

UTCTM

Universal Transition Coupling Technical Manual



IPEX

by aliaxis

CONTENTS

Benefits	1
Applications	2
Standards	2
System Design Considerations	3
Chemical Resistance	4
Installation Instructions	5
UTC Sizing Chart	6
Dimensions & Weights	6
Materials & Components	7
Principles of Operation	7



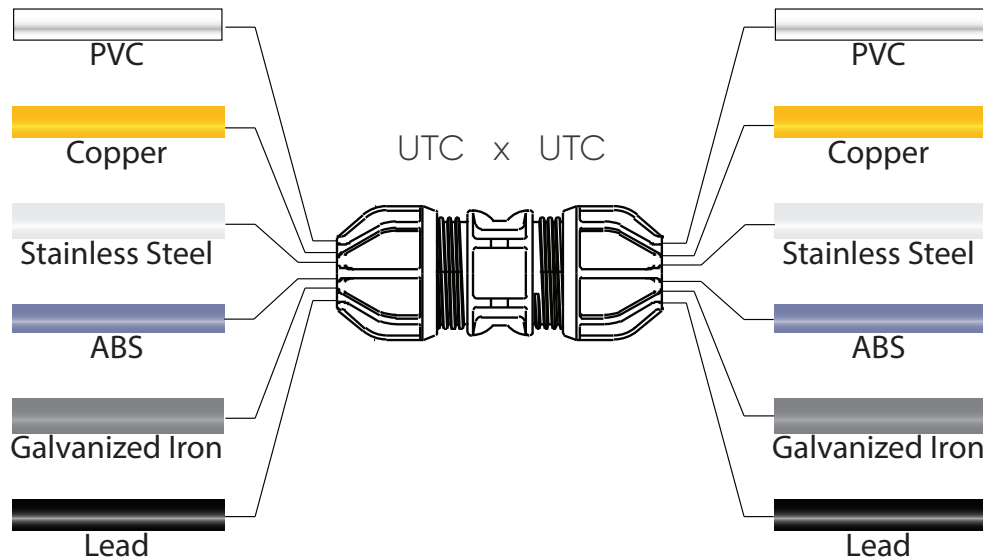
This literature is published in good faith and is believed to be reliable. However, it does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience. A policy of ongoing product improvements is maintained. This may result in modifications of features and/or specifications without notice.

Disclaimer
Please refer to our Terms and Conditions of sale.

Comprehensive Pipe Coverage

Connects to a wide variety of pipes

PVC, copper, galvanized iron, ABS, lead, stainless steel, steel, polyethylene and PEX



Benefits

Flexible Connections

Through its wide tolerance, the IPEX UTC is designed to fit a range of different diameters on most material (including PEX, CTS Polyethylene, Copper, PVC, IPS OD Polyethylene, Lead, ABS, Galvanized and Stainless Steel). The large seal in IPEX UTC is particularly suited to out-of-round and pitted pipes.

Faster to Fit

Slide & Tighten™ technology: The IPEX UTC incorporates all the benefits of Slide & Tighten technology. Simply witness mark the pipe against the flange on the fitting, and then insert the pipe to the correct depth. The nut can then be tightened using a wrench. The UTC is fully installed when the nut can no longer be tightened with reasonable force. No special tools are required and the IPEX UTC is supplied ready to use.

Lasts Longer

The composite material avoids corrosion, ensuring a long service life. In addition, galvanic corrosion can occur when a metal fitting is used to connect to a dissimilar metal pipe, using UTC fittings avoids this risk. UTC fittings have a 50 year + design life: Built to withstand the toughest conditions to ensure longevity and durability, IPEX UTC has a 50 year+ design life at 73 °F (23 °C).

Safety

Composite construction means there is no leachate of heavy materials and it is completely free of lead. UTC fittings are insulating and are a "Dielectric" fitting for use between dissimilar metals.

Prevents Theft

Manufactured from durable composite materials, the IPEX UTC fitting has no scrap value unlike brass fittings.

Robust and Easy

Made from advanced thermoplastic materials: The IPEX UTC is manufactured from lightweight high performance thermoplastic materials with outstanding impact, UV, chemical and corrosion resistance. The UTC end contains hard stainless steel grippers which provide superior end load resistance. The IPEX UTC is fully integrated with no loose components. There is no need for individual assembly of a split ring, sealing ring or nut. All that is required is the insertion of the pipe and tightening of the nut.

Pressure Rating

UTC fittings have a maximum operating pressure of 200psi

Applications

Repair Work

UTC is used extensively by water companies, plumbers and civil contractors for repair work. The UTC x UTC fitting was originally developed as a copper to copper repair joint at the request of a global water company.

New Installations

Connecting polyethylene pipe to water meter risers and polyethylene pipe to copper.

UTC fittings are used by water companies as a connection between polyethylene pipe and metal pipes.

Upgrades

UTC is particularly useful in service line upgrades. A small number of UTC fittings provide a complete solution and will connect to whatever pipe the installer finds at the property boundary.

Standards

The IPEX UTC compression fittings are approved for potable water use to CSA B137.1 and NSF61.

IPEX UTC fittings conform to the following standards:

ANSI/ASME B1.20.1,

Pipe threads, General purpose (inch).

ASTM F1498

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

ASTM F3536

Standard specification for PE and PP mechanical fittings for use on NPS 3 or smaller cold-water service polyethylene (PE) or crosslinked Polyethylene (PEX) pipe or tubing.

AWWA C800

Underground Service line valves and fittings. IPEX fittings comply with the relevant dimensional and performance requirements of AWWA C800.

ASTM D2565

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

System Design Considerations

IPEX UTC is a fitting that offers three distinct advantages over thermofusion fittings;

- **The ability to transition from PE to any recommended pipe material**
- **The ability to connect multiple types of pipes together**
- **Quick and easy installation and disassembly**

This section highlights engineering considerations when designing a pipe system with IPEX UTC.

Projected life of Compression fittings

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

Resistance to Impact

The thermoplastic materials used in the IPEX UTC Compression fittings have excellent impact properties.

Abrasion Resistance

IPEX UTC 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 against degradation from ultra-violet radiation. However, long term continuous use above ground does require fittings to be protected from direct sunlight.

Electrolytic Corrosion

The plastic body provides an effective means of isolation against electrolytic action when connecting two metal pipes. The stainless steel (grade 304) gripper teeth provide long term resistance to corrosion.

Thermal Insulation

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

Light Transmission

The IPEX UTC does not transmit light, thus protecting the water quality in potable water pipelines from growth of micro organisms.

Effect on Water

IPEX UTC does not impart to the water any odour, taste, colour, or any constituents that could be injurious to health.

Pressure Rating

IPEX UTC has a maximum operating pressure of 200psi and therefore should not be used in systems with pressure that exceeds 200psi.

Temperature

IPEX 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 73 ° F (23° C).

Fluids other than Water

IPEX UTC may convey a wide variety of fluids. The following table is provided as a guide only for the compatibility of various chemicals to IPEX UTC. Contact IPEX Technical Services for specific application.

The fact that certain combinations of chemicals and mechanical load can induce stress cracking in many otherwise chemically resistant materials, both metallic and non-metallic, is of particular significance.

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

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

IPEX Assistance

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

Size. What size is the valve or pipe work?

Temperature. What temperature are the chemicals? Is the temperature constant or cycling?

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

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

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

Remember the **STAMP** acronym.

Chemical Resistance

Chemical	Satisfactory	Not Satisfactory
Air	✓	
Ammonium Hydroxide	✓	
Alcohol	✓	
Acetone		✓
Auto Transmission Fluid	✓	
Antifreeze	✓	
Benzene		✓
Butane	✓	
Calcium Salts	✓	
Caustic Soda (60% 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 = 68°F		

Installation Instructions - UTC

(Joins PE, copper, stainless steel, ABS, galvanized iron, lead, steel or PVC 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.

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

UTC Sizing Chart

The following chart provides a convenient means of identifying the appropriate UTC fitting. For pipes and tubes not included in this chart, simply match the pipe's outside diameter to the appropriate UTC body size.

		PN# 255400	PN# 255401	PN# 255402
	Inches	0.59 – 0.83"	0.83 – 1.06"	1.06 – 1.34"
	Body Size	Size A	Size B	Size C
	mm	15-21 mm	21-27 mm	27-34 mm
Pipe Materials	Standards	Nominal Pipe Size in Inches		
Copper Type K, L & M	ASTM B88	1/2" and 5/8"	3/4"	1"
CTS PE or PEX ^a	ASTM D2737 / F876	1/2"	3/4"	1"
PVC (IPS-OD)	ASTM D2241 / D1785	–	1/2 and 3/4"	3/4" and 1"
ABS (IPS-OD)	ASTM D1527	–	1/2 and 3/4"	3/4" and 1"
Galvanized Iron (IPS-OD)	ASTM A53	–	1/2 and 3/4"	3/4" and 1"
Steel and Stainless Steel	ASTM A312 / A358 / A376	–	1/2 and 3/4"	3/4" and 1"
PE IPS-OD (SDR)	ASTM D3035 / D2447	–	1/2 and 3/4"	3/4" and 1"
PE SIDR 7 (IPS-ID)	ASTM D2239	1/2"	3/4"	–
PE SIDR 9 (IPS-ID)	ASTM D2239	1/2"	3/4"	1"
PE SIDR 11.5 (IPS-ID)	ASTM D2239	1/2"	3/4"	1"
PE SIDR 15 (IPS-ID)	ASTM D2239	1/2"	3/4"	1"
Lead Strong		1/2"	5/8"	1"
Extra Strong		–	1/2"	5/8 and 3/4" ^b
Double Extra Strong		–	1/2"	5/8 and 3/4" ^b

a Also known as Water Service Tube. UTC is cold water rated fitting. It is rated to 200 psi at 73° F (23° C), please consult IPEX or a local representative for de-rating factors in excess of 73° F (23° C).

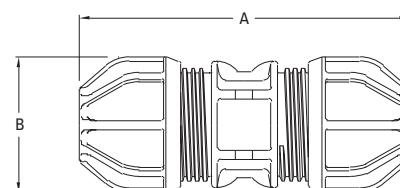
b If the OD of 3/4" 'Double Extra Strong' Lead Pipe is larger than 1.34", the pipe needs to be shaved when using a Size C UTC fitting.

Lead: The general condition of lead pipe can make sizing difficult at top and bottom tolerance. If the recommended UTC is not successful the next size up or down depending on the fit should be offered.

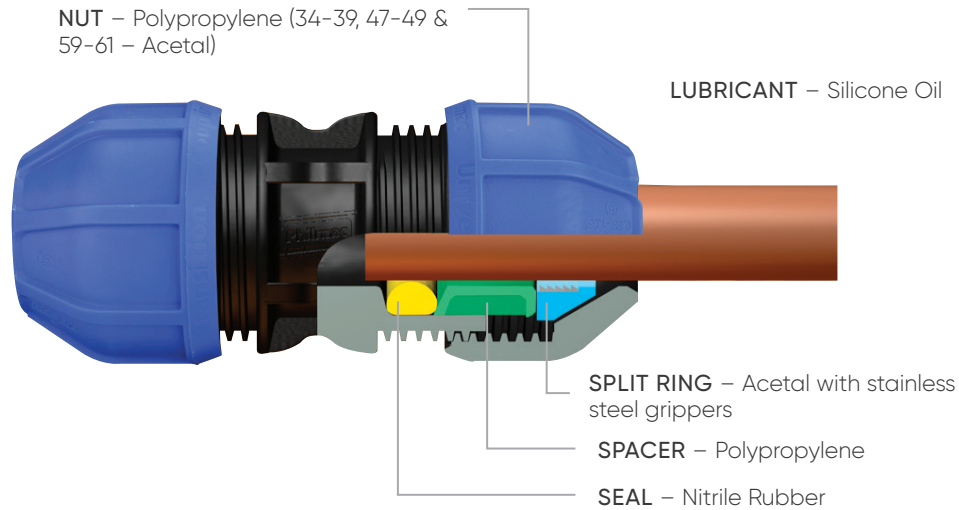
Dimensions & Weights

COUPLER (UTC x UTC)

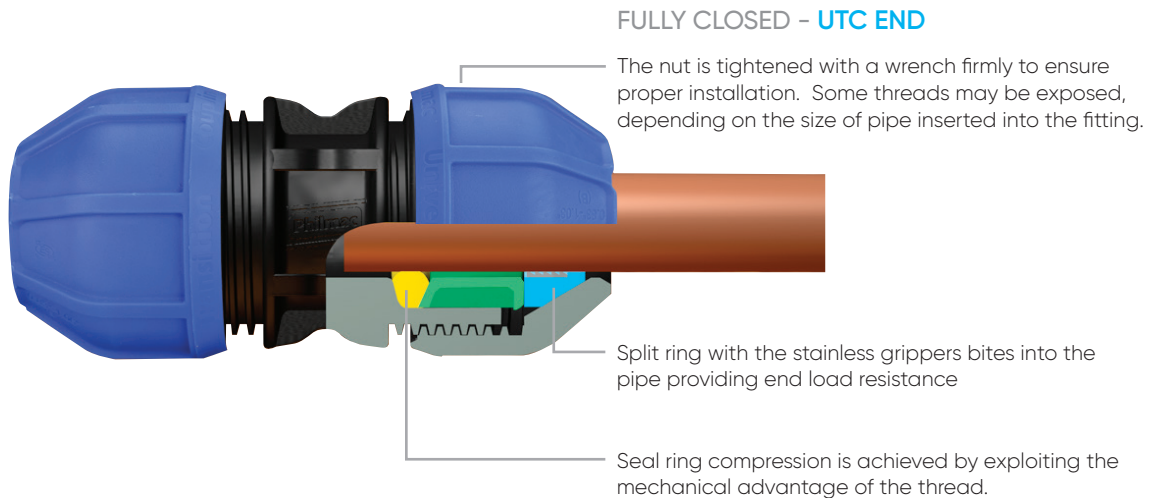
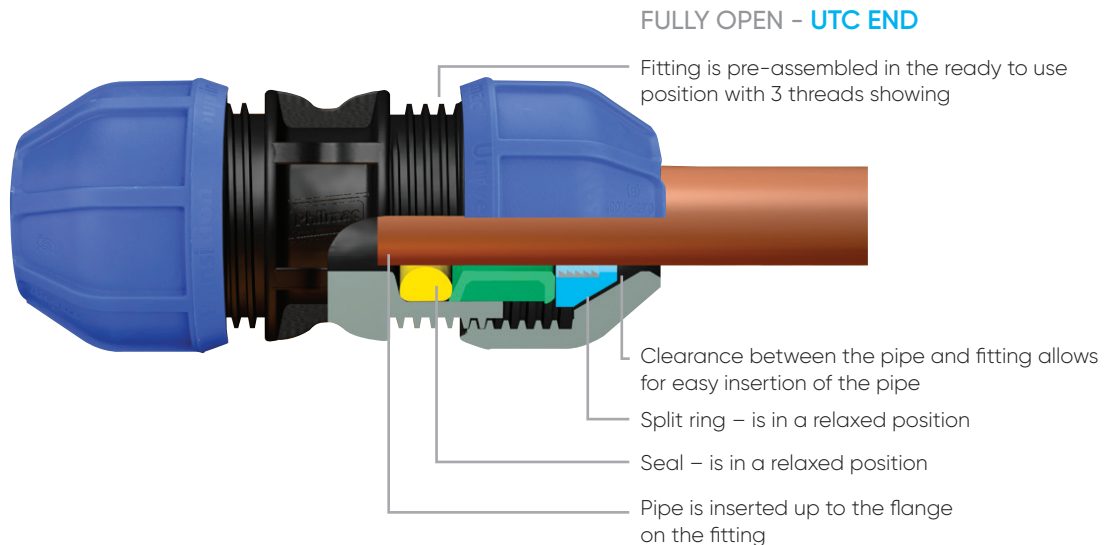
Size (OD) UTC x UTC	IPEX Code	Dimensions		Weight
		A	B	Wt
0.59 in. – 0.83 in. x 0.59 in. – 0.83 in. 15 – 21 mm x 15 – 21 mm	255400	5.35" (135.89 mm)	2.12" (53.85 mm)	0.28 lb (0.13 kg)
0.83 in. – 1.06 in. x 0.83 in. – 1.06 in. 21 – 27 mm x 21 – 27 mm	255401	6.14" (155.95 mm)	2.59" (65.79 mm)	0.47 lb (0.21 kg)
1.06 in. – 1.34 in. x 1.06 in. – 1.34 in. 27 – 34 mm x 27 – 34 mm	255402	6.88" (174.75 mm)	3.14" (79.76 mm)	0.77 lb (0.35 kg)



Material & Components



Principles Of Operation





IPEX USA LLC

10100 Rodney St, Pineville, NC 28134

CUSTOMER SERVICE

Email: retailorders32@ipexamerica.com



NAUTCTECHMAN2025