

DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series



- 9. Disc Stem:** Stainless Steel
- 10. Stop Ring:** Stainless Steel
- 11. Washer:** Brass
- 12. Balancing Stem:** CW510L
- 13. Balancing Stem O-Ring:** EPDM Perox
- 14. Bonnet O-Ring:** EPDM Perox
- 15. Bonnet:** CW510L
- 16. Graduated Scale:** Blue Polypropylene
- 17. Reg. Indicator:** Orange Polyamide
- 18. On/Off Cap:** Blue Polyamide
- 19. Test Point/Plug:** DZR Brass³

¹ Clamped to stem for 1/2"/3/4", with brass threaded washer for 1".

² In two parts (disc + cone) for 1/2"LF

³ Plug with copper gaskets. Test points with EPDM Perox gaskets and polypropylene ties.

Features

Low lead brass ON/OFF terminal balancing valve for HVAC and domestic water use. Threaded F/F (ASME B1.20.1 – NPT) or solder joint ends (ASME B16.22). Tolerance on nominal Cv for fully open valve + 10% (test according to BS7350). 300 WOG (Maximum 300psi up to 160°F. Maximum 150psi at 260°F.)

Available on following versions:

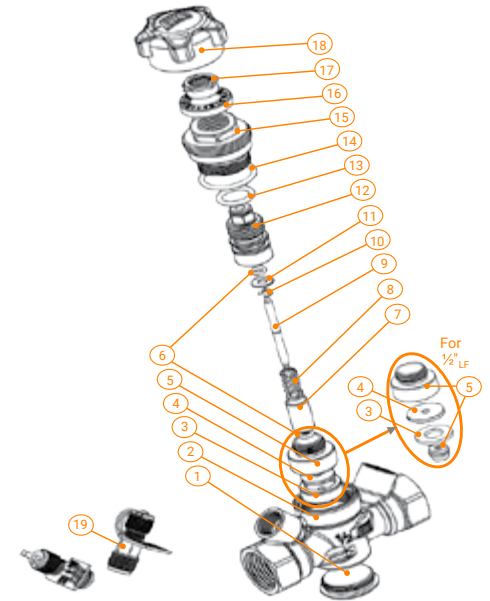
CSV-T-9527AB threaded ends

CSV-S-9529AB solder joint ends

Provided with mounted test points. With threaded M30x1.5 connection for linear actuator (Vaurien)

Working Conditions:

- Water (15°F to 260°F) below 32°F only for water with added anti-freezing fluids over 212°F only for water with added anti-boiling fluids



Material Specifications

- 1. Plug:** CW510L
- 2. Body:** CW510L
- 3. Gasket:** EPDM Perox
- 4. Gasket Washer¹:** CW510L
- 5. Balance Disc²:** CW510L
- 6. Stem O-Ring:** EPDM Perox
- 7. Spring Cartridge:** Brass
- 8. Spring:** Stainless Steel

For additional information on Gruvlok bag and tag coil kit service, contact an ASC Engineered Solutions Representative.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series

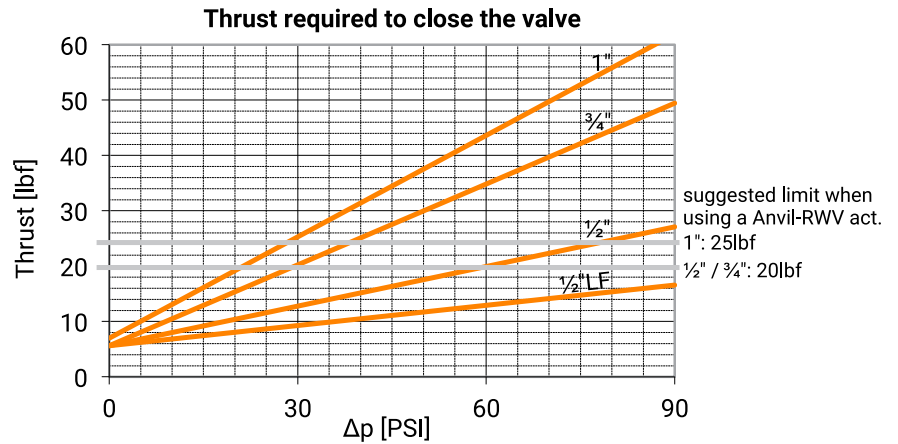
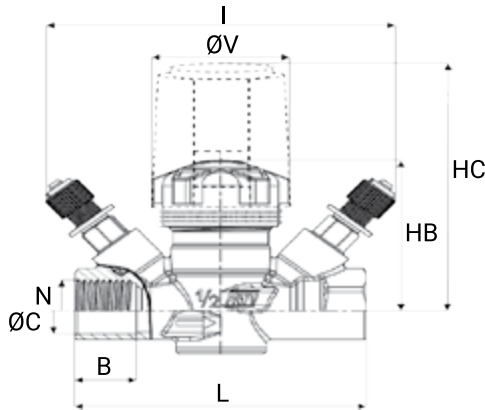


Fig. Anvil CSV-9520AB Series DZR Brass On/Off Terminal Balancing Valve

Valve Size	N	ØC ¹	L ²	B ²	HB	HC ³	ØV	I	Approx. Wt. Each	Flow Range
In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg	GPM
1/2 LF	1/2 - 14	0.627-0.631	3.3/3.9	0.65/0.51	2.0	3.3	1.6	3.9	0.77/0.74	0.49/1.17
15	-	15.93-16.03	83.8/99.1	16.5/13.0	50.8	83.8	40.6	99.1	0.35/0.34	-
1/2	1/2 - 14	0.627-0.631	3.3/3.9	0.65/0.51	2.0	3.3	1.6	3.9	0.77/0.74	0.98/2.35 ⁴
15	-	15.93-16.03	83.8/99.1	16.5/13.0	50.8	83.8	40.6	99.1	0.35/0.34	-
3/4	3/4 - 14	0.877-0.881	3.5/4.6	0.76/0.78	2.0	3.3	1.6	4.1	0.99/0.99	2.19/5.15 ⁴
20	-	22.28-22.38	88.9/116.8	19.3/19.8	50.8	83.8	40.6	104.1	0.45/0.45	-
1	1 - 11.5	1.128-1.131	3.9/5.0	0.90/0.92	2.8	4.3	1.6	4.3	1.37/1.27	4.09/9.56 ⁴
25	-	28.65-28.73	99.1/127.0	22.9/23.4	71.1	109.2	40.6	109.2	0.62/0.58	-

¹Tolerance field

² Threaded ends/soldering ends

³ Dimension with VIR actuators, for more details please consult specific technical sheet

If using a measuring manometer different from those proposed by Anvil-RWV, please verify that sensibility of the measuring device is compatible with indicated minimum flow (see flow measurement paragraph).



asc-es.com

Building connections that last™

DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series

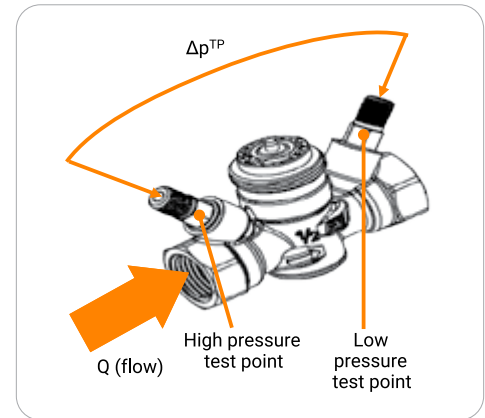
$$Q = C_v \cdot \sqrt{\Delta p^{TP}}$$

Flow Measurement

Formula linking flow Q (in GPM) and Δp measured at test points (in psi). C_v depends on regulating position as indicated in table.

Minimum flow that can be measured for each diameter may be calculated by using in the formula minimum Δp that can be measured by used manometer.

Valves are anyway designed for best performances when used on range previously suggested.

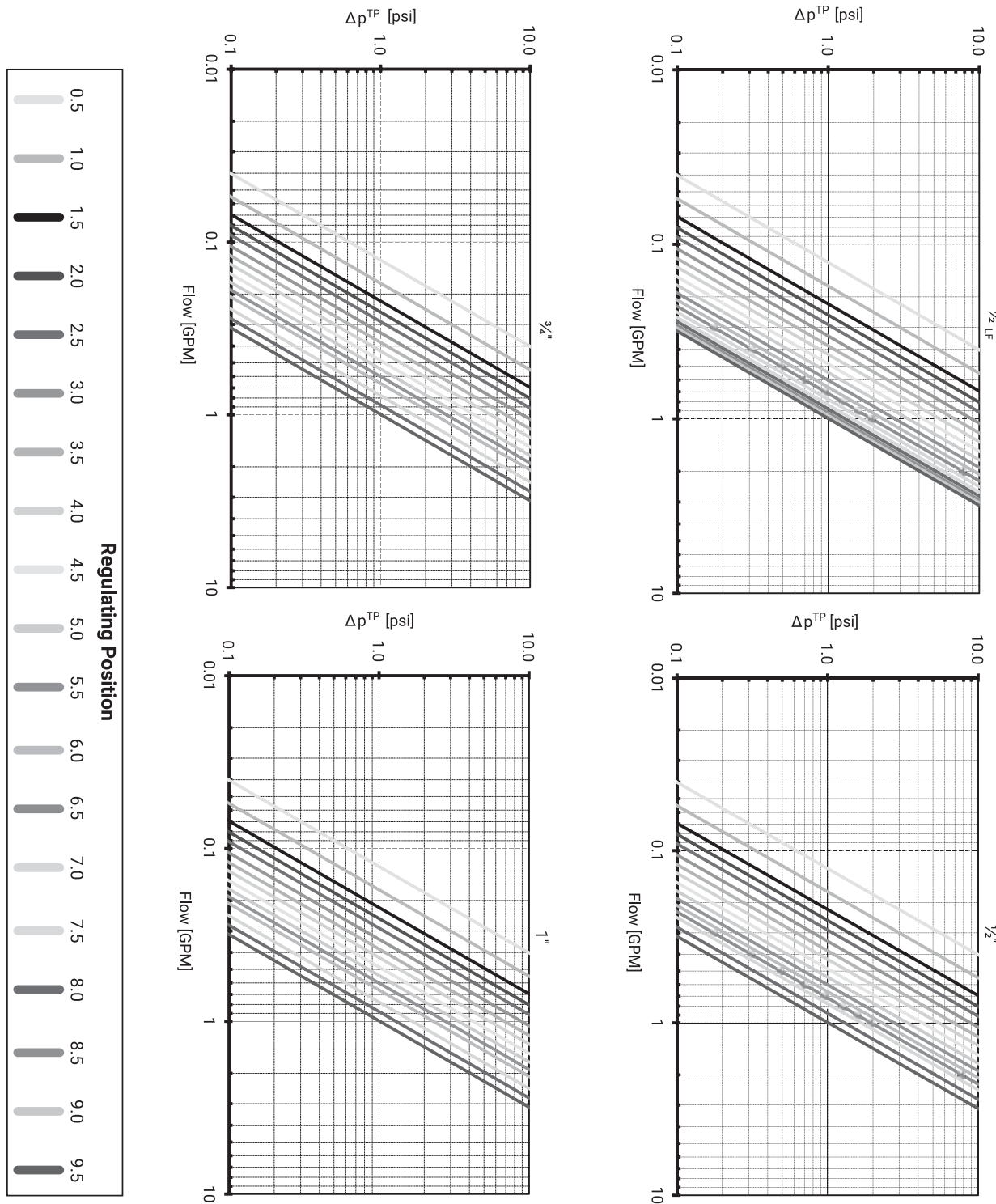


Flow Measurement

Regulating Position	C _v			
	1/2" LF	1/2"	3/4"	1"
-	GPM/psi	GPM/psi	GPM/psi	GPM/psi
0.5	0.127	0.578	0.798	1.538
1.0	0.173	0.879	1.237	2.405
1.5	0.220	1.098	1.584	3.121
2.0	0.254	1.260	1.896	3.665
2.5	0.289	1.399	2.197	4.162
3.0	0.335	1.514	2.451	4.509
3.5	0.382	1.607	2.671	4.844
4.0	0.428	1.699	2.856	5.226
4.5	0.486	1.769	3.017	5.491
5.0	0.543	1.838	3.179	5.723
5.5	0.601	1.884	3.306	5.942
6.0	0.659	1.931	3.422	6.127
6.5	0.717	1.965	3.526	6.312
7.0	0.775	2.000	3.619	6.555
7.5	0.832	2.035	3.700	6.740
8.0	0.879	2.058	3.792	6.937
8.5	0.925	2.081	3.873	7.087
9.0	0.960	2.104	3.942	7.145
9.5	0.994	2.116	4.012	7.283

For additional information on Gruvlok bag and tag coil kit service, contact an ASC Engineered Solutions Representative.

DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series



For additional information on Gruvlok bag and tag coil kit service, contact an ASC Engineered Solutions Representative.



asc-es.com

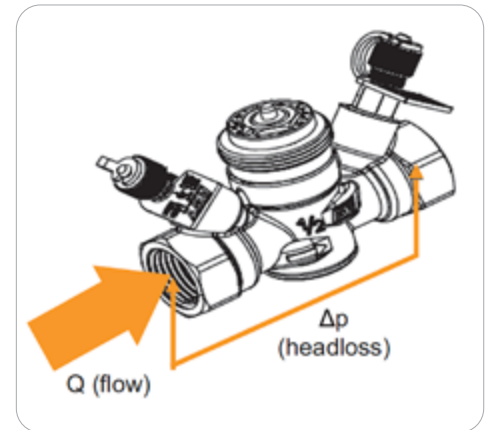
Building connections that last™

DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series

$$\Delta p = \left(\frac{Q}{C_v} \right)^2$$

Headloss Calculation

Formula linking flow Q (in GPM) and theoretical valve headloss (pressure drop) Δp (in psi). C_v depends on regulating position as indicated in table.



Headloss Calculation

Regulating Position	C _v (GPM/psi ^{0.5})			
	1/2" LF	1/2"	3/4"	1"
-	GPM/psi	GPM/psi	GPM/psi	GPM/psi
0.5	0.127	0.578	0.798	1.538
1.0	0.173	0.879	1.237	2.405
1.5	0.22	1.098	1.584	3.121
2.0	0.254	1.26	1.896	3.665
2.5	0.289	1.399	2.197	4.162
3.0	0.335	1.514	2.451	4.509
3.5	0.382	1.607	2.671	4.844
4.0	0.428	1.699	2.856	5.226
4.5	0.486	1.769	3.017	5.491
5.0	0.543	1.838	3.179	5.723
5.5	0.601	1.884	3.306	5.942
6.0	0.659	1.931	3.422	6.127
6.5	0.717	1.965	3.526	6.312
7.0	0.775	2.000	3.619	6.555
7.5	0.832	2.035	3.700	6.74
8.0	0.879	2.058	3.792	6.937
8.5	0.925	2.081	3.873	7.087
9.0	0.960	2.104	3.942	7.145
9.5	0.994	2.116	4.012	7.283

For additional information on Gruvlok bag and tag coil kit service, contact an ASC Engineered Solutions Representative.

DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series

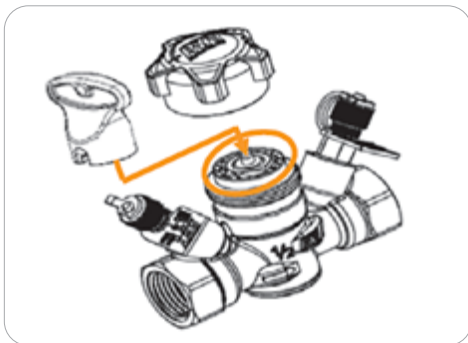
Installation

Regulation is done by removing the ON/OFF cap and acting on regulation indicator with the provided key. Once desired regulation is obtained, screw on the cap (gently with the only aim to fix it to the valve, do not apply force!)

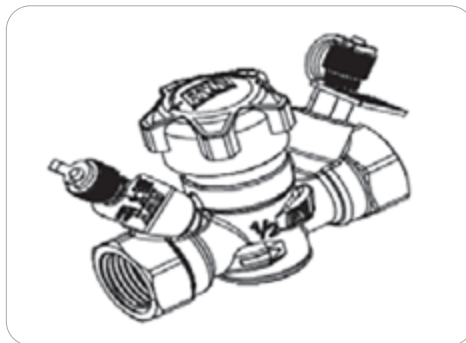
It's possible at any time to act on the ON/OFF cap to completely

close the valve, independently from regulation. To do so, act on the cap screwing it on at full stroke.

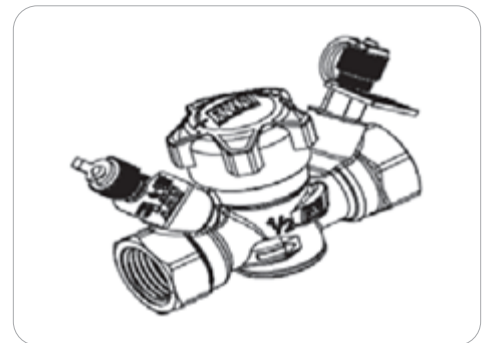
To obtain the best performances valve must be installed on a pipe with its same nominal size preceded and followed by straight pipe lengths as per figure indications.



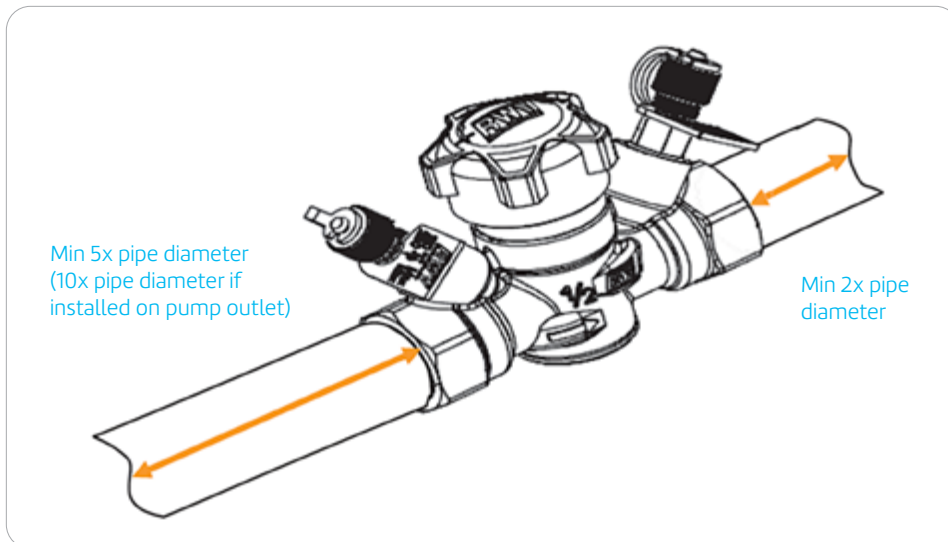
Regulation



ON/OFF Cap Fixing



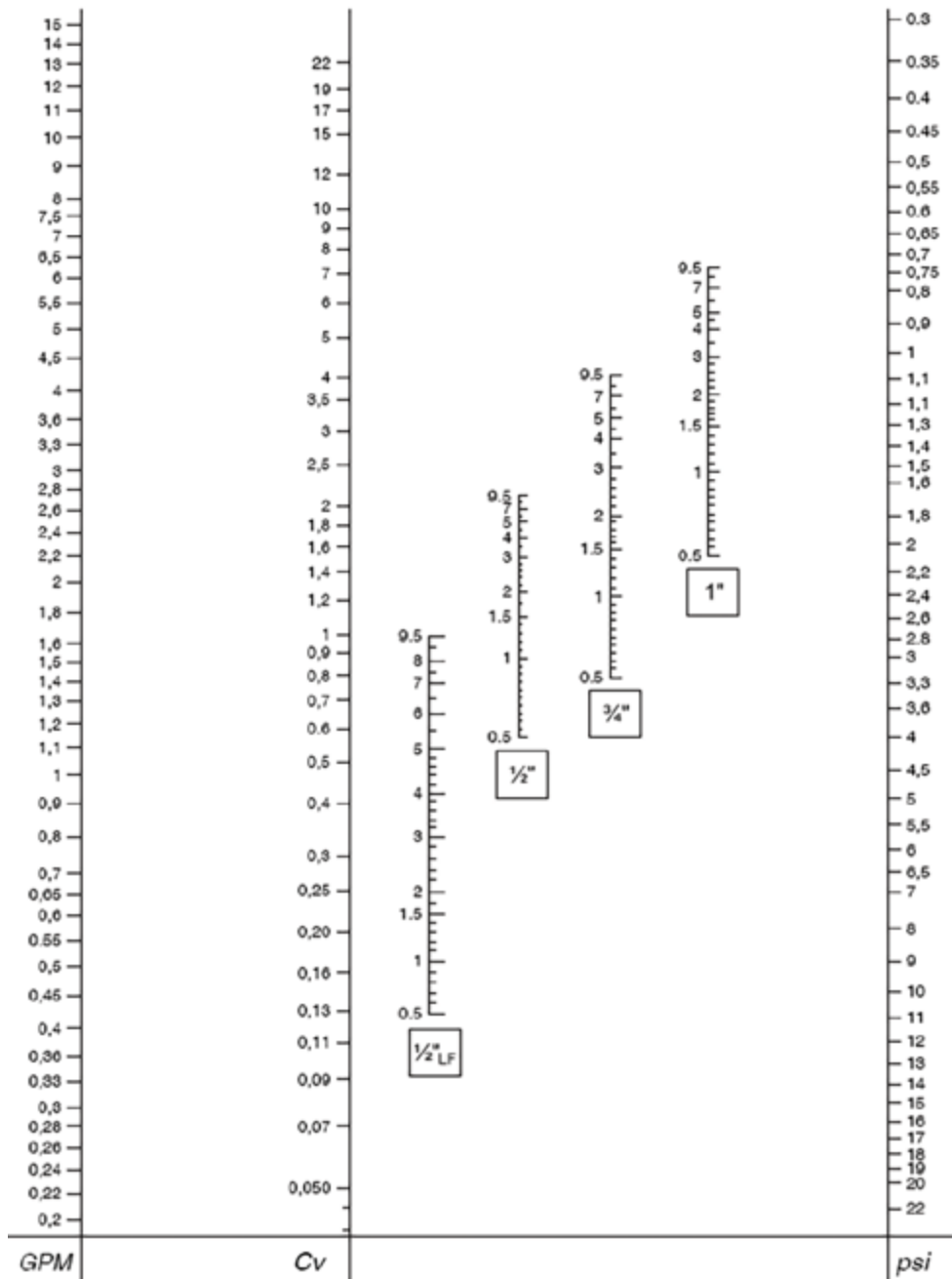
Valve Shut-Off



For additional information on Gruvlok bag and tag coil kit service, contact an ASC Engineered Solutions Representative.

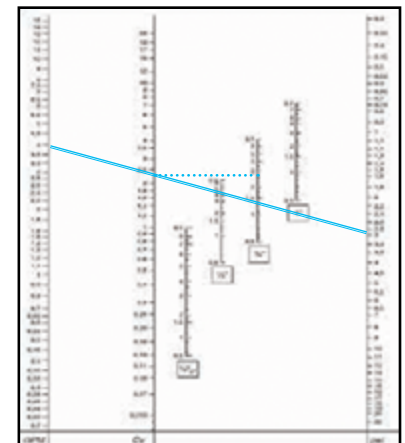
DZR Brass On/Off Terminal Low Lead Balancing Valves Fig. Anvil CSV-9520AB Series

Presetting



By using diagram above is possible to evaluate the presetting position of the valve with given design flowrate and headloss:

1. Draw a straight line joining design flowrate and design headloss;
2. Determine design C_v value as intersection of drawn line and C_v axis;
3. Draw a straight horizontal line from intersection previously identified and the specific valve size axis;
4. Intersection determines handwheel position to use for presetting.



In the example for a design flowrate of 4GPM and design Δp 3psi handwheel position of 2.7 is determined for a $\frac{3}{4}$ " valve.

For additional information on Gruvlok bag and tag coil kit service, contact an ASC Engineered Solutions Representative.