



DESCRIPTION

XT701 – XT701G – X701GC

Prefabricated kit PCS "Pettinaroli Commissioning Solutions" with 70 mm flushing by-pass, **EvoPICV 91** (equal percentage PICV), **Filterball®** shut off valve with integrated strainer, drain valve with hose connection, air vent and additional test point.

The PCS kit is ready to be install and provides all components required for commissioning and operation of the fan-coil units. By-pass avoids reverse flushing across the PICV.

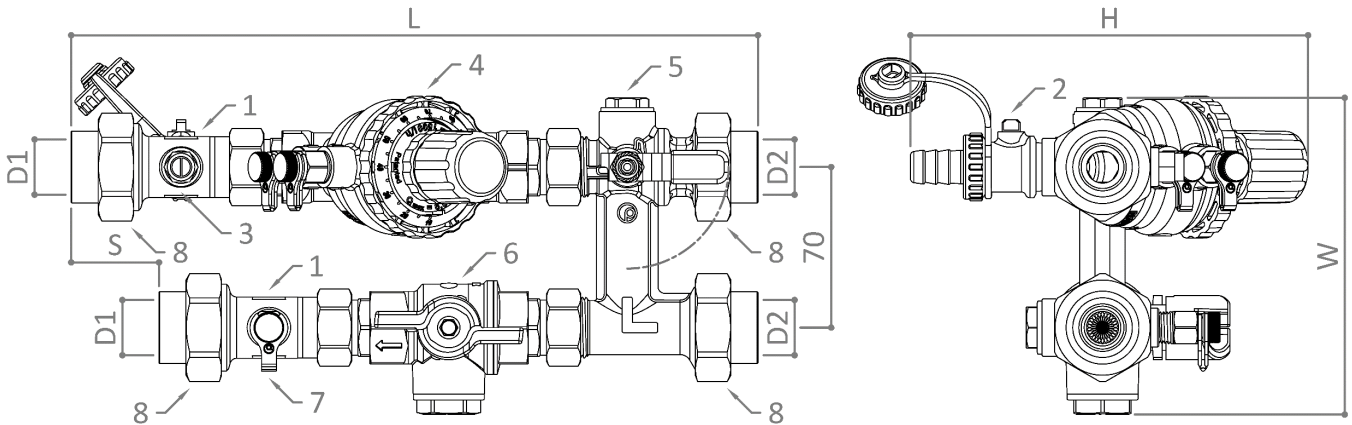
Each kit is 100% factory tested against leakage. The **PICV** is fully maintainable and has got two test points for commissioning and system optimization.

The **Filterball®** is a ball valve with an integrated strainer in the sphere. Main features: blowout proof stem, triple sealing technology, adjustable packing gland and lower pressure drop compared to a normal Y strainer. Stainless steel filter FM28: very easy to inspect and maintain.

Soft thermal insulation case available, if included the product part number becomes **XT701G**. More informations in the INSULATION chapter.

Flexible hoses series **EvoFLEX** available, if included (with also the insulation) the product part number becomes **X701GC**. More informations in the FLEXIBLE HOSES chapter.

DIMENSIONS




Dimensions in mm

Kit	H	W	S	L	D1*	D2*	Weight [kg]
XT701 – ½" – 150 l/h	150.5	139	3	282	½" Rp	½" Rp	2.33
XT701 – ½" – 600 l/h	150.5	139	3	282	½" Rp	½" Rp	3.03
XT701 – ½" – 780 l/h	150.5	139	3	282	½" Rp	½" Rp	2.84
XT701 – ¾" – 1000 l/h	151	139	38.5	298.5	¾" Rp	¾" Rp	3.21
XT701 – ¾" – 1500 l/h	151	139	38.5	298.5	¾" Rp	¾" Rp	3.16

*Available version with **NPT** thread on request.

MATERIAL LIST

#	Part number	Description	QTY	Material
1	1020P (18mm G 3/4")	Cross fitting	2	CuZn40Pb2 CW617N
2	148SC 1/2" x 15mm	Drain valve	1	CuZn40Pb2 CW617N
3	699C 1/4"	Air vent	1	CuZn39Pb3 CW614N
4	91VL 1/2" – 150 l/h 91L 1/2" – 600 l/h 91H 1/2" – 780 l/h 91L 3/4" – 1000 l/h 91H 3/4" – 1500 l/h	PICV Evo  91	1	CuZn36Pb2As CW602N NDA
5	XT7BP 3/4" x 1 1/8"	Flushing by-bass 70 mm	1	CuZn36Pb2As CW602N NDA
6	52F 1/2" o 3/4"	Filterball® valve	1	CuZn36Pb2As CW602N NDA
7	T90 1/4"	Pressure port	1	CuZn40Pb2 CW617N
8	B90CIL 1/2"	Connection fitting	4	CuZn40Pb2 CW617N
	B90CILG 3/4"	Connection fitting	4	CuZn38As CW511L NDA

For further informations about components and their maintenance please refer to their dedicated technical specifications.

→ For the 1/2" kits
→ For the 3/4" kits

TECHNICAL FEATURES

Centre to centre [mm]	Connections*	Flow rate range		PICV min ΔP [kPa]	Kit min ΔP [kPa]	Kv by-pass	Filtering capacity [μm]
		Minimum [l/h]	Maximum [l/h]				
70	1/2" F x 1/2" F	15	150	20	25	2.6	700
	1/2" F x 1/2" F	60	600	25	35		
	1/2" F x 1/2" F	78	780	35	35		
	3/4" F x 3/4" F	100	1000	30	45		
	3/4" F x 3/4" F	450	1500	35	50		

*All connections are made through a union.

DATA

Features	
Pressure rating	PN25 (PN16 with flexible hoses)
Flow rate range	15÷1500 l/h; depending on PICV selected
Working temperature range*	-10÷100°C
Working differential pressure range	20÷600 kPa; minimum depends on PICV and setting
Flow control accuracy (linearity and hysteresis)	Pos.9 ±5% for ΔP < 1 bar. Others ±10% for ΔP > 1 bar at 100%
Control valve characteristic	Equal percentage
Control valve leakage rate to IEC 60534-4	Class IV
Thread types	BSP (available also NPT)
Medium**	Water or water+glycol 30%

*No frost and no steam. Under 0 °C glycol must be added. For temperature limits of the actuators and flexible hoses see their dedicated technical specifications.

**Water quality must comply requirements mentioned in PICV technical specifications.

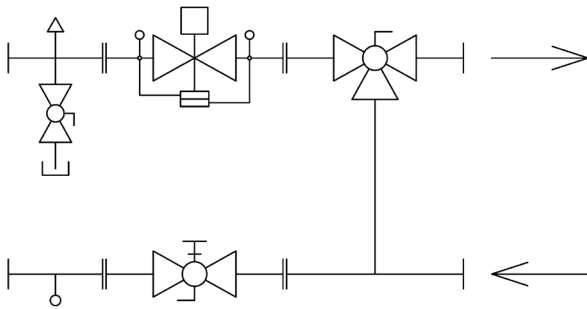
ACCESSORIES

- Venturi fitting device **CV90** series for flow measurement (accuracy ±3%). For further informations please refer to the dedicated technical specifications.



Accessories are not included with the kit.

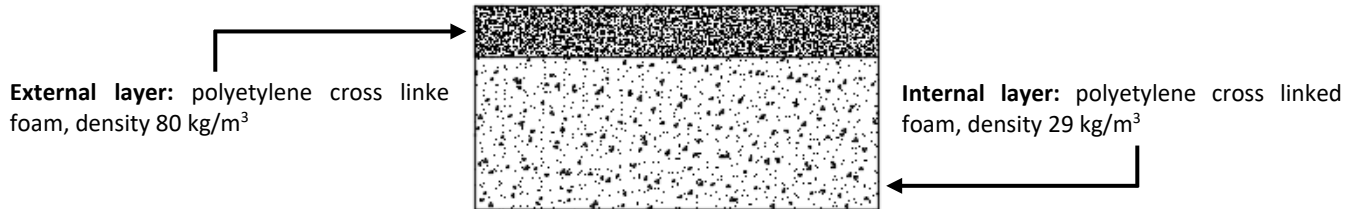
SCHEMATIC



INSULATION

Class 1 fire rated insulating case made by **2 shells** connected with **Velcro®** (multiple opening-closing) and realised with a sandwich structure:

- **External layer** made by high density insulating material to give it rigidity;
- **Internal layer** made by low density insulating material with high insulation performances.

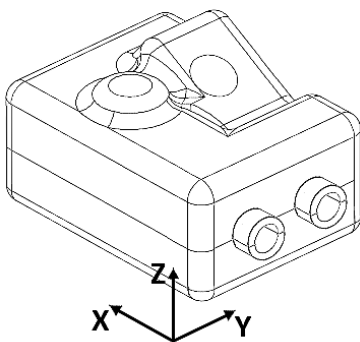


Total thickness 20 mm.

For the properties of the insulating materials see the following table:

	Standard	Insulation material		Unit of measure
Density	ISO 845	29	80	Kg/m ³
Compression stress (50% deflection)	ISO 3386/1	88	260	kPa
Tensile strength longitudinal	ISO 1798	0.18	0.80	MPa
Extension longitudinal stretch	ISO 1798	120 (break)	170 (break)	%
Residual distortion 22h at 23°C Deflection of 25% 24h after release	ISO 1856	13	1.5	%
Operating temperature range	-	-60/+90	-60/+90	°C
Thermal conductivity (40°C)	EN 12667	0.040	0.049	W/mK
Fire resistance	UL94	HF1	HF2	-

If insulation is included, the product part number becomes **XT701G**. Insulating cases dimensions are shown below:



Kit	X [mm]	Y [mm]	Z [mm]
XT701G – ½" – 150 l/h	340	180	170
XT701G – ½" – 600 l/h	340	180	170
XT701G – ½" – 780 l/h	340	180	170
XT701G – ¾" – 1000 l/h	340	180	170
XT701G – ¾" – 1500 l/h	340	180	170

Picture shown is for illustration purposes only. The real shape of the insulating case will vary depending on the type of kit.

FLEXIBLE HOSES

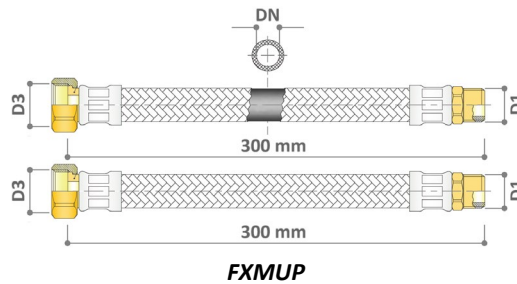
The **EvoFLEX** flexible hoses are connecting hoses made by synthetic rubber (EPDM) and covered with a stainless steel braid (AISI 304) to connect two pipe sections. High flexibility and resistance make **EvoFLEX** hoses able to clear obstacles and make narrow turns operating in very demanding conditions. This product is often exploited as anti vibration device to stop vibration propagation generated by pressurized pipes or machines (pumps, chillers, fans). The high quality of materials allows to get excellent performances and one of the longest product life on the market.


Available in the version 1 x 300 mm + 1 x 300 mm M x F **flat end** (f.e.) with the following features:

- Nominal pressure: 16 bar
- Type of medium: water or water+glycol
- Maximum medium temperature: 90°C
- Minimum medium temperature (no frost): 5°C (-10°C if glycol is added)

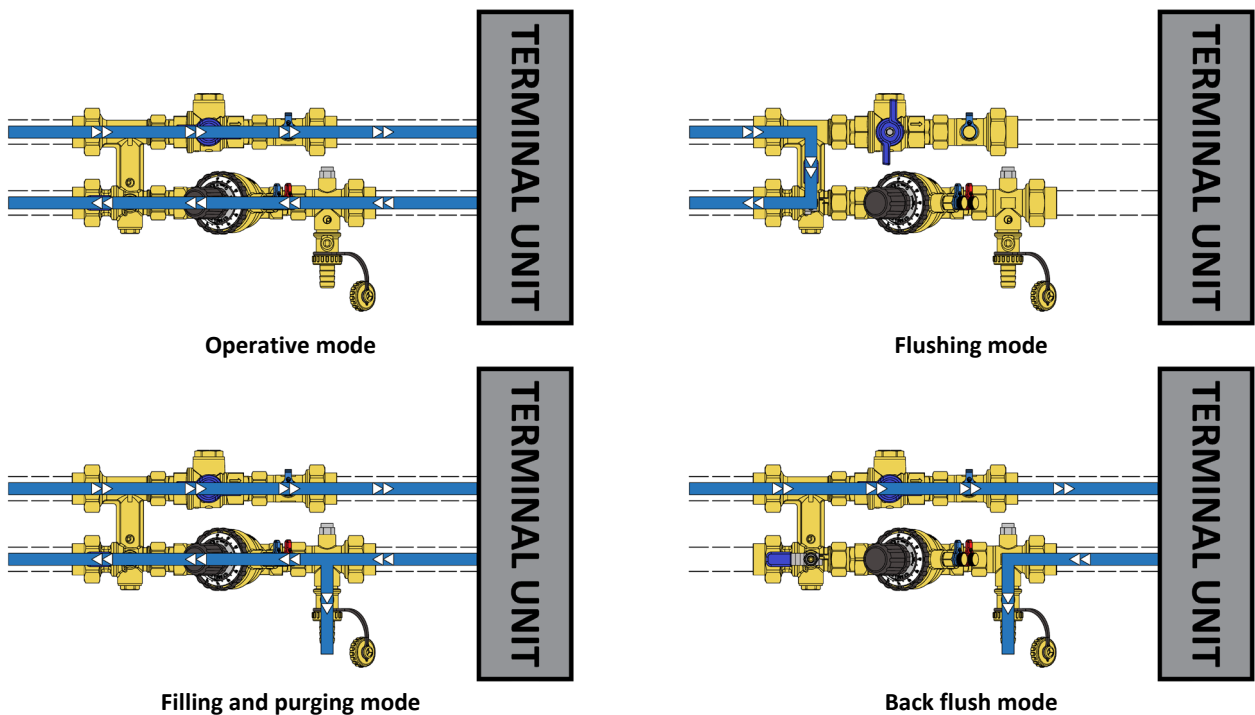
Used to simplify the connection operations between the kit and the terminal unit. If flexible hoses are included (and also insulation), the product part number becomes **X701GC**. The combinations to be used are listed below:


Kit	Flexible hoses	Part number	D1	D3	DN
X701GC – ½" – 150 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	½" M Rp	½" F f.e.	15
X701GC – ½" – 600 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	½" M Rp	½" F f.e.	15
X701GC – ½" – 780 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	½" M Rp	½" F f.e.	15
X701GC – ¾" – 1000 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	¾" M Rp	¾" F f.e.	19
X701GC – ¾" – 1500 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	¾" M Rp	¾" F f.e.	19



 The fittings indicated as D1 must be connected to the kit (connections D1). For further informations about flexible hoses, such as materials, length, possible fittings and insulation, please refer to their dedicated technical specifications.

OPERATIONS



 The drain valve in the above pictures is shown turned for illustration purposes only.

ACTUATORS

Part number	Type*	Voltage			Type of control				Properties			Stroke	Adapter
		24V	120V	230V	ON/OFF	PWM	3 POINTS	PROP. 0-10V	FEED BACK	FAIL SAFE	MICRO SWITCH		
VA7483	EM	X						X	X			6.3 mm**	0A7010
VA7484	EM	X						X	X	X		6.3 mm**	0A7010
VM000	EM	X						X	X			6.5 mm**	76TE (included)
VM060	EM	X						X	X	X		6.5 mm**	76TE (included)
VA7481	EM	X			X		X					6.3 mm	0A7010
VA7481	EM			X	X		X					6.3 mm	0A7010
A544P3	TE	X						X				4 mm	VA64 (included)
A544O2	TE	X			X	X						4 mm	VA64 (included)
A544O4	TE	X			X	X					X	4 mm	VA64 (included)
A542O2	TE			X	X	X						4 mm	VA64 (included)
A542O4	TE			X	X	X					X	4 mm	VA64 (included)

*Type of actuator: **EM**=Electro**M**echanical or **TE**=Termo**E**lectric. **Equipped with stroke detection system.




VA748 series



A54 series



VM0 series

 Where not indicated, the adapter is not included with the actuator. For further informations about the actuators please refer to their dedicated technical specifications.

INSTALLATION

The PICV can be installed in any position between vertical and horizontal: for electrical safety reasons, in case an actuator is mounted onto the valve, upside down installation of the PICV must be avoided (Fig. 1). Furthermore, due to the presence of the **Filterball**® which has an integrated strainer, it is necessary to pay attention to the direction of installation of this latter so that the flow won't pass trough it from bottom to top (Fig. 2).

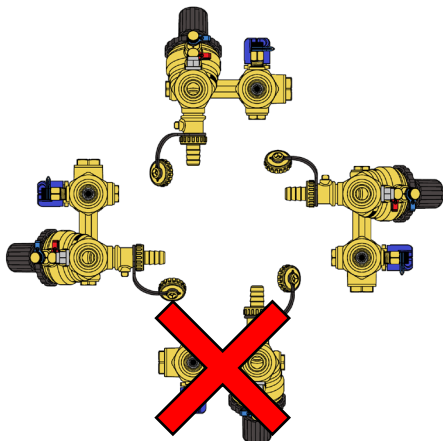


Fig. 1

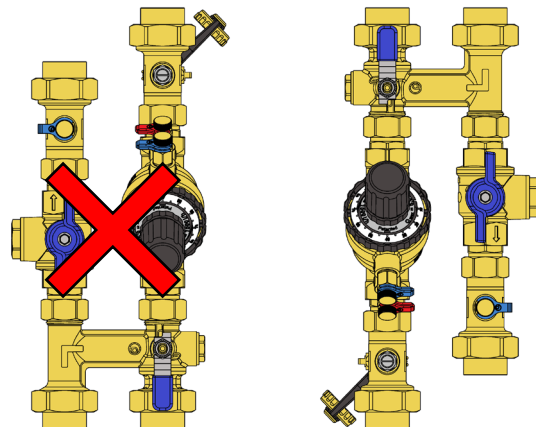


Fig. 2