

Manifold with by-pass valves

Art. 5029



100% MADE IN ITALY 

Function

Pintossi+C manifold with by-pass valves is equipped with a double **3 ways ball valve**. The manifold is studied to be used in several applications fields, thanks to the possibility to change fluid direction and the possibility to move the plugs equipped with **PTM** system (Pintossi Soft Sealing).

In particular, the main applications are the ones which require the use of a **primary circuit** and in specific situations its exclusion in favour of a **secondary circuit**. Alternatively it can be used in systems which involve and **supply** and **back circuit** to a terminal station and in some situations require its exclusion through a **by-pass system**.

PTM

Some examples of these applications are:

- Water treatments and softeners systems
- Geothermal systems
- Solar systems (filling unit valves)
- Water filtration and purification systems
- Point of use for plumbing circuit connection
- Heating systems with fan-coil for normal and backflushing operations
- Pool heat pumps systems

All manifolds' components are made in **DZR brass** (corrosion resistance) which allows a better and stronger resistance to corrosion phenomena, related to water particularly aggressive or not treated.

The manifold can be used in **drinking water systems** and it's built in accordance with Italian D.M 174/2004.

CR

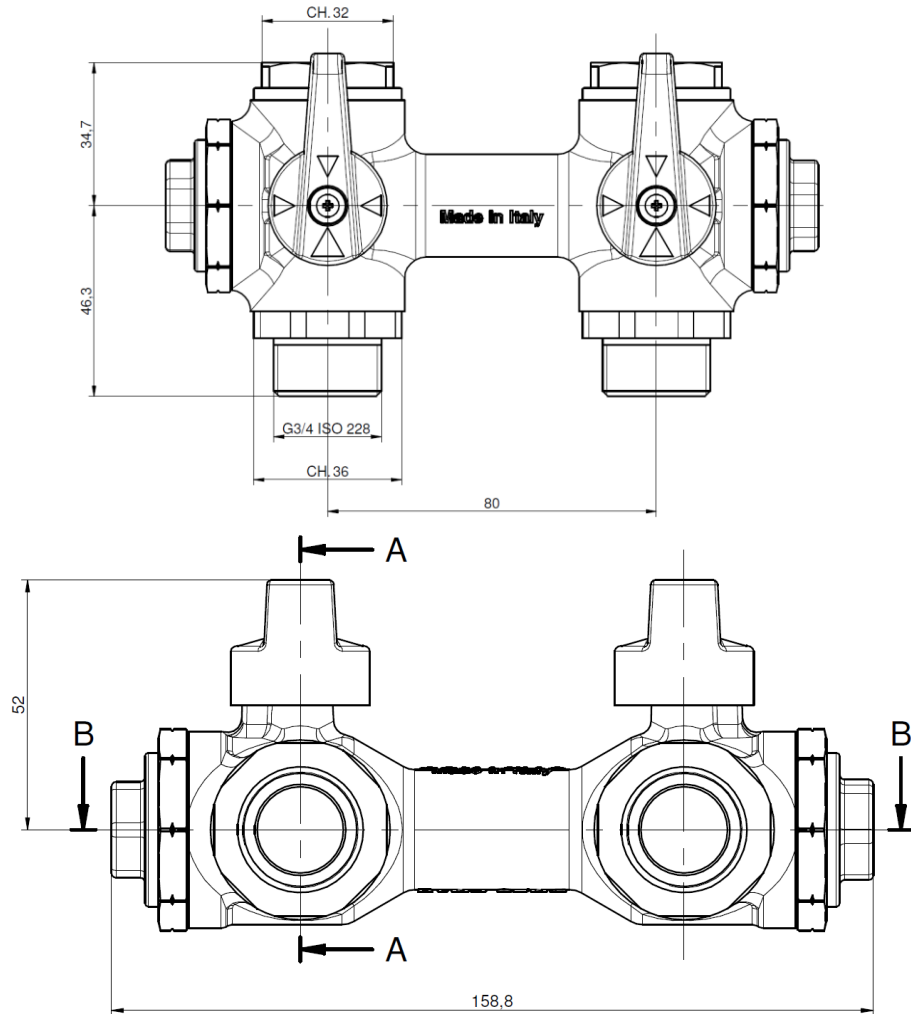
Technical characteristics

Fluids:	Water or Glycol solutions
Glycol max:	30%
Max working temperature:	100°C
Max working pressure:	16 bar
Ball hole:	DN 20

Materials

Body:	Brass CW602N
Unions:	Brass CW602N
Balls:	Brass CW617N chromed plated
Stems:	Brass CW602N
Seats:	Teflon
Plugs:	Brass CW602N
Gaskets:	EPDM / NBR for drinking water
Handles:	ABS

Dimensions



Anti-legionella and anti-freeze function

The manifold can be installed in several applications, among which, the one most used, in sanitary water systems. In fact, even in the configuration that provides the closure between the two valves, a whirling motion of **water recirculation** is maintained, avoiding in this way the stagnation of the water, that may cause the spread of Legionella bacteria, which in the case of inhalation by way of water vapor can generate negative effects on human health.



In addition, the specific geometry of the balls allows the valve body to have a constant contact with the passage of the fluid, **avoiding the creation of ice** and the subsequent break to the valve walls resulted from the dilatation that ice could generate.



Lever handles

The use of the valves is very simple and intuitive. The manifold is equipped with ergonomic lever handles with colored arrows marked that show:

1. Fluid open -> white arrow
2. Fluid close -> black arrow (except for anti-legionella recirculation)



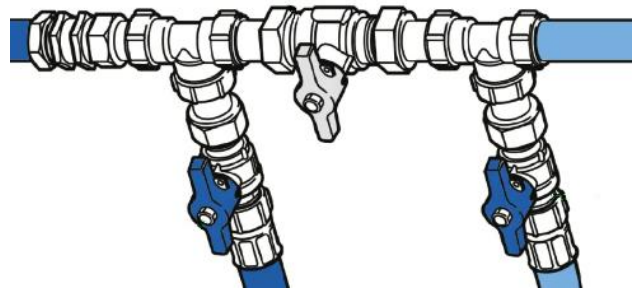
Advantages

Pintossi+C solution consists of a **single monoblock body**, composed of a manifold and two incorporated ball valves with a T-shape ball which permit to the by-pass to be carried out. The minimal sizes and the absence of additional connections allow the installation of the valve also in very small spaces.

These type of solutions are usually formed by 3 ball valves and many fittings and connections. This solution permit to override the primary system when necessary, such as in water filtration and softening systems. In other cases the manifold results very useful for cleaning, loading or draining closed circuits, as in the case of solar or geothermal systems.

This solution guarantees different advantages such as:

- **Reduction of connections** (only 4 against the 12 usually required as in the adjacent picture);
- Reduction of the possibility of **leakages**;
- Substantial reduction in **installation times**;
- Possibility of installation in **very small spaces**;
- **Easy usage** and maintenance (only two handles points);
- Valves with **full flow** to limit pressure losses;
- **Single wall fixing point**, fewer holes needed.



Standard layout

Pintossi+C manifolds with by-pass ball valves, thanks to its **modularity** and **ease of use**, can be used for the most different applications, basing on the final use configuration chosen by the end-user regarding open and close connections. Closing plugs are in fact equipped with **PTM** system (Pintossi Sof Sealing) which allows easy removal and re-assembling, always granting a correct sealing.

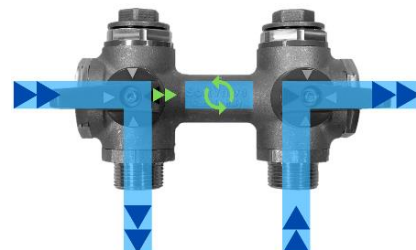
The most used application is related to sanitary water systems and loading or draining of solar and geothermal systems. This configuration includes the use of the manifold with a main circuit and following the ball valves handling creating a secondary (by-pass) circuit, as shown below.

Anti-legionella whirling motion causes the constant recirculation of the water in the connection channel between the two valves.

MAIN CIRCUIT OPEN



SECONDARY CIRCUIT OPEN (BY-PASS)



PRACTICAL EXAMPLES IN THE WATER TREATMENTS AND FILTRATION FIELD

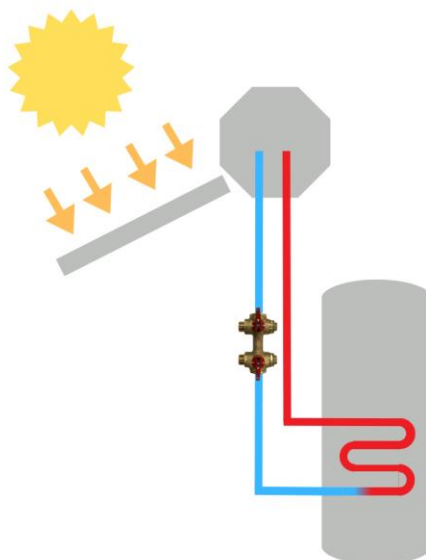


DESCALING PUMP SYSTEM

WATER SOFTNER SYSTEM

CARTRIDGES WATER TREATMENT SYSTEM

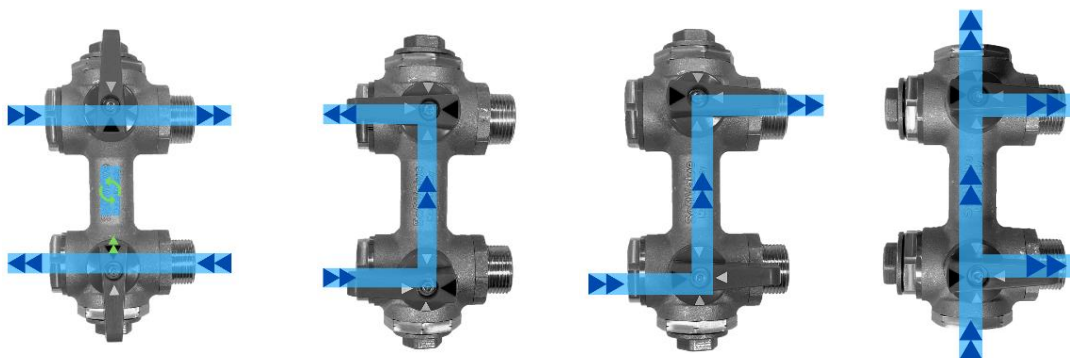
PRACTICAL EXAMPLE IN SOLAR SYSTEMS AS FILLING UNIT



Additional layouts

Thanks to the special **3 way ball**, to the **180° rotation** and to the **interchangeable connections system**, the by-pass manifold allows to configurate many layouts, basing on the specific systems requirements.

Examples



Fluid characteristics

Reference standard for water treatments in heating systems is Norm UNI 8065:2019 which regulates the parameters that must be observed to avoid scale and corrosion phenomena.

In order to grant product warranty, the fluids characteristics must comply with the rules in force in the country of relevance or at least present features not less to the ones prescribed by the Norm UNI 8065:2019.

In particular, minimum standards necessary but not sufficient to control are the following:

Fluid aspect: Limpid

PH: Between 7 and 8

Iron (FE): < 0,5 mg/kg (< 0,1 mg/kg for steam)

Copper (CU): < 0,1 mg/kg (< 0,05 mg/kg for steam)

Antifreeze: Passivated Propylene Glycol

Conditioning: as indicated by the producer

In any case when using antifreeze and conditioning solutions, is required to control and verify the correct compatibility between these substances and the construction materials stated in Pintossi+C technical datasheet.