9800 series

DZR Brass Regulation Ball Valve with Connection for Actuator

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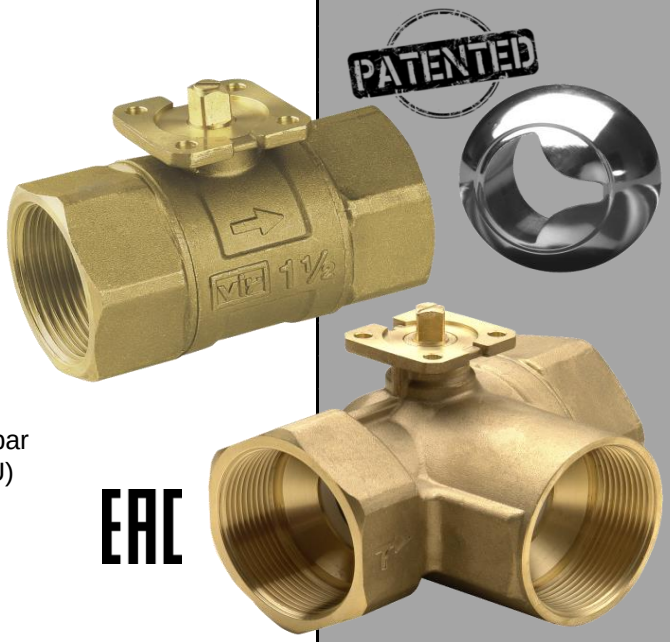
DZR brass regulation ball valve with connection for actuator
Available in the following versions:

- Fig. 980S, 2-way, threaded F/F (ISO 7/1 Rp)
- Fig. 980T, 3-way mixing, threaded F/F/F (ISO 7/1 Rp)

(available on request with ASME B1.20.1 NPT threads)
Actuator connection according to ISO 5211 F04-□9mm
Characteristic control curve according to VDI 2173
Linear char. on by-pass according to VDI 2173 (3-way only)
Blow-out proof stem
TR CU 010 compliant



Shell rating: PN40
Working conditions: Max 16bar, max differential pressure 3,5bar
Free of CE marking (cat. according to Art. 4.3 Dir. 2014/68/EU)

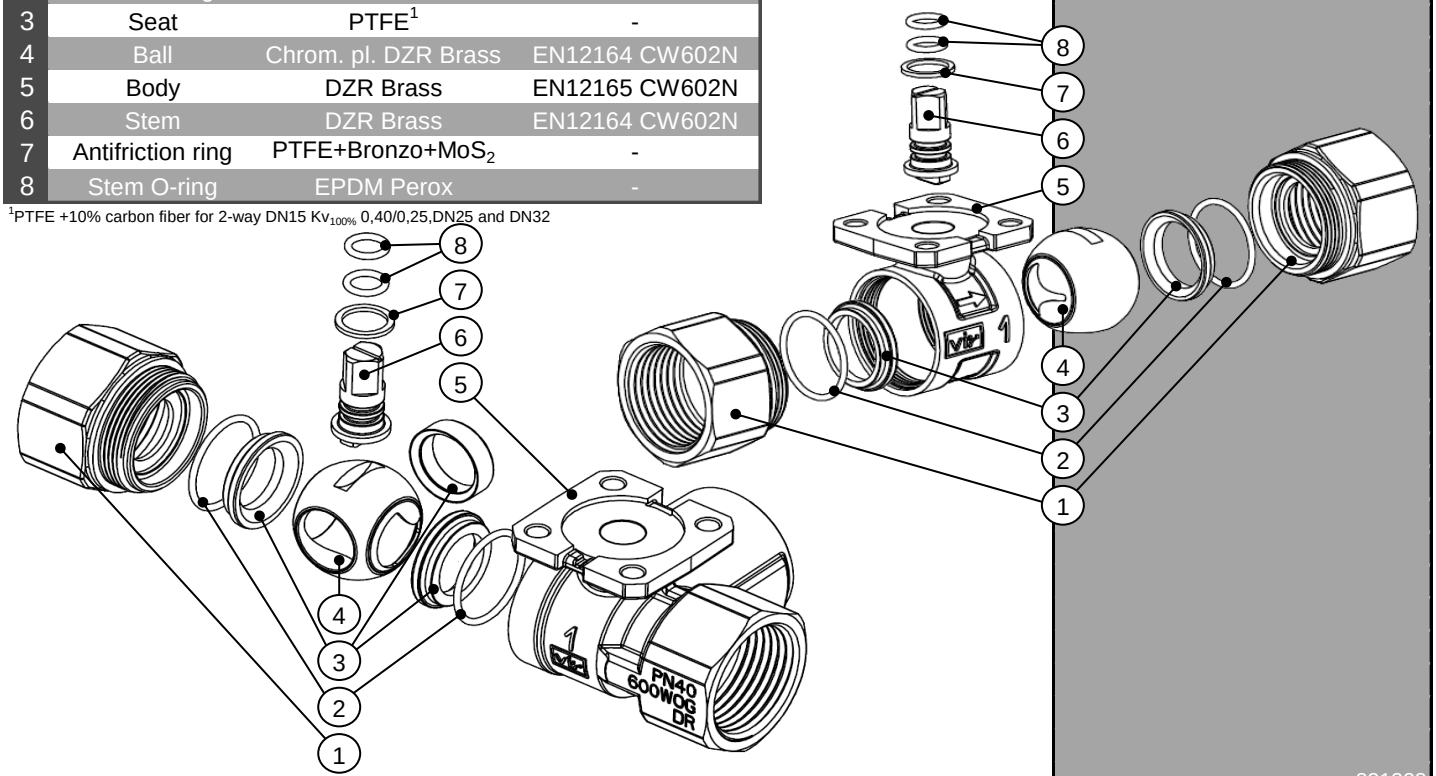
Working conditions

- Suitable for: water, -10°C to +130°C
  below 0°C only for water with added antifreeze fluids
  over 100°C only for water with added anti-boiling fluids
  (Ethylene glycol and propylene glycol mix. >20% and ≤50% may be used)
- Not suitable for: gases group 1 & 2, liquids group 1 (Dir. 2014/68/EU)

PARTLIST

N.	Part	Material	Norm
1	Fixed end	DZR Brass	EN12165 CW602N
2	Seat O-ring	EPDM Perox	-
3	Seat	PTFE[1]	-
4	Ball	Chrom. pl. DZR Brass	EN12164 CW602N
5	Body	DZR Brass	EN12165 CW602N
6	Stem	DZR Brass	EN12164 CW602N
7	Antifriction ring	PTFE+Bronzo+MoS_2	-
8	Stem O-ring	EPDM Perox	-

[1]PTFE +10% carbon fiber for 2-way DN15 $Kv_{100\%}$ 0,40/0,25,DN25 and DN32



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DIMENSIONS

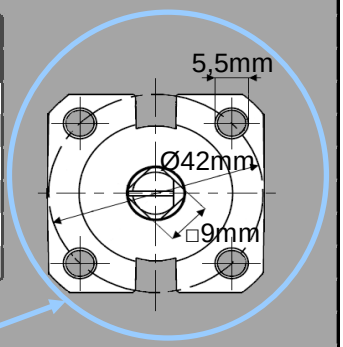
DN	T	L [mm]	LA [mm]	LB [mm]	C [mm]	HA [mm]	HB [mm]	ISO-□Q [mm]	Torque[1] [Nm]	Weight[2] [g]
015	½"	61,6	66,6	34,0	15,5	27,6[3]	10,0	F04 - □9	2,0	272 / 309[3]
020	¾"	67,4	72,2	36,7	16,5	27,6	10,0	F04 - □9	2,0	303 / 375
025	1"	76,8	85,4	44,8	19,5	30,5	10,0	F04 - □9	3,0	452 / 604
032	1¼"	88	99,2	52,6	21,5	34,3	10,0	F04 - □9	3,5	689 / 949
040	1½"	101,8	109,6	57,1	21,5	39,8	10,0	F04 - □9	3,5	1114 / 1364
050	2"	116,2	131,4	68,9	25,0	52,8	10,0	F04 - □9	3,5	1748 / 2266

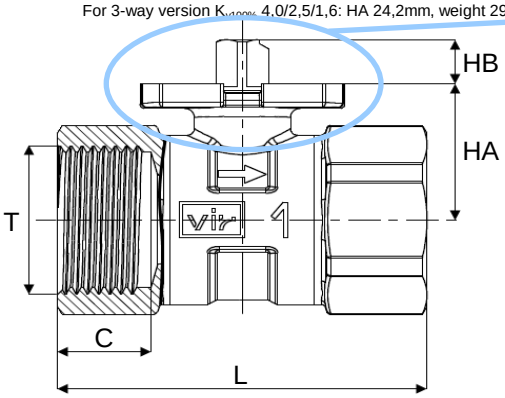
[1]Indicated torque valid for Δp≤1bar, torque is anyway ≤5Nm in the max Δp working range

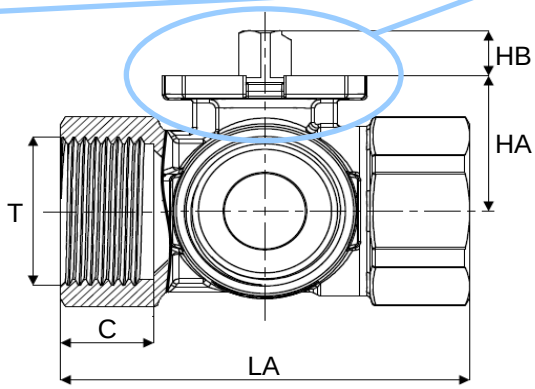
[2]2-way version weight / 3-way version weight

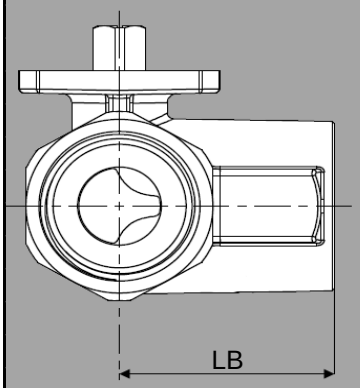
[3]For 2-way version $K_{v100\%}$ 0,63/0,40/0,25: HA 24,2mm, weight 258g

For 3-way version $K_{v100\%}$ 4,0/2,5/1,6: HA 24,2mm, weight 295g

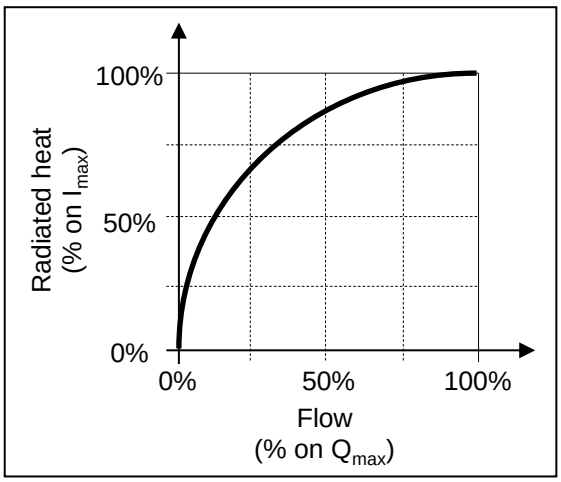




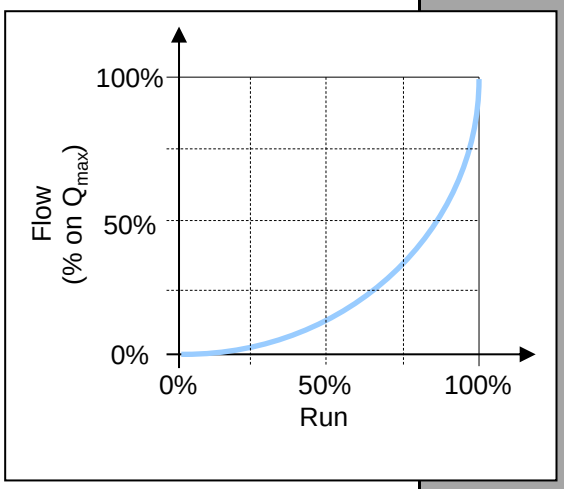




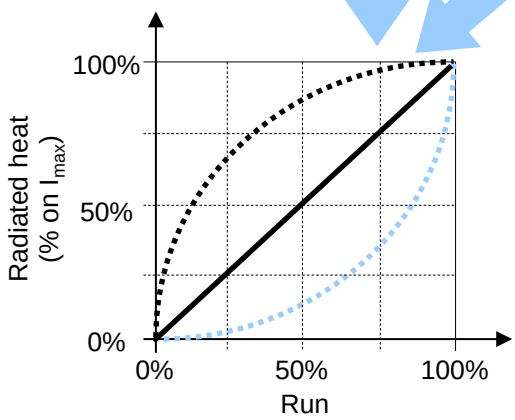
CHARACTERISTIC CURVE



Characteristic curve of heat exchanger



VIR valve, equal-percentage characteristic



Heat exchangers for HVAC system have a characteristic curve linking heat and flow which is not linear.
Using a valve with equal-percentage characteristic allow to compensate this curve.
The equal-percentage characteristic is obtained by using a special ball valve with shaped passage.

Q_{max} = maximum design flow
I_{max} = maximum radiated heat

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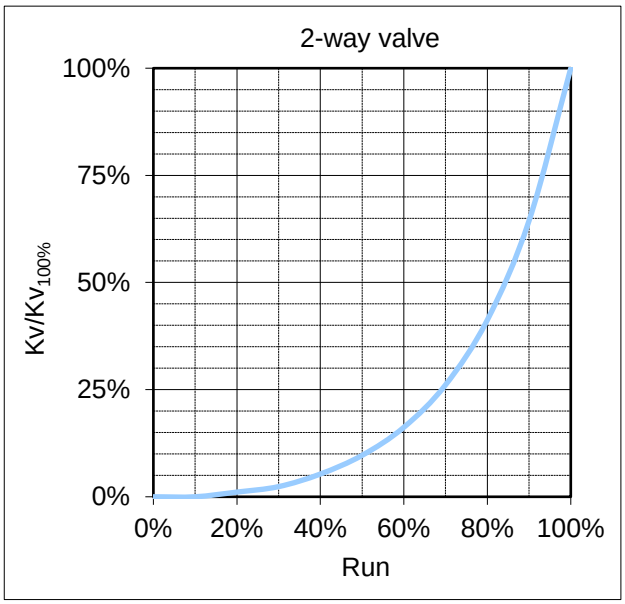
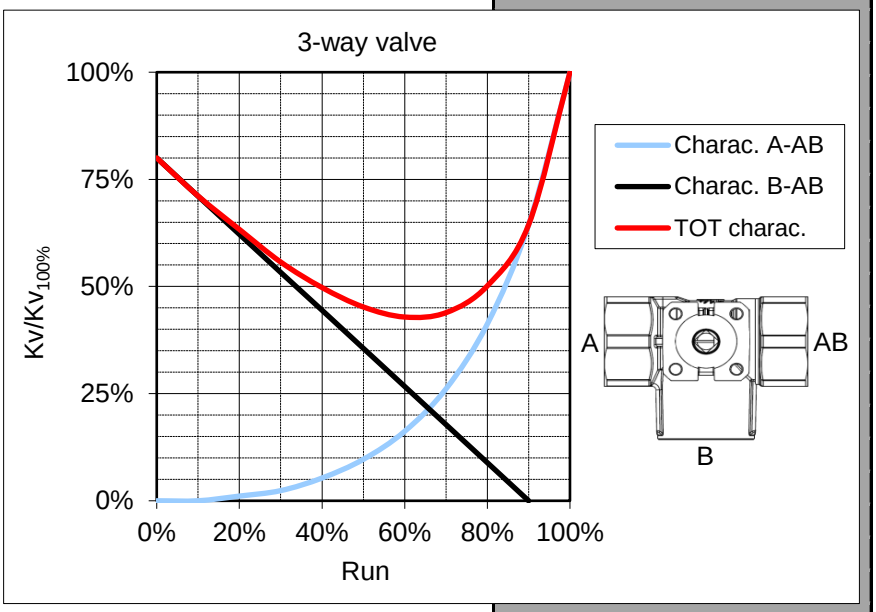
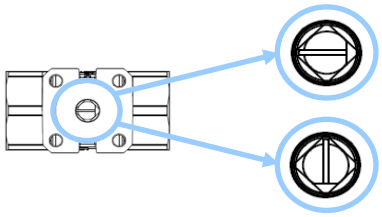


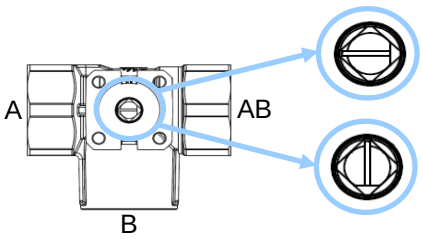




Stem detail, valve open

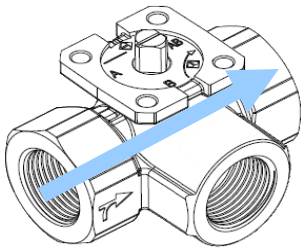
Stem detail, valve close

No Visible Leakage when tested to verify Class IV-L-1



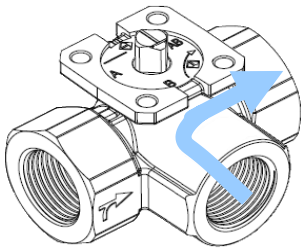
Stem detail
100% A-AB flow
0% B-AB flow

Stem detail
0% A-AB flow
100% B-AB flow



A-AB flow

Admitted Seat Leakage
Class IV-L-1 = 1 x 10^{-4} x RVC



B-AB flow

Admitted Seat Leakage
1 x 10^{-2} x RVC

Admitted Seat Leakage Classes according to IEC 60534-4. RVC: "Rated Valve Capacity" as per IEC 60534-4 standard.

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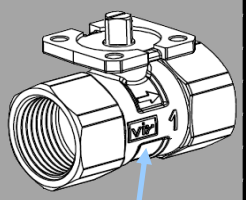
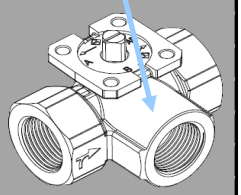
VALVE SIZING

DN	Available Kv100% [m3/h] for 2-way valves												
	0,25	0,40	0,63	1,0	1,6	2,5	4,0	6,3	10	16	25	40	63
015	8	7	6	5	4	3	2	1	0				
020							2	1	0				
025								2	1	0			
032									2	1	0		
040										2	1	0	
050											2	1	0

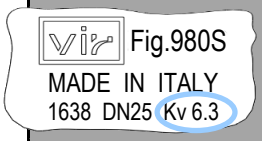


DN	Available $K_{v100\%}$ [m^3/h] for 3-way valves									
	1,0	1,6	2,5	4,0	6,3	10	16	25	40	63
015		4	3	2	1					
020				2	1					
025						1				
032							1			
040								1		
050									1	0[1]

[1]By-pass flow only 60% of flow on the main port

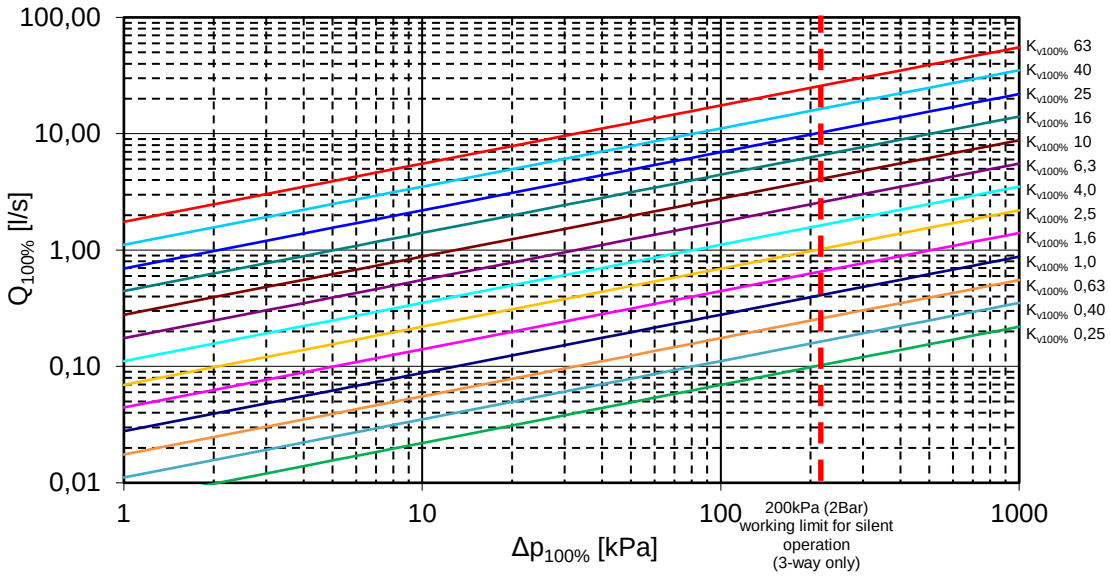


Valves are available in different $K_{v100\%}$ versions, the specific value is marked on the valves in the position indicated in the figure.
The specific $K_{v100\%}$ version of the valve is identified by the sixth digit of the product code according to the tables above.
In the example the marking of a F980S**2**025.1861 valve.



$$K_{v100\%} = \frac{36 \cdot Q_{100\%}}{\sqrt{\Delta p_{100\%}}}$$

Calculate $K_{v100\%}$ theoretically required based on maximum design flow ($Q_{100\%}$ in l/s) and design pressure drop ($\Delta p_{100\%}$ in kPa) at valve completely opened.
Select the closest available $K_{v100\%}$ on table below compatible with used pipe DN.



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