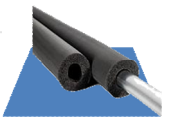
Static Flanged Balancing Valves

750B - 751B Variable orifice double regulating valves

Product data sheet


Insulation friendly


CE conformity 97/23/CE


Regulation Accuraty


Long lasting reliability


European production


751B
DN15 - DN80


751B
DN100 - DN200


750B
DN250 - DN400

Contents

Description

COMAP 750B and 751B Static Balancing valves are bronze flanged variable orifice double regulating valves.

Those straight through balancing valves are used when precise commissioning of heating, air conditioning and plumbing circuits is required.

They are used for hydronic balancing of flow for heating and cooling installations.

Features

Complete range from DN15 to DN400
Instantaneous test port connections

Can be mounted in all positions
Can be fitted on flow or return lines

Presetting digital indicator
Indication of full or 1/10 rotation
Presetting can be protected by tamperproof
Non-rising handwheel

Sealing of the memory

3 functions in one balancing valve:
- Flow control
- Isolation
- Measuring

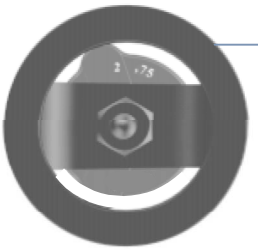
Benefits

Perpendicular seat design eases the thermal insulation
Non-rising handwheel
Setting can be recovered after isolation
Valve body made of corrosion resistant cast iron
Screw cap stops dirt entering test points
Quick measuring connections
PTFE + carbon seat sealing for long lasting features

Design

Stroke limiter

- The stroke limiter allows the setting memorization before isolation for instance: when reopening the valve, the setting is easily recover.
- The setting memorization can be sealed thanks to a locknut.
- The stroke limiter is protected by a protection cap.



Presetting display

Fine adjustment through user-friendly digital display design:

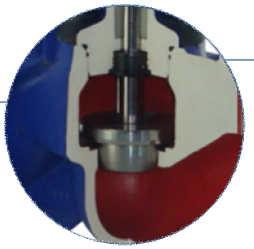
- accurate to 1/10 handwheel rotation,
- zero-point adjustment can be fixed reliably,
- easy to read from above.

Pressure test points

- Valves are delivered with quick coupling test points reliable in time.
- Measurer connection are easily accessible above the flanged.
- Easy to connect even with insulation: test point extensions can be fitted on.
- Differential pressure is measured on each side of the valve.

Sealing long lasting

- The seat sealing is made of PTFE and carbon which has shape memory features. This contributes to long lasting reliability of the isolation function.
- The stainless steel stem has a mirror finish and is equipped of a spindle seal which guarantee long lasting reliability valve tightness.



Flow regulation accuracy

The regulation function presents an optimize accuracy thanks to a screw-down globe concept.

The valve present ideal regulation properties through equal percentage characteristic curve up to a stroke of 45% (linear characteristic curve in the regulating range above stroke > 45%).

Range overview and weights

Figure	Illustration	DN	G	Kvs-value (m^3/h)	T_{max} (°C)	PN (bar)	Weight (kg)	Code
751B		DN15	1/2”	4.5	120	16	3.5	751504
		DN20	3/4”	6.6	120	16	4.1	751506
		DN25	1”	9.8	120	16	4.8	751507
		DN32	1”1/4	15.1	120	16	6.6	751508
		DN40	1”1/2	24.9	120	16	9.0	751509
		DN50	2”	48.5	120	16	11.5	751510
		DN65	2”1/2	74.4	120	16	18.5	751512
		DN80	3”	111	120	16	24.5	751513
		DN100	4”	165	120	16	40	751514
		DN125	5”	242	120	16	79	751516
		DN150	6”	372	120	16	91	751518
		DN200	8”	704	120	16	170	751520
750B		DN250	10”	812	200	16	265	750750
		DN300	12”	1383	200	16	360	750800
		DN350	14”	1651	200	16	535	750850
		DN400	16”	2383	200	16	765	750900

Material

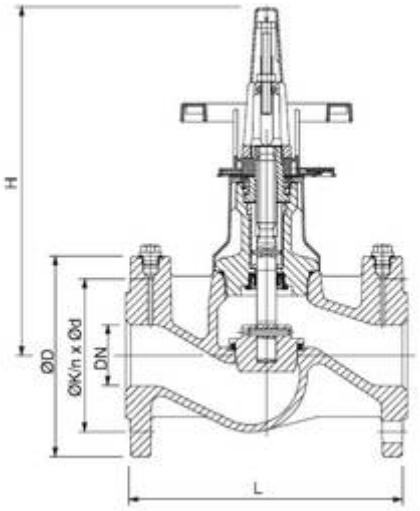
Valve housing:	Cast iron GG25, painted blue (LUXORAL AQUA)
Valve insert:	Stainless steel
Seat sealing:	PTFE + 25% carbon
Pressure test point with quick coupling:	Brass
Handwheel:	DN15 - DN50: Black plastic Grivory GV5H
	DN65 - DN400: Steel, painted black
Fairing:	Black plastic

Specifications and norms

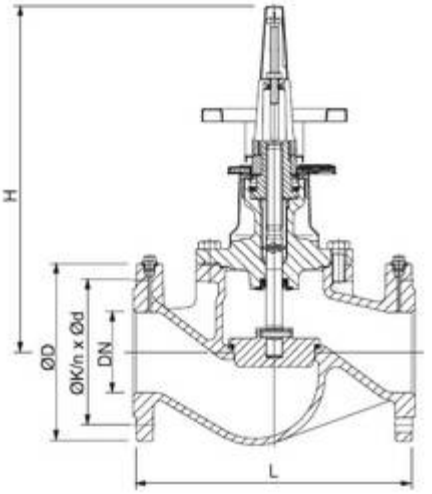
Temperature:	DN15 - DN200:	-10°C to 120°C short run at 130°C *[14 to 248°F short run at 266°F]*
	DN250 - DN400:	-10°C to 200°C *[14 to 382°F]*
Nominal Pressure:	up to 16 bar *[232 PSI]*	
Medium:	Water or neutral fluids, water-glycol mixtures	

Face to face length FTF series 1 according to DIN EN 558-1

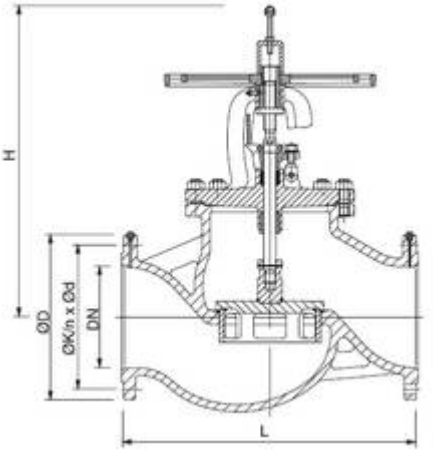
Dimensions



751B DN15 - DN80



751B DN100 - DN200



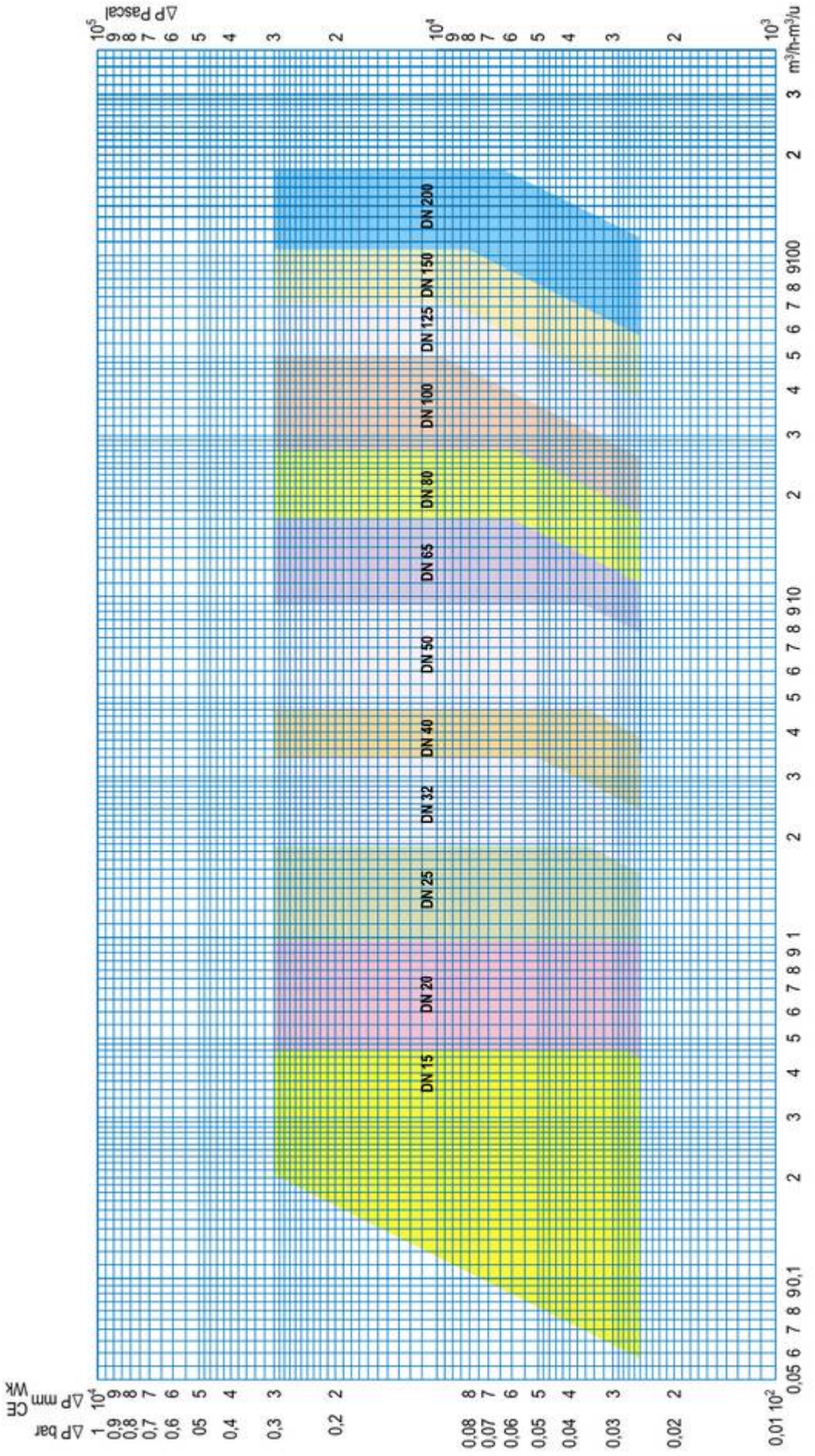
750B DN250 - DN400

Figure	Illustration	DN	G	L (mm)	H (mm)	⦸D (mm)	⦸K (mm)	n x ⦸ d
751B		DN15	1/2"	130	225	95	65	4 x14
		DN20	3/4"	150	225	105	75	4 x 14
		DN25	1"	160	225	115	85	4 x 14
		DN32	1"1/4	180	225	140	100	4 x 18
		DN40	1"1/2	200	280	150	110	4 x 18
		DN50	2"	230	280	165	125	4 x 18
		DN65	2"1/2	290	365	185	145	4 x 18
		DN80	3"	310	395	200	160	8 x 18
		DN100	4"	350	430	220	180	8 x 18
		DN125	5"	400	495	250	210	8 x 18
		DN150	6"	480	530	285	240	8 x 22
		DN200	8"	600	665	340	295	8 x 22
750B		DN250	10"	730	600	405	355	12 x 22
		DN300	12"	850	685	460	410	12 x 26
		DN350	14"	980	775	520	470	16 x 26
		DN400	16"	1100	790	580	525	16 x 30

Valve preselection

To carry out an optimum balancing, it is necessary to respect a certain number of selection criteria. The fundamental starting point consists in choosing the valve which will provide sufficient resistance within the circuit in which it is fitted.

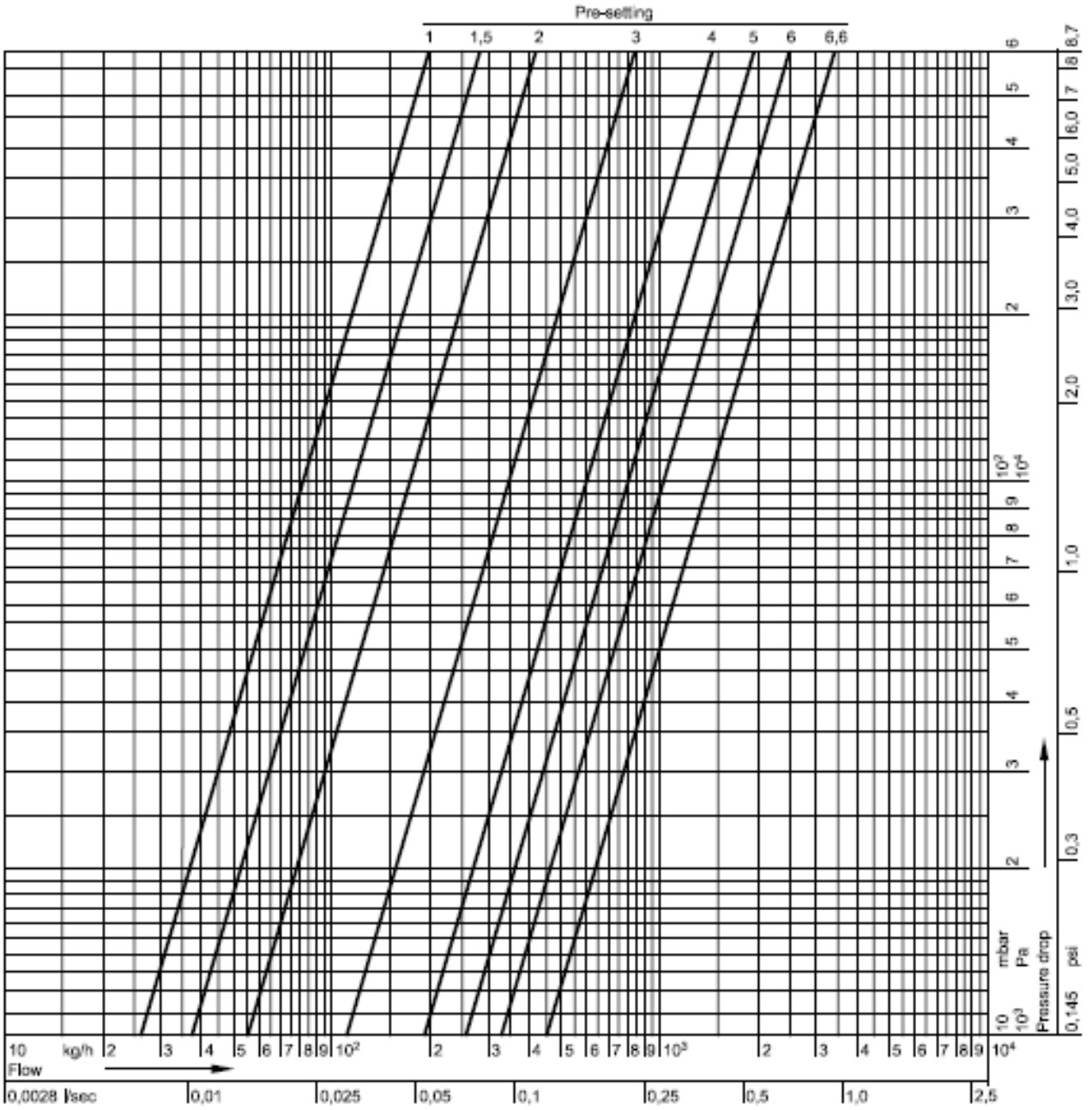
The diagram will simplify the valve size selection based on the valve differential pressure and flow.



Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN15



Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	Open 6.6
Kv-value	-	0.13	0.26	0.37	0.55	0.8	1.10	1.50	1.90	2.30	2.60	2.90	3.30	4.20	Kvs 4.5

Flow charts and Kv table

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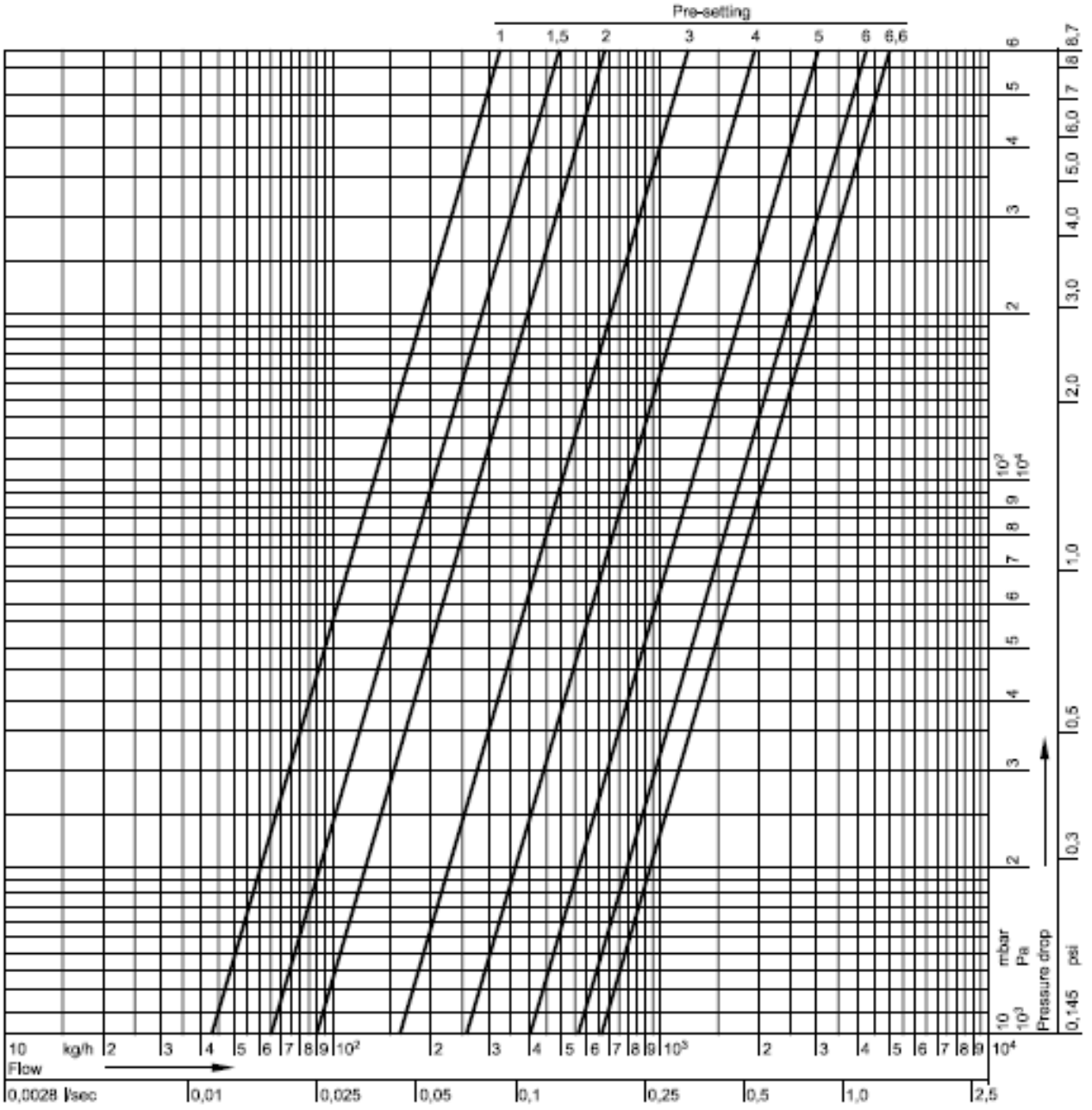
DN20

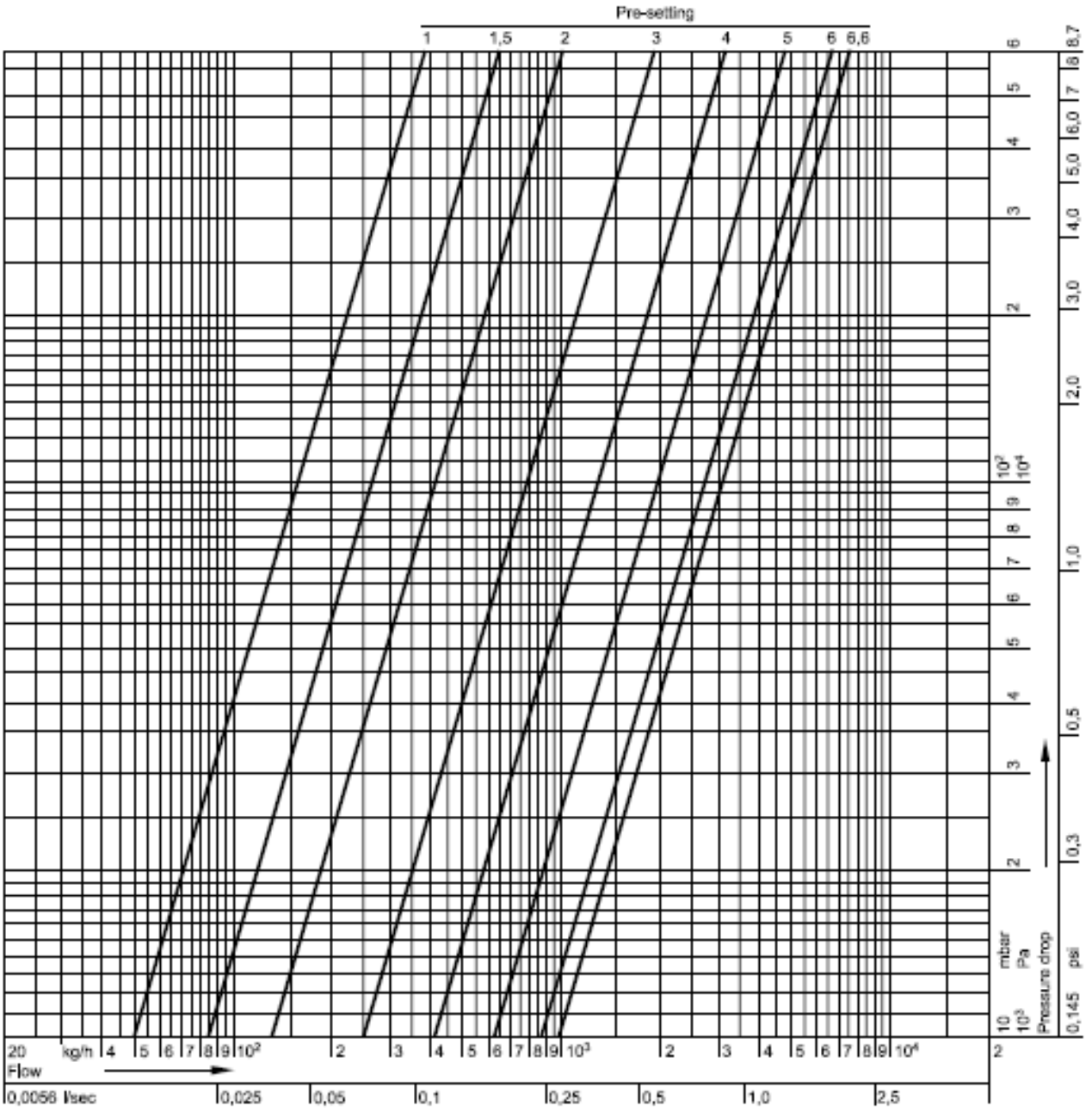


Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	Open 6.6
Kv-value	-	0.22	0.43	0.65	0.90	1.15	1.60	2.06	2.60	3.26	4.00	4.79	5.60	6.43	Kvs 6.60

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN25

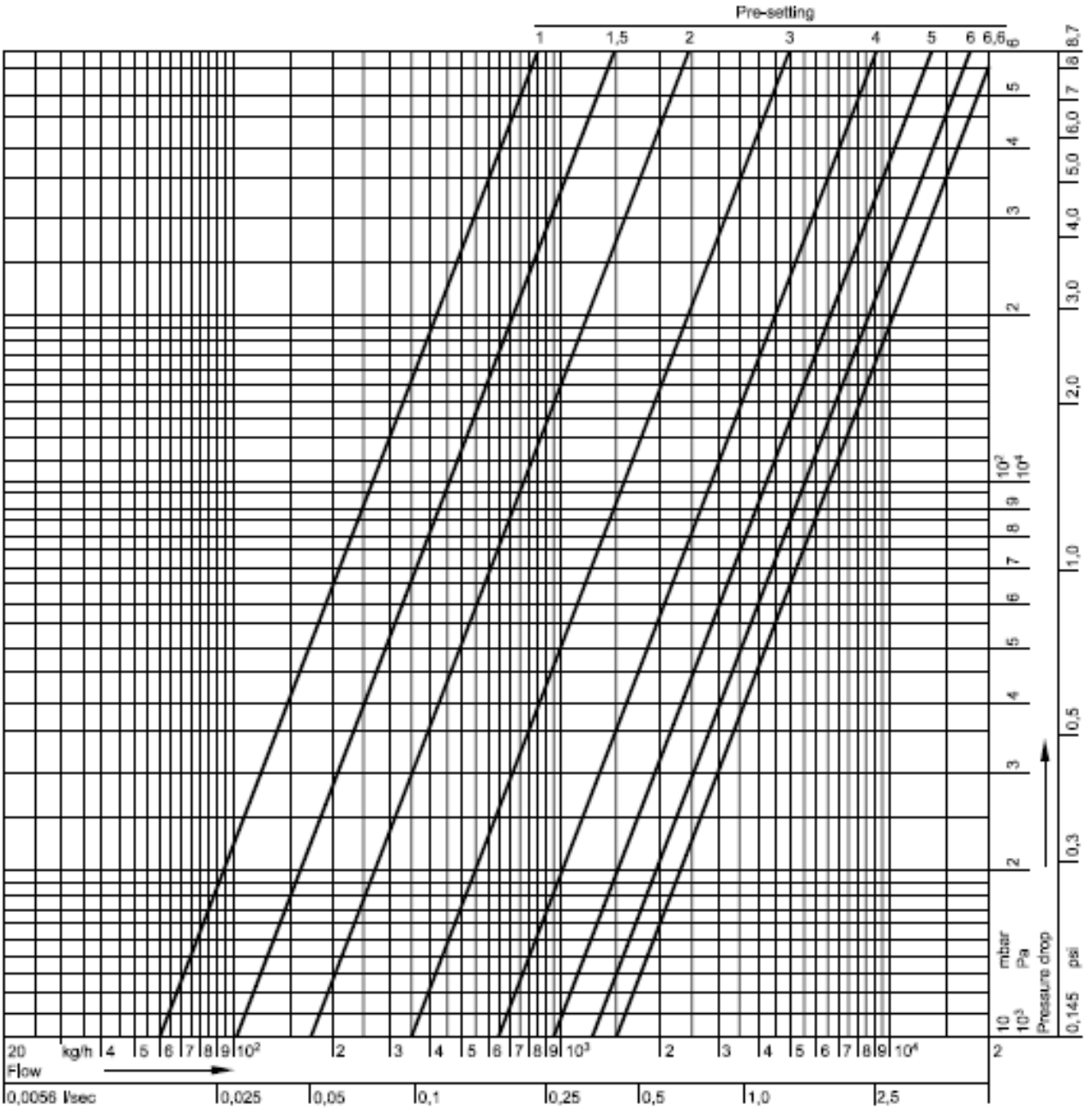


Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	Open 6.6
Kv-value	-	0.22	0.49	0.84	1.30	1.85	2.50	3.25	4.10	5.07	6.20	7.50	8.70	9.63	Kvs 9.80

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN32

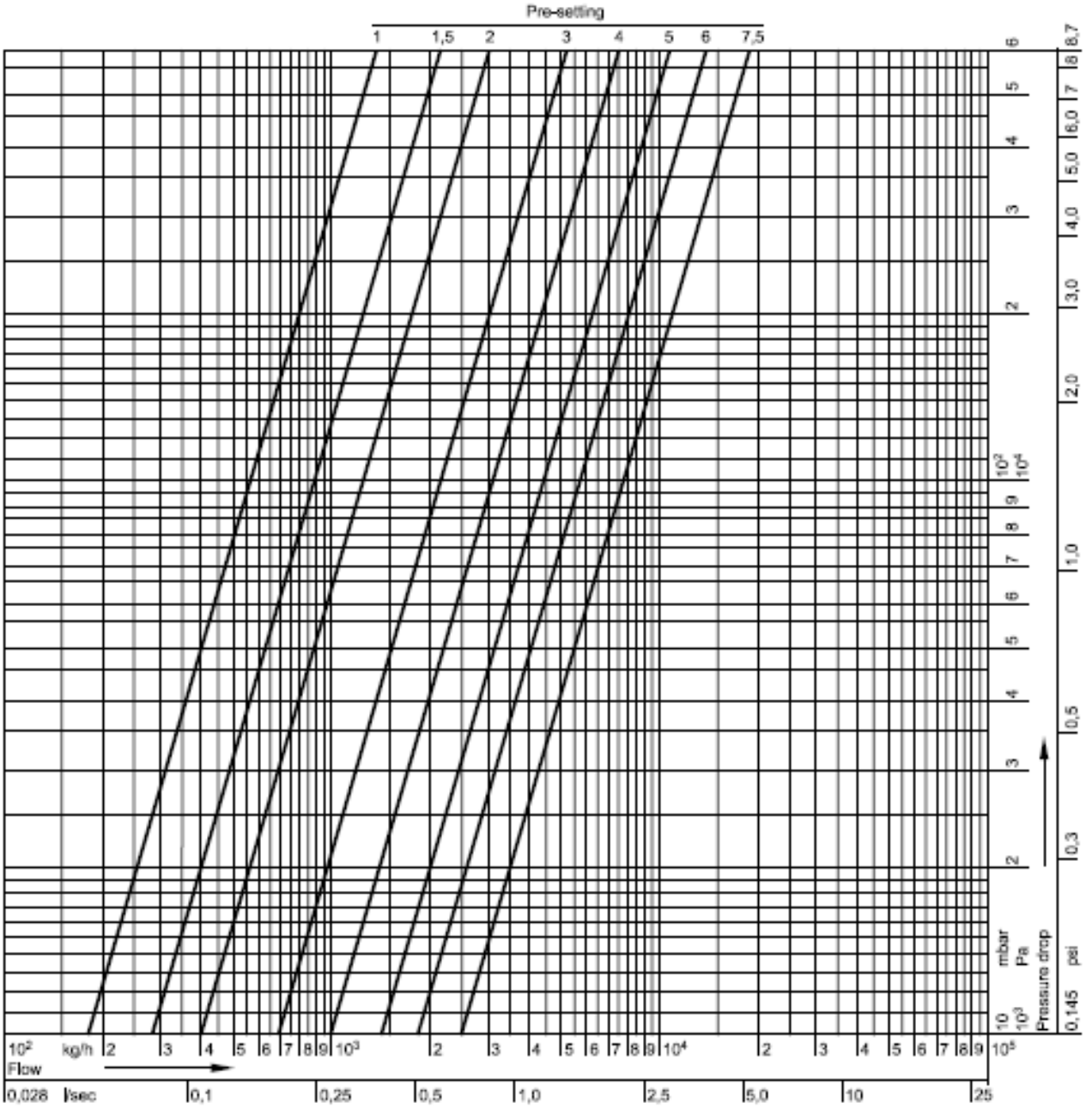


Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	Open 6.6
Kv-value	-	0.28	0.60	1.06	1.68	2.48	3.54	4.91	6.46	7.97	9.47	11.0	12.8	14.7	Kvs 17.7

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN40



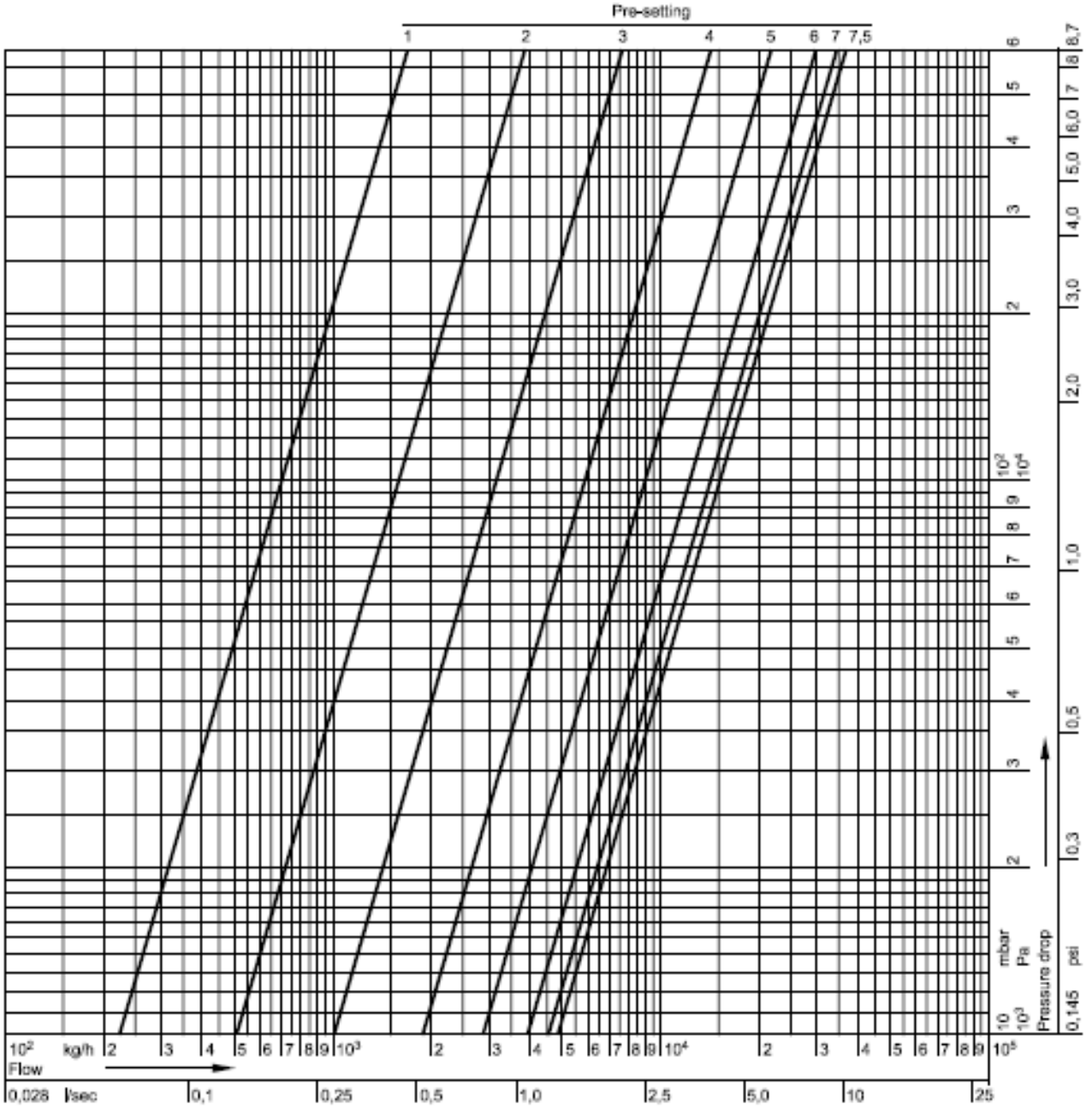
Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7.0
Kv-value	-	0.88	1.80	2.80	4.00	5.42	6.90	8.31	9.90	11.9	14.3	16.8	18.8	20.4	22.2

Pre-setting	Open 7.5
Kv-value	Kvs 24.9

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN50



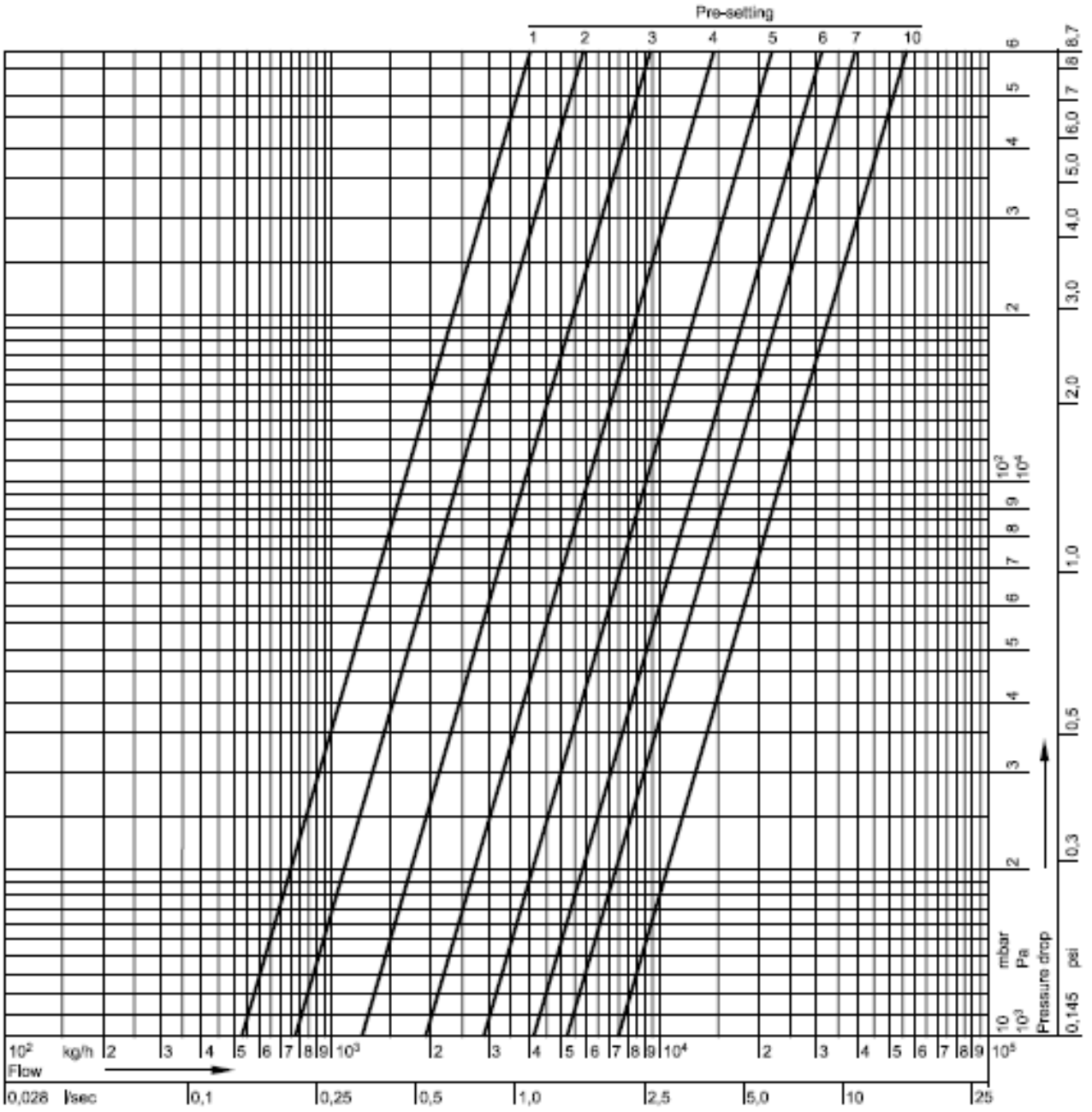
Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7.0
Kv-value	-	1.07	2.20	3.46	5.10	7.36	10.3	13.9	18.1	22.7	28.0	34.1	39.3	42.8	45.6

Pre-setting	Open 7.5
Kv-value	Kvs 48.5

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN65



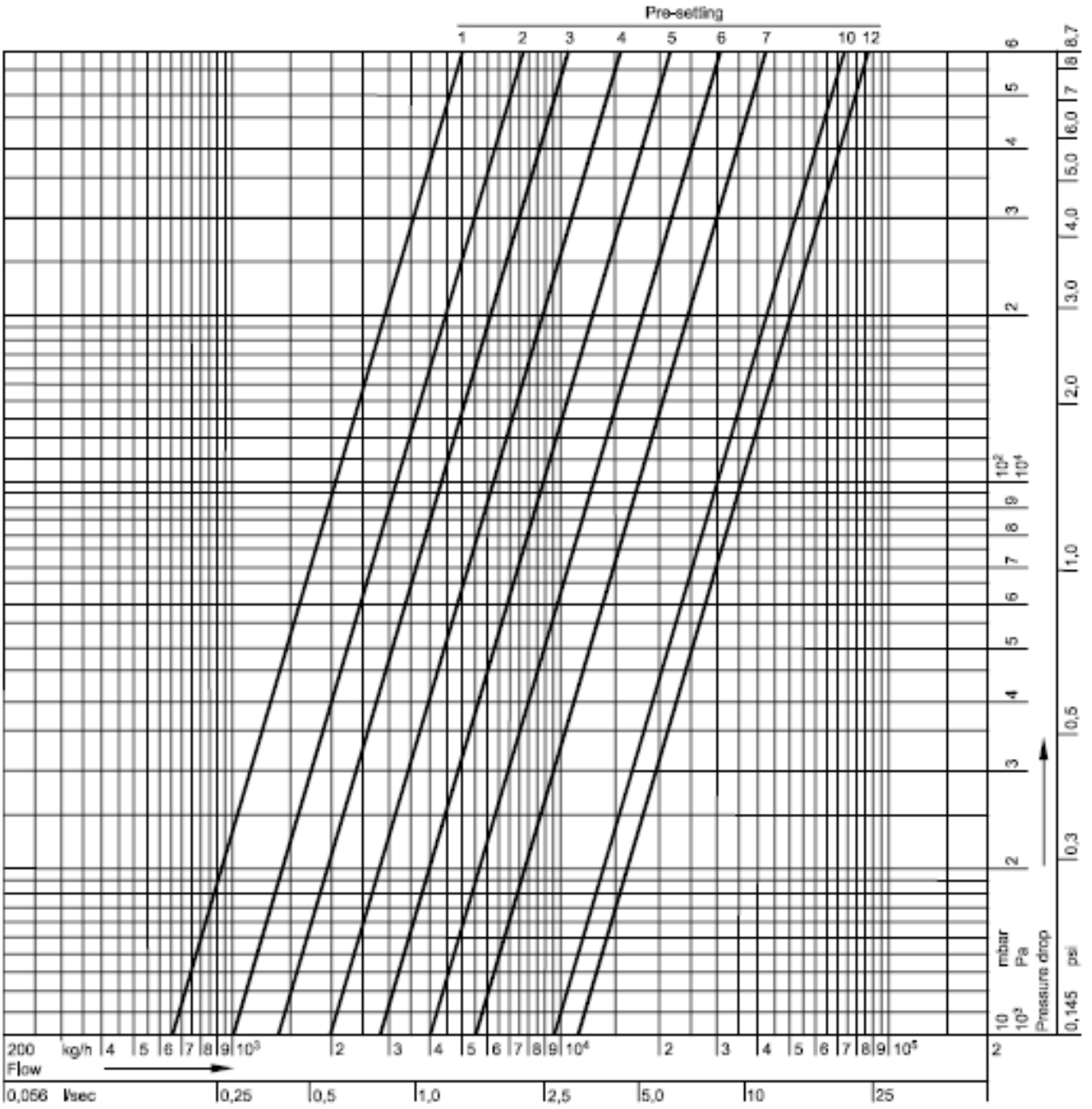
Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7.0
Kv-value	-	2.98	5.30	6.64	7.80	9.60	12.1	15.2	19.0	23.6	29.1	35.2	41.3	47.0	52.1

Pre-setting	8.0	9.0	Open 10.0
Kv-value	60.7	67.9	Kvs 74.4

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN80



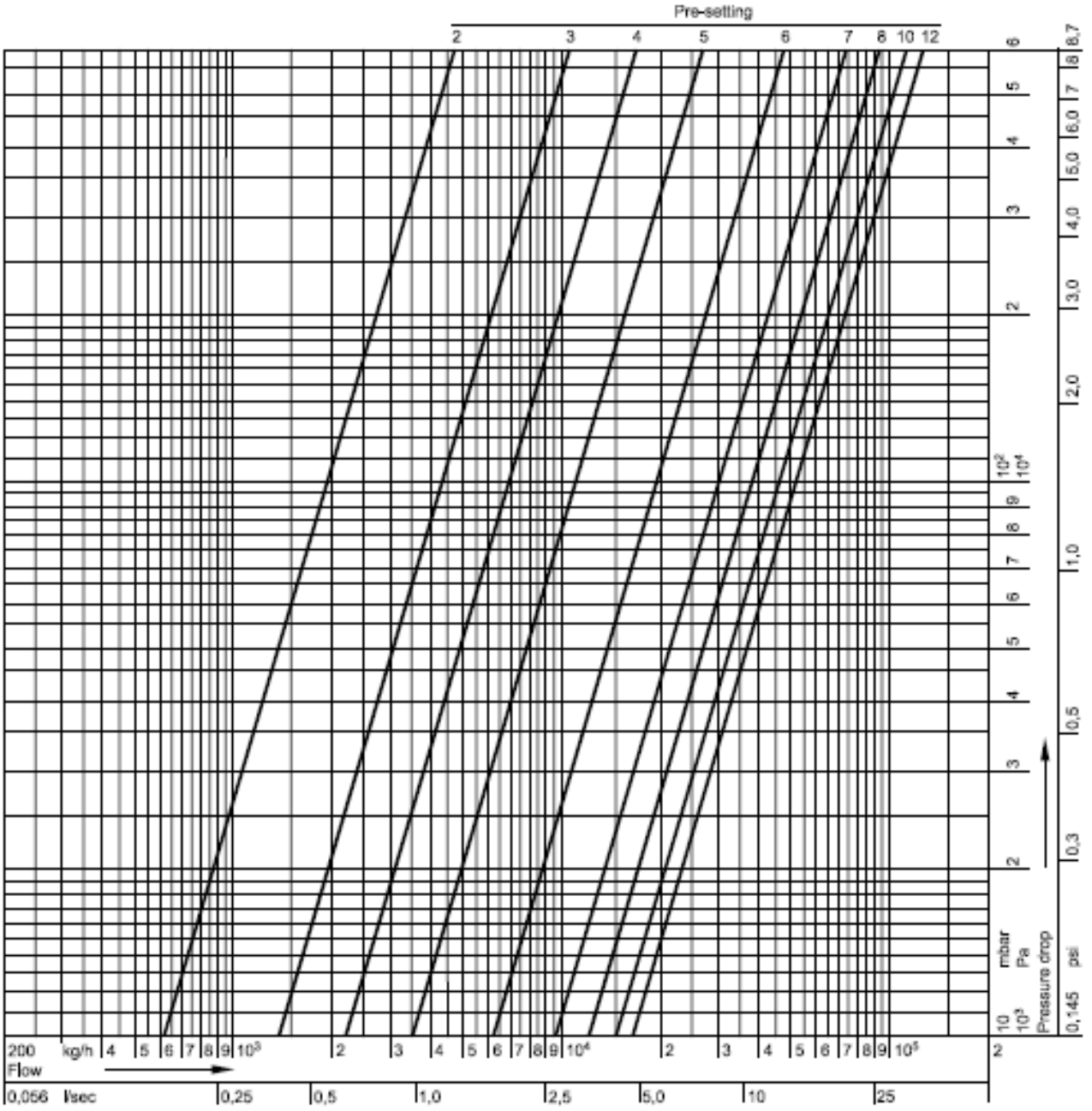
Pre-setting	Close 0	0.5	1	1.5	2.0	2.5	3	3.5	4	4.5	5	6	7.0	8.0	9.0
Kv-value	-	3.35	6.60	8.52	10.0	11.7	13.7	16.1	19.2	23.2	28.1	40.4	55.4	70.9	84.8

Pre-setting	10.0	11.0	Open 12.0
Kv-value	96.1	104	Kvs 111

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN100



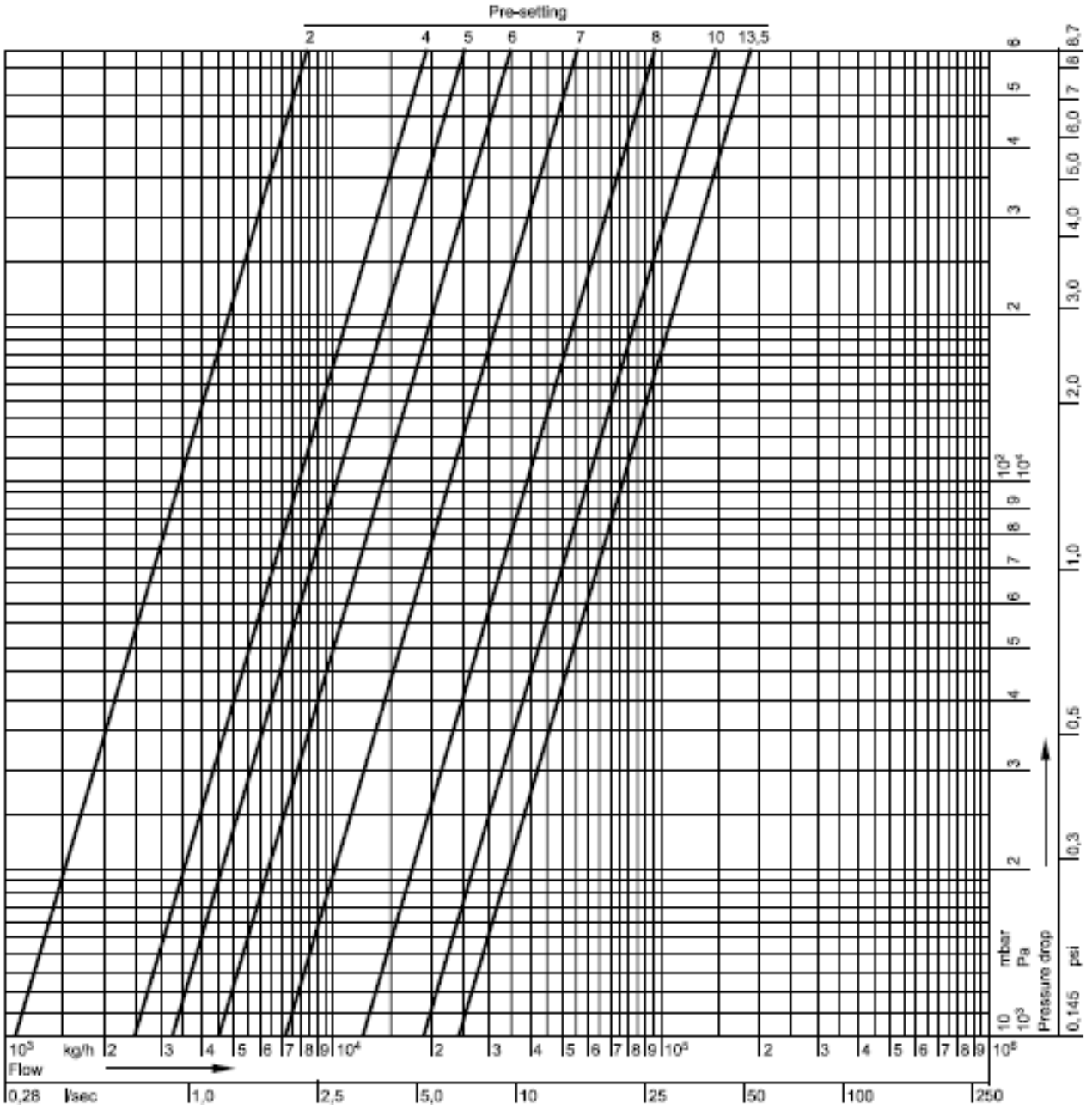
Pre-setting	Close 0	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6.0	6.5	7.0	7.5	8.0
Kv-value	-	3.80	6.20	9.60	13.4	17.3	21.8	27.6	35.7	47.2	62.4	79.3	96.6	110	121

Pre-setting	9.0	10.0	11.0	Open 12.0
Kv-value	137	148	157	Kvs 165

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN125



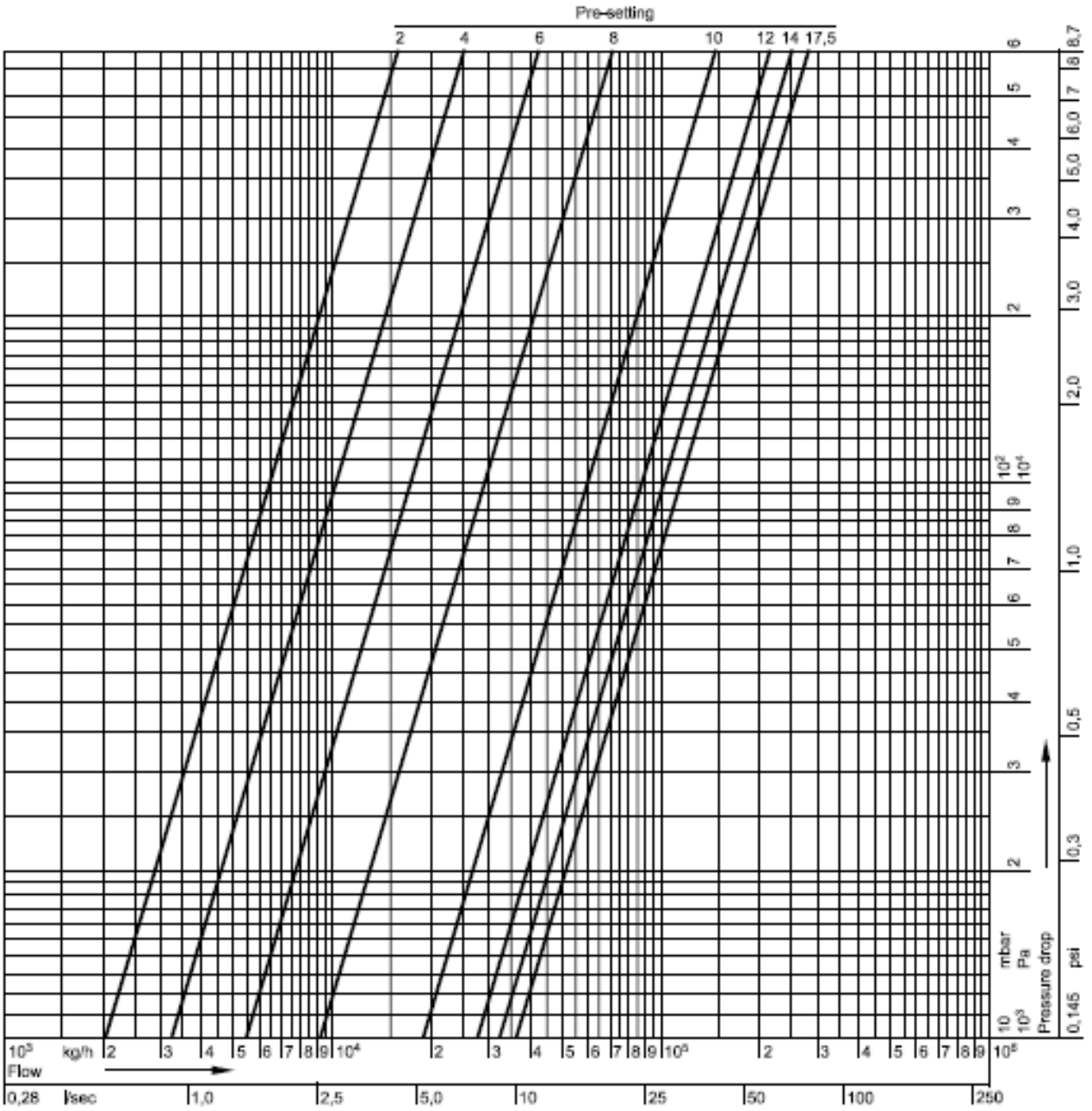
Pre-setting	Close 0	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6.0	6.5	7.0	7.5	8.0
Kv-value	-	8.30	11.3	14.4	17.7	21.1	24.6	28.2	32.3	37.4	44.9	56.1	72.5	93.2	120

Pre-setting	9.0	10.0	11.0	12.0	13.0	Open 13.5
Kv-value	162	225	247	263	276	Kvs 283

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN150



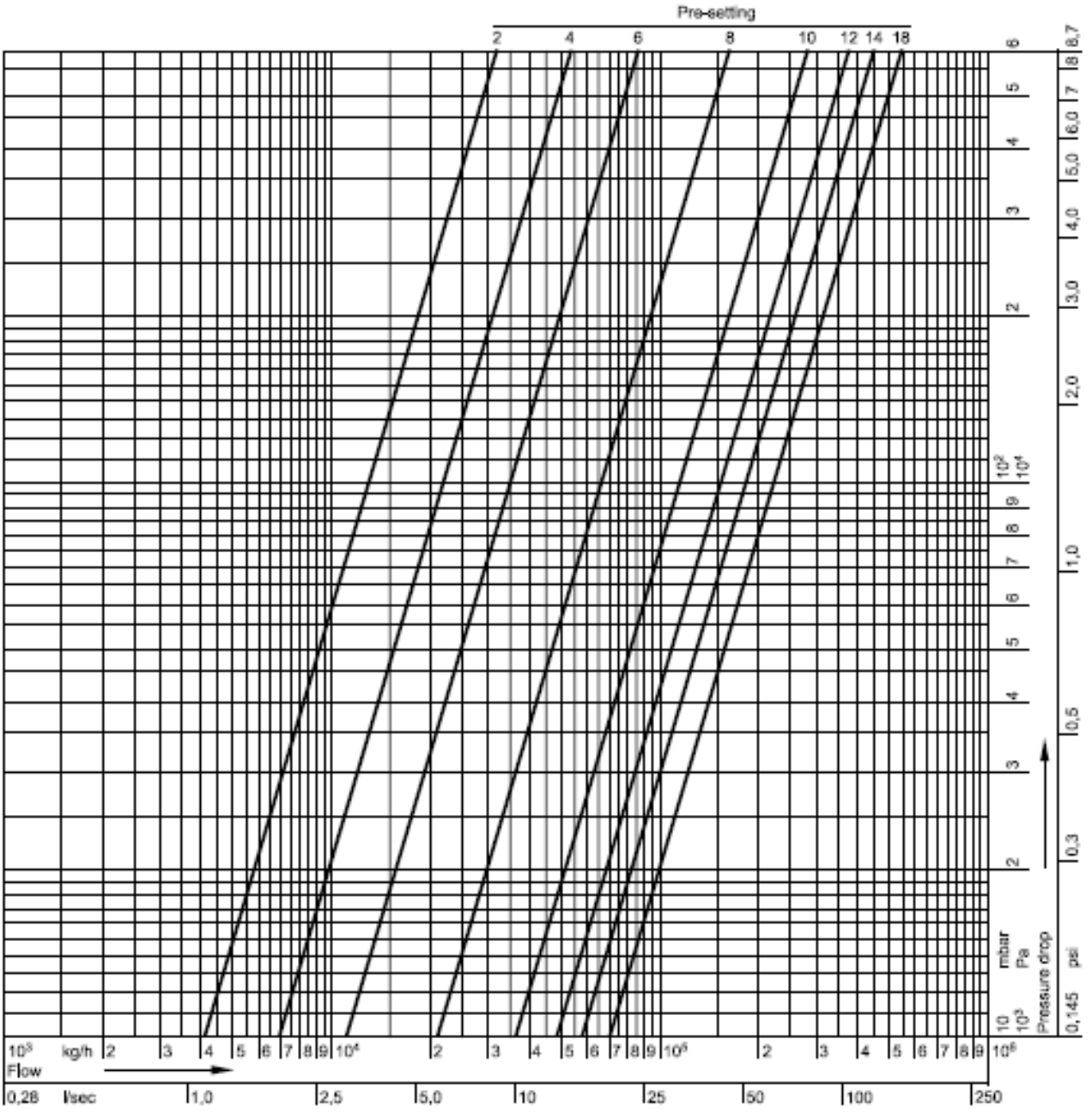
Pre-setting	Close 0	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6.0	6.5	7.0	7.5	8.0
Kv-value	-	16.2	20.4	23.8	26.7	29.5	33	37.6	42.3	48.0	54.5	61.5	69.6	80.0	92.9

Pre-setting	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	Open 17.5
Kv-value	136	193	240	274	300	320	337	352	365	Kvs 372

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN200

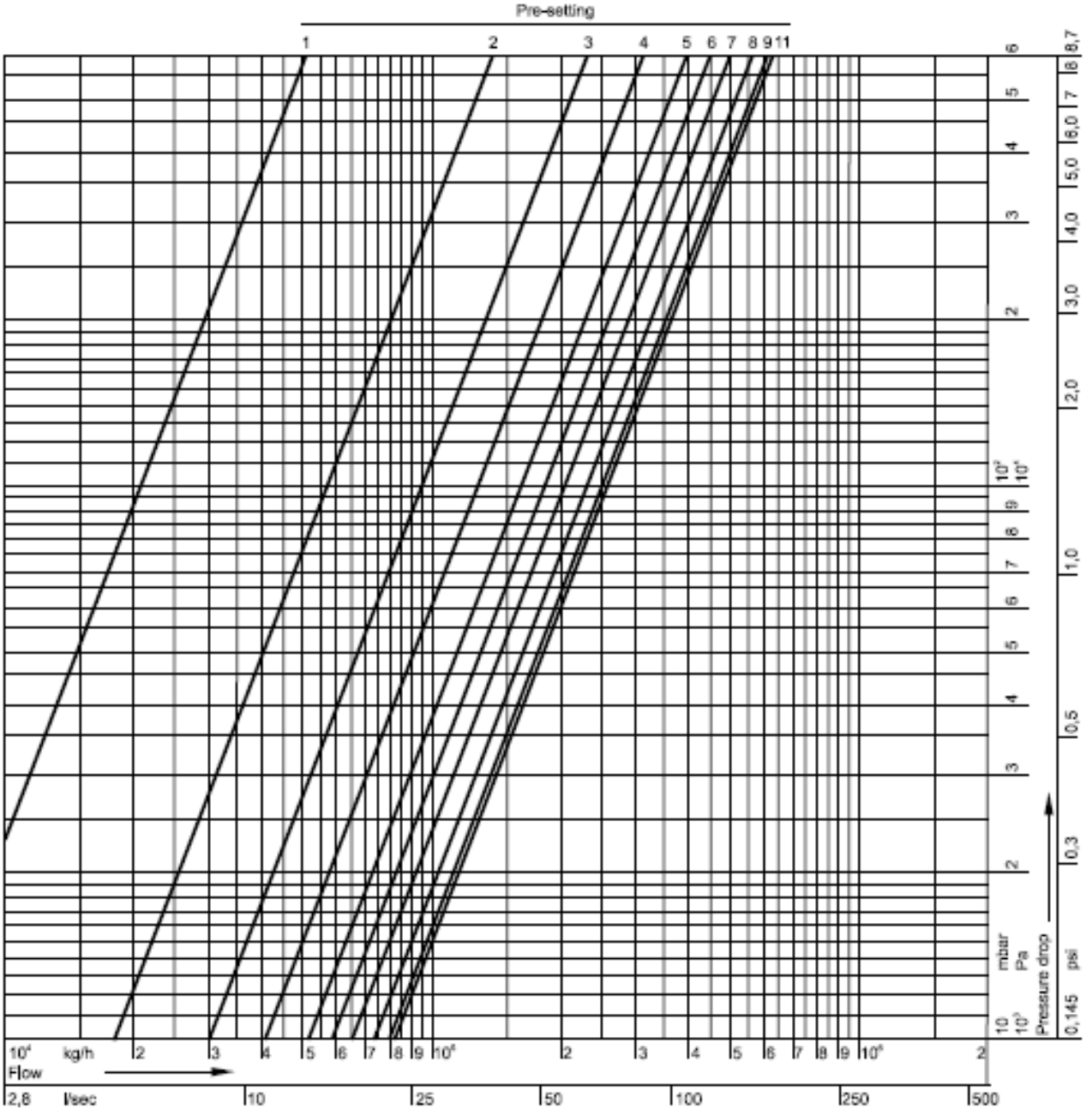


Pre-setting	Close 0	1.5	2.0	2.5	3	3.5	4	4.5	5	5.5	6.0	6.5	7.0	7.5	8.0
Kv-value	-	32.5	41.3	48.9	55.5	62.1	69.3	77.8	88.1	101	115	133	154	179	208
Pre-setting	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	Open 18.0					
Kv-value	284	364	435	489	537	575	613	646	677	Kvs 704					

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN250

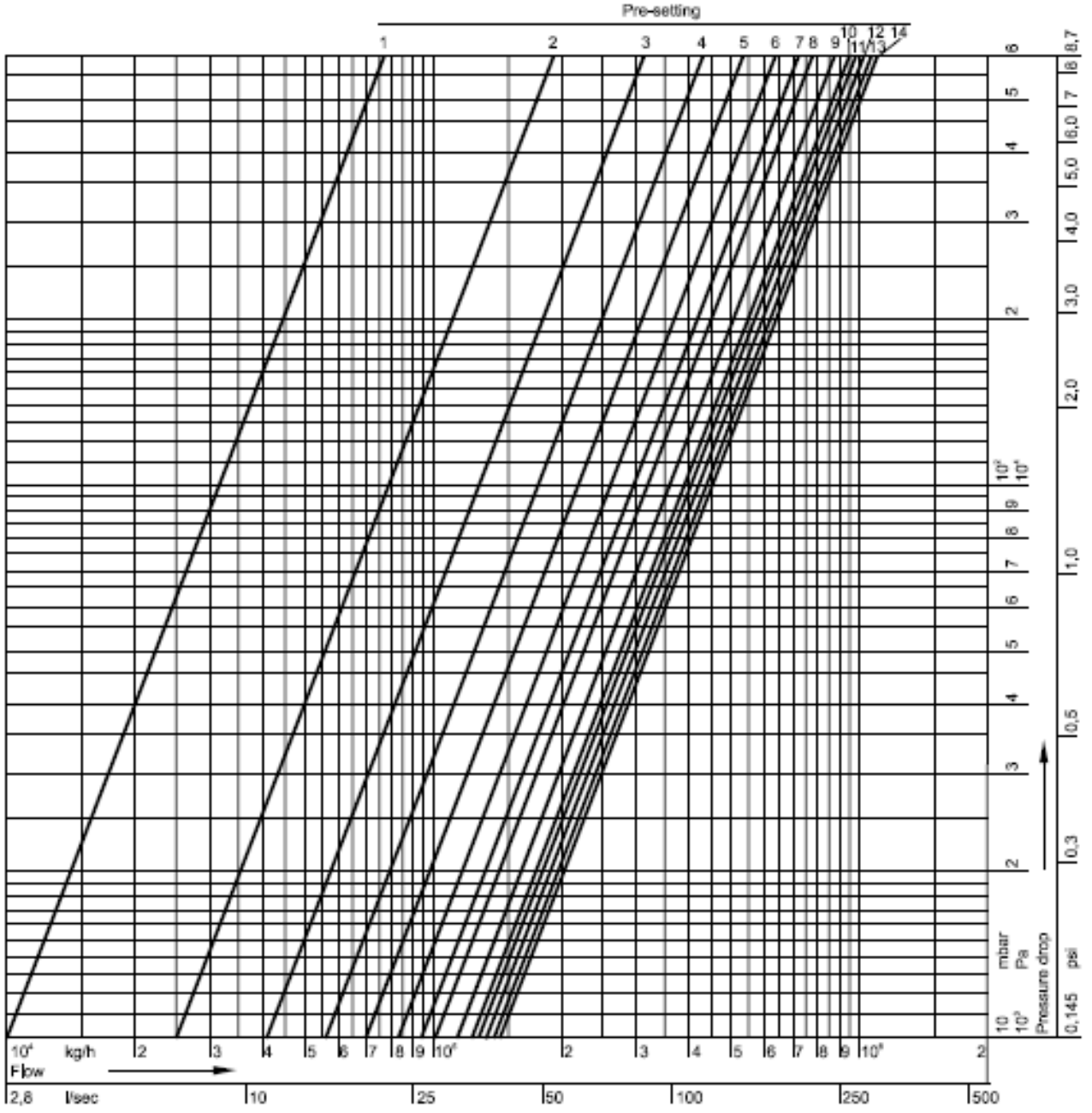


Pre-setting	Close 0	1	2	3	4	5	6	7	8	9	Open 11
Kv-value	-	66	178	297	410	514	587	649	731	800	Kvs 812

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN300

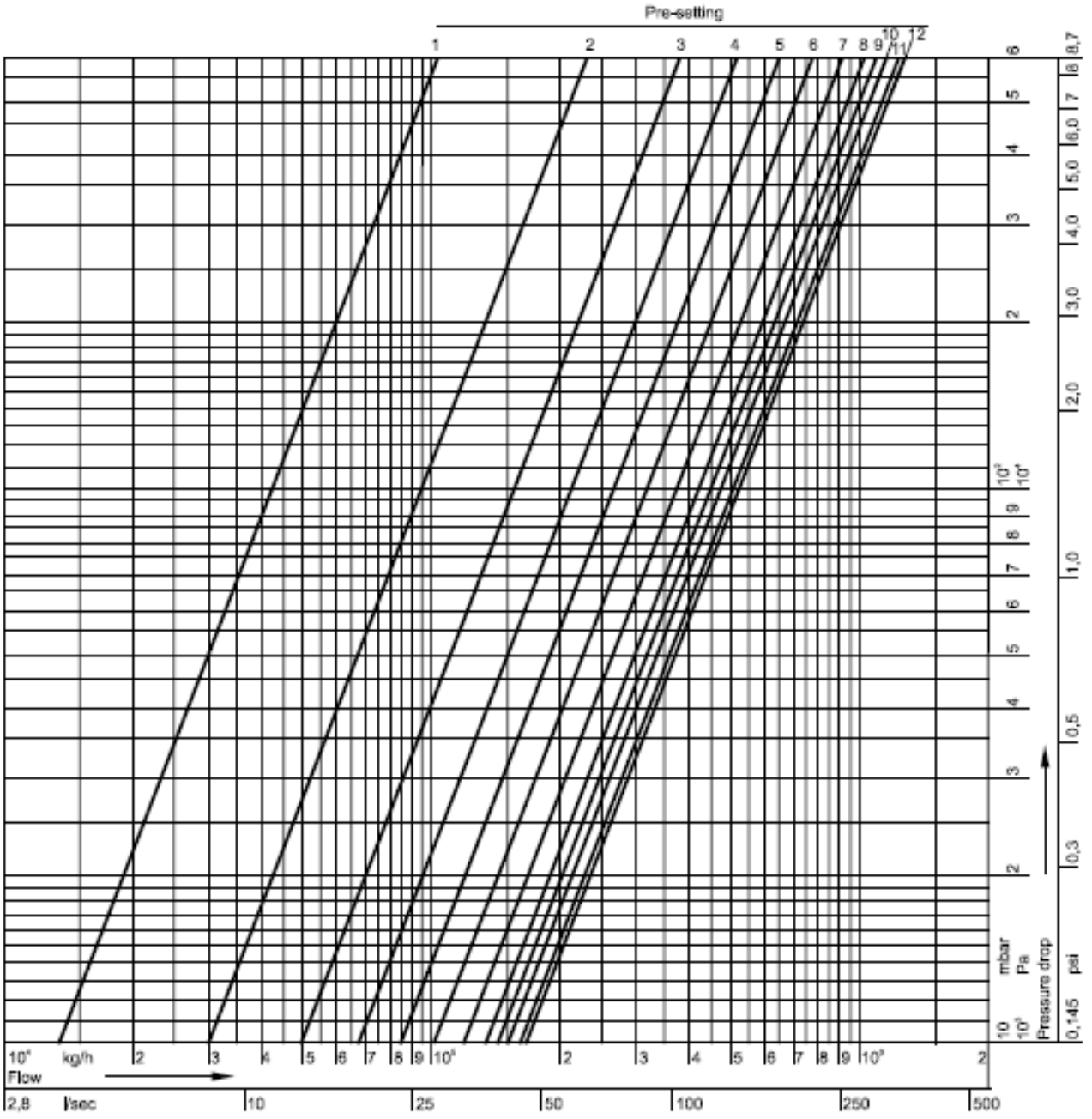


Pre-setting	Close 0	1	2	3	4	5	6	7	8	9	10	11	12	13	Open 14
Kv-value	-	109	248	411	560	696	825	944	1044	1138	1226	1291	1324	1345	Kvs 1380

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN350

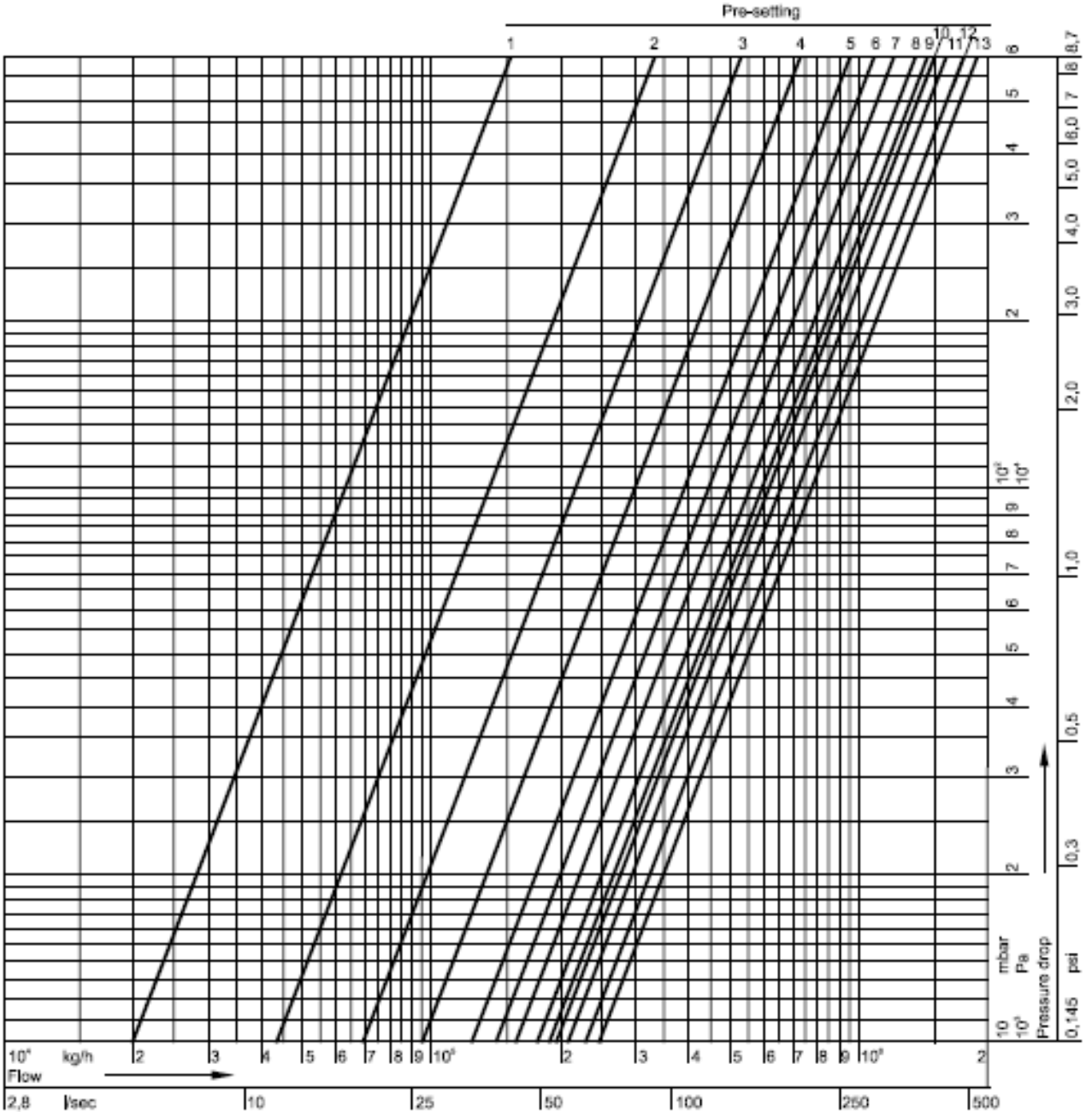


Pre-setting	Close 0	1	2	3	4	5	6	7	8	9	10	11	Open 12
Kv-value	-	128	300	495	677	851	1019	1163	1272	1386	1513	1606	Kvs 1651

Flow charts and Kv table

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*). For fluids with another density, please refer to the correction factor (page 24).

DN400



Pre-setting	Close 0	1	2	3	4	5	6	7	8	9	10	11	12	Open 13
Kv-value	-	201	430	690	946	1182	1409	1612	1752	1874	1991	2092	2256	Kvs 2389

Accessories for 751B and 750B valves

751B with 2754

751B with 2761

751B with 27

751B with 27S

751B with 2758

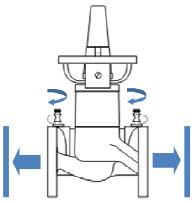
Figure	Description	Size	Code
2754 	Cap + o-ring for 750B and 751B valves (all sizes)	1/4''	VDP00A15
2761 	Test point for 750B and 751B valves (all sizes)	1/4''	276102
27 	Extension for 750B and 751B valves (all sizes)	1/4'' - L = 50mm	VBG95C00
27S 	Extension for 750B and 751B valves (all sizes)	1/4'' - L = 20mm	VPDBWA43
2758 	Measurer adapter for COMAP valves: - For Comap, Honeywell, Oventrop, Danfoss … measurers - For TA measurer		 275802 275801

Spare parts for 751B

Part number: U1400...	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
Black protection cap	01001				02001		03001	04001		05001		06001
Red cone	07001			08001	09001		10001		11001			12001
Black handwheel	13001					14001		15001				16001
Digital displau	17001						18001					

750B and 751B valves Installation

- **Valve and pipe preparation**

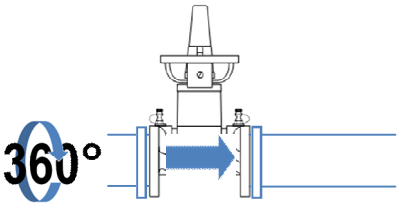


Screw the 2 pressure test point in the test points of the valve.

Remove the flange covers.

Inspect valve and pipe: there should be no foreign body nor dust in the pipe or the valve.

- **Valve orientation**

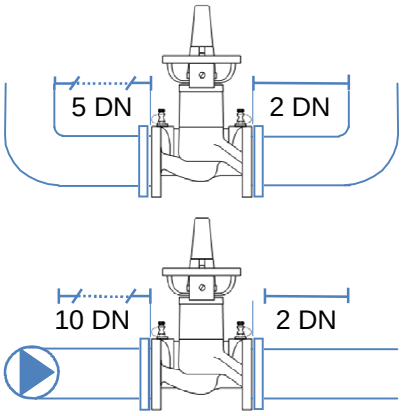


The valve must be mounted in flow direction (see arrow marked on the body).

Can be mounted 360° around pipe axis, but preferred position is vertical, head up (as example). The installation with head down is allowed only when fluid is clean.

Can be installed in either the supply or the return pipe, but installation in the return pipe is recommended.

- **Recommended pipe length**



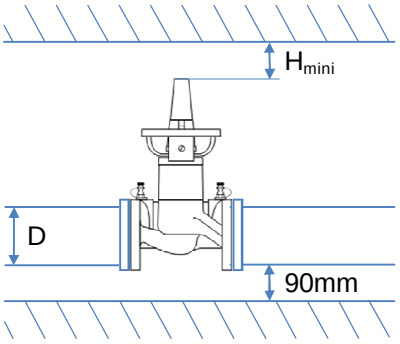
For safeguarding optimum measuring results, inlet and outlet distances of 15 x DN are recommended.

The minimum length of the inlet section:

- downstream of a pump should be 10 x DN,
- downstream of valves or fittings should be 5 x DN.

The minimum length of the outlet section should be at least 2 x DN.

- **Reserved space for accessibility**



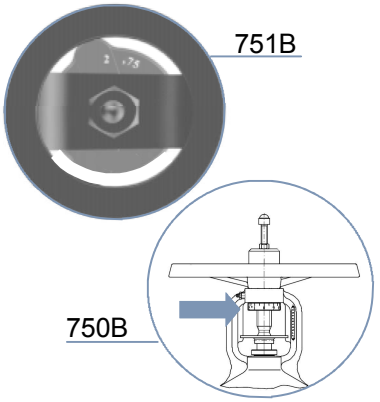
For an easy installation and handling of the balancing valve, a minimum distance (H) should be respected.

The 750B and 751B Balancing Valves can be installed on supply or on return lines and in all positions.

When the pressure test points are located under the balancing valve, there is a risk of dirt stagnation on the pressure test points. The sealing can become difficult. To eliminate these impurities, it is sufficient, time to time, to introduce the hexagonal key in the pressure test point.

Dia.	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400
H mm	60						90				110	140	140	140	140	140

- **Presetting position**



The presetting value of the valve is adjusted by turning the handwheel: the valve closes when handwheel is turned clockwise.

The presetting position is shown by the digital display: from a valve fully closed (position: 0) to a valve fully open (position: depends on valve diameter).

Each turn of the handwheel corresponds to the first digit - display in left window (example: 2).

The presetting subdivision correspond to 1/10 rotation of the handwheel - display in the black window (example: .75).

- **Presetting memorization**

The presenting value can be memorized in order to recover the presetting after having closed completely the valve for instance: when reopening the valve the presetting will be limited to the memorized value.

Remove the black protection cone to access the memorization set.

Adjust the presetting value of the valve by turning the handwheel : the valve closes when the handwheel is turned clockwise.

Tighten the stroke limiter screw until its seats: the setting is memorized.

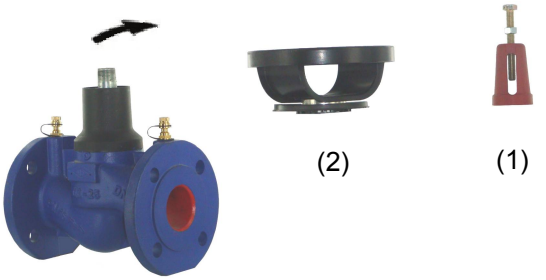
Tighten the nut until its seats: the setting is locked.

Put the black protection cone back.

- **Dismounting and mounting of the handwheel and display**

Close the valve: turn handwheel anti-closewise until “0,0” position is reached.

Remove the black cone.



Unscrew the red cone (1) fitted with the stroke limiter.
Lift the handwheel and digital display (2) all together.

Do not remove the insulation cap.

When fitting back the handwheel, insure that the display is attached and in 0.0 position. The red cone should be screwed on the valve with a maximum torque of 15Nm.

Correction factor

A balancing valve is defined by its flow capacity, the **Kv value - Kv_0**, in m³/h which creates a differential pressure of 1bar *[14.5 psi]* and for fluids with a density of σ_0 = 1000 kg/m³, (i.e. with pure water at a temperature of 20°C *[68°F]*).

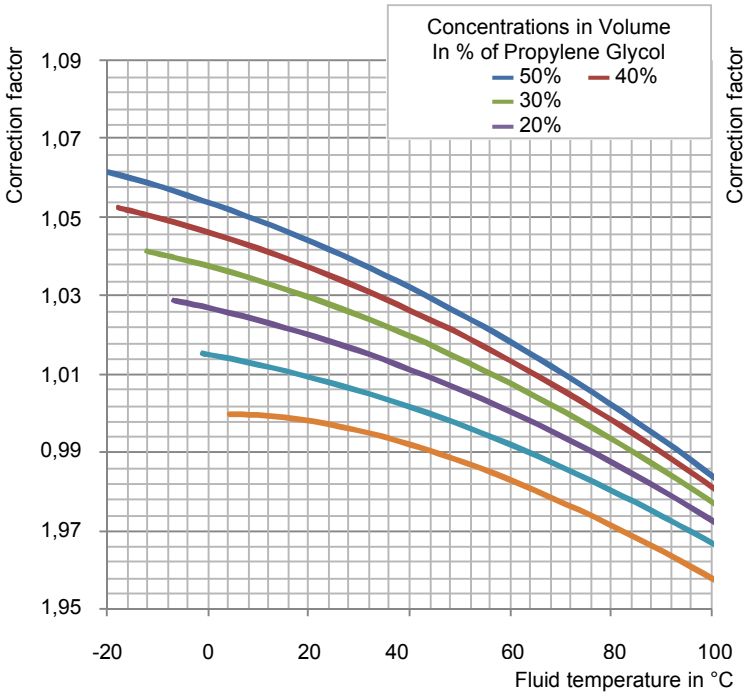
For fluids with another density the Kv-value, Kv_{fluid}, needs to be recalculated using a correction factor, f. In practice, when using charts, the differential pressure must be multiplied by the correction factor, f:

$$Kv_{fluid} = Kv_0 \times \frac{1}{\sqrt{f}}$$

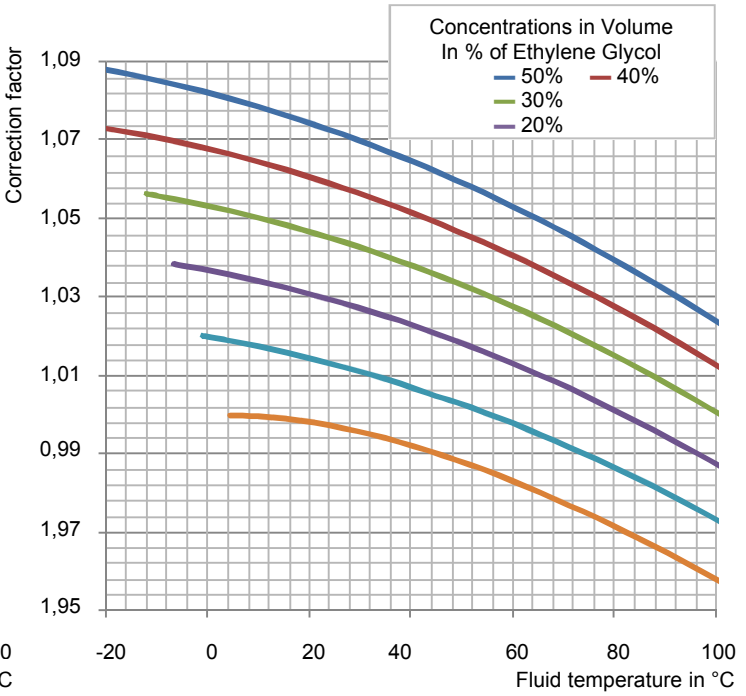
$$\Delta P_{fluid} = \Delta P_0 \times F$$

$$Q_{fluid} = Q_0 \times \frac{1}{\sqrt{f}}$$

Correction factor F
for Aqueous Solutions of Propylene Glycol



Correction factor F
for Aqueous Solutions of Ethylene Glycol



		Correction factor f					
Fluid	% of glycol	5°C	20°C	35°C	50°C	65°C	80°C
Water	0%	1.000	0.998	0.994	0.988	0.981	0.972
Ethylene glycol	10%	1.019	1.015	1.009	1.003	0.995	0.987
	20%	1.036	1.031	1.025	1.018	1.010	1.001
	30%	1.052	1.046	1.040	1.033	1.025	1.015
	40%	1.067	1.061	1.054	1.047	1.038	1.028
	50%	1.081	1.075	1.068	1.059	1.050	1.040
Propylene glycol	0%	1.000	0.998	0.994	0.988	0.981	0.972
	10%	1.014	1.009	1.004	0.997	0.989	0.980
	20%	1.026	1.020	1.014	1.006	0.998	0.988
	30%	1.036	1.030	1.022	1.014	1.004	0.994
	40%	1.044	1.037	1.029	1.020	1.010	0.998
	50%	1.052	1.044	1.035	1.025	1.014	1.002