

### Experience and Innovation

Continuous innovations, supported by several years of experience, allow us to satisfy our customers throughout the world. We are able to efficiently combine the strength of our experience with knowledge of the newest technologies in order to further assist our customers.

### Customer Care

Thanks to the biggest capacity in this sector **Twistloc** is able to guarantee on time delivery. We export to more than ten countries in the world through SNC's international corporate structure.

### Technical Assistance

To assist our customers we have a staff dedicated to providing technical assistance. We can provide assistance in new technologies.

### Partnership

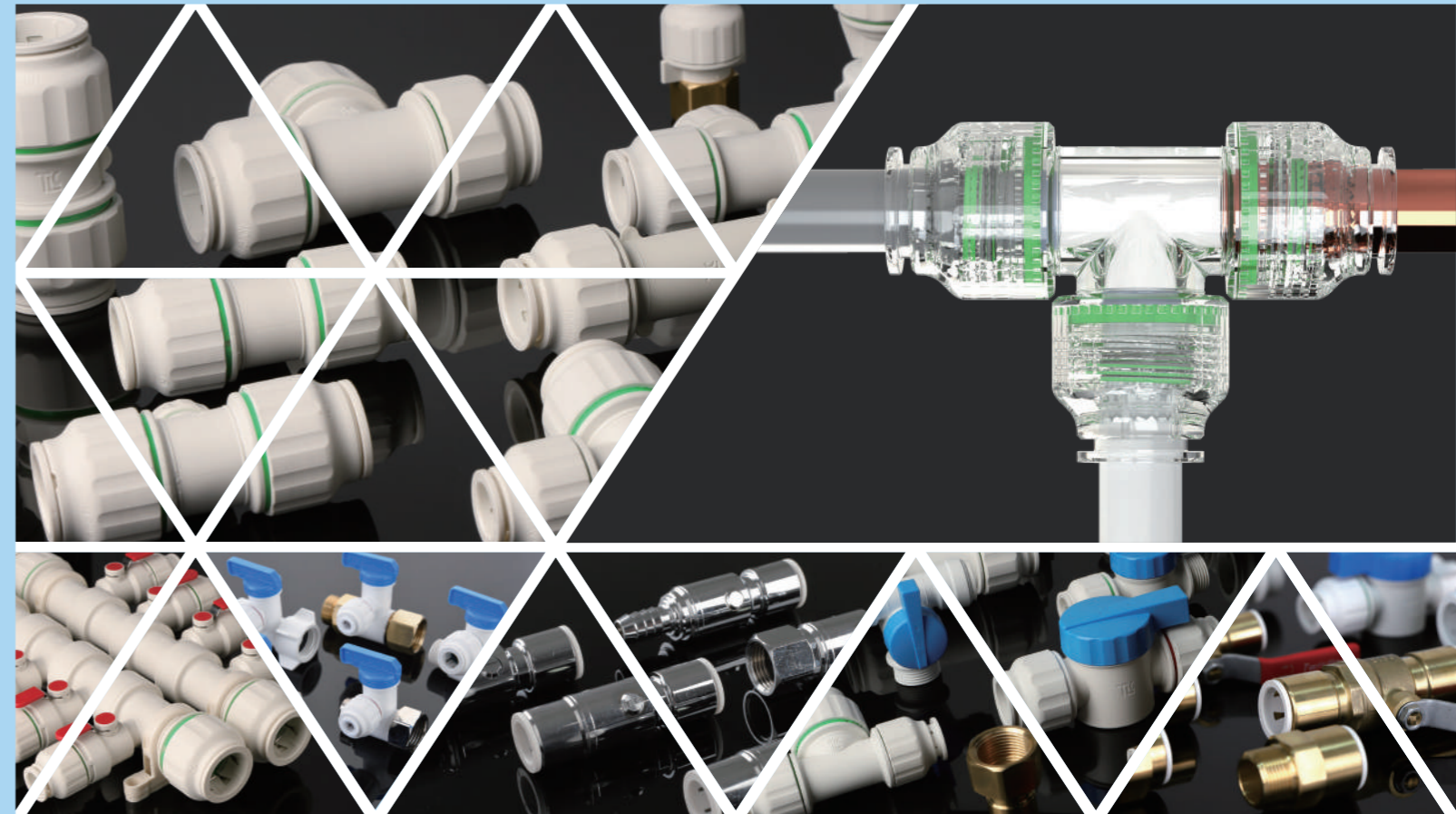
Our people work in concert with our customers and suppliers to develop and manufacture solutions that add value to the finished product. Let us work with you on your projects.

AUTHORIZED SALES REPRESENTATIVE

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# Twistloc®

The Visible Connection



## SNC CORPORATION

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# Contents

## Introduction

About Us .....	3
Warranty .....	3
Benefits .....	4
Approvals .....	5
Cautions .....	6
Making a perfect connection .....	7 - 8
Technical Information .....	9 - 11

## Product - Metric Sizes

White Fittings .....	13 - 15
Grey Fittings .....	16
DZR Brass Fittings .....	17
Plastic Valves .....	18 - 19
Brass Valves .....	19
Accessories .....	20

## Product - CTS sizes

White Fittings .....	21 - 23
Black Fittings .....	24 - 25
Plastic Valves .....	25
Accessories .....	26

## Manifolds .....

27 - 30

## Repair Couplings .....

31 - 32

## Installation Solution .....

33 - 35

## Angle Check Valve - Backflow prevention .....

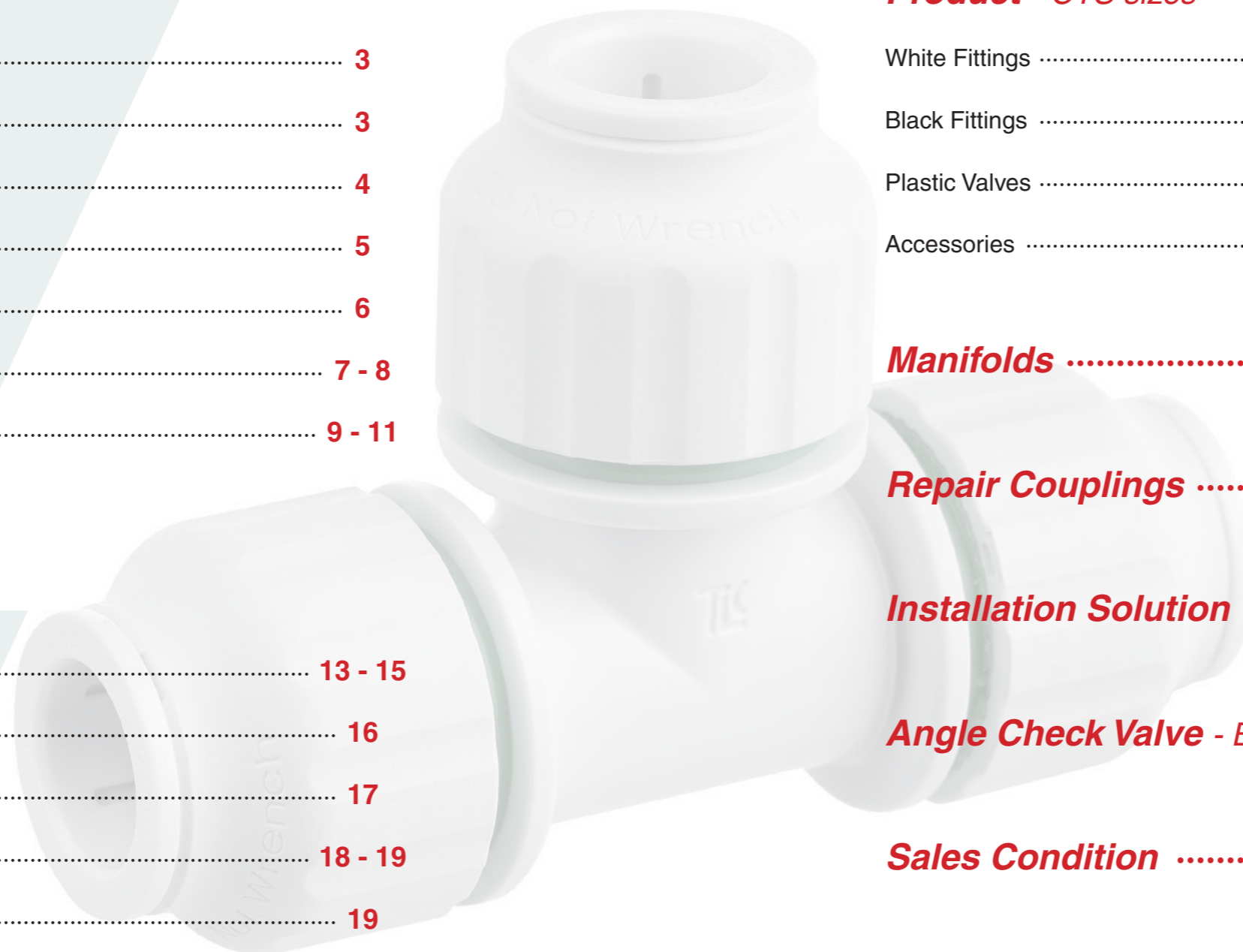
36

## Sales Condition .....

37

## Warranty Policy .....

38





## About US

Since 2007, as a leading manufacturer of Twist and Lock push-fit fittings, all of us at SNC are committed to continuous R&D activities to return our clients' affection with consistent and good quality products.

With our reputation for reliable products developments in the field of residential and commercial plastic plumbing and heating systems, SNC are proud to introduce our latest product range.

The core value of the SNC products lies in quality competitiveness and quality value. Strict quality control is implemented throughout the processes from design to production at its Incheon KOREA factory.

Total quality control is applied to the entire processes from the beginning of the initial design process to production, final assembly, post production test and packaging ensuring the best quality output.

Based on its quality competitiveness and value, SNC has been accredited by the world leading certification agencies.

We are committed to constant research and development, and all product specifications in this catalog are subject to change without notice. For further information, please contact your local Sales Representative.

## Warranty 50 Year

SNC products under long-term test programs and strict quality standards are backed by a 50-year warranty provided that they are installed to a pipe which has been produced in conformity with the plumbing and heating standards by a licensed plumbing contractor in accordance with installation instructions provided by SNC and applicable plumbing and heating requirements.

We take special care to select high quality materials and use manufacturing techniques that allow us to create products incorporating design and durability. This **Twistloc** range of water supply push-fit fittings has a manufacturer's guarantee of 50 years against manufacturing defects from the date of original purchase. For our full Warranty Policy, please refer to our literature p.38 or our website [https://www.twistloc.com/home/sub05\\_05.php](https://www.twistloc.com/home/sub05_05.php).



## Special Applications:

Boats	<b>Twistloc</b> system is flexible, allowing cables to be connected and easily hidden from view from the inside.
Caravan(RV)	<b>Twistloc</b> is ideal for caravan installation due to its flexibility and resistance to corrosion and freezing.
Exhibition	<b>Twistloc</b> is ideal for this application with unique features and the flexibility to easily separate and reuse.
Agriculture and Horticulture	<b>Twistloc</b> has many applications in agriculture and horticultural environments.
Mobile Home	<b>Twistloc</b> is ideal for this application, just like caravans.

## Why choose Twistloc®

The technology in **Twistloc** push-in fittings offers greater security and efficiency compared to other traditional fittings and valves, giving you the reassurance that the products you're installing are built to last. All plastic fittings and valves can be designated with a visual colour connection, ensuring that the connection is secure.

**Twistloc** products are certified for use with PEX, PB, Copper and cPVC pipe, making it easy to combine different types of pipe for repairs or new installations. Our products are easy to install and can help save labour time substantially.

## Key features and benefits:

- Simple and Easy to install.
- Secure connection indicator helps confirm leak-free joints.
- Easy verification of coupling (lock/unlock) status, even from a distance.
- Removable and reusable without damage to plumbing or fittings.
- Lightweight for easy handling.
- Strong connection suitable for heating systems.
- Product traceability code printed on the product to track manufacturing quality control.
- Flame-free, no need for a blowtorch.
- No corrosion or mineral build-up.
- Low heat diffusion ensures safe surface temperature.
- More resistant to bursting under freezing temperatures.
- No lead, non-toxic.



**Twistloc** products are a one step, fully demountable and reusable push-fit plumbing system which combines both push-fit and twist locking technology to offer a guaranteed secure, peace of mind leak free joint. **Twistloc** which incorporates pressure and combination system, is the Twist and Lock system suitable for plumbing, local/home hot water supply and heating systems. **Twistloc** products have been tested and approved in accordance with WRAS, Kitemarked to BS 7291 Parts 1,2 and 3 Class S, cUPC, NSF, Water marked to AS 4176.3 and ACS. Our products provide for the perfect plumbing system and are manufactured to ISO 9001 BSI standard. The specification of products complied with the requirement of central local/home heating and water supply systems. Various test have proved that **Twistloc** products are resistant to temperature and pressure beyond the normal operation ranges. The secure connection indicator means that once the green band can no longer be seen, you'll have absolute certainty that the joint is properly connected. This means you can be rest assured, knowing that you won't have to worry about future issues with leaks due to imperfect joining. The secure connection indicator is patented by our manufacturer. Not only does it make installations easier and safer, but is also straightforward and simple to use. **Twistloc** products must be installed to the correct plumbing regulations. Follow our installation guide for further information on correct fitting.

## Approvals

**Twistloc**® products are a one step, fully demountable and reusable push-fit plumbing system which combines both push-fit and twist locking technology to offer a guaranteed secure, peace of mind leak free joint.

**Twistloc**® which incorporates pressure and combination system, is the Twist and Lock system suitable for plumbing, local/home hot water supply and heating systems.

**Twistloc**® products have been tested and approved by WRAS, Kitemarked to BS 7291 Parts 1,2 and 3 Class S, cUPC, NSF, Water marked to AS 4176.3 and ACS.

**Twistloc**® products are manufactured in compliance with BS 7291, AS 4176.3, ASSE 1061, IGC 188, IAPMO/ANSI Z1157, NSF/ANSI/CAN 61 & 372, NSF/ANSI 14 and ASTM F877.

**Twistloc**® quality system is certified by BSI to BS EN ISO 9001.

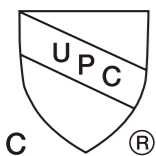
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The secure connection indicator is patented by our manufacturer. Not only does it make installations easier and safer, but is also straightforward and simple to use.

**Twistloc**® products must be installed to the correct plumbing regulations. Follow our installation guide for further information on correct fitting.



## Cautions:

Do not apply any impact force to **Twistloc**® fittings. **Twistloc**® fittings are plastic materials and should not be treated the same as metals. **Twistloc**® fittings may melt, crack or distort if exposed to open flames or excessive heat. Do not use pipe sealant, thread sealants or Teflon® paste in order to seal threaded fittings. All the connections to **Twistloc**® fittings are either a mechanical compression type, or seal with a rubber gasket and do not require any other forms of sealant. Do not insert fingers into **Twistloc**® fittings as the stainless steel teeth may cause injury.

If PEX pipe is used, then a tube support liner must be used also. The tube support liner acts as an internal support for the end of the pipe.

**Twistloc**® fittings should not be used for gas, fuel oil or compressed air applications. DO NOT allow contact with any chemical or foreign substance; paint strippers, solder flux, Acid based descalents or chemical.

**Twistloc**® fittings are not suitable for buried installation.

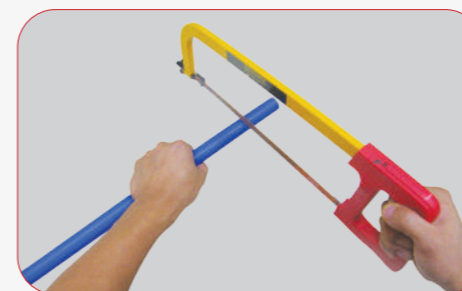
All **Twistloc**® fittings and related products should be selected, installed, used and maintained in accordance with these Technical Specifications.

When cutting pipe, ensure that the ends are cut square and are free of burrs.

Ensure that there are no scratches, gouges or any form of damage on the circumference of the pipe within 1 in. (25.4mm) of the cut end. Damage in this area may cause leakage. Check the fitting for any signs of damage or foreign objects.

Do not use a damaged or scored pipe.  
 · Do not leave burrs on the pipe.  
 · Ensure that the pipe is pushed into the fitting fully and is engaged properly in accordance with the instructions.  
 \* If the pipe is not fully inserted, the connection cannot be properly sealed even if the fitting is coupled.

\*If these installation guidelines conflict or are inconsistent with local building or plumbing codes, any codes applicable to parallel plumbing systems shall prevail.



Do not use a hacksaw to cut a pipe. Do not leave burrs on the pipe.

Ensure that the pipe is pushed into the fitting fully and is engaged properly in accordance with **Twistloc**® instructions.

If the pipe is not fully inserted, the connection cannot be properly sealed even the fitting is coupled.



You must push in the pipe passing the collets (gripper) and the O-ring inside the fitting.

When a connection has to be disassembled and reused, ensure the pipe has no damage around the circumference within 1" (25.4mm) of the end. Inspect the tube and fitting for any signs of damage and ensure they are free of foreign materials. The connection can then be reassembled.



- For plastic pipes:
  - Always use an appropriate pipe cutting tool such as plastic pipe shears to cut plastic pipes. Never use a hacksaw as this could cause damage.
- For copper pipes:
  - Use a pipe cutting wheel or pipe slice.



# Making a perfect connection

## To Lock The Pipe Connection

These instructions relate to the installation of **Twistloc** fittings for copper, PB, PEX and cPVC pipes. Please note that it is the installer's responsibility to ensure that **Twistloc** fittings, pipework and other components are appropriate for the intended applications, and that products are installed in accordance with the installation instructions and local plumbing codes. No information in this publication is intended to create any warranty beyond the SNC product warranty applicable to the plumbing system.

### Installing push-fit products:

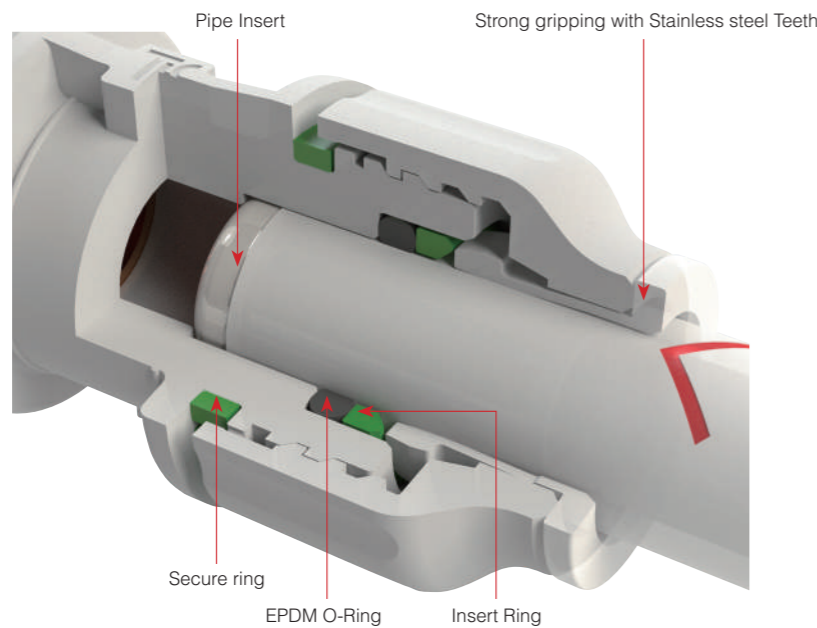
Before you start, inspect the pipe. Ensure there are no scratches, gouges or any form of damage or deformation on the pipe. It should also be free from dirt and grease that may affect the seal.

Pay close attention to the first inch (25.4mm) from the cut ends. Damage or foreign substances in this area may cause leakage problems. If there are any concerns, cut the affected pipe end to a clean and undamaged point.

Don't use any coarse materials to clean the outside surface of either plastic or copper pipes as this could affect the seal and result in leakage.

Ensure fittings and pipes are always kept clean by keeping them in the packaging provided - don't empty products onto the floor.

Never insert your finger into the fitting as you risk being cut by the metal 'grip teeth' inside the fitting.

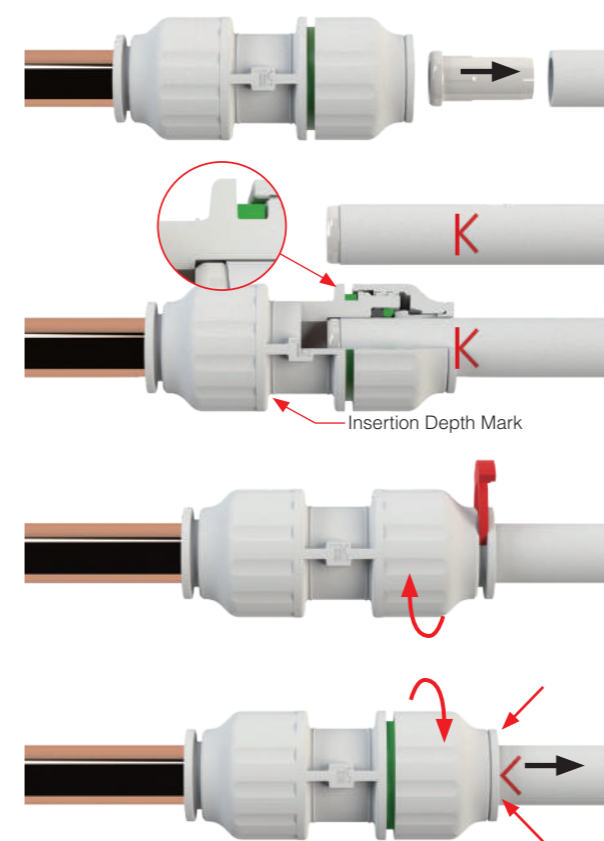


## Fittings & Valves Performance

Working Temperatures and Pressures			
NO.	Usual Temp	Max Temp	Pressures
Cold Water	20°C	20°C	12 bar
Hot Water	65°C	95°C	6 bar
Central Heating	82°C	*114°C	3 bar

\* Short term overload of up to 114°C

## Twistloc push-fit Installation



**1** Cut the pipe squarely using plastic pipe cutting tool. Ensure the outside of the pipe is free from burrs and score marks. Push pipe insert into the pipe. Pipe inserts are not required when using Copper pipe. Ensure screw cap is in the open position, the coloured ring will be visible.

**2** Measure and mark the insertion depth on the pipe using a suitable marker. Push fitting onto the end of the pipe until it reaches the pipe stop and insertion depth marking.

PIPE Size(OD)	10mm	15mm	16mm	20mm	22mm	28mm
Insertion Depth	22mm	30mm	32mm	36mm	36mm	41mm
PIPE Size(OD)	1/4"	3/8"	1/2"	5/8"	7/8"	1 1/8"
Insertion Depth	20mm	22mm	27mm	32mm	37mm	41mm

**3** Twist the screw cap until coloured ring is no longer visible. Only use hand force to twist the screw cap; using a wrench or other tools can easily damage the fitting and would not be covered by our guarantee. Pull the pipe away from the fitting to check it is a secure fit.

\*\*\*Advisory\*\*\* Test system to ensure water tight.

\* Optional - Fit coloured collect clip to provide easy recognition between hot (red) and cold (blue) pipes. This will also provide additional locking of the fitting.

**4** To disconnect : Make sure that the system is de-pressurised. Unlock fitting by twisting until coloured ring is visible. Press collet squarely against the face of the fitting. With the collet depressed, pull on the pipe to remove it from the fitting.

## Push Fit Fitting

**1** Cut the pipe squarely using plastic pipe cutting tool. Ensure the outside of the pipe is free from burrs and score marks. Push pipe insert into the pipe. Pipe inserts are not required when using Copper pipe.

**2** Measure and mark the insertion depth on the pipe using the table below and a suitable marker. Push fitting onto the end of the pipe until it reaches the pipe stop.

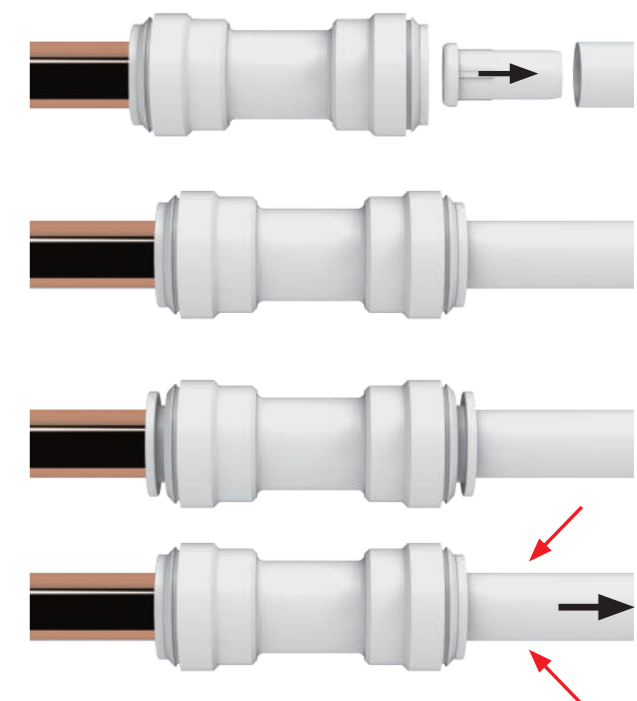
PIPE Size(OD)	10mm	15mm	22mm
Insertion Depth	20mm	28mm	34mm
PIPE Size(OD)	1/4"	3/8"	1/2"
Insertion Depth	17mm	20mm	24mm

**3** Pull the pipe away from the fitting to check it is a secure fit.

\* Test system to ensure watertight.

\* Optional - Fit coloured collet clip to provide easy recognition between hot (red) and cold (blue) pipes. This will also provide additional locking of the fitting.

**4** To disconnect : Make sure that the system is depressurized. Press collet squarely against the face of the fitting. With collet depressed, pull on the pipe to remove it from the fitting.

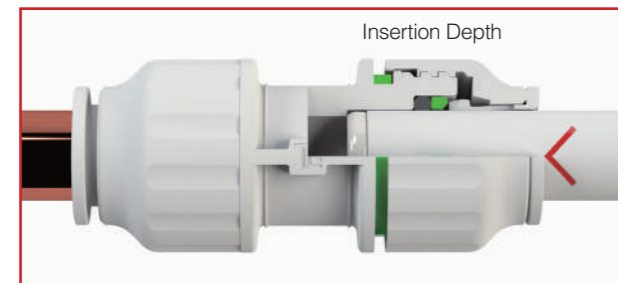


# Technical Information

## Insertion Depth Twistloc push-fit Products

Pipe stops / Insertion depths are located at the following distances from the fitting end.

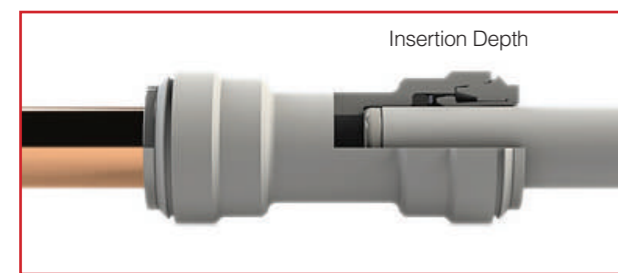
PIPE Size(OD)	10mm	15mm	16mm	20mm	22mm	28mm
Insertion Depth	22mm	30mm	32mm	36mm	36mm	41mm
PIPE Size(OD)	1/4"	3/8"	1/2"	5/8"	7/8"	1 1/8"
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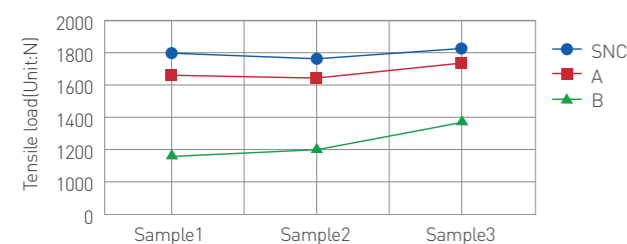
## Standard push-fit Products

Pipe stops / Insertion depths are located at the following distances from the fitting end.

PIPE Size(OD)	10mm	15mm	22mm	
Insertion Depth	20mm	28mm	34mm	
PIPE Size(OD)	1/4"	3/8"	1/2"	5/8"
Insertion Depth	17mm	20mm	24mm	29mm



## Tensile Force Values



The graph above shows the results of a tensile strength test conducted independently by the Korean Government Laboratory and shows conclusive prove that Twistloc fittings outperform our competitors.

## Maximum Torque

The Maximum torque values for threads used on **Twistloc** products are as follows;

Thread	Size	Maximum torque
Plastic	1.2"	3.5Nm
	3/4"	4Nm
	1"	5Nm
Brass	1.2"	30Nm
	3/4"	40Nm

※ 1Nm=8.85lbf-in/1lbf-in=0.01kgf-m

## Connect to other Brands of pipe

**Twistloc** insist on rigorous testing t.to ensure that all of pipes and fittings are manufactured within certain tolerances. As we are unable to guarantee those tolerances used by other manufacturers, we are unable to recommend our fittings be used with any other plastic pipe or fittings be used with ours.

## End Stop

If necessary, **Twistloc** not only provides a permanent leak-prevention sealing effect but also enables immediate removal and system extension for re-work. In particular, this is a Push-in design for easy use.

The Stop End is also useful in system pressure testing prior to connection works.

Fully push in the pipe and pull to check it is secure. The release, depress the collet and pull out the pipe.

## Mini-Manifold

For maximum flexibility, **Twistloc** fittings can be combined to provide multiple functions.



## Pipe Bending

To maintain the pipe radius.



For sharp bends, standard elbow fittings can be used. For slight bends it is possible to use the flexibility of the pipe to produce a bend which can be clipped into shape, or tighter still with our cold forming bends, subject to the following limits.

PIPE Size(OD)	3/8"&1/2"	5/8"
Min Radius with Clips	10&12mm	15&16mm
Min Radius with Cold Forming Bend	100mm	175mm

## Collet Clip

Our collet clip is used with **Twistloc** and Non-twistloc fittings to prevent accidental pipe disconnection and to provide color coding for the pipe.

## Pipe inserts

Pipe inserts must be used with all plastic pipe installations and must be fully inserted. The **Twistloc** insert is suitable for both PEX and PB pipes in common.

## Double Seal Inserts

The **Twistloc** pipe insert has been developed for use with barrier pipes and **Twistloc** fittings to provide additional defenses when installing the **Twistloc** push-fit system. The insert has its own O-ring which provides a secondary seal to the inside of the fitting with a stem sliding within the pipe inner diameter.

## Concealed pipework

When installing the **Twistloc** system in concrete and masonry, the pipe should be run in conduit pipe with access boxes for the fittings. This ensures that all pipe can be removed for replacement and maintenance, therefore complying with the requirements of the water regulations.

## Concrete and masonry

If **Twistloc** fittings are installed in conduit pipes with access boxes for fittings, they can be laid in concrete and masonry. This is to extend the pipe and provide access to both pipes and fittings. As specified in Schedule 2.7 to the Water Regulations and BS8000: Part 15, the fittings and pipes shall be detachable for possible replacement. Insulation is also recommended to protect against heat loss and frost effects.

## Copper pipe connection

400 mm is the minimum distance for soldering to the copper pipe inserted into the **Twistloc** fitting. Make sure that the residual flux and solder do not touch the fittings.

## Connecting to a storage vessel

We offer a range of tank connectors in 15mm and 22mm options for connection to cold water storage tanks. During installation, do not use any jointing compound on the connector. It should be tightened by hand as further mechanical tightening will damage the fitting.

## Connecting to boilers and heaters

A minimum length of 1 metre of copper pipe must be installed before connecting to a **Twistloc** pipework system. To avoid serious overheating, trapped air must be purged from the heating system before the boiler is operated. Always refer to the boiler manufacturer's installation instructions in the first instance.

## Continuously operated recirculating systems (secondary hot water circulation / ring main installations)

Plastic plumbing systems are not suitable for use on any continuously operated recirculating systems (secondary hot water circulation / ring main systems). These installations differ greatly from traditional domestic installations and therefore **Twistloc** pipe and fittings may not be used.

## Freezing for maintenance/system modification

We wouldn't recommend freezing techniques to carry out maintenance on our pipework or fittings. Ensure when installing the system there are suitable isolation valves used for maintenance purposes.

## Freezing conditions

Our plastic pipe can be used in freezing conditions. However, to minimise potential failure, the below steps should be followed:

- Make sure that metal to plastic pipe connections are made in an area where freezing will not occur.
- Ensure fittings are placed 150mm away from areas where freezing may occur to ensure there is enough free pipe to absorb the expansion caused by freezing.
- Insulate plastic pipe and fittings where freezing conditions may occur.



### Painting **Twistloc** pipe and fittings

**Twistloc** can be painted with either a water-based paint or an oil-based paint with an undercoat. Cellulose-based paints, paint strippers, thinners, flux, acid-based descalants or aggressive cleaning products must not be used.

### Corrosion inhibitor

We've tested Flomasta pipe and our fittings with Fernox & Sentinel and have approved them for use with our fittings. Flomasta pipes and our fittings are also suitable with Flomasta central heating inhibitor.

### Antifreeze

We've approved antifreezes which are based on Ethylene Glycol mixtures only.

### Electrical safety

Please contact a registered electrical contractor or your local Electrical Authority with regards to bonding, continuity and electrical safety.

### UV protection

**Twistloc** is suitable for use outdoors, however it should either be painted or covered with insulation to protect against exposure to UV rays.

### Pressure testing

It's essential to carry out a full system check upon completion of an installation.

Before carrying out any tests, ensure that all **Twistloc** pipe and fittings are installed correctly.

We recommend a test of 2 bar for 10 minutes followed by 10 bar for 10 minutes.

Any products that are not manufactured by **Twistloc** and are unable to withstand the test pressures should be disconnected during the test and capped off using the **Twistloc** end stop cap.

Pressure testing is NOT a substitute for making sure pipes and fittings are correctly installed.

For details on how to make a secure join, refer to the beginning of the installation guide.





# White Fittings - Metric Sizes

## Back Plate Elbow



Part Number	Pipe(mm)	Thread	Box Qty
SRDE6764M	15	1/2" BSP	160
SRDE6774M	16	1/2" BSP	150

\* Please see our torque figures on our technical information.

## Reducer



Part Number	Pipe(mm)	Stem(mm)	Box Qty
SPR6716M	10	15	500
SPR6737M	12	16	400
SPR6764M	15	22	300
SPR6760M	15	28	250
SPR6772M	16	20	350
SPR6740M	22	28	180

## Stem Elbow



Part Number	Pipe(mm)	Stem(mm)	Box Qty
SPT67111M	10	10	900
SPT6716M	10	15	500
SPT6733M	12	12	500
SPT6766M	15	15	300
SRTE6777M	16	16	300
SPT6722M	20	20	200
SPT6744M	22	22	200

## Male Connector



Part Number	Pipe(mm)	Thread	Box Qty
SRMC6734M	12	1/2" BSP	600
SRMC6764M	15	1/2" BSPT	390
SRMC6774M	16	1/2" BSPT	390
SRMC6745M	22	3/4" BSPT	250
SRMC6701M	28	1" BSPT	110

## Male Elbow



Part Number	Pipe(mm)	Thread	Box Qty
SRME6764M	15	1/2" BSPT	400
SRME6774M	16	1/2" BSPT	400

## Female Adaptor



Part Number	Pipe(mm)	Thread	Box Qty
SRF6734M	12	1/2" BSP	600
SRF6764M	15	1/2" BSP	400
SRF6765M	15	3/4" BSP	350
SRF6774M	16	1/2" BSP	400
SRF6775M	16	3/4" BSP	350
SRF6745M	22	3/4" BSP	200
SRF6701M	28	1" BSP	110

\* Please see our torque figures on our technical information.

## Straight Tap Connector



Part Number	Pipe(mm)	Thread	Box Qty
SPSU6714M	10	1/2" BSP	500
SPSU6734M	12	1/2" BSP	400
SRSU6764M	15	1/2" BSP	340
SRSU6765M	15	3/4" BSP	280
SRSU6774M	16	1/2" BSP	340
SRSU6775M	16	3/4" BSP	280
SPSU6725M	20	3/4" BSP	180
SPSU6745M	22	3/4" BSP	180

\* Please see our torque figures on our technical information.

## Straight Tap Connector\_Brass Thread



Part Number	Pipe(mm)	Thread	Box Qty
SPSU6714BM	10	1/2" BSP	250
SPSU6734BM	12	1/2" BSP	220
SRSU6764BM	15	1/2" BSP	200
SRSU6765BM	15	3/4" BSP	200
SRSU6774BM	16	1/2" BSP	200
SRSU6775BM	16	3/4" BSP	200
SPSU6725BM	20	3/4" BSP	150
SPSU6745BM	22	3/4" BSP	150

\* Please see our torque figures on our technical information.

## Bent Tap Connector



Part Number	Pipe(mm)	Thread	Box Qty
SPSE6714M	10	1/2" BSP	400
SPSE6734M	12	1/2" BSP	400
SRSE6764M	15	1/2" BSP	300
SRSE6765M	15	3/4" BSP	270
SRSE6774M	16	1/2" BSP	290
SRSE6775M	16	3/4" BSP	260

\* Please see our torque figures on our technical information.

## Bent Tap Connector\_Brass Thread



Part Number	Pipe(mm)	Thread	Box Qty
SPSE6714BM	10	1/2" BSP	300
SPSE6734BM	12	1/2" BSP	250
SRSE6764BM	15	1/2" BSP	200
SRSE6765BM	15	3/4" BSP	200
SRSE6774BM	16	1/2" BSP	200
SRSE6775BM	16	3/4" BSP	200

\* Please see our torque figures on our technical information.

## End Stop



Part Number	Pipe(mm)	Box Qty
SPST671M	10	1100
SPST673M	12	800
SPST676M	15	500
SPST677M	16	500
SPST672M	20	330
SPST674M	22	380
SRST670M	28	170

## Equal Elbow



Part Number	Pipe(mm)	Box Qty
SPE6711M	10	700
SPE6733M	12	400
SPE6766M	15	260
SPE6777M	16	260
SPE6722M	20	150
SPE6744M	22	160
SPE6700M	28	80

## Reducing Elbow



Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SPE6761M	15	10	400
SPE6746M	22	15	200

## Straight Coupler



Part Number	Pipe(mm)	Box Qty
SPU6711M	10	700
SPU6733M	12	450
SPU6766M	15	280
SPU6777M	16	280
SPU6722M	20	150
SPU6744M	22	180
SPU6700M	28	90

## Reducing Straight Coupler



Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SPU6761M	15	10	400
SPU6771M	16	10	400
SPU6746M	22	15	200
SPU6747M	22	16	200

## Equal Tee



Part Number	Pipe(mm)	Box Qty
SPT67111M	10	440
SPT67333M	12	440
SPT67666M	15	170
SPT67777M	16	160
SPT67222M	20	90
SPT67444M	22	100
SPT67000M	28	50

## Reducing Tee



Part Number	Pipe 1 (mm)	Pipe 2 (mm)	Pipe 3 (mm)	Box Qty
SPT67611M	15	10	10	450
SPT67661M	15	15	10	250
SPT67664M	15	15	22	160
SPT67277M	20	16	16	120
SPT67227M	20	20	16	100
SPT67466M	22	15	15	130
SPT67464M	22	15	22	110
SPT67477M	22	16	16	130
SPT67441M	22	22	10	115
SPT67446M	22	22	15	110
SPT67447M	22	22	16	110
SPT67044M	28	22	22	70
SPT67040M	28	22	28	60
SPT67001M	28	28	10	70
SPT67006M	28	28	15	70
SPT67004M	28	28	22	60

## Tube Tee Union




Part Number	Pipe 1 (mm)	Stem (mm)	Pipe 3 (mm)	Box Qty
SPTT67333M	12	12	12	400
SPTT67441M	22	22	10	130
SPTT67446M	22	22	15	110




## Grey Fittings - Metric Sizes

### 45° Stem Elbow




Part Number	Pipe (mm)	Stem (mm)	Box Qty
SPATE6766M	15	15	320
SPATE6744M	22	22	200

### 4-Way Manifold




Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SRFWC6741M	22	10	180

### Hose Connector




Part Number	Pipe (mm)	Barb (OD)	Box Qty
SHC61M	15	10	450
SHC63M	15	3/8"	450
SHC64M	15	1/2"	450
SHC41M	22	10	300
SHC44M	22	1/2"	300
SHC45M	22	3/4"	300



SHC61MBK	15	10	450
SHC63MBK	15	3/8"	450
SHC64MBK	15	1/2"	450
SHC41MBK	22	10	300
SHC44MBK	22	1/2"	300
SHC45MBK	22	3/4"	300


\* Not suitable for central heating systems. Max Temp 65°C

### 4-Port Manifold




Part Number	Pipe (mm)	2P-Size (mm)	Stem (mm)	Box Qty
SMF6741M-4P	22	10	22	100

### 2-Port Manifold



Part Number	Pipe (mm)	2P-Size (mm)	Stem (mm)	Box Qty
SMF6741M-2P	22	10	22	100
SMF6746M-2P	22	15	22	100


### Tank Coupler



Part Number	Pipe (mm)	Color	Box Qty
ATC66M	15	WHITE	100
ATC44M	22	WHITE	75
ATC66MBK	15	BLACK	100
ATC44MBK	22	BLACK	75


\* Not suitable for central heating systems. Max Temp 65°C

### Reducer




Part Number	Pipe (mm)	Stem (mm)	Box Qty
SPR6716MG	10	15	500
SPR6737MG	12	16	400
SPR6764MG	15	22	300
SPR6760MG	15	28	250
SPR6740MG	22	28	180

### Stem Elbow



Part Number	Pipe (mm)	Stem (mm)	Box Qty
SPT6711MG	10	10	900
SPT6716MG	10	15	500
SPT6733MG	12	12	500
SPT6766MG	15	15	300
SPT6722MG	20	20	200
SPT6744MG	22	22	200

### End Stop




Part Number	Pipe (mm)	Box Qty
SPST671MG	10	1100
SPST673MG	12	800
SPST676MG	15	500
SPST677MG	16	500
SPST672MG	20	330
SPST674MG	22	380

### Equal Elbow




Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SPE6711MG	10	10	700
SPE6733MG	12	12	400
SPE6766MG	15	15	260
SPE6777MG	16	16	270
SPE6722MG	20	20	150
SPE6744MG	22	22	160
SPE6700MG	28	28	80

### Reducing Elbow




Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SPE6761MG	15	10	400
SPE6746MG	22	15	200

### Straight Coupler




Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SPU6711MG	10	10	700
SPU6733MG	12	12	450
SPU6766MG	15	15	280
SPU6777MG	16	16	275
SPU6722MG	20	20	150
SPU6744MG	22	22	180
SPU6700MG	28	28	90

### Reducing Straight Coupler




Part Number	Pipe (mm)	Pipe (mm)	Box Qty
SPU6761MG	15	10	400
SPU6771MG	16	10	400
SPU6746MG	22	15	200
SPU6747MG	22	16	200

### Equal Tee



Part Number	Pipe (mm)	Box Qty
SPT67111MG	10	450
SPT67333MG	12	250
SPT67666MG	15	160
SPT67777MG	16	160
SPT67222MG	20	90
SPT67444MG	22	100
SPT67000MG	28	50

### Reducing Tee



Part Number	Pipe (mm) 1	Pipe (mm) 2	Pipe (mm) 3	Box Qty
SPT67611MG	15	10	10	200
SPT67661MG	15	15	10	180
SPT67664MG	15	15	22	160
SPT67277MG	20	16	16	120
SPT67227MG	20	20	16	100
SPT67466MG	22	15	15	130
SPT67464MG	22	15	22	110
SPT67477MG	22	16	16	130
SPT67441MG	22	22	10	115
SPT67446MG	22	22	15	110
SPT67447MG	22	22	16	110
SPT67044MG	28	22	22	70
SPT67040MG	28	22	28	60
SPT67001MG	28	28	10	70
SPT67006MG	28	28	15	70
SPT67004MG	28	28	22	60



## DZR Brass Fittings - Metric Sizes

### Female Coupler



Part Number	Pipe(mm)	Thread	Box Qty
SBFA6733M	12	3/8" BSP	200
SBFA6764M	15	1/2" BSP	150
SBFA6765M	15	3/4" BSP	150
SBFA6774M	16	1/2" BSP	150
SBFA6725M	20	3/4" BSP	100
SBFA6745M	22	3/4" BSP	100

### Male Stem Adaptor



Part Number	Stem(mm)	Thread	Box Qty
SBMSA6764M	15	1/2" BSP	150
SBMSA6745M	22	3/4" BSP	100
SBMSA6701M	28	1" BSP	100
SBMSAT6764M	15	1/2" BSPT	150
SBMSAT6774M	16	1/2" BSPT	150
SBMSAT6724M	20	1/2" BSPT	100
SBMSAT6725M	20	3/4" BSPT	100
SBMSAT6745M	22	3/4" BSPT	100

### Male Connector



Part Number	Pipe(mm)	Thread	Box Qty
SBMC6714M	10	1/2" BSP	200
SBMC6733M	12	3/8" BSP	200
SBMC6764M	15	1/2" BSP	150
SBMC6765M	15	3/4" BSP	150
SBMC6745M	22	3/4" BSP	100
SBMC6701M	28	1" BSP	60
SBMCT6734M	12	1/2" BSPT	200
SBMCT6764M	15	1/2" BSPT	150
SBMCT6774M	16	1/2" BSPT	150
SBMCT6775M	16	3/4" BSPT	150
SBMCT6724M	20	1/2" BSPT	100
SBMCT6725M	20	3/4" BSPT	100
SBMCT6745M	22	3/4" BSPT	100
SBMCT6701M	28	1" BSPT	60

### Back Plate Elbow



Part Number	Pipe(mm)	Thread	Box Qty
SBBPE6764M	15	1/2" BSP	100
SBBPE6774M	16	1/2" BSP	100
SBBPE6725M	20	3/4" BSP	70
SBBPE6745M	22	3/4" BSP	70

### Female Cylinder Coupler



Part Number	Pipe(mm)	Thread	Box Qty
SBFCA6741M	22	1" BSP	100

### Female Stem Adaptor



Part Number	Stem(mm)	Thread	Box Qty
SBFSA6764M	15	1/2" BSP	150
SBFSA6774M	16	1/2" BSP	150
SBFSA6725M	20	3/4" BSP	100
SBFSA6745M	22	3/4" BSP	100

### Male Cylinder Adaptor



Part Number	Pipe(mm)	Thread	Box Qty
SBMCC6741M	22	1" BSP	100

## Plastic Valves - Metric Sizes

### Shut Off Tap



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SVHU6733M	12	12	130
SVHU6766M	15	15	100
SVHU6777M	16	16	100
SVHU6744M	22	22	70

### Service Tap Valve



Part Number	Pipe(mm)	Thread	Box Qty
SVF6714M	10	1/2" BSP	200
SVF6764M	15	1/2" BSP	130

\* Please see our torque figures on our technical information.

### Angle Tap Valve



Part Number	Pipe(mm)	Thread	Box Qty
SVA6714M	10	1/2" BSPP	180

\* Please see our torque figures on our technical information.

### Washing Machine Tap



Part Number	Pipe(mm)	Thread	Box Qty
SVAT6765M	15	3/4" BSP	100

\* Hot and Cold water only. Max Temp. upto 65°C  
\* Please see our torque figures on our technical information.

### Appliance Tap Tee



Part Number	Pipe(mm)	Thread	Box Qty
SVATT65M	15	3/4" BSP	120

\* Hot and Cold water only. Max Temp. upto 65°C  
\* Please see our torque figures on our technical information.

### Isolating Valve



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SV66M	15	15	180
SV44M	22	22	90

\* Hot and Cold water only. Max Temp. upto 65°C

### Reducing Shut Off Tap



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SVHU6763M	15	12	120
SVHU6773M	16	12	120

### Service Angle Valve



Part Number	Pipe (mm) 1	Pipe (mm) 2	Box Qty
SVE6716M	10	15	200

### Service Tap Valve \_ Angled



Part Number	Pipe(mm)	Thread	Box Qty
SVA6764M	15	1/2" BSPP	180

\* Hot and Cold water only. Max Temp. upto 65°C  
\* Please see our torque figures on our technical information.

### Angle Stop Valve



Part Number	Pipe (mm) 1	Stem (mm) 2	Pipe (mm) 3	Box Qty
AVT67665SM	15	15	1/4"	120
AVT67661SM	15	15	3/8"	110
AVT67775SM	16	16	1/4"	120
AVT67771SM	16	16	3/8"	110
AVT67445SM	22	22	1/4"	100

\* Hot and Cold water only. Max Temp. upto 65°C  
\* Please see our torque figures on our technical information.

### Service Valve \_ Angled



Part Number	Pipe(mm)	Thread	Box Qty
SVTE64MC	15	1/2" BSP	125

\* Not suitable for central heating systems. Max Temp. upto 65°C  
\* Please see our torque figures on our technical information.

### Stop Cock



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SVSC6766M	15	15	100
SVSC6744M	22	22	50

\* Not suitable for central heating systems. Max Temp. upto 65°C



### Service Valve



Part Number	Pipe(mm)	Thread	Box Qty
SVT64MC	15	1/2" BSP	150

\* Hot and Cold water only. Max Temp. upto 65°C  
\* Please see our torque figures on our technical information.

### Double Check Valve



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SVDC66M	15	15	150

\* Not suitable for central heating systems. Max Temp. upto 65°C

### Hose Connector Valve



Part Number	Pipe(mm)	Barb(OD)	Box Qty
SHCV61M	15	10mm	150
SHCV63M	15	3/8"	150
SHCV64M	15	1/2"	150
SHCV44M	22	1/2"	100
SHCV45M	22	3/4"	100

\* Hot and Cold water only. Max Temp. upto 65°C



Part Number	Pipe(mm)	Barb(OD)	Box Qty
SHCV61MBK	15	10mm	150
SHCV63MBK	15	3/8"	150
SHCV64MBK	15	1/2"	150
SHCV44MBK	22	1/2"	100
SHCV45MBK	22	3/4"	100

\* Hot and Cold water only. Max Temp. upto 65°C

## Brass Valves - Metric Sizes

### Isolating Valve



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SV11MBC	10	10	200
SV66MBC	15	15	150

\* Chrome plated

### Hose Connector Valve



Part Number	Pipe(mm)	Barb(OD)	Box Qty
SHCV14BM	10	1/2"	200
SHCV64BM	15	1/2"	150
SHCV45BM	22	3/4"	100

\* Chrome plated

### Ball Valve



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SVB66MB	15	15	50
SVB44MB	22	22	25

### Drain Valve **NEW**



Part Number	Stem(mm)	Barb(OD)	Box Qty
SBDC64M	15	1/2"	100

### Service Valve



Part Number	Pipe(mm)	Thread	Box Qty
SVT14MBC	10	1/2" BSP	200
SVT64MBC	15	1/2" BSP	150

\* Chrome plated  
\* Please see our torque figures on our technical information.

## Accessories - Metric Sizes

### Pipe Insert



Part Number	Pipe(mm)
STS10M	10
STS12M	12
STS15M	15
STS16M	16
STS20M	20
STS22M	22
STS28M	28

### Collet Clip



Part Number	Pipe(mm)
SLC10MB	10 (Blue)
SLC12MB	12 (Blue)
SLC15MB	15 (Blue)
SLC22MB	22 (Blue)
SLC10MR	10 (Red)
SLC12MR	12 (Red)
SLC15MR	15 (Red)
SLC22MR	22 (Red)

### Double Seal Insert **NEW**



Part Number	Pipe(mm)
NDSI10M	10
NDSI12M	12
NDSI15M	15
NDSI16M	16
NDSI20M	20
NDSI22M	22
NDSI28M	28

### EPDM O-ring



Part Number	Pipe(mm)
SEBR10M	10
SEBR12M	12
SEBR15M	15
SEBR16M	16
SEBR20M	20
SEBR22M	22
SEBR28M	28

### Plug **NEW**



Part Number	Stem(mm)
SPL10M	10
SPL15M	15
SPL22M	22
SPL28M	28

### Conversion Adaptor \_ Brass



Part Number	Thread
ADP06M07FB	3/8" MBSP x 1/2" FBSP
ADP07M06FB	3/8" FBSP x 1/2" MBSP

\* Conversion adaptor can be assembled with 1/2" x 1/2" NPS, BSP or 3/8" x 3/8" Compression, BSP

### Conversion Adaptor \_ Hand Tighten



Part Number	Thread
ADP06M07FBP	3/8" MBSP x 1/2" FBSP
ADP07M06FBP	3/8" FBSP x 1/2" MBSP

\* Conversion adaptor can be assembled with 1/2" x 1/2" NPS, BSP or 3/8" x 3/8" Compression, BSP

### Collets



Part Number	Pipe(mm)
SCOL10M	10
SCOL12M	12
SCOL15M	15
SCOL16M	16
SCOL20M	20
SCOL22M	22
SCOL28M	28

### Pipe Cutter



Part Number	Pipe(mm)
TLC-PC	Up to 22

### Pipe Bend



Part Number	Pipe(mm)
SPB06	10
SPB07	12
SPB08	15&16
SPB10	20&22

### Heavy Duty Pipe Cutter



Part Number	Pipe(mm)
TLC-HPC	Up to 28



# White Fittings - CTS Sizes

## Back Plate Elbow



Part Number	Pipe(CTS)	Thread	Box Qty
SR67101	3/8"	1/2" FIP	200
SR67102	1/2"	1/2" FIP	150

\* Please see our torque figures on our technical information.

## Male Connector



Part Number	Pipe(CTS)	Thread	Box Qty
SR67131	3/8"	1/2" MIP	500
SR67132	1/2"	1/2" MIP	380
SR67133	1/2"	3/4" MIP	320
SR67134	3/4"	3/4" MIP	240
SR67135	1"	1" MIP	120

## Reducer



Part Number	Pipe(CTS)	Stem(CTS)	Box Qty
SR67151	1/4" OD	1/2"	500
SR67152	3/8"	1/2"	380
SR67153	1/2"	3/4"	300

## Male Elbow



Part Number	Pipe(CTS)	Thread	Box Qty
SR67141	1/2"	1/2" MIP	380

## Enlarger Connector



Part Number	Pipe(CTS)	Stem(CTS)	Box Qty
SR67111	1/2"	3/8"	450
SR67112	1"	3/4"	120

## Female Adaptor



Part Number	Pipe(CTS)	Thread	Box Qty
SR67121	3/8"	1/2" FIP	420
SR67122	1/2"	1/2" FIP	380
SR67123	1/2"	3/4" FIP	350
SR67124	3/4"	3/4" FIP	200
SR67125	1"	1" FIP	100
SR67126	1/2"	3/4" FGH	300

\* Please see our torque figures on our technical information.

## Stem Elbow



Part Number	Pipe(CTS)	Stem(CTS)	Box Qty
SPTE6711	1/4"	1/4"	800
SPTE6766	1/2"	1/2"	300
SPTE6744	3/4"	3/4"	200
SR67191	1/2"	1/2"	300

## Bent Tap Connector



Part Number	Pipe(CTS)	Thread	Box Qty
SPSE6714	1/4"	1/2" NPS	400
SPSE6734	3/8"	1/2" NPS	400
SR67161	1/2"	1/2" NPS	300
SR67162	1/2"	3/4" FGH	250
SR67163	1/2"	3/4" Closet	250
SR67165	1/2"	3/4" NPS	250

\* Please see our torque figures on our technical information.

## Bent Tap Connector\_Brass Thread



Part Number	Pipe(CTS)	Thread	Box Qty
SPSE6714B	1/4"	1/2" NPS	200
SPSE6734B	3/8"	1/2" NPS	300
SR67161B	1/2"	1/2" NPS	200
SR67162B	1/2"	3/4" FGH	200
SR67163B	1/2"	3/4" Closet	200
SR67165B	1/2"	3/4" NPS	250

\* Please see our torque figures on our technical information.

## Straight Tap Connector



Part Number	Pipe(CTS)	Thread	Box Qty
SPSU6714	1/4"	1/2" NPS	500
SPSU6734	3/8"	1/2" NPS	400
SPSU6745	3/4"	3/4" NPS	180
SR67171	1/2"	1/2" NPS	340
SR67172	1/2"	3/4" FGH	280
SR67173	1/2"	3/4" Closet	280

\* Please see our torque figures on our technical information.

## Straight Tap Connector\_Brass Thread



Part Number	Pipe(CTS)	Thread	Box Qty
SPSU6714B	1/4"	1/2" NPS	250
SPSU6734B	3/8"	1/2" NPS	220
SPSU6745B	3/4"	3/4" NPS	150
SR67171B	1/2"	1/2" NPS	200
SR67172B	1/2"	3/4" FGH	200
SR67173B	1/2"	3/4" Closet	200

\* Brass, De-Zincification Resistant

\* Please see our torque figures on our technical information.

## End Stop



Part Number	Pipe(CTS)	Box Qty
SPST671	1/4"	1100
SPST673	3/8"	800
SPST676	1/2"	450
SPST674	3/4"	360
SR67183	1"	160

※ Available color collets

## Reducing Elbow



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPE6761	1/2"	1/4"	320
SPE6746	3/4"	1/2"	200

## Equal Elbow



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPE6711	1/4"	1/4"	500
SPE6733	3/8"	3/8"	400
SPE6766	1/2"	1/2"	260
SPE6744	3/4"	3/4"	160
SPE6700	1"	1"	80

## Straight Coupler



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPU6711	1/4"	1/4"	700
SPU6733	3/8"	3/8"	450
SPU6766	1/2"	1/2"	280
SPU6744	3/4"	3/4"	160
SPU6700	1"	1"	90

## Reducing Straight Coupler



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPU6765	1/2"	1/4" OD	450
SPU6761	1/2"	1/4"	400
SR67222	1/2"	3/8"	300
SPU6746	3/4"	1/2"	200
SR67226	1"	3/4"	100

### Equal Tee



Part Number	Pipe(CTS)	Box Qty
SPT67111	1/4"	450
SPT67333	3/8"	250
SPT67666	1/2"	160
SPT67444	3/4"	100
SPT67000	1"	50

### Tube Tee Union \_ Branch Tee



Part Number	Pipe 1 (CTS)	Pipe 2 (CTS)	Pipe 3 (CTS)	Box Qty
SR67210	1/2"	1/2"	1/2"	180

### Reducing Tee



Part Number	Pipe 1 (CTS)	Pipe 2 (CTS)	Pipe 3 (CTS)	Box Qty
SPT67611	1/2"	1/4"	1/4"	200
SPT67661	1/2"	1/2"	1/4"	160
SPT67664	1/2"	1/2"	3/4"	130
SPT67466	3/4"	1/2"	1/2"	130
SPT67464	3/4"	1/2"	3/4"	100
SPT67441	3/4"	3/4"	1/4"	110
SPT67446	3/4"	3/4"	1/2"	100
SPT67044	1"	3/4"	3/4"	70
SPT67040	1"	3/4"	1"	60
SPT67001	1"	1"	1/4"	70
SPT67006	1"	1"	1/2"	60
SPT67004	1"	1"	3/4"	60
SR67302	1/2"	1/2"	1/4" OD	180

### Tube Tee Union



Part Number	Pipe 1 (CTS)	Pipe 2 (CTS)	Pipe 3 (CTS)	Box Qty
SR67211	1/2"	1/2"	1/2"	180
SR67212	3/4"	3/4"	3/4"	100



## Black Fittings - CTS Sizes

The Black **Twistloc**® Fittings are UV Resistant and manufactured from high quality engineered plastic with EPDM O-rings. They are recommended for use in Water Filtration, Water Softeners, RV, Marine, Plumbing Repair, Remodels, New Construction and other applications where UV Resistance is important. These fittings are available in 1/4", 3/8", 1/2", 3/4" and 1" CTS sizes and are suitable for both Hot and Cold Water plumbing applications.



### Straight Coupler



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPU6711B	1/4"	1/4"	700
SPU6733B	3/8"	3/8"	450
SPU6766B	1/2"	1/2"	280
SPU6744B	3/4"	3/4"	160
SPU6700B	1"	1"	90

### Equal Tee



Part Number	Pipe(CTS)	Box Qty
SPT67111B	1/4"	450
SPT67333B	3/8"	250
SPT67666B	1/2"	160
SPT67444B	3/4"	100
SPT67000B	1"	50

### Equal Elbow



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPE6711B	1/4"	1/4"	500
SPE6733B	3/8"	3/8"	400
SPE6766B	1/2"	1/2"	260
SPE6744B	3/4"	3/4"	160
SPE6700B	1"	1"	80

### Stem Elbow



Part Number	Pipe(CTS)	Stem(CTS)	Box Qty
SPT67111B	1/4"	1/4"	800
SPT67444B	3/4"	3/4"	200
SR67191B	1/2"	1/2"	300



### Reducing Straight Coupler



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SPU6761B	1/2"	1/4"	400
SPU6765B	1/2"	1/4" OD	450
SPU6746B	3/4"	1/2"	200
SR67222B	1/2"	3/8"	300
SR67226B	1"	3/4"	100

### Male Elbow



Part Number	Pipe(CTS)	Thread	Box Qty
SR67141B	1/2"	1/2" MIP	380

## Plastic Valves - CTS Sizes

### Shut off Tap



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SV67221	3/8"	3/8"	130
SV67223	1/2"	1/2"	100
SV67224	3/4"	3/4"	70

### Reducing Shut off Tap



Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SV67222	1/2"	1/4" OD	130
SV67225	1/2"	3/8"	120

### Service Tap Valve



Part Number	Pipe(CTS)	Thread	Box Qty
SV67101	1/4"	1/2" NPS	200
SV67102	3/8"	1/2" NPS	180

\* Please see our torque figures on our technical information.

### Barb Valve



Part Number	Barb(OD)	Thread	Box Qty
SFBV670707	1/2"	1/2" FBSP	200

### Male Connector



Part Number	Pipe(CTS)	Thread	Box Qty
SR67131B	3/8"	1/2" MIP	500
SR67132B	1/2"	1/2" MIP	380
SR67133B	1/2"	3/4" MIP	320
SR67134B	3/4"	3/4" MIP	240
SR67135B	1"	1" MIP	120

### Service Angle Valve



Part Number	Pipe (CTS)	Pipe (CTS)	Box Qty
SV67211	1/4"	1/2"	200
SV67212	3/8"	1/2"	180

### Angle Tap Valve



Part Number	Pipe(CTS)	Thread	Box Qty
SVA6714	1/4"	1/2" NPS	180
SVA6734	3/8"	1/2" NPS	160

\* Please see our torque figures on our technical information.

### Angle Stop Valve



Part Number	Pipe (CTS)	Stem (CTS)	Pipe (CTS)	Box Qty
AVT67665S	5/8" OD	5/8" OD	1/4" OD	120
AVT67661S	5/8" OD	5/8" OD	3/8" OD	110
AVT67445S	7/8" OD	7/8" OD	1/4" OD	100

\* Hot and Cold water only. Max Temp. upto 65°C

\* Please see our torque figures on our technical information

## Accessories - CTS Sizes

### Pipe Insert



Part Number	Pipe(CTS)
STS06	1/4"
STS07	3/8"
STS08	1/2"
STS10	3/4"
STS12	1"

### Collets



Part Number	Pipe(CTS)
SCOL04	1/4" OD
SCOL06	1/4"
SCOL07	3/8"
SCOL08	1/2"
SCOL10	3/4"
SCOL12	1"

### Pipe Bend



Part Number	Pipe(CTS)
SPB06	1/4"
SPB07	3/8"
SPB08	1/2"

### EPDM O-ring



Part Number	Pipe(CTS)
SEBR04	1/4" OD
SEBR06	1/4"
SEBR07	3/8"
SEBR08	1/2"
SEBR10	3/4"
SEBR12	1"

### Conversion Adaptor \_ Brass



Part Number	Thread
ADP06M07F	3/8" COMP x 1/2" NPS
ADP07M06F	1/2" NPS x 3/8" COMP

\* Conversion adaptor can be assembled with 1/2" x 1/2" NPS , BSP or 3/8" x 3/8" Compression,BSP

### Conversion Adaptor \_ Hand Tighten



Part Number	Thread
ADP0607	M3/8" CP x F1/2" NPS
ADP0706	M1/2" NPS x F3/8" CP

\* Conversion adaptor can be assembled with 1/2" x 1/2" NPS , BSP or 3/8" x 3/8" Compression,BSP

### Pipe Cutter



Part Number	Pipe(CTS)
TLC-PC	Up to 3/4"

### Heavy Duty Pipe Cutter



Part Number	Pipe(CTS)
TLC-HPC	Up to 1"

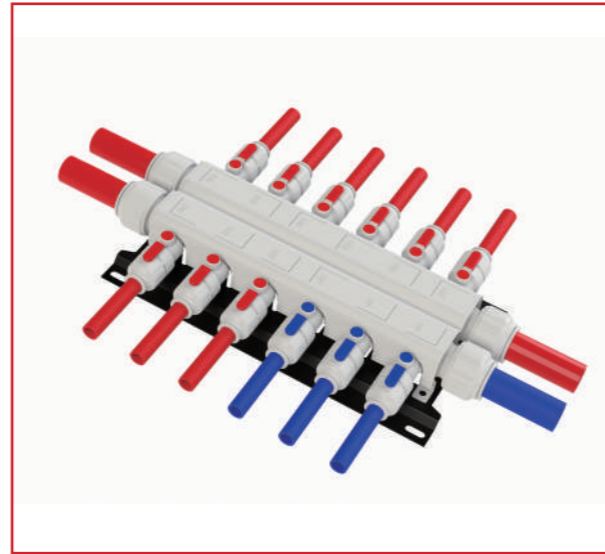
# Manifolds

**Twistloc** Manifolds combine push-fit technology with the value-added advantages of a manifold.

**Twistloc** Manifolds are designed to simplify manifold and pipe installation in Copper, cPVC, PE-RT, PB and PEX pipe, water or hydronic heating systems.

**Twistloc** manifold control unit being tested to requirements of IGC109 and approved in NSF/ANSI 372

**Twistloc** manifold supply inlet connections utilize a special 1"CTS or 28mm connection that requires transition fittings. Connections for the individual pipe distribution lines are push-fit type of fittings. Use only fittings supplied with **Twistloc** or other fittings designed for special port transitions which are available from your Twistloc distributor



## System advantages and Benefits

- Easy to Install
- Save labour time
  - Push-fit Connection
  - All white plastic system
- Installation Flexibility
- Corrosion Resistant
- No lead, non toxic
- No scale deposits
- No risk of flame or fire from a blowtorch
- Low heat diffusion ensures safe surface temperature
- Plumbing flexibility reduces the risk of burst under freezing temperature
- Permanent anti-leak connection
- Light weight for easy handling at sites
- Strong gripping suitable for heating systems

**Typical Supply line Size :** All inlets are 1"CTS (28mm) and use a reducing stem connector to create other inlet Sizes.

**Typical Distribution line Size :** 1/2"CTS (15mm)

In order to maximize the maximum water and energy savings of **Twistloc** manifold system, it is recommended to use the smallest distribution line Size that satisfy the flow rate and pressure requirements of each individual fixture. Using lines in Sizes larger than necessary can increase hot water delivery time.

Measures such as: increasing the line Size up to 1/2"CTS (15mm), relocating the **Twistloc** manifold to reduce line length(s), installing a separate **Twistloc** manifold close to an outlying group of fixtures, or running the line(s) in a more direct (shorter) path may alleviate a potential problem.

If the hose bibbs are primarily for irrigation purposes, they should be supplied from the main service line prior to **Twistloc** manifold. The service line should have Sizes appropriate for the additional water demand.

## Performance

NO.	Working Temperatures and Pressures		
	Usual Temp	Max Temp	Pressures
Cold Water	20°C	20°C	12 bar
Hot Water	65°C	95°C	6 bar
Central Heating	82°C	105°C	3 bar

### Single Close Type



Part Number	Inlet(mm)	Outlet(mm)	Bracket Size (WxL)(mm)	Box Qty
SMF6706SM-3P-C	28	15	140x200	12
SMF6706SM-4P-C	28	15	140x250	12
SMF6706SM-5P-C	28	15	140x300	12
SMF6706SM-6P-C	28	15	140x350	12

Part Number	Inlet(CTS)	Outlet(CTS)	Bracket Size (WxL)(mm)	Box Qty
SMF6706S-3P-C	1"	1/2"	140x200	12
SMF6706S-4P-C	1"	1/2"	140x250	12
SMF6706S-5P-C	1"	1/2"	140x300	12
SMF6706S-6P-C	1"	1/2"	140x350	12

※ 16, 20 & 22 Outlet branch are available.  
 ※ Brackets are sold separately, so please contact us.

### Single Open Type



Part Number	Inlet(mm)	Outlet(mm)	Bracket Size (WxL)(mm)	Box Qty
SMF6706SM-3P	28	15	140x200	12
SMF6706SM-4P	28	15	140x250	12
SMF6706SM-5P	28	15	140x300	12
SMF6706SM-6P	28	15	140x350	12

Part Number	Inlet(CTS)	Outlet(CTS)	Bracket Size (WxL)(mm)	Box Qty
SMF6706S-3P	1"	1/2"	140x200	12
SMF6706S-4P	1"	1/2"	140x250	12
SMF6706S-5P	1"	1/2"	140x300	12
SMF6706S-6P	1"	1/2"	140x350	12

※ 16, 20 & 22 Outlet branch are available.  
 ※ Brackets are sold separately, so please contact us.

### Dual Open Type



Part Number	Inlet(mm)	Outlet(mm)	Bracket Size (WxL)(mm)	Box Qty
SMF6706DM-6P	28	15	190x200	6
SMF6706DM-8P	28	15	190x250	6
SMF6706DM-10P	28	15	190x300	5
SMF6706DM-12P	28	15	190x350	5

Part Number	Inlet(CTS)	Outlet(CTS)	Bracket Size (WxL)(mm)	Box Qty
SMF6706D-6P	1"	1/2"	190x200	6
SMF6706D-8P	1"	1/2"	190x250	6
SMF6706D-10P	1"	1/2"	190x300	5
SMF6706D-12P	1"	1/2"	190x350	5

※ 16, 20 & 22 Outlet branch are available.  
 ※ Brackets are sold separately, so please contact us.

### Single Cover



Part Number	Size	Box Qty
SSC12	For Manifold Single	200

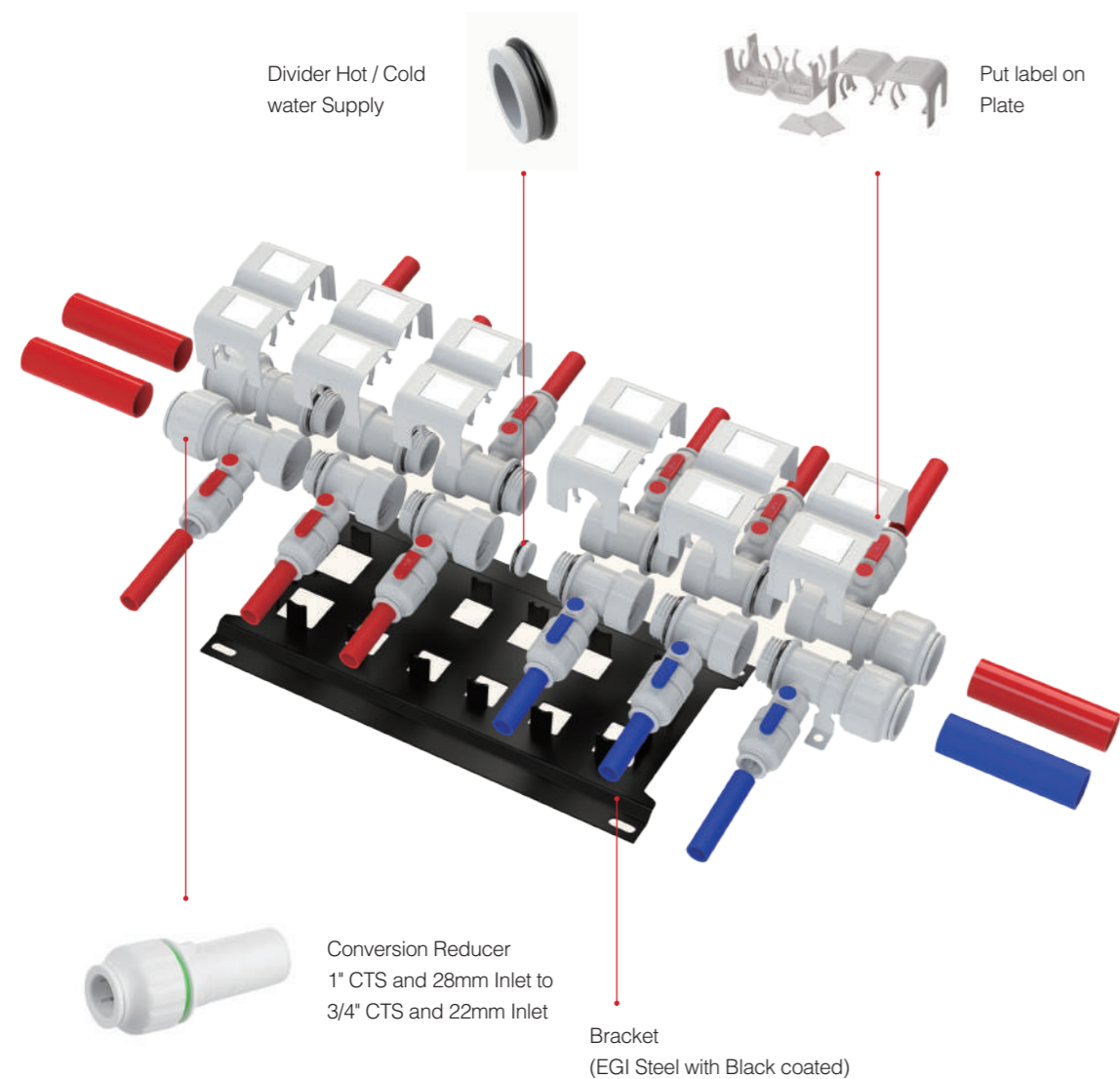
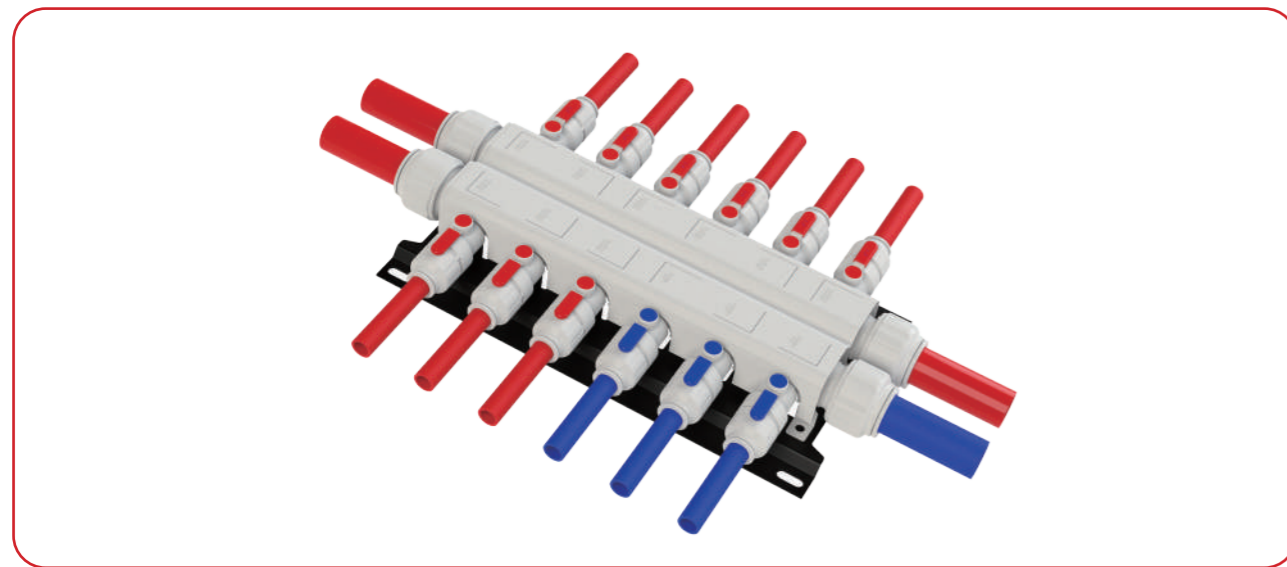
### Dual Cover



Part Number	Size	Box Qty
SDC12	For Manifold Dual	100



## Manifold assembly diagrams



## Installation guide

These Installation Instructions contain information on the installation of **Twistloc** Manifolds hot/cold potable water distribution system Copper, cPVC, PE-RT, PB and PEX pipes.

The installer shall be responsible for ensuring that **Twistloc** Manifolds, PEX tubing and other components on hand are appropriate for the intended applications, and that **Twistloc** Manifolds are installed in accordance with these installation instructions and local plumbing codes.

Nothing in this publication is intended to create any warranty beyond SNC's warranty applicable to **Twistloc** manifold plumbing system.

**NOTE:** These instructions should be used to install **Twistloc** Manifolds. Instructions specific to **Twistloc** Manifolds will be contained in an instruction sheet provided with **Twistloc** Manifolds.

- Keep **Twistloc** manifolds in the original shipping carton until they are installed. Protect **Twistloc** manifold from debris, wood chips, drywall mud or dust, paint, sand, etc., before, during and after installation. **Twistloc** manifold shall be covered during application of interior finishing materials such as paints, stains and textured coatings.

- DO NOT apply any impact force to **Twistloc** manifolds.

- DO NOT disassemble **Twistloc** manifolds.

- DO NOT adjust the tie rod bolts. They are preset in the factory.

- **Twistloc** manifold and **Twistloc** fittings are plastic materials and thus they should be treated differently from metals. \*

- **Twistloc** manifold and fittings may melt, crack or distort if exposed to open flame or excessive heat.

- Install **Twistloc** manifold in an accessible place which is not exposed to freezing temperatures or direct sunlight.

- Prevent fluids in **Twistloc** manifold from freezing.

- DO NOT use pipe dope, thread sealants or Teflon<sup>®</sup> paste in order to seal threaded fittings. All of the connections to **Twistloc** manifold are a mechanical compression type, or seal with a rubber gasket and do not require any other forms of sealant.

- Prevent **Twistloc** manifold from coming into contact with cPVC or PVC cements or cleaners, acids such as solder fluxes, strong oxidizing agents, highly alkaline solutions, lubricants, leak check compounds, bug sprays, cleaners, paints, bleaches, or other chemicals which could adversely affect the plastic. Avoid using solder flux or solvent cements adjacent to **Twistloc** manifold.

- All distribution line connections shall be made with fittings supplied with each manifold or other SNC approved connections.

**Twistloc** insist on rigorous testing to ensure that all of our pipes and fittings are manufactured within certain tolerances.

As we are unable to guarantee those tolerances used by other manufacturers, we are unable to recommend our fittings be used with any other plastic pipe or fittings.

- Distribution lines shall enter or exit **Twistloc** manifold in a straight line parallel to the length of **Twistloc** manifold.

- **Twistloc** manifold plumbing system relies upon the proper fastening of distribution line **Twistloc** connections. Failure to complete all connections will result in leakage.

- If these installation guidelines conflict or are inconsistent with local building or plumbing codes, any codes applicable to parallel plumbing systems shall prevail.

# Repair Couplings

**Twistloc** Slip Connectors are designed to be suitable for Copper, cPVC, PE-RT, PB and PEX pipes. **Twistloc** connectors offer the lowest material cost. When you need to repair a pipe line, **Twistloc** slip connectors offer greater efficiency than traditional fittings.

Please note that it is the installer's responsibility to ensure that **Twistloc** fittings, pipework and other components are appropriate for the intended applications, and that products are installed in accordance with the installation instructions and local plumbing codes.



## Advantages and Benefits

5"  
[13cm]  
Long



- Save labour time  
Push-fit Connection
- All white plastic system  
Easy To Repair
- Strong Gripping Strength  
Suitable and safe for heating and plumbing systems
- Permanent anti-leak connection  
Perfect connection with Push and twist and lock system
- Visible Connection Easy recognition of Size by color  
Easy verification of coupling (lock/unlock) status at a long distance
- Flexibility enables cabling works on the pipe through hard access area  
Light weight for easy handling at sites.
- No Tools Required
- PATENT PENDING

## Performance

NO.	Working Temperatures and Pressures		
	Usual Temp	Max Temp	Pressures
Cold Water	20°C	20°C	12 bar
Hot Water	65°C	95°C	6 bar
Central Heating	82°C	*114°C	3 bar

\* Short term overload of up to 114°C

## Slip Union Coupler



Part Number	Pipe(mm)	Pipe(mm)	Box Qty
SRU6766SM	15	15	150
SRU6777SM	16	16	90
SRU6744SM	22	22	100

Part Number	Pipe(CTS)	Pipe(CTS)	Box Qty
SR67223S	1/2" CTS	1/2" CTS	150
SR67225S	3/4" CTS	3/4" CTS	100

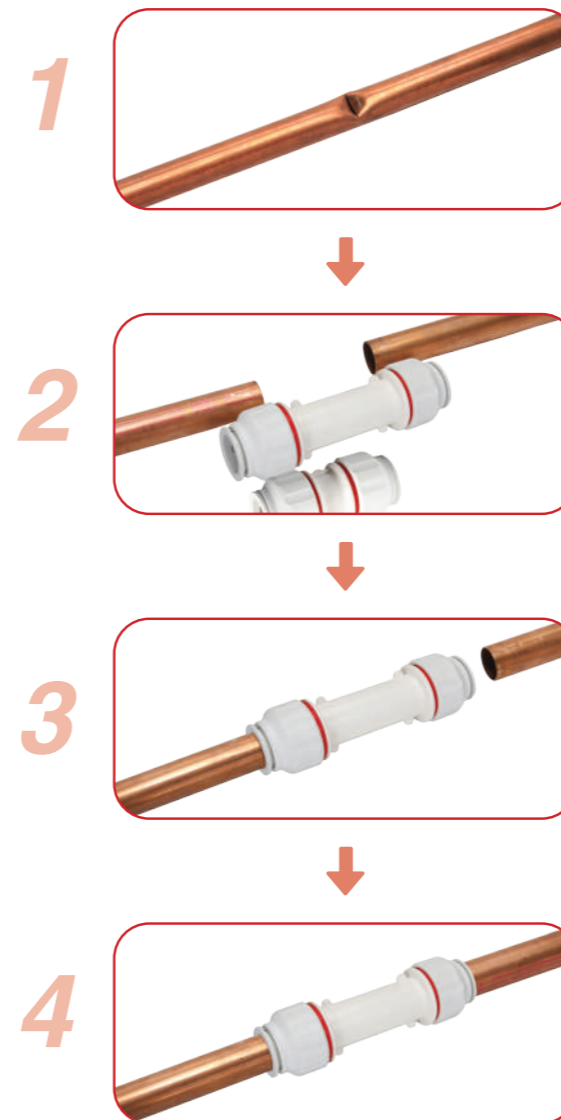
## Slip Tee Union



Part Number	Pipe 1 (mm)	Pipe 2 (mm)	Pipe 3 (mm)	Box Qty
SR6766SSM	15	15	1/4" OD	130

Part Number	Pipe (CTS)	Pipe (CTS)	Pipe (CTS)	Box Qty
SR67302S	1/2"	1/2"	1/4" OD	130

## How to repair :



Ensure that the damaged pipe is kept clean

Cut the damaged pipe less the instructed length which shows in our installation guide. Also please ensure the right cutting of pipe and clean the surface of pipe.

Connect the slip port with the pipe first and slide it until the connection is adjusted with the opposite side. Twist the screw cap until the coloured ring is no longer visible. Only use hand force to twist the screw cap; using a wrench or other tools can easily damage the fitting and would not be covered by our guarantee.

Connect to the other pipe and arrange a right connection. Twist the screw cap until the coloured ring is no longer visible. Pull the pipe away from the fitting to check it is a secure fit. \* Test system to ensure watertight.



# Installation Solution

**Twistloc** Stop & Faucet Valve Adaptor valves and Slip Tee Valves are manufactured in white Polypropylene, reinforced plastic which provides value-added advantages in the installation of water supply line mainly. **Twistloc** Stop & Faucet Valve Adaptors and Slip Tee Valves are designed for use in drinking water systems, Refrigerators, Ice-Makers, Humidifiers and Water filtration applications, etc.,. Our valves offer greater efficiency than any traditional valves.

Please note that it is the installer's responsibility to ensure that **Twistloc** fittings, pipework and other components are appropriate for the intended applications, and that products are installed in accordance with the installation instructions and local plumbing codes.



\*Conversion adaptor can be assembled with 1/2" x 1/2" NPS, BSP or 3/8" x 3/8" Compression, BSP

## Advantages and Benefits

- Easy to Install
- Save labour time
- Push-fit Connection
- All white plastic system
  - Better positioning with Swivel 90° Turn ON / OFF
- No Tools required Hand tighten
- Visible Connection
  - Easy recognition of Size by color Easy verification of coupling (lock/unlock) status at a long distance
- Strong Gripping Strength
  - Suitable and safe for heating and plumbing systems
- Permanent anti-leak connection
  - Perfect connection with Push and twist and lock system
- Flexibility enables cabling works on the pipe through hard access area Light weight for easy handling at sites.

## Performance

Working Temperatures and Pressures	
Usual Temp	Pressures
1°C	10 bar
20°C	10 bar
65°C	7 bar

## Stop Valve Adaptor \_ Hand Tighten



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6753B	1/4"	3/8" BSP	3/8" BSP	150
AVA6713B	3/8"	3/8" BSP	3/8" BSP	150
AVA67534B	1/4"	3/8" BSP	1/2" BSP	150
AVA67134B	3/8"	3/8" BSP	1/2" BSP	150

Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6753CP	1/4"	3/8" Comp	3/8" Comp	200
AVA6713CP	3/8"	3/8" Comp	3/8" Comp	200

\* Hot and Cold water only. Max Temp 65°C  
\* Please see our torque figures on our technical information.

## Stop Valve Adaptor \_ Brass



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6753BB	1/4"	3/8" BSP	3/8" BSP	100
AVA6713BB	3/8"	3/8" BSP	3/8" BSP	100

Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6753BCP	1/4"	3/8" Comp	3/8" Comp	150
AVA6713BCP	3/8"	3/8" Comp	3/8" Comp	150

\* Hot and Cold water only. Max Temp 65°C  
\* Please see our torque figures on our technical information.

## Faucet Valve Adaptor



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6754BP	1/4"	1/2" BSP	1/2" BSP	180
AVA6714BP	3/8"	1/2" BSP	1/2" BSP	180

Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6754	1/4"	1/2" NPS	1/2" NPS	180
AVA6714	3/8"	1/2" NPS	1/2" NPS	180

\* Hot and Cold water only. Max Temp 65°C  
\* Please see our torque figures on our technical information.

### Faucet Valve Adaptor \_ Brass Shaft



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6754BB	1/4"	1/2" BSP	1/2" BSP	100
AVA6714BB	3/8"	1/2" BSP	1/2" BSP	100

Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA6754B	1/4"	1/2" NPS	1/2" NPS	100
AVA6714B	3/8"	1/2" NPS	1/2" NPS	100

\* Hot and Cold water only. Max Temp 65°C  
 \* Please see our torque figures on our technical information.

### Reducing Faucet Valve Adaptor \_ Brass Shaft



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA67534BB	1/4"	3/8" BSP	1/2" BSP	100
AVA67134BB	3/8"	3/8" BSP	1/2" BSP	100

Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
AVA67534BCP	1/4"	3/8" COMP	1/2" NPS	100
AVA67134BCP	3/8"	3/8" COMP	1/2" NPS	100

\* Hot and Cold water only. Max Temp 65°C  
 \* Please see our torque figures on our technical information.  
 \* Included Conversion Adaptor

## How to Install



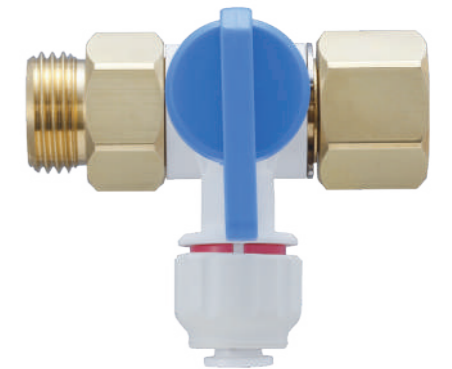
- 1 Shut off your existing Stop valve and disconnect the riser from the valve.
- 2 Connect our Stop valve to the water valve.
- 3 Connect the riser to our valve.
- 4 Push fitting onto the end of the pipe until it reaches the pipe stop. Twist the screw cap until the coloured ring is no longer visible.
- 5 Pull the pipe away from the fitting to check it is a secure fit.
- 6 Test system to ensure watertight.

## Angle Check Valve \_ Backflow prevention

### Angle Check valve

**Twistloc**® Backflow Prevention Valves offer great security and will not pollute your water system. Its simple design featuring a ¼ turn ON/Off along with ease of installation saves the end user time and money while providing them with a very effective water supply system.

Hot and Cold water only. Max Temp 65°C



### Applications :

- Vending Machines
- Water Purifiers
- Water Cooler
- Coffee & Beverage Machines

### Benefits :

1. Ease of installation in tight spaces
2. Maximum Security preventing the pollution of your water system
3. Food grade materials.
4. Valves are designed for easy connection to existing water supply lines

### Performance

Working Temperatures and Pressures	
Usual Temp	Pressures
1°C	10 bar
20°C	10 bar
65°C	7 bar

### Angle Check Valve \_ Brass Shaft



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
CVA6753BB	1/4"	3/8" BSP	3/8" BSP	100
CVA6713BB	3/8"	3/8" BSP	3/8" BSP	100
CVA6754BB	1/4"	1/2" BSP	1/2" BSP	100
CVA6714BB	3/8"	1/2" BSP	1/2" BSP	100



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
CVA6753BCP	1/4"	3/8" Comp	3/8" Comp	100
CVA6713BCP	3/8"	3/8" Comp	3/8" Comp	100
CVA6754B	1/4"	1/2" NPS	1/2" NPS	100
CVA6714B	3/8"	1/2" NPS	1/2" NPS	100

\* Please see our torque figures on our technical information.

### Angle Check Valve



Part Number	Tube(OD)	Male Thread	Female Thread	Box Qty
CVA6753B	1/4"	3/8" BSP	3/8" BSP	150
CVA6713B	3/8"	3/8" BSP	3/8" BSP	150
CVA67534B	1/4"	3/8" BSP	1/2" BSP	150
CVA67134B	3/8"	3/8" BSP	1/2" BSP	150

\* Please see our torque figures on our technical information.



## Sales Condition

These conditions of sale override any clause in the buyer's orders in any other communication if in conflict therewith.

### Prices

All prices are ex-works quoted unless specifically agreed otherwise in writing. SNC KOREA already (herein after called SNC) reserves the right to alter prices or terms offered to any buyer without notice. Prices and terms shall be those ruling at the date of despatch.

### Value Added Tax

VAT if not included in the quotation shall be added and payable where and at the rate applicable.

### Minimum Order Value

Minimum order value may be applied at the sole discretion of SNC.

### Payment Terms

The Company's standard terms is Wire Transfer or L/C at time of shipment. All other payment arrangements must have managements approval prior to shipment. Overdue invoices may be subject to interest charges.

### Freight Terms

Delivery Times are given as accurately as possible. The customer shall have no rights to damages or to cancel an order for failure to meet any delivery time stated or agreed either verbally or in writing. Shortage and damages to be notified in writing within 3 days of receipt of goods or no claims will be allowed. Claims for non receipt of goods must be made within 7 days of the date of despatch or no claim will be allowed. Under \$5,000 valued PO should be Ex-Works.

### Cancellation

Cancellation of an order will not normally be accepted by SNC. However, SNC may at its discretion agree to cancellation on the strict condition that all costs and expenses incurred by SNC up to the time of cancellation and all loss of profits and other loss

or damages resulting to SNC by reason of such cancellation will be reimbursed by the customer to SNC forthwith. Cancellation must be confirmed in writing.

### Performances

SNC warrants that the good shall, at the time of delivery, correspond to its suppliers specifications when used for purposes for which goods of that type are ordinarily used.

No liability is accepted for failure to attain any manufacturers performance figures quoted unless SNC shall have specifically guaranteed them with an agreed sum as liquidated damages and the buyer has suffered loss by reason of the failure to attain the figures specifically quoted and agreed.

Any particulars of weights and measurements or performances relating to the goods and like matters furnished by SNC to the buyer in any catalogues, literature or otherwise are approximate and are intended to present a general idea of the goods and unless previously and specifically agreed in writing shall not form part of any contract.

Where products are sourced and supplied to buyer specific designs and/or specifications, provided that the goods conform in all respects, no liability whatsoever shall be accepted for the fitness for purpose and approval for use will be solely at the buyer's risk.

Where products are sourced and supplied to an agreed specification for a specific application, it is the buyer's responsibility to prove the product in the application and in which case no liability whatsoever will be accepted for defects which are caused by use in the buyer's application unless specifically agreed otherwise in writing prior to use in that application.

[www.twistloc.com](http://www.twistloc.com)

## Warranty Policy

Limited Warranty: SNC warrants **Twistloc**® range of water supply push-fit fittings to be free of manufacturing defects and material and workmanship when used under normal usage in potable water systems, and installed to a pipe which have been produced in conformity with the plumbing and heating standards by a licensed plumbing contractor in accordance with installation instructions provided by SNC and applicable plumbing and heating requirements. This **Twistloc**® fittings carry a period of 50-year limited warranty from the date of original purchase.

This 50-year warranty does not cover the mechanical components within our range of valves and threaded adaptors. Sealing washers for both the valves and adaptors are also not covered within the 50-year warranty.

For the above-mentioned product types, these will hold a 2-year warranty for manufacturing defects from the date of original purchase.

Damage to fittings before, during or after installation from improper assembly, repair and poor maintenance, used in competition or for commercial purposes, caused by use of or exposure to unauthorized chemicals or solvents - inadequate freeze protection - exposure to water temperatures or pressure in excess of limitations set forth in SNC installation instructions, shall nullify the terms of this warranty.

SNC must receive notification of a claim of manufacturing defect or failure in writing within applicable warranty period and within (30) thirty days of said defect or failure. All fittings that pertain to claim must be made available to SNC at owner's expense for testing and determination of cause. Upon receipt of a warranty claim SNC shall have (90) working days in which to determine responsibility for any claims of defects in material or workmanship and the course of action to be taken.

In the event of a failure pertaining to an installed **Twistloc**® fittings and Valves, it is the responsibility of the property owner to obtain and pay for any repairs. Reimbursements for transportation, labor, repairs or other work related to any claims of defective materials are at the sole discretion of SNC and must be authorized in writing in advance by SNC.

Customers must contact the party whom the customer purchased the product and return the defective product to such party for repairs or replacement, as the case may be. Proof of purchase may be required. Customers are responsible for all shipping charges from their facility to the party from which the customers purchased the products.

### Warranties exclusive

If a snc product does not operate as warranted above, customer's sole remedy shall be repair or replacement of the product in question, at snc option. The foregoing warranties and remedies are exclusive and are in lieu of all other warranties or conditions, express or implied, either in fact or by operation of law, statutory or otherwise, including warranties or conditions of merchantability and fitness for a particular purpose. Snc neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale, installation, maintenance or use of its products.

Snc shall not be liable under this warranty if its testing and examination disclose the alleged defect in the product does not exist or was caused by customer's or any third person's misuse, neglect, improper installation or testing, unauthorized attempts to repair, or any other cause beyond the range of the intended use, or by accident, fire, lightning, or other hazard.

### Limitation of liability

In no event, any purchasing through snc or its authorized reseller, whether based in contract or tort (including negligence), shall snc be liable for incidental, consequential, indirect, special, or punitive damages of any kind, or for loss of revenue, loss of business, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure, or interruption of its products, even if snc or its authorized reseller has been advised of the possibility of such damages.

Some countries do not allow the exclusion of implied warranties or the limitation of incidental or consequential damages for consumer products, so the above limitations and exclusions may not apply to you.