arco® QUALITY BY TRADITION

multilayer press for water system

TECHNICAL SHEET 12/2017 | IP80020

MULTILAYER PIPE

SCOPE

The MULTILAYER PRESS WATER system of ARCO is designed for plumbing and heating installations, seen or underfloor, thanks to its low thermal expansion and ease of installation.

ARCOKAPA is the ARCO multilayer pipe of the PEX-Al-PEX type. The aluminium intermediate layer is made from a curved sheet over the inner layer of PEX, forming a continuous cylinder. The edges of the sheet are joined by overlap. The nominal thickness of the aluminium layer is as follows:

Diameter tube	Aluminium thickness
16 x 2.00	0.20 mm
18 x 2.00	0.23 mm
20 x 2.00	0.25 mm
25 x 2.50	0.28 mm
32 x 3.00	0.35 mm

The aluminum layer provides rigidity to the pipe, providing similar advantages as metallic pipes:

- Maintains the shape of a bent-pipe.
- Limits the dilatation of the pipe, the coefficient of expansion of the multilayer pipe is similar to the copper acts as perfect
- Increase mechanical and internal pressure resistance

The ARCOKAPA pipes meet the criteria of the EN ISO 21003, and certified by AENOR for all the service condition called in this quality standard,

Application class / design pressure:

- 1/6: Hot water supplying up to 60°C.
- 2/6: Hot water supplying up to 70°C.
- 4/6: Low temperature and Water-Based floor heating systems.
- 5/6: High temperature heating systems.
- Cold water (20°C) / 20 bar

TECHNICAL FEATURES

- Coefficient of thermal conductivity: 0,4 W/mK
- Coefficient of linear expansion: 0,025 mm/m
- Oxigen's permeability: < 0,10 g/m³ d
- Inner roughness: 0,007 mm
- Adhesion strength between PEX & Aluminum: >25 N/cm

HYDRAULIC FEATURES

Flow Coeff. Kv [Q: m³/h - Hf: bar]	16x2,00	18X2,00	20x2,00	25x2,50	32x3,00
	5,1	7,5	10,6	18,9	37,5

SCOPE

ARCO offers a wide range of valves and fittings for multilayer pipe systems. They allow to install a wide range of cold and hot water network for buildings. Our broad experience along the 40 years of valve manufacturing makes us able to provide la maximum reliability and quality on all the parts of these control systems.

Valves and fittings have been designed and manufactured for the service conditions previously mentioned (Classes 1,2,4 and 5).

MAIN CONSTUCTIVE FEATURES

RAW MATERIALS AND SURFACE TREATMENT.

Valves and fittings are made of brass alloys CW617N & CW614N according to the EN 12164 and EN 12165. The using of these alloys ensure a homogenous material composition and there for a stable mechanical behavior.

The O-rings are made of EPDM 70sh, certified for drinking water (hot and cold) according to the regulation EN 681-1 (WB & WA) by ACS, DVGW W534, KIWA-ATA, WRAS …

Sockets are made of stainless steel AISI 304 and they are isolated from the brass main body by a PERT ring avoiding the galvanic pair corrosion.

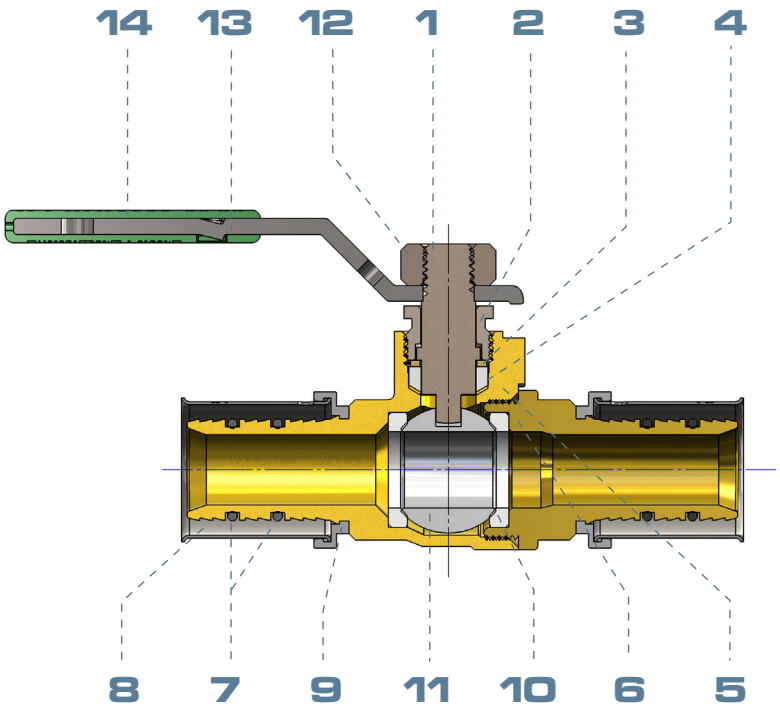
All the accessories and valves, excluding the embed valves, have a chrome plated finished that protect them from physical and chemical effects of the humidity.

COMPONENTS

ARCO offers a wide range of ball valves for multilayer pipe systems, as much for visible or embed pipe installations.

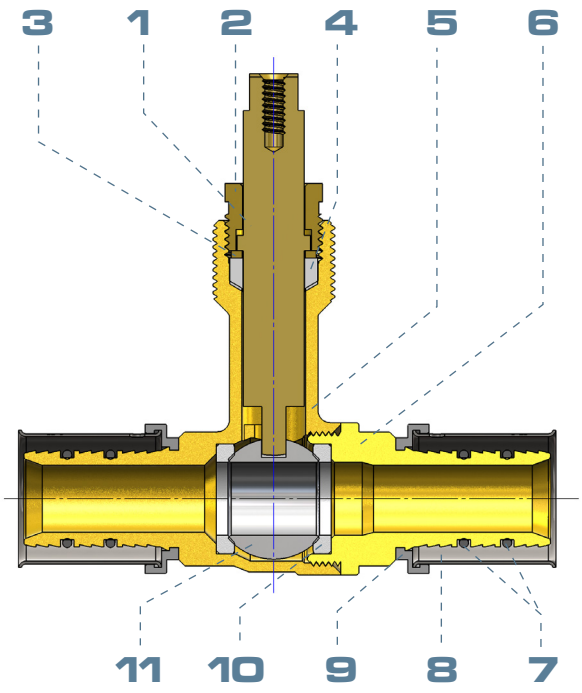
Visible installations - JUCAR Line

Item	Component	Material	Treatment
1	Stem	Brass CW614N	Zinc plated
2	Gland nut	Brass CW614N	Zinc plated
3	Washer	Brass CW614N	Zinc plated
4	Sealing gland	PTFE	
5	Body	Brass CW617N	Chrome
6	Lateral	Brass CW617N	Chrome
7	O-rings	EPDM 70sh	
8	Socket	Steel Inox. AISI 304	
9	Ring	PERT	
10	Seat	PTFE	
11	Ball	Brass CW614N	Chrome
12	Handle nut	Steel F-114	Zinc plated
13	Lever handle	Steel AISI 430	Zinc plated
14	Cover	LDPE	



Embed installations - JUCAR Embedded

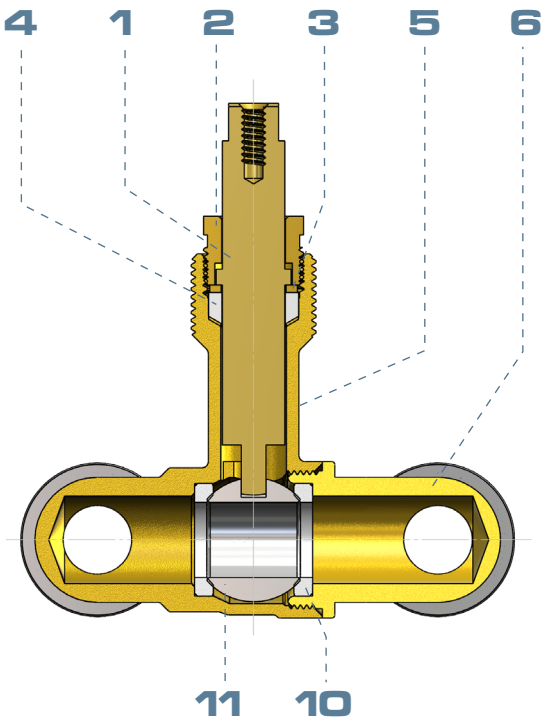
Item	Component	Material	Treatment
1	Stem	Brass CW614N	Zinc plated
2	Gland nut	Brass CW614N	Zinc plated
3	Washer	Brass CW614N	Zinc plated
4	Sealing gland	PTFE	
5	Body	Brass CW617N	
6	Lateral	Brass CW617N	
7	O-rings	EPDM 70sh	
8	Socket	Steel Inox. AISI 304	
9	Ring	PERT	
10	Seat	PTFE	
11	Ball	Brass CW614N	Chrome

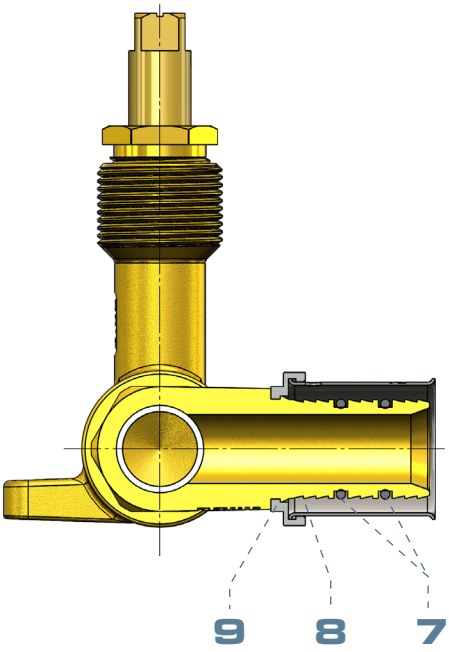


COMPONENTS

Embed installation - JUCAR Embedded in "U" shape

Item	Component	Material	Treatment
1	Stem	Brass CW614N	Zinc plated
2	Gland nut	Brass CW614N	Zinc plated
3	Washer	Brass CW614N	Zinc plated
4	Sealing gland	PTFE	
5	Body	Brass CW617N	
6	Lateral	Brass CW617N	
7	O-rings	EPDM 70sh	
8	Socket	Steel Inox. AISI 304	
9	Ring	PERT	
10	Seat	PTFE	
11	Ball	Brass CW614N	Chrome

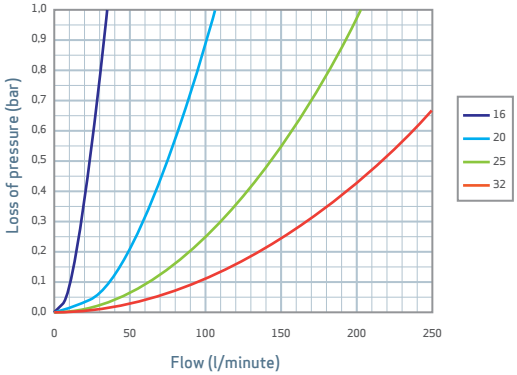




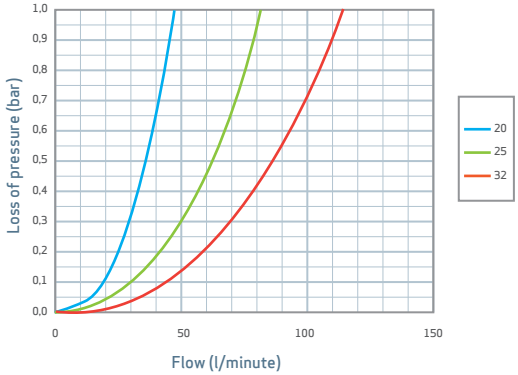
HYDRAULIC **FEATURES**

The hydraulic features have been obtained following the regulation EN 1267 "VALVES - TEST OF FLOW RESISTANCE USING WATER AS TEST FLUID."

JUCAR LINE & JUCAR EMBEDDED



JUCAR EMBEDDED IN "U" SHAPE

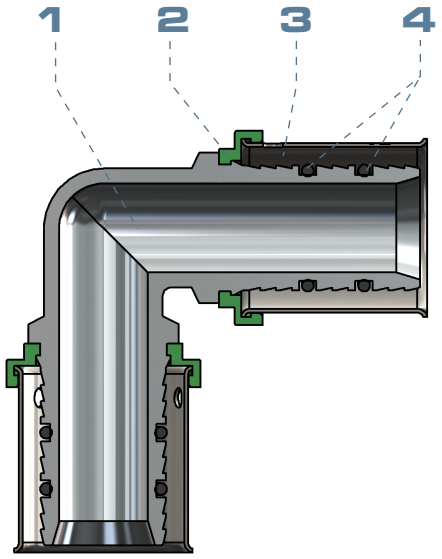


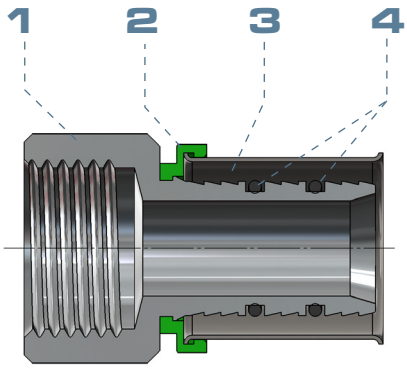
Flow Coeff. Kv [Q: m³/h - Hf: bar]	16x2,00	20x2,00	25x2,50	32x3,00
JUCAR Line	1,7	6,8	16,5	26,3
JUCAR Embedded	1,7	6,8	16,5	26,3
JUCAR Emb. "U"	-	2,9	5,0	6,8

FITTINGS

COMPONENTES

ARCO offers a wide range of press fittings for multilayer pipe systems, as much for visible or embed installations.





Item	Component	Material	Treatment
1	Body	Brass CW617N	Chrome
2	Ring	PERT	
3	Sleeve	Stainless Steel AISI 304	
4	O-rings	EPDM 70sh	

HYDRAULIC **FEATURES**

The hydraulic features have been obtained following the regulation EN 1267 "VALVES - TEST OF FLOW RESISTANCE USING WATER AS TEST FLUID."

We recommend for couplings and reduced tees, use the Kv value corresponding with the smaller diameter.

Flow Coefficient. Kv [Q: m^3/h - Hf: bar]	16x2,00	18X2,00	20x2,00	25x2,50	32x3,00
Female swivel coupling	3,2	---	6,3	13,3	30,6
Female coupling	3,2	4,6	6,3	13,3	30,6
Male coupling	2,6	4,4	6,4	13,8	30,9
Equal coupling	2,9	4,6	6,8	14,0	36,3
Equal elbow	1,3	2,1	3,3	6,9	14,3
Female elbow	1,6	2,2	3,4	5,3	11,3
Male elbow	1,1	---	3,3	5,1	11,1
Female socket elbow	1,5	2,2	3,2	---	---
Equal tee (straight flow)	1,9	3,6	6,0	11,8	33,1
Equal tee (angle flow)	1,2	3,1	3,3	6,7	12,7

INSTALATION **AND ASSEMBLY**

Pipes, valves and fittings are supplied perfectly packaged to protect them during the storage and delivering, keep this packaging until the installation.

Avoid smashing, breaks of the packaging, direct and current sun exposure, as well as direct contact with destructive chemical products.

Avoid dragging the pipes along the ground or the walls, that could damage or even useless it, we recommend the use of unwinders that make easier their manipulation and avoid damages.

Avoid the filth or strange elements inside the pipes, valves or fittings, these could produce operating problems, and once installed, the useless of the installation.

The elements of this system: pipe, valves and fittings are clamped by the press fitting system with U shaped or RFz clamps, the rest of clamps do not guarantee the correct press, tightness during the test or the service of the installation.

To obtain a correct press, you should follow the next steps:

- Cut the pipe in right angle, even cut, with scissors o plastic pipecutter, never with saw or similar.

- Measure and calibrate the inner part of the pipe with a caliber corresponding with the pipe dimension, checking that the inner chamfer is uniform and free of defects. A bad measurement or calibration could be the reason of a bad installation and so future leaks .

- Introduce the pipe up to the bottom of the valve or fitting. The correct positioning of the pipe is ensured visually, by checking that the pipe is visible through the three holes that the socket has on its base. Do not use any type of lubricant, except clean water, to make easier insert of the pipe in the valve or fitting.

INSTALATION **AND ASSEMBLY**

- Press the connection with the radial pressing tool, open manually the clamp, positioning the socket until the plastic ring makes top against the clamp by the exterior face. The connection must be right angle with the clamp.



- Open the clamp and take of the pressfitting.


All the clamps and tools used during the installation must be in optimal conditions following the advice of the manufacturer.

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