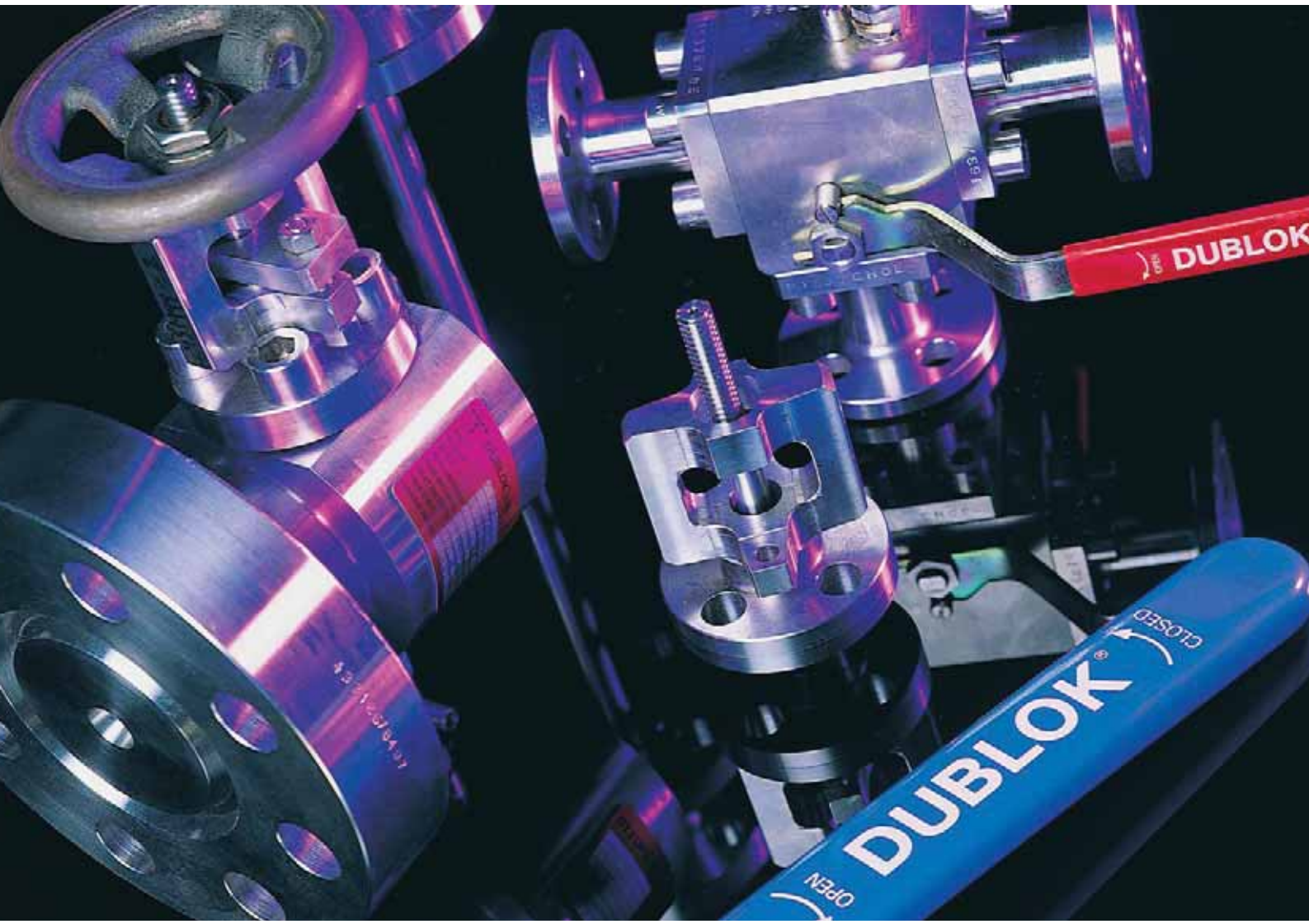
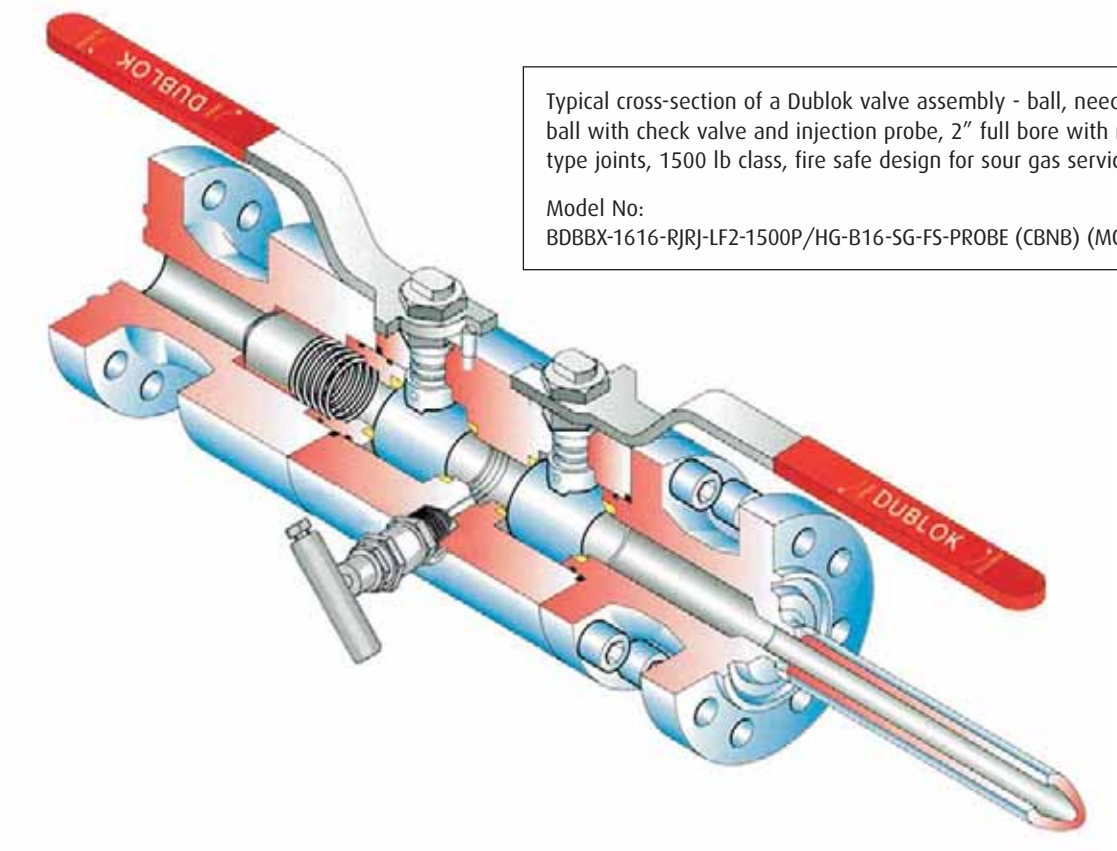
Modular and Integral Valves for Piping, Instrumentation and Subsea Applications



DUBLOK

The Dublok Concept



Typical cross-section of a Dublok valve assembly - ball, needle, ball with check valve and injection probe, 2" full bore with ring type joints, 1500 lb class, fire safe design for sour gas service.

Model No:
BDBBX-1616-RJRJ-LF2-1500P/HG-B16-SG-FS-PROBE (CBNB) (MOD)

The Dublok Concept

Over a period of many years the valve industry has evolved a wide diversity of valves designed for use where space is not usually a problem and unlimited weight can be supported by foundations. However, these characteristics are of critical importance on offshore platforms and in response to this special requirement Dublok pioneered the concept of Modular Construction Valve Assemblies which dramatically reduce weight and space requirements over conventional designs, typically by 50% - 65% and also potential leak paths, by 30% - 40%.

This is achieved by integrating as many valves as possible into a single manifold block. In addition, a variety of end connections can be incorporated into the bolted construction, i.e. raised face, ring type joint, threaded, weld connections etc. This unique 'building block' principle enables a wide range of valve combinations to be produced cost effectively, resulting in a lighter, more compact and robust valve. The concept has since been extended to include Dublok valves for use onshore as well as offshore, both topside and subsea.

With an ever-increasing emphasis on safety, the traditional method of bolting several flanged valves together to provide multiple isolation, where previously a single isolation valve would have been judged sufficient, created a number of additional concerns, namely the size and weight of the whole assembly. Increased weight and length necessitates more supports and results in higher nozzle loadings and, therefore, in increased vulnerability to vibration and impact. Convention in the valve industry has resulted in unnecessarily heavy and bulky flanged joints within commonly used valve assemblies such as Double Block and Bleed.

Additionally, having more valves and fittings means that more potential leak paths are created when emissions are becoming an increasingly sensitive safety and environmental issue. The unique Dublok concept minimises these problems.

Furthermore, with a range of end connections linked by strong bolted firesafe joints, similar to those used in the well proven split-bodied ball valve, this modular approach gives an almost unlimited range of configurations, which can be tailor-made to suit particular requirements. The Dublok concept has unrivalled versatility due to its interchangeable body sections and end connections. A series of individual modules have been designed, developed and proven in use and nowadays it is simply a matter of assembling these together into the required configuration.

The Dublok concept has been extremely successful and Dublok valves are specified and used by all the leading operators throughout the world.

Contents

Space, Weight & Cost Savings

Very significant space and weight savings can be achieved by using our modular construction assemblies.

Lighter
- Critical in itself
- Less need for supports
- Less metal means less cost, particularly in exotic alloys

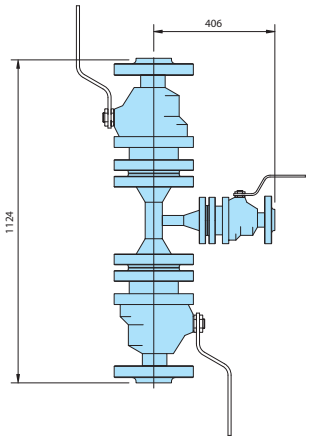
Shorter
- Less vulnerable to impact
- Less prone to vibration
- May fit into areas where conventional assemblies would not

Oversized Inlets
- Reduced weight, length and cost compared to oversized valves

Comparison between conventional and Dublok solutions

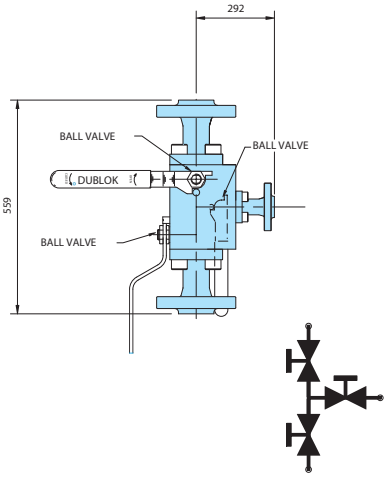
Double block and bleed

Conventional assembly



Size: 1124 x 406mm
Weight: 114kg

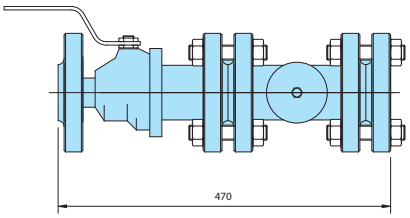
Dublok assembly



Size: 559 x 292mm
Weight: 54kg

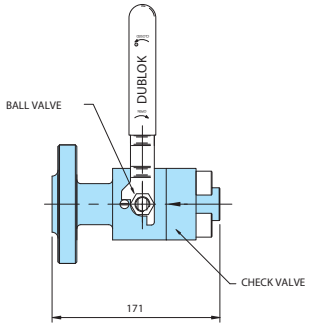
Single block and check

Conventional assembly



Size: 470mm
Weight: 33kg

Dublok assembly

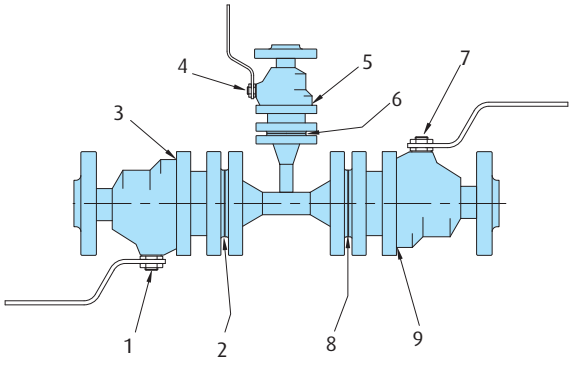


Size: 171mm
Weight: 10kg

Leak Path Reduction

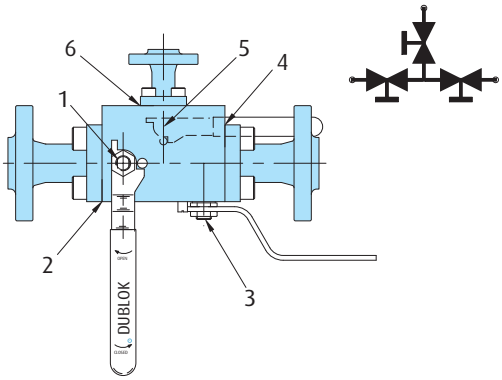
Conventional assembly

9 Leak Paths



Dublok double block and bleed

6 Leak Paths

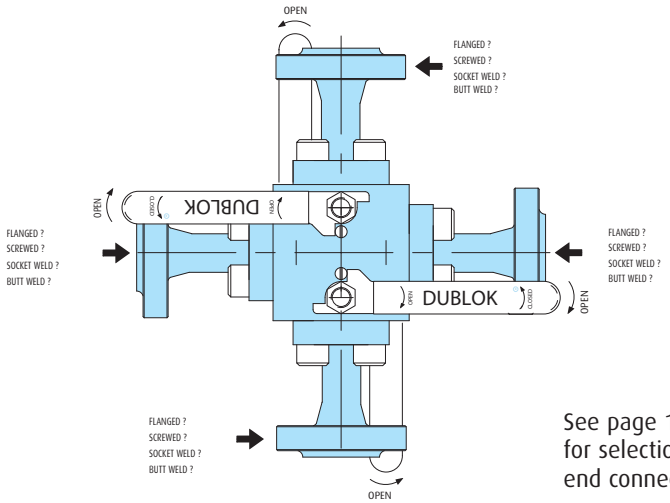


Our assemblies have as many valves as possible machined into a single block thereby reducing the number of leak-paths compared to conventionally constructed valve arrangements.

Less Leak Paths

Integrated construction gives fewer bolted flanged joints to be made on-site. This reduces the potential for leaking joints in the future and minimises maintenance time and cost.

Versatility and Ease of Maintenance



See page 18 for selection of end connections

Bolted Construction

- Allows a full range of end connectors and injection/sample probes to be fitted
- Elimination of screwed joints, a particular advantage for sour gas duties
- Due to compactness of valve, it is lighter and easier to work on, giving increased ease of maintenance

Strength and Integrity

Robust Design

- Reduced overall size and fewer joints give more robust construction, making the valve less susceptible to vibration and reduced weight requires less support from mating pipework etc.

Range and Applications

Valve Range

Dublok manufactures an unparalleled range of Modular and Integral Multi-Valve Assemblies which offer technically superior solutions, saving weight, space and cost for topside, subsea and onshore valve requirements.

Valve assemblies are available with almost any combination of ball, needle, gate, globe and check valve head units, combined into a compact and robust manifold. An extensive range of end connection styles compliments this flexible approach, so providing a wide choice of strong, reliable and cost effective valve configurations.

The Dublok range encompasses valve sizes of 3/8″ to 4″ full and reduced bore, ANSI class 150 through to 2500 and API 2000 through to 15000.

The Modular range offers the following valve types:-

Ball:	Soft and metal seated. Floating and trunnion mounted
Gate:	Solid wedge
Globe:	Non-rotating tip
Needle:	OS&Y, screwed or bolted bonnet
Check:	Piston and velocity type

The Integral range offers the following valve types:-

Ball:	Soft and metal seated. Floating and trunnion mounted
Needle:	OS&Y and screwed bonnet

The Subsea range offers the following valve types:-

Needle:	Metal seated. Bolted bonnet
Ball:	Metal seated. Trunnion mounted
Globe:	OS&Y metal seated
Check:	Metal and soft seated

Valve Applications

The Dublok range of valves is suitable for use in numerous applications, including:

- Positive isolation
- Double block and bleed
- Chemical injection points
- Sampling points
- Instrument loop takeoff points
- Blowdown points
- Vessel trim
- Vents
- Drains
- Hydraulic control on topside and subsea wellhead and flowline applications

Size and Pressure Ratings

	Bore Size	Pressure
Pipeline soft seated ball valves	1/2″ - 4″	up to 10,000 psi (API class 10,000 lb)
Pipeline metal seated ball valves	1/2″ - 2″	up to 6,000 psi (2,500 lb)
Instrument soft seated ball valves	10 mm	up to 10,000 psi (API class 10,000 lb)
Gate /Globe valves	1/2″ - 2″	up to 6,000 psi (2,500 lb)
Pipeline subsea needle valves	1/2"	up to 15,000 psi (API class 15,000 lb)
Instrument style subsea needle valves	5 mm	up to 10,000 psi (API class 10,000 lb)

Full range of end connection styles and sizes available to ANSI/API/DIN standards.
Other bore sizes are available on request.

Valve Configurations

Double Block and Bleed Valves

BDBBX

The Dublok ball valve double block and bleed assembly has three valves - primary isolation, secondary isolation and bleed - all integrated into a single block. If required the inlet or outlet end connection can incorporate a spring loaded in-line piston check valve. The end connectors are interchangeable and can be specified to suit exact requirements.

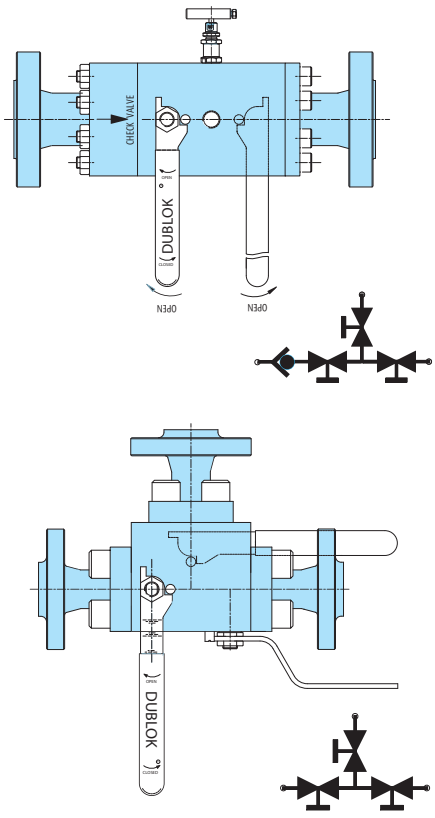
Our ball valve double block and bleed assembly is very compact and is recommended for general services. We can, however, incorporate needle, globe and gate valves into the design to suit particular duty specification.

Features

- Primary and secondary isolation options of Ball, Globe or Gate
- Bleed valve options of Needle or Ball
- Flanged bleed connection option available
- Single manifold, reduced leak paths
- End connectors to suit exact requirements
- Robust and compact design
- Inlet or outlet end connection can incorporate a spring loaded in-line piston Check valve
- For sampling points the valve can be supplied with a probe attached by means of full penetration butt weld
- Quill steadies can be fitted if required

Applications

- HP instrument connections for in line maintenance
- Process vents
- Process drains
- Level instrument gauges
- Injection points (with check)



Chemical Injection Points

BSBX BDBBX

Single block and check assemblies have proved to be very successful because of the many advantages over conventional injection point arrangements. Traditionally these points have been assembled from conventional valves and flanges with considerable penalties in terms of weight, space and leak paths.

This configuration is a very robust and compact unit. It may or may not be fitted with a probe and can be supplied in single block and check, double block and check or double block and bleed and check configurations.

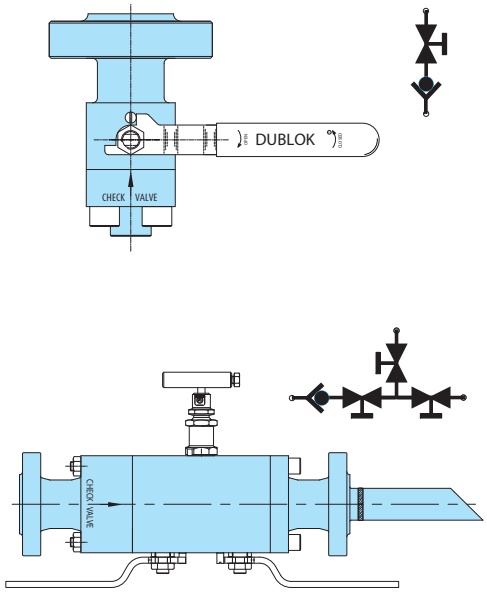
The injection probe is attached by means of a full penetration butt weld to an extension of the valve body forging, thereby eliminating the separate flange usually used to carry the probe.

Features

- Single or Double Block options
- Significant weight/space savings
- Reduced leak paths
- Robust and compact design
- Optional probe, attached by means of full penetration butt weld to body forging
- Quill steadies can be provided if required

Applications

- Injection points



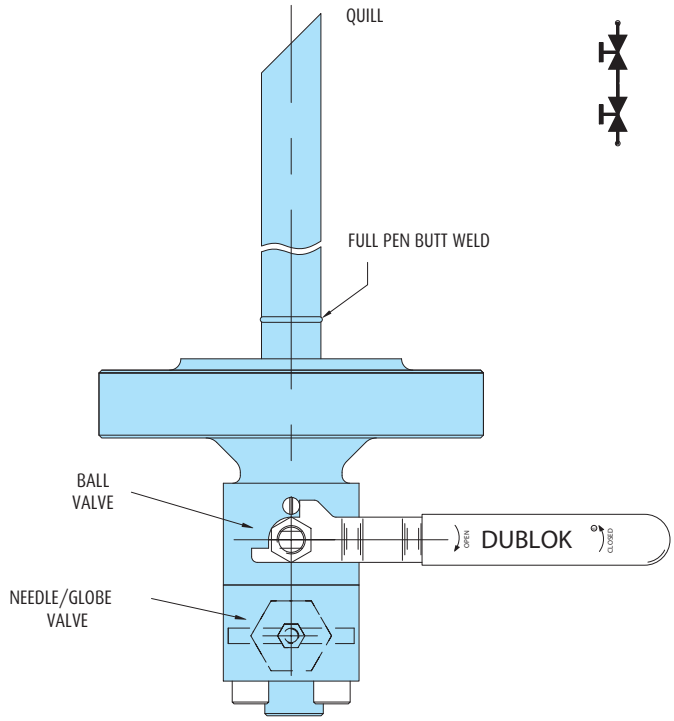
Valve Configurations

Single Block with Needle or Globe Valves — BDBX

Single Ball or Gate valves can be followed by a Needle or Globe valve for sampling or blowdown. The Ball or Gate valve provides primary isolation and the Globe or Needle valve flow control. For sampling points the unit may be fitted with an integral welded-on probe. The probe is attached by means of a full-penetration butt weld onto an extension of the valve body, thereby eliminating the separate flange usually used to carry the probe.

Features
- Primary isolation options of Ball, Globe or Gate
- Flow control using Needle or Globe valve
- For sampling points supplied with a probe attached by means of full penetration butt weld
- Quill steadies can be provided if required

Applications
- Sampling points
- Blow-down of vents/drains
- LP instrument connections
- Pig signallers



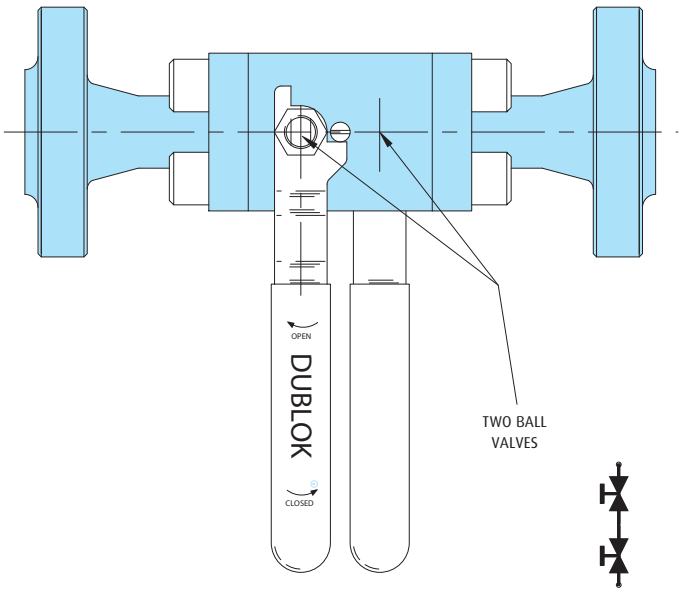
Double Block Assemblies — BDBX

Typical double block assemblies have two valves integrated into a single body thus eliminating the flanges usually involved. The end connections are interchangeable and can be specified to suit exact requirements, thereby eliminating unnecessary flanges, reducers and fittings.

Double block units can be provided in any combination of ball, gate, needle or globe valves.

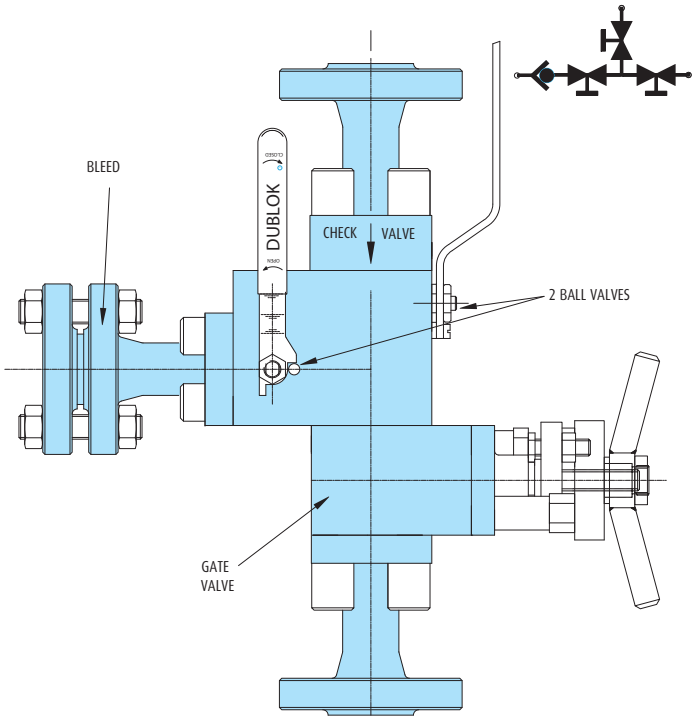
Features
- Primary and secondary isolation options of Ball, Gate, Needle and Globe
- Single manifold with interchangeable end connections

Applications
- HP instrument connections
- Vents and drains
- Level instrument gauges



Valve Configurations

Gate/Ball Assembly — BDBBX



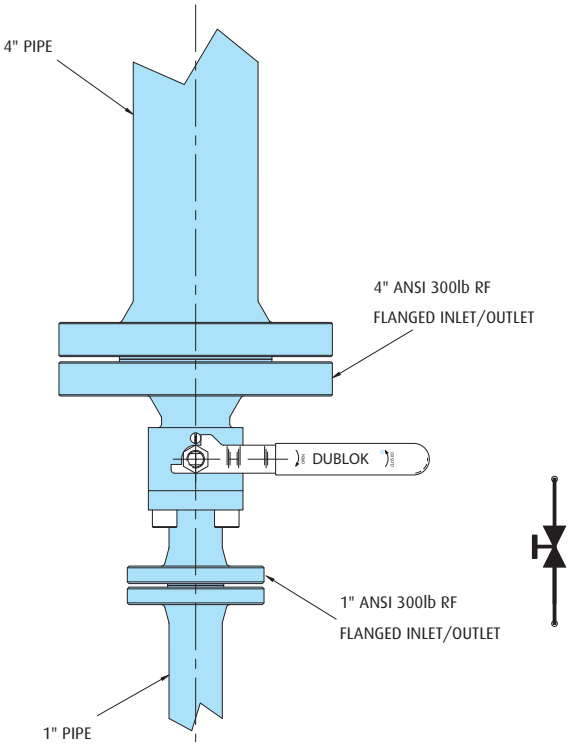
This four valve unit is an excellent example of the versatility of the Dublok design.

It has a mixture of gate, ball and check valves all incorporated into a neat compact assembly.

Features
- Gate/Ball/Check valve options incorporated into a robust and compact unit
- End Connectors to suit exact requirements
- Versatile configuration

Applications
- Blow-down points
- Sample points
- Coarse throttle points

Hybrid Valves (Valves with dissimilar ends) — BSBX



Frequently, an oversized valve will be used purely for the strength of the connection to the main line. Clearly this is wasteful in terms of space, weight and cost. The solution is to use a Dublok hybrid valve, with dissimilar ends. The one piece forged reducing inlet has a heavy wall to provide the required strength. The valve itself is the same size as the outlet so it is no longer, heavier or more expensive than need be.

Dramatic space and weight savings are possible using this valve.

Features
- Dissimilar end connections to suit special requirements
- Reduced valve manifold size
- Significant weight, space and cost savings

Applications
- For use where valve needs to accommodate variations in end connections without loss of integrity

Valve Head Types

Ball Valves ½" bore and above — Soft Seat

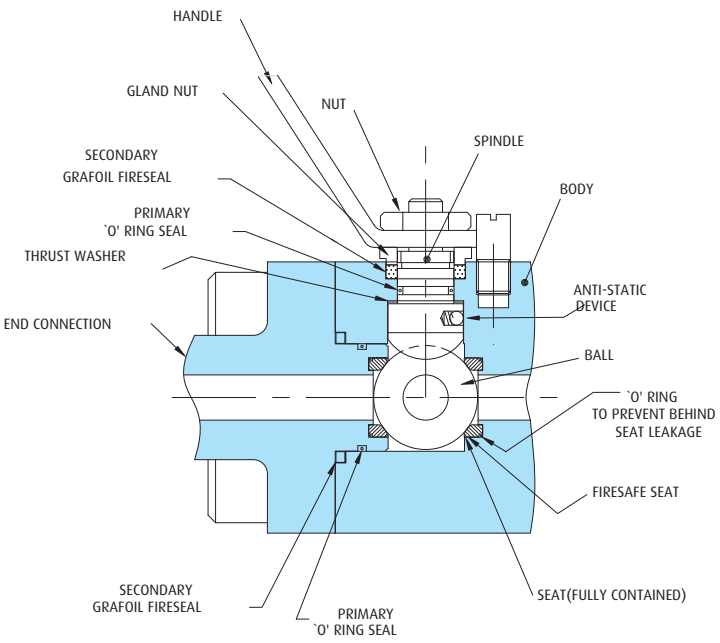
Specifications

Type	:	Floating Ball (Seat Supported)
Fire Integrity	:	Fire Tested to BS 6755 Part 2
Antistatic	:	To BS 5351
Seats	:	PTFE, GRTFE, NYLON, PEEK (To suit service conditions)

Uses

For pipeline applications where a through bore design is required to minimise pressure drop and maximise product flow, with ¼ turn shut off. Repeatable bubble type sealing, combined with economic construction.

Suitable for most general applications.



Ball Valves ½" bore and above — Metal Seat

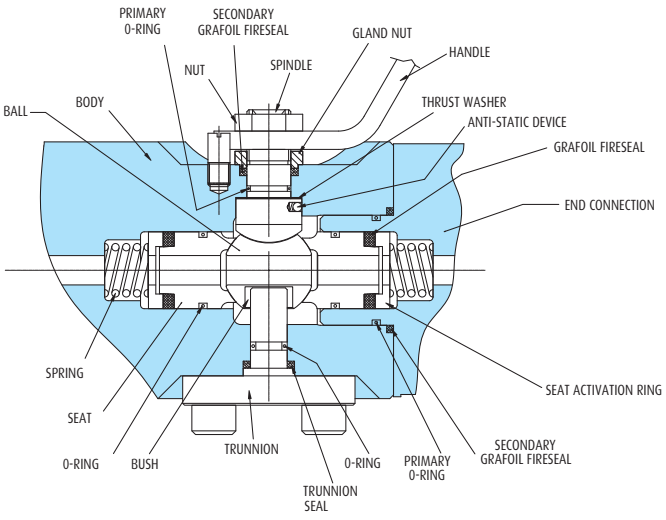
Specifications

Type	:	Trunnion mounted
Fire Integrity	:	Fire Tested to BS 6755 Part 2
Antistatic	:	To BS 5351
Seats	:	Metal to metal TCC (Tungsten Carbide Coated)

Uses

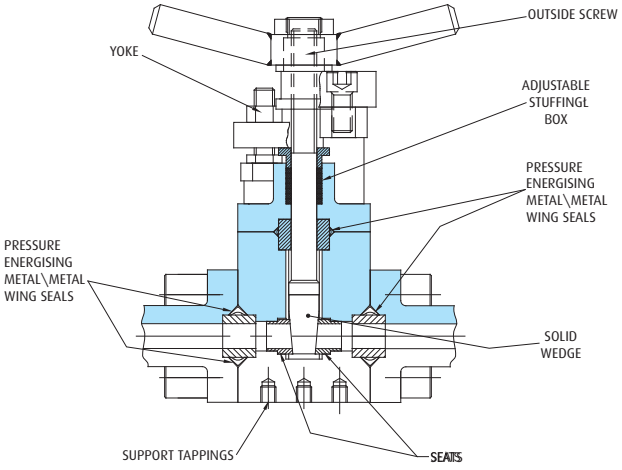
For pipeline applications where a through bore design is required to minimise pressure drop and maximise product flow, with ¼ turn shut off. Hardwearing seat surfaces give repeatable service.

Suitable for applications with high or low service temperatures which exclude the use of plastic seat materials.



Valve Head Types

Gate Valves



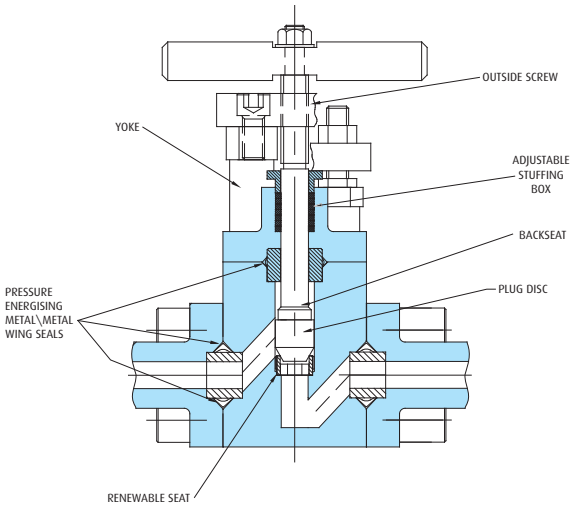
Specifications

Type : Outside screw and yoke wedge Gate Valve
Fire Integrity : Fire Tested to BS 6755 Part 2
Wedge : One piece, loose fitted to stem for perfect seat alignment
Seats : Metal to metal seats for abrasion resistance and performance at high temperature
Body Seals : Pressure energised metal to metal "WING" seal
Gland : Adjustable stuffing box with PTFE impregnated packing
Bonnet : Bolted

Uses

For pipeline applications where a through bore design is required with increased security of positive metal shut off for high or low service temperatures or abrasive service.

Globe Valves



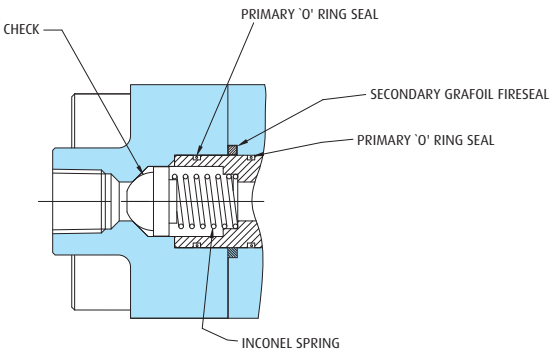
Specifications

Type : Outside screw and yoke
Fire Integrity : Fire Tested to BS 6755 Part 2
Plug : One piece, loose fitted to stem for perfect seat alignment
Seats : Metal to metal seated for abrasion resistance and performance at high temperature
Body Seals : Pressure energised metal to metal "WING" seal
Gland : Adjustable stuffing box with PTFE impregnated packing
Bonnet : Bolted

Uses

For pipeline applications where a pressure drop across the valve is acceptable. With increased security of positive metal to metal shut off. Suitable for all general applications.

Check Valves



Specifications

Type : Piston, in line, spring loaded
Seat : Metal to metal (soft seat available as an option)
Spring : Inconel

Uses

For injection service where the process fluid is being conditioned. Prevents process backflow if conditioning fluid pressure falls.

General Information

The Dublok range of integrally flanged manifolds is designed specifically for applications where modular construction is inappropriate or unnecessary.

The Dublok range of integral double block and bleed manifolds are used for primary isolation duties for liquid or gaseous service. Designed for weight and space saving they are available in a wide range of materials, sizes and head unit combinations to meet all requirements.

Applications

- Instrument loop takeoff points
- Positive isolation
- Double block and bleed
- Chemical injection
- Sampling points
- Blowdown points
- Drains / Vents

Valve Types

- Single block
- Single block and bleed
- Double block
- Double block and bleed

Connection Options

- Flange by threaded
- Flange by flange
- Threaded by threaded

Features

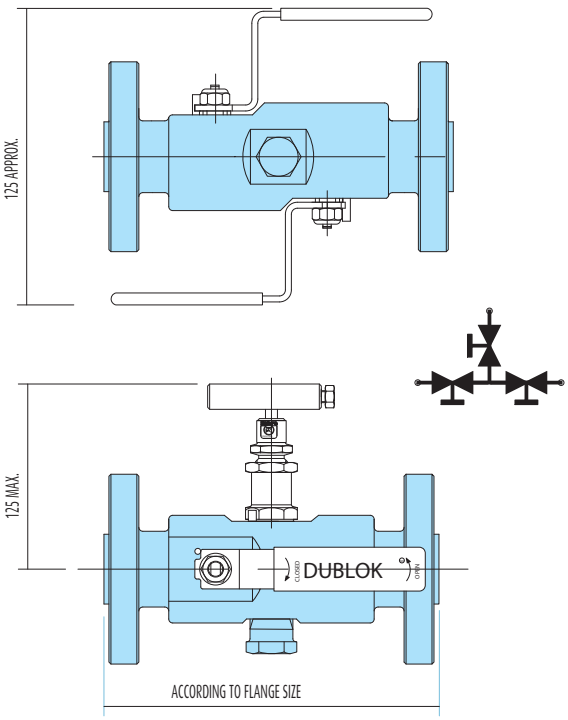
- Single one-piece forged body gives robust unit with fewer potential leak paths
- Compact design for weight and space savings
- Wide range of performance
- Wide range of materials including exotics
- Independently verified pressure/temperature range
- Firesafe design
- NACE compliant
- Choice of flanged or threaded process connections
- Designed for maximum operator safety
- Dublok's unique head unit design gives reduced actuating torque
- 100% tested at 1.5 times working pressure
- All wetted parts traceable to DIN 50049 3.1B certification

Valve Configurations

Integral Double Block & Bleed Valves — BDBBX

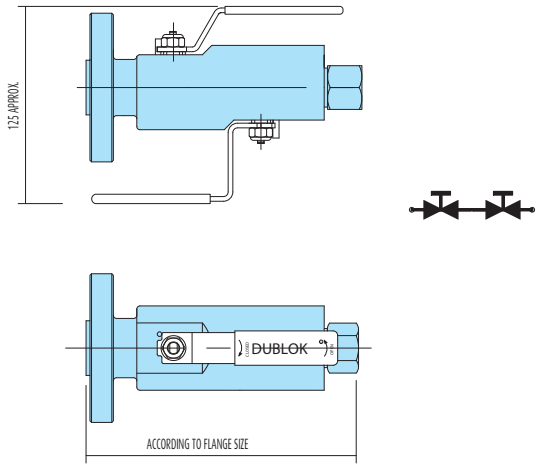
- Double block and bleed valve (ball, needle, ball)
- Flanged inlet / NPT threaded outlet connection with choice of sizes
- Single one-piece forged body gives compact unit with fewer potential leak paths
- Available in a wide range of different materials and a choice of bore sizes to suit various applications
- Full range of sizes in both the flanged inlet and the threaded outlet.

Model Number	Valve Configuration
BDBBX	Ball, Needle, Ball
Alternative configurations:-	
DBBX	3 x Needle
YDBBX	OS&Y & 2 x Needle



Valve Configurations

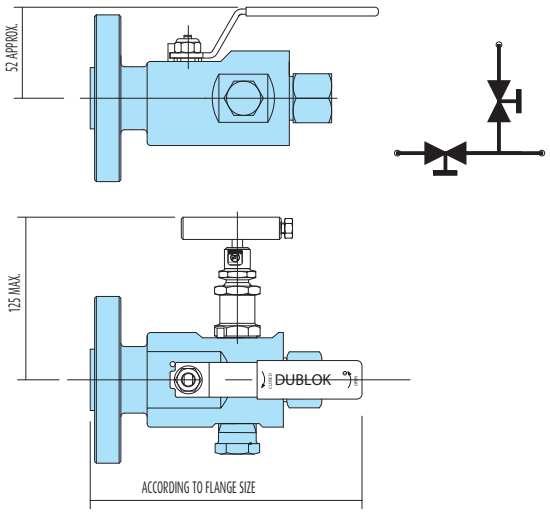
Integral Double Block Valves — BDBX



- Double isolate ball valve
- Available in a wide range of different materials and a choice of bore sizes to suit various applications
- Full range of sizes in both the flanged inlet and the threaded outlet

Model Number	Valve Configuration
BDBX	2 x Ball
Alternative configurations:-	
YDBX	OS&Y & Needle
DBX	2 x Needle

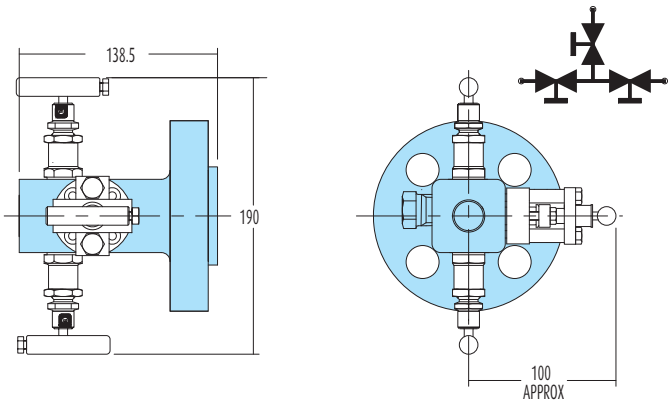
Integral Single Block & Bleed Valves — BSBBX



- Single block and bleed valve
- Single one-piece forged body gives compact unit with fewer potential leak paths
- Available in a wide range of different materials and a choice of bore sizes to suit various applications
- Full range of sizes in both the flanged inlet and the threaded outlet

Model Number	Valve Configuration
BSBBX	Ball, Needle
Alternative configurations:-	
YSBBX	OS&Y & Needle
SBBX	2 x Needle

Outside Screw & Yoke Primary Isolation Valves — YDBBX



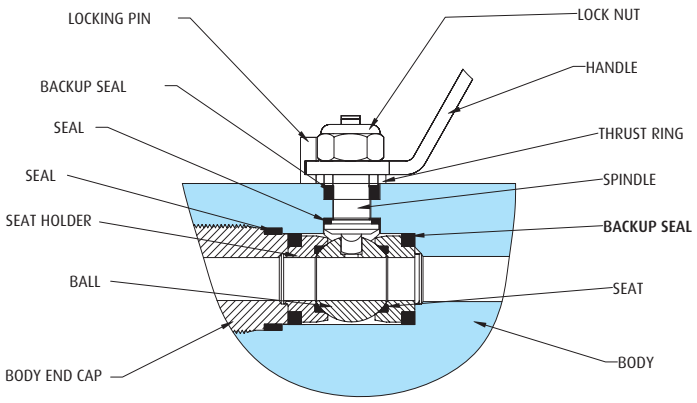
- Double block and bleed three valve manifold
- Flanged inlet / threaded outlet connection with choice of flange / thread sizes
- Single one-piece cast body with 2 isolate (1 OS&Y on primary isolation) and 1 vent valves
- $^{1}/_{2}$" NPT vent connection (plugged)

Model Number	Valve Configuration
YDDBX	OS&Y & 2 x Needle

Valve Head Types

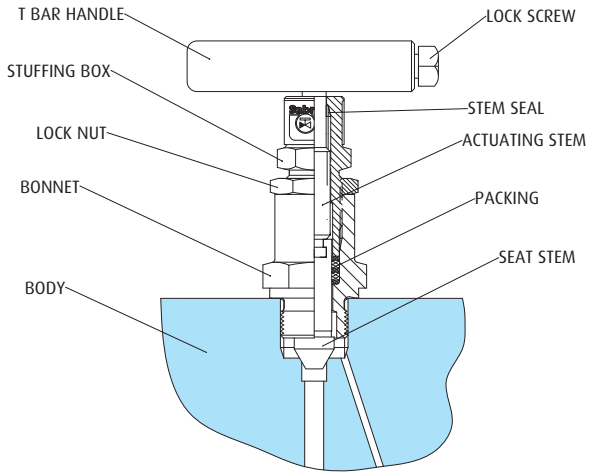
Ball Valves — 10mm Bore

Features
- Quarter turn positive shut-off
- 316 stainless steel handle and stop pin
- Blow-out proof one-piece stem
- Vented ball for cavity relief
- Fully supported seats
- End cap threads protected from process
- Vibration proof handle lock nut
- Fire-safe design
- Anti-static design
- Operating pressure up to 10,000 p.s.i.g.
- Operating temperature from -40°C to +200 C
- Threaded end caps pinned to prevent accidental removal



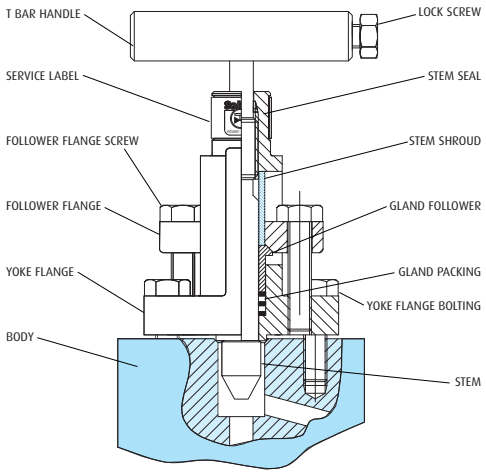
Needle Valves — 5mm Bore

Features
- Operating pressure up to 10,000 p.s.i.g
- Operating temperature from -40°C to 500°C
- Austenitic stainless steel one piece handle
- Effective thread seal (integral with gland follower)
- Unique NIFLOR coated stem threads
- Head unit service label
- Packing bush to suit operating conditions
- Bonnet locking pin
- Metal to metal body to bonnet seal (DIN 3852)
- All wetted parts traceable
- Hardened stem for positive shut-off
- 100% Pressure tested

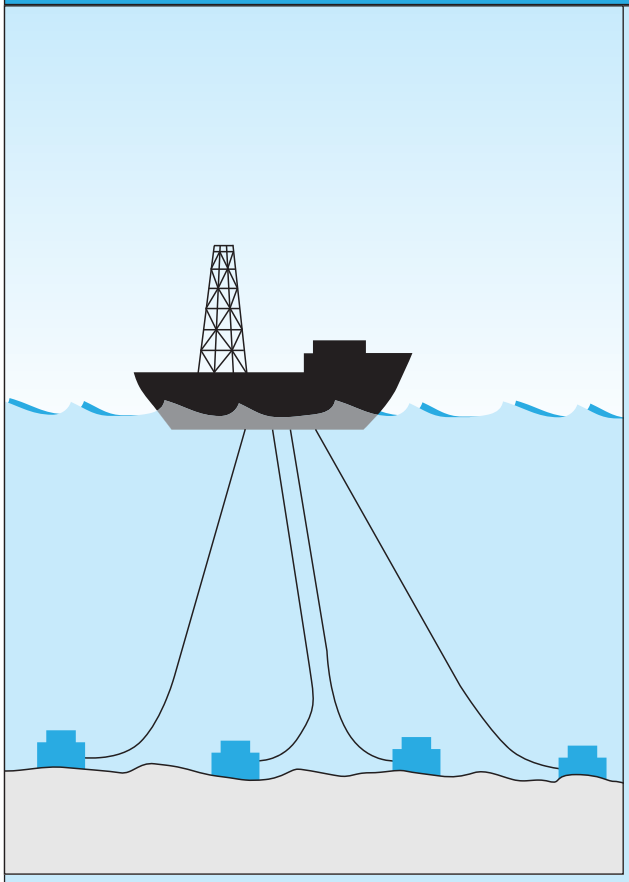


Outside Screw & Yoke Valves — 5mm Bore

Features
- Operating pressure up to 10,000 p.s.i.g.
- Operating temperature from - 40°C to 500°C
- Austenitic stainless steel on piece handle
- Effective thread seal (integral with follower flange)
- Unique NIFLOR coated stem threads
- Head unit service label
- Packing bush to suit operating conditions
- Bolted bonnet construction
- All wetted parts traceable
- Hardened stem for positive shut-off
- 100% Pressure tested



General Information



The Dublok range of subsea valves includes Needle, Globe, Ball and Check valve options contained within a robust manifold with a variety of end connections to suit the specific requirements of the application. Operating conditions up to 15,000 psi at 3,000 meters depth can be accommodated. Valves can be diver or ROV operated using low torque, non-rising stem activation with visible valve indication.

Special head unit configurations have been designed and proven specifically for subsea installations. Needle type (½" bore pipeline type / 5mm bore hydraulic service type), Globe, Ball and Check up to 2" bore are available to meet most requirements. The pipeline needle configuration has been extensively tested and proven by independent examining bodies. All these head unit types can be used in any manifold or valve body configuration to give the same versatility as the on-shore and top side range.

Robust construction, seawater ingress seals and ease of use together with the availability of various materials of construction gives superior subsea performance and extended operating life with minimum maintenance requirements.

Features

- Robust design to withstand accidental damage and/or abuse which the valve may be subjected to during installation and use.
- Essential elements of the head unit components are protected from ingress of sea-water by elastomeric seals. These seals are secondary to basic gland and valve seals, which are primary seals, and are so placed to protect these elements from the damaging effect of sea-water.
- Most valve head types can be adapted for actuation by either diver or ROV (Remotely Operated Vehicle).
- Needle valve construction uses a two-part spindle assembly with a non-rising actuation stem. This is of great advantage when being used with ROVs.
- Globe and Needle valve seats are non-rotating, ensuring positive non-galling operation during shut off.
- Ball valve configuration of seats (fully supported) with floating ball gives best solution for all through bore applications.
- Packing arrangements for the various valve types are designed to be maintenance free after installation.
- Materials of wetted components are traceable to original material certification (DIN 50049 3.1b).
- Material of construction to suit customers' requirements. Typical materials are:-

  316 stainless steel
  Duplex stainless steel
  6 Mo stainless steel
  Other materials available on request.

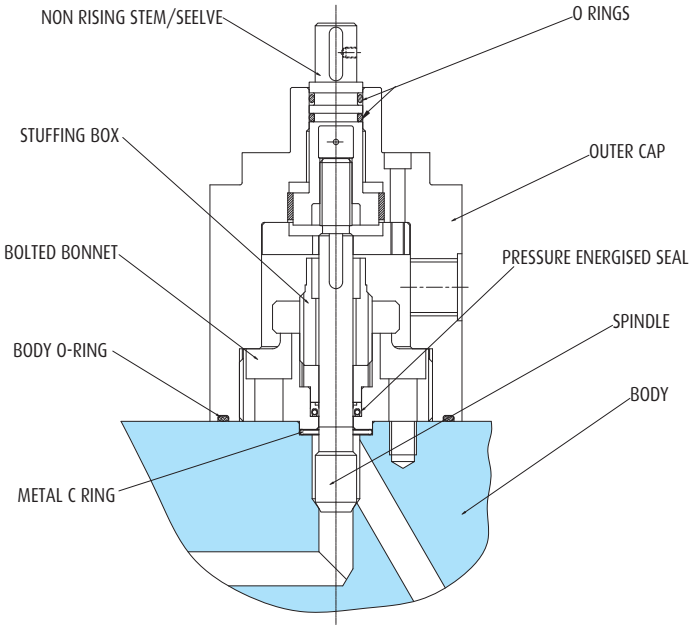
- All valves hydraulically tested to 1.5 times specified working pressure for body shell and 1.1 times specified working pressure for seat and packing.
- Check valve cracking pressures can be set to customers' requirements.
- Visual indication options available.

Valve Head Types

Needle Valves - Piping Class

Features
- Metal seated needle type
- 1/2" diameter bore
- Non-rotating seat
- Non-rising stem
- Optional indicator
- Non-adjustable gland packing
- Fully enclosed construction with secondary sea water seals at boundary interfaces
- Bolted bonnet construction

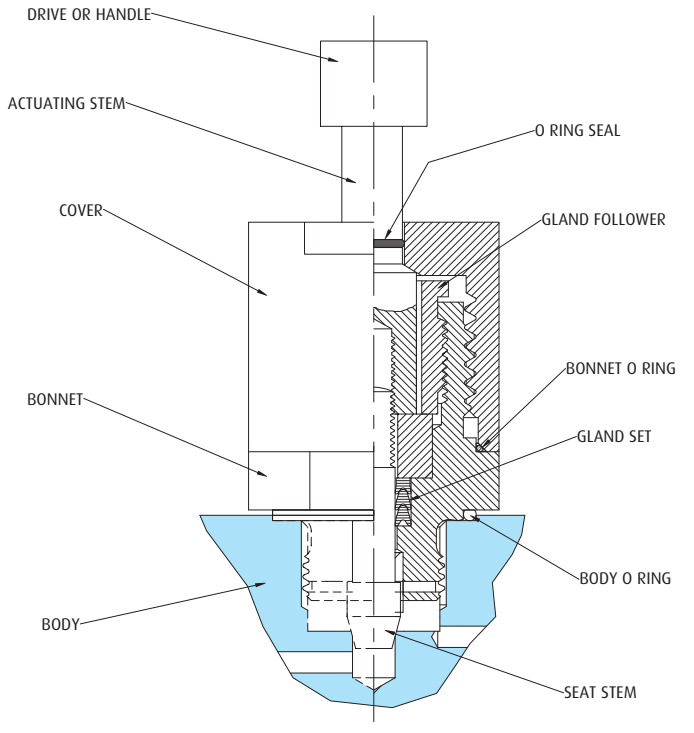
Applications
For pipeline applications where a through ball design is not required and with increased security of a positive metal to metal shut off to suit all service applications. Can be adapted to diver or ROV operation.



Needle Valves - Instrument Style

Features
- Metal seated needle type
- 5mm diameter bore
- Non-rotating seat stem
- Non-rising stem
- Non-adjustable gland packing
- Fully enclosed construction with secondary sea water seals at boundary interfaces.

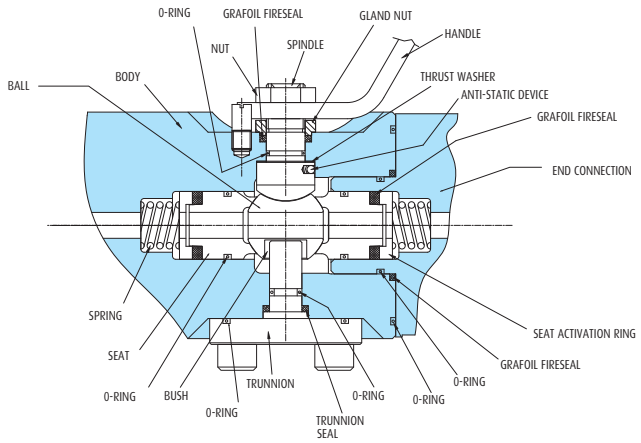
Applications
For instrument pressure monitoring applications where flow is not required. With increased security of positive metal to metal shut off to suit all service applications. Can be adapted to diver or ROV operation.



Valve Head Types

Ball Valves

Metal Seat



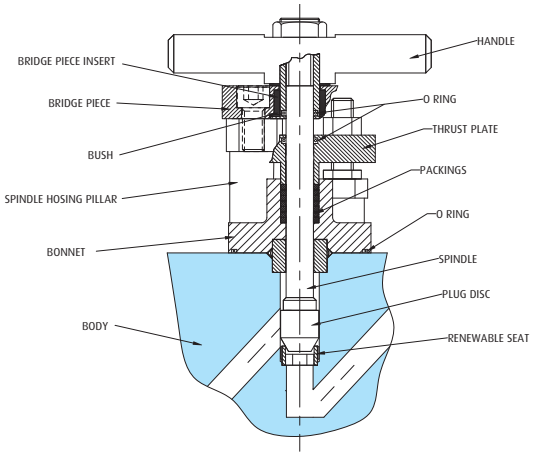
Features

- Trunnion mounted
- Fire tested to BS 6755 Part 2
- Antistatic to BS6755 Part 2
- Metal to metal seats (tungsten carbide coated)
- Fitted with secondary sea water seals at boundary interfaces.

Applications

For pipeline applications where a through bore design is required. ¼ turn shut off for ease of diver operation.

Globe Valves



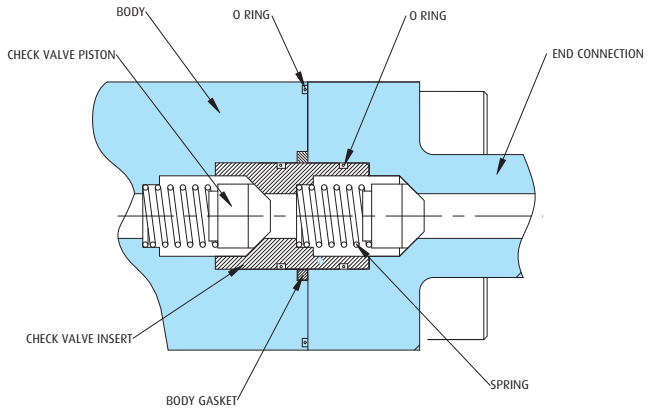
Features

- Outside screw and yolk
- Non-rotating stem tip
- Metal to metal seat
- Body seals - pressure energised
- Metal to metal wing seal with sea water seal back-up
- Bolted bonnet construction.

Applications

For pipeline applications where a through ball design is not required. With increased security of positive metal to metal shut off. Can be adapted for diver or ROV operation.

Double Check Valves



Features

- In line, spring loaded piston
- Metal to metal seat (soft seat available as option)
- Inconel spring
- Tandem construction for extra security
- Sea water seals at boundary interfaces.

Applications

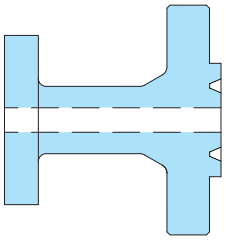
For injection service where the process fluid is being conditioned. Prevents process backflow of conditioning fluid if pressure falls.

End Connection Options

The Dublok range is not only highly effective in integrating valves into single blocks but also in combining fittings. Our bolted construction principle with its simple, robust, proven joint enables us to supply literally any end connection you may require.

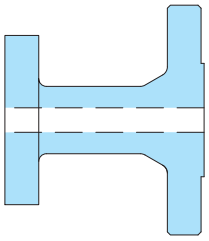
End Connection Availability

RTJ Flange



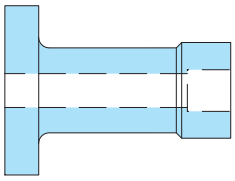
Ring type flange to ANSI/API/DIN

RF Flange



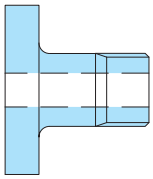
Raised face type joint flange to ANSI/DIN - smooth or serrated finish

Socket Weld End



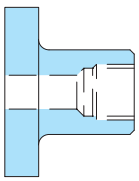
Socket weld detail to suit pipe size and schedule specified

Screwed End (Male)



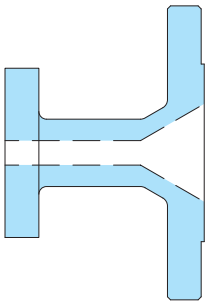
Male taper/parallel thread to suit requirements

Screwed End (Female)



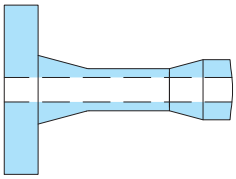
Female taper/parallel thread to suit requirements

Reducing End



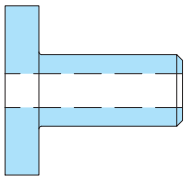
Flange joint to suit larger mating flange to body type

Branch End (Weld)



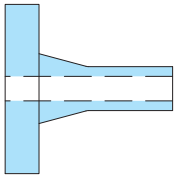
Weld end for direct welding as pipe branch

BW End



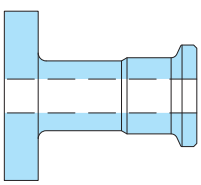
Prepared butt weld end detail to suit pipe size and schedule specified

Plain End



Plain weld end for mating with socket weld detail - to suit pipe size and schedule specified

Clamp Type End (all standard designs)



Clamp end detail to suit pipe size and seal ring specified

Other end connections available - contact the sales department if your required connections are not shown above.

Valve Body Materials

Valves are available in most metals including:-

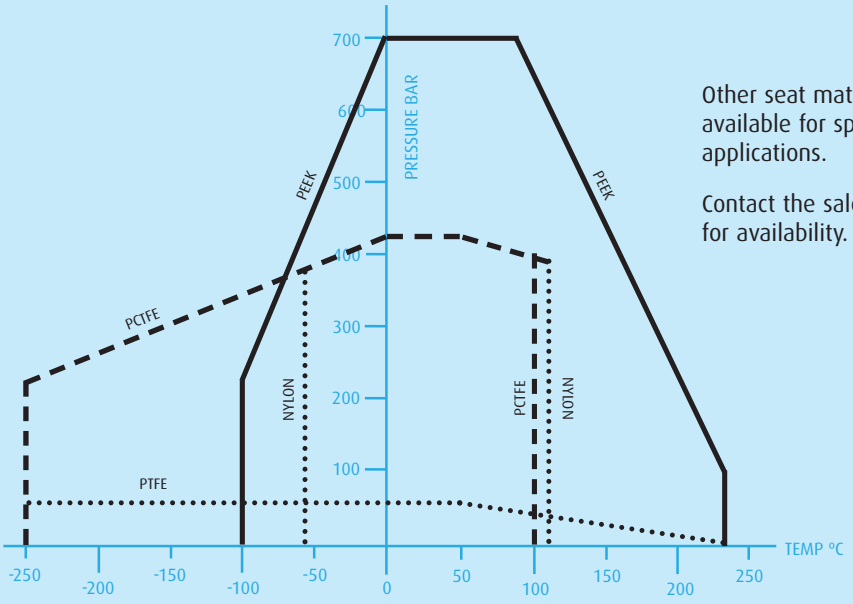
- Carbon Steel - ASTM A105N
- Carbon Steel - AISI 4140
- Carbon Steel - ASTM A350 GR LF2
- Stainless Steel - ASTM A182 GR 316
- Duplex Stainless Steel - ASTM A182 GR F51
- 6% Molybdenum Stainless Steel - ASTM A182 GR F44
- Super Duplex Stainless Steel - ASTM A182 GR F55
- Alloy 625
- Alloy 825
- Alloy 400
- Alloy 28
- Titanium

We would consider manufacture in any forged machinable metal. Please note we do not use barstock material for any pressure containment components. Materials of wetted components are traceable to original material certification (DIN 50049 3.1b).

Trim

Subject to customer specific requirements, we use Duplex stainless steel UNS 31803 balls and spindles as standard for all high pressure valves. This results in superior reliability and increased valve longevity. Similarly, Graphoil SPG6 seal rings, specially inhibited to prevent corrosion in stainless steel units, are used in preference to CAF because of its superior performance. Other materials are available to suit specific operating requirements.

Seat Material Rating Graph



Other seat materials are available for specific applications.

Contact the sales department for availability.

Soft Goods Rating

Commonly used materials for 'O' ring seals include: fluorocarbon grades, nitrile grades, perfluoroelastomers etc.
Due to the large availability of types of elastomers for sealing, always contact the sales department for suitability.

Destructive and Performance Testing

Over the years, in order to prove the integrity and longevity of our designs and occasionally at the request of customers, we have carried out a variety of destructive tests on various assemblies.

These tests can be summarised as follows:-

BURST TESTING BY WOOD GROUP

A ½" ANSI 2500 rated Double Block and Bleed Ball valve assembly (max c.w.p. 6,000 psi) fitted with primary 'O' rings and secondary graphoil rings was subjected to a gradually increasing water test pressure. When the maximum attainable pressure of 30,000 psi was reached, no leakage was noted.

The above test was repeated with the primary 'O' ring removed, ie. with only the firesafe graphoil ring fitted. The graphoil ring failed at 22,500 psi.

A ½" ANSI 2500 Gate Valve Double Block and Bleed assembly (max c.w.p. 6,000 psi) fitted with pressure energised metal to metal "wing" seals was similarly tested. Leakage occurred at the body joint at 22,500 psi.

NITROGEN TESTING BY UNIVERSITY OF LEEDS

A ½" ANSI 2500 rated Double Block and Bleed Ball valve assembly (max c.w.p. 6,000 psi) fitted with PEEK seats was subjected to a survival test of -100°C. It was then tested at a range of high and low pressures at temperatures of -57°C through to +225°C. The valves were bubble tight on nitrogen after this test.

Similar tests were carried out on the same assembly fitted with nylon seats, with a survival test of -60°C and varying pressure tests at temperatures of +20°C through to +120°C. A similar satisfactory result was obtained.

CYCLIC TESTING FOR BRITISH GAS

An ANSI 1500 nylon seated Ball valve which had been operated through 2,300 cycles under full differential pressure was bubble tight during a BS 6755 pressure test and a 15 psi air seat test. These test results indicate the longevity of our ball valve design.

HOT OIL TEST BY SCORE EUROPE FOR SHELL

A nylon seated Ball valve was cycled at 252 bar g pressure on 120°C hot oil process. It was then subjected to a low pressure air seat test and BS 6755 pressure testing and was found to be bubble tight. This test was carried out as part of the Shell approval process.

BEND TEST OF INLET NECK BY LLOYDS BRITISH

A ½" carbon steel ANSI 2500 Double Block and Bleed Ball valve assembly was subjected to a bend test in a jig. A progressively increasing load was applied to the inlet neck. The inlet connection piece bent through 90° and ultimately failed in tension at a load of 10.21 tonnes. This test proved the integrity and the mechanical strength of our assemblies.

FIRE SAFE TESTING

Where applicable, valve designs were tested and certified to BS 6755 Part 2 / API 6FA.

Valve Testing Facilities

We have a number of hydraulic test facilities capable of pressure testing up to 20,000 psi. In addition we are able to test using nitrogen or air up to 10,000 psi. All valves are tested to a minimum specification equating to API 598.

Enhanced testing programmes to suit customers' requirements can be accommodated.

Design Codes

Flanges to:	Design to:	
ANSI B16.5	EEMUA	182
API	ASME	B16.34
DIN	ASME	B31.3
	BS	6755
	API	6FA
	PED	

Quality Assurance

All Dublok products are manufactured in the UK at our modern plant in Altrincham, Cheshire. The Company employs design, procurement, machining, assembly and test procedures, which form part of our integrated quality assurance system. This is independently accredited by BSI Limited to the ISO 9001:2000 Quality Standard. In addition, all stages of order processing, from initial enquiry to final certification, are controlled through the use of integrated software applications, including sales order processing, CAD, MRP and stock control. This ensures our customers' requirements are accurately and promptly fulfilled.

We are committed to operating our business in a manner which helps protect the environment and we are accredited by BSI to ISO14001 Environmental Standard.

Our Health and Safety policies and procedures are accredited to BS OHSAS 18001:2008 and audited by BSI.

Certificate No. FM 32559

EMS 54826

Optional Extras

The Dublok range of valves can be enhanced by a number of options dependent on customer requirements.

These include:

- Extended spindles, for ease of access, insulation clearance etc.
- Locking devices, for Ball, Gate, Globe and Needle Valves
- Injection and Sampling Probes. These weld on probes/quills are butt welded to an extension on the body forging and can be provided with quill steadies if required
- Support points, can be supplied if required
- Standard and non-standard coatings/paint finishes
- Special valves to meet specific customer requirements can be designed and manufactured.

Please contact our sales department to discuss any special requirements you may have.

CE Marking

All valves are supplied in accordance with the requirements of the Pressure Equipment Directive No. PED97/23/EC & PER (SI 1999 No 2001).

CE

Technical Sales Support

Our technical sales team are available to provide advice and guidance on all Dublok products. We can provide technical advice on applications and help with product specification to ensure cost effective and reliable solutions.

Certification

All pressure containment components are manufactured from forged materials obtained from approved suppliers. Completed assemblies are supplied with a certification pack, which includes a Functional Pressure Test Certificate and Material Certification to EN 1024:2004 3.1 and NACE MR01-75. NDE Inspection Certification, 3.2 Certification etc. can be readily supplied as required.

Spares Support

Dublok carries extensive stocks of spare parts for the full range of valves. Standard replacement parts are normally available ex-stock. Full parts list records are maintained for each valve so enabling special and non-standard requirements to be fulfilled promptly.

Contact Information

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E-mail
valves@sabre-dublok.com

Web site
www.sabre-valves.com

Model Numbering System

Model Numbering System

BODY STYLES	INLET / OUTLET SIZES	CONNECTION TYPE	MATERIAL	FLANGE RATING	SEAT / PACKING OPTIONS	BORE SIZES	ACCESSORIES	VENT / HEAD UNIT TYPE	VALVE CLASS
BDBBX	16 8	RJRJ	LF2	1500P/HG	B16	SG	FS PROBE	(CBNB)	(MOD)

BODY STYLES

(for body styles see configuration pages)

BDBBX - Double block and bleed with integral check valve

INLET / OUTLET SIZES

Nominal size

1/2"	-	4	2"	-	16
3/4"	-	6	2 1/16" (API	-	16.5
1"	-	8	3"	-	24
1 1/2"	-	12	4"	-	32
1 13/16" (API)	-	14.5			

CONNECTION TYPE

RF	-	Raised face flange
RJ	-	Ring type joint flange
NT	-	NPT thread
BW	-	Butt weld
SW	-	Socket weld
RG	-	Hub
PL	-	Plain end

MATERIAL

A105	-	Carbon steel - ASTM A105N
4140	-	Carbon steel - ASTM 4140
LF2	-	Carbon steel - ASTM 350 GR LF2
316	-	Stainless steel - ASTM A182 GR 316
DUP	-	Duplex stainless steel - ASTM A182 GR F51
6MO	-	6% Molybdenum stainless steel - ASTM A182 GR F44 (254 SMO)
SDUP	-	Duplex stainless steel - ASTM A182 GR F55
625	-	Alloy 625
825	-	Alloy 825
MON	-	Alloy 400
A28	-	Alloy 28
TIB	-	Titanium
C276	-	Alloy C276

FLANGE RATING

ANSI	150	ANSI	1500
	300		2500
	600	API	5000
	900		10000

SEAT / PACKING OPTIONS

Ball	P	-	PEEK
	T	-	PTFE
	D	-	Nylon
	C	-	PCTFE
	M	-	Metal
Needle	HT	-	PTFE / PEEK packing
	HG	-	Graphite packing

BORE SIZES

B3	-	3/8"(10mm)	B12	-	1 1/2"
B4	-	1/2"	B16	-	2"
B6	-	3/4"	B24	-	3"
B8	-	1"	etc.		

ACCESSORIES

AS	-	Anti-static	Probe	-	Sample probe
FS	-	Firesafe	SG	-	Nace
L	-	Lock	P	-	Paint / protective coating

VENT / HEAD UNIT TYPE

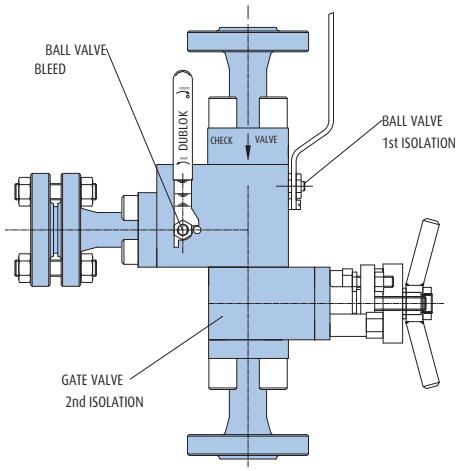
B	-	Ball valve	C	-	Check valve
T	-	Gate valve	N	-	Needle valve
G	-	Globe valve	Y	-	OS&Y Needle valve - 5mm bore

VALVE CLASS

MOD	-	Modular construction
INT	-	Integral construction
SUB	-	Subsea

Examples

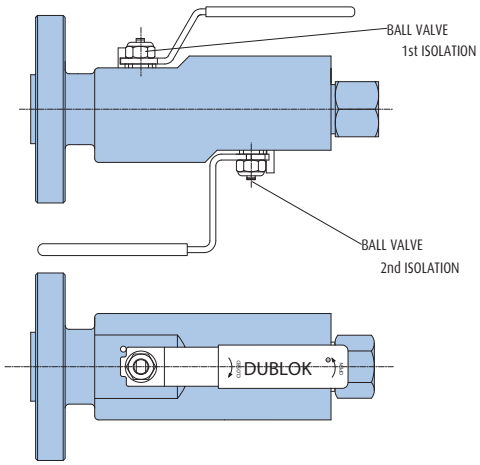
Gate/Ball Assembly



Model No:
BDBBX-888-RJRJRJ-LF2-2500P/M-B8-SG-FS (CBBT) (MOD)

- Modular block & bleed valve with integral check
- 1" ANSI 2500 lb RTJ flange inlet, outlet and vent
- 1" full bore
- Body material ASTM A350 - LF2
- Nace compliant (sour gas service)
- Fire safe design
- Primary isolate - ball, bleed - ball, secondary isolate - gate
- Ball valve seats - PEEK, gate valve seat - metal to metal.

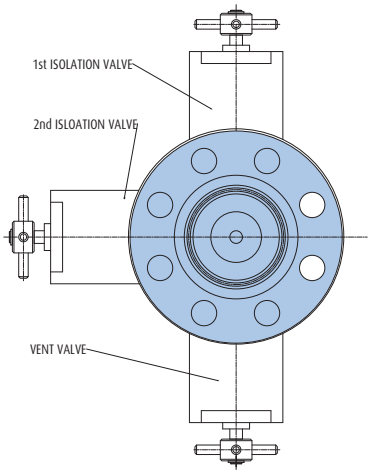
Integral Double Block Instrument Class Valve



Model No:
BDBX-84-RFNT-316-600T-B3-SG-FS (BB) (INT)

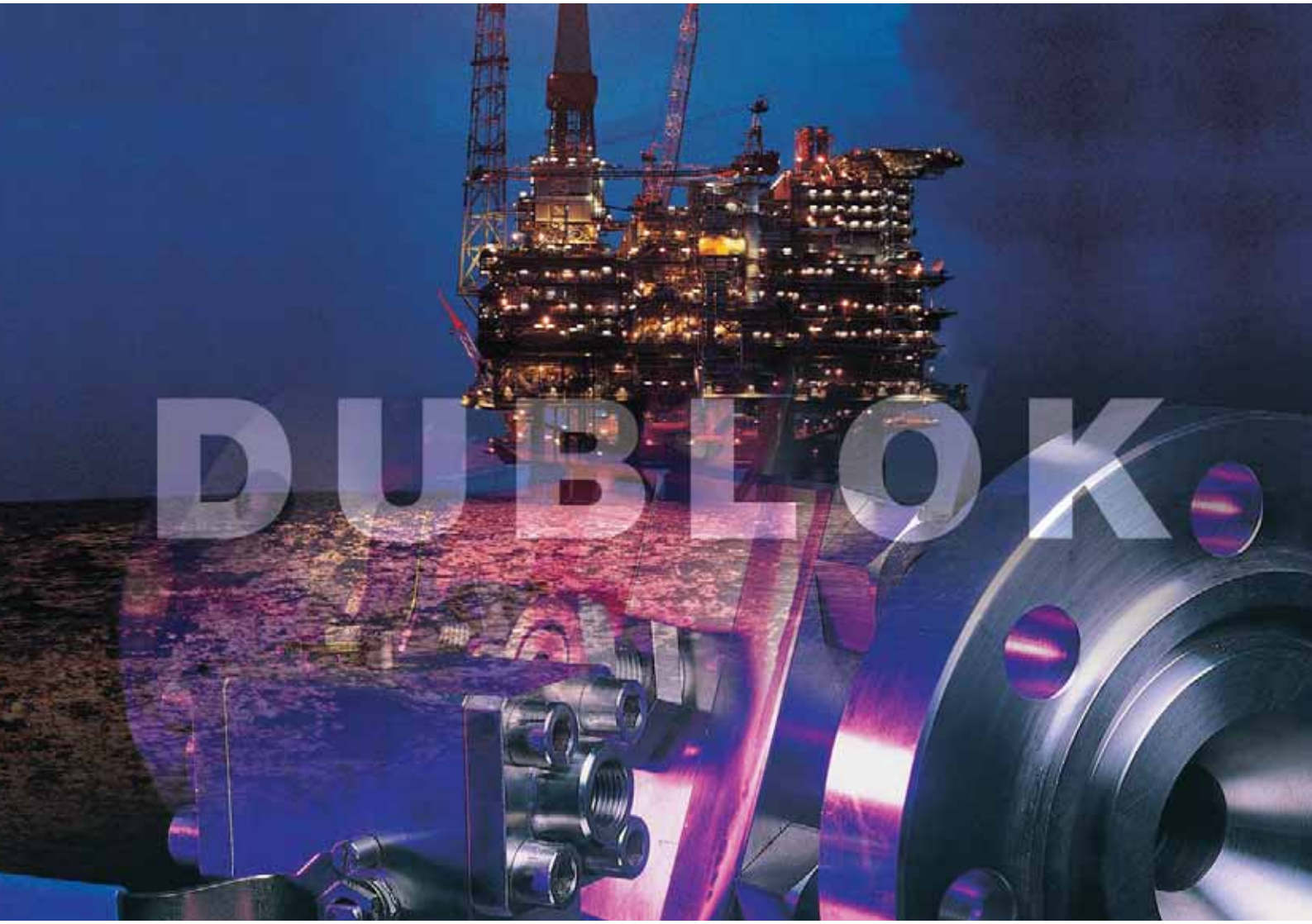
- Integral double block class valve
- 1" ANSI 600 lb RF flange inlet and ½" NPT female outlet
- 10mm bore
- Body material ASTM A182 - F316
- Nace compliant (sour gas service)
- Fire safe design
- Primary isolate - ball, secondary isolate - ball
- Ball valve seats - PTFE

Subsea Double Block and Bleed Valve



Model No:
DBBX-16.5 16.5-RJRJ-DUP-5000M-B4-SG(NNN) (SUB)

- Double block and bleed subsea valve
- 2 1/16" API 5000 lb RTJ flanged inlet and outlet
- ½" reduced bore
- Body material ASTM 182 - F51
- Nace compliant (sour gas service)
- Primary isolate, secondary isolate and vent - needle type (ROV operable)
- Metal seated



Certificate No. FM 32559
ISO 9001
Quality Management

Certificate No. OHS 94148
ISO 18001
Occupational Health & Safety

Certificate No.EMS 54826
ISO 14001
Environmental

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