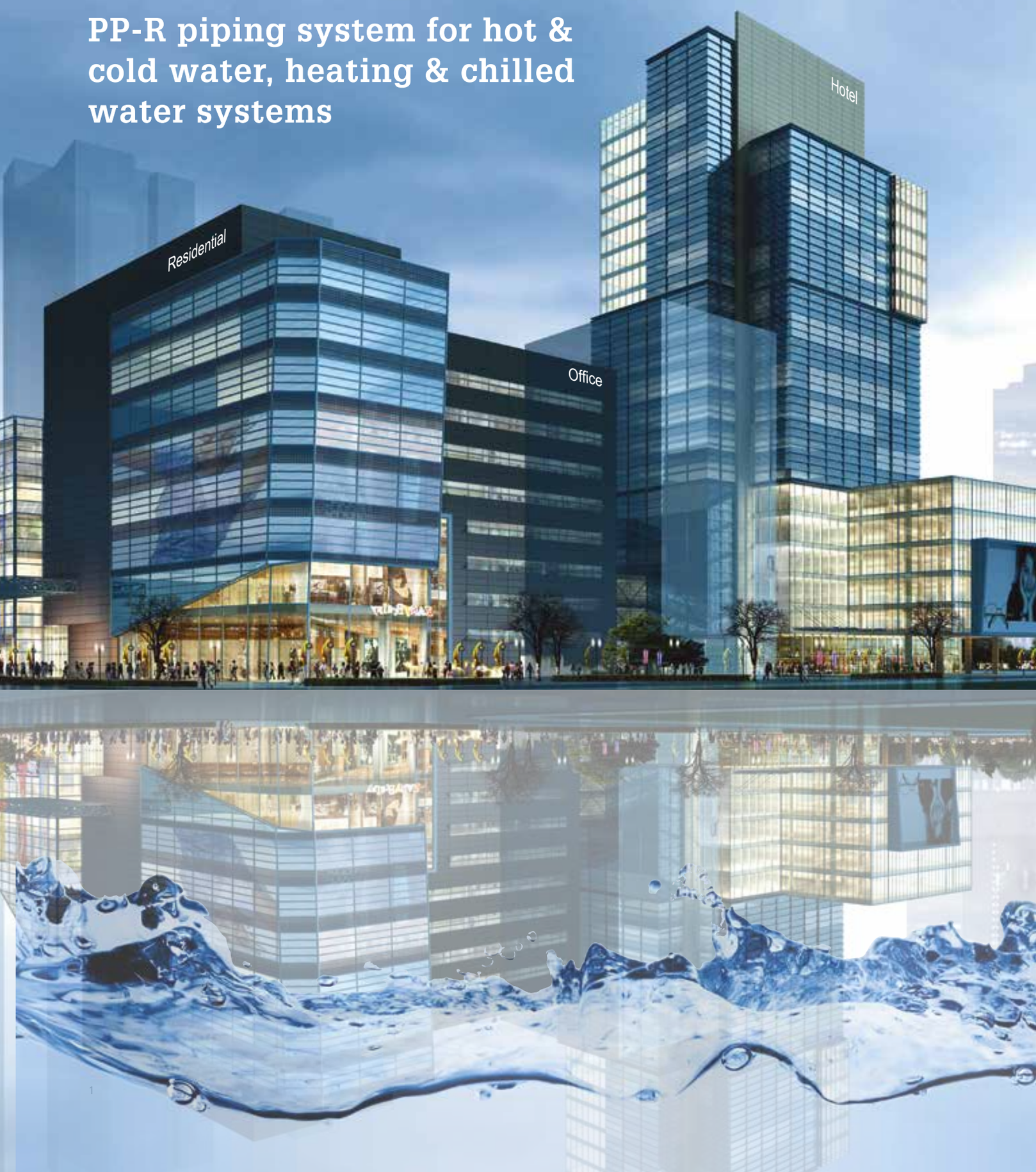
GF Piping Systems

Aquasystem

PP-R piping system for hot & cold water, heating & chilled water systems



The best choice for you

Georg Fischer is dedicated to designing, manufacturing and marketing piping systems for the safe and secure conveyance of liquid and gases. Our pipe, fittings and valves are widely used in a variety of building services applications.

Aquasystem has been designed and produced as a piping system for hot and cold water supply, heating, chilled water and boosted cold water.

Hotels

Aquasystem offers an economic and high energy efficient piping system, with a wide operating temperature range, providing maximum comfort for the end user in hotels.

Often these buildings are high-rise and the lightweight nature of GF's plastic piping system make it an ideal choice for hot & cold water throughout these buildings.

The Aquasystem range provides customers with the complete range of services for hot & cold water, heating and chilled water with quick and easy installation, through either a socket or an electrofusion process.

Residential

Aquasystem delivers a perfect solution to water conservation, water management and energy efficiency that not only allows you to satisfy regulations but adds real economic and ecological value with a reduced carbon footprint.

With Aquasystem we aim to make our customers' lives easier by developing an outstanding range of products to be installed quickly, easily and reliably.

Rising costs are a major concern in our market and we deliver solutions that are both competitively priced and sustainable.

Offices

Aquasystem is the perfect solution for your commercial projects. The use of potable water with this system provides benefits such as high impact strength and no corrosion.

Plastics are lighter and more economical than traditional materials, therefore reducing energy usage and greenhouse gas emissions, due to better production and transportation.

Aquasystem delivers performance, cost and sustainability benefits in one product.

Aquasystem made easy

Hot Water HWS	Cold Water CWS	Heating HTG	Boosted Cold Water BCW	Chilled Water CHW
✔	✔	✔	✔	✔

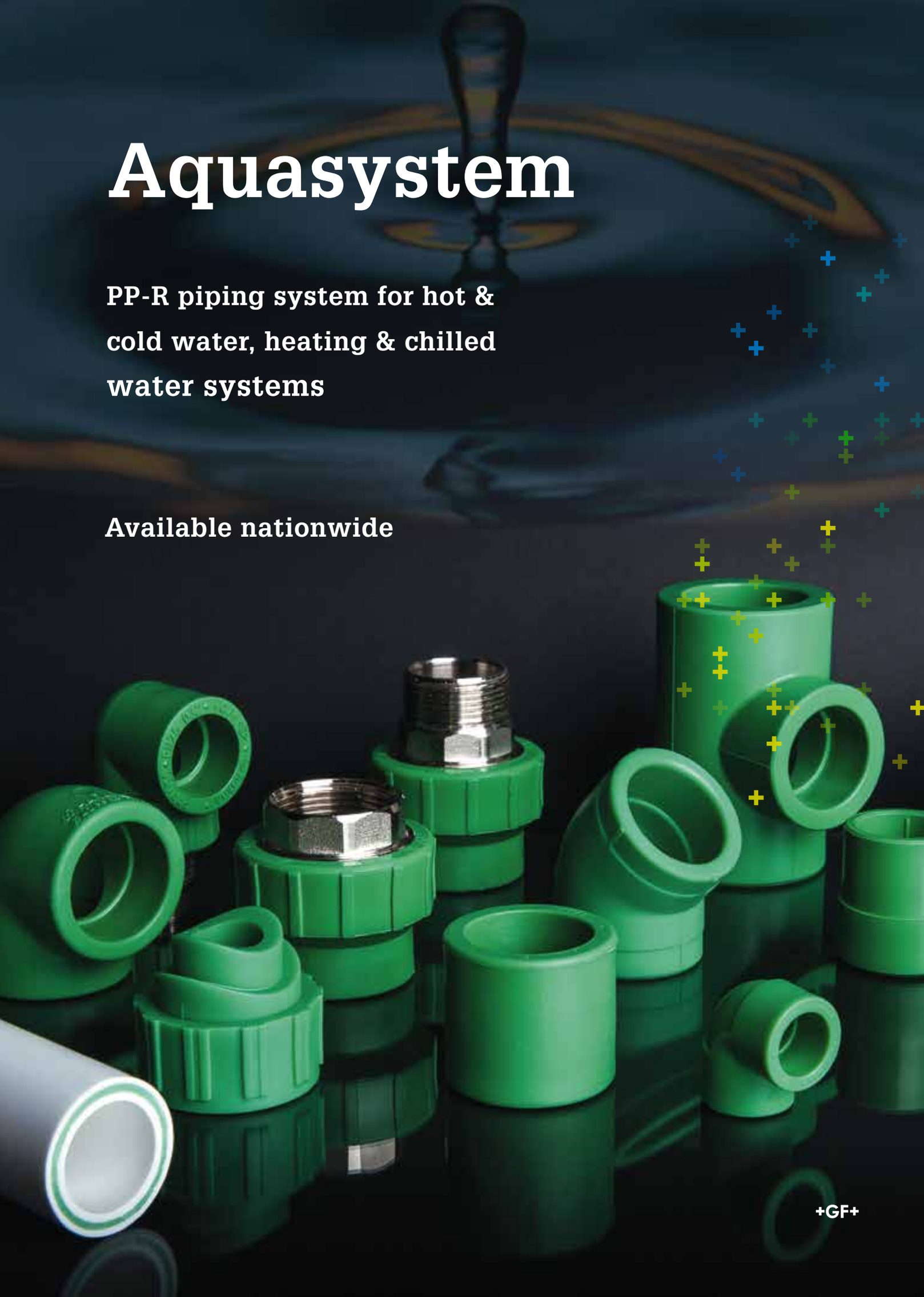
Typical Application Temperatures

Application	Hot Water Systems	Cold Water Systems	Heating Systems	Chilled Water Systems
Temperature	65°C	10°C	82°C	5°C

Aquasystem

PP-R piping system for hot & cold water, heating & chilled water systems

Available nationwide



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Features of Aquasystem

Some of the best advantages offered by Aquasystem compared with traditional systems are listed below:

Cost Saving

Compared with traditional systems, Aquasystem can reduce installation times by least 30%.

Lightweight

Plastic piping is considerably lighter when compared to traditional materials contributing to quick and easy installation on site.

Corrosion Resistant

Aquasystem will not corrode and is resistant to most chemicals used in water, heating and distribution systems.

Maintenance

Plastic piping compared to traditional systems require lower maintenance of the pipework. This offers cost savings due to smooth inner walls requiring less flushing and contributing to lower pressure losses.

Low Expansion

All piping systems expand, Aquasystem has a very low expansion rate compared to other plastic materials, due to the reinforced fibreglass material in the middle layer.

Low Thermal Conductivity

The thermal conductivity of Aquasystem is also very low when compared to traditional systems, thus reducing the heat losses in a hot water, heating system and heat gains in a chilled water system. This does not remove the statutory requirements for insulation of both heat loss/gain and condensation control.

Smooth Surface

The internal surface of the pipework remains smooth thereby reducing pressure losses and maintaining a constant bore size.

Hygiencially Safe

Aquasystem has WRAS material approval and is non-toxic.

Abrasion Resistance

The high abrasion resistance of Aquasystem guarantees a long service life.

Noise Reduction

Aquasystem reduces noise transmission through the pipework compared with traditional material systems.

High Strength

Resistant to impact and bending stresses.

Main benefits

Main benefits for building owner

- Proven quality standard
- No theft value
- Reduces carbon footprint
- No corrosion over lifetime
- Design life up to 50 years
- Energy saving
- Fully recyclable

Corrosion of traditional pipework

Main benefits for the installer

- Quick and easy installation
- Prefabrication possibilities
- Lightweight
- Technical support available
- High impact strength

Aquasystem Jointing

Jointing Method	Products	Size	Tools required	
Socket Fusion	Elbow Socket Tee Reducing tee Reducer Cap Crossover Saddle with spigot Transition fittings Distribution Manifold Unions Valves Flange adaptor	d20-d63	MSE 63 - Hand Held Pipe Cutter Tangit Cleaner Cloth	
Socket Fusion		d20-d125	SG125 - Bench Mounted Pipe Cutter Tangit Cleaner Cloth	
Electrofusion	Electrofusion Coupler	d20-d160	MSA 330 Pipe Cutter Rotary Peeler Hand Scraper Tangit Cleaner Cloth	
Butt fusion	Elbow Socket Tee Reducing tee Flange adaptor Reducer	d160	SG 315 - Bench Mounted Pipe Cutter Tangit Cleaner Cloth	

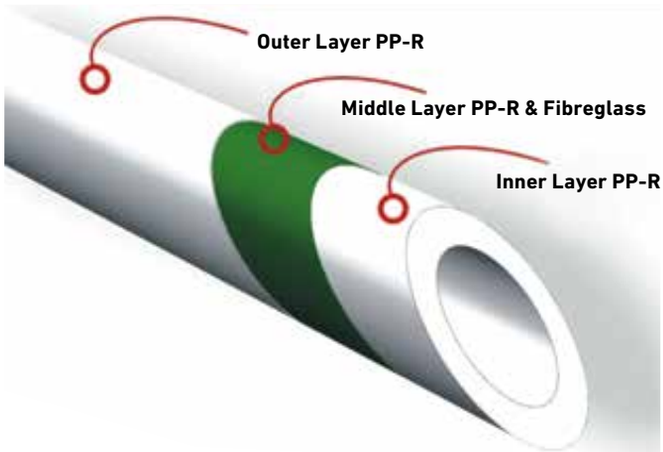
Note: All machines are available for purchase and hire
Hand Scraper to be used below 40mm only

Pipe Sizing

Equivalent Copper OD Size (mm)	Copper ID (mm)	Aquasystem OD (mm)	Aquasystem Wall Thickness (mm)	Aquasystem ID (mm)
15	13.6	20	3.2	13.6
22	20.2	25	4.0	17.0
28	26.2	32	4.7	22.6
35	32.6	40	5.8	28.4
42	39.9	50	7.0	36.0
54	51.6	63	8.6	45.8
67	64.3	75	10.3	54.4
76	73.2	90	12.3	65.4
108	105.0	110	15.1	79.8
		125	17.1	90.6
		160	21.7	116.6

Aquasystem Fibre Pipe

Size Range: d20 - d160
Approval: WRAS
Service Life: up to 50 years
Colour:
Pipe: White
Fittings: Green
Operating Temperature: 0°C - 90°C
Installation Temperature: 5°C - 45°C
Pipe length: 4m
Jointing methods:
d20 - d125: Socket fusion and Electrofusion
d125 - d160: Butt fusion and Electrofusion
Coefficient of thermal expansion : 0.035mm/m°C



Pressure Rating

Temperature (°C)	Safety Factor 1.5	
	Service Life (year)	Aquasystem's Nominal Pressure (bar)
10°C	25	31.2
	50	30.4
20°C	25	28.7
	50	25.9
30°C	25	22.4
	50	21.9
40°C	25	18.9
	50	18.4
50°C	25	18.0
	50	15.5
60°C	25	13.3
	50	12.9
65°C	25	10.7
	50	10.2
70°C	25	9.9
	50	8.5
80°C	10	8.0
	25	6.4
90°C	5	7.8

Pipe Bracketing

Aquasystem pipes require regularly spaced pipe supports and the bracketing distance depends on factors such as temperature and pipe diameter. The inner diameter of the support must be greater than the external diameter of the pipe, so it allows pipe movement due to expansion/contraction.

Aquasystem	Bracket distances (cm)						
d (mm)	20°C	30°C	40°C	50°C	60°C	70°C	80°C
20	90	90	80	80	70	65	65
25	130	100	90	90	80	75	75
32	115	115	105	105	100	90	90
40	130	130	120	120	115	105	105
50	145	145	135	135	130	120	120
63	165	165	155	155	145	135	135
75	185	185	175	175	165	155	155
90	200	200	190	190	180	175	175
110	215	210	200	180	175	175	175
125	240	235	224	201	196	196	196
160	269	262	250	225	219	219	219

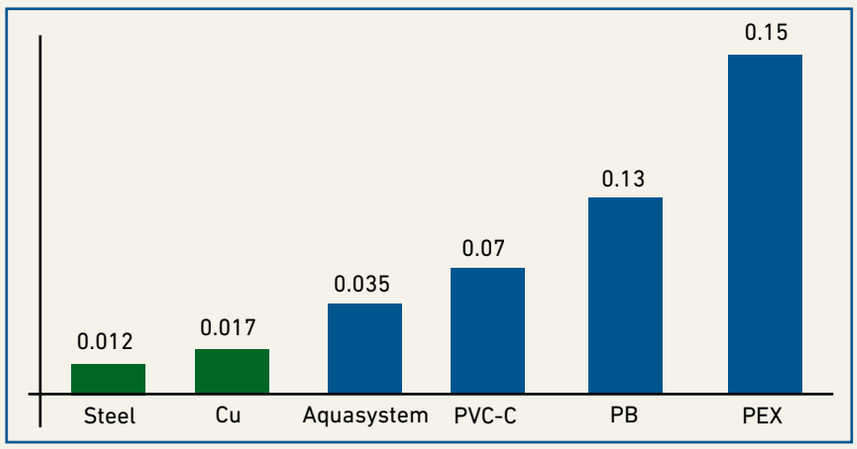
Note: The above values are for horizontal installations. These distances can be increased by 30% for vertical pipe installations (ie. multiply the values given by 1.3).

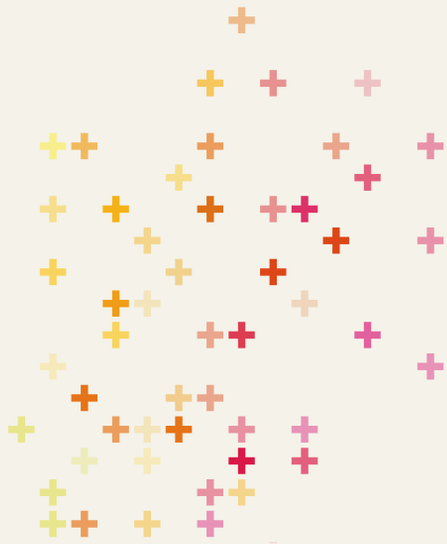
Thermal expansion

All materials expand or contract with an increase or decrease in temperature. During the design and installation of Aquasystem, it is important to calculate the change in length caused by the difference in the operating temperature and installation temperature.

The amount of expansion or contraction is dependent on the coefficient linear expansion, α, which is the elongation of a 1m length of pipe for a temperature increase of 1°C. Aquasystem's coefficient linear thermal expansion:
$\alpha = 0.035$mm/m°C

Coefficient of Linear Expansion α (mm/m°C)





Calculating the change in length

Changes in length are calculated using the following formula:

$\Delta L = \alpha \times L \times \Delta T$

Where ΔL = change in length (mm)
α = coefficient of expansion (mm/m°C)
L = original length (m)
ΔT = temperature difference (°C)
ΔT is the difference between the installation temperature and the operating temperature.

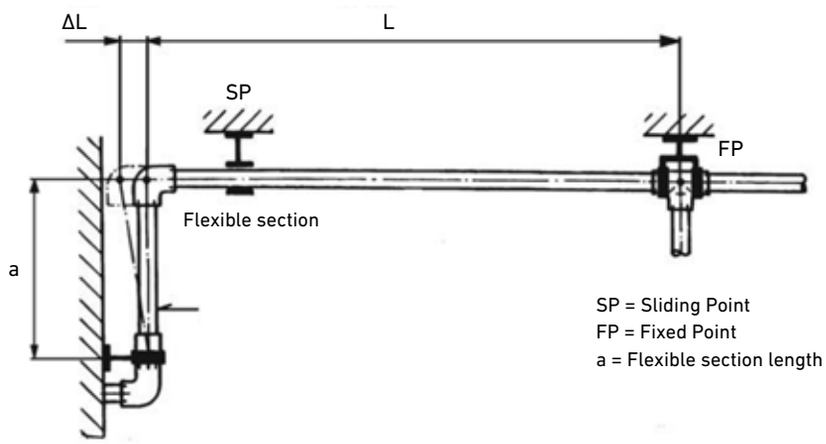
Note: If the operating temperature is higher than the installation temperature, then the pipe length increases. If the operating temperature is lower than the installation temperature, then the pipe contracts.

Change in length at varying temperatures

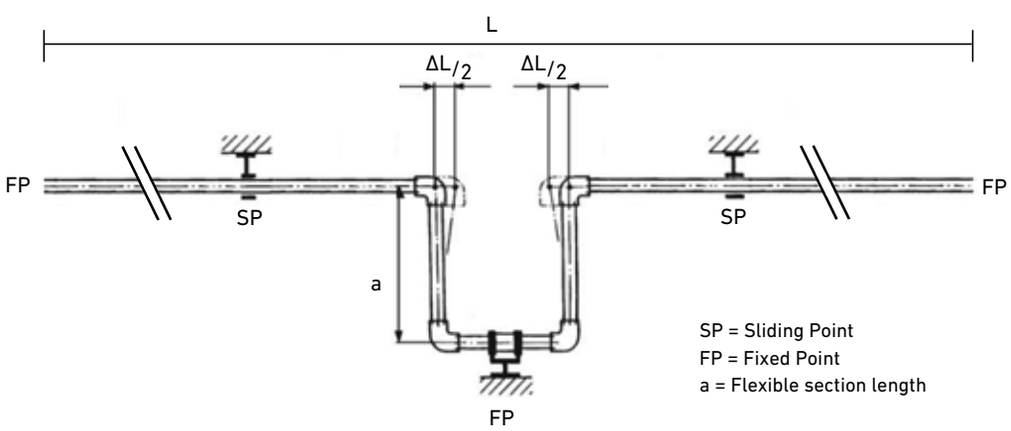
Aquasystem		**ΔL (mm)**							
Pipe length (m)	**ΔT**	**10°C**	**20°C**	**30°C**	**40°C**	**50°C**	**60°C**	**70°C**	**80°C**
1.0		0.35	0.70	1.10	1.40	1.80	2.10	2.50	2.80
2.0		0.70	1.40	2.10	2.80	3.50	4.20	4.90	5.60
3.0		1.10	2.10	3.20	4.20	5.30	6.30	7.40	8.40
4.0		1.40	2.80	4.20	5.60	7.00	8.40	9.80	11.20
5.0		1.80	3.50	5.30	7.00	8.80	10.50	12.30	14.00
6.0		2.10	4.20	6.30	8.40	10.50	12.60	14.70	17.20
7.0		2.50	4.90	7.40	9.80	12.30	14.70	17.20	19.60
8.0		2.80	5.60	8.40	11.20	14.00	16.80	19.60	22.40
9.0		3.20	6.30	9.50	12.60	15.80	18.90	22.10	25.20
10.0		3.50	7.00	10.50	14.00	17.50	21.00	24.50	28.00

Installation of Flexible Sections

It is important to control the direction and amount of thermal movement by correct positioning of fixed points. This ensures the pipe can be moved freely within loose brackets. Changes in the length are usually accommodated by flexible sections at changes of direction of the pipework or in expansion loops. The movement of the flexible section must not be restrained by fixed pipe brackets or protrusions of wall, girders, etc. The following example shows how to install fixed and sliding brackets at a change of direction:



An expansion loop can be installed to compensate the expansion and contraction of the system. Here, the change in length is distributed over two flexible sections.



Calculating the flexible section length

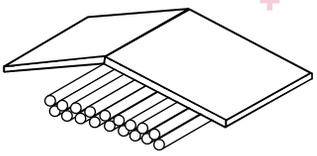
The length of the flexible section, a (mm) can be calculated using the following formula:

$a = k \times \sqrt{\Delta L \times od}$

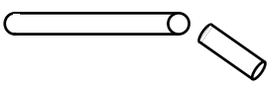
Where: ΔL = change in length (mm)
k = 20 (constant for PP-R)
od = outside pipe diameter (mm)

Precautions

UV Radiation
Aquasystem although UV stabilised, should not be directly exposed to the sun for prolonged amounts of time.



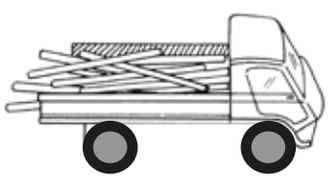
Low Temperatures
With temperatures close to zero, Aquasystem can become brittle therefore impact to the pipework should be avoided. Care should also be taken to ensure that the medium in the pipework does not freeze as a result damaging the piping system.

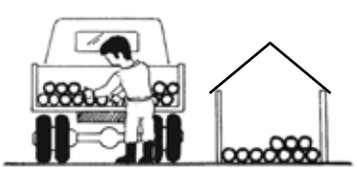


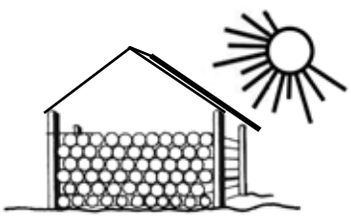
Threaded connections to metal
Where it is necessary to join to metal threads, it is recommended to use PTFE tape.

Transport and storage
Please observe the tips below for material transport and storage.

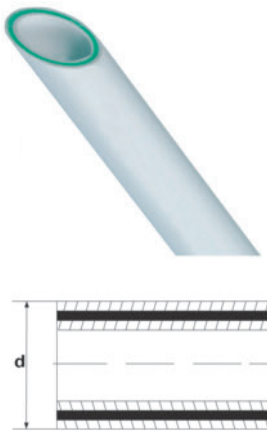
Handling Aquasystem







Pipes & Fittings



Aquasystem® PP-R Fibre Pipe - White PN20

Model:

- Pipe length: 4m
- Minimum order quantity: 1 length

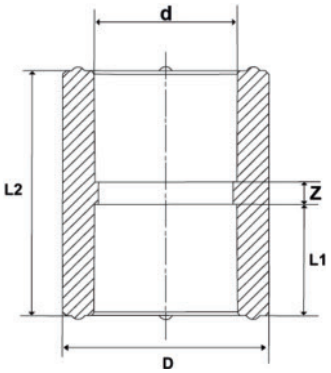
d [mm]	e [mm]	code	weight [kg]
20	3.2	**4200002000121**	0.146
25	4.0	**4200002500221**	0.228
32	4.7	**4200003200321**	0.368
40	5.8	**4200004000421**	0.575
50	7.0	**4200005000521**	0.902
63	8.6	**4200006300621**	1.405
75	10.3	**4200007500721**	1.999
90	12.3	**4200009000821**	2.868
110	15.1	**4200011000921**	4.295
125	17.1	**4200012500121**	5.534
160	21.7	**4200016000121**	9.625

Electrofusion fitting

Aquasystem® Electrofusion Coupler - Green

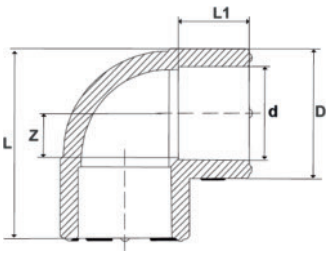
d [mm]	code	D [mm]	L [mm]	L1 [mm]
20	**4302902091522**	33.0	70.0	50.0
25	**4302902591522**	38.0	70.0	57.0
32	**4302903291522**	46.0	79.0	62.0
40	**4302904091522**	55.0	90.0	71.0
50	**4302905091522**	67.0	100.0	82.0
63	**4302906391522**	86.0	106.0	101.0
75	**4302907591522**	103.0	121.0	115.0
90	**4302909091522**	121.0	131.0	134.0
110	**4302911091522**	142.0	142.0	156.0
125	**4302912591522**	163.0	151.0	175.0
160	**4302916091522**	194.0	185.0	207.0

Socket fusion fittings



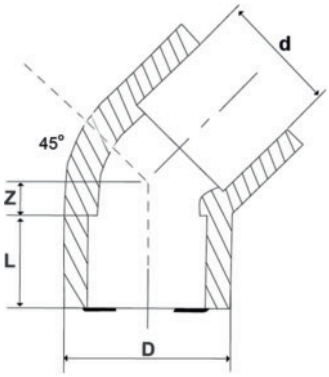
Aquasystem® Socket - Green

d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	**4302502020021**	27.5	16.0	34.0	3.4	25
25	**4302502520121**	33.3	16.0	34.0	4.4	25
32	**4302503220221**	41.3	20.0	45.0	4.0	25
40	**4304504020321**	53.0	21.0	48.0	8.0	25
50	**4302505020421**	66.4	23.8	52.0	3.6	25
63	**4302506320521**	83.5	27.5	58.0	1.7	25
75	**4302507520621**	98.2	31.0	65.0	4.0	25
90	**4302509020721**	118.2	36.0	75.0	5.5	25
110	**4302511020821**	144.0	41.5	85.0	5.0	25
125	**4302512520921**	165.0	40.0	90.0	10.0	25



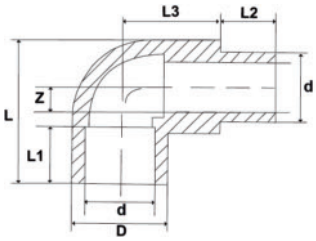
Aquasystem® Elbow 90° - Green

d [mm]	code	L1 [mm]	z [mm]	D [mm]	L [mm]	PN [bar]
20	**4302102000721**	16.0	11.0	28.0	39.0	25
25	**4302102500821**	16.0	13.5	32.7	46.0	25
32	**4302103200921**	20.0	17.0	41.5	56.0	25
40	**4302104001021**	21.0	21.5	52.0	67.5	25
50	**4302105001121**	23.8	25.5	65.4	83.5	25
63	**4302106301221**	27.5	33.0	84.0	102.5	25
75	**4302107501321**	31.0	40.0	97.5	115.0	25
90	**4302109001421**	36.0	46.0	117.9	138.0	25
110	**4302111001521**	41.5	59.0	144.0	169.0	25
125	**4302112501622**	41.5	84.0	165.0	206.5	25



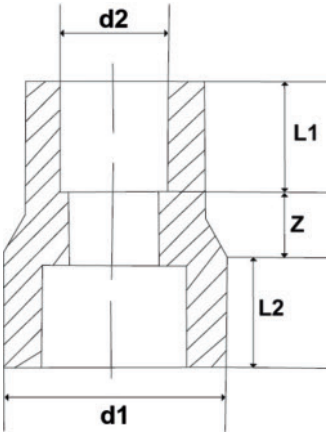
Aquasystem® Elbow 45° - Green

d [mm]	code	L [mm]	Z [mm]	D [mm]	PN [bar]
20	**4302102000121**	16.0	5.7	27.7	25
25	**4302102500221**	16.0	6.7	32.7	25
32	**4302103200321**	20.0	7.6	42.7	25
40	**4302104000422**	21.0	10.5	52.8	25
50	**4302105000522**	23.8	12.8	65.3	25
63	**4302105000622**	27.5	15.8	82.8	25
75	**4302107501222**	32.0	17.0	82.7	25
90	**4302109001322**	36.0	19.0	97.7	25
110	**4302111001422**	37.0	32.0	117.7	25
125	**4302112501522**	40.0	39.0	132.7	25



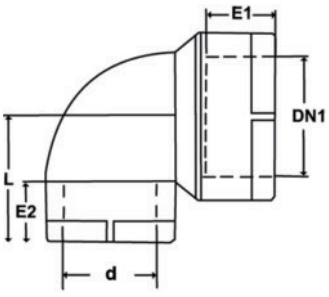
Aquasystem® Elbow 90° Male-Female - Green

d [mm]	code	D [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	**4302102005021**	29.4	42.1	16.0	16.0	28	12.1	25
25	**4302102505121**	35.7	48.8	16.0	16.0	28	14.5	25



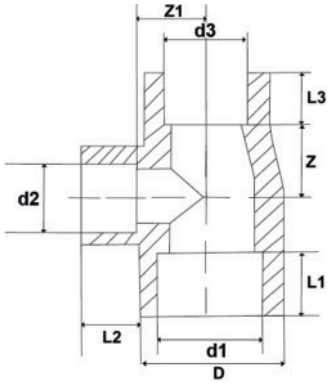
Aquasystem® Reducer - Green

d [mm]	code	d1 [mm]	d2 [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
25 - 20	**4302402510021**	25.0	20.0	16.0	18.0	3.0	25
32 - 20	**4302403210121**	32.0	20.0	16.0	21.0	5.0	25
32 - 25	**4302403210221**	32.0	25.0	16.0	25.0	3.0	25
40 - 20	**4302404010321**	40.0	20.0	15.0	27.0	9.5	25
40 - 25	**4302404010421**	40.0	25.0	19.0	25.0	8.0	25
40 - 32	**4302404010521**	40.0	32.0	18.5	25.0	6.5	25
50 - 20	**4302405010621**	50.0	20.0	15.5	32.0	8.0	25
50 - 25	**4302405010721**	50.0	25.0	16.5	32.0	9.0	25
50 - 32	**4302405010821**	50.0	32.0	18.5	28.0	9.5	25
50 - 40	**4302405010921**	50.0	40.0	21.0	28.0	9.5	25
63 - 25	**4302406311021**	63.0	25.0	16.2	26.4	12.5	25
63 - 32	**4302406311121**	63.0	32.0	19.0	36.0	13.5	25
63 - 40	**4302406311221**	63.0	40.0	22.0	36.0	16.0	25
63 - 50	**4302406311321**	63.0	50.0	25.0	25.0	15.5	25
75 - 50	**4302407511421**	75.0	50.0	25.0	25.0	16.5	25
75 - 63	**4302407511521**	75.0	63.0	28.0	28.0	14.5	25
90 - 63	**4302409011622**	90.0	63.0	28.0	34.0	21.0	25
90 - 75	**4302409011722**	75.0	75.0	31.0	34.0	22.0	25
110 - 63	**4302411011722**	110.0	63.0	31.0	34.0	22.0	25
110 - 75	**4302411011822**	110.0	75.0	31.0	38.0	23.0	25
110 - 90	**4302411011922**	110.0	90.0	34.0	42.0	23.5	25
125 - 75	**4302412512022**	110.0	75.0	48.0	48.0	2.0	25
125 - 90	**4302412512122**	125.0	90.0	50.0	50.0	2.0	25
125 - 110	**4302412512222**	125.0	110.0	85.0	100.0	40.0	25



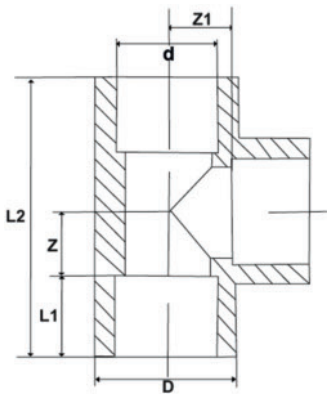
Aquasystem® Reducing Elbow - Green

d [mm]	DN1 [mm]	code	E1 [mm]	E2 [mm]	L [mm]
20	25	**4302402010022**	16.0	14.5	29.0
25	32	**4302402510122**	18.0	16.0	33.0



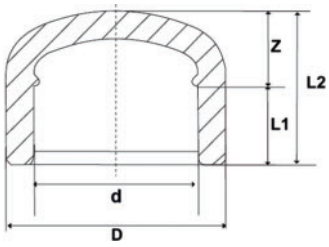
Aquasystem® Reducing Tee - Green

d [mm]	code	D [mm]	d1 [mm]	d2 [mm]	d3 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z1 [mm]	Z [mm]	PN [bar]
25 - 20 - 20	**4302902520021**	34	24.1	19.1	19.1	16.0	16.0	16.0	15.5	13.5	25
25 - 20 - 25	**4302902520121**	34	24.1	19.1	24.1	16.0	16.0	16.0	13.4	13.5	25
32 - 20 - 20	**4302903220221**	42	31.1	19.1	31.1	20.0	16.0	16.0	21.5	21.5	25
32 - 20 - 32	**4302903220421**	42	31.1	19.1	31.1	20.0	16.0	20.0	17.0	18.0	25
32 - 25 - 20	**4302903220521**	42	31.1	24.1	19.1	20.0	16.0	20.0	17.0	18.0	25
32 - 25 - 32	**4302903220621**	42	31.1	24.1	31.1	20.0	16.0	20.0	17.0	18.0	25
32 - 20 - 25	**4302903220321**	42	31.1	19.1	24.1	20.0	16.0	16.0	21.5	21.5	25
40 - 20 - 40	**4302904020721**	52	39.0	19.1	39.0	21.0	16.0	21.0	21.0	22.0	25
40 - 25 - 40	**4302904020821**	52	39.0	24.1	39.0	21.0	16.0	21.0	21.8	22.0	25
40 - 32 - 40	**4302904020921**	55	39.0	31.1	39.0	21.0	20.0	25.0	25.0	22.0	25
50 - 20 - 50	**4302905021021**	65	49.0	19.1	49.0	26.0	16.0	26.0	29.5	26.5	25
50 - 25 - 50	**4302905021221**	65	49.0	24.1	49.0	26.0	16.0	26.0	28.0	26.5	25
50 - 32 - 50	**4302905021321**	65	49.0	31.1	49.0	26.0	20.0	26.0	26.0	26.5	25
50 - 40 - 50	**4302905021421**	69	49.0	39.0	49.0	26.0	21.0	26.0	31.5	26.5	25
63 - 20 - 63	**4302906321322**	85	63.0	20.0	63.0	27.0	31.0	27.0	48.0	35.0	25
63 - 25 - 63	**4302906321422**	85	63.0	25.0	63.0	27.0	31.0	27.0	46.0	35.0	25
63 - 32 - 63	**4302906321522**	85	62.0	31.1	62.0	28.0	20.0	28.0	34.5	24.5	25
63 - 40 - 63	**4302906321622**	85	62.0	39.0	62.0	28.0	21.0	28.0	34.5	24.5	25
63 - 50 - 63	**4302906321722**	86	62.0	49.0	62.0	28.0	26.0	28.0	37.5	33.5	25
75 - 63 - 75	**4302907521722**	107	75.0	63.0	75.0	30.0	30.0	30.0	53.5	41.0	25
90 - 75 - 90	**4302909021722**	122	90.0	75.0	90.0	33.0	33.0	33.0	61.0	50.0	25
110 - 75 - 110	**4302911021622**	165	108.0	73.6	108.0	20.0	70.0	20.0	82.5	62.0	25
110 - 90 - 110	**4302911021722**	165	110.0	90.0	110.0	40.0	40.0	40.0	82.5	62.0	25
125 - 110 - 125	**4302912521822**	180	125.0	110.0	125.0	41.0	41.0	41.0	90.0	84.0	25



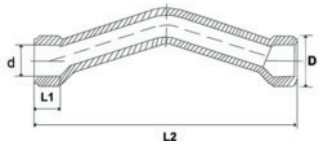
Aquasystem® Tee - Green

d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	Z [mm]	Z1 [mm]	PN [bar]
20	**4302902008021**	27.7	16.0	52.0	11.0	11.0	25
25	**4302902508121**	32.7	16.0	60.0	13.5	13.5	25
32	**4302903208221**	41.7	20.0	70.0	17.0	17.0	25
40	**4302904008321**	53.0	21.0	82.0	22.0	22.0	25
50	**4302905008421**	66.5	33.8	100.0	26.0	26.0	25
63	**4302906308521**	84.0	27.5	120.0	36.6	36.6	25
75	**4302907508621**	98.4	31.0	137.0	39.5	39.5	25
90	**4302909008721**	119.0	36.0	160.0	46.7	46.7	25
110	**4302911008821**	145.5	41.5	190.0	56.3	56.3	25
125	**4302912508922**	165.0	40.0	248.0	84.0	84.0	25



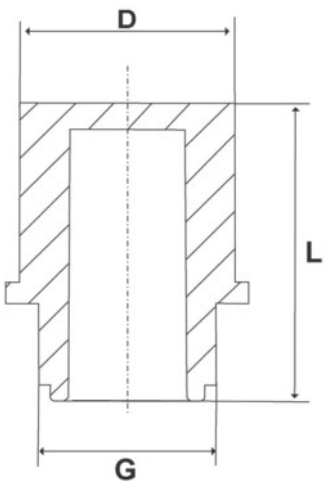
Aquasystem® End Cap - Green

d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	**4302902006021**	27.8	16.0	26.5	7.5	25
25	**4302902506121**	33.8	16.0	29.5	10.0	25
32	**4302903206221**	41.6	20.0	35.5	11.0	25
40	**4302904006321**	52.5	21.0	37.0	18.0	25
50	**4302905006421**	65.0	23.8	40.0	21.4	25
63	**4302906306522**	83.5	27.5	47.0	23.0	25
75	**4302907506622**	100.1	31.0	52.0	27.0	25
90	**4302909032022**	120.5	32.2	65.4	33.5	25
110	**4302911006722**	145.6	36.8	77.9	40.5	25



Aquasystem® Crossover With Socket - Green

d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	PN [bar]
20	**4302902000121**	29.5	16.0	160.0	25
25	**4302902500221**	35.0	16.0	203.0	25
32	**4302903200321**	45.0	20.0	273.0	25

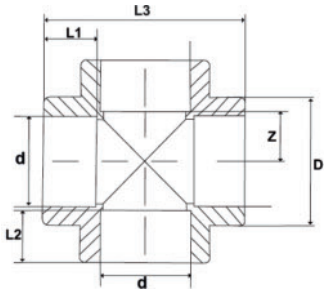


Aquasystem® Blind Cap - Green

d [mm]	code	G [inch]	D [mm]	L [mm]
20	**4302902014021**	½	22.0	35.0
25	**4302902514121**	¾	22.0	35.0

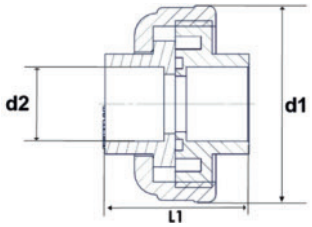
Aquasystem® Cross - Green

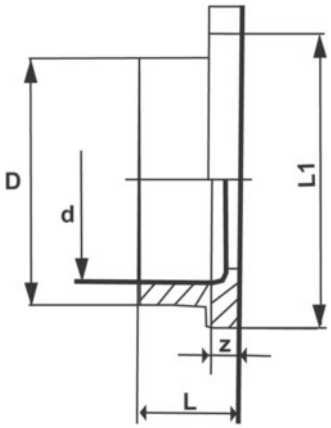
d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	**4302902060022**	28.8	16.0	16.0	56.0	11.7	25
25	**4302902560122**	36.5	20.0	16.0	70.0	12.5	25
32	**4302903260222**	43.5	20.0	20.0	80.0	17.1	25
40	**4302904060322**	53.3	20.6	21.0	84.5	21.7	25



Aquasystem® Union - Green

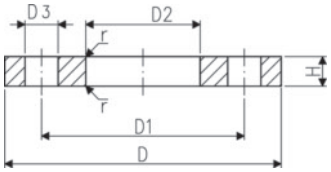
d [mm]	code	d1 [mm]	d2 [mm]	L1 [mm]	PN [bar]
20	**4302902028022**	54.0	15.0	40.0	16
25	**4302902528122**	60.0	20.0	46.0	16
32	**4302903228222**	68.0	25.0	52.0	16
40	**4302904028322**	83.0	32.0	60.0	16
50	**4302905028422**	97.0	40.0	72.0	16
63	**4302906328522**	118.0	50.0	87.0	16
75	**4302907528622**	143.0	65.0	100.0	16
90	**4302909028722**	178.0	80.0	117.0	16





Aquasystem® Flange Adaptor - Green

d [mm]	code	D [mm]	L [mm]	L1 [mm]	Z [mm]	PN [bar]
25	**4302902533022**	33.0	23.0	41.0	5.0	20
32	**4302903233022**	41.0	25.0	50.0	5.0	20
40	**4302904033022**	50.0	27.0	61.0	5.0	20
50	**4302905033022**	61.0	33.0	74.0	8.0	20
63	**4302906333022**	76.0	37.0	91.0	8.0	20
75	**4302907533022**	90.0	39.0	107.0	8.0	20
90	**4302909033022**	106.0	46.0	126.0	10.0	20
110	**4302911033022**	131.0	49.0	150.0	7.0	20
125	**4302912533022**	146.0	55.0	162.0	17.5	20



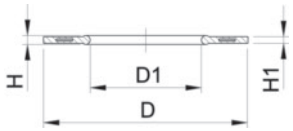
Backing Flange, Galvanised Steel for Socket Systems

Model:

- Galvanised steel, suitable for laying underground
- Connecting dimension: ISO 7005, EN 1092, BS 4504, DIN 2501
- Bolt circle PN10/16

AL: number of holes
*Bolt circle PN16

d [mm]	d [inch]	DN [mm]	PN [bar]	code	weight [kg]	SC	H [mm]	D [mm]	AL	D3 [mm]	D2 [mm]	D1 [mm]
20	½	15	16	**724 701 606**	0.220	M12x55	7	95	4	14	28	65
25	¾	20	16	**724 701 607**	0.320	M12x60	7	105	4	14	34	75
32	1	25	16	**724 701 608**	0.410	M12x60	7	115	4	14	42	85
40	1 ¼	32	16	**724 701 609**	0.820	M16x70	8	140	4	18	51	100
50	1 ½	40	16	**724 701 610**	1.040	M16x75	8	150	4	18	62	110
63	2	50	16	**724 701 611**	1.220	M16x80	8	165	4	18	78	125
75	2 ½	65	16	**724 701 612**	1.440	M16x85	8	185	4	18	92	145
90	3	80	16	**724 701 613**	1.530	M16x90	8	200	4	18	110	160
110	3	80	16	**724 701 014**	1.840	M16x95	8	200	4	18	133	160
110		100	16	**724 700 014**	1.840	M16x95	8	220	8	18	133	180
125	4	100	16	**724 700 015**	1.950	M16X95	8	220	8	18	150	180
125		125	16	**724 701 015**	2.020	M16X95	8	250	8	18	150	210



Profile flange gasket metric

Model:

- For all metric GF Flange Adaptors
- Profile Gasket with steel insert (type G-ST-P/K)
- ardness: 70° Shore EPDM, 75° Shore **FPM**
- **EPDM**: approved acc. to DVGW W 270, KTW recommendation
- Centering on the inner diameter of the screw crown
- material steel insert: carbon steel

di FA are the suitable inner diameters of flange adaptors

d [mm]	PN [bar]	DN [mm]	EPDM code	FPM code	weight [kg]
20	16	15	**748 440 706**	**749 440 706**	0.013
25	16	20	**748 440 707**	**749 440 707**	0.014
32	16	25	**748 440 708**	**749 440 708**	0.019
40	16	32	**748 440 709**	**749 440 709**	0.026
50	16	40	**748 440 710**	**749 440 710**	0.039
63	16	50	**748 440 711**	**749 440 711**	0.050
75	16	65	**748 440 712**	**749 440 712**	0.082
90	16	80	**748 440 713**	**749 440 713**	0.083
110	16	100	**748 440 714**	**749 440 714**	0.127
125	16	100	**748 440 715**	**749 440 715**	0.105
140	16	125	**748 440 716**	**749 440 716**	0.173
160 - 180	16	150	**748 440 717**	**749 440 717**	0.207

d [mm]	D [mm]	H [mm]	di FA [mm]	H1 [mm]	Closest inch [inch]	D1 [mm]
20	51	4	10 - 20	3		20
25	61	4	12 - 22	3		22
32	71	4	18 - 28	3		28
40	82	4	30 - 40	3		40
50	92	4	36 - 46	3		46
63	107	5	48 - 58	4		58
75	127	5	59 - 69	4		69
90	142	5	73 - 84	4		84

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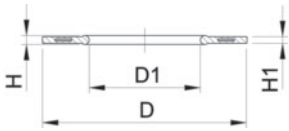
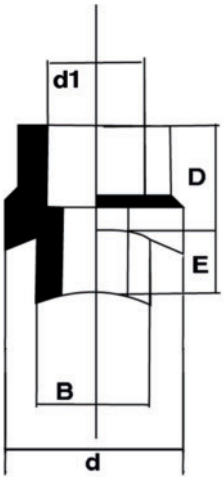


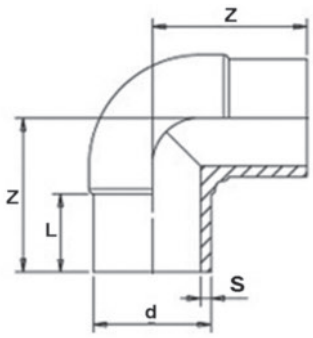
d [mm]	D [mm]	H [mm]	di FA [mm]	H1 [mm]	Closest inch [inch]	D1 [mm]
110	162	6	94 - 104	5		104
125	162	6	113 - 123	5		123
140	192	6	127 - 137	5		137
160 - 180	218	8	150 - 160	6	6	160



Aquasystem® Saddle With Spigot - Green

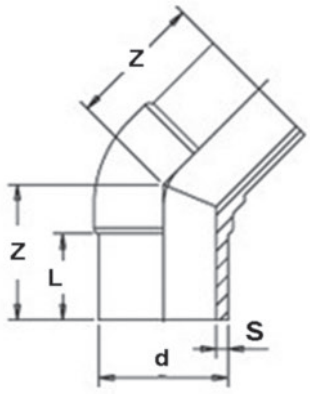
d - d1 [mm]	code	B [mm]	D [mm]	E [mm]	PN [bar]
40 - 20	**4302904090022**	22.0	20.0	7.0	25
40 - 25	**4302904090122**	22.0	27.0	7.0	25
50 - 20	**4302905090022**	22.0	20.0	8.0	25
50 - 25	**4302905090122**	22.0	27.0	8.0	25
63 - 20	**4302906390022**	22.0	20.0	10.0	25
63 - 25	**4302906390122**	22.0	27.0	10.0	25
63 - 32	**4302906390222**	32.0	30.0	10.0	25
75 - 20	**4302907590022**	22.0	20.0	10.0	25
75 - 25	**4302907590122**	22.0	27.0	10.0	25
75 - 32	**4302907590222**	32.0	30.0	10.0	25
75 - 40	**4302907590322**	32.0	30.0	15.0	25
90 - 20	**4302909090022**	22.0	20.0	15.0	25
90 - 25	**4302909090122**	22.0	27.0	15.0	25
90 - 32	**4302909090222**	32.0	30.0	15.0	25
90 - 40	**4302909090322**	32.0	30.0	15.0	25
110 - 20	**4302911090022**	22.0	20.0	15.0	25
110 - 25	**4302911090122**	22.0	27.0	15.0	25
110 - 32	**4302911090222**	32.0	30.0	15.0	25
110 - 40	**4302911090322**	32.0	30.0	15.0	25
125 - 20	**4302912590022**	22.0	27.0	15.0	25
125 - 25	**4302912590122**	22.0	30.0	15.0	25
125 - 32	**4302912590222**	32.0	30.0	15.0	25
125 - 40	**4302912590322**	32.0	30.0	15.0	25

Butt fusion fittings



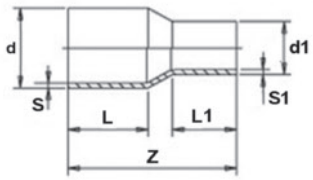
Aquasystem® Butt Fusion Elbow 90° - Green

d [mm]	code	z [mm]	L [mm]	s [mm]	PN [bar]
160	**4302116001422**	212	110	14.6	25



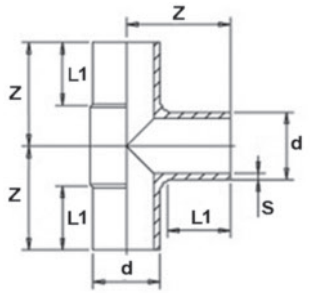
Aquasystem® Butt Fusion Elbow 45° - Green

d [mm]	code	L [mm]	Z [mm]	s [mm]	PN [bar]
160	**4302116001622**	110	168	14.6	25



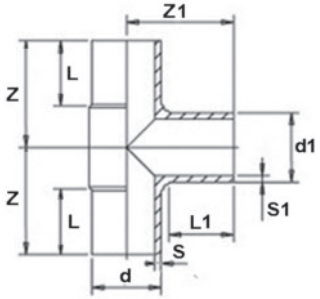
Aquasystem® Butt Fusion Reducer - Green

d [mm]	code	d1 [mm]	L [mm]	L1 [mm]	Z [mm]	s [mm]	s1 [mm]	PN [bar]
160 - 125	**4302416012322**	125	110.0	97	255	14.6	11.4	25



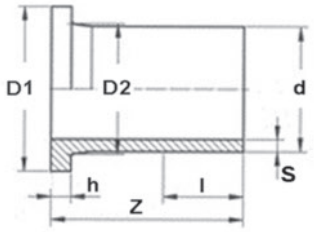
Aquasystem® Butt Fusion Tee - Green

d [mm]	code	L1 [mm]	Z [mm]	s [mm]	PN [bar]
160	**4302916009022**	124	225	14.6	25



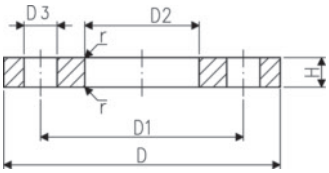
Aquasystem® Butt Fusion Reducing Tee - Green

d [mm]	code	d1 [mm]	L [mm]	L1 [mm]	s [mm]	s1 [mm]	Z [mm]	Z1 [mm]	PN [bar]
160 - 110 - 160	**4302916021922**	110	110	95	14.6	10	212	200	25



Aquasystem® Butt Fusion Flange Adaptor - Green

d [mm]	code	d1 [mm]	d2 [mm]	L [mm]	h [mm]	s [mm]	Z [mm]	PN [bar]
160	**4302916033022**	212	175	110	25	14.6	182	20



Backing Flange, Galvanised Steel for Butt Fusion Systems

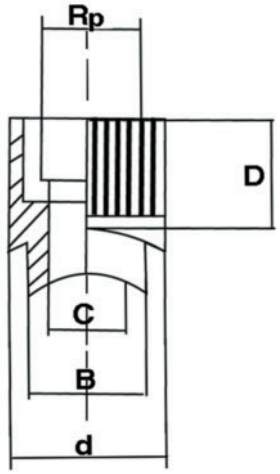
AL: number of holes

Model:

- Galvanised steel, suitable for laying underground
- Connecting dimension: ANSI/ASME B 16.5 class 150, ASTM D 4024, BS 1560, BS EN 1759
- Bolt circle Class 150

d [mm]	d [inch]	DN [mm]	PN [bar]	code	weight [kg]	D [mm]	D1 [mm]	D2 [mm]	D3 [mm]	H [mm]	AL	SC
160	6	150	16	**724 701 917**	0.001	279	241	178	22	8	8	M20x120

Transition fittings

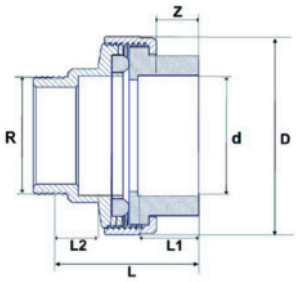


Aquasystem® Threaded Female saddle with Spigot - Green

d [mm]	Rp [inch]	code	B [mm]	D [mm]	C [mm]	PN [bar]
40	½	**4302904091122**	22	27	13	25
50	½	**4302905091122**	22	27	13	25
50	¾	**4302905091022**	32	30	21	25
63	½	**4302906391122**	22	27	13	25
63	¾	**4302906391022**	32	30	21	25
75	½	**4302907591122**	22	27	13	25
75	¾	**4302907591022**	32	30	21	25
75	1	**4302907591222**	32	34	22	25
90	½	**4302909091122**	22	27	13	25
90	¾	**4302909091022**	32	30	21	25
90	1	**4302909091222**	32	34	22	25
110	½	**4302911091122**	22	27	13	25
110	¾	**4302911091022**	32	30	21	25
110	1	**4302911091222**	32	34	22	25
125	½	**4302912591122**	22	27	14	25
125	¾	**4302912591022**	32	30	22	25
125	1	**4302912591222**	32	34	22	25

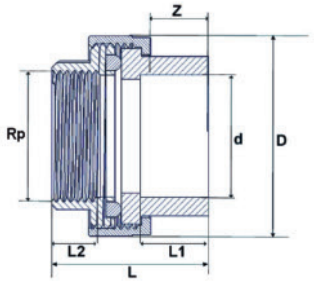
Aquasystem® Adaptor Union Socket Male Threaded (EPDM) BSP - Green

d [mm]	R [inch]	code	D [mm]	L1 [mm]	L2 [mm]	L [mm]	Z [mm]	PN [bar]
20	½	**4302702030521**	36.5	16.0	13.0	60.0	12.5	25
20	¾	**4302902030421**	45.0	16.0	15.0	60.0	13.7	25
25	¾	**4302702530121**	45.0	16.0	15.0	65.0	13.7	25
32	1	**4302703230121**	51.0	20.0	16.0	67.0	15.0	25
40	1 ¼	**4302904030122**	63.5	21.0	18.0	69.0	18.3	25
50	1 ½	**4302905030122**	79.0	24.0	20.0	73.0	17.0	25
63	2	**4302906330122**	103.0	28.0	20.0	75.0	23.0	25



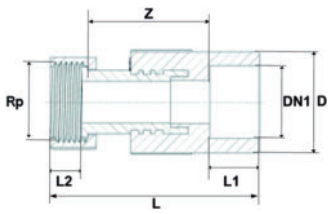
Aquasystem® Adaptor Union Socket Female Threaded (EPDM) BSP - Green

d [mm]	Rp [inch]	code	D [mm]	L1 [mm]	L2 [mm]	L [mm]	Z [mm]	PN [bar]
20	½	**4302702030421**	36.5	16	16	50	12.5	25
20	¾	**4302902030321**	45.0	16	16	50	13.7	25
25	¾	**4302702530021**	45.0	16	17	55	13.7	25
32	1	**4302703230021**	51.0	20	18	57	15.0	25
40	1 ¼	**4302904030022**	63.5	21	20	60	18.3	25
50	1 ½	**4302905030022**	79.0	24	25	62	17.0	25
63	2	**4302906330022**	103.0	28	28	65	23.0	25

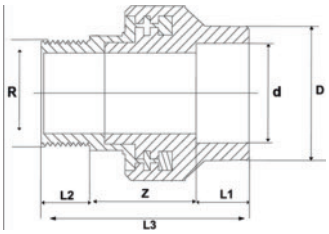


Aquasystem® Transition With Loose Nut BSP - Green

d [mm]	Rp [inch]	code	D [mm]	L [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	½	**4302902030821**	28.5	69.5	16.0	12.0	45.2	25
25	¾	**4302902530621**	35.5	72.5	16.0	13.0	45.2	25
25	1	**4302902530721**	35.5	75.0	20.0	13.0	47.0	25

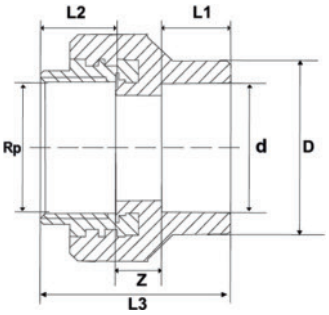


Aquasystem® Male Socket (Hexagon) BSP - Green



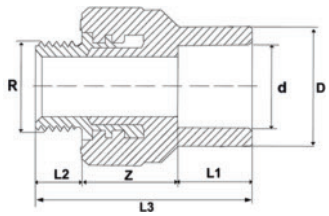
d [mm]	R [inch]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
32	1	**4302703230321**	42.9	18.0	15.0	60.0	38.7	25
40	1 ¼	**4302704040121**	53.0	21.0	20.0	80.0	41.1	25
50	1 ½	**4302705040121**	66.5	24.0	22.0	90.0	36.5	25
63	2	**4302706340121**	83.0	28.0	22.0	95.0	49.0	25
75	2 ½	**4302707530022**	100.4	73.5	25.0	105.0	47.5	25
90	3	**4302709030022**	117.1	36.0	28.0	120.0	63.3	25
110	4	**4302711030022**	148.7	41.5	32.0	140.0	78.0	25

Aquasystem® Female Socket (Hexagon) BSP - Green

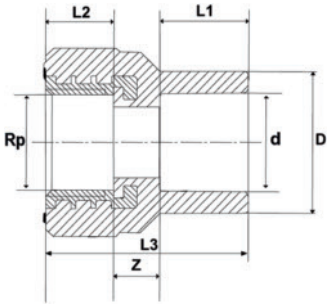


d [mm]	Rp [inch]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
32	1	**4302703230621**	42.9	18.0	18.0	55.0	19.9	25
40	1 ¼	**4302704040021**	53.0	21.0	20.0	80.0	41.1	25
50	1 ½	**4302705040021**	66.5	24.0	22.0	90.0	36.5	25
63	2	**4302706340021**	83.0	28.0	22.0	95.0	49.0	25
75	2 ½	**4302707530122**	100.4	73.5	25.0	105.0	47.5	25
90	3	**4302709030122**	117.1	36.0	28.0	120.0	63.3	25
110	4	**4302711030122**	148.7	41.5	32.0	140.0	78.0	25

Aquasystem® Male Socket (Round) BSP - Green

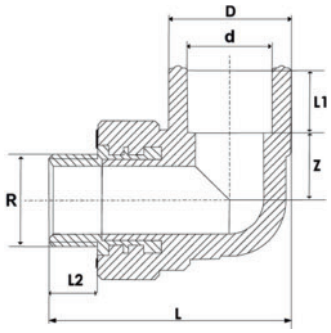


d [mm]	R [inch]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	½	**4302702040221**	27.9	16	11	51	22.5	25
20	¾	**4302702040321**	27.9	16	12	52	22.5	25
25	½	**4302702540221**	33.4	16	11	51	21.8	25
25	¾	**4302702540321**	33.4	16	12	52	21.8	25
32	¾	**4302703240121**	43.7	20	12	56	26.5	25
32	1	**4302703240321**	43.7	20	12	56	26.5	25



Aquasystem® Female Socket (Round) BSP - Green

d [mm]	Rp [inch]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	½	**4302702040021**	19.1	16.0	12.0	40.0	8.5	25
20	¾	**4302702040121**	19.1	16.0	13.0	40.0	8.5	25
25	½	**4302702540021**	24.1	16.0	12.0	40.0	7.5	25
25	¾	**4302702540121**	24.1	16.0	13.0	40.0	7.5	25
32	¾	**4302703240021**	31.1	20.0	13.0	44.0	10.0	25
32	1	**4302703240221**	31.1	20.0	13.0	44.0	10.0	25

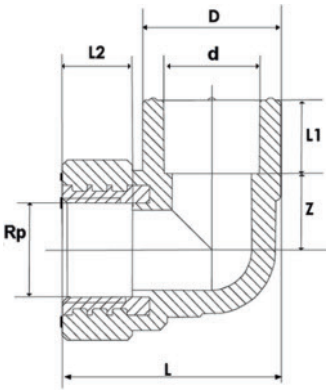


Aquasystem® Male Elbow BSP - Green

d [mm]	R [inch]	code	D [mm]	L [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	½	**4302102030221**	28.1	57.4	16.0	14.0	16.0	25
20	¾	**4302102030321**	28.1	58.4	16.0	13.5	16.0	25
25	½	**4302102530221**	35.0	64.5	18.5	14.0	11.7	25
25	¾	**4302102530321**	32.0	66.2	18.5	13.5	22.6	25
32	¾	**4302103230221**	43.7	76.0	18.5	13.5	18.0	25
32	1	**4302103230321**	43.7	74.0	18.5	17.0	18.0	25

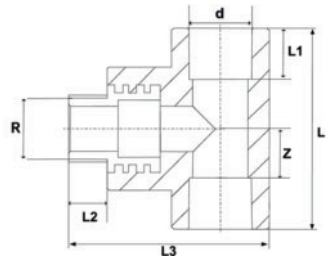
Aquasystem® Female Elbow BSP - Green

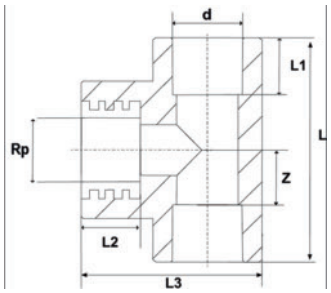
d [mm]	Rp [inch]	code	D [mm]	L [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	½	**4302102030021**	28.1	44.4	16.0	15.0	15.5	25
20	¾	**4302102030121**	28.1	44.4	16.0	15.0	15.5	25
25	½	**4302102530021**	35.0	51.6	18.5	15.0	12.7	25
25	¾	**4302102530121**	32.8	51.6	18.5	15.0	22.8	25
32	¾	**4302103230021**	43.7	62.0	18.5	15.0	18.0	25
32	1	**4302103230121**	43.7	62.0	18.5	18.0	18.0	25



Aquasystem® Transition Tee Male BSP - Green

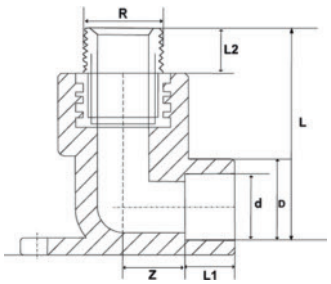
d [mm]	R [inch]	code	L1 [mm]	L2 [mm]	L3 [mm]	L [mm]	Z [mm]	PN [bar]
20	½	**4302902030221**	16.0	11.0	60.2	52.0	10.7	25





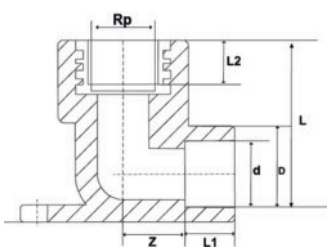
Aquasystem® Transition Tee Female BSP - Green

d [mm]	Rp [inch]	code	L1 [mm]	L2 [mm]	L3 [mm]	L [mm]	Z [mm]	PN [bar]
20	½	**4302902030021**	16.00	15.0	47.0	52	11.0	25
20	¾	**4302902030121**	16.00	15.0	47.0	52	11.0	25
25	½	**4302902530021**	16.00	15.0	55.0	60	13.8	25
25	¾	**4302902530121**	16.00	15.0	55.0	60	13.8	25
32	¾	**4302903230021**	20.00	15.0	68.6	70	18.8	25
32	1	**4302903230121**	20.00	18.0	68.6	70	18.8	25



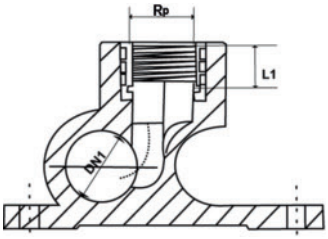
Aquasystem® Backplate Elbow (Male) BSP - Green

d [mm]	R [inch]	code	D [mm]	L [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	½	**4302902030621**	28.2	65.5	16.0	11.0	15.0	25
25	½	**4302102530821**	35.1	65.5	16.0	11.0	15.0	25
25	¾	**4302102530721**	35.1	65.5	16.0	13.0	17.0	25



Aquasystem® Backplate Elbow (Female) BSP - Green

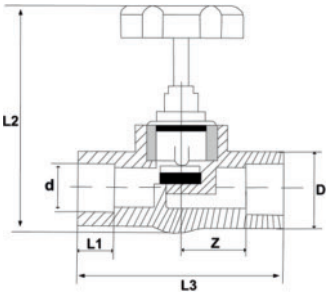
d [mm]	Rp [inch]	code	SP	GP	D [mm]	L [mm]	L1 [mm]	L2 [mm]	Z [mm]	PN [bar]
20	½	**4302902030721**	25	150	30.0	53.0	16.0	12.0	15.5	25



Aquasystem® Backplate Elbow (Double) BSP - Green

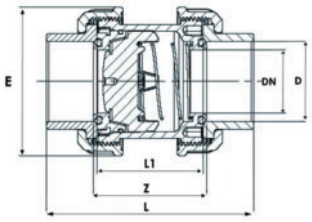
d [mm]	Rp [inch]	code	L1 [mm]	PN [bar]
25	½	**4302902530521**	15	25

Accessories



Aquasystem® Gate Valve - Green

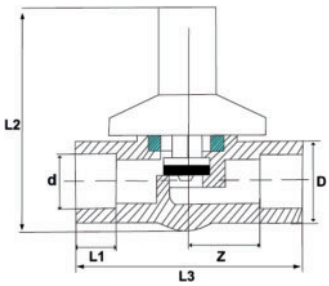
d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	**4302802035021**	27.6	16.0	97.0	68	14.5	20
25	**4302802535121**	35.2	19.0	102.0	78	22.0	20
32	**4302803235221**	42.8	20.0	114.0	88	26.3	20



Aquasystem® Check Valve - Green

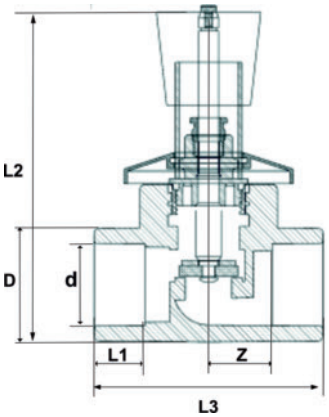
d [mm]	code	DN [mm]	E [mm]	L1 [mm]	Z [mm]	F [mm]	L [mm]	PN [bar]
20	**4302902031022**	15	54.0	45.0	80.0	16.0	83.0	20
25	**4302902531122**	20	60.0	51.0	57.0	19.0	95.0	20
32	**4302903231222**	25	68.0	55.0	61.0	22.0	105.0	20
40	**4302904031322**	32	83.0	64.0	70.0	26.0	122.0	20
50	**4302905031422**	40	97.0	75.0	81.0	31.0	143.0	20
63	**4302906331522**	50	118.0	85.0	91.0	38.0	167.0	20
75	**4302907531622**	65	143.0	108.0	114.0	44.0	202.0	20
90	**4302909031722**	80	178.0	134.0	144.0	51.0	246.0	20

Aquasystem® Chromium Valve (Short) - Green

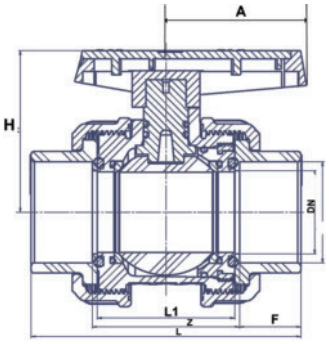


d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	**4302802040021**	27.6	16.0	97.0	68.0	14.5	20
25	**4302802540221**	35.2	19.0	102.0	78.0	22.0	20
32	**4302803240421**	42.8	20.0	114.0	88.0	26.3	20

Aquasystem® Chromium Valve (Long) - Green

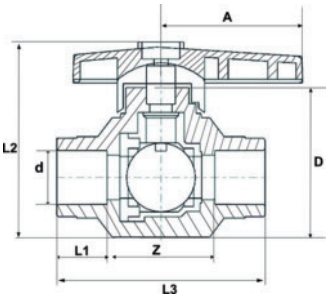


d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	PN [bar]
20	**4302802040121**	27.6	16.0	115.0	68.0	14.5	20
25	**4302802540321**	35.2	19.0	125.0	78.0	22.0	20
32	**4302803240521**	42.8	20.0	135.0	88.0	26.3	20



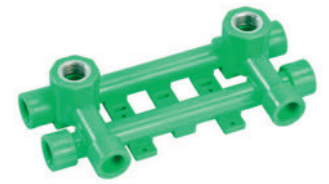
Aquasystem® Ball Valve (PN16) - Green

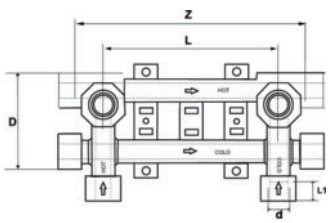
d [mm]	code	DN [mm]	H [mm]	L1 [mm]	Z [mm]	F [mm]	L [mm]	A [mm]	PN [bar]
20	**4302802042522**	15	48.0	45.0	51.0	16.0	83.0	40.7	16
25	**4302802542622**	20	55.0	51.0	57.0	19.0	95.0	51.0	16
32	**4302803242722**	25	65.0	55.0	61.0	22.0	105.0	54.6	16
40	**4302804043122**	32	76.0	64.0	70.0	26.0	122.0	64.5	16
50	**4302805043222**	40	87.0	75.0	81.0	31.0	143.0	70.0	16
63	**4302806343322**	50	101.0	85.0	91.0	38.0	167.0	85.5	16
75	**4302807543422**	65	113.0	108.0	114.0	44.0	202.0	85.5	16
90	**4302809043522**	80	144.0	134.0	144.0	51.0	246.0	127.5	16



Aquasystem® Ball Valve (PN20) - Green

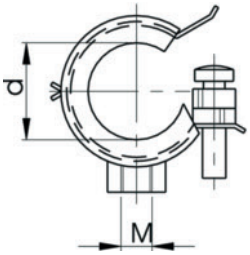
d [mm]	code	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Z [mm]	A [mm]	PN [bar]
20	**4302802042822**	50.0	16.0	72.0	88.0	36.0	57.5	20
25	**4302802542922**	57.5	19.0	82.0	76.0	35.0	57.5	20
32	**4302803243022**	70.3	20.0	92.0	68.0	48.0	74.5	20
40	**4302804043622**	88.0	36.1	121.4	109.1	68.8	104.0	20
50	**4302805043722**	98.0	36.5	140.0	125.2	70.5	104.0	20
63	**4302806343822**	106.0	35.9	121.1	119.3	82.5	104.0	20
75	**4302807543922**	125.5	42.6	159.5	144.9	91.6	145.0	20





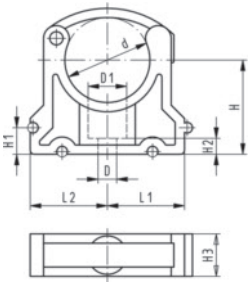
Aquasystem® Distribution Manifold BSP - Green

d [mm]	Rp [inch]	code	D [mm]	L1 [mm]	L [mm]	Z [mm]	PN [bar]
20	½	**4302902030521**	81.1	16.0	150.0	201.0	25



Pipe clamp

d [mm]	code	SP	weight [kg]	M [mm]
20	**761 066 297**	50	0.045	8
25	**761 066 298**	50	0.053	8
32	**761 066 299**	50	0.046	8
40	**761 066 300**	50	0.071	8
50	**761 066 301**	50	0.087	8
63	**761 066 302**	10	0.134	8
75	**761 066 303**	10	0.135	8
90	**761 066 304**	10	0.156	10
110	**761 066 305**	25	0.228	10



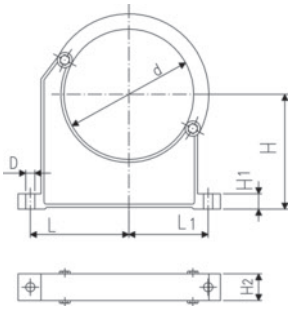
KLIP-IT pipe clip type 061H PP metric

Model:

- Material: Clip and safety clip PP black, UV resistant, bolts galvanized
- **Minimum order quantity: standard packagings SP**
- * d16 to d32 without bracket
- d16 - d63: height designed for Ball Valve Type 546 und 543

	d [mm]	code	SP	weight [kg]
	20	**167 061 036**	10	0.007
	25	**167 061 037**	10	0.009
*	32	**167 061 038**	10	0.012
	40	**167 061 039**	10	0.027
	50	**167 061 040**	10	0.031
	63	**167 061 041**	10	0.052

	d [mm]	D [mm]	D1 [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	SC	closest inch [inch]
	20	6	11	17	19	27	10	6	16	M5	½
	25	6	11	19	22	30	10	6	16	M5	¾
*	32	6	11	24	27	36	10	6	16	M5	1
	40	7	14	34	34	44	10	7	22	M6	1 ¼
	50	7	14	37	37	51	10	7	22	M6	1 ½
	63	9	17	45	45	64	10	10	25	M8	2



Pipe clip type 060 PP metric

Model:

- Material: Clip and safety clip PP black, UV resistant, bolts galvanized
- **Minimum order quantity: standard packaging SP or gross packaging GP**
- Accidental opening of the safety clip is not possible
- Clip and safety clip are not assembled in the packaging.
- Pipes with flanges can be installed directly

d [mm]	code	SP	weight [kg]	D [mm]	L [mm]	L1 [mm]	H [mm]	H1 [mm]	H2 [mm]	SC	closest inch [inch]
90	**167 060 038**	10	0.144	9	89	71	105	15	33	M 8	3
110	**167 060 039**	10	0.158	9	94	80	115	15	33	M 8	4
125	**167 060 040**	10	0.249	11	116	91	130	20	35	M10	
140	**167 060 041**	10	0.260	11	121	98	130	20	35	M10	5
160	**167 060 042**	10	0.296	11	131	107	148	20	35	M10	6

Machines and tools
Tools

MSE 63 Socket fusion tool

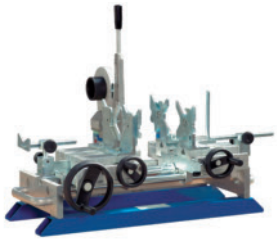
- Heater plate only requires heating tools.
- Choice of electronic or thermostatic temperature control
- Support for heating bushes and spigots of d 16 to 63 mm (110 mm)
- Pick up for floor stand or table clamp
- Monitoring and setting of heating element temperature
- High temperature accuracy over the entire heating surface
- T = thermostatic temperature control / E = electronic temperature control

d-d [mm]	Type	Performance	code	weight [kg]
16 - 63	MSE 63 T	115 V/800 W	**790 105 096**	2.075

Table clamp for SSE/MSE

- For correct placement of heater

code	SP	weight [kg]
790 109 315	0	0.660



SG 125 Socket fusion bench machine

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

d-d [mm]	Performance	code	weight [kg]
20 - 90	115 V/1500 W	**790 310 037**	65.000

SG315 butt fusion machine

Note:
The industrial butt fusion machine for pressure piping systems. Extremely sturdy design use in the workshop and on job sites.

code	weight [kg]
790 130 002	128.000

MSA 330 - 115 Volt
Electrofusion unit with jointing data recording

The MSA 330 electrofusion unit combines high performance in jointing with easy and safe handling. The internal memory has a capacity of 500 jointing records, for data transfer the unit is equipped with an USB interface. The record is delivered as PDF or CSV format, both are manageable with common and free PC software applications. An intuitive operation menu is guiding through the complete jointing process. For fusion data input a barcode scanner is connected (manual data input configurable). The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and indication of cooling time. The unit is suitable for jointing in series. Robust aluminum housing with convenient cable rewind and handle for weight balanced transport. Fusion cable detachable with military connector.
Inclusive dedicated transport case, pouch for scanner, 2 pairs of angle adapter clips 4,0 mm and 4,7 mm, operation instructions and configuration chart.

Technical Data

Ambient temperature	-10°C to +45°C
Mains voltage	90 V - 135 V AC
Mains frequency	40 Hz - 70 Hz
Fusion voltage	8 - 48 V AC
Fusion current	max. 90 A
Suggested power generator	3,5 kVA (5,0 kVA for fittings with Ø>200mm)
Protection	Class 1 / IP 54
Mains cable	10 m
Fusion cable	3 m
Interface	USB (type A) for PC communication and software updates
Dimensions (WxHxD)	280 x 480 x 320 mm
Weight incl. cables	25 kg
Display	LCD (20 alphanumerical char. x 4 lines), contrast adjustment, blue background, white characters
Languages	10

description	code	weight [lb]
Barcode scanner, transport case	**790 160 017**	70.548

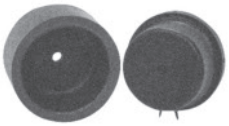
PPC Plastic pipe cutter

- For cutting plastic pipes d10 - d160

Article	d-d [mm]	code	SP	weight [kg]	Closest inch [inch]
PPC 63, s max. = 7.2mm	10 - 63	**790 109 001**	1	0.865	⅛ - 2
PPC 110, s max. = 12.7mm	50 - 110	**790 109 002**	1	1.624	1 ½ - 4
PPC 160, s max. = 19.0mm	110 - 160	**790 109 003**	1	2.212	4 - 6

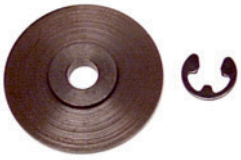
Set of heating tools for saddles

d [mm]	code	SP	weight [kg]
40 - 20 - 25	**760 840 585**	1	0.209
50 - 20 - 25	**760 840 586**	1	0.223
63 - 20 - 25	**760 840 587**	1	0.223
75 - 20 - 25	**760 840 588**	1	0.231
90 - 20 - 25	**760 840 589**	1	0.231
110 - 20 - 25	**760 840 590**	1	0.233
125 - 20 - 25	**760 840 591**	1	0.250
50 - 32 - 40	**760 840 592**	1	0.285
63 - 32 - 40	**760 840 593**	1	0.317
75 - 32 - 40	**760 840 594**	1	0.322
90 - 32 - 40	**760 840 595**	1	0.322
110 - 32 - 40	**760 840 596**	1	0.334
125 - 32 - 40	**760 840 597**	1	0.350



Set of heating tools for welder

d [mm]	code	SP	weight [kg]
20	**760 840 562**	1	0.001
25	**760 840 563**	1	0.001
32	**760 840 564**	1	0.001
40	**760 840 565**	1	0.001
50	**760 840 566**	1	0.001
63	**760 840 567**	1	0.001
75	**760 840 568**	1	0.001
90	**760 840 569**	1	0.001
110	**760 840 570**	1	0.001
125	**760 840 571**	1	0.001



Replacement cutting wheels

- **for plastic pipe cutter**

d-d [mm]	Article	code	SP	weight [kg]
10 - 63	SR 63 max. s=7,2 mm	**790 109 011**	50	0.004
50 - 110	SR 110/160 max. s=12,7 mm	**790 109 012**	50	0.015
110 - 160	SR 160 max. s=19,0 mm	**790 109 013**	30	0.023

Milling cutter for saddles with spigot

d [mm]	code	SP
20 - 25	**760 840 600**	1
32	**760 840 601**	1

Hand scraper

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

code	weight [kg]	Description
799 198 094	0.143	Hand scraper with long handle

Rotary peeler RS

Note:
This innovative Rotary Peeler RS is designed to use for universal peeling at the pipe end, for electrofusion couplings, tees and elbows and as well as for electrofusion saddles.Suitable for peeling of pipes made out of PE 80, PE 100, PEX, PP.

d [mm]	Article	code	weight [kg]
40	RS 40	**790 136 001**	1.310
50	RS 50	**790 136 002**	1.310
63	RS 63	**790 136 003**	1.310
75	RS 75	**790 136 004**	1.540
90	RS 90	**790 136 005**	1.540
110	RS 110	**790 136 006**	1.540
125	RS 125	**790 136 007**	1.730
140	RS 140	**790 136 008**	1.730
160	RS 160	**790 136 009**	1.730

Tempil stick

Temperature [°C]	code	SP	weight [kg]
253	**799 496 008**	0	0.169
274	**799 496 009**	0	0.013

KS cleaner and blue paper

#	code	weight [kg]
1 litre	**799 298 023**	0.872
1 roll	**790 099 175**	1.000

Socket fusion jointing

1. Cut the pipe
Cut the pipe at a right angle, if necessary remove swarf from the inside.

2. Clean the fitting and pipe
Clean the internal surface of the fitting and the outside of the pipe using Tangit KS cleaner and a lint free cloth (any dirt or grease on the fitting or pipe can result in a joint failure).

3. Mark the insertion depth
Mark the insertion depth into the heater bush and fitting (see table below) on the pipe. The mark must remain visible under heating and jointing.

4. Clean the heater bushes
Clean the heater bushes with Tangit KS cleaner and a lint free cloth. To clean inside the smaller bushes the cloth can be wrapped around a piece of dowel or wooden pencil. The heater bushes should be wiped clean after each welding.

5. Check the fusion temperature
Once the socket fusion machine is on and has been allowed to heat up, check the fusion temperature, which must range between 253°C and 274°C. The temperature is checked using Tempil sticks. The yellow stick melts at 253°C and the red stick melts at 274°C. When the yellow stick melts and the red one does not melt, the heater bushes are at the correct temperature for the fusion. After checking the fusion temperature, wipe the heater bushes with a clean lint free cloth.

6. Heat the pipe and fitting
Push the pipe and the fitting simultaneously onto the heater bushes up to the insertion depth mark (this must remain visible). The pipe and the fitting are held on the heater bushes with a gentle pressure and kept straight and level. A timer should be used to ensure the correct heating time (see table below) has elapsed.

7. Joint the pipe and fitting
Align the pipe and fitting and bring them together. Push the pipe into the fitting up to the insertion depth mark (which must remain visible). Do not twist the pipe whilst pushing together. Maintain a gentle pressure whilst holding.

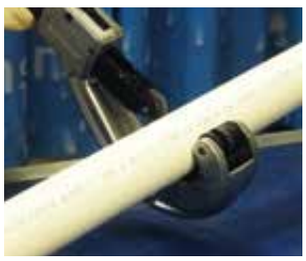
8. Fusion inspection
Inspect the outer fusion bead. An even bead from the fitting and one from the pipe should be visible all the way around the pipe. Ensure the newly made joint remains stress-free until the cooling time (see table below) has elapsed them together for the correct time (see table below).

Note: heating time to be increased by 50% for ambient temperatures below +5°C

Pipe Size OD (mm)	Insertion Depth (mm)	Heating Time (secs)	Change Over Time (secs)	Holding Time (secs)	Cooling Time (mins)
20	14	6	4	6	2
25	16	7	4	7	3
32	18	8	6	8	4
40	20	12	6	12	4
50	23	18	6	18	5
63	26	25	8	25	6
75	28	30	8	30	8
90	31	40	10	40	8
110	33	50	10	50	8
125	40	60	10	60	8

Electrofusion jointing

1. Cut the pipe
Cut the pipe at a right angle, if necessary remove swarf from the inside.



2. Scrape the pipe ends
The pipe ends should be scraped with a blade all the way around the pipe and to a depth greater than the insertion depth. This can be by rotary scraper.
Note: The fusion process should be started within 30 minutes of scraping.

3. Clean the fitting & pipe
Clean the internal surface of the fitting and the outside of the pipe using Tangit KS cleaner and a lint free cloth (any dirt or grease on the fitting or pipe can result in a joint failure).

4. Mark the insertion depth
Mark the insertion depth into the fitting on the pipe.

5. Insert the pipe into the fitting
Insert the scraped pipe ends into the fitting up to the insertion depth mark. Align both ends of the pipe and secure the fitting and the pipe.

6. Attach the electrofusion machine cables
Attach the clamps to make the connection between the cables and the resistor pins on the fitting.

7. Follow the electrofusion machine instructions
The barcode on the fitting can be read to transmit fusion data to machine.
Complete the fusion procedure in accordance with the machine instructions. Ensure the newly made joint remains stress-free until the cooling time (see table) has elapsed. 2 hours hardening time must be allowed from when the fitting is cool before conducting pressure tests.

Minimum cooling time without moving coupler and pipe:

Pipe Diameter OD (mm)	Cooling time (mins)
20	10
25	10
32	10
40	15
50	15
63	20
75	25
90	30
110	35
125	40

Installation of Saddles

Assemble the special heating tools for saddles on a standard socket welder. Once the socket welder is on, check the temperature, which must be in the range of 253°C-274°C (this operation may be performed by means of Tempil sticks). Wipe the heating tools with a clean lint free cloth. Clean the surfaces to be welded with Tangit KS cleaner and a lint free cloth.

Drill the pipe with the specific drill, taking into consideration the saddle spigot diameter. The swarf must be taken out, avoiding any pipe contamination. It is possible to smooth the hole mouth changing the rotating of the drill direction.

Push the saddle heating tool with the spigot into the pipe hole and the saddle into the other tool. Heat the pipe surface and the saddle for 30 seconds.

Once the heating process is over, remove the socket welder and push the saddles spigot into the pipe hole with a light pressure until the surfaces will meet entirely. Keep the position for 15-20 seconds and the system cool down for 30 minutes, before making the pressure test.

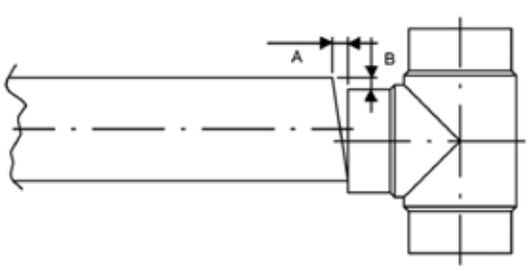
Butt fusion jointing

1. Preparation of the fusion joint
The fusion temperature should be between 200°C and 220°C. In principle, the upper temperature should be aimed at for thick walls and the lower temperature for less thicker walls.

2. Cut the pipe
Cut the pipe at a right angle if necessary remove swarf from the inside.

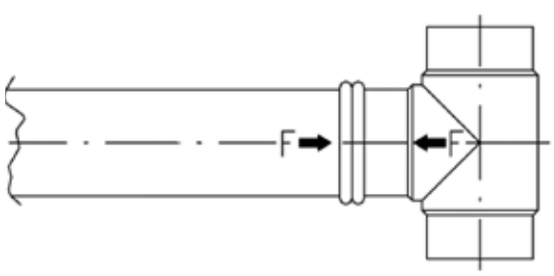
3. Clean the fitting and pipe
Clean the face of the fitting and the pipe using Tangit KS cleaner and a lint free cloth (any dirt or grease on the fitting or pipe can result in a joint failure).

4. Clean the heating element
Clean the heating element with a dry, clean paper before each fusion joint.
Protect the working surface of the heating element from becoming soiled. Clean both faces of the heating element with dry, lint-free cloth before each fusion joint. Protect the heating element from wind, damage and soiling during the intervals between making fusion joints.
Before machining the jointing surfaces, make sure that the tools and the work pieces are clean and grease-free beyond the actual zone; if necessary, clean with a cleaning fluid.

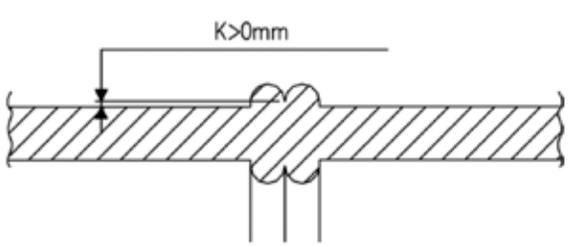


5. Planing & Subsequent Checking
Before machining the jointing surfaces, make sure that the tools and the work pieces are clean and grease-free beyond the acutal fusion zone; if necessary, clean with a cleaning fluid.
All the components clamped into the fusion jointing machine are planed simultaneously with the planer provided. The shavings should not be thicker that ≤0.2mm.
This step is completed when there is no unmachined area left on either of the parts to be joined. This is normally the case when no more shavings come off the machined surface. Remove any shavings which may have fallen into the pipe or fitting with eg. a brush. The fusion surfaces should not be touched by hand under any circumstances. Otherwise they must be cleaned with cleaning fluid.
Once they have been machined, the parts are moved together until they touch. The gap between the two parts must not exceed 0.5mm at any point.

6. Check the wall alignment and gap
The alignment of the two parts should be checked at the same time. A possible misalignment on the outside must not exceed 10% of the thickness of the wall. If this limit is exceeded, a better clamping position is to be sought, eg. by rotating the pipe. In such a case, however, the surface must be re-planed.
IMPORTANT: The fusion surfaces must be planed immediately prior to jointing.



7. Fusion jointing procedure
Once it has attained the fusion temperature, position the heating element in the fusion jointing machine. Press the parts to be jointed against the heating element with the force required for equalisation until the entire circumference of each of the jointing faces rests.
Once the heating period has elapsed, remove the parts from the heating element which should be removed without touching the jointing surfaces and push the parts together immediately. The changeover time must not exceed the value listed in the table.
Next the pressure should be increased rapidly to the present jointing pressure within the period of time specified in the the cooling period.



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