90BY

Valve for HVAC Terminal Units Mounting

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Valve for HVAC terminal units mounting (fan coils, heat exchangers and so on)
Threaded F/F/F/F (ISO 228/1) union ends
Version with only two union ends also available
Olive and nut mounting kit for European copper tubing (EN1057) on request:

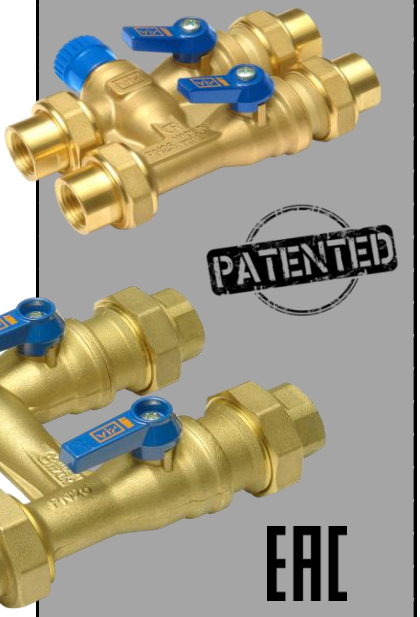
- DN15, kit for 15mm pipe
- DN20, kit for 22mm pipe

Other connections (CxC, threaded M, ISO 7/1 Rp) or combinations on request
Air testing according to EN12266-1
Available in 40mm or 80mm center to center version
One piece body with integral by-pass channel
Blow-out proof stems
TR CU 010 compliant

PN25 (Max 25bar up to 100°C, max 20bar at 130°C)
PN16 with O/N kit (Max 16bar up to 30°C, max 5bar at 120°C)
Free of CE marking (cat. according to Art. 4.3 Dir. 2014/68/EU)

Working conditions

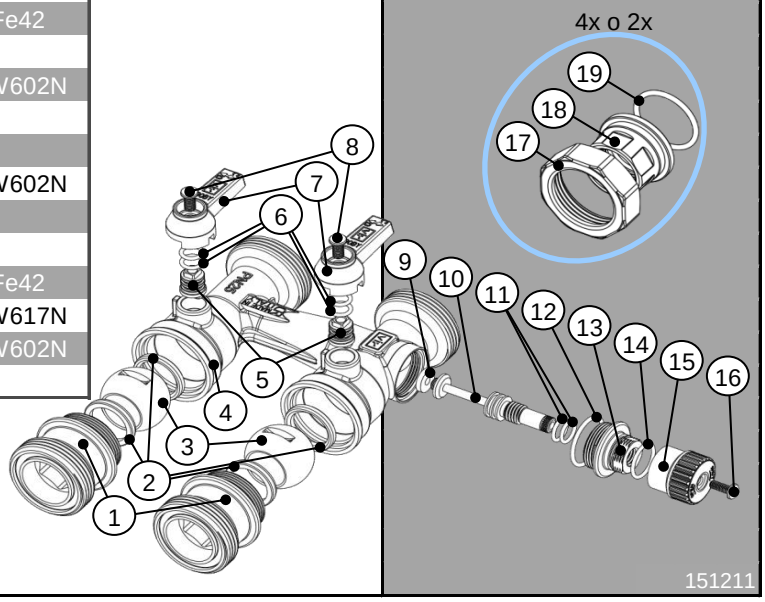
- Suitable for: water, -10°C to +130°C (120°C with O/N kit)
  below 0°C only for water with added antifreeze fluids
  over 100°C only for water with added anti-boiling fluids
- Not suitable for: gases group 1 & 2, liquids group 1 (Dir. 2014/68/UE)



PARTLIST

N.	Part	Material	Norm
1	Fixed end	DZR brass	EN12165 CW602N
2	Seat	PTFE	-
3	Ball	Chr. pl. DZR brass	EN12164 CW602N
4	Body	DZR brass	EN12165 CW602N
5	Stem	DZR brass	EN12164 CW602N
6	Stem O-ring	EPDM Perox	-
7	Butterfly	Aluminum	EN1705
8	Butterfly screw	Zinc plated steel	EN10025 Fe42
9	By-pass gasket	EPDM Perox	-
10	By-pass stem	DZR brass	EN12164 CW602N
11	By-pass stem OR	EPDM Perox	-
12	Bonnet o-ring	EPDM Perox	-
13	Bonnet	DZR brass	EN12164 CW602N
14	Handwheel o-ring	Silicon	-
15	Handwheel	ABS (blue)	-
16	Handwheel screw	Zinc plated steel	EN10025 Fe42
17	Union nut	Brass	EN12165 CW617N
18	Union[1]	DZR brass	EN12164 CW602N
17	Union O-ring	EPDM Perox	-

[1]In two parts for $DN20_{40}$ and DN25

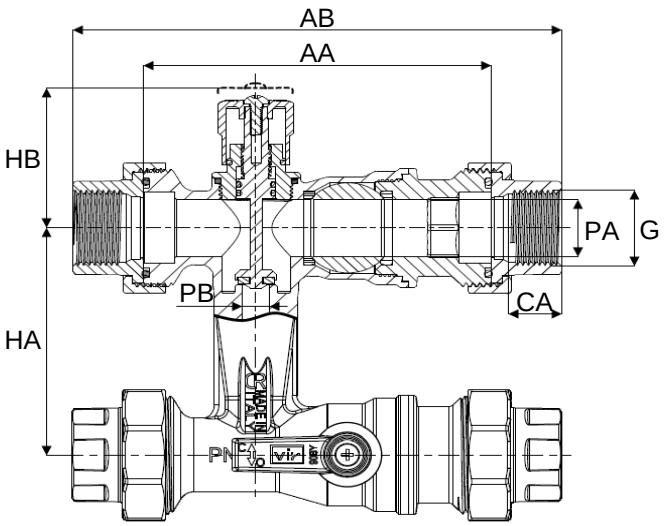


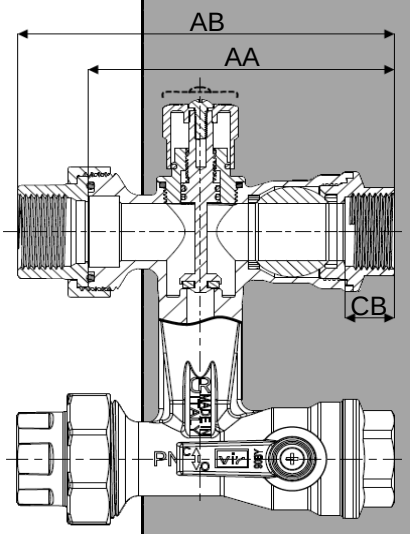
151211

DIMENSIONS

DN	G	AA[1] [mm]	AB[1] [mm]	CA [mm]	CB [mm]	PA [mm]	PB [mm]	HA [mm]	HB [mm]	Weight[1] [g]
015_{40}	½"	99 / 89	149 / 114	15,0	17,5	15	9	40	46,8	1050 / 795
015_{80}	½"	114 / 107	154 / 127	16,0	17,5	20	9	80	49,1	1840 / 1320
020_{40}	¾"	99 / 89	161 / 120	15,0	16,5	15	9	40	46,8	1170 / 850
020_{80}	¾"	114 / 101	160 / 124	16,0	17,5	20	9	80	49,1	1950 / 1440
025	1"	114 / 101	184 / 146	19,5	19,5	20	9	80	49,1	2140 / 1650

[1]Version with four unions / version with two unions





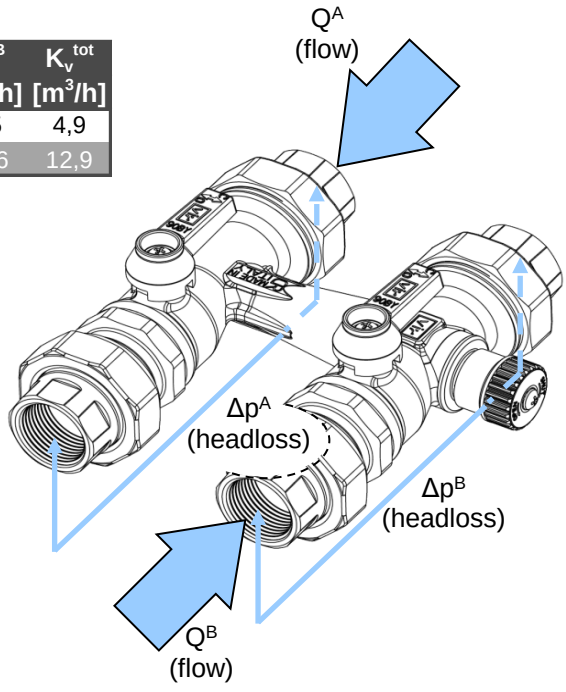
HEADLOSS CALCULATION

$$\Delta p = \left(\frac{36 \cdot Q}{K_V} \right)^2$$

Formula linking flow Q (in l/s) and theoretical valve headloss Δp (in kPa).
Supposing to have a close-circuit heat exchanger (Q^A=Q^B=Q, closed by-pass) and with Kv values as per below table:

$$\Delta p^A = \left(\frac{36 \cdot Q^A}{K_v^A} \right)^2 \quad \Delta p^B = \left(\frac{36 \cdot Q^B}{K_v^B} \right)^2 \rightarrow \Delta p^{tot} = \Delta p^A + \Delta p^B = \left(\frac{36 \cdot Q^A}{K_v^A} \right)^2 + \left(\frac{36 \cdot Q^B}{K_v^B} \right)^2 \quad or \quad \Delta p^{tot} = \left(\frac{36 \cdot Q}{K_v^{tot}} \right)^2$$

DN	K_v^A [m^3/h]	K_v^B [m^3/h]	K_v^{tot} [m^3/h]
$015_{40}/020_{40}$	7,5	6,5	4,9
$015_{80}/020_{80}/025$	20,5	16,6	12,9



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