

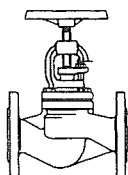
ARI-STOBU® - Stop valve with gland seal



ARI-STOBU® Globe valve with flanges

- TRB 801 No.45 (without GG-25)

Cast iron
Nodular iron
BR 006/306

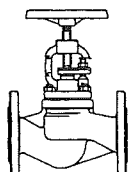


Page 2

ARI-STOBU® Globe valve with flanges

- TRB 801 No.45
- Test approvals TÜ.A./TÜV.AR.187-00

Cast steel
BR 006/306

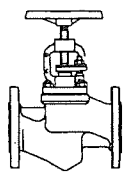


Page 2

ARI-STOBU® Globe valve with flanges

- TRB 801 No.45
- Test approvals TÜ.A./TÜV.AR.187-00

Forged steel
BR 006

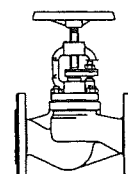


Page 3

ARI-STOBU® Globe valve with flanges

- TRB 801 No.45

Stainless steel
BR 006

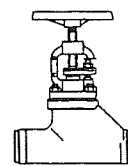


Page 3

ARI-STOBU® Globe valve with butt weld ends

- TRB 801 No.45
- Test approvals TÜ.A./TÜV.AR.187-00

Forged steel
BR 005

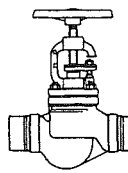


Page 5

ARI-STOBU® Globe valve with butt weld ends

- TRB 801 No.45
- Test approvals TÜ.A./TÜV.AR.187-00

Cast steel
BR 005

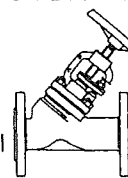


Page 4

ARI-STOBU® Y-pattern globe valve with flanges

- TRB 801 No.45

Stainless steel
BR 009

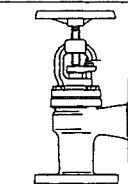


Page 5

ARI-STOBU® Angle pattern globe valve with flanges

- TRB 801 No.45 (without GG-25)

Cast iron
Nodular iron
BR 007/307

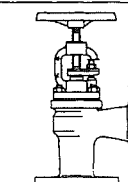


Page 6

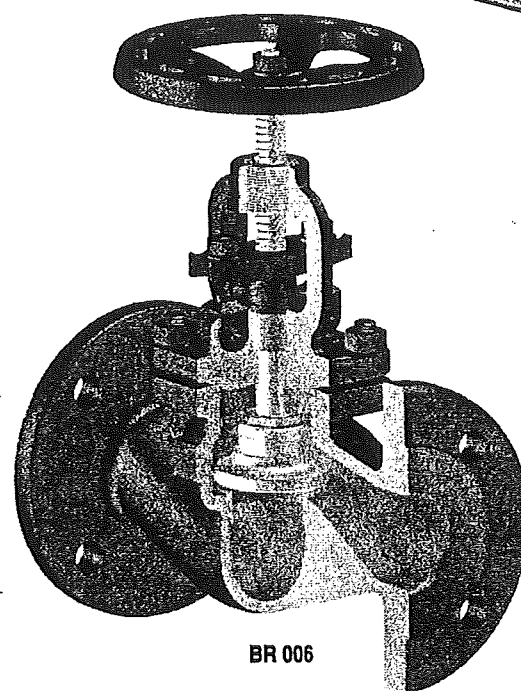
ARI-STOBU® Angle pattern globe valve with flanges

- TRB 801 No.45
- Test approvals TÜ.A./TÜV.AR.187-00

Cast steel
BR 007/307



Page 6



BR 006

Features:

- Proven technology
- Solid plug made of stainless material
- Solid spindle made of stainless material
- Solid seat made of stainless material
- Spindle with roll hardened thread
- Burnished stem
- High-tensile gland packing
- Favourable zeta-values
- Free of asbestos

In cast steel, forged steel and stainless steel:

- Bonnet top with threaded bush
- Pivot mounted bolts



ARI-STOBU® - Stop valve with gland seal, made of cast iron and nodular iron

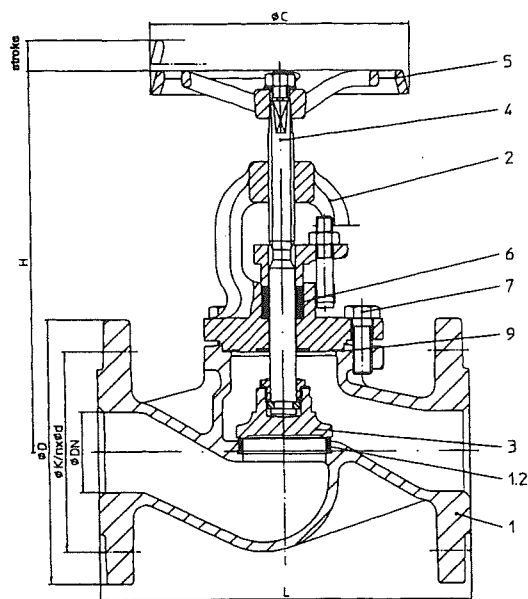


Figure	Nominal pressure	Material	Nominal diameters
12.006	PN 16	GG-25	DN 15-300
12.306			
22.006	PN 16	GGG-40.3	DN 15-350
22.306			
23.006	PN 25	GGG-40.3	DN 15-150
23.306			
BR 306: Trim made of RG/MS (CuZn35Ni, 2.0540 code number 02 G-CuSn 10, 2.1050 code number 03)			

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Vapour facilities
- Recycling facilities
- Shipbuilding
- General plant manufacturing

- other applications on request -

- C E-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
12.006 / 12.306		3,5	4,0	5,0	6,8	9,3	12,2	18,0	24,5	35,0	55,0	77,0	145,0	243,0	341,0	--	--	--
22.006 / 22.306		3,9	4,3	5,4	7,0	9,5	12,9	18,4	24,5	36,0	56,0	78,0	122,0	247,0	336,0	451,0	--	--
23.006 / 23.306		3,9	4,3	5,4	7,0	9,5	12,9	18,4	24,5	36,0	56,0	78,0	122,0	--	--	--	--	--

ARI-STOBU® - Stop valve with gland seal, made of cast steel

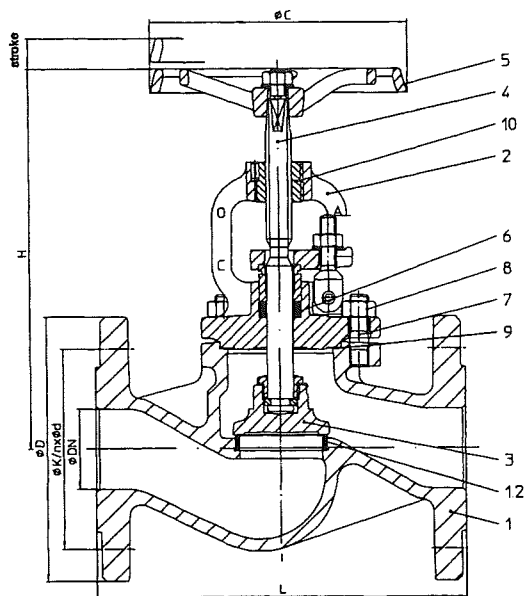


Figure	Nominal pressure	Material	Nominal diameters
34.006	PN 25	1.0619+N	DN 15-500
34.306			
35.006	PN 40	1.0619+N	DN 15-500
35.306			
BR 306: Trim made of RG/MS (CuZn35Ni, 2.0540 code number 02 G-CuSn 10, 2.1050 code number 03)			
Test:	34.006 DN 15-400 35.006 DN 15-200	TÜ.A/TÜV.AR 187-00 TÜ.A/TÜV.AR 187-00	

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Vapour facilities
- Recycling facilities
- Shipbuilding
- General plant manufacturing

- other applications on request -

- C E-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
34.006 / 34.306		4,4	5,4	6,3	7,0	10,5	13,8	21,0	27,5	40,0	61,0	84,0	160,0	265,0	377,0	510,0	780,0	1095,0
35.006 / 35.306		4,8	5,4	7,1	8,0	11,5	13,5	23,5	28,0	39,5	61,0	84,0	170,0	283,0	414,0	557,0	857,0	1150,0

ARI-STOBU® - Stop valve with gland seal, made of forged steel

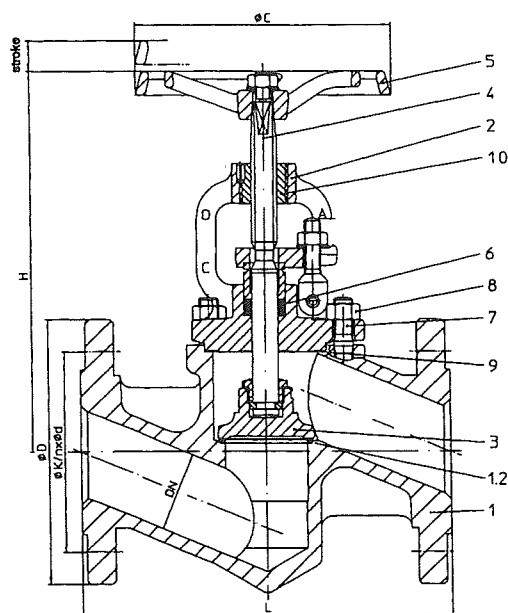


Figure	Nominal pressure	Material	Nominal diameters
45.006	PN 40	C22.8	DN 15-50
for DN >50 see Fig. 35.006 (1.0619+N)			
Test: TÜ.A/TÜV.AR 187-00			

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Recycling facilities
- Shipbuilding
- General plant manufacturing
- Vapour facilities

- other applications on request -

- CE-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
45.006		4,3	5,0	6,0	7,0	10,0	13,0	--	--	--	--	--	--	--	--	--	--	--

ARI-STOBU® - Stop valve with gland seal, made of stainless steel

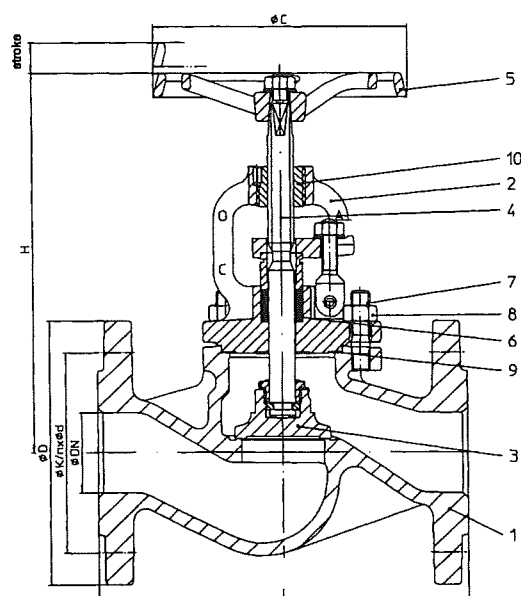


Figure	Nominal pressure	Material	Nominal diameters
52.006	PN 16	1.4408	DN 15-200
54.006	PN 25	1.4408	DN 200
55.006	PN 40	1.4408	DN 15-150

Selection of possible applications:

- Recycling facilities
- Chemical industry
- Hospital technology
- Processing technology
- Process water installations
- Installations with aggressive media

- other applications on request -

- CE-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
52.006 / 54.006 / 55.006		4,8	5,4	7,1	8,0	11,5	13,5	23,5	28,0	39,5	61,0	84,0	170,0	--	--	--	--	--

ARI-STOBU® - Stop valve with gland seal, made of forged steel

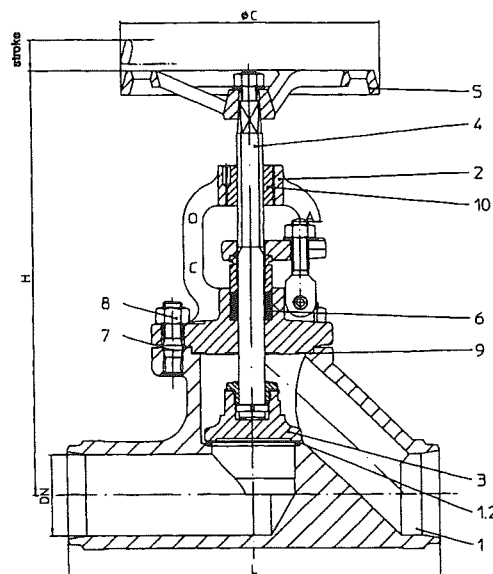


Figure	Nominal pressure	Material	Nominal diameters
45.005	PN 40	C22.8	DN 15-50
for DN >50 see Fig. 35.005 (1.0619+N)			
Butt weld ends according to DIN 3239-1, form 2 (see page 7)			
Test: TÜ.A/TÜV.AR 187-00			

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Vapour facilities
- Recycling facilities
- Shipbuilding
- General plant manufacturing

- other applications on request -

- C E-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
45.005		2,9	3,0	3,5	3,5	6,2	7,8	-	-	-	-	-	-	-	-	-	-	-

ARI-STOBU® - Stop valve with gland seal, made of cast steel

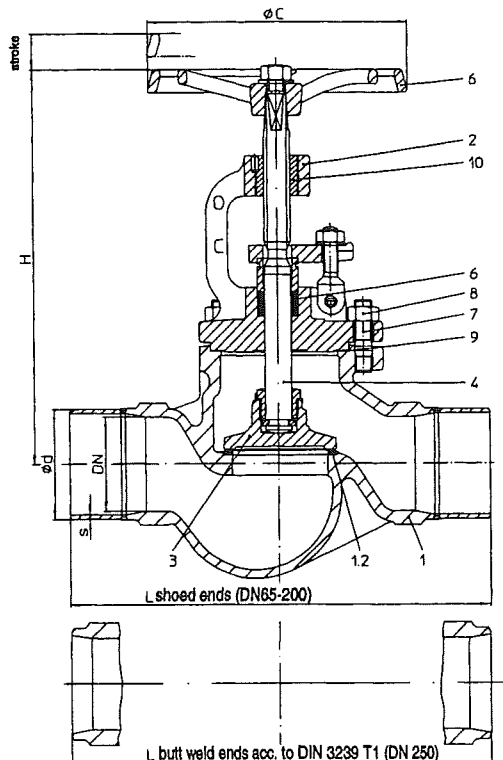


Figure	Nominal pressure	Material	Nominal diameters
35.005	PN 40	1.0619+N	DN 65-200
for DN <65 see Fig. 45.005 (C22.8)			
DN 65-200 with shoed ends made of St 35.8			
DN 250 butt weld ends acc. to DIN 3239 T1, form 2 (see page 7)			
Test: TÜ.A/TÜV.AR 187-00			

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Vapour facilities
- Recycling facilities
- Shipbuilding
- General plant manufacturing

- other applications on request -

- C E-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

DN	65	80	100	125	150	200	250*
Ø d	76,1	88,9	114,3	139,7	168,3	219,1	-
s	2,9	3,2	3,6	4,0	4,5	6,3	-
* DN 250 butt weld ends acc. to DIN 3239 T1, form 2 (see page 7)							

Weights (kg)

Figure-No.	DN	65	80	100	125	150	200	250
35.005		16,0	21,0	28,0	45,0	66,0	143,0	228,0

ARI-STOBU® - Stop valve with gland seal, made of stainless steel

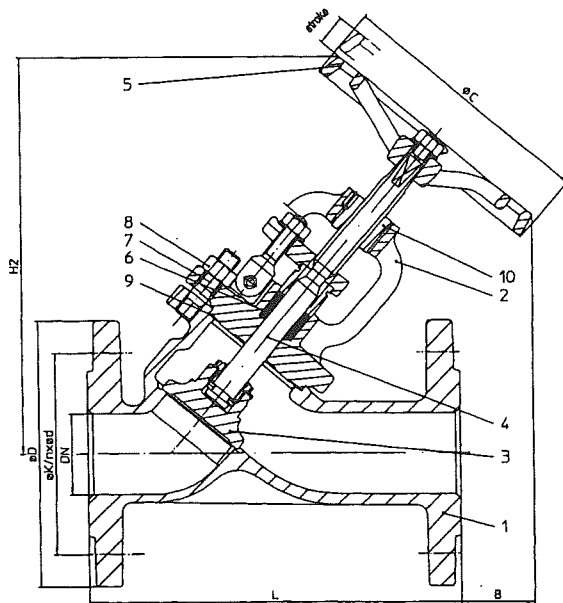


Figure	Nominal pressure	Material	Nominal diameters
52.009	PN 16	1.4408	DN 15-200
54.009	PN 25	1.4408	DN 15-200
55.009	PN 40	1.4408	DN 15-200

Selection of possible applications:

- Recycling facilities
- Chemical industry
- Hospital technology
- Processing technology
- Process water installations
- Installations with aggressive media

- other applications on request -

- CE-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
52.009 / 54.009 / 55.009		4,0	4,6	6,0	7,6	9,4	11,6	16,5	23,2	35,0	43,0	72,0	141,0	--	--	--	--	--

ARI-STOBU® - Stop valve with gland seal, made of cast iron and nodular iron

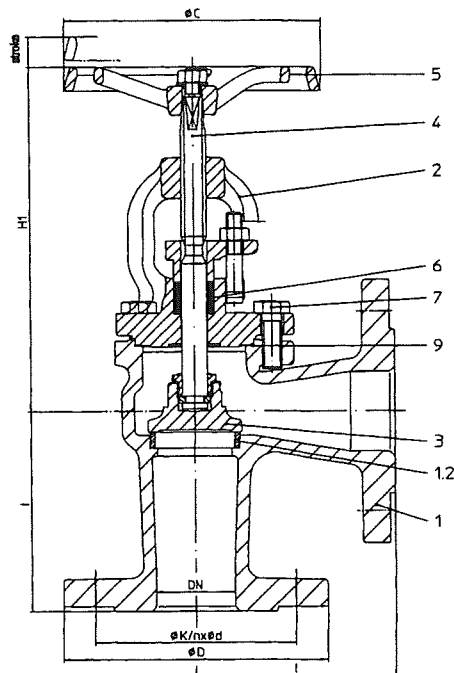


Figure	Nominal pressure	Material	Nominal diameters
12.007	PN 16	GG-25	DN 15-500
12.307	PN 16	GG-25	DN 15-500
22.007	PN 16	GGG-40.3	DN 15-500
22.307	PN 16	GGG-40.3	DN 15-500
BR 307: Trim made of RG/MS (CuZn35Ni, 2.0540 code number 02 G-CuSn 10, 2.1050 code number 03)			

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Vapour facilities
- Recycling facilities
- Shipbuilding
- General plant manufacturing

- other applications on request -

- CE-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
12.007 / 12.307		3,9	4,5	5,5	6,6	9,1	11,5	17,1	22,4	32,0	46,0	67,0	126,0	184,0	270,0	398,0	625,0	885,0
22.007 / 22.307		4,0	4,5	5,6	6,6	9,2	11,6	17,0	22,6	33,0	46,0	68,0	100,0	204,0	270,0	398,0	570,0	885,0

ARI-STOBU® - Stop valve with gland seal, made of cast steel

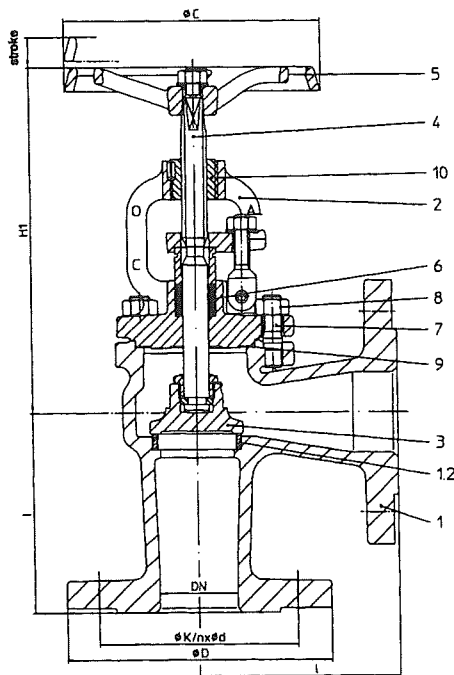


Figure	Nominal pressure	Material	Nominal diameters
34.007	PN 25	1.0619+N	DN 15-500
34.307			
35.007	PN 40	1.0619+N	DN 15-500
35.307			
BR 307: Trim made of RG/MS (CuZn35Ni, 2.0540 code number 02 G-CuSn 10, 2.1050 code number 03)			
Test:	34.007 DN 15-400	TÜ.A/TÜV.AR 187-00	
	35.007 DN 15-150	TÜ.A/TÜV.AR 187-00	

Selection of possible applications:

- Industry
- Powerstations
- Flue gas purification plant
- Vapour facilities
- Recycling facilities
- Shipbuilding
- General plant manufacturing

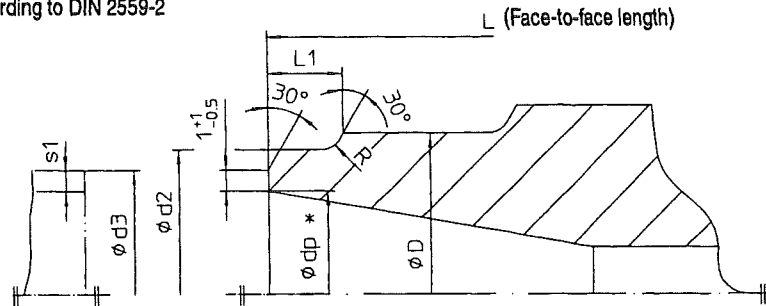
- other applications on request -

- C E-marking for applications acc. to Pressure Equipment Directive (identification obligation from \geq DN32)

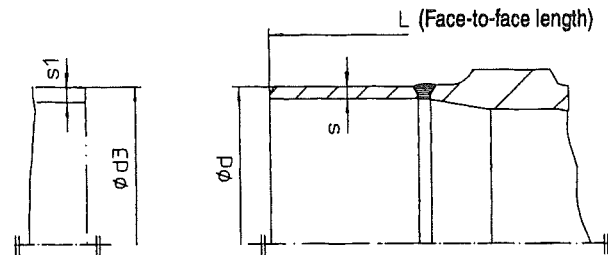
Weights (kg)

Figure-No.	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
34.007 / 34.307		5,2	7,2	7,4	8,4	12,4	13,6	20,0	25,0	34,0	53,0	70,0	138,0	170,0	290,0	383,0	690,0	963,0
35.007 / 35.307		5,2	7,2	7,4	8,4	12,4	13,6	20,0	25,0	34,0	53,0	70,0	148,0	188,0	327,0	430,0	767,0	1018,0

* $\varnothing dp$ according to DIN 2559-2



Edge shaping
according to DIN EN 25817



DN	L	Butt weld ends according to DIN 3239-1, form 2					Shoed ends made of St 35.8 Pipe connection = welding neck flanges		Pipe = DIN 3239-1 $\varnothing d3 \times s1$
		$\varnothing d2$	$\varnothing dp$	$\varnothing D$	R	L1	$\varnothing d$	s	
15	130	22,0	17,0	29	3	10	--	--	21,3 x 2,0
20	150	28,0	22,0	34	3	10	--	--	26,9 x 2,3
25	160	34,0	28,5	40	3	10	--	--	33,7 x 2,6
32	180	43,0	37,0	47	3	10	--	--	42,4 x 2,6
40	200	49,0	43,0	57	3	10	--	--	48,3 x 2,6
50	230	61,0	54,0	67	3	10	--	--	60,3 x 3,2
65	290	77,0	69,0	84	3	10	76,1	2,9	--
80	310	90,0	81,0	100	3	12	88,9	3,2	--
100	350	115,0	104,0	125	3	14	114,3	3,6	--
125	400	141,0	130,5	149	3	18	139,7	4,0	--
150	480	170,0	156,5	176	3	20	168,3	4,5	--
200	600	222,0	204,5	241	5	20	219,1	6,3	--
250	730	276,0	256,5	292	5	25	--	--	273,0 x 8,0

Face-to-face length according to DIN 3202 T2

Butt weld ends according to DIN 3239 T1, form 2

Weld joint according to DIN 2559 T1, code number 22

The material used for ARI valves with butt weld ends is: 1.0619+N (GS-C25N) according to DIN EN 10213-1-2, C22.8 according to DIN 17243.

The material used for ARI valves with shoed ends (DN 65-200) St 35.8 according to DIN 17175.

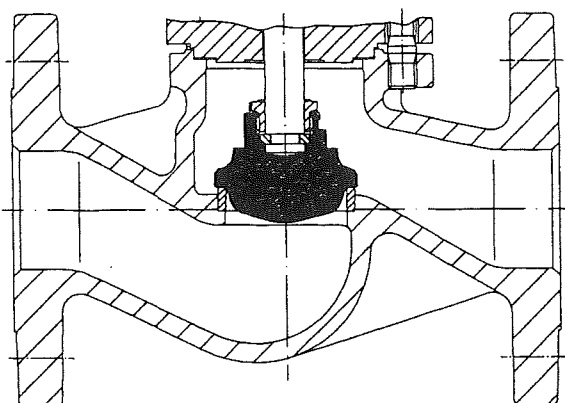
Based on our experience we recommend electric welding techniques for connecting valves or strainers with tubes or with each other.

Lime based electrodes with an appropriate composite material should be used as filler material for welding.

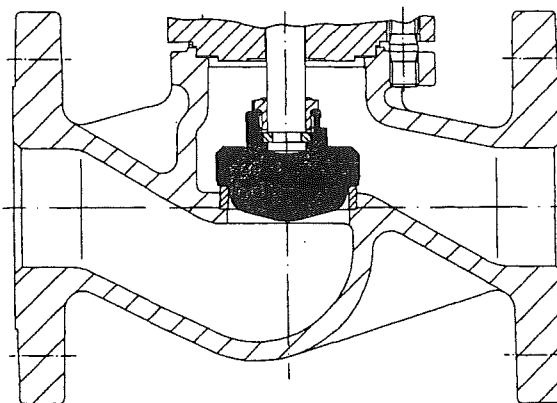
Gas welding should be avoided.

Due to the different material composition and material thickness of valves and tubes, gas welding is more susceptible to produce faults than electric welding (hardness cracks, coarse-grained structure).

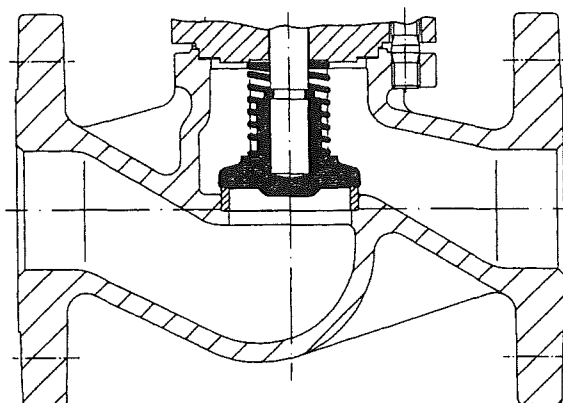
Plug design



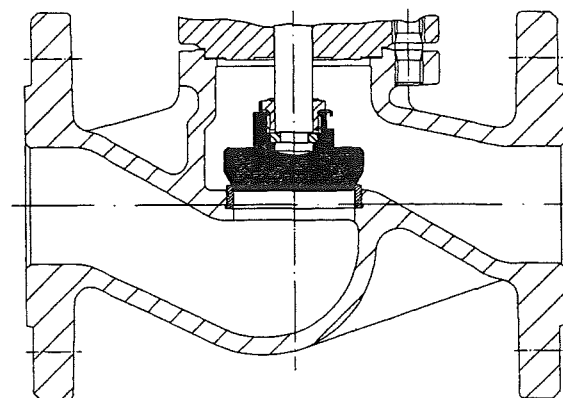
Throttling plug



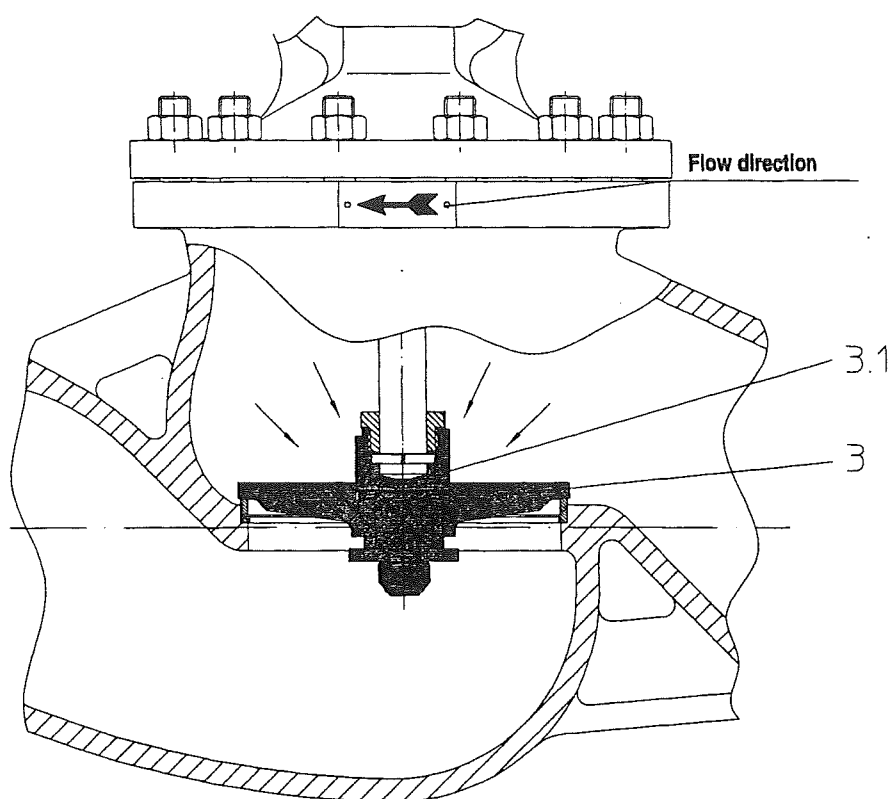
Throttling plug with soft seal, PTFE + 25% carbon
Max. operating temperature 200 °C



Loose plug with re-setting spring - max differential pressure, see table of pressure balancing plugs.
(Design for special applications see page 10)



Plug with marginal seat



Valves with **balancing plugs** have to be installed with medium flowing over the plug (3) as indicated by flow direction arrow on valve body.

Working principles:

When the valve is closed, anticlockwise rotation of the hand wheel lifts the pilot plug (3.1) off the larger balancing plug (3). This allows the medium to pass through the plug and equalizes the pressure of the medium under the plug (3). After the pressures have been equalized within the values stated in the table, the valve can be opened by turning the valve further with normal manual force.

Balancing plugs are fully effective only in closed systems.

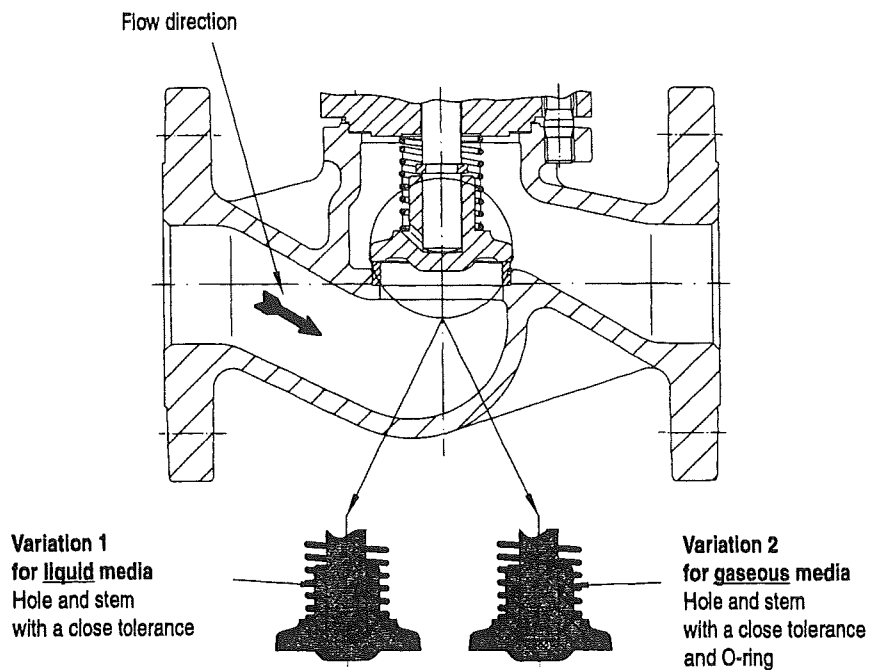
The pressure of the medium on either side of the plug cannot be equalized in plants served by pumps operating on their characteristic.

The pressures of the medium on either side of the plug cannot be equalized if the medium is discharged into "open air".

A bypass line or some other arrangement is necessary if too much time is required for pressure equalization owing to the volume in the piping system.

ARI-stop valves with differential pressures exceeding the following pressures, have to be fitted with pressure balancing plugs:

Balancing plug	DN	125	150	200	250	300	350	400	500
Differential pressure	D p	25 bar	21 bar	14 bar	9 bar	6 bar	4,5 bar	3,5 bar	1,5 bar

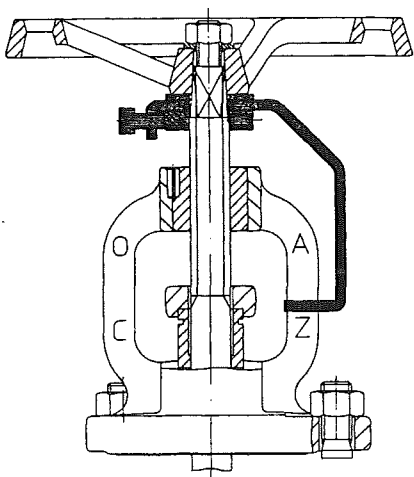


Loose plug with re-setting spring and plug damper

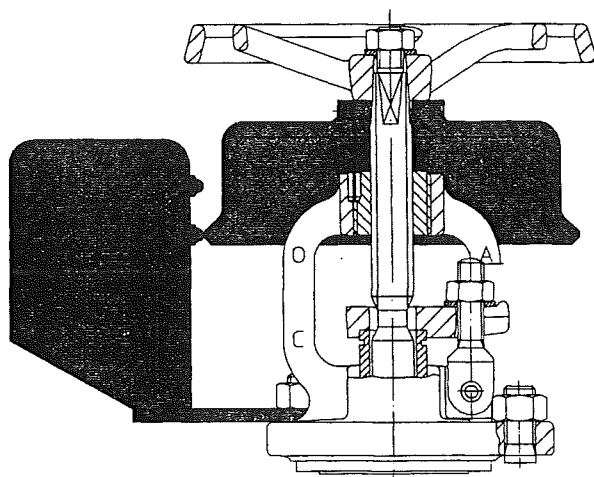
In special applications, like high flow turbulences, stuffing box valves with „loose plug “ and damper should be used: Working principles

- if stuffing box valves with loose plug are mounted directly by centrifuged pumps;
- behind pressure reduction stations;
- behind pipe elbows;
- in compact plants;
- if expansion joints are missing;
- if the pump is not mounted on a damper;
- if there is no flow stabilizing pipe length;
- if there is no start-up bypass line;
- when chosen valve diameter to large.

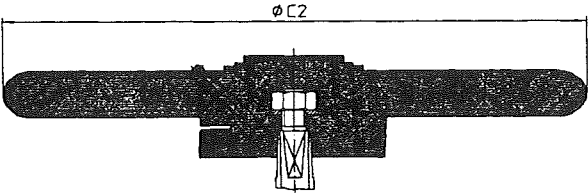
1. When the plug opens, the medium escapes slowly through the hole of the plug damper.
2. When the plug closes, the medium gets sucked slowly through the hole of the plug damper into the hollow space.



Position indicator with locking device

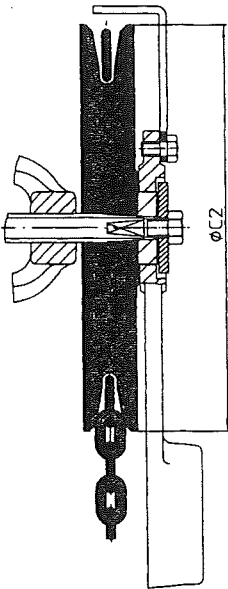


Limit switch



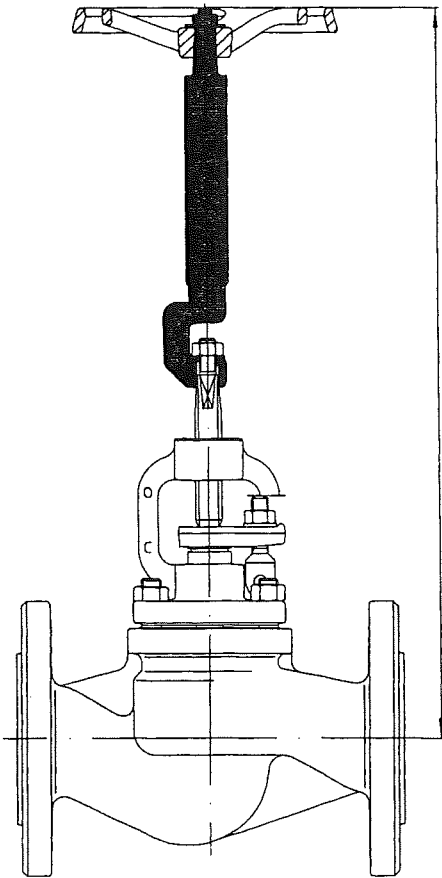
DN	ØC2 (mm)	Weight (kg)
15- 32	180	1,5
40- 100	250	3,0
125-200	365	5,0
250-500	520	13,0

Handwheel operated by impact force



DN	ØC2 (mm)	Weight (kg)
15- 32	180	2,5
40- 80	220	7
100-125	260	8,9
150-400	300	11

Chain wheel



Spindle extension (please specify the height in your order)

Dimensions / kvs- and zeta-values / parts

Dimensions, kvs- and zeta-values

DN	L	I	B	H	H1	H2	Stroke	ØC	Kvs-values			Zeta-values		
									Straight-way	Forged-valve	Angle-pattern	Straight-way	Forged-valve	Angle-pattern
15	130	90	80	185	185	200	9	120	4,2	3,3	5,2	4,4	7,2	2,8
20	150	95	70	185	185	200	9	120	7,4	5,8	9,2	4,5	7,3	2,9
25	160	100	85	205	200	225	13	140	12	9,2	15,0	4,4	7,1	2,8
32	180	105	70	205	200	225	13	140	19	15,0	24,0	4,2	7,2	2,7
40	200	115	70	230	215	245	21	160	31	23,3	37,0	4,1	7,3	2,9
50	230	125	45	230	215	250	19	160	47	36,0	58,0	4,4	7,4	2,8
65	290	145	30	270	245	285	28	180	77	--	96,0	4,6	--	2,9
80	310	155	65	305	280	320	32	200	120	--	150,0	4,3	--	2,8
100	350	175	75	355	320	415	36	225	188	--	235,0	4,3	--	2,7
125	400	200	80	395	360	435	52	250	288	--	360,0	4,5	--	2,9
150	480	225	75	450	415	505	56	400	410	--	510,0	4,6	--	3,0
200	600	275	130	570	495	640	73	520	725	--	905,0	4,6	--	3,0
250	730	325	--	685	575	--	80	520	1145	--	1430,0	4,5	--	2,9
300	850	375	--	770	655	--	110	520	1635	--	2040,0	4,6	--	3,0
350	980	425	--	860	735	--	116	640	2220	--	2775,0	4,6	--	3,0
500	1100	475	--	865	740	--	126	640	3180	--	3975,0	3,9	--	2,5
	1350	525	--	995	840	--	181	640	4530	--	5660,0	4,6	--	3,0

Zeta-value ...with tolerances out of the Kv-value calculation according to VDI/VDE 2173

Dimensions of flanges see page 13 or flange slide

Globe valves with flanges:

Face-to-face length FTF series 1 according to DIN EN 558-1 (DIN 3202-1 series F1)

Angle pattern globe valves with flanges:

Face-to-face length CTF series 8 according to DIN EN 558-1 (DIN 3202-1 series F32)

Globe valves with butt weld ends:

Face-to-face length according to DIN 3202-2 series S7

Figure	12.006 12.007	22/23.006 22/23.007	34/35.006 34/35.007	35.005	12.306/307	22/23.306 22/23.307	34/35.306; 34/35.307	45.005 45.006	52/54/55.006 52/54/55.009	
Part	Description	Material, Material-No.								
1	Body	GG-25 0.6025	GGG-40.3 0.7043	1.0619+N (GS-C25N) 1.0619.01	GG-25 0.6025	GGG-40.3 0.7043	1.0619+N (GS-C25N) 1.0619.01	C22.8 1.0460	1.4408	
1.2	Seat	X 20 Cr 13, 1.4021.05			DN≤50: X 20 Cr 13, 1.4021.05; DN>50: 1.4551			GZ-CuSn 5 Zn Pb*, 2.1096.03 code number 02 G-CuSn 10, 2.1050.03	X 5 CrNiNb19-9 1.4551	—
	Bonnet	GG-25, 0.6025	GGG-40.3 0.7043	DN ≤ 80: C22.8 1.0460 DN > 80: 1.0619+N (GSC25N) 1.0619.01	GG-25, 0.6025	GGG-40.3 0.7043	DN ≤ 80: C22.8 1.0460 DN > 80: 1.0619+N (GS-C25N) 1.0619.01	C22.8 1.0460	DN ≤ 80: 1.4404 DN > 80: 1.4408	
3	Plug	DN ≤ 200: X 20 Cr 13, 1.4021.05 DN > 200: P265 GH (Kbl. H11) - X 8 Cr Ti 18, 1.0425 - 1.4502			GZ-CuSn5Zn Pb*, 2.1096.03 code number 02 G-CuSn 10, 2.1050.03			X 20 Cr 13 1.4021.05	1.4571	
4	Spindle	X 20 Cr 13, 1.4021.05 burnished			CuZn35Ni, 2.0540 code number 02 burnished CuSn 8, 2.1030 code number 03 burnished			X 20 Cr 13 1.4021.05 burnished	1.4571	
5	Handwheel	GG-25, 0.6025 coated								
6	Gland packing	Pure graphite								
7	Hexagon screws Studs	5.6	24 CrMo 5 1.7258		5.6	24 CrMo 5 1.7258			A 4-70	
8	Hexagon nuts	--	Ck 35, 1.1181		—	Ck 35, 1.1181			A4	
9	Seal	CrNi laminated both sides with pure graphite								
10	Threaded bush	--	—	9S20K Fe/Zn 1.0711	—	—	9S20K Fe/Zn 1.0711	1.4104		

* max. operating temperature: 225 °C

* max. operating temperature: 225 °C

Informations / restrictions of technical rules have to be observed!

Operating instructions can be ordered on request by phone (+49 52 07) 994-0 or fax (+49 52 07) 994-158 or 159.

ARI-valves made of GG-25 are not allowed in systems according to TRD 110.

A production allowance according to TRB 801 No. 45 exists (according to TRB801 No. 45 GG-25 is not allowed).

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

ARI-STOBU flow diagrams see technical annex

Leakage rate according to DIN 3230-3 (leakage rate 1)

Alternative description according to DIN 3356 „valves“

	PN 16	PN 25	PN 40
Flanges according to	DIN 2533	DIN 2544	DIN 2545

Butt weld ends according to DIN 3239 (see on page 7)

Pressure-temperature-classification

Material	PN	Temperature								
		-60°C till <+10°C*	-10°C	120°C	200°C	250°C	300°C	350°C	400°C	450°C
GG-25	16	---	16 bar	16 bar	13 bar	11 bar	10 bar	---	---	---
GGG-40.3	16	---	16 bar	16 bar	13 bar	13 bar	13 bar	10 bar	---	---
GGG-40.3	25	---	25 bar	25 bar	20 bar	18 bar	16 bar	15 bar	---	---
1.0619+N / C22.8	25	12,5 bar	25 bar	25 bar	22 bar	20 bar	17 bar	16 bar	13 bar	10 bar
1.0619+N / C22.8	40	20 bar	40 bar	40 bar	35 bar	32 bar	28 bar	24 bar	21 bar	18 bar

Material	PN	Temperature								
		-60°C till <+20°C*	20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C
1.4408	16	8 bar	16 bar	13 bar	11,5 bar	10,5 bar	9,5 bar	9 bar	8,3 bar	8 bar
1.4408	25	12,5 bar	25 bar	20 bar	18 bar	16 bar	15 bar	14 bar	13 bar	12,5 bar
1.4408	40	20 bar	40 bar	32 bar	29 bar	26 bar	24 bar	22 bar	21 bar	20 bar

* Studs and nuts made of A4-70

Standard - flange dimensions

DN	PN 6			PN 16			PN 25			PN 40		
	Ø D	Ø K	n x Ø d1	Ø D	Ø K	n x Ø d1	Ø D	Ø K	n x Ø d1	Ø D	Ø K	n x Ø d1
15	80	55	4 x 11	95	65	4 x 14	95	65	4 x 14	95	65	4 x 14
20	90	65	4 x 11	105	75	4 x 14	105	75	4 x 14	105	75	4 x 14
25	100	75	4 x 11	115	85	4 x 14	115	85	4 x 14	115	85	4 x 14
32	120	90	4 x 14	140	100	4 x 18	140	100	4 x 18	140	100	4 x 18
40	130	100	4 x 14	150	110	4 x 18	150	110	4 x 18	150	110	4 x 18
50	140	110	4 x 14	165	125	4 x 18	165	125	4 x 18	165	125	4 x 18
65	160	130	4 x 14	185	145	4 x 18	185	145	8 x 18	185	145	8 x 18
80	190	150	4 x 18	200	160	8 x 18	200	160	8 x 18	200	160	8 x 18
100	210	170	4 x 18	220	180	8 x 18	235	190	8 x 22	235	190	8 x 22
125	240	200	8 x 18	250	210	8 x 18	270	220	8 x 26	270	220	8 x 26
150	265	225	8 x 18	285	240	8 x 22	300	250	8 x 26	300	250	8 x 26
200	320	280	8 x 18	340	295	12 x 22	360	310	12 x 26	375	320	12 x 30
250	---	---	---	405	355	12 x 26	425	370	12 x 30	450	385	12 x 33
300	---	---	---	460	410	12 x 26	485	430	16 x 30	515	450	16 x 33
350	---	---	---	520	470	16 x 26	555	490	16 x 33	580	510	16 x 36
400	---	---	---	580	525	16 x 30	620	550	16 x 36	660	585	16 x 39
500	---	---	---	715	650	20 x 33	730	660	20 x 36	755	670	20 x 42

Please indicate when ordering:

- Figure-No.
- Nominal pressure
- Nominal diameter
- Special design / accessories

Example:

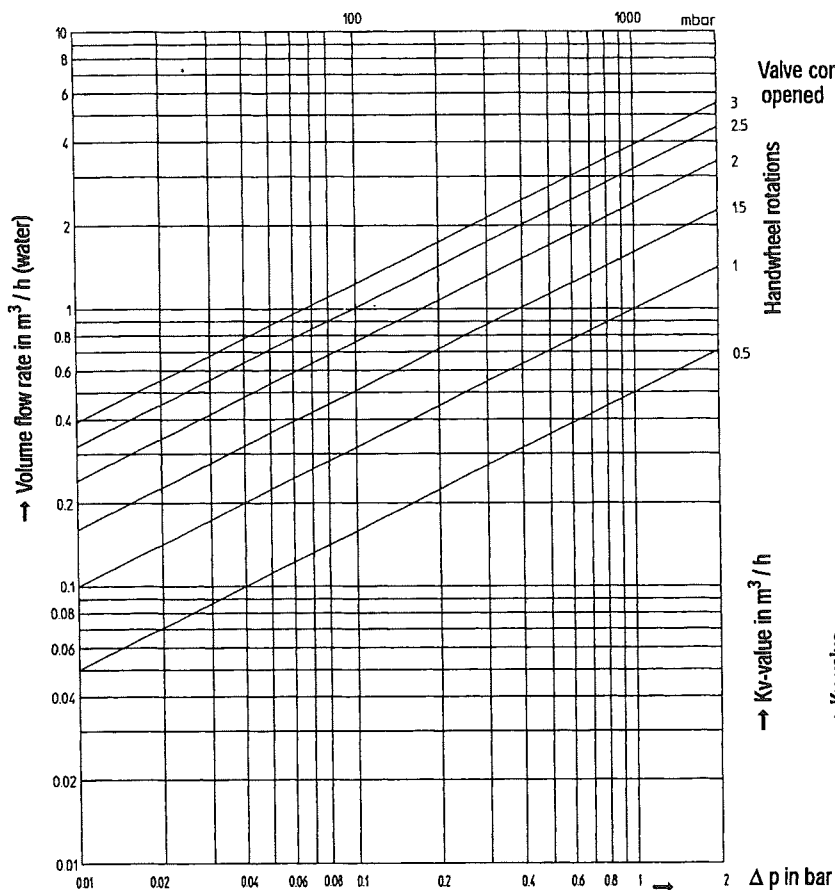
Figure 35.006; nominal pressure PN40; nominal diameter DN100; with throttling plug, position indicator with locking device.

Dimensions in mm
Weights in kg
1 bar Δ 10⁵ Pa Δ 0,1 MPa
Kvs in m³/h
1Kvs Δ 0,85 Cv



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ARI-Armaturen Albert Richter GmbH & Co. KG, D-33756 Schloß Holte-Stukenbrock,
Tel. +49 52 07 / 994-0, Telefax +49 52 07 / 994-158 or 159 Internet: <http://www.ari-armaturen.com> E-mail: info.vertrieb@ari-armaturen.com



DN 15 / PN 6-40

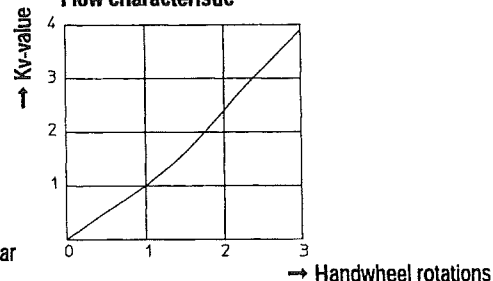
Handwheel rotations	Zeta-Value	Kv-Value
0,5	324	0,5
1	81	1
1,5	31,6	1,6
2	14,1	2,4
2,5	7,9	3,2
3	5,3	3,9

max. permissible differential pressure in regulating function 2,0 bar.

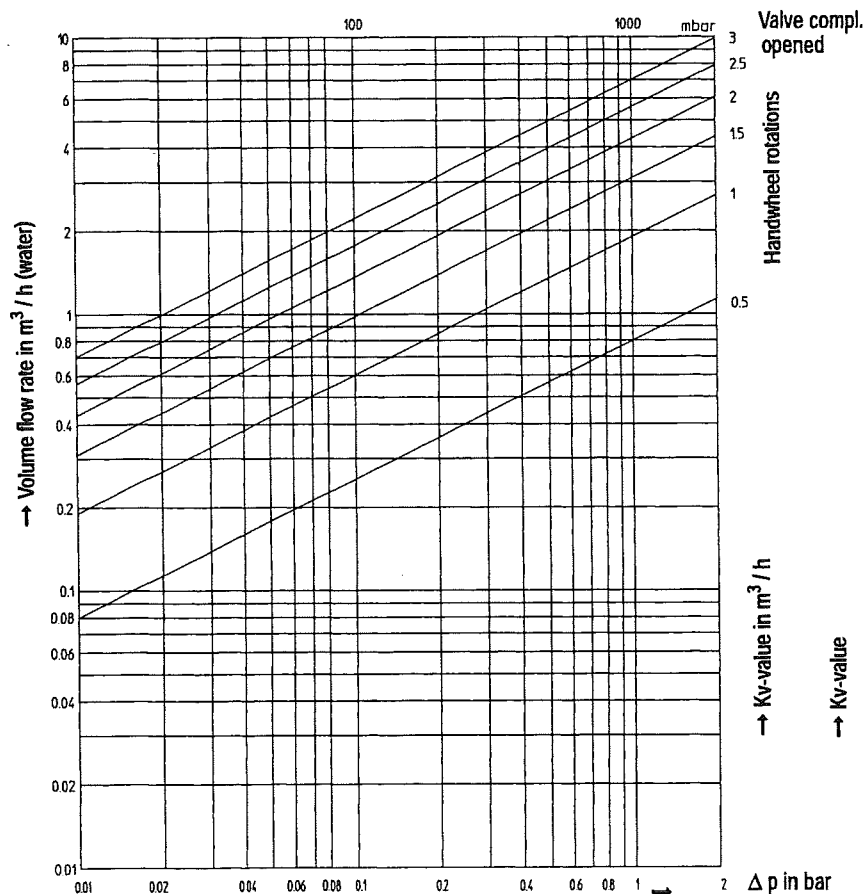
max. permissible flow speed: Liquids ≤ 4 m/s,
Gas and vapours ≤ 60 m/s

Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa



DN 20 / PN 6-40

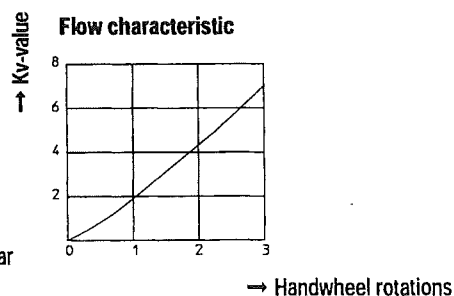
Handwheel rotations	Zeta-Value	Kv-Value
0,5	400	0,8
1	70,9	1,9
1,5	26,6	3,1
2	13,8	4,3
2,5	8,2	5,6
3	5,2	7,0

max. permissible differential pressure in regulating function 2,0 bar.

max. permissible flow speed: Liquids ≤ 4 m/s,
Gas and vapours ≤ 60 m/s

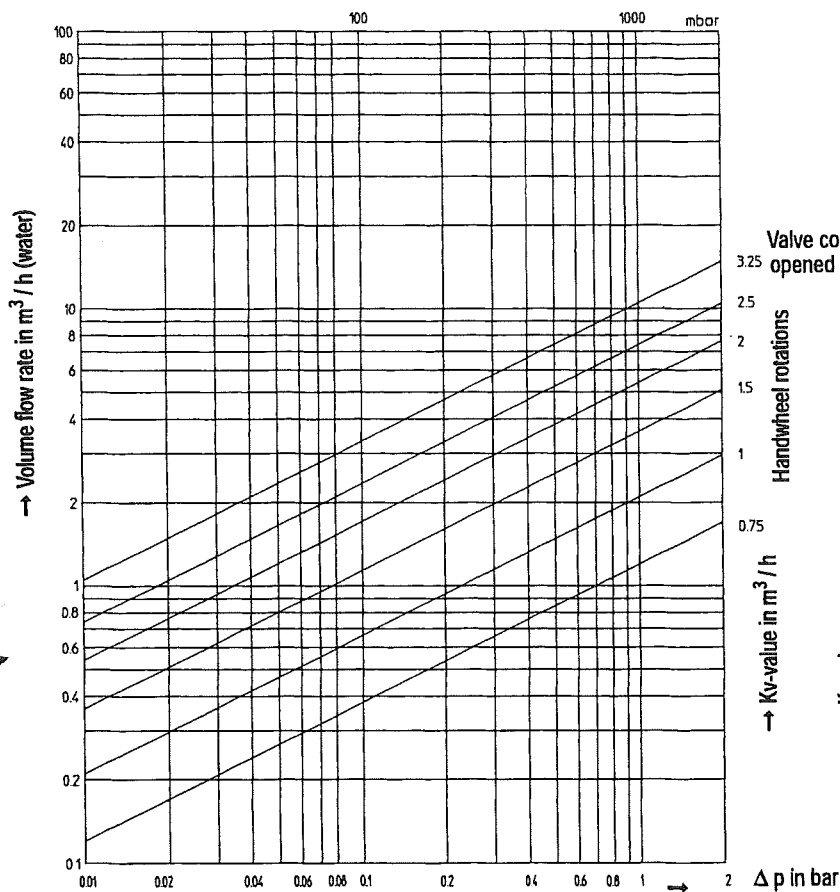
Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa

Flow diagram STOBU® with throttling plug



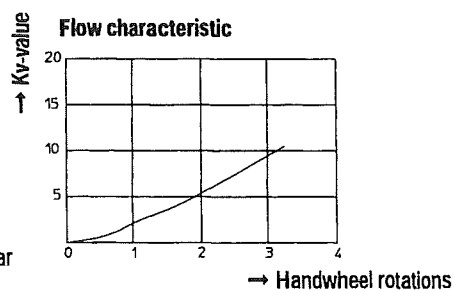
DN 25 / PN 6-40

Handwheel rotations	Zeta-Value	Kv-Value
0,75	434	1,2
1	142	2,1
1,5	48,2	3,6
2	21,4	5,4
2,5	11,4	7,4
3,25	5,7	10,5

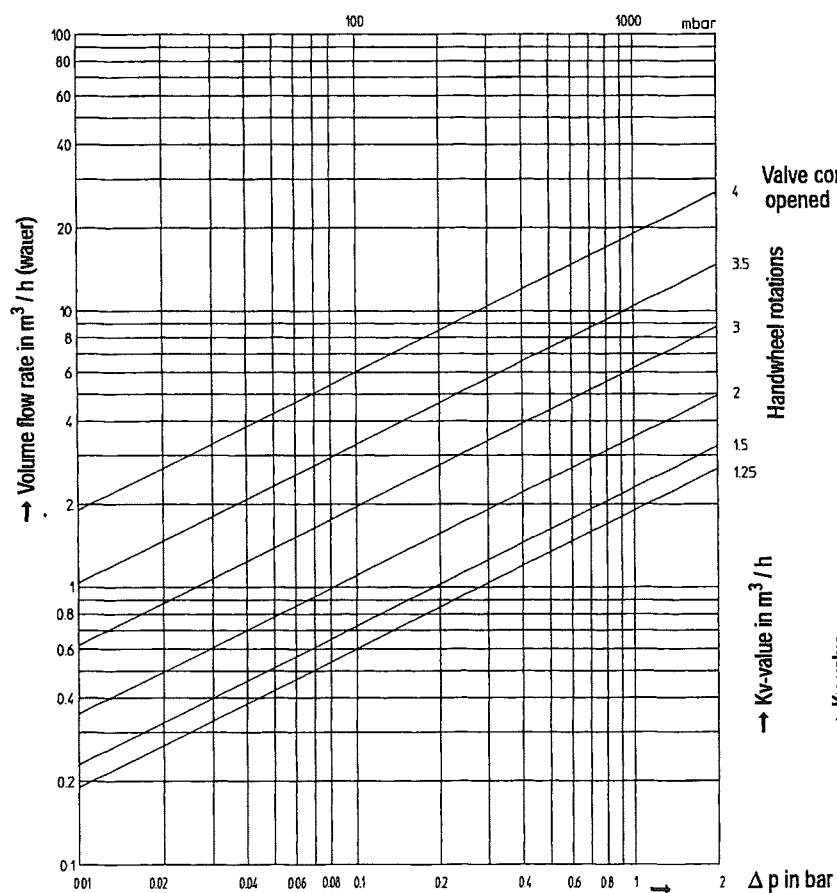
max. permissible differential pressure in regulating function 2,0 bar.

max. permissible flow speed: Liquids ≤ 4 m/s, Gas and vapours ≤ 60 m/s

Condition: The flow must be free of cavitation.



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa



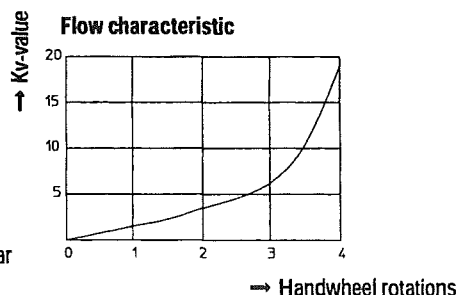
DN 32 / PN 6-40

Handwheel rotations	Zeta-Value	Kv-Value
1,25	465	1,9
1,5	317	2,3
2	137	3,5
3	43,6	6,2
3,5	15,5	10,4
4	4,65	19

max. permissible differential pressure in regulating function 2,0 bar.

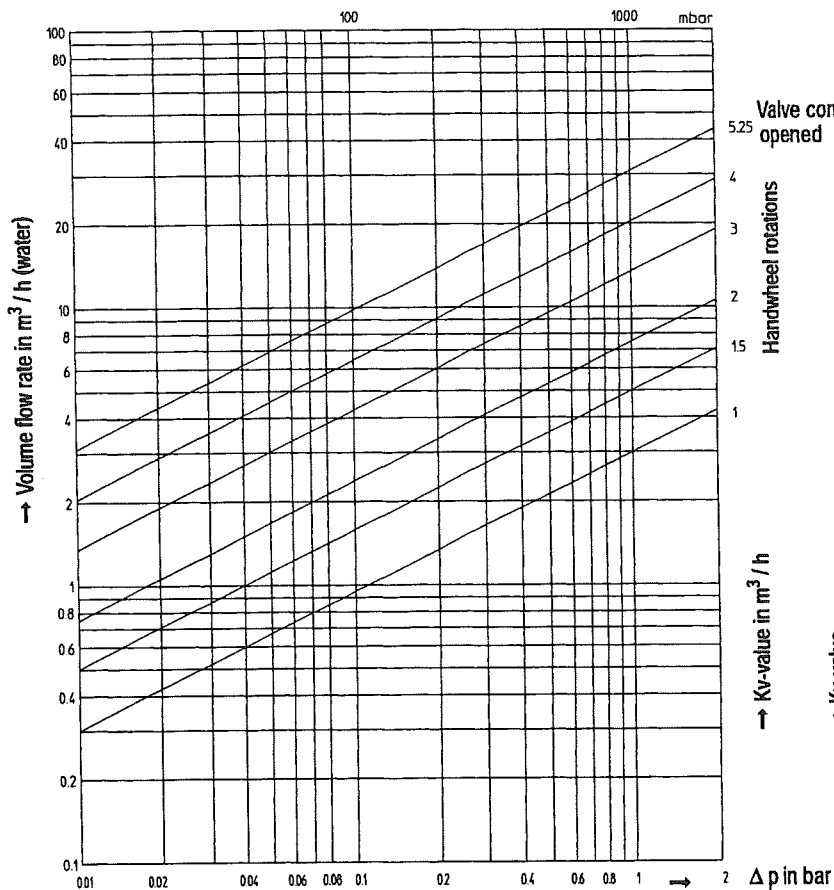
max. permissible flow speed: Liquids ≤ 4 m/s, Gas and vapours ≤ 60 m/s

Condition: The flow must be free of cavitation.



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa

Flow diagram STOBU® with throttling plug



DN 40 / PN 6-40

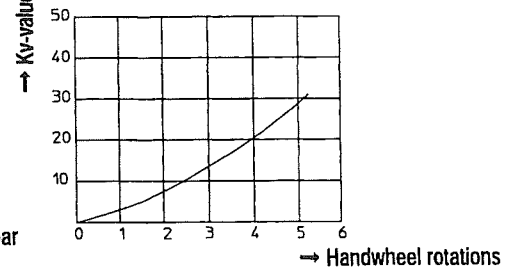
Handwheel rotations	Zeta-Value	Kv-Value
1	455	3
1,5	164	5
2	72,8	7,5
3	22,5	13,5
4	9,8	20,4
5,25	4,3	31

max. permissible differential pressure in regulating function 2,0 bar.

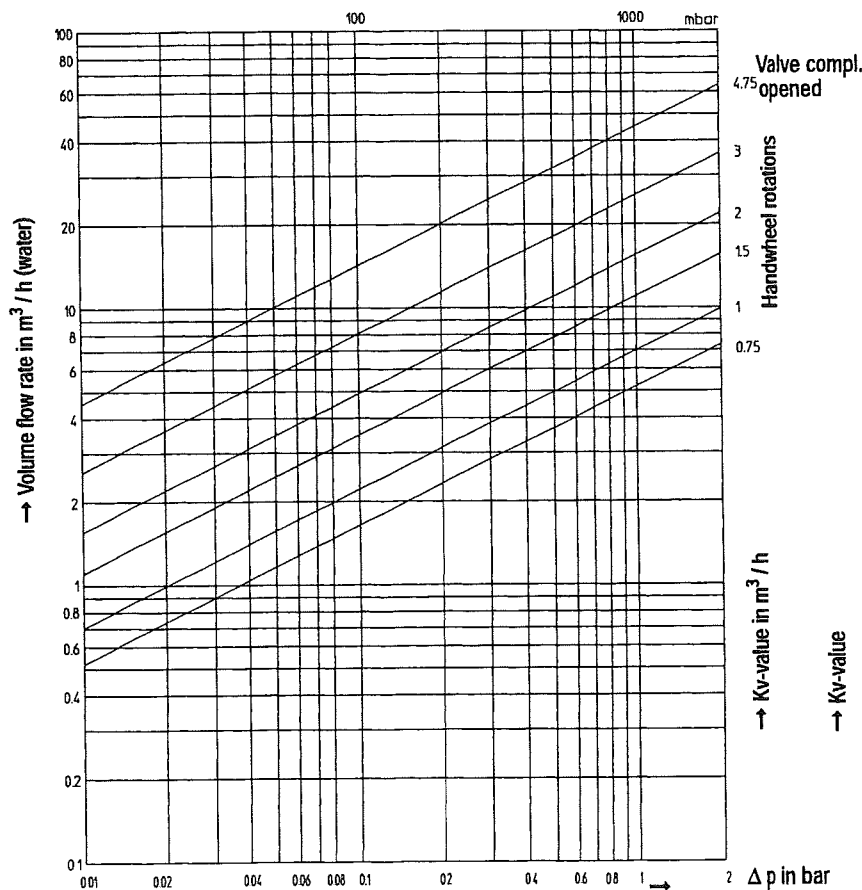
max. permissible flow speed: Liquids ≤ 4 m/s, Gas and vapours ≤ 60 m/s

Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa



DN 50 / PN 6-40

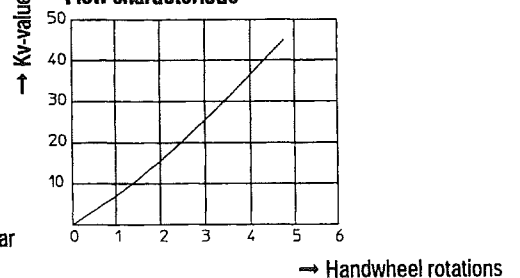
Handwheel rotations	Zeta-Value	Kv-Value
0,75	370	5,2
1	204	7
1,5	82,6	11
2	41,6	15,5
3	15,4	25,5
4,75	4,9	45

max. permissible differential pressure in regulating function 2,0 bar.

max. permissible flow speed: Liquids ≤ 4 m/s, Gas and vapours ≤ 60 m/s

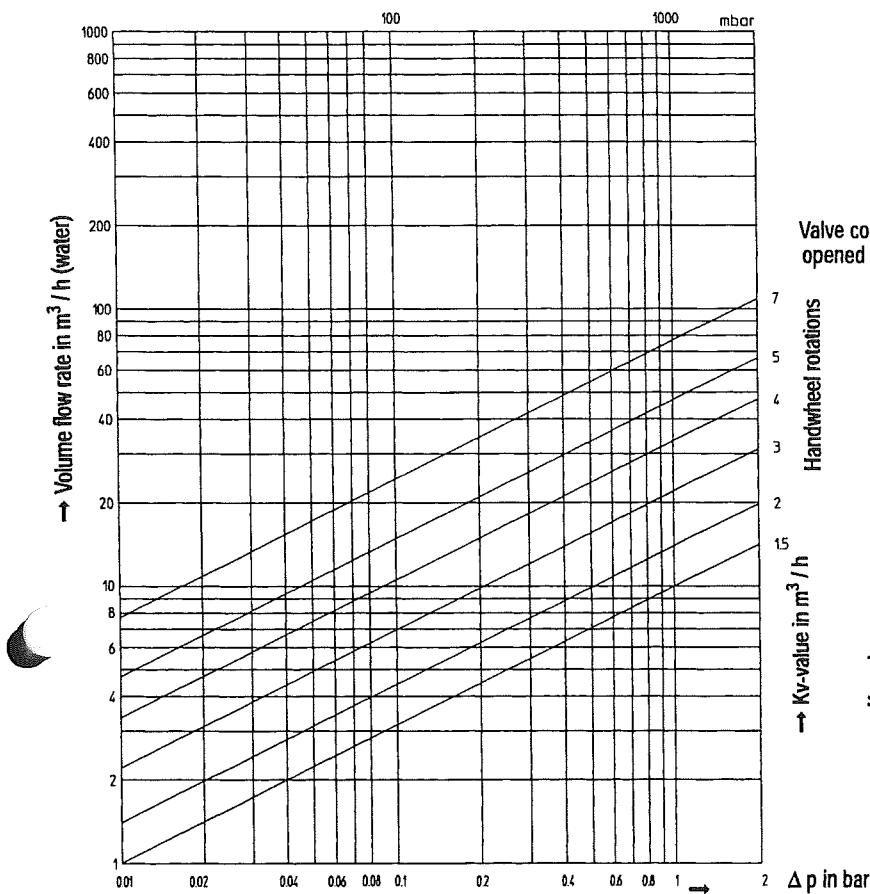
Condition: The flow must be free of cavitation.

Flow characteristic



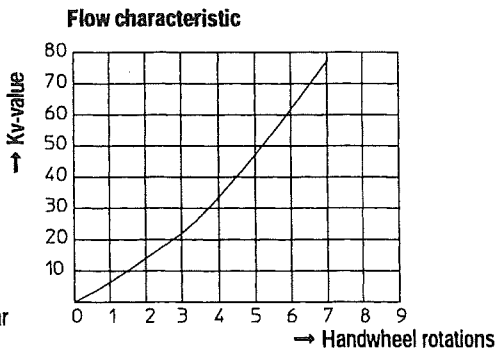
Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa

Flow diagram STOBU® with throttling plug

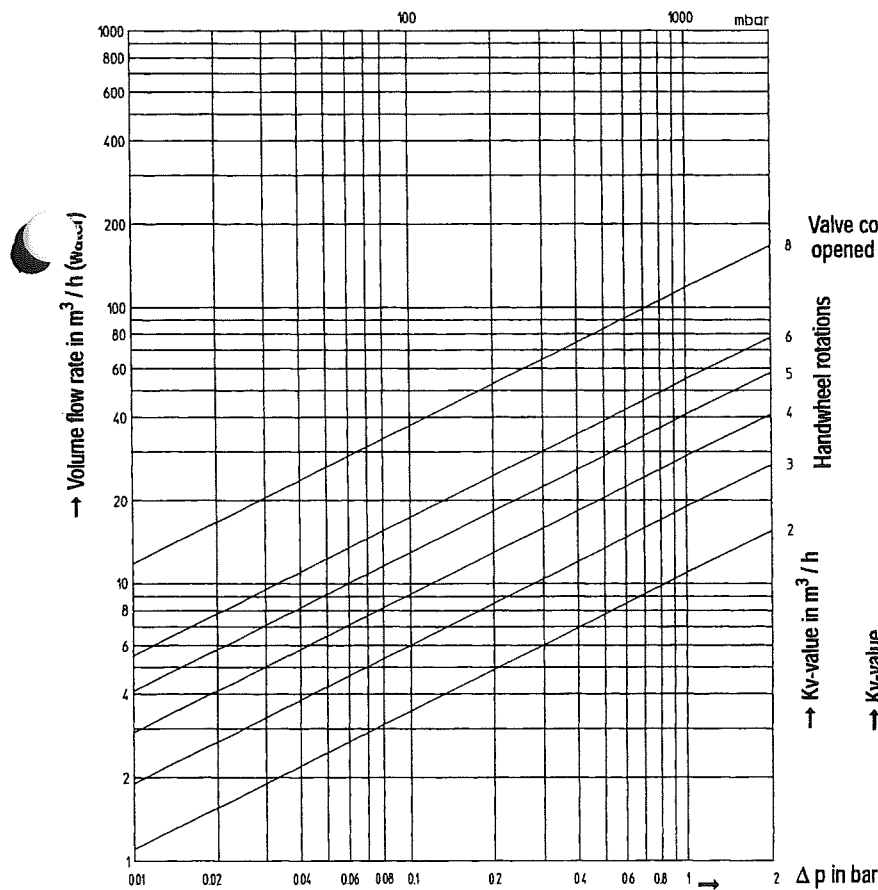


DN 65 / PN 6-40		
Handwheel rotations	Zeta-Value	Kv-Value
1,5	207	10
2	105	14
3	42,8	22
4	18,5	33,5
5	9,4	47
7	3,5	77

max. permissible differential pressure in regulating function 2,0 bar.
max. permissible flow speed: Liquids ≤ 4 m/s,
Gas and vapours ≤ 60 m/s
Condition: The flow must be free of cavitation.

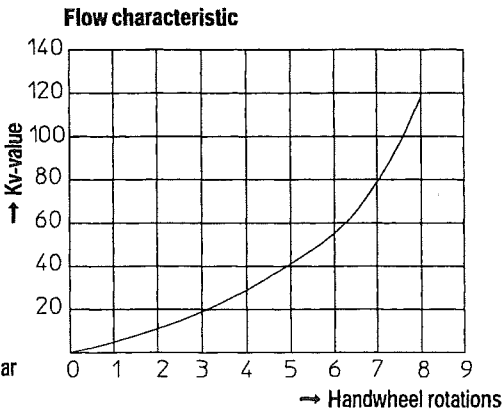


Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa



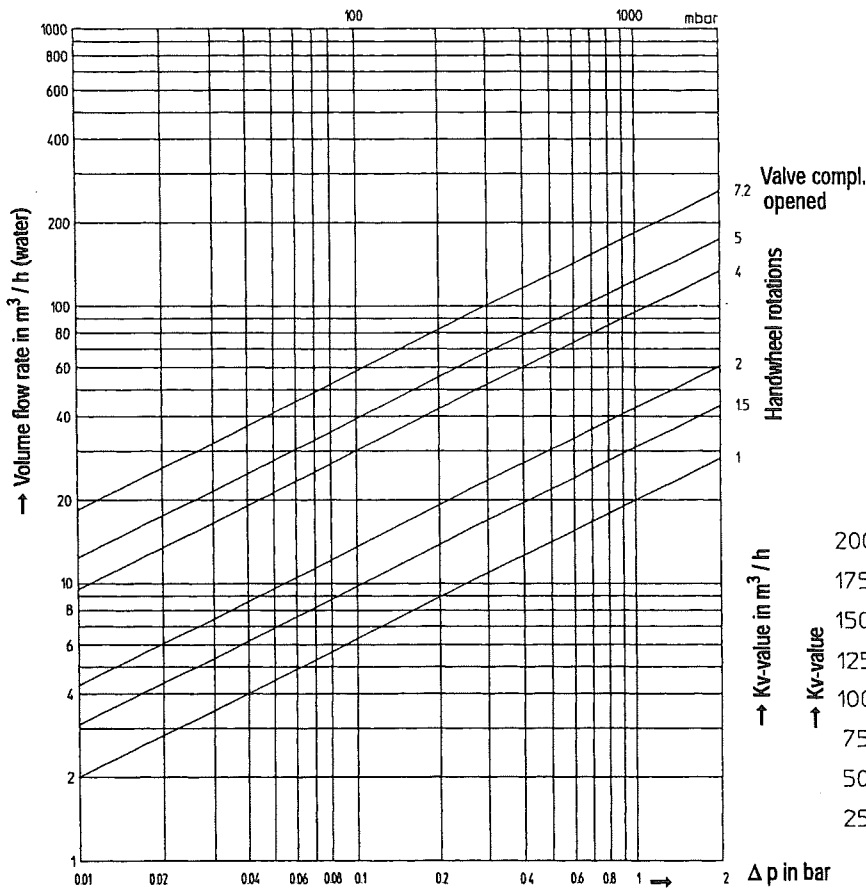
DN 80 / PN 6-40		
Handwheel rotations	Zeta-Value	Kv-Value
2	542	11
3	182	19
4	77,9	29
5	39	41
6	21,7	55
8	4,7	118

max. permissible differential pressure in regulating function 2,0 bar.
max. permissible flow speed: Liquids ≤ 4 m/s,
Gas and vapours ≤ 60 m/s
Condition: The flow must be free of cavitation.



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa

Flow diagram STOBU® with throttling plug



DN 100 / PN 6-40

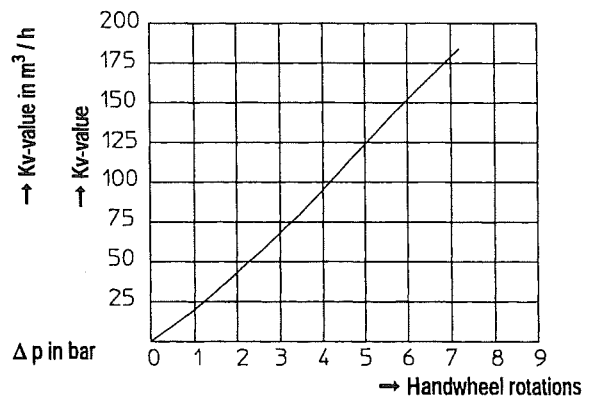
Handwheel rotations	Zeta-Value	Kv-Value
1	400	20
1,5	166	31
2	86,5	43
4	17,7	95
5	10,4	124
7,2	4,7	184

max. permissible differential pressure in regulating function 1,5 bar.

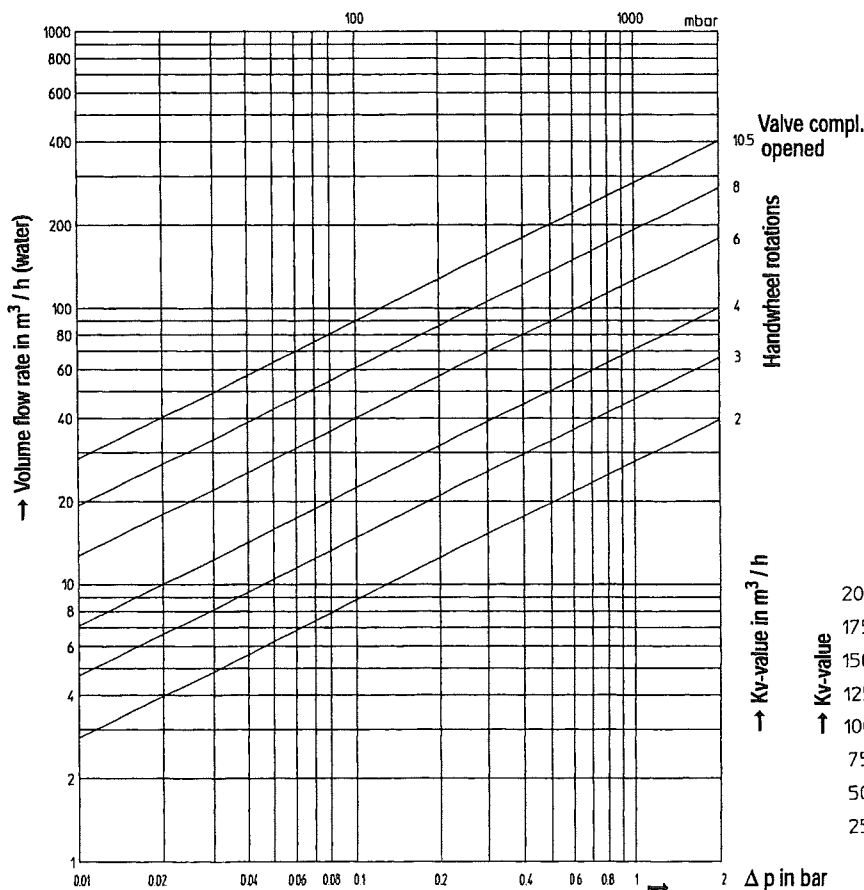
max. permissible flow speed: Liquids $\leq 4 \text{ m/s}$, Gas and vapours $\leq 60 \text{ m/s}$

Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H_2O) (1mm $\text{H}_2\text{O} = 9,8066 \text{ Pa}$) 1bar = 0,1MPa = 10^5 Pa



DN 125 / PN 6-40

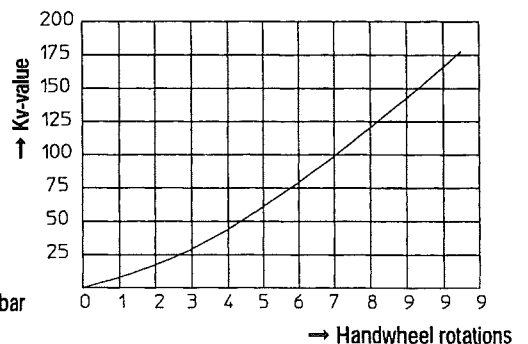
Handwheel rotations	Zeta-Value	Kv-Value
2	498	28
3	177	47
4	77,5	71
6	24,2	127
8	10,5	193
10,5	4,8	285

max. permissible differential pressure in regulating function 1,5 bar.

max. permissible flow speed: Liquids $\leq 4 \text{ m/s}$, Gas and vapours $\leq 60 \text{ m/s}$

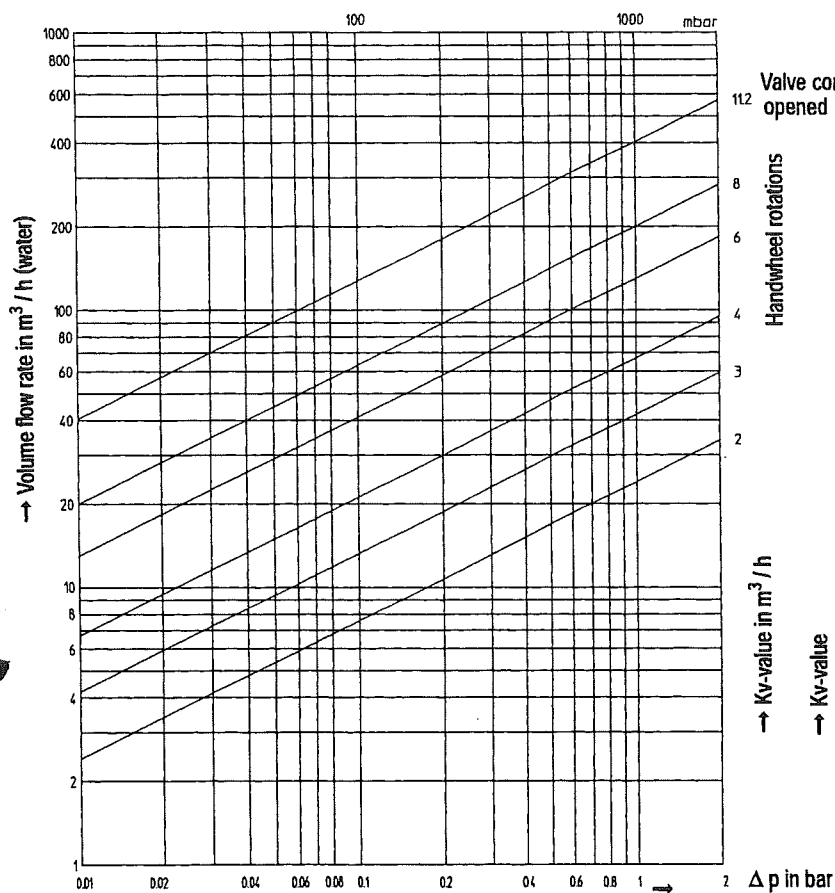
Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H_2O) (1mm $\text{H}_2\text{O} = 9,8066 \text{ Pa}$) 1bar = 0,1MPa = 10^5 Pa

Flow diagram STOBU® with throttling plug



DN 150 / PN 6-40

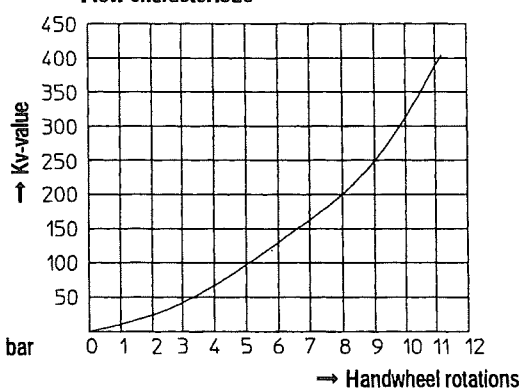
Handwheel rotations	Zeta-Value	Kv-Value
2	1406	24
3	459	42
4	180	67
6	57,9	130
8	20,3	200
11,2	4,96	404

max. permissible differential pressure in regulating function 1,0 bar.

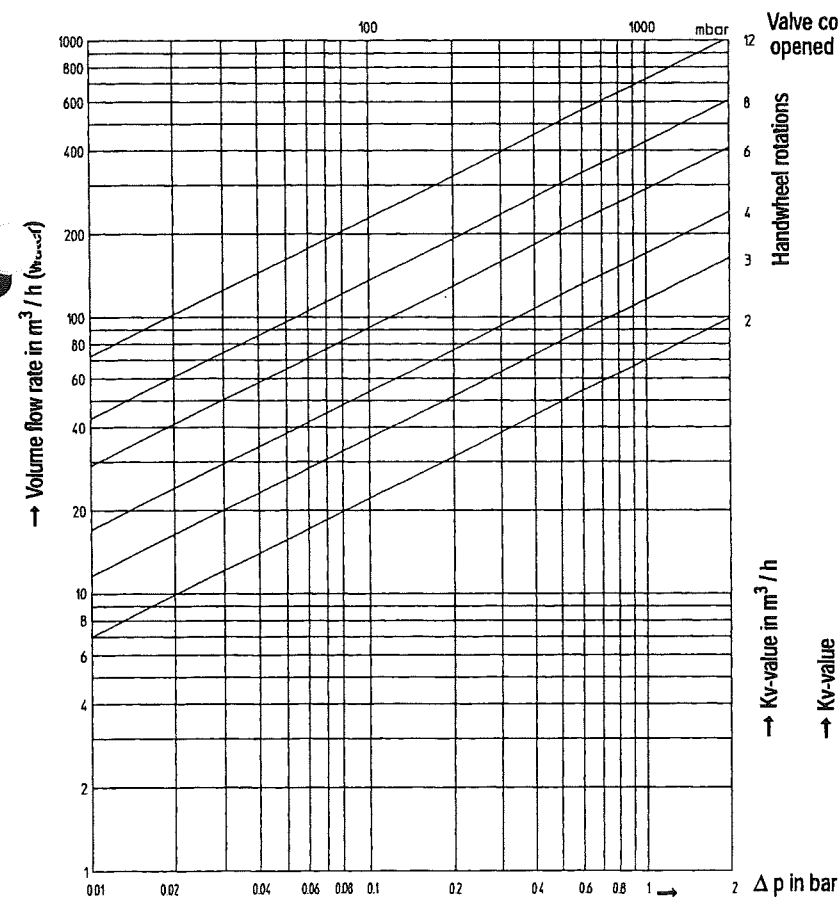
max. permissible flow speed: Liquids ≤ 4 m/s,
Gas and vapours ≤ 60 m/s

Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa



DN 200 / PN 6-40

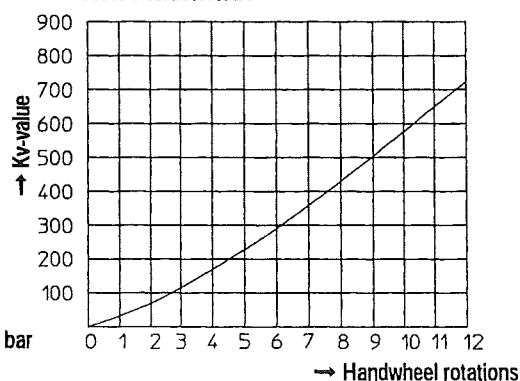
Handwheel rotations	Zeta-Value	Kv-Value
2	522	70
3	190	116
4	88,6	170
6	30,4	290
8	13,8	430
12	4,9	723

max. permissible differential pressure in regulating function 0,8 bar.

max. permissible flow speed: Liquids ≤ 4 m/s,
Gas and vapours ≤ 60 m/s

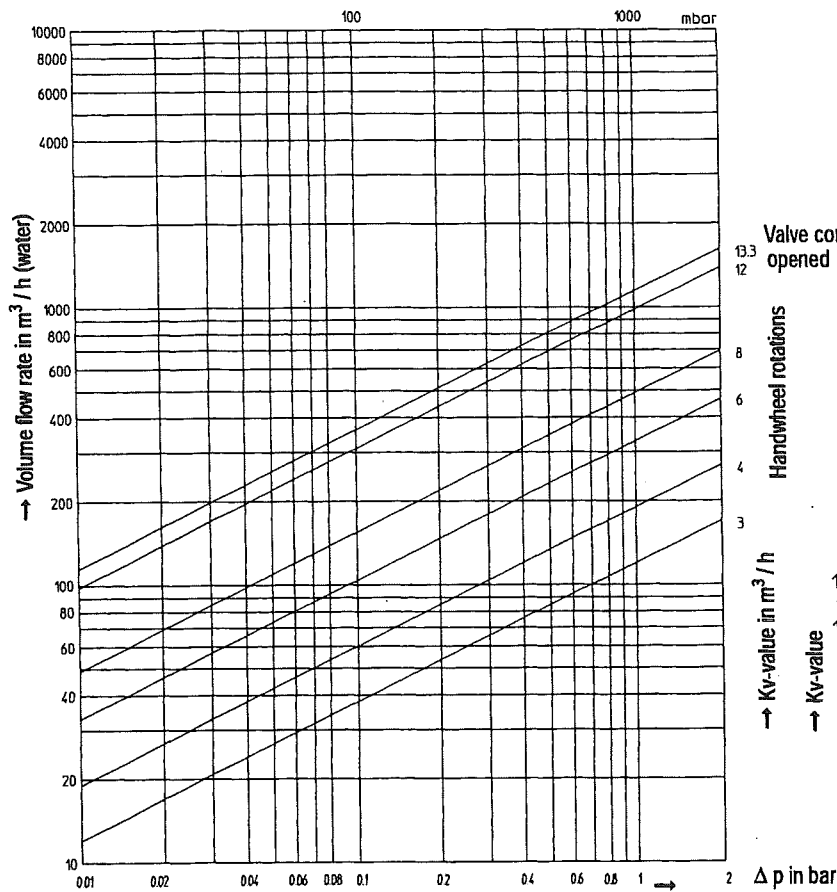
Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H₂O) (1mm H₂O = 9,8066 Pa) 1bar = 0,1MPa = 10⁵Pa

Flow diagram STOBU® with throttling plug



DN 250/ PN 6-40

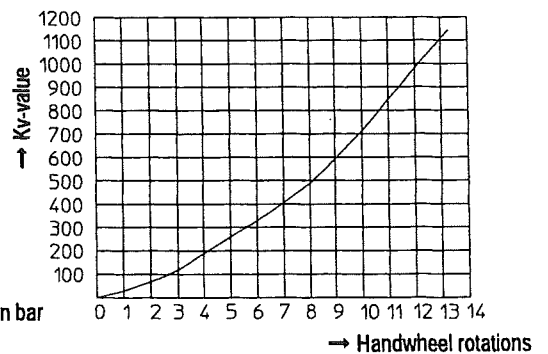
Handwheel rotations	Zeta-Value	Kv-Value
3	434	120
4	173	190
6	57,4	330
8	26	490
12	6,5	980
13,3	4,77	1145

max. permissible differential pressure in regulating function 0,8 bar.

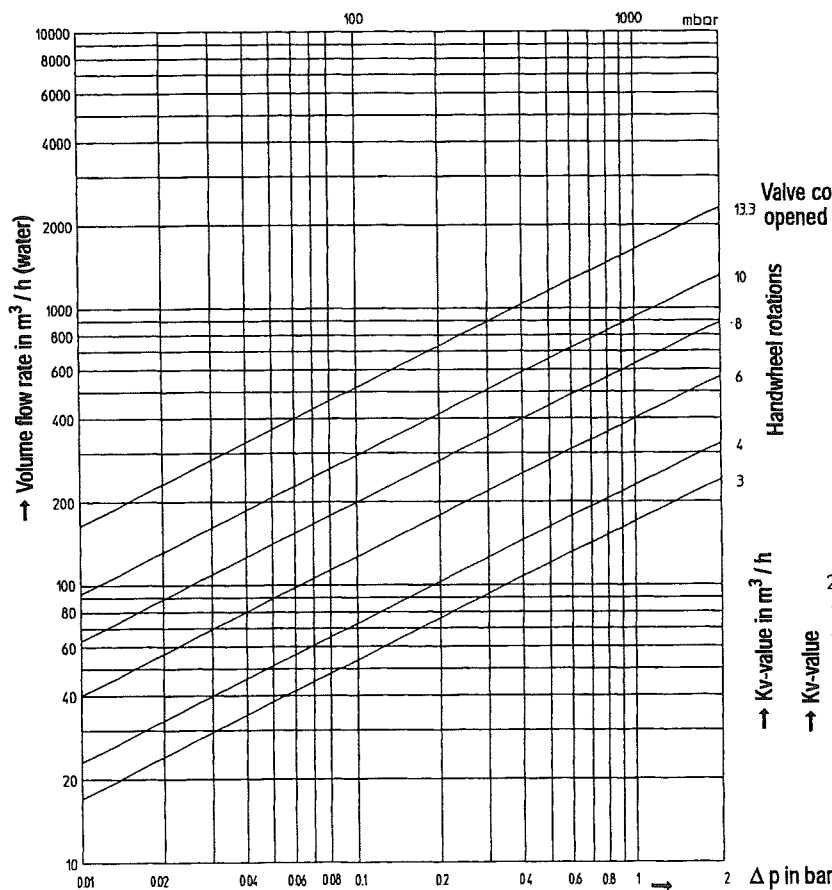
max. permissible flow speed: Liquids ≤ 4 m/s, Gas and vapours ≤ 60 m/s

Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H_2O) (1mm H_2O = 9,8066 Pa) 1bar = 0,1MPa = 10^5 Pa



DN 300 / PN 6-40

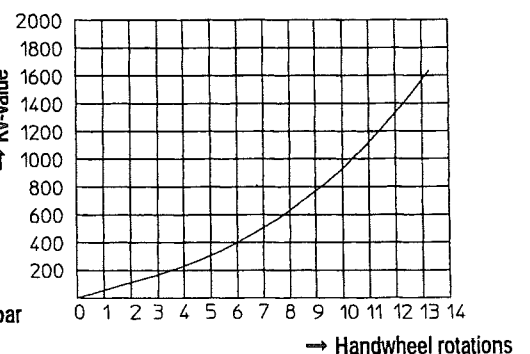
Handwheel rotations	Zeta-Value	Kv-Value
3	448	170
4	245	230
6	81	400
8	32,6	630
10	15	930
13,3	4,85	1635

max. permissible differential pressure in regulating function 0,5 bar.

max. permissible flow speed: Liquids ≤ 4 m/s, Gas and vapours ≤ 60 m/s

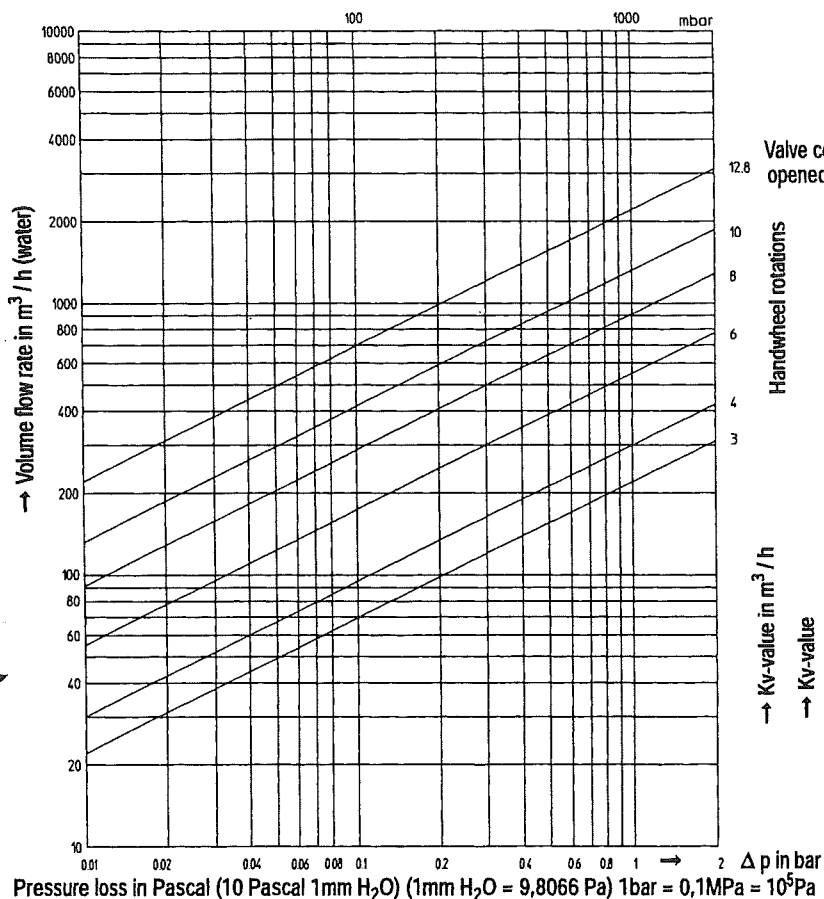
Condition: The flow must be free of cavitation.

Flow characteristic



Pressure loss in Pascal (10 Pascal 1mm H_2O) (1mm H_2O = 9,8066 Pa) 1bar = 0,1MPa = 10^5 Pa

Flow diagram STOBU® with throttling plug



DN 350 / PN 16-40

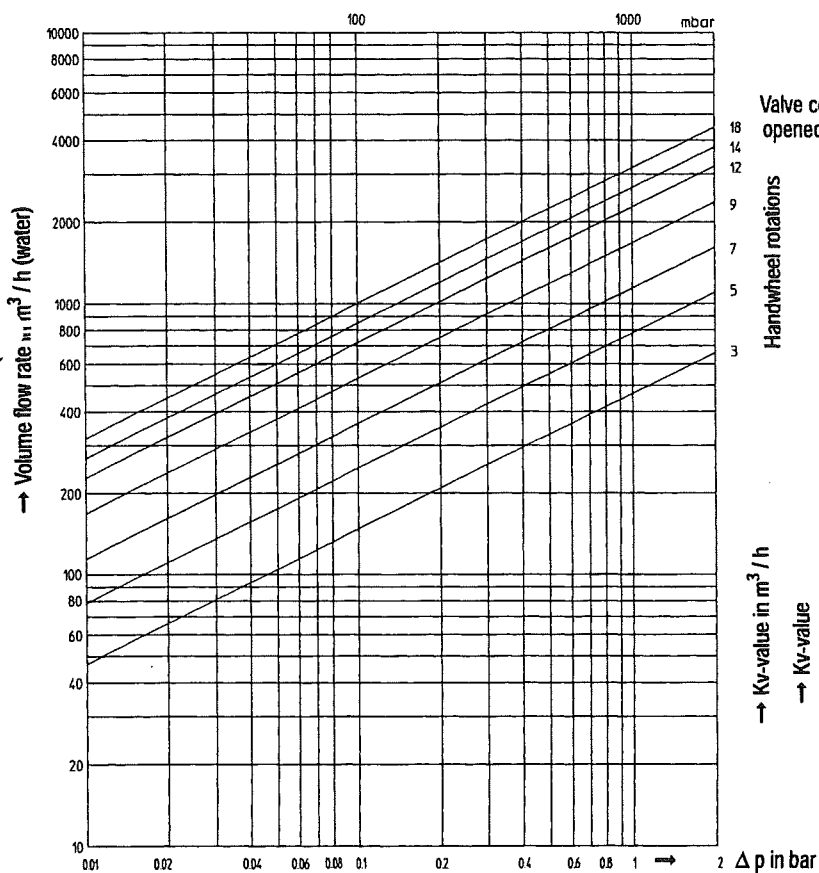
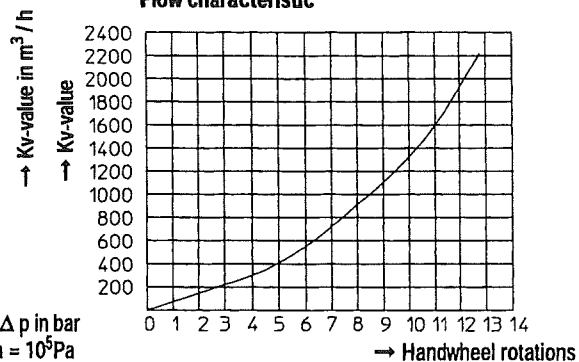
Handwheel rotations	Zeta-Value	Kv-Value
3	496	220
4	267	300
6	79,4	550
8	29	910
10	13,8	1320
12,8	4,9	2220

max. permissible differential pressure in regulating function 0,5 bar.

max. permissible flow speed: Liquids $\leq 4 \text{ m/s}$, Gas and vapours $\leq 60 \text{ m/s}$

Condition: The flow must be free of cavitation.

Flow characteristic



DN 400 / PN 16-40

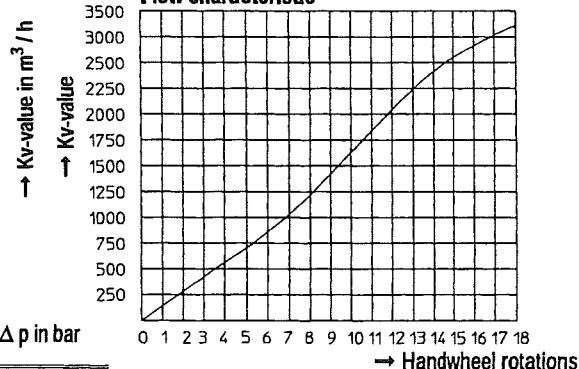
Handwheel rotations	Zeta-Value	Kv-Value
3	188	467
5	67	782
7	31,4	1142
9	16,4	1578
12	7,94	2271
14	5,70	2680
18	4,05	3180

max. permissible differential pressure in regulating function 0,5 bar.

max. permissible flow speed: Liquids $\leq 4 \text{ m/s}$, Gas and vapours $\leq 60 \text{ m/s}$

Condition: The flow must be free of cavitation.

Flow characteristic



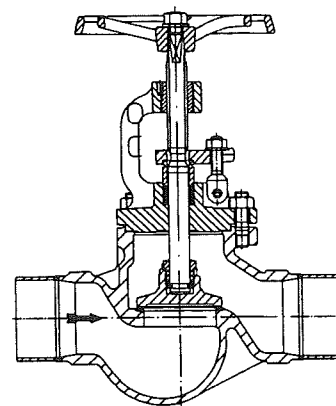
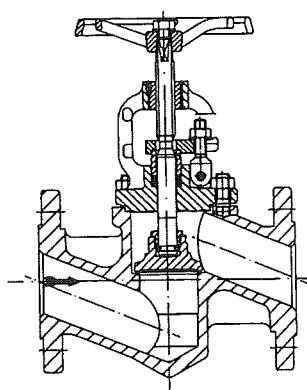
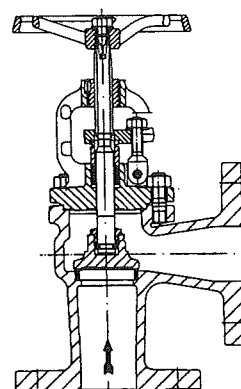
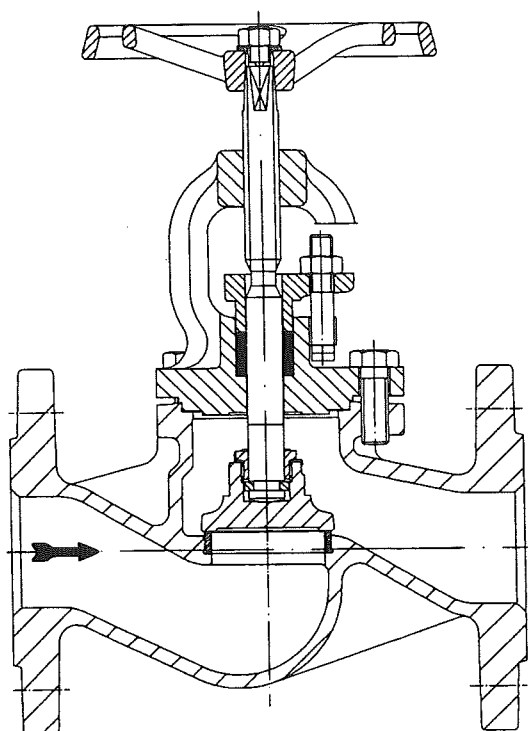
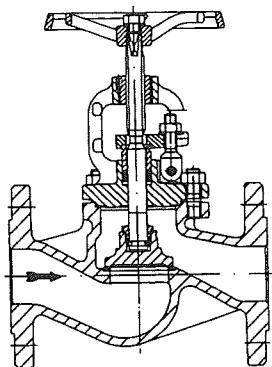
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GERMAN QUALITY VALVES

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Operating and Installation Instructions

Stop Valve with Gland Seal

STOBU®



Contents

1.0 General information on operating instructions.....	2	4.5 Marking	5
2.0 Notes on possible dangers	2	5.0 Installation.....	5
2.1 Significance of symbols.....	2	5.1 General notes on installation	5
2.2 Safety-related definitions.....	2	5.2 Installing valves with butt weld ends.....	6
2.3 Qualified personnel.....	2	5.3 Installing valves with balancing plugs.....	6
3.0 Handling.....	3	5.4 Installing valves with limit switches	7
3.1 Storage.....	3	6.0 Notes on dangers during installation, operation and maintenance	7
3.2 Transport.....	3	7.0 Putting the valve into operation	7
3.3 Handling before installation	3	8.0 Care and maintenance.....	8
4.0 Description	3	9.0 Troubleshooting	9
4.1 Scope of applications.....	3	10.0 Troubleshooting table	10
4.2 Operating principles	3	11.0 Dismantling the valve	12
4.3 Diagram.....	4	12.0 Warranty	12
4.4 Technical data - remarks.....	5		

1.0 General information on operating instructions

These operating instructions contain information necessary to install and operate the valve both safely and effectively.

If problems arise which cannot be solved with the aid of these operating instructions, please contact the supplier/manufacturer for further information. These operating instructions comply with applicable EN safety standards as well as regulations and codes of practice applicable in the Federal Republic of Germany. If the valve is used outside the Federal Republic of Germany, the operator or the person responsible for the system design must ensure that valid national codes of practice are complied with. The manufacturer reserves all rights to implement technical modifications and improvements at any time.

The use of these operating instructions assumes the user is qualified as described under Section 2.3 "Qualified Personnel".

The operating personnel must be instructed in accordance with the operating instructions.



2.0 Notes on possible dangers



2.1 Significance of symbols



Warning of general danger

2.2 Safety-related definitions

The signal definitions DANGER, WARNING, CAUTION and NOTE are used in these operating instructions as indications for particular hazards or for important information requiring special signs.

DANGER means that if the relevant information is disregarded, there is a danger of fatal injury and / or considerable damage to property can occur.

WARNING means that if the relevant information is disregarded, there is a danger of serious injury and / or damage to property can occur.



CAUTION means that if the relevant information is disregarded, there is a danger of injury and / or damage to property can occur.

NOTE means that particular attention must be paid to certain technical aspects.

All other information not specifically emphasised such as transport, installation, operating and maintenance instructions as well as technical data (in the operating instructions, product documentation and on the device itself) must also be complied with to the fullest extent in order to avoid faults which in turn can cause serious injury to persons or damage to property.

2.3 Qualified personnel

The term "qualified personnel" relates to persons who are familiarised with installation, assembly, start-up, operation and maintenance of the product and have the qualifications corresponding to their responsibilities such as:

Instruction and obligation to comply with all operational, regional and in-company regulations and requirements;

Training or instruction in accordance with safety technology standards with regard to the upkeep and use of appropriate safety and work protection equipment; First aid training, etc.
(see TRB 700).

3.0 Handling

3.1 Storage

- Storage temperature -20° to +65°C dry, free of dirt
- The painting is only a primer, intending to guard against rust during stock or transportation. Don't damage the paintwork.
- A desiccant or heating to prevent condensation is necessary in damp rooms.

3.2 Transport

- Transport temperature -20° to +65°C.
- Protect against external force (impact, vibration etc.).
- Don't damage the paintwork.

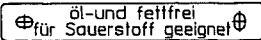
3.3 Handling before installation

- If flange covers are fitted, remove shortly before maintenance!
- Protect against atmospheric conditions e.g. wetness (apply a desiccant).
- Correct handling protects against damage.

4.0 Description

4.1 Scope of applications

STOBU valves are used for shut-off and throttling duties. The engineer planning a plant is responsible for selecting the correct valve for the application. The special markings on the valve must be taken into account

- Valves for oxygen application (O_2) have a fixed plate.  Oil and grease free for oxygen application
- Valves for Ammonia (NH_3) acc. to TRD 451-452 must be free from nonferrous metals with flanges DIN 2512 form N.
acc. to TRB 801 No.34 for ammonia storage tank systems, bodies with shoed ends must be stress-relief-annealed.
- ARI-Valves of GG-25 are not allowed in systems acc. to TRD 110.
- Valves for inflammable, aggressive or toxic media, must be off tensile material.
- With applications for media that demand special criteria, please consult.
- CE-marking for applications acc. to Pressure Equipment Directive.



4.2 Operating principles

The valve is closed by turning the hand wheel clockwise (valve plug/seating function). Do not use tools to increase the torque on the hand wheel. The valve spindle is sealed by a stuffing box.

4.3 Diagram

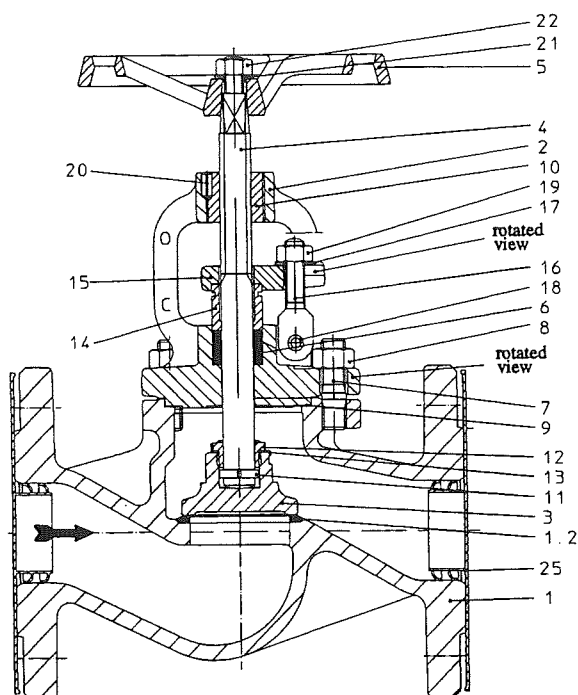


fig. 1: STOBU-DG 1.0619+N (GS-C25N)

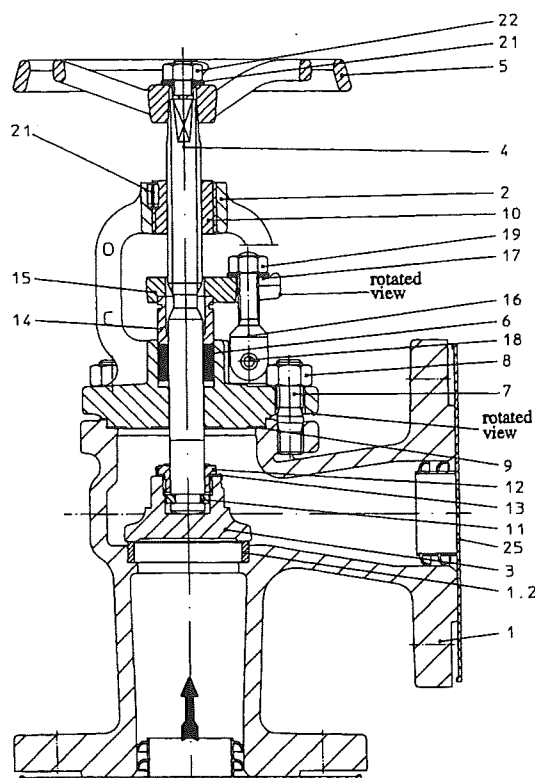


fig. 2: STOBU-ECK 1.0619+N (GS-C25N)

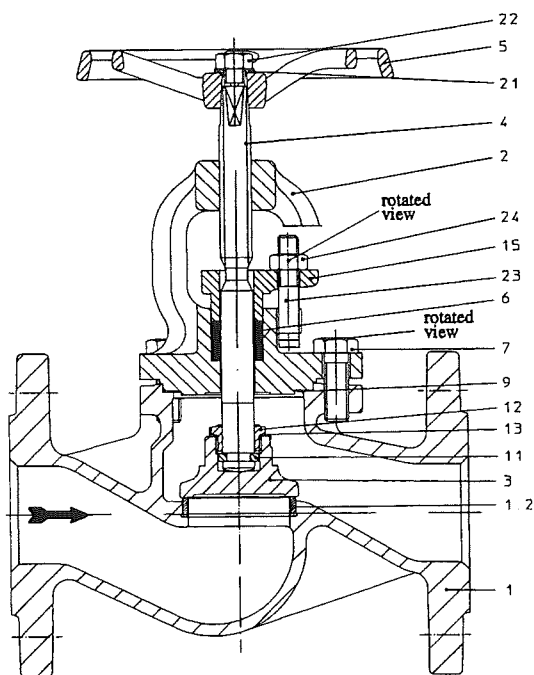


fig. 3: STOBU-DG GG-25/GGG-40.3

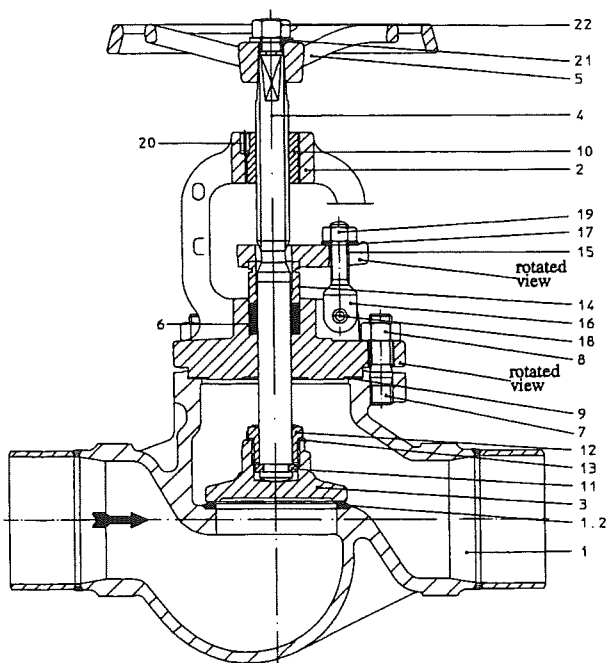


fig. 4: STOBU-DG SE-VS 1.0619+N (GS-C25N)

4.4 Technical data - remarks

- Principal dimensions

See catalogue for data.

- Pressure-temperature-classification

See catalogue for data.

- Valves with butt weld ends

See catalogue for data.

- Limit switches

Valves with limit switches (see section 5.4 of chapter "Installation").


- Balancing plugs

Balancing plug	DN	125	150	200	250	300	350	400
Pressure difference	ΔP	25 bar	21 bar	14 bar	9 bar	6 bar	4,5 bar	3,5 bar

ARI stop valves must be equipped with balancing plugs (see subsection 5.3, "Installing valves with balancing plugs") if the pressure differences exceed the values shown in the table when the valves are closed.

4.5 Marking


Details of the CE-marking on the valve:

 CE-marking

0525 Notified body

Typ Type

Bj. Year of manufacture

 Manufacturer

According to the Pressure Equipment Directive part 3, valves without safety function are only allowed to bear the CE-marking DN32 onwards.

5.0 Installation

5.1 General notes on installation

The following points should be taken into account besides the general principles governing installation work:

- Remove flange covers if present.
- There must be no foreign bodies inside the valve or piping.
- Pay attention to the direction of flow: see markings on the valve and refer to the operation and installation instructions (point 5.3).
- Valves can be installed with the spindle pointing in any direction, but the preferred spindle position is vertical.
- Centre packings between the flanges.
- Connection flanges must mate exactly.
- If the valve is handling steam, the piping must be laid with a gradient to prevent water from accumulating in pockets. Condensation traps are needed to prevent water-hammer.
- All parts must be free from stress after installation.
- The valve must not serve as a fixed point. It must be carried by the piping.
- Protect the valve from dirt, especially during construction work.
- Install compensators to compensate for thermal expansion of the piping.
- Keep the thread and shaft of the spindle free from paint.
- Lockable stop valves must be installed in such a way that the spindle is vertical and the flow agent enters under the taper. If the valves are installed in pipelines in positions other than specified, they must be fitted with a closing spring.

- Design with loose plug

A plug damper should be used in critical applications, immediately downstream of pumps, compressors, etc., where severe turbulence and pulsating pressure surges may occur. Through the damper function of the loose plug, the negative influence of pressure shocks and high turbulences, are not transferred onto the valve.

5.2 Installing valves with butt weld ends

Thoroughly clean the butt weld ends of the valve and piping before welding. Valves with butt weld ends must be welded in place while closed.

Valves are to be welded in place only by qualified welders using suitable welding equipment in accordance with the rules of good practice. See the catalogue for the necessary data.

5.3 Installing valves with balancing plugs

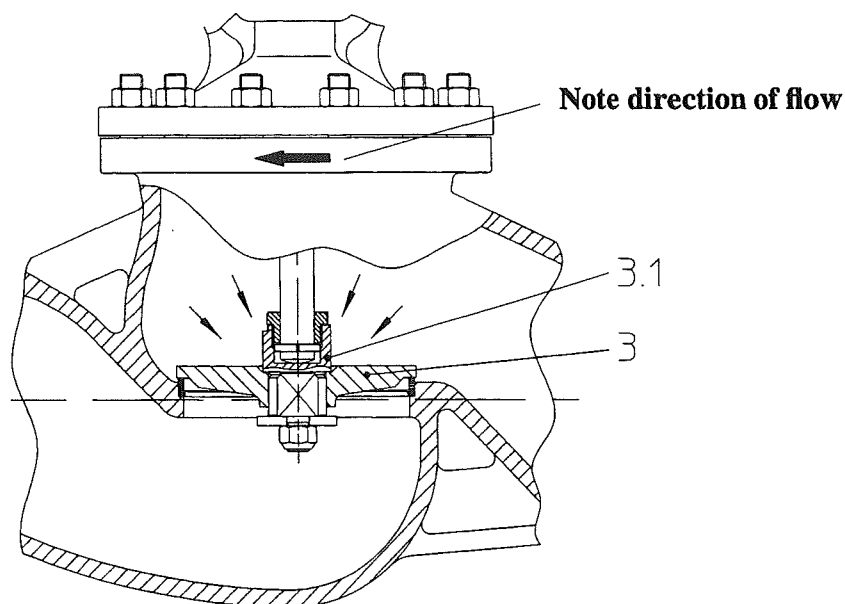


fig. 5

Balancing plug	DN	125	150	200	250	300	350	400
Pressure difference	ΔP	25 bar	21 bar	14 bar	9 bar	6 bar	4,5 bar	3,5 bar

Valves with **balancing plugs** have to be installed with medium flowing over the plug (3) as indicated by flow direction arrow on valve body.

Working principles:

When the valve is closed, anticlockwise rotation of the hand wheel lifts the pilot plug (3.1) off the larger balancing plug (3). This allows the medium to pass through the plug and equalizes the pressure of the medium under the plug (3). After the pressures have been equalized within the values stated in the table, the valve can be opened by turning the valve further with normal manual force.

- Balancing plugs are fully effective only in closed systems.
- The pressure of the medium on either side of the plug cannot be equalized in plants served by pumps operating on their characteristic.
- The pressures of the medium on either side of the plug cannot be equalized if the medium is discharged into "open air".
- A bypass line or some other arrangement is necessary if too much time is required for pressure equalization owing to the volume in the piping system.

5.4 Installing valves with limit switches

The valves with limit switches must be connected up as shown in the plans of the plant on the basis of their working principles.

6.0 Notes on dangers during installation, operation and maintenance



DANGER !

Operation can be completely safe only if the valve is properly installed, put into operation and maintained by trained personnel (cf. point 2.3 "Qualified personnel") paying full attention to the warnings in these operating instructions. In addition, the general installation and safety rules for piping and plant installation must be observed, and appropriate tools and safety equipment are to be used. Strict attention must be paid to the operating instructions during all work on the valve and when handling it. Injury or damage can be caused by ignoring them.

When used as an end-blockage, a safety precaution (e.g. plug-in disc, blind flange etc.) is demanded by maintenance works.

7.0 Putting the valve into operation

- Before putting the valve into operation, check that the material, pressure, temperature and direction of flow are as specified with the plans of the piping system.
- Regard the TRB 700.
- Residues in piping and valves (dirt, weld beads, etc.) inevitably lead to leakage.



DANGER !

Before putting a new plant into operation or restarting a plant after repairs or modification, always make sure that:

- All installation and assembly work has been completed!
- Only qualified personnel (see point 2.3) are employed to start the plant!
- The valve is in the correct position for its function!
- Existing guards have been attached and in good order.

8.0 Care and maintenance

- Maintenance and maintenance-intervals have to be defined by the operator according to the service conditions (see TRB 700).

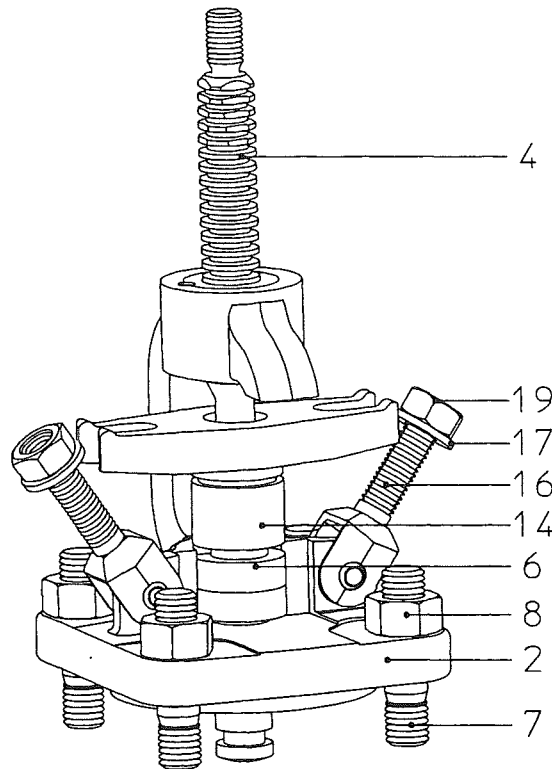


fig. 6: Pattern with hinged bolts

- Observe safety instructions!
- Keep the spindle well greased!

Lubricant: e.g. Klüberpaste HEL 46-450 (at valves for oxygen: Oxigenoex FF 250)
to order at: Klüber Lubrication München KG, Postfach 701047, D-81310 München
or a lubricant which is suitable for the application.



WARNING ! Pay attention, that the lubricant is suitable for the media.

- If the valve spindle (4) leaks, gradually tighten the stuffing box seal (6) evenly in increments by means of the hex. nuts (19) until leaking stops.



WARNING ! In the case of hot or harmful mediums, replace the stuffing box packing as necessary.

- Replace stuffing box packings only after the medium has cooled down and the pressure in the plant has been relieved. See point 2.3, "Qualified personnel").
In the case of corrosive or aggressive mediums, drain and ventilate the valve before replacing the packing.
- Valve service life can be improved by leakage checks.

- When cutting the new packing to length, make sure that the ends are cut with a slant (cf. Fig. 7)

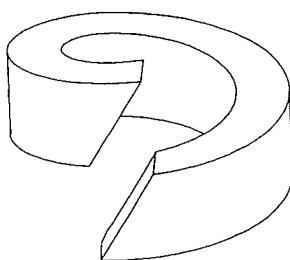


Bild 7: Split packing ring

WARNING ! See point 11.0 before dismantling the.



- Before reassembling the unit, remember that the bearing surface must be cleaned and 2 new gaskets (9) must be inserted.
- Set the cover in place
- Tighten the hexagon nuts (hexagon screws for valves of cast iron) evenly crosswise.
- Tightening torque's for hexagon screws / nuts:

DN	hexagon nuts / hexagon screws	Torque (Nm)
15- 32	M 10	15-30
40- 65	M 12	35-50
80-100	M 16	75-100
125-150	M 16	80-120
200	M 20	150-200
250-400	M 24	340-410
500	M 27	340-410

9.0 Troubleshooting

In the event of failures or malfunctions, check that the valve was assembled and installed as described in these instructions.

Regard the TRB 700.

Compare the material, pressure, temperature and direction of flow with the information given in the plans of the piping system. Check also that the service conditions correspond to the data given on the data plate and the technical data.

DANGER !

It is essential that the safety regulations are observed when identifying faults!



If malfunctions cannot be eliminate with the help of the following „*troubleshooting table*“, the supplier or manufacturer should be consulted.

10.0 Troubleshooting table

Fault	Possible cause	Corrective measures
No flow	Valve closed.	Open valve.
	Flange covers not removed. (25; fig.1-2; page 4)	Remove flange covers. (25; fig.1-2; page 4)
Little flow	Valve not sufficiently open.	Open valve.
	Dirt sieve clogged.	Clean / replace sieve. Relieve pressure first! See points 7.0 and 11.0!
	Piping system clogged.	Check piping system.
Valve difficult to move or cannot be opened	Spindle (4) dry (fig. 6; page 8)	Grease spindle (4) (fig. 6; page 8) (Lubricant: see page 20)
	Stuffing box too tight (6; fig. 1-4; page 4)	Slacken hex. nuts of stuffing box gland (15) slightly, but not sufficiently to cause leakage (fig. 1-4; page 4)
	Wrong direction of rotation	Turn in correct direction (anticlockwise to open valve).
Valve spindle leaking	Stuffing box gland (15) slack (fig. 1-4; page 4).	Tighten stuffing box gland (15) until leakage stops. -Hex. nut (fig. 1-4; page 4).
		If necessary, renew packing in stuffing box seal (6). Observe warnings (Fig. 6; page 20)! Relieve the pressure in the system first! See points 7.0 and 11.0!
Leakage across valve seat.	Valve not properly closed.	Pull hand wheel tight without tools.
	Seat (1.2) / plug (3) damaged by foreign particles. (fig. 1-4; page 4).	Replaced valve, consult supplier/manufacturer. Relieve the pressure in the system first! See points 7.0 and 11.0!
	Pressure difference too high.	Use a valve with balancing plug (see point 5.3).
	Medium contaminated (suspended solids).	Clean valve. Install dirt screen upstream of valve. Relieve the pressure in the system first! See points 7.0 and 11.0!
Valve with throttling plug + position indicator + locking device cannot be opened.	Locking device has been tightened.	Release locking device.



Fault	Possible cause	Corrective measures
Rattling / banging of the plug design with „loose plug“	Nominal diameter of the valve in compliance to the flow rate is <u>to big</u>	Choose smaller nominal diameter Use a plug damper execution: see medium
	<ul style="list-style-type: none"> - high flow turbulences; - the valve with loose plug is mounted directly by a centrifuged pump; - behind pressure reduction stations; - behind pipe elbows; - in compact plants; - expansion joints are missing; - the pump is not mounted on a damper; - there is no flow stabilizing pipe length; - there is no start-up bypass line 	Alter the system Relieve the pressure in the system first! See points 7.0 and 11.0! Use a plug damper execution: see medium
Flange broken between valve and piping.	Bolts tightened unevenly. Mating flanges not properly aligned.	Re-align piping and fit new valve! Relieve the pressure in the system first!

Caution: - Read point 11.0 prior to dismantling and repair work!
 - Read point 7.0 before restarting the plant!



11.0 Dismantling the valve

The following points must be observed beside the general principals rules and TRB 700 governing the assembly work:

- Pressureless pipe system.
- Medium must be cool.
- Plant must be drained.
- Purge piping systems in case of caustic, inflammable, aggressive or toxic media.
- Have assembly work performed only by qualified personnel (see point 2.3).

12.0 Warranty

The extent and period of warranty cover are specified in the "Standard Terms and Conditions of Albert Richter GmbH & Co. KG" valid at the time of delivery or, by way of departure, in the contract of sale itself.

We guarantee freedom of faults in compliance with state-of-the-art technology and the confirmed application.

No warranty claims can be made for any damage caused as the result of incorrect handling or disregard of operating and installation instructions, accident prevention regulations, EN, DIN, VDE standards and other applicable codes of practice.

This warranty also does not cover any damage which occurs during operation under conditions deviating from those laid down by specifications or other agreements.

Justified complaints will be eliminated by repair carried out by us or by a specialist appointed by us.

No claims will be accepted beyond the scope of this warranty. The right to replacement delivery is excluded.

The warranty shall not cover maintenance work, installation of external parts, design modifications or natural wear.

Any damage incurred during transport should not be reported to us but *rather* to the competent cargo-handling depot, the railway company or carrier company immediately or else claims for replacements from these companies will be invalidated.



Technology for the Future.
GERMAN QUALITY VALVES

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Internet: <http://www.ari-armaturen.com> E-mail: info.vertrieb@ari-armaturen.com



ZERTIFIKAT

Hiermit wird bescheinigt, dass das Qualitätsmanagementsystem von:

ARI-Armaturen
Albert Richter GmbH & Co. KG
Schloss Holte-Stukenbrock und Holzhausen
Deutschland

durch Lloyd's Register Quality Assurance geprüft und bewertet
wurde und den folgenden Normen zum Qualitätsmanagement entspricht:

ISO 9001:1994 EN ISO 9001:1994 DIN EN ISO 9001:1994
BS EN ISO 9001:1994 ANSI/ISO/ASQC/Q9001-1994

Das Qualitätsmanagementsystem ist anwendbar für:

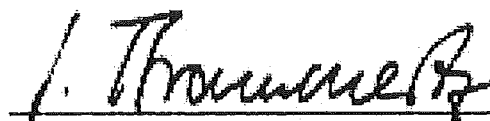
Entwicklung, Herstellung und Vertrieb von Armaturen.

Zertifikat
Registrier-Nr.: KLN 912458

Erstmalige Zulassung: 21. April 1992

Bestehendes Zertifikat: 15. März 2001

Dieses Zertifikat ist gültig bis: 14. Dezember 2003


Lloyd's Register Quality Assurance Köln



TGA-ZV-02-01-00

Das Zertifikat wurde gemäß der DAK-Normen zur Zertifizierung und Überwachung ausgestellt. Das Unternehmen ist verpflichtet, die Anforderungen der DAK-Normen zu erfüllen.



CE 0525

ZERTIFIKAT

*In Übereinstimmung mit den Anforderungen
der Druckgeräte-Richtlinie 97/23/EG.*

Hiermit wird bescheinigt, daß das Qualitätssicherungssystem von:

**ARI-Armaturen
Albert Richter GmbH & Co. KG**

Schloß Holte-Stukenbrock,
Bundesrepublik Deutschland

entsprechend den Forderungen des Anhangs III,

Modul H

*der Druckgeräte-Richtlinie 97/23/EG durch die LRQA GmbH geprüft und bewertet wurde
und in Übereinstimmung mit den Anforderungen für folgende Produkte ist:*

Industriearmaturen

*Die Zulassung gilt unter der Voraussetzung, daß das Qualitätssystem fortlaufend aufrecht
erhalten wird und die Forderungen obiger Richtlinie erfüllt.*

*Weiterhin wird die Genehmigung erteilt, die Registrier-Nummer von LRQA GmbH als
benannte Stelle in Übereinstimmung mit obiger Richtlinie und den Vorschriften in bezug
auf die Produkte zu verwenden.*

Zertifikat-Nummer: 50003/1

Erstmalige Zulassung: 17. April 2000

Bestehendes Zertifikat: 26. März 2001

LRQA GmbH
Registrier-Nr. 0525

Dieses Zertifikat ist gültig bis: 31. März 2004

Im Auftrag von LRQA GmbH