

Ball sector valve 4040



DN 25 to DN 300

Pneumatic control valve for controlling neutral and aggressive media with integrated positioner

- DN 25 to DN 300
- Large Kvs values up to 3840
- Excellent control behavior
- Suitable for abrasive media
- Easily replaceable seat ring
- Low maintenance
- Easy to equip with drives
- Economical and easy to install
- Optionally with power amplifier type 4090 (from DN150) to reduce the switching time
- Optionally with installation length according to ANSI ISA 75.08.02



Technical data of the valve

design	DN 25 - DN 250 intermediate flange design DN 300 flange connection	
nominal widths	DN 25 to DN 300	
housing material	castings turned parts	1.4408 (CF8M) 1.4404 (316L)
Material of the bearing journal	1.4122	
bearing material	High temperature plain bearings	
Interface to the drive	Mounting kit DIN/ISO 5211	
nominal pressure	DN25 - DN50	PN40 (for flanges PN 10 - PN 40), ANSI300, ANSI150
	DN65 - DN100	PN25 (for flanges PN 10 - PN 25), ANSI150
	DN125 - DN300	PN16 (for flanges PN 10 - PN 16), ANSI150
media temperature	- 40°C to +220°C	depending on the seal design
ambient temperature	- 40°C to +80°C Special versions on request	depending on the drive design
vacuum	up to 50 mbar abs.	
curve	Almost equal percentage valve characteristic	
rangeability	300:1	
Specific leak rate	KS2 series, DN25-DN250: ISO FE-BH-CC3-SSA0-t(-40°C/+220°C)-PN40-ISO 15848-1 KS1	
Shaft and housing seal	series, DN300: ISO FE-BH-SSA0-t(RT)-PN16- ISO 15848-1	

Maximum Working Pressures

DN	permissible differential pressure (delta p)									
	Seat ring PTFE			Seat ring PEEK				Seat ring stellite		
	up to 80°C bar	120°C bar	170°C bar	up to 80°C bar	120°C bar	170°C bar	220°C bar	up to 80°C bar	170°C bar	220°C bar
25-50	25	16	6	40	40	25	16	40	40	25
65-100	16	12	5	25	25	16	10	25	25	16
125-300	16	12	4	16	16	12	8th	16	16	12

Drives for attachment according to DIN/ISO5211, control pressure 5 - 6 bar
(if only a lower control pressure is available, this must be specified for the design)

temperature limits

seat ring	Material O-ring									
	viton		EPDM		NBR		FFKM		PFA silicone	
	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]
PTFE	- 15	170	- 40	140	- 30	100	- 15	170	- 45	170
PEEK	- 15	200	- 40	140	- 30	100	- 15	220	- 45	220
stellite	- 15	200	- 40	140	- 30	100	- 15	220	- 45	220

leakage

seat ring	spherical sector	leak rate	
		Portion of the max. Kvs value	Class according to EN 60534-4: (IEC 60534-4)
PTFE or PEEK	polished stainless steel		VI
PTFE or PEEK	Hard-chromed stainless steel	5x10 ⁻⁷	IV-S1
PTFE or PEEK	Stainless steel, hard chrome plated + lapped		VI
stellite	Stainless steel, hard chrome plated + lapped	5x10 ⁻⁶	IV-S1

Actuating times with positioner 8049

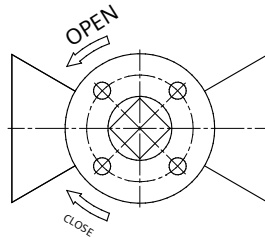
DN	Actuating time open 5% to 95%			Actuating time close 95% to 5%		
	default 100 NI/min	with performance amplifier Type 4090	with external solenoid valves (1500NL)	default 100 NI/min	with performance amplifier Type 4090	with external solenoid valves (1500NL)
100	4.0s	1.9s	1.0s	5.4s	3.0s	1.2s
150	7.0s	2.5s	1.5s	8.5s	4.0s	1.6s
200	11.0s	4.0s	1.8s	13.0s	8.0s	1.9s
250	14.0s	5.0s	2.5s	17.5s	10.0s	2.6s
300	23.0s	9.0s	4.5s	43.0s	18.0s	6.0s

Kvs values

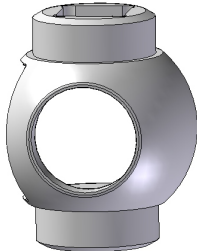
DN	Kvs value reduced to					
	100%	63%	40%	25%	16%	6.3%
25	25	12.7	7.9	5.3	3.6	1.45
40	70	40	25			
50	109	65	41			
65	190					
80	300					
100	390					
125	756					
150	810					
200	1365					
250	2220					
300	3840					

Torques and mounting kits for retrofitting drives

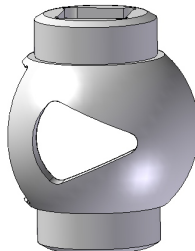
DN	angle of rotation nominal	Max. pressure level pm	Max. pressure level ANSI	recommended Torque [Nm]		mounting kit ISO 5211 diagonal square	
				On to-Operation	Rule-operation	row 1	row 2
25	90°	PN40	ANSI 300	15	25	F04/SW11	F05/SW14
40	90°	PN40	ANSI 300	30	50	F05/SW14	F07/SW17
50	90°	PN40	ANSI 300	30	50	F05/SW14	F07/SW17
65	90°	PN25	ANSI 150	60	100	F07/SW17	F10/SW22
80	90°	PN25	ANSI 150	60	100	F07/SW17	F10/SW22
100	90°	PN25	ANSI 150	90	150	F07/SW17	F10/SW22
125	90°	PN16	ANSI 150	150	250	F10/SW22	F12/SW27
150	90°	PN16	ANSI 150	150	250	F10/SW22	F12/SW27
200	90°	PN16	ANSI 150	210	350	F12/SW27	F14/SW36
250	90°	PN16	ANSI 150	360	600	F12/SW27	F14/SW36
300	90°	PN16	ANSI 150	900	1500	F14/SW36	F16/SW46



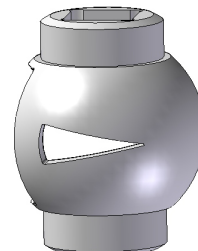
Ball sectors with reduced Kvs values



100%



Reduced
63%



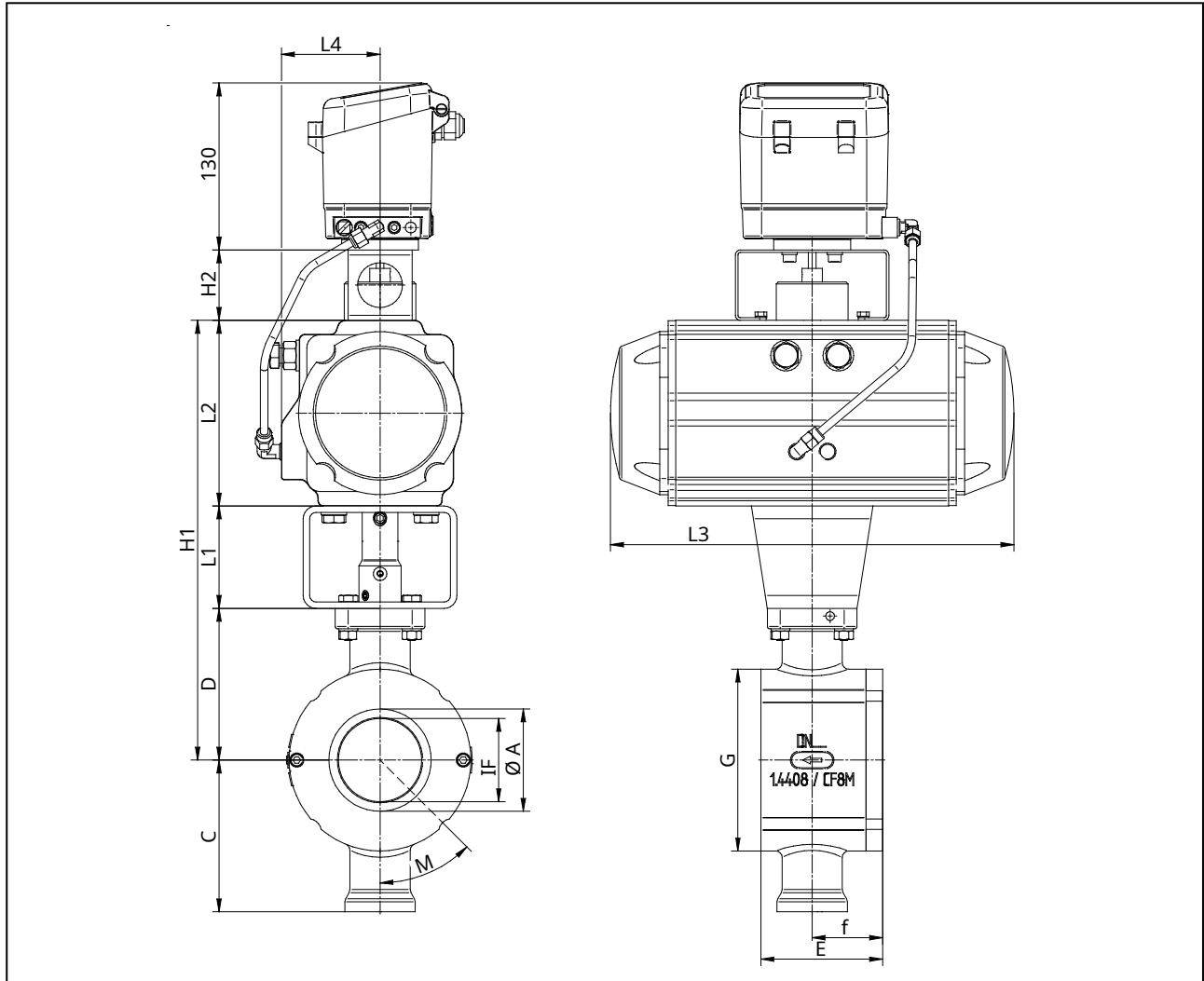
Reduced
25%

Ball sector valve type 4040 with handwheel gear



Dimensions KS2 with actuator and positioner 8049

Sealing of the bearing journal with PTFE packing



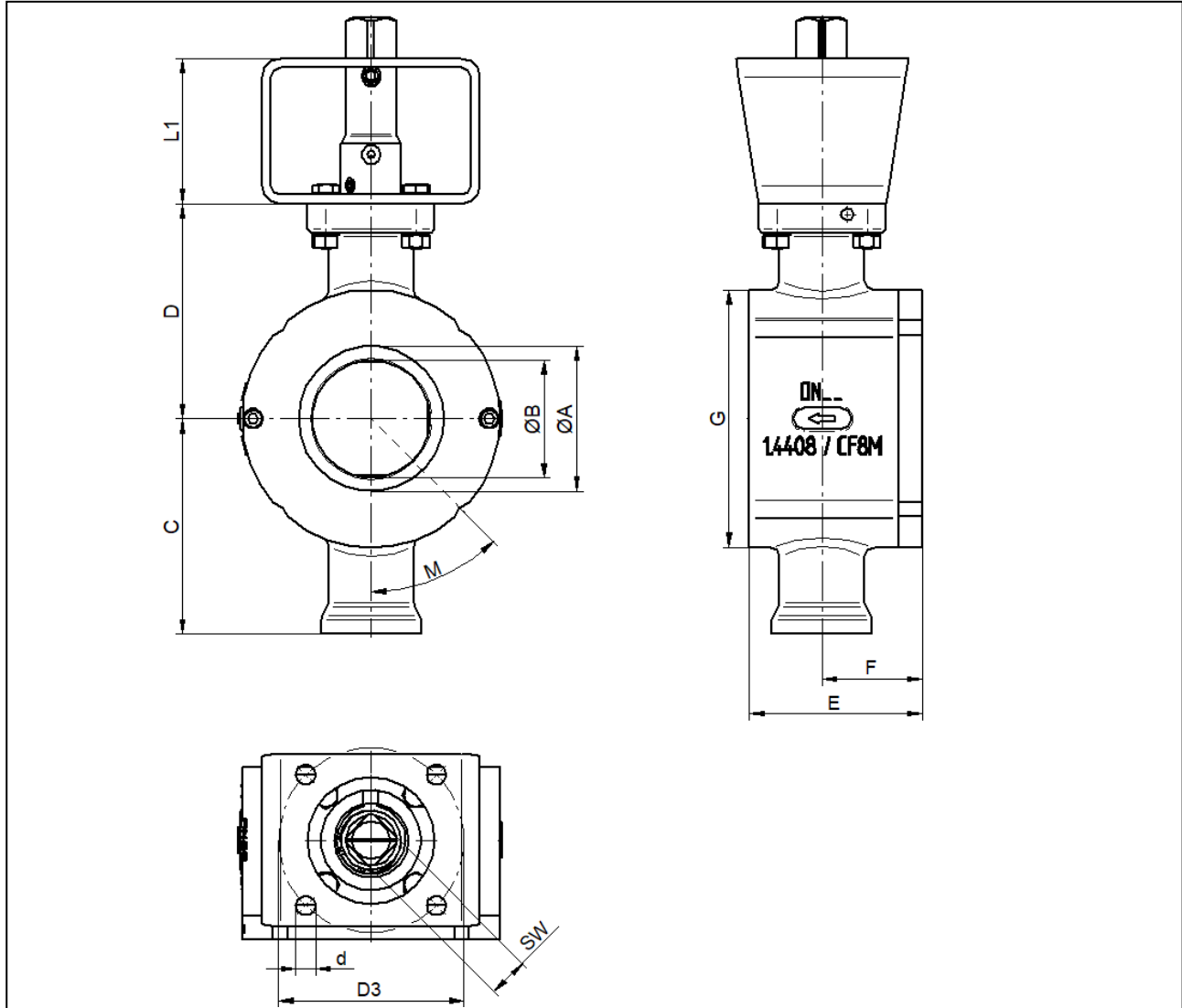
DN	Drive single-acting						Drive double-acting					
	L1	L2	L3	L4	H1	Weight [kg]	L1	L2	L3	L4	H1	Weight [kg]
25	60	102	210.5	52	247	6.2	60	85	158.5	47	230	4.3
40	60	115	247.5	56.8	267	8.3	60	102	210.5	52	254	6.7
50	60	115	247.5	56.8	270	9.1	60	102	210.5	52	257	7
65	80	145	315	77	340.5	16.6	60	115	247.5	53.8	290.5	11.3
80	80	145	315	77	343.5	17.4	60	115	247.5	53.8	293.5	12.1
100	80	157	345	82	366.5	24	60	127	268.5	67	316.5	17.2
125	80	177	408.5	91.5	434.5	37.6	80	157	345	82	414.5	26.2
150	80	177	408.5	91.5	444	40.6	80	157	345	82	424	34
200	80	220.5	487	105	516.5	72.3	80	177	408.5	96.5	473	55.2
250	80	245	543	112	567	109	80	196	437.5	99	518	84.8

DN	A	B	C	D	E	f	G	H2
25	25	20	85	85	50	26	75	45
40	41	32	92	92	58	31	96	45
50	53	40	95	95	71	38	112	45
65	65	50	115.5	115.5	85	49	129	55
80	80	65	118.5	118.5	95	55	142	55
100	100	80	129.5	129.5	112	62	174	55
125	100	125	177.5	177.5	148	85	200	55
150	150	120	187	187	170	95	220	55
200	200	155	216	216	210	120	275	75
250	250	195	242	242	270	145	338	75

size in mm

Dimensions KS2 without drive (with mounting kit ISO 5211)

Sealing of the bearing journal with PTFE packing

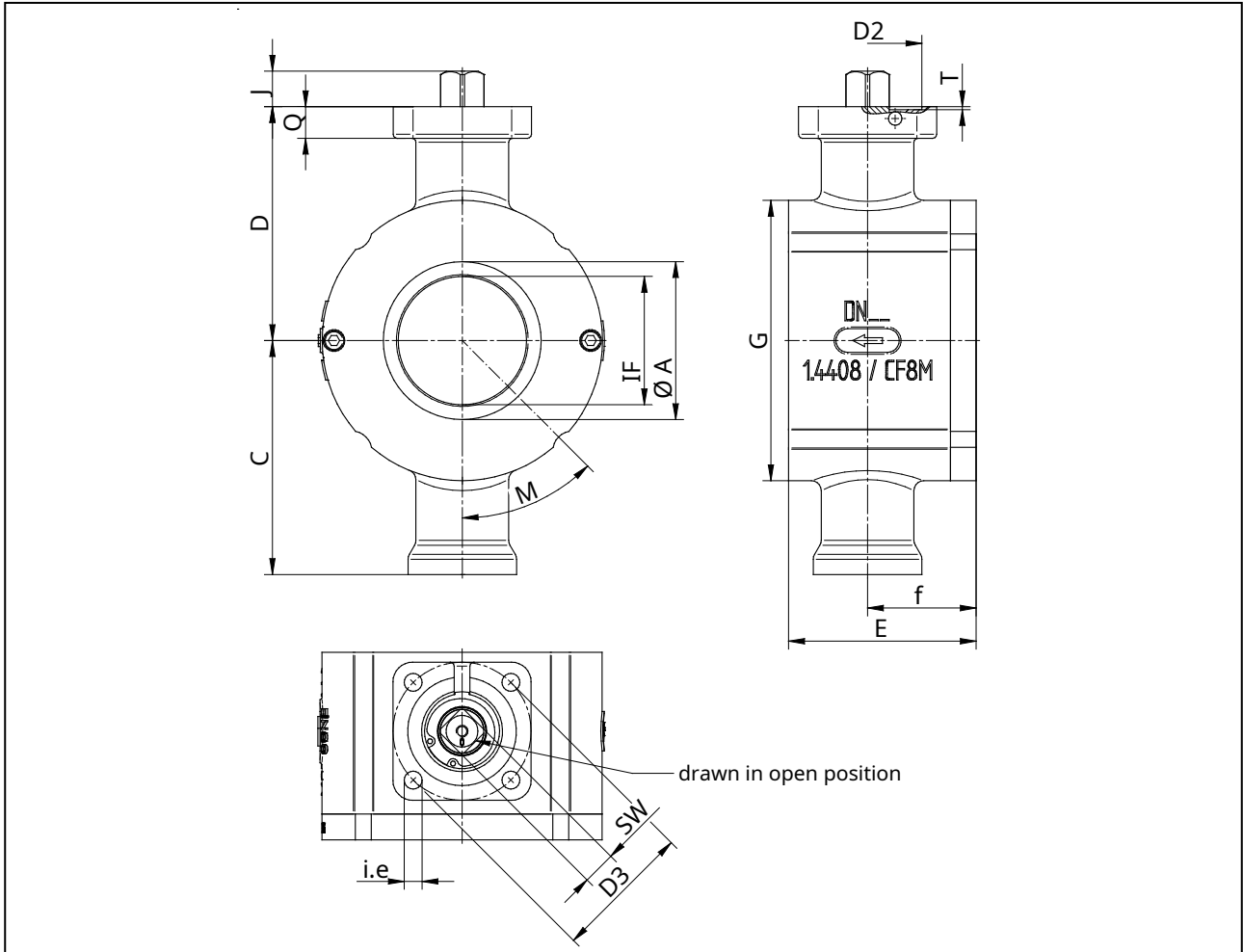


DN	A	B	C	D	E	f	G	row 1				row 2				sex important [kg]		
								L1	SW	i.e	D3	DIN ISO 5211	L1	SW	i.e		D3	DIN ISO 5211
25	25	20	85	85	50	26	75	60	11	5.5	42	F 04	60	14	6.6	50	F 05	2.2
40	41	32	92	92	58	31	96	60	14	6.6	50	F 05	60	17	9	70	F 07	3
50	53	40	95	95	71	38	112	60	14	6.6	50	F 05	60	17	9	70	F 07	3.8
65	65	50	115.5	115.5	85	49	129	60	17	9	70	F 07	80	22	11	102	f 10	6.4
80	80	65	118.5	118.5	95	55	142	60	17	9	70	F 07	80	22	11	102	f 10	7.2
100	100	80	129.5	129.5	112	62	174	60	17	9	70	F 07	80	22	11	102	f 10	11
125	100	125	177.5	177.5	148	85	200	80	22	11	102	f 10	80	27	13.5	125	f 12	20
150	150	120	187	187	170	95	220	80	22	11	102	f 10	80	27	13.5	125	f 12	23
200	200	155	216	216	210	120	275	80	27	13.5	125	f 12	80	36	17	140	f 14	40
250	250	195	242	242	270	145	338	80	27	13.5	125	f 12	80	36	17	140	f 14	66

size in mm

Dimensions KS2 without drive Version with square

Sealing of the bearing journal with PTFE packing

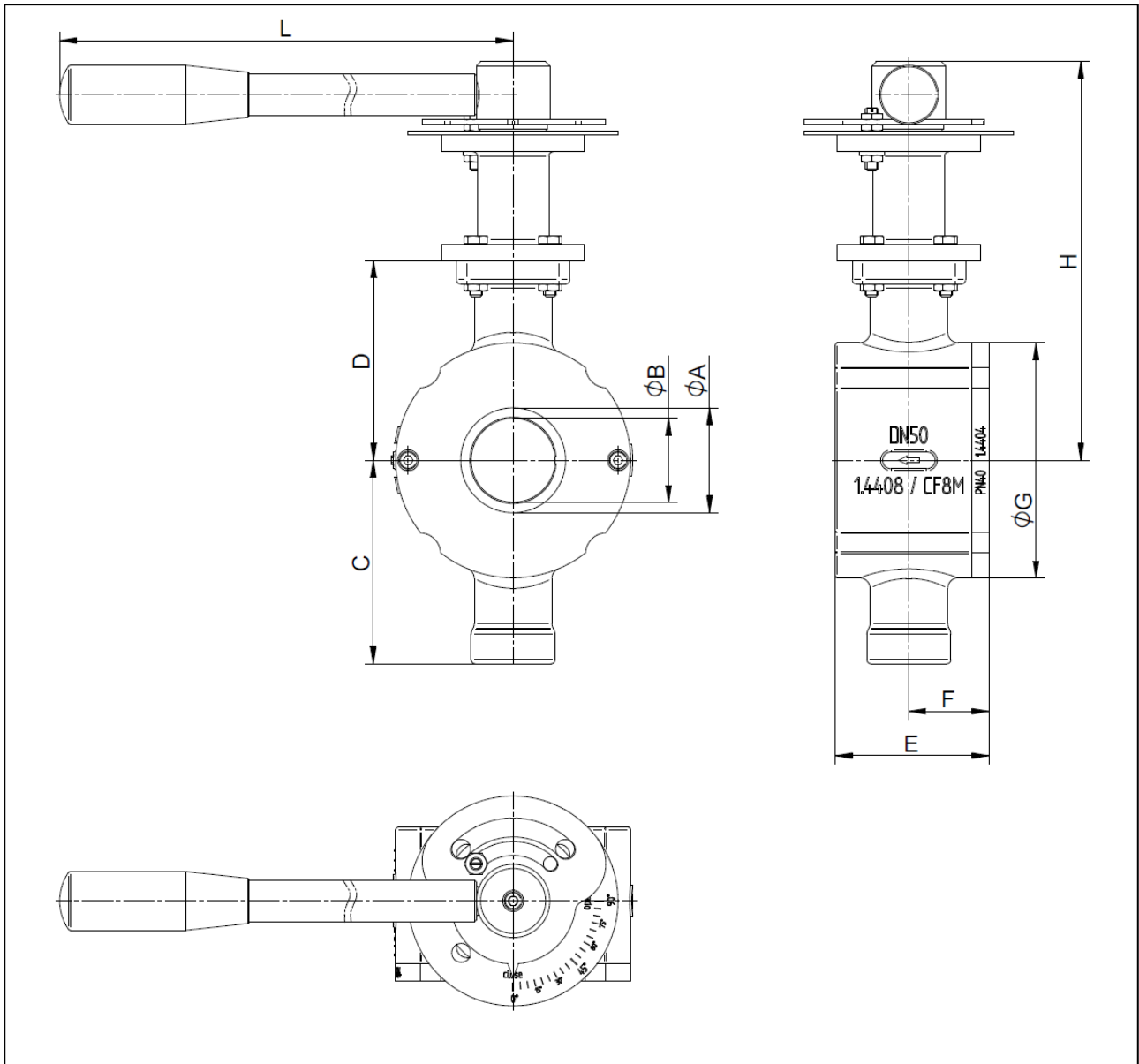


DN	A	B	C	D	E	f	J	SW	Q	i.e	D2	T	D3	DIN ISO 5211	sex important [kg]
25	25	20	85	85	50	26	15	14	11	6.6	35	1	50	F05	2.2
40	41	32	92	92	58	31	15	14	11	6.6	35	1	50	F05	3
50	53	40	95	95	71	38	15	14	11	6.6	35	1	50	F05	3.8
65	65	50	115.5	115.5	85	49	18	17	16	9	55	1.5	70	F 07	6.4
80	80	65	118.5	118.5	95	55	18	17	16	9	55	1.5	70	F 07	7.2
100	100	80	129.5	129.5	112	62	18	17	16	9	55	1.5	70	F 07	11
125	100	125	177.5	177.5	148	85	22.5	22	17	11	70	1.5	102	f 10	20
150	150	120	187	187	170	95	22.5	22	17	11	70	1.5	102	f 10	23
200	200	155	216	216	210	120	27.5	27	17	13.5	85	1.5	125	f 12	40
250	250	195	242	242	270	145	27.5	27	17	13.5	85	1.5	125	f 12	66

size in mm

Dimensions KS2 with spindle extension and hand lever

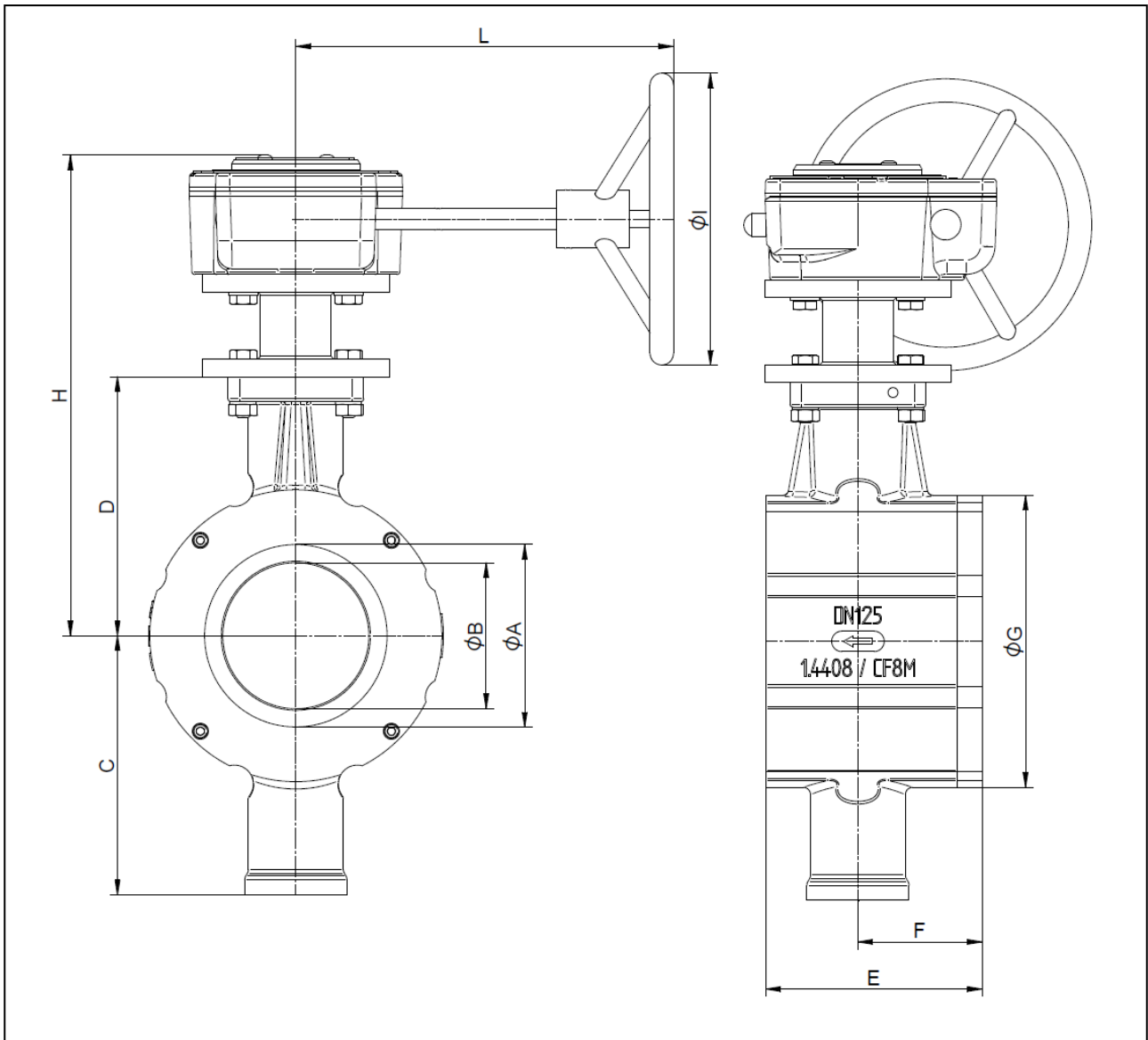
Sealing of the bearing journal with PTFE packing



DN	A	B	C	D	E	f	G	H	L	Weight (kg)
25	25	20	85	85	50	26	73	180	254	3.7
40	41	32	92	92	58	31	94	187	254	4.5
50	53	40	95	95	71	38	112	190	254	5.3
65	65	50	116	116	85	49	112	231	254	8.8
80	80	65	119	119	95	55	142	234	325	9.6
100	100	80	130	130	112	62	174	245	325	13.4

size in mm

Dimensions KS2 with spindle extension and handwheel gear
Sealing of the bearing journal with PTFE packing

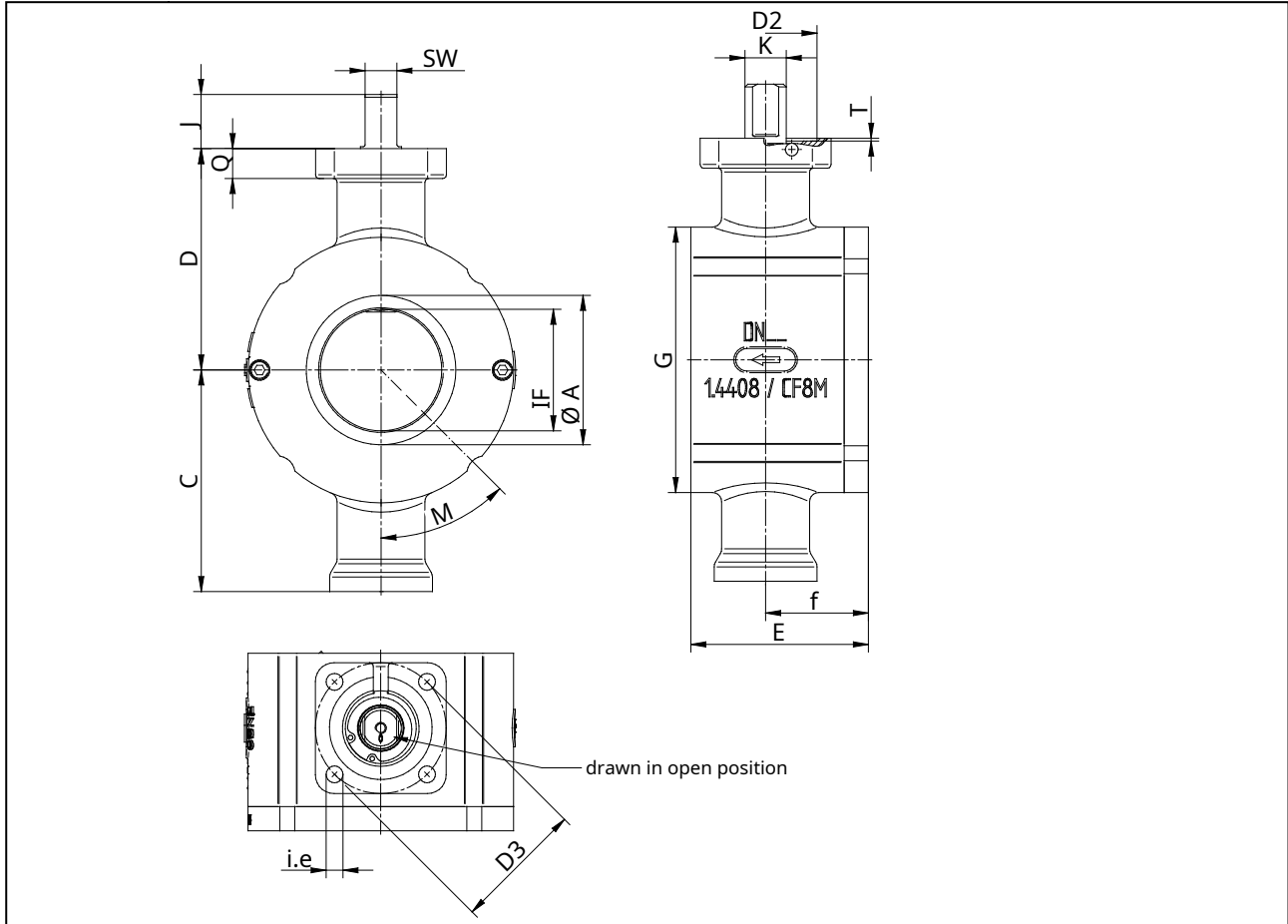


DN	A	B	C	D	E	f	G	H	I	L	Weight (kg)
125	125	100	178	178	148	85	200	330	200	259	28
150	150	120	187	187	170	95	220	339	200	259	31
200	200	155	216	216	210	120	275	358	200	259	49.2
250	250	195	242	242	270	145	344	384	200	259	75.2

size in mm

Dimensions KS2 without drive Version with two flats

Sealing of the bearing journal with PTFE packing



DN	A	B	C	D	E	f	J	SW	K	Q	i.e	D2	T	D3	DIN ISO 5211	sex important [kg]
25	25	20	85	85	50	26	24	14	18	11	6.6	35	1	50	F05	2.2
40	41	32	92	92	58	31	24	14	18	11	6.6	35	1	50	F05	3
50	53	40	95	95	71	38	24	14	18	11	6.6	35	1	50	F05	3.8
65	65	50	115.5	115.5	85	49	29	17	22	16	9	55	1.5	70	F07	6.4
80	80	65	118.5	118.5	95	55	29	17	22	16	9	55	1.5	70	F07	7.2
100	100	80	129.5	129.5	112	62	29	17	22	16	9	55	1.5	70	F07	11
125	100	125	177.5	177.5	148	85	37.5	22	28	17	11	70	1.5	102	f 10	20
150	150	120	187	187	170	95	37.5	22	28	17	11	70	1.5	102	f 10	23
200	200	155	216	216	210	120	46.5	27	36	17	13.5	85	1.5	125	f 12	40
250	250	195	242	242	270	145	46.5	27	36	17	13.5	85	1.5	125	f 12	66

size in mm

Dimensions KS1 DN300 with AirTorque drive

Sealing of the bearing journal with O-rings
(designed for a control pressure of 5 - 6 bar)

