IPS-OD 3G Fittings

Philmac

The connection you can trust.

Technical Manual

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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.

NATA Accredited Laboratory Number: 14673

Australian Standard

WaterMark

Certified to NSF/ANSI/CAN 61

Metric version published May 2022

Reference Number: PHI1110

Disclaimer

Please note that the information, opinions, recommendations and advice given in this manual are supplied only to provide an improved understanding of the technical aspects of fitting systems.

So far as the law allows, Philmac Pty Ltd will not accept liability in respect of any loss or damage of any kind claimed to arise as a result of reliance upon any information claimed in this manual.

Please refer to our Terms and Conditions of sale.

Suitable for:
IPS Outside Dimensioned PE Pipe

Being an OD specified pipe, 3G® IPS-OD fitting connect to the outside of the pipe. The same fitting works on certified PE pipe SDR7 thru 17 for cold water only. Sizes 1/2" to 2".

ASTM D3035, Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter (IPS-OD or SDR).

ASTM D2447, Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter.

Additional features

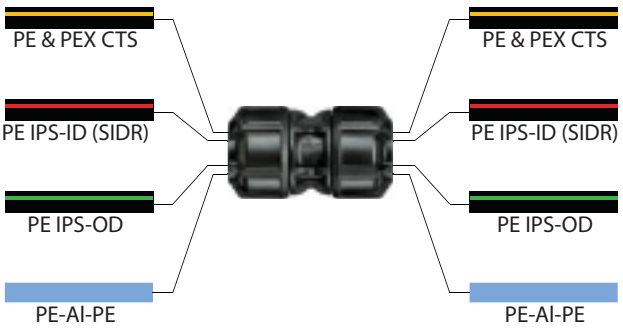
Visual stop: The flange on the body of the 3G™ compression fitting provides a visual stop to indicate when the nut is fully tightened. This removes any uncertainty from the installation process and eliminates the risk of over-tightening.

No loose components: If the nut is removed there is no danger of losing components, as the collet and seal ring are retained in the body of the fitting. Losing components in the trench becomes a thing of the past.

Designed to minimize pipe twist: The fitting has been designed to minimize pipe twist as the nut is tightened. Maximum pipe twist is approximately a quarter 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.

Rated to 230psi: 3G™ compression fittings are pressure rated to 230psi to meet the needs of high pressure systems.

Common Body enables Cross Connection Between Different Pipe Standard



The innovative design of the 3G® fitting uses a common body across the entire range. By simply changing the connection components 3G® can connect to pipes from all the major standards including CTS, IPS-OD, IPS-ID, Kitec XPA pipes.

By installing a Conversion Kit any fitting can be used to join pipes of different standards. Couplers and Elbows can be used and a Tee can be used to connect three pipes all of different standards.

Complete range

The CTS 3G® compression fittings range is comprehensive: straight and reducing couplers, tees, elbows, male and female adapters and caps ranging from 3/4" to 2".

Coupler 3G Metric PE x PE

Male Adaptor MI x PE

Female Adaptor MI x PE

Elbow PE x PE

Male Elbow MI x PE

Female Elbow FI x PE

Tee PE x PE x PE

Female Tee FI x PE x PE

Male Tee MI x PE x PE

Reducing Tee PE x PE x PE

End Cap PE x PE

Standards and Tests

Philmac 3G® range of compression fittings hold certificates for the following standards:

NSF-61 (USA & Canada),

Fitting materials approved for use in drinking water applications.

BS 6920, (United Kingdom and Middle East)

Fitting materials approved for use in drinking water applications.

ACS, (France)

Fitting materials approved for use in drinking water applications.

AS/NZS 4020, (Australia)

Testing of products for use in contact with drinking water.

B137 .1:2 2017 (Canada)

Polyethylene pipe, tubing and fittings for cold water pressure services.

Philmac 3G® fittings meet the following thread standards:

ANSI/ASME B1.20.1,

Pipe threads, General purpose (inch).

ASTM F1498,

Standard specification for tapered pipe threads 60° for thermoplastic pipe and fittings.

AS/ISO 7.1,

Pipe threads where pressure joints are made on the threads. Part 1 Dimensions, tolerances and designations.

3G® fittings meet the requirements of the following codes:

AWWA C800,

Underground Service line valves and fittings. Philmac 3G® fittings comply with the relevant dimensional and performance requirements of AWWA C800.

ISO 14236,

Plastic pipe and fittings - Mechanical joint compression fittings use with polyethylene pipes in water supply systems

ASTM D2565,

UV Resistance, Grade 8. 3G® fittings are rated 8 on a 1 to 8 scale.

Philmac tests the 3G® fitting range using the following test methods:

ASTM D2444,

Standard Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight).

ASTM D1598,

Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure.

ASTM F 1674,

Standard Test Method for Joint Restraint Products for Use with PVC Pipe.

ASTM F 2164,

Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure.

3G® fittings are designed for connection to PE pipes and tubes manufactured to the following specifications:

ASTM D2737,

Standard Specification for Polyethylene (PE) Plastic Tubing to Copper Tube Size (CTS) dimensions.

ASTM F876,

Standard Specification for Crosslinked Polyethylene (PEX) Tubing to Copper Tube Size (CTS) dimensions.

ASTM D2239,

Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter (IPS-ID or ID-Series).

ASTM D3035,

Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter (IPS-OD or SDR).

ASTM D2447,

Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter.

ASTM F1282,

Standard Specification for Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure Pipe

ASTM F1281,

Standard Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe.

ASTM B88,

Standard Specification for Seamless Copper Tube, Type K, L & M

3G® Engineered for Strength

Philmac 3G® High-Performance Fittings are stronger than the pipe

Under an endload test the length of 2" SIDR pipe failed before the

3G® ID-Series fitting.

ICC-ES PMG Product Certificate

PMG-1253

Effective Date: November 2021

This listing is subject to re-examination in one year.

www.icc-es-pmg.org | (800) 423-6587 | (562) 699-0543 A Subsidiary of the International Code Council®

CSI: Division: 22 00 00 — Plumbing
Section: 22 11 16 — Domestic Water Piping

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Products: Plastic Compression Fittings

Listee: Philmac Pty Ltd
53-59 Deeds Road
North Plympton 5037
South Australia, Australia
www.philmac.com.au

Additional Listee

IPEX
1425 North Service RD E unit 3
Oakville ON L5H1A7
Canada

Compliance with the following codes:

2021, 2018, 2015, 2012, 2009 and 2006 International Plumbing Code® (IPC)
2021, 2018, 2015, 2012, 2009 and 2006 International Residential Code® (IRC)
2021, 2018, 2015, 2012, 2009 and 2006 Uniform Plumbing Code® (UPC)*
2017 Uniform Plumbing Code® - India (UPC-India)*
2015, 2010 and 2005 National Plumbing Code of Canada® (NPC)**

*Copyrighted publication of the International Association of Plumbing and Mechanical Officials
**National Plumbing Code of Canada is a copyrighted publication of National Research Council Canada

Compliance with the following standards:

CSA B137.1-2020, Polyethylene (PE) Pipe, Tubing, and Fittings for Cold-water Pressure Services
NSF/ANSI/CAN 61-2020, Drinking Water System Components – Health Effects

Identification:

Fittings shall be marked with at least the following:
(a) the manufacturer's name or trademark;
(b) nominal size

CSA INTERNATIONAL

Certificate of Compliance

Certificate: 1616428 Master Contract: 152989

Project: 1616428 Date Issued: 2005/06/21

Issued to: Philmac Pty. Limited
53 Deeds Rd
North Plympton
South Australia, South Australia 5037
Australia
Attention: Mr. Leigh Bunting

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C', 'US' and ▲

C US
Drinking Water
NSF/ANSI 61

Issued by: Franco DiFolco, B.Sc.,C.Chem

Authorized by: Nick Alfano, Operations Manager

PRODUCTS

CLASS 6861 04 - PIPES AND RELATED PRODUCTS - ANSI/NSF 61 SECTION 4 - Certified to ANSI/NSF 61

3G Fittings – (Material evaluated for use in contact with drinking water only)

3G Fitting Model Numbers:

End Cap Assemblies: 99312200, 99412200, 99313300, 99413300, 99314400, 99414400, 99315500, 99415500, 99316600, 99416600, and 99417700

NSF®

Certified to NSF/ANSI/CAN 61

System Design Considerations

Projected life of Compression fittings

Whilst Philmac 3G™ Compression fittings conforms to institutionalized 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

To calculate head loss, fittings can be replaced with an equivalent length of pipe. The following formula is used to estimate this equivalent length of PE pipe based on the conveyance of water;

L (feet) = ID (inch) x F
where L = head loss based on equivalent pipe length (feet)
ID = pipe inner diameter (inch)
F = fitting constant

Fitting	Fitting Constant (F)
90° elbow	2.5
90° tee - straight through	1
90° tee - side branch	5

Resistance to Impact

The thermoplastic materials used in the Philmac 3G™ Compression fittings have excellent impact properties.

Abrasion Resistance

Philmac 3G™ Compression fittings are suitable for the transportation of abrasive slurries and will withstand normal conditions found in urban, mining, industrial, rural water and waste water systems.

Weathering

The materials used contain pigments to provide excellent protection to degradation due to ultra-violet radiation. Continuous use of the Philmac 3G™ Compression fittings in systems above ground is therefore permissible without additional protection.

Electrolytic Corrosion - 'Dielectric' fitting

Philmac 3G™ Compression fittings are non magnetizing and does not cause electrolytic deterioration.

Thermal Insulation

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

Light Transmission

The all black Philmac 3G™ Compression fittings do not transmit light, thus protecting the water quality in potable water pipelines from growth of micro organizms.

Effect on Water

Philmac 3G™ Compression fittings do not impart to water any odor, taste, color, or any constituents in concentrations that could be injurious to health.

Temperature

3G Compression fittings are designed for cold water applications only. Exposure to elevated temperatures has a significant impact on the lifetime of the fittings. All projected lifetimes are based on an operating temperature of 73 degrees Fahrenheit.

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 vapors 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 and 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 3G® fittings in the presence of chemicals, evaluate each materials used in the fitting by using chemical performance tables published by the chemical industry.

Normally only the wetted area of the fitting, ie the body and seal need evaluation. For immersed applications, the nut, 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 valve or pipe work?

Temperature. What temperature are the chemicals? 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 pipe and fitting? Does it vary?

Remember the **STAMP** acronym.

Chemical	Satisfactory	Consult Philmac
Air	A	
Ammonium Hydroxide	A	
Alcohol	A	
Acetone		A
Auto Transmission Fluid	A	
Antifreeze	A	
Benzene		A
Butane	A	
Calcium Salts	A	
Caustic Soda (40% aqueous)	A	
Cresol		A
Citric Acid (10% aqueous)	A	
Copper Salts	A	
Ethylene Alcohol	A	
Ethyl Glycol	A	
Diesel	A	
Formic Acid		A
Gasoline		A
Hydrochloric Acid		A
Kerosene		A
Mineral Oils	A	
Methane	A	
Methylene Chloride		A
Nitric Acid		A
Petroleum Oils	A	
Sewerage	A	
Sodium Cyanide	A	
Sulphuric Acid		A
Toluene		A
Turpentine		A
Transformer Oil	A	
Zinc Salt Solution	A	
Note: Fluid Temperature = 68°F		

CTS installation instructions

1. Cut pipe square

Cut the pipe square. There is no need to prepare the pipe end.

Chamfering or lubrication is not required.

2. Ready to use position

The fitting is pre-assembled and ready to use, however always ensure the nut is fully relaxed and 2 threads are showing before inserting the pipe.

3. Pipe insertion

Insert the pipe until the first point of resistance is felt.

4. Nut tightening

The nut should be tightened by hand.

Tighten the nut until it just touches the flange on the body of the fitting. You may need a small turn with a wrench to achieve this.

5. Check for correct installation

Ensure the nut is tightened until flush with the flange on the body of the fitting.

Fitting is now fully installed.

6. Disassembly

To disassemble the fitting simply loosen the nut using a wrench until 2 threads are showing. Pipe will be released and can simply be pulled out of the fitting.

Note: Philmac recommends the use of PTFE tape on NPT threads to ensure a positive seal.

Threaded fittings - installation instructions

Philmac CTS 3G® 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 material properties of Polypropylene which 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 CTS 3G™ to perform.

Manufactured from Engineering Plastics

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

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.

New Approach to Installation

Philmac CTS 3G® fittings usher in a new era of thread connection. The high performance materials comform to slight irregularities in metal threads, whereas metal to metal joints tend to bind increasing the installation effort.

Smaller Lighter tools

A simple set of Channel-Locks can be used to install a Philmac threaded fitting. Gone are the days when you need a four-foot wrench to install and tighten a threaded fitting.

Proven Performance

Philmac threaded fittings are built tough and are used world-wide by water companies, civil contractors, 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.

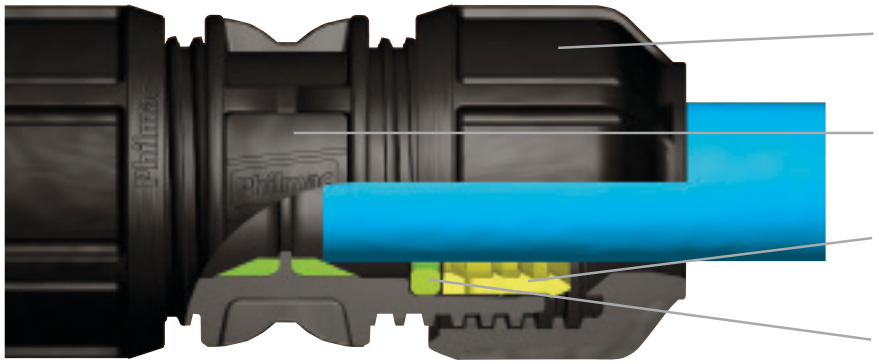
3. Grip the body of the 3G fitting with Channel Locks or similar plumbing tools and continue to screw the Male Adapter into the valve until tight.

   Stop if the shoulder of the 3G™ 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.

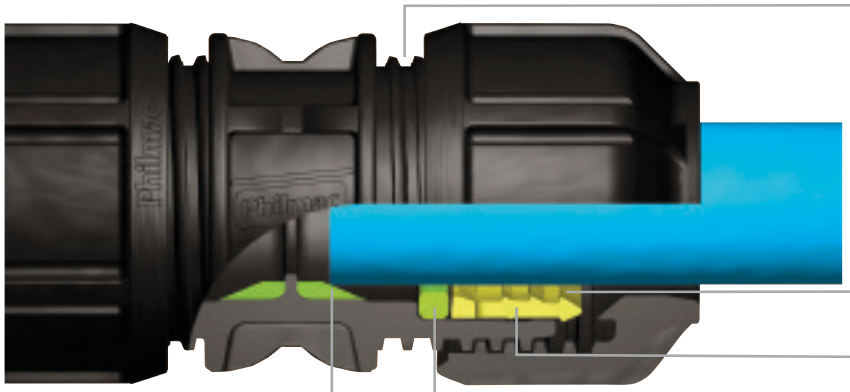
EASY RELIABLE CONNECTIONS, EVERYTIME

Materials & components

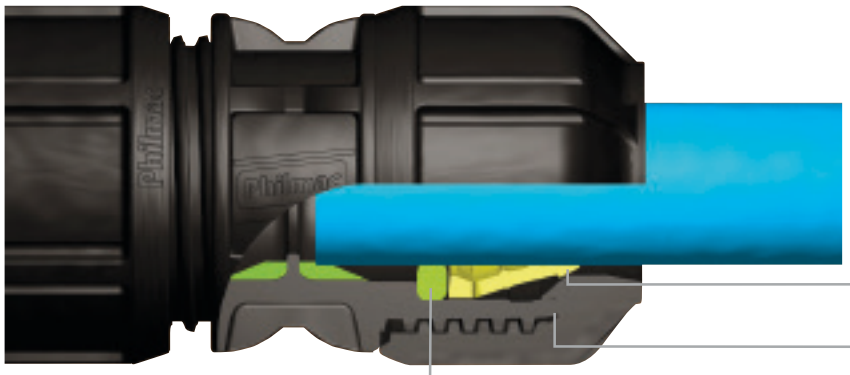


Principals of operation

FULLY OPEN



FULLY CLOSED

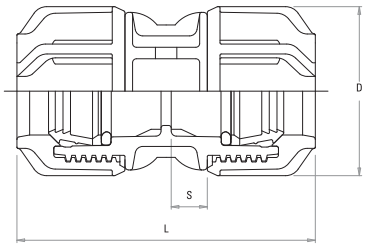


IPS OD fittings for IPS OD (DR) PE Pipe

(suits PE to ASTM D3035 or ASTM D2447)

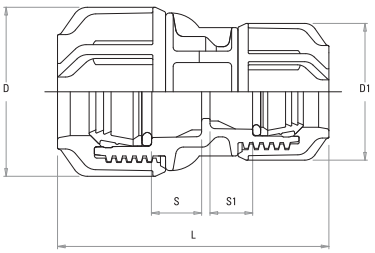
COUPLINGS (POL X POL) (Also available as Slip Couplers)

Harco Code	Philmac Code	Size	Dimensions inches			lb.
			S	D	L	Wt
75-30822	99412200	1/2" x 1/2"	0.39	1.85	3.55	0.18
75-30833	99413300	3/4" x 3/4"	0.43	2.17	3.82	0.26
75-30844	99414400	1" x 1"	0.55	2.64	4.65	0.44
75-30855	99415500	1-1/4" x 1-1/4"	0.71	3.19	5.36	0.72
75-30866	99416600	1-1/2" x 1-1/2"	0.95	3.70	6.34	1.14
75-30888	99417700	2" x 2"	1.14	4.33	7.16	1.67



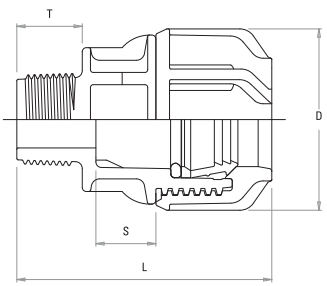
REDUCING COUPLERS (POL X POL)

Harco Code	Philmac Code	Size	Dimensions inches					lb.
			S	S1	D	D1	L	Wt
75-31732	99413200	3/4" x 1/2"	0.43	0.39	2.17	1.85	3.70	0.22
75-31742	99414200	1" x 1/2"	0.55	0.39	2.64	1.85	4.33	0.31
75-31743	99414300	1" x 3/4"	0.55	0.43	2.64	2.17	4.26	0.36
75-31753	99415300	1-1/4" x 3/4"	0.71	0.43	3.19	2.17	4.93	0.53
75-31754	99415400	1-1/4" x 1"	0.71	0.55	3.19	2.64	5.04	0.62
75-31763	99416300	1-1/2" x 3/4"	0.95	0.43	3.70	2.17	5.56	0.75
75-31764	99416400	1-1/2" x 1"	0.95	0.55	3.70	2.64	5.91	0.84
75-31765	99416500	1-1/2" x 1-1/4"	0.95	0.71	3.70	3.19	5.87	0.97
77-31784	-	2" x 1"	1.14	0.55	4.33	2.64	6.58	1.12
77-31785	-	2" x 1-1/4"	1.14	0.70	4.33	3.18	6.81	1.26
77-31786	-	2" x 1-1/2"	1.14	0.94	4.33	3.70	6.85	1.45



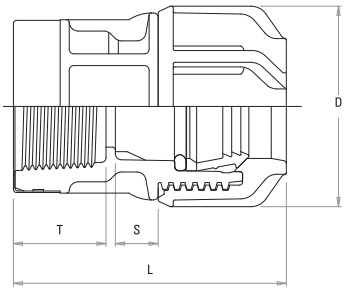
MALE ADAPTERS (POL X MI NPT)

Harco Code	Philmac Code	Size	Dimensions inches				lb.
			S	D	L	T	Wt
75-33022	99422100	1/2" x 1/2"	0.67	1.85	2.88	0.78	0.10
75-33023	99422200	1/2" x 3/4"	0.67	1.85	2.96	0.83	0.11
75-33032	99423100	3/4" x 1/2"	0.75	2.17	3.19	0.78	0.16
75-33033	99423200	3/4" x 3/4"	0.75	2.17	3.23	0.83	0.16
75-33034	99423300	3/4" x 1"	0.75	2.17	3.35	0.96	0.17
75-33043	99424200	1" x 3/4"	0.87	2.64	3.59	0.83	0.26
75-33044	99424300	1" x 1"	0.87	2.64	3.70	0.96	0.27
75-33045	99424400	1" x 1-1/4"	0.87	2.64	3.82	1.05	0.28
75-33054	99425300	1-1/4" x 1"	1.10	3.19	4.18	0.96	0.43
75-33055	99425400	1-1/4" x 1-1/4"	1.10	3.19	4.29	1.05	0.44
75-33056	99425500	1-1/4" x 1-1/2"	1.10	3.19	4.29	1.05	0.44
75-33066	99426500	1-1/2" x 1-1/2"	1.18	3.70	4.65	1.05	0.66
75-33068	99426600	1-1/2" x 2"	1.18	3.70	4.69	1.22	0.67



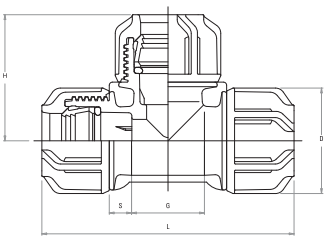
FEMALE ADAPTER (POL X FI NPT)

Harco Code	Philmac Code	Size	Dimensions inches				lb.
			S	D	L	T	Wt
75-33222	99482100	1/2" x 1/2"	0.39	1.85	2.71	0.90	0.12
75-33223	99482200	1/2" x 3/4"	0.39	1.85	2.76	0.95	0.12
75-33232	99483100	3/4" x1/2" *	0.43	2.17	2.91	0.90	0.18
75-33233	99483200	3/4" x 3/4"	0.43	2.17	2.80	0.95	0.17
75-33234	99483300	3/4" x 1"	0.43	2.17	3.03	1.08	0.18
75-33243	99484200	1" x 3/4" *	0.43	2.17	3.50	0.95	0.26
75-33244	99484300	1" x 1"	0.55	2.64	3.47	1.08	0.28
75-33245	99484400	1" x 1-1/4"	0.55	2.64	3.59	1.19	0.29
75-33255	99485400	1-1/4" x 1-1/4"	0.71	3.19	3.98	1.19	0.45
75-33256	99485500	1-1/4" x 1-1/2"	0.71	3.19	3.98	1.19	0.46
75-33266	99486500	1-1/2" x 1-1/2"	0.95	3.70	4.18	1.19	0.63
75-33268	99486600	1-1/2" x 2"	0.95	3.70	4.22	1.36	0.73



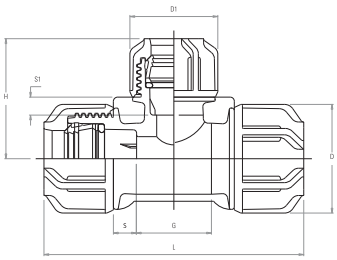
TEES (POL X POL X POL) (Also available as Slip Tees)

Harco Code	Philmac Code	Size	Dimensions inches					lb.
			S	D	H	G	L	Wt
75-312222	99432200	1/2" x 1/2" x 1/2"	0.39	1.85	2.32	1.22	4.61	0.37
75-312333	99433300	3/4" x 3/4" x 3/4"	0.43	2.17	2.64	1.58	5.28	0.43
75-312444	99434400	1" x 1" x 1"	0.55	2.64	3.15	1.89	6.30	0.72
75-312555	99435500	1-1/4" x 1-1/4" x 1-1/4"	0.71	3.19	3.74	1.97	7.17	1.17
75-312666	99436600	1-1/2" x 1-1/2" x 1-1/2"	0.95	3.70	3.98	2.36	7.96	1.76



REDUCING TEES (POL X POL X POL)

Harco Code	Philmac Code	Size	Dimensions inches							lb.
			S	S1	D	D1	H	G	L	Wt
75-313332	99433200	3/4" x 3/4" x 1/2"	0.43	0.39	2.17	1.85	2.52	1.58	5.28	0.53
75-313334	99433400	3/4" x 3/4" x 1"	0.43	0.55	2.17	2.64	2.72	1.58	5.28	0.52
75-313443	99434300	1" x 1" x 3/4"	0.55	0.43	2.64	2.17	2.92	3.47	6.30	0.62
75-313553	99435300	1-1/4" x 1-1/4" x 3/4"	0.71	0.43	3.19	2.17	2.92	1.34	6.54	0.88
75-313554	99435400	1-1/4" x 1-1/4" x 1"	0.71	0.55	3.19	2.64	3.31	1.54	6.74	0.96
75-313663	99436300	1-1/2" x 1-1/2" x 3/4"	0.79	0.43	3.70	2.17	3.19	1.38	7.17	1.30
75-313664	99436400	1-1/2" x 1-1/2" x 1"	0.79	0.55	3.70	2.64	3.55	1.58	7.37	1.40
75-313665	99436500	1-1/2" x 1-1/2" x 1-1/4"	0.95	0.83	3.70	3.19	3.86	2.36	7.76	1.54
75-313883	-	2" x 2" x 3/4"	0.79	0.43	3.70	2.17	3.19	1.38	7.17	1.30
75-313884	-	2" x 2" x 1"	0.79	0.55	3.70	2.64	3.55	1.58	7.37	1.40
75-313886	-	2" x 2" x 1-1/2"	0.95	0.83	3.70	3.19	3.86	2.36	7.76	1.54



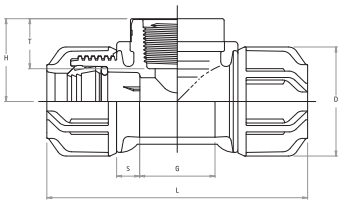
*** NPT compatible, however marked as BSP**

IPS OD fittings for IPS OD (DR) PE Pipe

(suits PE to ASTM D3035 or ASTM D2447)

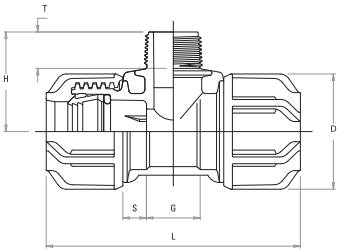
FEMALE TEES (POL X POL X FI NPT)

			Dimensions inches						lb.
Harco Code	Philmac Code	Size	S	D	H	G	L	T	Wt
75-351222	99442100	1/2" x 1/2" x 1/2"	0.39	1.85	1.50	1.22	4.61	0.90	0.20
75-351223	99442200	1/2" x 1/2" x 3/4"	0.39	1.85	1.50	1.22	4.61	0.95	0.22
75-351332	99443100	3/4" x 3/4" x 1/2"	0.43	2.17	1.58	1.58	5.28	0.90	0.32
75-351333	99443200	3/4" x 3/4" x 3/4"	0.43	2.17	1.62	1.58	5.28	0.95	0.33
75-351334	99443300	3/4" x 3/4" x 1"	0.43	2.17	1.73	1.58	5.28	1.08	0.35
75-351442	99444100	1" x 1" x 1/2"	0.55	2.64	1.65	0.79	5.32	0.90	0.45
75-351443	99444200	1" x 1" x 3/4"	0.55	2.64	1.73	1.89	6.30	0.95	0.53
75-351444	99444300	1" x 1" x 1"	0.55	2.64	1.73	1.89	6.30	1.08	0.54
75-351445	99444400	1" x 1" x 1-1/4"	0.55	2.64	1.97	1.89	6.30	1.19	0.57
75-351552	99445100	1-1/4" x 1-1/4" x 1/2"	0.71	3.19	1.89	0.75	5.95	0.90	0.73
75-351553	99445200	1-1/4" x 1-1/4" x 3/4"	0.71	3.19	1.97	0.95	6.15	0.95	0.76
75-351555	99445400	1-1/4" x 1-1/4" x 1-1/4"	0.71	3.19	2.21	1.97	7.17	1.19	0.91
75-351556	99445500	1-1/4" x 1-1/4" x 1-1/2"	0.71	3.19	2.20	1.97	7.17	1.19	0.91
75-351662	99446100	1-1/2" x 1-1/2" x 1/2"	0.95	3.70	2.13	0.75	6.90	0.90	1.13
75-351663	99446200	1-1/2" x 1-1/2" x 3/4"	0.95	3.70	2.25	0.95	7.13	0.95	1.17
75-351666	99446500	1-1/2" x 1-1/2" x 1-1/2"	0.95	3.70	2.64	2.36	7.76	1.19	1.28
75-351668	99446600	1-1/2" x 1-1/2" x 2"	0.95	3.70	2.80	2.36	8.39	1.36	1.39



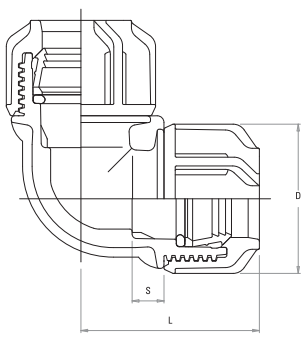
MALE TEES (POL X POL X MI NPT)

			Dimensions inches						lb.
Harco Code	Philmac Code	Size	S	D	H	G	L	T	Wt
75-352332	99493100	3/4" x 3/4" x 1/2" *	0.43	2.17	2.09	1.38	4.49	0.78	0.31
75-352333	99493200	3/4" x 3/4" x 3/4" *	0.43	2.17	2.09	1.38	4.49	0.83	0.33



ELBOWS (POL X POL)

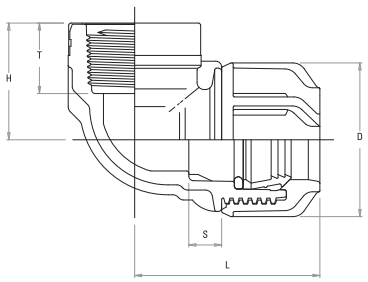
			Dimensions inches			lb.
Harco Code	Philmac Code	Size	S	D	L	Wt
75-31822	99452200	1/2" x 1/2"	0.39	1.85	2.32	0.18
75-31832	99453200	3/4" x 1/2"	0.43	2.17	2.56	0.24
75-31833	99453300	3/4" x 3/4"	0.43	2.17	2.64	0.29
75-31844	99454400	1" x 1"	0.55	2.64	3.15	0.49
75-31855	99455500	1-1/4" x 1-1/4"	0.71	3.19	3.59	0.79
95-31866	99456600	1-1/2" x 1-1/2"	0.95	3.70	3.98	1.21



*** NPT compatible, however marked as BSP**

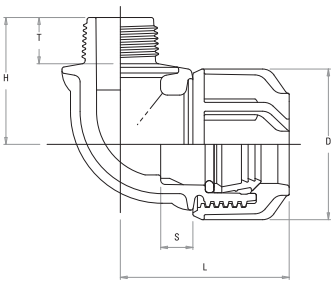
FEMALE ELBOWS (POL X FI NPT)

Harco Code	Philmac Code	Size	Dimensions inches					lb.
			S	D	H	L	T	Wt
75-32022	99462100	1/2" x 1/2"	0.39	1.85	2.88	2.32	0.90	0.11
75-32023	99462200	1/2" x 3/4"	0.39	1.85	2.88	2.32	0.95	0.12
75-32032	99463100	3/4" x 1/2" *	0.43	2.17	3.47	2.64	0.90	0.17
75-32033	99463200	3/4" x 3/4"	0.43	2.17	3.47	2.64	0.95	0.18
75-32034	99463300	3/4" x 1"	0.43	2.17	3.47	2.64	1.08	0.20
75-32044	99464300	1" x 1"	0.55	2.64	4.14	3.15	1.08	0.30
75-32045	99464400	1" x 1-1/4"	0.55	2.64	4.14	3.19	1.19	0.33
75-32055	99465400	1-1/4" x 1-1/4"	0.71	3.19	4.96	3.59	1.19	0.50
75-32056	99465500	1-1/4" x 1-1/2"	0.71	3.19	4.96	3.59	1.19	0.52
75-32066	99466500	1-1/2" x 1-1/2"	0.95	3.70	5.59	3.98	1.19	0.73
75-32068	99466600	1-1/2" x 2"	0.95	3.70	5.59	4.18	1.36	0.84



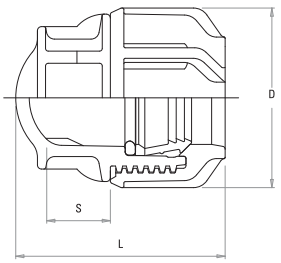
MALE ELBOWS (POL X MI NPT)

Harco Code	Philmac Code	Size	Dimensions inches					lb.
			S	D	H	L	T	Wt
75-32222	99472100	1/2 x 1/2" *	0.47	1.85	1.69	2.24	0.78	0.13
75-32223	99473200	3/4" x 3/4" *	0.51	2.17	1.93	2.56	0.83	0.15

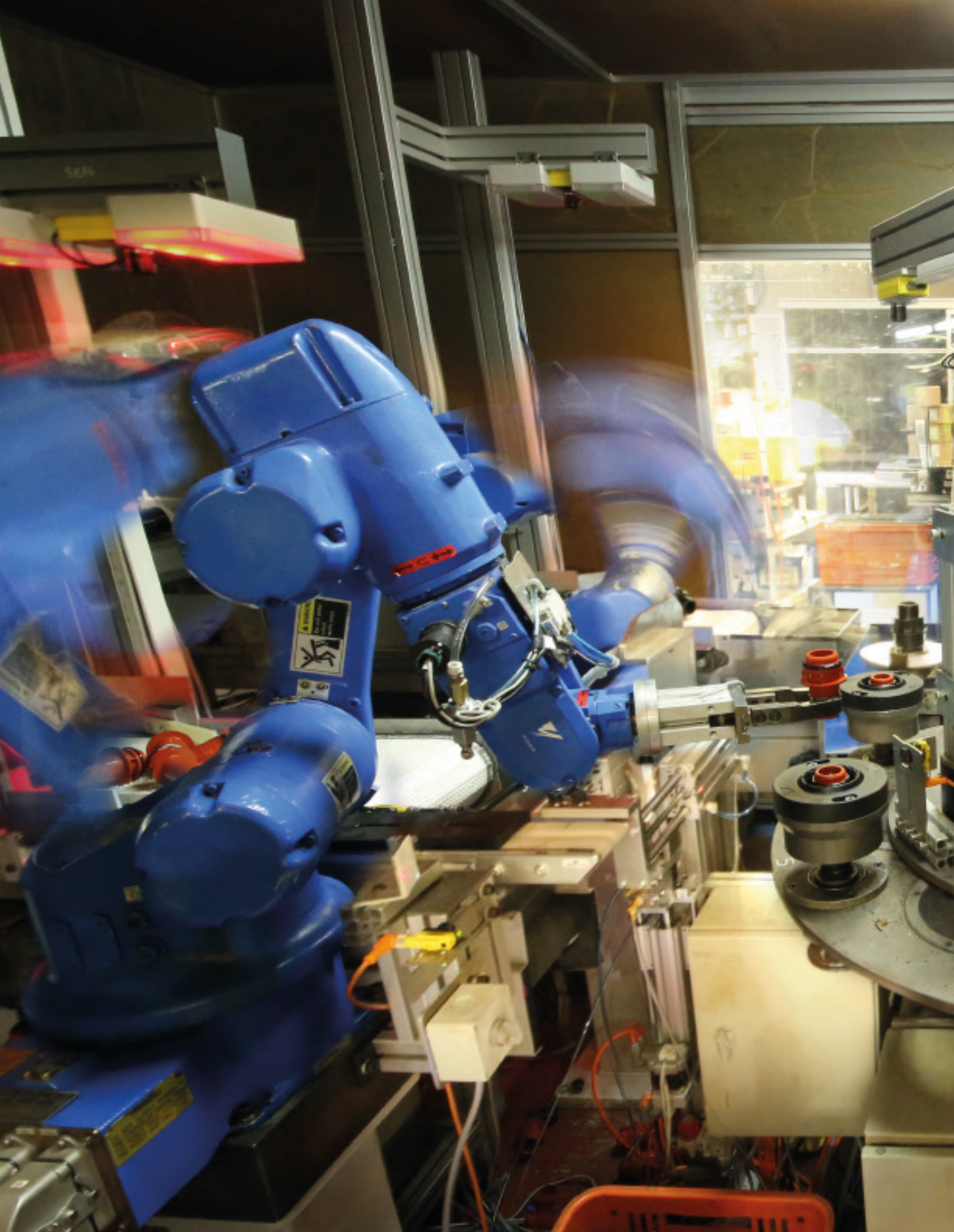


END CAPS

Code	Size	Dimensions inches			lb.
		S	D	L	Wt
99402900	1/2"	0.71	1.57	1.97	0.04
99403900	3/4"	0.74	1.85	2.28	0.08
99404900	1"	0.91	2.16	2.68	0.15
99405900	1-1/4"	0.94	2.63	3.07	0.24
99406900	1-1/2"	1.22	3.19	3.62	0.42



*** NPT compatible, however marked as BSP**




MOTOMAN

IPS-OD Large Bore

IPS-OD Large Bore

Just like the smaller sizes, Philmac's IPS-OD large bore range also utilizes Slide and Tighten™ technology, so installation is simple and reliable. The large bore range provides the same features and benefits of the 3G® range including a visual stop, minimal pipe twisting during installation and no requirement to remove the nut to connect to the pipe. The large bore range utilizes a longer nut because sealing is completed by pushing an O-ring between the pipe and body. In contrast, smaller sizes rely on an in-situ seal being squeezed between the pipe and body.

Features & Benefits

- **Fast and easy Installation** – no pipe preparation is required. Simply insert the pipe into the fitting until the first point of resistance is felt, and then tighten the nut
- **Dynamic sealing method** – the mechanical advantage of the nut is used to push the O-ring into the compressed position, eliminating the need to push past a seal when inserting the pipe
- **No loose components** – if the nut should be removed for any reason there is no danger of losing the O-ring, spacer or grip ring as they are retained in the nut
- **Rated to 230 psi** – ensures the fittings meet the requirements of high pressure systems
- **Lead-free** – the fittings are made from materials that are lead free.

DESCRIPTION	PART NUMBER
COUPLER – Poly x Poly	97217700
SLIP COUPLER – Poly x Poly	97217710
MALE ADAPTOR – Poly x 2" MI NPT	97227600
FEMALE ADAPTOR – Poly x 2" FI NPT	97287600
TEE – Poly x Poly	97237700
ELBOW – Poly x Poly	97257700
FEMALE ELBOW – Poly x 2" FI NPT	97267600
FEMALE TEE – Poly x 2" FI NPT	97247600
END CAP	97207900
PVC CONNECTION KIT (Grip Ring Only)	97207700
PVC CONNECTION KIT (Nut, Grip Ring & Spacer Assy)	97207710

1

Cut the pipe square, there is no need to chamfer or lubricate

2

Ensure 3 threads are showing and simply slide the pipe in until the point of first resistance is felt

3

Tighten the nut by hand, and then with a wrench to the point where the nut is touching the flange on the body of the fitting. Do not tighten beyond this point.

Acme Joints

Philmac manufactures a range of compression fittings that connect 2" IPS OD pipe with 1-1/2" Acme male threads. The range consists of Tee and Elbow configurations, and is popular with large irrigation turf projects such as golf course irrigation. Acme threads are used for connection to threaded swing joint fittings.

Image courtesy of TORO®

ACME TEE & ELBOW

(IPS-OD Poly x Acme)

DESCRIPTION	SIZE	PART NUMBER
TEE	2" x 1-1/2"	97247520
SLIP TEE	2" x 1-1/2"	97247550
ELBOW	2" x 1-1/2"	97267520

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Philmac

The connection you can trust.

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