# 3G Metric Fittings

Philmac

The connection you can trust.

## Technical Manual

# CONTENTS



NATA

Certified Product™ Australian Standard

WaterMark

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. 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.

# 3G Metric Compression Fittings

Simply Slide and Tighten for a reliable connection you can trust

# Benefits

### Fast and Easy Installation

**Slide & Tighten® technology:** 3G Metric™ incorporates all the benefits of Philmac's unique Slide & Tighten® technology. No pipe preparation is needed and no force is required to push the pipe past the seal, so installation couldn't be faster or easier. Simply insert the pipe into the fitting until the stop is felt, and then tighten the nut. Assembly is so easy you can even do it under live conditions. No special tools are required, and there is no need to disassemble the fitting before use because the 3G Metric™ compression fitting is supplied pre-assembled and ready to use.

**Compact design:** The size of the new Philmac 3G Metric™ compression fitting has been kept to a minimum, making the fitting ideal to use in confined areas. In addition to making connections with minimal turns of the nut, the design and size of the fitting means that in installations taking place between two fixed points, the manipulation of the pipe into the fitting becomes easy.

**Easy disassembly:** The fitting has been designed so the collet is released as soon as the nut is backed off, making disassembly easy.

### Complete Security

The large seal in Philmac UTC® is particularly suited to Out-of-Round and Pitted pipes

**Dynamic sealing method:** The mechanical advantage of the nut thread compresses the seal into position.

**Visual stop:** The flange on the body of Philmac's 3G Metric™ compression fitting provides a visual stop to indicate when the nut is fully tightened. This removes any uncertainty from the installation process.

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

**Designed to minimise pipe twist:** The fitting has been designed to minimise 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.

**Approvals:** Philmac 3G Metric™ is WaterMark approved and has WSAA appraisal.

### High Performance

**Made from advanced thermoplastic materials:** 3G Metric™ is manufactured from lightweight high performance thermoplastic materials with outstanding impact, UV, chemical and corrosion resistance. The material is non-toxic and taint-free.

**Rated to 1600 kpa:** 3G Metric™ is pressure rated to 1600 kpa (PN16) to meet the needs of high pressure systems.

**50 year+ design life:** Built to withstand the toughest conditions to ensure longevity and durability, 3G Metric™ has a 50 year+ design life.

### Complete Coverage

**Wide range:** The new 3G Metric™ range is comprehensive: straight and reducing joiners, tees, elbows, end connectors and caps ranging from 16mm to 63mm.

Philmac 3G Metric™ also incorporates a range of dedicated recycled water fittings and poly to copper connections for fast and simple connection to both PE and copper pipe.

# Standards

**Philmac 3G Metric™ is a complete range of mechanical fittings designed to make connections simple when joining metric PE pipes.**

Philmac 3G Metric's innovative design comprises the following product mix;

| Product Description | Size (mm) | Maximum Operating Pressure (KPa) |
|---|---|---|
| Compression fittings (PE x PE/FI BSP/MI BSP) | 16-63 | 1600 (16 bar) |
| Compression fittings PE x (UTC) | 16-63 (15-61) | 1250 (12.5 bar) |
| Compression fittings PE x (Copper) | 16-32 ($^1/_2$", $^3/_4$") | 1600 (16 bar) |
| Tapping saddles | 32-110 | 1600 (16 bar) |
| Accessories - Spanners | 20-63 | |

**Philmac 3G Metric™ is designed to comply with the requirements of the following standards:**

**AS/NZS4129 & 14236**
Fittings for polyethylene pressure pipe systems.

**AS/NZS 4020**
Products for use in contact with water intended for human consumption with regards to their effect on the quality of water.

**AS3688**
Water supply - copper and copper alloy body compression and capillary fittings and threaded-end connectors.

**ISO7.1 & BS21**
Pipe threads where pressure joints are made on the threads.

**PE Pipes - AS/NZS4130, ISO4427, EN12201** (formally BS6572 & BS6730) Polyethylene pipes for pressure applications.

**Copper Pipes - AS1432**
Copper tubes for plumbing, gas fitting and drainage applications.

Note: Philmac 3G Metric™ is also suitable for use with pipes manufactured according to various overseas and international standards. Please consult Philmac Technical Services for information.

# Product Specifications

**Fittings For PE To PE Pipe Connection**
Guidelines for the specifications of Philmac 3G Metric™ compression fittings.

### 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 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 AS4020 (products for use in contact with water intended for human consumption with regards to their effect on the quality of water).

### Product Configuration/Material Overview
Fittings shall be of the compression fitting type.

Fitting bodies shall be of polypropylene material, the nut shall be of acetal material and the collet shall be of acetal material. Each fitting shall be supplied complete and pre-assembled with captivated collet and seal inside the body.

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).

# Installation Instructions - Poly

**1. Cut Pipe Square**

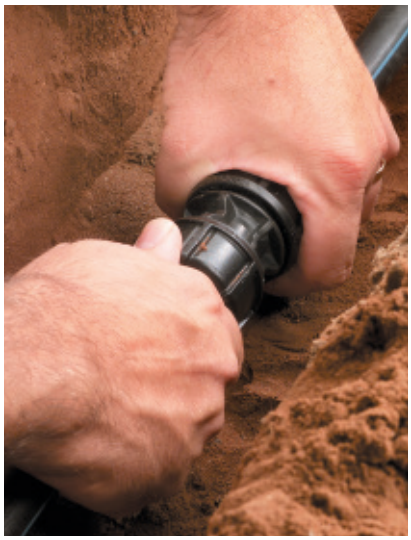
Cut the pipe square. There is no need to prepare the pipe end. Chamfering or lubrication is not required.

**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 stop is felt.



**4. Nut Tightening**

The nut should be tightened by hand and then firmly with a wrench. Tighten the nut all the way to the flange on the body of the fitting.

**5. Fully Installed**

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.

*** Slip Couplings** - To ensure adequate insertion depth, witness mark the pipes to the flange on the fitting. Then insert the pipe to the correct depth.

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

# Installation Instructions Poly to Copper (AS1432)

**1.** Cut pipe square.  Ensure the pipe is free from sharp burrs.  Chamfering or lubrication is not required.

**2. Ready to use position**

The fitting is pre-assembled and ready to use.

**3. Pipe Insertion**

Insert the pipe and push it past the o-ring.

**4.** Cut copper pipe square. The fitting is pre-assembled and ready to use. Mark the depth of copper using pipe stop marking or body flange as a visual indicator.

**5.** Insert the copper pipe and push past the rubber seal up to the mark indicated.

**6.** Tighten the nut by hand and finish using a wrench. Remember to check that the nut is tight against the body flange.

**7.** The nut should be tightened firmly with a wrench.

**Note:** Installation instructions apply to the copper end of a 3G x Copper fitting.

# Installation Instructions - Poly to UTC

## (UTC joins PVC, Copper, Galvanised Iron, Stainless Steel, Lead, Steel and PE Pipes)

**1. Cut pipe to length**
Cut pipe square and to length using the flange on the central body as a guide. Ensure end of connecting pipe is undamaged and clean.

**2. Ready to use position.**
The fitting is pre-assembled and ready to use, however always ensure the nut is backed off and 3 threads are showing. Pipes at the top end of the fitting tolerance may require 5 threads showing.

**3. Pipe insertion**
To ensure adequate insertion depth, witness mark the pipe to the back of the flange. If conditions permit a marker pen can be used or alternatively use of a thumb is suitable. Then insert pipe to the correct depth.

**4. Nut tightening**
Tighten nut firmly with a wrench. Nut will not butt against the body flange when the pipe size is at the top end of the fitting tolerance.

**5. Fully Installed**
The fitting is fully installed when the nut cannot be tightened any further with reasonable force.

**6. Disassembly**
Unscrew the nut with a wrench. Pipe will be released and can be pulled out of the fitting.

- Use a pipe measuring gauge if there are doubts on pipe outside diameter (OD) size.
- Installation instructions are also applicable for the PE end.

**Note:** Installation instructions apply to the UTC® end of a 3G x UTC® fitting or the UTC® ends of a UTC® x UTC® fitting.

# System Design Considerations

There are generally two types of PE pipe fittings; mechanical and thermofusion. Philmac 3G Metric™ 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 3G Metric™.

### Projected life of compression fittings

Whilst Philmac 3G Metric™ 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 F = fitting constant
D = pipe inner diameter (m)
L = head loss based on equivalent pipe length (m)

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

### Resistance to Impact

The thermoplastic materials used in the Philmac 3G Metric™ fitting have excellent impact properties

### Abrasion resistance

Philmac 3G Metric™ 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

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

### Electrolytic Corrosion

Philmac 3G Metric™ is non magnetising 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 Metric™ does not transmit light, thus protecting the water quality in potable water pipelines from growth of micro organisms.

### Effect on Water

Philmac 3G Metric™ does not impart to water any odour, taste, colour, or any constituents in concentrations that could be injurious to health.

### Fluids other than Water

Philmac 3G Metric™ may convey a wide variety of fluids. The following table is provided as a guide only for the compatibility of various chemicals to Philmac 3G Metric™. Contact Philmac for advice on specific applications.

### Temperature

Philmac UTC 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 23 degrees Celsius.

# Chemical Resistance

| Chemical | Satisfactory | Not Satisfactory |
|---|---|---|
| Air | ✔ | |
| Ammonium Hydroxide | | ✔ |
| Alcohol | ✔ | |
| Acetone | | ✔ |
| AutoTransmission Fluid | | ✔ |
| Antifreeze (<50% concentration) | ✔ | |
| Benzene | | ✔ |
| Butane | | ✔ |
| Calcium Salts | ✔ | |
| Caustic Soda (40% aqueous) | ✔ | |

| Chemical | Satisfactory | Not Satisfactory |
|---|---|---|
| Cresol | | ✔ |
| Citric Acid (10% aqueous) | | ✔ |
| Copper Salts | ✔ | |
| Diesel | | ✔ |
| Formic Acid | | ✔ |
| Gasoline | ✔ | |
| Hydrochloric Acid | | ✔ |
| Kerosene | | ✔ |
| Mineral Oils | | ✔ |
| Methane | | ✔ |

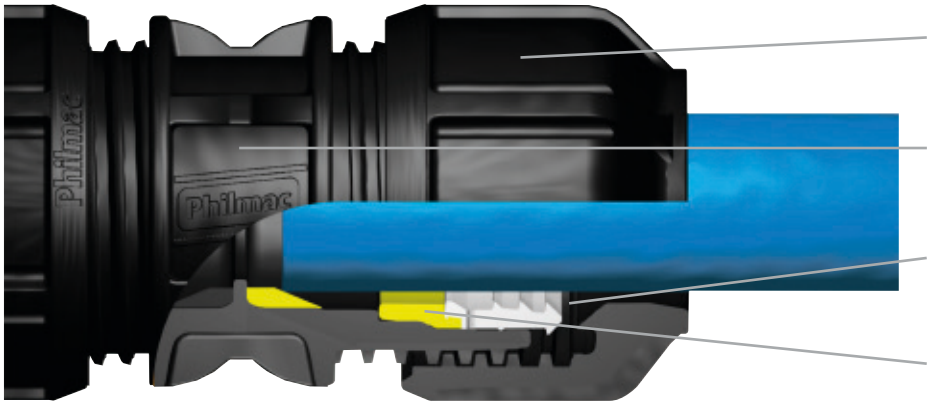
| Chemical | Satisfactory | Not Satisfactory |
|---|---|---|
| Methylene Chloride | | ✔ |
| Nitric Acid | | ✔ |
| Petroleum Oils | ✔ | |
| Sewerage | ✔ | |
| Sodium Cyanide | ✔ | |
| Sulphuric Acid | | ✔ |
| Toluene | | ✔ |
| Turpentine | | ✔ |
| Transformer Oil | ✔ | |
| Zinc Salt Solution | | ✔ |

Note: Fluid Temperature = 20°C



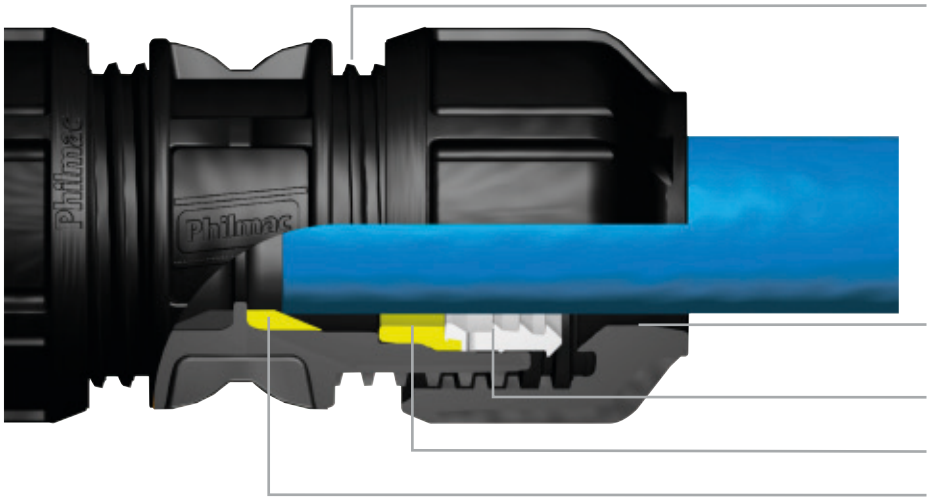
*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Materials & Components




# Principals of Operation

FULLY OPEN

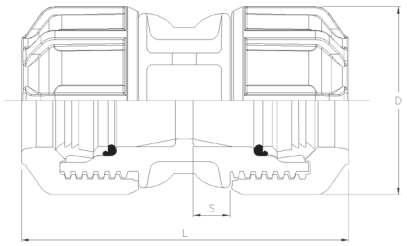



FULLY CLOSED

# Range Dimensions & Weights

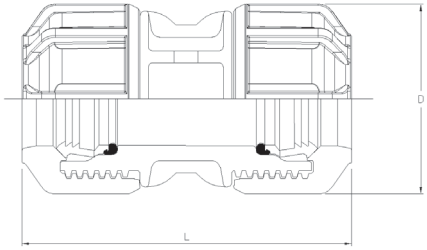
## **JOINERS** [Metric X Metric]

| | | Dimensions mm. | | | kg. |
|---|---|---|---|---|---|
| Size | Part No. | S | D | L | Wt |
| 16 x 16 | 70711100 | 9 | 40 | 76 | 0.03 |
| 20 x 20 | 70712200 | 10 | 47 | 90 | 0.08 |
| 25 x 25 | 70713300 | 11 | 55 | 97 | 0.12 |
| 32 x 32 | 70714400 | 14 | 67 | 118 | 0.20 |
| 40 x 40 | 70715500 | 18 | 81 | 136 | 0.33 |
| 50 x 50 | 70716600 | 24 | 94 | 161 | 0.52 |
| 63 x 63 | 70717700 | 29 | 110 | 182 | 0.76 |



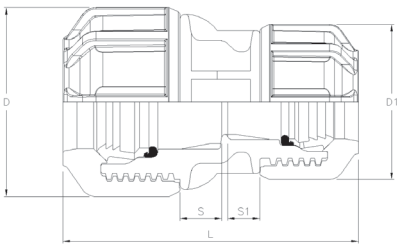

## **SLIP JOINERS** [Metric X Metric]

| | | Dimensions mm. | | kg. |
|---|---|---|---|---|
| Size | Part No. | D | L | Wt |
| 20 x 20 | 70701220 | 47 | 90 | 0.08 |
| 25 x 25 | 70701330 | 55 | 97 | 0.12 |
| 32 x 32 | 70701440 | 67 | 118 | 0.20 |
| 40 x 40 | 70701550 | 81 | 136 | 0.33 |
| 50 x 50 | 70701660 | 94 | 161 | 0.52 |
| 63 x 63 | 70701770 | 110 | 182 | 0.76 |




## **REDUCING JOINERS** [Metric X Metric]

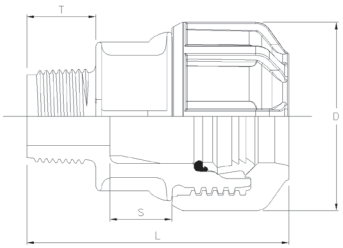
| | | Dimensions mm. | | | | | kg. |
|---|---|---|---|---|---|---|---|
| Size | Part No. | S | S1 | D | D1 | L | Wt |
| 20 x 16 | 70712100 | 10 | 9 | 47 | 40 | 83 | 0.06 |
| 25 x 16 | 70713100 | 11 | 9 | 55 | 40 | 87 | 0.06 |
| 25 x 20 | 70713200 | 11 | 10 | 55 | 47 | 94 | 0.10 |
| 32 x 20 | 70714200 | 14 | 10 | 67 | 47 | 110 | 0.14 |
| 32 x 25 | 70714300 | 14 | 11 | 67 | 55 | 108 | 0.16 |
| 40 x 25 | 70715300 | 18 | 11 | 81 | 55 | 125 | 0.24 |
| 40 x 32 | 70715400 | 18 | 14 | 81 | 67 | 128 | 0.28 |
| 50 x 25 | 70716300 | 24 | 11 | 94 | 55 | 141 | 0.34 |
| 50 x 32 | 70716400 | 24 | 14 | 94 | 67 | 150 | 0.38 |
| 50 x 40 | 70716500 | 24 | 18 | 94 | 81 | 149 | 0.44 |
| 63 x 32 | 70717400 | 29 | 14 | 110 | 67 | 167 | 0.51 |
| 63 x 40 | 70717500 | 29 | 18 | 110 | 81 | 173 | 0.57 |
| 63 x 50 | 70717600 | 29 | 24 | 110 | 94 | 174 | 0.66 |



# Range Dimensions & Weights

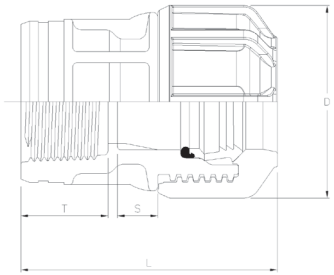
## **END CONNECTORS** [Metric X MI BSP

| | | Dimensions mm. | | | | kg. |
|---|---|---|---|---|---|---|
| Size | Part No. | S | D | L | T | Wt |
| 16 x 1/2" | 70721100 | 16 | 40 | 66 | 19.8 | 0.03 |
| 16 x 3/4" | 70721200 | 16 | 40 | 68 | 21.1 | 0.03 |
| 20 x 1/2" | 70722100 | 17 | 47 | 73 | 19.8 | 0.05 |
| 20 x 3/4" | 70722200 | 17 | 47 | 75 | 21.1 | 0.05 |
| 20 x 1" | 70722300 | 17 | 47 | 78 | 24.4 | 0.05 |
| 25 x 1/2" | 70723100 | 19 | 55 | 81 | 19.8 | 0.07 |
| 25 x 3/4" | 70723200 | 19 | 55 | 82 | 21.1 | 0.07 |
| 25 x 1" | 70723300 | 19 | 55 | 85 | 24.4 | 0.08 |
| 32 x 3/4" | 70724200 | 22 | 67 | 91 | 21.1 | 0.12 |
| 32 x 1" | 70724300 | 22 | 67 | 94 | 24.4 | 0.12 |
| 32 x 1-1/4" | 70724400 | 22 | 67 | 97 | 26.7 | 0.13 |
| 32 x 1-1/2" | 70724500 | 22 | 67 | 97 | 26.7 | 0.13 |
| 40 x 1" | 70725300 | 28 | 81 | 106 | 24.4 | 0.20 |
| 40 x 1-1/4" | 70725400 | 28 | 81 | 109 | 26.7 | 0.20 |
| 40 x 1-1/2" | 70725500 | 28 | 81 | 109 | 26.7 | 0.20 |
| 40 x 2" | 70725600 | 28 | 81 | 112 | 31 | 0.20 |
| 50 x 1-1/2" | 70726500 | 30 | 94 | 118 | 26.7 | 0.30 |
| 50 x 2" | 70726600 | 30 | 94 | 119 | 31 | 0.31 |
| 63 x 1-1/2" | 70727500 | 36 | 110 | 132 | 26.7 | 0.40 |
| 63 x 2" | 70727600 | 36 | 110 | 127 | 31 | 0.41 |




## **END CONNECTORS** [Metric X FI BSP]

| | | Dimensions mm. | | | | kg. |
|---|---|---|---|---|---|---|
| Size | Part No. | S | D | L | T | Wt |
| 16 x 1/2" | 70781100 | 9 | 40 | 62 | 22.8 | 0.03 |
| 16 x 3/4" | 70781200 | 9 | 40 | 63 | 24.1 | 0.04 |
| 20 x 1/2" | 70782100 | 10 | 47 | 71 | 22.8 | 0.05 |
| 20 x 3/4" | 70782200 | 10 | 47 | 70 | 24.1 | 0.05 |
| 20 x 1" | 70782300 | 10 | 47 | 73 | 27.4 | 0.05 |
| 25 x 1/2" | 70783100 | 11 | 55 | 74 | 22.8 | 0.08 |
| 25 x 3/4" | 70783200 | 11 | 55 | 71 | 24.1 | 0.08 |
| 25 x 1" | 70783300 | 11 | 55 | 77 | 27.4 | 0.08 |
| 32 x 3/4" | 70784200 | 14 | 67 | 89 | 24.1 | 0.12 |
| 32 x 1" | 70784300 | 14 | 67 | 88 | 27.4 | 0.13 |
| 32 x 1-1/4" | 70784400 | 14 | 67 | 91 | 30.2 | 0.13 |
| 40 x 1-1/4" | 70785400 | 18 | 81 | 101 | 30.2 | 0.20 |
| 40 x 1-1/2" | 70785500 | 18 | 81 | 101 | 30.2 | 0.21 |
| 50 x 1-1/2" | 70786500 | 24 | 94 | 106 | 30.2 | 0.29 |
| 50 x 2" | 70786600 | 24 | 94 | 107 | 34.5 | 0.30 |
| 63 x 2" | 70787600 | 29 | 110 | 121 | 34.5 | 0.44 |

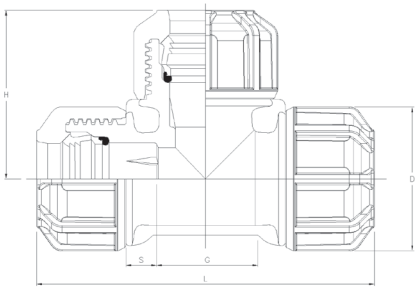



*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Range Dimensions & Weights

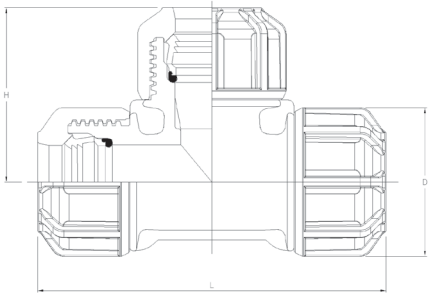
## **TEES** [Metric X Metric X Metric]

| | | Dimensions mm. | | | | | kg. |
|---|---|---|---|---|---|---|---|
| Size | Part No. | S | D | H | G | L | Wt |
| 16 x 16 x 16 | 70731100 | 9 | 40 | 51 | 30 | 102 | 0.08 |
| 20 x 20 x 20 | 70732200 | 10 | 47 | 59 | 31 | 117 | 0.12 |
| 25 x 25 x 25 | 70733300 | 11 | 55 | 67 | 40 | 134 | 0.19 |
| 32 x 32 x 32 | 70734400 | 14 | 67 | 80 | 48 | 160 | 0.33 |
| 40 x 40 x 40 | 70735500 | 18 | 81 | 95 | 50 | 182 | 0.53 |
| 50 x 50 x 50 | 70736600 | 24 | 94 | 101 | 60 | 202 | 0.80 |
| 63 x 63 x 63 | 70737700 | 29 | 110 | 118 | 73 | 236 | 1.22 |



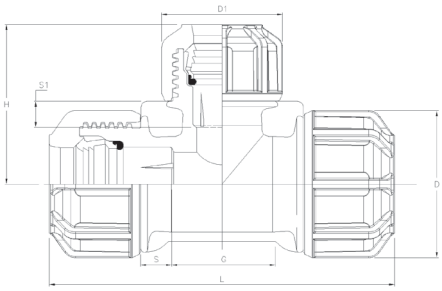
## **SLIP TEES** [Metric X Metric X Metric]

| | | Dimensions mm. | | | kg. |
|---|---|---|---|---|---|
| Size | Part No. | D | H | L | Wt |
| 20 x 20 x 20 | 70703220 | 47 | 59 | 117 | 0.12 |
| 25 x 25 x 25 | 70703330 | 55 | 67 | 134 | 0.19 |
| 32 x 32 x 32 | 70703440 | 67 | 80 | 160 | 0.33 |
| 40 x 40 x 40 | 70703550 | 81 | 95 | 182 | 0.53 |
| 50 x 50 x 50 | 70703660 | 94 | 101 | 202 | 0.80 |
| 63 x 63 x 63 | 70703770 | 110 | 118 | 236 | 1.22 |



## **REDUCING TEES** [Metric X Metric X Metric]

| | | Dimensions mm. | | | | | | | kg. |
|---|---|---|---|---|---|---|---|---|---|
| Size | Part No. | S | S1 | D | D1 | H | G | L | Wt |
| 25 x 25 x 20 | 70733200 | 11 | 10 | 55 | 47 | 64 | 40 | 134 | 0.18 |
| 25 x 25 x 32 | 70733400 | 11 | 14 | 55 | 64 | 69 | 40 | 134 | 0.24 |
| 32 x 32 x 25 | 70734300 | 14 | 11 | 67 | 55 | 74 | 40 | 160 | 0.30 |
| 40 x 40 x 25 | 70735300 | 18 | 11 | 81 | 55 | 74 | 34 | 166 | 0.40 |
| 40 x 40 x 32 | 70735400 | 18 | 14 | 81 | 67 | 84 | 39 | 171 | 0.46 |
| 50 x 50 x 25 | 70736300 | 20 | 11 | 94 | 55 | 81 | 35 | 182 | 0.63 |
| 50 x 50 x 32 | 70736400 | 20 | 14 | 94 | 67 | 90 | 40 | 187 | 0.66 |
| 50 x 50 x 40 | 70736500 | 24 | 21 | 94 | 81 | 98 | 60 | 197 | 0.70 |
| 63 x 63 x 25 | 70737300 | 24 | 11 | 110 | 55 | 88 | 29 | 196 | 0.82 |
| 63 x 63 x 32 | 70737400 | 24 | 14 | 110 | 67 | 98 | 34 | 201 | 0.87 |
| 63 x 63 x 50 | 70737600 | 29 | 24 | 110 | 94 | 111 | 73 | 220 | 1.05 |



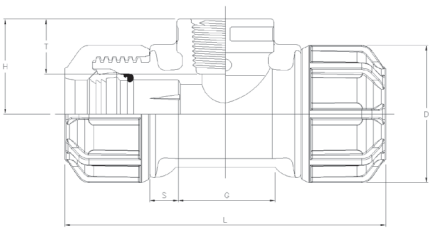


*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Range Dimensions & Weights

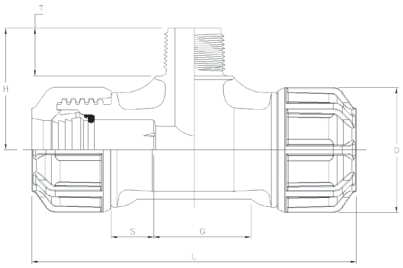
## **TEES** [Metric X Metric X FI BSP]

| | | Dimensions mm. | | | | | | kg. |
|---|---|---|---|---|---|---|---|---|
| Size | Part No. | S | D | H | G | L | T | Wt |
| 16 x 16 x 1/2" | 70741100 | 9 | 40 | 33 | 30 | 102 | 22.8 | 0.06 |
| 20 x 20 x 1/2" | 70742100 | 10 | 47 | 38 | 31 | 117 | 22.8 | 0.09 |
| 20 x 20 x 3/4" | 70742200 | 10 | 47 | 38 | 31 | 117 | 24.1 | 0.10 |
| 25 x 25 x 1/2" | 70743100 | 11 | 55 | 40 | 40 | 134 | 22.8 | 0.14 |
| 25 x 25 x 3/4" | 70743200 | 11 | 55 | 41 | 40 | 134 | 24.1 | 0.15 |
| 25 x 25 x 1" | 70743300 | 11 | 55 | 44 | 40 | 134 | 27.4 | 0.16 |
| 32 x 32 x 1/2" | 70744100 | 14 | 67 | 42 | 20 | 135 | 22.8 | 0.21 |
| 32 x 32 x 3/4" | 70744200 | 14 | 67 | 44 | 48 | 160 | 24.1 | 0.24 |
| 32 x 32 x 1" | 70744300 | 14 | 67 | 44 | 48 | 160 | 27.4 | 0.25 |
| 32 x 32 x 1-1/4" | 70744400 | 14 | 67 | 50 | 48 | 160 | 30.2 | 0.26 |
| 40 x 40 x 1/2" | 70745100 | 18 | 81 | 48 | 19 | 151 | 22.8 | 0.33 |
| 40 x 40 x 3/4" | 70745200 | 18 | 81 | 50 | 24 | 156 | 24.1 | 0.34 |
| 40 x 40 x 1-1/4" | 70745400 | 18 | 81 | 56 | 50 | 182 | 30.2 | 0.41 |
| 40 x 40 x 1-1/2" | 70745500 | 18 | 81 | 56 | 50 | 182 | 30.2 | 0.41 |
| 50 x 50 x 1/2" | 70746100 | 24 | 94 | 54 | 19 | 175 | 22.8 | 0.51 |
| 50 x 50 x 3/4" | 70746200 | 24 | 94 | 57 | 24 | 181 | 24.1 | 0.53 |
| 50 x 50 x 1-1/2" | 70746500 | 24 | 94 | 67 | 60 | 197 | 30.2 | 0.58 |
| 50 x 50 x 2" | 70746600 | 24 | 94 | 71 | 60 | 213 | 34.5 | 0.63 |
| 63 x 63 x 2" | 70747600 | 29 | 110 | 77 | 73 | 226 | 34.5 | 0.89 |



## **TEES** [Metric X Metric X MI BSP]

| | | Dimensions mm. | | | | | | kg. |
|---|---|---|---|---|---|---|---|---|
| Size | Part No. | S | D | H | G | L | T | Wt |
| 25 x 25 x 1/2" | 70793100 | 11 | 55 | 53 | 35 | 114 | 19.8 | 0.14 |
| 25 x 25 x 3/4" | 70793200 | 11 | 55 | 54 | 35 | 114 | 21.1 | 0.15 |

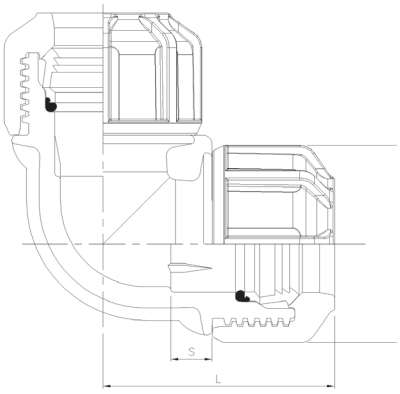


*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Range Dimensions & Weights

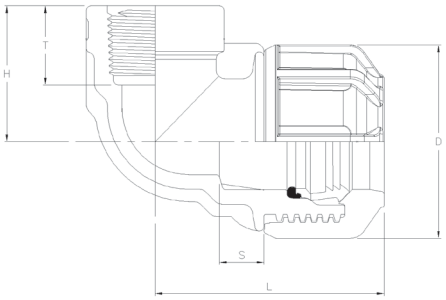
## **ELBOWS** [Metric X Metric]

| Size | Part No. | Dimensions mm. S | D | L | kg. Wt |
|---|---|---|---|---|---|
| 16 x 16 | 70751100 | 9 | 40 | 51 | 0.05 |
| 20 x 20 | 70752200 | 10 | 47 | 59 | 0.07 |
| 25 x 20 | 70753200 | 11 | 55 | 65 | 0.08 |
| 25 x 25 | 70753300 | 11 | 55 | 67 | 0.13 |
| 32 x 32 | 70754400 | 14 | 67 | 80 | 0.22 |
| 40 x 40 | 70755500 | 18 | 81 | 91 | 0.36 |
| 50 x 50 | 70756600 | 24 | 94 | 101 | 0.55 |
| 63 x 63 | 70757700 | 29 | 110 | 118 | 0.85 |



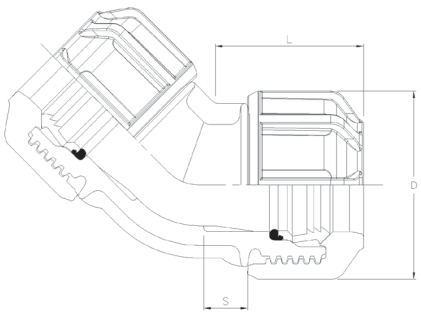

## **ELBOWS** [Metric X FI BSP]

| Size | Part No. | Dimensions mm. S | D | H | L | T | kg. Wt |
|---|---|---|---|---|---|---|---|
| 16 x 1/2" | 70761100 | 9 | 40 | 67 | 51 | 22.8 | 0.04 |
| 20 x 1/2" | 70762100 | 10 | 47 | 73 | 59 | 22.8 | 0.05 |
| 20 x 3/4" | 70762200 | 10 | 47 | 73 | 59 | 24.1 | 0.06 |
| 25 x 1/2" | 70763100 | 11 | 55 | 88 | 67 | 22.8 | 0.08 |
| 25 x 3/4" | 70763200 | 11 | 55 | 88 | 67 | 24.1 | 0.08 |
| 25 x 1" | 70763300 | 11 | 55 | 88 | 67 | 27.4 | 0.09 |
| 32 x 1" | 70764300 | 14 | 67 | 105 | 80 | 27.4 | 0.14 |
| 32 x 1-1/4" | 70764400 | 14 | 67 | 105 | 81 | 30.2 | 0.15 |
| 40 x 1-1/4" | 70765400 | 18 | 81 | 126 | 91 | 30.2 | 0.23 |
| 40 x 1-1/2" | 70765500 | 18 | 81 | 126 | 91 | 30.2 | 0.24 |
| 50 x 1-1/2" | 70766500 | 24 | 94 | 142 | 101 | 30.2 | 0.33 |
| 50 x 2" | 70766600 | 24 | 94 | 142 | 106 | 34.5 | 0.38 |
| 63 x 2" | 70767600 | 29 | 110 | 160 | 113 | 34.5 | 0.53 |




## **ELBOWS 45°** [Metric X Metric]

| Size | Part No. | Dimensions mm. S | D | L | kg. Wt |
|---|---|---|---|---|---|
| 20 x 20 | 70702800 | 10 | 47 | 47 | 0.07 |
| 25 x 25 | 70703800 | 11 | 55 | 50 | 0.13 |
| 32 x 32 | 70704800 | 14 | 67 | 53 | 0.23 |
| 40 x 40 | 70705800 | 18 | 81 | 67 | 0.36 |
| 50 x 50 | 70706800 | 24 | 94 | 81 | 0.56 |
| 63 x 63 | 70707800 | 29 | 110 | 97 | 0.85 |



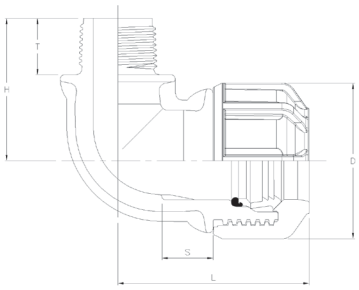



*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Range Dimensions & Weights

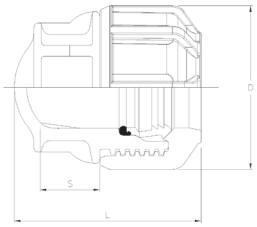
## **ELBOWS** [Metric X MI BSP]

| | | Dimensions mm. | | | | | kg. |
|---|---|---|---|---|---|---|---|
| Size | Part No. | S | D | H | L | T | Wt |
| 20 x 1/2" | 70772100 | 12 | 47 | 43 | 57 | 19.8 | 0.06 |
| 25 x 3/4" | 70773200 | 13 | 55 | 49 | 65 | 21.1 | 0.07 |
| 32 x 1" | 70774300 | 14 | 67 | 68 | 69 | 24.1 | 0.07 |



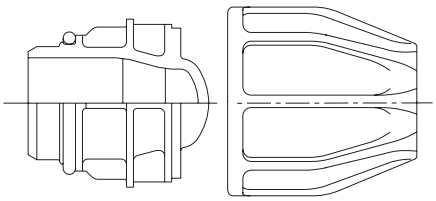
## **END CAPS** [Metric]

| | | Dimensions mm. | | | kg. |
|---|---|---|---|---|---|
| Size | Part No. | S | D | L | Wt |
| 16 | 70701900 | 18 | 40 | 50 | 0.02 |
| 20 | 70702900 | 19 | 47 | 58 | 0.04 |
| 25 | 70703900 | 23 | 55 | 68 | 0.07 |
| 32 | 70704900 | 24 | 67 | 78 | 0.11 |
| 40 | 70705900 | 31 | 81 | 92 | 0.19 |
| 50 | 70706900 | 33 | 94 | 105 | 0.29 |
| 63 | 70707900 | 41 | 110 | 124 | 0.45 |



## **BLANKING SETS**

| Size (OD) | Ref No |
|---|---|
| 20mm | 97 7022 00 |
| 25mm | 97 7033 00 |
| 32mm | 97 7044 00 |
| 40mm | 97 7055 00 |
| 50mm | 97 7066 00 |
| 63mm | 97 7077 00 |

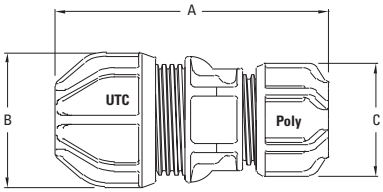


*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Range Dimensions & Weights

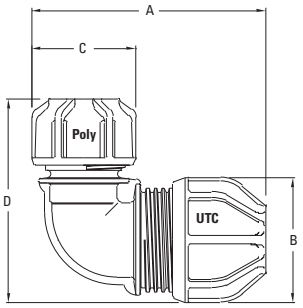
## **COUPLER** (UTC® X Poly)

| Size | Part No. | Dimensions mm. A | B | C | kg. Wt |
|---|---|---|---|---|---|
| 15-21mm UTC x 20 | 70103200 | 114 | 54 | 47 | 0.51 |
| 15-21mm UTC x 25 | 70103300 | 119 | 54 | 55 | 0.60 |
| 21-27mm UTC x 20 | 70104200 | 132 | 66 | 47 | 0.73 |
| 21-27mm UTC x 25 | 70104300 | 130 | 66 | 55 | 0.75 |
| 27-34mm UTC x 20 | 70105200 | 147 | 80 | 47 | 0.93 |
| 27-34mm UTC x 25 | 70105300 | 149 | 80 | 55 | 1.16 |
| 27-34mm UTC x 32 | 70105400 | 150 | 80 | 67 | 1.34 |
| 27-34mm UTC x 40 | 70105500 | 151 | 80 | 81 | 1.43 |
| 39-43mm UTC x 32 | 70106400 | 168 | 96 | 67 | 1.91 |
| 34-39mm UTC x 32 | 70107400 | 153 | 80 | 67 | 1.61 |
| 34-39mm UTC x 40 | 70107500 | 163 | 80 | 81 | 1.93 |
| 47-49mm UTC x 50 | 70108600 | 199 | 96 | 94 | 3.23 |
| 47-49mm UTC x 63 | 70108700 | 201 | 96 | 110 | 3.91 |
| 59-61mm UTC x 63 | 70109700 | 227 | 113 | 110 | 4.51 |




## **ELBOW 90°** (UTC® X Poly)

| Size | Part No. | Dimensions mm. A | B | C | D | kg. Wt |
|---|---|---|---|---|---|---|
| 15-21mm UTC x 20 | 70152300 | 110 | 54 | 47 | 96 | 0.60 |
| 15-21mm UTC x 25 | 70153300 | 112 | 54 | 55 | 98 | 0.66 |
| 21-27mm UTC x 25 | 70154300 | 119 | 66 | 55 | 106 | 0.84 |
| 21-27mm UTC x 32 | 70154400 | 132 | 66 | 67 | 117 | 1.12 |
| 27-34mm UTC x 25 | 70155300 | 132 | 80 | 55 | 118 | 1.16 |
| 27-34mm UTC x 32 | 70155400 | 142 | 80 | 67 | 126 | 1.40 |




UTC® seals on a wide range of water service pipes and connects to hard and soft materials.

The large rubber seal in UTC® works particularly well on sealing Out-of-Round and Pitted metal pipes.
These include PVC, copper, galvanised, iron, ABS, lead, stainless steel and PE.
Other pipe materials, please consult Philmac or a local representative.

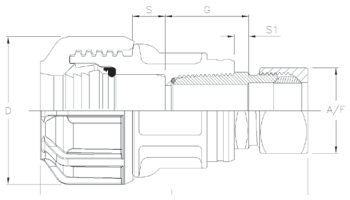


*For advice on chemical resistance properties please contact your nearest Philmac representative.

# Range Dimensions & Weights

## **TRANSITION FITTINGS (JOINERS/COUPLING)*** (PE Metric x Copper – AS1432)

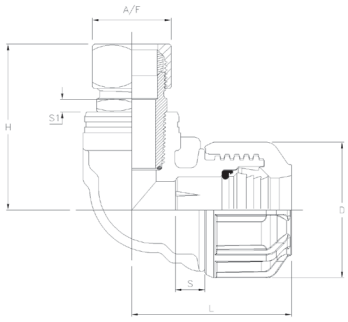
| | | Dimensions mm. | | | | | | kg. |
|---|---|---|---|---|---|---|---|---|
| Size (OD x BSP) | Ref No | S | S1 | D | G | A/F | L | Wt |
| 16mm x ½" | 70621100 | 9 | 6 | 40 | 32 | 25.4 | 93 | 0.13 |
| 20mm x ½" | 70622100 | 10 | 6 | 47 | 33 | 25.4 | 108 | 0.14 |
| 20mm x ¾" | 70622200 | 10 | 6 | 47 | 33 | 31.8 | 108 | 0.19 |
| 25mm x ½" | 70623100 | 11 | 6 | 56 | 33 | 25.4 | 120 | 0.18 |
| 25mm x ¾" | 70623200 | 11 | 6 | 56 | 33 | 31.8 | 123 | 0.22 |
| 32mm x ¾" | 70624200 | 14 | 6 | 69 | 33 | 31.8 | 140 | 0.30 |




*Supplied with Nut (DR Brass) and Olive.

## **TRANSITION FITTINGS (ELBOWS)*** (PE Metric x Copper – AS1432)

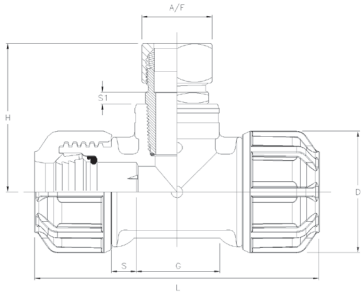
| | | Dimensions mm. | | | | | | kg. |
|---|---|---|---|---|---|---|---|---|
| Size (OD) | Ref No | S | S1 | D | H | A/F | L | Wt |
| 20mm x ½" | 70672100 | 10 | 6 | 47 | 62 | 25.4 | 59 | 0.16 |
| 25mm x ½" | 70673100 | 11 | 6 | 56 | 66 | 25.4 | 67 | 0.19 |
| 25mm x ¾" | 70673200 | 11 | 6 | 56 | 67 | 31.8 | 67 | 0.23 |




*Supplied with Nut (DR Brass) and Olive.

## **TRANSITION FITTINGS (TEES)*** (PE Metric x Copper – AS1432)

| | | Dimensions mm. | | | | | | | kg. |
|---|---|---|---|---|---|---|---|---|---|
| Size (OD x BSP) | Ref No | S | S1 | D | H | G | A/F | L | Wt |
| 20mm x 20mm x ½" | 70692100 | 11 | 6 | 56 | 62 | 40 | 25.4 | 117 | 0.2 |
| 25mm x 25mm x ½" | 70693100 | 11 | 6 | 56 | 66 | 40 | 25.4 | 134 | 0.26 |
| 25mm x 25mm x ¾" | 70693200 | 11 | 6 | 56 | 67 | 40 | 31.8 | 134 | 0.31 |




*Supplied with Nut (DR Brass) and Olive.

*For advice on chemical resistance properties please contact your nearest Philmac representative.


Ph: 1800 755 899
Fax: 1800 244 688
sales_orders@philmac.com.au
collect_orders@philmac.com.au

Head Office Philmac Pty Ltd

47-59 Deeds Road
North Plympton SA 5037 Australia

ABN: 17 007 873 047



PHI1633 06/24


Philmac

The connection you can trust.