

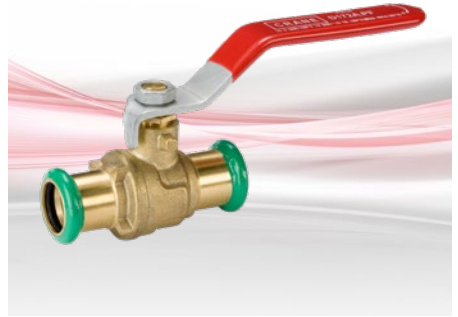
# COPPER ALLOY PRESS-FIT BALL VALVES

D172A.PF | D172AEXS.PF | D172ATH.PF | D172ALS.PF

## FORM AND FUNCTION

Ball Valves are light, compact units, which are easy to install and operate, giving low flow resistance and 100% bubble tight shut off.

Crane FS WRAS Approved Press-Fit integral ended Ball Valves, are designed for both new-build and refurbishment projects, and can be installed on a variety of pipe materials. The Quarter-turn Bi Directional flow valve is suitable for isolation applications (open or closed).



**D172A**

## LIMITS OF USE

These valves have been categorised in accordance with the Pressure Equipment Directive 2014/68/EU.

**The fluid to be transported is limited to those shown in the product table below.**

**On no account must these valves be used on any unstable fluids, or for the fluids groups not specified in the product table.**

**Note:** Valves that are classified as SEP (Sound Engineering Practice) are not CE marked and therefore do not require a declaration of conformity.

Fig. No.	PED category by valve size (DN)				Product applications			
	SEP	CAT 1	CAT 2	CAT 3	Group 1 Gas	Group 2 Gas	Group 1 Liquid	Group 1 Liquid
D172A.PF D172AEXS.PF D172ATH.PF D172ALS.PF	15mm - 54mm	-	-	-	-	-	-	✓

## LIMITS OF USE (CONTINUED)

D172A.PF, D172AEXS.PF, D172ATH.PF and D172ALS.PF valves are WRAS approved for use on wholesome (potable) water.

Valves must be installed into a well-designed system and it is recommended that the system be inspected in accordance with the appropriate national and regional legislation.

- Valves must be installed by trained personnel only.
- Service temperature and pressure indicated on the identification plate or body marking should not be exceeded.
- The installation should be designed to provide adequate means of draining and venting to avoid harmful effects such as water hammer, vacuum collapse, corrosion and uncontrolled chemical reactions and to permit cleaning, inspection and maintenance in the correct manner.
- Valves are not designed to operate under high shock loadings. Where pressure increases occur due to shock loading (water hammer), they should be added to the working pressure to obtain the total pressure acting on the valve. The total must not exceed the pressure rating of the valve. A pressure surge, or shock, is usually caused by the rapid closure of a check valve or quarter turn valve resulting in a sudden reduction in flow rate.
- It is the responsibility of the installer to ensure that the valves do not exceed the allowable limits of pressure. However, the equipment is designed to withstand a momentary pressure surge of up to 10% above the maximum working pressure.

- The product has not been designed to include corrosion, erosion or abrasion allowances. Any queries regarding service applications should be addressed to the Crane Fluid Systems - Technical Sales Department.
- The valves have been designed for loadings, appropriate to its intended use and other reasonably foreseeable operating conditions. Loadings caused by traffic, wind and earthquake have not been taken into account.

Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive or erosive service, transporting fluids with abrasive solids.

- The piping system shall be designed to reduce the risk of fatigue due to vibration of pipes.
- Maximum operating pressure reduces as service temperature increases. Pressure and temperature limitations are shown by the valve body marking or on the identification plate.
- Crane valves have not been designed as fire safe valves.

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## GENERAL CONSIDERATIONS

- Where the lever, and therefore the valve identification, is removed for maintenance it must be refitted after the work is completed. The absence of the lever invalidates the valve's CE status.
- The surfaces of valves in service may be subject to extremes of temperatures; care should be taken when handling.

## STRESS CORROSION CRACKING

The use of chemicals for system dosing must be determined by the user as all aspects of the system must be established and considered, and the effect of the chemicals used (including compounds arising from chemical combinations) must also be established in order to accurately determine compatibility.

Crane (and its related brands) manufacture hardware (valves, couplings, etc) for the Building Services industry and Utilities industries.

However, we are not system designers or operators and cannot make recommendations regarding chemical compatibility for the system, as a result of the above variables. Any comments from Crane regarding chemical compatibility shall relate solely to the Crane product and does not constitute a recommendation on compatibility for the wider system, resultant chemical compounds, components, substances or materials, in whole or in part.

For reference, and not exhaustive, certain austenitic stainless steels and aluminium alloys crack in the presence of chlorides, mild steel cracks in the presence of alkali and nitrates, copper alloys crack in ammoniacal solutions and iron with almost any caustic species (hydrogen presence notwithstanding).

For more information on how SCC can occur, please visit [www.cranefs.com](http://www.cranefs.com)

## SUITABLE PIPE MATERIAL

- Hard & half hard copper tubes to EN 1057.
- Precision carbon steel tubes according to EN 10305-3.
- Precision stainless steel tubes according to EN 10312.

## COMPATIBLE CRIMP TOOLS INCLUDE

- Novopress ACO 102
- Novopress ACO 203XL
- REMS Mini-Press 22V ACC BP
- REMS ACC Li-Ion Set
- Klauke (UAP4L)

## PPE & TOOLS REQUIRED FOR PRESS CONNECTIONS

- Suitable PPE must be worn.
- Pipe cutter or a fine toothed hacksaw.
- Deburrer tool and coloured pen for marking.
- Correct Press-fit machine with constant pressing force.

## INSTALLATION / PREPARATION

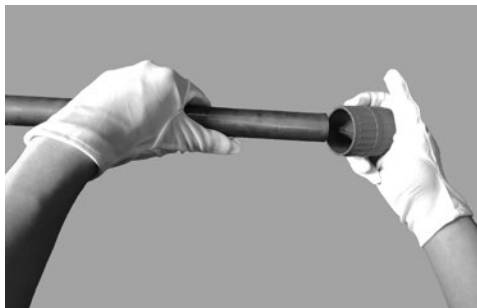
- Ensure valve is suitable for conditions.
- Remove dust caps.
- Crimp tool must be operated by a trained person.
- Crimp tool must be up to date with maintenance schedule.
- Ensure pressing jaws and adaptor jaws are in good working order.

## INSTALLATION / PREPARATION (CONTINUED)

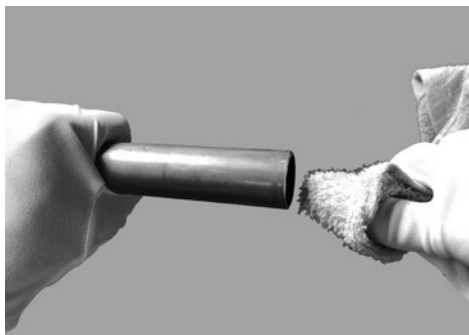
1. Check all pipe work and fittings are clean, undamaged, and free from scoring or dents.
2. Determine the pipe length.
3. Cut the pipe to the correct length using an appropriate pipe cutter for the material used:



4. Deburr the pipe ends, internally and externally to avoid damage to the sealing ring when fitted:

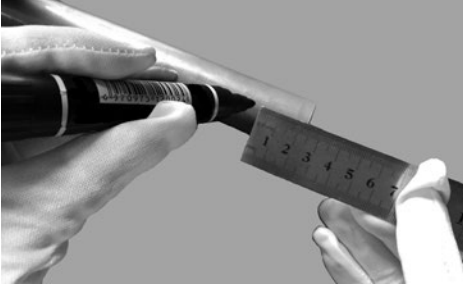


5. Clean/remove debris and excess material from the pipe ends:



**INSTALLATION / PREPARATION (CONTINUED)**

6. Using a coloured pen, mark the insertion distance:



**Press Insertion Depth Table (mm)**

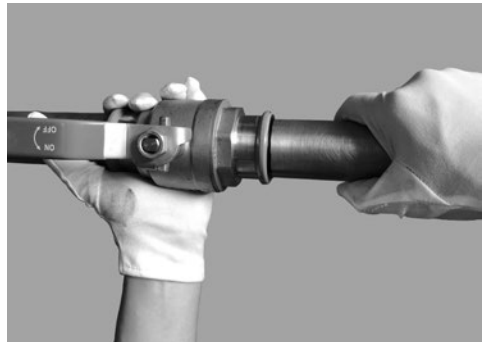
<b>Tube Size</b>	15	18	22	28	35	42	54
<b>Insertion Depth</b>	18	18	20	20	21	27	28.5

7. Remove dust caps from valves. Caps are type 4 LDPE, therefore can be recycled.

8. Check that the seal rings are not damaged and are clean. If the visual press indicator is missing then check for any damage to the press end, the sleeve should only be removed after crimping:



9. Insert the pipe into the ball valve until the predetermined marker is in-line with the press-fit connection, with pushing and twisting action. Once fitted make sure that the orientation of the valve is correct, as it cannot be moved when crimped:



## INSTALLATION / PREPARATION (CONTINUED)

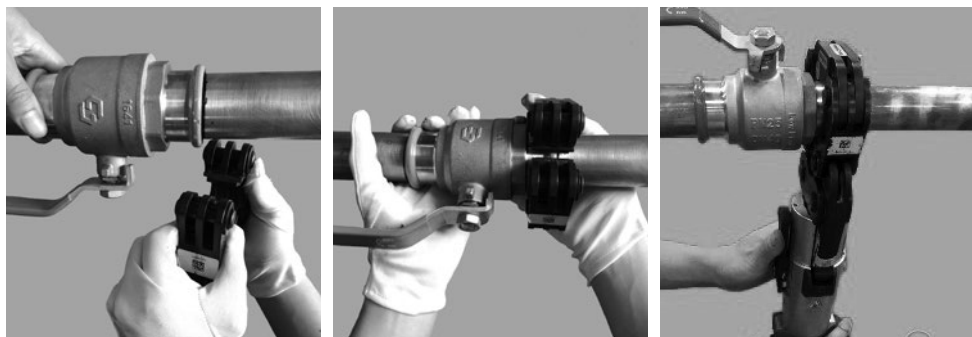
10. Using an appropriate crimp tool press the valve and pipe together.

Ensure the diameter of the press ball valve matches the diameter of the pressing jaw or collar:

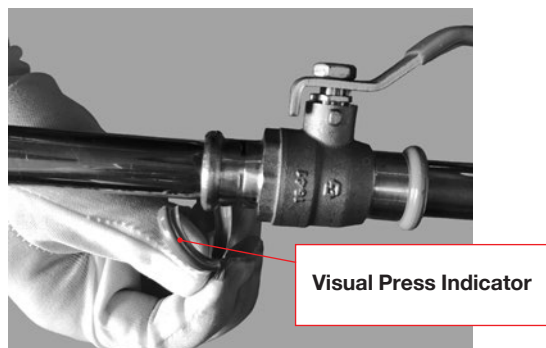
- 15mm – 35mm use pressing jaw:



- 42mm – 54mm use pressing collar and adaptor:



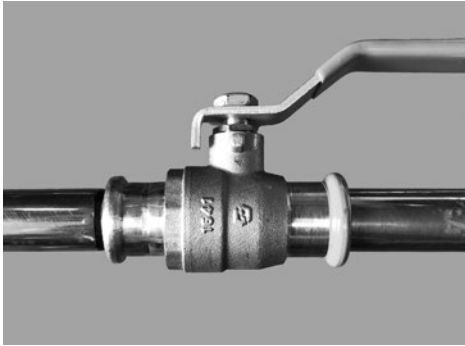
11. Once the ends have been crimped remove the visual press indicator:



Visual Press Indicator

**INSTALLATION / PREPARATION (CONTINUED)**

12. Perform a final check to confirm the correct insertion depth has been achieved:



- 13. Repeat steps 1 through 11 until all ball valves have been fitted, pressed, and checked.
- 14. Perform one final run through making sure there are no visual press indicators attached to the valves.

**VALVE LOCATION**

Ball valves may be fitted in vertical, horizontal or inclined pipelines. Flow may be in either direction and the valve may be any way up, on its side or upside down. The position chosen should allow easy access to the operating mechanism. It is important to leave access to the gland nut, if fitted.

**PIPING SUPPORTS**

These must be carefully aligned and at the correct distance between centres for the size and type of pipe. Please refer to the current best practice for details of correct spans and installation details.

**PRESSURE/TEMPERATURE RATING**

Fig. No.	Pressure Rating	Connection Ends	Body Material	Size	Maximum Operating Pressure Conditions	Maximum Operating Temperature Conditions
D172A.PF D172AEXS.PF D172ATH.PF D172ALS.PF	PN16	Press-fit	DZR Brass	15mm - 54mm	16 bar from -10°C to 100°C	13.5 bar at 120°C

**OPERATION**

Ball valves have a quarter turn operation (clockwise to close) providing quick and positive isolation.

To close the valve, the handle or key is rotated clockwise to a positive stop.

To open the valve, the handle or key is rotated anti-clockwise to a positive stop.

**Note: The operator should use appropriate personal protective equipment at extreme temperature conditions.**

## OPERATION (CONTINUED)

**Note: Rapid closure of a quarter turn valve on liquid services may cause system water hammer.**

**Ball valves have PTFE body seats and should only be used in the full open or closed positions.**

**For operation purposes the ball valve is provided with either a lever handle, T-handle, or Lockshield.**

Where a Lockshield is fitted:

- Remove plastic cover to access drive mechanism.
- Valve may be open or closed using standard hex spanners / sockets.
- Replace Lockshield cover after operation.

If valve is to be locked either open or closed:

- Remove retaining nut from drive mechanism
- Lift drive mechanism and turn through 90° ensuring slot in mechanism locates on body stop tang.
- Refit retaining nut
- Replace Lockshield cover

## ROUTINE MAINTENANCE

The Crane Ball valve is maintenance free but for optimum and long life service the following points must be considered:

- Check for leaks at gland. If gland is leaking tighten the gland nut(s). The gland nut(s) should be tightened only enough to prevent gland leakage. Over-tightening can cause excessive wear on the stem and packing and make the valve difficult to operate. If leakage persists the packing should be replaced.

**Note:** Ensure valve and pipeline have been depressurised, drained and the valve isolated before attempting to replace gland packing.

- Occasionally operate valves that remain open or closed for long periods to ensure they are in good working order, thus avoiding the possibility of being inoperable in a time of emergency.

For the supply of genuine Crane spares or technical assistance please contact the technical team if required.



To visit our Video Library go to:  
[www.youtube.com/user/CraneBSU](http://www.youtube.com/user/CraneBSU)



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