

Cryogenic OFFSET disc butterfly valves

DN 200 to DN 1050 (8" to 42")

Applications

- LNG process / All liquefied gases.

Working conditions

- Temperature: from -250 °C to +200 °C.
- Maximum working pressure: 20 bar.
- Rating: ASME B16.34 Class 150.

Materials

See page 2.

Standard design

- Buttweld side entry: DN 200 (8") to DN 1050 (42").
- Fire-safe agreement according to BS 6755 part 2 and API 6FA.
- The valves meet the safety requirements of the pressure Equipments Directive 97/23EC (PED) Appendix I for fluids of the groups 1 and 2.

Connections

- Buttweld versions according to ASME B16.25,
- Schedule up to 40 S or STD according to NPS,
- Other ends on request.

Standard option

- Lip Seal Ring for installation in any position (standard for marine applications).
- Drip plate for insulation.
- Transition piece (100 mm) for welding on pipe.
- Electrical continuity.

Standard variants

- Manual actuator MR
- Pneumatic actuator ACTAIR / DYNACTAIR
- Electric actuator ACTELEC
- Hydraulic actuator ACTO / DYNACTO / ENNACTO
- Limit switches box AMTROBOX R

Materials

Body	KSB code
Stainless steel ASTM A 351 gr. CF 3M / 1.4409 or CF 8M / 1.4408	6
Disc	KSB code
Stainless steel ASTM A 351 gr. CF 8M / 1.4408 with hard chromium overlay on edge	6
Stainless steel ASTM A 351 gr. CF 8M / 1.4408 with stellite overlay on edge	6s
Operating shaft	KSB code
Stainless steel A479 gr. 316L *	6 *
Stainless steel A638 gr. 660	6f
Stainless steel A479 gr. XM19 **	6r**
Cover	KSB code
Stainless steel 316L	6
Bonnet extension	KSB code
Stainless steel ASTM A 351 gr. CF 8M / 1.4408	6
Seat	KSB code
Copper	CU

* Caution: The working pressure is limited. Please consult us.

** Caution: The working pressure is limited to 18 bar for DN 40".

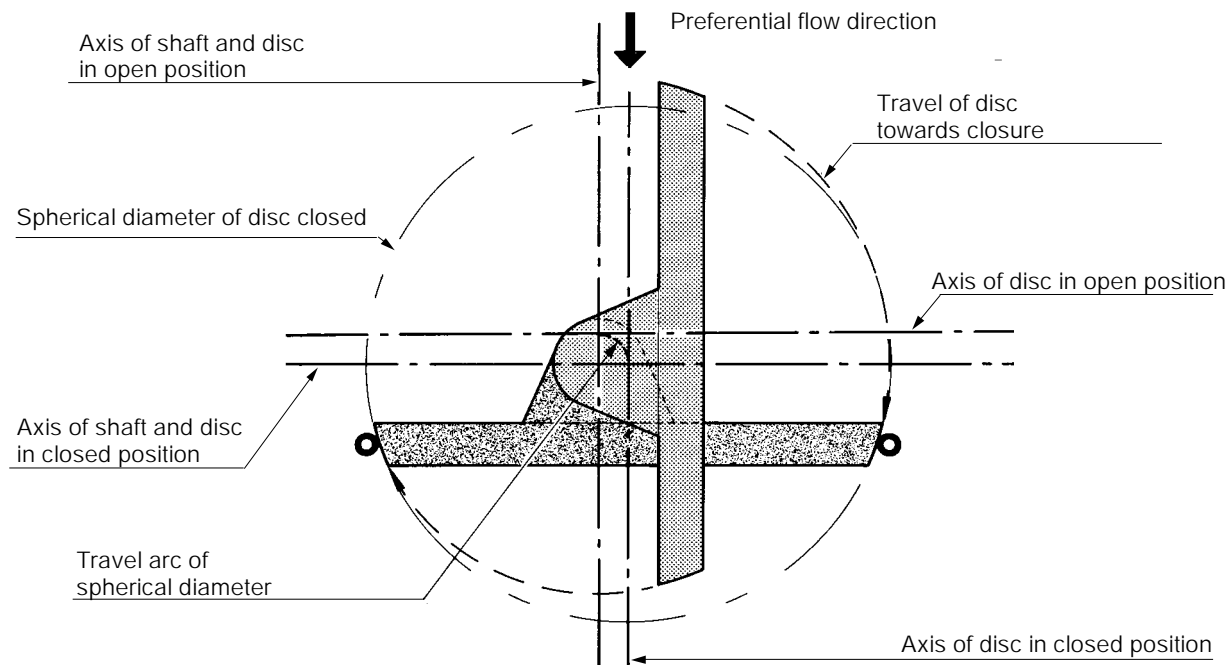
Kinematics

The compression of the seating disc edge onto the seat is achieved by double-eccentric kinematics.

The axis of the shafts is off-set to valve axis and eccentric to pipe axis.

This design eliminates the possibility of friction during operation and, as a result ensures long life service while maintaining tight shut-off characteristics.

These tight shut-off characteristics comply with to the most severe requirements of Standards.

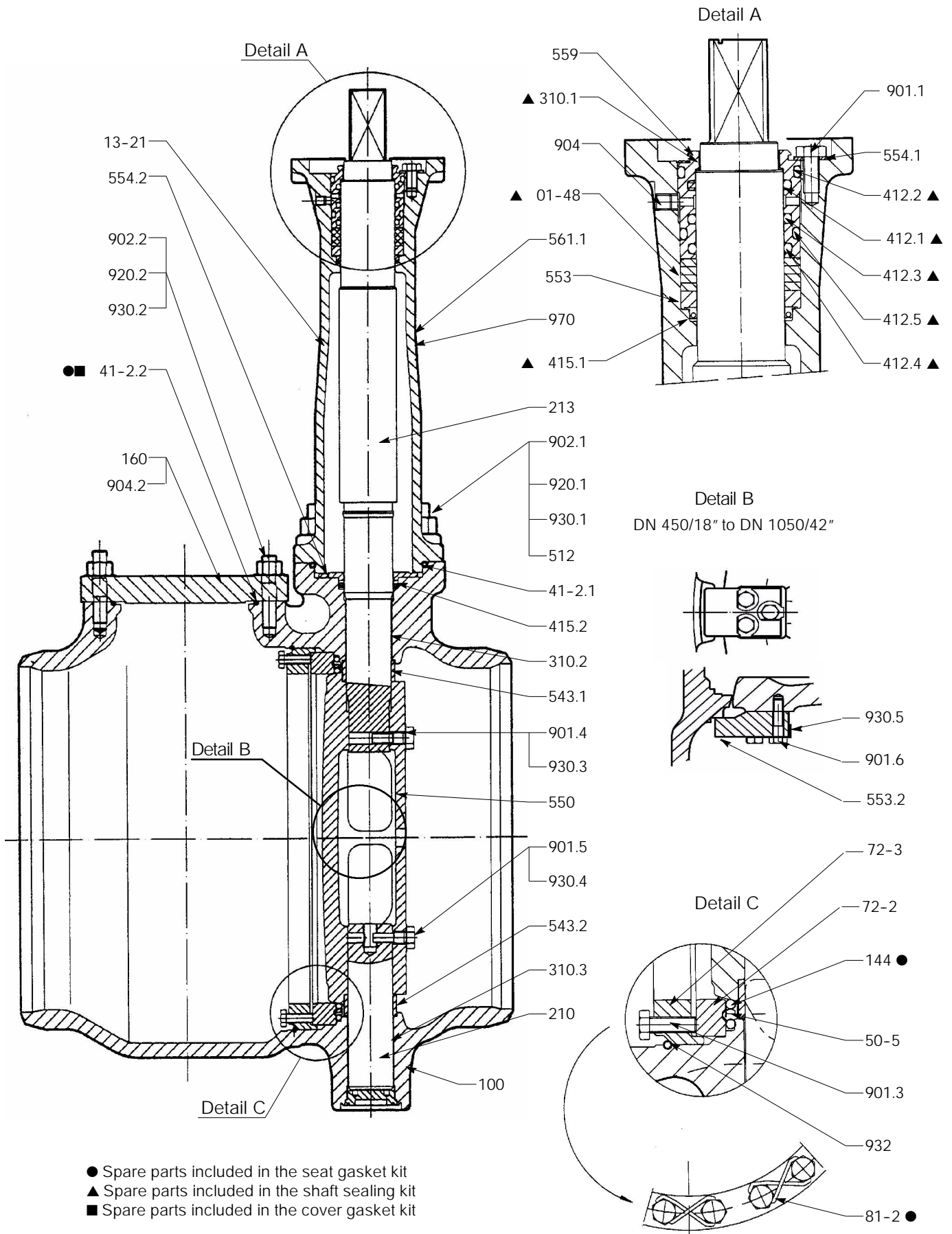


The DANAIS TBT II Side Entry is a bi-directional valve with a preferential flow direction shown by an arrow on the body.

Hydraulic characteristics

DN	NPS	Flow coefficient in full open position		Zeta
		Kv ₀	Cv ₀	
200	8	1 850	2 150	0.75
250	10	3 350	3 880	0.56
300	12	4 870	5 650	0.55
350	14	7 070	8 200	0.48
400	16	10 350	12 000	0.38
450	18	12 500	14 500	0.42
500	20	15 090	17 500	0.44
550	22	18 280	21 200	0.44
600	24	22 410	26 000	0.41
650	26	26 300	30 000	0.41
700	28	29 650	34 400	0.44
750	30	32 750	38 000	0.47
800	32	35 350	41 000	0.52
900	36	43 100	50 000	0.56
1000	40	58 290	67 600	0.43
1050	42	67 390	78 170	0.52

Construction

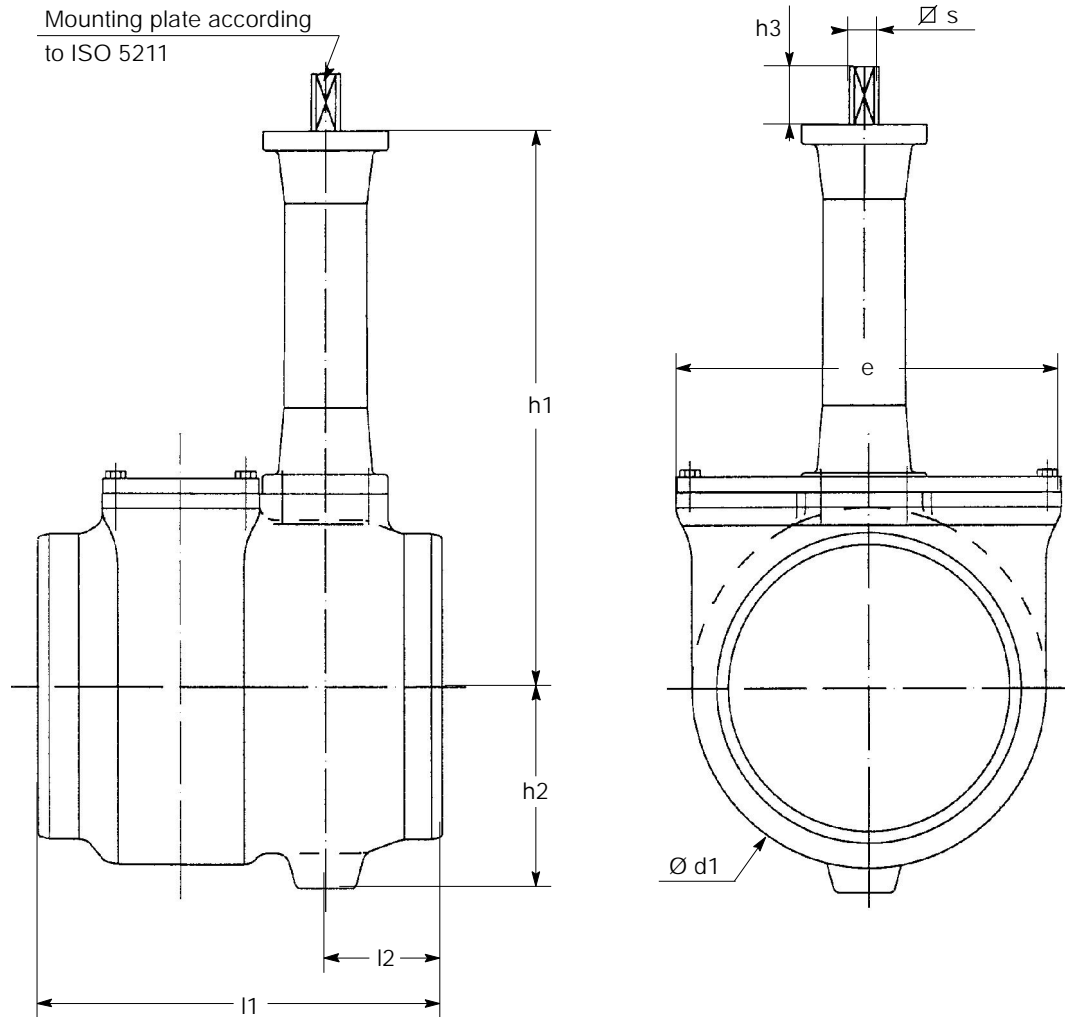


Parts list

Item	Designation	Materials
01-48	Sealing packing	Expanded graphite
100	Body	Stainless steel A351 gr CF3M (1.4409) or CF8M (1.1108)
13-21	Extension	Stainless steel A351 gr CF8M (1.4408)
144	Seat	Copper
160	Cover	Stainless steel 316L
210	Shaft	Stainless steel A479 gr. 316L
213	Operating shaft	Stainless steel A479 gr. 316L or A638 gr. 660 (*) or A479 gr. XM19
310.1	Self lubricating strip	Stainless steel + PTFE
310.2	Self lubricating strip	Stainless steel + PTFE
310.3	Self lubricating strip	Stainless steel + PTFE
41-2.1	Static joint	Nickel
41-2.2	Static joint	Copper
412.1	O-ring	HC Nitrile(**)
412.2	O-ring	HC Nitrile(**)
412.3	O-ring	HC Nitrile(**)
412.4	O-ring	HC Nitrile(**)
412.5	O-ring	HC Nitrile(**)
415.1	Lip seal ring	PTFE + ELGILOY
415.2	Lip seal ring (Standard for marine application) (Optional for others applications)	PTFE + ELGILOY
50-5	Reaction ring	Z5 NCTDV 26-15-B / A638 gr. 660
512	Adjusting ring	Z3 CND 17-11-02 / 316L
543.1	Spacer bush	Z3 CND 17-11-02 / 316L
543.2	Spacer bush	Z3 CND 17-11-02 / 316L
550	Disc	Stainless steel A351 gr CF8M (1.4408) with hard chromium or stellite overlay on edge
553	Thrust insert	Z3 CND 17-11-02 / 316L
553.2	Thrust	Stainless steel 316L
554.1	Washer	Stainless steel
554.2	Plain washer	Stainless steel
559	Gasket holder	Z3 CND 17-11-02 / 316L
561.1	Grooved nail	Stainless steel
72-2	Centering flange	Z3 CND 17-11-01 / 316L
72-3	Tightening flange	Z3 CND 17-11-01 / 316L
81-2	Wire	Z3 CN 18-09
901.1	Hexagon head screw	A4-70 Stainless steel
901.3	Hexagon head screw	A4-70 Stainless steel
901.4	Hexagon head screw	A4-70 Stainless steel
901.5	Hexagon head screw	A4-70 Stainless steel
901.6	Hexagon head screw	A4-70 Stainless steel
902.1	Stud	A320 gr. B8 M cl. 2
902.2	Stud	A320 gr. B8 M cl. 2
904	Socket screw	Stainless steel A4-70
920.1	Hexagon nut	A 194 gr. 8 M
920.2	Hexagon nut	A 194 gr. 8 M
930.1	Retainer	Stainless steel 316 or equivalent
930.2	Retainer	Stainless steel 316 or equivalent
930.3	Retainer	Stainless steel 316 or equivalent
930.4	Retainer	Stainless steel 316 or equivalent
930.5	Retainer (DN ≥ 700) or wire (DN 450 to 650)	Stainless steel 316 or equivalent
932	Outer ring	Stainless steel 316 or equivalent
970	Identity plate	Stainless steel 316 or equivalent

(*) For DN550, only A638 gr. 660 or A479 gr. XM19 is available

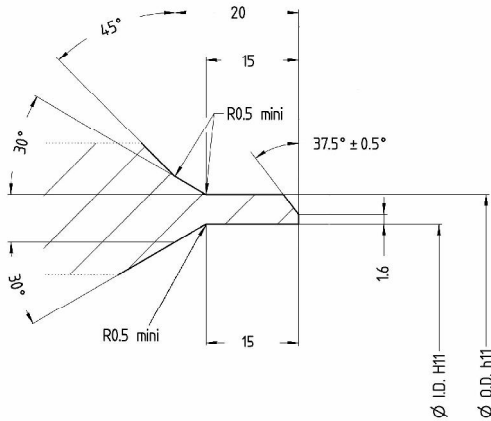
(**) HC Nitrile: Epichlorohydrin for ambient temperature below minus 25 °C. .

Dimensions


mm

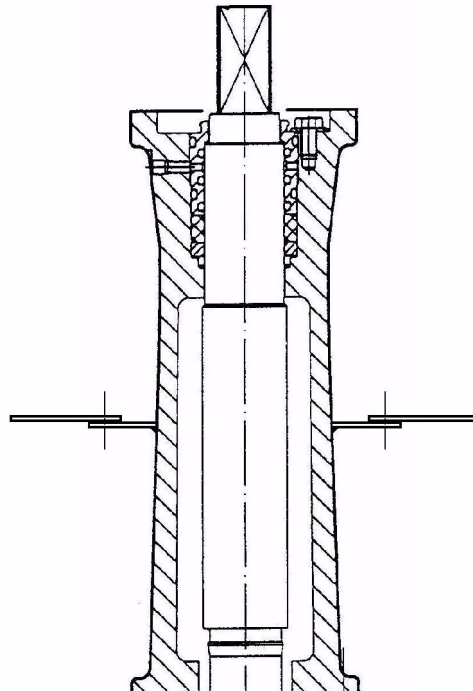
DN	NPS	h1	h2	Ød1	l1	l2	e	ISO plate	∅ s		h3	Weight Kg
									6*	6 f / 6 r		
200	8	610	147	268	419	94	334	F12	30	30	55	99
250	10	640	174	316	457	120	382	F12	30	30	55	125
300	12	665	237	372	502	135	434	F14	36	36	60	159
350	14	700	274	431	530	149	491	F14	36	36	60	194
400	16	750	300	480	550	159	538	F16	40	40	76	247
450	18	800	333	553	600	170	609	F16	46	46	76	363
500	20	850	356	592	620	180	672	F25	50	50	85	464
550	22	885	382	644	650	178	706	F25		50	85	461
600	24	975	449	697	670	200	776	F25	55	50	85	658
650	26	975	449	697	710	220	776	F25	55	50	85	683
700	28	1050	472	800	795	213	956	F30	70	70	104	874
750	30	1100	532	878	795	213	956	F30	70	70	104	1017
800	32	1100	532	874	840	235	956	F30	70	70	104	1304
900	36	1175	585	1024	900	252	1064	F35	80	80	109	1540
1000	40	1350	665	1125	1150	230	1170	F40	90	90	110	1800
1050	42	1440	705	1180	1250	320	1220	F40	90	90	110	2800

* The working pressure is limited. Please consult us.

Dimensions of Buttweld ends


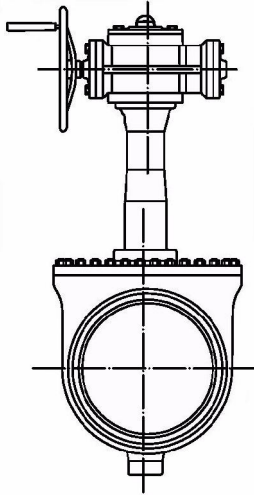
DN	NPS	O.D.	I.D. Schedule 10S	I.D. Schedule 10	I.D. Schedule 40S	I.D. Schedule STD	I.D. Schedule XS
200	8	219,08	211,56		202,72		
250	10	273,05	264,67		254,51		
300	12	323,85	314,71		304,8		
350	14	355,6	346,05	Please, consult us	336,55		
400	16	406,4	396,85		387,35		
450	18	457,2	447,65		438,15		
500	20	508	496,93		488,95		
550	22	558,8	547,73			539,75	
600	24	609,6	596,9		590,55		
650	26	660,4		644,55		641,35	
700	28	711,2		695,35		692,15	
750	30	762	746,15			742,95	
800	32	812,8		796,95		793,75	
900	36	914,4		898,55		895,35	
1000	40	1016				996,95	990,6
1050	42	1066,8				1047,75	1041,4

O.D.: Outside Diameter I.D.: Inside Diameter

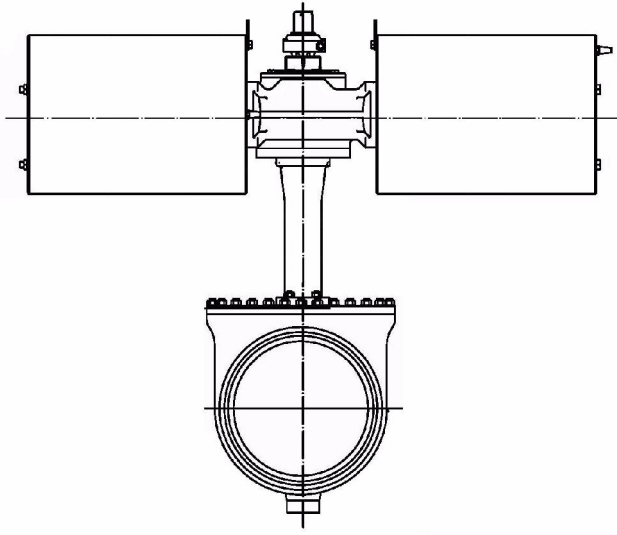
Option
Drip Plate for insulation


Standard variants

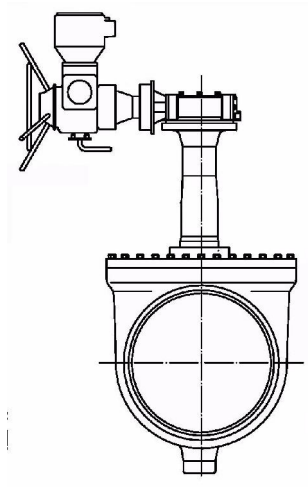
MR manual reducer



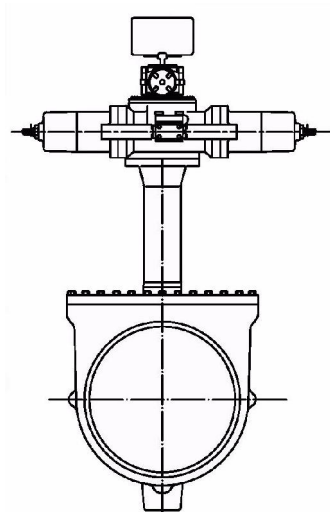
ACTAIR / DYNACTAIR pneumatic actuator



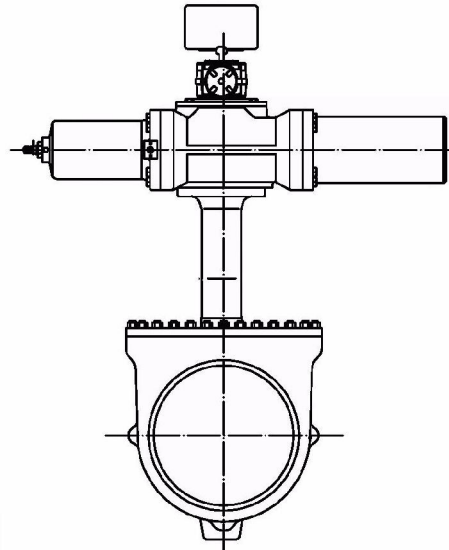
ACTELEC electric actuator



ACTO hydraulic actuator



ENNACTO hydraulic actuator



This leaflet is not contractual
and may be amended without notice.

03.10.11

8460.1221/3-10