

Butterfly Valve

ISORIA 20/25

DN 32-1000

PS 20 bar: ISORIA 20

PS 25 bar: ISORIA 25

Type Series Booklet



Legal information/Copyright

Type Series Booklet ISORIA 20/25

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- ACTAIR NG / DYNACTAIR NG pneumatic actuators
- HQ hydraulic actuators
- AMTROBOX for open/closed position signalling
- AMTRONIC position signalling and control air supply
- SMARTRONIC positioner and process controller
- UL version of ISORIA 20 for fire protection applications
- Version to RCC-M and ASME for use in the nuclear sector
- Anti-static design for manually actuated valves

Valve body materials

Table 2: Overview of available materials

Material	Material number	Type	DN max.	KSB code
ISORIA 20 et ISORIA 25				
EN-GJS-400-15	5.3106	T2	DN 32-600	3g
EN-GJS-400-15	5.3106	T5	DN 350-600	3g
ISORIA 20				
EN-GJS-400-15	5.3106	T3	DN 32-600	3g
EN-GJS-400-15	5.3106	T4	DN 32-600	3g
Cast steel	1.0619	T4	DN 32-600	1
Cast steel	1.0619	T5	DN 200-600	1
ISORIA 25				
EN-GJS-400-15	5.3106	T5	DN 700-1000	3g
ASTM A536 Gr. 60.40.18		T5	DN 350-1000	3g
Cast steel		T5	DN 200-1000	1
ASTM A216 Gr. WCC				

Product benefits

- Spherically machined disc with rounded sealing contour
 - ensures durable and permanently tight shut-off
- Splined or keyed connection without play between shaft and valve disc
 - Dry shaft, no contact with fluid handled
- Sealing to atmosphere is ensured,
 - even when the actuator has been removed
- Marking indicates position of valve disc
- Valve equipped with stainless steel bearing bushes with reinforced PTFE coating
- Valve actuation options
 - Manual
 - Electric
 - Pneumatic
 - Hydraulic

Product information

Product information as per Pressure Equipment Directive 2014/68/EU (PED)

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.

EC Machinery Directive 2006/42/EC

Valves with actuators can meet the requirements of the 2006/42/EC Machinery Directive for partly completed machinery.

Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see <https://www.ksb.com/ksb-en/About-KSB/Corporate-responsibility/reach/>.

Product information as per Directive 2014/34/EU (ATEX)

The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, Group II, category 2 (zones 1+21) to ATEX 2014/34/EU.

Certifications

Table 3: Overview

Label	Effective in:	Comment
	Worldwide	
	France	Approved in accordance with the French drinking water regulation
	United Kingdom	Approved in accordance with the UK drinking water regulation
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications
	-	Approved for fire-fighting applications

Related documents

Table 4: Information/documents

Document	Reference number
Operating manual	8449.8

Purchase order specifications

1. Type
2. Nominal pressure
3. Nominal size
4. Fluid handled
5. Flow rate / flow velocity
6. Operating temperature
7. Materials (body, valve disc, seat)
8. Line connection, flange facing and flange surface quality
9. Actuator / automation
10. Reference number

Technical data
Permissible pressures for liners
Table 5: Summarising table

DN	NPS [inch]	Max. permissible pressure PS [bar]		
		XA - XC	XV	K
32-600	1¼-24	20	20	20
32-600	1¼-24	25	25	-
700-1000	28-40	25	-	-

Vacuum resistance
Table 6: vacuum resistance data

DN	NPS [inch]	Liner mounting method	Min. pressure	Max. temperature
			[bar absolute]	All liners
32-150	1¼-6	Non-glued (standard)	$1,33 \cdot 10^{-5}$ (10^{-2} torr)	See "Operating data"
200-600	8-24	Non-glued (standard)	0,3	
200-1000	8-24	Glued (optional)	$1,33 \cdot 10^{-5}$ (10^{-2} torr)	

Hydraulic characteristics of butterfly valves
Table 7: Kv0 and Cv0 [mm]

DN	NPS [inch]	Flow coefficient with valve disc fully open		Zeta
		Kv0	Cv0	
32	1¼	30	35	1,44
40	1½	53	62	1,46
50	2	133	154	0,56
65	2½	240	280	0,49
80	3	410	475	0,39
100	4	655	760	0,37
125	5	900	1044	0,48
150	6	1800	2090	0,25
200	8	3550	4120	0,20
250	10	3890	4500	0,41
300	12	5580	6470	0,42
350	14	8060	9350	0,37
400	16	10500	12180	0,37
450	18	13300	15400	0,37
500	20	17400	20200	0,33
550	22	21000	24400	0,33
600	24	25000	29000	0,33
700	28	34200	39600	0,33
800	32	43000	49900	0,35
900	36	54600	63300	0,35
1000	40	69600	80700	0,33

Actuating torques

A safety coefficient has already been included in the actuating torques for actuator selection.

Table 8: actuating torques [Nm] for ISORIA 20

DN	NPS	With lubricating fluids	With non-lubricating fluids
	[inch]		
32	1¼	20	20
40	1½	20	20
50	2	30	30
65	2½	40	50
80	3	50	60
100	4	70	100
125	5	100	150
150	6	140	200
200	8	240	350
250	10	410	610
300	12	630	950
350	14	860	1300
400	16	1300	1900
450	18	1700	2500
500	20	2100	3100
550	22	2500	3700
600	24	2900	4300

Table 9: actuating torques [Nm] for ISORIA 25

DN	NPS	With lubricating fluids only
	[inch]	
32	1¼	20
40	1½	20
50	2	30
65	2½	50
80	3	60
100	4	100
125	5	150
150	6	200
200	8	270
250	10	500
300	12	800
350	14	1000
400	16	1600
450	18	2100
500	20	2500
550	22	3000
600	24	3500
700	28	9000
800	32	10500
900	36	12000
1000	40	14000

Materials

Table 10: Sectional drawing

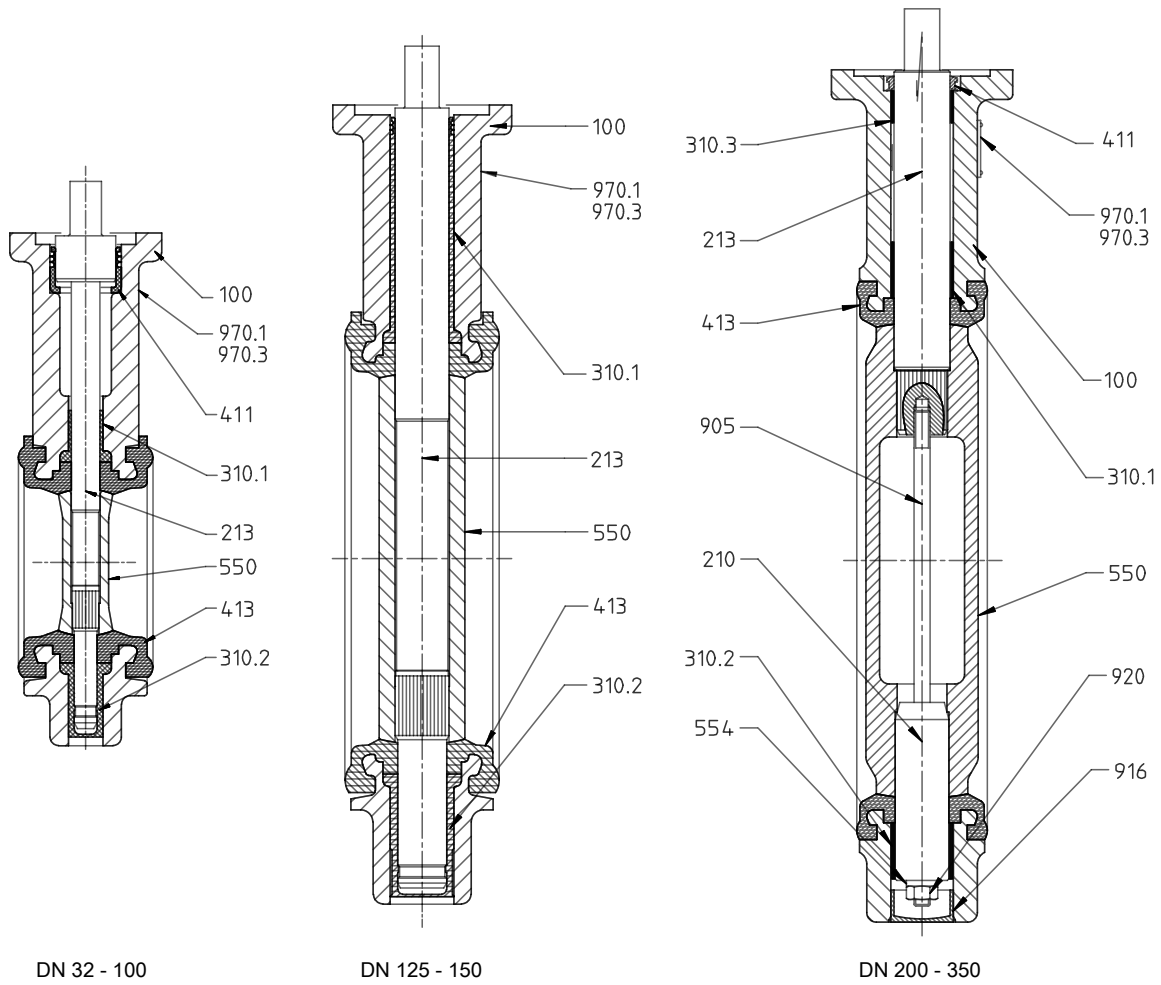


Fig. 1: Sectional drawings of ISORIA 20/25, DN 32 - 350

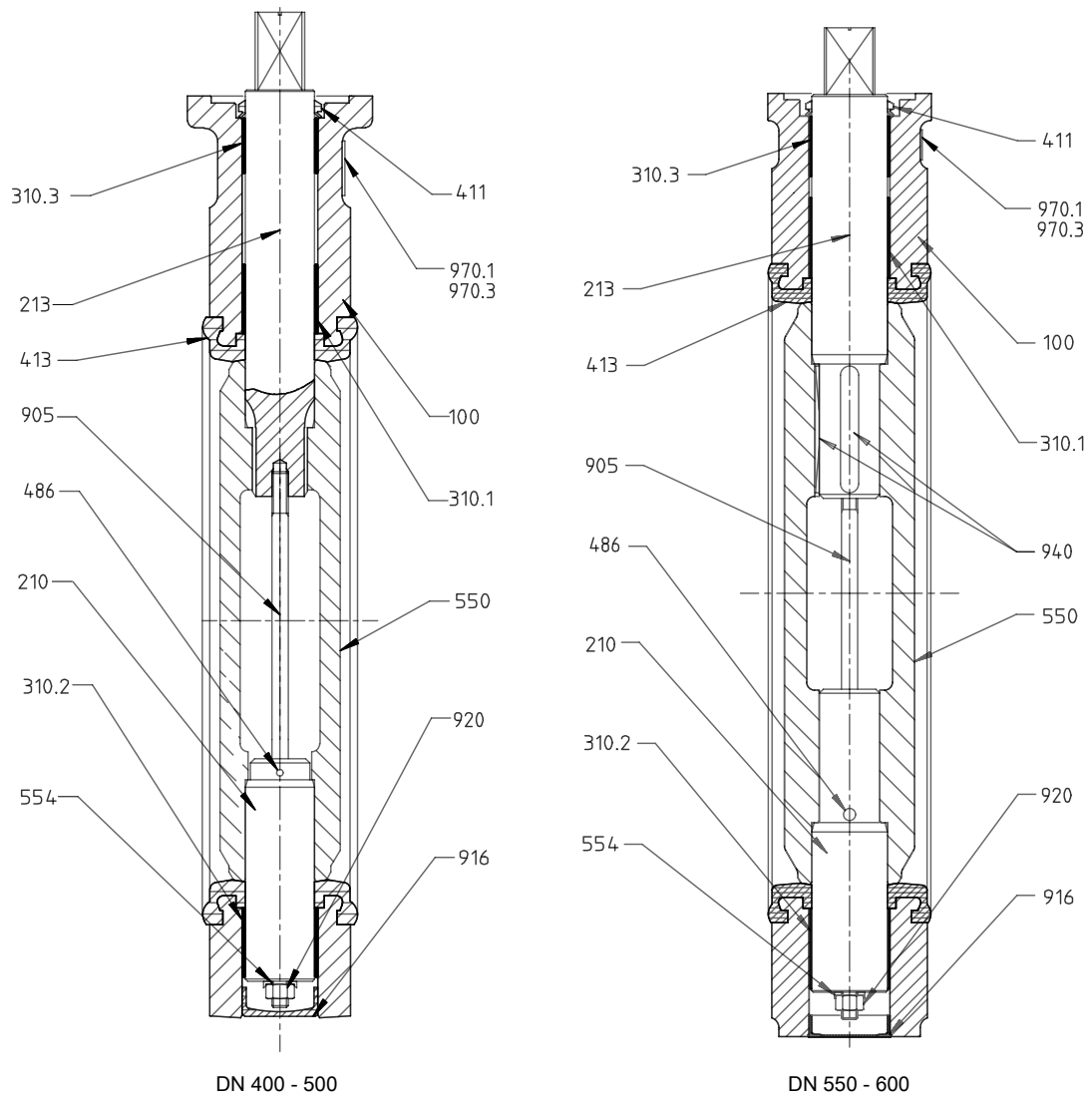


Fig. 2: Sectional drawings of ISORIA 20/25 DN 400 - 600

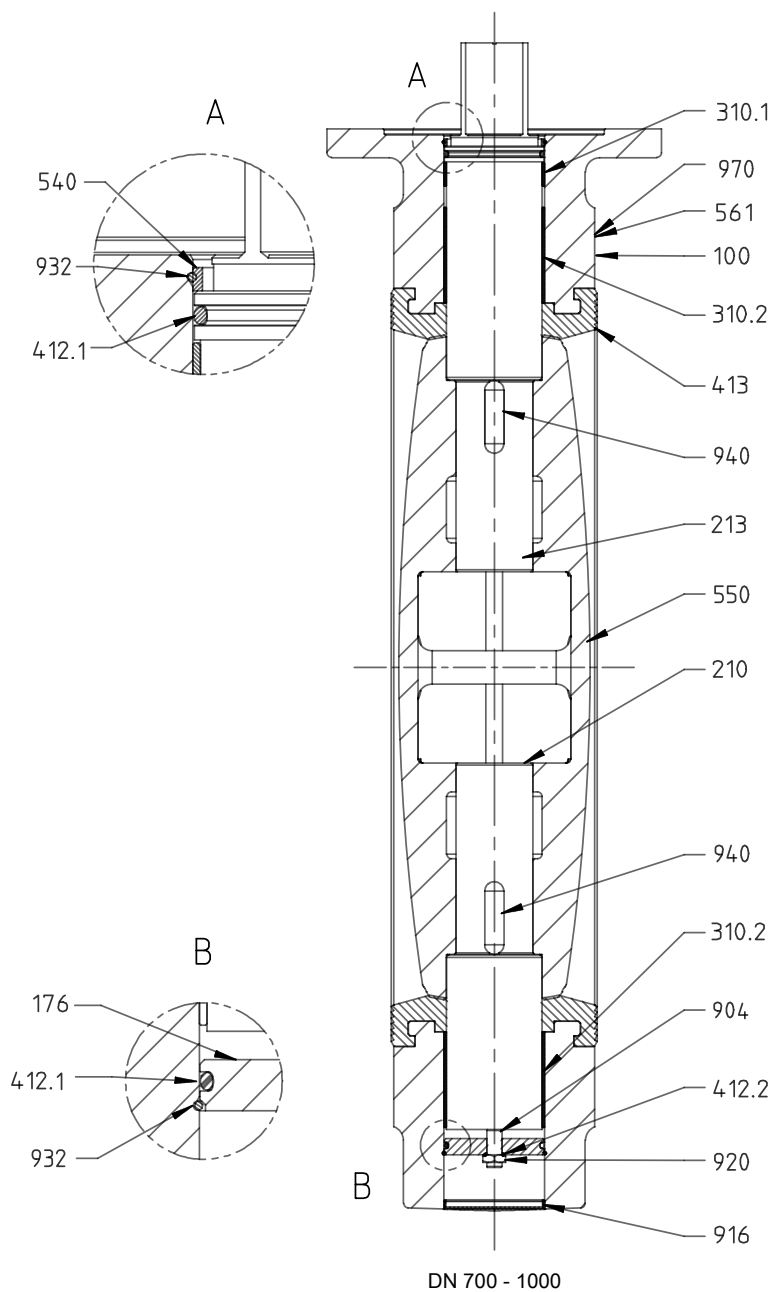
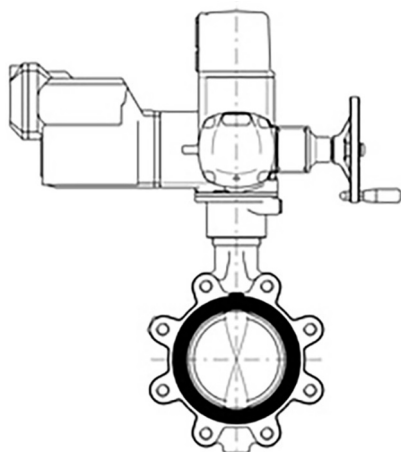


Fig. 3: Sectional drawings of ISORIA 25, DN 700 - 1000

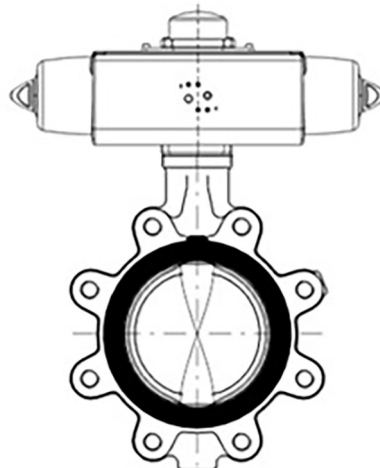
Part No.	Description	DN	Materials	KSB code
100	Body T2	32 - 600	Nodular cast iron 5.3106	3g
100	Body T3	32 - 600	Nodular cast iron 5.3106	3g
100	Body T4	32 - 600	Nodular cast iron 5.3106	3g
100	Body T4	32 - 600	Cast steel	1
100	Body T5	350 - 1000	Nodular cast iron 5.3106	3g
100	Body T5	700 - 1000	ASTM A536 gr. 60.40.18	3g
100	Body T5	200 - 1000	Cast steel	1
100	Body T5	700 - 1000	ASTM A216 gr. WCC	1
176	Bottom	700 - 1000	Steel	
210 ¹⁾	Shaft	200 - 600	Stainless steel 1.4057 (17 % Cr)	6h
210 ¹⁾	Shaft	200 - 600	Nickel alloy MONEL K 500, tempered	8
210 ¹⁾	Shaft	700 - 1000	Stainless steel 1.4028 (13 % Cr)	6k
213 ¹⁾	Actuating shaft	32 - 600	Stainless steel 1.4057 (17 % Cr)	6h
213 ¹⁾	Actuating shaft	32 - 600	Nickel alloy MONEL K 500, tempered	8
213 ¹⁾	Actuating shaft	700 - 1000	Stainless steel 1.4028 (13 % Cr)	6k
310.1 ¹⁾²⁾³⁾	Plain bearing	32 - 150	Acetal	
310.1 ¹⁾	Plain bearing	200 - 1000	Steel with reinforced PTFE coating	
310.2 ¹⁾²⁾³⁾	Plain bearing	32 - 150	Acetal	
310.2 ¹⁾	Plain bearing	200 - 1000	Steel with reinforced PTFE coating	
310.3 ¹⁾	Plain bearing	200 - 600	Steel with reinforced PTFE coating	
411 ¹⁾²⁾³⁾	Joint ring	32 - 100	Acetal	
411 ¹⁾²⁾³⁾	Joint ring	200 - 600	Nitrile	
412.1 ¹⁾²⁾³⁾	O-ring	700 - 1000	Nitrile	
412.2 ¹⁾²⁾³⁾	O-ring	700 - 1000	Nitrile	
413 ³⁾	Liner	32 - 600	EPDM	XA
413 ³⁾	Liner	32 -1000	EPDM suitable for drinking water	XC
413 ³⁾	Liner	32 - 600	EPDM, heat-resistant	XV
413 ³⁾	Liner	32 - 600	High-grade nitrile	K
486 ¹⁾	Ball	400 - 600	Stainless steel	
540 ¹⁾²⁾³⁾	Bush	700 - 1000	Acetal	
550 ²⁾	Valve disc	32 - 1000	Nodular cast iron 5.3106	3g
550 ²⁾	Valve disc	32 - 600	Stainless steel 1.4408 (18-12) ASTM A351 Gr. CF8M	6
550 ²⁾	Valve disc	32 - 600	Stainless steel 1.4408 (18-12), polished, ASTM A351 Gr. CF8M	6i ⁴⁾
550 ²⁾	Valve disc	700 - 1000	ASTM A536 Gr. 60.40.18	3g
550 ²⁾	Valve disc	32 - 1000	Aluminium bronze CC333G	2
554 ¹⁾²⁾³⁾	Washer	200 - 600	Nylon	
561	Half round head grooved pin	700 - 1000	Stainless steel	
904 ¹⁾	Grub screw	700 - 1000	Steel	
905 ¹⁾	Tie bolt	200 - 600	Steel	
916 ¹⁾²⁾³⁾	Plug	200 - 500	Polyethylene	
916 ¹⁾²⁾³⁾	Plug	550 - 1000	Polyamide	
920 ¹⁾	Nut	200 - 1000	Steel	
932 ¹⁾²⁾³⁾	Circlip	700 - 1000	Stainless steel	
940 ¹⁾	Key	550 - 1000	Steel	
970	Name plate	700 - 1000	Stainless steel	
970.1	Name plate	32 - 600	Adhesive polyester	
970.2	Name plate	32 - 600	Stainless steel	

-
- 1 Part from shaft spare parts kit
 - 2 Part from valve disc spare parts kit
 - 3 Part from liner spare parts kit
 - 4 ISORIA 20 only

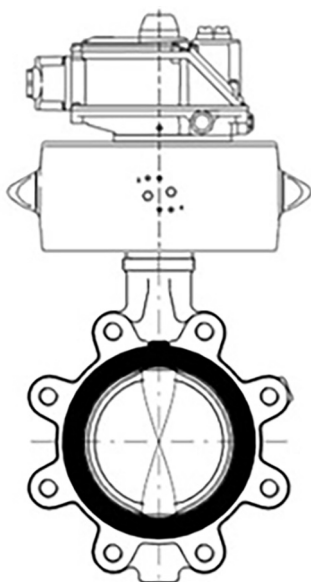
Variants



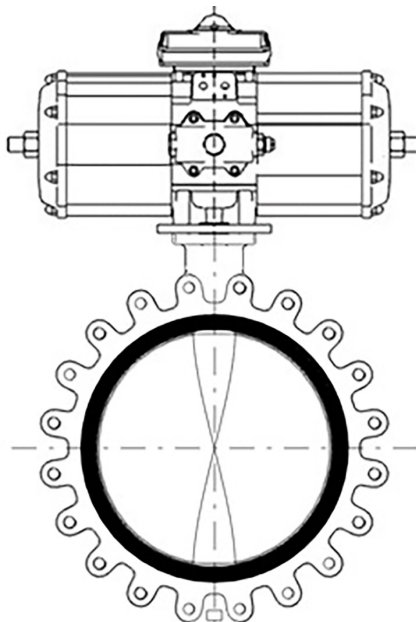
Electric actuator



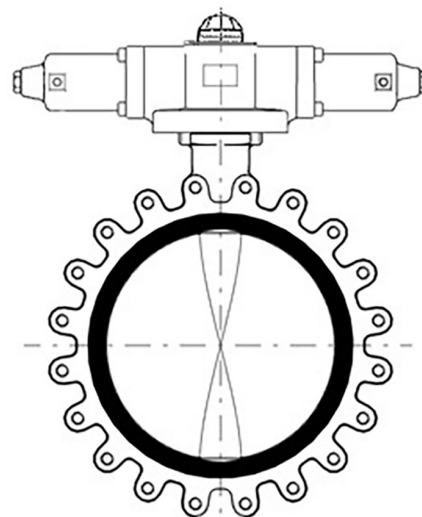
ACTAIR NG / DYNACTAIR NG pneumatic actuator



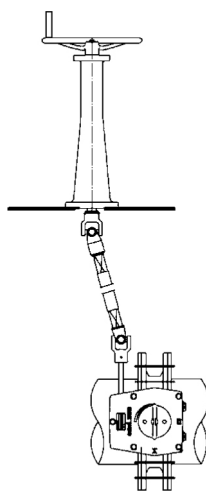
AMTRONIC / SMARTRONIC compressed air supply, positioner



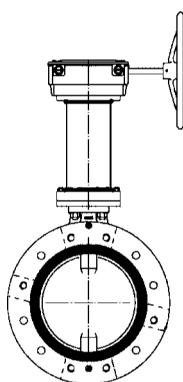
Limit switch box AMTROBOX, AMTROBOX S, AMTROBOX R, AMTROBOX EEx-ed, AMTROBOX EEx-ia



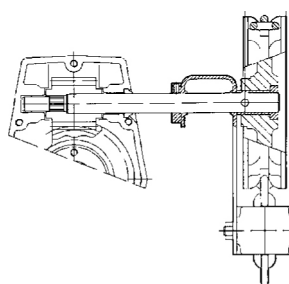
HQ hydraulic actuator



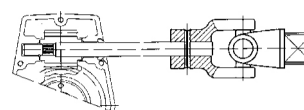
Deck stand



Extension



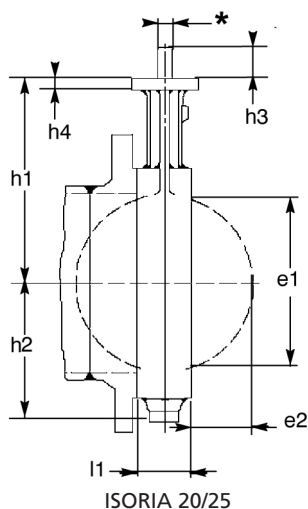
Chain wheel



Cardan connection

Dimensions and weights

Dimensions of ISORIA 20/25



* Flat end s in $\varnothing z$ or $\varnothing s$

Table 11: Dimensions [mm]

DN	NPS [inch]	l1	h1	h2	Top flange to ISO 5211		Shaft end Flat end			Shaft end Square end		Valve disc	
					No.	h4	$\varnothing s$	$\varnothing z$	h3	$\varnothing s$	h3	e1	e2
32	1¼	33	109	54	F05	10	11	14	24	/	/	-	-
40	1½	33	105	58	F05	10	11	14	24	/	/	33	4
50	2	43	115	65	F05	10	11	14	24	/	/	38	4
65	2½	46	130	75	F05	10	11	14	24	/	/	55	10
80	3	46	135	95	F05	10	11	14	24	/	/	74	18
100	4	52	150	105	F05	10	14	18	24	/	/	92	25
125	5	56	165	124	F07	12	14	18	30	/	/	117	35
150	6	56	185	141	F07	12	14	18	30	/	/	143	48
200	8	60	218	172	F10	15	19	25	35	/	/	191	68
250	10	68	265	206	F10	15	19	25	35	/	/	241	89
300	12	78	306	236	F12	18	22	28	40	/	/	290	110
350	14	78	335	269	F14	22	/	/	/	30	55	326	127
400	16	102	380	302	F14	22	/	/	/	36	55	370	140
450	18	114	410	328	F14	22	/	/	/	36	55	422	160
500	20	127	440	358	F16	26	/	/	/	40	65	470	178
550	22	154	475	406	F16	26	/	/	/	50	65	522	195
600	24	154	495	438	F16	26	/	/	/	50	65	566	215
700	28	210	581	542	F30	43	/	/	/	70	73	670	246
800	32	230	631	602	F30	43	/	/	/	70	73	768	286
900	36	260	681	657	F30	43	/	/	/	80	73	864	321
1000	40	280	756	713	F30	43	/	/	/	90	73	962	361

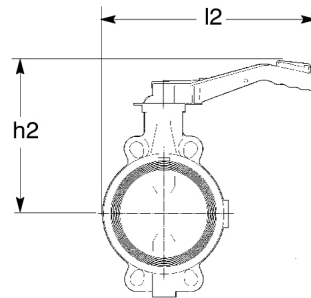
Manual override

The selection of actuators given below typically applies to butterfly valves handling lubricating fluids at the maximum flow velocities shown.

For valves handling non-lubricating fluids (gas), a max. flow velocity of 50 m/s applies.

Higher flow velocities and further actuator/valve combinations are possible, depending on the operating conditions and hydraulic characteristics. Please contact us.

Dimensions and weights of ISORIA 20/25 + S / SR lever



Unit comprising ISORIA 20/25 + S / SR lever

S lever: can be locked in end positions

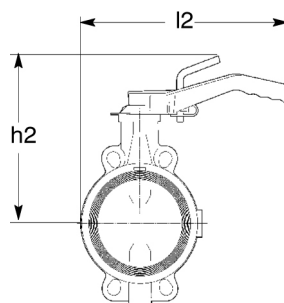
SR lever: can be locked in 9 positions

Table 12: Actuation via S / SR lever [mm]

DN	NPS	Max. velocity	l2	h2	[kg] ⁵⁾
	[inch]	[m/s]			
32	1¼	4,0	180	164	0,5
40	1½	4,0	180	160	0,5
50	2	4,0	180	170	0,5
32	1¼	4,0	260	184	0,6
40	1½	4,0	260	180	0,6
50	2	4,0	260	190	0,6
65	2½	4,0	260	205	0,6
80	3	4,0	260	210	0,6
100	4	4,0	330	235	0,7
125	5	4,0	330	250	0,7
150	6	4,0	330	270	0,7

⁵⁾ The weights given refer to the actuating element.

Dimensions and weights of ISORIA 20/25 + SP lever



Unit comprising ISORIA 20/25 + SP lever

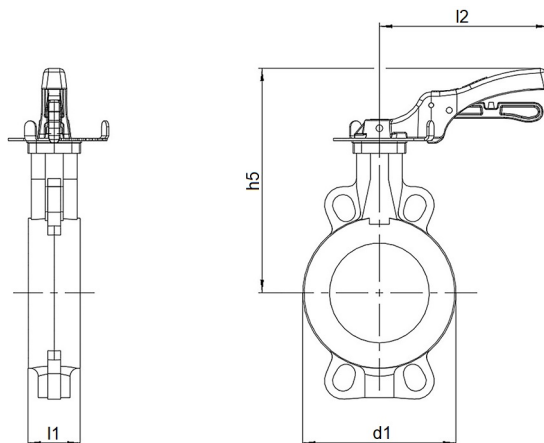
SP lever: can be locked in any position

Table 13: Actuation via SP lever [mm]

DN	NPS	Max. velocity	l2	h2	[kg] ⁶⁾
	[inch]	[m/s]			
32	1¼	4,0	260	209	0,7
40	1½	4,0	260	205	0,7
50	2	4,0	260	210	0,7
65	2½	4,0	260	236	0,7
80	3	4,0	260	242	0,7
100	4	4,0	330	263	1,4
125	5	4,0	330	277	1,4
150	6	4,0	330	294	1,4

⁶⁾ The weights given refer to the actuating element.

Dimensions and weights of ISORIA 20/25 + CR / CM lever



Unit comprising ISORIA 20/25 + CR / CM lever

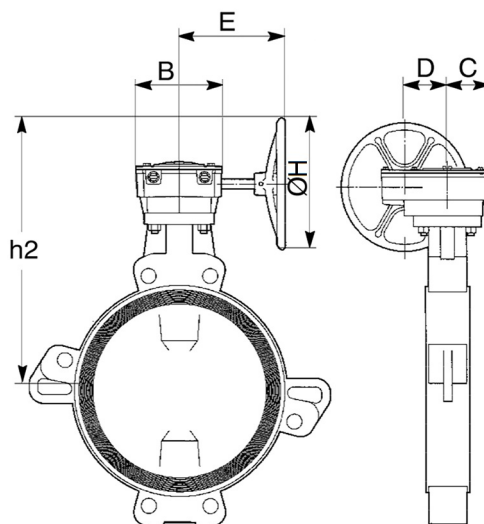
Table 14: Actuation via S / SR lever [mm]

DN	NPS [inch]	Max. velocity [m/s]	l1	d1	l2	h5	[kg] ⁷⁾
32	1¼	4,0	33	103	CR165	182	0,8
40	1½	4,0	33	110	CR165	178	0,8
50	2	4,0	43	122	CR165	188	0,8
65	2½	4,0	46	139	CR165	203	0,8
80	3	4,0	46	145	CR165	208	0,8
100	4	4,0	52	152	CR230	236	1,2
125	5	4,0	56	185	CR300	264	1,7
150	6	4,0	56	210	CR300	284	1,7
200	8	4,0	60	346	CR510 ⁸⁾	331	3,1

⁷ The weights given refer to the actuating element.

⁸ High actuating torque, manual gearbox recommended

Dimensions and weights of ISORIA 20/25 + MR manual gearbox



Unit comprising ISORIA 20/25 + MR manual gearbox

Table 15: Actuation via MR manual gearbox for ISORIA 20 – lubricating fluid [mm]

DN	NPS	Max. velocity	Type	B	C	D	E	H	h2	[kg] ⁹
	[inch]	[m/s]								
32	1¼	4,0	MR25	115	45	56	181	225	260	6
40	1½	4,0	MR25	115	45	56	181	225	256	6
50	2	4,0	MR25	115	45	56	181	225	266	6
65	2½	4,0	MR25	115	45	56	181	225	281	6
80	3	4,0	MR25	115	45	56	181	225	286	6
100	4	4,0	MR25	115	45	56	181	225	301	6
125	5	4,0	MR25	115	45	56	181	225	316	6
150	6	4,0	MR25	115	45	56	181	225	336	6
200	8	4,0	MR25	115	45	56	181	225	369	6
250	10	4,0	MR50	134	55	66	189	225	428	7,5
300	12	4,0	MR100	165	67	78	243	350	543	14
350	14	4,0	MR100	165	67	78	243	350	572	14
400	16	3,0	MR200	240	75	109	263	350	628	21,5
450	18	3,0	MR200	240	75	109	263	350	658	21,5
500	20	3,0	MR200	240	75	109	263	350	688	21,5
550	22	3,0	MR400	459	115	125	332	350	775	58
600	24	3,0	MR400	459	115	125	332	350	795	58

⁹ The weights given refer to the actuating element.

Table 16: Actuation via MR manual gearbox for ISORIA 20 – non-lubricating fluid [mm]

DN	NPS	Max. velocity	Type	B	C	D	E	H	h2	[kg] ¹⁰⁾
	[inch]	[m/s]								
32	1¼	50	MR25	115	45	56	181	225	260	6
40	1½	50	MR25	115	45	56	181	225	256	6
50	2	50	MR25	115	45	56	181	225	266	6
65	2½	50	MR25	115	45	56	181	225	282	6
80	3	50	MR25	115	45	56	181	225	286	6
100	4	50	MR25	115	45	56	181	225	301	6
125	5	50	MR25	115	45	56	181	225	316	6
150	6	50	MR25	115	45	56	181	225	336	6
200	8	50	MR50	134	55	66	189	225	381	7,5
250	10	50	MR50	134	55	66	189	225	428	7,5
300	12	50	MR100	165	67	78	243	350	543	14
350	14	50	MR200	240	75	109	263	350	583	21,5
400	16	50	MR200	240	75	109	263	350	628	21,5
450	18	50	MR400	459	115	125	332	350	710	58
500	20	50	MR400	459	115	125	332	350	740	58
550	22	50	MR400	459	115	125	332	350	775	58
600	24	50	MR400	459	115	125	332	350	795	58

Table 17: Actuation via MR manual gearbox for ISORIA 25 [mm]

DN	NPS	Max. velocity	Type	B	C	D	E	H	h2	[kg] ¹¹⁾
	[inch]	[m/s]								
32	1¼	4,0	MR25	115	45	56	181	225	260	6
40	1½	4,0	MR25	115	45	56	181	225	256	6
50	2	4,0	MR25	115	45	56	181	225	266	6
65	2½	4,0	MR25	115	45	56	181	225	281	6
80	3	4,0	MR25	115	45	56	181	225	286	6
100	4	4,0	MR25	115	45	56	181	225	301	6
125	5	4,0	MR25	115	45	56	181	225	316	6
150	6	4,0	MR25	115	45	56	181	225	336	6
200	8	4,0	MR50	134	55	66	189	225	381	7,5
250	10	4,0	MR50	134	55	66	189	225	428	7,5
300	12	4,0	MR100	165	67	78	243	350	543	14
350	14	4,0	MR100	165	67	78	243	350	572	14
400	16	3,0	MR200	240	75	109	263	350	628	21,5
450	18	3,0	MR200	240	75	109	263	350	658	21,5
500	20	3,0	MR400	459	115	125	332	350	710	58
550	22	3,0	MR400	459	115	125	332	350	745	58
600	24	3,0	MR400	459	115	125	332	350	765	58
700	28	2,0	MR1200	657	180	180	680	800	1072	175
800	32	2,0	MR1200	657	180	180	680	800	1122	175
900	36	2,0	MR1600	679	180	180	446	350	969	183
1000	40	2,0	MR1600	679	180	180	446	350	1044	183

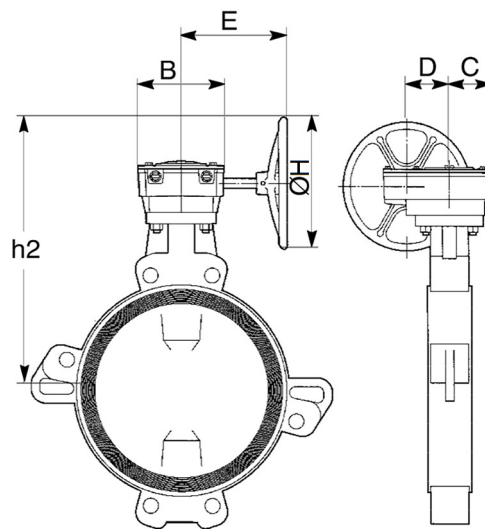
¹⁰⁾ The weights given refer to the actuating element.

¹¹⁾ The weights given refer to the actuating element.

Dimensions and weights of ISORIA UL - fire protection systems

UL approval is valid for the unit consisting of the valve and the manual gearbox:

- ISORIA 20
- MR manual gearbox with:
 - Red gear housing
 - Yellow position indicator flag
- Options:
 - Handwheel locking arrangement with chain and padlock
 - Limit switch(es)
 - Neck extension (1 to 6 metres)



Unit comprising ISORIA UL + MR manual gearbox

Table 18: Actuation via MR manual gearbox for ISORIA 20 UL [mm]

DN	NPS [inch]	Max. velocity [m/s]	Type	B	C	D	E	H	h2	[kg] ¹²⁾
32	1¼	4,0	MR25	115	45	56	181	225	291	6
40	1½	4,0	MR25	115	45	56	181	225	287	6
50	2	4,0	MR25	115	45	56	181	225	297	6
65	2½	4,0	MR25	115	45	56	181	225	312	6
80	3	4,0	MR25	115	45	56	181	225	317	6
100	4	4,0	MR25	115	45	56	181	225	332	6
125	5	4,0	MR25	115	45	56	181	225	347	6
150	6	4,0	MR25	115	45	56	181	225	367	6
200	8	4,0	MR25	115	45	56	181	225	400	6
250	10	4,0	MR50	134	55	66	189	225	459	7,5
300	12	4,0	MR100	165	67	78	243	350	574	14

¹²⁾ The weights given refer to the actuating element.

Line connections

The valves can be installed between the following line connections (other line connections on request):

- EN 1092 PN 16, 20 and 25
- ASME B16.1 Cl. 125 and B16.5 Cl. 150
- ASME B16.47 Cl.150 Series A
- MSS SP44 Cl.150
- AWWA C207 Cl. E
- AS 2129 Tab. E
- BS 10 Tab. E
- JIS B2220, B2238 and B2239 16K and 20K

Table 19: Semi-lug body T2 for ISORIA 20 for standards EN 1092, MSS and JIS

DN	NPS [inch]	EN 1092			MSS SP44 Class 150	JIS B2220, B2238, B2239	
		PN 16	PN 20	PN 25		16K	20K
32	1¼	✓	✓	✓	•	✓	✓
40	1½	✓	✓	✓	•	✓	✓
50	2	✓	✓	✓	•	✓■	✓■
65	2½	✓	✓	✓■	•	✓■	✓■
80	3	✓	✓	✓	•	✓	✓
100	4	✓	✓	✓	•	✓	✓
125	5	✓	✓	✓	•	✓	✓
150	6	✓	✓	✓	•	✓■	✓■
200	8	✓	✓	✓	•	✓	✓
250	10	✓	✓	✓	•	✓	✓
300	12	✓	✓	✓	✓	✓	✓
350	14	✓	✓	✓	✓	✓	✓
400	16	✓	✓	✓	✓	✓	✓
450	18	✓	✓	✓	✓	✓	✓
500	20	✓	✓	✓	✓	✓	✓
550	22	•	✓	•	✓	✓	✓
600	24	✓	✓	✓	✓	✓	✓

Table 20: Semi-lug body T2 for ISORIA 20 for standards ASME, AWWA, BS10 and AS2129

DN	NPS [inch]	ASME		AWWA	BS10	AS2129
		B16.1 Cl. 125	B16.5 Cl. 150	C207 Cl. E	Table E	Table E
32	1¼	✓	✓	•	✓	✓
40	1½	✓	✓	•	✓	✓
50	2	✓	✓	•	✓	✓
65	2½	✓	✓	•	✓	✓
80	3	✓	✓	•	✓■	✓■
100	4	✓	✓	✓	✓■	✓■
125	5	✓	✓	✓	✓	✓
150	6	✓	✓	✓	✓	✓
200	8	✓	✓	✓	✓	✓
250	10	✓	✓	✓	✓	✓
300	12	✓	✓	✓	✓	✓
350	14	✓	✓	✓	✓	✓
400	16	✓	✓	✓	✓	✓
450	18	✓	✓	✓	✓	✓
500	20	✓	✓	✓	✓	✓
550	22	•	•	✓	✓	✓
600	24	✓	✓	✓	✓	✓

Table 21: Symbols key

Symbol	Description	Symbol	Description
✓	Installation possible	•	Non-standardised connection
■	Downstream dismantling not possible	◆	Installation not possible
☎	Contact KSB.		

Table 22: Full-lug body with flat faces T3 for ISORIA 20 for standards EN 1092, MSS and JIS

DN	NPS [inch]	EN 1092			MSS SP44		JIS B2220, B2238, B2239	
		PN 16	PN 20	PN 25	Cl.150 UNC	Cl.150 UN	16K	20K
32	1¼	✓	✓	✓	•	•	✓	✓
40	1½	✓	✓	✓	•	•	✓	✓
50	2	✓	✓	✓	•	•	♦	♦
65	2½	✓	✓	✓	•	•	✓	✓
80	3	✓	✓	✓	•	•	✓	✓
100	4	✓	✓	✓	•	•	✓	✓
125	5	✓	✓	✓	•	•	✓	✓
150	6	✓	✓	✓	•	•	♦	♦
200	8	✓	✓	✓	•	•	✓	✓
250	10	✓	✓	✓	•	•	✓	✓
300	12	✓	✓	✓	✓	•	✓	✓
350	14	✓	✓	✓	✓	•	✓	✓
400	16	✓	✓	✓	✓	•	✓	✓
450	18	✓	✓	✓	✓	✓	✓	✓
500	20	✓	✓	✓	✓	✓	✓	✓
600	24	✓	✓	✓	✓	✓	✓	✓

Table 23: Full-lug body with flat faces T3 for ISORIA 20 for standards ASME, AWWA, BS10 and AS2129

DN	NPS [inch]	ASME	AWWA	BS10	AS2129
		B16.5 Cl. 150	C207 Cl. E UNC (94)	Table E UNC	Table E UNC
32	1¼	✓	•	✓	✓
40	1½	✓	•	✓	✓
50	2	✓	•	✓	✓
65	2½	✓	•	✓	✓
80	3	✓	•	✓	✓
100	4	✓	✓	✓	✓
125	5	✓	✓	✓	✓
150	6	✓	✓	✓	✓
200	8	✓	✓	✓	✓
250	10	✓	✓	✓	✓
300	12	✓	✓	✓	✓
350	14	✓	✓	✓	✓
400	16	✓	✓	♦	♦
450	18	✓	✓	✓	✓
500	20	✓	✓	♦	♦
600	24	✓	✓	♦	♦

Table 24: Symbols key

Symbol	Description	Symbol	Description
✓	Installation possible	•	Non-standardised connection
■	Downstream dismantling not possible	♦	Installation not possible
☎	Contact KSB.		

Table 25: Full-lug body with raised faces T4 for ISORIA 20 for standards EN 1092, MSS and JIS

DN	NPS [inch]	EN 1092			MSS SP44 cl.150	JIS B2220, B2238, B2239	
		PN 16	PN 20	PN 25		16K	20K
32	1¼	✓	✓	✓	•	✓	✓
40	1½	✓	✓	✓	•	✓	✓
50	2	✓	✓	✓	•	♦	♦
65	2½	✓	✓	♦	•	♦	♦
80	3	✓	✓	✓	•	✓	✓
100	4	✓	✓	✓	•	✓	✓
125	5	✓	✓	♦	•	♦	♦
150	6	✓	✓	♦	•	♦	♦
200	8	✓	✓	♦	•	♦	♦
250	10	✓	✓	♦	•	♦	♦
300	12	✓	✓	✓	✓	✓	✓
350	14	✓	✓	✓	✓	✓	✓
400	16	✓	✓	✓	✓	✓	✓
450	18	✓	✓	✓	✓	✓	✓
500	20	✓	✓	✓	✓	✓	✓
550	22	•	✓	•	✓	✓	✓
600	24	✓	✓	✓	✓	✓	✓

Table 26: Full-lug body with raised faces T4 for ISORIA 20 for standards ASME, AWWA, BS10 and AS2129

DN	NPS [inch]	ASME		AWWA C207 Cl. E	BS10 Table E	AS2129 Table E
		B16.1 Cl. 125	B16.5 Cl. 150			
32	1¼	✓	✓	•	✓	✓
40	1½	✓	✓	•	✓	✓
50	2	✓	✓	•	✓	✓
65	2½	✓	✓	•	✓	✓
80	3	✓	✓	•	✓	✓
100	4	✓	✓	✓	✓	✓
125	5	✓	✓	✓	✓	✓
150	6	✓	✓	✓	✓	✓
200	8	✓	✓	✓	✓	✓
250	10	✓	✓	✓	✓	✓
300	12	✓	✓	✓	✓	✓
350	14	✓	✓	✓	✓	✓
400	16	✓	✓	✓	♦	♦
450	18	✓	✓	✓	✓	✓
500	20	✓	✓	✓	♦	♦
550	22	•	•	✓	♦	♦
600	24	✓	✓	✓	♦	♦

Table 27: Symbols key

Symbol	Description	Symbol	Description
✓	Installation possible	•	Non-standardised connection
■	Downstream dismantling not possible	♦	Installation not possible
⌘	Contact KSB.		

Table 28: Flanged body with flat faces T5 for ISORIA 20 for standards EN 1092, MSS and JIS

DN	NPS [inch]	EN 1092			MSS SP44 Cl. 150	JIS B2220, B2238, B2239	
		PN 16	PN 20	PN 25		16K	20K
200	8	✓	✓	✓■	•	✓	✓
250	10	✓	✓	✓■	•	✓	✓
300	12	✓	✓	✓	✓	✓	✓
350	14	✓	✓	✓■	✓	✓	✓
400	16	✓	✓	✓■	✓	✓	✓
450	18	✓	✓	♦	✓	♦	♦
500	20	✓	✓	✓	✓	✓	✓
550	22	•	✓	•	✓	♦	♦
600	24	✓	✓	✓	✓	✓	✓

Table 29: Flanged body with flat faces T5 for ISORIA 20 for standards ASME, AWWA, BS10 and AS2129

DN	NPS [inch]	ASME		AWWA	BS10	AS2129
		B16.1 Cl.125	B16.5 Cl. 150	C207 Cl. E	Table E	Table E
200	8	✓	✓	✓	✓	✓
250	10	✓	✓	✓	✓	✓
300	12	✓	✓	✓	✓	✓
350	14	✓	✓	✓	✓	✓
400	16	✓	✓	✓	✓	✓
450	18	✓	✓	✓	✓	✓
500	20	✓	✓	✓	✓	✓
550	22	•	•	✓	✓	✓
600	24	✓	✓	✓	✓	✓

Table 30: Symbols key

Symbol	Description	Symbol	Description
✓	Installation possible	•	Non-standardised connection
■	Downstream dismantling not possible	♦	Installation not possible
☎	Contact KSB.		

Table 31: Semi-lug body T2 for ISORIA 25 for standards EN 1092, ASME and MSS

DN	NPS [inch]	EN 1092		ASME	MSS SP44 Cl. 150
		PN 20	PN 25	B16.5 Cl. 150	
32	1¼	✓	✓	✓	•
40	1½	✓	✓	✓	•
50	2	✓	✓	✓	•
65	2½	✓	✓	✓	•
80	3	✓	✓	✓	•
100	4	✓	✓	✓	•
125	5	✓	✓	✓	•
150	6	✓	✓	✓	•
200	8	✓	✓▲	✓	•
250	10	✓	✓	✓	•
300	12	✓	✓	✓	✓
350	14	✓	✓	✓	✓
400	16	✓	✓	✓	✓
450	18	✓	✓	✓	✓
500	20	✓	✓	✓	✓
550	22	✓	•	•	✓
600	24	✓	✓	✓	✓

Table 32: Flanged body with flat faces T5 for ISORIA 25 for standards EN 1092, ASME and MSS

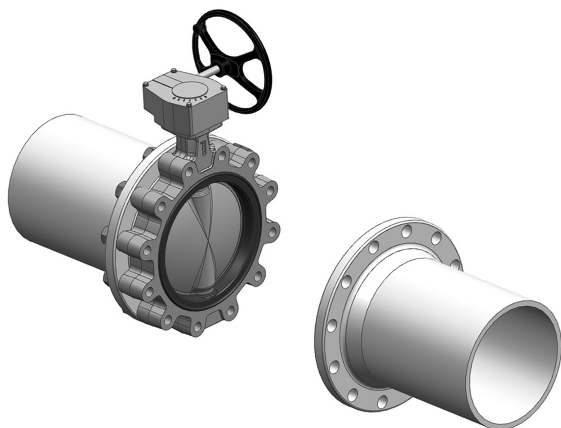
DN	NPS [inch]	EN 1092		ASME	MSS SP44 Cl. 150
		PN 20	PN 25	B16.5 Cl. 150	
200	8	✓	✓■	✓	•
250	10	✓	✓■	✓	•
300	12	✓	✓	✓	✓
350	14	✓	✓■	✓	✓
400	16	✓	✓■	✓	✓
450	18	✓	◆	✓	✓
500	20	✓	✓	✓	✓
550	22	✓	•	•	✓
600	24	✓	✓	✓	✓
700	28	⊗	⊗	•	⊗
800	32	⊗	✓	•	⊗
900	36	⊗	⊗	•	⊗
1000	40	⊗	✓	•	⊗

Table 33: Symbols key

Symbol	Description	Symbol	Description
✓	Installation possible	•	Non-standardised connection
■	Downstream dismantling not possible	◆	Installation not possible
⊗	Contact KSB.		

Installation information

Dead-end service and downstream dismantling



Downstream dismantling

For downstream dismantling,
successively loosen diagonally opposed tie rods.

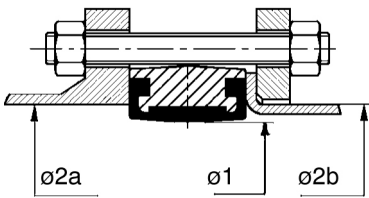


Dead-end service

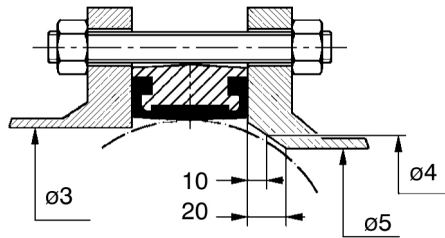
Flange dimensions

The valves can be installed between all commercial mating flanges and line connections without requiring any flange gaskets. The elastomer liner alone provides a tight seal at the flange connections. Please verify that the connection meets the requirements given below. The flange dimensions indicated in the table apply to all body types.

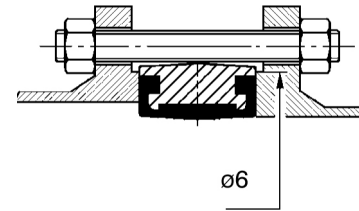
ISORIA 20



Drawing A



Drawing B



Drawing C

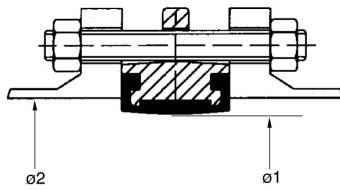
Ø2a and Ø3: flange face diameter

Ø2b: pipe OD with loose plate flange to DIN 2642 and NF E 29-251

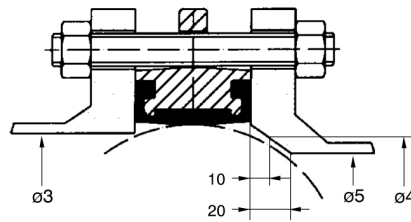
Table 34: Dimensions table of ISORIA 20

DN	NPS	Optimum Ø	Max. permissible Ø		Min. permissible Ø of flange face	Min. Ø at a distance of 10 mm from the flange face	Min. Ø at a distance of 20mm from the flange face	Min. permissible raised face Ø of flanges with raised faces
	[inch]		Ø2a	Ø2b				
40	1¼	32	44	43	-	-	-	64
40	1½	40	50	49	33	-	-	73
50	2	50	63	61	38	-	-	89
65	2½	65	78	77	55	-	-	104
80	3	80	92	89	74	53	-	124
100	4	100	117	115	92	77	48	147
125	5	125	145	140	117	107	88	177
150	6	150	172	169	143	137	123	202
200	8	195	223	220	191	183	173	251
250	10	245	278	273	241	234	226	305
300	12	295	329	324	290	284	276	358
350	14	330	361	356	326	321	314	399
400	16	380	412	407	370	366	358	452
450	18	430	463	457	422	416	409	505
500	20	480	515	508	470	464	457	558
550	22	540	568	561	522	516	509	625
600	24	580	617	610	566	560	554	664

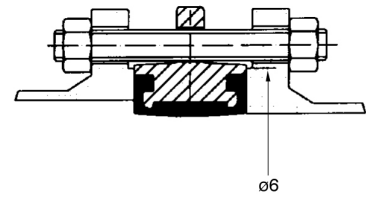
ISORIA 25



Drawing D



Drawing E



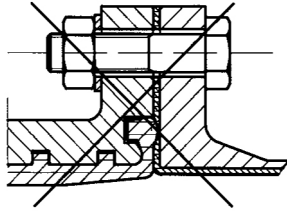
Drawing F

Installation between loose plate flanges on lap joint stub ends is not permitted.

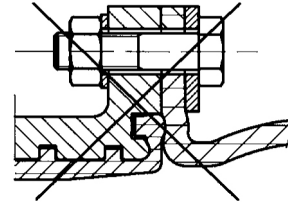
Table 35: Dimensions table of ISORIA 25

DN	NPS	Optimum Ø	Max. permissible Ø	Min. permissible Ø of flange face	Min. Ø at a distance of 10 mm from the flange face	Min. Ø at a distance of 20mm from the flange face	Min. permissible raised face Ø of flanges with raised faces
	[inch]						
32	1¼	32	33	-	-	-	64
40	1½	40	41	33	-	-	73
50	2	50	51	38	-	-	89
65	2½	65	66	55	-	-	104
80	3	80	81	74	53	-	124
100	4	100	101	92	77	48	147
125	5	125	126	117	107	88	177
150	6	150	151	143	137	123	202
200	8	195	201	191	183	173	251
250	10	245	251	241	234	226	305
300	12	295	302	290	284	276	358
350	14	330	337	326	321	314	399
400	16	380	387	370	366	358	452
450	18	430	438	422	416	409	505
500	20	480	488	470	464	457	558
550	22	540	549	522	516	509	625
600	24	580	589	566	560	554	664
700	28	700	700	683	668	661	Flanges with flat faces only
800	32	800	799	782	766	760	
900	36	900	900	880	860	854	
1000	40	1000	1000	976	958	952	

Coated flange



Flange with rubber coating



Expansion bellows

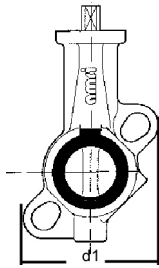
N.B.: Direct installation between rubber-coated flanges or with expansion bellows is not permitted. Contact KSB.

Installation between flanges made of polyethylene

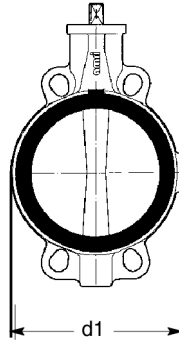
- Installation between flanges with flat faces is permitted.
- Installation between flanges with grooved faces is not permitted.

Bolting and weights

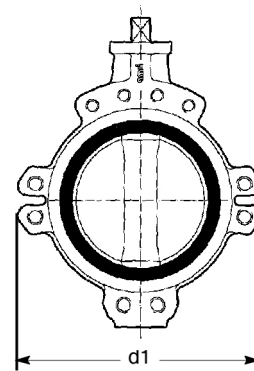
Bolting and weights for semi-lug body - T2



Drawing of ISORIA 20/25 T2 DN 40



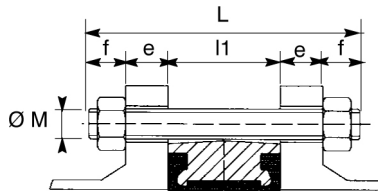
Drawing of ISORIA 20/25 T2 DN 150



ISORIA 20/25 T2 DN 600

The drawings do not indicate the exact product design
(number of tapped lugs/tapped holes/through-holes)

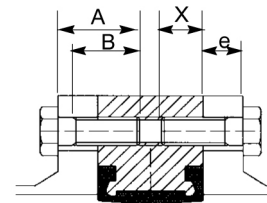
N.B.: Bolting is not included in our standard scope of supply.



Length of tie bolt for semi-lug body – T2

$$L = l1 + 2e + 2f$$

L: minimum length of tie bolts
l1: face-to-face length of valve
e: flange thickness (customer-specific)
f: thickness of nut + standardised overhang of tie bolt



Length of bolt at shaft passage for semi-lug body – T2

$$A = e + X$$

A: max. bolt length
X: max. thread engagement depth
e: flange thickness (customer-specific)
B: min. thread length > A-e

ISORIA 20
Table 36: Dimensions [mm] and weights [kg] for semi-lug body T2 – line connections to EN 1092-1

DN	NPS	l1	d1	EN 1092-1 PN 16					EN 1092-1 PN 25					[kg]
				Ø M	Tie bolt ¹³⁾		Bolt		Ø M	Tie bolt ¹³⁾		Bolt		
	[inch]				f	Qty	X	Qty ¹⁴⁾		f	Qty	X	Qty ¹⁴⁾	
32	1¼	33	103	M16	20	4	-	-	M16	20	4	-	-	1,2
40	1½	33	110	M16	20	4	-	-	M16	20	4	-	-	1,3
50	2	43	122	M16	20	4	-	-	M16	20	4	-	-	1,8
65	2½	46	139	M16	20	4/8	-	-	M16	20	4/8	-	-	2,3
80	3	46	145	M16	20	8	-	-	M16	20	8	-	-	3,2
100	4	52	152	M16	20	8	-	-	M20	24	8	-	-	4,5
125	5	56	185	M16	20	8	-	-	M24	29	8	-	-	6,7
150	6	56	210	M20	24	8	-	-	M24	29	8	-	-	7,5
200	8	60	346	M20	24	12	-	-	M24	29	12	-	-	14,0
250	10	68	413	M24	29	12	-	-	M27	32	12	-	-	20,0
300	12	78	520	M24	29	6	24	6	M27	32	10	27	6	48,0
350	14	78	539	M24	29	10	24	6	M30	35	10	30	6	60,0
400	16	102	604	M27	32	10	27	6	M33	38	10	33	6	80,0
450	18	114	657	M27	32	14	27	6	M33	28	14	33	6	110,0
500	20	127	716	M30	35	12	30	8	M33	24	12	33	8	145,0
550	22	154	782	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾
600	24	154	836	M33	38	10	33	10	M36	42	10	36	10	220,0

Table 37: Dimensions [mm] and weights [kg] for semi-lug body T2 – line connections to ASME, MSS and JIS

DN	NPS	l1	d1	ASME B16.5 class 150 ¹⁶⁾ ASME B16.1 class 125 ¹⁶⁾ MSS SP 44 Cl. 150 ¹⁶⁾ ASME B16.47 Cl. 150 Series A ¹⁶⁾					JIS B2220, B2238, B2239 16K					[kg]
				UNC	Tie bolt ¹³⁾		Bolt		Ø M	Tie bolt ¹³⁾		Bolt		
	[inch]				f	Qty	X	Qty ¹⁴⁾		f	Qty	X	Qty ¹⁴⁾	
32	1¼	33	108	1/2	17	4	-	-	M16	20	4	-	-	1,2
40	1½	33	108	1/2	17	4	-	-	M16	20	4	-	-	1,3
50	2	43	118	5/8	20	4	-	-	M16	20	8	-	-	1,8
65	2½	46	132	5/8	20	4	-	-	M16	20	8	-	-	2,3
80	3	46	138	5/8	20	4	-	-	M20	24	8	-	-	3,2
100	4	52	150	5/8	20	8	-	-	M20	24	8	-	-	4,5
125	5	56	234	3/4	24	8	-	-	M22	26	8	-	-	6,7
150	6	56	260	3/4	24	8	-	-	M22	26	12	-	-	7,5
200	8	60	322	3/4	24	8	-	-	M22	26	12	-	-	14,0
250	10	68	394	7/8	29	12	-	-	M24	29	12	-	-	20,0
300	12	78	462	7/8	29	6	24	6	M24	29	10	24	6	48,0
350	14	78	538	1	32	6	27	6	M30 x 3	35	10	30	6	60,0
400	16	102	604	1	32	10	27	6	M30 x 3	35	16	30	6	80,0
450	18	114	656	1 1/8	35	10	30	6	M30 x 3	35	14	30	6	110,0
500	20	127	716	1 1/8	35	12	30	8	M30 x 3	35	12	30	8	145,0
550	22	154	804	1 1/4	38	12	32	8	M36 x 3	42	12	36	8	180,0
600	24	154	836	1 1/4	38	10	32	10	M36 x 3	42	14	36	10	220,0

¹³ Quantity of nuts = quantity of tie bolts x 2
¹⁴ Quantity of bolts x 2
¹⁵ Non-standardised connection
¹⁶ For DN's concerned, see connection standards.

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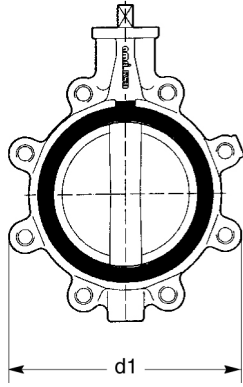
Table 38: Dimensions [mm] and weights [kg] for semi-lug body T2 – line connections to EN 1092-1, MSS and ASME

DN	NPS	l1	d1	EN 1092-1 PN 25					MSS SP 44 Cl.150 ASME B16.5 class 150					[kg]
				Ø M	Tie bolt ¹³⁾		Bolt		UNC	Tie bolt ¹³⁾		Bolt		
	[inch]				f	Qty	X	Qty ¹⁴⁾		[inch]	f	Qty	X	
32	1¼	33	103	M16	20	4	-	-	1/2	17	4	-	-	1,2
40	1½	33	110	M16	20	4	-	-	1/2	17	4	-	-	1,3
50	2	43	122	M16	20	4	-	-	5/8	20	4	-	-	1,8
65	2½	46	139	M16	20	4/8	-	-	5/8	20	4	-	-	2,3
80	3	46	145	M16	20	8	-	-	5/8	20	4	-	-	3,2
100	4	52	152	M20	24	8	-	-	5/8	20	8	-	-	4,5
125	5	56	185	M24	29	8	-	-	3/4	24	8	-	-	6,7
150	6	56	210	M24	29	8	-	-	3/4	24	8	-	-	7,5
200	8	60	346	M24	29	12	-	-	3/4	24	8	-	-	14,0
250	10	68	413	M27	32	12	-	-	7/8	29	12	-	-	20,0
300	12	78	520	M27	32	10	27	6	7/8	29	12	24	6	48,0
350	14	78	539	M30	35	10	30	6	1	32	6	27	6	60,0
400	16	102	604	M33	38	10	33	6	1	32	10	27	6	80,0
450	18	114	657	M33	28	14	33	6	1 1/8	35	10	30	6	110,0
500	20	127	716	M33	24	12	33	8	1 1/8	35	12	30	8	145,0
550	22	154	782	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	¹⁵⁾	1 1/4	38	12	32	8	¹⁵⁾
600	24	154	836	M36	42	10	36	10	1 1/4	38	10	32	10	220,0

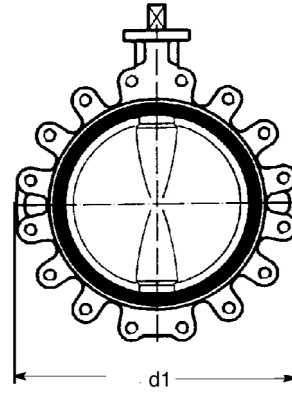
Table 39: Dimensions [mm] and weights [kg] for semi-lug body T2 – line connections to MSS and ASME

DN	NPS	l1	d1	MSS SP 44 Cl.150 ASME B16.47 Cl. 150 Series A					[kg]
				UNC	Tie bolt ¹³⁾		Bolt		
	[inch]				f	Qty	X	Qty ¹⁴⁾	
32	1¼	33	108	1/2	17	4	-	-	1,2
40	1½	33	108	1/2	17	4	-	-	1,3
50	2	43	118	5/8	20	4	-	-	1,8
65	2½	46	132	5/8	20	4	-	-	2,3
80	3	46	138	5/8	20	4	-	-	3,2
100	4	52	150	5/8	20	8	-	-	4,5
125	5	56	234	3/4	24	8	-	-	6,7
150	6	56	260	3/4	24	8	-	-	7,5
200	8	60	322	3/4	24	8	-	-	14,0
250	10	68	394	7/8	29	12	-	-	20,0
300	12	78	462	7/8	29	12	24	6	48,0
350	14	78	538	1	32	6	27	6	60,0
400	16	102	604	1	32	10	27	6	80,0
450	18	114	656	1 1/8	35	10	30	6	110,0
500	20	127	716	1 1/8	35	12	30	8	145,0
550	22	154	804	1 1/4	38	12	32	8	180,0
600	24	154	836	1 1/4	38	10	32	10	220,0

Bolting and weights for full-lug body with raised/flat faces - T3/T4



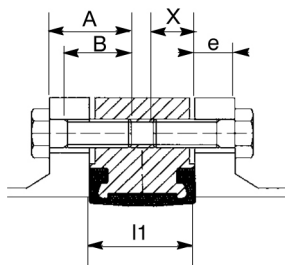
Drawing of ISORIA 20 T3/T4 DN 150



Drawing of ISORIA 20 T3/T4 DN 400

The drawings do not indicate the exact product design (number of lugs).

N.B.: Bolting is not included in our standard scope of supply.



$$A = e + X$$

- A: max. bolt length
- X: max. thread engagement depth
- e: flange thickness (customer-specific)
- B: min. thread length > A-e

Length of bolts for full-lug body with raised/flat faces - T3/T4

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Table 40: Dimensions [mm] and weights [kg] for full-lug body with raised/flat faces T3/T4 - connection EN 1092-1

DN	NPS	I1	d1	EN 1092-1 PN 16			EN 1092-1 PN 25			[kg]
				Ø M	Bolt		Ø M	Bolt		
	[inch]				X	Qty ¹⁷⁾		X	Qty ¹⁷⁾	
32	1¼	33	101	M16	14	4	M16	14	4	2,0
40	1½	33	106	M16	14	4	M16	14	4	2,0
50	2	43	117	M16	18	4	M16	18	4	2,5
65	2½	46	132	M16	20	4/8	¹⁸⁾	¹⁸⁾	¹⁸⁾	3,0
80	3	46	139	M16	20	8	M16	20	8	4,0
100	4	52	160	M16	22	8	M20	24	8	5,5
125	5	56	234	M16	22	8	¹⁸⁾	¹⁸⁾	¹⁸⁾	9,0
150	6	56	257	M20	26	8	¹⁸⁾	¹⁸⁾	¹⁸⁾	11,0
200	8	60	310	M20	26	12	¹⁸⁾	¹⁸⁾	¹⁸⁾	24,0
250	10	68	394	M24	29	12	¹⁸⁾	¹⁸⁾	¹⁸⁾	39,0
300	12	78	462	M24	30	12	M27	34	16	46,0
350	14	78	527	M24	30	16	M30	24	16	62,0
400	16	102	605	M27	34	16	M33	40	16	101,0
450	18	114	636	M27	34	20	M33	40	20	122,0
500	20	127	718	M30	37	20	M33	40	20	179,0
550	22	154	790	¹⁸⁾	¹⁸⁾	¹⁸⁾	¹⁸⁾	¹⁸⁾	¹⁸⁾	233,0
600	24	154	835	M33	42	20	M36	45	20	256,0

Table 41: Dimensions [mm] and weights [kg] for full-lug body with raised/flat faces T3/T4 - connections ASME, MSS and JIS

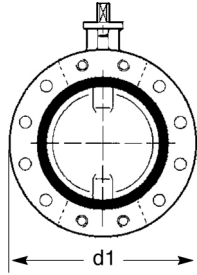
DN	NPS	I1	d1	ASME B16.5 Cl. 150 ASME B16.1 class 125 MSS SP 44 Cl. 150 ASME B16.47 Cl. 150 Series A ¹⁹⁾			JIS B2220, B2238, B2239 16K			[kg]
				UNC	Bolt		Ø M	Bolt		
	[inch]				X	Qty ¹⁷⁾		X	Qty ¹⁷⁾	
32	1¼	33	101	1/2	14	4	M16	14	4	2,0
40	1½	33	106	1/2	14	4	M16	14	4	2,0
50	2	43	117	5/8	18	4	¹⁸⁾	¹⁸⁾	¹⁸⁾	2,5
65	2½	46	132	5/8	20	4	¹⁸⁾	¹⁸⁾	¹⁸⁾	3,0
80	3	46	139	5/8	20	4	M20	20	8	4,0
100	4	52	160	5/8	22	8	M20	24	8	5,5
125	5	56	234	3/4	23	8	¹⁸⁾	¹⁸⁾	¹⁸⁾	9,0
150	6	56	257	3/4	26	8	¹⁸⁾	¹⁸⁾	¹⁸⁾	11,0
200	8	60	310	3/4	26	8	¹⁸⁾	¹⁸⁾	¹⁸⁾	24,0
250	10	68	394	7/8	28	12	¹⁸⁾	¹⁸⁾	¹⁸⁾	39,0
300	12	78	462	7/8	28	12	M24	30	16	46,0
350	14	78	527	1	30	12	M30 x 3	34	16	62,0
400	16	102	605	1	34	16	M30 x 3	37	16	101,0
450	18	114	636	1 1/8	37	16	M30 x 3	37	20	122,0
500	20	127	718	1 1/8	37	20	M30 x 3	37	20	179,0
550	22	154	790	1 1/4	39	20	M36 x 3	42	20	233,0
600	24	154	835	1 1/4	42	20	M36 x 3	34	24	256,0

¹⁷⁾ Quantity of bolts x 2

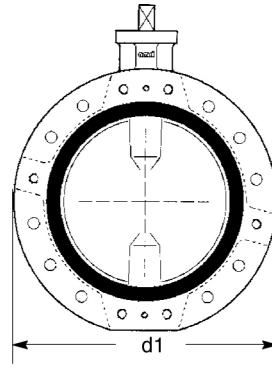
¹⁸⁾ Non-standardised connection

¹⁹⁾ For DN's concerned, see connection standards.

Bolting and weights for flanged body with flat faces - T5



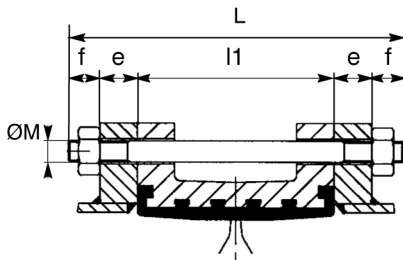
Drawing of ISORIA 20/25 T5 - DN 250



Drawing of ISORIA 20/25 T5 - DN 400

The drawings do not indicate the exact product design
(number of tapped holes/plain holes)

N.B.: Bolting is not included in our standard scope of supply.



Length of tie bolt for flanged body with flat faces - T5

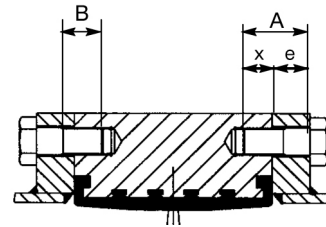
$$\text{Length of tie bolt } L = l1 + 2e + 2f$$

L: minimum length of tie bolts

l1: face-to-face length of valve

e: flange thickness (customer-specific)

f: thickness of nut + standardised overhang of tie bolt



Length of bolt at shaft passage for flanged body with flat faces - T5

$$A = e + X$$

A: max. bolt length

X: max. thread engagement depth

e: flange thickness (customer-specific)

B: min. thread length > A-e

ISORIA 20
Table 42: Dimensions [mm] and weights [kg] for flanged body with flat faces T5 – line connections to EN 1092-1

DN	NPS	l1	d1	EN 1092-1 PN 16					EN 1092-1 PN 25					[kg]
				Ø M	Tie bolt ²⁰⁾		Bolt		Ø M	Tie bolt ²⁰⁾		Bolt		
	[inch]				f	Qty	X	Qty ²¹⁾		f	Qty	X	Qty ²¹⁾	
200	8	60	343	M20	24	8	16	4	M24	29	12	-	-	23
250	10	68	406	M24	29	8	24	4	M27	32	12	-	-	40
300	12	78	483	M24	29	6	24	6	M27	32	10	27	6	60
350	14	78	533	M24	29	10	24	6	M30	35	16	-	-	80
400	16	102	597	M27	32	10	27	6	M33	38	16	-	-	105
450	18	114	640	M27	32	14	27	6	M33	38	14	33	6	130
500	20	127	715	M30	35	12	30	8	M33	38	12	33	8	180
550	22	154	749	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾
600	24	154	840	M33	38	10	33	10	M36	42	10	36	10	260

Table 43: Dimensions [mm] and weights [kg] for flanged body with flat faces T5 – line connections to ASME, MSS and JIS

DN	NPS	l1	d1	ASME B16.5 class 150 ²³⁾ ASME B16.1 class 125 ²³⁾ MSS SP 44 Cl. 150 ²³⁾ ASME B16.47 Cl. 150 Series A ²³⁾					JIS B2220, B2238, B2239 16K					[kg]
				UNC	Tie bolt ²⁰⁾		Bolt		Ø M	Tie bolt ²⁰⁾		Bolt		
	[inch]				f	Qty	X	Qty ²¹⁾		f	Qty	X	Qty ²¹⁾	
200	8	60	343	3/4	24	4	20	4	M22	26	8	22	4	23
250	10	68	406	7/8	29	8	24	4	M24	29	8	24	4	40
300	12	78	483	7/8	29	6	24	6	M24	29	10	24	6	60
350	14	78	533	1	32	6	27	6	M30x3	35	10	30	6	80
400	16	102	597	1	32	10	27	6	M30x3	35	10	30	6	105
450	18	114	640	1 1/8	32	10	30	6	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	130
500	20	127	715	1 1/8	35	12	30	8	M30x3	35	12	30	8	180
550	22	154	749	1 1/4	35	12	32	8	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	230
600	24	154	840	1 1/4	38	10	32	10	M30x3	42	14	36	10	260

²⁰⁾ Quantity of nuts = quantity of tie bolts x 2

²¹⁾ Quantity of bolts x 2

²²⁾ Non-standardised connection

²³⁾ For DN's concerned, see connection standards.

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Table 44: Dimensions [mm] and weights [kg] for flanged body with flat faces T5 – line connections to EN 1092-1 and ASME

DN	NPS [inch]	l1	Ød1		EN 1092-1 PN 25					ASME B16.5 class 150					[kg]
					ØM	Tie bolt ²⁰⁾		Bolt		UNC	Tie bolt ²⁰⁾		Bolt		
						f	Qty	X	Qty ²¹⁾		f	Qty	X	Qty ²¹⁾	
200	8	60	343	-	M24	29	12	-	-	3/4	24	4	20	4	23
250	10	68	430	-	M27	32	12	-	-	7/8	29	8	24	4	40
300	12	78	483	-	M27	32	10	27	6	7/8	29	6	24	6	60
350	14	78	533	533	M30	35	16	-	-	1	32	6	27	6	80
400	16	102	597	597	M33	38	16	-	-	1	32	10	27	6	105
450	18	114	668	640	M33	38	14	33	6	1 1/8	32	10	30	6	130
500	20	127	715	715	M33	38	12	33	8	-	-	-	-	-	180
550	22	154	790	749	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	-	-	-	-	-	230
600	24	154	840	840	M36	42	10	36	10	-	-	-	-	-	260
700	28	210	960	960	M39	45	20	36	4	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	375
800	32	230	1085	1085	M45	52	20	32	4	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	500
900	36	260	1185	1185	M45	52	24	40	4	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	745
1000	40	280	1320	1320	M52	60	24	35	4	²²⁾	²²⁾	²²⁾	²²⁾	²²⁾	950

Table 45: Dimensions [mm] and weights [kg] for flanged body with flat faces T5 – line connections to ASME and MSS

DN	NPS	l1	Ød1		MSS SP 44 Cl. 150 ASME B16.47 Cl. 150 Series A					[kg]
					UNC	Tie bolt ²⁰⁾		Bolt		
						[inch]	f	Qty	X	
200	8	60	343	-	3/4	-	-	-	-	23
250	10	68	430	-	7/8	-	-	-	-	40
300	12	78	483	-	7/8	29	6	24	6	60
350	14	78	533	533	1	32	6	27	6	80
400	16	102	597	597	1	32	10	27	6	105
450	18	114	668	640	1 1/8	35	10	30	6	130
500	20	127	715	715	1 1/8	35	12	30	8	180
550	22	154	790	749	1 1/4	38	12	32	8	230
600	24	154	840	840	1 1/4	38	10	32	10	260
700	28	210	960	960	Contact KSB.				10	375
800	32	230	1085	1085	Contact KSB.				4	500
900	36	260	1185	1185	Contact KSB.				4	745
1000	40	280	1320	1320	Contact KSB.				8	950



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