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Eccentric Butterfly Valves

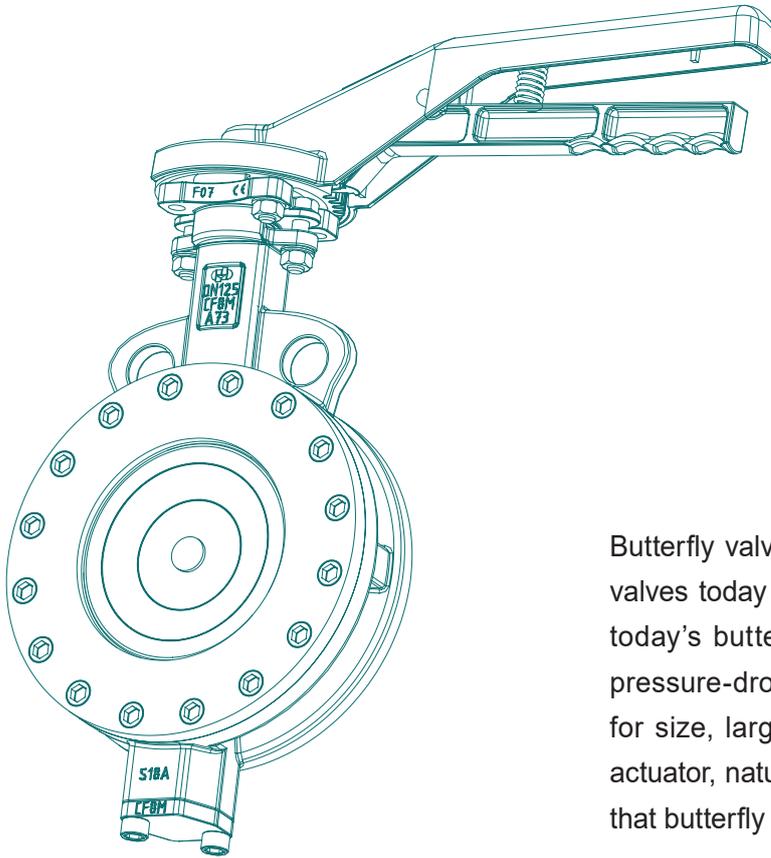


High Performance Butterfly Valves
Series A73 & A74 Wafer/Lug
Eccentric Butterfly

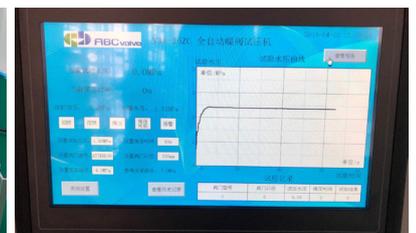
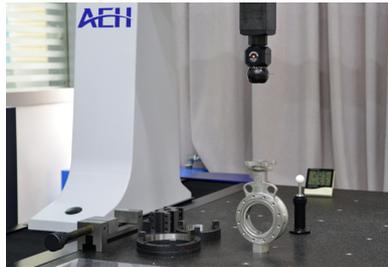
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Butterfly valves are one of the fastest growing types of control valves today for a number of reasons. The control provided by today's butterfly valve is more than adequate for many low-pressure-drop applications and other standard services. Size for size, larger flow coefficient, less frictional forces, smaller actuator, naturally high pressure-recovery factor, all these mean that butterfly valves are preferred in applications.



ABC valve focuses on Automatic Butterfly valve Control. Manufacturing systems and products are certified by ISO9001, BV Marine, PED CE, FDA, DVGW, WRAS, KTW, Fire Test Certification. These create good conditions for us to service customers worldwide with ABC high quality products at competitive price.



General information

Series A73 & A74 High performance butterfly valves provide cost-effective solution for a wide range of applications where bubble-tight shut-off is required. Utilizing an eccentric disc and offset shaft, the design incorporates the flexible-lip sealing system into a lightweight, compact body. The result is that **in many cases the valve can replace globe valve and gate valve yet easier operating, longer lasting and lower cost.**

Significant performance makes the valve widely used in many applications such as **Airport refueling, Hydrocarbon processing, HVAC, Air treatment, Chemical processing, Purified gas, Steam and vacuum services, Potable water, Powder and pulp processing,** etc.

Series	A73 Wafer eccentric butterfly valve	A74 Lug eccentric butterfly valve
Picture		
Connection	Wafer	Lug
Nominal diameter	DN50-DN600	
Max. working ressure	Up to 50bar (Class300)	
Standard working ressure	20bar (Class150), 50bar (Class300)	
Face to face	API 609 Category B, Wafer & Lug	
Top flange	ISO 5211	
Tightness check	ISO 5208 Category 3, API 598 Table 5	
Temperature range	-40°C to +200°C (Depending on pressure, medium and material)	
Operation	Hand level, gear box, pneumatic actuator, electric actuator	

A73 Flange accommodation			EN1092-1			ASME B16.5		AS2129		
Wafer type	Size	Pressure	PN16	PN25	PN40	Class150	Class300	Table D	Table E	Table F
A73-0	DN50-DN125	Class300	●	●	●	●	●	●	●	●
A73-1	DN150-DN250	Class150	●	●		●		●	●	
A73-2	DN150-DN250	Class300			●		●			●
A73-1	DN300-DN600	Class150	●			●		●	●	
A73-2	DN300-DN600	Class300		●	●		●			●

A73 & A74 Valve Design

Blow out proof one-piece shaft with position indication

Multiply V type rings of Graphite or RPTFE for safe shaft sealing

Extended valve neck allowing insulation

Body locating holes for proper installation and centering of the valve between flanges

Bolted seat retainer keeps seat stably and allows for easy change out

ISO5211 top flange together with stem square suitable for direct mounting of actuators

Easy-adjust gland accessible with actuator mounted in place

Retaining ring for both equally pressing on packing and stem blowout proof

Belleville washers on the gland nut offer reliable long lasting pressing on shaft packing

PTFE lined SS316 bearings support shaft and increase life service

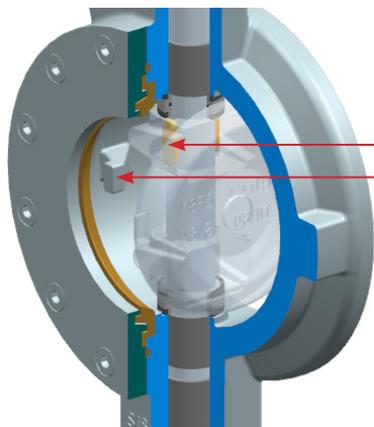
Self-energized seat resulting in longer life and reduced maintenance

Double offset disc reducing valve torque and friction

Thrust ring for anti-blowout and anti-static

Pin-less shaft to disc connection makes the valve convenient for parts replacement and reliable even under corrosion

Integral disc stop prevent disc from over travel



Key Component Features

Body



- System 5 corrosion protection coating for WCB, Passivation for CF8M
- Types: Wafer, Lug
- Multi-standard alignment holes suitable for mounting flanges: EN1092 PN16, PN25, PN40; ANSI 150LB, 300LB, AS2129 Table D, Table E, Table F
- ISO 5211 top flange integral on body according to valve torque
- Extended valve neck allowing insulation
- Extra wall thickness for stability of performance

Disc



- Double offset eccentric design limits seat contact through range of motion, reducing torque and friction between disc and seat
- High strength disc design ensures the valve stand on high pressure and frequent quick opening closing movement
- Keyway connection between disc and stem allow replacement of parts easy and avoid pin which may fail because of corrosion or frequent opening closing
- Reinforced disc hub makes the rotary of disc extra strong even for over operation
- Spherically machined disc provides good sealing performance and extended life for RPTFE seat

Seat



- Easy seat replacement
- One-piece self-energized seat without secondary components such as o-rings, springs or wires, resulting in longer life and reduced maintenance
- 25% carbon fiber reinforced PTFE makes the seat long life for regulating
- Trouble-free mounting between flanges of both slip-on and plate type
- Pressure assisting sealing design gives Bi-directional bubble tight shut off at full pressure (Valve must be installed with retaining ring upstream for dead end service)

Key Component Features

Shaft



- ISO 5211 driving square with arrow indicating disc position
- High-strength through shaft for stable disc support
- Keyway connection driving the disc fast and firmly
- Anti-blowout shaft and Anti-static design

Gland and Packing



- Easy-adjust gland accessible with actuator mounted in place
- Second blowout proof on stem
- Multiply V type rings of Graphite or RPTFE for stem packing

Seat Retainer

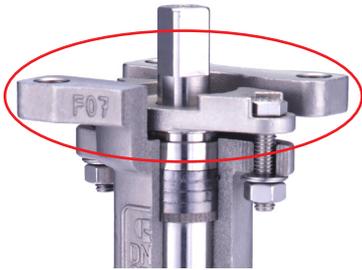


- Full-faced seat retainer is firmly attached by bolts located outside of sealing area, protecting the bolts from corrosion
- Flange face equipped with serrated spiral finish and is compatible with both flat and spiral wound gaskets
- Fully installed bolts keep sure the seat in consistent position under both factory test and user application

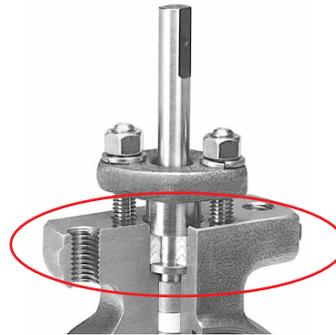
Design Advantages Comparing

A73/A74 Eccentric butterfly design

Conventional product design



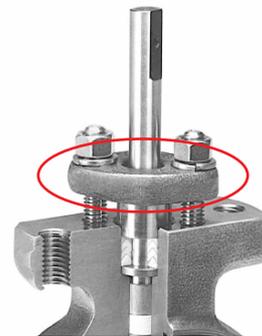
ISO5211 top flange integrally casted on valve body for direct mounting.



Bracket need to be used for actuating. Vibration or fail of actuating may happen.



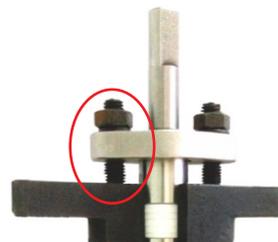
Easy-adjust gland bridge accessible with actuator mounted in place and incorporating a conical surface mating with spherical surface on packing press ring which compensates for uneven adjustment of gland nuts.



Difficult to adjust gland and uneven pressing of gland may happen.



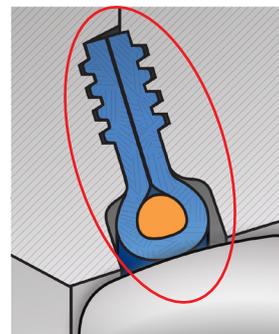
Belleville springs make the gland pressing self-adjusting.



For frequent opening and closing situations, gland nut need to be adjusted by manual quite several times, or excessive pressing on packing may happen.



One-piece self-energized seat without secondary component resulting in longer life and reduced maintenance. Higher sealing force will be created by higher pressure itself.



Energized by O-ring inside PTFE, O-ring may fail because of temperature or pressure.

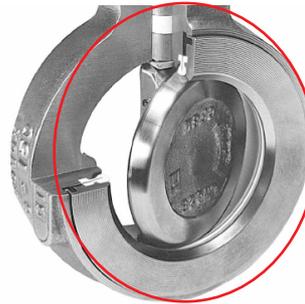
Design Advantages Comparing

A73/A74 Eccentric butterfly design



Seat retainer with bolts in full strength assures the seat in consistent position under both factory test and user application.

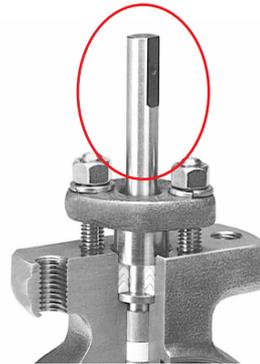
Conventional product design



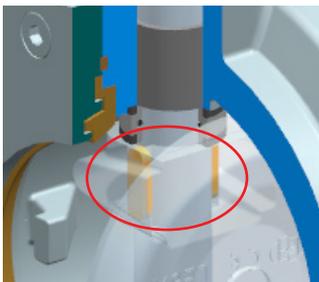
Retainer position depending on pressing from clamping flange, this may cause different station because of different installation or gasket.



ISO5211 stem square for direct standard actuating.



Special actuator or coupling needed.



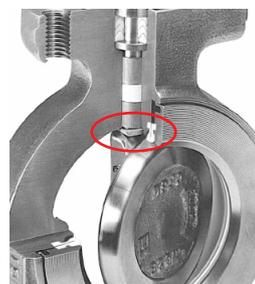
Keyway connection between disc and stem, replaceable and high strength.



Pins may fall off or break. Welded pins make stem and disc not replaceable.



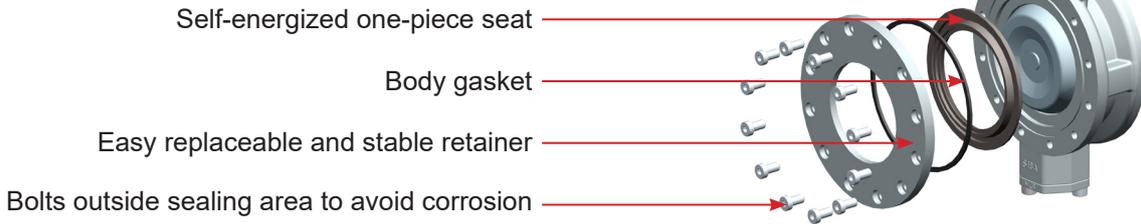
Washer seals brush away particles, avoid penetration of fluid into bushing and shaft clogging.



No seal between disc and body. Minerals, particles, corrosive scale may get into stem bushing and cause shaft clogging.

Superior A73/A74 Eccentric Butterfly Design

Easy Replaceable and Reliable Sealing



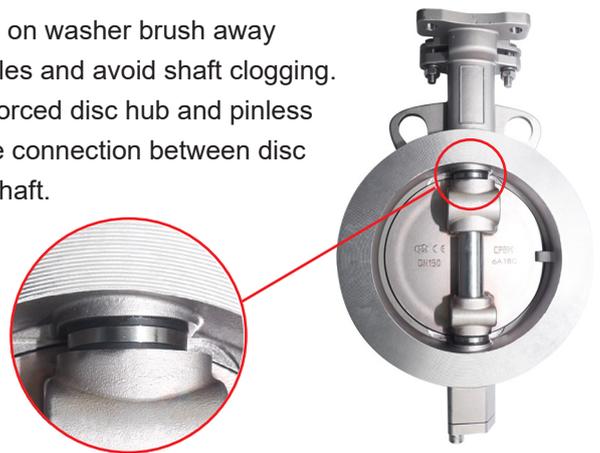
Easy and Convenient Gland Adjusting

Hexagon recess casted on gland bridge to hold the bolt head and adjusting of bolt not interfere with actuator.



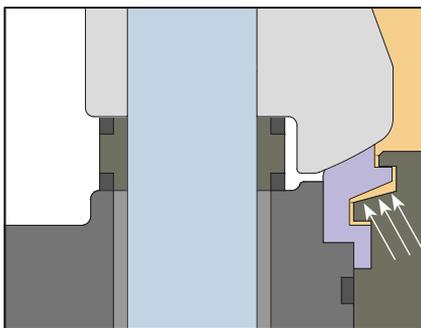
Safe Stem Driving

Seals on washer brush away particles and avoid shaft clogging. Reinforced disc hub and pinless stable connection between disc and shaft.

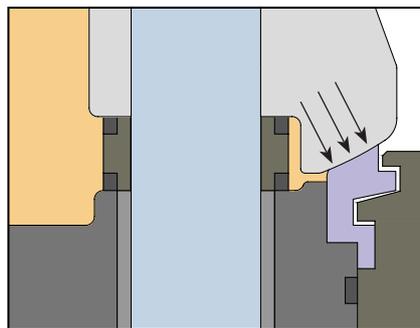


Self Bi-directional sealing

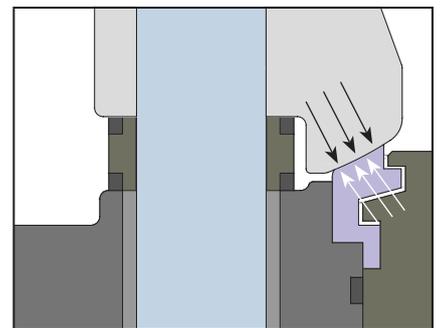
The eccentric seating motion limits sliding contact between the disc and seat, reducing wear and torque. The self-energizing seat is pressure assisted to ensure bubble tight sealing in both directions and does not rely on secondary components such as O-rings or springs. This simplifies maintenance and extends life.



Pressure on the retainer side forces the seat harder onto the disc, further improving the sealing. The higher the pressure, the tighter the sealing.



Pressure on the body side forces the disc further onto the self-energized seat, causing tighter shutoff. The seat is contained securely by the seat retainer to prevent excessive deflection.

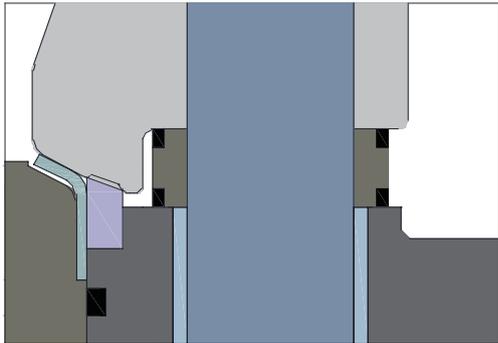


In the closed position, the self-energized seat is deflected by the disc, maintaining a positive sealing by pushing back against the disc.

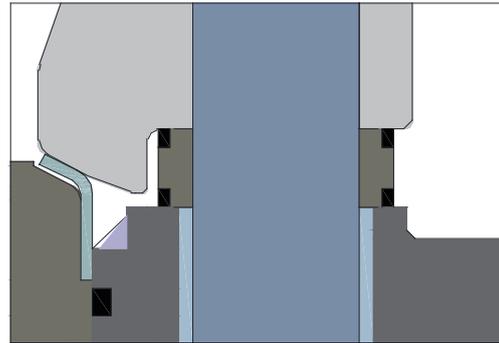
Superior A73/A74 Eccentric Butterfly Design

Fire Safe Seat

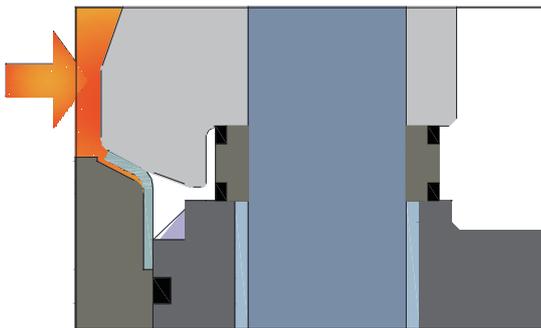
For reliable control of flammable and hazardous fluids in petroleum, petrochemical, chemical and other fire-risk applications, the fire safe design offers a safe protection in accordance with the worldwide fire test standard API 607.



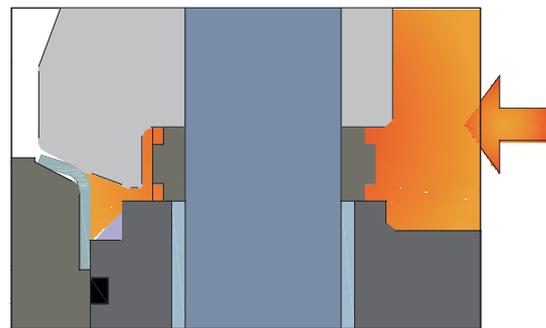
In normal service, the Fire Safe resilient/metal seat seals in both directions of line media flow through the full rated pressure and temperature rating with zero leakage. When closed, the disc remains compressed against the resilient seat, which is securely locked in place by a full-faced retainer. Line media pressure strengthens the seating.



In the event of a fire, if excessive heat destroys the resilient seat materials, either partially or completely, the seat provides a constant metal to metal backup seal because of the seat energizing design and spring mechanism Inconel seat.



When pressure from retainer side, it forces the metal seat harder onto the disc, further improving the sealing.



When pressure from body side, it forces the disc further onto the metal seat, causing tighter shutoff. The seat is supported securely by the seat retainer to prevent excessive deflection.



High Performance Triple Eccentric Metal Seat

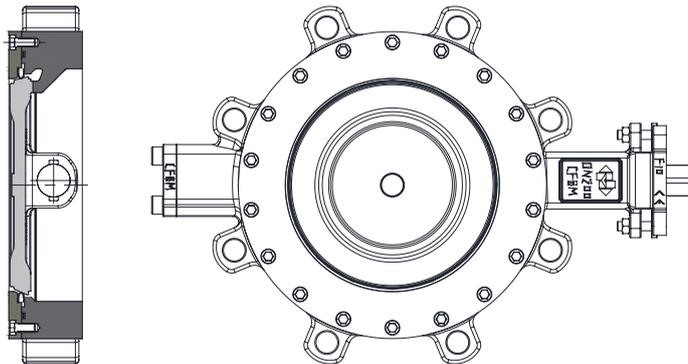
High performance triple eccentric metal seat butterfly valve offers a wide pressure and temperature range in both control and shut-off applications.

Due to several special constructions, the valve widely used and perform very well in applications such as liquids, gases, steam, pulp stocks.

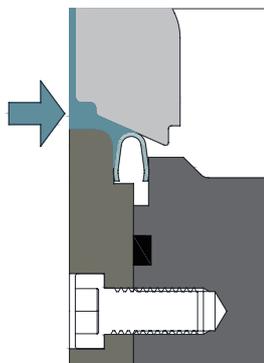
Features

- Full metal to metal
- Bidirectional long term tightness
- Low operating torque while good sealing
- Contact seating design resulting in low friction
- Excellent wear resistance
- Bidirectional long term tightness
- Long life cycle
- Minimize maintenance
- Seat totally interchangeable without disassembly of disc and shaft
- Equal percentage flow characteristics

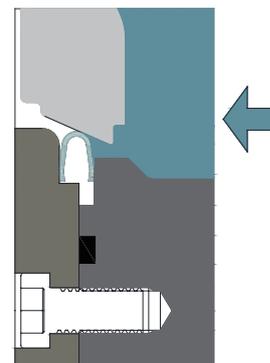
Triple Eccentric Seating Principle



The valve disc is precision machined in tri-eccentric to create an initial contact sealing between disc and seat.

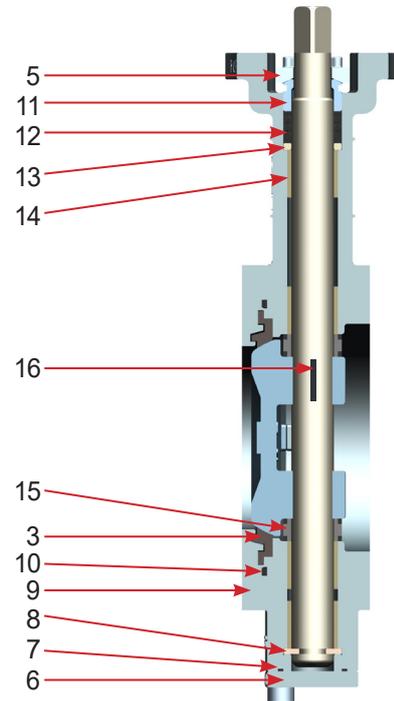
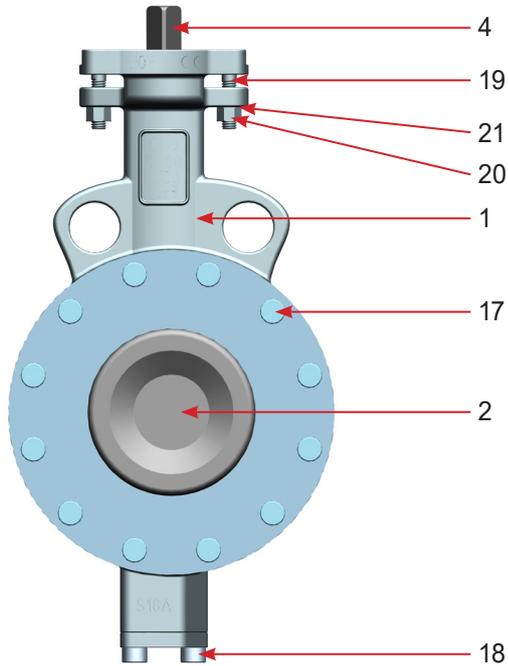


When pressure from retainer side, it forces the metal seat harder onto the disc, further improving the sealing.



When pressure from body side, it forces the disc further onto the metal seat, causing tighter shutoff.

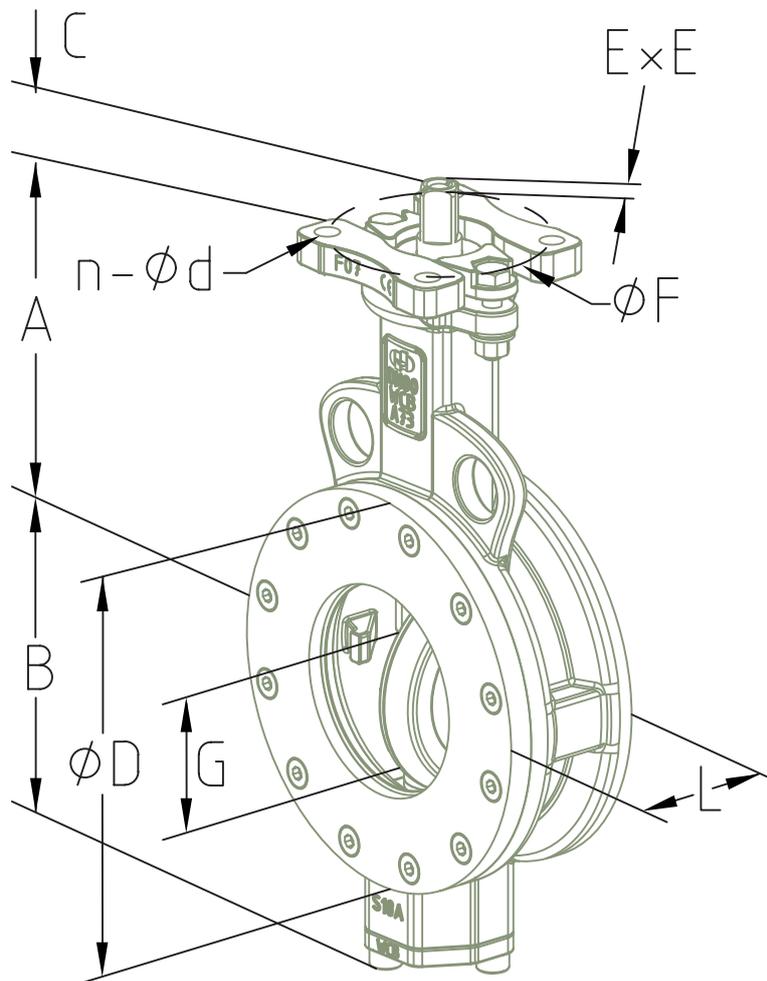
Structure and Material



Parts list and material specification

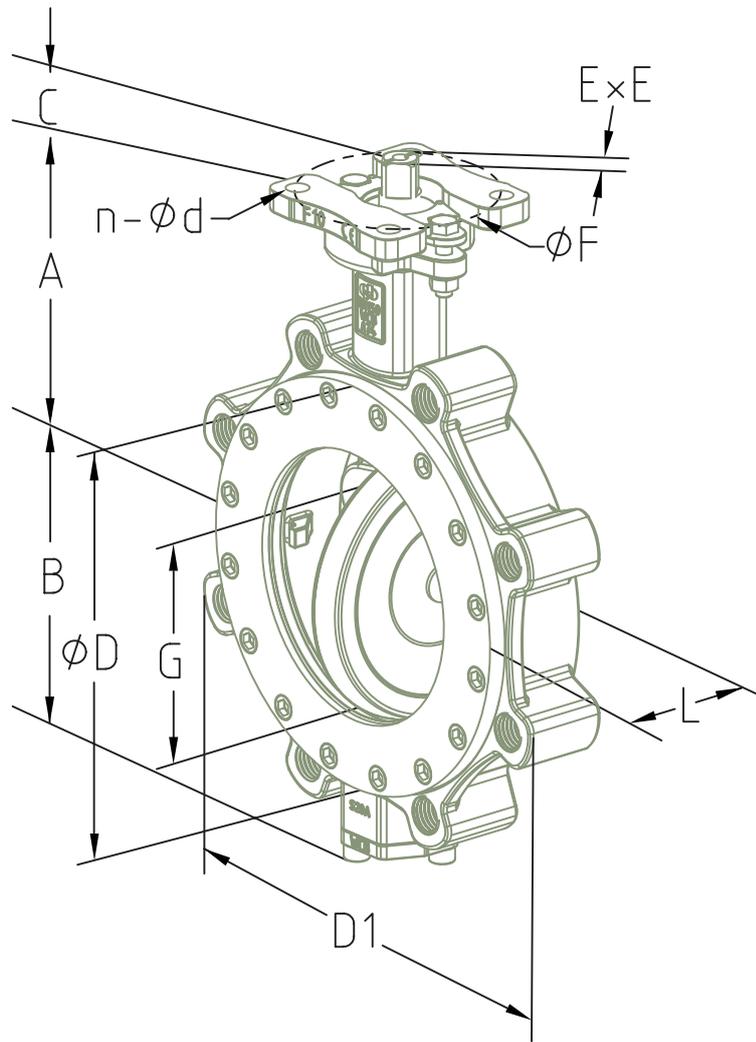
No.	Part name	Material	Standard	Surface Treatment
1	Body	Cast Steel	ASTM A216 WCB	System 5 coating Grey
		Stainless Steel	ASTM A351 CF8	Passivation
			ASTM A351 CF8M	Passivation
2	Disc	Stainless Steel	ASTM A351 CF8	Passivation
			ASTM A351 CF8M	Passivation
3	Seat	RPTFE	PTFE with 25% Carbon fiber	
		RPTFE+SS316	Fire safe	
		Inconel	Metal to Metal	
4	Shaft	Stainless Steel	17-4PHSS	
5	Packing gland	Stainless Steel	ASTM A351 CF8M	Passivation
6	Bottom cover	Stainless Steel		
7	Cover seal	Graphite		
8	Retainer ring	Stainless Steel	SS316	
9	Seat retainer	Same as body		
10	Gasket	Graphite standard, RPTFE optional		
11	Press ring	Stainless Steel	SS316	
12	Packing	Graphite standard, RPTFE optional		
13	Packing support	Stainless Steel	SS316	
14	Bearing	Stainless Steel	SS316+PTFE	
15	Thrust bearing	Stainless Steel	SS316	
16	Keys	Stainless Steel	SS316	
17	Bolts	Stainless Steel	SS316	
18	Bolts	Stainless Steel	SS316	
19	Bolts	Stainless Steel	SS316	
20	Nuts	Stainless Steel	SS3106	
21	Belleville washer	Stainless Steel	SS316	

A73 Dimensions (mm)



SIZE		A	B	C	D	E	Top Flange	G	L	WT (kg)	A	B	C	D	E	Top Flange	G	L	WT (kg)
DN	INCH	Class150									Class300								
50	2"	126	79	13.5	92	11	F05	45	43	3	126	79	13.5	92	11	F05	45	43	3
65	2 1/2"	126	87	13.5	105	11	F05	45	46	4	126	87	13.5	105	11	F05	45	46	4
80	3"	145	100	17.5	130	11	F07	72	48	5	145	100	17.5	130	11	F07	72	48	5
100	4"	170	124	17.5	157	14	F07	91	54	6	170	124	17.5	157	14	F07	91	54	6
125	5"	185	144	17.5	186	14	F07	114	57	9	185	144	17.5	186	14	F07	114	57	9
150	6"	203	150	18.5	216	17	F10	145	57	12	203	150	18.5	216	17	F10	145	57	12
200	8"	239	186	24.5	269	22	F10	192	64	19	257	204	24.5	269	22	F10	192	73	23
250	10"	275	226	24.5	324	22	F10	240	71	33	288	238	30	324	27	F12	240	83	39
300	12"	307	251	30	380	27	F12	285	81	42	330	268	30	380	27	F12	285	92	55
350	14"	337	294	30	416	27	F12	328	92	61	337	294	39	416	36	F14	320	117	79
400	16"	368	320	30	476	27	F14	373	102	88	368	320	49	476	46	F16	363	133	103
450	18"	406	341	39	534	36	F16	422	114	135	406	341	49	534	46	F16	400	149	170
500	20"	442	383	49	588	46	F16	470	127	173	442	383	49	588	46	F25	450	159	225
600	24"	493	442	49	692	46	F25	570	154	272	500	442	58	692	55	F25	550	181	338

A74 Dimensions (mm)



SIZE	A	B	C	D	D1	E	Top Flange	G	L	WT (kg)	A	B	C	D	D1	E	Top Flange	G	L	WT (kg)
DN INCH	Class150										Class300									
50 2"	126	79	13.5	92	123	11	F05	45	43	5	126	79	13.5	92	155	11	F05	45	43	6
65 2 1/2"	126	87	13.5	105	150	11	F05	45	46	6	126	87	13.5	105	178	11	F05	45	46	7
80 3"	145	100	17.5	130	156	11	F07	72	48	8	145	100	17.5	130	199	11	F07	72	48	10
100 4"	170	124	17.5	157	218	14	F07	91	54	10	170	124	17.5	157	243	14	F07	91	54	12
125 5"	185	144	17.5	186	241	14	F07	114	57	15	185	144	17.5	186	265	14	F07	114	57	18
150 6"	203	150	18.5	216	264	17	F10	145	57	20	203	150	18.5	216	312	17	F10	145	57	25
200 8"	239	186	24.5	269	325	22	F10	192	64	23	257	204	24.5	269	370	22	F10	192	73	40
250 10"	275	226	24.5	324	394	22	F10	240	71	42	288	238	30	324	438	27	F12	240	83	65
300 12"	307	251	30	380	471	27	F12	285	81	60	330	268	30	380	512	27	F12	285	92	100
350 14"	337	294	30	416	520	27	F12	328	92	100	337	294	39	416	579	36	F14	320	117	200
400 16"	368	320	30	476	585	27	F14	373	102	155	368	320	49	476	643	46	F16	363	133	260
450 18"	406	341	39	534	625	36	F16	422	114	200	406	341	49	534	705	46	F16	400	149	380
500 20"	442	383	49	588	693	46	F16	470	127	270	442	383	49	588	769	46	F25	450	159	470
600 24"	493	442	49	692	807	46	F25	570	154	420	500	442	58	692	908	55	F25	550	181	780



Cv and Valve Torque

Cv

SIZE		Class150 Cv (U.G.P.M at 1psi ΔP)									Class300 Cv (U.G.P.M at 1psi ΔP)								
DN	INCH	10°	20°	30°	40°	50°	60°	70°	80°	90°	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	2"	2	5	12	23	40	59	78	110	130	2	5	12	23	40	59	78	110	130
65	2 1/2"	3	8	16	30	50	77	100	130	160	3	8	16	30	50	77	100	130	160
80	3"	4	14	30	55	88	120	150	175	180	4	14	30	55	88	120	150	175	180
100	4"	9	25	60	115	177	255	310	365	375	9	25	60	115	177	255	310	365	375
125	5"	15	40	75	143	232	362	500	675	790	15	40	75	143	232	362	500	675	790
150	6"	30	70	140	215	330	511	750	1000	1350	30	70	140	215	330	511	750	1000	1350
200	8"	60	150	260	456	688	1062	1550	2200	2800	50	135	230	410	615	950	1395	1980	2520
250	10"	95	250	450	700	1052	1633	2450	3400	4300	65	225	400	630	940	1460	2205	3060	3870
300	12"	150	380	690	1050	1632	2532	3740	5300	6655	95	342	623	945	1450	2270	3366	4770	5980
350	14"	170	430	810	1220	1893	2900	4300	6100	7652	110	387	729	1098	1700	2610	3870	5490	6880
400	16"	222	570	1022	1510	2420	3705	5500	7890	9800	180	513	910	1359	2178	3333	4950	7101	8820
450	18"	170	610	1160	2230	3522	5100	6900	9150	10600	160	549	1045	2007	3169	4590	6210	8235	9540
500	20"	195	880	1530	2825	4508	6530	8800	11800	13400	175	792	1370	2540	4057	5877	7920	10620	12060
600	24"	238	1020	2200	3890	6645	9570	12900	17200	20000	220	918	1980	3501	5980	8613	11610	15480	18000

Note:

1. The charted values are based for water, Temp: 0°C to 40°C .
2. The charted values are based on the initial breakaway torque under operating pressure.
3. The torque values listed above do not include a safety factor. Recommended safety factor see Service Factor Guide Chart below.
4. The effect of dynamic torque is not considered in tabulation.

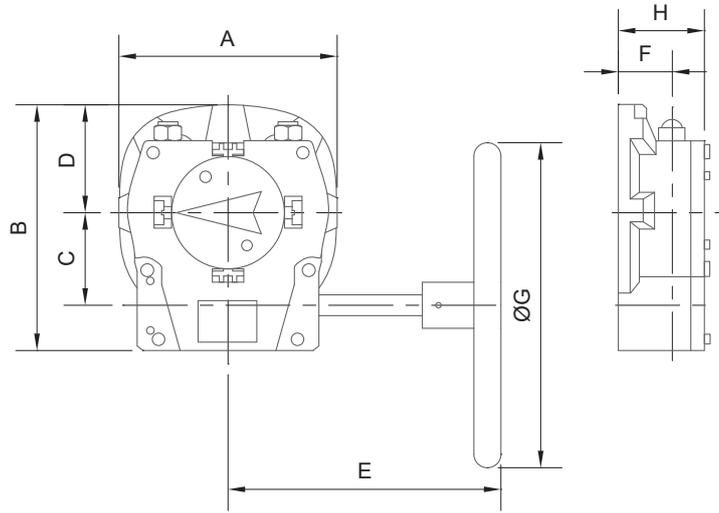
Valve Torque

SIZE		Class150 Valve torque under pressure(N*M)									Class150 Maximum allowable shaft torque (N*M)	Class300 Valve torque under pressure(N*M)									Class300 Maximum allowable shaft torque (N*M)
		6.9bar (100psi) differential pressure			13.8bar (200psi) differential pressure			19.7bar (285psi) differential pressure				20.7bar (300psi) differential pressure			34.5bar (500psi) differential pressure			50bar (725psi) differential pressure			
DN	INCH	RPTFE seat	Firesafe seat	Metal seat	RPTFE seat	Firesafe seat	Metal seat	RPTFE seat	Firesafe seat	Metal seat	RPTFE seat	Firesafe seat	Metal seat	RPTFE seat	Firesafe seat	Metal seat	RPTFE seat	Firesafe seat	Metal seat		
50	2	30	55	50	32	60	55	35	65	59	180	36	66	60	40	70	65	50	80	75	180
65	1 1/2	30	55	50	32	60	55	35	65	59	180	36	66	60	40	70	65	50	80	75	180
80	3	35	70	60	38	78	75	40	80	77	180	41	82	79	50	85	80	60	90	80	180
100	4	50	90	80	55	100	90	60	110	100	380	62	113	103	75	130	120	105	160	150	380
125	5	65	130	118	75	150	130	85	170	150	380	87	175	155	120	192	182	190	290	260	380
150	6	100	180	165	115	205	185	125	225	210	700	128	230	216	165	260	250	265	400	380	700
200	8	165	290	275	195	345	322	216	390	350	1200	290	419	400	380	600	570	539	850	800	1200
250	10	220	461	420	275	550	520	320	632	590	1200	469	640	600	620	990	930	870	1200	1150	1800
300	12	295	690	655	390	861	820	470	1005	910	1800	660	1090	975	825	1296	1100	1010	1365	1310	1800
350	14	490	820	796	685	1020	960	850	1200	1120	1800	1105	1350	1297	1500	2380	2210	1790	2530	2390	3200
400	16	630	962	922	875	1200	1050	950	1300	1250	1800	1320	1510	1469	1720	2629	2600	2295	3259	3210	5600
450	18	820	1310	1259	1145	1856	1798	1425	2320	2280	3200	1700	2510	2396	2200	2970	2890	3350	4150	4000	5600
500	20	1100	1880	1792	1545	2682	2593	1923	3360	3270	5600	2305	3620	3527	3250	3997	3800	4010	4925	4831	5600
600	24	1680	2780	2695	2380	3660	3589	2985	4315	4198	5600	3097	5820	5665	4395	7100	6950	6009	9536	9380	12000

Service Factor Rating

Service Condition	Service Type	Media Type	Safety Factor	Multiplier
1	Ideal	Lubricating Oil	20%	1.2
2	Normal	Water	30%	1.3
3	Severe	Dry Air, Solvents	50%	1.5
4	Extreme	Abrasives	100%	2.0



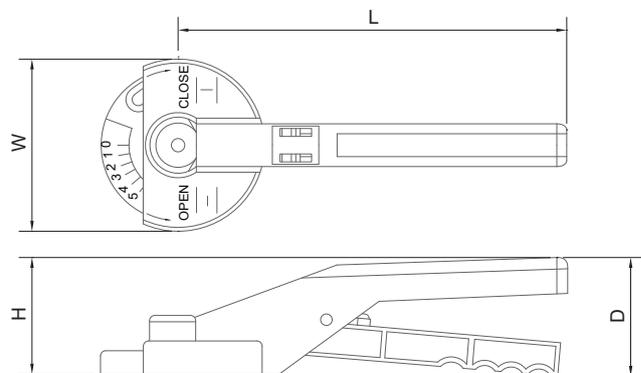


Worm Gear

SIZE Class150		SIZE Class300		Ratio	Gear torque (N*M)	A	B	C	D	E	F	G	H	WT (kg)
DN	INCH	DN	INCH											
50-65	2"-2 1/2"	50-65	2"-2 1/2"	40:1	200	92	111	39	46	151	31	100	55	3
80-125	3"-5"	80-125	3"-5"	40:1	200	92	111	39	46	151	31	140	55	3
150-200	6"-8"	150-200	6"-8"	42:1	500	118	145	53	61	214	35	260	61	6
250-300	10"-12"	250	10"	42:1	1000	165	182	66	76	210	42	300	72	11
350-400	14"-16"	300-350	12"-14"	60:1	1800	200	231	89	100	277	50	400	81	14
450-500	18"-20"	400-450	16"-18"	68:1	3400	252	296	123	118	357	50	400	91	32
600	24"	500	20"	88:1	4400	315	354	153	145	382	50	500	93	44
		600	24"	184:1	7900	310	380	138	155	448	65	500	122	65

Hand Lever

SIZE		D	H	L	W	WT (kg)
DN	INCH					
50-65	2"-2 1/2"	56	65	195	74	0.3
80	3"	73	82	200	101	0.52
100-125	4"-5"	78	82	269	101	0.6
150-200	6"-8"	101	100	330	145	1.5



Installation, Use, Maintenance Instructions

1. Storage

1) A73/A74 eccentric butterfly valve is dispatched with the disc closed on the seat and the flange faces and valve internals protected with covers. Machined ferrous surfaces are protected with an removable rust preventative. If the valve is used for cleaning gases with a "degrease" label, it is recommended that the valve be unpacked until installation.

2) It is suggested that the valve is kept packed until it is to be installed in the pipeline.

2. Check before installation

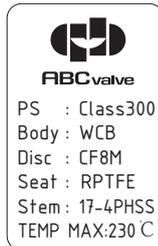
1) Open the valve package

2) Check the valve flow path to ensure that there are no debris in the flow path.

3) Make sure there are no foreign matter, welding slag, etc. in the supporting pipeline.

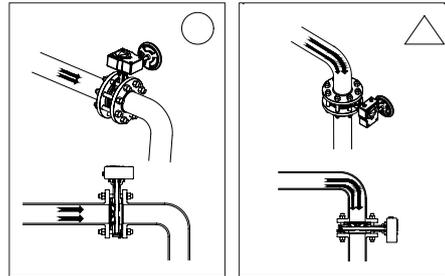
4) All operating devices, whether manual or automatic, should be installed before the valve is installed in the pipeline and ensure that it is installed correctly.

5) Check the valve plate to ensure that the valve material meets the expected operating conditions.



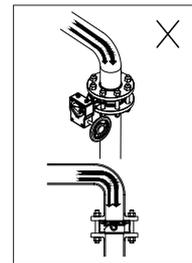
3. Installation

1) The valve is designed to seal against bidirectional flow and can therefore be installed with flow in either direction. However better sealing life will be obtained with downstream flow against the shaft side of disc. Installation location attention



Good

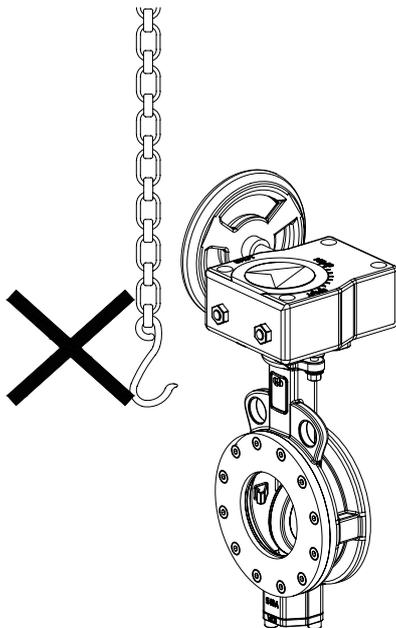
Inevitably acceptable



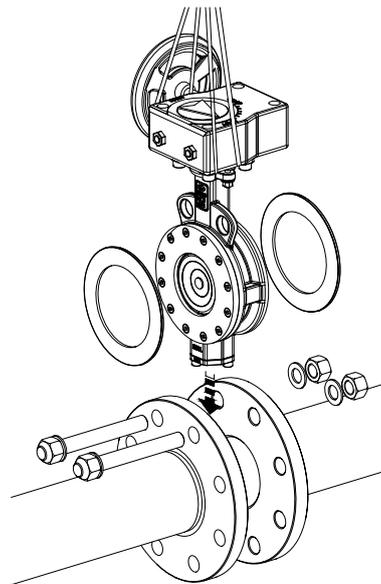
Wrong

2) Lifting attention

Valves above DN200 are not allowed to use valve flange correction holes or handwheel as hook points.



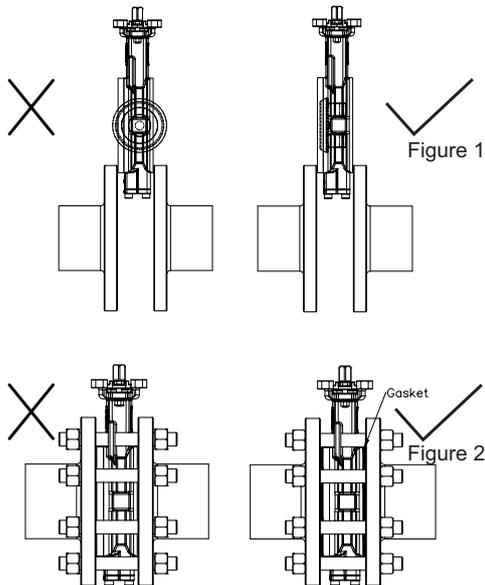
3) There should be enough space between the flanges to allow the valve easily enter between the flanges. If the flange distance is not enough for the valve, the valve seal will be damaged.



Installation, Use, Maintenance Instructions

4) Flange gaskets is necessary

Place the valve between the flanges and gaskets as shown in Figure 1, position the valve with flange bolts.



5) Before tightening the bolts, make sure that there is no collision during the valve plate switching process and carefully open the valve as shown in Figure 3.

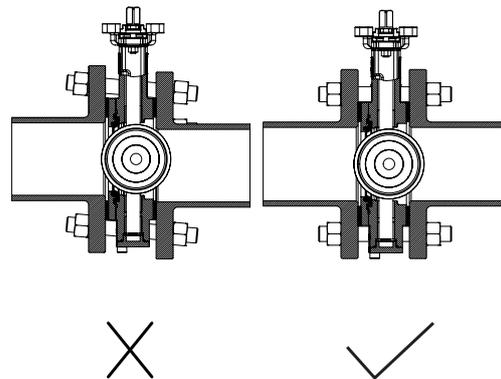


Figure 3

6) Tighten the flange bolts in the order shown in Figure 4.

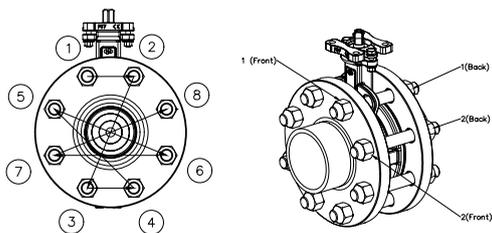


Figure 4

7) Flange bolt tightening force refers to the following table

Bolt specification	bolt tightening torque (N*M)
M16	230
M20	450
M24	780
M30	1550
M36	2700

4. Valve Maintenance

1) The valve is recommended to be fully open and closed several times every three months without special maintenance.

2) If the parts need to be replaced, please refer to the valve structure in Figure 5. In general, please contact ABC Valves before replacing parts.

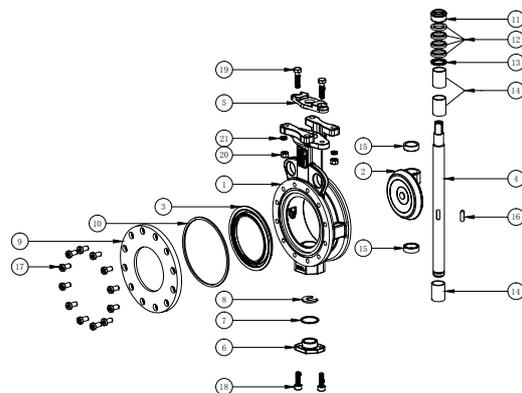


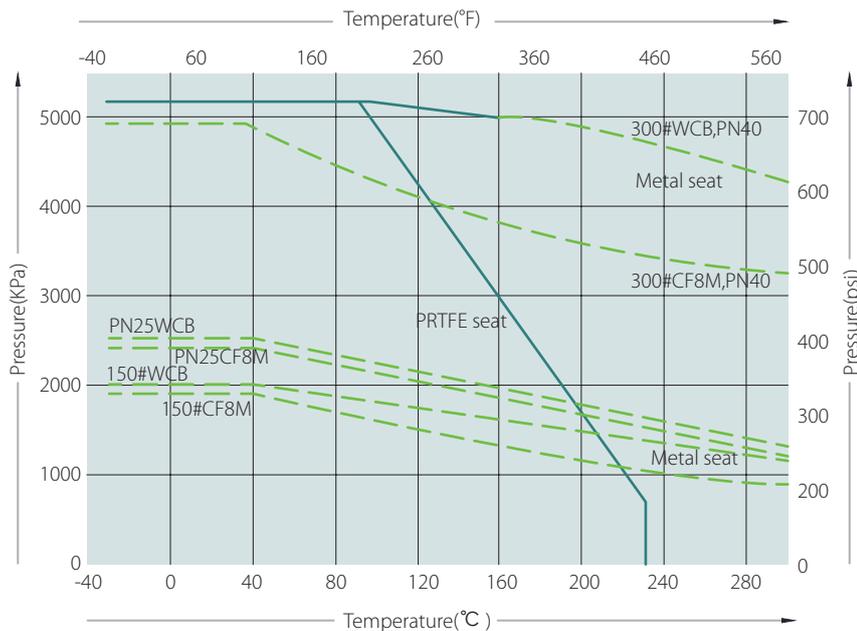
Figure 5



A73 & A74 Ordering Guidelines

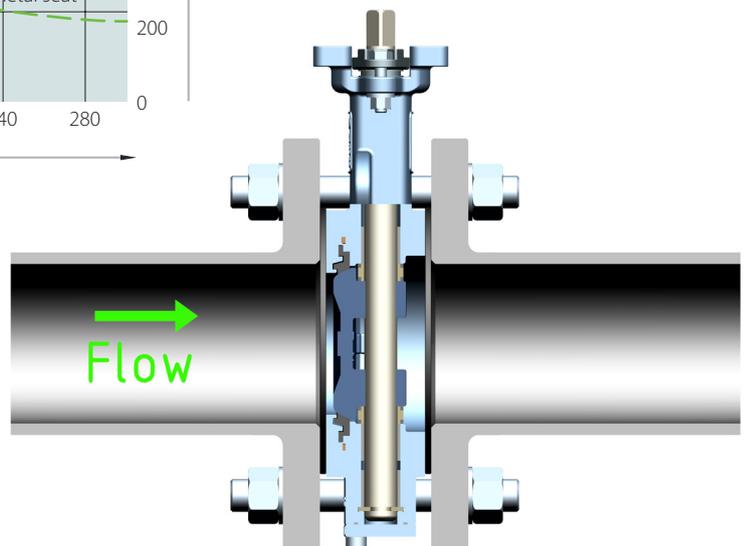
Valve Series			Matching of Material (Body/Disc/Seat/Stem)		Operator Type		Nominal Size			Additional
A	7	3	0	1	1	0	0	5	0	
A73 = Wafer			01 = WCB/CF8/RPTFE/17-4		10 = Bare Shaft		005 = DN50			0 = Standard Pressure
A74 = Lug			02 = CF8M/CF8M/RPTFE/17-4		11 = Lever Operated		006 = DN65			1 = Class150
			03 = WCB/CF8M/ RPTFE/17-4		12 = Gear Operated		008 = DN80			2 = Class300
					13 = Single Acting Pneumatic Actuator		010 = DN100			A = A74 Class150
					14 = Double Acting Pneumatic Actuator		012 = DN125			C = A74 PN16
					15 = Electric Actuator		015 = DN150			D = A74 TABLE D
					16 = Hydraulic actuator		020 = DN200			E = A74 TABLE E
					17 = Electro-hydraulic actuator		025 = DN250			F = A74 TABLE F
							030 = DN300			

Temperature-pressure Diagram

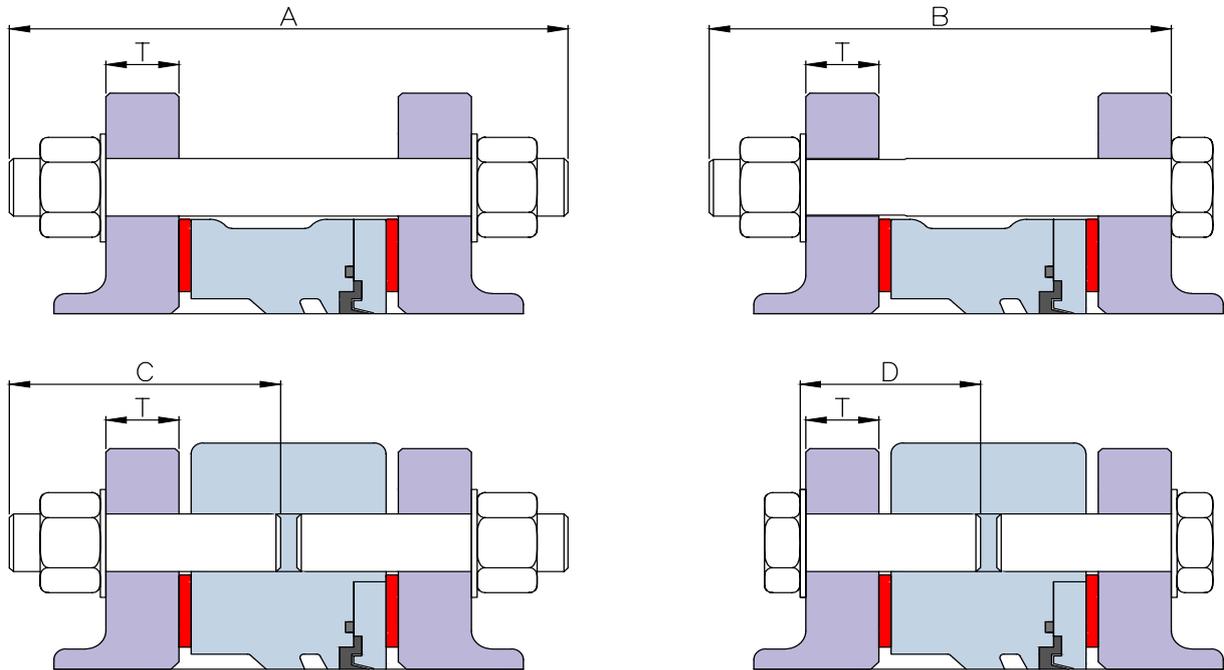


Flow can be executed in both directions and following advantages can be approached while using suggested flow direction:

- 1) Minimal initial breakaway torque.
- 2) Reduced seat wear.
- 3) No wetted shaft when closing.



Bolting and Installation



size		PN10						PN16						PN20						PN25					
mm	inch	A	B	C	D	T	bolt size	A	B	C	D	T	bolt size	A	B	C	D	T	bolt size	A	B	C	D	T	bolt size
50	2	130	120	65	45	20	M16	130	120	65	45	20	M16	135	125	70	50	22.5	M16	135	125	70	50	22	M16
65	2.5	130	120	65	45	20	M16	130	120	65	45	20	M16	135	125	70	50	23	M16	135	125	70	50	22	M16
80	3	135	120	65	45	20	M16	135	120	65	45	20	M16	140	130	70	50	24	M16	140	130	70	50	24	M16
100	4	145	130	70	50	22	M16	145	130	70	50	22	M16	145	135	75	55	24	M16	155	140	80	55	24	M20
125	5	145	135	75	50	22	M16	145	135	75	50	22	M16	155	140	75	55	24	M20	175	155	85	60	26	M24
150	6	160	140	80	55	24	M20	160	140	80	55	24	M20	160	145	80	55	26	M20	175	155	90	60	28	M24
200	8	160	145	80	55	24	M20	160	145	80	55	24	M20	170	155	85	60	29	M20	185	165	90	65	30	M24
250	10	175	160	85	60	26	M20	185	165	85	60	26	M24	195	175	95	70	31	M24	200	180	100	70	32	M27
300	12	185	170	90	65	26	M20	200	180	90	70	28	M24	205	185	105	70	32	M24	215	195	110	75	34	M27
350	14	185	170	90	65	26	M20	200	185	90	70	30	M24	220	195	105	75	35	M27	230	205	115	80	38	M30
400	16	220	200	110	70	26	M24	235	215	110	80	32	M27	245	225	125	85	37	M27	265	240	130	95	40	M33
450	18	235	215	115	75	28	M24	265	240	115	90	40	M27	270	240	130	95	40	M30	290	265	145	105	48	M33
500	20	245	230	125	75	28	M24	295	270	125	100	44	M30	290	265	140	95	43	M30	305	280	155	105	48	M33
600	24	290	270	145	85	34	M27	345	320	145	110	54	M33	335	310	165	105	48	M33	360	330	180	120	58	M36

size		ANSI B 16.5 150LB						JIS10K						JIS 16K & 20K						AS2129 TABLE E					
mm	inch	A	B	C	D	T	bolt size	A	B	C	D	T	bolt size	A	B	C	D	T	bolt size	A	B	C	D	T	bolt size
50	2	135	125	70	50	20	5/8"	130	115	65	45	16	M16	130	115	65	45	16	M16	120	110	60	40	10	M16
65	2.5	135	125	70	50	22	5/8"	130	115	65	45	18	M16	130	115	65	45	18	M16	120	110	60	40	14	M16
80	3	140	130	70	50	24	5/8"	130	115	65	45	18	M16	140	125	70	50	20	M20	120	110	60	40	14	M16
100	4	145	135	75	55	24	5/8"	135	120	70	50	18	M16	150	135	75	55	22	M20	135	120	65	45	17	M16
125	5	160	145	80	55	24	3/4"	150	135	75	55	20	M20	160	140	80	55	22	M22	140	125	70	50	17	M16
150	6	160	145	80	55	25	3/4"	155	140	80	55	22	M20	160	145	80	55	24	M22	145	130	70	50	17	M20
200	8	170	155	85	60	28	3/4"	160	140	80	55	22	M20	170	150	85	60	26	M22	152	135	75	50	19	M20
250	10	185	170	95	65	30	7/8"	175	155	85	60	24	M22	190	170	95	65	28	M24	165	150	85	55	22	M20
300	12	200	180	100	70	32	7/8"	185	165	90	60	24	M22	200	185	100	70	30	M24	185	170	95	65	25	M24
350	14	215	195	105	75	35	1"	190	170	95	65	26	M22	220	200	110	80	34	M30	195	175	95	70	29	M24
400	16	240	220	120	80	37	1"	220	205	110	70	28	M24	255	230	130	85	38	M30	225	205	110	75	32	M24
450	18	265	240	130	90	40	1 1/8"	240	220	120	75	30	M24	270	245	135	90	40	M30	240	225	120	80	35	M24
500	20	285	260	140	90	43	1 1/8"	250	230	125	75	30	M24	290	265	145	95	42	M30	260	245	130	80	38	M24
600	24	330	305	165	100	48	1 1/4"	295	270	145	85	32	M30	335	310	170	105	46	M36	325	300	165	100	48	M30

