

3 G METRIC™

**Connect with the  
Next Generation.**



**Philmac®**

The connection you can trust.

**3G**  
METRIC

## INTRODUCTION

Philmac, Australia's premier manufacturer of plastic compression fittings for polyethylene pipelines is proud to release 3G Metric – our third and very latest generation of fittings to connect metric sized poly pipe.

Having taken international markets by storm since its release in 2005, 3G Metric is now set to make metric poly pipe connections in Australia easier than ever before. The culmination of years of research & development and utilisation of cutting-edge manufacturing technology and stringent testing, this new range of fittings is smaller, tougher and faster to use than ever before. And, its 100% compatible with Australia's number one fitting to join rural poly pipe, Philmac Rural.

Designed to make the job at hand so much easier, the 3G Metric plastic compression fitting is the product of Philmac's unrelenting commitment to continuous improvement and a culture based on innovation and ingenuity.

## FEATURES & BENEFITS



# 3G Metric. Connect with the Next Generation.



## 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 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.

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

## 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, 3G Metric™ has been 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 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 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

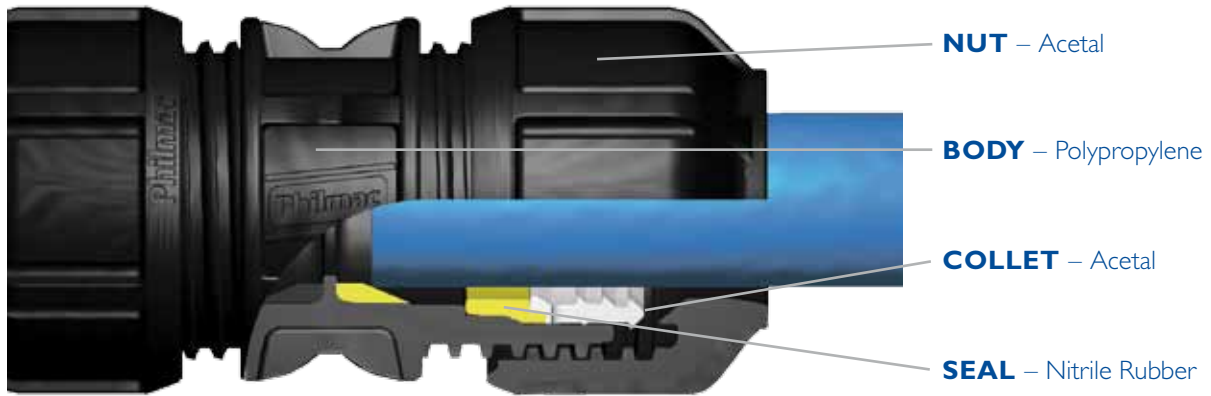
Philmac 3G Metric™ may convey a wide variety of fluids. The following table is provided as a guide only for the compatibility of various chemicals to Philmac 3G Metric™. Contact Philmac for advice on specific applications.

## CHEMICAL RESISTANCE

Chemical	Satisfactory	Not Satisfactory
Air	▲	
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	▲	

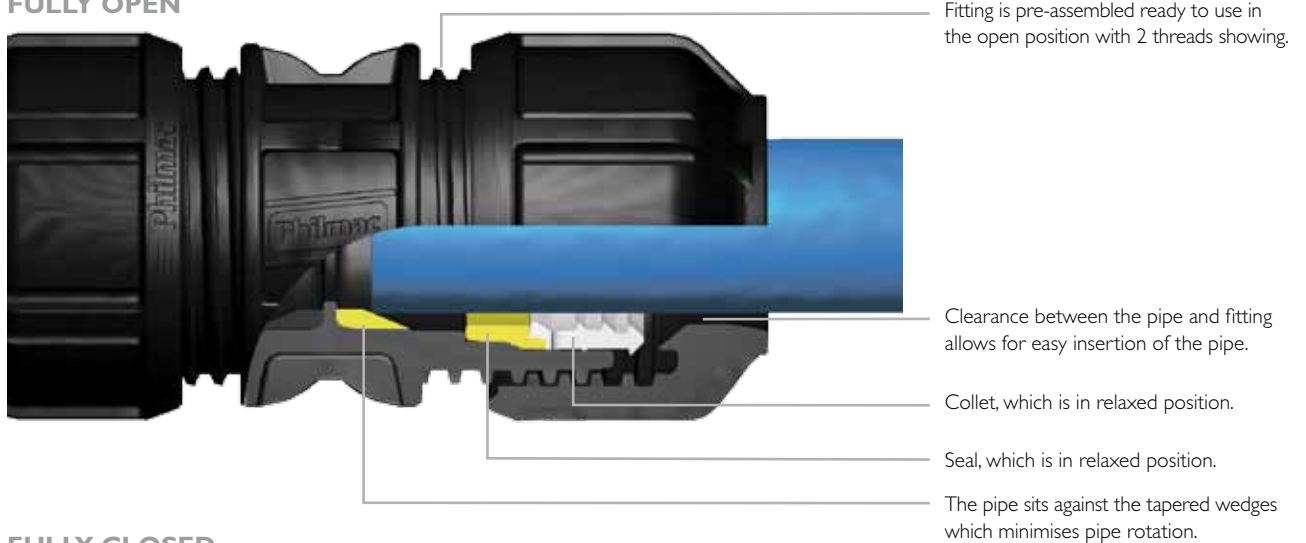
Note: Fluid Temperature = 20°C

## MATERIALS & COMPONENTS

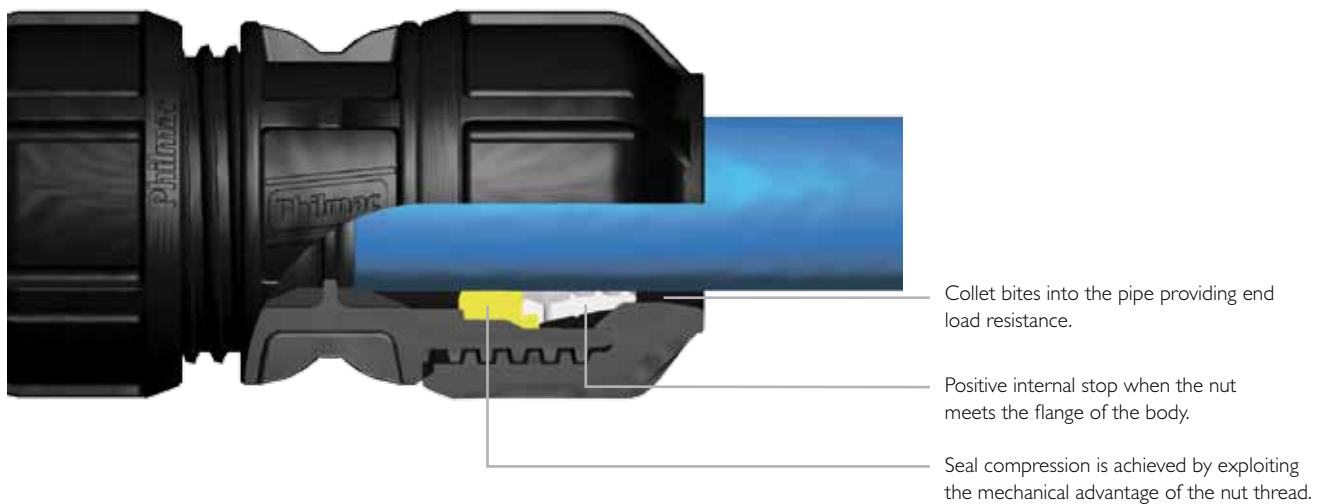


## PRINCIPALS OF OPERATION

### FULLY OPEN



### FULLY CLOSED



## RANGE DETAILS

### JOINERS (Metric X Metric)

Size	Part No.
16 x 16	70711100
20 x 20	70712200
25 x 25	70713300
32 x 32	70714400
40 x 40	70715500
50 x 50	70716600
63 x 63	70717700



### SLIP JOINERS (Metric X Metric)

Size	Part No.
20 x 20	70701220
25 x 25	70701330
32 x 32	70701440
40 x 40	70701550
50 x 50	70701660
63 x 63	70701770



### REDUCING JOINERS (Metric X Metric)

Size	Part No.
20 x 16	70712100
25 x 16	70713100
25 x 20	70713200
32 x 20	70714200
32 x 25	70714300
40 x 25	70715300
40 x 32	70715400
50 x 25	70716300
50 x 32	70716400
50 x 40	70716500
63 x 32	70717400
63 x 40	70717500
63 x 50	70717600



### TEES (Metric X Metric X Metric)

Size	Part No.
16 x 16 x 16	70731100
20 x 20 x 20	70732200
25 x 25 x 25	70733300
32 x 32 x 32	70734400
40 x 40 x 40	70735500
50 x 50 x 50	70736600
63 x 63 x 63	70737700



### REDUCING TEES (Metric X Metric X Metric)

Size	Part No.
25 x 25 x 20	70733200
25 x 25 x 32	70733400
32 x 32 x 25	70734300
40 x 40 x 25	70735300
40 x 40 x 32	70735400
50 x 50 x 25	70736300
50 x 50 x 32	70736400
50 x 50 x 40	70736500
63 x 63 x 25	70737300
63 x 63 x 32	70737400
63 x 63 x 50	70737600



### END CONNECTORS (Metric X FI BSP)

Size	Part No.
16 x 1/2"	70781100
16 x 3/4"	70781200
20 x 1/2"	70782100
20 x 3/4"	70782200
20 x 1"	70782300
25 x 1/2"	70783100
25 x 3/4"	70783200
25 x 1"	70783300
32 x 3/4"	70784200
32 x 1"	70784300
32 x 1-1/4"	70784400
40 x 1-1/4"	70785400
40 x 1-1/2"	70785500
50 x 1-1/2"	70786500
50 x 2"	70786600
63 x 2"	70787600



### END CONNECTORS (Metric X MI BSP)

Size	Part No.
16 x 1/2"	70721100
16 x 3/4"	70721200
20 x 1/2"	70722100
20 x 3/4"	70722200
20 x 1"	70722300
25 x 1/2"	70723100
25 x 3/4"	70723200
25 x 1"	70723300
32 x 3/4"	70724200
32 x 1"	70724300
32 x 1-1/4"	70724400
32 x 1-1/2"	70724500
40 x 1"	70725300
40 x 1-1/4"	70725400
40 x 1-1/2"	70725500
40 x 2"	70725600
50 x 1-1/2"	70726500
50 x 2"	70726600
63 x 1-1/2"	70727500
63 x 2"	70727600



### TEES (Metric X Metric X FI BSP)

Size	Part No.
16 x 16 x 1/2"	70741100
20 x 20 x 1/2"	70742100
20 x 20 x 3/4"	70742200
25 x 25 x 1/2"	70743100
25 x 25 x 3/4"	70743200
25 x 25 x 1"	70743300
32 x 32 x 1/2"	70744100
32 x 32 x 3/4"	70744200
32 x 32 x 1"	70744300
32 x 32 x 1-1/4"	70744400
40 x 40 x 1/2"	70745100
40 x 40 x 3/4"	70745200
40 x 40 x 1-1/4"	70745400
40 x 40 x 1-1/2"	70745500
50 x 50 x 1/2"	70746100
50 x 50 x 3/4"	70746200
50 x 50 x 1-1/2"	70746500
50 x 50 x 2"	70746600
63 x 63 x 2"	70747600





## RANGE DETAILS

### SLIP TEES (Metric X Metric X Metric)

Size	Part No.
20 x 20 x 20	70703220
25 x 25 x 25	70703330
32 x 32 x 32	70703440
40 x 40 x 40	70703550
50 x 50 x 50	70703660
63 x 63 x 63	70703770



### END CAPS (Metric)

Size	Part No.
16	70701900
20	70702900
25	70703900
32	70704900
40	70705900
50	70706900
63	70707900



### TEES (Metric X Metric X MI BSP)

Size	Part No.
25 x 25 x 1/2"	70793100
25 x 25 x 3/4"	70793200



### BLANKING SETS

Size	Part 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



### ELBOWS (Metric X Metric)

Size	Part No.
16 x 16	70751100
20 x 20	70752200
25 x 20	70753200
25 x 25	70753300
32 x 32	70754400
40 x 40	70755500
50 x 50	70756600
63 x 63	70757700



### WALL PLATE ELBOWS

Size	Part No.
20 x 1/2" BSP	71022900
25 x 3/4" BSP	71023900



### ELBOWS (Metric X FI BSP)

Size	Part No.
16 x 1/2"	70761100
20 x 1/2"	70762100
20 x 3/4"	70762200
25 x 1/2"	70763100
25 x 3/4"	70763200
25 x 1"	70763300
32 x 1"	70764300
32 x 1-1/4"	70764400
40 x 1-1/4"	70765400
40 x 1-1/2"	70765500
50 x 1-1/2"	70766500
50 x 2"	70766600
63 x 2"	70767600



### ELBOWS (Metric X MI BSP)

Size	Part No.
20 x 1/2"	70772100
25 x 3/4"	70773200
32 x 1"	70774300



**Quality  
Endorsed  
Company**

ISO 9001:2000  
License No. 2558  
SAI Global



**Certified  
Environmental  
Management**

ISO 14001 Lic: CEM20307  
SAI Global



**NATA Accredited  
Laboratory  
Number: 14673**

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.

