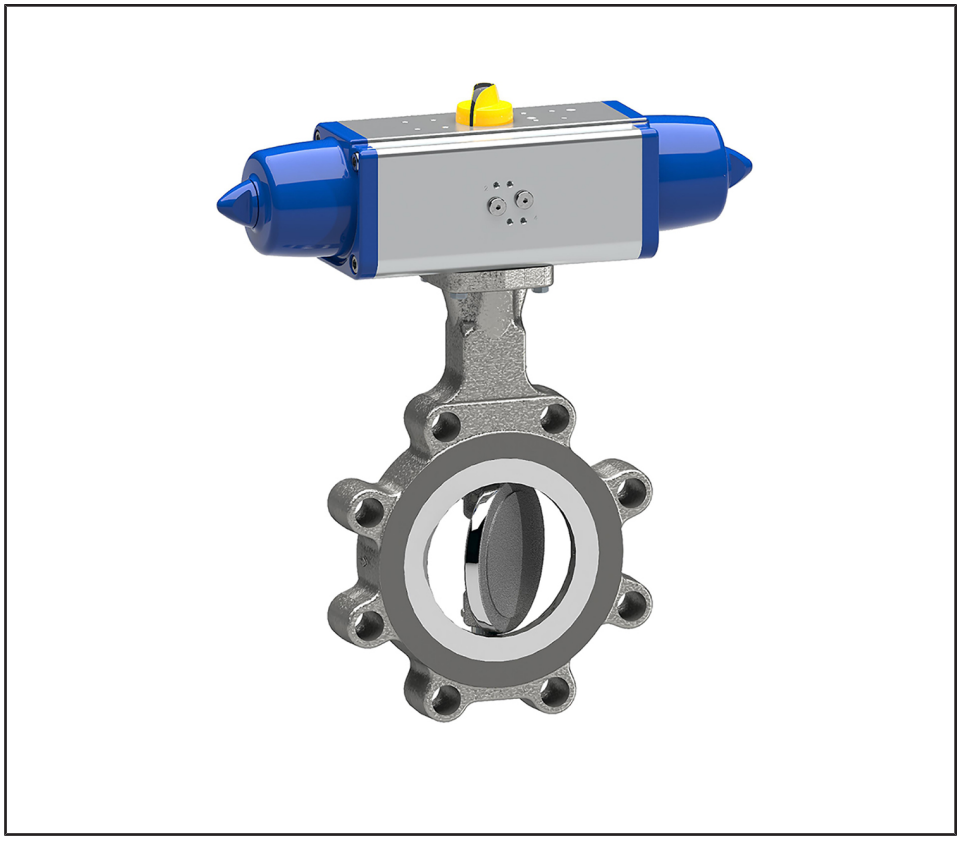
Butterfly Valve

DANAÏS MT II

Type Series Booklet



Legal information/Copyright

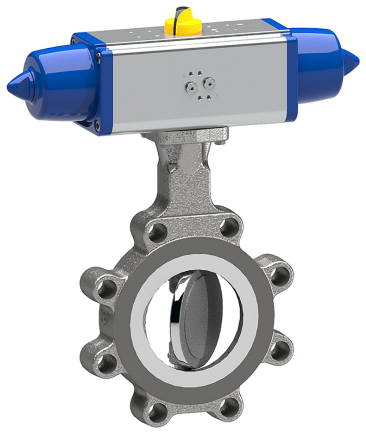
Type Series Booklet DANAÏS MT II

Contents

Butterfly Valves

Offset-disc Butterfly Valves

DANAÏS MT II



Main applications

- Nuclear power stations
- Hot-water heating systems
- Chemical industry
- Air-conditioning
- Paper industry / pulp industry
- Mining
- Petrochemical industry
- Process engineering
- Pressure boosting
- Industrial recirculation systems
- Industrial gas

Fluids handled

- Fuels
- Hot water
- High-temperature hot water
- Aggressive fluids
- Heat transfer fluids / Oils
- Fluids containing mineral oils
- Solids-laden fluids
- Corrosive fluids
- Flammable fluids
- Polymerising/crystallising fluids
- Radioactive fluids
- Toxic fluids
- Volatile fluids
- Gas
- Oil
- Steam
- Vacuum
- Gaseous oxygen

Operating data

Table 1: Operating properties

Characteristic	Value	
	DANAÏS MT II Class 150	DANAÏS MT II Class 300
Pressure class	Class 150 - PN25	Class 300
Nominal size	DN 50 - 600	
Nominal size [inch]	NPS 2-24	
Max. permissible pressure [bar]	25	50
Min. permissible temperature [°C]	≥-29 for body made of carbon steel ≥ -50 for body made of stainless steel	
Max. permissible temperature [°C]	≤ +260	
Actuation at ΔP	Plastomer: ≤ 25 bar Metal: ≤ 20 bar	≤ 50 bar
Vacuum operation down to	0 bar absolute	
Max. permissible flow velocity at operating pressure	4 m/s for liquids 50 m/s for clean gases	

The permissible operating temperature depends on the fluid handled and on the seat used.
Higher temperatures on request.

Design details

Design

- Wafer-type body with flat faces – T1: DN 50 - 600 (2 - 24 in.)
- Full-lug body with raised faces – T4: DN 50 - 600 (2 - 24 in.)
- Flanged body with raised faces – T7: DN 50 - 600 (2 - 24 in.)
- Dead-end service and downstream dismantling possible with body types T4 and T7.
- Fire-safe to API 6FA and ISO 10497
- The valves meet the fugitive emission requirements specified in TA Luft (German Technical Guidelines on Air Quality Control, VDI 2440) and standard ISO 15848-1 (CO3 Class A).
- Face-to-face length in accordance with standards:
  - EN 558 Series 20, ISO 5752 Series 20 (except for DN 350: EN 558 / ISO 5752 Series 25) and API 609 Table 2 Class 150 (DANAÏS MT II Class 150)
  - EN 558 Series 16 and 14, ISO 5752 Series 14 and API 609 Table 2 Class 300 (DANAÏS MT II Class 300)
- Can be installed between flanges to:
  - EN 1092-1, ASME B16.5, ISO 7005, JIS B2220 (DANAÏS MT II Class 150)
  - EN 1092-1, PN 25, PN 40, ASME Class 300 and ISO 7005 PN 50 (DANAÏS MT Class 300)
- Top flange and square valve shaft end to ISO 5211
- Marking in accordance with EN 19

8460.154/04-EN

- Absolutely tight shut-off in either direction of flow in accordance with EN 12266-1, leakage rate A, and ISO 5208, category A.
- Steel body: anti-corrosive primer coat and optional two-layer or three-layer coating system
- Stainless steel body: pickled and passivated

Variants

- Quarter-turn levers of the S+ / SR+ / SP+ / CR+ / CM+ type series
- MS / MC manual gearboxes
- Electric quarter-turn actuators
- Electric multi-turn actuators
- ACTAIR EVO / DYNACTAIR EVO pneumatic actuators
- HQ hydraulic actuators
- AMTROBOX for open/closed position signalling
- AMTRONIC U on/off control unit
- SMARTRONIC U positioner
- Class 150 version for marine applications, flanged body, DN 100-450 (DANAÏS MT II Class 150 only)
- Anti-static design for manually actuated valves
- Class 150 version for gaseous oxygen applications (GOX), full-lug body with raised faces (T4), DN 50-600 (2-24 in.)

Valve body materials

Table 2: Overview of available materials

Material	Material number	Temperature limit	KSB code
ASTM A216 Gr. WCC	1.0619	-29 °C to +260 °C	1
ASTM A351 Gr. CF 8M	1.4408	-50 °C to +260 °C	6
ASTM A351 Gr. CF 3M[1)]		-50 °C to +150 °C	6m

Product benefits

- Extra long neck
  - Continuous heat insulation between pipe and valve
- Flange faces with large sealing surfaces
  - allow the use of a wide range of standardised sealing elements
- Patented seat design with two independent sealing systems at the shaft passage:
  - Tight shut-off. Highest sealing capability on the market, even at full pressure rating
  - Long service life
  - Service-friendly
- Body seat protected against abrasion, ensuring a long service life of the seat
- Fire-safe or emission control graphite packing
  - Fire-safe valve to BS 6755-2
  - The valve meets the requirements specified in TA-Luft (German Technical Guidelines on Air Quality Control, VDI 2440) and standard ISO 15848-1 (CO3 Class A).
- Shaft in anti-blow-out design
  - Actuator can be removed safely.
  - Protection of persons in the vicinity of the valve
- Valve body without separate bottom cover
  - Absolutely tight sealing to atmosphere
- Design with non-metallic components possible, suitable for use with purely gaseous oxygen (compliant with BAM, WHA)

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.

Product information as per UK Pressure Equipment (Safety) Regulations 2016

The valves satisfy the safety requirements of the UK Pressure Equipment (Safety) Regulations 2016 (PER) 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 European chemicals regulation (EC) No. 1907/2006 (REACH) see https://www.ksb.com/en-global/company/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.

1 Not available for DANAÏS MT II Class 300

Certifications

Table 3: Overview

Label	Effective in:	Comment
	Worldwide	-
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications
	Worldwide	FDA-compliant plastomer material
	Europe	Certificate regarding food contact materials as per European Regulation (EC) No. 1935/2004
	Eurasian Economic Union	Technical Regulations of the Eurasian Economic Union TR CU 052/2013

Related documents

Table 4: Information/documents

Document	Reference number
Actuator selection	8460.332
Actuator selection	8460.352
Operating manual	8450.810

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

8460.154/04-EN

Pressure/temperature ratings

In pressure class 150 (ASTM materials), the DANAÏS MT II Class 150 valve meets the requirements of ASME B16.34 Class 150 "Standard Class" in accordance with the table below:

Table 5: Pressure Class 150 (for DANAÏS MT II Class 150)

Pressure class	ASTM materials		Operating pressure in bar at a temperature in °C										
	Body	Seat	-50	-29	-10	20	100	135	150	180	200	220	260
Class 150	A216 gr. WCC	Plastomer	[2]	20,0	20,0	20,0	17,7	16,4	15,8	10,0	3,3	0,0	0,0
		Metal	[2]	20,0	20,0	20,0	17,7	16,4	15,8	14,7	14,0	13,2	11,7
	A351 Gr. CF8M	Plastomer	19,0	19,0	19,0	19,0	16,0	15,2	14,8	10,0	3,3	0,0	0,0
		Metal	19,0	19,0	19,0	19,0	16,0	15,2	14,8	15,6	13,5	13,0	11,7

In pressure class PN25 (European materials), the DANAÏS MT II Class 150 butterfly valve meets the requirements of EN 12516-1. The values in the following table are valid for valves to Pressure Equipment Directive 2014/68/EU.

Table 6: Pressure Class PN25 (for DANAÏS MT II Class 150)

Pressure class	European materials		Operating pressure in bar at a temperature in °C										
	Body	Seat	-50	-29	-10	20	100	135	150	180	200	220	260
PN25	1.0619	Plastomer[3]	[2]	24,4	24,4	24,4	21,3	20,3	15,8	10,0	3,3	0,0	0,0
		Metal	[2]	24,4	24,4	24,4	21,3	20,3	19,8	18,6	17,8	17,2	15,9
	1.4408	Plastomer[3]	24,3	24,3	24,3	24,3	20,7	19,3	15,8	10,0	3,3	0,0	0,0
		Metal	24,3	24,3	24,3	24,3	20,7	19,3	18,7	17,8	17,2	16,7	15,8

In pressure class 300 (European materials), the DANAÏS MT II Class 300 butterfly valve meets the requirements of EN 12516-1. The values in the following table are valid for valves to Pressure Equipment Directive 2014/68/EU.

Table 7: Pressure Class 300, European materials (for DANAÏS MT II Class 300)

Pressure class	European materials		Operating pressure in bar at a temperature in °C										
	Body	Seat	-50	-29	-10	20	100	135	150	180	200	220	260
Class 300	1.0619	Plastomer[3]	[2]	49,4	49,4	49,4	43,2	20,3	15,8	10,0	3,3	0,0	0,0
		Metal	[2]	49,4	49,4	49,4	43,2	41,0	40,1	37,8	36,0	34,8	32,3
	1.4408	Plastomer[3]	49,2	49,2	49,2	49,2	42,0	20,3	15,8	10,0	3,3	0,0	0,0
		Metal	49,2	49,2	49,2	49,2	42,0	39,1	37,9	36,0	34,8	33,8	32,0

In pressure class 300 (ASTM materials), the DANAÏS MT II Class 300 valve meets the requirements of ASME B16.34 Class 300 "Standard Class" in accordance with the table below:

Table 8: Pressure Class 300, ASTM materials (for DANAÏS MT II Class 300)

Pressure class	ASTM materials		Operating pressure in bar at a temperature in °C									
	Body	Seat	-50	-29	38	100	135	150	180	200	220	260
Class 300	A216 gr. WCC	Plastomer[3]	[2]	51,7	51,7	51,5	20,3	15,8	10,0	3,3	0,0	0,0
		Metal	[2]	51,7	51,7	51,5	50,7	50,3	49,3	48,7	47,8	45,9
	A351 gr. CF8M	Plastomer[3]	49,6	49,6	49,6	42,2	20,3	15,8	10,0	3,3	0,0	0,0
		Metal	49,6	49,6	49,6	42,2	39,7	38,6	36,9	35,7	34,8	33,1

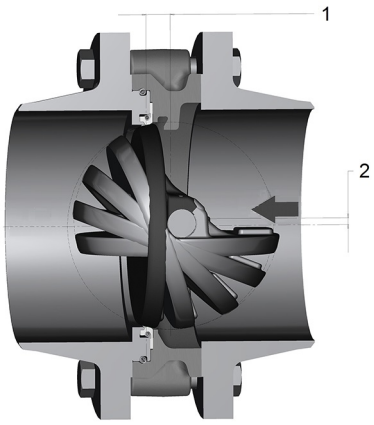
2 Not permitted

3 For temperatures < -29 °C and pressures > 8 bar, please contact KSB.

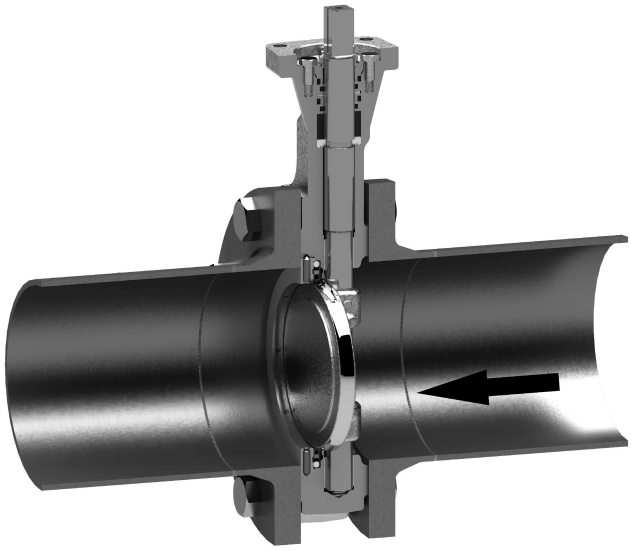
Technical data

Kinematics

- The valve disc is pressed onto the seat by double-offset kinematics.
- Double offset:
  - The axis of rotation is offset from the seat/disc interface.
  - The axis of rotation is offset from the piping centreline.
- This design prevents friction between the seat and the sealing surface of the valve disc as the valve disc opens and closes.
- The valve's shut-off capability is maintained even after a very large number of actuating cycles.
- The butterfly valve's shut-off capability meets the most stringent specifications and standards.



Schematic
Cross-section perpendicular to actuating shaft



Schematic
Cross-section parallel to actuating shaft

1. First offset
2. Second offset

8460.154/04-EN

Tight shut-off

- The valve complies with the standards listed below.
- This valve is a bi-directional valve; the preferential flow direction is indicated by the arrow on the body (differential pressure is applied from the shaft side).

Table 9: Overview of applicable standards

Valves	With plastomer seat	With metal seat	
		Standard design	According to specification, acceptance testing at supplier's factory
For liquids	EN 12266-1 Leakage rate A ISO 5208 Category A API 598	EN 12266-1 Leakage rate D ISO 5208 Category C API 598 MSS SP 61	EN 12266-1 Leakage rate B ISO 5208 Category B API 598 ANSI / FCI 70.2 Class V
For gases	EN 12266-1 Leakage rate A ISO 5208 Category A API 598 ANSI / FCI 70.2 Class VI	EN 12266-1 Leakage rate D ISO 5208 Leakage rate < Cat. D MSS SP 61	EN 12266-1 Leakage rate B ISO 5208 Category B API 598 ANSI / FCI 70.2 Class VI

Actuating torque

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

DANAÏS MT II Class 150 - PN25

Actuating torques for valves with plastomer seat handling lubricating or non-lubricating fluid

Table 10: Table of actuating torques for valves with plastomer seat [Nm]

DN	NPS	Differential pressure ΔP [bar]											
	[inch]	0	2	4	6	8	10	12	14	16	18	20	25
50	2	20	20	20	20	20	20	30	30	30	30	30	30
65	2½	30	30	30	30	30	30	30	30	30	30	30	40
80	3	30	30	30	30	30	30	30	30	30	40	40	40
100	4	40	40	40	40	40	40	50	50	60	60	70	80
125	5	60	60	60	60	60	60	70	80	80	90	100	120
150	6	80	80	80	80	100	110	120	140	150	160	180	210
200	8	150	150	150	150	180	200	220	240	270	290	320	380
250	10	210	210	210	260	310	360	420	460	520	570	620	740
300	12	410	410	410	410	490	580	660	750	830	920	1000	1210
350	14	500	500	500	600	750	890	1030	1160	1300	1430	1570	1910
400	16	700	700	700	860	1050	1240	1430	1610	1800	1990	2170	2640
450	18	1010	1010	1010	1310	1610	1900	2200	2500	2790	3090	3390	4130
500	20	1300	1300	1300	1690	2080	2480	2880	3280	3670	4090	4470	5460
600	24	1930	1930	1930	2530	3130	3730	4330	4930	5530	6130	6730	8230

8460.154/04-EN

Actuating torques for valves with flexible metal seat handling lubricating fluid

Table 11: Table of actuating torques for valves with flexible metal seat [Nm]

DN	NPS	Differential pressure ΔP [bar]										
	[inch]	0	2	4	6	8	10	12	14	16	18	20
50	2	40	40	40	40	40	40	40	50	50	50	50
65	2½	40	40	40	40	40	40	40	50	50	50	50
80	3	40	40	40	40	40	40	40	50	50	50	50
100	4	70	70	70	70	70	70	70	70	90	90	90
125	5	100	100	100	100	100	100	110	120	130	130	150
150	6	160	160	160	160	160	160	180	190	210	220	240
200	8	280	280	280	280	280	280	310	340	370	400	420
250	10	500	500	500	500	500	500	560	610	670	720	780
300	12	770	770	770	770	770	770	850	950	1040	1130	1220
350	14	1160	1160	1160	1160	1160	1160	1300	1450	1590	1740	1880
400	16	1640	1640	1640	1640	1640	1640	1840	2040	2240	2440	2640
450	18	2140	2140	2140	2140	2140	2450	2770	3080	3400	3710	4030
500	20	2300	2300	2300	2300	2720	3140	3550	3970	4390	4810	5220
600	24	2820	2820	2820	3450	4080	4710	5340	5970	6600	7230	7860

Actuating torques for valves with flexible metal seat handling non-lubricating fluid

Table 12: Table of actuating torques for valves with flexible metal seat [Nm]

DN	NPS	Differential pressure ΔP [bar]										
	[inch]	0	2	4	6	8	10	12	14	16	18	20
50	2	80	80	80	80	80	80	90	100	100	100	100
65	2½	90	90	90	90	90	90	90	100	100	100	100
80	3	100	100	100	100	100	100	100	100	100	100	100
100	4	120	120	120	120	120	120	120	130	140	150	160
125	5	190	190	190	190	190	190	200	220	230	240	250
150	6	300	300	300	300	300	300	320	340	360	380	400
200	8	500	500	500	500	500	500	550	590	630	660	700
250	10	860	860	860	860	860	860	930	1000	1070	1140	1200
300	12	1260	1260	1260	1260	1260	1260	1370	1480	1590	1700	1800
350	14	1860	1860	1860	1860	1860	1860	2030	2200	2370	2530	2700
400	16	2680	2680	2680	2680	2680	2680	2920	3150	3390	3620	3850
450	18	3550	3550	3550	3550	3550	3900	4260	4620	4980	5340	5700
500	20	3900	3900	3900	3900	4370	4840	5310	5790	6260	6730	7200
600	24	5150	5150	5150	5840	6550	7260	7970	8680	9390	10100	10800

8460.154/04-EN

DANAÏS MT II Class 300

Actuating torque for valves with plastomer seat handling lubricating or non-lubricating fluid

Table 13: Table of actuating torques for valves with plastomer seat [Nm]

DN	NPS	Differential pressure ΔP [bar]																
	[inch]	0	2	4	6	8	10	12	14	16	18	20	25	30	35	40	45	50
50	2	20	20	20	20	20	20	30	30	30	30	30	30	40	40	40	40	50
65	2½	30	30	30	30	30	30	30	30	30	30	30	40	40	50	50	50	60
80	3	30	30	30	30	30	30	30	30	30	40	40	40	50	50	60	60	70
100	4	40	40	40	40	40	40	50	50	60	60	70	80	80	100	110	120	130
125	5	60	60	60	60	60	60	70	80	80	90	100	120	130	150	170	180	200
150	6	80	80	80	80	100	110	120	140	150	160	180	210	240	280	300	340	370
200	8	150	150	150	150	180	200	220	240	270	290	320	380	440	500	560	620	690
250	10	210	210	210	260	310	360	420	460	520	570	620	740	870	1000	1120	1250	1380
300	12	410	410	410	410	490	580	660	750	830	920	1000	1210	1420	1640	1850	2060	2270
350	14	500	500	500	600	750	890	1030	1160	1300	1430	1570	1910	2250	2610	2970	3270	3600
400	16	700	700	700	860	1050	1240	1430	1610	1800	1990	2170	2640	3110	3580	4050	4520	4980
450	18	1010	1010	1010	1310	1610	1900	2200	2500	2790	3090	3390	4130	4870	5610	6350	7070	7830
500	20	1300	1300	1300	1690	2080	2480	2880	3280	3670	4090	4470	5460	6450	7440	8440	9430	10420
600	24	1930	1930	1930	2530	3130	3730	4330	4930	5530	6130	6730	8230	9730	11232	12730	14230	15730

Actuating torque for valves with flexible metal seat handling lubricating fluid

Table 14: Table of actuating torques for valves with flexible metal seat [Nm]

DN	NPS	Differential pressure ΔP [bar]																
	[inch]	0	2	4	6	8	10	12	14	16	18	20	25	30	35	40	45	50
50	2	40	40	40	40	40	40	40	50	50	50	50	50	60	60	70	70	80
65	2½	40	40	40	40	40	40	40	50	50	50	50	60	60	70	80	80	90
80	3	40	40	40	40	40	40	40	50	50	50	50	60	70	70	80	90	90
100	4	70	70	70	70	70	70	70	70	90	90	90	100	110	130	140	150	160
125	5	100	100	100	100	100	100	110	120	130	130	150	160	180	200	220	240	260
150	6	160	160	160	160	160	160	180	190	210	220	240	280	320	350	390	430	470
200	8	280	280	280	280	280	280	310	340	370	400	420	490	560	630	700	770	840
250	10	500	500	500	500	500	500	560	610	670	720	780	920	1060	1200	1340	1470	1610
300	12	770	770	770	770	770	770	850	950	1040	1130	1220	1450	1680	1910	2140	2370	2600
350	14	1160	1160	1160	1160	1160	1160	1300	1450	1590	1740	1880	2250	2610	2970	3330	3700	4060
400	16	1640	1640	1640	1640	1640	1640	1840	2040	2240	2440	2640	3140	3640	4140	4640	5140	5640
450	18	2140	2140	2140	2140	2140	2450	2770	3080	3400	3710	4030	4810	5600	6380	7170	7950	8740
500	20	2300	2300	2300	2300	2720	3140	3550	3970	4390	4810	5220	6270	7310	8360	9400	10450	11490
600	24	2820	2820	2820	3450	4080	4710	5340	5970	6600	7230	7860	9440	11000	12590	14160	15740	17310

8460.154/04-EN

Actuating torque for valves with flexible metal seat handling non-lubricating fluid

Table 15: Table of actuating torques for valves with flexible metal seat [Nm]

DN	NPS	Differential pressure ΔP [bar]																
	[inch]	0	2	4	6	8	10	12	14	16	18	20	25	30	35	40	45	50
50	2	80	80	80	80	80	80	90	100	100	100	100	100	110	120	130	140	150
65	2½	90	90	90	90	90	90	90	100	100	100	100	100	110	120	130	140	150
80	3	100	100	100	100	100	100	100	100	100	100	100	100	110	120	130	140	150
100	4	120	120	120	120	120	120	120	130	140	150	160	170	190	210	230	240	250
125	5	190	190	190	190	190	190	200	220	230	240	250	280	310	340	370	400	430
150	6	300	300	300	300	300	300	320	340	360	380	400	450	500	550	610	660	710
200	8	500	500	500	500	500	500	550	590	630	660	700	800	890	980	1080	1170	1260
250	10	860	860	860	860	860	860	930	1000	1070	1140	1200	1380	1550	1720	1890	2070	2240
300	12	1260	1260	1260	1260	1260	1260	1370	1480	1590	1700	1800	2080	2350	2620	2890	3170	3440
350	14	1860	1860	1860	1860	1860	1860	2030	2200	2370	2530	2700	3130	3550	3970	4400	4820	5240
400	16	2680	2680	2680	2680	2680	2680	2920	3150	3390	3620	3850	4440	5030	5610	6200	6790	7380
450	18	3550	3550	3550	3550	3550	3900	4260	4620	4980	5340	5700	6600	7500	8400	9300	10210	11110
500	20	3900	3900	3900	3900	4370	4840	5310	5790	6260	6730	7200	8390	9570	10750	11930	13110	14290
600	24	5150	5150	5150	5840	6550	7260	7970	8680	9390	10100	10800	12580	14350	16120	17890	19670	21440

8460.154/04-EN

Hydraulic characteristics

DANAÏS MT II Class 150 - PN25

Table 16: Hydraulic characteristics of DANAÏS MT Class 150 - PN25 [Kv0 in m^3/ h / $bar^{0.5}$] and [Cv0 in GUS/min / $psi^{0.5}$]

DN	NPS	Flow coefficient with disc fully open		Zeta
	[inch]	Kv0	Cv0	
50	2	70	80	2,04
65	2½	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	1140	0,84
200	8	1850	2150	0,75
250	10	3350	3880	0,56
300	12	4870	5650	0,55
350	14	7070	8200	0,48
400	16	10350	12000	0,38
450	18	12500	14500	0,42
500	20	15090	17500	0,44
600	24	22410	26000	0,41

DANAÏS MT II Class 300

Table 17: Hydraulic characteristics of DANAÏS MT Class 300 [Kv0 in m^3/ h / $bar^{0.5}$] and [Cv0 in GUS/min / $psi^{0.5}$]

DN	NPS	Flow coefficient with disc fully open		Zeta
	[inch]	Kv0	Cv0	
50	2	70	80	2,04
65	2½	110	145	2,35
80	3	180	210	2,02
100	4	330	380	1,47
125	5	560	650	1,24
150	6	910	1055	0,98
200	8	1300	1510	1,51
250	10	1800	2090	1,93
300	12	2500	2900	2,07
350	14	3400	3950	2,07
400	16	4500	5220	2,02
450	18	6500	7540	1,55
500	20	8600	10000	1,35
600	24	12000	14000	1,44

8460.154/04-EN

Fire-safe design

Metal-seated valves are fire-tested to BS 6755-2, and certified as "fire safe".

This certification covers tight shut-off (metal-to-metal seating) and sealing at the shaft passage (fire-safe graphite packing).

The fire-safe design is recommended for the full-lug body T4 and the flanged body T7.

Emissions control design

The valves with plastomer seat and metal seat are certified to TA-Luft (07.2002 edition), VDI 2440 and standard ISO 15848-1 (CO3 Class A).

Tightness class at the shaft: < 10^{-6} $mg.s^{-1}.m^{-1}$

The graphite packing is certified to TA-Luft and ISO 15848-1 (SUPAGRAPH CONTROL). However, this packing has no fire-safe certification.

ATEX-compliant design

(Optional) variant which meets the requirements of the ATEX directive 2014/34/EU (group II, category 2, zones 1 and 21).

Possible configurations

Table 18: Overview of possible configurations

Seat type	Graphite packing	Certification		Variant
		Fire-safe	Emissions control	ATEX
Plastomer	Emissions control (SUPAGRAPH CONTROL)	NO	YES	YES
Metal	Fire-safe	YES	NO	YES
	Emissions control (SUPAGRAPH CONTROL)	NO	YES	YES

8460.154/04-EN

Materials

Components in common for wafer-type body with flat faces, full-lug body and flanged body - Class 150 - PN25

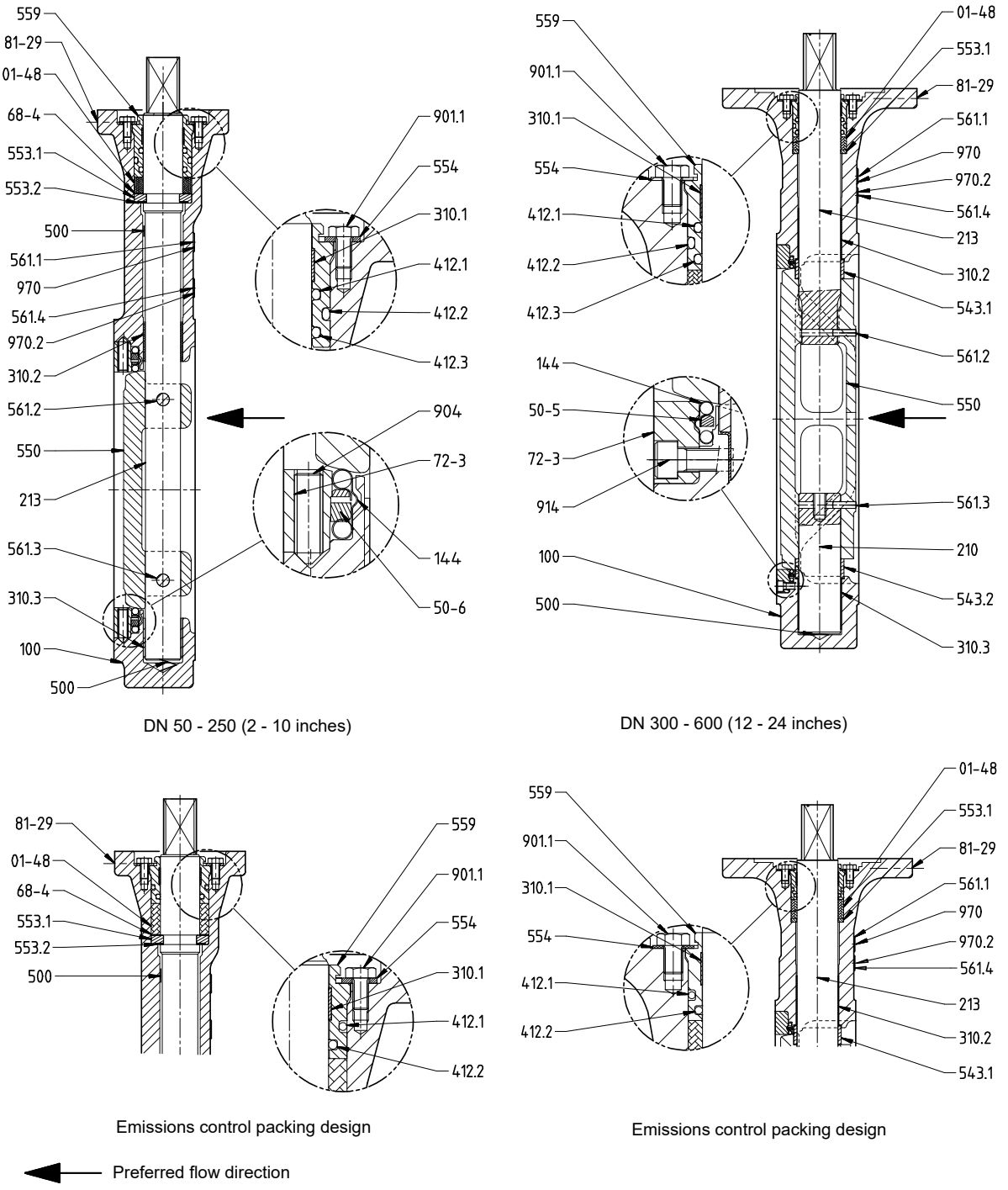


Fig. 1: Sectional drawing of DANAÏS MT II DN 300 - 600 (12 - 24 inches) / wafer-type body (T1) and full-lug body (T4) / metal design

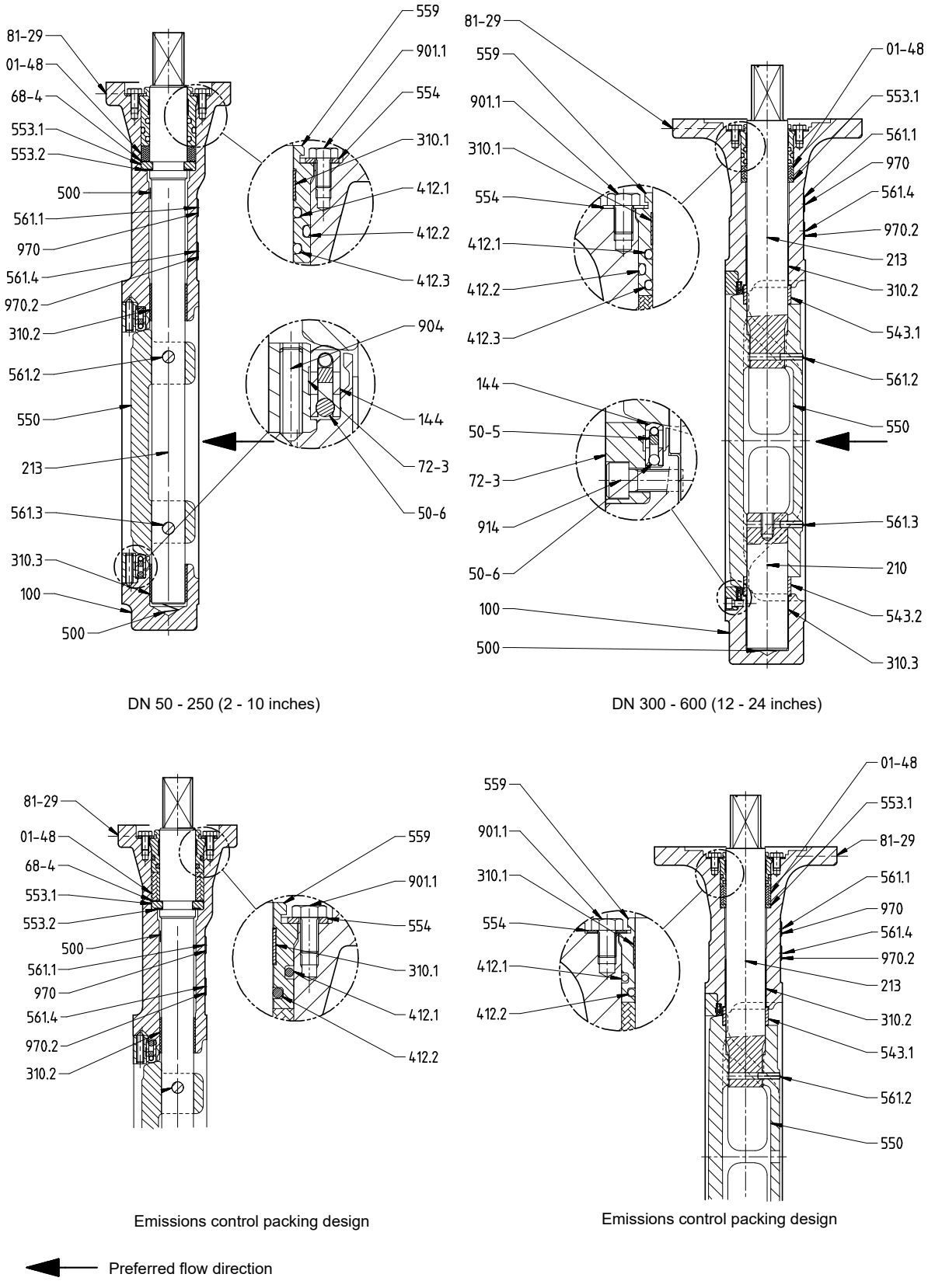


Fig. 2: Sectional drawing of DANAÏS MT II DN 300 - 600 (12 - 24 inches) / wafer-type body (T1) and full-lug body (T4) / plastomer design

8460.154/04-EN

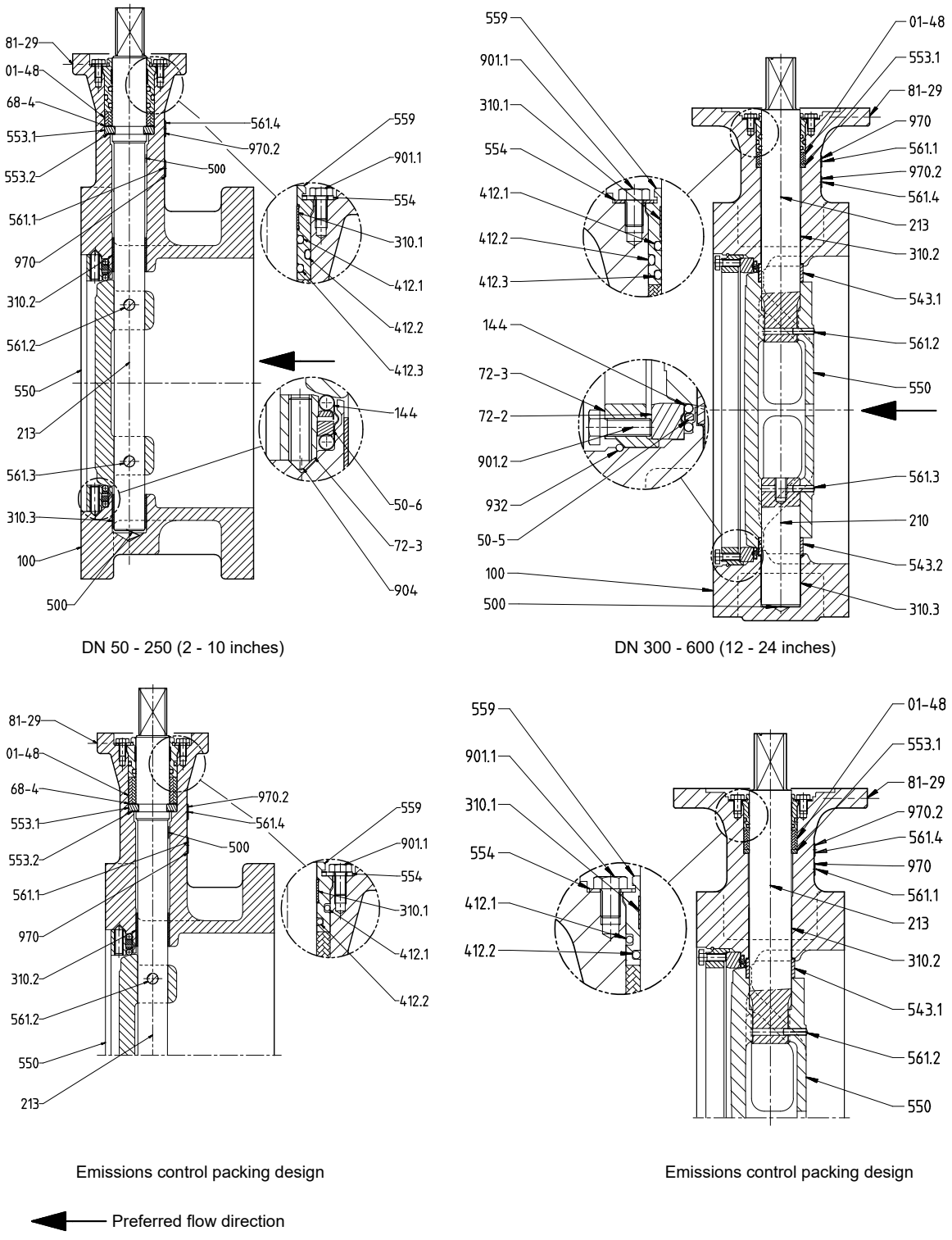


Fig. 3: Sectional drawing of DANAÏS MT II DN 300 - 600 (12 - 24 inches) / flanged body (T7) / metal design

8460.154/04-EN

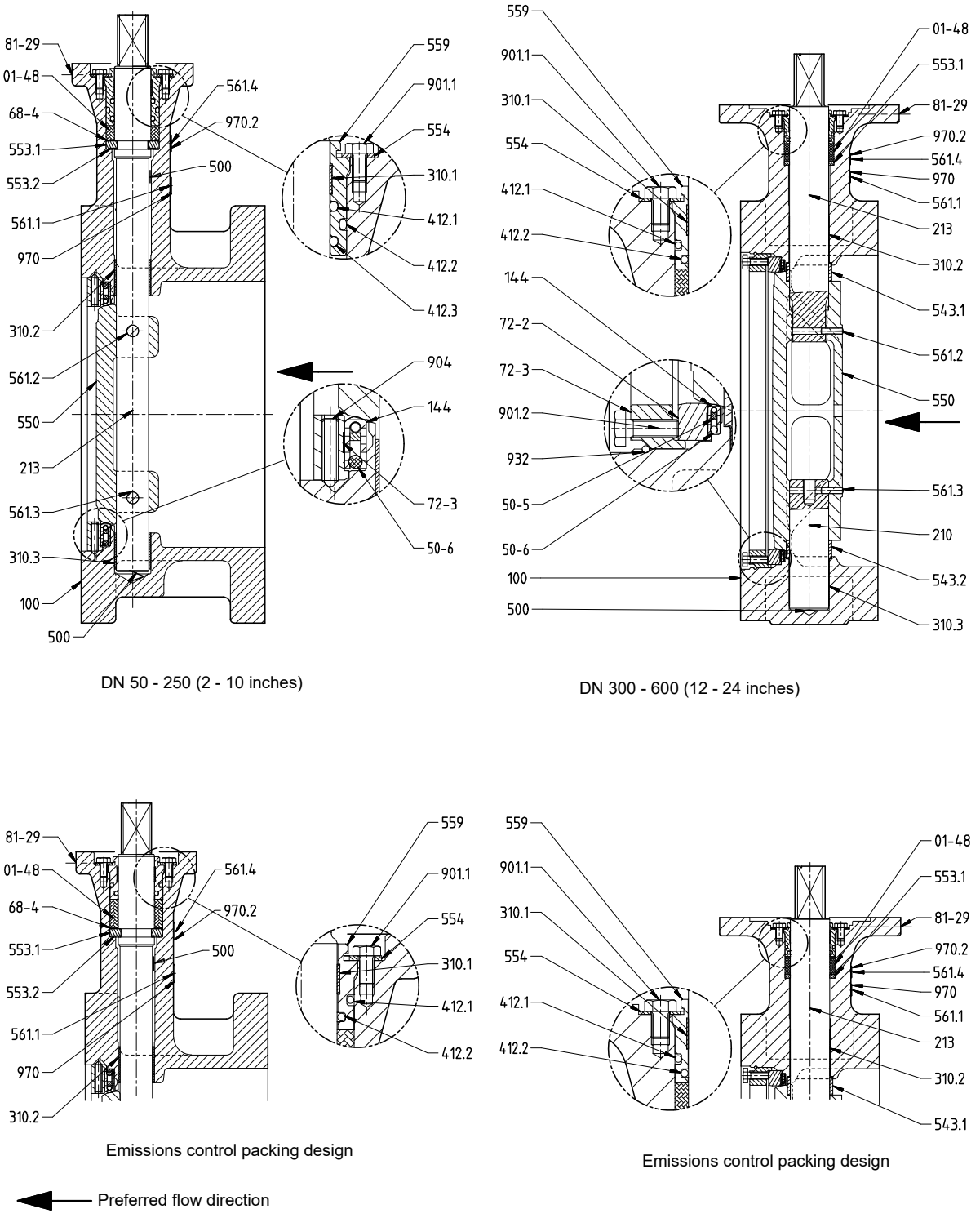


Fig. 4: Sectional drawing of DANAÏS MT II DN 300 - 600 (12 - 24 inches) / flanged body (T7) / plastomer design

Table 19: List of components for wafer-type body with flat faces, full-lug body and flanged body (DANAÏS MT II Class 150 - PN 25)

Part No.	Description	DN	Materials	Temperature	KSB code
01-48[4)]	Gland packing	50-600	Expanded graphite SUPAGRAF CONTROL		
50-5[5)]	Compression ring	300-600	Stainless steel		
50-6[5)]	Locking ring	50-250	Stainless steel		
68-4	Foil	50-250	Stainless steel		
72-2	Centring flange	300-600	Stainless steel		
72-3	Retaining flange	50-600	Stainless steel		
81-29	Earth terminal	50-600			
100	Body	50-600	Steel ASTM A 216 Gr. WCC/1.0619	-29 °C to +260 °C	1
			Stainless steel ASTM A351 Gr. CF8M / 1.4408	-50 °C to +260 °C	6
			Stainless steel ASTM A351 Gr. CF3M Mo > 2.75 for marine applications	-50 °C to +150 °C	6m
144[5)]	Metal seat	50-600	Nickel	-50 °C to +260 °C	NI
			Copper	-50 °C to +150 °C	CU
			Stainless steel Cl. A4-70	-50 °C to +260 °C	IX
	Plastomer seat		Reinforced PTFE[6)]	-50 °C to +220 °C	FA
210	Shaft	300-600	Stainless steel ASTM A564 Gr. 630 / 1.4542	-29 °C to +260 °C	6e
			Stainless steel ASTM A479 Gr. 316L / 1.4404, PS limited to 10 bar	-50 °C to +260 °C	6
			Stainless steel 1.4462, PS limited to 16 bar	-50 °C to +260 °C	7e
213	Actuating shaft	50-600	Stainless steel ASTM A564 Gr. 630 / 1.4542	-29 °C to +260 °C	6e
			Stainless steel ASTM A479 Gr. 316L / 1.4404, PS limited to 10 bar	-50 °C to + 260 °C	6
			Stainless steel 1.4462, PS limited to 16 bar	-50 °C to +260 °C	7e
310.1[4)]	Plain bearing	50-600	Stainless steel + PTFE		
310.2[7)]	Plain bearing	50-600	Stainless steel + PTFE		
310.3[7)]	Plain bearing	50-600	Stainless steel + PTFE		
412.1[4)]	O-ring	50-600	VITON (FKM)		
412.2[4)]	O-ring	50-600	VITON (FKM)		
412.3[4)]	O-ring	50-600	VITON (FKM)		
500	Anti-static ring	50-250	Stainless steel		
543.1	Spacer bush	300-600	Stainless steel		
543.2	Spacer bush	300-600	Stainless steel		
550	Valve disc	50-600	Stainless steel ASTM A351 Gr. CF8M / 1.4408	-50 °C to +260 °C	6
			Stainless steel ASTM A351 Gr. CF3M Mo > 2.75 for marine applications	-50 °C to +150 °C	6m
553.1	Thrust insert	50-600	Stainless steel		
553.2	Thrust insert	50-250	Stainless steel + PTFE		
554	Washer	50-600	Stainless steel		
559	Seal retainer	50-600	Stainless steel		
561.1	Half round head grooved pin	50-600	Stainless steel		
561.2[7)]	Grooved pin	50-600	Stainless steel		
561.3[7)]	Grooved pin	50-600	Stainless steel		
561.4[7)]	Grooved pin	50-600	Stainless steel		
901.1	Hexagon head bolt	50-600	Stainless steel Cl. A4-70		
901.2	Hexagon head bolt	300-600	Stainless steel Cl. A4-70		
904[5)]	Grub screw	50-250	Stainless steel Cl. A4-70		
914[5)]	Hexagon socket head cap screw	300-600	Stainless steel Cl. A4-70		
932	Circlip	300-600	Stainless steel Cl. A4-70		
970	Name plate	50-600	Stainless steel		
970.2	Name plate	50-600	Stainless steel		

4 Part from shaft seal spare parts kit
5 Part from seat spare parts kit
6 For temperatures < -29 °C and pressures > 8 bar, please contact the manufacturer.
7 Part from bearing spare parts kit

Table 20: List of components for emissions control packing design (DANAÏS MT II Class 150 - PN 25)

Part No.	Description	DN	Materials	Temperature	KSB code
01-48[4)]	Fire-safe packing	50-600	Graphite, expanded		
68-4	Foil	50-250	Stainless steel		
310.1[4)]	Plain bearing	50-600	Stainless steel + PTFE		
310.2[7)]	Plain bearing	50-600	Stainless steel + PTFE		
412.1[4)]	O-ring	50-600	VITON (FKM)		
412.2[4)]	O-ring	50-600	VITON (FKM)		
554	Washer	50-600	Stainless steel		
559	Seal retainer	50-600	Stainless steel		
901.1	Hexagon head bolt	50-600	Stainless steel Cl. A4-70		

8460.154/04-EN

Components in common for wafer-type body with flat faces (T1), full-lug body (T4) and flanged body (T7) - Class 300

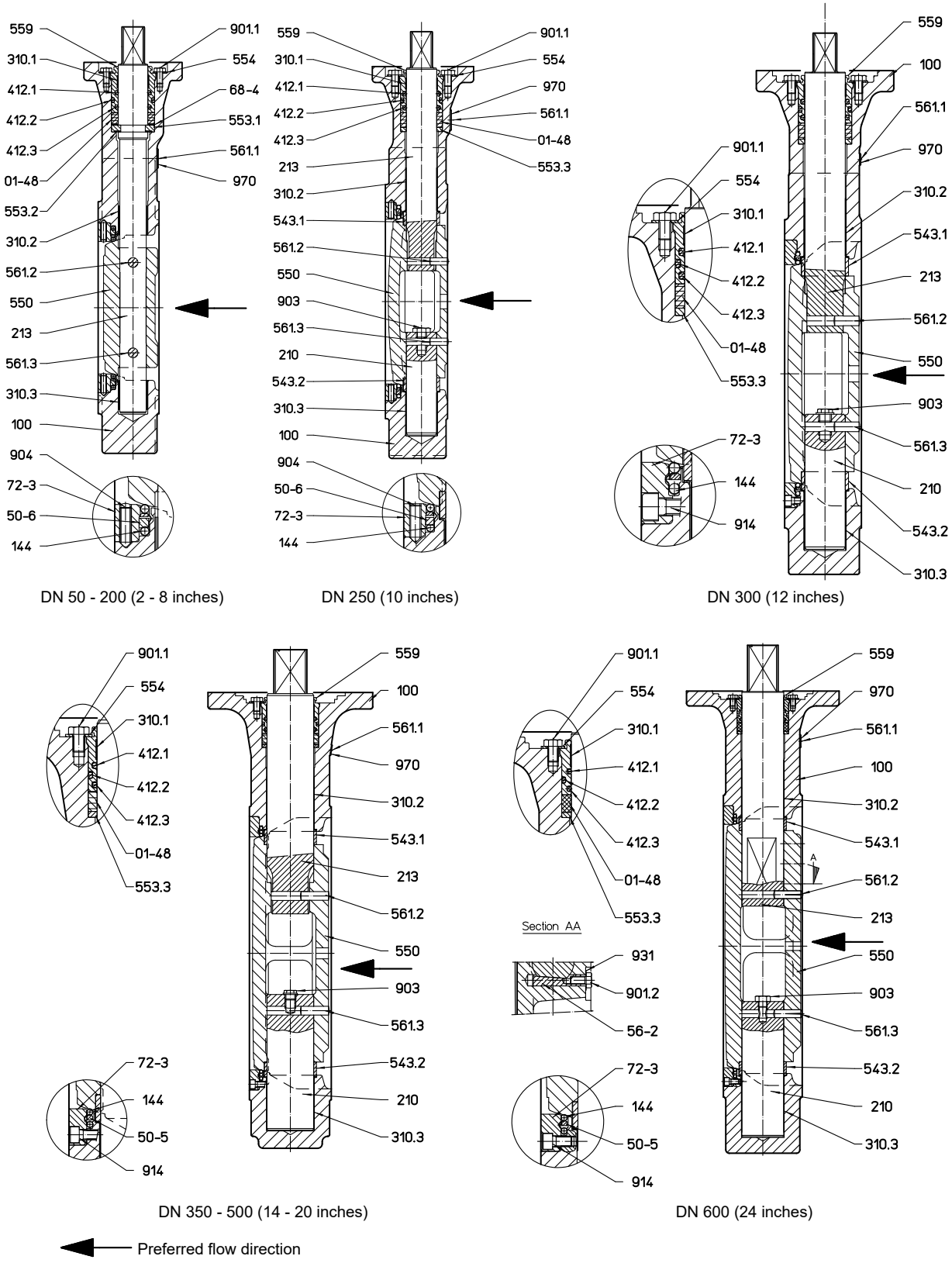


Fig. 5: Sectional drawing of DANAÏS MT II DN 50 - 600 (2 - 24 inches) / wafer-type body (T1) and full-lug body (T4) / metal design

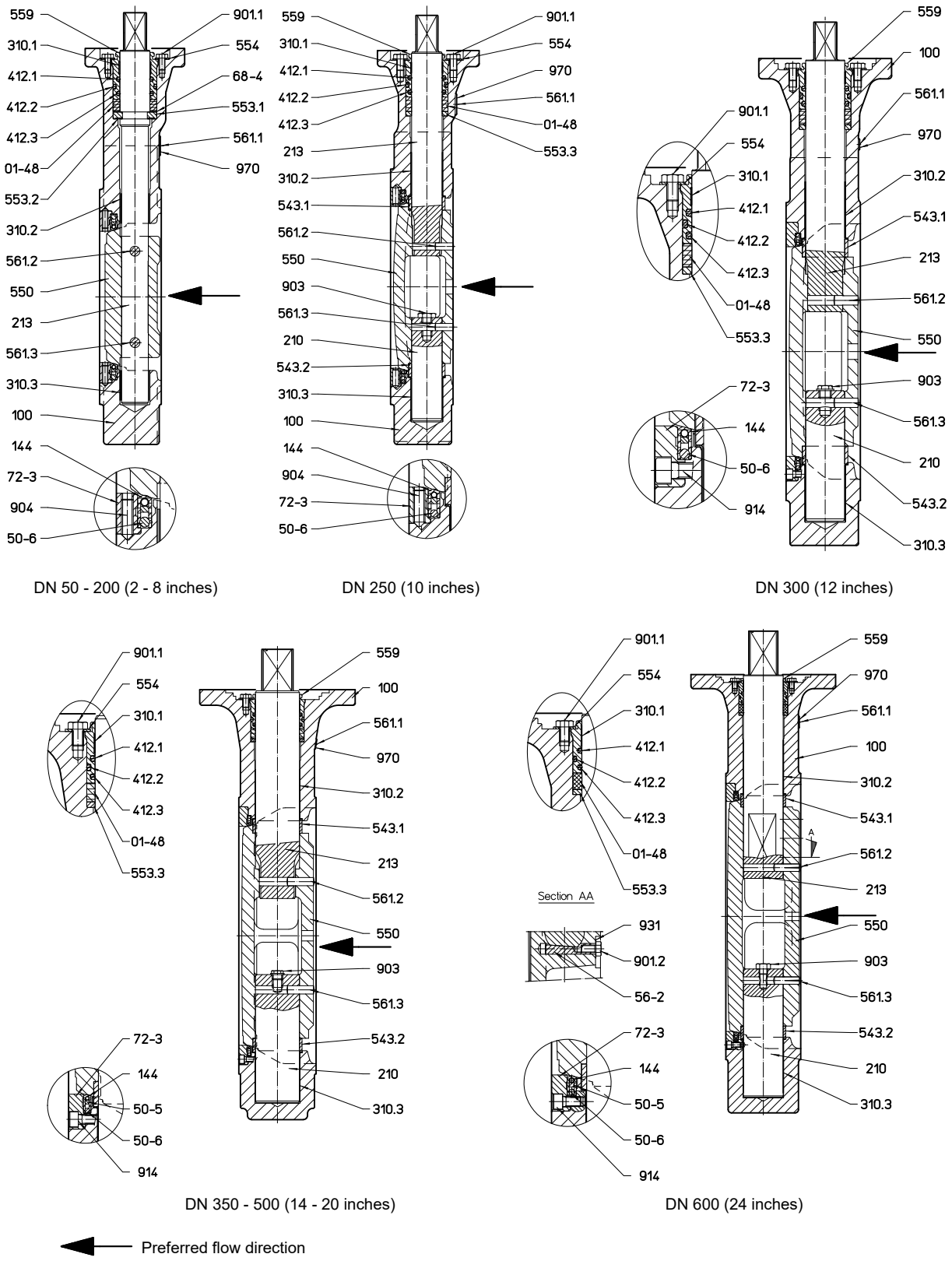


Fig. 6: Sectional drawing of DANAÏS MT II DN 50 - 300 (2 - 12 inches) / wafer-type body (T1) and full-lug body (T4) / plastomer design

8460.154/04-EN

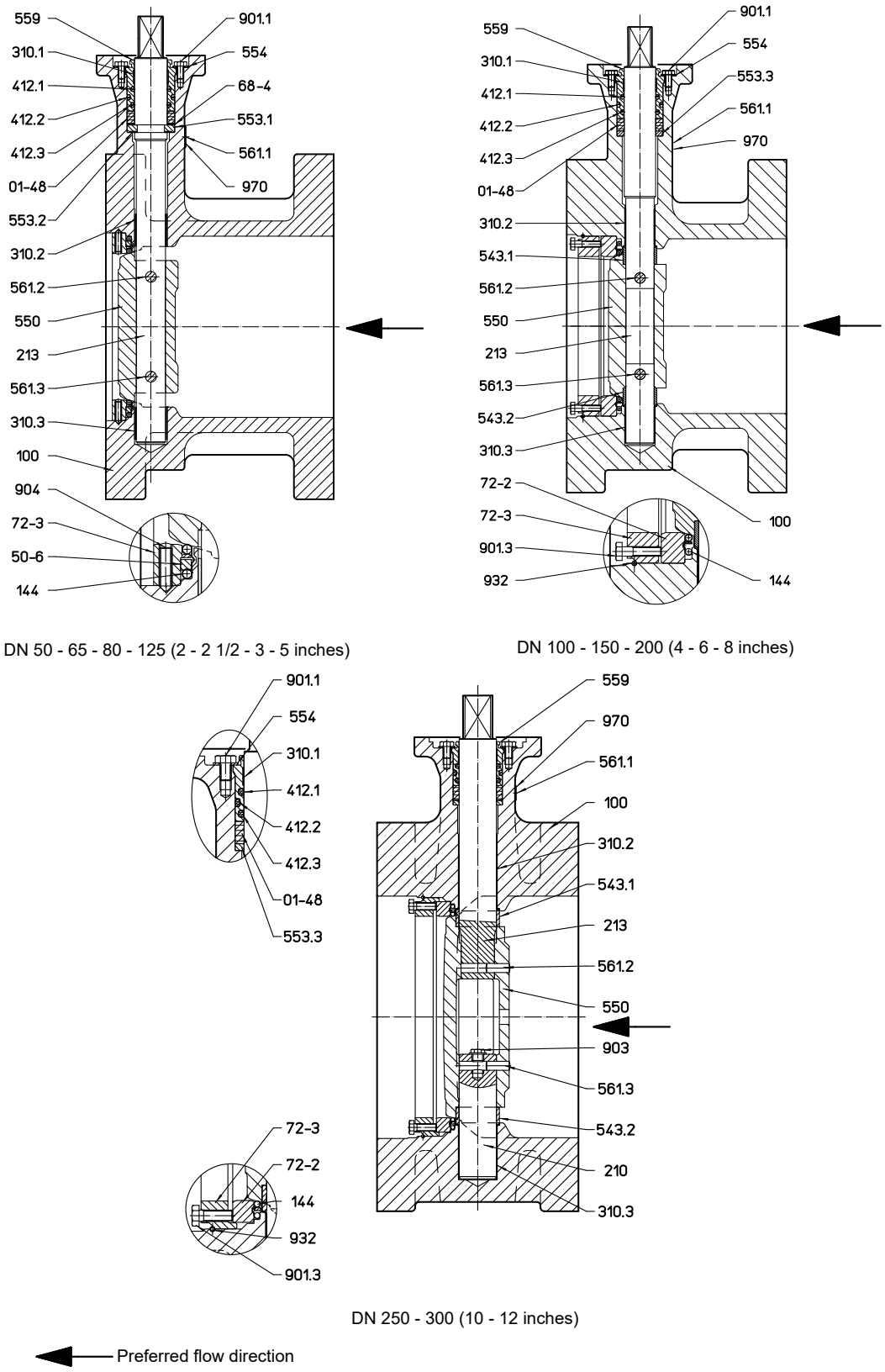


Fig. 7: Sectional drawing of DANAÏS MT II DN 50 - 300 (2 - 12 inches) / flanged body (T7) / metal design

8460.154/04-EN

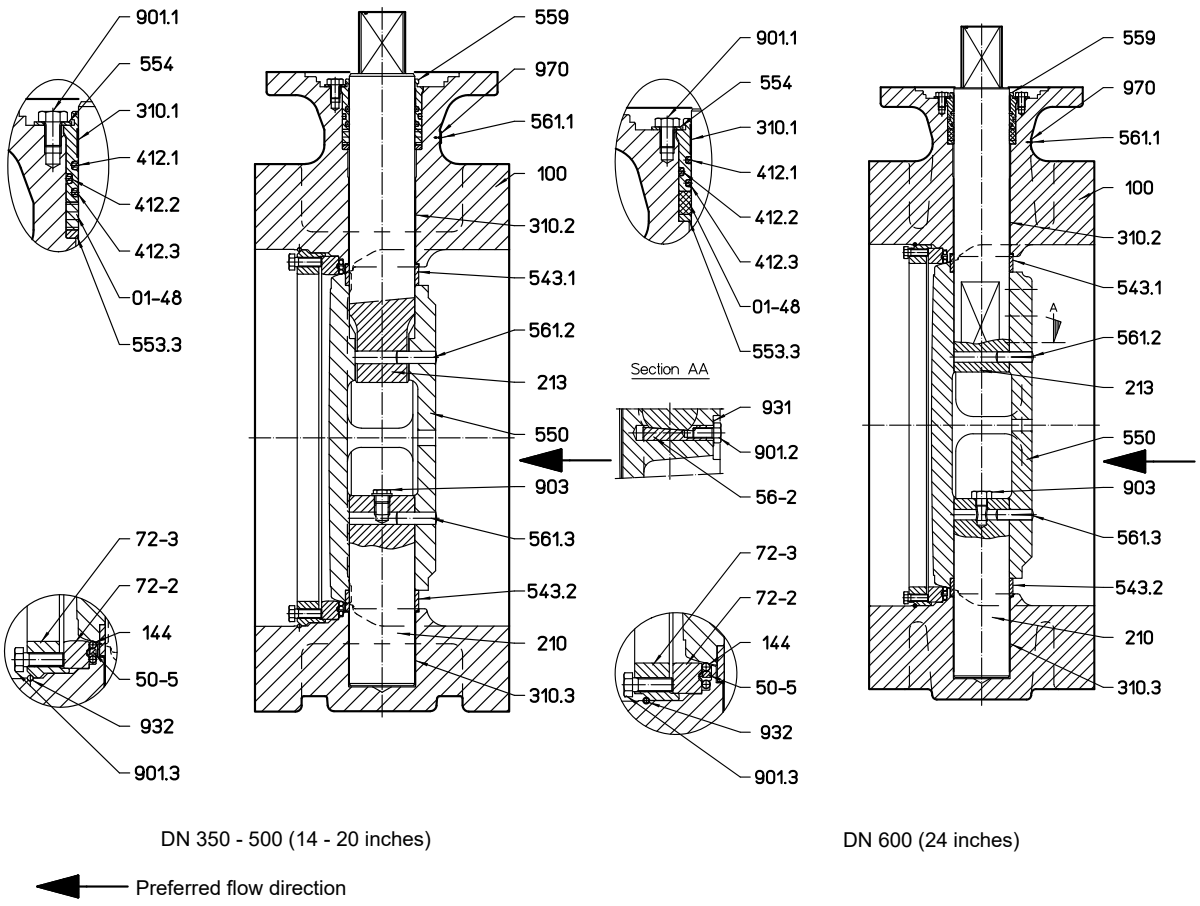


Fig. 8: Sectional drawing of DANAÏS MT II DN 350 - 600 (14 - 24 inches) / flanged body (T7) / metal design

8460.154/04-EN

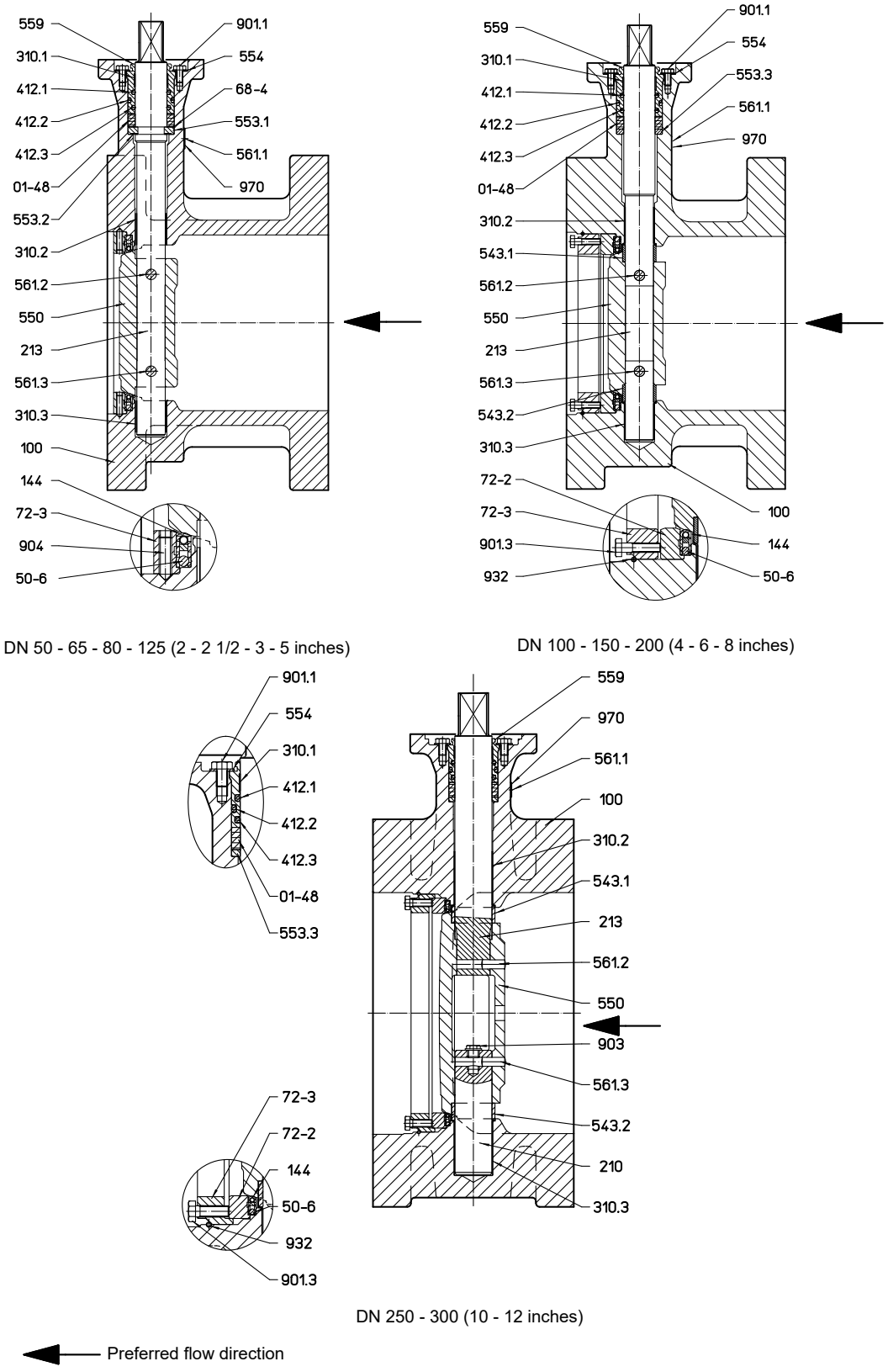


Fig. 9: Sectional drawing of DANAÏS MT II DN 50 - 300 (2 - 12 inches) / flanged body (T7) / plastomer design

8460.154/04-EN

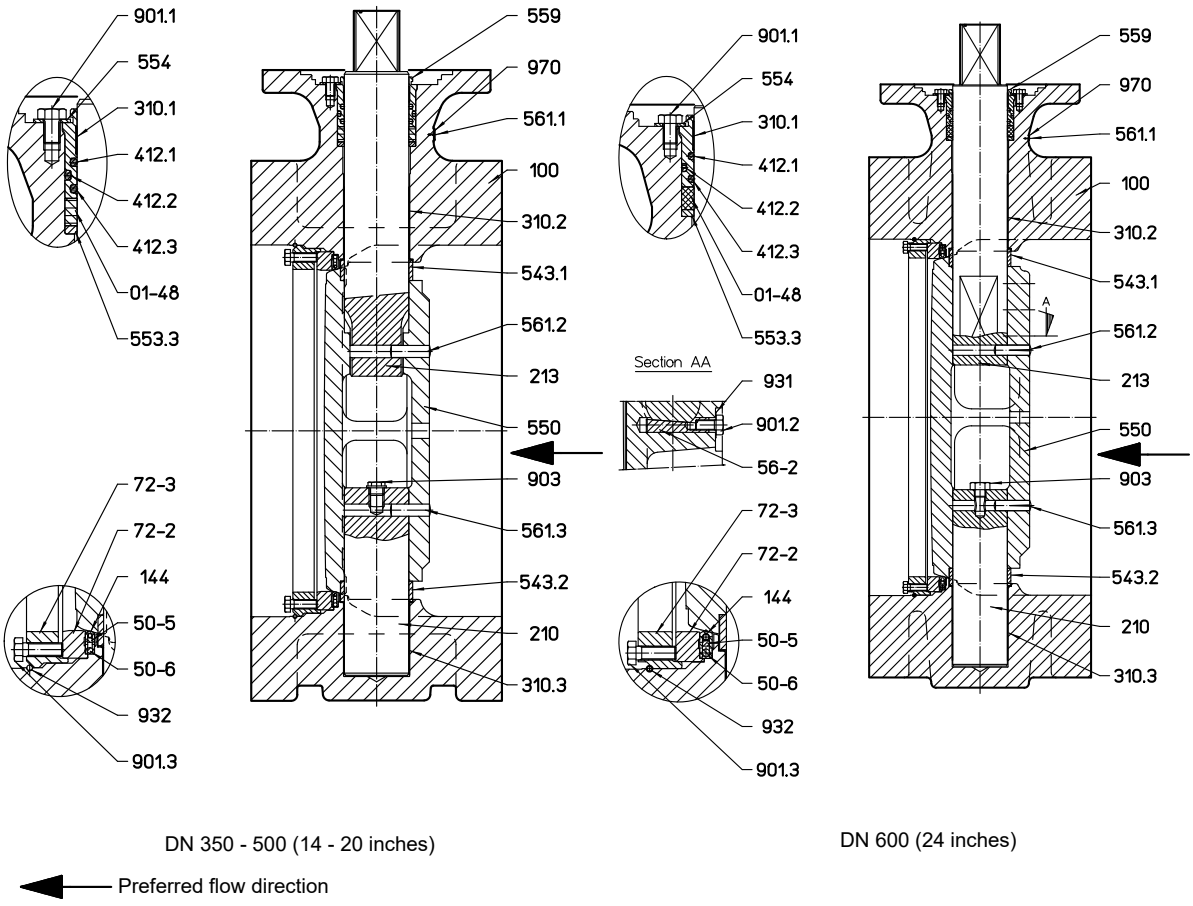


Fig. 10: Sectional drawing of DANAÏS MT II DN 350 - 600 (14 - 24 inches) / flanged body (T7) / plastomer design

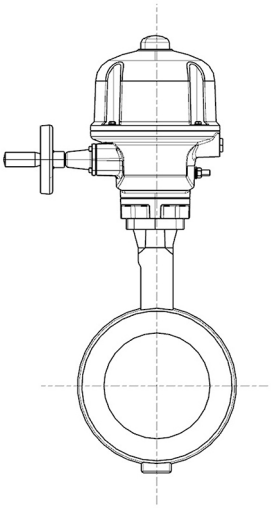
8460.154/04-EN

Table 21: List of components for wafer-type body with flat faces, full-lug body and flanged body (DANAÏS MT II Class 300)

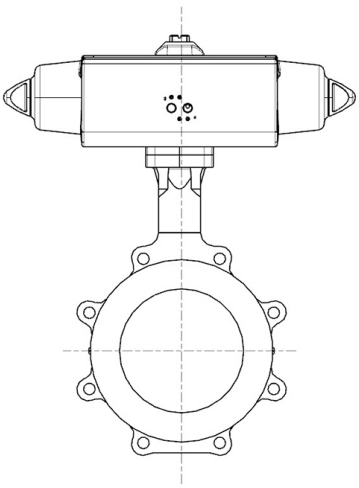
Part No.	Description	DN	Materials	Temperature	KSB code
01-48	Fire-safe packing	50-600	Graphite, expanded		
50-5[8)]	Compression ring	350-600	Stainless steel		
50-6	Locking ring	50-600	Stainless steel		
56-2	Taper pin	600	Stainless steel		
68-4	Foil	50-200	Stainless steel		
72-2	Centring flange	DN100-600	Stainless steel		
72-3	Retaining flange	50-600	Stainless steel		
100	Body	50-600	Steel ASTM A 216 Gr. WCC/1.0619	-29 °C to +260 °C	1
			Stainless steel ASTM A351 Gr. CF8M / 1.4408	-50 °C to +260 °C	6
144[8)]	Metal seat	50-600	Nickel, ΔP limited to 20 bar	-50 °C to +260 °C	NI
			Copper, ΔP limited to 20 bar	-50 °C to +260 °C	CU
			Stainless steel Cl. A4-70, ΔP limited to 20 bar	-50 °C to +260 °C	IX
	Plastomer seat		Reinforced PTFE[9)]	-50 °C to +220 °C	FA
210	Shaft	250-600	Stainless steel ASTM A564 Gr. 630 / 1.4542	-29 °C to +260 °C	6e
			Stainless steel ASTM A479 Gr. 316L / 1.4404, PS limited to 20 bar	-50 °C to +260 °C	6
213	Actuating shaft	50-600	Stainless steel ASTM A564 Gr. 630 / 1.4542	-29 °C to +260 °C	6e
			Stainless steel ASTM A479 Gr. 316L / 1.4404, PS limited to 20 bar	-50 °C to + 260 °C	6
310.1[10)]	Plain bearing	50-600	Stainless steel + PTFE		
310.2[11)]	Plain bearing	50-600	Stainless steel + PTFE		
310.3[11)]	Plain bearing	50-600	Stainless steel + PTFE		
412.1[10)]	O-ring	50-600	VITON (FKM)		
412.2[10)]	O-ring	50-600	VITON (FKM)		
412.3[10)]	O-ring	50-600	VITON (FKM)		
543.1	Spacer bush	250-600	Stainless steel		
543.2	Spacer bush	250-600	Stainless steel		
550	Valve disc	50-600	Stainless steel ASTM A351 Gr. CF8M / 1.4408	-50 °C to +260 °C	6
553.1	Thrust insert	50-200	Stainless steel		
553.2	Thrust insert	50-200	Stainless steel + PTFE		
553.3	Thrust insert	250-600	Stainless steel		
554	Washer	50-600	Stainless steel		
559	Seal retainer	50-600	Stainless steel		
561.1	Half round head grooved pin	50-600	Stainless steel		
561.2[11)]	Grooved pin	50-600	Stainless steel		
561.3[11)]	Grooved pin	50-600	Stainless steel		
901.1	Hexagon head bolt	50-600	Stainless steel Cl. A4-70		
901.2[11)]	Hexagon head bolt	600	Stainless steel Cl. A4-70		
901.3	Hexagon head bolt	100-600	Stainless steel Cl. A4-70		
903	Screw plug	250-600	Stainless steel Cl. A4-70		
904[8)]	Grub screw	50-250	Stainless steel Cl. A4-70		
914[8)]	Hexagon socket head cap screw	300-600	Stainless steel Cl. A4-70		
931[11)]	Lock washer	600	Stainless steel		
932	Circlip	100-600	Stainless steel Cl. A4-70		
970	Name plate	50-600	Stainless steel		

8 Part from seat spare parts kit
9 For temperatures < -29 °C and pressures > 8 bar, please contact the manufacturer.
10 Part from shaft seal spare parts kit
11 Part from bearing spare parts kit

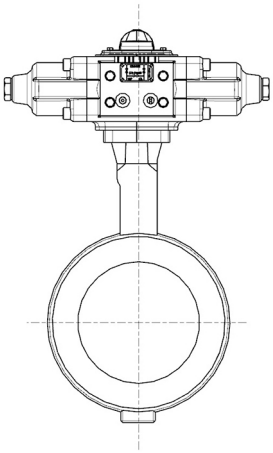
Variants



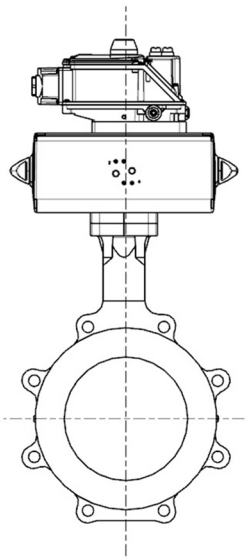
Electric actuator



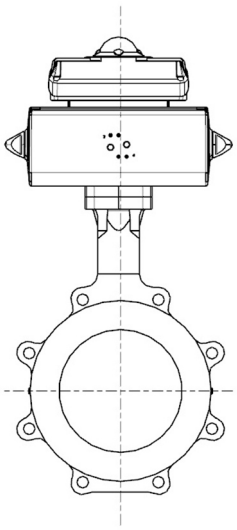
Pneumatic actuator
ACTAIR EVO / DYNACTAIR EVO



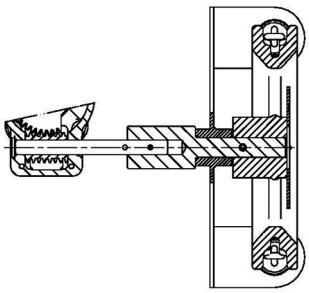
HQ EVO Hydraulic actuator



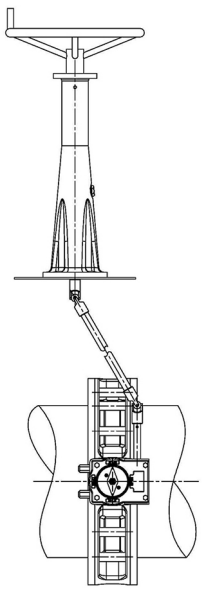
ACTAIR EVO + AMTRONIC U
ACTAIR EVO + SMARTRONIC U



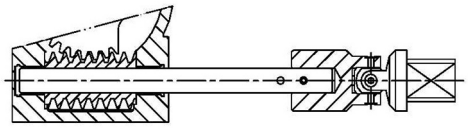
ACTAIR EVO+
AMTROBOX, AMTROBOX R, AMTROBOX Ex ia



Actuation via chain wheel



Deck stand



Cardan connection

8460.154/04-EN

Dimensions

DANAÏS MT II Class 150 - PN25

Dimensions of DANAÏS MT II Class 150 with wafer-type body with flat faces - T1

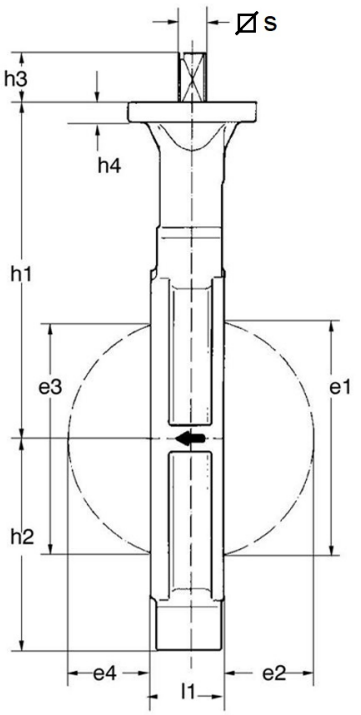


Fig. 11: Sectional drawing DANAÏS MT II Class 150 T1

Table 22: Dimensions [mm]

DN	NPS	l1	h1	h2	Top flange ISO 5211		Square shaft end		Valve disc open			
	[inch]				No.	h4	⌀ s	h3	e1	e2	e3	e4
50	2	43	175	54	F07	16	L14	20	36	9	-	-
65	2½	46	190	67	F07	16	L14	20	49	13	13	1
80	3	50	205	74	F07	16	L14	20	62	18	38	6
100	4	52	225	90	F07	16	L14	20	81	24	67	17
125	5	56	240	102	F07	16	L17	20	103	33	91	23
150	6	56	250	120	F10	18	L19	35	131	48	117	33
200	8	60	290	151	F10	18	L22	40	177	70	163	51
250	10	68	325	182	F12	20	L27	40	226	91	212	70
300	12	78	375	237	F14	22	L30	55	266	106	254	87
350	14	92	405	274	F14	22	L36	58	309	123	297	103
400	16	102	440	300	F16	26	L40	77	360	145	346	121
450	18	114	475	329	F16	26	L46	75	420	169	408	147
500	20	127	510	355	F25	30	L50	85	456	182	444	160
600	24	154	585	449	F25	30	L55	85	546	213	537	197

Table 23: Face-to-face length

The face-to-face lengths of DANAÏS MT II Class 150 - PN 25 butterfly valves with wafer-type body with flat faces meet the requirements of EN 558-1, API 609 Table 2 Class 150 and ISO 5752-20. Exception:

- DN 350: ISO 5752-20 is replaced by ISO 5752-25

Dimensions of DANAÏS MT II Class 150 with full-lug body - T4

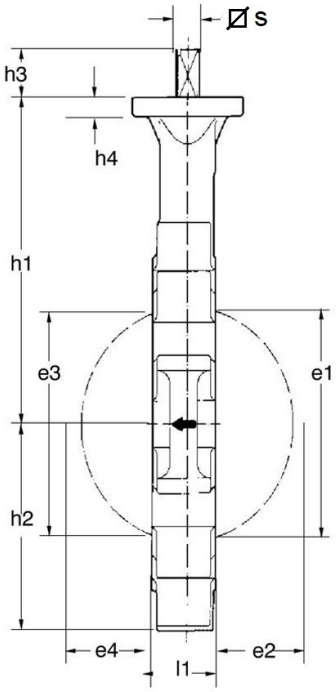


Fig. 12: Sectional drawing DANAÏS MT II Class 150 T4

Table 24: Dimensions [mm]

DN	NPS	l1	h1	h2	Top flange ISO 5211		Square shaft end		Valve disc open			
	[inch]				No.	h4	⌀ s	h3	e1	e2	e3	e4
50	2	43	175	60	F07	16	L14	20	36	9	-	-
65[12)]	2½	46	190	67	F07	16	L14	20	49	13	13	1
65[13)]	2½	46	190	85	F07	16	L14	20	49	13	13	1
80[14)]	3	50	205	74	F07	16	L14	20	62	18	38	6
80[15)]	3	50	205	94	F07	16	L14	20	62	18	38	6
100	4	52	225	105	F07	16	L14	20	81	24	67	17
125	5	56	240	123	F07	16	L17	20	103	33	91	23
150	6	56	250	135	F10	18	L19	35	131	48	117	33
200	8	60	290	155	F10	18	L22	40	177	70	163	51
250	10	68	325	202	F12	20	L27	40	226	91	212	70
300	12	78	375	237	F14	22	L30	55	266	106	254	87
350	14	92	405	274	F14	22	L36	58	309	123	297	103
400	16	102	440	300	F16	26	L40	77	360	145	346	121
450	18	114	475	329	F16	26	L46	75	420	169	408	147
500	20	127	510	356	F25	30	L50	85	456	182	444	160
600	24	154	585	449	F25	30	L55	85	546	213	537	197

Table 25: Face-to-face length

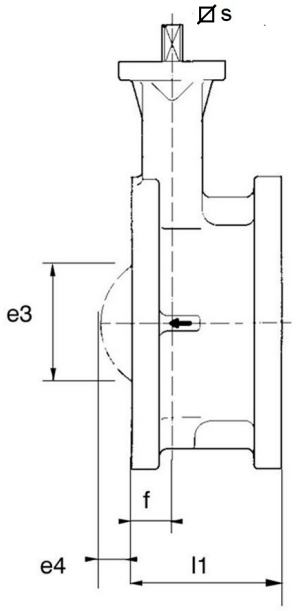
The face-to-face lengths (l1) of DANAÏS MT II Class 150 butterfly valves with full-lug body meet the requirements of EN 558-1, API 609 Table 2 Class 150 and ISO 5752-20. Exception:

- DN 350: ISO 5752-20 is replaced by ISO 5752-25

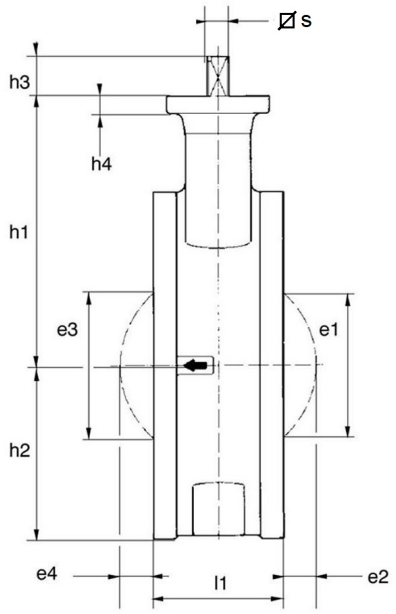
8460.154/04-EN

12 Installed between flanges EN 1092-1 PN 10 and PN 16 - 4 holes, ASME B16.5 Class 150 and JIS B2220 10K
13 Installed between flanges EN 1092-1 PN 10 and PN 16 - 8 holes, PN 25 and JIS B2220 16K and 20K
14 Installed between flanges ASME B16.5 Class 150
15 Installed between flanges EN 1092-1 PN 10, 16, 25 and JIS B2220-10, 16K and 20K

Dimensions of DANAÏS MT II Class 150 with flanged body - T7



DN 50 - 250 (2 - 10 inches)



DN 300 - 600 (12 - 24 inches)

Fig. 13: Sectional drawing DANAÏS MT II Class 150 T7

Table 26: Dimensions [mm]

DN	NPS	l1	f	h1	h2	Top flange ISO 5211		Square shaft end		Valve disc open			
	[inch]					No.	h4	Ø s	h3	e1	e2	e3	e4
50	2	108	28,5	175	76	F07	16	L14	20	-	-	-	-
65	2½	112	33,5	190	89	F07	16	L14	20	-	-	-	-
80	3	114	33,5	205	95	F07	16	L14	20	-	-	18	2
100	4	127	36,0	225	115	F07	16	L14	20	-	-	52	8
125	5	140	38,0	240	127	F07	16	L17	20	-	-	81	17
150	6	140	38,0	250	140	F10	18	L19	35	-	-	112	29
200	8	152	42,5	290	172	F10	18	L22	40	-	-	158	46
250	10	165	46,5	325	203	F12	20	L27	40	27	1	208	65
300	12	178	-	375	242	F14	22	L30	55	214	52	197	42
350	14	190	-	405	274	F14	22	L36	58	263	70	245	58
400	16	216	-	440	300	F16	26	L40	77	306	82	289	70
450	18	222	-	475	329	F16	26	L46	75	376	111	359	97
500	20	229	-	510	356	F25	30	L50	85	417	128	399	112
600	24	267	-	585	449	F25	30	L55	85	505	157	487	141

Face-to-face length

The face-to-face lengths (l1) of DANAÏS MT II Class 150 valves with flanged body meet the requirements of EN 558-1 / ISO 5752-13.

DANAÏS MT II Class 300

Dimensions of DANAÏS MT II Class 300 with wafer-type body with flat faces - T1

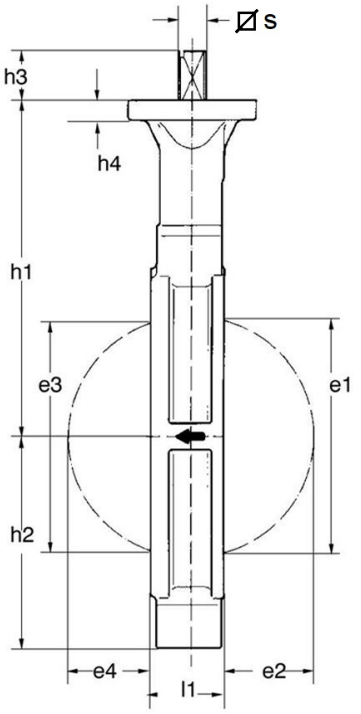


Fig. 14: Sectional drawing DANAÏS MT II Class 300 T1

Table 27: Dimensions [mm]

DN	NPS	l1	h1	h2	Top flange ISO 5211		Square shaft end		Valve disc open			
	[inch]				No.	h4	⌀ s	h3	e1	e2	e3	e4
50	2	43	175	54	F07	16	L17	20	36	9	-	-
65	2½	46	190	67	F07	16	L17	20	49	13	13	1
80	3	50	205	74	F07	16	L17	20	62	18	38	6
100	4	54	225	90	F07	16	L17	20	81	24	64	13
125	5	59	240	131	F10	18	L19	35	100	31	87	21
150	6	59	250	148	F10	18	L22	40	130	46	115	31
200	8	73	290	183	F12	20	L27	40	174	64	158	46
250	10	83	325	217	F14	22	L30	55	222	84	204	62
300	12	92	375	248	F16	26	L36	75	260	96	249	81
350	14	117	405	296	F16	26	L46	75	299	105	292	96
400	16	133	440	322	F25	30	L46	85	350	125	340	113
450	18	149	475	355	F25	30	L55	78	408	147	397	133
500	20	159	510	392	F30	34	L60	78	445	160	438	150
600	24	181	585	475	F30	34	L75	105	542	201	531	185

Table 28: Face-to-face length

The face-to-face lengths (l1) of DANAÏS MT II Class 300 butterfly valves with wafer-type body with flat faces meet the requirements of API 609 Class 300. Exceptions:

- DN 50 and 65 comply with EN 558-16
- DN 125 (not standardised), its width is identical to DN 150 API 609 Table 2 Class 300

8460.154/04-EN

Dimensions of DANAÏS MT II Class 300 with full-lug body - T4

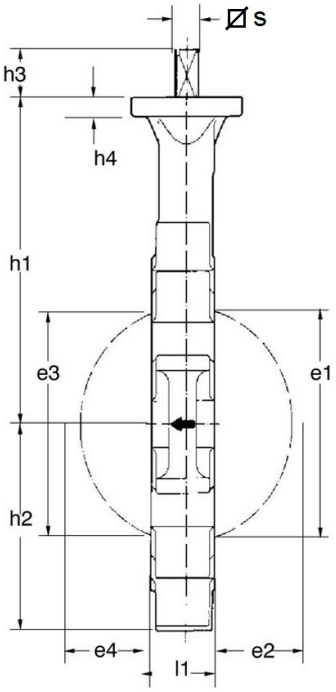


Fig. 15: Sectional drawing DANAÏS MT II Class 300 T4

Table 29: Dimensions [mm]

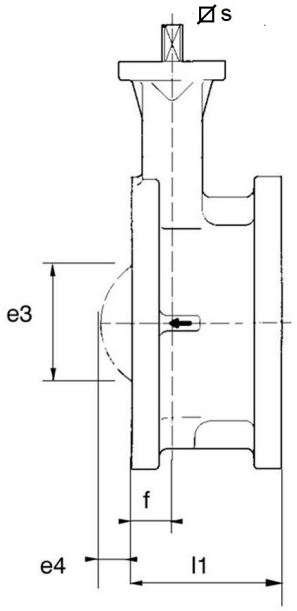
DN	NPS	l1	h1	h2	Top flange ISO 5211		Square shaft end		Valve disc open			
	[inch]				No.	h4	⌀ s	h3	e1	e2	e3	e4
50	2	43	175	76	F07	16	L17	20	36	9	-	-
65	2½	46	190	87	F07	16	L17	20	49	13	13	1
80	3	50	205	94	F07	16	L17	20	62	18	38	6
100	4	54	225	111	F07	16	L17	20	81	24	64	13
125	5	59	240	131	F10	18	L19	35	100	31	87	21
150	6	59	250	148	F10	18	L22	40	130	46	115	31
200	8	73	290	181	F12	20	L27	40	174	64	158	46
250	10	83	325	214	F14	22	L30	55	222	84	204	62
300	12	92	375	248	F16	26	L36	75	260	96	249	81
350	14	117	405	296	F16	26	L46	75	299	105	292	96
400	16	133	440	312	F25	30	L46	85	350	125	340	113
450	18	149	475	355	F25	30	L55	78	408	147	397	133
500	20	159	510	392	F30	34	L60	78	445	160	438	150
600	24	181	585	475	F30	34	L75	105	542	201	531	185

Table 30: Face-to-face length

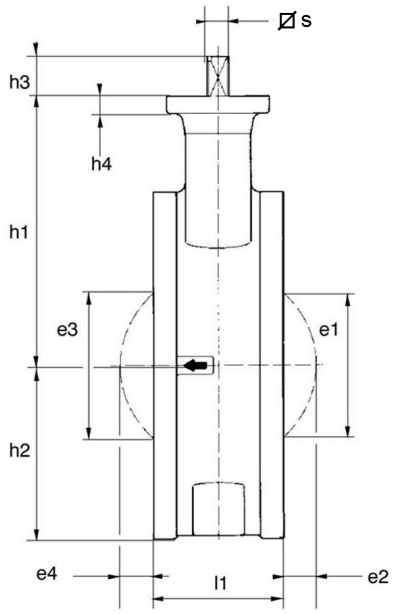
The face-to-face lengths (l1) of DANAÏS MT II Class 300 butterfly valves with full-lug body meet the requirements of API 609 Class 300. Exceptions:

- DN 50 and 65 comply with EN 558-16
- DN 125 (not standardised), its width is identical to DN 150 API 609 Table 2 Class 300

Dimensions of DANAÏS MT II Class 300 with flanged body - T7



DN 50 - 80 and 125 (2 - 3 and 5 inches)



DN 100 and 150 - 200 (4 and 6 - 24 inches)

Fig. 16: Sectional drawing DANAÏS MT II Class 300 T7

Table 31: Dimensions [mm]

DN	NPS	l1	f	h1	h2	Top flange ISO 5211		Square shaft end		Valve disc open			
	[inch]					No.	h4	Ø s	h3	e1	e2	e3	e4
50	2	150	28,5	175	83	F07	16	L17	20	-	-	-	-
65	2½	170	33,5	190	95	F07	16	L17	20	-	-	-	-
80	3	180	33,5	205	105	F07	16	L17	20	-	-	18	2
100	4	190	-	225	127	F07	16	L17	20	-	-	48	7
125	5	200	38,0	240	140	F10	18	L19	35	-	-	75	15
150	6	210	-	250	159	F10	18	L22	40	-	-	106	25
200	8	230	-	290	191	F12	20	L27	40	-	-	150	39
250	10	250	-	325	222	F14	22	L30	55	-		198	56
300	12	270	-	375	260	F16	26	L36	75	80	6	-	-
350	14	290	-	405	296	F16	26	L46	75	154	20	99	8
400	16	310	-	440	324	F25	30	L46	85	219	36	182	24
450	18	330	-	475	356	F25	30	L55	78	291	57	257	43
500	20	350	-	510	392	F30	34	L60	78	329	68	293	53
600	24	390	-	585	475	F30	34	L75	105	425	96	394	80

Table 32: Face-to-face length

The face-to-face lengths (l1) of DANAÏS MT II Class 300 valves with flanged body meet the requirements of EN 558-1 / ISO 5752-14.

8460.154/04-EN

Line connections

DANAÏS MT II Class 150 - PN 25

The valves can be installed between flanges in accordance with the following standards:
- EN 1092-1 PN10, PN16 and PN25
- ASME B16.5 Class 150
- JIS B2220 10K, 16K and 20K

Other connection options on request.

Note: The line connection to ISO 7005 PN20 is discontinued, line connections to ASME B16.5 Class 150 should preferably be used.

Table 33: Wafer-type body with flat faces - T1 for DANAÏS MT II Class 150

DN	NPS	EN 1092-1			ASME	ISO 7005	JIS B2220		
	[inch]	PN 10	PN 16	PN 25	B16.5 Class 150	PN 20	10K	16K	20K
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 34: Full-lug body - T4 for DANAÏS MT II Class 150

DN	NPS	EN 1092-1			ASME	ISO 7005	JIS B2220		
	[inch]	PN 10	PN 16	PN 25	B16.5 Class 150	PN 20	10K	16K	20K
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	✓	✓	✓	✓	✓	•	•	•

8460.154/04-EN

Table 35: Flanged body with raised faces - T7 for DANAÏS MT II Class 150

DN	NPS	EN 1092-1			ASME	ISO 7005	JIS B2220		
	[inch]	PN 10	PN 16	PN 25	B16.5 Class 150	PN 20	10K	16K	20K
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 36: Key

Symbol	Description	Symbol	Description
✓	Installation possible	•	Not available

8460.154/04-EN

DANAÏS MT II Class 300

The valves can be installed between flanges in accordance with the following standards:
- EN 1092-1 PN25 and PN40
- ASME B16.5 Class 300

Other connection options on request.

Note: The line connection to ISO 7005 PN50 is discontinued, line connections to ASME B16.5 Class 300 should preferably be used.

Table 37: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 300

DN	NPS [inch]	EN 1092-1 PN25	EN 1092-1 PN 40	ISO 7005 PN 50	ASME B16.5 Class 300
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 38: Full-lug body - T4 for DANAÏS MT II Class 300

DN	NPS [inch]	EN 1092-1 PN25	EN 1092-1 PN 40	ISO 7005 PN 50	ASME B16.5 Class 300
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 39: Flanged body - T7 for DANAÏS MT II Class 300

DN	NPS [inch]	EN 1092-1 PN25	EN 1092-1 PN 40	ISO 7005 PN 50	ASME B16.5 Class 300
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	✓	✓	✓	✓

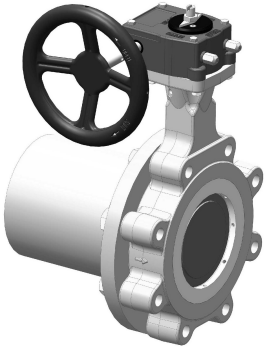
Table 40: Key

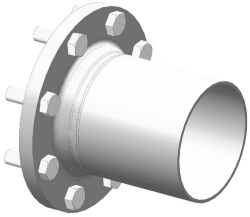
Symbol	Description	Symbol	Description
✓	Installation possible	☎	Contact KSB.

8460.154/04-EN

Installation information

Dead-end service and downstream dismantling





Downstream dismantling

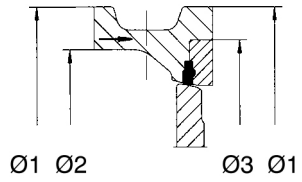
Dead-end service

Definition of sealing element

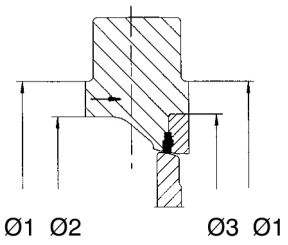
The DANAÏS MT II valves can be installed between all commercial mating flanges and line connections using standard gaskets or serrated gaskets.

Flange faces

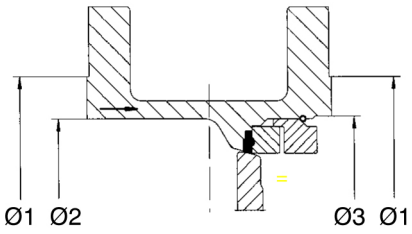
To ensure proper connection the dimensions of flange gaskets must be compatible with the dimensions specified below:



Wafer-type body with flat faces - T1



Full-lug body - T4



Flanged body - T7

Table 41: Table of flange dimensions for DANAÏS MT II Class 150 - PN25

DN	NPS	Wafer-type body with flat faces - T1			Full-lug body - T4			Flanged body - T7		
	[inch]	Ø 1	Ø 2	Ø 3	Ø 1	Ø 2	Ø 3	Ø 1	Ø 2	Ø 3
50	2	93	62	73	91,9	62	73	91,9	61	73
65	2½	111	74	91	104,6	74	91	104,6	73	91
80	3	127	91	106	127	90	106	127	98	106
100	4	158	121	128	157,2	117	128	157,2	124	128
125	5	180	142	148	185,7	142	148	185,7	148	148
150	6	201	169	173	215,9	168	173	215,9	173	173
200	8	260	219	226	269,7	219	226	269,7	226	226
250	10	315	273	274	323,9	273	274	323,9	277	274
300	12	364[16)]	320	331	381	327	331	381	326	324
350	14	413	355	386	412,8[17)]	363	386	412,8	375	372
400	16	470	408	438	169,9	414	438	469,9	430	425
450	18	530	464	498	533,4	468	498	533,4	468	489
500	20	572	510	538	584,2	518	538	584,2	526	529
600	24	680	610	644	692,2	623	644	692,2	630	625

Table 42: Table of flange dimensions for DANAÏS MT II Class 300

DN	NPS	Wafer-type body with flat faces - T1			Full-lug body - T4			Flanged body - T7		
	[inch]	Ø 1	Ø 2	Ø 3	Ø 1	Ø 2	Ø 3	Ø 1	Ø 2	Ø 3
50	2	93	61	73	92,1	61	73	92,1	71	73
65	2½	117	73	91	104,8	73	91	104,8	88	91
80	3	127	90	106	127	89	106	127	100	106
100	4	157	114	128	157,2	114	128	157,2	120	128
125	5	185,7	141	148	185,7	141	148	185,7	144	148
150	6	215,9	168	173	215,9	168	173	215,9	167	173
200	8	269,9	220	226	269,9	220	226	269,9	220	226
250	10	323,8	273	273	323,8	273	273	323,8	281	273
300	12	381	327	330	381	327	330	381	324	323
350	14	412,8	382	385	412,8	382	385	412,8	382	373
400	16	470	433	438	470	433	438	470	422	423
450	18	533,4	494	498	533,4	494	498	533,4	489	487
500	20	584,2	536	538	584,2	536	538	584,2	528	526
600	24	692,2	639	640	692,2	639	640	692,2	625	622

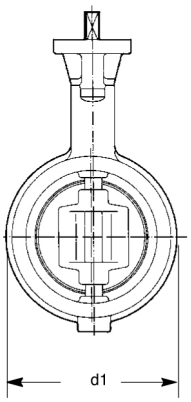
8460.154/04-EN

16 Ø1: 375 for EN 1092-1 PN25 and JIS B2220 10K, 16K, 20K

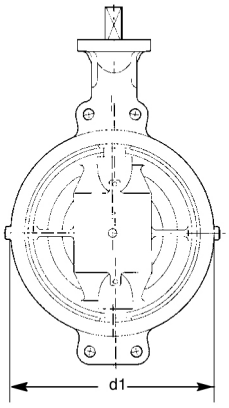
17 Ø1: 438 for EN 1092-1 PN10, 16, 25 and JIS B2220 10K, 16K, 20K

Bolting and weights

Bolting and weights for wafer-type body with flat faces - T1



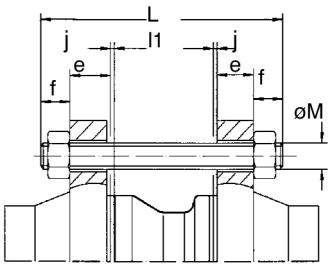
Drawing of DANAÏS MT II T1 DN 100



Drawing of DANAÏS MT II T1 DN 300

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

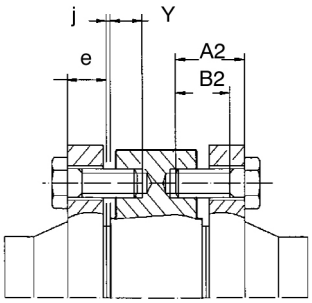
N.B.: Bolting is not included in our standard scope of supply.



Sectional drawing of T1 body bolting by tie rods

Tie rod length
L = l1 + 2e + 2f + 2j

l1: face-to-face length of valve
e: flange thickness (customer-specific)
F: standardised tie rod overhang
j: flange gasket thickness



Sectional drawing of T1 body bolting by bolts

Bolt length at shaft passage
A2max = e + Y + j

e: flange thickness (customer-specific)
Y: max. thread engagement depth
j: flange gasket thickness
B2: min. bolt thread length B2 > A2-e

Table 43: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 150 - PN25) / standards EN 1092-1 PN10 and PN16

DN	NPS	d1	l1	EN 1092-1 PN 10					EN 1092-1 PN 16					[kg]
				Ø M	Tie rod[18]		Bolt A2		Ø M	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]		f	Qty[19]	Y	Qty[19]	
50	2	105	43	M16	20	4	-	-	M16	20	4	-	-	5,0
65	2½	124	46	M16	20	4/8	-	-	M16	20	4/8	-	-	6,0
80	3	144	50	M16	20	8	-	-	M16	20	8	-	-	7,0
100	4	164	52	M16	20	8	-	-	M16	20	8	-	-	9,5
125	5	194	56	M16	20	8	-	-	M16	20	8	-	-	12,0
150	6	219	56	M20	24	8	-	-	M20	24	8	-	-	17,0
200	8	275	60	M20	24	8	-	-	M20	24	12	-	-	24,0
250	10	330	68	M20	24	12	-	-	M24	29	12	-	-	36,0
300	12	376	78	M20	24	12	-	-	M24	29	12	-	-	58,0
350	14	413	92	M20	24	12	33	4	M24	29	12	33	4	79,0
400	16	470	102	M24	29	12	44	4	M27	32	12	44	4	110,0
450	18	530	114	M24	29	16	24	4	M27	32	16	24	4	146,0
500	20	572	127	M24	29	16	32	4	M30	35	16	31	4	188,0
600	24	680	154	M27	32	16	43	4	M33	38	16	48	4	293,0

Table 44: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 150 - PN25) / standard EN 1092-1 PN25

DN	NPS	d1	l1	EN 1092-1 PN 25					[kg]
				Ø M	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]	
50	2	105	43	M16	20	4	-	-	5,0
65	2½	124	46	M16	20	8	-	-	6,0
80	3	144	50	M16	20	8	-	-	7,0
100	4	164	52	M20	24	8	-	-	9,5
125	5	194	56	M24	29	8	-	-	12,0
150	6	219	56	M24	29	8	-	-	17,0
200	8	275	60	M24	29	12	-	-	24,0
250	10	330	68	M27	32	12	-	-	36,0
300	12	376	78	M27	32	12	26	4	58,0
350	14	413	92	M30	35	12	27	4	79,0
400	16	470	102	M33	38	12	44	4	110,0
450	18	530	114	M33	39	16	22	4	146,0
500	20	572	127	M33	38	16	31	4	188,0
600	24	680	154	M36	42	16	47	4	293,0

Table 45: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 150 - PN25) / standards ISO 7005 PN20 and ASME B16.5 Class 150

DN	NPS	d1	l1	ISO 7005 PN 20					ASME B16.5 Class 150					[kg]
				Ø M	Tie rod[18]		Bolt A2		UN/ UNC[20]	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]	[inch]	f	Qty[19]	Y	Qty[19]	
50	2	105	43	M16	20	4	-	-	5/8	20	4	-	-	5,0
65	2½	124	46	M16	20	4	-	-	5/8	20	4	-	-	6,0
80	3	144	50	M16	20	4	-	-	5/8	20	4	-	-	7,0
100	4	164	52	M16	20	8	-	-	5/8	20	8	-	-	9,5
125	5	194	56	M20	24	8	-	-	3/4	24	8	-	-	12,0
150	6	219	56	M20	24	8	-	-	3/4	24	8	-	-	17,0
200	8	275	60	M20	24	8	-	-	3/4	24	8	-	-	24,0
250	10	330	68	M24	29	12	-	-	7/8	29	12	-	-	36,0
300	12	376	78	M24	29	12	-	-	7/8	29	12	-	-	58,0
350	14	413	92	M27	27	12	-	-	1	32	12	-	-	79,0
400	16	470	102	M27	27	12	44	4	1	32	12	44	4	110,0

18 Quantity of nuts = quantity of tie rods x 2
19 Number of bolts per side
20 For bolts < 1 inch, only UNC

DN	NPS	d1	l1	ISO 7005 PN 20					ASME B16.5 Class 150					[kg]
				Ø M	Tie rod[18]		Bolt A2		UN/ UNC[20]	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]	[inch]	f	Qty[19]	Y	Qty[19]	
450	18	530	114	M30	31	12	40	4	1 1/8	35	12	40	4	146,0
500	20	572	127	M30	31	16	31	4	1 1/8	35	16	31	4	188,0
600	24	680	154	M33	34	16	47	4	1 1/4	38	16	47	4	293,0

Table 46: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 150 - PN25) / standards JIS 10K, 16K and 20K

DN	NPS	d1	l1	JIS B2220 10K					JIS B2220 16K and 20K					[kg]
				Ø M	Tie rod[18]		Bolt A2		Ø M	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]		f	Qty[19]	Y	Qty[19]	
50	2	105	43	M16	20	4	-	-	-	-	-	-	-	5,0
65	2½	124	46	M16	20	4	-	-	M16	20	8	-	-	6,0
80	3	144	50	M16	20	8	-	-	M20	24	8	-	-	7,0
100	4	164	52	M16	20	8	-	-	M20	24	8	-	-	9,5
125	5	194	56	M20	24	8	-	-	M22	26	8	-	-	12,0
150	6	219	56	M20	24	8	-	-	M22	26	12	27	4	17,0
200	8	275	60	M20	24	12	-	-	M22	26	12	-	-	24,0
250	10	330	68	M22	26	12	-	-	M24	29	12	-	-	36,0
300	12	376	78	M22	26	12	24	4	M24	29	12	26	4	58,0
350	14	413	92	M22	26	12	39	4	M30x3	35	12	41	4	79,0
400	16	470	102	M24	29	12	42	4	M30x3	35	12	44	4	110,0
450	18	530	114	M24	29	16	24	4	M30x3	35	16	24	4	146,0
500	20	572	127	M24	29	16	32	4	M30x3	35	16	32	4	188,0
600	24	680	154	M30	35	20	37	4	M36x3	42	20	36	4	293,0

Table 47: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 300) / standards EN 1092-1 PN25 and PN40

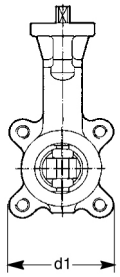
DN	NPS	d1	l1	EN 1092-1 PN 25					EN 1092-1 PN 40					[kg]
				Ø M	Tie rod[18]		Bolt A2		Ø M	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]		f	Qty[19]	Y	Qty[19]	
50	2	105	43	M16	20	4	-	-	M16	20	4	-	-	5,0
65	2½	124	46	M16	20	8	-	-	M16	20	8	-	-	6,0
80	3	164	50	M16	20	8	-	-	M16	20	8	-	-	7,0
100	4	178	54	M20	24	8	-	-	M20	24	8	-	-	9,5
125	5	194	59	M24	29	8	-	-	M24	29	8	-	-	12,0
150	6	216	59	M24	29	8	-	-	M24	29	8	-	-	17,0
200	8	270	73	M24	29	12	-	-	M27	32	12	-	-	24,0
250	10	324	83	M27	32	12	-	-	M30	35	12	-	-	36,0
300	12	381	92	M27	32	12	23	4	M30	35	12	23	4	58,0
350	14	453	117	M30	35	12	29	4	M33	38	12	30	4	79,0
400	16	510	133	M33	38	12	41	4	M36	42	12	42	4	110,0
450	18	564	149	M33	38	16	28	4	M36	42	16	27	4	146,0
500	20	620	159	M33	38	16	32	4	M39	45	16	30	4	188,0
600	24	730	181	M36	42	16	44	4	M45	52	16	41	4	293,0

Table 48: Wafer-type body with flat faces - T1 (DANAÏS MT II Class 300) / standards ISO 7005 PN50 and ASME B16.5 Class 300

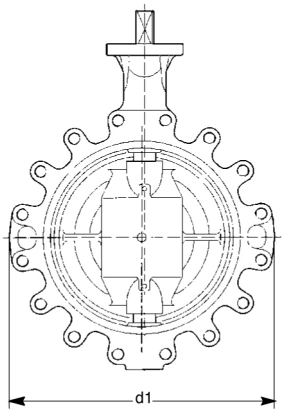
DN	NPS	d1	l1	ISO 7005 PN 50					ASME B16.5 Class 300					[kg]
				Ø M	Tie rod[18]		Bolt A2		UNC	Tie rod[18]		Bolt A2		
	[inch]				f	Qty[19]	Y	Qty[19]	[inch]	f	Qty[19]	Y	Qty[19]	
50	2	105	43	M16	20	8	-	-	5/8	20	8	-	-	5,0
65	2½	124	46	M20	24	8	-	-	3/4	24	8	-	-	6,0
80	3	164	50	M20	24	8	-	-	3/4	24	8	-	-	7,0
100	4	178	54	M20	24	8	-	-	3/4	24	8	-	-	9,5
125	5	194	59	M20	24	8	-	-	3/4	24	8	-	-	12,0
150	6	216	59	M20	24	8	25	4	3/4	24	8	25	4	17,0
200	8	270	73	M24	29	12	-	-	7/8	29	12	-	-	24,0
250	10	324	83	M27	32	12	26	4	1	32	12	26	4	36,0
300	12	381	92	M30	35	12	23	4	$1^1/_8$	35	12	23	4	58,0
350	14	453	117	M30	35	16	22	4	$1^1/_8$	35	16	22	4	79,0
400	16	510	133	M33	38	16	30	4	$1^1/_4$	38	16	30	4	110,0
450	18	564	149	M33	38	20	24	4	$1^1/_4$	38	20	24	4	146,0
500	20	620	159	M33	38	20	28	4	$1^1/_4$	38	20	28	4	188,0
600	24	730	181	M39	45	20	38	4	$1^1/_2$	45	20	38	4	293,0

8460.154/04-EN

Bolting and weights for full-lug body - T4



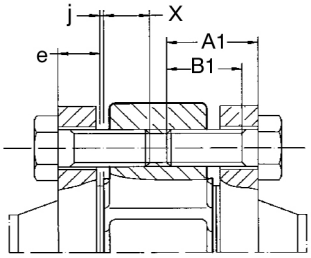
Drawing of DANAÏS MT II T4 DN 65



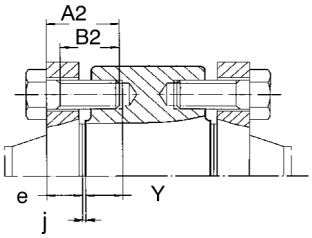
Drawing of DANAÏS MT II T4 DN 450

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

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



Sectional drawing of T4 body bolting by bolts



Sectional drawing of T4 body bolting at shaft passage

Bolt length for tapped lugs

A1max = e + X + j

e: flange thickness (customer-specific)
X: max. thread engagement depth
j: flange gasket thickness
B1: min. bolt thread length B1 > A1-e

Bolt length at shaft passage

A2max = e + Y + j

e: flange thickness (customer-specific)
Y: max. thread engagement depth
j: flange gasket thickness
B2: min. bolt thread length B2 > A2-e

8460.154/04-EN

Table 49: Full-lug body - T4 (DANAÏS MT II Class 150 - PN25) / standards EN 1092-1 PN10 and PN16

DN	NPS	d1	EN 1092-1 PN 10					EN 1092-1 PN 16					[kg]
			Ø M	Bolt A1		Bolt A2		Ø M	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]		X	Qty[21)]	Y	Qty[21)]	
50	2	120	M16	20	4	-	-	M16	20	4	-	-	6,5
65	2½	130	M16	20	4	-	-	M16	20	4	-	-	7,5
65	2½	174	M16	20	8	-	-	M16	20	8	-		8,8
80	3	188	M16	21	8	-	-	M16	21	8	-	-	9,0
100	4	210	M16	21	8	-	-	M16	21	8	-	-	11,2
125	5	246	M16	20	8	-	-	M16	20	8	-	-	15,4
150	6	270	M20	24	8	-	-	M20	24	8	-	-	18,5
200	8	310	M20	26	8	-	-	-	-	-	-	-	30,0
200	8	340	-	-	-	-	-	M20	26	12	-	-	31,0
250	10	417	M20	26	12	-	-	M24	30	12			48,0
300	12	478	M20	26	12	-	-	M24	30	8	35	4	70,0
300	12	476	-	-	-	-	-	-	-	-	-	-	72,5
350	14	542	M20	37	16	-	-	M24	37	16	-	-	108,0
400	16	606	M24	42	16	-	-	M27	44	16	-	-	130,0
450	18	657	M24	40	16	24	4	M27	44	16	24	4	207,0
500	20	716	M24	42	16	32	4	M30	51	16	31	4	237,0
600	24	834	M27	43	20	-	-	M33	52	16	48	4	363,0

Table 50: Full-lug body - T4 (DANAÏS MT II Class 150 - PN25) / standard EN 1092-1 PN25

DN	NPS	d1	EN 1092-1 PN 25					[kg]
			Ø M	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]	
50	2	120	M16	20	4	-	-	6,5
65	2½	130	-	-	-	-	-	7,5
65	2½	174	M16	20	8	-	-	8,8
80	3	188	M16	21	8	-	-	9,0
100	4	210	M20	26	8	-	-	11,2
125	5	246	M24	27	8	-	-	15,4
150	6	270	M24	27	8	-	-	18,5
200	8	310	-	-	-	-	-	30,0
200	8	340	M24	29	12	-	-	31,0
250	10	417	M27	33	12	-	-	48,0
300	12	478	-	-	-	-	-	70,0
300	12	476	M27	33	12	26	4	72,5
350	14	542	M30	42	16	-	-	108,0
400	16	606	M33	44	16	-	-	130,0
450	18	657	M33	39	16	22	4	207,0
500	20	716	M33	55	16	31	4	237,0
600	24	834	M36	57	16	47	4	363,0

Table 51: Full-lug body - T4 (DANAÏS MT II Class 150 - PN25) / standards ISO 7005 PN20 and ASME B16.5 Class 150

DN	NPS	d1	ISO 7005 PN 20					ASME B16.5 Class 150					[kg]
			Ø M	Bolt A1		Bolt A2		UN/ UNC[22)]	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]	[inch]	X	Qty[21)]	Y	Qty[21)]	
50	2	120	M16	20	4	-	-	5/8	20	4	-	-	6,5
65	2½	130	M16	20	4	-	-	5/8	20	4	-	-	7,5
80	3	188	M16	21	4	-	-	5/8	21	4	-	-	9,0
100	4	210	M16	21	8	-	-	5/8	21	8	-	-	11,2
125	5	246	M20	25	8	-	-	3/4	25	8	-	-	15,4
150	6	270	M20	24	8	-	-	3/4	24	8	-	-	18,5
200	8	310	M20	26	8	-	-	3/4	26	8	-	-	30,0

21 Number of bolts per side
22 For bolts < 1 inch, only UNC

DN	NPS	d1	ISO 7005 PN 20					ASME B16.5 Class 150					[kg]
			Ø M	Bolt A1		Bolt A2		UN/ UNC[22)]	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]	[inch]	X	Qty[21)]	Y	Qty[21)]	
250	10	417	M24	30	12	-	-	7/8	30	12	-	-	48,0
300	12	478	M24	26	12	-	-	7/8	26	12	-	-	70,0
350	14	523	M27	39	12	-	-	1	39	12	-	-	99,0
400	16	606	M27	44	16	-	-	1	44	16	-	-	130,0
450	18	630	M30	51	12	40	4	$1^1/_8$	51	12	40	4	167,0
500	20	716	M30	51	16	31	4	$1^1/_8$	51	16	31	4	237,0
600	24	834	M33	52	16	47	4	$1^1/_4$	52	16	47	4	363,0

Table 52: Full-lug body - T4 (DANAÏS MT II Class 150 - PN25) / standards JIS B2220 10K, 16K and 20K

DN	NPS	d1	JIS B2220 10K					JIS B2220 16K and 20K					[kg]
			Ø M	Bolt A1		Bolt A2		Ø M	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]		X	Qty[21)]	Y	Qty[21)]	
50	2	120	M16	20	4	-	-	-	-	-	-	-	6,5
65	2½	130	M16	20	4	-	-	M16	20	8	-	-	7,5
65	2½	174	-	-	-	-	-	M20	24	8	-	-	8,8
80	3	188	M16	21	8	-	-	M20	26	8	-	-	9,0
100	4	210	M16	21	8	-	-	M22	27	8	-	-	11,2
125	5	246	M20	25	8	-	-	-	-	-	-	-	15,4
150	6	270	M20	24	8	-	-	-	-	-	-	-	18,5
200	8	310	-	-	-	-	-	M22	29	12	-	-	30,0
200	8	340	M20	39	12	-	-	M24	31	12	-	-	31,0
250	10	417	M22	32	12	-	-	-	-	-	-	-	48,0
300	12	478	-	-	-	-	-	M24	30	16	-	-	70,0
300	12	476	M22	24	16	-	-	-	-	-	-	-	72,5
350	14	523	-	-	-	-	-	M30x3	34	16	-	-	99,0
350	14	542	M22	36	16	-	-	M30x3	44	16	-	-	108,0
400	16	606	M24	42	16	-	-	-	-	-	-	-	130,0
450	18	657	M24	40	16	24	4	M30x3	49	16	26	4	207,0
500	20	716	M24	42	16	32	4	M30x3	51	16	32	4	237,0
600	24	834	-	-	-	-	-	-	-	-	-	-	363,0

Table 53: Full-lug body - T4 (DANAÏS MT II Class 300) / standards EN 1092-1 PN25 and PN40

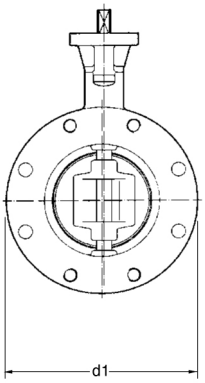
DN	NPS	d1	EN 1092-1 PN 25					EN 1092-1 PN 40					[kg]
			Ø M	Bolt A1		Bolt A2		Ø M	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]		X	Qty[21)]	Y	Qty[21)]	
50	2	120	M16	20	4	-	-	M16	20	4	-	-	6,5
65	2½	130	M16	21	8	-	-	M16	21	8	-	-	7,5
80	3	188	M16	23	8	-	-	M16	23	8	-	-	8,8
100	4	210	M20	26	8	-	-	M20	26	8	-	-	11,2
125	5	246	M24	29	8	-	-	M24	29	8	-	-	15,4
150	6	270	M24	29	8	-	-	M24	29	8	-	-	18,5
200	8	310	M24	34	12	-	-	M27	34	8	-	-	30,0
250	10	417	M27	40	12	-	-	M30	40	12	-	-	48,0
300	12	478	M27	45	12	23	4	M30	45	12	23	4	70,0
350	14	523	-	-	-	-	-	-	-	-	-	-	99,5
400	16	606	M33	53	12	41	4	M36	58	12	42	4	130,0
450	18	630	M33	52	16	28	4	M36	57	16	27	4	167,0
500	20	716	-	-	-	-	-	-	-	-	-	-	237,0
600	24	834	-	-	-	-	-	-	-	-	-	-	363,0

Table 54: Full-lug body - T4 (DANAÏS MT II Class 300) / standards ISO 7005 PN50 and ASME B16.5 Class 300

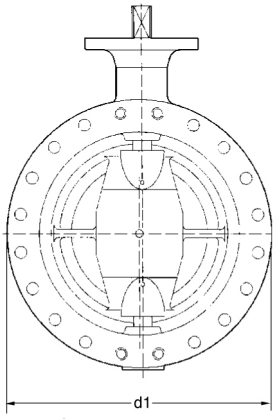
DN	NPS	d1	ISO 7005 PN 50					ASME B16.5 Class 300					[kg]
			Ø M	Bolt A1		Bolt A2		UNC	Bolt A1		Bolt A2		
	[inch]			X	Qty[21)]	Y	Qty[21)]	[inch]	X	Qty[21)]	Y	Qty[21)]	
50	2	120	M16	20	8	-	-	5/8	20	8	-	-	6,5
65	2½	130	M20	21	8	-	-	3/4	21	8	-	-	7,5
80	3	188	M20	23	8	-	-	3/4	23	8	-	-	8,8
100	4	210	M20	26	8	-	-	3/4	26	8	-	-	11,2
125	5	246	M20	29	8	-	-	3/4	29	8	-	-	15,4
150	6	270	M20	29	8	-	-	3/4	29	12	-	-	18,5
200	8	310	M24	34	12	-	-	7/8	34	12	-	-	30,0
250	10	417	M27	40	12	26	4	1	40	12	26	4	48,0
300	12	478	M30	45	12	23	4	$1^1/_8$	45	12	23	4	70,0
350	14	523	M30	49	16	22	4	$1^1/_8$	49	16	22	4	99,5
400	16	606	M33	53	16	30	4	$1^1/_4$	53	16	30	4	130,0
450	18	630	-	-	-	-	-	-	-	-	-	-	167,0
500	20	716	M33	52	20	28	4	$1^1/_4$	52	20	28	4	237,0
600	24	834	M39	64	20	38	4	$1^1/_2$	64	20	38	4	363,0

8460.154/04-EN

Bolting and weights for flanged body - T7



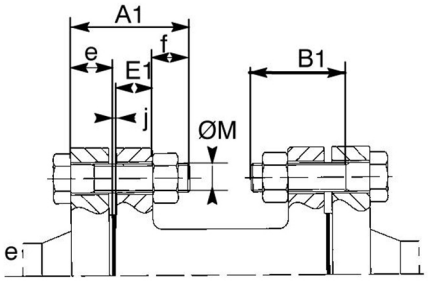
Drawing of DANAÏS MT II T7 DN 150



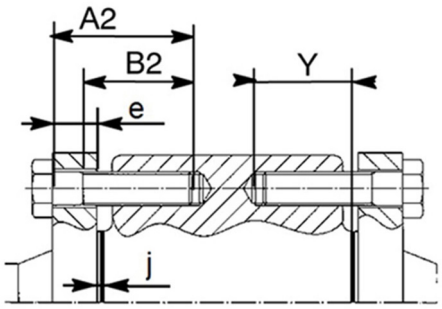
Drawing of DANAÏS MT II T7 DN 500

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

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



Sectional drawing of flanged body bolting (T7)



Sectional drawing of T7 body bolting at shaft passage

Bolt length for flanges

A1max. = e + j + E1max. + f

E1: valve flange thickness
e: flange thickness (customer-specific)
f: bolt overhang
j: flange gasket thickness
B1: min. bolt thread length B1 > A1-e

Bolt length at shaft passage

A2max = e + Y + j

e: flange thickness (customer-specific)
Y: max. thread engagement depth at shaft passage
j: flange gasket thickness
B2: min. bolt thread length B2 > A2-e

8460.154/04-EN

Table 55: Flanged body - T7 (DANAÏS MT II Class 150 - PN 25) / standards EN 1092-1 PN10 and PN16

DN	NPS	d1	E1	EN 1092-1 PN 10					EN 1092-1 PN 16					[kg]
				Ø M	Bolt A1		Bolt A2		Ø M	Bolt A1		Bolt A2		
	[inch]				X	Qty[23)]	Y	Qty[23)]		X	Qty[23)]	Y	Qty[23)]	
50	2	152	22	M16	20	4	-	-	M16	20	4	-	-	10,0
65	2½	178	22,5	M16	20	4	-	-	M16	20	4	-	-	13,0
65	2½	178	22,5	M16	20	4	24	4	M16	20	4	24	4	13,0
80	3	190	27	M16	20	4	24	4	M16	20	4	24	4	16,0
100	4	229	27	M16	20	4	24	4	M16	20	4	24	4	23,5
125	5	254	27	M16	20	4	24	4	M16	20	4	24	4	27,5
150	6	279	28,5	M20	24	4	25	4	M20	24	4	25	4	32,0
200	8	343	31,5	M20	24	4	28	4	M20	24	8	28	4	52,0
250	10	406	33,5	M20	24	8	30	4	M24	29	8	30	4	73,0
300	12	483	35	M20	24	8	32	4	M24	29	8	32	4	115,0
350	14	535	38	M20	24	12	35	4	M24	29	12	35	4	147,0
400	16	600	40	M24	29	12	37	4	M27	32	12	37	4	207,0
450	18	635	42,5	M24	29	16	39	4	M27	32	16	39	4	243,0
500	20	700	46	M24	29	16	42	4	M30	35	16	42	4	335,0
600	24	826	52	M27	32	16	48	4	M33	38	16	48	4	463,0

Table 56: Flanged body - T7 (DANAÏS MT II Class 150 - PN25) / standard EN 1092-1 PN25

DN	NPS	d1	E1	EN 1092-1 PN 25					[kg]
				Ø M	Bolt A1		Bolt A2		
	[inch]				X	Qty[23)]	Y	Qty[23)]	
50	2	152	22	M16	20	4	-	-	10,0
65	2½	178	22,5	-	-	-	-	-	13,0
65	2½	178	22,5	M16	20	4	24	4	13,0
80	3	190	27	M16	20	4	24	4	16,0
100	4	229	27	M20	24	4	24	4	23,5
125	5	254	27	-	-	-	-	-	27,5
150	6	279	28,5	-	-	-	-	-	32,0
200	8	343	31,5	-	-	-	-	-	52,0
250	10	406	33,5	-	-	-	-	-	73,0
300	12	483	35	M27	32	12	32	4	115,0
350	14	535	38	-	-	-	-	-	147,0
400	16	600	40	M33	38	12	37	4	207,0
450	18	635	42,5	M33	38	16	39	4	243,0
500	20	700	46	-	-	-	-	-	335,0
600	24	826	52	M36	42	16	48	4	463,0

Table 57: Flanged body - T7 (DANAÏS MT II Class 150 - PN25) / standards ISO 7005 PN20 and ASME B16.5 Class 150

DN	NPS	d1	E1	ISO 7005 PN 20					ASME B16.5 Class 150					[kg]
				Ø M	Bolt A1		Bolt A2		UN/ UNC[24)]	Bolt A1		Bolt A2		
	[inch]				X	Qty[23)]	Y	Qty[23)]	[inch]	X	Qty[23)]	Y	Qty[23)]	
50	2	152	22	M16	20	4	-	-	5/8	20	4	-	-	10,0
65	2½	178	22,5	M16	20	4	-	-	5/8	20	4	-	-	13,0
80	3	190	27	M16	20	4	-	-	5/8	20	4	-	-	16,0
100	4	229	27	M16	20	4	24	4	5/8	20	4	24	4	23,5
125	5	254	27	M20	24	4	24	4	3/4	24	4	24	4	27,5
150	6	279	28,5	M20	24	4	25	4	3/4	24	4	25	4	32,0
200	8	343	31,5	M20	24	4	28	4	3/4	24	4	28	4	52,0
250	10	406	33,5	M24	29	8	30	4	7/8	29	8	30	4	73,0
300	12	483	35	M24	29	8	32	4	7/8	29	8	32	4	115,0
350	14	535	38	M27	32	8	35	4	1	32	8	35	4	147,0
400	16	600	40	M27	32	12	37	4	1	32	12	37	4	207,0

23 Number of bolts per side
24 For bolts < 1 inch, only UNC

DN	NPS	d1	E1	ISO 7005 PN 20					ASME B16.5 Class 150					[kg]
				Ø M	Bolt A1		Bolt A2		UN/ UNC[24)]	Bolt A1		Bolt A2		
	[inch]				X	Qty[23)]	Y	Qty[23)]	[inch]	X	Qty[23)]	Y	Qty[23)]	
450	18	635	42,5	M30	35	12	39	4	1 1/8	35	12	39	4	243,0
500	20	700	46	M30	35	16	42	4	1 1/8	35	16	42	4	335,0
600	24	826	52	M33	38	16	48	4	1 1/4	38	16	48	4	463,0

Table 58: Flanged body - T7 (DANAÏS MT II Class 150 - PN25) / standards JIS B2220 10K, 16K and 20K

DN	NPS	d1	E1	JIS B2220 10K					JIS B2220 16K and 20K					[kg]
				Ø M	Bolt A1		Bolt A2		Ø M	Bolt A1		Bolt A2		
	[inch]				X	Qty[23)]	Y	Qty[23)]		X	Qty[23)]	Y	Qty[23)]	
50	2	152	22	M16	20	4	-	-	M16	20	4	19	4	10,0
65	2½	178	22,5	M16	20	4	-	-	M16	20	4	22	4	13,0
80	3	190	27	M16	20	8	-	-	M20	24	4	24	4	16,0
100	4	229	27	M16	20	4	4	24	M20	24	4	24	4	23,5
125	5	254	27	M20	24	4	4	24	-	-	-	-	-	27,5
150	6	279	28,5	M20	24	4	4	25	-	-	-	-	-	32,0
200	8	343	31,5	M20	24	8	4	28	M22	27	8	28	4	52,0
250	10	406	33,5	M22	27	8	4	30	-	-	-	-	-	73,0
300	12	483	35	M22	27	12	4	32	M24	29	12	32	4	115,0
350	14	535	38	M22	27	12	4	35	M30X3	35	12	35	4	147,0
400	16	600	40	M24	29	12	4	37	M30X3	35	12	37	4	207,0
450	18	635	42,5	M24	29	16	4	39	-	-	-	-	-	243,0
500	20	700	46	M24	29	16	4	42	-	-	-	-	-	335,0
600	24	826	52	M30	35	20	4	48	M36X3	42	20	48	4	463,0

Table 59: Flanged body - T7 (DANAÏS MT II Class 300) / standard EN 1092-1 PN25

DN	NPS	d1	E1	EN 1092-1 PN 25							[kg]
				Ø M	Bolt A1		Bolt A2		Bolt A3		
	[inch]				f	Qty[23)]	X	Qty[23)]	i	Qty[23)]	
50	2	152	25,6	M16	-	-	-	-	22	4	10,0
65	2½	178	28,6	M16	-	-	-	-	25	8	13,0
80	3	190	31,5	M16	-	-	-	-	27	8	16,0
100	4	229	35	M20	-	-	-	-	30	8	23,5
125	5	254	38,2	M24	-	-	-	-	35	8	27,5
150	6	279	39,8	M24	-	-	-	-	36	8	32,0
200	8	343	44,3	M24	-	-	-	-	36	12	52,0
250	10	406	51	M27	-	-	-	-	40	12	73,0
300	12	483	54	M27	-	-	-	-	40	16	115,0
350	14	535	58	M30	-	-	-	-	45	16	147,0
400	16	600	60,4	M33	-	-	-	-	49	16	207,0
450	18	635	63,7	M33	-	-	-	-	49	20	243,0
500	20	700	68,3	M33	-	-	-	-	49	20	335,0
600	24	826	74,7	M36	-	-	-	-	54	20	463,0

Table 60: Flanged body - T7 (DANAÏS MT II Class 300) / standard EN 1092-1 PN40

DN	NPS	d1	E1	EN 1092-1 PN 40							[kg]
				Ø M	Bolt A1		Bolt A2		Bolt A3		
	[inch]				f	Qty[23)]	X	Qty[23)]	i	Qty[23)]	
50	2	152	25,6	M16	-	-	-	-	22	4	10,0
65	2½	178	28,6	M16	-	-	-	-	25	8	13,0
80	3	190	31,5	M16	-	-	-	-	27	8	16,0
100	4	229	35	M20	-	-	-	-	30	8	23,5
125	5	254	38,2	M24	-	-	-	-	35	8	27,5
150	6	279	39,8	M24	-	-	-	-	36	8	32,0
200	8	343	44,3	M27	32	8	40	4	-	-	52,0
250	10	406	51	M30	35	8	45	4	-	-	73,0
300	12	483	54	M30	35	12	45	4	-	-	115,0
350	14	535	58	M33	38	12	49	4	-	-	147,0
400	16	600	60,4	M36	42	12	54	4	-	-	207,0
450	18	635	63,7	M36	-	-	-	-	54	20	243,0
500	20	700	68,3	M39	-	-	-	-	58	20	335,0
600	24	826	74,7	M45	52	16	67	4	-	-	463,0

Table 61: Flanged body - T7 (DANAÏS MT II Class 300) / standard EN 1092-1 PN50

DN	NPS	d1	E1	EN 1092-1 PN 50							[kg]
				Ø M	Bolt A1		Bolt A2		Bolt A3		
	[inch]				f	Qty[23)]	X	Qty[23)]	i	Qty[23)]	
50	2	152	25,6	M16	-	--	-	-	22	8	10,0
65	2½	178	28,6	M20	-	-	-	-	25	8	13,0
80	3	190	31,5	M20	24	4	28	4	-	-	16,0
100	4	229	35	M20	24	4	30	4	-	-	23,5
125	5	254	38,2	M20	24	4	30	4	-	-	27,5
150	6	279	39,8	M20	24	8	30	4	-	-	32,0
200	8	343	44,3	M24	29	8	36	4	-	-	52,0
250	10	406	51	M27	32	12	30	4	-	-	73,0
300	12	483	54	M30	35	12	45	4	-	-	115,0
350	14	535	58	M30	35	16	45	4	-	-	147,0
400	16	600	60,4	M33	38	16	49	4	-	-	207,0
450	18	635	63,7	M33	38	16	49	4	40	4	243,0
500	20	700	68,3	M33	38	20	49	4	-	-	335,0
600	24	826	74,7	M39	45	20	58	4	-	-	463,0

8460.154/04-EN

Table 62: Flanged body - T7 (DANAÏS MT II Class 300) / ASME B16.5 Class 300

DN	NPS	d1	E1	ASME B16.5 Class 300							[kg]
				UNC	Bolt A1		Bolt A2		Bolt A3		
	[inch]			[inch]	f	Qty[23)]	X	Qty[23)]	i	Qty[23)]	
50	2	152	25,6	5/8	-	-	-	-	22	8	10,0
65	2½	178	28,6	3/4	-	-	-	-	25	8	13,0
80	3	190	31,5	3/4	24	4	28	4	-	-	16,0
100	4	229	35	3/4	24	4	30	4	-	-	23,5
125	5	254	38,2	3/4	24	4	30	4	-	-	27,5
150	6	279	39,8	3/4	24	8	30	4	-	-	32,0
200	8	343	44,3	7/8	29	8	36	4	-	-	52,0
250	10	406	51	1	32	12	30	4	-	-	73,0
300	12	483	54	$1^1/_8$	35	12	45	4	-	-	115,0
350	14	535	58	$1^1/_8$	35	16	45	4	-	-	147,0
400	16	600	60,4	$1^1/_4$	38	16	49	4	-	-	207,0
450	18	635	63,7	$1^1/_4$	38	16	49	4	40	4	243,0
500	20	700	68,3	$1^1/_4$	38	20	49	4	-	-	335,0
600	24	826	74,7	$1^1/_2$	45	20	58	4	-	-	463,0

2022-11-15

8460.154/04-EN

KSB S.A.S.
4, allée des Barbanniers • 92635 Gennevilliers Cedex (France)
Tél. 09 69 39 29 79
www.ksb.com/fr-fr