

## 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.

## Design

- Flanged body with raised faces (Type 6): DN 50 (2") to DN 1200 (48").
- 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.
- Face to face according to ISO 5752 series 13 and EN 558.1 series 13 Standards.

- PN10 / PN 16 / PN 20 in accordance with ISO 7005,
- ASME B 16.5 Class 150,
- ASME B16.47 Class 150 series A and B,
- MSS SP 44 Class 150,
- API 605,
- Other drilling patterns on request.

## Standard option

- Lip Seal Ring for installation in any position (> 75 ° from vertical positions) (standard for marine applications).
- Drip plate for insulation.
- Electrical continuity.

## Standard variants

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

## Connections

## Materials

Body	KSB code
Stainless steel ASTM A 351 gr. 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
Bonnet	KSB code
Stainless steel ASTM A 351 gr. CF 8M / 1.4408	6
Seat	KSB code
Copper	CU

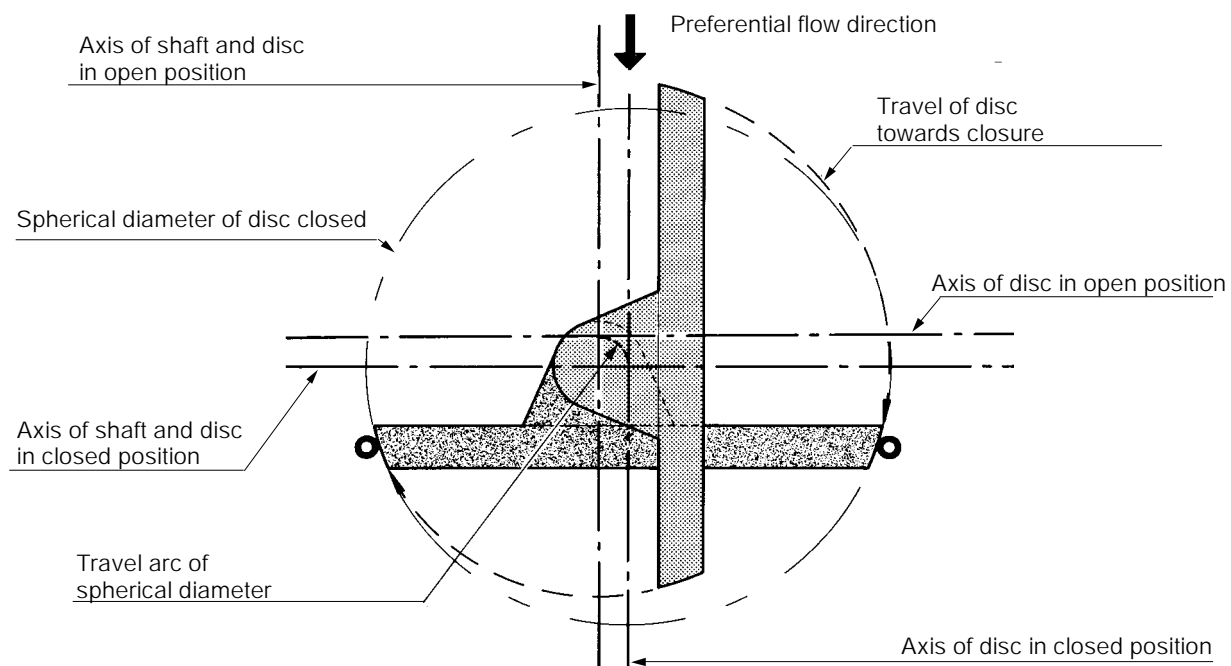
\* Caution: The working pressure is limited. Please consult us.

## 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 and Standards.

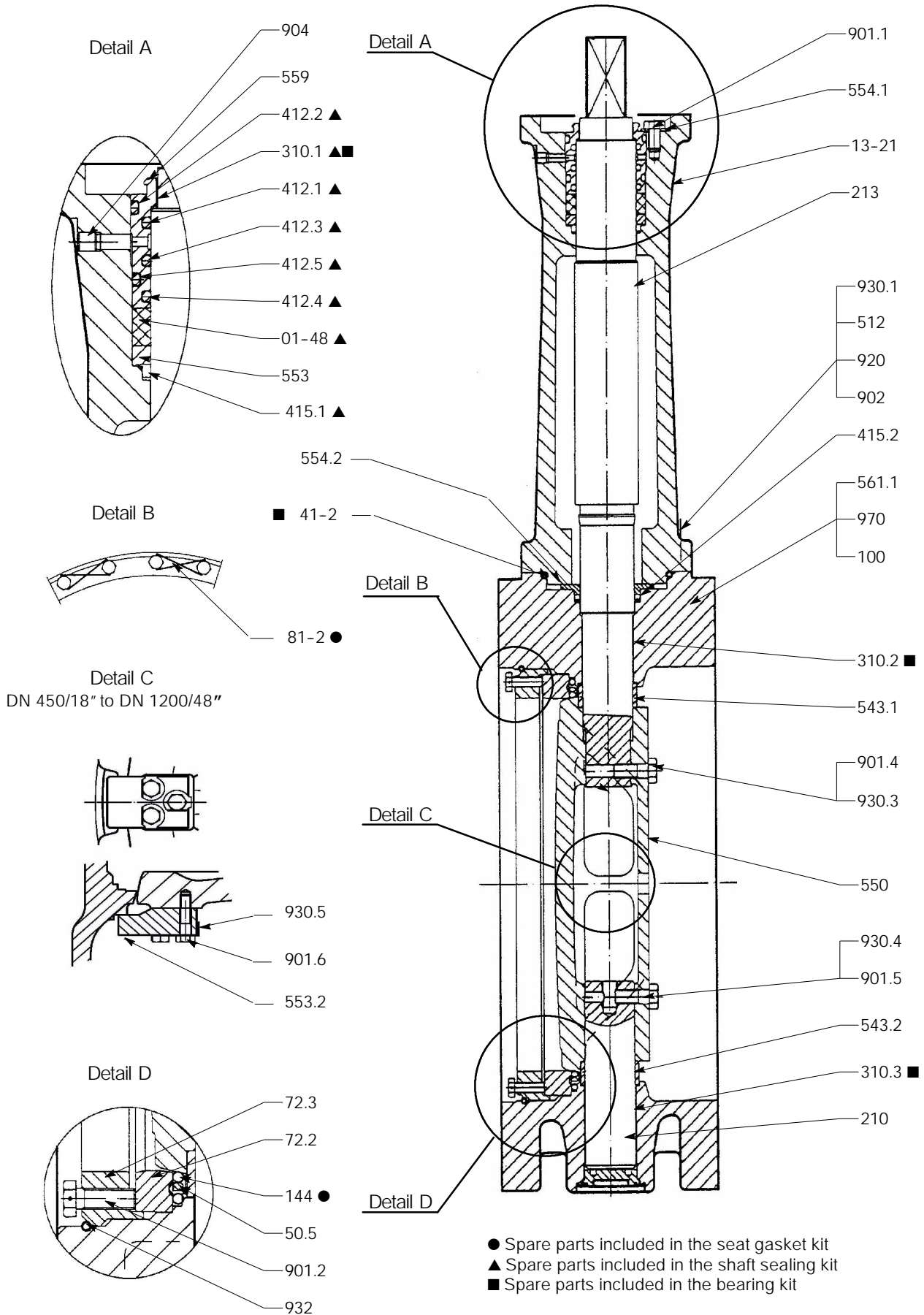


The DANAIS TBT II Flanged is a bi-directional valve with a preferential flow direction shown by an arrow on the body.

**Hydraulic characteristics**

DN	NPS	Flow coefficient in full open position		Zeta
		K <sub>v0</sub>	C <sub>v0</sub>	
50	2	70	80	2.04
65	2 ½	110	145	2.35
80	3	190	220	1.81
100	4	340	400	1.38
125	5	600	700	1.08
150	6	980	1 140	0.84
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	30 500	0.41
700	28	29 650	34 400	0.44
750	30	32 820	38 070	0.47
800	32	37 330	43 300	0.47
850	34	42 790	49 600	0.46
900	36	53 840	62 450	0.36
1000	40	58 290	67 600	0.47
1050	42	67 390	78 170	0.43
1200	48	80 000	92 800	0.52

Construction

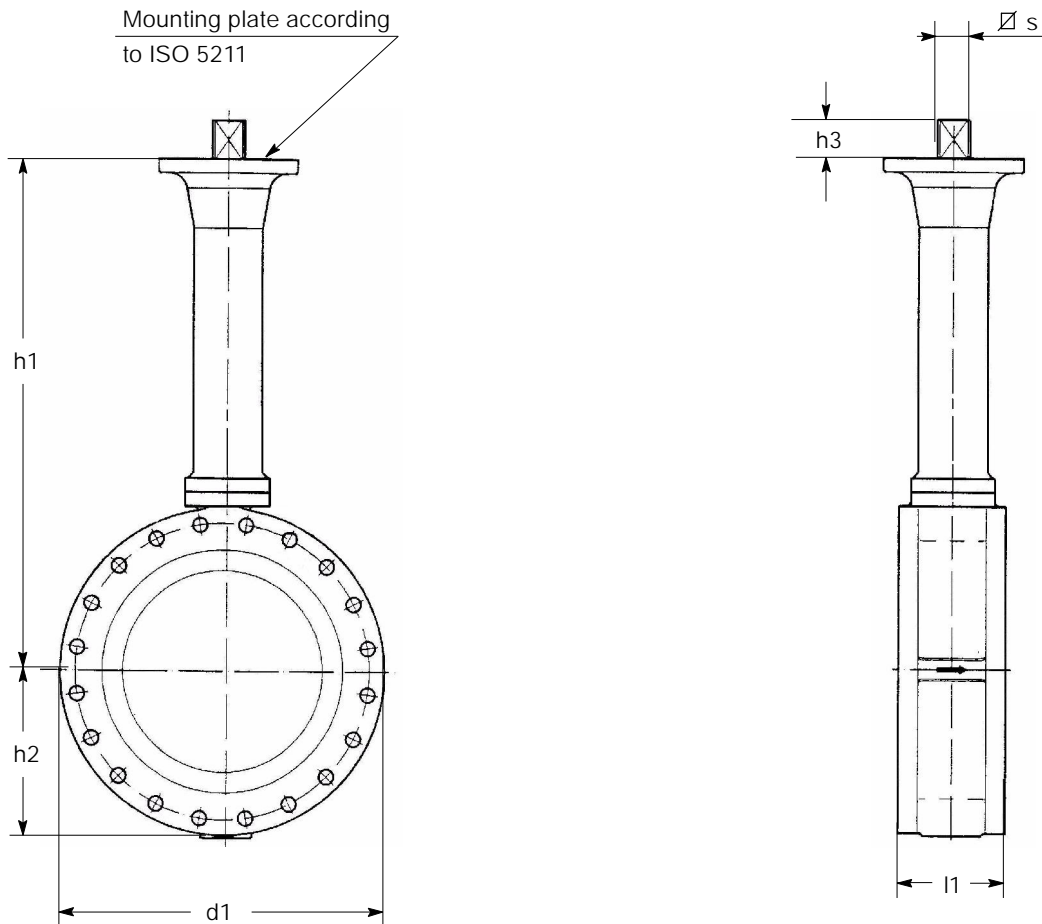


**Parts list**

Item	Designation	Materials
01-48	Sealing packing	Expanded graphite
100	Body	Stainless steel A351 gr CF8M (1.4408)
13-21	Extension	Stainless steel A351 gr CF8M (1.4408)
144	Seat	Copper
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	Static joint	Nickel
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 applications) (Optional for others applications)	PTFE + Elgiloy
50-5	Reaction ring	A638 gr. 660
512	Adjusting ring	Z 3 CND 17-11-02 / 316L
543.1	Spacer bush	Z 3 CND 17-11-02 / 316L
543.2	Spacer bush	Z 3 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 pin	Z3 CND 17-12-02 / 316L
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	A4-80 Stainless steel
901.2	Hexagon head screw	A4-80 Stainless steel
901.4	Hexagon head screw	A4-80 Stainless steel
901.5	Hexagon head screw	A4-80 Stainless steel
901.6	Hexagon head screw	A4-70 Stainless steel
902	Stud	A320 gr. B8 M cl. 2
904	Socket screw	A4-70 Stainless steel
920	Hexagon nut	A 194 gr. 8 M
930.1	Retainer	Stainless steel 316 or equivalent
930.3	Retainer	Stainless steel 316 or equivalent
930.3	Nut lock	Stainless steel 316
930.4	Nut lock	Stainless steel 316 or equivalent
930.5	Retainer (DN ≥ 700) or wire (DN 450 to 650)	Stainless steel 316 or equivalent
932	Inner ring	Stainless steel 316 or equivalent
970	Identity plate	Stainless steel 316 or equivalent

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

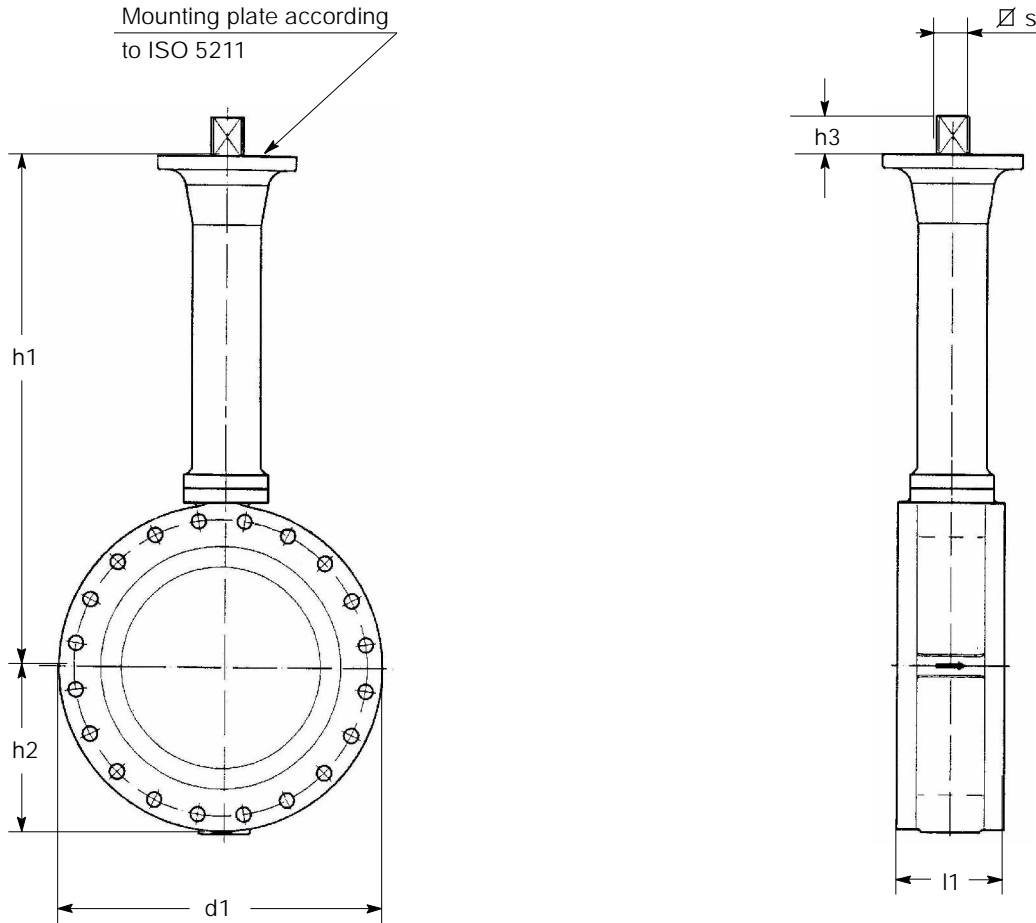
(\*\*) HC Nitrile: Epichlorohydrin for ambient temperature below minus 25 °C.

**Dimensions - DN 50 to 600**


mm

DN	NPS	h1	h2	d1	l1	z	ISO plate	∅ s		h3	Weight Kg
								6*	6f / 6r		
50	2	480	76	152	108	445	F10	19	19	35	12
65	2½	495	89	178	112	452	F10	19	19	35	15
80	3	510	95	190	114	459	F10	19	19	35	20
100	4	530	115	229	127	467	F10	19	19	35	30
125	5	545	127	254	140	478	F10	19	19	35	35
150	6	580	140	279	140	490	F12	25	25	45	41
200	8	610	172	343	152	525	F12	30	30	55	51
250	10	640	203	406	165	500	F12	30	30	55	95
300	12	665	242	483	178	495	F14	36	36	60	133
350	14	700	274	535	190	520	F14	36	36	60	147
400	16	750	300	600	216	515	F16	40	40	76	218
450	18	800	329	635	222	532	F16	46	46	76	242
500	20	850	356	700	229	558	F25	50	50	85	457
550	22	885	382	756	267	585	F25		50	85	472
600	24	975	449	826	267	630	F25	55	50	85	520

\* The working pressure is limited. Please consult us.

**Dimensions - DN 650 to 1200**


mm

DN	NPS	h1	h2	API	MSS	l1	ISO plate	$\varnothing s$		h3	Weight kg
				(1)	(2)			6*	6f / 6r		
650	26	1020	446	786	870	292	F30	70	70	104	774
700	28	1050	472	837	927	292	F30	70	70	104	1032
750	30	1100	532	887	985	292	F30	70	70	104	1153
800	32	1135	547	941	1061	318	F30	70	70	104	1274
850	34	1200	565	1005	1112	318	F35	80	80	**	1520
900	36	1175	591	1057	1169	330	F35	80	80	109	1736
1000	40	1280	698	1175	1289	410	F40		90	**	2287
1050	42	1440	705	1226	1346	410	F40		90	112	2621
1200	48	1490	810	1392	1512	470	F40		110	132	3840

(1) API 605 class 150 or ASME B16.47 series B class 150

(2) MSS SP44 class 150 or ASME B16.47 series A class 150

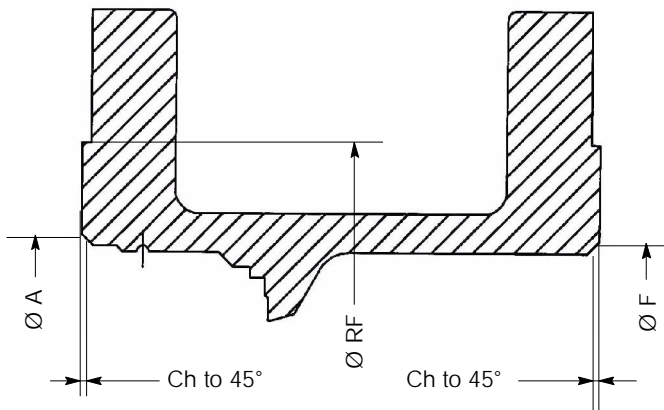
\* The working pressure is limited. Please, consult us.

\*\* According to actuator.

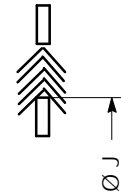
## Dimensions for flange gasket definition

In order to ensure a correct connection, the dimensions of flange gaskets must be compatible with the dimensions mentioned in the table below.

Connection according to ASME B16.5 class 150 and ASME B16.47 class 150 série A.



**NB: We do not supply the gasket**



DN	NPS	Ø A <sup>±0.5</sup>	Ø F <sup>0</sup> <sub>-10</sub>
80	3	94,5	90,5
100	4	128,5	127
150	6	177	176
200	8	230	228
250	10	278	279
300	12	326	330
350	14	376,5	377
400	16	426,5	432
450	18	490,5	477
500	20	530,5	528
550	22	581	587
600	24	627	638
650	26	673	679
700	28	707	713
750	30	760,5	760
800	32	813	816,5
850	34		
900	36	918	924
1000	40		
1050	42	1066	1054
1200	48	1184	1176

Ø J
104,5
138,5
187
240
286
337
387
439
499
541
594
647
690
725
773
828,5
936
1078
1196

Please consult us

## Flange facing finish

Serrated spiral finish according to ASME B16.5 class 150 or ASME B16.47 class 150 série A.

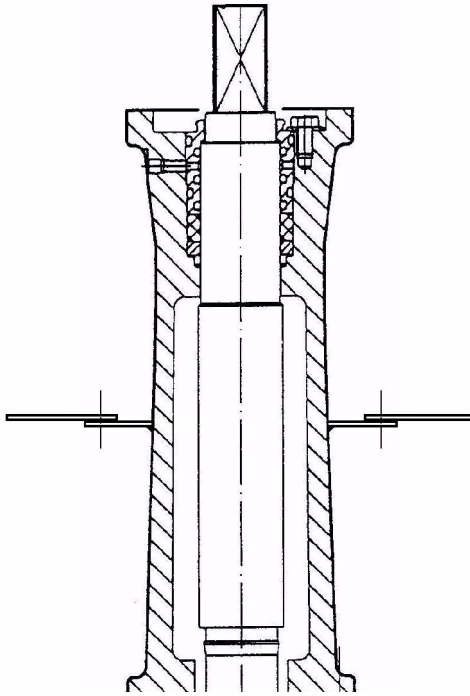
Standard: Stock finish (Ra 6,3 to Ra 12,5)

Optional: Smooth finish (Ra 3,2 and Ra 6,3)



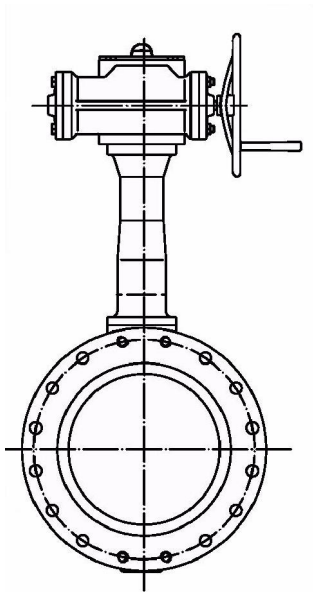
Option

Drip Plate for insulation

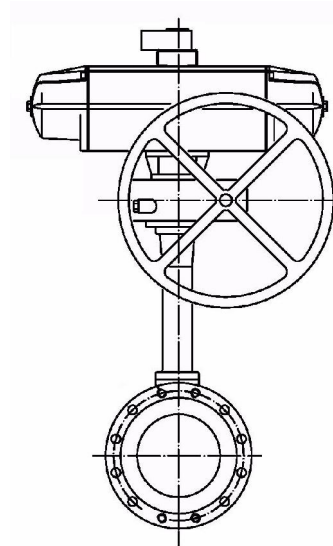


**Standard variants**

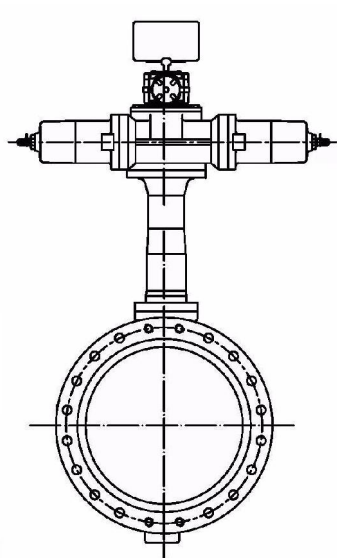
**MR manual reducer**



**ACTAIR / DYNACTAIR pneumatic actuator with manual override**



**ACTO hydraulic actuator**



**ENNACTO hydraulic actuator**

