CHROMATIC

DOV

Mechanical Seal **6D Cartridge** Ball Valves

An innovative combination of the best characteristics of ball, gate and triple offset butterfly valve technologies, with superior access and repairability of sealing components.

Advanced Design

- Incorporates the positive features of ball, gate, plug and high performance valves

Versatile

- The DOV valve is a quarter turn, mechanically sealing, through conduit, tight shutoff valve that is well suited for a broad range of applications

INTRODUCTION

The Double Offset Valve (***DOV***) is an advanced design that incorporates the positive features of ball, gate, plug and high performance valves. The DOV valve is a quarter turn, mechanically sealing, through conduit, tight shutoff valve that is well suited for a broad range of applications. It is innovative and effective with minimal maintenance required.

The DOV valve design provides low emissions and quick operation capabilities in critical shutoff applications and severe services. The unique double offset ball design improves the seal characteristic at low pressure conditions to achieve tight shutoff for double block and bleed and double isolation and bleed. The metal seated valve uses the same body a nd bonnet as the resilient seated valve and is factory tested to the tightest leakage criteria in the industry.

The DOV valve is manufactured by Chromatic Industries LLC at 16400 Air Center Blvd, Suite 200, Houston TX 77032. The DOV valve is available in a range of materials of construction including various carbon and alloy steels, as well as high grade stainless steels, duplex stainless steels, and high nickel/chrome alloys for various services in critical oil and gas applications.


BUREAU VERITAS
Certification

CHROMATIC INDUSTRIES, INC.
159 S. TRADE CENTER PARKWAY
CONROE, TX 77385 USA

Bureau Veritas Certification Holding SAS certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standards detailed below

Standards

ISO 9001:2008

Scope of certification

DESIGN AND MANUFACTURE OF INDUSTRIAL VALVES

Certification cycle start date: 22 July 2017

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 15 September 2018

Original certification date: 23 July 2014

Certificate no.: US010288-1

ANAB

DOV VALVE

The DOV valve represents the newest, most innovative combination of the best characteristics the major valve designs (Ball, Gate, and Triple Offset/Butterfly valves) with superior advantages of access and repairability of sealing components.

BUBBLE TIGHT – DROP TIGHT SEALING

The DOV valve can be supplied with either resilient or metal seats to hold to the tightest industry standards. The resilient seated valves are tested to bubble tight requirements (API 6D/ISO 5208 Rate A with no visible leakage allowed) and the metal seated valves are tested to drop tight standards (ISO 5208 Rate D).

BALL VALVE CHARACTERISTICS

The DOV valve is manufactured to ASME B16.10 ball valve end to end dimensions. It is a direct replacement - flange to flange - of most standard ball valves. It is easily actuated with a simple, quarter-turn actuator. The DOV is a full port piggable valve with block and bleed and double isolation and bleed capabilities. The combination of trunnion design and mechanical energized seats allows each seat to independently seal regardless of pressure and flow direction.

GATE VALVE CHARACTERISTICS

The Double Offset Ball (DOB) and seat design provides a mechanical energized seal similar to an expanding gate valve however in a quarter turn operation.

DOUBLE-OFFSET VALVE CHARACTERISTICS

Mechanical - Dynamic Seating: As the valve closes, the DOB provides mechanical sealing as a result of implementing a wedge in the DOB. As the DOB rotates from the open position to the closed position, an increasing offset applies a force, independent of line pressure, to achieve a positive seal.

FIRE-SAFE

The DOV valve is inherently fire-safe and has been tested and passed the latest ISO 10497 and API 607 requirements.

TOP ENTRY – CARTRIDGE VALVE

The DOV valve's cartridge feature provides ease of access to internals for simple, quick repair or re-trim. All internal parts are attached to the bonnet allowing quick exchange when required, minimizing downtime.

FEATURES

CARTRIDGE DESIGN

- Top Entry
- Ease of Repair
- Reduced Downtime
- Serialized Cartridges
- Interchangeability

MECHANICALLY SEATED

- ***DOB*** - Mechanical Wedge
- Bubble Tight Seating
- Bi-Directional Sealing
- Seals without use of springs or pressure differential

QUARTER TURN OPERATION

- Easily and Economically Automated
- Quick / Reliable Operation
- Low Dimensional Profile

DOV CARTRIDGE VALVE

CARTRIDGE DESIGN

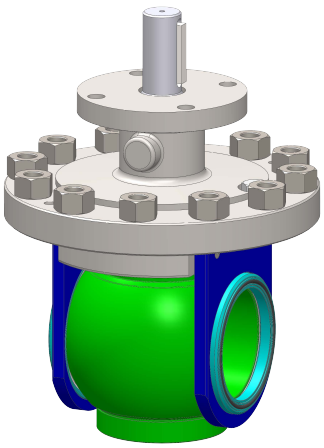
The DOV's defining feature is its '***cartridge design***' whereby all the valve's internal sealing parts are affixed to the bonnet allowing quick and easy serviceability and reducing expensive downtime during maintenance.

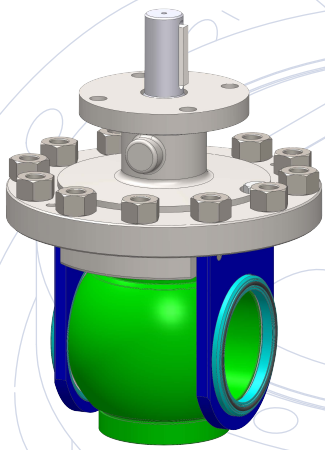
This 'cartridge design' provides the ability to repair the valve with relative ease in a minimum amount of time without any special training or special tools.

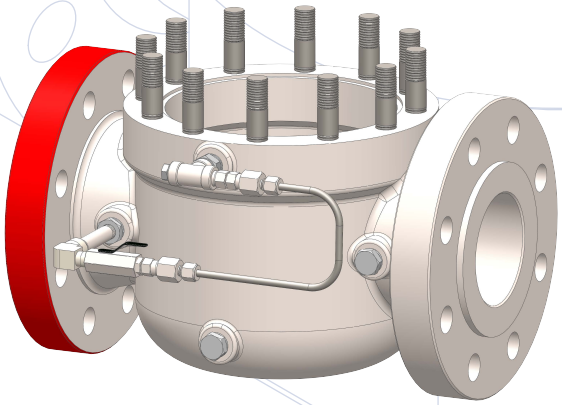
When the valve is isolated (de-pressured), simply remove the bonnet fasteners, slide the cartridge out of the body, insert the new cartridge into the body, and retighten the bonnet fasteners.

Patents: 7,357,145; 7,484,523; 8,960,643; 9,446485.

Numerous patents pending in USA and worldwide.







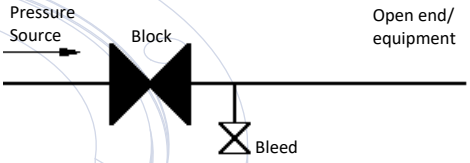
MECHANICAL WEDGE SEATING

The mechanical seal is achieved by rotating the DOB around a central fixed point (stem). The increased offset of the external sealing surface of the DOB creates a positive mechanical load on the seat at the full closed position. The positive mechanical load provides a tight seal at both low and high pressures irrespective of direction of differential pressure.

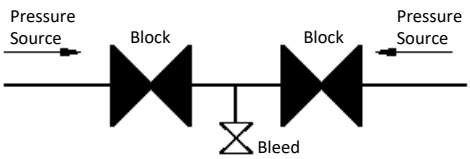
DOUBLE OFFSET BALL

BLOCK AND BLEED

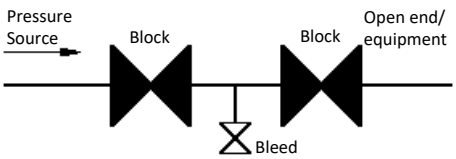
The DOV valve is a versatile valve which can be used in “Block & Bleed” type A and B, “Double Block & Bleed” type A and B, “Double Isolation & Bleed” type A and B in DIB-1 and DIB-2 configurations.



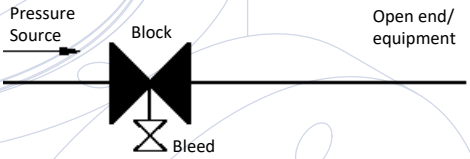
Block & Bleed: Type A



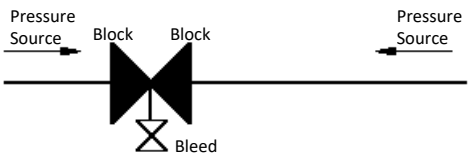
Double Block & Bleed: Type A



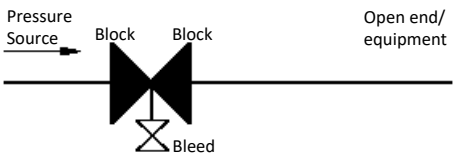
Double Isolation & Bleed: Type A



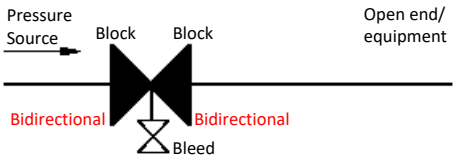
Block & Bleed: Type A



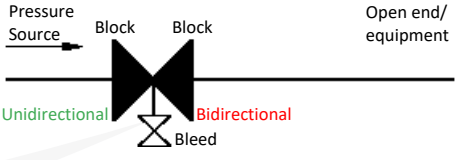
Double Block & Bleed: Type B



Double Isolation & Bleed: Type B



Double Isolation & Bleed: DIB-1



Double Isolation & Bleed: DIB-2

BLOCK AND BLEED DEFINED

According to API 6D;

Double Block and Bleed Valve is a “single valve with two seating surfaces that, in the closed position, provides a seal against pressure from both ends of the valve with the means of venting/bleeding the cavity between the seating surfaces”

NOTE: This valve does not provide positive double isolation when only one side is under pressure.

Double Isolation and Bleed Valve is a “single valve with two seating surfaces, each of which, in the closed position, provides a seal against pressure from a single source, with the means of venting/bleeding the cavity between the seating surfaces”

NOTE: This feature can be provided in one or both directions.

Double Isolation and Bleed DIB-1, Both seats bidirectional

Double Isolation and Bleed DIB-2, One seat unidirectional and one seat bidirectional

DOV valves are available in a variety of sizes, pressure classes, materials, and trims. The basic design is easily scalable. Additional sizes, pressures classes and features are continually under development to meet industry needs.

MATERIAL AVAILABILITY

Carbon steel (A216 Grade WCC), impact-tested carbon steel (A352 Grade LCC), and stainless steel (A351 Grade CF8M) are the most typical alloys offered, but other alloys are available for body/bonnet or internals depending on service conditions. Trim materials are available in a variety of alloys to meet NACE requirements and other corrosive environments.

SEATS/SEALS

The selection of seat/seal material is dependent on the service fluid and temperature, and includes various common elastomers such as Viton® and HNBR, or synthetic materials such as Teflon®, Tefzel®, PEEK, or all-metal.

PRODUCT AVAILABILITY

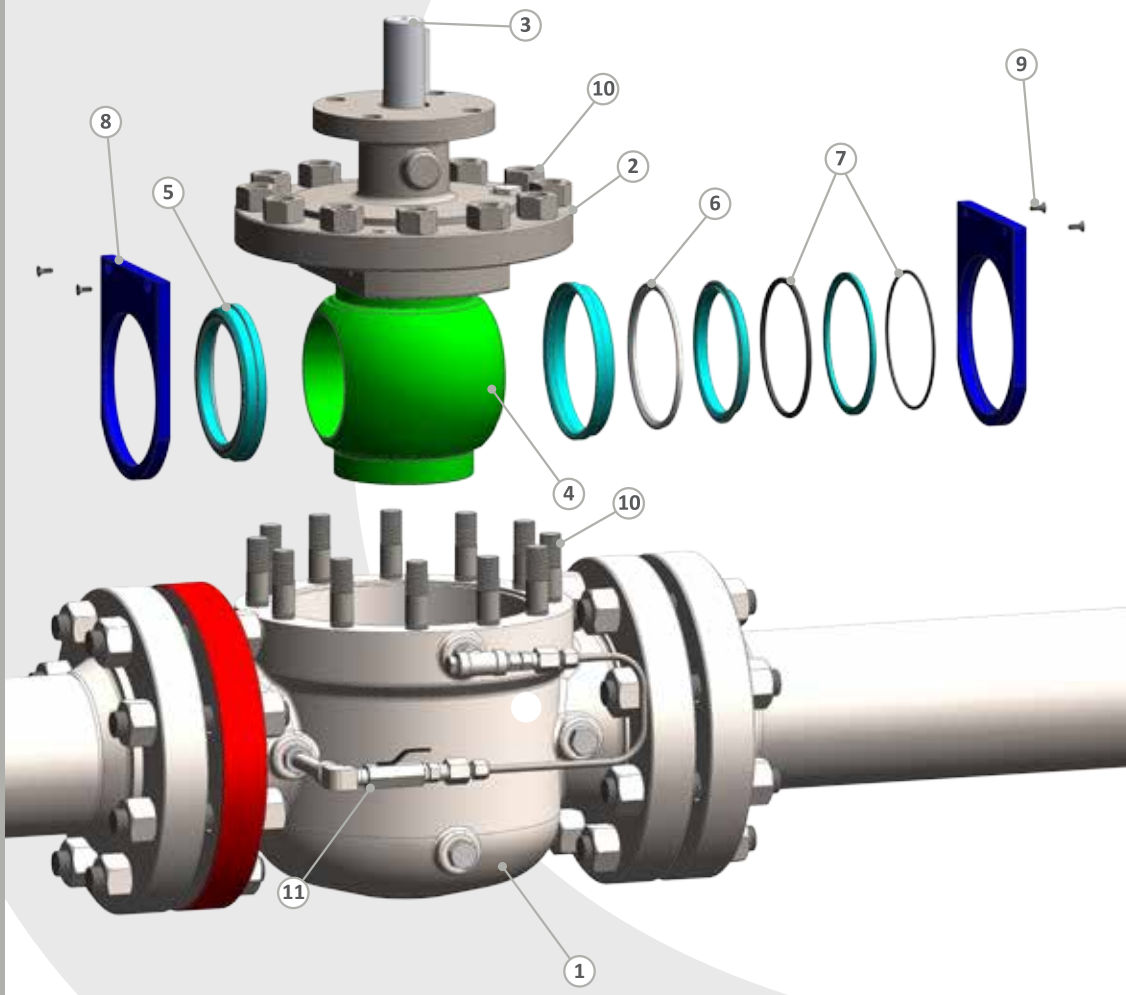
DOV valves are available in either Full or Reduced Port configurations with most common end connections including raised face, ring type joint, butt-weld, threaded. Special sizes and design modifications can be discussed for special applications.

PRODUCT AVAILABILITY

Standard Materials of Construction

1	**Body**	ASTM A216-WCC; ASTM A351-CF8M
2	**Bonnet**	ASTM A216-WCC; ASTM A351-CF8M
3	**Stem**	ASTM 4140 CS ENP; 17-4 SS or Nitronic 50 SS
4	**Double Offset Ball**	Carbon Steel ENP or QPQ; Stainless Steel
5	**Seat**	Carbon Steel ENP; Stainless Steel
6	**Seat Insert**	Teflon; Nylon; PEEK
7	**Seals**	Viton; HNBR: FFKM
8	**Retaining Plates**	Carbon Steel ENP; Stainless Steel
9	**Screws**	ASTM A573
10	**Bonnet Fasteners**	ASTM A193-B7 / A194-2H
11	**Diff. Thermal Relief**	Stainless Steel

DOV valves can be trimmed to meet a range of applications including sour corrosive services requiring NACE compliant materials.



APPLICATIONS

Proven Successes and Creative Solutions

ISOLATION/BLOCK VALVE

For critical isolation requirements demanding bubble tight shut-off.

DOUBLE BLOCK AND BLEED VALVE (DBB)

To provide verification of valve sealing and ensure seat integrity.

ESD (EMERGENCY SHUT DOWN) VALVE

In the case of an emergency, the DOV valves can provide a reliable quarter-turn operation with a repeatable, mechanical "zero leakage" shut-off.

BRINE/STORAGE BLOCK VALVE

Application where corrosive salt water is always present and salt crystal buildup can make a valve difficult to perform. The proven DOV valves can break through salt formation; HEM-Core design helps protect the seats and body from erosion corrosion; and the mechanical sealing delivers repeatable shutoff.

METER/PROVER MANIFOLD

The DOV valve has dual mechanical seals with double isolation and bleed (DIB) capabilities similar to expanding plug and gate valves. However, the DOV can be full or reduced port with a quarter turn operation allowing for easy actuation. The DOV can block and bleed in both open and closed positions.

LIQUID PIPLINES-CRUDE, REFINED PRODUCTS & NGL

As a full and piggable valve, the DOV is a direct replacement for other rising stem valves such as slab and expanding gate valves.

EXTENDED BODY (FOR BURIED SERVICE) VALVE

The body can be extended for buried service so the internals can be accessed from the surface eliminating the requirement to excavate buried valves.

NACE SOUR CORROSIVE BLOCK VALVE

The DOV valve is easily trimmed for services requiring metallurgy and seals suitable for NACE services.

OTHER POSSIBILITIES INCLUDE:

Blow-Down Valves
Kicker Valves
Pig Launcher/Receiver Valves

Let Us Help You in Your Demanding Applications

Why Chromatic?

- Engineered valve solutions that reduce downtime & operating costs
- Proven designs and experienced manufacturing capabilities
- Demonstrated innovation and technical leadership
- Technical alliances that deliver best-in-class options
- Customer satisfaction through operational excellence

CHROMATIC is a premier designer, manufacturer, fabricator and distributor of valve, actuation and pressure and well control products and services for the North American energy industry. The Company's 60,000 square foot headquarters and technology center is located in Houston, TX and houses fully equipped engineering, manufacturing, fabrication, and service functions. A 30,000 square foot facility in Jennings, LA, houses the Company's ChromeDRILL, ChromeLEASE and ChromeSERVE operations. We are committed to continuously improving our products and services while we strive to protect our employees, our communities and the environment.

CHROMATIC

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ISO 9001: 2015

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