What Is PEX? Why Use PEX?

Cross-linked polyethylene (PEX) is a high-temperature, flexible, polymer pipe. Cross-linking technology was first developed in Europe and has since come into use around the world for a variety of applications. PEX has a 30-year history of successful use in the European market with extensive testing for durability and material performance. It was first introduced in North America in 1984 where it was primarily used for radiant floor heating. More recently, it has become used for domestic water distribution systems. It is approved for potable hot and cold water supply systems in all model plumbing and mechanical codes across the United States including California and Canada.

Why Plumb With PEX?

- **Easy to Install** - PEX tubing is joined with an easy to install “crimp” system; no solvent welding with messy chemicals, no chance of fire hazard possibilities due to soldering
- **Cost Effective** - When installed using Manifolds fewer fittings are needed to install PEX; meaning you save money in material and time. PEX tubing also costs less than copper pipe.
- **Availability of Pipe Sizes** - PEX tubing is available in a wide range of diameters.
- **Energy Efficiency** - PEX tubing minimizes heat transmission through the pipe wall.
- **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 pipe.
- **Water Conservation** - Well designed PEX plumbing systems can reduce the wait time for hot water to reach the fixture.
- **Environmentally Sound** - PEX is an inert material and does not contain volatile organic compounds (VOCs).
- **Installation Flexibility** - PEX systems can be installed in either a conventional “trunk and branch” system or a manifold “home-run” system. PEX is also great for 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 pipe. 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 pipe to break or burst, causing thousands of dollars in water damage, PEX tubing will expand several times its original size without damage. However, it is recommended that you follow all codes regarding water line freeze prevention.
Apollo PEX Tools, Fittings, and Accessories
Apollo PEX has a wide variety of tools, fittings and accessories available.

<table>
<thead>
<tr>
<th>Apollo Crimp Tools and Crimp Rings</th>
<th>Apollo PEX Tubing</th>
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<tbody>
<tr>
<td>3/8” - 1”</td>
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<tr>
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<th>Apollo Brass PEX Fittings</th>
<th>Apollo Poly Alloy PEX Fittings</th>
<th>Apollo Push Fittings</th>
</tr>
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<td>3/8” - 1”</td>
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<tr>
<th>Apollo Ring and Clamp Removal Tool</th>
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<th>Apollo J-Hooks</th>
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<th>Apollo Manifold</th>
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12, 16, 20, 24, 28, 32, and 36 Ports Available

Go/No-Go Gauge
Tools

PEX Crimp Tool

How to use:

1. Cut tubing end squarely. Check for and remove any burrs.
2. Slide crimp ring over end of tubing. Insert fitting into end of tubing until it stops. Position the crimp ring 1/8” to 1/4” from the end of the tubing and over the ribs of the fitting.
3. Place the crimping end of tool around the crimp ring and press the handles together.
4. Check for proper crimp with the Go/No-Go gauge.

How to adjust the crimp force:

1. Open the handle, then loosen the nut on the screw with the numbers surrounding it.
2. Push and rotate the screw. Increase the number for more crimp force. Decrease the number for less crimp force.
3. Push the screw back into place and tighten the nut.

If your crimp tool has screws on the side, to adjust the crimp force first loosen the set screw. Next, tighten the adjustment screw for more force or loosen the screw for less force. Finally, tighten the set screw after any adjustments.

To remove and replace crimp heads:

1. With the handles fully open, press side release spring upward until the hook is above the jaw pin.
2. Slide jaw out of position and remove.
3. With the side release spring pressed upward, slide new jaw into place and release the spring.

All Apollo PEX Tools are pre-calibrated for 10,000 crimps.
PEX Angle Crimp Tool

How to use:

1. Cut tubing end squarely. Check for and remove any burrs.
2. Slide crimp ring over end of tubing. Insert fitting into end of tubing until it stops. Position the crimp ring 1/8” to 1/4” from the end of the tubing and over the ribs of the fitting.
3. Place the crimping end of tool around the crimp ring and press the handles together.
4. Check for proper crimp with the Go/No-Go gauge (see below). Pressure test the PEX tubing and inspect before burying or normal use.

How to use the Angle Crimp Tool Go/No-Go Gauge:

1. Slide the correct slot on the gauge around the crimped ring.
2. If the ring does not fit into the “Go” slot at all, but fits into the “No-Go” slot, then the crimp is not correct. Remove the incorrectly crimped ring from the PEX pipe, adjust the crimping force on the tool and repeat the crimping process.
3. If the ring slides into the “Go” slot, then the crimp is good.

Please check every ring with the Go/No-Go Gauge after crimping to ensure a proper connection.

Photo left shows a correct crimp.

How to adjust the crimp diameter:

1. Note the number that the adjustment dial is currently set at.
2. Pop off the C-Clip that is aligned with the adjustment dial with a small tool, such as a flathead screwdriver.
3. Slide the hexagonal adjustment dial head out approximately 1/4”.
4. Rotate the back pin until the line on the adjustment dial head points to the next highest number on the tool body.
5. Push the adjustment dial head back into position and return the C-Clip to its original position.
PEX Go/No-Go Gauge

How to use:

1. Slide the correct slot on the gauge around the crimped ring.

2. If the ring does not fit into the slot at all, then the crimp is a “No-Go”. Adjust the crimping force on the tool and re-crimp the ring.

3. If the ring slides into the slot and stops in the “Go” range, then the crimp is good.

4. If the ring slides all the way into the slot, then the crimp ring is compressed too small and is a “No-Go”. Remove the ring and adjust the crimping force on the tool.

Crimp Rings vs. Pinch Clamps

**Crimp Ring**
- Copper material
- Use with brass or poly-alloy fittings
- Gauge available to check for proper crimp

**Pinch Clamp**
- Stainless Steel material
- Use with brass or poly-alloy fittings
- One tool can clamp several ring sizes
- Reduced equipment cost

Crimp Rings

**Standard vs. Pro**

**Standard Crimp Ring**
- Copper material
- Use with brass or poly-alloy fittings

**Pro Crimp Ring**
- Copper material with plastic top
- Use with brass or poly-alloy fittings
- Allows for hands free fastening
- Secures crimp ring position on pipe
- Guarantee’s proper ring placement
PEX Quick Pinch Clamp Tool

How to use:

1. Cut PEX tubing square, leaving a clean, even edge. Remove any burrs.
2. Slip PEX cinch clamp over tubing and insert fitting. Place cinch clamp 1/8” below edge of tubing.
3. Place PEX cinch clamp nub between tool jaws and ratchet the clamp until the PEX Cinch Clamp Tool auto-releases. This action will assure that the PEX cinch clamp is fully engaged.
4. Pressure test the PEX tubing and inspect before burying or normal use. If there are any signs of leaks, repeat the total procedure.

For use with Apollo®, Watts®, Murray®, and Oetiker® PEX cinch clamps. Do not use with Zurn® Quickclamp™ PEX crimp rings.

How to calibrate:

1. Insert the Calibration Bar into the tool as shown. Ratchet the Pinch Tool to the closed position and hold (tool jaws should be biting into the bar).
2. Use the Calibration Tool to gauge the jaw gap. The jaw gap should be between 0.8 mm and 1.2 mm.
   If the 1.2 mm side of the gauge slides into the gap, then the jaw space is too large. If the 0.8 mm side of the gauge cannot slide into the gap, then the jaw space is too narrow.
3. To adjust the jaw gap, turn the Pinch Tool on its side and locate the locking screw positioned on the handle. Use a standard screwdriver to loosen the locking screw. Locate the adjustment screw. Turn the adjustment screw right or left as needed to change the size of the jaw gap. When adjustment is complete, tighten the locking screw.

If you need a replacement calibration bar, please go to http://www.apolloflow.com/contact or call 888-229-2874.
**PEX One Hand Pinch Clamp Fastening Tool**

**How to use:**

1. Cut PEX tubing square, leaving a clean, even edge. Remove any burrs.
2. Slip PEX pinch clamp over tubing and insert fitting. Place pinch clamp 1/8" below edge of tubing.
3. Place pinch clamp nub between tool jaws and ratchet the clamp (approximately seven times) until the LED light comes on. This will assure that the pinch clamp is fully engaged.
4. To release the Pinch Tool, rotate the release lever on the side. It is very important to complete the pinch process before releasing the tool.

The LED light may not turn on after more than 7 ratchets when installing some 1" pinch clamps. Don’t overclamp! Check with specification of pinch clamp manufacturer.

For use with Apollo®, Watts®, Murray®, and Oetiker® PEX pinch clamps. Do not use with Zurn® Quickclamp™ PEX crimp rings. Do not use the fastening tool to remove pinch clamps.

**How to calibrate:**

1. Ratchet the Pinch Tool to the closed position and hold.
2. Use the Calibration Tool to gauge the jaw gap. The jaw gap should be between 1.2 mm and 1.4 mm. If the 1.4 mm side of the gauge slides into the gap, then the jaw space is too large. If the 1.2 mm side of the gauge cannot slide into the gap, then the jaw space is too narrow.
3. To adjust the jaw gap, turn the Pinch Tool on its side and locate the hex screw positioned on the ratchet arm. Use the enclosed Allen wrench to raise or lower the screw. Raising the screw (counterclockwise turn) will cause the jaw gap to increase. Lowering the screw (clockwise turn) will decrease the jaw gap.

If you need a replacement calibration bar, please go to http://www.apolloflow.com/contact or call 888-229-2874.
PEX Ring Removal Tool

How to remove crimp rings:

1. Set dial on tool to desired ring cutting size.

2. Cut PEX pipe close to fitting and insert small jaw inside fitting and compress handle, forcing cutter through crimp ring.

3. Reposition cutter to other side of crimp ring and compress handle forcing the crimp ring open.

4. Remove PEX ring from pipe.

5. Reinsert removal tool into fitting and fully close the handles, forcing the cutting jaw into the PEX pipe.

6. Repeat in several positions to free PEX pipe for removal.

How to remove pinch clamps:

1. Place pinch clamp nub between tool jaws with blade at top and compress handles and repeat until clamp releases.

2. Remove clamp and go to step five in PEX crimp ring removal to clear from tubing.
Fittings

PEX Brass Fittings
Apollo® PEX Brass Fittings are used for making junctions or directional changes with PEX pipe constructed potable water systems.

All Apollo® PEX Brass Fittings have barb ends unless otherwise noted.

All Apollo® PEX Brass Fittings comply with the U.S. Safe Water Drinking Act (SWDA) and the 2011 U.S. Reduction of Lead in Drinking Water Act by containing equal to or less than 0.25% lead.

Specifications:
Use Apollo® PEX Brass Fittings with Apollo® PEX pipe and fasten to pipe using Apollo® Crimp Rings or Apollo® Pinch Clamps with Apollo® PEX Tools. Follow all instructions included with Apollo® tools, fittings, and fasteners.

Approvals:
- ASTM F877 and F1807 Conformance - Third Party Certified
- NSF 14 and 61
- IAPMO
- CSA B137.5

PEX Poly Alloy Fittings
Apollo® PEX Poly Alloy Fittings are used for making junctions or directional changes with PEX pipe constructed potable water systems.

Apollo PEX Poly Alloy Fittings are a polysulfone/polyenylsulfone blended polymer.

All Apollo® PEX Poly Alloy Fittings have barb ends unless otherwise noted.

Specifications:
Use Apollo® PEX Poly Alloy Fittings with Apollo® PEX pipe and fasten to pipe using Apollo® Crimp Rings or Apollo® Pinch Clamps with Apollo® PEX Tools. Follow all instructions included with Apollo® tools, fittings, and fasteners.

Approvals:
- ASTM F2159 Conformance - Third Party Certified
- NSF-pw (Standards 14 & 61)
- IAPMO
- CSA B137.5

Push Fittings
Apollo® Push Fittings are used for making junctions or directional changes with PEX, CPVC, or Copper pipe constructed potable water systems.

All Apollo® Push Fittings comply with the U.S. Safe Water Drinking Act (SDWA) and the 2011 U.S. Reduction of Lead in Drinking Water Act by containing equal to or less than 0.25% lead.

Approvals:
- UPC®-C
- cNSF®us pw-G
- AB1953
Barb Fittings - Brass and Poly Alloy

How to install with a crimp ring:

1. Cut tubing end squarely. Remove any burrs.
2. Slide crimp ring over end of tubing. Insert fitting into end of tubing until it stops. Position the crimp ring 1/8" to 1/4" from the end of the tubing and over the ribs of the fitting.
3. Place the crimping end of tool around the crimp ring and press the handles together.
4. Check for proper crimp with the Go/No-Go gauge.

How to install with a pinch clamp:

1. Cut PEX tubing square, leaving a clean, even edge. Remove any burrs.
2. Slip PEX pinch clamp over tubing and insert fitting. Place pinch clamp 1/8" below edge of tubing.
3. Place PEX pinch clamp nub between tool jaws and ratchet the clamp until the PEX Pinch Clamp Tool auto-releases. This action will assure that the PEX pinch clamp is fully engaged.
4. Pressure test the PEX tubing and inspect before burying or normal use. If there are any signs of leaks, remove the clamp and repeat the total procedure.

Illustration of a good connection:

1. Fitting shoulder.
2. Pipe is cut squarely and stops at fitting shoulder.
3. Position the ring or clamp 1/8" - 1/4" from the end of the pipe, over the two end ribs of the fitting.
4. The ring or clamp is evenly compressed over the pipe.
5. The PEX material is uniformly compressed between the ribs, resulting in a leak-free joint.
Fittings

Push Fittings

How to connect:

1. Cut tubing end squarely. Check for and remove any burrs.
2. Push fitting onto the end of tubing, making sure the end is fully seated.

How to disconnect:

1. Press collet squarely against the face of the fitting.
2. While pressing the collet, pull the tubing to remove it from the fitting. The fitting may be reused.

The use of pipe inserts for plastic pipe connections with Apollo Push Fittings is **recommended** in standard residential plumbing (hot and cold water) installations. Pipe inserts are included with all Apollo Push Fittings.

The use of pipe inserts for plastic pipe connections with Apollo Push Fittings is **required** in all heating installations. Pipe inserts are included with all Apollo Push Fittings.

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### PEX Brass Crimp Fittings

**Friction Loss - Equivalent Feet of PEX Tubing**

<table>
<thead>
<tr>
<th>Size</th>
<th>Coupling</th>
<th>Elbow</th>
<th>Tee Run</th>
<th>Tee Branch</th>
</tr>
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<tr>
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<tr>
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<tr>
<td>1&quot;</td>
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### PEX Poly Alloy Crimp Fittings

**Friction Loss - Equivalent Feet of PEX Tubing**

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<th>Coupling</th>
<th>Elbow</th>
<th>Tee Run</th>
<th>Tee Branch</th>
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<td>18.0</td>
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### Pressure Drop

**PSI per Foot of PEX Tubing**

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<tr>
<th>gpm</th>
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<tr>
<td>18</td>
<td>0.267</td>
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</table>

= 8 fps per size tubing

**NOTE:** Maximum flow for each size based on 12 fps velocity. PSI x 2.307 = head loss.
PEX Tubing

PEX tubing is cross-linked, high-density polyethylene. It’s available in white, red, or blue colors for easy identification of hot and cold water lines.

Apollo PEX tubing is type PEX-B (PE-Xb, PEXb). The silane method, also called the “moisture cure” method, results in PEX-B. In this method, cross-linking is performed in a secondary post-extrusion process, producing cross-links between a cross-linking agent. The process is accelerated with heat and moisture. The cross-linked bonds are formed through silanol condensation between two grafted vinyltrimethoxysilane (VTMS) units, connecting the polyethylene chains with C-C-Si-O-Si-C-C bridges.¹

PEX tubing is for use in hot and cold potable water distribution systems as well as hydronic radiant heating systems. PEX tubing can also be used in “continuously recirculating” plumbing systems up to 140°F while maintaining chlorine resistance.

Features:
• Tough
• Flexible
• Less expensive than other plumbing materials
• Copper tube size dimensions (CTS)
• Available in white, red, or blue

Standards / Certifications:
• PEX 5006 - SDR 9
• Meets ASTM F876/F877
• cNSFus-pw/rfh
• ANSI/NSF Standards 61 & 14
• cUPC
• CSA B137.5

Pressure & Temperature:
• 160 psi @ 73° F, 100 psi @ 180° F

Installation:
To cut PEX tubing, use a PEX tubing cutter and cut at a 90° angle. Clear the cut end of any burrs or debris. PEX tubing can be run through holes drilled into the center of studs or by using straps and hangers. Bend supports can be used to make bends and angles instead of having to cut the tubing and use fittings. A variety of barb fittings or push type fittings can be used with PEX tubing. Do not expose PEX tubing to direct sunlight.

It is recommended to insulate hot water lines with standard foam polyethylene pipe insulation to prevent heat loss. If installing in an area that experiences harsh winters, it’s recommended to insulate both hot and cold water lines to prevent freezing.

¹ http://en.wikipedia.org/wiki/Cross-linked_polyethylene

<table>
<thead>
<tr>
<th>Fluid Capacity of Apollo PEX Tubing</th>
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<tbody>
<tr>
<td>Nominal Size</td>
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</tr>
<tr>
<td>3/8”</td>
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<tr>
<td>1/2”</td>
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<tr>
<td>3/4”</td>
</tr>
<tr>
<td>1”</td>
</tr>
</tbody>
</table>
**PEX Tubing**

**Do Not Use with PEX**
Liquid-based leak detectors, adhesive tape, pipe dope, linseed oil, threading compound, putty, mineral oil, petroleum products, metal pipe hangers.

**Leave Excess Tubing**
Leave extra tubing at the beginning and end of runs to simplify connection to manifolds and end points and to make connections without straining the tubing or connection. Immediate connection to a manifold or transition fittings and then making the run reduces the chance of cutting tubing too short.

**Identify Tubing Runs**
Clearly and permanently mark each run at each end 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.

**Thermal Expansion**
Because PEX tube expands and contracts at about 1" per 100' of pipe for every 10°F 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. Do not install fittings beneath concrete.

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

**Pipe Hangers**
Plastic hangers are recommended for use with Apollo PEX tubing. To prevent noise transfer, only use hangers that keep the tube off of the nailing surface. Hangers should be used every 32" on horizontal runs and every 4' on vertical runs. Allow the tube to dip between hangers and never over tighten. To prevent stress on the crimp joints, always support tubing before and after the fitting.

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

**Stubouts**
A copper stubout may be used to exit a branch from a wall. If a stubout is used, take care not to rotate the connection when cutting the end off. Always check local codes on the use of copper stubouts.

**Trenching**
If PEX tubing is placed in a trench, leave sufficient excess to allow for expansion and contraction when temperatures change in the tubing.

**PEX Tubing at Expansion Joints**
Add a protective layer of insulation or place the tubing into the material underneath if installing PEX tubing under expansion joints.
Temperature and Sunlight
Keep PEX tube away from extreme temperatures - 12” away from recessed lighting and 6” away from gas vents. Also, keep away from attics, crawl spaces, outside walls, or insulate per plumbing codes. Keep out of direct sunlight.

Excessive Pressure and Temperature
Apollo PEX tubing is rated up to 160 psi at 73° F or 100 psi at 180° F. Exceeding these ratings will void the warranty.

Excessive Heat
Soldering - Do not solder near Apollo PEX tubing.
Water Heaters and Boilers - Use a minimum of 18” of metal tubing to transition between Apollo PEX tubing and the water heater/boiler.

Freeze Protection
Apollo PEX is resistant to freeze damage, but freeze protection is recommended that is typical to the area where installing. Fittings and connections can be damaged if the plumbing system freezes.

Thawing a Frozen System
Do not send electrical currents through a PEX plumbing system. Do not use an open flame to thaw a PEX plumbing system. A hot air gun may be used as long as the temperature does not exceed 300°F (149°C). Do not use a hot air gun on one spot for more than five minutes at a time. Do not heat pipe until it changes color.

Damaged Pipe
Do not splice PEX pipe in inaccessible locations. If a splice is necessary at a point underground, insulate the coupling and splice point to protect it from corrosion and stress. Always perform a leak and pressure test after making a splice.

Bundling Lines
Run hot and cold lines in separate groups to avoid transferring heat between hot and cold lines.

Inspection
Always inspect PEX tubing for damage and proper fastening prior to testing. Also, check all fitting and manifold connections. Repair or replace as needed. Pressure test the system with air or water at completion.

Expansion Loops
PEX tubing expands and contracts approximately 1” per 100’ of tubing for every 10°F change in temperature. Because of this expansion and contraction, expansion loops should be installed to compensate for these changes without damage to the plumbing system. When creating an expansion loop, make sure there is adequate space for the loop to expand and contract. Do not install the loop so it’s touching studs or joists on both sides. These loops will expand when the pipe is heated and contract when the pipe cools or the building is unheated.
Conventional Plumbing Method

The conventional (or trunk and branch) method has one main trunk line with smaller branch lines delivering water to various fixtures. This method uses PEX tubing with push or barb fittings and is the fastest, easiest way to get water from meter to fixtures. However, long waits for hot water often occur.
Manifold or Home-Run Plumbing Method

The manifold or home-run plumbing method provides a distribution point to all fixtures. This method uses PEX tubing with a manifold consisting of the same number of ports as fixtures available, and push or barb fittings. Manifolds offer a variety of benefits:

• Control water at one central location.
• Faster delivery of hot water.
• Save Time and Money - 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 manifold 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 and “water hammer”.

[Diagram showing manifold or home-run plumbing method]
Manifolds

Each manifold has a galvanized back plate for easy mounting to any structure. The cover plate, for labeling purposes, is constructed of 1/4" ABS. All manifolds are bolted to the back plate, rather than screwed. Each manifold consists of two inlet ports that supply the dual chambers. Typically one inlet is used for cold water supply, and the other inlet is used for hot water supply. However, both inlets may be used for either hot or cold water. The inlets are not temperature specific. The water inlets connections are 3/4" PEX Barb, The outlets are 1/2" MPT. 1/2" FPT Swivel x Barb valves are included.

Each manifold is individually boxed, and includes red and blue labels for indicating the destination fixtures. Keep the manifold in it’s carton until ready for installation. Protect the manifold from dust and debris until plumbing system is fully installed.

How To Install:

1. Count the number of cold and hot water locations in the house. Be sure to include outside hose bibs and the refrigerator ice maker.
2. Make sure the manifold has as many ports as the house has hot and cold locations.
3. Find an accessible location near the water heater, but not closer than 18" from the water heater outlet, to place the manifold.
4. Attach the shut off valves.
5. Position the manifold in the desired location and nail or screw the mounting bracket to the studs. Make sure all valve handles have room for operation.
6. Attach 1/2" PEX pipe to the inlets and outlets and crimp or clamp securely. Close and cap all unused manifold ports.
7. Label each connection to the water location it supplies. Labels are included with each Apollo manifold.

Manifold Installation Warnings:

• Before and after installation, ensure manifold is kept in a location with limited exposure to chemicals, paint, hazardous materials, debris, excessive heat, direct flame, or moving objects that could cause damage.
• The manifold should be located in an area that will not be covered permanently with sheetrock, plywood, or paneling.
• Manifolds should not be installed or kept in a location exposed to freezing temperatures.
• Do not allow water to freeze in the manifold.
• Do not use pipe dope or tape to seal any fittings on the manifold.
• Care should be taken not to over or under tighten fittings.
• Distribution lines must connect to the connecting valves in a straight line perpendicular to the manifold as to avoid bending stress on the valves.
• Manifolds should be installed per all local and national building/plumbing codes. Where a conflict exists between installation instructions and local requirements, the local codes shall take precedence.
• The installer must also meet all qualifications required by the state and/or local administrative authority administering the provisions of the code where PEX piping is installed.
• Apollo is not responsible for leaks and property damage caused by failure to follow the installation instructions.
**Warranty & Limitations of Liability**

Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of FIVE years from the date of delivery to you, our initial purchaser. This warranty applies to Apollo brand product with “Made in the USA” markings only.

Should any failure to conform to this warranty appear within FIVE years after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco’s recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco’s own expense.

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*It is the end user’s responsibility to confirm that items intended for use satisfy local codes and standards.*