

Let's move the medium!

butterfly valves

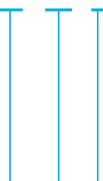
BV10

BV10-U

BV11 - XX XX X

BV12

BV12-U



Body		
Cast iron	23	GG25 Epoxy coated
Ductile iron	24	GGG40 Epoxy coated
Cast steel	44	A216 WCB
Stainless steel	63	CF8
Stainless steel	66	CF8M

Disc		
Alu - Bronze	13	ASTM B148 C95400
Ductile iron	24	GGG40 Epoxy coated
Ductile iron	25	GGG40 Nickel plated
Ductile iron	26	GGG40 Halar plated
Ductile iron	27	GGG40 Nylon plated
Stainless steel	63	CF8
Stainless steel	66	CF8M
Stainless steel	69	CF8M polished

Seat	
EPDM	E
NBR	B
FKM/FPM	V
VMQ	S
PTFE	T
WHITE EPDM	WE
CSM	H

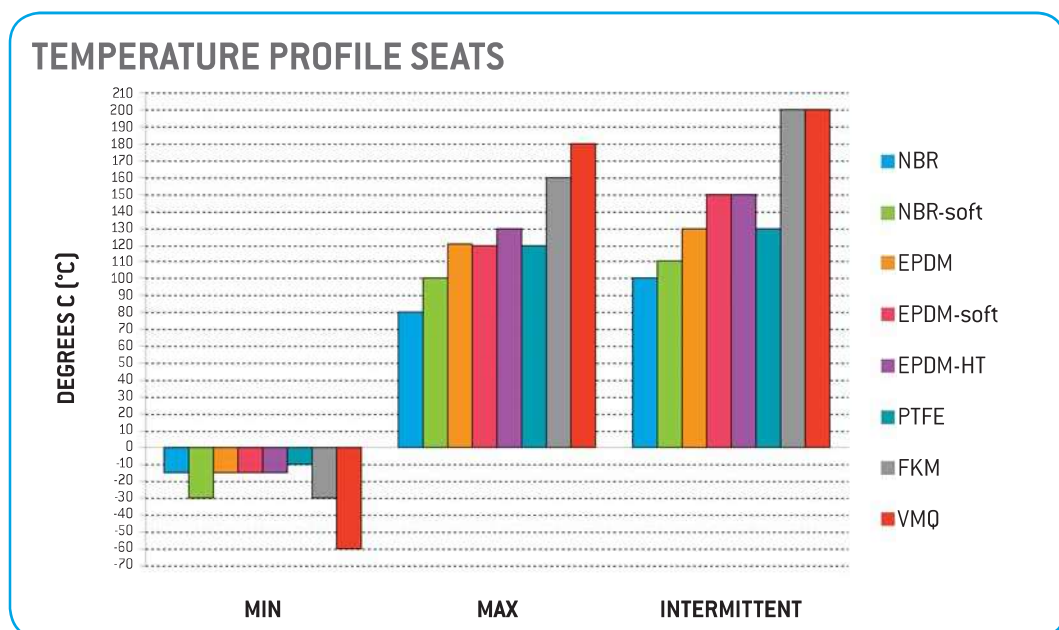
For soft seat valves, NP, code is composed as follows BV10-NP-XXXXX or BV12-NP-XXXXX

rubber - seat material

The field of application and/or chemical resistance suggested by us derives from our long experience in valve manufacturing but are purely indicative. Since many factors influence the liner - type of fluid, concentration, temperature, pressure, type of flow (turbulent, laminar), impurities, etc - the final choice of liner is up to our customers based on their specific process characteristics and applications.



- EPDM** EPDM is a terpolymer elastomer made from ethylene-propylene diene monomer. EPDM has good abrasion and tear resistance and offers excellent chemical resistance to a variety of acids and alkalines. It is susceptible to attack by oils and is not recommended for applications involving petroleum oils, strong acids or strong alkalines. It has exceptionally good weather aging and ozone resistance. It is fairly good with ketones and alcohols and has excellent temperature range from -15°C until +120°C.
- NBR** is a general purpose oil-resistant polymer known as nitrile rubber. Nitrile rubber (BUNA) is a copolymer of butadiene and acrylonitrile and has a moderate temperature range from -15°C until 80°C. Nitrile has good solvent, oil, water and hydraulic fluid resistance. It displays good abrasion resistance and tensile strength. Nitrile should not be used in highly polar solvents such as acetone and methyl ethyl ketone, nor should it be used in chlorinated hydrocarbons, ozone or nitro hydrocarbons.
- PTFE** Polytetrafluoroethylene has outstanding resistance to chemical attack by most chemicals and solvents. It is especially used in applications where high mechanical strength is required. Because of its purity, inertness and electrical isolating properties, PTFE finds most of its applications in chemical-, food-, pharmaceutical- and electro-industry. Temperature ranging from -10°C to +120°C.
- FKM** Fluorocarbon elastomers are compatible with a broad spectrum of chemicals. Because of this extensive chemical compatibility, which spans considerable concentration and temperature ranges from -30°C to +160°C, fluorocarbon elastomers have gained wide acceptance as material of construction for butterfly valves. FKM can be used in most applications involving mineral acids, salt solutions, chlorinated hydrocarbons and petroleum oils. They are particularly good in hydrocarbon service however they are not suitable for hot water and steam service.
- VMQ** Silicons are primarily based on a sequence of silicon and oxygen atoms rather than a long chain of carbon atoms. This silicon-oxygen backbone is much stronger than a carbon-based backbone, making silicons much more resistant to extreme temperature, range -60°C to 180°C. In addition to being generally inert silicons are odourless, tasteless, non-toxic and fungus resistance making them suitable for food & beverage applications. Silicons are not well suited for dynamic use due to their poor tear and tensile strength. Silicons are also gas permeable.
- TFM** TFM is manufactured with PTFE and a 1% fraction of perfluoropropyl vinyl ether (PPVE). While the properties of conventional PTFE will be conserved, the additive PPVE leads to a better allocation of the PTFE particles and thus to a higher density of the molecular structure. This leads - in comparison with conventional PTFE - to a cold flow which is considerably lower for TFM, a reduced permeation that leads to better barrier properties and a smooth surface that provokes only a slight abrasion of the liner and less particles in the medium. Temperature ranging from -20°C to +200°C



EPDM – Soft is soft seat / EPDM – HT : EPDM that is manufactured through other production process which broadens temperature range

rubber - seat material

Name	Composition	General applications	Limitations
EPDM	Ethylene-propylene Terpolymer	Water-Steam Sea Water Brine Esters Ketone Alkalies Caustic soda	Not recommended for Hydrocarbons Oils Fats
NBR	Copolymer of butadiene and acrylonitrile	Hydrocarbons Natural Gas Oils and fat Air Gasoline	Not recommended for Solvents Benzene Xylol
PTFE	PolyTetraFluoroEthylene	Solvents Corrosive products	Not recommended for fluid containing powders Alkaline metals Gaseous Fluorine
FKM	Fluorocarbon polymer	Acids Oils Hydrocarbons	Not recommended for Steam Freon Ketones Alkalies
VMQ	Organic Silicone polymer	Food & Beverage	Not recommended for Steam Oils Hydrocarbons
TFM	Tetra Fluoro Modified (modified PTFE)	High chemical demands High purity environments Corrosive liquids & gases Abrasive liquids & gases	



DISC COATINGS

PFA Perfluoralkoxy-Copolymer is a thermoplastic fluorine polymer. It is used in combination with TFM lined butterfly valves for many different and high demanding applications. PFA is very similar in composition to the fluoropolymers (PTFE) and shows the same useful properties as outstanding resistance to chemical attack, high chemical strength, low coefficient of friction, inertness and electrical isolating properties.

HALAR Halar fluoropolymer exhibits outstanding chemical resistance and excellent barrier properties. It is unaffected by all corrosive chemicals commonly encountered in industry. Amongst those substances that HALAR fluoropolymer is resistant to are strong mineral and oxidizing acids, alkalies, metal etching agents, liquid oxygen and essentially all organic solvents except hot amines. Typical of the fluoropolymers, HALAR is attacked by metallic sodium and potassium. Rate of attack is a function of exposure time and temperature.

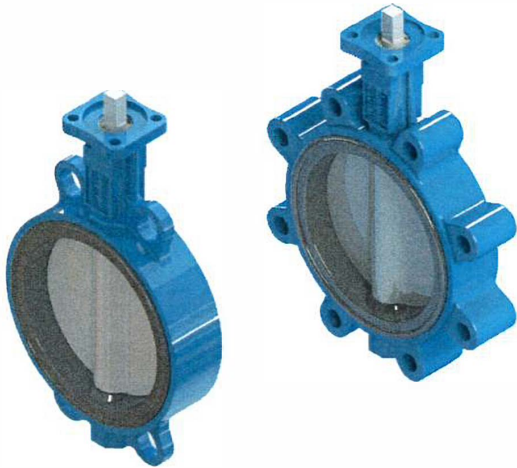
NYLON Nylon, a synthetic thermoplastic polyamide (PA11), has many applications in a wide variety of fields where following characteristics are required: excellent resistance to corrosion, improved resistance to wear and abrasion, good impact resistance, electrical insulation, low surface friction, compatibility with food products, good hygienic properties, long service life. There are no volatile substances, toxicity, or odours released on the finished coatings, thus contributing to a healthy environment.

BV10NPS/BV12NPS

SOFT SEAT CONCENTRIC BUTTERFLY

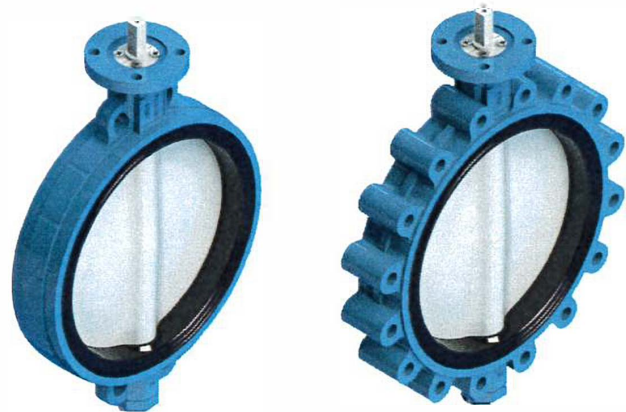
PN10 / PN16 (DN50 - DN400)

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TECHNICAL DESCRIPTION

- Soft seat means without any backup
- Maximum pressure rating is 16bar
- Fully sealed in both directions
- Four flange locating holes ensure accurate valve position during installation
- Valve seat is detachable and easy to replace, ensuring low maintenance cost and long service life.



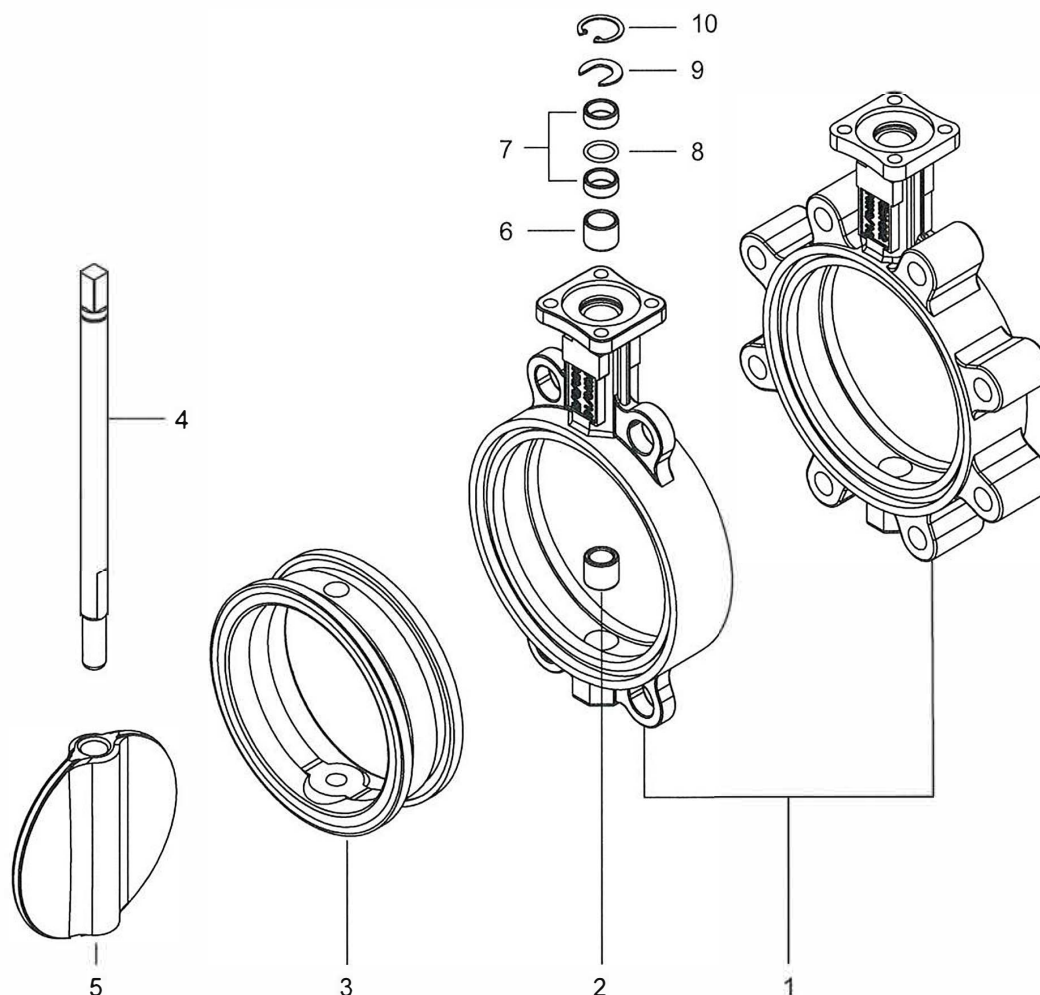
TECHNICAL DESCRIPTION

- Valve size DN50 to DN400
- Design acc. to API 609, EN 593, BS5155
- Face to face acc. to API 609&EN 558 series 20
- Connection flange:
 - ANSI CL150
 - EN 1092-2 PN6 (only for BV10NPS)
 - EN 1092-2 PN10
 - EN 1092-2 PN16
- Testing and inspection acc. to API 598&EN 12266-1
- Top flange acc. to ISO 5211
- Standard top flange can be installed for pneumatic actuator, electric actuator, hand lever, gear box and so on.

BV10NPS/BV12NPS

SOFT SEAT CONCENTRIC BUTTERFLY
PN10 / PN16 (DN50 - DN400)

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DN50-DN300

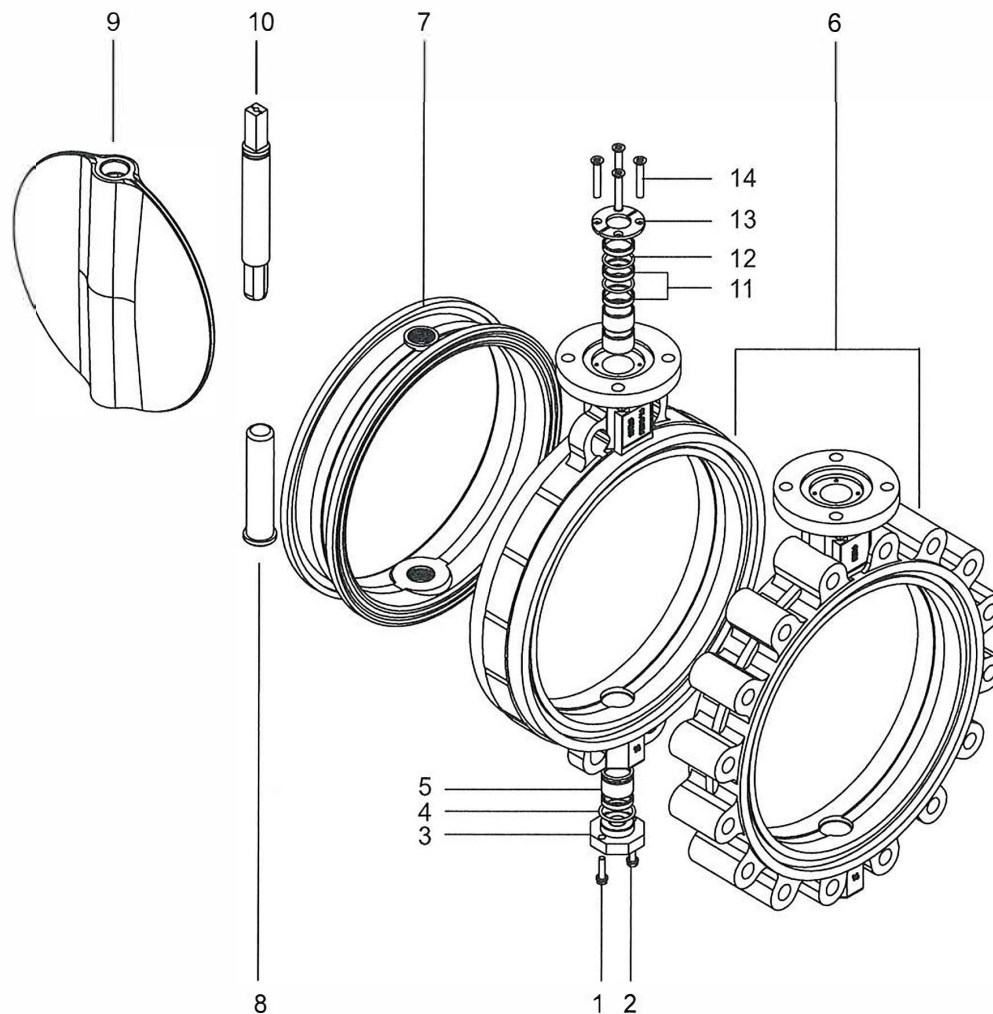
NO.	NAME	MATERIAL			
1	Body	GG25/GGG40			
2	Down bushing	Lubricating bronze			
3	Seat	EPDM			
4	Shaft	ASTMA276 SS410/SS420			
5	Disc	GGG40+EPOXY	GGG40+Ni Plated	GGG40+Nylon	Al-Brone CF8M
6	Long bushing	Lubricating bronze			
7	Short bushing	Lubricating bronze			
8	O-Ring	NBR/EPDM/EPDM HT/MVQ/FKM			
9	Splint ring	Steel			
10	Circlip	Steel			

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BV10NPS/BV12NPS

SOFT SEAT CONCENTRIC BUTTERFLY
PN10 / PN16 (DN50 - DN400)

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DN350-DN400

NO.	NAME	MATERIAL
1	Hex bolts	Steel
2	Spring washer	Steel
3	End cover	GG25/GGG40
4	O-Ring	NBR/EPDM/EPDM HT/MVQ/FKM
5	Middle bushing	Lubricating bronze
6	Body	GG25/GGG40
7	Seat	EPDM
8	Support Shaft	ASTMA276 SS410/SS420
9	Disc	GGG40+EPOXY GGG40+Ni Plated GGG40+Nylon Al-Brone CF8M
10	Control Shaft	ASTMA276 SS410/SS420
11	Short bushing	Lubricating bronze
12	O-Ring	NBR/EPDM/EPDM HT/MVQ/FKM
13	Open loop	SS420
14	Screws	Steel

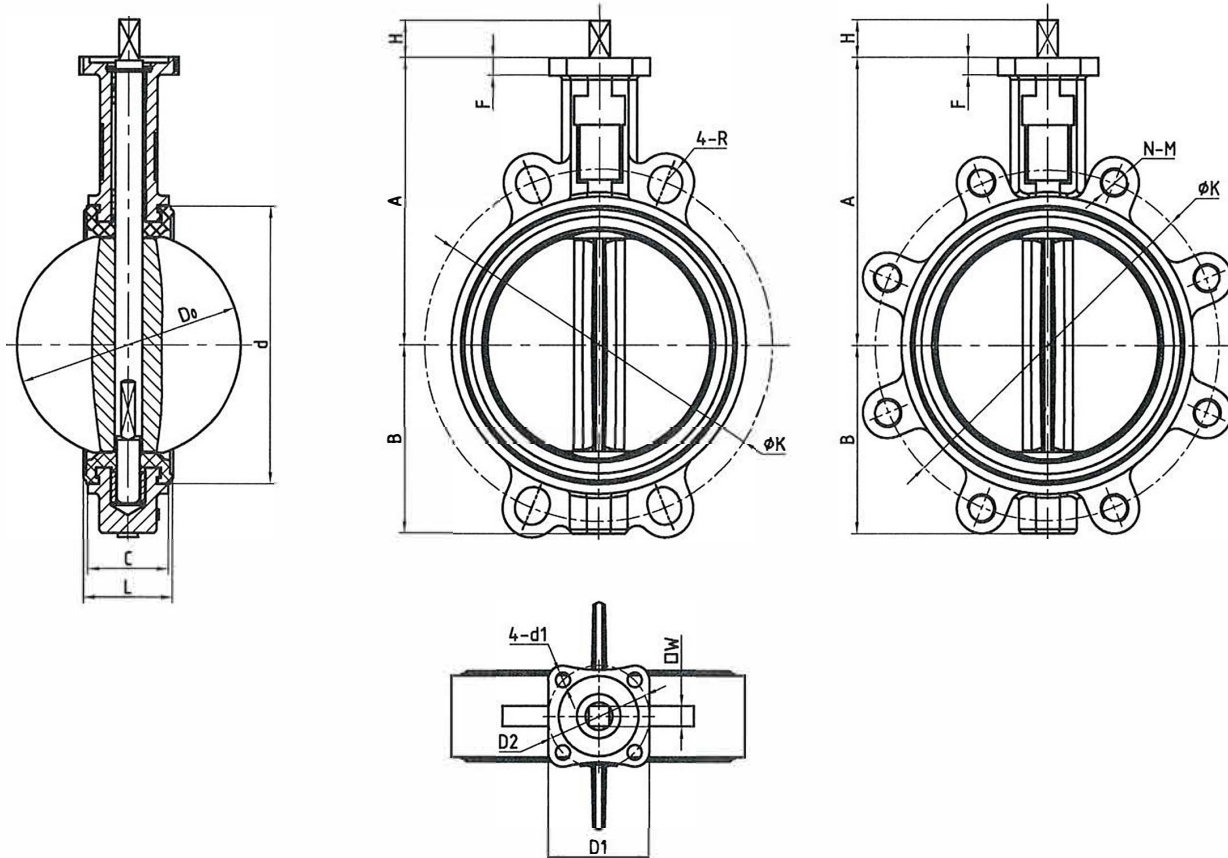
BV10NPS/BV12NPS

SOFT SEAT CONCENTRIC BUTTERFLY

PN10 / PN16 (DN50 - DN400)

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DN50-DN300



SIZE		A	B	H	C	L	D0	d	F	D1	D2	d1	W	End connection			Weight(Kg)	
DN(mm)	NPS(in)													K	R	N-M	Wafer	Lug
50	2	125	65	17	43	47	52.5	79	10	50	50	7	9				2.5	2.8
65	2 1/2	136	71	17	46	51	64.3	95	10	50	50	7	9				2.9	3.2
80	3	142	78	17	46	51	78.8	111	10	50	50	7	9				3.3	4.1
100	4	163	95	19	52	58	104	135	12	70	70	10	11				5.6	7.3
125	5	176.5	112	19	56	62	123.3	163.5	12	70	70	10	14				7.2	10.0
150	6	197	129	25	56	62	155.4	190	12	70	70	10	14				8.6	11.6
200	8	230	158	25	60	66	202.4	246	15	102	102	12	17				15.0	18.5
250	10	260	193	38	68	75	250.4	300	15	102	102	12	22				22.0	30.5
300	12	292	222	38	78	85	301.5	352	15	102	102	12	22				24.5	47.0

Reference
ASME B16.5 CL150
EN 1092-2 PN6(A)
EN 1092-2 PN10
EN 1092-2 PN16

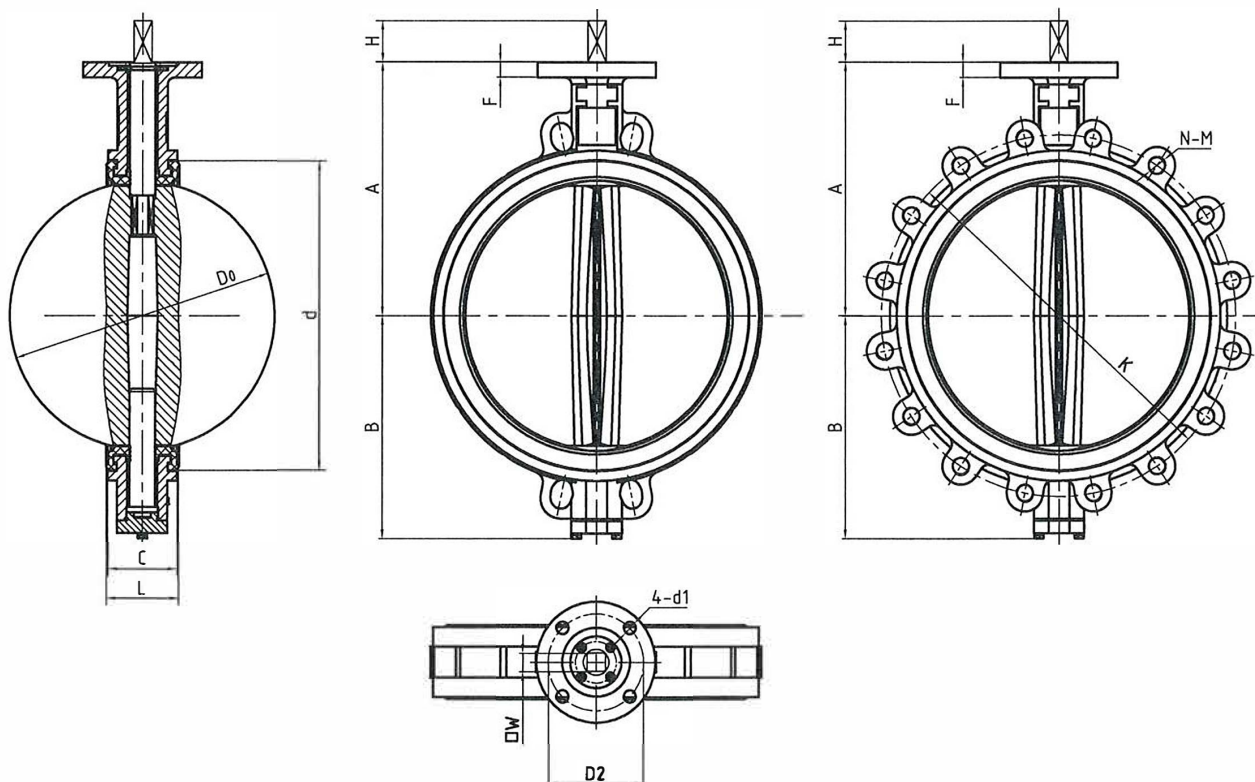
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BV10NPS/BV12NPS

SOFT SEAT CONCENTRIC BUTTERFLY
PN10 / PN16 (DN50 - DN400)

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DN350-DN400



SIZE		A	B	H	C	L	D0	d	F	D2	d1	W	End connection		Weight(Kg)	
DN(mm)	NPS(in)												K	N-M	Wafer	Lug
350	14	336	270	40	78	83	333.3	383.5	20	125	14	22	ASME B16.5		46	78
													CL150			
400	16	368	323	45	102	107	389.6	449.5	22	140	18	27	EN 1092-2 PN10/		73	88
													PN16			

BV10NPS/BV12NPS

SOFT SEAT CONCENTRIC BUTTERFLY

PN10 / PN16 (DN50 - DN400)

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TORQUE

VALVE SIZE		Torque(16bar, Wet)Nm
DN(mm)	NPS(in)	
50	2	12
65	2½	18
80	3	30
100	4	45
125	5	65
150	6	80
200	8	140
250	10	260
300	12	380
350	14	600
400	16	780

- The data listed in the table are the starting torque values when the medium is liquid or lubricating medium.
- The data listed in the table are reference values. The actual values are related to many factors, such as pressure, medium, rubber material, quality, temperature, etc.
- Other requirements please consult with Belven Controls.

Cv

VALVE SIZE		Cv(90°)
DN(mm)	NPS(in)	
50	2	115
65	2½	196
80	3	302
100	4	600
125	5	1022
150	6	1580
200	8	3140
250	10	5340
300	12	8250
350	14	10400
400	16	13600

- Cv value in the table (USgal / min), water temperature 60 °F (15.6 °C), water flow measured when the pressure difference is $\Delta P = 1$ psi
- Approximate conversion relation $Cv=1.156Kv$
- Other requirements please consult with Belven Controls.

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