

MANUAL BALANCING VALVES

CIM 3739B

Description

Cim 3739B is a flanged balancing valve with “variable orifice”, used where an accurate flow measurement in big heating or cooling systems is needed. It is manufactured in dimensions from DN50 up to DN300.

CIM 3739B flanged balancing valve is made of cast iron, with flanges according to TS ISO 7005-2 standard and it is suitable for both heating and cooling applications at working pressure up to 16 bar, within the temperature range of - 10°C and +120°C.

The main features of **CIM 3739B** balancing valve are as follows:

- Cast iron body according to EN-JL 1040 standard.
- Difference between the external faces of the flanges according to EN 558 series 1 standard.
- External and internal epoxy coating of the valve.
- Handle equipped with two windows enabling the reading of opening angle of the obturator. The first window shows the complete turns, while the second one the hundredths of turns at interval of 0,05.
- A metal to metal thread locking mechanism so that valve settings can be accurately locked enabling the valve to be closed and re-opened to its exact pre-set position.
- An EPDM lined valve plug providing tight shut-off for isolation purposes.



Fig 1

Installation procedure

Remove the protecting covers of the flanges if applicable. Before installation of **CIM 3739B**, check that inside the valve and the pipes, there are no foreign matters which might damage the tightness of the valve.

When installing the valve, please make sure to have a pipe length 5 times the DN upstream the valve and 2 times the DN downstream, and pay attention to the arrow direction casted on the valve body, which shall be the same as the flow one.

The valve can be installed with handle in any position. If fluid is not sure to be cleaned, it is advisable to have the handle upwards.

CIM 3739B shall be installed to the flanges of the pipe perfectly aligned with its flanges, by assuring that coupled parts will not suffer any stress. The valve shall not be used as anchor for hanging pipes, rather it is the pipe that shall support the valve itself. Make sure to true up the tightening gaskets of the flanges before tightening the bolts.

Pay attention to any welding procedure carried out in the installation, for this could cause high temperatures exceeding the working limits of the valve. Pipes should be equipped with thermal expansion joint.

Regulating

To close the valve, rotate clockwise the handle until the stop. The position of the obturator is given by the numbers shown in the two windows of the handle. The left window shows the complete turns, while the right

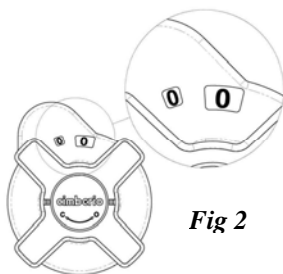


Fig 2

one shows the hundredths of turn at interval of 0,05 (see picture 2). When the valve is completely closed, the two windows show a 0,0 value.

Δp and relevant flow rate values can be read through the differential manometer Cim 726. This interfaces with the balancing valve through two sensors inserted in the binder points placed at

the two ends of the valve, near the flanges. Looking at the data showed in the herewith attached diagrams, it is possible to regulate the flow by rotating the handle anticlockwise until the required flow rate is reached (f.i.5, 45 picture 3).

When the regulating position is reached, take the cover "a" of the handle off (picture 4) by a screwdriver.

Rotate clockwise the screw "b" (picture 4) placed under the cover by an Allen Key 8 mm. until the stop. In this way, the valve can be closed and opened again up to the regulating value fixed previously.

In order to prevent the removal of the cover after the balancing process, lock the cover by a metallic wire inserted in the proper hole "c" (picture 5) and then seal it



Fig 3

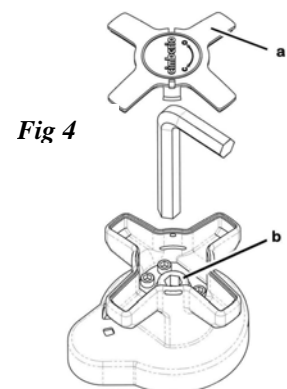
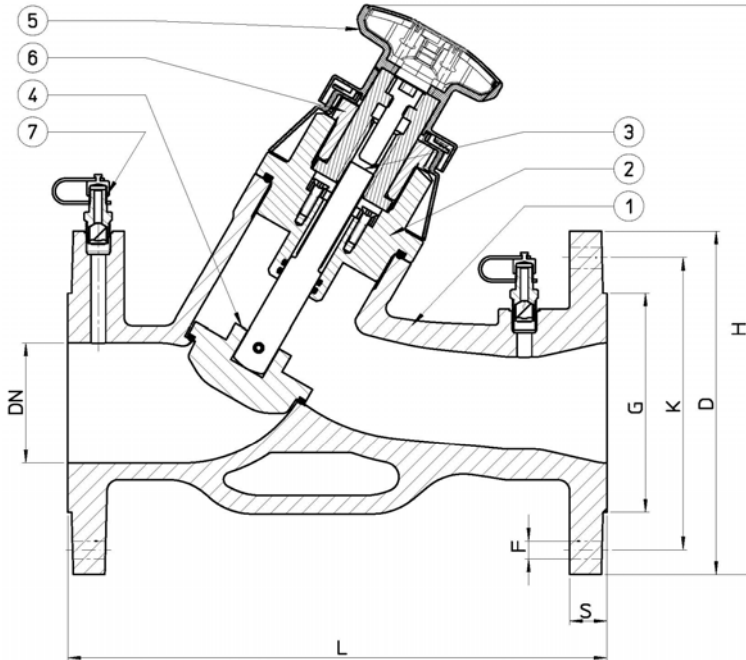
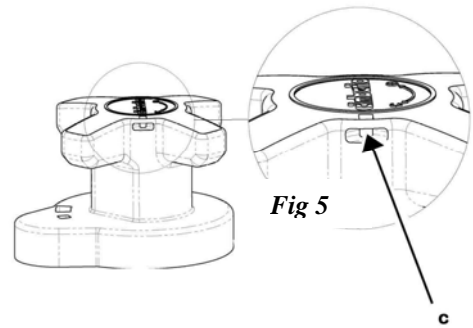


Fig 4

In this way the regulating screw of the total opening is no more accessible.

Dimensions CIM 3739B



- 1 – Body
- 2 – Bonnet
- 3 – Stem
- 4 - Disc
- 5 – Handweel
- 6 – Yoke nut
- 7 – Binder point

Fig 6

DN	L	H	D	K	G	S	F	N
50	230	190	165	125	100	20	19	4
65	290	214	185	145	118	20	19	4
80	310	225	200	160	132	22	19	8
100	350	334	220	180	156	24	19	8
125	400	388	250	210	178	26	19	8
150	480	403	285	240	211	26	23	8
200	600	825	340	295	266	30	23	12
250	730	900	405	355	319	32	28	12
300	850	946	460	410	370	32	28	12

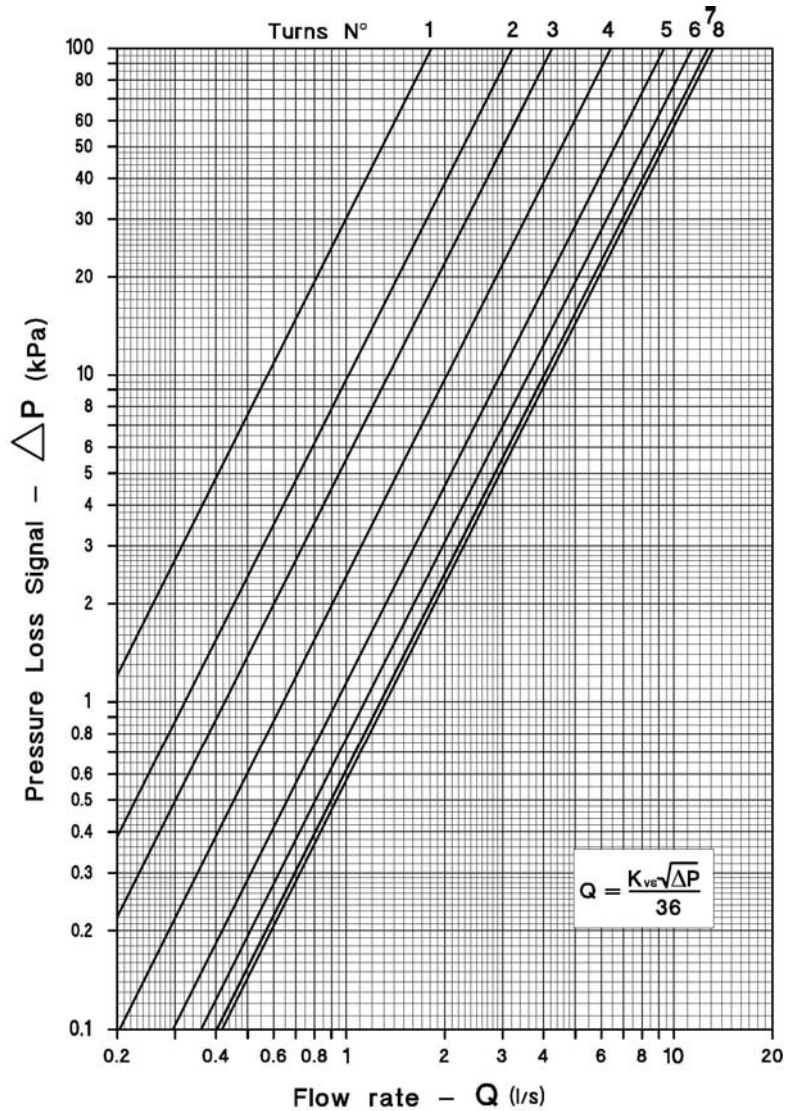
Maintenance

As a rule, the balancing valve does not need any maintenance. In case of replacement or need of disassembling of some components of the valve, make sure that the installation is not under service or pressure.

Diagrams and tables

CIM 3739B – DN 50

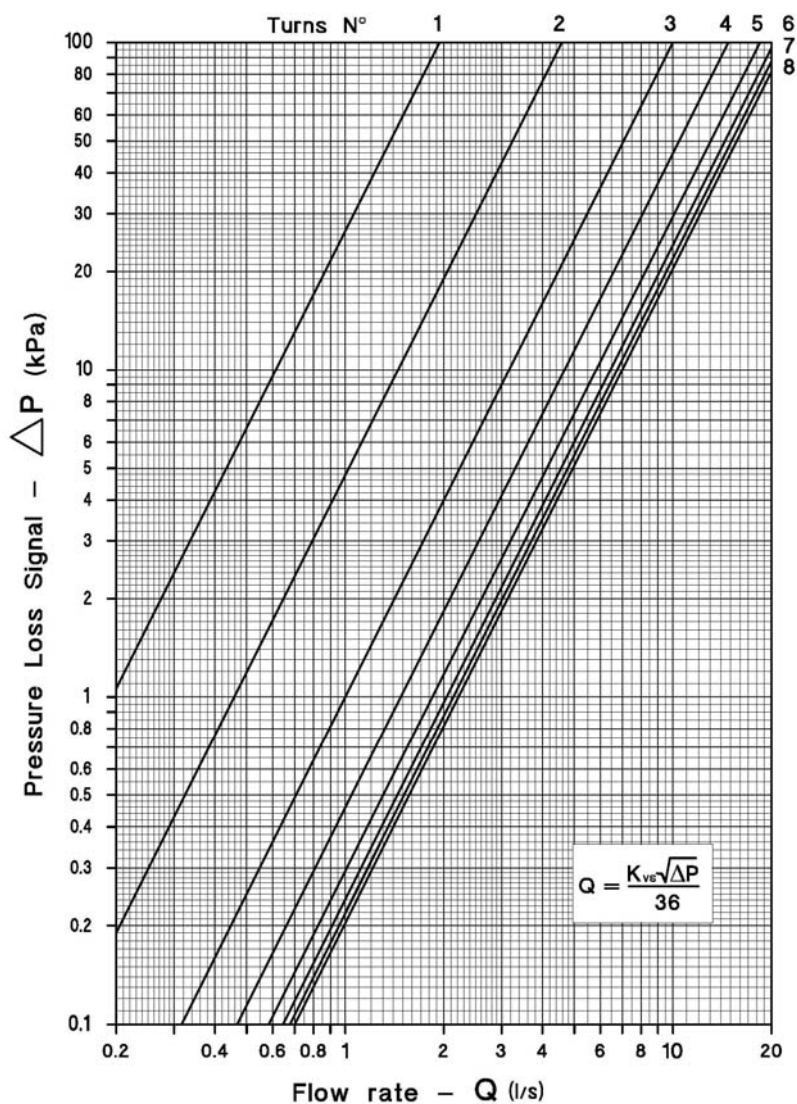
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	6,55	7,05	7,55	8,05	8,55	9,06	9,56	10,06	10,56	11,06
2	11,56	11,94	12,31	12,69	13,06	13,44	13,82	14,19	14,57	14,94
3	15,32	16,10	16,88	17,66	18,44	19,22	19,99	20,77	21,55	22,33
4	23,11	24,16	25,21	26,26	27,31	28,36	29,40	30,45	31,50	32,55
5	33,60	34,40	35,20	36,01	36,81	37,61	38,41	39,21	40,02	40,82
6	41,62	42,04	42,46	42,87	43,29	43,71	44,13	44,55	44,96	45,38
7	45,80	45,97	46,14	46,31	46,48	46,65	46,82	46,99	47,16	47,33
8	47,50									
9										
10										
11										
12										

CIM 3739B – DN 65

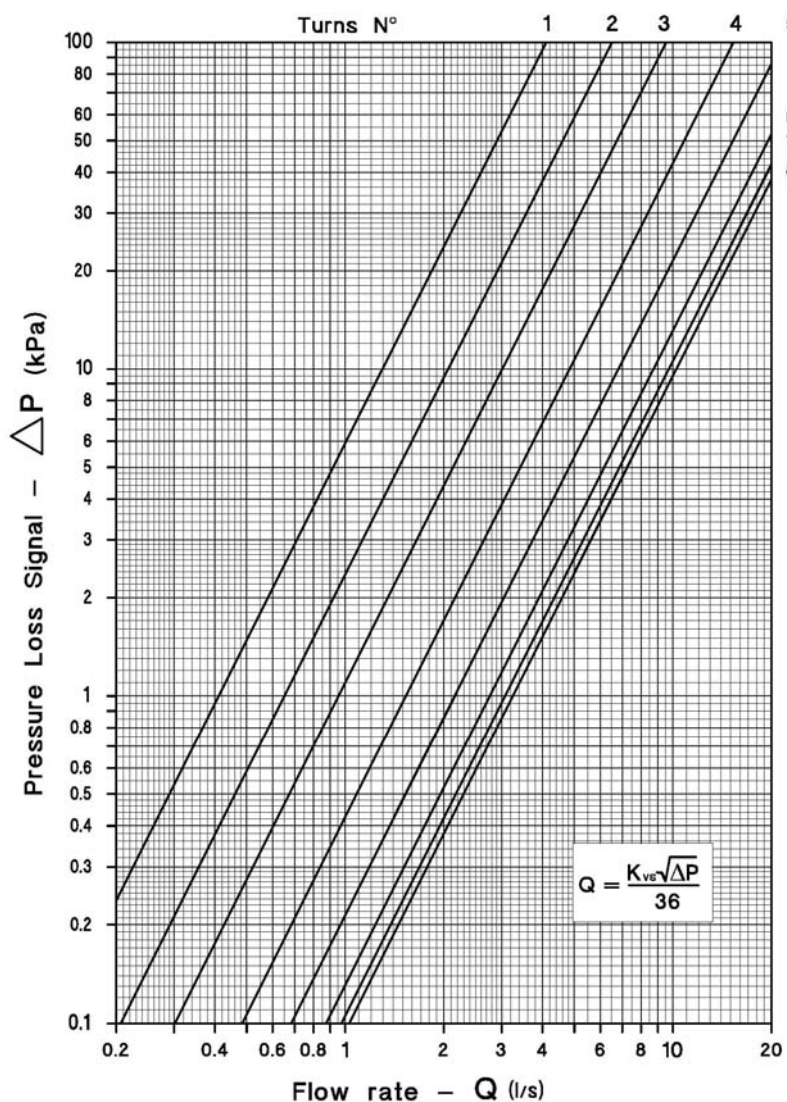
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	6,99	7,94	8,89	9,84	10,79	11,75	12,70	13,65	14,60	15,55
2	16,50	18,45	20,40	22,36	24,31	26,26	28,21	30,16	32,12	34,07
3	36,02	37,74	39,45	41,17	42,89	44,61	46,32	48,04	49,76	51,47
4	53,19	54,51	55,84	57,16	58,49	59,81	61,13	62,46	63,78	65,11
5	66,43	67,13	67,83	68,53	69,23	69,93	70,63	71,33	72,03	72,73
6	73,43	73,79	74,14	74,50	74,85	75,21	75,57	75,92	76,28	76,63
7	76,99	77,26	77,53	77,81	78,08	78,35	78,62	78,89	79,17	79,44
8	79,71									
9										
10										
11										
12										

CIM 3739B – DN 80

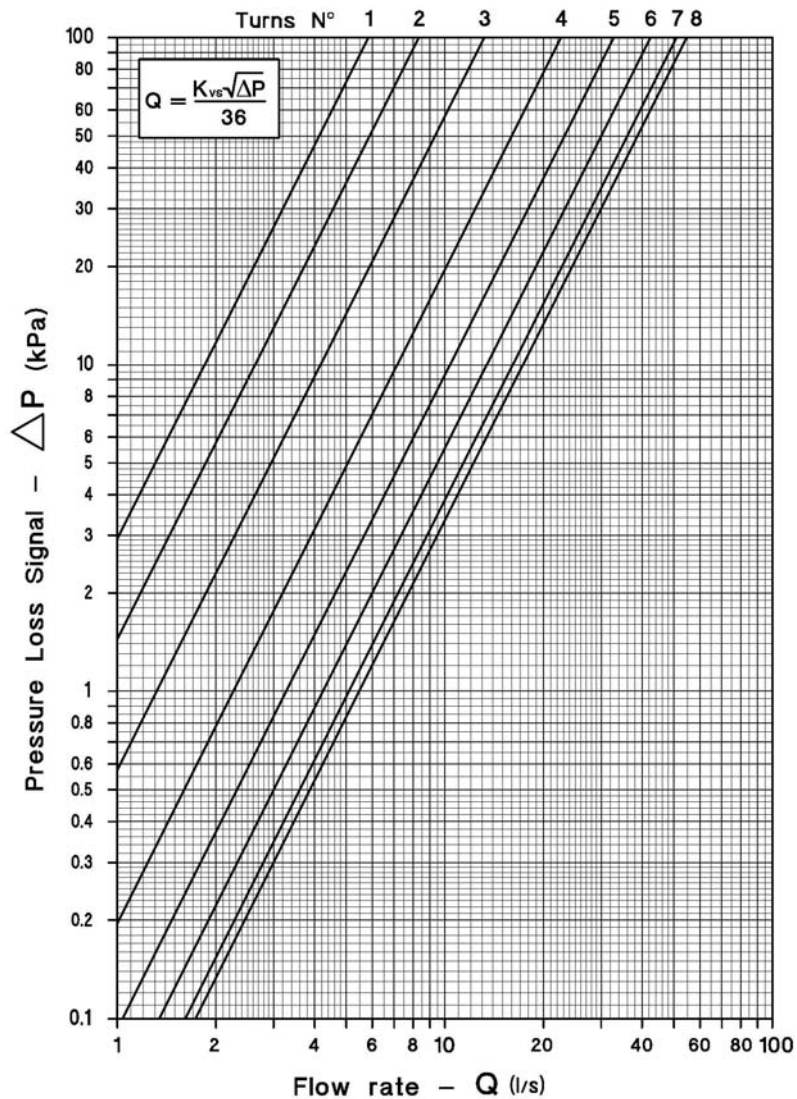
Kvs value registered on the binder points placed at the end of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	14,77	15,64	16,51	17,37	18,24	19,11	19,98	20,85	21,71	22,58
2	23,45	24,54	25,63	26,73	27,82	28,91	30,00	31,09	32,19	33,28
3	34,37	36,45	38,52	40,60	42,68	44,76	46,83	48,91	50,99	53,06
4	55,14	57,40	59,66	61,91	64,17	66,43	68,69	70,95	73,20	75,46
5	77,72	79,89	82,06	84,23	86,40	88,58	90,75	92,92	95,09	97,26
6	99,43	100,73	102,03	103,33	104,63	105,93	107,23	108,53	109,83	111,13
7	112,43	112,87	113,31	113,74	114,18	114,62	115,06	115,50	115,93	116,37
8	116,81									
9										
10										
11										
12										

CIM 3739B – DN 100

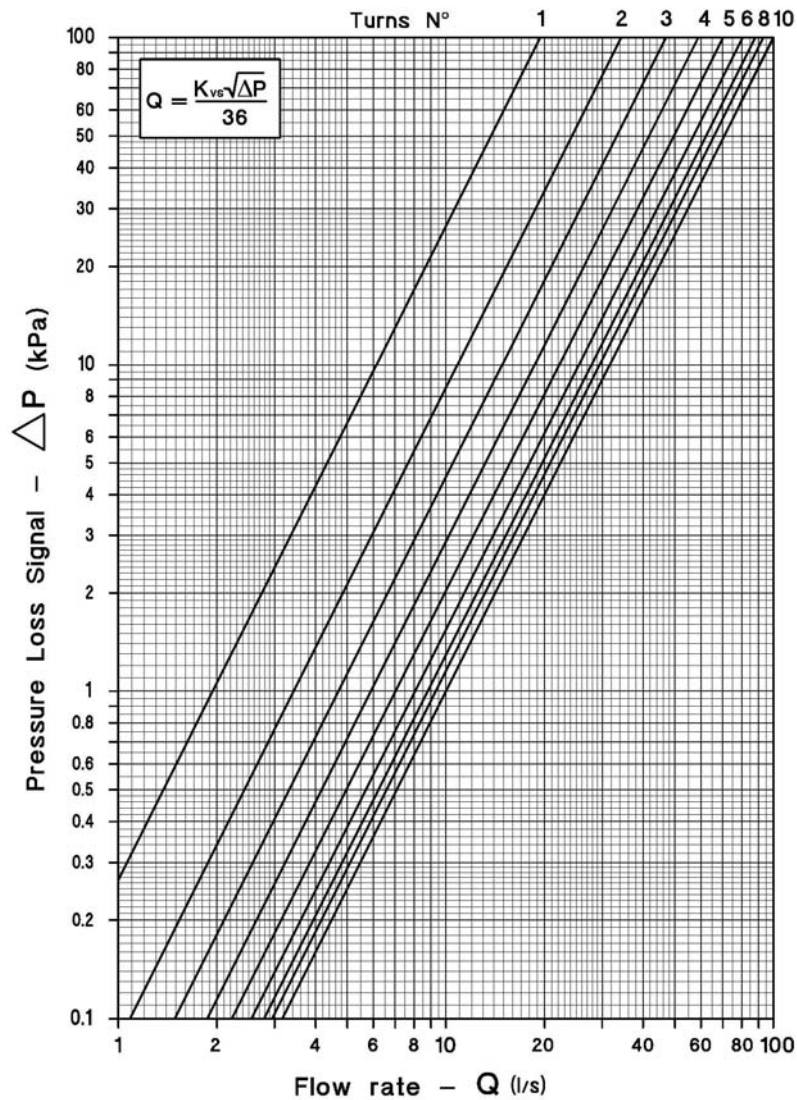
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	21,03	21,93	22,82	23,72	24,61	25,51	26,40	27,30	28,19	29,09
2	29,98	31,73	33,48	35,23	36,98	38,74	40,49	42,24	43,99	45,74
3	47,49	50,88	54,27	57,66	61,05	64,45	67,84	71,23	74,62	78,01
4	81,40	85,06	88,71	92,37	96,03	99,69	103,34	107,00	110,66	114,31
5	117,97	121,43	124,89	128,35	131,81	135,27	138,72	142,18	145,64	149,10
6	152,56	155,63	158,69	161,76	164,83	167,90	170,96	174,03	177,10	180,16
7	183,23	184,59	185,94	187,30	188,65	190,01	191,36	192,72	194,07	195,43
8	196,78									
9										
10										
11										
12										

CIM 3739B – DN 125

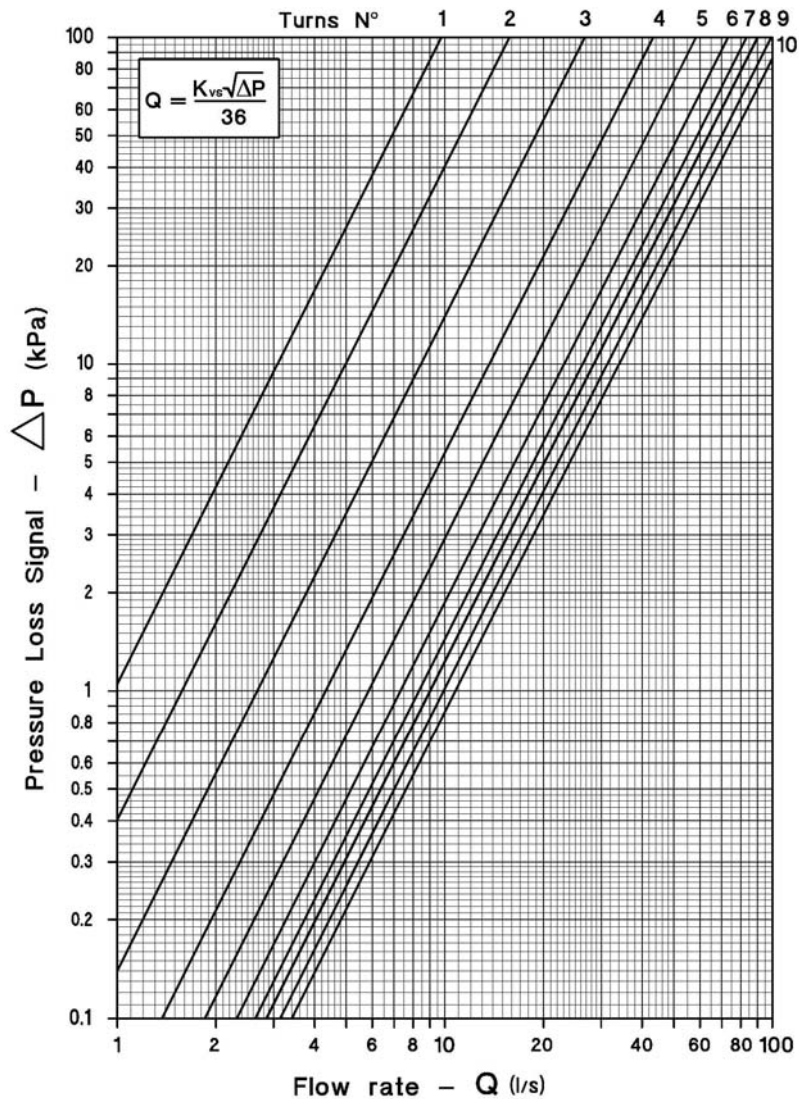
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	69,87	75,22	80,58	85,93	91,28	96,64	101,99	107,34	112,69	118,05
2	123,40	127,97	132,53	137,10	141,66	146,23	150,79	155,36	159,92	164,49
3	169,05	173,37	177,70	182,02	186,35	190,67	194,99	199,32	203,64	207,97
4	212,29	216,31	220,34	224,36	228,38	232,41	236,43	240,45	244,47	248,50
5	252,52	256,30	260,08	263,86	267,64	271,42	275,19	278,97	282,75	286,53
6	290,31	292,96	295,61	298,26	300,91	303,57	306,22	308,87	311,52	314,17
7	316,82	318,65	320,48	322,31	324,14	325,97	327,80	329,63	331,46	333,29
8	335,12	337,27	339,42	341,58	343,73	345,88	348,03	350,18	352,34	354,49
9	356,64	356,98	357,32	357,66	358,00	358,35	358,69	359,03	359,37	359,71
10	360,05									
11										
12										

CIM 3739B – DN 150

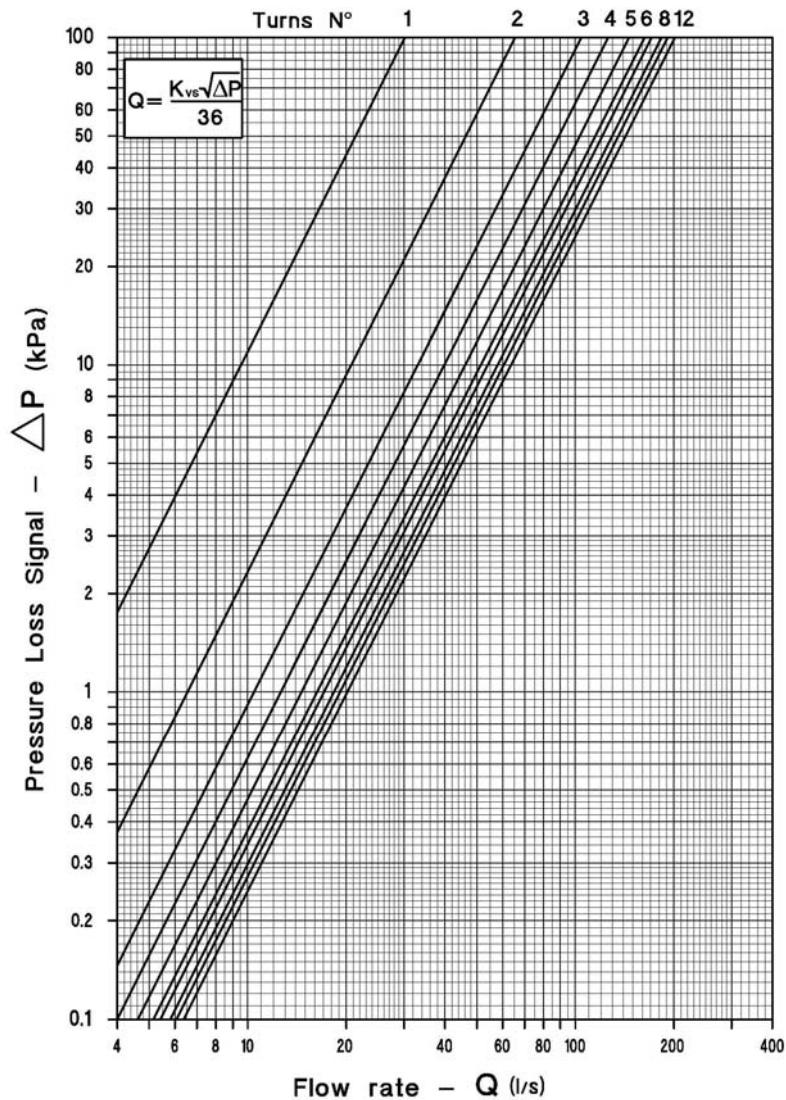
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	35,10	37,26	39,42	41,58	43,74	45,90	48,06	50,22	52,38	54,54
2	56,70	60,66	64,62	68,58	72,54	76,50	80,46	84,42	88,38	92,34
3	96,30	102,23	108,16	114,09	120,02	125,95	131,88	137,81	143,74	149,67
4	155,60	161,07	166,54	172,01	177,48	182,95	188,42	193,89	199,36	204,83
5	210,30	215,60	220,90	226,20	231,50	236,80	242,10	247,40	252,70	258,00
6	263,30	266,98	270,66	274,35	278,03	281,71	285,39	289,07	292,76	296,44
7	300,12	302,54	304,97	307,39	309,82	312,24	314,66	317,09	319,51	321,94
8	324,36	327,58	330,80	334,02	337,24	340,46	343,67	346,89	350,11	353,33
9	356,55	359,68	362,81	365,94	369,07	372,20	375,32	378,45	381,58	384,71
10	387,84									
11										
12										

CIM 3739B – DN 200

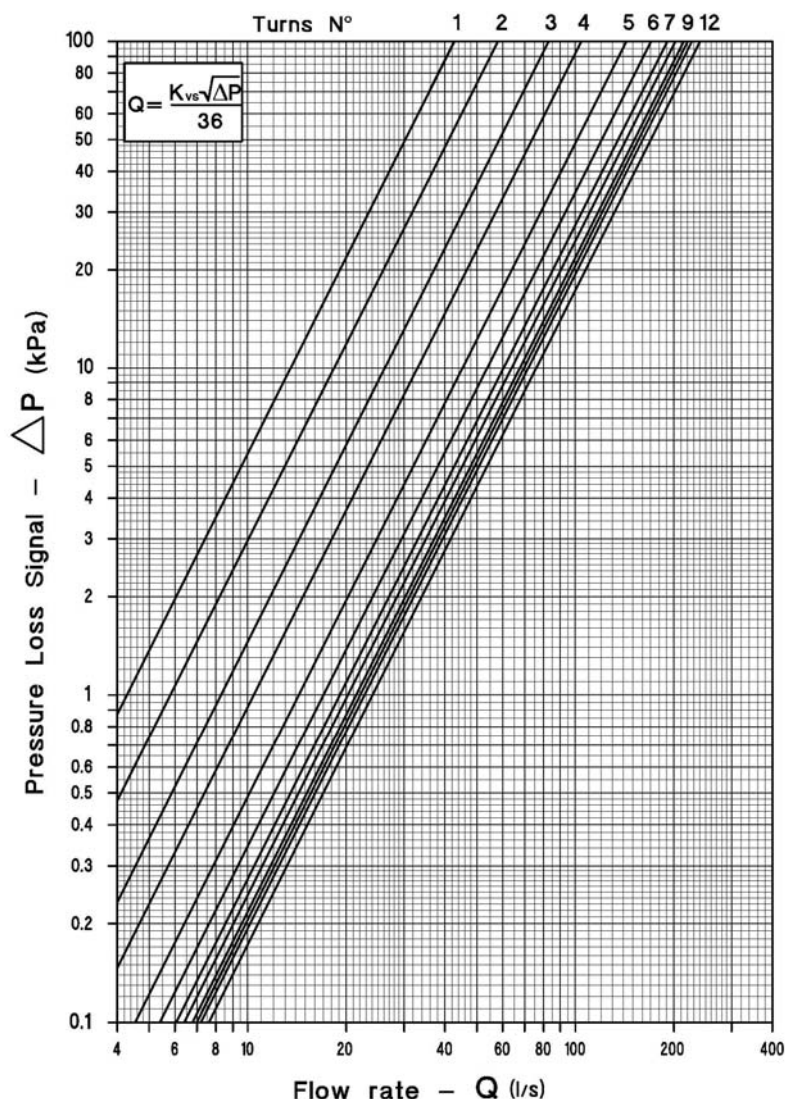
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	108,67	121,41	134,14	146,88	159,61	172,35	185,09	197,82	210,56	223,29
2	236,03	250,04	264,06	278,07	292,09	306,10	320,11	334,13	348,14	362,16
3	376,17	383,95	391,73	399,51	407,29	415,07	422,85	430,63	438,41	446,19
4	453,97	461,07	468,16	475,26	482,35	489,45	496,55	503,64	510,74	517,83
5	524,93	531,05	537,16	543,28	549,39	555,51	561,63	567,74	573,86	579,97
6	586,09	589,05	592,02	594,98	597,94	600,91	603,87	606,83	609,79	612,76
7	615,72	620,15	624,58	629,01	633,44	637,87	642,30	646,73	651,16	655,59
8	660,02	662,51	664,99	667,48	669,97	672,46	674,94	677,43	679,92	682,40
9	684,89	685,34	685,80	686,25	686,70	687,16	687,61	688,06	688,51	688,97
10	689,42	692,16	694,90	697,64	700,38	703,13	705,87	708,61	711,35	714,09
11	716,83	717,63	718,43	719,22	720,02	720,82	721,62	722,42	723,21	724,01
12	724,81									

CIM 3739B – DN 250

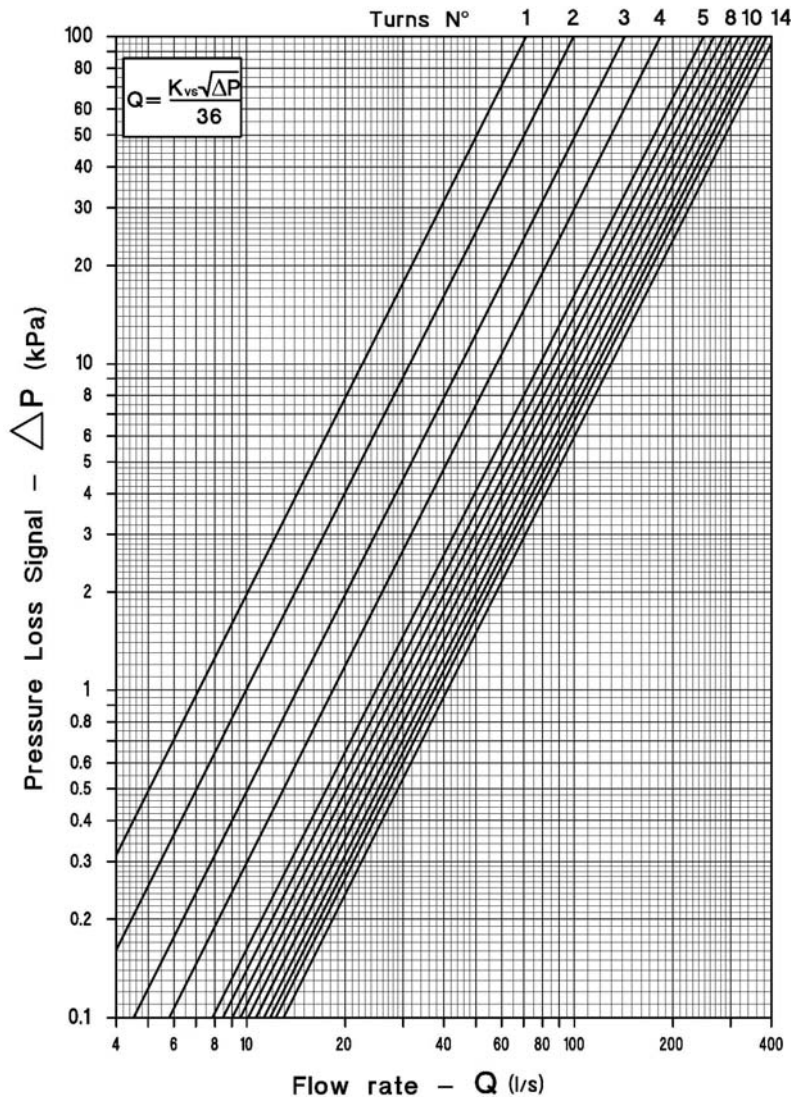
Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	153,99	159,48	164,98	170,47	175,97	181,46	186,95	192,45	197,94	203,44
2	208,93	217,89	226,85	235,81	244,77	253,74	262,70	271,66	280,62	289,58
3	298,54	306,27	314,00	321,73	329,46	337,19	344,92	352,65	360,38	368,11
4	375,84	389,84	403,84	417,83	431,83	445,83	459,83	473,83	487,82	501,82
5	515,82	525,54	535,27	544,99	554,72	564,44	574,16	583,89	593,61	603,34
6	613,06	620,54	628,02	635,50	642,98	650,46	657,94	665,42	672,90	680,38
7	687,86	691,94	696,01	700,09	704,16	708,24	712,32	716,39	720,47	724,54
8	728,62	732,94	737,25	741,57	745,89	750,21	754,52	758,84	763,16	767,47
9	771,79	774,04	776,30	778,55	780,81	783,06	785,31	787,57	789,82	792,08
10	794,33	796,65	798,97	801,29	803,61	805,93	808,24	810,56	812,88	815,20
11	817,52	822,36	827,21	832,05	836,90	841,74	846,58	851,43	856,27	861,12
12	865,96									

CIM 3739B – DN 300

Kvs value registered on the binder points placed at the ends of the valve



Kvs (flow rate in m³/h @ 1bar pressure drop)										
Full turn	Hundredth of turn									
	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90
1	256,83	266,98	277,12	287,27	297,41	307,56	317,70	327,85	337,99	348,14
2	358,28	373,84	389,40	404,95	420,51	436,07	451,63	467,19	482,74	498,30
3	513,86	528,43	543,01	557,58	572,15	586,73	601,30	615,87	630,44	645,02
4	659,59	683,13	706,67	730,20	753,74	777,28	800,82	824,36	847,89	871,43
5	894,97	901,63	908,29	914,94	921,60	928,26	934,92	941,58	948,23	954,89
6	961,55	968,21	974,87	981,52	988,18	994,84	1001,50	1008,16	1014,81	1021,47
7	1028,13	1034,00	1039,86	1045,73	1051,59	1057,46	1063,33	1069,19	1075,06	1080,92
8	1086,79	1092,99	1099,19	1105,39	1111,59	1117,79	1123,99	1130,19	1136,39	1142,59
9	1148,79	1155,34	1161,90	1168,45	1175,01	1181,56	1188,11	1194,67	1201,22	1207,78
10	1214,33	1221,26	1228,19	1235,11	1242,04	1248,97	1255,90	1262,83	1269,75	1276,68
11	1283,61	1289,44	1295,26	1301,09	1306,91	1312,74	1318,57	1324,39	1330,22	1336,04
12	1341,87	1347,18	1352,50	1357,81	1363,13	1368,44	1373,75	1379,07	1384,38	1389,70
13	1395,01	1402,97	1410,93	1418,89	1426,85	1434,81	1442,76	1450,72	1458,68	1466,64
14	1474,60									