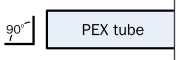
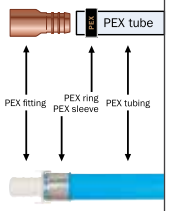
Making Crimp Connections



STEP 1 Cut tube off square (90°) with a tube cutter.

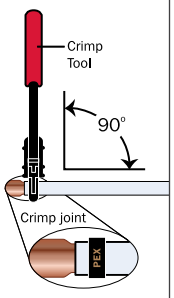
YOU'LL NEED

☐ Tube Cutter



STEP 2 Slide the PEX crimp ring over the end of the PEX tube leaving about ¼" of the tube showing. Insert the fitting into the end of the tube. BE SURE the crimp ring is centered over the PEX barb.

STEP 2 Slide the PEX sleeve over the end of the PEX tube fully. Insert the fitting into the end of the tube. BE SURE the fitting is inserted fully into the pipe.

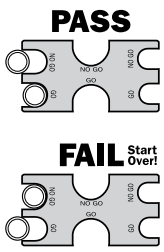


STEP 3 Center the jaws of the correct size crimp tool over the crimp ring or sleeve. Be sure the tool is held STRAIGHT and close the jaws completely. CRIMP/PRESS ONE TIME ONLY! If you do not get a proper crimp connection the first time, cut the fitting off and start from the beginning.

YOU'LL NEED

☐ Compression/Crimp Tool

Note: sleeves and crimp rings are to be used with either ASTM F1807 or F2159 fittings along with the appropriate tool.



STEP 4 BE SURE TO CHECK EVERY CRIMP JOINT! Every crimp joint should be checked with the GO/NO GO Gauge. If the designated GO slot fits over and will rotate around the crimped ring, you have made a proper crimp. If the crimped ring will fit in the NO GO Gauge or will not fit in the GO Gauge, you must cut the crimp joint off and make a new connection.

YOU'LL NEED

☐ GO/NO GO Gauge

More about PEX Crimp Connections

- Can be used with both hot and cold drinking water lines or with hydronic (radiant) heating.
- Insert fittings can be installed behind walls, but cannot be buried in concrete.
- Use the Home Run system or install in a continuous loop.
- PEX crimp rings are made of annealed copper. Sioux Chief's PEX V-Sleeve is made of Stainless Steel.

PEX and PB fittings and crimp rings are not interchangeable.

All Sioux Chief fittings and rings are manufactured to the ASTM Standard F1807 Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR 9 Cross-linked Polyethylene (PEX) Tubing, and are compatible with any and all fittings and rings manufactured to this same standard. All Sioux Chief plastic fittings are made to the ASTM F2159 specification for plastic insert fittings. Sioux Chief's V-Sleeve connection is made to the ASTM F877 standard for hot and cold PEX systems utilizing SDR plastic tubing.

PEX INSTALLATION GUIDE – 10/11 © 2011 SIOUX CHIEF MFG.

POWER PEX™ F1807

Installation Guide

All of the information you'll need to plan and install PEX plumbing in your home.

www.siouxchief.com

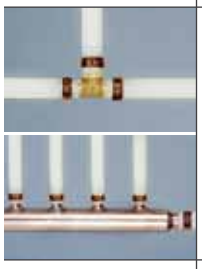
Sioux Chief

Why Plumb with PEX?

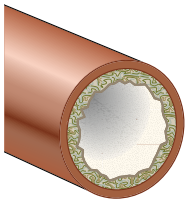
Easy to Install
PEX tube is joined with an easy to install and test 'crimp' system—no solvent welding with messy chemicals, no chance of fire hazard possibilities due to soldering.

Cost Effective
When installed using Branchmaster manifolds fewer fittings are needed to install PEX—meaning you save money in material and time. PEX tubing also costs less than copper tubing.

Quiet
When installed using manifolds, PEX can be run in long lengths with smoother bends, meaning less water line noise. PEX also does not amplify sound as readily as copper tube. The quietest system is achieved by fastening PEX with Sioux Chief's full line of sound deadening hangers and brackets.



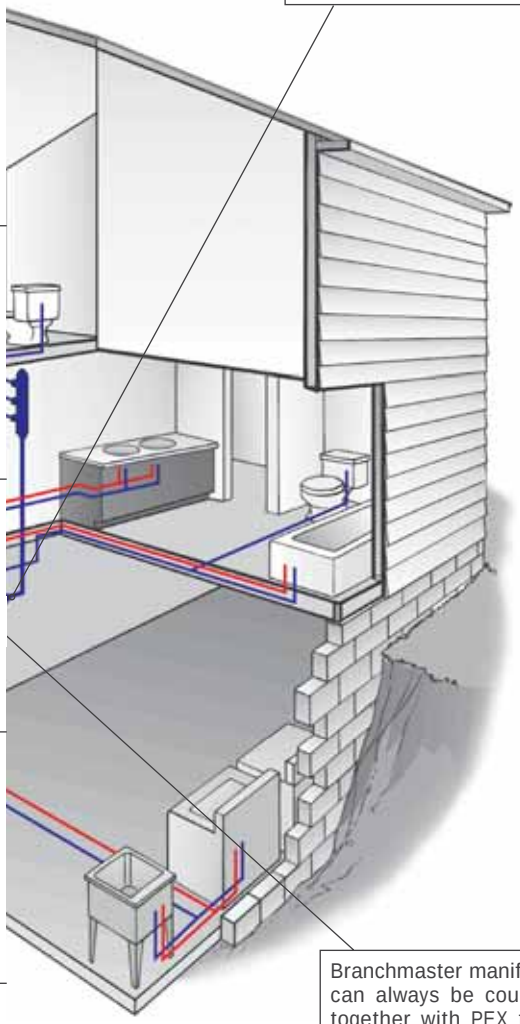
Installation Flexibility
PEX systems can be installed in either a conventional 'branch and tee' system, or a manifold system using Branchmaster manifolds. PEX is great for quickly adding fixtures off of your existing copper or CPVC system.



Corrosion Resistant
Because of PEX's smooth inner walls, minerals do not build up as fast as with copper tubing. It is also more resistant to the harmful effects of abrasive chemicals such as chlorine.

Freeze Resistant
While freezing conditions often cause copper and CPVC tube to break, causing thousands of dollars in water damage, PEX tube will expand several times its original size without damage. However, it is recommended that you follow all codes regarding water line freeze prevention.

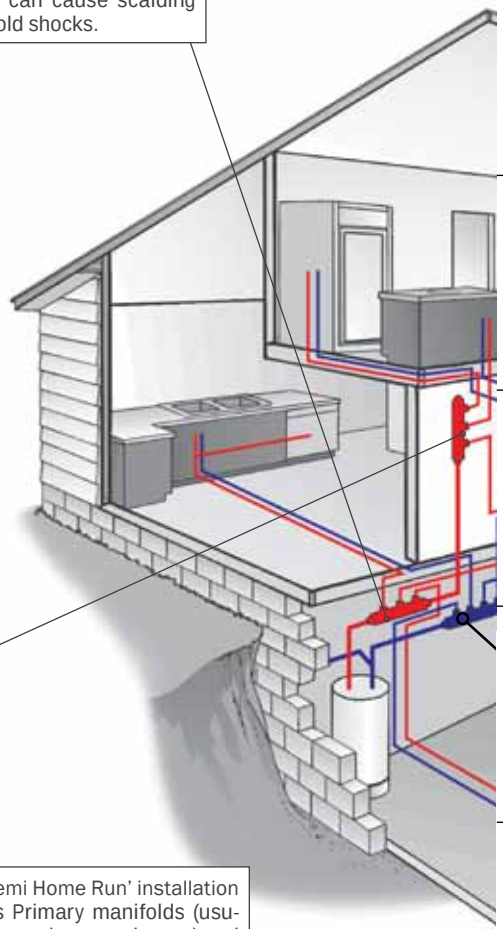
For maximum flexibility when servicing a line, we recommend using valved manifolds wherever they are installed. Your primary manifolds should always be valved.



Branchmaster manifolds can always be coupled together with PEX tube to achieve the desired number of branches.

Planning Manifold Locations

A 'Home Run' installation method uses manifolds in one spot only (usually near the water heater), and gives a dedicated branch line to each fixture in the house. This layout best minimizes pressure fluctuations, which can cause scalding and cold shocks.



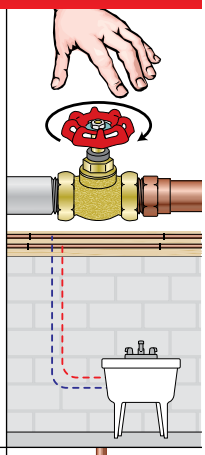
A 'Semi Home Run' installation uses Primary manifolds (usually near the water heater) and secondary manifolds. To use a Branchmaster manifold as a secondary manifold, simply plug one end with PEX pipe and a PEX plug.

Transitioning from Copper

STEP 1 Turn off water service to the entire house. If you have a valve installed that will turn off water to the affected area only—turn off this valve instead. Drain water from the system by opening both the hot and cold sides of the lowest faucet in the house.

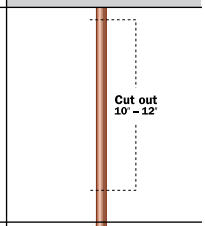
Locate the nearest existing accessible water line to the new fixture (toilet, tub/shower, sink, etc.) and plan the most direct route from that line to the fixture (read 'Running PEX Tube' for tips/precautions).

YOU'LL NEED
- ☐ Tape measure
- ☐ Ladder



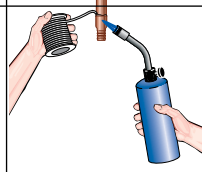
STEP 2 Cut out roughly 10″ to 12″ of copper piping. Let excess water drain from the system and deburr cut ends of copper tube.

YOU'LL NEED
- ☐ Copper cutting tool
- ☐ Tape measure

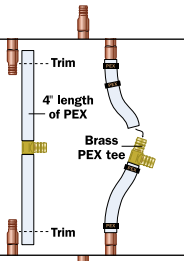


STEP 3 Clean and prepare two Sweat × PEX adapter fittings and solder to the two ends of the cut tube.

YOU'LL NEED
- ☐ Solder
- ☐ Soldering torch
- ☐ Sand cloth
- ☐ Flux
- ☐ Flame retardant rags

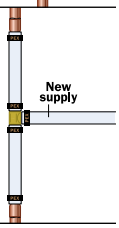


STEP 4 Position the PEX tee and two equal lengths of PEX tube between the Sweat × PEX fittings. Trim off excess tube and crimp in the PEX assembly per the 'Making Crimp Connections' sheet. (see page 11)



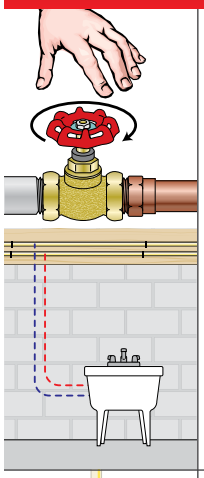
STEP 5 Crimp in the new supply line to the fixture.

YOU'LL NEED
- ☐ Crimp tool
- ☐ Crimp rings
- ☐ Test gauge



Smart Tip Go torchless and reduce job time to ten minutes using the Add-A-Line. Only compress Add-A-line to copper tube.

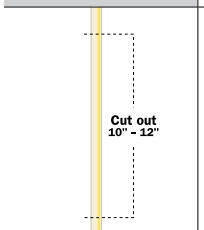
Transitioning from CPVC



Turn off water service to the entire house. If you have a valve installed that will turn off water to the affected area only—turn off this valve instead. Drain water from the system by opening both the hot and cold sides of the lowest faucet in the house.

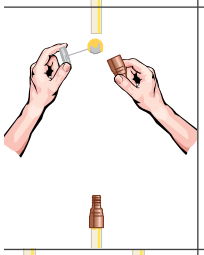
STEP 1 Locate the nearest existing accessible water line to the new fixture (toilet, tub/shower, sink, etc.) and plan the most direct route from that line to the fixture (read 'running PEX Tube' for tips/precautions).

YOU'LL NEED
- ☐ Tape measure
- ☐ Ladder



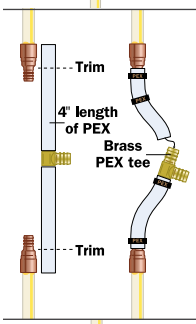
STEP 2 Cut out roughly 10″ to 12″ of CPVC. Let excess water drain from the system and remove any burrs from cut ends.

YOU'LL NEED
- ☐ Plastic tube cutting tool
- ☐ Tape measure

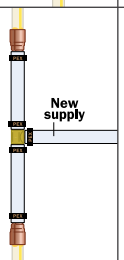


STEP 3 Using CPVC solvent cement, glue on two CPVC × PEX Adapters. Wipe off excess glue.

YOU'LL NEED
- ☐ CPVC Cement
- ☐ CPVC Primer



STEP 4 Position the PEX tee and two equal lengths of PEX tube between the CPVC × PEX fittings. Trim off excess tube and crimp in the PEX assembly per the 'Making Crimp Connections' sheet.
(see page 11)

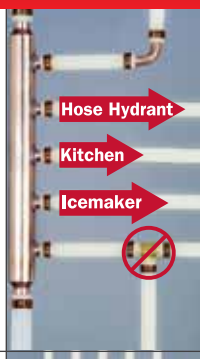


STEP 5 Crimp in the new supply line to the fixture.

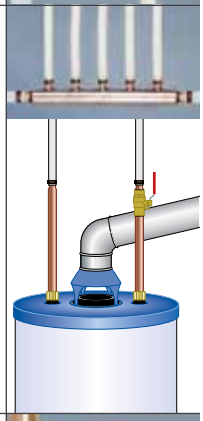
YOU'LL NEED
- ☐ Crimp tool
- ☐ Crimp rings
- ☐ Test gauge

Manifold Installation

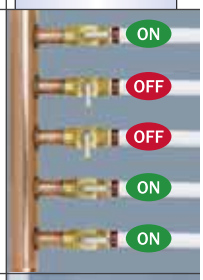
One Branch, One Fixture
To get the full benefit of manifold use, each branch should supply only one fixture. Supplying more than one fixture on a branch increases the chance of pressure fluctuations, which can cause inadequate water pressure and scalding.



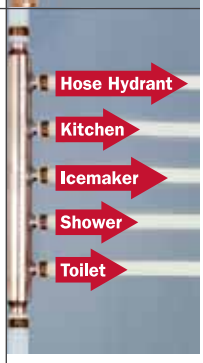
Placement
Because potentially half of the crimp connections are at the manifold (the other half at the various termination points), be sure to locate the manifold(s) in an accessible location, preferably near the water heater. Locating near the water heater ensures that quickest delivery of hot water (per code, make sure manifold is at least 18″ from water heater).



Valved Manifolds
Sioux Chief offers both valved and standard manifolds—valved manifolds allow easy isolation and service of a fixture without affecting water service to the rest of the house.



Manifold Sizing
The home run manifold system allows individual lines for each fixture. To "size" a manifold, count the number of cold and/or hot water locations that you plan to plumb. Be sure to remember ice makers and outside hose bibs. Always purchase manifolds with enough cold and hot water branches to service all planned fixtures. Branchmaster Manifolds can be linked with ¾″ PEX tube to allow unlimited branch connections. Make sure to plug all unused branches with a 6″ stub of tube and a PEX plug (6″ should be enough to let you cut off the plug and use the branch for future fixtures).



Why Use Manifolds

Save Time and Money
Sioux Chief Branchmaster manifolds allow you to make longer continuous runs of PEX pipe—meaning you buy fewer fittings and spend less time installing!

Fewer Possible Leaks
Longer continuous runs with fewer crimp connections means fewer chances of leaks and avoiding the possibility of thousands of dollars in water damage!

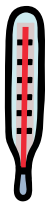
Controls Scalding
When plumbed so that each branch line feeds only one fixture, The Branchmaster greatly reduces pressure fluctuations and temperature swings that cause scalding.

Quiet Plumbing
Longer runs of pipe using fewer fittings means smoother bends and turns which reduces line noise.

Install with Confidence
Branchmaster manifolds are guaranteed against defects in materials and workmanship for the life of your plumbing system.

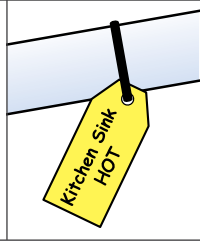
Running PEX Tubing

Extreme Temperatures and Sunlight
Keep PEX tube away from extreme temperatures—12″ away from recessed lighting and 6″ away from gas vents. (water heater, stove pipe, etc.) Also keep away from attics, crawl spaces, outside walls, or insulate per plumbing codes. Also keep out of direct sunlight.

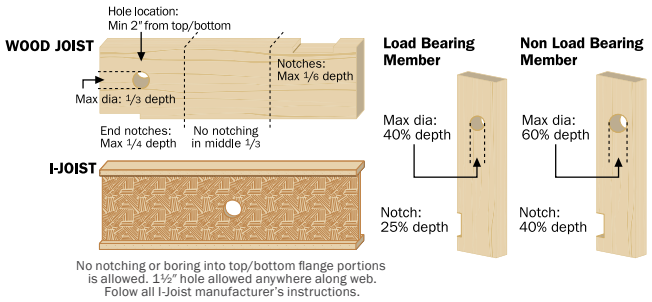


Allow for Mistakes
Leave extra tubing at the beginning and end of runs to simplify connection to manifolds and end points (at wall or at fixture). Immediate connection to the manifold or transition fittings and then making the run reduces the chance of cutting tube too short.

Identify Tubing Runs
Clearly and permanently mark each run (at the manifold) to identify the fixture it supplies (hot or cold water, bathroom sink, kitchen sink, basement toilet, etc.). Do not apply adhesive labels to PEX pipe unless labels are approved by the tubing manufacturer.

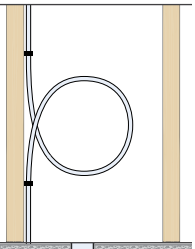


Drilling & Notching Structural Members

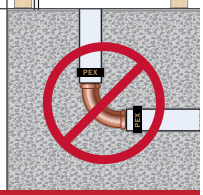


No notching or boring into top/bottom flange portions is allowed. 1½″ hole allowed anywhere along web. Folow all I-Joist manufacturer's instructions.

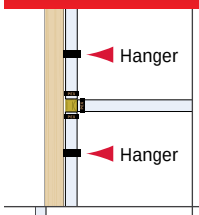
Thermal Expansion
Because PEX tube expands and contracts at about 1″ per 100 feet of pipe for every 10° change in temperature—you must allow for expansion and contraction in long runs. This can be accomplished with an offset or expansion loop.



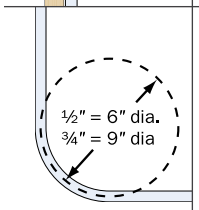
PEX and Concrete
Tubing installed within or under concrete slabs should be continuous lengths of PEX tube. No fittings beneath concrete.



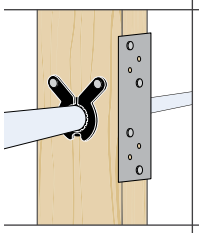
Fastening PEX Tube



Support the Fitting
To prevent stress on the crimp joints, always support the tube before and after the fitting.



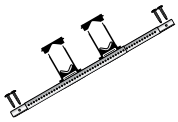
Minimum Bend Radius
Do not bend tube too tightly. The minimum recommend bend radius is six times the tube size (i.e. ½″ tube = 3″ bend radius). When making a 90° turn, use bend supports.



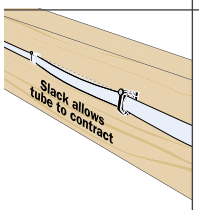
Tube Through Studs
Grommets should be used when running tube through studs to prevent tube damage and reduce noise transfer. Tube that is run within 2″ of a stud nailing surface must be protected with a metal stud guard.

No Metal Hangers
Metal hangers can damage PEX tube, we recommend only plastic hangers be installed. To prevent noise transfer, only use hangers that keep the tube off of the nailing surface (studs and joists).

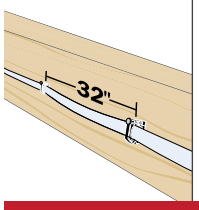
RECOMMENDED HANGERS:
Tube Talon, Sioux Strap or Suspensulator.



Tube Between Joists and Stud Bays
To make it easier to run tube in stud or joist cavities, use the Power Bar, it installs quickly and is totally adjustable (USBs located in the pipe hanger offering).



Leave Room for Thermal Movement
PEX needs room to expand and contract. Allow tube to dip between hangers and never over-tighten. Many Sioux Chief hangers are designed to let the tube contract and expand without the possibility of over–tightening.



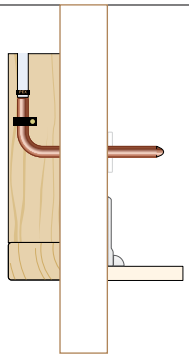
Hanger Spacing
Hangers should be used every 32″ on horizontal runs and every 4′ on vertical runs.

Finishing Tubing Runs

After properly running and fastening the PEX tube, it's time to terminate the run into a finished area of the house (through a floor or a wall). Although there are some situations where it makes sense to crimp the tube directly to a valve or fixture (basement laundry or sink), it is best use a copper stub out due to their rigidity and resistance to bangs and bumps that could cause leaks.

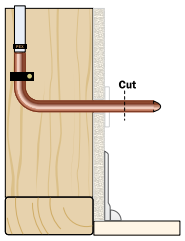
STEP 1
Crimp PEX tube to a straight PEX stub out or a stub out elbow depending on whether you need to make a turn as you come through the wall. Make sure stub out is properly secured (see page 6 for tips on fastening PEX tube).

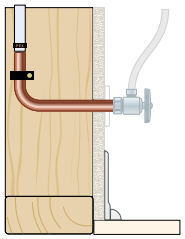
YOU'LL NEED
- ☐ Crimp tool
- ☐ Crimp rings
- ☐ Plastic Hangers



STEP 2
Cut the spun-closed end off of the stub out, then deburr and clean the outside of the tube with sand cloth.

YOU'LL NEED
- ☐ Copper cutting/deburring tool
- ☐ Sand Cloth



STEP 3
Using two wrenches, compress the stop valve onto the copper tube. Be careful not to over-tighten the joint.

YOU'LL NEED
- ☐ Wrenches
- ☐ ⅝″ supply stop valve