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Red-White Valve Corp.

**9800 series**  
 DZR Brass Regulation Ball Valve with  
 Actuator Mounting Pad

**Description**

DZR brass regulation ball valve with actuator mounting pad  
 Available for following versions:

- 2-way, threaded F x F (ASME B1.20.1 - NPT)
- 3-way mixing, threaded F x F x F (ASME B1.20.1 - NPT)  
 (available upon request with ISO 7/1 Rp threads)

Actuator connection according ISO 5211 F04-□0.35in

Characteristic control curve according VDI 2173

Linear characteristic on bypass according VDI 2173 (3-way only)

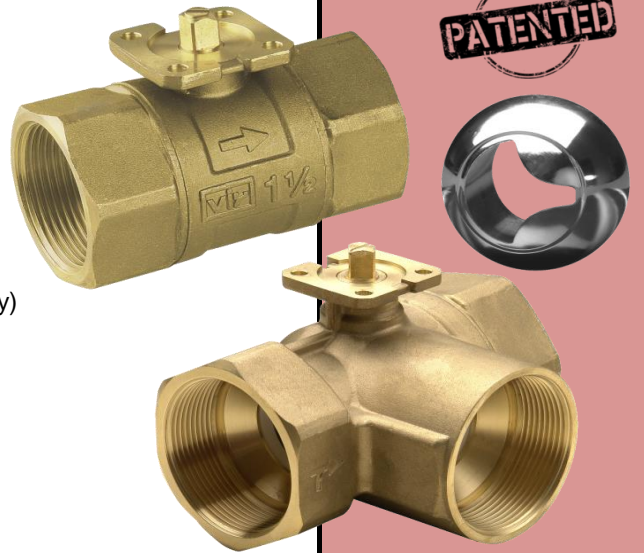
Blow-out proof stem

600WOG

Maximum differential pressure 50psi

Working conditions

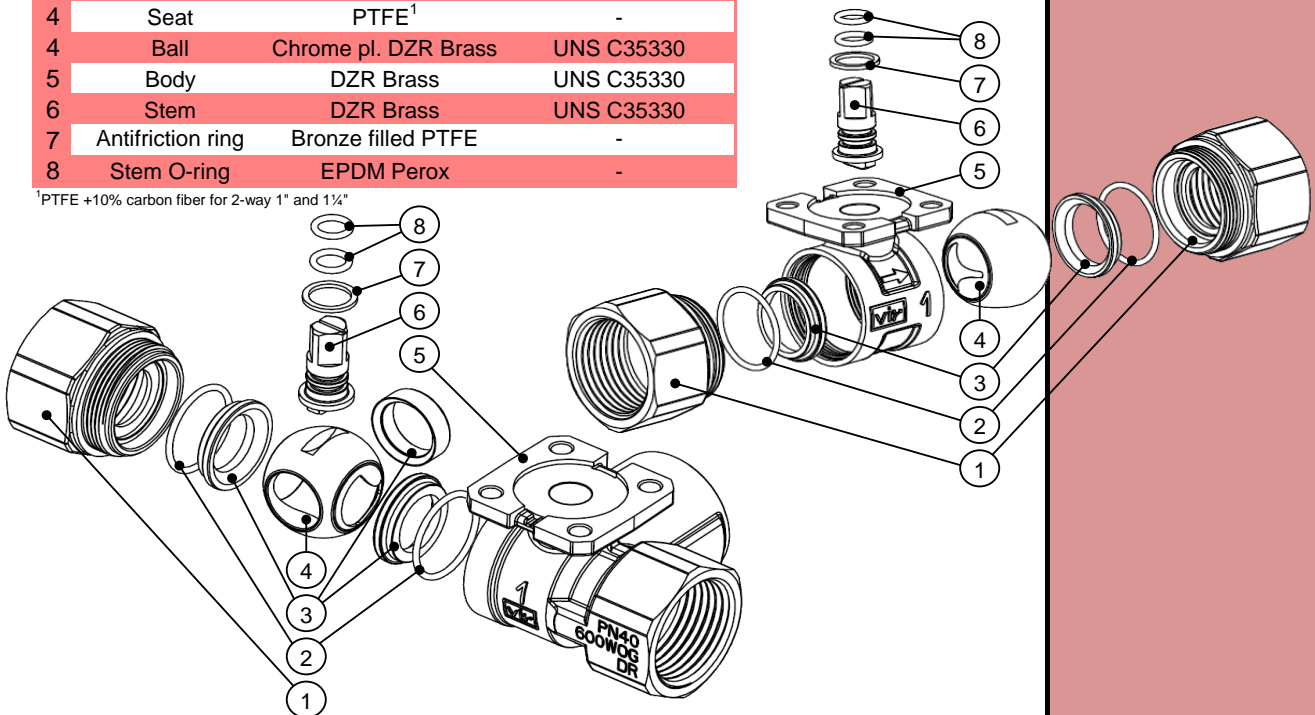
- Water: from 15°F to 260°F  
 below 32°F only for water with added antifreezing fluid  
 over 212°F only for water with added anti-boiling fluid  
 (Ethylene-Glycolic and propylene-glycolic mix >20% and ≤50% may be used)



**Parts List**

N.	Description	Material	Standard
1	Tail piece	DZR Brass	UNS C35330
2	Seat O-ring	EPDM Perox	-
4	Seat	PTFE <sup>1</sup>	-
4	Ball	Chrome pl. DZR Brass	UNS C35330
5	Body	DZR Brass	UNS C35330
6	Stem	DZR Brass	UNS C35330
7	Antifriction ring	Bronze filled PTFE	-
8	Stem O-ring	EPDM Perox	-

<sup>1</sup>PTFE +10% carbon fiber for 2-way 1" and 1½"



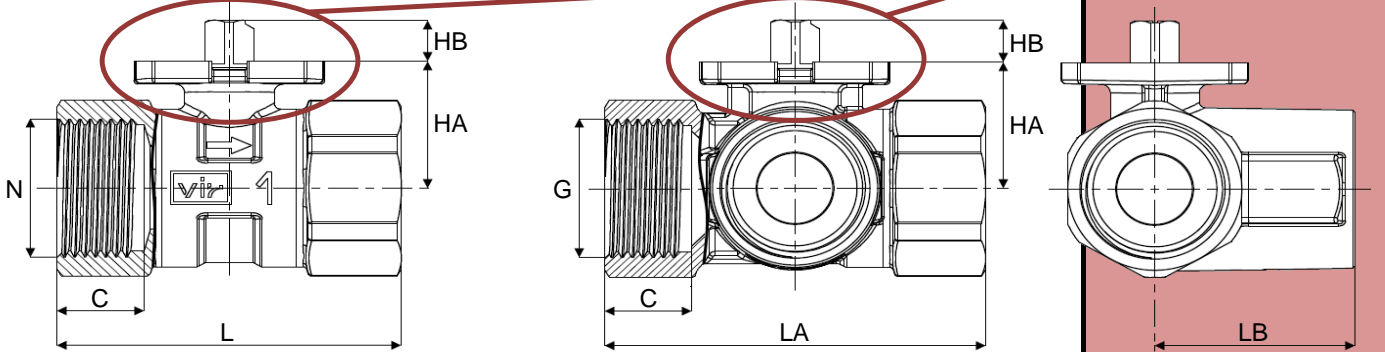
## Dimensions

Size	N	L	LA	LB	C	HA	HB	ISO-□Q	Torque <sup>1</sup>	Weight <sup>2</sup>
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[lbf-in]	[lb]
1/2"	1/2"	#REF!	#REF!	#REF!	#REF!	0,95 <sup>3</sup>	#REF!	F04-□0.35	18	0,60 / 0,65 <sup>3</sup>
3/4"	3/4"	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	F04-□0.35	18	0.67 / 0.83
1"	1"	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	F04-□0.35	27	1.00 / 1.33
1 1/4"	1 1/4"	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	F04-□0.35	31	1.52 / 2.09
1 1/2"	1 1/2"	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	F04-□0.35	31	2.46 / 3.01
2"	2"	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	F04-□0.35	31	3.85 / 5.00

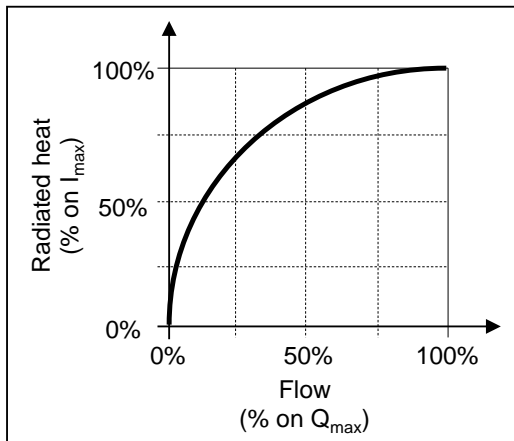
<sup>1</sup>Indicated torque valid for  $\Delta p \leq 1$  bar, torque is anyway  $\leq 44$  lbf-in up to the max  $\Delta p$  working range

<sup>2</sup>2-way version weight / 3-way version weight

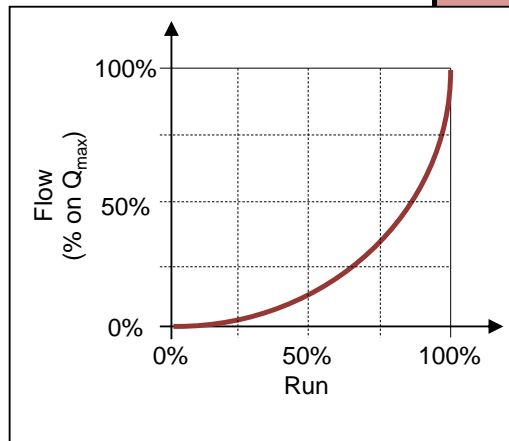
<sup>3</sup>For 3-way version  $C_{v100\%}$  7,28; HA 1,1 in, weight 0,68 lb



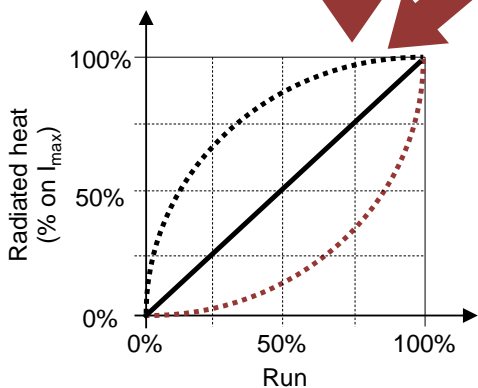
## Charat. Curve



Characteristic curve of heat exchanger



RWV 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.

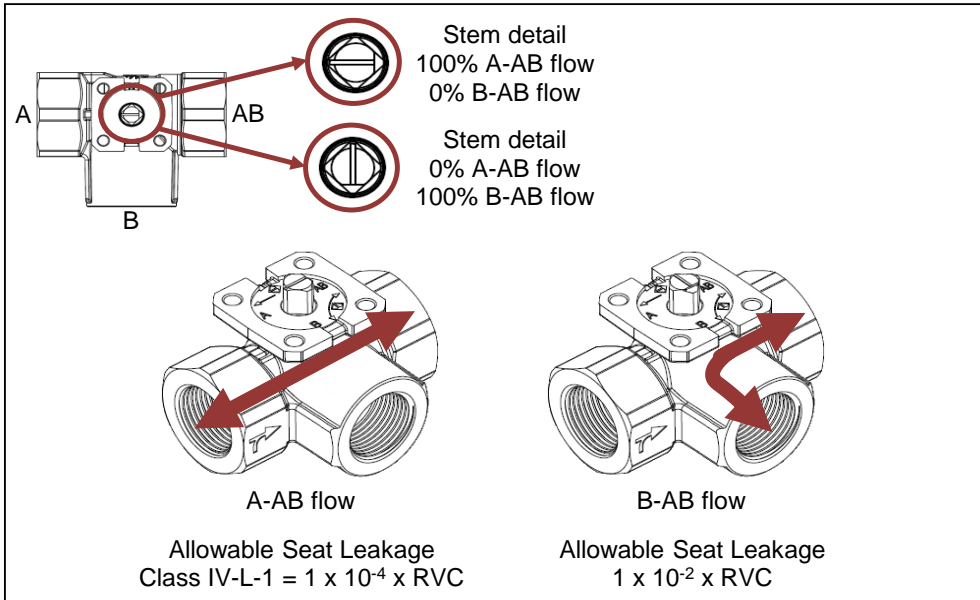
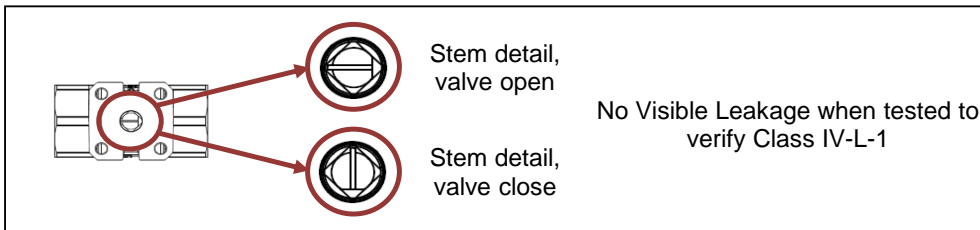
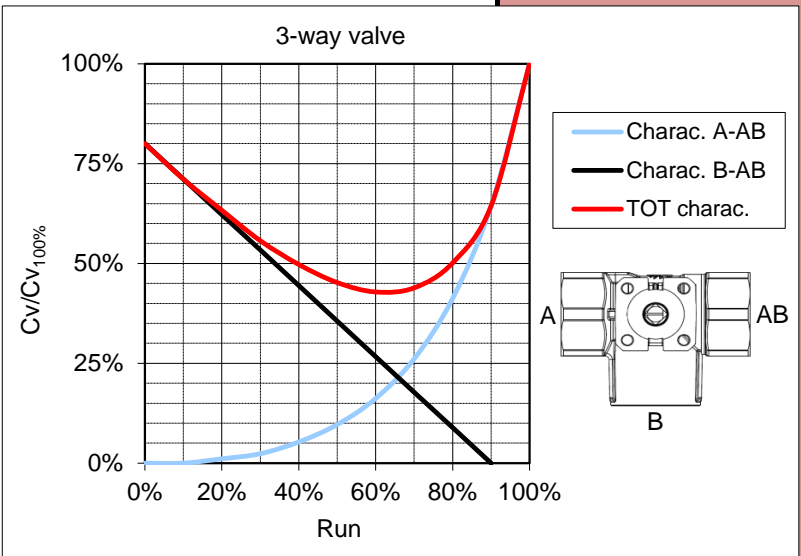
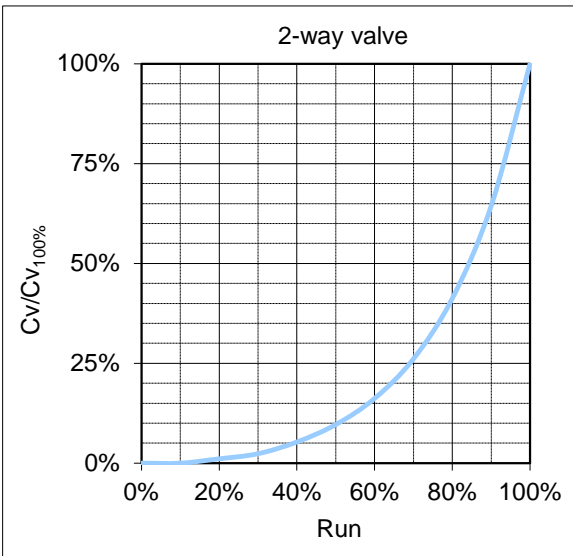
The equal-percentage characteristic is obtained by using a special ball valve with shaped passage.

$Q_{max}$  = maximum design flow

$I_{max}$  = maximum radiated heat

**RWV**<sup>®</sup>

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# Valve Sizing

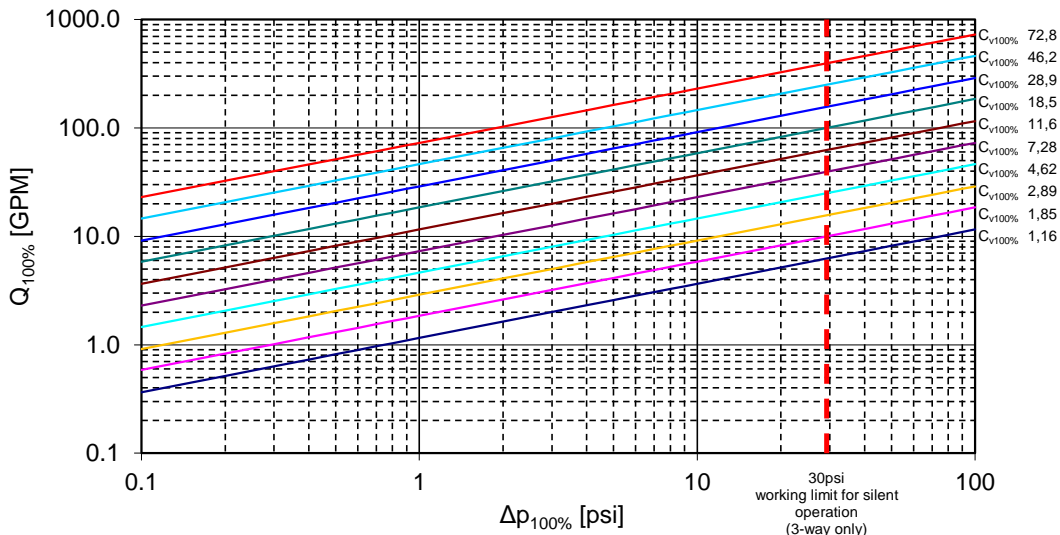
Size	Available $C_{v100\%}$ [GPM/psi <sup>1/2</sup> ] for 2-way valves									
	1.16	1.85	2.89	4.62	7.28	11.6	18.5	28.9	46.2	72.8
1/2"	X	X	X	X	X	X				
3/4"				X	X	X				
1"					X	X	X			
1 1/4"						X	X	X		
1 1/2"							X	X	X	
2"								X	X	X

Size	Available $C_{v100\%}$ (GPM/psi <sup>1/2</sup> )									
	1.16	1.85	2.89	4.62	7.28	11.6	18.5	28.9	46.2	72.8
1/2"		X	X	X	X					
3/4"				X	X					
1"						X				
1 1/4"							X			
1 1/2"								X		
2"									X	X <sup>1</sup>

<sup>1</sup>By-pass flow only 60% of flow on the main port

$$C_{v100\%} = \frac{Q_{100\%}}{\sqrt{\Delta p_{100\%}}}$$

Calculate  $C_{v100\%}$  theoretically required based on maximum design flow ( $Q_{100\%}$  in GPM) and design pressure drop ( $\Delta p_{100\%}$  in psi) at valve completely opened. Select the closest available  $C_{v100\%}$  on table below compatible with used pipe size.



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