

DUTCH ENGINEERING

Get more.... Than you see



TYPE BM BALL VALVE

150 lbs / 300 lbs ½" to 6" PN10 / PN16 / PN25 / PN40 DN15 to DN150 Soft Seated & Metal Seated

VACTRA Over 20 years experience

And more than 4000 customers in over 35 countries attest to our experience.

VACTRA provides extensive expertise on a full range of valve, valve actuation and pressure gauge products used in upstream and downstream applications within the oil & gas, petro-chemical, water, water treatment, HVAC, pharmaceutical, power and utility industries.

From the extensive knowledge gained, VACTRA offers an optimum flanged ball valve product design, our Type BM (Bench Mark), for both standard applications and engineered solutions. The Type BM Ball Valve offers value for money with proven European product quality, from start to finish, this quality and the robustness of product design is guaranteed.



ISO 9001

VACTRA's certification to the latest ISO 9001:2015 demonstrates the involvement of its leadership team and its

organization toward continuous quality system improvement. VACTRA is committed to relentlessly improve its Quality Management System in order to provide world class services to its customers. The ability to supply valves, actuators and controls, that can be trusted in the most demanding applications is paramount to ensure full satisfaction of VACTRA's customers.



Innovative Simplicity

Using the combined power of a team of independent engineers with different fields of extensive technical experience, the VACTRA Type BM Flanged Ball Valve provides the optimum design for material selection of ball seats, fire safe seals and metallic component parts.

The product design criteria are based on leading International valve standards, including API 608, ASME B16.5, ASME B16.10, ASME B16.34, EN 1092, EN1983 and EN 12516.

Material casting quality is assured, and upon request confirmed, according to various approval criteria including DNV / GL Marine Approval, Bureau VERITAS marine Approval, AD2000 Merkblatt W0, PED 97/23/EC, Lloyds Marine approval, American Bureau of Shipping Marine Approval and Norsok M-650 Approval.

Independent product performance is verified in accordance with the most demanding test: standards including Fire sate ISO 10497 / API 607,

Fugitive Emission ISO 15848-1 / TA Luft and Design validation Test According SPE TAT 77/300.

Every single Type BM valve is tested for tightness performance & inspection according to EN 12266-1 / ISO 5208 / DIN 3230 / API 598 / MSS SP-55.















 Lever, locking device and stop plate integrated in one part. Primary part costs and secondary logistic costs have been deleted.

 Bolting on the gland plate is locked with double 316SS washers acc. DIN 25201-4.
Bolting on the gland plate is always secured and the low emission is guaranteed.

The straight diagonal surface of the gland plate in contact with the spherical surface of the gland yields a constant pressure on the surface of the packing. Even when the bolting force on the gland plate is divided unequal the low emission of the packing is guaranteed. Contact between gland plate and gland is self aligning.

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- 4 Radial shaft bearing absorbs side forces on the stem and ensures packing tightness and trusted torques figures. Double radial bearing for 3" and larger.
- 5 Top and bottom packing ring have been designed with optimum tolerances. This results in the best performance of the packing during fire safe and fugitive emission tests
- The graphite packing is pressed to its optimum size during assembly. In comparison with fully compressed packing, our design leads to an optimum filling of the packing area and hence leads to best proven test results.
 - Roughness of the packing contact surfaces, body and stem, are optimum for best performance for fire safe and fugitive emission features
 - Chambered from 3 sides, our seat design is optimum for constructional resilience and best tightness performance.



ITEM NO.	ΩΤΥ.	DESCRIPTION	MATERIAL		
1	1	BODY	CARBON STEEL ASTM A216 WCB / EN 10203-2 1.0619 STAINLESS STEEL ASTM A351 CF8M / EN 10203-4 1.4408		
2	1	BALL	STAINLESS STEEL ASTM A351 CF8M		
3	1	END FLANGE	CARBON STEEL ASTM A216 WCB / EN 10203-2 1.0619 STAINLESS STEEL ASTM A351 CF8M / EN 10203-4 1.4408		
4	2	SEAT	TFM-1600 (PTFE)		
5	1	STEM	STAINLESS STEEL ASTM A479 316L		
6	1	AXIAL BEARING	PTFE		
7	1/2	RADIAL BEARING	PTFE		
8	2	PACKING SUPPORT RING	STAINLESS STEEL AISI 316L		
9	4/5	SHAFT PACKING	GRAPHITE LOW EMISSION		
10	1	GLAND	STAINLESS STEEL ASTM A479 316L		
11	1	GLAND PLATE	STAINLESS STEEL ASTM A351 CF8M		
12	1	LEVER BRACKET	STAINLESS STEEL AISI 316		
13	1	SCREW	A4		
14	1	WASHER	A4		
15	2	LOCK WASHER	Α4		
16	2	BOLT	CARBON STEEL 8.8 STAINLESS STEEL A4-80 / B8M Cl. 2		
17	1	LEVER	STAINLESS STEEL ASTM A351 CF8M		
18	2	ANTI STATIC SPRING	INCONEL ALLOY X-750		
19	2	ANTI STATIC BALL	STAINLESS STEEL AISI 316L		
20	6/16	BOLT	STAINLESS STEEL A4-80 / B8M Cl. 2		
21	1	BODY PACKING	GRAPHITE SIGRAFLEX HD		
22	2	BOLT	STAINLESS STEEL A4-80 / B8M CI. 2		
23	2	LOCK WASHER	STAINLESS STEEL A4 / 316		
24	1	SCREW	STAINLESS STEEL A4		

Other materials upon request



Metal seated Construction

Plant production performance in all kinds of industries depend heavily on effective measures to prevent wear and corrosion. Depending on the nature of the wear to which they are exposed, customized surface treatments based on a broad spectrum of methodology can be applied to product assemblies.

The form of an assembly and the stresses to which it may be subjected are the key factors in determining which coating system is the most suitable for use. Even minor differences in the system of wear can significantly affect the demands placed on the coating system. This means that coating systems which work well with one assembly cannot necessarily be applied "as is" to other assemblies.

VACTRA wear analysis assigns appropriate weightings to the various elements and this has a material influence on both the optimal design and the choice of coating methods. We apply our understanding of stress levels and years of experience to minimize wear and optimize friction conditions. This improves the operational safety of plant and machinery, cuts costs, conserves resources, saves energy and reduces harmful emissions.



Please consult our technical sales office for :

- Metal seats, zero leakage, for higher temperatures up to +450°C, corrosive and abrasive conditions
- Trunnion mounted ball construction (API 6D pending)
- Low temperature requirements, cryogenic -196°C
- High performance materials : Hastelloy, Inconel, Uranus, Titanium
- Marine grade materials : Aluminium Bronze ASTM B148-C958.00







Actuator Control Systems

VACTRA provides a valve package which includes an unrivalled diversity of advanced actuator control system solutions. Such diversity has meant that VACTRA products are currently being used in all major industries not least those operating in the harshest application conditions.

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All units are fully factory tested for their intended and expected performance prior to despatch and certificates of conformity/test are issued with each package at the time of despatch.

VACTRA engineers are available to provide technical support to customers and site personnel who may require assistance on the application, installation or operation of the actuator control systems offered.

Our technical sales office will be pleased to supply full documentation, drawings and installation diagrams on request.

- Hand operated with lever or gear.
- Pneumatic actuators in aluminium, carbon steel, stainless steel
- Hydraulic actuators in carbon steel, stainless steel
- Electric actuators
- Solenoid valves
- Valve Position Monitors
- Partial Stroke Test Systems
- Valve Positioners









MT Actuator, Standard construction with proven quality

Our full line of pneumatic control products, including our industry recognized rack & pinion actuators type MT, provide cost-effective solutions for the most complicated flow requirements, including diverting and multi-port flow applications across a wide array of industries. Our patented adjustable dual-travel stops provide the greatest degree of control in the industry at ±10 degrees on each end of the stroke. Also available in stainless steel, the SS Series actuators take corrosion resistance to the extreme with all of the great engineering features that set us apart from the competition.

Exploded view and standard materials list aluminum construction

Features :

- Aluminum body. On request ENP, Epoxy or Teflon infused coating.
- 17 model sizes, both in double acting and spring return.
- Offered output up to 5.000 Nm.
- Conformity according ISO5211, DIN3337, VDI/VDE 3845, Namur.
- Standard rotation 90°. On request 120°, 135°, 150°, 180° rotation

- Separates safety springs for single acting version
- Maximum 10 bar air supply or non corrosive gasses
- Temperature -20°C up to +100°C. On request -50 °C up to +150°C.

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Standard clockwise closing rotation



ltem	Description	Material	ltem	Description	Material
1	End cap screw	SS304	14	Upper washer	Techno polymer
2	Left end cap	Aluminium UNI 5076	15	C clip	SS304
3	End cap o-ring	Buna-N	16	Indicator fixed	Techno polymer
4	Guide ring	Techno Polymer	17	Indicator rotating	Techno polymer
5	Piston o-ring	Buna-N	18	C clip	SS304
6	Left piston	Aluminium UNI 5076	19	Right piston	Aluminium UNI 5076
7	Piston skate	Techno Polymer	20	Internal set screw	SS304
8	Activation body	Aluminium 6063 or 6005	21	Stop bolt	SS304
9	Upper pinion o-ring	Buna-N	22	Right end cap	Aluminium UNI 5076
10	Upper pinion bearing	Techno Polymer	23	Travel stop o-ring	Buna-N
11	Pinion	Carbon steel nickel plated	24	Washer	SS304
12	Lower pinion bearing	Techno polymer	25	Travel stop bolt	SS304
13	Lower pinion o-ring	Buna-N			



The Camtorc Actuator A Problem Solver with a Robust Design

As well as rack and pinion actuators VACTRA also supplies the Camtorc range of pneumatic and hydraulic actuators. The Camtorc range provides more of an actuator than meets the eye! The robust design and simplicity results in an actuator range that has a successful and proven track record for over 40 years.

The unique characteristics can be summarized as follows:

- Simplest Mechanism Available : Complex assemblies required to dissipate the high side loads generated by Scotch Yokes are totally eliminated
- Pneumatic torques from 29 Nm up to 24.830 Nm
- No Side Forces : Providing an extended life of seals and components
- High Integrity Construction : Camtorc actuators do not utilize cast iron for any components
- Compact Design : Type S (steel) and type SX (stainless steel) standard construction pneumatic actuator uses the same body size for double acting and spring return, version, offering considerable space saving when compared to "equal" torque scotch yoke actuators
- Chambered Cam Mechanism : Zero back lash
- Self Contained Pressurized Spring Cylinder : Air output torque not affected by spring force. It saves 60% space compared to scotch yoke actuators, especially when your valve has a high running torque.

- Inherent Safety on Partial Stroke Test Systems : The self contained pressurized spring cylinder combined with patent pending control system prevents a spurious trip when initiating a partial stroke test (PSTS).
- Whole Life Cost : Exceptionally low wear, maintenance and initial competitive prices, Camtorc actuators provide best value for money and low cost of ownership.

Inherent Safety on Partial Stroke Test Systems

A summarized explanation of our unique feature:

- Port A and C are pressurized and the value is actuated. Port B is the pneumatic breather port for the centre body.
- (2) When initiating a partial stroke test with our patented pending control system the spring cylinder will be depressurized through port C and port A remains pressurized.

The spring will decompress, however the instrument air pressure in the air cylinder supplied by port A will function as a pneumatic break thus preventing the actuator closing fully. A spurious trip is not possible.





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Valve Position Monitors

Complementary we supply valve position monitors, valve monitoring systems and valve positioners for automated valves.

Our product range can cater for a variety of situations and process industries, from hazardous environments through to general purpose manufacturing. We ensure that our products have a long service life and lower operating costs, meaning that the operating and service costs over the life of the product are minimal.

VACTRA valve communication systems are designed to be safe, easy to install, use and maintain. Our systems comply with the applicable sections of the most demanding international electrical standards and to the requirements of the latest European Directives, covering functional safety and the environment.

Features

- Polycarbonate, aluminium or stainless steel enclosures
- Conventional, analogue (discrete), bus and wireless position feedback systems
- IP66, IP67 & IP68 enclosures
- Unique, non-contact transmitter solutions with valve diagnostic capability
- Highly flexible valve controllers for shut-down profiling and PST for simple installation on new and retrofit applications
- Worldwide certification (e.g. ATEX, CU-TR, IECEx, PESO & others)

Pressure Gauges

VACTRA offers various solutions for surveying pressure and delta pressure. I.a. a differential pressure gauge featuring a complete mechanical construction. This dp pressure gauge is suitable for a static pressure up to 1.000 bar and a differential pressure of 200 bar. When required it can be completely fitted with protective casing, tubing and instrument valves. This device is a simple and robust solution for monitoring the pollution of strainers, just to name an example.

Lower differential pressures

For lower differential pressures or locations with available power supply you could also consider a combination of 2 independent pressure sensors made by Suchy in Germany.

The advantages are a straightforward and economical installation, no tubing required, no instrumentation valves required, with media of a high viscosity, no chemical seal needed if a front flush diaphragm is used, integrated zero-point correction, local reading and distance signals. The minimum and maximum occurred values and service hours are electronically saved.

The menu choice is in either English or German. The output signal is either in mA or Volt. The dp-range varies from vacuum to 100 bar.

Standard pressure gauges

- Case diameters Ø40 Ø50 Ø63 Ø80 Ø100 Ø160
- Bourdon Tube, Capsule Element, Diaphragm Spring, Chemical Seal, Precision Test
- Brass, Stainless Steel, Heavy Duty, Dry, Glycerin Filled, Electrical Contacts





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Multiport ball valves Lead to less valves

Complementary to our 2-way ball valves, VACTRA also offers multiport ball valves 3-way and 4-way. Cost effective multiport ball valves feature multidirectional control combined with shutoff capacity in one valve. Valve duplication and the need for an extra shutoff valve are eliminated.

Our multiport valves, X- L- and T-port, are available with threaded, weld ends and flanged end connections. End connections can be mixed on a single valve.

Standard delivery range includes up DN150 / 6" 300lbs. Other sizes and classes upon request. The four seat design is available with spring energised seats.

The ball stem can be either one piece or two piece pinned design.





BVHD / BLHD Butterfly Valves High Performance

VACTRA double eccentric high performance butterfly valves, BVHD/BLHD, are designed with long life as a primary feature. The technical construction and choice of materials result in a valve operation that exceeds market standards and your expectations.

As standard, we offer wafer and lugged type DN50 up to DN500 (2" up to 20") in pressure class PN10/PN16/PN25 and ASME Class 150 lbs. Materials include Carbon steel ASTM A216 WCB, Stainless Steel ASTM A351 CF8M (A316), Duplex ASTM A890 Gr. 4A and Super Duplex ASTM A890 Gr. 5A with a choice of different seat construction including PTFE, UHT, Inconel & Fire Safe. The Fire Safe version is certified according ANSI/API 607 6A, edition September 2010 and ISO 10497-5 : 2004 (Identical).

VACTRA BVHD / BLHD high performance butterfly valves guarantee the best selection for the most demanding applications in the Chemical, Petrochemical, Offshore Oil & Gas and Refinery industries.

Key features:

- Spring energised gland packing ensures shaft sealing even at high temperature
- Both upper and lower shaft are guided by bearings providing lower operating torgues
- Special shaft disc connection ensures an accurate torque and avoids clearances
- Operating temperature up to +400°C
- Metal seated with a lamellar ring for gas tight performance
- DNV Type Approval, Bureau Veritas Type Approval, SIL compliance, ATEX



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BVKI / BLKI / BFKI Butterfly Valves Resilient Seat

VACTRA Resilient Seated Butterfly Valve's seat construction and internal disc to stem connection isolates the line media from the body and stem. The seat is designed to seal with slip-on or weld-neck flanges and the multiple integrated o-rings eliminate the need for flange gaskets. The tongue and groove design locks the seat in place and makes the valve suitable for installation end of line.

BVKI WAFER TYPE / BLKI LUGGED TYPE / BFKI DOUBLE FLANGED TYPE

Sizes DN40 – DN800 / 1½" - 32", PN6 / PN10 / PN16 / PN25 / 150lbs **Body materials:** Ductile iron / Carbon Steel / Stainless Steel / Aluminum Bronze **Disc materials:** Ductile iron / Carbon Steel / Stainless Steel / Aluminum Bronze / Hastelloy / Monel

Seat materials: Various resilient materials for temperature ranging from -60°C up to +200°C DNV Type Approval, Bureau Veritas Type Approval, SIL compliance, ATEX

BVTT / BLTT Butterfly Valves PTFE Lined

most corrosive

VACTRA PTFE lined butterfly valves, BVTT/BLTT, are designed to be applied in the most corrosive applications. The details in the construction and modular choice of materials results in one of the best PTFE lined valves available.

As standard, we offer wafer and lugged type DN50 up to DN500 (2" up to 20") with working 10 bar. Connection for flanges PN10/16 and Class 150. Materials include Ductile Iron GJS 400-15, Carbon Steel ASTM A216 WCB, Stainless Steel ASTM A351 CF8M.

Key features :

- Spring energised shaft seals ensure sealing even up to +190 °C
- O-rings on the shaft seals in PTFE and FKM guarantee a double seal safety
- Minimum thickness up to 3 mm of the seat for a proven long life expectancy
- Split body for easy disassembly and maintenance
- Metal seated with a lamellar ring for gas tight performance
- DNV Type Approval, Bureau Veritas Type Approval, SIL compliance, ATEX

The PTFE seat is supported by a silicone ring. The disc is available in AISI316, Hastelloy, Duplex, Superduplex. Coatings on the discs are available in for example PTFE or Halar. VACTRA BVTT / BLTT PTFE lined butterfly valves guarantee the best selection for the most demanding corrosive applications in the Chemical, Petrochemical, Offshore Oil & Gas and Refinery industries.



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