

Design Attributes

These series are quarter turn rotary valves, unidirectional, with rubber sealing, for stopping or regulating the flow of the service fluid when necessary. A metal disc with rubber sealing is positioned in the centre of the valve. The valve closes by turning the handwheel clockwise. The two offsets apply to the location of the shaft with respect to the center line of the bore and the center line of the disc/seat sealing surfaces. The first offset moves back the disc rotation axis from the disc sealing surfaces. This allows having a continuous sealing surface on the disc. The second offset moves away the disc rotation axis from the center-line of the valve body which provides interference free opening and closing of the valve.

Through their accurate design, with its double eccentric feature, and production, they offer a reliable and durable performance through the life span, with relative low torque and full seat tightness, even with certain presence of sediments, being widely used mainly in water works service.

The streamlined inner cavity efficiently lowers the resistance of the medium

The sealing shaft design protects the shaft from medium and increase the coaxiality to reduce the torque, together extending the service life of the shaft

Perfect seating performance through its T-type resilience sealing ring which is inlaid between disc and disc gland ring. When the disc is closed, sealing ring is extruded by disc gland ring to form two-way sealing. Pressure favors its sealing performance. Sealing ring can be replaced without disassembling the disc



St. steel seat embedded into the body to fit accurately, forming a corrosion-proof and wear resistance seal surface for a longer life span

Nameplate incl. batch no. for full traceability

Epoxy coat protection for body and disc

Shaft bushings support the disc effectively so the valves can be installed vertically up to certain size

Main Features

Valve design: EN 593, EN 12516

Nominal Pressure: PN16

Face to face length: EN 558 S14 (DIN 3202 F4)

Valve end connections: Flanged to EN 1092-2 type 21/B, PN16

Top flange: ISO 5211

Marking: EN 19. See arrow on body for flow direction

Pressure Tests: EN 12266-1

Seat leakage rate: Rate A (full seat tightness)

Epoxy coating protection blue color similar to RAL5005. Min. average thickness 250 microns

Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC

Main Duties / Limits of use

Fresh water & neutral liquids of group 2*, acc. to Directive 2014/68/EU, Annex II table 9 up to category I

Neutral gases of group 2* acc. to Directive 2014/68/EU, Annex II table 7 up to category I

Table 7: PS 16 bar DN100-200

PS 13 bar DN250

PS 10 bar DN300-350

PS 6 bar DN400-500

Table 9: PS 16 bar DN100-1200 (Art.4-Parr.3 DN100-300)

TS: -10/80°C (NBR and Hypalon sealing), -10/110°C (EPDM sealing), -10/130°C (heat EPDM sealing), -10/170°C (Viton sealing)

Questions referring to chemical resistance, please consult us

*Classification of fluids (group 2) acc. to Directive 2014/68/EU, Article 13

Working pressure	16 bar	15,8 bar	15,5 bar	15,2 bar
Temperature	-10°C — 120°C	130°C	150°C	170°C

We recommend not to exceed maximum velocity as follows:

PN6: 2,5 m/s

PN10: 3 m/s

PN16: 4 m/s

Options

Drinking water approval, higher service pressure ratings and temperatures, other connections, other designs and approvals, limit switches, different actuation. Please consult us

Codification

Butterfly valve

V F 7 9 1 P G G N 0 0 0 5 0

V F : UNIWAT butterfly valve identification

BUTTERFLY TYPE

791 Double flange double eccentric

P With lever
R With worm gear
B Bare shaft
E Electric actuator

BODY

G Ductile iron JS1030 (GGG40)

DISC

G Ductile iron JS1030 (GGG40)
I St. steel CF8M (AISI 316)
A Cast steel WCB

SEAT

E EPDM
N NBR
V Viton
H Hypalon
F Heat EPDM

OPTIONS

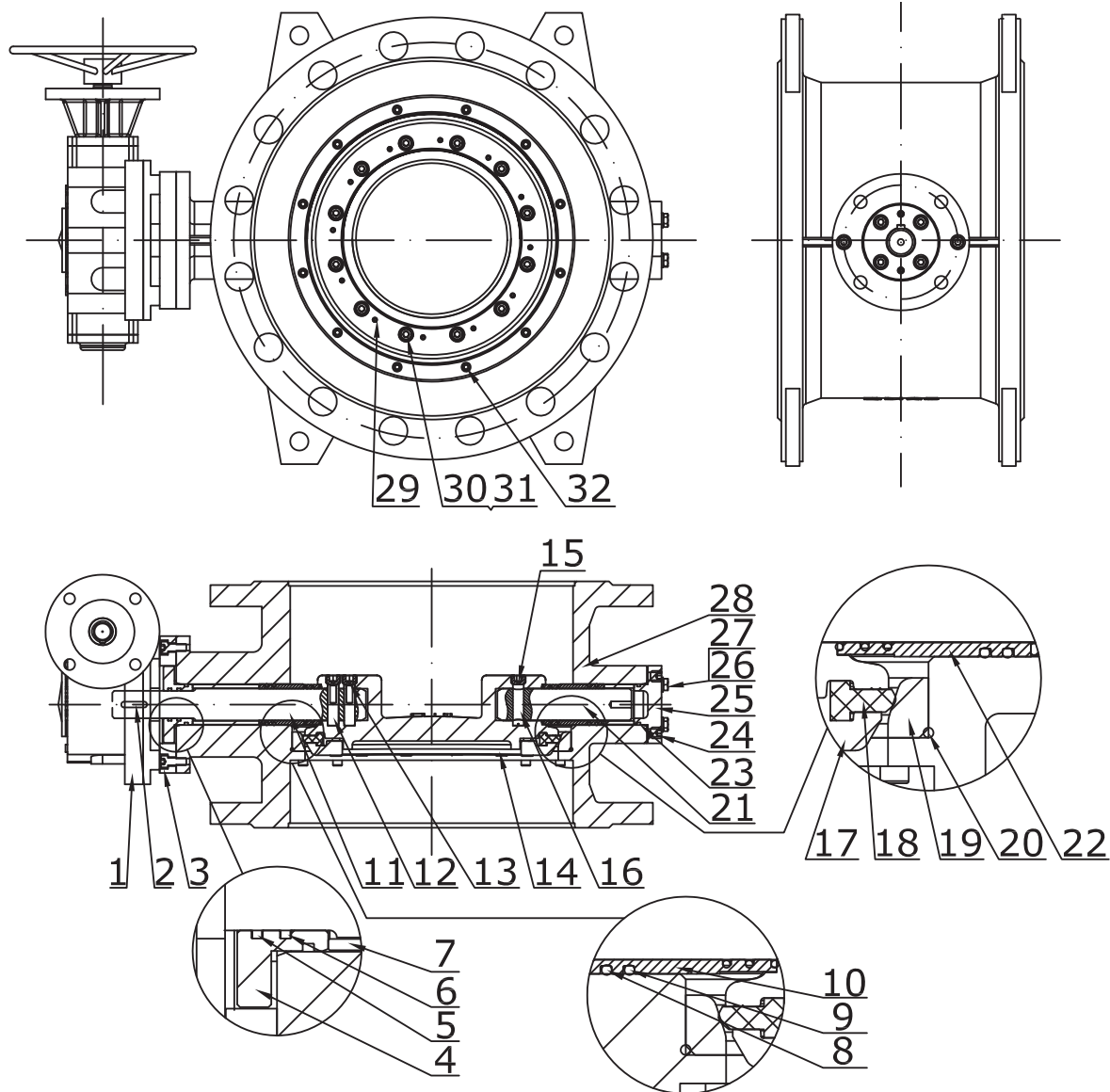
00 FTF EN 558 S14
13 FTF EN 558 S13
.. Other options

VALVE SIZE

050 DN50
300 DN300
910 DN1000
912 DN1200

Main Parts and Materials

TYPE VF791 DN100-300



Nº	PART	MATERIAL
1	GEAR BOX	-
2	KEY	Steel
3	CONNECTION	Ductile iron EN-JS1030 (GGG40)
4	GLAND	Ductile iron EN-JS1030 (GGG40)
5/ 6/ 8/ 9/ 20/ 23	O-RING	_E_ EPDM
		N NBR
		V Viton
		H Hypalon
		F Heat EPDM
7	SPACE WASHER	Steel
10	BUSHING	Copper
11	UPPERSHAFT	St. steel SS420
12	CYLINDRIC PIN	St. steel SS420
13	LOCKING SCREW	St. steel SS304
14	DISC	_G_ Ductile iron EN-JS1030 (GGG40)
		I St. steel CF8M (AISI 316)
		A Cast steel WCB
15	LOCKING SCREW	St. steel SS304
16	CYLINDRIC PIN	St. steel SS304

Nº	PART	MATERIAL
17	RETAINER	Steel Q235
18	DISC SEALING	_E_ EPDM
		N NBR
		V Viton
		H Hypalon
		F Heat EPDM
19	BODY SEALING	St. steel SS304
21	LOWER SHAFT	St. steel SS420
22	BUSHING	Copper
24	LOCKING SCREW	St. steel SS201
25	BOTTOM COVER	Ductile iron EN-JS1030 (GGG40)
26	SCREW	St. steel SS201
27	WASHER	St. steel SS201
28	BODY	Ductile iron EN-JS1030 (GGG40)
29	SOCKET SCREW	St. steel SS304
30	SOCKET HEAD BOLT	St. steel SS304
31	SPRING WASHER	St. steel SS304
32	SCREW	St. steel SS304

Main Valve Parameters

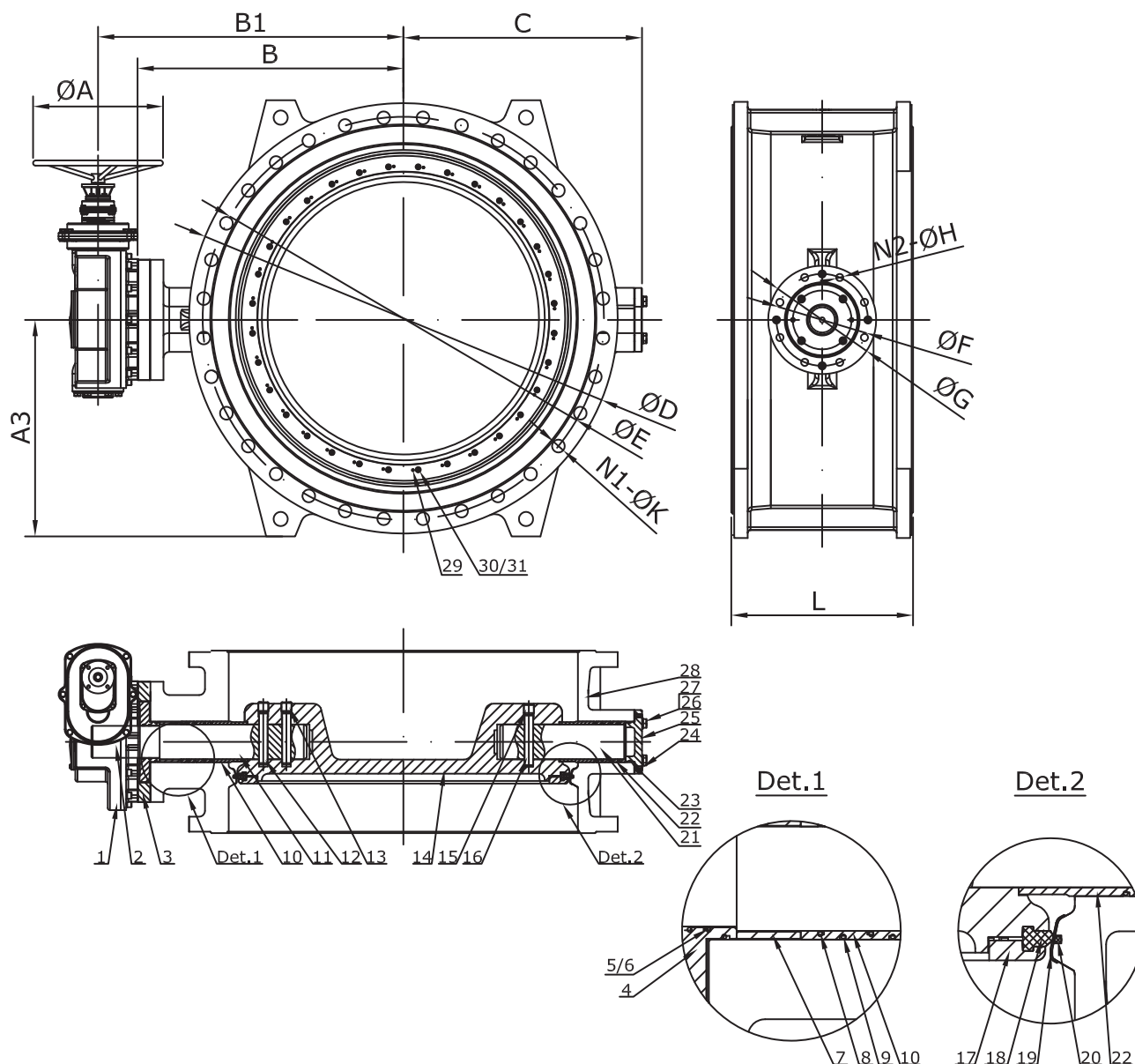
TYPE VF791 DN100-300

DN	100	150	200	250	300
A	120	120	200	300	300
A3	118	150	178	208	235
B	162	203	217	260	295
B1	220	263	275	315	355
C	122	122	164	190	251
ØD	220	285	340	405	460
ØE	180	240	295	355	410
N1	8	8	12	12	12
ØK	19	23	23	28	28
ØF	70	102	102	102	125
ØG	90	125	125	125	150
N2	4	4	4	4	4
ØH	10	12	12	12	12
L	190	210	230	250	270
Kvs-value	601	3642	7575	12339	20246
Approx. Weight	16	30	43	60	85

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

Main Parts and Materials

TYPE VF791 DN400-800



Nº	PART	MATERIAL
1	GEAR BOX	-
2	KEY	Steel
3	CONNECTION	Ductile iron EN-JS1030 (GGG40)
4	GLAND	Ductile iron EN-JS1030 (GGG40)
5/ 6/ 8/ 9/ 20/ 23	O-RING	_E_ EPDM
		N NBR
		V Viton
		H Hypalon
		F Heat EPDM
7	SPACE WASHER	Steel
10	BUSHING	Copper
11	UPPERSHAFT	St. steel SS420
12	CYLINDRIC PIN	St. steel SS420
13	LOCKING SCREW	St. steel SS304
14	DISC	_G_ Ductile iron EN-JS1030 (GGG40)
		I St. steel CF8M (AISI 316)
		A Cast steel WCB
15	LOCKING SCREW	St. steel SS304

Nº	PART	MATERIAL
16	CYLINDRIC PIN	St. steel SS304
17	RETAINER	Steel Q235
18	DISC SEALING	_E_ EPDM
		N NBR
		V Viton
		H Hypalon
		F Heat EPDM
19	BODY SEALING	St. steel SS304
21	LOWER SHAFT	St. steel SS420
22	BUSHING	Copper
24	LOCKING SCREW	St. steel SS201
25	BOTTOM COVER	Ductile iron EN-JS1030 (GGG40)
26	SCREW	St. steel SS201
27	WASHER	St. steel SS201
28	BODY	Ductile iron EN-JS1030 (GGG40)
29	SOCKET SCREW	St. steel SS304
30	SOCKET HEAD BOLT	St. steel SS304
31	SPRING WASHER	St. steel SS304

Information / restriction of technical rules need to be observed!
 Installation, Operating and Maintenance Manual can be downloaded at www.comeval.es

The engineer, designing a system or a plant, is responsible for the selection of the correct valve
 Product suitability must be verified, contact manufacturer for information

Main Valve Parameters

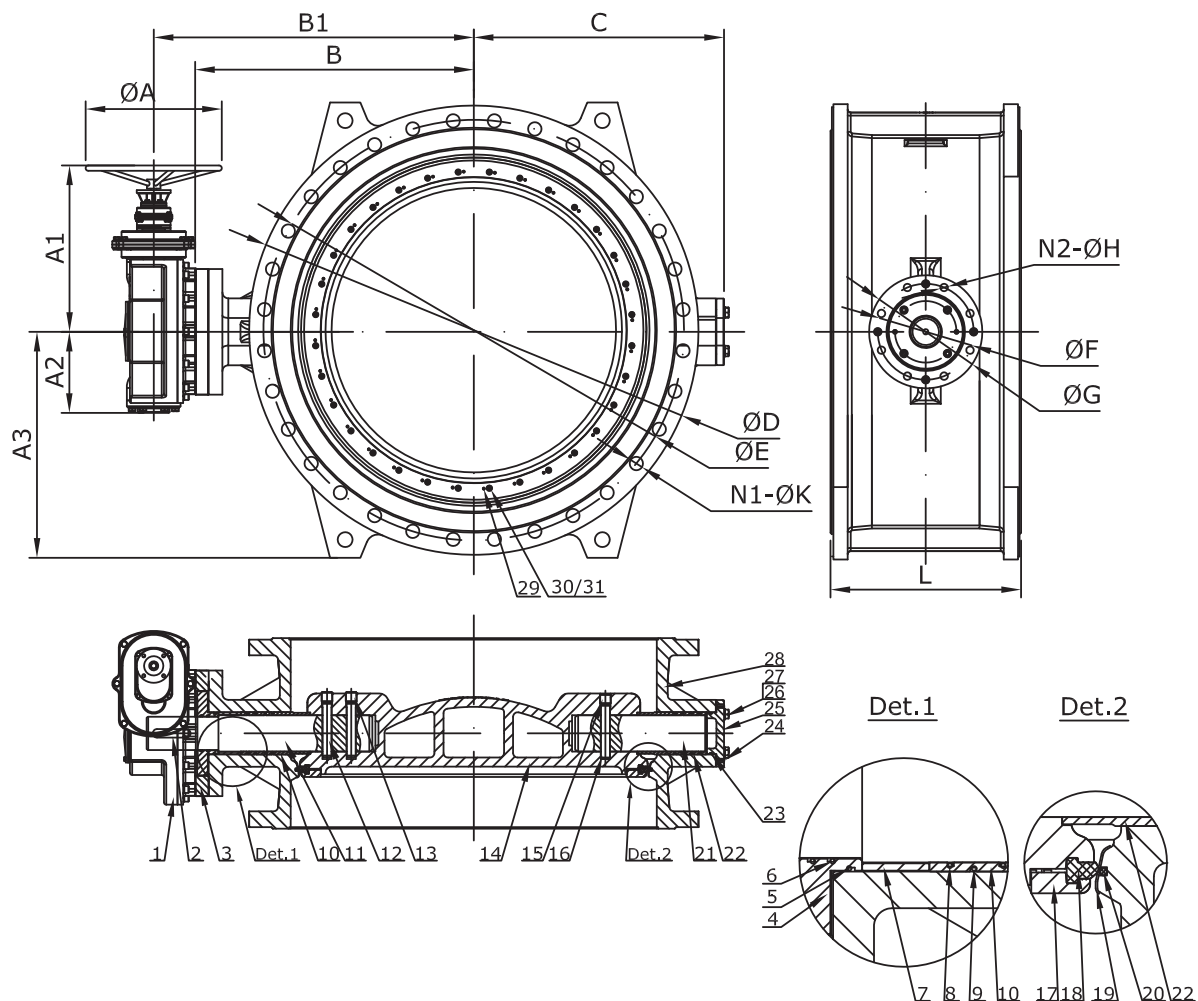
TYPE VF791 DN400-800

DN	400	450	500	600	700	800
A	385	385	385	385	385	385
A3	293	318	345	400	458	520
B	365	400	420	490	586	650
B1	445	503	510	560	557	745
C	300	379	370	418	537	595
ØD	580	640	715	840	910	1025
ØE	525	585	650	770	840	950
N1	16	20	20	20	24	24
ØK	31	31	34	37	37	41
ØF	165	165	165	165	254	254
ØG	210	210	210	210	300	300
N2	4	4	4	4	8	8
ØH	18	18	23	23	18	18
L	310	390	350	330	430	470
Kvs-value	38901	53690	58718	94372	127489	167579
Approx. Weight	155	237	300	460	670	775

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

Main Parts and Materials

TYPE VF791 DN 900-1200



Nº	PART	MATERIAL
1	GEAR BOX	-
2	KEY	Steel
3	CONNECTION	Ductile iron EN-JS1030 (GGG40)
4	GLAND	Ductile iron EN-JS1030 (GGG40)
5/ 6/ 8/ 9/ 20/ 23	O-RING	_E_ EPDM
		N NBR
		V Viton
		H Hypalon
		F Heat EPDM
7	SPACE WASHER	Steel
10	BUSHING	Copper
11	UPPERSHAFT	St. steel SS420
12	CYLINDRIC PIN	St. steel SS420
13	LOCKING SCREW	St. steel SS304
14	DISC	_G_ Ductile iron EN-JS1030 (GGG40)
		I St. steel CF8M (AISI 316)
		A Cast steel WCB
15	LOCKING SCREW	St. steel SS304

Nº	PART	MATERIAL
16	CYLINDRIC PIN	St. steel SS304
17	RETAINER	Steel Q235
18	DISC SEALING	_E_ EPDM
		N NBR
		V Viton
		H Hypalon
		F Heat EPDM
19	BODY SEALING	St. steel SS304
21	LOWER SHAFT	St. steel SS420
22	BUSHING	Copper
24	LOCKING SCREW	St. steel SS201
25	BOTTOM COVER	Ductile iron EN-JS1030 (GGG40)
26	SCREW	St. steel SS201
27	WASHER	St. steel SS201
28	BODY	Ductile iron EN-JS1030 (GGG40)
29	SOCKET SCREW	St. steel SS304
30	SOCKET HEAD BOLT	St. steel SS304
31	SPRING WASHER	St. steel SS304

Main Valve Parameters

TYPE VF791 DN900-1200

DN	900	1000	1200
ØA	385	385	500
A1	462	462	478
A2	235	235	235
A3	568	633	748
B	718	795	921
B1	842	919	1045
C	638	678	828
ØD	1125	1255	1485
ØE	1050	1170	1390
N1	28	28	32
ØK	41	44	44
ØF	298	298	356
ØG	350	350	415
N2	8	8	8
ØH	23	23	33
L	510	550	630
Kvs-value	220787	277097	402522
Approx. Weight	1087	1340	1996

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

Main Valve Parameters

Valve Torques

DN	Torque-PN6	Torque-PN10	Torque-PN16
100	95	100	110
150	108	180	245
200	150	300	447
250	200	410	718
300	270	540	1060
400	500	1270	1978
450	740	1880	2563
500	866	2200	3238
600	960	3800	4874
700	2191	7425	8219
800	5500	8852	11182
900	-	10000	14500
1000	-	12500	18000
1200	15406	22974	27029

Dimensions in mm subject to manufacturing tolerance / Torques in Nm

Remarks for Actuator Sizing:

The torque values given are for water or other non-viscous lubricating liquids at ambient temperature at full differential pressure.

Recommended safety factor to be applied:

30-40% for double acting pneumatic actuators

30-50% for single acting pneumatic actuators and electric actuators

For gases or viscous liquid please consult us.

There are three torques to be considered when selecting the proper actuator for a butterfly valve:

- 1) Seating Torque: The torque to displace a resilient seat and effect shutoff.
- 2) Bearing Torque: The torque required to overcome friction forces on the valve shaft bearing surfaces during valve travel angle (about 30% of seating torque)
- 3) Dynamic Torque: Due to fluid forces which tend to close the valve when the valve is partially open. This torque is due to the velocity of the fluid created by a differential pressure across the valve. Systems should be projected to avoid high velocities across the valve

Above given values are inclusive of the 3 torques, the actuator selected must provide the calculated torque over its total opening and closing travel angle.