



PIPETEC[®] TECHNICAL MANUAL

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PIPES

ALUMINIUM MULTILAYER COMPOSITE PIPE

The Pipetec metal composite pipe was developed to withstand the wide range of temperatures and pressures in cold and hot water systems.

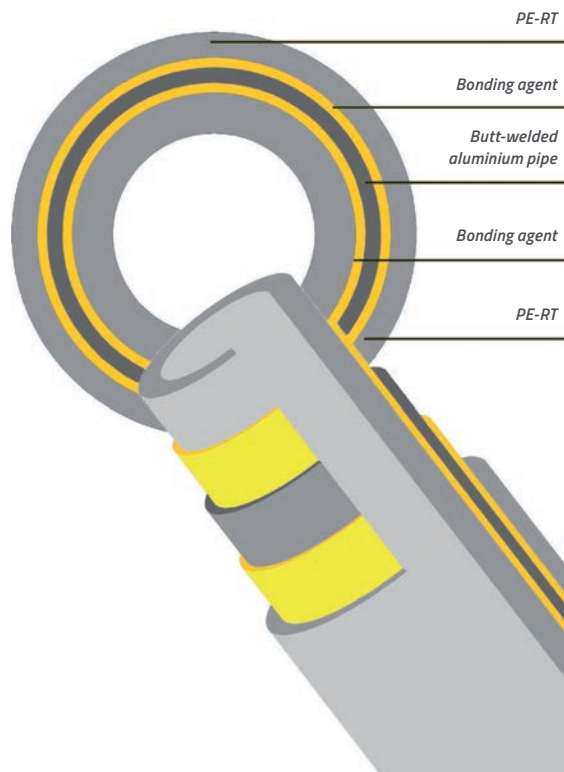
► DESIGN

A basic polyethylene pipe is extruded and a bonding agent is applied. An aluminium strip is formed around the pipe, butt welded longitudinally and calibrated to the inner pipe. A further adhesive layer and a covering layer of polyethylene are then applied. The weld seam is checked inline during the production process. The internal diameter of the finished product is checked with a ball.

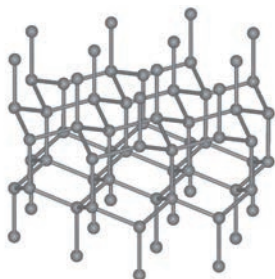
► MATERIALS

PE-RT – ELASTICITY AT ANY TEMPERATURE

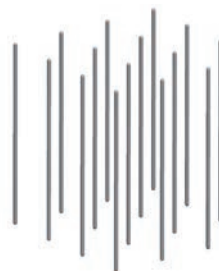
The internal pipe material PE-RT (Raised Temperature) was specially developed for applications in cold and hot water systems. Only pure materials from established raw material producers are used. The interlinked structure of the material has high thermal resistance and is therefore particularly suitable for use in this area.



POLYETHYLENE



Interlinked (physically)
Better structure



Not interlinked (physically)
Weaker structure

High-temperature-resistant polyethylene or PE-RT extends the typical properties of polyethylene. Because of its molecular structure and its process properties, it is also extremely stable at high temperatures. This makes it perfect for applications in the field of cold and hot water systems. The combination of PE-RT, aluminium and bonding

agent offers some big advantages in terms of processing and cost-effectiveness of installations in comparison to conventional raw materials such as copper or C-steel. All materials are tested and safe for use in drinking water installations.

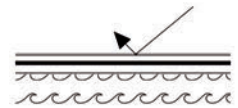


► ADVANTAGES OF ALUMINIUM MULTILAYER COMPOSITE PIPE

The Pipetec pipe system is designed for universal use and offers some important advantages to those who work with it:

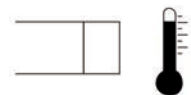
100% DIFFUSION-TIGHT

The Pipetec multilayer composite pipe is 100% diffusion-tight thanks to the internal butt-welded aluminium pipe (oxygen barrier).



LITTLE THERMAL EXPANSION

The internal aluminium pipe reduces the thermal expansion considerably (compared to conventional plastic pipes). It is roughly equivalent to that of metal pipes ($0.024 \text{ mm/m} \times \text{K}$).



PHYSICALLY INTERLINKED PLASTIC INSIDE AND OUT PE-RT

The Pipetec System multilayer composite pipe has the same quality plastic both inside and outside. This prevents different ageing processes or material properties.



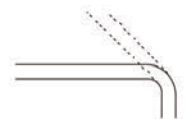
NO MATERIAL ABRASION, NO DEPOSITS

The lower roughness of the interlinked plastic prevents any material abrasion or deposits that would change the pipe cross-section.



DIMENSIONALLY STABLE, HARDLY ANY FITTINGS FOR DIRECTIONCHANGES

The Pipetec System multilayer composite pipe can be bent easily by hand and stays in the required shape without any spring-back. Changes of direction can be achieved without any moulded parts. Only in exceptional cases are appropriate Fittings required.



DURABILITY 70° AT 10 BAR

The Pipetec System multilayer composite pipe has continuous durability at 70°C and 10 bar. Brief temperature spikes of 95°C are feasible in accordance with DVGW Worksheet W542 and W534.



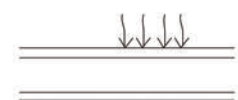
NOISE REDUCTION FEATURES

The smooth inside wall of the pipe means there are no audible flow noises. Fittings, moulded parts and taps can be separated from the construction base with appropriate insulation (DIN 4109 / EnEV).



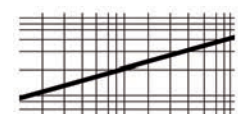
CORROSION RESISTANCE

The fittings are just as resistant to corrosion as the Pipetec System multilayer composite pipes. The components in the range are therefore suitable for all types of drinking water.



SERVICE LIFE

The Pipetec System multilayer composite pipe is designed for a service life of at least 50 years under the continuous load described above (70°C at 10 bar, 95°C for short periods). Laying and testing in accordance with DIN 1988.



MEETS THE REQUIREMENTS OF THE UBA POSITIVE LIST (DVGW AND KIWA CERTIFICATION)




► TECHNICAL DATA FOR ALUMINIUM MULTILAYER COMPOSITE PIPE (AS OF 11/2018)

DIMENSIONS	16X2.0	16X2.0	20X2.0	26X3.0	32X3.0	40X3.5	50X4.0	63X4.5
Item no.	VR1620...HZ	VR1620... VS1620... VRI162...	VR2020... VS2020... VRI202...	VR2630... VS2630... VRI263...	VR3230... VS3230...	VS402 VS405	VS505	VS635
Certifications / Tests	none (heating applications only)	DVGW KIWA	DVGW KIWA	DVGW KIWA	DVGW KIWA	DVGW KIWA	DVGW KIWA	DVGW KIWA
Colour	white	white	white	white	white	white	white	white
Pipe structure in layers	5	5	5	5	5	5	5	5
External pipe diameter (mm)	16.0	16.0	20.0	26.0	32.0	40.0	50.0	63.0
Pipe wall thickness (mm)	2.0	2.0	2.0	3.0	3.0	3.5	4.0	4.5
Internal pipe diameter (mm)	12.0	12.0	16.0	20.0	26.0	33.0	42.0	54.0
Aluminium layer thickness (mm)	0.15	0.20	0.25	0.35 / 0.3	0.50	0.50	0.60	0.80
Density								
Smallest bending radius (mm) without bending tool (T = 20°C)	80	80	100	260	-			-
Smallest bending radius (mm) with bending tool (T = 20°C)	32	48	60	104	128	160	200	252
Metre weight (g / m)	100	105	140	260	350	500	700	1,100
Water content (litre / m)	0.113	0.113	0.201	0.314	0.531	0.855	1.385	2.290
Linear expansion coefficient (mm / (m K))	0.023	0.023	0.023	0.023	0.023	0.023	0.026	0.026
Thermal resistance (m ² k / W)	0.0046	0.0045	0.0044	0.0066	0.0063	0.0075	0.0085	0.0093
Thermal conductivity (W / m K)	0.43	0.44	0.46	0.45	0.48	0.47	0.47	0.49
Max. operating temperature, over 50 years (°C)	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Max. operating temperature, max. 1 year (°C)	80	95	95	95	95	95	95	95
Fail-safe temperature, max. 100 hours (°C)	95	110	110	110	110	110	110	110
Max. operating pressure, over 50 years (bar)	6	10	10	10	10	10	10	10
Max. operating pressure, max. 1 year (bar)	8	12	12	12	12	12	12	12
Max. operating pressure, app. classes 4/5 (bar)								
Surface roughness (mm)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Oxygen permeability (g /m ³ d)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1



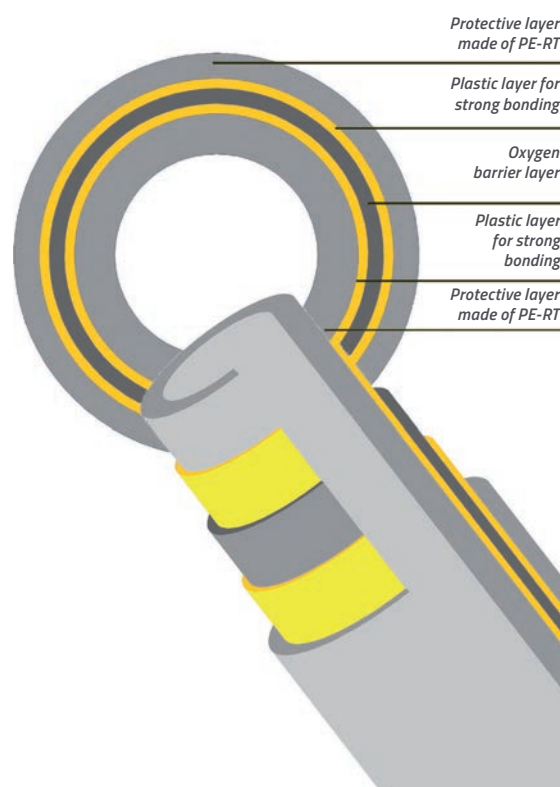
SOLID PLASTIC PIPE PE-RT

Thermally stable solid plastic pipe for underfloor heating systems - PE-RT is a high-quality, five-layer underfloor heating pipe. This structure provides high oxygen tightness, which is not affected even by rough building site conditions.

► STRUCTURE – MATERIAL

A specially modified polyethylene is used for PE-RT (Raised Temperature) heating pipes, the molecular structure and composition of which guarantee very good thermal stability and high mechanical strength up to temperatures of 90°C.

The five-layer pipe structure is made in a single work operation using the extrusion process. A layer of EVOH provides a very effective oxygen barrier, while the outer PE-RT layer protects the entire layer structure from external factors. The layers are securely and permanently glued together by means of a bonding agent. This production process makes the pipe particularly suitable for cost-effective and safe installation of underfloor heating systems.



► ADVANTAGES OF SOLID PLASTIC PIPE PE-RT

- Oxygen tightness with co-extruded EVOH coating as per DIN 4726
- Range of use max. 90°C, max. 6 bar, continuous temperature 70°C
- Pipes made of PE-RT are free from corrosion. The materials will not react or change.
- Weldable basic pipe
- Excellent stress crack resistance
- Suitable for particularly rough laying conditions thanks to 5-layer technology
- Flexible and easy to lay – can be laid cold
- Tight bending radii possible
- Resistant to numerous chemicals (details on request)
- No encrustation thanks to smooth internal pipe surface
- Light weight


► TECHNICAL DATA FOR SOLID PLASTIC PIPE PE-RT (AS OF 11/2018) INCL. ULTRAFLEX

DIMENSIONS	12X2.0	14X2.0	16X2.0	17X2.0
Item no.	HR120...	HR1420...	HR1620...	HR1720...
Certifications / Tests (only Type 2)	SKZ	SKZ	SKZ	SKZ
Colour	natural	natural	natural	natural
Pipe structure in layers	5	5	5	5
External pipe diameter (mm)	12.0	14.0	16.0	17.0
Pipe wall thickness (mm)	2.0	2.0	2.0	2.0
Internal pipe diameter (mm)	8.0	10.0	12.0	13.0
Density	0.945	0.945	0.945	0.945
Smallest bending radius (mm) without bending tool (T = 20°C)	60	70	80	90
Smallest bending radius (mm) with bending tool (T = 20°C)	24	28	32	36
Metre weight (g / m)	62	75	87	94
Water content (litre / m)	0.050	0.079	0.113	0.133
Linear expansion coefficient (mm / (m K))	0.195	0.195	0.195	0.195
Thermal resistance (m ² k / W)	0.0050	0.0050	0.0050	0.0050
Thermal conductivity (W / m K)	0.40	0.40	0.40	0.40
Max. operating temperature, over 50 years (°C)	70.0	70.0	70.0	70.0
Max. operating temperature, max. 1 year (°C)	90	90	90	90
Fail-safe temperature, max. 100 hours (°C)	100	100	100	100
Max. operating pressure, over 50 years (bar)	-	-	-	-
Max. operating pressure, max. 1 year (bar)	-	-	-	-
Max. operating pressure, app. classes 4/5 (bar)	8	8	8	8
Surface roughness (mm)	0.007	0.007	0.007	0.007
Oxygen permeability (g / m ³ d)	<0.01	<0.01	<0.01	<0.01



TECHNICAL DATA FITTINGS

ZETA VALUES PIPETEC PRESS FITTINGS

Loss coefficient ζ

COMPONENT	SYMBOL	DIM 16	DIM 20	DIM 26	DIM 32	DIM 40	DIM 50
T-CONNECTOR FLOW SEPARATION		9.8	7.6	5.5	3.4	2.8	2.2
T-CONNECTOR RUN (COUPLING)		5.4	4.2	3.1	2.6	2.1	1.6
T-CONNECTOR COUNTER-FLOW FOR FLOW SEPARATION		12.2	8.5	6.8	5.1	3.4	2.8
T-CONNECTOR COUNTER-FLOW FOR FLOW COMBINATION		12.2	8.5	6.8	5.1	3.4	2.8
90° ELBOW		8.7	6.3	4.5	2.9	1.3	1.3
PIPE BEND		1.3	0.9	0.7	0.4	0.2	-
TRANSITION REDUCER		8.3	6.3	5.1	2.8	1.6	1.3
WALL BUSHING		5.5	5.4	-	-	-	-

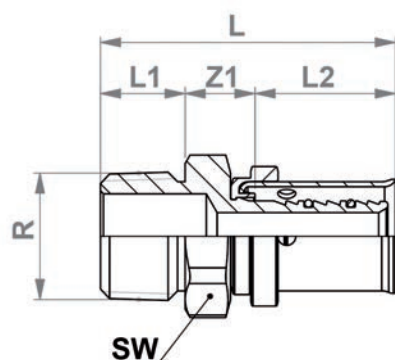


INSTALLATION DIMENSIONS / Z-DIMENSIONS

PIPETEC PRESSFITTINGS



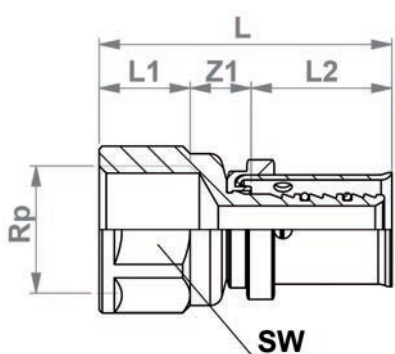
PRESS CONNECTOR WITH MALE THREAD



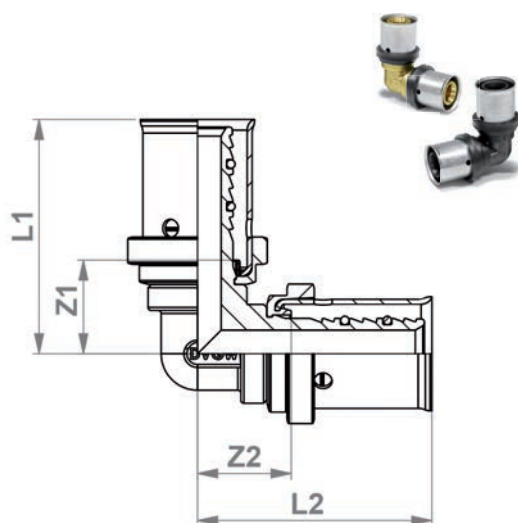
ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	SW mm	R "
PFUA1604	16 x 2 - 1/2"	Brass	48	14	23	11	24	1/2
PFUA1605	16 x 2 - 3/4"	Brass	51	16	23	12	27	3/4
PFUA2004	20 x 2 - 1/2"	Brass	48	14	23	11	24	1/2
PFUA2005	20 x 2 - 3/4"	Brass	51	16	23	12	27	3/4
PFUA2006	20 x 2 - 1"	Brass	57	20	23	14	36	1
PFUA2604	26 x 3 - 1/2"	Brass	48	14	23	11	24	1/2
PFUA2605	26 x 3 - 3/4"	Brass	51	16	23	12	27	3/4
PFUA2606	26 x 3 - 1"	Brass	57	20	23	14	36	1
PFUA3206	32 x 3 - 1"	Brass	57	20	23	14	36	1
PFUA3207	32 x 3 - 1 1/4"	Brass	59	22	23	14	46	1 1/4
PFUA4006	40 x 3,5 - 1"	Brass	47	20	23	14	36	1
PFUA4007	40 x 3,5 - 1 1/4"	Brass	59	22	23	14	46	1 1/4
PFUA5007	50 x 4 - 1 1/4"	Brass	71	22	35	14	46	1 1/4
PFUA5008	50 x 4 - 1 1/2"	Brass	71	22	35	14	51	1 1/2
PFUA6309	63 x 4,5 - 2"	Brass	79	25	39	15	65	2



PRESS CONNECTOR WITH FEMALE THREAD



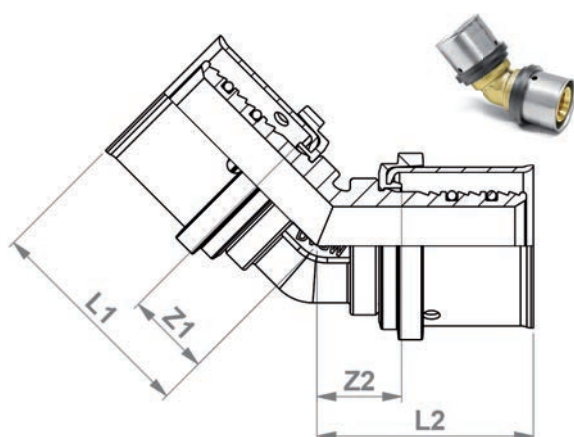
ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	SW mm	Rp "
PFUI1604	16 x 2 - 1/2"	Brass	48	16	23	9	25	1/2
PFUI1605	16 x 2 - 3/4"	Brass	51	17	23	11	32	3/4
PFUI2004	20 x 2 - 1/2"	Brass	47	16	23	8	27	1/2
PFUI2005	20 x 2 - 3/4"	Brass	50	17	23	10	32	3/4
PFUI2605	26 x 3 - 3/4"	Brass	49	17	23	9	32	3/4
PFUI2606	26 x 3 - 1"	Brass	54	21	23	10	41	1
PFUI3206	32 x 3 - 1"	Brass	53	21	23	9	41	1
PFUI3207	32 x 3 - 1 1/4"	Brass	57	23	23	11	50	1 1/4
PFUI4006	40 x 3,5 - 1"	Brass	53	21	23	9	38	1
PFUI4007	40 x 3,5 - 1 1/4"	Brass	59	23	23	13	50	1 1/4
PFUI4008	40 x 3,5 - 1 1/2"	Brass	59	23	23	13	55	1 1/2
PFUI5007	50 x 4 - 1 1/4"	Brass	66	23	35	8	50	1 1/4
PFUI5008	50 x 4 - 1 1/2"	Brass	67	23	35	9	55	1 1/2
PFUI6309	63 x 4,5 - 2"	Brass	72	27	39	6	65	2



PRESS ELBOW 90°



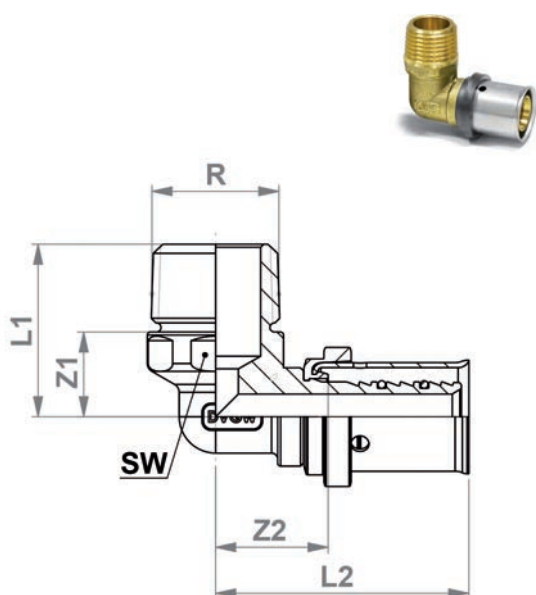
ITEM NO.	SIZE	MATERIAL	Z1 mm	L1 mm	Z2 mm	L2 mm
PFW1616	16 x 2	Brass	16	39	16	39
KPFW1616	16 x 2	PPSU	16	39	16	39
PFW2020	20 x 2	Brass	18	41	18	41
KPFW2020	20 x 2	PPSU	18	41	18	41
PFW2626	26 x 3	Brass	18	41	18	41
KPFW2626	26 x 3	PPSU	18	41	18	41
PFW3232	32 x 3	Brass	24	47	24	47
KPFW3232	32 x 3	PPSU	24	47	24	47
PFW4040	40 x 3,5	Brass	26	49	26	49
PFW5050	50 x 4	Brass	32	67	32	67
PFW6363	63 x 4,5	Brass	43	81	43	81



PRESS ELBOW 45°



ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm
PFWH2626	26 x 3	Brass	38	15	38	15
PFWH3232	32 x 3	Brass	39	16	39	16
PFWH4040	40 x 3,5	Brass	45	22	45	22
PFWH5050	50 x 4	Brass	57	22	57	22
PFWH6363	63 x 4,5	Brass	62,5	24	62,5	24



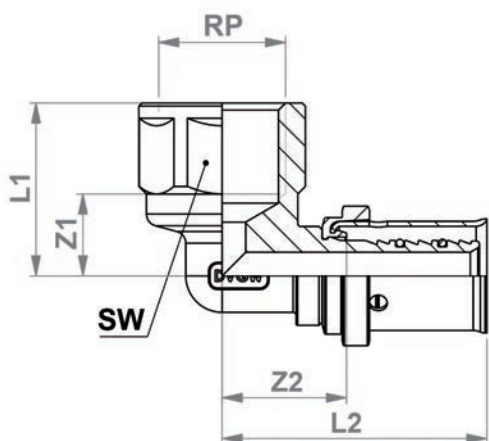
PRESS ELBOW WITH MALE THREAD



ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	SW mm	Rp "
PFWA1604	16 x 2 - 1/2"	Brass	30	16	41	18	22	1/2
PFWA1605	16 x 2 - 3/4"	Brass	32	16	45	22	27	3/4
PFWA2004	20 x 2 - 1/2"	Brass	32	18	42	19	22	1/2
PFWA2005	20 x 2 - 3/4"	Brass	34	18	44	21	27	3/4
PFWA2605	26 x 3 - 3/4"	Brass	34	18	44	21	-	3/4
PFWA2606	26 x 3 - 1"	Brass	42	22	48	25	34	1
PFWA3206	32 x 3 - 1"	Brass	45	25	48	25	34	1
PFWA4007	40 x 3,5 - 1 1/4"	Brass	56	34	53	30	43	1 1/4
PFWA5007	50 x 4 - 1 1/4"	Brass	61	39	65	30	43	1 1/4
PFWA5008	50 x 4 - 1 1/2"	Brass	61	39	68	33	50	1 1/2
PFWA6309	63 x 4,5 - 2"	Brass	70	45	78	39	60	2



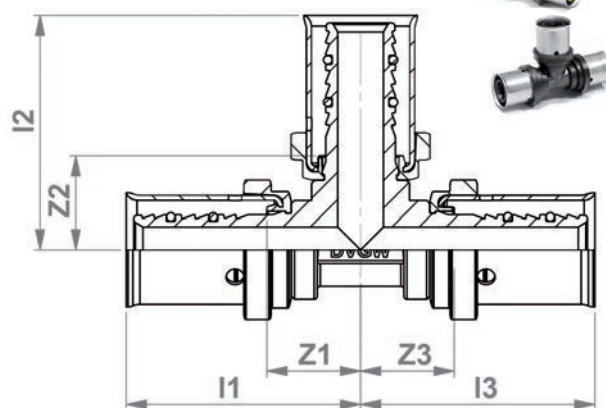
PRESS ELBOW WITH FEMALE THREAD



ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	SW mm	Rp "
PFWI1604	16 x 2 - 1/2"	Brass	29	13	45	22	27	1/2
PFWI1605	16 x 2 - 3/4"	Brass	32	15	48	25	33	3/4
PFWI2004	20 x 2 - 1/2"	Brass	31	15	45	22	27	1/2
PFWI2005	20 x 2 - 3/4"	Brass	33	16	48	25	33	3/4
PFWI2605	26 x 3 - 3/4"	Brass	34	17	48	25	33	3/4
PFWI2606	26 x 3 - 1"	Brass	41	20	53	30	41	1
PFWI3206	32 x 3 - 1"	Brass	42	21	53	30	41	1
PFWI4007	40 x 3,5 - 1 1/4"	Brass	50	27	58	35	50	1 1/4
PFWI5007	50 x 4 - 1 1/2"	Brass	51	28	72	37	50	1 1/2
PFWI5008	50 x 4 - 1 1/2"	Brass	52	29	73	38	56	1 1/2
PFWI6309	63 x 4,5 - 2"	Brass	62	35	81	42	67	2



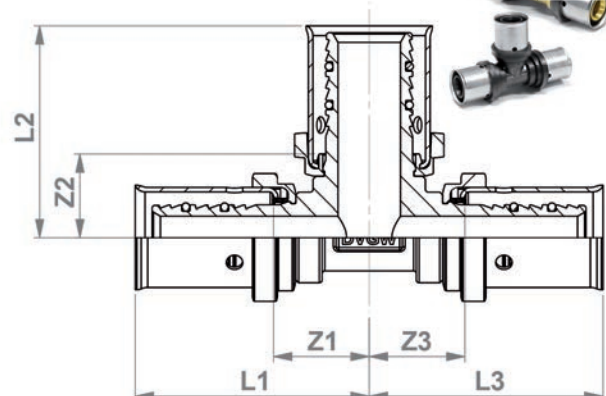
PRESS T-CONNECTOR



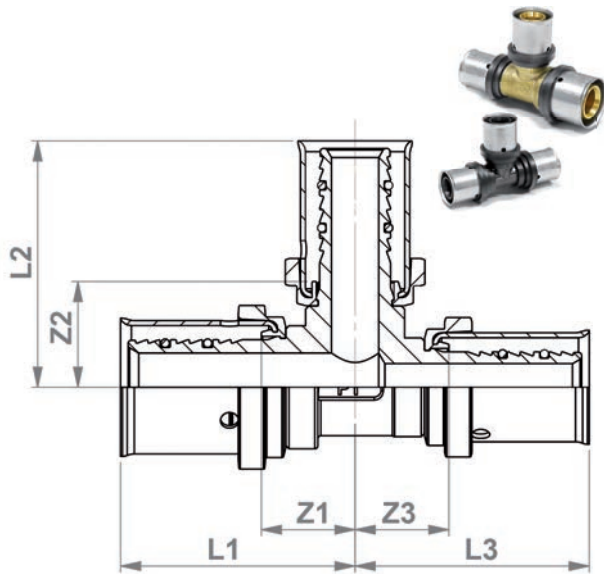
ITEM NO.	SIZE	MATERIAL	Z1 mm	L1 mm	Z2 mm	L2 mm	Z3 mm	L3 mm
PFT161616	16 x 2	Brass	16	39	16	39	16	39
KPFT161616	16 x 2	PPSU	16	39	16	39	16	39
PFT202020	20 x 2	Brass	18	41	18	41	18	41
KPFT202020	20 x 2	PPSU	18	41	18	41	18	41
PFT262626	26 x 3	Brass	18	41	18	41	18	41
KPFT262626	26 x 3	PPSU	18	41	18	41	18	41
PFT323232	32 x 3	Brass	24	47	24	47	24	47
KPFT323232	32 x 3	PPSU	24	47	24	47	24	47
PFT404040	40 x 3,5	Brass	26	49	26	49	26	49
PFT505050	50 x 4	Brass	32	67	32	67	32	67
PFT636363	63 x 4,5	Brass	43	81	43	81	43	81



PRESS T-CONNECTOR, ENLARGED CENTRAL OUTLET



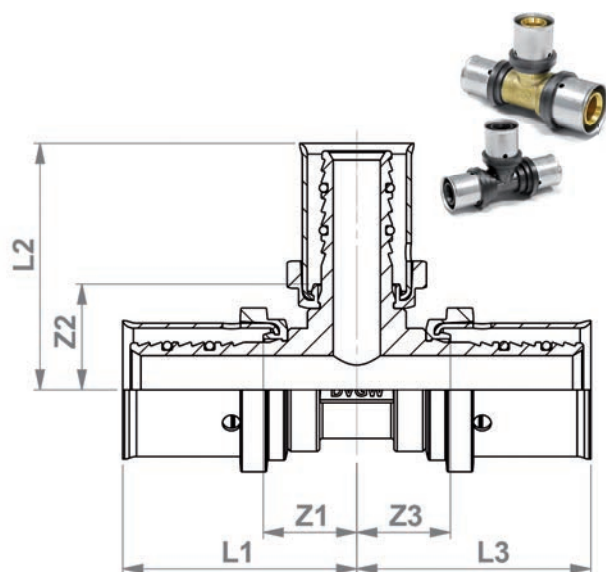
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	L3 mm	Z3 mm
PFT162016	16 x 2 - 20 x 2 - 16 x 2	Brass	40	17	38	15	40	17
KPFT162016	16 x 2 - 20 x 2 - 16 x 2	PPSU	40	17	38	15	40	17
PFT202620	20 x 2 - 26 x 3 - 20 x 2	Brass	43	20	41	8	43	20
KPFT202620	20 x 2 - 26 x 3 - 20 x 2	PPSU	43	20	41	8	43	20
PFT263226	26 x 3 - 32 x 3 - 26 x 3	Brass	45	22	43	20	45	22
PFT324032	32 x 3 - 40 x 3,5 - 32 x 3	Brass	49	26	45	22	49	26



PRESS REDUCED T-CONNECTOR



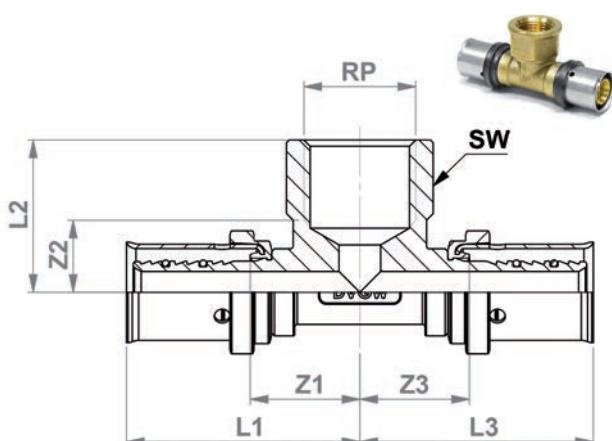
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	L3 mm	Z3 mm
PFT201616	20 x 2 - 16 x 2 - 16 x 2	Brass	38	15	40	17	39	16
KPFT201616	20 x 2 - 16 x 2 - 16 x 2	PPSU	38	15	40	17	39	16
PFT202016	20 x 2 - 20 x 2 - 16 x 2	Brass	40	17	40	17	41	18
KPFT202016	20 x 2 - 20 x 2 - 16 x 2	PPSU	40	17	40	17	41	18
PFT261620	26 x 3 - 16 x 2 - 20 x 2	Brass	39	16	43	20	38	15
KPFT261620	26 x 3 - 16 x 2 - 20 x 2	PPSU	39	16	43	20	38	15
PFT262016	26 x 3 - 20 x 2 - 16 x 2	Brass	41	18	44	21	39	16
KPFT262016	26 x 3 - 20 x 2 - 16 x 2	PPSU	41	18	44	21	39	16
PFT262020	26 x 3 - 20 x 2 - 20 x 2	Brass	41	18	43	20	40	17
KPFT262020	26 x 3 - 20 x 2 - 20 x 2	PPSU	41	18	43	20	40	17
PFT262616	26 x 3 - 26 x 3 - 16 x 2	Brass	44	21	43	20	43	20
KPFT262616	26 x 3 - 26 x 3 - 16 x 2	PPSU	44	21	43	20	43	20
PFT262620	26 x 3 - 26 x 3 - 20 x 2	Brass	44	21	43	20	43	20
KPFT262620	26 x 3 - 26 x 3 - 20 x 2	PPSU	44	21	43	20	43	20
PFT322020	32 x 3 - 20 x 2 - 20 x 2	Brass	41	18	47	24	41	18
PFT322026	32 x 3 - 20 x 2 - 26 x 3	Brass	41	18	47	24	41	18
PFT322626	32 x 3 - 26 x 3 - 26 x 3	Brass	44	21	47	24	43	20
KPFT322626	32 x 3 - 26 x 3 - 26 x 3	PPSU	44	21	47	24	43	20
PFT323220	32 x 3 - 32 x 3 - 20 x 2	Brass	47	24	47	24	46	23
PFT323226	32 x 3 - 32 x 3 - 26 x 3	Brass	47	24	47	24	46	23
PFT402632	40 x 3.5 - 26 x 3 - 32 x 3	Brass	43	20	49	26	42	19
PFT403232	40 x 3.5 - 32 x 3 - 32 x 3	Brass	47	24	50	27	46	23
PFT404026	40 x 3.5 - 40 x 3.5 - 26 x 3	Brass	49	26	49	26	49	26
PFT404032	40 x 3.5 - 40 x 3.5 - 32 x 3	Brass	49	26	49	26	49	26
PFT503240	50 x 4 - 32 x 3 - 40 x 3.5	Brass	58	23	54	31	46	23
PFT504040	50 x 4 - 40 x 3.5 - 40 x 3.5	Brass	61	26	54	31	50	27
PFT505032	50 x 4 - 50 x 4 - 32 x 3	Brass	67	32	67	32	55	32
PFT505040	50 x 4 - 50 x 4 - 40 x 3.5	Brass	67	32	67	32	56	33
PFT634050	63 x 4.5 - 40 x 3.5 - 50 x 4	Brass	65	26	61	38	61	26
PFT635050	63 x 4.5 - 50 x 4 - 50 x 4	Brass	71	32	73	38	66	31
PFT636340	63 x 4.5 - 63 x 4.5 - 40 x 3.5	Brass	77	38	77	38	62	39
PFT636350	63 x 4.5 - 63 x 4.5 - 50 x 4	Brass	77	38	77	38	73	38



PRESS T-CONNECTOR, REDUCING CENTRAL OUTLET



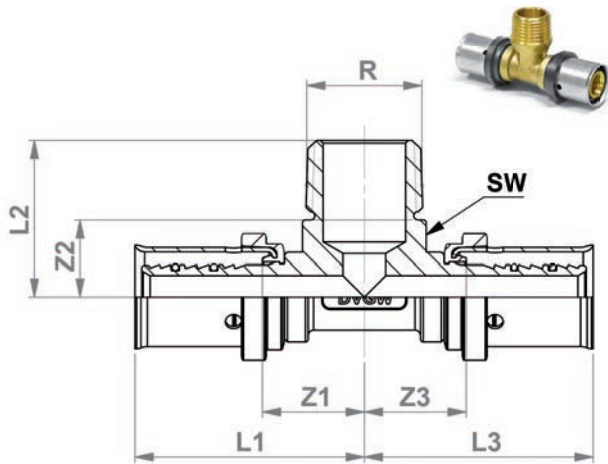
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	L3 mm	Z3 mm
PFT201620	20 x 2 - 16 x 2 - 20 x 2	Brass	38	15	41	18	38	15
KPFT201620	20 x 2 - 16 x 2 - 20 x 2	PPSU	39	16	43	20	38	15
PFT261626	26 x 3 - 16 x 2 - 26 x 3	Brass	39	16	44	21	39	16
KPFT261626	26 x 3 - 16 x 2 - 26 x 3	PPSU	39	16	44	21	39	16
PFT262026	26 x 3 - 20 x 2 - 26 x 3	Brass	41	18	44	21	41	18
KPFT262026	26 x 3 - 20 x 2 - 26 x 3	PPSU	41	18	44	21	41	18
PFT321632	32 x 3 - 16 x 2 - 32 x 3	Brass	39	16	47	24	39	16
KPFT321632	32 x 3 - 16 x 2 - 32 x 3	PPSU	39	16	47	24	39	16
PFT322032	32 x 3 - 20 x 2 - 32 x 3	Brass	41	18	47	24	41	18
KPFT322032	32 x 3 - 20 x 2 - 32 x 3	PPSU	41	18	47	24	41	18
PFT322632	32 x 3 - 26 x 3 - 32 x 3	Brass	42	19	47	24	42	19
KPFT322632	32 x 3 - 26 x 3 - 32 x 3	PPSU	42	19	47	24	42	19
PFT402040	40 x 3,5 - 20 x 2 - 40 x 3,5	Brass	41	18	49	26	41	18
PFT402640	40 x 3,5 - 26 x 3 - 40 x 3,5	Brass	43	20	49	26	43	20
PFT403240	40 x 3,5 - 32 x 3 - 40 x 3,5	Brass	46	23	49	26	46	23
PFT502650	50 x 4 - 26 x 3 - 50 x 4	Brass	55	20	56	33	55	20
PFT503250	50 x 4 - 32 x 3 - 50 x 4	Brass	58	23	56	33	58	23
PFT504050	50 x 4 - 40 x 3,5 - 50 x 4	Brass	62	27	56	33	62	27
PFT633263	63 x 4,5 - 32 x 3 - 63 x 4,5	Brass	62	23	61	38	62	23
PFT634063	63 x 4,5 - 40 x 3,5 - 63 x 4,5	Brass	66	27	62	39	66	27
PFT635063	63 x 4,5 - 50 x 4 - 63 x 4,5	Brass	71	32	72	37	71	32



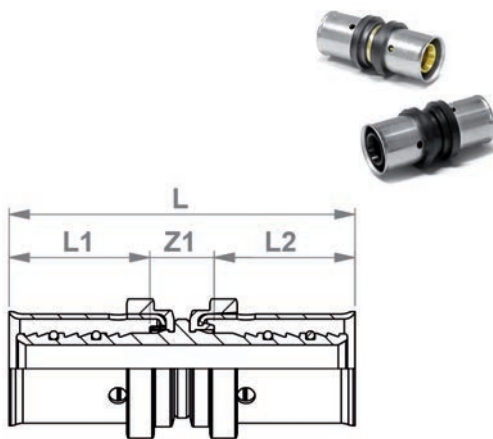
PRESS T-CONNECTOR WITH FEMALE THREAD



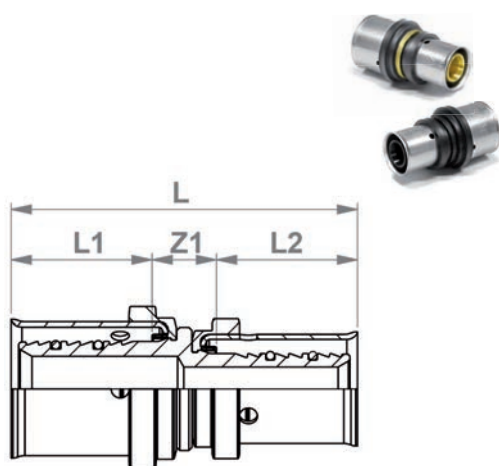
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	Z3 mm	L3 mm	Rp "	SW mm
PFTI160416	16 x 2 - ½" - 16 x 2	Brass	46	23	30	14	46	23	½	27
PFTI200420	20 x 2 - ½" - 20 x 2	Brass	46	23	30	14	46	23	½	27
PFTI200520	20 x 2 - ¾" - 20 x 2	Brass	49	26	33	16	49	26	¾	33
PFTI260426	26 x 3 - ½" - 26 x 3	Brass	46	23	32	16	46	23	½	27
PFTI260526	26 x 3 - ¾" - 26 x 3	Brass	49	26	34	17	49	26	¾	33
PFTI320432	32 x 3 - ½" - 32 x 3	Brass	46	23	35	19	46	23	½	27
PFTI320532	32 x 3 - ¾" - 32 x 3	Brass	49	26	38	21	49	26	¾	33
PFTI320632	32 x 3 - 1" - 32 x 3	Brass	53	30	43	22	53	30	1	41
PFTI320732	32 x 3 - 1 ¼" - 32 x 3	Brass	57	34	47	24	57	34	1 ¼	50
PFTI400640	40 x 3,5 - 1" - 40 x 3,5	Brass	53	30	44	23	53	30	1	41
PFTI400740	40 x 3,5 - 1 ¼" - 40 x 3,5	Brass	58	35	49	26	58	35	1 ¼	50
PFTI500750	50 x 4 - 1 ¼" - 50 x 4	Brass	69	34	50	27	69	34	1 ¼	50
PFTI500850	50 x 4 - 1 ½" - 50 x 4	Brass	72	37	52	29	72	37	1 ½	56
PFTI630663	63 x 4,5 - 1" - 63 x 4,5	Brass	68	29	55	34	68	29	1	41
PFTI630863	63 x 4,5 - 1 ½" - 63 x 4,5	Brass	76	37	56	33	76	37	1 ½	56

PRESS T-CONNECTOR WITH MALE THREAD

ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	Z3 mm	L3 mm	Rp "	SW mm
PFTA160416	16 x 2 - 1/2" - 16 x 2	Brass	42	19	30	16	42	19	1/2	21
PFTA200420	20 x 2 - 1/2" - 20 x 2	Brass	42	19	32	18	42	19	1/2	21
PFTA200520	20 x 2 - 3/4" - 20 x 2	Brass	45	22	34	18	45	22	3/4	27
PFTA260426	26 x 3 - 1/2" - 26 x 3	Brass	41	18	34	18	41	18	1/2	21
PFTA260526	26 x 3 - 3/4" - 26 x 3	Brass	44	21	36	20	44	21	3/4	27
PFTA260626	26 x 3 - 1" - 26 x 3	Brass	49	26	42	22	49	26	1	34
PFTA320532	32 x 3 - 3/4" - 32 x 3	Brass	45	22	40	24	45	22	3/4	27
PFTA320632	32 x 3 - 1" - 32 x 3	Brass	49	26	45	25	49	26	1	34
PFTA320732	32 x 3 - 1 1/4" - 32 x 3	Brass	53	30	52	30	53	30	1 1/4	43
PFTA400640	40 x 3,5 - 1" - 40 x 3,5	Brass	49	26	48	28	49	26	1	34
PFTA500750	50 x 4 - 1 1/4" - 50 x 4	Brass	65	30	62	40	65	30	1 1/4	43
PFTA500850	50 x 4 - 1 1/2" - 50 x 4	Brass	68	33	62	40	68	33	1 1/2	50
PFTA630963	63 x 4,5 - 2" - 63 x 4,5	Brass	78	39	69	44	78	39	2	60

PRESS COUPLING

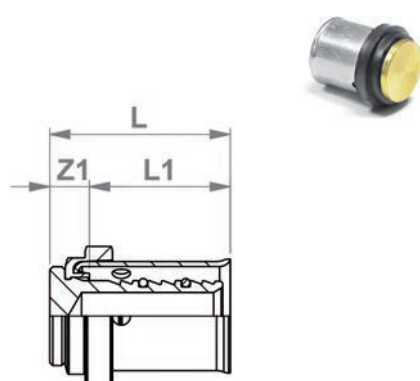
ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm
PFK1616	16 x 2 - 16 x 2	Brass	57	23	23	11
KPFK1616	16 x 2 - 16 x 2	PPSU	57	23	23	11
PFK2020	20 x 2 - 20 x 2	Brass	57	23	23	11
KPFK2020	20 x 2 - 20 x 2	PPSU	57	23	23	11
PFK2626	26 x 3 - 26 x 3	Brass	57	23	23	11
KPFK2626	26 x 3 - 26 x 3	PPSU	57	23	23	11
PFK3232	32 x 3 - 32 x 3	Brass	58	23	23	12
KPFK3232	32 x 3 - 32 x 3	PPSU	58	23	23	12
PFK4040	40 x 3,5 - 40 x 3,5	Brass	59	23	23	13
PFK5050	50 x 4 - 50 x 4	Brass	83	35	35	13
PFK6363	63 x 4,5 - 63 x 4,5	Brass	90	38,5	38,5	13



PRESS REDUCED COUPLING



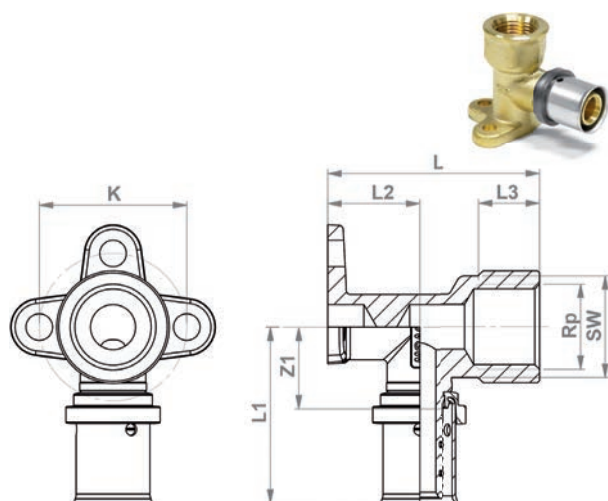
ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	L1 mm
PFK2016	20 x 2 - 16 x 2	Brass	57	23	23	11
KPFK2016	20 x 2 - 16 x 2	PPSU	57	23	23	11
PFK2616	26 x 3 - 16 x 2	Brass	57	23	23	11
PFK2620	26 x 3 - 20 x 2	Brass	57	23	23	11
KPFK2620	26 x 3 - 20 x 2	PPSU	57	23	23	11
PFK3216	32 x 3 - 16 x 2	Brass	58	23	23	12
PFK3220	32 x 3 - 20 x 2	Brass	58	23	23	12
PFK3226	32 x 3 - 26 x 3	Brass	58	23	23	12
KPFK3226	32 x 3 - 26 x 3	PPSU	58	23	23	12
PFK4026	40 x 3,5 - 26 x 3	Brass	59	23	23	13
PFK4032	40 x 3,5 - 32 x 3	Brass	59	23	23	13
PFK5032	50 x 4 - 32 x 3	Brass	71	35	23	13
PFK5040	50 x 4 - 40 x 3,5	Brass	71	35	23	13
PFK6340	63 x 4,5 - 40 x 3,5	Brass	75	39	23	13
PFK6350	63 x 4,5 - 50 x 4	Brass	87	39	35	13



PRESS END PLUG



ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	Z1 mm
PFS16	16 x 2	Brass	30	23	7
PFS20	20 x 2	Brass	30	23	7
PFS26	26 x 3	Brass	30	23	7
PFS32	32 x 3	Brass	31	23	8
PFS40	40 x 3,5	Brass	32	23	9
PFS50	50 x 4	Brass	45	35	10
PFS63	63 x 4,5	Brass	48	39	9



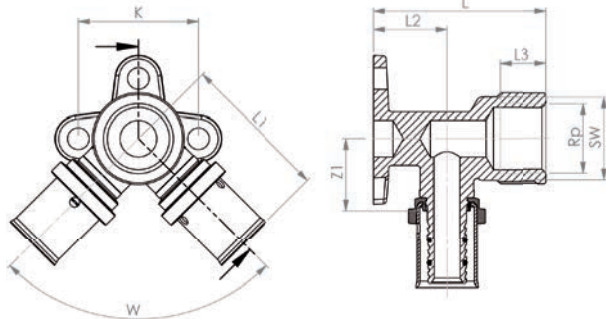
PRESS WALL ELBOW



ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	L3 mm	L mm	K mm	Rp "	SW mm
PFWWK1603	16 x 2 - 3/8" - 39 mm	Brass	44	21	175	14	39	36	3/8	25
PFWWK1604	16 x 2 - 1/2" - 39 mm	Brass	46	23	175	14	39	36	1/2	27
PFWWM1604	16 x 2 - 1/2" - 52 mm	Brass	46	23	225	14	52	36	1/2	27
PFWWL1604	16 x 2 - 1/2" - 78 mm	Brass	46	23	225	14	78	36	1/2	27
PFWWM2004	20 x 2 - 1/2" - 52 mm	Brass	46	23	225	14	52	36	1/2	27
PFWWL2004	20 x 2 - 1/2" - 78 mm	Brass	46	23	225	14	78	36	1/2	27
PFWWM2005	20 x 2 - 3/4" - 52 mm	Brass	48	23	225	14	78	36	1/2	27
PFWWM2605	26 x 3 - 3/4" - 52 mm	Brass	48	25	225	16	52	36	3/4	33



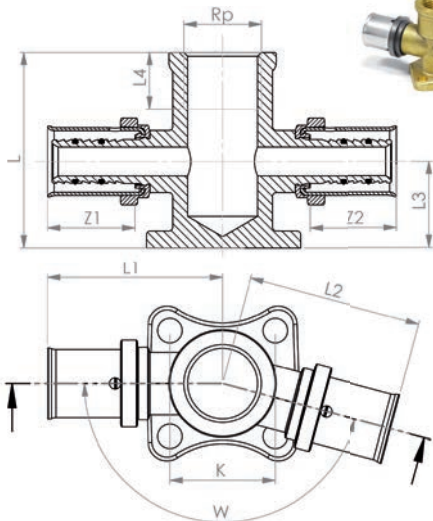
PRESS WALL ELBOW DOUBLE – V-SHAPED



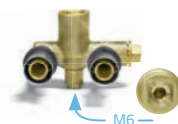
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	L mm	L3 mm	Rp "	SW mm	W mm	K mm
PFWW160416	16 x 2 - 1/2" - 16 x 2	Brass	45	22	22	52	14	1/2	27	90	36
PFWW200420	20 x 2 - 1/2" - 20 x 2	Brass	45	22	24	52	14	1/2	27	90	36



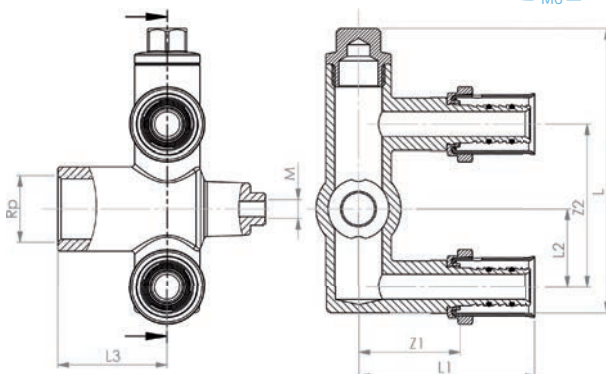
PRESS WALL ELBOW DOUBLE – SERIES SHAPED



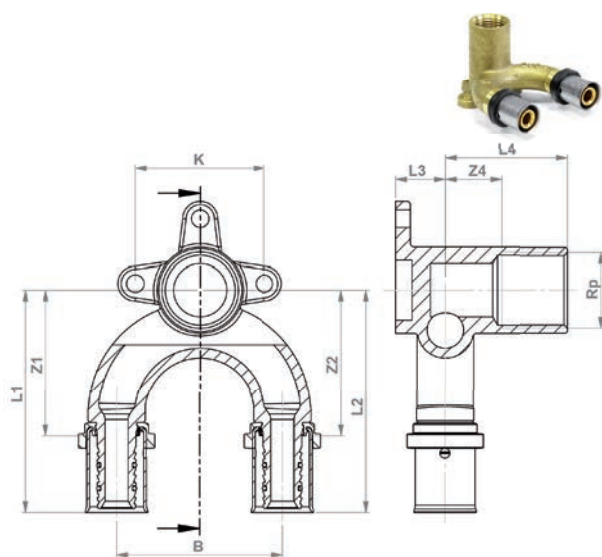
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	L3 mm	Rp "	L4 "	W mm	K mm	Z4 mm
PFWW16416	16 x 2 - 1/2" - 16 x 2	Brass	46	23	46	23	23	1/2	14	165	28	52
PFWW200420	20 x 2 - 1/2" - 20 x 2	Brass	46	23	46	23	23	1/2	14	165	25	52



PRESS WALL ELBOW DOUBLE – U-SHAPED



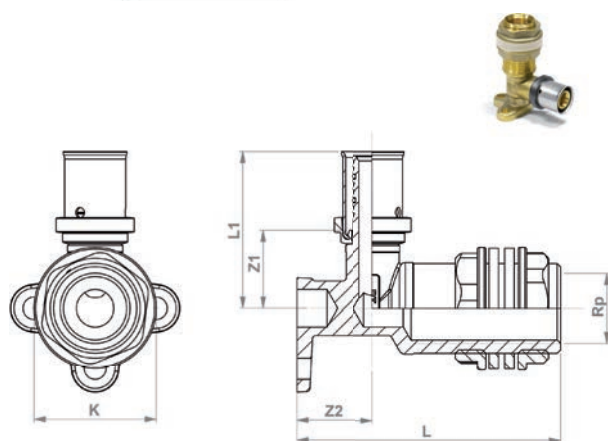
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	L mm	Rp "	M mm	L3 mm
PFWWU160416	16 x 2 - 1/2" - 16 x 2	Brass	54	31	24	50	88	1/2	6	34
PFWWU200420	20 x 2 - 1/2" - 20 x 2	Brass	54	31	24	50	88	1/2	6	34



PRESS WALL ELBOW DOUBLE – U-SHAPED CURVED



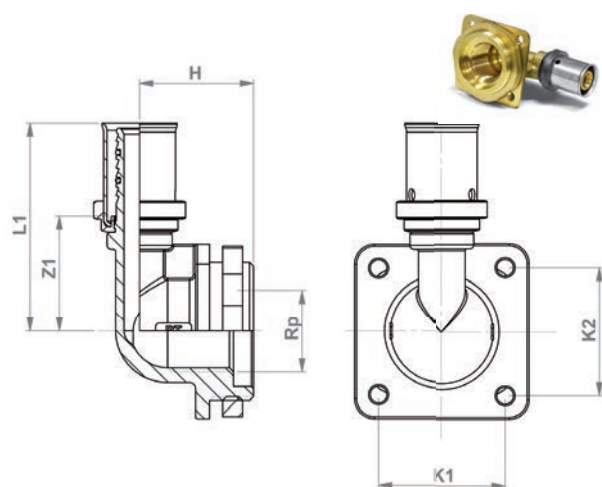
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	Z2 mm	B mm	K mm	Rp "	L3 mm	L4 mm	Z4 mm
PFWWUSA160416	16 x 2 - ½" - 16 x 2	Brass	67	44	67	44	50	39	½	15	37	17
PFWWUSA200420	20 x 2 - ½" - 20 x 2	Brass	67	44	67	44	50	39	½	15	37	17



PRESS WALL BUSHING WITH FEMALE THREAD



ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L mm	Z2 mm	Rp "	K mm
PFWDF1604	16 x 2 mm - ½"	Brass	46	23	78	225	½	36
PFWDF2004	20 x 2 mm - ½"	Brass	46	23	78	225	½	36



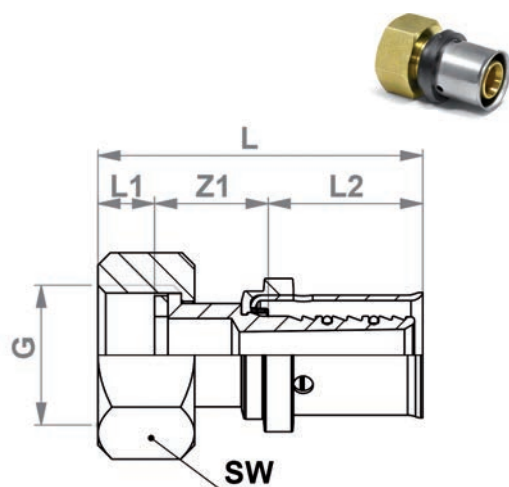
PRESS TOILET CONNECTION



ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	H mm	Rp "	K1 mm	K2 mm
PFTC16	16 x 2 mm - ½"	Brass	52	29	285	½	32	32

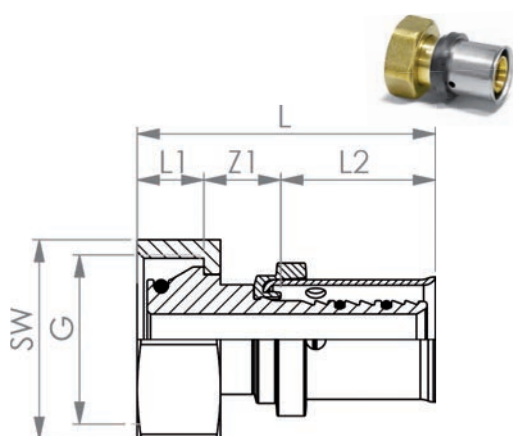


PRESS CONNECTOR SCREW CONNECTOR WITH FEMALE THREAD



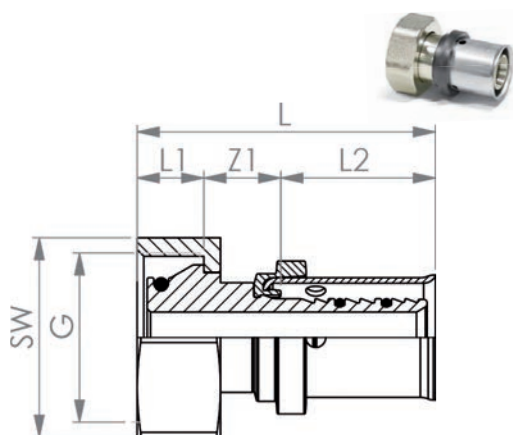
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	L mm	G "	SW mm
PFV1604	16 x 2 - 1/2"	Brass	9	17	23	49	1/2	27
PFV1605	16 x 2 - 3/4"	Brass	8	15	23	46	3/4	32
PFV2004	20 x 2 - 1/2"	Brass	9	17	23	49	1/2	27
PFV2005	20 x 2 - 3/4"	Brass	9	17	23	49	3/4	32
PFV2006	20 x 2 - 1"	Brass	10	19	23	53	1	40
PFV2008	20 x 2 - 1 1/2"	Brass	10	13	23	46	1 1/2	52
PFV2605	26 x 3 - 3/4"	Brass	8	18	23	49	3/4	32
PFV2606	26 x 3 - 1"	Brass	10	21	23	54	1	40
PFV2608	26 x 3 - 1 1/2"	Brass	10	13	23	46	1 1/2	54
PFV3206	32 x 3 - 1"	Brass	10	19	23	53	1	40
PFV3207	32 x 3 - 1 1/4"	Brass	10	19	23	53	1 1/4	48
PFV3208	32 x 3 - 1 1/2"	Brass	10	20	23	53	1 1/2	54
PFV4007	40 x 3,5 - 1 1/4"	Brass	10	22	23	55	1 1/4	48
PFV4008	40 x 3,5 - 1 1/2"	Brass	10	20	23	53	1 1/2	52
PFV5009	50 x 4 - 2"	Brass	13	25	35	73	2	66
PFV6310	63 x 4,5 - 2 1/2"	Brass	19	34	39	92	2 1/2	82

PRESS CONNECTOR SCREW CONNECTOR WITH EUROCONE THREAD

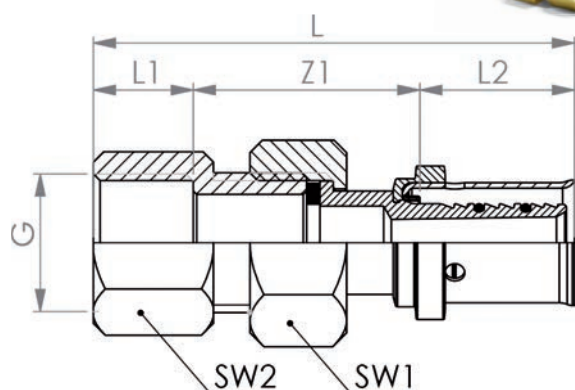


ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	G mm	SW mm
PFV1605EK	16 x 2 - 3/4"	Brass	45	10	23	12	3/4	30
PFV2005EK	20 x 2 - 3/4"	Brass	47	10	23	14	3/4	30

PRESS CONNECTOR SCREW CONNECTOR WITH EUROCONE THREAD, NICKEL-PLATED



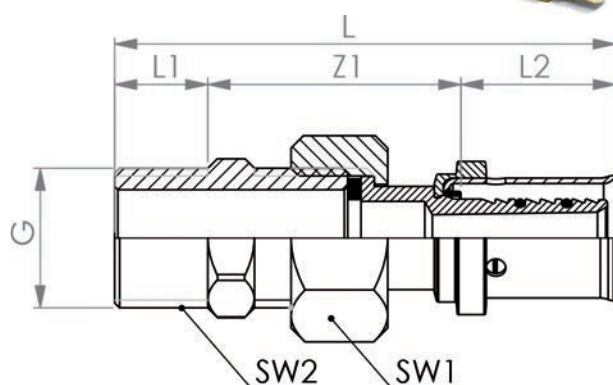
ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	G mm	SW mm
PFV1605EK	16 x 2 - 3/4"	Brass, Nickel-plated	45	10	23	12	3/4	30
PFV2005EK	20 x 2 - 3/4"	Brass, Nickel-plated	47	10	23	14	3/4	30



PRESS CONNECTOR SCREW CONNECTOR WITH FEMALE THREAD



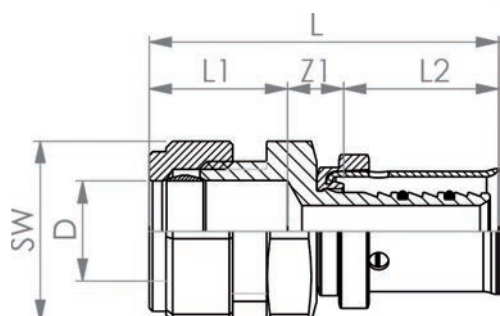
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	L mm	G mm	SW1 mm	SW2 mm
PFV1604IG	16 x 2 - ½"	Brass	15	34	23	72	½	27	24
PFV1605IG	16 x 2 - ¾"	Brass	16	33	23	72	¾	32	31
PFV2004IG	20 x 2 - ½"	Brass	15	35	23	73	½	27	24
PFV2005IG	20 x 2 - ¾"	Brass	16	34	23	73	¾	32	31
PFV2605IG	26 x 3 - ¾"	Brass	16	35	23	74	¾	32	31
PFV2606IG	26 x 3 - 1"	Brass	16	40	23	79	1	40	37
PFV3206IG	32 x 3 - 1"	Brass	16	42	23	81	1	40	37
PFV3207IG	32 x 3 - 1 ¼"	Brass	17	40	23	80	1 ¼	48	46



PRESS CONNECTOR SCREW CONNECTOR WITH MALE THREAD



ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L2 mm	L mm	G mm	SW1 mm	SW2 mm
PFV1604AG	16 x 2 - ½"	Brass	14	38	23	75	½	27	21
PFV1605AG	16 x 2 - ¾"	Brass	15	37	23	75	¾	32	27
PFV2004AG	20 x 2 - ½"	Brass	14	39	23	76	½	27	21
PFV2005AG	20 x 2 - ¾"	Brass	15	38	23	76	¾	32	32
PFV2605AG	26 x 3 - ¾"	Brass	15	40	23	78	¾	32	27
PFV2606AG	26 x 3 - 1"	Brass	16	44	23	83	1	40	35
PFV3206AG	32 x 3 - 1"	Brass	16	45	23	84	1	40	35
PFV3207AG	32 x 3 - 1 ¼"	Brass	16	43	23	82	1 ¼	48	44

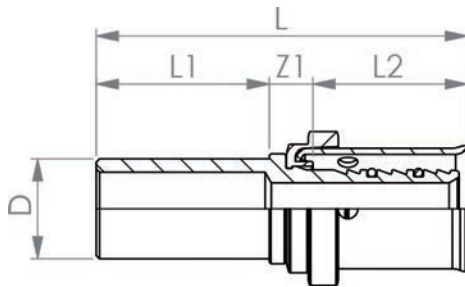


PRESS CONNECTOR ON COPPER PIPE SCREW CONNECTION

ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	D mm	SW mm
PFUEK1615	16 x 2 - 15 mm	Brass	51	20	23	8	15	25
PFUEK2018	20 x 2 - 18 mm	Brass	54	22	23	9	18	28
PFUEK2022	20 x 2 - 22 mm	Brass	54	22	23	9	22	35
PFUEK2622	26 x 3 - 22 mm	Brass	54	22	23	9	22	35
PFUEK2628	26 x 3 - 28 mm	Brass	56	22	23	11	28	40
PFUEK3228	32 x 3 - 28 mm	Brass	57	22	23	12	28	40
PFUEK3235	32 x 3 - 35 mm	Brass	59	25	23	11	35	49
PFUEK4035	40 x 3,5 - 35 mm	Brass	59	25	23	11	35	49



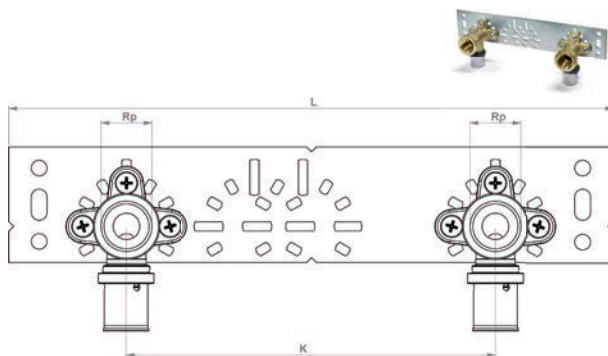
PRESS CONNECTOR ON COPPER PIPE NICKEL-PLATED – PRESS CONNECTION



ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	Z1 mm	D mm
PFUEK1615	16 x 2 - 15 mm	Brass, Nickel-plated	56	26	23	7	15
PFUEK2018	20 x 2 - 18 mm	Brass, Nickel-plated	56	26	23	7	15
PFUEK2022	20 x 2 - 22 mm	Brass, Nickel-plated	56	26	23	7	18
PFUEK2622	26 x 3 - 22 mm	Brass, Nickel-plated	56	26	23	7	22
PFUEK2628	26 x 3 - 28 mm	Brass, Nickel-plated	56	26	23	7	22
PFUEK3228	32 x 3 - 28 mm	Brass, Nickel-plated	56	25	23	8	28

PRESS WALL ELBOW

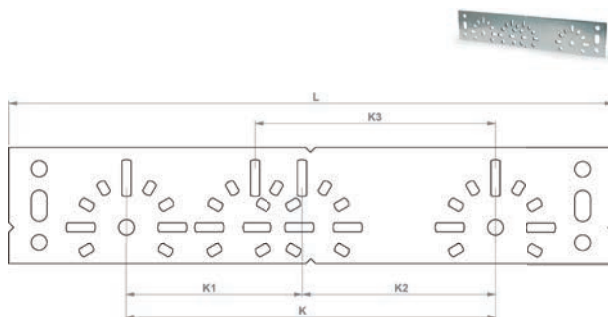
MOUNTED ON MOUNTING PLATE INSIDE MICROMETER 153 MM



ITEM NO.	SIZE	MATERIAL	K mm	L mm	Rp "	Rp "
PFWWSET1604	16 x 2 - ½"	Brass / sheet metal DIN EN 10142	153	250	½	½
PFWWSET2004	20 x 2 - ½"	DX51 D+Z or plastic	153	250	½	½

MOUNTING PLATE

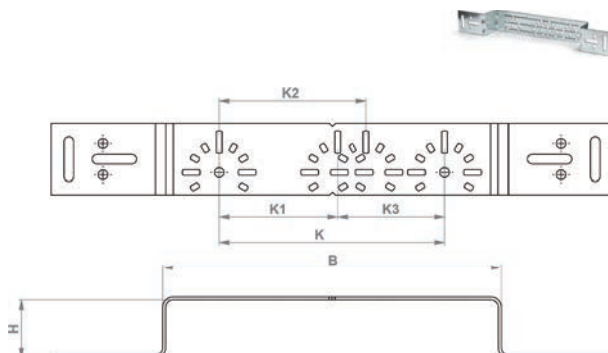
FOR WALL ELBOW, INSIDE MICROMETER 73, 80, 100, 153 MM



ITEM NO.	SIZE	MATERIAL	L mm	K mm	K1 mm	K2 mm	K3 mm
MP153	250 / 48 mm	Sheet metal DIN EN 10142 DX51 D+Z or plastic	250	153	73	80	100

MOUNTING PLATE

MOUNTED ON MOUNTING PLATE, ANGLED, INSIDE MICROMETER 153 MM

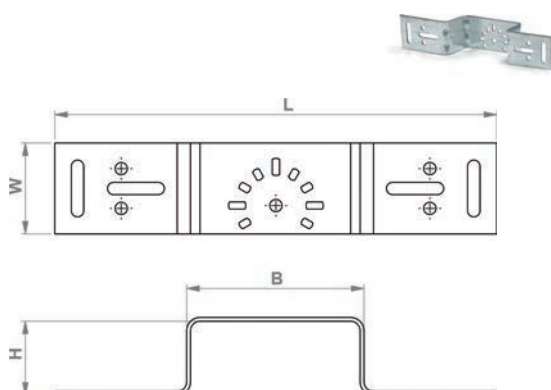


ITEM NO.	SIZE	MATERIAL	B mm	H mm	K mm	K1 mm	K2 mm	K3 mm
MPGU	385 mm	Sheet metal DIN EN 10142 DX51 D+Z	229	39	153	80	100	73



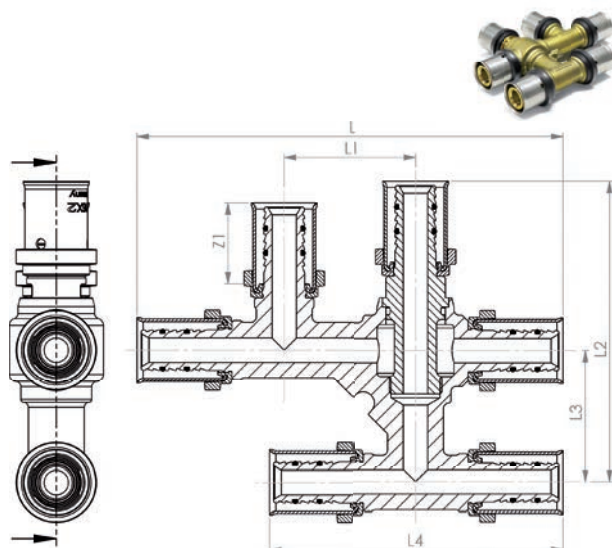
MOUNTING PLATE

FOR ONE WALL ELBOW



ITEM NO.	SIZE	MATERIAL	B mm	H mm	W mm	L mm
MPKU	228 mm, Installation 40 mm	Sheet metal DIN EN 10142 DX51 D+Z	94	39	48	228

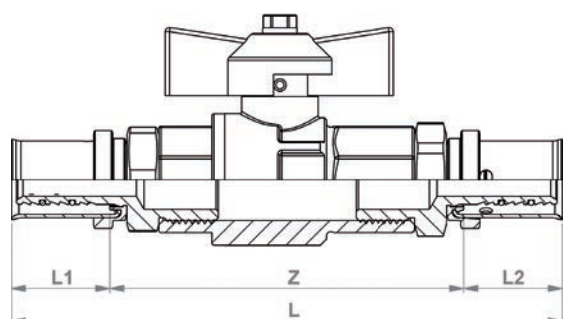
PRESS T-CONNECTOR, CROSS-FREE



ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	Z1 mm	L2 mm	L3 mm	L4 mm
PFKFT161616	16 x 2 - 16 x 2 - 16 x 2	Brass	122	38	23	86	38	84
PFKFT201616	20 x 2 - 16 x 2 - 16 x 2	Brass	122	38	23	86	38	84
PFKFT201620	20 x 2 - 16 x 2 - 20 x 2	Brass	122	38	23	86	38	84
PFKFT202020	20 x 2 - 20 x 2 - 20 x 2	Brass	122	38	23	86	38	84

PRESS BALL VALVE

GREEN BUTTERFLY – HANDLE PLUMBING (DVGW CERTIFICATION)

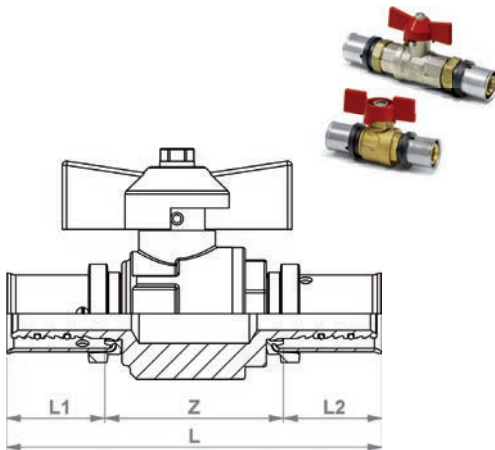


ITEM NO.	SIZE	MATERIAL	L1 mm	Z mm	L2 mm	L mm
PFKU16D	16 x 2	Brass	23	83	23	129
PFKU20D	20 x 2	Brass	23	84	23	130
PFKU26D	26 x 3	Brass	23	91	23	137
PFKU32D	32 x 3	Brass	23	113	23	159
PFKU40D	40 x 3,5	Brass	23	139	23	185
PFKU50D	50 x 4	Brass	35	154	35	224
PFKU63D	63 x 4,5	Brass	39	161	39	239



PRESS BALL VALVE

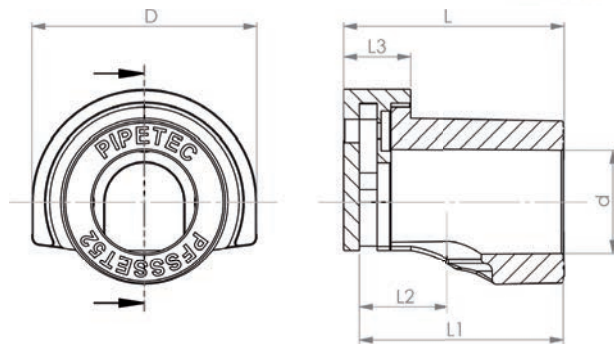
RED BUTTERFLY – HANDLE HEATING (NO DVGW CERTIFICATION)



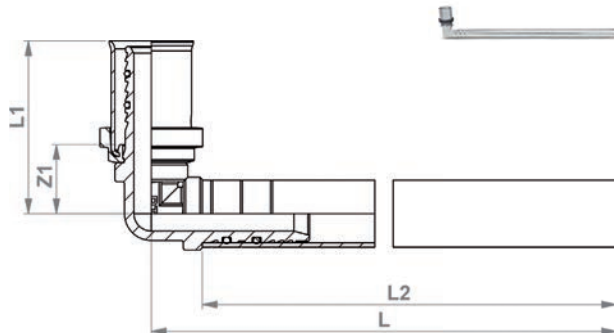
ITEM NO.	SIZE	MATERIAL	L1 mm	Z mm	L2 mm	L mm
PFKU16	16 x 2	Brass	23	39	23	85
PFKU20	20 x 2	Brass	23	40	23	86
PFKU26	26 x 3	Brass	23	45	23	91
PFKU32	32 x 3	Brass	23	106	23	152
PFKU40	40 x 3,5	Brass	23	120	23	166
PFKU50	50 x 4	Brass	35	126	35	196
PFKU63	63 x 4,5	Brass	39	148	39	226



SOUND INSULATION SET FOR WALL ELBOW



ITEM NO.	SIZE	MATERIAL	L mm	L1 mm	L2 mm	L3 mm	D mm	d mm
PFSSET39	39 mm	TPE	43	39	17,5	17	57	26
PFSSET52	52 mm	TPE	56	52	22,5	17	57	26
PFSSET78	78 mm	TPE	82	78	22,5	17	57	26

PRESS RADIATOR CONNECTION ELBOW,
NICKEL-PLATED

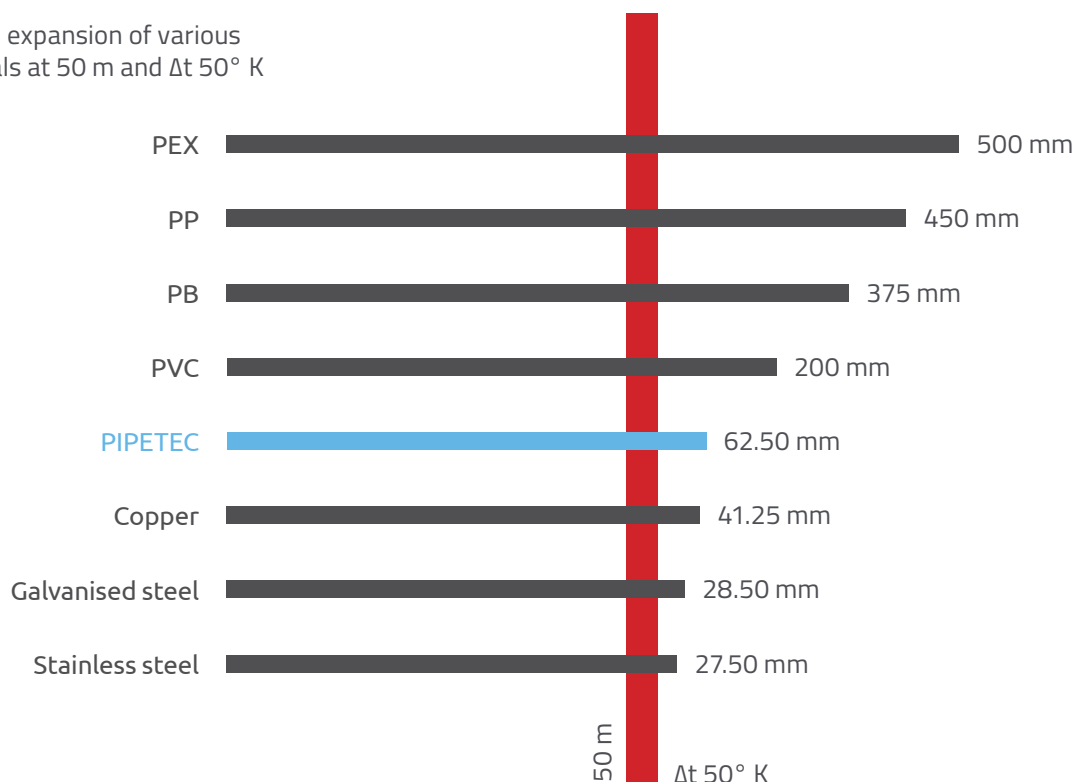
ITEM NO.	SIZE	MATERIAL	L1 mm	Z1 mm	L mm	L2 mm
PFHAW16300	16 x 2 - 15 mm - 300 mm	Brass/Copper nickel-plated	39	15	300	289
PFHAW20300	20 x 2 - 15 mm - 300 mm	Brass/Copper nickel-plated	41	17	300	287



GENERAL TECHNICAL DATA / INSTALLATION INSTRUCTIONS

LONGITUDINAL EXPANSION PIPETEC METAL COMPOSITE PIPES

Longitudinal expansion of various pipe materials at 50 m and Δt 50° K



PIPE ROUGHNESS PIPETEC METAL COMPOSITE PIPES AND PE-RT

Pipe wall roughness values for various materials:

COPPER

k_{new}	0.0015 mm
k_{used}	0.03 mm

PIPETEC / PLASTIC

k_{new}	0.007 mm
k_{used}	0.007 mm

GALVANISED STEEL PIPE

k_{new}	0.15 mm - 0.16 mm
k_{used}	up to 4.0 mm

SEAMLESS STEEL PIPES

k_{new}	0.02 - 0.06 mm
k_{used}	up to 4.0 mm



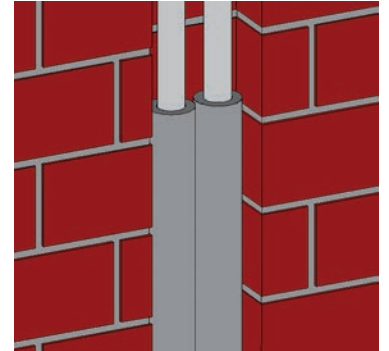
INSULATION OF PIPELINES

Meets the German Building Energy Act (GEG)

50% Insulation 100%

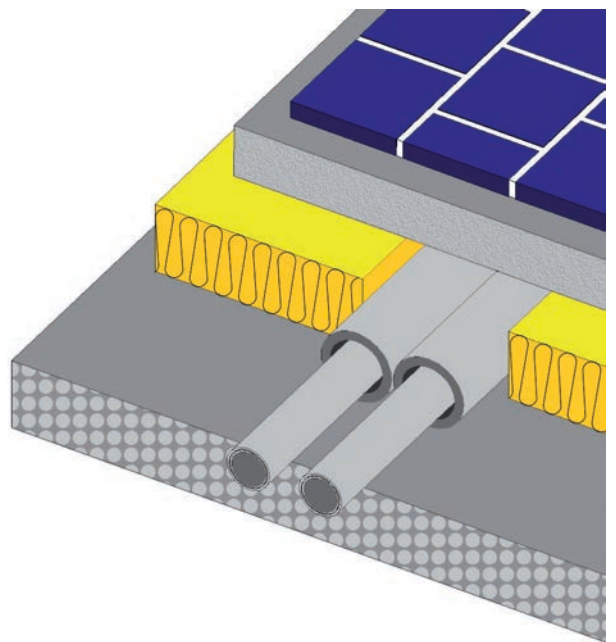
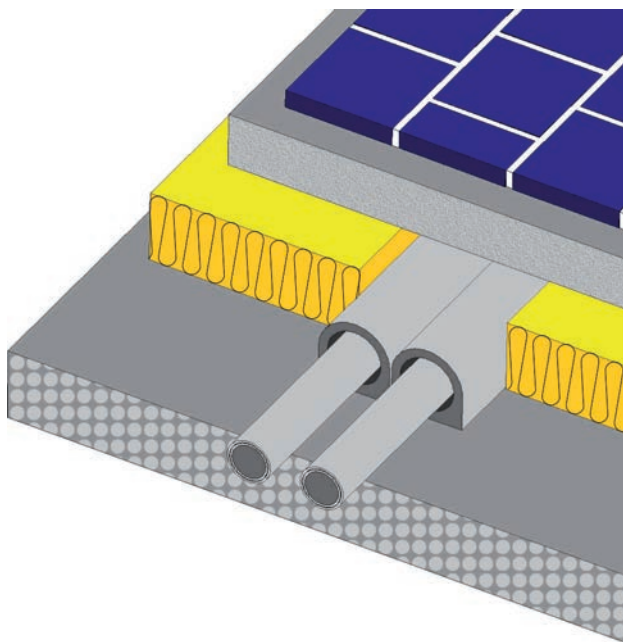
Risers in a shaft or flush-mounted between heated rooms of various users

can be laid next to unheated rooms, the ground and outside air.



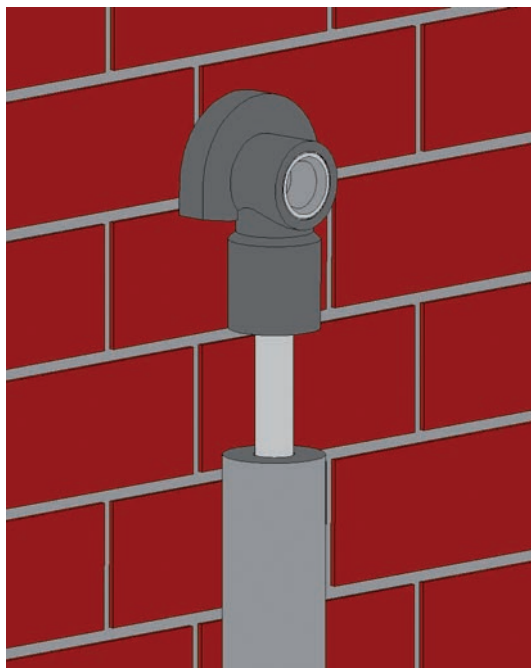
FLOOR CONSTRUCTION

Pre-insulated Pipetec multilayer composite pipe

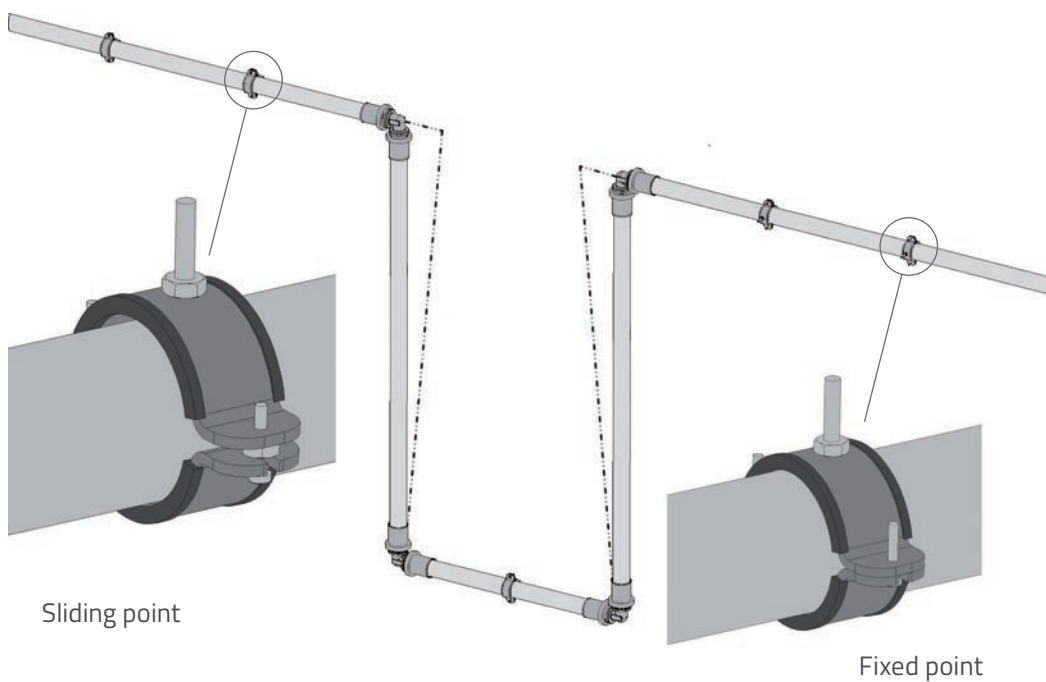




NOISE PROTECTION



LONGITUDINAL EXPANSION



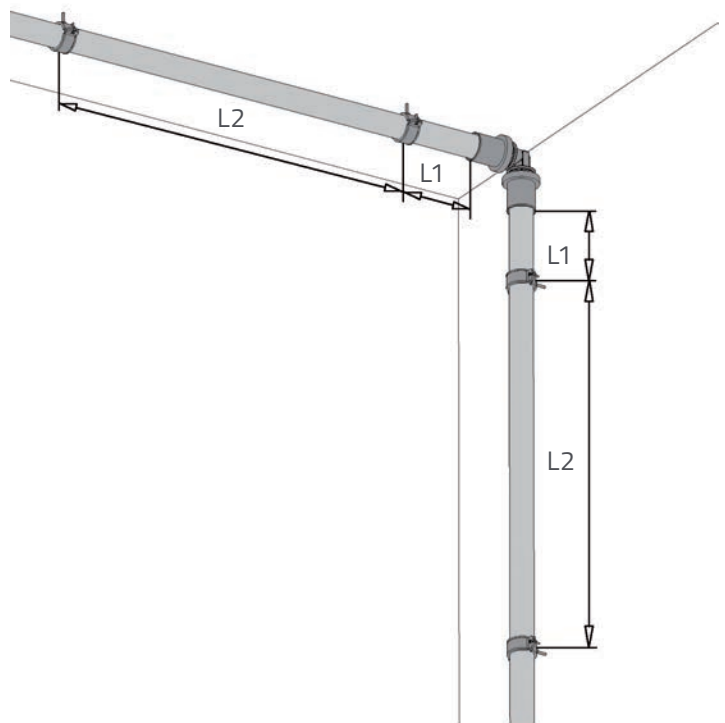
Sliding point

Fixed point



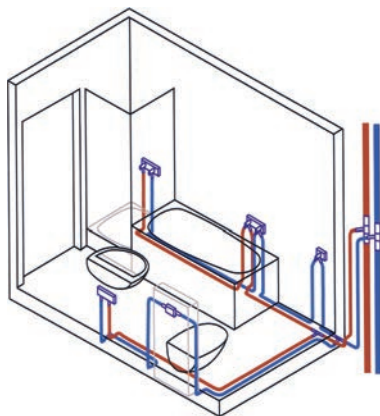
FIXING SPACINGS

DN	PIPE DIMENSIONS MM	L2 (CM) MAX. FIXING SPACINGS	
		VERTICAL	HORIZONTAL
16	16 x 2.00	135	150
20	20 x 2.00	150	175
26	26 x 3.00	165	200
32	32 x 3.00	200	200
40	40 x 3.50	250	250
50	50 x 4.00	250	250
63	63 x 4.50	250	250

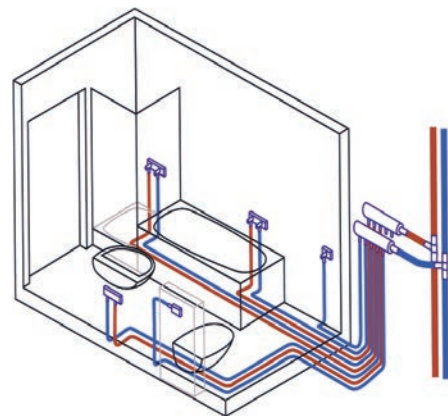


LAYING INSTRUCTIONS

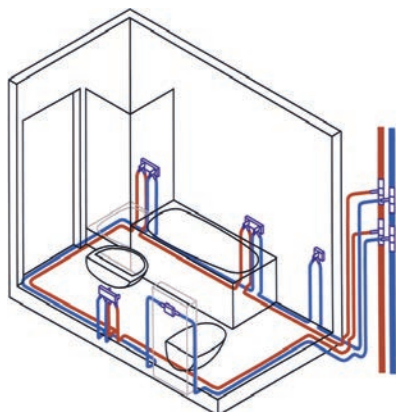
Group connection



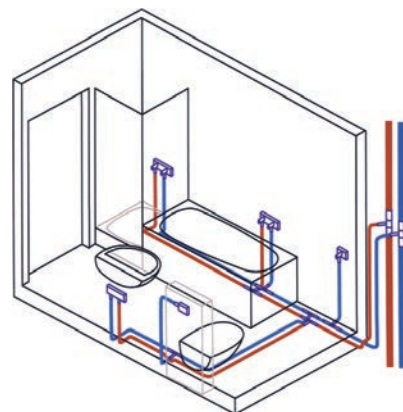
Manifold system



Ring line

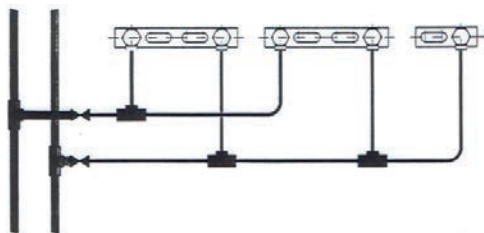


T-piece installation

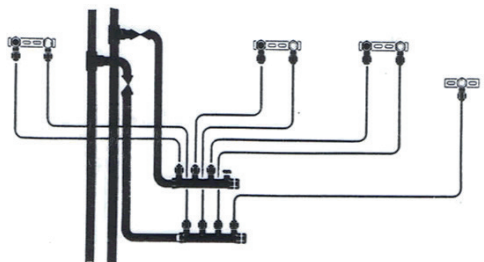




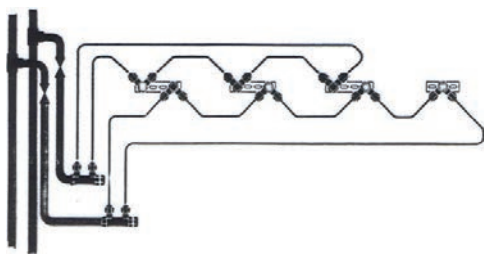
SAMPLE INSTALLATIONS



Conventional
distribution system



Individual distribution system



Ring line system

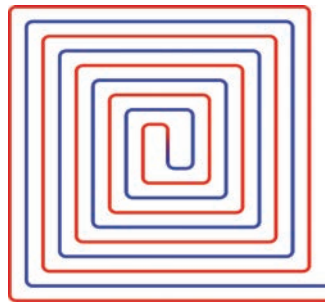


ASSEMBLY AND LAYING GUIDELINES

Underfloor heating

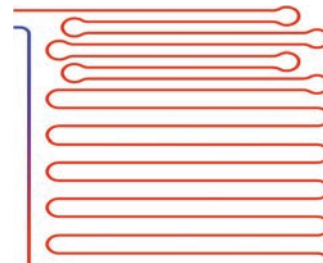
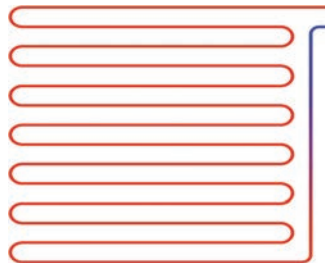
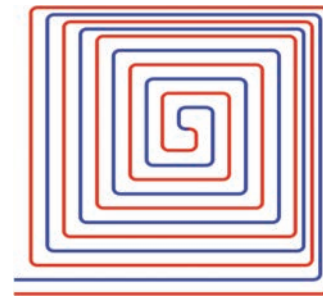
BIFILAR INSTALLATION

Spiral pattern with return loop in the centre of the heating circuit. The even installation of feed and return results in a very consistent distribution of heat.



BIFILAR INSTALLATION WITH EDGE ZONE

Serpentine pattern with edge zone included on two sides of the room.



MEANDERING INSTALLATION

Serpentine pattern with return loop at the end of the heating circuit. Continuous installation without inclusion of the return results in a higher temperature at the start of the heating circuit.

MEANDERING INSTALLATION WITH EDGE ZONE

With this type of installation, the edge zone raises the temperature increase at the start of the heating circuit.



SAMPLE CALCULATION

Two-pipe heating with radiators

Taking account of the maximum flow speeds, the following heat outputs/volume flows can be connected:

<i>Recommendation:</i> Radiator connection pipes	≤ 0.3 m/s
Heating distribution pipes	≤ 0.5 m/s
Heating risers and cellar pipes	≤ 1.0 m/s

Note pressure loss Δp !

RADIATOR CONNECTION PIPES

PIPE DIMENSIONS IN MM Ø	16 X 2	20 X 2	26 X 3	32 X 3
VOLUME FLOW VMAX IN L/H	130			
FLOW SPEED MAX IN M/S	0.30			
HEAT OUTPUT QN IN KCAL/H AT 20°C	2,600			
HEAT OUTPUT QN IN WATTS AT 20°C	3,023			

HEATING DISTRIBUTION PIPES

PIPE DIMENSIONS IN MM Ø	16 X 2	20 X 2	26 X 3	32 X 3
VOLUME FLOW VMAX IN L/H	220	450	700	900
FLOW SPEED MAX IN M/S	0.50	0.50	0.50	0.50
HEAT OUTPUT QN IN KCAL/H AT 20°C	4,400	6,800	14,500	18,000
HEAT OUTPUT QN IN WATTS AT 20°C	5,116	7,890	16,800	20,930

HEATING RISERS AND CELLAR PIPES

PIPE DIMENSIONS IN MM Ø	16 X 2	20 X 2	26 X 3	32 X 3
VOLUME FLOW VMAX IN L/H	440	900	1,400	1,800
FLOW SPEED MAX IN M/S	1.00	1.00	1.00	1.00
HEAT OUTPUT QN IN KCAL/H AT 20°C	8,800	13,600	29,000	36,000
HEAT OUTPUT QN IN WATTS AT 20°C	10,233	15,780	33,600	41,860

SAMPLE CALCULATION OF VOLUME FLOW (FLOW RATE IN L/H)

Heat output: $Q_N/W \times 0.86$
 Temperature difference: Δt (TV-TR) = Volume flow V in l/h

$$\frac{Q_N = 1,000 \text{ W} \times 0.86}{\Delta t 20^\circ\text{C}} = V = 43 \text{ l/h}$$

Note:

For heating circuits connected to a system (single pipe heating), the entire ring volume flow of all radiators must be taken into account!



INSTALLATION INSTRUCTIONS FOR PIPETEC MS / PSU PRESS FITTINGS

The aluminium composite pipe is cut to the desired length using pipe cutters. The calibrator then ensures that the pipe end is completely round and deburred after cutting. At the same time the pipe interior is chamfered to allow the fitting to be inserted into the pipe without damaging the O-ring. Finally, the three openings (inspection windows) at the end of the stainless steel sleeve, which indicate the correct position of the pipe in the fitting, guarantee a correct pressing operation.

► NOTE

Perfect functioning of the pipe connection can only be ensured by using fittings with the DVGW-certified Pipetec aluminium multilayer composite pipe. Please note how important it is to ensure correct and expert calibration and deburring using a suitable tool. Always protect fittings with insulation or suitable adhesive tape to protect them from direct contact with concrete, screed, construction foam, mortar, etc. Make sure installation is stress-free! Brass threads that are sealed too tightly (especially when using hemp) can lead to tension in the brass. This can lead to stress corrosion cracking due to assembly.



1

CUTTING THE PIPE TO LENGTH

The pipe must be cut to the desired length using a suitable tool. The cross-sectional area of the cut must be perpendicular to the pipe. Diagonal cuts must be avoided.

Handsaws, jigsaws and blunt tools are not suitable for cutting to length.



2

CALIBRATING AND DEBURRING THE PIPE

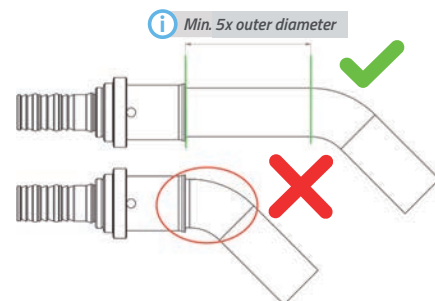
The pipe end must be calibrated and deburred after trimming. To do this, the calibrator must first be inserted into the pipe up to the stop. Deburring is then completed by turning the calibrator. Turning removes material from the interior of the pipe, creating a chamfer on the end of the pipe. This chamfer makes it easier to insert the fitting and protects the O-rings from damage.



3

ASSEMBLY OF FITTINGS

Use appropriate force to insert the fitting into the end of the pipe axially up to the stop. The three inspection windows on the stainless steel pressing sleeve indicate the correct insertion depth. Please do not use additional lubricant.



4

PRESSING

Using an appropriate pressing tool and pressing jaws that match the dimensions of the fitting, press until the pressing jaws are fully closed and the pressing process is complete. Then check the connection. It is essential to carry out a pressure and leak test (see page 94).





ASSEMBLY INSTRUCTIONS FOR PIPETEC SCREW FITTINGS

Neither pressing tools nor pressing jaws are required for assembling compression fittings. Leak-tightness is achieved simply by tightening the union nut. The clamping ring is crimped onto the pipe using the cone on the inside of the union nut.

► NOTE

Perfect functioning of the pipe connection can only be ensured by using fittings with the DVGW-certified Pipetec aluminium multilayer composite pipe. Please note how important it is to ensure correct and expert calibration and deburring using a suitable tool. Always protect fittings with insulation or suitable adhesive tape to protect them from direct contact with concrete, screed, construction foam, mortar, etc. Make sure installation is stress-free! Brass threads that are sealed too tightly (especially when using hemp) can lead to tension in the brass. This can lead to stress corrosion cracking due to assembly.


1

CUTTING THE PIPE TO LENGTH

The pipe must be cut to the desired length using a suitable tool. The cross-sectional area of the cut must be perpendicular to the pipe. Diagonal cuts must be avoided.

Handsaws, jigsaws and blunt tools are not suitable for cutting to length.


2

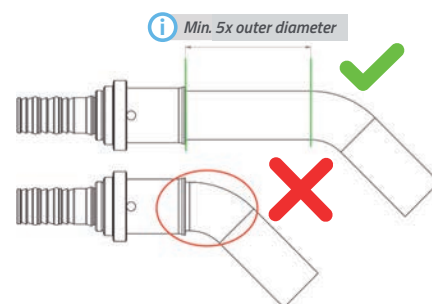
CALIBRATING AND DEBURRING THE PIPE

The pipe end must be calibrated and deburred after trimming. To do this, the calibrator must first be inserted into the pipe up to the stop. Deburring is then completed by turning the calibrator. Turning removes material from the interior of the pipe, creating a chamfer on the end of the pipe. This chamfer makes it easier to insert the fitting and protects the O-rings from damage.


3

ASSEMBLY OF FITTINGS

Union nut and clamping ring must be positioned on the pipe as per the illustration. The nipple of the basic body is then fully inserted into the pipe. Clamping ring and union nut are pushed into the basic fitting body up to the stop. The union nut can then be tightened by hand.


4

TIGHTENING THE CONNECTION

The union nut must be tightened using a suitable tool until the corresponding resistance is reached. Then check the connection. It is essential to carry out a pressure and leak test (see page 94).

The recommended tightening torques for our screw fittings are:

Size 16 pipe	> 10 Nm
Size 20 pipe	> 20 Nm
Size 26 pipe	> 25 Nm
Size 32 pipe	> 45 Nm



ASSEMBLY INSTRUCTIONS FOR PIPETEC PUSH FITTINGS

The aluminium composite pipe is cut to the desired length using pipe cutters. Calibration is required to ensure that the pipe end is completely round and deburred after cutting. At the same time, calibration creates a chamfer. This allows the fitting to be inserted into the pipe without damaging the sealing ring.

► NOTE

Perfect functioning of the pipe connection can only be ensured by using fittings with the DVGW-certified Pipetec aluminium multilayer composite pipe. Please note how important it is to ensure correct and expert calibration and deburring using a suitable tool. The connection is permanent! Before attaching the fitting, please ensure that the pipe is the required length and no attachment clips or similar have to be placed over the pipe. Always protect fittings with insulation or suitable adhesive tape to protect them from direct contact with concrete, screed, construction foam, mortar, etc. Make sure installation is stress-free! Brass threads that are sealed too tightly (especially when using hemp) can lead to tension in the brass. This can lead to stress corrosion cracking due to assembly.



1

CUTTING THE PIPE TO LENGTH

The pipe must be cut to the desired length using a suitable tool. The cross-sectional area of the cut must be perpendicular to the pipe. Diagonal cuts must be avoided.

Handsaws, jigsaws and blunt tools are not suitable for cutting to length.



2

CALIBRATING AND DEBURRING THE PIPE

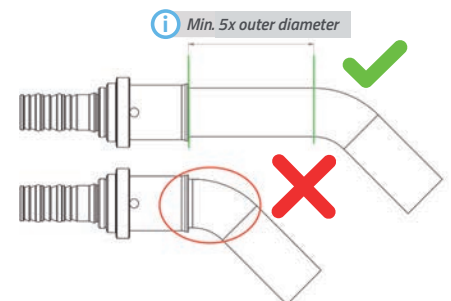
The pipe end must be calibrated and deburred after trimming. To do this, the calibrator must first be inserted into the pipe up to the stop. Deburring is then completed by turning the calibrator. Turning removes material from the interior of the pipe, creating a cone that makes it easier to insert fittings and also protects the wedge seal from damage. **PLEASE NOTE: Please use only our grey K1626 calibrator for calibration!**



3

ASSEMBLY OF FITTINGS

Use appropriate force to insert the fitting into the end of the pipe axially up to the stop. The two integrated inspection windows indicate the correct insertion depth. Both inspection windows must be filled by the white pipe. The fittings are prepared for immediate assembly in the factory, please do not use additional lubricant.



4

FINAL TESTING

Check that the pipe is firmly in place. It must not be possible to pull the pipe out. It is essential to carry out a pressure and leak test (see page 94).