

AVK SAUDI BUTTERFLY VALVE



BUTTERFLY VALVES

Expect... **AVK**
الشركة السعودية لصناعة الصمامات المحدودة
SAUDI VALVES MANUFACTURING CO. LTD.

EXPECT SUPREME PRODUCTS

AVK is one of the leading manufacturers of valves for the water, gas and sewage industries as well as fire protection worldwide. Our product programme comprises a large range of valves, hydrants, pipe fittings and accessories, each complying with the highest standards of safety and durability. Today, AVK is the only manufacturer offering gate valves that meet to most of the common national and international standards such as ISO, CEN, DIN, NF, BS, AWWA, JWWA, SABS, AS and GOST. Our global position ensures that we are able to give you, your partners and your customers the quality products you require.

WHEN IT COMES TO QUALITY AT AVK, NOTHING IS LEFT TO CHANGE

AVK's products are characterized by a high, consistent quality, competitive prices and a durability in line with market requirements. This calls for strict quality control of the production process from beginning to end leading to AVK being certified according to ISO 9001.

PRODUCT DEVELOPMENT

Market proximity is an important part of AVK's strategy; close contact with the end-user ensures close monitoring of the market as well as constant adaptation and development of the product programme to meet with market requirements. This takes place in our development department in Denmark, an advanced technology centre, where ideas and suggestions from different countries are gathered and existing products are continually adapted and tested. In co-operation with the end user, the products are field tested before the final market launch, thus achieving the best result in each individual market.

PRODUCTION

Production takes place in Saudi Arabia, Denmark, the UK, Netherlands, France, Poland, USA, Australia, Germany, Spain, Switzerland, Malaysia, Japan, China, India and Canada. AVK products are also produced under license in several other countries. Stock control and distribution to end users are handled through a wide network of sales companies, agents and dealers in more than 85 countries. This network services the end-user, allowing AVK to monitor market changes and keep abreast of customer requirements.

AVK FOCUSES ON THE ENVIRONMENT

The products of AVK form part of infrastructures, which play an important role for the local environment all over the world. This, for example, applies to the supply of pure drinking water and the draining of wastewater to treatment plants. As a natural consequence of this, AVK focuses on the environment in all of its internal processes.



BUTTERFLY VALVES FOR WATER, WASTEWATER & FIRE PROTECTION

Butterfly valves are generally used for process applications, however, they have recently become a versatile product that is used in many different applications and industries.

Butterfly valves are broad in all aspects such as media usage, pressure resistance, combinations of materials, operating options and approvals/certifications. For the water sector, the design of butterfly valves is approved for usage in clean potable water, final effluent, air scour duty and UV systems, provided that the appropriate valve materials and liners are used. It is both used for isolation and regulation duties* and has excellent flow control functionality.

* Consult AVK if you want to use Butterfly valves for regulation.





Global presence and delivery service

To brand and sell AVK's comprehensive product assortment, the AVK Group is present in more than 85 countries worldwide. Sales and distribution are handled by AVK sales companies, agents and distributors.

We value the importance of local customers being serviced by local sales organisations. It enables us to provide a great service to our end users located around the world. Furthermore, it is crucial for our continued development that we maintain the proximity to our end users. Only by listening to our customers, we will be able to keep living up to the market expectations.

AVK GROUP IS RENOWNED WORLDWIDE FOR QUALITY AND RELIABILITY

THERE IS ALWAYS AN AVK COMPANY OR AN AVK PARTNER NEAR YOU

Extensive range of butterfly valves

AVK was founded in 1969 and in the first years we focused on gate valves. From the 90s we started offering butterfly valves. AVK became distributor of centric fixed liner butterfly valves from Wouter Witzel, a well-esteemed manufacturer founded in 1966 in the Netherlands and since 2005 a member of the AVK Group.

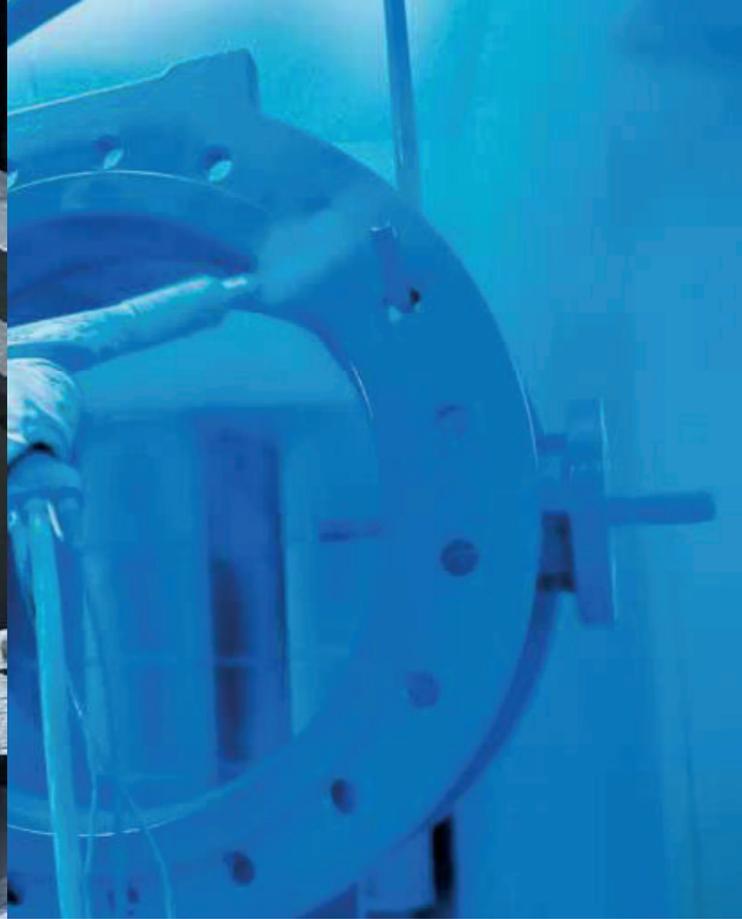
The same year AVK introduced a brand new range of double eccentric butterfly valves. DN 1400-2200 were added to the range a few years ago and are manufactured at Glenfield in the UK, the AVK Group specialist in large diameter valves. In 2008 AVK acquired World Valve, a small manufacturer strong within customized butterfly valves.

In 2010 InterApp Armaturen Holding AG became member of the AVK Group. InterApp was founded in 1969 and is a well reputed manufacturer of centric loose liner butterfly valves produced in Spain and Switzerland. Today approx. 3,000 people in the AVK group are doing their utmost to ensure that AVK remains one of the world's leading valve manufacturers for water, sewage, gas and fire protection applications.

Quality is a rule of conduct in our supply chain

AVK valves are manufactured in modern factories characterised by lean production and a high degree of automation. We are entirely committed to ensuring that quality remains an integrated part of our production flow. Throughout the processes, a number of tests and quality controls are meticulously carried out to safeguard the durability and operational reliability of our products. Our quality assurance system is of course certified according to the ISO 9001 standards.

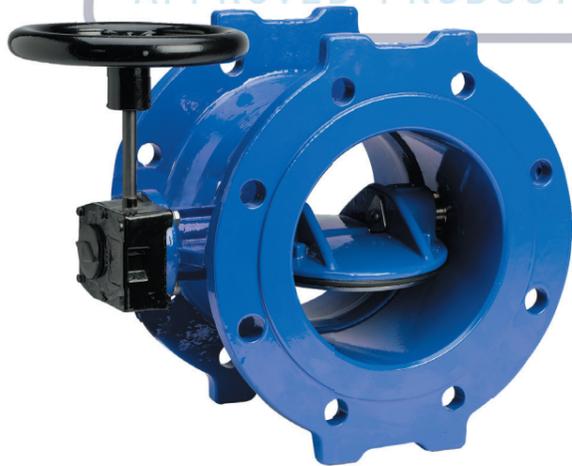




STATE-OF-THE-ART RUBBER TECHNOLOGY GIVES HIGHEST SAFETY



CORROSION PROTECTION IN COMPLIANCE WITH TOUGH REQUIREMENTS



Internal and external epoxy coating to DIN 30677-2 AND WRAS guidelines

All casting are blast cleaned according to ISO 12944-4. Any unevenness of the product surface is cleaned to provide perfect adhesion of the coating. The epoxy is electrostatically applied in a closed booth, where the powder melts and cures in contact with the preheated component. Through control measures ensure optimum corrosion protection. Our double eccentric butterfly valves from DN 1400 come with a two-pack epoxy, and our centric butterfly valves with loose liner in DN 450 and above are supplied with a 300 µm polyurethane coating.

Traceability and durability in focus

The rubber materials for liners and sealings are developed and manufactured by AVK GUMMI A/S with the use of highly advanced technologies.

Data is constantly collected throughout the entire manufacturing process and this secures traceability of every individual ingredient, each compound, and the finalised components. A number of tests are carried out to make sure that the compression set values, the tensile strength and the resistance to water treatment chemicals meet the predefined requirements.

Excellent ability to regain original shape

AVK GUMMI A/S has a special focus on the compression set value, meaning the ability to regain original shape. Even after many years of service where the rubber has been compressed numerous times, it will regain its original shape and ensure a tight sealing. Impurities will not affect the rubber surface or the tightness of the valve, as the impurities will be absorbed in the rubber when the valve is in closed position.

Furthermore, the rubber recipes are composed with focus on minimising the formation of biofilm to prevent the rubber from forming breeding ground for bacteria.

AVK CENTRIC BUTTERFLY VALVES FIXED LINER



AVK offers the widest range of butterfly valves at the market. The fixed liner butterfly valves from AVK are among the very few of its kind and offer outstanding advantages.

Unique fixed liner design

An outstanding seating concept is the heart of the valve. The rubber is injection moulded directly on the valve body forming a permanent bond with an optimal rubber shore hardness. Consequently, there is no risk of deformation or dislocation of the liner and the valves are therefore suitable even under vacuum conditions.

The disc has a profiled sealing edge which requires minimal deformation of the liner to achieve a tight sealing. This gives less wear of the liner and low operating torques.

Feature summary

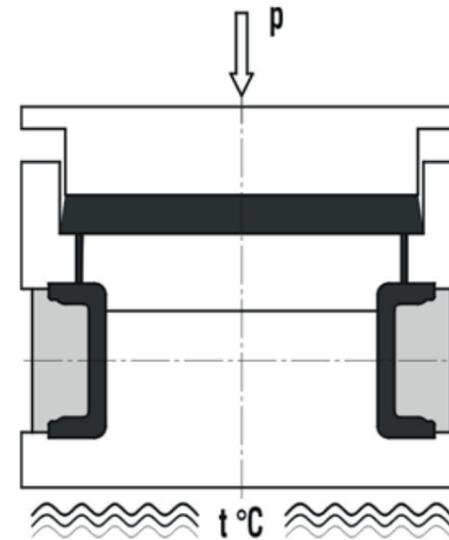
- Fixed liner with no risk of deformation or dislocation, thus suitable under vacuum conditions
 - AVK rubber liner with excellent ability to regain shape after compression
 - Disc with profiled sealing edge gives less wear of liner
 - Low operating torques due to fixed liner, profiled disc and shaft bearings
 - Streamlined disc prevents turbulence, pressure drops and valve vibration
 - Available as wafer, semilug, full lug, double flanged short and double flanged long in DN 40-2000 with any type of actuation
- AVK offers the widest range of butterfly valves at the market. The fixed liner butterfly valves from AVK are among the very few of its kind and offer outstanding advantages.

*No turbulence or pressure drops
The streamlined disc gives low flow resistance when the valve is open.
Therefore, the valves will not cause any turbulence, pressure drops or valve vibration, and will reduce energy costs for the user.*



Profiled disc and unique AVK rubber ensure exceptional durability
The unique AVK rubber compound has an excellent ability to regain shape after compression, and this ability combined with the profiled disc secure tightness even after thousands of operation cycles.

Bonded Vulcanized Liner



Vulcanization is done by transfer or injection presses

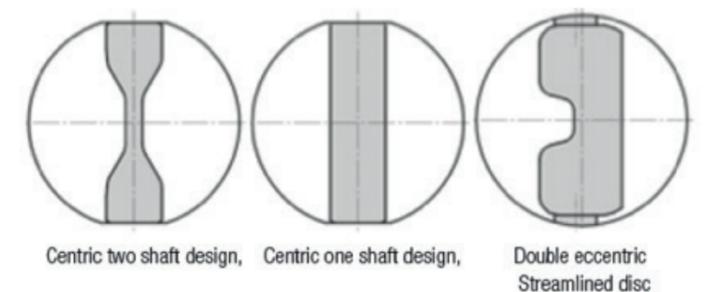
1. The chamber is filled with un-vulcanized rubber
 2. The press holes create a cavity between mold and body
 3. The cavity will be filled with rubber at high temperature and pressure
 4. The rubber vulcanizes
- e.g. DN 500 = 50min, DN 1500 = 5 hours



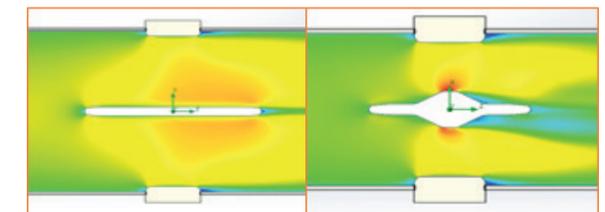
Benefits of streamlined disc design

- No turbulence, pressure drops or valve vibration - Low flow resistance & High Kv values
- Reduced energy costs
- Bi-directional tight shut-off

Flow characteristics/ flow resistance



Higher Kv



PRODUCT INFORMATION

AVK CENTRIC BUTTERFLY VALVES LOOSE LINER

Fixed Liner Butterfly Valve

The Innovation that Reduce the Water Operation Cost

WARRANTY 5 YEARS WARRANTY

Higher Kv + **Low Torque**

Maintenance Free

50 years Serving Water Authorities around the World

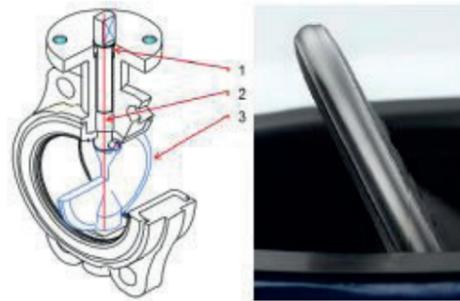
No Corrosion = **Water operation cost reduction**

Low Torque *Profiled Disc Edge*

The torque values which is required to operate Centric Butterfly Valves is very low. This also impact on the sizing of the gearbox or the actuator. The less torque the smaller gearbox/actuator required which will result in a less costly package.

AVK Centric Butterfly Valve is designed with 3 main components which secure a minimum required torque to operate the valves.

- 1. Bronze Bushing. 2. PTFE Bearing.
- 3. Profile Disc Edge.



Compared to Double Eccentric Butterfly Valve which requires a higher operating torque values. This means a bigger gearbox/ actuator which will impact on the total cost of the valve and actuator and also increasing the operating cost on the end user as more power will be consumed.

A MULTIPURPOSE, MODULAR AND STATE OF THE ART VALVE

The centric butterfly valve with loose liner AVK Series 820 is specially designed for liquids and gasses in water, waste-water and gas supply and is mounted with a wide range of actuators.

Long experience, best technology

Produced by our sister company InterApp Valcom, in Spain, the AVK Series 820 is based on their best performing butterfly valve Desponia, which has been produced for more than 35 years. AVK Series 820 has been designed with many features that assure a trouble-free operation for many years:

- Robust body in ductile iron with fusion bonded epoxy coating
- Resistant and replaceable liner

- Square driven disc for assuring an effective and durable power transmission and streamlined shape for better flow characteristics
 - Unique anti-blow out shaft system
 - Stainless steel shaft that always works dry
- The Series 820 is available in Wafer, Lug and U-shape, for sizes from DN25 up to DN1600, working pressures up to 16 bar, and maximum temperatures of 135 oC. The body design allows for the most significant flange rating connections.



CASE STUDY

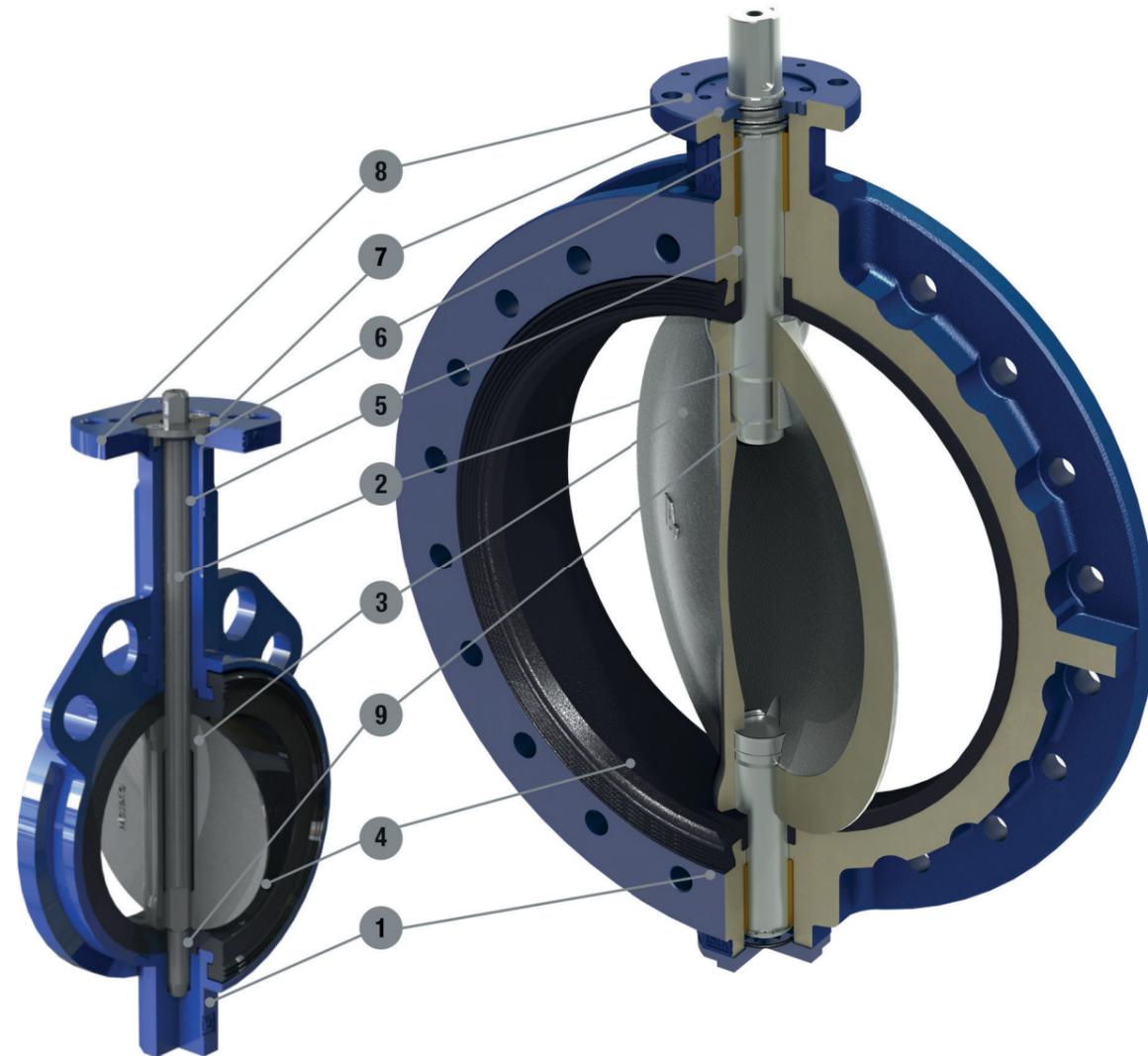
A DN400 centric design butterfly valve at 16 bar Differential pressure will require 1000 Nm for Open/Close. When looking for the selection of an electrical actuator, the choice will be a model which consume 0.2KW power consumption.

A DN400 double eccentric design butterfly valve at 16 bar differential pressure will require 1960 Nm for Open/Close. When looking for the selection of an electrical Actuator, the choice will be a model which consume 0.4KW power consumption.

Case Study Conclusion

Due to lower torques, the power consumption of centric design butterfly valves is %50 less than the power consumption in the double eccentric butterfly valve design. In total, this will reduce the water operation cost.

ROBUST DESIGN AND MODULAR APPROACH



1. Body (extended valve neck allowing insulation)
2. Blow out proof shaft with position indication
3. Disc with streamlined shape and polished edges
4. Replaceable liner with sealing grooves on the tightening face
5. Shaft bearings (Resicoat®, Bronze)
6. External shaft sealing
7. Retaining washer (blow out protection)
8. ISO top flange for modular actuator connection
9. Square driven disc mechanism

SEVERAL MATERIALS FOR SPECIFIC APPLICATIONS



The Series (76/820) disc features a streamlined shape for better flow characteristics and polished edges to reduce the torque and avoid wear of the liner when the valves operate frequently.



The disc sealing area, which is contact with liner, is spherically designed to ensure a perfect connection between liner and disc and guarantees a perfect tightness in the shaft passage.



Stainless Steel

- Acid resistant stainless steel, with superior mechanical properties
- AISI 316 stainless steel offers a good general resistance to corrosion that makes it suitable for many applications
- Widely used on drinking water applications, due to its inert and corrosion resistant nature



Ductile iron, Rilsan coated

- Ductile iron (GGG40), with Rilsan coating of 250 microns
- Rilsan is a polyamide and bioplastic, a member of the nylon family of polymers, also known as Nylon 11
- It has good chemical resistance and it is approved for drinking water systems





The AVK Series 820 features one of the most resistant yet replaceable liners in the market.

Due to its robust construction and unique characteristics, it assures a long lifetime of the valve, while maintaining a perfect tightness during all the stages of valve operation.

1. The set of built in O-rings in the shaft passage and the convex form ensure a tight connection with the shaft avoiding any leakage in the shaft passage

2. Special shape to ensure a perfect grip to the body, which prevents any relative liner displacement when the disc opens or closes

3. Sealing grooves on tightening face assure a perfect installation between flanges



Standard EPDM

- One of the most popular elastomer materials
- Excellent chemical resistance to a wide variety of corrosive products
- Working temperature: -20 – 95C

High temperature EPDM

- This material maintains the chemical resistance of standard EPDM, while increases the maximum working temperature
- Working temperature: -20 – 95C

EPDM with potable water approvals

- It keeps the chemical resistance, with a special formulation to be able to pass the long and strenuous tests of many of the main potable water approval regulations: NSF-61, WRAS, ACS, W270, KTW
- Working temperature: -20 – 95C

Nitrile

- General oil resistant polymer
- Working temperature: -20 – 95C
- Widely used in applications that contains hydrocarbons
- Good wear resistance
- Working temperature: -10 – 100C



State-of-the-art anti-blow out shaft retention system with retaining collar and screws, which avoids the use of connecting pins between disc and shaft or other complicated systems

Replaceable liner with robust design that allows for high operation cycles and ensures a longer lifetime of the valve

Stainless steel shaft with position indicator on top, and a highly precise square machined for driving the disc, which assures an effective and durable power transmission.

Slim disc design with polished edges that reduces the torque and avoid sharp edges which can damage the liner. The interior of the disc has a precisely machined square for the connection to the shaft

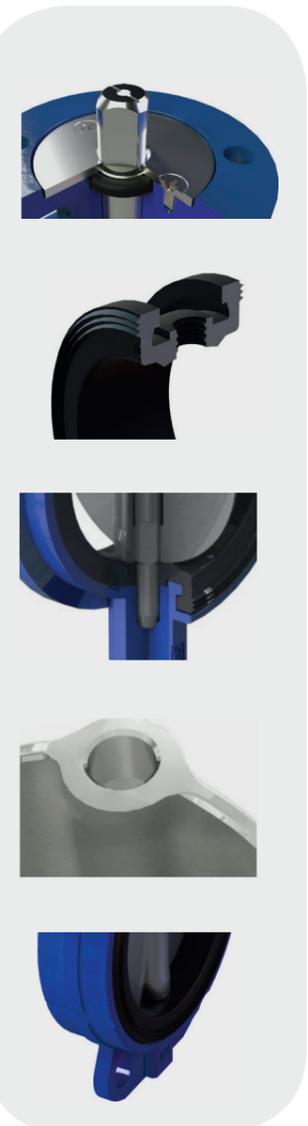
Robust design body with fusion bonded epoxy coating, applied in-house, and able to meet the C5 corrosion category of the ISO-12944

MANUFACTURED WITH THE BEST FEATURES

The AVK Series 820 has technical features that make it stand out as one of the most reliable and higher quality butterfly valves in the market.

Robust design improved for more than 35 years

Thanks to InterApp Valcom, Member of the AVK Group, and its long experience as a butterfly valve manufacturer, the AVK Series 820 counts with first rate quality standards and flexibility, full In-house manufacturing capacity, and technical know-how . All these manufacturing characteristics, along with its technical features, make the AVK Series 820 one of the best performing butterfly valves in the market



WIDE RANGE OF ACTUATORS, MULTIPLE POSSIBILITIES

FM APPROVED BUTTERFLY VALVES

Handlevers

- Plastic and aluminium handlevers
- Robust design with ergonomic grip
- With 10 notched positions
- Lockable with padlock
- Possibility to mount limit switch boxes

Gearboxes

- Quarter turn gearboxes • Cast aluminium or cast iron housing, polyurethane coated
- Torque up to 32.000 Nm • Adjustable travel stops
- Input shaft in Stainless steel
- Available in special configuration and with a wide range of accessories

Electric actuators

- Ruggedized electric actuators
- For On-Off and Modulating applications
- Quarter turn or Multi-Turn with torque up to 500.000Nm
- Power supply: AC / DC and three-phase
- Different control and communication protocols available
- Special executions available: Explosion-proof, fail-safe executions, etc.

FEATURES

- Easy installation (integrated flange gasket)
- Bi-directional
- Available in Wafer, Semi-lug, Lug and double flanged type
- Many trim options and suitable for aggressive fluids and stagnant (sea)water
- Several coating systems available, incl. for buried service
- High corrosive resistant trim
- Cast iron FM approved gearbox
- High duty: rubberlined bonded to the body, vacuum proof and reliable low torque



DOUBLE ECCENTRIC BUTTERFLY VALVE, THE SAFE CHOICE



Wouter Witzel introduces their program for FM approved rubber-lined butterfly valves. Industrial and commercial companies around the world rely on products and services that are FM Approved and specification tested to protect their properties with systems for fire protection.

The FM APPROVED mark, which is backed by scientific research and testing, tells customers the product conforms to the highest standards.

Our range of FM approved butterfly valves fully comply to these requirements and are specific designed for heavy duty fire-water applications.



DESIGN	
Body	Wafer type Semi lug type Lugged type Single flanged type Double flanged type
Design Standard	EN 593 and API 609
End Connection	EN 1092 PN 10, 16 ASME B16.5 cl. 150 MSS SP 44 cl. 150
Size Range	DN 50 - 400, NPS 2" - 16"
Face to Face	EN 558-1/2 Series 13,14,16,20 API 609 A
Body	Ductile Iron JS1030 or ASTM A 395
Body Seat	Rubber lined bonded to the body (NBR or EPDM)
Disc	Centric design (several materials available)
Shaft	Dry shaft design
Gearbox	FM approved gearbox with Vane indicator and optional (2) integrated switches
Options	Extension spindle Extra Coating layers

FUNCTIONAL CHARACTERISTICS	
Application	On/off and regulating
Design pressure	max. 16 bar
Design temp	NBR : 90 degr. C EPDM : 110 degr. C
Flow velocity	5 m/s
Seat tightness	Bi-directional ISO5208 A
Certificates	EN10204 2.2,3.1,3.2

TYPICAL MARKETS FOR OUR FM APPROVED BUTTERFLY VALVES

- Oil & Gas Industry: refineries and tank terminals
- (Petro) Chemical industry
- Building services: Airports utility buildings
- Power Plants

OUR FM APPROVED BUTTERFLY VALVES ARE SUITABLE FOR HEAVY DUTY APPLICATIONS SUCH AS FIREWATER SYSTEMS WITH

- Seawater
- Foam
- Chlorinated water
- Stagnant and aggressive water (high chance of corrosion)
- High flow velocity (up to 5 m/s is guaranteed) and vacuum proof
- Low operation frequency (reliable low torque due to bonded rubber lining and disc design)



AVK offers double eccentric butterfly valves in DN 200-2800 designed with durability in focus. The tilted and firmly secured disc, the optimised seal design and the corrosion protected shaft end zones are features that exceed the market standards.

Tilted and secured disc

The tension on the disc is released after a few degrees of opening which gives only insignificant wear of the disc seal. Furthermore, the design minimises the compression of the sealing which ensures low operating torques.

The disc and shaft are connected by means of a key and a keyway. Furthermore, the key is secured with two set screws to prevent wear of the keyway and thus to avoid fluttering caused by flow velocity and play in the key and keyway connection.

Two disc designs

Two different disc designs – plate design and flow-through design – are available to meet market requirements worldwide. The flow-through design is less sensitive to cavitation at high flow velocities. This design is available for DN 700-1200 butterfly valves.



AVK BUTTERFLY VALVES FEATURE PROTECTED SHAFT ENDS



Two seat designs

AVK offers double eccentric butterfly valves with two different seat designs.

The integral seat design has a machined and epoxy coated ductile iron seat integrated in the body.

The stainless steel seat design has a replaceable seat ring of stainless steel sealed with an O-ring. For DN 200-600 valves the ring is pressed into the body, and for larger dimensions the ring is fixed with bolts sealed with epoxy.

Disc seal optimised for high performance

The disc seal is shaped to secure fixation in correct position providing a very reliable function. The excellent rubber quality makes it possible to reduce the amount of rubber which ensures low closing torques. The EPDM sealing is approved by DVGW, KIWA and WRAS.

The stainless steel retainer ring keeps the disc seal in place. It is fixed by stainless steel bolts coated with precoat 80 to prevent loosening. The threaded bolt holes in the disc are corrosion protected with O-rings around the bolt heads.



Protected shaft ends secure durability

There are no uncoated ductile iron surfaces exposed to the media. In DN 200-600 the shaft ends are protected with stainless steel plates with gaskets.

After mounting and successful pressure test, an extra layer of epoxy coating seals the steel plates. In larger dimensions the shaft ends are fully encapsulated in the disc and fixed to the disc with dowels.

The low friction PTFE shaft bearings ensure low operating torques for the complete range.

*Design of DN 700-2800
The shaft ends are fully encapsulated in the disc and are fixed with dowels. There are two O-rings on each dowel, which are protected with a stainless steel plate fixed with stainless steel bolts.*



DOUBLE OFFSET AWWA C504 BUTTERFLY VALVES

Series VBS valve is a high performance double offset butterfly valve. With versatile design, it introduces several innovations that set it apart from other existing valves on the market and aims to serve with excellence the water market and its needs.

The great advantage is the double offset disc (butterfly) system and sealing system with interchangeable seat in the body, providing easy maintenance and extending useful life.

Replaceable shaft sealing

The shaft sealing is replaceable under pressure to enable easy maintenance. Sealings of EPDM secure tightness from inside and out, and NBR sealings protect against impurities from outside. The butterfly valves are fitted with a locking device which makes it possible to lock the disc in open/closed position.

Bi-directional and slim design

The valves are bi-directional even though valves from DN 700 and up are marked with an arrow indicating the preferred flow direction.

In addition to all the design features and benefits, AVK has minimised the weight to make handling easier and to put less strain on the environment.

Actuation of your choice

AVK can offer any type of actuation. Our standard options are IP67 gearboxes with handwheel for above ground installation, IP68 gearboxes for buried service, and ISO-input gearboxes for mounting of electrical actuators. Furthermore, we offer extension stems, adaptors and handwheels.

Product approvals

The butterfly valves are approved by:

- DVGW in DN 200-1200
- KIWA in DN 200-600
- WRAS in DN 700-1200

For larger dimensions all components are approved.

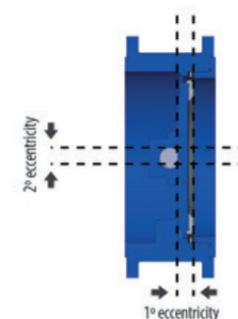


Valves Characteristics

- Wafer Type: DN 50mm (2")-600mm (24")
- Flanged Type: DN 80mm(3")-1900mm(72")
- Construction :ABNT 15768 | awwa c504 | ISO 5752 S13 | API609B
- Body Material : Ductile iron, carbon steel, stainless steel, others.
- Disc material: Ductile iron, carbok steel, stainless steel, others.
- Seat: EPDM | BUNA-N | POLYURETHANE, Others
- Installation: NBR 7675 | ISO 2531 | ANSI | AWWA
- Actuation: Manual | Pneumatic | Electric



Pressure test of every single valve
The hydraulic test is always done from both directions according to EN 1074-1 and 2 / EN 12266.



DOUBLE OFFSET DESIGN

Body, disc and stem are designed with an offset double system, reducing friction between the disc and seat, extending useful life, and allowing greater flow of fluid in small disc opening angles



Seat

Elastomer replaceable seat with "steel core" embedded to the body and fixed by a retaining ring. Body lined with / vulcanized rubber.



PACKING GLAND

Reversed type allows gasket adjustment without dismantling actuation system.



Seat

Elastomer replaceable seat with "steel core" embedded to the body and fixed by a retaining ring. Body lined with / vulcanized rubber.

DOUBLE OFFSET BUTTERFLY VALVES



FACE TO FACE FLANGED TYPE

Valve face to face dimension is built according to AWWA C504 (Short Body)/ ISO 5752 Series 13 Standards and others under request.



FACE TO FACE WAFER TYPE

Valve face to face is built according to AWWA C504 (Short Body) / ISO 5752 Series 20 Standards and others under request.



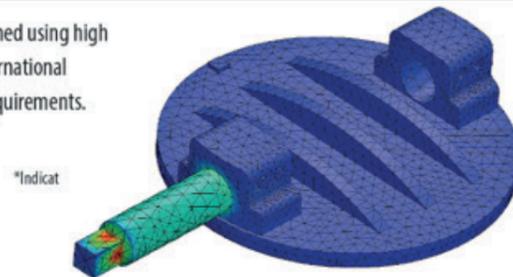
TOP FLANGE

The mounting base of the top flange is built according to ISO 5211 Standard. Allowing, together with the stem, the direct coupling of manual, electric or pneumatic actuators, in addition to allow packing gland setting and viewing.

DN	FACE TO FACE DIMENSIONS			
	FLANGED TYPE		WAFER TYPE	
	AWWA C504	ISO 5752 SERIES 13	ISO 5752 SERIES 20	AWWA C504
50 (2")	*	108	43	
75 (3")	127	114	46	50,8
100 (4")	127	127	52	57,2
150 (6")	127	140	56	71,4
200 (8")	152	152	60	74,6
250 (10")	203	165	68	79,4
300 (12")	203	178	78	85,7
350 (14")	203	190	78	96,3
400 (16")	203	216	102	105
450 (18")	203	222	114	117
500 (20")	203	229	127	130
600 (24")	203	267	154	
700 (28")	*305	292		
750 (30")	305			
800 (32")	*305	318		
900 (36")	305	330		
1000 (40")	*305	410		
1050 (42")	305			
1200 (48")	381	470		
1350 (54")	381			
1400 (56")	*381	530		
1500 (60")	381			
1600 (64")	*457	600		
1650 (66")	457			
1800 (72")	457	670		

FINITE ELEMENT ANALYSIS RESEARCH AND DEVELOPMENT

VCW products are designed using high technology to meet all international standards and customer requirements.



*Indicat

- 1 - Construction: according to AWWA C504 /// ABNT NBR 15768 /// API 609B
- 2 - Nominal Diameter: 50mm (2") up to 1800 (72")
- 3 - Pressure rating: (PN 10/ PN 16/ PN25) others under request
- 4 - Face to face: AWWA C504 Short Body /// ISO 5752 Series 13 or 20 /// API 609B /// others under request
- 5 - To install between flanges: NBR 7675/ AWWA C207 / ISO2531/ ANSI B16.5 / others under request
- 6 - Lining:
 - 6.1 - Body epoxy coating: internally and externally.
 - 6.2 - Internally, body lining with rubber vulcanization and externally, body epoxy lining.
- 7 - Actuation: Lever, Reducer with flywheel, Electric actuator, etc.

NOTE: Suggested specification is for guidance only, materials will be provided as requested by the client.

SUGGESTED SPECIFICATION

Double Offset Butterfly Valve, Flanged/Wafer Type, construction according to standard (1), DN (2) mm, pressure rating PN (3), face to face (4), to be installed between flanges (5), with bi-directional and watertight sealing. Body, disc and stem are designed with double offset system reducing friction between disc and seat. Body built in mono block ductile iron ASTM A 536, GR 65.45.12 with stopper incorporated. Disc with double offset system in ductile iron ASTM A536 Gr. 65.45.12, with lining built in stainless steel CF8 for rubber seat sealing contact. Superior and inferior Stem (axis) in stainless steel ASTM A276 type 410. Bronze bearings TM 23 standard. Replaceable seat in Buna-N with steel core and embedded to valve body fixed by a retaining ring, with replacing possibility without removing the valve from piping, and may be installed in the end of line. Packing gland inverted type that allows gasket adjustment without dismantling actuation system. Name Plate made of stainless steel. Lining (6), Actuation (7).

METAL SEATED TRIPLE ECCENTRIC BUTTERFLY VALVE

Face to Face According to BS EN 593, ANSI B16.10, Flange drilling can accommodate BS EN 1092, DIN 2630-2638, ANSI B 16.5 API 605, B16.47, API 609 & AWWA C207. Pressure test according to BS EN 593

Double Flanged Triple Eccentric Butterfly Valve Materials.

Body & Disc: Fabricated carbon steel S355Jr, S.G. Iron BS2789 Gr.420, Cast Steel A216 WCB. Also Stainless Steel & Nickel Alloys

Shaft: Stainless Steel: 431(EN57)

Bearing bush: Glacier DU, Stainless Steel 316 (Chrome Carbide), Phosphor Bronze

Seal Ring: Laminated Stainless Steel

Seat Ring: Stainless Steel 304

Retaining Ring: Stainless Steel 316

Actuation: Valves are generally fitted with worm gearboxes for manual operation. They can also be fitted with electric, pneumatic or hydraulic actuators to suit output drives in accordance with ISO 5211.



PRODUCTS SPECIFICATIONS



TRIPLE ECCENTRIC METAL SEATED BUTTERFLY VALVE

61/45

Gunric Triple Eccentric Butterfly Valve

Water, Waste Water, Cooling Water, Mine Water, Chemicals, Steam and Gas

Bubble Tight Shut, Fire Safe Certified Design, High Cycle, High Performance, Large Diameters, ISO 5211 Mount

80mm to 2500mm

Seals available in

- Laminated metal
- Solid metal
- PTFE
- ANSI B16.10

Corrosion protection Carboline 891 - 250 micron, S/S welding on blade edge, Actuators, Gearboxes, Packaging, Ex-Works Price

PN2.5 – PN250, Class 125 to Class 1500

-35°C to +1000°C

Available in steel, ductile iron, stainless steel, nickel alloys, fabricated and castings available

BS EN 593, BS EN 1092, DIN 2630 – 2638, ANSI B16.5, API 605, API 609 & AWWA C207

SERIES NO.

DESCRIPTION

APPLICATIONS

MAIN FEATURES

SIZES

OPTIONS

VALVE RATING

TEMPERATURE RANGE

BODY MATERIALS

APPLICABLE STANDARDS

DOUBLE ECCENTRIC AND CENTRIC BUTTERFLY VALVES



Series 61/45
Double Triple Eccentric Butterfly Valve
DN 80-2500
Laminated Stainless Steel
PN2.5-25



Series 756/xxx
Butterfly valve
Double eccentric
Double flanged
Design standard EN 593
Integral seat
IP 67 gearbox
DN 200-2800
PN 10/16
Ductile iron
Options:
• stainless steel seat
• PN 25 in DN 200-1200
• IP 68 gearbox



Series 766
Double Eccentric Butterfly Valve
Double Centric
Design standard is AWWA
Seal in body or Seal in disc
DN600 – 1200
150 PSI /250 PSI



Series 75/10
Butterfly valve
Centric with fixed liner
Wafer type
DN 40-1400
PN 10/16
Ductile iron

Options:
• various actuators



Series 75/31
Butterfly valve
Centric with fixed liner
Semi-lug type
DN 50-200
PN 10/16
Ductile iron

Options:
• various actuators



Series 75/41
Butterfly valve
Centric with fixed liner
Full lug type
DN 50-1200
PN 10/16
Ductile iron

Options:
• various actuators



Series 75/20
Butterfly valve
Centric with fixed liner
Double flanged short
DN 50-2000
PN 10/16
Ductile iron

Options:
• various actuators



Series 75/21
Butterfly valve
Centric with loose liner
Double flanged long
DN 50-1500
PN 10/16
Ductile iron

Options:
• various actuators



Series 820/00
Butterfly valve
Centric with loose liner
Wafer type
DN 25-1000
PN 10/16
Ductile iron

Options:
• various actuators



Series 820/10
Butterfly valve
Centric with loose line
Lug type
DN 25-600
PN 10/16
Ductile iron

Options:
• various actuators



Series 820/20
Butterfly valve
Centric with loose liner
U-section type
DN 150-1600
PN 10/16
Ductile iron

Options:
• various actuators



Series 813/80
Butterfly Valve
Centric with loose line
Double flanged short
Design standard AS4020
DN 350-600
PN 10/16
Ductile iron



Series 815
GROOVED END BUTTERFLY VALVES
DN60 – DN200
300 PSI
Ductile iron



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We highly recommend that any person using this data for practical purposes should have specialist training and expertise in the application of these products and knowledge of their installation and operating conditions. If any assistance is required, please consult with a member of AVK team.