Installation Procedure for WaterPex Single Layer Pe-Xb and Multilayer Crimp Systems

The Couta Group Pex-Al-Pex Piping System Installation Guidelines

This manual contains recommended installation instructions for the Couta Group WaterPex piping systems. **Failure to observe these installation instructions** may result in substandard performance of the system. The Couta Group expressly disclaim any responsibility or liability for substandard performance resulting from failure to comply with the installation instructions.

The requirements for the installation of Water systems are mandated by local authorities and AS3500 The Plumbing and Drainage Standard which has been adopted to varying degrees by State Authorities.

AS/NZS 3500 Plumbing and drainage standard is comprised of a number of parts as outlined below:

3500.0 **Part 0:** **Glossary of terms (this Standard)**	**3500.1** **Part 1:** **Water services**	**3500.2** **Part 2:** **Sanitary plumbing and drainage systems**
3500.3 **Part 3:** **Storm water drainage systems**	**3500.4** **Part 4:** **Heated water services.**	**3500.5** **Part 5:** **Domestic installations**

The Standard is primarily intended for the general water industry and for use in the interpretation of terminology used in the various parts of the Plumbing and drainage series of Standards and covers water supply from the reticulation main into the premises, including hot water service systems, sanitary fixtures, drainage and their associated water and waste fittings, pipe systems and associated components.

WaterPex systems comply with all requirements of these standards.

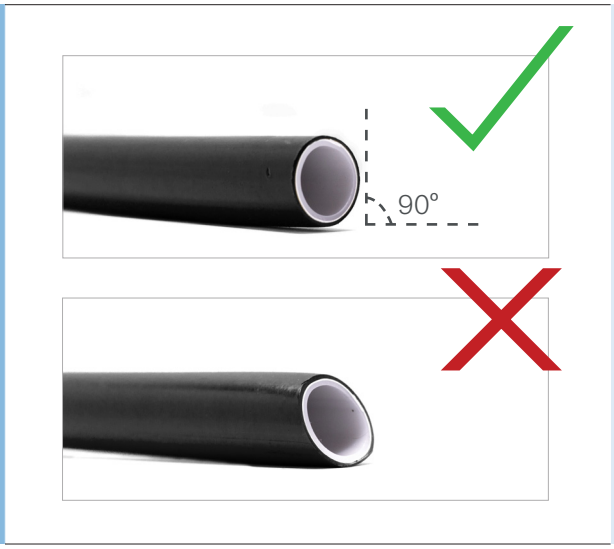
It is important for installers of potable water systems to also note that water piping systems (pipe and fittings jointed) must also comply with AS 4020 - Testing of products for use in contact with drinking water.

Installation Procedure for WaterPex Single Layer Pe-Xb and Multilayer Crimp Systems

Pipe Preparation

Cut the pipe to the required length ensuring that the cut is square (perpendicular to the length). Use the GPZ-SC1 cutter or equivalent for 16 through to 32mm pipe. The GPZ-QGQ cutter is easiest when working with larger bore piping systems

Pipe end profile with appropriate right angle cut



Always check that the pipe end profile has been cut square.

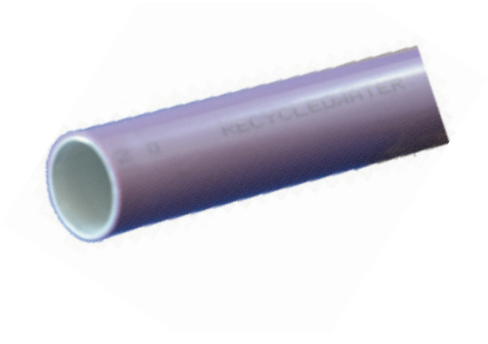
Rounding and Bevelling

The reamer tools have the dual purpose of "rounding" the pipe after cutting and then bevelling the inner lip of the pipe to allow easy insertion of the fitting to prevent damage of the O-ring during insertion into the pipe.

Using either the plastic or metal reamer, insert the correct sized reamer into the pipe, turning as you go. This will round the pipe. Push the reamer down and continue to turn so that the reamer bevels the inner lip of the pipe. You should see pex swarf being generated at the shoulder of the reamer. Continue to ream for 3-4 turns.

Plastic reamer inserted into pipe

Rounded piping after use of reamer



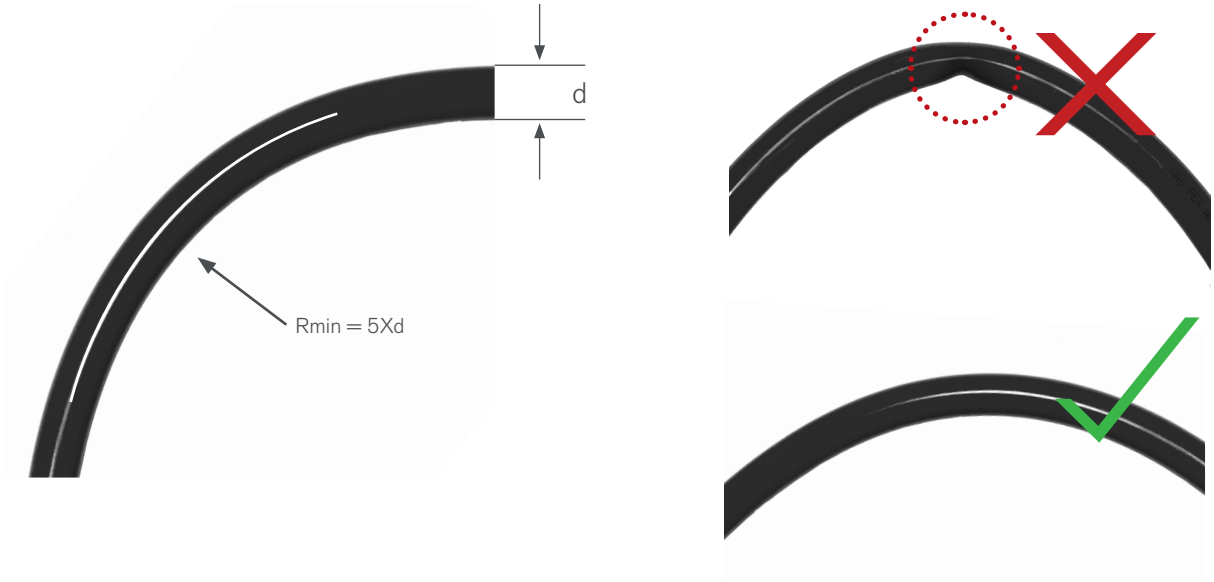
Always check the pipe has been rounded by the reamer and bevelled smoothly. Also ensure the swarf has been removed from the pipe to ensure it does not interfere with crimping of the joint.

Installation Procedure for WaterPex Single Layer Pe-Xb and Multilayer Crimp Systems

Creating pipe Bends

Bending of the pipe may be accomplished by hand with an internal or external bending spring or copper tube benders. Bending springs are available within our range of products. It is very important to note that the minimum bending radius for pipe is 5x D where D is the nominal outside diameter of the pipe.

Bent piping



If you want to bend the pipe by hand then this is possible although not the recommended method. A bending spring is preferred.
If bending the pipe by hand it is recommended that you keep your hands 40cm (16 inches) apart during the bending process. Create the bend slowly taking care not to kink the pipe or exceed the minimum bend requirements.

If bending with an internal bending spring, insert the bending spring inside the pipe remembering to leave a minimum of 2 inches of the spring extruding from the pipe – this is necessary so that you are able to easily remove the spring after creating the bend. Create the bend ensuring that the bending radius is not less than 5x the outer diameter of the pipe. Remove the bending spring when completed.

Where an external bending spring is to be used to create the bend, insert the pipe into the bending spring and move the spring so that it centres on the point at which you require a bend. Create the bend ensuring that the bending radius is not less than 5x the outer diameter of the pipe. Remove the bending spring when completed.

Installation Procedure for WaterPex Single Layer Pe-Xb and Multilayer Crimp Systems

Connecting pipe and fittings – Sizes 16 through to 32mm

Check the fitting and pipe- The pipe end should be rounded and bevelled as previously described and the size of the fitting and pipe to be joined must be identical, e.g. 20mm fitting joined to 20mm pipe.

Push the pipe straight on to the fitting (do not "screw/turn" the pipe on to the fitting) until the pipe shows fully past the witness mark of the sleeve.

At this point, the joint is now prepared for crimping.

Piping placed fully past witness mark of fitting sleeve

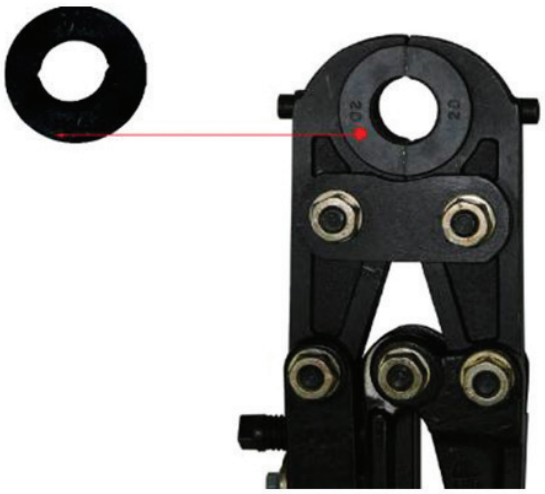
The Couta Group disclaims any responsibility or liability for product failures due to the use of any unauthorized tools or the mixing and matching the pipe and/or fittings of other manufactures with Couta Group systems.

Ensure that your crimping tool has been adjusted as recommended. Verification/calibration of the tool should be made on the following occasions

- First use of the tool
- Every time heads are changed
- Every 60 crimps
- Each day prior to use
- The closed clamp handles can be opened freely with little or no force

Also ensure that the correct sized jaw has been fitted to the tool.

Tool and corresponding jaw



Installation Procedure for WaterPex Single Layer Pe-Xb and Multilayer Crimp Systems

Position the jaws so that the face of the jaw abuts the plastic isolating ring.

Positioning of jaw in relation to isolating ring

Fully close the handles of the crimping tool until the handles lock into their final position. Open the handles and remove the pressing tool from the fitting. Check the crimp using the gauging tool and if ok the jointing is complete.

Resulting crimped joint

The Couta Group has tested and approved the use of Novopress, Klauke, Rothenberger and REMS battery tools for effective crimping of these larger joints. Jaws are to be U-profile. Other brands of crimping tool have not been fully tested with our systems.

These Installation Guidelines outline common installation situations. Situations not covered in this document should be referred to the Couta Group for further information. If Users meet any new case or have any questions on the above guidelines, please do not hesitate to contact The Couta Group by phoning 1300 761 916 or via email on sales@coutagroup.com.au

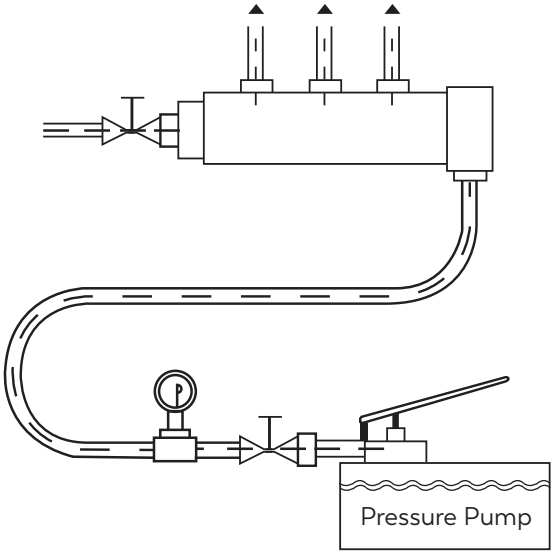
Gauging tool

The gauge should slip over the grooves in the sleeve of the crimped fitting without touching the sides. If the tool scrapes the stainless steel sleeve, needs force, or simply will not go over the crimped sleeve then the fitting has not been fully crimped. In these cases the tool must be recalibrated and the joint re-crimped.

Installation Procedure for WaterPex Single Layer Pe-Xb and Multilayer Crimp Systems

Testing and commissioning of all water services should be in accordance with Clauses 2.24.2 and 2.24.3 of AS/NZS 3500.5:2012.

In addition to those requirements, all WaterPex systems tests must include the procedures set out below.



1. Conduct a visual inspection of all pipe joints and connections to ensure that these have been performed correctly. Use the WaterPex Gauging tool to check that joints have been fully crimped. Ensure that joints have only been crimped once and that the pipe is visible in the witness marks of the sleeves on the fittings

2. In addition to jointing, it is critical that clipping of pipe is correct. There should be NO CLIPPING OF THE PIPE WITHIN 150mm OF A PIPE JOINT. This is important as clipping close to joints restricts pipe movement, especially on tees, and uncrimped joints (if missed on visual inspection) may not fail on the following testing.

3. Connect a test bucket with pressure gauge or equivalent at the lowest point of the installation being tested. Pressure testing must be done with water. Ensure a pressure difference of 100kPa can be read by the pressure measuring instrument.

4. Close valves or otherwise isolate and seal the system with end caps or similar. Fill the closed system with water and purge the system of air. For fully completed systems shut-off valves before and after boilers and tanks are to be closed so that the test pressure is kept away from the rest of the system.

5. Using the test bucket, slowly increase the pressure in the system to 1,500kPa and hold for 2 minutes. Inspect the pipe and joints for obvious leaks during this time.

6. After 2 minutes, if there are no observed leaks, decrease the system pressure to 1,000kPa and hold for 20 seconds. Then, immediately and rapidly, increase the pressure back to 1,500kPa by quickly pumping the test bucket. Again inspect the pipe for leaks.

7. After 2 minutes, if there are no observed leaks, decrease the system pressure to 1,000kPa and hold for 20 seconds. Then, immediately and rapidly, again increase the pressure back to 1,500kPa by quickly pumping the test bucket.

8. If no leaks have been detected in the previous step, record the pressure and leave the system for 30 minutes.

9. After 30 minutes, reread the gauge and visually inspect the job for leaks. If the pressure is within 100kPa of the pressure recorded in step 8 and there is no observed leakage, then the test is considered as a pass. Record the final pressure on your job record.

10. Results of testing MUST be recorded on a test report or job sheet. The report must include name of job site and location of test, date, time, test parameters and testing results. The test report should be attached to the job file for later reference if required.

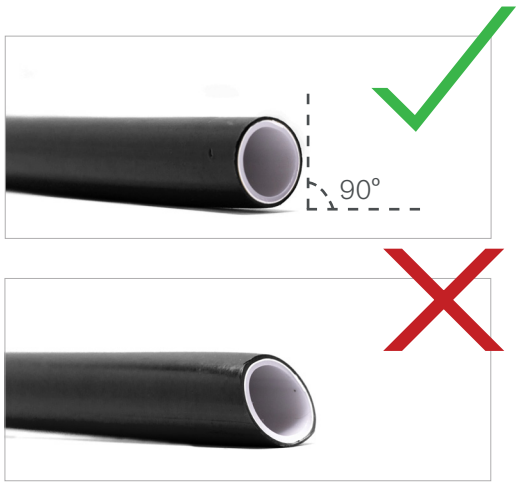
11. After testing, the system is to be flushed with clean drinking water.

Note: Lower test pressures may be used for testing of the installation but the testing would not comply to the requirements of AS3500 and may not detect all installation deficiencies.

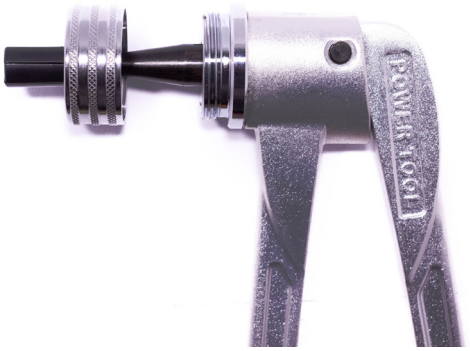
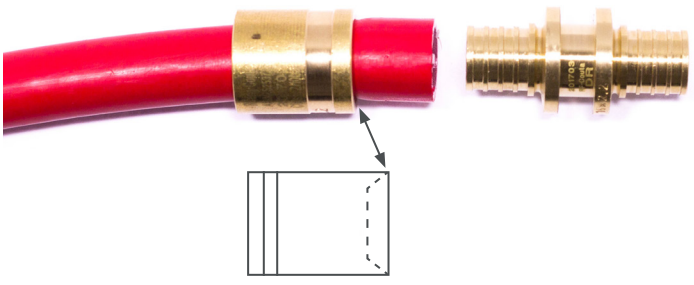
Installation Procedure for WaterPex PN20 Pe-Xa Sleeve System

Pipe Preparation

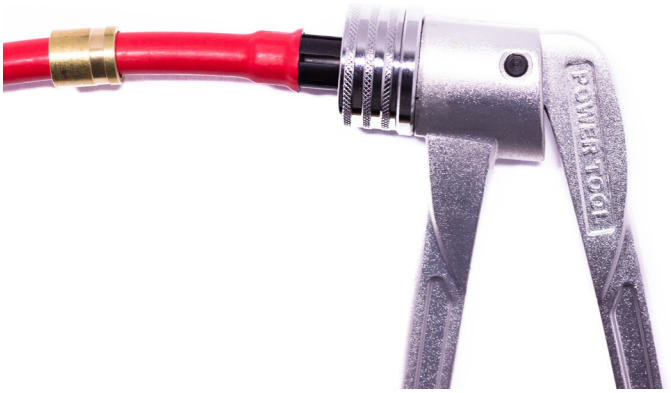
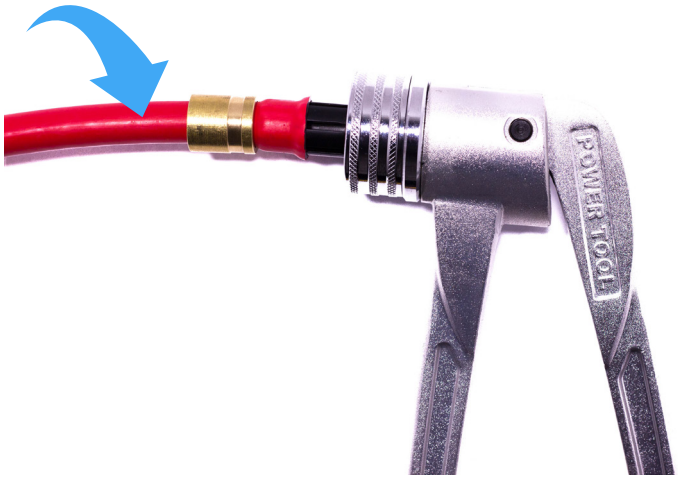
Cut the pipe to the required length ensuring that the cut is square (perpendicular to the length). Use the GPZ-SC1 cutter or equivalent for 16 through to 25mm pipe. The GPZ-QGQ cutter is easiest when working with larger bore piping systems

Pipe end profile with appropriate right angle cut		Always check that the pipe end profile has been cut square.

Pipe expansion

Pipe must be expanded prior to jointing using a pipe expander. Ensure that the expander heads in good condition otherwise the joint may leak.	
Holding the levers of the expanding tool fully open, screw on the expander head.	

Installation Procedure for WaterPex PN20 Pe-Xa Sleeve System

Slip the WaterPex brass sleeve over the pipe as shown above with its bevelled end facing towards the fitting to be joined.	
Insert the expander head into pipe, ensuring that the brass sleeve is well clear of the area that is to be expanded. To expand the pipe, fully close the levers of the expanding tool. Hold them in position momentarily then release and rotate pipe approximaly 30° and repeat the process. This ensures that the inside pipe surface is expanded evenly.	

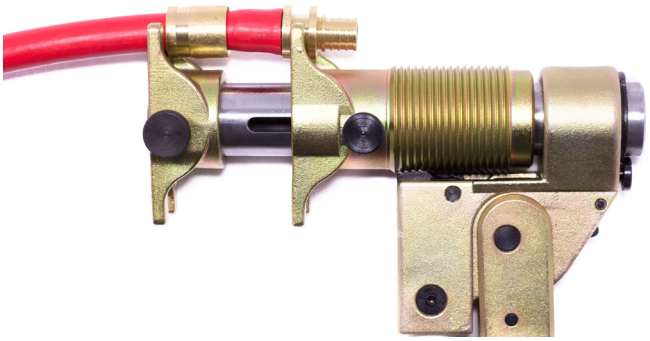
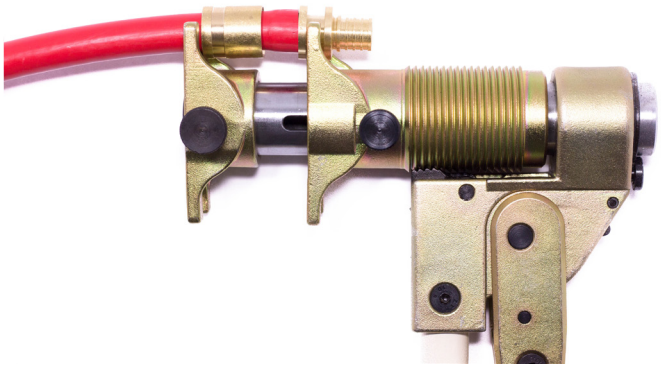
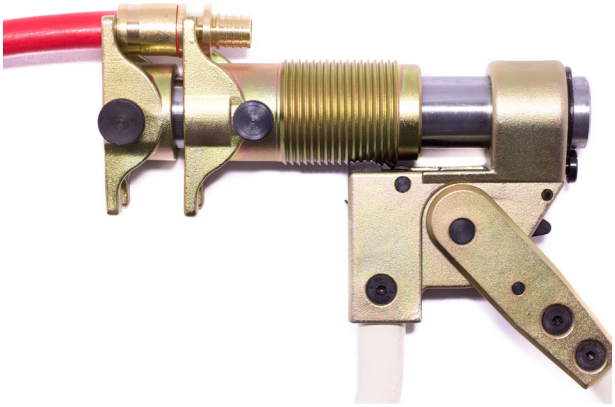
Note: It should not be necessary to expand more than twice. Over or under expansion can lead to possible joint failure.

Installation Procedure for WaterPex PN20 Pe-Xa Sleeve System

Joint assembly

Insert the fitting into the expanded pipe until the pipe reaches the fitting stop - It does not need to reach to the shoulder. After a few moments the pipe will shrink and grip the fitting. Slide the brass sleeve as far as you can towards the fitting.

Completion of joint

Position the brass sleeve and fitting squarely within the jaws of the jointing tool as shown above.	
Draw the sleeve towards the fitting by closing the jaws of the jointing tool.	
The brass sleeve is drawn over the pipe until it reaches the shoulder of the fitting.	

That completes the jointing process.