

Design

The V5032 Kombi-2-plus valve consists of:

- Valve body with pressure test cocks and internal threads DN10...DN20 to DIN2999 (ISO7) for threaded pipe or copper and precision steel pipe 10...20 mm (see Accessories), or
- Valve body DN25...DN80 with pressure test cocks and internal threads to DIN2999 (ISO7) for threaded pipe
- Valve insert with handwheel
- Pre-setting dial and display

Materials

- Valve housing made of red bronze
- Valve insert and pressure test cocks made of brass with seat sealing made of PTFE
- O-rings and soft seals made of EPDM
- Handwheel, pre-setting dial and display made of plastic, blue and black

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Application

The hydronic balance is a significant requirement for the efficient operation of a hydronic heating or cooling installation. In an unbalanced system under or over provision of hot water to individual radiators or circuits can occur. Apart from the correct selection of radiator valves, regulation of individual circuits is also necessary and in some cases, such as in DIN 18 380, VOB part C, required by national standards.

This requirement is met with V5032 Kombi-2-plus double-regulating balancing valves.

The V5032 Kombi-2-plus is a variable orifice double-regulating balancing valve for the return with additional functions shutoff, draining and filling.

Together with a V5012 Kombi-DP diaphragm unit the V5032 Kombi-2-plus can be upgraded to an automatic balancing valve – even after the system has been taken into commission and under system pressure.

Features

- **Dimensions DN15 to DN40 can be retrofitted with a Kombi-Diaphragm Unit**
- **High accuracy of the pre-setting because of individual adjustment**
- **Robust valve body made of corrosion resistant red bronze**
- **Available in sizes up to DN80**
- **Visible pre-setting dial with concealed pre-setting wheel**
- **Maintenance free spindle with double O-ring sealings**
- **PTFE seat sealing**

Please Note:

- To avoid stone deposit and corrosion the composition of the medium should conform with VDI-Guideline 2035
- Additives have to be suitable for EPDM sealings
- System has to be flushed thoroughly before initial operation with all valves fully open
- Any complaints or costs resulting from non-compliance with above rules will not be accepted by Honeywell
- Please contact us if you should have any special requirements or needs

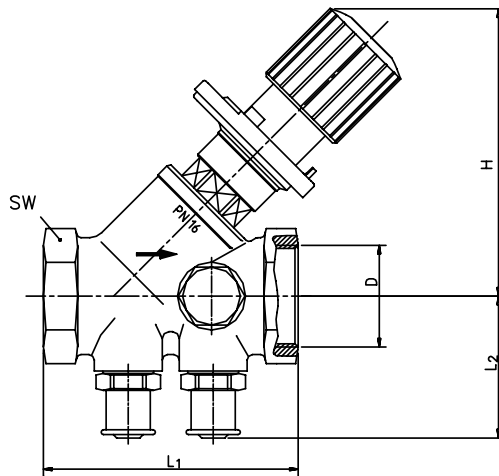
Specifications

Medium	Water, water-glycole mixture
Operating temperature	2...130°C (36...266°F)
Operating pressure	max. 16 bar (232 psi)
kvs (cv)-values	see table below

Ordering Information

Order text	DN	Thread	kvs (cv)-value	OS-No.
V5032 Kombi-2-plus variable orifice double-regulating balancing valve with internal threads to DIN 2999 (ISO 7) on inlet and outlet	15	Rp 1/2"	2.7 (3.2)	V5032Y0015
	20	Rp 3/4"	6.4 (7.5)	V5032Y0020
	25	Rp 1"	6.8 (8.0)	V5032Y0025
	32	Rp 1 1/4"	21.0 (24.6)	V5032Y0032
	40	Rp 1 1/2"	22.0 (25.7)	V5032Y0040
	50	Rp 2"	38.0 (44.5)	V5032Y0050
	65	Rp 2 1/2"	47.7 (55.8)	V5032Y0065
	80	Rp 3"	71.0 (83.1)	V5032Y0080

Dimensions



DN	kvs (cv)-value	D	H	L1	L2	SW
15	2,7 (3,16)	Rp1/2"	85	65	41	27
20	6,4 (7,49)	Rp3/4"	100	75	42	32
25	6,8 (7,96)	Rp1"	100	90	45	41
32	21,0 (24,6)	Rp1 1/4"	137	110	46	50
40	22,0 (25,7)	Rp1 1/2"	137	120	49	55
50	38,0 (44,5)	Rp2"	158	150	55	70
65	47,7 (55,8)	Rp2 1/2"	195	180	68	85
80	71,0 (83,1)	Rp3"	210	200	75	100

NOTE: All values in mm if not stated otherwise.
Dimension 'H' refers to fully open valve.

Accessories


Connections

Set of compression ring and nut

	1/2" x 10 mm	VA650A1210
	1/2" x 12 mm	VA650A1212
	1/2" x 14 mm	VA650A1214
	1/2" x 15 mm	VA650A1215
	1/2" x 16 mm	VA650A1216
	3/4" x 18 mm	VA650A2018
	3/4" x 22 mm	VA650A2022

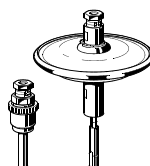
NOTE: Support inserts have to be used for soft copper and steel pipe (wall thickness 1 mm).

Set of compression ring, nut and support insert (2 pcs each)

	1/2" x 12 mm	VA651A1212
	1/2" x 15 mm	VA651A1215
	1/2" x 16 mm	VA651A1216
	3/4" x 18 mm	VA651A2018

Accessories

V5012 Kombi-DP diaphragm unit for valves DN15...DN40

	Setting range 0.1...0.3 bar (1.45...4.35 psi) differential pressure	V5012C0103
	Setting range 0.3...0.6 bar (4.35...8.7 psi) differential pressure	V5012C0306

NOTE: For product information and diagrams see product data sheet 'V5012C Kombi-DP'

The V5032 Kombi-2-plus valve must be pre-set to 1.5 (for DN15...25) or 1.0 (DN32...40) when used with the Kombi-Diaphragm Unit.

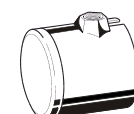
Pump pressure: max. 2 bar (29 psi)

V5100 Stop Valve-3 as shutoff valve and V5012 Kombi-DP connection point in the supply

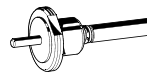
	DN15	V5100Y0015
	DN20	V5100Y0020
	DN25	V5100Y0025
	DN32	V5100Y0032
	DN40	V5100Y0040

NOTE: For product information and diagrams see product data sheet 'V5100 Stop Valve-3'

VA2501A Tamper-proof cap

	for valves DN15...DN25	VA2501A010
	for valves DN32...DN50	VA2501A032

VA2500A Adapter for actuators with M 30 x 1,5 connection

	for valves DN15...DN40	VA2500A001
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Kvs-values for V5032 Kombi-2-plus with installed adapter:

DN	15	20	25	32	40
kvs-value	1.50	3.50	3.50	5.50	5.50
cv-value	1.76	4.1	4.1	6.44	6.44

NOTE: The V5032 Kombi-2-plus valve must be pre-set to 1.5 (for DN15...25) or 1.0 (DN32...40) when used with actuator.

Pump pressure: max. 2 bar (29 psi)

VA2510B Insulation shells

	for valves DN15	VA2510B015
	for valves DN20	VA2510B020
	for valves DN25	VA2510B025
	for valves DN32	VA2510B032
	for valves DN40	VA2510B040
	for valves DN50	VA2510B050

NOTE: For product information see product data sheet 'VA2510B Insulation Shells'.

VA3500A Draining adapter

	for all sizes	VA3500A001
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Measuring equipment


VA2601A Extension piece for pressure test cocks, length 45 mm – for use with insulated Kombi-2-plus

	for all sizes	VA2601A008
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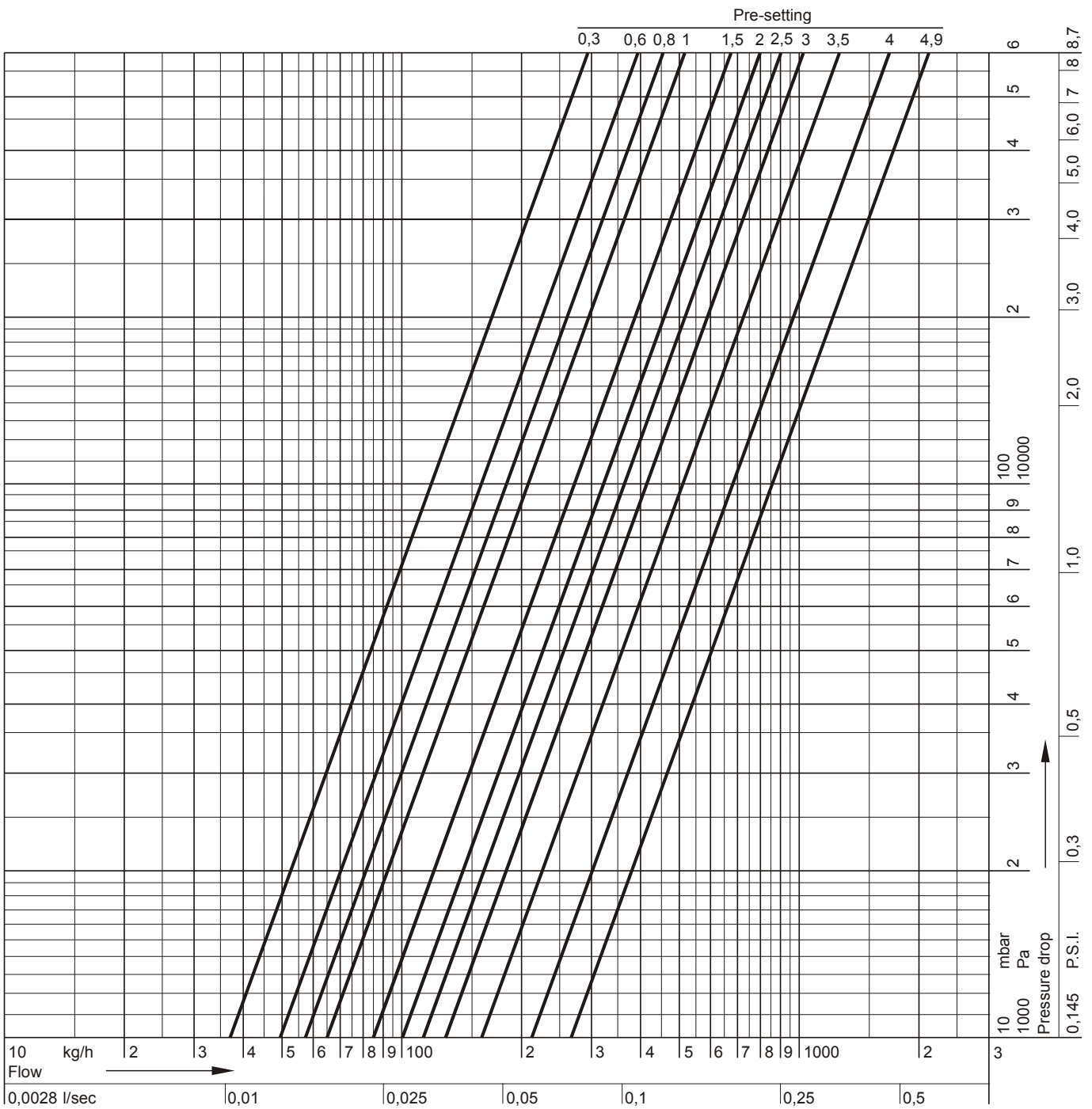
VS3600A Measuring adapters (2 pcs)

	for all sizes	VS3600A008
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VM241 BasicMES handheld measuring computer

	for all sizes; computer is supplied with case and accessories	VM241A1002
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Flow Data DN15

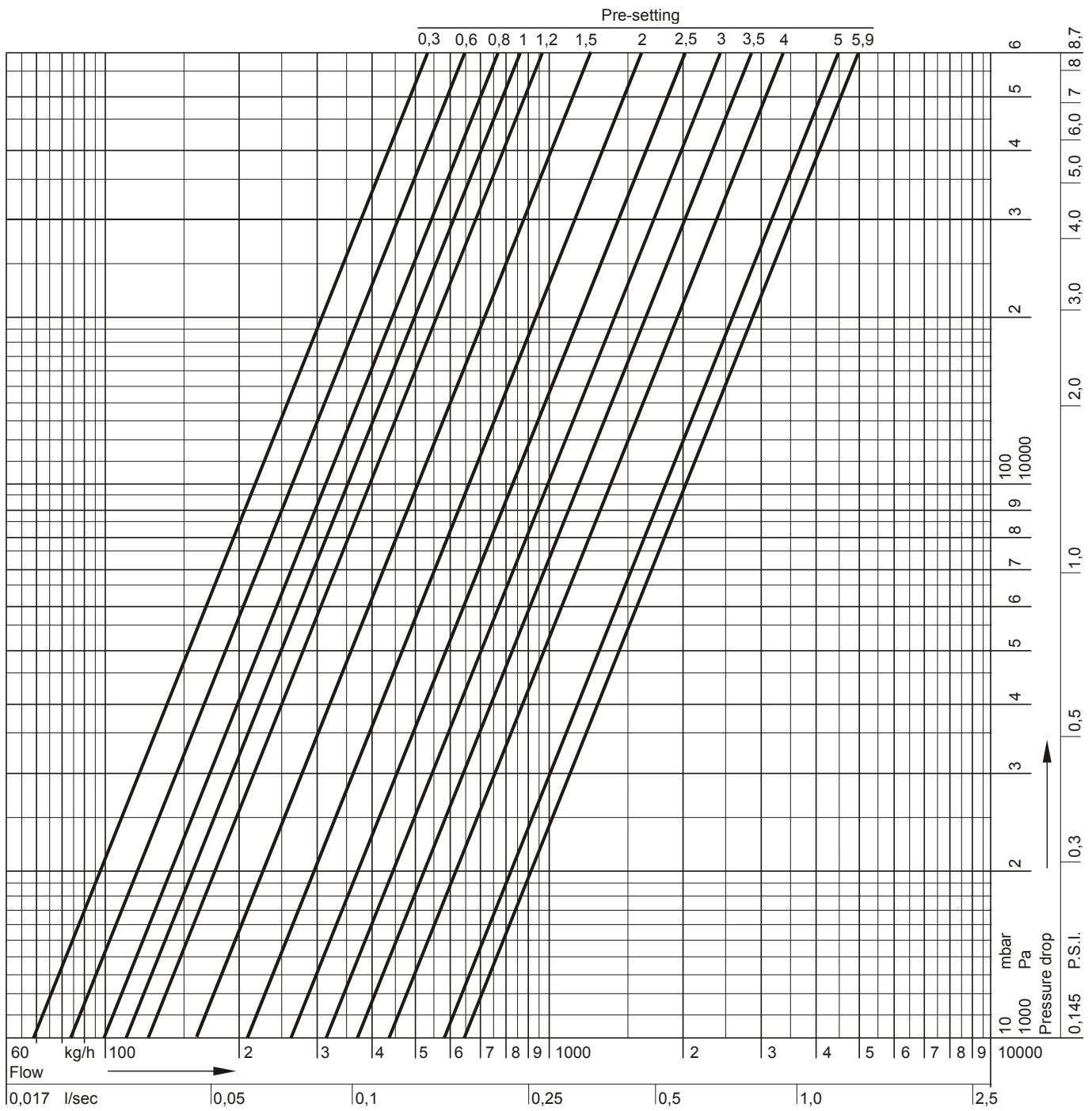


Pre-setting	0,3	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6
k_v-value	0,37	0,43	0,49	0,57	0,65	0,73	0,81	0,88	0,94	1,00	1,05	1,10	1,16	1,22	1,32	1,42	1,57	1,74
cv-value	0,43	0,50	0,57	0,67	0,76	0,85	0,95	1,03	1,10	1,17	1,23	1,29	1,36	1,43	1,54	1,66	1,84	2,04

Pre-setting	3,8	4,0	4,2	4,4	4,6	4,8	4,9 = open
k_v-value	1,92	2,12	2,31	2,49	2,63	2,67	k _{vs} = 2,70
cv-value	2,25	2,48	2,70	2,91	3,08	3,12	3,16

NOTE: Flow diagram is ONLY valid for valve WITHOUT installed actuator (-adapter) or Kombi-Diaphragm Unit

Flow Data DN20

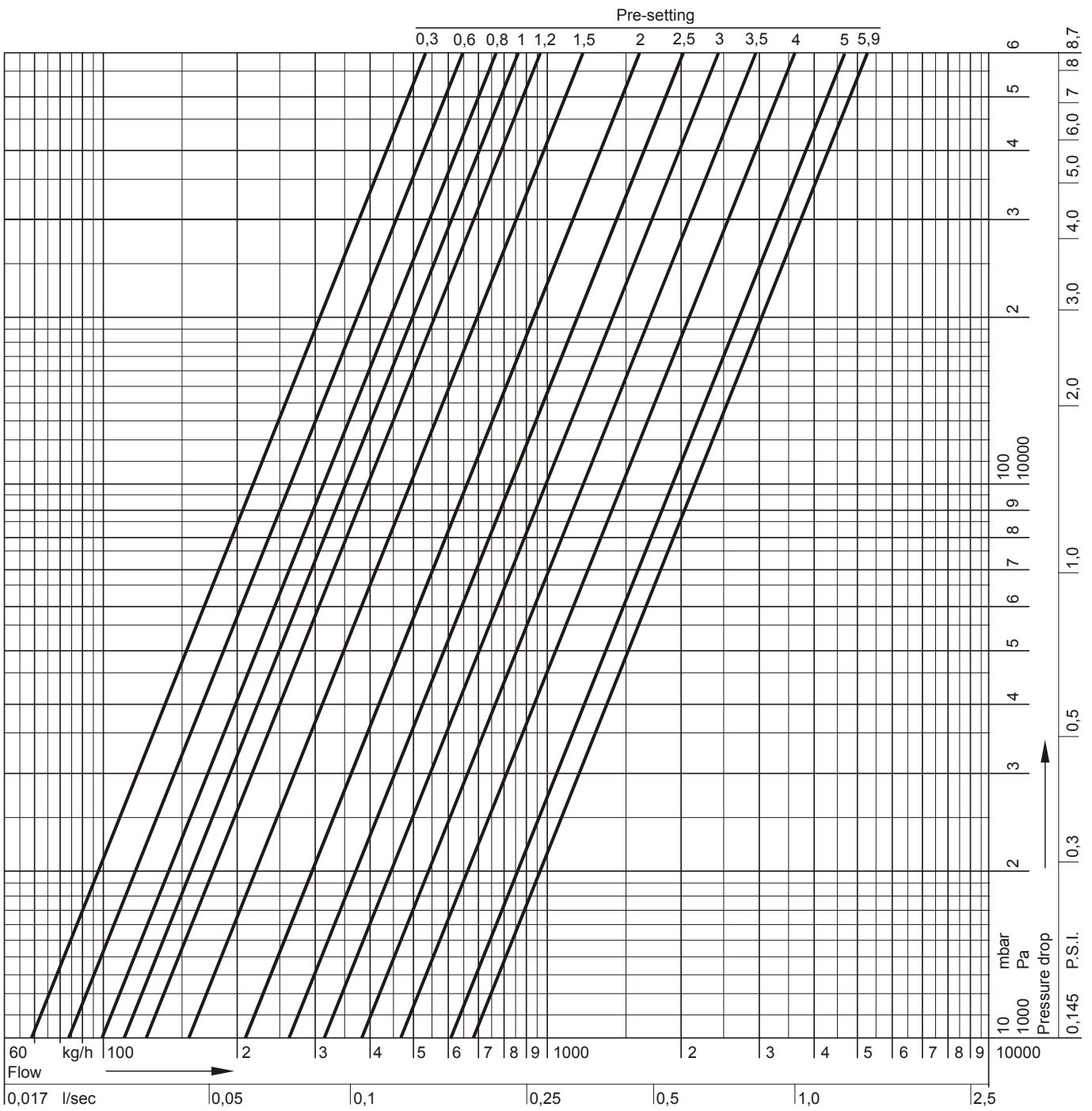


Pre-setting	0,3	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6
k_v-value	0,68	0,72	0,84	0,97	1,10	1,30	1,50	1,70	1,90	2,10	2,30	2,50	2,70	2,91	3,12	3,36	3,60	3,86
cv-value	0,80	0,84	0,98	1,13	1,29	1,52	1,76	1,99	2,22	2,46	2,69	2,93	3,16	3,40	3,65	3,93	4,21	4,52

Pre-setting	3,8	4,0	4,2	4,4	4,6	4,8	5,0	5,2	5,4	5,6	5,8	5,9 = open
k_v-value	4,12	4,40	4,69	4,99	5,28	5,57	5,84	6,07	6,26	6,32	6,38	k _{vs} = 6,40
cv-value	4,82	5,15	5,49	5,84	6,18	6,52	6,83	7,10	7,32	7,39	7,46	7,49

NOTE: Flow diagram is ONLY valid for valve WITHOUT installed actuator (-adapter) or Kombi-Diaphragm Unit

Flow Data DN25

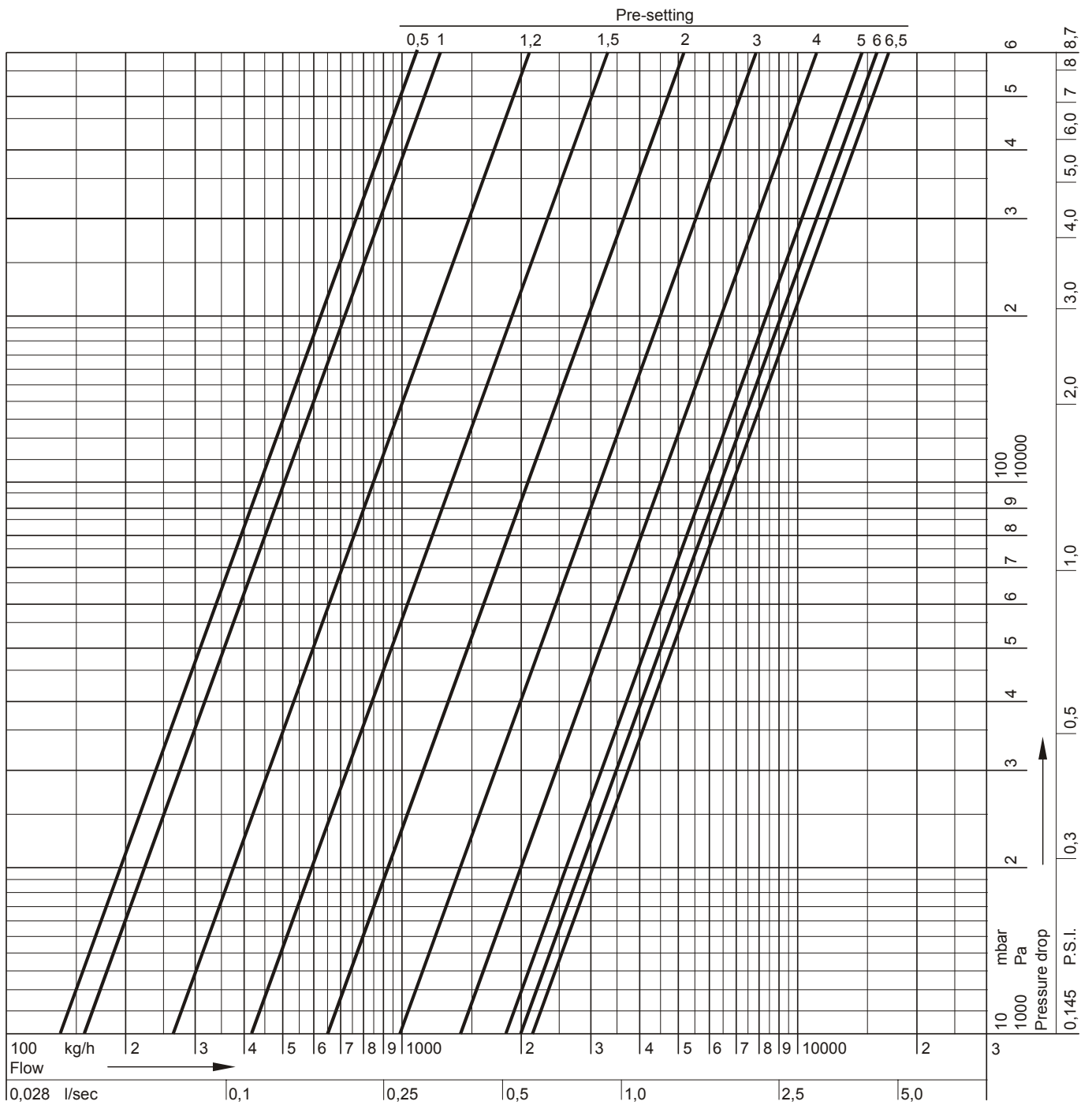


Pre-setting	0,3	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6
k_v-value	0,68	0,72	0,84	0,97	1,10	1,30	1,50	1,70	1,90	2,10	2,30	2,50	2,70	2,95	3,20	3,48	3,76	4,05
cv-value	0,80	0,84	0,98	1,13	1,29	1,52	1,76	1,99	2,22	2,46	2,69	2,93	3,16	3,45	3,74	4,07	4,40	4,74

Pre-setting	3,8	4,0	4,2	4,4	4,6	4,8	5,0	5,2	5,4	5,6	5,8	5,9 = open
k_v-value	4,34	4,64	4,94	5,24	5,52	5,80	6,06	6,30	6,50	6,65	6,75	k _{vs} = 6,80
cv-value	5,08	5,43	5,78	6,13	6,46	6,79	7,09	7,37	7,61	7,78	7,90	7,96

NOTE: Flow diagram is ONLY valid for valve WITHOUT installed actuator (-adapter) or Kombi-Diaphragm Unit

Flow Data DN32

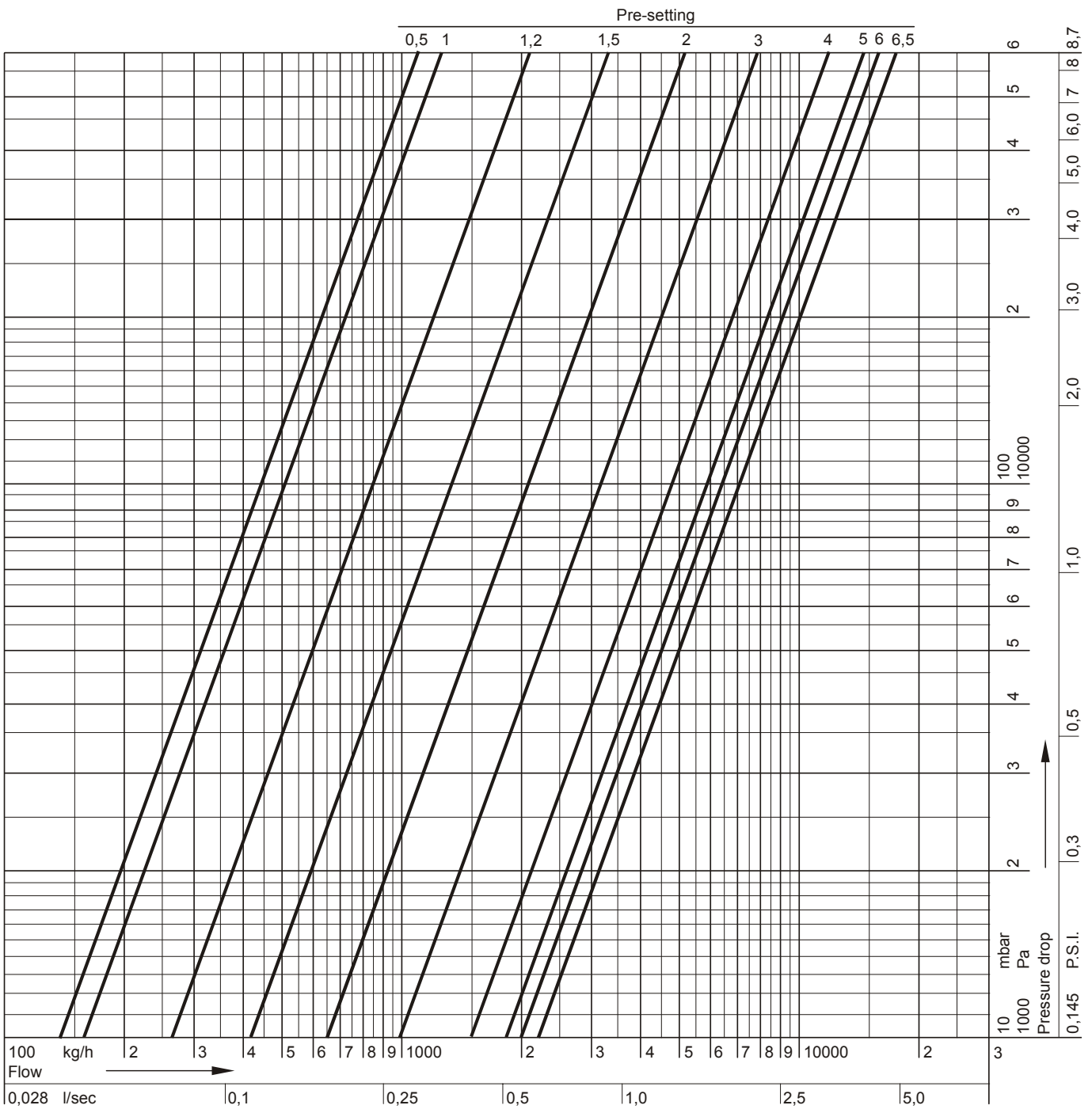


Pre-setting	0,5	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6	3,8
k_v-value	1,40	1,45	1,55	1,60	2,60	3,70	4,80	5,90	6,50	6,90	7,50	8,30	9,20	10,2	11,2	12,2	13,2	14,1
cv-value	1,64	1,70	1,81	1,87	3,04	4,33	5,62	6,90	7,61	8,07	8,78	9,71	10,8	11,9	13,1	14,3	15,4	16,5

Pre-setting	4,0	4,2	4,4	4,6	4,8	5,0	5,2	5,4	5,6	5,8	6,0	6,2	6,4	6,5 = open
k_v-value	15,0	15,8	16,5	17,1	17,7	18,2	18,6	19,0	19,4	19,7	20,0	20,4	20,8	k _{vs} = 21,0
cv-value	17,6	18,5	19,3	20,0	20,7	21,3	21,8	22,2	22,7	23,0	23,4	23,9	24,3	24,6

NOTE: Flow diagram is ONLY valid for valve WITHOUT installed actuator (-adapter) or Kombi-Diaphragm Unit

Flow Data DN40

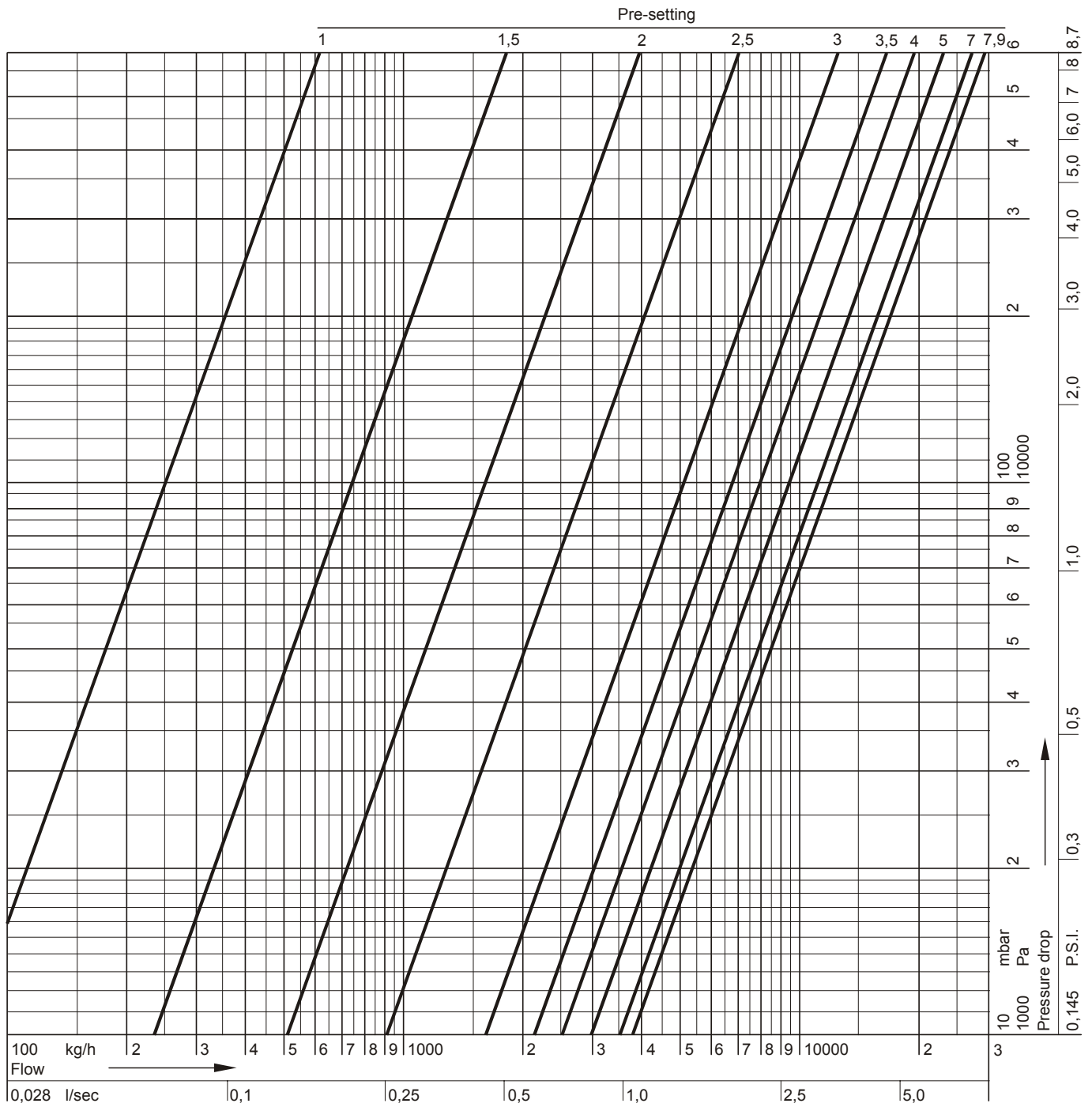


Pre-setting	0,5	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6	3,8
kv-value	1,40	1,45	1,55	1,60	2,60	3,70	4,80	5,90	6,50	6,90	7,50	8,30	9,20	10,2	11,2	12,2	13,2	14,1
cv-value	1,64	1,70	1,81	1,87	3,04	4,33	5,62	6,90	7,61	8,07	8,78	9,71	10,8	11,9	13,1	14,3	15,4	16,5

Pre-setting	4,0	4,2	4,4	4,6	4,8	5,0	5,2	5,4	5,6	5,8	6,0	6,2	6,4	6,5 = open
kv-value	15,0	15,8	16,5	17,1	17,7	18,2	18,6	19,0	19,4	19,7	20,0	20,8	21,6	kv _s = 22,0
cv-value	17,6	18,5	19,3	20,0	20,7	21,3	21,8	22,2	22,7	23,0	23,4	24,3	25,3	25,7

NOTE: Flow diagram is ONLY valid for valve WITHOUT installed actuator (-adapter) or Kombi-Diaphragm Unit

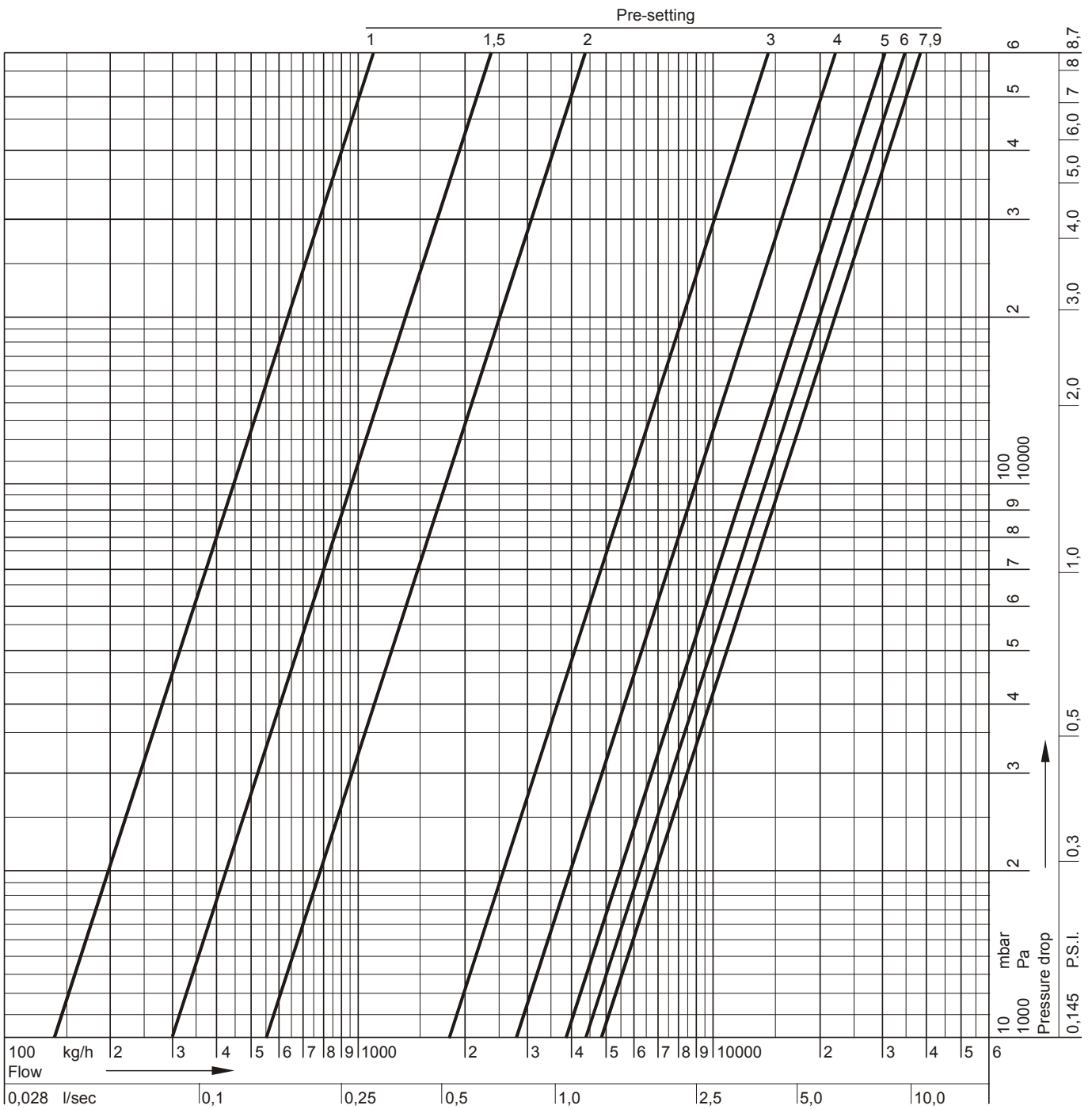
Flow Data DN50



Pre-setting	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6	3,8	4,0	4,2	4,4
kv-value	0,80	1,25	1,88	2,72	3,78	5,10	6,68	8,54	10,7	13,0	15,6	18,7	21,0	22,8	24,3	25,4	26,4	27,2
cv-value	0,94	1,46	2,20	3,18	4,42	5,97	7,82	9,99	12,5	15,2	18,3	21,9	24,6	26,7	28,4	29,7	30,9	31,8

Pre-setting	4,6	4,8	5,0	5,2	5,4	5,6	5,8	6,0	6,2	6,4	6,6	6,8	7,0	7,2	7,4	7,6	7,9 = open
kv-value	28,0	28,8	29,5	30,2	31,0	31,7	32,4	33,0	33,6	34,1	34,6	35,0	35,4	35,8	36,2	36,8	k _{vs} = 38,0
cv-value	32,8	33,7	34,5	35,3	36,3	37,1	37,9	38,6	39,3	39,9	40,5	41,0	41,4	41,9	42,4	43,1	44,5

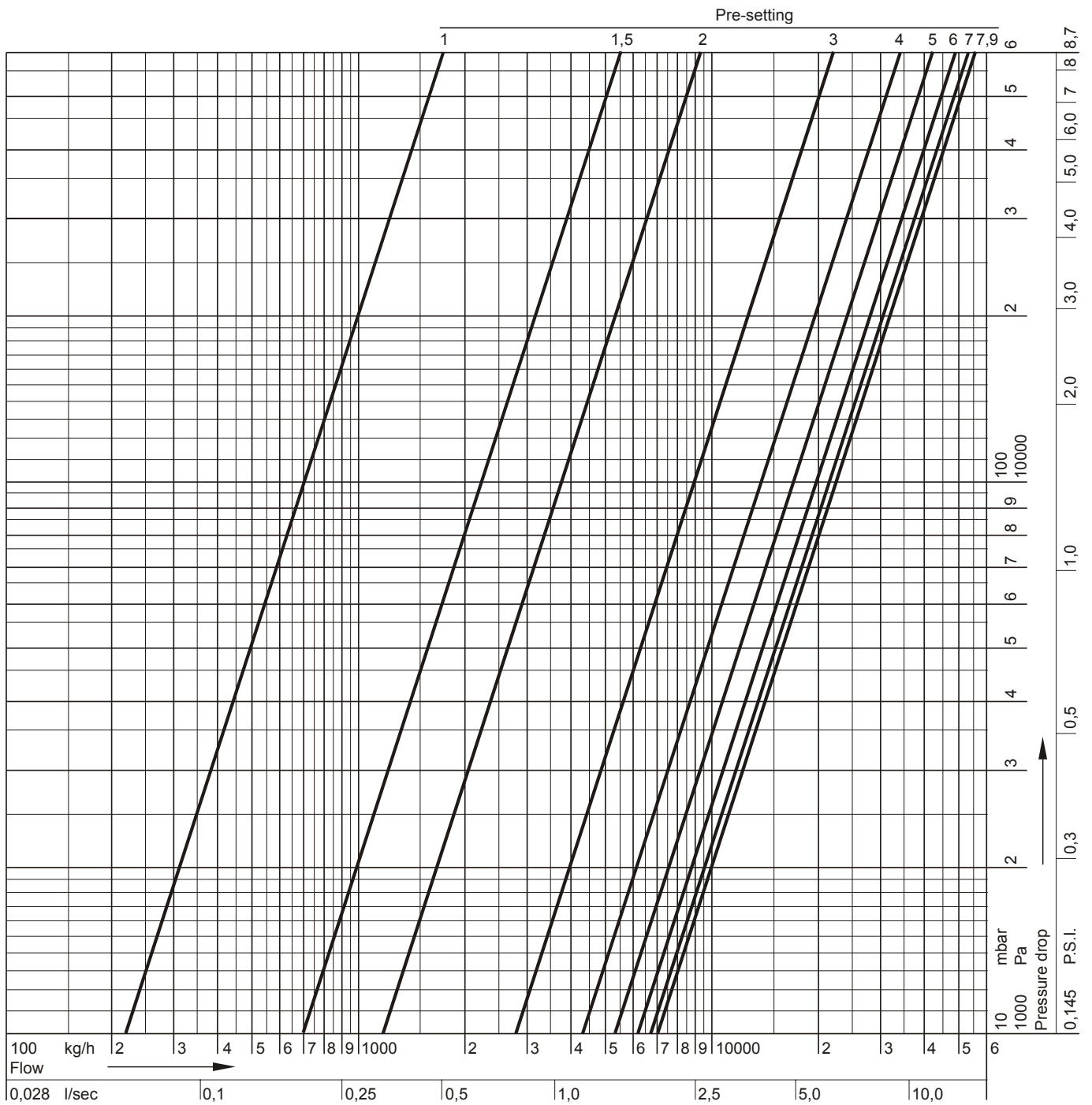
Flow Data DN65



Pre-setting	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6	3,8	4,0	4,2	4,4
k_v-value	1,40	1,50	2,50	3,50	4,50	5,50	7,70	10,0	12,2	14,5	16,7	19,0	21,3	23,7	26,0	28,3	30,1	31,9
cv-value	1,64	1,76	2,93	4,10	5,27	6,44	9,01	11,7	14,3	17,0	19,5	22,2	24,9	27,7	30,4	33,1	35,2	37,3

Pre-setting	4,6	4,8	5,0	5,2	5,4	5,6	5,8	6,0	6,2	6,4	6,6	6,8	7,0	7,2	7,4	7,6	7,9 = open
k_v-value	33,6	35,4	37,2	38,6	40,1	41,5	43,0	44,0	44,9	45,4	46,0	46,5	47,0	47,1	47,3	47,4	k _{vs} = 47,7
cv-value	39,3	41,4	43,5	45,2	46,9	48,6	50,3	51,5	52,5	53,1	53,8	54,4	55,0	55,0	55,3	55,5	55,8

Flow Data DN80



Pre-setting	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2	3,4	3,6	3,8	4,0	4,2	4,4
k_v-value	2,20	4,20	6,20	8,10	10,1	12,1	15,3	18,5	21,6	24,8	28,0	30,9	33,9	36,8	39,8	42,7	44,9	47,0
k_v-value	2,57	4,91	7,25	9,48	11,8	14,2	17,9	21,6	25,3	29,0	32,8	36,1	39,7	43,1	46,6	50,0	52,5	55,0

Pre-setting	4,6	4,8	5,0	5,2	5,4	5,6	5,8	6,0	6,2	6,4	6,6	6,8	7,0	7,2	7,4	7,6	7,9 = open
k_v-value	49,2	51,3	53,5	55,2	57,0	58,7	60,5	62,2	63,4	64,5	65,7	66,8	68,0	68,6	69,2	69,8	k _{vs} = 71,0
k_v-value	57,6	60,0	62,6	64,6	66,7	68,7	70,8	72,8	74,2	75,5	76,9	78,2	79,6	80,3	81,0	81,7	83,1

Influence of Coolants on Flow Values

The flow through a valve is defined by the k_v -value. The k_v -value is the flow m through a valve in [m³/h] at a differential pressure of 1 bar (14,5 psi) and is only valid for fluids with a density of $\rho_0 = 1000 \text{ kg/m}^3$. This condition is met by water at a temperature of 20°C (68°F). For fluids with another density the following formula can be applied:

$$K_{V_{Medium}} = \frac{m}{\sqrt{\Delta p}} \times \frac{\sqrt{\rho_{Medium}}}{\sqrt{\rho_0}}$$

Correction Factor f

When the density σ is expressed in t/m³ instead of kg/m³ the correction factor f is the result. The correction factor f can be used to re-calculate k_v -value, pressure drop and flow:

$$K_{V_{Medium}} = K_{V_0} \times \frac{1}{\sqrt{f}}$$

$$\Delta p_{Medium} = \Delta p_0 \times f$$

$$m_{Medium} = m_0 \times \frac{1}{\sqrt{f}}$$

Table 1. Values for correction factor f

Medium	water part	Correction factor f					
		5°C (41°F)	20°C (68°F)	35°C (95°F)	50°C (122°F)	65°C (149°F)	80°C (176°F)
Normal water	100%	1,000	0,998	0,994	0,988	0,981	0,972
Ethylen glycol	70%	1,052	1,047	1,041	1,033	1,024	1,015
e.g. Antifrogen N	50%	1,086	1,079	1,070	1,061	1,052	1,042
Propylen glycol	70%	1,035	1,029	1,021	1,012	1,002	0,991
e.g. Antifrogen L	50%	1,053	1,044	1,035	1,025	1,014	1,002

For more information on Honeywell balancing and pipeline valves see www.honeywell-valvesizing.com.

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