

9535 EN series

Variable Orifice DZR Brass Double Regulating Valve

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Variable orifice DZR brass double regulating valve
Threaded F/F (ISO 228/1 for DN15 and DN20, ISO 7/1 Rp above)
Olive and nut kit (O/N) for European copper tubing (EN1057) on request:

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

Tolerance on nominal K_v for completely open valve $\pm 10\%$

(test according to BS7350)

Provided with mounted test points

WRAS and TR CU 010 compliant

PN20 (Max 20bar up to 80°C, max 10bar 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
(ethylene glycol or propylene glycol mixtures up to 50% may be used)
- Not suitable for: gases group 1 & 2, liquids group 1 (Dir. 2014/68/EU)

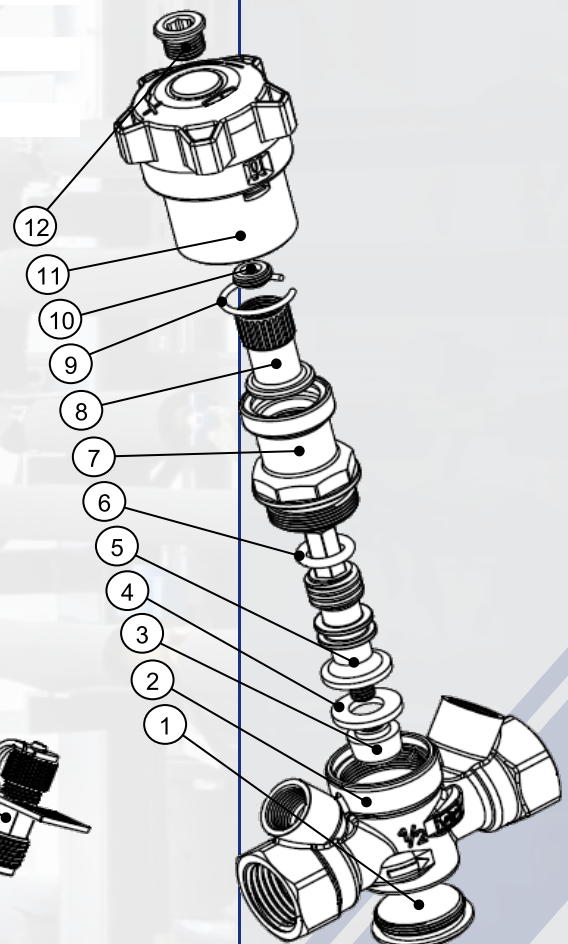


PARTLIST

N.	Part	Material	Norm
1	Plug	DZR Brass	EN12164 CW602N
2	Body	DZR Brass	EN12165 CW602N
3	Balancing cone	DZR Brass	EN12164 CW602N
4	Gasket disc	PTFE	-
5	Stem	DZR Brass	EN12164 CW602N
6	Stem O-ring	EPDM Perox	-
7	Bonnet	DZR Brass	EN12164 CW602N
8	Drive sleeve	Brass	-
9	Stop spring ring	Spring steel	-
10	Memory stop	Brass	-
11	Handwheel	ABS (blue) ¹	-
12	Handwheel ret. nut	Brass	-
13	Test point	DZR Brass ²	EN12164 CW602N

¹Plug and primary graduated scale in orange acetalic resin

²With EPDM Perox gaskets and polypropylene ties



DIMENSIONS

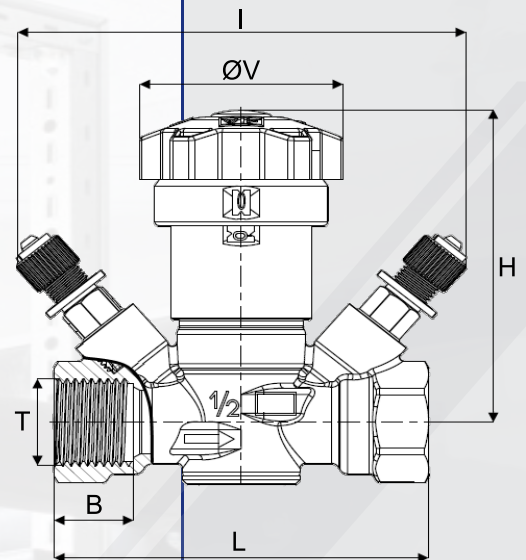
DN	T	L	B	H	ØV	I	Wgt	Flow range
		[mm]	[mm]	[mm]	[mm]	[mm]	[g]	[l/s]
L 015	1/2"	83 ¹	17,5	73	46	99	390 ¹	0,031-0,074
015	1/2"	83 ¹	17,5	73	46	99	390 ¹	0,062-0,148 ³
020	3/4"	90 ²	19,2	73	46	105	510 ²	0,138-0,325 ³
025	1"	98	23,0	78,5	46	110	650	0,258-0,603 ³

¹For olive and nut version length 104,4mm, weight +63g

²For olive and nut version length 113,2mm, weight +65g

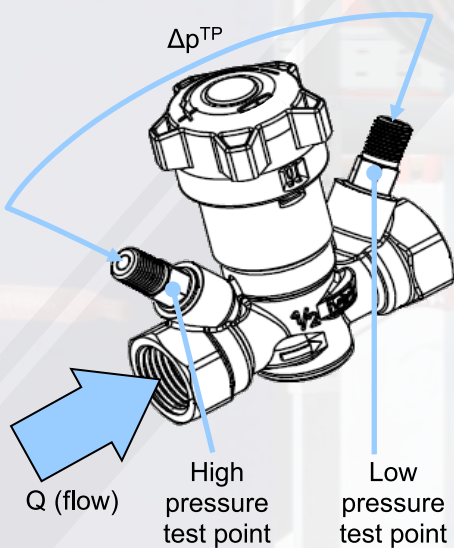
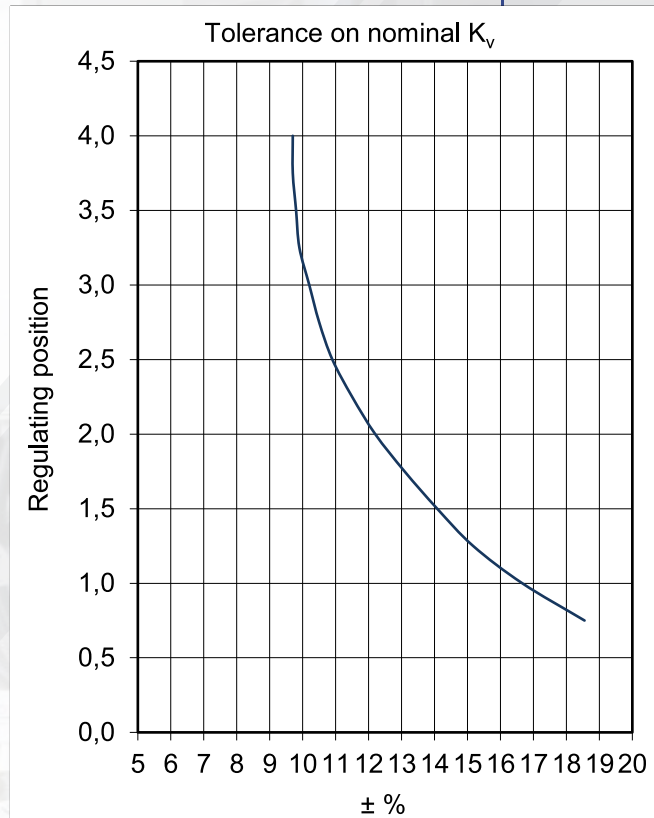
³Suggested flow range applicability (BS7350)

If used with measuring manometers different from those proposed by VIR please verify that sensibility of the measuring device is compatible with indicated minimum flow (see flow measurement paragraph)



FLOW MEASUREMENT

Handwheel position	K _v [m ³ /h @ 1bar]			
	L 015	015	020	025
0,5	0,12	0,58	0,45	1,42
0,7	0,15	0,62	0,53	1,52
1,0	0,21	0,72	0,67	1,75
1,3	0,28	0,85	0,91	1,97
1,5	0,32	0,90	1,14	2,13
1,7	0,39	0,95	1,27	2,33
2,0	0,48	1,07	1,36	2,56
2,3	0,59	1,11	1,47	2,85
2,5	0,64	1,15	1,57	3,12
2,7	0,70	1,17	1,62	3,39
3,0	0,76	1,21	1,69	3,83
3,3	0,83	1,30	1,86	4,27
3,5	0,85	1,39	2,11	4,59
3,7	0,88	1,45	2,43	4,91
4,0	0,93	1,58	2,89	5,33



$$Q = \frac{K_v \cdot \sqrt{\Delta p^{TP}}}{36}$$

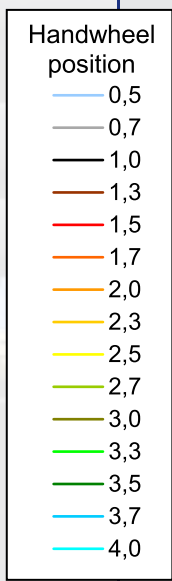
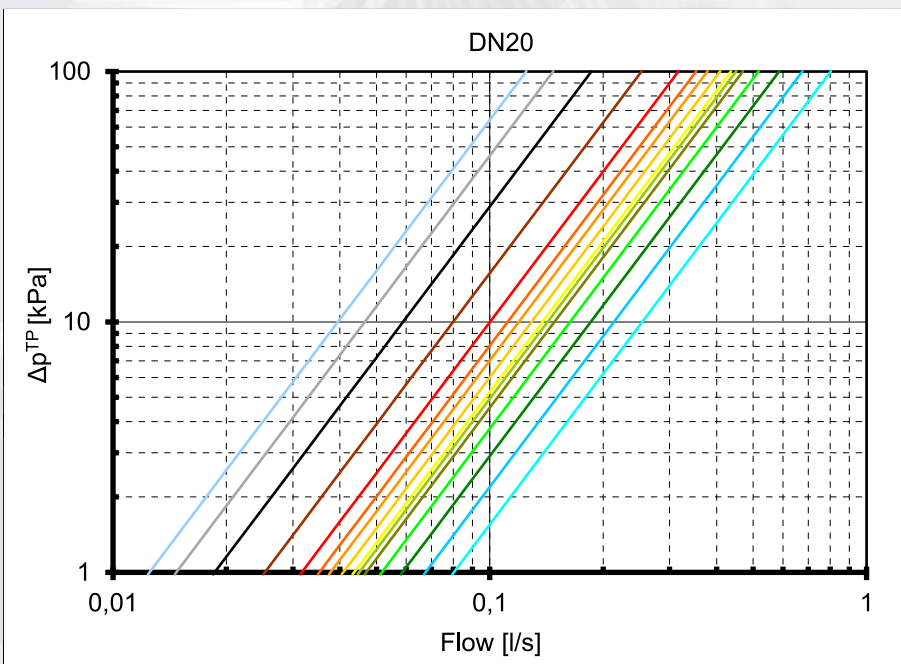
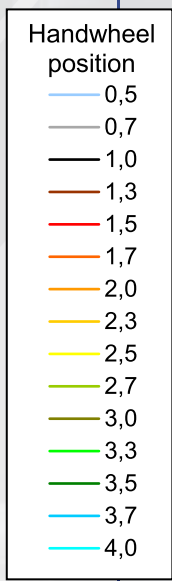
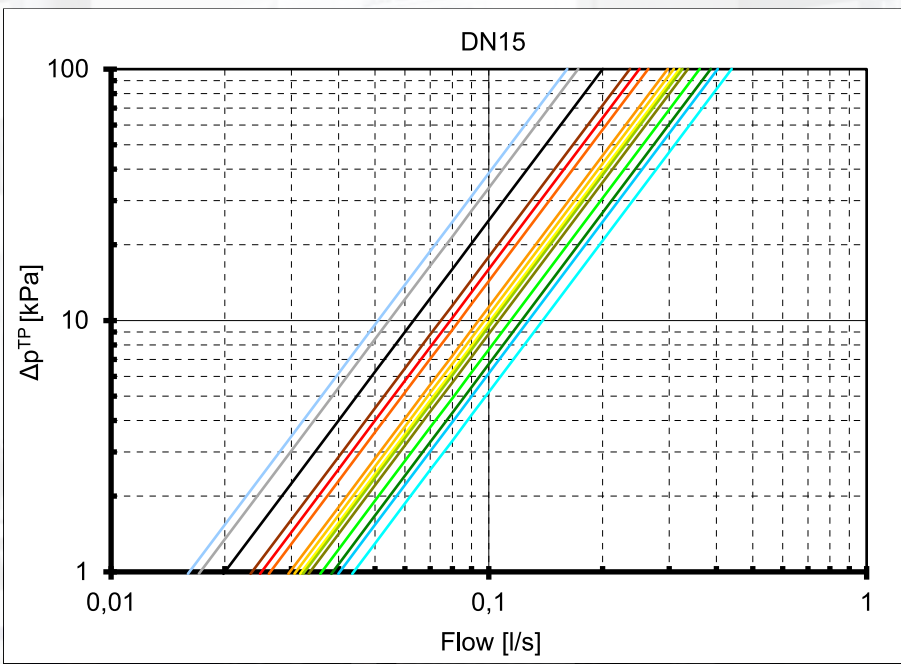
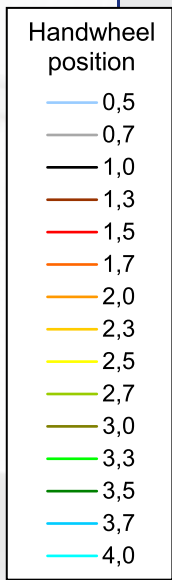
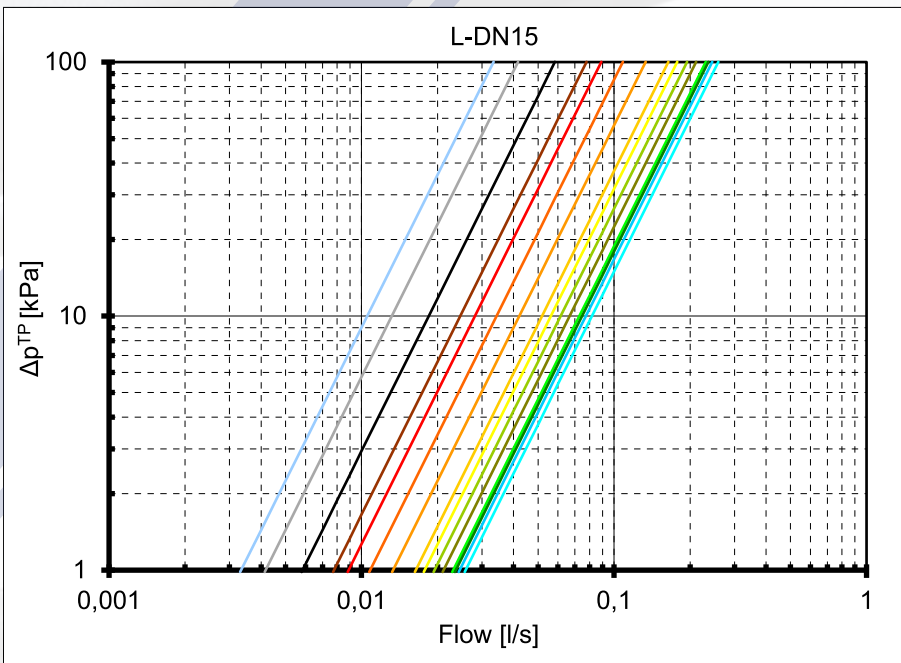
Formula linking flow Q (in l/s) and Δp measured at test points (in kPa). K_v depends on handwheel position as indicated on table.

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.

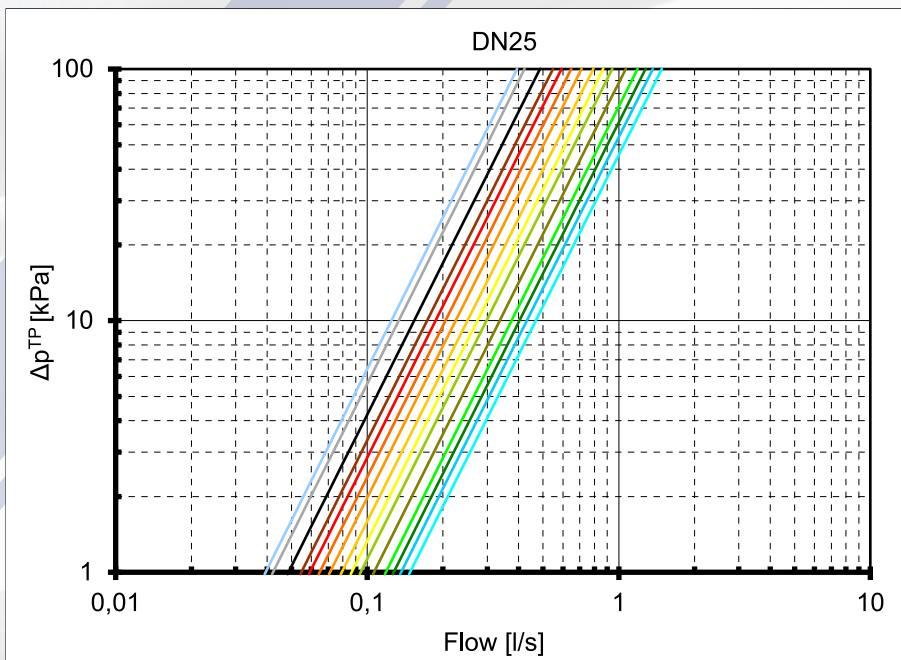
Valves are anyway designed for best performances when used on range previously suggested and as indicated by BS7350.



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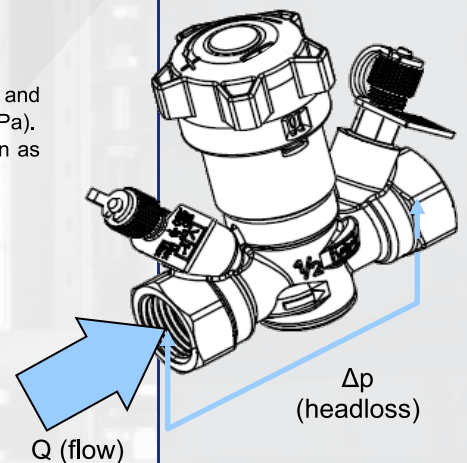
- Handwheel position
- 0,5
 - 0,7
 - 1,0
 - 1,3
 - 1,5
 - 1,7
 - 2,0
 - 2,3
 - 2,5
 - 2,7
 - 3,0
 - 3,3
 - 3,5
 - 3,7
 - 4,0

HEADLOSS CALCULATION

Handwheel position	K _v [m ³ /h @ 1bar]			
	L 015	015	020	025
0,5	0,12	0,58	0,45	1,42
0,7	0,15	0,62	0,53	1,52
1,0	0,21	0,72	0,67	1,75
1,3	0,28	0,85	0,91	1,97
1,5	0,32	0,90	1,14	2,13
1,7	0,39	0,95	1,27	2,33
2,0	0,48	1,07	1,36	2,56
2,3	0,59	1,11	1,47	2,85
2,5	0,64	1,15	1,57	3,12
2,7	0,70	1,17	1,62	3,39
3,0	0,76	1,21	1,69	3,83
3,3	0,83	1,30	1,86	4,27
3,5	0,85	1,39	2,11	4,59
3,7	0,88	1,45	2,43	4,91
4,0	0,93	1,58	2,89	5,33

Formula linking flow Q (in l/s) and theoretical valve headloss Δp (in kPa). Kv depends on handwheel position as indicated on table.

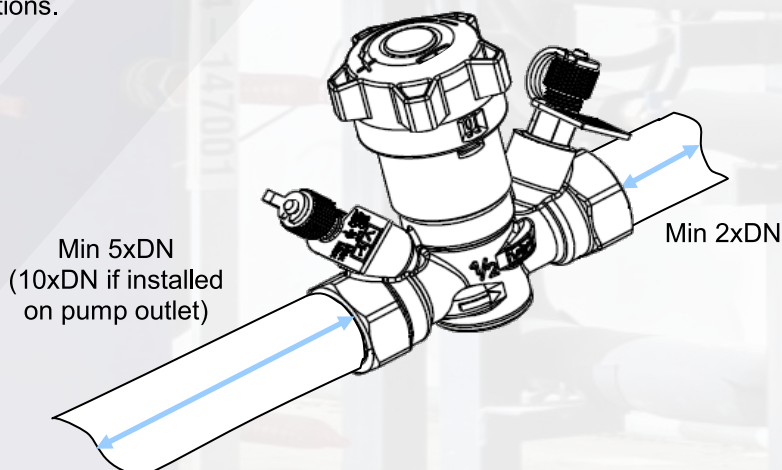
$$\Delta p = \left(\frac{36 \cdot Q}{K_v} \right)^2$$



Copy of the table presented in flow measurement paragraph
 Δp (headloss) approximately equal to Δp^{TP}

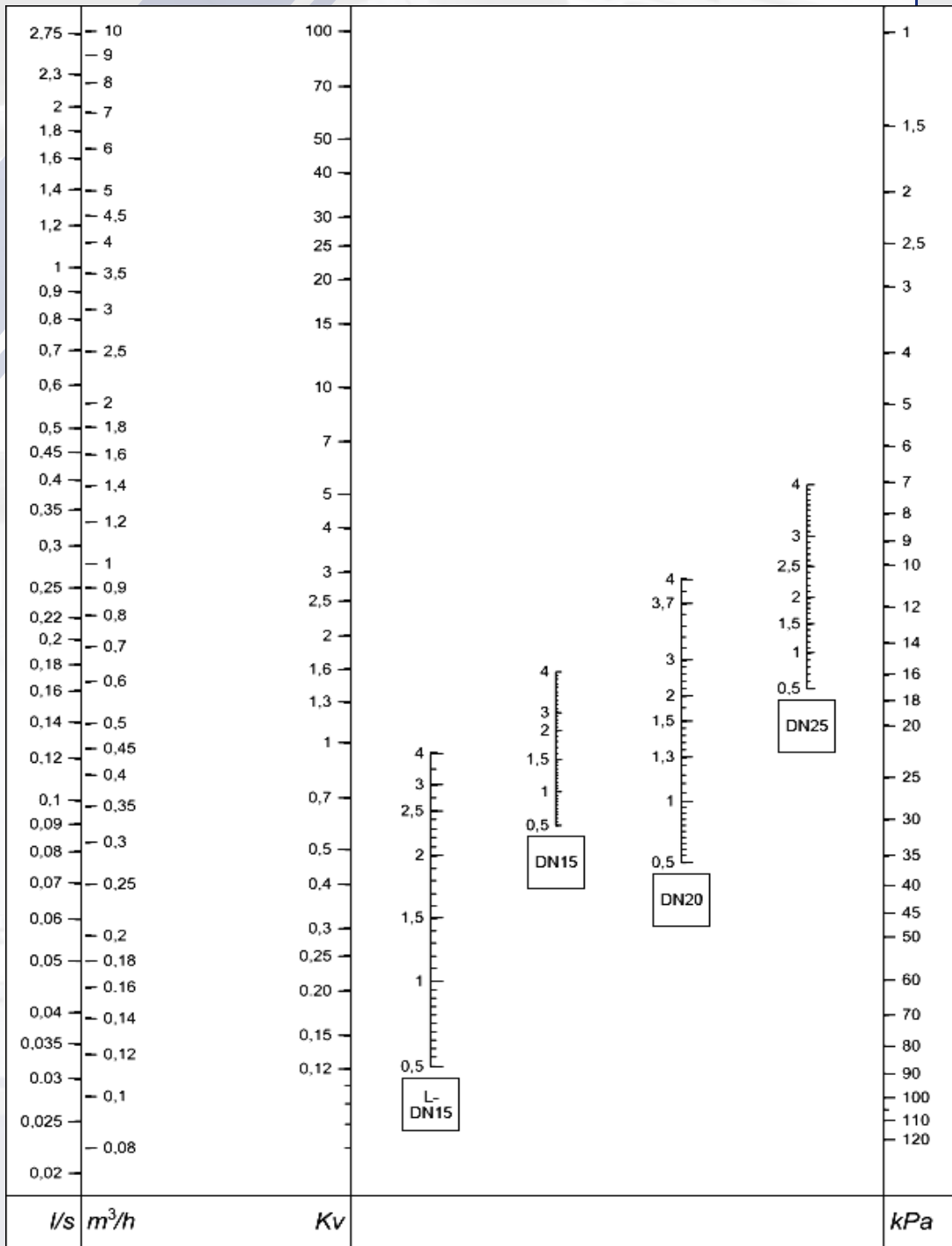
INSTALLATION

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.



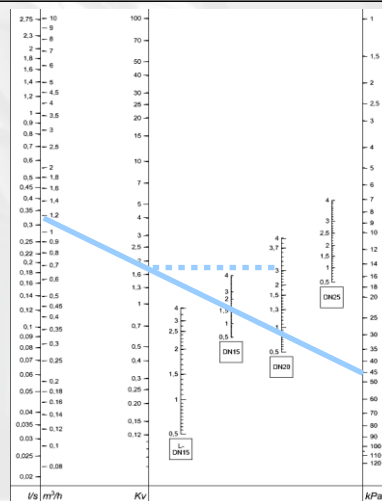
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PRESETTING



By using diagram above is possible to esteem 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 K_v value as intersection of drawn line and K_v axis;
- 3) draw a straight horizontal line from intersection previously identified and the specific valve DN Axis;
- 4) intersection determines handwheel position to use for presetting.



In the example for a design flowrate of 1,2m³/h and design Δp of 45kPa regulating position of 3,2 is determined for a DN20 valve



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