

Easy LOK

EASY RELIABLE CONNECTIONS, EVERYTIME

TECHNICAL MANUAL



Philmac®

The connection you can trust.

Committed to sustainable development, Philmac is well renowned for quality products and services. Philmac manufactures pipe fittings and valves under a Quality Assurance System assessed and approved to ISO 9001-2000 and has obtained the prestigious environmental management certification ISO 14000.

Philmac has a NATA accredited laboratory and tests fittings and valves to international and national standards. Third party accreditation is carried out by SAI Global.

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EasyLOK

No matter the application Philmac's EasyLOK range of metric fittings has you covered, no worries.

Originally designed for use in the harsh mining environment, EasyLOK made the transition to irrigation and industrial applications with ease. The simple assembly process takes the hard work out of handling large bore metric pipe.

Available in a full range of configurations and a size range from 16mm to 110mm EasyLOK will provide an easy, reliable and long lasting solution.

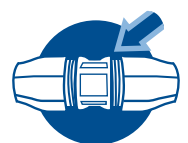
WORRY FREE INSTALLATION, EVERYTIME



EASY ASSEMBLY

EasyLOK fittings have been designed to ensure that installation is as easy as possible and that it works everytime. When working with large pipes, installation can be challenging not only because of the size of the pipe but also the condition of the pipe. Recognising this EasyLOK fittings are installed by taking them apart and then putting the components on separately. The components all go onto the pipe easily and ensure that everything is positioned correctly no matter the condition of the pipe. The pipe can then be pushed into the body of fitting and the nut fully tightened. Installation is made easy and 100% reliable with EasyLOK

EASY ASSEMBLY EasyLOK fittings have been designed so that they can be re-used. Once the fitting is installed it is a simple matter of loosening the nut with multigrips or a spanner. Once the nut has been loosened the internal components can easily be released and the pipe removed from the fitting. Disassembly could not be easier.



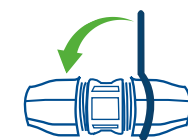
VISUAL STOP

The flange on the body of the EasyLOK fitting provides a visual stop to indicate when the nut is fully tightened. This removes any uncertainty from the installation process.



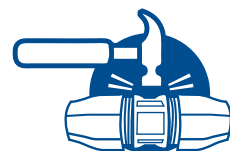
CHEMICAL RESISTANCE

Standard compression fittings are supplied with nitrile seals which fail when they come into contact with acids. EasyLOK fittings are supplied with EPDM seals which means that the fittings can withstand a wide range of chemicals without having to switch components.



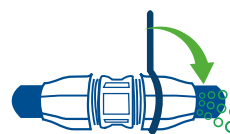
EASY TO USE

With Easylok fitting it is essential that the nut is tightened fully so that no threads are showing to ensure complete compression of the seal. The Easylok range has been designed to minimise the torque required to tighten the nut making installation as simple and easy as possible.



IMPACT RESISTANCE

EasyLOK fittings are made from a high grade of polypropylene to provide significant resistance to impact. There is always a risk of impact so the fitting must be tough and durable to provide a long life. At the same time if in the unlikely circumstances that the material should fail due to impact, it will result in a ductile rather than a brittle failure. This means that there is no risk of injury through a fitting explosion when used in a compressed air application.



SAFETY IS PARAMOUNT

Philmac strongly recommends that fittings should never be disconnected on a live air line. However in the event that work commences on an air line before the air supply is switched off, the use of Philmac EasyLOK fittings will ensure that a warning is given to the user that the line is live. The user can then switch off the air supply and continue working on the line in a safe manner.



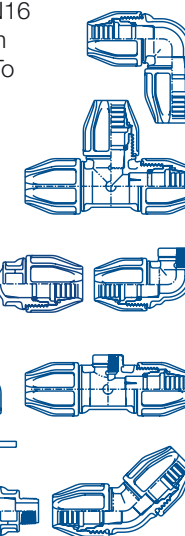
MINIMISES PIPE TWIST

The fitting has been designed to minimise pipe twist as the nut is tightened. Maximum pipe twist is approximately three quarters of a turn compared to one and a half turns with many other fittings. Pipe twist can impact on not only the connection you have just made but also on the connection at the other end of the line.



COMPLETE COVERAGE

The Easylok range is rated to PN16 and is available from 20mm to 110mm. To ensure complete coverage and that there is a fitting for all requirements Easylok fittings are available in joiners, elbows, male and female adaptors, tees and threaded elbows and tees



STANDARDS

Philmac EasyLOK range of compression fittings hold certificates for the following standards:

AS/NZS 4129: Fittings for polyethylene (PE) pipes for pressure applications.

AS/NZS 4020: Testing of products for use in contact with drinking water.

BS 6920: Products for use in contact with water intended for human consumption with regards to their effect on the quality of water.

Philmac EasyLOK exceeds the requirements of:

ISO 14236: Plastics pipes and fittings -- Mechanical-joint compression fittings for use with polyethylene pressure pipes in water supply systems.

Philmac EasyLOK threads and flanges comply with the requirements of the following standards:

AS 1722.1-1975: Pipe threads of Whitworth form - Sealing pipe threads (superseded by ISO7.1)

BS21: Specification for pipe threads for tubes and fittings where pressure-tight joints are made on the threads.

ISO7.1: Pipe threads where pressure joints are made on the threads.

AS 2129 Table E (Drill Pattern): Flanges for pipes, valves and fittings.

Philmac EasyLOK fittings are suitable for use with pipes manufactured to the dimensions specified in the following standards:

AS/NZS 4130: Polyethylene pipes (PE) for pressure applications.

BS 6572: Specification for blue polyethylene pipes up to nominal size 63mm for below ground use for potable water.

BS EN 12201-2:2003: Plastic piping systems for water supply. Polyethylene (PE). Pipes.

EN 12201: Plastic piping systems for water supply. Polyethylene (PE).

ISO 4427: Plastics piping systems -- Polyethylene (PE) pipes and fittings for water supply.

SYSTEM DESIGN CONSIDERATIONS

There are generally two types of PE pipe fittings; mechanical and thermofusion. Philmac EasyLOK is a range of mechanical fittings that offers three distinct advantages over thermofusion fittings;

- **More economical**
- **Quick and easy installation**
- **Quick and easy revision to installation**

This section highlights engineering considerations when designing a PE pipe system with Philmac EasyLOK.

Projected life of Compression fittings

Whilst Philmac EasyLOK conforms to institutionalised specifications written to have a minimum life of 50 years, its compression fittings are intentionally developed to exceed the expectations of these specifications.

Head Losses

The following table offers a guide in estimating head losses in PE pipe systems based on the conveyance of water. Use the following formula to estimate this head loss;

$$L = F \times D$$

where L = head loss based on equivalent pipe length (m)
F = fitting constant
D = pipe inner diameter (m)

Fitting	Fitting Constant (F)
90° elbow	30
90° tee - straight through	12
90° tee - side branch	60

Resistance to Impact

Philmac EasyLOK polypropylene body and nut has excellent impact properties compared to other plastic materials.

Abrasion Resistance

Philmac EasyLOK is suitable for the transportation of abrasive slurries and will withstand normal conditions found in urban, mining, industrial, rural water and waste water systems.

Weathering

Black polypropylene material contains pigments to provide excellent protection against degradation from ultra-violet radiation. However, long term continuous use above ground can impact performance and fittings should be protected from direct sunlight.

Electrolytic Corrosion

The metal reinforcing rings on female threads are made from stainless steel (grade 316) and provide long term resistance to corrosion.

Thermal Insulation

Polypropylene has natural thermal insulation of 2000 times over copper and 200 times over steel.

Light Transmission

The Philmac EasyLOK fittings do not transmit light, thus protecting the water quality in potable water pipelines from growth of micro organisms.

Effect on Water

Philmac EasyLOK does not impart to the water any odour, taste, colour, or any constituents in concentrations that could be injurious to health.

Pressure Rating

Philmac EasyLOK fittings are rated for PN16 and have a maximum operating pressure of 16 Bar, 1600kPa or 230 psi.

Pipe Material

Philmac EasyLOK fittings maintain their full rating on PE 100 (HDPE), PE 80B (MDPE) and PE 63 (LDPE)

Temperature Derating

Philmac EasyLOK performance ratings are at 20°C, for higher temperatures apply the same derating to the Philmac EasyLOK fittings as applied to the PE pipe.

Chemical Resistance

Fluids other than Water
Many factors can affect the chemical resistance of plastics. Some of these include temperature, pressure, exposure time, continuous or cyclic expose and the type of mechanical stress applied. The fact that certain combinations of chemicals and mechanical load can induce stress cracking in many otherwise chemically resistant materials, both metallic and non-metallic, is of particular significance.

Mixtures of chemicals can result in a performance quite different than that of each individual chemical. Equally vapours and corrosive liquids can often be combinations of chemicals.

Due to the number of parameters that influence the performance of metals and plastics in the presence of chemicals the performance can differ from a laboratory test. Philmac strongly recommends that the final decision be based on the results of a trial installation evaluated under actual service conditions.

Evaluation method
To evaluate the performance of Philmac EasyLOK fittings evaluate each of the materials used in the fittings (as listed on Page 8) by using material chemical performance tables.

Normally only the wetted area of the fitting, ie the Body and Seal need evaluation. For immersed applications the Split Ring and Spacer also need evaluation.

Philmac Assistance
To evaluate the performance of a material in the Philmac product in the presence of chemicals please contact Philmac and supply the following five parameters.

Size. What size is the fitting and pipe work?

Temperature. What temperature will the chemicals be at, is the temperature constant or cycling?

Application. Where and how is the fitting being used? Is the chemical on the inside or is the fitting immersed in the chemical, ie on the outside of the body rather than the inside?

Media. What chemical is being used? Is it a liquid or gas, is it one chemical or are there combinations? Are there surrounding chemicals or gases in the air?

Pressure. What pressure is being applied to the fitting? Does it vary?

Remember the **STAMP** acronym.

Chemical Resistance

Chemical	Satisfactory	Consult Philmac
Ammonium Hydroxide	✓	
Alcohol	✓	
Acetone		✓
Auto Transmission Fluid	✓	
Antifreeze	✓	
Benzene		✓
Butane	✓	
Calcium Salts	✓	
Caustic Soda (40% aqueous)	✓	
Cresol		✓
Citric Acid (10% aqueous)	✓	
Copper Salts	✓	
Ethylene Alcohol	✓	
Ethyl Glycol	✓	
Diesel	✓	
Formic Acid		✓
Gasoline		✓
Hydrochloric Acid		✓
Kerosene		✓
Mineral Oils	✓	
Methane	✓	
Methylene Chloride		✓
Nitric Acid		✓
Petroleum Oils	✓	
Sewerage	✓	
Sodium Cyanide	✓	
Sulphuric Acid		✓
Toluene		✓
Turpentine		✓
Transformer Oil	✓	
Zinc Salt Solution	✓	
Note: Fluid Temperature = 20°C		

EasyLOK

INSTALLATION INSTRUCTIONS - EASYLOK



1 No special tools are required, standard multi-grips, pipe cutters or saw. If using a saw ensure there are no burrs.

2 Cut the pipe square. There is no need to chamfer or lubricate the pipe.

3 Take the fitting apart, remove the nut.



4 Remove the split ring and collet and O-ring.

5 Slide the components onto the pipe, first the nut, then the split ring and collet followed by the O-ring.

6 Insert the pipe into the fitting body ensuring pipe butts against tapered wedges in body of fitting. Bring the components up to the fitting body.



7 Tighten the nut by hand.

8 While holding the body tighten the nut all the way to the flange using multi-grips

9 The fitting is now fully installed

Disassembly



1 Use the multi-grips to loosen the nut then continue to loosen by hand and slide the body off the pipe.

2 Remove the O-ring, then the split ring, collet and nut, then re-assemble the fitting and it is now ready to use.

THREADED FITTINGS - INSTALLATION INSTRUCTIONS

Philmac EasyLOK Compression fittings offer a range of advantages over metal threaded fittings

- **Faster, Easier and Reliable Installation.**
- **Less Effort through lower friction**
- **Based on over 40 years of experience in Europe and Australia**
- **Exploits the properties of Polypropylene to reduce the installation effort compared to metal threads**

Based on over 40 years experience

Philmac manufactured the world's first all-plastic compression fitting in 1968. With over 40 years experience you can trust Philmac 3G™ to perform.

Less Friction

Philmac threaded fittings require significantly less effort to install. Delivered through the use of high performance plastic that provide far less friction than metal on metal threads.

Smaller Lighter tools

A simple set of multi-grip pliers can be used to install a Philmac threaded fitting. Gone are the days when you need a large wrench to install and tighten a threaded fitting.

Manufactured from Engineering Plastics

Philmac threaded fitting bodies are manufactured from high performance engineering plastics which delivers significant benefits.

New Approach to Installation

Philmac EasyLOK fittings usher in a new era of thread connection. The high performance materials conform to slight irregularities in metal threads, whereas metal to metal joints tend to bind increasing the installation effort.

Proven Performance

Philmac threaded fittings are built tough and are used world-wide by water companies, plumbers and in rural applications.

Example - Male Adapter into a metal valve



1. Apply PTFE tape or suitable* sealant to the plastic thread ensuring sufficient is applied to ensure a watertight seal.

2. Using your hands, screw the thread of the Male Adapter into the valve until firm.

3. Grip the body of the EasyLOK fitting with Multi-grips or similar plumbing tools and continue to screw the Male Adapter into the valve until tight.

Stop if the shoulder of the EasyLOK fittings touches the other fitting..

* **Note:** Philmac recommends the use of PTFE tape on threads to ensure a positive seal. If a liquid or paste sealant is used ensure it is suitable to be used with both Polypropylene and the material being connected to the Philmac fitting.



1. Ensure a gasket is used between the flange of the EasyLOK fitting and the flange to which it is to be connected.



2. Fit the correct size and length bolts to each hole in the flange and hand tighten them.



3. Tighten the bolts with a spanner ensuring the bolts are torqued up correctly in an appropriate sequence, refer Figure 1.

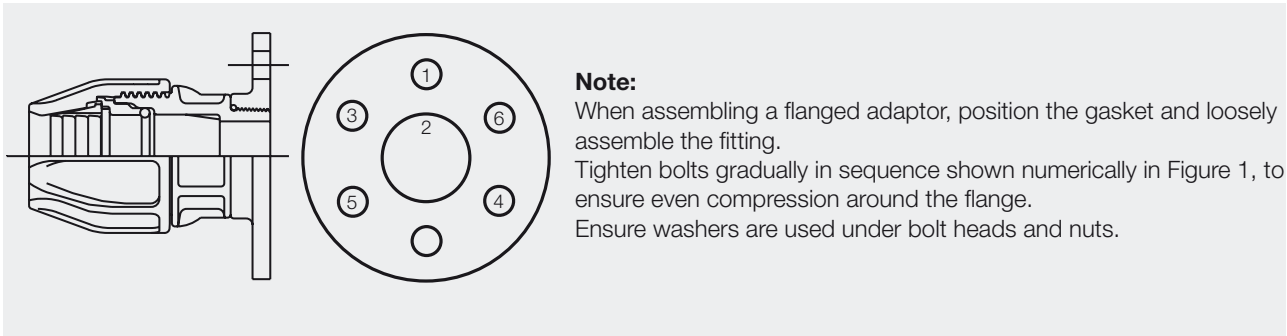


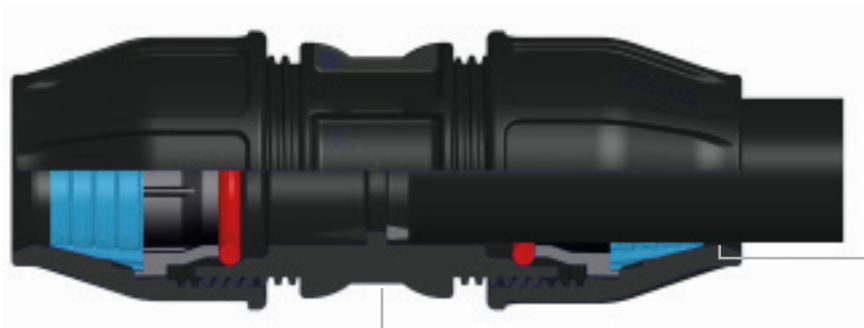
FIGURE 1

GENERAL INSTALLATION NOTES

1. Always ensure Philmac fittings are stored away from dusty areas to avoid dust settling on the lubricated seal.
2. Philmac recommends the use of PTFE tape on threads to ensure a positive seal.
3. Philmac EasyLOK includes ergonomically designed spanners for fittings.

PRINCIPALS OF OPERATION PHILMAC EASYLOK COMPRESSION FITTINGS

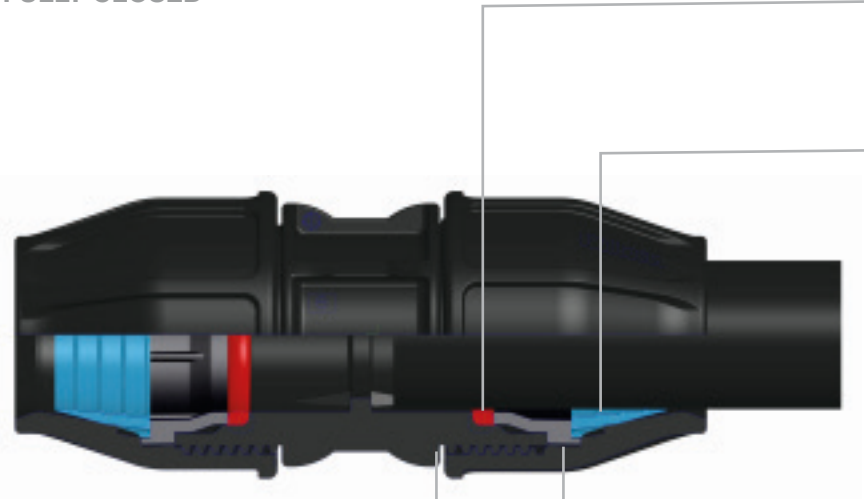
FULLY OPEN



Clearance between pipe and fitting allows for easy insertion of the pipe.

The pipe sits against tapered wedges which minimises pipe rotation.

FULLY CLOSED



Seal compression is achieved when the nut has pushed the seal into the compression chamber.

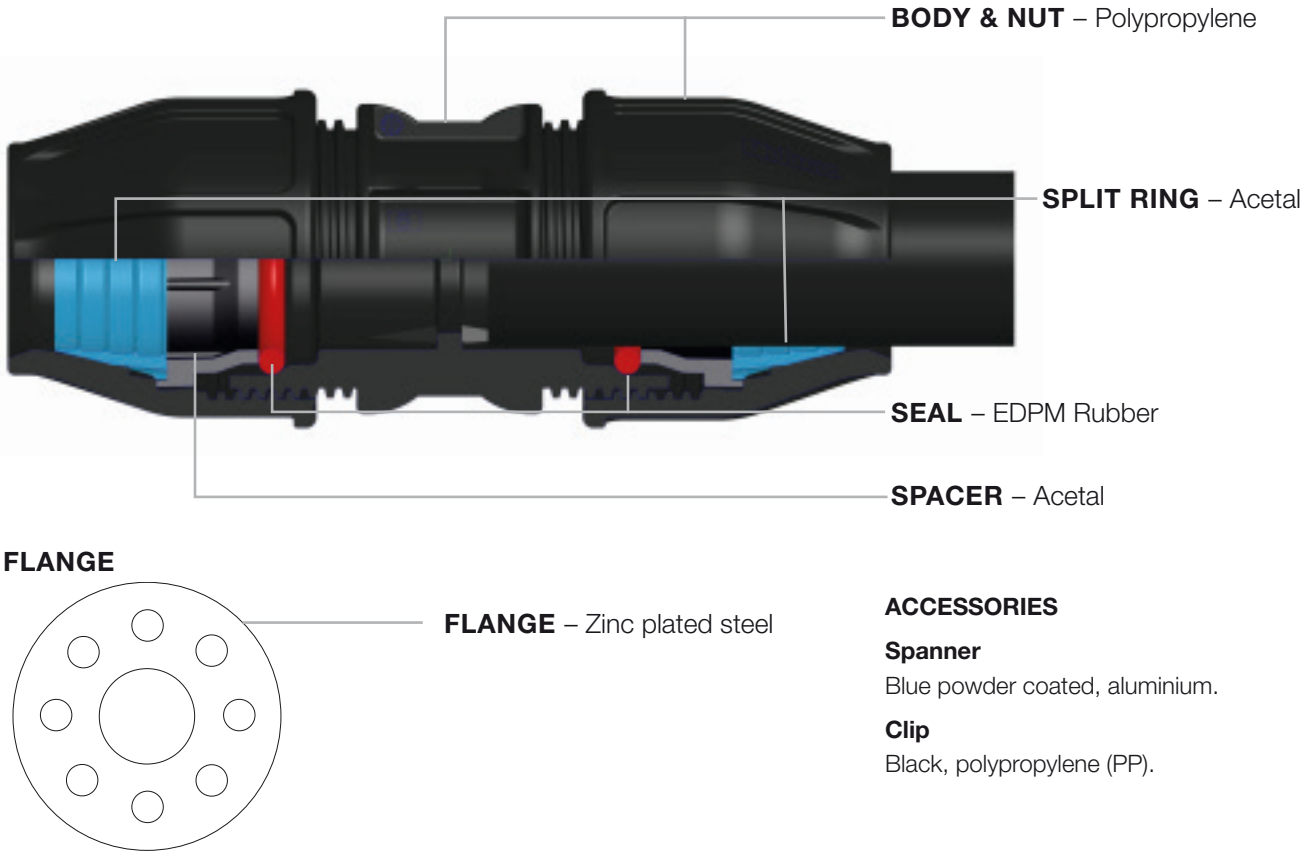
Split ring bites into pipe.
High internal pressure or tensile load causes the split ring to bite further into the pipe.

Positive internal stop: Fitting is fully assembled when the nut butts up against the spacer and the spacer butts up against fitting.

Visual stop: Fitting is fully assembled when nut meets the flange on the body of the fitting.

MATERIALS & COMPONENTS

COMPRESSION FITTINGS



APPLICATIONS

Polyethylene Pipe (PE) is an extremely versatile material which is used for a number of applications. Accordingly, Philmac Metric provides the optimal means of connecting to PE pipes. Philmac EasyLOK is designed to serve a vast number of industries. The following are only some examples of its uses.

- Mining**
Conveyance of water, compressed air, chemical solutions and slurries in mines and processing plants.
- Plumbing**
House connections.
- Municipal Water Supply**
Water treatment plants and mains-to-meter lines.

LUBRICANT – Silicone oil

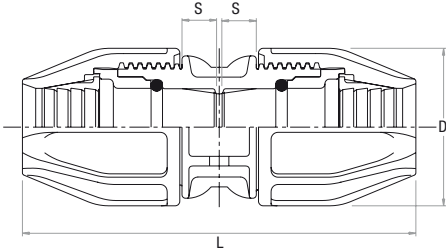
RANGE DIMENSIONS & WEIGHTS



RANGE DIMENSIONS & WEIGHTS

JOINERS/COUPLING (Pol x Pol)

Size (OD)	Ref No	Dimensions mm.			kg.
		S	D	L	Wt
20mm x 20mm	97 6122 00	10	47	117	0.08
25mm x 25mm	97 6133 00	11	56	140	0.13
32mm x 32mm	97 6144 00	14	68	170	0.24
40mm x 40mm	97 6155 00	18	82	205	0.41
50mm x 50mm	97 6166 00	24	96	229	0.59
63mm x 63mm	97 6177 00	29	113	251	0.89
75mm x 75mm	97 6188 00	43	134	295	1.24
90mm x 90mm	97 6199 00	50	157	350	2.06
110mm x 110mm	97 6100 00	62	190	430	3.61



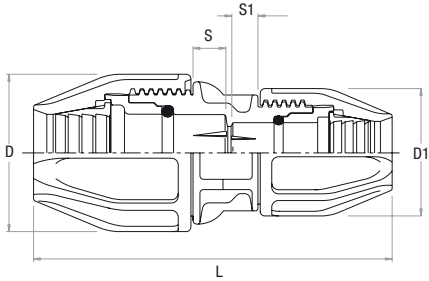
SLIP JOINERS/COUPLING (Pol x Pol)

Size (OD)	Ref No
20mm x 20mm	97 6012 20
25mm x 25mm	97 6013 30
32mm x 32mm	97 6014 40
40mm x 40mm	97 6015 50
50mm x 50mm	97 6016 60
63mm x 63mm	97 6017 70

Design is the same as Joiners except that the body allows pipe insertion all the way through.

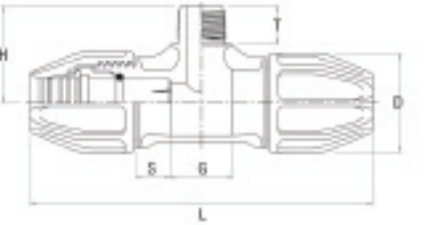
REDUCING JOINERS/COUPLING (Pol x Pol)

Size (OD)	Ref No	Dimensions mm.					kg.
		S	S1	D	D1	L	Wt
25mm x 20mm	97 6132 00	11	10	56	47	129	0.11
32mm x 20mm	97 6142 00	14	10	69	47	149	0.16
32mm x 25mm	97 6143 00	14	11	69	56	155	0.19
40mm x 25mm	97 6153 00	18	11	82	56	181	0.28
40mm x 32mm	97 6154 00	18	14	82	69	188	0.33
50mm x 25mm	97 6163 00	24	11	96	56	197	0.38
50mm x 32mm	97 6164 00	24	14	96	69	210	0.42
50mm x 40mm	97 7165 00	24	18	96	82	218	0.50
63mm x 32mm	97 6174 00	29	14	113	69	227	0.59
63mm x 40mm	97 6175 00	29	18	113	82	242	0.67
63mm x 50mm	97 6176 00	29	24	113	96	242	0.76
75mm x 63mm	97 6187 00	43	24	134	113	274	1.09
90mm x 63mm	97 6197 00	50	43	157	113	310	1.67
90mm x 75mm	97 6198 00	50	43	157	134	322	1.71
110mm x 63mm	97 6107 00	62	50	190	157	370	3.26
110mm x 90mm	97 7109 00	62	50	190	157	393	3.26



MALE TEES (Pol x Pol x BSP)

Size (OD)	Ref No	Dimensions mm.						kg.
		S	D	H	G	L	Wt	Wt
25mm x 25mm x 1/2"	97 6931 00	11	56	35	53	188	19.8	0.17
25mm x 25mm x 3/4"	97 6932 00	11	56	35	54	188	21.1	0.17

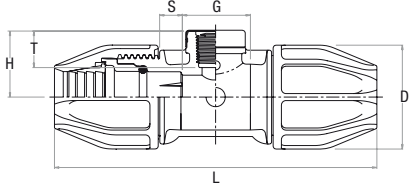


For advice on chemical resistance properties please refer to page 5 and contact your nearest Philmac representative

RANGE DIMENSIONS & WEIGHTS

TEES (Pol x FI BSP)

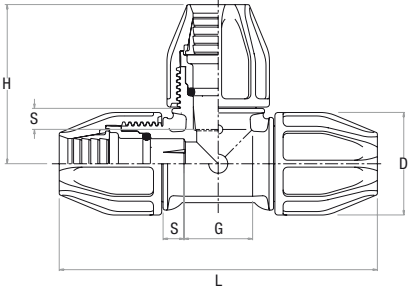
Size (OD x BSP)	Ref No	Dimensions mm.						kg.
		S	D	G	H	L	T	Wt
20mm x20mm x 1/2"	97 6421 00	10	47	31	38	145	22.8	0.10
20mm x 20mm x 3/4"	97 6422 00	10	47	31	39	145	24.1	0.11
25mm x 25mm x 1/2"	97 6431 00	11	56	40	40	177	22.8	0.16
25mm x 25mm x 3/4"	97 6432 00	11	56	40	41	177	24.1	0.17
25mm x 25mm x 1"	97 6433 00	11	56	40	44	177	27.4	0.18
32mm x 32mm x 3/4"	97 6442 00	14	69	48	44	211	24.1	0.28
32mm x 32mm x 1"	97 6443 00	14	69	48	44	211	27.4	0.30
32mm x 32mm x 1-1/4"	97 6444 00	14	69	48	50	211	30.2	0.31
40mm x 40mm x 1-1/4"	97 6454 00	18	82	50	53	251	30.2	0.49
40mm x 40mm x 1-1/2"	97 6455 00	18	82	50	56	251	30.2	0.50
50mm x 50mm x 1-1/2"	97 6465 00	24	96	60	71	284	34.5	0.79
50mm x 50mm x 2"	97 6466 00	24	96	60	71	284	34.5	0.79
63mm x 63mm x 1-1/4"	97 6474 00	29	113	88	77	310	34.5	1.16
63mm x 63mm x 1-1/2"	97 6475 00	29	113	88	77	310	34.5	1.16
63mm x 63mm x 2"	97 6476 00	29	113	73	77	320	34.5	1.16
75mm x 75mm x 2"	97 6486 00	43	134	88	109	375	34.5	2.24
75mm x 75mm x 2-1/2"	97 6487 00	43	134	88	109	375	34.5	2.24
75mm x 75mm x 3"	97 6488 00	43	134	88	109	375	34.5	2.24
90mm x 90mm x 3"	97 6498 00	50	154	100	123	451	39	3.63
110mm x 110mm x 4"	97 6409 00	62	190	120	150	551	46	6.07



Stainless steel reinforcing ring on FI Outlets on 50mm to 110mm

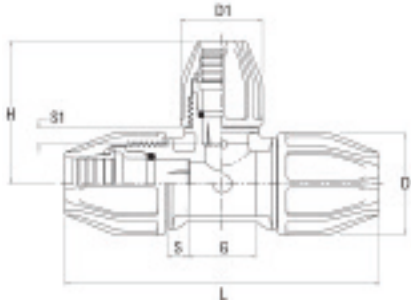
EQUAL TEES (Pol x Pol x Pol)

Size (OD)	Ref No	Dimensions mm.					kg.
		S	D	H	G	L	Wt
20mm x 20mm x 20mm	97 6322 00	10	47	73	31	145	0.13
25mm x 25mm x 25mm	97 6333 00	11	56	89	40	177	0.22
32mm x 32mm x 32mm	97 6344 00	14	69	106	48	211	0.39
40mm x 40mm x 40mm	97 6355 00	18	82	126	50	251	0.66
50mm x 50mm x 50mm	97 6366 00	24	96	142	60	284	0.98
63mm x 63mm x 63mm	97 6377 00	29	113	161	73	320	1.51
75mm x 75mm x 75mm	97 6388 00	43	134	188	88	375	2.20
90mm x 90mm x 90mm	97 6399 00	50	157	226	100	451	3.63
110mm x 110mm x 110mm	97 6300 00	62	190	276	120	551	6.00



REDUCING TEES (Pol x Pol x Pol)

Size (OD)	Ref No	Dimensions mm.							kg.
		S	S1	D	D1	H	G	L	Wt
25mm x 25mm x 20mm	97 6332 00	11	10	56	47	53	40	177	0.19
32mm x 32mm x 25mm	97 6343 00	14	11	69	56	88	46	211	0.34
50mm x 50mm x 40mm	97 6365 00	24	21	96	82	134	60	284	0.90
63mm x 63mm x 50mm	97 6376 00	29	24	113	96	150	73	320	1.38



For advice on chemical resistance properties please refer to page 5 and contact your nearest Philmac representative

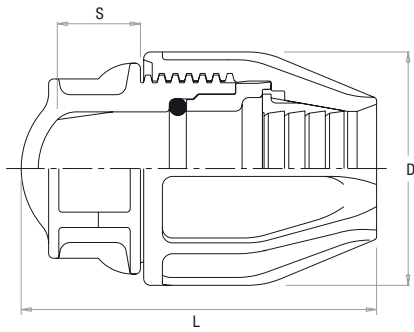
SLIP TEES - EQUAL TEES (Pol x Pol x Pol)

Size (OD)	Ref No
20mm x 20mm x 20mm	97 6032 20
25mm x 25mm x 25mm	97 6033 30
32mm x 32mm x 32mm	97 6034 40
40mm x 40mm x 40mm	97 6035 50
50mm x 50mm x 50mm	97 6036 60
63mm x 63mm x 63mm	97 6037 70

Design is the same as Joiners except that the body allows pipe insertion all the way through.

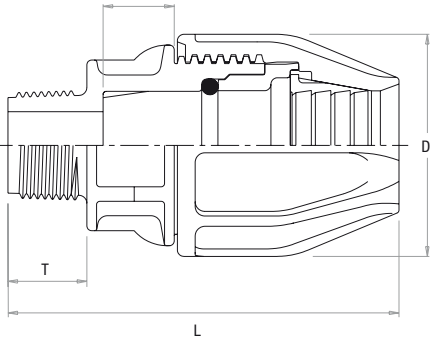
END CAPS (Pol)

Size (OD)	Ref No	Dimensions mm.			kg.
		S	D	L	Wt
20mm	97 6029 00	19	47	74	0.05
25mm	97 6039 00	23	56	90	0.08
32mm	97 6049 00	24	69	104	0.13
40mm	97 6059 00	31	82	127	0.23
50mm	97 6069 00	33	96	139	0.33
63mm	97 6079 00	41	113	159	0.51
75mm	97 6089 00	48	134	170	0.71
90mm	97 6099 00	55	157	220	1.14
110mm	97 6009 00	67	190	250	1.81



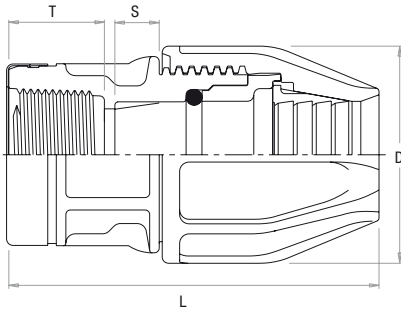
END CONNECTORS (Pol x MI BSP)

Size (OD x BSP)	Ref No	Dimensions mm.				kg.
		S	D	L	T	Wt
20mm x 1/2"	97 6221 00	17	47	87	19.8	0.05
20mm x 3/4"	97 6222 00	17	47	88	21.1	0.05
20mm x 1"	97 6223 00	17	47	92	24.4	0.06
25mm x 1/2"	97 6231 00	19	56	103	19.8	0.08
25mm x 3/2"	97 6232 00	19	56	104	21.1	0.08
25mm x 1"	97 6233 00	19	56	107	24.4	0.08
32mm x 3/4"	97 6242 00	22	69	117	21.1	0.14
32mm x 1"	97 6243 00	22	69	120	24.4	0.14
32mm x 1-1/4"	97 6244 00	22	69	123	26.7	0.15
32mm x 1-1/2"	97 6245 00	22	69	123	26.7	0.15
40mm x 1"	97 6253 00	28	82	141	24.4	0.24
40mm x 1-1/4"	97 6254 00	28	82	143	26.7	0.24
40mm x 1-1/2"	97 6255 00	28	82	144	26.7	0.25
40mm x 2"	97 6256 00	28	82	148	31	0.26
50mm x 1"	97 6263 00	30	96	152	24.4	0.34
50mm x 1-1/4"	97 6264 00	30	96	152	26.7	0.34
50mm x 1-1/2"	97 6265 00	30	96	152	26.7	0.34
50mm x 2"	97 6266 00	30	96	156	31	0.34
63mm x 1-1/2"	97 6275 00	36	113	166	26.7	0.52
63mm x 2"	97 6276 00	36	113	171	31	0.53
63mm x 2-1/2"	97 6277 00	36	113	175	33	0.53
75mm x 2"	97 6286 00	43	137	185	31	0.72
75mm x 2-1/2"	97 6287 00	43	137	189	33	0.72
75mm x 3"	97 6288 00	43	134	190.5	36.5	0.74
90mm x 2"	97 6298 00	50	157	221	31	1.22
90mm x 3"	97 6299 00	50	157	221	36.5	1.22
90mm x 4"	97 6206 00	50	157	225	43	1.22
110mm x 3"	97 6208 00	62	190	267	43	2.20
110mm x 4"	97 6209 00	62	190	269	43	2.20



END CONNECTORS (Pol x FI BSP)

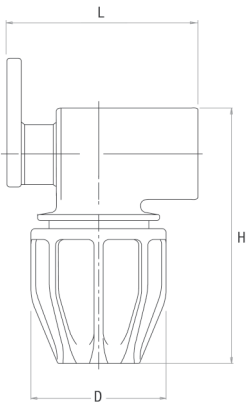
Size (OD x BSP)	Ref No	Dimensions mm.				kg.
		S	D	L	T	Wt
20mm x 1/2"	97 6821 00	10	47	85	22.8	0.06
20mm x 3/4"	97 6822 00	10	47	83	24.1	0.06
20mm x 1"	97 6823 00	10	47	86	27.4	0.07
25mm x 1/2"	97 6831 00	11	56	95	22.8	0.08
25mm x 3/4"	97 6832 00	11	56	96	24.1	0.09
25mm x 1"	97 6833 00	11	56	99	27.4	0.10
32mm x 1"	97 6843 00	14	69	114	27.4	0.16
32mm x 1-1/4"	97 6844 00	14	69	116	30.2	0.16
40mm x 1-1/4"	97 6854 00	18	82	136	30.2	0.25
40mm x 1-1/2"	97 6855 00	18	82	136	30.2	0.27
50mm x 1-1/4"	97 6864 00	24	96	140	30.2	0.37
50mm x 1-1/2"	97 6865 00	24	96	145	30.2	0.37
50mm x 2"	97 6866 00	24	96	149	34.5	0.39
63mm x 2"	97 6876 00	29	113	161	34.5	0.55
75mm x 2"	97 6886 00	43	134	185	34.5	0.75
75mm x 2-1/2"	97 6887 00	43	134	188	34.5	0.75
90mm x 2"	97 6896 00	50	157	217	39	1.26
90mm x 3"	97 6898 00	50	157	219	39	1.26
110mm x 3"	97 6808 00	62	190	266	46	2.20
110mm x 4"	97 6809 00	62	190	267	46	2.20



Stainless steel reinforcing ring on FI Outlets

BRASS WALL PLATE ELBOW (Pol x FI BSP)

Size (OD)	Ref No	Dimensions mm.			kg.
		D	L	H	Wt
25mm x 3/4"	97 6249 00	55	65	88	0.47

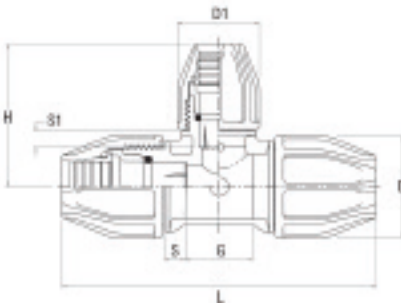


PLASTIC WALL PLATE ELBOW (Pol x FI BSP)

Size (OD)	Ref No	Dimensions mm.			kg.
		D	L	H	Wt
20mm x 1/2"	97 6229 00	47	56	76	0.06
25mm x 1/2"	97 6238 00	55	65	88	0.08
25mm x 3/4"	97 6239 00	55	65	88	0.09

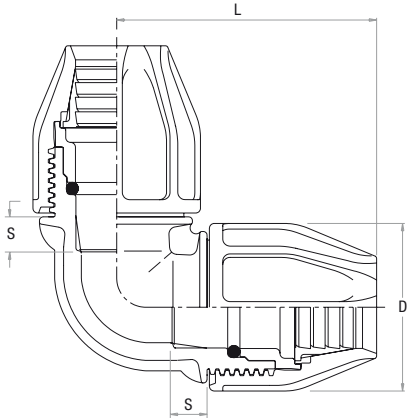
EXPANDING TEE (Pol x Pol X Pol)

Size (OD)	Ref No	Dimensions mm.							kg.
		S	S1	D	D1	H	G	L	Wt
25mm x 25mm x 32mm	97 6334 00	11	14	56	69	102	40	177	0.27



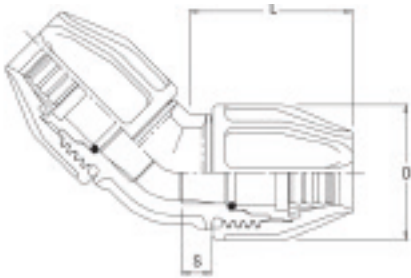
ELBOWS (Pol x Pol 90°)

Size (OD)	Ref No	Dimensions mm.			kg.
		S	D	L	Wt
20mm x 20mm	97 6522 00	10	47	73	0.09
25mm x 25mm	97 6533 00	11	56	89	0.15
32mm x 32mm	97 6544 00	14	69	107	0.26
40mm x 40mm	97 6555 00	18	82	124	0.45
50mm x 50mm	97 6566 00	24	96	142	0.67
63mm x 63mm	97 6577 00	29	113	161	1.04
75mm x 75mm	97 6588 00	43	134	192	1.47
90mm x 90mm	97 6599 00	50	157	233	2.44
110mm x 110mm	97 6500 00	62	190	275	4.29



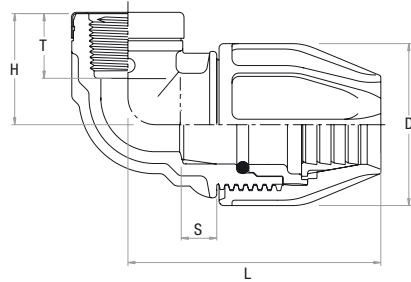
ELBOWS (Pol x Pol 45°)

Size (OD)	Ref No	Dimensions mm.			kg.
		S	D	L	Wt
20mm x 20mm	97 6028 00	10	47	63	0.09
25mm x 25mm	97 6038 00	11	56	71	0.15
32mm x 32mm	97 6048 00	14	69	85	0.26
40mm x 40mm	97 6058 00	18	82	124	0.45
50mm x 50mm	97 6068 00	24	96	105	0.67
63mm x 63mm	97 6078 00	29	113	116	1.04



FEMALE ELBOWS (Pol x FI BSP)

Size (OD x BSP)	Ref No	Dimensions mm.					kg.
		S	D	H	L	T	Wt
20mm x 1/2"	97 6621 00	10	47	38	73	22.8	0.05
20mm x 3/4"	97 6622 00	10	47	39	73	24.1	0.07
25mm x 1/2"	97 6631 00	11	56	40	88	22.8	0.08
25mm x 3/4"	97 6632 00	11	56	41	88	24.1	0.10
25mm x 1"	97 6633 00	11	56	44	88	27.4	0.11
32mm x 1"	97 6643 00	14	69	48	105	27.4	0.17
32mm x 1-1/4"	97 6644 00	14	69	50	105	30.2	0.18
40mm x 1-1/4"	97 6654 00	18	82	53	126	30.2	0.28
40mm x 1-1/2"	97 6655 00	18	82	56	126	30.2	0.30
50mm x 1-1/2"	97 6665 00	24	96	71	142	30.2	0.43
50mm x 2"	97 6666 00	24	96	77	142	34.5	0.46
63mm x 1-1/2"	97 6675 00	29	113	77	160	34.5	0.68
63mm x 2"	97 6676 00	29	113	77	160	34.5	0.68
75mm x 2"	97 6686 00	43	134	109	189	34.5	1.47
75mm x 2-1/2"	97 6687 00	43	134	109	189	34.5	1.47
75mm x 3"	97 6688 00	43	134	109	189	34.5	1.47
90mm x 3"	97 6698 00	50	157	122	223	39	2.44
110mm x 4"	97 6609 00	62	190	145	273	46	4.29



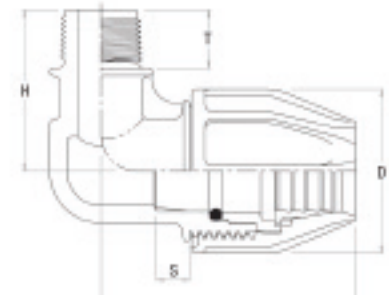
Stainless steel reinforcing ring on FI Outlets

REDUCING MALE ELBOW (Pol x Pol 90°)

Size (OD)	Ref No	Dimensions mm.			kg.
		S	D	L	Wt
25mm x 20mm	97 6523 00	11	-	49	0.09

MALE ELBOW (Pol x MI BSP)

Size (OD)	Ref No	Dimensions mm.					kg.
		S	D	H	L	T	Wt
50mm x 2"	97 6732 00	13	56	49	104	21.1	0.09
63mm x 2"	97 6743 00	14	69	68	127	24.4	0.17

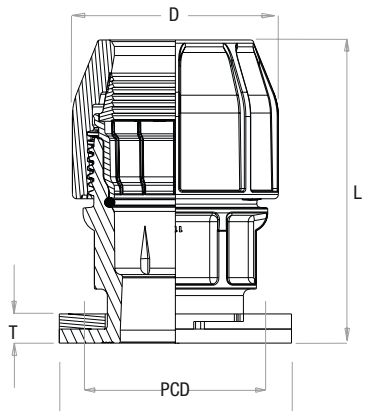


FLANGED ADAPTORS (Pol x Flange)

Size (OD)	Ref No	D	L	Wt (Kg)
50 x 2"	97696600	96	178	1.54
63 x 2"	97697600	113	184	1.62
63 x 4"	97697900	113	191	2.1
75 x 3"	97698800	134	215	2.4
90 x 3"	97699800	157	221	2.8
110 x 4"	97690900	190	269	3.6

Flange Pattern Codes

Flange Size	Flange Coating	PCD	#Holes	Hole Diam	F	T
2"	Epoxy	114	4	18	150	21
3"	Epoxy	146	4	18	183	27
4"	Epoxy	178	8	18	214	28



PRODUCT SPECIFICATION

Manufacturer Accreditation

Only fittings manufactured by Manufacturers with a Quality System approved to ISO9001 or equivalent shall be accepted for use.

Product Performance Accreditation

Fittings for Polyethylene (PE) pipes shall meet the applicable performance requirements of ISO14236 with specific reference to:

- a) Pressure Testing (ISO 3458)
- b) External Pressure resistance testing (ISO 3459)
- c) Resistance to pull out of test assemblies at 20 degrees C (ISO 3501)
- d) Internal pressure resistance when subjected to bending stresses (ISO 3503)

Threaded ends of fittings shall be tapered and conform to ISO7.1 (specification for pipe threads for tubes and fittings where pressure tight joints are made on threads).

Product Material Accreditation

Fittings for Polyethylene (PE) pipes shall have a body made from materials tested in accordance with ISO 9080 (Plastic piping

FITTINGS FOR PE TO PE PIPE CONNECTION

Guidelines for the specifications of Philmac EasyLOK compression fittings.

and ducting systems – determination of the long term hydrostatic strength of thermoplastic materials in pipe form by extrapolation).

Performance verification shall be according to test parameters outlined in Clause 8.3.2.2 of ISO 14236 – Verification of long term behaviour.

Fittings shall be suitable for the conveyance of drinking water and shall conform to BS6920 and AS4020 (suitability of non metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of water).

Product Configuration/Material Overview

Fittings shall be of the compression fitting type.

Fitting bodies and nuts shall be of polypropylene material, the spacer shall be of nylon material and the split ring shall be in acetal material. Each fitting shall be supplied complete and pre assembled with captivated split ring, spacer and seal inside

the nut. Seal rings shall be made from nitrile rubber.

Fitting body colour shall be black so as to minimise potential light transmission and/or UV degradation.

Method of Connection

The seal of a joint will be achieved by nut tightening so as to obtain watertightness by a seal ring around the external diameter of the pipe.

Any pipe preparation will be limited to cutting and cleaning of pipe (for foreign material or burrs). Fittings shall not require the pipe to be lubricated or chamfered during installation.

There shall be no loose components during assembly or disassembly (meaning that the fitting shall not be required to be dismantled during assembly or disassembly and if the nut is removed accidentally components will not fall out of the fitting unless removed deliberately).



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