



Braukmann V5000, V5010 Kombi-3-plus

Balancing and shut-off valves

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 18380, VOB part C, required by national standards.

This requirement is met with Kombi-3-plus Series balancing valves.

The V5000 Kombi-3-plus RED is a fixed orifice measuring valve for the supply with additional functions shut-off, draining and filling.

The V5010 Kombi-3-plus BLUE for the return is a double regulating balancing valve with additional functions shut-off, draining and filling.

Together with a V5012 Kombi-DP diaphragm unit the Kombi-3-plus can be upgraded to an automatic balancing valve – even after the system has been taken into commission and under system pressure.




SPECIAL FEATURES

- V5010 Kombi-3-plus BLUE DN10 to DN40 can be retrofitted with a Kombi-DP diaphragm unit (V5012) – with-out interrupting operation of the system
- High accuracy of presetting because of individual adjustment
- Visible presetting dial with concealed presetting wheel (V5010 Kombi-3-plus BLUE)
- All functions of the Kombi-3-plus valves can be installed through the spindle
- Combination of Kombi-3-plus RED and BLUE allows measuring in the supply and pre-setting in the return – at the same time
- Robust valve body made of corrosion resistant red bronze
- Available in sizes up to DN80
- Maintenance free spindle with double O-ring sealings
- PTFE-seat sealing

TECHNICAL DATA

Media	
Medium:	Water or water-glycol mixture, quality to VDI 2035
Pressure values	
Max. operating pressure:	max. 16 bar (232 psi)
Operating temperatures	
DN15 to DN50:	-20 - 130 °C (-4 - 266 °F)
DN65 and DN80:	-20 - 110 °C (-4 - 230 °F)
Specifications	
k _{vs} (cv)-values:	see tables and flow diagrams
Note:	To avoid stone deposit and corrosion the composition of the medium should conform with VDI-Guideline 2035
Note:	Additives have to be suitable for EPDM sealings
Note:	System has to be flushed thoroughly before initial operation with all valves fully open
Note:	Any complaints or costs resulting from non-compliance with above rules will not be accepted
Note:	Please contact us if you should have any special requirements or needs

CONSTRUCTION

Overview	Components	Materials
	1 Valve body DN10 to DN20 with internal threads to DIN 2999 (ISO 7) for threaded pipe or copper and precision steel pipe 10 - 20 mm (see Accessories)	Red bronze
	2 Valve body DN25 to DN80 with internal threads to DIN 2999 (ISO 7) for threaded pipe	Red bronze
	3 Valve body DN10 to DN50 with external threads to ISO 228 for use with connections (see Accessories)	Red bronze
	Not depicted components:	
	Valve insert with handwheel and pre-setting dial and display (V5010 only)	Brass with seat sealing made of PTFE
Seat sealing	PTFE	
O-rings and soft seals	EPDM	
Connection nut	Brass	
Handwheel, presetting dial and display	Plastic, red or blue and white Metal for DN65 and DN80	

METHOD OF OPERATION

The Kombi-3-plus Series consists of the following valves:

- V5000 Kombi-3-plus RED fixed orifice measuring valve body
- V5010 Kombi-3-plus BLUE double-regulating balancing valve

A red and a blue Kombi-3-plus are installed as combination in the supply and return pipeline and can be further upgraded with the following components:

- V5012 Kombi-DP upgrade kit to convert the V5010 Kombi-3-plus BLUE into an automatic balancing valve (also see separate data sheet EN3H-0281GE25)
- Valve body DN10 to DN50 with external threads to ISO 228 for use with connections (see Accessories)
- Valve insert with handwheel
- Presetting dial and display (V5010 only)

INSTALLATION GUIDELINES

Installation Example

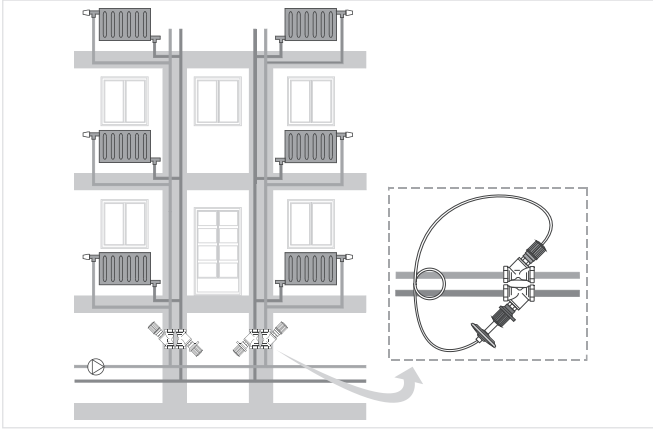


Fig. 1 Kombi-3-plus RED and BLUE in ascending pipeline

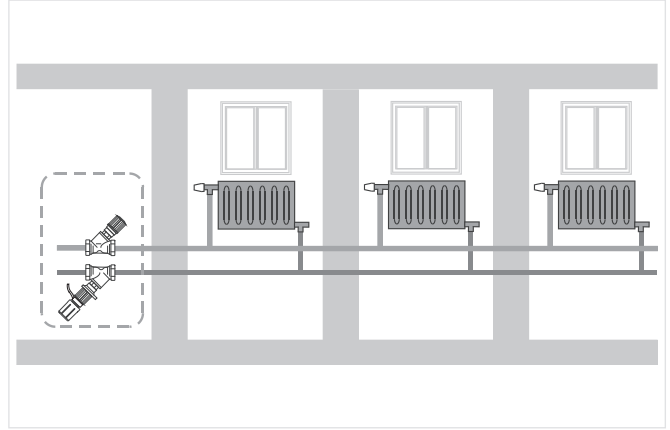


Fig. 3 Kombi-3-Plus - Zone control

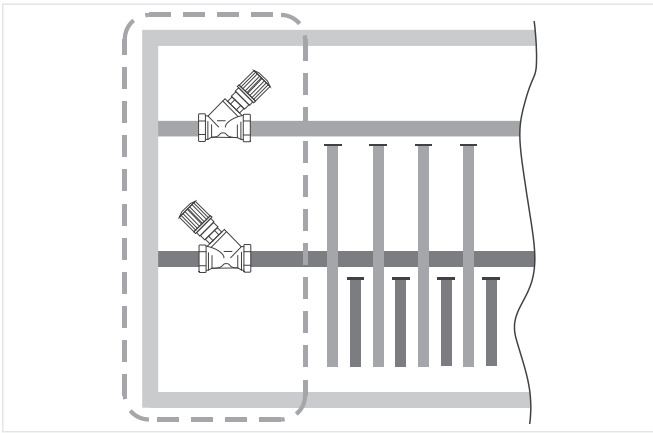


Fig. 2 Kombi-3-Plus - Distribution

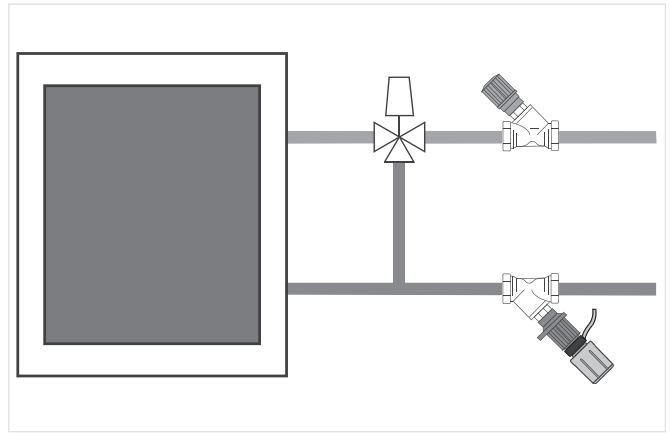


Fig. 4 Kombi-3-Plus - Fan coil

TECHNICAL CHARACTERISTICS

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 $\sigma_0 = 1000 \text{ kg/m}^3$. 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:

$$k_{v_{\text{Medium}}} = \frac{m}{\sqrt{\Delta p}} \times \frac{\sqrt{\rho_{\text{Medium}}}}{\sqrt{\rho_0}}$$

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:

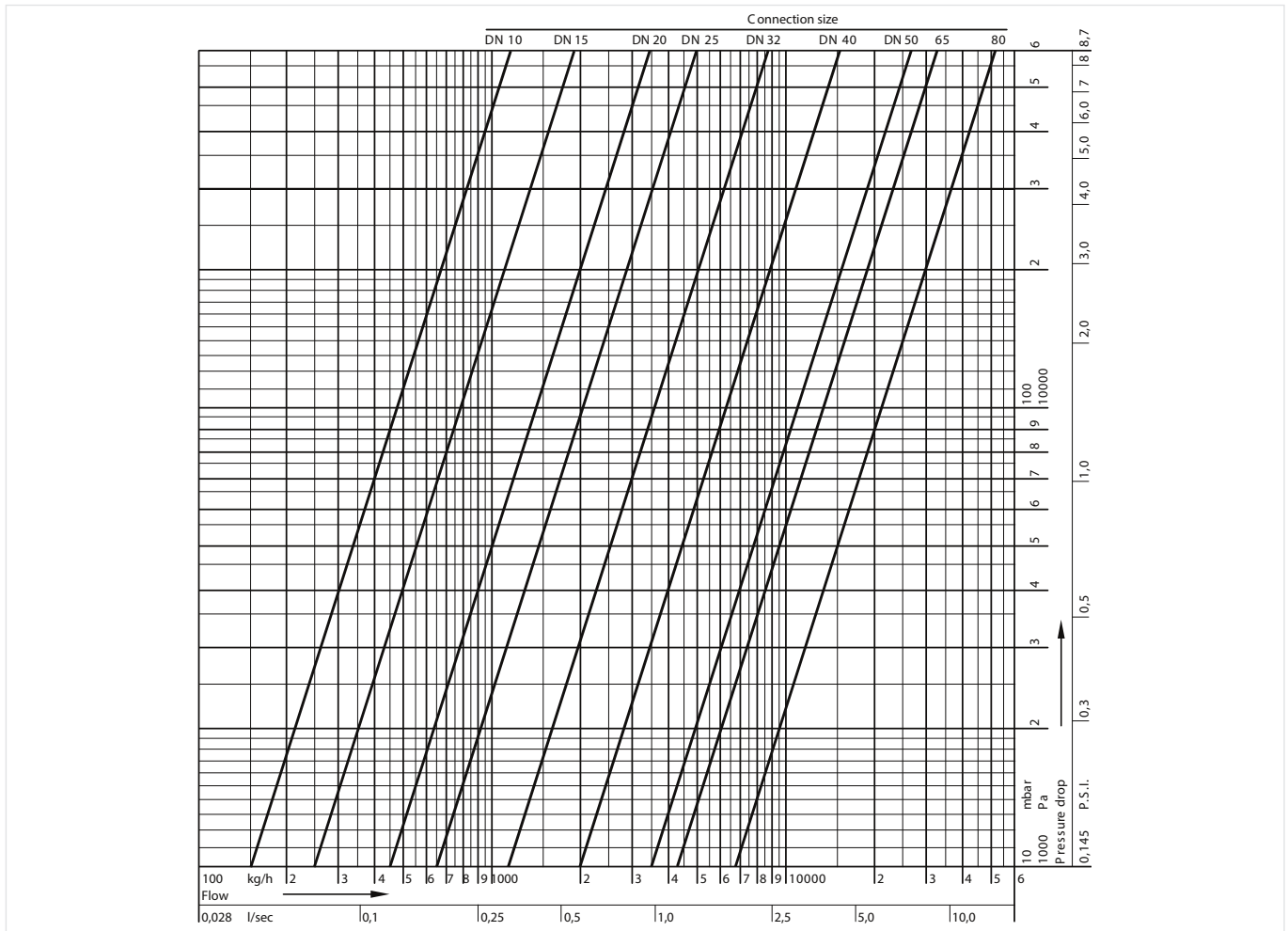
$$k_{v_{\text{Medium}}} = k_{v_0} \times \frac{1}{\sqrt{f}} \quad \Delta p_{\text{Medium}} = \Delta p_0 \times f \quad m_{\text{Medium}} = m_0 \times \frac{1}{\sqrt{f}}$$

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 %	1.0	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

kvs-Values V5000 Kombi-3-plus RED

Connection sizes:	10	15	20	25	32	40	50	65	80
k _v -value:	1.5	2.5	4.5	6.5	13.0	20.0	35.0	42.0	68.0
cv-value:	1.76	2.93	5.27	7.61	15.2	23.4	41.0	49.1	80.0

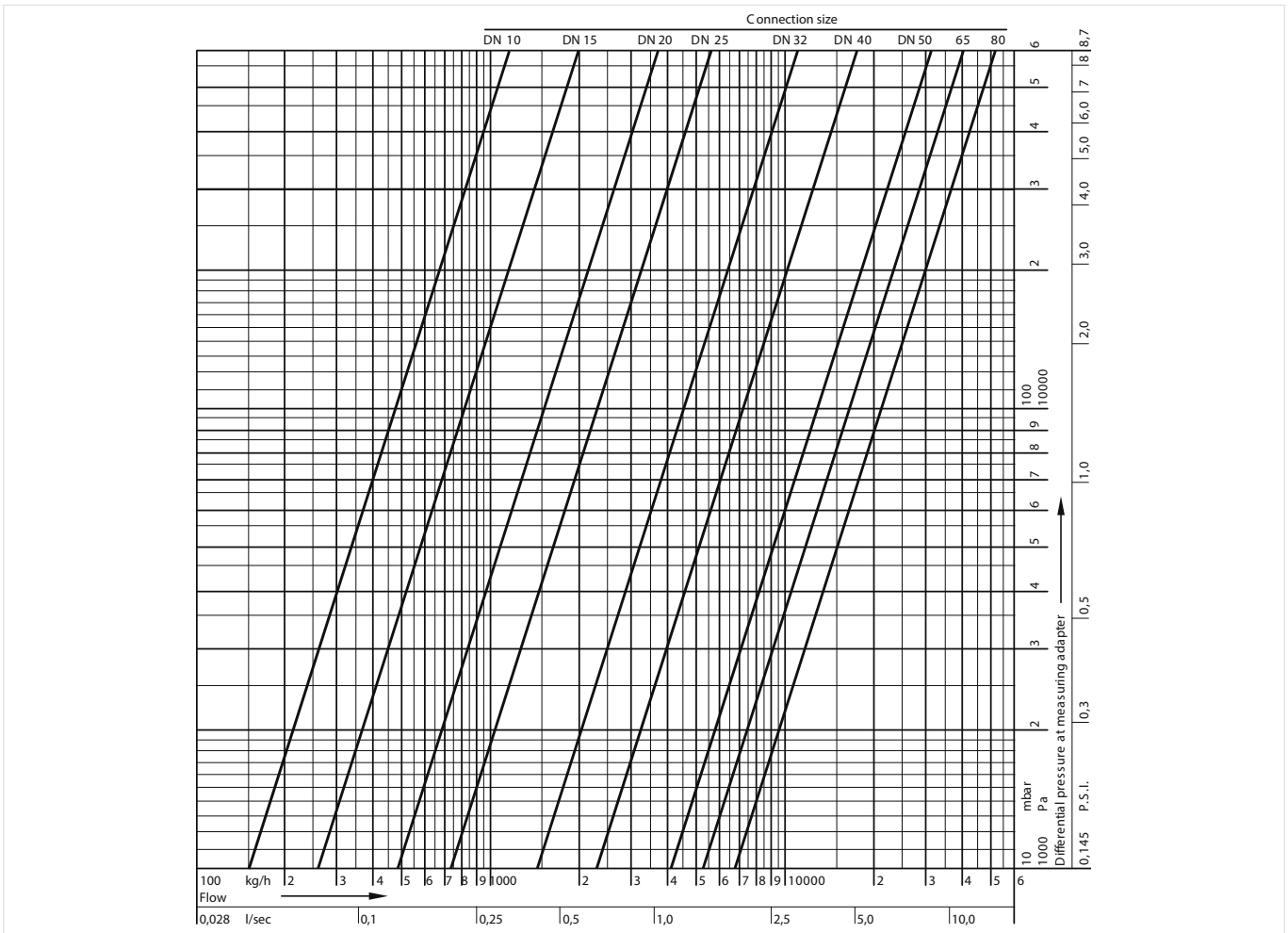
Flow Data V5000 Kombi-3-plus RED



kvs-Values V5000 Kombi-3-plus RED for flow measurement

Connection sizes:	10	15	20	25	32	40	50	65	80
k _v -value:	1.55	2.65	4.88	7.3	14.5	23.0	41.0	53.0	68.0
cv-value:	1.81	3.10	5.71	8.54	17.0	26.9	48.0	62.0	80.0

Flow Data V5000 Kombi-3-plus RED for flow measurement



kvs-Values V5010 Kombi-3-plus BLUE, DN10

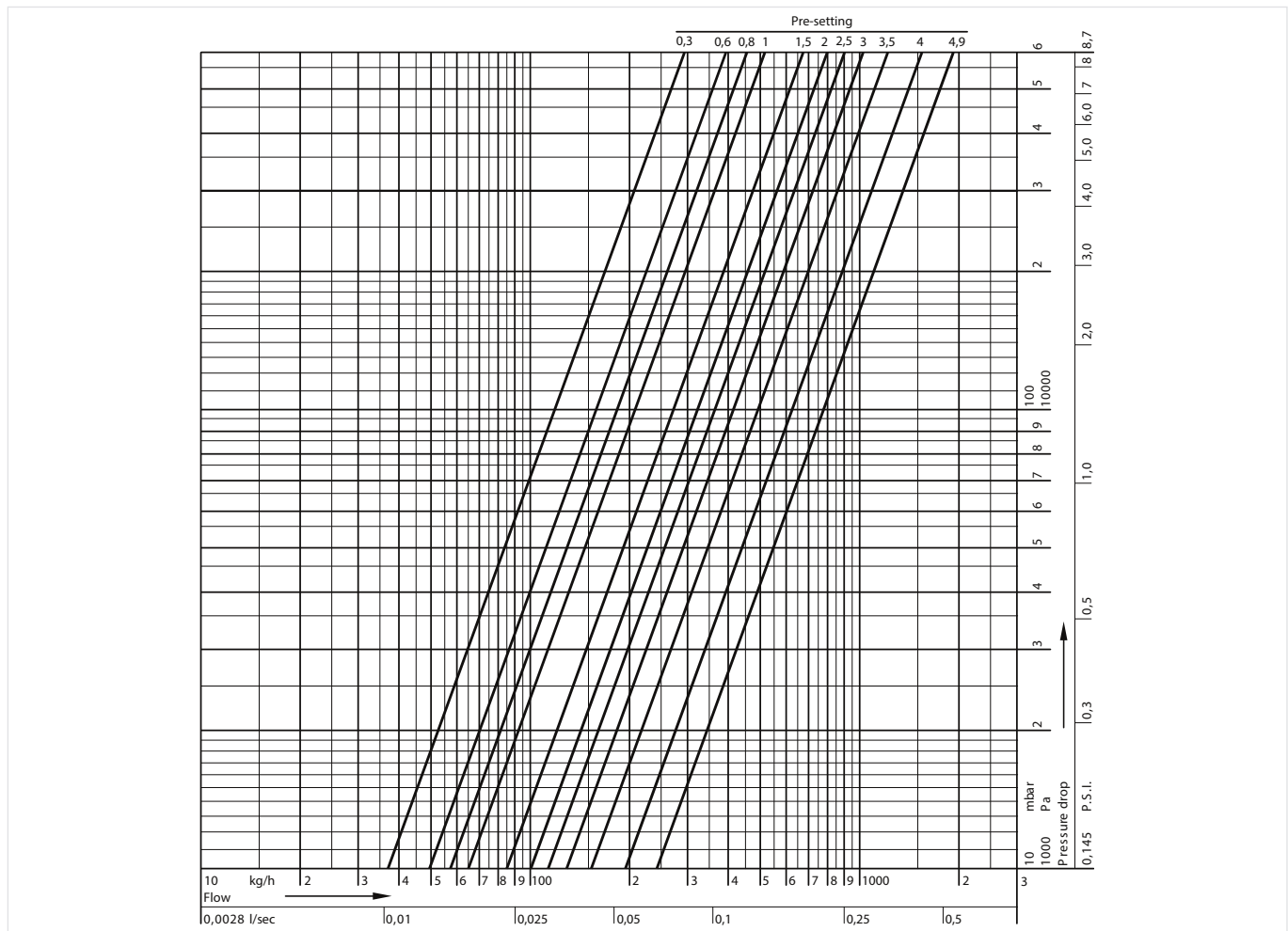
Presetting:	0.3	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4
k _v -value:	0.37	0.43	0.49	0.57	0.65	0.73	0.81	0.88	0.94	1.0	1.05	1.10
cv-value:	0.43	0.5	0.57	0.67	0.76	0.85	0.95	1.03	1.10	1.17	1.23	1.29

Presetting:	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
k _v -value:	1.16	1.22	1.3	1.39	1.5	1.63	1.77	1.92	2.07	2.21	2.32	2.39
cv-value:	1.36	1.43	1.52	1.63	1.76	1.91	2.07	2.25	2.42	2.59	2.71	2.80

Presetting:	4.9 = open
k _v -value:	k _{vs} = 2.40
cv-value:	2.81

Note: Flow diagram is only valid for valve without installed actuator (-adapter) or Kombi-Diaphragm Unit.

Flow Data V5010 Kombi-3-plus BLUE, DN10



kvs-Values V5010 Kombi-3-plus BLUE, DN15

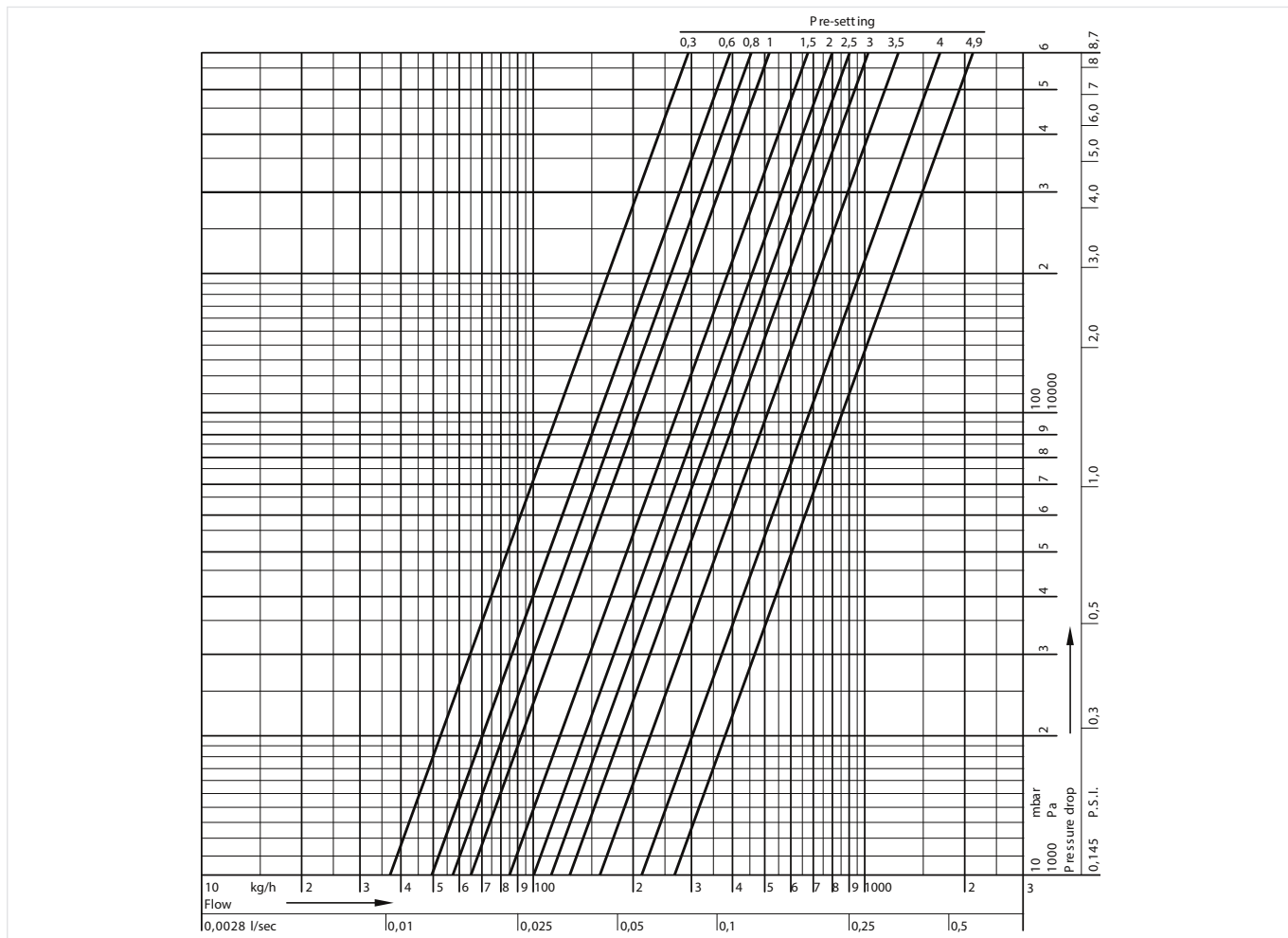
Presetting:	0.3	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4
k _v -value:	0.37	0.43	0.49	0.57	0.65	0.73	0.81	0.88	0.94	1.0	1.05	1.10
cv-value:	0.43	0.5	0.57	0.67	0.76	0.85	0.95	1.03	1.10	1.17	1.23	1.29

Presetting:	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
k _v -value:	1.16	1.22	1.3	1.42	1.57	1.74	1.92	2.12	2.31	2.49	2.63	2.67
cv-value:	1.36	1.43	1.54	1.66	1.84	2.04	2.25	2.48	2.7	2.91	3.08	3.12

Presetting:	4.9 = open
k _v -value:	k _{vs} = 2.70
cv-value:	3.16

Note: Flow diagram is only valid for valve without installed actuator (-adapter) or Kombi-Diaphragm Unit.

Flow Data V5010 Kombi-3-plus BLUE, DN15



kvs-Values V5010 Kombi-3-plus BLUE, DN20

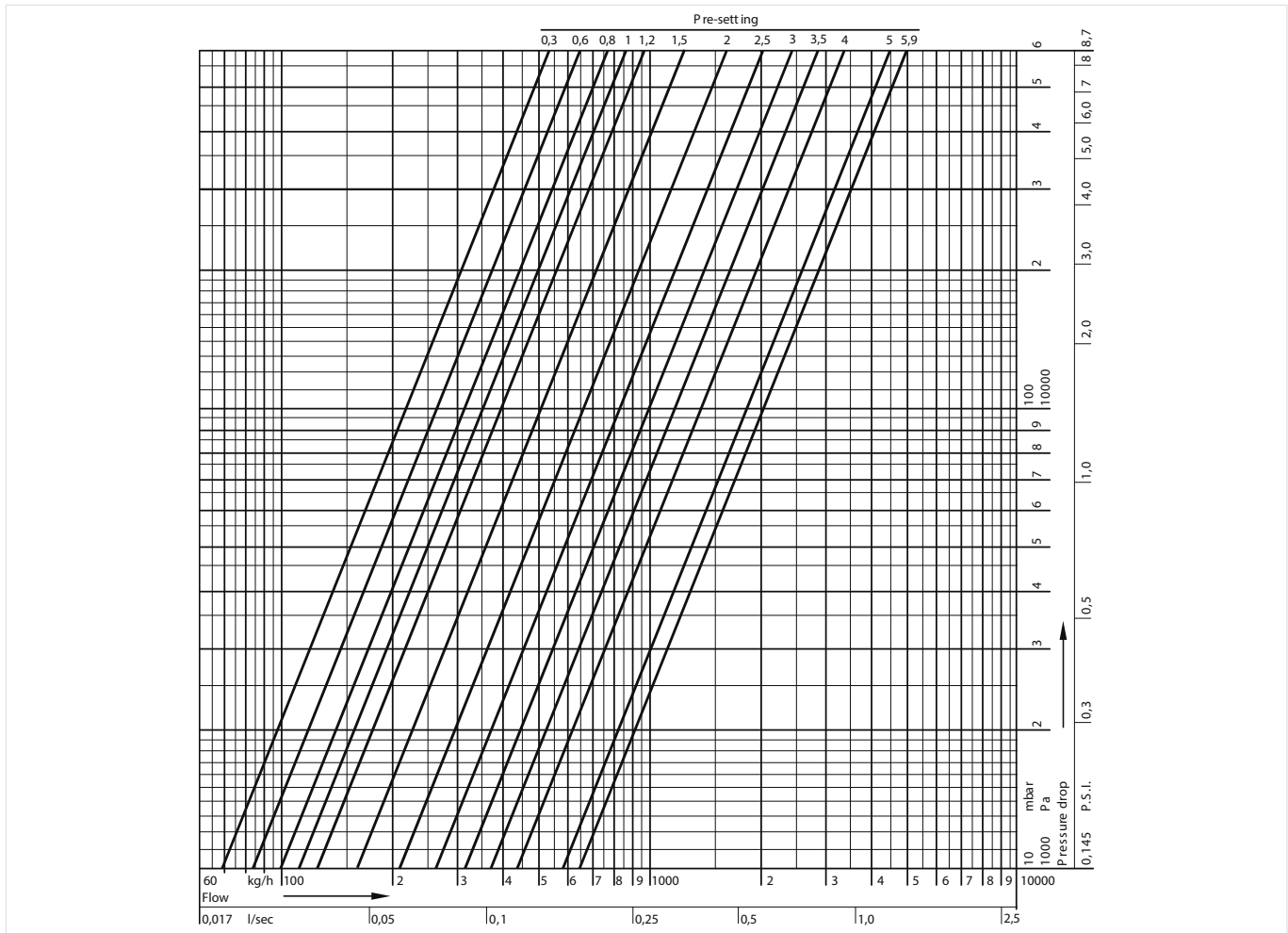
Pre-setting:	0.3	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4
k _v -value:	0.68	0.72	0.84	0.97	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5
cv-value:	0.80	0.84	0.98	1.13	1.29	1.52	1.76	1.99	2.22	2.46	2.69	2.93

Pre-setting:	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
k _v -value:	2.7	2.91	3.12	3.36	3.6	3.86	4.12	4.4	4.69	4.99	5.28	5.57
cv-value:	3.16	3.4	3.65	3.93	4.21	4.52	4.82	5.15	5.49	5.84	6.18	6.52

Pre-setting:	5.0	5.2	5.4	5.6	5.8	5.9 = open
k _v -value:	5.84	6.07	6.26	6.32	6.38	k _{vs} = 6.40
cv-value:	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 V5010 Kombi-3-plus BLUE, DN20

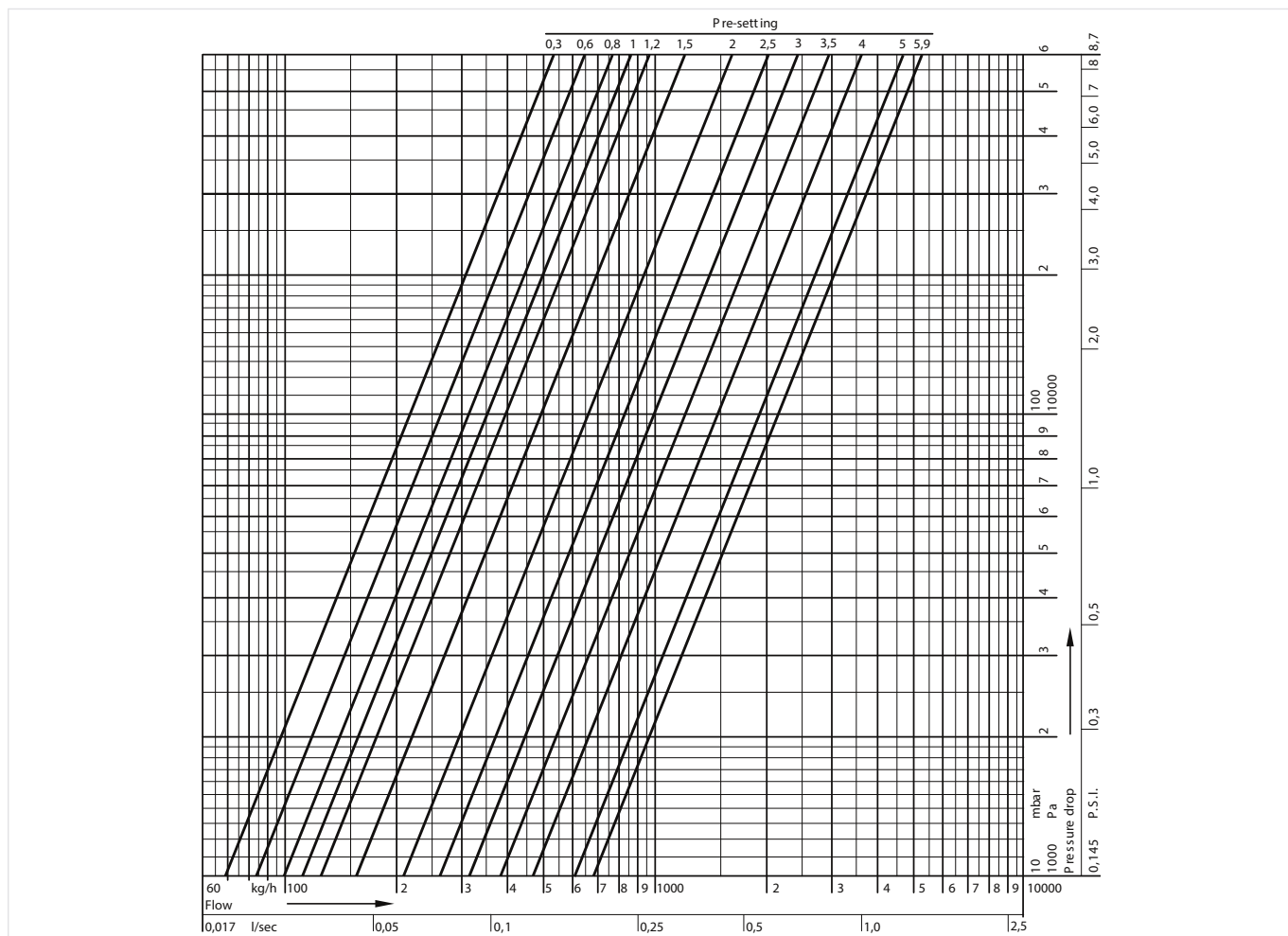


kvs-Values V5010 Kombi-3-plus BLUE, DN25

Presetting:	0.3	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4
k _v -value:	0.68	0.72	0.84	0.97	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5
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
Presetting:	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
k _v -value:	2.7	2.95	3.20	3.48	3.76	4.05	4.34	4.64	4.94	5.24	5.52	5.8
cv-value:	3.16	3.45	3.74	4.07	4.4	4.74	5.08	5.43	5.78	6.13	6.46	6.79
Presetting:	5.0	5.2	5.4	5.6	5.8	5.9 = open						
k _v -value:	6.06	6.3	6.5	6.65	6.75	k _{vs} = 6.80						
cv-value:	7.09	7.37	7.61	7.78	7.9	7.96						

Note: Flow diagram is only valid for valve without installed actuator (-adapter) or Kombi-Diaphragm Unit.

Flow Data V5010 Kombi-3-plus BLUE, DN25

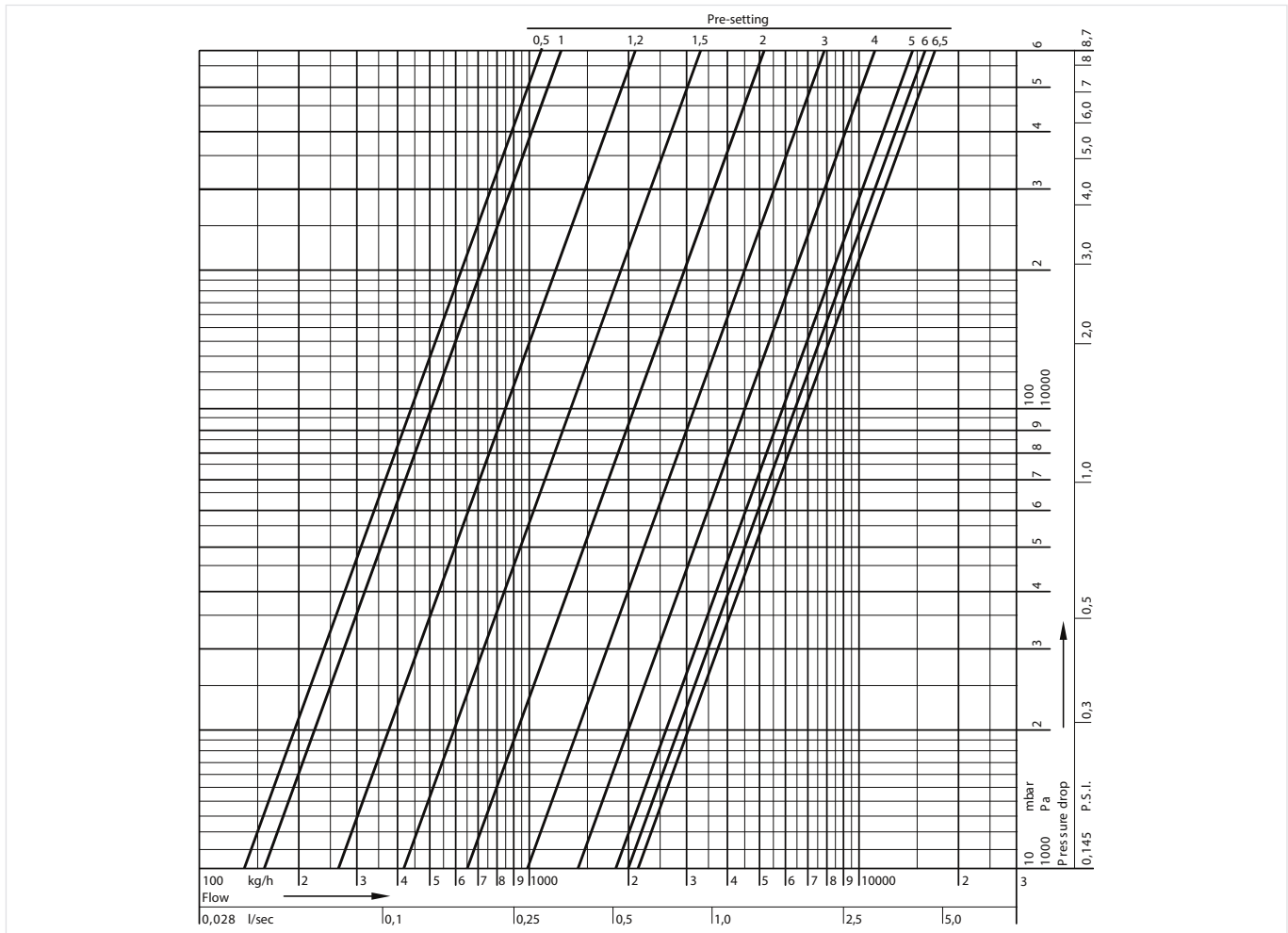


kvs-Values V5010 Kombi-3-plus BLUE, DN32

Presetting:	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6
k _v -value:	1.4	1.45	1.55	1.6	2.6	3.7	4.8	5.9	6.5	6.9	7.5	8.3
cv-value:	1.64	1.7	1.81	1.87	3.04	4.33	5.62	6.9	7.61	8.07	8.78	9.71
Presetting:	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0
k _v -value:	9.2	10.2	11.2	12.2	13.2	14.1	15.0	15.8	16.5	17.1	17.7	18.2
cv-value:	10.8	11.9	13.1	14.3	15.4	16.5	17.6	18.5	19.3	20.0	20.7	21.3
Presetting:	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.5 = open				
k _v -value:	18.6	19.0	19.4	19.7	20.0	20.4	20.8	k _{vs} = 21.0				
cv-value:	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 V5010 Kombi-3-plus BLUE, DN32

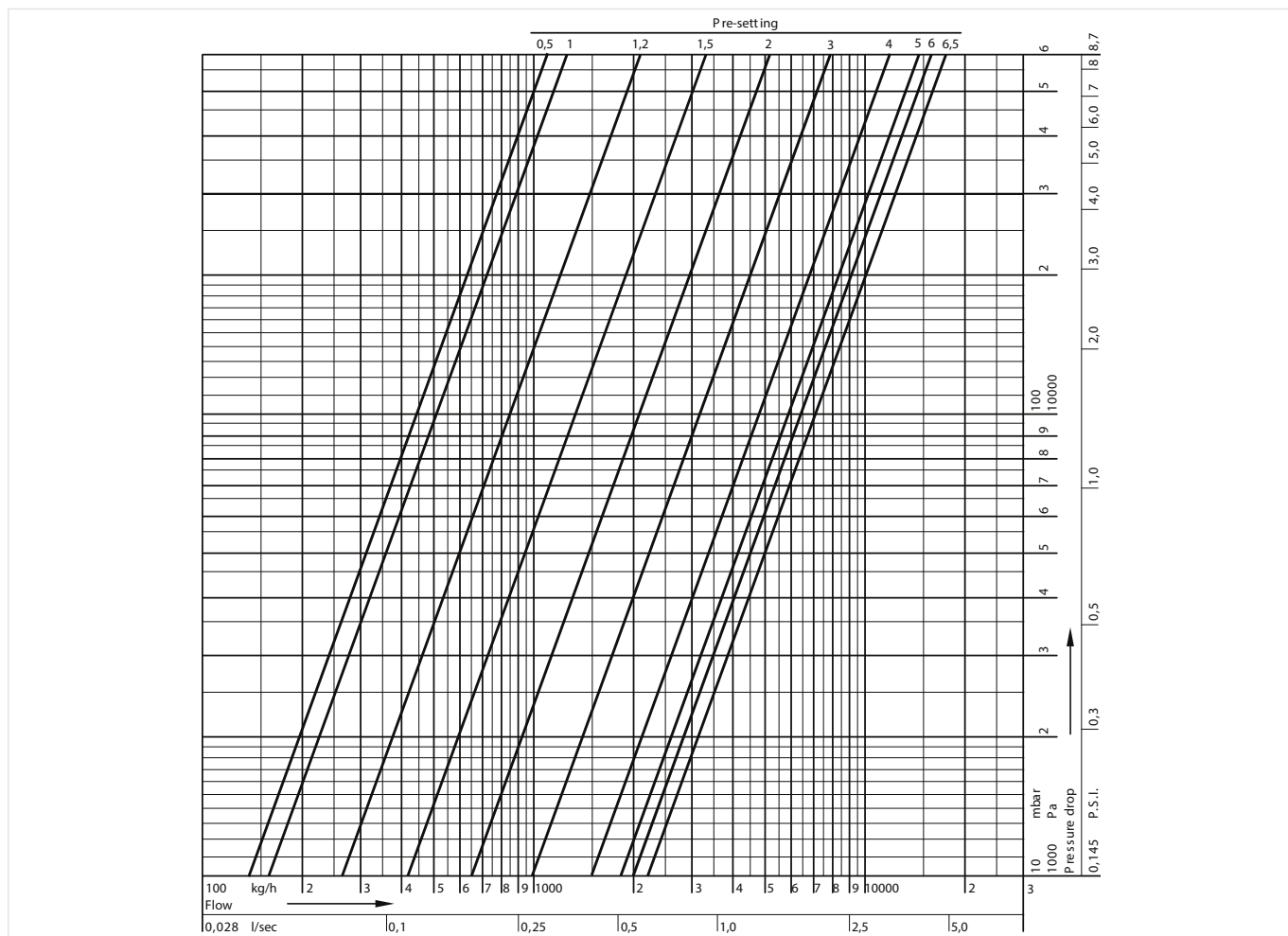


kvs-Values V5010 Kombi-3-plus BLUE, DN40

Presetting:	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6
k _v -value:	1.4	1.45	1.55	1.6	2.6	3.7	4.8	5.9	6.5	6.9	7.5	8.3
cv-value:	1.64	1.7	1.81	1.87	3.04	4.33	5.62	6.9	7.61	8.07	8.78	9.71
Presetting:	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0
k _v -value:	9.2	10.2	11.2	12.2	13.2	14.1	15.0	15.8	16.5	17.1	17.7	18.2
cv-value:	10.8	11.9	13.1	14.3	15.4	16.5	17.6	18.5	19.3	20.0	20.7	21.3
Presetting:	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.5 = open				
k _v -value:	18.6	19.0	19.4	19.7	20.0	20.8	21.6	k _{vS} = 22.0				
cv-value:	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.

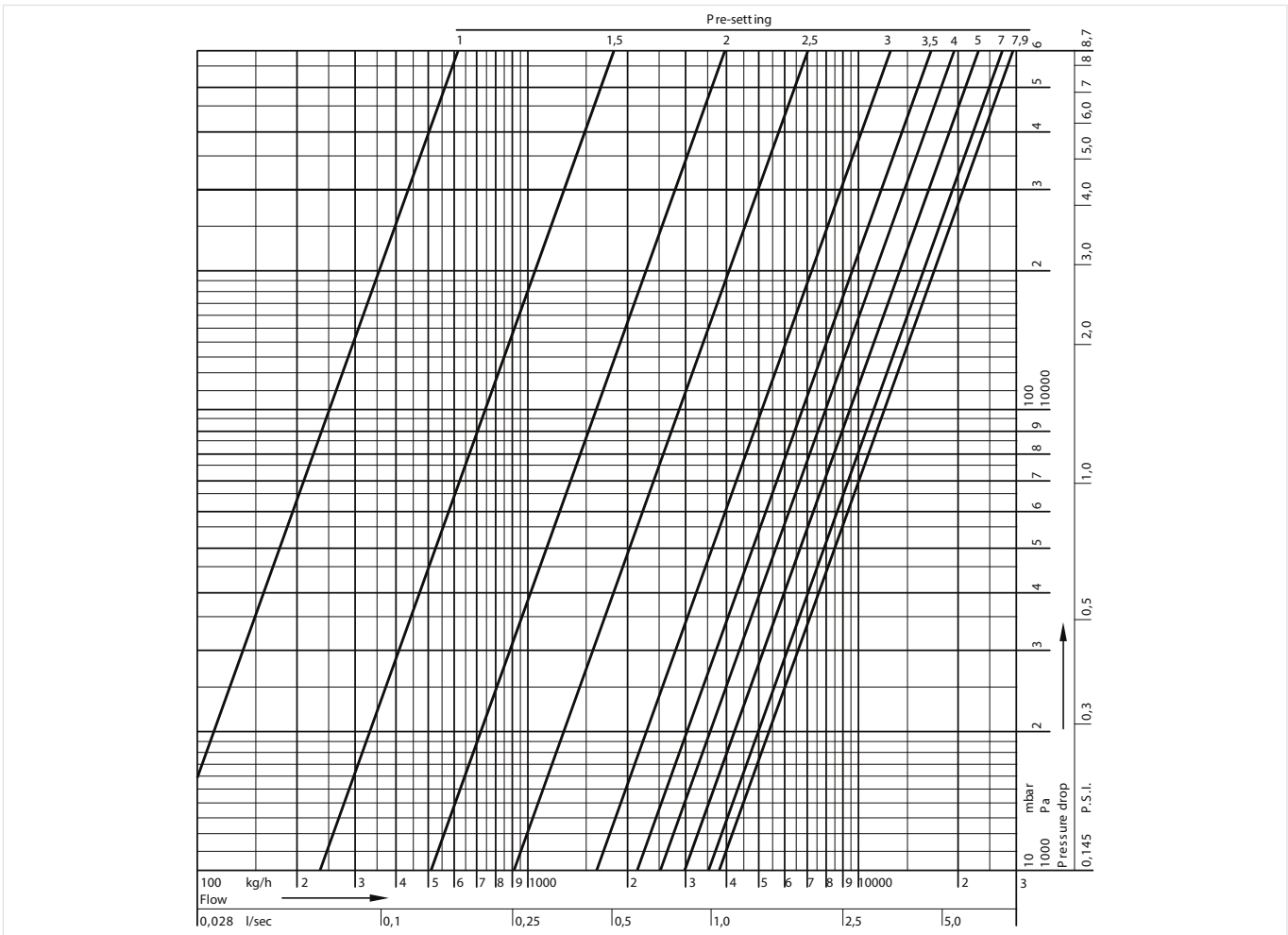
Flow Data V5010 Kombi-3-plus BLUE, DN40



kvs-Values V5010 Kombi-3-plus BLUE, 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
k _v -value:	0.8	1.25	1.88	2.72	3.78	5.1	6.68	8.45	10.7	13.0	15.6	18.7
cv-value:	0.94	1.46	2.2	3.18	4.42	5.97	7.82	9.99	12.5	15.2	18.3	21.9
Pre-setting:	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6
k _v -value:	21.0	22.8	24.3	25.4	26.4	27.2	28.0	28.8	29.5	30.2	31.0	31.7
cv-value:	24.6	26.7	28.4	29.7	30.9	31.8	32.8	33.7	34.5	35.3	36.3	37.1
Pre-setting:	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:	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:	37.9	38.6	39.3	39.9	40.5	41.0	41.4	41.9	42.4	43.1	44.5	

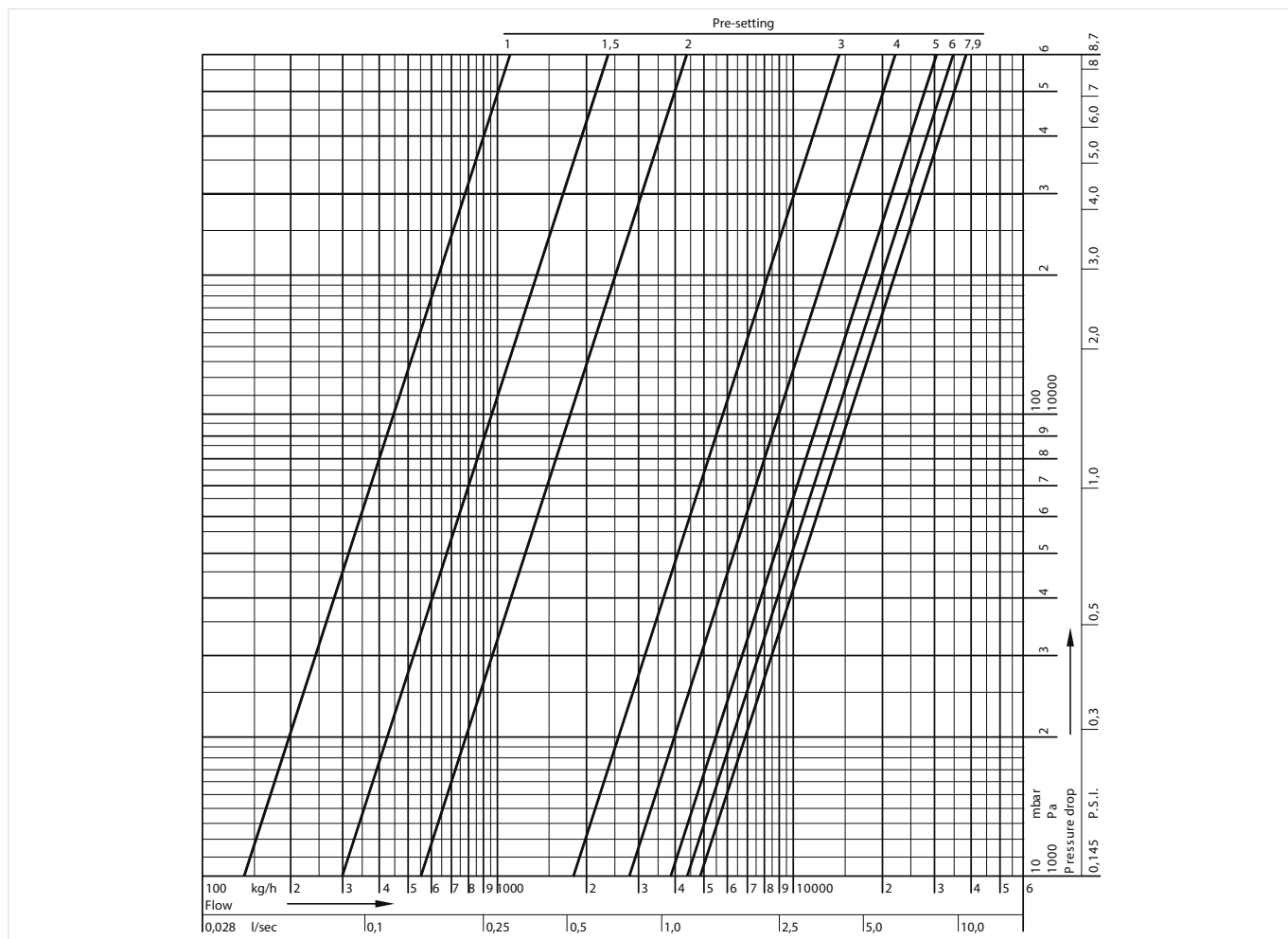
Flow Data V5010 Kombi-3-plus BLUE, DN50



kvs-Values V5010 Kombi-3-plus BLUE, DN65

Presetting:	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
k _v -value:	1.4	1.5	2.5	3.5	4.5	5.5	7.7	10.0	12.2	14.5	16.7	19.0
cv-value:	1.64	1.76	2.93	4.1	5.27	6.44	9.01	11.7	14.3	17.0	19.5	22.2
Presetting:	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6
k _v -value:	21.3	23.7	26.0	28.3	30.1	31.9	33.6	35.4	37.2	38.6	40.1	41.5
cv-value:	24.9	27.7	30.4	33.1	35.2	37.3	39.3	41.4	43.5	45.2	46.9	48.6
Presetting:	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:	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:	50.3	51.5	52.5	53.1	53.8	54.4	55.0	55.0	55.3	55.5	55.8	

Flow Data V5010 Kombi-3-plus BLUE, DN65



kvs-Values V5010 Kombi-3-plus BLUE, DN80

Presetting:	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
k _v -value:	2.2	4.2	6.2	8.1	10.1	12.1	15.3	18.5	21.6	24.8	28.0	30.9
cv-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
Presetting:	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6
k _v -value:	33.9	36.8	39.8	42.7	44.9	47.0	49.2	51.3	53.5	55.2	57.0	58.7
cv-value:	39.7	43.1	46.6	50.0	52.5	55.0	57.6	60.0	62.6	64.6	66.7	68.7
Presetting:	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:	60.5	62.2	63.4	64.5	65.7	66.8	68.0	68.6	69.2	69.8	k _{vs} = 71.0	
cv-value:	70.8	72.8	74.2	75.5	76.9	78.2	79.6	80.3	81.0	81.7	83.1	

Flow Data V5010 Kombi-3-plus BLUE, DN80

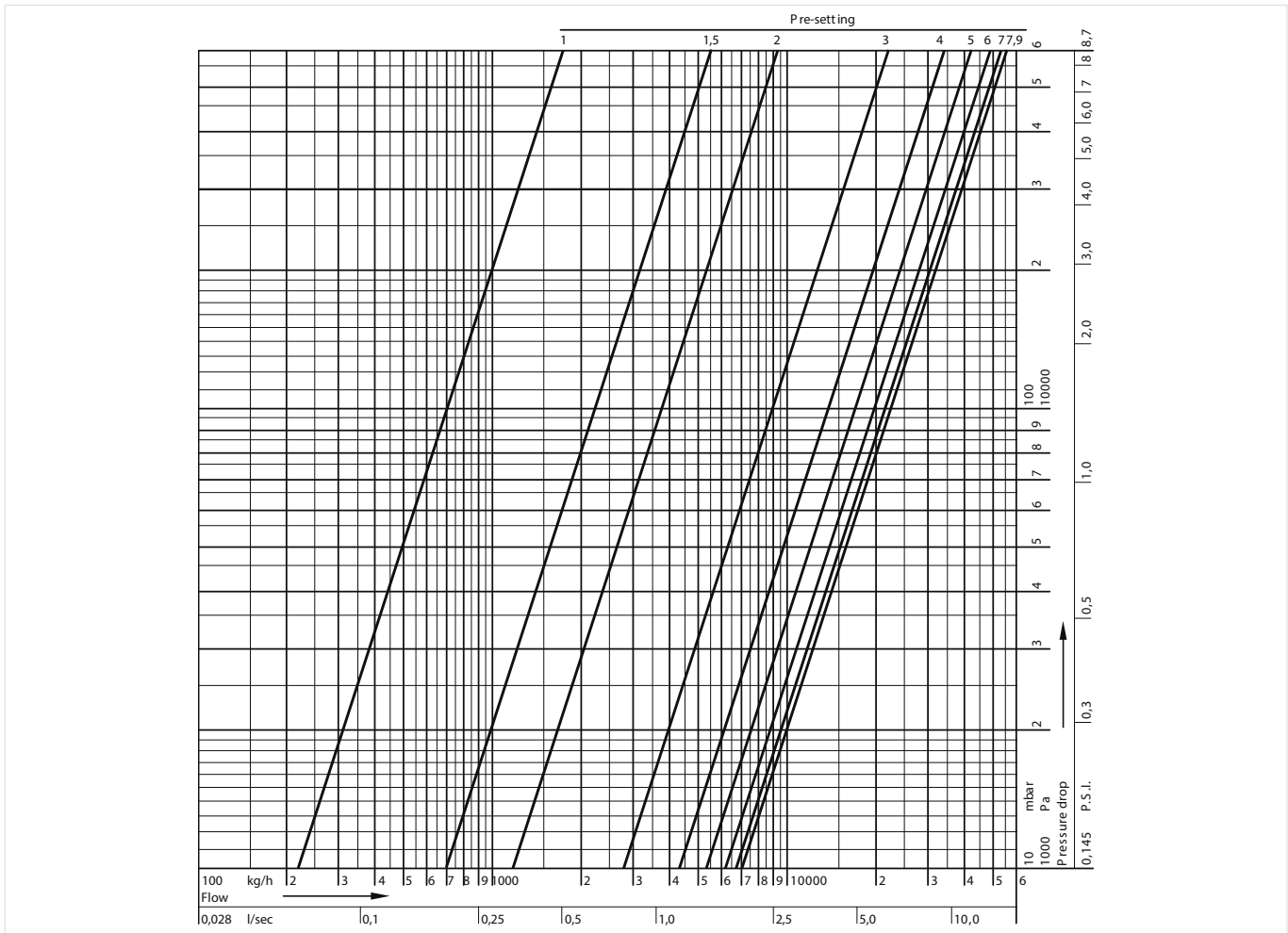
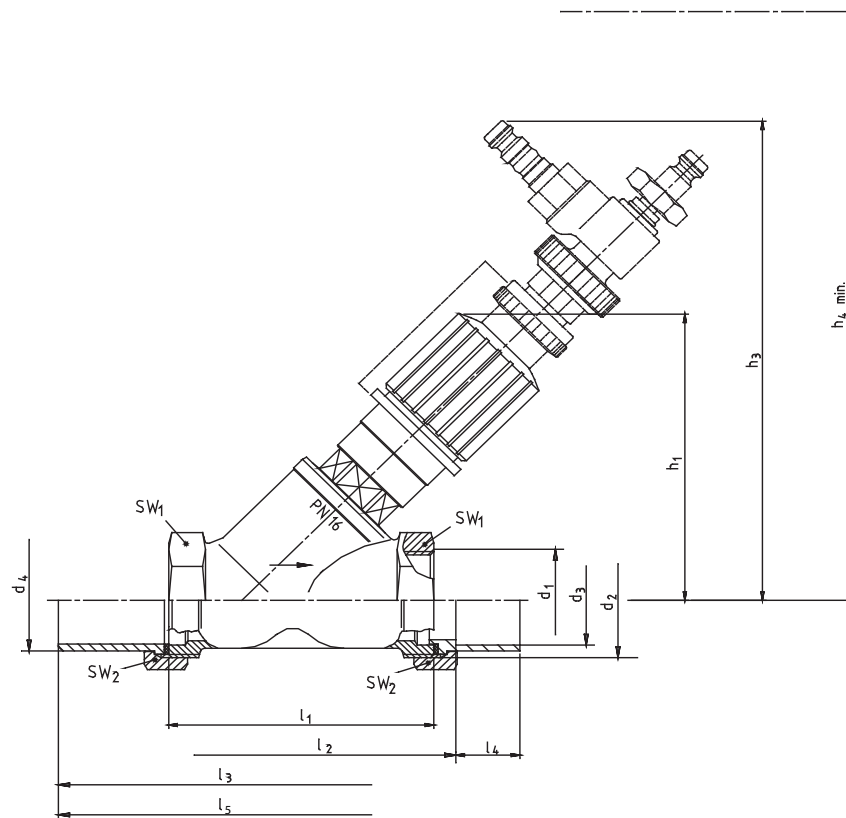


Fig. 5 Flow Data V5010 Kombi-3-plus BLUE, DN80

DIMENSIONS

Overview

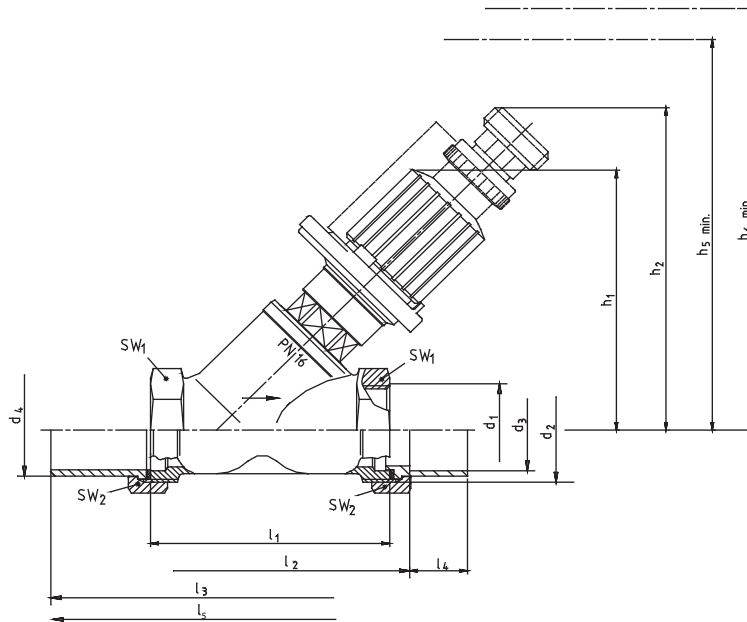


Parameter		Values								
Connection sizes:	R	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Nominal sizes:	DN	10	15	20	25	32	40	50	65	80
k _{vs} (c _v)-values:	m ³ /h	1.5 (1.76)	2.5 (2.93)	4.5 (5.27)	6.5 (7.61)	13.0 (15.2)	20.0 (23.4)	35.0 (41.0)	42.0 (49.1)	68.0 (79.6)
Dimensions:	h ₁	85	85	100	100	137	137	158	195	210
	h ₃	145	145	160	160	195	195	215	225	240
	h ₄	195	195	210	210	280	280	300	310	325
	h ₅	135	135	150	150	185	185	205	215	230
	h ₆	130	130	145	145	210	210	230	-	-
	l ₁	60	65	75	90	110	120	150	180	200
	l ₂	74	81	92	108	128	140	170	-	-
	l ₃	110	125	146	170	200	220	260	-	-
	l ₄	10	12	17	20	25	29	34	-	-
	l ₅	110	125	140	155	184	128	274	-	-
	d ₁	Rp3/8"	Rp1/2"	Rp3/4"	Rp1"	Rp1 1/4"	Rp1 1/2"	Rp2"	Rp2 1/2"	Rp3"
	d ₂	G5/8"A	G3/4"A	G1"A	G1 1/4"A	G1 1/2"A	G1 3/4"A	G2 3/8"A	-	-
	d ₃	12	15	22	28	35	42	54	-	-
	d ₄	16	20.5	26	33	41	47.5	60	-	-
SW ₁	22	27	32	41	50	55	70	85	100	
SW ₂	27	30	37	47	52	60	75	-	-	

Note: All dimensions in mm unless stated otherwise.

Note: Dimensions V5000 Kombi-3-plus RED

Overview



Parameter		Values								
Connection sizes:	R	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Nominal sizes:	DN	10	15	20	25	32	40	50	65	80
k_{vs} (c_v)-values:	m^3/h	2.4 (2.81)	2.7 (3.16)	6.4 (7.49)	6.8 (7.96)	21.0 (24.6)	22.0 (25.7)	38.0 (44.5)	47.7 (55.8)	71.0 (83.1)
Dimensions:	h_1	85	85	100	100	137	137	158	195	210
	h_2	105	105	120	120	155	155	176	186	201
	h_5	135	135	150	150	185	185	205	215	230
	h_6	130	130	145	145	210	210	230	-	-
	l_1	60	65	75	90	110	120	150	180	200
	l_2	74	81	92	108	128	140	170	-	-
	l_3	110	125	146	170	200	220	260	-	-
	l_4	10	12	17	20	25	29	34	-	-
	l_5	110	125	140	155	184	238	274	-	-
	d_1	Rp3/8"	Rp1/2"	Rp3/4"	Rp1"	Rp1 1/4"	Rp1 1/2"	Rp2"	Rp2 1/2"	Rp3"
	d_2	G5/8"A	G3/4"A	G1"A	G1 1/4"A	G1 1/2"A	G1 3/4"A	G2 3/8"A	-	-
	d_3	12	15	22	28	35	42	54	-	-
	d_4	16	20.5	26	33	41	47.5	60	-	-
SW_1	22	27	32	41	50	55	70	85	100	
SW_2	27	30	37	47	52	60	75	-	-	

Note: All dimensions in mm unless stated otherwise.

Note: Dimensions V5010 Kombi-3-plus BLUE

Abbreviations used for dimensions

DN	Nominal size diameter	h_5	Clearance required to fit draining adapter
d_1	Internal thread on body (connection size)	h_6	Clearance required to fit tamper-proof cap
d_2	External thread on body	l_1	Body length according to DIN 3502
d_3	Inner \varnothing of connection	l_2	Installed length with soldering connections
d_4	Outer \varnothing of connection	l_3	Installed length with welding connections
h_1	Height with valve fully open	l_4	Length of soldering connection
h_2	Height with installed draining adapter	l_5	Installed length with threaded connections
h_3	Height with installed measuring adapter	SW_1	Wrench size
h_4	Clearance required to fit measuring adapter	SW_2	Wrench size

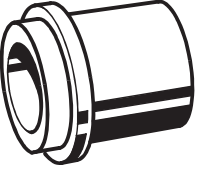
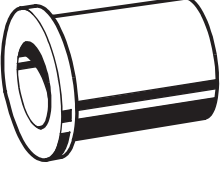
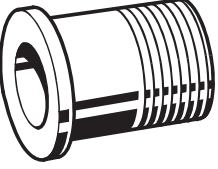

ORDERING INFORMATION

The following tables contain all the information you need to make an order of an item of your choice. When ordering, please always state the type, the ordering or the part number.

Options

Order text:	DN:	Thread:	k_{vs} (C_{vs})-value:	OS-No.:
V5000Y Kombi-3-plus RED fixed orifice measuring valve with internal threads to DIN 2999 (ISO 7) on inlet and outlet	DN10	Rp 3/8"	1.5 (1.8)	V5000Y0010
	DN15	Rp 1/2"	2.5 (2.9)	V5000Y0015
	DN20	Rp 3/4"	4.5 (5.3)	V5000Y0020
	DN25	Rp 1"	6.5 (7.6)	V5000Y0025
	DN32	Rp 1 1/4"	13.0 (15.2)	V5000Y0032
	DN40	Rp 1 1/2"	20.0 (23.4)	V5000Y0040
	DN50	Rp 2"	35.0 (41.0)	V5000Y0050
	DN65	Rp 2 1/2"	42.0 (49.1)	V5000Y0065
	DN80	Rp 3"	68.0 (79.6)	V5000Y0080
V5000X Kombi-3-plus RED fixed orifice measuring valve with external threads to DIN ISO 228 on inlet and outlet	DN10	G 3/8" A	1.5 (1.8)	V5000X0010
	DN15	G 3/4" A	2.5 (2.9)	V5000X0015
	DN20	G 1" A	4.5 (5.3)	V5000X0020
	DN25	G 1 1/4" A	6.5 (7.6)	V5000X0025
	DN32	G 1 1/2" A	13.0 (15.2)	V5000X0032
	DN40	G 1 3/4" A	20.0 (23.4)	V5000X0040
	DN50	G 2 3/8" A	35.0 (41.0)	V5000X0050
V5010Y Kombi-3-plus BLUE double regulating balancing valve with internal threads to DIN 2999 (ISO 7) on inlet and outlet	DN10	Rp 3/8"	2.4 (2.8)	V5010Y0010
	DN15	Rp 1/2"	2.7 (3.2)	V5010Y0015
	DN20	Rp 3/4"	6.4 (7.5)	V5010Y0020
	DN25	Rp 1"	6.8 (8.0)	V5010Y0025
	DN32	Rp 1 1/4"	21.0 (24.6)	V5010Y0032
	DN40	Rp 1 1/2"	22.0 (25.7)	V5010Y0040
	DN50	Rp 2"	38.0 (44.5)	V5010Y0050
	DN65	Rp 2 1/2"	47.7 (55.8)	V5010Y0065
V5010X Kombi-3-plus BLUE double regulating balancing valve with external threads to DIN ISO 228 on inlet and outlet	DN80	Rp 3"	71.0 (83.1)	V5010Y0080
	DN10	G 3/8" A	2.4 (2.8)	V5010X0010
	DN15	G 3/4" A	2.7 (3.2)	V5010X0015
	DN20	G 1" A	6.4 (7.5)	V5010X0020
	DN25	G 1 1/4" A	6.8 (8.0)	V5010X0025
	DN32	G 1 1/2" A	21.0 (24.6)	V5010X0032
	DN40	G 1 3/4" A	22.0 (25.7)	V5010X0040
DN50	G 2 3/8" A	38.0 (44.5)	V5010X0050	




Accessories**Connections for valves with external threads (V5000X and V5010X)**

	Description	Dimension	Part No.
	VA5530 Soldering connection made of brass		
	for valves DN10	12 mm	VA5530A010
	for valves DN15	15 mm	VA5530A015
	for valves DN20	22 mm	VA5530A020
	for valves DN25	28 mm	VA5530A025
	for valves DN32	35 mm	VA5530A032
	for valves DN40	42 mm	VA5530A040
	for valves DN50	54 mm	VA5530A050
	VA5540 Welding connection made of steel		
	for valves DN10 (3/8")		VA5540A010
	for valves DN15 (1/2")		VA5540A015
	for valves DN20 (3/4")		VA5540A020
	for valves DN25 (1")		VA5540A025
	for valves DN32 (1 1/4")		VA5540A032
	for valves DN40 (1 1/2")		VA5540A040
	for valves DN50 (2")		VA5540A050
	VA5500 Externally threaded connection made of brass		
	for valves DN10 (3/8")		VA5500A010
	for valves DN15 (1/2")		VA5500A015
	for valves DN20 (3/4")		VA5500A020
	for valves DN25 (1")		VA5500A025
	for valves DN32 (1 1/4")		VA5500A032
	for valves DN40 (1 1/2")		VA5500A040
	for valves DN50 (2")		VA5500A050
	VA5090 Sealing ring		
	for valves DN10 (3/8")		VA5090A010
	for valves DN15 (1/2")		VA5090A015
	for valves DN20 (3/4")		VA5090A020
	for valves DN25 (1")		VA5090A025
	for valves DN32 (1 1/4")		VA5090A032
	for valves DN40 (1 1/2")		VA5090A040
	for valves DN50 (2")		VA5090A050

Connections for valves with internal threads (V5000X and V5010X)

	V5012C Kombi-Diaphragm Unit Note: For product information and diagrams see product data sheet 'V5012 Kombi-DP Diaphragm Unit'. The Kombi-3-plus BLUE valve must be pre-set to 1.5 (for DN10 - DN25) or 1.0 (DN32 - DN40) when used with the V5012 Kombi-DP Diaphragm Unit. Pump pressure: max. 2 bar (29 psi)		
	for V5010 Kombi-3-plus BLUE DN10 - DN40	Setting range 0.1 - 0.3 bar (1.45 - 4.35 psi) differential pressure	V5012C0103
	for V5010 Kombi-3-plus BLUE DN10 - DN40	Setting range 0.3 - 0.6 bar (4.35 - 8.7 psi) differential pressure	V5012C0306
	VA2503 External presetting device for diaphragm unit 0.1 - 0.3 bar		VA2503A001
	VA2500 Adapter for actuators with M30 x 1.5 connection Note: For product information and diagrams see product data sheet 'V5012 Kombi-DP Diaphragm Unit'. The Kombi-3-plus BLUE valve must be pre-set to 1.5 (for DN10 - DN25) or 1.0 (DN32 - DN40) when used with the V5012 Kombi-DP Diaphragm Unit. Pump pressure: max. 2 bar (29 psi)		
	for V5010 Kombi-3-plus BLUE DN10 - DN40		VA2500A001
	VA2501 Tamper-proof cap for valves DN10 - DN25 for valves DN32 - DN50		VA2501A010 VA2501A032
	VA2502 Spring to reduce differential pressure presetting	for diaphragm unit 0.1 - 0.3 bar	VA2502A001
	VA2510 Insulation shells Note: For product information see product data sheet 'VA2510B Insulation Shells'.		
	for valves DN15		VA2510C015
	for valves DN20		VA2510C020
	for valves DN25		VA2510C025
	for valves DN32		VA2510C032
	for valves DN40		VA2510C040
for valves DN50		VA2510C050	
	VA3400 Draining adapter	for all types and sizes	VA3400A001

Measuring equipment (V5000 only)

	<p>VA3502</p>	<p>Pressure measuring set</p>	
	<p>VM242A</p>	<p>BasicMes-2 handheld measuring computer</p>	
	<p>VS2000</p>	<p>Handwheel screw</p>	
			<p>for V5000 Kombi-3-plus RED</p> <p>VA3502A001</p>
		<p>Note: To connect the VM241 BasicMes to SafeCon™ pressue test cocks please order measuring adapter VA3600C001 separately.</p> <p>Computer is supplied with case and accessories</p>	<p>for all sizes</p> <p>VM242A0101</p>
			<p>for all sizes</p> <p>VS2000A010</p>



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