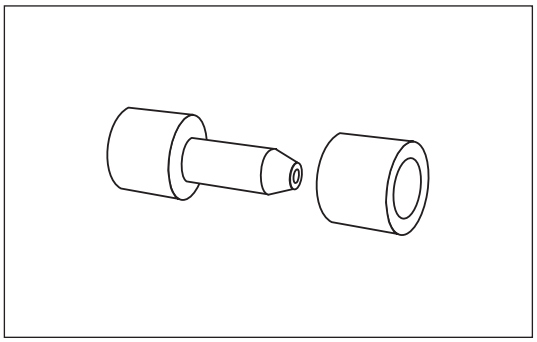
Max diameter pipe mm	Product No.
28	9000 0000 006 001
32	9000 0000 006 002
63	9000 0000 006 003



Calibration mandrel

For CuFlex to calibrate copper pipes before soldering.

CuFlex service pipe, d mm	Product No.
15	9050 0000 017 000
18	9050 0000 017 005
22	9050 0000 017 001
28	9050 0000 017 002
35	9050 0000 017 003

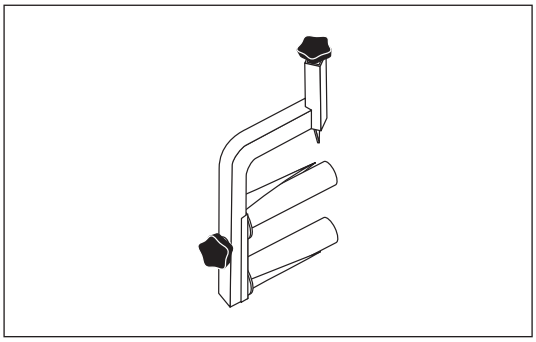


Stripping tools

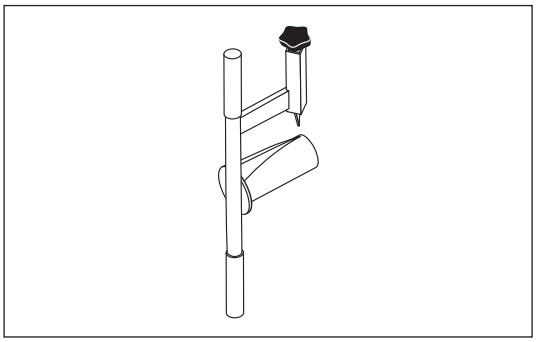
Application

For removal of insulation from pipes with PEX and Alupex service pipes to prevent that the service pipe is damaged.

Service pipe	Service pipe, d mm	Product No.
PEX	20-25	9000 0000 006 001
	32-40	9000 0000 006 011
	40-50	9000 0000 006 003
Alupex	16-20	9000 0000 006 020
	26-32	9000 0000 006 021



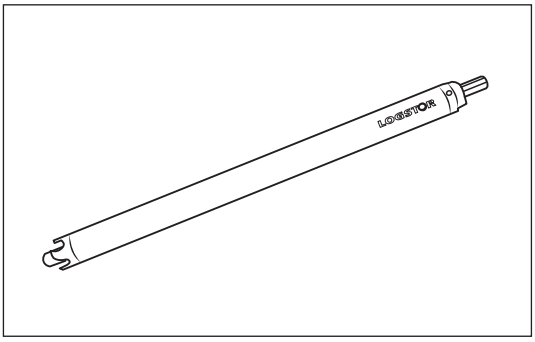
Service pipe	Service pipe, d mm	Product No.
PEX	63	9000 0000 006 004
	75	9000 0000 006 005
	90	9000 0000 006 006
	110	9000 0000 006 007



Stripping tool for AluFlextra to use with drilling machine:

Standard length 400 mm:

Service pipe, ø mm	Product No.
16	90000000006022
20	90000000006023
26	90000000006024
32	90000000006025

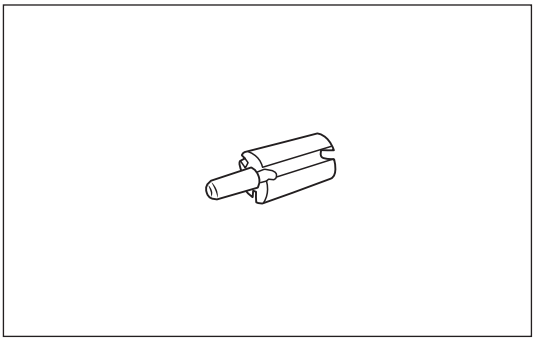


Standard length 700 mm:

Service pipe, ø mm	Product No.
16	90000000006026
20	90000000006027
26	90000000006028
32	90000000006029

Cleaning/deburring tool:

Service pipe, ø mm	Product No.
16	90000000006030
20	90000000006031
26	90000000006032
32	90000000006033



Press tool for coupling type MP

General

Hydraulic press tool for installing press coupling, type MP (Multipress).

Delivered as a complete set.

To buy or rent please contact LOGSTOR Service Department.

AP63

For dimension ø16 - ø63

Product No. 9050 1430 063 000

AP110

For dimension ø63 - ø110

Product No. 9050 1430 110 000

Hydraulic pump

Used for hydrauliic press tool.

Product No. 9050 1420 000 000

Press tool for coupling, type JT

General

Press tool for installing press coupling, type JT (Jentro).

Delivered as a complete set.

To buy or rent please contact LOGSTOR Service Department.

ø25 - ø32 mm

Product No. 9050 1460 032 000

ø40 - ø63 mm

Product No. 9050 1460 063 000

ø50 - ø110 mm

Product No. 9050 1460 110 000

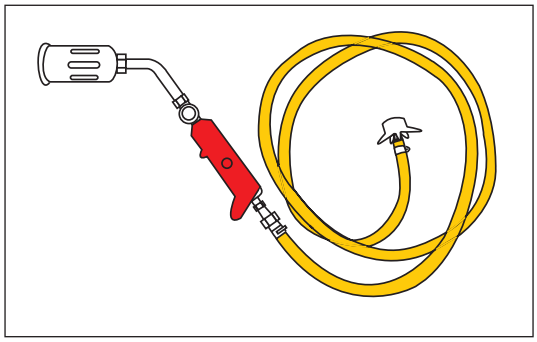
Tools for installing casing joints

Gas burner set

For installation of shrink sleeves.

Complete burner set for propane gas with a 10 m hose and a 50 mm burner head.

Hose union	Product No.
for regulator	9000 0000 001 943
with ½" thread	9000 0000 001 944



Spare parts for gas burner set

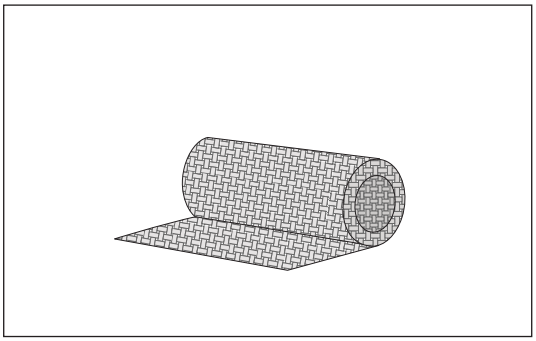
	Product No.
Burner head ø50 mm	9000 0000 010 001
Burner head ø60 mm	9000 0000 010 002
Burner pipe 200 mm	9000 0000 011 000
Burner handle	9000 0000 012 000
Gas hose 10 m	9000 0000 013 000
Hose union for regulator	9000 0000 017 000
Hose union with ½" thread	9000 0000 021 000

Heat shield

For protecting corrugated casings when shrinking sleeves.

Width: 150mm
Length: 1000 mm

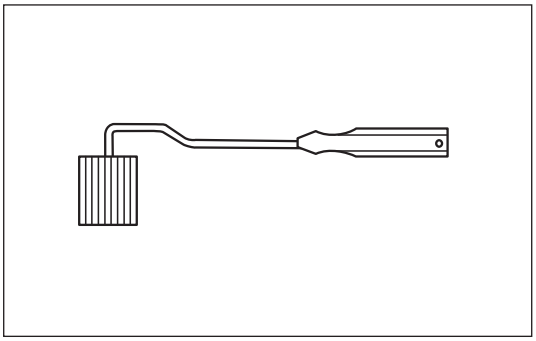
Product No. 9050 0150 031 000.



Roller

For compressing overlap on open shrink wraps and collars.

Product No. 9050 0000 008 000.

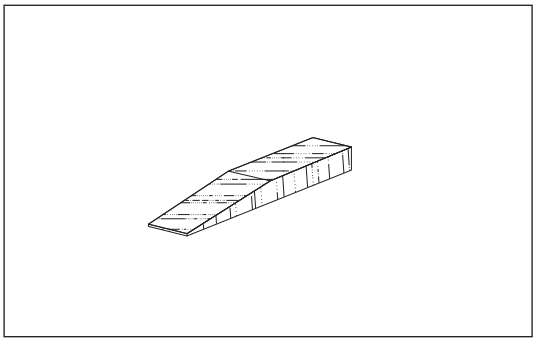


Tools for installing casing joints

Wooden wedge

For centering shrink sleeves during installation.

Delivered in bags with 24 pcs.



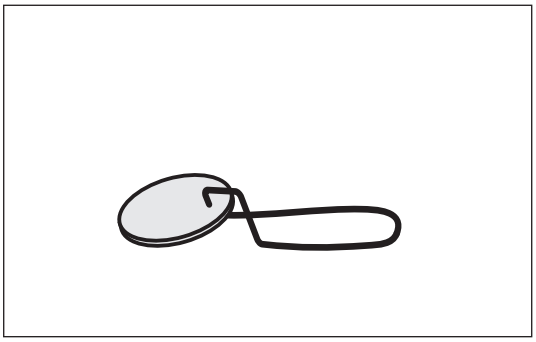
Type	Length, mm	Height, mm	Width, mm	Product No.
Small, type A	240	13	22	1997 0000 033 002
Big, type B	345	27	32	1997 0000 033 003

Tools for expansion plug

Patch spoon

Retaining tool for installation of patch.

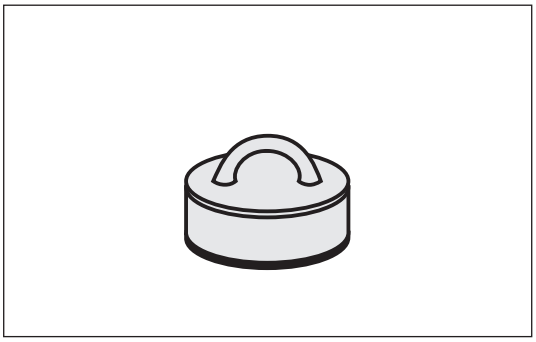
Product No. 9050 0000 025 002



Patch press

For compressing patch.

Product No. 9050 0000 025 004



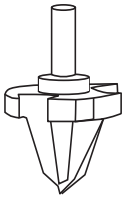
Tools for weld plug

Conical drill bit

For drilling the foam hole before installing weld plug.

Hole size	Product No.
ø35 mm	9050 0035 023 001
ø43 mm*	9050 0043 023 001

* For repair use.

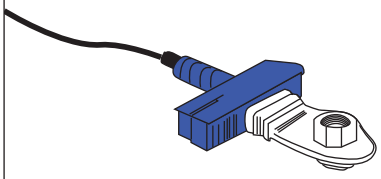


Socket welder

Socket welder HHSW-63-W for replaceable cones. Cones are ordered separately.

Delivered in a box.

Product No. 9050 0000 023 013.



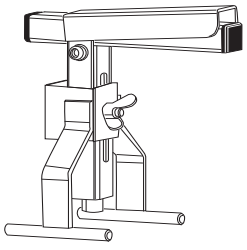
Cones for socket welder

Weld plug size	Product No.
ø35 mm	9050 0000 023 010
ø43 mm*	9050 0000 023 011

* For repair use.

Retaining tool for weld plug

Product No. 9050 0000 025 008



Leakage test equipment

Hand pump

Air pump to leakage test casing joints before foaming.

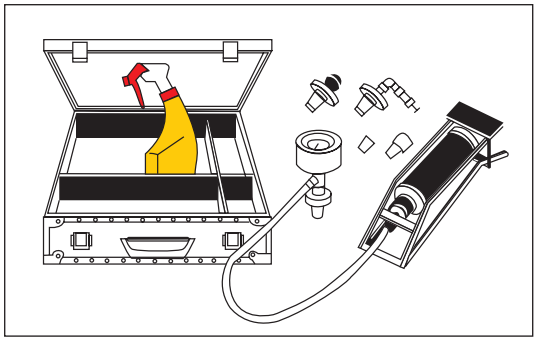
Product Nos. air pumps, complete:
Hole size 24 mm 9050 0000 027 000
Hole size 17.5 mm 9050 0000 027 007

Spare parts:
Product Nos. manometer with plug:
Hole size 24 mm 9050 0000 027 001
Hole size 17.5 mm 9050 0000 027 008

Product Nos. extra plug:
Hole size 24 mm 9050 0000 027 003
Hole size 17.5 mm 9050 0000 027 009

Foot pump

Product No. 9050 0000 027 011.



Transport and handling

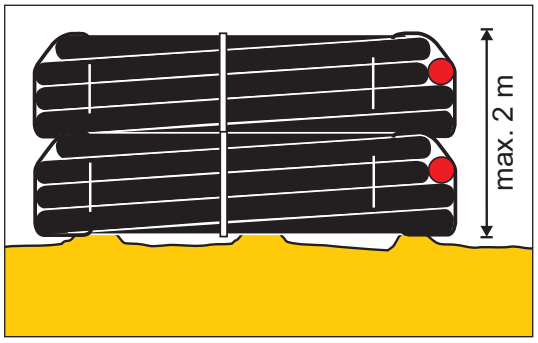
Contents

Storage and transport

Storage

The pipes must be stocked in such a way that they are not damaged.
Stack the pipes on a level surface of stoneless sand with cushions of sand, as illustrated.

Max. stack height for FlexPipes in coils is 2 meters.



Foam liquids must be stored indoors at 18-24°C.
Likewise shrink materials must be stored indoors or under cover.
All casing joints must be stored vertically, resting on one end, to avoid ovalization.

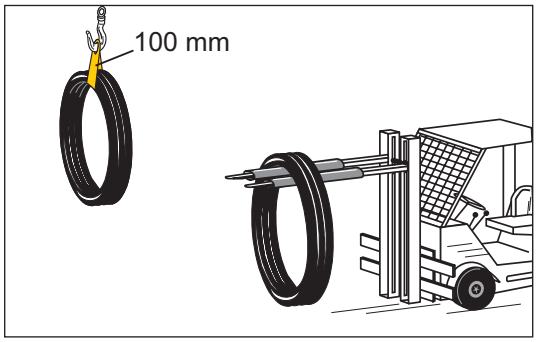
Unloading

Pipes and other components must not be rolled or thrown directly onto the ground. They must be lifted in place and NOT pulled on the truck bed or on the ground.

Handling, FlexPipes

Only use lifting straps with a width of min. 100 mm.

When using a truck, the forks must be protected with outer casings, rubber pads etc.



Installation in trench

FlexPipes can be installed in excavated trenches as described under Design.
The cross section of the trench must allow sufficient space for proper installation of pipes and casing joints and compacting of levelling layer and backfilling.

Note! The minimum cover also applies to branches, if any.

Shortening

FlexPipes are delivered in coils.

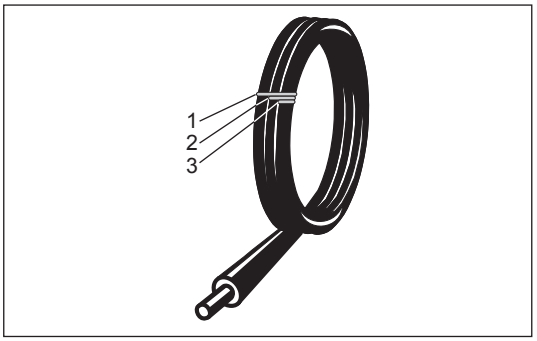
The required length is cut perpendicularly, using a suitable saw.

The casing of the FlexPipe has a continuous metre indication, facilitating the cutting of exact lengths.

Unwinding

Do not cut all fixation strings at the same time.

Place the coil at the start of the trench.
Cut the first string.
Unwind the pipe till the next string and then cut that etc.

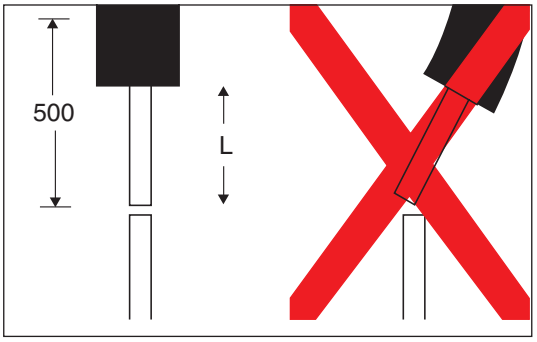


Straightening

Straighten the FlexPipe end, so that min. 500 mm of it is straight and parallel with the opposite pipe end.

This adaptation is important and necessary to ensure that subsequent installation of the casing joint can be carried out according to instructions.

Please keep the bounce effect of the free pipe ends in mind, when cutting.

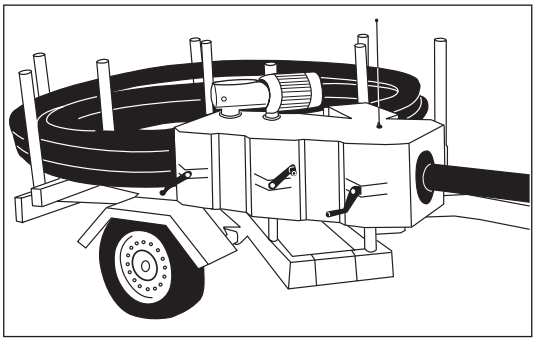


Auxiliary tools

In case of major tasks and major dimensions it is advantageous to use a waggon with motorized straightener. LOGSTOR can refer to relevant suppliers.

NOTE!

1. At temperatures below 10°C the outer casing must be preheated to lukewarm, immediately before it is inserted in the straightener head (soft gas flame during the entire straightening process).
2. It is recommended to store the coil in a heated room at least 24 hours before use.

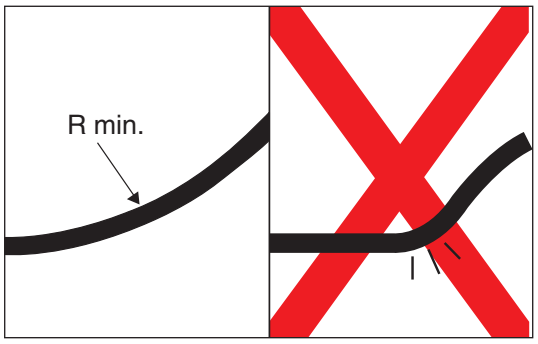


Bending

As described in Design the pipes can be bent to a minimum bending radius.

Never bend the pipes over a sharp edge.

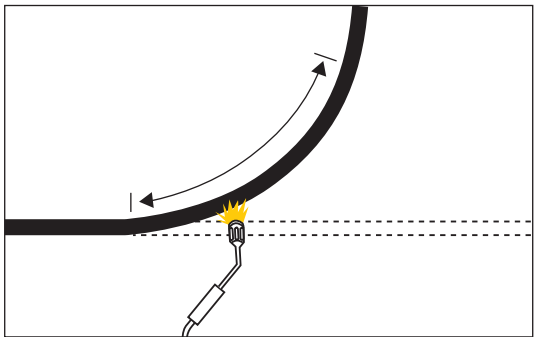
The rigidity of the pipes depends on their temperature. On installation it may be necessary to ensure the pipe position e.g. by partial backfilling.



At temperatures below 10°C the outer casings can be preheated to lukewarm.

Bend the pipe slowly and smoothly, not jerkily.

Avoid to bend the utmost 25-30 cm of the pipe because of the bounce effect.



Installation

Contents

Contents

Press coupling, type MP

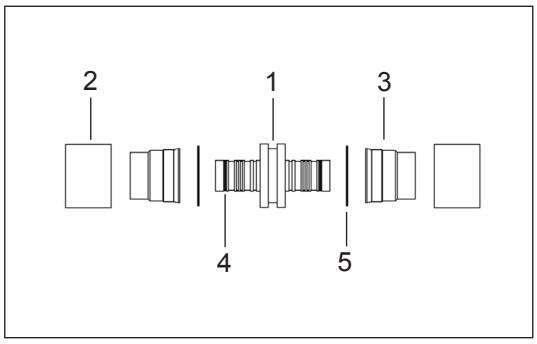
Press coupling

The press coupling consists of:

1. Base unit
2. Press ring
3. Squeezing ring

Only for AluFlextra:

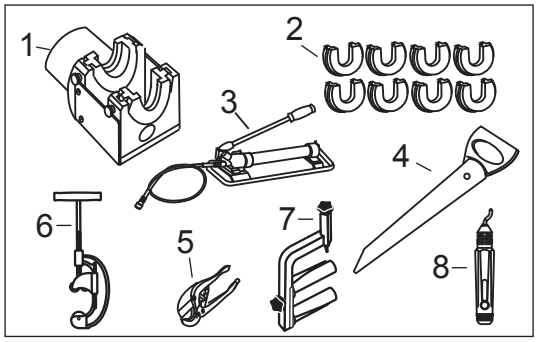
4. O-ring
5. Insulating ring



Tools

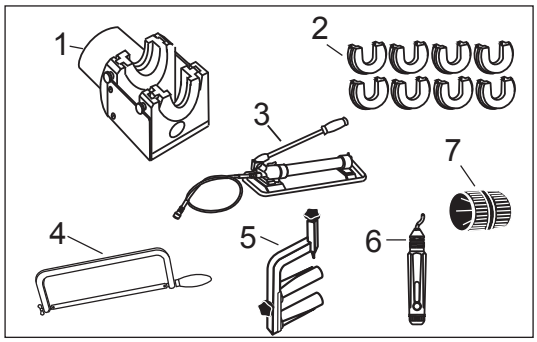
PEX service pipe:

1. Compression tool
2. Exchangeable compression inserts
3. Hydraulic pump
4. Saw
5. PEX scissors for dimensions ≤ ø63 mm.
6. Pipe cutter for dimensions > ø63 mm
7. Stripping tool
8. Deburring tool



Alupex service pipe:

1. Compression tool
2. Exchangeable compression inserts
3. Hydraulic pump
4. Hacksaw
5. Stripping tool
6. Deburring tool, internal
7. Deburring tool, external

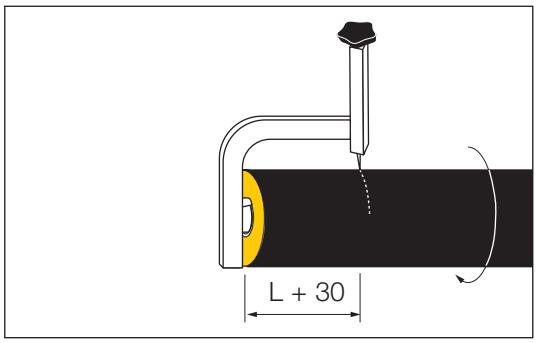


Removing insulation and shortening

Remove L + 30 mm insulation from the service pipe, using the stripping tool.

The additional 30 mm is for later trimming of the service pipe, before coupling installation.

Service pipe, ø mm	L mm
16-40	90
50	105
63-110	125

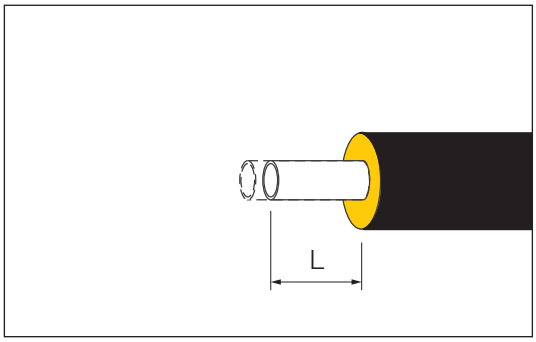


Press coupling, type MP

Removing insulation and shortening, *continued*

Shorten the pipe in a clean and perpendicular cut to the L length, using PEX scissors or hacksaw.

Make sure the pipe end is not damaged.

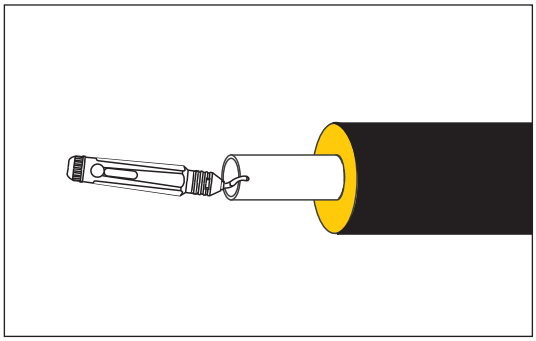


Deburring

Debur the pipe end in- and externally, using the deburring tool.

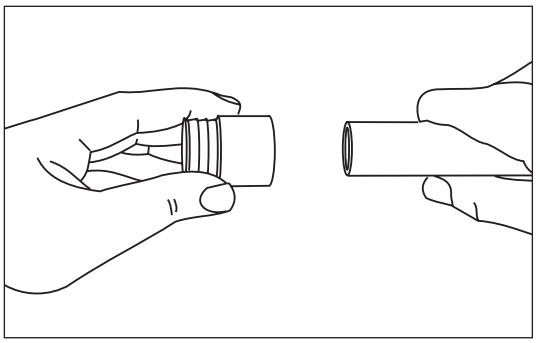
Remove foam remnants from the service pipe with emery cloth, grain size 150.

Place shrink sleeve and collars on one pipe.



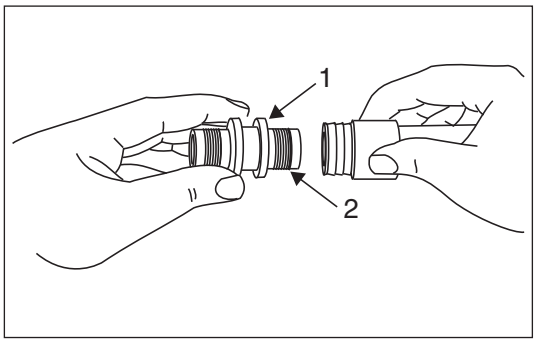
Installing the coupling

Push the press ring and the squeezing ring on to one of the pipe ends.



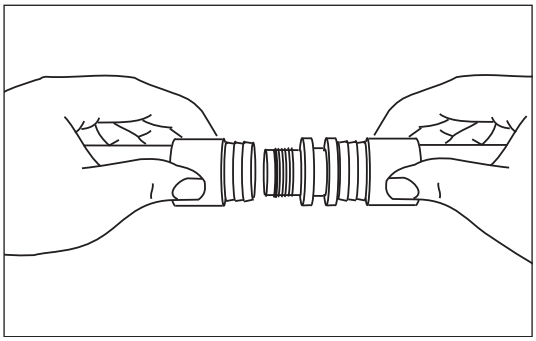
Thrust the base unit into the pipe to stop. Use a rubber hammer, if necessary.

Only AluFlextra:
Make sure that the insulating ring (1) and the O-ring (2) are placed correctly.



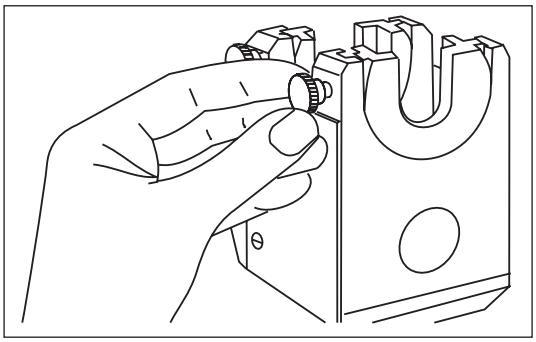
Installing the coupling, ***continued***

Repeat at the other pipe end.

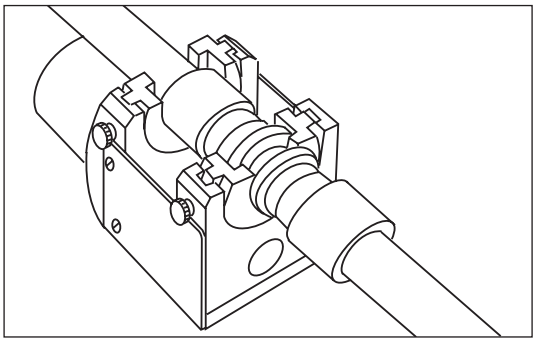


Preparing compression tool

Prepare the tool according to the instructions for the tool in question.
Install compression inserts, corresponding to the actual service pipe dimension



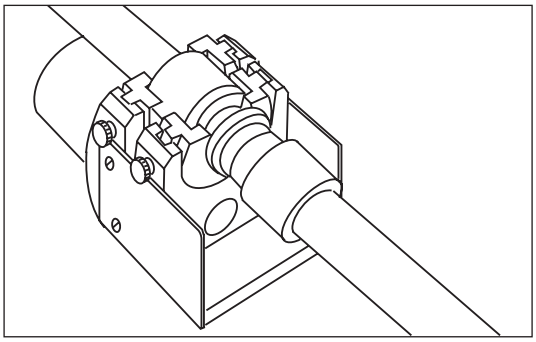
Place the pipe joint in the compression tool. Prior to compression make sure that the joint is placed correctly.



Compressing the coupling

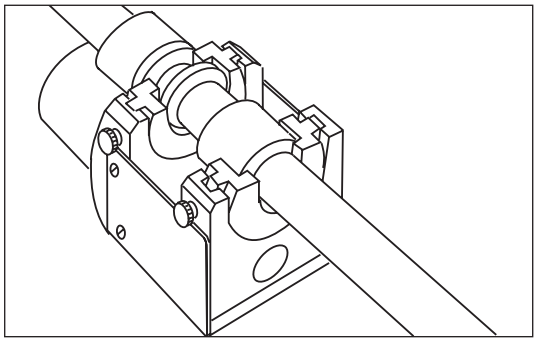
Activate the compression tool, until the press ring comes to a stop.

Avoid excessive compression.



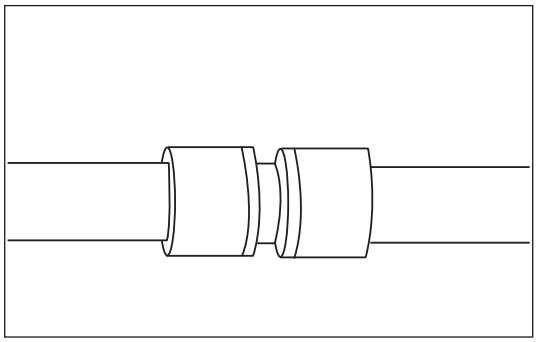
Compressing the coupling, ***continued***

Repeat at the other end.



Finished coupling

Check that both press rings have come to a complete stop.

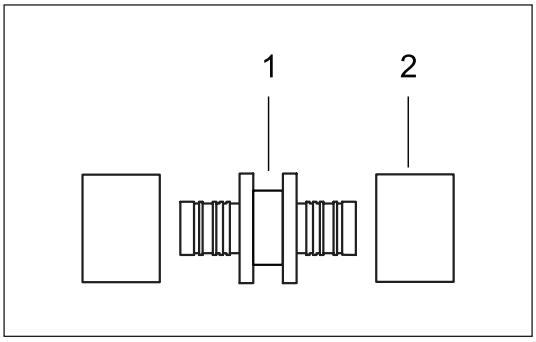


Press coupling, type JT

Press coupling

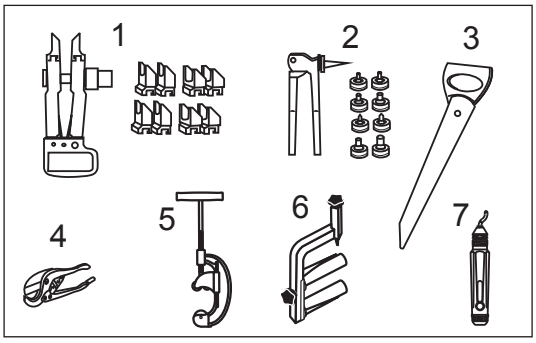
Press couling, type JT consists of:

1. Supporting bush
2. Press ring



Tools

1. Compression tool
2. Expansion tool
3. Saw
4. PEX scissors for dimensions ≤ ø 63 mm
5. Pipe cutter for dimensions > ø 63 mm
6. Stripping tool
7. Deburring tool

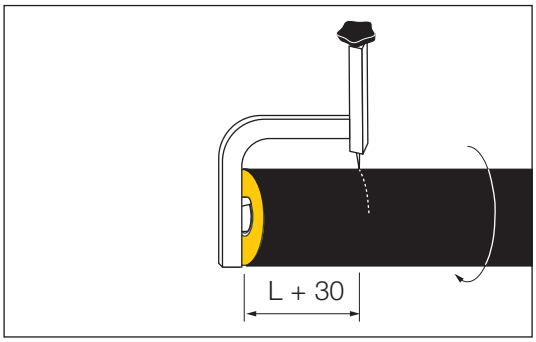


Removing insulation and shortening

Remove L + 30 mm of the insulation from the pipe end, using the stripping tool.

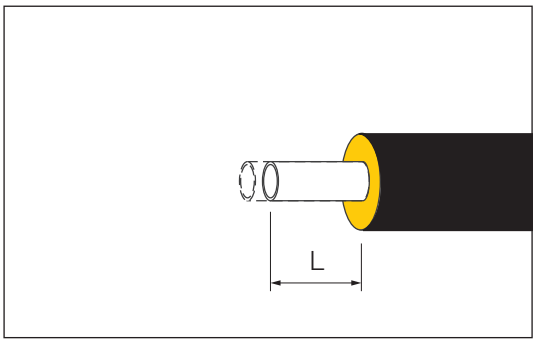
The additional 30 mm is for later trimming of the service pipe, before coupling installation.

Coupling	L, mm
Press coupling straight	140
Press coupling 90°	140
Press coupling with weld end	200
Press coupling tee	
main pipe	140
branch	200



Shorten the pipe in a clean and perpendicular cut to the L length.

Check that the pipe end is not damaged.

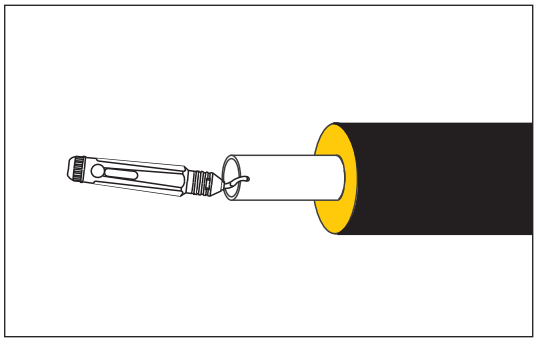


Deburring

Deburr the inside and outside of the service pipe end, using the deburring tool.

Remove foam remnants on the service pipe with emery cloth, grain size 150.

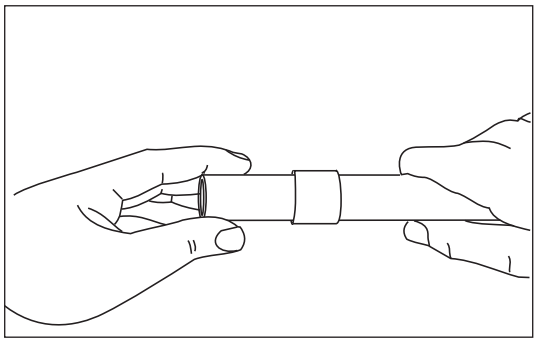
Install shrink sleeves and collars on one of the pipe end.



Expanding the pipe end

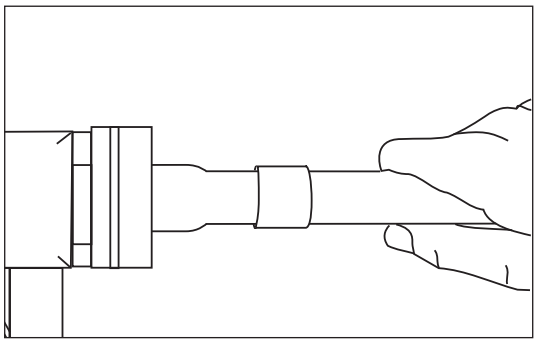
Push the press ring on to one of the pipe ends.

Place the press ring minimum 2 x compression ring length from the pipe end.



Expand the pipe ends with the expansion tool as described in the user instructions of the tool supplier.

Note! The pipe end is typically expanded twice in a row, rotating the expansion tool 30°.

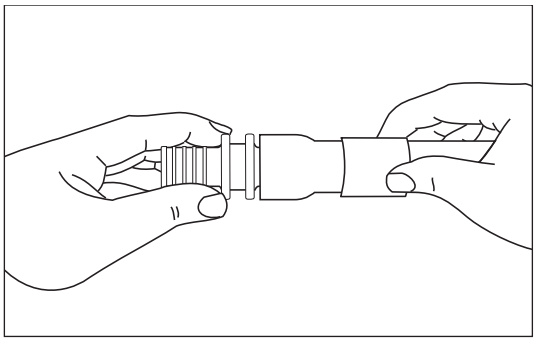


Installing the coupling

Immediately after using the expansion tool the supporting bush is inserted as far as possible into the pipe.

Check that all the ribs of the supporting bush as a minimum are covered by the pipe. If this is not the case, repeat the expansion process.

Before compressing the coupling check again that none of the ribs of the supporting bush at the pipe end are visible.

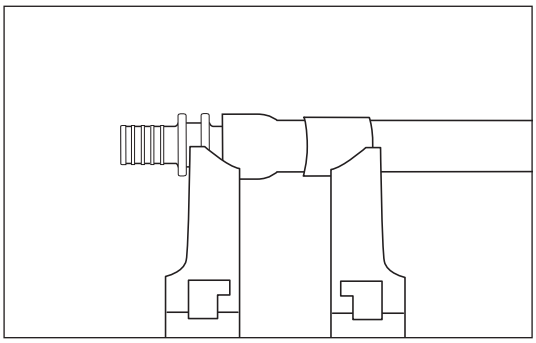


Press coupling, type JT

Compressing the coupling

Place the compression tool so the jaws presses against the nipple flange and the compression ring as described in the user instructions from the tool supplier.

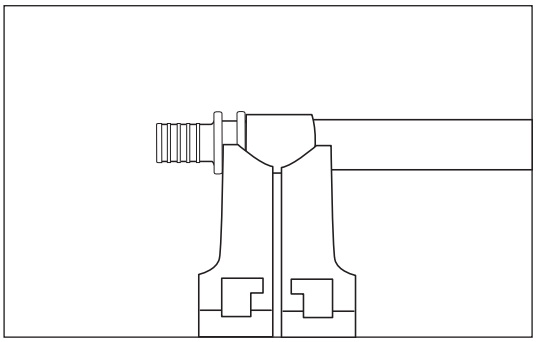
Check that the tool is correctly placed, before compressing.



Activate the compressing tool, until the compression ring is flush with the nipple flange. 1 mm split between the press ring and the nipple flange is acceptable.

Avoid excessive compression.

Make sure the compression is perpendicular to the pipe and even around the flanges of the coupling.

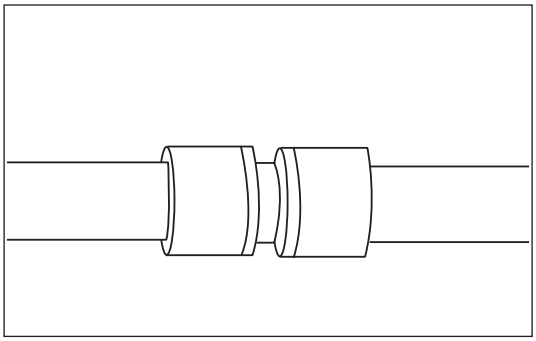


Repeat at the other pipe end

Repeat at the other pipe end.

Finished coupling

Check that both press rings have come to a complete stop and that the joint has been compressed evenly all the way round. 1 mm split between the press ring and the nipple flange is acceptable.

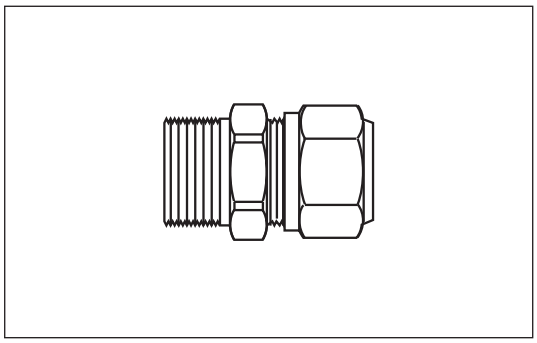


Compression coupling ø16-32 mm

Coupling

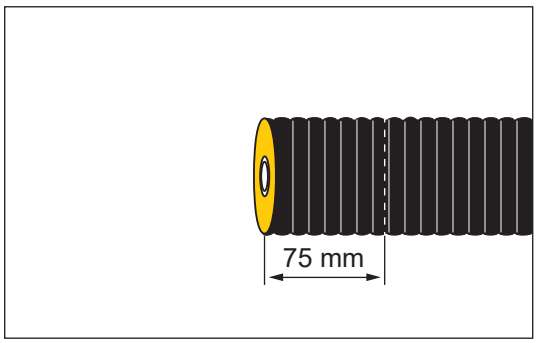
The coupling consists of:

1. Clutch casing with supporting bush
2. Squeezing ring
3. Union nut



Preparing pipe ends

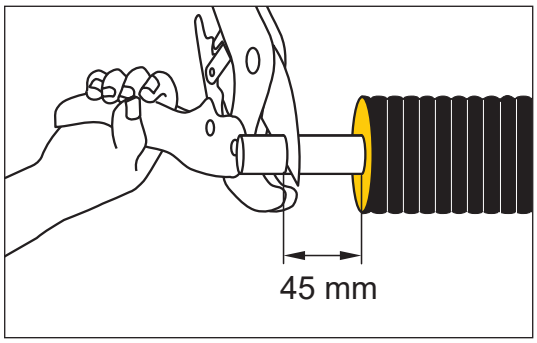
Remove 75 mm insulation from the pipe end with a stripping tool.



Cut the PEX pipe at right angles, using a pair of PEX scissors or a saw.

Free end: 45 mm.

Remove any external burrs and foam remnants.



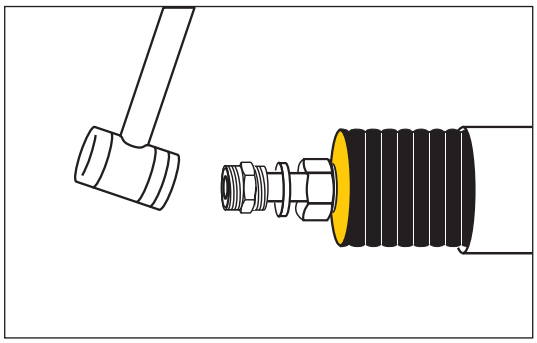
Installing coupling

Disassemble the coupling:

Place the union nut and the squeezing ring on the pipe.

Push the supporting bush into the pipe to full stop. Use a rubber hammer, if necessary.

The pipe end must be in the dish-shaped part.

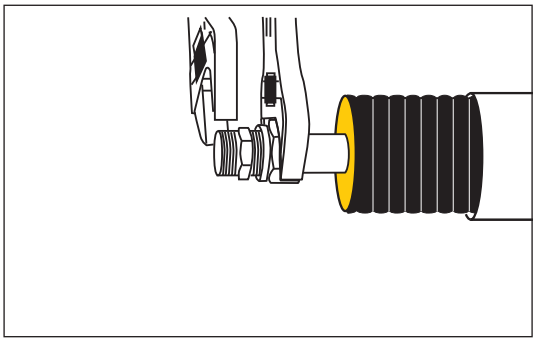


Compression coupling ø16-32 mm

Installing coupling, continued

Push the supporting bush into the body of the coupling - to the bottom. Tighten the union nut manually. The body must not turn. Retighten approx. 2.5 rounds, until the resistance is firm.

Use a ring spanner or an adjustable spanner, NOT a PIPE WRENCH.

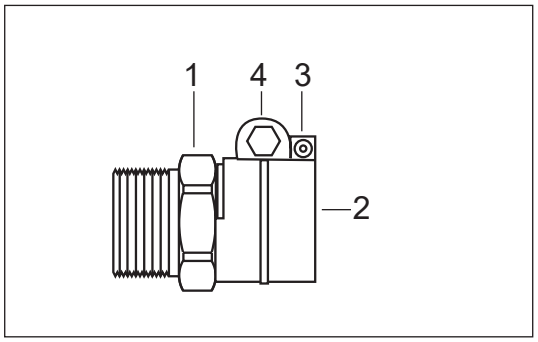


Compression coupling ø40-110 mm

Coupling

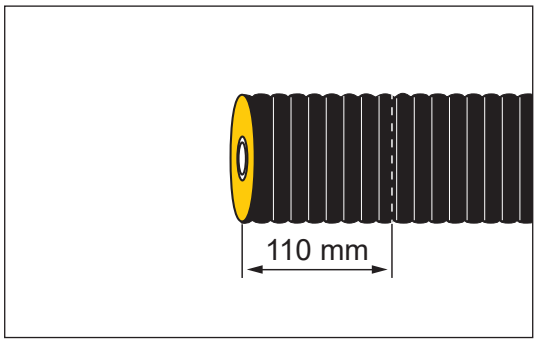
The coupling consists of:

1. Clutch casing with supporting bush
2. Clamping piece
3. Opening screw
4. Tightening bolt



Preparing pipe ends

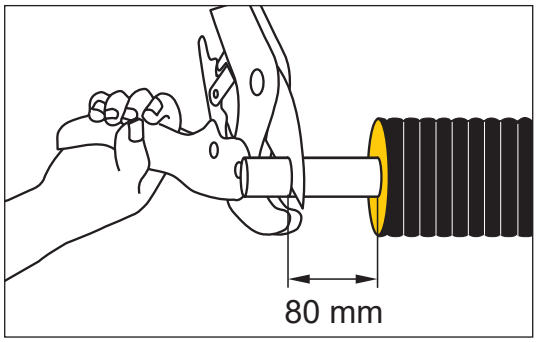
Remove 110 mm insulation from the FlexPipe end with a stripping tool.



Cut the PEX pipe at right angles, using a pair of PEX scissors or a saw.

Free end: 80 mm.

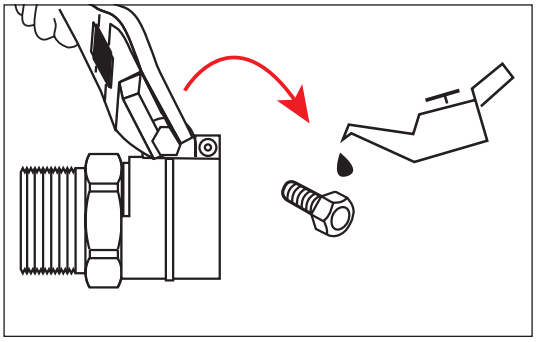
Remove any external burrs and foam remnants.



Compression coupling ø40-110 mm

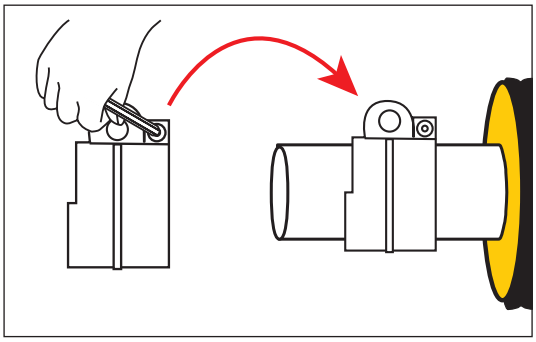
Installing coupling

Unscrew the tightening bolt and lubricate it with mineral oil.



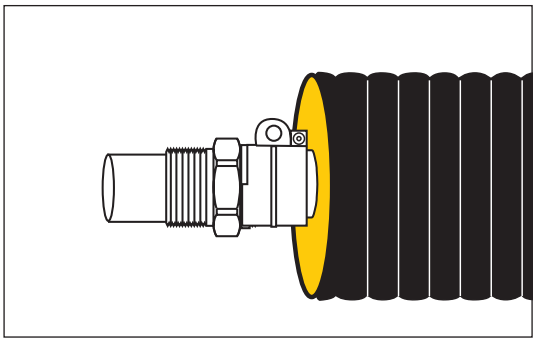
Open the clamping piece with the opening screw.

Push the clamping piece onto the pipe.



Push the clutch casing with supporting bush into the PEX pipe. The PEX pipe must be in full contact with the bottom.

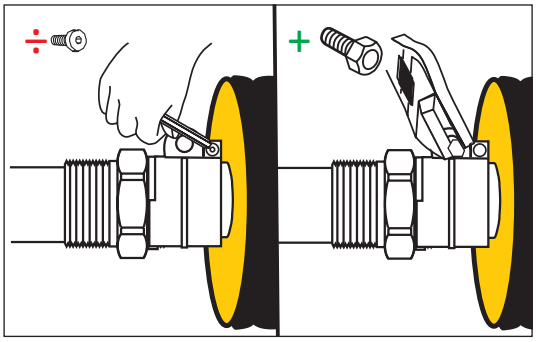
Place the clamping piece over the groove of the supporting bush, so the blades grip the groove.



Remove the opening screw completely.

Slowly tighten the bolt, until the clamping piece is completely joined.

Big dimensions require pausing, so the PEX pipe can take shape after the coupling. It may take up to 30 minutes to connect PEX 63 mm and larger. If necessary, relubricate with mineral oil.



Installation - Straight casing joints

Contents

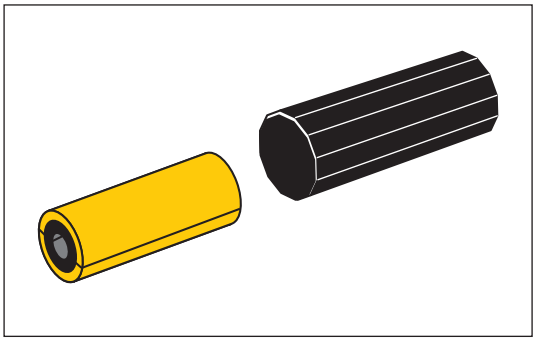
Installation - Straight casing joints

FXJoint

Application

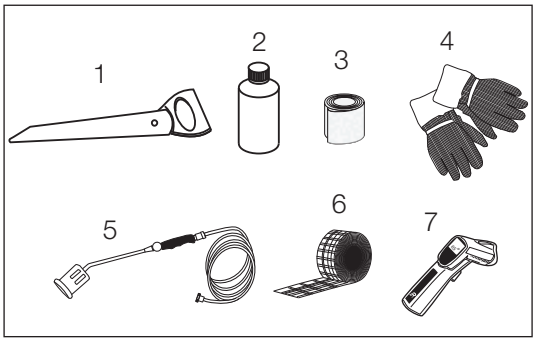
FXJoint is a closed shrink joint which is installed, before joining the service pipe.

The joint is used to join FlexPipes in casing dimension ø90 - 180 mm.



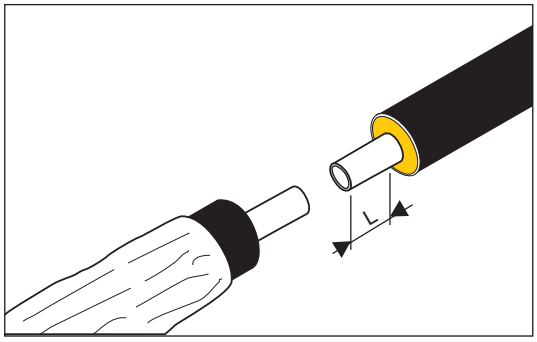
Tools

1. Saw
2. Alcohol, min. 93%
3. Emery cloth, grain size 60
4. Gloves
5. Gas burner,ø 50 mm
6. Heat shield
7. Temperature measuring device



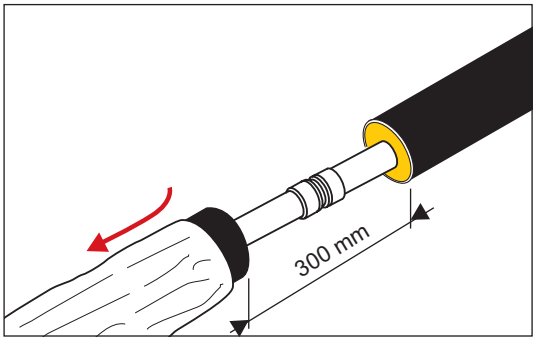
Preparation

1. Cut off the insulation with a suitable stripping tool in accordance with the installation instructions for the coupling.



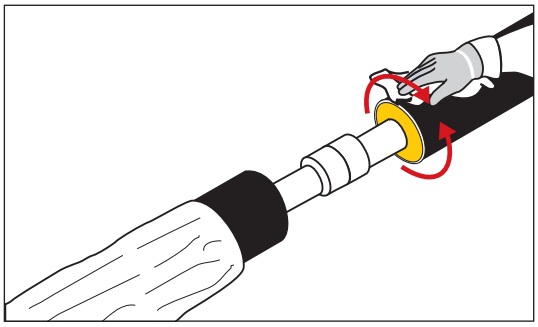
Installing coupling

2. Place the shrink sleeve with packing on one of the pipes, before the service pipes are joined.
   The total free pipe length is max. 300 mm



Cleaning

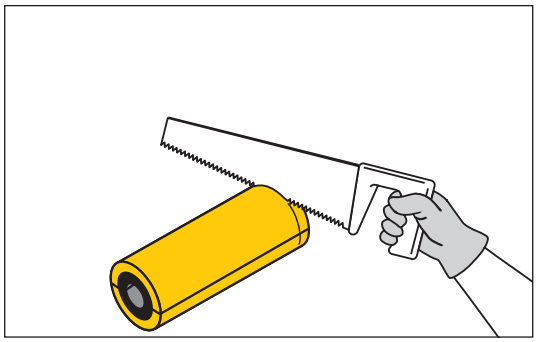
3. All surfaces in the mounting area must be CLEAN and DRY.
   Clean the outer casing with alcohol.



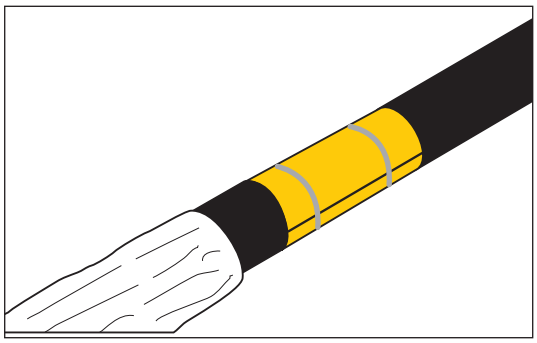
Insulation shells

4. Shorten the insulation shells, so they fit tightly between the casing pipes.

   Remove any insulation foam to make room for the coupling



5. Fit the insulation shells tightly between the casing pipes, using adhesive tape if necessary.
   All surfaces must be CLEAN and DRY at least 150 mm from both casing ends.



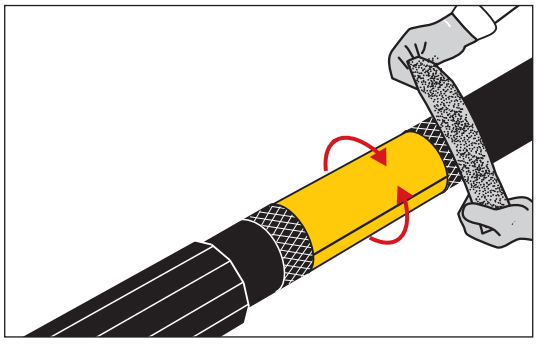
Activation

6. Remove the packing from the shrink sleeve.
   Check that the sleeve is CLEAN and DRY inside and out.

   Grind the contact surfaces of the shrink sleeve so grinding marks are visible outside the sleeve rim (This enables visual control of the activation by the inspection).

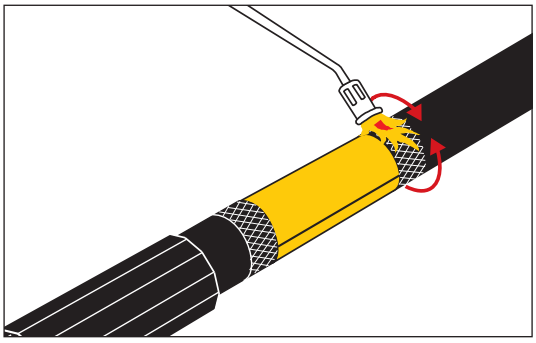
   Remove loose grind dust.

   Do not touch the ground contact surfaces.



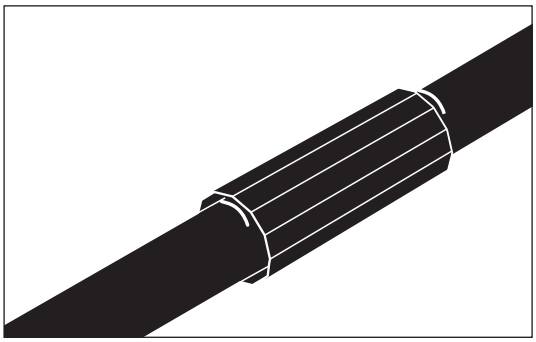
Activation, ***continued***

7. Activate the contact surfaces with gas burner to a surface temperature of min. 65°C.



Centring

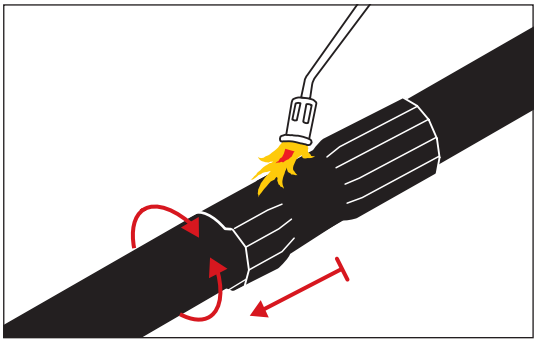
8. Centre the shrink sleeve over the joint and then remove the mastic cover from the shrink sleeve.
   Check that all foil has been removed.



Shrinkage

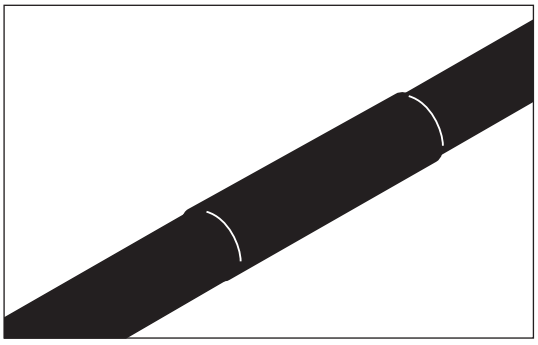
9. First, shrink from the middle towards one end, then from the middle towards the other end.
   Hold the burner head at an angle of approx. 30° towards the middle of the sleeve to avoid unintended heating of the casings.
   Shrink until til expansion marks have vanished and the sleeve forms an almost straight encircling edge.

   NB! Avoid heating directly on the casing.
   Beskyt evt. kappen med LOGSTOR heat shield.



Finished joint

10. The joint is complete.



Installation - Straight casing joints

SX-WPJoint

Application

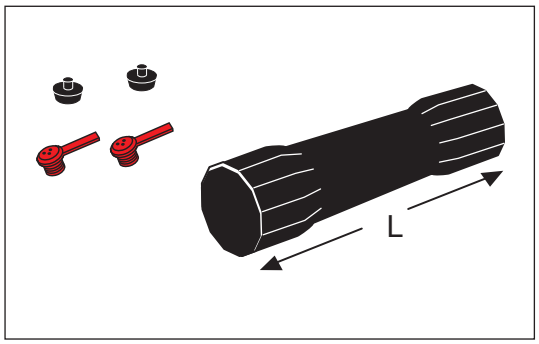
SX-WPJoint is a closed shrink sleeve which is installed, before the service pipe is welded together.

SX-WPJoint is used for joining pipes in dimensional range ø90 - 450 mm.

The foam hole is sealed with a weld plug.

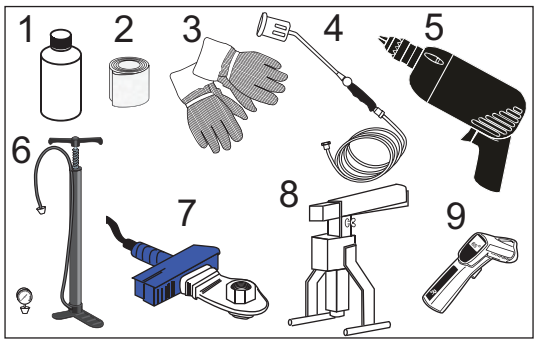
Foam pack:
- size, see Foam Pack Folder.
- more information, see Handling & Installation section 7

When installing on FlextraPipe, a collar is installed. The collar is ordered separately.



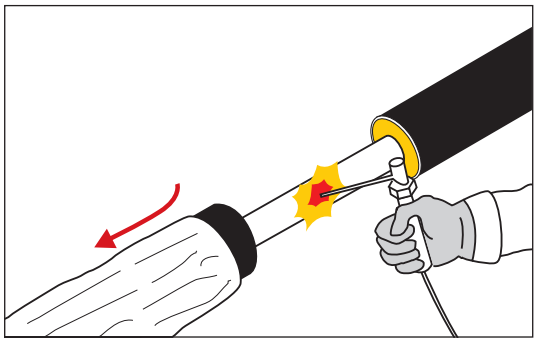
Tools

1. Alcohol, min. 93%
2. Emery cloth: Grain size 60: ø 90-280 mm
3. Gloves
4. Gas burner: ø 50 mm: ø 90-280 mm
5. Drilling machine with a ø 35 mm conical drill bit
6. Leakage test equipment
7. Plug welding tool
8. Retaining tool for weld plug
9. Temperature measuring device



Preinstallation of casing joint

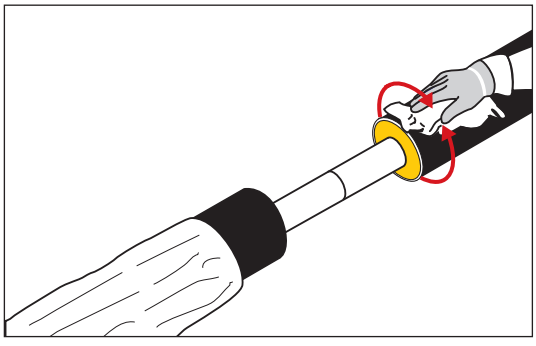
1. Place the shrink sleeve with packing on one of the pipes, before the service pipes are joined.



Cleaning

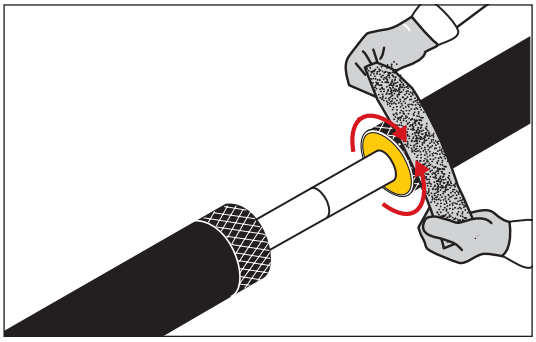
2. All surfaces in the mounting area must be CLEAN and DRY.

   Afterwards clean them with alcohol.



Activation

3. Remove the packaging from the shrink sleeve.
   Check that the sleeve is DRY and CLEAN inside and out.
   Leave the packing foil on the outer casing for later use as a shield against strong sunlight and during foaming of the sleeve.

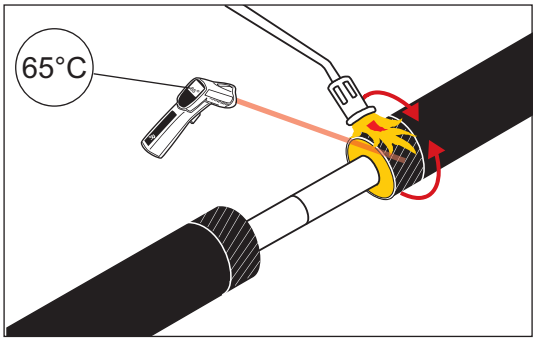


4. Grind the contact surfaces of the shrink sleeve with emery cloth, so grind marks are visible outside the sleeve rim (This enables visual control of the grinding by the inspection).

   Remove grind dust, if any.

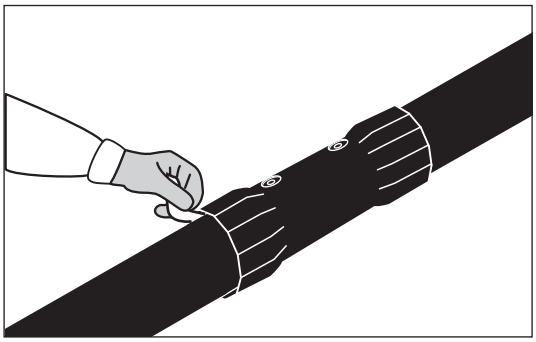
   Avoid touching the ground contact surfaces.

5. Activate the contact surfaces with a gas burner to a surface temperature of min. 65°C.



Centering sleeve

6. Centre the shrink sleeve on the joint.
   Remove the mastic covering in the shrink sleeve.
   Make sure that all the foil has been removed.

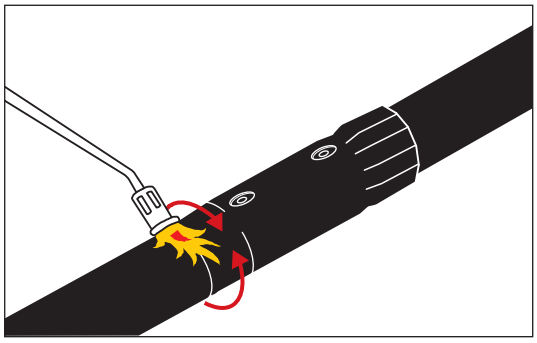


Shrinkage

7. Shrink the ends of the sleeve. Avoid heating directly on the casing.

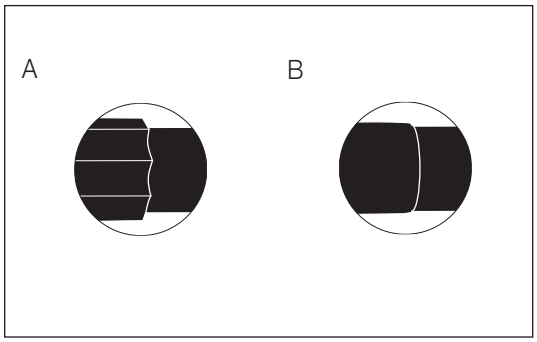
   Shrink the sleeve starting at the top to ensure centering.

   Large dimensions can be supported at the middle to ease centering.



8. Shrink until all expansion marks have vanished and the end of the sleeve forms an almost straight encircling edge.

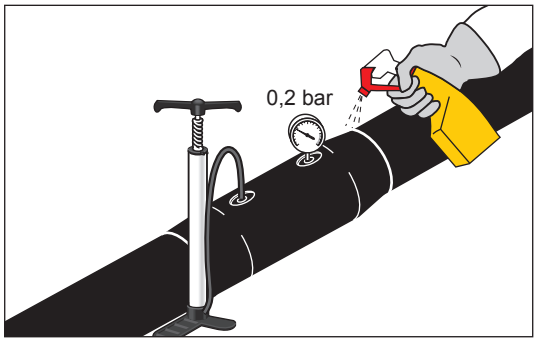
   A. Before
   B. After



Leakage test

9. Wait until the sleeve has cooled off to handwarm. Leakage test at 0.2 bar.

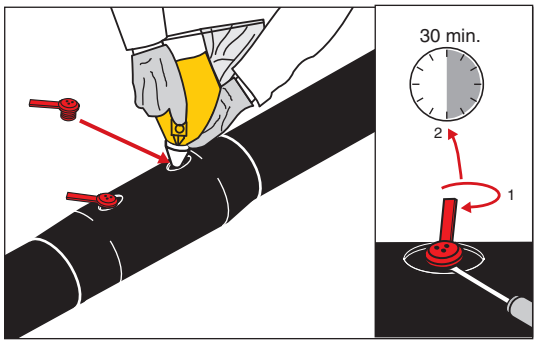
   Visually test that the sleeve ends are leakproof with a soap solution.



Foaming

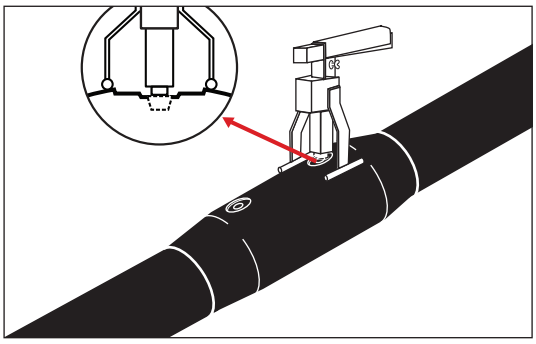
10. Pull the packaging foil back onto the sleeve and make a hole in the foil and Install a venting plug in one hole and foam the sleeve through the other hole. Install the other venting plug. .

11. 10 minutes after foaming the venting plug can be turned half round what facilitates the later removal of the venting plug.
    Wait min. 30 min. for degassing to complete.
    Remove the venting plugs.
    Remove excess foam or spillage, if any.

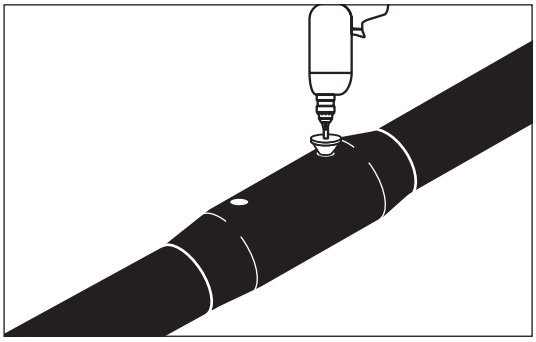


Weld plug

12. Adjust the retaining tool to the rim of the hole.

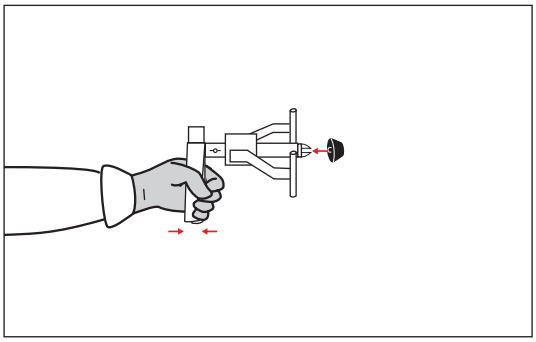


13. Drill the hole with a conical drill bit ø 35 mm:
    Remove any milling residues.

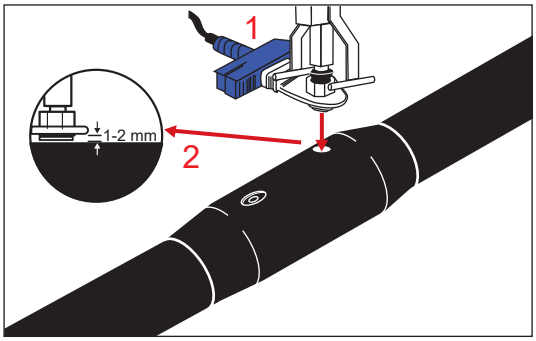


14. Clean the rim and the casing surface around the hole with alcohol.

    Insert the weld plug in the retaining tool and clean with alcohol.



15. Heat the plug welder to 250°C.
16. Place the weld plug in the conical hole of the plug welder.
    Keep it under a light pressure, until the rim of the plug starts to form a bead.
    Now place the opposite side of the tool in the foam hole.

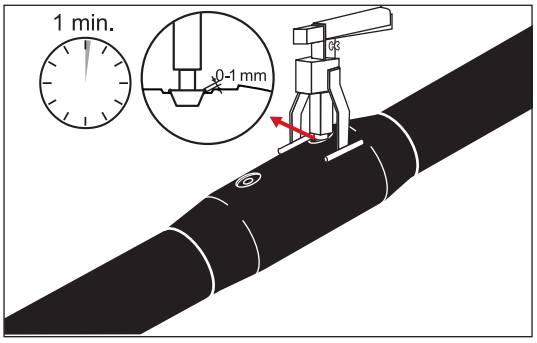


Weld plug, ***continued***

17. Remove the plug welder and immediately press the weld plug into the hole, until the legs rest on the casing and the upper rim of the plug is flush with the the casing rim around the foaming hole (max. approx. 1 mm above).

    Hold the pressure constant at least 1 minute, until the welding zone has cooled down to handwarm, before the retaining tool is removed.
    There has to be a visible bead.

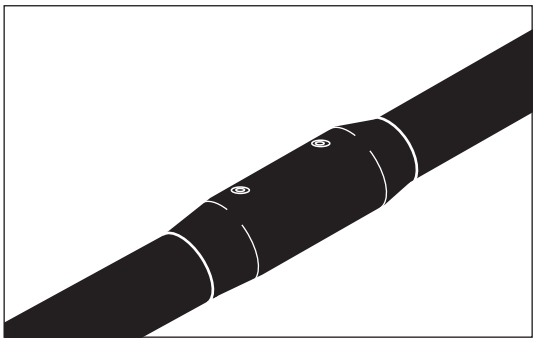
    Repeat the process with the other plug.



Finished joint

18. The joint is complete.

When installing on a FlextraPipe, a collar is installed at the casing joint ends.

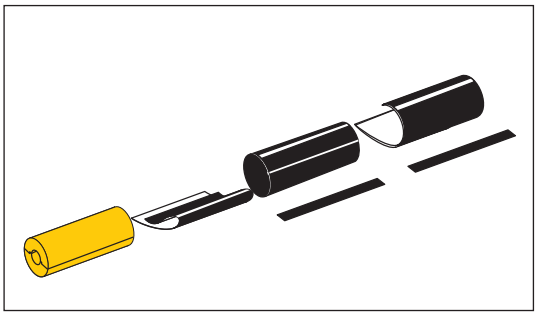


Installation - Straight casing joints
C2LJoint and C2FJoint

Application

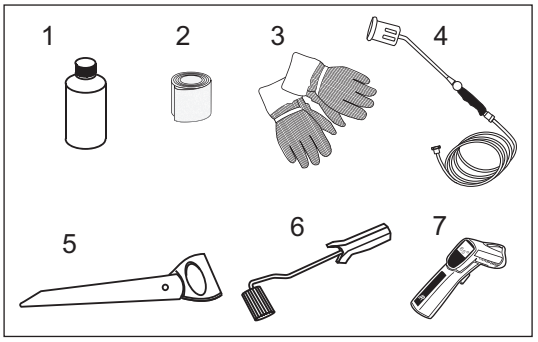
C2LJoint and C2FJoint are used, when there is not enough space to pre-install a shrink joint, e.g. where two short bends are used immediately after each other or as a repair joint.

C2FJoint is used for outer casing dimensions ø 90 - 180 mm and C2LJoint for outer casing dimensions ø90 - 630 mm with insulation shells.



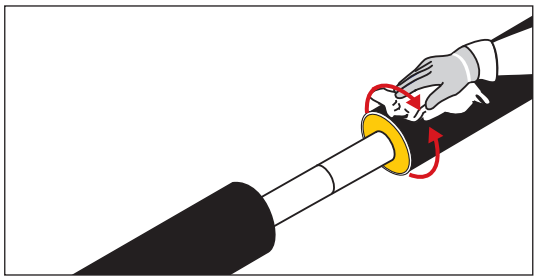
Tools

1. Alcohol, min. 93%
2. Emery cloth, grain size 60
3. Gloves
4. Gas burner: ø 50 mm: ø 90-280 mm
5. Saw
6. Roller
7. Temperature measuring device



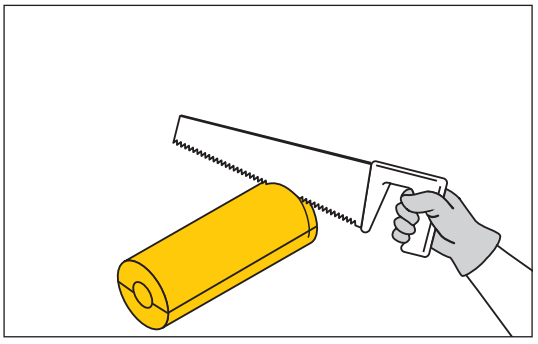
Cleaning

1. All surfaces in the mounting area must be CLEAN and DRY.

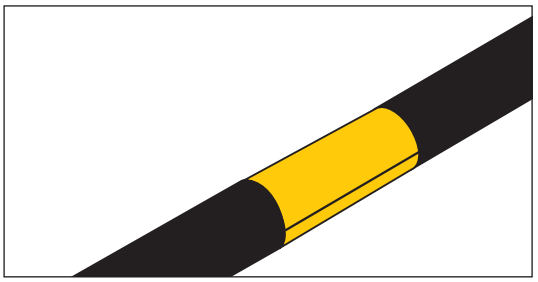


Insulation shells

2. Shorten the insulation shells to make them fit tightly between the casing pipes.



3. Fit the insulation shells tightly between the casing pipes, using adhesive tape if required. All surfaces must be CLEAN and DRY.
   Afterwards clean the casing surfaces with alcohol.

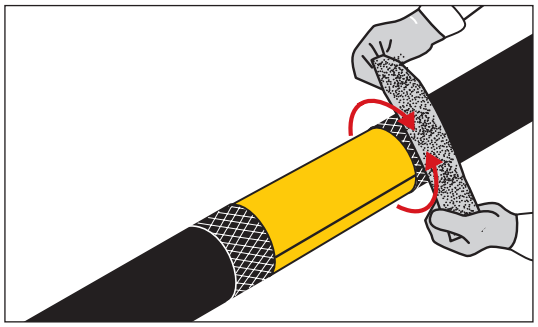


Activation

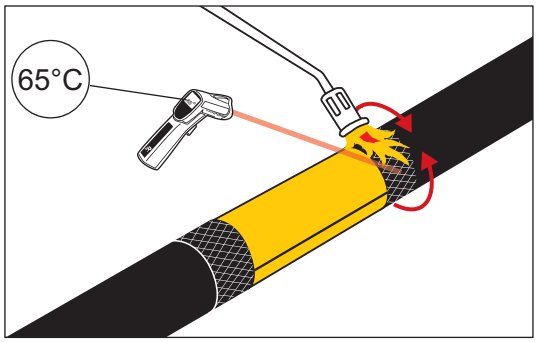
4. Grind the contact surfaces of the shrink sleeve with emery cloth, so grind marks are visible outside the rim (This enables visual control of the grinding by the inspection).

   Remove grind dust.

   Avoid touching the ground contact surfaces.

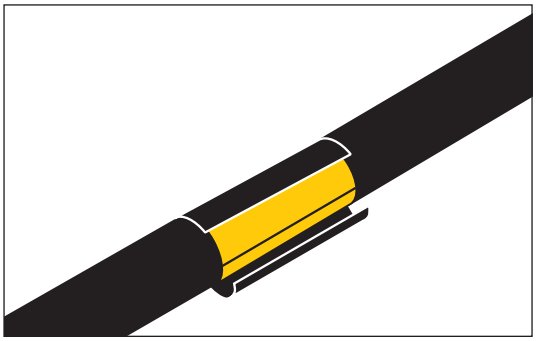


5. Activate the contact surfaces with gas burner to a surface temperature of min. 65°C.

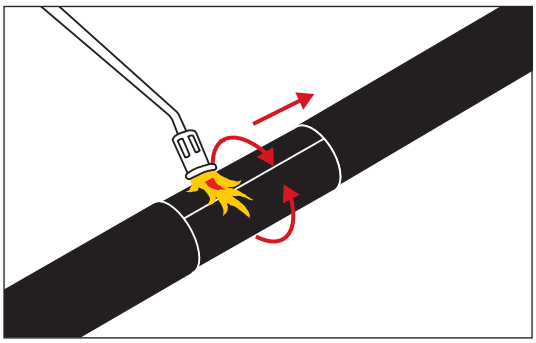


Shrink film

6. Centre the shrink film on the joint and place it around the pipe.
   Attach one edge of the shrink film in “10 o’clock” position.
   Pull the film around the pipe by removing the protective foil so that the film adheres to the surface beneath it.

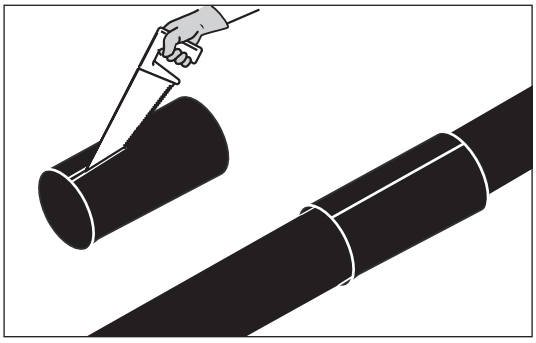


7. Heat the whole film from the centre towards the sides, ensuring that the film is tightly fitted around the pipe.

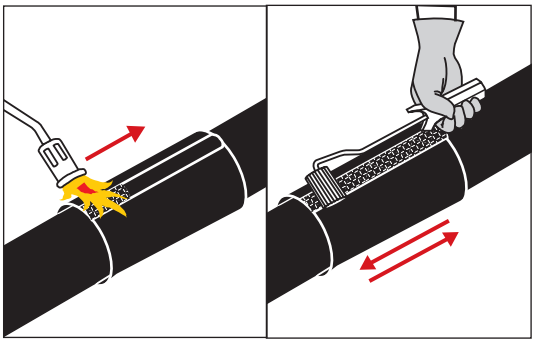


Shrink sleeve

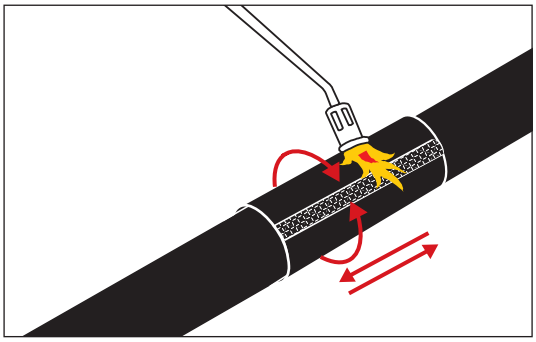
8. Remove the packaging from the shrink sleeve.
   Check that the sleeve is DRY and CLEAN inside and out.
   Open the shrink sleeve by cutting it longitudinally.
   Clean the sleeve with alcohol.Then place the shrink sleeve over the joint.
   Centre the shrink sleeve on the joint. The longitudinal cut of the sleeve must be on the top and its edges must adjoin.



9. Centre the closure patch on the shrink sleeve cut with the adhesive side facing downwards. The adhesive side has a visible netting.
   Heat the closure patch until the net structure becomes visible on the topside.
   Press down the closure patch.
   Then roll on the closure patch with the roller to ensure a good adhesion.

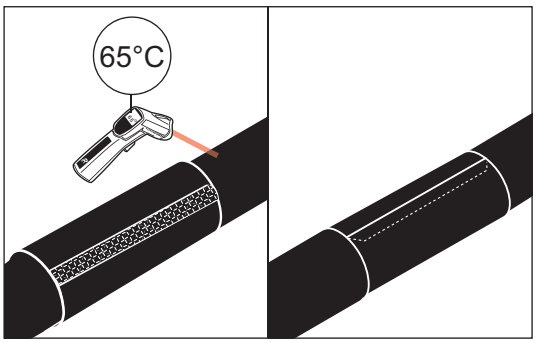


10. If necessary, turn the sleeve, so that the closure patch is in a “10 o’clock position”.
    Shrink the sleeve with longitudinal sweeping movements from one sleeve end to the other.



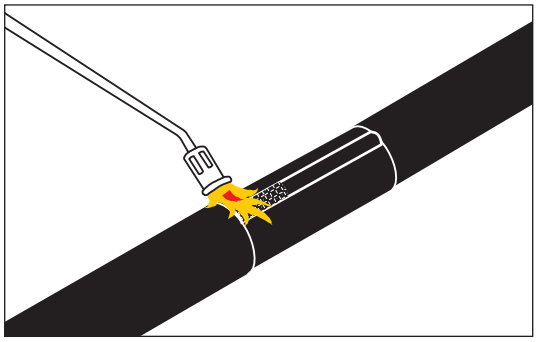
Shrink wrap

11. Check the activation temperature of the contact surfaces prior to installing the shrink wrap. The temperature must be min. 65°C.
    Remove the protective foil from the shrink wrap, while pulling the wrap into position. Make sure that the text on the wrap encircles the pipe and that the wrap closes at the top.
    The wrap must fit loosely around the pipe with an overlap of min 50 mm.

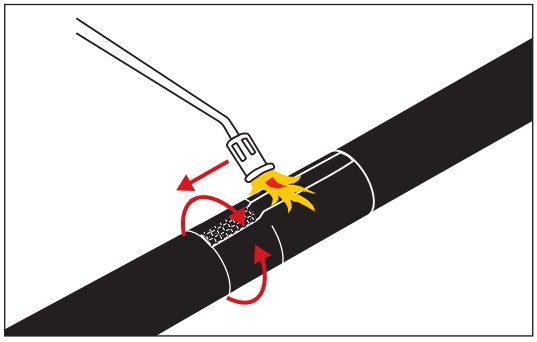


Shrink wrap, ***continued***

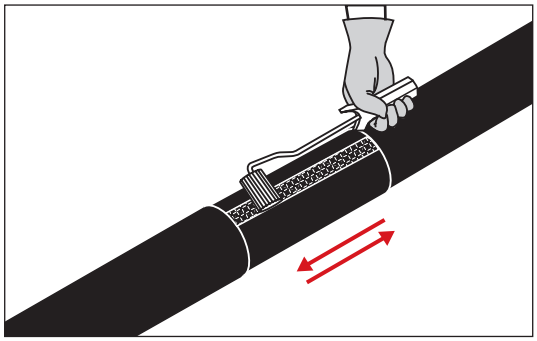
12. Centre the closure patch right above the wrap seam. Fasten as described under item 9.



13. Shrink the wrap from the centre towards the ends.
    Shrink until the sealing compound becomes visible at all edges and the entire wrap adheres to the underlying surface.
    After shrinkage the surface structure of the shrink wrap must be smooth and the green heat indicators must be heated, until they disappear.

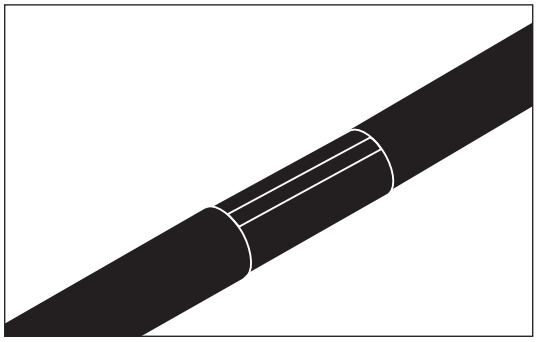


14. Lightly roll along the overlapping edge, ensuring that any tunnel at the edge is sealed with sealing compound.



Færdig samling

15. Samlingen er færdig.



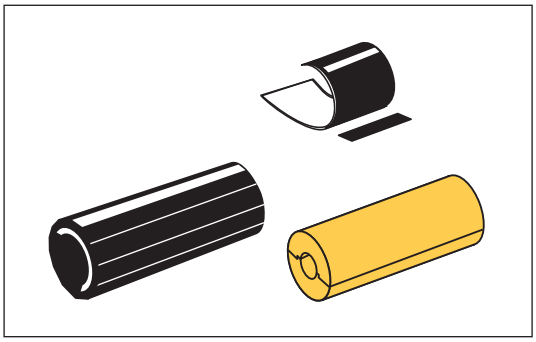
Installation - Straight casing joints

End fitting with insulation shells

Application

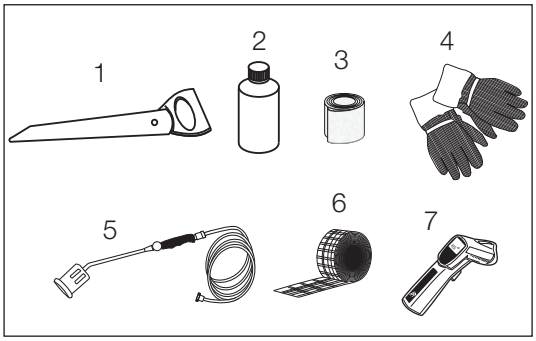
End fittings are used to terminate a pipe in the ground, temporarily or permanently.

End fittings for flexible systems are delivered in dimensions ø 90-180 mm.



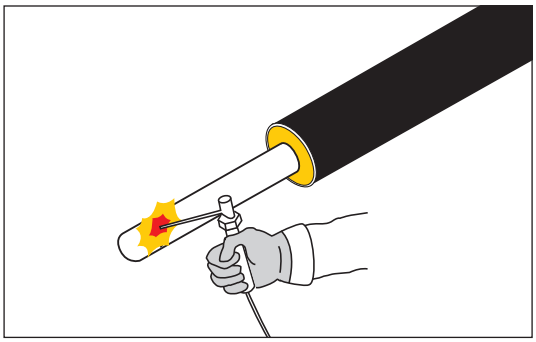
Tools

1. Saw
2. Alcohol, min. 93%
3. Emery cloth, grain size 60
4. Gloves
5. Gas burner,ø 50 mm
6. Heat shield
7. Temperature measuring device



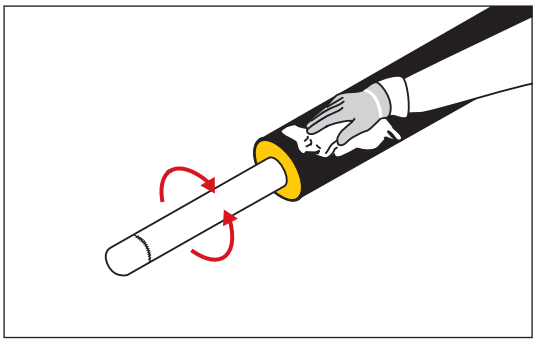
Weld-on end

1. Weld the end on the service pipe.



Cleaning

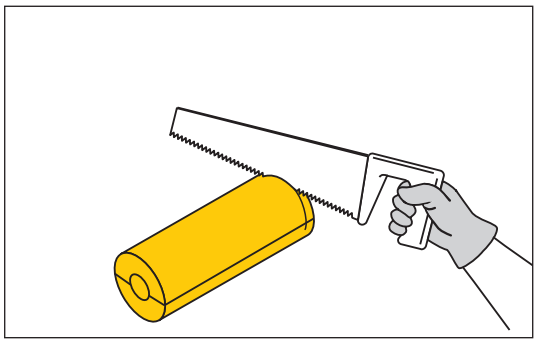
2. Clean all surfaces in the mounting area.



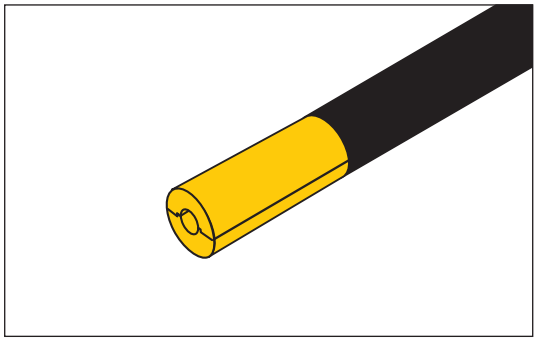
End fitting with insulation shells

Adjusting insulation shells

3. Shorten the insulation shells to the length of the free end including the weld-on end.

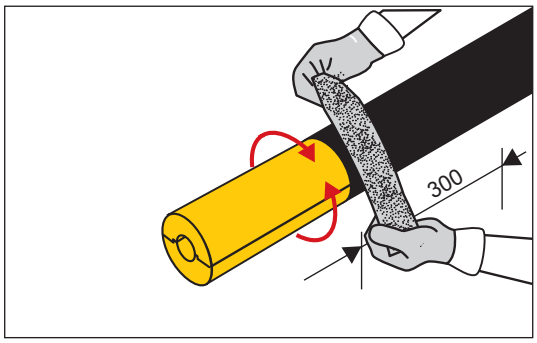


4. Place the insulation shells around the service pipe. Tape, if required.
   The pipe end must be CLEAN and DRY.
   Now clean the casing surface with alcohol.

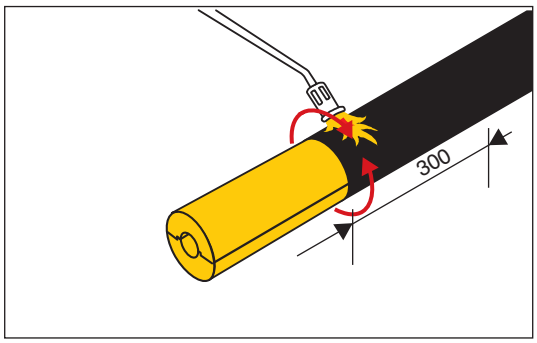


Activation

5. Activate the outer casing with emery cloth, grain size 60, at least 300 mm from the casing end.

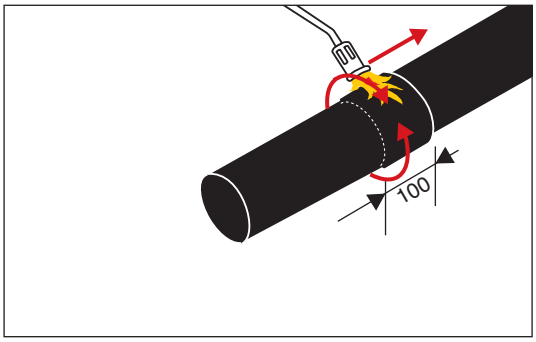


6. Activate the casing pipe with gas burner at least 300 mm from the casing end, until the surface has a matt, silky look.



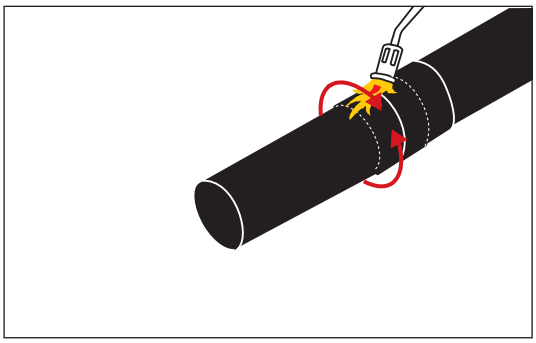
Shrinking sleeve

7. Remove the packing from the shrink sleeve. Check that the sleeve is CLEAN and DRY, inside and out.
   Place the shrink sleeve on the insulation shells and the outer casing.
   Shrink the sleeve on to the casing pipe, starting approx. 100 mm from the end of the shrink sleeve.



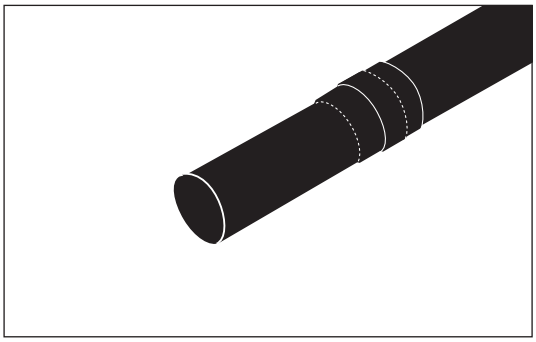
Shrinking shrink wrap and closure patch

8. Centre a shrink wrap (bevelled corners) on one shrink sleeve end, so the fat end of the symbol faces the sleeve.
   Install the shrink wrap around the sleeve end with an overlap of 50 mm.
   Centre the closure patch over the joint of the shrink wrap.
   Heat the closure patch, until the net structure can be seen on the upper side.
   Press down the closure patch.



9. Shrink the wrap with a gas burner, moving from the shrink sleeve towards the casing pipe. The sealing compound must be visible at both sides in the entire circumference. After shrinkage the surface structure must be smooth.

10. The joint is complete



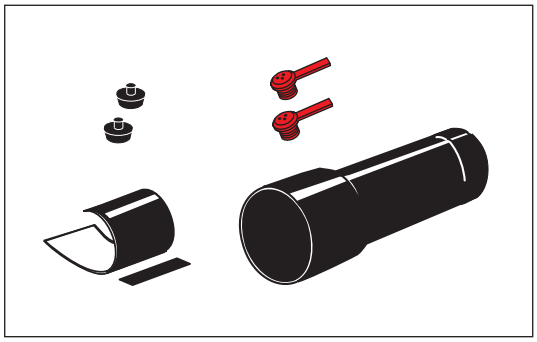
Installation - Straight casing joints

End fitting for foaming

Application

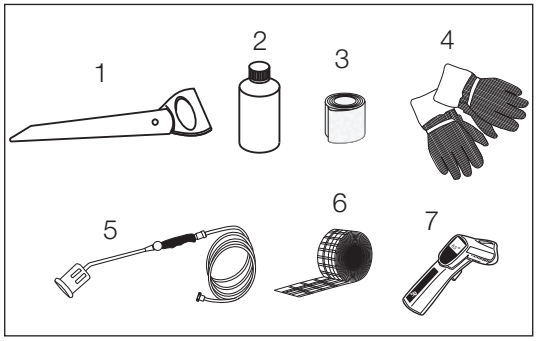
End fittings are used to terminate a pipe in the ground, temporarily or permanently.

End fittings for flexible systems are delivered in dimensions ø 90-180 mm.



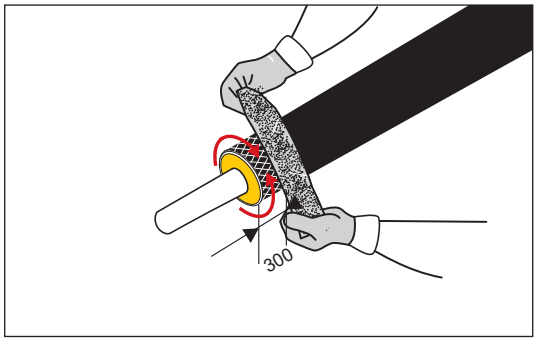
Tools

1. Saw
2. Alcohol, min. 93%
3. Emery cloth, grain size 60
4. Gloves
5. Gas burner,ø 50 mm
6. Heat shield
7. Temperature measuring device

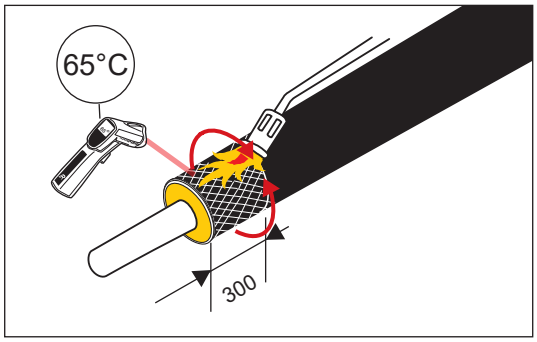


Activation

1. Activate the outer casing with emery cloth, grain size 60, at least 300 mm from the casing end.



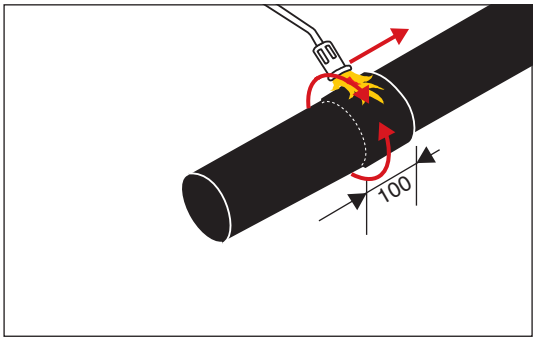
2. Activate the casing pipe with gas burner at least 300 mm from the casing end, until the surface has a matt, silky look.



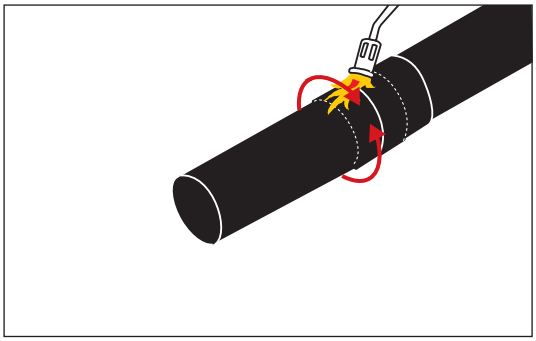
End fitting for foaming

Shrinking sleeve and collar

3. Remove the packing from the shrink sleeve. Check that the sleeve is CLEAN and DRY inside and out.
   Place the shrink sleeve on the insulation shells and the outer casing.
   Now clean the casing surface with alcohol.
   Shrink the sleeve, starting approx. 100 mm from the end of the shrink sleeve.



4. Centre a shrink wrap (bevelled corners) on one shrink sleeve end, so the fat end of the symbol faces the sleeve.
   Install the shrink wrap around the sleeve end with an overlap of 50 mm.
   Centre the closure patch over the joint of the shrink wrap.
   Heat the closure patch, until the net structure can be seen on the upper side.
   Press down the closure patch.



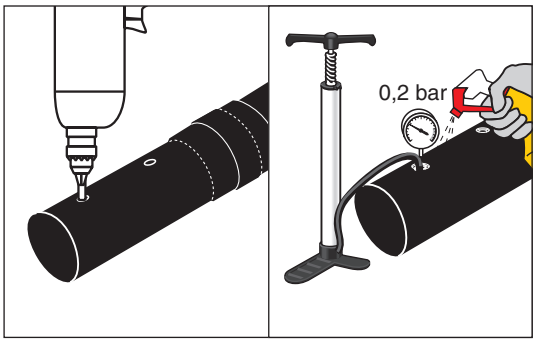
5. Shrink the wrap with a gas burner, moving from the shrink sleeve towards the casing pipe. The sealing compound must be visible at both sides in the entire circumference. After shrinkage the surface structure must be smooth.

Leakage test

6. Drill one ø 17.5 mm hole in the sleeve.

   When the sleeve has cooled to handwarm leakage test with 0.2 bar.

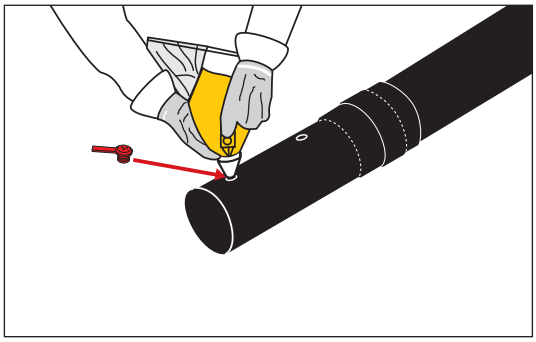
   Test the sleeve end visually with soapy water.



End fitting for foaming

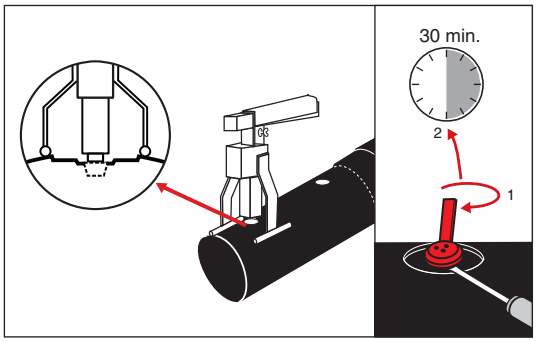
Foaming

7. Pull the packaging foil back onto the sleeve and foam the sleeve through the hole. Install the venting plug. .
8. 10 minutes after foaming the venting plug can be turned half round what facilitates the later removal of the venting plug. Wait min. 30 min. for degassing to complete. Remove the venting plug. Remove excess foam or spillage, if any.

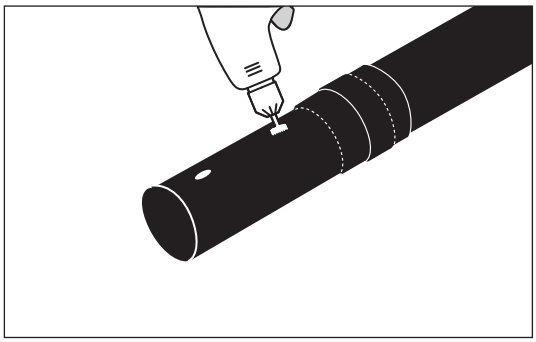


Weld plug

9. Adjust the retaining tool to the rim of the hole.

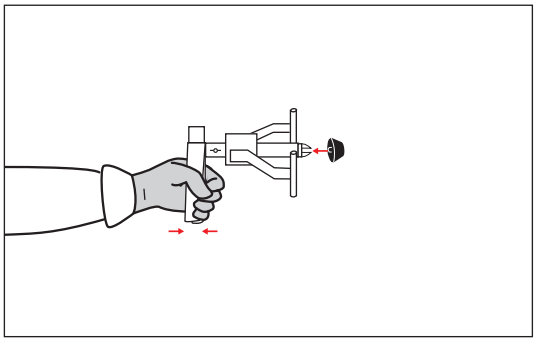


10. Drill the hole with a conical drill bit ø 35 mm: Remove any milling residues.



11. Clean the rim and the casing surface around the hole with alcohol.

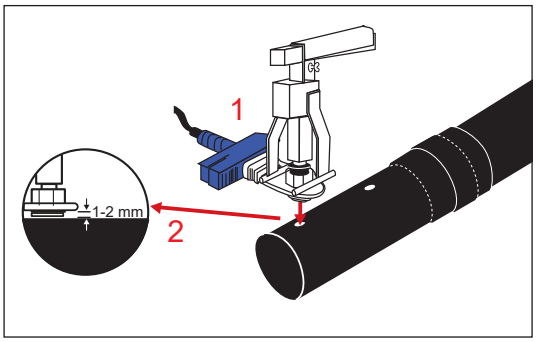
    Insert the weld plug in the retaining tool and clean with alcohol.



End fitting for foaming

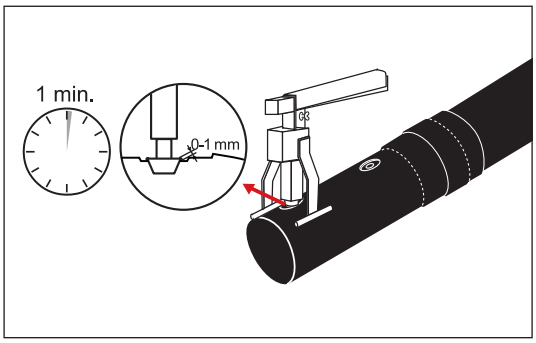
Weld plug, ***continued***

12. Heat the plug welder to 250°C.
13. Place the weld plug in the conical hole of the plug welder.
    Keep it under a light pressure, until the rim of the plug starts to form a bead.
    Now place the opposite side of the tool in the foam hole.



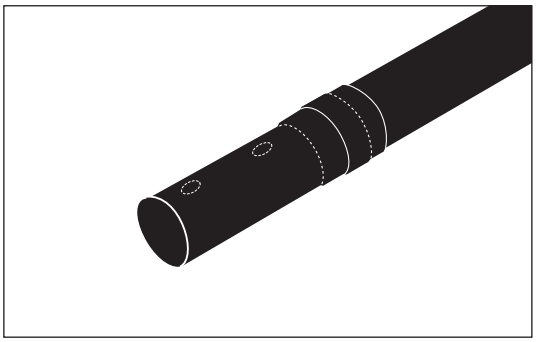
14. Remove the plug welder and immediately press the weld plug into the hole, until the legs rest on the casing and the upper rim of the plug is flush with the the casing rim around the foaming hole (max. approx. 1 mm above).

    Hold the pressure constant at least 1 minute, until the welding zone has cooled down to handwarm, before the retaining tool is removed.
    There has to be a visible bead.



Finished joint

15. The joint is complete.



Installation - T-joints

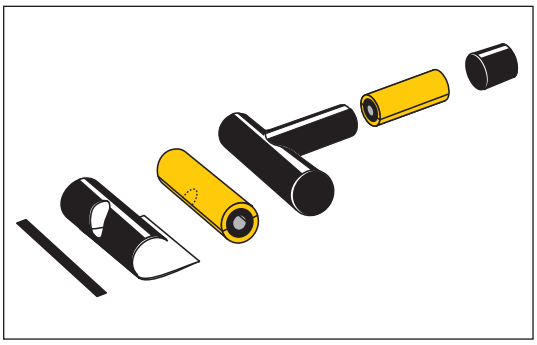
Contents

T-joint straight with insulation shells

Application

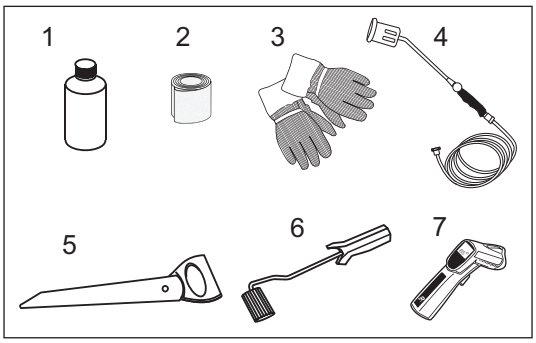
T-joint straight with insulation shells is used for branching on FlexPipes.

It can be used for main pipe dimensions ø 90-180 mm and branch dimensions ø 90-160 mm.



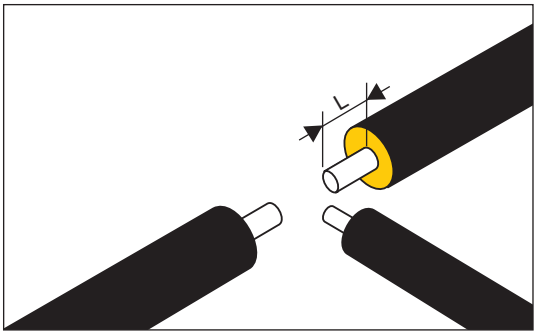
Tools

1. Alcohol, min. 93%
2. Emery cloth, grain size 60
3. Gloves
4. Gas burner: ø 50 mm
5. Saw
6. Roller
7. Temperature measuring device

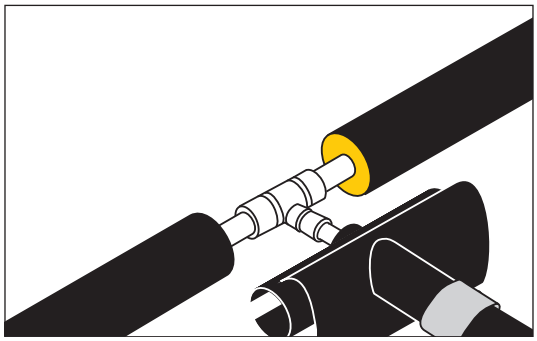


Preparations

1. Cut off the insulation with a suitable stripping tool. L depends on the type of coupling. The total stripped length is max. 300 mm.



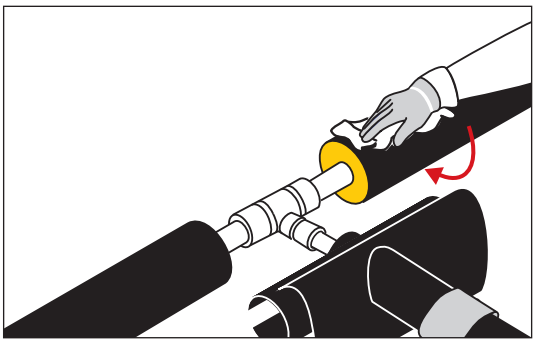
2. Place collar, wrap, and T-shoe on the branch, before joining the pipes. Install the coupling as shown in the relevant instructions.



T-joint straight with insulation shells

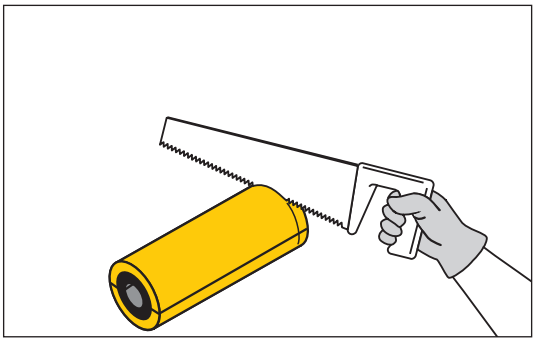
Cleaning

3. Clean all surfaces in the mounting area. Clean all casing pipe ends min. 200 mm from the ends with alcohol.

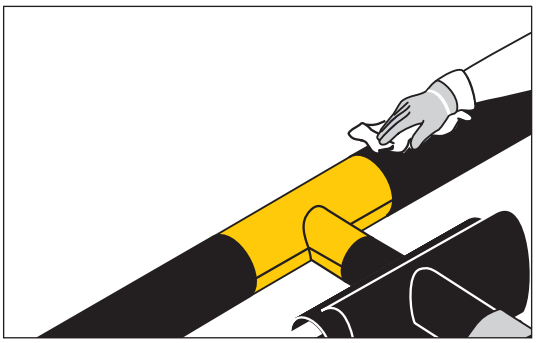


Adjusting insulation shells

4. Shorten the insulation shells to make them fit tightly between the casing pipes. It can be necessary to remove insulation foam around the coupling.

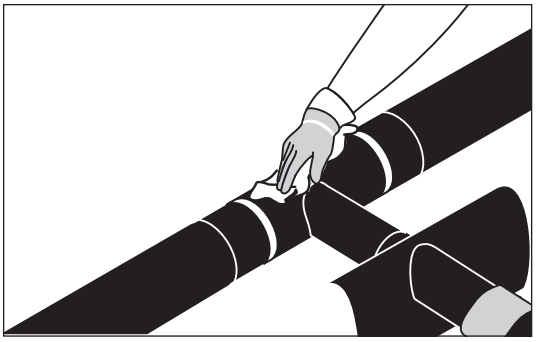


5. Fit the insulation shells tightly between the casing pipes, using adhesive tape, if required.
   All surfaces must be CLEAN and DRY.
   Now clean with alcohol.



T-shoe

6. Heat the T-shoe to 50-60°C.
   Pull the T-shoe over the main pipe and fasten with tape.



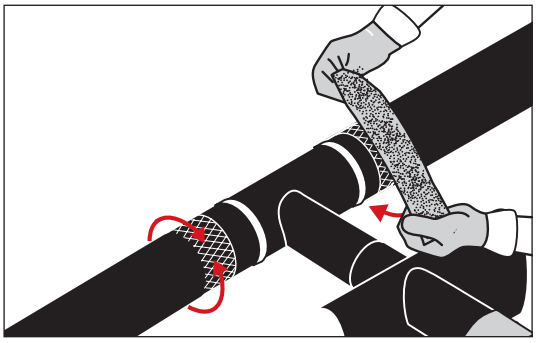
T-joint straight with insulation shells

Activation

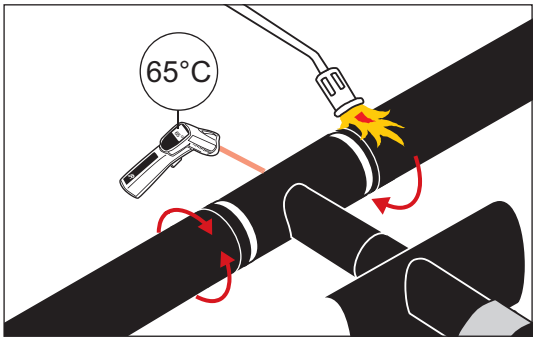
7. Grind the contact surfaces of the T-shoe so grinding marks are visible outside the rim (This enables visual control of the activation by the inspection).

   Remove loose grind dust.

   Do not touch the ground contact surfaces.

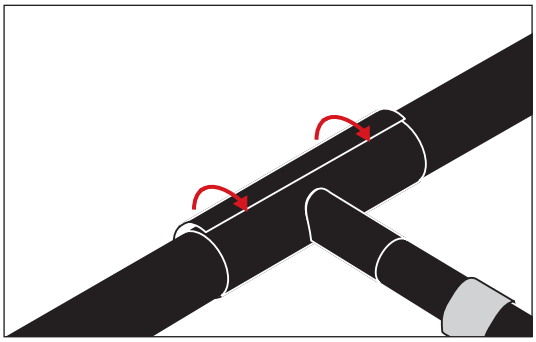


8. Activate the contact surfaces with gas burner to a surface temperature of min. 65°C.

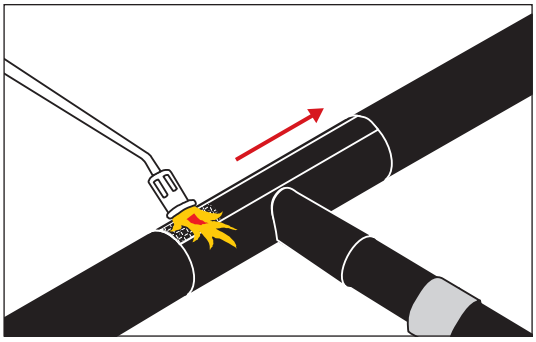


Shrink wrap

9. Remove the paper, while pulling the wrap into position.
   Turn the wrap so that the text goes around the pipe and closes at the top.



10. Clean the adhesive side of the closure patch with alcohol.
    Centre the closure patch on the wrap joint with the adhesive side facing down.
    The adhesive side has visible reinforcement. Heat the closure patch until the structure of reinforcement becomes visible on the topside.
    Press down the closure patch.

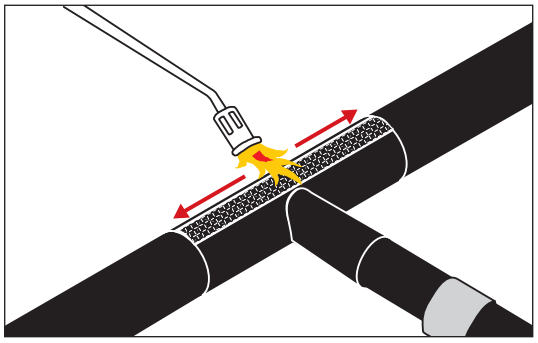


T-joint straight with insulation shells

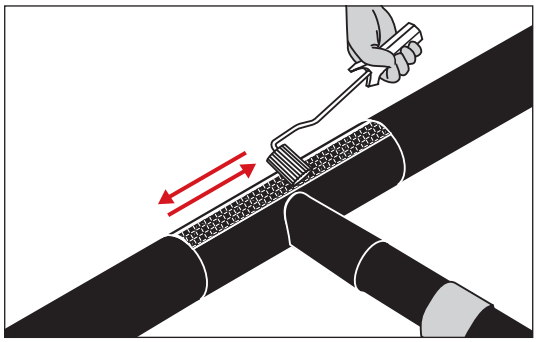
Shrink wrap
continued

11. Shrink the wrap from the centre towards both ends ensuring that the sealing compound becomes visible at both ends and the full shrinking effect has been utilised.

    NB! Do not heat directly on the outer casing.

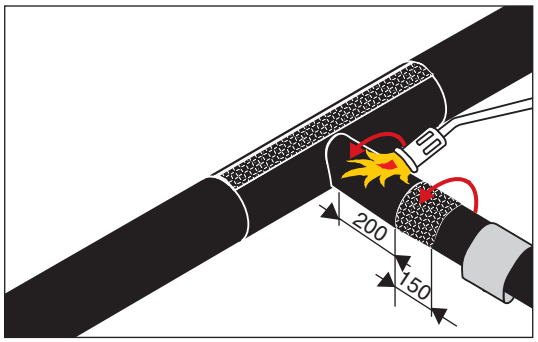


12. Roll along the overlapping edge, ensuring that any tunnel at the edge is sealed with mastic.



Branch

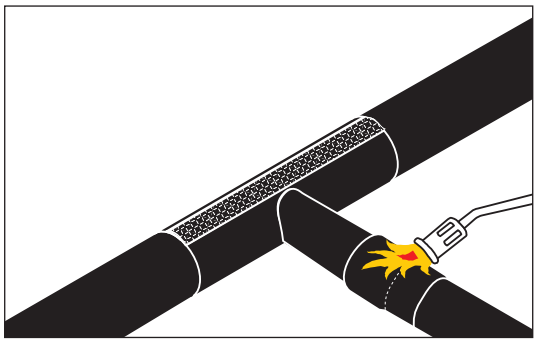
13. Shrink the outermost 200 mm on the branch.
    Activate the casing 150 mm onto the branch.
    Surface temperature: approx. 65°C.



14. Remove the packing and paper from the collar.
    Check that all the paper has been removed.
    Shrink so the middle of the collar is over the end of the T-shoe.

    NB! Do not heat directly on the outer casing.

15. The joint is complete.

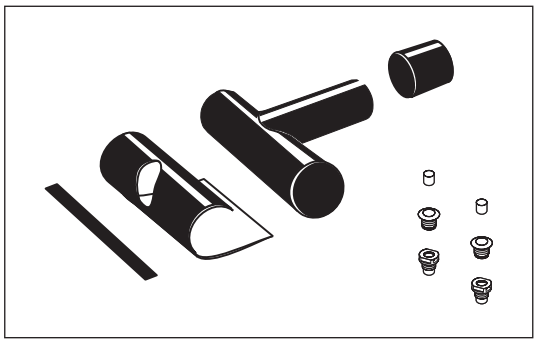


T-joint straight for foaming

Application

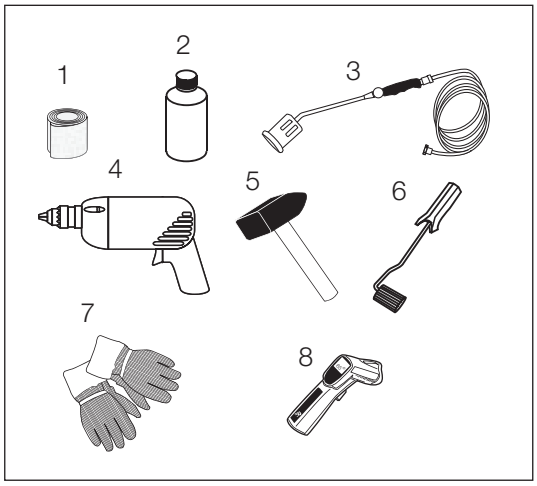
T-joint straight for foaming is used for branching on FlexPipes.

It can be used for main pipe dimensions ø 90-180 mm and branch dimensions ø 90-160 mm.



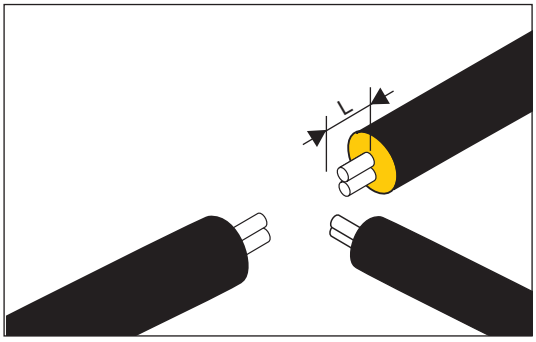
Tools

1. Emery clotch, grainz size 60
2. Alcohol, min. 93%
3. Gas burner ø 50 mm
4. Drilling machine
5. Hammer
6. Roller
7. Gloves
8. Temperature measuring device

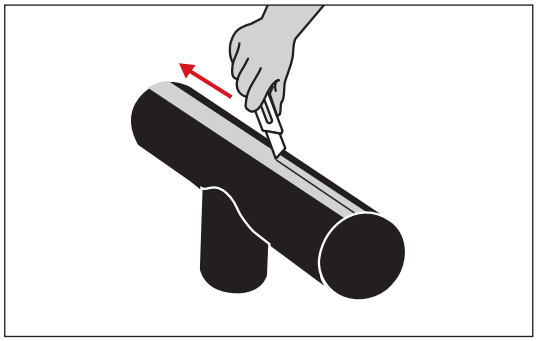


Preparations

1. Cut off the insulation with a suitable stripping tool. L depends on the type of coupling. The total stripped length is max. 300 mm.



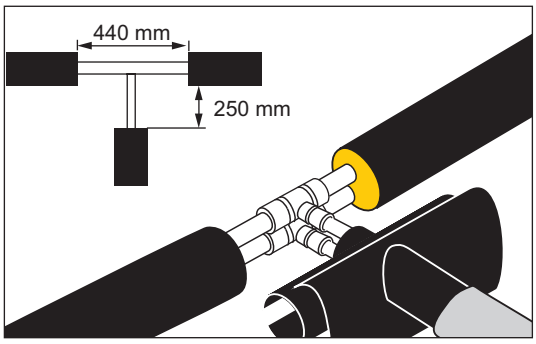
2. Cut the T-shoe open in the middle of the bevelled area.



T-joint straight for foaming

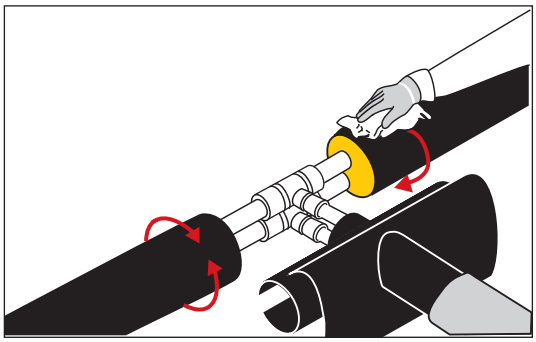
Preparations, ***continued***

3. Preinstall collar, wrap, and T-shoe on the branch.
   Join the pipes in accordance with the relevant instructions.
   Stripping length of main pipes is max. 440 mm and that of the branch max. 250 mm.



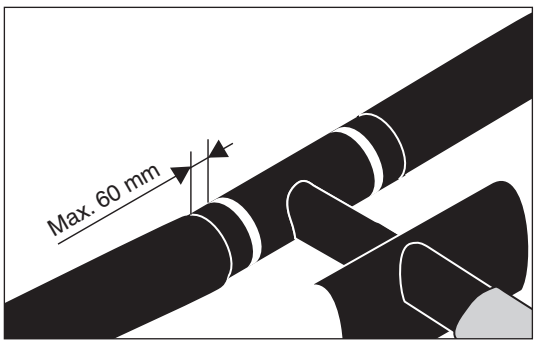
Cleaning

4. Clean all surfaces in the mounting area.
   Use alcohol on min. 150 mm of the outer casing ends.

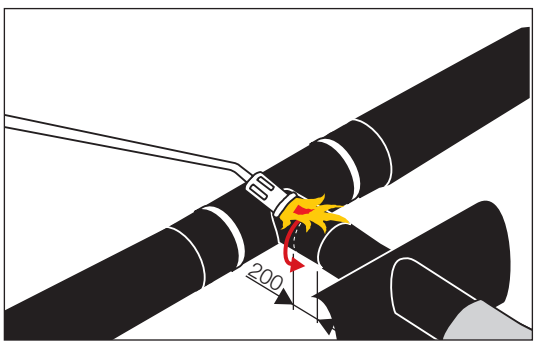


Installing T-shoe

5. Pull the T-shoe over the main pipes.
   Fasten the T-shoe tightly around the pipe with straps on each side of the branch.
   Wrap filament tape around the T-shoe max. 60 mm from the edge of the T-shoe.



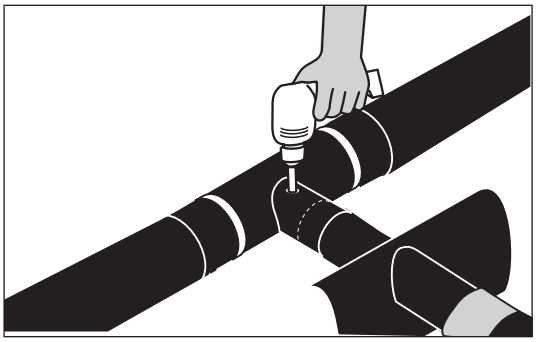
6. Shrink the outmost 200 mm of the branch pipe.



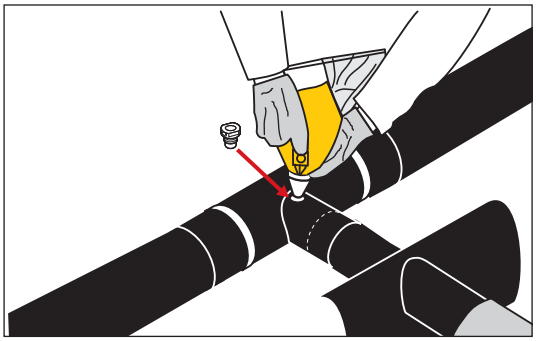
T-joint straight for foaming

Foaming

7. Drill a ø25 mm hole in the branch pipe.

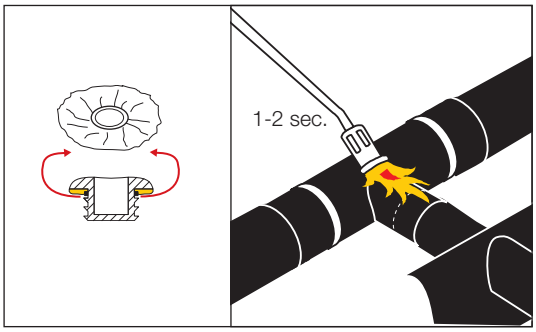


8. Foam the T-shoe and insert a venting plug in the hole.
   Wait min. 30 min. for degassing.
   Remove the venting plug by turning and lifting it.
   Remove excess foam, if any.
   Activate the area around the hole with emery cloth, grain size 60.

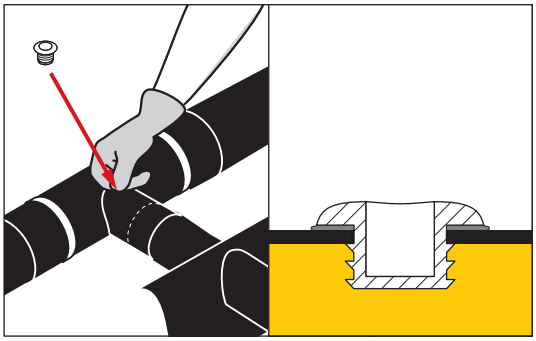


Expansion plug

9. Remove the protective foil from the expansion plug and check the mastic.
   Activate briefly the area around the hole with a hard flame.



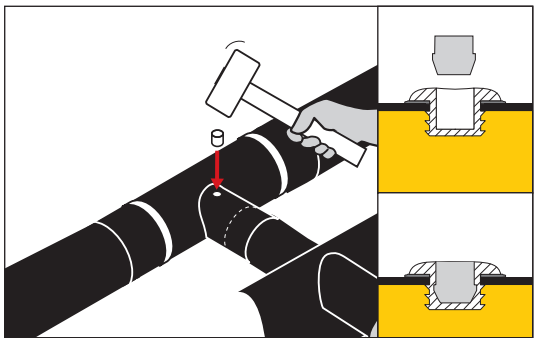
10. Mount the expansion plug in the hole and press, until the mastic is spread smoothly under the collar of the plug.



T-joint straight for foaming

Expansion plug, ***continued***

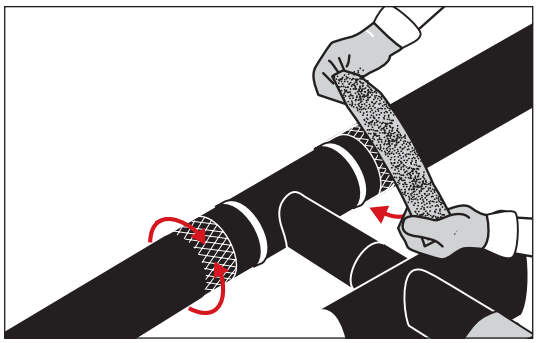
11. Centre the wedge plug in the expansion plug and drive it completely into the plug with a hammer.



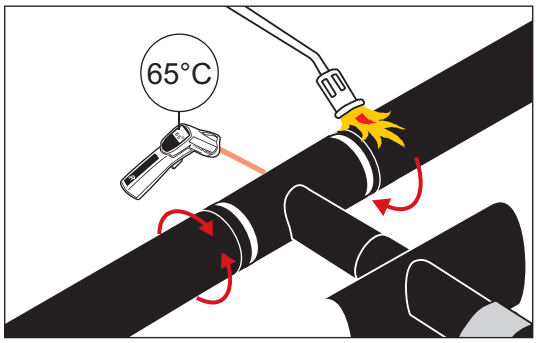
Activating main pipe

12. Grind the contact surfaces of the T-shoe so grinding marks are visible outside the rim (This enables visual control of the activation by the inspection).
Remove loose grind dust.

    Do not touch the ground contact surfaces.

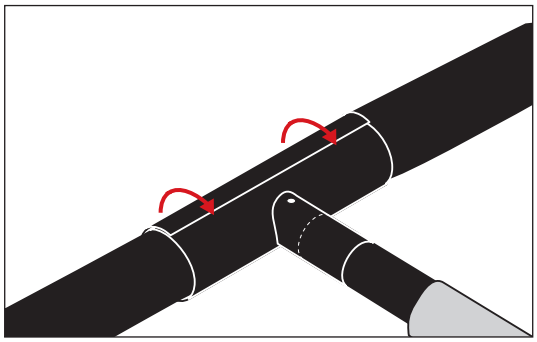


13. Activate the contact surfaces with gas burner to a surface temperature of min. 65°C.



Installing shrink wrap

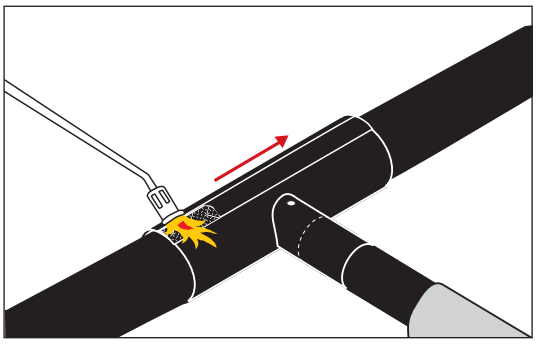
14. Place the shrink wrap around the main pipe.
Remove the protective paper, while pulling the wrap into position.
Turn the wrap so that the text goes around the pipe and closes at the top.
The wrap must fit loosely around the pipe with an overlap of min. 50 mm.



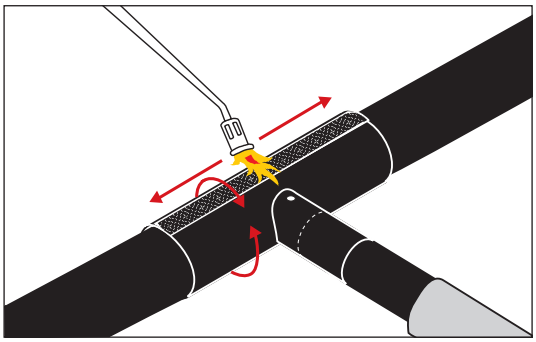
T-joint straight for foaming

Installing shrink wrap, ***continued***

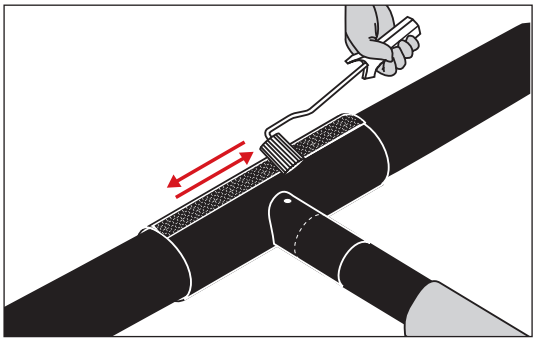
15. Clean the adhesive side of the closure patch with alcohol.
Centre the closure patch on the wrap joint with the adhesive side facing down.
The adhesive side has visible reinforcement.
Heat the closure patch with a strong flame until the structure of reinforcement becomes visible on the topside.
Press down the closure patch.



16. Shrink the wrap from the centre towards the ends, ensuring that the sealing compound spreads to both ends and that the full shrinking effect has been utilised.



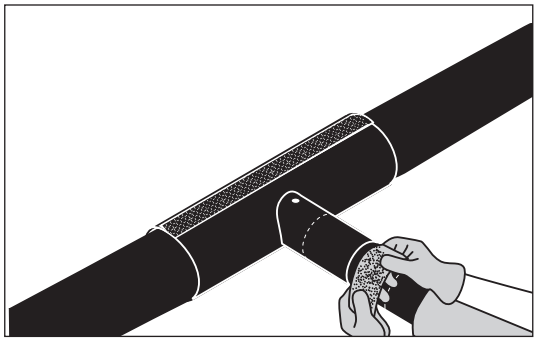
17. Roll along the overlap, ensuring that any tunnel at the edge is sealed with mastic.



Activating branch

18. Activate branch pipe and outer casing with emery cloth at least 150 mm on to the casing and the joint.
Grind the contact surfaces of the collar on the branch pipe and the outer casing with emery cloth, so grind marks are visible outside the collar.(This enables visual control of the activation by the inspection).
Remove any loose grind dust.

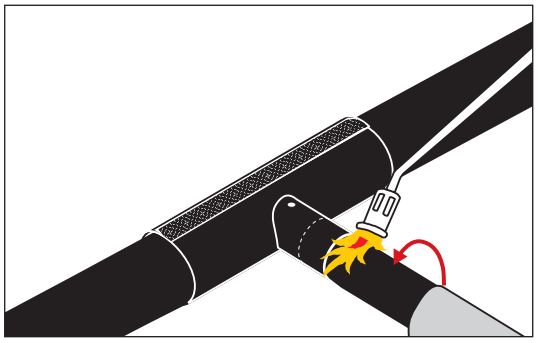
Do not touch the ground contact surfaces.



T-joint straight for foaming

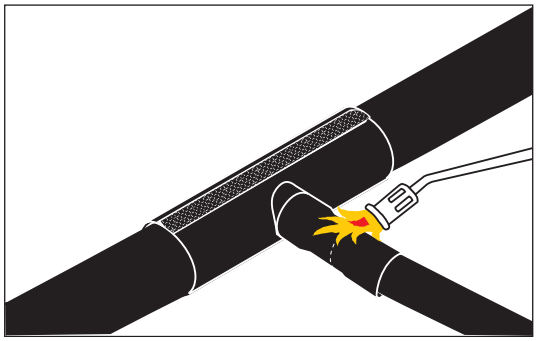
Activating branch *continued*

10. Activate the contact surface with a gas burner to a surface temperature of min. 65°C..



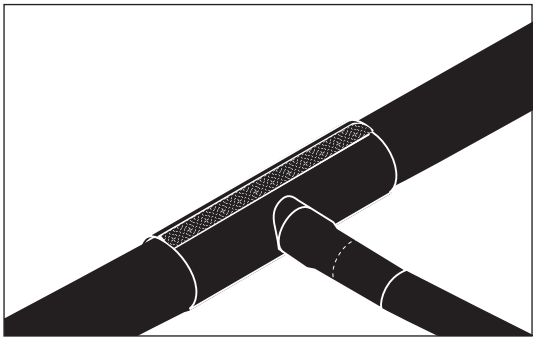
Installing collar

20. Remove packing and paper from the collar.
Check that all paper is removed.
Shrink so the middle of the collar is over end of the shoe.



Finished joint

21. The joint is complete.

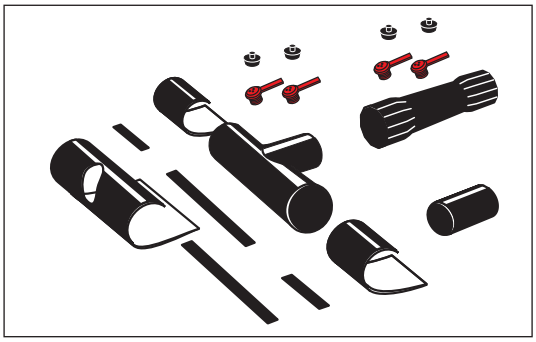


TXJoint

Application

The T-joint "TXJoint" is used to branch from TwinPipe to TwinPipe in outer casing dimensions ø125 - 710 mm and branch dimensions ø90 - 180 mm.

Foam pack:
- size, please see Foam Pack Folder
- additional information, please see section 7 in Handling & Installation.

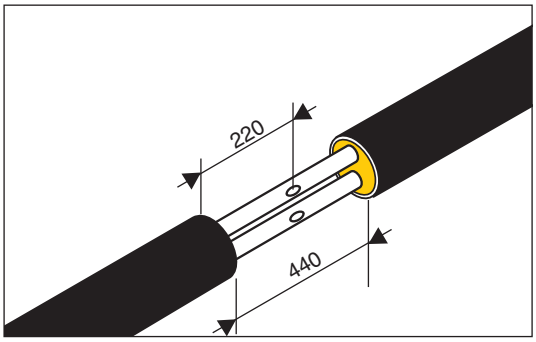


Tools

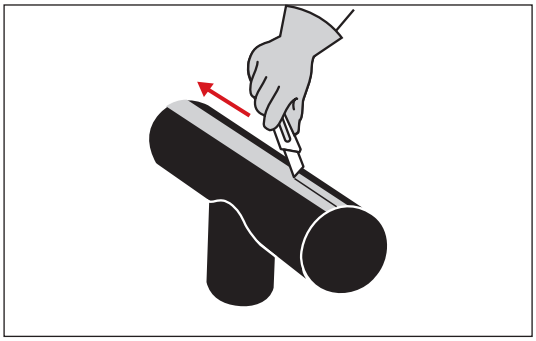
1. Alcohol, min 93%
2. Emery cloth:
   grain size 60: ø90 - 280 mm
   grain size 36: ø315 - 710 mm
3. Gloves
4. Gas burner:
   ø 50 mm: ø 90 - 280 mm
   ø 60 mm: ø315 - 710 mm
5. Leakage test equipment
6. Temperature measuring device
7. Roller
8. Drilling machine with 17.5 mm drill bit
9. 35 mm conical drill bit
10. Plug welding tool
11. Retaining tool for weld plug
12. Knife
13. Straps
14. Filament tape

Preparations

1. Cut off the insulation with a suitable stripping tool.
   Mind the alarm wires.
   Remove foam remnants from the service pipe.



2. Cut the T-shoe open in the middle of the bevelled area.

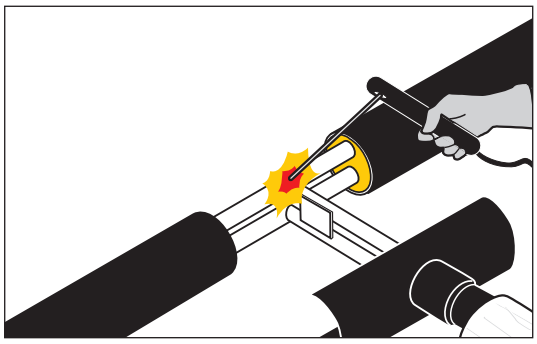


Preparations, ***continued***

3. Place SX-WPJoint, wrap, and T-shoe on the branch pipe. In case of a Flextra branch, the collar on the branch is placed first.

   Mount the branch on the main pipe.

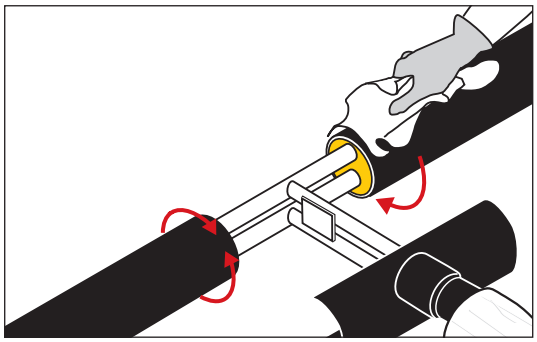
   Use transition pipe, component No. 0262, if required.



Cleaning

4. All surfaces in the mounting area including that of the T-shoe must be DRY and CLEAN.

   Now clean with alcohol.

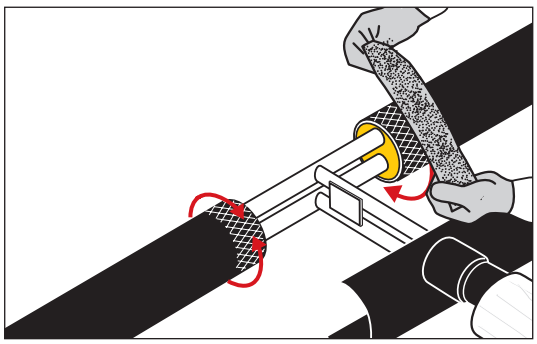


Activating main pipe

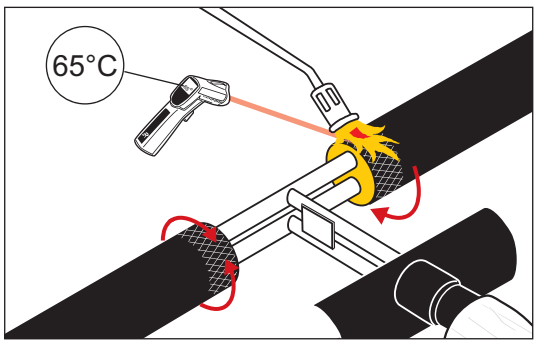
5. Grind the contact surfaces of T-shoe and wrap on the main pipe with emery cloth. Grind so grind marks will be visible outside the rim of the joint so later visual inspection of the activation is possible.

   Remove the grind dust.

   Avoid touching the ground contact surfaces.



6. Activate the contact surfaces with a gas burner to a surface temperature of min. 65°C.



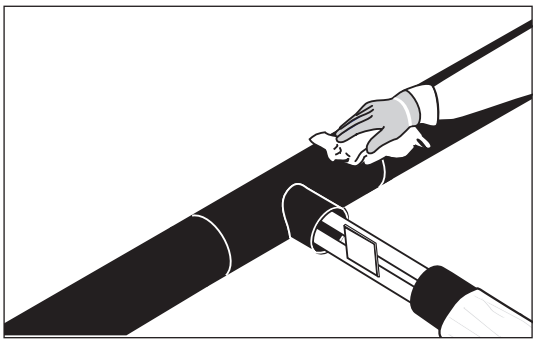
Installing T-shoe

7. Briefly heat the T-shoe and pull it onto the main pipe.

   Clean the T-shoe externally with alcohol.

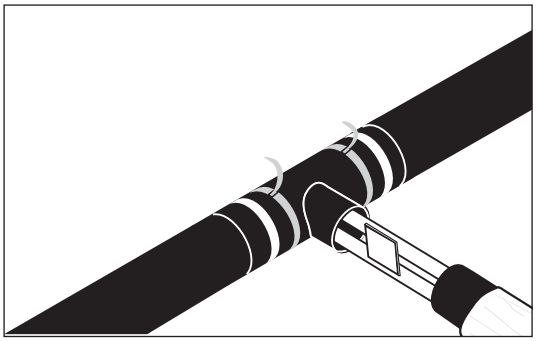
   Then grind the T-shoe externally with emery cloth.

   Briefly heat the entire T-shoe externally with a gas burner.



   Fasten the entire T-shoe tightly around the pipe on each side of the connecting branch with straps.

   Wind filament tape around the T-shoe max. 60 mm from the rim of the T-shoe.

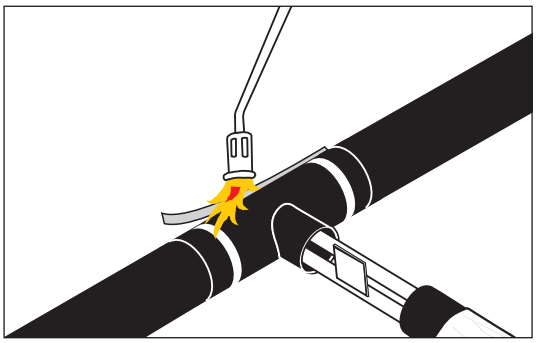


8. Remove the straps. The filament tape is not removed.

   Close the longitudinal joint with the PERP tape without reinforcement structure.

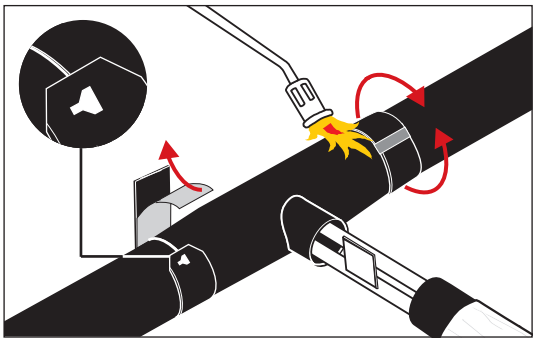
   Centre the closure patch on the joint of the T-shoe with the adhesive side facing downwards.

   Heat the closure patch, until the mastic becomes visible at its edge, and roll hard on it to fix it.



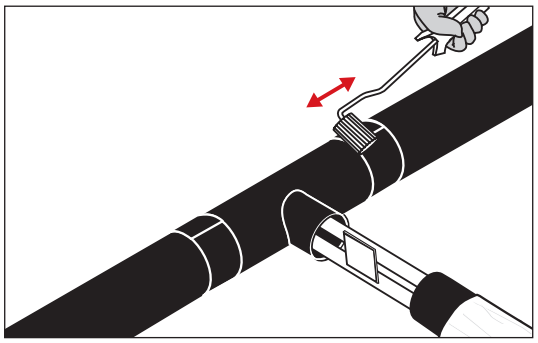
Open shrink wraps

9. Activate the contact surfaces for the open shrink wraps on the T-shoe with a gas burner to a surface temperature of min. 65°C.
   Centre a shrink wrap (bevelled corners) on one shrink sleeve end, so the fat end of the symbol faces the sleeve.
   Install the shrink wrap around the sleeve end with an overlap of 50 mm.



Open shrink wraps, ***continued***

10. Centre the closure patch over the joint of the shrink wrap.
    Heat the closure patch, until the reinforcement structure can be seen on the upper side. Press down the closure patch.
    Shrink the shrink wrap with a gas burner, moving from the shrink sleeve towards the casing pipe.
    The sealing compound must be visible at both sides in the entire circumference.
    After shrinkage the surface structure must be smooth.
11. Lightly roll along the the overlapping edge, ensuring that any tunnel is sealed with sealing compound.

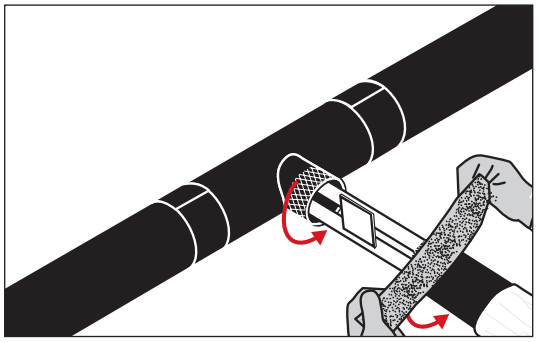


Repeat steps 9, 10 and 11 with the other shrink wrap over the other sleeve end.

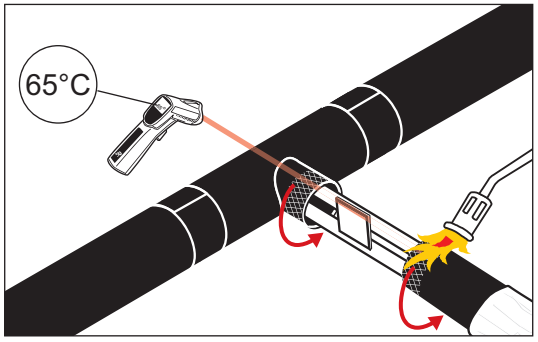
Branch

12. Grind the contact surfaces of the SX-WP shrink sleeve on the outer casing and T-shoe.

    Grind so grind marks will be visible outside the rim of the joint so later visual inspection of the activation is possible.

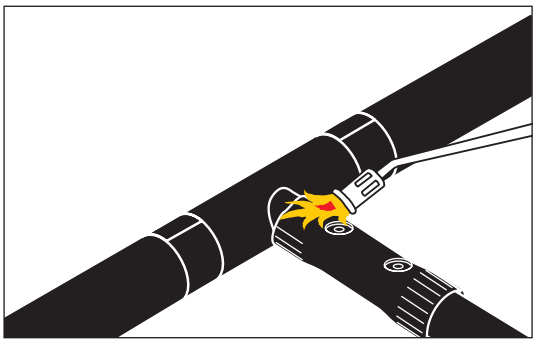


13. Activate the contact surfaces for the SX-WP shrink sleeve with gas burner to a surface temperature of min. 65°C.

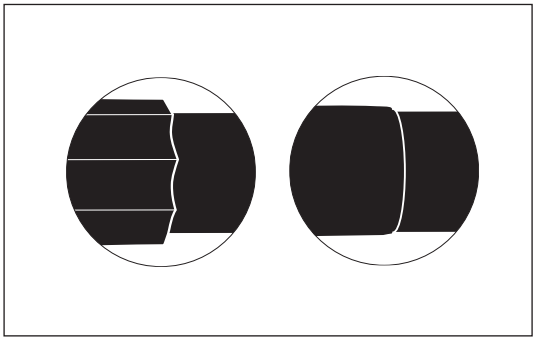


Shrink sleeve on branch

14. Remove the packing from the shrink sleeve.
Do not use cutting tools with sharp edges.
Make sure that the sleeve is CLEAN and DRY inside and out.
Centre the sleeve on the joint and remove the mastic covering in the sleeve.
Make sure that all the foil has been removed.
Shrink the ends of the sleeve. Avoid heating directly on the casing. Shrink the sleeve starting at the top to ensure centering.
At large dimensions support the sleeve at the middle to ease centering.

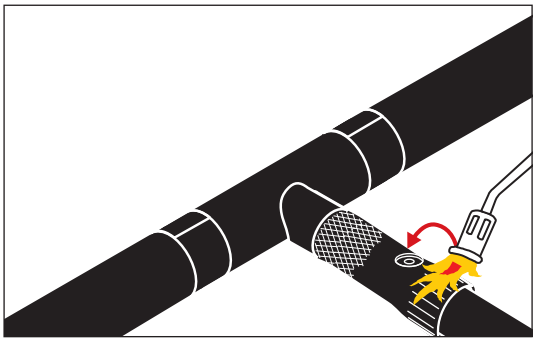


Shrink until all expansion marks have faded and the end of the sleeve forms an almost straight encircling edge.



Flextra branch:
Remove the packing and paper from the collar.
Check that all paper has been removed.

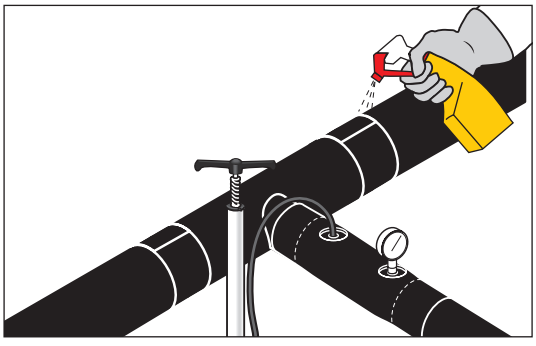
Shrink the collar onto the sleeve end.



Leakage test

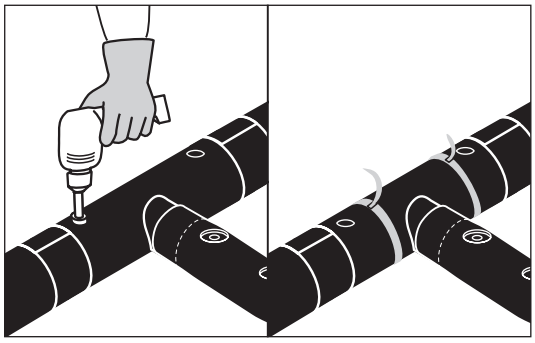
15. When the shrink sleeve has cooled off to lukewarm, leakage test the joint at 0.2 bar.

Test the joint ends visually with a soapy solution.



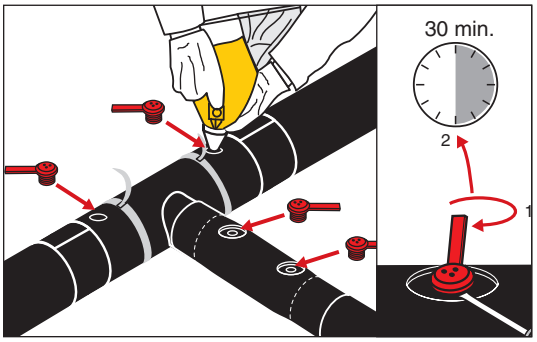
Foaming

16. Drill two foaming holes (ø 17.5 mm) in the T-shoe.
    Prior to foaming install 2 straps on the bottom of the T-shoe. One on each side of the branch.



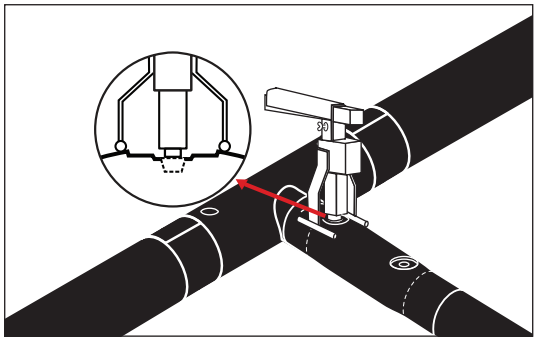
Venting and foaming

17. Install venting plugs in three of the holes. Two on the branch and one on the main pipe.
    Foam the joint at the lowest point through the fourth hole and install the fourth venting plug. Wait min. 30 min. for degassing.
    10 minutes after foaming turn the venting plug 180° to ease the removal of the venting plug.
    Remove the venting plugs.
    Remove excess foam or spillage.
    After cooling remove the straps.



Weld plugs

18. Adjust the retaining tool to the top of the hole.

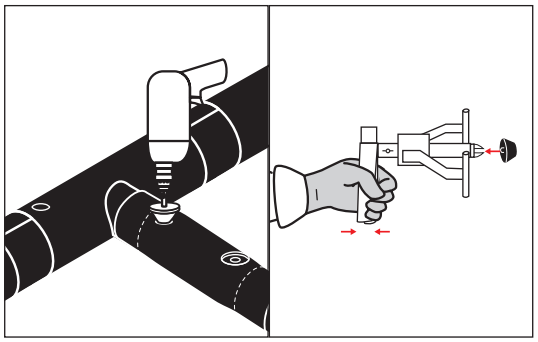


19. Drill the plug hole with a conical drill bit to clean the PE hole rim.

    Remove milling residues.

    Clean the rim and the joint surface around the hole with alcohol.

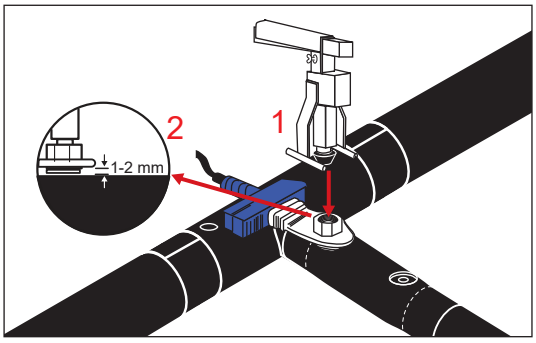
20. Insert the weld plug in the retaining tool and clean with alcohol .



Weld plugs, ***continued***

21. Heat the socket welder to 250°C.

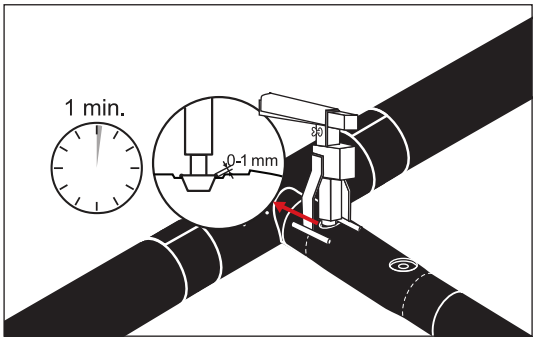
    Place the weld plug in the conical hole of the socket welder.
    Keep the plug under a light pressure, until the rim of the plug starts to form a bead.
    Now place the opposite side of the tool in the foam hole.



22. Remove the socket welder and immediately press the weld plug into the hole, until the legs rest on the outer casing and the upper rim of the plug is flush with the upper casing rim around the foaming hole (max. 1 mm above).

    Hold the pressure constant at least 1 minute, until the welding zone has cooled down to lukewarm, before the retaining tool is removed.
    There has to be a visible bead all around the plug.

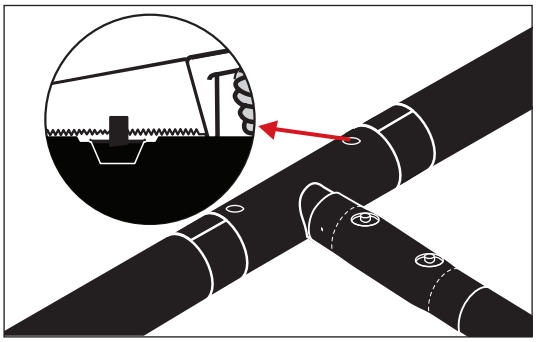
    Repeat the process with the other 3 plugs.



23. Wait until the weld plug is lukewarm.

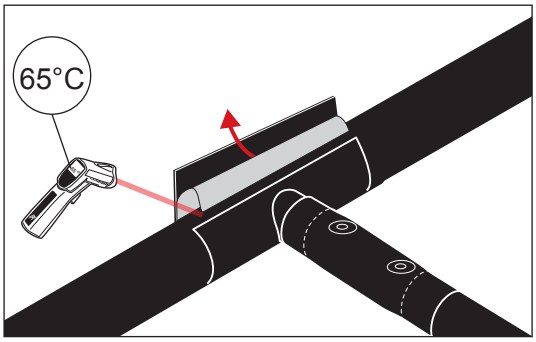
    Level the weld plugs to the surface of the outer casing of the main pipe with a saw.

    Take care not to damage the bead.



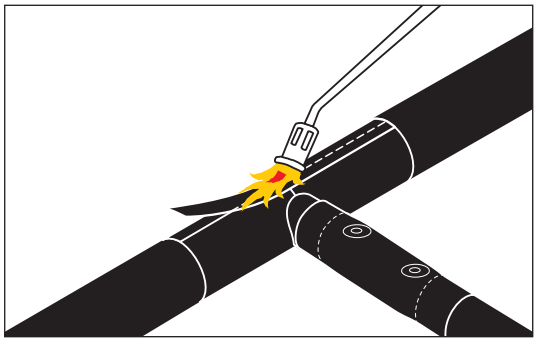
Shrinking the wrap

24. Before placing the wrap activate the contact surface with a gas burner to a surface temperature of min. 65°C.
    Place the shrink wrap around the main pipe.
    Remove the paper, while pulling the wrap into position.
    Turn the wrap so that the text goes around the pipe and the joint is at the top.
    Pull the shrink wrap tight around the casing joint.

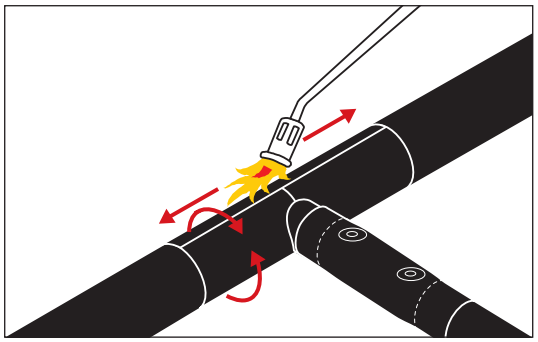


Shrinking the wrap, ***continued***

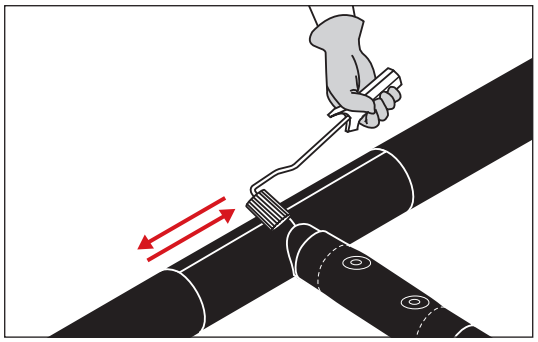
25. Centre the closure patch on the wrap joint with the adhesive side facing down. The adhesive side has visible reinforcement. Heat the closure patch until the reinforcement structure becomes visible on the top side. Press down the closure patch.



26. Shrink the wrap from the centre towards the ends, ensuring that the sealing compound spreads to all ends and that the full shrinking effect has been utilised.

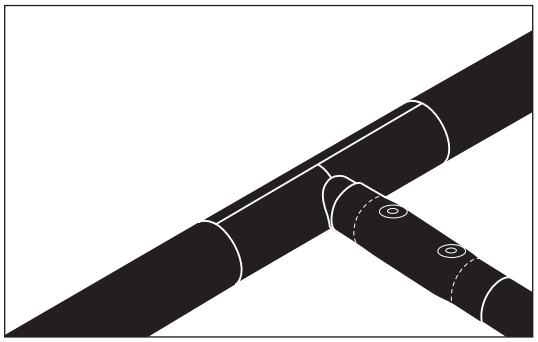


27. Roll along the overlapping edge, ensuring that any tunnel at the edge is sealed with sealing compound.



Finished joint

28. The joint is complete.



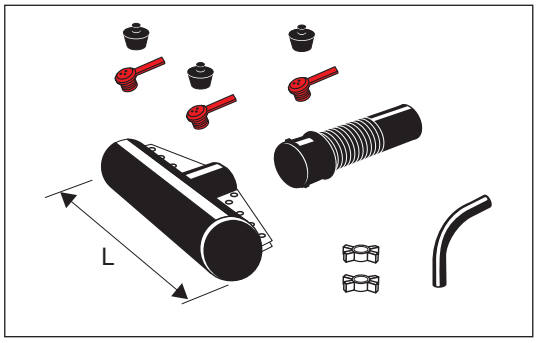
SXT-WPJoint

Application

SXT-WPJoints are used to branch from outer casing dimensions ø 90-315 mm.

Max. casing dimension of branch:
ø 200 mm.

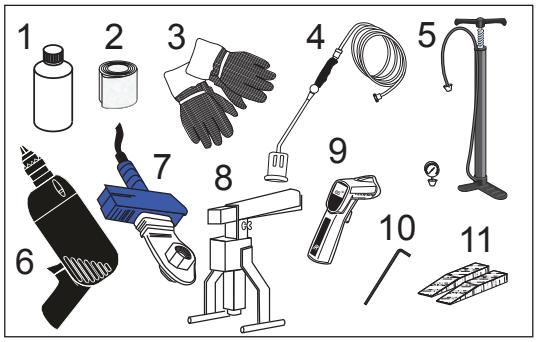
When connecting to FlextraPipe branch a collar is installed. The collar is ordered separately.



Tools

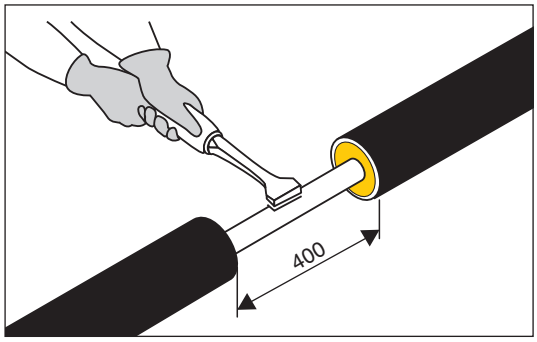
The following tools must be used when installing SXT-WPJoints:

1. Alcohol, min. 93%
2. Emery cloth
   Grain size 60: ø 90-280 mm
   Grain size 36: ø 315 mm
3. Gloves
4. Gas burner
   ø 50 mm: ø 90-280 mm
   ø 60 mm: 315 mm
5. Leakage test equipment
6. Drilling machine with a ø 35 mm conical mill bit
7. Plug welding tool
8. Retaining tool for weld plug
9. Temperature measuring device
10. Allen key
11. Wooden wedges



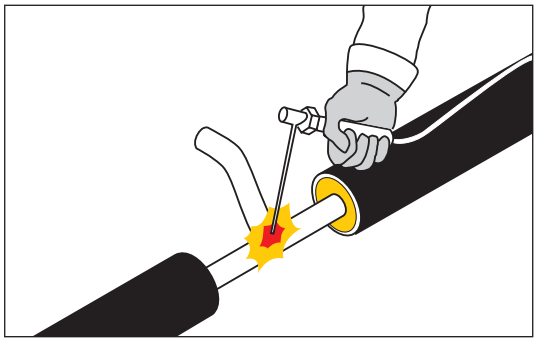
Preparations for branch

1. Cut off max. 400 mm of the casing pipe and insulation.
   Mind the alarm wires.
   Clean the service pipe of excess insulation.



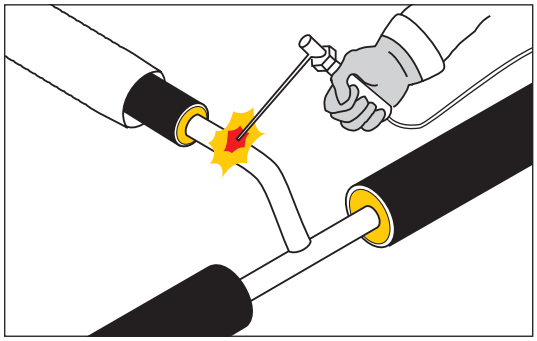
Welding on the branch

2. Adjust the length of the branch pipe piece according to the installation instruction for it and weld it onto the main pipe.



3. Place the branch sleeve with packing on the branch.
   Make sure that the branch sleeve and T-shoe fits correctly.

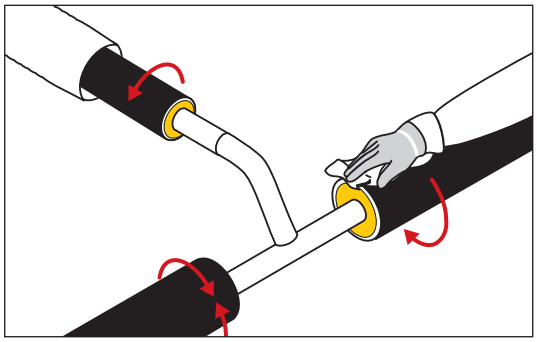
   Weld the branch pipe onto the branch pipe piece.



Cleaning

4. All surfaces in the connection area must be CLEAN and DRY.

   Afterwards clean them with alcohol.

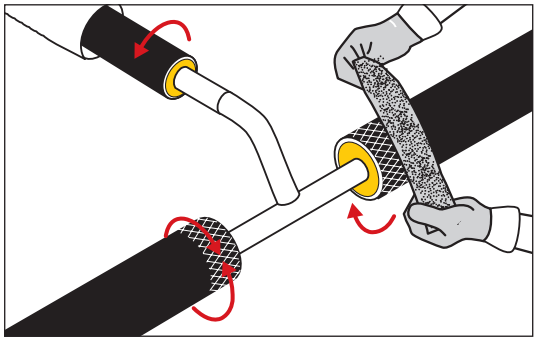


Activation

5. Grind all contact surfaces with emery cloth so grind marks are visible outside the sleeve rim (This enables visual control of the grinding by the inspection).

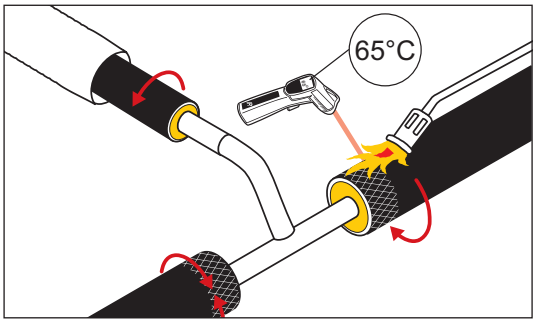
   Remove grind dust.

   Avoid touching ground contact surfaces.



Activation, ***continued***

6. Activate all contact surfaces with a gas burner to a surface temperature of min. 65°C.



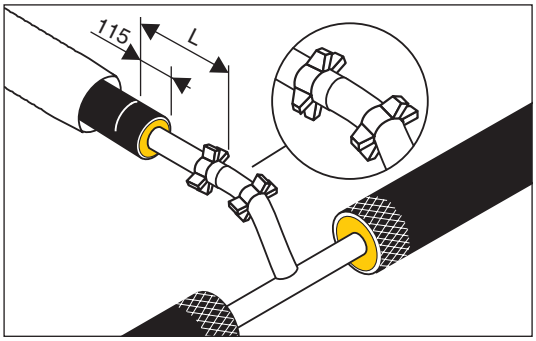
Preparing the branch

7. Place a spacer in the middle of the bend and another in the middle of the straight run of the branch.

   Mark the distance L from the welding onto the branch. see below table.

   To make foaming possible the free pipe ends generally have to be extended.

   Measure 115 mm back from the marking L and cut off the insulation.



Marking length, series 1, 2, and 3

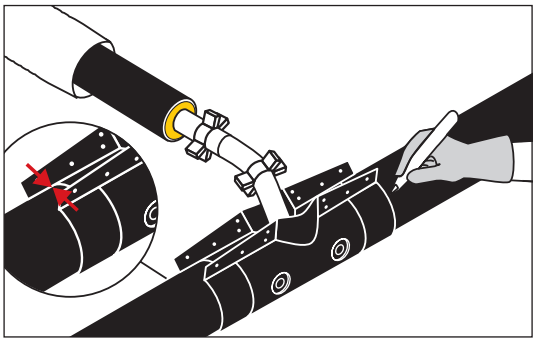
Main pipe ø mm	45° branch							90° branch						
	90	110	125	140	160	180	200	90	110	125	140	160	180	200
90	360							360						
110	355	315						355	335					
125	335	310	335					335	335	335				
140	335	310	330	340				335	330	335	330			
160	335	310	330	335				335	335	335	340			
180	-	300	330	335	345			-	350	345	345	350		
200	335	315	330	335	345			335	340	340	335	340		
225	335	315	330	330	345		330	335	340	340	340	340		350
250	335	315	330	330	345		330	335	340	340	340	340		350
280	-	310	340	345	345	335	-	-	350	345	345	350	340	-
315	335	320	335	335	345	-	330	335	340	340	340	340	-	350

Installing T-shoe

8. Remove the packing from the T-shoe. Make sure that it is CLEAN and DRY inside.

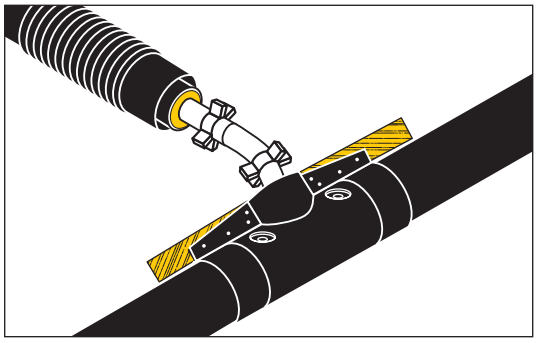
   Pull it over the main pipe. Turn the holes upside.

   Centre the T-shoe in relation to the branch pipe piece and mark the position of the flanges on the outer casing.



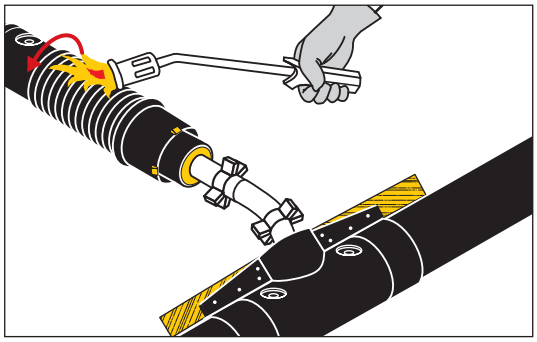
Installing T-shoe, ***continued***

9. Insert 2 wooden wedges between the flanges over the mastic.

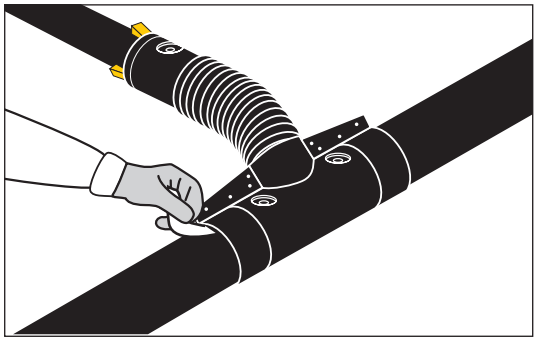


Preparing the branch sleeve

10. Remove the packing from the branch sleeve.
Heat the entire corrugation at the top and bottom with a gas burner. Do not heat the smooth ends.
Continue until the corrugation is so flexible that it can be compressed like a harmonica with the finger tips.

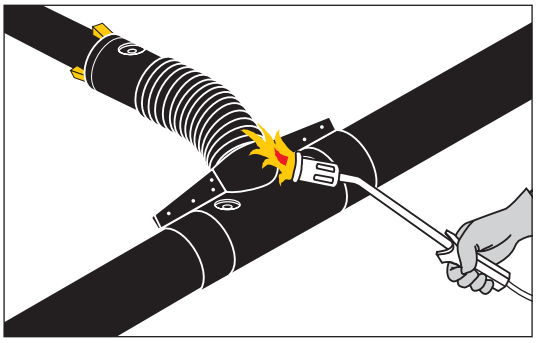


11. Remove the paper from the outer branch pipe piece. Remove the mastic cover from the inner T-shoe. Pull the branch sleeve over the branch pipe piece and insert the end in the opening of the T-shoe.
The foam holes on the branch must turn upside
Remove the wooden wedges on the main pipe.
Remove the internal flange cover and pull the two circumferential covers outside the joint ends.
Place the ends of the branch sleeve exactly at the L-mark. Centre the sleeve with wedges.
Place the T-shoe according to the mark on the outer casing.
Mount the screws with washers and fasten the screws loosely with the fingers.

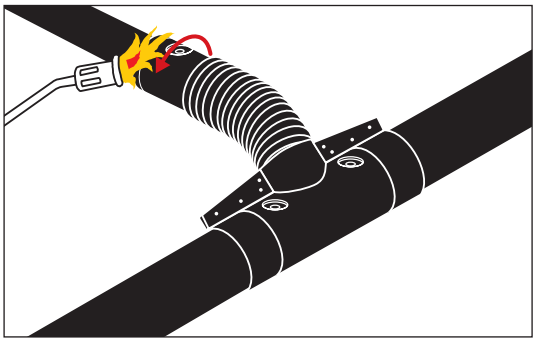


Shrinking the branch joint

12. Shrink the T-shoe by heating the ends, flanges and collar of the shoe.
    Note! Heat takes some time to penetrate and enter the mastic, which is to be softened.
    Heat slowly!
    Too hard a flame may result in no or slower shrinkage.
    Heat the ends and collar in turn.



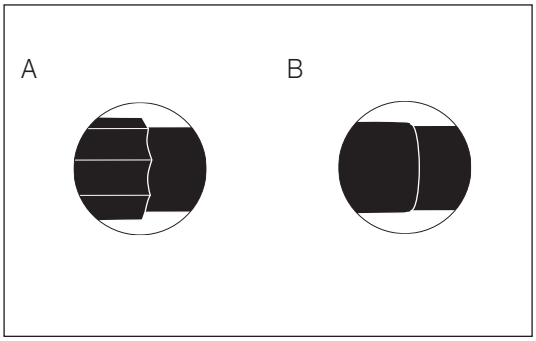
13. Remove the wedges and protective foil inside the branch sleeve.
    Shrink the outermost 100 mm of the sleeve.



8. Shrink until all expansion marks have vanished and the end of the sleeve forms an almost straight encircling edge.

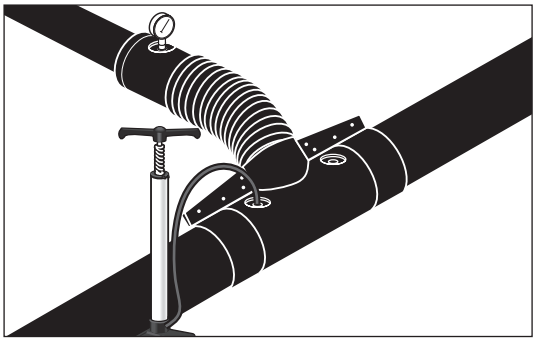
   A. Before
   B. After

   Wait until the sleeve has cooled down to handwarm og tighten up the screws.



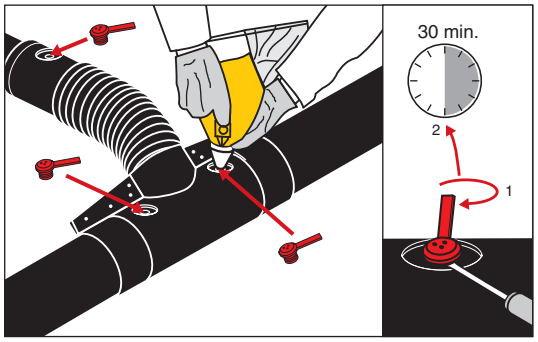
Leakage test

14. Leakage test at 0.2 bar.
    Check all joints with a soap solution.
    The solution must not get in contact with the plug areas.



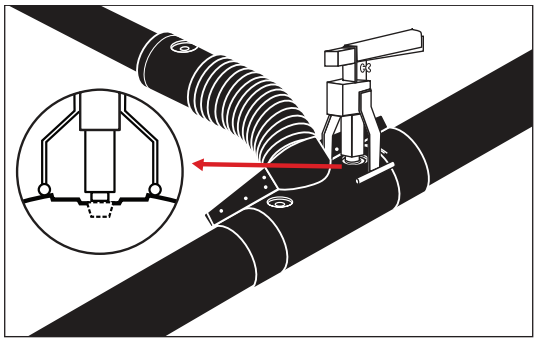
Foaming

15. Foam the sleeve via the T-shoe.
    Install the venting plugs in two of the holes and foam the sleeve through the third hole.
    Install the last venting plug.
16. 10 minutes after foaming the venting plug can be turned half round what facilitates the later removal of the venting plug.
    Wait min. 30 min. for degassing to complete.
    Remove the venting plugs.
    Remove excess foam or spillage, if any.



Weld plug

17. Adjust the retaining tool to the upper rim of the hole.

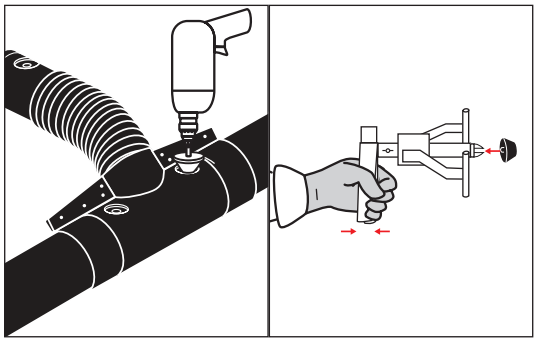


18. Drill the plug hole with a conical drill bit to clean the PE hole rim.

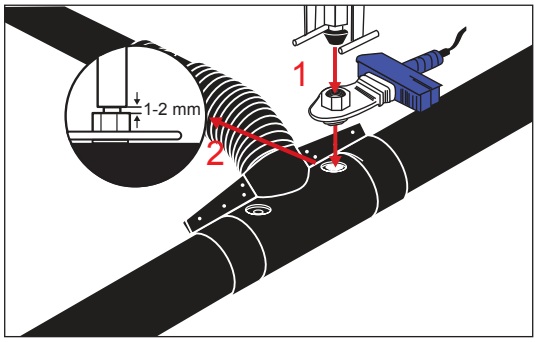
    Clean the rim and the casing surface around the hole with alcohol.

    Remove any milling residues.

    Insert the weld plug in the retaining tool and clean it with alcohol.



19. Heat the plug welder to 250°C.
20. Place the weld plug in the conical hole of the plug welder.
    Keep it under a light pressure, until the rim of the plug starts to form a bead.
    Now place the opposite side of the tool in the foam hole.

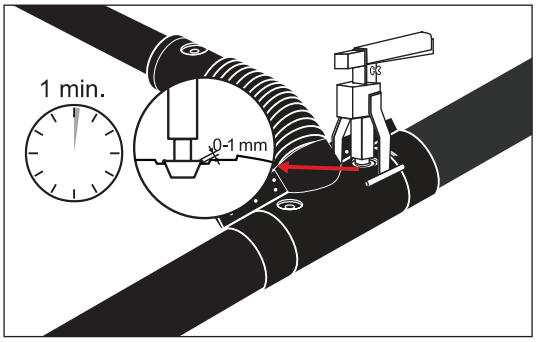


Weld plug,
continued

21. Remove the plug welder and immediately press the weld plug into the hole, until the legs rest on the casing and the upper rim of the plug is flush with the the casing rim around the foaming hole (max. approx. 1 mm above).

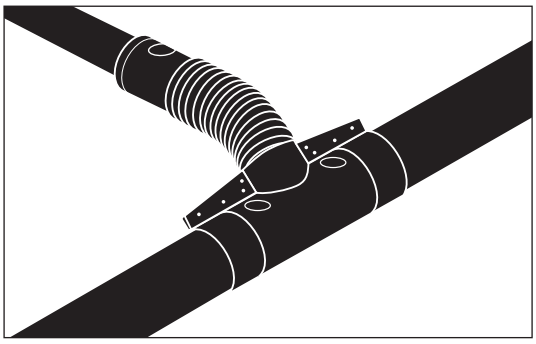
    Hold the pressure constant at least 1 minute, until the welding zone has cooled down to handwarm, before the retaining tool is removed.
    There has to be a visible bead.

    Repeat the process with the other plugs in the remaining two holes.



Finished joint

22. The joint is complete.



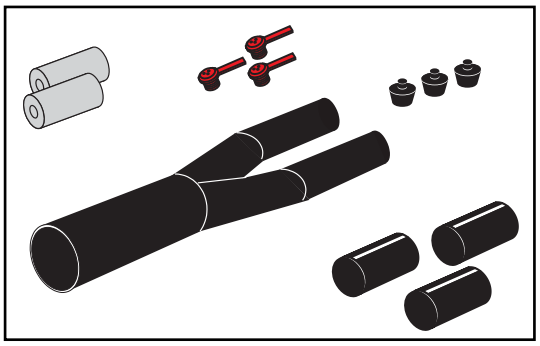
TSJoint

Installation instructions for the TSJoint are available in LOGSTOR's Weld Joint Manual on LOGSTOR.com.

Y-Joint

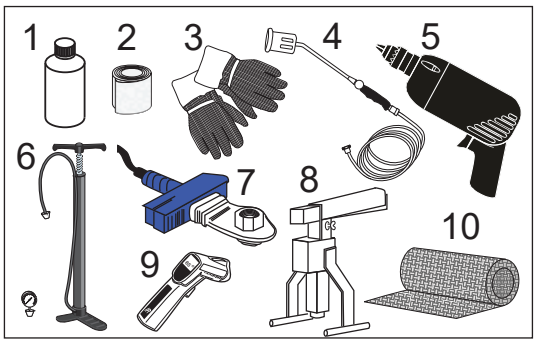
Application

Y-Joint is used as a transition from TwinPipe to single pipe.
All 3 ends of the joint are shrinkable and embedded with mastic.
The joint is double sealed.
Used for TwinPipe casing dimensions ø 90-140 mm and single pipe casing dimensions ø 66-140 mm.



Tools

1. Alcohol, min. 93%
2. Emery cloth:
   Grain size 60: ø 90 - 280 mm
3. Gloves
4. Gas burner:
   ø 50 mm: ø 90-280 mm
5. Drilling machine with ø 17.5 drill bit and ø 35 mm conical drill bit
6. Leakage test equipment
7. Plug welder
8. Retaining tool for weld plug
9. Temperature measuring device
10. Heat shield



Pipe end preparations

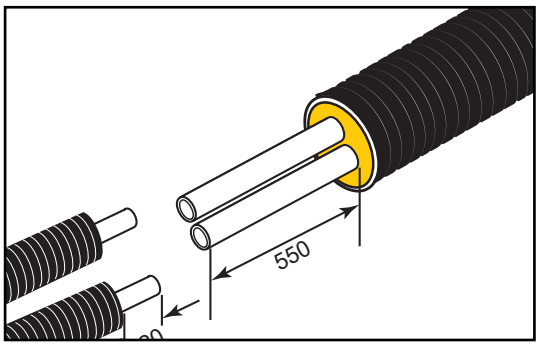
All surfaces in the joint area must be CLEAN and DRY.

Remove insulation from TwinPipe Flex: 580 mm.

Remove insulation from single Flex: 150 mm.

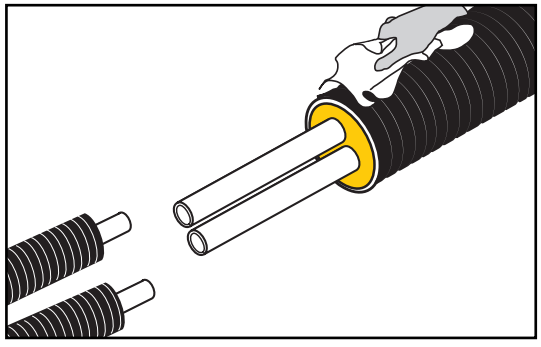
Cut 30 mm off the flexible service pipes.

The finished free pipe ends must be 550 mm for TwinPipe and 120 mm for single pipes.



Cleaning, TwinPipe

Clean approx. 500 mm of the TwinPipe casing end with alcohol.

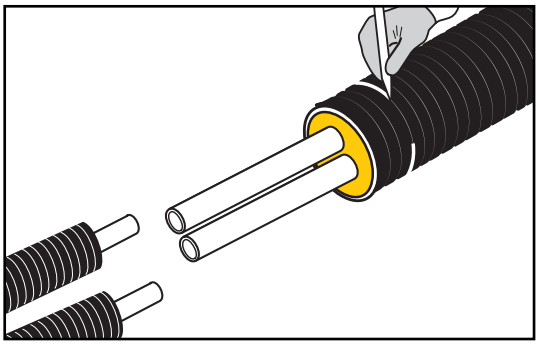


Y-Joint

Marking, TwinPipe

Mark the L-measurement on the TwinPipe casing, measured from the casing pipe end.

115 mm to the rim of the sleeve.

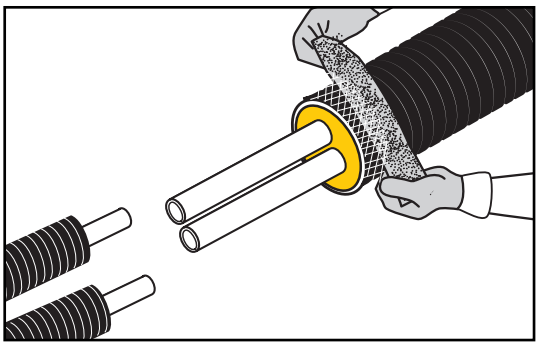


Activation, TwinPipe

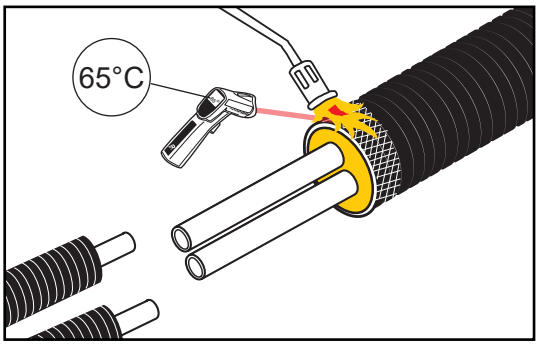
Grind minimum 250 mm of the contact surfaces of the sleeve and collar with emery cloth, so grind marks become visible outside the collar rim (This enables visual control of the grinding by the inspection).

Remove grind dust, if any.

Avoid touching the ground contact surfaces.



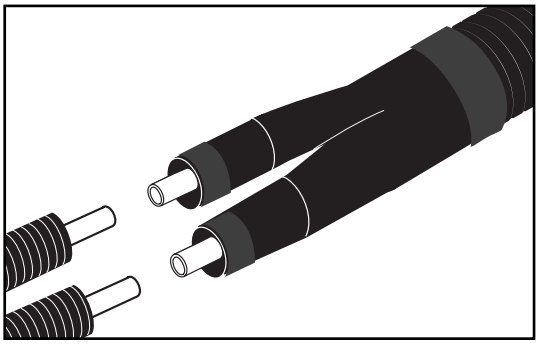
Activate the contact surfaces with a gas burner to a surface temperature of min. 65°C.



Placing the sleeve

Check that the sleeve is CLEAN and DRY inside and out.

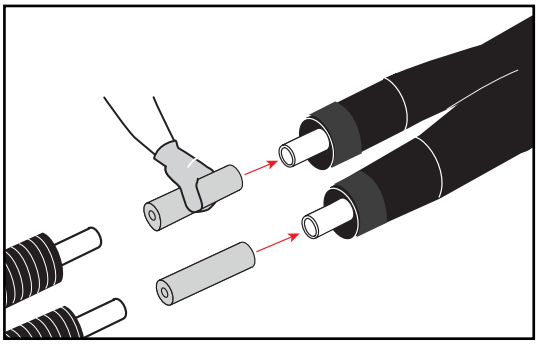
Place the sleeve with collars on to the TwinPipe, so couplings can be installed.



Y-Joint

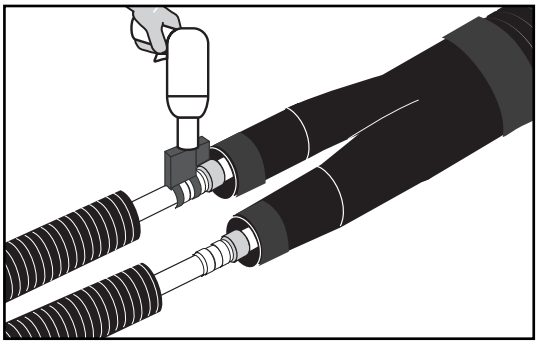
Pipe insulation

Place the 2 pieces of pipe insulation on to the two single pipes.



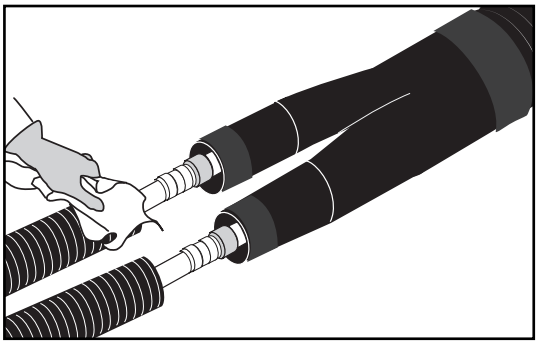
Coupling installation

Install couplings according to the valid instructions.



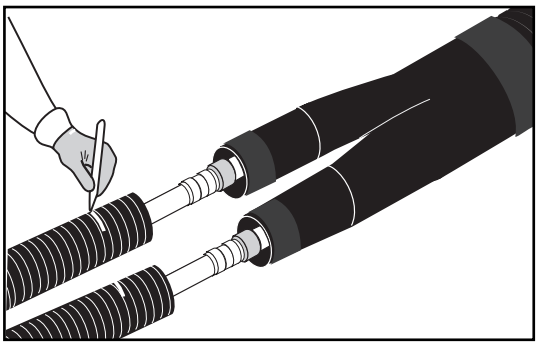
Cleaning, single pipe

Clean minimum 250 mm of the two single pipe casing ends with alcohol.



Marking, single pipe

Mark 115 mm on both single pipes, measured from the outer casing end.



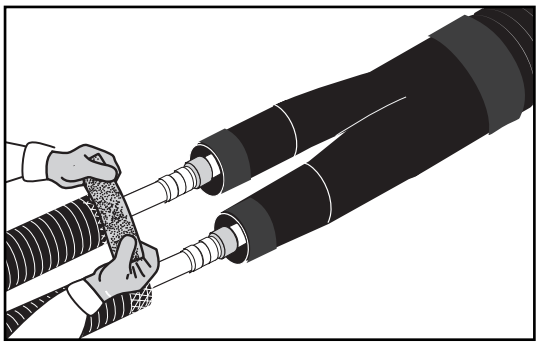
Y-Joint

Activation, single pipe

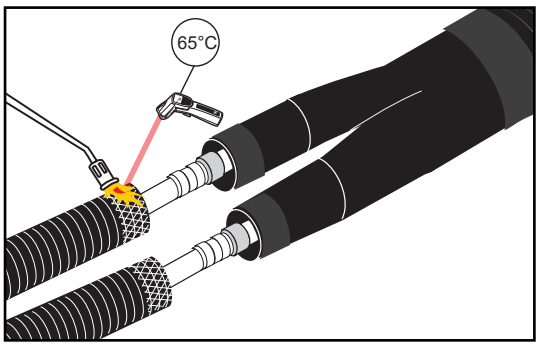
Grind minimum 250 mm of the contact surfaces of the sleeve and collar with emery cloth, so grind marks become visible outside the collar rim (This enables visual control of the grinding by the inspection).

Remove grind dust, if any.

Avoid touching the ground contact surfaces.

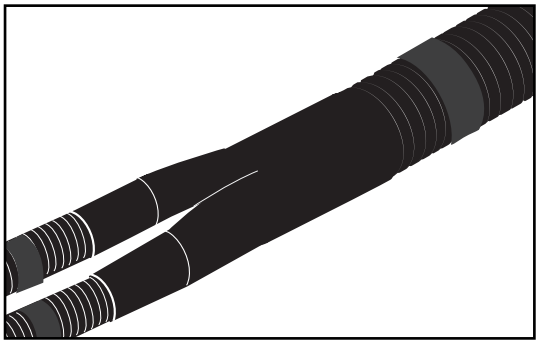


Activate the contact surfaces with a gas burner to a surface temperature of min. 65°C.



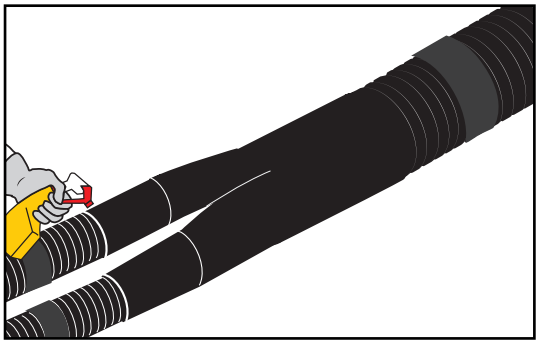
Centering the sleeve

Center the sleeve over the joint according to the marks on the outer casing.



Cleaning

Clean the three shrink ends of the sleeve with alcohol.



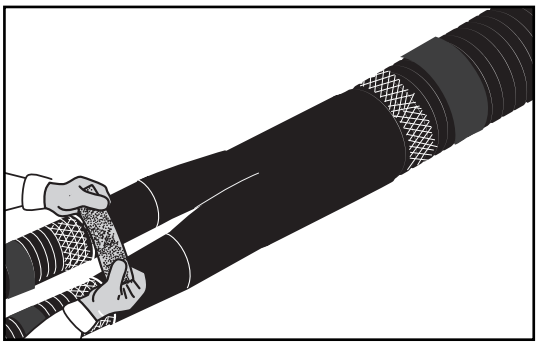
Y-Joint

Activation, collars

Grind the contact surfaces of the collars on the sleeve with emery cloth, so grind marks become visible outside the collar rims (This enables visual control of tthe grinding by the inspection).

Remove grind dust, if any.

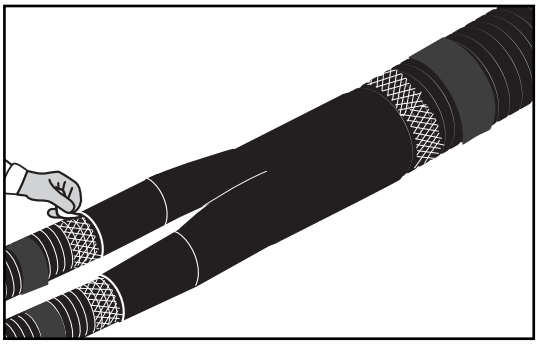
Avoid touching the ground contact surfaces.



Shrinking sleeve ends

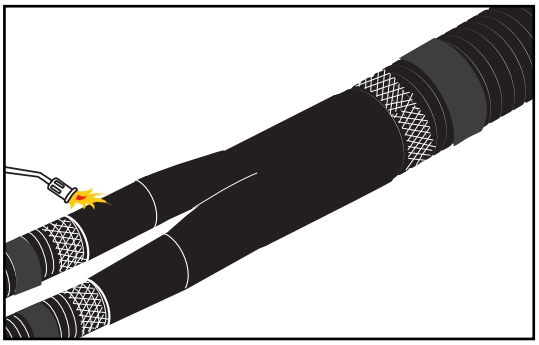
Remove the mastic cover from all sleeve ends.

Check that all cover has been removed.



Shrink the 3 sleeve ends. Avoid to heat the casing directly.

Protect the casing with LOGSTOR heat shield, if necessary.



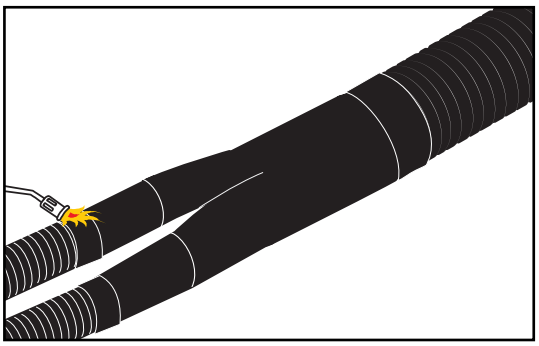
Shrinking collars

Remove the collars from the packaging. Check that all packaging has been removed.

Center the collar over the sleeve end.

Remove the mastic cover and check that all cover has been removed.

Repeat with the other 2 collars.

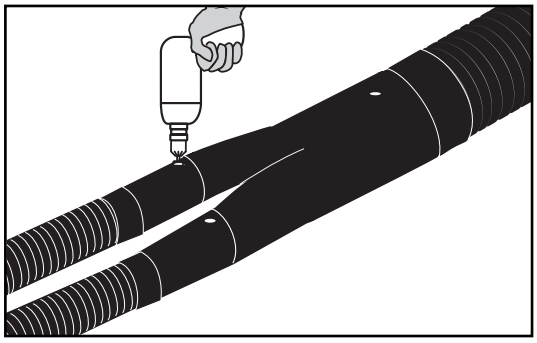


Y-Joint

Leakage testing

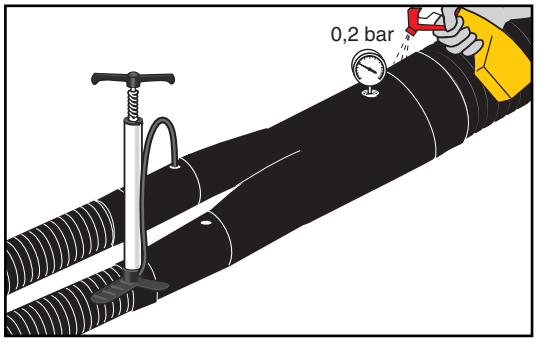
Drill three ø17.5 mm holes – one at each end at the highest point.

For leakage testing it is an advantage first to drill 2 holes and then drill the third hole in connection with the foaming.



When the shrink sleeve has cooled to hand-warm, leakage test with 0.2 bar.

Test the sleeve ends visually with soapy water.

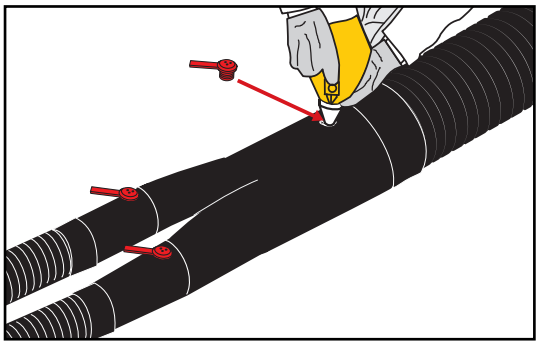


Foaming

Insert 2 venting plugs in the holes in the single pipes and foam the sleeve through the last foaming hole.

Now install a venting plug in the last foaming hole.

10 minutes after foaming the venting plugs can be turned half round, what facilitates the later removal of the venting plugs.

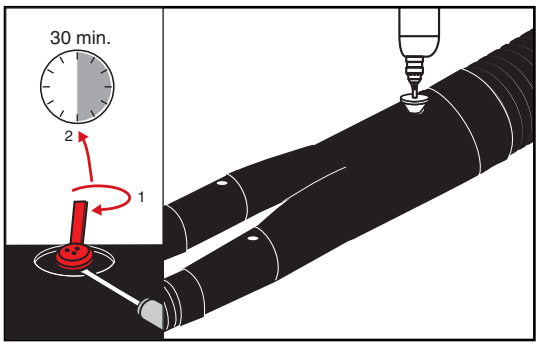


Wait at least 30 minutes for degassing to complete.

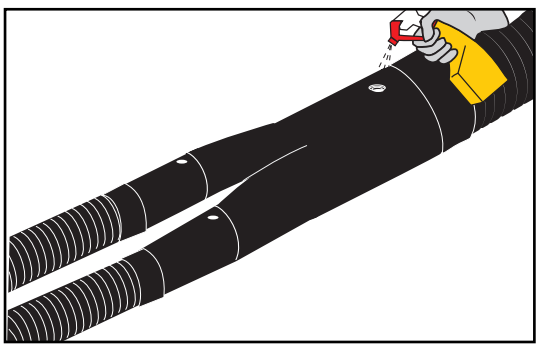
Remove the venting plugs. Remove excess foam or spillage, if any.

Mill the 3 foaming holes with a conical ø35 mm drill bit.

Remove any milling residues.



Clean the rim and surface around the holes using alcohol.



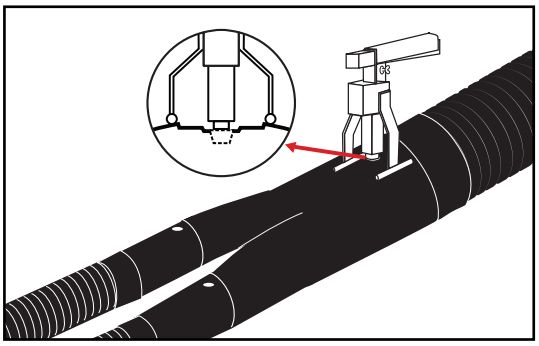
Y-Joint

Installing weld plugs

Adjust the retaining tool to the rim of the hole.

Insert the weld plug in the retaining tool and clean it with alcohol.

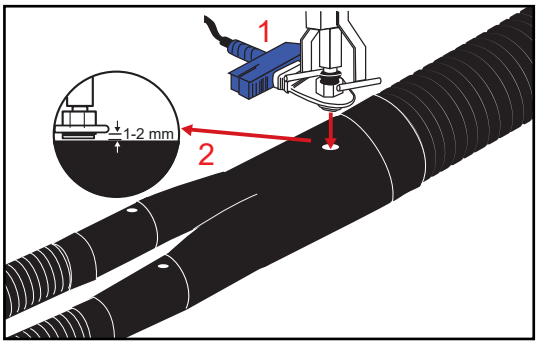
Heat the plug welder to 250°C.



Place the weld plug in the conical hole of the plug welder.

Keep it under light pressure, until the rim of the plug starts to form a bead.

Now place the opposite part of the tool in the foam hole.

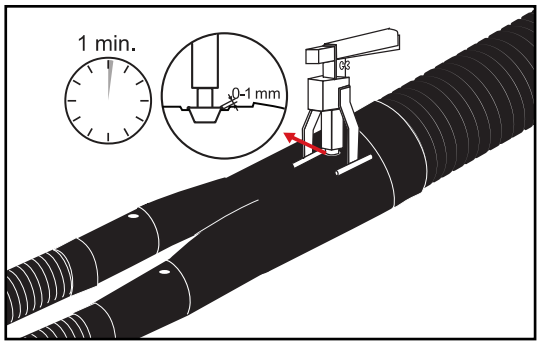


Remove the plug welder and immediately press the weld plug into the hole, until the legs rest on the casing and the upper rim of the plug is flush with the upper rim of the sleeve at the foam hole (approx. 1 mm above).

Hold the pressure constant for at least 1 minute, until the welding zone has cooled down to handwarm, before the retaining tool is removed.

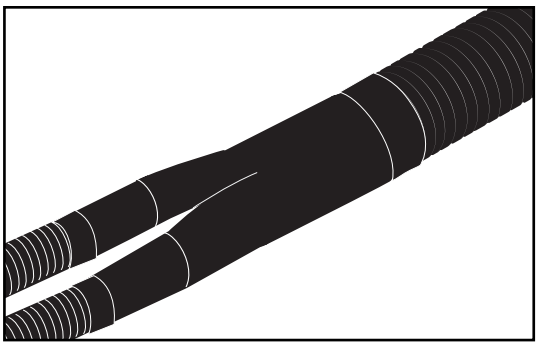
There has to be a visible bead.

Repeat the process with the other 2 plugs.



Finished joint

The joint is complete.



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