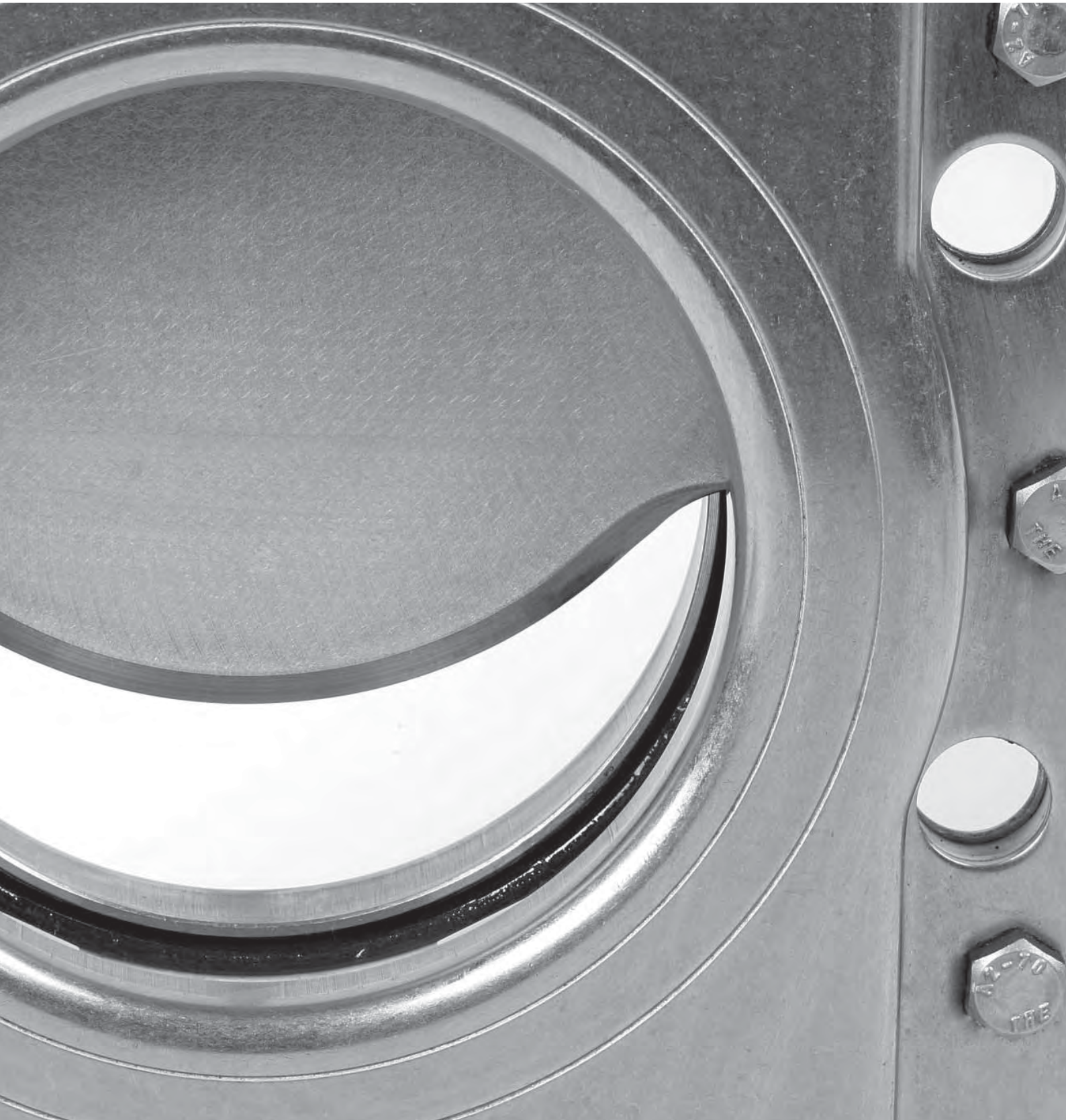


Valves

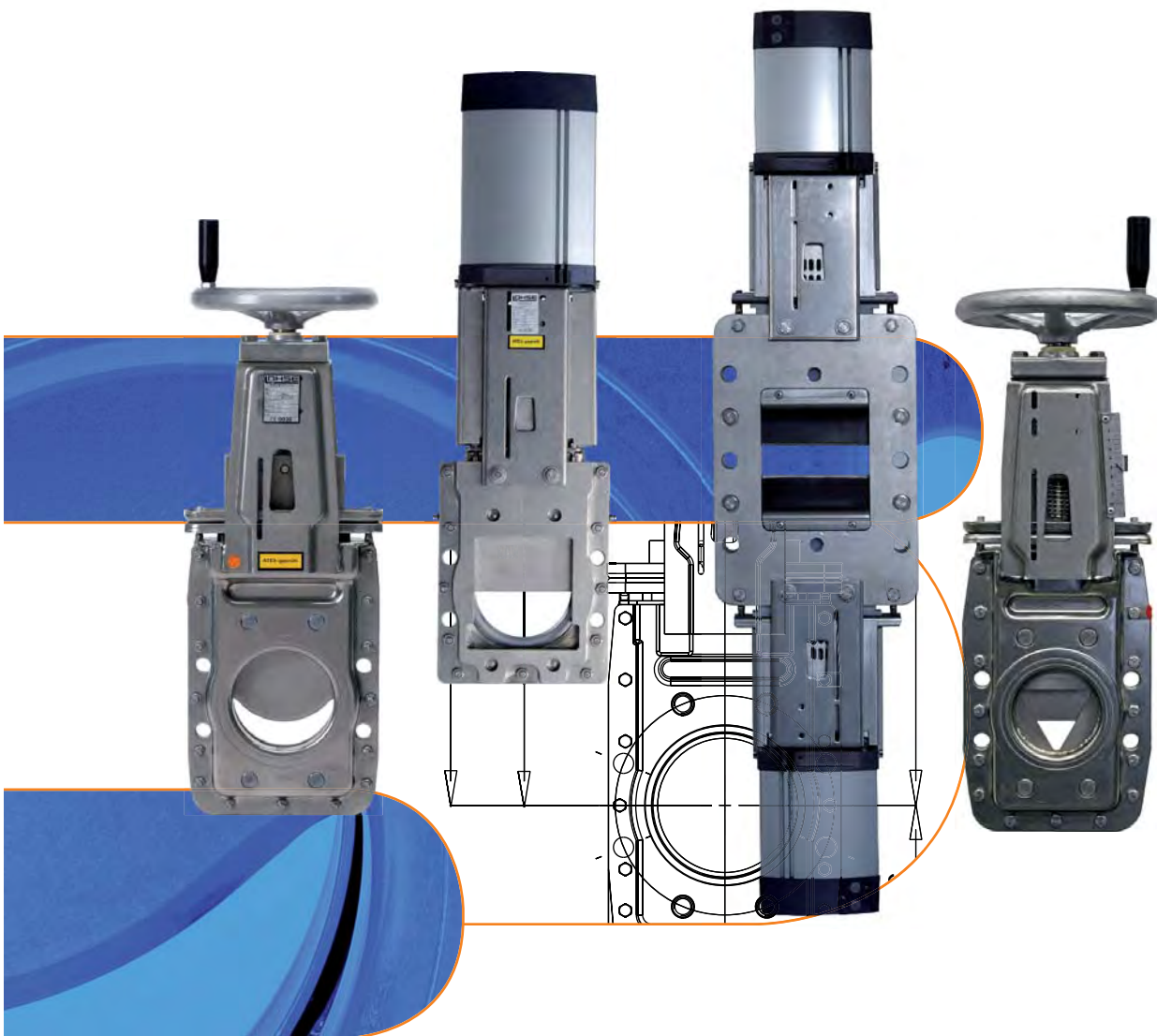
# MARTIN LOHSE GmbH



Valves	3
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# Valves



MARTIN LOHSE GmbH  
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Postfach 1565 · D-89505 Heidenheim  
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server.ab@lohse-gmbh.de  
www.lohse-gmbh.de



### Shut-Off-Valves

- of stainless steel  
Type CNA 5
- with through-going valve plate  
Type CDS, CDSV, CDSR 23
- effluent and clarification  
Type CAW 41
- of cast stainless steel or spherical graphite iron  
Type EGNA resp. GGNA 57

### Regulating Valves

- Type CBS 67

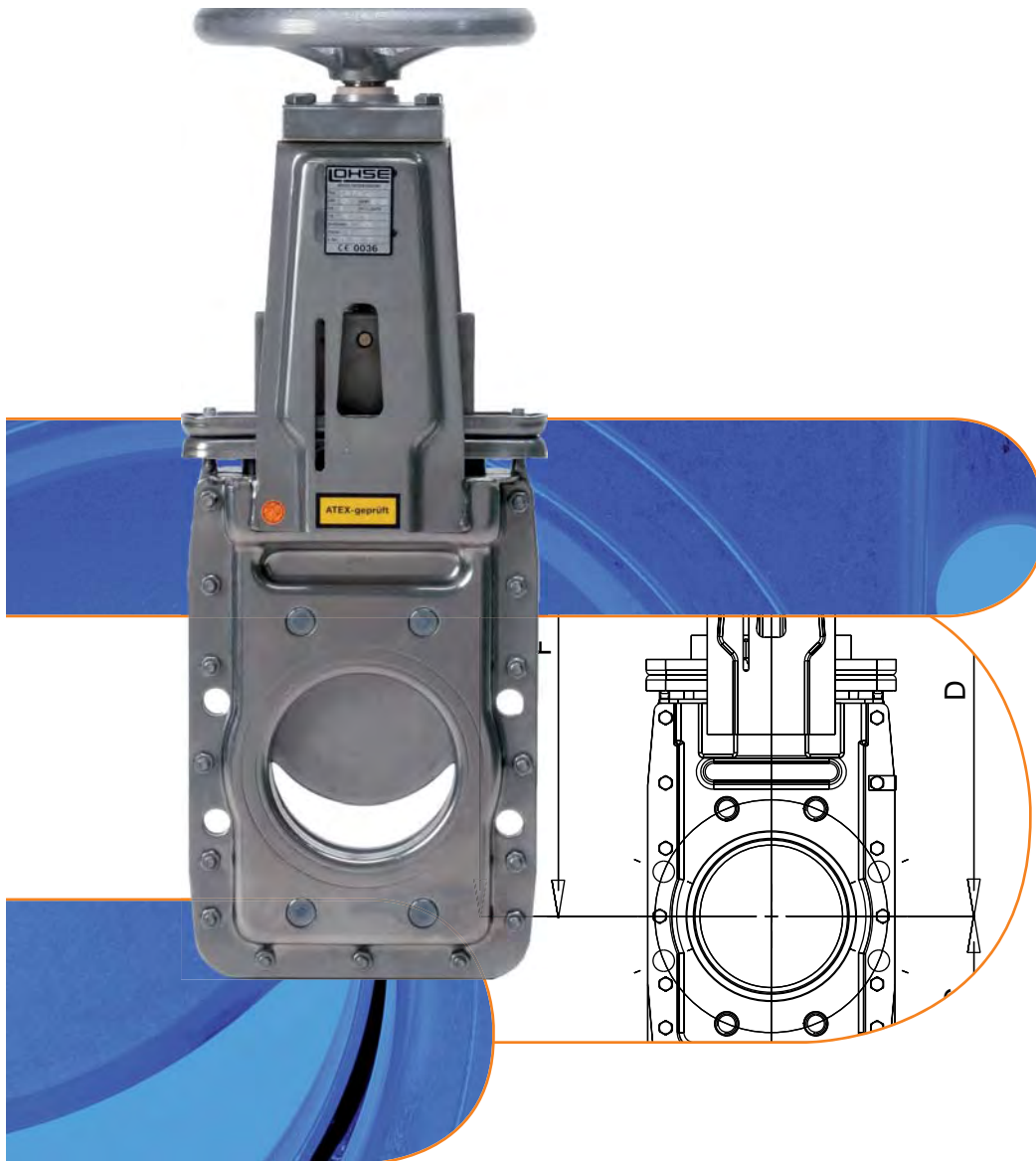
### Reject-Valves

- Type RQS 81
- Type NAQ 89
- Type AEQ 97
- Type SAQ 105
- Type TA 109
- Type TAQ 115
- Type TRE 121

Valves of stainless steel · COMPACT-Program

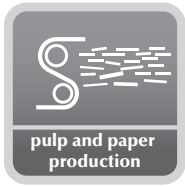
# Shut-Off-Valves

## CNA 50 – 1000 mm



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www.lohse-gmbh.de

## Applications



### Paper industry and chemical industry

LOHSE COMPACT-gate valves have proved their value and reliability in all branches of ins paper and chemical industries. CNA-valves are “shut-off” type valves. The type is suitable for shut-off of stock and aggressive media.



### Industrial sewage treatment

When LOHSE COMPACT-gate valves of acid resistant stainless steel are installed in waste water treatment plants, the need to use expensive isolation appliances to guard against contact-corrosion is removed.



### Food industry

LOHSE COMPACT-gate valves with seals, suitable for food, are widely used as shut-off valves for viscous and glutinous media as for instance in salt works, sugar mills, wine making industry, breweries etc.



### Special models

For special applications, we can supply special valves constructed of various materials for differing temperatures, pressures and sealing properties to suit the particular application.

## Construction

### Housings entirely of stainless steel

- pressed steel design
- corrosion and acid resistant
- light
- easy to maintain
- the handwheel support also serves as a mounting for any switchgear or control apparatus

### Slide guides of special plastic

- abrasion resistant
- excellent anti-friction properties
- temperature resistant
- acid resistant
- easily replaceable

### Valve plate of stainless steel

- specially shaped to prevent depositing stock
- built in strength to resist water pressure vibration

### Bore cross section = nominal diameter of piping

- no stringing of fibres is possible

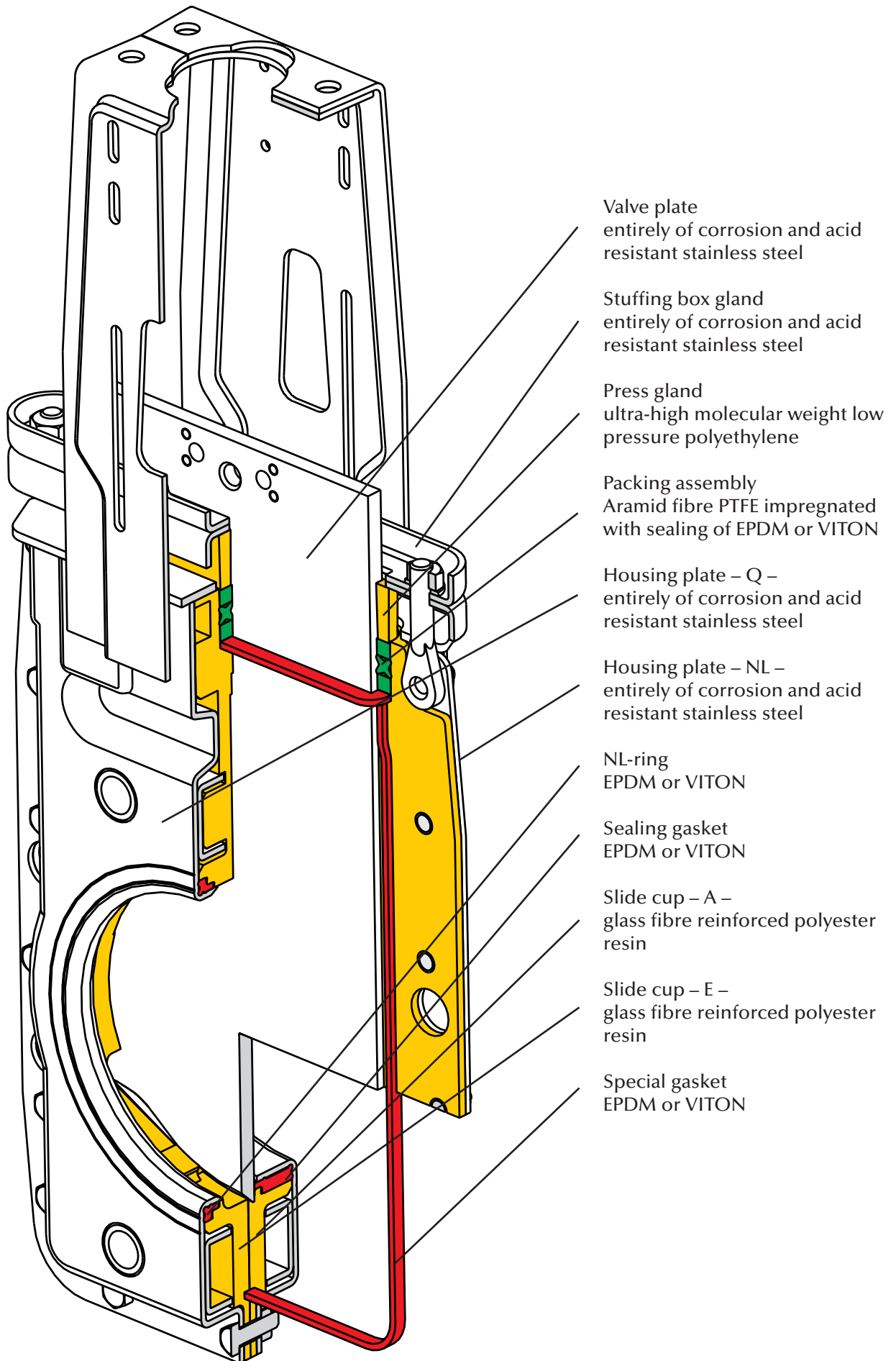
### Actuating elements in well-proved LOHSE modular system

- interchangeable on all valves of our make
- also interchangeable on the incorporated existing valve
- reduced stock holding

### 100 % water-tight

- seals resistant to temperature and acids
- seals easily replaceable but firmly anchored in the valve housing
- Leak test according to DIN EN 12266-02:2012-04 Table A5, test medium liquid, leakage rate A





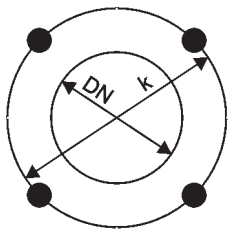
- Valve plate  
entirely of corrosion and acid resistant stainless steel
- Stuffing box gland  
entirely of corrosion and acid resistant stainless steel
- Press gland  
ultra-high molecular weight low pressure polyethylene
- Packing assembly  
Aramid fibre PTFE impregnated with sealing of EPDM or VITON
- Housing plate – Q –  
entirely of corrosion and acid resistant stainless steel
- Housing plate – NL –  
entirely of corrosion and acid resistant stainless steel
- NL-ring  
EPDM or VITON
- Sealing gasket  
EPDM or VITON
- Slide cup – A –  
glass fibre reinforced polyester resin
- Slide cup – E –  
glass fibre reinforced polyester resin
- Special gasket  
EPDM or VITON

## Materials

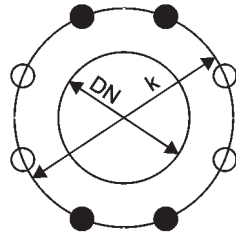
- housing
  - DN 50 – 250 1.4404
  - DN 300 – 600 1.4541
  - DN 700 – 1000 1.4571
- flanging ring
  - DN 300 – 1000 1.4571
- valve plate 1.4571
- slide cups
  - DN 50 – 250 GRP
  - DN 300 – 600 PP
- sealing EPDM, VITON or NBR
- slide parts
  - DN 700 – 1000 CuSn6 / CuAL10Ni
- stuffing box gland
  - DN 50 – 150 1.4301
  - DN 200 – 450 1.4541
  - DN 500 – 600 1.4301
  - DN 700 – 1000 1.4571
- packing assembly
  - packing aramid fibre with impregnation of PTFE
  - p-ring EPDM, VITON or NBR
- press gland
  - DN 50 -150 PE-HMW (RCH 500)
- bracket 1.4301
- screws / nuts A2
- max. operating pressure
  - DN 50 – 250 8 bar
  - DN 300 – 400 6 bar
  - DN 450 – 600 4 bar
  - DN 700 – 800 2.5 bar
  - DN 900 – 1000 1.5 bar
- max. operating temperature with sealing of
  - NBR 105° C
  - EPDM 120° C



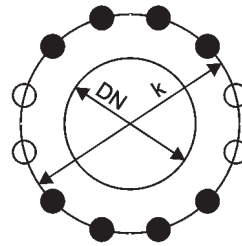
Flange bores for LOHSE COMPACT-valves according to DIN EN 1092-1, PN 10



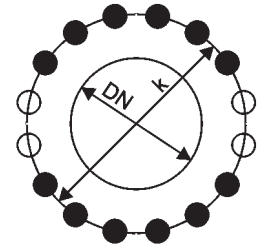
DN 50-65



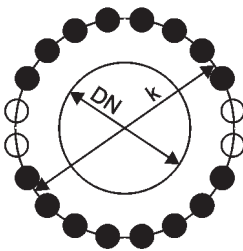
DN 80-200



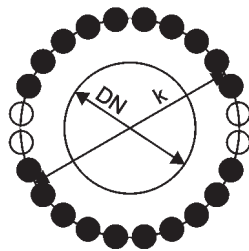
DN 250-300



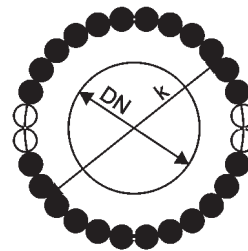
DN 350-400



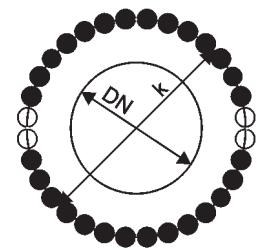
DN 450-600



DN 700-800

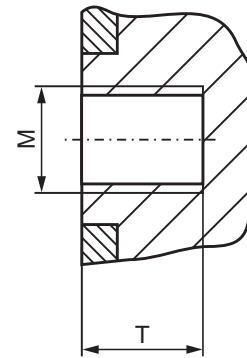


DN 900-1000



DN 1100-1200

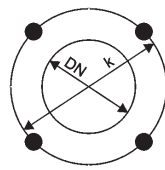
DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2
50	125	4	M16	12	4	-
65	145	4	M16	12	4	-
80	160	8	M16	12	4	4
100	180	8	M16	12	4	4
125	210	8	M16	12	4	4
150	240	8	M20	16	4	4
200	295	8	M20	16	4	4
250	350	12	M20	20	8	4
300	400	12	M20	20	8	4
350	460	16	M20	20	12	4
400	515	16	M24	23	12	4
450	565	20	M24	30	16	4
500	620	20	M24	30	16	4
600	725	20	M27	35	16	4
700	840	24	M27	40	20	4
800	950	24	M30	45	20	4
900	1050	28	M30	45	24	4
1000	1160	28	M33	45	24	4
1100	1270	32	M33	50	28	4
1200	1380	32	M36	55	28	4



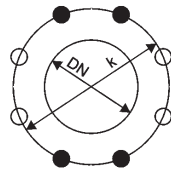
Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread



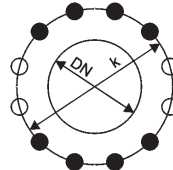
Flange bores for LOHSE COMPACT-valves  
according to ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150)



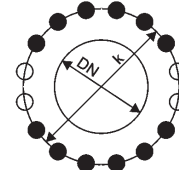
DN 50-80



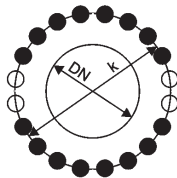
DN 100-200



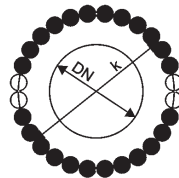
DN 250-350



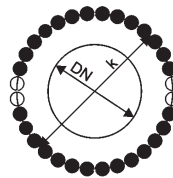
DN 400-450



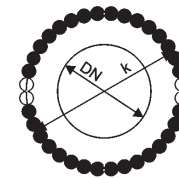
DN 500-600



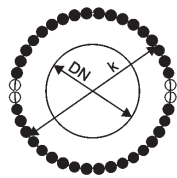
DN 700-800



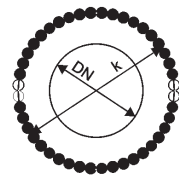
DN 900



DN 1000

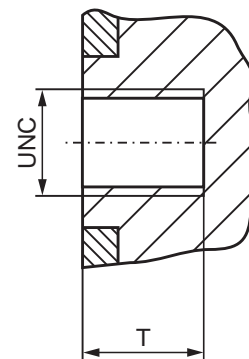


DN 1100



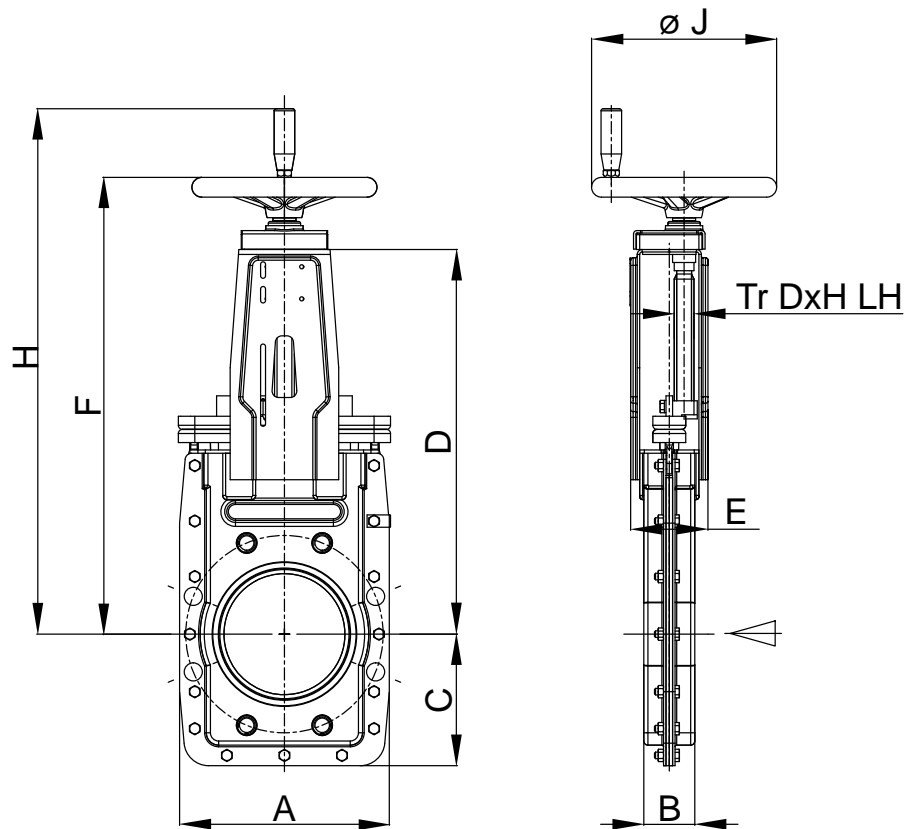
DN 1200

DN [mm]	DN [inch]	K [mm]	K [inch]	Z	UNC	T [mm]	T [inch]	Z1	Z2
50	2	120.6	4 3/4	4	5/8"-11	12	0.472	4	-
65	2.5	139.7	5 1/2	4	5/8"-11	12	0.472	4	-
80	3	152.4	6	4	5/8"-11	12	0.472	4	-
100	4	190.5	7 1/2	8	5/8"-11	12	0.472	4	4
125	5	215.9	8 1/2	8	3/4"-10	12	0.472	4	4
150	6	241.3	9 1/2	8	3/4"-10	16	0.630	4	4
200	8	298.5	11 3/4	8	3/4"-10	16	0.630	4	4
250	10	362	14 1/4	12	7/8"-9	20	0.787	8	4
300	12	431.8	17	12	7/8"-9	20	0.787	8	4
350	14	476.3	18 3/4	12	1"-8	20	0.787	8	4
400	16	539.8	21 1/4	16	1"-8	23	0.910	12	4
450	18	577.9	22 3/4	16	1 1/8"-7	30	1.181	12	4
500	20	635	25	20	1 1/8"-7	30	1.181	16	4
600	24	749.3	29 1/2	20	1 1/4"-7	35	1,378	16	4
700	28	863	34	28	1 1/4"-7	40	1.575	24	4
800	32	978	38 1/2	28	1 1/2"-6	45	1.772	24	4
900	36	1086	42 3/4	32	1 1/2"-6	45	1.772	28	4
1000	40	1200	47 1/4	36	1 1/2"-6	45	1.775	32	4
1100	44	1314	51 3/4	40	1 1/2"-6	50	1.969	36	4
1200	48	1422	56	44	1 1/2"-6	55	2.165	40	4



Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

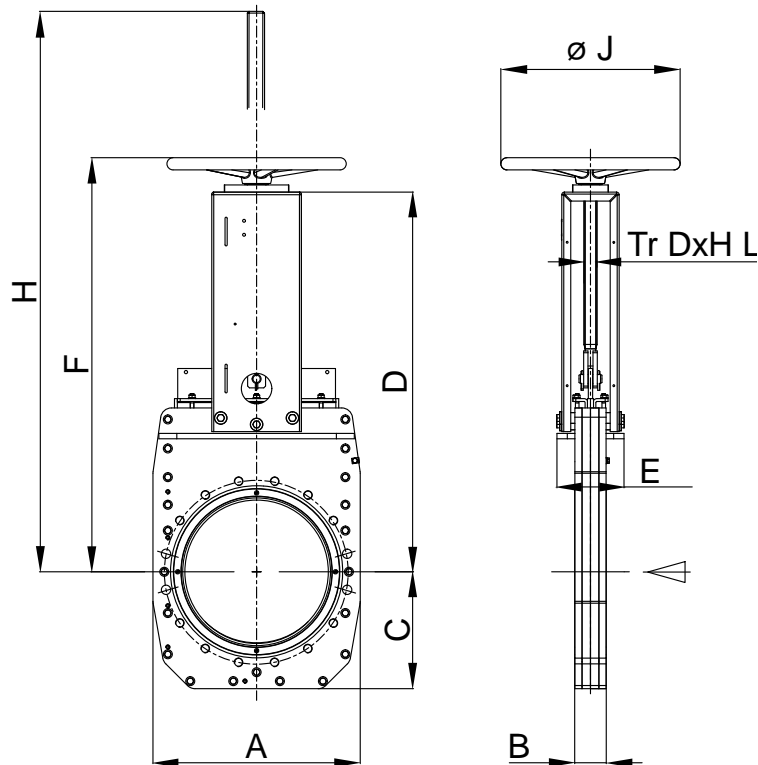
## COMPACT-valve handwheel drive with non-rising stem



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	394	478	180	20 x 4	9
65	8	185	42	100	313	78	394	478	180	20 x 4	9
80	8	175	52	125	313	78	395	478	180	20 x 4	9
*)100	8	210	54	135	368	94	456	539	225	24 x 5	13
*)125	8	230	52	145	413	94	500	584	225	24 x 5	15
*)150	8	255	62	160	468	94	556	639	225	24 x 5	18
200	8	328	60	189	557	143	656	739	280	30 x 6	39
250	8	400	68	230	668	166	767	850	280	30 x 6	55
300	6	450	72	260	764	170	869	-	360	30 x 6	68
350	6	510	72	290	907	190	998	-	360	30 x 6	130
400	6	575	90	326	1059	190	1163	-	500	30 x 6	180
450	4	630	110	315	1200	208	1304	-	500	30 x 6	262
500	4	700	110	350	1265	228	1384	-	500	36 x 6	263
600	4	810	130	405	1495	268	1614	-	500	36 x 6	

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

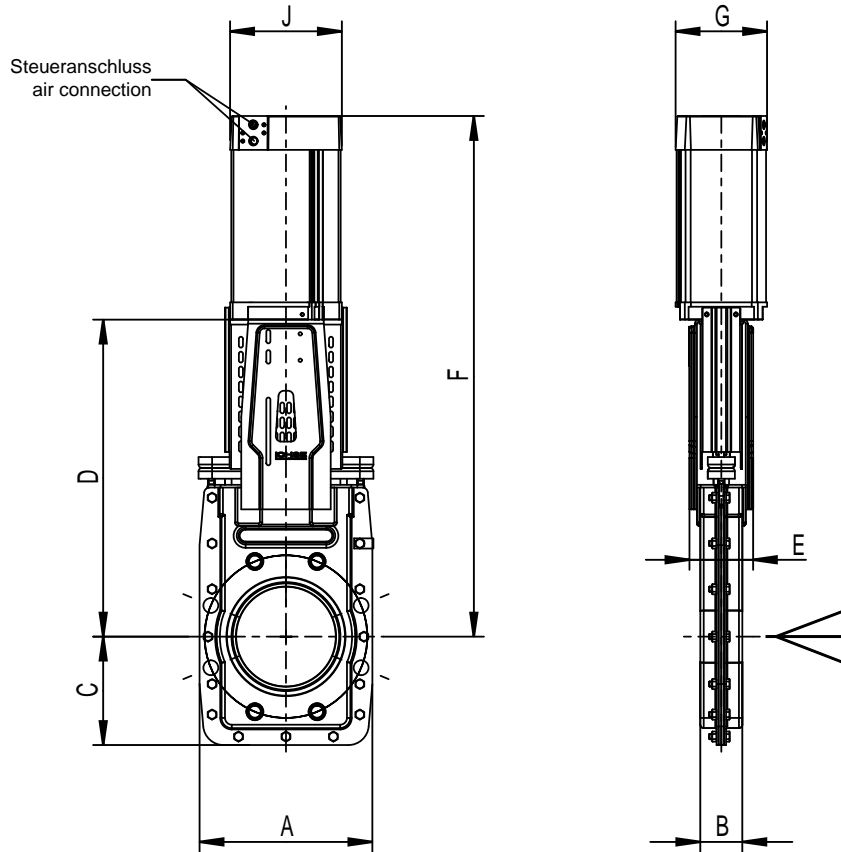
COMPACT-valve  
handwheel drive with rising stem



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	378	425	225	20 x 4	8.3
65	8	185	42	100	313	78	378	440	225	20 x 4	8.8
80	8	175	52	125	313	78	378	455	225	20 x 4	9.1
*)100	8	210	54	135	368	94	437	540	280	24 x 5	13.5
*)125	8	230	52	145	413	94	482	610	280	24 x 5	15.3
*)150	8	255	62	160	468	94	537	690	280	24 x 5	18.4
200	8	328	60	189	557	143	637	840	360	30 x 6	39
250	8	400	68	230	668	166	748	995	360	30 x 6	55
300	6	450	72	260	764	170	844	1145	360	30 x 6	93
350	6	510	72	290	907	190	1003	1355	500	36 x 6	101
400	6	575	90	326	1059	190	1155	1555	500	36 x 6	174
450	4	630	110	315	1200	208	1296	1760	500	36 x 6	258
500	4	700	110	350	1265	228	1361	1975	500	36 x 6	263
600	4	810	130	405	1495	268	1591	2205	640	44 x 7	472
700	2.5	960	151	480	1756	307	1887	2610	800	44 x 7	1060
800	2.5	1060	151	530	1976	307	2107	2930	800	44 x 7	1262

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-valve  
pneumatic cylinder and protection guard

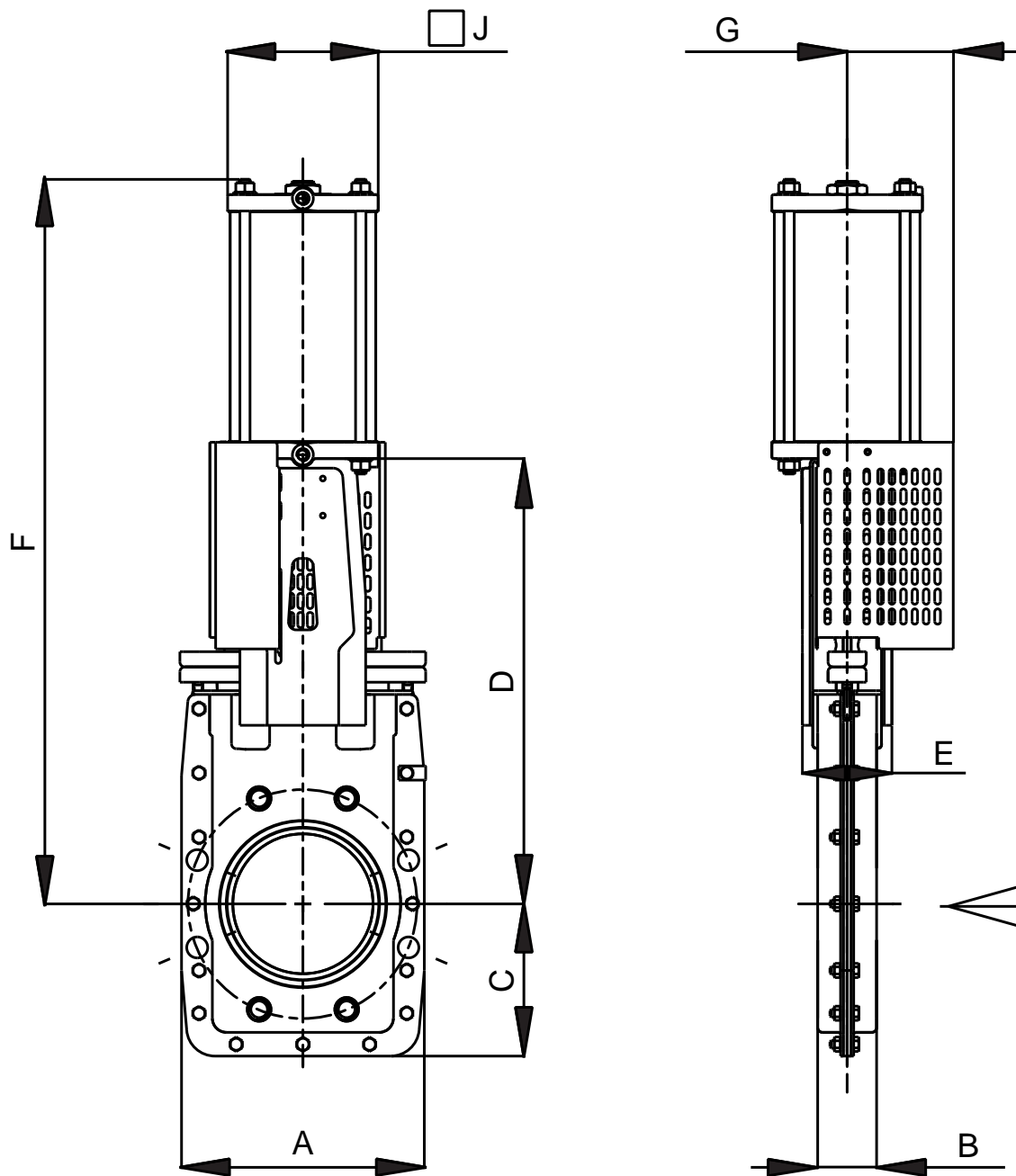


DN	BD [bar]	A	B	C	D	E	F	G	J	cyl Ø	air connection	control pressure [bar]	weight ~[kg]
50	8	185	42	100	313	78	495	109	139	100	G 1/4"	6	11.2
65	8	185	42	100	313	78	510	109	139	100	G 1/4"	6	11.6
80	8	175	52	123	313	78	523	109	139	100	G 1/4"	6	12.6
*)100	8	210	54	135	368	94	596	109	139	100	G 1/4"	6	15.4
*)125	8	255	52	145	413	94	691	135	162	125	G 1/4"	6	21.4
*)150	8	255	62	160	468	94	768	135	165	125	G 1/4"	6	25.3
200	8	328	60	190	557	143	917	170	204	160	G 1/4"	6	48.5
250	8	400	68	230	668	166	1069	170	204	160	G 1/4"	6	66.5
300	6	450	72	260	764	170	1218	170	204	160	G 1/4"	6	92
350	6	510	72	290	907	190	1452	211	244	200	G 1/2"	6	120
400	6	575	90	326	1059	190	1650	211	244	200	G 1/2"	6	207
450	4	630	110	315	1200	208	1870	242	283	230	G 1/2"	6	310
500	4	700	110	350	1265	228	1985	242	283	230	G 1/2"	6	350

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150); air connection acc. VDI/VDE 3845 (NAMUR). Further sizes on request.



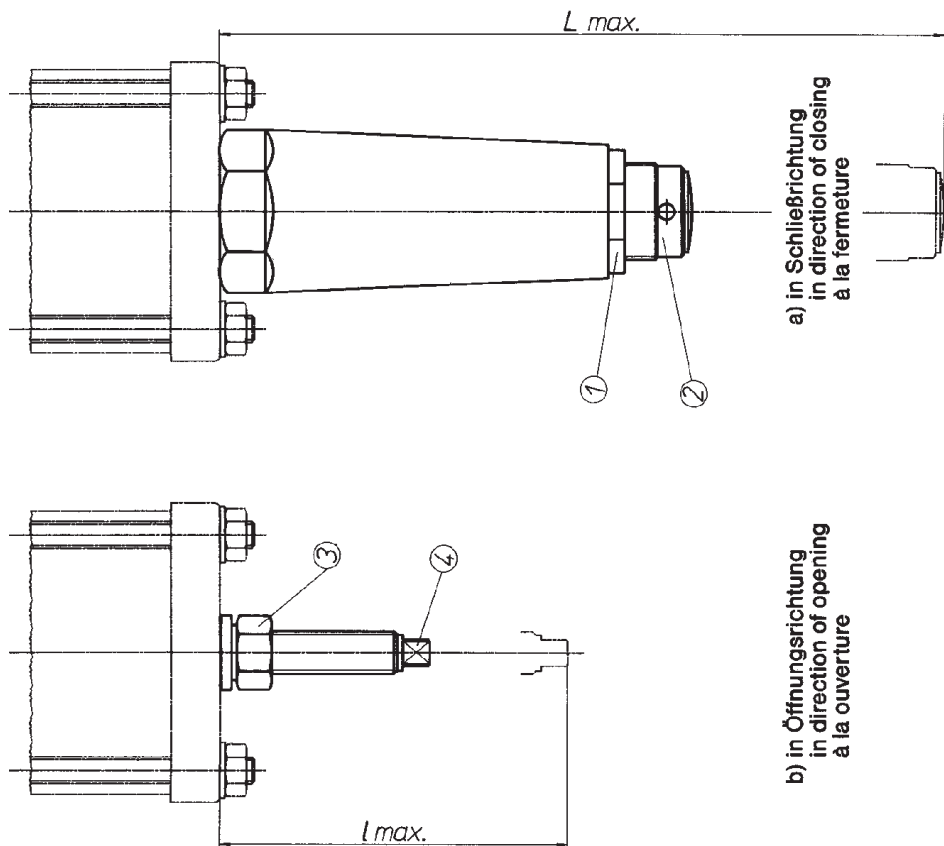
COMPACT-valve  
pneumatic cylinder and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	J	cyl Ø	air connection	control pressure [bar]	weight ~[kg]
600	4	810	130	405	1495	268	2314	318	318	300	G 1/2"	6	517
700	2.5	960	151	480	1756	307	2745	425	425	400	G 3/4"	6	1220
800	2.5	1060	151	530	1976	307	3065	425	425	400	G 3/4"	6	1340

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-valve  
pneumatic-cylinder and variable stroke limiter



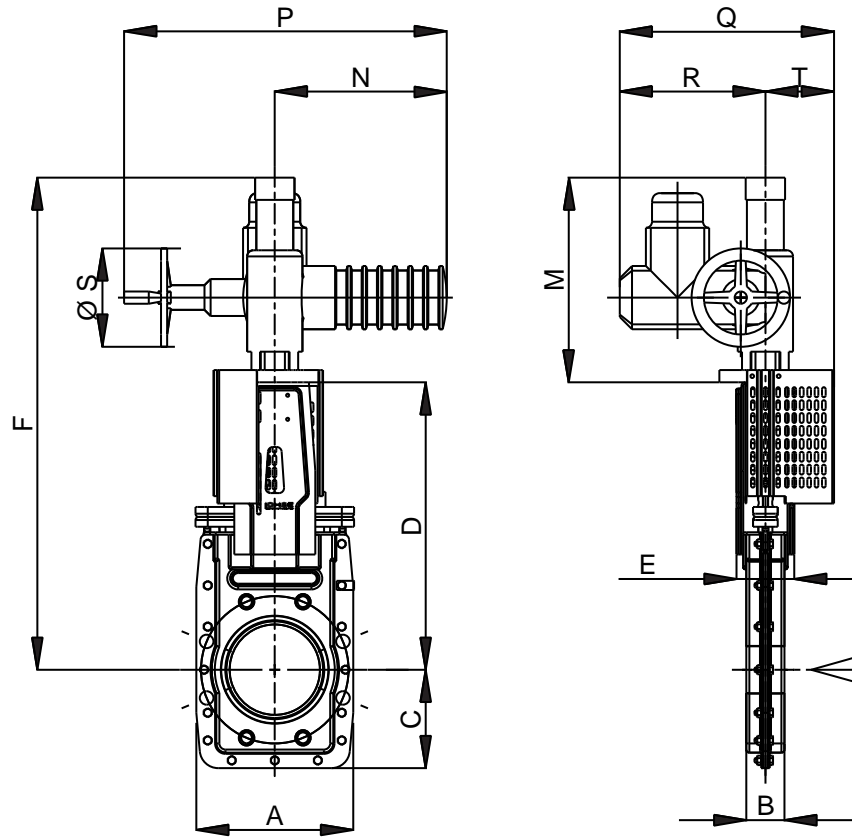
Variable stroke limiter

- in direction of closing: loosen the nut (1), adjust the adjustable pipe (2), tighten the nut (1)
- in direction of opening: loosen the nut (3), adjust the adjustable screw (4) tighten the nut

DN	cyl.Ø [mm]	in direction of opening		in direction of closing	
		L max ~	L max ~	L max ~	L max ~
50	100	140		268	
65	100	140		268	
80	100	140		268	
100	125	190		413	
125	125	190		413	
150	145	225		428	
200	175	252		550	

Further sizes on request.

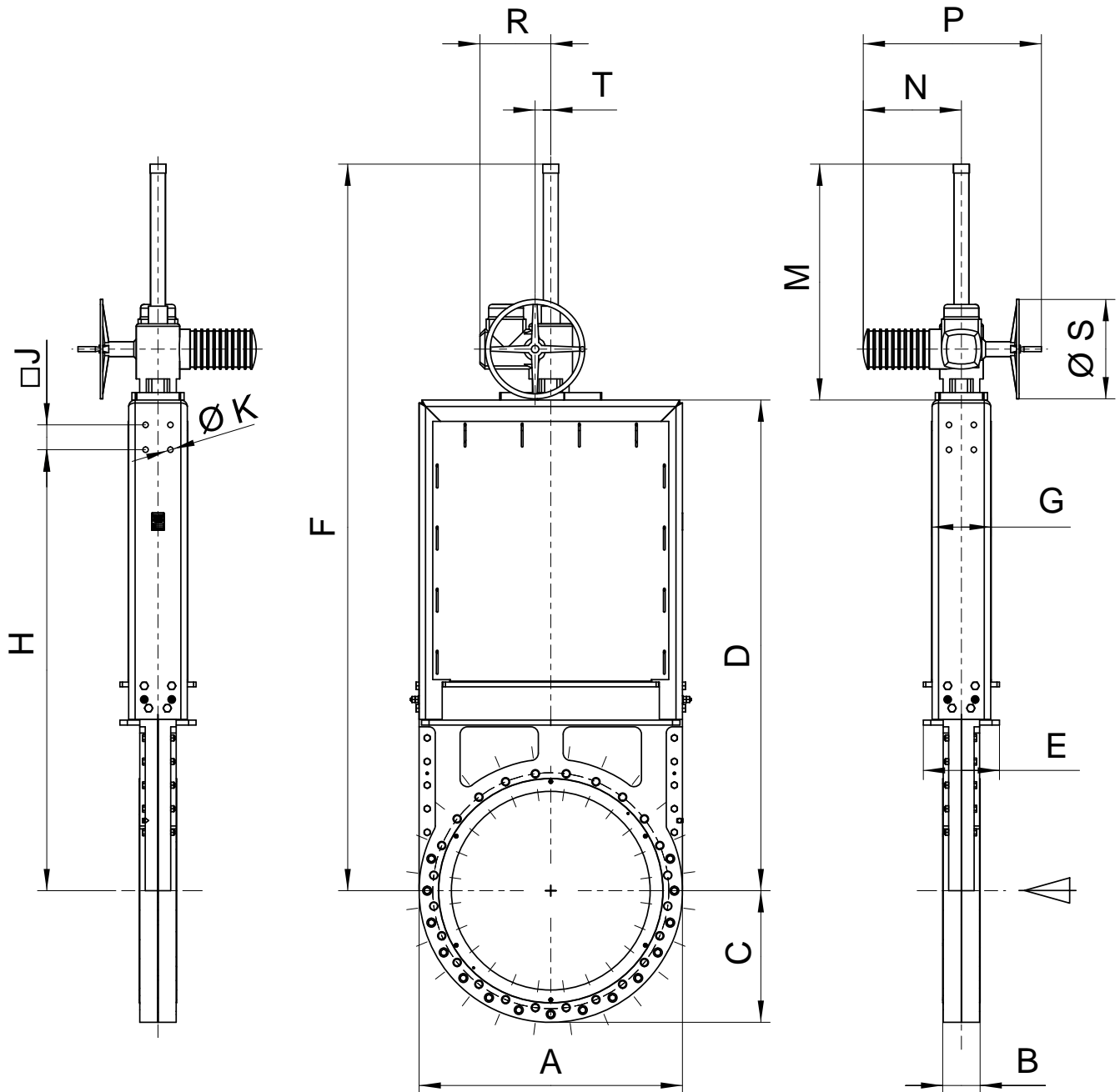
## COMPACT-valve electric drive and protection guard



DN	BD [bar]	A	B	C	D	E	F	M	N	P	Q	R	ØS	T	stem Tr DxH	closing time [s]	weight ~[kg]
50	8	185	42	100	313	78	646	333	280	515	349	237	160	112	20 x 4	18.7	32
65	8	185	42	100	313	78	646	333	280	515	349	237	160	112	20 x 4	24.4	32
80	8	175	52	125	313	78	646	333	280	515	349	237	160	112	20 x 4	29.7	32
*)100	8	210	54	135	368	94	701	333	280	515	349	237	160	112	24 x 5	28.3	37
*)125	8	230	52	145	413	94	746	333	280	515	349	237	160	112	24 x 5	35.2	38
*)150	8	255	62	160	468	94	801	333	280	515	349	237	160	112	24 x 5	41.6	42
200	8	328	60	190	557	143	902	345	355	536	373	247	200	126	30 x 6	46.7	58
250	8	400	68	230	668	166	1013	345	355	536	373	247	200	126	30 x 6	57.8	84
300	6	450	72	260	764	170	1202	438	355	536	373	247	200	126	30 x 6	68.9	96
350	6	510	72	290	907	190	1350	443	355	536	389	247	200	142	36 x 6	78.0	124
400	6	575	90	326	1059	190	1602	543	355	536	393	247	200	146	36 x 6	90.0	198
450	4	630	110	315	1200	208	1808	608	285	713	436	285	315	151	36 x 6	101.0	291
500	4	700	110	350	1265	228	1873	608	380	713	436	285	315	151	36 x 6	112.0	328
600	4	810	130	405	1495	268	2203	708	380	713	446	285	315	161	44 x 7	83.0	527

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-valve  
electric drive and protection guard

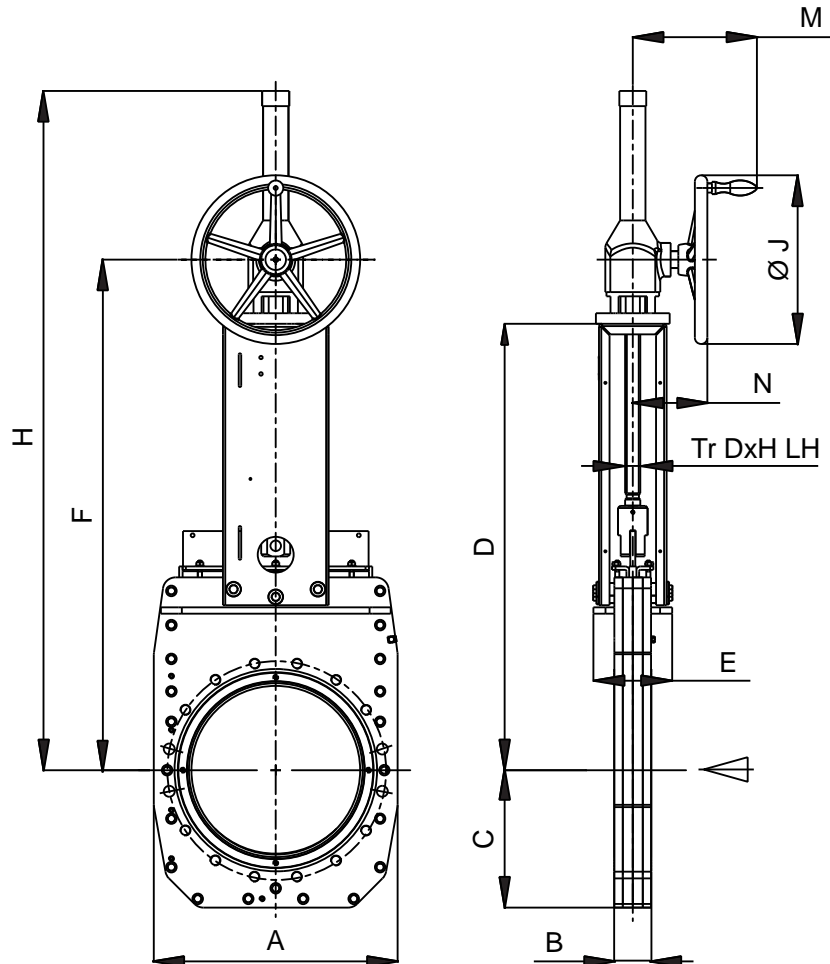


DN	BD [bar]	A	B	C	D	E	F	G	H	J	ØK	M	N	P	R	ØS	T	stem Tr DxH	closing time [s]	weight ~[kg]
700	2.5	960	151	480	1756	307	2606	240	1550	100	22	850	395	717	285	400	63	44 x 7	96.6	1099
800	2.5	1060	151	530	1976	307	2926	240	1776	100	22	950	395	717	285	400	63	44 x 7	110.2	1285
900	1.5	1170	160	585	2108	311	3253	240	1790	100	22	1145	510	860	330	500	80	44 x 7	108.9	1536

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.



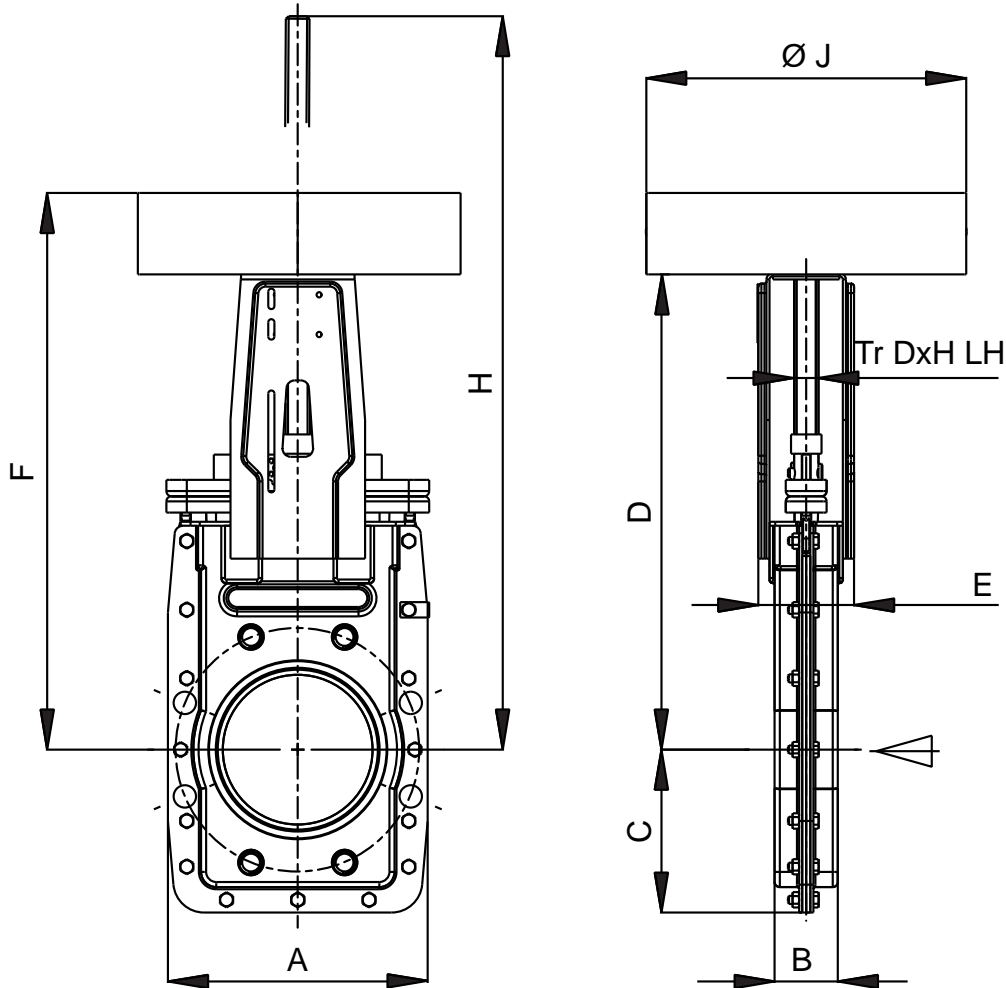
COMPACT-valve  
bevel gear box and handwheel



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	M	N	Tr D x H LH	weight ~[kg]
*)150	8	225	62	160	468	94	615	770	360	278	174	24 x 5	33
200	8	328	60	190	557	143	704	909	360	278	174	30 x 6	55
250	8	400	68	230	668	166	815	1070	360	278	174	30 x 6	72
300	6	450	72	260	764	170	911	1216	360	278	174	30 x 6	82
350	6	520	72	290	907	190	1059	1414	400	295	185	36 x 6	146
400	6	578	90	326	1059	190	1211	1611	400	295	185	36 x 6	191
450	4	630	110	315	1200	208	1352	1802	400	295	185	36 x 6	274
500	4	700	110	350	1265	228	1455	1947	400	340	222	36 x 6	327
600	4	810	130	405	1495	268	1685	2250	500	340	222	44 x 7	503
700	2.5	960	151	480	1756	307	1946	2422	500	340	222	44 x 7	1075
800	2.5	1060	151	530	1976	307	2166	2927	500	340	222	44 x 7	1265

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

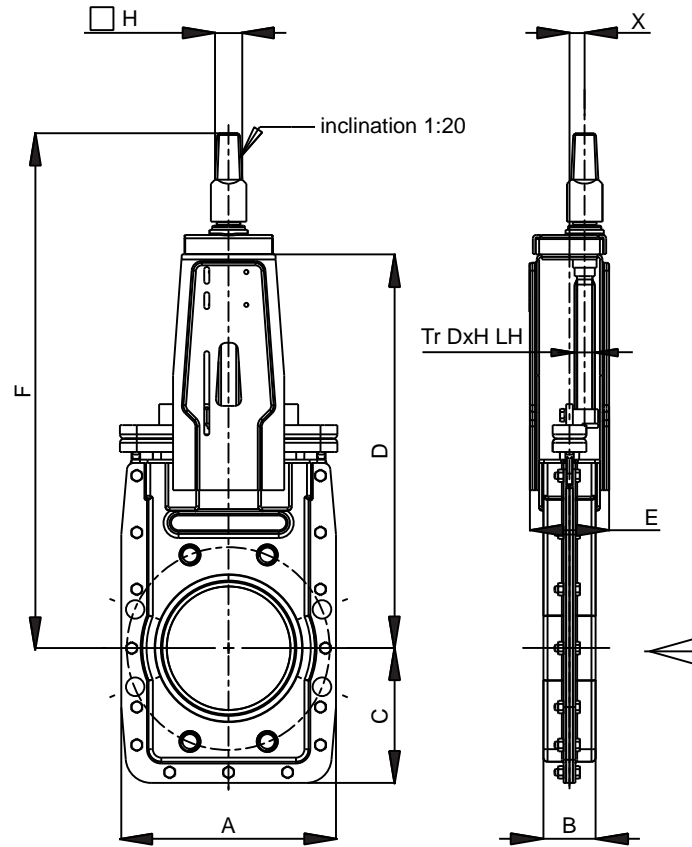
COMPACT-valve  
sprocket drive



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	394	397	274	20 x 4	14
65	8	185	42	100	313	78	394	412	274	20 x 4	14
80	8	175	52	125	313	78	394	437	274	20 x 4	14
*)100	8	210	54	135	368	94	447	520	314	24 x 5	18
*)125	8	230	52	145	413	94	492	595	314	24 x 5	21
*)150	8	255	62	160	468	94	547	665	314	24 x 5	25
200	8	328	60	190	557	143	636	821	394	30 x 6	50
250	8	400	68	230	668	166	747	981	394	30 x 6	66
300	6	450	72	260	764	170	843	1131	394	30 x 6	87
350	6	510	72	290	907	190	1000	1350	516	36 x 6	113
400	6	575	90	326	1059	190	1152	1550	516	36 x 6	198

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-valve  
square head



DN	BD [bar]	A	B	C	D	E	F	H	X	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	455	32	15	20 x 4	9
65	8	185	42	100	313	78	455	32	15	20 x 4	10
80	8	175	52	125	313	78	456	32	15	20 x 4	10
*)100	8	210	54	135	368	94	512	32	18	24 x 5	12
*)125	8	230	52	145	413	94	557	32	18	24 x 5	15
*)150	8	255	62	160	468	94	612	32	18	24 x 5	18
200	8	328	60	190	557	143	707	32	22	30 x 6	38
250	8	400	68	230	668	166	818	32	22	30 x 6	51
300	6	450	72	260	764	170	914	32	22	30 x 6	67
350	6	510	72	290	907	190	1043	32	26	36 x 6	96
400	6	575	90	326	1059	190	1195	32	26	36 x 6	136
450	4	630	110	315	1200	208	1336	32	28.5	36 x 6	261
500	4	700	110	350	1265	228	1416	32	35	36 x 6	311
600	4	810	130	405	1495	268	1646	32	35	44 x 7	468

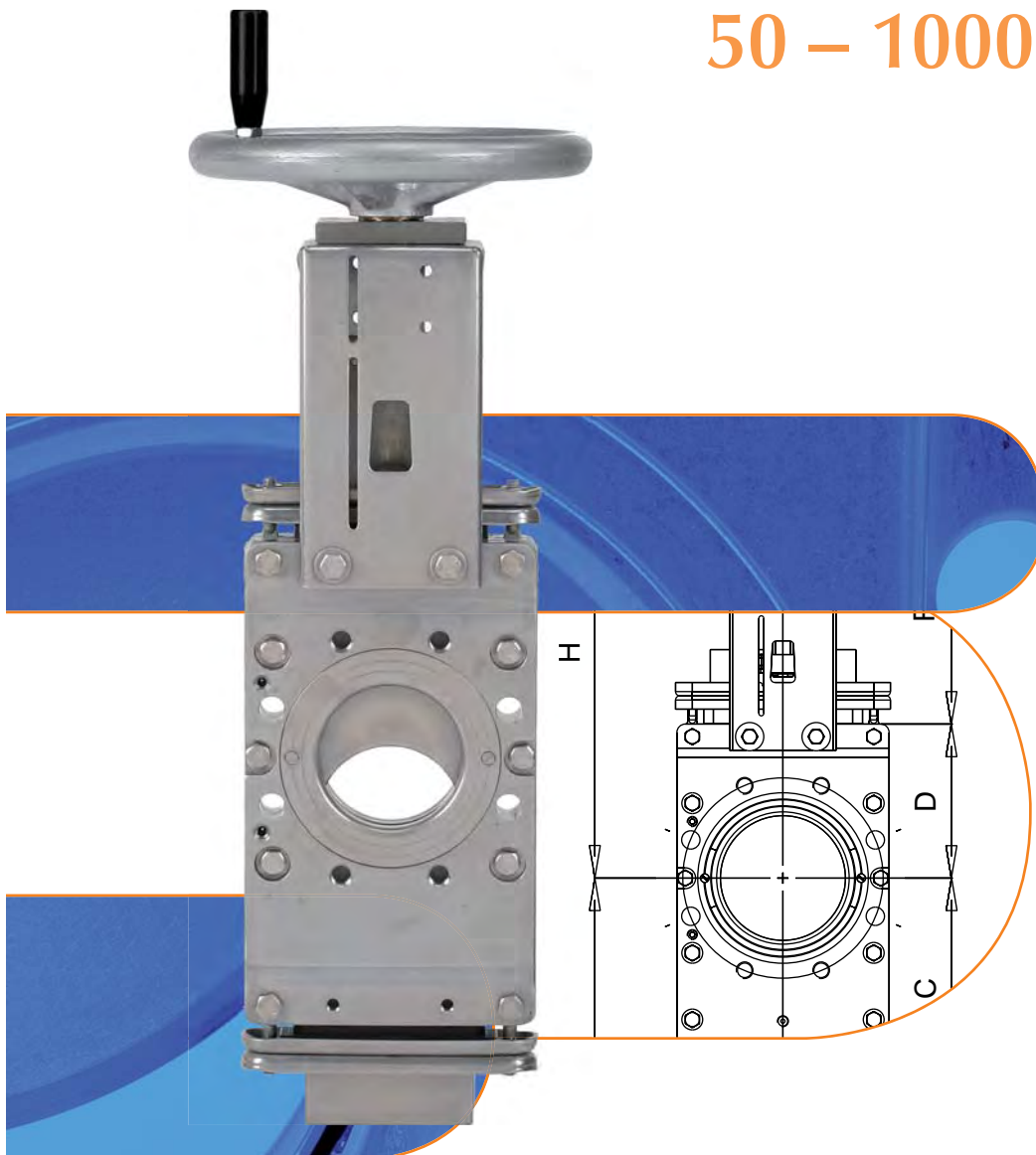
\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

Valves of stainless steel · COMPACT-Program

# Shut-Off-Valves with through-going valve plate

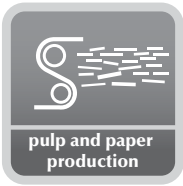
## CDS/CDSV/CDSR

### 50 – 1000 mm



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## Applications



### Paper industry

LOHSE stock valves with through-going slide plate have been successfully tested thousands of times in all areas of the pulp and paper industry.

Valve types CDS and CDSV are installed as shut-off valves for pulp with a high degree of contamination, owing to their absolutely smooth, pocket-free passage.



### Chemical industry and food industry

LOHSE stock valves with through-going slide plate special execution with sealings suitable for foodstuffs are used as shut-off valves and regulating valves for viscous, pulverulent, granular and sticky substances.



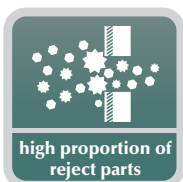
### Waste treatment plants

LOHSE stock valves with through-going slide plate can be found in waste treatment plants for the shutting off of viscous and aggressive substances.

### Special valves

On request we can supply specially designed valves of the most varied materials (e. g. titan) for special fields of application.

## Media





## Construction

### Housing entirely of stainless steel

- corrosion and acid resistant
- easy to maintain
- the handwheel support also serves as a mounting for any control apparatus and protection guard

### Slide cups of special plastic

- abrasion resistant
- excellent anti-friction properties
- temperature resistant
- acid resistant
- easily replaceable

### Valve plate of stainless steel

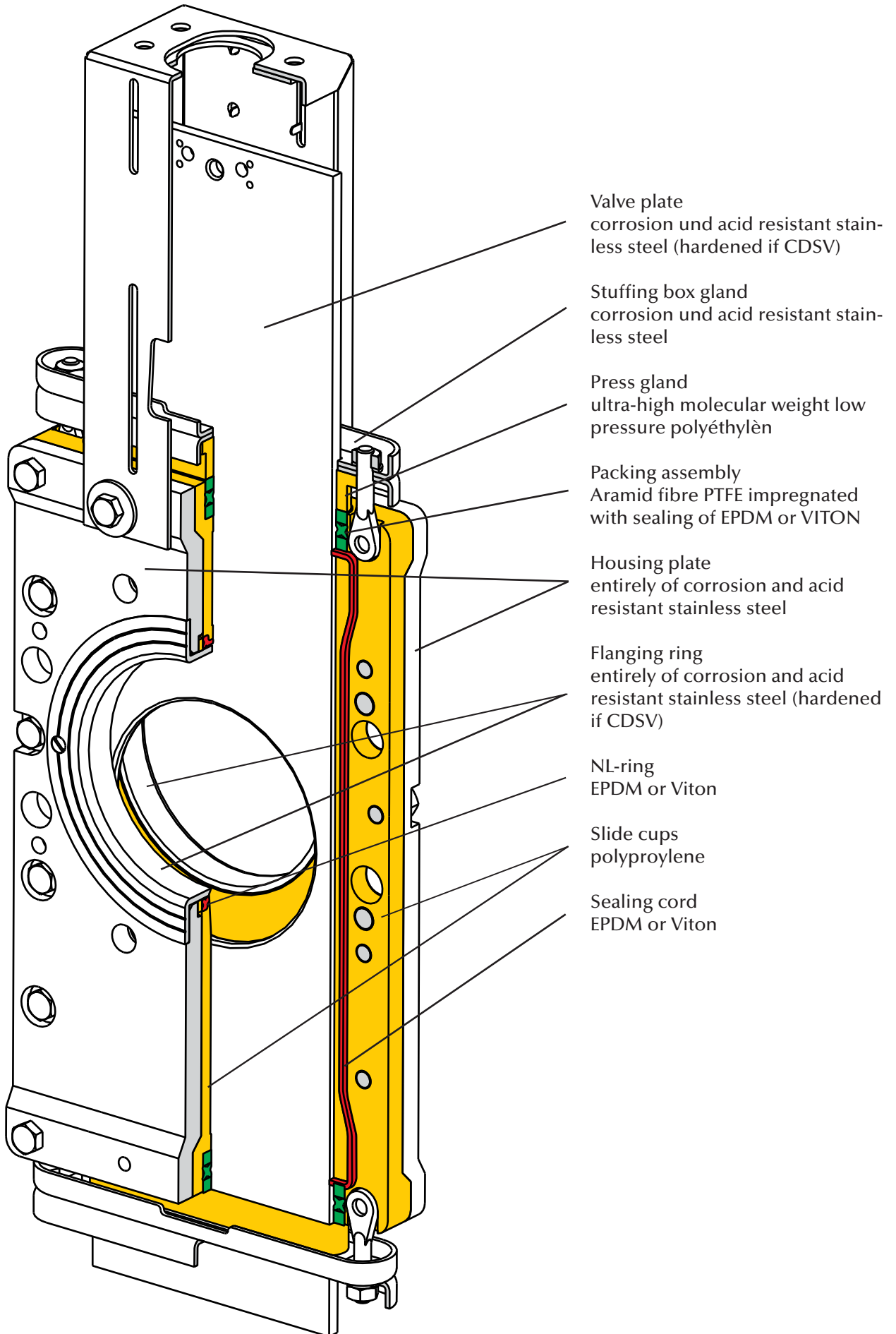
- corrosion and acid resistant – type CDSV has a hardened valve plate
- bare cross section = nominal diameter of piping
- no stringing of fibres is possible
- free of dead space in open position

### 100 % water-tight in both directions

- seals resistant to temperature and acids
- seals easily replaceable but firmly anchored in the valve housing
- Leak test according to DIN EN 12266-02:2012-04  
Table A5, test medium liquid, leakage rate A

### Actuating elements in well-proved LOHSE modular system

- interchangeable an all valves of our make
- also interchangeable on the incorporated existing valve
- reduced stock holding



Valve plate  
corrosion und acid resistant stain-  
less steel (hardened if CDSV)

Stuffing box gland  
corrosion und acid resistant stain-  
less steel

Press gland  
ultra-high molecular weight low  
pressure polyéthylèn

Packing assembly  
Aramid fibre PTFE impregnated  
with sealing of EPDM or VITON

Housing plate  
entirely of corrosion and acid  
resistant stainless steel

Flanging ring  
entirely of corrosion and acid  
resistant stainless steel (hardened  
if CDSV)

NL-ring  
EPDM or Viton

Slide cups  
polypropylene

Sealing cord  
EPDM or Viton

## Materials

- housing
  - DN 50 – 400 1.4301
  - DN 450 – 600 1.4541
  - DN 700 – 1000 1.4571
- flanging ring
  - DN 50 – 65 1.4571
  - DN 80 1.4404
  - DN 100 – 1000 1.4571
- valve plate 1.4571
- slide cups
  - DN 50 – 600 PP
- sealing EPDM or VITON
- slide parts
  - DN 700 – 1000 CuSn6 / CuAl10Ni
- stuffing box gland 1.4301
- packing assembly
  - DN 50 – 500:
    - packing aramid fibre with impregnation of PTFE
    - p-ring EPDM, VITON or NBR
  - DN 600 aramid fibre with PTFE
  - DN 700 – 1000:
    - packing aramid fibre with impregnation of PTFE
    - p-ring EPDM, VITON or NBR
- press gland
  - DN 50 -150 PE-HMW (RCH 500)
- bracket 1.4301
- screws / nuts A2
- max. operating pressure
  - DN 50 – 250 8 bar
  - DN 300 – 400 6 bar
  - DN 450 – 600 4 bar
  - DN 700 – 800 2.5 bar
  - DN 900 – 1000 2 bar
- max. operating temperature 120° C

Type CDSV similar, but with hardened flanging rings and valve plate.

## Operating elements – the LOHSE modular system

All LOHSE COMPACT-valves comprise the following **main groups**:

- valve body type: CDS, CDSV
- operating elements type Hns, H, P, PV, E, GK, K, X

All elements are interchangeable for any given size. Thereby the connections of brackets as well as the coupling of actuator and valve plate will be removed and fixed again after the exchange. No removal of incorporated valve body (notice safety rules – pipes must be pressureless).

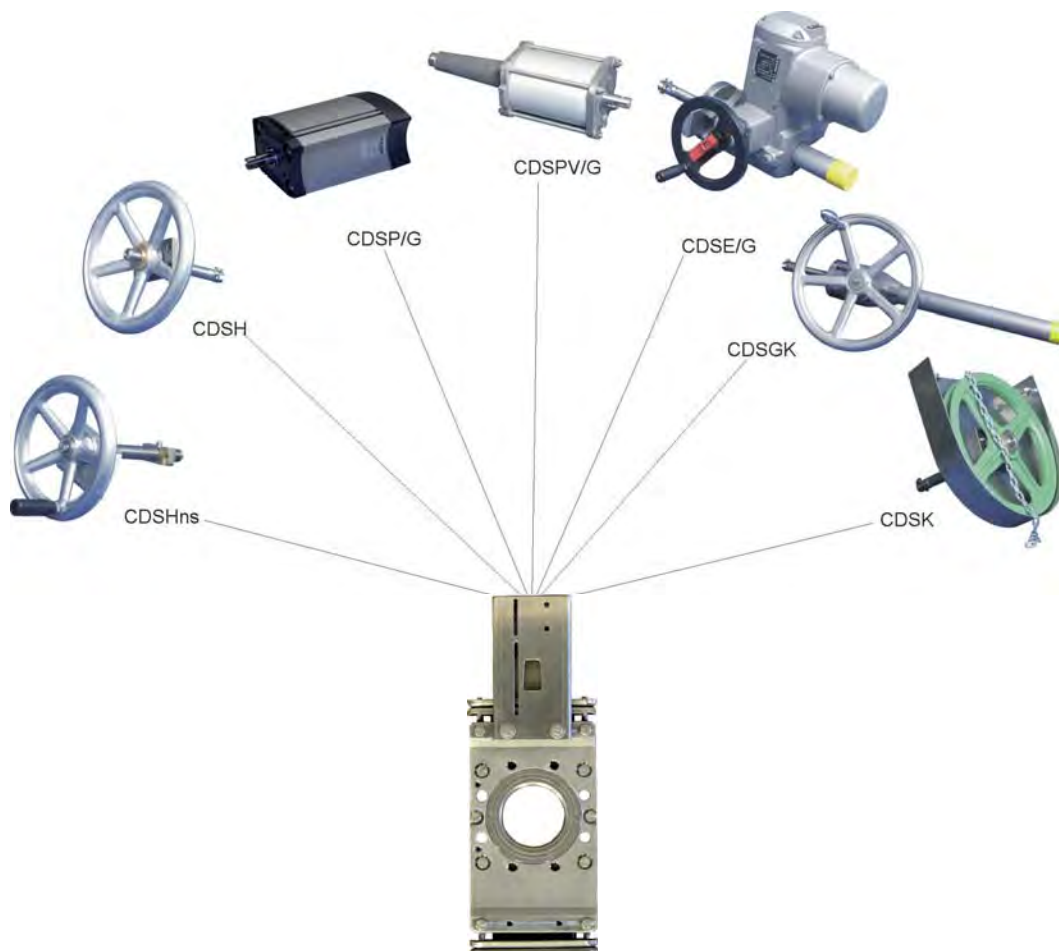
This facility is called the **LOHSE modular system** which offers the following advantages:

- simplified and less expensive holding of spare parts.
- in case of damage, actuating elements can be replaced inexpensively.
- if any valve drives have to be altered, replacement is easy and quick

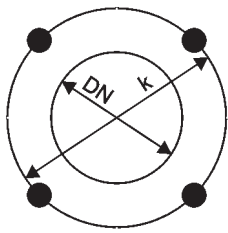
### Protection guards (G)

According to machinery directive 2006/42/EG guards are compulsory to shield all moving parts on automated gate valves.

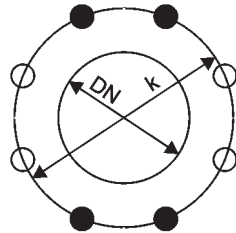
Protection guard of stainless steel.



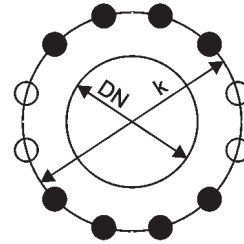
Flange bores for LOHSE COMPACT-valves according to DIN EN 1092-1, PN 10



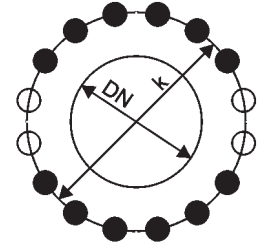
DN 50-65



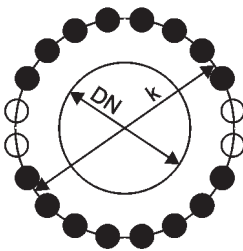
DN 80-200



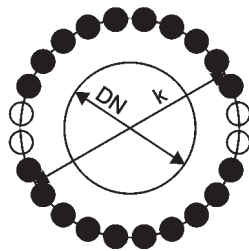
DN 250-300



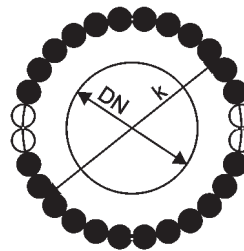
DN 350-400



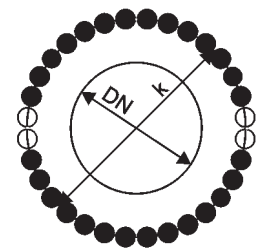
DN 450-600



DN 700-800

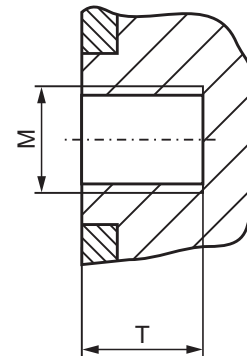


DN 900-1000



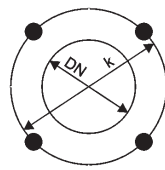
DN 1100-1200

DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2
50	125	4	M16	12	4	-
65	145	4	M16	12	4	-
80	160	8	M16	12	4	4
100	180	8	M16	12	4	4
125	210	8	M16	12	4	4
150	240	8	M20	16	4	4
200	295	8	M20	16	4	4
250	350	12	M20	20	8	4
300	400	12	M20	20	8	4
350	460	16	M20	20	12	4
400	515	16	M24	23	12	4
450	565	20	M24	30	16	4
500	620	20	M24	30	16	4
600	725	20	M27	35	16	4
700	840	24	M27	40	20	4
800	950	24	M30	45	20	4
900	1050	28	M30	45	24	4
1000	1160	28	M33	45	24	4
1100	1270	32	M33	50	28	4
1200	1380	32	M36	55	28	4

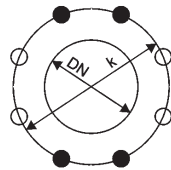


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

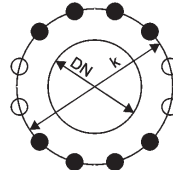
Flange bores for LOHSE COMPACT-valves  
according to ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150)



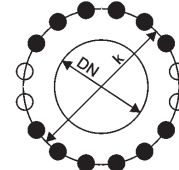
DN 50-80



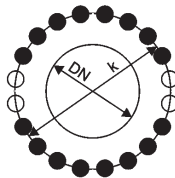
DN 100-200



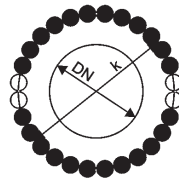
DN 250-350



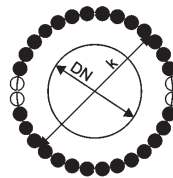
DN 400-450



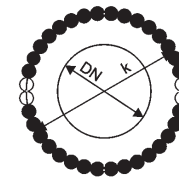
DN 500-600



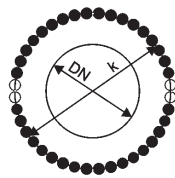
DN 700-800



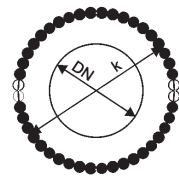
DN 900



DN 1000

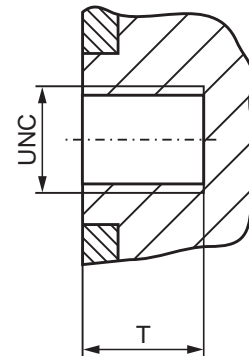


DN 1100



DN 1200

DN [mm]	DN [inch]	K [mm]	K [inch]	Z	UNC	T [mm]	T [inch]	Z1	Z2
50	2	120.6	4 3/4	4	5/8"-11	12	0.472	4	-
65	2.5	139.7	5 1/2	4	5/8"-11	12	0.472	4	-
80	3	152.4	6	4	5/8"-11	12	0.472	4	-
100	4	190.5	7 1/2	8	5/8"-11	12	0.472	4	4
125	5	215.9	8 1/2	8	3/4"-10	12	0.472	4	4
150	6	241.3	9 1/2	8	3/4"-10	16	0.630	4	4
200	8	298.5	11 3/4	8	3/4"-10	16	0.630	4	4
250	10	362	14 1/4	12	7/8"-9	20	0.787	8	4
300	12	431.8	17	12	7/8"-9	20	0.787	8	4
350	14	476.3	18 3/4	12	1"-8	20	0.787	8	4
400	16	539.8	21 1/4	16	1"-8	23	0.910	12	4
450	18	577.9	22 3/4	16	1 1/8"-7	30	1.181	12	4
500	20	635	25	20	1 1/8"-7	30	1.181	16	4
600	24	749.3	29 1/2	20	1 1/4"-7	35	1.378	16	4
700	28	863	34	28	1 1/4"-7	40	1.575	24	4
800	32	978	38 1/2	28	1 1/2"-6	45	1.772	24	4
900	36	1086	42 3/4	32	1 1/2"-6	45	1.772	28	4
1000	40	1200	47 1/4	36	1 1/2"-6	45	1.775	32	4
1100	44	1314	51 3/4	40	1 1/2"-6	50	1.969	36	4
1200	48	1422	56	44	1 1/2"-6	55	2.165	40	4

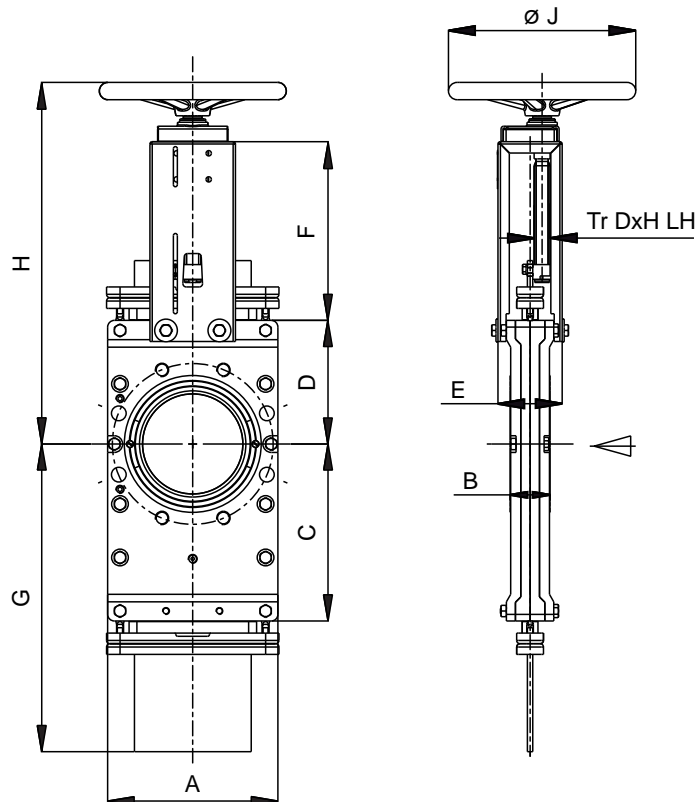


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread



COMPACT-shut-off valve with through-going valve plate  
handwheel drive with non-rising stem

Type CDSVHns similar, but with hardened valve plate and flanging rings

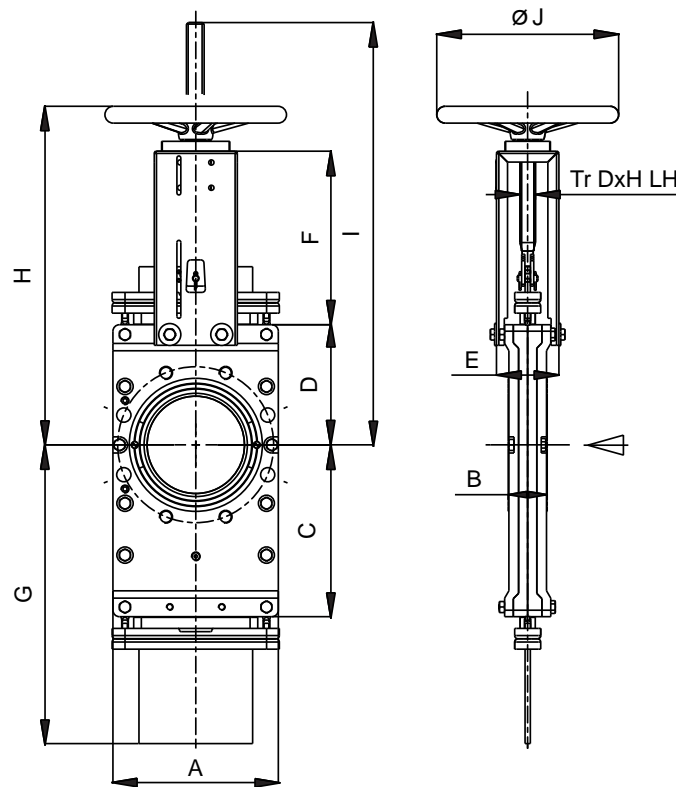


DN	BD [bar]	A	B	C	D	E	F	G	H	Ø J	Tr D x H LH	weight ~[kg]
50	8	160	40	125	125	85	160	212	368	225	20 x 4	13
65	8	160	40	140	140	85	160	238	383	225	20 x 4	13
80	8	185	50	160	145	85	176	282	404	225	20 x 4	16
100	8	205	49	190	155	96	207	331	451	280	24 x 5	24
125	8	235	50	230	170	96	233	401	492	280	24 x 5	31
150	8	255	60	265	185	96	270	461	541	280	24 x 5	39
200	8	325	60	355	222	120	315	614	637	360	30 x 6	67
250	8	400	70	440	263	127	368	753	731	360	30 x 6	115
300	6	430	70	505	300	127	427	873	832	360	30 x 6	143
350	6	490	70	580	340	167	511	1006	942	360	30 x 6	201
400	6	570	90	655	385	189	610	1122	1099	500	30 x 6	266
450	4	630	110	750	435	208	680	1282	1217	500	30 x 6	
500	4	700	110	840	470	228	735	1422	1324	500	36 x 6	
600	4	810	130	1000	545	268	850	1667	1514	500	36 x 6	

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off valve with through-going valve plate  
handwheel drive with rising stem

Type CDSVH similar, but with hardened valve plate and flanging rings

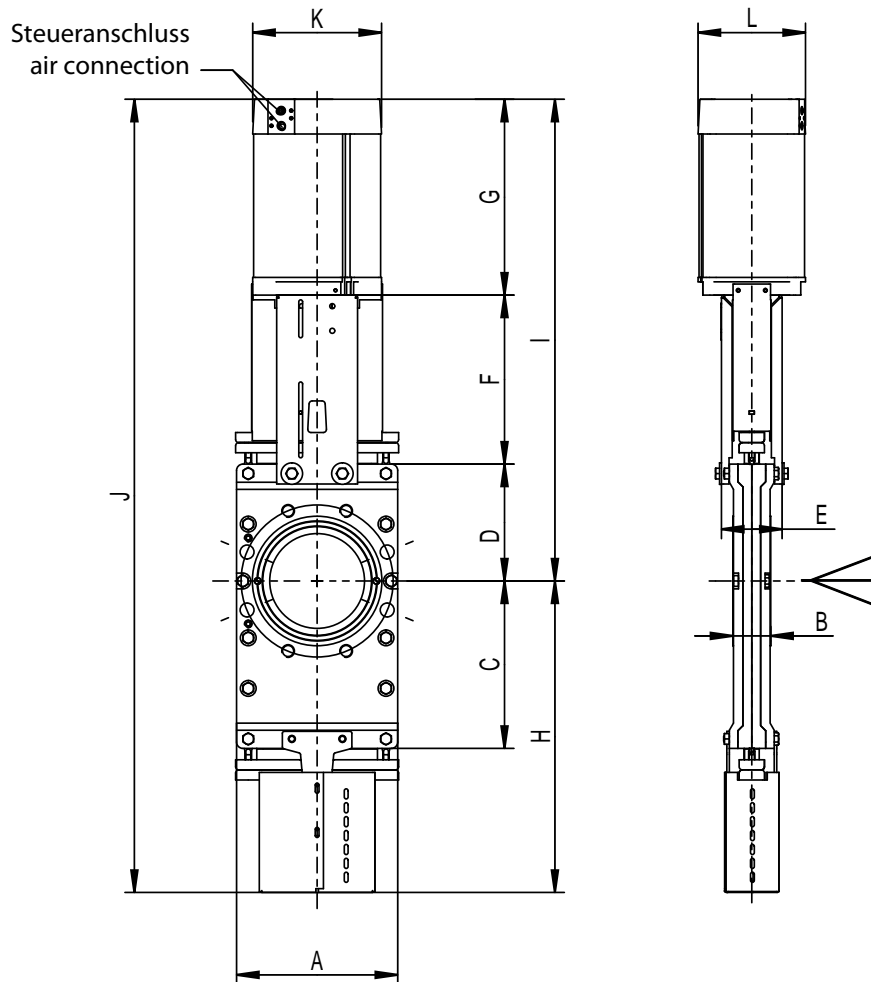


DN	BD [bar]	A	B	C	D	E	F	G	H	I	Ø J	Tr D x H LH	weight ~[kg]
50	8	160	40	125	125	85	160	212	350	395	225	20 x 4	13
65	8	160	40	140	140	85	160	238	365	425	225	20 x 4	13
80	8	185	50	160	145	85	176	282	386	465	225	20 x 4	17
100	8	205	49	190	155	96	207	331	431	530	280	24 x 5	25
125	8	235	50	230	170	96	233	401	472	595	280	24 x 5	31
150	8	255	60	265	185	96	270	461	522	672	280	24 x 5	39
200	8	325	60	355	222	120	315	614	617	820	360	30 x 6	67
250	8	400	70	440	263	127	368	753	711	960	360	30 x 6	116
300	6	430	70	505	300	127	427	873	807	1110	360	30 x 6	143
350	6	490	70	580	340	167	511	1006	947	1300	500	36 x 6	201
400	6	570	90	655	385	189	610	1122	1091	1500	500	36 x 6	266
450	4	630	110	750	435	208	680	1282	1211	1665	500	36 x 6	428
500	4	700	110	840	470	228	735	1422	1301	1805	500	36 x 6	564
600	4	810	130	1000	545	268	850	1667	1491	2105	640	44 x 7	898

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off valve with through-going valve plate  
pneumatic cylinder and protection guard

Type CDSVP/G similar, but with hardened valve plate and flanging rings

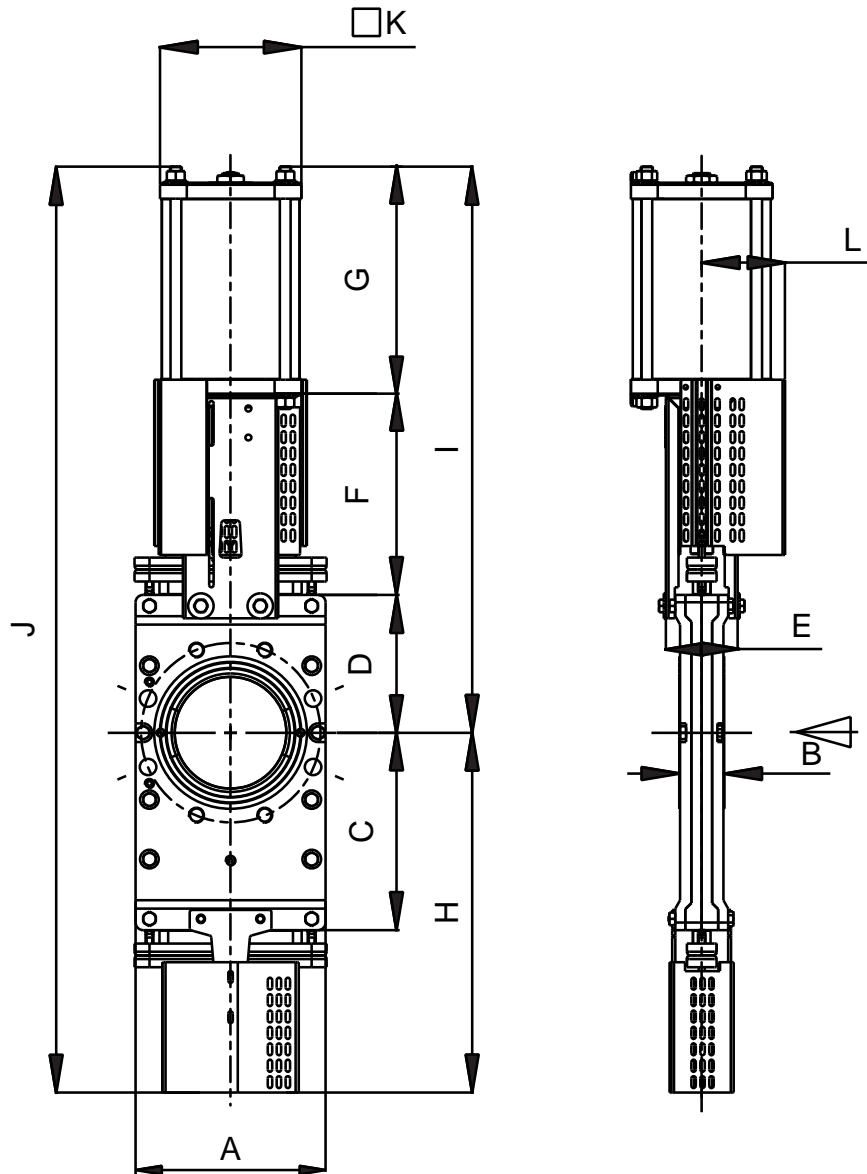


DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	K	L	cyl Ø	air connection	weight ~[kg]
50	8	160	40	125	125	85	160	182	245	467	712	139	109	100	G 1/4"	15.3
65	8	160	40	140	140	85	160	197	260	497	757	139	109	100	G 1/4"	15.4
80	8	185	50	160	145	85	176	210	301	531	832	139	109	100	G 1/4"	15.5
100	8	205	49	190	155	96	207	253	358	615	973	165	135	125	G 1/4"	31.9
125	8	235	50	230	170	96	233	279	431	682	1113	165	135	125	G 1/4"	36.1
150	8	255	60	265	185	96	268	310	493	763	1256	204	170	160	G 1/4"	49.4
200	8	325	60	355	222	120	315	360	665	897	1562	204	170	160	G 1/4"	84.4
250	8	400	70	440	263	127	368	433	805	1064	1869	211	244	200	G 1/2"	134
300	6	430	70	505	300	127	427	515	915	1242	2157	283	242	230	G 1/2"	163
350	6	490	70	580	340	167	511	575	1041	1426	2467	283	242	230	G 1/2"	235

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150); air connection acc. VDI/VDE 3845 (NAMUR). Further sizes on request.

COMPACT-shut-off valve with through-going valve plate  
pneumatic cylinder and protection guard

Type CDSVP/G similar, but with hardened valve plate and flanging rings

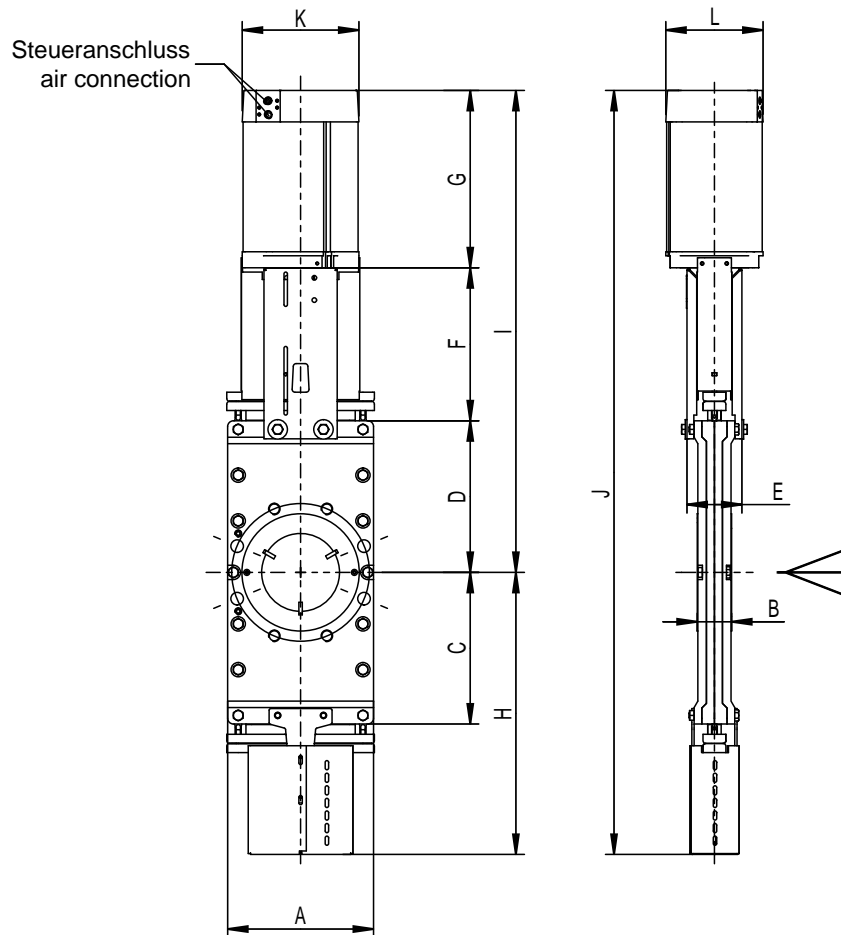


DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	K	L	cyl Ø	air connection	weigh ~[kg]
400	6	570	90	655	385	189	610	621	1132	1616	2748	318	318	300	G 1/2"	320
450	4	630	110	750	435	208	680	666	1367	1781	3148	318	318	300	G 1/2"	519
500	4	700	110	840	470	228	735	789	1457	1994	3451	425	425	400	G 3/4"	718
600	4	810	130	1000	545	268	850	889	1720	2284	4004	425	425	400	G 3/4"	1046
700	2.5	960	150	1155	645	306	996	986	1995	2627	4622	645	645	500	G 3/4"	
800	2.5	1060	150	1310	710	306	1136	1086	2226	2932	5158	645	645	500	G 3/4"	

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off-valve

with through-going valve plate, extended housing, valve plate and flanging rings hardened, conical inlet with turbulence interrupter (ribs), with pneumatic cylinder and protection guard

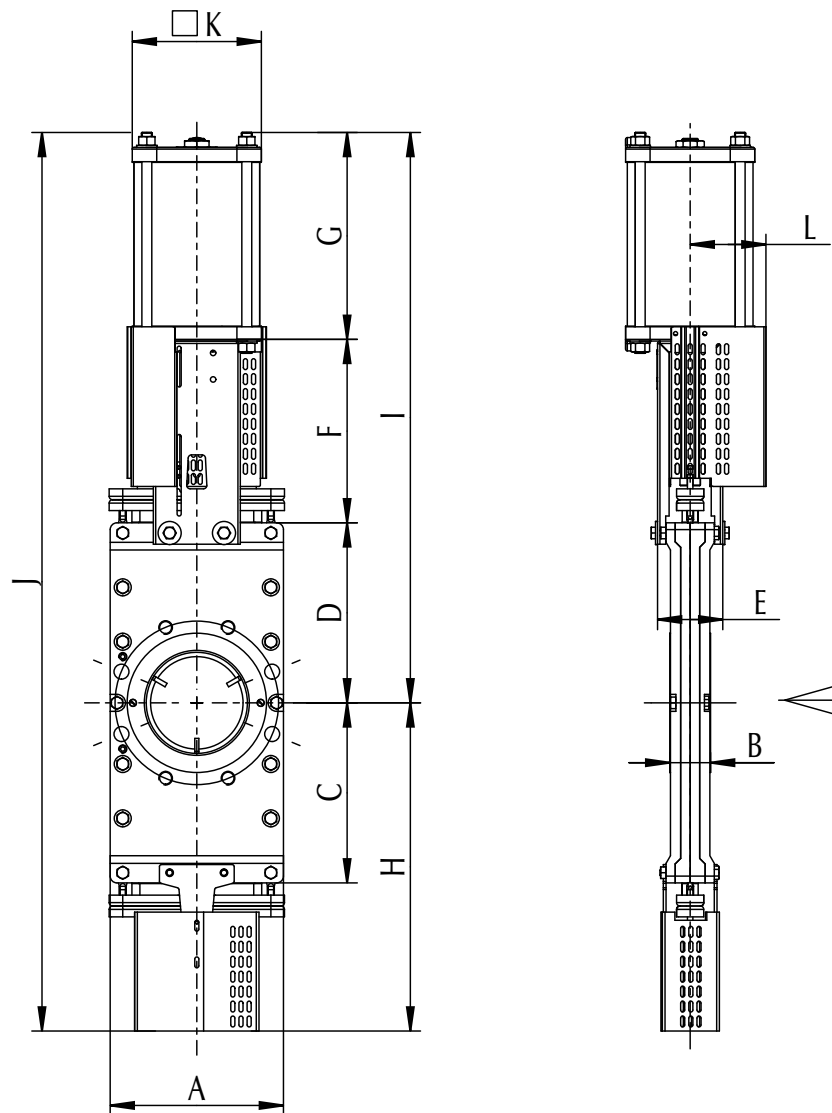


DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	□ K	L	cyl Ø	air conecion
50	8	160	40	125	125	85	160	200	242	485	727	138	108	125	G 1/4"
65	8	160	40	140	140	85	160	206	257	506	763	138	108	125	G 1/4"
80	8	185	50	160	160	85	176	221	298	557	855	138	108	125	G 1/4"
100	8	205	49	190	190	96	207	243	350	640	990	158	114	145	G 1/4"
125	8	235	50	230	230	96	233	272	412	735	1147	158	114	145	G 1/4"
150	8	255	60	265	265	96	270	305	483	840	1323	190	112	175	G 1/2"
200	8	325	60	355	355	120	315	352	626	1022	1648	215	125	200	G 1/2"
250	8	400	70	440	440	127	368	401	762	1209	1971	215	126	200	G 1/2"
300	6	430	70	505	505	127	427	670	883	1602	2485	283	242	230	G 1/2"
350	6	490	70	580	580	167	511	720	1011	1811	2822	283	242	230	G 1/2"

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150); air connection acc. VDI/VDE 3845 (NAMUR). Further sizes on request.

COMPACT-shut-off-valve

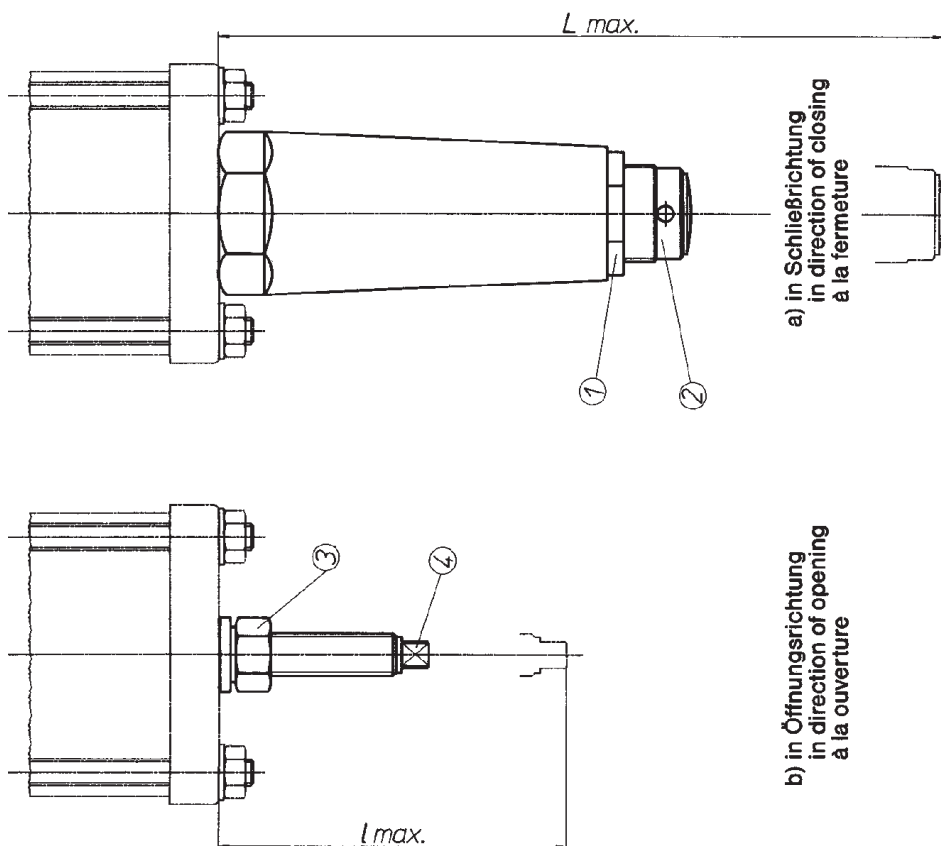
with through-going valve plate, extended housing, valve plate and flanging rings hardened, conical inlet with turbulence interrupter (ribs), with pneumatic cylinder and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	□ K	L	cyl Ø	air connecion
400	6	570	90	655	655	189	610	621	1132	1886	3018	318	146	300	G 1/2"
450	4	630	110	750	750	208	680	666	1367	2096	3463	318	151	300	G 1/2"
500	4	700	110	840	840	228	735	789	1457	2364	3821	425	151	400	G 3/4"
600	4	810	130	1000	1000	268	850	889	1720	2739	4459	425	161	400	G 3/4"
700	2.5	960	150	1155	1155	306	996	986	1995	3137	5132	645	-	500	G 3/4"
800	2.5	1060	150	1310	1310	306	1136	1086	2226	3532	5758	645	-	500	G 3/4"

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150). Further sizes on request.

COMPACT-shut-off-valve with through-going valve plate  
 pneumatic-cylinder with variable stroke limiter and protection guard  
 Type CDSVPV/G similar, but with hardened valve plate and flanging rings



### Variable stroke limiter

- in direction of closing:  
loosen the nut (1), adjust the adjustable pipe (2), tighten the nut (1)
- in direction of opening:  
loosen the nut (3), adjust the adjustable screw (4) tighten the nut

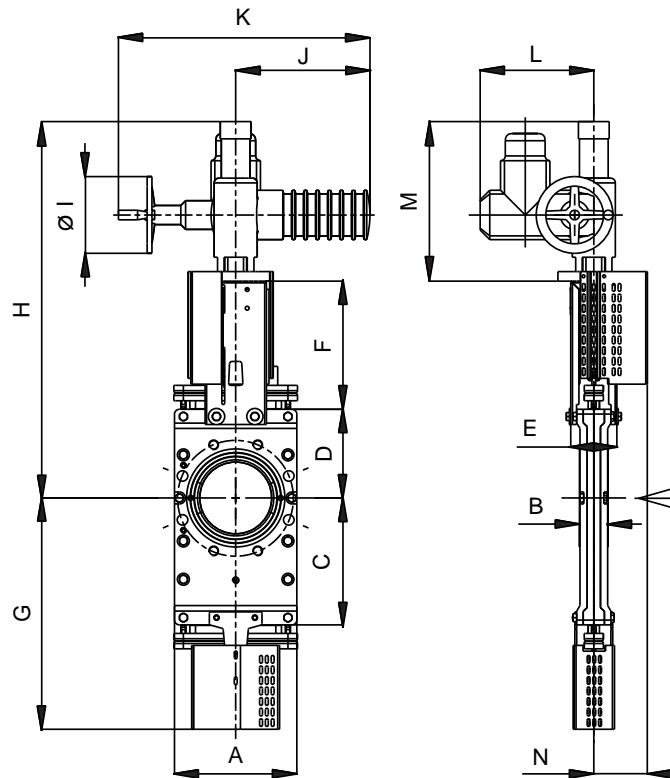
DN	cyl.Ø	in direction of opening	in direction of closing
		L max ~	L max ~
50	125	140	283
65	125	140	283
80	125	140	283
100	145	190	439
125	145	190	439
150	175	202	439
200	200	252	554

Further sizes on request.



COMPACT-shut-off-valve with through-going valve plate  
electric drive and protection guard

Type CDSVE/G similar, but with hardened valve plate and flanging rings

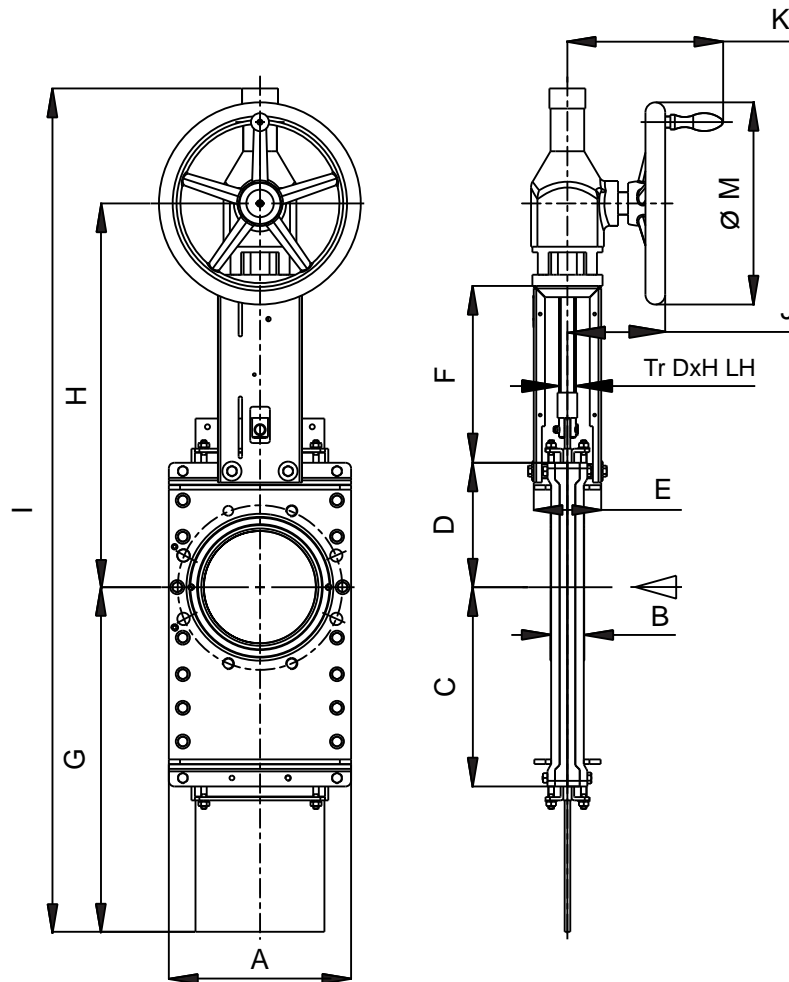


DN	BD [bar]	A	B	C	D	E	F	G	H	ØI	J	K	L	M	N	stem Tr DxH	closing time [s]	weight ~[kg]
50	8	160	40	125	125	85	160	242	618	140	280	509	237	333	108	20 x 4	19.3	36
65	8	160	40	140	140	85	160	257	633	140	280	509	237	333	108	20 x 4	24.3	36
80	8	185	50	160	145	85	176	298	654	140	280	509	237	333	108	20 x 4	29.3	40
100	8	205	49	190	155	96	207	350	695	160	280	525	237	333	114	24 x 5	29.1	47
125	8	235	50	230	170	96	233	412	736	160	280	525	237	333	114	24 x 5	35.7	54
150	8	255	60	265	185	96	270	483	786	160	280	525	237	333	112	24 x 5	42.4	62
200	8	325	60	355	222	120	315	626	882	200	355	603	247	345	126	30 x 6	45.0	96
250	8	400	70	440	263	127	368	762	976	200	355	603	247	345	126	30 x 6	56.4	145
300	6	430	70	505	300	127	427	883	1165	200	355	603	247	438	126	30 x 6	68.9	172
350	6	490	70	580	340	167	511	1011	1294	200	355	603	247	443	142	36 x 6	78.4	230
400	6	570	90	655	385	189	610	1132	1503	315	380	695	285	508	146	36 x 6	89.8	295
450	4	630	110	750	435	208	680	1367	1723	315	380	695	285	608	151	36 x 6	100.9	500
500	4	700	110	840	470	228	735	1475	1813	315	380	695	285	608	151	36 x 6	112.2	645
600	4	810	130	1000	545	268	850	1720	2103	315	380	695	285	708	161	44 x 7	83.0	989

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off-valve with through-going valve plate  
bevel gear box and handwheel

Type CDSVGK similar, but with hardened valve plate and flanging rings

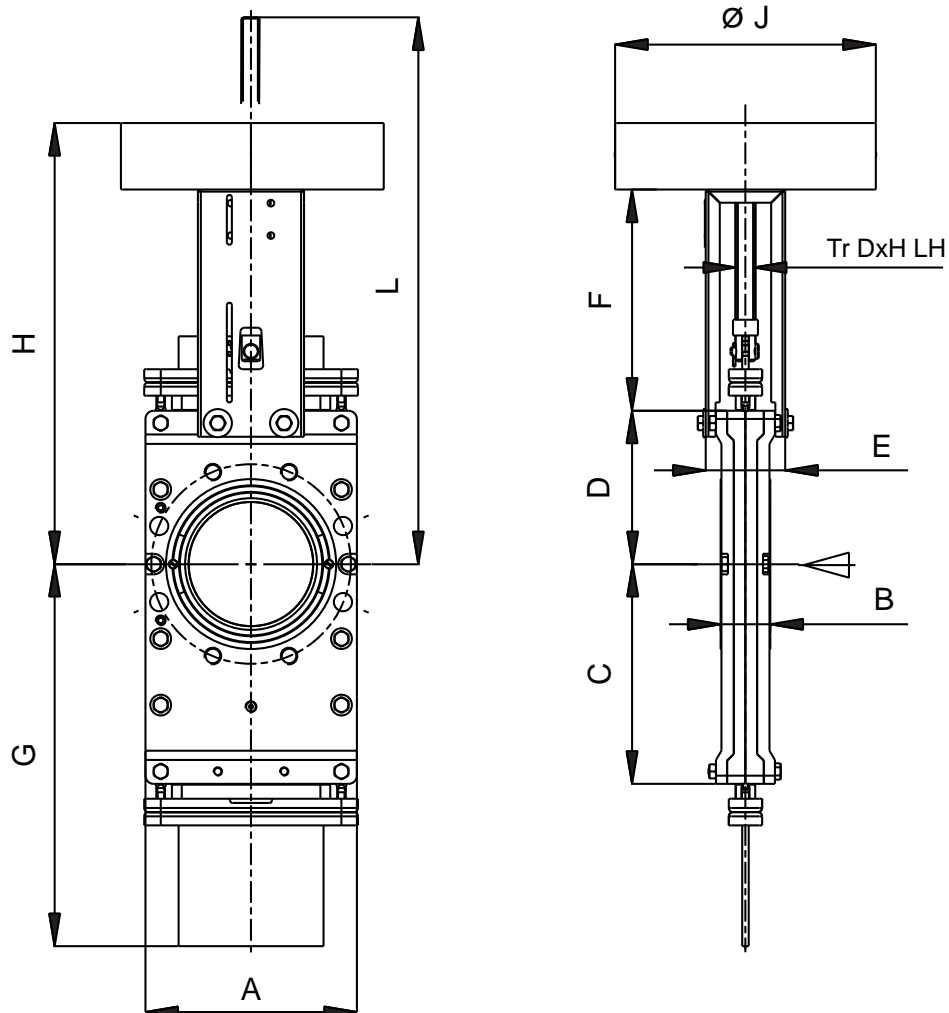


DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	L	ØM	Tr DxH	weight ~[kg]
200	8	325	60	355	222	120	315	614	684	1503	174	155	360	30 x 6	87
250	8	400	70	440	263	127	368	753	778	1786	174	155	360	30 x 6	134
300	6	430	70	505	300	127	427	873	874	2052	174	155	360	30 x 6	164
350	6	490	70	580	340	167	511	1006	1003	2364	185	178	400	36 x 6	215
400	6	570	90	655	385	189	610	1122	1147	2669	185	178	400	36 x 6	279
450	4	630	110	750	435	208	680	1285	1267	2999	185	178	400	36 x 6	431
500	4	700	110	840	470	228	735	1422	1395	3309	222	205	400	36 x 6	592
600	4	810	130	1000	545	268	850	1667	1585	3817	222	205	500	44 x 7	903
700	2.5	960	150	1155	645	306	996	1948	1831	4445	222	205	500	44 x 7	
800	2.5	1060	150	1310	710	306	1136	2178	2036	4978	222	205	500	44 x 7	

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off-valve with through-going valve plate  
sprocket drive

Type CDSVK similar, but with hardened valve plate and flanging rings



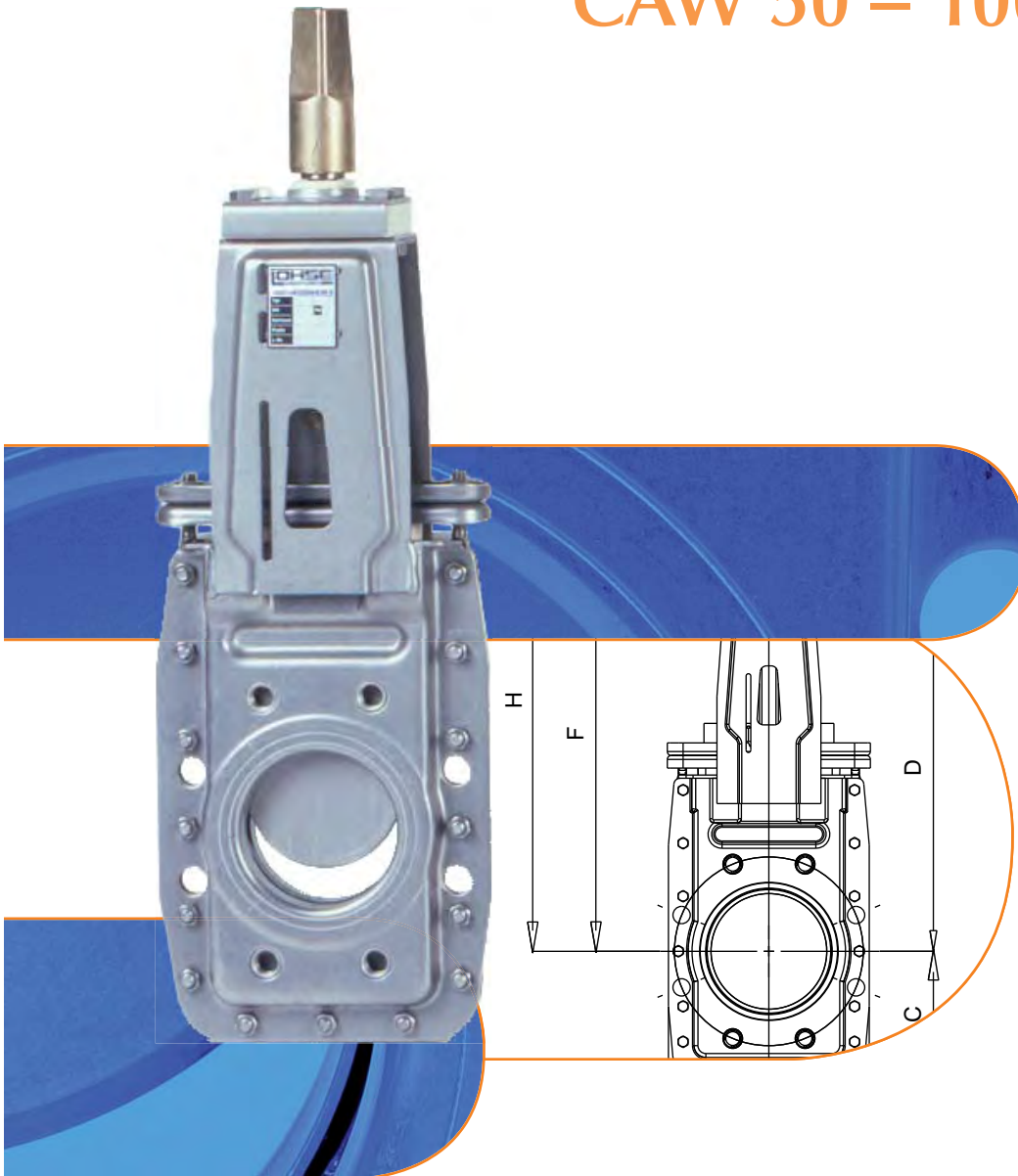
DN	BD [bar]	A	B	C	D	E	F	G	H	L	Ø J	Tr D x H LH	weight ~[kg]
50	8	160	40	125	125	85	160	212	366	395	274	20 x 4	18
65	8	160	40	140	140	85	160	238	381	425	274	20 x 4	19
80	8	185	50	160	145	85	176	282	402	460	274	20 x 4	23
100	8	205	49	190	155	96	207	331	441	530	314	24 x 5	31
125	8	235	50	230	170	96	233	401	482	595	314	24 x 5	37
150	8	255	60	265	185	96	270	461	532	667	314	24 x 5	47
200	8	325	60	355	222	120	315	614	616	815	394	30 x 6	79
250	8	400	70	440	263	127	368	753	710	955	394	30 x 6	127
300	6	430	70	505	300	127	427	873	806	1106	394	30 x 6	150

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

Valves of stainless steel · COMPACT-Program

# Shut-Off-Valves

## CAW 50 – 1000 mm



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## Applications



### Municipal sewage treatment

When LOHSE COMPACT-gate valves of acid resistant stainless steel are installed in waste water treatment plants, the need to use expensive isolation appliances to guard against contact-corrosion is removed.



### Food industry

LOHSE COMPACT-gate valves with seals, suitable for food, are widely used as shut-off valves for viscous and glutinous media as for instance in salt works, sugar mills, wine making industry, breweries etc.

## Construction

### Stainless steel housing

- of a rust and acid resistant material which prevents not only its own corrosion but also contact corrosion on stainless steel piping therefore saving expensive isolation materials
- two parts – easy to maintain
- made from pressed stainless steel plate which keeps its shape – light and easy to install
- the frame for the drive acts at the same as a fastening for the switch and control mechanisms

### Plastic slide lining

- this material has the highest slide properties but at the same time is abrasion resistant
- resistant to temperature extremes and acid
- easy to change

### Valve plate of stainless steel

- of a rust and acid resistant material

### Flow opening = the nominal width of the piping

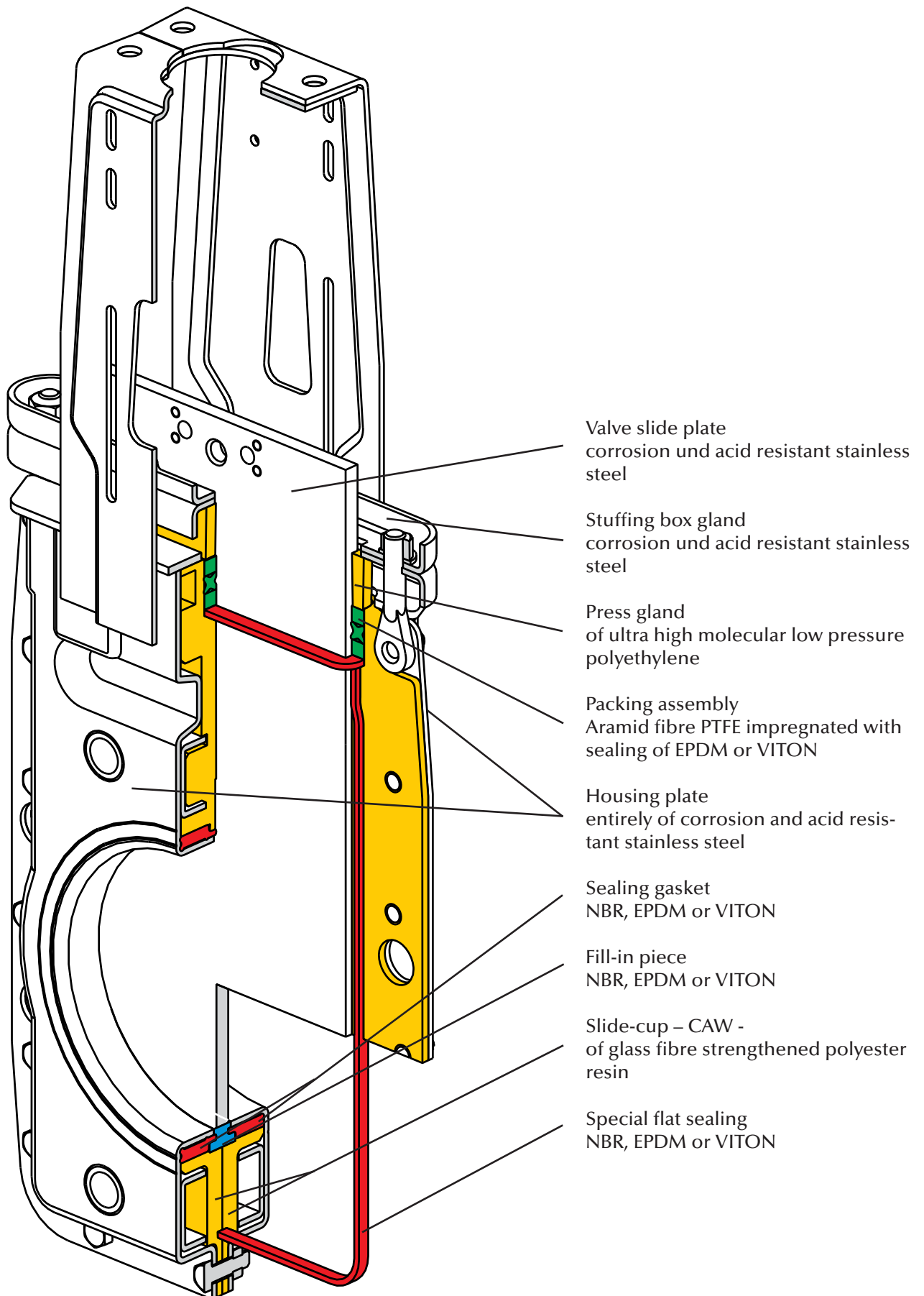
- no contraction caused by guide strips to the side
- by using an elastomer you guarantee a completely smooth flow

### Drives all part of the proven LOHSE modular system

- easy-to-use handwheel with a handle grip to quickly open or shut the valve by hand
- electro or pneumatic drives to enable activation from a distance
- drives are exchangeable in the case of all our valves even in an assembled condition
- drive accessories can be optimally attuned to one another

### Watertight

- Leak test according to DIN EN 12266-02:2012-04 Table A5, test medium liquid, leakage rate A



Valve slide plate  
corrosion und acid resistant stainless steel

Stuffing box gland  
corrosion und acid resistant stainless steel

Press gland  
of ultra high molecular low pressure polyethylene

Packing assembly  
Aramid fibre PTFE impregnated with sealing of EPDM or VITON

Housing plate  
entirely of corrosion and acid resistant stainless steel

Sealing gasket  
NBR, EPDM or VITON

Fill-in piece  
NBR, EPDM or VITON

Slide-cup – CAW -  
of glass fibre strengthened polyester resin

Special flat sealing  
NBR, EPDM or VITON

## Materials

- housing
  - DN 50 – 250 1.4404
  - DN 300 – 600 1.4541
  - DN 700 – 1000 1.4571
- flanging ring
  - DN 700 – 1000 1.4571
- valve plate 1.4571
- slide cups
  - DN 50 – 250 GRP
  - DN 300 – 600 PP
- sealing EPDM, VITON or NBR
- slide parts
  - DN 700 – 1000 CuSn6 / CuAL10Ni
- stuffing box gland
  - DN 50 – 150 1.4301
  - DN 200 – 450 1.4541
  - DN 500 – 600 1.4301
  - DN 700 – 1000 1.4571
- packing assembly
  - packing aramid fibre with impregnation of PTFE
  - p-ring EPDM, VITON or NBR
- press gland
  - DN 50 -150 PE-HMW (RCH 500)
- bracket 1.4301
- screws / nuts A2
- max. operating pressure
  - DN 50 – 80 8 bar
  - DN 100 – 200 6 bar
  - DN 250 – 300 4 bar
  - DN 350 – 600 2.5 bar
  - DN 700 – 1000 1.5 bar
- max. operating temperature
  - with sealing NBR 105° C
  - with sealing EPDM 120° C



## Operating elements – the LOHSE modular system

All LOHSE COMPACT-valves comprise the following **main groups**:

- valve body type: CAW
- operating elements type Hns, P, E, GK, K, X (accessories such as e.g. extensions on inquiry)

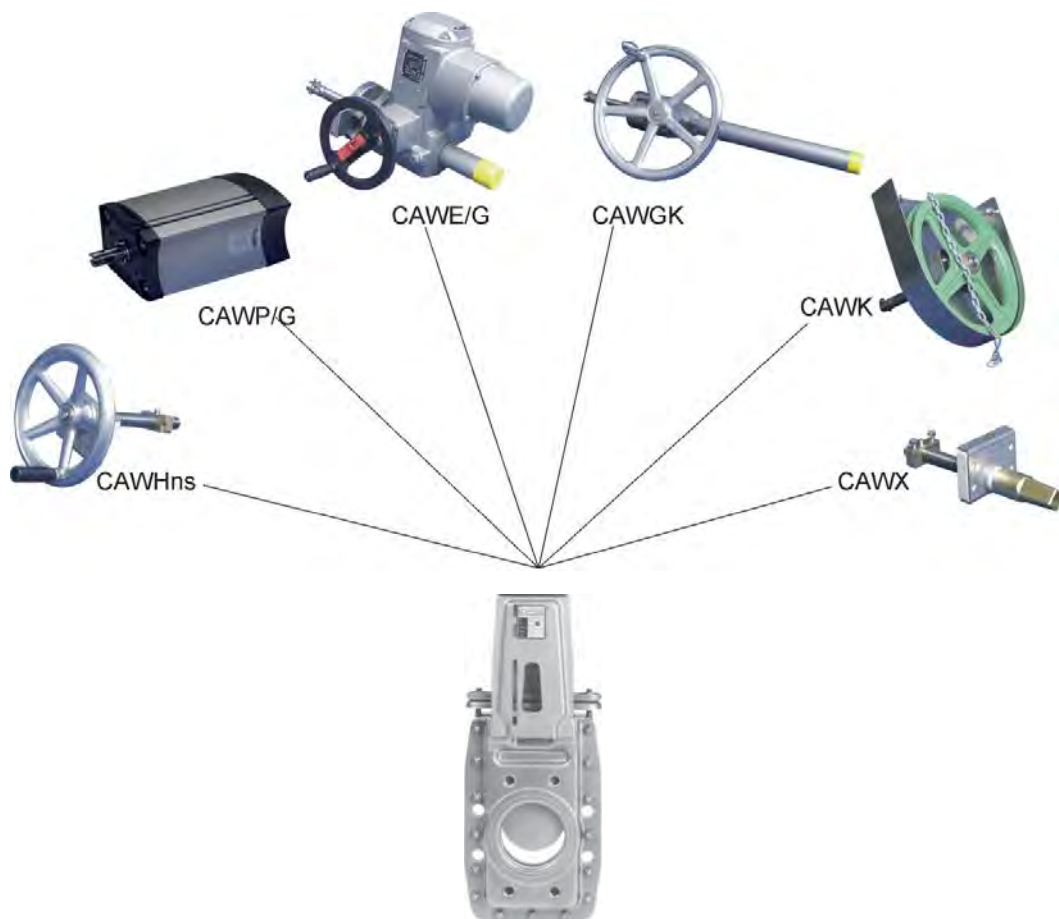
All elements are interchangeable for any given size. Thereby the connections of brackets as well as the coupling of actuator and valve plate will be removed and fixed again after the exchange. No removal of incorporated valve body (notice safety rules – pipes must be pressureless).

This facility is called the **LOHSE modular system** which offers the following advantages:

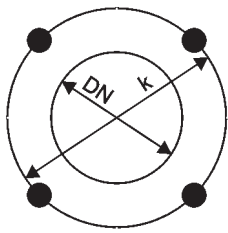
- simplified and less expensive holding of spare parts.
- in case of damage, actuating elements can be replaced inexpensively.
- if any valve drives have to be altered, replacement is easy and quick

### Protection guards (G)

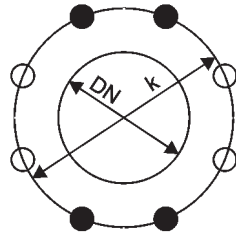
According to machinery directive 2006/42/EG guards are compulsory to shield all moving parts on automated gate valves.  
Protection guard of stainless steel.



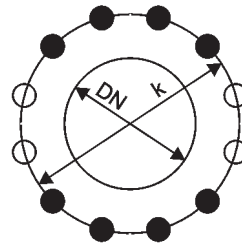
Flange bores for LOHSE COMPACT-valves according to DIN EN 1092-1, PN 10



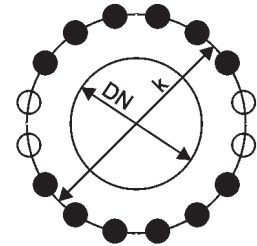
DN 50-65



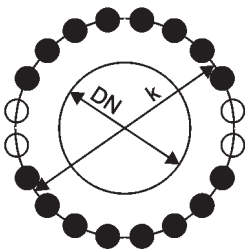
DN 80-200



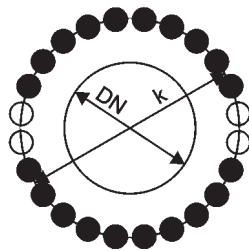
DN 250-300



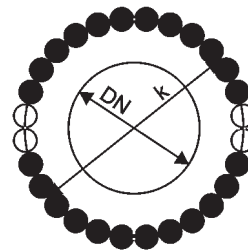
DN 350-400



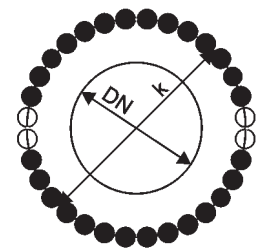
DN 450-600



DN 700-800

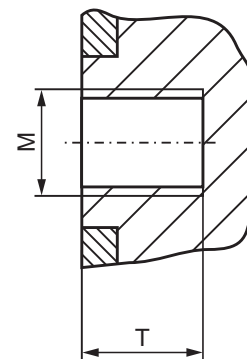


DN 900-1000



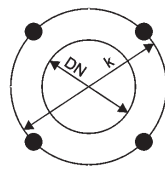
DN 1100-1200

DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2
50	125	4	M16	12	4	-
65	145	4	M16	12	4	-
80	160	8	M16	12	4	4
100	180	8	M16	12	4	4
125	210	8	M16	12	4	4
150	240	8	M20	16	4	4
200	295	8	M20	16	4	4
250	350	12	M20	20	8	4
300	400	12	M20	20	8	4
350	460	16	M20	20	12	4
400	515	16	M24	23	12	4
450	565	20	M24	30	16	4
500	620	20	M24	30	16	4
600	725	20	M27	35	16	4
700	840	24	M27	40	20	4
800	950	24	M30	45	20	4
900	1050	28	M30	45	24	4
1000	1160	28	M33	45	24	4
1100	1270	32	M33	50	28	4
1200	1380	32	M36	55	28	4

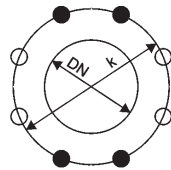


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

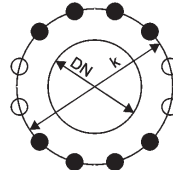
Flange bores for LOHSE COMPACT-valves  
according to ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150)



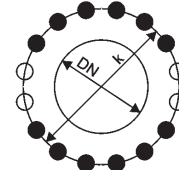
DN 50-80



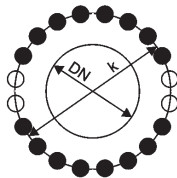
DN 100-200



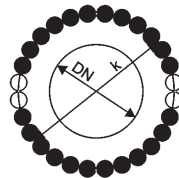
DN 250-350



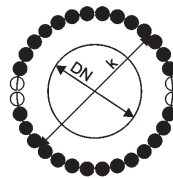
DN 400-450



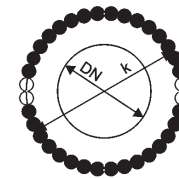
DN 500-600



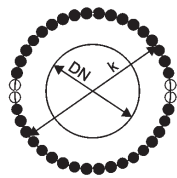
DN 700-800



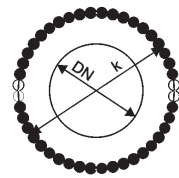
DN 900



DN 1000

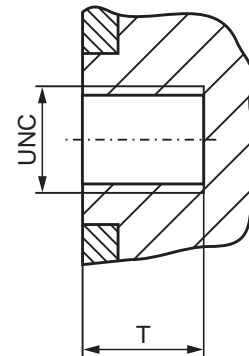


DN 1100



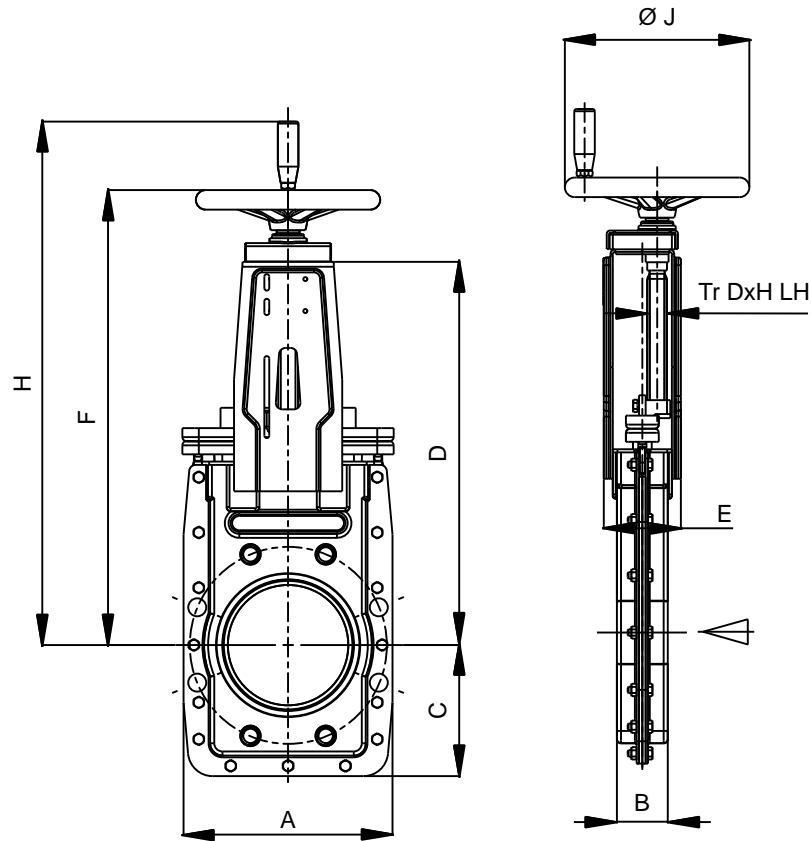
DN 1200

DN [mm]	DN [inch]	K [mm]	K [inch]	Z	UNC	T [mm]	T [inch]	Z1	Z2
50	2	120.6	4 3/4	4	5/8"-11	12	0.472	4	-
65	2.5	139.7	5 1/2	4	5/8"-11	12	0.472	4	-
80	3	152.4	6	4	5/8"-11	12	0.472	4	-
100	4	190.5	7 1/2	8	5/8"-11	12	0.472	4	4
125	5	215.9	8 1/2	8	3/4"-10	12	0.472	4	4
150	6	241.3	9 1/2	8	3/4"-10	16	0.630	4	4
200	8	298.5	11 3/4	8	3/4"-10	16	0.630	4	4
250	10	362	14 1/4	12	7/8"-9	20	0.787	8	4
300	12	431.8	17	12	7/8"-9	20	0.787	8	4
350	14	476.3	18 3/4	12	1"-8	20	0.787	8	4
400	16	539.8	21 1/4	16	1"-8	23	0.910	12	4
450	18	577.9	22 3/4	16	1 1/8"-7	30	1.181	12	4
500	20	635	25	20	1 1/8"-7	30	1.181	16	4
600	24	749.3	29 1/2	20	1 1/4"-7	35	1,378	16	4
700	28	863	34	28	1 1/4"-7	40	1.575	24	4
800	32	978	38 1/2	28	1 1/2"-6	45	1.772	24	4
900	36	1086	42 3/4	32	1 1/2"-6	45	1.772	28	4
1000	40	1200	47 1/4	36	1 1/2"-6	45	1.775	32	4
1100	44	1314	51 3/4	40	1 1/2"-6	50	1.969	36	4
1200	48	1422	56	44	1 1/2"-6	55	2.165	40	4



Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

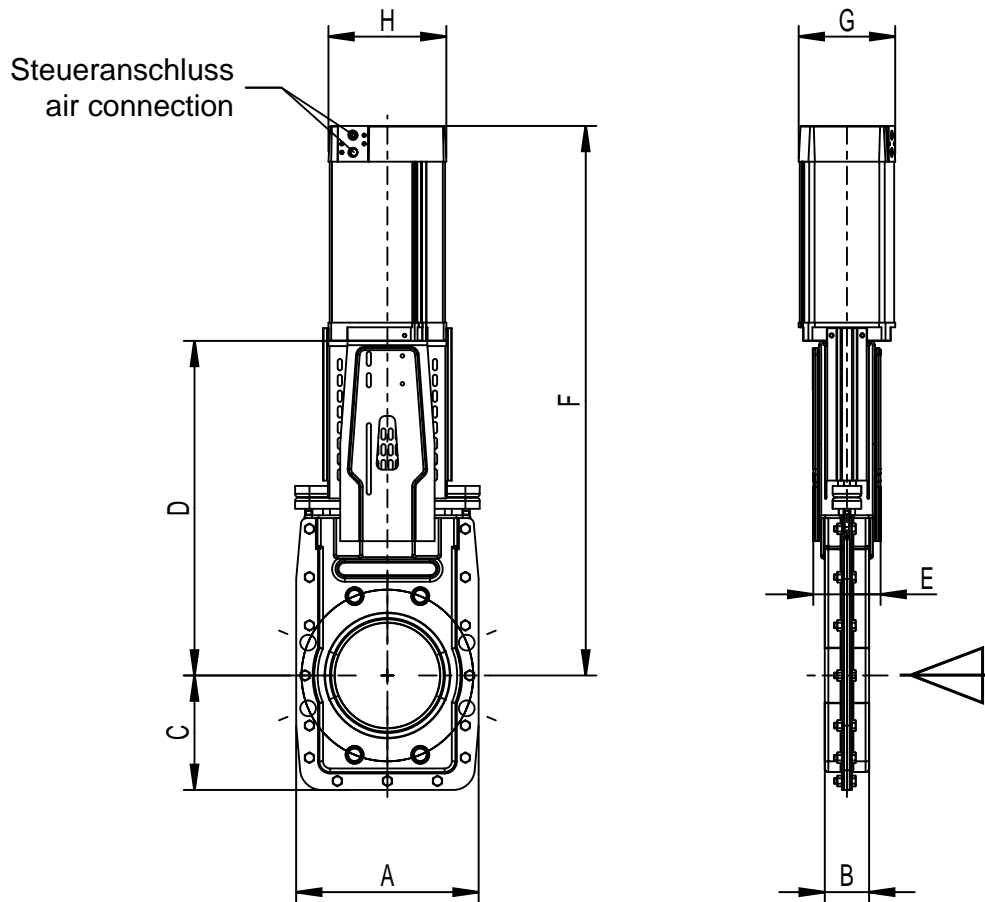
## COMPACT-shut-off-valve handwheel drive with non-rising stem



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	394	478	180	20 x 4	9
65	8	185	42	100	313	78	394	478	180	20 x 4	9
80	8	175	52	125	313	78	395	478	180	20 x 4	9
*)100	6	210	52	135	368	94	456	539	225	24 x 5	13
*)125	6	230	52	145	413	94	500	584	225	24 x 5	15
*)150	6	255	62	160	468	94	556	639	225	24 x 5	19
200	6	328	60	189	557	143	656	739	280	30 x 6	38
250	4	400	68	230	668	166	767	850	280	30 x 6	49
300	4	450	72	260	764	170	869	–	360	30 x 6	77
350	2.5	510	72	290	907	190	998	–	360	30 x 6	129
400	2.5	575	90	326	1059	190	1163	–	500	30 x 6	182
450	2.5	630	92	315	1200	208	1304	–	500	30 x 6	249
500	2.5	700	92	350	1265	228	1384	–	500	36 x 6	263
600	2.5	810	112	405	1495	268	1614	–	500	36 x 6	461

\*) opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

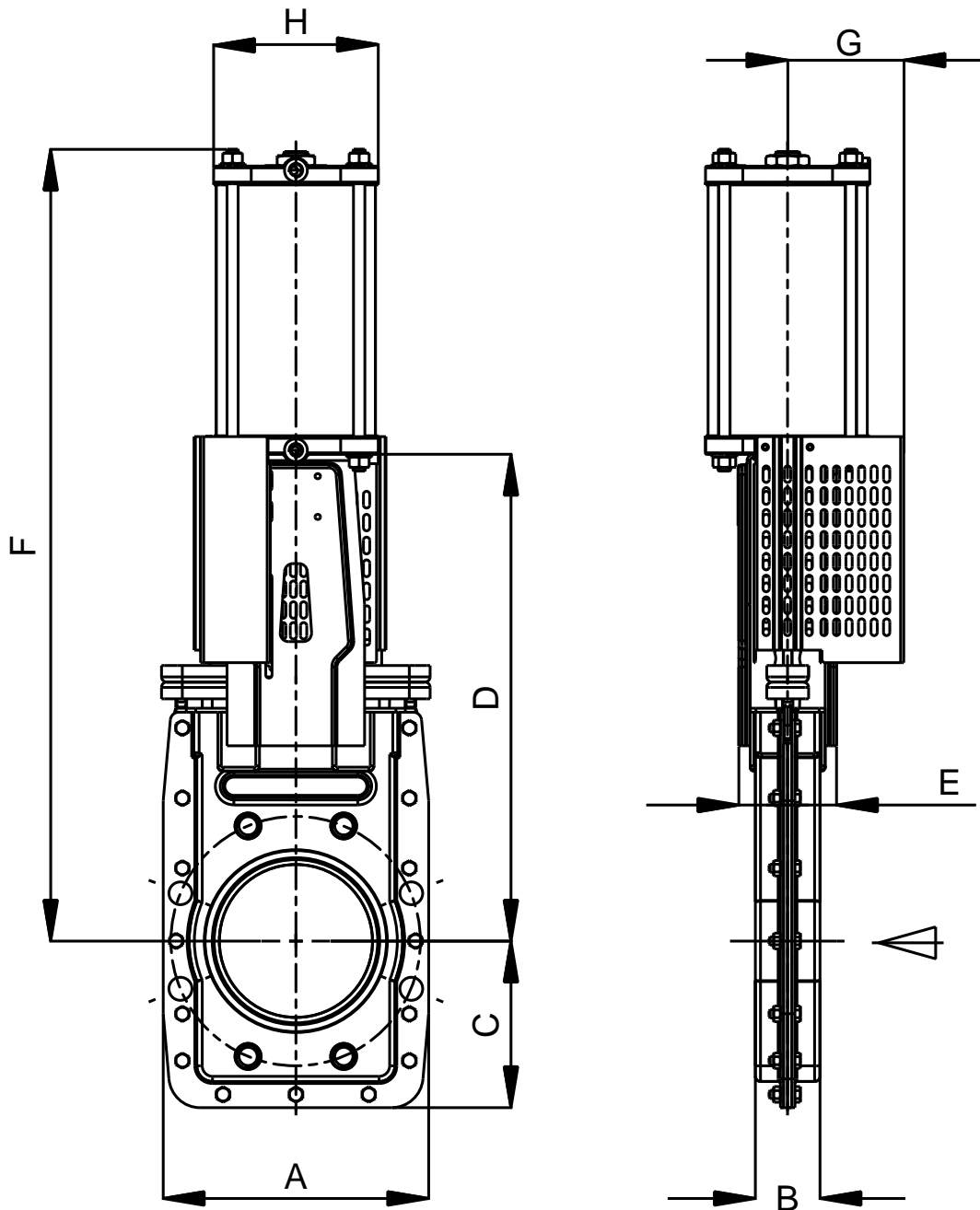
COMPACT-shut-off-valve  
pneumatic cylinder and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	H	Zyl Ø	air connection	control pressure [bar]	weight ~[kg]
50	8	185	42	100	313	78	495	109	139	100	G 1/4"	6	11.2
65	8	185	42	100	313	78	510	109	139	100	G 1/4"	6	11.6
80	8	175	52	123	313	78	523	109	139	100	G 1/4"	6	11.6
*)100	6	210	52	135	368	94	596	109	139	100	G 1/4"	6	15.4
*)125	6	255	52	145	413	94	691	135	165	125	G 1/4"	6	20.4
*)150	6	255	62	160	468	94	768	135	165	125	G 1/4"	6	24.3
200	6	328	60	190	557	143	917	170	204	160	G 1/4"	6	48.5
250	4	400	68	230	668	166	1069	170	204	160	G 1/4"	6	65.5
300	4	450	72	260	764	170	1224	170	204	160	G 1/4"	6	78
350	2.5	510	72	290	907	190	1452	211	244	200	G 1/2"	6	156
400	2.5	575	90	326	1059	190	1650	211	244	200	G 1/2"	6	204
450	2.5	630	92	315	1200	190	1870	242	283	230	G 1/2"	6	310

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150);  
air connection acc. VDI/VDE 3845 (NAMUR). Further sizes on request.

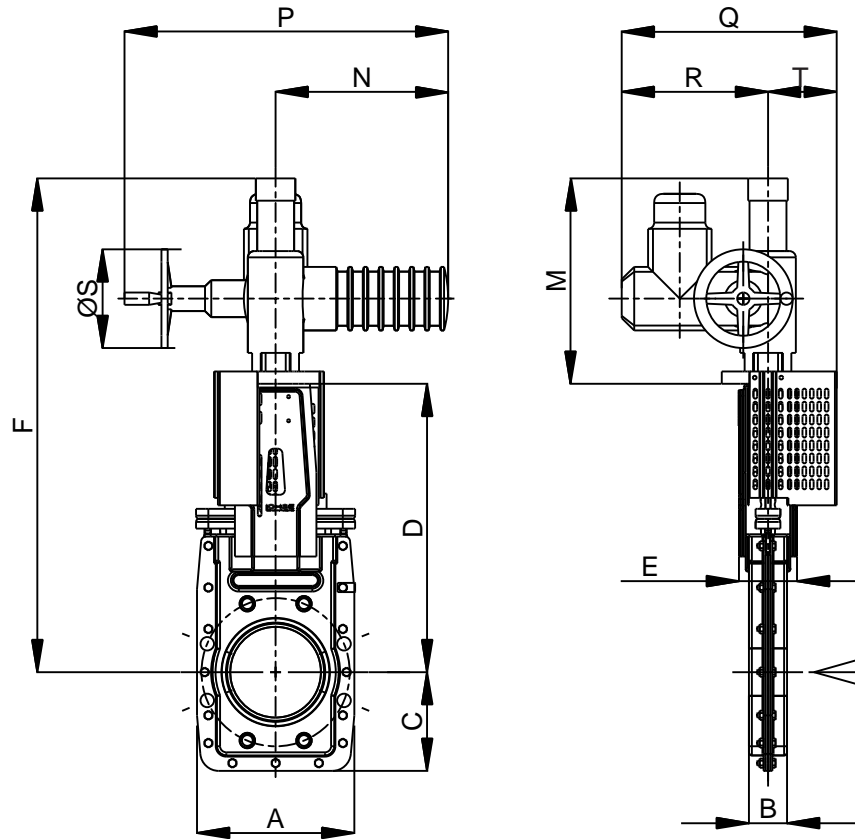
COMPACT-shut-off-valve  
pneumatic cylinder and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	H	Zyl Ø	air connection	control ressure [bar]	weight ~[kg]
500	2.5	700	92	350	1265	228	1986	318	318	300	G 1/2"	6	343
600	2.5	810	112	405	1495	268	2314	318	318	300	G 1/2"	6	517

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150). Further sizes on request.

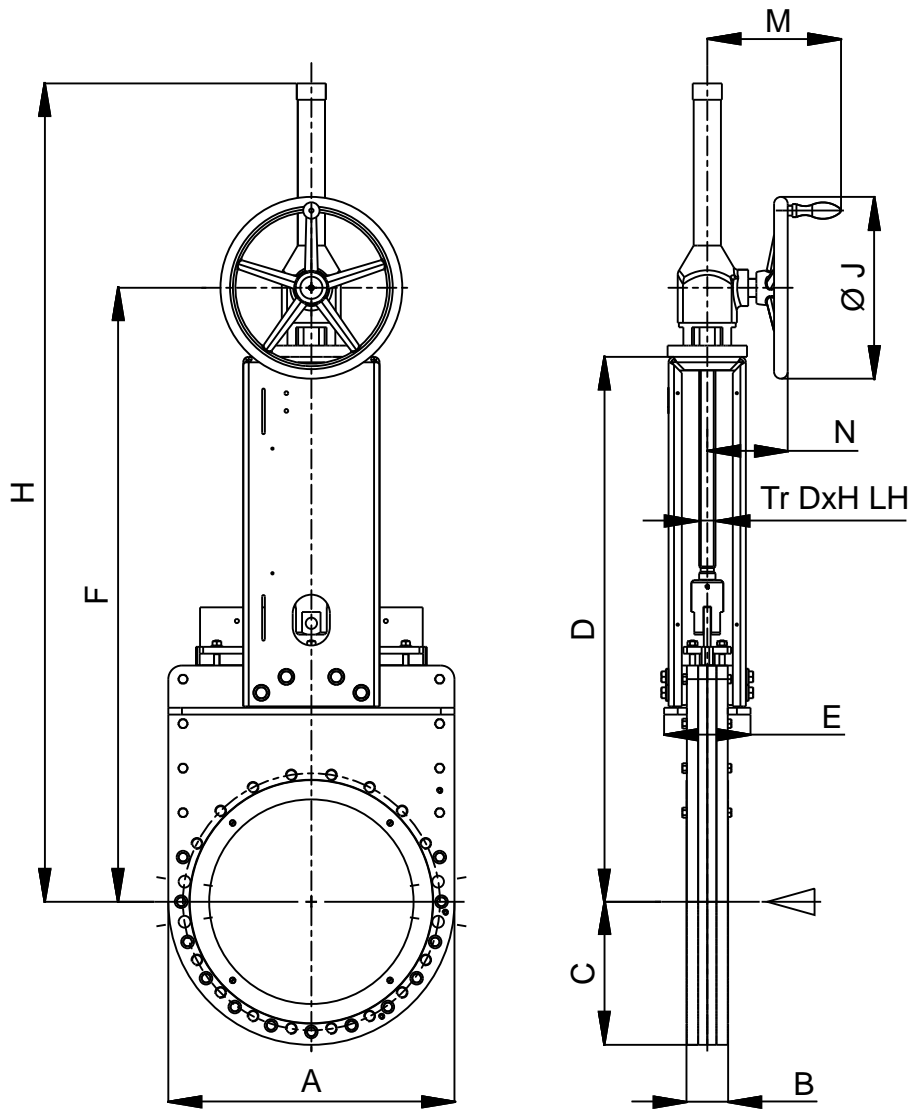
COMPACT-shut-off-valve  
electric drive and protection guard



DN	BD [bar]	A	B	C	D	E	F	M	N	P	Q	R	ØS	T	stem Tr DxH	closing time [s]	weight ~[kg]
50	8	185	42	100	313	78	646	333	280	515	349	237	160	112	20 x 4	18	32
65	8	185	42	100	313	78	646	333	280	515	349	237	160	112	20 x 4	23	32
80	8	175	52	125	313	78	646	333	280	515	349	237	160	112	20 x 4	28	32
*)100	6	210	52	135	368	94	701	333	280	515	349	237	160	112	24 x 5	27	37
*)125	6	230	52	145	413	94	746	333	280	515	349	237	160	112	24 x 5	34	38
*)150	6	255	62	160	468	94	801	333	280	515	349	237	160	112	24 x 5	41	42
200	6	328	60	190	557	143	902	345	355	536	373	247	200	126	30 x 6	45	58
250	4	400	68	230	668	166	1013	345	355	536	373	247	200	126	30 x 6	56	84
300	4	450	72	260	764	170	1202	438	355	536	373	247	200	126	30 x 6	67	96
350	2.5	510	72	290	907	190	1350	443	355	536	389	247	200	142	36 x 6	78	151
400	2.5	575	90	326	1059	190	1602	543	355	536	393	247	200	146	36 x 6	90	198
450	2.5	630	92	315	1200	208	1808	608	285	713	436	285	315	151	36 x 6	102	304
500	2.5	700	92	350	1265	228	1873	608	380	713	436	285	315	151	36 x 6	115	328
600	2.5	810	112	405	1495	268	2203	708	380	713	446	285	315	161	44 x 7	138	554

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off-valve  
bevel gear box handwheel

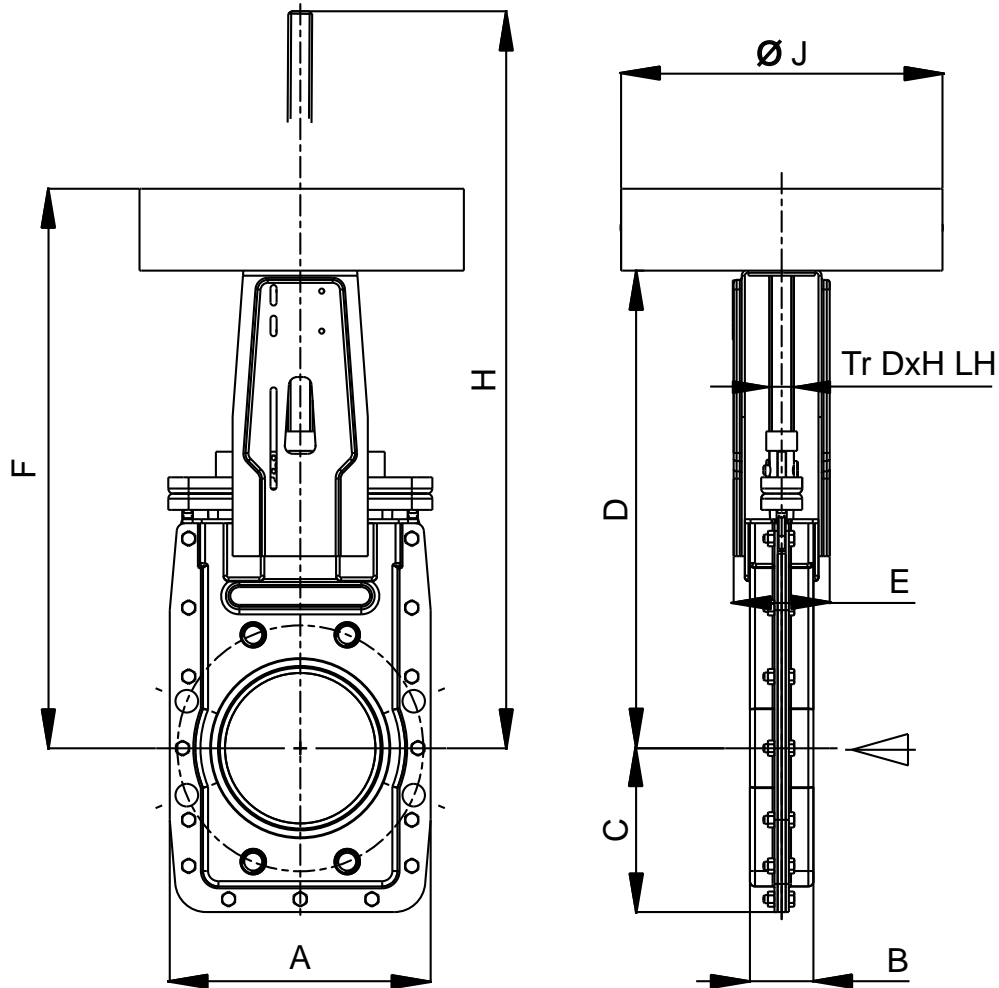


DN	BD [bar]	A	B	C	D	E	F	H	Ø J	M	N	Tr D x H LH	weight ~[kg]
350	2.5	520	72	290	907	190	1059	1414	400	295	185	36 x 6	145
400	2.5	578	90	326	1059	190	1211	1611	400	295	185	36 x 6	195
450	2.5	630	92	315	1200	208	1352	1802	400	295	185	36 x 6	273
500	2.5	700	92	350	1265	228	1455	1947	400	340	222	36 x 6	292
600	2.5	810	112	405	1495	268	1685	2250	500	340	222	44 x 7	493
700	1.5	960	150	480	1756	307	1946	2422	500	340	222	44 x 7	1075
800	1.5	1060	150	530	1976	307	2166	2927	500	340	222	44 x 7	1265
900	1.5	1170	160	585	2108	311	2307	3159	500	340	222	44 x 7	1473

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.



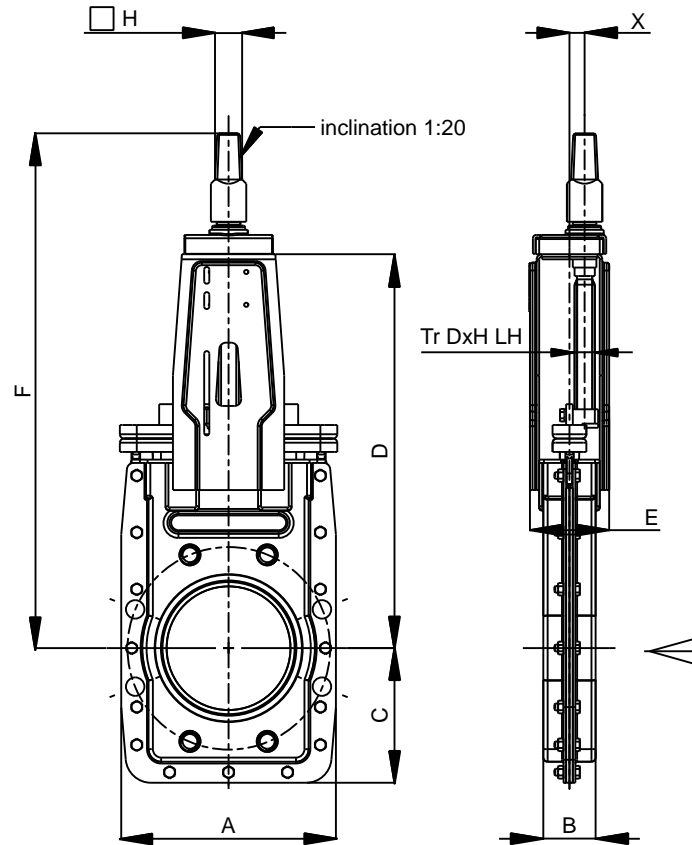
## COMPACT-shut-off-valve spocket drive



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	394	397	274	20 x 4	14
65	8	185	42	100	313	78	394	412	274	20 x 4	14
80	8	175	52	125	313	78	394	437	274	20 x 4	14
*)100	6	210	52	135	368	94	447	520	314	24 x 5	18
*)125	6	230	52	145	413	94	492	595	314	24 x 5	21
*)150	6	255	62	160	468	94	547	665	314	24 x 5	25
200	6	328	60	190	557	143	636	821	394	30 x 6	50
250	4	400	68	230	668	166	747	981	394	30 x 6	66
300	4	450	72	260	764	170	843	1131	394	30 x 6	87
350	2.5	510	72	290	907	190	1000	1350	516	36 x 6	133
400	2.5	575	90	326	1059	190	1152	1550	516	36 x 6	202

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

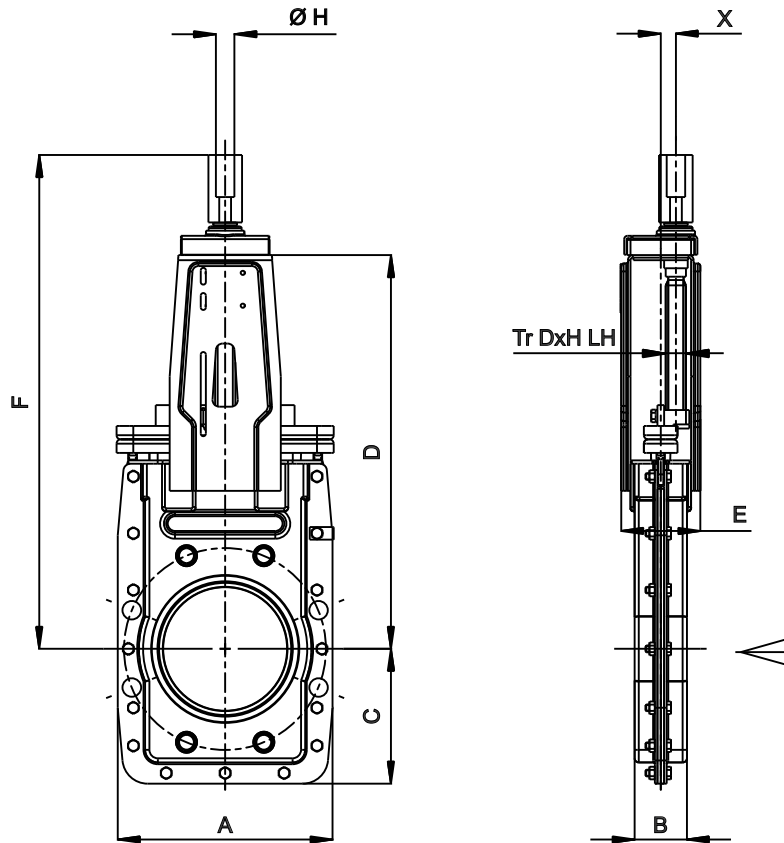
COMPACT-shut-off-valve  
square head



DN	BD [bar]	A	B	C	D	E	F	H	X	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	455	32	15	20 x 4	9
65	8	185	42	100	313	78	455	32	15	20 x 4	10
80	8	175	52	125	313	78	456	32	15	20 x 4	10
*)100	6	210	52	135	368	94	512	32	18	24 x 5	13
*)125	6	230	52	145	413	94	557	32	18	24 x 5	15
*)150	6	255	62	160	468	94	612	32	18	24 x 5	18
200	6	328	60	190	557	143	707	32	22	30 x 6	38
250	4	400	68	230	668	166	818	32	22	30 x 6	51
300	4	450	72	260	764	170	914	32	22	30 x 6	67
350	2.5	510	72	290	907	190	1043	32	26	36 x 6	96
400	2.5	575	90	326	1059	190	1195	32	26	36 x 6	136
450	2.5	630	92	315	1200	208	1336	32	28.5	36 x 6	261
500	2.5	700	92	350	1265	228	1416	32	35	36 x 6	311
600	2.5	810	112	405	1495	268	1646	32	35	44 x 7	468

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-shut-off-valve  
round sleeve



DN	BD [bar]	A	B	C	D	E	F	H	X	Tr D x H LH	weight ~[kg]
50	8	185	42	100	313	78	430	20	15	20 x 4	9
65	8	185	42	100	313	78	430	20	15	20 x 4	10
80	8	175	52	125	313	78	431	20	15	20 x 4	10
*)100	6	210	52	135	368	94	487	22	18	24 x 5	13
*)125	6	230	52	145	413	94	531	22	18	24 x 5	15
*)150	6	255	62	160	468	94	587	22	18	24 x 5	18
200	6	328	60	190	557	143	692	25	22	30 x 6	38
250	4	400	68	230	668	166	803	25	22	30 x 6	51
300	4	450	72	260	764	170	899	30	22	30 x 6	67
350	2.5	510	72	290	907	193	1048	30	26	30 x 6	96
400	2.5	575	90	326	1059	190	1200	30	26	30 x 6	136
450	2.5	630	92	315	1200	208	1341	30	28.5	30 x 6	231
500	2.5	700	92	350	1265	228	1421	35	35	36 x 6	311
600	2.5	810	112	405	1495	268	1651	35	35	36 x 6	468

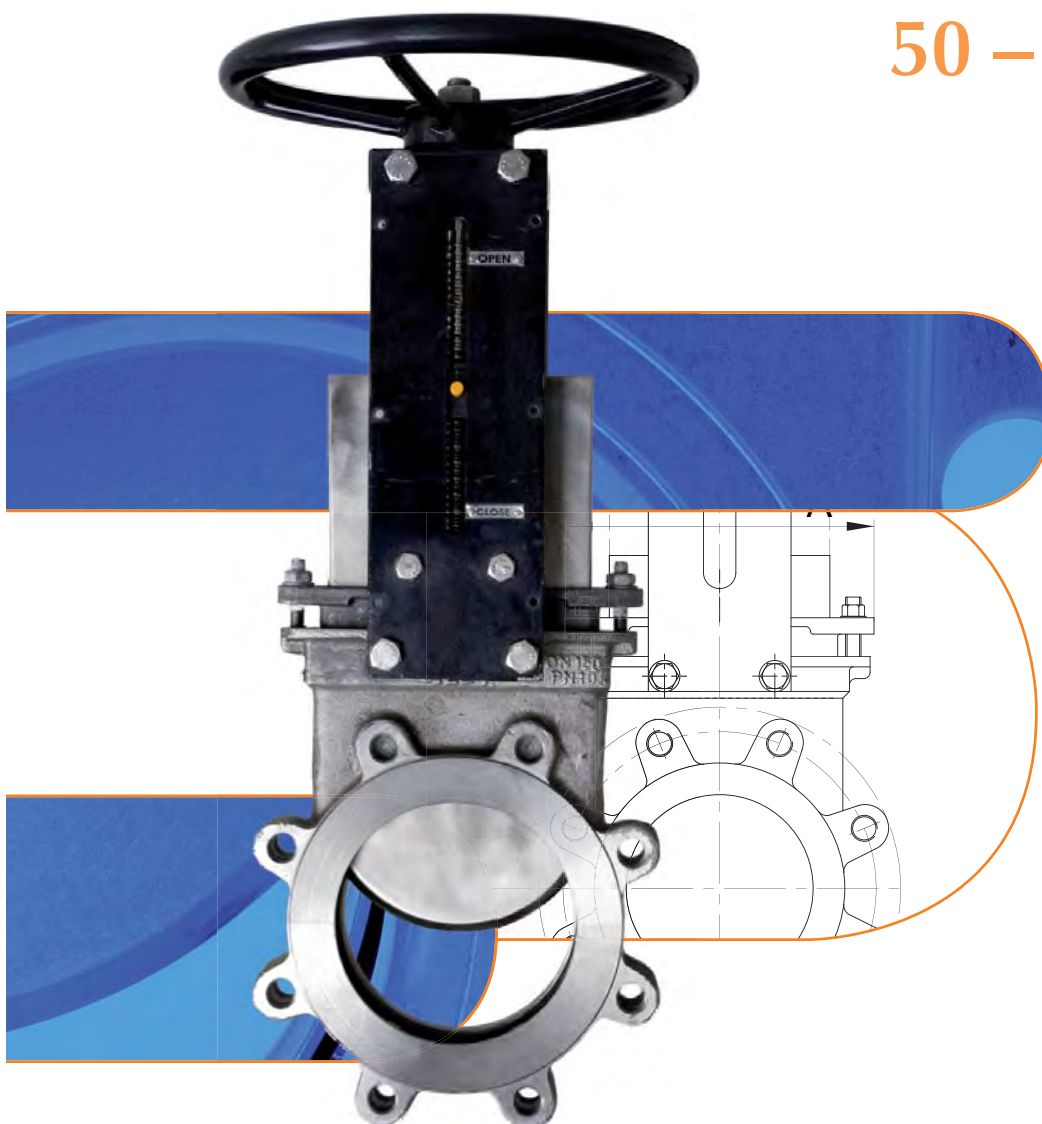
\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

Valves

# Shut-Off Valves of cast stainless steel or spheroidal graphite iron

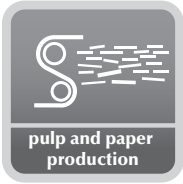
**EGNA / GGNA**

**50 – 600 mm**



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## Applications



### Paper and chemical industry

LOHSE-shut-off valves constructed with corrosion and acid resistant stainless steel.

The EGNA shut-off-valves find a use in waste water treatment plants and the need to use expensive isolation appliances against contact corrosion is not longer required.

The GGNA shut-off-valves are sturdy and have a long service life. They are suitable to shut-off the pipes in all areas of water, waste water or pulp where stainless steel shut-off-valves are not necessary.

### Industrial sewage treatment

LOHSE shut-off-valves used in all areas of the industrial sewage treatment.

The housing of GGNA shut-off-valves is epoxy coated and has a good protection against corrosion.

LOHSE-EGNA shut-off valves constructed with corrosion and acid resistant stainless steel. They find a use in waste water treatment plants and the need to use expensive isolation appliances against contact corrosion is not longer required.

### Waste technology

LOHSE shut-off-valves find a use in bio-mechanical wet treatment plant to shut-off the pipes with high-viscosity, low-viscosity and aggressive medium. The valves are running without problems although the medium has impurities and fibers.

### Special models

For special application, we can supply special valves on request.

## Construction

### Housing

- solid monobloc housing - wafer
- lug design
- full opening
- one-sided sealing
- infused guidances
- type GGNA: epoxy coating

### Valve plate

- solid version of stainless steel  
(type EGNA: corrosion and acid resistant)

### Body seat

- metal seated or
- soft seated with EPDM, NBR, VITON, PTFE (replaceable)

### Packing

- PTFE impregnated synthetic fiber

### Operating elements

- handwheel with non-rising stem
- pneumatic cylinder, double-acting
- electric drive
- bevel gear drive

### Watertight

- Leak test according to DIN EN 12266-02:2012-04  
Table A5, test medium liquid, leakage rate A

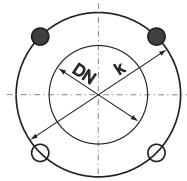
## Materials

- housing  
Type EGNA:1.4408  
Type GGNA: EN-JS1050 / GGG50, epoxy coated
- valve plate  
1.4404 / 1.4301
- sealing  
EPDM / NBR  
optional:  
metal, NBR / EPDM, VITON, PTFE
- packing  
PTFE impregnated synthetic fiber
- stuffing box gland  
Type EGNA:1.4408  
Type GGNA: EN-JS1050 / GGG50
- bracket  
epoxy coated steel
- protection guard  
epoxy coated steel
- max. operating pressure
 

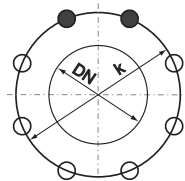
DN 50 – 200	10 bar
DN 250	8 bar
DN 300 – 350	6 bar
DN 400 – 500	4 bar
DN 600	3 bar
- max. operating temperature with sealing of
 

metal	120° C
NBR	105° C
EPDM	120° C
Viton	200° C
PTFE	230° C

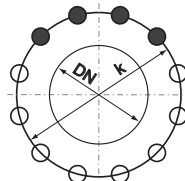
Flange bores for LOHSE EGNA/GGNA-valves according to DIN EN 1092-1, PN 10



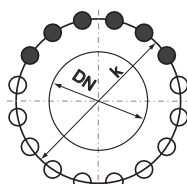
DN 50-65



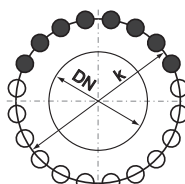
DN 80-200



DN 250-350

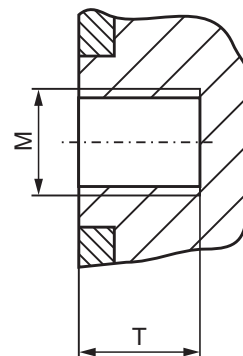


DN 400-450



DN 500-600

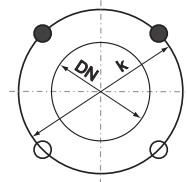
DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2
50	125	4	M16	9	2	2
65	145	4	M16	9	2	2
80	160	4	M16	9	2	6
100	180	8	M16	9	2	6
125	210	8	M16	10	2	6
150	240	8	M20	10	2	6
200	295	8	M20	12	2	6
250	350	12	M20	12	4	8
300	400	12	M20	12	4	8
350	460	12	M20	15	4	8
400	515	16	M24	15	6	10
450	565	16	M24	15	6	10
500	620	20	M24	20	8	12
600	725	20	M27	20	8	12



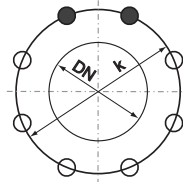
Z = total numbers of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread



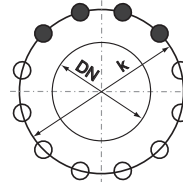
Flange bores for LOHSE EGNA/GGNA-valves according to ANSI B 16.5 Class 150



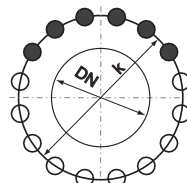
DN 50-65



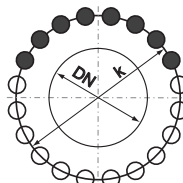
DN 80-200



DN 250-350

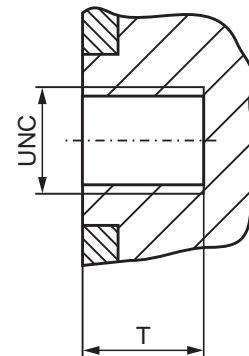


DN 400-450



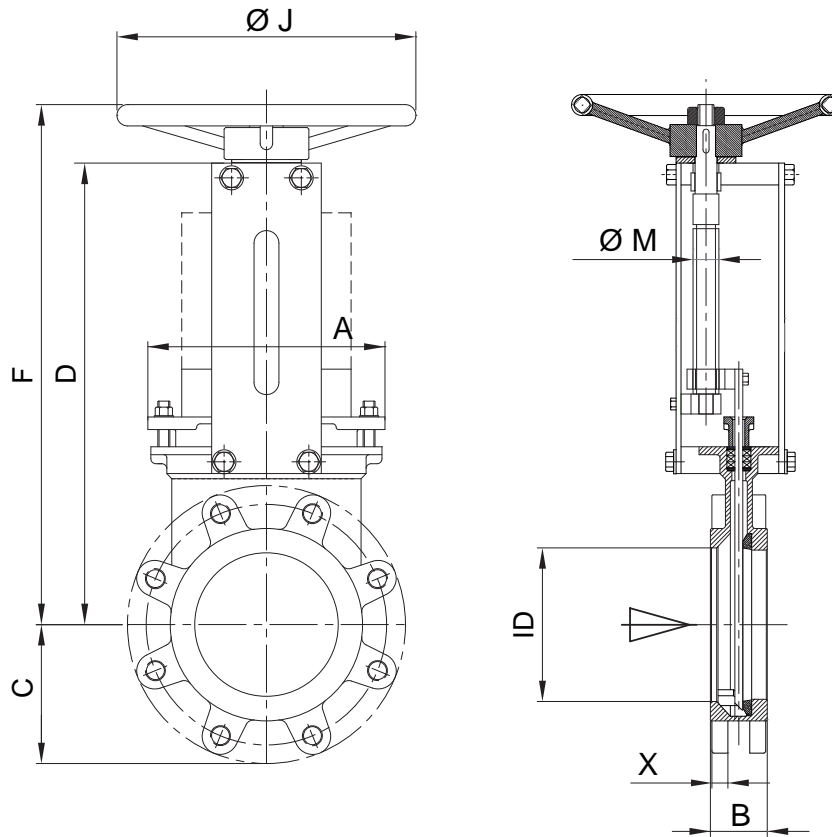
DN 500-600

DN [mm]	DN [inch]	K [mm]	K [inch]	Z	UNC	T [mm]	T [inch]	Z1	Z2
50	2	120.5	4 3/4	4	5/8"-11	9	11/32	2	2
65	2,5	140	5 1/2	4	5/8"-11	9	11/32	2	2
80	3	152.5	6	4	5/8"-11	9	11/32	2	6
100	4	190.5	7 1/2	8	5/8"-11	9	11/32	2	6
125	5	215.9	8 1/2	8	3/4"-10	10	3/8	2	6
150	6	241.3	9 1/2	8	3/4"-10	10	3/8	2	6
200	8	298.5	11 3/4	8	3/4"-10	12	15/32	2	6
250	10	362	14 1/4	12	7/8"-9	12	15/32	4	8
300	12	432	17	12	7/8"-9	12	15/32	4	8
350	14	476	18 3/4	12	1"-8	15	19/32	4	8
400	16	540	21 1/4	16	1"-8	15	19/32	6	10
450	18	578	22 3/4	16	1 1/8"-7	15	19/32	6	10
500	20	635	25	20	1 1/8"-7	20	13/16	8	12
600	24	749.5	29 1/2	20	1 1/4"-7	20	13/16	8	12



Z = total numbers of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

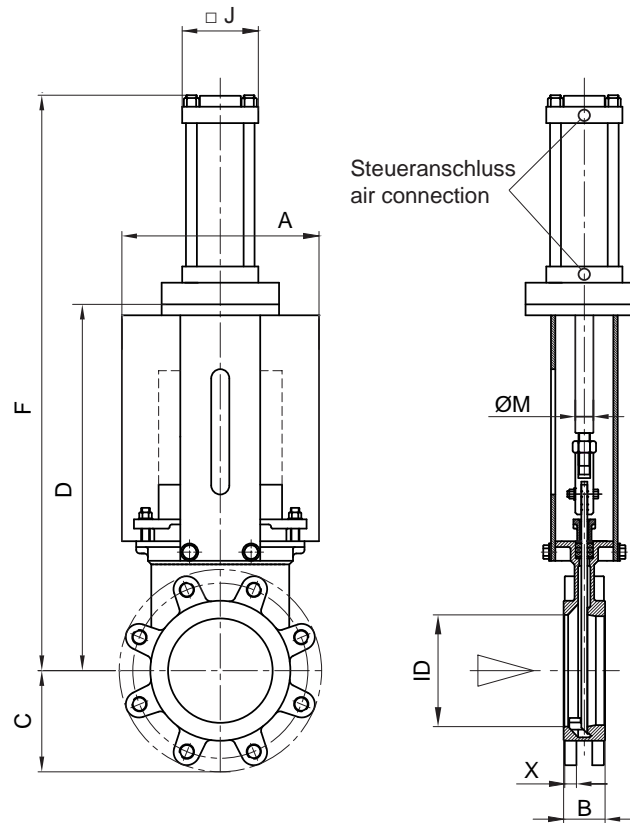
EGNA Cast stainless steel valve / GGNA spheroidal graphite iron valve  
handwheel with non-rising stem



DN	BD [bar]	ID	A	B	C	D	F	$\varnothing J$	X	$\varnothing M$	weight ~[kg]
50	10	51	133	48	80	285	335	200	16	19	11.1
65	10	63.5	146	48	95	320	370	200	16	19	12.8
80	10	77	156	51	100	343	393	200	16	19	13.3
100	10	102	192	51	115	401	451	200	16	19	16.9
125	10	127	222	57	129	450	510	300	20	19	21
150	10	150	238	57	140	488	548	300	20	26	26.2
200	10	203	269	70	173	600	660	300	20	26	35.54
250	8	254	326	70	205	715	785	400	22	26	54.8
300	6	305	390	76	245	830	900	400	22	32	74.3
350	6	337	420	76	270	900	970	400	27	36	96.8
400	4	388	505	89	300	1020	1130	500	27	36	143.5
450	4	438	593	89	340	1165	1275	500	27	36	215
500	4	489	663	114	355	1270	1380	500	27	36	280
600	3	591	782	114	415	1490	1600	500	30	36	310

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150.  
Further sizes on request.

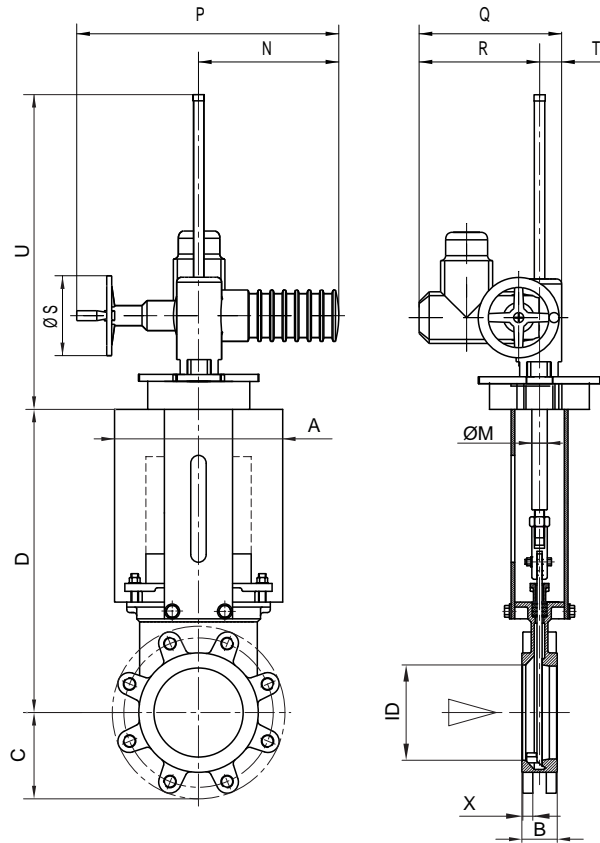
EGNA Cast stainless steel valve / GGNA spheroidal graphite iron valve  
pneumatic cylinder and protection guard



DN	BD [bar]	ID	A	B	C	D	F	J	Ø M	X	air connection	cyl Ø	weight ~[kg]
50	10	51	143	48	80	312	530	92	19	16	G 3/8"	80	15
65	10	63.5	156	48	95	337	570	92	19	16	G 3/8"	80	16.8
80	10	77	166	51	100	368	620	92	19	16	G 3/8"	80	17.5
100	10	102	202	51	115	430	720	109	19	16	G 1/2"	100	22.6
125	10	127	232	57	129	453	765	109	19	20	G 1/2"	100	27
150	10	150	248	57	140	486	780	140	26	20	G 3/8"	125	35.5
200	10	203	279	70	173	616	971	175	26	20	G 3/8"	160	55
250	8	254	336	70	205	788	1260	175	26	22	G 3/4"	160	75
300	6	305	400	76	245	873	1280	220	32	22	G 3/8"	200	126
350	6	337	430	76	270	960	1535	220	36	27	G 3/4"	200	152
400	4	388	515	89	300	1070	1710	290	36	27	G 3/4"	250	204
450	4	438	603	89	340	1192	1880	290	36	27	G 3/4"	250	280
500	4	489	373	114	355	1285	2055	330	36	27	G 3/4"	300	357
600	3	591	792	114	415	1525	2395	330	36	30	G 3/4"	300	410

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150.  
Further sizes on request.

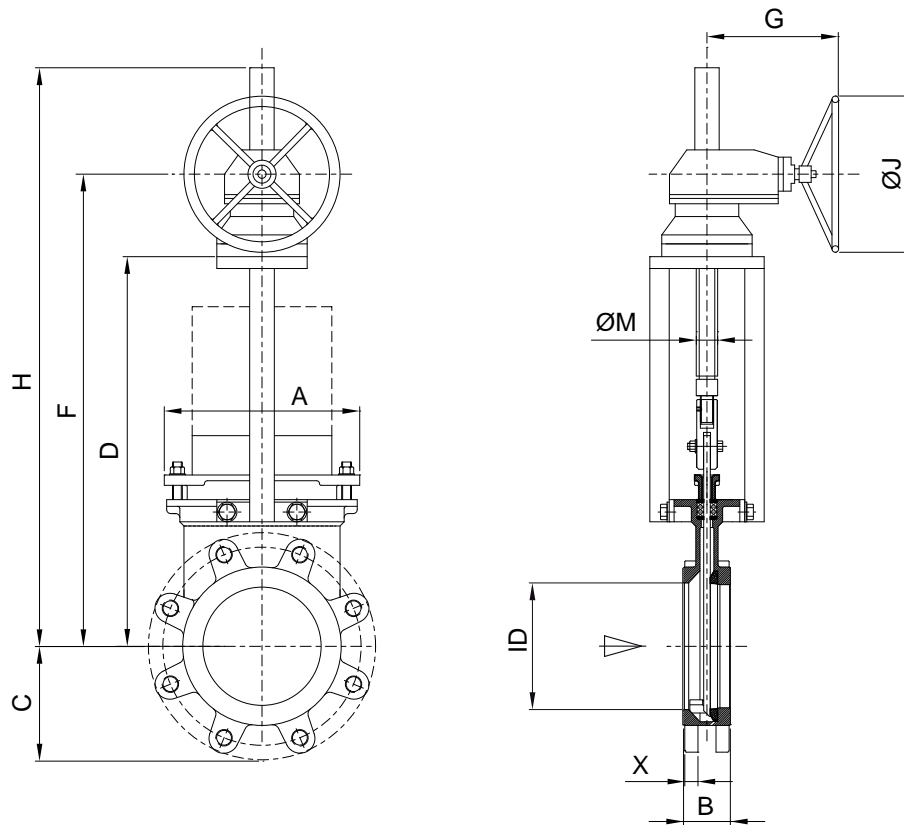
EGNA Cast stainless steel valve / GGNA spheroidal graphite iron valve  
electric drive and protection guard



DN	BD [bar]	ID	A	B	C	D	Ø M	N	P	Q	R	ØS	T	U	X	closing time [s]	weight ~[kg]
50	10	51	143	48	80	284	19	265	515	349	238	160	62	333	16	19,4	44
65	10	63.5	156	48	95	315	19	265	515	349	238	160	62	333	16	25,2	46
80	10	77	166	51	100	340	19	265	515	349	238	160	62	333	16	30,8	46.5
100	10	102	202	51	115	400	19	265	515	349	238	160	62	333	16	32,4	50
125	10	127	232	57	129	430	19	265	515	349	238	160	62	333	20	36,0	54
150	10	150	248	57	140	465	26	265	515	349	238	160	62	333	20	42,5	59
200	10	203	279	70	173	560	26	283	536	373	248	200	65	345	20	47,6	68.5
250	8	254	336	70	205	660	26	283	536	373	248	200	65	345	22	58,9	88
300	6	305	400	76	245	770	32	283	536	373	248	200	65	438	22	70,3	107
350	6	337	430	76	270	860	36	283	536	389	248	200	65	443	27	79,4	130
400	4	388	515	89	300	992	36	283	536	393	248	200	65	543	27	92,1	214.5
450	4	438	603	89	340	1120	36	283	536	436	248	200	65	608	27	103,5	286
500	4	489	673	114	355	1260	36	389	725	436	286	315	91	608	27	114,4	351
600	3	591	792	114	415	1475	36	389	725	446	286	315	91	708	30	85,8	381

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150.  
Further sizes on request.

EGNA Cast stainless steel valve / GGNA spheroidal graphite iron valve  
bevel gear box and handwheel



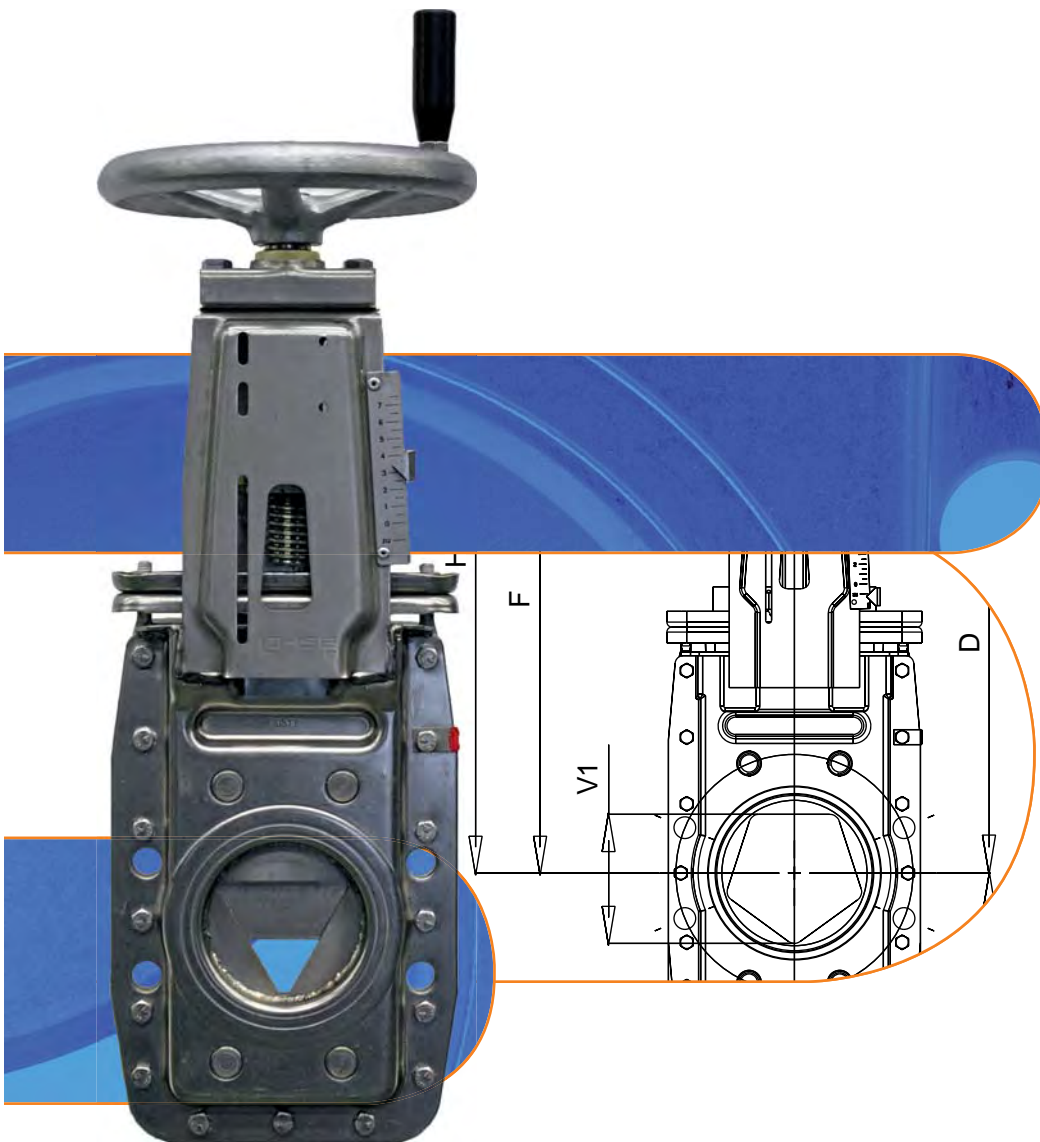
DN	BD [bar]	ID	A	B	C	D	F	G	H	Ø J	Ø M	X	weight ~[kg]
50	10	51	133	48	80	284	356	248	385	200	19	16	27.1
65	10	63.5	146	48	95	315	387	248	415	200	19	16	28.8
80	10	77	156	51	100	340	415	248	480	200	19	16	29.3
100	10	102	192	51	115	400	472	248	540	200	19	16	32.9
125	10	127	222	57	129	430	502	248	595	200	19	20	37
150	10	150	238	57	140	465	537	273	675	300	26	20	42.4
200	10	203	269	70	173	560	632	273	830	300	26	20	51.74
250	8	254	326	70	205	660	732	273	980	300	26	22	71
300	6	305	390	76	245	770	842	273	1140	300	32	22	90.5
350	6	337	420	76	270	860	932	273	1260	400	36	27	113
400	4	388	505	89	300	992	1064	273	1465	400	36	27	160
450	4	438	593	89	340	1120	1292	273	1640	400	36	27	231.5
500	4	489	663	114	355	1260	1332	273	1830	400	36	27	296.5
600	3	591	782	114	415	1475	1547	273	2150	400	36	30	326.5

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150.  
Further sizes on request.

Valves of stainless steel · COMPACT-Program

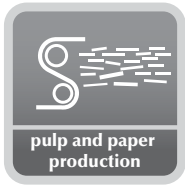
# Regulating Valves

## CBS 50 – 400 mm



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server.ab@lohse-gmbh.de  
www.lohse-gmbh.de

## Applications



### Paper industry and chemical industry

LOHSE COMPACT-gate valves have proved their value and reliability in all branches of ins paper and chemical industries. CNA-valves are regulating-type valves. The type is suitable for regulation of stock and aggressive media.



### Sewage treatment

When LOHSE COMPACT-gate valves of acid resistant stainless steel are installed in waste water treatment plants, the need to use expensive isolation appliances to guard against contact-corrosion is removed.



### Food industry

LOHSE COMPACT-gate valves with seals, suitable for food, are widely used as regulating valves for viscous and glutinous media as for instance in salt works, sugar mills, wine making industry, breweries etc.



### Special models

For special applications, we can supply special valves constructed of various materials for differing temperatures, pressures and sealing properties to suit the particular application.

## Construction

### Housings entirely of stainless steel

- pressed steel design
- completely corrosion and acid resistant
- light
- easy to maintain
- the handwheel support also serves as a mounting for any switchgear or control apparatus

### Slide guides of special plastic

- abrasion resistant
- excellent anti-friction properties
- temperature resistant
- acid resistant
- easily replaceable

### Valve plate of stainless steel

- through its special design in combination with triangle and pentagon orifice is a constant regulation possible
- built in strength to resist water pressure vibration

### Design of orifice triangle or pentagon

- triangle for precisely regulation
- pentagon for regulation with high flow

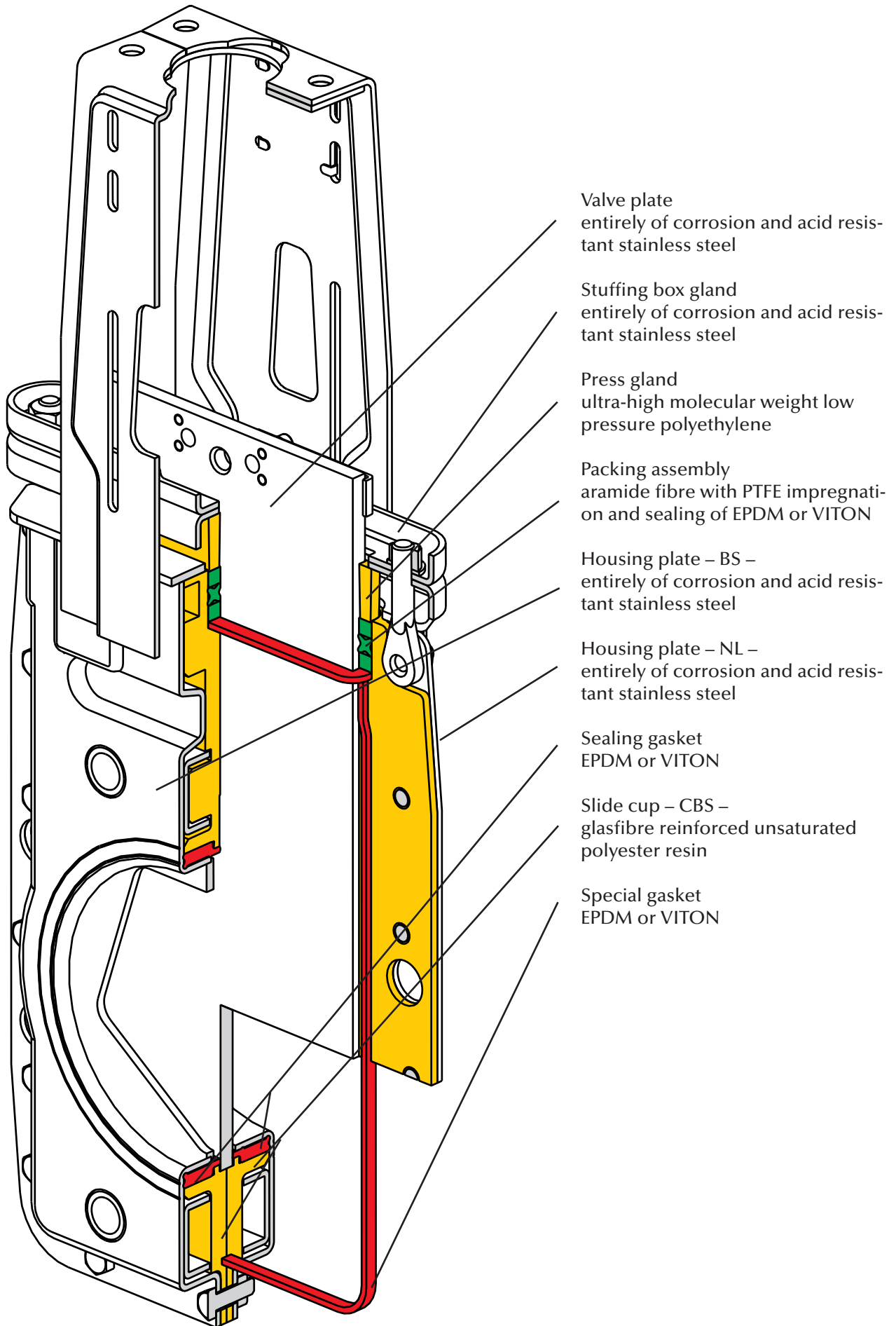
### Actuating elements in well-proved LOHSE modular system

- interchangeable on all valves of our make
- also interchangeable on the incorporated existing valve
- reduced stock holding

### Watertight

- Leak test according to DIN EN 12266-02:2012-04 Table A5, test medium liquid, leakage rate A





Valve plate  
entirely of corrosion and acid resistant stainless steel

Stuffing box gland  
entirely of corrosion and acid resistant stainless steel

Press gland  
ultra-high molecular weight low pressure polyethylene

Packing assembly  
aramide fibre with PTFE impregnation and sealing of EPDM or VITON

Housing plate – BS –  
entirely of corrosion and acid resistant stainless steel

Housing plate – NL –  
entirely of corrosion and acid resistant stainless steel

Sealing gasket  
EPDM or VITON

Slide cup – CBS –  
glasfibre reinforced unsaturated polyester resin

Special gasket  
EPDM or VITON

## Materials

- housing
  - DN 50 – 250 1.4404
  - DN 300 – 600 1.4541
  - DN 700 – 1000 1.4571
- flanging ring
  - DN 300 – 1000 1.4571
- valve plate 1.4571
- slide cups
  - DN 50 – 250 GRP
  - DN 300 – 600 PP
- sealing EPDM, VITON or NBR
- slide parts
  - DN 700 – 1000 CuSn6 / CuAL10Ni
- stuffing box gland
  - DN 50 – 150 1.4301
  - DN 200 – 450 1.4541
  - DN 500 – 600 1.4301
  - DN 700 – 1000 1.4571
- packing assembly
  - packing aramid fibre with impregnation of PTFE
  - p-ring EPDM, VITON or NBR
- press gland
  - DN 50 -150 PE-HMW (RCH 500)
- bracket 1.4301
- screws / nuts A2
- max. operating pressure
  - DN 50 – 250 8 bar
  - DN 300 – 400 6 bar
  - DN 450 – 600 4 bar
  - DN 700 – 800 2.5 bar
  - DN 900 – 1000 1.5 bar
- max. operating temperature with sealing of
  - NBR 105° C
  - EPDM 120° C

## Operating elements – the LOHSE modular system

All LOHSE COMPACT-valves comprise the following **main groups**:

- valve body type: CBS
- operating elements type Hns, H, P, PV, E, GK

All elements are interchangeable for any given size. Thereby the connections of brackets as well as the coupling of actuator and valve plate will be removed and fixed again after the exchange. No removal of incorporated valve body (notice safety rules – pipes must be pressureless).

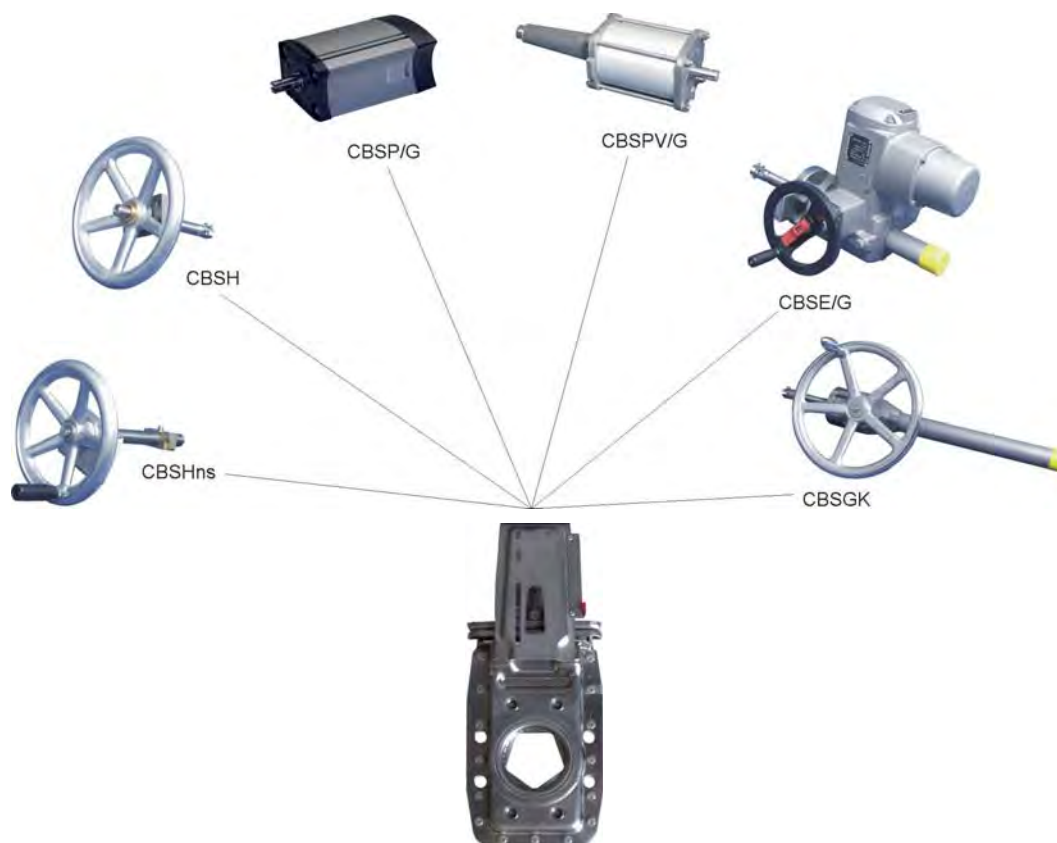
This facility is called the **LOHSE modular system** which offers the following advantages:

- simplified and less expensive holding of spare parts.
- in case of damage, actuating elements can be replaced inexpensively.
- if any valve drives have to be altered, replacement is easy and quick

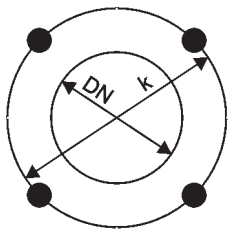
### Protection guards (G)

According to machinery directive 2006/42/EG guards are compulsory to shield all moving parts on automated gate valves.

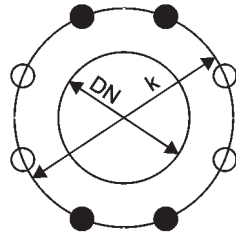
Protection guard of stainless steel.



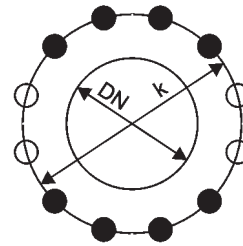
Flange bores for LOHSE COMPACT-valves according to DIN EN 1092-1, PN 10



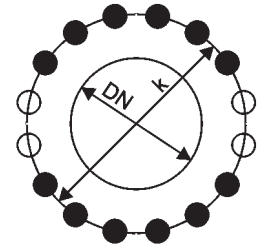
DN 50-65



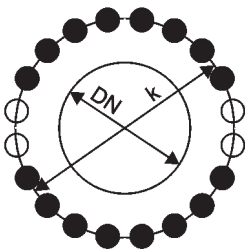
DN 80-200



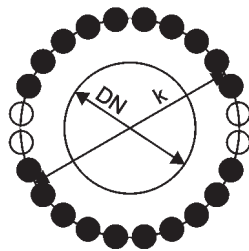
DN 250-300



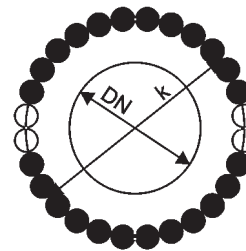
DN 350-400



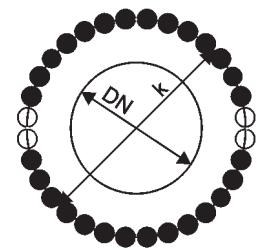
DN 450-600



DN 700-800

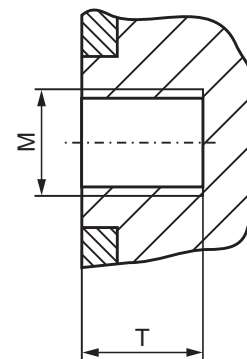


DN 900-1000



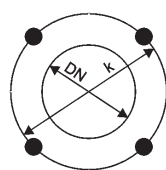
DN 1100-1200

DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2
50	125	4	M16	12	4	-
65	145	4	M16	12	4	-
80	160	8	M16	12	4	4
100	180	8	M16	12	4	4
125	210	8	M16	12	4	4
150	240	8	M20	16	4	4
200	295	8	M20	16	4	4
250	350	12	M20	20	8	4
300	400	12	M20	20	8	4
350	460	16	M20	20	12	4
400	515	16	M24	23	12	4
450	565	20	M24	30	16	4
500	620	20	M24	30	16	4
600	725	20	M27	35	16	4
700	840	24	M27	40	20	4
800	950	24	M30	45	20	4
900	1050	28	M30	45	24	4
1000	1160	28	M33	45	24	4
1100	1270	32	M33	50	28	4
1200	1380	32	M36	55	28	4

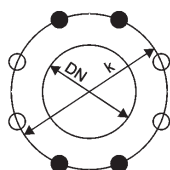


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

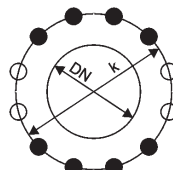
Flange bores for LOHSE COMPACT-valves  
according to ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150)



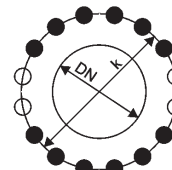
DN 50-80



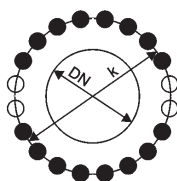
DN 100-200



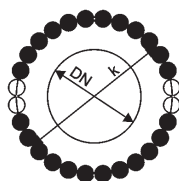
DN 250-350



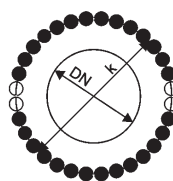
DN 400-450



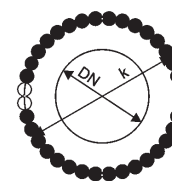
DN 500-600



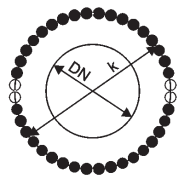
DN 700-800



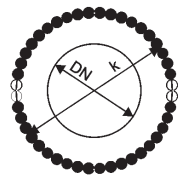
DN 900



DN 1000

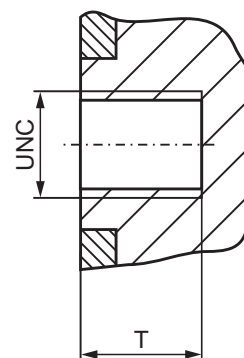


DN 1100



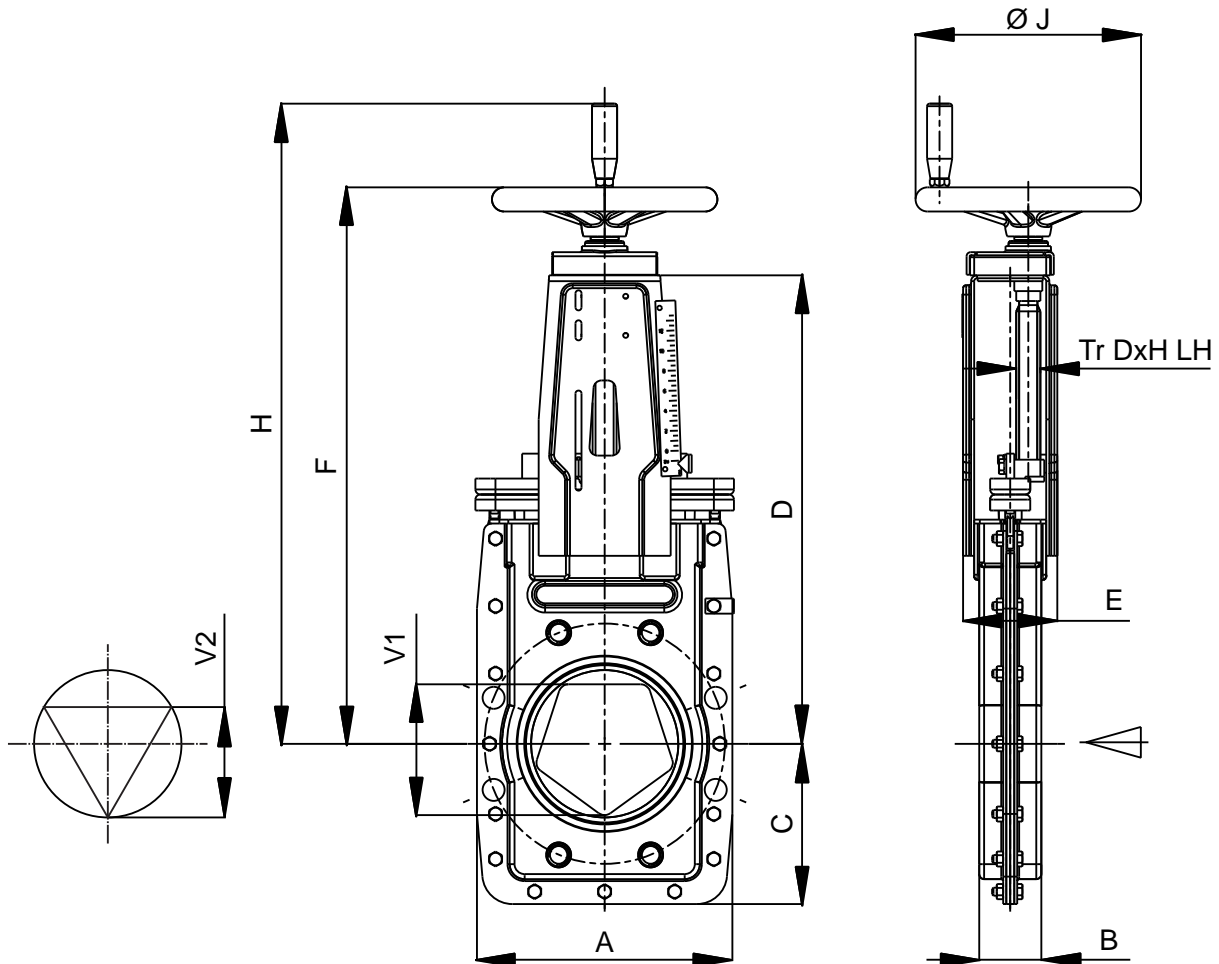
DN 1200

DN [mm]	DN [inch]	K [mm]	K [inch]	Z	UNC	T [mm]	T [inch]	Z1	Z2
50	2	120.6	4 3/4	4	5/8"-11	12	0.472	4	-
65	2.5	139.7	5 1/2	4	5/8"-11	12	0.472	4	-
80	3	152.4	6	4	5/8"-11	12	0.472	4	-
100	4	190.5	7 1/2	8	5/8"-11	12	0.472	4	4
125	5	215.9	8 1/2	8	3/4"-10	12	0.472	4	4
150	6	241.3	9 1/2	8	3/4"-10	16	0.630	4	4
200	8	298.5	11 3/4	8	3/4"-10	16	0.630	4	4
250	10	362	14 1/4	12	7/8"-9	20	0.787	8	4
300	12	431.8	17	12	7/8"-9	20	0.787	8	4
350	14	476.3	18 3/4	12	1"-8	20	0.787	8	4
400	16	539.8	21 1/4	16	1"-8	23	0.910	12	4
450	18	577.9	22 3/4	16	1 1/8"-7	30	1.181	12	4
500	20	635	25	20	1 1/8"-7	30	1.181	16	4
600	24	749.3	29 1/2	20	1 1/4"-7	35	1.378	16	4
700	28	863	34	28	1 1/4"-7	40	1.575	24	4
800	32	978	38 1/2	28	1 1/2"-6	45	1.772	24	4
900	36	1086	42 3/4	32	1 1/2"-6	45	1.772	28	4
1000	40	1200	47 1/4	36	1 1/2"-6	45	1.775	32	4
1100	44	1314	51 3/4	40	1 1/2"-6	50	1.969	36	4
1200	48	1422	56	44	1 1/2"-6	55	2.165	40	4



Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

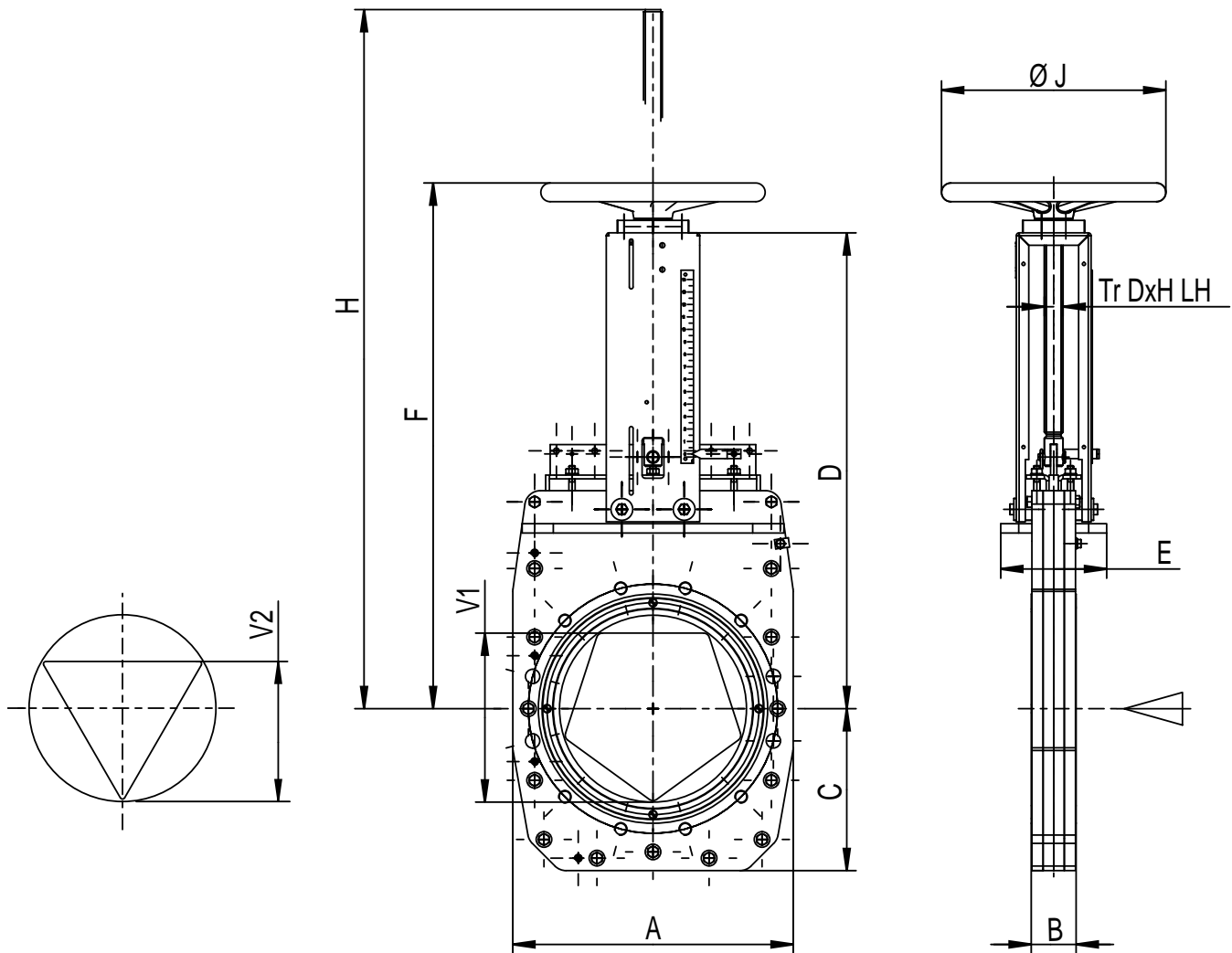
COMPACT-regulating valve with orifice  
handwheel drive with non-rising stem



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	V1	V2	weight ~[kg]
50	8	185	42	100	313	78	394	478	180	20 x 4	45	38	9
65	8	185	42	100	313	78	394	478	180	20 x 4	59	49	9
80	8	175	52	125	313	78	395	478	180	20 x 4	72	49	9
*)100	8	210	52	135	368	94	456	539	225	24 x 5	88	73	13
*)125	8	230	52	145	413	94	500	584	225	24 x 5	110	92	16
*)150	8	255	62	160	468	94	556	639	225	24 x 5	133	110	19
200	8	328	60	189	557	143	656	739	280	30 x 6	181	150	38
250	8	400	68	230	668	166	767	850	280	30 x 6	226	188	53
300	6	450	72	260	764	170	869	-	360	30 x 6	271	225	68
350	6	510	72	290	907	190	998	-	360	30 x 6	317	263	131
400	6	575	90	326	1059	190	1163	-	362	30 x 6	362	300	160

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

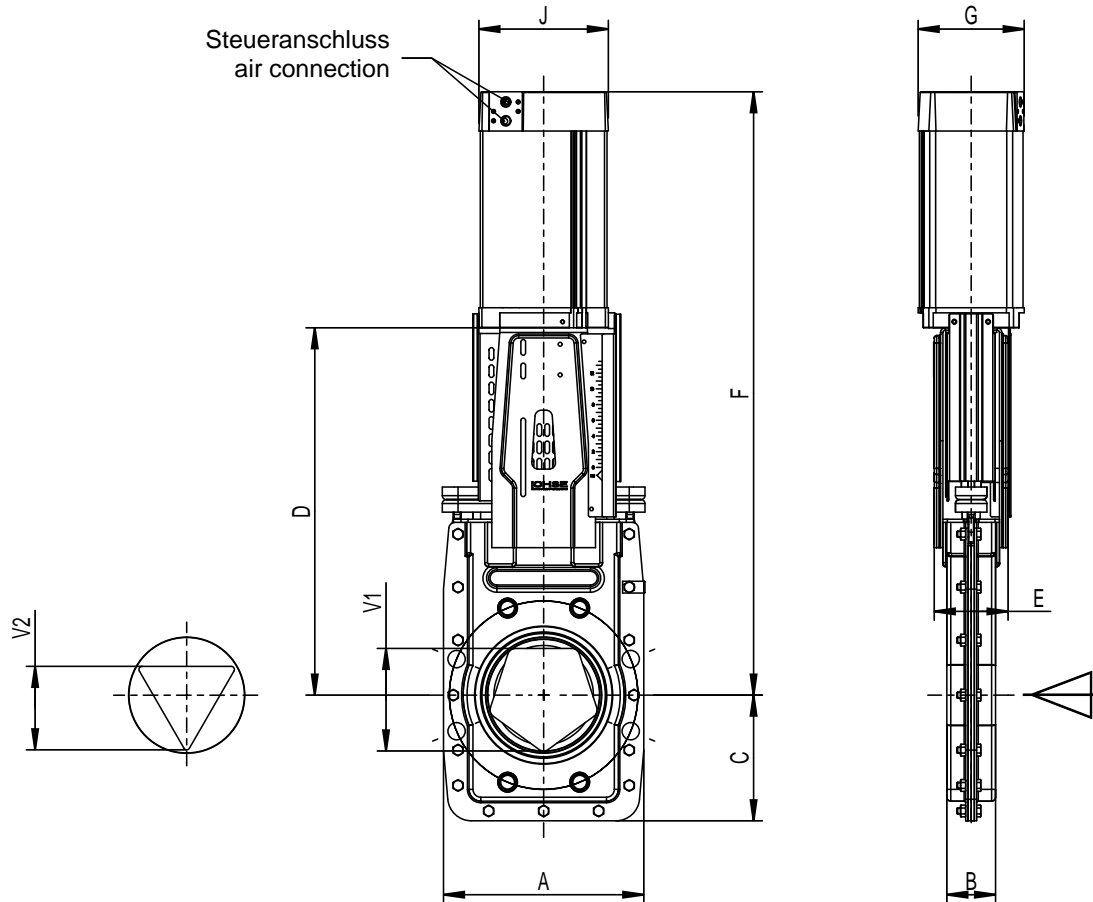
COMPACT-regulating valve with orifice  
handwheel drive with rising stem



DN	BD [bar]	A	B	C	D	E	F	H	Ø J	Tr D x H LH	V1	V2	weight ~[kg]
350	6	510	71	290	907	190	1003	1355	500	36 x 6	317	263	102
400	6	575	90	326	1059	190	1155	1555	500	36 x 6	362	300	175

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-regulating valve with orifice  
pneumatic-cylinder and protection guard

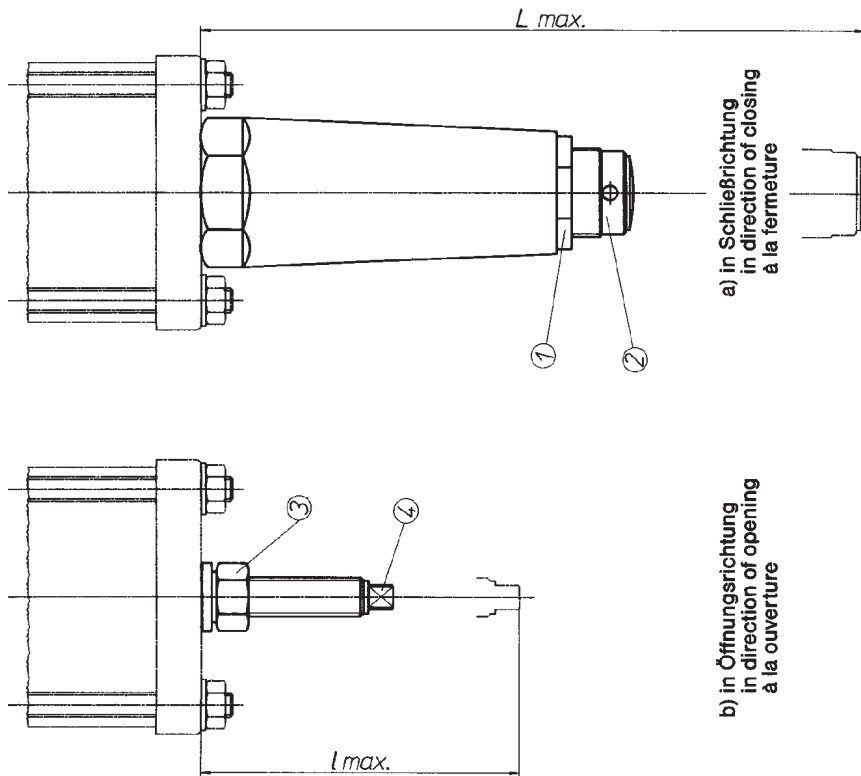


DN	BD [bar]	A	B	C	D	E	F	G	J	Zyl Ø	air connection	control pressure [bar]	V1	V2	weight ~[kg]
50	8	185	42	100	313	78	495	109	139	100	G 1/8"	6	45	38	11.3
65	8	185	42	100	313	78	510	109	139	100	G 1/8"	6	59	49	11.4
80	8	175	52	123	313	78	523	109	139	100	G 1/8"	6	72	60	11.5
*)100	8	210	52	135	368	94	596	109	139	100	G 1/4"	6	88	73	17.9
*)125	8	255	52	145	413	94	691	135	165	125	G 1/4"	6	110	92	21.1
*)150	8	255	62	160	468	94	768	135	165	125	G 1/4"	6	133	110	29.3
200	8	328	60	190	557	143	917	170	204	160	G 1/4"	6	181	150	49.5
250	8	400	68	230	668	166	1069	170	204	160	G 1/4"	6	226	188	65.5
300	6	450	72	260	764	170	1224	170	204	160	G 1/4"	6	271	225	78
350	6	510	72	290	907	190	1452	211	244	200	G 1/2"	6	317	263	141
400	6	575	90	326	1059	190	1650	211	244	200	G 1/2"	6	362	300	227
500	4	700	110	375	1265	228	1985	242	283	230	G 1/2"	6	450	375	

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150);  
air connection acc. VDI/VDE 3845 (NAMUR). Further sizes on request.



## COMPACT-regulating valve with orifice pneumatic-cylinder, variable stroke limiter and protection device



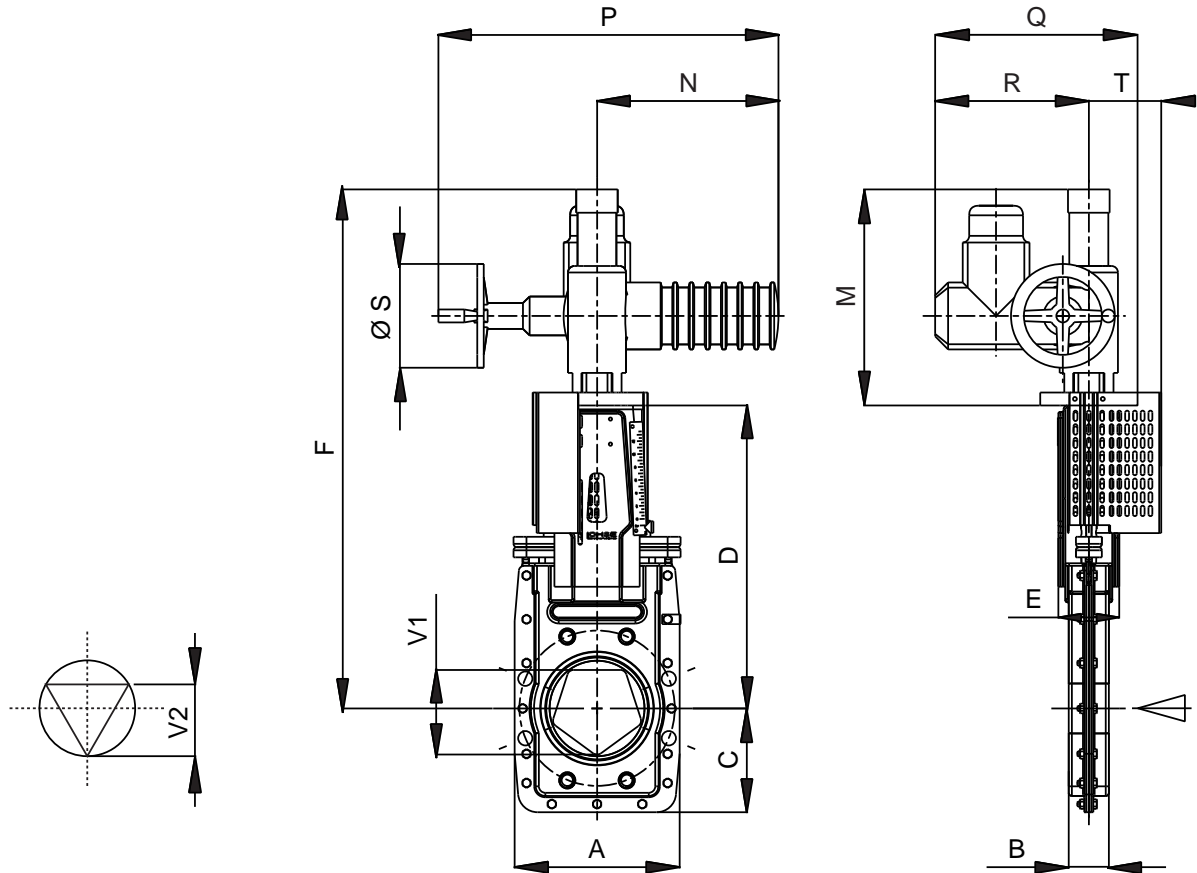
### Variable stroke limiter

- In direction of closing: loosen the nut (1), adjust the adjustable pipe (2), tighten the nut (1).
- In direction of opening: loosen the nut (3), adjust the adjustable screw (4) tighten the nut.

DN	cyl.Ø	in direction of opening		in direction of closing	
		L max ~	L max ~	L max ~	L max ~
50	125	140		283	
65	125	140		283	
80	125	140		283	
100	145	190		439	
125	145	190		439	
150	175	225		439	
200	200	225		554	

Further sizes on request.

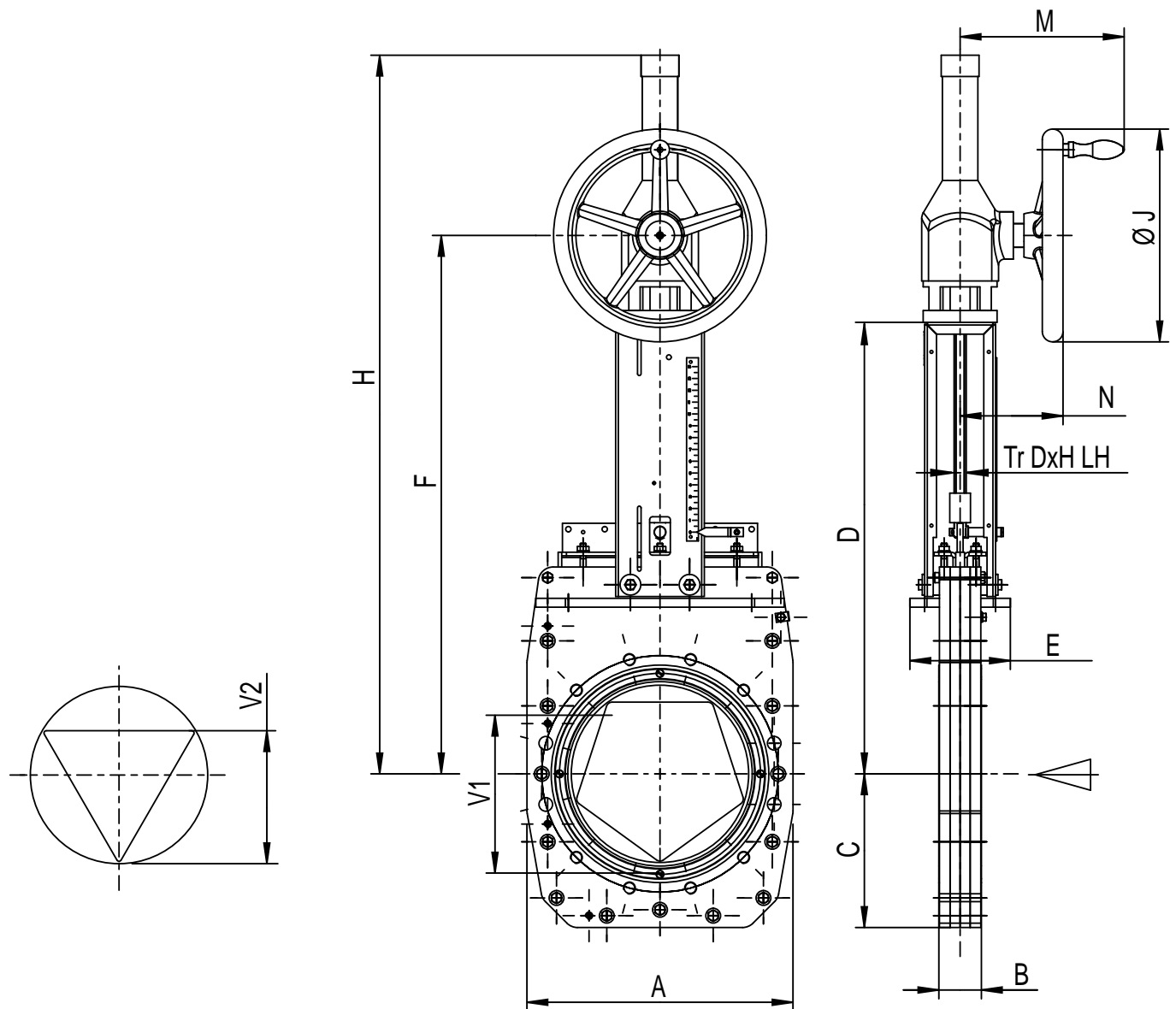
COMPACT-regulating valve with orifice  
electric-drive and protection guard



DN	BD [bar]	A	B	C	D	E	F	M	N	P	Q	R	ØS	T	V1	V2	stem Tr DxH	closing time [s]		weight ~[kg]
																		pen-tagon	trian-gel	
50	8	185	42	100	313	78	646	333	280	515	349	237	160	112	45	38	20 x 4	66.8	55.9	31
65	8	185	42	100	313	78	646	333	280	515	349	237	160	112	59	49	20 x 4	84.5	70.9	31
80	8	175	52	125	313	78	646	333	280	515	349	237	160	112	72	60	20 x 4	103.6	85.9	31
*)100	8	210	52	135	368	94	701	333	280	515	349	237	160	112	88	73	24 x 5	102.5	85.0	35
*)125	8	230	52	145	413	94	746	333	280	515	349	237	160	112	110	92	24 x 5	126.5	105.8	37
*)150	8	255	62	160	468	94	801	333	280	515	349	237	160	112	133	110	24 x 5	151.6	127.6	41
200	8	328	60	190	557	143	902	345	355	536	373	247	200	126	181	150	30 x 6	167.3	113.1	65
250	8	400	68	230	668	166	1013	345	355	536	373	247	200	126	226	188	30 x 6	208.2	173.6	80
300	6	450	72	260	764	170	1202	438	355	536	373	247	200	126	271	225	30 x 6	249.1	207.3	95
350	6	510	72	290	907	190	1350	443	355	536	389	247	200	142	317	263	36 x 6	200.0	166.3	130
400	6	575	90	326	1059	190	1602	543	355	536	393	247	200	146	362	300	36 x 6	228.2	189.4	195
500	4	700	110	375	1265	228	1873	608	380	695	373	285	315	146	452	375	36 x 6	289.9	236.3	383

\*) Opening DN - 3mm, full opening on request.  
Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

COMPACT-regulating valve with orifice  
bevel gear box and handwheel



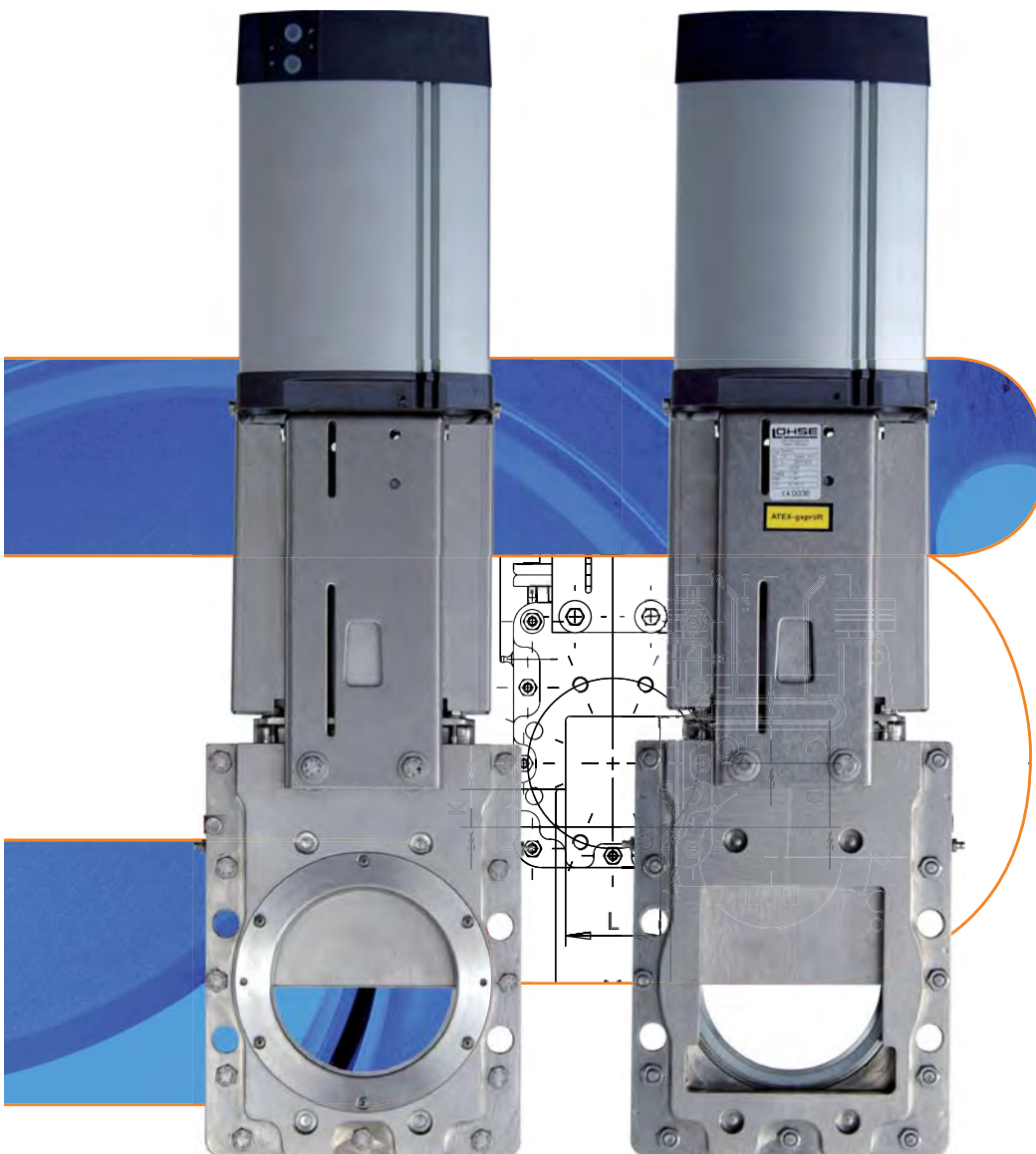
DN	BD [bar]	A	B	C	D	E	F	H	ØJ	N	M	V1	V2	Tr D x H LH	weight ~[kg]
150	8	255	62	160	468	94	615	765	360	174	278	133	110	24 x 5	
200	8	328	60	190	557	143	704	909	360	174	278	181	150	30 x 6	52
250	8	400	68	230	668	166	815	1070	360	174	278	226	188	30 x 6	70
300	6	450	72	260	764	170	911	1216	360	174	278	271	225	30 x 6	84
350	6	520	72	290	907	190	1059	1414	400	185	295	317	263	36 x 6	115
400	6	578	90	326	1059	190	1211	1611	400	185	295	362	300	36 x 6	155

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10 or ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150).  
Further sizes on request.

Valves of stainless steel

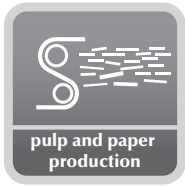
# Bulk- and Reject-Valves

## RQS/RQSV



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server.ab@lohse-gmbh.de  
www.lohse-gmbh.de

## Applications



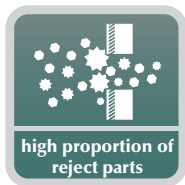
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

## Media



## Operating elements – the LOHSE modular system

- Hns handwheel drive with non-rising stem  
P pneumatic cylinder

## Watertight

Leak test according to DIN EN 12266-02:2012-04  
Table A5, test medium liquid, leakage rate A

## Description

Valves of stainless steel with round inlet and square outlet.

Depending on the design or rather the application there is in the inlet of the valve a wear ring of stainless steel or a sealing ring of rubber.

In the case if a wear ring of stainless steel, the seating is brought about via a sealing ring of either PE, PTFE or bronze.

In the case of a sealing ring of rubber (SBR), the seating is effected by means of an inserted sealing lip. The sealing ring of rubber also takes in the seating of the flange connection on the inlet side.

The guides of broze are positioned in such a way that the medium passing through cannot build up in these. At the end of the guides there is a lager free area so that the medium doesn't pressed together inside the valve. To enabel a good discharge out of the valve, a square outlet has been selected.

## Materials

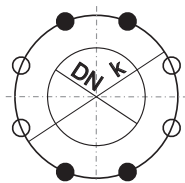
- housing 1.4571
- valve plate 1.4571
- flow sealing SBR, PE, PTFE or CuSn 12
- slide borders CuAL 10 Ni5Fe4
- wear ring 1.4571, SBR / 1.4571
- slide blocks CuSn6
- stuffing box gland 1.4551
- packing assembly Arostat / EPDM
- bracket 1.4301
- max. operating pressure
  - DN 100 – 200 8 bar
  - DN 250 – 300 4 bar
  - DN 400 – 600 2 bar
- max. operating temperature with
  - sealing ring of PE 80° C
  - wear ring of SBR 80° C
  - wear ring with
    - bronze slide ring 120° C
    - sealing ring of PTFE 200° C

Type RQSV similar, but with hardened wear ring and valve plate.

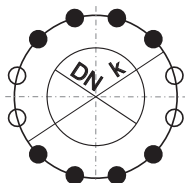
Flange bores for LOHSE RQS valves with metric tread

Inlet side  
according DIN EN 1092-1, PN 10

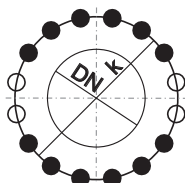
Outlet side  
according LOHSE standard



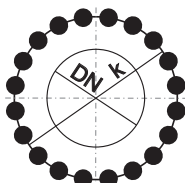
DN 150-200



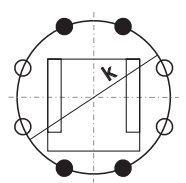
DN 250-300



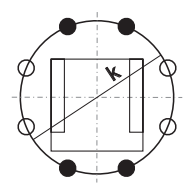
DN 400



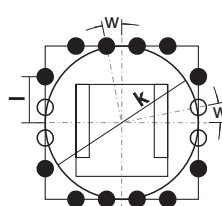
DN 500



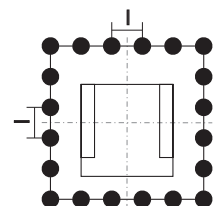
DN 150-200



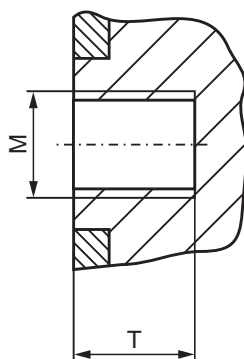
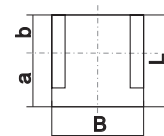
DN 250-300



DN 400



DN 500



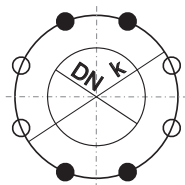
- Z = total number of holes
- Z1 = number of joint-holes
- Z2 = number of through-going bores
- T = usable depth of thread

DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2	l [mm]	L [mm]	B [mm]	a [mm]	b [mm]
150	240	8	M20	18	4	4		163	167	92	75
200	295	8	M20	20	4	4		217	215	117	100
250	350	12 resp. 8	M20	22	8 resp. 4	4		267	270	142	125
300	400	12 resp. 8	M20	22	8 resp. 4	4		317	335	167	150
400	515	16	M24	24	12	4	170	418	435	218	200
500	620	20	M24	34	20	0	121	520	540	270	250

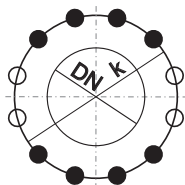
Flange bores for LOHSE RQS valves with UNC thread

Inlet side  
according ANSI B16.5 Class 150:

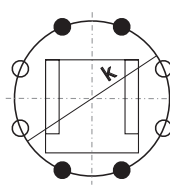
Outlet side  
according Standard



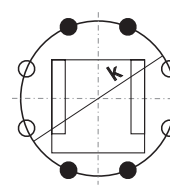
DN 150-200  
(6f - 8f)



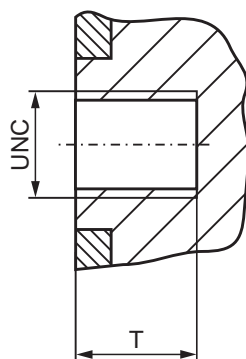
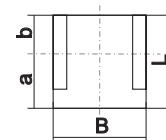
DN 250  
(10f)



DN 150-200  
(6f - 8f)



DN 250  
(10f)



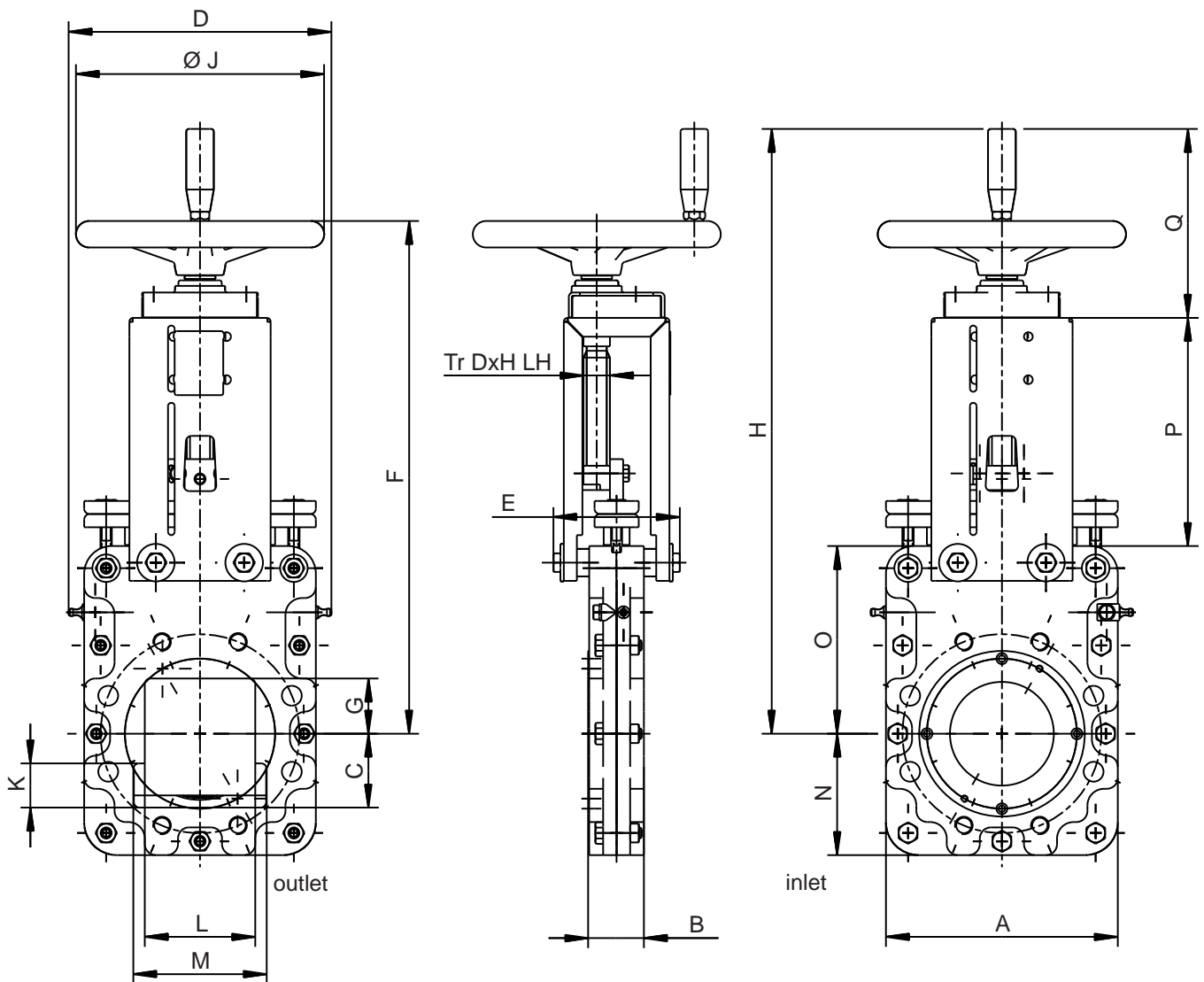
- Z = total number of holes
- Z1 = number of joint-holes
- Z2 = number of through-going bores
- T = usable depth of thread

DN [mm]	DN [inch]	K [inch]	Z	UNC [inch]	T [inch]	Z1	Z2	L [mm]	B [mm]	a [mm]	b [mm]
150	6	9 1/2	8	3/4	11/16	4	4	163	167	92	75
200	8	11 3/4	8	3/4	3/4	4	4	217	215	117	100
250	10	14 1/4	12 resp. 8	7/8	7/8	8 resp. 4	4	267	270	142	125



Reject-valve of stainless steel  
 circular inlet, square outlet  
 handwheel drive with non-rising stem

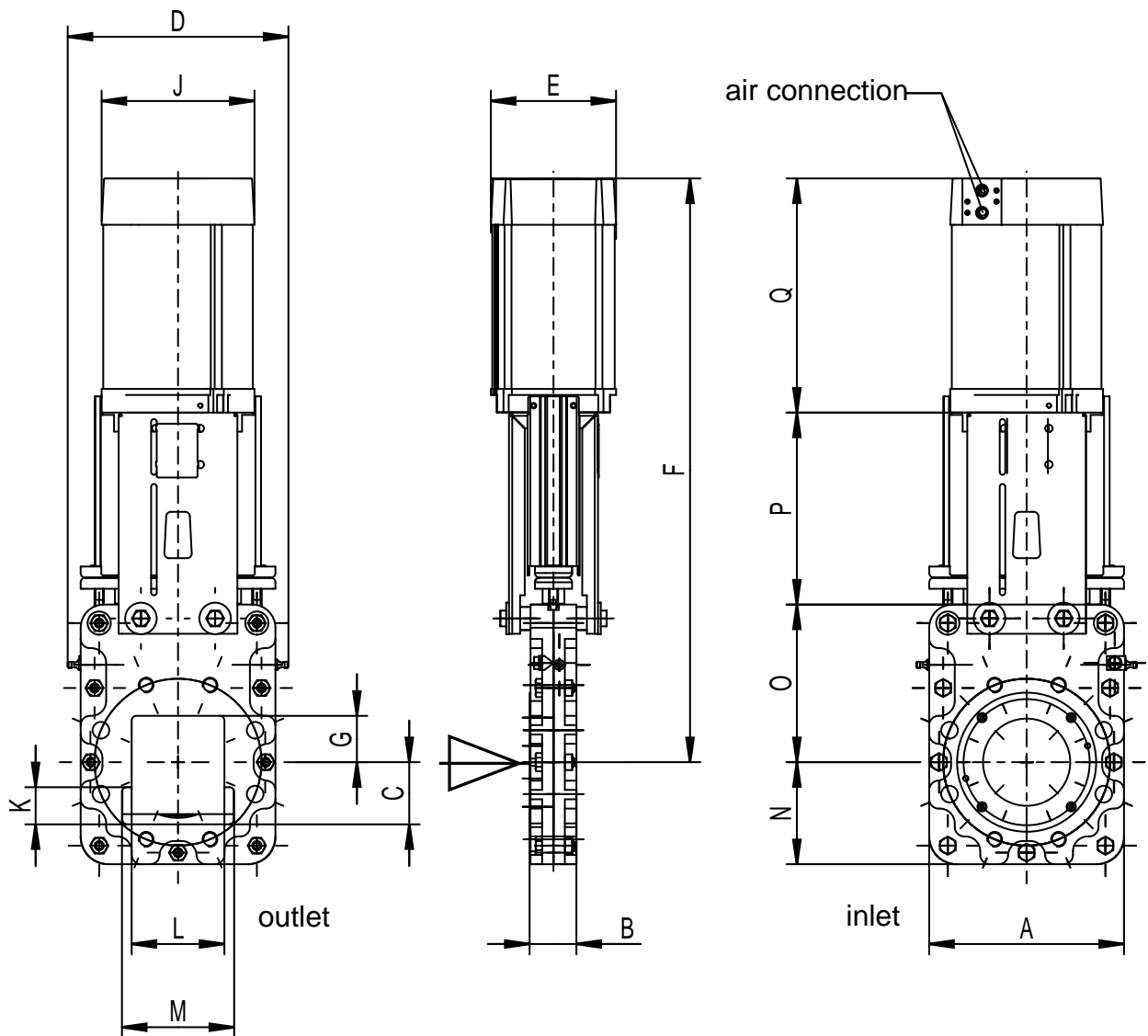
Type RQSVHns similar, but with hardened wear ring and valve plate.



DN	BD [bar]	A	B	C	D	E	F	G	H	Ø J	K	L	M	N	O	P	Q	Tr D x H LH
100	8	210	50,5	67	238	115	465	50	548	225	40	100	121	110	170	207	171	24 x 5
150	8	255	66	88	283	115	540	75	624	255	36	146	167	140	190	263	171	24 x 5
200	8	320	66	117	348	139	636	100	720	280	40	185	215	160	225	313	98	24 x 5

Dimensions in mm, flange bores to on request.  
 Further sizes on request.

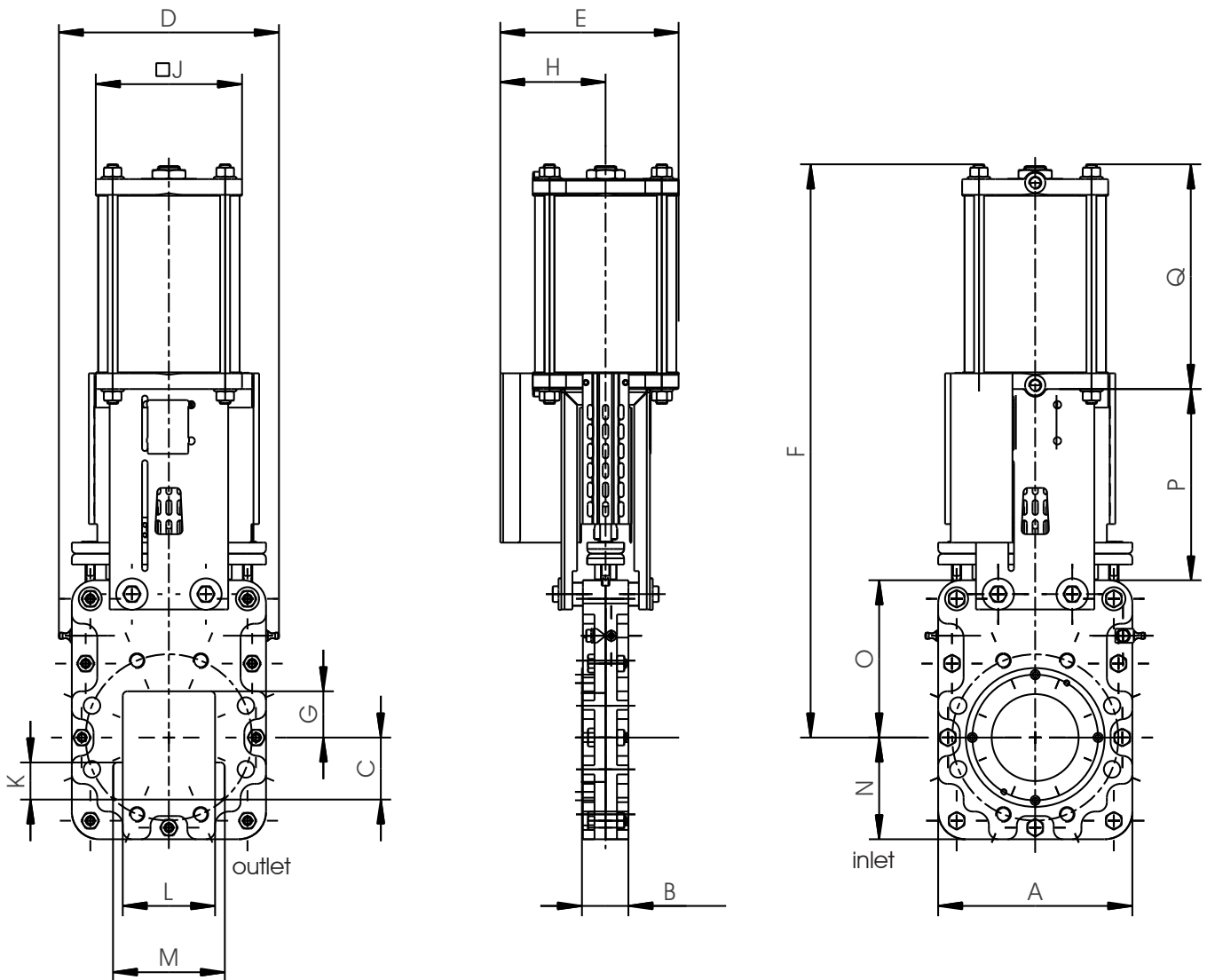
Reject valve of stainless steel  
 circular inlet, square outlet  
 pneumatic cylinder and protection guard  
 Type RQSVP/G similar, but with hardened wear ring and valve plate.



DN	BD [bar]	A	B	C	D	E	F	G	J	K	L	M	N	O	P	Q	cyl Ø	air connection	control pressure
100	8	210	51	67	238	135	740	50	165	40	100	121	110	170	207	253	125	G 1/4"	6 bar
150	8	255	66	88	283	170	763	75	204	36	146	167	140	190	263	310	160	G 1/4"	6 bar
200	8	320	66	117	348	170	898	100	204	40	185	215	160	225	313	360	160	G 1/4"	6 bar
250	8	352	80	142	352	211	1065	125	244	50	241	273	195	270	362	433	200	G 1/2"	6 bar
300	4	460	75	167	488	242	1274	150	283	65	304	334	235	340	419	515	230	G 1/2"	6 bar

Dimensions in mm, flange bores to on request; air connection acc.VDI/VDE 3845 (NAMUR).  
 Further sizes on request.

Reject valve of stainless steel  
 circular inlet, square outlet  
 pneumatic cylinder and protection guard  
 Type RQSVP/G similar, but with hardened wear ring and valve plate.



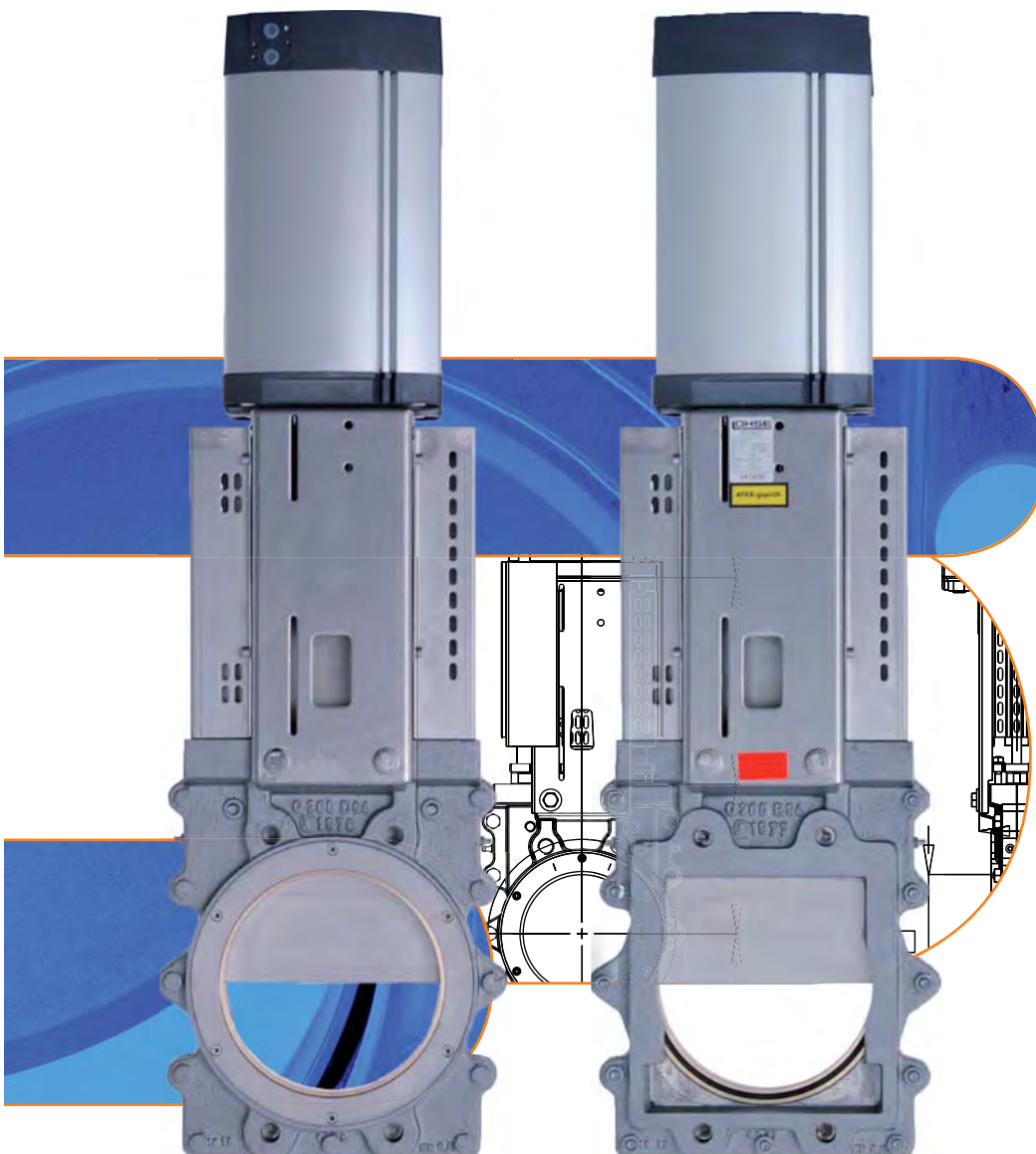
DN	BD [bar]	A	B	C	D	E	F	G	J	K	L	M	N	O	P	Q	cyl Ø	air connection	control pressure
400	2	570	92	218	598	318	1639	200	318	65	405	435	285	410	608	621	300	G 1/2"	6 bar
500	2	680	112	270	708	425	2024	250	425	65	510	540	345	510	725	789	400	G 3/4"	6 bar

Dimensions in mm, flange bores to on request.  
 Further sizes on request.

Valves

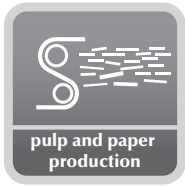
# Reject-Valves

## NAQP/G



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 server.ab@lohse-gmbh.de  
 www.lohse-gmbh.de

## Applications



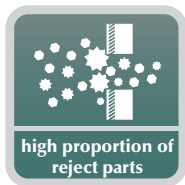
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

## Media



## Features

### Model

- round inlet
- allows it to be connected to DIN EN 1092-1, PN 10 round pipes, with integral wearing ring and gasket, spring-mounted
- square outlet
- the outlet is larger than the inlet, allowing unwanted materials to fall out freely, no pockets in the base of the housing

### Valve plate

- prepared so that switch sensors may be connected for limit position monitoring

### Valve plate guide

- the guides in the front third are shortened, i.e. the sliding plate guarantees a clearance
- replaceable sliding rails made from bronze or special plastic
- protected by housing plate on the inlet side

### Seal

- the combination of wearing ring and gasket on the inlet side, with the pressure deflected away to the inlet side, is made possible because the sliding plate is guided exactly
- easy to replace, can be accessed from outside

### Watertight

- Leak test according to DIN EN 12266-02:2012-04 Table A5, test medium liquid, leakage rate A

## Accessories

### On the inlet side:

- conical ring insert, hardened

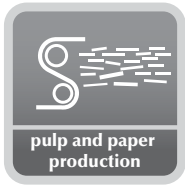
### On the outlet side:

- stainless steel adapter, square to round, allows outlet to be continued on round DIN EN 1092-1, PN 10 pipes

### Options:

- holding parts and switching sensors for limit switches, suitable for all common types of limit switch
- solenoid valve attached directly to the pneumatic cylinder
- housing and sliding plate in other materials (as required by customer)
- highly wear-resistant version of the sliding plate made from hardened stainless steel

## Applications



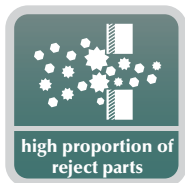
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

## Media



## Materials

- |                              |                    |
|------------------------------|--------------------|
| • housing                    | EN-GJL-250 (GG 25) |
| • valve plate                | 1.4571             |
| • sealing                    | NBR                |
| • slide borders              | CuAl10 Mo5Fe4      |
| • wear ring                  | CuSn12             |
| • scraper                    | CuAl10 Ni5Fe4      |
| • stuffing box gland         | CuSn5ZnPb          |
| • packing assembly           | Arostat / EPDM     |
| • press ring                 | 1.4541             |
| • bracket                    | 1.4301             |
| • max. operating pressure    |                    |
| DN 150 – 250                 | 8 bar              |
| • max. operating temperature | 80° C              |

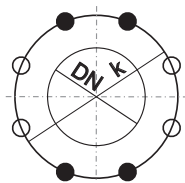
Flange bores for LOHSE NAQ valves with metric tread

Inlet side

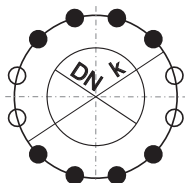
according DIN EN 1092-1, PN 10

Outlet side

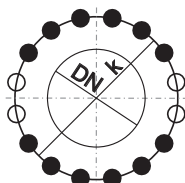
according LOHSE standard



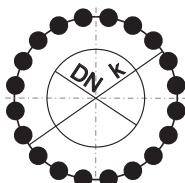
DN 150-200



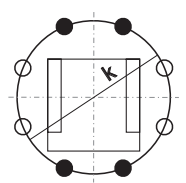
DN 250-300



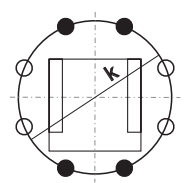
DN 400



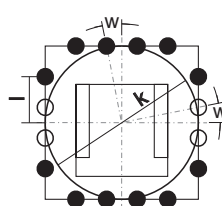
DN 500



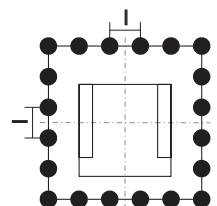
DN 150-200



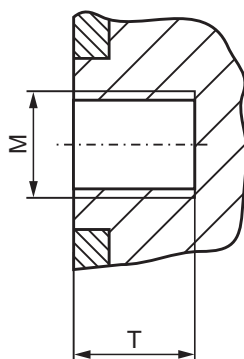
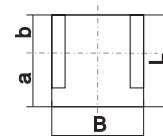
DN 250-300



DN 400



DN 500



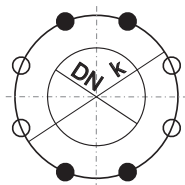
- Z = total number of holes
- Z1 = number of joint-holes
- Z2 = number of through-going bores
- T = usable depth of thread

DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2	l [mm]	L [mm]	B [mm]	a [mm]	b [mm]
150	240	8	M20	18	4	4		163	167	92	75
200	295	8	M20	20	4	4		217	215	117	100
250	350	12 resp. 8	M20	22	8 resp. 4	4		267	270	142	125
300	400	12 resp. 8	M20	22	8 resp. 4	4		317	335	167	150
400	515	16	M24	24	12	4	170	418	435	218	200
500	620	20	M24	34	20	0	121	520	540	270	250

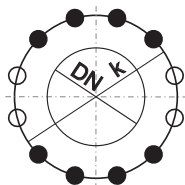


Flange bores for LOHSE NAQ valves with UNC thread

Inlet side  
according ANSI B16.5 Class 150:

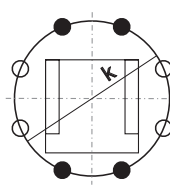


DN 150-200  
(6f - 8f)

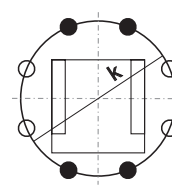


DN 250  
(10f)

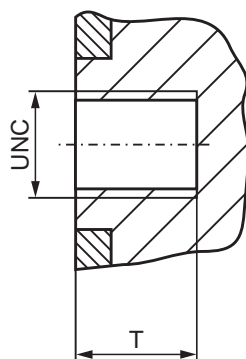
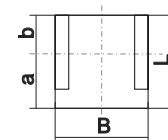
Outlet side  
according Standard



DN 150-200  
(6f - 8f)



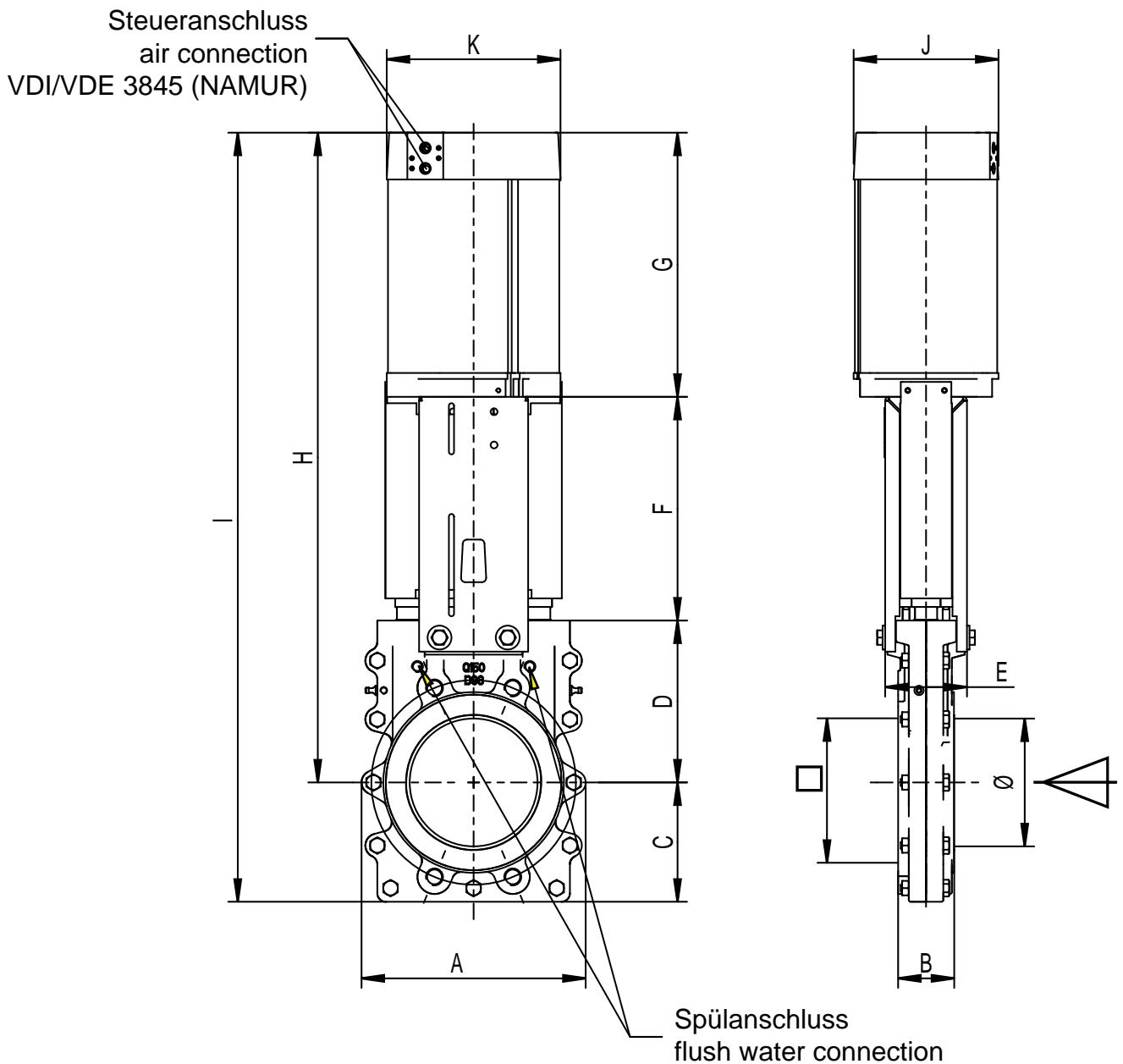
DN 250  
(10f)



- Z = total number of holes
- Z1 = number of joint-holes
- Z2 = number of through-going bores
- T = usable depth of thread

DN [mm]	DN [inch]	K [inch]	Z	UNC [inch]	T [inch]	Z1	Z2	L [mm]	B [mm]	a [mm]	b [mm]
150	6	9 1/2	8	3/4	11/16	4	4	163	167	92	75
200	8	11 3/4	8	3/4	3/4	4	4	217	215	117	100
250	10	14 1/4	12 resp. 8	7/8	7/8	8 resp. 4	4	267	270	142	125

Reject-valve  
 circular inlet, square outlet  
 pneumatic cylinder and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	K	Zyl Ø	air connection	flush water connection	weight ~[kg]
150	8	263	66	140	190	96	263	310	763	903	170	190	160	G 1/4"	G 1/4"	41.4
200	8	325	66	160	225	120	310	360	895	1055	170	215	160	G 1/4"	G 1/2"	56.5
250	8	350	78	195	270	120	362	433	1065	1260	211	244	200	G 1/2"	G 1/2"	82

Dimensions in mm, flange bores on request; air connection acc. VDI/VDE 3845 (NAMUR).  
 Further sizes on request.



Valves

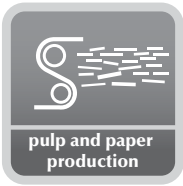
# Reject-Valves

## AEQP/G



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## Applications



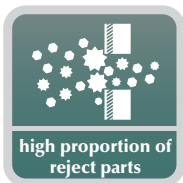
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

## Media



## Accessories

### On the inlet side:

stainless steel intermediate flange, allows connection to round DIN EN 1092-1, PN 10 pipes or to locks (approx. 20 mm thick, drilled for both flange patterns)

### On the outlet side:

stainless steel adapter, square to round, allows outlet to be continued on round DIN EN 1092-1, PN 10 pipes

### Options:

- holding parts and switching sensors for limit switches, suitable for all common types of limit switch
- solenoid valve attached directly to the pneumatic cylinder
- housing and valve plate in other materials (as required by customer)

## Features

### Rectangular model

- free passage when opened
- the outlet is larger than the inlet, allowing unwanted materials to fall out freely
- braking of a rotation in progress

### Valve plate

- highly wear-resistant version made from hardened stainless steel
- prepared so that switch sensors may be connected for limit position monitoring

### Valve plate guide

- the guides in the front third are shortened, i.e. the valve plate guarantees a clearance
- replaceable sliding rails made from bronze

### Sealing frame

- protects the sliding plate and sliding plate guide
- low-wear, material: SBR
- plug-in connection system makes replacement easy
- 2-in-1 system:
  1. flow seal
  2. flange seal (no additional flange seal required)

### Watertight

- Leak test according to DIN EN 12266-02:2012-04 Table A5, test medium liquid, leakage rate A

## Materials

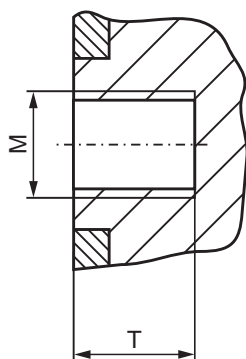
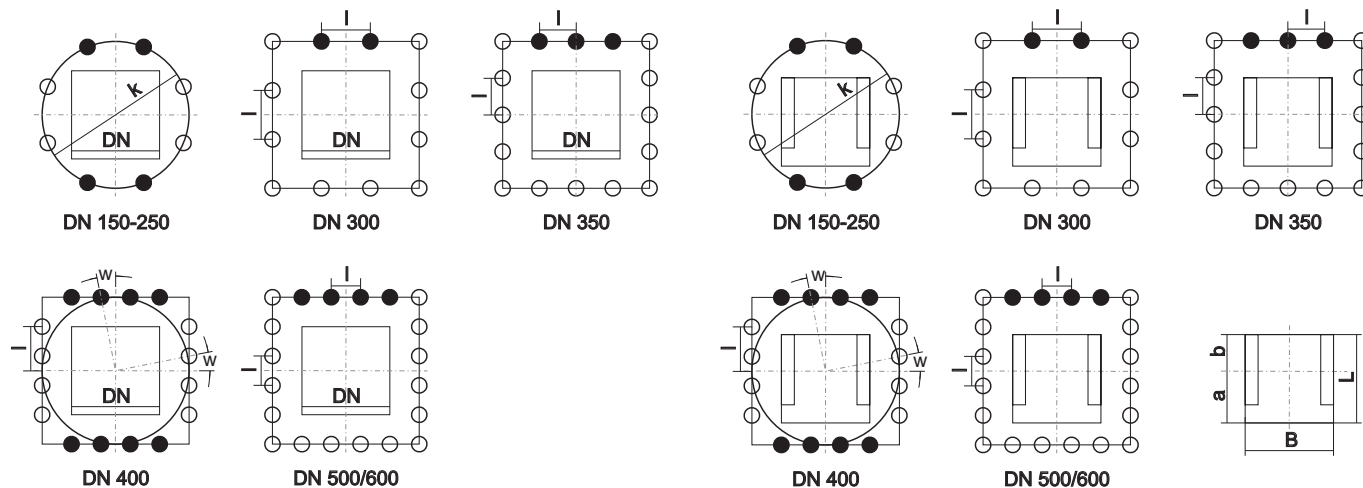
- housing EN-GJL-250 (GG 25)  
or  
1.4571
- valve plate 1.4571 hardened
- sealing frame SBR
- slide borders CuAl10Ni5Fe4
- packing assembly Arostat / EPDM
- bracket 1.4301
- max. operating pressure
 

DN 50 – 250	8 bar
DN 300	4 bar
DN 350 – 600	2 bar
- max. operating temperature 80° C

Flange bores for LOHSE AEQ-valves with metric thread according to LOHSE standard

Inlet site

Outlet site

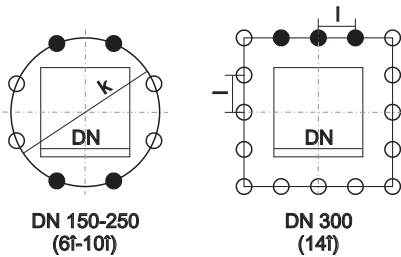


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

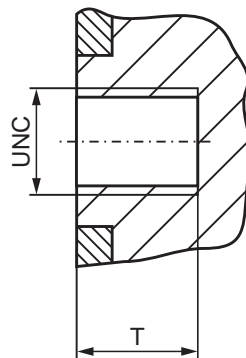
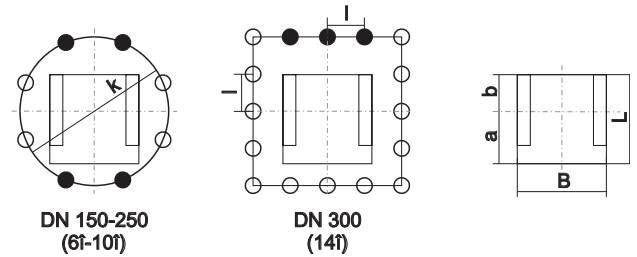
DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2	l [mm]	w [°]	L [mm]	B [mm]	a [mm]	b [mm]
150	150	8	M20	18	4	4			156	167	83	73
200	200	8	M20	20	4	4			211	222	111	100
250	350	8	M20	22	4	4			260	270	135	125
300		12	M20	24	2	10	129		317	335	167	150
350		16	M20	26	3	13	110		367	385	192	175
400	515	16	M24	24	8	8	170	11,25	418	437	218	200
500		20	M24	34	4	16	121		520	540	270	250
600		20	M27	35	4	16	143		620	640	320	300

Flange bores for LOHSE AEQ-valves with UNC thread according LOHSE standard

Inlet side



Outlet side

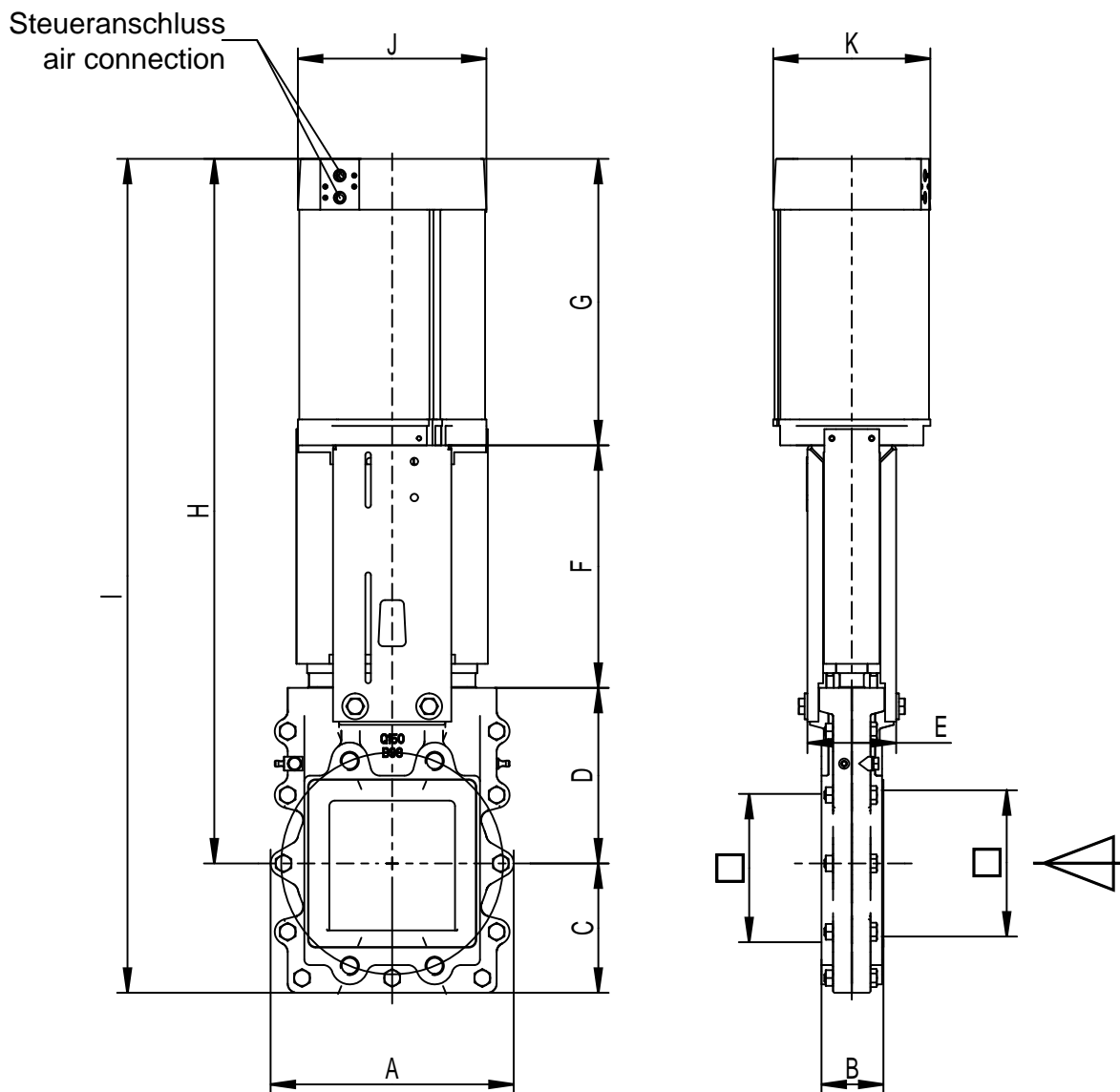


- Z = total number of holes
- Z1 = number of joint-holes
- Z2 = number of through-going bores
- T = usable depth of thread

DN [mm]	K [inch]	Z	UNC [inch]	T [inch]	Z1	Z2	l [inch]	w [°]	L [mm]	B [mm]	a [mm]	b [mm]
150	9 1/2	8	3/4	11/16	4	4			156	167	83	73
200	11 3/4	8	3/4	3/4	4	4			211	222	111	100
250	14 1/4	8	7/8	7/8	4	4			260	270	135	125
300		16	1	1	3	13	4 5/16		317	335	167	150



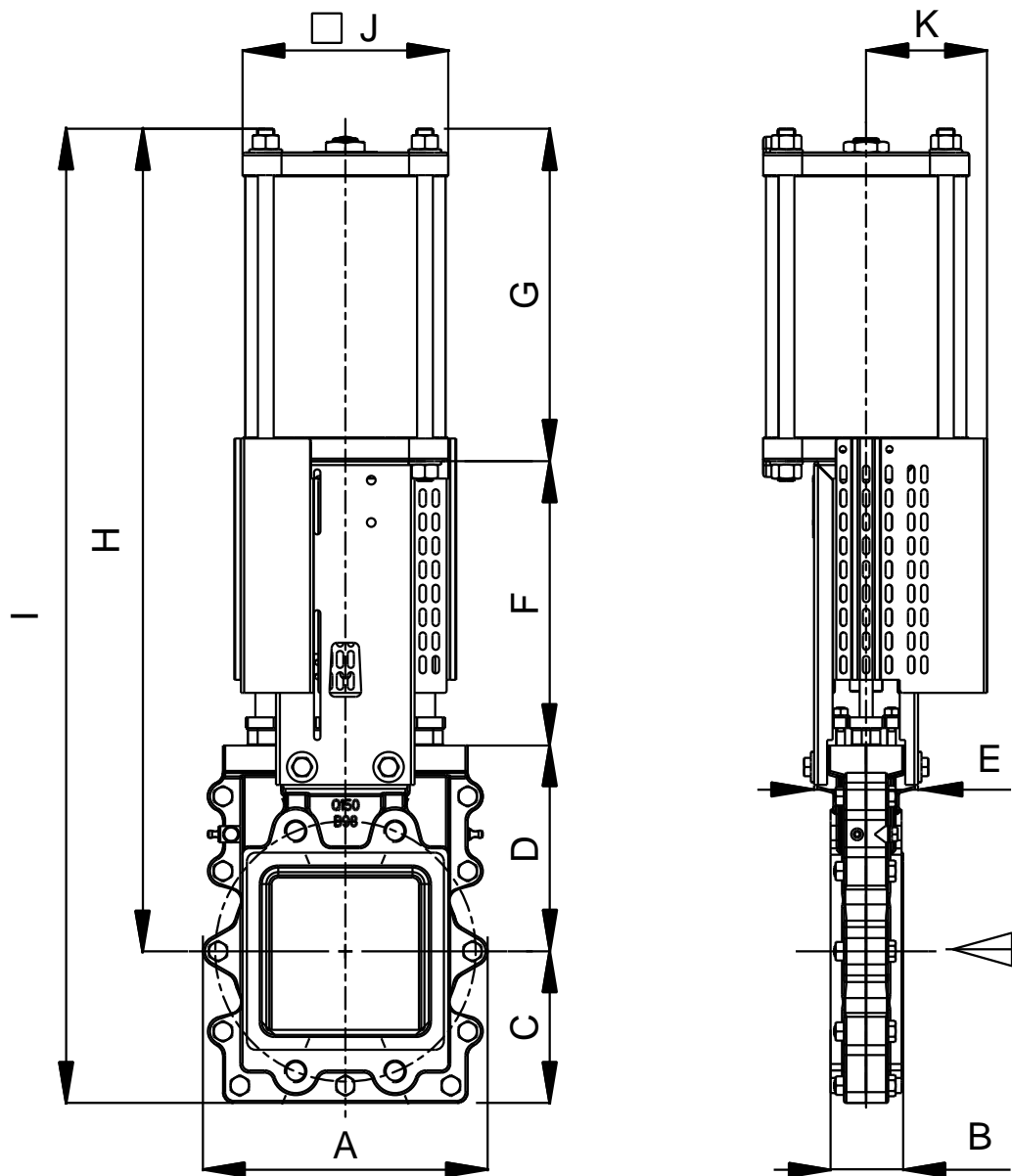
Reject-valve  
square in- and outlet  
pneumatic cylinder and protection guard  
Housing EN-GJL-250 or stainless steel



DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	K	cyl Ø	air con- nection	weight ~[kg]	
															EN- GJL-250	stainless steel
150	8	263	67	140	190	96	263	310	763	903	204	170	160	G 1/4"	43.4	45.4
200	8	360	72	180	260	120	310	360	930	1110	204	170	160	G 1/4"	79.5	64.5
250	8	390	81	195	270	120	362	433	1065	1260	244	211	200	G 1/2"	88	87
300	4	470	81	235	340	120	419	515	1274	1509	242	283	230	G 1/2"	140	140
350	2	510	92	260	365	160	509	575	1449	1709	242	283	230	G 1/2"	214	214

Dimensions in mm, flange bores on request; air connection acc. VDI/VDE 3845 (NAMUR).  
Further sizes on request.

Reject-valve  
 square in- and outlet  
 pneumatic cylinder and protection guard  
 Housing EN-GJL-250 or stainless steel



DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	K	cyl Ø	air connection	weight ~[kg]	
															EN-GJL-250	stainless steel
400	2	570	92	285	410	160	608	621	1639	1924	318	318	300	G 1/2"	243	250
500	2	690	112	345	510	182	735	721	1966	2311	318	318	300	G 1/2"	397	408
600	2	770	111	400	570	161	850	889	2309	2709	425	425	400	G 3/4"	572	572

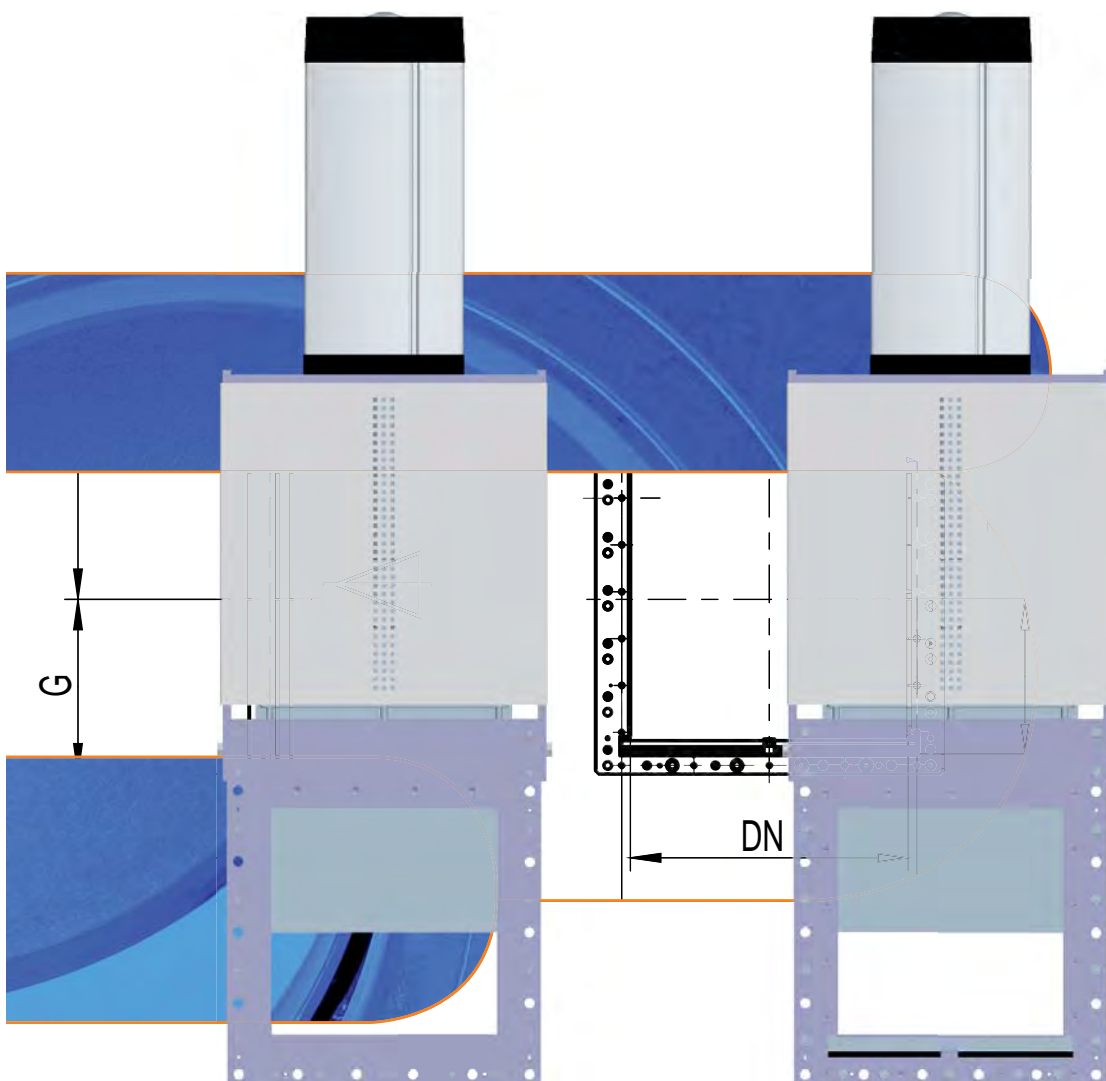
Dimensions in mm, flange bores on request.  
 Further sizes on request.



Valves of stainless steel

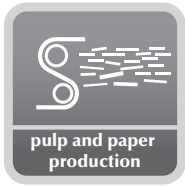
# Reject Valves

SAQ



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## Applications



### General usage

- media with reject fraction
- coarse-grained media (granular material)
- fine-grained media (powder)
- temperature range -10 to 80° C

### Locations

- pulper drain unit
- discharging device
- dumping and emptying devices

## Description

- Valves of stainless steel with square inlet and outlet.
- Square design.
- Extended outlet space for unhindered discharge of reject.
- Valve plate in stainless steel, prepared for mounting the switch button of end position control unit.
- Valve plate guide by slide cups and slide borders guarantees maximum slip.
- Replaceable sliding components.

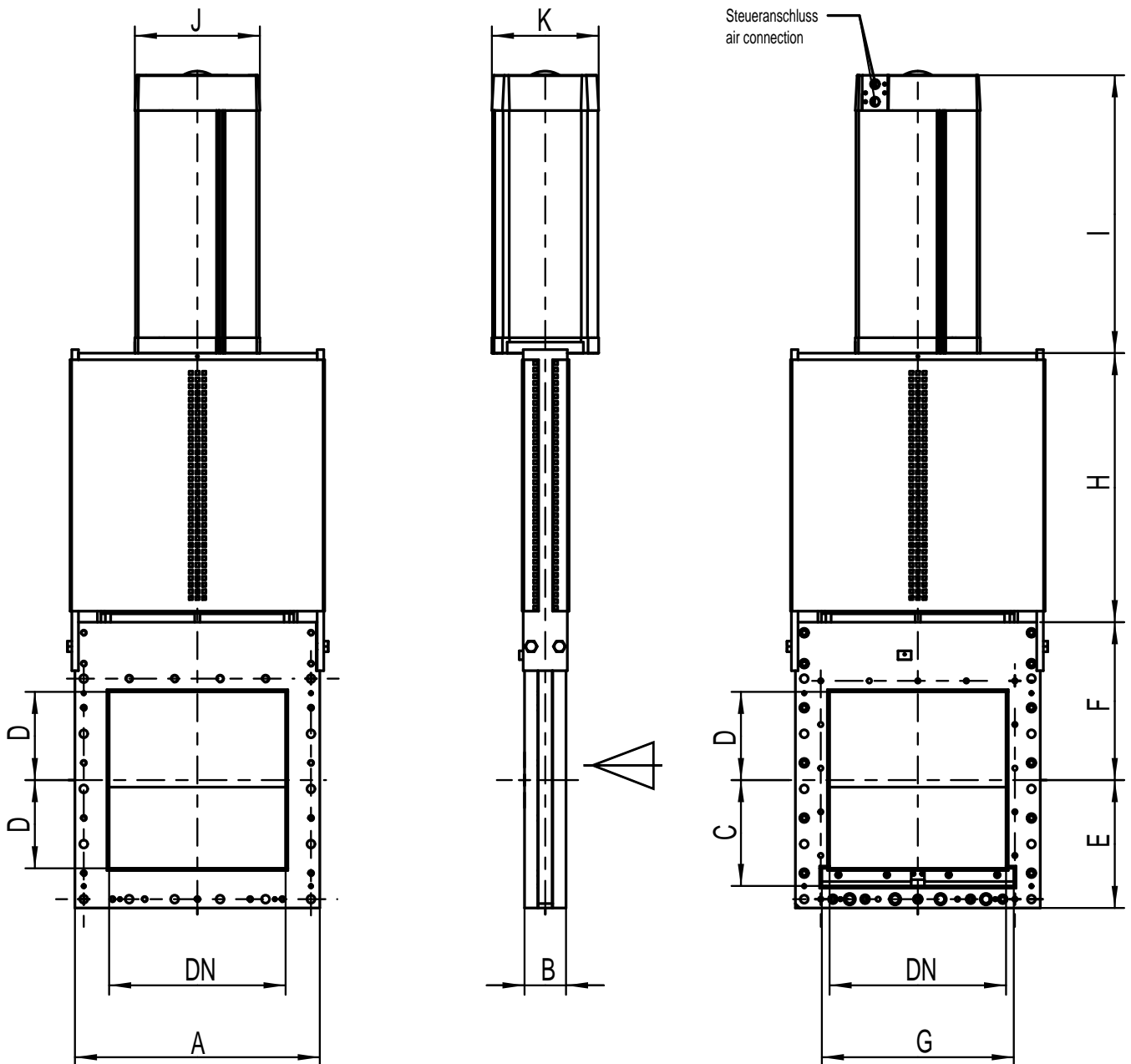
## Watertight

Leak test according to DIN EN 12266-02:2012-04  
Table A5, test medium liquid, leakage rate A

## Materials

- housing 1.4571
- valve plate 1.4571
- sealings EPDM
- slide borders RCH 1000  
(ultra-high molecular weight low pressure polyethylene)
- bracket St 37
- max. operating pressure 4 bar
- max. operating temperature 80° C

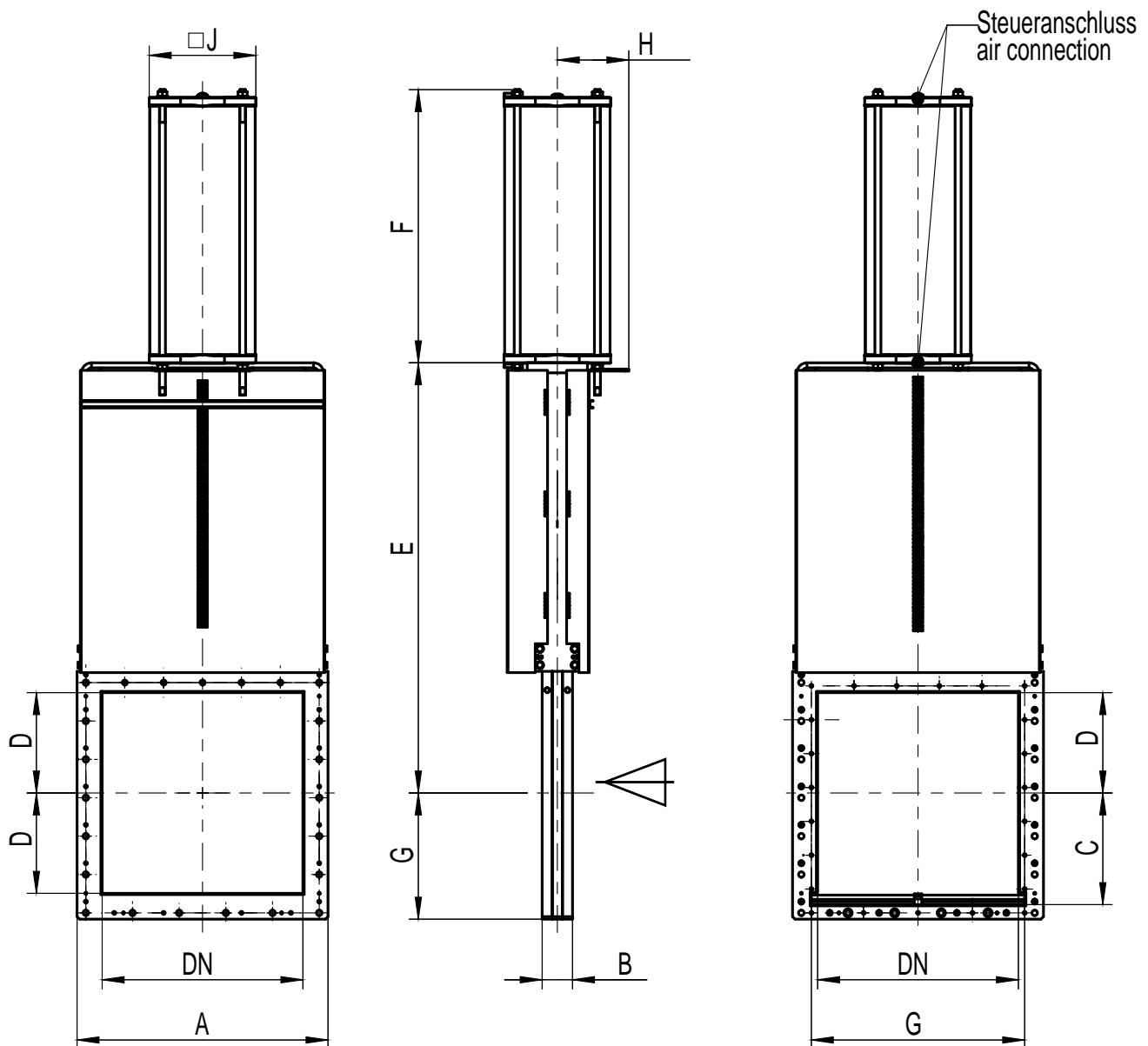
Reject valves of stainless steel  
square inlet and outlet  
pneumatic cylinder and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	H	I	J	K	cyl. Ø	air connection	control pressure
400	4	555	94	240	200	290	358	435	610	630	283	242	230	G 1/2"	6

Dimensions in mm, flange bores to on request; air connection acc. VDI/VDE 3845 (NAMUR).  
Further sizes on request.

Reject valves of stainless steel  
square inlet and outlet  
pneumatic cylinder and protection guard



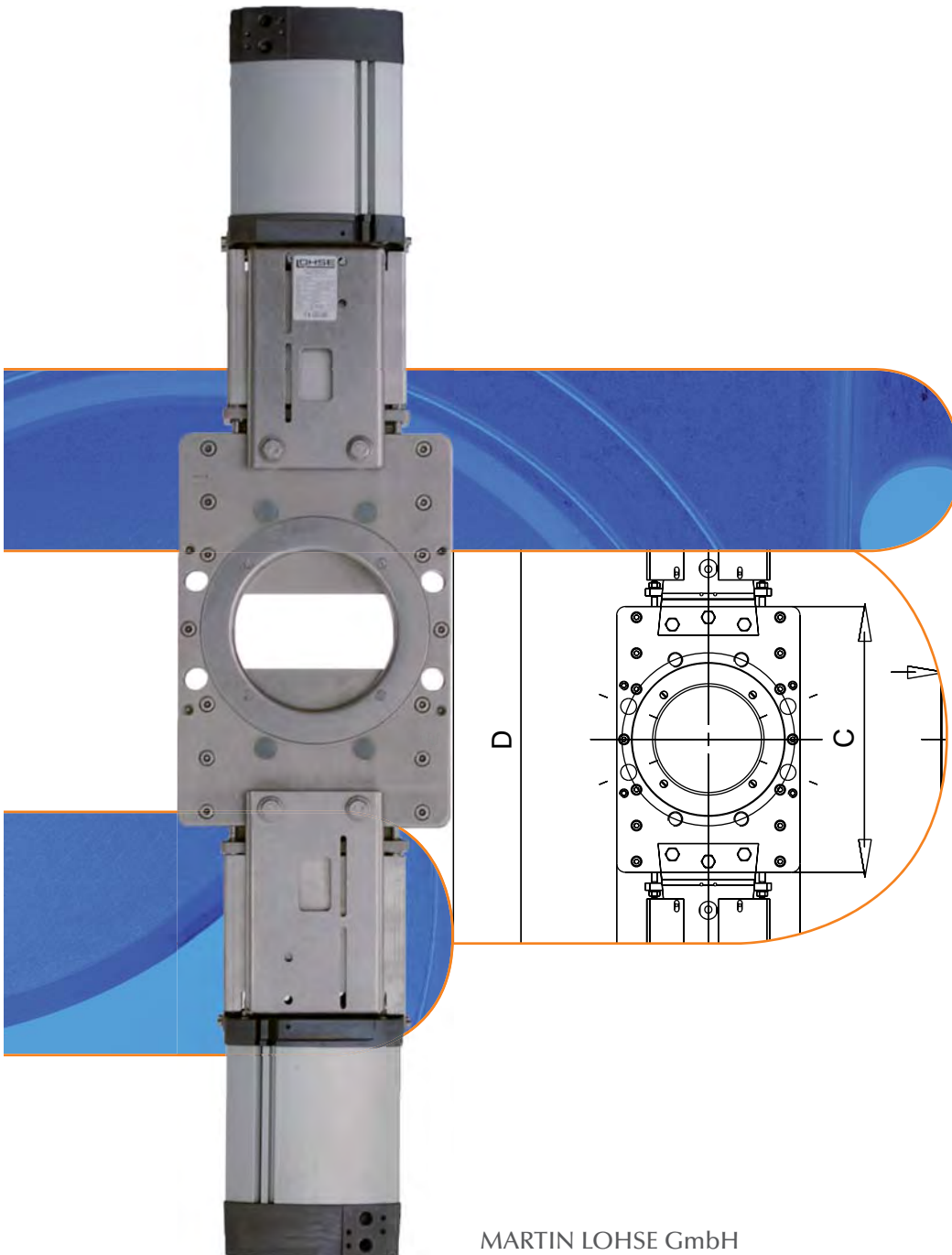
DN	BD [bar]	A	B	C	D	E	F	G	H	J	cyl. Ø	air connection	control pressure
500	2,5	655	96	290	250	1179	721	350	200	318	300	G 1/2"	6
600	2	765	95	340	300	1348	823	400	200	318	300	G 1/2"	6
800	1,5	1000	121	445	400	1715	1089	503	285	425	400	G 3/4"	6

Dimensions in mm, flange bores to on request.  
Further sizes on request.

Valves of stainless steel

# Reject-Valves

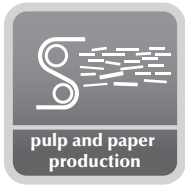
TAP/G



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## Applications



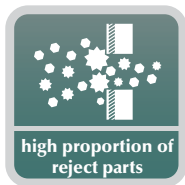
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

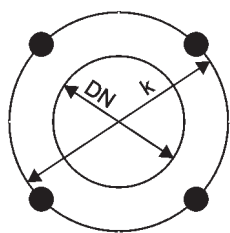
## Media



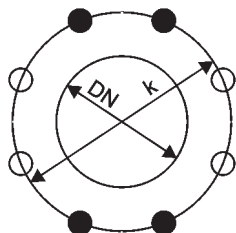
## Materials

- housing S355J2  
or  
1.4541
- flanging ring 1.4571
- valve plate 1.4571
- slide cups PE-UHMW (RCH1000)
- sealing EPDM
- stuffing box gland  
DN 100 – 500 1.4541  
DN 600 – 800 1.4301
- bracket S355 J2 (steel)  
or  
1.4541
- max. operating pressure  
DN 100 – 250 4 bar  
DN 300 – 800 2 bar
- max. operating temperature 80° C

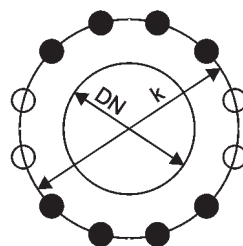
Flange bores for LOHSE TA-valves according to DIN EN 1092-1, PN 10



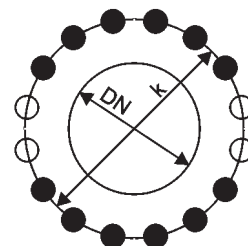
DN 50-65



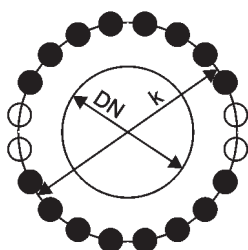
DN 80-200



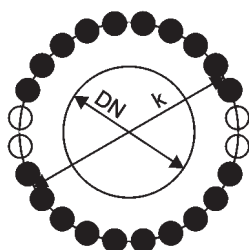
DN 250-300



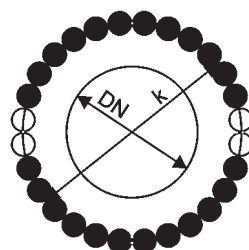
DN 350-400



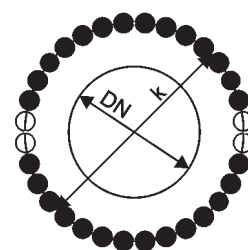
DN 450-600



DN 700-800

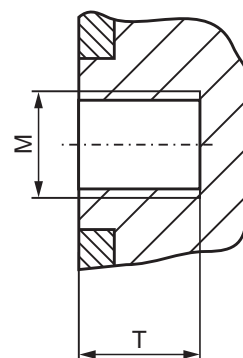


DN 900-1000



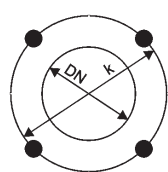
DN 1100-1200

DN [mm]	K [mm]	Z	M	T [mm]	Z1	Z2
50	125	4	M16	12	4	-
65	145	4	M16	12	4	-
80	160	8	M16	12	4	4
100	180	8	M16	12	4	4
125	210	8	M16	12	4	4
150	240	8	M20	16	4	4
200	295	8	M20	16	4	4
250	350	12	M20	20	8	4
300	400	12	M20	20	8	4
350	460	16	M20	20	12	4
400	515	16	M24	23	12	4
450	565	20	M24	30	16	4
500	620	20	M24	30	16	4
600	725	20	M27	35	16	4
700	840	24	M27	40	20	4
800	950	24	M30	45	20	4
900	1050	28	M30	45	24	4
1000	1160	28	M33	45	24	4
1100	1270	32	M33	50	28	4
1200	1380	32	M36	55	28	4

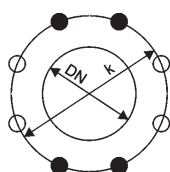


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

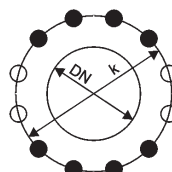
Flange bores for LOHSE TA-valves  
according to ANSI B 16.5 Class 150 (≥ DN 700: ANSI B 16.47 Class 150)



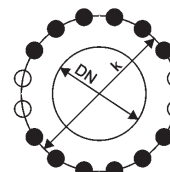
DN 50-80



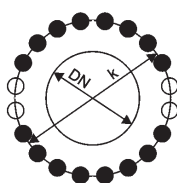
DN 100-200



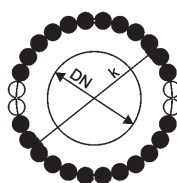
DN 250-350



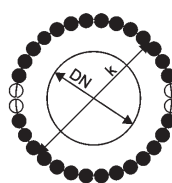
DN 400-450



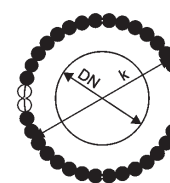
DN 500-600



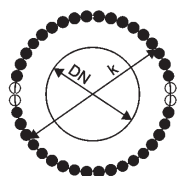
DN 700-800



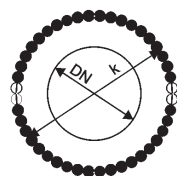
DN 900



DN 1000

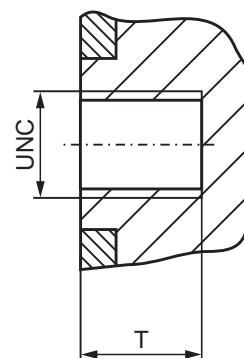


DN 1100



DN 1200

DN [mm]	DN [inch]	K [mm]	K [inch]	Z	UNC	T [mm]	T [inch]	Z1	Z2
50	2	120.6	4 3/4	4	5/8"-11	12	0.472	4	-
65	2.5	139.7	5 1/2	4	5/8"-11	12	0.472	4	-
80	3	152.4	6	4	5/8"-11	12	0.472	4	-
100	4	190.5	7 1/2	8	5/8"-11	12	0.472	4	4
125	5	215.9	8 1/2	8	3/4"-10	12	0.472	4	4
150	6	241.3	9 1/2	8	3/4"-10	16	0.630	4	4
200	8	298.5	11 3/4	8	3/4"-10	16	0.630	4	4
250	10	362	14 1/4	12	7/8"-9	20	0.787	8	4
300	12	431.8	17	12	7/8"-9	20	0.787	8	4
350	14	476.3	18 3/4	12	1"-8	20	0.787	8	4
400	16	539.8	21 1/4	16	1"-8	23	0.910	12	4
450	18	577.9	22 3/4	16	1 1/8"-7	30	1.181	12	4
500	20	635	25	20	1 1/8"-7	30	1.181	16	4
600	24	749.3	29 1/2	20	1 1/4"-7	35	1.378	16	4
700	28	863	34	28	1 1/4"-7	40	1.575	24	4
800	32	978	38 1/2	28	1 1/2"-6	45	1.772	24	4
900	36	1086	42 3/4	32	1 1/2"-6	45	1.772	28	4
1000	40	1200	47 1/4	36	1 1/2"-6	45	1.775	32	4
1100	44	1314	51 3/4	40	1 1/2"-6	50	1.969	36	4
1200	48	1422	56	44	1 1/2"-6	55	2.165	40	4

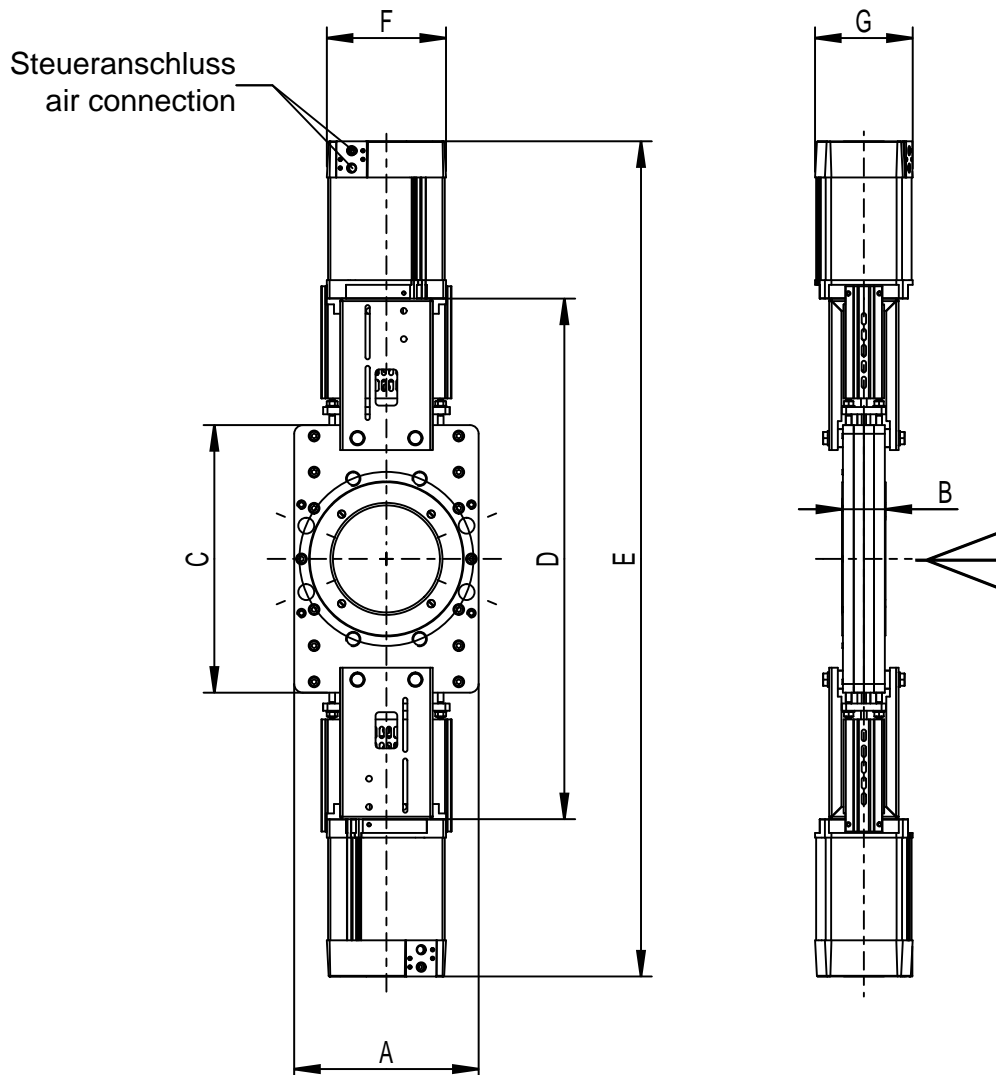


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

## Reject-valve

two double-acting pneumatic cylinders and protection guard

Housing stainless steel or steel



DN	BD [bar]	A	B	C	D	E	F	G	cyl Ø	air connection	weight ~[kg]
100	4	200	50	300	590	969	165	135	125	G 1/4"	33.9
125	4	230	50	325	640	1043	165	135	125	G 1/4"	37.2
150	4	255	60	370	720	1155	165	135	125	G 1/4"	50
200	4	310	60	460	870	1362	204	170	160	G 1/4"	86
250	4	380	70	550	1020	1568	204	170	160	G 1/4"	116
300	2	430	70	600	1126	1770	244	211	200	G 1/2"	154
350	2	490	130	700	1290	2040	283	242	230	G 1/2"	202

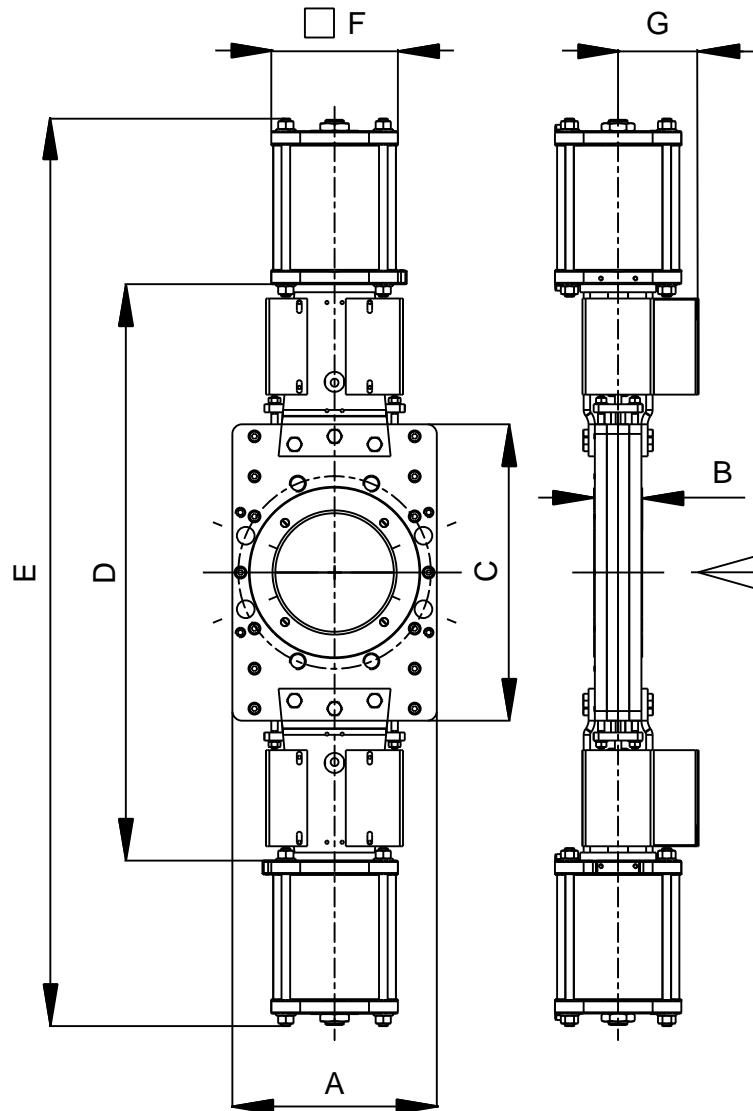
Mounting only in vertical flow direction. Higher operating pressures on request.

Dimensions in mm, flange bores to DIN EN 1092-1, PN 10 or ANSI B 16.5 class 150; air connection acc. VDI/VDE 3845 (NAMUR). Further sizes on request.

## Reject-valve

two double-acting pneumatic cylinders and protection guard

Housing stainless steel or steel



DN	BD [bar]	A	B	C	D	E	F	G	cyl Ø	air connection	weight ~[kg]
400	2	540	90	800	1578	2366	318	318	300	G 1/2"	300
450	2	600	110	900	1730	2574	318	318	300	G 1/2"	405
500	2	650	110	1100	2010	2888	318	318	300	G 1/2"	527
600	2	800	110	1300	2320	3308	318	318	300	G 1/2"	705
700	2	930	110	1500	2720	3974	425	425	400	G 3/4"	1370
800	2	1030	140	1750	3100	4382	645	645	500	G 3/4"	2335

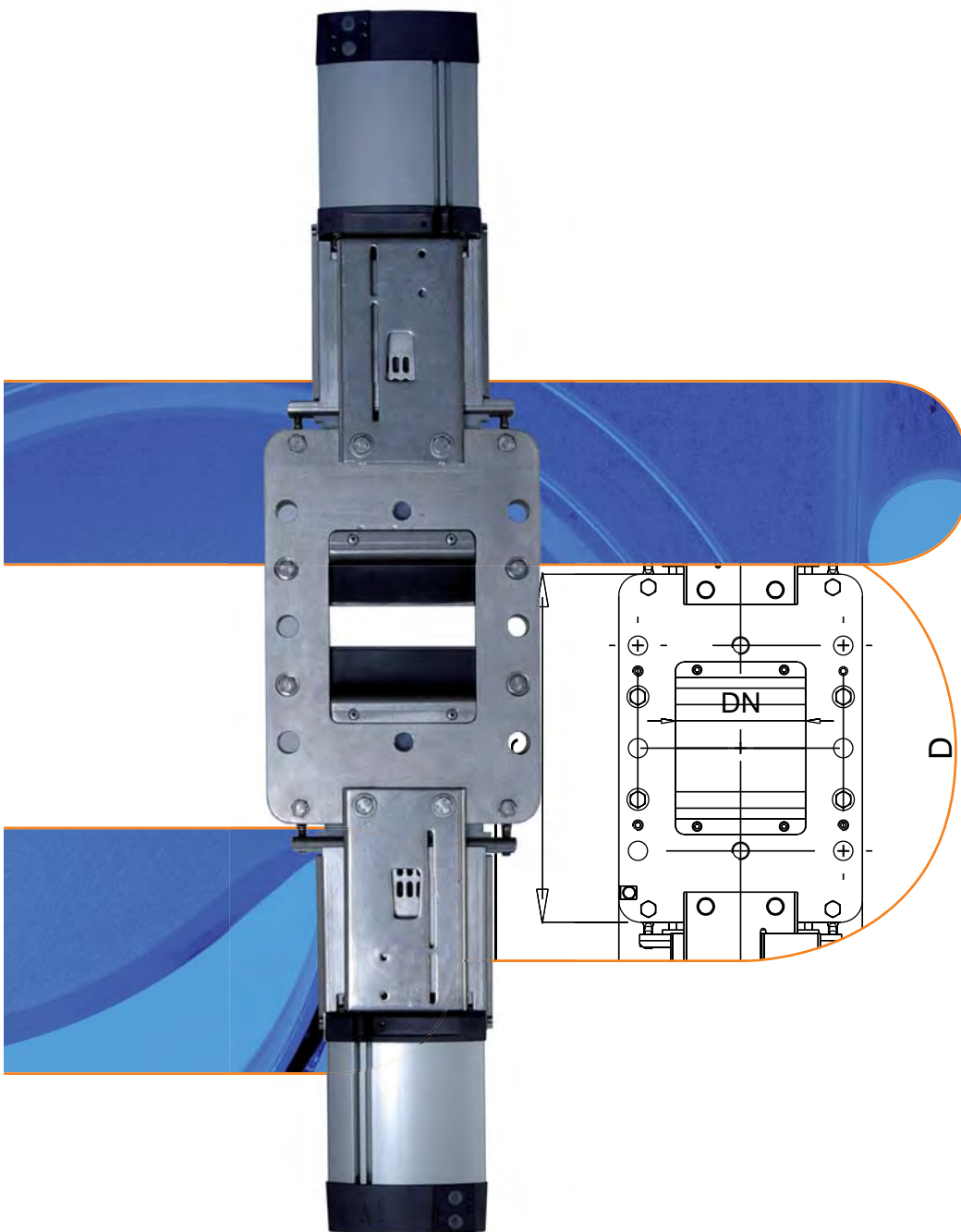
Mounting only in vertical flow direction. Higher operating pressures on request.

Dimensions in mm, flange bores to DIN EN 1092-1, PN 10 or ANSI B 16.5 class 150 (≥ DN 700: ANSI B 16.47 class 150).  
Further sizes on request.

Valves of stainless steel

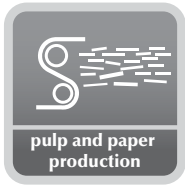
# Reject-Valves

## TAQP/G



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## Applications



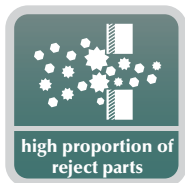
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

## Media



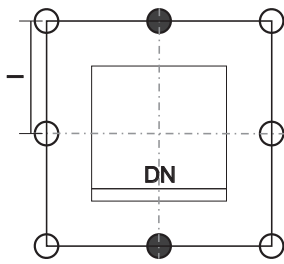
## Materials

- housing 1.4571
- valve plate 1.4571 hardened
- slide cups
 

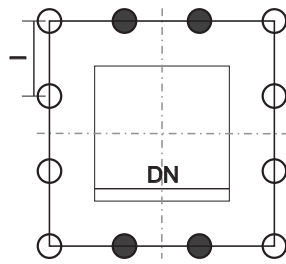
DN 150 – 400	PE-UHMW
DN 450 – 600	PP
- sealing EPDM
- rod wiper polyurethane caoutchouc
- stuffing box gland 1.4541
- bracket 1.4301
- max. operating pressure
 

DN 150 – 250	4 bar
DN 300 – 700	2 bar
- max. operating temperature 80° C

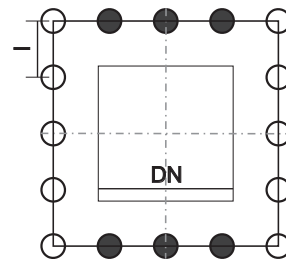
Flange bores for LOHSE TAQ valves according LOHSE standard



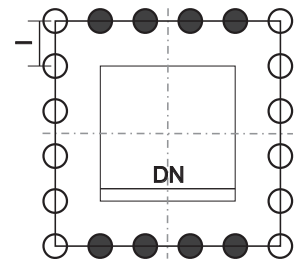
DN 150/200



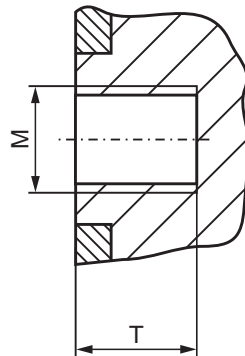
DN 250/300



DN 350/400



DN 500-700



Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

with metric tread

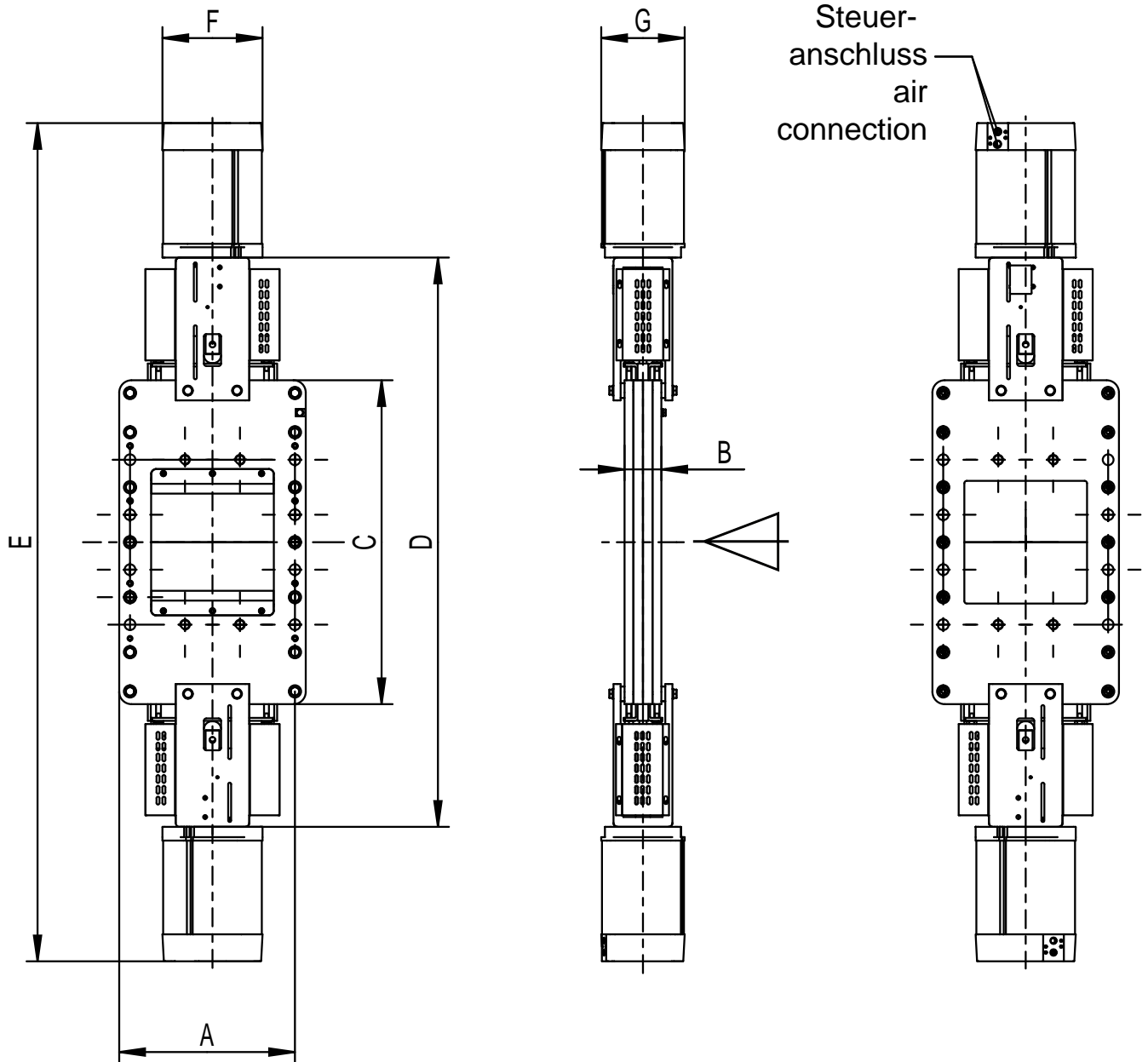
DN [mm]	Z	M	T [mm]	Z1	Z2	l [mm]
150	8	M20	18	2	6	118
200	8	M20	18	2	6	143
250	12	M20	18	4	8	112
300	12	M20	18	4	8	129
350	16	M20	20	6	10	110
400	16	M24	20	6	10	126.5
450	20	M24	20	8	12	112
500	20	M24	20	8	12	121
600	20	M27	23	8	12	143



Reject-valve

square

two double-acting pneumatic cylinders and protection guard



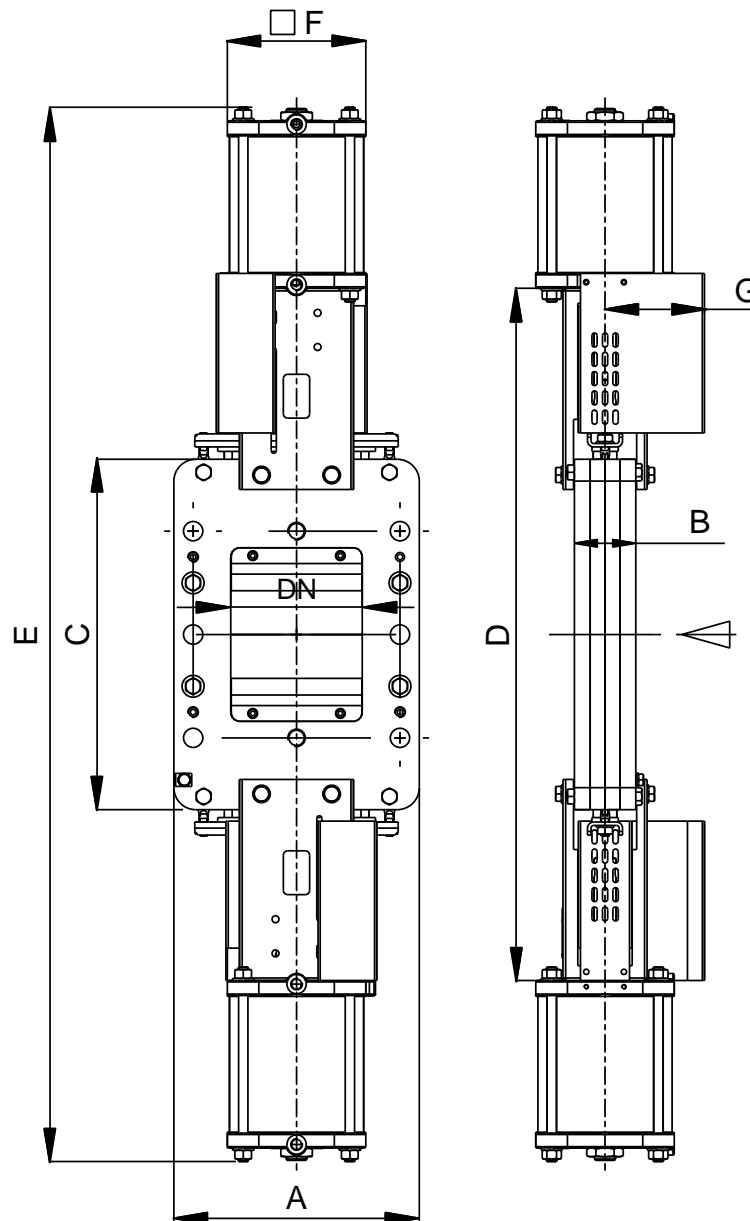
DN	BD [bar]	A	B	C	D	E	F	G	cyl Ø	air connection	weight ~[kg]
150	4	280	70	400	750	1185	165	135	125	G 1/4"	56.9
200	4	330	70	540	980	1472	204	170	160	G 1/4"	93.2
250	4	380	75	660	1214	1708	204	170	160	G 1/4"	123
300	2	430	75	780	1330	1974	244	211	200	G 1/2"	164

Dimensions in mm, flange bores on request; air connection acc. VDI/VDE 3845 (NAMUR).  
Further sizes on request.

## Reject-valve

## square

two double-acting pneumatic cylinders and protection guard



DN	BD [bar]	A	B	C	D	E	F	G	cyl Ø	air connection	weight ~[kg]
350	2	490	92	910	1552	2255	246	246	230	G 1/2"	219
400	2	550	92	1000	1810	2596	318	318	300	G 1/2"	320
450	2	600	95	1150	2030	2830	318	318	300	G 1/2"	464
500	2	650	96	1280	2220	3110	318	318	300	G 1/2"	610
600	2	770	120	1530	2590	3580	318	318	300	G 1/2"	1202

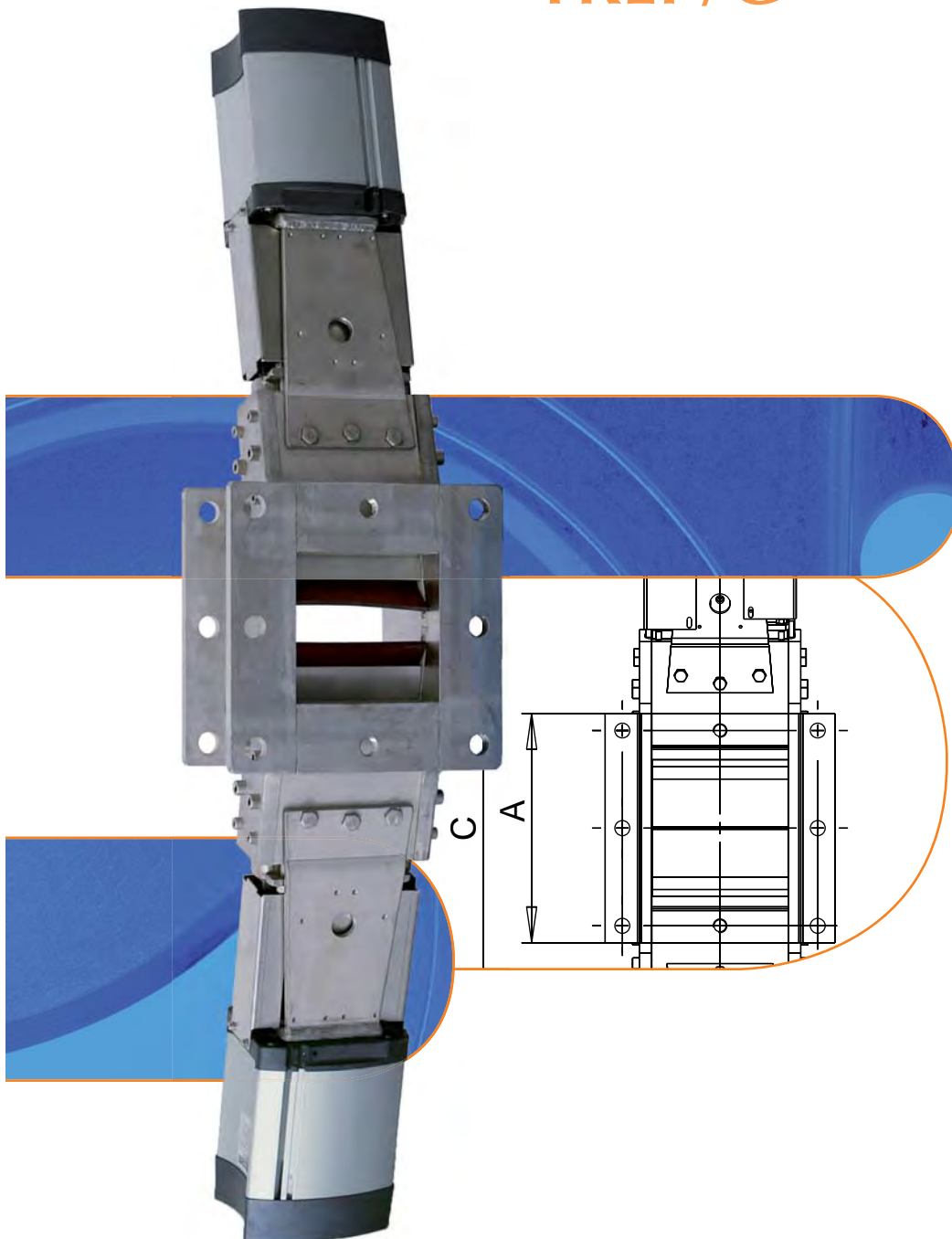
Dimensions in mm, flange bores on request.  
Further sizes on request.



Valves of stainless steel

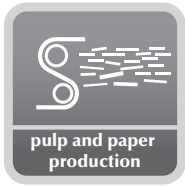
# Reject-Valves

## TREP/G



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## Applications



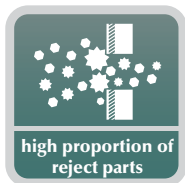
### General usage

- media with reject fraction (e.g. nails and staples)
- coarse-grained media
- granulates
- powders
- temperature range to 80 °C
- see table for permitted operating pressure

### Locations

- extraction devices for heavy soiling applications
- dumping and emptying devices for heavy soiling applications
- cleaning machines

## Media

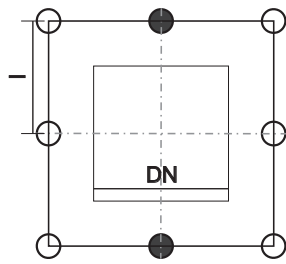


## Materials

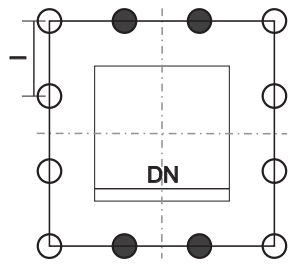
- housing 1.4571
- valve plate 1.4571
- slide cups PA 12 G
- rod wiper polyurethane caoutchouc
- stuffing box gland 1.4571
- bracket 1.4571
- max. operating pressure
 

DN 150 – 250	4 bar
DN 300 – 700	2 bar
- max. operating temperature 80° C

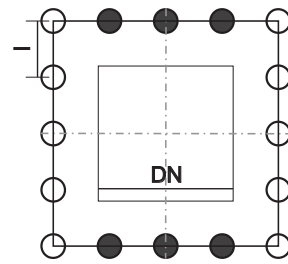
Flange bores for LOHSE TRE valves according LOHSE standard



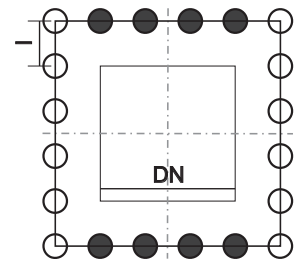
DN 150/200



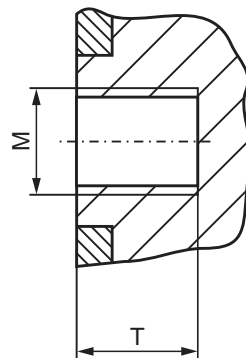
DN 250/300



DN 350/400



DN 500-700

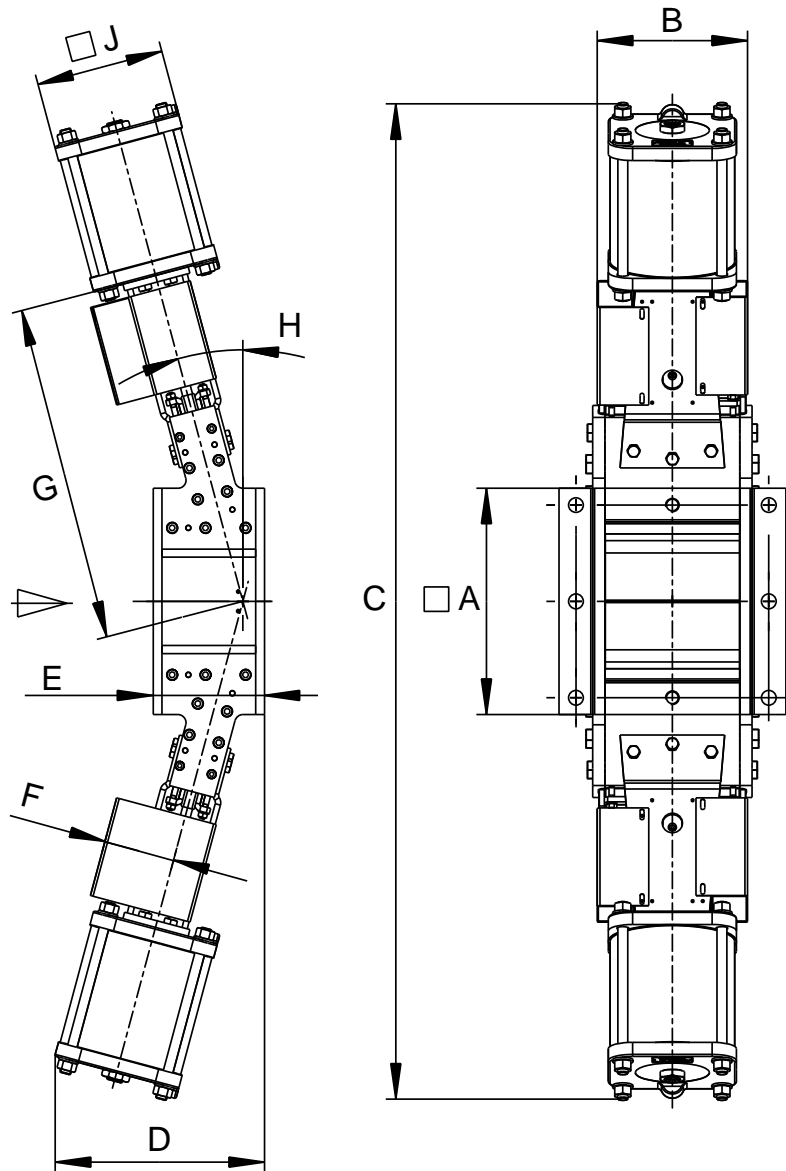


Z = total number of holes  
 Z1 = number of joint-holes  
 Z2 = number of through-going bores  
 T = usable depth of thread

with metric tread

DN [mm]	Z	M	T [mm]	Z1	Z2	l [mm]
150	8	M20	18	2	6	118
200	8	M20	18	2	6	143
250	12	M20	18	4	8	112
300	12	M20	18	4	8	129
350	16	M20	20	6	10	110
400	16	M24	20	6	10	126.5
450	20	M24	20	8	12	112
500	20	M24	20	8	12	121
600	20	M27	23	8	12	143

Reject-valve  
two double-acting pneumatic cylinders and protection guard

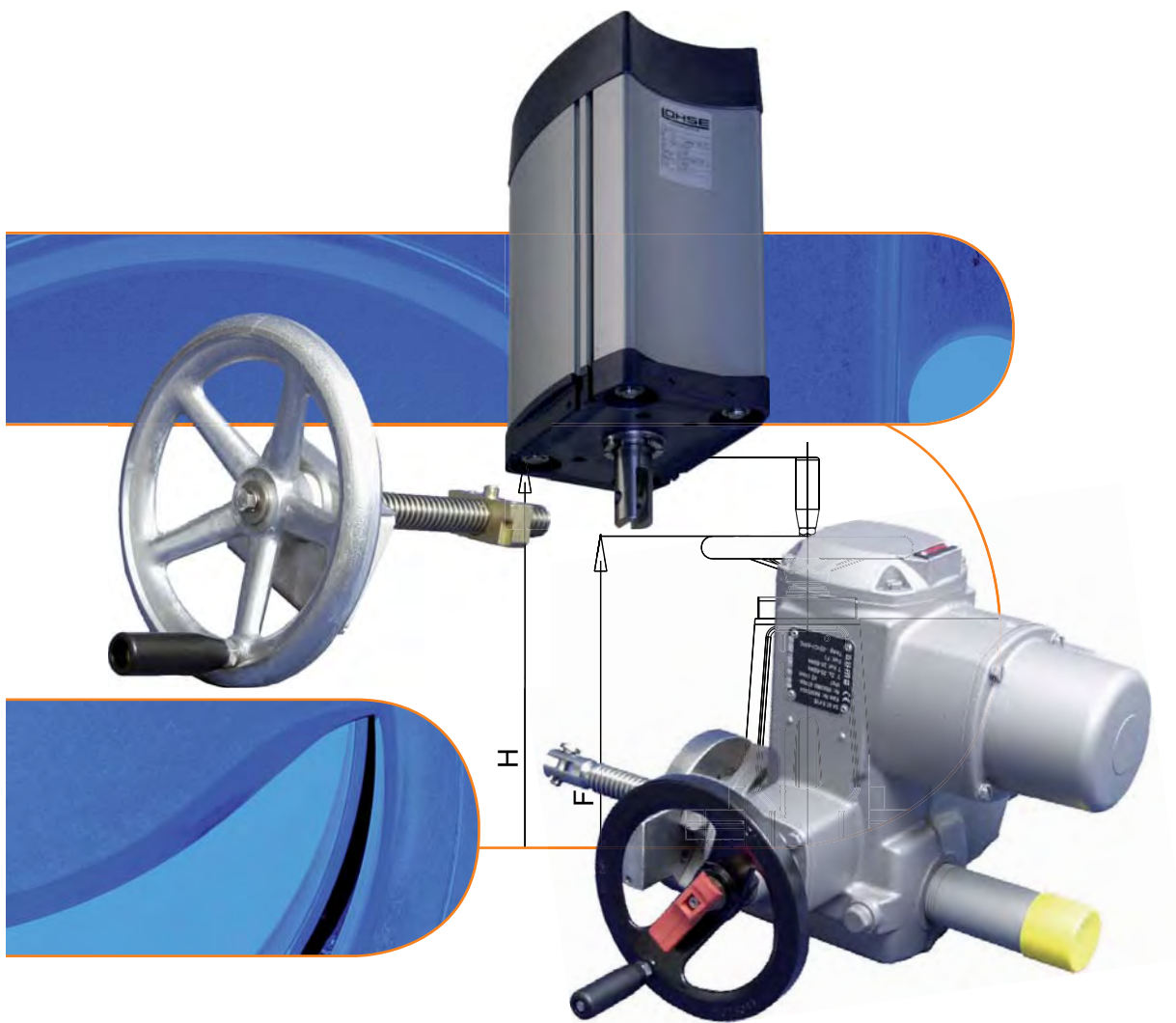


DN	BD [bar]	A	B	C	D	E	F	G	H	J	cyl.Ø	air con- nection	weight ~[kg]
150	4	286	175	1274	274	156	106	424	15°	158	145	G 1/4"	85
200	4	336	223	1477	313	165	106	500	15°	190	175	G 1/2"	119
250	4	386	273	1640	330	170	107	552	15°	190	175	G 1/2"	138
300	2	436	325	1870	375	190	107	649	15°	215	200	G 1/2"	158
400	2	566	425	2540	478	215	118	906	15°	246	230	G 1/2"	319
500	2	666	525	3016	568	210	131	1080	15°	318	300	G 1/2"	586
600	2	786	625	3355	616	285	135	1203	15°	318	300	G 1/2"	846

Dimensions in mm, flange bores on request.  
Further sizes on request.

Operating elements - the LOHSE modular system

# Operating Elements for LOHSE Valves



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## Operating elements - the LOHSE modular system

All LOHSE COMPACT-valves comprise the following **main groups**:

- valve body type
- operating elements type Hns, H, P, E, K, GK or X

All elements are interchangeable for any given size. Thereby the connections of brackets as well as the coupling of actuator and valve plate will be removed and fixed again after the exchange. No removal of incorporated valve body (notice safety rules – pipes must be pressureless).

This facility is called the **LOHSE modular system** which offers the following advantages:

- simplified and less expensive holding of spare parts.
- in case of damage, actuating elements can be replaced inexpensively.
- if any valve drives have to be altered, replacement is easy and quick

### **Protection guards (G)**

According to machinery directive 2006/42/EG guards are compulsory to shield all moving parts on automated gate valves.

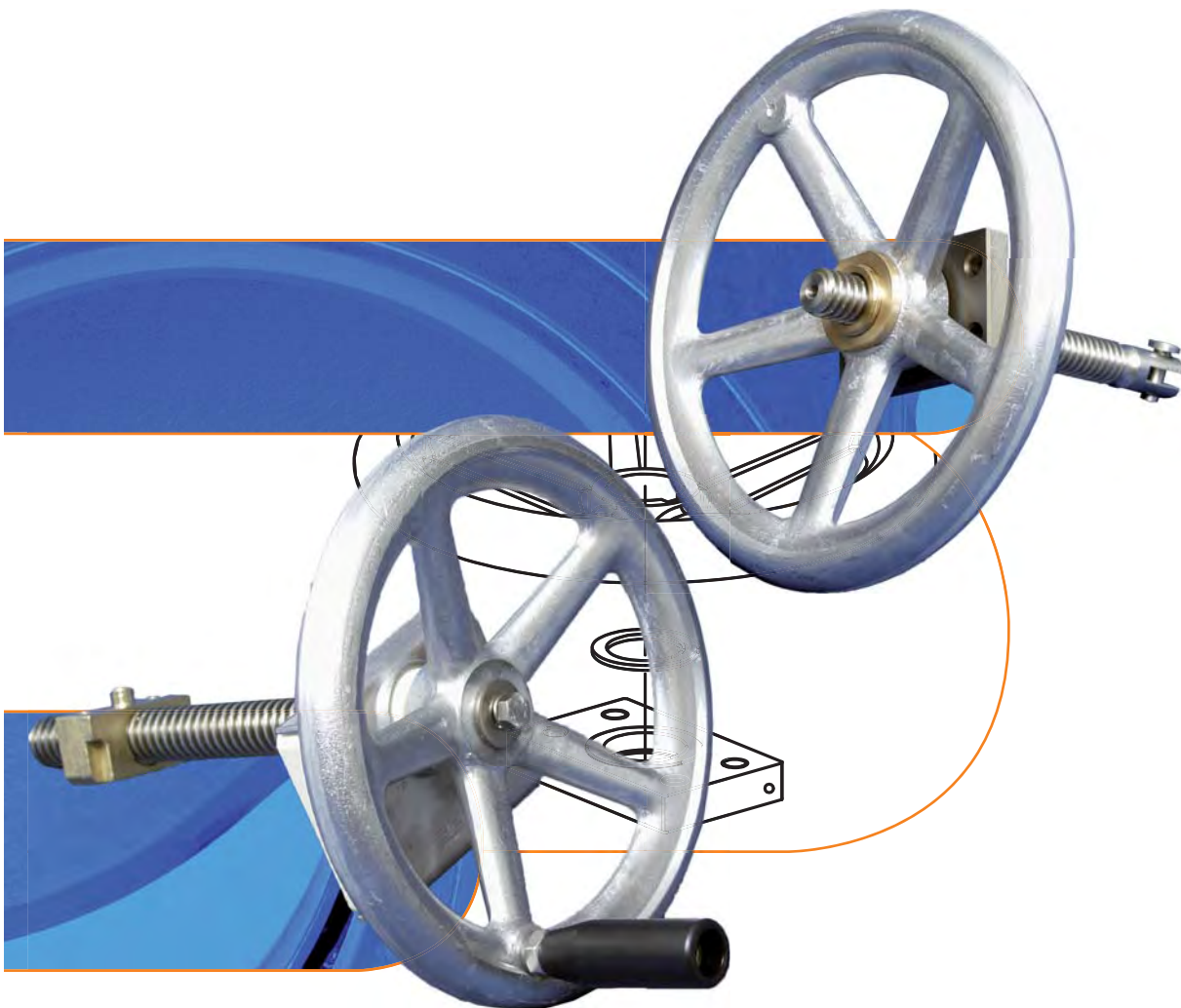
Protection guard of stainless steel.



Operating elements - the LOHSE modular system

# Handwheels

**Hns - not rising**  
**H - rising**



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Handwheel actuator type Hns with non-rising stem

Handwheel with non-rising stem, left-hand trapezoidal thread.  
 Attach a barrel handle to the handwheel of valves of type CNAHns, CBSHns and CAWHns up to DN 250.

**Recommendation** for valves DN 50 – 300



Materials

- handwheel                      AlSi5Mg or Al/Sustamid
- stem                              1.4301

Valid for types: CNA, CNAА, CNA-Bi, CAW, CBS, CBS, CBSA, CGNA, CGBS

Valid for types: CDS, CDSV, CDSA, CDSR, CGDS, DS, DSV, DSA, NAQ, RQS, RQSV, AEQ

nominal diameter DN	handwheel-Ø [mm]	weight [kg]
50	180	1.8
65	180	1.8
80	180	1.8
100	225	2.6
125	225	2.7
150	225	2.7
200	280	4.7
250	280	4.9
300	360	5.8

nominal diameter DN	handwheel-Ø [mm]	weight [kg]
50	225	1.8
65	225	2.4
80	225	2.4
100	280	3.9
125	280	4.1
150	280	4.3
200	360	5.7
250	360	6.0
300	360	6.2

## Handwheel actuator type H with rising stem

Handwheel with rising stem, left-hand trapezoidal thread, with stop sleeve.  
Turn clockwise: valve „CLOSED“.  
Turn anticlockwise: valve „OPEN“.

### Recommendation

for valves DN 350 and more



### Materials

- handwheel                      AlSi5Mg
- stem                                1.4301

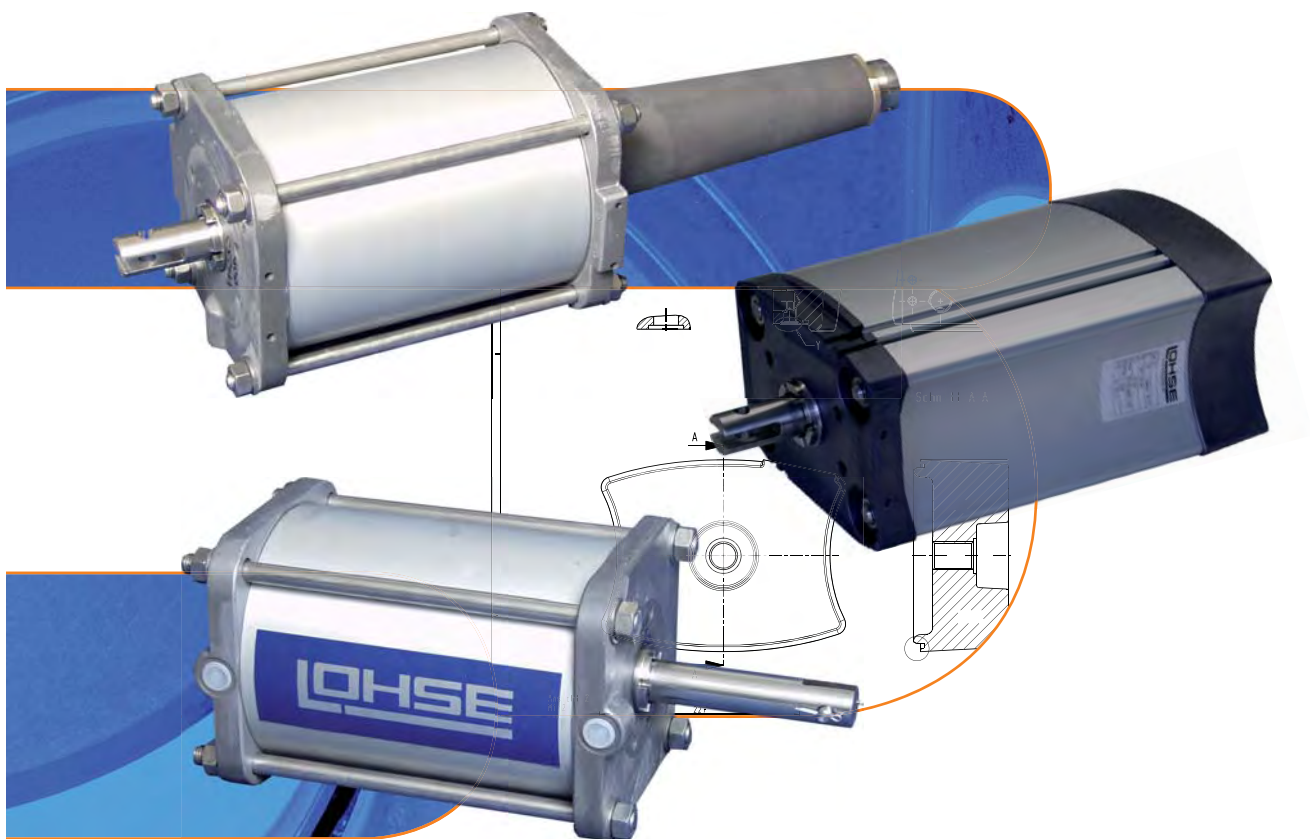
nominal diameter DN	handwheel-Ø [mm]	weight [kg]
50	225	1.9
65	225	1.9
80	225	1.9
100	280	3.3
125	280	3.3
150	280	3.4
200	360	6.0
250	360	6.2

nominal diameter DN	handwheel-Ø [mm]	weight [kg]
300	360	6.4
350	500	8.9
400	500	9.9
450	500	11.4
500	500	15.1
600	640	25.9
700	800	33.6
800	800	34.1



Operating elements - the LOHSE modular system

# Pneumatic Cylinders



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General

Pressure

LOHSE pneumatic cylinders are controlled with compressed air at pressures of between 5 and 7 bar (6 bar\*) through a multi-port valve. The control valve can be operated manually, electrically (solenoid valve) or pneumatically.

Optimum function at 6 bar. A minimum pressure of 5 bar is required to operate the valve under normal operating conditions. The maximum pressure of 7 bar (6 bar\*) must not be exceeded.

\* PC Ø 500 for max. 6 bar

Maintenance-free

LOHSE pneumatic cylinders are virtually maintenance-free. They are factory-lubricated.

LOHSE pneumatic cylinders are generally factory-adjusted to the particular valve type and valve size.

Accessories

- multi-port valve
- silencer
- flow control valve

Air consumption

Formula for the calculation of the air consumption in double-acting and single acting pneumatic cylinders (VC, VM, PZ, VMV, VMF).

$$Q \text{ [Nl/stroke]} = \frac{1,033 + P}{1,033} \times \text{piston surface [dm}^2\text{]} \times \text{stroke [dm]}$$

P = operating pressure [bar]

Q = air volume [normal litre / stroke]

CNAP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
50	100	56	3.0
65	100	73	3.9
80	100	89	4.8
100	100	106	5.7
125	125	132	11.0
150	125	156	13.0
200	160	210	28.7
250	160	260	35.6
300	160	312	42.7
350	200	362	77.4
400	200	412	88.1
450	230	462	130.6
500	230	512	144.8
600	300	612	294.5

CDSP / CDSVP / CDSAP / CDSRP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
50	100	58	3.1
65	100	73	4.0
80	100	88	4.7
100	125	109	9.1
125	125	134	11.2
150	160	159	21.8
200	160	210	28.8
250	200	260	55.6
300	230	310	87.7
350	230	360	101.8
400	300	410	197.3
450	300	460	221.4
500	400	512	437.8
600	400	612	523.4

## CBSP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
50	100	62	3.4
65	100	73	3.9
80	100	89	4.8
100	100	106	5.7
125	125	132	11.0
150	125	156	13.0
200	160	210	28.7
250	160	260	35.6
300	160	312	42.7
350	200	362	77.4
400	200	412	88.1

## CAWP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
50	100	52	2.8
65	100	67	3.6
80	100	82	4.4
100	100	99	5.3
125	125	124	10.4
150	125	149	12.5
200	160	202	27.6
250	160	252	34.5
300	160	302	47.4
350	200	352	75.3
400	200	402	86.0
450	230	452	127.8
500	230	502	142.0
600	300	602	289.7

## TAP / TAQP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
100	125	50	4.2
125	125	62,5	5.2
150	125	75	6.3
200	160	100	13.7
250	160	125	17.1
300	200	150	32.1
350	230	175	49.5
400	300	200	96.2
450	300	225	108.3
500	300	250	120.3
600	300	300	144.4
700	400	350	299.4

## AEQP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
150	160	147	20.2
200	160	202	27.7
250	200	247	52.8
300	230	302	85.4
350	230	352	99.6
400	300	402	193.5
500	300	502	241.6
600	400	602	514.8

## RQSP / NAQP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
100	125	114	9.5
150	160	164	22.5
200	160	214	29.3
250	200	275	58.8
300	230	325	91.9
400	300	425	204.5
500	400	530	453.3

## TREP

DN [mm]	cyl. Ø [mm]	stroke [mm]	Q [Nl/stroke] p=6 bar
150	125	77.6	6.5
200	160	103.5	14.2
250	160	129.4	17.8
300	200	155.3	33.2
400	300	207.1	99.7
500	300	258.8	124.5
600	300	310.6	149.5

Closing force, operating pressure 6 bar (60 N/cm<sup>2</sup>)

cyl. Ø [mm]	closing force [kN]
100	4.7
125	7.4
145	9.9
160	13.8
175	14.4
200	18.9
230	24.9
300	42.4
400	75.4
500	117.8

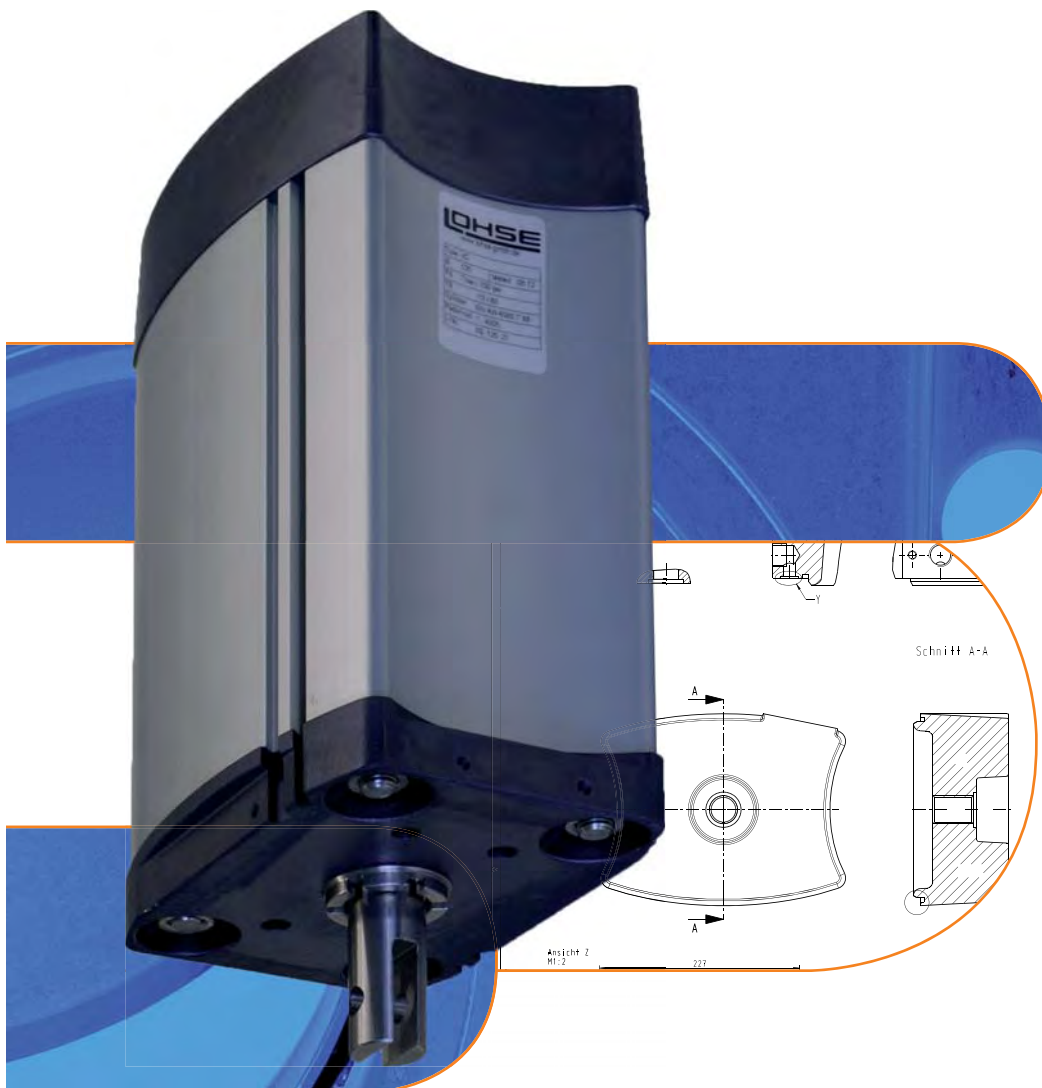
Compressed air  
connection

cyl. Ø [mm]	compressed air connection	min. line inside ø [mm]	min. pressure [bar]	max. pressure [bar]
100	G 1/8"	4	5	7
125	G 1/4"	7	5	7
145	G 1/4"	7	5	7
160	G 1/4"	7	5	7
175	G 1/2"	11	5	7
200	G 1/2"	11	5	7
230	G 1/2"	11	5	7
300	G 1/2"	11	5	7
400	G 3/4"	20	5	7
500	G 3/4"	20	5	7

Operating elements - the LOHSE modular system

# Pneumatic Cylinder

## Type VC



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**A specially developed linear cylinder for corrosive media under the most demanding of operating conditions**

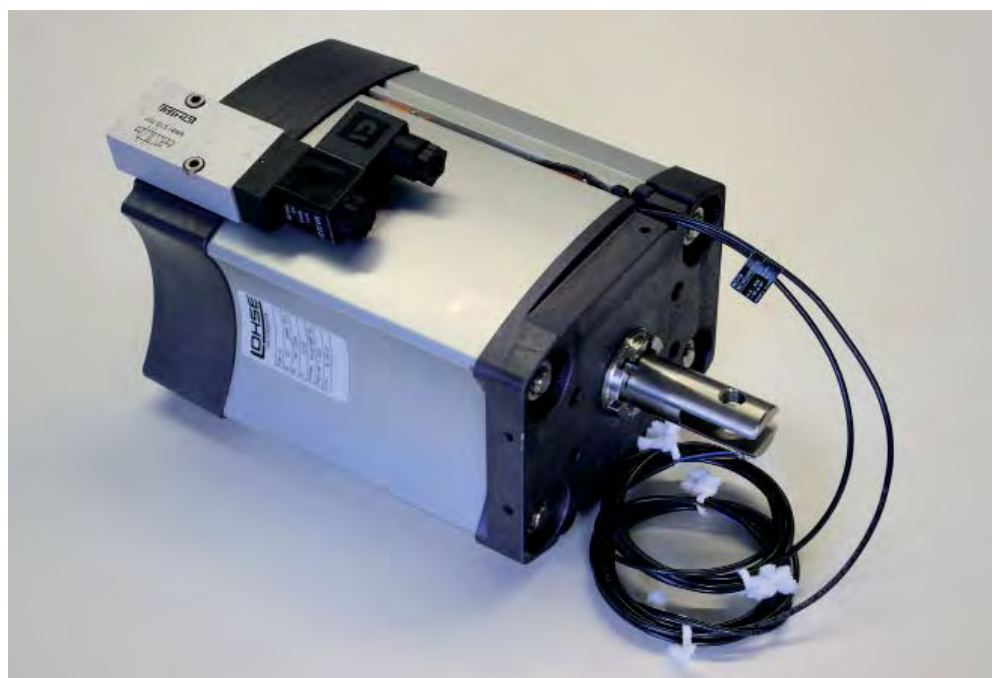
**A compact construction according to the latest industrial design**

- No external parts
  - dirt can be easily removed
- Stroke can be precisely adjusted in both directions and as a result can be used on a wide variety of valve types
- Light weight on account of its aluminium construction
- Low maintenance due to a life time cycle of lubrication
- Strong rods running the length of the cylinder barrel thus easy to remove
- Sturdy piston rod in stainless steel precisely guided

**An integrated NAMUR interface according to VDI/VDE 3845 to enable the direct mounting of the solenoid valve**

- No tubing is necessary from the solenoid valve to the cylinder
  - saving fixtures and air connections
  - reduction of leaks
- Straightforward mounting of the solenoid valve via two screws
  - mounting bracket no longer necessary
  - reduction of assembly time
- Direct connection of the solenoid to the main air line
  - expensive pneumatic control cabinets are thus eliminated
- Much improved air flow, the volume of flow is channelled internally in the piston area enabling a more direct response of cylinder piston and thus avoiding a jerking effect of the piston
- Lower stock-holding costs as identical solenoid valves suit all cylinders
- Connections:
 

	1/4"	1/2"
	Ø 100	Ø 200
	Ø 125	Ø 230
	Ø 160	



## A Profiled Barrel with slots

- Made from anodized aluminium for optimum wear and slide characteristics
- Built-in T and C slots according to ISO 15552 for contactless position recognition
  - easy mounting of common cylinder proximity switches by insertion into the slots and fixing with sensor integrated clamping screws with combined slot or hexagon socket head
  - very clear visibility of the piston position even from a distance via integrated LED indicators on the proximity switches
  - Cost reduction
    - > via the elimination of expensive brackets to mount conventional proximity switches
    - > reduced installation time
  - Accessibility
    - > straightforward and practical adjustment is enabled
    - > in safety as guards do not need to be removed



## Magnetic Piston

- Magnetic as standard
  - no retrofitting necessary
  - the change to a contactless position recognition is always possible

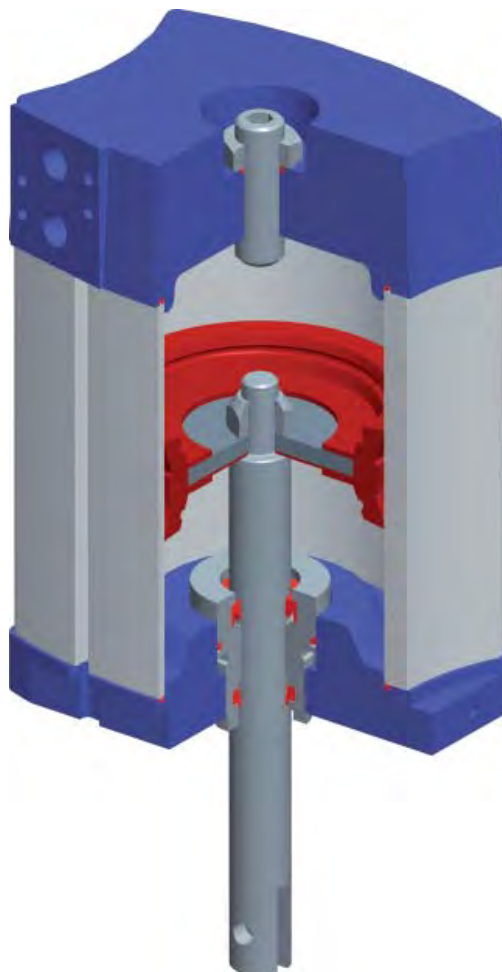
## Materials

- cylinder bottom + cover    AlSi5Mg
- profiled barrel            AW-6060T66
- piston rod                    1.4305
- piston head                 NBR
- hexagon bolts              A2-70
- adjusting nut with bush    1.4305
- sealings                      NBR

## Correlation between pneumatic cylinder VC and LOHSE-valves

DN	CNA	CAW	CBS	CDS	NAQ	RQS	AEQ	TA	TAQ	TRE	SAQ
50	Ø 100	Ø 100	Ø 100	Ø 100	-	-	-	-	-	-	-
65	Ø 100	Ø 100	Ø 100	Ø 100	-	-	-	-	-	-	-
80	Ø 100	Ø 100	Ø 100	Ø 100	-	-	-	-	-	-	-
100	Ø 100	Ø 100	Ø 100	Ø 125	-	Ø 125	-	Ø 125	Ø 125	-	-
125	Ø 125	Ø 125	Ø 125	Ø 125	-	-	-	Ø 125	Ø 125	-	-
150	Ø 125	Ø 125	Ø 125	Ø 160	Ø 160	Ø 160	Ø 160	Ø 125	Ø 125	Ø 125	-
200	Ø 160	Ø 160	Ø 160	Ø 160	Ø 160	Ø 160	Ø 160	Ø 160	Ø 160	Ø 160	-
250	Ø 160	Ø 160	Ø 160	Ø 200	Ø 200	Ø 200	Ø 200	Ø 160	Ø 160	Ø 160	-
300	Ø 160	Ø 160	Ø 160	Ø 230	-	Ø 230	Ø 230	Ø 200	Ø 200	Ø 200	-
350	Ø 200	Ø 200	Ø 200	Ø 230	-	-	Ø 230	Ø 230	Ø 230	-	-
400	Ø 200	Ø 200	Ø 200	Ø 300 (*)	-	Ø 300 (*)	Ø 300 (*)	Ø 300 (*)	Ø 300 (*)	Ø 300 (*)	Ø 230
450	Ø 230	Ø 230	Ø 230	Ø 300 (*)	-	-	-	Ø 300 (*)	Ø 300 (*)	-	-
500	Ø 230	Ø 230	Ø 230	Ø 400 (**)	-	Ø 400 (**)	Ø 300 (*)	Ø 300 (*)	Ø 300 (*)	Ø 300 (*)	Ø 300 (*)

(\*) pneumatic cylinder type VM  
 (\*\*) pneumatic cylinder type PZ





Operating elements - the LOHSE modular system

# Pneumatic Cylinder

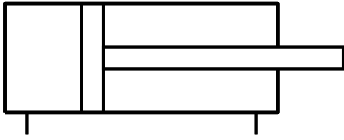
## Type VM



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## Pneumatic cylinder type VM, double-acting



LOHSE VM pneumatic cylinders are double-acting cylinders. In closing direction, the stroke can be adjusted with the adjusting nut. In opening direction, it can be adjusted with the adjusting screw.



Size: Ø 300 mm  
Stroke: adjusted to suit valve type and size.

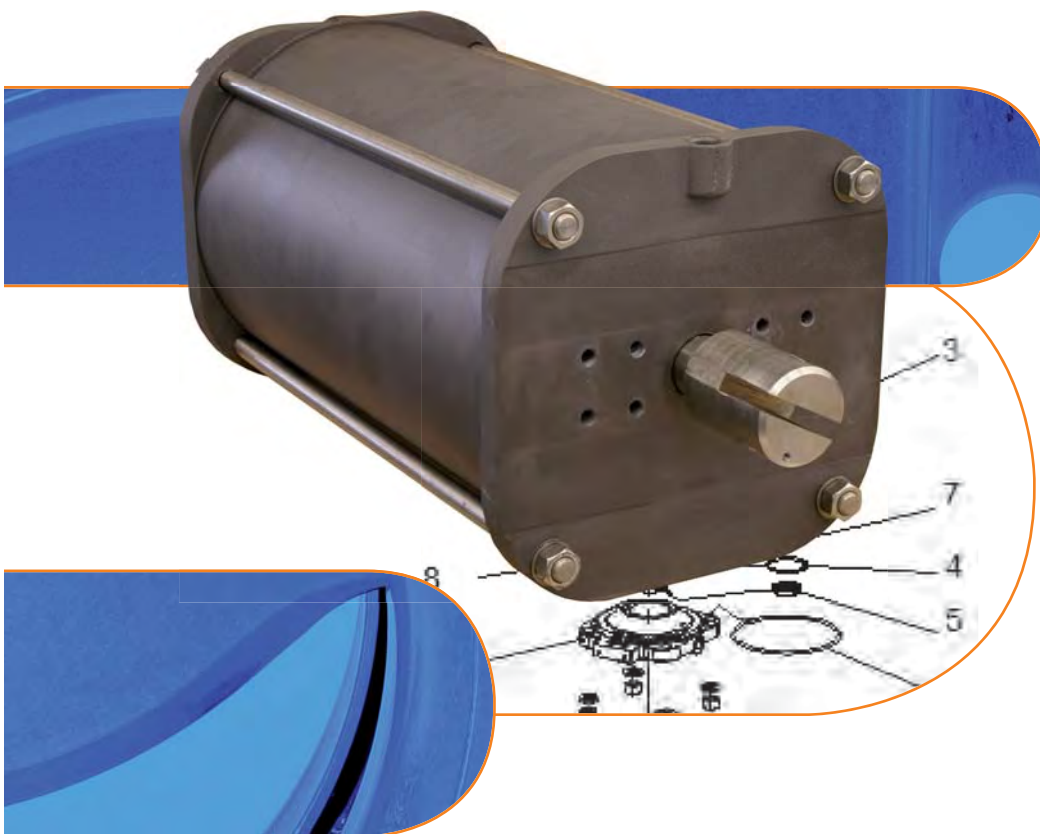
## Materials

- cylinder bottom + cover    AlSi5Mg
- cylinder barrel             AlMgSi0.5
- piston rod                     1.4305
- piston head                  NBR
- hexagon bolts                A2-70
- adjusting nut with bush    1.4305
- sealings                        NBR

Operating elements - the LOHSE modular system

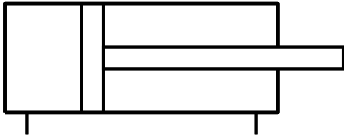
# Pneumatic Cylinder

## Type PZ



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## Pneumatic cylinder type PZ, double acting



LOHSE PZ pneumatic cylinders are equipped with a fixed stop in closing direction (no adjusting nut). In opening direction, their stroke can be adjusted by means of the adjusting screw.



Sizes: Ø 400 and Ø 500 mm  
Stroke: adjusted to suit valve type and size.

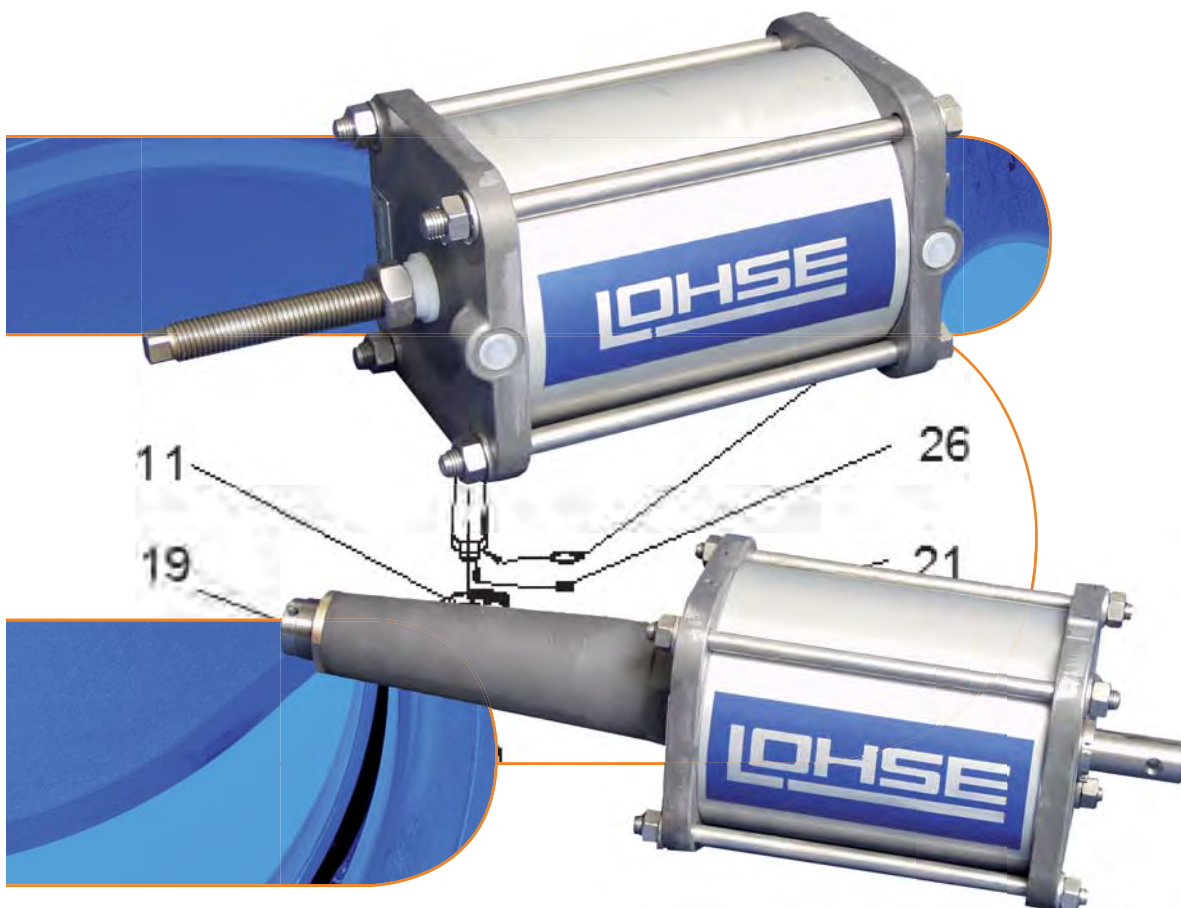
## Materials

- cylinder bottom + cover Al
- cylinder barrel AlSi10Mg
- piston rod 1.4305
- piston PE
- hexagon bolts A2-70
- sealings NBR

Operating elements - the LOHSE modular system

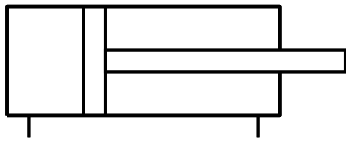
# Pneumatic Cylinder

## Type VMV



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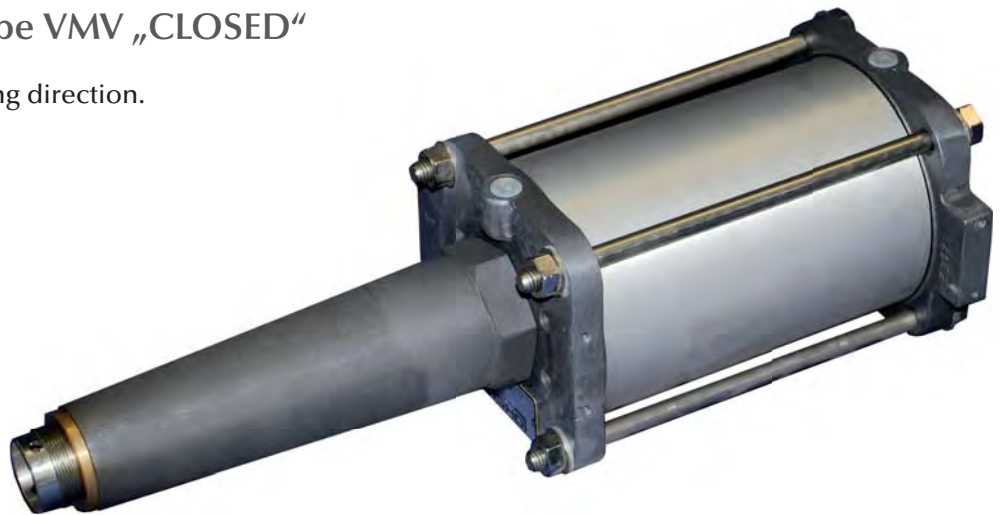
## Pneumatic cylinder type VMV, double acting



LOHSE VMV pneumatic cylinders are cylinders with adjustable stroke limitation across the entire stroke length.

## Pneumatic cylinder type VMV „CLOSED“

VMV „CLOSED“ - stop in closing direction.



## Pneumatic cylinder type VMV „OPEN“

VMV „OPEN“ - stop in opening direction.



## Materials

- cylinder bottom + cover    AlSi5Mg
- cylinder barrel            AlMgSi0.5
- piston rod                    1.4305
- piston head                 NBR
- hexagon bolts              A2-70
- adjusting nut with bush    1.4305
- sealings                     NBR



Operating elements - the LOHSE modular system

# Pneumatic Cylinder

## Type VMF



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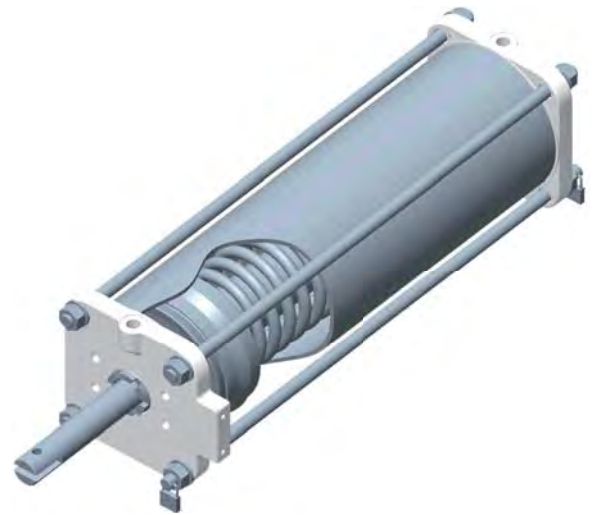
## Pneumatic cylinder type VMF, single acting

LOHSE VMF pneumatic cylinders are single-acting cylinders that are closed or opened by spring force.

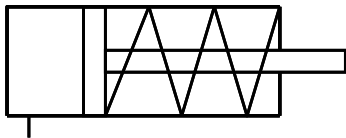
### Pneumatic cylinder type VMF „spring-closing“



When not pressurised, the cylinder rod is fully extended.



### Pneumatic cylinder Type VMF „spring-opening“



When not pressurised, the cylinder rod is fully retracted.



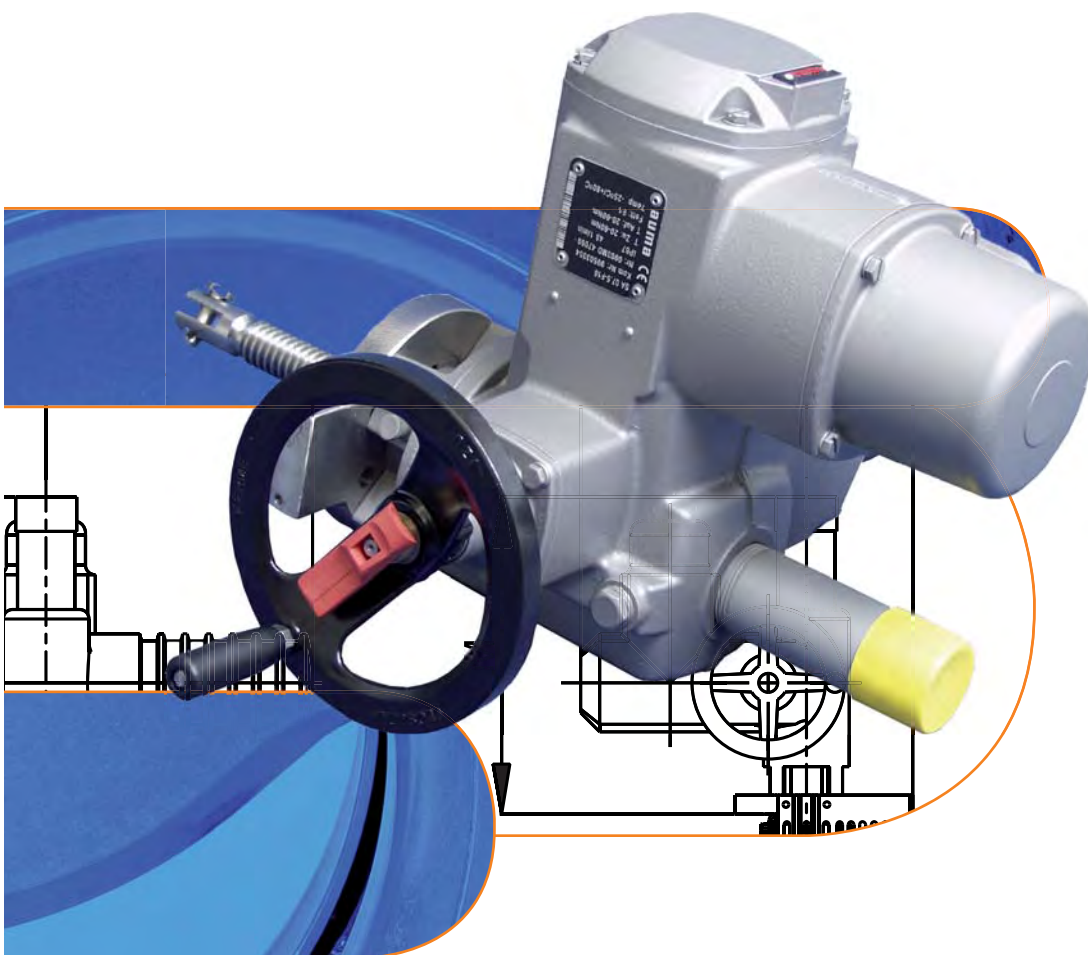
## Materials

- cylinder bottom + cover    AlSi5Mg
- cylinder barrel             AlMgSi0.5
- piston rod                     1.4305
- piston head                  NBR
- hexagon nuts                A2-70
- adjusting nut with bush    1.4305
- sealings                        NBR

Operating elements - the LOHSE modular system

# Electrical Actuator

## Type E



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In principle, the valves can be operated with all conventional electrical actuators. The technical data in the tables below refer to AUMA actuators.



## Adjustment

Incorrectly set travel and torque settings can cause damage to the valve.

- Adjust the settings as described in the operating manual of the actuator manufacturer and the details provided in the tables below.

for CNA, CNAА, CNA-Bi,  
CGNA

DN [mm]	actuator type (AUMA)	torque [Nm]		actuating time [s]	power [kW]
		opening	closing		
50	SA 07.2 A45	30	20	17.3	0.18
65	SA 07.2 A45	30	20	24.4	0.18
80	SA 07.2 A45	30	20	29.7	0.18
100	SA 07.5A45	30	20	28.3	0.37
125	SA 07.5A45	40	30	35.2	0.37
150	SA 07.5A45	40	30	41.6	0.37
200	SA 10.2 A45	80	60	46.7	0.75
250	SA 10.2 A45	80	60	57.8	0.75
300	SA 10.2 A45	80	60	68.9	0.75
350	SA 10.2 A45	120	80	78.0	0.75
400	SA 10.2 A45	120	80	90.0	0.75
450	SA 10.2 A45	120	80	101.0	0.75
500	SA 14.2 A45	250	200	112.0	1.50
600	SA 14.2 A63	250	200	83.0	3.00
700	SA 14.6 A63	500	400	97.0	5.50
800	SA 14.6 A63	500	400	110.0	5.50
900	SA 16.2 A63	800	600	108.4	7.50
1000	SA 16.2 A63	800	600	120.8	7.50
1400	SA 25.1 A63	1800	1400	136.2	15

for CAW

DN [mm]	actuator type (AUMA)	torque [Nm]		actuating time [s]	power [kW]
		opening	closing		
50	SA 07.2 A45	30	20	17.3	0.18
65	SA 07.2 A45	30	20	22.4	0.18
80	SA 07.2 A45	30	20	27.3	0.18
100	SA 07.6 A45	30	20	26.4	0.37
125	SA 07.6 A45	40	30	33.1	0.37
150	SA 07.6 A45	40	30	39.7	0.37
200	SA 10.2 A45	80	60	44.8	0.75
250	SA 10.2 A45	80	60	56.0	0.75
300	SA 10.2 A45	80	60	67.1	0.75
350	SA 10.2 A45	120	80	78.2	0.75
400	SA 10.2 A45	120	80	89.3	0.75
450	SA 10.2 A45	120	80	100.4	0.75
500	SA 14.2 A45	250	200	111.6	1.50
600	SA 14.2 A63	250	200	81.9	3.00
700	SA 14.6 A63	500	400	99.5	5.50
800	SA 14.6 A63	500	400	109.1	5.50
900	SA 16.2 A63	800	600	107.6	7.50
1000	SA 16.2 A63	800	600	119.5	7.50

for CBS, CBSA, CGBS  
(triangular or pentagonal  
orifice)

DN [mm]	actuator type (AUMA)	torque [Nm]		actuating time [s]		power [kW]
		opening	closing	triangular	pentago- nal	
50	SA 07.2 A11	30	20	55.9	66.8	0.045
65	SA 07.2 A11	30	20	70.9	84.5	0.045
80	SA 07.2 A11	30	20	85.9	103.6	0.045
100	SA 07.6 A11	30	20	85.0	102.5	0.09
125	SA 07.6 A11	40	30	105.8	126.5	0.09
150	SA 07.6 A11	40	30	127.6	151.6	0.09
200	SA 10.2 A11	80	60	113.1	167.3	0.18
250	SA 10.2 A11	80	60	173.6	208.2	0.18
300	SA 10.2 A11	80	60	207.3	249.1	0.18
350	SA 10.2 A16	120	80	166.3	200.0	0.37
400	SA 10.2 A16	120	80	189.4	228.2	0.37
450	SA 10.2 A16	120	80	213.1	256.3	0.37
500	SA 14.2 A16	250	150	236.3	284.4	0.75
600	SA 14.2 A22	250	150	183.1	212.7	0.75
700	SA 14.6 A22	500	300	208.4	250.5	1.50
800	SA 14.6 A22	500	300	235.8	283.6	1.50

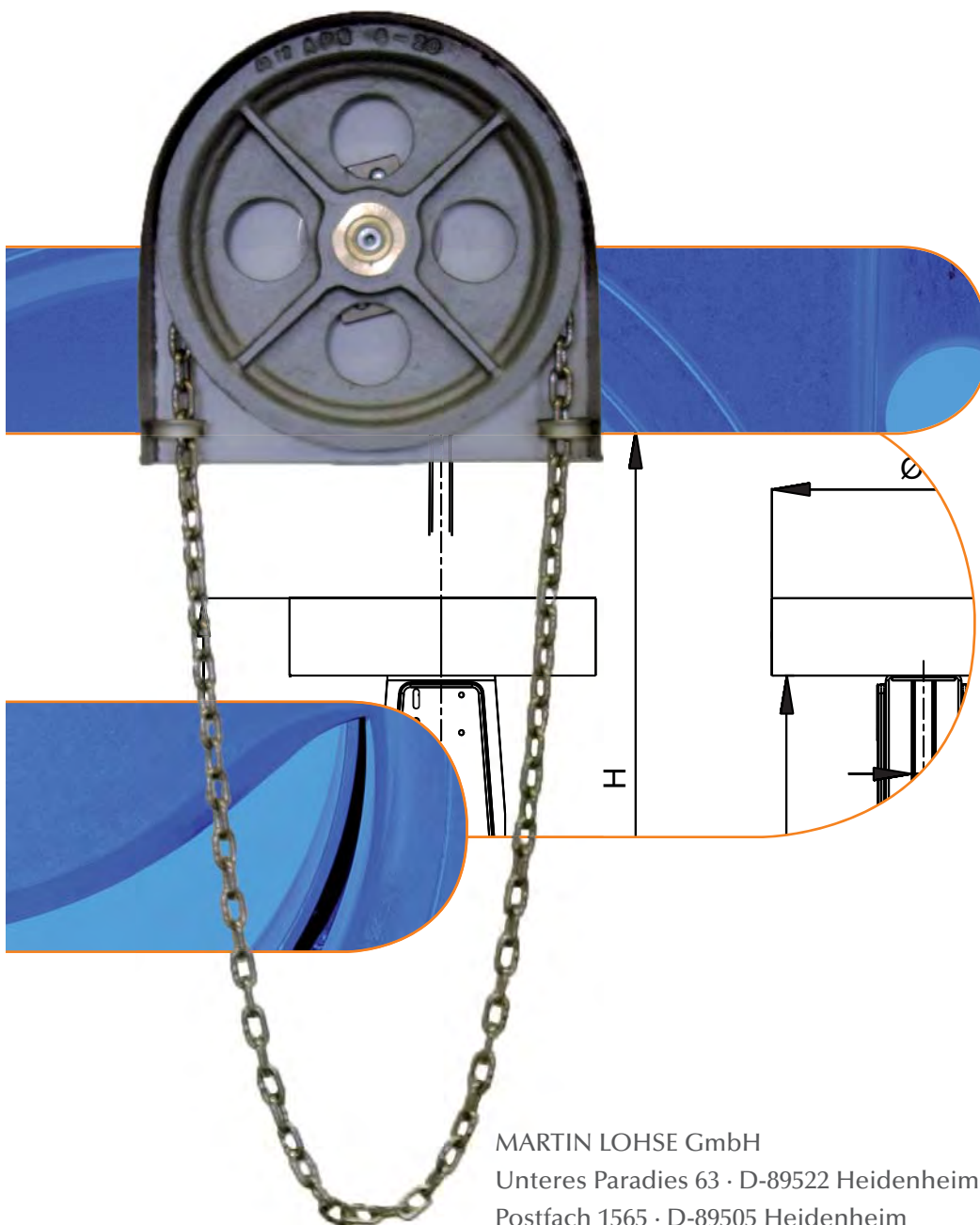
for CDS, CDSV, CDSA,  
CDSR, CDSQ, CGDS

DN [mm]	actuator type (AUMA)	torque [Nm]		actuating time [s]	power [kW]
		opening	closing		
50	SA 07.6 A45	30	20	19.3	0.37
65	SA 07.6 A45	30	20	24.3	0.37
80	SA 07.6 A45	30	20	29.3	0.37
100	SA 07.6 A45	30	20	29.1	0.37
125	SA 07.6 A45	40	30	35.7	0.37
150	SA 07.6 A45	40	30	42.4	0.37
200	SA 10.2 A45	80	60	45.0	0.75
250	SA 10.2 A45	80	60	56.4	0.75
300	SA 10.2 A45	80	60	68.9	0.75
350	SA 14.2 A45	120	80	78.4	1.50
400	SA 14.2 A45	120	80	89.8	1.50
450	SA 14.2 A45	120	80	100.9	1.50
500	SA 14.6 A45	250	200	112.2	3.00
600	SA 14.6 A63	250	200	83.0	5.50
700	SA 14.6 A63	500	400	96.6	5.50
800	SA 14.6 A63	500	400	110.2	5.50
900	SA 16.2 A63	800	600	108.4	7.50
1000	SA 16.2 A63	800	600	120.8	7.50

Operating elements - the LOHSE modular system

# Chain Wheel Actuator

## Type K



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## Chain wheel actuator type K

- Sprocket wheel for DIN 766 A round steel chains
- rising stem



nominal diameter of valve DN	sprocket wheel - $\varnothing$ [mm]
50	260
65	260
80	260
100	300
125	300
150	300

nominal diameter of valve DN	sprocket wheel - $\varnothing$ [mm]
200	380
250	380
300	380
350	500
400	500

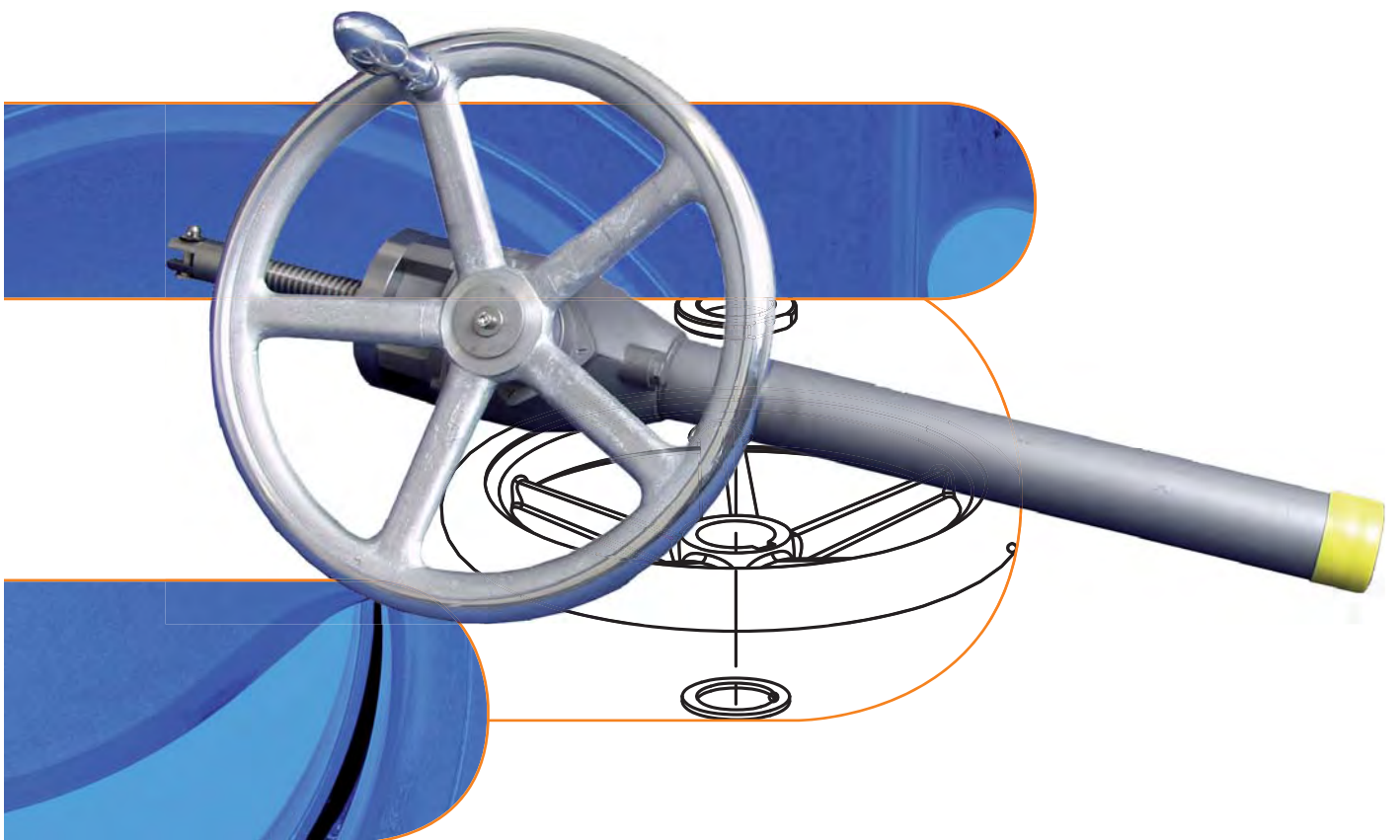
## Function

- Turn clockwise: valve „CLOSED“.
- Turn anticlockwise: valve „OPEN“.

Operating elements - the LOHSE modular system

# Bevel Gear Actuator

## Type GK



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## Bevel gear actuator type GK



nominal diameter valve DN	bevel gear actuator type (AUMA)	hand wheel $\varnothing$ [mm]
150 - 300	GK10.2	360
350 - 500	GK10.2	400
600 - 800	GK14.2	500
900 - 1000	GK14.6	640

### Technical data

- bevel gear actuator types 10.2 and 14.2 are single-speed gear mechanisms
- speed reduction ratio  $i = 2:1$
- max. torque:
  - GK 10.2 : 120 Nm
  - GK 14.2 : 250 Nm
  - GK 14.6 : 500 Nm

### Function

The actuators are operated manually.

- Turn clockwise: valve „CLOSED“.
- Turn anticlockwise: valve „OPEN“.

### Recommendation

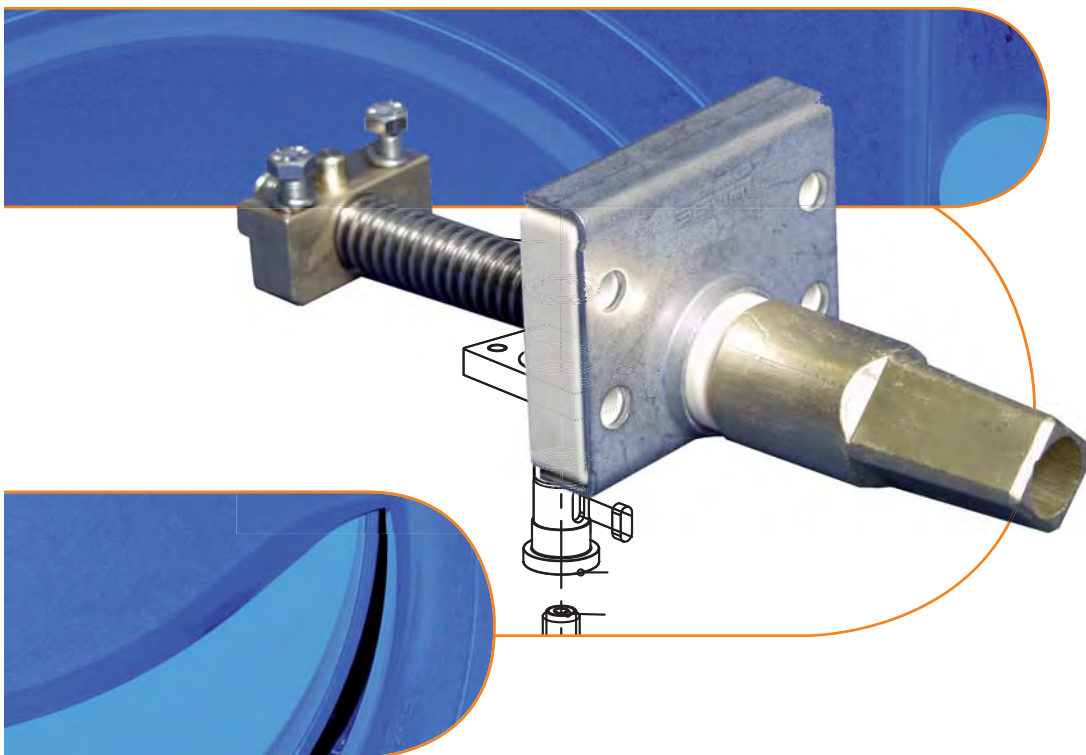
for valves DN 350 and more



Operating elements - the LOHSE modular system

# Square Head Actuator

## Type X

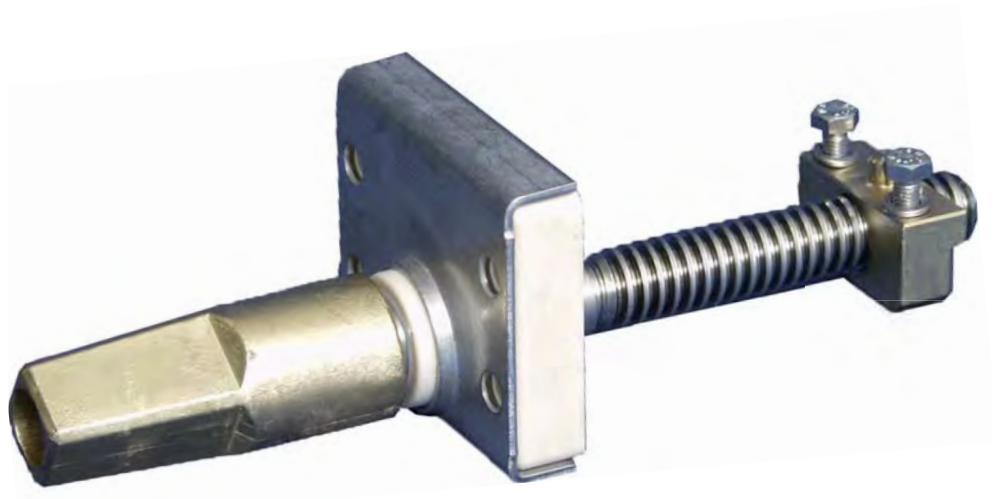


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## Square head actuator type X for subsurface valves

Square head DIN 3223 „C“ with non-rising stem.



### Function

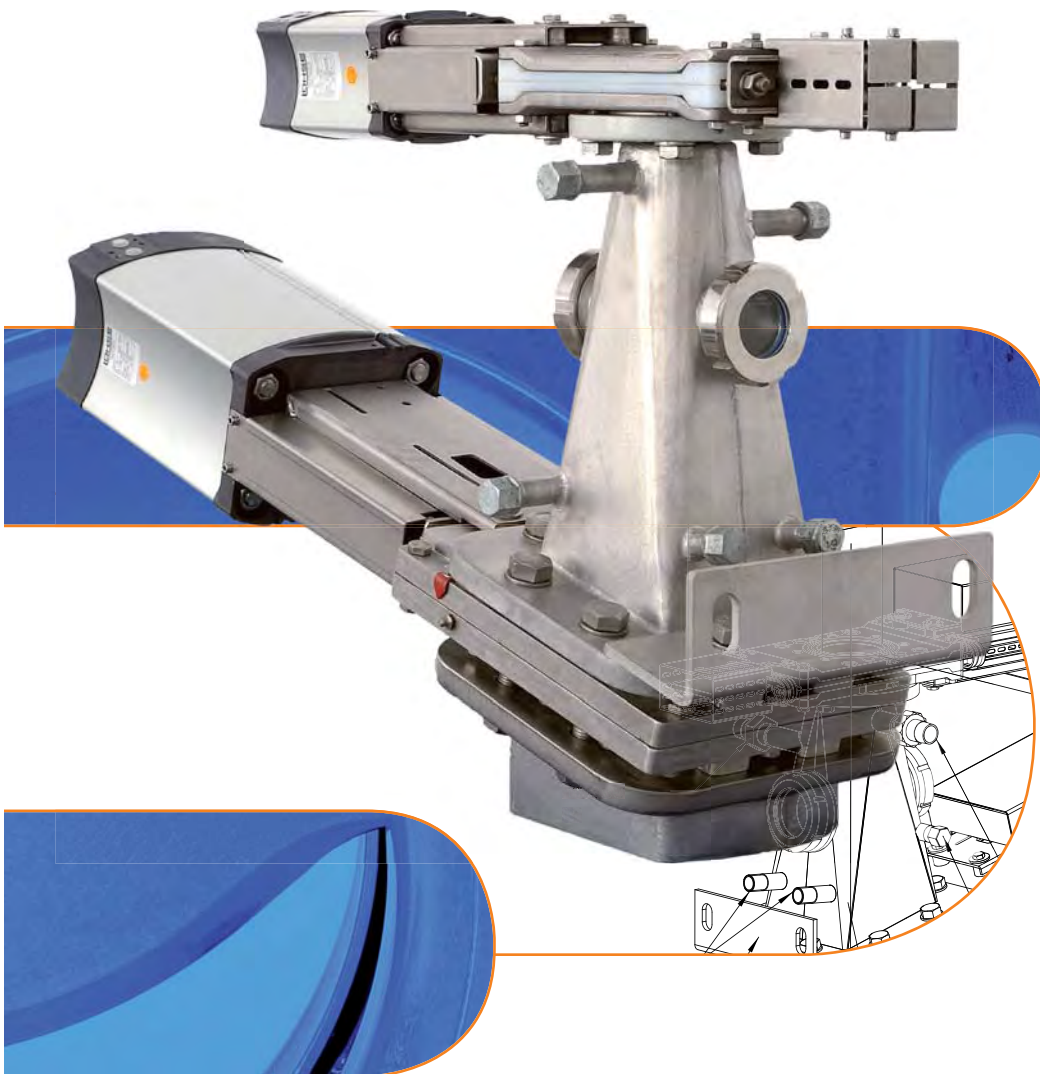
The square head actuator is operated by means of a DIN 3223 „C“ fitting wrench.

- Turn clockwise: valve „CLOSED“.
- Turn anticlockwise: valve „OPEN“.

Valves of stainless steel

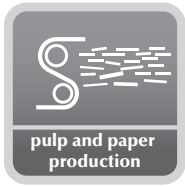
# Dirt Traps RSL

## of stainless steel



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## Applications



The LOHSE dirt traps RSL have been specially designed for the removal of foreign particles from the cleaning process.

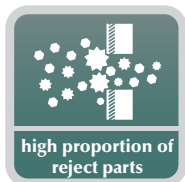
They are used to remove reject particles from fibrous media of various viscosity. They can be used in all types of cleaning machines, tanks and pipelines.

The maximum permissible operating temperature for LOHSE RSL dirt traps is 80 °C / 176° F (dirt traps for higher temperatures are available on request).

The maximum permissible operating pressure for LOHSE RSL dirt traps is 6 bar (dirt traps for higher pressures are available on request).



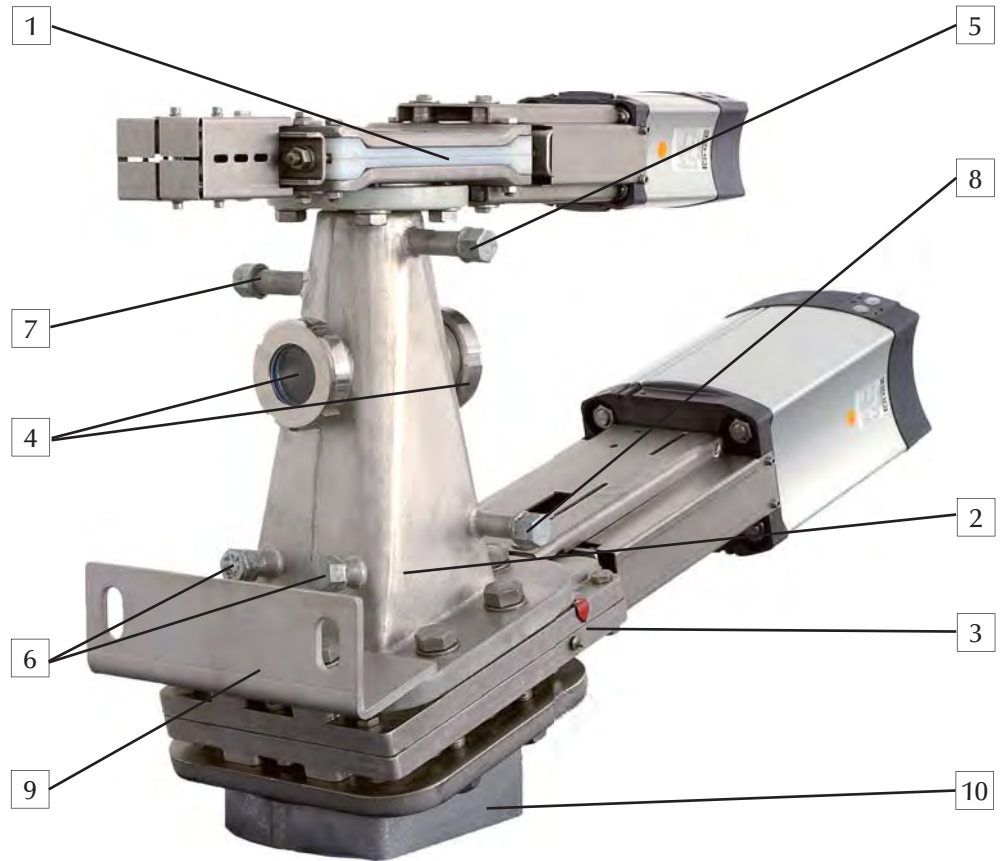
## Media



## Benefits

- the inclined positioning of the discharge valve prevents the build up of turbulence in the centre of the valve slide plate; as a result there is markedly less wear on the valve slide plate
- the right angular cross section of the discharge valve prevents small parts getting stuck between the valve body and the slide plate
- two back water connections prevent congestion in dead corners
- regulated heavy rejects removal: by means of 2 sight glasses an optimal adjustment of the back water level becomes possible
- pressure relief when at its highest level by means of an air extraction connection
- dirt trap volume can be selected (see list)

Construction



pos.	description	remark
1	inlet valve CDSVP/G	round cross-section
2	sluice chamber	round to rectangular
3	discharge valve AEQP/G	rectangular cross-section
4	sight glasses	
5	air relief C	periodical operating interval
6	cleaning/ filling connections A / B	periodical operating interval
7	flush water connection D	connection recommende by manufacturer
8	flush water connection E	connection recommende by manufacturer
9	attaching device	
10	outlet piece	

## Process description

### Start of dirt trap control

Power to solenoid valves	„on“
Water pressure	„ok“
Water	„supply ok“
Pump of cleaning machine	„off“
Compressed air for shut-off valve	„supply ok“
- Pressure	„ok“
- Flow control valve	„adjusted“

### START – Flushing phase of dirt trap

The moment the pump in front of the cleaning machine is started, the timer relay of the cycle control system is started.

After the cycle time has lapsed:

- Timer relay cycle time	„0“
- Upper shut-off valve	„closed“
- Lower shut-off valve	„open“
- Filling water solenoid valve	„open“
- FILLING timer relay	„on“ (10 to 20 sec.)
- Signal lower valve	„closed“ via exhaust air restrictor
- VENTING timer relay	„on“ (10 to 20 sec.)
- Signal lower valve	„closed“
- FILLING timer relay after time has lapsed	„off“
- Filling water solenoid valve	„closed“
- VENTING timer relay after time has lapsed	„off“
- Air relief solenoid valve	„closed“
- Upper shut-off valve	„open“

If required:

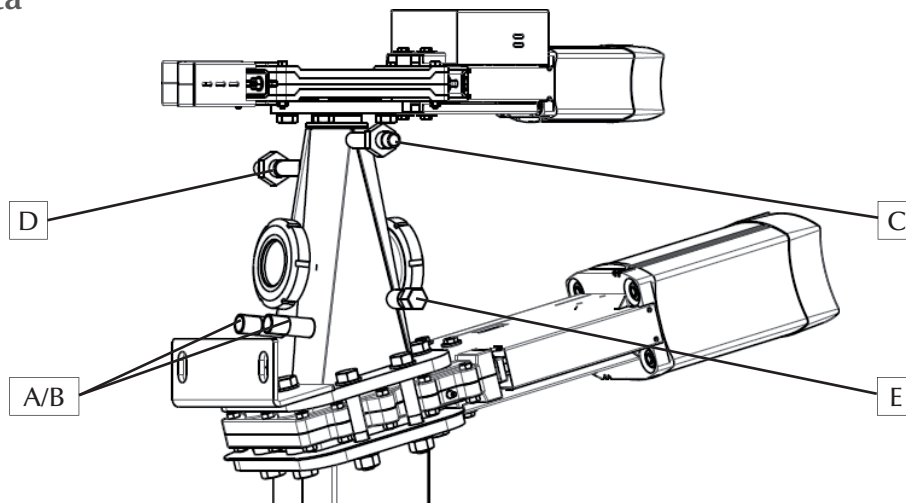
- Readjustment of dilution water by means of manually operated taps
- Next cycle time started through timer relay „on“ (5 to 120 minutes)

\* All values are approximate and must be adapted to the specific system!

### Interlocking:

- if there is no compressed air
- if there is no dilution water
- if there is no control voltage
- if there is no medium
- if the medium pressure drops in front of the cleaning machine

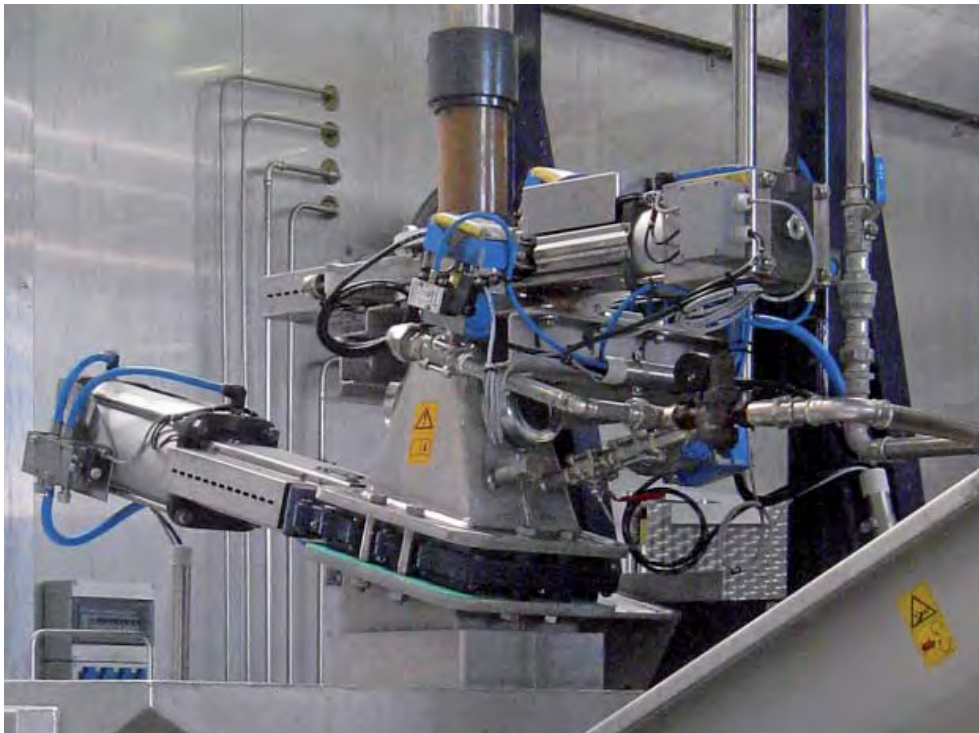
## Technical data



Type	Inlet valve Reject-valve type CDSVP/G	Outlet valve Reject-valve type AEQP/G	Volume ~ [l]	Overall height [mm]	Air relief C [inch]	cleaning/ filling connections A / B [inch]	flush water connect. D [inch]	flush water connect. E [inch]
RSL 50/150	DN 50	DN 150	5	682	1/2	1/2	1	3/4
RSL 65/150	DN 65	DN 150	5	682	1/2	1/2	1	3/4
RSL 80/150	DN 80	DN 150	5	695	1/2	1/2	1	3/4
RSL 100/150	DN 100	DN 150	8	635	1	3/4	1	3/4
RSL 100/200	DN 100	DN 200	11	650	1	3/4	1	3/4
RSL 100/250	DN 100	DN 250	15	634	1	3/4	1	3/4
RSL 125/250	DN 125	DN 250	15	635	1	3/4	1	3/4
RSL 150/200	DN 150	DN 200	13	660	1	3/4	1	3/4
RSL 150/250	DN 150	DN 250	17	662	1	3/4	1	3/4
RSL 200/250	DN 200	DN 250	22	745	1	3/4	1	3/4
RSL 250/300	DN 250	DN 300	40	823	1	3/4	1	3/4

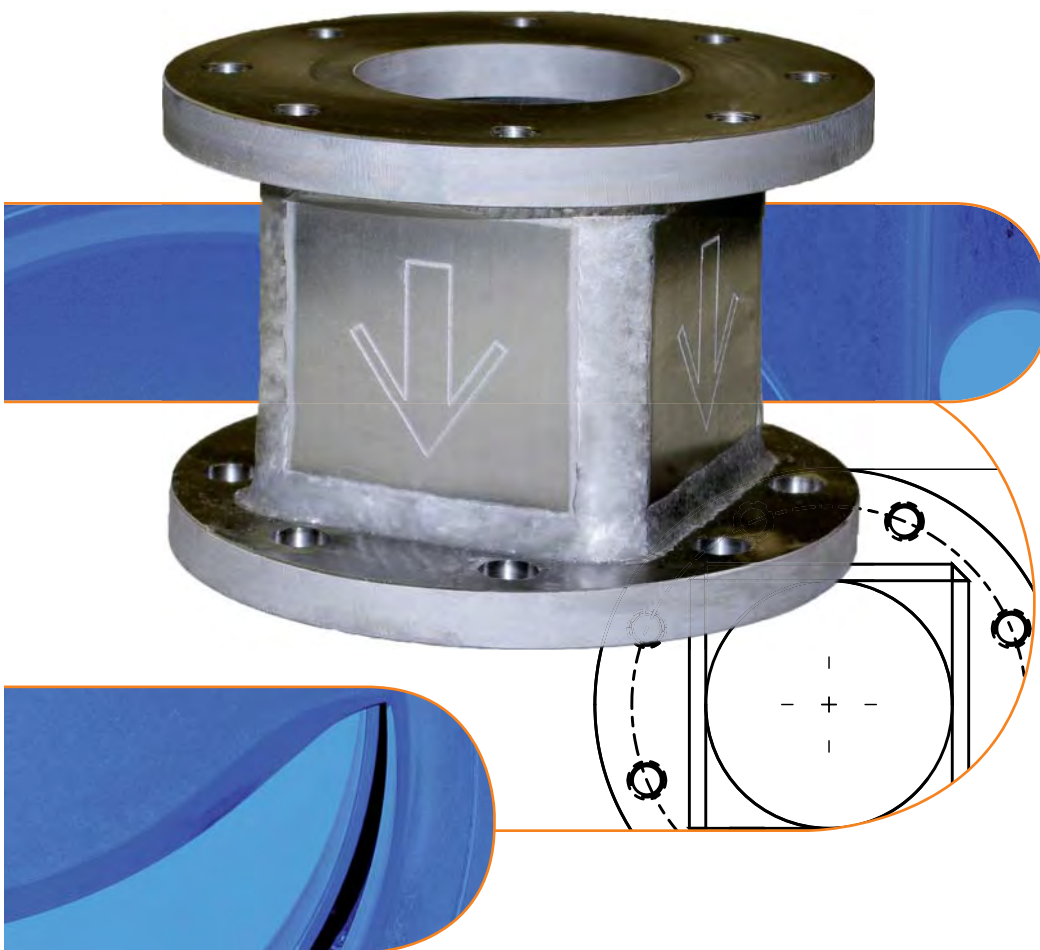
Outlet valve of grey cast iron (G) or stainless steel (E).





# Vortex Breakers

## RBrR and RBrQ



MARTIN LOHSE GmbH  
Unteres Paradies 63 · D-89522 Heidenheim  
Postfach 1565 · D-89505 Heidenheim  
phone +49(0)7321 / 755-42 · fax +49(0)7321 / 755-97  
server.ab@lohse-gmbh.de  
www.lohse-gmbh.de



## Vortex breakers for heavy component dirt traps

Ready-to-install intermediate component on cleaning machines

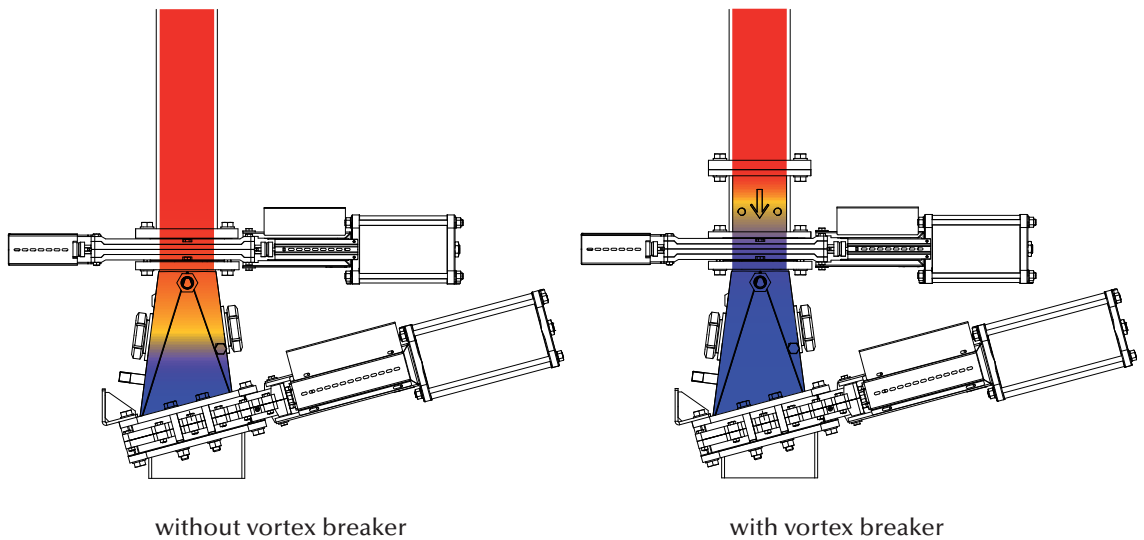
### Applications

In case of extreme wear on reject valves / dirt traps, e.g. high density cleaners.

### Function

The rectangular cross section slows down the rotation of the medium and the rotation does not penetrate to the valve.

### Rotation intensity

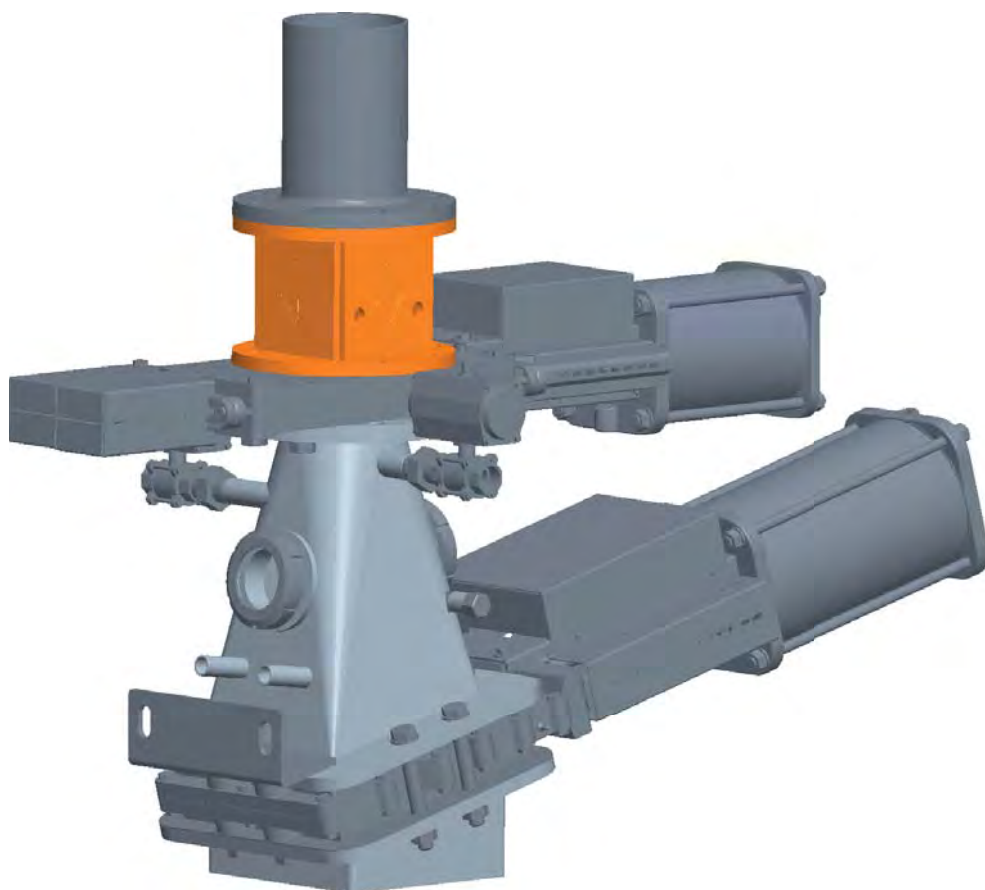


## Benefits

Minimisation of wear on the valve and trap container increases the service life, reduces maintenance, lowers costs and increases operational reliability. The fibre recovery (high density cleaner) is not impaired.

## Easy installation

The ready-to-install vortex breaker is integrated above the inlet valve of the dirt trap. It is adapted to different nominal diameters. Only the height of the overall machine changes – depending on the nominal diameter of the dirt trap – by the height of the respective rotary damper (see dimension sheet).



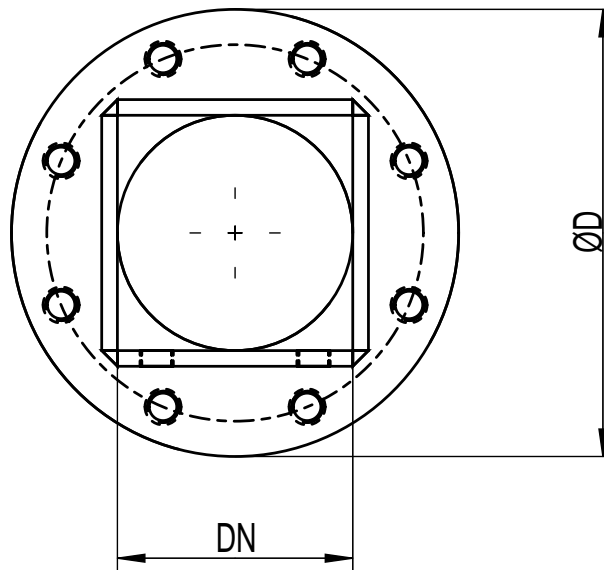
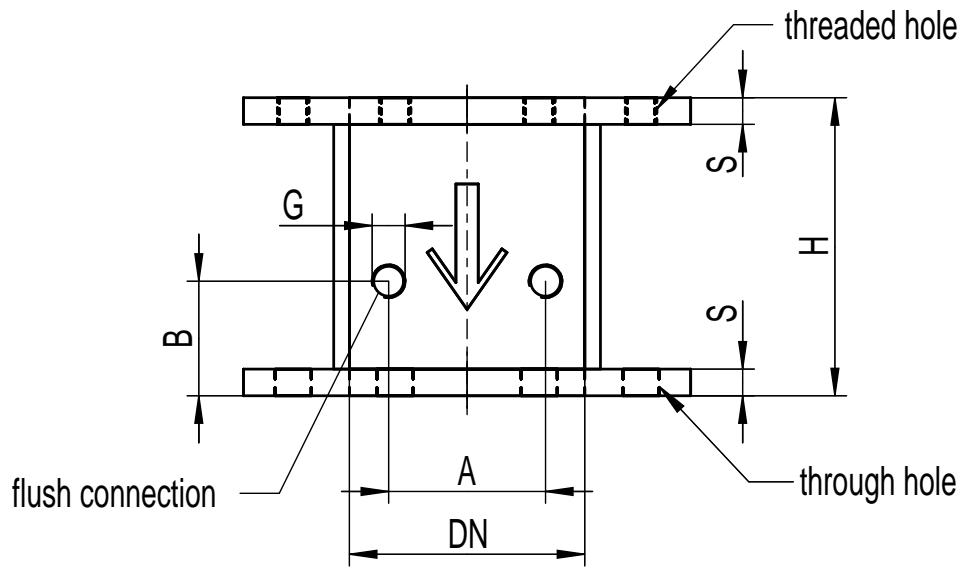
## Versions:

### Type RBrr

Round inlet and outlet of vortex breaker: suitable for round outlet of the cleaning machine and round inlet of the dirt trap / inlet valve..

### Type RBrrq

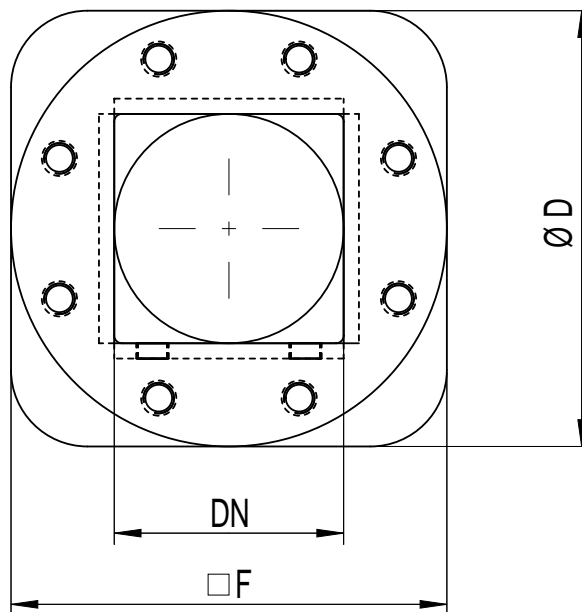
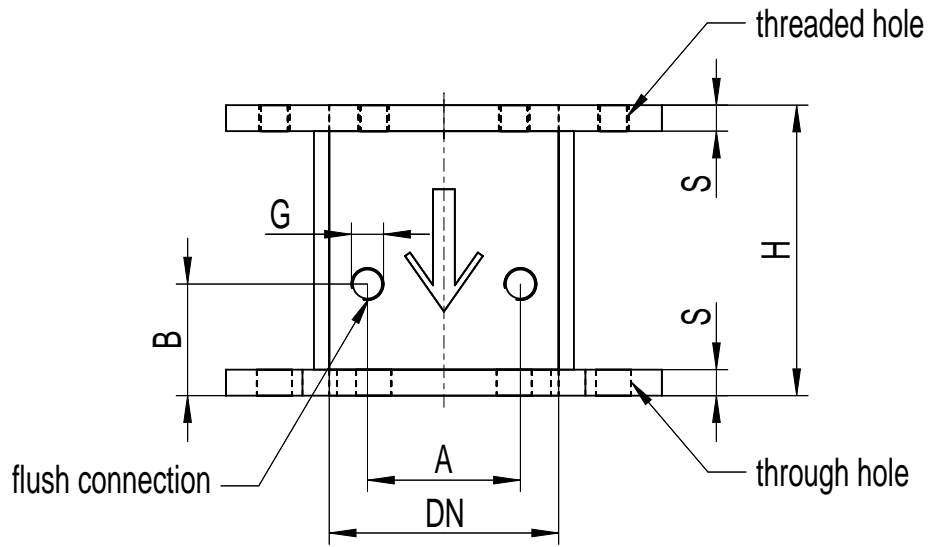
Round inlet and square outlet of vortex breaker: suitable for round outlet of the cleaning machine and square inlet of the dirt trap / inlet valve..



DN	A	B	G	S	H	ØD
50	25	43	1/4"	13	110	165
80	50	53	1/2"	13	120	200
100	60	63	1/2"	17	150	220
125	80	63	1/2"	17	175	250
150	100	73	1/2"	17	190	285
200	150	74	1/2"	18	220	340
350	250	74	1/2"	23	350	505

Material: 1.4571

Dimensions in mm, flange dimensions to DIN EN 1092-1, PN 10.  
Further sizes on request.



DN	A	B	G	S	H	ØD	□ F
50	25	43	1/4"	13	110	165	165
80	50	53	1/2"	13	120	200	200
100	60	63	1/2"	17	150	220	220
125	80	63	1/2"	17	175	250	250
150	100	73	1/2"	17	190	285	285
200	150	74	1/2"	18	220	340	340

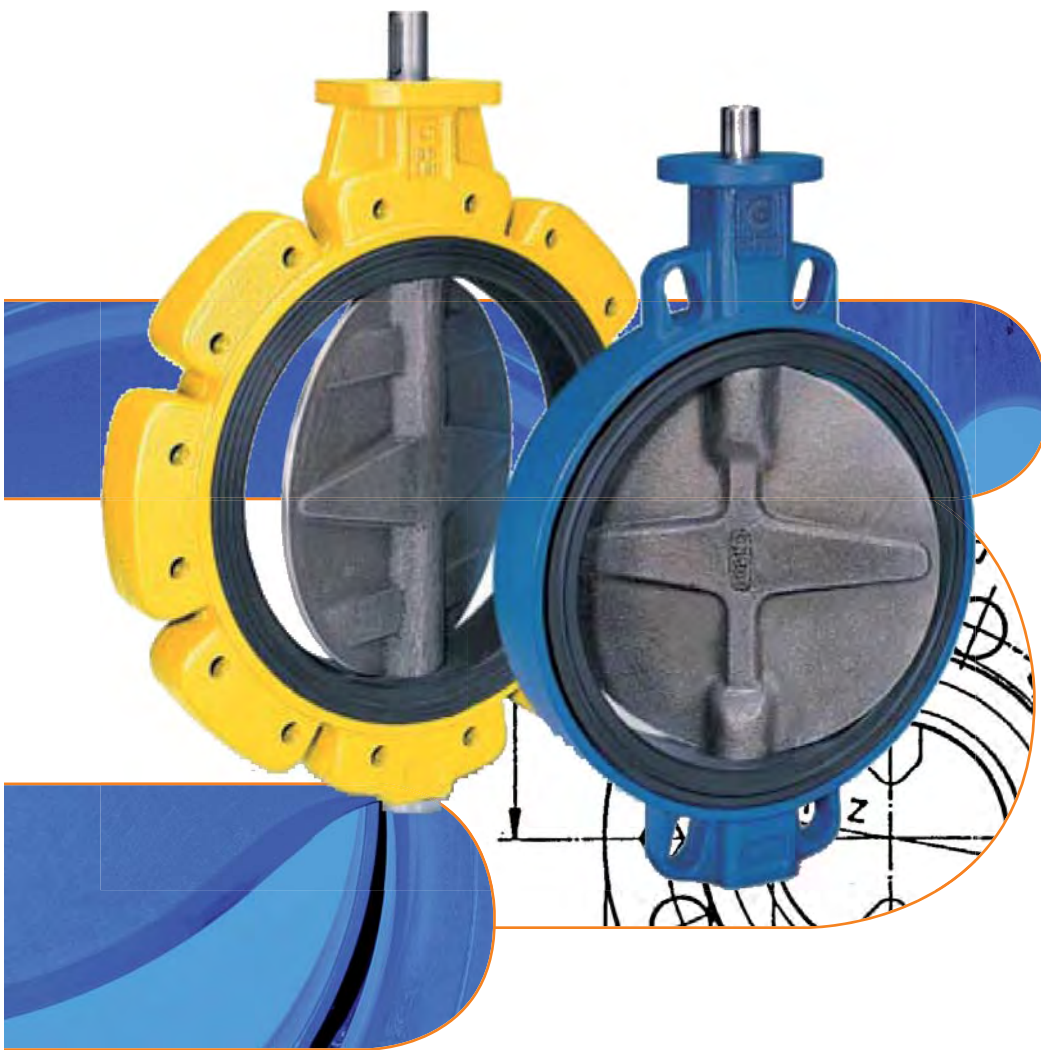
Material: 1.4571

Dimensions in mm, flange dimensions inlet to DIN EN 1092-1, PN 10, outlet on request. Further sizes on request.



Valves

# Butterfly Valves



MARTIN LOHSE GmbH  
Unteres Paradies 63 · D-89522 Heidenheim  
Postfach 1565 · D-89505 Heidenheim  
phone +49(0)7321 / 755-42 · fax +49(0)7321 / 755-97  
server.ab@lohse-gmbh.de  
www.lohse-gmbh.de

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HD Series	201
PTFE Seated Butterfly Vales	209



**SOFT SEAT**

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**BVPD - Wafer BLPD - Lug**  
DN 50 - 500 • 2" - 20"

**BVKI - Wafer BLKI - Lug**  
DN 40 - 800 • 1 1/2" - 32"

**BFKI - double flange**  
DN 80 - 600 • 3" - 24"

**Max working pressure:**

BVPD/BLPD DN 50÷500: **6 Bar**  
Flange: **PN 6-10-16 • A150**  
BVKI/BLKI DN 40÷500: **16 Bar**  
Flange: **PN 10-16 • A150**  
BVKI/BLKI DN 600÷800: **10 Bar**  
Flange: **PN 6-10-16 • A150**  
BFKI DN 80÷600: **16 Bar**  
Flange: **PN 6-10-16 • A150**

**KI series to be used also with vacuum**

**Design:**

EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092  
ISO 5211 ~ DIN 3337 ~ API 609  
PED 97/23/EC(cat III) Mod H

**Face to face:**

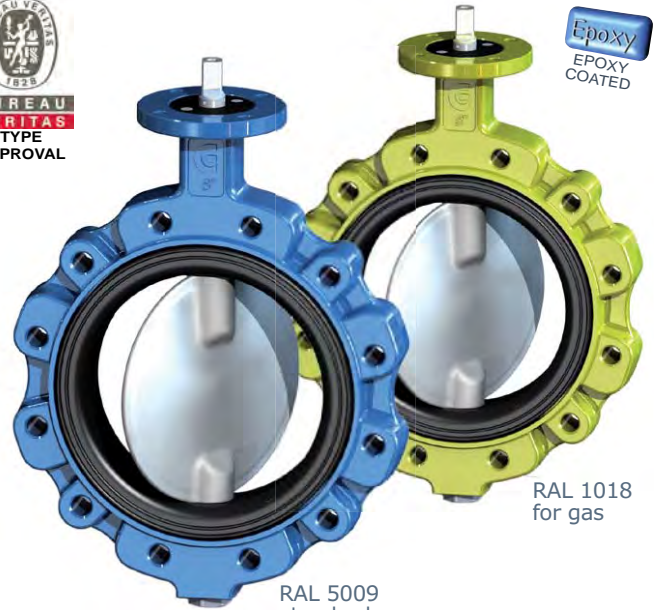
DIN EN 558-1 Series 20 ~ ISO 5752 Series 20  
BS-5155 Series 4 ~ MSS-SP67  
API609 cat.A ~ NFE 29305-1

**Testing:**

EN 12266-1 Rate A ~ ISO 5208 Rate A  
DIN 3230 ~ API 598

**Tag:**

EN 19 ~ MSS SP-25



Epoxy  
EPOXY  
COATED

RAL 1018  
for gas

RAL 5009  
standard



All valves are supplied with a metallic label in compliance with PED directive.

BODY			BVPD	BVKI / BLKI	BFKI
material	references	standard coating	DN	DN	DN
Ductile iron	EN-GJS 400-15 (GS400)	Epoxy RAL 5009	50-500	40-800	80-600
Carbon steel	ASTM A216-WCB	Epoxy RAL 9005	50-500	40-800	-
Stainless steel	ASTM A351 CF8M (A316)	-	50-500	40-800	-
Aluminium-bronze	ASTM B148-C958.00	-	50-500	40-800	-
Aluminium (P <sub>max</sub> 10Bar)	EN AB 46400	Epoxy RAL 7024	50-500	40-500	-

DISC			BVPD	BVKI / BLKI	BFKI
material	references	standard coating	DN	DN	DN
Steel	ASTM A105	Zinc	50-100	50-100	80-100
Ductile iron	EN-GJS 400-15 (GS400)	Zinc	125-500	125-800	125-600
Stainless steel	ASTM A351 CF8M (A316)	-	50-500	40-800	80-600
Aluminium-bronze	ASTM B148-C958.00	-	50-500	40-800	80-600
Hastelloy®	ASTM A494 CX2MW	-	50-500	40-800	80-600
Monel®	ASTM A494 M35-1	-	50-500	40-800	80-600

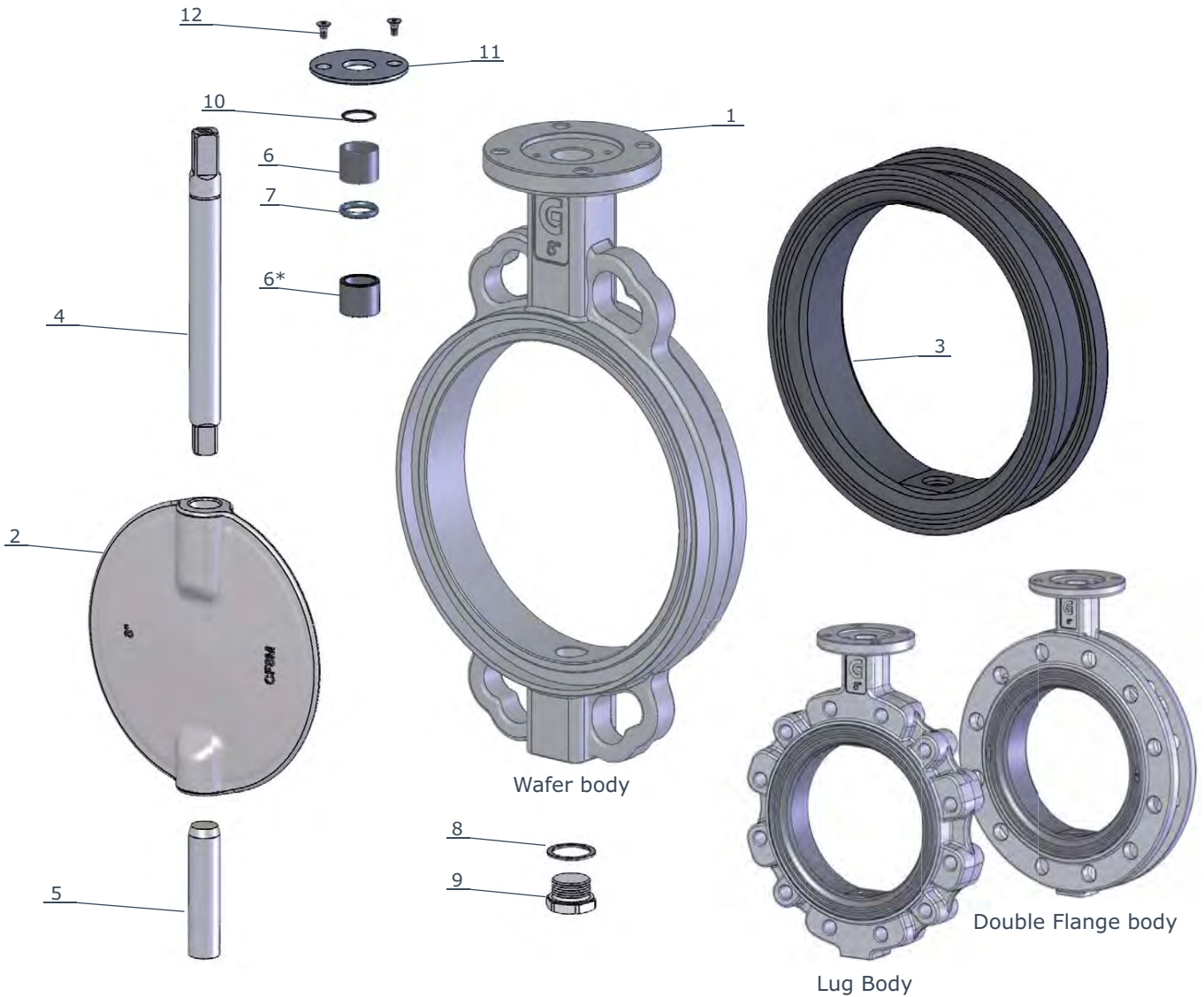
BODY RUBBER SEAT		DN 40/500 replaceable - DN 600/800 vulcanized not replaceable			
ref.	designation	trade name	working temp.	applications	
NBR	nitrile rubber	BUNA®	-25°C / +100°C	oils, hydrocarbons, gas, air, water	
EPDM	copolymer EPDM	-	-35°C / +130°C	water, sea water, steam, diluted acids	
EPDM HT	copolimery EPDM HT	-	-30°C / +135°C	water, sea water, steam, diluted acids	
CO	carboxide	-	-25°C / +100°C	dust, air	
FKM	fluoroelastomer	VITON®	-20°C / +200°C	oils, acids, hydrocarbons	
CR	polychloroprene	NEOPRENE®	-20°C / +100°C	alkali, bases, water	
NR	natural rubber	-	-40°C / + 80°C	glycols, abrasive media	
MVQ	silicon rubber	SILOPREN®	-60°C / +190°C	water, food, drinks	
CSM	chlorosulfonated polyethylene	HYPALON®	-20°C / +125°C	acids, mineral bases, alcohols, hydrocarbons	

On request can be supplied other materials as: LCB, Hastelloy, Monel, Uranus, Alloy, DUPLEX, Special steels, Special bronzes.  
Coating on request: RILSAN®, Halar®, Chenisil®

**BVPD - Wafer BLPD - Lug**  
 DN 50 - 300 • 2" - 12"  
 PN 6-10-16 • ANSI 150

**BVKI - Wafer BLKI - Lug**  
 DN 40 - 300 • 1"1/1 - 12"  
 PN 10-16 • ANSI 150

**BFKI - double flange**  
 DN 80 - 300 • 3" - 12"  
 PN 6-10-16 • ANSI 150



item	q.ty	part	material	item	q.ty	part	material
1	1	body (BFKI only GS400)	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216 - WCB</li> <li>A352 - LCB</li> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>aluminium (only WAFER)</li> </ul>	4	1	upper shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>	5	1	lower shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
◇3	1	body seat (replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> <li>carboxide</li> <li>polychloroprene (NEOPRENE®)</li> <li>natural rubber</li> <li>silicon</li> </ul>	◇6	1	bush	bronze
				◇6*	1	bush	bronze
				◇7	1	shaft packing	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) on request</li> </ul>
				8	1	plug packing	aluminium
				9	1	threaded plug	zinc plated steel
				10	1	stop ring	steel
				11	1	upper flange	<ul style="list-style-type: none"> <li>IXEF (DN 40-150)</li> <li>aluminium (DN 200-300)</li> </ul>
				12	2	screw	zinc plated steel

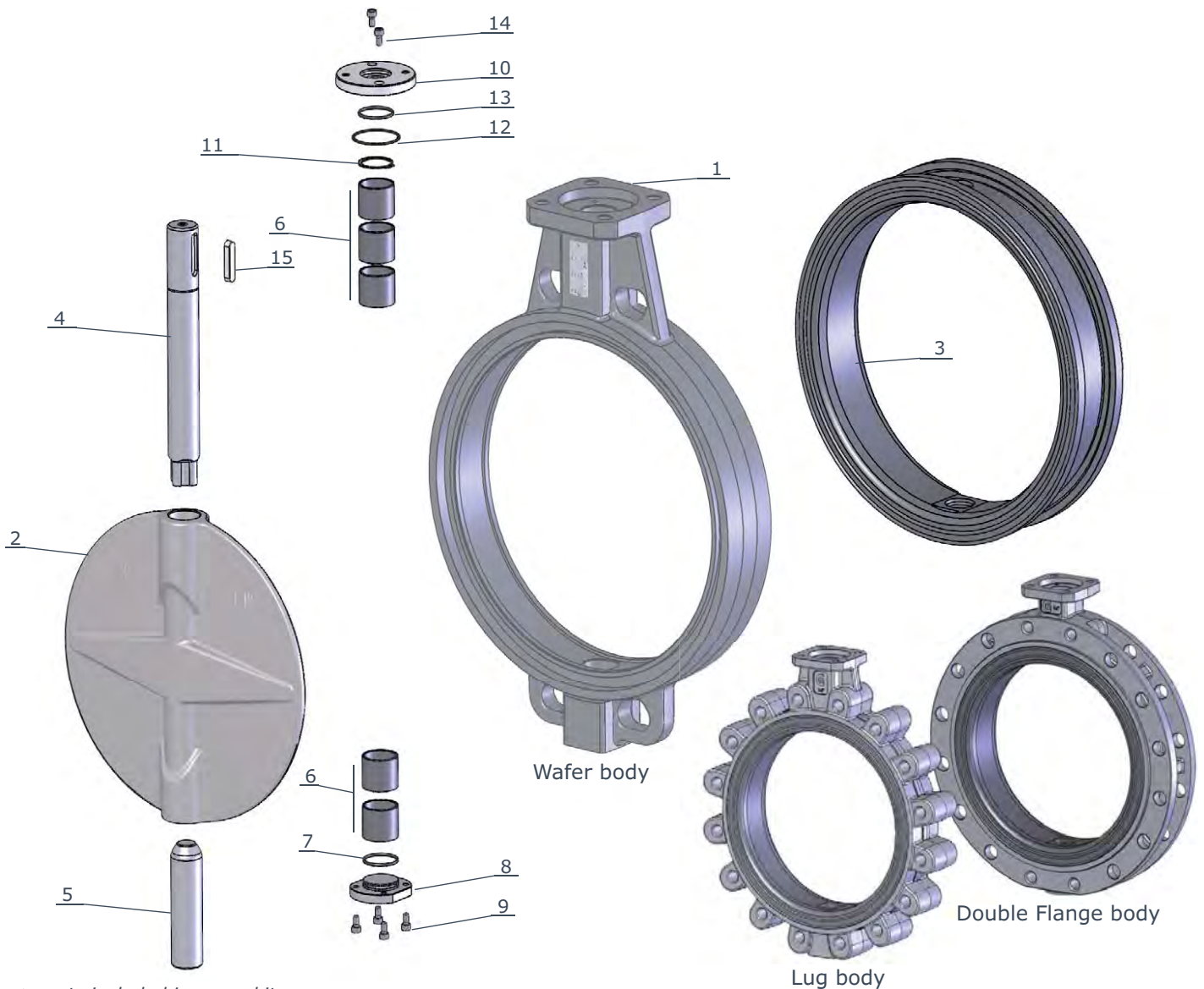
◇ parts included in spare kit

\* only for DN300

**BVPD - Wafer BLPD - Lug**  
 DN 350 - 500 • 14" - 20"  
 PN 6-10-16 • ANSI 150

**BVKI - Wafer BLKI - Lug**  
 DN 350 - 500 • 14" - 20"  
 PN 10-16 • ANSI 150

**BFKI - double flange**  
 DN 350 - 500 • 14" - 20"  
 PN 6-10-16 • ANSI 150



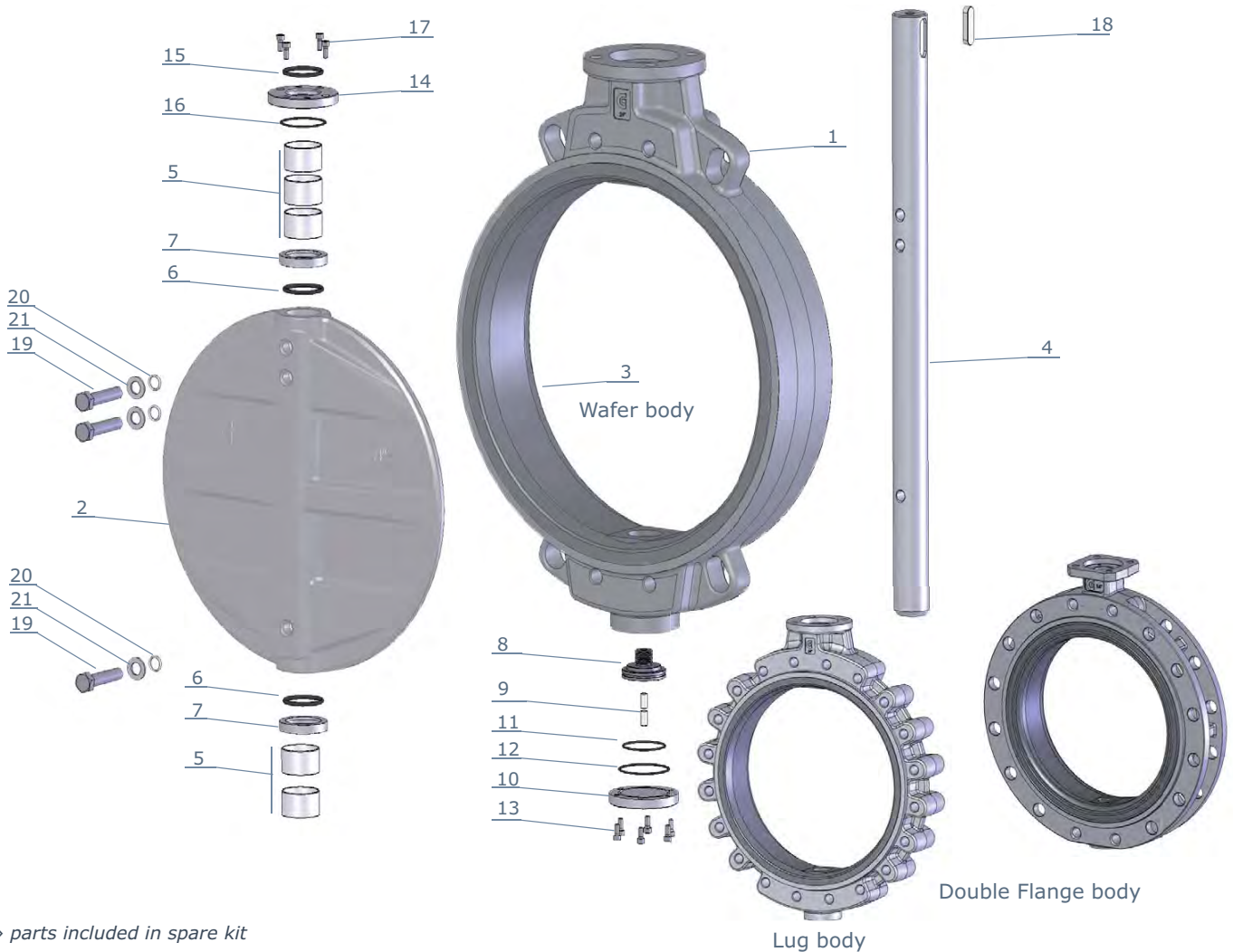
◇ parts included in spare kit

item	q.ty	part	material	item	q.ty	part	material
1	1	body (BFKI only GS400)	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216-WCB</li> <li>A352-LCB</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>aluminium (only WAFER)</li> </ul>	5	1	lower shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>	◇6	5	bush	<ul style="list-style-type: none"> <li>bronze</li> <li>steel+PTFE (DN 450-500)</li> </ul>
◇3	1	body seat (replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> <li>carboxide</li> <li>polychloroprene (NEOPRENE®)</li> <li>natural rubber</li> <li>silicon</li> </ul>	◇7	1	packing lower flange	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
4	1	upper shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>	8	1	lower flange	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				9	4	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				10	1	upper flange	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				11	1	stop ring	<ul style="list-style-type: none"> <li>steel</li> </ul>
				◇12	1	O.Ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
				◇13	1	O.Ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
				14	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				15	1	key	<ul style="list-style-type: none"> <li>steel C40</li> </ul>



**BVKI - Wafer BLKI - Lug**  
 DN 600 - 800 • 24" - 32"  
 PN 6-10-16 • ANSI 150

**BFKI - double flange**  
 DN 600 • 24"  
 PN 6-10-16 • ANSI 150



◇ parts included in spare kit

item	q.ty	part	material	item	q.ty	part	material
1	1	body (BFKI only GS400)	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216-WCB</li> <li>A352-LCB</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> </ul>	7	2	O.ring housing	• AISI 316
2	1	disc	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>	8	1	shaft support	• Bronze
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>	9	2	adjusting screw	• AISI 316
4	1	shaft	<ul style="list-style-type: none"> <li>AISI 303</li> <li>AISI 316 (on request)</li> </ul>	10	1	lower flange	• zinc plated steel
◇5	5	bush	• steel + PTFE	◇11	1	O.ring	• NBR (BUNA®)
◇6	2	shaft O.ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) on request</li> </ul>	◇12	1	O.ring	• NBR (BUNA®)
				13	6	screw	• zinc plated steel
				14	1	upper flange	• zinc plated steel
				◇15	1	O.ring	• NBR (BUNA®)
				◇16	1	O.ring	• NBR (BUNA®)
				17	4	screw	• zinc plated steel
				18	1	key	• steel
				19	3	screw	• AISI 316
				◇20	3	O.ring	• PTFE
				21	3	washer	• AISI 316

<b>BVKA - Wafer</b>   <b>BLKA - Lug</b>	<b>BVKX - Wafer</b>	<b>BLKX - Lug</b>
DN 40 - 800 • 1"1/2 - 32"	DN 50 - 250 • 2" - 10"	DN 50 - 200 • 2" - 8"

Max working pressure:  
 BVKA/BLKA DN 40÷800: **20 Bar**  
*Flange: PN 10-16 • A150*  
 BVKX DN 50÷250: **25 Bar**  
 BLKX DN 50÷200: **25 Bar**  
*Flange: PN 16-25 • A150*  
 To be used also with vacuum

Design:  
 EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092  
 ISO 5211 ~ DIN 3337 ~ API 609  
 PED 97/23/EC(cat III) Mod H

Face to face:  
 DIN EN 558-1 Series 20 ~ ISO 5752 Series 20  
 BS-5155 Series 4 ~ MSS-SP67  
 API609 cat.A ~ NFE 29305-1

Testing:  
 EN 12266-1 Rate A ~ ISO 5208 Rate A  
 DIN 3230 ~ API 598

Tag:  
 EN 19 ~ MSS SP-25



BVKA

All valves are supplied with a metallic label in compliance with PED directive.

BODY			BVKA/BLKA	BVKX	BLKX
material	references	standard coating	DN	DN	DN
Ductile iron	EN-GJS 400-15 (GS400)	Epoxy RAL 5009	40-800	50-250	50-200
Carbon steel	ASTM A216-WCB	Epoxy RAL 9005	40-800	50-100	50-100
Stainless steel	ASTM A351 CF8M (A316)	-	40-800	50-100	50-100
Aluminium-bronze	ASTM B148-C958.00	-	40-800	50-100	50-100

DISC			BVKA/BLKA	BVKX	BLKX
material	references	standard coating	DN	DN	DN
Stainless steel	ASTM A351 CF8M (A316)	-	40-800	50-250	50-200
Aluminium-bronze	ASTM B148-C958.00	-	40-800	50-250	50-200
Hastelloy®	ASTM A494 CX2MW	-	40-800	50-250	50-200
Monel®	ASTM A494 M35-1	-	40-800	50-250	50-200

BODY RUBBER SEAT		KA DN 40/150 replaceable - DN 200/800 vulcanized not replaceable KX DN 50/250 vulcanized not replaceable		
ref.	designation	trade name	working temp.	applications
NBR	nitrile rubber	BUNA®	-25°C / +100°C	oils, hydrocarbons, gas, air, water
EPDM	copolymer EPDM	-	-35°C / +130°C	water, sea water, steam, diluted acids
EPDM HT	copolimery EPDM HT	-	-30°C / +135°C	water, sea water, steam, diluted acids
FKM	fluoroelastomer	VITON®	-20°C / +200°C	oils, acids, hydrocabons

On request can be supplied other materials as: LCB, Hastelloy, Monel, Uranus, Alloy, DUPLEX, Special steels, Special bronzes.  
 Coating on request: RILSAN®, Halar®, Chenisil®

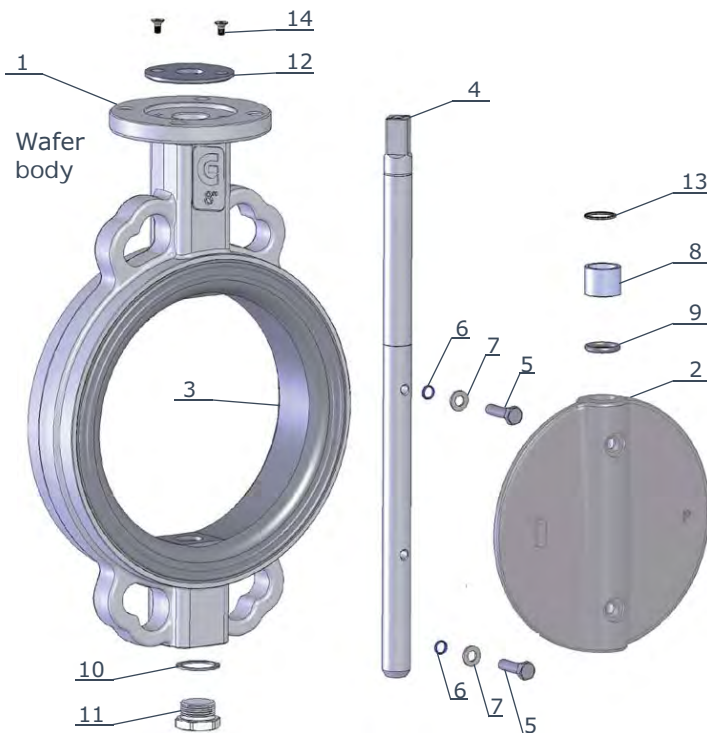
**BVKA - Wafer BLKA - Lug**  
 DN 40 - 150 • 1 1/2" - 6"  
 PN 10-16 • ANSI 150



item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216 - WCB</li> <li>A352 - LCB</li> <li>A351 - CF8M (AISI 316)</li> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>
◇3	1	body seat (replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>
4	1	upper shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
5	1	lower shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
◇6	1	bush	<ul style="list-style-type: none"> <li>bronze</li> </ul>
◇7	1	shaft packing	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) (on request)</li> </ul>
8	1	plug packing	<ul style="list-style-type: none"> <li>aluminium</li> </ul>
9	1	threaded plug	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
10	1	stop ring	<ul style="list-style-type: none"> <li>steel</li> </ul>
11	1	upper flange	<ul style="list-style-type: none"> <li>IXEF (DN 40-150)</li> </ul>
12	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>

◇ parts included in spare kit

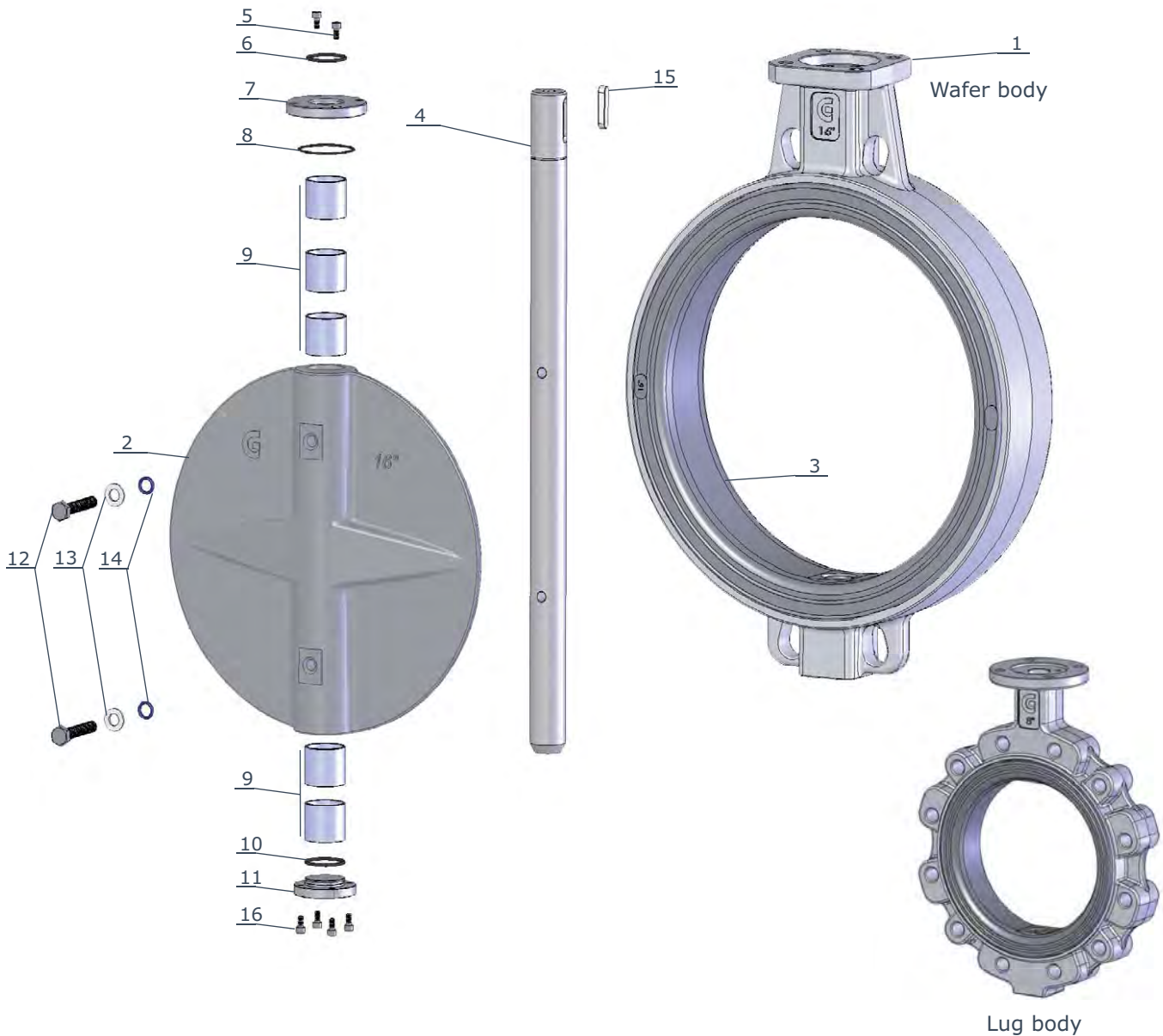
**BVKA - Wafer BLKA - Lug**  
 DN 200 - 300 • 8" - 12"  
 PN 10-16 • ANSI 150



item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216-WCB</li> <li>A352-LCB</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>
4	1	shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
5	2	screw	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>
◇6	2	O.Ring	<ul style="list-style-type: none"> <li>PTFE</li> </ul>
7	2	washer	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>
◇8	1	bush	<ul style="list-style-type: none"> <li>bronze</li> </ul>
◇9	1	shaft packing	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) (on req.)</li> </ul>
10	1	plug packing	<ul style="list-style-type: none"> <li>aluminium</li> </ul>
11	1	threaded plug	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
12	1	upper flange	<ul style="list-style-type: none"> <li>aluminium</li> </ul>
13	1	stop ring	<ul style="list-style-type: none"> <li>steel</li> </ul>
14	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>

◇ parts included in spare kit

**BVKA - Wafer BLKA - Lug**  
 DN 350 - 400 • 14" - 16"  
 PN 10-16 • ANSI 150

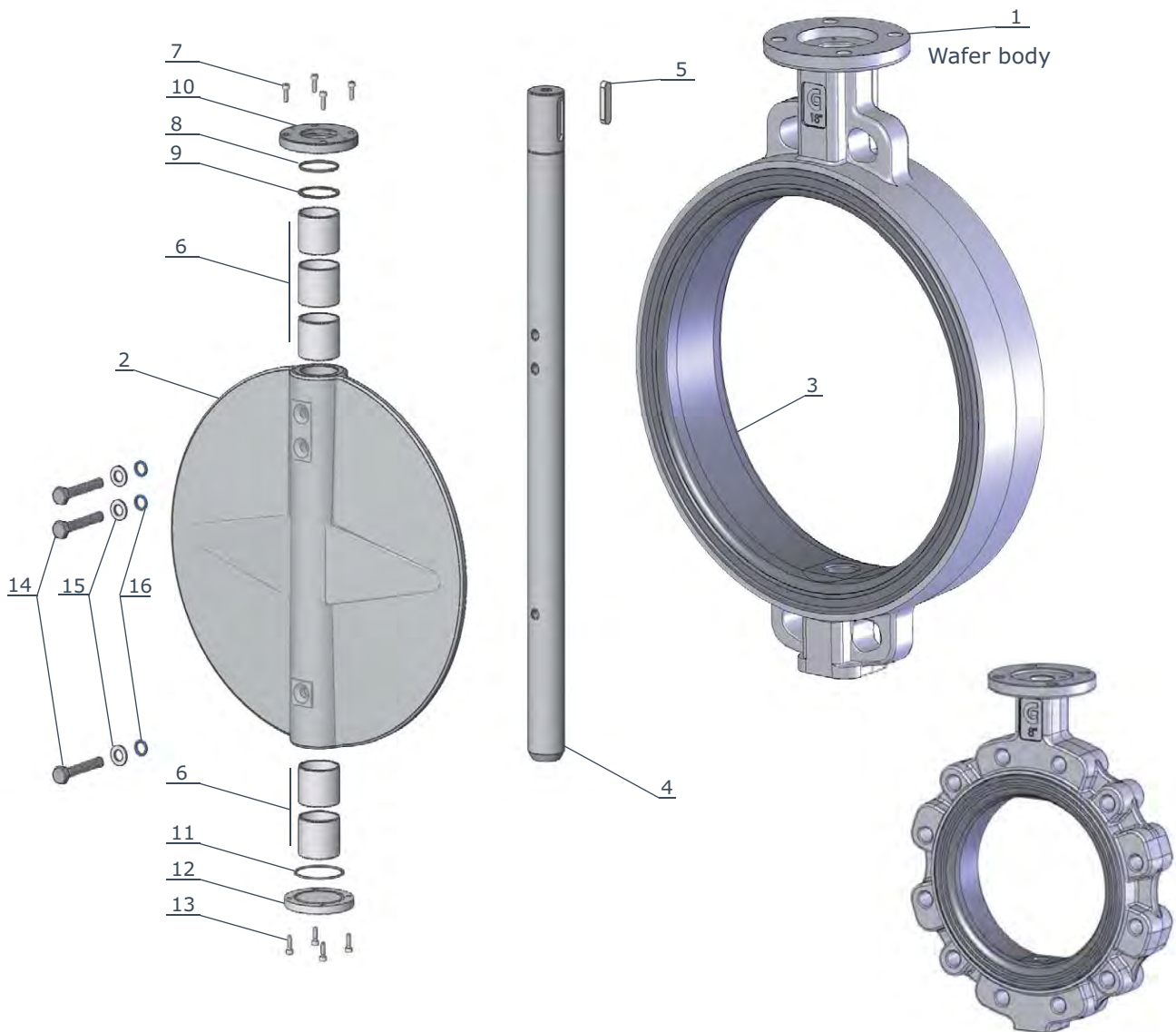


◇ parts included in spare kit

item	q.ty	part	material	item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216-WCB</li> <li>A352-LCB</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> </ul>	5	2	screw	zinc plated steel
2	1	disc	<ul style="list-style-type: none"> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>	◇6	1	O.ring	NBR (BUNA®)
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>	7	1	upper flange	zinc plated steel
4	1	shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>	◇8	1	O.ring	NBR (BUNA®)
				◇9	5	bush	bronze
				◇10	1	O.ring	NBR (BUNA®)
				11	1	lower flange	zinc plated steel
				12	2	screw	AISI 316
				13	2	washer	AISI 316
				◇14	2	O. ring	PTFE
				15	1	key	steel C40
				16	4	screw	zinc plated steel



**BVKA - Wafer BLKA - Lug**  
 DN 450 - 500 • 18" - 20"  
 PN 10-16 • ANSI 150



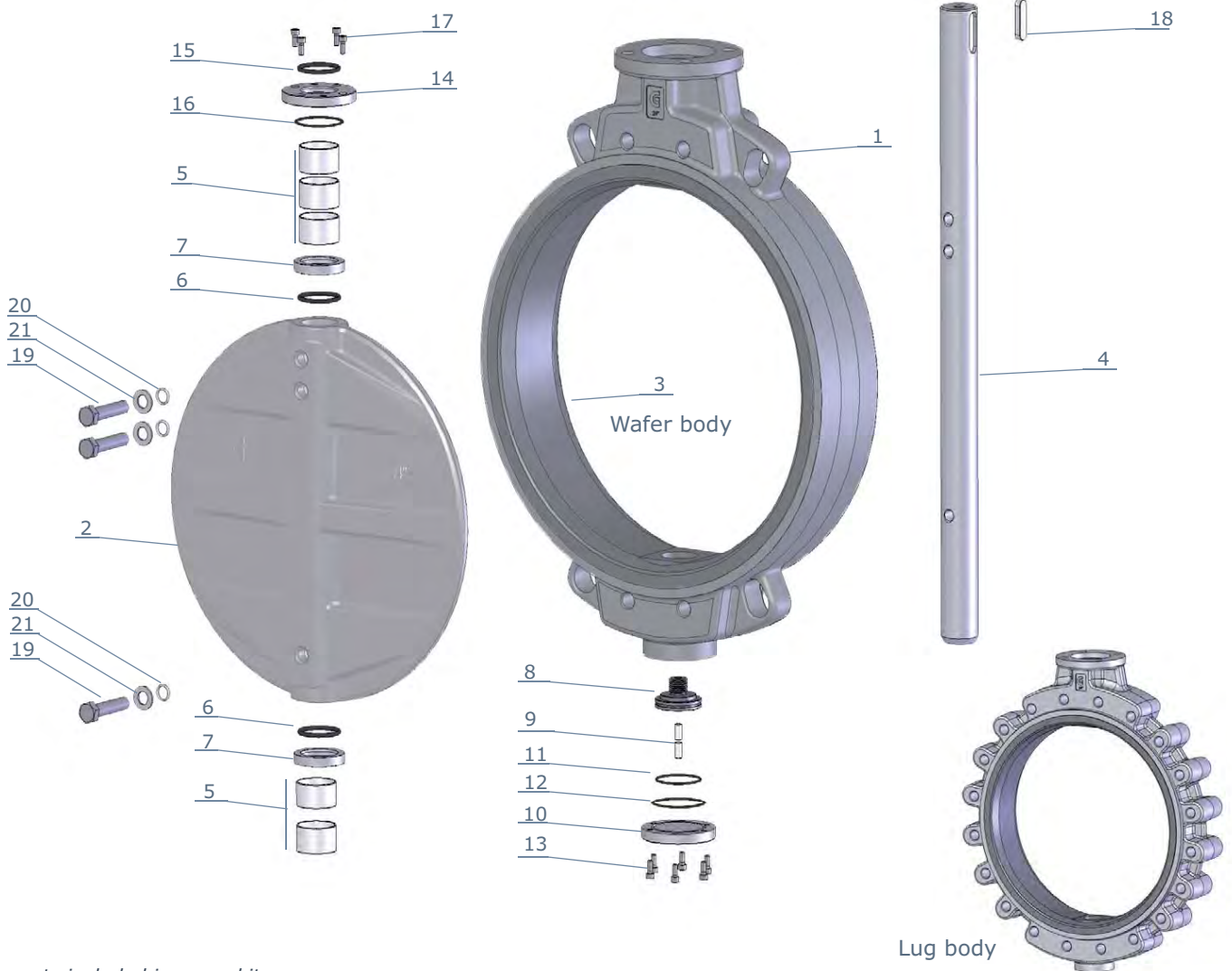
Lug body

◇ parts included in spare kit

item	q.ty	part	material	item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216-WCB</li> <li>A352-LCB</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> </ul>	◇6	5	bush	• steel + PTFE
2	1	disc	<ul style="list-style-type: none"> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>	7	4	screw	• zinc plated steel
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>	◇8	1	O.ring	• NBR (BUNA®)
4	1	shalt	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>	9	5	stop ring	• steel
5	1	key	• steel C40	10	1	upper flange	• zinc plated steel
				◇11	1	O.ring	• NBR (BUNA®)
				12	1	lower flange	• zinc plated steel
				13	4	screw	• steel
				14	2	screw	• AISI 316
				15	2	washer	• AISI 316
				◇16	2	O. ring	• PTFE



**BVKA - Wafer BLKA - Lug**  
 DN 600 - 800 • 24" - 32"  
 PN 16 • ANSI 150



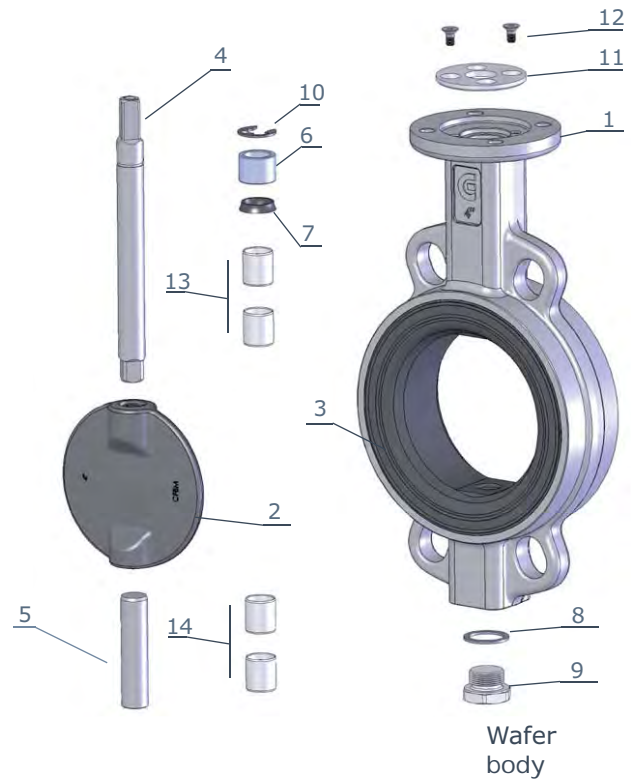
◇ parts included in spare kit

item	q.ty	part	material	item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216-WCB</li> <li>A352-LCB</li> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> </ul>	7	2	O.ring housing	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>	8	1	shaft support	<ul style="list-style-type: none"> <li>Bronze</li> </ul>
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>	9	2	adjusting screw	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>
4	1	shaft	<ul style="list-style-type: none"> <li>AISI 303</li> <li>AISI 316 (on request)</li> </ul>	10	1	lower flange	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
◇5	5	bush	<ul style="list-style-type: none"> <li>steel + PTFE</li> </ul>	◇11	1	O.ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
◇6	2	O.ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) on request</li> </ul>	◇12	1	O.ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
				13	6	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				14	1	upper flange	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				◇15	1	O.ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
				◇16	1	O.ring	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> </ul>
				17	4	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> </ul>
				18	1	key	<ul style="list-style-type: none"> <li>steel</li> </ul>
				19	3	screw	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>
				◇20	3	O.ring	<ul style="list-style-type: none"> <li>PTFE</li> </ul>
				21	3	washer	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>

**BVKX - Wafer BLKX - Lug**

DN 50 - 100 • 2" - 4"  
PN 16-25 • ANSI 150

item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216 - WCB</li> <li>A352 - LCB</li> <li>A351 - CF8M (AISI 316)</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>A351 - CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>
4	1	upper shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
5	1	lower shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
◇6	1	bush	bronze
◇7	1	shaft packing	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) on req.</li> </ul>
8	1	plug packing	aluminium
9	1	threaded plug	zinc plated steel
10	1	stop ring	steel
11	1	upper flange	IXEF (DN 50-100)
12	2	screw	zinc plated steel
◇13	2	upper bush	steel + PTFE
◇14	2	lower bush	steel + PTFE



◇ parts included in spare kit

**BVKX - Wafer**

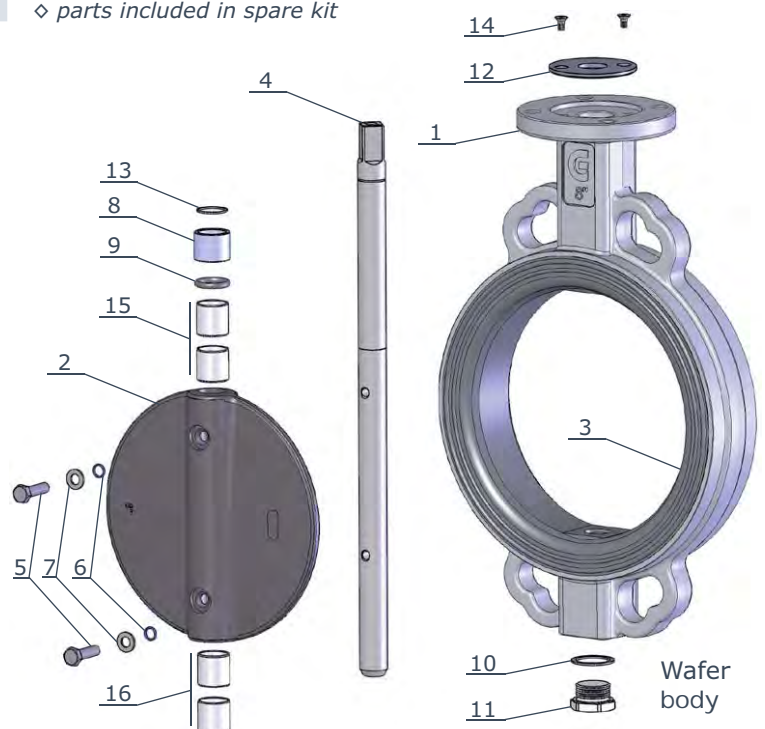
DN 125 - 250 • 5" - 10"  
PN 16-25 • ANSI 150

**BLKX - Lug**

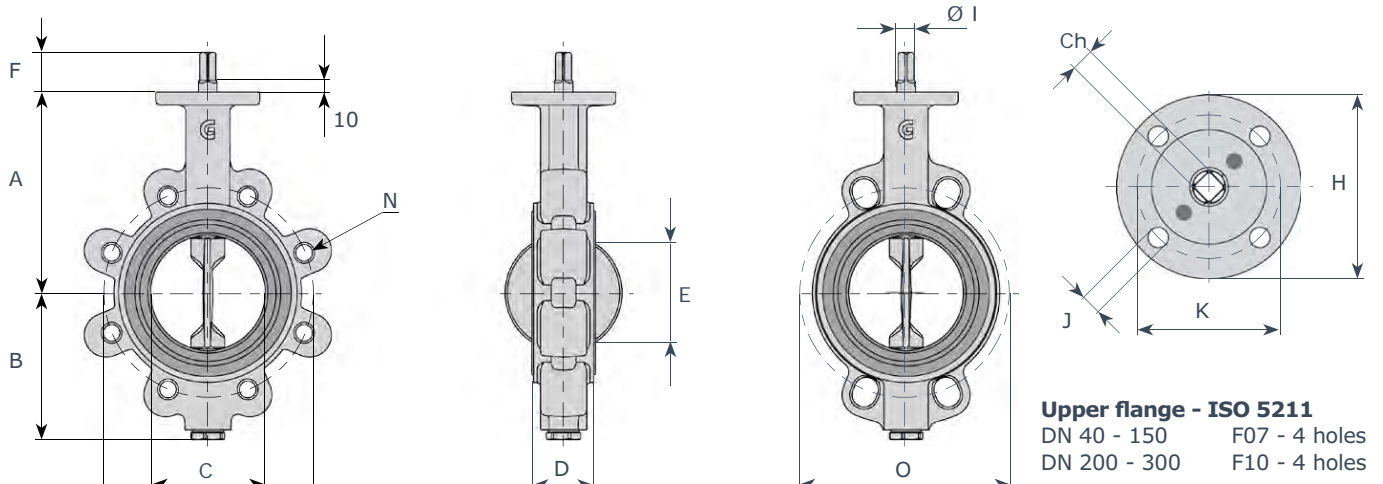
DN 125 - 200 • 5" - 8"  
PN 16-25 • ANSI 150

item	q.ty	part	material
1	1	body	ductile iron GS400
2	1	disc	<ul style="list-style-type: none"> <li>A351-CF8M (AISI 316)</li> <li>aluminium-bronze</li> <li>Hastelloy®</li> <li>Monel®</li> </ul>
3	1	body seat (vulcanized not replaceable)	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>EPDM</li> <li>EPDM HT</li> <li>FKM (VITON®)</li> </ul>
4	1	shaft	<ul style="list-style-type: none"> <li>AISI 430</li> <li>AISI 316 (on request)</li> </ul>
5	2	screw	AISI 316
◇6	2	O.Ring	PTFE
7	2	washer	AISI 316
◇8	1	bush	bronze
◇9	1	shaft packing	<ul style="list-style-type: none"> <li>NBR (BUNA®)</li> <li>FKM (VITON®) (on req.)</li> </ul>
10	1	plug packing	aluminium
11	1	threaded plug	zinc plated steel
12	1	upper flange	<ul style="list-style-type: none"> <li>IXEF (DN 125-150)</li> <li>aluminium (DN 200-250)</li> </ul>
13	1	stop ring	steel
14	2	screw	zinc plated steel
◇15	2	upper bush	steel + PTFE
◇16	2	lower bush	steel + PTFE

◇ parts included in spare kit



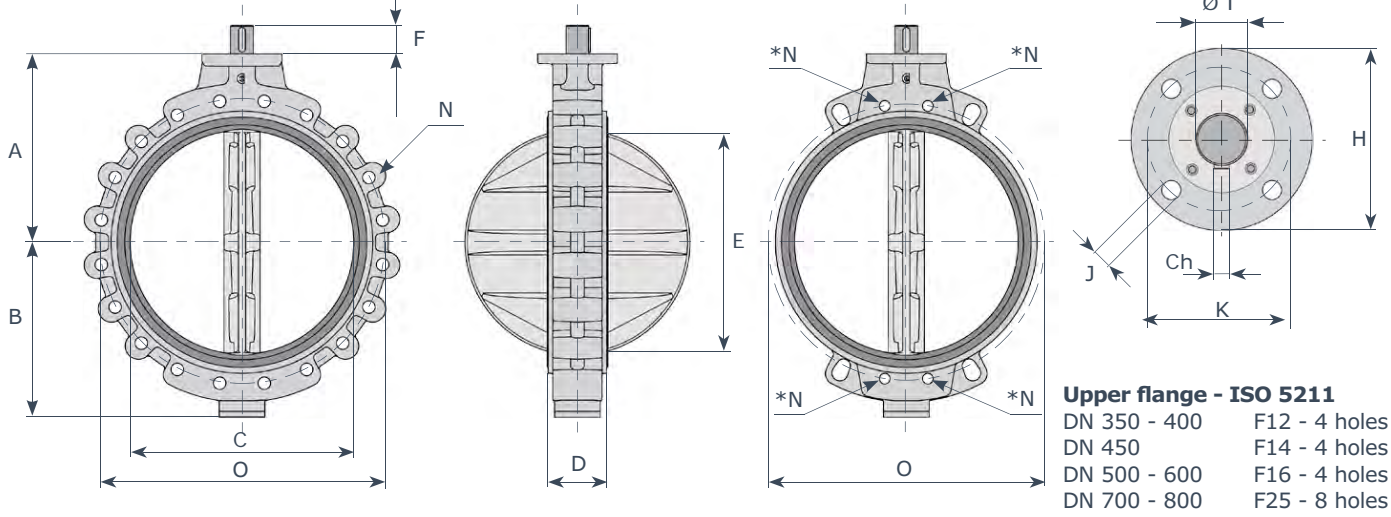
BVPD - Wafer BLPD - Lug | BVKI - Wafer BLKI - Lug | BVKA - Wafer BLKA - Lug



**Upper flange - ISO 5211**  
 DN 40 - 150 F07 - 4 holes  
 DN 200 - 300 F10 - 4 holes

Note: in case of ANSI150 flanges, threading can be:  
 $1\frac{1}{2}'' \div 12''$  ANSI B1.1UNC2B

DN	A	B	C	D	E	F	Ø I	Ch	H	K	J	Kg															
												PN 6			PN 10			PN 16			ANSI 150			PD-KI		KA	
												N	n.	O	N	n.	O	N	n.	O	N	n.	O	W	L	W	L
40	130	75	49	33	36	34	14	11	90	70	9	-	-	-	M16	4	110	M16	4	110	M14	4	98.4	2.2	3	2.2	3
50	138	81	55	43	35	34	14	11	90	70	9	M12	4	110	M16	4	125	M16	4	125	M16	4	120.6	2.8	3.7	2.8	3.7
65	144	98	68	46	50	34	14	11	90	70	9	M12	4	130	M16	8	145	M16	8	145	M16	4	139.7	3.7	5.3	3.7	5.3
80	158	110	81	46	67	34	14	11	90	70	9	M16	4	150	M16	8	160	M16	8	160	M16	4	152.4	4	6.1	4	6.1
100	173	128	101	52	87	34	16	11	90	70	9	M16	4	170	M16	8	180	M16	8	180	M16	8	190.5	6	8.1	6	8.1
125	186	140	126	56	113	34	18	14	90	70	9	M16	8	200	M16	8	210	M16	8	210	M20	8	215.9	7.2	9.7	7.2	9.7
150	202	155	150	56	140	34	18	14	90	70	9	M16	8	225	M20	8	240	M20	8	240	M20	8	241.3	9.1	11.5	9.5	11.8
200	240	190	200	60	191	38	22	17	125	102	11	M16	8	280	M20	8	295	M20	12	295	M20	8	298.4	14	27	16	29
250	270	220	250	68	241	38	30	22	125	102	11	M16	12	335	M20	12	350	M24	12	355	M22	12	361.9	22	34	26	38
300	300	247	298	78	289	38	30	22	125	102	11	M20	12	395	M20	12	400	M24	12	410	M22	12	431.8	32	49	36	53



**Upper flange - ISO 5211**  
 DN 350 - 400 F12 - 4 holes  
 DN 450 F14 - 4 holes  
 DN 500 - 600 F16 - 4 holes  
 DN 700 - 800 F25 - 8 holes

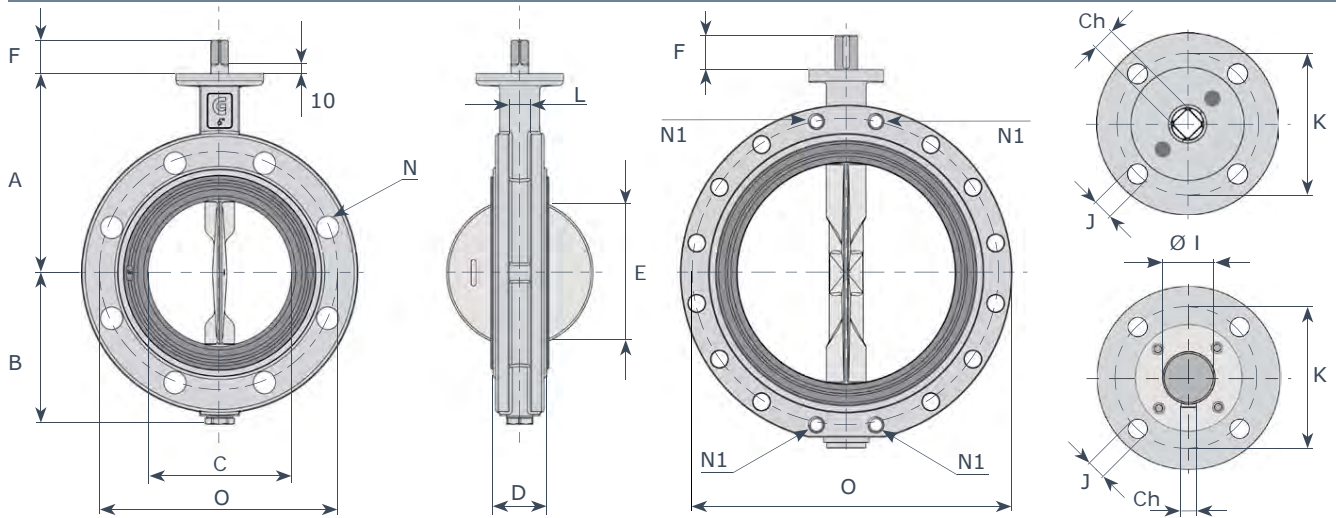
Note: in case of ANSI150 flanges, threading can be: 14" ANSI B1.1UNC2B  
 16" ÷ 32" ANSI B1.1-8 UNC2B

\*Note: WAFER bodies DN 600 - 700 - 800 have 4 holes N threaded as relevant LUG version

DN	A	B	C	D	E	F	Ø I	Ch	H	K	J	Kg															
												PN 6			PN 10			PN 16			ANSI 150			PD-KI		KA	
												N	n.	O	N	n.	O	N	n.	O	N	n.	O	W	L	W	L
350	330	280	341	78	332	60	35	10	150	125	14	M20	12	445	M20	16	460	M24	16	470	M24	12	476.2	42	62	55	75
400	355	305	390	102	376	60	40	12	150	125	14	M20	16	495	M24	16	515	M27	16	525	M27	16	539.7	76	90	94	104
450	400	343	444	114	430	60	45	12	175	140	18	M20	16	550	M24	20	565	M27	20	585	M27	16	577.8	110	170	135	195
500	422	366	495	127	479	60	45	12	210	165	22	M20	20	600	M24	20	620	M30	20	650	M27	20	635.0	140	180	165	205
600	495	460	595	154	575	75	60	18	210	165	22	M24	20	705	M27	20	725	M33	20	770	M33	20	749.3	220	290	220	290
700	550	506	690	165	670	90	70	20	300	254	18	M24	24	810	M27	24	840	M33	24	840	M33	28	863.6	300	415	300	415
800	640	590	780	190	757	100	80	22	300	254	18	M27	24	920	M30	24	950	M36	24	950	M39	28	977.9	444	570	465	570



**BFKI - Double Flange**

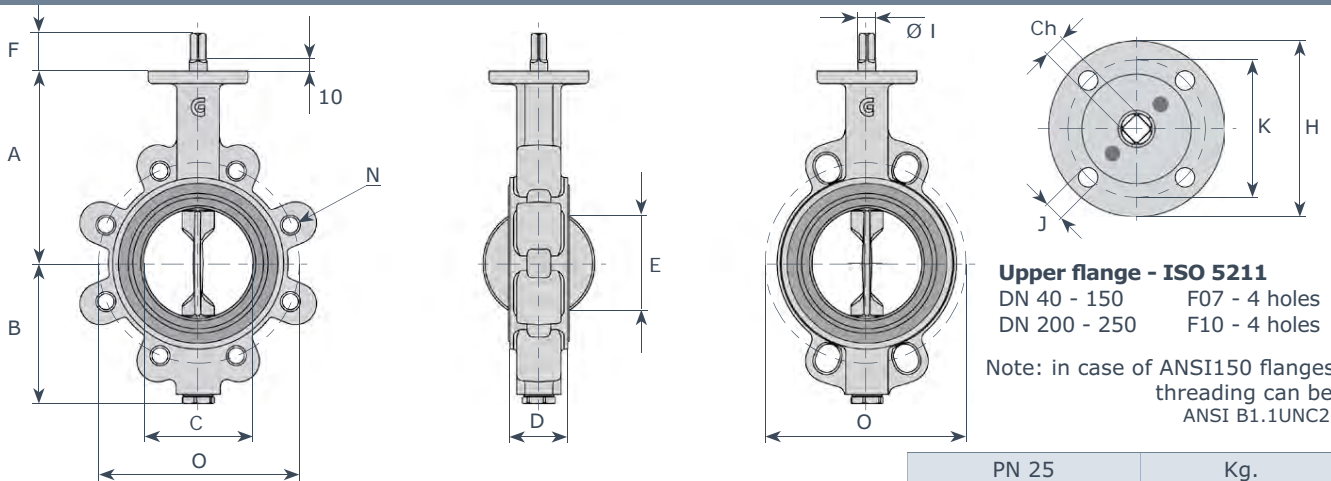


**Upper flange - ISO 5211**  
 DN 80 - 150 F07 - 4 holes  
 DN 200 - 300 F10 - 4 holes  
 DN 350 - 400 DN 450  
 DN 500 - 600 F12 - 4 holes  
 F14 - 4 holes  
 F16 - 4 holes

Note: in case of ANSI150 flanges, threading can be: 16"÷24" ANSI B1.1-8 UNC2B

DN	"	PN 6												PN 10				PN 16				ANSI 150				Kg.			
		A	B	C	D	E	F	Ø I	Ch	K	J	L	N	N1	n.	O	N	N1	n.	O	N	N1	n.	O	N		N1	n.	O
80	3	158	110	81	46	67	34	14	11	70	9	14	18	--	4	150	18	--	8	160	18	--	8	160	18	--	4	152.4	6.5
100	4	173	128	101	52	87	34	16	11	70	9	16	18	--	4	170	18	--	8	180	18	--	8	180	18	--	8	190.5	8
125	5	186	140	126	56	113	34	18	14	70	9	18	18	--	8	200	18	--	8	210	18	--	8	210	22	--	8	215.9	10
150	6	202	155	150	56	140	34	18	14	70	9	18	18	--	8	225	22	--	8	240	22	--	8	240	22	--	8	241.3	12
200	8	240	190	200	60	191	38	22	17	102	11	22	18	--	8	280	22	--	8	295	22	--	12	295	22	--	8	298.4	20
250	10	270	220	250	68	241	38	30	22	102	11	30	18	--	12	335	22	--	12	350	25	--	12	355	25	--	12	361.9	30
300	12	300	247	298	78	289	38	30	22	102	11	30	22	--	12	395	22	--	12	400	25	--	12	410	25	--	12	431.8	46
350	14	330	285	341	78	332	60	35	10	125	14	35	22	--	12	445	22	--	16	460	25	--	16	470	28	--	12	476.2	65
400	16	355	310	390	102	376	60	40	12	125	14	40	22	M20	16	495	25	M24	16	515	30	M27	16	525	30	M27	16	539.7	85
450	18	400	343	444	114	430	60	45	12	140	18	45	22	M20	16	550	25	M24	20	565	30	M27	20	585	30	M27	16	577.8	120
500	20	422	375	495	127	479	60	45	12	165	22	45	22	M20	20	600	25	M24	20	620	33	M30	20	650	30	M27	20	635.0	180
600	24	495	460	595	154	575	75	60	18	165	22	60	25	M24	20	705	30	M27	20	725	36	M33	20	770	36	M33	20	749.3	270

**BVKX - Wafer BLKX - Lug**



**Upper flange - ISO 5211**  
 DN 40 - 150 F07 - 4 holes  
 DN 200 - 250 F10 - 4 holes  
 Note: in case of ANSI150 flanges, threading can be: ANSI B1.1UNC2B

DN	"	PN 25												Kg.			
		A	B	C	D	E	F	Ø I	Ch	H	K	J	N	n.	O	wafer	lug
50	2	138	81	55	43	35	34	14	11	90	70	9	M16	4	125	2.8	3.7
65	2 1/2	144	98	68	46	50	34	14	11	90	70	9	M16	8	145	3.7	5.3
80	3	158	110	81	46	67	34	14	11	90	70	9	M16	8	160	4	6.1
100	4	173	128	101	52	87	34	16	11	90	70	9	M20	8	190	6	8.1
125	5	186	140	126	56	113	34	18	14	90	70	9	M24	8	220	7.2	9.7
150	6	202	155	150	56	140	34	18	14	90	70	9	M24	8	250	9.5	11.8
200	8	240	190	200	60	191	38	22	17	125	102	11	M24	12	310	16	29
250	10	270	220	250	68	241	38	30	22	125	102	11	--	--	370	25	--

**PD Series - Torque values - Nm - safety factor excluded**

Seat body NBR/EPDM/Carboxide						fluid H <sub>2</sub> O - 20°C			Seat body FKM/natural rubber						fluid H <sub>2</sub> O - 20°C		
working pressure BAR									working pressure BAR								
DN	0	6	DN	0	6	DN	0	6	DN	0	6	DN	0	6	DN	0	6
50/65	4	6	150	40	49	350	345	370	50/65	6	9	150	52	65	350	465	495
80	5	7	200	47	58	400	382	405	80	7	11	200	62	78	400	515	540
100	8	12	250	89	100	450	427	465	100	11	16	250	120	134	450	578	627
125	22	31	300	167	180	500	450	500	125	29	42	300	225	241	500	607	675

**KI Series - Torque values - Nm - safety factor excluded**

Seat body NBR/EPDM					fluid H <sub>2</sub> O - 20°C									
working pressure BAR					working pressure BAR					working pressure BAR				
DN	0	6	10	16	DN	0	6	10	16	DN	0	6	10	16
40	11	11	13	14	150	55	60	84	90	450	480	520	720	1050
50	11	12	13	15	200	100	107	180	210	500	550	600	810	1600
65	11	16	16	18	250	160	175	220	320	600	1650	1960	2300	-
80	20	30	36	40	300	260	270	320	390	700	2270	3000	3350	-
100	40	43	45	48	350	410	450	590	850	800	3200	3400	4000	-
125	48	52	52	70	400	450	480	650	900					

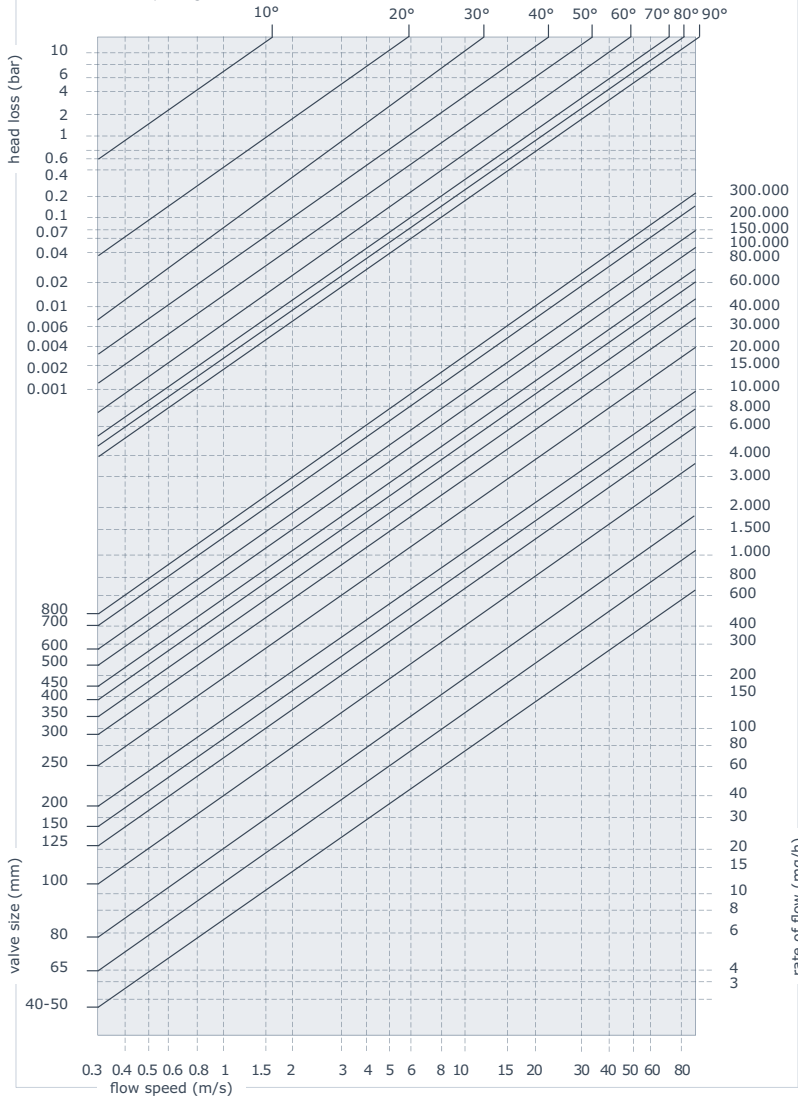
Seat body FKM/natural rubber					fluid H <sub>2</sub> O - 20°C									
working pressure BAR					working pressure BAR					working pressure BAR				
DN	0	6	10	16	DN	0	6	10	16	DN	0	6	10	16
40	14	14	16	17	150	66	72	101	108	450	580	630	880	1310
50	14	15	16	18	200	120	129	216	252	500	660	740	990	2020
65	14	20	20	22	250	192	210	264	386	600	1980	2380	2760	-
80	24	36	44	48	300	312	330	396	480	700	2750	3680	4040	-
100	48	52	54	58	350	498	545	728	1050	800	3880	4120	4860	-
125	60	62	64	84	400	550	584	798	1120					

**KA/KX Series - Torque values - Nm - safety factor excluded**

Seat body NBR/EPDM							fluid H <sub>2</sub> O - 20°C							
working pressure BAR							working pressure BAR							
DN	0	6	10	16	20	25	DN	0	6	10	16	20		
40	12	12	14	15	15	-	300	272	294	362	410	429		
50	12	13	14	16	17	20	350	431	557	714	1071	1122		
65	12	17	17	19	20	31	400	683	767	893	1470	1540		
80	21	32	38	42	44	49	450	1000	1208	1313	1995	2090		
100	42	45	47	50	53	65	500	1155	1418	1733	2625	2750		
125	50	55	55	74	77	82	600	2300	2800	3700	4800	5280		
150	58	63	88	95	99	103	700	3800	5050	5600	6900	7590		
200	105	112	189	221	231	320	800	5200	6800	7900	10300	11330		
250	175	190	231	336	352	440								

Head losses

notes: values indicated in this page is only for information  
disc opening valve



Formulae for calculation of rate flow

**Liquids:**  $Q = \frac{KV}{\sqrt{\frac{PS}{\Delta P}}}$

- Q rate of flow (m³/h)
- PS specific gravity (water=1)
- ΔP pressure drop (bar)

**Gas:**  $Q = 28.5 \cdot \frac{KV}{\sqrt{P_2 \cdot \Delta P}}$

- Q rate of flow (m³/h)
- PS specific gravity (air=1)
- ΔP pressure drop (bar) (less than 1/2 inlet pressure)
- P<sub>2</sub> outlet pressure

**Steam:**  $Q = 22.5 \cdot KV \cdot \sqrt{P_2 \cdot \Delta P}$

- Q rate of flow (Kg/h)
- ΔP pressure drop (bar) (less than 1/2 inlet pressure)
- P<sub>2</sub> outlet pressure

Calculation of the rate of flow equivalent to H<sub>2</sub>O:

$$Q_e = Q \sqrt{\frac{d}{1000}}$$

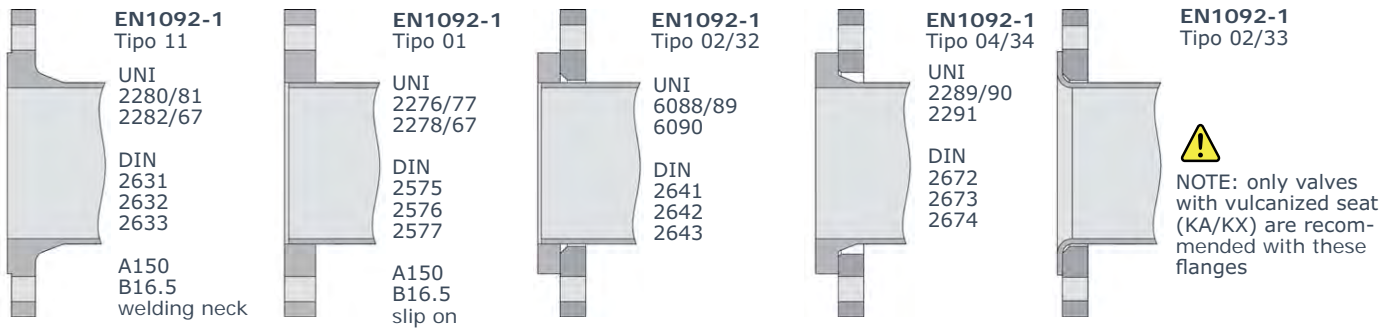
For different liquid, gas or steam head losses are determined by equivalent water of flow, as follows:

- Q<sub>e</sub> equivalent water flow (mc/l o l/s)
- Q fluid flow (mc/l o l/s)
- d fluid specific gravity (Kg/mc)

Values KV (CV = 1,16 KV)

angle	40/50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800
5°	-	-	-	-	-	-	-	-	-	53	68	85	106	151	206	270
10°	-	-	-	-	-	-	-	21	49	123	161	199	246	354	482	629
15°	0,2	0,6	1,8	2,4	4,2	5,6	14	80	188	228	299	369	457	658	900	1168
20°	0,9	2,5	5,2	9,5	15	23	110	156	280	315	412	511	630	907	1234	2010
25°	3	6,1	12	22	38	61	125	225	354	457	597	740	914	1314	1789	2735
30°	6,1	11	21	39	69	112	211	310	381	661	863	1069	1320	1899	2585	5080
35°	9,9	18	33	60	105	166	303	433	521	890	1162	1440	1778	2560	3484	6254
40°	15	27	49	88	148	228	405	591	742	1184	1547	1916	2366	3407	4638	9700
45°	21	38	68	121	199	303	528	774	987	1552	2028	2512	3102	4466	6079	11581
50°	29	51	91	159	262	394	679	988	1252	2008	2620	3248	4010	5774	7860	15000
55°	39	68	119	207	338	505	863	1247	1571	2548	3318	4123	5090	7329	9976	17765
60°	53	90	156	269	434	641	1085	1591	2059	3225	4202	5218	6442	9277	12627	22200
65°	72	121	209	357	565	820	1364	2065	2807	3983	5196	6445	7957	11457	15595	26077
70°	92	161	283	487	768	1097	1788	2715	3744	5195	6775	8412	10377	14944	20341	34500
75°	109	209	381	662	1059	1507	2425	3625	4935	6964	9084	11269	13912	20032	27267	39546
80°	115	240	457	815	1303	1861	3043	4768	6831	9301	12142	15048	18578	26752	36413	47560
85°	115	253	502	906	1457	2008	3642	4890	8230	10280	13408	16632	20533	29568	40246	52566
90°	116	257	508	925	1492	2168	3838	5010	9233	10792	14082	17840	22024	31715	43166	56381

Flanges to be used



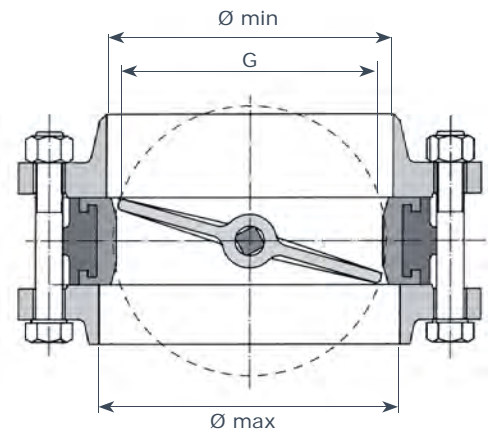
Bolts and rods dimensions

DN	Wafer valves											
	PN 6			PN 10			PN 16			ANSI 150		
	Bolts	Rods	N°	Bolts	Rods	N°	Bolts	Rods	N°	Bolts	Rods	N°
40	M12x80	M12x90	4	M16x90	M16x100	4	M16x90	M16x100	4	M14x90	M14x110	4
50	M12x90	M12x100	4	M16x100	M16x120	4	M16x100	M16x120	4	M16x100	M16x130	4
65	M12x100	M12x110	4	M16x110	M16x130	8	M16x110	M16x130	8	M16x110	M16x140	4
80	M16x100	M16x120	4	M16x110	M16x130	8	M16x110	M16x130	8	M16x120	M16x150	4
100	M16x110	M16x120	4	M16x120	M16x140	8	M16x120	M16x140	8	M16x120	M16x150	8
125	M16x120	M16x140	8	M16x120	M16x150	8	M16x120	M16x150	8	M20x130	M20x160	8
150	M16x120	M16x140	8	M20x130	M20x160	8	M20x130	M20x160	8	M20x140	M20x160	8
200	M16x130	M16x150	8	M20x140	M20x170	8	M20x140	M20x170	12	M20x150	M20x170	8
250	M16x140	M16x160	12	M20x150	M20x180	12	M24x150	M24x180	12	M22x160	M22x190	12
300	M20x150	M20x180	12	M20x160	M20x190	12	M24x160	M24x190	12	M22x170	M22x210	12
350	M20x150	M20x180	12	M20x160	M20x190	16	M24x170	M24x200	16	M24x180	M24x220	12
400	M20x180	M20x210	16	M24x190	M24x220	16	M27x210	M27x240	16	M27x210	M27x250	16
450	M20x190	M20x220	16	M24x200	M24x230	20	M27x220	M27x250	20	M27x230	M27x270	16
500	M20x210	M20x240	20	M24x210	M24x240	20	M30x240	M30x280	20	M27x250	M27x290	20
600	M24x240	M24x270	20	M27x250	M27x290	20	M33x270	M33x320	20	M33x290	M33x340	20
700	M24x250	M24x280	24	M27x260	M27x310	24	M33x280	M33x330	24	M33x350	M33x400	28
800	M27x280	M27x320	24	M30x290	M30x350	24	M36x320	M36x360	24	M39x400	M33x460	28

DN	Lug valves - Double Flange valves							
	PN 6		PN 10		PN 16		ANSI 150	
	Bolts	N°	Bolts	N°	Bolts	N°	Bolts	N°
40	M12x30	8	M16x30	8	M16x30	8	M14x30	8
50	M12x35	8	M16x35	8	M16x35	8	M16x35	8
65	M12x35	8	M16x40	16	M16x40	16	M16x40	8
80	M16x40	8	M16x40	16	M16x40	16	M16x40	8
100	M16x40	8	M16x40	16	M16x40	16	M16x45	16
125	M16x45	16	M16x45	16	M16x45	16	M20x50	16
150	M16x45	16	M20x45	16	M20x45	16	M20x50	16
200	M16x50	16	M20x50	16	M20x50	24	M20x55	16
250	M16x55	24	M20x55	24	M24x55	24	M22x60	24
300	M20x60	24	M20x60	24	M24x60	24	M22x60	24
350	M20x60	24	M20x60	32	M24x65	32	M24x65	24
400	M20x70	32	M24x70	32	M27x70	32	M27x80	32
450	M20x80	32	M24x80	40	M27x80	40	M27x80	32
500	M20x80	40	M24x80	40	M30x80	40	M27x90	40
600	M24x90	40	M27x90	40	M33x100	40	M33x100	40
700	M24x100	48	M27x100	48	M33x110	48	M33x130	56
800	M27x110	48	M30x120	48	M36x130	48	M39x150	56

NOTE 1: Screw and rod dimensions have been calculated with WELDING NECK flanges PN 6/10/16 (EN1092-1 Tipe 11) ANSI150 (ANSI B16.5)

NOTE 2: Number of nuts should be double when WAFER valves are assembled with threaded rods.



DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800
G	36	35	50	67	87	113	140	191	241	289	332	376	430	475	575	670	757
Ø min	46	44	60	75	98	122	148	196	244	296	342	378	440	485	585	681	782
Ø max	49	62	80	93	118	146	175	225	275	330	372	422	450	500	600	717	815

Compatibility flanges - body Wafer

DN	EN 1092-1 / EN 1092-2					ASME/ANSI			BS 10		JIS B2220		
	PN 6	PN 10	PN 16	PN 25	PN 40	class 125	class 150	class 300	tab D	tab E	5K	10K	16K
40	☐	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
50	☐	✓	✓	✓	✓	✓	✓	●	●	●	●	☐	✗
65	☐	✓	✓	✓	✓	✓	✓	●	●	●	✓	☐	☐
80	☐	✓	✓	✓	✓	✓	✓	●	●	●	●	●	✓
100	☐	✓	✓	●	●	✓	✓	✗	●	✓	✗	●	✓
125	☐	✓	✓	● (1)	● (1)	✓	✓	✗	✓	✓	☐	✓	● (1)
150	☐	✓	✓	● (1)	● (1)	✓	✓	✗	●	●	✓	✓	✗
200	☐	✓	✓	✓ (2)	✗	✓	✓	✗	✓	✓	●	✓	✓ (2)
250	☐	✓	✓	●	✗	✓	✓	✗	✗	✓	●	✓	✗
300	☐	✓	✓	✓ (2)	✗	✓	✓	✗	✓	✓	●	●	✓ (2)
350	☐	✓	✓	●	✗	✓	✓	✗	✓	✓	●	●	●
400	☐	✓	✓	●	✗	✓	✓	✗	✗	✗	●	●	✓
450	☐	✓	✓	●	✗	✓	✓	✗	✗	●	●	✓	✗
500	☐	✓	✓	●	✗	✓	✓	✗	✗	✗	●	✓	✓
600	☐	✓	✓	●	✗	✓	✓	✗	✗	✗	●	✗	✗
700	☐	✓	✓	✗	✗		✓	✗			●	✓	✗
800	☐	✓	✓	✗	✗		✓	✗			●	✓	✗

✓ standard  
 ☐ only body PN 6 version  
 ● on request  
 ✗ not possible

(1) only with ductile iron bodies  
 (2) standard with ductile iron and steel bodies, on request with different materials

Compatibility flanges - body Lug

DN	EN 1092-1 / EN 1092-2					ASME/ANSI			BS 10		JIS B2220		
	PN 6	PN 10	PN 16	PN 25	PN 40	class 125	class 150	class 300	tab D	tab E	5K	10K	16K
40	☐	✓	✓	✓	✓	✓	✓	●	☐	☐	●	●	●
50	☐	✓	✓	✓	✓	✓	✓	●	●	●	●	●	✗
65	☐	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●
80	☐	✓	✓	✓	✓	✓	✓	●	●	●	●	●	✓
100	☐	✓	✓	●	●	✓	✓	✗	●	✓	✗	●	●
125	☐	✓	✓	● (1)	● (1)	✓	✓	✗	✓	✓	✓	✓	● (1)
150	☐	✓	✓	● (1)	● (1)	✓	✓	✗	●	●	●	✓	✗
200	☐	✓	✓	●	✗	✓	✓	✗	●	●	●	✓	✗
250	☐	✓	✓	✗	✗	✓	✓	✗	✗	●	●	✓ (1)	✗
300	☐	✓	✓	✗	✗	✓	✓	✗	●	●	●	●	✗
350	☐	✓	✓	✗	✗	✓	✓	✗	●	●	●	●	✗
400	☐	✓	✓	✗	✗	✓	✓	✗	●	●	●	●	●
450	☐	✓	✓	✗	✗	✓	✓	✗	✗	●	●	✓	✗
500	☐	✓	✓	✗	✗	✓	✓	✗	✗	✗	●	✓	✗
600	☐	✓	✓	●	✗	✓	✓	✗	✗	✗	●	✗	✗
700	☐	✓	✓	✗	✗		✓	✗			●	✓	✗
800	☐	✓	✓	✗	✗		✓	✗			●	✓	✗

✓ standard  
 ☐ only body PN 6 version  
 ● on request  
 ✗ not possible

(1) only with ductile iron bodies  
 (2) standard with ductile iron and steel bodies, on request with different materials

Test

GHIBSON valves are built according to following international standards:

Body test pressure:	DIN 3230BA - API598	DIN 3230	body test	hydraulic test	pneu test
Hydraulic test pressure:	DIN 3230BN1 - API598	PN6	9 bar	7 bar	6 bar
Pneumatic test pressure:	DIN 3230BO1 - API598	PN10	15 bar	11 bar	6 bar
Test certificates:	UNI EN 10204 2.2 (standard)	PN16	24 bar	17,6 bar	6 bar
	UNI EN 10204 3.1 (on request)	PN25	38 bar	27,5 bar	6 bar
	UNI EN 10204 3.2 (on request)				

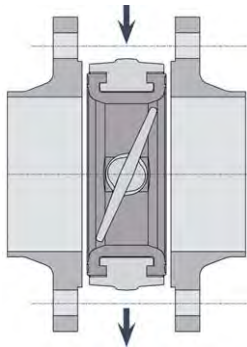
Test duration is indicated by API598 standard

Body test pressure:	Hydraulic test pressure:	Pneumatic test pressure:	API598	body test	hydraulic test
< DN 65 = 15 sec.	< DN 65 = 15 sec.	< DN 65 = 15 sec.	ANSI125	21 bar	18 bar
DN 65 / DN 200 = 80 sec.	DN 65 / DN 200 = 30 sec.	DN 65 / DN 200 = 30 sec.	ANSI150	30 bar	22 bar
> DN 200 = 180 sec.	> DN 200 = 60 sec	> DN 200 = 60 sec	ANSI300	78 bar	58 bar

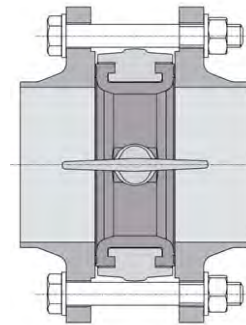


Installation

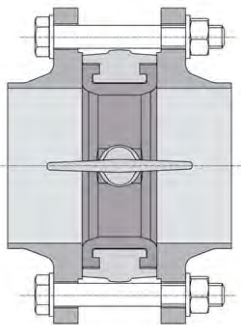
Assembly



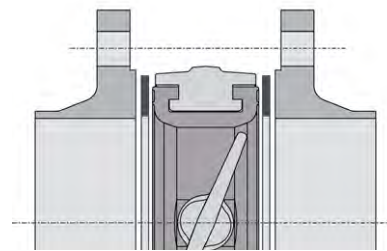
1 - Leave a space between flanges so that valve can be easily inserted and removed.



2 - Open completely the valve before tightening flanges.



3 - Tighten bolts till flanges are in contact with valve body.

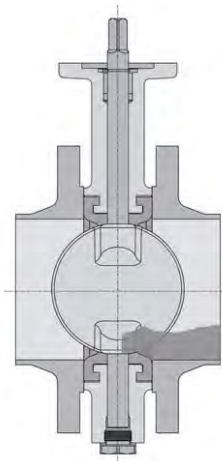


4 - NOTE: do not insert other packing between flange and valve.

NOTE: Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to avoid that heat damage the seat. Clean carefully the welding to avoid that slags damage the seat.

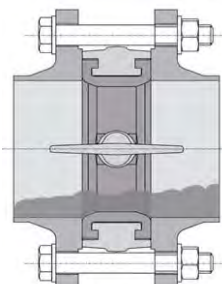
Installation for powders and muddy fluids

In case of use with powders or muddy fluids, install the valve with horizontal rotation axis, to allow sediments to flow easily on opening.



**Wrong**  
Vertical rotation axis

←  
powders or muddy fluids



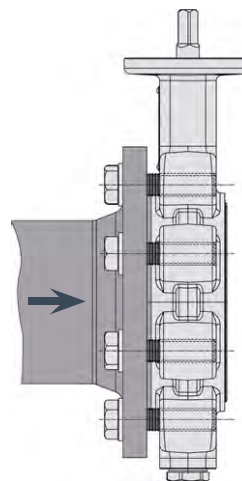
**Right**  
Horizontal rotation axis

←  
powders or muddy fluids

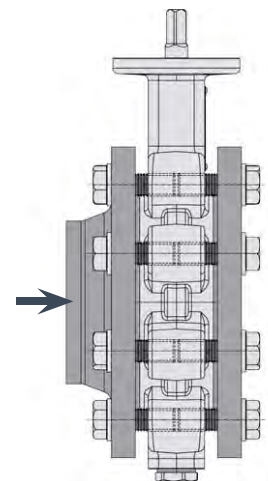
This type of installation is always advisable with valve diameters over DN 400.

End piping installation

When valves are installed end of piping, a counterflange as per dwg type B is needed to secure tightness at max pressure.



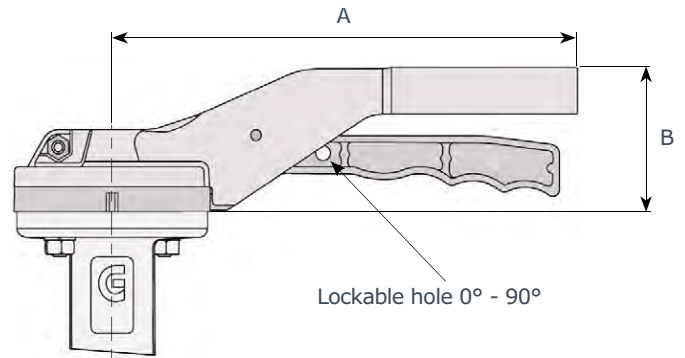
Type A installation without end piping



Type B installation with end piping

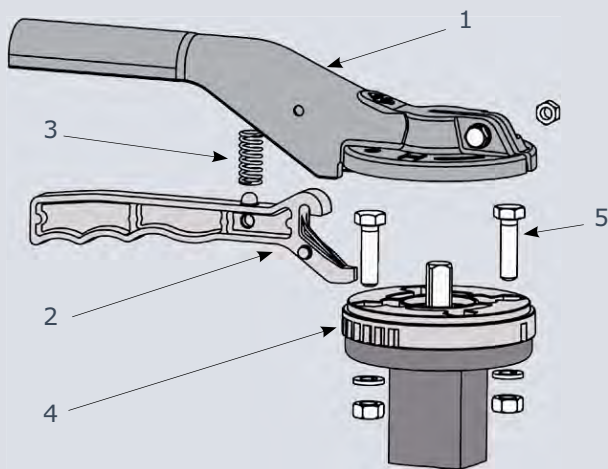
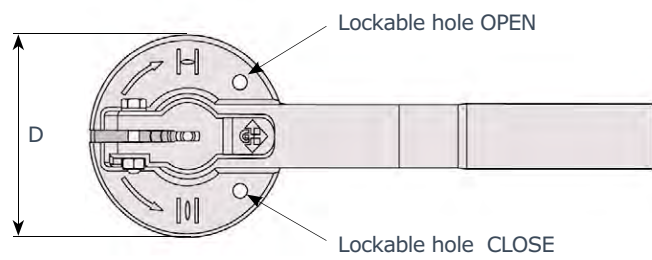
valve type	P <sub>max</sub> (Bar)	
	type A installation	type B installation
BLPD	4	6
BLKI	6	16
BLKA	16	20
BLKX	16	25

Handlevers



DN	A	B	D	Kg
40 - 100	220	67	93	0.6
125 - 150	275	67	93	0.65
200 - 300	340	76	125	1

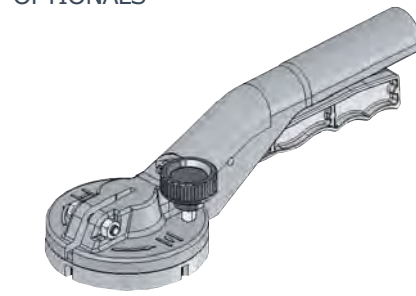
Note:  
DN 250 - 300 handlever not recommended  
(PD series excluded)



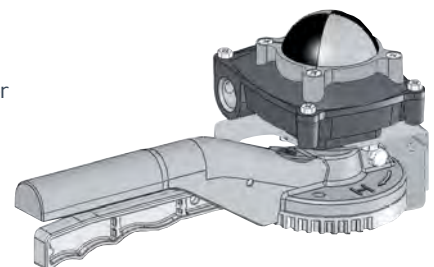
1	lever	aluminium
2	trigger	aluminium
3	spring	stainless steel
4	disc positioning	aluminium
5	screws	steel

\* others material on request

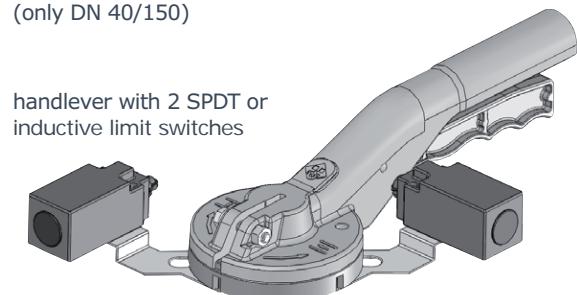
OPTIONALS



Adjustable handlever

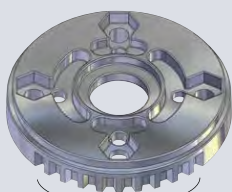


handlever with switch box  
(only DN 40/150)

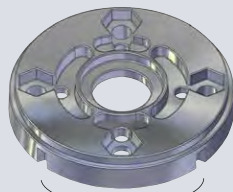


handlever with 2 SPDT or  
inductive limit switches

positioning disc DN 40 - 150 designed for flanges ISO 5211 F05/F07



10 positions



Open - Closed

positioning disc with two types of regulation: 10 positions or Open/Close

**Gearboxes**

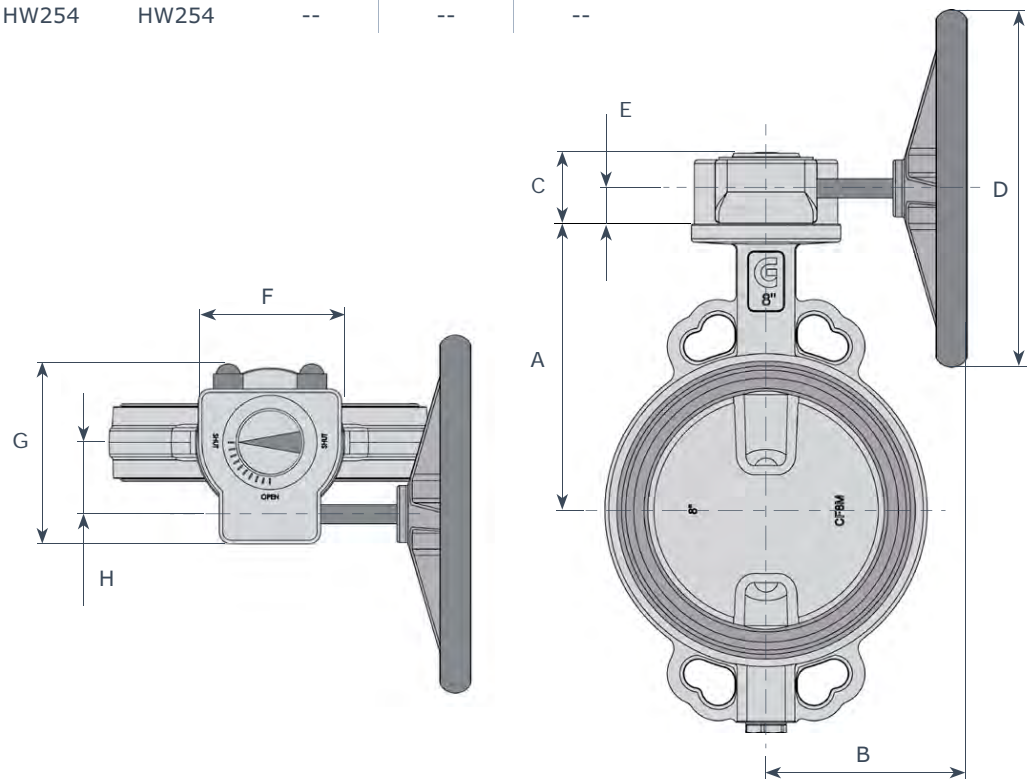
Aluminium body - HW Series

**Coupling valve - actuators**

DN	"	PD	KI			KA	KX
			p = 6 bar	p = 10 bar	p = 16 bar		
40	1 <sup>1/2</sup>	--	HW070	HW070	HW070	--	--
50	2	HW070	HW070	HW070	HW070	HW070	HW070
65	2 <sup>1/2</sup>	HW070	HW070	HW070	HW070	HW070	HW070
80	3	HW070	HW070	HW070	HW070	HW070	HW070
100	4	HW070	HW070	HW070	HW070	HW070	HW070
125	5	HW070	HW070	HW070	HW070	HW070	HW070
150	6	HW070	HW070	HW070	HW070	HW070	HW070
200	8	HW102	HW102	HW102	HW102	HW102	HW102
250	10	HW102	HW102	HW102	HW102	HW102	--
300	12	HW102	HW102	HW102	HW102	HW102	--
350	14	HW140	HW140	HW140	HW140	HW140	--
400	16	HW140	HW140	HW140	HW140	HW165	--
450	18	HW165	HW165	HW165	HW165	HW165	--
500	20	HW165	HW165	HW165	HW165	HW254	--
600	24	--	HW254	HW254	--	--	--
700	28	--	HW254	HW254	--	--	--
800	32	--	HW254	HW254	--	--	--

**HW series**  
 body: aluminium  
 worm gears: steel  
 sector gear: ductile iron  
 shaft: stainless steel  
 handwheel: steel  
 protection: IP65  
 T: -20 / +120 °C

DN	"	A
40	1 <sup>1/2</sup>	130
50	2	138
65	2 <sup>1/2</sup>	144
80	3	158
100	4	173
125	5	186
150	6	202
200	8	240
250	10	270
300	12	300
350	14	330
400	16	355
450	18	400
500	20	422
600	24	495
700	28	550
800	32	640



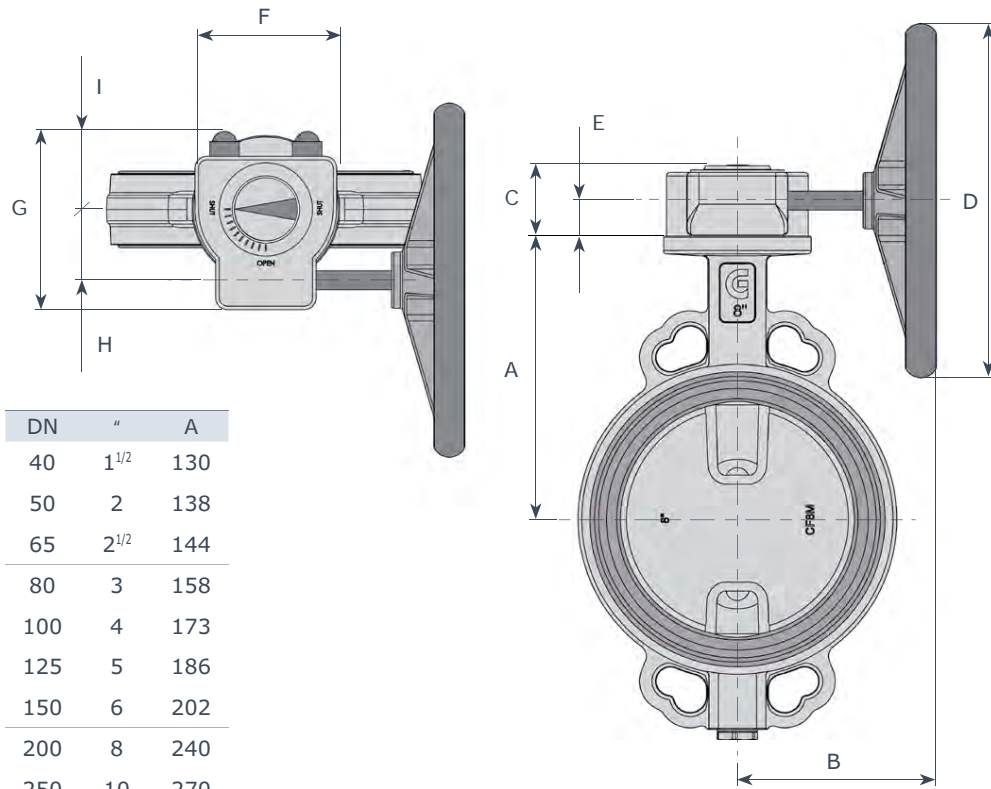
Mod.	B	C	D	E	F	G	H	Kg
HW070	160	48	140	27	80	115	42	1.6
HW102	215	56	250	33	120	150	60	3
HW140	325	95	400	51	185	225	80	10
HW165	395	105	600	61	230	268	105	20
HW254	416	125	700	80	265	332	130	25

**Gearboxes**  
Cast Iron body - AB Series

**Coupling valve - actuators**

DN	"	PD	KI			KA	KX
			p = 6 bar	p = 10 bar	p = 16 bar		
40	1 1/2	AB150	AB150	AB150	AB150	AB150	AB150
50	2	AB150	AB150	AB150	AB150	AB150	AB150
65	2 1/2	AB150	AB150	AB150	AB150	AB150	AB150
80	3	AB150	AB150	AB150	AB150	AB150	AB150
100	4	AB150	AB150	AB150	AB150	AB150	AB150
125	5	AB150	AB150	AB150	AB150	AB150	AB150
150	6	AB150	AB150	AB150	AB150	AB150	AB150
200	8	AB215	AB215	AB215	AB215	AB215	AB215
250	10	AB550	AB550	AB550	AB550	AB550	AB550
300	12	AB550	AB550	AB550	AB550	AB550	AB550
350	14	AB880	AB880	AB880	AB880	AB880	AB880
400	16	AB880	AB880	AB880	AB880	AB880	AB880
450	18	AB880	AB880	AB880	AB880	AB1250	--
500	20	AB880	AB880	AB880	AB880	AB1250	--
600	24	--	AB1250	AB1250	--	AB1954	--
700	28	--	AB1950	AB1950	--	AB6804	--
800	32	--	AB1950	AB1954	--	AB6806	--

**AB series**  
 body: cast iron GG25  
 worm gears: steel  
 sector gear: ductile iron  
 shaft: steel  
 handwheel: steel  
 protection: IP67  
 T: -20 / +120 °C  
 low/high temperature execution on request



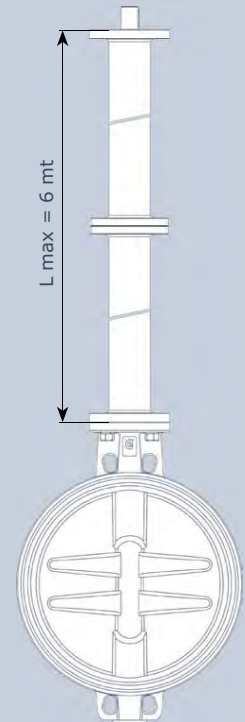
DN	"	A
40	1 1/2	130
50	2	138
65	2 1/2	144
80	3	158
100	4	173
125	5	186
150	6	202
200	8	240
250	10	270
300	12	300
350	14	330
400	16	355
450	18	400
500	20	422
600	24	495
700	28	550
800	32	640

Mod.	B	C	D	E	F	G	H	I	Kg
AB150	134	55	125	27	80	124	43	58	2.2
AB215	197	63	200	29	102	128	52	48	3.5
AB550	292	88	300	41	138	174	71	69	8.5
AB880	319	93	400	42	200	226	86	100	14
AB1250	380	102	500	48	220	258	105	110	22
AB1950	425	126	600	52	285	323	130	143	32
AB1954	485	126	600	52	285	323	211	143	45
AB6804	538	159	600	59	370	407	263	170	70
AB6806	579	159	600	59	370	407	278	170	81

**Waterproof valve shaft extension**

When necessary, it's possible to extend the valve shaft as indicated in the figure. Construction is in carbon steel with protective paint (on request stainless steel). Max length to be supplied is 6 meters from the flange plane to the valve.

"L" measure should be indicated when ordering.



Our technical department is available to solve special applications.



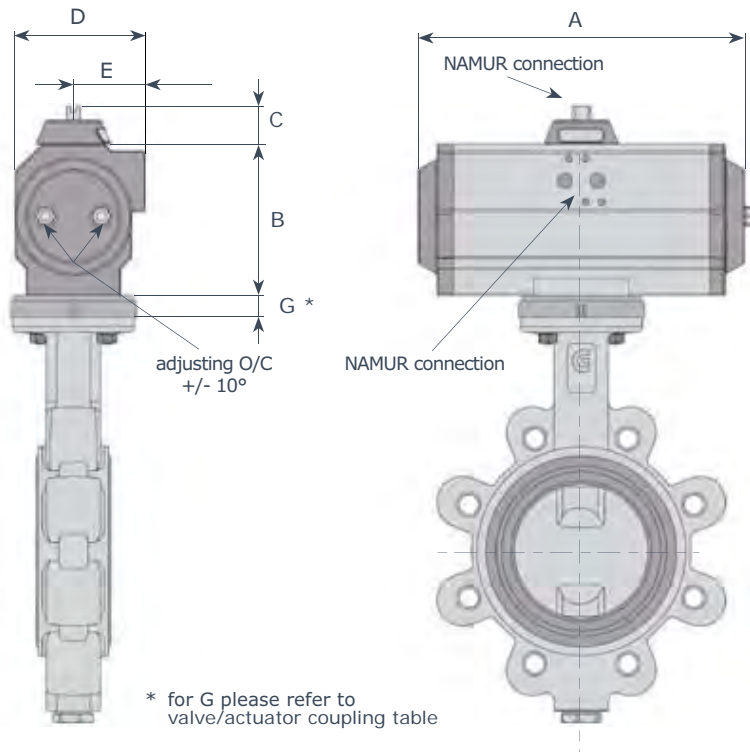
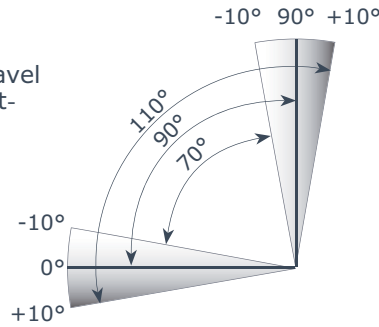
**Pneumatic Actuators**  
DA double acting - SR spring return

**Features:**

Max air pressure: **10 bar**  
 Temperature: **-20°C / +80°C**  
*on request:* **-50°C / +150°C**  
 torque at 5.6 Bar: **31 Nm / 3564 Nm**  
 Double travel stop  
 open/close: **±10°**

UT series actuators feature a bi-directional travel stop. Side located stops allow a ±10° adjustment in both closing and opening directions, so guarantee a range of adjustment between 70° and 110° of actuator stroke.

Stops can be modified on request to allow higher closing/opening angles



**Operating media:**

dry/clear air : P max 10 Bar

**Temperature:**

O-Rings NBR -20° C/+100° C

O-Rings FKM -15° C/+150° C

O-Rings Silicon -50° C/+ 80° C

Rotation: 90°

Regulation range: +/- 10°

Lubrication For Life

**Flange:**

ISO 5211/DIN 3337

connection for solenoid valve,

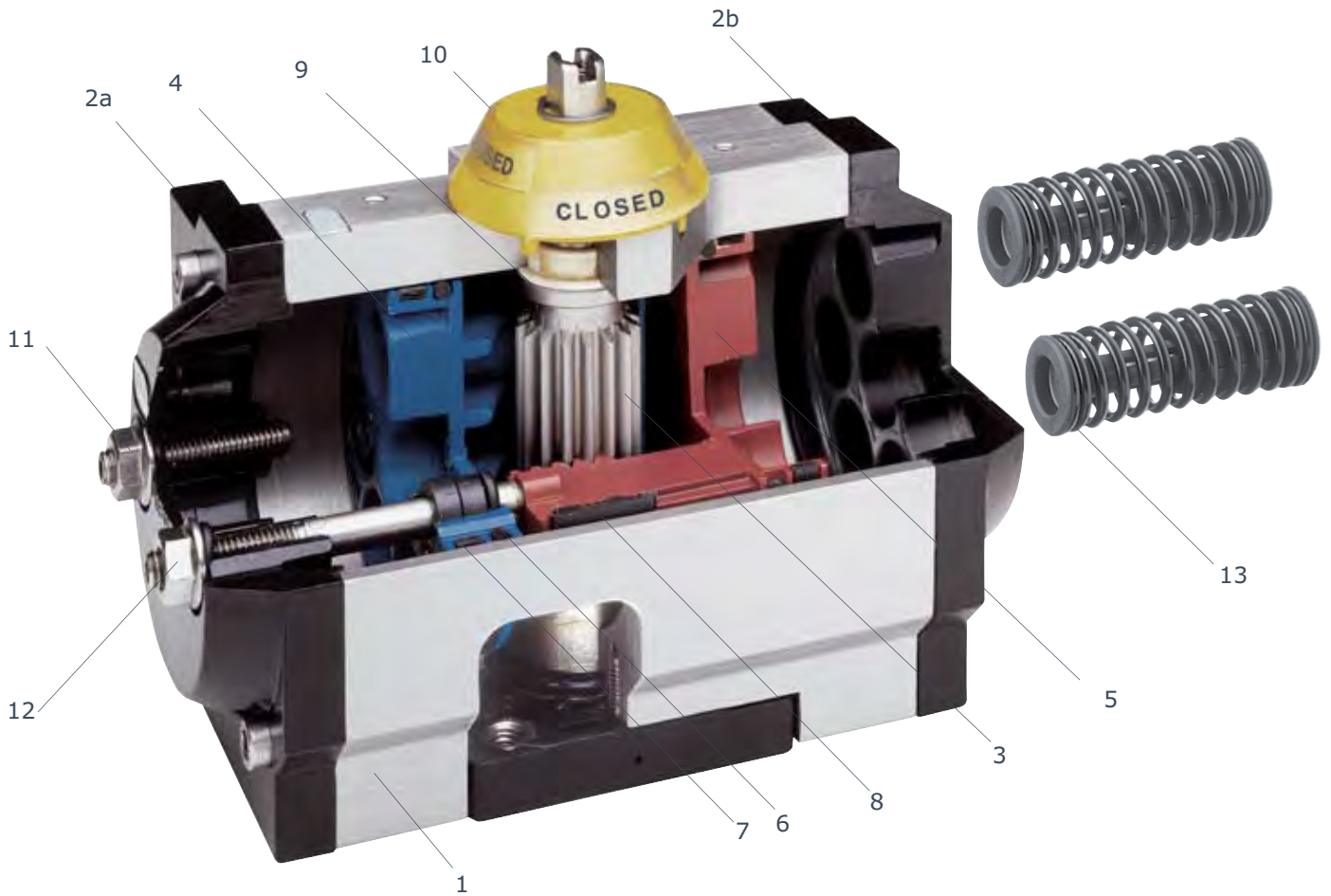
switches box:

NAMUR VDI / VDE 3845

Mod. UT: double acting  
 Mod. UTS: single acting spring return

DA	SR	A	B	C	D	E	DA	SR	A	B	C	D	E
UT 10	UTS 10	119	70	20	67	27	UT 45	UTS 45	351	168.5	30	145	73
UT 15	UTS 15	165	81	30	81	47	UT 50	UTS 50	361	202	30	181	91
UT 17	UTS 17	197	81	30	81	47	UT 55	UTS 55	418	202	30	181	91
UT 20	UTS 20	177	98	30	96	54	UT 60	UTS 60	444	274	30	232	116
UT 25	UTS 25	239	98	30	96	54	UT 65	UTS 65	502	274	30	232	116
UT 30	UTS 30	230	117	30	114	62	UT 70	UTS 70	587	332	30	332	166
UT 35	UTS 35	246	154	30	131	65.5	UT 75	UTS 75	677	332	30	332	166
UT 40	UTS 40	290	154	30	131	65.5	* UTS / UTS4 : same dimensions						

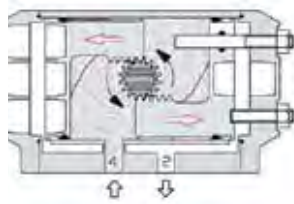
Pneumatic actuators rack & pinion - UT series



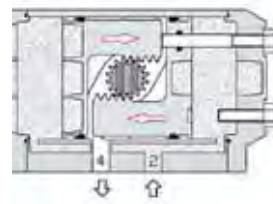
item.	part	material
1	body	<ul style="list-style-type: none"> <li>• anodized aluminium ASTM B210</li> </ul>
2a	left end cap	<ul style="list-style-type: none"> <li>• die-cast aluminium UNI 5076</li> </ul>
2b	right end cap	<ul style="list-style-type: none"> <li>• die-cast aluminium UNI 5076</li> </ul>
3	pinion	<ul style="list-style-type: none"> <li>• steel SAE 11L14</li> <li>• nickel coated steel acc. to ASTM B733</li> </ul>
4	left piston	<ul style="list-style-type: none"> <li>• die-cast aluminium UNI 5076</li> </ul>
5	right piston	<ul style="list-style-type: none"> <li>• die-cast aluminium UNI 5076</li> </ul>
6	piston O-ring	<ul style="list-style-type: none"> <li>• NBR</li> </ul>
7	bearing pad	<ul style="list-style-type: none"> <li>• techno-polymer</li> </ul>
8	piston skate	<ul style="list-style-type: none"> <li>• techno-polymer</li> </ul>
9	bearing pad upper pinion	<ul style="list-style-type: none"> <li>• techno-polymer</li> </ul>
10	position indicator	<ul style="list-style-type: none"> <li>• techno-polymer</li> </ul>
11	open travel stop	<ul style="list-style-type: none"> <li>• stainless steel AISI 304</li> </ul>
12	close travel stop	<ul style="list-style-type: none"> <li>• stainless steel AISI 304</li> </ul>
13	spring SR mod.	<ul style="list-style-type: none"> <li>• spring steel</li> </ul>

Options body and end cap: hard anodizing or PTFE coating or epoxy powder coated units or electroless nickel plating.

Torque chart - double acting - Nm



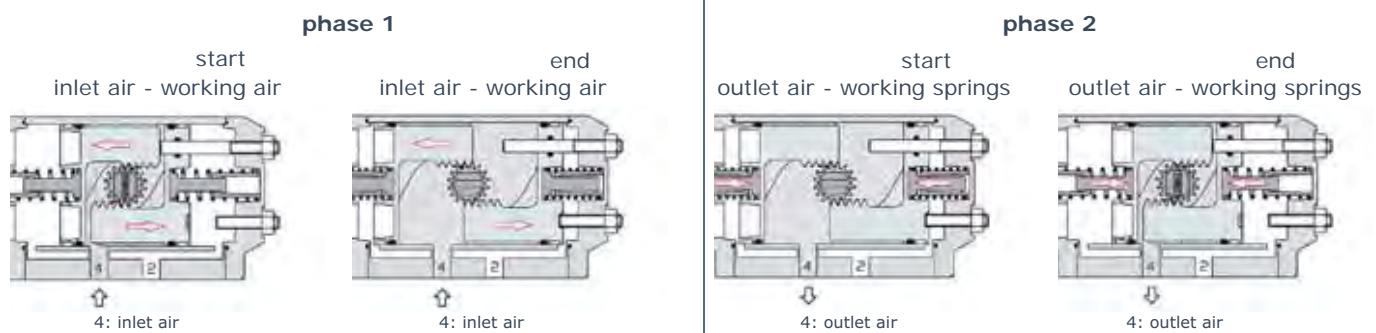
4: inlet air / 2: outlet air



2: inlet air / 4: outlet air

TIPO/TYPER	2 Bar	3 Bar	4 Bar	5 Bar	5,62 Bar	6 Bar	7 Bar	8 Bar	9 Bar	10 Bar
UT 10	2.52	5.0	10.1	12.6	14.1	15.1	17.6	10.5	--	--
UT 15	11	17	22	28	31	33	39	44	50	55
UT 17	15	22	29	36	41	44	51	58	65	73
UT 20	20	30	40	50	57	60	70	80	90	100
UT 25	30	45	60	76	85	91	106	121	136	151
UT 30	40	60	80	101	113	121	141	161	181	201
UT 35	64	97	129	161	180	193	226	258	290	322
UT 40	81	121	161	202	226	242	282	323	363	403
UT 45	126	189	252	315	353	377	440	503	566	629
UT 50	181	272	362	453	509	544	634	725	815	906
UT 55	242	362	483	604	676	725	846	966	1087	1208
UT 60	366	550	733	916	1030	1099	1282	1466	1649	1832
UT 65	483	725	966	1208	1358	1450	1691	1933	2174	2416
UT 70	946	1419	1892	2365	2658	2838	3311	3784	--	--
UT 75	1268	1903	2537	3171	3564	3805	4439	5074	--	--

Torque chart - single acting 90° - Nm



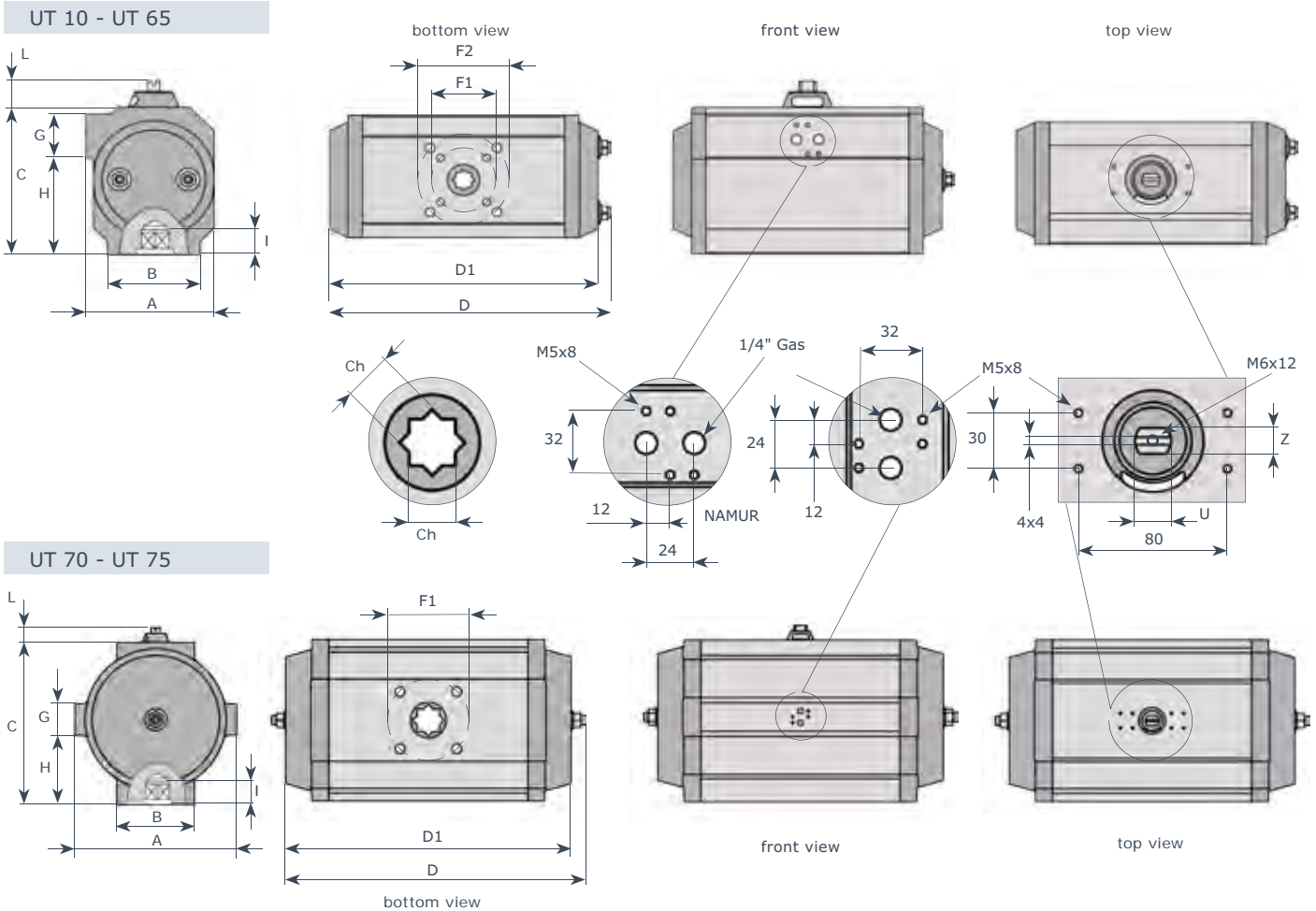
type	springs	phase 1														phase 2	
		3 bar		4 bar		5 bar		5.6 bar		6 bar		7 bar		8 Bar		start	end
UT 10	1+1	5,1	3,9	7,6	6,4	10,1	8,9	11,6	10,4	12,6	11,4	15,1	13,9	17,7	13,9	3,7	2,5
	2+2	2,6	0,2	5,1	2,7	7,6	5,2	9,1	6,7	10,1	7,7	12,6	10,2	15,2	10,2	7,4	5,0
	3+3	--	--	--	--	5,1	1,5	6,6	3,0	7,6	4,0	10,1	6,5	12,7	6,5	11,2	7,5
UT 15	2+2	10,5	8,1	16,0	13,6	21,5	19,1	24,6	22,5	27	24,6	32,5	30,1	38	35,6	8,4	6,0
	3+3	7,4	3,9	12,9	9,4	18,4	14,9	21,8	18,3	23,9	20,4	29,4	25,9	34,9	31,4	12,6	9,1
	4+4	--	--	9,9	5,1	15,4	10,6	18,8	14	20,9	16,1	26,4	21,6	31,9	27,1	16,9	12,1
	5+5	--	--	6,9	0,9	12,4	6,4	15,8	9,8	17,9	11,9	23,4	17,4	28,9	22,9	21,1	15,1
UT 17	2+2	14,5	11,2	21,8	18,5	29,0	25,7	33,4	30,1	36,3	33	43,5	40,2	50,8	47,5	10,5	7,2
	3+3	10,9	6,0	18,2	13,3	25,4	20,5	29,8	24,9	32,7	27,8	39,9	35	47,2	42,3	15,7	10,8
	4+4	7,3	0,8	14,6	8,1	21,8	15,3	26,2	19,7	29,1	22,6	36,3	29,8	43,6	37,1	20,9	14,4
	5+5	--	--	10,9	2,9	18,1	10,1	22,5	14,5	25,4	17,4	32,6	24,6	39,9	31,9	26,1	18,1
UT 20	2+2	19,6	16,2	29,6	26,2	39,6	36,2	46,1	42,7	49,6	46,2	59,6	56,2	69,6	66,2	13,8	10,4
	3+3	14,4	9,2	24,4	19,2	34,4	29,2	40,9	35,7	44,4	39,2	54,4	49,2	64,4	59,2	20,8	15,6
	4+4	9,2	2,3	19,2	12,3	29,2	22,3	35,7	28,8	39,2	32,3	49,2	42,3	59,2	52,3	27,7	20,8
	5+5	--	--	14,0	5,4	24,0	15,4	30,5	21,9	34	25,4	44	35,4	54	45,4	34,6	26,0
7+5	--	--	--	--	18,8	8,4	25,3	14,9	28,8	18,4	38,8	28,4	48,8	38,4	41,6	31,2	

Torque chart - single acting 90° - Nm

type	springs	phase 1														phase 2	
		3 bar		4 bar		5 bar		5.2 bar		6 bar		7 bar		8 Bar		start	end
		start	end	start	end	start	end	start	end	start	end	start	end	start	end		
UT 25	2+2	31,3	23,2	46,4	38,3	61,5	53,4	70,5	62,4	76,6	68,5	91,7	83,6	106,8	98,7	22,1	14,0
	3+3	24,4	12,1	39,5	27,2	54,6	42,3	63,6	51,3	69,7	57,4	84,8	72,5	99,9	87,6	33,2	20,9
	4+4	17,4	1,1	32,5	16,2	47,6	31,3	56,6	40,3	62,7	46,4	77,8	61,5	92,9	76,6	44,2	27,9
	5+5	--	--	25,5	5,1	40,6	20,2	49,6	29,2	55,7	35,3	70,8	50,4	85,9	65,5	55,3	34,9
	7+5	--	--	--	--	33,6	9,2	42,6	18,2	48,7	24,3	63,8	39,4	78,9	54,5	66,3	41,9
UT 30	2+2	39,2	32,0	59,3	52,1	79,4	72,2	91,6	84,4	99,5	92,3	119,6	112,4	139,7	132,5	28,3	21,1
	3+3	28,7	17,9	48,8	38,0	68,9	58,1	81,4	70,3	89	78,2	109,1	98,3	129,2	118,4	42,4	31,6
	4+4	18,1	3,7	38,2	23,8	58,3	43,9	70,5	56,1	78,4	64	98,5	84,1	118,6	104,2	56,6	42,2
	5+5	--	--	27,7	9,7	47,8	29,8	60	42	67,9	49,9	88	70	108,1	90,1	70,7	52,7
	7+5	--	--	--	--	37,3	15,6	49,5	27,8	54,7	35,7	77,5	55,8	97,6	75,9	84,9	63,2
UT 35	2+2	62,0	50,1	94,2	82,3	126,5	114,6	145,8	133,9	158,7	146,8	190,9	179	223,1	211,2	46,5	34,6
	3+3	44,6	26,9	76,8	59,1	109,1	91,4	128,4	110,7	141,3	123,6	173,5	155,8	205,7	188	69,7	52,0
	4+4	27,2	3,6	59,5	35,8	91,8	68,1	111,1	87,4	124	100,3	156,2	132,5	188,4	164,7	93,0	69,3
	5+5	--	--	42,2	12,6	74,5	44,9	93,8	64,2	106,7	77,1	138,9	109,3	171,1	141,4	116,2	86,6
	7+5	--	--	--	--	57,1	21,6	76,4	40,9	89,3	53,8	121,5	86	153,7	118,2	139,5	104,0
UT 40	2+2	79,0	63,9	119,3	104,2	159,6	144,5	183,8	168,7	199,9	184,8	240,3	225,2	280,6	265,5	57,0	41,9
	3+3	58,1	35,4	98,4	75,7	138,7	116	162,9	140,2	179	156,3	219,4	196,7	259,7	237	85,5	62,8
	4+4	37,2	6,8	77,5	47,1	117,8	87,4	142	111,6	158,1	127,7	198,5	168,1	238,8	208,4	114,1	83,7
	5+5	--	--	56,5	18,6	96,8	58,9	121	83,1	137,1	99,2	177,5	139,6	217,8	179,9	142,6	104,7
	7+5	--	--	--	--	75,9	30,4	100,1	54,6	116,2	70,7	156,6	111,1	196,9	151,4	171,1	125,6
UT 45	2+2	125,6	88,3	188,5	151,2	251,4	214,1	289,6	252,3	314,3	277	377,2	339,9	440,1	402,8	100,4	63,1
	3+3	94,0	38,1	156,9	101,0	219,8	163,9	258	202,1	282,7	226,8	345,6	289,7	408,5	352,6	150,6	94,7
	4+4	--	--	125,4	50,8	188,3	113,7	226,5	151,9	251,2	176,6	314,1	239,5	377	302,4	200,8	126,2
	5+5	--	--	--	--	156,7	63,5	194,9	101,7	219,6	126,4	282,5	189,3	345,4	252,2	251,0	157,8
	7+5	--	--	--	--	125,2	13,3	163,4	51,5	188,1	76,2	251	139,1	313,9	202	301,2	189,3
UT 50	2+2	173,7	147,5	264,3	238,1	354,9	328,7	411,1	384,9	445,5	419,3	536,1	509,9	626,7	600,5	124,3	98,1
	3+3	124,6	85,3	215,2	175,9	305,8	266,5	362	322,7	396,4	357,1	487	447,7	577,6	538,2	186,5	147,2
	4+4	--	--	166,2	113,8	256,8	204,4	313	260,6	347,4	295	438	385,6	528,6	476,2	248,6	196,2
	5+5	--	--	117,1	51,6	207,7	142,2	263,9	198,4	298,3	232,8	388,9	323,4	479,5	414	310,8	245,3
	7+5	--	--	--	--	158,7	80,1	214,9	136,3	249,3	170,7	339,9	261,3	430,5	351,9	372,9	294,3
UT55	2+2	243,2	194,4	364,0	315,2	484,8	436	557,3	508,5	605,6	556,8	726,4	677,6	847,2	798,4	167,9	119,1
	3+3	183,6	110,5	304,0	231,3	425,2	352,1	497,7	424,6	546	472,9	666,8	593,7	787,6	714,5	251,8	178,7
	4+4	124,0	26,6	244,8	147,4	365,6	268,2	438,1	340,7	486,4	389	607,2	509,8	728	630,6	335,7	238,3
	5+5	--	--	185,3	63,4	306,1	184,2	378,6	256,7	426,8	305	547,7	425,8	668,5	546,6	419,7	297,8
	7+5	--	--	--	--	246,5	100,3	319	172,8	367,3	221,1	488,1	341,9	608,9	462,7	503,6	357,4
UT 60	2+2	356,5	307,4	539,7	490,6	722,9	763,8	836,5	787,4	906,1	857	1089,3	1040,2	1272,5	1223,4	242,2	193,1
	3+3	260,0	186,2	443,2	369,4	626,4	552,6	740	666,2	812,6	735,8	992,8	919	1176	1102,2	363,4	289,6
	4+4	163,4	65,1	346,6	248,3	529,8	431,5	643,4	545,1	713	614,7	896,2	797,9	1079,4	981,1	484,5	386,2
	5+5	--	--	250,1	127,2	433,3	310,4	546,9	424	616,5	493,6	799,7	676,8	982,9	860	605,6	482,7
	7+5	--	--	153,5	6,2	336,7	189,4	450,3	303	519,9	372,6	703,1	555,8	886,3	739	726,6	579,3
UT 65	2+2	489,6	404,7	731,2	649,3	972,8	890,9	1122,6	1040,7	1214,4	1132,5	1456,6	1374,1	1697,6	1615,5	317,1	235,2
	3+3	372	249,1	613,6	490,7	855,2	732,3	1005	882,1	1096,8	973,9	1338,4	1215,5	1580	1457,1	475,7	352,8
	4+4	254,3	90,6	495,9	332,2	737,5	573,8	887,3	723,6	979,1	815,4	1220,7	1057	1462,3	1298,6	634,2	470,5
	5+5	--	--	378,3	173,6	619,9	415,2	769,7	565	861,5	656,8	1103,1	898,4	1344,7	1140	792,8	588,1
	7+5	--	--	260,8	14,8	502,4	256,4	652,2	406,2	744	498	985,6	739,6	1227,2	981,2	951,6	705,6
UT 70	2+2	1073	940	1546	1413	2019	1886	2312	2179	2492	2359	2965	2832	3438	3305	479	346
	3+3	900	700	1373	1173	1846	1646	2139	1939	2319	2119	2792	2592	3265	3065	719	519
	4+4	727	461	1200	934	1673	1407	1966	1700	2146	1880	2619	2353	3092	2826	958	692
	5+5	--	--	1026	694	1499	1167	1792	1460	1972	1640	2445	2113	2918	2586	1198	866
	6+6	--	--	853t	454	1326	927	1619	1220	1799	1400	2272	1873	2745	2346	1438	1039
	7+7	--	--	--	--	1153	688	1446	981	1626	1161	2099	1634	2572	2107	1677	1212
	8+8	--	--	--	--	--	--	1273	741	1453	921	1926	1394	2399	1867	1917	1385
	UT 75	2+2	1500	1261	2134	1895	2768	2529	3161	2922	3402	3163	4036	3797	4671	4432	642
3+3	1299	940	1933	1574	2567	2208	2960	2601	3201	2842	3835	3476	4470	4111	936	604	
4+4	1098	619	1732	1253	2366	1887	2759	2280	3000	2521	3634	3155	4269	3790	1284	805	
5+5	--	--	1530	933	2164	1567	2557	1960	2798	2201	3432	2835	4067	3470	1604	1007	
6+6	--	--	1329	612	1963	1246	2356	1639	2597	1880	3231	2514	3866	3149	1925	1208	
7+7	--	--	--	--	1761	925	2154	1318	2395	1559	3029	2193	3664	2828	2246	1410	
8+8	--	--	--	--	1560	604	1953	997	2194	1238	2828	1872	3463	2507	2567	1611	



Pneumatic actuators - dimensions



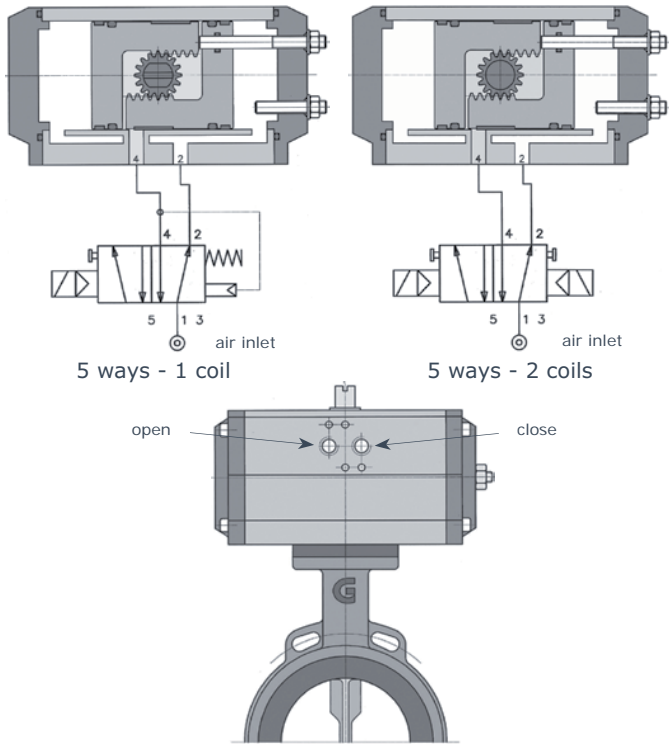
tipo/type	A	B	C	D	D1	F1	F2	G	H	I	Ch	L	U	Z
UT10	-	53	71	119	-	-	F03	45	26	12,5	11	20	12/14	9/11
UT15	81	62	81	175	165	F05	F07	45	36	19	14	30	12	10
UT17	81	62	81	207	197	F05	F07	45	36	19	14	30	12	10
UT20	96	76,5	98	186	177	F05	F07	45	53	19	17	30	14	10
UT25	96	76,5	98	248	239	F05	F07	45	53	23	17	30	14	10
UT30	114	90,5	117	241	230	F05	F07	45	72	23	17	30	19,5	14
UT35	131	95,5	154	261	246	F07	F10	45	109	30	22	30	19,5	14
UT40	131	95,5	154	305	290	F07	F10	45	109	30	22	30	19,5	14
UT45	145	98,5	168,5	367	351	F07	F10	45	123.5	30	22	30	28	20
UT50	181	124,5	202	380,5	361	F10	F12	45	157	31	27	30	28	20
UT55	181	124,5	202	428	418	F10	F12	45	157	37	27	30	28	20
UT60	232	140	274	467	444	F10	F14	45	212	41	36	30	28	20
UT65	232	140	274	525	502	F10	F14	45	212	50	36	30	28	20
UT70	332	160	332	636	587	F16	//	55	283	64	46	30	45	36
UT75	332	160	332	734	677	F16	//	55	283	64	46	30	45	36

Weight and air consumption - full cycle

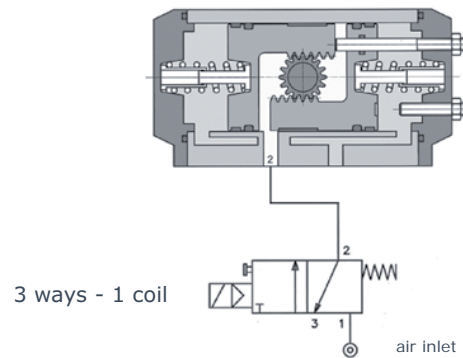
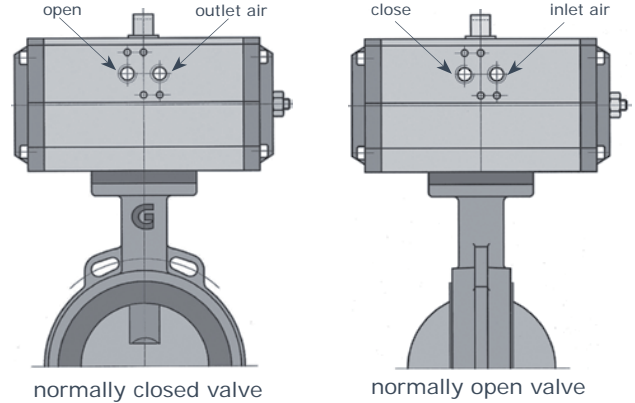
type	weight (kg)		air consumption (N Lt)		type	weight (kg)		air consumption (N Lt)	
	DA	SR	DA	SR		DA	SR	DA	SR
UT10	0.570	0.655	0.22	0.13	UT45	11.17	13.73	4.40	1.85
UT15	1.60	1.79	0.41	0.18	UT50	16.20	19,56	4.60	2.50
UT17	1.92	2.16	0.55	0.25	UT55	19.90	24.72	9.00	4.10
UT20	2.35	2.73	0.71	0.29	UT60	27.95	37.73	12.50	6.50
UT25	3.25	3.77	1.10	0.48	UT65	38.40	48.00	16.60	7.10
UT30	4.15	4.88	1.40	0.65	UT70	66.80	82.96	27.10	9.60
UT35	6.80	8.24	2.45	1.20	UT75	81.60	98.00	31.40	11.70
UT40	8.10	9.78	3.05	1.60					

**Pneumatic actuators**  
Double - Single acting

double acting actuator - 5 ways solenoid valve



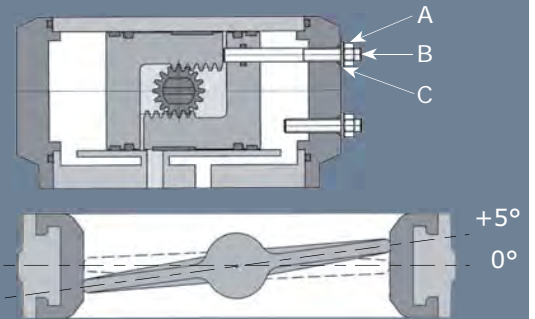
single acting actuator - 3 ways solenoid valve



**Adjustment of valve closing angle**

Gibson butterfly valves are tested and supplied with a closing angle adjustment at +5°. In case this angle should be modified, operate as follows:

1. let the valve in semi-open position,
2. close compressed air supply,
3. loosen nut A,
4. rotate B screws anticlockwise to reduce closing angle, or clockwise to enlarge it,
5. tighten A nut, paying attention that C packing is not damaged,
6. re-connect compressed air and close the valve.







**DOUBLE ECCENTRIC**

**HD Series**

• technical data	<b>202</b>
• components DN 50-300	202
RTFE seat	203
Inconel seat	203
"FIRE SAFE" seat	204



**TABLES**

• dimensions	205
• torque values	206
• pressure / temperature	206
• tests	206

<b>Gearboxes</b>	<b>207</b>
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**BVHD - Wafer BLHD- Lug**  
 DN 50 - 300 • 2" - 12"

Max working pressure:

BVHD/BLHD DN 50÷300: **25 Bar**  
*Flanges: DN 50 ÷ 250: PN 10-16-25•A150*  
*DN 300: PN 10-16•A150*

Design:

EN 593~EN 736  
 EN 12516~EN 1092~EN12266  
 ISO 5211~DIN 3337~API 609~ASME B16.34  
 PED 97/23/EC (cat III) Mod H

Face to face:

DIN EN 558-1 Series 20~ISO 5752 Series 20  
 BS-5155 Series 4~MSS-SP67  
 API 609 cat.A~NFE 29305-1

Testing:

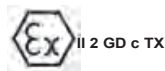
EN 12266-1 Rate A ~ ISO 5208 Rate A  
 DIN 3230 ~ API 598  
 FIRE TEST API607 VI Ed. September

Tag:

EN 19 ~ MSS SP-25



All valves are supplied with a metallic label in compliance with PED directive.



## BODY

material	references	standard coating	DN
Carbon steel (wafer, lug)	ASTM A216-WCB	High-temp coating grey color	50-300
Stainless steel (wafer, lug)	ASTM A351 CF8M (A316)	-	50-300
DUPLEX	ASTM A890 Gr. 4A	-	50-300
SUPERDUPLEX	ASTM A890 Gr. 5A	-	50-300

## DISC

material	references	DN
Stainless steel	ASTM A351 CF8M (A316)	50-300
DUPLEX	ASTM A890 Gr. 4A	50-300
SUPERDUPLEX	ASTM A890 Gr. 5A	50-300

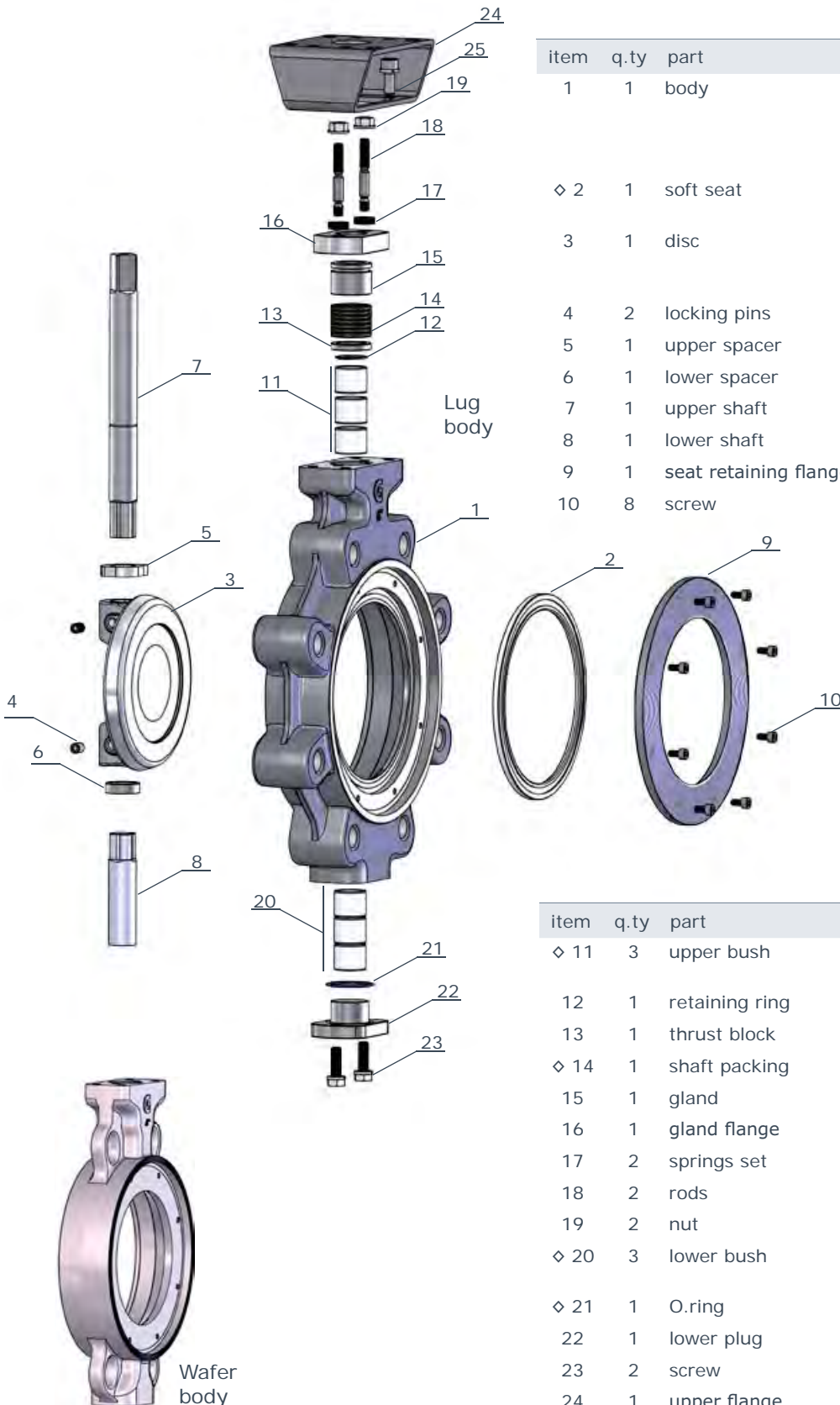
## BODY SEAT

ref.	material	working temp.
RT	RTFE (PTFE reinforced)	-60°C / +230°C
MT	Inconel 625	-60°C / +450°C

On request can be supplied other materials as: LCB, Hastelloy, Monel, Uranus, Alloy, DUPLEX, Special steels, Special bronzes.  
 Coating on request: RILSAN®, Halar®, Chenisil®

**NOTE:** in case of gas application, please contact our technical dpt.

**BVHD - Wafer BLHD - Lug • RTFE seat**  
 DN 50 - 300 • 2" - 12"  
 PN 10 - 16 - 25 • ANSI 150



item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>• A216 - WCB</li> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
◇ 2	1	soft seat	<ul style="list-style-type: none"> <li>• PTFE</li> <li>• RTFE (PTFE reinforced)</li> </ul>
3	1	disc	<ul style="list-style-type: none"> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
4	2	locking pins	• AISI316
5	1	upper spacer	• AISI316
6	1	lower spacer	• AISI316
7	1	upper shaft	• ASTM A564 Gr630
8	1	lower shaft	• ASTM A564 Gr630
9	1	seat retaining flange	• AISI 316
10	8	screw	• AISI 316

item	q.ty	part	material
◇ 11	3	upper bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
12	1	retaining ring	• A 316
13	1	thrust block	• A 316
◇ 14	1	shaft packing	• graphite
15	1	gland	• AISI316
16	1	gland flange	• AISI316
17	2	springs set	• stainless steel
18	2	rods	• AISI 316
19	2	nut	• AISI 316
◇ 20	3	lower bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
◇ 21	1	O.ring	• PTFE
22	1	lower plug	• AISI 316
23	2	screw	• AISI 316
24	1	upper flange	• steel epoxy coated
25	4	screw	• AISI 316



**BVHD - Wafer BLHD - Lug • Inconel seat**  
 DN 50 - 300 • 2" - 12"  
 PN 10 - 16 - 25 • ANSI 150

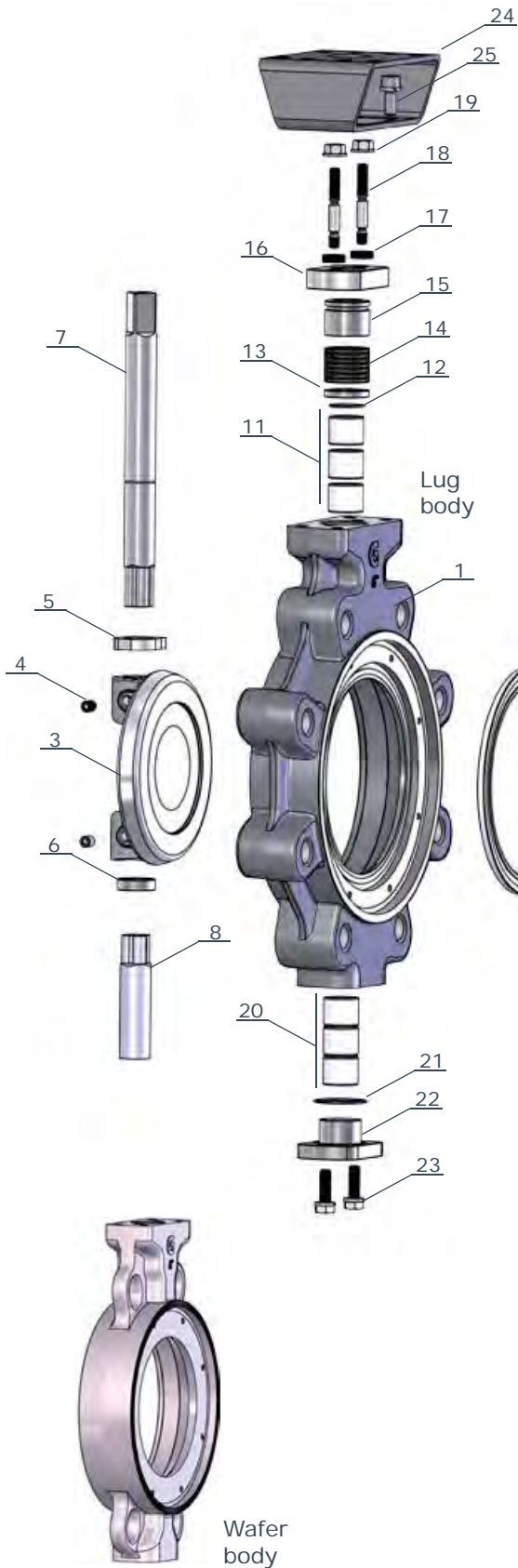
item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>• A216 - WCB</li> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
◇ 2	1	metallic seat	• Inconel 625 + graphite
3	1	disc	<ul style="list-style-type: none"> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
4	2	locking pins	• AISI316
5	1	upper spacer	• AISI316
6	1	lower spacer	• AISI316
7	1	upper shaft	• ASTM A564 Gr630
8	1	lower shaft	• ASTM A564 Gr630
9	1	seat retaining flange	• AISI 316
10	8	screw	• AISI 316

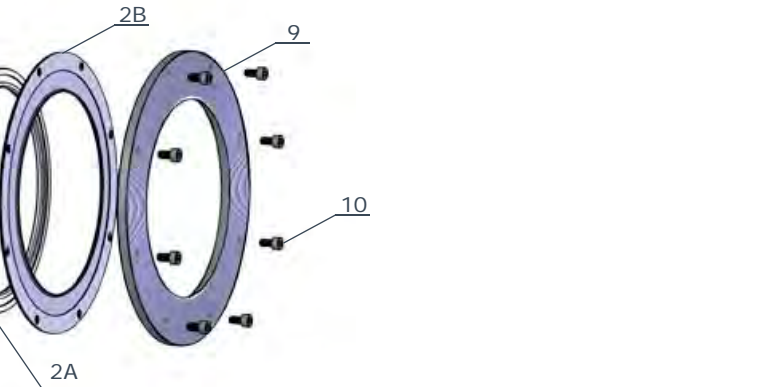
item	q.ty	part	material
◇ 11	3	upper bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
12	1	retaining ring	• A 316
13	1	thrust block	• A 316
◇ 14	1	shaft packing	• graphite
15	1	gland	• AISI316
16	1	gland flange	• AISI316
17	2	springs set	• stainless steel
18	2	rods	• AISI 316
19	2	nut	• AISI 316
◇ 20	3	lower bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
◇ 21	1	packing	• graphite
22	1	lower plug	• AISI 316
23	2	screw	• AISI 316
24	1	upper flange	• steel epoxy coated
25	4	screw	• AISI 316

◇ parts included in spare kit

**BVHD - Wafer BLHD - Lug • "FIRE SAFE" seat**  
 DN 50 - 300 • 2" - 12"  
 PN 10 - 16 - 25 • ANSI 150



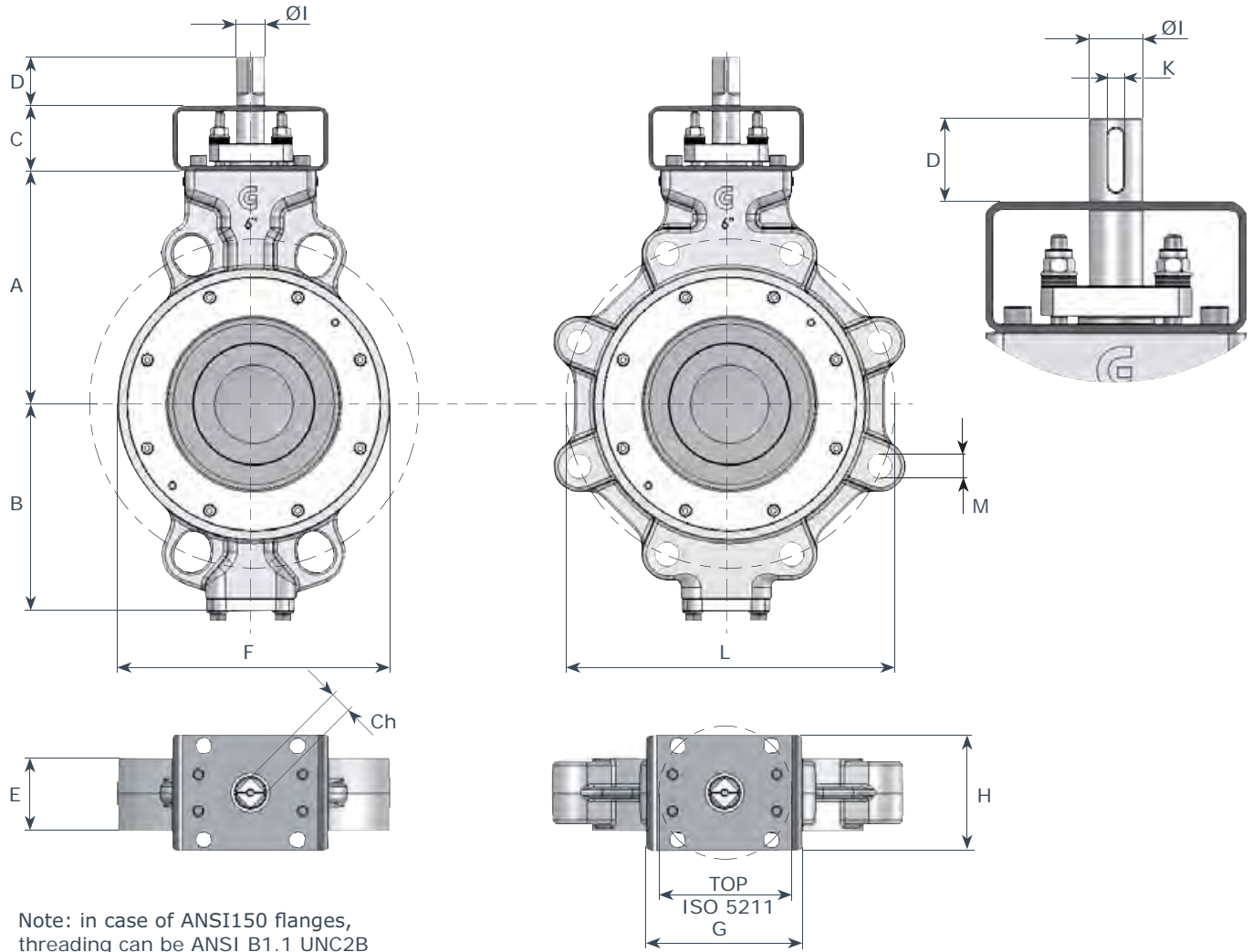
item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>• A216 - WCB</li> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
◇ 2A	1	soft seat	• RTFE (PTFE reinforced)
◇ 2B	1	metallic seat	• Inconel 625 + graphite
3	1	disc	<ul style="list-style-type: none"> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
4	2	locking pins	• AISI316
5	1	upper spacer	• AISI316
6	1	lower spacer	• AISI316
7	1	upper shaft	• ASTM A564 Gr630
8	1	lower shaft	• ASTM A564 Gr630
9	1	seat retaining flange	• AISI 316
10	8	screw	• AISI 316



item	q.ty	part	material
◇ 11	3	upper bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
12	1	retaining ring	• A 316
13	1	thrust block	• A 316
◇ 14	1	shaft packing	• graphite
15	1	gland	• AISI316
16	1	gland flange	• AISI316
17	2	springs set	• stainless steel
18	2	rods	• AISI 316
19	2	nut	• AISI 316
◇ 20	3	lower bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
◇ 21	1	packing	• graphite
22	1	lower plug	• AISI 316
23	2	screw	• AISI 316
24	1	upper flange	• steel epoxy coated
25	4	screw	• AISI 316



BVHD/BLHD dimensions



Note: in case of ANSI150 flanges, threading can be ANSI B1.1 UNC2B

DN	"	A	B	C	D	E	F	G	H	Ø I	Ch	K	TOP
50	2	117	81	50	34	43	95	100	70	14	11	-	F07
65	2 <sup>1/2</sup>	120	93	50	34	46	105	100	70	14	11	-	F07
80	3	129	101	50	34	46	127	100	70	14	11	-	F07
100	4	160	128	50	34	52	150	100	70	18	14	-	F07
125	5	170	159	50	38	56	174	120	90	22	17	-	F10
150	6	179	168	50	38	56	210	120	90	22	17	-	F10
200	8	218	207	60	40	61	270	120	90	25	-	8	F10
250	10	257	232	80	60	69	325	160	130	30	-	10	F12
300	12	300	270	80	60	78	378	160	130	35	-	10	F12

DN	PN 10			PN 16			PN 25			ANSI 150			Kg.	
	M	n.	L	M	n.	L	M	n.	L	M	n.	L	wafer	lug
50	M16	4	125	M16	4	125	M16	4	125	M16	4	120.6	3.5	5.7
65	M16	8	145	M16	8	145	M16	8	145	M16	4	139.7	4.0	7
80	M16	8	160	M16	8	160	M16	8	160	M16	4	152.4	4.8	7.6
100	M16	8	180	M16	8	180	M20	8	190	M16	8	190.5	8	9.7
125	M16	8	210	M16	8	210	M24	8	220	M20	8	215.9	10.1	14.8
150	M20	8	240	M20	8	240	M24	8	250	M20	8	241.3	13.5	17.6
200	M20	8	295	M20	12	295	M24	12	310	M20	8	298.4	22	32
250	M20	12	350	M24	12	355	M27	12	370	M22	12	361.9	35	46
300	M20	12	400	M24	12	410	≈	≈	≈	M22	12	431.8	50	62

compatible flanges JIS B2220 :2004

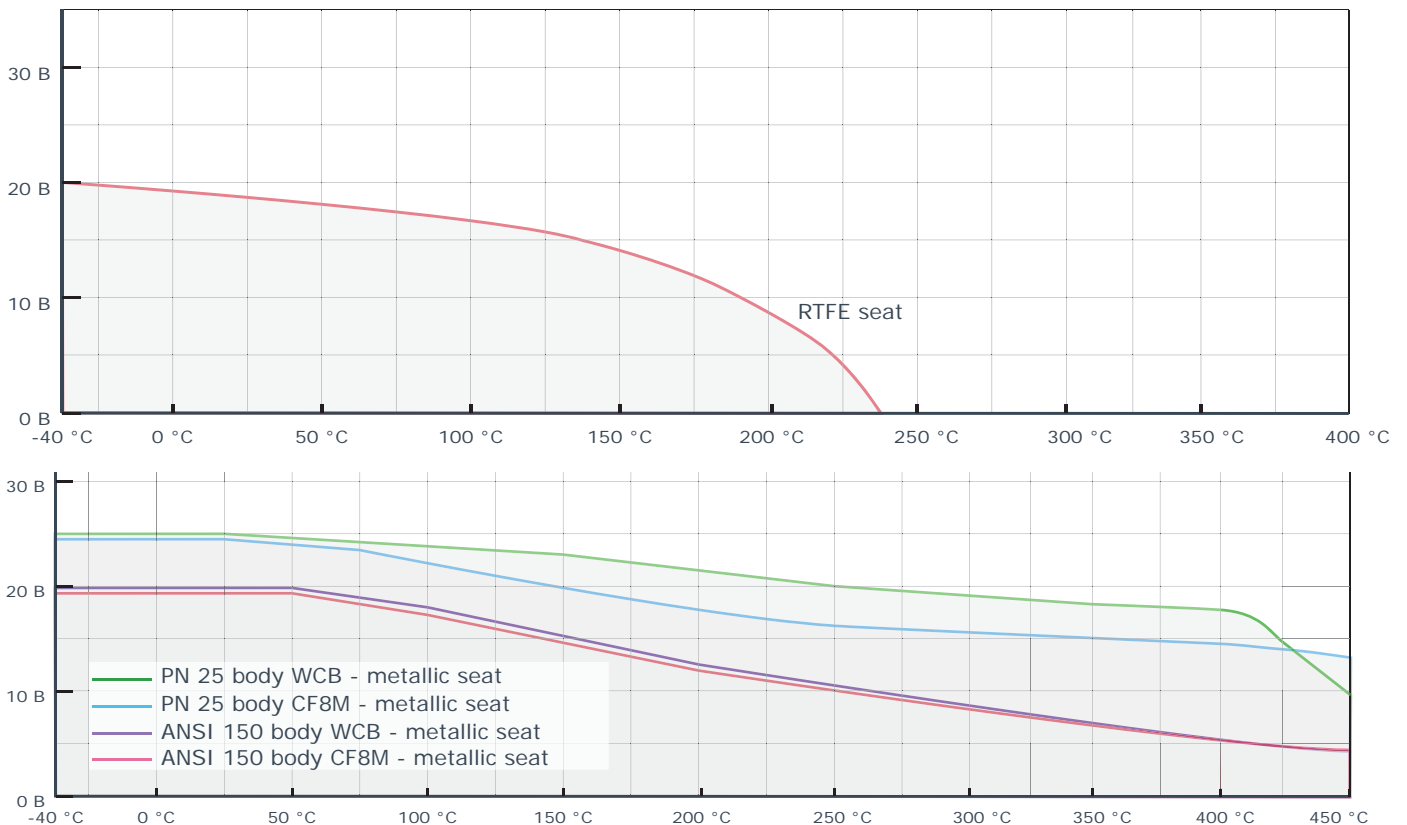
DN	BVHD - wafer (Pmax = 25bar)					BLHD - lug (Pmax = 25bar)				
	JIS 5K	JIS 10K	JIS 16K	JIS 20K	JIS 30K	JIS 5K	JIS 10K	JIS 16K	JIS 20K	JIS 30K
50	✗	✓	●	●	●	✗	●	●	●	✗
65	●	✓	●	●	✗	●	●	●	●	✗
80	●	●	●	●	✗	●	●	●	●	●
100	✗	●	✓	✓	✓	✗	●	●	●	●
125	●	●	✓	✓	✓	●	●	●	●	●
150	●	✓	✗	✗	✗	●	✓	✗	✗	✗
200	✗	●	✓	✓	●	✗	●	●	●	●
250	●	✓	✗	✗	✗	●	●	✗	✗	✗
300	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

✓ standard  
 ● on request  
 ✗ not possible

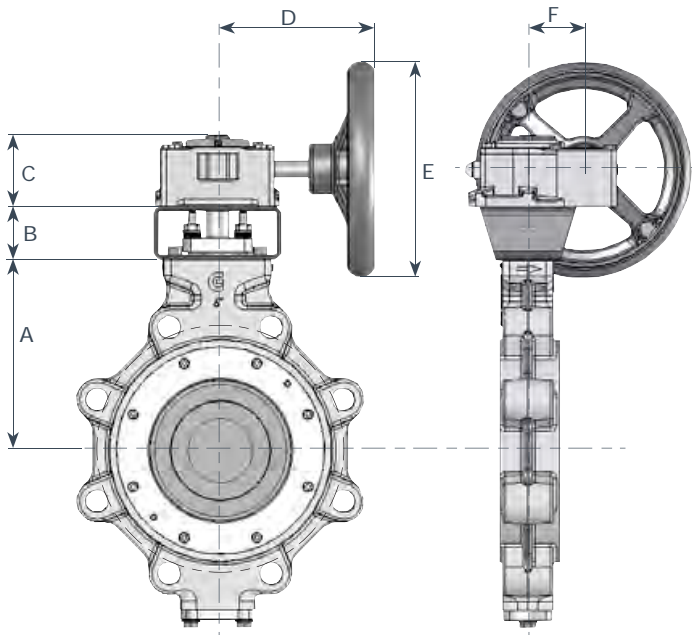
HD Series - Torque values - Nm

seat: RTFE fluid: H <sub>2</sub> O - 20°C					seat: INCONEL fluid: H <sub>2</sub> O - 20°C				
DN	working pressure: BAR				DN	working pressure: BAR			
	10	16	20	25		10	16	20	25
50	24	30	40	47	50	36	44	58	68
65	34	38	48	60	65	51	56	70	86
80	38	45	54	68	80	57	67	78	97
100	45	56	62	81	100	68	83	89	114
125	85	90	105	120	125	124	133	154	168
150	130	145	170	210	150	186	212	248	302
200	180	240	270	390	200	261	350	392	570
250	330	450	520	580	250	480	668	765	848
300	580	640	740	850	300	848	941	1085	1244

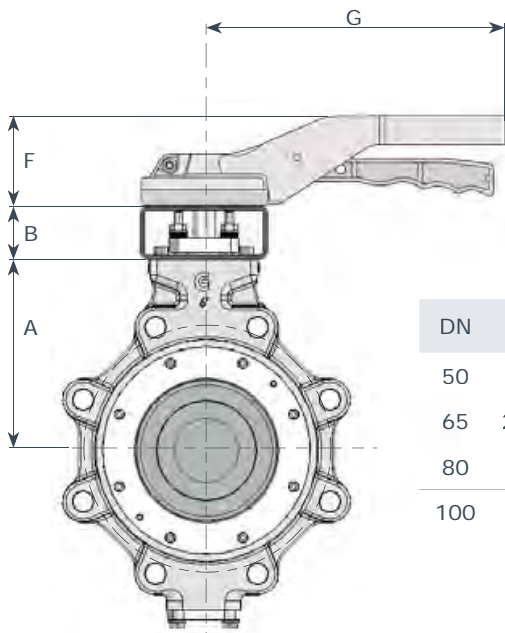
Pressure / Temperature



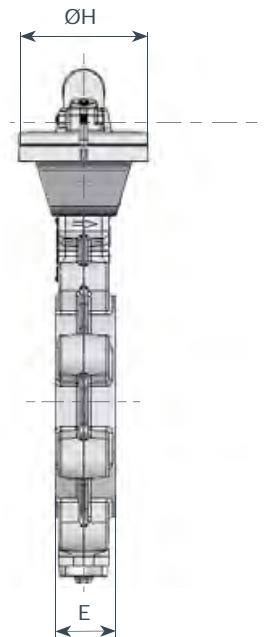
Gearboxes



DN	"	A	B	C	D	E	F	type
50	2	117	50	55	157.5	200	43	AB150
65	2 <sup>1/2</sup>	120	50	55	157.5	200	43	AB150
80	3	129	50	55	157.5	200	43	AB150
100	4	160	50	55	157.5	200	43	AB150
125	5	170	50	63	217	200	52	AB215
150	6	179	50	63	217	200	52	AB215
200	8	218	60	63	217	200	52	AB215
250	10	257	80	88	292	300	71	AB550
300	12	300	80	88	292	300	71	AB550



DN	"	A	B	E	F	G	ØH
50	2	117	50	43	67	220	93
65	2 <sup>1/2</sup>	120	50	46	67	220	93
80	3	129	50	46	67	220	93
100	4	160	50	52	67	275	93



Test

**GHIBSON valves are built according to following international standards:**

Body test pressure: DIN 3230BA - API598  
 Hydraulic test pressure: DIN 3230BN1 - API598  
 Pneumatic test pressure: DIN 3230BO1 - API598  
 Test certificates: UNI EN 10204 2.2 (standard)  
 UNI EN 10204 3.1 (on request)  
 UNI EN 10204 3.2 (on request)

DIN	body test	hydraulic test	pneu test
3230			
PN6	9 bar	7 bar	6 bar
PN10	15 bar	11 bar	6 bar
PN16	24 bar	17,6 bar	6 bar
PN25	38 bar	27,5 bar	6 bar

**Test duration is indicated by API598 standard**

Body test pressure: < DN 65 = 15 sec.  
 DN 65 / DN 200 = 80 sec.  
 > DN 200 = 180 sec.  
 Hydraulic test pressure: < DN 65 = 15 sec.  
 DN 65 / DN 200 = 30 sec.  
 > DN 200 = 60 sec  
 Pneumatic test pressure: < DN 65 = 15 sec.  
 DN 65 / DN 200 = 30 sec.  
 > DN 200 = 60 sec

API598	body test	hydraulic test
ANSI125	21 bar	18 bar
ANSI150	30 bar	22 bar
ANSI300	78 bar	58 bar



**PTFE SEATED**

**TT Series**

• technical data	210
• components DN 50-300	211
Stainless steel disc	211
Stainless steel + PTFE disc	212



**tables**

• components DN 350-500	213
• dimensions	214
• torque values	215

<b>Installation instructions</b>	<b>216</b>
<b>Tests</b>	<b>216</b>
<b>Handlever</b>	<b>218</b>
<b>Gearbox</b>	<b>219</b>

**BVTT - Wafer**  
DN 50 - 500 • 2" - 20"

**BLTT - Lug**  
DN 50 - 500 • 2" - 20"

Max working pressure:

BVTT/BLTT DN 50÷400: **10 Bar**  
Flange: **PN 10-16-A150**

BVTT/BLTT DN 500: **6 Bar**  
Flange: **PN 10-16-A150**

To be used for vacuum (not with PTFE disc)

Design:

EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092  
ISO 5211 ~ DIN 3337 ~ API 609  
PED 97/23/EC (cat III) Mod H

Face to face:

DIN EN 558-1 Series 20 ~ ISO 5752 Series 20  
BS-5155 Series 4 ~ MSS-SP67  
API 609 cat. A ~ NFE 29305-1

Testing:

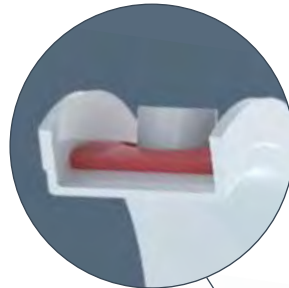
EN 12266-1 Rate A ~ ISO 5208 Rate A  
DIN 3230 ~ API 598

Tag:

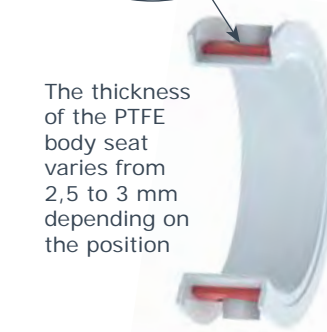
EN 19 ~ MSS SP-25



All the valves are supplied with a metallic label in compliance with PED directive.



The thickness of the PTFE body seat varies from 2,5 to 3 mm depending on the position



**BODY**

material	references	standard coating	lug	wafer
Ductile iron (wafer, lug)	EN-GJS 400-15 (GS400)	Epoxy RAL 5009	50-500	50-500
Carbon steel (wafer)	ASTM A216-WCB	Epoxy RAL 9005	-	50-500
Stainless steel (wafer)	ASTM A351 CF8M (A316)	-	-	50-500

**DISC**

material	references	standard coating	coating on request	DN
Stainless steel	ASTM A351 CF8M (A316)	-	HALAR®	50-500
Stainless steel	ASTM A564 Type 630	PTFE	-	50-300
Hastelloy®	ASTM A494 CX2MW	-	-	50-500
Monel®	ASTM A494 M35-1	-	-	50-500

**BODY SEAT**

ref.	designation	trade name	working temp.	applications
PTFE	polytetrafluorethylene	TEFLON®	-60°C / +190°C	acids, foods, solvents

On request can be supplied other materials as: LCB, Hastelloy, Monel, Uranus, Alloy, DUPLEX, Special steels, Special bronzes.  
Coating on request: RILSAN®, Halar®, Chenisil®

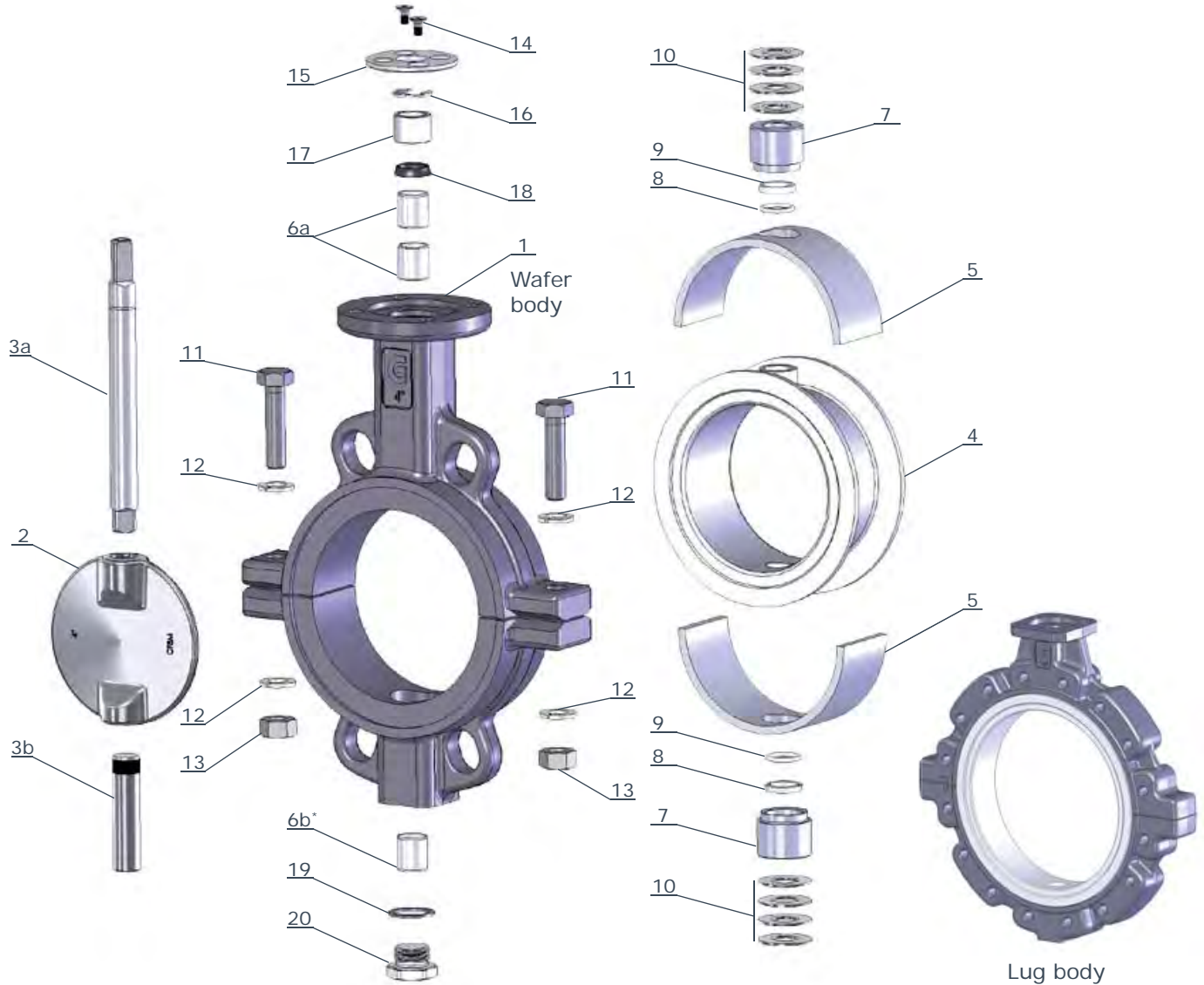


BVTT - Wafer BLTT - Lug

DN 50 - 300 • 2" - 12"

PN 10-16 • ANSI 150

Stainless steel (ASTM A351 CF8M) disc



item	q.ty	part	material	item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216 - WCB</li> <li>A351 - CF8M (AISI 316)</li> </ul>	11	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
2	1	disc	<ul style="list-style-type: none"> <li>A351 - CF8M (AISI 316)</li> <li>HALAR® (on request)</li> </ul>	12	4	washer	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
3a	1	upper shaft	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>	13	2	screw nut	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
3b	1	lower shaft	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>	14	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
◇4	1	body seat	<ul style="list-style-type: none"> <li>PTFE</li> </ul>	15	1	upper flange	<ul style="list-style-type: none"> <li>IXEF (DN 50/150)</li> <li>aluminium (DN 200/300)</li> </ul>
◇5	1	elastic support	<ul style="list-style-type: none"> <li>silicon</li> </ul>	16	1	stop ring	<ul style="list-style-type: none"> <li>steel</li> </ul>
6a	2	bush upper shaft	<ul style="list-style-type: none"> <li>steel + PTFE</li> </ul>	◇17	1	upper bush	<ul style="list-style-type: none"> <li>PFTE</li> </ul>
6b*	1*	bush lower shaft	<ul style="list-style-type: none"> <li>steel + PTFE</li> </ul>	◇18	1	O.Ring	<ul style="list-style-type: none"> <li>FKM (VITON®)</li> </ul>
7	2	housing	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>	19	1	plug paking	<ul style="list-style-type: none"> <li>aluminium</li> <li>PTFE (body AISI 316)</li> </ul>
◇8	2	O. Ring	<ul style="list-style-type: none"> <li>FEP + FKM (VITON®)</li> </ul>	20	1	threaded plug	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
◇9	2	C. Ring	<ul style="list-style-type: none"> <li>PTFE</li> </ul>				
10	2	springs set	<ul style="list-style-type: none"> <li>steel</li> </ul>				

\* only DN200/300

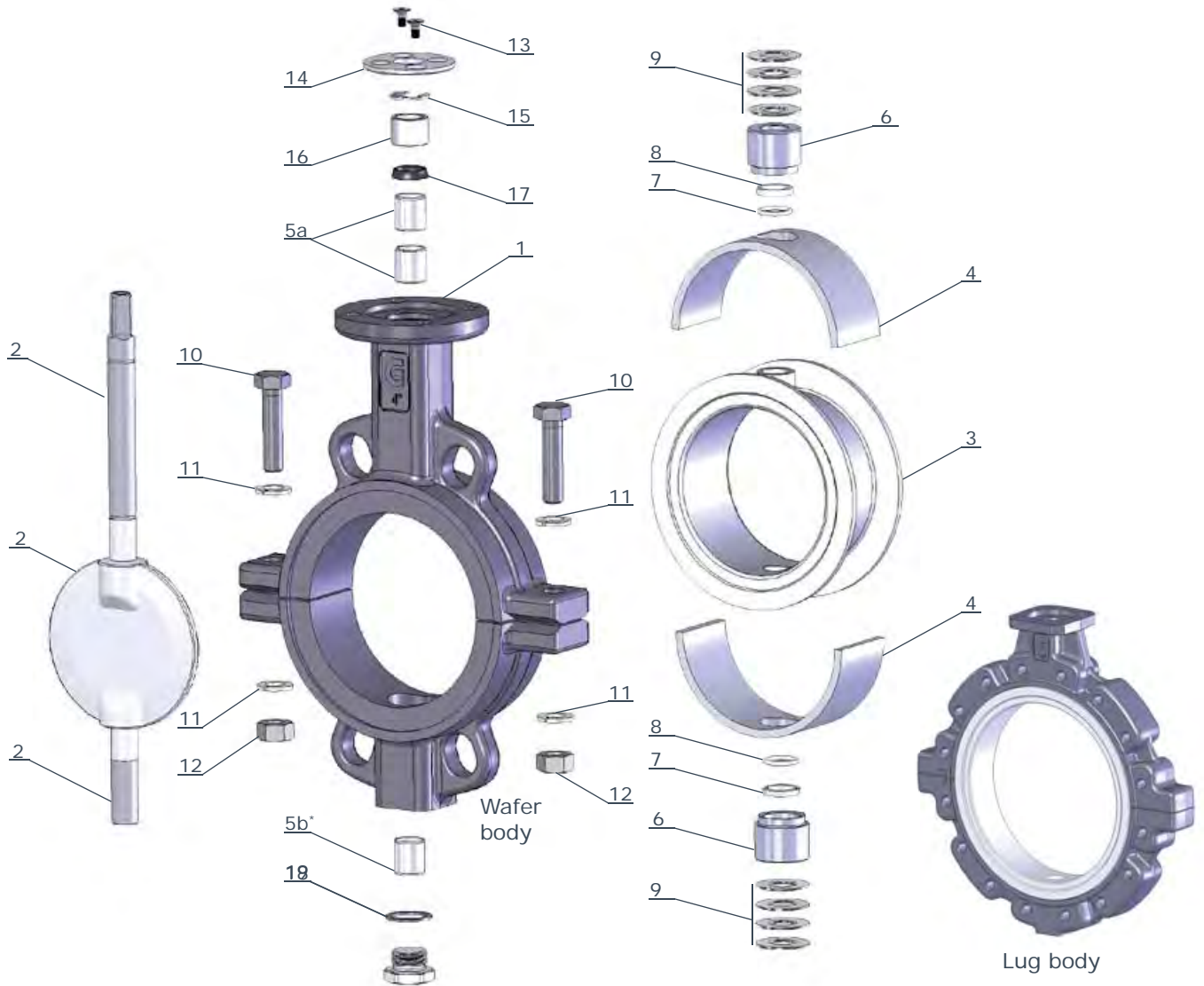
◇ parts included in spare kit

**BVTT - Wafer BLTT - Lug**

DN 50 - 300 • 2" - 12"

PN 10-16 • ANSI 150

**Stainless steel disc (ASTM A564 Type 630) PTFE coated**



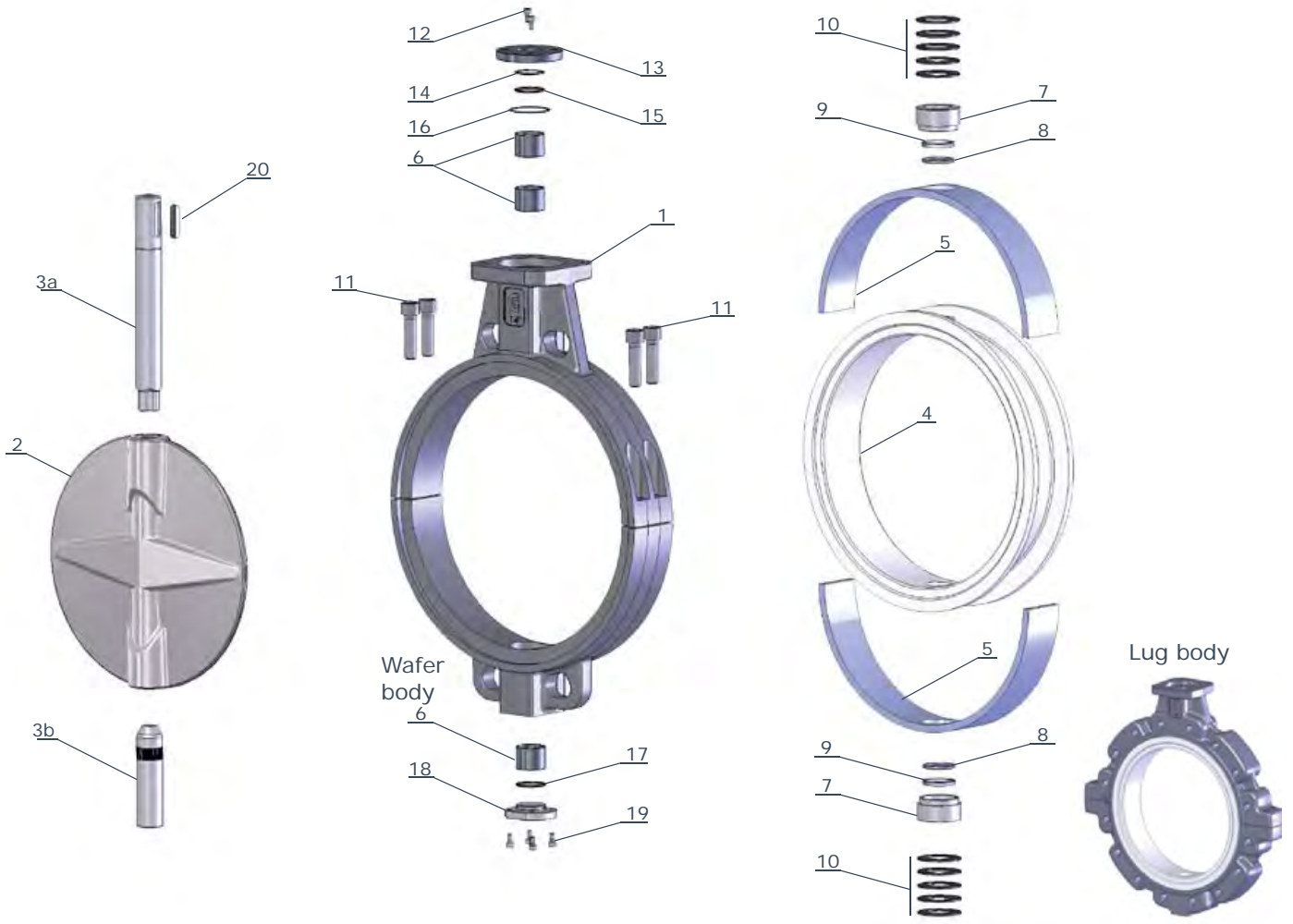
item	q.ty	part	material	item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>ductile iron GS400</li> <li>A216 - WCB</li> <li>A351 - CF8M (AISI 316)</li> </ul>	11	4	washer	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
◇2	1	disc - shafts	<ul style="list-style-type: none"> <li>ASTM A564 Type 630 + PTFE</li> </ul>	12	2	screw nut	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
◇3	1	body seat	<ul style="list-style-type: none"> <li>PTFE</li> </ul>	13	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
◇4	1	elastic support	<ul style="list-style-type: none"> <li>silicon</li> </ul>	14	1	upper flange	<ul style="list-style-type: none"> <li>IXEF (DN 50/150)</li> <li>aluminium (DN 200/300)</li> </ul>
5a	2	bush upper shaft	<ul style="list-style-type: none"> <li>steel + PTFE</li> </ul>	15	1	stop ring	<ul style="list-style-type: none"> <li>steel</li> </ul>
5b*	1*	bush lower shaft	<ul style="list-style-type: none"> <li>steel + PTFE</li> </ul>	◇16	1	upper bush	<ul style="list-style-type: none"> <li>PFTE</li> </ul>
6	2	housing	<ul style="list-style-type: none"> <li>AISI 316</li> </ul>	◇17	1	O.Ring	<ul style="list-style-type: none"> <li>FKM (VITON®)</li> </ul>
◇7	2	O. Ring	<ul style="list-style-type: none"> <li>FEP + FKM (VITON®)</li> </ul>	18	1	plug paking	<ul style="list-style-type: none"> <li>aluminium</li> <li>PTFE (body AISI 316)</li> </ul>
◇8	2	C. Ring	<ul style="list-style-type: none"> <li>PTFE</li> </ul>	19	1	threaded plug	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>
9	2	springs set	<ul style="list-style-type: none"> <li>steel</li> </ul>				
10	2	screw	<ul style="list-style-type: none"> <li>zinc plated steel</li> <li>AISI 316 (body AISI 316)</li> </ul>				

\* only DN200/300

◇ parts included in spare kit



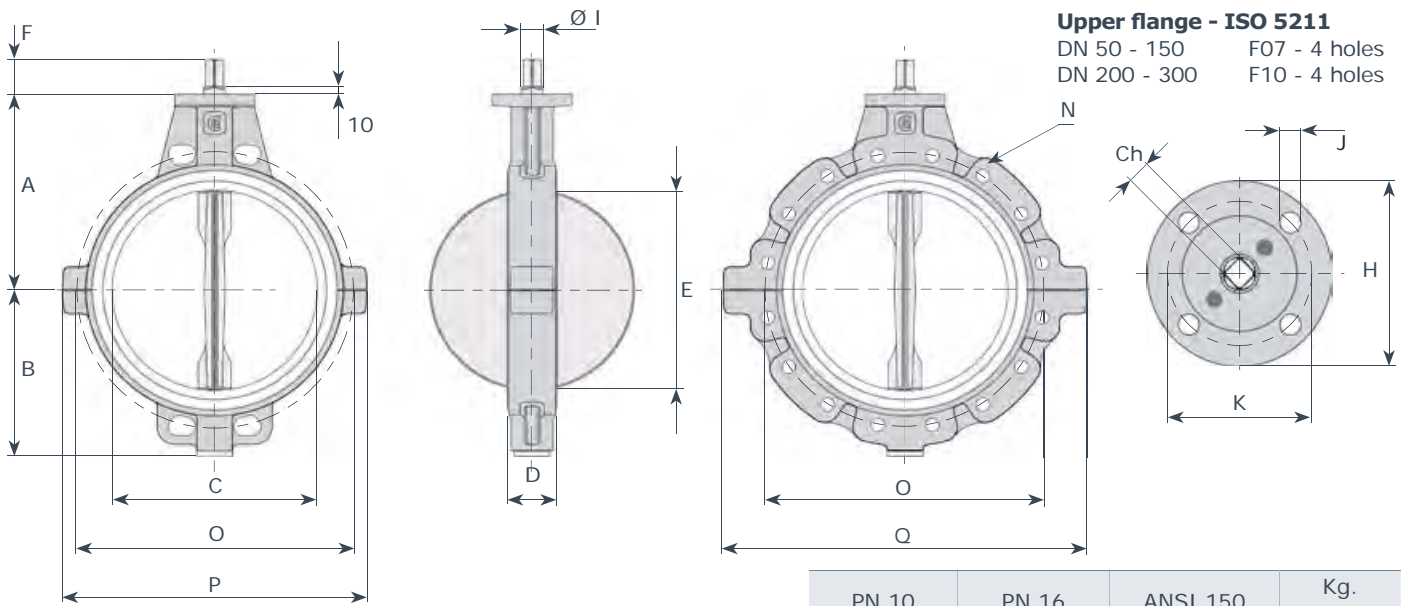
**BVTT - Wafer BLTT - Lug**  
 DN 350 - 500 • 14" - 20"  
 PN 10-16 • ANSI 150



item	q.ty	part	material	item	q.ty	part	material
1	1	body	• ductile iron GS400 • A216 - WCB • A351 - CF8M (AISI 316)	11	4	screw	• zinc plated steel • AISI 316 (body AISI 316)
2	1	body	• A351 - CF8M (AISI 316) • HALAR® (on request)	12	2	screw	• zinc plated steel • AISI 316 (body AISI 316)
3a	1	upper shafts	• AISI 316	13	1	upper flange	• zinc plated steel • AISI 316 (body AISI 316)
3b	1	lower shafts	• AISI 316	◇14	1	O.Ring	• FKM (VITON®)
◇4	1	body seat	• PTFE	15	1	stop ring	• steel
◇5	1	elastic support	• silicon	◇16	1	O.Ring	• FKM (VITON®)
6	3	bush shaft	• A105 + PTFE	◇17	1	O.Ring	• FKM (VITON®)
7	2	housing	• AISI 316	18	1	lower flange	• zinc plated steel • AISI 316 (body AISI 316)
◇8	2	O. Ring	• FEP + FKM (VITON®)	19	4	screw	• zinc plated steel • AISI 316 (body AISI 316)
◇9	2	C. Ring	• PTFE	20	1	key	• steel C40
10	2	springs set	• steel				

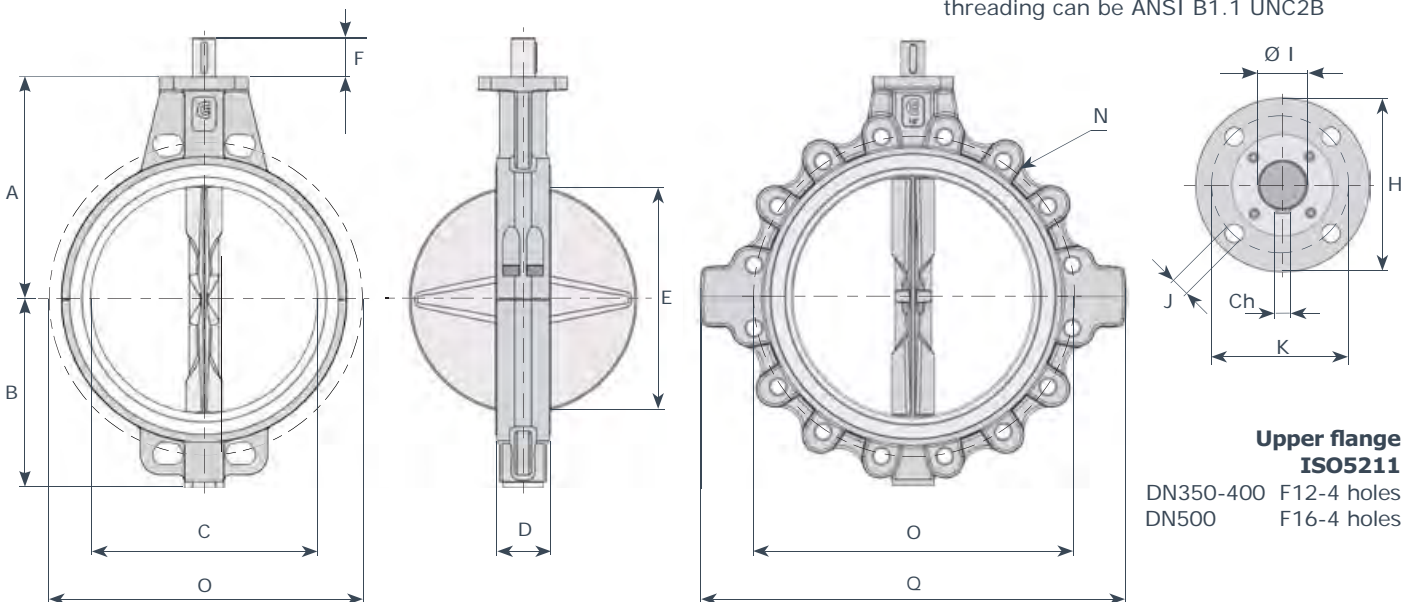
◇ parts included in spare kit

BVTT - Wafer BLTT - Lug



DN	"	A	B	C	D	E	F	Ø I	Ch	H	K	J	P	Q	N	PN 10			PN 16			ANSI 150			Kg.	
																n.	O	N	n.	O	N	n.	O	wafer	lug	
50	2	138	81	55	43	35	34	14	11	90	70	9	165	165	M16	4	125	M16	4	125	M16	4	120.6	3.4	3.9	
65	2 1/2	144	98	68	46	50	34	14	11	90	70	9	186	186	M16	8	145	M16	8	145	M16	4	139.7	4.1	4.7	
80	3	158	110	81	46	67	34	14	11	90	70	9	196	242	M16	8	160	M16	8	160	M16	4	152.4	4.4	7.6	
100	4	173	128	101	52	87	34	16	11	90	70	9	220	270	M16	8	180	M16	8	180	M16	8	190.5	6.8	8.4	
125	5	186	140	126	56	113	34	18	14	90	70	9	250	297	M16	8	210	M16	8	210	M20	8	215.9	8.8	11.2	
150	6	202	155	150	56	140	34	18	14	90	70	9	278	321	M20	8	240	M20	8	240	M20	8	241.3	10.5	12.9	
200	8	240	190	200	60	191	38	22	17	125	102	11	355	420	M20	8	295	M20	12	295	M20	8	298.4	15.2	25.0	
250	10	270	220	250	68	241	38	30	22	125	102	11	398	472	M20	12	350	M24	12	355	M22	12	361.9	24.5	30.0	
300	12	300	247	298	78	289	38	30	22	125	102	11	455	540	M20	12	400	M24	12	410	M22	12	431.8	32.0	45.0	

Note: in case of ANSI 150 flanges, threading can be ANSI B1.1 UNC2B



DN	"	A	B	C	D	E	F	Ø I	Ch	H	K	J	Q	PN10			PN16			ANSI150			kg.	
														N	n.	O	N	n.	O	N	n.	O	wafer	lug
350	14	330	280	341	78	332	60	35	10	150	125	14	600	M20	16	460	M24	16	470	M24	12	476	54	73
400	16	355	305	390	102	376	60	40	12	150	125	14	690	M24	16	515	M27	16	525	M27	16	539	68	104
500	20	422	366	485	127	468	60	45	12	210	165	22	820	M24	20	620	M30	20	650	M27	20	635	149	179

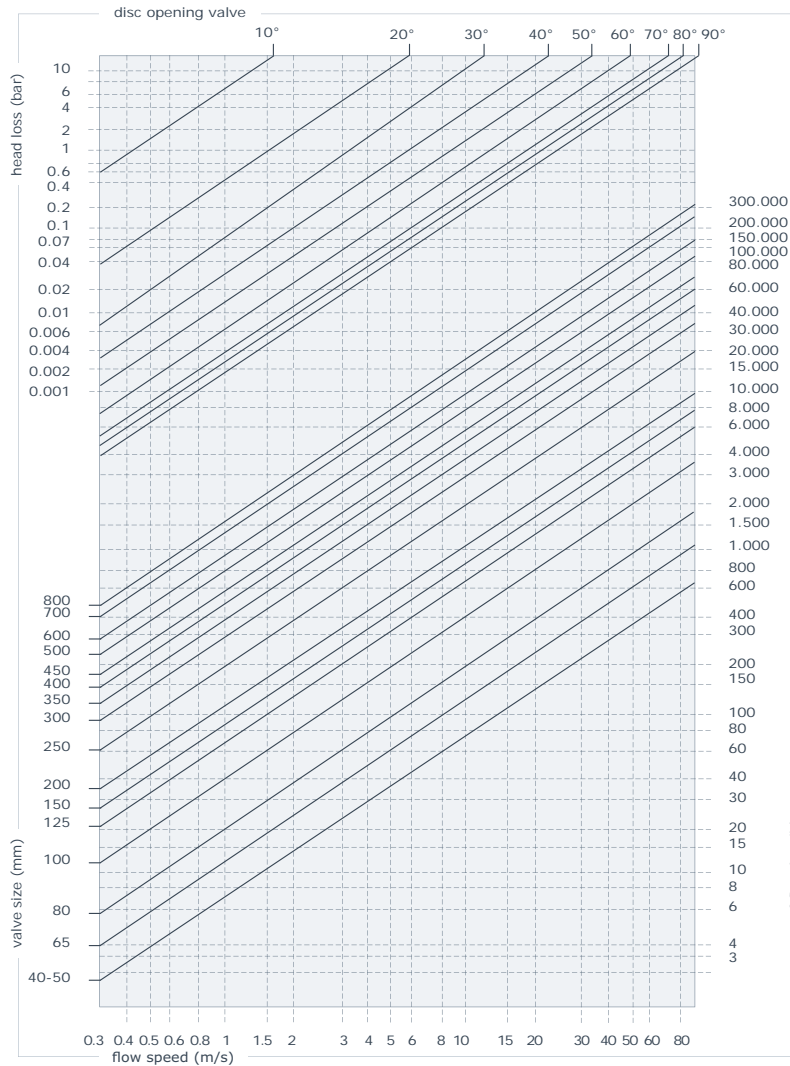
**TT Series - Torque values - Nm - safety factor excluded**

disc: <b>CF8M</b> (A316)				fluid H <sub>2</sub> O - 20°C working pressure BAR				disc: <b>A564</b> (A630) + PTFE				fluid H <sub>2</sub> O - 20°C working pressure BAR											
DN	0	6	10	DN	0	6	10	DN	0	6	10	DN	0	6	10	DN	0	6	10				
50	13	16	19	125	45	57	75	300	214	296	366	50	12	15	18	100	30	51	62	200	122	145	180
65	15	21	24	150	53	63	94	350	400	450	550	65	14	20	23	125	42	54	71	250	180	220	280
80	28	42	52	200	128	153	188	400	700	800	1000	80	26	40	49	150	50	60	89	300	311	344	385
100	32	54	65	250	198	232	296	500	980	1250	-												

Head losses

notes: values indicated in this page is only for information

Formulae for calculation of rate flow



**Liquids:** 
$$Q = \frac{KV}{\sqrt{\frac{PS}{\Delta P}}}$$

Q rate of flow (m<sup>3</sup>/h)  
PS specific gravity (water=1)  
ΔP pressure drop (bar)

**Gas:** 
$$Q = 28.5 \cdot \frac{KV}{\sqrt{\frac{PS}{P_2 \cdot \Delta P}}}$$

Q rate of flow (m<sup>3</sup>/h)  
PS specific gravity (air=1)  
ΔP pressure drop (bar) (less than 1/2 inlet pressure)  
P<sub>2</sub> outlet pressure

**Steam:** 
$$Q = 22.5 \cdot KV \cdot \sqrt{P_2 \cdot \Delta P}$$

Q rate of flow (Kg/h)  
ΔP pressure drop (bar) (less than 1/2 inlet pressure)  
P<sub>2</sub> outlet pressure

**Calculation of the rate of flow equivalent to H<sub>2</sub>O:**

$$Q_e = Q \sqrt{\frac{d}{1000}}$$

For different liquid, gas or steam head losses are determined by equivalent water rate of flow, as follows:

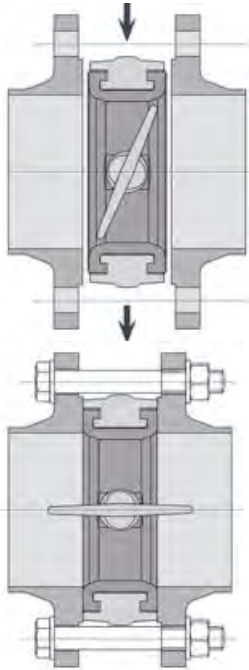
Q<sub>e</sub> equivalent water flow (mc/l o l/s)  
Q fluid flow (mc/l o l/s)  
d fluid specific gravity (Kg/mc)

Values KV (CV = 1,16 KV)

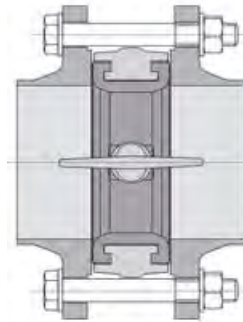
angle	40/50	65	80	100	125	150	200	250	300	350	400	500
5°	-	-	-	-	-	-	-	-	-	53	68	106
10°	-	-	-	-	-	-	-	21	49	123	161	246
15°	0,2	0,6	1,8	2,4	4,2	5,6	14	80	188	228	299	457
20°	0,9	2,5	5,2	9,5	15	23	110	156	280	315	412	630
25°	3	6,1	12	22	38	61	125	225	354	457	597	914
30°	6,1	11	21	39	69	112	211	310	381	661	863	1320
35°	9,9	18	33	60	105	166	303	433	521	890	1162	1778
40°	15	27	49	88	148	228	405	591	742	1184	1547	2366
45°	21	38	68	121	199	303	528	774	987	1552	2028	3102
50°	29	51	91	159	262	394	679	988	1252	2008	2620	4010
55°	39	68	119	207	338	505	863	1247	1571	2548	3318	5090
60°	53	90	156	269	434	641	1085	1591	2059	3225	4202	6442
65°	72	121	209	357	565	820	1364	2065	2807	3983	5196	7957
70°	92	161	283	487	768	1097	1788	2715	3744	5195	6775	10377
75°	109	209	381	662	1059	1507	2425	3625	4935	6964	9084	13912
80°	115	240	457	815	1303	1861	3043	4768	6831	9301	12142	18578
85°	115	253	502	906	1457	2008	3642	4890	8230	10280	13408	20533
90°	116	257	508	925	1492	2168	3838	5010	9233	10792	14082	22024

Installation and test

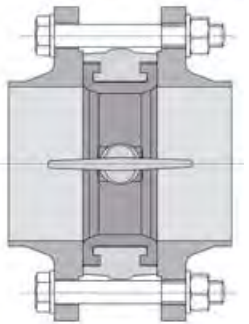
Assembly



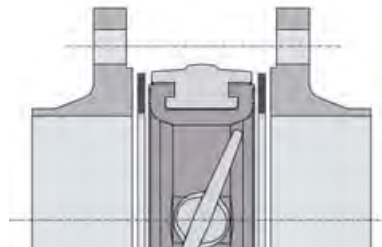
1 - Leave a space between flanges so that valve can be easily inserted and removed.



2 - Open completely the valve before tightening flanges.



3 - Tighten bolts till flanges are in contact with valve body.

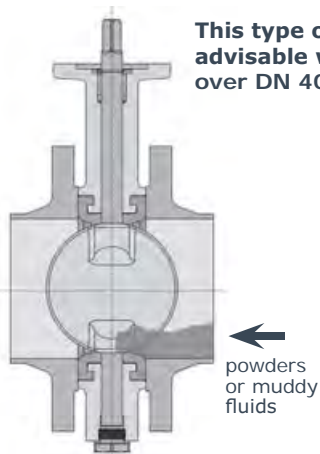


4 - NOTE: do not insert other packing between flange and valve.

NOTE: Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to avoid that heat damage the seat. Clean carefully the welding to avoid that slags damage the seat.

Installation for powders and muddy fluids

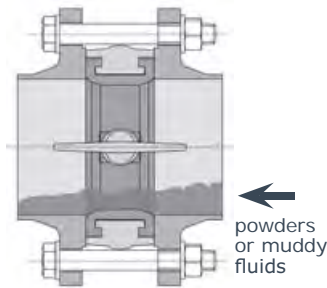
In case of use with muddy fluids or powders, install the valve with horizontal rotation axis, to allow sediments to flow easily on opening.



**This type of installation is always advisable with valve diameters over DN 400.**

← powders or muddy fluids

**Wrong**  
Vertical rotation axis



← powders or muddy fluids

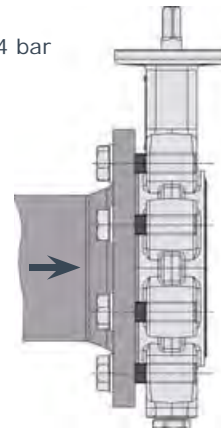
**Right**  
Horizontal rotation axis

End piping installation

When valves are installed end of piping, a counterflange as per dwg type B is needed to secure tightness at max pressure.

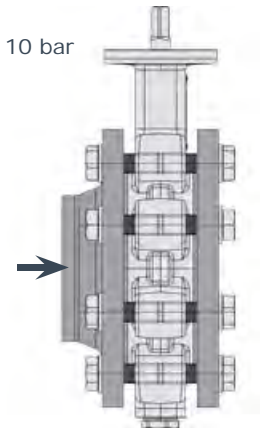
Type A installation without end piping

$P_{max} = 4 \text{ bar}$



Type B installation with end piping

$P_{max} = 10 \text{ bar}$



Test

**GIBSON valves are built according to following international standards:**

Body test pressure:	DIN 3230BA - API598
Hydraulic test pressure:	DIN 3230BN1 - API598
Pneumatic test pressure:	DIN 3230BO1 - API598
Test certificates:	UNI EN 10204 2.2 (standard)
	UNI EN 10204 3.1 (on request)
	UNI EN 10204 3.2 (on request)

DIN	body test	hydraulic test	pneu test
3230			
PN6	9 bar	7 bar	6 bar
PN10	15 bar	11 bar	6 bar
PN16	24 bar	17,6 bar	6 bar
PN25	38 bar	27,5 bar	6 bar

**Test duration is indicated by API598 standard**

Body test pressure:	Hydraulic test pressure:	Pneumatic test pressure:
< DN 65 = 15 sec.	< DN 65 = 15 sec.	< DN 65 = 15 sec.
DN 65 / DN 200 = 80 sec.	DN 65 / DN 200 = 30 sec.	DN 65 / DN 200 = 30 sec.
> DN 200 = 180 sec.	> DN 200 = 60 sec	> DN 200 = 60 sec

API598	body test	hydraulic test
ANSI125	21 bar	18 bar
ANSI150	30 bar	22 bar
ANSI300	78 bar	58 bar

Flanges to be used

**EN1092-1 Tipo 11**  
UNI 2280/81 2282/67  
DIN 2631 2632 2633  
A150 B16.5 welding neck

**EN1092-1 Tipo 01**  
UNI 2276/77 2278/67  
DIN 2575 2576 2577  
A150 B16.5 slip on

**EN1092-1 Tipo 02/32**  
UNI 6088/89 6090  
DIN 2641 2642 2643

**EN1092-1 Tipo 04/34**  
UNI 2289/90 2291  
DIN 2672 2673 2674

**EN1092-1 Tipo 02/33**  
 NOTE: only valves with vulcanized seat (KA/KX) are recommended with these flanges

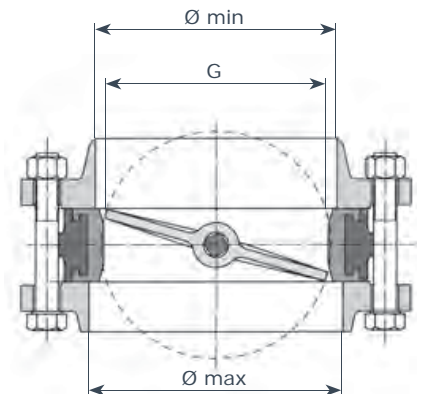
Bolts and rods dimensions

DN	Wafer valves								
	PN 10			PN 16			ANSI 150		
	Bolts	Rods	N°	Bolts	Rods	N°	Bolts	Rods	N°
40	M16x90	M16x100	4	M16x90	M16x100	4	M14x90	M14x110	4
50	M16x100	M16x120	4	M16x100	M16x120	4	M16x100	M16x130	4
65	M16x110	M16x130	8	M16x110	M16x130	8	M16x110	M16x140	4
80	M16x110	M16x130	8	M16x110	M16x130	8	M16x120	M16x150	4
100	M16x120	M16x140	8	M16x120	M16x140	8	M16x120	M16x150	8
125	M16x120	M16x150	8	M16x120	M16x150	8	M20x130	M20x160	8
150	M20x130	M20x160	8	M20x130	M20x160	8	M20x140	M20x160	8
200	M20x140	M20x170	8	M20x140	M20x170	12	M20x150	M20x170	8
250	M20x150	M20x180	12	M24x150	M24x180	12	M22x160	M22x190	12
300	M20x160	M20x190	12	M24x160	M24x190	12	M22x170	M22x210	12
350	M20x160	M20x190	16	M24x170	M24x200	16	M24x180	M24x220	12
400	M24x190	M24x220	16	M27x210	M27x240	16	M27x210	M27x250	16
450	M24x200	M24x230	20	M27x220	M27x250	20	M27x230	M27x270	16
500	M24x210	M24x240	20	M30x240	M30x280	20	M27x250	M27x290	20

DN	Lug valves - Double Flange valves					
	PN 10		PN 16		ANSI 150	
	Bolts	N°	Bolts	N°	Bolts	N°
40	M16x30	8	M16x30	8	M14x30	8
50	M16x35	8	M16x35	8	M16x35	8
65	M16x40	16	M16x40	16	M16x40	8
80	M16x40	16	M16x40	16	M16x40	8
100	M16x40	16	M16x40	16	M16x45	16
125	M16x45	16	M16x45	16	M20x50	16
150	M20x45	16	M20x45	16	M20x50	16
200	M20x50	16	M20x50	24	M20x55	16
250	M20x55	24	M24x55	24	M22x60	24
300	M20x60	24	M24x60	24	M22x60	24
350	M20x60	32	M24x65	32	M24x65	24
400	M24x70	32	M27x70	32	M27x80	32
450	M24x80	40	M27x80	40	M27x80	32
500	M24x80	40	M30x80	40	M27x90	40

NOTE 1: Screw and rod dimensions have been calculated with WELDING NECK flanges PN 6/10/16 (EN1092-1 Tipe 11) ANSI150 (ANSI B16.5)

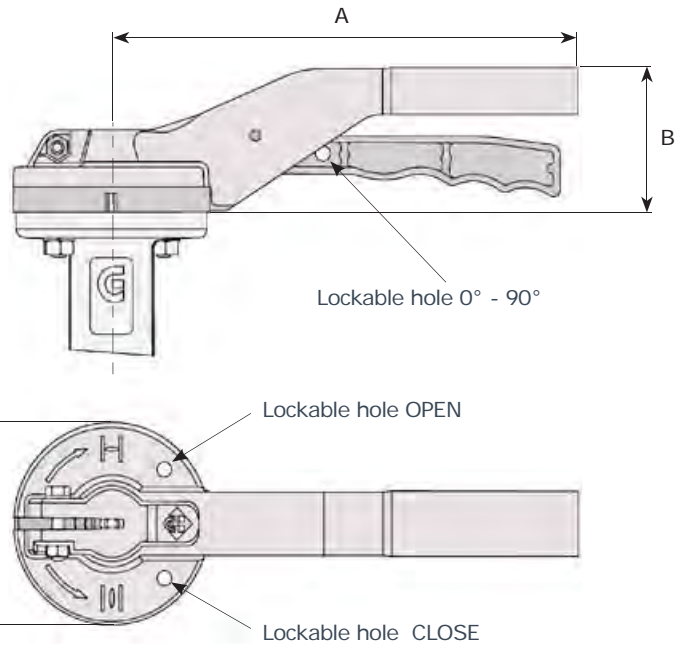
NOTE 2: Number of nuts should be double when WAFER valves are assembled with threaded rods.



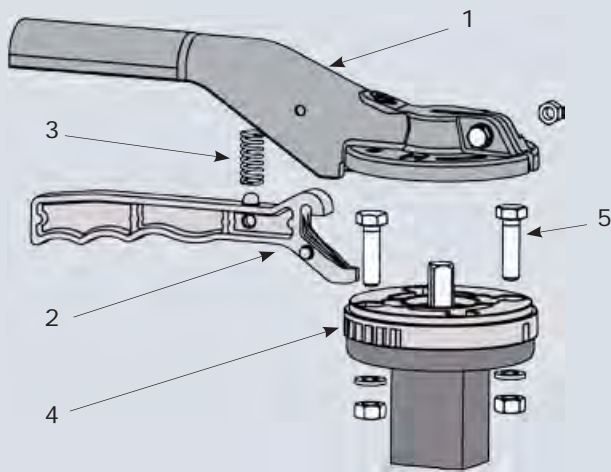
DN	40	50	65	80	100	125	150	200	250	DN	300	350	400	450	500	600	700	800
G	36	35	50	67	87	113	140	191	241	5°	289	332	376	430	479	575	670	757
Ø min	29	44	60	75	98	122	148	196	244	10°	296	332	378	428	478	566	681	782
Ø max	49	62	80	93	118	146	175	225	275	15°	330	372	422	450	500	600	717	815



Handlevers



DN	A	B	D	Kg
40 - 100	220	67	93	0.6
125 - 150	275	67	93	0.65
200	340	76	125	1

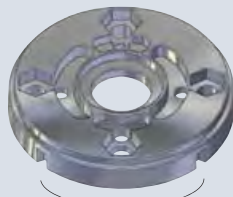


		DN40 - 300	DN40 - 150
1	lever	aluminium	A351 CF8M
2	trigger	aluminium	A351 CF8M
3	spring	stainless steel	stainless steel
4	disc positioning	aluminium	A351 CF8M
5	screws	stainless steel	stainless steel

positioning disc DN 40 - 150 designed for flanges ISO 5211 F05/F07



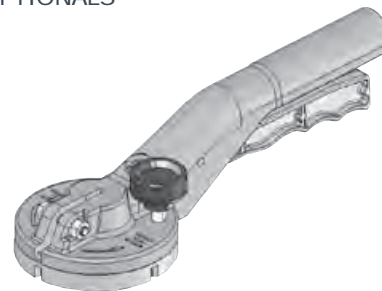
10 positions



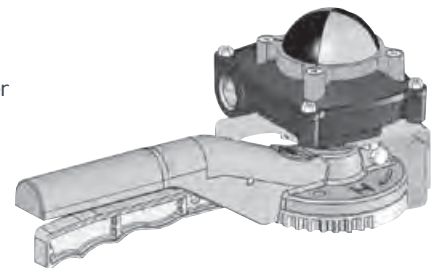
2 positions  
Open - Closed

positioning disc with two types of regulation: 10 positions or Open/Close

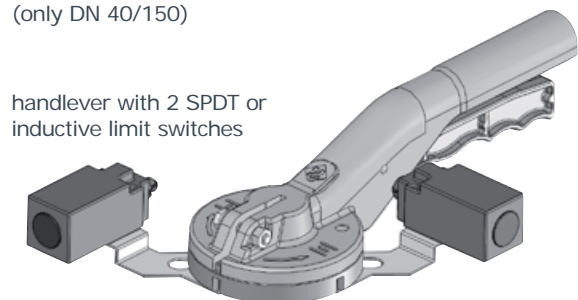
OPTIONALS



Adjustable handle lever



handlever with switch box  
(only DN 40/150)



handlever with 2 SPDT or  
inductive limit switches

**Gearboxes**

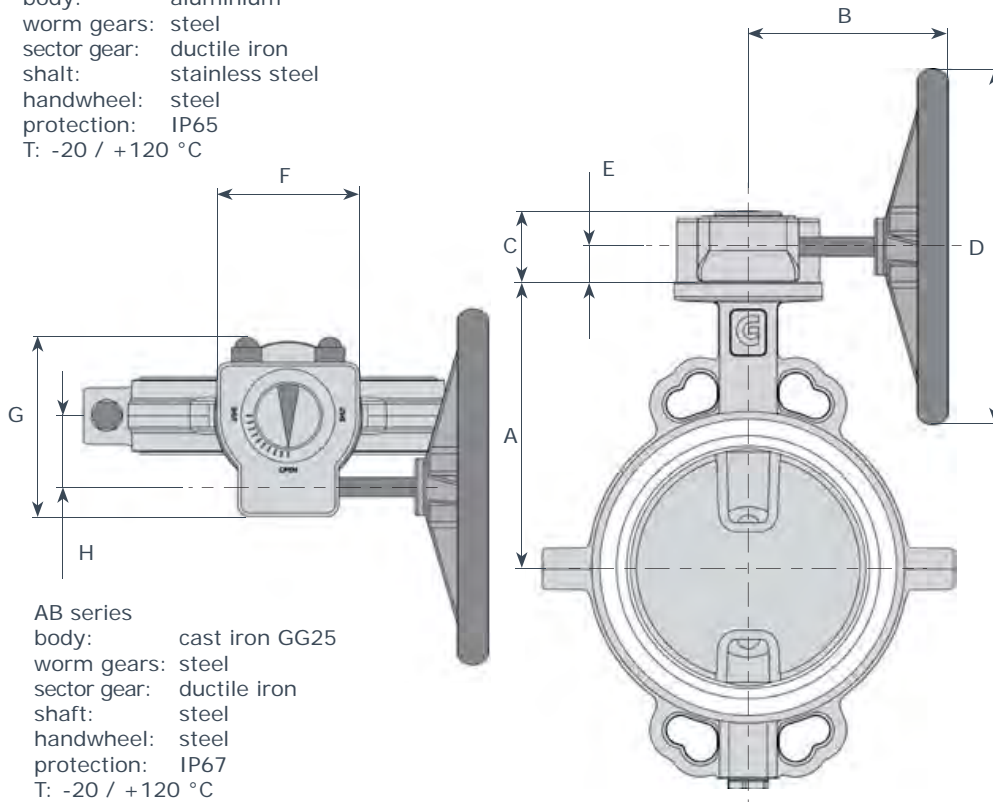
Aluminium body - HW Series

Cast Iron body - AB Series

**HW series**

- body: aluminium
- worm gears: steel
- sector gear: ductile iron
- shaft: stainless steel
- handwheel: steel
- protection: IP65
- T: -20 / +120 °C

low/high temperature execution on request



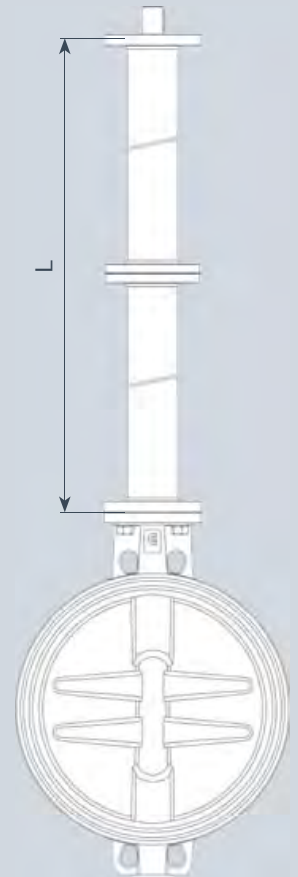
**AB series**

- body: cast iron GG25
- worm gears: steel
- sector gear: ductile iron
- shaft: steel
- handwheel: steel
- protection: IP67
- T: -20 / +120 °C

**Waterproof valve shaft extension**

When necessary, it's possible to extend the valve shaft as indicated in the figure. Construction is in carbon steel with protective paint (on request stainless steel).

"L" measure should be indicated when ordering.



Our technical department is available to solve special applications.

**Dimensions**

Mod. HW	B	C	D	E	F	G	H		Kg
HW 070	160	48	140	27	80	115	42		1.6
HW 102	215	56	250	33	120	150	60		3
HW 140	325	95	400	51	185	225	80		10
HW 165	395	105	600	61	230	268	105		20
Mod.	B	C	D	E	F	G	H	I	Kg
AB150	157.5	55	125	27	80	124	43	58	2.2
AB215	217	63	200	29	102	128	52	48	3.5
AB550	282	88	300	41	138	174	71	69	8.5
AB880	282	93	400	42	200	226	86	100	14
AB1250	322	102	500	48	220	258	105	110	22
AB1950	425	126	600	55	285	323	130	143	32
AB195-PR4	398	126	600	55	285	323	130	143	39
AB680-PR4	451	159	600	59	370	407	182	170	62.5
AB680-PR6	451	159	600	59	370	407	182	170	64.2

**Coupling valve - actuators**

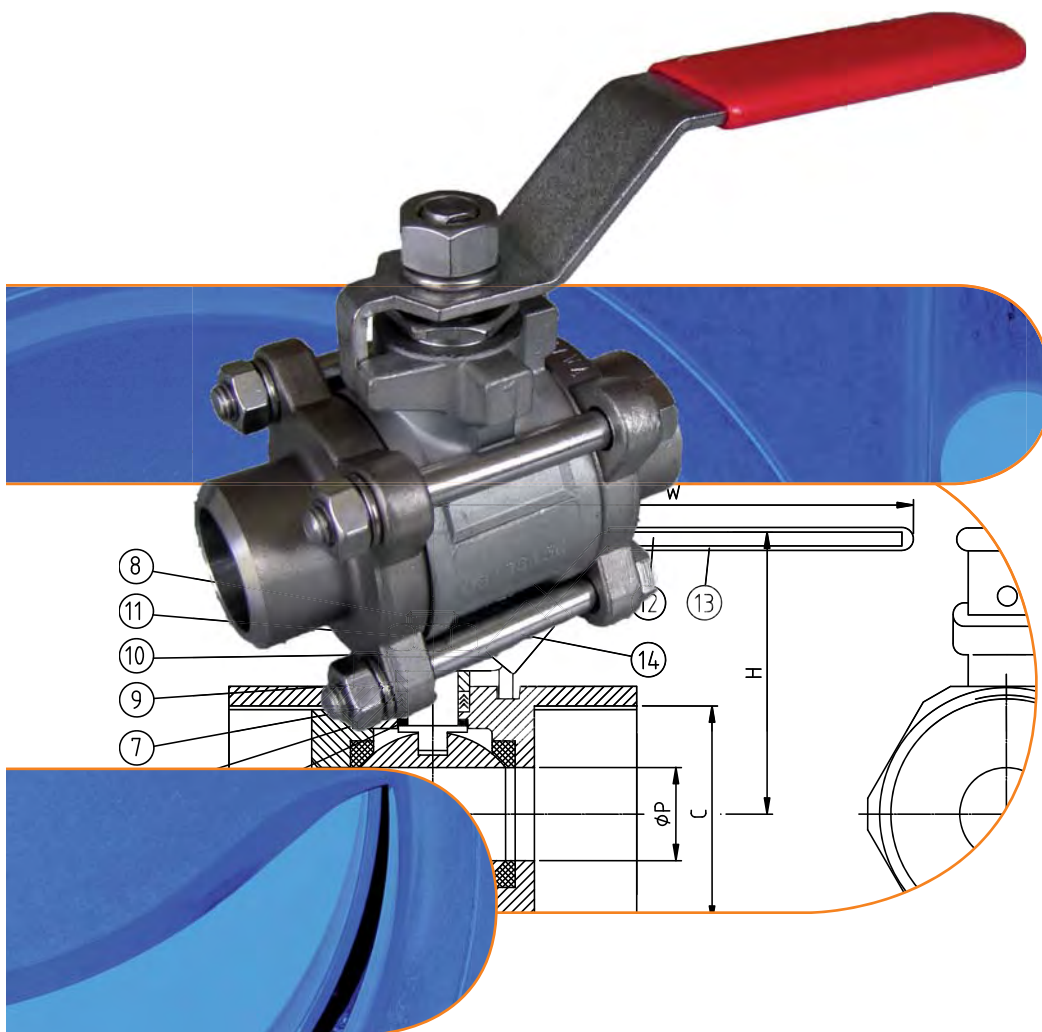
DN	"	mod. HW 10 bar	mod. AB 10 bar	A	DN	"	mod. HW 10 bar	mod. AB 10 bar	A
50	2	HW070	AB150	138	200	8	HW102	AB215	240
65	2 <sup>1/2</sup>	HW070	AB150	144	250	10	HW102	AB550	270
80	3	HW070	AB150	158	300	12	HW102	AB550	300
100	4	HW070	AB150	173	350	14	HW140	AB880	330
125	5	HW070	AB150	186	400	16	HW140	AB880	355
150	6	HW070	AB150	202	500	20	HW165	AB880	422





# Ball Valves

of stainless steel



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 server.ab@lohse-gmbh.de  
 www.lohse-gmbh.de

## Ball Valves of stainless steel

### 1-part ball valves

- VL-201T  
hand lever, thread end (T), reduced opening 223

### 2-part ball valves

- VL-K451T  
hand lever, thread end (T), full opening, PN 63 225
- VL-402  
hand lever, thread end (T), full opening, PN 100 227
- VL-815-PD / -PE  
pneumatic part turn actuator, flange connection, full opening 229
- VL-830-PD / -PE  
pneumatic part turn actuator, flange connection, full opening 230
- VL-815F  
hand lever, flange connection (F) , full opening 232
- VL-421T-PD / -PE  
pneumatic part turn actuator, thread end (T), full opening, DIN/ISO 5211 top flange 234

### 3-part ball valves

- VL-K551T / B  
hand lever, thread end (T) or welding end (B), full opening 236
- VL-K501T / B  
hand lever, thread end (T) or welding end (B), full opening 238
- VL-K551T\_BL  
hand lever, thread end (T) and long welding end (BL), full opening 240
- VL-521T-PD / -PE  
pneumatic part turn actuator, DIN/ISO 5211 top flange, thread end (T) 241
- VL-521B-PD / -PE  
pneumatic part turn actuator, DIN/ISO 5211 top flange, welding end (B) 243

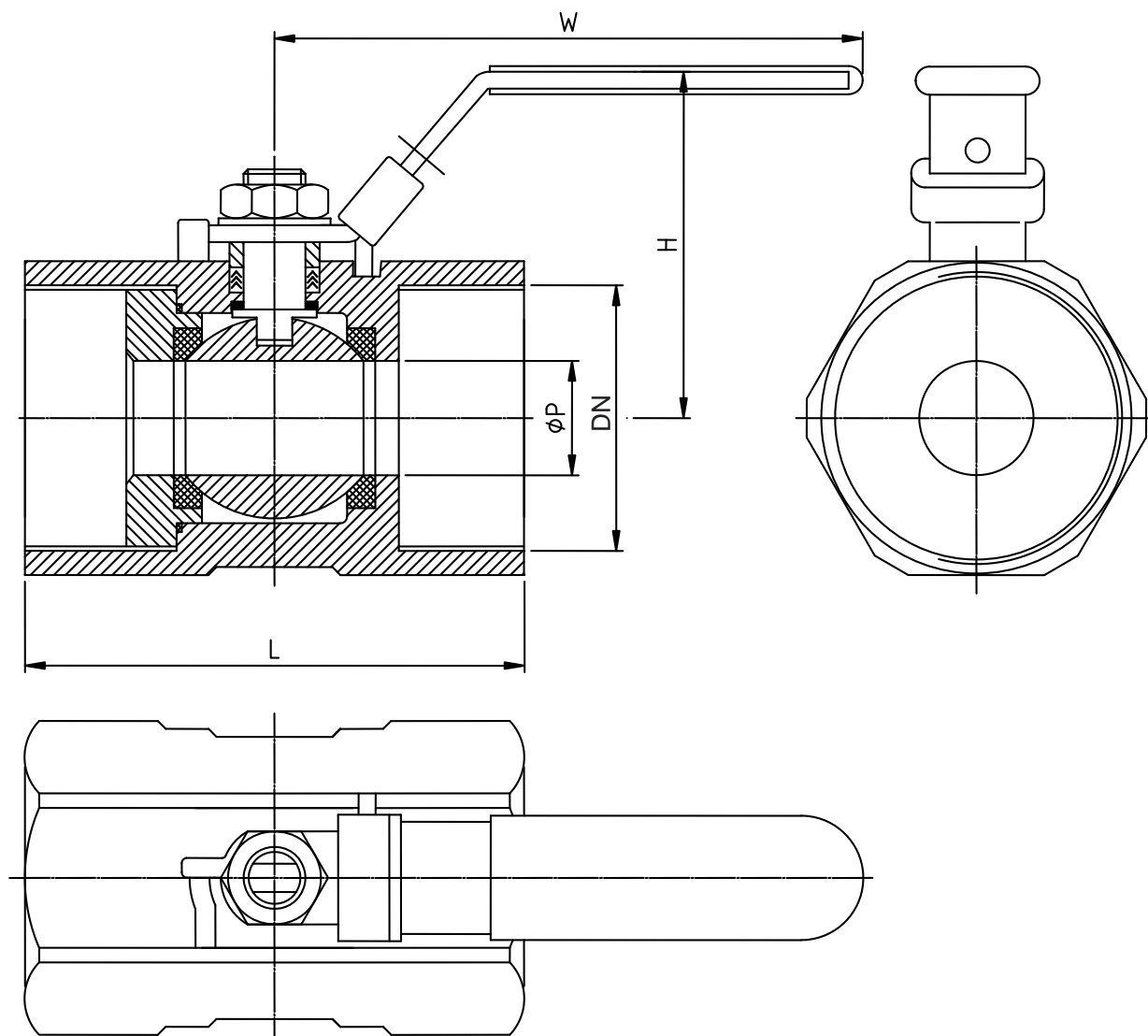
### compact flange ball valves

- VL-160F  
hand lever, full opening 245
- VL-140F  
hand lever, DIN/ISO 5211 top flange, full opening  
DN 15–100 247
- VL-140F-PD/-PE  
pneumatic part turn actuator, DIN/ISO 5211 top flange, full opening  
DN 15–100 248
- VL-140F  
hand lever, DIN/ISO 5211 top flange, reduced opening  
DN 125–200 250
- VL-140F-PD/-PE  
pneumatic part turn actuator, DIN/ISO 5211 top flange, reduced opening  
DN 125–200 251

### pressure-temperature curve

- 253

1-part ball valve of stainless steel  
hand lever, thread end (T), reduced opening  
PN 63 DN 8–50

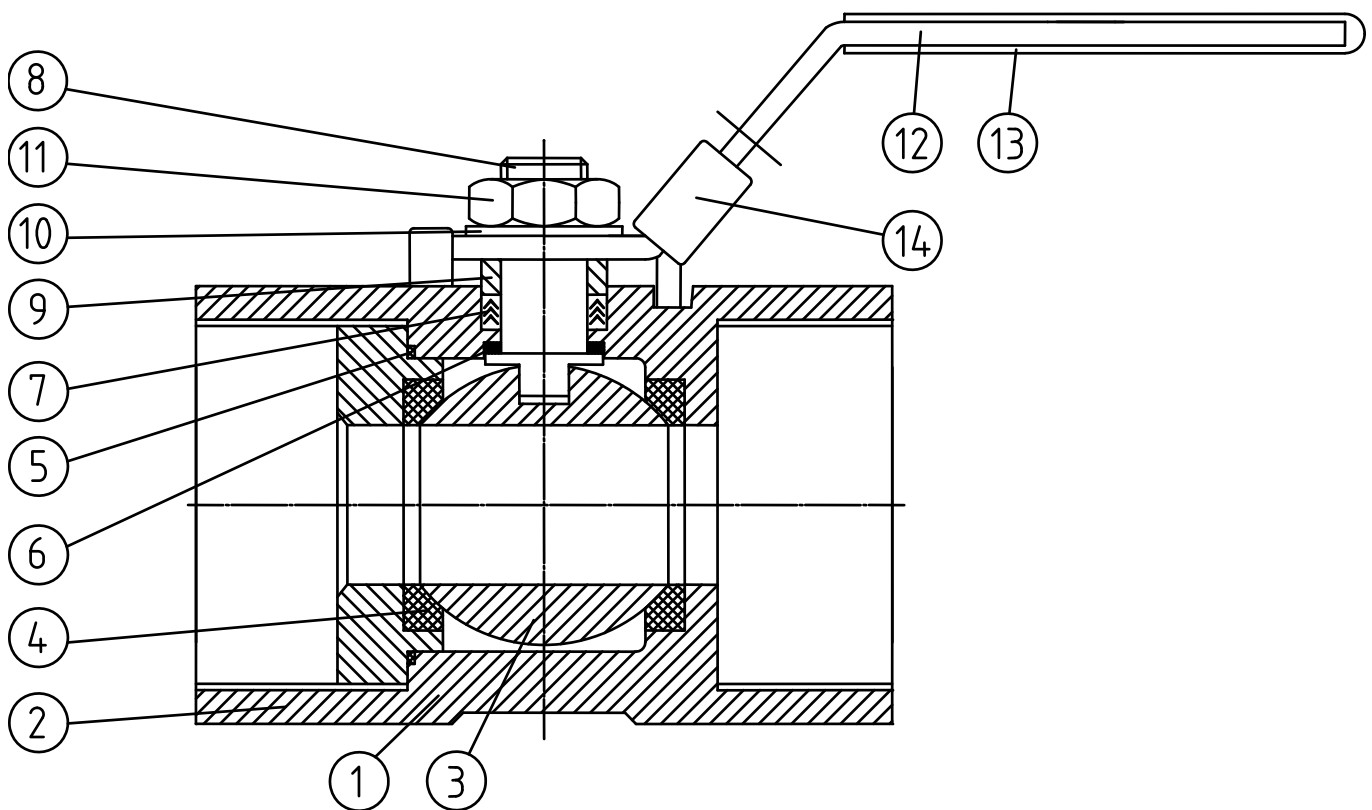


DN	Ø P	L	H	W	weight ~[kg]	
8	1/4"	5	39	32.5	70	0.065
10	3/8"	7	44	34.5	70	0.1
15	1/2"	9.2	56.5	43.5	90	0.15
20	3/4"	12.5	58	47	90	0.3
25	1"	16	71	55	110	0.4
32	1 1/4"	20	78	60.5	110	0.7
40	1 1/2"	25.4	83	74.5	140	0.8
50	2"	32	100	80.5	140	1.3

Thread according to DIN 2999, dimensions in mm.  
Temperature range -10°C to 200°C  
(see pressure-temperature curve).

1-part ball valve of stainless steel  
 hand lever, thread end (T), reduced opening  
 PN 63 DN 8–50

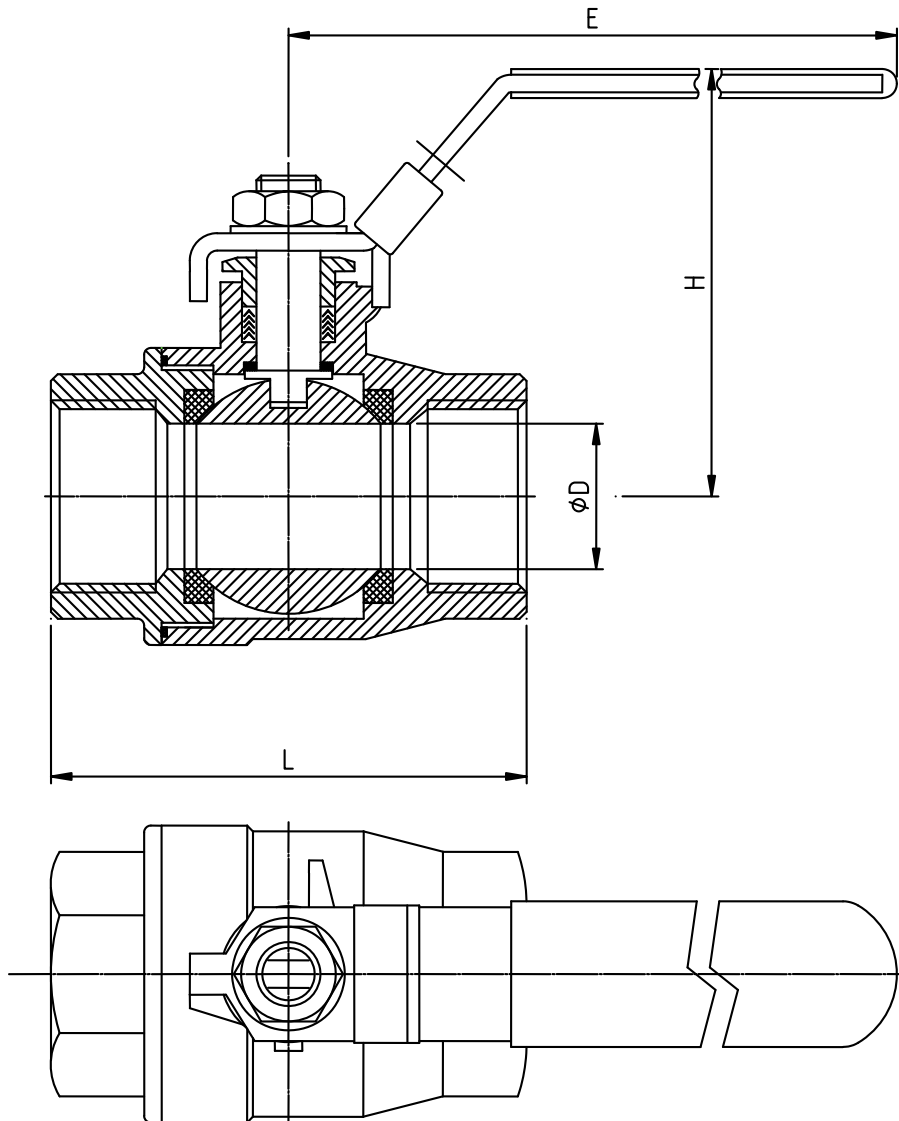
materials



pos.	description	amount	material
1	housing	1	1.4408
2	end piece	1	1.4408
3	ball	1	1.4401
4	ball seal	2	PTFE
5	housing seal	1	PTFE
6	clamping ring	1	PTFE
7	operating shaft seal	1 set	PTFE

pos.	description	amount	material
8	operating shaft	1	1.4401
9	stuffing box	1	1.4301
10	washer	1	1.4301
11	nut	1	1.4301
12	handle	1	1.4301
13	handle coat	1	plastics
14	locking device	1	1.4301 (optional)

2-part ball valve of stainless steel  
 hand lever, thread end (T), full opening  
 PN 63 DN 8–50 (1/4" – 2")



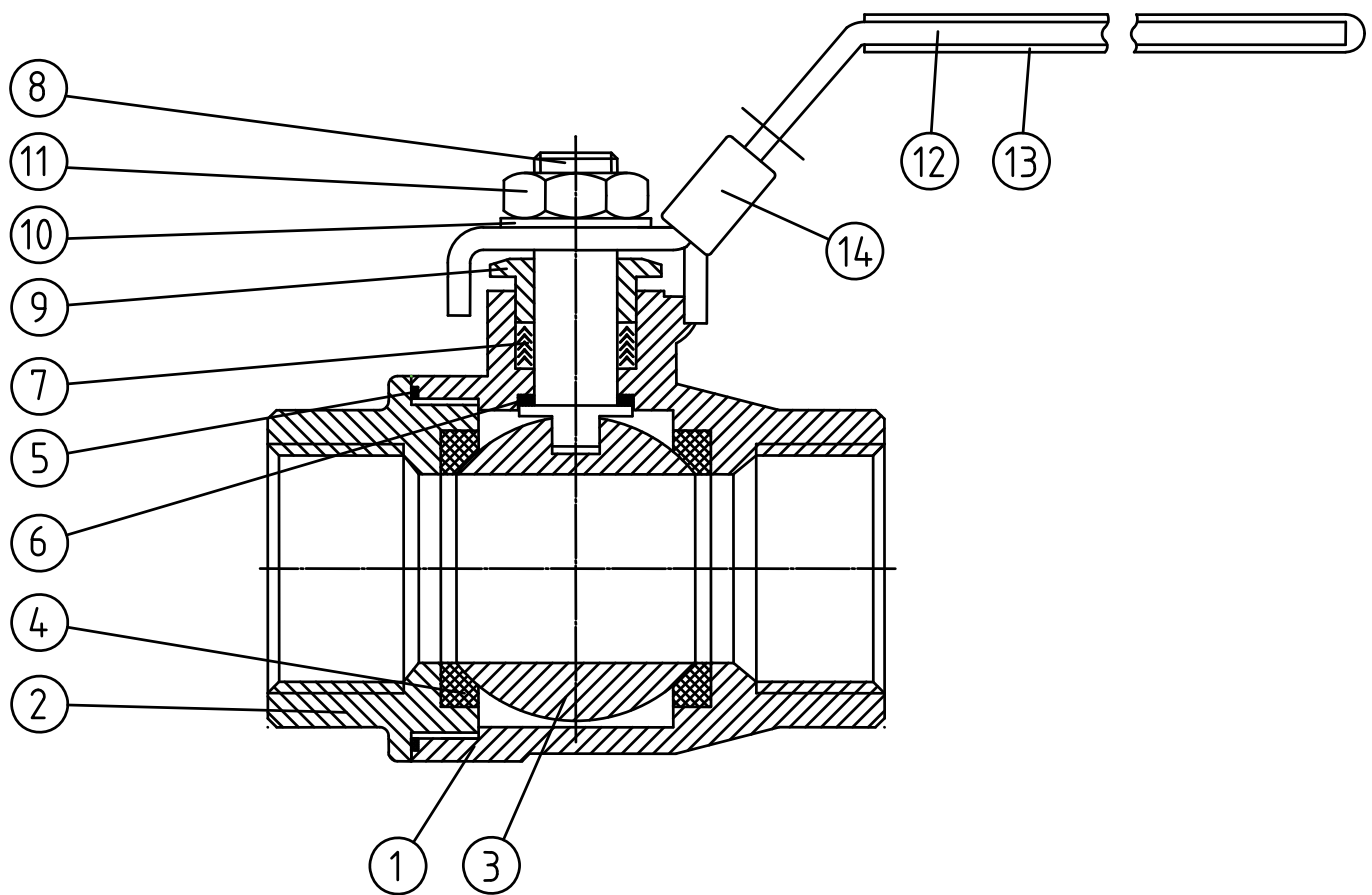
DN	Ø D	L	H	E	weight ~[kg]
8	1/4"	11.6	100	51	0.23
10	3/8"	12.5	100	51	0.23
15	1/2"	15	100	49	0.28
20	3/4"	20	120	58	0.44
25	1"	25	150	68	0.68
32	1 1/4"	32	150	73	1.06
40	1 1/2"	38	164	87	1.62
50	2"	50	164	95	2.52

Overall length according to DIN 3202 M3, thread according to DIN 2999, dimensions in mm.

Temperature range -10°C to 200°C  
 (see pressure-temperature curve).

2-part ball valve of stainless steel  
 hand lever, thread end (T), full opening  
 PN 63 DN 8–50 (1/4" – 2")

materials

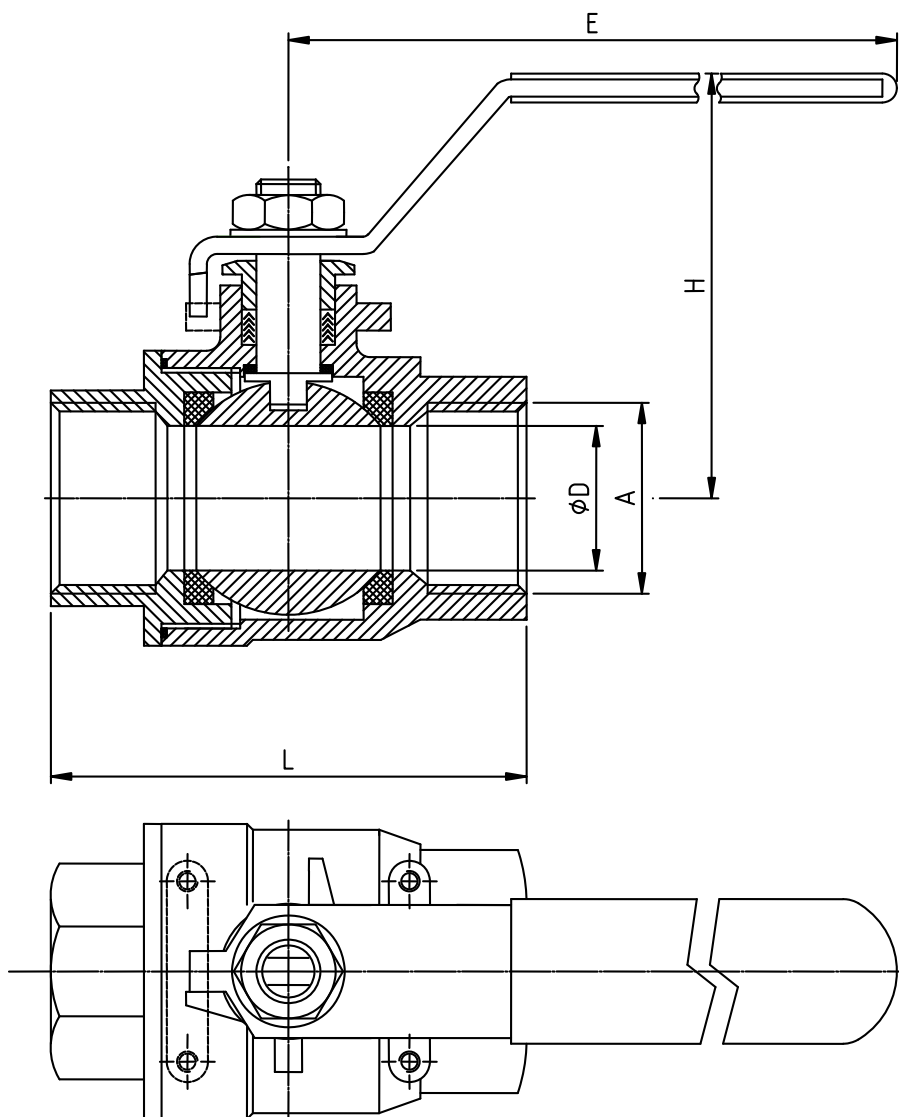


pos.	description	amount	material
1	housing	1	1.4408
2	end piece	1	1.4408
3	ball	1	1.4401
4	ball seal	2	PTFE
5	housing seal	1	PTFE
6	clamping ring	1	PTFE
7	operating shaft seal	1 set	PTFE

pos.	description	amount	material
8	operating shaft	1	1.4401
9	stuffing box	1	1.4301
10	washer	1	1.4301
11	nut	1	1.4301
12	handle	1	1.4301
13	handle coat	1	plastics
14	locking device	1	1.4301 (optional)



2-part ball valve of stainless steel  
 hand lever, thread end (T), full opening  
 PN 100 DN 8–50 (1/4" – 2")



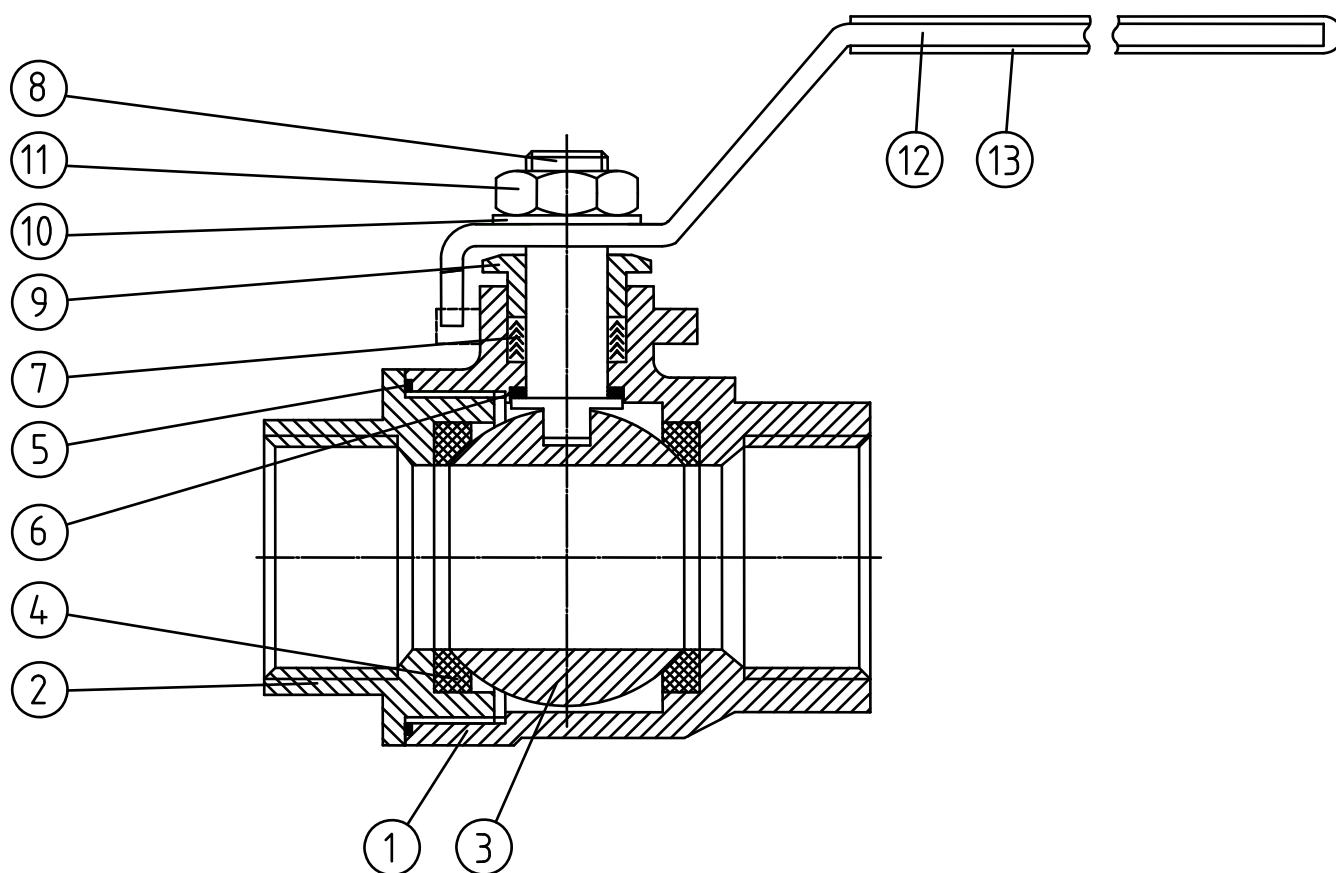
DN	Ø D	L	H	E	weight ~[kg]	
8	1/4"	11.6	55	50	96	0.25
10	3/8"	12.7	60	50	96	0.25
15	1/2"	15	75	53	96	0.4
20	3/4"	20	80	64	125	0.5
25	1"	25	90	66	125	0.9
32	1 1/4"	32	110	79	170	1.6
40	1 1/2"	38	120	83	170	2.3
50	2"	50	140	94	190	3.6

Overall length according to DIN 3202 M3, thread according to DIN 2999, dimensions in mm.

Temperature range -10°C to 200°C  
 (see pressure-temperature curve).

2-part ball valve of stainless steel  
hand lever, thread end (T), full opening  
PN 100 DN 8–50 (1/4" – 2")

## materials



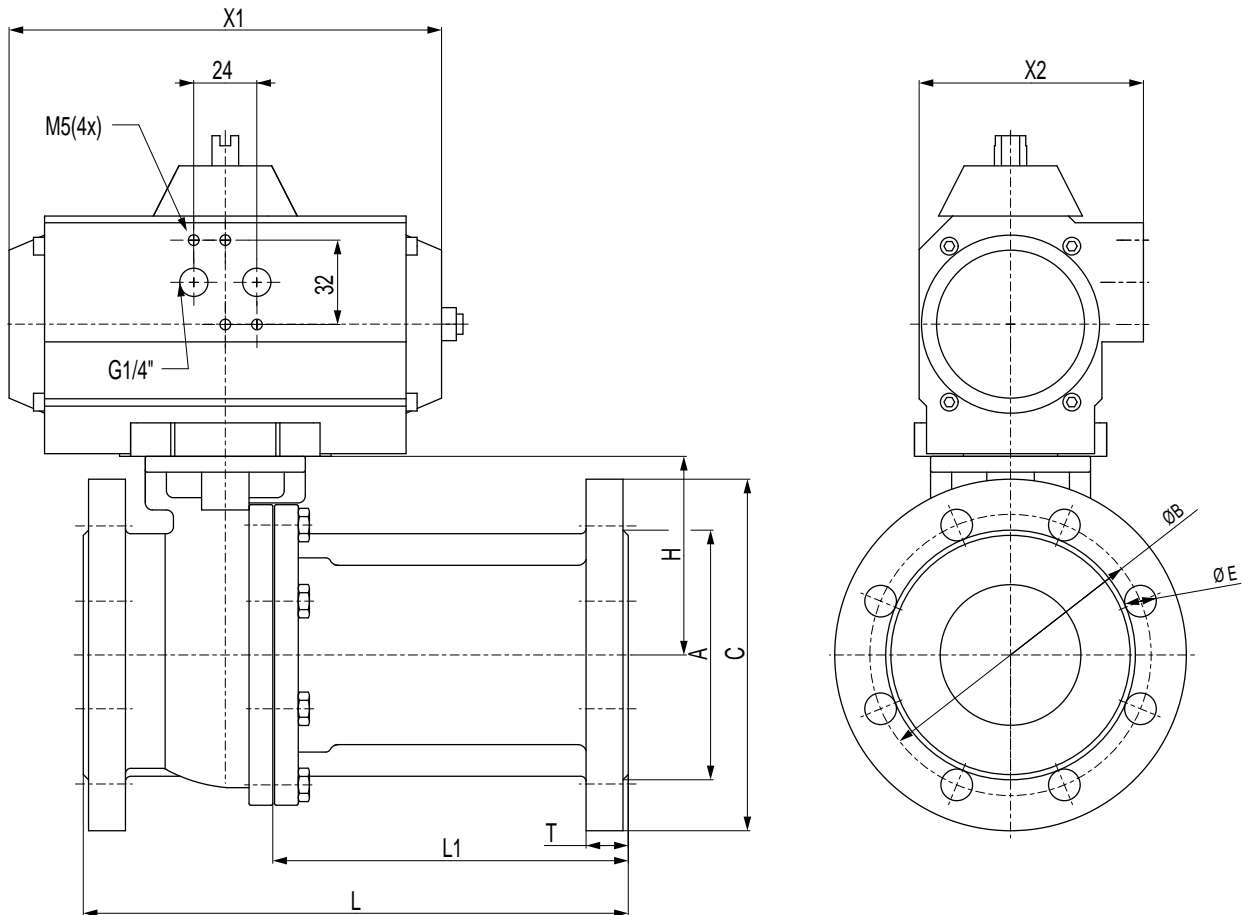
pos.	description	amount	material
1	housing	1	1.4408
2	end piece	1	1.4408
3	ball	1	1.4401
4	ball seal	2	PTFE
5	housing seal	1	PTFE
6	clamping ring	1	PTFE
7	operating shaft seal	1 set	PTFE

pos.	description	amount	material
8	operating shaft	1	1.4401
9	stuffing box	1	1.4301
10	washer	1	1.4301
11	nut	1	1.4301
12	handle	1	1.4301
13	handle coat	1	plastics
14	locking device	1	1.4301 (optional)

2-part flange ball valve of stainless steel

full opening, DIN/ISO 5211 top flange, square operating shaft and pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting)

ANSI Class 150 DN 1/2" – DN4"



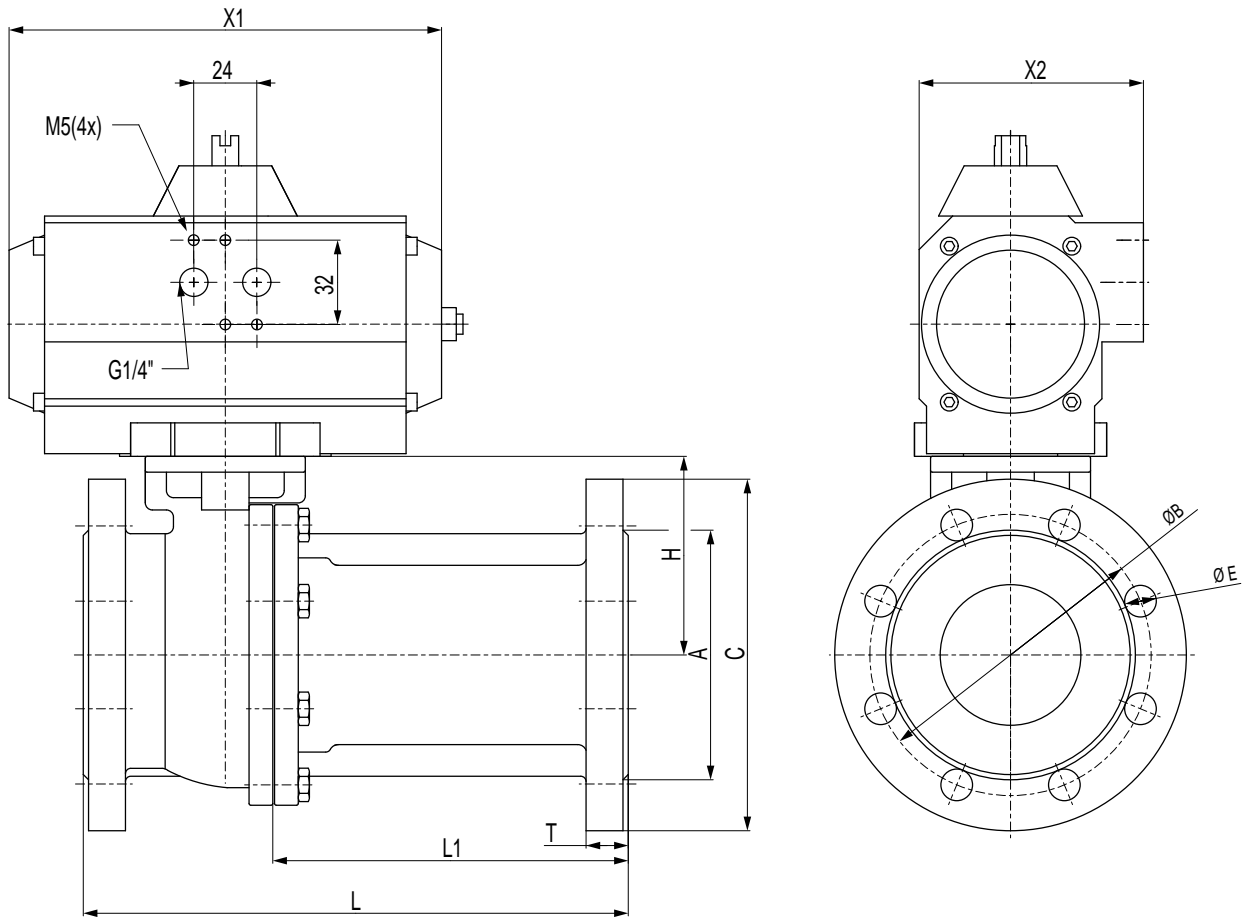
DN	A	B	C	E	H	L	L1	T	X1	X2	rotating drive	
15	1/2"	35	60.5	89	16	50	108	41.5	11.1	119	67	UT 05
20	3/4"	43	70	98	16	53.5	117	48.5	12.7	165	85	UT 15
25	1"	51	79.5	108	16	58.5	127	54	14.3	165	85	UT 15
32	1 1/4"	64	89	117	16	71	140	67	15.9	165	85	UT 15
40	1 1/2"	73	98.5	127	16	76	165	84	17.5	197	85	UT 17
50	2"	92	120.5	152	19	83.5	178	90	19.1	177	96	UT 20
65	2 1/2"	105	139.5	178	19	95	190.5	92.5	22.3	230	113	UT 30
80	3"	127	152.5	190	19	113	203	94.2	23.9	246	138	UT 35
100	4"	157	190.5	229	19	131	229	114.5	23.9	246	138	UT 35

Dimensions in mm. With integrated mounting pad acc. to DIN/ISO 5211 for direct actuator mounting.  
Temperature range -10°C to 200°C (see pressure-temperature curve).

2-part flange ball valve of stainless steel

full opening, DIN/ISO 5211 top flange, square operating shaft and pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting)

ANSI Class 300 DN 1/2" – DN4"

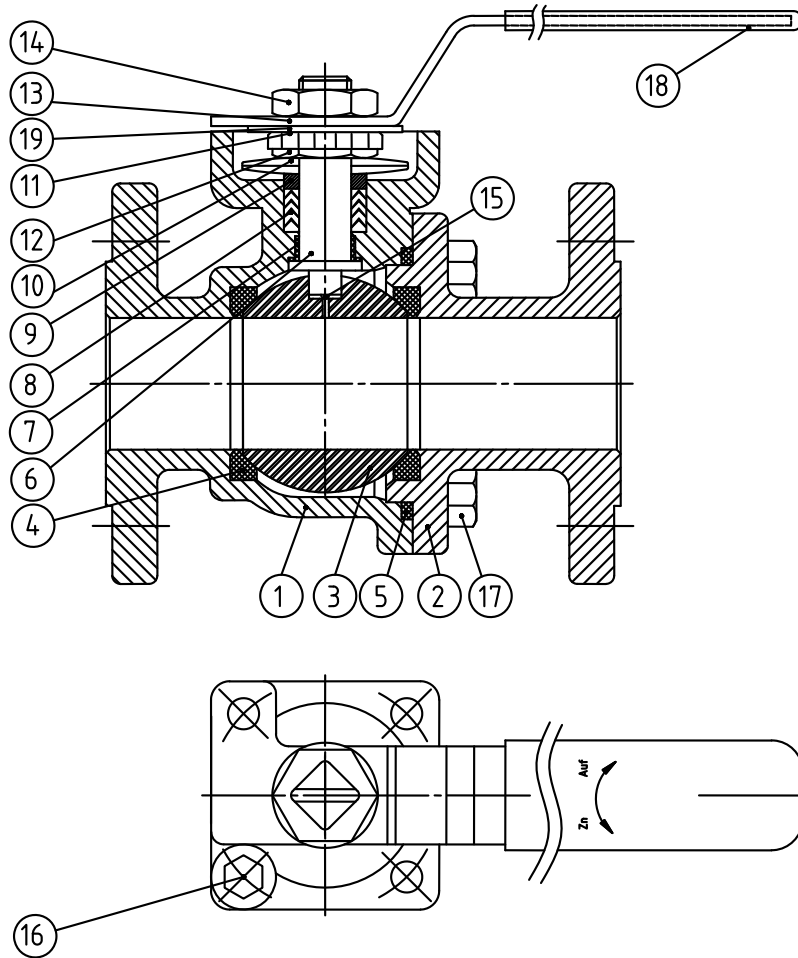


DN	A	B	C	E	H	L	L1	T	X1	X2	rotating drive	
15	1/2"	35	66.5	95	16	–	140	73.5	14.3	119	67	UT 05
20	3/4"	43	82.5	117	19	58.7	152	83.5	15.9	165	85	UT 15
25	1"	51	89	124	19	62	165	92	17.5	165	85	UT 15
32	1 1/4"	64	98.5	133	19	–	178	105	19.1	165	85	UT 15
40	1 1/2"	73	114.5	156	22	78	190	109	20.7	197	85	UT 17
50	2"	92	127	165	19	–	216	128	22.3	177	96	UT 20
65	2 1/2"	105	149	190	22	95.5	241	143	25.4	230	113	UT 30
80	3"	127	168	210	22	–	282.5	173.7	28.6	246	138	UT 35
100	4"	157	200	254	22	–	305	196.5	31.8	246	138	UT 35

Dimensions in mm. With integrated mounting pad acc. to DIN/ISO 5211 for direct actuator mounting. Temperature range -10°C to 200°C (see pressure-temperature curve).

2-part flange ball valve of stainless steel  
 full opening, DIN/ISO 5211 top flange, square operating shaft  
 ANSI Class 150/300 DN 1/2" – DN4"

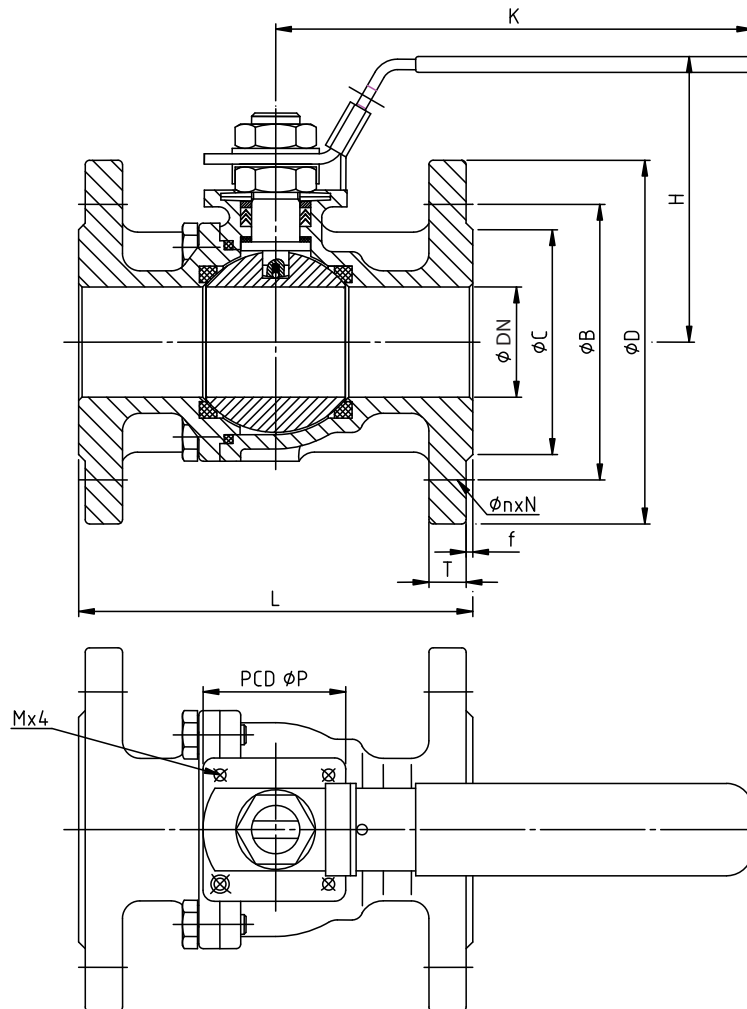
materials



pos.	description	amount	material
1	body	1	1.4408
2	end cap	1	1.4408
3	ball	1	CF8 / SUS 304
4	seat	2	RPTFE
5	body gasket	1	PTFE
6	stem	1	SUS 316
7	thrust washer	1	PTFE
8	gland packing	1	RPTFE
9	gland	1	SUS 316
10	disc spring	2	SUS 301

pos.	description	amount	material
11	tab washer	1	SUS 304
12	stem nut	1	SUS 304
13	handle	1	carbon steel
14	handle nut	1	carbon steel
15	anti-static	1	SUS 316
16	stopper	1 set	SUS 304
17	hex bolt		A4-70
18	cover	1	plastic
19	ring	1	PTFE

2-part flange ball valve (F) of stainless steel  
hand lever, full opening  
PN 40 / DN 15–50, PN 16 / DN 65–100



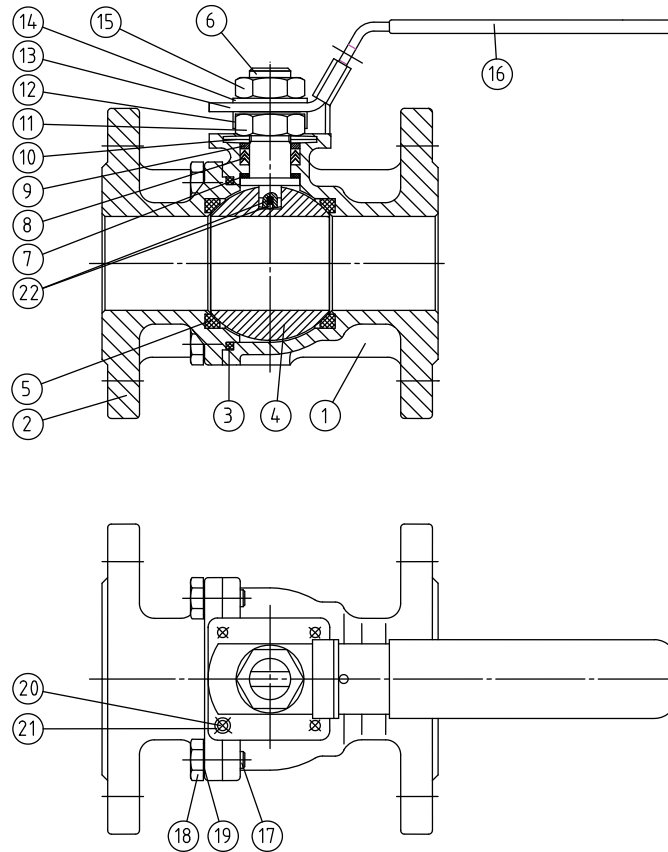
DN	Ø B	Ø C	Ø D	E	Ø F	H	K	L	T	f	Ø n	N	M	Ø P
15	65	45	95	8	12	72	145	115	16	2	14	4	5	42/F04
20	75	58	105	8	12	74	145	120	18	2	14	4	5	42/F04
25	85	68	115	8.7	14	81	178	125	18	2	14	4	6	50/F05
32	100	78	140	8.7	14	87	178	130	18	2	18	4	6	50/F05
40	110	88	150	15	22	126	255	140	18	3	18	4	8	70/F07
50	125	102	165	15	22	136	255	150	20	3	18	4	8	70/F07
65	145	122	185	15	22	155	255	170	18	3	18	4	8	70/F07
80	160	138	200	17	25.8	167	350	180	20	3	18	8	10	102/F10
100	180	158	220	17	25.8	179	400	190	20	3	18	8	10	102/F10

Overall length according to DIN 3202 F4/short.

Dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).

2-part flange ball valve (F) of stainless steel  
hand lever, full opening  
PN 40 / DN 15–50, PN 16 / DN 65–100

## materials

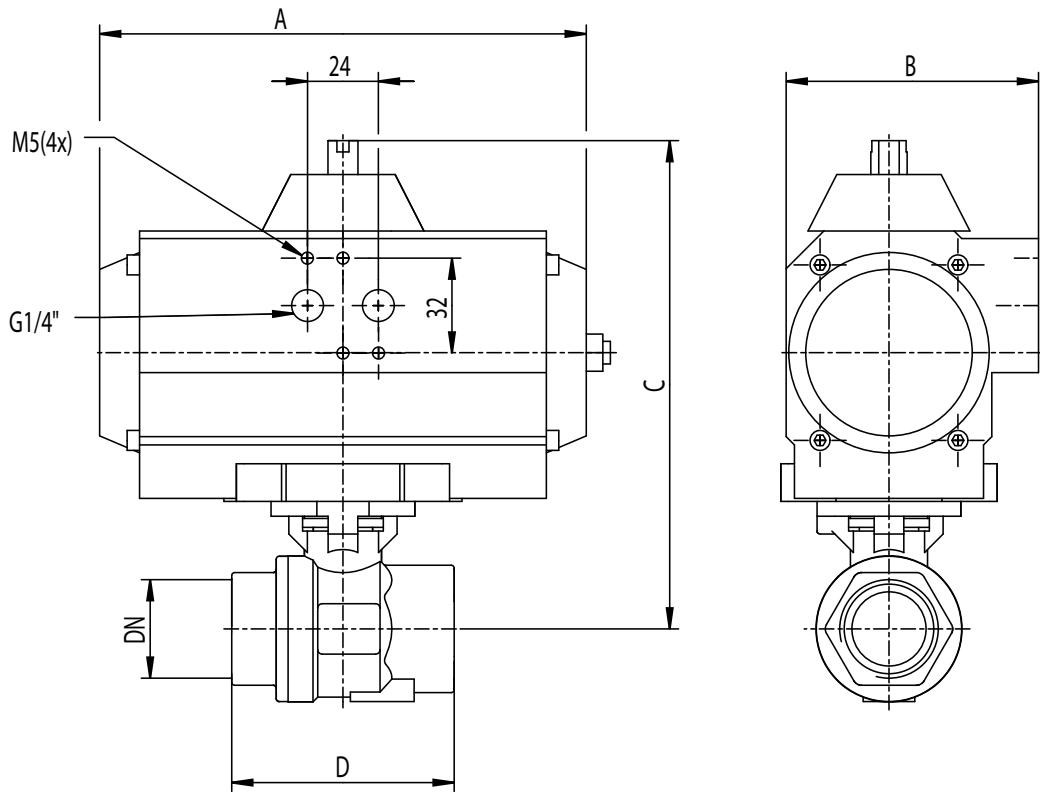


pos.	description	amount	material
1	housing	1	1.4408
2	end piece	1	1.4408
3	housing seal	1	PTFE
4	ball	1	1.4401
5	ball seal	2	reinforced PTFE
6	operating shaft	1	1.4401
7	clamping ring	1	PTFE
8	operating shaft seal	2	PTFE
9	stuffing box	1	1.4301
10	disc spring	2	1.4301
11	operating shaft nut	1	1.4301

pos.	description	amount	material
12	circlip	1	1.4301
13	body stop	1	1.4301
14	washer	1	1.4301
15	nut	1	1.4301
16	handle	1	1.4301
17	screw	4-8	1.4301
18	nut	4-8	1.4301
19	washer	4-8	1.4301
20	screw	1	1.4301
21	washer	1	1.4301
22	antistatic spring	2	1.4301



2-part ball valve of stainless steel  
 thread end (T), full opening, DIN/ISO 5211 top flange, square operating shaft and  
 pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic  
 single-acting)  
 PN 63 DN 8 (1/4") – DN 80 (3")



ball valve with rotating drive - PD = pneumatic double-acting

DN	A	B	C	D	rotating drive
8	119	67		51	UT 05
10	119	67		51	UT 05
15	119	67	156	63	UT 05
20	165	85	162	65	UT 15
25	165	85	165	75	UT 15
32	165	85	193	87	UT 15
40	197	85	197	95	UT 17
50	177	96	227	111	UT 20
65	230	113	287	185	UT 30
80	246	138	296	205	UT 35

ball valve with rotating drive - PE = pneumatic single-acting

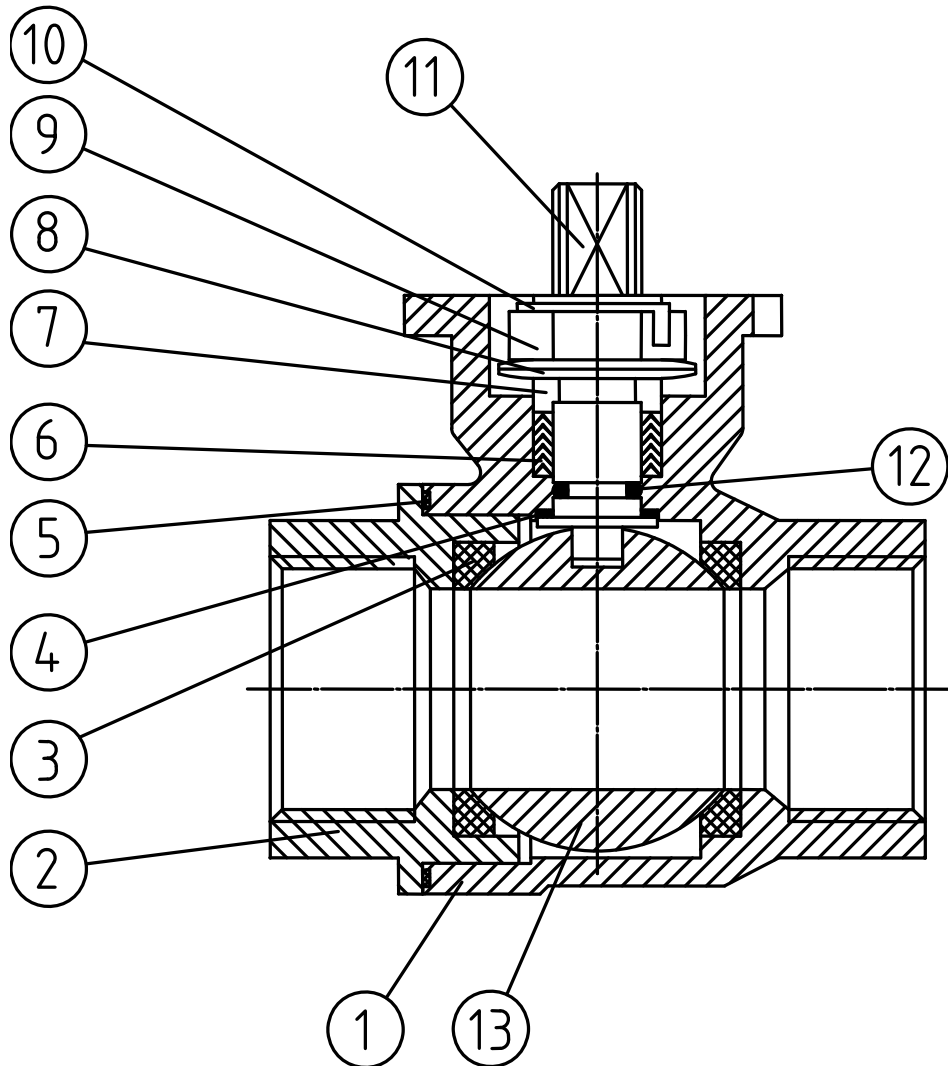
DN	A	B	C	D	rotating drive
8	119	67		51	UT 05s2
10	119	67		51	UT 05s2
15	119	67	156	63	UT 15s4
20	165	85	162	65	UT 15s4
25	165	85	165	75	UT 17s4
32	197	85	193	87	UT 20s4
40	177	96	197	95	UT 25s4
50	230	113	227	111	UT 30s4
65	246	138	287	185	UT 35s4
80	290	138	296	205	UT 40s4

Actuator design 5 bar control pressure.

Thread according to DIN 2999, dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).

2-part ball valve of stainless steel  
 thread end (T), full opening, DIN/ISO 5211 top flange  
 PN 63 DN 8 (1/4") – DN 80 (3")

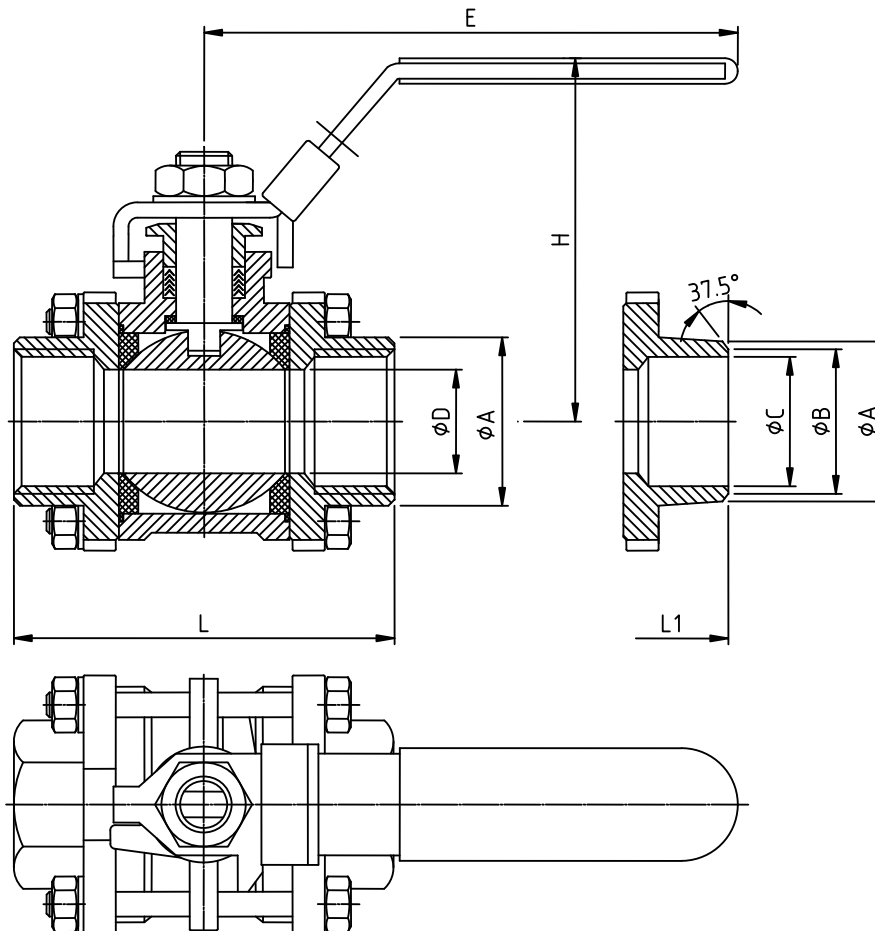
materials



pos.	description	amount	material
1	housing	1	1.4408
2	end piece	1	1.4408
3	ball seal	2	PTFE
4	clamping ring	1	PTFE
5	housing seal	1	PTFE
6	operating shaft seal	2	PTFE
7	stuffing box nut	1	1.4401

pos.	description	amount	material
8	disc spring	2	1.4301
9	nut	1	1.4301
10	circlip	1	1.4301
11	operating shaft	1	1.4401
12	O-ring	1	Viton
13	ball	1	1.4401

3-part ball valve of stainless steel  
hand lever, thread end (T) or welding end (B), full opening  
PN 63 DN 8–50 (1/4" – 2")

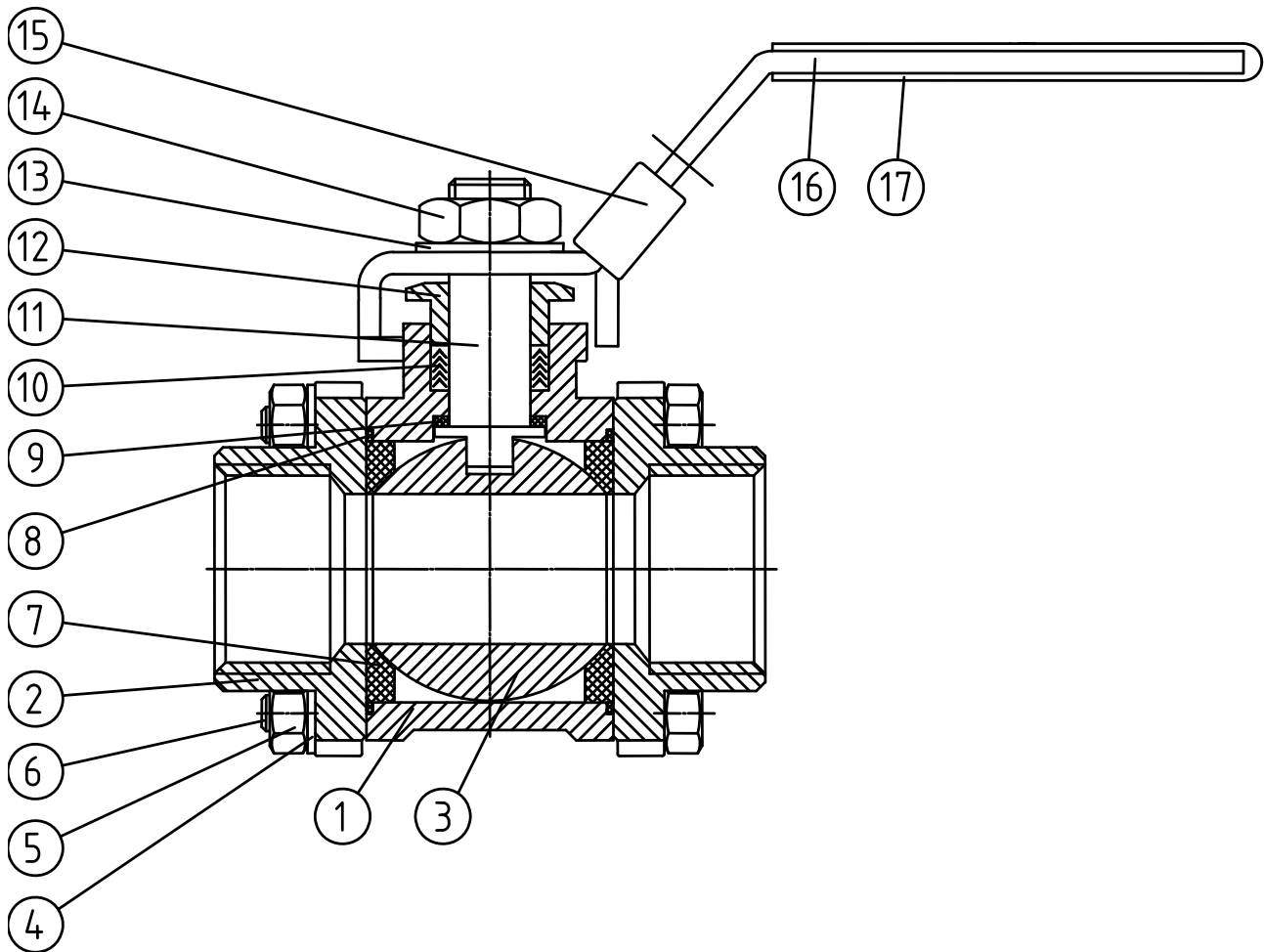


DN	Ø A	Ø B	Ø C	Ø D	L	L1	H	E	weigh ~[kg]
8	18	12	10	11.6	61	60	56	100	0.35
10	18	16	13	12.5	61	60	56	100	0.32
15	23	19	15	15.0	68	65	58	100	0.52
20	28	24	21	20.0	80	76	60	120	0.72
25	35	31.5	26.6	25.0	86	86	70	148	1.02
32	43	39	35	32.0	105	105	75	148	1.68
40	50	45	40.5	38.0	120	120	86	164	2.32
50	61	56	52.5	50.0	134	134	93	164	3.46

Thread according to DIN 2999, dimensions in mm.  
Temperature range -10°C to 200°C  
(see pressure-temperature curve).

3-part ball valve of stainless steel  
hand lever, thread end (T) or welding end (B), full opening  
PN 63 DN 8–50 (1/4" – 2")

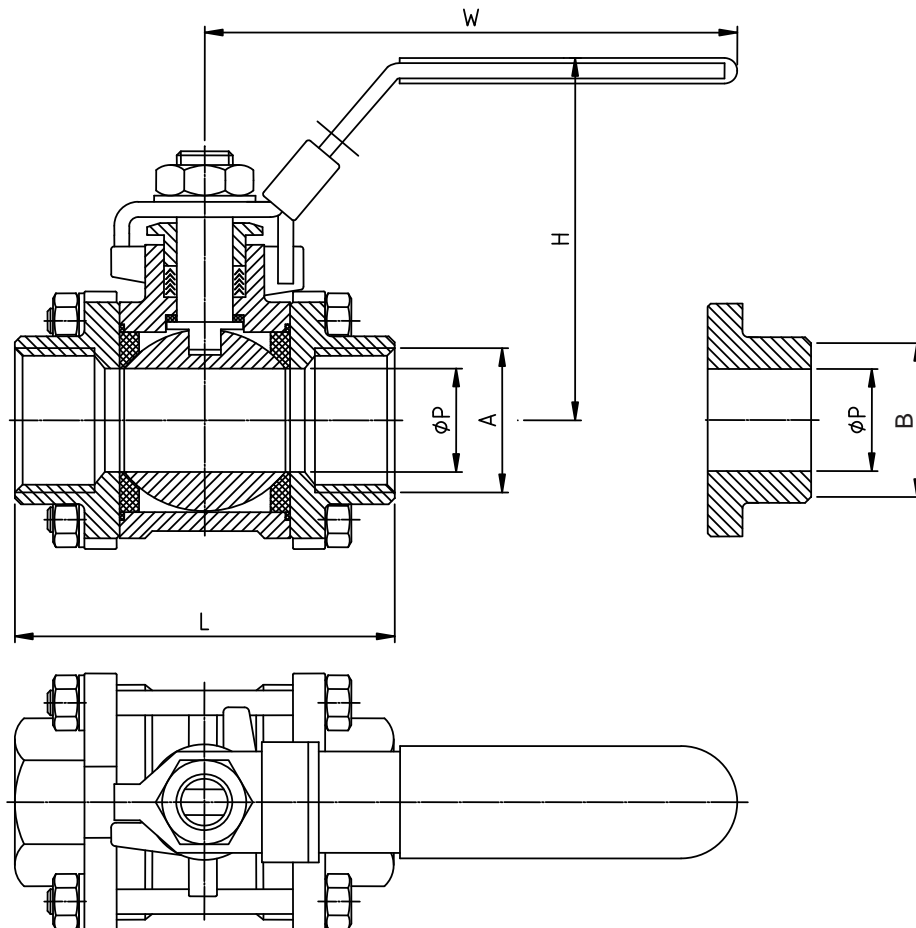
## materials



pos.	description	amount	material
1	housing	1	1.4408
2	end piece	2	1.4408
3	ball	1	1.4401
4	washer	4	1.4301
5	nut	4	1.4301
6	screw	4	1.4301
7	ball seal	2	PTFE
8	housing seal	2	PTFE
9	clamping ring	1	PTFE

pos.	description	amount	material
10	operating shaft seal	1 set	PTFE
11	operating shaft	1	1.4401
12	stuffing box	1	1.4301
13	washer	1	1.4301
14	nut	1	1.4301
15	locking device	1	1.4301 (optional)
16	handle	1	1.4301
17	handle coat	1	plastics

3-part ball valve of stainless steel  
hand lever, thread end (T) or welding end (B), full opening  
PN 63 DN 10–100 (1/4" – 2")

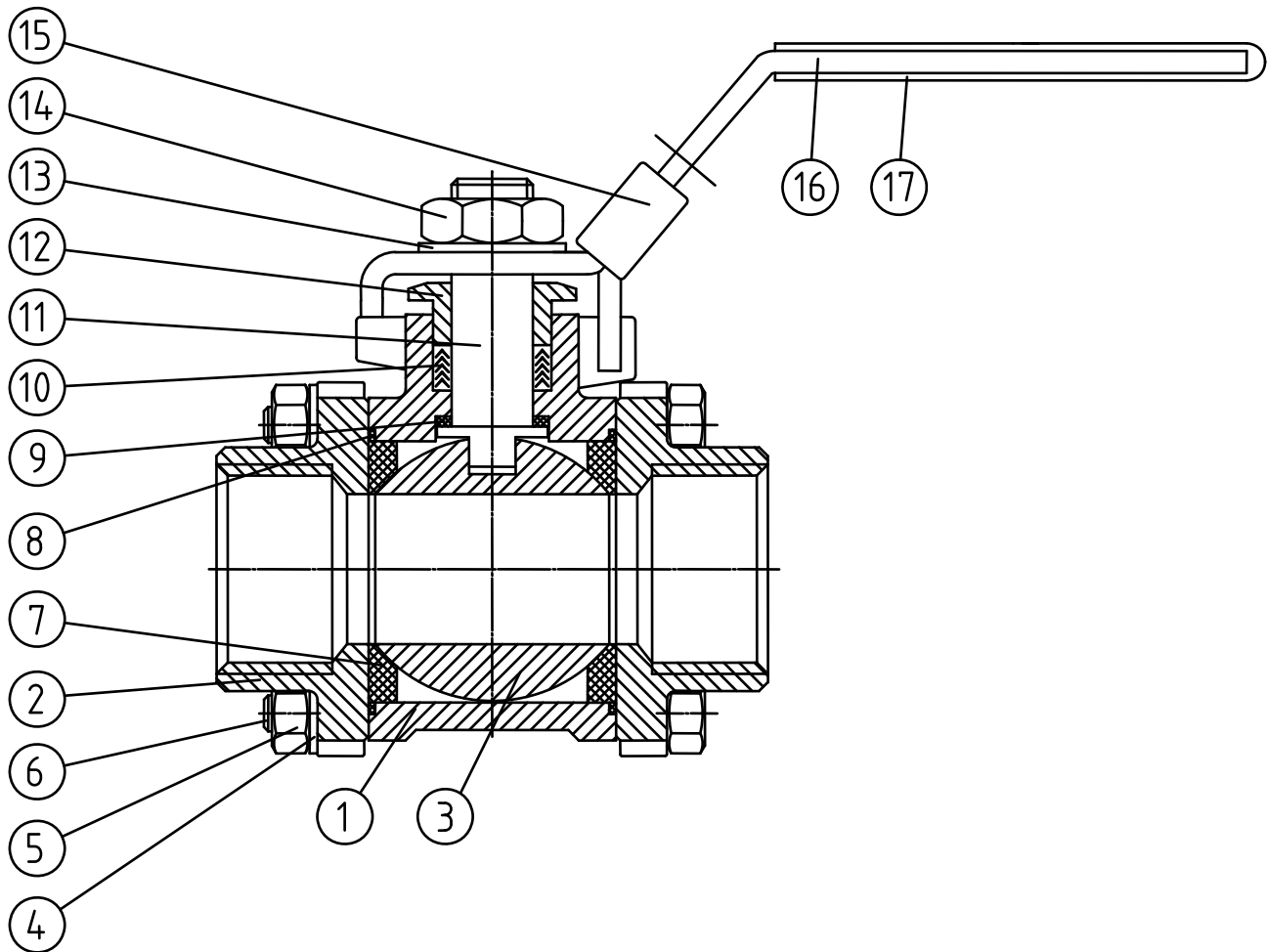


DN	A [inch]	B	Ø P	L	H	W	weight ~[kg]
10	1/4	12,5	11,6	65	55	97.5	0.35
12	3/8	15	12,7	70	55	97.5	0.35
15	1/2	18	16	75	64	125.5	0.6
20	3/4	22	20	90	67	125.5	0.95
25	1	28	25	100	83	143.5	1.2
32	1 1/4	35	32	110	89	143.5	1.85
40	1 1/2	43	38	125	100	203.5	2.7
50	2	54	51	150	108	203.5	4.35
65	2 1/2	69	65	190	150	251.5	8.3
80	3	84	80	220	161	251.5	12.3
100	4	104	100	270	180	291.5	23.8

Thread according to DIN 2999, dimensions in mm.  
Temperature range -10°C to 200°C  
(see pressure-temperature curve).

3-part ball valve of stainless steel  
hand lever, thread end (T) or welding end (B), full opening  
PN 63 DN 10–100 (1/4" – 2")

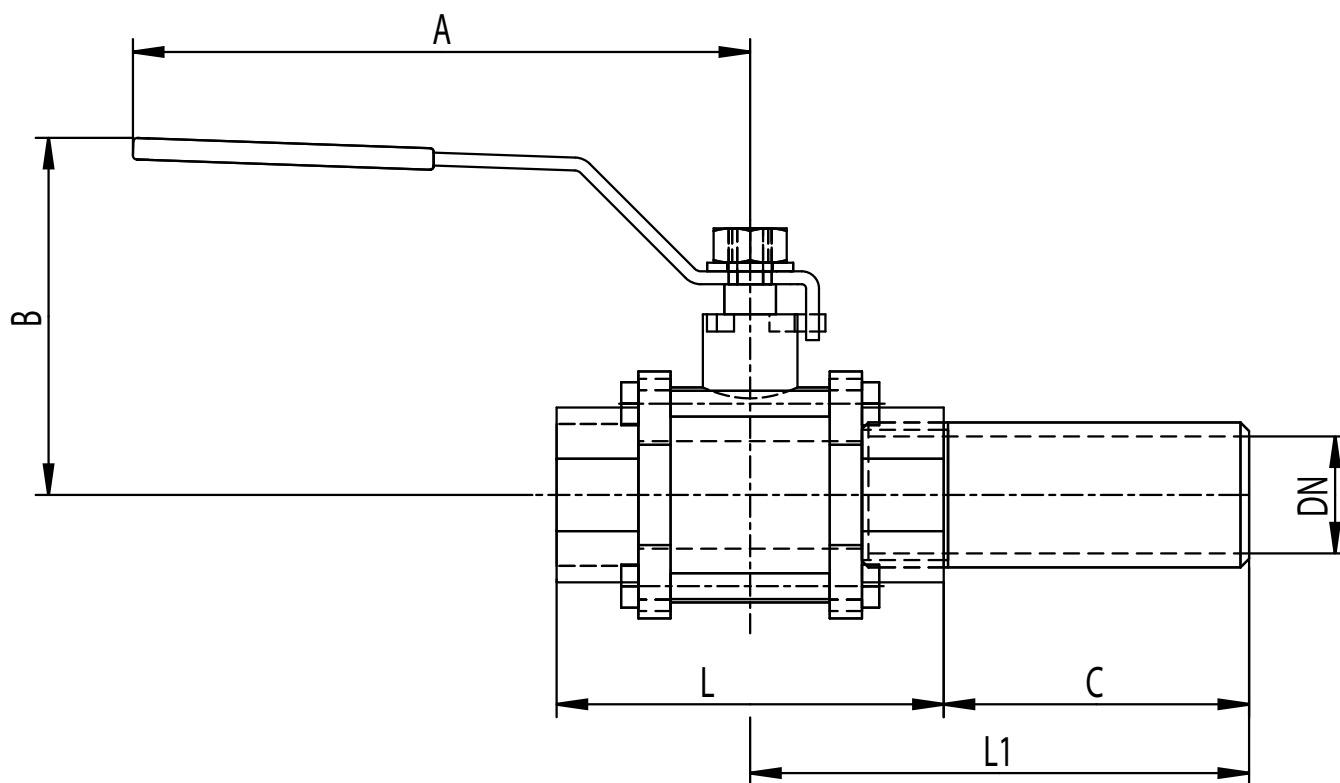
## materials



pos.	description	amount	material
1	housing	1	1.4408
2	end piece	2	1.4408
3	ball	1	1.4401
4	washer	4-12	1.4301
5	nut	4-12	1.4301
6	screw	4-6	1.4301
7	ball seal	2	PTFE
8	housing seal	2	PTFE
9	clamping ring	1	PTFE

pos.	description	amount	material
10	operating shaft seal	1 set	PTFE
11	operating shaft	1	1.4401
12	stuffing box	1	1.4301
13	washer	1	1.4301
14	nut	1	1.4301
15	locking device	1	1.4301 (optional)
16	handle	1	1.4301
17	handle coat	1	plastics

3-part ball valve of stainless steel  
hand lever, thread end (T) and with long welding end (BL), full opening  
PN 63 DN 8–100 (1/4" – 4")



DN		A	B	C	L	L1
8	1/4"	100	56	51	61	90
10	3/8"	100	56	66	61	95
15	1/2"	100	58	76	68	110
20	3/4"	120	60	70	80	110
25	1"	148	70	77	86	115
32	1 1/4"	148	75	83	105	135
40	1 1/2"	164	86	80	120	140
50	2"	164	93	68	134	145
65	2 1/2"	248	130	84	163	165
80	3"	248	137	79	183	170
100	4"	290	180	72	226	185

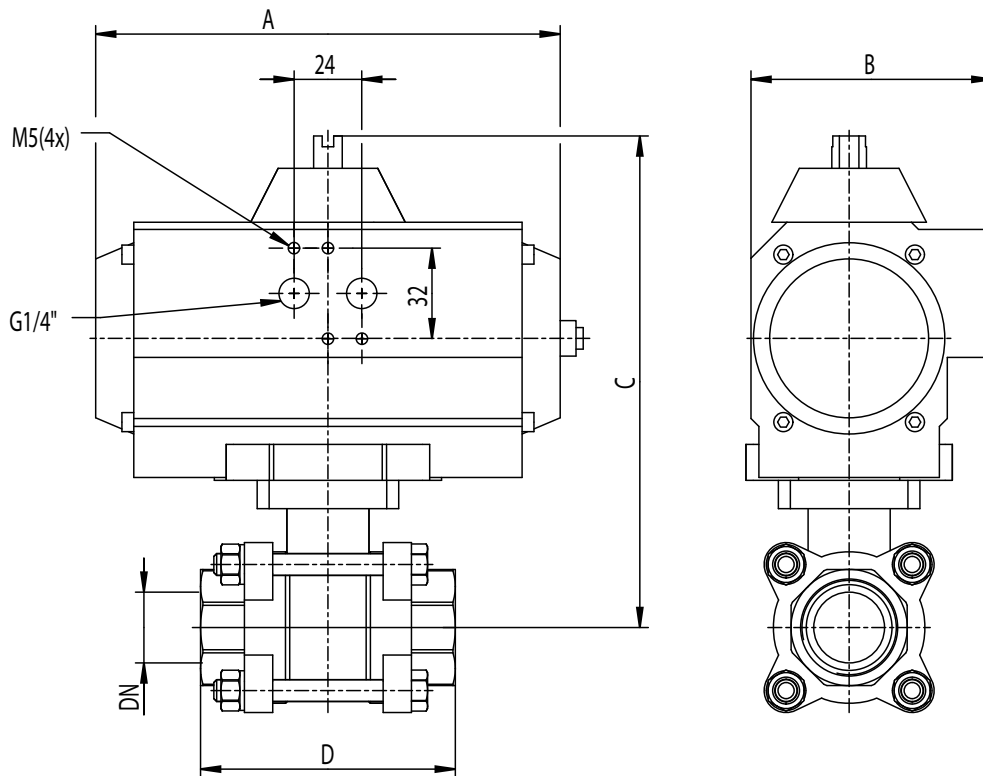
Thread according to DIN 2999, dimensions in mm.  
Temperature range -10°C to 200°C  
(see pressure-temperature curve).



3-part ball valve or stainless steel

DIN/ISO 5211 top flange, thread end (T), pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting)

PN 63 DN 10–100



ball valve with rotating drive - PD = pneumatic double-acting

DN	A	B	C	D	rotating drive	
10	1/4"	119	67	141	65	UT 05
12	3/8"	119	67	141	65	UT 05
16	1/2"	119	67	141	75	UT 05
20	3/4"	119	67	145	80	UT 05
25	1"	165	85	174	90	UT 15
32	1 1/4"	165	85	179	110	UT 15
40	1 1/2"	165	85	189	120	UT 15
50	2"	177	96	220	140	UT 20
65	2 1/2"	239	96	241	185	UT 25
80	3"	246	138	306	205	UT 35
100	4"	246	138	334	240	UT 35

ball valve with rotating drive - PE = pneumatic single-acting

DN	A	B	C	D	rotating drive	
10	1/4"	165	85	161	65	UT 15s4
12	3/8"	165	85	161	65	UT 15s4
16	1/2"	165	85	161	75	UT 15s4
20	3/4"	197	85	165	80	UT 17s4
25	1"	197	85	173	90	UT 17s4
32	1 1/4"	177	96	201	110	UT 20s4
40	1 1/2"	239	96	211	120	UT 25s4
50	2"	230	113	239	140	UT 30s4
65	2 1/2"	246	138	294	185	UT 35s4
80	3"	391	185	358	205	UT 50s4
100	4"	391	185	385	240	UT 50s4

Actuator design 5 bar control pressure. Overall length according to DIN 3202 M3.

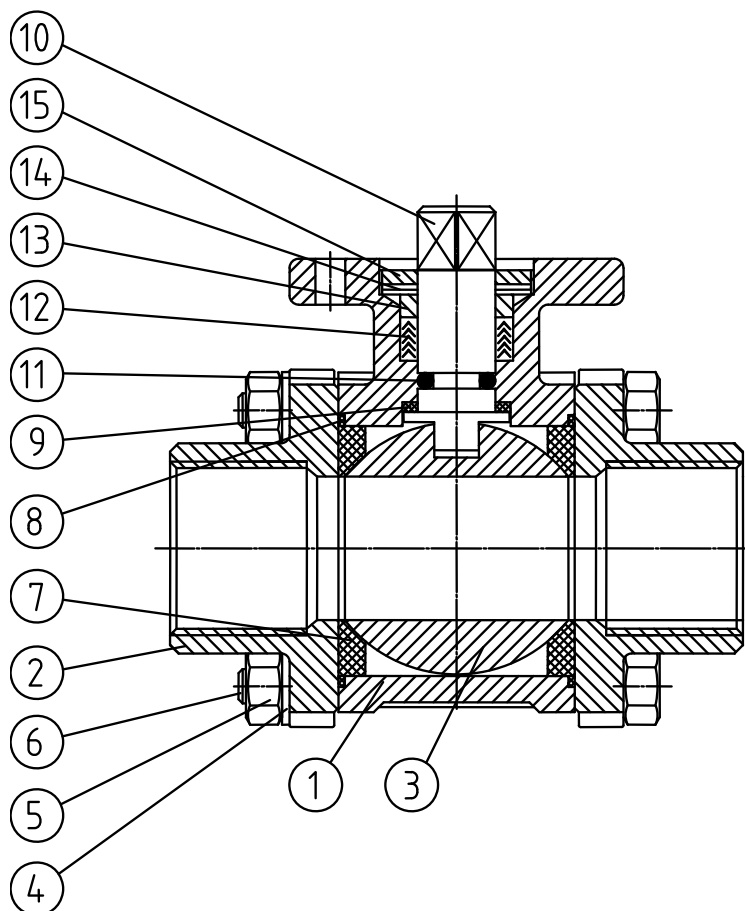
Thread according to DIN 2999, dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).

3-part ball valve or stainless steel

DIN/ISO 5211 top flange, thread end (T), pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting)

PN 63 DN 10–100

materials



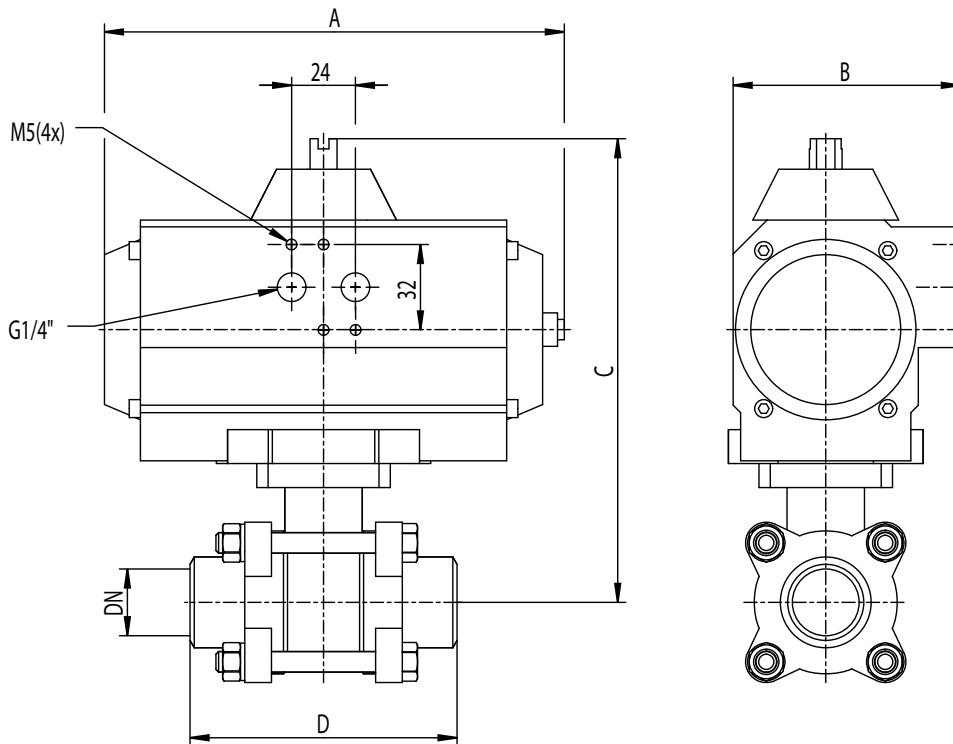
pos.	description	amount	material
1	housing	1	1.4408
2	end piece	2	1.4408
3	ball	1	1.4401
4	washer	4-12	1.4301
5	nut	4-12	1.4301
6	screw	4-12	1.4301
7	ball seal	2	reinforced PTFE
8	housing seal	2	PTFE

pos.	description	amount	material
9	clamping ring	1	PTFE
10	operating shaft	1	1.4401
11	O-ring	1	Viton
12	operating shaft seal	1 set	PTFE
13	stuffing box	1	1.4301
14	spring	2	spring steel
15	nut	1	1.4301

3-part ball valve of stainless steel

DIN/ISO 5211 top flange, welding end (B), pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting)

PN 63 DN 10–100



ball valve with rotating drive - PD = pneumatic double-acting

DN	A	B	C	D	rotating drive	
10	1/4"	119	67	141	70	UT 05
12	3/8"	119	67	141	70	UT 05
16	1/2"	119	67	141	75	UT 05
20	3/4"	119	67	145	90	UT 05
25	1"	165	85	174	100	UT 15
32	1 1/4"	165	85	179	110	UT 15
40	1 1/2"	165	85	189	125	UT 15
50	2"	177	96	220	150	UT 20
65	2 1/2"	239	96	241	190	UT 25
80	3"	246	138	306	220	UT 35
100	4"	246	138	334	270	UT 35

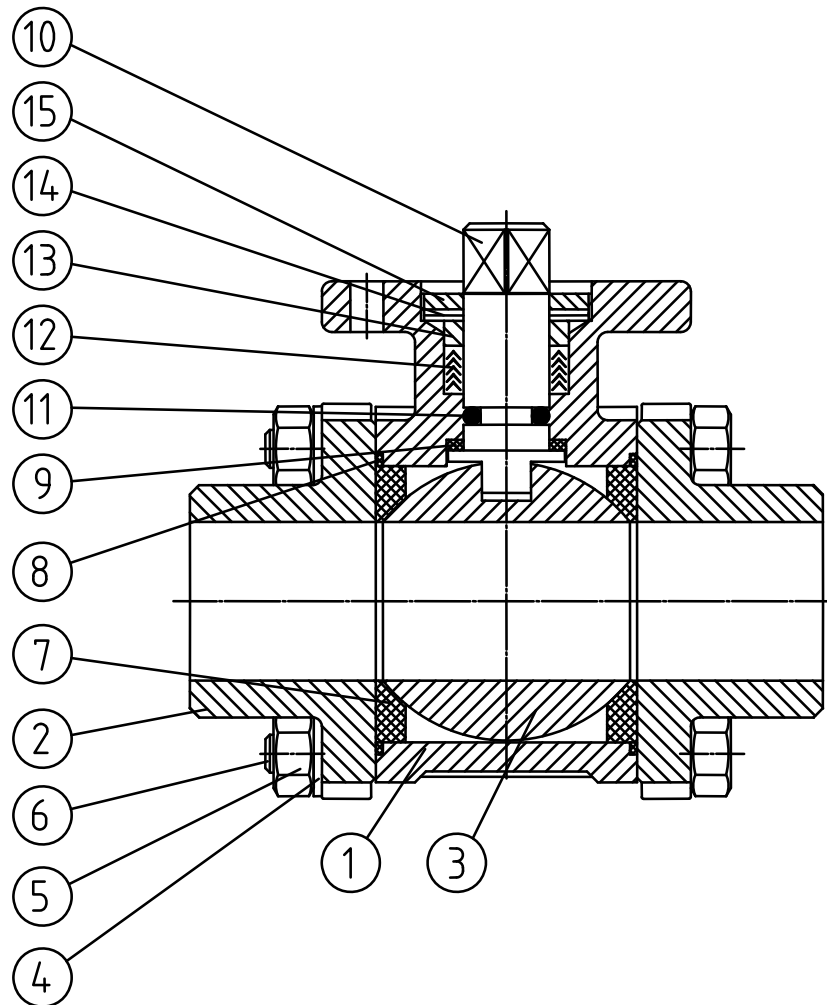
ball valve with rotating drive - PE = pneumatic single-acting

DN	A	B	C	D	rotating drive	
10	1/4"	165	85	161	70	UT 15s4
12	3/8"	165	85	161	70	UT 15s4
16	1/2"	165	85	161	75	UT 15s4
20	3/4"	197	85	165	90	UT 17s4
25	1"	197	85	173	100	UT 17s4
32	1 1/4"	177	96	201	110	UT 20s4
40	1 1/2"	239	96	211	125	UT 25s4
50	2"	230	113	239	150	UT 30s4
65	2 1/2"	246	138	294	190	UT 35s4
80	3"	391	185	358	220	UT 50s4
100	4"	391	185	385	270	UT 50s4

Actuator design 5 bar control pressure. Overall length according to DIN 3202 M3, dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).

3-part ball valve of stainless steel  
 DIN/ISO top flange, welding end (B)  
 PN 63 DN 10–100

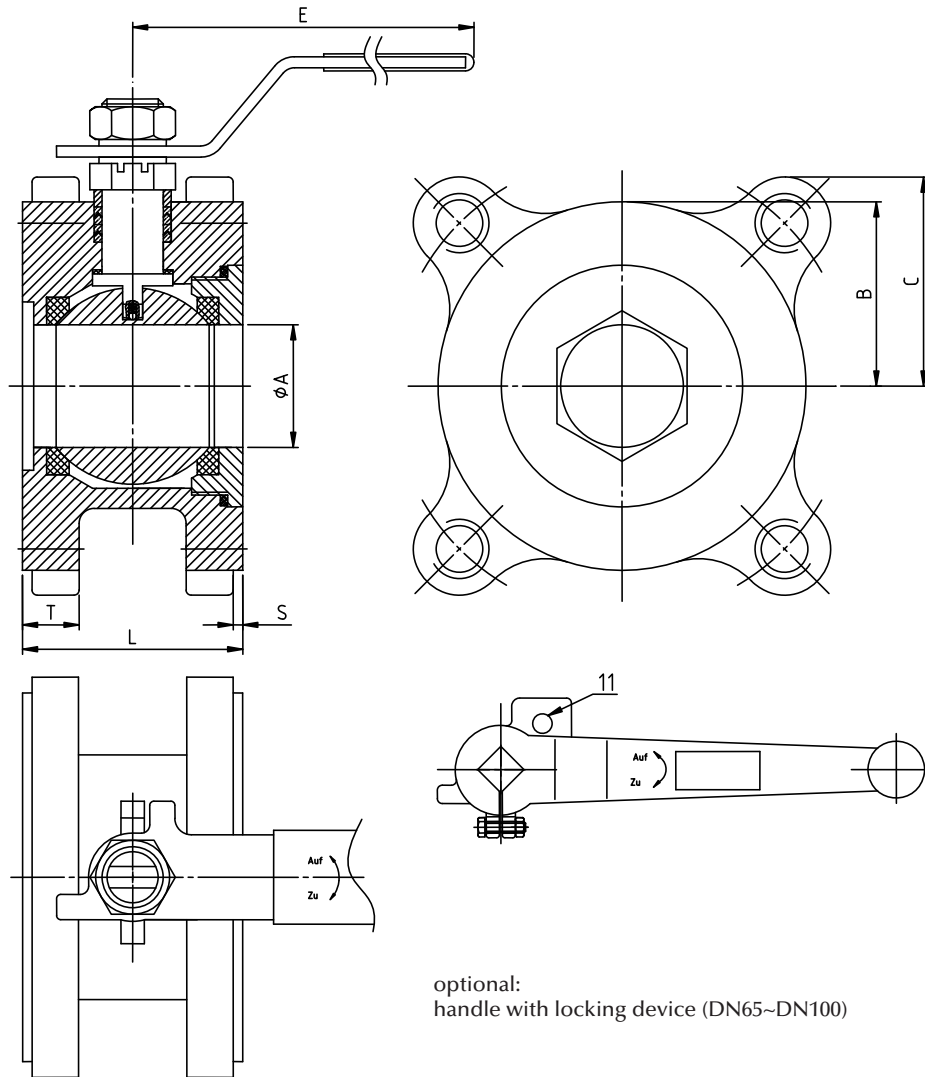
materials



pos.	description	amount	materials
1	housing	1	1.4408
2	ens piece	2	1.4408
3	ball	1	1.4401
4	washer	4-12	1.4301
5	nut	4-12	1.4301
6	screw	4-12	1.4301
7	ball seal	2	reinforced PTFE
8	housing seal	2	PTFE

pos.	description	amount	materials
9	clamping ring	1	PTFE
10	operating shaft	1	1.4401
11	O-ring	1	Viton
12	operating shaft seal	1 set	PTFE
13	stuffing box	1	1.4301
14	spring	2	spring steel
15	nut	1	1.4301

compact flange ball valve (F) or stainless steel  
hand lever, full opening  
PN 40/PN 16 DN 15–100



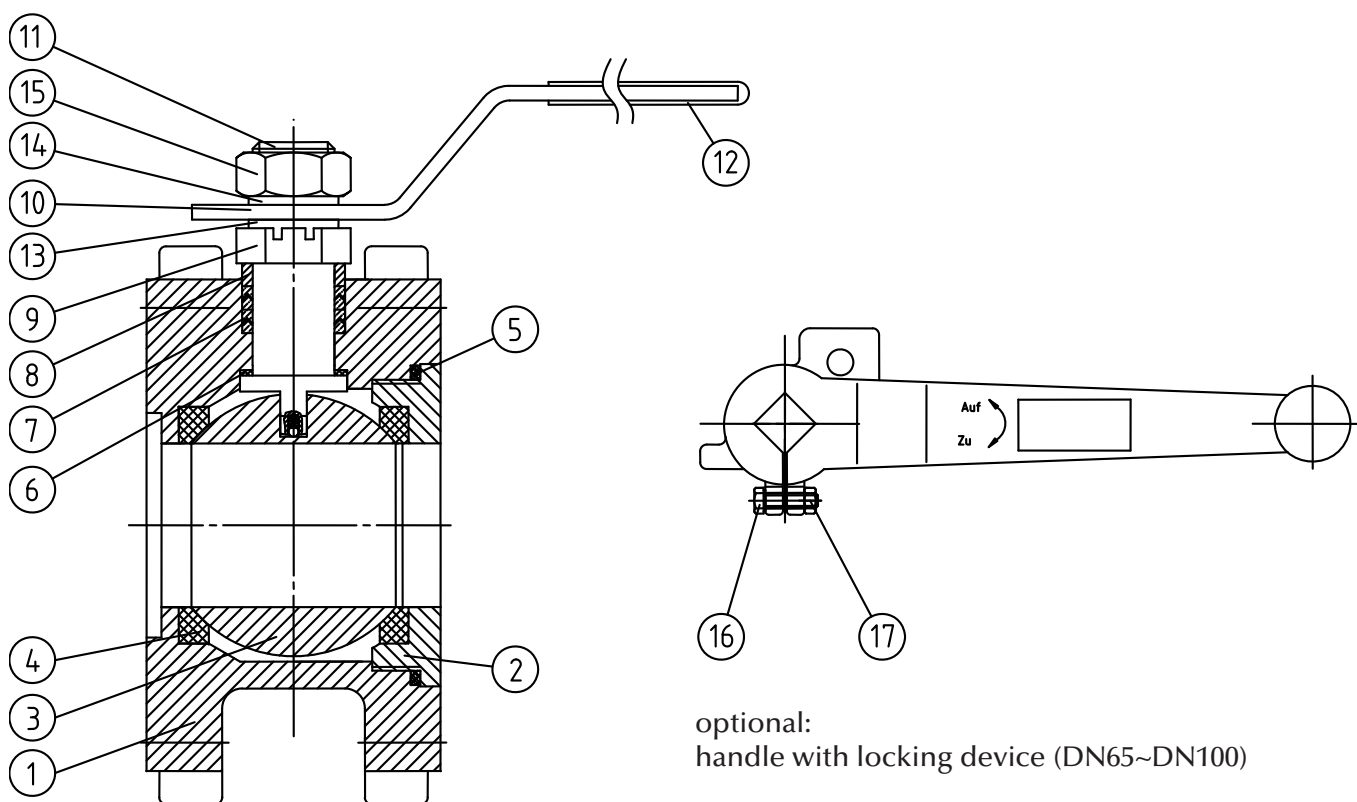
optional:  
handle with locking device (DN65~DN100)

DN	Ø A	B	C	E	L	S	T	M
15	1/2"	15	23.6	36.93	133	40.0	2	M12
20	3/4"	20	32.0	40.47	133	44.0	2	M12
25	1"	25	35.0	40.55	133	53.0	2	M12
32	1 1/4"	32	42.3	53.69	228	58.4	2	M16
40	1 1/2"	38	47.3	57.33	228	62.0	3	M16
50	2"	50	52.55	64.19	228	78.0	3	M16
65	2 1/2"	64	80.0	71.27	315	100.0	3	M16
80	3"	76	90.0	87.16	315	120.0	3	M16
100	4"	96	111.0	103.15	315	152.0	3	M16

Dimensions in mm.  
Temperature range -10°C to 200°C  
(see pressure-temperature curve).

compact flange ball valve (F) or stainless steel  
hand lever, full opening  
PN 40/PN 16 DN 15–100

materials

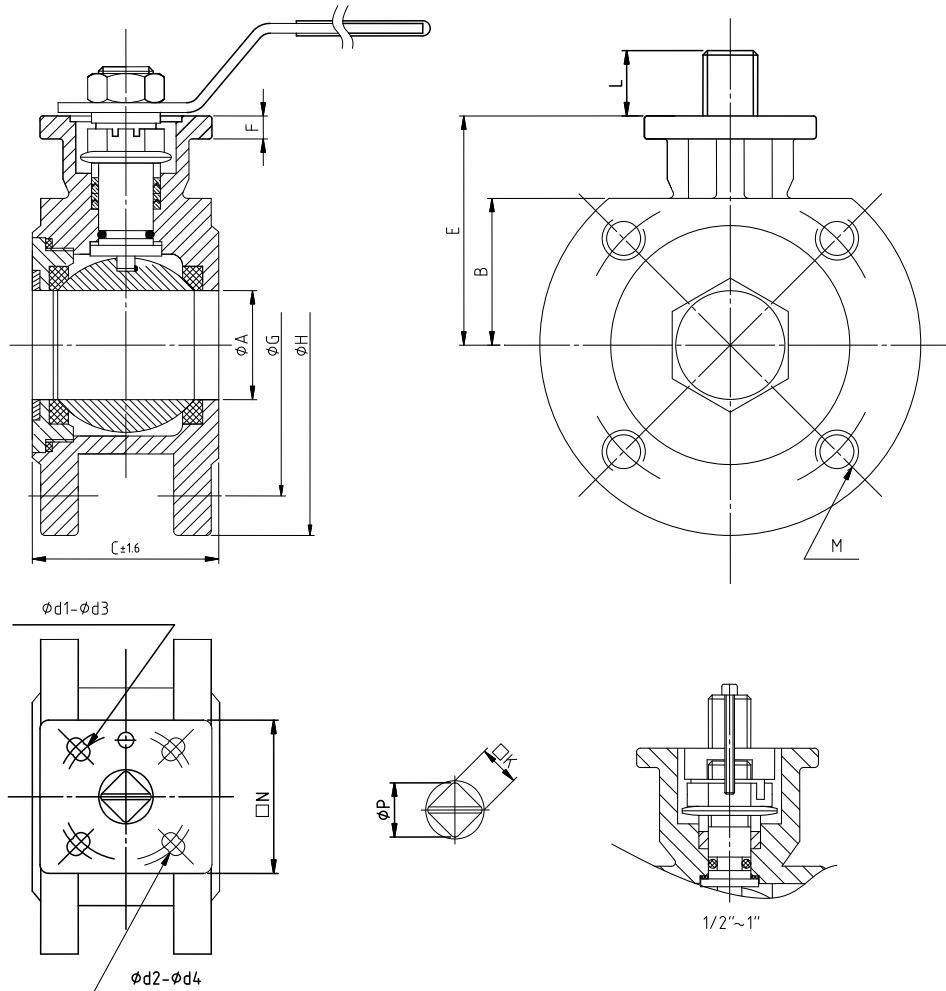


optional:  
handle with locking device (DN65~DN100)

pos.	description	amount	materials
1	housing	1	1.4408
2	end piece	2	1.4408
3	ball	1	1.4401
4	ball seal	2	reinforced PTFE
5	housing seal	2	PTFE
6	clamping ring	1	PTFE
7	operating shaft seal	1 set	PTFE
8	stuffing box ring	1	1.4301
9	stuffing box	1	1.4301

pos.	description	amount	materials
10	handle	1	1.4301
11	operating shaft	1	1.4401
12	handle coat	1	plastics
13	locking ring	1	1.4301
14	washer	1	1.4301
15	nut	1	1.4301
16	screw	1	1.4301
17	nut	1	1.4301

compact flange ball valve (F) of stainless steel  
 hand lever, DIN/ISO 5211 top flange, full opening  
 PN 16 / 40 DN 15–100

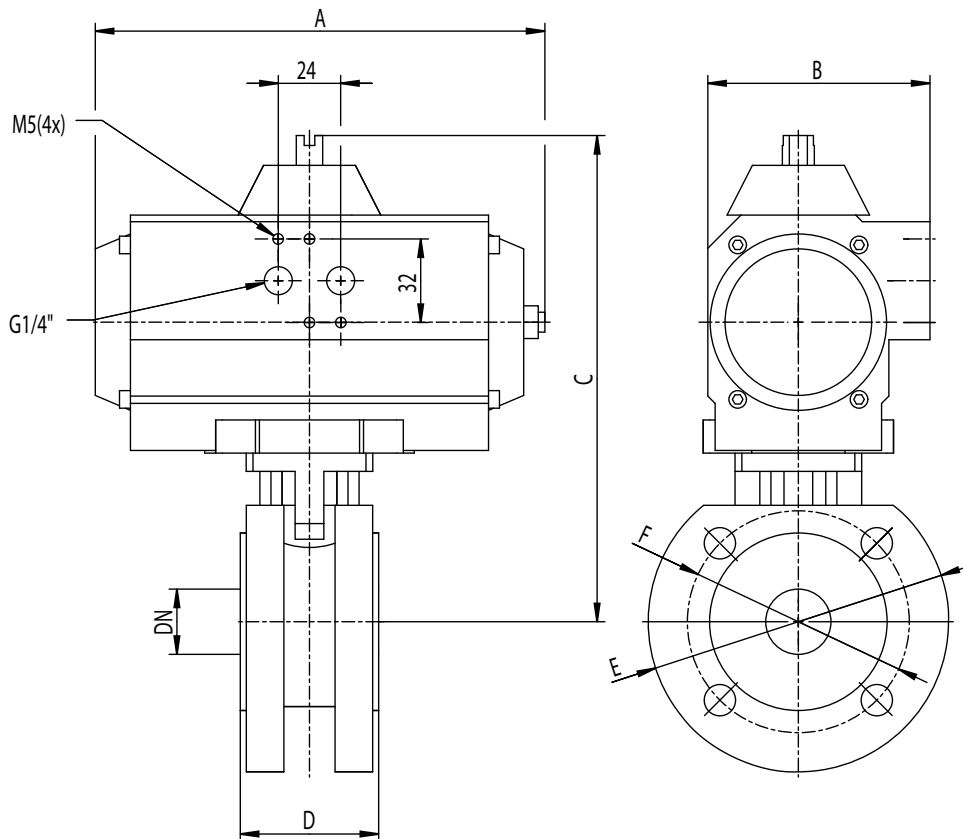


DN	C	Ø G	Ø H	Ø A	B	E	F	□ N	ISO 5211	Ø d1	Ø d2	Ø d3	Ø d4	□ K	Ø P	L	M	
1/2"	15	40	65	95	15	34.5	60.0	6.3	43.5	F03/F04	36	42	6.0	5.5	9	11.11	8	M12x1,75
3/4"	20	44	75	105	20	38.5	64.3	7.0	43.5	F03/F04	36	42	6.0	5.5	9	11.11	11	M12x1,75
1"	25	53	85	115	25	44.6	64.6	7.0	48.5	F04/F05	42	50	5.5	7.0	11	11.11	11	M12x1,75
1 1/4"	32	58.4	100	135	32	51	70.2	7.0	48.5	F04/F05	42	50	5.5	7.0	11	11.11	11	M16x2
1 1/2"	40	62	110	145	38	55	76.3	7.2	70.0	F05/F07	50	70	7.0	8.5	14	19.05	17	M16x2
2"	50	78	125	155	50	63	85.5	7.2	70.0	F05/F07	50	70	7.0	8.5	14	19.05	15	M16x2
2 1/2"	65	100	145	185	65	73.5	105	10.6	-	F07	-	70	-	9.0	17	22.22	14	M16x2
3"	80	120	160	200	76	94	123	10.6	-	F07	-	70	-	9.0	17	22.22	18	M16x2
4"	100	152	180	220	96	105	132	12.6	-	F07/F10	70	102	9.0	10.5	17	22.22	15	M16x2

DN 15 – DN 50 flanges according to PN 40, DN 65 – DN 100 flanges according to PN 16.  
 Integrated top flange according DIN/ISO 5211 for direct mounting of the actuation.  
 Dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).



compact flange ball valve (F) of stainless steel  
 pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting), DIN/ISO 5211 top flange, full opening  
 PN 16 / 40 DN 15–100



ball valve with rotating drive - PD = pneumatic double-acting

DN		A	B	C	D	E	F	rotating drive
15	G 1/2"	119	67	161	40	95	65	UT 05
20	G 3/4"	119	67	165	44	105	75	UT 05
25	G 1"	165	85	186	53	115	85	UT 15
32	G 1 1/4"	165	85	191	58	135	100	UT 15
40	G 1 1/2"	165	85	219	62	145	110	UT 15
50	G 2"	177	96	229	78	155	125	UT 20
65	G 2 1/2"	239	96	248	100	185	145	UT 25
80	G 3"	246	138	285	120	200	160	UT 35
100	G 4"	246	138	328	152	220	180	UT 35

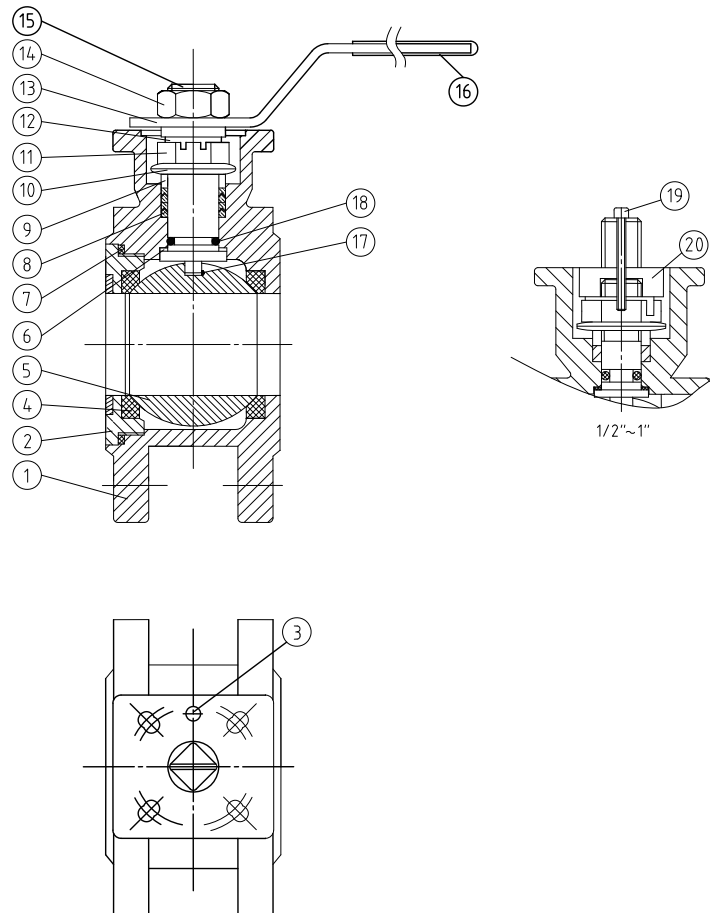
ball valve with rotating drive - PE = pneumatic single-acting

DN		A	B	C	D	E	F	rotating drive
15	G 1/2"	165	85	181	40	95	65	UT 15s4
20	G 3/4"	197	85	185	44	105	75	UT 17s4
25	G 1"	197	85	186	53	115	85	UT 17s4
32	G 1 1/4"	177	96	213	58	135	100	UT 20s4
40	G 1 1/2"	239	96	219	62	145	110	UT 25s4
50	G 2"	230	113	248	78	155	125	UT 30s4
65	G 2 1/2"	246	138	313	100	185	145	UT 35s4
80	G 3"	391	185	331	120	200	160	UT 50s4
100	G 4"	391	185	380	152	220	180	UT 50s4

Actuator design 5 bar control pressure.  
 Dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).

compact flange ball valve (F) of stainless steel  
 hand lever or pneumatic part turn actuator, DIN/ISO 5211 top flange, full opening  
 PN 16 / 40 DN 15–100

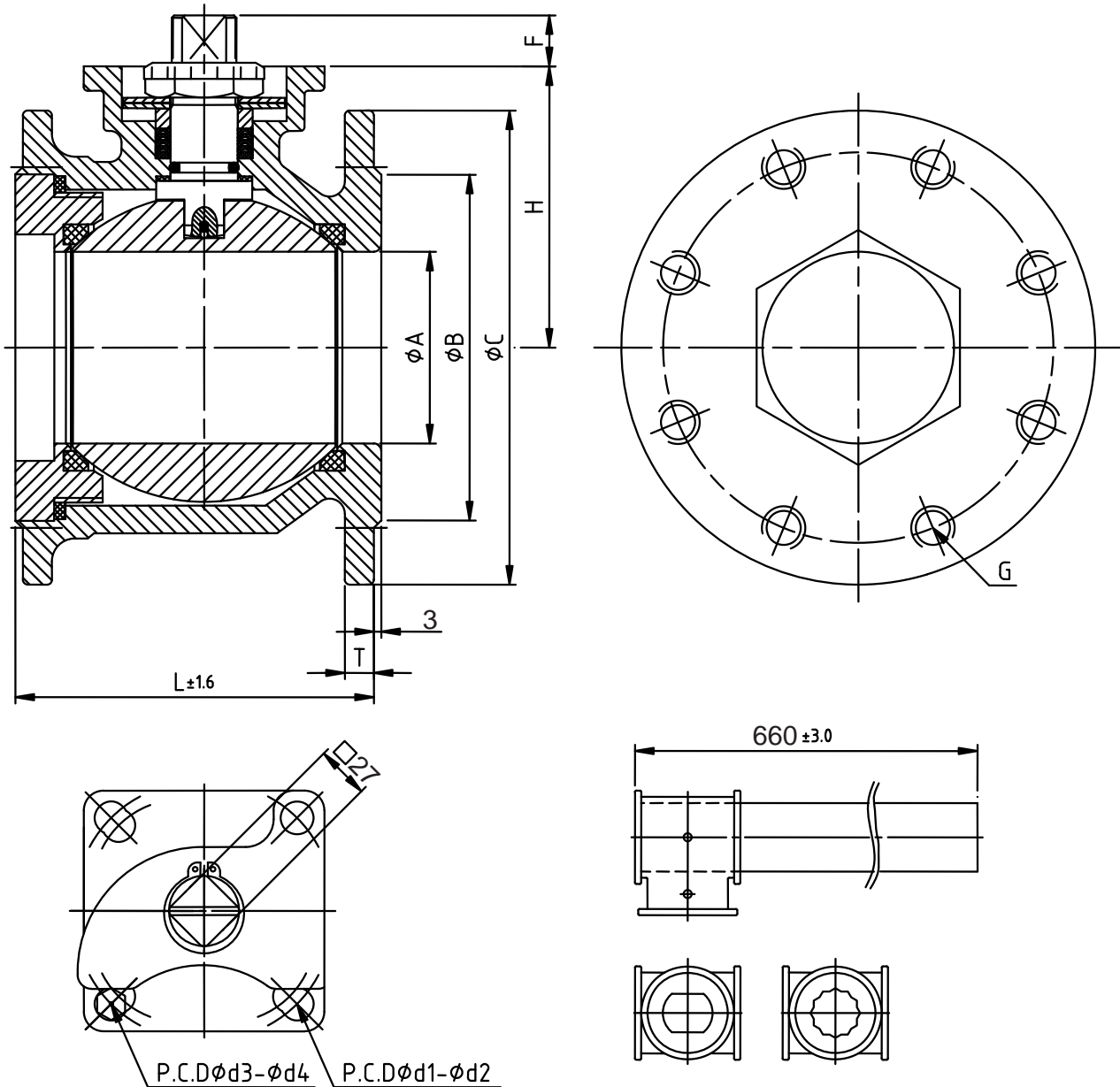
materials



pos.	description	amount	material
1	housing	1	1.4408
2	screw-in fitting	1	1.4408
3	body stop	1	1.4301
4	ball seal	2	reinforced PTFE
5	ball	1	1.4401
6	clamping ring	1	PTFE
7	housing seal	1	PTFE
8	operating shaft seal	1 set	PTFE
9	stuffing box	2	1.4301
10	disc spring	2	1.4310

pos.	description	amount	material
11	stuffing box	1	1.4301
12	circlip	1	1.4301
13	handle	1	1.4301
14	nut	1	1.4301
15	operating shaft	1	1.4401
16	handle coat	1	plastics
17	antistatic (optional)	1	1.4301
18	O-ring	1	VITON
19	pin	1	1.4301
20	pusher dog	1	1.4301

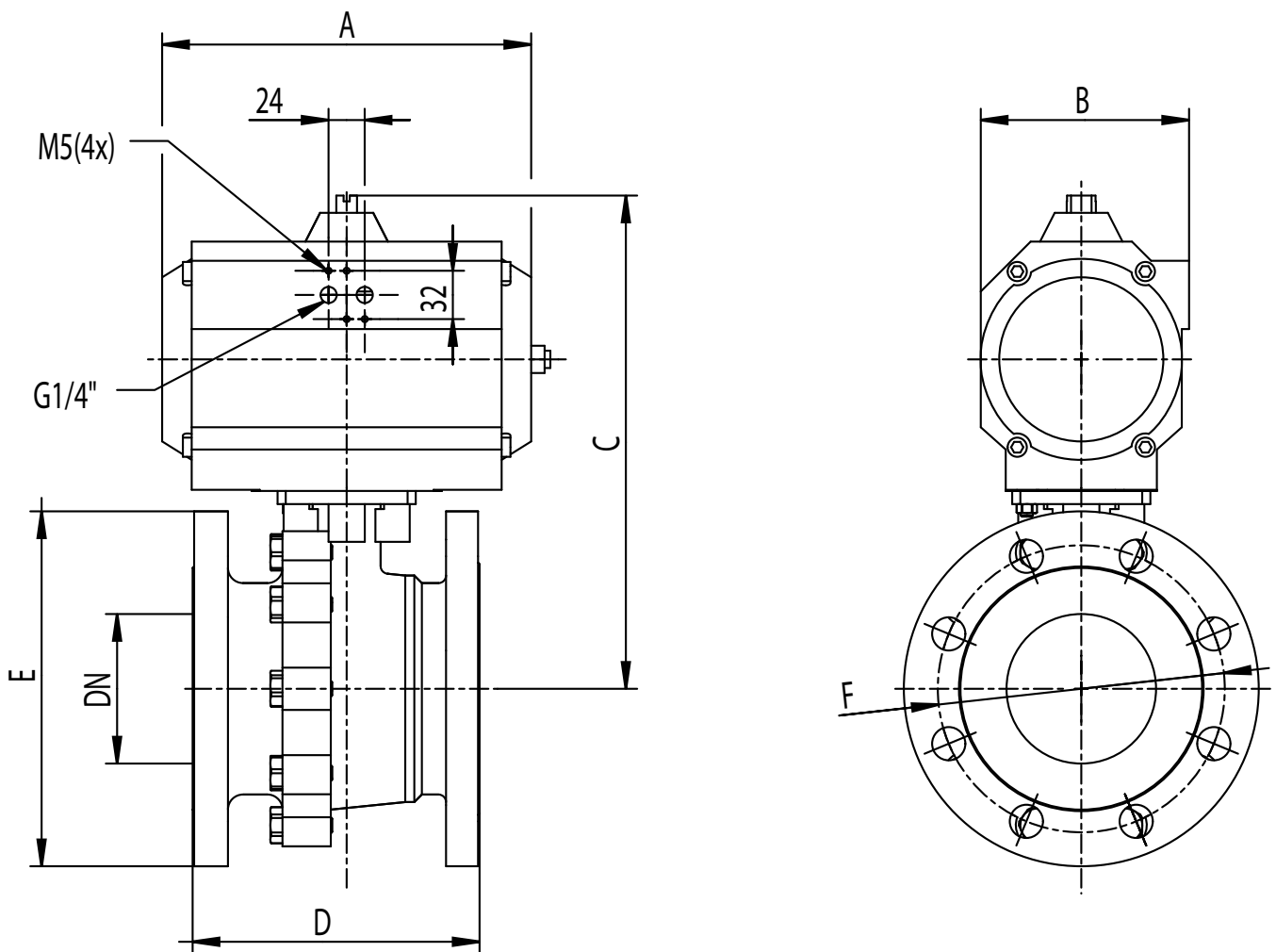
compact flange ball valve (F) of stainless steel  
 hand lever, DIN/ISO 5211 top flange, reduced opening  
 PN 16 DN 125–200



DN	Ø A	Ø B	Ø C	T	L	G	H	Ø d1	Ø d2	Ø d3	Ø d4	ISO 5211	F	
5"	125	114	188	250	22	180	M16x2	157.5	102	10.5	125	12.5	F10/F12	36
6"	150	135	212	285	22	215	M16x2	172.5	102	10.5	125	12.5	F10/F12	36
8"	200	152	268	340	24	236	M20x2,5	185.0	-	-	125	13.0	F12	37.5

Integrated top flange according DIN/ISO 5211 for direct mounting of the actuation.  
 Dimenstions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).  
 min. control air pressure 5 bar

compact flange ball valve (F) of stainless steel  
 pneumatic part turn actuator (PD = pneumatic double-acting; PE = pneumatic single-acting), DIN/ISO 5211 top flange, reduced opening  
 PN 16 DN 125–200



ball valve with rotating drive - PD = pneumatic double-acting

DN	A	B	C	D	E	F	rotating drive
125 5"	351	151	366	183	250	210	UT 45
150 6"	391	185	405	218	385	240	UT 50
200 8"	418	185	427	239	340	295	UT 55

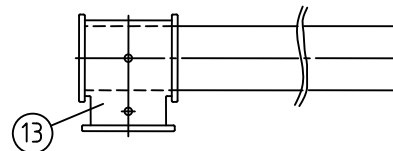
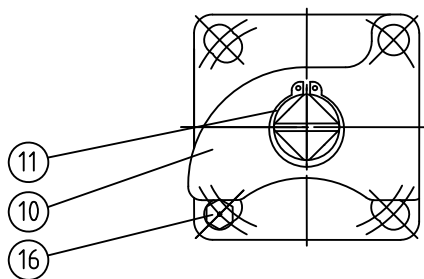
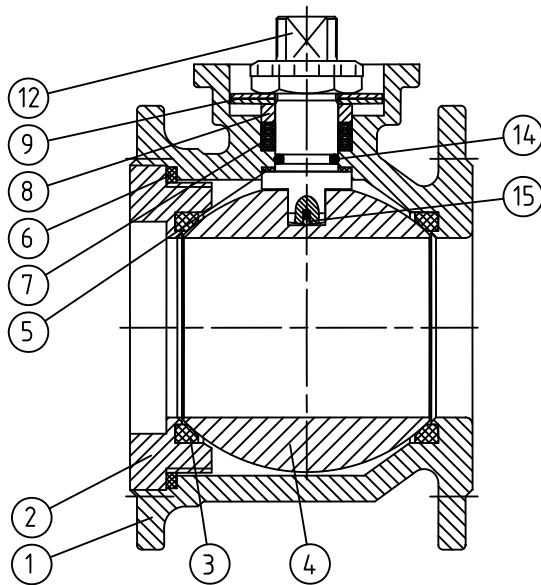
ball valve with rotating drive - PE = pneumatic single-acting

DN	A	B	C	D	E	F	rotating drive
125 5"	418	185	400	183	250	210	UT 55s4
150 6"	444	235	487	218	385	240	UT 60s4
200 8"	502	235	489	239	340	295	UT 65s4

Integrated top flange according DIN/ISO 5211 for direct mounting of the actuation.  
 Actuator design 5 bar control pressure.  
 Dimensions in mm. Temperature range -10°C to 200°C (see pressure-temperature curve).

compact flange ball valve (F) of stainless steel  
 hand lever or pneumatic part turn actuator, reduced opening  
 PN 16 DN 125–200

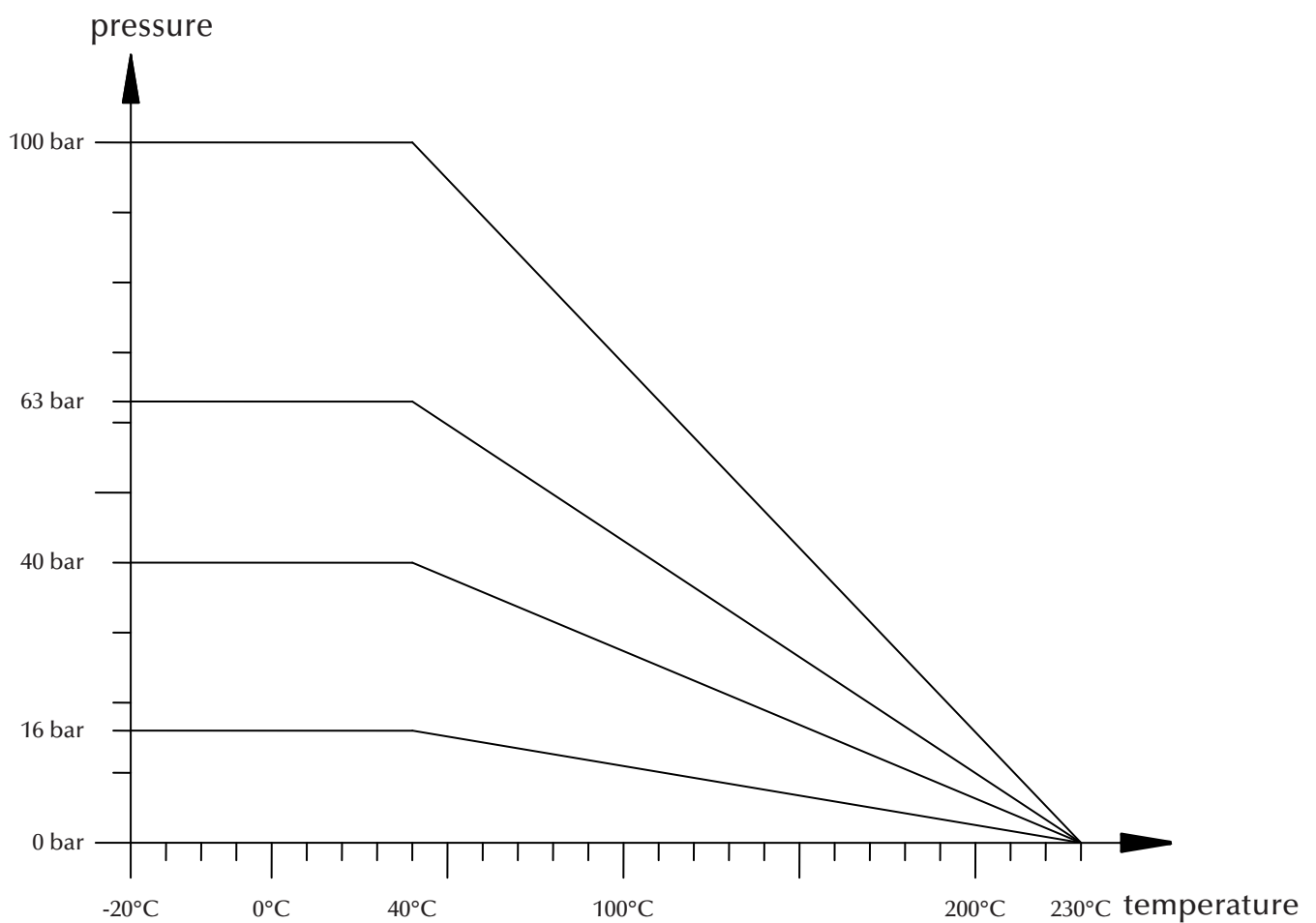
materials



pos.	description	amoung	material
1	housing	1	1.4408
2	screw-in fitting	1	1.4408
3	ball seal	2	reinforced PTFE
4	ball	1	1.4401
5	clamping ring	1	PTFE
6	housing seal	1	PTFE
7	operating shaft seal	1 set	PTFE
8	stuffing box	1	1.4301

pos.	description	amoung	material
9	disc spring	2	1.4310
10	body stop plate	1	1.4408
11	circlip	1	1.4301
12	operating shaft	1	1.4401
13	handle	1	1.4301
14	O-ring	1	Viton
15	antistatic ball	1	1.4301
16	body stop	1	A2-70

pressure-temperature curve

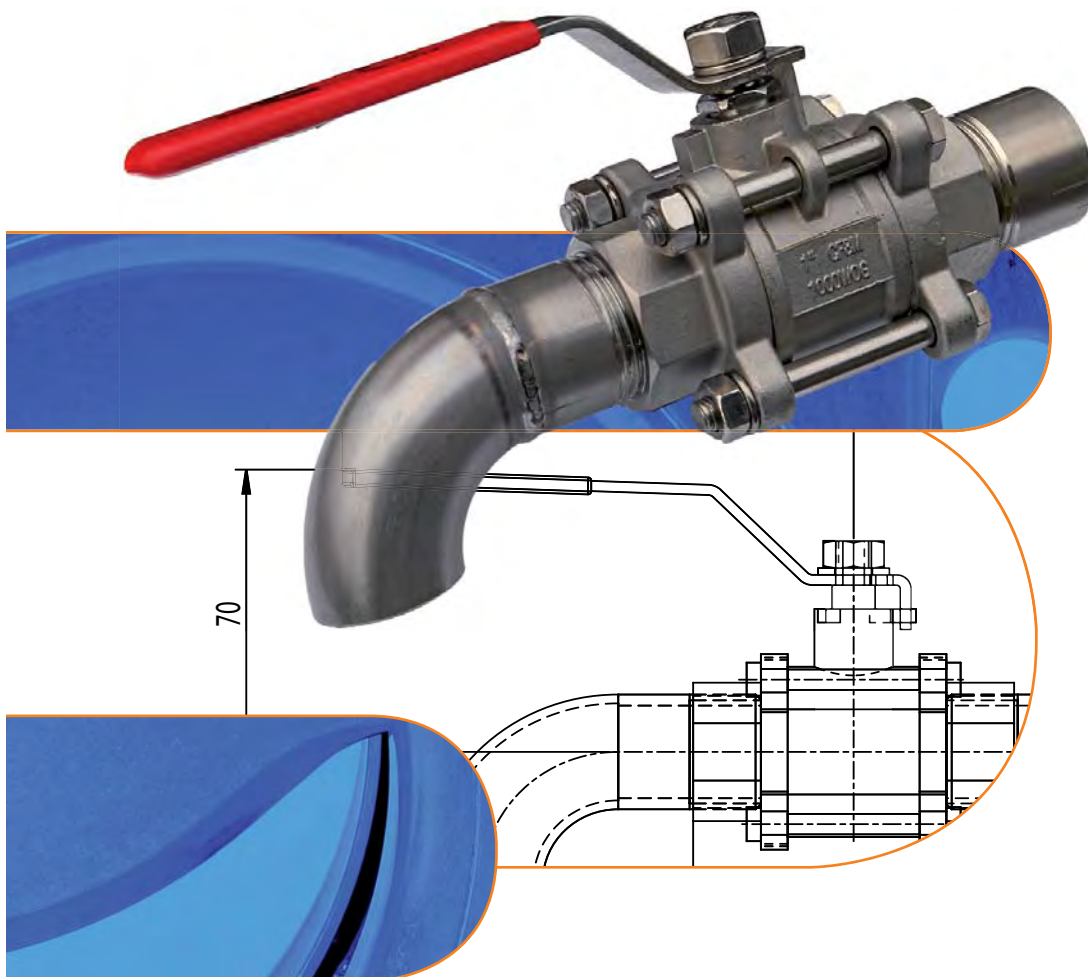


Please notice: These values do not apply for medium steam!  
For steam application please confer with our sales team.



# Sampling Valves

## of stainless steel



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## Sampling Valves of stainless steel

### with blockflange

• curved sampling valve with hand lever	
PHB25k H DN 25 (1")	257
PHB50k H DN 50 (2")	258
• straight sampling valve with hand lever	
PHB25g H DN 25 (1")	259
PHB50g H DN 50 (2")	260
• curved sampling valve with rotary actuator, pneumatic, double-acting	
PHB25k PD DN 25 (1")	261
PHB50k PD DN 50 (2")	262
• straight sampling valve with rotary actuator, pneumatic, double-acting	
PHB25g PD DN 25 (1")	263
PHB50g PD DN 50 (2")	264

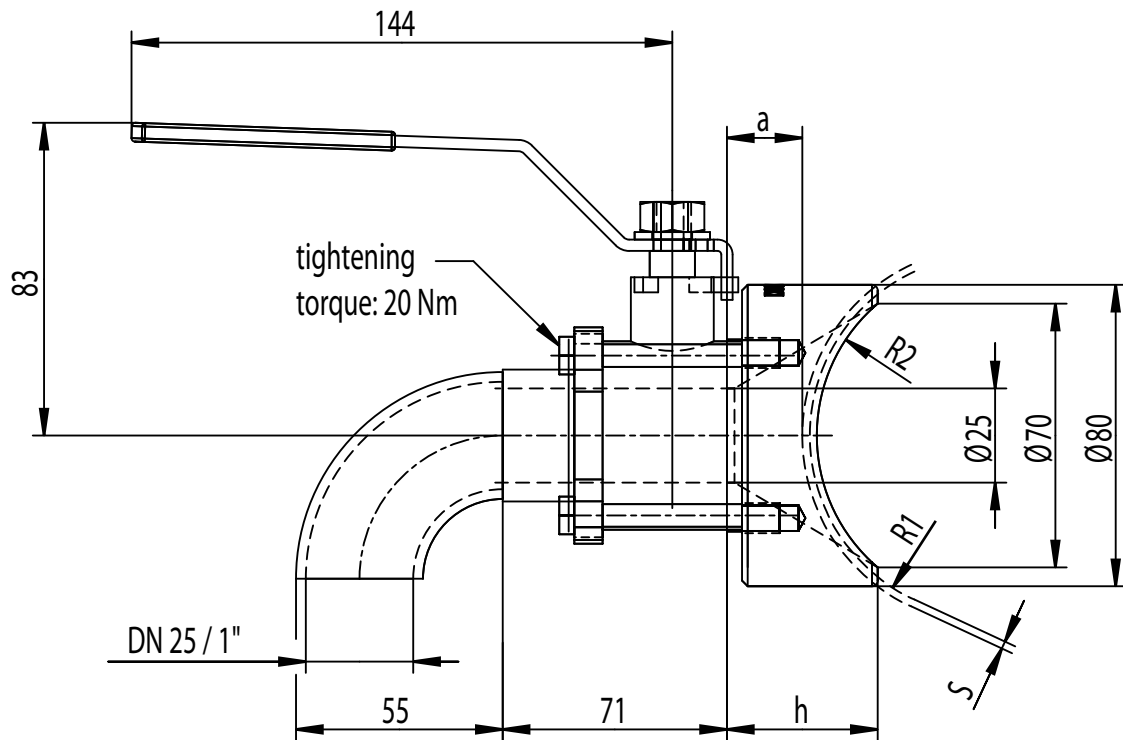
### with weld-on nipple

• curved sampling valve with hand lever	
PHG25k H DN 25 (1")	265
PHG50k H DN 50 (2")	266
• straight sampling valve with hand lever	
PHG25g H DN 25 (1")	267
PHG50g H DN 50 (2")	268

## Legend

PH	= sampling valve
B	= block flange
G	= weld-on nipple
25 (z.B.)	= nominal size in mm
/100 (z.B.)	= pipe diameter in mm
k	= bent
g	= straight
H	= hand lever
PD	= rotary actuator, pneumatic, double-acting

curved sampling valve DN 25 (1")  
hand lever, block flange for welding and grinding



DN pipe*	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB25/100k H	50	2	40	46	18	2
125	PHB25/125k H	62.5	2	35	59.5	18	2
150	PHB25/150k H	75	2	35	72.5	21	2
200	PHB25/200k H	100	2.5	30	98	19	2.1
250	PHB25/250k H	125	2.5	30	122	21	2.1
300	PHB25k/300k H	150	3	30	146	22	2.2
350	PHB25k/350k H	175	3	30	174	22	2.2
400	PHB25/400k H	200	3	30	199	23	2.2
450	PHB25/450-800k H	225	3	30	-	24	2.3
500		250	3				
600		300	4				
700		350	4				
800		800	4				

**Application:**

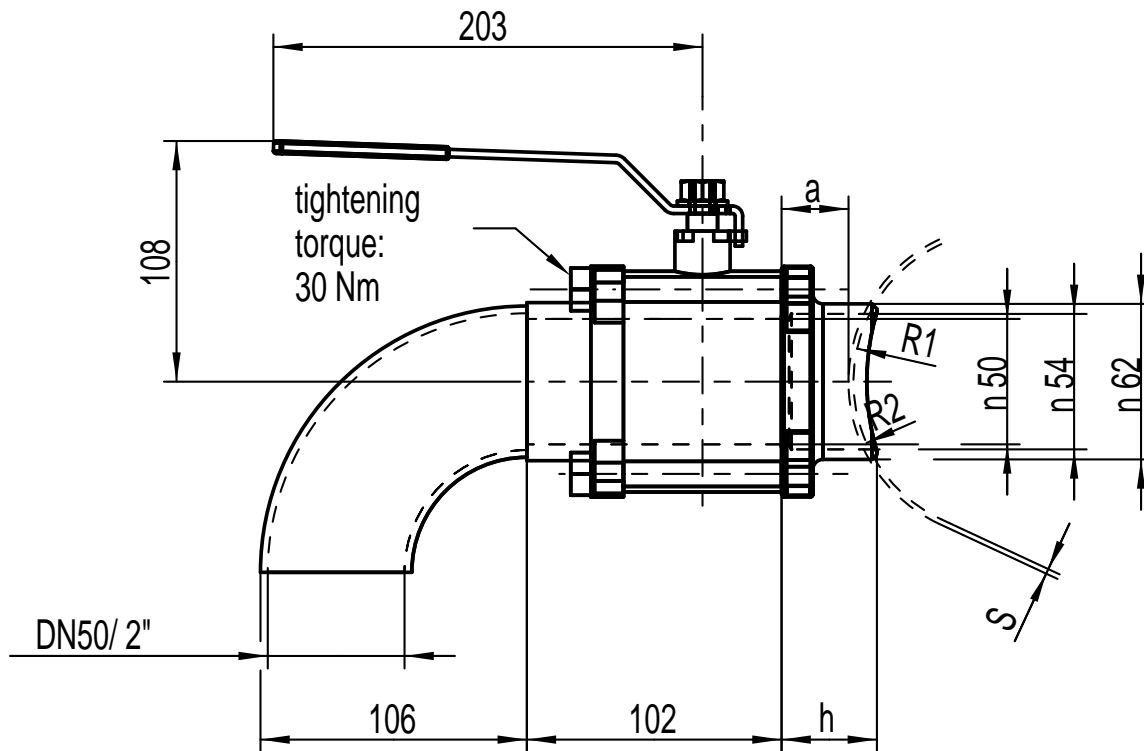
Wherever no projecting edges or hollow spaces are allowed in pipes.

e.g. paper production:

- flow box
- accepted stock line

\*DN pipe must be specified  
S = material thickness of pipe

curved sampling valve DN 50 (2")  
hand lever, block flange for welding and grinding



DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB50/100k H	50	2	49	46	27	4.6
125	PHB50/125k H	62.5	2	49	59.5	32.5	4.6
150	PHB50/150k H	75	2	44.5	72.5	31	4.7
200	PHB50/200k H	100	2.5	42	98	31	4.7
250	PHB50/250k H	125	2.5	35	122	31	4.6
300	PHB50/300k H	150	3	38.5	149	30.5	4.6
350	PHB50/350k H	175	3	38.5	174	31	4.7
400	PHB50/400k H	200	3	38	199	31	4.6
450	PHB50/450k H	225	3	38	-	32	4.6
500		250	3				
600		300	4				
700		350	4				
800		400	4				

**Application:**

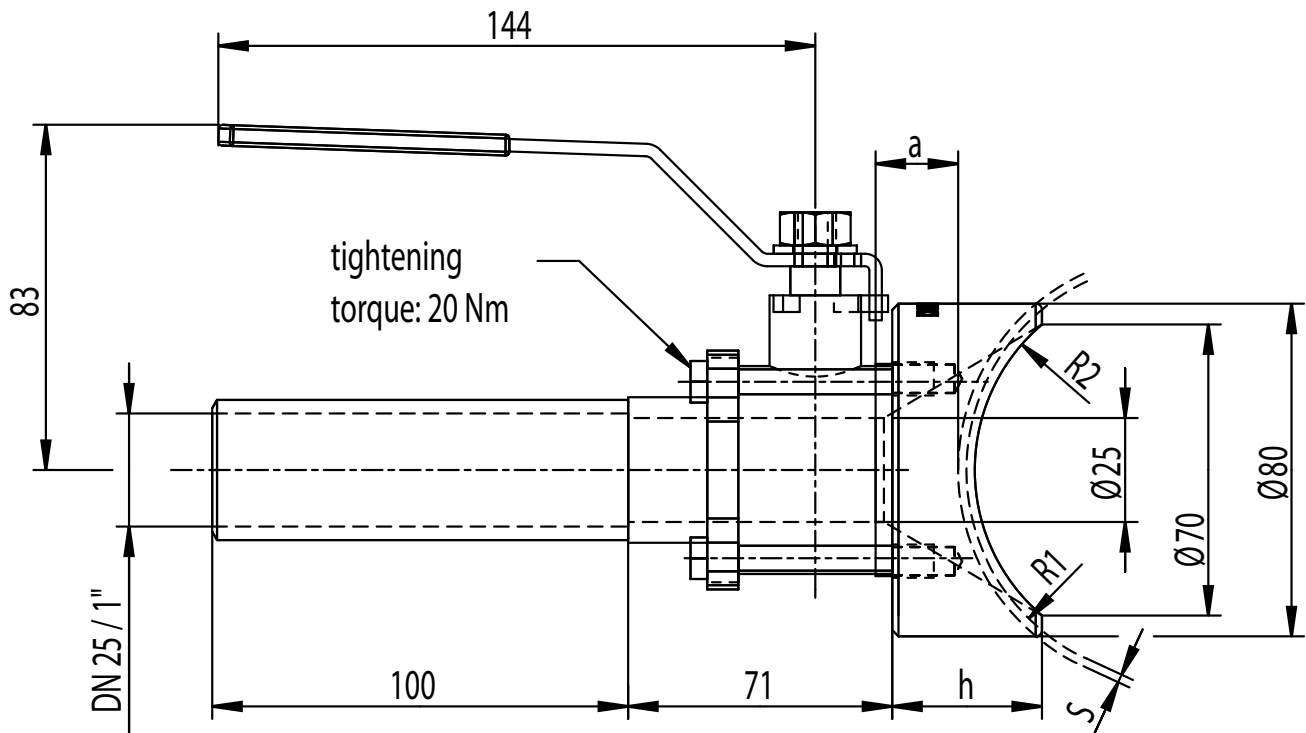
Wherever no projecting edges or hollow spaces are allowed in pipes.

e.g. paper production:

- flow box
- accepted stock line

\* DN pipe must be specified  
S = material thickness of pipe

straight sampling valve DN 25 (1")  
hand lever, block flange for welding and grinding



DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB25/100g H	50	2	40	46	18	2.1
125	PHB25/125g H	62.5	2	35	59.5	18	2.1
150	PHB25/150g H	75	2	35	72.5	21	2.1
200	PHB25/200g H	100	2.5	30	98	19	2.2
250	PHB25/250g H	125	2.5	30	122	21	2.2
300	PHB25/300g H	150	3	30	146	22	2.3
350	PHB25/350g H	175	3	30	174	22	2.3
400	PHB25/400g H	200	3	30	199	23	2.3
450	PHB25/450-800g H	225	3	30	-	24	2.4
500		250	3				
600		300	4				
700		350	4				
800		800	4				

**Application:**

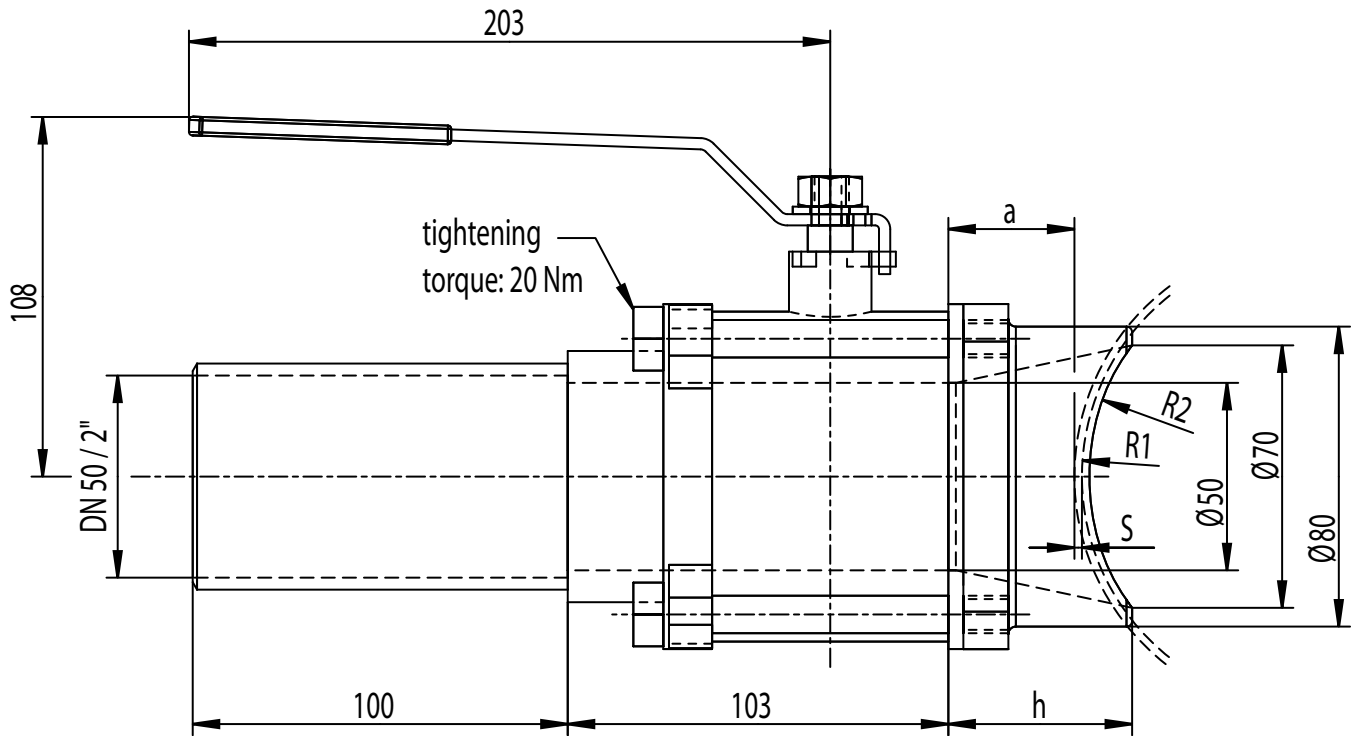
Wherever no projecting edges or hollow spaces are allowed in pipes.

e.g. paper production:

- flow box
- accepted stock line

\* DN pipe must be specified  
S = material thickness of pipe

straight sampling valve DN 50 (2")  
 hand lever,  
 block flange for welding and grinding



DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB50/100g H	50	2	49	46	27	4.7
125	PHB50/125g H	62.5	2	49	59.5	32.5	4.7
150	PHB50/150g H	75	2	44.5	72.5	31	4.8
200	PHB50/200g H	100	2.5	42	98	31	4.8
250	PHB50/250g H	125	2.5	41.5	122	31	4.7
300	PHB50/300g H	150	3	38.5	149	30.5	4.7
350	PHB50/250g H	175	3	38.5	174	31	4.8
400	PHB50/400g H	200	3	38	199	31	4.7
450	PHB50/450g H	225	3	38	-	32	4.7
500		250	3				
600		300	4				
700		350	4				
800		400	4				

**Application:**

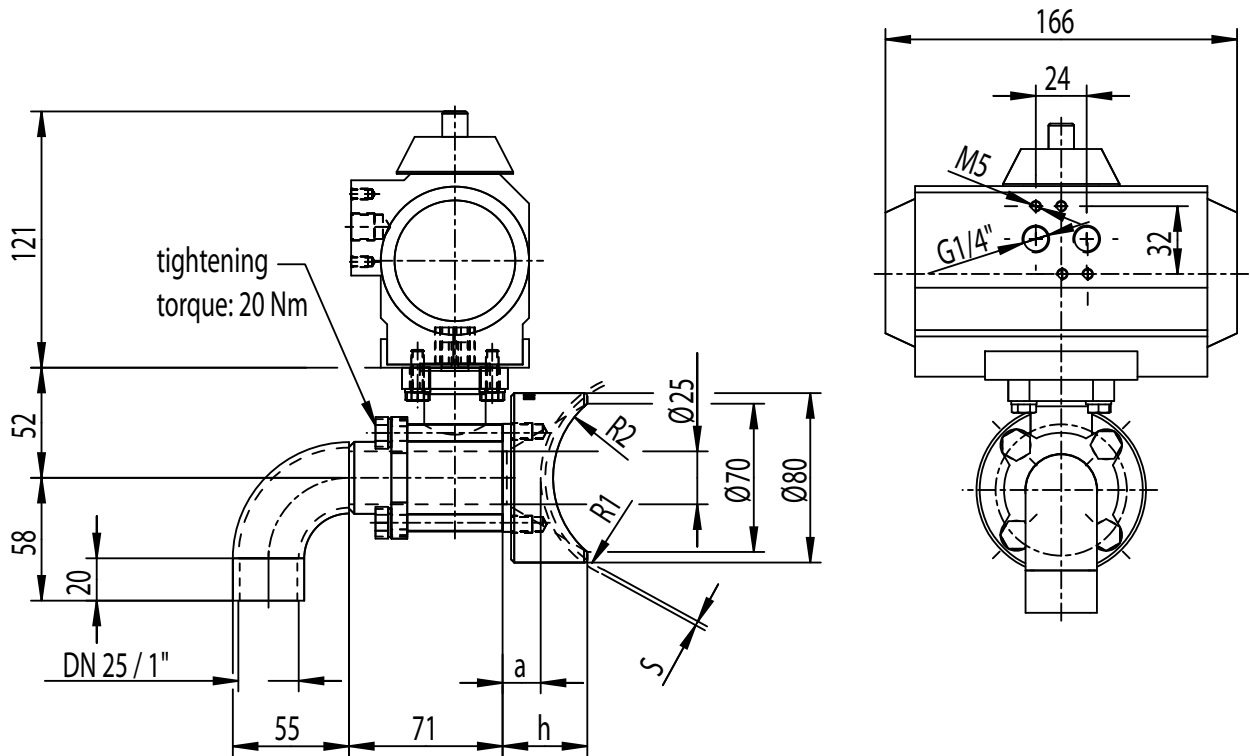
Wherever no projecting edges or hollow spaces are allowed in pipes.

e.g. paper production:

- flow box
- accepted stock line

\* DN pipe must be specified  
 S = material thickness of pipe

curved samplng valve DN 25 (1")  
 rotary actuator, pneumatic, double-acting,  
 block flange for welding and grinding



DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB25/100k PD	50	2	40	46	18	4
125	PHB25/125k PD	62.5	2	35	59.5	18	4
150	PHB25/150k PD	75	2	35	72.5	21	4
200	PHB25/200k PD	100	2.5	30	98	19	4.1
250	PHB25/250k PD	125	2.5	30	122	21	4.1
300	PHB25/300k PD	150	3	30	146	22	4.2
350	PHB25/350k PD	175	3	30	174	22	4.2
400	PHB25/400k PD	200	3	30	199	23	4.2
450	PHB25/450-800k PD	225	3	30	-	24	4.3
500		250	3				
600		300	4				
700		350	4				
800		800	4				

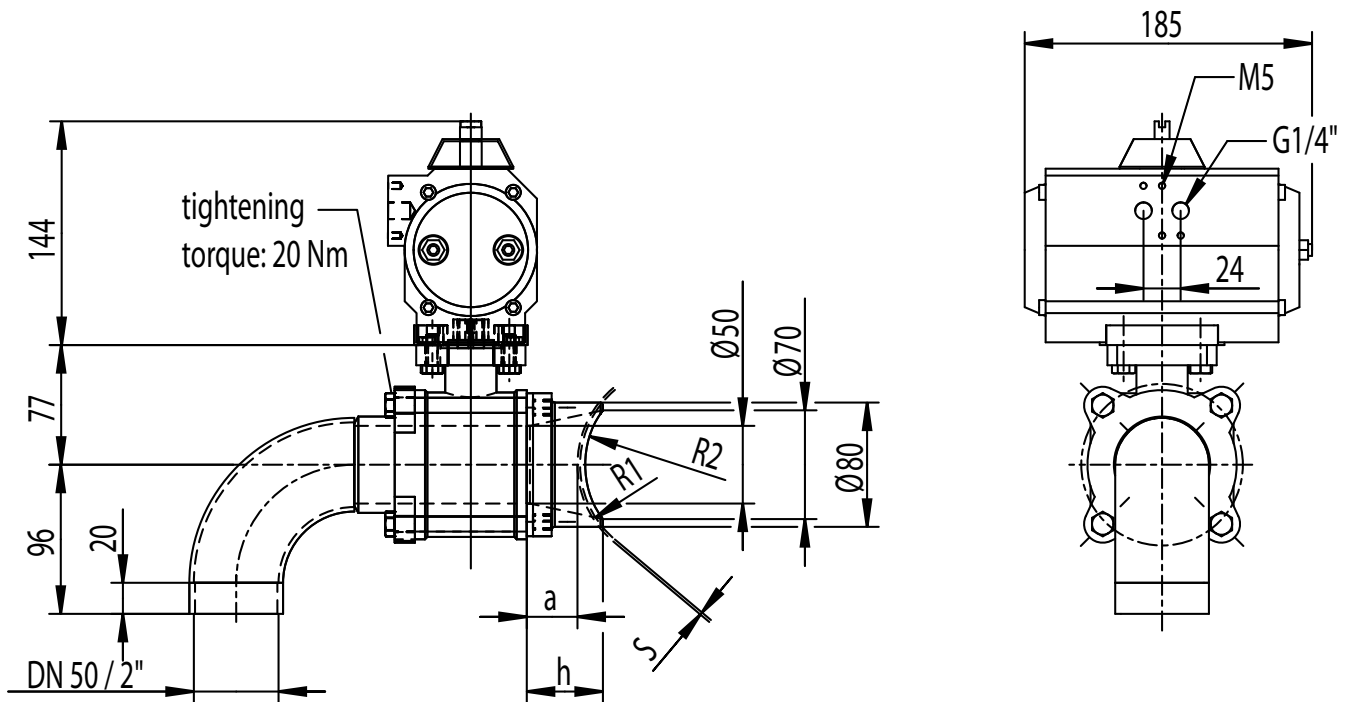
\* DN pipe must be specified  
 S = material thickness of pipe

### Application:

Wherever no projecting edges or hollow spaces are allowed in pipes.

Can be installed with pneumatic cylinder at inaccessible locations (danger areas) -> the sample can be removed outside of the danger area by means of pipe extensions or hoses.

curved sampling valve DN 50 (2")  
 rotary actuator, pneumatic, double-acting,  
 block flange for welding and grinding



DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB50/100k PD	50	2	49	46	27	7.6
125	PHB50/125k PD	62.5	2	49	59.5	32.5	7.6
150	PHB50/150k PD	75	2	44.5	72.5	31	7.7
200	PHB50/200k PD	100	2.5	42	98	31	7.7
250	PHB50/250k PD	125	2.5	41.5	122	31	7.6
300	PHB50/300k PD	150	3	38.5	149	30.5	7.6
350	PHB50/250k PD	175	3	38.5	174	31	7.7
400	PHB50/400k PD	200	3	38	199	31	7.6
450	PHB50/450k PD	225	3	38	-	32	7.6
500		250	3				
600		300	4				
700		350	4				
800		400	4				

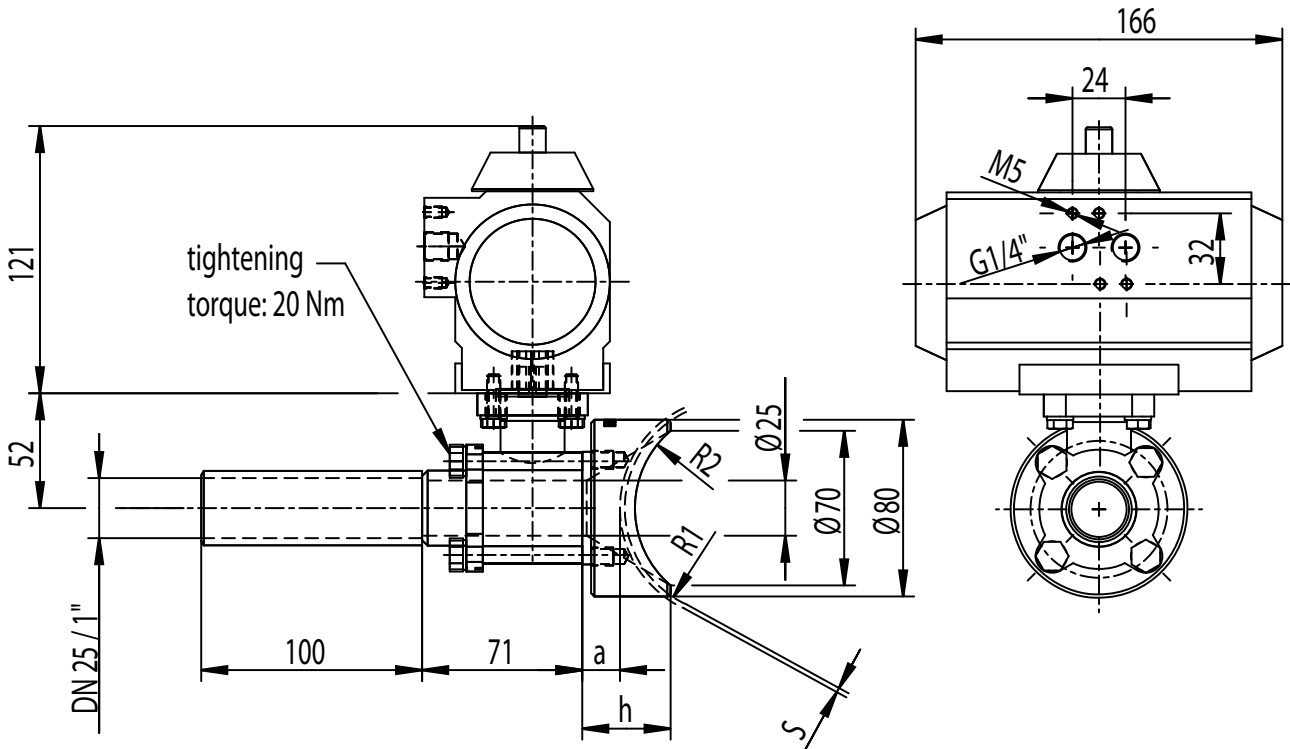
\* DN pipe must be specified  
 S = material thickness of pipe

### Application:

Wherever no projecting edges or hollow spaces are allowed in pipes.

Can be installed with pneumatic cylinder at inaccessible locations (danger areas) -> the sample can be removed outside of the danger area by means of pipe extensions or hoses.

straight sampling valve DN 25 (1")  
 rotary actuator, pneumatic, double-acting,  
 block flange for welding and grinding



DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB25/100g PD	50	2	40	46	18	4.1
125	PHB25/125g PD	62.5	2	35	59.5	18	4.1
150	PHB25/150g PD	75	2	35	72.5	21	4.1
200	PHB25/200g PD	100	2.5	30	98	19	4.2
250	PHB25/250g PD	125	2.5	30	122	21	4.2
300	PHB25/300g PD	150	3	30	146	22	4.3
350	PHB25/350g PD	175	3	30	174	22	4.3
400	PHB25/400g PD	200	3	30	199	23	4.3
450	PHB25/450-800g PD	225	3	30	-	24	4.4
500		250	3				
600		300	4				
700		350	4				
800		800	4				

**Application:**

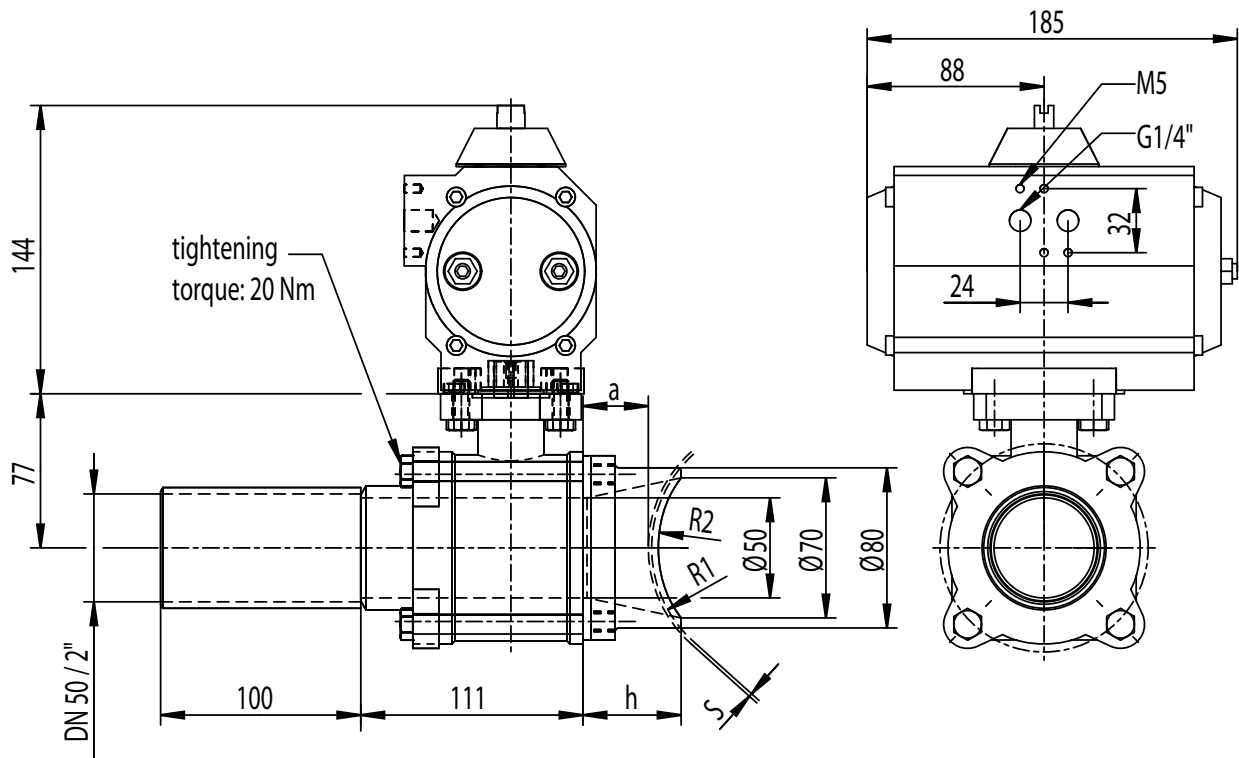
Wherever no projecting edges or hollow spaces are allowed in pipes.

Can be installed with pneumatic cylinder at inaccessible locations (danger areas) -> the sample can be removed outside of the danger area by means of pipe extensions or hoses.

\* DN pipe must be specified  
 S = material thickness of pipe



straight sampling valve DN 50 (2")  
 rotary actuator, pneumatic, double-acting,  
 block flange for welding and grinding



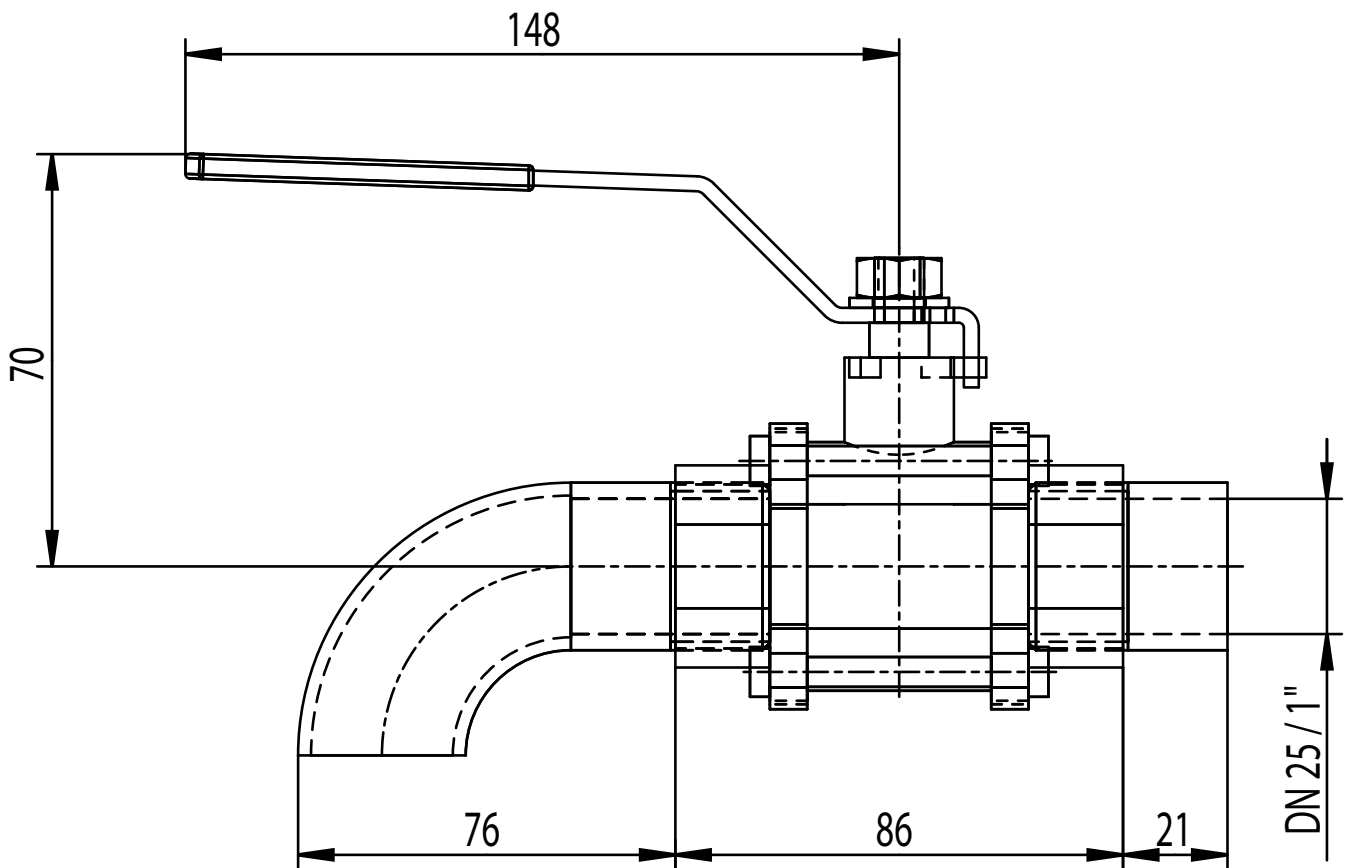
DN pipe *	Type	R1 [mm]	S [mm]	h [mm]	R2 [mm]	a [mm]	weight [kg]
100	PHB50/100g PD	50	2	49	46	27	7.7
125	PHB50/125g PD	62.5	2	49	59.5	32.5	7.7
150	PHB50/150g PD	75	2	44.5	72.5	31	7.8
200	PHB50/200g PD	100	2.5	42	98	31	7.8
250	PHB50/250g PD	125	2.5	41.5	122	31	7.7
300	PHB50/300g PD	150	3	38.5	149	30.5	7.7
350	PHB50/250g PD	175	3	38.5	174	31	7.8
400	PHB50/400g PD	200	3	38	199	31	7.7
450	PHB50/450g PD	225	3	38	-	32	7.7
500		250	3				
600		300	4				
700		350	4				
800		400	4				

**Application:**

Wherever no projecting edges or hollow spaces are allowed in pipes.  
 Can be installed with pneumatic cylinder at inaccessible locations (danger areas) -> the sample can be removed outside of the danger area by means of pipe extensions or hoses.

\* DN pipe must be specified  
 S = material thickness of pipe

curved sampling valve DN 25 (1")  
hand lever,  
weld-on nipple

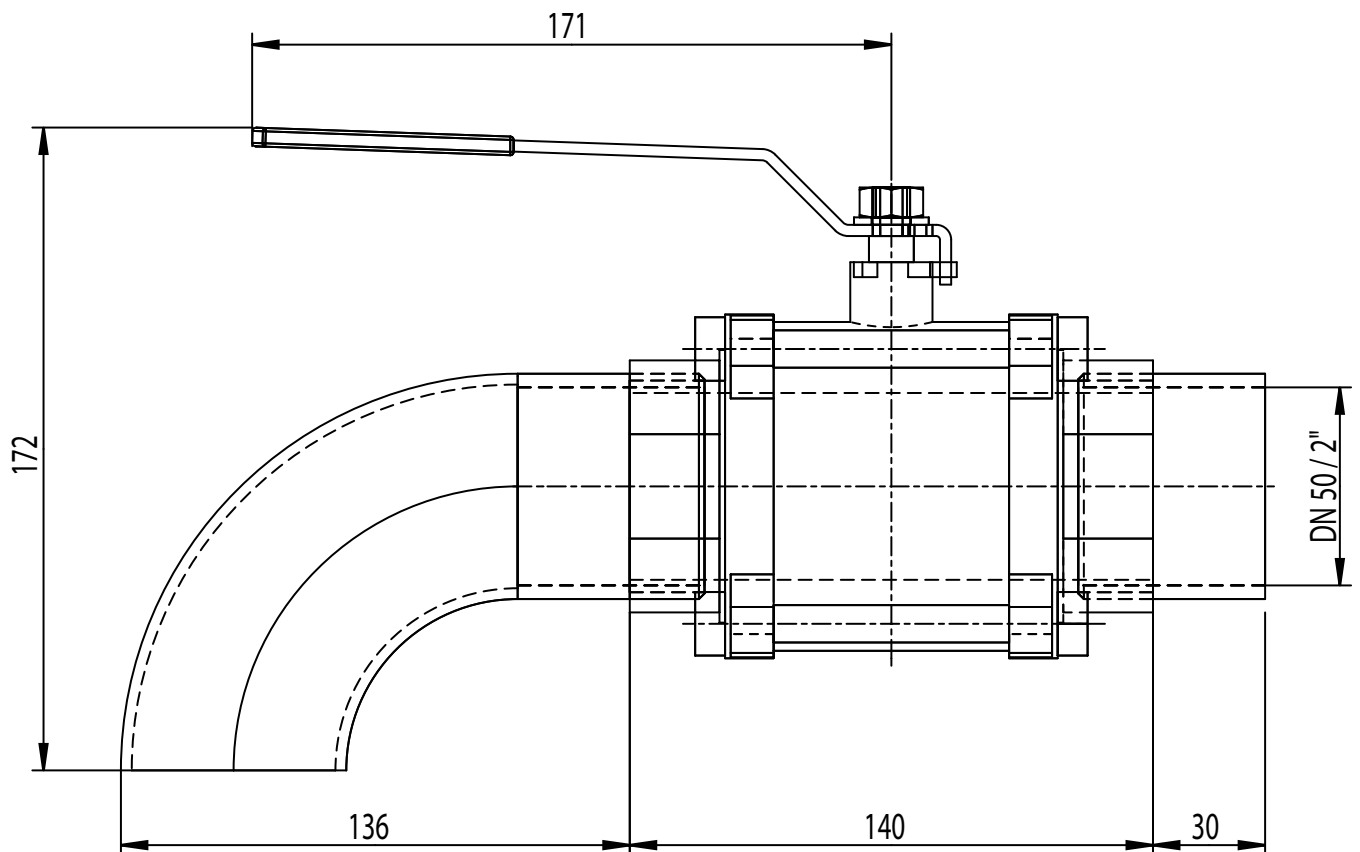


### Application:

Wherever samples of media have to be taken and hollow spaces are negligible.

weight: 1.4 kg

curved sampling valve DN 50 (2")  
hand lever,  
weld-on nipple

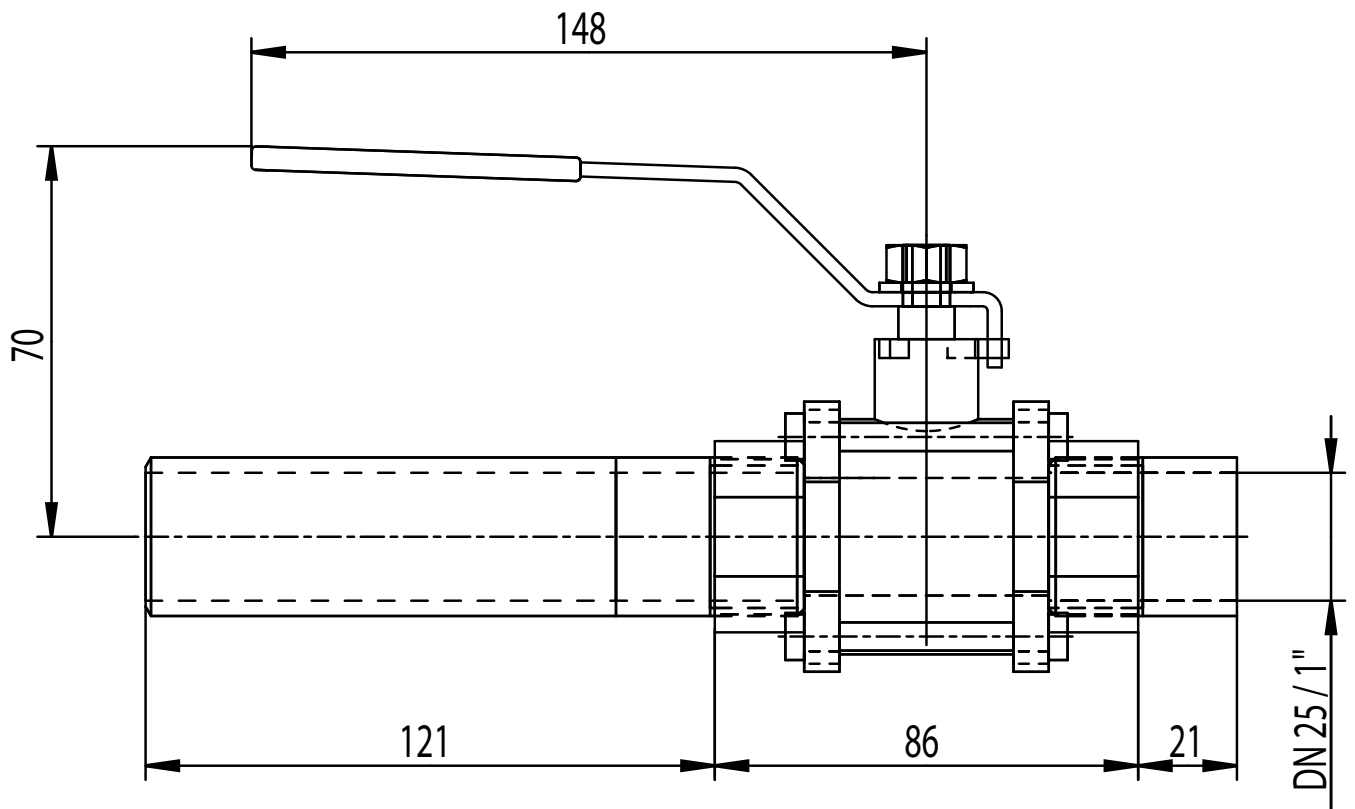


### Application:

Wherever samples of media have to be taken and hollow spaces are negligible.

weight: 4.1 kg

straight sampling valve DN 25 (1")  
hand lever,  
weld-on nipple

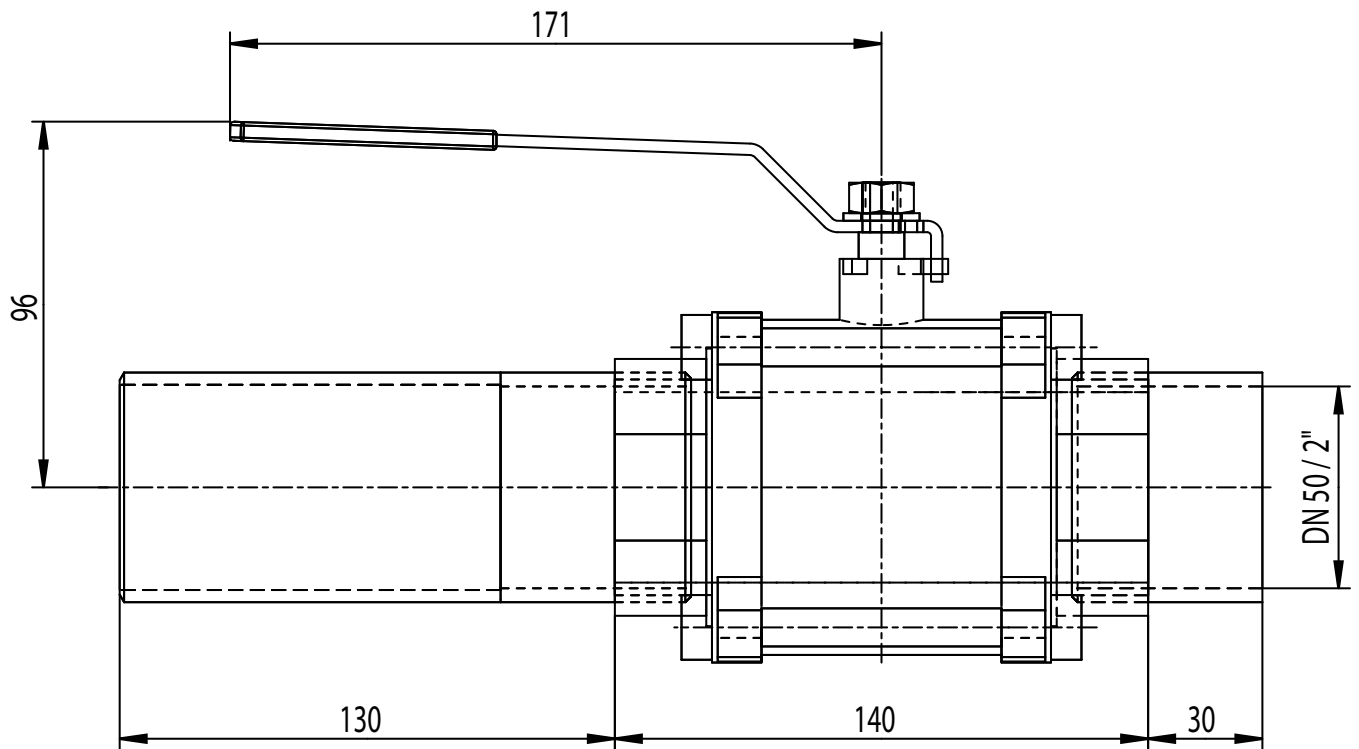


### Application:

Wherever samples of media have to be taken and hollow spaces are negligible.

weight: 1.5 kg

straight sampling valve DN 50 (2")  
hand lever,  
weld-on nipple

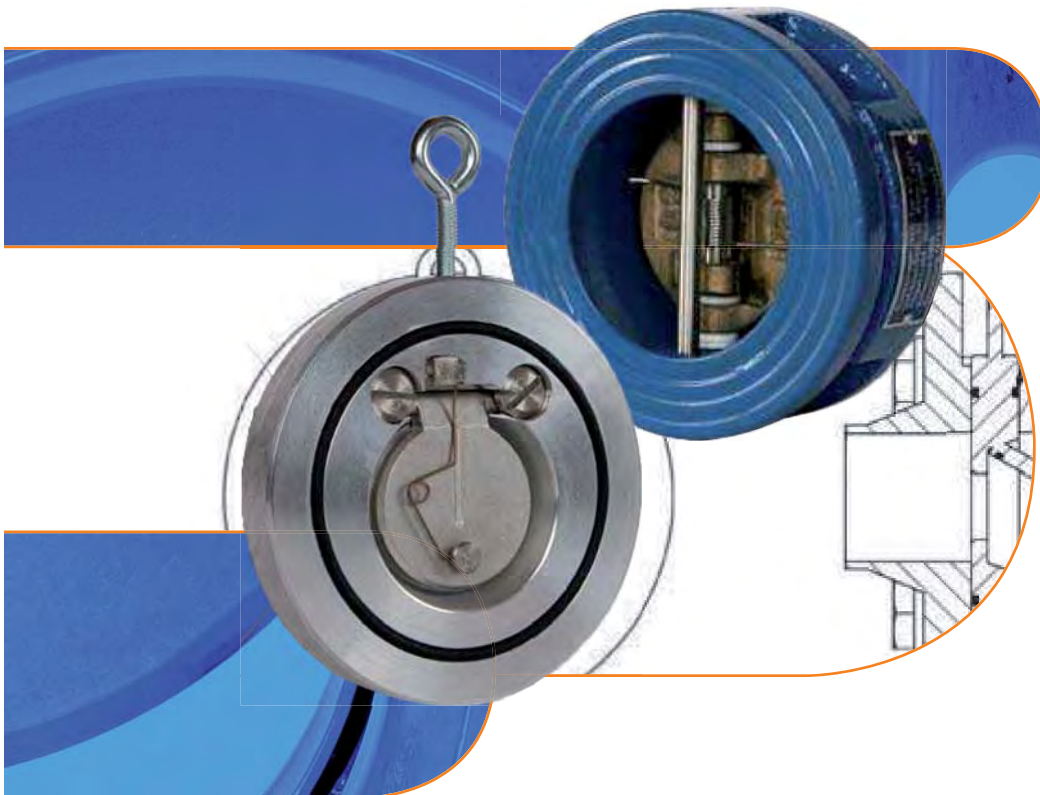


### Application:

Wherever samples of media have to be taken and hollow spaces are negligible.

weight: 4.2 kg

# Check Valves



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Swing Check Valves Type ZRK / ZRKF	271
Dual Plate Check Valves Type 915	283
Disco Check Valves Type 930	293
Disco Check Valves Type 932	303

# Swing Check Valves

## Type ZRK / ZRKF











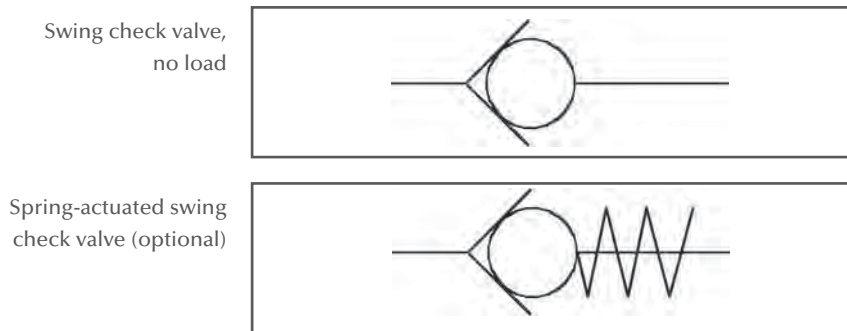
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phone +49(0)7321 / 755-42 · fax +49(0)7321 / 755-97  
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Design

Design	Body	Disc	Spring	Seals	Pressure range	
GGG40-ST	GGG40, zinc plated	Steel 1.0619, zinc plated	Stainless steel 1.4571	NBR, EPDM, FPM (Viton) or PTF	0 to 16 bar	
ST-ST	Steel 1.0619, zinc plated					
ST1-ST	Steel (C22.8), zinc plated					
ST-VA	Steel 1.0619, zinc plated	Stainless steel 1.4408/1.4581	NBR, EPDM, FPM (Viton), PTFE or metal seated			
VA-VA	Stainless steel 1.4408					
VA1-VA1	Stainless steel 1.4571	Stainless steel 1.4571				
AB-AB	Alu bronze 2.0975	Alu bronze 2.0975	Hastelloy C4 (2.4610)	NBR, EPDM, FPM (Viton) or PTFE		
DU-DU	Duplex 1.4469	Duplex 1.4469				



## Description and application purpose

Swing check valves are armatures (valves) for return flow prevention in piping systems. Easy structures and short dimensions are the remarkable features of ZRK-ZRKF-swing check valves. They are constructed to be mounted directly between flanges acc. to DIN. Swing check valves of type ZRK-ZRKF are suitable for industrial employment in piping systems for transport of liquid and gaseous fluids of group 1 (explosive, inflammable, toxic, incendiary) and group 2 (all other) according to Pressure Equipment Directive 97/23/EC. They are not suitable for media with solid components.

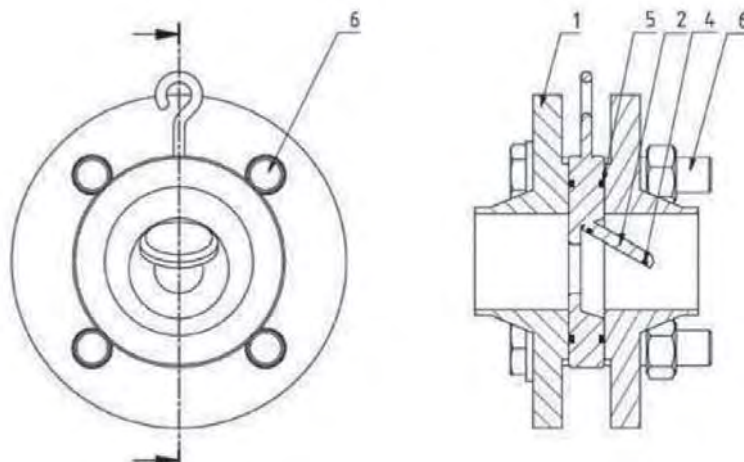
## Function

The swing check valves are automatically held in a central position by the flange connection screws (pos. 6). An O-ring (pos. 5) seals the equipment and protects it from external effects. Therefore, we recommend to use flanges with clean sealing surfaces. AWS swing check valves require a low opening pressure. The resulting opening power directs the valve against a spring<sup>1)</sup> (page 5, DN 32 – 40, pos. 7) and the valve's weight power (pos. 2), so that the media is released. If the initial pressure is higher than the entrance pressure, the valve closes and is sealed by the O-ring<sup>2)</sup> (pos. 5) to protect it from the media.

<sup>1)</sup> only design ZRKF

<sup>2)</sup> only design with O-ring  
otherwise metal seated

**ZRK-ZRKF-swing check valves do not require maintenance.**



To guarantee the compatibility with the fluid we offer 5 variants of seal material:

	Max. working temperature
N = NBR	-10 to +90°C
E = EPDM	-10 to +120°C
F = FPM (Viton)	-10 to +150°C
T = PTFE	-10 to +200°C
M = metal seated	-10 to +300°C

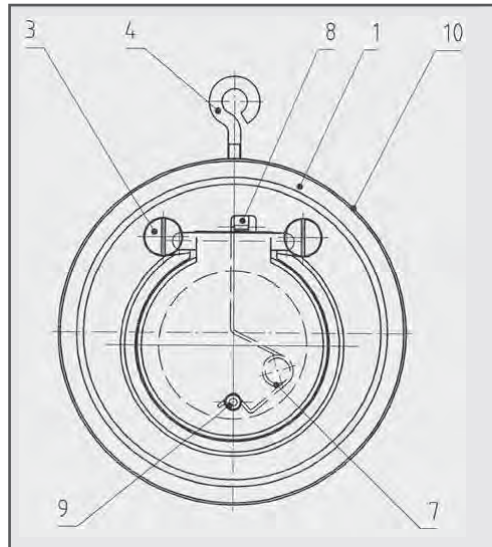
### Dimensions, pressure range

PS 16 = DN 32 / 40 / 50 / 65 / 80 / 100 / 125 / 150 / 200 / 250 / 300

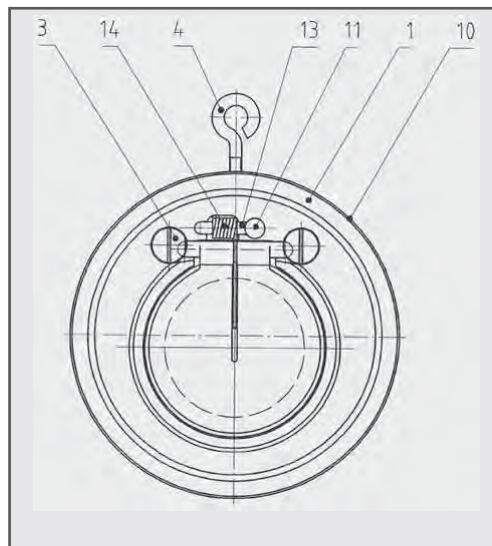
PS 10 = DN 350 / 400 / 500 / 600

List of spare parts

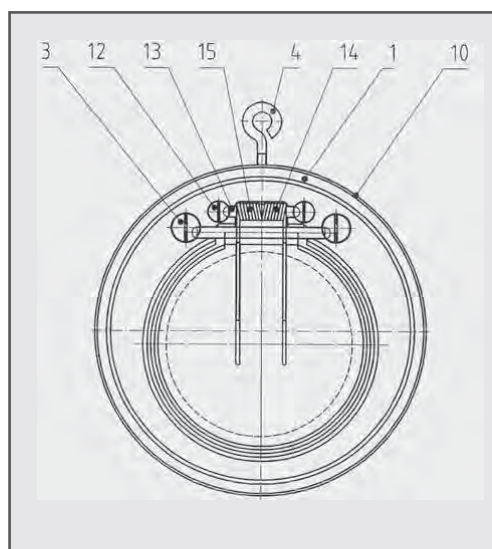
DN 32 to DN 40



DN 50 to DN 125

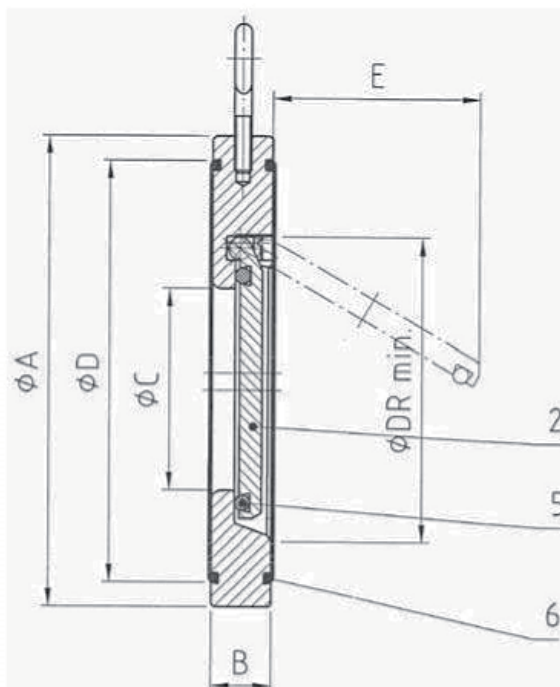


DN 150 to DN 300



Item	Designation
1	Body
2	Disc
3	Screw
4	Ringschraube
5	O-ring
6	O-ring
7	Spring
8	Pivot
9	Jig
10	Plate
11	Jig for pin
12	Screws
13	Pin for spring
14	Spring right
15	Spring left

## Dimensions



DN	Flange connection								without spring	with spring	C	D	E	DR
	PN 6	PN 10	PN 16	PN 25	PN40	PN 64	ANSI 150	ANSI 300						
	A	A	A	A	A	A	A	A	B	B				
32	79	85	85	85	85	-	74	85.9	15	15	18	59	22	37
40	89	95	95	95	95	106	83	98.6	16	16	22	72	23	43
50	98	109	109	109	109	115	105	114.4	14	14	32	86	37	54
65	118	129	129	129	129	140	124	133.7	14	14	40	109	50	70
80	134	144	144	144	144	150	137	152.4	14	14	54	119	61	82
100	154	164	164	170	170	176	175	184.5	18	18	70	146	77	106
125	184	195	195	196	196	214	197	219.3	18	18	92	173	98	131
150	209	220	220	226	226	251	222	254	20	20	112	197	120	159
200	264	275	275	286	294	313	279	311.2	22	22	154	255	160	207
250	319	330	331	344	356	368	340	365	26	26	192	312	190	260
300	375	380	386	404	421	428	410	245.6	32	32	227	363	220	309
350	425	440	446	461	478	490	451	489	38	-	266	416	250	341
400	475	491	499	518	550	547	514	543.1	44	-	310	467	290	392
450	-	541	558	-	-	-	549	600.3	52	-	350	520	340	442
500	580	596	621	628	632	-	606	657.4	58	-	400	550	390	493
600	681	698	738	735	-	-	718	777.7	62	-	486	660	470	595

Dimensions in mm.

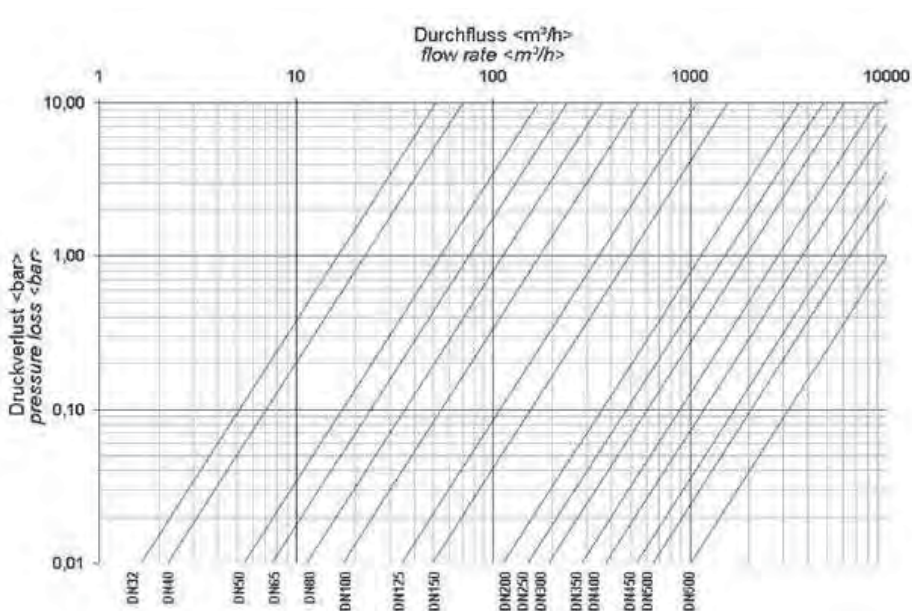
Min. opening pressure

DN [mm]	Kv-value [m³/h]	Opening pressure [mbar] at flow direction			
		↔ without spring	↔ with spring	↑ without spring	↑ with spring
32	16,2	~ 2	~ 15	~ 10	~ 25
40	22,2				
50	54				
65	75				
80	112				
100	172				
125	342				
150	490				
200	1128	~ 4	~ 17	~ 14	
250	1500				
300	2290	~ 6	~ 18	~ 18	~ 27
350	2890				
400	3700				
450	5000			~ 24	~ 34
500	6550				
600	9500			~ 26	~ 36

Tightness

A minimum back pressure of 0.3 bar is required to keep the swing check valves tight.

Pressure loss diagram



The values in the diagram refer to water at 20°C. If you need information on other fluids, please contact us.

## Weights ZRK

DN [mm]	PN 10 [kg]	PN 16 [kg]	PN 25 [kg]	PN 40 [kg]	ANSI 150 [kg]
32	0.5				0.4
40	0.78				0.65
50	0.9				0.85
65	1.25				1.14
80	1.5				1.35
100	2.4		2.6		2.7
125	3.3		3.35		3.4
150	4.6		4.95		4.7
200	7.5		8.3	9.1	7.8
250	13.1		14.4	16.1	15.1
300	21.3	22.3	25.0	28.0	26.0

## Weights ZRKF

DN [mm]	PN 10 [kg]	PN 16 [kg]	PN 25 [kg]	PN 40 [kg]	ANSI 150 [kg]
32	0.5				0.4
40	0.78				0.65
50	0.85				0.83
65	1.225				1.22
80	1.5				1.38
100	2.4		2.48		2.8
125	3.3		3.33		3.5
150	4.6		4.9		4.7
200	7.49		8.3	9.0	7.9
250	13.1		14.6	15.9	15.3
300	21.3	22.3	25.0	28.0	26.0



## Operating instructions

### 1. Appropriate use in accordance to designed capabilities

ZRK-ZRKF-swing check valves are designed to block media on one side of the pipe within allowable pressure and temperature limits (see data sheet) and to be installed in a pipe system only. They are only to be used with media, which the material and the seals are resistant to. They are not suitable for media with solid components.

### 2. Safety advices

#### General safety advices

The safety advices for the pipe system, in which the valves are to be mounted, are to be followed. The same applies to the swing check valves.

#### Demands on the user

In pipe systems, where our swing check valves are to be used, the planning/installing person and the operator are responsible for the following issues:

- The swing check valves is to be used according to the regulation in p.1.
- The pipe system is to be installed correctly and its operation is to be checked regularly.
- The swing check valves is to be mounted, removed and repaired by qualified personnel only. The staff is to be regularly instructed according to all relevant regulations concerning working safety and environmental protection, especially in the field of pipes under pressure.
- These staff members have to be informed about the manual and the advices included.



CAUTION!

#### Special risks

Before the swing check valve is being removed, pressure has to be completely taken off the plant to avoid media escaping from the pipe. Fluid being left in the pipe must be drained off. Fluid, which has remained in the valve and comes out during removal, is to be collected. If hazardous fluids or gases are left in the valves, the safety measurements required must be taken.

### 3. Storage and transport

#### Lagerung:

- Swing check valves are to be transported in their original packaging and to be stored in a clean location.
- Swing check valves include sealing elements consisting of organic material, that reacts to environmental effects. Therefore, they are to be stored in a place, which is also to be kept as cool, dry and dark as possible.
- The front and back sides of the swing check valves must not be mechanically damaged.



CAUTION!

#### Transport:

The personnel must pay special attention, when big swing check valves (> DN 100) are unpacked and transported. The valve is to be held in a horizontal position in a way, that it can open at the top only. This is to avoid, that the valve unintentionally drops down and is damaged.



correct

and



improper



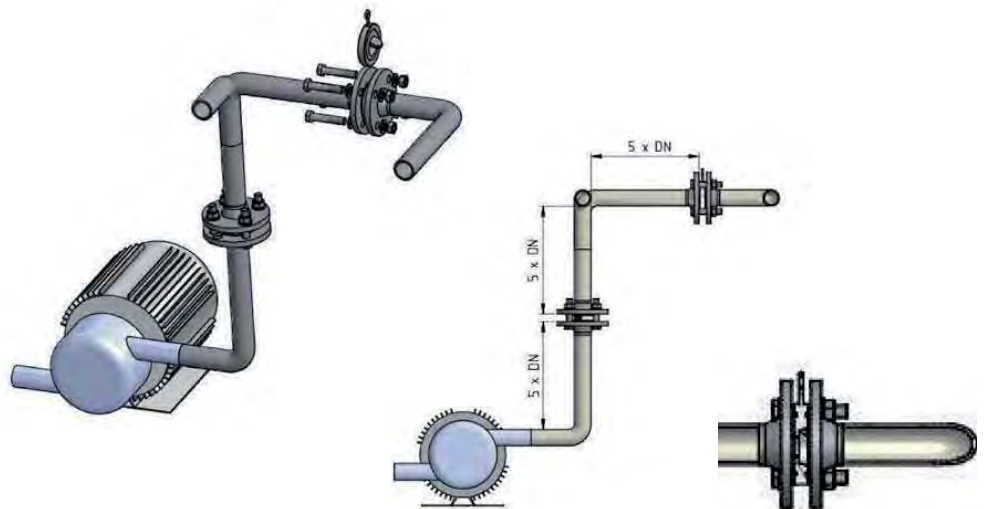
handling

## 4. Installation instructions, start-up

The following aspects are to be considered during the installation of swing check valves:

- Possible damages to the swing check valves and O-rings are to be checked prior to installation. Check if the valve can be moved. Damaged parts must not be installed.
- Make sure that only those swing check valves are being installed, that meet the operational requirements regarding pressure category, chemical resistance, connection and dimensions.
- Make sure to install a minimum of 5 x nominal diameter of straight pipeline in front of and behind the swing check valve.
- Exit supports allow a greater opening angle and higher throughput values (see diagram).
- Do not install the valves directly onto a pump flange.
- Avoid pulsation and pressure impact.
- Vertical throughput is allowable only if the valve can open at the top.
- In case of horizontal throughput, the ring screw must be at the top (see diagram).
- Watch throughput direction (see arrow on the plate)!
- The swing check valves are placed between the flanges by means of a ring screw. They are put in their central position according to the outer diameter of the case and the flange screw inner side.
- Tighten the flange screws crosswise regarding the torque required (see data sheet).

**After the installation is finished, check the tightness of the connections by a pressure check.**



## 5. Assistance in case of malfunctions, repair

It is absolutely necessary to read and follow the safety advices before removing the valves (p. 2)! Loosen the flange screws and pull out the swing check valve by means of the ring screw. Spare part orders are to be placed at our company and must include the complete data, listed on the plate. Original spare parts are to be installed only. Take off the spring (option) and unscrew the 2 screws. Then, the O-ring or the valve can be replaced. To install the valve, follow the instructions in reversed order.

## Type code

Typ	Material Gehäuse	Material Klappe	Nennweite DN	Dichtungen
ZRK	GGG40 = GGG40, zinc plated	ST = Steel A216 (WCB), zinc plated	32 bis 1200	N = NBR
ZRKF	ST = Steel A216 (WCB), zinc plated	VA = Stainless steel AISI 316 Ti		F = FPM (Viton)
	ST1 = Steel (C22.8), zinc plated	VA1 = Stainless steel AISI 316 Ti		E = EPDM
	VA = Stainless steel CF8M	AB = Alubronze 2.0975		T = PTFE (Teflon)
	VA1 = Stainless steel AISI 316 Ti	DU = Duplex 1.4469		M = metal seated
	AB = Alu bronze 2.0975			
	DU = Duplex 1.4469			

## Order example

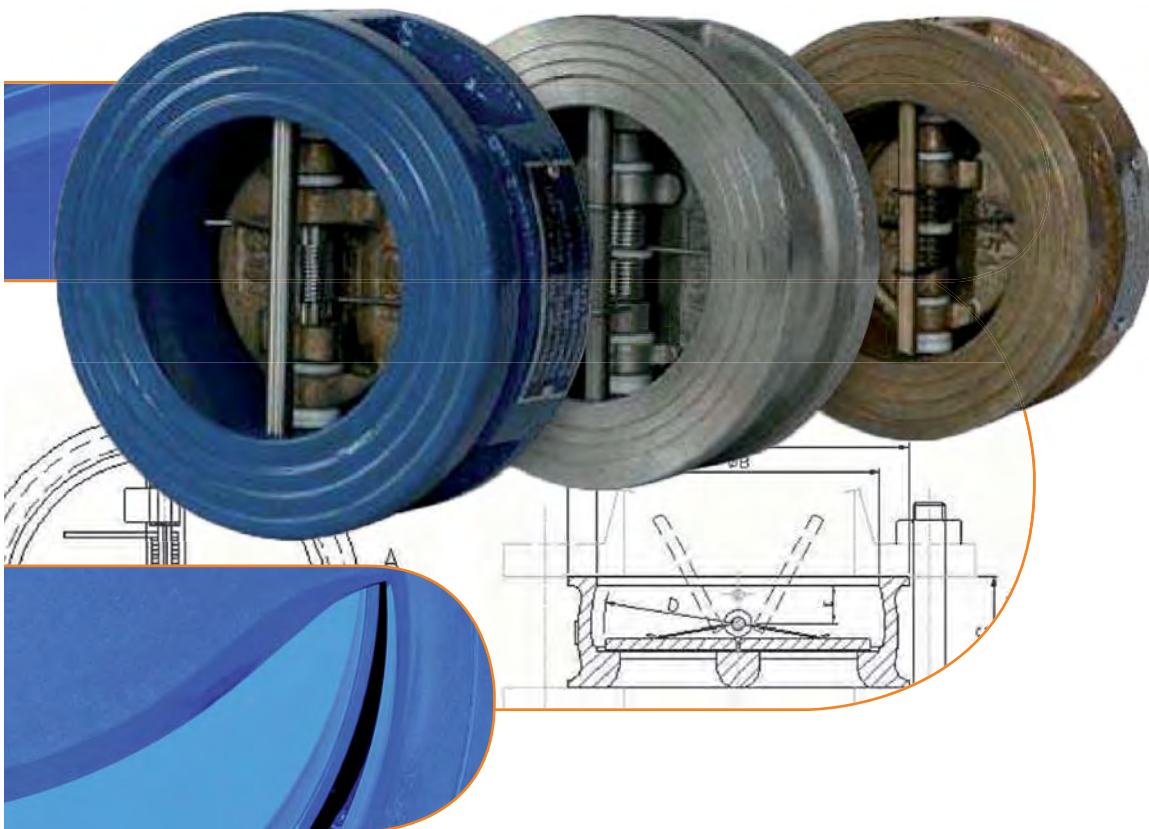
## ZRKF - ST - ST - 200 - N - F1

ZRKF	Swing check valve	design ZRKF (with spring reset)
ST	Body made of	steel (C22.8), zinc plated
ST	Disc made of	steel A 216 (WCB), zinc plated
200	Nominal diameter	200
N	Seals	NBR
F1	Spring	Stainless steel AISI 316 Ti



# Dual Plate Check Valves

## Type 915



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Design

Design	Body	Plate	Stem	Spring	Seals	Pressure range	
1	GGG-40 (ductile iron)	GGG-40 (ductile iron)	Stainless steel	Stainless steel	NBR, EPDM, FPM (Viton)	0 to 16 bar	
2		Alu bronze C954					
3		Stainless steel					
4	Stainless steel 1.4408	Stainless steel 1.4408	Stainless steel 1.4404	Stainless steel 1.4401			
6	Alu bronze C954			Inconel 600			
7	Duplex 1.4469						
8	Hastelloy						

## Description, function

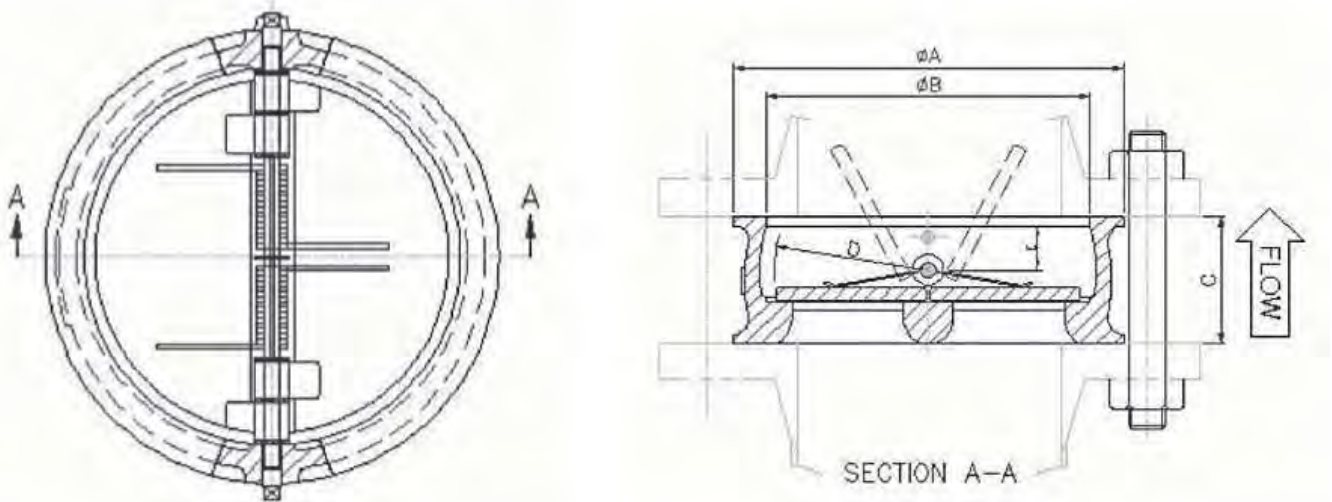
Easy structures and short dimensions (acc. to DIN EN 558-1, line 16 or API 594) are the remarkable features of dual plate check valves type 915. They are to be directly mounted between DIN flanges (PN 10, PN 16 or ANSI 150).

Dual plate check valves type 915 require a low opening pressure. The resulting opening power directs the stems against the spring and the valve's weight power, so that the media is released. If the initial pressure is higher than the entrance pressure, the valve closes and is sealed by the O-ring to protect it from the media.

Dual plate check valves type 915 do not require maintenance.



## Dimensions



DN		A			B	C		D	E
[mm]	[inch]	PN 10	PN 16	ANSI 150	[mm]	DIN EN 558-1	API 594		
50	2	107			70,5	43	60	28,8	19
65	2,5	127			80	46	67	36,1	20
80	3	142			94	64	73	43,4	28
100	4	162			117	64	73	52,8	27
125	5	193			145	70	–	65,7	30
150	6	218			180	76	98	78,6	31
200	8	273			221	89	127	104,4	33
250	10	328			275,5	114	146	127	50
300	12	378	383	406	325,5	114	181	148,3	43
350	14	438	444	448	360	127	184	172,4	45
400	16	489	495	511	410	140	191	197,4	52
450	18	539	555	546	467	152	203	217,8	58
500	20	591	617	603	515	152	219	241	58
600	24	695	734	714	624	178	222	295,4	73

Face to face according to: DIN EN558-1 row16 (DIN3202 / K3)  
 Flange according to: DIN EN 1092-1 PN10/16

Face to face according to: DIN EN558-1 row16 (DIN3202 / K3)  
 Flange according to: ANSI B16,5 150LBS

Face to face according to: API 594  
 Flange according to: ANSI B16,5 150LBS



## Min. opening pressure

DN	NPS	Kv-value	Opening pressure at flow direction		
			↔	↑	↓
[mm]	[inch]	[m³/h]	[mbar]		
50	2	63	15	20	10
65	2.5	109			
80	3	172			
100	4	289			
125	5	476			
150	6	750			
200	8	1550			
250	10	2880			
300	12	4100		30	-
350	14	5276			
400	16	8250			
450	18	10550			
500	20	14500			
600	24	24000			
700	28	27000			
800	32	31241			
900	36	39539			
1000	40	48814			

## Tightness

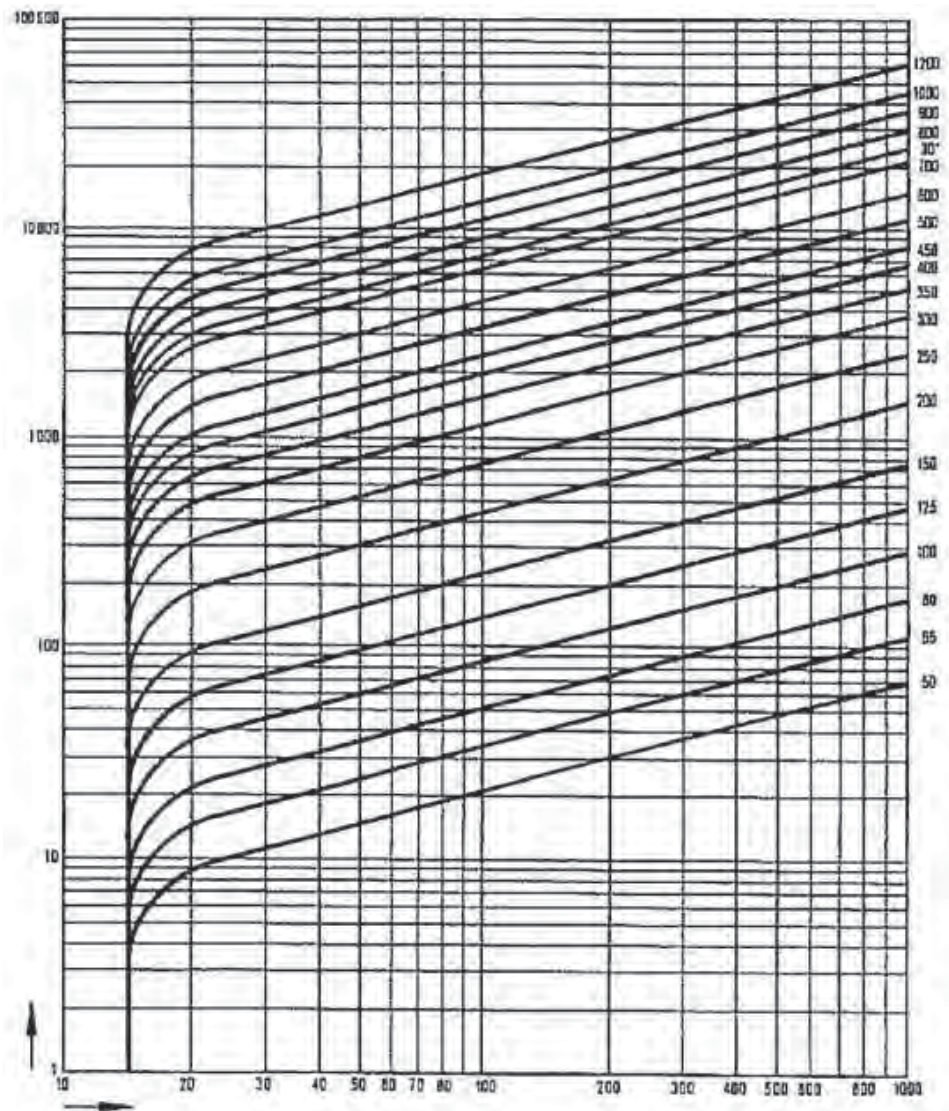
Leak rate according to: DIN EN 12266 or API 598

Pressure loss diagram

Durchflussvolumen  
[Wasser]  $V_w$  [m<sup>3</sup>/h]

Flow volume  
[water]  $V_w$  [m<sup>3</sup>/h]

DN



Druckverlust  $\Delta p$   
in mbar

Pressure drop  $\Delta p$   
mbar

## Operating instructions

### 1. Appropriate use in accordance to designed capabilities

Dual plate check valves type 915 are designed to block media on one side of the pipe within allowable pressure and temperature limits (see data sheet) and to be installed in a pipe system only. They are only to be used with media, which the material and the seals are resistant to. They are not suitable for media with solid components.

### 2. Safety advices

#### General safety advices

The safety advices for the pipe system, in which the valves are to be mounted, are to be followed. The same applies to the dual plate check valves.

#### Demands on the user

In pipe systems, where our dual plate check valves are to be used, the planning/ installing person and the operator are responsible for the following issues:

- The dual plate check valves is to be used according to the regulation in p.1
- The pipe system is to be installed correctly and its operation is to be checked regularly.
- The dual plate check valves is to be mounted, removed and repaired by qualified personnel only. The staff is to be regularly instructed according to all relevant regulations concerning working safety and environmental protection, especially in the field of pipes under pressure.
- These staff members have to be informed about the manual and the advices included.



#### Special risks

Before the dual plate check valve is being removed, pressure has to be completely taken off the plant to avoid media escaping from the pipe. Fluid being left in the pipe must be drained off. Fluid, which has remained in the valve and comes out during removal, is to be collected. If hazardous fluids or gases are left in the valves, the safety measurements required must be taken..

### 3. Storage

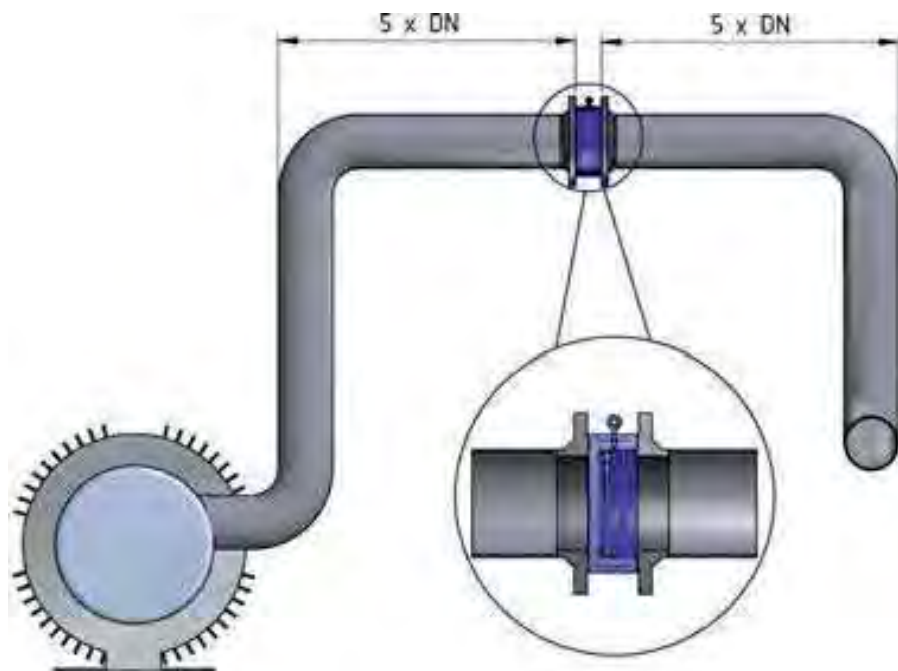
- Dual plate check valves are to be transported in their original packaging and to be stored in a clean location.
- Dual plate check valves include sealing elements consisting of organic material, that reacts to environmental effects. Therefore, they are to be stored in a place, which is also to be kept as cool, dry and dark as possible.
- The front and back sides of the dual plate check valves must not be mechanically damaged..

#### 4. Installation instructions, start-up

The following aspects are to be considered during the installation of swing check valves:

- Possible damages to the dual check valves and O-rings are to be checked prior to installation. Check if the valve can be moved. Damaged parts must not be installed.
- Make sure that only those swing check valves are being installed, that meet the operational requirements regarding pressure category, chemical resistance, connection and dimensions.
- Make sure to install a minimum of 5 x nominal diameter of straight pipeline in front of and behind the swing check valve.
- In horizontal pipeline make sure that the stem of armature is in vertical position (see pic.)
- Do not install the valves directly onto a pump flange.
- Avoid pulsation and pressure impact.
- Vertical throughput is allowable only if the valve can open at the top.
- Watch throughput direction (see arrow on the plate)!
- The dual plate check valves are put in their central position according to the outer diameter of the case and the flange screw inner side.
- Tighten the flange screws crosswise regarding the torque required (see data sheet).

**After the installation is finished, check the tightness of the connections by a pressure check.**



#### 5. Assistance in case of malfunctions, repair

It is absolutely necessary to read and follow the safety advices before removing the valves (p. 2)! Loosen the flange screws and pull out the dual plate check valve. Spare part orders are to be placed at our company and must include the complete data, listed on the plate. Original spare parts are to be installed only..

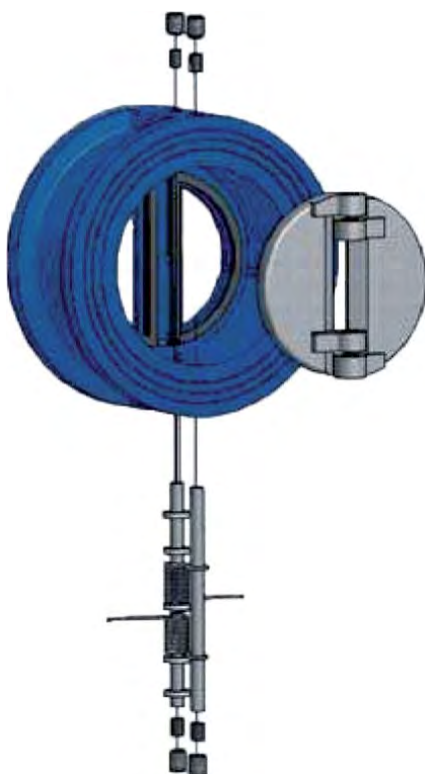
Type code

Type	DN	Design	Material					
	Size		Body	Plate	Stem	Spring	Hexagon set screw	Seal
915	50 to 600	1		GGG-40 ductile iron	Stainless steel			M = metal seated
		2	GGG-40 ductile iron	Alu bronze				E = EPDM
		3		CF8M				V = Viton
		4	CF8M					F = FPM/FKM
	6	C954 Alu bronze			Inconel 600	C954 Alu bronze	N = NBR	
	7	Duplex 1.4469				Duplex 1.4469		
	8	Hastelloy						

Order example

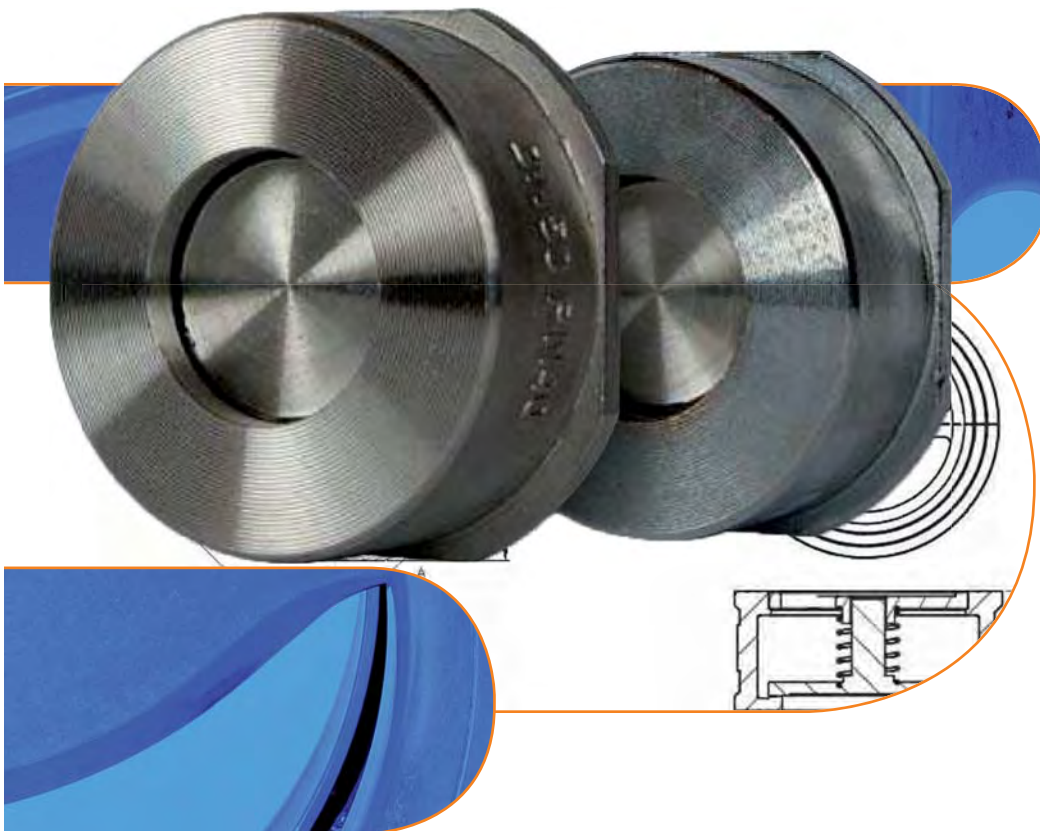
915 / 200 / 1 / N / F1

915	Dual plate check valve	type 915
200	Size	200
1	Body	GGG-40
	Plate	GGG-40
	Stem, Sprin, Hex. set Screw	Stainless Steel
N	Seal	NBR
F1	With reset spring	Stainless Steel AISI 316 Ti



# Disco Check Valves

## Type 930





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## Design

Desing	Body	Disc	Spring	Seal	Pressure Range	
1	Stainless steel CF8M	Stainless steel AISI 316	Stainless steel AISI 316	NBR, EPDM, FMP (Viton), PTFE or metal seated	0 to 40 bar	
2	Carbon steel, zinc plated (WCB)					

## Description and application

<sup>1)</sup> DIN EN 558-1 row 49  
(old DIN 3203-3)

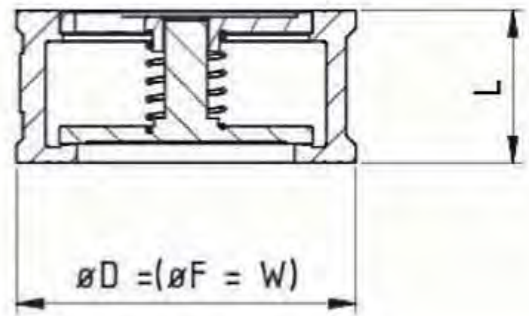
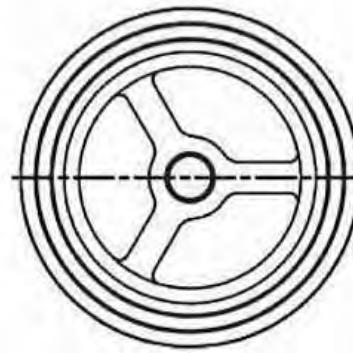
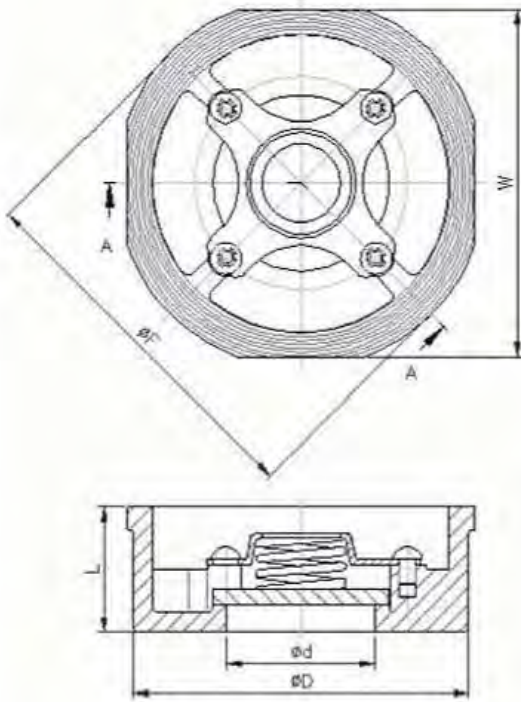
Disco check valves are fittings for the backflow prevention in pipe systems. Easy structures and short dimensions <sup>(1)</sup> according to DIN EN 558-1, row 49) are the remarkable features of disco check valves type 930. They offer an optimum solution in case of bigger nominal widths and there, where connection flange mountings are required or more favorable. The disco check valves type 930 are suitable for the industrial use in pipe systems for the transport of liquid or gaseous materials as well as in systems where much higher demands are made on the material.

## Function

Disco check valves type 930 may have any mounting position. They are opened by means of the medium pressure and closed again by means of a spring, prior to the creation of a backflow.



Dimensions



DN	Dimensions						Fitting flanges					
	NPS [inch]	Ø d	Ø D	Ø F	W	L	PN6	PN10	PN16	PN25	PN40	ANSI 150
15	1/2	15	43	53	43	16	✗	✓	✓	✓	✓	✗
20	3/4	20	53	63	53	19	✓	✓	✓	✓	✓	✗
25	1	25	63	73	63	22	✓	✓	✓	✓	✓	✗
32	1 1/4	30	75	84	75	28	✓	✓	✓	✓	✓	✗
40	1 1/2	38	86	94	86	32	✗	✓	✓	✓	✓	✗
50	2	47	95	107	95	40	✓	✓	✓	✓	✓	✓
65	2 1/2	62	115	126	115	46	✓	✓	✓	✓	✓	✗
80	3	77	131	145	131	50	✓	✓	✓	✓	✓	✓
100	4	96	150	164	150	60	✓	✓	✓	✓	✓	✓

Dimensions in mm.

## min. opening pressure

DN	NPS	Kv-value	Opening pressure at flow direction			without spring	weight
			↔	↑	↓	↑	
[mm]	[inch]	[m³/h]	[mbar]				[kg]
15	1/2	2	25	30	20	2,5	0.10
20	3/4	7	25	30	20	2,5	0.16
25	1	13	25	30	20	3	0.28
32	1 1/4	17	25	30	20	3.5	0.52
40	1 1/2	23	25	30	20	3.5	0.70
50	2	48	25	30	20	4	1.10
65	2 1/2	55	25	30	20	k.W.	1.58
80	3	83	25	30	20	k.W.	1.78
100	4	127	25	30	20	k.W.	3.30

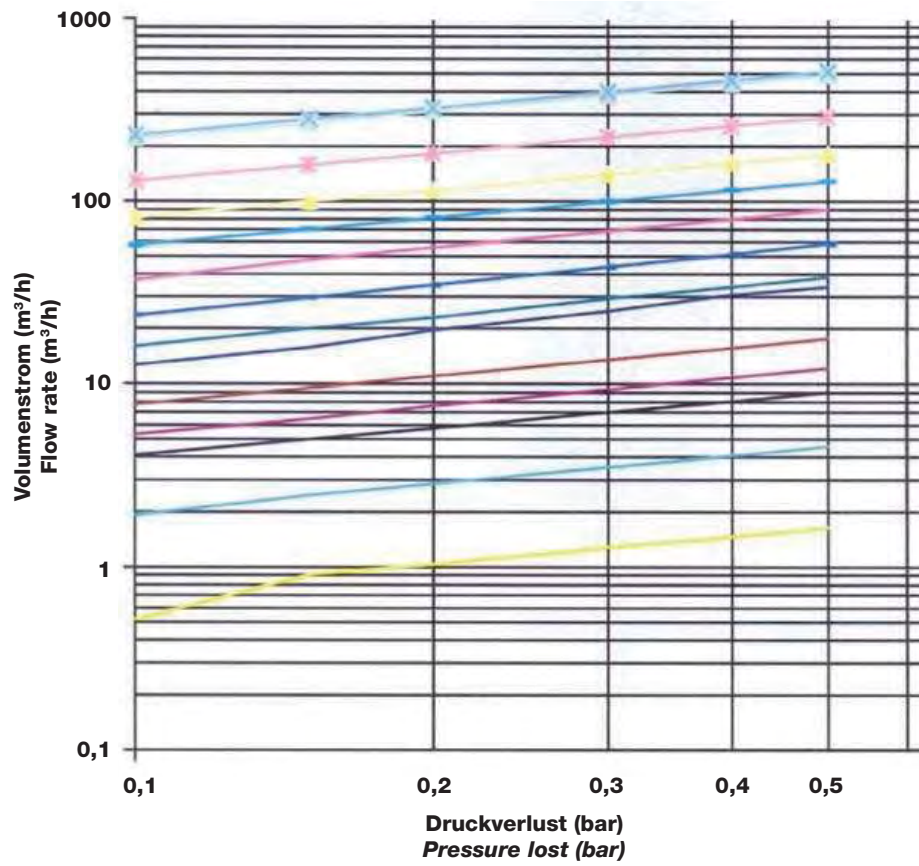
## Tightness

The disco check valve closes by himself due to the spring without a difference of pressure.

## Max. working temperature in relation to seals:

Seal	from [°C]	to [°C]
NBR	-10	+90
EPDM	-10	+120
FPM (Viton)	-10	+150
PTFE	-10	+200
metal seated	-10	+300

Pressure loss diagram



Measurements of fluid flow according to DIN EN 60534-2-3.

The values in the diagram refer to water at 20°C.  
If you need information on other fluids, please contact us.

## Operating instructions

### 1. Appropriate use in accordance

Disco check valves type 930 are designed to block media on one side of the pipe within allowable pressure and temperature limits (see data sheet) and to be installed in a pipe system only. They have only to be used with media, to which the material and the seals are resistant. They are not suitable for media with solid components..

### 2. Safety advices

#### General safety advices

The safety instructions for the pipe system, in which the valves are mounted, have to be observed. The same applies to the disco check valves.

#### Demands on the user

In pipe systems, where our disco check valves are mounted, the planning/installing person and the operator are responsible for the following issues:

- The disco check valves must strictly be used according to the regulation in p.1.
- The pipe system has to be installed correctly and its operation has to be checked regularly.
- The disco check valves have to be mounted, removed and repaired by qualified personnel only. The staff must be regularly instructed according to all relevant regulations concerning working safety and environmental protection, especially in the field of pipes under pressure.
- These staff members have to be informed about the manual and the instructions there included.



#### Special risks

Before the disco check valve is being removed, pressure has to be completely taken off the plant to avoid media escaping from the pipe. Fluid being left in the pipe must be drained off. Fluid, which has remained in the valve and comes out during removal, has to be collected. If hazardous fluids or gases are left in the valves, the safety measurements required must be taken.

### 3. Storage

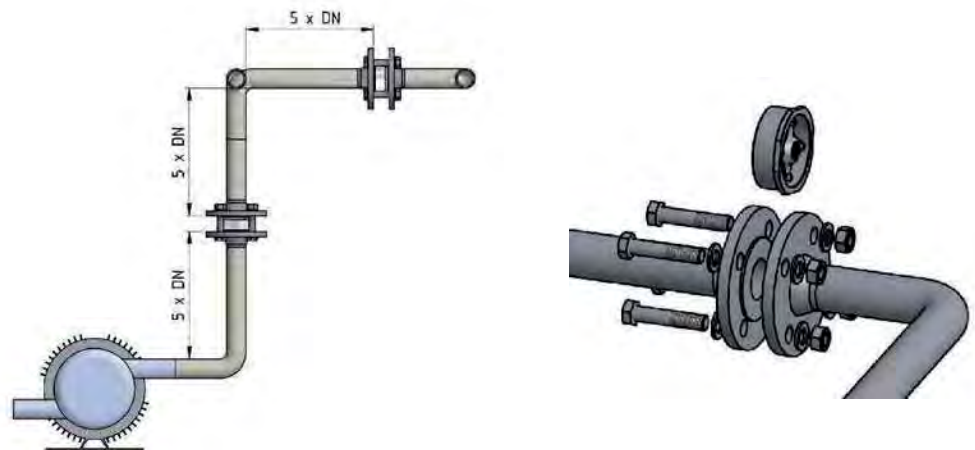
- Disco check valves have to be transported in their original packaging and to be stored in a clean location.
- Disco check valves include sealing elements consisting of organic material, that reacts to environmental effects. Therefore, they have to be stored in a place, which has also to be kept as cool, dry and dark as possible.
- The front and back sides of the disco check valves must not be mechanically damaged.

#### 4. Installation instructions, start-up

The following aspects have to be observed during the installation of disco check valves:

- Possible damages to the disco check valves and O-rings have to be checked prior to installation. Check if the valve can be moved. Damaged parts must not be installed.
- Make sure that only those disco check valves are installed, that meet the operational requirements regarding pressure category, chemical resistance, connection and dimensions.
- Make sure to install a minimum of 5 x nominal diameter of straight pipeline in front of and behind the disco check valve.
- Do not install the valves directly onto a pump flange.
- Avoid pulsation and pressure impact.
- Observe the throughput direction (see arrow on the plate)!

**After the installation, check the tightness of the connections by a pressure check.**



#### 5. Assistance in case of malfunctions, repair

It is absolutely necessary to read and follow the safety instructions before removing the valves (p. 2)!

Spare part orders have to be placed at our company and must include the complete data, listed on the plate. Only original spare parts have to be installed. For the removal of the disc, take off the spring by unscrewing the screws at the bottom. Then, the O-ring or the valve can be replaced. To install the valve, follow the instructions in reversed order.

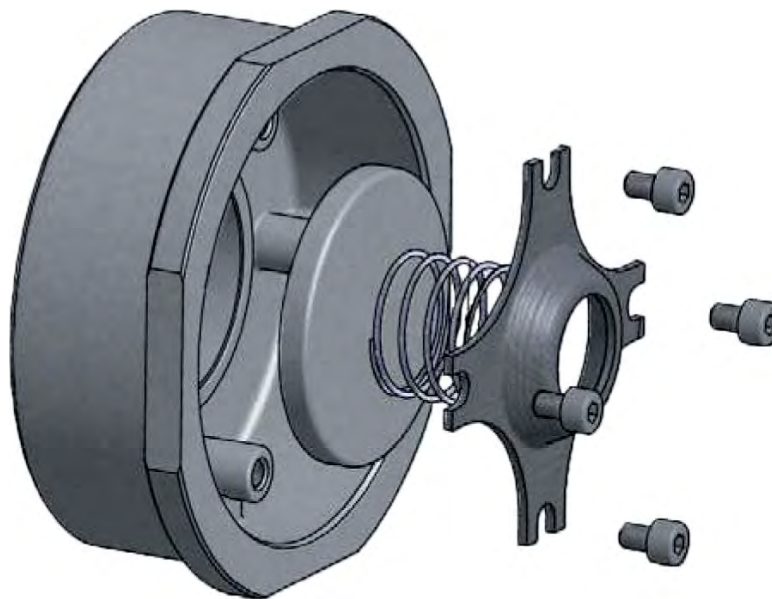
Type code

Type	DN	Material				
	Size	Design	Body	Plate	Spring	Seal
930	15 bis 300	1	1.4408	1.4436	1.4436	N =NBR
		2	1.0619			E =EPDM V =Viton F =FPM/FKM P =PTFE M=metal seated

Order examlpe

930 / 100 / 1 / M

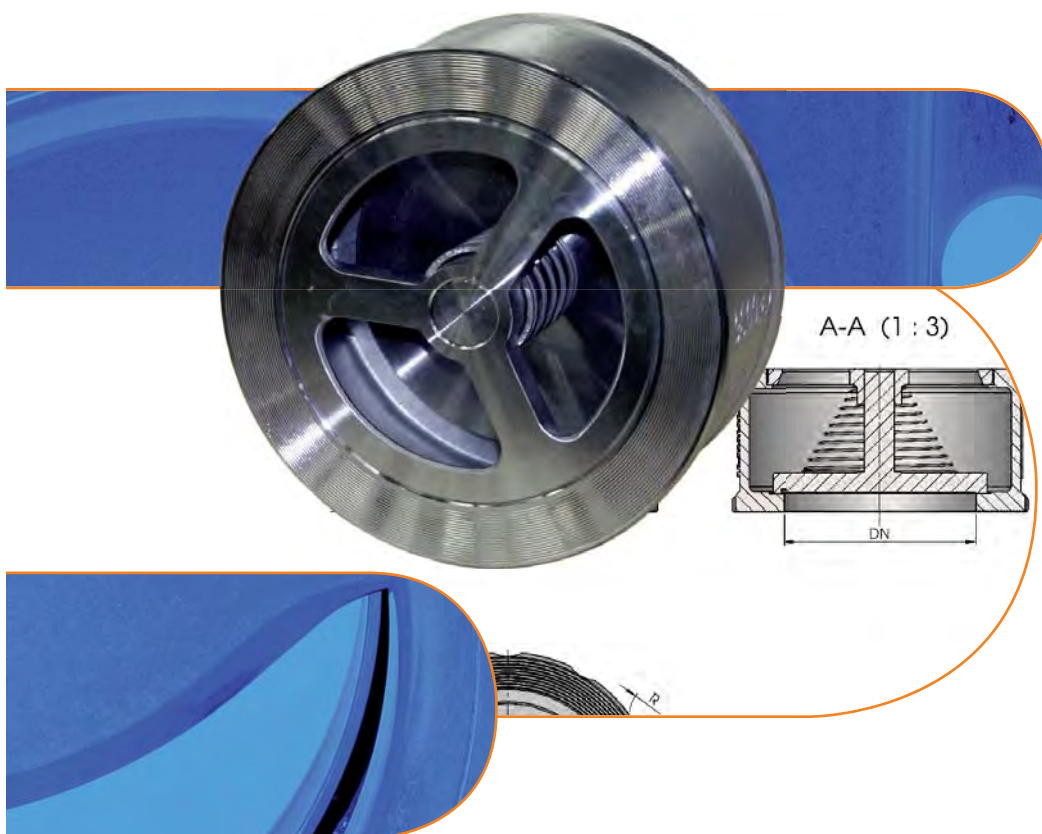
930	Disco check valve	Type 930
100	Nominal diamneter	100
1	Body	CF8M
	Disc	AISI 316
	Spring	AISI 316
M	Seal	metal seated





# Disco Check Valves

## Type 932



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Desing	Body	Disc	Spring	Seal	Pressure Range	
1	Stainless steel CF8M	Stainless steel CF8M	Stainless steel AISI 316 Ti	NBR, EPDM, FPM (Viton) PTF or metal seated	0 to 40 bar	
3	Brass 2.0401				0 to 16 bar	
4	Alu bronze C954	Alu bronze C954	Hastelloy C4 (2.4610)		0 to 25 bar	
4.1		Stainless steel CF8M	Stainless steel AISI 316 Ti			
5	Cast steel 1.0619	Stainless steel CF8M	Stainless steel AISI 316 Ti		0 to 16 bar	
6	Duplex 1.4469		Hastelloy C4 (2.4610)		0 to 40 bar	

## Description and application

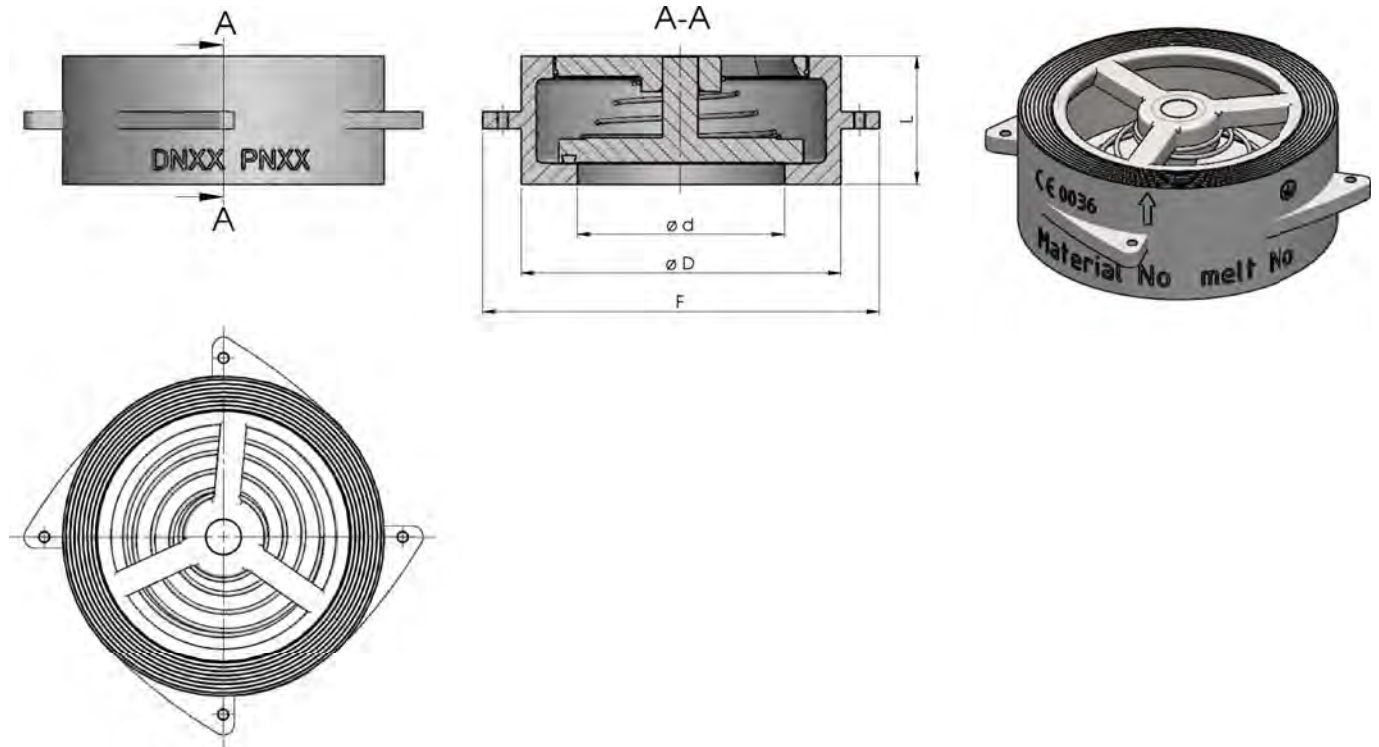
<sup>1)</sup> DIN EN 558-1 row 49  
(old DIN 3203-3)

Disco check valves are fittings for the backflow prevention in pipe systems. Easy structures and short dimensions <sup>(1)</sup> according to DIN EN 558-1, row 49) are the remarkable features of disco check valves type 930. They offer an optimum solution in case of bigger nominal widths and there, where connection flange mountings are required or more favorable. The disco check valves type 930 are suitable for the industrial use in pipe systems for the transport of liquid or gaseous materials as well as in systems where much higher demands are made on the material.

## Function

Disco check valves type 930 may have any mounting position. They are opened by means of the medium pressure and closed again by means of a spring, prior to the creation of a backflow.

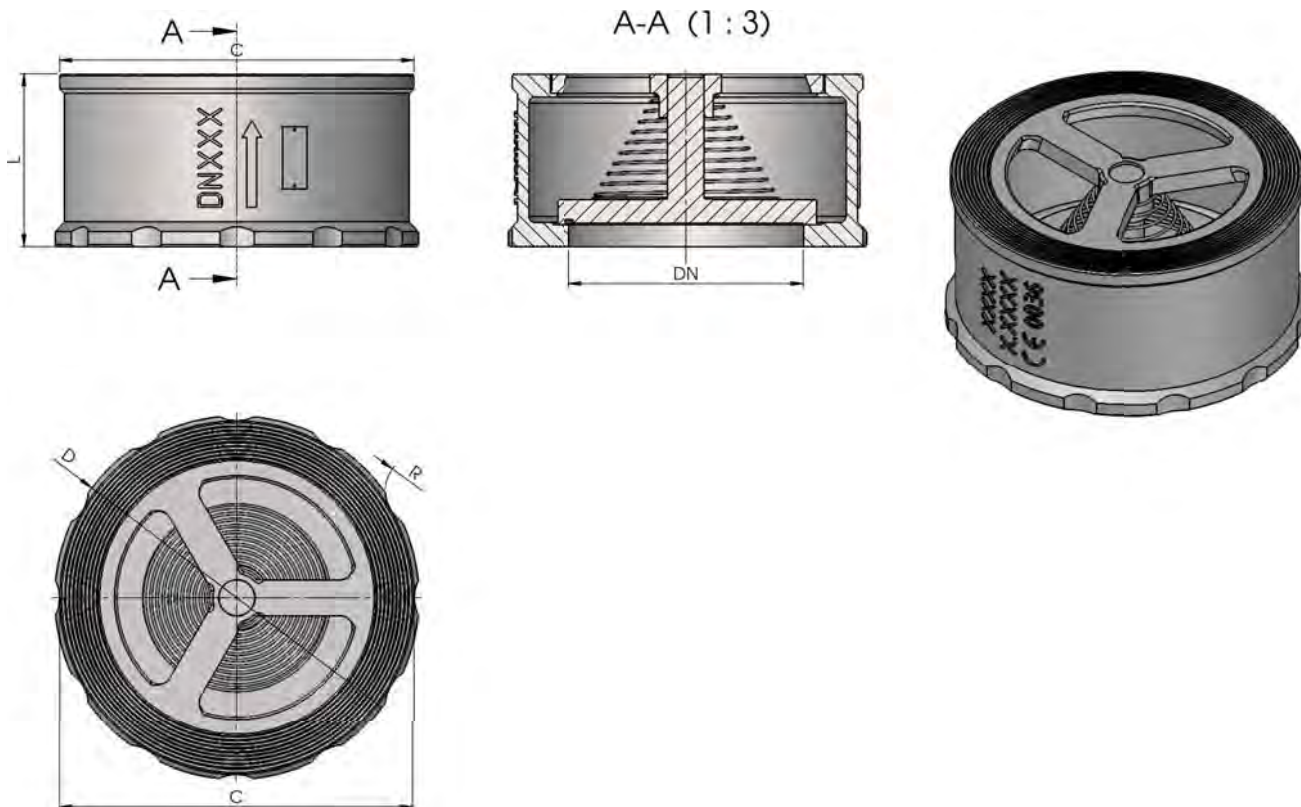
Dimensions



DN		Dimensions			
[mm]	[inch]	Ø d	Ø D	Ø F	L
15	1/2	15	43	56	16
20	3/4	19	53	69	19
25	1	25	63	76	22
32	1 1/4	32	75	87	28
40	1 1/2	38	80	101	31.5
50	2	47	95	114	40
65	2 1/2	63	115	136	46
80	3	77	131	154	50
100	4	97.5	150	178	60

Dimensions in mm.

Dimensions



DN		Dimensions							
[mm]	[inch]	Ø C (PN 10/16)	Ø D (PN 10/16)	Ø C (150 lbs)	Ø C (PN 25)	Ø D (PN 25)	R (PN 10/16)	R (PN 25)	L
125	5	194	194	194	194	194	-	-	90
150	6	220	220	220	220	220	-	-	106
200	8	275	280	280	286	294	11	30	140
250	10	331	340	340	344	356	11	33	145
300	12	380	386	404	404	421	11	33	160

Dimensions in mm.

## min. opening pressure

DN		Kv-value [m³/h]	Opening pressure at flow direction			without spring
[mm]	[inch]		↔	↑	↓	↑
			[mbar]			
15	1/2	4	~ 20	~ 24	~ 16	~ 4
20	3/4	7		~ 25	~ 15	~ 5
25	1	10				
32	1 1/4	17		~ 26	~ 14	~ 6
40	1 1/2	24		~ 27	~ 13	~ 7
50	2	37		~ 28	~ 12	~ 8
65	2 1/2	61		~ 29	~ 11	~ 9
80	3	74		~ 30	~ 10	~ 10
100	4	115		~ 33	~ 7	~ 13
125	5	201	~ 30	~ 46	~ 14	~ 16
150	6	286		~ 47	~ 13	~ 17
200	8	553		~ 51	~ 9	~ 21
250	10	643	~ 40	~ 64	~ 16	~ 24
300	12	867		~ 68	~ 12	~ 38

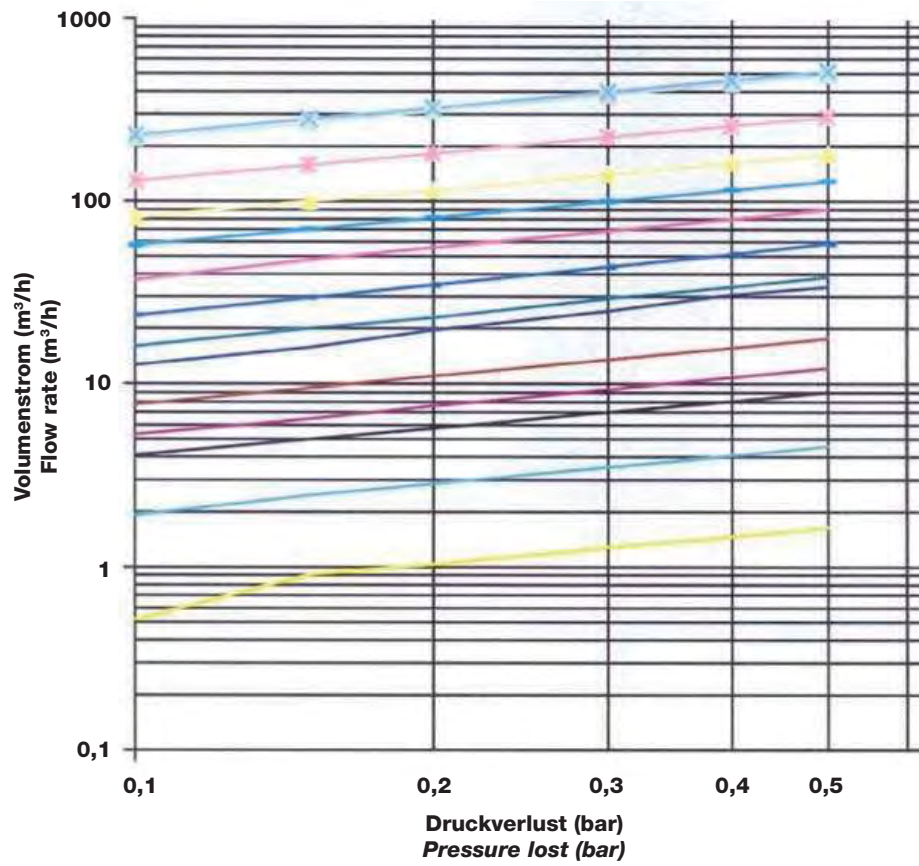
## Tightness

The disco check valve closes by himself due to the spring without a difference of pressure.

## Max. working temperature in relation to seals:

Seal	from [°C]	to [°C]
NBR	-10	+90
EPDM	-10	+120
FPM (Viton)	-10	+150
PTFE	-10	+200
metal seated	-10	+300

Pressure loss diagram



Measurements of fluid flow according to DIN EN 60534-2-3.

The values in the diagram refer to water at 20°C.  
If you need information on other fluids, please contact us.

## Operating instructions

### 1. Appropriate use in accordance

Disco check valves type 930 are designed to block media on one side of the pipe within allowable pressure and temperature limits (see data sheet) and to be installed in a pipe system only. They have only to be used with media, to which the material and the seals are resistant. They are not suitable for media with solid components..

### 2. Safety advices

#### General safety advices

The safety instructions for the pipe system, in which the valves are mounted, have to be observed. The same applies to the disco check valves.

#### Demands on the user

In pipe systems, where our disco check valves are mounted, the planning/installing person and the operator are responsible for the following issues:

- The disco check valves must strictly be used according to the regulation in p.1.
- The pipe system has to be installed correctly and its operation has to be checked regularly.
- The disco check valves have to be mounted, removed and repaired by qualified personnel only. The staff must be regularly instructed according to all relevant regulations concerning working safety and environmental protection, especially in the field of pipes under pressure.
- These staff members have to be informed about the manual and the instructions there included.



#### Special risks

Before the disco check valve is being removed, pressure has to be completely taken off the plant to avoid media escaping from the pipe. Fluid being left in the pipe must be drained off. Fluid, which has remained in the valve and comes out during removal, has to be collected. If hazardous fluids or gases are left in the valves, the safety measurements required must be taken.

### 3. Storage

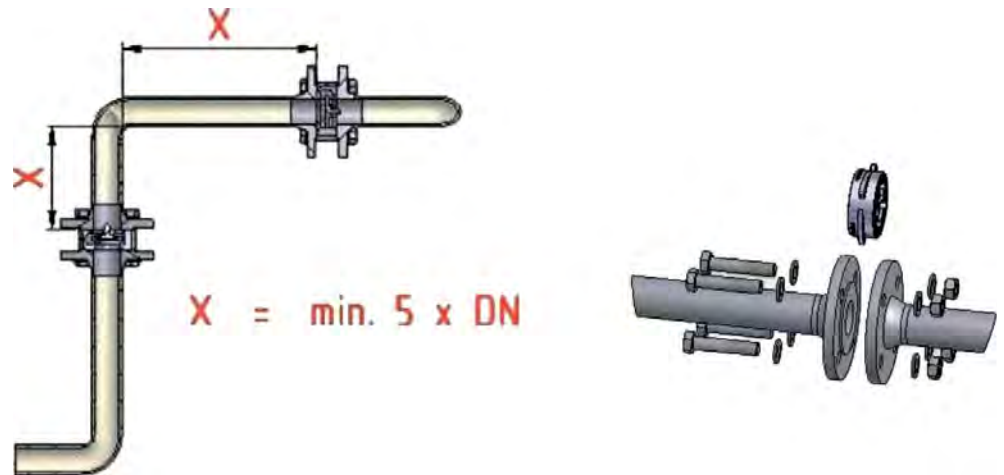
- Disco check valves have to be transported in their original packaging and to be stored in a clean location.
- Disco check valves include sealing elements consisting of organic material, that reacts to environmental effects. Therefore, they have to be stored in a place, which has also to be kept as cool, dry and dark as possible.
- The front and back sides of the disco check valves must not be mechanically damaged.

#### 4. Installation instructions, start-up

The following aspects have to be observed during the installation of disco check valves:

- Possible damages to the disco check valves and O-rings have to be checked prior to installation. Check if the valve can be moved. Damaged parts must not be installed.
- Make sure that only those disco check valves are installed, that meet the operational requirements regarding pressure category, chemical resistance, connection and dimensions.
- Make sure to install a minimum of 5 x nominal diameter of straight pipeline in front of and behind the disco check valve.
- Do not install the valves directly onto a pump flange.
- Avoid pulsation and pressure impact.
- Observe the throughput direction (see arrow on the plate)!

**After the installation, check the tightness of the connections by a pressure check.**



#### 5. Assistance in case of malfunctions, repair

It is absolutely necessary to read and follow the safety instructions before removing the valves (p. 2)!

Spare part orders have to be placed at our company and must include the complete data, listed on the plate. Only original spare parts have to be installed. For the removal of the disc, take off the spring by unscrewing the screws at the bottom. Then, the O-ring or the valve can be replaced. To install the valve, follow the instructions in reversed order.



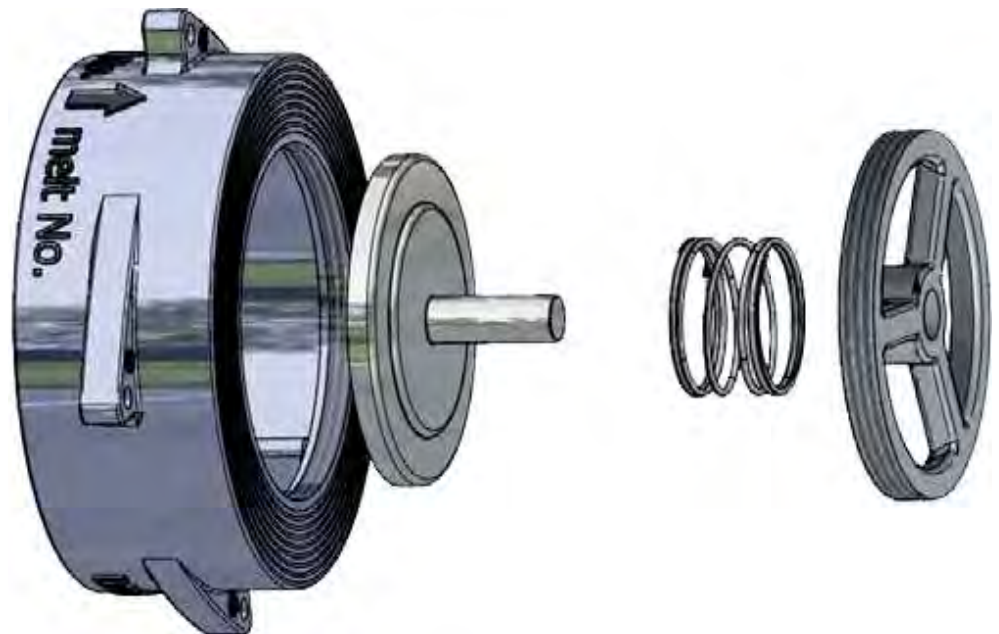
Type code

Typ	DN	Material			
	Size	Body	Plate	Spring	Seal
932	15 bis 300	VA = Edelstahl 1.4408	VA = Edelstahl 1.4408	1.4436	N = NBR
		MS = Messing	AB = Alu- Bronze		E = EPDM
		AB = Alu- Bronze	DU = Duplex		V = FPM (Viton)
		ST = Stahlguss			T = PTFE (Teflon)
		DU = Duplex			M = metal seated

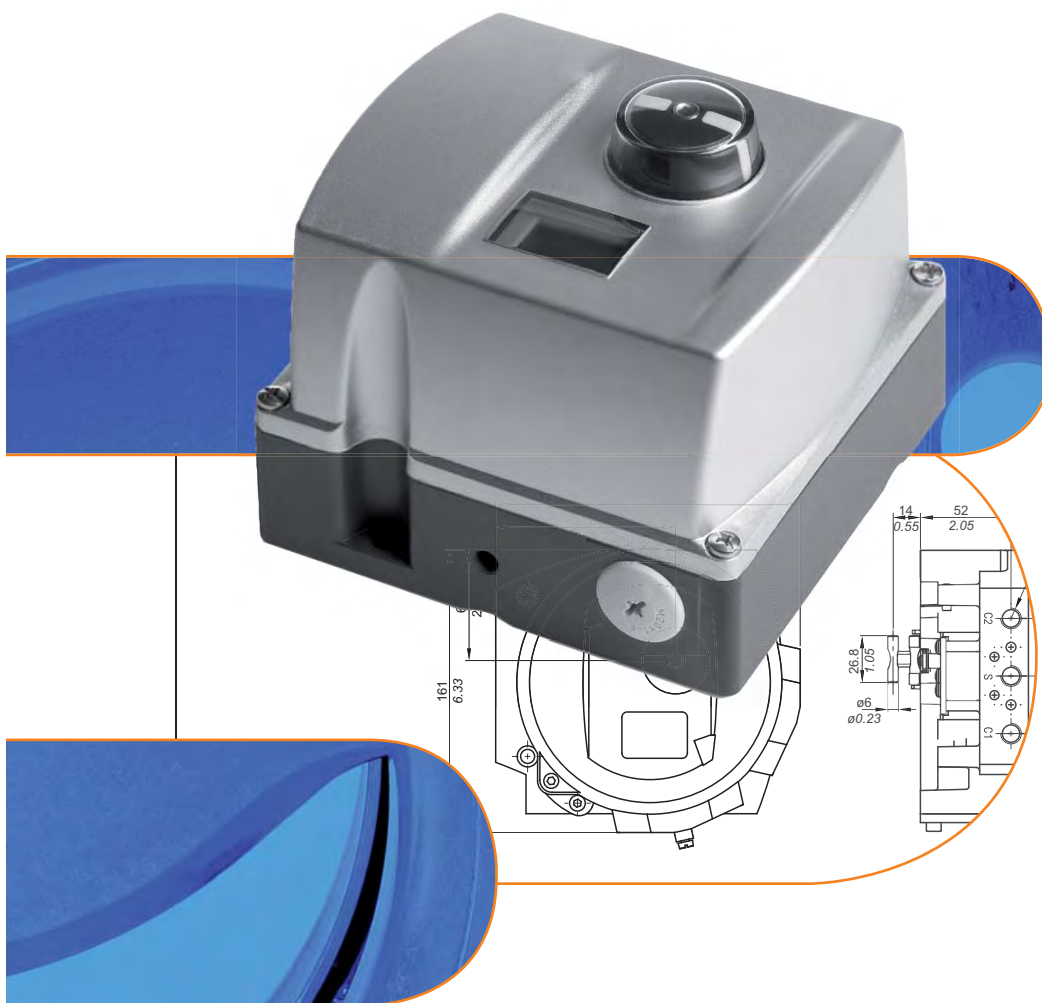
Order example

932 / 100 / 1 / M / F1

932	Disco check valve	Typ 930
100	Nominal diameter	100
1	Body	1.4408
	Disc	1.4436
	Spring	1.4436
M	Sea	metal seated



# Accessories



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## Accessories

Valve Controller	315
Switchguard	327
Limit switches	341
Inductive Sensors	341
• IG0005 – AC/DC normally open	341
• IG5401 – DC PNP normally open	342
Magnetic Sensors	343
• MK5100 – DC PNP, 3-wire	343
• MK5103 – DC PNP, 2-wire	345
• MK5158 – DC PNP, 3-wire	347
• MK5158 – DC PNP, 3-wire with connector	349
Limit Switch Box	351
Terminal Box	355
Solenoid Valves	359
• Standard Solenoid Valve, 5/2-way, G 1/4"	359
• Standard Solenoid Valve, 5/2-way, G 1/2"	360
• Standard Solenoid Valve, 3/2-way, G 1/4"	361
• Standard Solenoid Valve, 3/2-way, G 1/2"	362
• Namur Solenoid Valve, 5/2-way, G 1/4"	363
• Namur Solenoid Valve, 5/2-way, G 1/2"	364
• Namur Solenoid Valve, 3/2-way, G 1/4"	365
• Namur Solenoid Valve, 3/2-way, G 1/2"	366

## ND9000® INTELLIGENT VALVE CONTROLLER

ND9000 is a top class intelligent valve controller designed to operate on every control valve actuator and in all industry areas. It guarantees the end product quality in all operating conditions with unique diagnostics and incomparable performance features. ND9000 is a reliable and future-proof investment with FieldCare™ life-time support.



### Key Features

- Benchmark control performance on rotary and linear valves
- Reliable and robust design
- Easy commissioning and operation
- Language selection: English, German and French
- Local / remote operation
- Expandable architecture
- Advanced device diagnostics including
  - Self-diagnostics
  - Online diagnostics
  - Performance diagnostics
  - Communication diagnostics
  - Extended off-line tests
  - Intelligent Valve Diamond

### Options

- Interchangeable communication options:
  - HART
  - FOUNDATION fieldbus
  - Profibus PA
- Limit switches
- Position transmitter (in HART only)
- Full stainless steel enclosure
- Exhaust adapter

### Total cost of ownership

- Low energy and air consumption
- Future proof design allows further options at a reduced cost
- Optimized spares program minimizes spare part inventory

- Retro-fit to existing installations

### Minimised process variability

- Linearisation of the valve flow characteristics
- Excellent dynamic and static control performance
- Fast response to control signal change
- Accurate internal measurements

### Easy installation and configuration

- Same device can be used for linear and rotary valves, double and single-acting actuators
- Simple fast calibration and configuration
  - using Local User Interface (LUI)
  - using FieldCare software in a remote location
  - using Distributed Control System (DCS) asset management tools
- Flush mounting capability to avoid tubing and mounting parts
- Low power consumption enables installation to all common control systems

### Open solution

- Freely interface with software and hardware from a variety of manufacturers. This open architecture allows the ND9000 to be integrated with other field devices to give an unprecedented level of controllability.
- FDT and EDD based multi-vendor support configuration
- different drivers (gsd,DTM,DD,EDDL) available



## Technical Description

The ND9000 is a 4–20 mA or fieldbus powered microcontroller-based intelligent valve controller. The device contains a Local User Interface (LUI) enabling local configuration. A PC with FieldCare software can be connected to the ND9000 itself or to the control loop.

The powerful 32-bit microcontroller controls the valve position. The measurements include:

- Input signal
- Valve position with contactless sensor
- Actuator pressures, 2 independent measurements
- Supply pressure
- Spool valve position
- Device temperature

Advanced self-diagnostics guarantees that all measurements operate correctly. After connections of electric signal and pneumatic supply the microcontroller ( $\mu\text{C}$ ) reads the input signal, position sensor ( $\alpha$ ), pressure sensors (Ps, P1, P2) and spool position sensor (SPS). A difference between input signal and position sensor ( $\alpha$ ) measurement is detected by control algorithm inside the  $\mu\text{C}$ . The  $\mu\text{C}$  calculates a new value for prestage (PR) coil current based on the information from the input signal and from the sensors. Changed current to the PR changes the pilot pressure to the spool valve. Reduced pilot pressure moves the spool and the actuator pressures change accordingly. The spool opens the flow to the driving side of the double diaphragm actuator and opens the flow out from the other side of the actuator. The increasing pressure will move the diaphragm piston. The actuator and feedback shaft rotate. The position sensor ( $\alpha$ ), measures the rotation for the  $\mu\text{C}$ . The  $\mu\text{C}$  using control algorithm modulates the PR-current from the steady state value until a new position of the actuator according to the input signal is reached.

## Technical Specifications

### General

Loop powered, no external power supply required. Suitable for rotary and linear valves.

Actuator connections in accordance with VDI/VDE 3845 and IEC 60534-6 standards.

Flush mounting on selected actuators

Action: Double or single acting

Travel range: Linear; 10–120 mm / 0.4–4.7 in

Rotary: 55–95 degrees

Measurement range 110° with freely rotating feedback shaft.

### Environmental influence

Standard temperature range:

-40° – +85 °C / -40° – +185 °F

Influence of temperature on valve position:

0.5 % /10 °K

Influence of vibration on valve position:

< 1 % under 2g 5–150 Hz,

1g 150–300 Hz, 0.5g 300–2000 Hz

### Enclosure

Material: ND9100: Anodized aluminium alloy and polymer composite

ND9200: Anodised aluminium alloy and tempered glass

ND9300: Full 316 stainless steel

Protection class: IP66, NEMA 4x

Pneumatic ports: G 1/4 (ND9100)

1/4 NPT (ND9200 and ND9300)

Cable gland thread: M20x1.5 (ND9000 )

1/2 NPT ((ND9000E2, ND9000U1 and ND9000U2)

Weight: 1.8 kg / 4.0 lbs (ND9100)

3.4 kg / 7.5 lbs (ND9200)

8.6 kg / 19.0 lbs (ND9300)

Mechanical and digital position indicator visible through main cover, not applicable ND9200E2 and ND9300.

Special corrosion resistance design or stainless steel housing available as an option for demanding environment.



## Technical Data

### Pneumatics

Supply pressure: 1,4 – 8 bar

Effect of supply pressure on valve position:  
 < 0.1 % at 10 % difference in inlet pressure

Air quality: Acc. to ISO 8573-1  
 Solid particles: Class 5 (3 – 5 µm filtration is recommended)  
 Humidity: Class 1 (dew point 10 °C/ 18 °F below minimum temperature is recommended)  
 Oil class: 3 ( or < 1 ppm)

Capacity with 4 bar / 60 psi supply:  
 5,5 Nm<sup>3</sup>/h / 3.3 scfm (spool valve 2)  
 12 Nm<sup>3</sup>/h / 7.1 scfm (spool valve 3)  
 38 Nm<sup>3</sup> /h /22.4 scfm (spool valve 6)

Consumption with 4 bar / 60 psi supply in steady state positig:  
 < 0.6 Nm<sup>3</sup> /h/0.35 scfm (spool valve 2 & 3)  
 < 1.0 Nm<sup>3</sup> /h/0.6 scfm (spool valve 6)

### Electronics

#### HART

Supply power: Loop powered, 4–20 mA

Minimum signal: 3.6 mA

Current max : 120 mA

Load voltage: up to 9.5 VDC/20 mA  
 (corresponding 475 Ω)

Voltage: max. 30 VDC

Polarity protection: -30 VDC

Over current protection: active over 35 mA

### Profibus PA and FOUNDATION fieldbus

Supply power: voltage 9–32 VDC, reverse polarity protection

Max basic current 17.2 mA

Fault current (FDE) 3.9 mA

### FOUNDATION fieldbus function block execution times

AO	20 ms
PID	25 ms
DO	15 ms
DI	15 ms
IS	15 ms
OS	20 ms

### Performance with moderate constant-load actuators EC05-EC10 in ambient temperature

TDead band acc. to IEC 61514: ≤ 0.1 %

Hysteresis acc. to IEC 61514: < 0.5 %

### Local User Interface (LUI) functions

- Local control of the valve
- Monitoring of valve position, target position, input signal, temperature, supply and actuator pressure difference
- Guided-startup function
- LUI may be locked remotely to prevent unauthorised access
- Calibration: Automatic / Manual linearization
- 1-point calibration
- Control configuration: aggressive, fast, optimum, stable, maximum stability
- Configuration of the control valve
  - Rotation: valve rotation clockwise or counter-clockwise to close
  - Dead Angle
  - Low cut-off, cut-off safety range (default 2 %)
  - Positioner fail action, open/close
  - Signal direction: Direct/reverse acting
  - Actuator type, double/single acting
  - Valve type, rotary/linear
  - Language selection: English, German and French

### Position transmitter (optional)

Output signal: 4 – 20 mA (galvanic isolation; 600 VDC)

Supply voltage: 12 – 30 V VDC

Resolution: 16 bit / 0,244 µA

Linearity: < 0,05 % FS

Temperature effect: < 0,35 % FS

External load: max. 0 – 780 Ω  
 max. 0 – 690 Ω for intrinsically safe

Ex ia IIC T6 U<sub>i</sub> ≤ 28 V

Ex d IIC T4/T5/T6 U<sub>i</sub> ≤ 30 V

Technical Data

**PROXIMITY SENSORS AND LIMIT SWITCHES  
(OPTIONAL WITH EXTENSION MODULE FOR ND9100 & ND9200)**

Code I02 P+F NJ2-12GK-SN, 2 sensors  
 Code I09 P+F; NCB2-12GM35-N0  
 Code I56 IFC 2002-ARKG/UP, 2 sensors  
 Code K05 Omron D2VW-5, micro switch, 2 sensors  
 Code K06 Omron D2VW-01 gold plated, micro switch  
 Code B06 Omron D2VW-01 gold plated, micro switch, 2 sensors.  
 (Bus powered, no external power and cabling needed).



Fig. 1. Local User Interface (LUI) enables real time awareness of control parameters in the device at a glance.

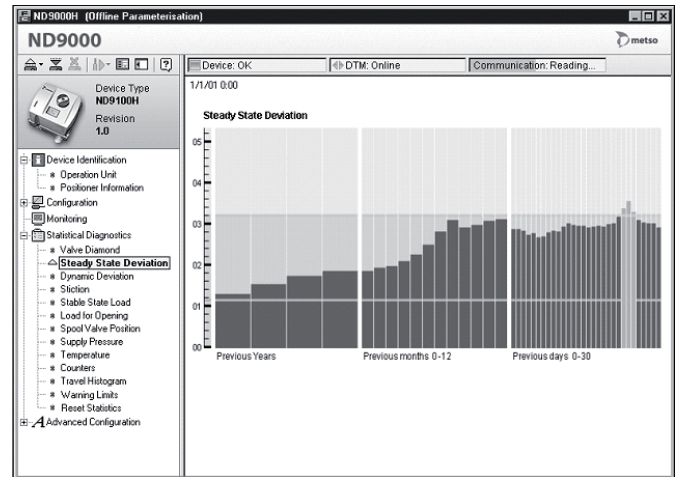
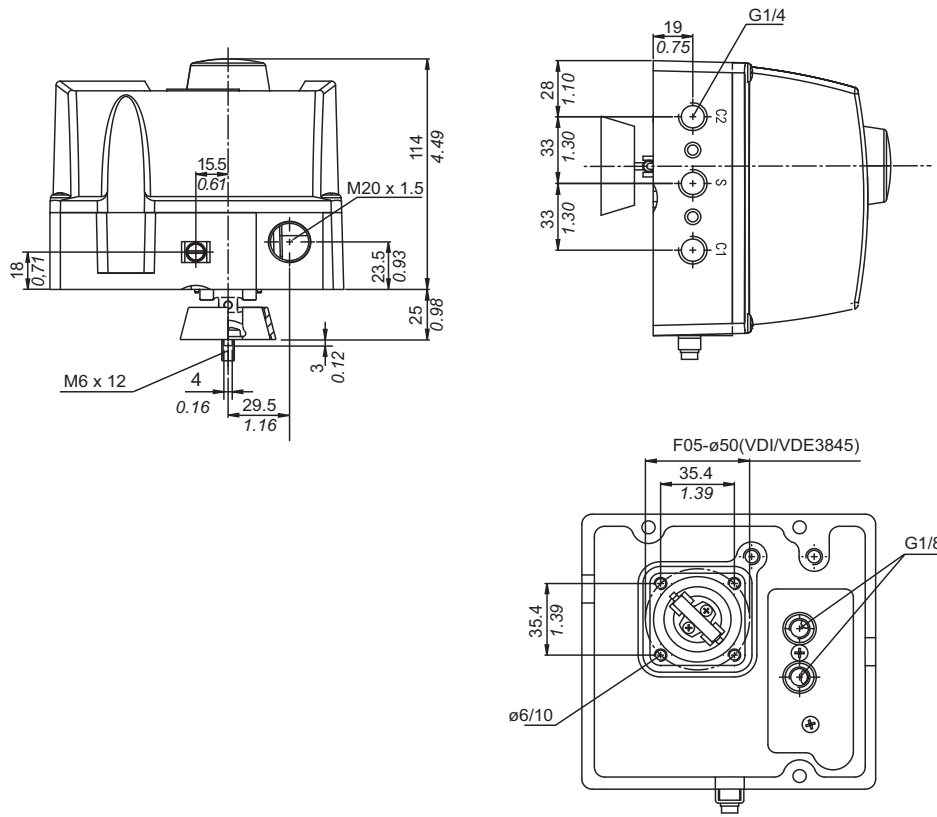


Fig. 2. Trend collection enables fast and easy predictive maintenance. The need for maintenance is reduced and increased plant and process availability are realised.

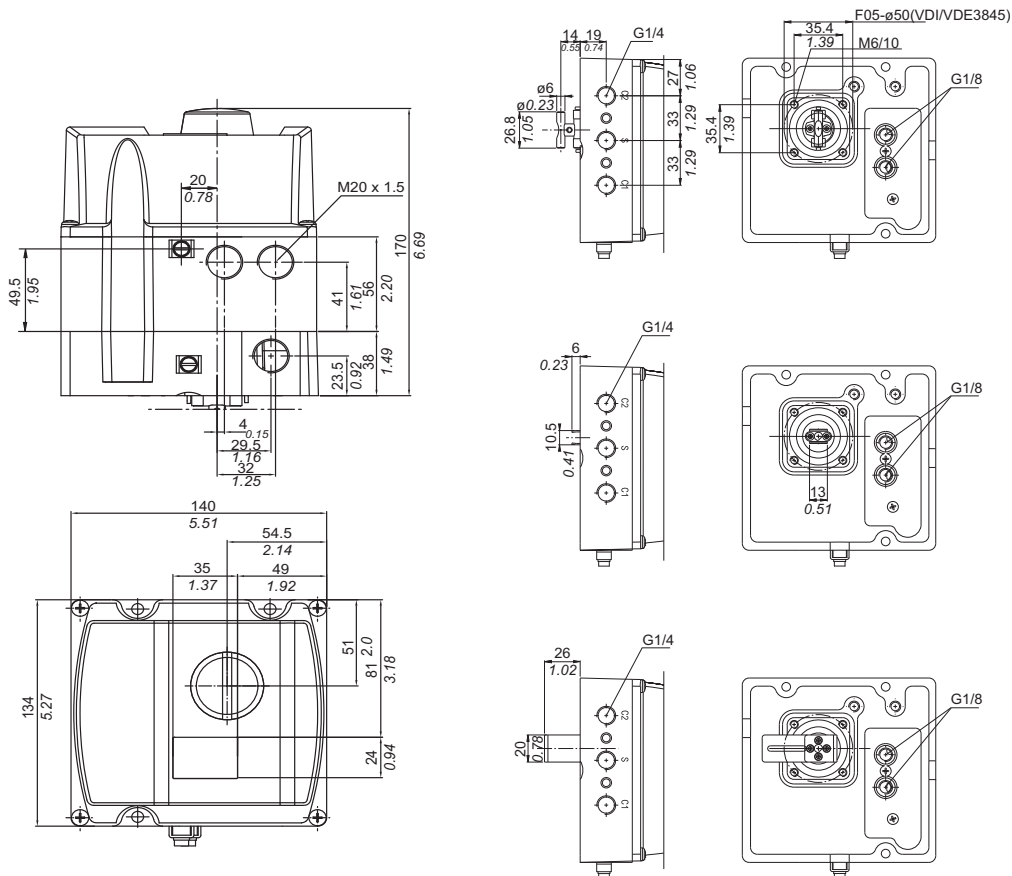


Dimensions

ND9100

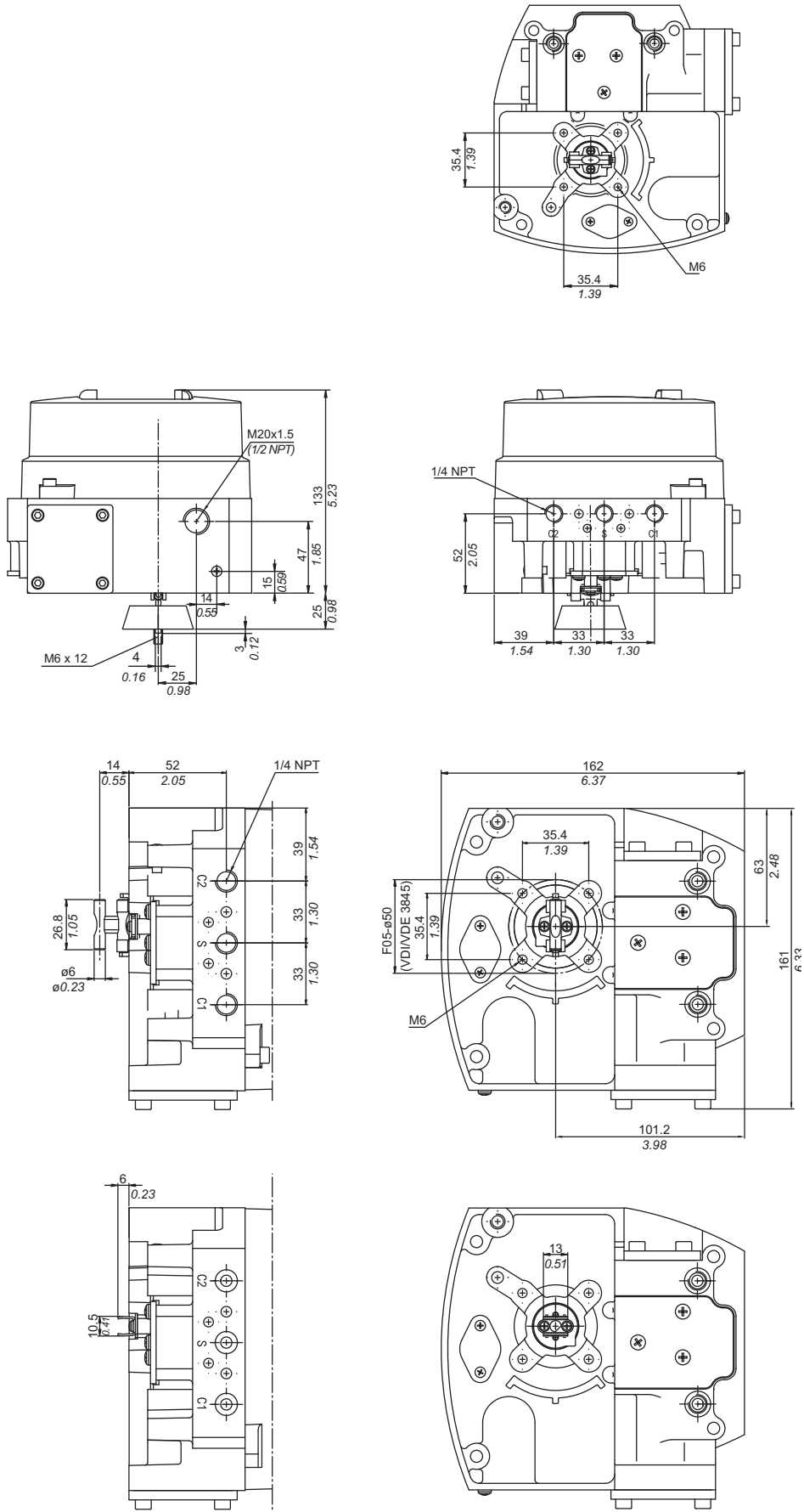


ND9100/I, ND9100/K and ND9100/B



Dimensions

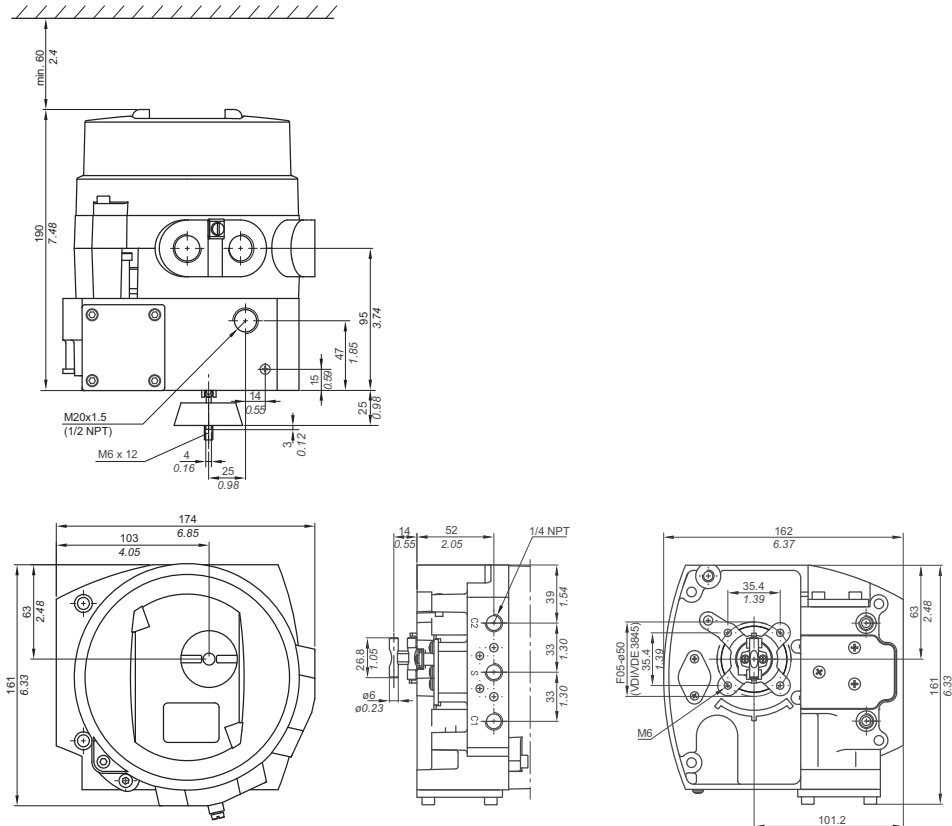
ND9200



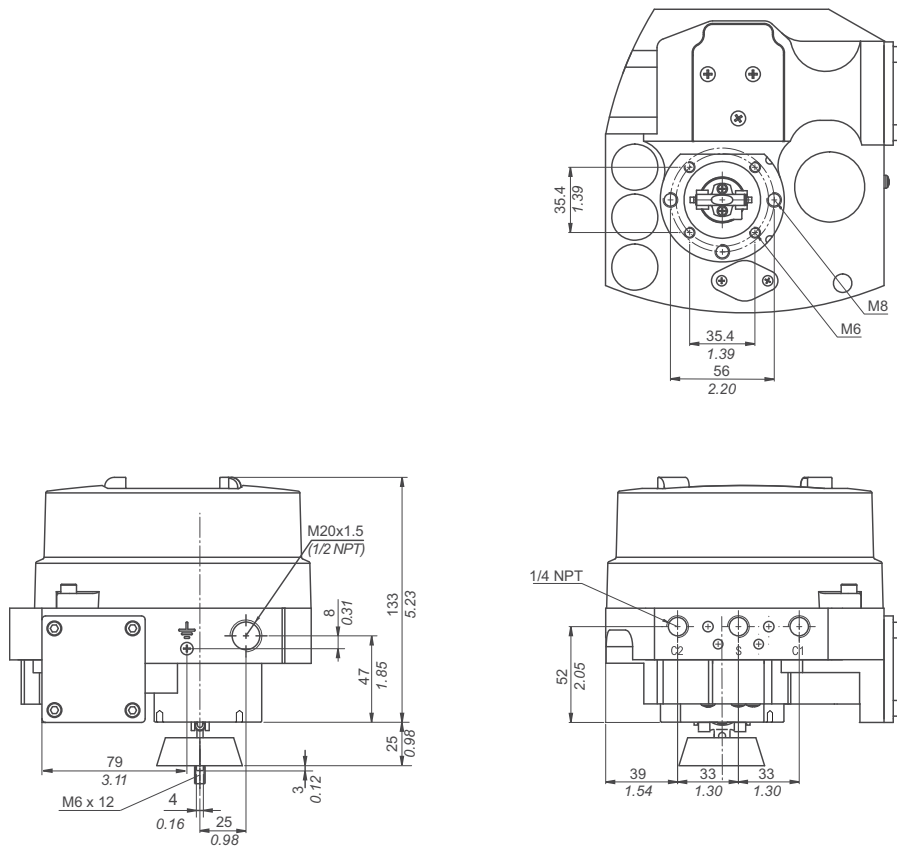
ND9200

Dimensions

ND9200/I, ND9200/K, ND9200/B



ND9300





## How to Order

1.	2.	3.	4.	5.	6.	7.	8.	9.
ND	9	10	3	H	X1	T		

1. product group	
ND	Intelligent valve controller
2. series code	
9	Series 9000 intelligent valve controller with universal shaft and attachment face according to standard VDI/VDE 3845, EC/EJ actuators and old Neles standard. Relevant shaft adapter included in mounting kits. When valve positioners are separate deliveries, shaft adapter kit is supplied.
3. enclosure	
10	Standard IP66 /NEMA 4X enclosure
20	Flameproof (Ex d) IP66 / NEMA 4X enclosure
30	Stainless steel flameproof (Ex d) IP66 / NEMA 4X enclosure
4. spool valve	connections (S, C1, C2)
2	Low capacity: stroke volume of actuator < 1 dm <sup>3</sup>
3	Medium capacity: stroke volume of actuator 1-3 dm <sup>3</sup>
6	High capacity: stroke volume of actuator > 3 dm <sup>3</sup>
G 1/4 (ND9100 series) 1/4 NPT (ND9200 and ND9300 series)	
5. communication / input signal range	
H	4-20 mA, HART communication Supply voltage 30 V DC. Load voltage: up to 9.5 V DC at 20 mA; corresponding to 475 W (maximum voltage drop).
F	FOUNDATION fieldbus, Physical layer according to IEC 61158-2.
P	Profibus PA, Physical layer according to IEC 61158-2.
6. approvals of standard enclosure valve controller	
N	No approvals for hazardous areas. M20x1.5 conduit entry. Not applicable to 3. sign „20“. Temperature range -40 to +85° C / -40 to +185° F.
X1	ATEX and IECEx certifications: II 1 G Ex ia IIC T4/T5/T6 Ga II 1 D Ex tD A20 IP66 T90°C Not applicable to 3. sign „20“. M 20x1.5 conduit entry. Not available with the limit switches (8. sign „I“ or „K“). Temperature range: T4: -40 to +80° C / -40 to +185° F; T5: < +65° C / < +149° F; T6: < +50° C / < 122° F. ND91_HX1 und ND93_HX1: Ui <= 28 V, li <= 120 mA, Pi <= 1 W, Ci <= 22 nF, Li <= 53 µH. ND91_FX1, ND91_PX1, ND93_FX1 und DN93_PX1: Ui <= 24 V, li <= 380 mA, Pi <= 5.32 W, Ci <= 5 nF, Li <= 10 µH.
X2	ATEX and IECEx certifications: II 2 G Ex ia IIC T4/T5/T6 Gb II 2 D Ex tD A21 IP66 T90°C Not applicable to 3. sign „20“. ND91_HX2: Ui <= 28 V, li <= 120 mA, Pi <= 1 W, Ci <= 22 nF, Li <= 53 µH. M 20x1.5 conduit entry. Temperature range: T4: -40 to +80° C / -40 to +185° F; T5: < +65° C / < +149° F; T6: < +50° C / < 122° F. Only available with ATEX certified inductive limit switches (e.g. I02, I09). Without limit switches and with B_ switches, use X1 instead.
X3	ATEX and IECEx certifications: II 3 G Ex nA IIC T4/T5/T6 II 3 D Ex tD A22 IP66 T90°C No Zener Barrier needed. Not applicable to 3. sign „20“. Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F. M20x1.5 conduit entry. ND91_HX3 und ND93_HX3: Ui <= 30 V, li <= 152 mA, Pmax = device limits itself, Ci <= 22 nF, Li <= 53 µH. ND91_FX3, ND91_PX3, ND93_FX3 und ND93_PX3: Ui <= 24 V, Ci <= 5 nF, Li <= 10 µH.

6. approvals of standard enclosure valve controller	
X4	ATEX and IECEx certifications: II 3 G Ex nL IIC T4/T5/T6 Gc II 3 D Ex tD A22 IP66 T90°C FNICO model Not applicable to 3. sign „20“. ND91_FX4 and ND91_PX4, ND93_FX4 and ND93_PX4: Ui <= 32 V, li <= 380 mA, Pi <= 5.32 W, Ci <= 5 nF, Li <= 10 µH. M20x1.5 conduit entry. Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F.
U1	FM and CSA certifications: IS Class I, Division 1, Groups A, B, C, D, T4...T6 IS Class I, Zone 0, AEx ia, IIC T4...T6 Not applicable to 3. sign „20“. Temperature range: T4: -40 to +80° C / -40 to +176° F; T5: < +65° C / < +149° F; T6: < +50° C / < +122° F. 1/2 NPT conduit entry. Not available with the limit switches (8. sign „I“ or „K“). ND91_HU1 and ND93_HU1: Ui <= 28 V, li <= 120 mA, Pi <= 1W, Ci <= 22 nF, Li <= 53 µH. ND91_FU1, ND91_PU1, ND93_FU1 and ND93_PU1: Ui <= 24 V, li <= 380 mA, Pi <= 5.32 W, Ci <= 5 nF, Li <= 10 µH. Not available with any limit switches (8. sign „I“, „K“ or „B“).
U2	FM and CSA certifications: NI Class I, Division 2, Groups A, B, C, D, T4...T6 NI Class I, Zone 2, Ex nA IIC T4...T6 No Zener Barrier needed. Not applicable to 3. sign „20“. 1/2 NPT conduit entry. ND91_HU2 and ND93_HU2: Ui <= 30 V, Pmax = device limits itself, Ci <= 22 nF, Li <= 53 µH. external load resistance 0-780 Ohm. Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +70° C / < +158° F; T6: < +55° C / < +131° F. Not available with the limit switches (8. sign „I“ or „K“). ND91_FU2, ND91_PU2, ND93_FU2 und ND93_PU2: Ui <= 24 V, li <= 380 mA, Pi <= 5.32 W, Ci <= 5 nF, Li <= 10 µH. Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F. Not available with any limit switches (8. sign „I“, „K“ or „B“).
Z1	INMETRO certifications: BR-Ex ia IIC T4/T5/T6 IP66 Not applicable to 3. sign „20“. Approved for Zone 0. M20x1.5 conduit entry. Temperature range: T4: -40 to +80° C / -40 to +176° F; T5: < +65° C / < +149° F; T6: < +50° C / < +122° F. Not available with the limit switches (8. sign „I“ or „K“). ND91_HZ1 and ND93_HZ1: Ui <= 28 V, li <= 120 mA, Pi <= 1 W, Ci <= 22 nF, Li <= 53 µH. ND91_FZ1, ND91_PZ1, ND93_FZ1 and ND93_PZ1: Ui <= 24 V, li <= 380 mA, Pi <= 5.32 W, Ci <= 5 nF, Li <= 10 µH.
Z2	INMETRO certifications: BR-Ex ia IIC T4/T5/T6 IP66 Not applicable to 3. sign „20“. Approved for Zone 1. M20x1.5 conduit entry. Temperature range: T4: -40 to +80° C / -40 to +176° F; T5: < +65° C / < +149° F; T6: < +50° C / < +122° F. ND91_HZ2 and ND93_HZ2: Ui <= 28 V, li <= 120 mA, Pi <= 1 W, Ci <= 22 nF, Li <= 53 µH. ND91_FZ2, ND91_PZ2, ND93_FZ2 and ND93_PZ2: Ui <= 24 V, li <= 380 mA, Pi <= 5.32 W, Ci <= 5 nF, Li <= 10 µH. Only available with ATEX certified inductive limit switches (e.g. I02, I09). Without limit switches and with B_ switches, use Z1 instead.

How to Order

6. approvals of standard enclosure valve controller	
Z3	INMETRO certifications: BR-Ex nA II / nL IIC T4/T5/T6 IP66 Not applicable to 3. sign „20“. Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F. M20x1.5 conduit entry. ND91_HZ3 and ND93_HZ3: Ui <= 30 V, Pmax = device limits itself, Ci <= 22 nF, Li <= 53 µH. ND91_FZ3, ND91_PZ3, ND93_FZ3 and ND93_PZ3: Ui <= 24 V, Ci <= 5 nF, Li <= 10 µH.
E1	Flameproof enclosure, M20x1.5 conduit entry. ATEX and IECEx certifications: II 2 G Ex d IIC T4...T6 II 2 D Ex tD A21 IP66 T100°C Not applicable to 3. sign „10“. Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F. ND92_HE1 and ND93_HE1: Ui <= 30 V ND92_FE1, ND92_PE1, ND93_FE1 and ND93_PE1: Ui <= 32 V
E2	Flameproof enclosure, 1/2 NPT conduit entry. Temperatur range: -40 to +85° C / -40 to +185° F FM certification: Class I, Div 1. Groups A, B, C, D. Class II, Div 1, Groups E, F, G. Class III T4/T5/T6 Class I, Zone 1, AEx d IIC, T4/T5/T6, IP66/Type 4X CSA certification: Class I, Div 1. Guppen B, C, D. Class II, Div 1, Gruppen E, F, G, Class III T4/T5/T6 Ex d IIC T4/T5/T6, DIP A21, Ta 100°C, IP66/NEMA 4X Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F. Applicable to 3. sign „20“ only. ND92_HE2: Ui <= 30 V ND92_FE2 und ND92_PE2: Ui <= 32 V
E4	Flameproof enclosure, M20x1.5 or 1/2 NPT conduit entry. Temperature range: T6: -20 to +60° C / -4 to +140° F TIIS (JIS) certifications: Ex d II C T6 Applicable to 3. sign „20“ only. Applicable to 5. sign „H“ only. Not available with any limit switches (8. sign „I“ or „K“). Not available with option „M“ (7. sign). Deliverd always with TIIS (JIS) approved cable gland and conduit entry nipple (accessory CG42 or CG41), see type code from Accfes-sories for Positioners item 10: CG42: G 1/2 conduit entry and cable entry adapter CG41: 1/2 NPT conduit entry and cable entry adapter ND92_HE4: <= 30 V
E5	Flameproof enclosure, M20x1.5 NPT conduit entry. Temperature range: -40 to +85° C / -40 to +185° F INMETRO certification: BR-Ex d IIC, T4/T5/T6, IP 66 Temperature range: T4: -40 to +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F. Not applicable to 3. sign „10“. ND92_HE5, ND93_HE5: Ui <= 30 V ND92_FE5, ND92_PE5, ND93_FE5, ND93_PE5: Ui <= 32 V

7. options for valve controller	
T	ND9_H_T only: internal 2-wire (passiv) position transmitter. Analog position feedback signal, output 4-20 mA, supply voltage 12-30 VDC, external load resistance 0-780 Ohm. ND91_HX1T, ND91_HX2T, ND91_HZ1T, ND93_HX1T, ND93_HX2T, ND_93_HZ1T: Ui < 28 V, Ii < 120 mA, Pi < 1W, Li = 53 µH, Ci = 22 nF, external load resistance 0-690 Ohm. ND91_HX2T, ND91_HX4T, ND91_HZ3T, ND93_HX3T, ND93_HX4T, ND93_HZ3T: Ui < 30 V, Pmax = device limits itself, Li = 53 µH, Ci = 22 nF, Ii = 152 mA, external load resistance 0-780 Ohm. ND91_HU1T and ND93_HU1T: Ui <= 28 V, Ii < 120 mA, Pi < 1W, Li = 53 µH, Ci = 22 nF, external load resistance 0-690 Ohm. ND91_HU2T and ND93_HU2T: Ui <= 30 V, Pmax = device limits itself, Li = 53 µH, Ci = 22 nF, external load resistance 0-780 Ohm. ND92_HE1T, ND93_HE5T, ND93_HE1T, ND93_HE5T: Ui <= 30 V, Pmax = device limits itself, external load resistance 0-780 Ohm. ND92_HE2T: Ui <= 30 V, Pmax = device limits itself, external load resistance 0-780 Ohm.
M	Special corrosion resistant finish. External aluminium surfaces protected by hard anodizing with PTFE. Coating thickness 20 µm. Not painted. Not available with 7. sign „G“. Not applicable to 3. sign „30“. Not applicable to 6. sign „E4“.
G	Exhaust adapter. ND9100: 1x 1/2 NPT thread; ND9200 and ND9300: 2x 1/2 NPT threads. Not available with 7. sign „M“.
X	Special construction, to be specified.
8. limit switch type Not applicable to 3. sign „30“.	
Inductive proximity switches, 2 pcs. IP66/NEMA 4X enclosure. M20x1.5 conduit entry (2 pcs.). Option E2: 1/2 NPT conduit entry (2 pcs.).	
I02	P+F; NJ2-12GK-SN, 2-wire type, DC; > 3 mA; < 1 mA. Intrinsically safe according to ATEX II 2 G Ex ia IIC T6. Temperatur range: -40 to +85° C / -40 to +185° F. Option of valve controller shall always be X2, X3 or X4, Z2 or Z3, E1, E2 or E6 (6. sign). Not applicable to 6. sign „X1“, „Z1“, „U1“, „U2“ and „E4“.
I09	P+F; NCB2-12GM35-N0, 2-wire type, DC; > 3 mA; < 1 mA. Intrinsically safe according to ATEX II 2 G Ex ia IIC T6. Temperature range: -25 to +85° C / -13 to +185° F. Option of valve controller shall always be X2, X3 or X4, Z2 or Z3, E1, E2 or E6 (6. sign). Not applicable to 6. sign „X1“, „Z1“, „U1“ and „U2“.
I56	ifm IF2002-ARKG/UP, 2-wire type, DC; 150 mA, 10-36 V DC, leakage current < 0,6 mA. Temperature range: -20 to +80° C / -4 to +176° F. Not applicable to 6. sign „X1“, „X2“, „X3“, „X4“, „Z1“, „Z2“, „Z3“, „U1“ and „U2“.
Mechanical micro switches, 2 Stk. IP66/NEMA 4X enclosure. M20x1.5 conduit entry (2 pcs.). Option E2: 1/2 NPT conduit entry (2 pcs.).	
K05	OMRON D2VW-5; 3 A - 250 V AC, 0.4 A - 125 V DC, 5 A - 30 V DC. Temperature range: -40 to +80° C / -40 to +176° F. Not applicable to 6. sign „X1“, „X2“, „X3“, „X4“, „Z1“, „Z2“, „Z3“, „U1“ and „U2“.
K06	OMRON D2VW-01; gold plated contacts, 100 mA - 30 V DC / 125 V AC. Temperature range: -40 to +80° C / -40 to +176° F. Not applicable to 6. sign „X1“, „X2“, „X3“, „X4“, „Z1“, „Z2“, „Z3“, „U1“ and „U2“.
Bus-powered mechanical micro switches, 2 Stk. Appicabel with ND9000F and ND9000P only. IP66/NEMA 4X enclosure. M20x1.5 conduit entry (2 pcs.). Option E2: 1/2 NPT conduit entry (2 pcs.).	
B06	OMRON D2VW-01, vgold plated contacts; Bus-powered, no external power needed. Temperature range: -40 to +80° C / -40 to +176° F. Not applicable to 6. sign „U1“ and „U2“.
9. Optionen Endschalter	
Y	Special construction, to be specified.

## How to Order

filter regulator	
K	Filter regulator for supply air. Filter size 5 µm. Pressure gauge, Scale bar/psi/kPa, basic material brass, nickel plated, housing stainless steel, glycerine filled. Temperature range: T4: -40 to +82° C / -40 to +180° F. „K“ option includes a thread nipple 1/4“ NPT to 1/4“ NPT which is suitable with ND9000 positioner options A3 and A5 (1/4 NPT air connection).
K1	Filter regulator for supply air. Filter size 5 µm. Pressure gauge, Scale bar/psi/kPa, basic material brass, nickel plated, housing stainless steel, glycerine filled. Temperature range: T4: -40 to +82° C / -40 to +180° F. „K1“ option includes a thread nipple 1/4“ NPT to G 1/4“ NPT which is suitable with ND9100 positioner options A1 (1/4 NPT air connection).
conduit entry nipples	
CE07	1/2 NPT conduit entry nipples M20x1.5 / 1/2 NPT (ND9100)
CE08	R1/2 (PF 1/2) conduit entry nipples M20x1.5 / R1/2 (ND9100)
CE09	1/2 NPT conduit entry nipples Brass M20x1.5 / 1/2 NPT, Exd approved (ND9100 and ND9200)
CE07	1/2 NPT conduit entry nipples stainless steel M20x1.5 / 1/2 NPT, Exd approved (ND9300)
cable glands	
NHot to be used together with conduit entry nipples (CE_) or connection plugs (P_).	
CG5	M20x1.5 grey/plastic, IP66
CG6	M20x1.5 blue/plastic, IP66, Ex e
CG42	G 1/2 conduit entry and cable entry adapter, JIS approved (ND9200H)
CG41	1/2 NPT conduit entry and cable entry adapter, JIS approved (ND9200H)
pressure gauges and connection blocks	
A1	Pressure gauge, scale bar/psi/kPa, basic material brass, housing nickel plated stainless steel, glycerine filled. Connections G 1/4 (S, C1, C2). Temperature range: T4: -40 to +85° C / -40 to +185° F.
A3	Pressure gauge, scale bar/psi/kPa, basic material brass, housing nickel plated stainless steel, glycerine filled. Connections 1/4 NPT (S, C1, C2). Temperature range: T4: -40 to +85° C / -40 to +185° F.
A5	Pneumatic connection block. Material AlSiMg, anidized grey. Connections 1/4 NPT (S, C1, C2). Temperature range: T4: -40 to +85° C / -40 to +185° F. Only for ND9100.
A6	Pressure gauges with connections G 1/4. Material AISI 316. Only for ND9300.
A7	Pressure gauges with connections 1/4 NPT. Material AISI 316. Only for ND9300.

connection plugs	
Not to be used together with conduit entry nipples (CE_) or cableglands (CG_).	
P1H	ND9100H, SG9200H (HART): connection plug according to M20x1.5 / DIN 43650A (ISO 4400). Not applicabel with 5. sign „F“ and „P“.
P4H	Valve controller and limit switch with connection plugs (1 + 1 pcs.) ND9100H, SG9200HN (HART): M20x1.5 / DIN 43650A (ISO 4400). ND9100/K00, SG92_HN/K2_ or 2-wire ND9100/100 or SG92_HN/I_ limit switches only: male M20x1.5 /M12. Not applicabel with 5. sign „F“ and „P“.
P2F	ND9100F and ND9100F/B06 (Foundation Fieldbus): connection plug male eurofast, Turck FSV49, M20x1.5 / M12. Not applicabel with 5. sign „H“ and „P“.
P3F	ND9100F and ND9100F/B06 (Foundation Fieldbus): connection plug male minifast, Turck RSFV49, M20x1.5 / 7/8“. Not applicabel with 5. sign „H“ and „P“.
P2P	ND9100P and ND9100P/B06 (Profibus PA): connection plug male, Weidmüller 842593, M20x1.5 / M12. Not applicabel with 5. sign „H“ and „P“.
P3P	ND9100P and ND9100P/B06 (Profibus PA): connection plug male minifast, Turck RSFV48, M20x1.5 / 7/8“. Not applicabel with 5. sign „H“ and „P“.



## SWITCHGUARD™ INTELLIGENT ON/OFF VALVE CONTROLLER

SwitchGuard™ SG9000 is a top class intelligent on/off valve controller designed to operate on any valve actuator. Unique embedded diagnostic features are integrated into its design and enables users to guarantee the availability of their switching valves in demanding processes. SwitchGuard can be easily fitted to the actuator and its controlled pneumatic capacity replaces any solenoid valve providing a simple, reliable interface with the process control system. Diagnostic information is presented in an easily understandable way using FDT technology, such as FieldCare™, to enable planned maintenance of potentially failing valve assemblies before they have a chance to impact on the process.



### Key Features

- Reliable and robust design
- The rugged cover protects the unit from environmental hazards and external abuse
- Ease of use
- Language selection: English, German and French
- Local / remote operation
- Expandable architecture
- Advanced device diagnostics including
  - Self-diagnostics
  - Online diagnostics
  - Performance diagnostics
- Speed control for switching
- HART communication

### Options

- Full stainless steel enclosure (SG9300)
- High pneumatic capacity (SG9200)
- Integrated limit switches
- Position transmitter
- U/I converter to support binary control

### Total cost of ownership

- Low energy and air consumption
- Future proof design allows further options at a reduced cost
- Optimised spares program. Reduced number of spares



### Designed to switch

- Several pre-selected opening and closing profiles
  - Opening and closing can be configured separately
  - Minimised pressure impacts in piping
- Excellent speed control performance
- Highly reliable pneumatics unit
- Wide pneumatics capacity

### Easy installation and configuration

- Same unit for linear and rotary valves, double and single-acting actuators
- Simple calibration and configuration
  - Using Local User Interface (LUI)
  - Using FieldCare software in a remote location
- Low power design enables installation to all common control systems

### Open solution

- Freely interface with software and hardware from a variety of manufacturers. This open architecture allows the SwitchGuard to be integrated with other field devices and systems.
- FDT and EDD based multi-vendor support configuration



### Easy to maintain

- Modular design with maintenance components
- Alterable pneumatics module
- Fewer maintainable components than in a traditional instrumentation solution
- Visibility of the whole valve package

### Mounting

- Can be mounted on single and double acting pneumatic actuators
- Can be mounted on both rotary and linear valves
- Extensive selection of mounting kits for 3rd party actuators

### Product reliability

- Designed to operate in harsh environmental conditions
  - Rugged modular design
  - Excellent temperature characteristics
  - Vibration and impact tolerant
  - IP66 enclosure
  - Full stainless steel enclosure (SG9300)
  - Protected against humidity
- Maintenance free operation
  - Resistant to dirty air
  - Wear resistant and sealed components
  - Contactless position measurement

### Predictive maintenance

- Easy access to collected data with FieldCare software
- Logical trend collection
- Information collected on service conditions
- Fast notifications with on-line alarms
- Condition monitoring tool available

### TECHNICAL DESCRIPTION

The SwitchGuard is a 4–20 mA loop-powered micro-controller-based intelligent on/off valve controller. Binary 24 VDC signal can be used via optional U/I converter. The Switch-Guard operates even at 3.6 mA input signal and communicates via HART. The device contains a Local User Interface enabling local configuration. A PC with FieldCare software can be connected to the SwitchGuard itself or to the control loop.

The powerful 32-bit microcontroller controls the valve position.

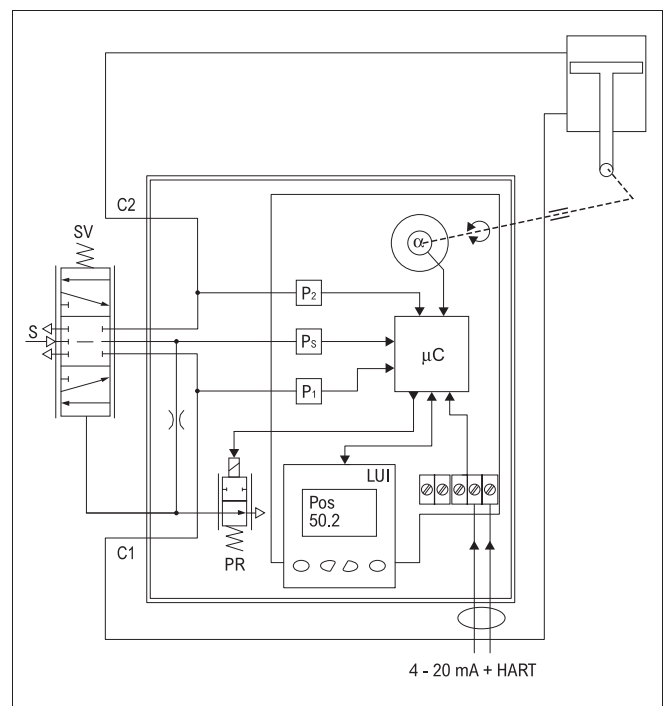
The measurements include:

- Input signal
- Valve position with contactless sensor
- Actuator pressures, 2 independent measurements
- Supply pressure
- Device temperature

Advanced self-diagnostics guarantees that all measurements

operate correctly. Failure of one measurement does not cause the valve to fail if the input signal and position measurements are operating correctly. After connections of electric signal and pneumatic supply the micro controller ( $\mu C$ ) reads the input signal, position sensor ( $\alpha$ ), and pressure sensors ( $P_s$ ,  $P_1$ ,  $P_2$ ). A difference between setpoint according to stroke curve and position sensor ( $\alpha$ ) measurement is detected by the control algorithm inside the  $\mu C$ . The  $\mu C$  calculates a new value for prestage ( $PR$ ) coil current based on this information.

Changed current to the  $PR$  changes the pilot pressure to the spool valve. Reduced pilot pressure moves the spool and the actuator pressures change accordingly. The spool opens the flow to the driving side of the double diaphragm actuator and opens the flow out from the other side of the actuator. The increasing pressure will move the diaphragm piston. The actuator and feedback shaft rotate clockwise.



## Technical Data

### General

Loop powered, no external power supply required. Suitable for rotary and linear valves. Actuator connections in accordance with VDI/VDE 3845 and IEC 60534-6 standards.

Action: Double or single acting  
 Travel range: Linear: 10–120 mm  
 Rotary: 45–95°  
 Measurement range 110° with freely rotating feedback shaft

### Environmental influence

Standard temperature range:  
 -20° – +85 °C / -4° – +185 °F  
 Optional temperature range:  
 -40° – +60 °C / -40° – +140 °F

### Enclosure

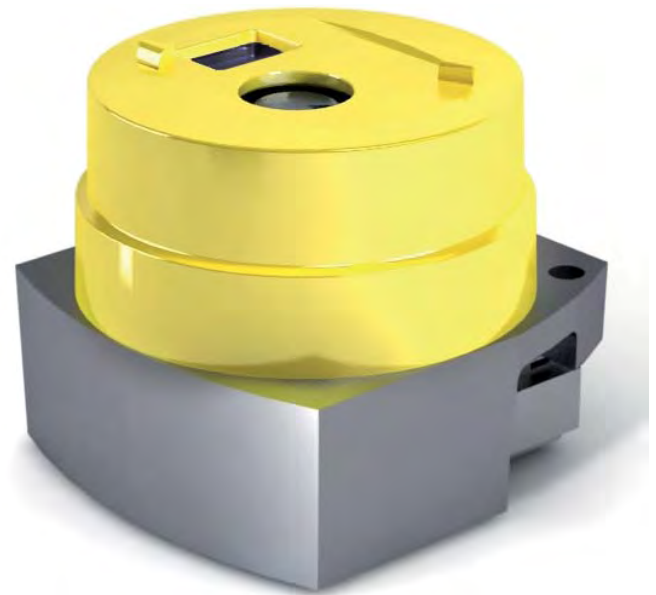
Material: Anodised aluminium alloy and glass window  
 Protection class: IP66, NEMA 4X  
 Pneumatic ports: SG921\_ 1/4 NPT  
 SG9235 1/2 NPT  
 SG9237 1 NPT (1/2 NPT supply)  
 Conduit entry thread: M20 x 1.5  
 Weight: SG921\_ 3.0 kg / 6.6 lbs  
 SG9235 4.6 kg / 10.1 lbs  
 SG9237 5.0 kg / 11 lbs  
 Limit switches +1.0 kg / 2.2 lbs  
 Mechanical and digital position indicator visible through the main cover.

### Pneumatics

Supply pressure: 3–8 bar / 44–116 psi  
 Air quality: According to ISO 8573-1:2001  
 Solid particles: Class 7  
 Humidity: Class 1  
 (dew point 10 ° C/50 °F below minimum temperature is recommended)  
 Oil class: 3 (or <1 ppm)

Capacity with 4 bar / 60 psi supply:  
 SG9212 7 Nm<sup>3</sup>/h / 4.1 scfm (Cv = 0,06)  
 SG9215 90 Nm<sup>3</sup>/h / 53 scfm (Cv = 0,7)  
 SG9235 380 Nm<sup>3</sup>/h / 223 scfm (Cv = 3,2)  
 SG9237 feed 380 Nm<sup>3</sup>/h / 223 scfm  
 (Cv = 3,2)  
 exhaust 700 Nm<sup>3</sup>/h / 412 scfm  
 (Cv = 6,4)

Consumption with 4 bar / 60 psi supply:  
 actuator pressurized 0.22 Nm<sup>3</sup>/h / 1.13 scfm,  
 actuator vented 0.25 Nm<sup>3</sup>/h / 1.14 scfm



### Electronics

Electrical connection: max. 2.5 mm<sup>2</sup>  
 HART  
 Supply power: Loop powered, 4-20 mA  
 Minimum signal: 3.6 mA  
 Current max : 23 mA  
 Load voltage: up to 9.5 V DC / 20 mA  
 (corresponding 475 Ω)  
 Voltage: max. 30 V DC  
 Polarity protection: -30 V DC  
 Over current protection: active over 35 mA  
 Max power dissipation: 1.05 W  
 with position transmitter 1.74 W

Ex d IIC T5/T6: U<sub>i</sub> ≤ 30 V  
 P<sub>i</sub> ≤ 1080 mW

Ex ia IIC T4/T5/T6: U<sub>i</sub> ≤ 28 V  
 I<sub>i</sub> ≤ 120 mA  
 P<sub>i</sub> ≤ 1 W  
 C<sub>i</sub> ≤ 22 nF  
 L<sub>i</sub> ≤ 53 μH

Ex nA IIC T4/T5/T6: U<sub>i</sub> ≤ 30 V  
 I<sub>i</sub> ≤ 152 mA

Ex nL IIC T4/T5/T6: U<sub>i</sub> ≤ 28 V  
 I<sub>i</sub> ≤ 152 mA  
 C<sub>i</sub> ≤ 22 nF  
 L<sub>i</sub> ≤ 53 uH

## Technical Data

### Position transmitter (optional)

Output signal:	4–20 mA (galvanic isolation; 600 V DC)
Supply voltage:	12 - 30 V DC
Resolution:	16 bit / 0.244 µA
Linearity:	<0.05 % FS
Temperature effect:	<0.35 % FS
External load:	max 0–780 Ω max 0–690 Ω for intrinsically safe
Ex ia IIC T4/T5/T6:	U <sub>i</sub> ≤ 28 V I <sub>i</sub> ≤ 120 mA P <sub>i</sub> ≤ 1 W C <sub>i</sub> ≤ 22 nF L <sub>i</sub> ≤ 53 µH
Ex nA IIC T4/T5/T6:	U <sub>i</sub> ≤ 30 V I <sub>i</sub> ≤ 152 mA
Ex nL IIC T4/T5/T6:	U <sub>i</sub> ≤ 28 V I <sub>i</sub> ≤ 152 mA C <sub>i</sub> ≤ 22 nF L <sub>i</sub> ≤ 53 µH
Ex d IIC T5/T6:	U <sub>i</sub> ≤ 30 V P <sub>i</sub> ≤ 1080 mW

### Local User Interface (LUI) functions

- Local control of the valve
- Monitoring of valve position, input signal, temperature, supply and actuator pressure difference
- Guided start-up function
- LUI may be locked remotely to prevent unauthorised access
- Automatic travel calibration
- Tuning
- Parameter selection
- Language selection: English, German and French
- Alarm and warning state indications
- Latest event view



Fig. 1. Local User Interface (LUI) enables real time awareness of device parameters.

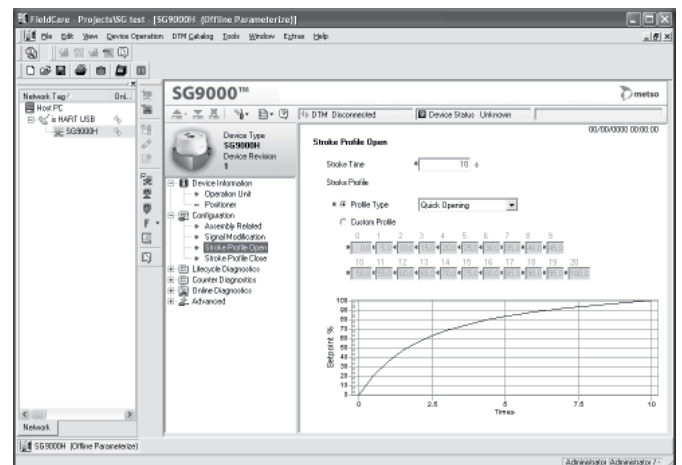


Fig. 2. Configuration is easy to do with DTM, graphical user interface. E.g. pre-selected profiles for opening and closing enable fast and easy stroke setup.

Type: CNAP/G

Shut-Off-Valve

COMPACT-valve  
of stainless steel  
pneumatic cylinder and pro-  
tection guard



valve DN [mm]	drive				Switch Guard SG92_				assembly kit
	cyl. Ø [mm]	stroke [mm]	Q [NI/stroke] P=1,13bar	air connec- tion thread	_12 1/4" NPT	_15 1/4" NPT	_35 1/2" NPT	piping [mm]	order no.
approx. manipulating time [s]									
50	100	62	0.55	G1/8"	5			6	A138280
65	100	77	0.68	G1/8"	6			6	A138280
80	100	90	0.80	G1/8"	7			6	A138280
100	125	109	1.52	G1/4"		2		10	A138283
125	125	134	1.87	G1/4"		3		10	A138283
150	145	159	2.98	G1/4"		4		10	A138283
200	175	212	5.78	G1/2"			1	16	A138285
250	175	260	7.10	G1/2"			2	16	A138286
300	200	312	11.12	G1/2"			2	16	A138287
350	230	362	17.07	G1/2"			3	16	A138288
400	230	412	19.42	G1/2"			3	16	A138288
450	300	462	37.05	G1/2"			5	16	A138289
500	300	512	41.07	G1/2"			6	16	A138290
600	300	612	49.17	G1/2"			8	16	A138291

Type: CBSP/G

Regulating Valve

COMPACT-valve  
of stainless steel  
orifice

pneumatic-cylinder and pro-  
tection guard



valve DN [mm]	drive				Switch Guard SG92_				assembly kit	
	cyl. Ø [mm]	stroke [mm]	Q [NI/stroke] P=1,13bar	air connec- tion thread	_12 1/4" NPT	_15 1/4" NPT	_35 1/2" NPT	pipng [mm]	order no.	
approx. manipulating time [s]										
50	125	62	0.87	G1/4"	7	1		10	A138281	
65	125	77	1.07	G1/4"	9	2		10	A138281	
80	125	90	1.25	G1/4"		2		10	A138281	
100	145	109	2.05	G1/4"		3		10	A138284	
125	145	134	2.52	G1/4"		4		10	A138284	
150	175	159	4.33	G1/2"			1	16	A138284	
200	200	212	7.57	G1/2"			2	16	A138285	
250	200	260	9.27	G1/2"			2	16	A138286	
300	230	312	14.72	G1/2"			3	16	A138287	
350	300	362	29.03	G1/2"			4	16	A138288	
400	300	412	33.05	G1/2"			5	16	A138288	

Type: CDSP/G

Shut-Off-Valve

COMPACT-shut-off valve  
with through-going valve  
plate  
pneumatic cylinder and pro-  
tection guard

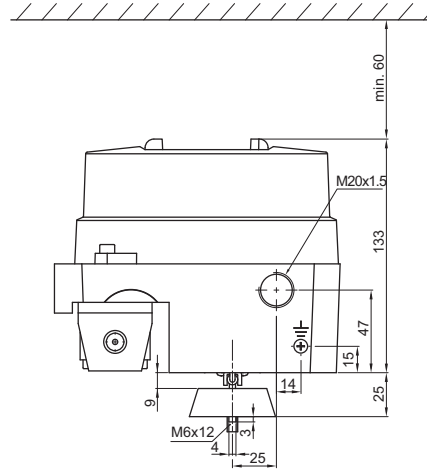
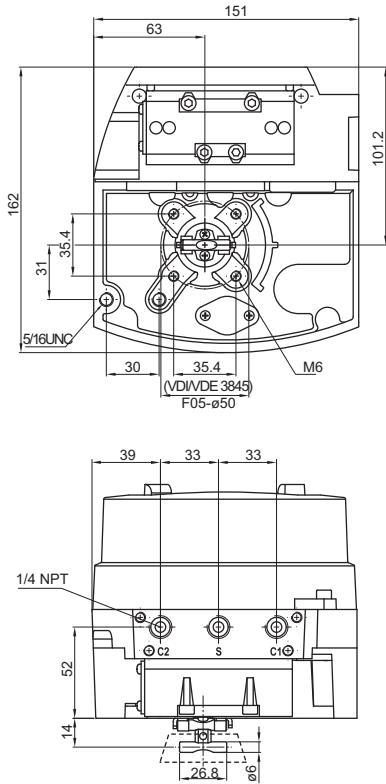


valve DN [mm]	drive				Switch Guard SG92_				assembly kit order no.
	cyl. Ø [mm]	stroke [mm]	Q [NI/stroke] P=1,13bar	air connec- tion thread	_12 1/4" NPT	_15 1/4" NPT	_35 1/2" NPT	pipng [mm]	
					approx. manipulating time [s]				
50	125	58	0.80	G1/4"	7	1		10	A138282
65	125	73	1.02	G1/4"	9	2		10	A138282
80	125	88	1.23	G1/4"		2		10	A138282
100	145	109	2.05	G1/4"		3		10	A138284
125	145	134	2.52	G1/4"		4		10	A138284
150	175	159	4.33	G1/2"			1	16	A138284
200	200	210	7.48	G1/2"			2	16	A138285
250	200	260	9.27	G1/2"			2	16	A138286
300	230	310	14.62	G1/2"			3	16	A138287
350	300	360	28.88	G1/2"			4	16	A138288
400	300	410	32.88	G1/2"			5	16	A138288
450	300	460	36.90	G1/2"			5	16	A138289
500	400	512	72.72	G3/4"			9	16	A138290
600	400	612	86.98	G3/4"			13	16	A138291

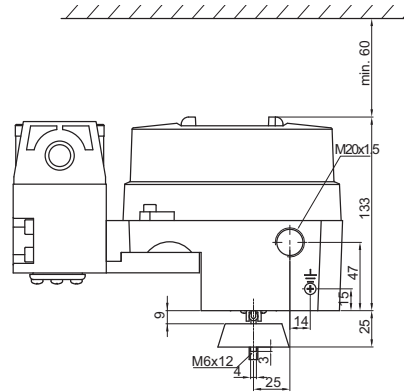
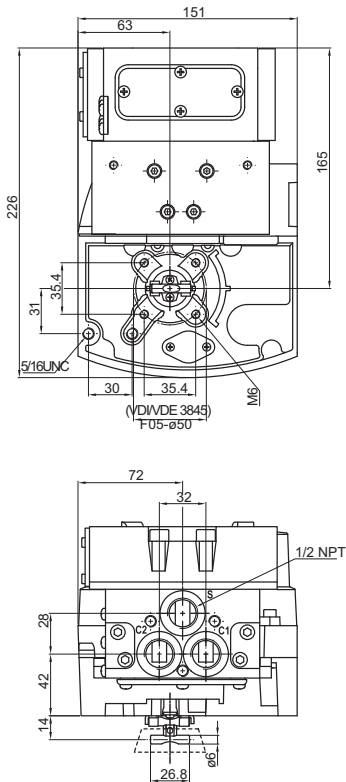


Dimensions

SG921\_

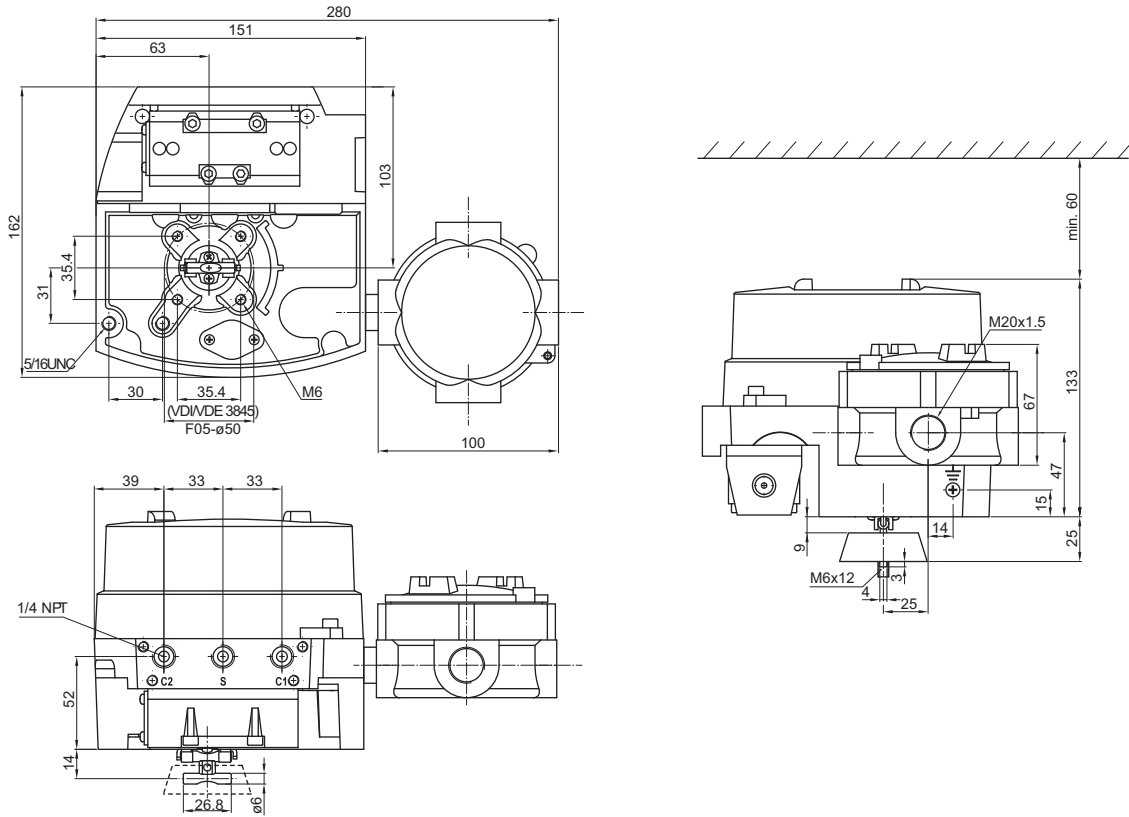


SG923\_

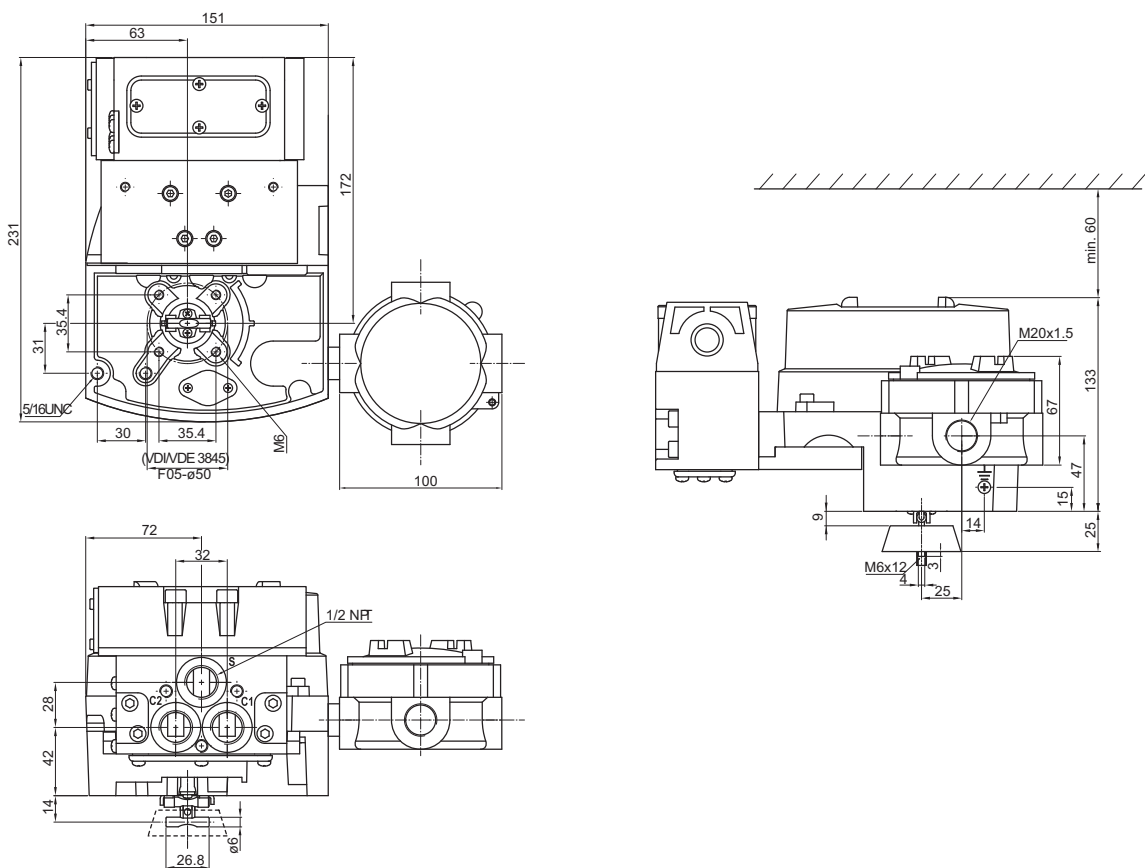


Dimensions

SG921\_J



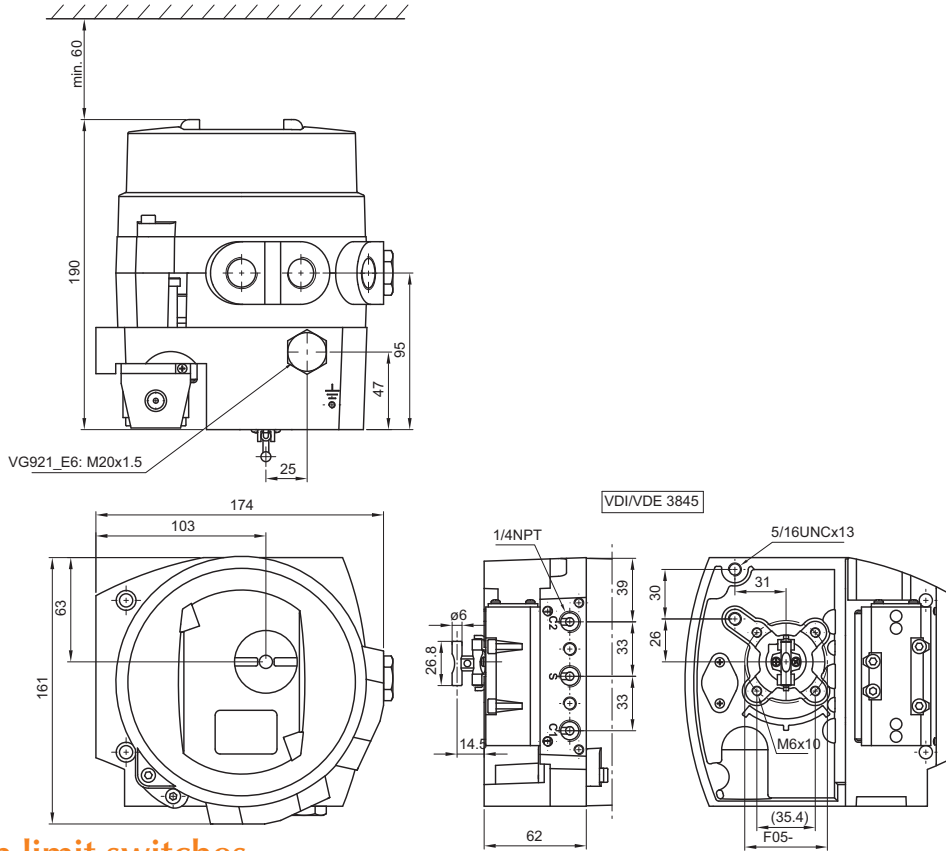
SG923\_J



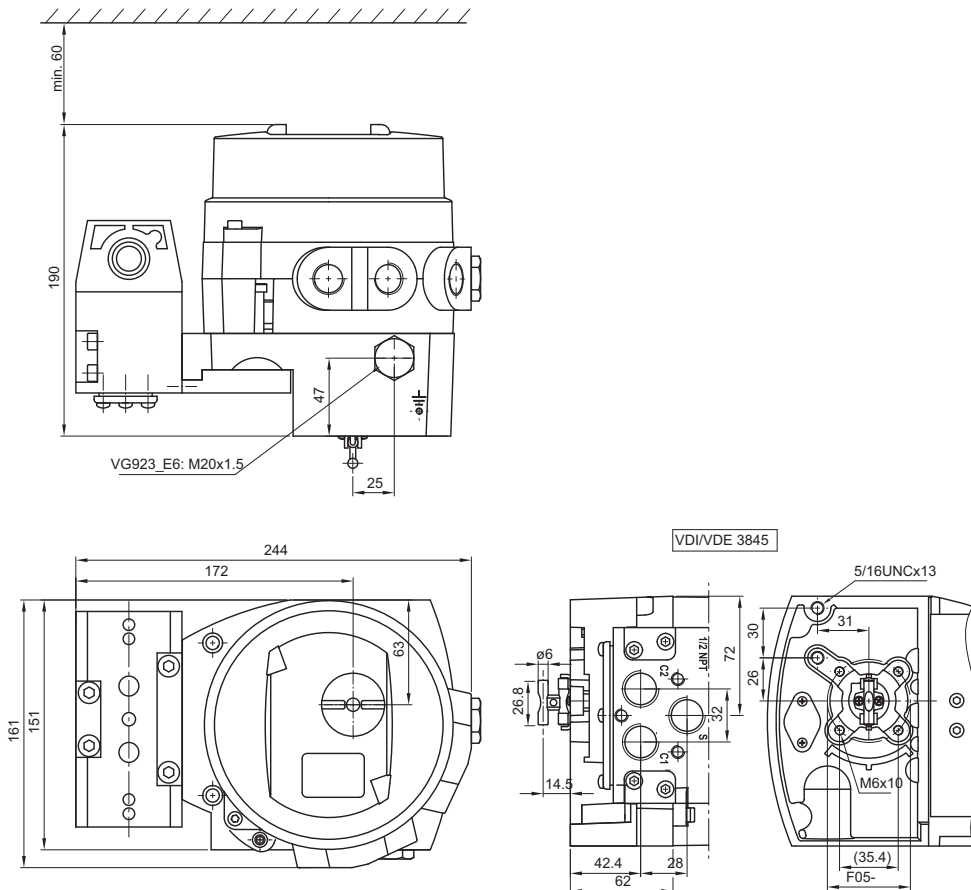


Dimensions

VSG921\_ with limit switches

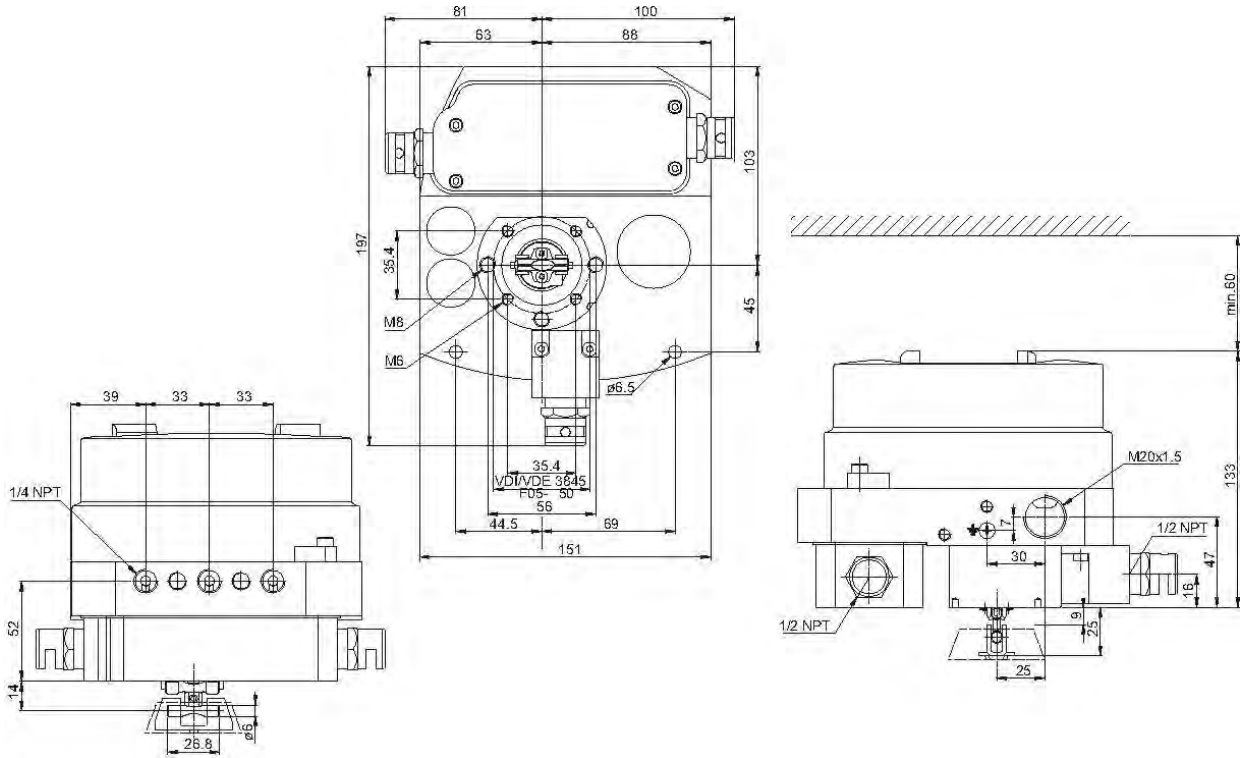


SG923\_ with limit switches

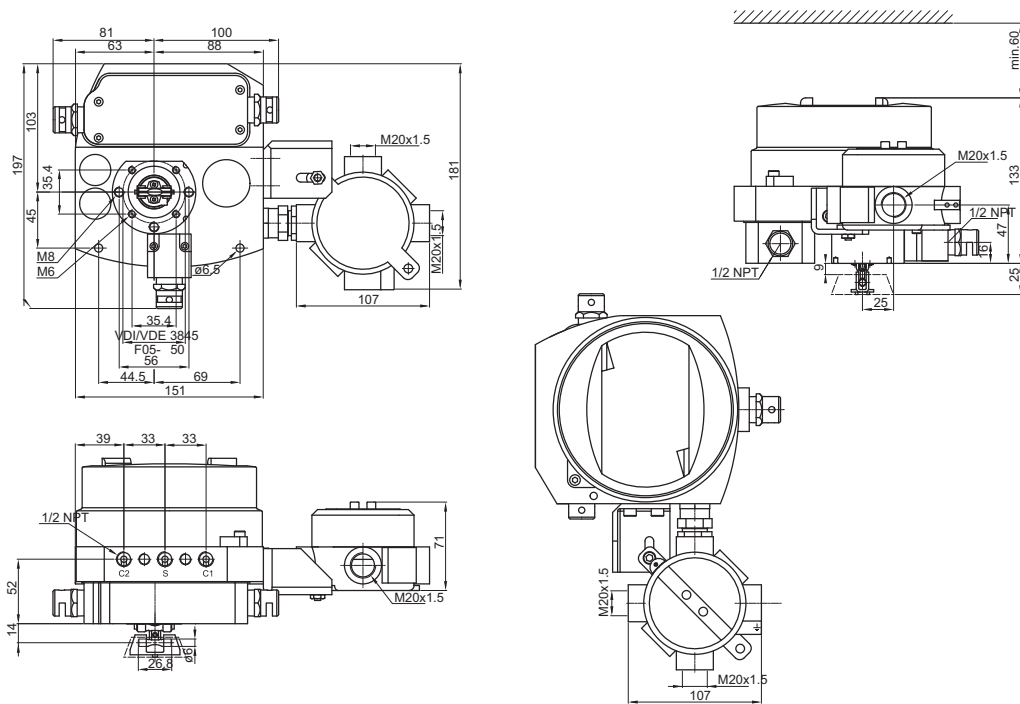


Dimensions

SG931\_



SG931\_J





How to Order

1.	2.	3.	4.	5.	6.	7.	*)	8.	9.
SG	9	2	15	H	X1		/	I02	

\*) Slash shall always be marked in place shown above.

1.	product group	
SG	SwitchGuard SG9000. Intelligent ON-OFF-valve controller.	
2.	series code	
9	Series 9000 intelligent ON-OFF-valve controller with universal shaft and attachment face according to standard VDI/VDE 3845. Relevant shaft adapter included in mounting kits. When valve controllers are separate deliveries, shaft adapter kit is supplied.	
3.	enclosure	
Standard temperature range -20 to +85° C / -4 to +185° F. M20x1.5 conduit entry.		
2	Standard anodized aluminium enclosure, IP66 /NEMA 4X.	
3	Stainless steel enclosure, IP66 / NEMA 4X.	
4.	spool valve	connections
12	restricted capacity stroke volume of actuator 0.3 - 4.3 dm <sup>3</sup>	S, C1, C2 = 1/4 NPT
15	standard capacity stroke volume of actuator > 0.6 dm <sup>3</sup>	
35	high capacity stroke volume of actuator > 3.5 dm <sup>3</sup> Not applicable to 3. sign „3“.	S, C1, C2 = 1/2 NPT
37	extended capacity For single acting actuators. stroke volume of actuator > 6.5 dm <sup>3</sup> Not applicable to 3. sign „3“.	S = 1/2 NPT, C2 = 1 NPT
5.	communication / input signal range	
H	4-20 mA, HART communication	
6.	approvals vor hazardous areas	
N	No approvals for hazardous areas. M20x1.5 conduit entry.	
X1	ATEX and IECEx certifications: II 1 G Ex ia IIC T4/T5/T6 Ga II 1 D Ex tD A20 IP66 T 90°C Ui <= 28 V, li <= 120 mA, Pi <= 1 W, Ci = 22 nF, Li = 53 µH. Temperature range: T4: -40 to +80° C / -40 to +176° F; T5: < +65° C / < +149° F; T6: < +50° C / < +122° F Not available with limit switches. Ex tD certification is not available with 7. sign „M“.	
X2	ATEX and IECEx certifications: II 2 G Ex ia IIC T4/T5/T6 Gb II 2 D Ex tD A21 IP66 T 90°C Ui = 28 V, li = 120 mA, Pi = 1 W, Ci = 22 nF, Li = 53 µH. Temperature range: T4: -40 to +80° C / -40 to +176° F; T5: < +65° C / < +149° F; T6: < +50° C / < +122° F Only available with ATEX and IECEx certified inductive limit switches. Ex tD certification is not availabel with 7. sign „M“.	
X3	ATEX and IECEx certifications: II 3 G Ex nA IIC T4/T5/T6 II 3 D Ex tD A22 IP66 T 90°C No Zener barrier needed. Ui = 30 V, Pmax = device limits itself. Temperature range: T4: -40 bis +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F Available without limit switches or with ATEX or IECEx certified inductive limit switches. Ex tD certification is not available with 7. sign „M“.	
X4	ATEX and IECEx certifications: II 3 G Ex nL IIC T4/T5/T6 Gc II 3 D Ex tD A22 IP66 T 90°C No Zener barrier needed. Ui = 30 V, li <= 152 mA, Ci = 22 nF, Li = 53 µH, Pmax = device limits itself. Temperature range: T4: -40 bis +85° C / -40 to +185° F; T5: < +75° C / < +167° F; T6: < +60° C / < +140° F Available without limit switches or with ATEX or IECEx certified inductive limit switches. Ex tD certification is not available with 7. sign „M“.	

6.	approvals for hazardous areas
E6	ATEX certifications: II 2 G Ex d IIC T5/T6 Gb Ui <= 30V. Temperature range: T5: Ta -40° C or -25 to +85° C / -40° F or -13 to +185° F T6: Ta -40° C or -25 to +70° C / -40° F or -13 to +158° F Available with or without limit switches.
U1	FM certifications: IS Class I, Division 1, Groups A, B, C, D, T4...T6 IS Class I, Zone 0, AEx ia, IIC T4...T6 Ui <= 28 V, li <= 120 mA, Pi <= 1 W, Ci = 22 nF, Li = 53 µH. Temperature range: T4: -40 bis +80° C / -40 to +176° F; T5: < +65° C / < +149° F; T6: < +50° C / < +122° F Not available with limit switches.
U2	FM certifications: NI Class I, Division 1, Groups A, B, C, D, T4...T6 NI Class I, Zone 2, Ex nA IIC, T4...T6 No Zener barrier needed. Ui <= 30 V, Pmax = device limits itself, external load resistance 0-780 Ohm. Temperature range: T4: -40 bis +85° C / -40 to +185° F; T5: < +70° C / < +158° F; T6: < +55° C / < +131° F Not available with limit switches..
7.	options of ON-OFF-valve controlle
T	Internal 2-wire (passive) position transmitter. Analog position feedback signal, output 4-20 mA, supply voltage 12-30 V DC, external load resistance 0-780 Ohm. SG9_X1T and SG9_X2T: Ui < 28 V, li < 120 mA, Pi < 1W, Li = 53 µH, Ci = 22 nF, external load resistance 0-690 Ohm. SG9_X3T and SG9_E6T: Ui = 30 V, Pmax = device limits itself, external load resistance 0-780 Ohm. SG92_U1T: Ui <= 28 V, li <= 120 mA, Pi <= 1W, Li = 53 µH, Ci = 22 nF, external load resistance 0-780 Ohm. SG92_U2T: Ui = 30 V, Pmax = device limits itself, external load resistance 0-780 Ohm.
C	Low temperature. Temperature range: -40 to +60° C / -40 to +140° F.
J	External junction box for all 4-20 mA wirings, including position transmitter, if applicable. Junction box is located in the standard enclosure, 2 pcs. M20x1.5 conduit entry.
M	Special corrosion resistant finish. External aluminium surfaces protected by hard anodizing with PTFE. Coating thickness 20 µm. Not painted. Not applicoble to 3. sign „3“. Not available with Ex tD certification.
Y	Special construction, to be specified.

8.	limit swicht type
IP 66 / NEMA 4X enclosure. Extension housing with additional conduit entries, max. 4 pcs. M20x1.5.	
Inductive proximity switches	
I02	P+F; NJ2-12GK-SN, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NC Intrinsically save according to ATEX II 2 G Ex ia IIC T6. Temperature range: -40 to +85° C / -40 to +185° F. Applicable to 6. sign „X2“, „X3“, „X4“ or „E6“.
I09	P+F; NCB2-12GM35-N0, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NC Intrinsically save according to ATEX II 2 G EEx ia IIC T6. Minimum temperature range: -25 to +85° C / -13 to +185° F. Applicable to 6. sign „X2“, „X3“, „X4“ or „E6“.
I32	Omron; E2E-X2Y1; 2-wire type; AC; < 100 mA; 24-240 V AC. Temperature range: -40 to +85° C / -40 to +185° F. Applicable to 6. sign „E6“.
I45	P+F; NJ3-13GK-S1N, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NO. Intrinsically save according to ATEX II 1 G Ex ia IIC T6. Temperature range: -25 to +85° C / -13 to +185° F. Applicable to 6. sign „X2“, „X3“, „X4“ or „E6“.
I56	ifm IFC2002-ARKG/UP, 2-wire type, DC; 150 mA, 10-36 V DC, leakage current < 0.6 mA. Temperature range: -25 to +80° C / -13 to +176° F. Applicable to 6. sign „E6“.
D33	SST Sensor Dual Module, NO, 8-125 V DC / 24-125 V AC. Temperature range: -40 to +80° C / -40 to +176° F. Applicable to 6. sign „E6“.
D44	Namur Sensor Dual Module, 6-29 V DC, > 3 mA; < 1 mA. Temperature range: -40 to +80° C / -40 to +176° F. Applicable to 6. sign „E6“.
Reed Type Proximity Switches, 2 pcs. Temperature range: -40 to +85° C / -40 to +185° F.	
R01	StoneL; Maxx-Guard G, SPDT, 300 mA, 24 V DC; 200 mA, 125 V AC Applicable to 6. sign „E6“.
Mechanical micro switches Temperature range: -40 to +85° C / -40 to +185° F.	
K25	2 pcs. D2VW-5L2A-1MS; 3 A - 250 V AC, 0.4 A - 125 V DC, 5 A - 30 V AC. M20x1.5 conduit entry (2 pcs.). Applicable to 6. sign „E6“.
K26	2 pcs. D2VW-01L2A-1MS; gold plated contacts, 100 mA - 30 V DC / 125 V AC. M20x1.5 conduit entry (2 pcs.). Applicable to 6. sign „E6“.
K45	4 pcs. D2VW-5L2A-1MS; 3 A - 250 V AC, 0.4 A - 125 V DC, 5 A - 30 V AC. M20x1.5 conduit entry (4 pcs.). Applicable to 6. sign „E6“.
K46	4 pcs. D2VW-01L2A-1MS; gold plated contacts, 100 mA - 30 V DC / 125 V AC. M20x1.5 conduit entry (4 pcs.). Applicable to 6. sign „E6“.

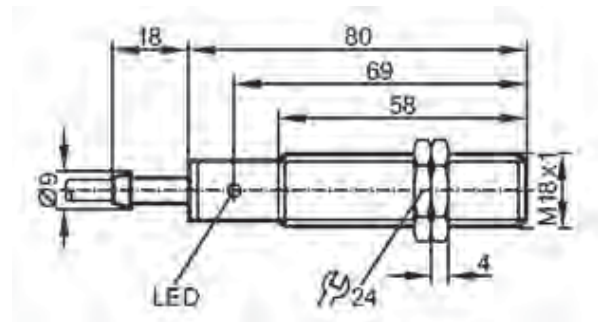
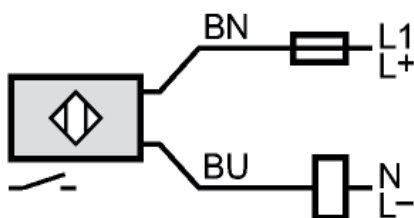
9.	options
Y	Special construction, to be specified.
accessories	
U24	U/I Converter, P+F KFDX-DCV. DC Input. Input voltage 10 mVB to 100 V DC. Power/Supply: 9-30 V DC. Power consumption: <= 1.5 W.
U48	U/I Converter, P+F KFDX-DCV. DC Input. Input voltage 10 mVB to 100 V DC. Power/Supply: 9-30 V DC. Power consumption: <= 1.5 W.

IG0005

IG-2005-ABOA  
 Inductive sensor  
 Plastic thread M18 x 1  
 Cable  
 Sensing range 5 mm [f]  
 flush mountable



Electrical design Output		AC/DC normally open
Operating voltage	[V]	20...250 AC/DC
Current rating (continuous)	[mA]	350 AC (...50 °C) / 250 AC (...80 °C) / 100 DC
Current rating (peak)	[mA]	$\hat{i}$ : 2.2 A (20 ms / 0,5 Hz)
Minimum load current	[mA]	5
Short circuit proof / Reverse polarity protection / Overload protection		no
Voltage drop	[V]	< AC 6.5 / < DC 6
Leakage current	[mA]	< 2.5 (AC 250 V) / < 1.3 (AC 110 V) / < 0.8 (DC 24 V)
Real sensing range (Sr)	[mm]	5 ± 10 %
Operating distance	[mm]	0...4.05
Switch-point drift	[% of Sr]	-10...10
Hysteresis	[% of Sr]	1...15
Switching frequency	[Hz]	25 AC / 50 DC
Correction factors		mild steel = 1 / stainless steel approx. 0.7 / brass approx. 0.4 / aluminium approx. 0.3 / copper approx. 0.2
Ambient temperature	[°C]	-25...80
Protection		IP 67, II
EMC		EN 60947-5-2; EN 55011: class B
MTTF	[years]	609
Housing materials		PBT
Function display Switching status	LED	yellow
Connection		PVC cable / 2 m; 2 x 0.5 mm <sup>2</sup>
Weight	[kg]	0.11
Remarks		Recommendation: check the unit for reliable function after a short circuit.
Accessories (included)		2 lock nuts



Wiring

Core colors: BN – brown; BU – blue

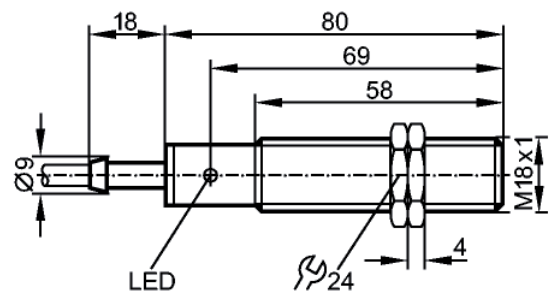
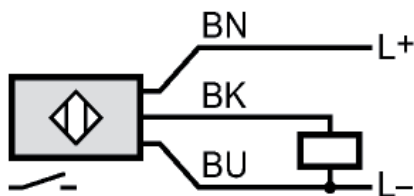
Note: miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting)

IG5401

IG-3008-BPKG  
 Inductive sensor  
 Plastic thread M18 x 1  
 Cable  
 Sensing range 8 mm [nf]  
 non-flush mountable



Electrical design Output		DC PNP normally open
Operating voltage	[V]	10...36 DC
Current rating	[mA]	250
Short-circuit protection		yes (non-latching)
Reverse polarity protection / Overload protection		yes
Voltage drop	[V]	< 2,5
Current consumptio	[mA]	< 15 (24 V)
Real sensing range (Sr)	[mm]	8 ± 10 %
Operating distance	[mm]	0...6.5
Switch-point drift	[% of Sr]	-10...10
Hysteresis	[% of Sr]	1...15
Switching frequency	[Hz]	300
Correction factors		mild steel = 1 / stainless steel approx. 0.7 / brass approx. 0.4 / aluminium approx. 0.3 / copper approx. 0.2
Ambient temperature	[°C]	-25...80
Protection		IP 67, II
EMC		EN 60947-5-2
MTTF	[years]	1853
Housing materials		PBT
Function display Switching status	LED	yellow
Connection		PVC cable / 2 m; 3 x 0.5 mm <sup>2</sup>
Weight	[kg]	0.117
Accessories (included)		2 lock nuts



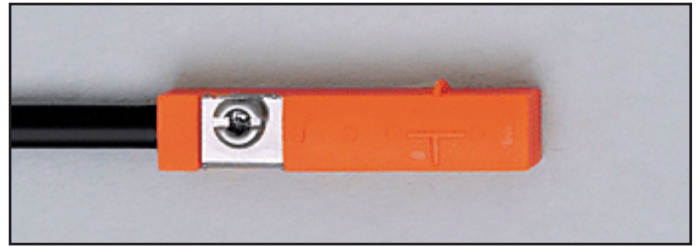
Wiring

Core colors: BN – brown; BU – blue; BK – black



## MK5100

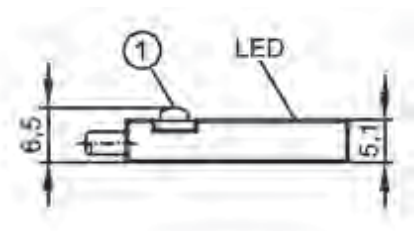
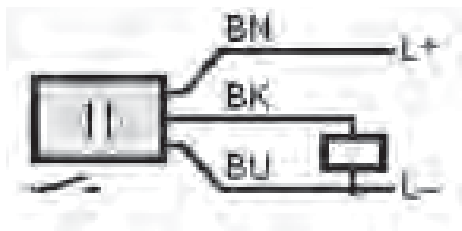
cylinder sensor with GMR cell  
 Plastic housing for T-slot cylinders  
 Cable  
 [f] flush mountable  
 Magnetic sensitivity 2.8 mT  
 Travel speed > 10 m/s



Electrical data		
Electrical design		DC PNP
Operating voltage	[V]	10...30 DC
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[ms]	< 30
Outputs		
Output function		normally open
Voltage drop	[V]	< 2.5
Current rating	[mA]	100
Short-circuit protection		yes
Overload protection		yes
Switching frequency	[Hz]	10000
Range		
Magnetic sensitivity	[mT]	2.8
Travel speed	[m/s]	> 10
Accuracy / deviations		
Hysteresis	[mm]	< 1.5
Repeatability	[mm]	< 0.2
Environment		
Ambient temperature	[°C]	-25...85
Protection		IP 65 / IP 67
Tests / approvals		
EMC		EN 61000-4-2 ESD: - CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m (80...2000 MHz) EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF conducted: 10 V (0.15...80 MHz) EN 55011: class B
MTTF	[Years]	3694
Mechanical data		
Mounting		flush mountable
Housing materials		housing: PA (polyamide); Fastening clamp: stainless steel
Weight	[kg]	0.027

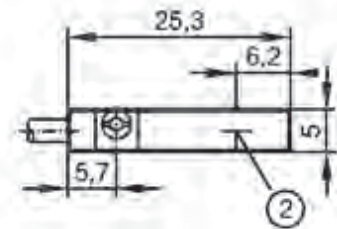


Displays / operating elements		
Output status indication LED	LED	yellow
Electrical connection		
Connection		PUR cable / 2 m; 3 x 0.14 mm <sup>2</sup>
Accessories		
Accessories (included)		rubber placeholder; cable clip
Remarks		
		cULus - Class 2 source required Clamping screw with combined slot/hexagon socket head AF 1.5
Pack quantity	[piece]	1



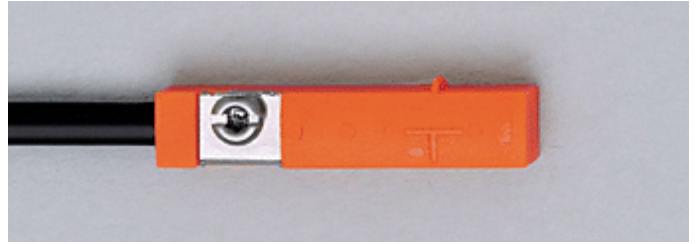
**Wiring**

Core colours: BK – black; BN – brown; BU – blue



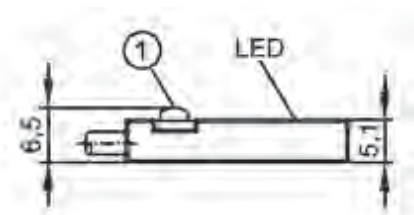
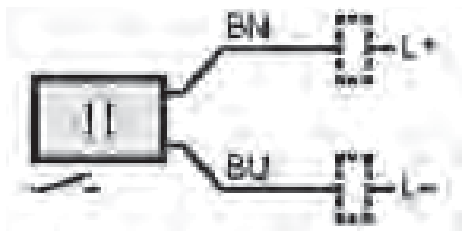
## MK5103

cylinder sensor with GMR cell  
 Plastic housing for T-slot cylinders  
 Cable  
 flush mountable  
 Magnetic sensitivity 2.8 mT  
 Travel speed > 10 m/s



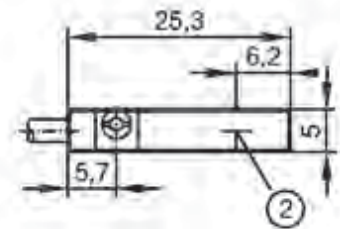
Electrical data		
Electrical design		DC PNP/NPN
Operating voltage	[V]	10...30 DC
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[ms]	30
Outputs		
Output function		normally open
Voltage drop	[V]	< 4.5
Minimum load current	[mA]	5
Leakage current	[mA]	< 0.8
Current rating	[mA]	100
Short-circuit protection		yes
Overload protection		yes
Switching frequency	[Hz]	4000
Range		
Magnetic sensitivity	[mT]	2.8
Travel speed	[m/s]	> 20
Accuracy / deviations		
Hysteresis	[mm]	1.5
Repeatability	[mm]	< 0.2
Environment		
Ambient temperature	[°C]	-25...85
Protection		IP 65 / IP 67
Tests / approvals		
EMC		EN 61000-4-2 ESD: - CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m (80...2000 MHz) EN 61000-4-4 Burst: 2 kV EN 61000-4-5 Surge: 0,5 kV EN 61000-4-6 HF conducted: 10 V (0.15...80 MHz) EN 55011: class B
MTTF	[Years]	3145
Mechanical data		
Mounting		flush mountable
Housing materials		PA (polyamide); Fastening clamp: stainless steel
Weight	[kg]	0.026

Displays / operating elements		
Output status indication LED	LED	yellow
Electrical connection		
Connection		PUR cable / 2 m; 2 x 0.14 mm <sup>2</sup>
Accessories		
Accessories (included)		rubber placeholder; cable clip
Remarks		
		cULus - Class 2 source required Clamping screw with combined slot/hexagon socket head AF 1.5
Pack quantity	[piece]	1



### Wiring

Core colours: BN – brown; BU – blue



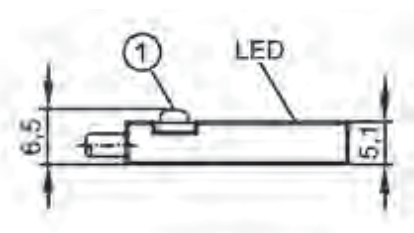
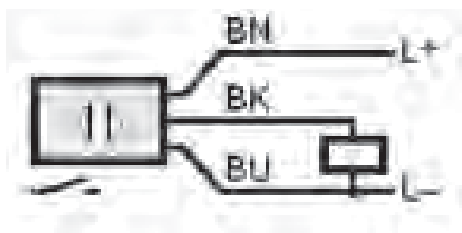
## MK5158

cylinder sensor with AMR cell  
 Plastic housing for T-slot cylinders  
 Cable  
 flush mountable  
 Magnetic sensitivity 2.0 mT  
 Travel speed > 10 m/s



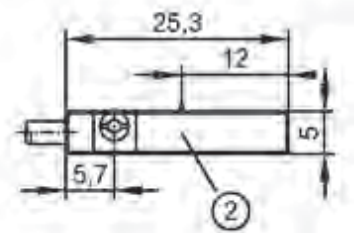
Electrical data		
Electrical design		DC PNP
Operating voltage	[V]	10...30 DC
Current consumption	[mA]	< 10
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[ms]	< 30
Outputs		
Output function		normally open
Voltage drop	[V]	< 2.5
Current rating	[mA]	100
Short-circuit protection		yes
Overload protection		yes
Switching frequency	[Hz]	6000
Range		
Magnetic sensitivity	[mT]	2.0
Travel speed	[m/s]	> 10
Accuracy / deviations		
Hysteresis	[mm]	1.0
Repeatability	[mm]	< 0.2
Environment		
Ambient temperature	[°C]	-25...85
Protection		IP 65 / IP 67 / IP 69K
Tests / approvals		
EMC		EN 61000-4-2 ESD: - CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m (80...2000 MHz) EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF conducted: 10 V (0.15...80 MHz) EN 55011: class B
MTTF	[Years]	2064
Mechanical data		
Mounting		flush mountable
Housing materials		PA (polyamide); Fastening clamp: stainless steel
Weight	[kg]	0.031

Displays / operating elements		
Output status indication LED	LED	yellow
Electrical connection		
Connection		PVC cable / 2 m; 3 x 0.14 mm <sup>2</sup>
Accessories		
Accessories (included)		rubber placeholder; cable clip
Remarks		
		cULus - Class 2 source required Clamping screw with combined slot/hexagon socket head AF 1.5
Pack quantity	[piece]	1



### Wiring

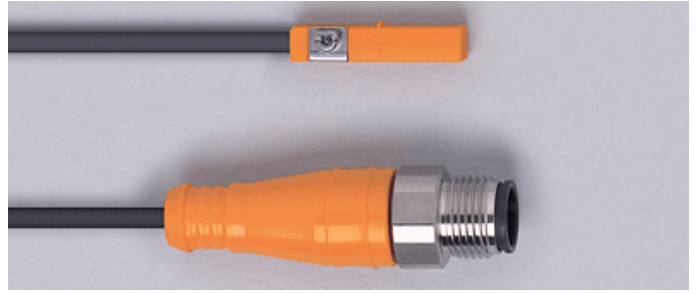
Core colours: BN – brown; BW – black; BU – blue



- 1: Fastening clamp
- 2: sensing face

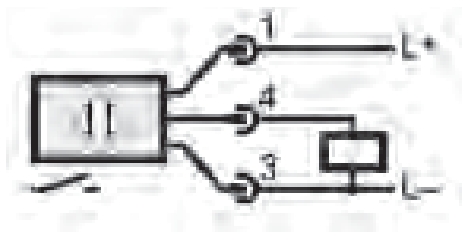
**MK5157**

cylinder sensor with AMR cell  
 Plastic housing for T-slot cylinders  
 Cable with connector  
 flush mountable  
 Magnetic sensitivity 2.0 mT  
 Travel speed > 10 m/s

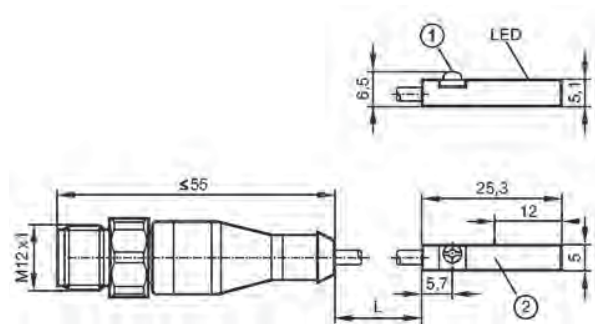


Electrical data		
Electrical design		DC PNP
Operating voltage	[V]	10...30 DC
Current consumption	[mA]	< 10
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[ms]	< 30
Outputs		
Output function		normally open
Voltage drop	[V]	< 2.5
Current rating	[mA]	100
Short-circuit protection		yes
Overload protection		yes
Switching frequency	[Hz]	6000
Range		
Magnetic sensitivity	[mT]	2.0
Travel speed	[m/s]	> 10
Accuracy / deviations		
Hysteresis	[mm]	1.0
Repeatability	[mm]	< 0.2
Environment		
Ambient temperature	[°C]	-25...85
Protection		IP 65 / IP 67 / IP 69K
Tests / approvals		
EMC		EN 61000-4-2 ESD: - CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m (80...2000 MHz) EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF conducted: 10 V (0.15...80 MHz) EN 55011: class B
MTTF	[Years]	2064
Mechanical data		
Mounting		flush mountable
Housing materials		PA (polyamide); Fastening clamp: stainless steel
Weight	[kg]	0.021

Displays / operating elements		
Output status indication LED	LED	yellow
Electrical connection		
Connection		PVC cable / 0.3 m; with M12 connector, with rotatable stainless steel hexagon nut
Accessories		
Accessories (included)		rubber placeholder; cable clip
Remarks		
		cULus - Class 2 source required Clamping screw with combined slot/hexagon socket head AF 1.5
Pack quantity	[piece]	1



Wiring



- 1: Fastening clamp
- 2: sensing face

Flexible plastic limit switch box with plastic bracket

PA6 / PC / PA6GF30

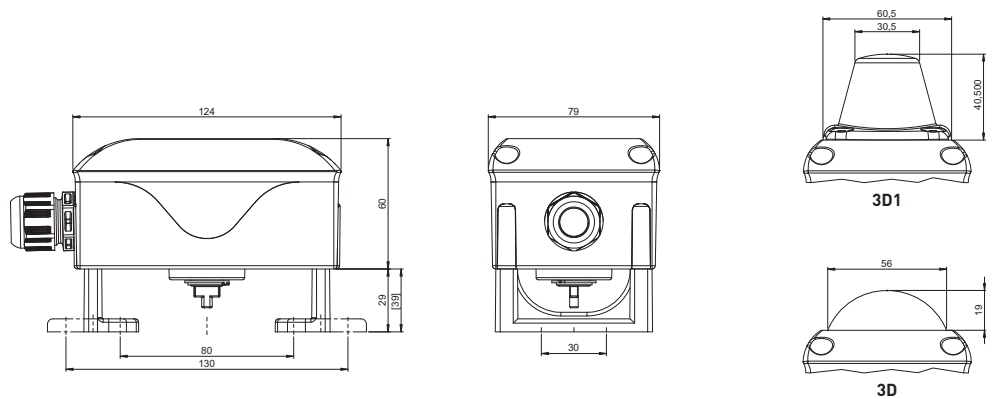
Model: EPP  
 IP67  
 -25°C bis +80°C



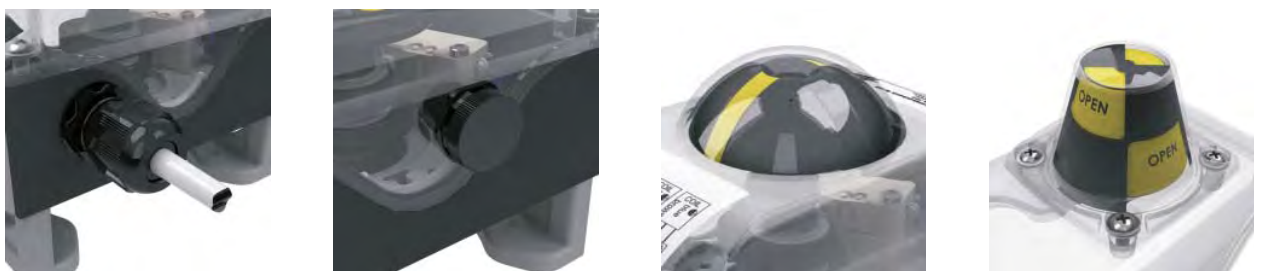
Description

- Compact and flexible limit switch box made of polyamide (PA6) with flat cover made of polycarbonate (PC) (Optional: 3D or 3D1 indicator)
- Adjustable polyamide mounting bracket (PA6) reinforced with 30% fiber glass for simple assembly on actuators according to VDI/VDE 3845: Hole spacings: 80x30mm and 130x30mm (optional: 50x25mm) Shaft heights: 20 and 30mm (IMPORTANT NOTE: As standard **no F05 interface** in the bottom. Optional available.)
- Enclosure IP67 according to DIN EN 60529
- Cable gland M20x1,5 black (for cable Ø 6-12mm)
- Sealings EPDM and NBR, Screws AISI 304, Shaft polyamide PA6
- Other colours of casing available on request
- Application: Standard applications without explosive atmosphere. 1-4 mechanical switches or proximity sensors in V3 design, 1-3 slot type sensors, 1-2 cylindrical sensors Ø 8-18mm

Dimensions



Optional executions





with inductive proximity switches, 2-wire AC/DC

Versions

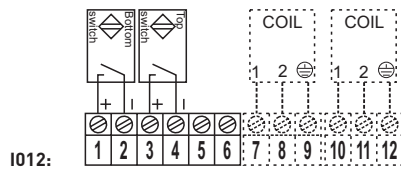


IFM  
IN0073



Turck  
Bi2-Q10S-AZ31X

Producer switch	IFM	Turck
Switch type	IN0073 (AC/DC N.O.)	Bi2-Q10S-AZ31X (AC/DC N.O.)
Voltage	20-250V AC/DC	AC: 20-250V DC: 10-300V
Maximum current	AC: 350 mA, 50°C / 250 mA, 80°C DC: 100 mA	100 mA
Frequency	AC: 25 Hz DC: 50 Hz	50-60 Hz
Output indicator	LED gelb	LED rot
Enclosure switch	IP67	IP67
Temperature	-25°C ... +80°C	-25°C ... +70°C
Ordering code	EPP2I01-29, EPE2I01-29 EAP2I01-29, EAE2I01-29	EPP2I01-371, EPE2I01-371 EAP2I01-371, EAE2I01-371



Code number

E □ □ □ I □ □ - □ - □ □ □

Accessories							
Type							
29	IFM, IN0073				371	Turck, Bi2-Q10S-AZ31X	
Hole spacing							
00	50x25x20	01	80x30x20	02	80x30x30	03	130x30x30
04	130x30x50*	05	80x30x40*	06	80x30x50*	07	130x30x20
08	130x30x40*	09	50x25x30				
Switch type							
M	Mechanical	I	Inductive	S	Slot type	D	Dual sensor
Switches							
1	Piece	2	Pieces	3	Pieces	4	Pieces
Bracket							
P	Polyamide	E	Stainless steel				
Housing							
P	Polyamide	A	Aluminium	V	Vestamide		

\* These hole spacings are only available with stainless steel bracket.

with intrinsically safe, inductive proximity switches

Versions



IFM  
NS5002



P+F  
NJ2-V3-N

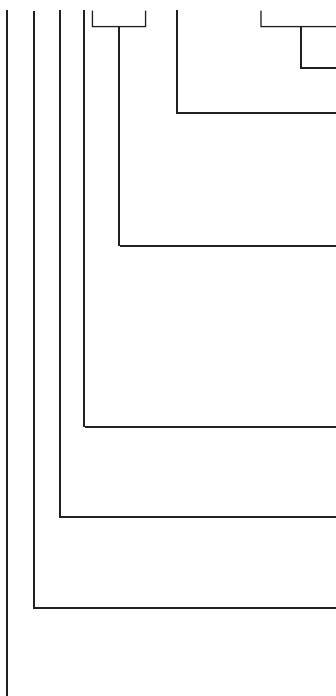
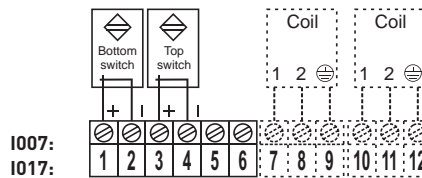


Turck  
Bi2-Q10S-Y1X

Producer switch	IFM	P+F	Turck
Switch type	NS5002 (N.C.)	NJ2-V3-N (N.C.)	Bi2-Q10S-Y1X (N.C.)
Voltage	8,2V DC	8,2V DC	8,2V DC
Maximum current	< 1 mA > 2,1mA	< 1 mA > 3mA	< 1,2 mA > 2,1mA
Frequency	800 Hz	1000 Hz	1000 Hz
SIL Level	-	SIL 1-3 (IEC 61508:2010)	SIL 1-3 (IEC 61508:2010)
Ambient temperature	-20°C ... +70°C	-25°C ... +70°C	-25°C ... +70°C
ATEX/IECEX	Ex II 2G Ex ia IIC T6 Gb Ex II 2D Ex ia IIIC T80°C Db	Ex II 2G Ex ia IIC T6 Gb Ex II 2D Ex ia IIIC T80°C Db	Ex II 2G Ex ia IIC T6 Gb Ex II 2D Ex ia IIIC T80°C Db
CE Type examination certificate	IBExU 11 ATEX 1154 IECEX IBE 13.0042	IBExU 11 ATEX 1154 IECEX IBE 13.0042	IBExU 11 ATEX 1154 IECEX IBE 13.0042
Ex zone	Zone 1, Zone 21	Zone 1, Zone 21	Zone 1, Zone 21
Ordering code	EVP2I01-14-IA, EVE2I01-14-IA EAP2I01-14-IA, EAE2I01-14-IA	EVP2I01-IA, EVE2I01-IA EAP2I01-IA, EAE2I01-IA	EVP2I01-130-IA, EVE2I01-130-IA EAP2I01-130-IA, EAE2I01-130-IA

Code number

E □ □ □ I □ □ - □ - IA - □ □ □



Accessories							
Type							
14	IFM, NS5002						P+F, NJ2-V3-N
130	Turck, Bi2-Q10S-Y1X						
Hole spacing							
00	50x25x20	01	80x30x20	02	80x30x30	03	130x30x30
04	130x30x50*	05	80x30x40*	06	80x30x50*	07	130x30x20
08	130x30x40*	09	50x25x30	10	F05		
Switch type							
M	Mechanical	I	Inductive	S	Slot type	D	Dual sensor
Switches							
1	Piece	2	Pieces	3	Pieces	4	Pieces
Bracket							
P	Polyamide	E	Stainless steel				
Housing							
A	Aluminium	V	Vestamide				

\* These hole spacings are only available with stainless steel bracket.





## technical data

material	glass fibre reinforced polyester
dimensions	75 x 110 x 55 mm
color	similar to RAL 7000, squirrel grey
ingress protection	IP 66 to EN 60529
impact resistance	>7 Joule, EN 50014
temperature range PUR (polyurethane) seal	-40°C to +90°C
surface resistances	>10 <sup>12</sup> Ohm to DIN 53482
flammability	V0 / self-extinguishing, UL 94
insulation	fully insulated to VDE 0100
dielectric strength	18 KV / mm
toxicity	free from halogen

## specification

Plastic enclosure consisting of

- lid
- seal, incl. captive +/- stainless steel screws
- base with earthing screws

## connections

with DIN rail TS15 armed with 11 Phoenix terminals MBK 5/E

side A: 3 x M16x1.5, factory wired

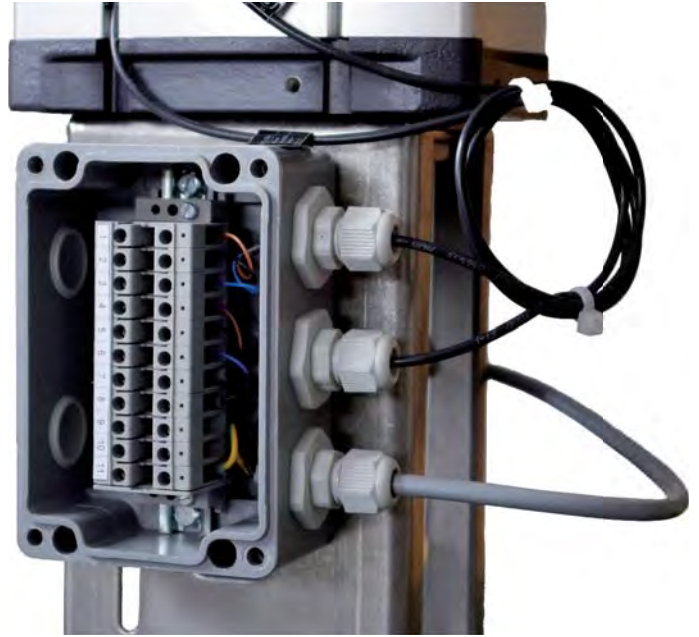
side B: 2 x M20x1.5, supplied with blind cover has to be wired by customer

## bracket

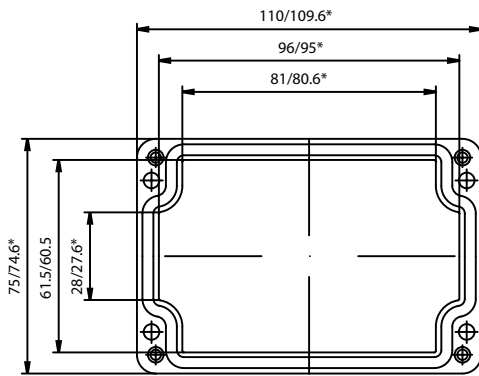
on pneumatic cylinder with stainless steel bracket

## On request:

- box with housing of aluminium
- box with approval according to ATEX



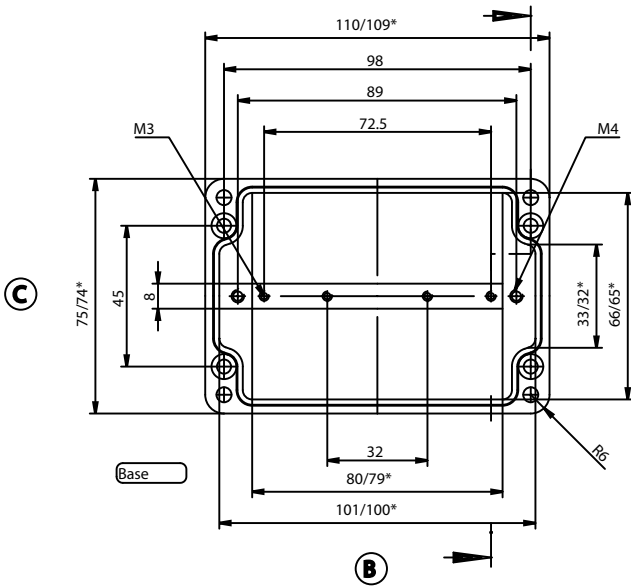
dimensions



\* = Conical form tapering downwards.  
Free dimensions-tolerance to DIN 16901-130

Lid

A



Base

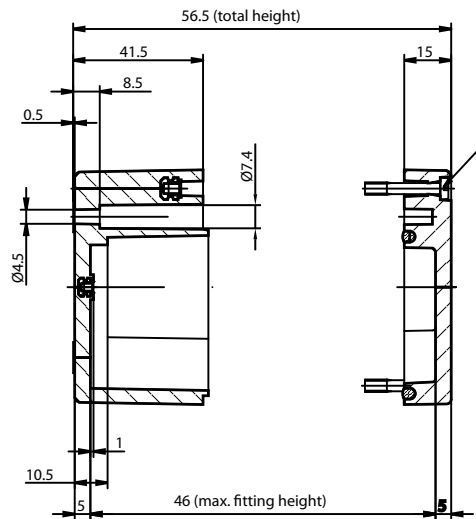
B

D

E

F

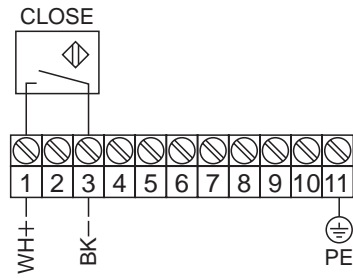
Cylinder screw M4 x 24/7 similar to DIN 84



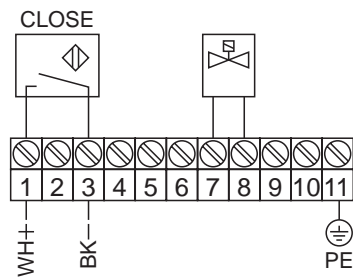
Connection diagrams

limit switches 2-wire

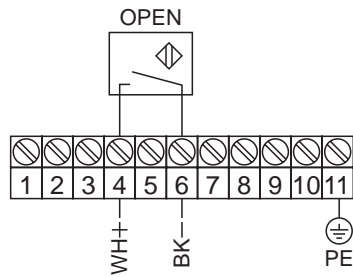
1 limit switch - position CLOSE / 2-wire



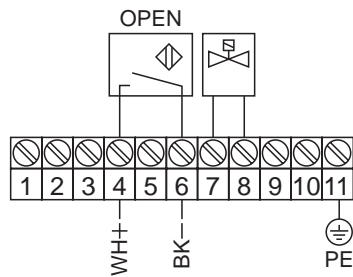
1 limit switch - position CLOSE / 2-wire  
1 solenoid valve



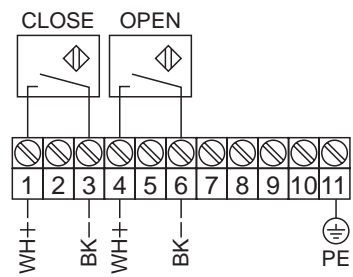
1 limit switch - position OPEN / 2-wire



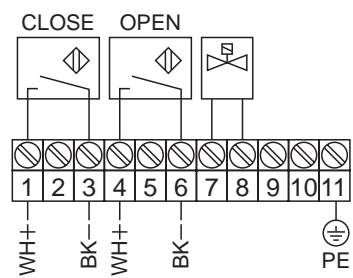
1 limit switch - position OPEN / 2-wire  
1 solenoid valve



2 limit switches - position OPEN and CLOSE / 2-wire

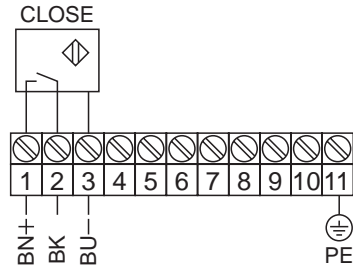


2 limit switches - position OPEN and CLOSE / 2-wire  
1 solenoid valve

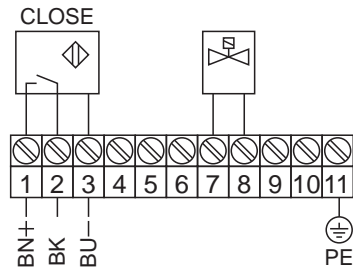


**limit switches 3-wire**

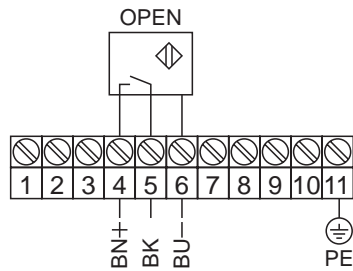
1 limit switch - position CLOSE / 3-wire



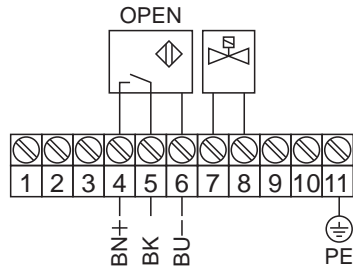
1 limit switch - position CLOSE / 3-wire  
1 solenoid valve



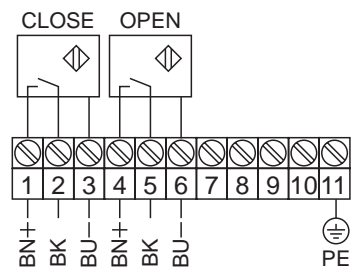
1 limit switch - position OPEN / 3-wire



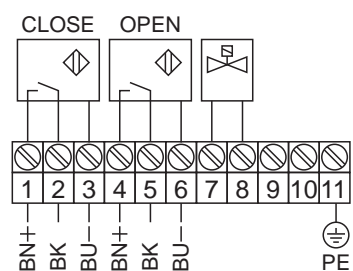
1 limit switch - position OPEN / 3-wire  
1 solenoid valve



2 limit switches - position OPEN and CLOSE / 3-wire



2 limit switches - position OPEN and CLOSE / 3-wire  
1 solenoid valve







Standard Solenoid Valve, 5/2-way, G 1/2"

MH 510 121

5/2-way solenoid valve actuated by permanent signal and equipped with air spring return.

Generally with manual override.

Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.

Port 14: G 1/8".

Minimum actuation pressure: 3 bar.

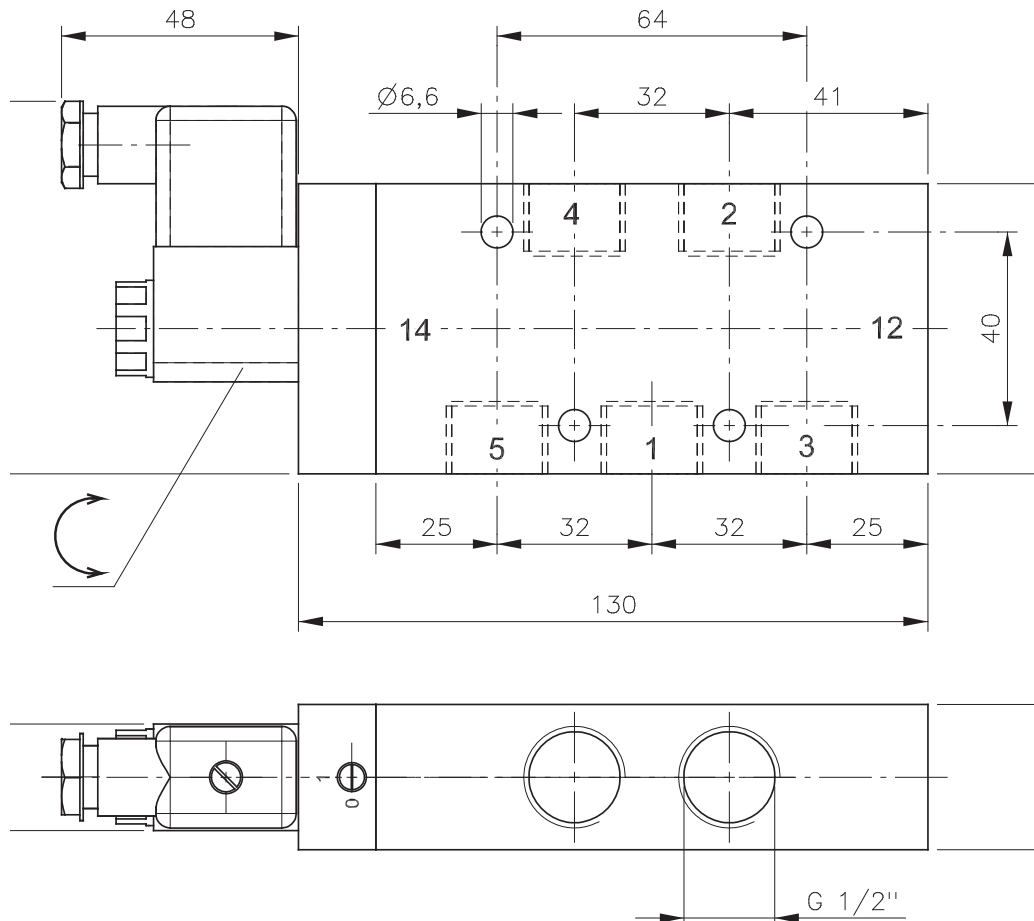
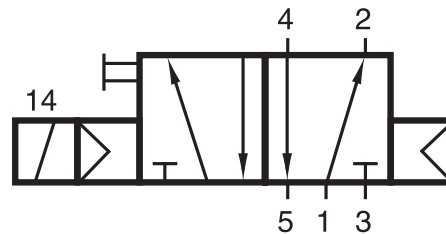
Version for vacuum on request.

Connector as shown on the photo is included.

Also available according ATEX (II2G/Dc T4 – 10°C <= TA <= 50°C resp. II3G/Dc T5 – 10°C <= TA <= 50°C): 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/2"
air flow	3000 l/min
operating pressure	1 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.67 kg



Standard Solenoid Valve, 3/2-way, G 1/4"

MH 310 701

3/2-way solenoid valve normally closed actuated by permanent signal and equipped with air spring return. Generally with manual override.

Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.

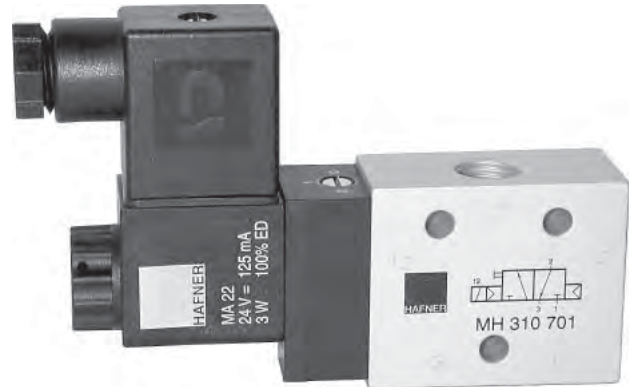
Port 12: M5.

Minimum actuation pressure: 3 bar.

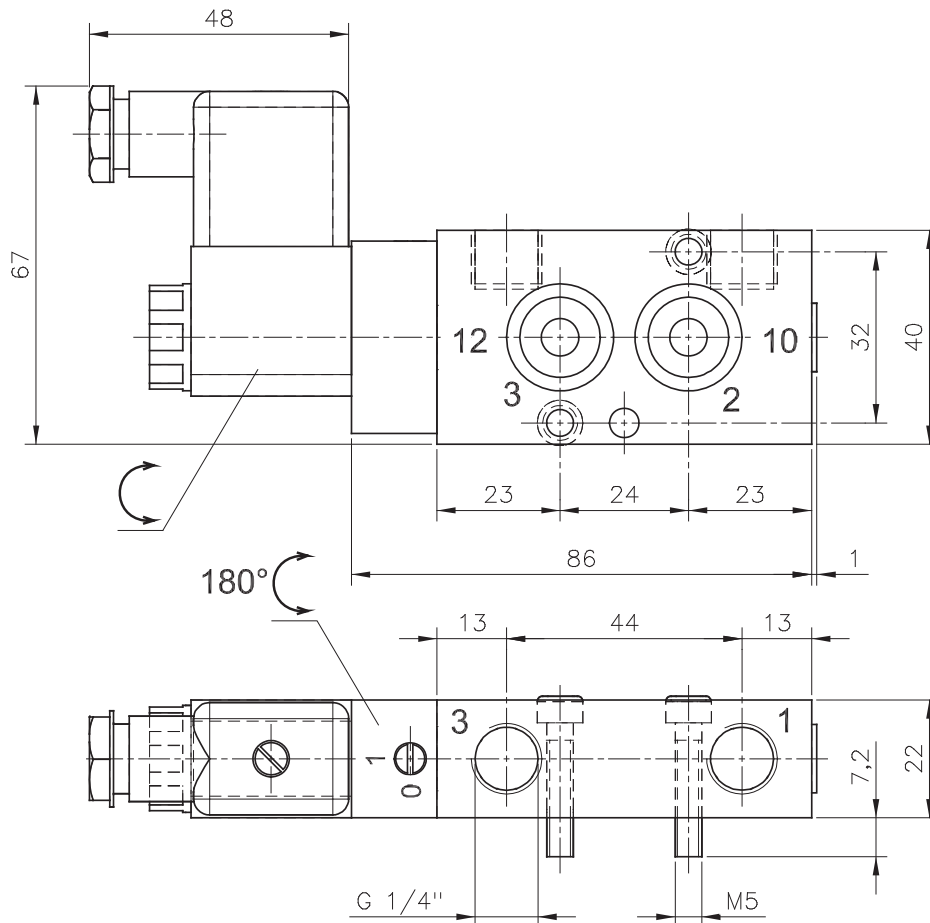
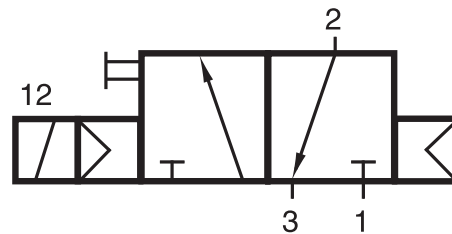
Version for vacuum on request.

Connector as shown on the photo is included.

Also available according ATEX (II2G/Dc T4 – 10°C <= TA <= 50°C resp. II3G/Dc T5 – 10°C <= TA <= 50°C): 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/4"
air flow	1250 l/min
operating pressure	2 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.21 kg



Standard Solenoid Valve, 3/2-way, G 1/2"

MH 310 121

3/2-way solenoid valve normally closed actuated by permanent signal and equipped with air spring return. Mit pneumatischer Federrückstellung.

Generally with manual override.

Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.

Port 12: G 1/8".

Minimum actuation pressure: 3 bar.

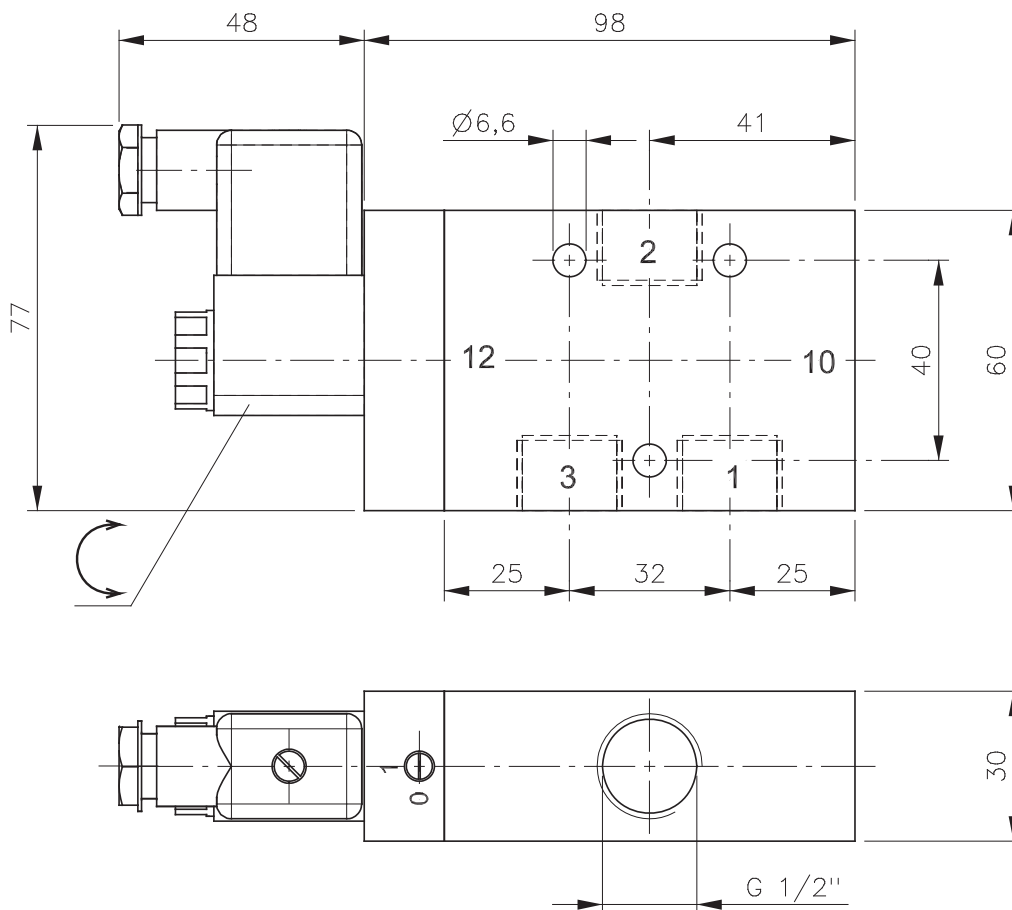
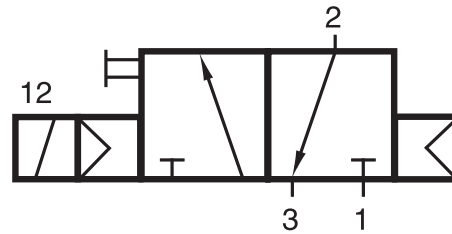
Version for vacuum on request.

Connector as shown on the photo is included.

Also available according ATEX (II2G/Dc T4 – 10°C ≤ TA ≤ 50°C resp. II3G/Dc T5 – 10°C ≤ TA ≤ 50°C): 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/2"
air flow	3000 l/min
operating pressure	1 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.53 kg



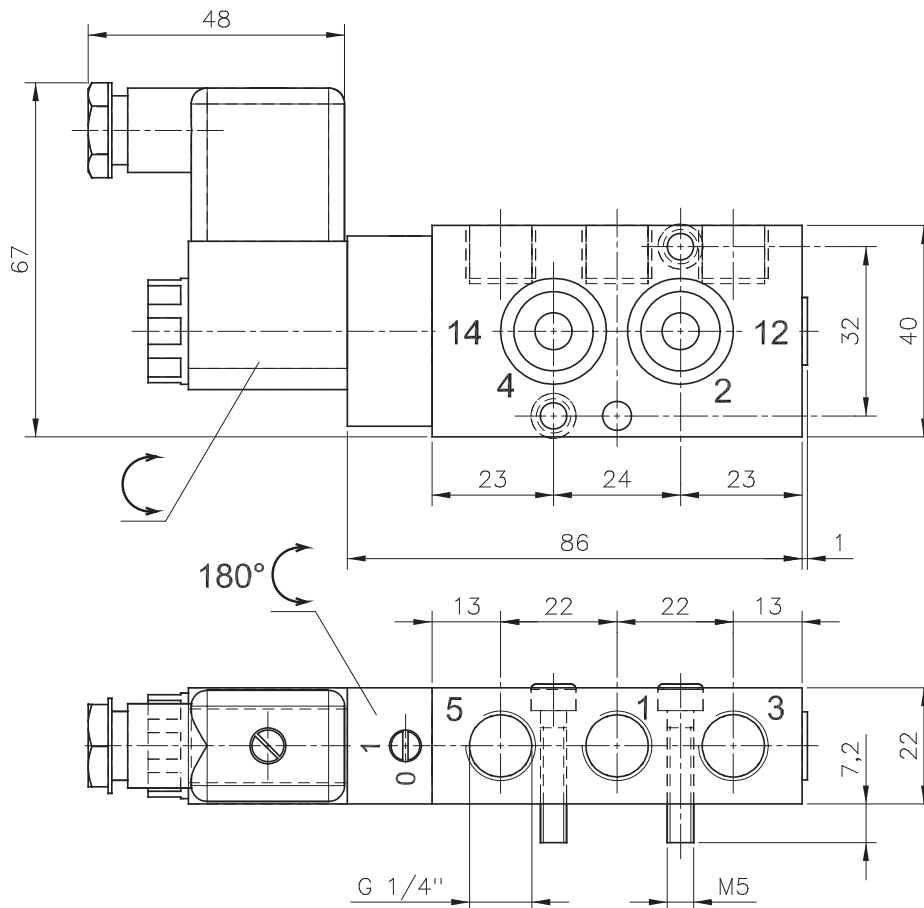
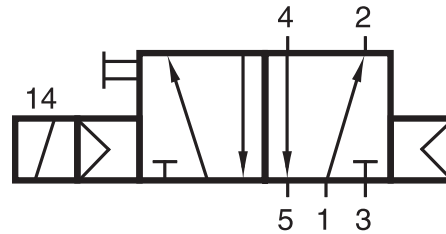
Namur Solenoid Valve, 5/2-way, G 1/4"

MNH 510 701

5/2-way solenoid valve, actuated by permanent signal.  
 Interface according to 1/4" Namur standard.  
 With pneumatic spring return.  
 Generally with manual override.  
 Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.  
 Delivery includes 1 pin, 2 screws, 2 O-rings and 1 connector.  
 Also available according ATEX (II2G/Dc T4 – 10°C <= TA <= 50°C resp. II3G/Dc T5 – 10°C <= TA <= 50°C):  
 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/4"
air flow	1250 l/min
operating pressure	2 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.26 kg



Namur Solenoid Valve, 5/2-way, G 1/2"

MNH 510 121

5/2-way solenoid valve, actuated by permanent signal.

Interface according to 1/2" Namur standard.

With pneumatic spring return.

Generally with manual override.

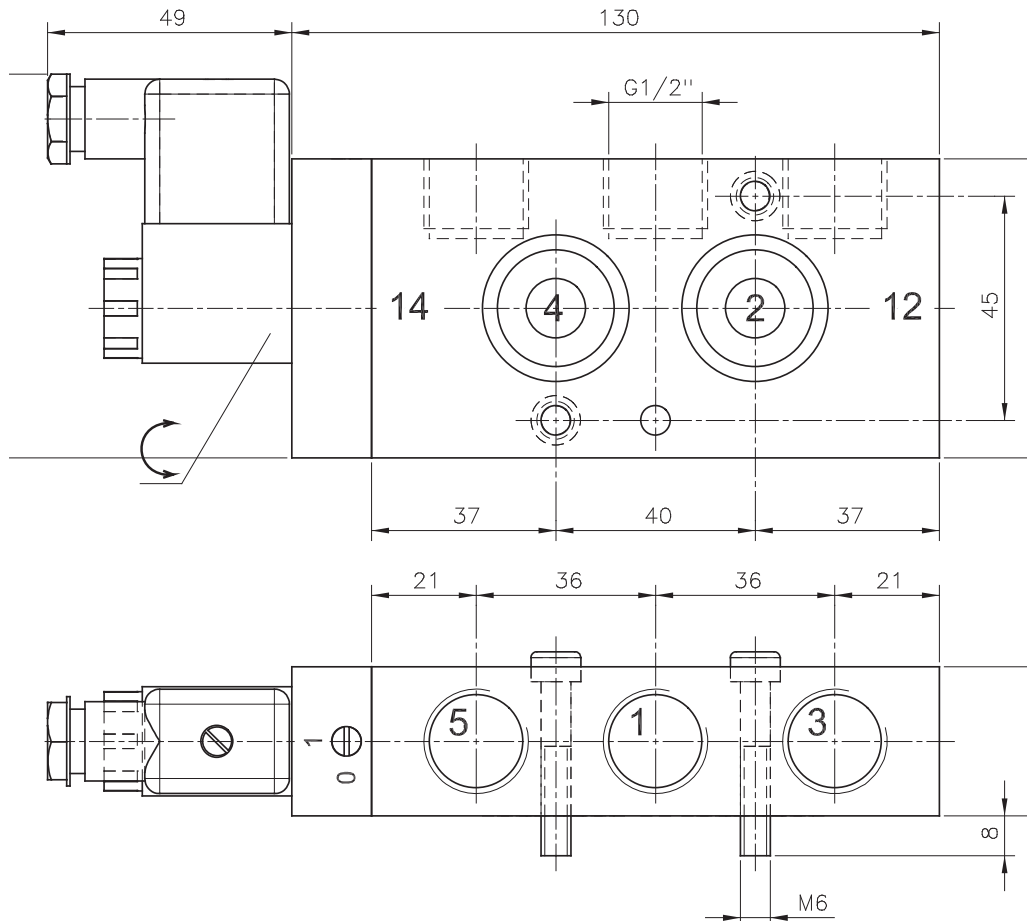
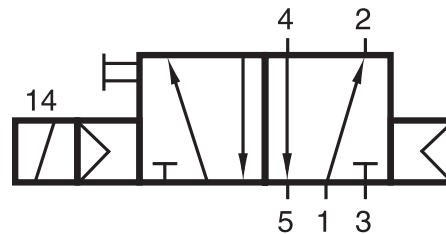
Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.

Delivery includes 1 pin, 2 screws, 2 O-rings and 1 connector.

Also available according ATEX (II2G/Dc T4 – 10°C <= TA <= 50°C resp. II3G/Dc T5 – 10°C <= TA <= 50°C): 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/2"
air flow	3000 l/min
operating pressure	1.0 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.70 kg



Namur Solenoid Valve, 3/2-way, G 1/4"

**MNH 310 701**

3/2-way solenoid valve, actuated by permanent signal. Interface according to 1/4" Namur standard, with exhaust air recirculation („purge“).

Normally closed.

With pneumatic spring return.

Generally with manual override.

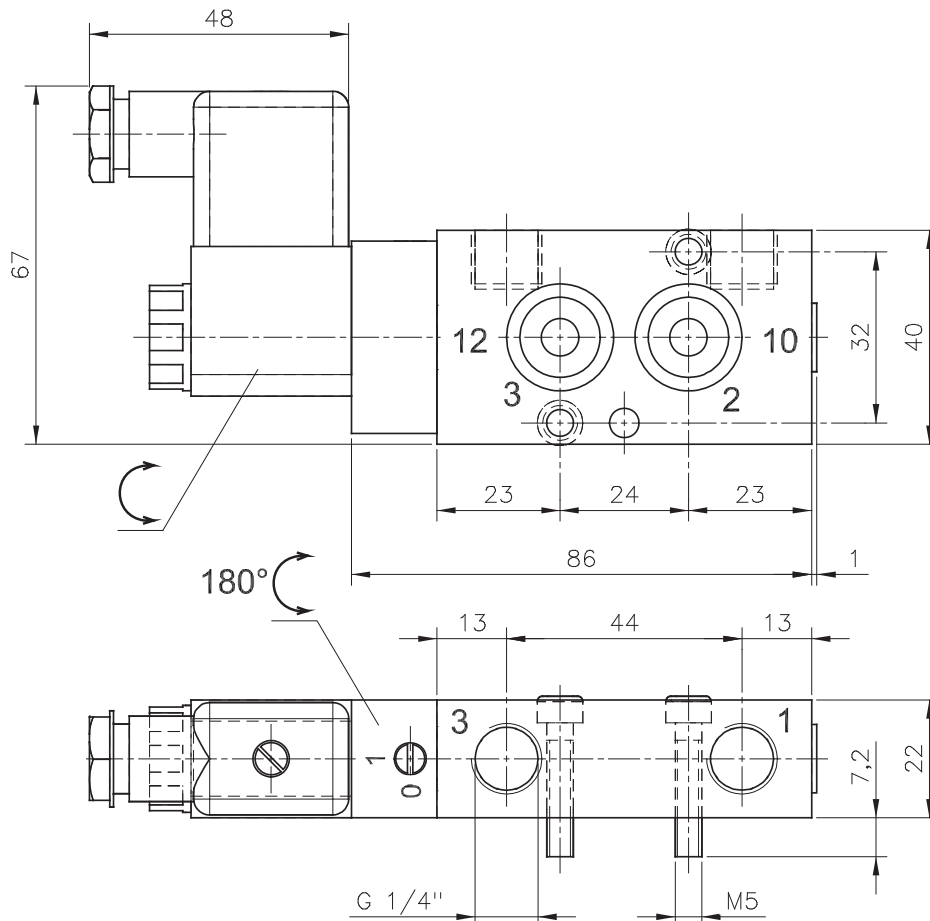
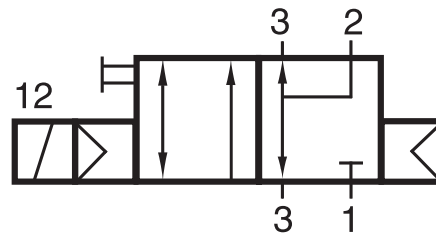
Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.

Delivery includes 1 pin, 2 screws, 2 O-rings and 1 connector.

Also available according ATEX (II2G/Dc T4 – 10°C <= TA <= 50°C resp. II3G/Dc T5 – 10°C <= TA <= 50°C): 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/4"
air flow	1250 l/min
operating pressure	2 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.26 kg



Namur Solenoid Valve, 3/2-way, G 1/2"

MNH 310 121

3/2-way solenoid valve, actuated by permanent signal. Interface according to 1/2" Namur standard, with exhaust air recirculation („purge“).

With pneumatic spring return.

Generally with manual override.

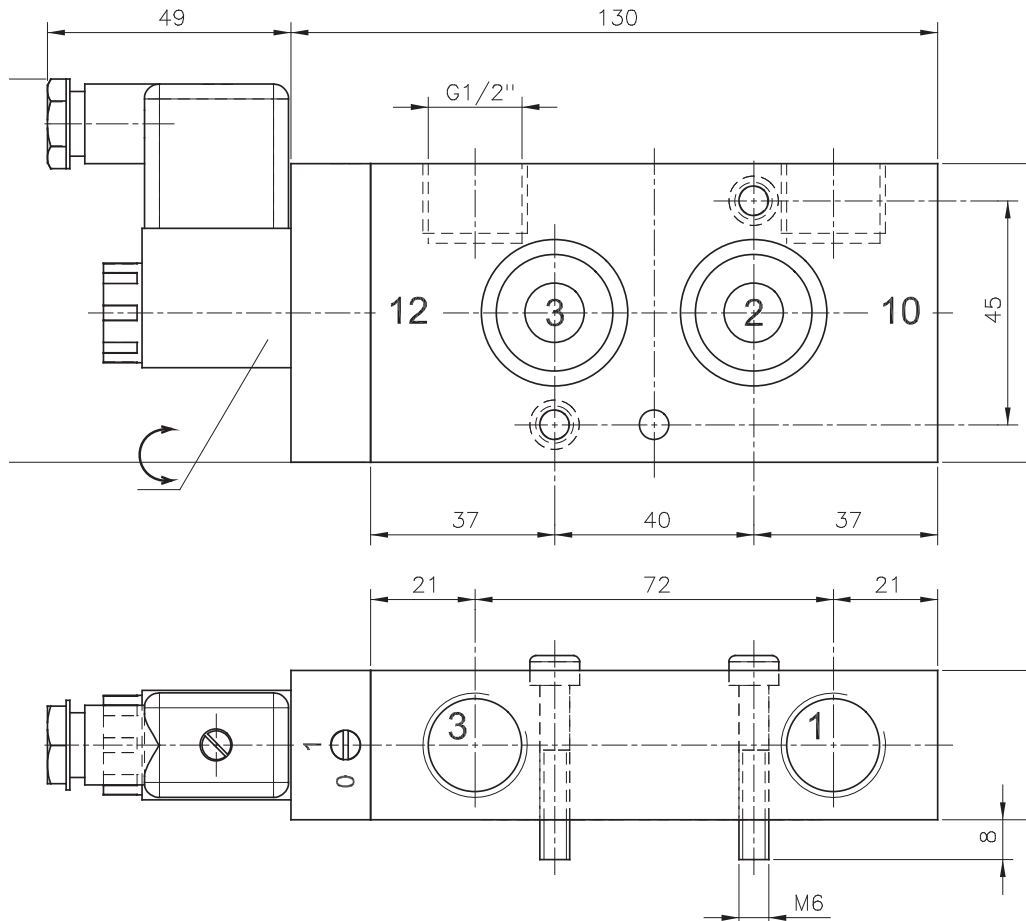
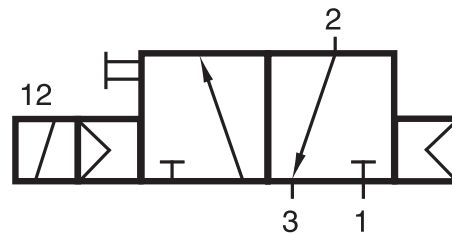
Available with solenoid operators: 230V / 50 Hz, 110 V / 50 Hz, 24 V / 50 Hz, 48 V =, 24 V =, 12 V =.

Delivery includes 1 pin, 2 screws, 2 O-rings and 1 connector.

Also available according ATEX (II2G/Dc T4 – 10°C <= TA <= 50°C resp. II3G/Dc T5 – 10°C <= TA <= 50°C): 230V / 50 Hz, 110 V / 50 Hz, 24 V =; with cable (3m).



port size	G 1/2"
air flow	3000 l/min
operating pressure	1.0 - 10 bar
power cons.	3 W = / 5 VA ~
weight	0.70 kg





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### General approvals / Certificates

- QM-Managementsystem to DIN EN ISO 9001
- manufacturer to AD 2000
- certified to DIN EN ISO 3834-3 (quality requirements for welding methods)
- manufacturer’s declaration according to directive 94/9 EC (ATEX)
- qualified welder to EN 287 material groups W01;W03, W11
- qualified welder to DIN EN ISO 15614 material group W01
- approved specialist factory to § 19 I WHG
- X-ray test (RT) to EN 473
- Mobile spectral analysis with accuracy to laboratory standard (including C, P and S)
- noise level measurement
- authorisation to transfer stamp for certificates
- surface crack inspection (PT) to EN 473
- sealing test (Nekal)
- sealing test to DIN 25412 Part 2
- testing and acceptance acc. pressure vessel directive 97/23 EG
- layer thickness measurement
- wall thickness measurement
- temperature measurement (-50 to +1150 degree C)



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