J.S.COCK A/S

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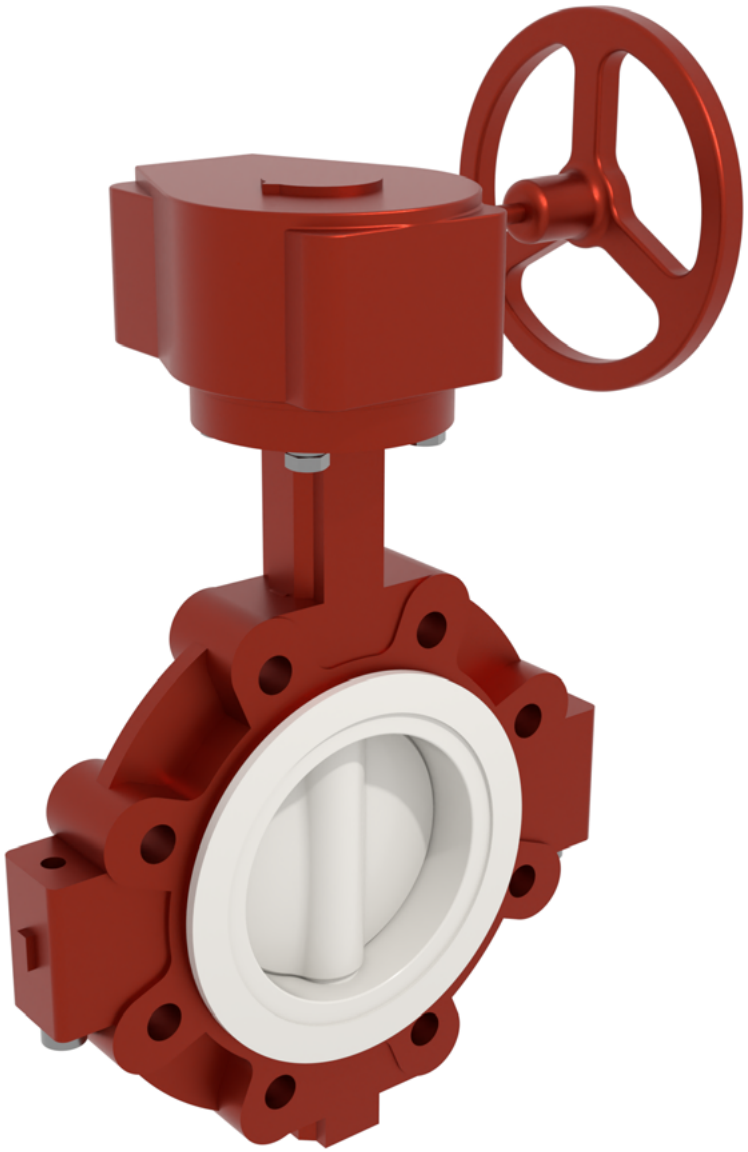
WOD - PTFE LINED BUTTERFLY VALVES

TYPE CBF04-TA(L)01

Installation, use and maintenance



ISO 9001:2015

WRAS APPROVED PRODUCT

PED 2014/68/EU

MORE THAN 120 YEARS OF EXPERIECNCE AS VENDORS OF VALVES AND INSTRUMENTS

Oslo | Bergen | Arendal | Larvik | Trondheim

CONTENT

GENERAL INFORMATION

The CBF04 butterfly valve consists of a two-piece body with a concentric disc and seat configuration. The seat liner is constructed from PTFE (Polytetrafluoroethylene), offering robust protection. In contrast, the disc is coated with PTFE, featuring a coating thickness of 3 to 4 mm. This design ensures that the valve body and the disc is protected from direct contact with the medium.

FEATURES

- Provides a tight seal regardless of flow direction.
- Precision-machined valve body and disc contribute to low operating torque, enhanced reliability, and extended service life.
- Features a PTFE liner that resists corrosion, ensuring a prolonged service life.
- Designed for easy disassembly, facilitating material-specific recycling.
- Suitable for end-of-pipe installation in the case of lugged-type butterfly valves.

Valves are suitable for various industries, including:

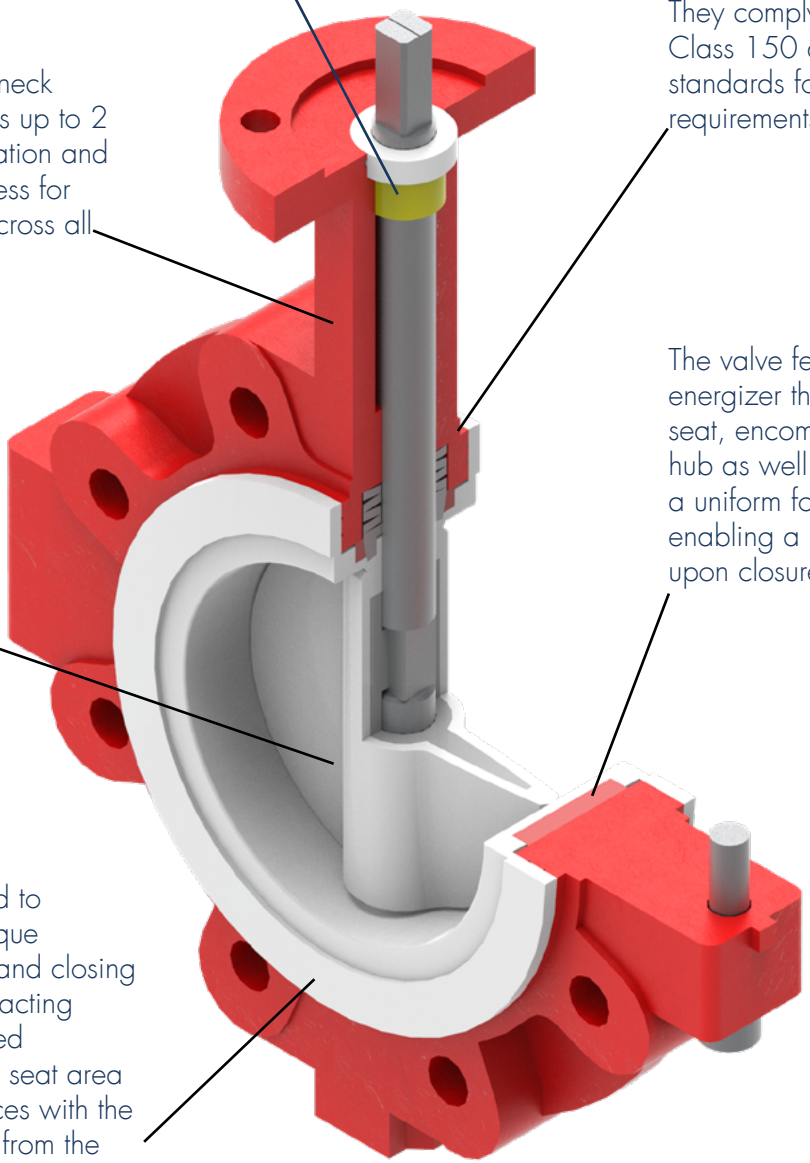
- Chemical, Petrochemical, and Petroleum Refining & Oilfield
- Water & Wastewater Treatment, Irrigation, and Desalination
- Food Processing, Steel Production, Textile, and Sugar/Ethanol Production
- Power Generation and Mining
- Pneumatic Materials Handling, Shipbuilding, and HVAC

DESIGN FEATURES DN50 - DN200

The valve includes a top stem bushing, secured by a stainless steel ring, designed to absorb lateral forces from the actuator.

The bodies of the valves are two-piece, lug-style, and feature an epoxy coating for durability. They comply with the full ASME Class 150 and DIN 3840 standards for hydrostatic pressure requirements.

The valve's extended neck design accommodates up to 2 inches of piping insulation and offers convenient access for actuator installation across all valve sizes.



The valve features a resilient seat energizer that encircles the entire seat, encompassing the disc hub as well. This design ensures a uniform force is applied, enabling a bubble-tight seal upon closure.

The disc is constructed with a minimum thickness of 1/8 inch (3 mm) of pure, virgin PTFE, fully encapsulating a stainless steel core.

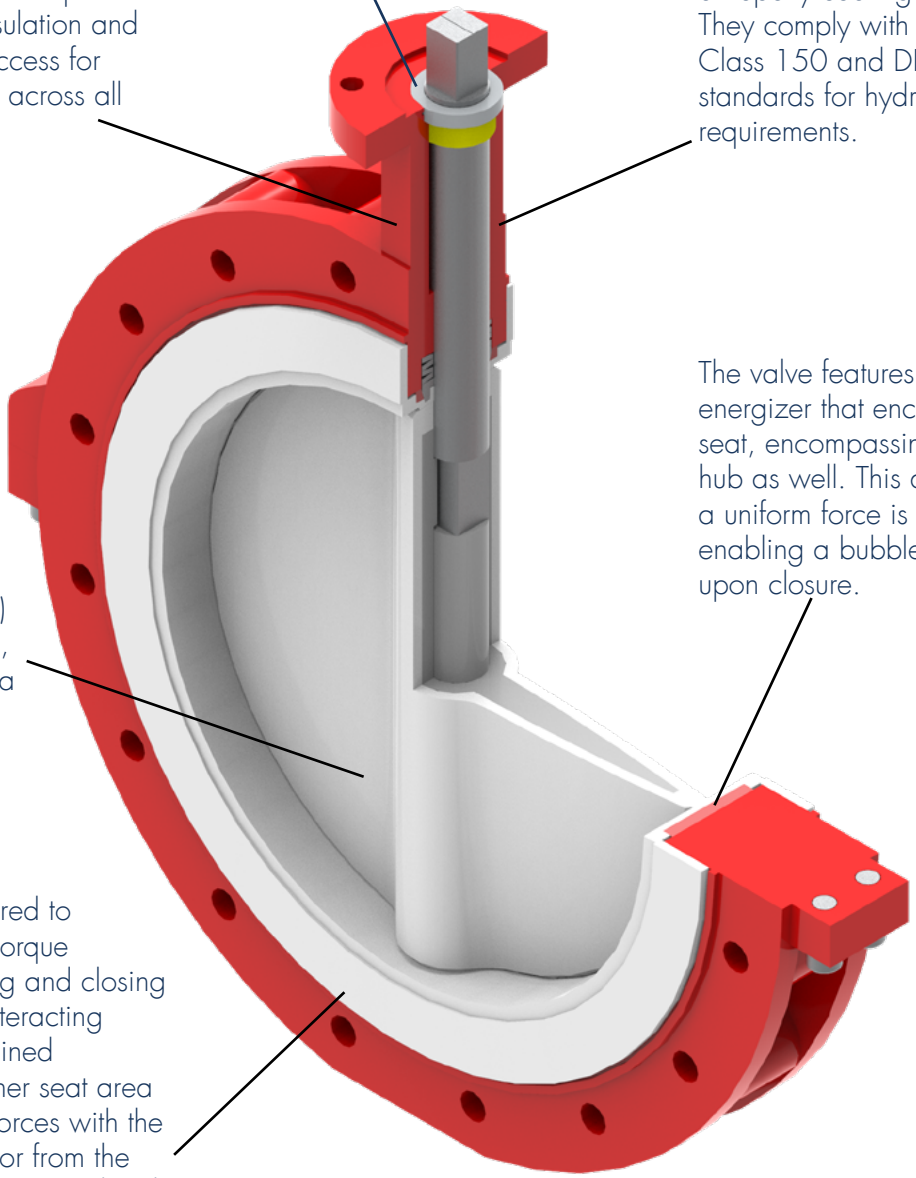
The seat is engineered to decrease both the torque required for opening and closing and the wear on interacting components. Machined curvatures in the inner seat area lessen the contact forces with the disc as it moves to or from the closed position. This specialized seat geometry enables reduced torque and minimizes seat wear for enhanced durability.

DESIGN FEATURES DN250 - DN600

The valve includes a top stem bushing, secured by a stainless steel ring, designed to absorb lateral forces from the actuator.

The valve's extended neck design accommodates up to 2 inches of piping insulation and offers convenient access for actuator installation across all valve sizes.

The bodies of the valves are two-piece, lug-style, and feature an epoxy coating for durability. They comply with the full ASME Class 150 and DIN 3840 standards for hydrostatic pressure requirements.



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CBF04-TL01

Through thorough field research and advanced engineering, we have developed a cutting-edge design for the Series CBF04-TA01, ensuring outstanding shut-off capabilities (bubble-tight seal) and high flow coefficients (Cv values). Available in a diverse array of materials, including PTFE, Stainless Steel, UHMWPE, and special alloys, this series meets a broad spectrum of customer needs. True to Worlds Valves' commitment, precision in manufacturing and unparalleled quality are at the forefront, cementing our reputation for valves with an extended service life.

TECHNICAL SPECIFICATIONS

Design Standard
EN 593 | API 609 | BS 5155 | MSS SP-67

Face to Face
DIN 558-1 | API609 | DIN 3202 K1 | SO 5752 | BS5155

Testing Standards
EN 12266-1 | ISO 5208 | API 598

Flange Standards
ASME B16.1 125lb | ASME B16.5 150lb | BS4504 PN10/16
DIN 2501 PN10/16 | ISO 7005 PN10/16 EN | 1092 PN10/16

Top Flange
ISO 5211 (Can be customised at request)

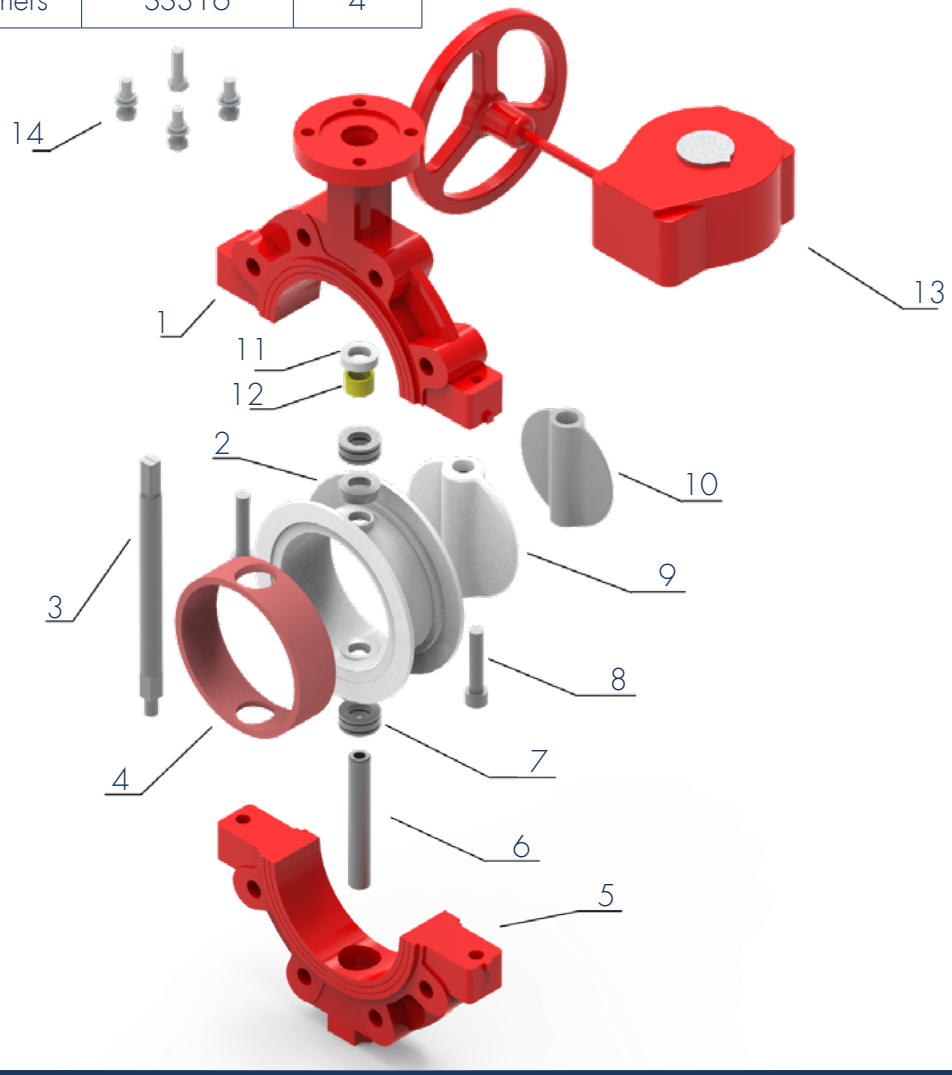
Temperature Range
-35°C to +200°C (depends on medium, pressure and material)

Suitable Medium

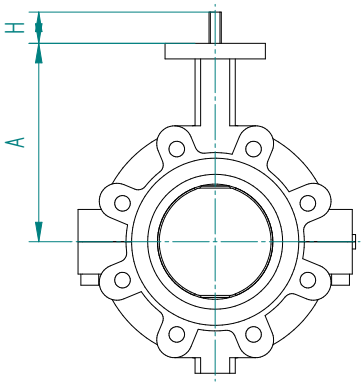
Fresh water	Waste water	Sewage	Seawater	Air	Steam
Food	Oils	Medicine	Akalis	Salt Solutions	

MATERIALS

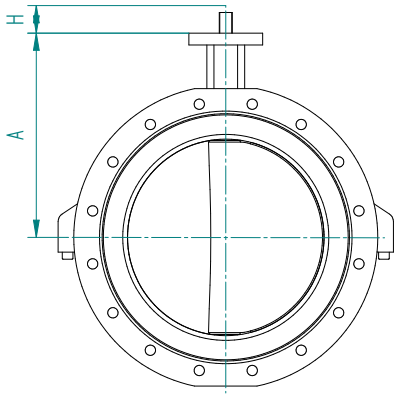
Nr	Part	Material	QTY
1	Upper Body	GGG 40	1
2	Seat	PTFE	1
3	Upper Shaft	SS431	1
4	Seat Energizer	Silicone	1
5	Lower Body	GGG 40	1
6	Lower Shaft	SS431	1
7	Spring Washers	Spring Steel	8
8	Mounting Bolts	SS316	2/4
9	Disc Coating	PTFE	1
10	Disc Core	WCB	1
11	Gland Nut	SS316	3
12	Bushing	PTFE	1
13	Gear	GGG 40	1
14	Mounting Bolt w/ Washers	SS316	4



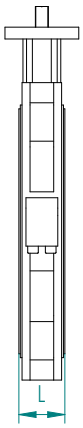
OUTLINE DIMENSIONS

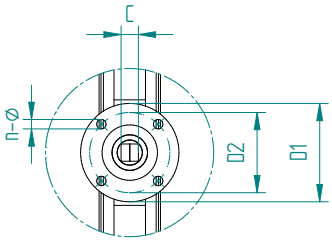


DN50-DN200



DN250-DN600



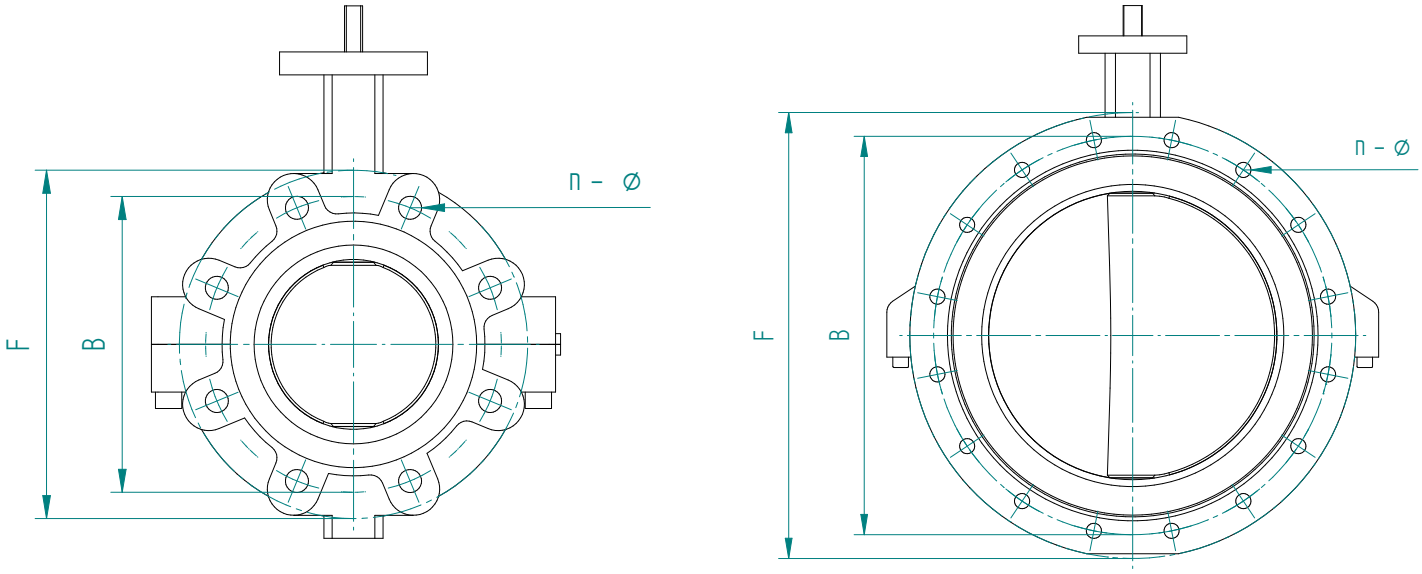


ISO 5211

Size	L	A	H*	C	ISO5211	D1	D2	n - Ø
DN50	43	140	14/28	9	F05/F07	90	50/70	4 - 7/10
DN65	46	150	14/28	9	F05/F07	90	50/70	4 - 7/10
DN80	46	160	14/28	9	F05/F07	90	50/70	4 - 7/10
DN100	52	178	14/28	11	F07	90	70	4 - 10
DN125	56	190	17/28	14	F07	90	70	4 - 10
DN150	56	200	17/28	14	F07	90	70	4 - 10
DN200	60	240	22/35	17	F10	125	102	4 - 12
DN250	68	273	22/35	22	F10/F12	150	102/125	4 - 12/14
DN300	78	310	22/35	22	F10	125	102	4 - 12
DN350	78	346	22/35	22	F10/F12	150	102/125	4 - 12/14
DN400	102	375	36	27	F14	175	140	4 - 18
DN450	114	406	36	27	F14	175	140	4 - 18
DN500	127	438	36	36	F14	175	140	4 - 18
DN600	154	495	46	36	F16	210	165	4 - 22

*Bare shaft valves have lower stem height. Valves with lever or gear have longer stem.

CONNECTION DIMENSIONS



	Flange Diameter - F				Diameter of Bolt Circle B				Qty and Dimensions of Bolt n - ø			
Size	150lb	PN10	PN16	JIS10K	150lb	PN10	PN16	JIS10K	150lb	PN10	PN16	JIS10K
DN50	150	165	165	155	120.7	125	125	120	4-5/8"-11	4-M16	4-M16	4-M16
DN65	180	185	185	175	139.7	145	145	140	4-5/8"-11	4-M16	4-M16	4-M16
DN80	190	200	200	185	152.4	160	160	150	4-5/8"-11	8-M16	8-M16	8-M16
DN100	230	220	220	210	190.5	180	180	175	8-5/8"-11	8-M16	8-M16	8-M16
DN125	255	250	250	250	215.9	210	210	210	8-3/4"-10	8-M16	8-M16	8-M20
DN150	280	285	285	280	241.3	240	240	240	8-3/4"-10	8-M20	8-M20	8-M20
DN200	345	340	340	330	298.5	295	295	290	8-3/4"-10	8-M20	12-M20	12-M20
DN250	405	395	405	400	362	350	355	355	12-7/8"-9	12-M20	12-M24	12-M22
DN300	485	445	460	445	431.8	400	410	400	12-7/8"-9	12-M20	12-M24	16-M22
DN350	535	505	520	490	476.3	460	470	445	12-1"-8	16-M20	16-M24	16-M22
DN400	595	565	580	560	539.8	515	525	510	16-1"-8	16-M24	16-M27	16-M24
DN450	635	615	640	620	577.9	565	585	565	16-1 1/8"-8	20-M24	20-M27	20-M24
DN500	700	670	715	675	635	620	650	620	20-1 1/8"-8	20-M24	20-M30	20-M24
DN600	815	780	840	795	749.3	725	770	730	20-1 1/4"-8	20-M27	20-M33	24-M30

TECHNICAL PERFORMANCE

	CV - Flow in G/m at 1 PSI								
Size	10°	20°	30°	40°	50°	60°	70°	80°	90°
DN50	0.08	4	10	20	38	54	77	106	115
DN65	0.17	7	17	31	55	83	122	173	187
DN80	0.26	10	19	33	60	99	156	234	257
DN100	0.43	14	31	66	1 18	196	309	464	510
DN125	0.68	25	52	1 13	201	333	527	791	869
DN150	1.7	38	81	174	311	514	814	1221	1342
DN200	2.55	76	160	347	618	1022	1618	2426	2666
DN250	3.4	128	272	590	1051	1740	2754	4130	4539
DN300	4.3	199	421	911	1624	2688	4254	6381	7013
DN350	5	287	608	1317	2347	3883	6146	9217	10129
DN400	7	394	836	1811	3227	5340	8451	12676	13930
DN450	9	523	1107	2399	4274	7072	11193	16789	18449
DN500	12	825	1423	3084	5495	9093	14391	21587	23722
DN600	19	1039	2199	4764	8491	14049	22233	33351	36649

Torque Values CBF04-TL01(wet)														
Size(mm(	50	65	80	100	125	150	200	250	300	350	400	450	500	600
10 Bar(Nm)	20	30	40	65	100	150	290	430	560	732	1300	1700	2700	4200
16 Bar(Nm)	25	35	45	75	120	160	320	460	650	850				

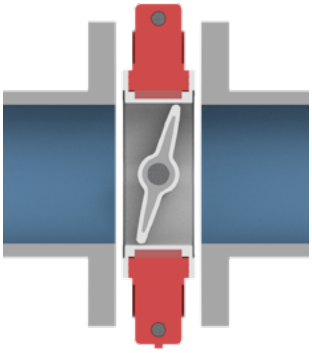
NOTE: Torque data based on 25°C puriefied water - does not include safety factor.

INSTALLATION PROCEDURE

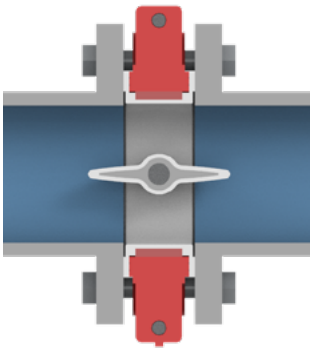
Installation

1. Ensure convenient access for operation, maintenance, and replacement when installing the butterfly valve.
2. The valve supports installation in any flow direction, suitable for bidirectional use.
3. Store the valve in a moisture-free environment prior to installation, with the disc opened at a 15-degree angle.
4. Pre-installation checks:
    - Confirm that the valve i according to the technical specifications.
    - Thoroughly clean the valve before operation to remove any grime or dust that might be trapped between the disc and the seat.
    - Ensure the handle/gear is securely attached to the flange and stem.
5. During installation, mount the connection bolts in a criss-cross pattern to ensure even distribution of the load.
6. After installing the valve, it's important to open the disc for any pipeline strength pressure testing. This ensures accurate test results and protects the valve's integrity.
7. Post-installation inspections should be performed:
    - Check for damage on the valve seat and O'ring sealings.
    - Evaluate the sealing of the disc.
    - Ensure there is no friction when operating the valve.
    - Conduct sealing tests as per the guidelines.
    - Keep a record of the inspection for future reference.

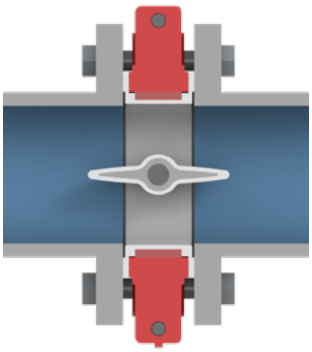
ASSEMBLY



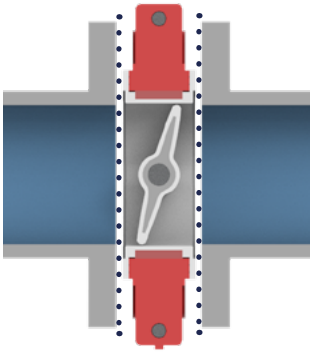
1. Leave sufficient space between flanges so that the valve can be easily inserted.



2. Open the valve all the before tightening the flanges.



3. Tighten the bolt untill the flanges are in contact with the valve body.

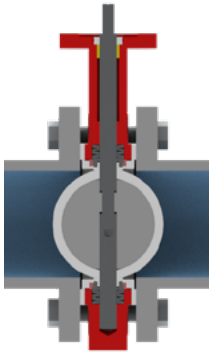


4. Note: Do not insert any other packing between the flanges and the valve.

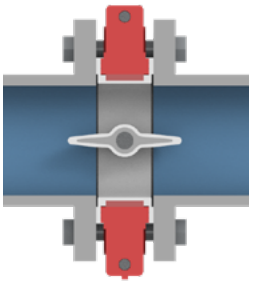
NOTE: When welding the pipe, initially perform spot welds with the valve positioned between the flanges. It's essential to remove the valve before completing the full welding process. This precaution is to avoid heat damage to the valve seat. After welding, thoroughly clean off any welding slag to prevent it from damaging the valve seat when the valve is reinstalled

INSTALLATION FOR POWDERS AND MUDDY FLUIDS

When using the valve with powders or muddy fluids, it's advisable to install it with the rotation axis horizontal. This orientation facilitates the easy flow of sediments upon opening the valve.



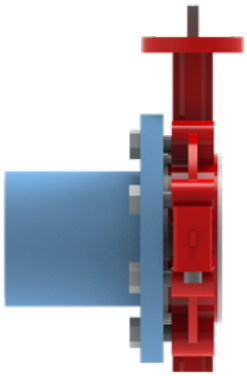
Wrong
Vertically rotated axis



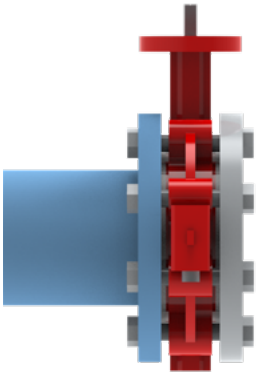
Correct
Horizontally rotated axis

INSTALLATION FOR POWDERS AND MUDDY FLUIDS

When valves are installed with a counterflange at the pipe's end, a counter flange(type B) is required to ensure tightness at maximum pressure. Note that if the valve is installed without a counter flange (type A), this should be clearly specified when ordering.



Type A
Installed without counter flange

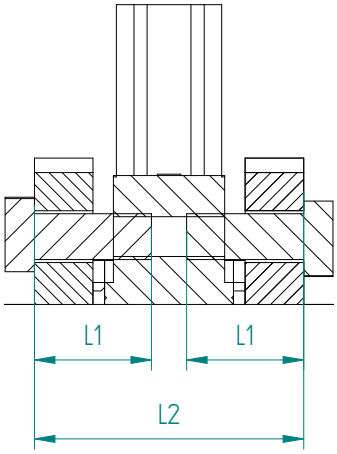


Type B
Installed with counter flange

Max Pressure:

- Type A - 6 Bar
- Type B - 16 Bar

RECOMMENDED BOLT SIZES



Note: 2xL1 < L2

	EN1092-1 PN10		EN1092-1 PN16		ASME B16.5 #150	
	QTY	D x L1	QTY	D x L1	QTY	D x L1
DN50	4x2	M16x40	4x2	M16x40	4x2	5/8"x40
DN65	4x2	M16x45	4x2	M16x45	4x2	5/8"x45
DN80	8x2	M16x45	8x2	M16x45	4x2	5/8"x45
DN100	8x2	M16x50	8x2	M16x50	8x2	3/4"x50
DN125	8x2	M16x50	8x2	M16x50	8x2	3/4"x50
DN150	8x2	M20x50	8x2	M20x50	8x2	3/4"x50
DN200	8x2	M20x55	12x2	M20x55	8x2	3/4"x55
DN250	12x2	M20x60	12x2	M24x60	12x2	7/8"x60
DN300	12x2	M20x65	12x2	M24x65	12x2	7/8"x65
DN350	16x2	M20x65	16x2	M24x65	12x2	1"x65
DN400	16x2	M24x75	16x2	M27x75	16x2	1"x75
DN450	20x2	M24x80	20x2	M27x80	16x2	9/8x80
DN500	20x2	M24x90	20x2	M30x90	20x2	9/8x90
DN600	20x2	M27x100	20x2	M33x100	20x2	5/4x100

Note:
All bolt lenghts are suggestions ment as a guide for installation, actual dimension will vary depending on flanges, washer thicknes and enviroment. J.S. Cock AS does not take responsibility for any damages caused during installation.
For flanges with **Raised Face** - Add in the thickness of the raised face.

WORKING PRINCIPALS OF A BUTTERFLY VALVE

The butterfly valve consists of several key components: the body, stem, disc, and seat bushings. The operation of the valve is controlled by the actuating device. As this device rotates, it turns the stem and the attached disc. This rotation enables the opening and closing of the valve, thereby controlling the flow of fluid. When the handle wheel is rotated clockwise, the valve closes, effectively stopping the flow.

ADVANTAGES

- Compact and lightweight, easy to install and maintain, with versatile mounting options.
- Simple and compact construction allows for quick 90-degree on-off operation.
- Minimized operating torque, contributing to energy savings.
- Bubble-tight sealing confirmed through testing, ensuring no leakage under pressure.
- Wide selection of materials, suitable for various mediums.
- Long service life, capable of enduring tens of thousands of opening and closing cycles.
- Flow curve tending to a straight line, offering excellent regulation performance.

COMMON FAULTS, CAUSES AND SOLUTIONS

Fault	Cause	Solution
Leakage in the sealing area	Scratches on the disc sealing area or body sealing seat	Repair or replace the damaged sealing area or body sealing seat.
	Disc not fully closed	Adjust the actuator for complete disc closure
	Loose hexagonal socket head bolts on the clamping ring	Secure any loose bolts.
Leakage at the shaft end	The seat or O-ring is not fully pressed.	Replace the body sealing seat to ensure proper engagement of the O-ring.
Leakage at the joint between valve face and pipeline flange	Connection bolts are not tightened evenly.	Ensure the connection bolts are tightened uniformly to prevent leakage.

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Larvik

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J.S.COCK A/S
RIKTIG FØRSTE GANGEN

REV 04 - 8/24

WRAS APPROVED PRODUCT

This certifies that

TIANJIN WORLDS VALVE CO., LTD.

has had the undermentioned product(s) examined, tested and certified as being of an appropriate quality and standard as required in the Water Supply (Water Fittings) Regulations and Scottish Water Byelaws, subject to scheme requirements being met when installed.

Model Numbers

WDS-CBF BUTTERFLY VALVES

The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current status of an approval must be obtained from the WRAS Approvals Directory (www.wras.co.uk/directory)

The product so mentioned will be valid until the end of:

November 2027

Certificate No.

2211340

Ian Hughes,
WRAS Approvals Manager

Current issue date: 24 September 2023
Expiry date: 23 September 2026
Certificate identity number: 10548846

Original approval(s):
ISO 9001 - 24 September 2014

Certificate of Approval

This is to certify that the Management System of:

Tianjin Worlds Valve Co., Ltd.

No. 25, Fuhui Road, Beizhakou Industrual Zone, Jinnan District, Tianjin City 300353, China

Unified Social Credit Code: 91120116660339827K

Registration Address: Room 1007, Building 1, No. 1988, Yingbin Road, Tanggu, Binhai New District, Tianjin City

has been approved by LRQA to the following standards:

ISO 9001:2015
GB/T 19001-2016

Approval number(s): ISO 9001 – 0068971

The scope of this approval is applicable to:

Design and manufacture of industrial application valves and strainers (<=4Mpa).

Davis Guan

Regional Director, Greater China, Assessment

LRQA Shanghai Office

Issued by: LRQA Limited

UKAS MANAGEMENT SYSTEMS 0001

CARSO - LABORATOIRE SANTÉ ENVIRONNEMENT HYGIÈNE DE LYON
Laboratoire Agréé pour les analyses d'eaux par le Ministère de la Santé
Laboratoire habilité par le Ministère chargé de la santé en application de l'article R*.1321-52 du code de la santé publique

ATTESTATION DE CONFORMITE SANITAIRE

Certificate of sanitary conformity

Conformément à l'arrêté du 29 mai 1997 modifié et à la circulaire du Ministère de la santé Direction Générale de la Santé DGS/SD7A 2002 n°571 du 25 novembre 2002

Coordonnées du demandeur des essais / *Contact details of the ACS owner* :

TIANJIN WORLDS VALVE CO., LTD
No.25 Fuhui road
Beizhakou Electrical Industrial Area
Jinnan District
TIANJIN
P.R. CHINA

Nom de l'accessoire représentatif / *Reference of the representative accessory* :
Vanne papillon / *Butterfly valve* CBF02-TA01 DN 50

N° de dossier attribué par le laboratoire habilité / *File reference* : **23 ACC LY 021**

Date de réalisation des essais d'inertie selon la norme XP P41-280 : aucun essai de migration n'est nécessaire à l'obtention de cette ACS.
Tests date (according to the standard XP P 41-280) : No testing is required to issue this ACS.
Commentaires : les composants organiques sont conformes à l'arrêté du 29 mai 1997 modifié. Les composants métalliques sont conformes à l'arrêté du 25 juin 2020.
Comments : organic components are compliant with the decree dated 29th May 1997 modified. Metallic components are compliant with the decree dated 25th June 2020.

Famille d'accessoires couverte par l'ACS / *Accessories' family covered by this certificate* :
Vannes papillons / Butterfly valves

Références / References (3 references) :

CBF02-TU01 (U Section) DN40 - DN1200
CBF02-TA01 (Wafer type) DN40 - DN1200
CBF02-TL01 (Lug type) DN40 - DN600

Attestation délivrée par : Christelle AUTUGELLE
Responsable Laboratoire MCDE
CARSO - L.S.E.H.L.

Signature :

A la date du /*Date of issue* : 01 Février 2023
Date d'expiration / *Expiration date* : 01 Février 2028

Commentaires / *Comments* : Renouvellement / *Renewal* 18 ACC LY 165

Société par action simplifiée au capital de 2 283 622,38 Euros - RCS Lyon B 410 545 313 - SIRET 410 545 313 00042 - APE 743 B - N° TVA : FR 82 410 545 313
Siège Social et laboratoire : 4, avenue Jean Moulin - CS 30228 - F - 69633 VENISSIEUX cedex - Tél. : (33) 04 72 76 16 16 - Fax : (33) 04 78 72 35 03
Site web : www.groupecarso.com - e-mail : mcde@groupecarso.com

EU CERTIFICATE OF CONFORMITY

In accordance with the requirements of the Pressure Equipment Directive 2014/68/EU

This is to certify that the Quality Management System of:

Tianjin Worlds Valve Co., Ltd.
Registration address: Room 1007, Building 1, No. 1988, Yingbin Road, Tanggu, Binhai New District, Tianjin City,
Factory address: No. 25, Fuhui Road, Beizhakou Industrial Zone, Jinnan District, Tianjin City,
People's Republic of China

has been assessed against the requirements of Annex III, Module H of the above Directive and conforms to the requirements for the products shown below:

Design and Manufacture of Butterfly Valves, Check Valves, Gate Valves and Strainers (see attached schedule)

Approval is subject to the continued maintenance of the quality system in accordance with the requirements of the above Directive for the product(s) listed on the attached schedule.

Authorisation is hereby given to use the Notified Body Identification Number in accordance with the requirements of the specified Directive in relation to the products as identified above.

Certificate No.:	0343/PED/0038/PED/SHA/6020650/A
Original Approval:	3 October 2014
Current Certificate:	3 October 2023
Certificate Expiry:	2 October 2026
Notified Body No.	0343

Alfred Yao on behalf of LRQA Nederland B.V.