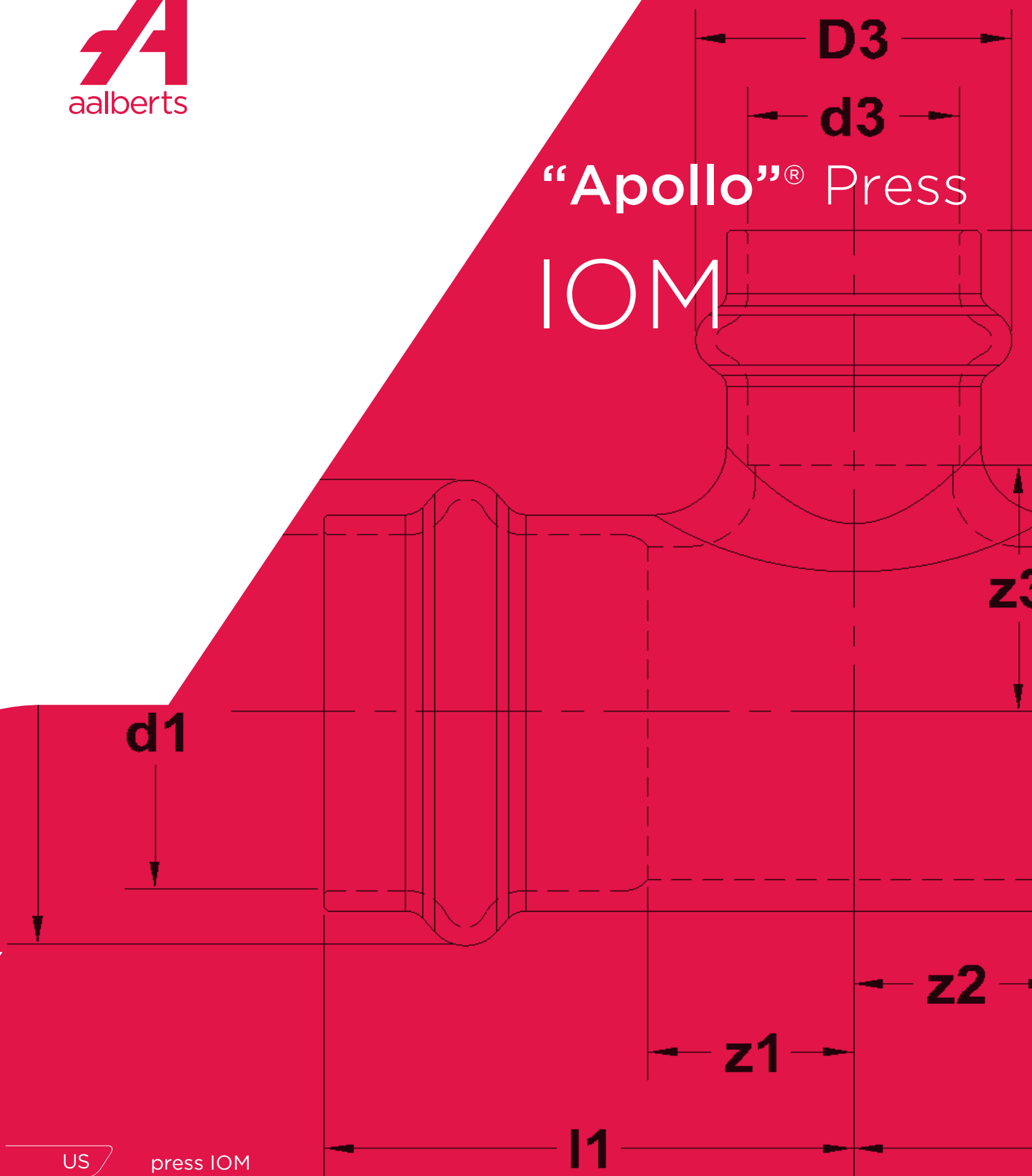


“Apollo”[®] Press IOM



system data

small diameter fittings (1/2" - 2")

"Apollo"[®] Press small diameter fittings are made from lead free copper or copper alloys. EPDM sealing elements are pre-installed and lubricated with ANSI/NSF 61-listed silicone lubricant

large diameter fittings

"Apollo"[®] Press large diameter fittings are made from naturally lead-free copper. They also contain a one-piece 360-degree solid stainless steel grip ring and EPDM sealing elements pre-installed and lubricated with ANSI/NSF 61-listed silicone lubricant

valves

"Apollo"[®] Press valves are offered in lead-free and non-lead-free brass and bronze copper alloys. They contain pre-installed EPDM sealing elements with a silicone-free NSF 61-listed lubricant

EPDM sealing element

Ethylene-Propylene Diene Monomer (EPDM) is black and shiny in appearance and has an operating temperature range of 0°F-250°F. When properly installed, the EPDM sealing element is warranted to last as long as the copper tube with which it is joined

system benefits

"Apollo"[®] Press fittings and valves offer a clean, flame free, consistent joining method with a proven performance with EPDM sealing elements and unpressed fitting identification feature which allows the installer to identify unpressed fittings during a 2-step test method ensuring the identification of any unpressed connections

approved applications

service	pressure	temperature	EPDM
hot & cold potable water	300 psi	0°F - 250°F	✓
rainwater / gray water	300 psi	0°F - 250°F	✓
chilled water	300 psi	0°F - 250°F	✓
hydronic heating	300 psi	0°F - 250°F	✓
cooling water	200 psi	32°F - 250°F	✓
low-pressure steam	up to 15 psi	248°F	✓
ethanol	200 psi	32°F - 250°F	✓
compressed air	200 psi	32°F - 250°F	✓
oxygen (non-medical)	140 psi	up to 140°F	✓
nitrogen	200 psi	32°F - 250°F	✓
carbon dioxide	200 psi	32°F - 250°F	✓
argon	200 psi	ambient	✓
hydrogen	125 psi	0°F - 250°F	✓
vacuum	29.2 in Hg	0°F - 160°F	✓

If your application is not listed, please contact your local Aalberts IPS representative or visit www.aalberts-ips.us for additional information

listings, approvals, & codes

fittings

- IAPMO-listed to NSF 61, NSF 372, IAPMO/ANSI Z1117, and CSA TIL-MSE 13 standards
- NSF/ANSI 61
- NSF/ANSI 372
- ASTM B1029

compliant with

- ICC International Plumbing Code
- Uniform Plumbing Code (UPC[®])
- National Standard Plumbing Code (NSPC)
- Massachusetts Commonwealth of Massachusetts Product Approval Number P1-1205-57
- Illinois Department of Public Health, Plumbing Code Advisory Council
- Kentucky Commonwealth of Kentucky, Office of Housing, Buildings, & Construction
- Minnesota Plumbing Code Advisory Council
- Wisconsin Safety & Buildings Division
- City of Los Angeles, CA - general approval RR#5630
- BMEC Ontario Authorization: #22-04-400

for updated certifications, please visit the IAPMO & NSF websites

valves

"Apollo"[®] Press valves are designed to meet the most rigorous industry standards. Depending upon the product, numerous approvals are available, including:

- NSF 61
- NSF 372
- IAPMO/ANSI Z1157
- IAPMO/ANSI Z1117
- FM 1140
- FM 1920
- UL 258

see individual data sheets for applicable products

general installation instructions

handling

“Apollo”® Press fittings and valves should remain in their packaging immediately prior to installation. This ensures the fitting remains un-damaged and clean from on-site debris. Unused fittings should be kept in their original packaging with any openings sealed to ensure fitting cleanliness is maintained. Components shall be free from dirt, debris, and grime that may interfere with the EPDM sealing element.

“Apollo”® Press fittings and valves are compatible with ASTM B88 ½” - 1 ¼” soft drawn and ½” - 4” hard drawn type K, L and M copper tube. The installing contractor must ensure the tube surface is free of imperfections to include deep scratches, dents, tape, paint, grease, oil, dirt and insized stamped marks that could interfere with the joint seal

underground installations

When permitted by state and local codes, “Apollo”® Press fittings are approved for use in underground installations. When buried in an area with corrosive soil conditions, the fittings must be protected.

concealed spaces

“Apollo”® Press fittings are approved for use in concealed spaces when permitted by state and local codes. The concealed tubing and fitting system shall be protected from all puncture threats

expansion

Thermal expansion and contraction can place stress on installed joints. The installing contractor must account for these effects by using expansion joints or mechanical expansion compensators to reduce or eliminate stress

freezing conditions

Installed pipe/tube systems exposed to freezing conditions must be protected per state and local code requirements and good installation practice. For media applications, contact Aalberts customer service

tube hangers & supports

“Apollo”® Press tube hangers and supports do not require special consideration. Tube hangers and supports should be made of a material suitable for copper tube and conform to local code requirements. Care should be taken to ensure the piping system is isolated from shock and vibration

re-pressing a pressed fitting

If a fitting is required to be re-pressed, position, keeping the jaw in the same pre-pressed configuration, then re-press

system sizing

“Apollo”® Press piping systems shall be sized and designed per local/state/model codes and copper piping system engineer design standards. Note: The slight tube deformation created when pressing a joint is not a proven source of turbulence. Erosion corrosion can be minimized with strict adherence to proper design flow rates and installation guidelines

electrical bonding

The mechanical press connection provides a continuous metal to metal contact between the fitting and tube. When properly installed, “Apollo”® Press fittings and valves comply with section 1211.15 - Electrical Bonding and Grounding of the Uniform Plumbing Code

material compatibility

“Apollo”® Press fittings and valves shall not come in contact with chemicals or solvents that may compromise the integrity of the EPDM sealing element before or after installation. Chemicals and solvents include household cleaning products, oil-based paints, non-Aalberts approved lubricants, flux, mineral oils, adhesives, ammonia, and nitrates.

pressure testing

Installed systems should be pressure tested in accordance with state and local code requirements. With Leak Before Press®, functionally un-pressed “Apollo”® Press joints will be easily identified.

A “2 Step Test” shall be performed prior to commissioning the system. Pressurize the system with compressed air, nitrogen, or water not to exceed 25 psi. Turn the pressure source off and watch the pressure gauge for pressure loss. If there is no pressure loss, proceed with testing per the specification or local code requirements. If there is pressure loss, walk the system to identify unpressed fittings. Upon location of an unpressed fitting/s, prior to pressing the joint always ensure there is no pressure in the system, the tube is properly seated into the fitting socket and properly marked. After pressing the fitting/s, proceed back to the pressure source and pressurize the system per specification or local code requirements.

caution: do not exceed 600 psi with water or 200 psi with air

Fittings and valves may not pass a pressure test for one of the following reasons:

- the joint was never pressed
 - **press the fitting following our installation instructions**
- the tube was not fully inserted into the fitting socket
 - **replace**
- the jaw, sling, ring, and/or chain was not properly aligned on the joint
 - **replace**
- the joint may have rotated
 - **re-press, rotate jaw, sling, ring, and chain 90-degrees from original position** (recommended but not necessary)
- sealing element may not have been present
 - **replace**
- press was made over scratch, dent, or debris
 - **replace**
- the tube end was not properly prepped (chamfered and deburred) which can damage the sealing element upon insertion
 - **replace**

minimum spacing

between “Apollo”® Press joints

To prevent pressing an improper joint, a minimum distance between fittings is required. Failure to provide this distance may result in a joint failure (refer to the table below)

fitting size	minimum spacing
½"	0"
¾"	0"
1"	0"
1 ¼"	½"
1 ½"	⅝"

fitting size	minimum spacing
2"	¾"
2 ½"	⅝"
3"	⅝"
4"	⅝"

between an “Apollo”® Press joint & existing solder joint

The minimum distance when installing an “Apollo” Press joint near an existing solder joint is in the table below. All residual solder, flux, or debris shall be removed from the exterior of the tube prior to installation

fitting size	minimum spacing
½"	¼"
¾"	¼"
1"	⅞"
1 ¼"	⅞"
1 ½"	⅝"

fitting size	minimum spacing
2"	¾"
2 ½"	¼"
3"	¼"
4"	¼"

between an “Apollo”® Press joint & existing brazed joint

The minimum distance when making an “Apollo”® Press joint near a brazed joint is 2 tube diameters of the tube being pressed

fitting size	minimum spacing
½"	1"
¾"	1 ½"
1"	2"
1 ¼"	2 ½"
1 ½"	3"

fitting size	minimum spacing
2"	4"
2 ½"	5"
3"	6"
4"	8"

when soldering near an “Apollo”® Press joint

The minimum distance is found in the table below. The installer shall take proper precautions to protect and keep the “Apollo”® Press joint cool using one of the following methods:

- wrap the joint in a cold, wet rag
- use an application approved spray, clay, or putty type, heat sink to protect the joint
- pre-fabricate the solder connection, waiting for it to cool before making the press connection

fitting size	minimum spacing
½"	1 ½"
¾"	2 ¼"
1"	3"
1 ¼"	3 ¾"
1 ½"	4 ½"

fitting size	minimum spacing
2"	6"
2 ½"	7 ½"
3"	9"
4"	12"

when brazing near an “Apollo”® Press joint

The minimum distance can be found in the table below. The installer shall take proper precautions to protect and keep the “Apollo”® Press joint cool using the following methods:

- wrap the joint in a cold, wet rag
- use an application approved spray, clay, or putty type, heat sink to protect the joint
- pre-fabricate the braze joint, waiting for it to cool before making the press connection

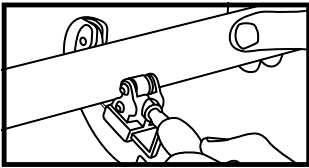
fitting size	minimum spacing
½"	4 ½"
¾"	6 ¾"
1"	9"
1 ¼"	11 ¼"
1 ½"	13 ½"

fitting size	minimum spacing
2"	18"
2 ½"	22 ½"
3"	27"
4"	36"

installation guidelines

small diameter fitting & valves (½" - 2")

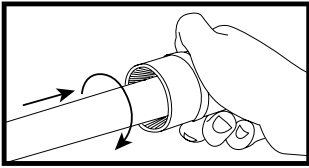
It is the responsibility of the end-user to follow all instructions for installing “Apollo”® Press fittings and valves. Failure to follow these instructions and safe plumbing practices may result in extensive property damage, serious injury or death.



1. cutting the tube to length

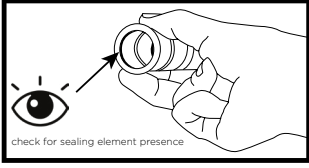
After measuring, cut the tube square using a rotary tube cutter, a fine-toothed saw, or displacement-type cutter suitable for copper tubing. The tube must always be cut completely through at a 90° angle. Do not partially cut the tube and break it off as this could potentially cause leakage.

note: do not use grease, oil-cooled saws, or flame cutters when cutting the tube



2. deburring and cleaning the tube end

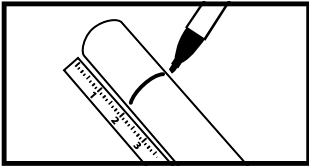
Cut tube ends must be thoroughly deburred on the inside and the outside using a fine-toothed file or commercially available deburring tool. Use a Scotch-brite™ pad, wire brush, sandpaper or cloth to ensure tube ends are free of dirt and debris prior to inserting the tube. Proper tube prep is necessary to avoid any damage to the sealing element when inserting the pipe into the fitting.



3. check the fitting

Inspect the press fitting or valve for any damage or defect. Always ensure the sealing element is present, undamaged, free of dirt and debris, and properly positioned within the fitting bead socket.

note: do not attempt to press the connection if the sealing element is damaged or not present

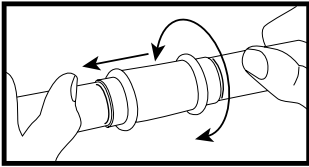


4. marking insertion depth

Using a permanent tube marker, mark the appropriate insertion depth on the copper tube with respect to the “Apollo”® Press insertion depth chart.

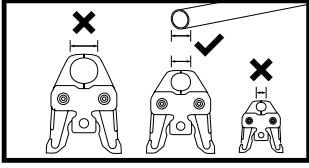
nominal pipe size (in.)	minimum insertion depth (in.)*
½	¾ (0.75)
¾	7⁄8 (0.91)
1	7⁄8 (0.91)
1 ¼	1 (1.03)
1 ½	1 1⁄16 (1.43)
2	1 1⁄8 (1.58)

*fraction estimated



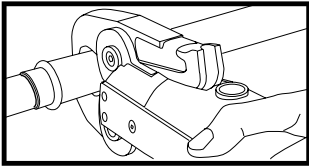
5. fitting the tube end into the connection

Always ensure the tube end does not have any burrs or sharp edges prior to insertion. Insert the copper tube into the fitting or valve with twisting motion until it meets the insertion depth mark or tube stop. Failure to properly follow the required insertion depth requirements can produce an inadequate seal.



6. preparing the press tool and jaw

Using an approved press tool and jaw of correct size, open the jaw and place over the fitting or valve bead at a 90° angle to the tube centerline, ensuring that the bead is properly aligned with the groove on the inside of the jaws. Misalignment of jaws to the bead will result in an incomplete press. Before making the press connection, double-check that the tube is fully inserted to the required insertion depth.



7. pressing the connection

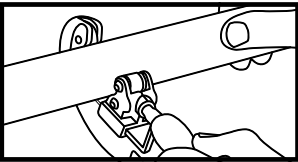
Engage press tool trigger and begin pressing the connection. Confirm that the tool has fully cycled per the approved tool manufacture’s instructions. Disengage the trigger and open the press jaws. Be sure to visually inspect that a proper press connection has been made.

note: if desired, a fitting may be pressed a second time by repositioning the press jaw 90° from the previous pressed position, then re-press.

installation guidelines

large diameter fittings & valves (2½" - 4")

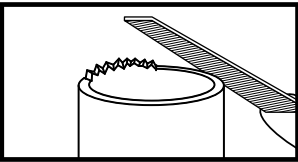
It is the responsibility of the end-user to follow all instructions for installing “Apollo”® Press fittings and valves. Failure to follow these instructions and safe plumbing practices may result in extensive property damage, serious injury or death.



1. cutting the tube to length

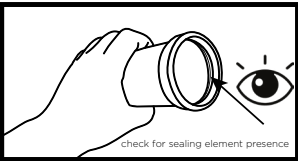
After measuring, cut the tube square using a rotary tube cutter, a fine-toothed saw, or displacement-type cutter suitable for copper tubing. The tube must always be cut completely through at a 90° angle. Do not partially cut the tube and break it off as this could potentially cause leakage.

note: do not use grease, oil-cooled saws, or flame cutters when cutting the tube



2. deburring and cleaning the tube end

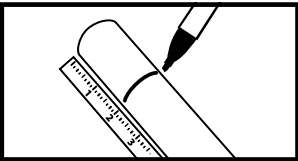
Cut tube ends must be thoroughly deburred on the inside and the outside using a fine-toothed file or commercially available deburring tool. Use a Scotch-brite™ pad, wire brush, sandpaper or cloth to ensure tube ends are free of dirt and debris prior to inserting the tube. Proper tube prep is necessary to avoid any damage to the sealing element when inserting the pipe into the fitting.



3. check the fitting

Inspect the press fitting or valve for any damage or defect. Always ensure the sealing element, spacer ring, and grip ring are present, undamaged, free of dirt and debris, and properly positioned within the fitting cup.

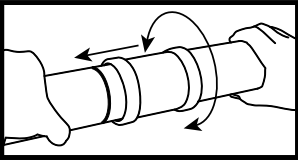
note: do not attempt to press the connection if the aforementioned internal components are damaged or not present



4. marking insertion depth

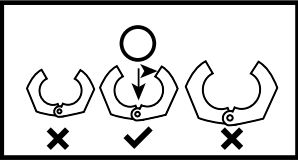
Using a permanent marker, mark the appropriate insertion depth on the copper tube with respect to the “Apollo”® Press insertion depth chart.

nominal pipe size (in.)	minimum insertion depth (in.)
2 ½	1 ½ (1.9)
3	2 ½ (2.1)
4	2 ½ (2.5)



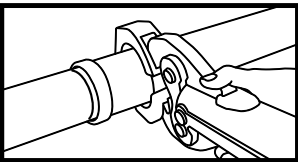
5. fitting the tube end into the connection

Always ensure the tube end does not have any burrs or sharp edges prior to insertion. Insert the copper tube into the fitting or valve with twisting motion until it meets the insertion depth mark or tube stop. Failure to properly follow the required insertion depth requirements can produce an inadequate seal.



6. preparing the press tool and jaw

Using an approved press tool, actuator jaw and ring of correct size, open the ring and place over the fitting or valve bead at a 90° angle to the tube centerline, ensuring that the bead is properly aligned with the groove on the inside of the ring. Misalignment of ring to the bead will result in an incomplete press. Before making the press connection, double-check that the tube is fully inserted to the required insertion depth.



7. pressing the connection

Align the actuator jaw with the ring, engage the press tool trigger, and begin pressing the fitting or valve. Confirm that the tool has fully cycled per the approved tool manufacture's instructions. Disengage the trigger and open the actuator jaw and press ring. Be sure to visually inspect that a proper press connection has been made.

note: if desired, a fitting may be pressed a second time by repositioning the press jaw 90° from the previous pressed position, then re-press.

jaw compatibility

Tool and jaw approval is granted based on laboratory testing performed by Aalberts utilizing performance requirements in IAPMO/ANSI Z1117, proprietary standards developed by Aalberts, and by following the jaw, actuator, and pressing tool operating instructions. The following best practices apply as a requirement of all approvals.

- pressing tools (sometimes called press tools or guns) require periodic inspection and re-calibration. Specific recommendations vary by manufacturer and model number - consult the operating instructions provided with the pressing tool
- jaws require periodic inspections to ensure proper installation - check the jaw manufacturers operating instructions for details
- jaws require cleaning to remove copper build-up or chips. Typically, cleaning is performed dry with an abrasive pad, however, specific jaw cleaning instructions are included in the jaw manufacturers operating instructions. Jaw cleaning intervals will vary by size, material, and engineering design
- jaw cleanliness, jaw inspection/repair (if required), and periodic press tool inspection/re-calibration are the responsibility of the installer. Failure to maintain the press tool, jaw, or actuator may void the manufacturer’s warranty
- extreme hot and cold temperatures can affect tool operation refer to the tool manufactures operating instructions

note: jaw approval testing is performed using jaws and pressing tools submitted by each jaw and pressing tool manufacturer listed below. Aalberts does not conduct testing of jaw and pressing tool interchangeability

½” - 2” “Apollo”® Press valves & copper/low-lead brass fittings

DEWALT	
copper jaws (inches)	
½”	DCE200012
¾”	DCE200034
1”	DCE200100
1 ¼”	DCE200114
1 ½”	DCE200112
2”	DCE200200

RIDGID	
compact jaws (inches)	
½”	16958
½”	22768
¾”	16963
¾”	22773
1”	16963
1”	22778
1 ¼”	31228

standard jaws (inches)	
½”	76652
½”	21848
¾”	76657
¾”	21853
1”	76662
1”	21858
1 ¼”	76667
1 ¼”	21863
1 ½”	76672
1 ½”	21868
2”	76677
2”	21873

Milwaukee	
M12 compact jaws (inches)	
½”	49-16-2450
¾”	49-16-2451
1”	49-16-2452
1 ¼”	49-16-2453
M12 compact jaws (inches)	
½”	49-16-2650
¾”	49-16-2651
1”	49-16-2652 ²
1 ¼”	49-16-2653 ²
1 ½”	49-16-2654
2”	49-16-2655

ROTHENBERGER	
compact jaws (inches)	
½”	15031V
¾”	15032V
1”	15033V
standard jaws (inches)	
½”	15222X
¾”	15223X
1”	15224X ²
1 ¼”	15225X ²
1 ½”	15226X
2”	15227X

NIBCO	
standard jaws (inches)	
½”	PC-10S
¾”	PC-11S
1”	PC-12S
1 ¼”	PC-13S ²
1 ½”	PC-14S
2”	PC-15S

REMS	
compact jaws (mini tongs - inches)	
½ VUS ½	578566
¾ VUS ¾	578568
1 VUS 1	578570 ¹
1 ¼ VUS 1 ¼	578606
standard jaws (tongs - inches)	
½ VUS ½	571770
¾ VUS ¾	571775
1 VUS 1	571780 ²
1 ¼ VUS 1 ¼	571785 ²
1 ½ VUS 1 ½	571790
2 VUS 2	571795

note 1: a jaw date coded prior to 02/2014 could have a potential interference problem with “Apollo”® Press 77W, 77WLF, 77V, and 77VLF press ball valves

note 2: jaws are compatible with new production 77W, 77WLF, and 77VLF press ball valves identified with “M18” on the valve box label and hang tag

2 ½” - 4” “Apollo”® Press LD-C valves & copper fittings

DEWALT	
copper jaws (inches)	
2 ½”	DCE201212
3”	DCE201300
4”	DCE201400
ring jaw	DCE200A

Milwaukee	
M18 standard jaws (inches)	
2 ½”	49-16-2656
3”	49-16-2657
4”	49-16-2658
ring jaw	49-16-2659

REMS	
standard pressing ring (inches)	
2 ½ VUSF 2 ½	572819
3 VUSF 3	572820
4 VUSF 4	572821
adapter tong Z5	572802

RIDGID	
standard jaws (inches)	
2 ½”	20543
3”	20548
4”	20553
actuator	21878