DESCRIPTION

XT702 – XT702G – X702GA

Prefabricated kit PCS "Pettinaroli Commissioning Solutions" with 70 mm flushing by-pass, **DYNASTY 92** (**linear and dirt resistant PICV**) and **Filterball®** shut off valve with integrated strainer.

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.

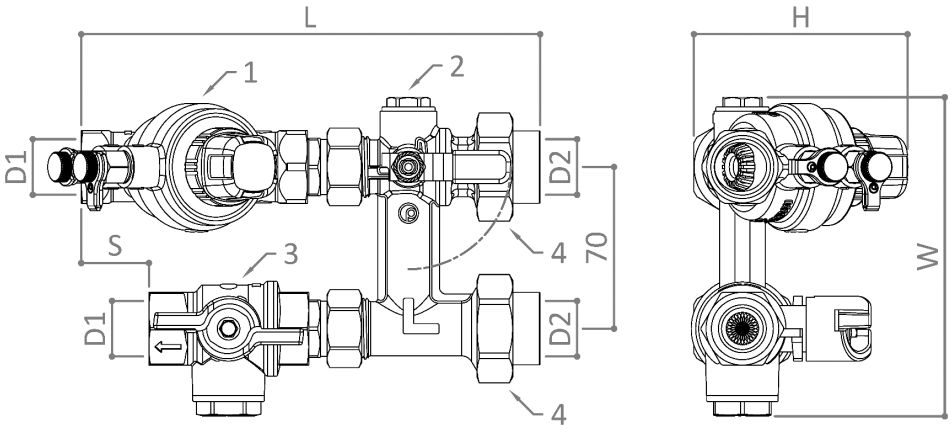
Each kit is 100% factory tested against leakage. The **PICV** is fully mantainable and has got two test points for commissioning and system optimization.

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 ***XT702G***. More informations in the INSULATION chapter.

Flexible hoses series **EvoFLEX** available, if included (with also the insulation) the product part number becomes ***X702GA***. More informations in the FLEXIBLE HOSES chapter.

DIMENSIONS



Dimensions in **mm**

Kit	H	W	S	L	D1*	D2*	Weight [kg]
XT702 – ½" – 150 l/h	89.5	138	12	177	½" Rp	½" Rp	1.80
XT702 – ½" – 450 l/h	89.5	138	12	177	½" Rp	½" Rp	1.80
XT702 – ½" – 850 l/h	92	138	25	192	½" Rp	½" Rp	1.98
XT702 – ¾" – 1000 l/h	92.5	138	29	198	¾" Rp	¾" Rp	2.00
XT702 – ¾" – 1850 l/h	92.5	138	29	198	¾" Rp	¾" Rp	2.08
XT702 – ¾" x 1" – 2500 l/h	99	138	51.5	238	¾" Rp	1" Rp	2.47
XT702 – ¾" x 1" – 3300 l/h	99	138	51.5	238	¾" Rp	1" Rp	2.36

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

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MATERIAL LIST

#	Part number	Description	QTY	Material
1	92VL ½" – 150 l/h 92L ½" – 450 l/h 92H ½" – 850 l/h 92L ¾" – 1000 l/h 92H ¾" – 1850 l/h 92L 1" – 2500 l/h 92H 1" – 3300 l/h	PICV DYNASTY 92	1	CuZn36Pb2As CW602N NDA
2	XT7BP ¾" x 1 ⅛"	Flushing by-pass 70 mm	1	CuZn36Pb2As CW602N NDA
3	52F ½" or ¾"	**Filterball®** valve	1	CuZn36Pb2As CW602N NDA
4	B90CIL ½"	Connection fitting	2	CuZn40Pb2 CW617N
	B90CILG ¾"	Connection fitting	2	CuZn38As CW511L NDA
	B90CIL 1"	Connection fitting	2	CuZn36Pb2As CW602N NDA

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

→ **For the ½" kits**
→ **For the ¾" kits**
→ **For the 1" kits**

TECHNICAL FEATURES

Centre to centre	Connections*	Flow rate range		PICV min ΔP	Kit min ΔP	Kv by-pass	Filtering capacity
		Minimum	Maximum				
[mm]		[l/h]	[l/h]	[kPa]	[kPa]		[µm]
70	½" F x ½" F	19	150	25	35	2.6	700
	½" F x ½" F	42	450	35	40		
	½" F x ½" F	157	850	30	35		
	¾" F x ¾" F	169	1000	30	35		
	¾" F x ¾" F	276	1850	35	40		
	¾" F x 1" F	339	2500	30	45		
	¾" F x 1" F	173	3300	30	45		

*F connections on the by-pass side are made trough unions. For the 2500 and 3300 l/h kits also the PICV is equipped with a F union.

DATA

Features	
Pressure rating	PN25 (PN16 with flexible hoses)
Flow rate range	19÷3300 l/h; depending on PICV selected
Working temperature range*	-10÷100°C
Working differential pressure range	25÷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	Linear
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.

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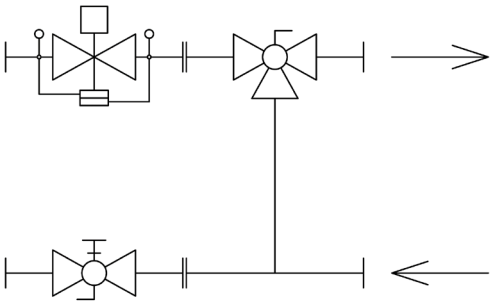
SCHEMATIC

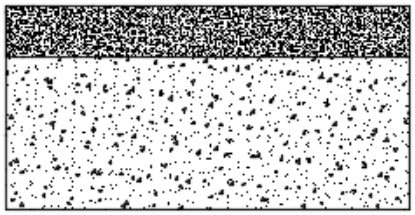


INSULATION

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 perfomances.

External layer: polyetylene cross linke foam, density 80 kg/m^3

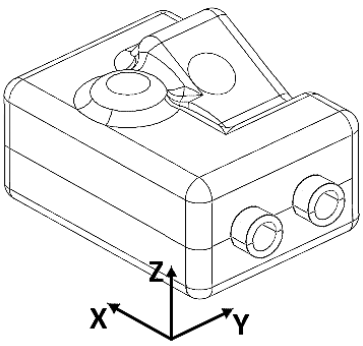


Internal layer: polyetylene cross linked foam, density 29 kg/m^3

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 ***XT702G***. Insulating cases dimensions are shown below:



Kit	X [mm]	Y [mm]	Z [mm]
XT702G – ½" – 150 l/h	275	180	110
XT702G – ½" – 450 l/h	275	180	110
XT702G – ½" – 850 l/h	305	180	110
XT702G – ¾" – 1000 l/h	310	180	110
XT702G – ¾" – 1850 l/h	310	180	110
XT702G – ¾" x 1" – 2500 l/h	320	185	125
XT702G – ¾" x 1" – 3300 l/h	320	185	125

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

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FLEXIBLE HOSES

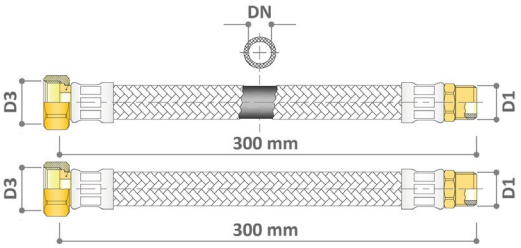
The **EvoFLEX** flexible hoses are connecting hoses made by synthetic rubber (EPDM) and covered with a stainless steel braid (AISI 304) to connect two pipe sections. High flexibility and resistance make **EvoFLEX** hoses able to clear obstacles and make narrow turns operating in very demanding conditions. 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 excelent performances and one of longest product life on the market.

Available in the version 1 x 300 mm + 1 x 300/350 mm M x F **flat end** (f.e.) with the following features:

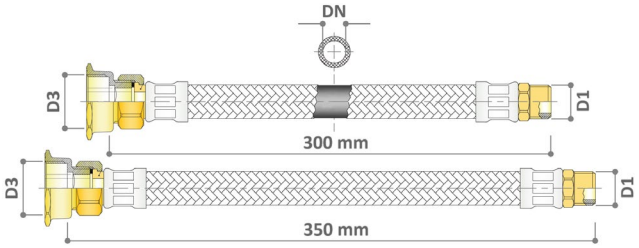
- Nominal pressure: 16 bar
- Type of medium: water or water+glycol
- Maximum medium temperature: 90°C
- Minimum medium temperature (no frost): 5°C (-10°C if glycol is added)

Used to semplify the connection operations between the kit and the terminal unit. If flexible hoses are included (and also insulation), the product part number becomes ***X702GA***. The combinations to be used are listed below:

Kit	Flexible hoses	Part number	D1	D3	DN
X702GA – ½" – 150 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	½" M Rp	½" F f.e.	15
X702GA – ½" – 450 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	½" M Rp	½" F f.e.	15
X702GA – ½" – 850 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	½" M Rp	½" F f.e.	15
X702GA – ¾" – 1000 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	¾" M Rp	¾" F f.e.	19
X702GA – ¾" – 1850 l/h	1 x 300 mm + 1 x 300 mm	FXMUP	¾" M Rp	¾" F f.e.	19
X702GA – 1" – 2500 l/h	1 x 300 mm + 1 x 350 mm	FXMUF	¾" M Rp	1" F f.e.	19
X702GA – 1" – 3300 l/h	1 x 300 mm + 1 x 350 mm	FXMUF	¾" M Rp	1" F f.e.	19



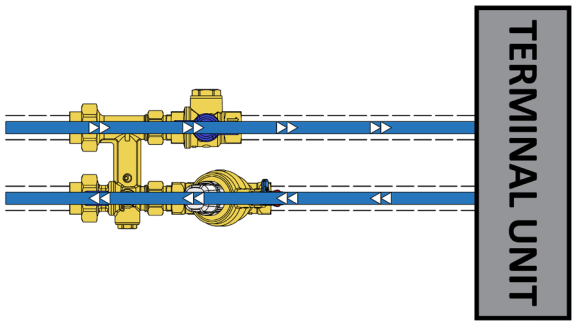
FXMUP



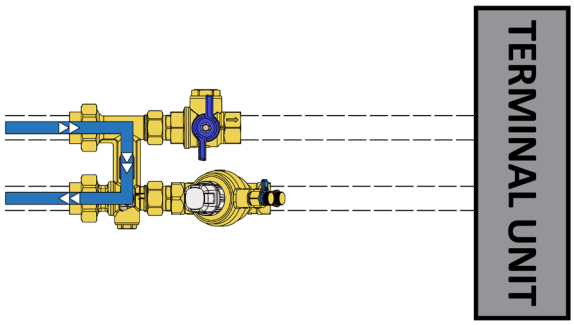
FXMUF

⚠ 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



Operative mode



Flushing mode

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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* or *0A748X*
VA7484	EM	X						X	X	X		6.3 mm**	*0A7010* or *0A748X*
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* or *0A748X*
VA7481	EM			X	X		X					6.3 mm	*0A7010* or *0A748X*
A544P3	TE	X						X				4 mm	*VA64* (included)
A564P3	TE	X						X				6.5 mm	*VA64* (included)
A544O2	TE	X			X	X						4 mm	*VA64* (included)
A544O4	TE	X			X	X					X	4 mm	*VA64* (included)
A564O2	TE	X			X	X						6.5 mm	*VA64* (included)
A542O2	TE			X	X	X						4 mm	*VA64* (included)
A542O4	TE			X	X	X					X	4 mm	*VA64* (included)
A562O2	TE			X	X	X						6.5 mm	*VA64* (included)

*Type of actuator: **EM**=**E**lectro**M**echanical or **TE**=**T**termo**E**lectric. **Equipped with stroke detection system.

For kits up to 1850 l/h use actuators series *A54, VM0* and adapter *0A7010* (for *VA748* series). For kits from 2500 l/h and above use actuators series *A56, VM0* and adapter *0A748X* (for *VA748* series).

***VA748* series**

***A54* & *A56* 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).

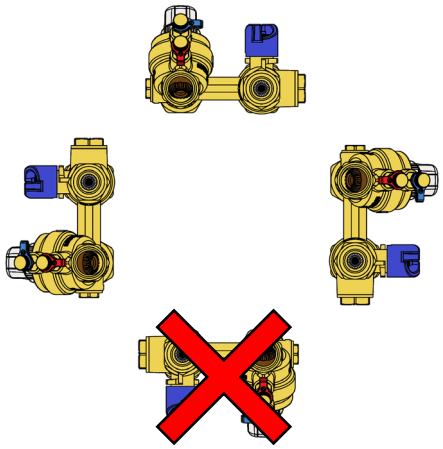

Fig. 1

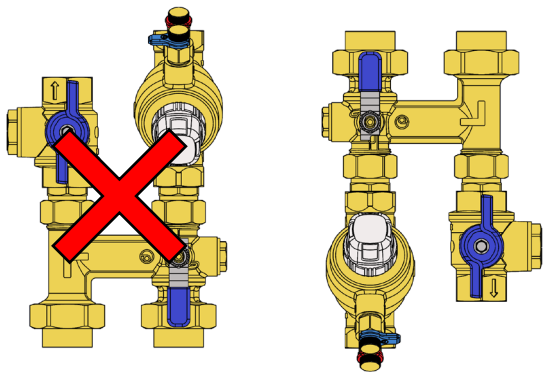

Fig. 2

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