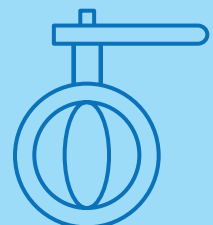


**econ**<sup>®</sup>



**High  
Performance  
Butterfly Valves**

Double Eccentric



## High Performance Double Eccentric Butterfly Valves

Econ®'s double offset design and patented floating seat construction provides a reliable 100% bi-directional disc sealing. This unique construction meets the high demands of applications in which High Performance butterfly valves are being used. Econ® High Performance butterfly valves can be used for a maximum pressure up to 51 bar or a maximum temperature of 500°C. Econ® High Performance butterfly valves can therefore very well be used for applications, where rubber lined butterfly valves no longer can be used, due to their limited pressure and temperature range.

### Applicable certifications

- PED Module H according to 2014/68/EC
- Fire safe approved according to ISO 10497: 2010
- SIL 2 according to IEC 61508-1 and SIL 3 in redundant setup
- Leakage rate for soft seated valves according to API 598 or EN 12266-1 class A
- Leakage rate for metal seated valves according to ANSI FCI 70-2-2003
  - Table 1 class V for Class 150 valves up to DN300
  - Table 1 class IV for DN350 and larger and all Class 300 valves.
- Fugitive emission according to ISO 15848-1 CO3 class BH (optional)
- EC 1935 and FDA approved - Food contact materials

### Models

- Wafer type - Series 91
- Lug type - Series 93
- Double flange - Series 94

### Range

- ANSI 150 | 2" – 48"
- DIN PN16/25 | DN50 – 1200

### Optional

- ANSI 300 | 2.1/2" – 24"
- DIN PN40 | DN65 – 600

### Standard seat materials

- PTFE (TF 1641): -29°C to 210°C
- R-PTFE: -29°C to 250°C
- PTFE/Inconel B637 (fire safe): -29°C to 210°C
- R-PTFE/Inconel B637 (fire safe): -29°C to 250°C
- Inconel B637: -29°C to 500°C

### Standard body materials

- A216 WCB / 1.0619
- A351 CF8M / 1.4408



*Econ® series 91  
with lever*



*Econ® series 93  
with gearbox*



*Econ® series 94  
with gearbox*



## Features

One piece shaft design up to DN300 and a two piece shaft design for DN350 and larger. Anti-blowout design and equipped with an anti-static device.

Direct Mount Flange according to ISO 5211 for easy and fast assembly of actuators.

The adjustable gland packing provides a constant compression for a reliable stem sealing. Optionally a stem seal can be supplied, which complies with the ISO 15848-1 fugitive emission standard.

Anti-static design with earth connection.

The shaft is supported by top and bottom long life bearings. The two bearings provide excellent resistance to corrosion and distortion as a result of high temperatures and mechanical forces.

Available seat constructions:

- PTFE or R-PTFE soft seated
- PTFE/Inconel B637 or R-PTFE/Inconel B637 fire safe soft seated
- Inconel B637 metal seated

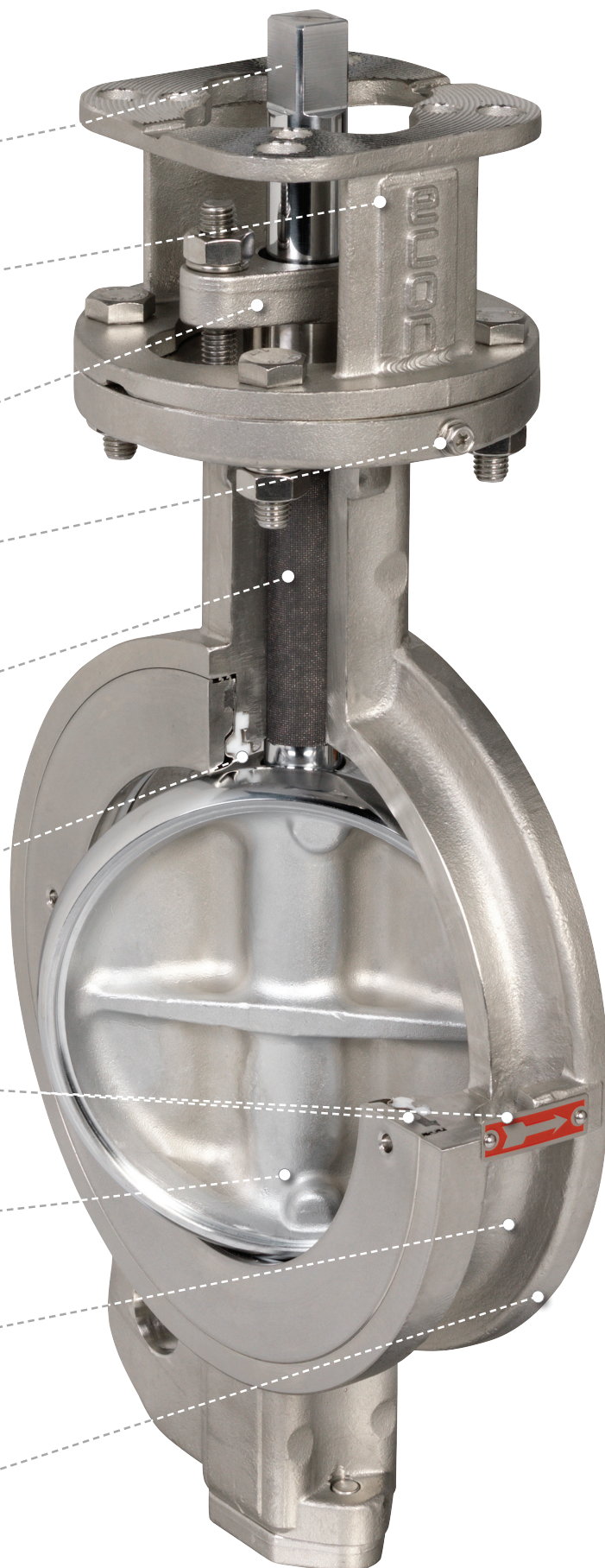
Econ® High Performance butterfly valves have a preferred flow direction for an optimal performance and long life span. Due to the patented floatable seat construction the valve still is 100% bi-directional for the full pressure rating of the valve.

Splined stem-disc connection for an ideal load distribution and backlash free operation.

High quality body and disc, realized by the "lost wax" molding process.

Face to face dimensions according to:

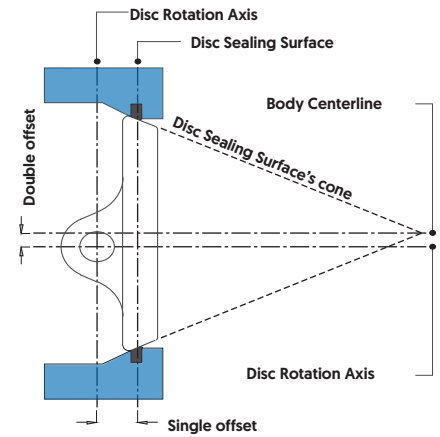
- **API 609 Category B**
  - Table 3A for wafer and lug type
  - Table 3C for double flange type
- **EN 558 series 20 (wafer and lug type) and series 13 and 14 (double flange type)**



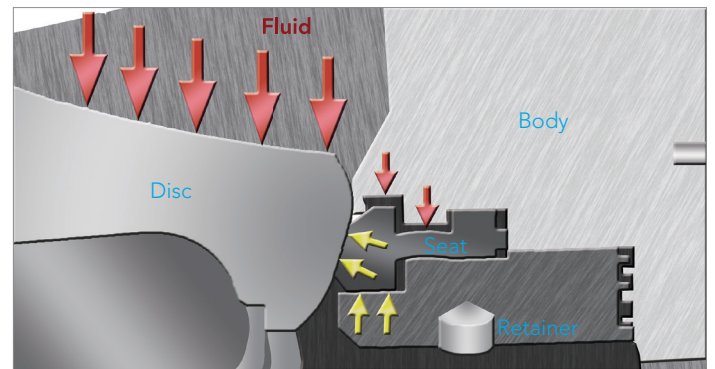
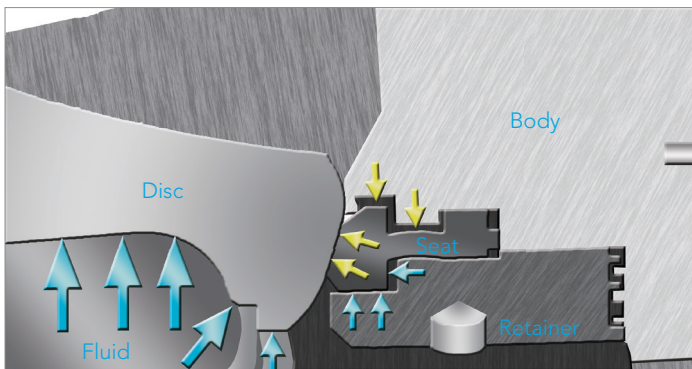


### Double eccentric design

High Performance valves, also known as double eccentric butterfly valves have a stem which is mounted slightly out of the pipeline center and also behind the disc seat. This design leads to minimal wear and low operating torques.



### Seat construction

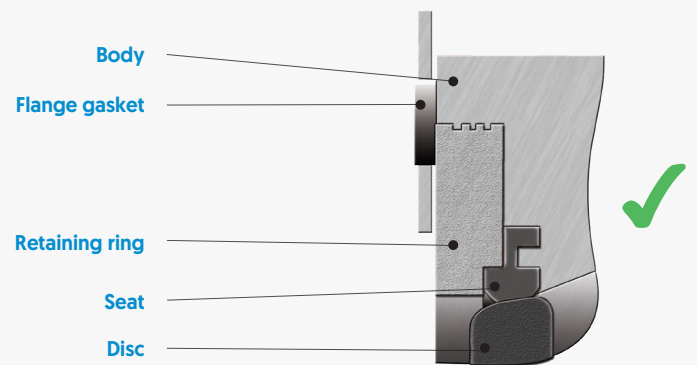


The special patented floatable retaining ring and the special designed seat ring ensures a 100% sealing construction, low torques, an increase of the life span and makes the valve 100% bi-directional for the full pressure rating of the valve.

### econ® design

The patented retaining ring has a special twin threaded design which ensures the most optimal clamping force of the seat on the disc.

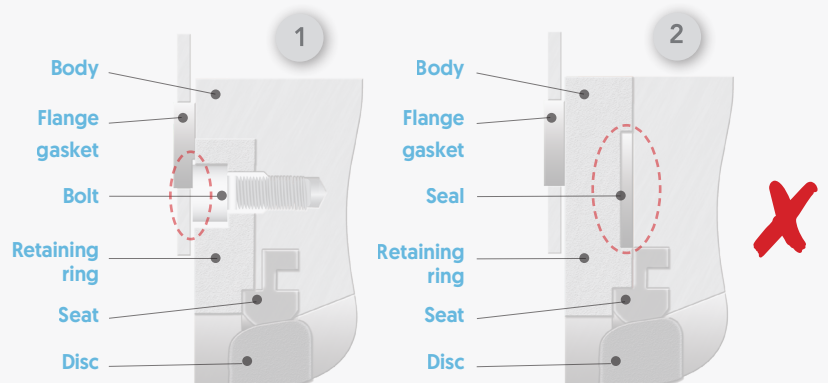
Unlike conventional designs, the outside surface of the retaining ring does not contain unevenness or interruptions, which increases the reliability of the flange gasket.



### Conventional designs

1 Conventional double eccentric butterfly valves have fixed socket bolts to mount the retaining ring to the valve. This reduces the sealing surface between the valve and pipe flange, which increases the risk of leakage.

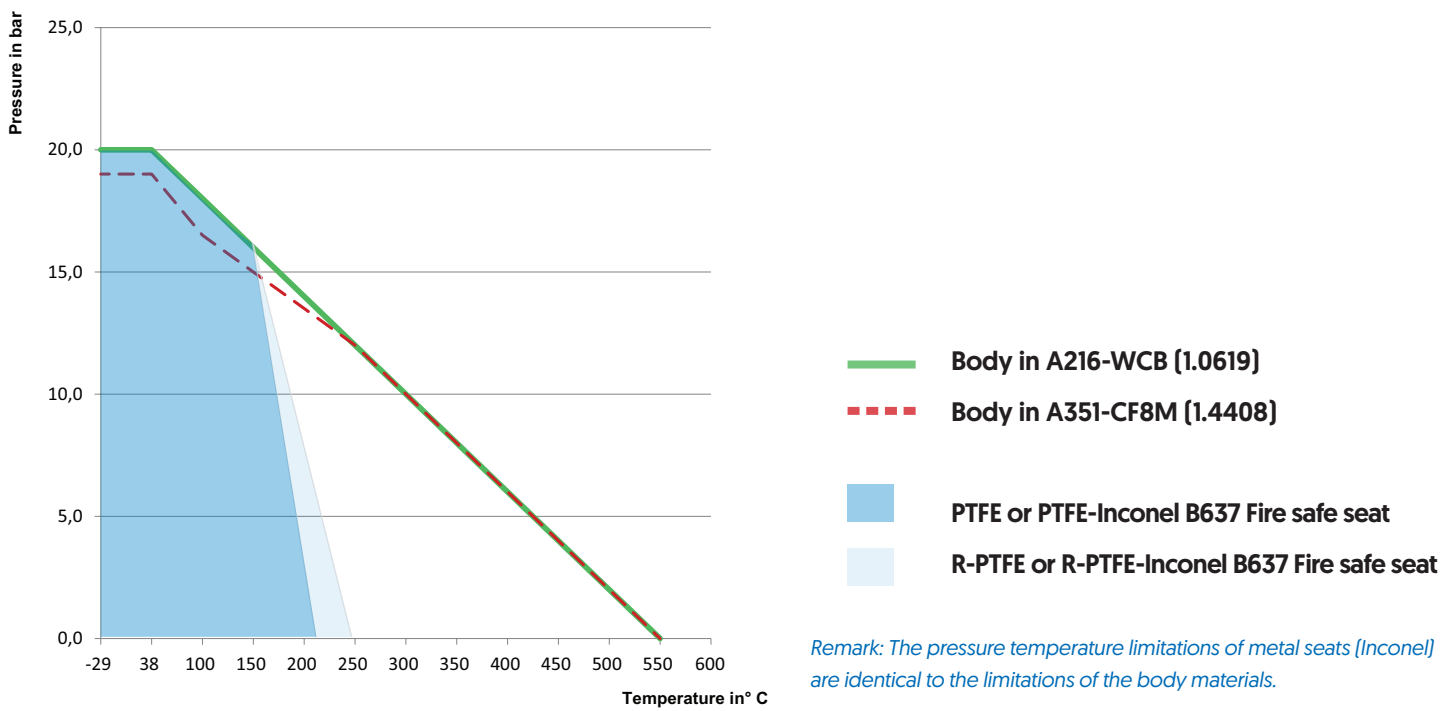
2 Another frequently used design requires an additional seal in order to prevent leakage to the outside. Additional seals however increase the risk of leakage.



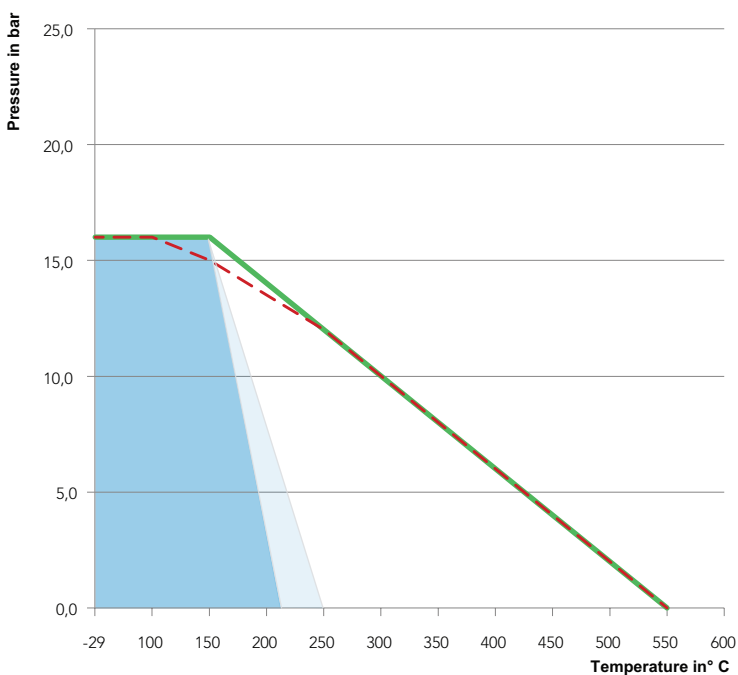


## Pressure-Temperature charts

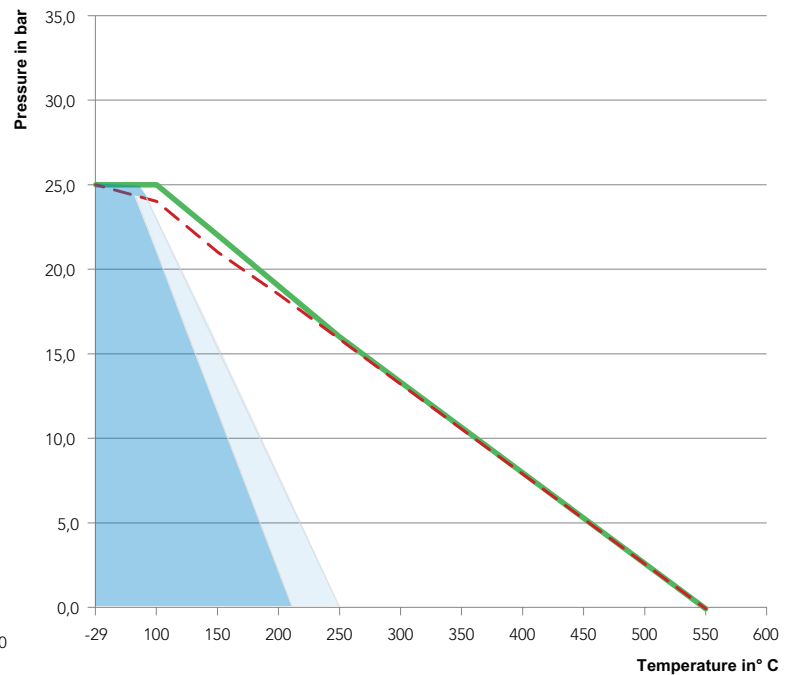
### ANSI Class 150 version



### DIN PN16 version



### DIN PN25 version



*Pressure-Temperature charts for Class 300 / PN40 valves on request.*

## High Performance Double Eccentric Butterfly Valves

### Parts and materials Serie 91, 93 and 94 with soft seat

Pos.	Part	Material		Pos.	Part	Material	
		Carbon steel valve	Stainless steel valve			Carbon steel valve	Stainless steel valve
1	Body	A216-WCB [1.0619]	A351-CF8M [1.4408]	9	Locking plate	RPTFE+SS316	RPTFE+SS316
2	Disc	A351-CF8M [1.4408]	A351-CF8M [1.4408]	10	Seal	PTFE	PTFE
3	Retainer ring	A351-CF8M [1.4408]	A351-CF8M [1.4408]	11	Bottom cover	A216-WCB [1.0619]	A351-CF8M [1.4408]
4	Seat	PTFE (TF 1641)	PTFE (TF 1641)	12	Gland packing	PTFE	PTFE
		R-PTFE-GF15% <sup>2</sup>	PTFE-GF15% <sup>2</sup>	13	Gland	A351-CF8M [1.4408]	A351-CF8M [1.4408]
		R-PTFE-CF15% <sup>2</sup>	PTFE-CF15% <sup>2</sup>	14	Bracket	A351-CF8 [1.4308]	A351-CF8 [1.4308]
5+6	Bushing	RPTFE+SS316	RPTFE+SS316	15	Stud bolt	A193-B8 [1.4301]	A193-B8 [1.4301]
7	Shaft	A564-630 [1.4542]	A564-630 [1.4542]	16	Nut	A194-8 [1.4571]	A194-8 [1.4571]
8	Stud	A193 B8M [1.4401]	A193 B8M [1.4401]	17	Bolt	A193-B8 [1.4301]	A193-B8 [1.4301]

### Parts and materials Serie 91, 93 and 94 with fire safe soft seat

Pos.	Part	Material		Pos.	Part	Material	
		Carbon steel valve	Stainless steel valve			Carbon steel valve	Stainless steel valve
1	Body	A216-WCB [1.0619]	A351-CF8M [1.4408]	10	Seal	Graphite	Graphite
2	Disc	A351-CF8M [1.4408] <sup>1</sup>	A351-CF8M [1.4408] <sup>1</sup>	11	Bottom cover	A216-WCB [1.0619]	A351-CF8M [1.4408]
3	Retainer ring	A351-CF8M [1.4408]	A351-CF8M [1.4408]	12	Gland packing	Graphite	Graphite
4	Seat	PTFE	PTFE	13	Gland	A351-CF8M [1.4408]	A351-CF8M [1.4408]
		R-PTFE-GF15% <sup>2</sup>	PTFE-GF15% <sup>2</sup>	14	Bracket	A351-CF8 [1.4308]	A351-CF8 [1.4308]
		R-PTFE-CF15% <sup>2</sup>	PTFE-CF15% <sup>2</sup>	15	Stud bolt	A193-B8 [1.4301]	A193-B8 [1.4301]
5+6	Bushing	RPTFE+SS316	RPTFE+SS316	16	Nut	A194-8 [1.4571]	A194-8 [1.4571]
7	Shaft	A564-630 [1.4542] <sup>1</sup>	A564-630 [1.4542] <sup>1</sup>	17	Bolt	A193-B8 [1.4301]	A193-B8 [1.4301]
8	Stud	A193 B8M [1.4401]	A193 B8M [1.4401]	18	Gasket	Graphite	Graphite
9	Locking plate	RPTFE+SS316	RPTFE+SS316	19	Fire safe seat	B637 [2.4668]	B637 [2.4668]

### Parts and materials Serie 91, 93 and 94 with metal seat

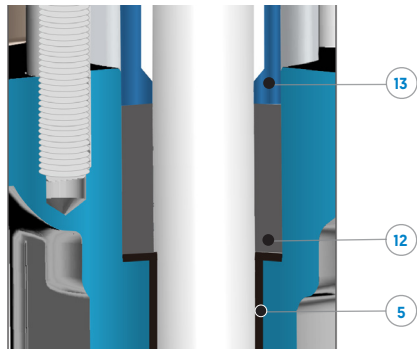
Pos.	Part	Material		Pos.	Part	Material	
		Carbon steel valve	Stainless steel valve			Carbon steel valve	Stainless steel valve
1	Body	A216-WCB [1.0619]	A351-CF8M [1.4408]	11	Bottom cover	A216-WCB [1.0619]	A351-CF8M [1.4408]
2	Disc	A351-CF8M [1.4408] <sup>1</sup>	A351-CF8M [1.4408] <sup>1</sup>	12	Gland packing	Graphite	Graphite
3	Retainer ring	A351-CF8M [1.4408]	A351-CF8M [1.4408]	13	Gland	A351-CF8M [1.4408]	A351-CF8M [1.4408]
4	Seat	B637 [2.4668]	B637 [2.4668]	14	Bracket	A351-CF8 [1.4308]	A351-CF8 [1.4308]
5+6	Bushing	RPTFE+SS316	RPTFE+SS316	15	Stud bolt	A193-B8 [1.4301]	A193-B8 [1.4301]
7	Shaft	A564-630 [1.4542] <sup>1</sup>	A564-630 [1.4542] <sup>1</sup>	16	Nut	A194-8 [1.4571]	A194-8 [1.4571]
8	Stud	A193 B8M [1.4401]	A193 B8M [1.4401]	17	Bolt	A193-B8 [1.4301]	A193-B8 [1.4301]
9	Locking plate	RPTFE+SS316	RPTFE+SS316	18	Gasket	Graphite	Graphite
10	Seal	Graphite	Graphite				

<sup>1</sup> Disc edge and shaft hard chrome plated

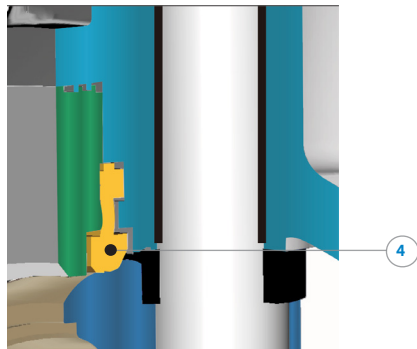
<sup>2</sup> Optional seat materials



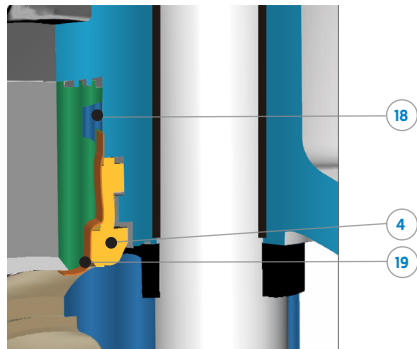
Upper stem bearing and sealing



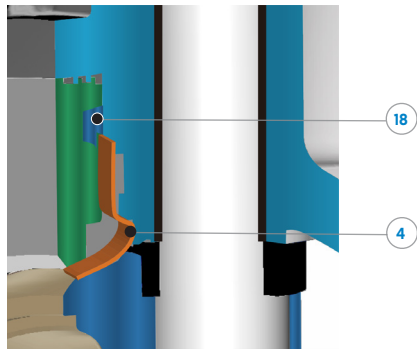
Soft seat



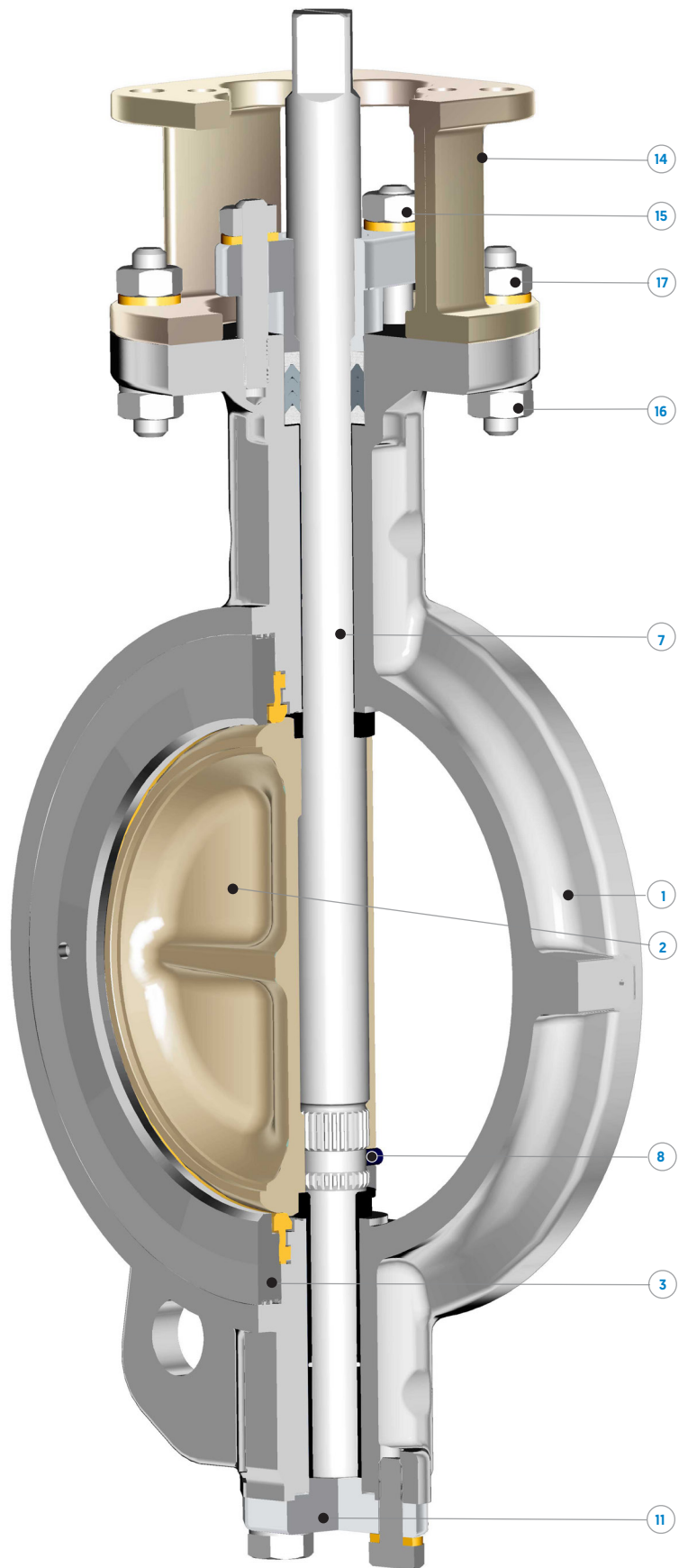
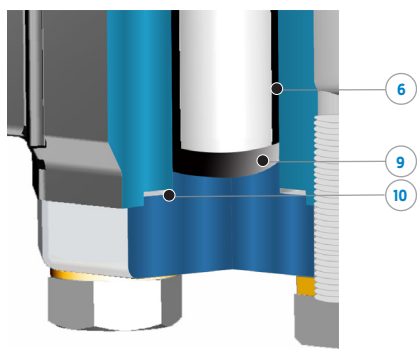
Fire Safe Soft seat



Metal seat



Lower stem bearing and sealing



### Kv-values class 150, PN16 and PN25 versions

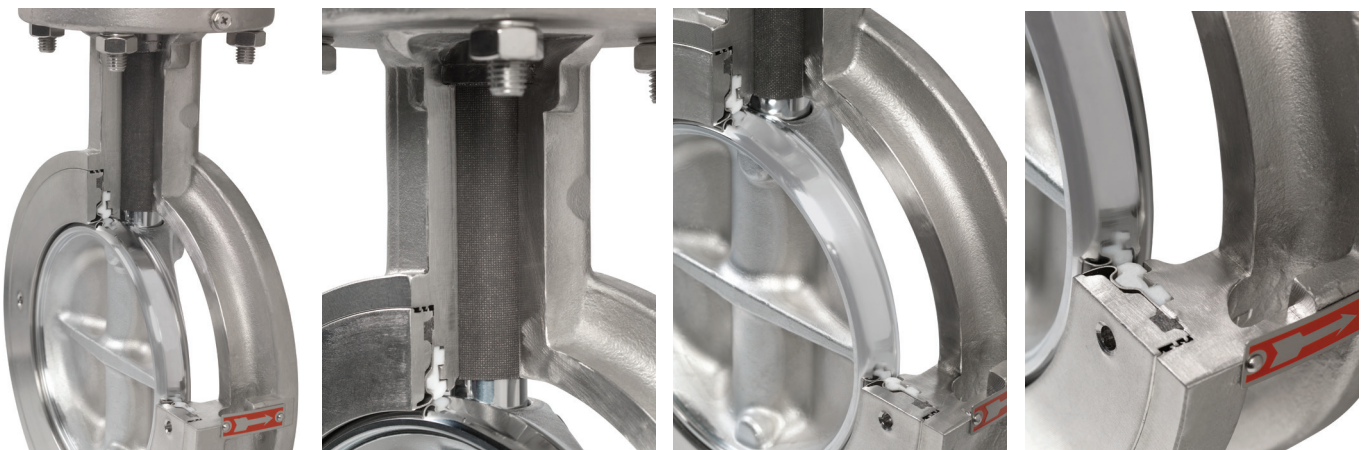
NPS	DN	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
2"	50	1	2	4	9	13	20	30	46	55	57
[2.½"]	65	4	8	19	28	44	61	80	97	118	121
3"	80	8	14	35	51	80	111	147	183	221	225
4"	100	12	22	56	84	131	182	239	293	354	363
[5"]	125	22	39	98	140	219	303	410	503	603	623
6"	150	21	67	131	195	361	629	761	1.017	1.159	1.189
8"	200	36	118	234	348	472	661	851	1.127	1.254	1.513
10"	250	108	264	425	504	798	1.089	1.427	1.781	2.110	2.306
12"	300	147	359	578	834	1.124	1.517	2.645	2.986	3.328	3.775
14"	350	192	437	688	1.007	1.395	1.938	2.699	3.657	4.634	5.156
16"	400	272	464	780	1.145	1.646	2.149	3.202	4.665	5.955	6.711
18"	450	339	818	1.259	1.764	2.435	3.388	4.683	6.105	7.379	8.087
20"	500	444	1.035	1.586	2.212	3.030	4.274	6.299	7.865	9.520	10.223
24"	600	731	1.609	2.379	3.381	4.756	6.626	9.372	12.471	15.863	17.173

### Kv-values class 300, PN40 versions (optional)

NPS	DN	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
2"	50	1	2	4	9	13	20	30	46	55	57
[2.½"]	65	4	8	19	28	44	61	80	97	118	121
3"	80	8	14	35	51	80	111	147	183	221	225
4"	100	12	22	56	84	131	182	239	293	354	363
[5"]	125	22	39	98	140	219	303	410	503	603	623
6"	150	18	58	129	188	303	588	692	821	1.081	1.098
8"	200	29	103	203	319	461	622	839	1.061	1.151	1.410
10"	250	62	184	338	501	695	915	1.242	1.617	2.000	2.155
12"	300	90	257	446	690	1.012	1.435	1.988	2.590	3.299	3.445
14"	350	105	332	586	901	1.320	1.821	2.501	3.306	3.960	4.143
16"	400	212	412	728	1.092	1.593	2.096	2.883	4.346	5.287	5.540
18"	450	268	521	1.059	1.542	2.235	3.011	4.076	5.384	6.730	7.082
20"	500	330	643	1.307	1.904	2.759	3.717	5.367	6.988	8.842	9.448
24"	600	476	927	1.883	2.743	3.974	5.352	7.728	10.062	12.732	13.605

**Remark:**

- *Kv is the capacity in m<sup>3</sup>/h for water at 20°C at a differential pressure of 1 bar.*







## Torque values (Nm) soft seated butterfly valves \*

Size		ΔP (bar)						
NPS	DN	0	5	10	15	20	25	MAST
2"	50	10	12	14	16	17	20	163
[2.½"]	65	15	17	23	27	32	40	163
3"	80	20	23	29	34	40	46	324
4"	100	27	32	40	47	60	66	324
[5"]	125	40	42	59	69	81	98	647
6"	150	48	64	80	91	114	136	647
8"	200	69	88	114	128	157	187	906
10"	250	116	163	201	238	304	377	1.295
12"	300	151	227	288	415	481	637	2.589
14"	350	294	415	604	754	905	1.018	2.589
16"	400	441	528	754	905	1.056	1.207	5.179
18"	450	603	741	943	1.131	1.282	1.470	5.179
20"	500	770	1.086	1.357	1.584	1.900	2.171	10.357
24"	600	943	1.293	1.697	2.047	2.343	2.558	10.357

## Torque values (Nm) fire safe soft seated butterfly valves \*

Size		ΔP (bar)						
NPS	NPS	0	5	10	15	20	25	MAST
2"	50	23	25	30	34	38	46	163
[2.½"]	65	29	36	47	54	64	75	163
3"	80	39	47	59	71	83	98	324
4"	100	59	68	80	91	108	125	324
[5"]	125	91	106	131	150	172	187	647
6"	150	114	151	174	204	227	257	647
8"	200	136	181	227	272	324	370	906
10"	250	197	249	324	370	437	498	1.295
12"	300	257	362	423	528	664	777	2.589
14"	350	355	558	641	762	920	1.094	2.589
16"	400	506	739	973	1.161	1.297	1.448	5.179
18"	450	649	814	1.048	1.312	1.606	2.036	5.179
20"	500	830	1.064	1.387	1.667	2.247	2.624	10.357
24"	600	980	1.244	1.712	2.141	2.910	3.619	10.357

## Torque values (Nm) metal seated butterfly valves \*

Size		ΔP (bar)						
NPS	DN	0	5	10	15	20	25	MAST
2"	50	30	38	46	50	58	64	163
[2.½"]	65	36	44	60	79	98	114	163
3"	80	44	55	68	91	108	129	324
4"	100	60	79	94	121	137	167	324
[5"]	125	84	108	119	140	163	191	647
6"	150	106	130	154	179	204	246	647
8"	200	159	197	227	257	287	334	906
10"	250	204	257	310	362	445	528	1.295
12"	300	287	355	430	566	717	905	2.589
14"	350	415	520	649	784	958	1.094	2.589
16"	400	588	762	943	1.147	1.357	1.584	5.179
18"	450	694	852	1.109	1.387	1.697	2.209	5.179
20"	500	996	1.086	1.448	1.810	2.262	2.624	10.357
24"	600	1.177	1.357	1.674	2.262	3.137	4.674	10.357

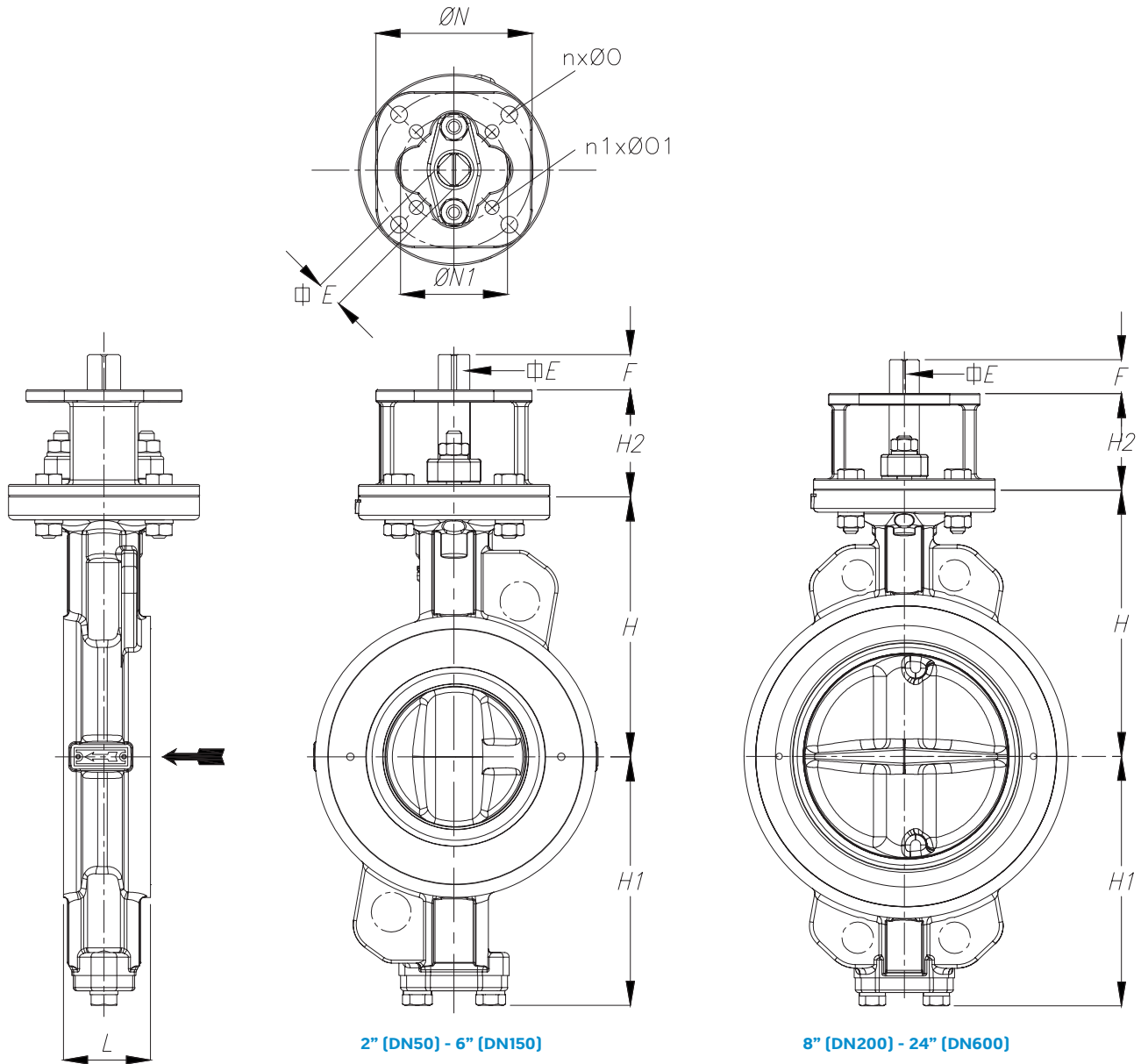
### \* Basic principles:

- Break To Open (BTO) and Break To Close (BTC) torque values without safety factor.
- For standard applications, like lubricating fluids, a safety factor of 1.3 must be applied for the selection of an actuator.
- For a gas or non-lubricating medium a safety factor of at least 1.5 must be applied for the selection of an actuator.
- Torque figures for Class 300 / PN40 valves on request

Consult your distributor for specific applications.

## High Performance Double Eccentric Butterfly Valves

Dimensions Series 91 | 2" [DN50] - 24" [DN600] Class 150/PN16 \*



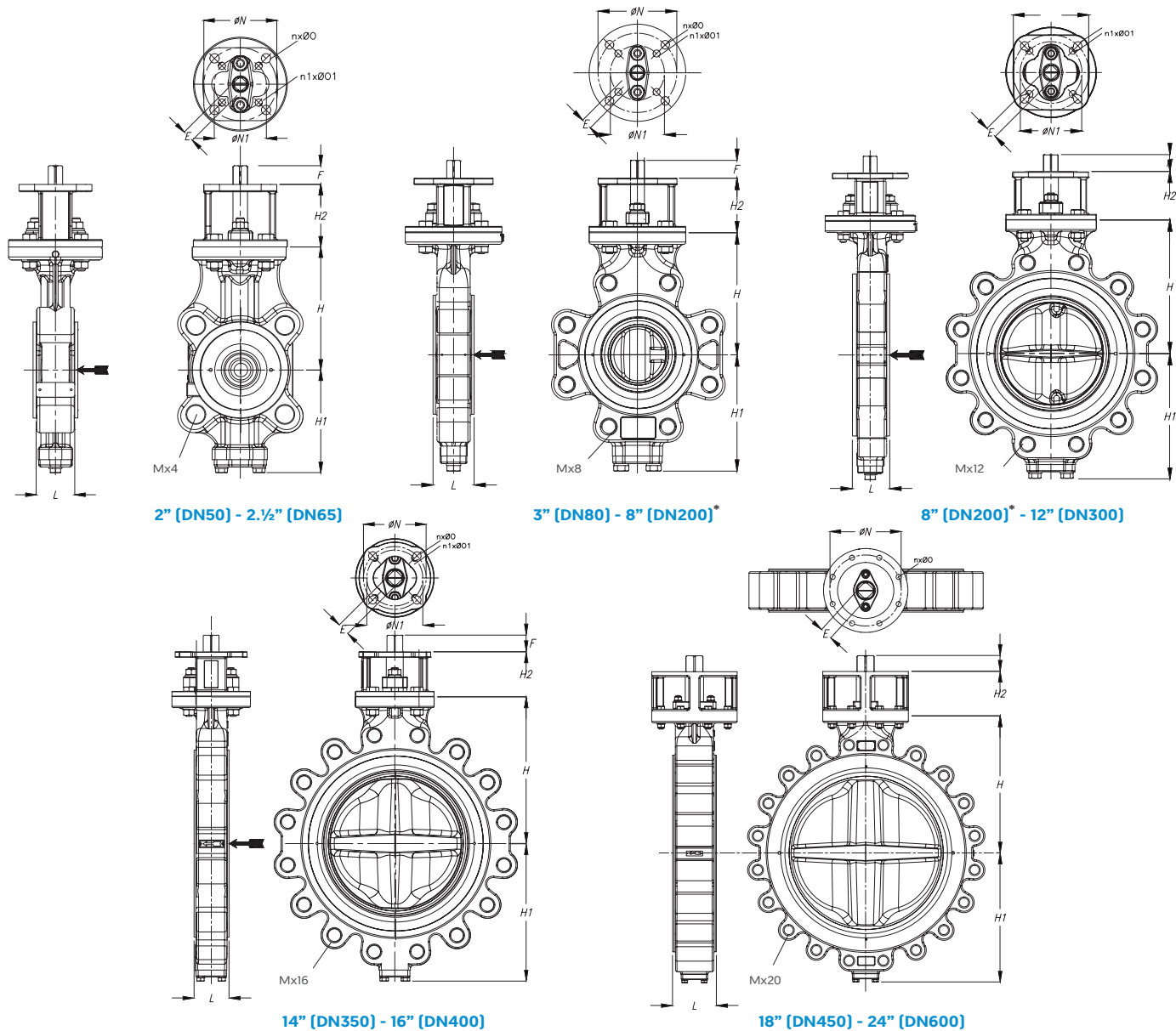
NPS	DN	E	□ F	H	H1	H2	L	ØN	n	ØO	ØN1	n1	ØO1	WEIGHT (kg)
2"	50	11	18	118	99	60	43	70	4	10	50	4	8	4
[2.½"]	65	11	18	125	110	60	46	70	4	10	50	4	8	5
3"	80	14	23	140	128	70	47	102	4	12	70	4	10	8
4"	100	14	23	157	150	70	53	102	4	12	70	4	10	10
[5"]	125	17	23	170	163	70	57	102	4	12	70	4	10	13
6"	150	17	23	185	176	70	56	102	4	12	70	4	10	14
8"	200	19	28	220	206	80	62	125	4	14	102	4	12	25
10"	250	22	28	260	238	80	68	125	4	14	102	4	12	33
12"	300	27	37	290	269	100	78	140	4	18	125	4	14	48
14"	350	27	37	326	306	100	78/92 <sup>1</sup>	140	4	18	125	4	14	64
16"	400	36	47	370	342	120	102	165	4	22	140	4	18	102
18"	450	36	47	395	370	120	114	165	4	22	140	4	18	129
20"	500	46	56	430	399	120	127	165	4	22	140	4	18	223
24"	600	46	56	490	455	150	154	165	4	22	-	-	-	273
24"	600	46	56	490	455	150	154	254	8	18	-	-	-	276

<sup>1</sup> 78mm according to EN 558 and 92mm according to API 609 Category B

\* Drawings for Class 300 / PN40 valves on request



## Dimensions Series 93 | 2" (DN50 - 24" (DN600) Class 150/PN16 \*\*



NPS	DN	E	□ F	H	H1	H2	L	ØN	n	Ø	ØN1	n1	ØO1	WEIGHT (kg)
2"	50	11	18	118	99	60	43	70	4	10	50	4	8	5
[2½"]	65	11	18	125	110	60	46	70	4	10	50	4	8	9
3"	80	14	23	140	128	70	47	102	4	12	70	4	10	10
4"	100	14	23	157	150	70	53	102	4	12	70	4	10	16
[5"]	125	17	23	170	163	70	57	102	4	12	70	4	10	19
6"	150	17	23	185	176	70	56	102	4	12	70	4	10	20
8"	200	19	28	220	206	80	62	125	4	14	102	4	12	33
10"	250	22	28	260	238	80	68	125	4	14	102	4	12	47
12"	300	27	37	290	269	100	78	140	4	18	125	4	14	77
14"	350	27	37	326	306	100	78/92 <sup>1</sup>	140	4	18	125	4	14	90
16"	400	36	47	370	342	120	102	165	4	22	140	4	18	138
18"	450	36	47	395	370	120	114	165	4	22	140	4	18	164
20"	500	46	56	430	399	120	127	165	4	22	140	4	18	189
24"	600	46	56	490	455	150	154	165	4	22			-	367
24"	600	46	56	490	455	150	154	254	8	18			-	370

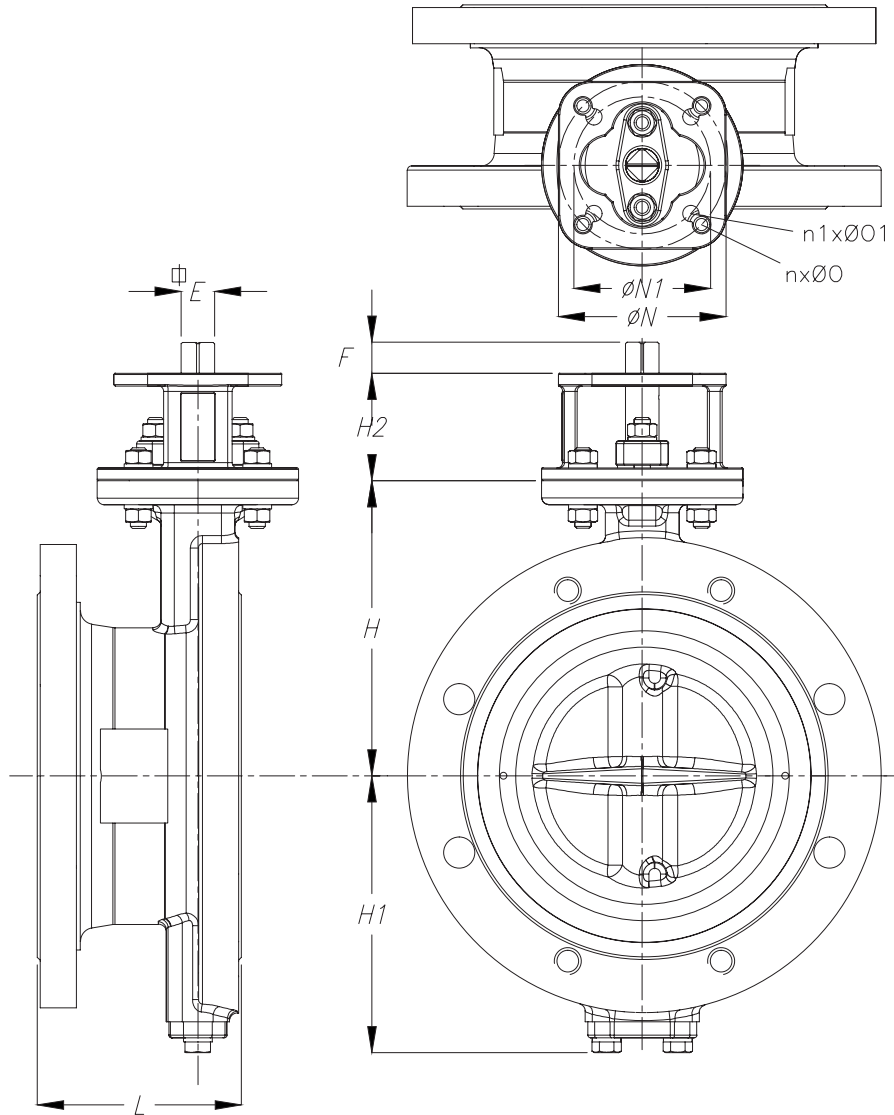
\* Class 150 in 8" has 8 bolt holes. DIN PN16 and PN25 have 12 bolt holes.

\*\* Drawings for Class 300 / PN40 valves on request

1) 78mm according to EN 558 and 92mm according to API 609 Category B

## High Performance Double Eccentric Butterfly Valves

Dimensions Series 94 | 3" [DN80] - 24" [DN600] Class 150/PN16 \*



NPS	DN	E	⌀	H	H1	H2	L [short] <sup>1</sup>	L [long] <sup>2</sup>	ØN	n	Ø0	ØN1	n1	Ø01	WEIGHT(kg) Short/Long
3"	80	14	23	140	120,5	70	114	180	102	4	12	70	4	10	12/15
4"	100	14	23	157	150	70	127	190	102	4	12	70	4	10	20/23
5"	125	17	23	170	163	70	140	200	102	4	12	70	4	10	24/28
6"	150	17	23	185	176	70	140	210	102	4	12	70	4	10	32/34
8"	200	19	28	220	206	80	152	230	125	4	14	102	4	12	40/56
10"	250	22	28	260	238	80	165	250	125	4	14	102	4	12	66/72
12"	300	27	37	290	269	100	178	270	140	4	18	125	4	14	101/118
14"	350	27	37	326	306	100	190	290	140	4	18	125	4	14	123/148
16"	400	36	47	370	342	120	216	310	165	4	22	140	4	18	179/214
18"	450	36	47	395	370	120	222	330	165	4	22	140	4	18	205/236
20"	500	46	56	430	399	120	229	350	165	4	22	140	4	18	218/293
24"	600	46	56	490	455	150	267	390	254	8	18	-	-	-	440/455

1) Short pattern according to API 609 Category B Table 3C and EN 558 series 13.  
2) Long pattern according to EN 558 series 14.

\* Drawings for Class 300 / PN40 valves on request





## Valve operation

### Lever

- Robust heavy duty lever (Fig. 4001G)
- Suitable for size 2" / DN50 up to 6" / DN150
- Lockable in every intermediate position
- Closed position is adjustable

### Gear box

- Robust ductile iron gear box
- Protection class IP65 (Fig. 4023) or IP68 (Fig. 4025)
- Visual position indicator
- Open and closed positions are adjustable

### Double acting or single acting pneumatic actuator

- Compact
- Suitable for high duty cycles
- Fast opening and closing times
- Few moving parts: Increases operational safety
- Modular design for easy mounting of accessories like limit switches, (NAMUR) solenoid valves and bus communication systems
- Can be combined with emergency operation (manual gearbox)
- Single acting actuators can be supplied with a spring opening or spring closing configuration for a fail safe function

### Electric actuator

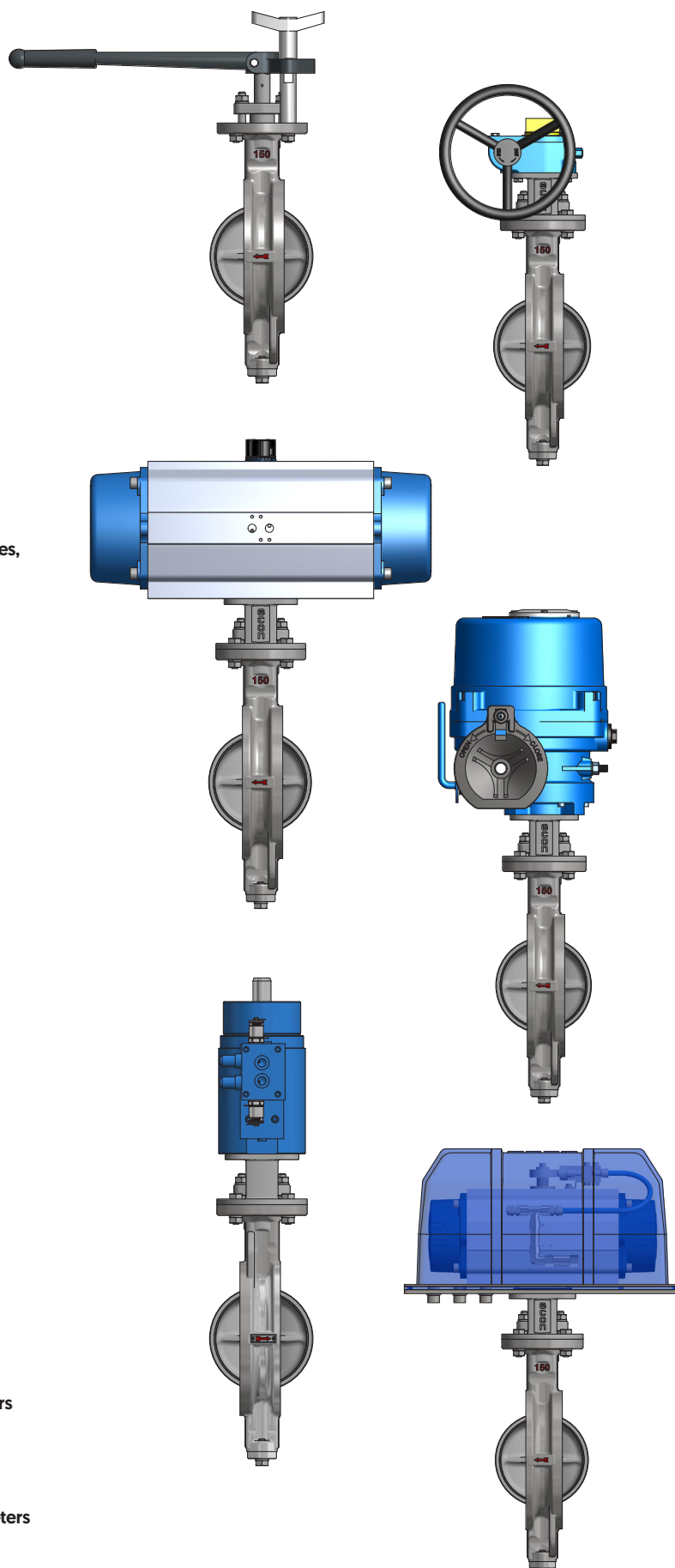
- Compact
- Wide range of voltage options
- Slow opening and closing times prevent water hammering
- Noiseless
- Self-locking reduction gear
- Integrated limit switches for feedback signals
- Emergency handwheel operator
- ISO 5211 mounting flange
- Modulating actuator available (4-20mA or 0-10VDC)
- IP68 version as an option
- EExd version as an option
- CAN-open fieldbus as an option

### Hydraulic actuator

- Extremely compact
- High output torque up to 16.200Nm
- Single and double acting versions
- Heavy duty
- High operational safety
- Modular design for easy mounting of accessories, like limit switches or visual open/close indication
- Modular design for additional hydraulic functionality
- Water tight enclosure
- ISO 5211 mounting flange
- Submersible enclosure up to 20 meters as an option
- Electro-hydraulic version as an option
- CAN-open fieldbus as an option for the electric-hydraulic actuators

### Actuator protector for pneumatic actuators

- Protects the actuator against highly corrosive environments
- Special version available for submerged applications up to 20 meters



### Pneumatic Actuators



#### Fig. 7901 and 7902

Pneumatic Rack & Pinion actuators are most commonly used for valve automation. The simple design make these actuators very reliable and cost effective. Econ® double and single acting actuators are characterized by fast operating times and have a guaranteed service life of 500.000 cycles.

#### Features

- Torque output up to 6.500Nm
- Single acting (Fig. 7901) and double acting (Fig. 7902)
- Lightweight aluminium body
- Stroke adjustment of plus and minus 5°
- Namur pilot valve connection
- Suitable for use in potentially explosive atmospheres according to 2014/34/EC (Ex II 2 G-D EX-c)
- VDI/VDE 3845 mounting connection for position feedback devices
- Multi-purpose valve position puck for P&F F25 and F31 dual sensors
- Hard anodized body and epoxy coated end-caps (EN-ISO 12944-2-C3)
- Ambient temperature: -30°C to +100°C

#### Options

- Complete SS316 version
- Limit switches for position feedback
- Stroke adjustment locking device
- Pilot solenoid valve in 24VAC or DC, 110VAC and 230VAC
- 4-20mA or 0-10VDC valve positioner for modulating services
- Ambient temperature: -60 up to +150°C
- Imperial version for North-American markets
- Fast acting actuators
- 100% stroke adjustment
- Coatings:
  - Completely epoxy coated
  - Completely hard anodized + ENP
  - Completely PTFE coated



Econ® Rack & Pinion double acting pneumatic actuator Fig. 7902



Econ® Rack & Pinion single acting pneumatic actuator Fig. 7901



Epoxy coated anticorrosive version



PTFE coated anticorrosive version



Hard anodized + ENP anticorrosive version



Fig. 79015 and 79025 completely made of SS316



Econ® switch boxes Fig. 79651 and 79653 for remote valve position feedback





# Electric Actuators



## Fig. 7907

In industrial and maritime environments electric actuators must be suitable to operate in the most challenging conditions. Therefore the Econ® Fig. 7907 electric actuator has a robust design and a hard anodized, polyester powder coated, enclosure. The Econ® electric actuators offer reliability, ease of use and good value for money.

### Features

- Torque output up to 3000Nm
- Power supply: 24VDC, 24VAC, 110VAC and 230VAC (50/60Hz)
- Limit switches: Open/close, SPDT, 250VAC 16A
- Extra limit switches for position feedback: Open/close, SPDT, 250VAC 16A
- Torque switches: Open/close, SPDT, 250VAC 16A
- Water tight enclosure according to IP67
- Thermal motor protection
- Anti-condensation heater
- Manual override
- Ambient temperature: -20°C to +70°C

### Options

- Power supply - 380VAC and 440VAC (50/60Hz)
- Explosion proof enclosure Eexd II B T4
- Water tight enclosure according to IP68 - 10m/72h
- Potentiometer unit (0~10kΩ)
- Position transmitter (output 4~20mA)
- Proportional control unit for modulating applications (input, output 0~10VDC, 4~20mA)
- CAN-open and Profibus fieldbus
- Fail safe battery
- Fire proof version 1.050 +/- 5°C / 50min
- Fire proof execution 250 +/- 5°C / 150min



Econ® butterfly valve Fig. 9130 with electric actuator Fig. 7907

# Helical Hydraulic Actuators



## Fig. 21201 and 21204

The Econ® helical hydraulic actuator is made for the most severe environments and can even be submerged into seawater continuously. This robust actuator is widely used in maritime applications. The actuator can be supplied both in single and double acting versions. With the Econ® powerpack these actuators can be converted into electro-hydraulic operated actuators. The modular system, including standardized connecting manifolds with built-in functionality, provides the possibility for advanced remote valve control in every application in every environment.

### Features

- Torque output up to 16.200Nm
- Single acting (Fig. 21201) and double acting (Fig. 21204)
- Robust and compact helical design
- Water tight enclosure
- Hydraulic pilot pressure: 135bar
- Ambient temperature: -20°C to +70°C
- Modular design for easy mounting of accessories, like connecting manifolds, hand pumps, limit switches or visual open/ close indication

### Options

- Hydraulic Positive Position Indication - HPPI (Fig. 21202)
- Constantly submersible enclosure up to 20m
- Electro-hydraulic version
- CAN-open fieldbus for the electro-hydraulic actuators



Econ® butterfly valve Fig. 9130 with electro-hydraulic helical actuator Fig. 21204+21302

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Flow Control

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