Fluicon
VALVES

TRIPLE OFFSET METAL SEATED
PROCESS VALVES FOR SEVERE SERVICE

OMB
Group Company

The **Elifin Group** is active in the production of valves for the hydrocarbon and petrochemical processing plants, oil & gas off-shore and on-shore production and transportation and for the energy industry since 1973.

The aim of **Elifin Group** is to provide a whole range of valves (small diameter gate/globe/check valves, small and large diameter floaters and trunnion mounted ball valves, through conduit gate valves and triple offset butterfly valves) and offer the market a high quality product designed for severe service applications.

OMB Valves, headquartered in Cenate Sotto, Italy, has manufacturing operations in Europe, Asia and Middle East, supported by a worldwide distribution network.















Fluicon Valves has been established in November 2010 in Cenate Sotto, Italy, as part of Elifin Group, Holding Company of OMB Valves and Calobri.

Its strategic location among the OMB manufacturing complex allows Fluicon to access and benefit from a wide range of resources in terms of machining, equipment and expertise.

TRIPLE OFFSET METAL SEATED

The triple offset design was initially developed in the 70's and since then this valve has replaced many others in several process applications.

Thanks to its triple offset geometry and metal to metal sealing this valve is suitable for very severe service and therefore its range of applications in the process industry is constantly growing.

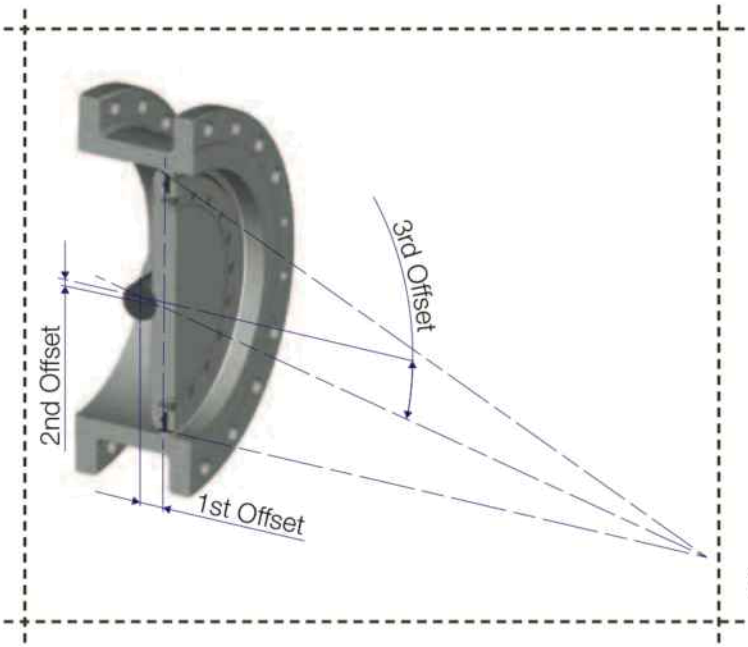
TRIPLE OFFSET METAL SEATED PROCESS VALVES FOR SEVERE SERVICE

FEATURES & BENEFITS

- Quarter-turn non-rubbing & frictionless sealing
- Inherently fire-safe to API 607
- Resilient solid or laminated seal assures ZERO-LEAKAGE according to API 598 “resilient seated” and API 6D
- Bi-directional torque seated design
- Stellite® hard-faced integral seat
- Optional forged body enhances material quality
- Optimized disc design for maximum flow capacity
- Anti Blow-Out stem design in full compliance with API 609
- Hardened bearings ensure hi-cycle service and long life
- Packing & bottom flange low fugitive emissions in compliance with ISO 15848 and API 622
- Ideal for direct replacement of gate, high performance butterfly, plug and ball valves

TRIPLE OFFSET CONCEPT

The triple offset design has been developed in order to completely eliminate friction between seat and seal throughout the entire rotation.



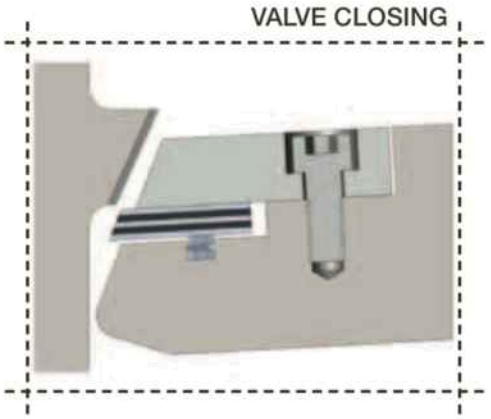
The first offset is given by placing the stem behind the disc, achieving a continuous contact between seat and seal.

The second offset is given by placing the stem centerline away from the pipe centerline, achieving a "camming" action that drives the seal away from the seat during rotation, thus removing any contact in the first few degrees of rotation.

Both seat and seal are then machined to match a conical profile with an inclined angle, adding the third offset to the well-known double offset design.
The contact angle between seat and seal is carefully selected in order to avoid galling while limiting the required seating torque.

RESILIENT METAL SEAL

Contact between seat and seal is achieved only in the fully closed position.
The torque applied to seat the valve generates radial forces that uniformly compress the metal seal ring.
The seal ring is therefore energized and adjusts to perfectly match the seat, achieving bidirectional bubble-tight shutoff.



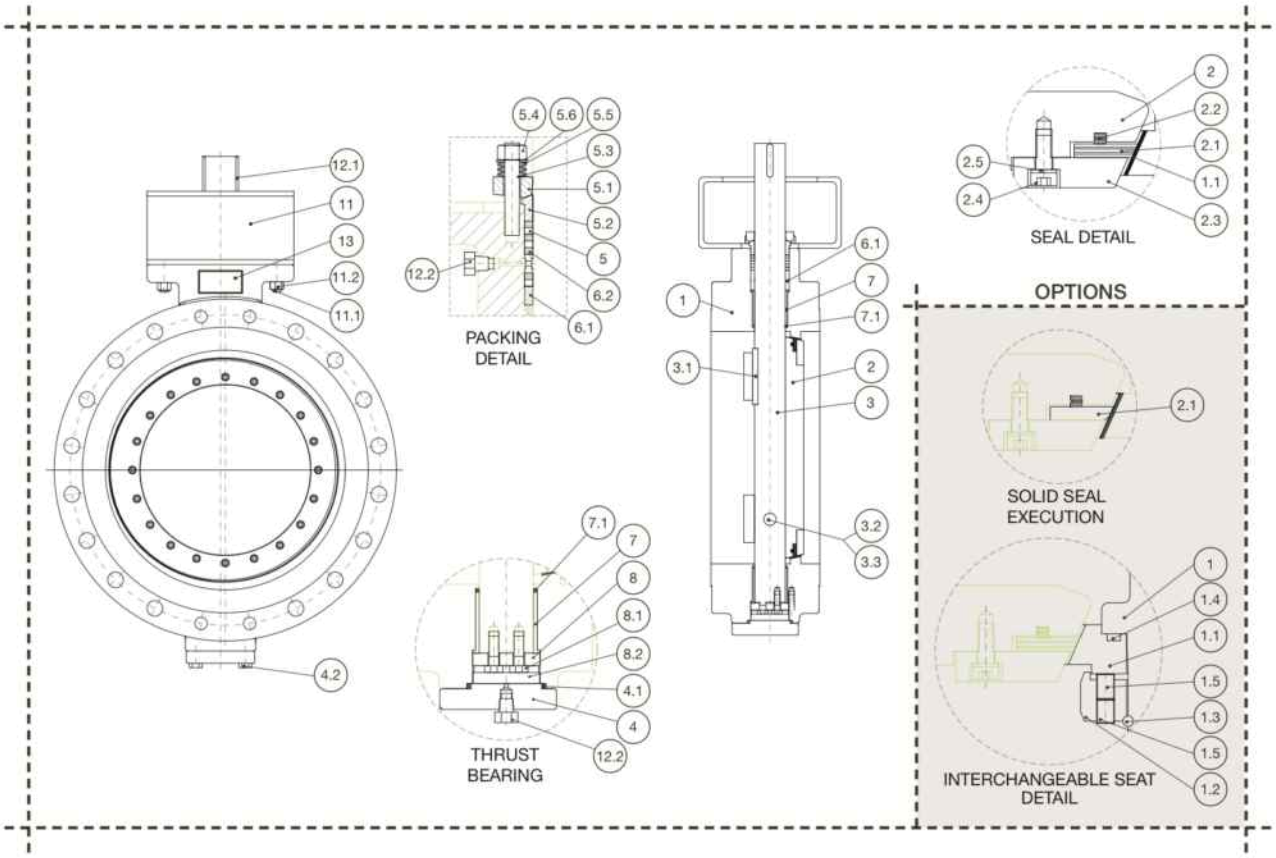
MATERIALS OF CONSTRUCTION

TYPICAL BILL OF MATERIALS

Item	Description	Carbon Steel Body	Stainless Steel Body	Recommended Spare Part
1	Body	ASTM A216 WCB or A516 Gr. 70	ASTM A351 CF8M or A240 Gr. 316	
1.1	Seat	Stellite® 21 weld overlay	Stellite® 21 weld overlay	
2	Disc	ASTM A216 WCB or A105 + ENP	ASTM A351 CF8M or A182 F316	
2.1	Seal Ring	UNS S31803 + Graphite	UNS S31803 + Graphite	•
2.2	Seal Gasket	AISI 316 + graphite	AISI 316 + graphite	•
2.3	Retainer Flange	ASTM A516 Gr. 70 or A105 + ENP	ASTM A240 Gr. 316 or A182 F316	
2.4	Retainer Flange Bolting	ISO 3506 A4	ISO 3506 A4	
2.5	Retainer Flange Bolt Washer	ISO 3506 A4	ISO 3506 A4	
3	Stem	UNS S41000	A479 Gr. XM19	
3.1	Disc Key	UNS S41000	UNS S20910	
3.2	Disc Pin	UNS S41000	UNS S20910	
3.3	Disc Pin Retainer	ASTM A194 Gr. 8M	ASTM A194 Gr. 8M	
4	Bottom Flange	ASTM A516 Gr. 70 or A105	ASTM A240 Gr. 316 or A182 F316	
4.1	Bottom Gasket	AISI 316 + graphite	AISI 316 + graphite	•
4.2	Bottom Flange Bolting	ASTM A193 B8M	ASTM A193 B8M	
5	Packing	Graphite	Graphite	•
5.1	Gland Flange	AISI 316	AISI 316	
5.2	Gland	AISI 316	AISI 316	
5.3	Gland Stud	ASTM A193 B8M	ASTM A193 B8M	
5.4	Gland Nut	ASTM A194 Gr. 8M	ASTM A194 Gr. 8M	
6.1	Spacer	AISI 316	AISI 316	
7	Bearing	AISI 316 hardened	AISI 316 hardened	
7.1	Bearing Protector	Graphite	Graphite	•
8	Thrust Bearing	AISI 316 hardened	AISI 316 hardened	
8.1	Thrust Bearing Bolting	ASTM A193 B8M	ASTM A193 B8M	
8.2	Locking Plate	AISI 316 hardened	AISI 316 hardened	
11	Bracket	Carbon steel	Carbon steel	
11.1	Bracket Stud Bolt	Alloy steel, HDG	Alloy steel, HDG	
11.2	Bracket Nut	Alloy steel, HDG	Alloy steel, HDG	
12.1	Gear Key	Alloy steel	Alloy steel	
13	Nameplate	Stainless steel	Stainless steel	

Please refer to page 8 and 9 for an exhaustive list of common materials of construction.

SECTIONAL DRAWING - BASIC CONFIGURATION



BASIC OPTIONS

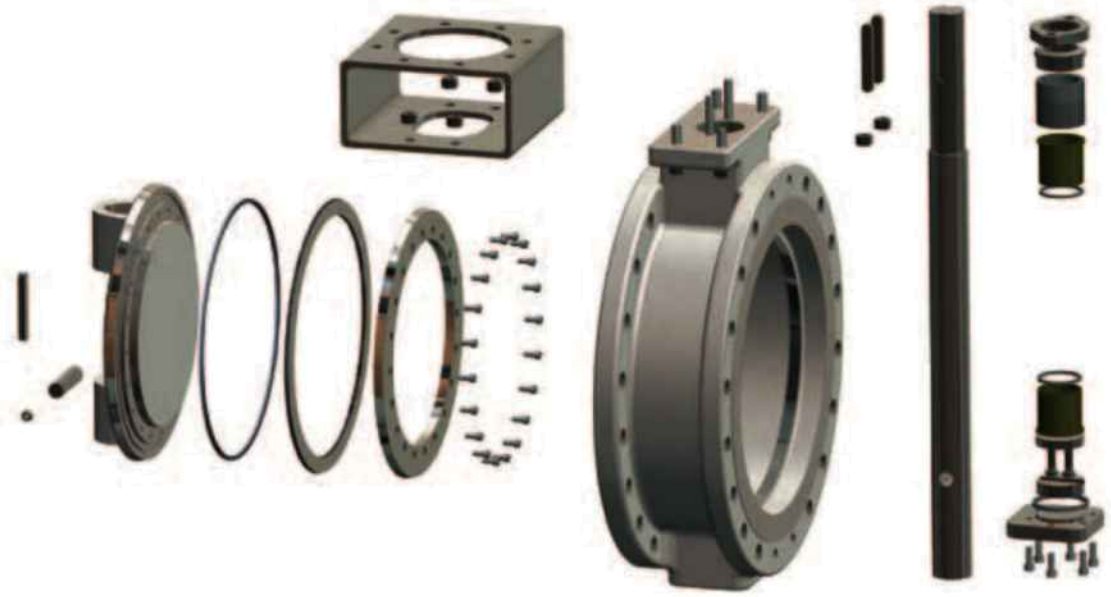
Item	Description	Carbon Steel Body	Stainless Steel Body	Recommended Spare Part
2.1	Solid Seal Ring	UNS S17400	UNS S20910	•
6.2	Lantern ring	AISI 316	AISI 316	
12.2	Plug	AISI 316	AISI 316	
5.5	Belleville springs	Alloy steel	Alloy steel	
5.6	Belleville springs washer	Alloy steel	Alloy steel	

INTERCHANGEABLE SEAT OPTION

Item	Description	Carbon Steel Body	Stainless Steel Body	Recommended Spare Part
1.1	Seat	ASTM A240 Gr. 316 or A182 F316 hardened	ASTM A240 Gr. 316 or A182 F316 hardened	•
1.2	Seat retainer flange	ASTM A516 Gr. 70 or A105	ASTM A240 Gr. 316 or A182 F316	
1.3	Seeger ring	AISI 316	AISI 316	
1.4	Seat gasket	Graphite	Graphite	
1.5	Seat retainer dowel	ASTM A193 B8M	ASTM A193 B8M	

COMMON BODY AND DISC MATERIALS

Material group	Common Name	Cast	UNS	Forging/Barstock	UNS	DIN	Plate
Carbon Steel	CS	A216 WCB	J03002	A105	K03504	1.0402	A516 Gr. 60
Low Temperature Carbon Steel	LTCS	A352 LCB	J03003	A350 LF2	K03011	1.0508	A516 Gr. 70
		A352 LCC	J02505	A350 LF2	K03011	1.0508	A516 Gr. 70
Low Alloy Steel	Chrome-Moly	A217 WC6	J12072	A182 F11	K11572	1.7335	A387 Gr. 11
		A217 WC9	J21890	A182 F22	K21590	1.7380	-
		A217 C5	J42045	A182 F5	K41545	1.7362	A387 Gr. 5
		A217 C12	J82090	A182 F9	K90941	1.7386	-
		A217 C12A	J84090	A182 F91	K90901	1.4903	-
Stainless Steel	Austenitic steel	A351 CF8	J92600	A182 F304	S30400	1.4301	A240 Gr. 304
		A351 CF3	J92500	A182 F304L	S30403	1.4306	A240 Gr. 304L
		A351 CF8M	J92900	A182 F316	S31600	1.4408	A240 Gr. 316
		A351 CF3M	J92800	A182 F316L	S31603	1.4404	A240 Gr. 316L
		A351 CF8C	J92710	A182 F347	S34700	1.4550	A240 Gr. 347
	Alloy 20®	A351 CN7M	N08007	B462/B473 N08020	N08020	2.4660	B463 N08020
	Duplex 2205	A995 Gr. 4A	J92205	A182 F51	S31803	1.4462	A240 S31803
	SAF® 2507	A995 Gr. 5A	J93404	A182 F53	S32750	1.4469	A240 S32750
	Zeron® 100	A995 Gr. 6A	J93380	A182 F55	S32760	1.4501	A240 S32760
	254 SMO	A351 CK3MCuN	J93254	A182 F44	S31254	1.4547	A240 S31254
Nickel-Copper	Monel® 400	A494 M35-1	N24135	B564/B164 N04400	N04400	2.4365	B127 N04400
Nickel-Iron Alloys	Incoloy® 825	A494 CU5MCuC		B564/B425 N08825	N08825	2.4858	B424 N08825
Nickel SuperAlloy	Inconel® 625	A494 CW-6MC	N26625	B564/B446 N06625	N06625	2.4856	B443 Gr. 1
	Hastelloy® C-276	A494 CW-12MW	N30002	B564/B574 N10276	N10276	2.4686	B575 N10276
Titanium	Titanium Gr. 2	B367 C2	R50400	B381/B348 Gr.2	R50400	3.7035	B265 Gr. 2
Copper Alloy	Ni-Al-Brz	B148 C95800	C95800	-	-	-	-
	Al-Brz	B148 C95500	C95500	-	-	-	-



COMMON TRIM MATERIALS

Material group	Common Name	Forging/Barstock	UNS	DIN
Stainless Steel	Nitronic® 50	A479 Gr. XM19	S20910	1.4565
	13Cr	A182 F6A/A479 Gr. 410	S41000	1.4006
	AISI 420	A276 Gr. 420	S42000	1.4021
	AISI 430	A276 Gr. 430	S43000	1.4016
	17-4PH®	A705/A564 Gr. 630	S17400	1.4542
	Alloy 20®	B462/B473 N08020	N08020	2.4660
	Duplex 2205	A182 F51	S31803	1.4462
	SAF® 2507	A182 F53	S32750	1.4469
	Zeron® 100	A182 F55	S32760	1.4501
	254 SMO	A182 F44	S31254	1.4547
	Greek Ascoloy®	A565 S41800	S41800	-
	-	A565 S42200	S42200	-
	Nitronic® 60	A276 S21800	S21800	-
	Alloy A-286	A638 Gr. 660	S66286	1.4980
Nickel-Copper	Monel® K500	B865 N05500	N05500	2.4375
Nickel-Iron Alloys	Incoloy® 825	B564/B425 N08825	N08825	2.4858
Nickel SuperAlloy	Inconel® 718	B637 N07718	N07718	2.4668
	Inconel® 625	B564/B446 N06625	N06625	2.4856
	Hastelloy® C-276	B564/B574 N10276	N10276	2.4686
Titanium	Titanium Gr. 5	B381/B348 Gr.5	R56400	3.7165
Copper Alloy	Ni-Al-Brz	B150 C63000 HR50	C63000	-

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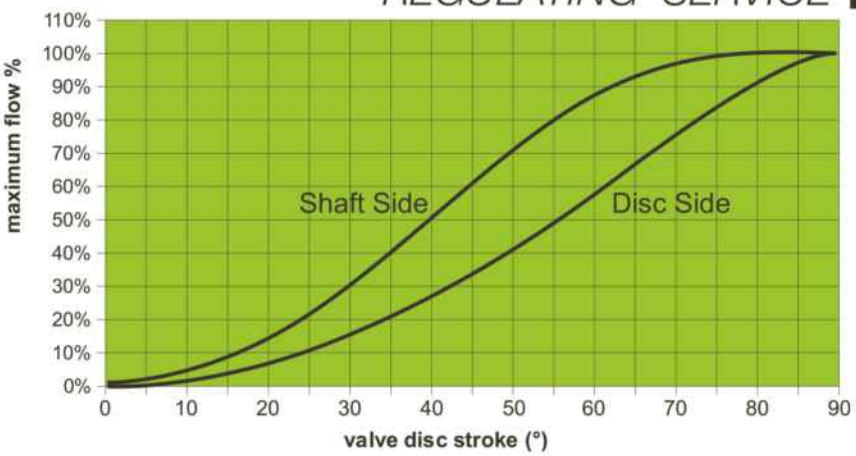
Saf 2507® is a registered trademark of Sandvik Intellectual Property Ab | NITRONIC® is a registered trademark of Armco Inc | 17-4 PH® is a registered trademark of AK Steel

REGULATING SERVICE

Flow Coefficient, commonly known as Cv (in imperial units) and Kv (in metric units) is a number that directly relates the flow through the valve to the valve pressure drop (Cv = 1,16 Kv)

As the valve disc moves from closed to open position, the percentage of maximum flow passing through the valve increases according to specific curves. Different curves are available depending on the valve geometry and on the side from which the flow enters the valve.
Nevertheless all curves show the same profile whose main characteristic is to approximate, for a wide valve disc stroke and within a close tolerance, an equi-percentage curve (where at equal percentage increments of the valve free passage correspond equal percentage increments of the flow characteristic).
This, added to the valve robust design, makes the Triple Offset Metal Seated valve the ideal choice also for regulating service. FLUICON Engineering Dept. has the tools and knowledge to support customers in valve sizing.



APPLICABLE STANDARDS

DESIGN
ASME B16.34
ASME VIII
DIN 3840
API 609
MSS SP-68
NACE

END CONNECTIONS
ASME
DIN
ISO
JIS

TESTING
API 598 zero leakage
API 6D
ISO 5208 Rate A
EN 12266 Rate A
BS 6755 Rate A
BS 6364

MARKING
EN 12266
MSS-SP-25

FACE TO FACE
API 609
MSS-SP-68
ISO 5752
ASME B16.10
EN 558

FIRE TEST
API 607
BS 6755
ISO/FDIS 10497

FUGITIVE EMISSIONS
TA-LUFT
SHELL SPE 77-312
ISO 15848
API 622

QUALITY
ISO 9001
PED 97/23/EC
SIL
GOST-R
CRN

Basic product range
3" to 96" ASME Cl. 150 to 900. Other dimensions or pressure ratings (Cl. 1500 or 2500) on request.

Basic temperature range
-60°C (-76°F) to 420°C (788°F)

Body style
Wafer, Lugged, Double Flanged, Double Flanged Gate, Butt-Welding, Butt-Welding Top-Entry.

Material of construction
Carbon, Alloy and Stainless Steel, Duplex and Super Duplex, 254 SMO, Aluminum Bronze, Nikel Alloys, Titanium, Special Alloys.

Cryogenic service (-196°C)
Extended bonnet to protect packing, solid seal ring and Stellite® seat, full cryogenic testing to international or customer specifications. Available also in TOP ENTRY configuration.

High temperature service (+815°C)
Extended bonnet to protect packing, stellite bearings and seat (optional tungsten or chromium carbides coatings).

Jacketed valve
Heated body jackets to prevent media crystallization.

Steam tracing
Shaft and disc tracing to prevent media crystallization in the bearings and seal ring area.

DOUBLE BLOCK & BLEED CONFIGURATION

The concerns and restrictions about safety and environment have increased the demand for valves that can guarantee positive isolation and verification of sealing integrity.

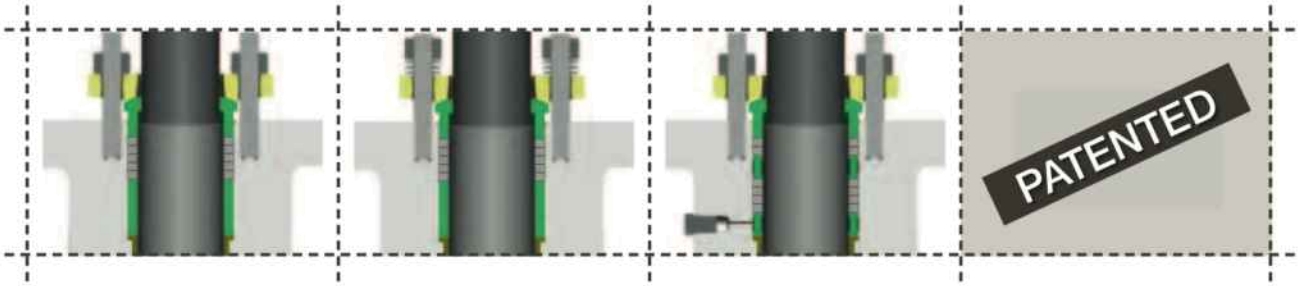
Fluicon double block & bleed valve has been designed to provide double isolation and integral bleed facility in one single, compact body, thus drastically reducing size, weight and joints/bolting as opposed to the common practice of connecting two isolation valves in series with a bleed valve located on a spool piece between them.

This valve incorporates all the features and benefits of Fluicon triple offset metal seated valve.

Face-to-face dimension allows direct replacement of gate valves without pipe modification.

EMISSION CONTROL OPTIONS

Fluicon offers a wide range of solutions to control fugitive emissions



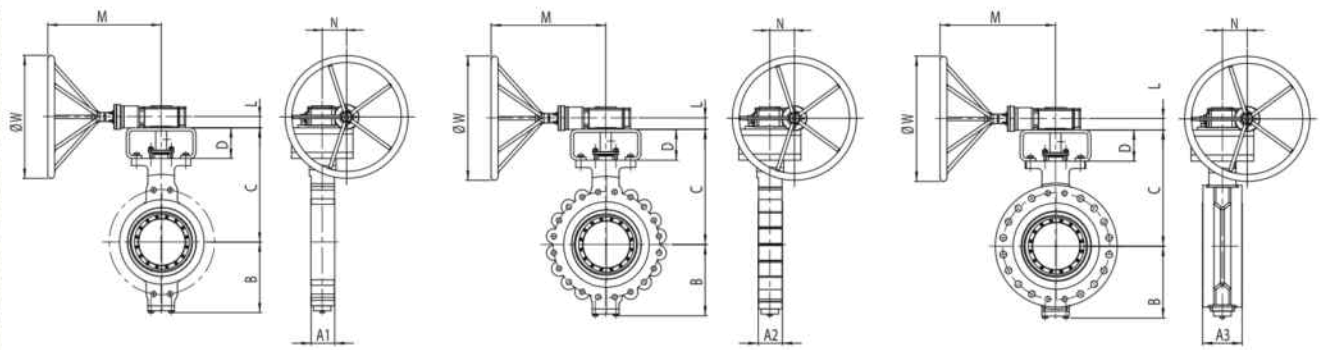
Graphite Packing
Tight control on stem and packing chamber walls finishing and material purity and density in the packing guarantee a leakproof sealing to EPA requisitions.

Live Loading
Bolts Loaded Type
(on request)
Two sets of Belleville springs keep gland flange pressure on packing for long periods of time without maintenance.

Lantern Ring
(on request)
The lantern ring option provides a way to verify proper operation of packing and a purge port for flushing.

ARMA-SEAL 310™
(on request)
This packing is used to comply with ISO 15848 and Shell SPE 77-312

GENERAL ARRANGEMENT TABLES - METRIC UNITS

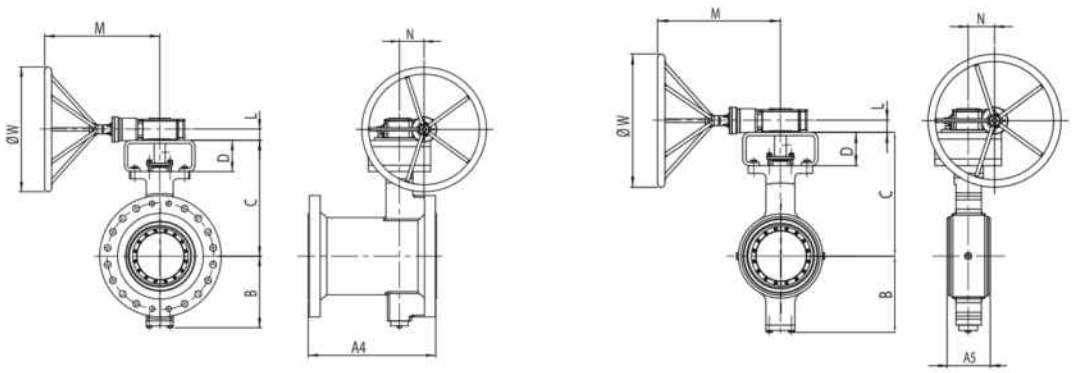


CLASS 150																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	Kg	Kg	Kg	Kg	Kg
3	48	48	114	203	180	132	280	80	40	185	55	250	24	24	32	34	26
4	54	54	127	229	190	140	300	80	40	185	55	250	25	25	34	37	31
5	57	57	140	254	200	164	314	80	40	212	67	300	26	26	41	46	34
6	57	57	140	267	210	181	345	100	40	212	67	300	26	30	55	60	39
8	64	64	152	292	230	198	380	100	40	212	67	300	43	52	83	95	62
10	71	71	165	330	250	249	410	100	50	221	86	300	59	72	108	115	80
12	81	81	178	356	270	279	477	130	50	371	86	700	83	99	141	152	105
14	92	92	190	381	290	308	520	130	62	353	86	700	123	142	186	201	142
16	102	102	216	406	310	348	545	130	53	360	119	700	171	193	244	263	185
18	114	114	222	432	330	381	560	130	53	484	119	700	227	256	310	324	234
20	127	127	229	457	350	416	615	150	53	484	119	700	281	336	365	407	299
22	127	127	229	508	350	447	644	150	63	560	130	700	347	385	438	485	367
24	154	154	267	508	390	476	670	150	63	560	130	700	412	512	545	579	436
26	210	210	292	559	430	513	705	150	90	607	162	700	503	612	644	701	584
28	229	229	292	610	430	544	775	200	63	560	130	700	675	755	788	824	726
30	230	230	318	610	430	567	815	200	90	607	162	700	748	867	897	938	801
32	241	241	318	660	470	612	865	200	90	607	162	700	803	986	1046	1097	900
34	241	241	330	711	470	646	892	200	96	585	246	700	948	1214	1274	1331	1066
36	241	241	330	711	510	679	930	200	96	585	246	700	1060	1324	1384	1526	1228
38	300	300	410	762	550	712	969	200	121	550	281	1000	1115	1459	1510	1622	1318
40	300	300	410	762	550	745	1011	200	138	622	340	1000	1324	1605	1725	1945	1455
42	300	300	410	813	550	778	1103	250	138	622	340	1000	1371	1651	1771	2050	1569
44	300	300	470	832	630	811	1148	250	138	622	340	1000	1811	2085	2235	2698	1945
46	350	350	470	851	630	844	1194	250	138	643	340	1000	1840	2123	2313	3224	2141
48	350	350	470	864	630	873	1280	300	138	643	340	1000	1903	2186	2386	3312	2269
50	365	365	470	890	630	909	1340	300	138	622	340	1000	2044	2318	2405	3575	2386
52	365	365	530	903	710	942	1390	300	138	622	340	1000	2317	2583	2833	3879	2649
54	390	390	530	918	710	975	1440	300	138	622	340	1000	2651	3109	3409	4119	3045
56	390	390	530	933	710	1007	1492	300	149	660	430	1000	3098	3786	4136	4586	3470
58	390	390	530	948	710	1039	1543	300	149	660	430	1000	3346	3892	4242	5022	3747
60	390	390	600	963	790	1071	1595	300	149	660	430	1000	3803	4257	4557	5396	4036

All dimensions in mm

CLASS 150	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	API 609	API 609	ISO 5752-13	ASME B16.10	ISO 5752-14
Over 24"	ISO 5752-16	ISO 5752-16	ISO 5752-13	ASME B16.10 Mft STD over 36"	ISO 5752-14

Body drilling & weight:
ASME B16.5 up to 24"
ASME B16.47 A- Series over 24"



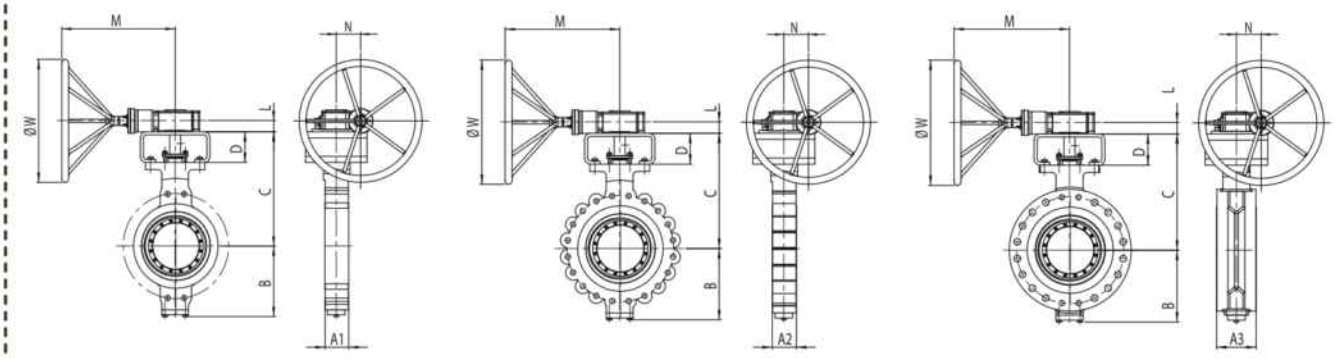
CLASS 300																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	Kg	Kg	Kg	Kg	Kg
3	48	48	114	283	180	132	280	80	40	185	55	250	28	32	34	38	29
4	54	54	127	305	190	140	300	80	40	185	55	250	30	36	38	45	33
5	57	57	140	381	200	167	320	80	40	212	67	300	40	50	53	65	43
6	57	57	140	403	210	192	365	100	40	212	67	500	48	57	76	85	52
8	64	64	152	419	230	233	426	130	50	371	86	500	74	94	107	119	80
10	71	71	165	455	250	272	455	130	64	367	119	630	100	123	143	180	110
12	81	81	178	502	270	313	495	130	53	484	119	700	147	187	212	290	162
14	92	92	190	762	290	345	558	150	53	540	119	700	217	252	302	407	228
16	102	102	216	838	310	382	590	150	63	560	130	700	294	354	404	614	315
18	114	114	222	914	330	425	670	200	63	560	130	700	340	450	485	820	357
20	127	127	229	991	350	475	709	200	90	607	162	700	441	581	611	1066	461
22	127	127	229	1092	350	505	746	200	90	607	162	700	503	643	673	1253	573
24	154	154	267	1143	390	556	785	200	90	607	162	700	721	841	911	1591	765
26	210	210	292	1245	430	576	818	200	96	585	246	700	817	1066	1137	1625	947
28	229	229	292	1346	430	610	853	200	138	622	340	1000	1150	1309	1387	1824	1179
30	230	230	318	1397	430	643	889	200	138	622	340	1000	1360	1530	1605	2025	1395
32	241	241	318	1524	470	676	974	250	138	622	340	1000	1496	1696	1796	2171	1615
34	241	241	330	1626	470	708	1009	250	138	622	340	1000	1608	1808	1908	2364	1879
36	241	241	330	1727	510	739	1045	250	138	622	340	1000	2020	2220	2300	2630	2162
38	300	300	410	1824	550	769	1080	250	138	622	340	1000	2196	2416	2466	2882	2465
40	300	300	410	1921	550	798	1165	300	149	660	430	1000	2505	2705	2805	3619	2789
42	300	300	410	2018	550	826	1200	300	149	660	430	1000	2581	2784	2877	3702	3133
44	300	300	470	2115	630	854	1235	300	149	660	430	1000	2894	3094	3194	4244	3497
46	350	350	470	2212	630	881	1270	300	149	660	430	1000	3197	3397	3597	4757	3882
48	350	350	470	2309	630	905	1305	300	163	792	513	1000	3561	3773	3955	5291	4286

All dimensions in mm

Body drilling & weight:
ASME B16.5 up to 24"
ASME B16.47 A- Series over 24"

CLASS 300	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	API 609	API 609	ISO 5752-13	ASME B16.10	ISO 5752-14
Over 24"	ISO 5752-16	ISO 5752-16	ISO 5752-13	ASME B16.10 Mft STD over 36"	ISO 5752-14

GENERAL ARRANGEMENT TABLES - METRIC UNITS

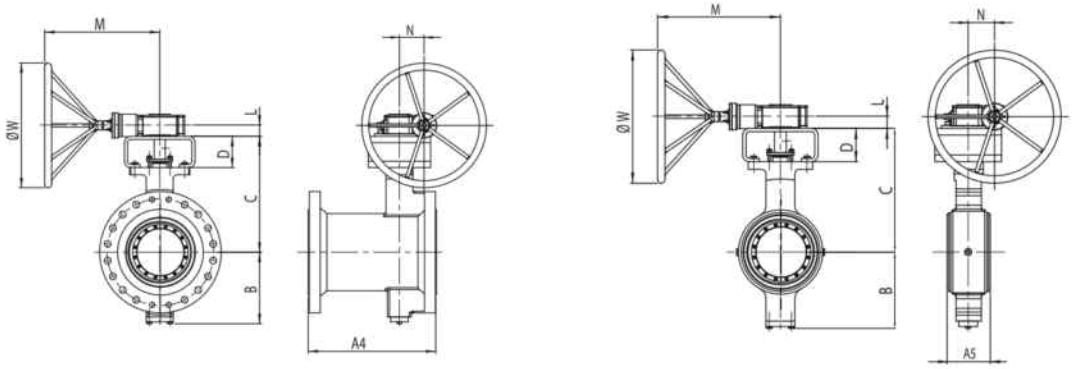


CLASS 600																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	Kg	Kg	Kg	Kg	Kg
3	54	54	180	356	180	158	217	100	40	212	67	300	30	34	38	42	32
4	64	64	190	432	190	180	275	120	50	221	86	300	40	57	67	73	47
5	78	78	200	508	200	203	313	120	50	371	86	500	51	75	105	108	65
6	78	78	210	559	210	229	425	140	62	337	95	500	68	94	134	147	84
8	102	102	230	660	230	267	445	130	53	354	119	700	115	155	175	192	140
10	117	117	250	787	250	326	513	150	53	484	119	700	161	216	299	334	196
12	140	140	270	838	270	363	605	200	63	560	130	700	227	299	416	560	264
14	155	155	290	889	290	389	620	200	63	560	130	700	325	444	576	912	364
16	178	178	310	991	310	450	793	200	90	607	162	700	415	669	857	1209	499
18	200	200	330	1092	330	495	862	200	96	585	246	700	533	822	1012	1377	652
20	216	216	350	1194	350	548	1095	250	96	585	246	700	687	1086	1273	1696	846
22	216	216	350	1295	350	582	1048	250	96	585	246	700	886	1294	1518	1994	1054
24	232	232	390	1397	390	626	1114	250	138	622	340	1000	1137	1631	1851	2306	1331
26	292	292	430	1448	430	669	1179	250	138	622	340	1000	1449	1922	2142	2552	1622
28	292	292	430	1549	430	712	1243	250	138	622	340	1000	1549	2109	2369	2887	1828
30	318	318	430	1651	430	755	1306	250	138	622	340	1000	2098	2618	2904	3391	2283
32	318	318	470	1778	470	798	1419	300	149	660	430	1000	2633	3195	3495	3920	2822
34	330	330	470	1930	470	840	1480	300	149	660	430	1000	3140	3640	3940	4490	3453
36	330	330	510	2083	510	881	1524	300	163	792	513	1000	3591	4261	4541	5112	3930

All dimensions in mm

Body drilling & weight:
ASME B16.5 up to 24"
ASME B16.47 A- Series over 24"

CLASS 600	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	API 609	API 609	ISO 5752-14	ASME B16.10	ISO 5752-14
Over 24"	ISO 5752-13	ISO 5752-13	ISO 5752-14	ASME B16.10	ISO 5752-14



CLASS 900																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	Kg	Kg	Kg	Kg	Kg
6	140	140	210	610	210	256	425	130	62	353	86	700	71	127	137	158	88
8	230	230	230	735	230	299	490	150	53	484	119	700	129	191	216	275	148
10	250	250	250	838	250	358	582	200	63	560	130	700	201	292	322	404	221
12	270	270	270	965	270	402	640	200	90	607	162	700	271	427	553	719	298
14	270	270	290	1029	290	455	700	200	90	607	162	700	349	668	865	1206	403
16	270	270	310	1130	310	508	817	250	96	585	246	700	457	934	1263	1593	552
18	300	300	432	1219	432	561	891	250	121	550	281	1000	618	1115	1492	1874	707
20	350	350	457	1321	457	615	971	250	138	622	340	1000	871	1497	2055	2495	981
22	350	350	483	1321	483	670	1058	250	138	622	340	1000	1020	1961	2443	3024	1203
24	350	350	508	1549	508	726	1201	300	138	622	340	1000	1268	2307	2876	3503	1538

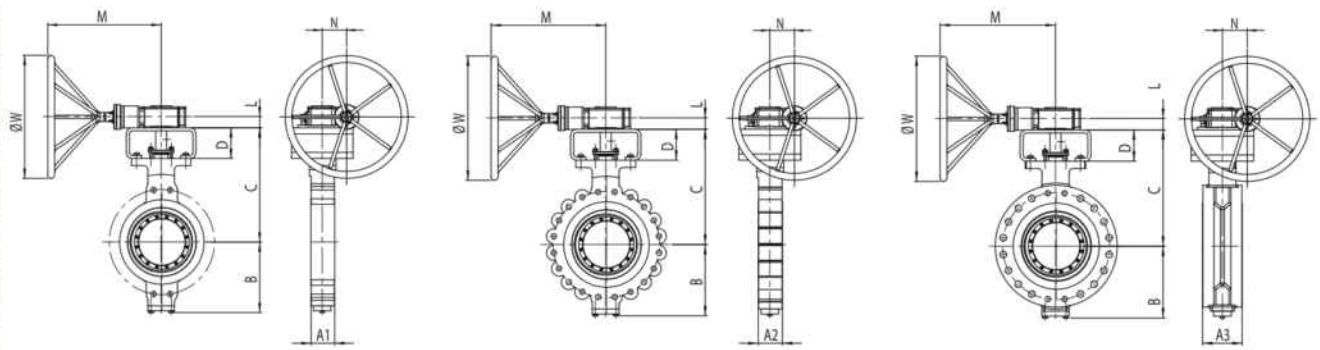
All dimensions in mm

Body drilling & weight:
ASME B16.5 up to 24"

CLASS 900	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	Mft. STD	Mft. STD	ISO 5752 S.14 up to 16" ISO 5752 S. 3 over 16"	ASME B16.10	ISO 5752 S.14 up to 16" ISO 5752 S. 3 over 16"

1. Face to face dimensions are in accordance with the latest editions of the standards
2. Please contact Fluicon for other available sizes and classes
3. Other end connections available on request
4. Fluicon riserves the right to change dimensions and weights without previous notice, according to project requirements

GENERAL ARRANGEMENT TABLES - IMPERIAL UNITS

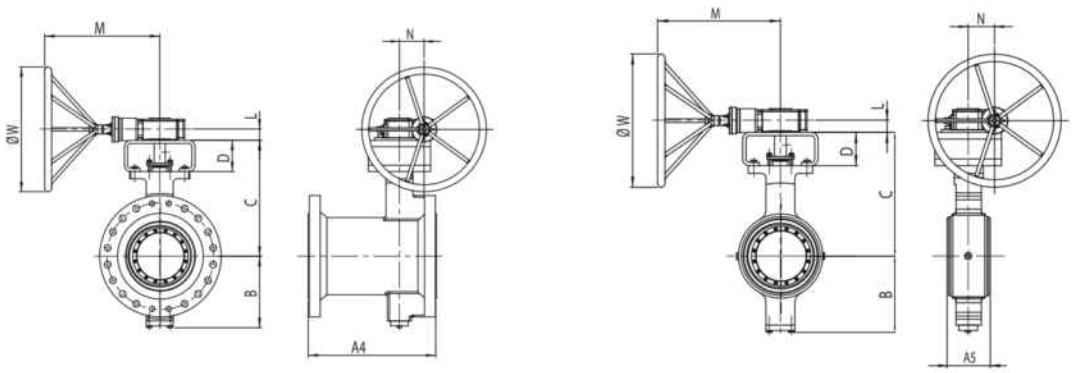


CLASS 150																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	lbs	lbs	lbs	lbs	lbs
3	1.9	1.9	4.5	8.0	7.1	5.2	11.0	3.1	1.6	7.3	2.1	9.8	52	52	71	75	58
4	2.1	2.1	5.0	9.0	7.5	5.5	11.8	3.1	1.6	7.3	2.1	9.8	54	56	75	81	69
5	2.2	2.2	5.5	10.0	7.9	6.4	12.4	3.1	1.6	8.3	2.6	11.8	58	58	90	101	76
6	2.2	2.2	5.5	10.5	8.3	7.1	13.6	3.9	1.6	8.3	2.6	11.8	58	67	121	132	86
8	2.5	2.5	6.0	11.5	9.1	7.8	15.0	3.9	1.6	8.3	2.6	11.8	95	115	183	208	136
10	2.8	2.8	6.5	13.0	9.8	9.8	16.1	3.9	2.0	8.7	3.4	11.8	130	158	239	254	177
12	3.2	3.2	7.0	14.0	10.6	11.0	18.8	5.1	2.0	14.6	3.4	27.6	184	218	312	336	231
14	3.6	3.6	7.5	15.0	11.4	12.1	20.5	5.1	2.4	13.9	3.4	27.6	272	313	411	444	313
16	4.0	4.0	8.5	16.0	12.2	13.7	21.5	5.1	2.1	14.2	4.7	27.6	376	426	539	580	408
18	4.5	4.5	8.7	17.0	13.0	15.0	22.0	5.1	2.1	19.1	4.7	27.6	501	564	683	714	516
20	5.0	5.0	9.0	18.0	13.8	16.4	24.2	5.9	2.1	19.1	4.7	27.6	619	741	805	896	659
22	5.0	5.0	9.0	20.0	13.8	17.6	25.3	5.9	2.5	22.0	5.1	27.6	765	849	966	1069	809
24	6.1	6.1	10.5	20.0	15.4	18.7	26.4	5.9	2.5	22.0	5.1	27.6	908	1129	1202	1276	961
26	8.3	8.3	11.5	22.0	16.9	20.2	27.7	5.9	3.5	23.9	6.4	27.6	1110	1349	1420	1545	1288
28	9.0	9.0	11.5	24.0	16.9	21.4	30.5	7.9	2.5	22.0	5.1	27.6	1487	1664	1737	1817	1601
30	9.1	9.1	12.5	24.0	16.9	22.3	32.1	7.9	3.5	23.9	6.4	27.6	1649	1911	1978	2068	1765
32	9.5	9.5	12.5	26.0	18.5	24.1	34.1	7.9	3.5	23.9	6.4	27.6	1770	2174	2306	2418	1984
34	9.5	9.5	13.0	28.0	18.5	25.4	35.1	7.9	3.8	23.0	9.7	27.6	2090	2677	2809	2934	2349
36	9.5	9.5	13.0	28.0	20.1	26.7	36.6	7.9	3.8	23.0	9.7	27.6	2337	2920	3052	3364	2707
38	11.8	11.8	16.1	30.0	21.7	28.0	38.2	7.9	4.8	21.7	11.0	39.4	2459	3217	3329	3576	2906
40	11.8	11.8	16.1	30.0	21.7	29.3	39.8	7.9	5.4	24.5	13.4	39.4	2919	3538	3802	4288	3208
42	11.8	11.8	16.1	32.0	21.7	30.6	43.4	9.8	5.4	24.5	13.4	39.4	3023	3640	3904	4519	3459
44	11.8	11.8	18.5	32.8	24.8	31.9	45.2	9.8	5.4	24.5	13.4	39.4	3993	4596	4927	5947	4289
46	13.8	13.8	18.5	33.5	24.8	33.2	47.0	9.8	5.4	25.3	13.4	39.4	4056	4680	5099	7107	4720
48	13.8	13.8	18.5	34.0	24.8	34.4	50.4	11.8	5.4	25.3	13.4	39.4	4195	4819	5260	7301	5002
50	14.4	14.4	18.5	35.0	24.8	35.8	52.8	11.8	5.4	24.5	13.4	39.4	4506	5110	5303	7882	5261
52	14.4	14.4	20.9	35.6	28.0	37.1	54.7	11.8	5.4	24.5	13.4	39.4	5109	5695	6246	8552	5840
54	15.4	15.4	20.9	36.1	28.0	38.4	56.7	11.8	5.4	24.5	13.4	39.4	5844	6855	7516	9082	6712
56	15.4	15.4	20.9	36.7	28.0	39.6	58.7	11.8	5.9	26.0	16.9	39.4	6830	8347	9118	10110	7650
58	15.4	15.4	20.9	37.3	28.0	40.9	60.8	11.8	5.9	26.0	16.9	39.4	7377	8580	9352	11071	8262
60	15.4	15.4	23.6	37.9	31.1	42.2	62.8	11.8	5.9	26.0	16.9	39.4	8384	9385	10046	11896	8897

All dimensions in inches

CLASS 150	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	API 609	API 609	ISO 5752-13	ASME B16.10	ISO 5752-14
Over 24"	ISO 5752-16	ISO 5752-16	ISO 5752-13	ASME B16.10 Mft STD over 36"	ISO 5752-14

Body drilling & weight:
ASME B16.5 up to 24"
ASME B16.47 A- Series over 24"



CLASS 300

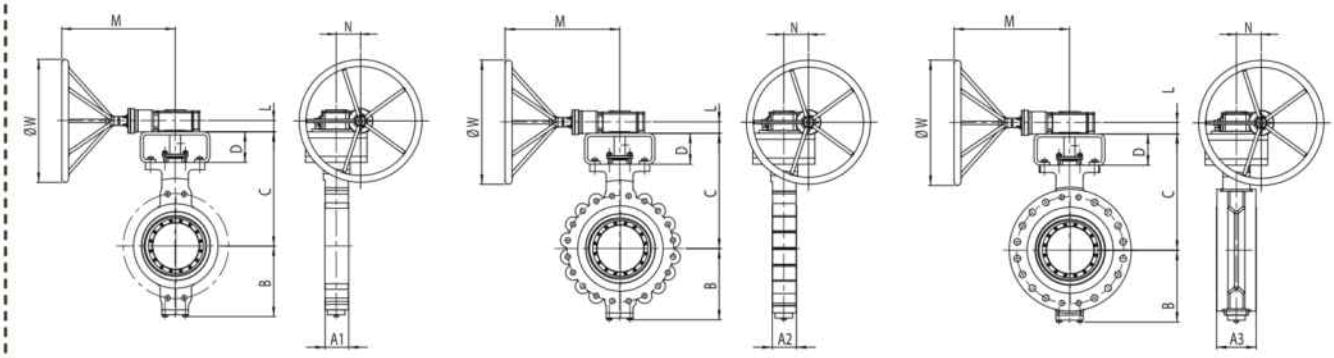
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	lbs	lbs	lbs	lbs	lbs
3	1.9	1.9	4.5	11.1	7.1	5.2	11.0	3.1	1.6	7.3	2.1	9.8	62	71	75	84	64
4	2.1	2.1	5.0	12.0	7.5	5.5	11.8	3.1	1.6	7.3	2.1	9.8	66	79	83	99	73
5	2.2	2.2	5.5	15.0	7.9	6.6	12.6	3.1	1.6	8.3	2.6	11.8	88	110	117	143	95
6	2.2	2.2	5.5	15.9	8.3	7.6	14.4	3.9	1.6	8.3	2.6	19.7	106	126	168	188	115
8	2.5	2.5	6.0	16.5	9.1	9.2	16.8	5.1	2.0	14.6	3.4	19.7	163	207	236	262	176
10	2.8	2.8	6.5	17.9	9.8	10.7	17.9	5.1	2.5	14.5	4.7	24.8	221	271	315	397	243
12	3.2	3.2	7.0	19.8	10.6	12.3	19.5	5.1	2.1	19.1	4.7	27.6	323	411	467	639	357
14	3.6	3.6	7.5	30.0	11.4	13.6	22.0	5.9	2.1	21.3	4.7	27.6	478	555	666	897	503
16	4.0	4.0	8.5	33.0	12.2	15.0	23.2	5.9	2.5	22.0	5.1	27.6	648	780	890	1353	694
18	4.5	4.5	8.7	36.0	13.0	16.7	26.4	7.9	2.5	22.0	5.1	27.6	750	992	1069	1808	787
20	5.0	5.0	9.0	39.0	13.8	18.7	27.9	7.9	3.5	23.9	6.4	27.6	973	1281	1347	2350	1017
22	5.0	5.0	9.0	43.0	13.8	19.9	29.4	7.9	3.5	23.9	6.4	27.6	1109	1418	1484	2763	1263
24	6.1	6.1	10.5	45.0	15.4	21.9	30.9	7.9	3.5	23.9	6.4	27.6	1589	1854	2008	3507	1687
26	8.3	8.3	11.5	49.0	16.9	22.7	32.2	7.9	3.8	23.0	9.7	27.6	1801	2350	2506	3582	2089
28	9.0	9.0	11.5	53.0	16.9	24.0	33.6	7.9	5.4	24.5	13.4	39.4	2535	2886	3058	4021	2599
30	9.1	9.1	12.5	55.0	16.9	25.3	35.0	7.9	5.4	24.5	13.4	39.4	2998	3373	3539	4465	3075
32	9.5	9.5	12.5	60.0	18.5	26.6	38.3	9.8	5.4	24.5	13.4	39.4	3298	3739	3959	4786	3561
34	9.5	9.5	13.0	64.0	18.5	27.9	39.7	9.8	5.4	24.5	13.4	39.4	3544	3985	4206	5211	4141
36	9.5	9.5	13.0	68.0	20.1	29.1	41.1	9.8	5.4	24.5	13.4	39.4	4453	4894	5070	5798	4766
38	11.8	11.8	16.1	71.8	21.7	30.3	42.5	9.8	5.4	24.5	13.4	39.4	4842	5327	5437	6354	5435
40	11.8	11.8	16.1	75.6	21.7	31.4	45.9	11.8	5.9	26.0	16.9	39.4	5523	5964	6185	7979	6149
42	11.8	11.8	16.1	79.4	21.7	32.5	47.2	11.8	5.9	26.0	16.9	39.4	5690	6138	6343	8161	6907
44	11.8	11.8	18.5	83.3	24.8	33.6	48.6	11.8	5.9	26.0	16.9	39.4	6380	6821	7041	9356	7710
46	13.8	13.8	18.5	87.1	24.8	34.7	50.0	11.8	5.9	26.0	16.9	39.4	7049	7490	7931	10488	8558
48	13.8	13.8	18.5	90.9	24.8	35.6	51.4	11.8	6.4	31.2	20.2	39.4	7851	8318	8719	11665	9450

All dimensions in inches

Body drilling & weight:
ASME B16.5 up to 24"
ASME B16.47 A- Series over 24"

CLASS 300	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	API 609	API 609	ISO 5752-13	ASME B16.10	ISO 5752-14
Over 24"	ISO 5752-16	ISO 5752-16	ISO 5752-13	ASME B16.10 Mft STD over 36"	ISO 5752-14

GENERAL ARRANGEMENT TABLES - IMPERIAL UNITS

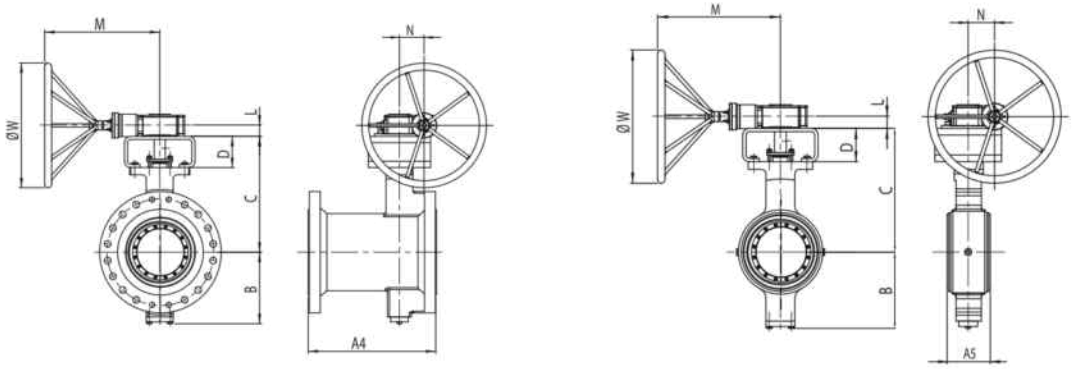


CLASS 600																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	lbs	lbs	lbs	lbs	lbs
3	2.1	2.1	7.1	14.0	7.1	6.2	8.5	3.9	1.6	8.3	2.6	11.8	66	75	83	93	71
4	2.5	2.5	7.5	17.0	7.5	7.1	10.8	4.7	2.0	8.7	3.4	11.8	88	125	147	161	103
5	3.1	3.1	7.9	20.0	7.9	8.0	12.3	4.7	2.0	14.6	3.4	19.7	112	166	232	238	144
6	3.1	3.1	8.3	22.0	8.3	9.0	16.7	5.5	2.4	13.3	3.7	19.7	150	206	295	324	184
8	4.0	4.0	9.1	26.0	9.1	10.5	17.5	5.1	2.1	13.9	4.7	27.6	254	342	386	423	309
10	4.6	4.6	9.8	31.0	9.8	12.8	20.2	5.9	2.1	19.1	4.7	27.6	355	476	659	736	432
12	5.5	5.5	10.6	33.0	10.6	14.3	23.8	7.9	2.5	22.0	5.1	27.6	500	659	917	1235	582
14	6.1	6.1	11.4	35.0	11.4	15.3	24.4	7.9	2.5	22.0	5.1	27.6	717	978	1269	2011	802
16	7.0	7.0	12.2	39.0	12.2	17.7	31.2	7.9	3.5	23.9	6.4	27.6	914	1475	1889	2665	1099
18	7.9	7.9	13.0	43.0	13.0	19.5	33.9	7.9	3.8	23.0	9.7	27.6	1174	1812	2231	3036	1437
20	8.5	8.5	13.8	47.0	13.8	21.6	43.1	9.8	3.8	23.0	9.7	27.6	1515	2395	2807	3739	1866
22	8.5	8.5	13.8	51.0	13.8	22.9	41.2	9.8	3.8	23.0	9.7	27.6	1954	2853	3347	4396	2324
24	9.1	9.1	15.4	55.0	15.4	24.6	43.9	9.8	5.4	24.5	13.4	39.4	2508	3596	4081	5084	2935
26	11.5	11.5	16.9	57.0	16.9	26.3	46.4	9.8	5.4	24.5	13.4	39.4	3194	4238	4723	5626	3577
28	11.5	11.5	16.9	61.0	16.9	28.0	49.0	9.8	5.4	24.5	13.4	39.4	3415	4650	5223	6365	4030
30	12.5	12.5	16.9	65.0	16.9	29.7	51.4	9.8	5.4	24.5	13.4	39.4	4626	5772	6402	7476	5034
32	12.5	12.5	18.5	70.0	18.5	31.4	55.9	11.8	5.9	26.0	16.9	39.4	5805	7044	7705	8642	6222
34	13.0	13.0	18.5	76.0	18.5	33.1	58.3	11.8	5.9	26.0	16.9	39.4	6922	8024	8686	9899	7612
36	13.0	13.0	20.1	82.0	20.1	34.7	60.0	11.8	6.4	31.2	20.2	39.4	7916	9394	10011	11270	8664

All dimensions in inches

Body drilling & weight:
ASME B16.5 up to 24"
ASME B16.47 A- Series over 24"

CLASS 600	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	API 609	API 609	ISO 5752-14	ASME B16.10	ISO 5752-14
Over 24"	ISO 5752-13	ISO 5752-13	ISO 5752-14	ASME B16.10	ISO 5752-14



CLASS 900																	
NPS	Face-to-Face					Other Valve Dimensions			Gear Dimensions				Weight (valve + gear)				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding	Centre to Bottom	Centre to top	Bracket	Base to HW Axis	Centre to HW	Centre to HW Axis	HW Diameter	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
	A1	A2	A3	A4	A5	B	C	D	L	M	N	ØW	lbs	lbs	lbs	lbs	lbs
6	5.5	5.5	8.3	24.0	8.3	10.1	16.7	5.1	2.4	13.9	3.4	27.6	157	279	302	348	194
8	9.1	9.1	9.1	28.9	9.1	11.8	19.3	5.9	2.1	19.1	4.7	27.6	284	421	476	606	326
10	9.8	9.8	9.8	33.0	9.8	14.1	22.9	7.9	2.5	22.0	5.1	27.6	443	644	710	891	487
12	10.6	10.6	10.6	38.0	10.6	15.8	25.2	7.9	3.5	23.9	6.4	27.6	598	941	1219	1585	657
14	10.6	10.6	11.4	40.5	11.4	17.9	27.5	7.9	3.5	23.9	6.4	27.6	769	1473	1907	2659	888
16	10.6	10.6	12.2	44.5	12.2	20.0	32.2	9.8	3.8	23.0	9.7	27.6	1008	2059	2784	3512	1217
18	11.8	11.8	17.0	48.0	17.0	22.1	35.1	9.8	4.8	21.7	11.0	39.4	1362	2458	3289	4131	1559
20	13.8	13.8	18.0	52.0	18.0	24.2	38.2	9.8	5.4	24.5	13.4	39.4	1920	3300	4530	5501	2163
22	13.8	13.8	19.0	52.0	19.0	26.4	41.6	9.8	5.4	24.5	13.4	39.4	2249	4323	5386	6667	2652
24	13.8	13.8	20.0	61.0	20.0	28.6	47.3	11.8	5.4	24.5	13.4	39.4	2795	5086	6340	7723	3391

All dimensions in inches

Body drilling & weight:
ASME B16.5 up to 24"

CLASS 900	E-to-E Dimensions				
	Wafer	Lugged	Double Flanged	Double Flanged Gate	Butt Welding
Up to 24"	Mft. STD	Mft. STD	ISO 5752 S.14 up to 16" ISO 5752 S. 3 over 16"	ASME B16.10	ISO 5752 S.14 up to 16" ISO 5752 S. 3 over 16"

1. Face to face dimensions are in accordance with the latest editions of the standards
2. Please contact Fluicon for other available sizes and classes
3. Other end connections available on request
4. Fluicon riserves the right to change dimensions and weights without previous notice, according to project requirements

Fluicon
VALVES

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TRIPLE OFFSET
METAL SEATED

CRYOGENIC TRIPLE OFFSET
METAL SEATED

CRYOGENIC TRIPLE OFFSET
METAL SEATED TOP-ENTRY

DUAL PLATE
CHECK VALVES

Local Agent:

FLUICON VALVES s.r.l - Via Europa - 24069 Cenate Sotto (BG) - Italy
Tel: +39 035 4256766 - Fax: +39 035 942638 - info@fluicon.com