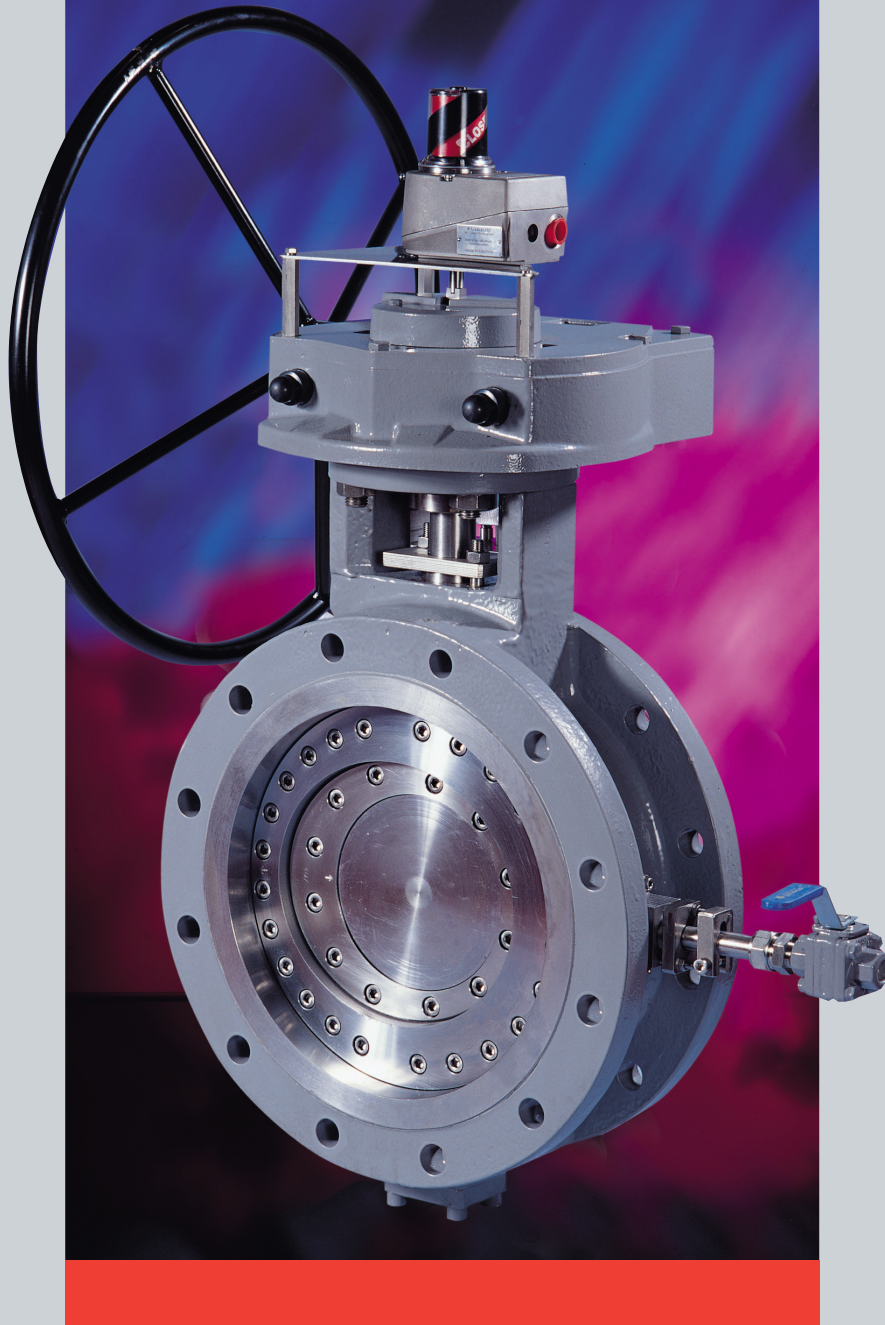


Going to Extremes



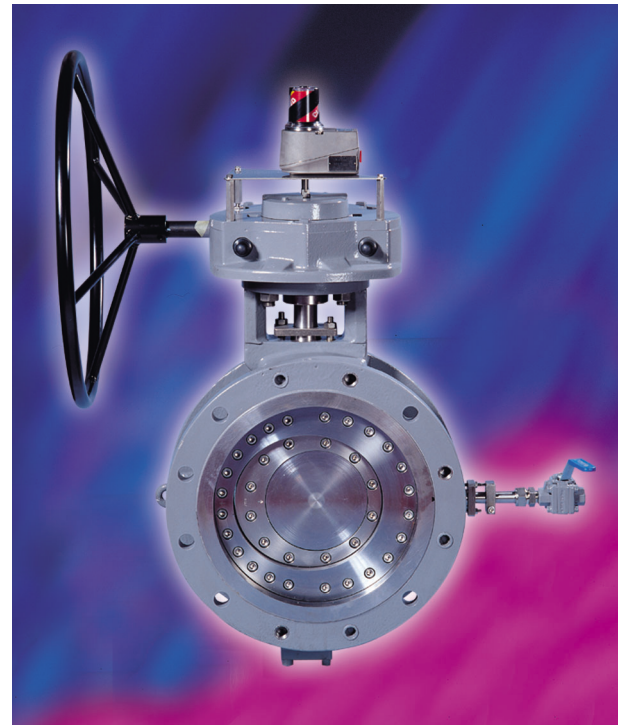
**DOUBLE BLOCK AND
BLEED VALVES**

TOMOETRITEC
THE ULTIMATE PROCESS VALVE

At the leading edge

The need for positive, verifiable, maintainable shut – off in critical applications has led to the wide-spread use of double block and bleed valves in the process industry. Traditionally these valves have been ball or plug valves, both of which penalise the user in terms of weight, operating torque, initial material cost and of course maintainability which translates into cost of ownership.

Tomoe Tritec have developed a range of Double Block and Bleed valves which provide the security of guaranteed isolation while delivering the benefit of the triple offset, metal seated butterfly valve.



Double Block & Bleed Options



Using the narrow face to face of a butterfly valve, double sealing systems can be supplied within a ball, plug or gate valve face to face with a bleed facility between the two positive seals.

Option 1

One valve with two seat assemblies and integral, large bleed cavity to minimise risk of bleed point blockage.

Available in double flanged short pattern which increases the savings in weight, space and cost.

Double block and bleed facility is generated by a double laminated seat assembly with a recessed spacer ring. The bleed path is directly through the body wall to a bleed isolation valve.

Option 2

Two valves sharing one integral cast body. This eliminates the need for extra joints, gaskets and bolting and potential leak paths. The valves are independently operated and the cast body incorporates a large bore bleed facility, again minimising the risk of blockage. Reduced material mass reduces initial cost, ease of maintenance and reduced weight reduces cost of ownership.

Available in double flanged long pattern, ball and plug valve face to face dimensions to allow for replacement of existing ball or plug valve without the need for pipe modifications.

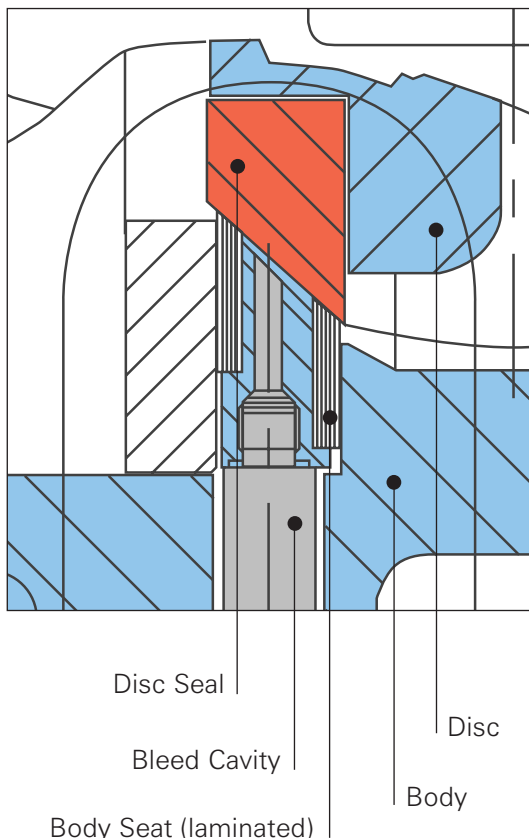
Option 3

Two complete valves connected by a spool piece. The spool piece incorporates a large bore bleed cavity and block valve. This three piece valve is the most flexible option in terms of valve body styles and overall face to face dimensions. The two valves are independently operated and separately maintainable.



Benefit from the advanced features of the Tritec Triple Offset Valve design

- Firetested to BS6755 part 2 / API 6FA / AP1 607 4th Edition.
- Available Fully Rated to Class 2500Lb.
- Fully rated for end of line duty.
- Standard materials conform to NACE, all exotic materials also available.
- Laminated seat is mounted in the body, removing it from the erosive effects of the flowing media.



- Seat is self centering "floating" design.
- Both Seat and Seal are field replaceable without special tools.
- Unique elliptical bolting pattern allows foolproof replacement of seat and seal.

- Gasket Sealing Face is completely uninterrupted by fixings.
- Suitable for use with Spiral Wound gaskets and all flange finishes including RTJ.
- Antiblowout device on shaft.
- ISO mounting flange allows easy fitting and changing of operators.
- Operator is bolted and doweled to prevent radial movement and subsequent loss of seating torque.



- Body counterbore and seat bolting arranged elliptically to ensure equal support, gasket land and gasket loading all around the elliptical edge of the laminated body seat.
- Inboard AND outboard thrust mechanisms prevent decentralising of disc, even under high temperature and line pressure.
- Sizes 2" - 54".
- Body styles, materials, design standards / approvals are as per the standard Tomoe Tritec range.
- Any face to face, no pipe modifications required.

Double Block and Bleed Valves

Tomoe Tritec has recently supplied over 200 Double Block and Bleed valves into the North Sea and to USA and Canadian refineries. This design is very attractive to our customers where space is a problem, as in an FPSO. A large order has been supplied to an existing FPSO where ball valves with single isolation were installed,

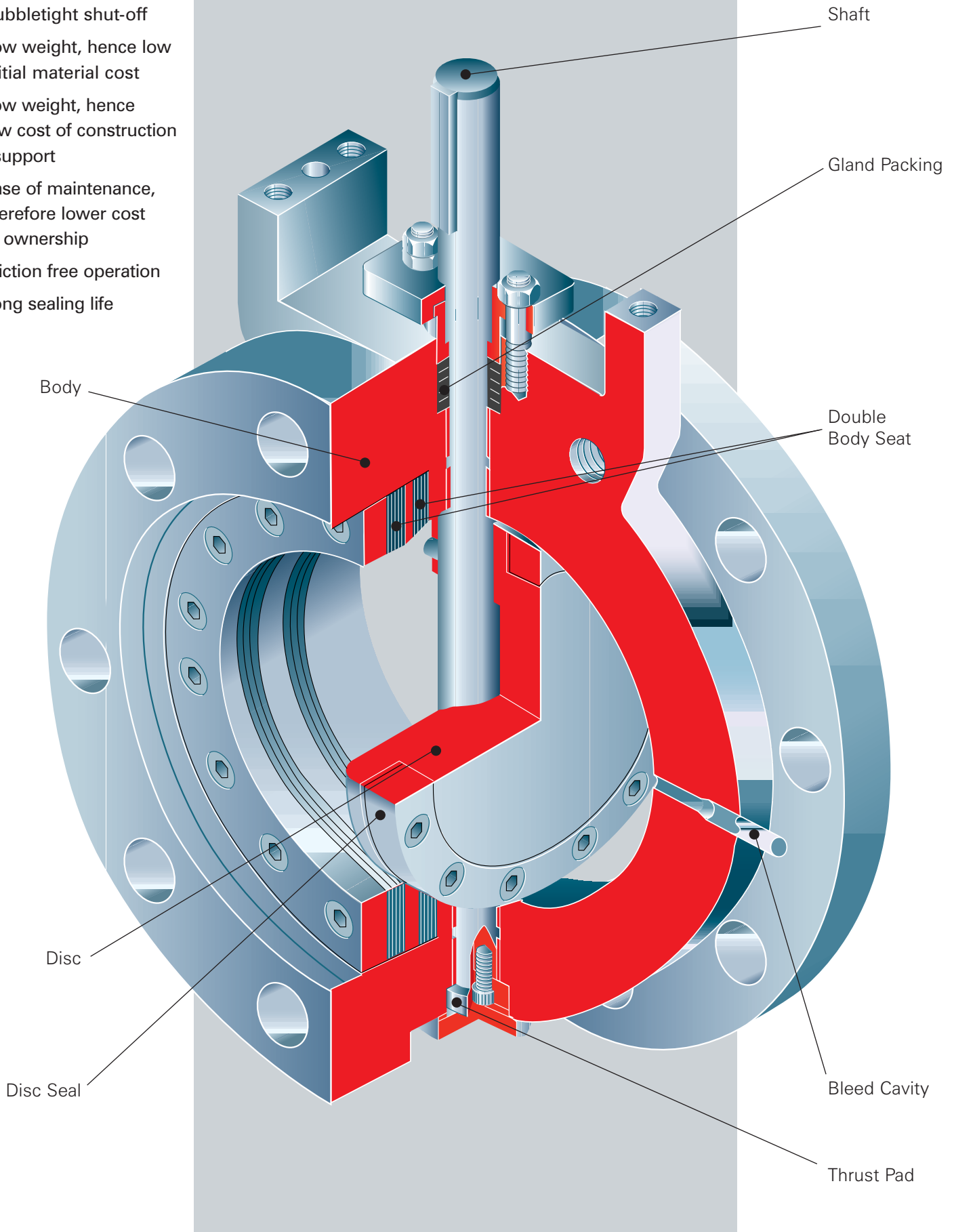
and where the customer required double isolation but had no space for a second ball valve. The client was able to remove the existing ball valve and install a Tomoe Tritec DB&B valve of the same face to face dimensions, thus achieving the required double isolation. Supplied in six weeks the client saved over £1 million in valves and installation costs.

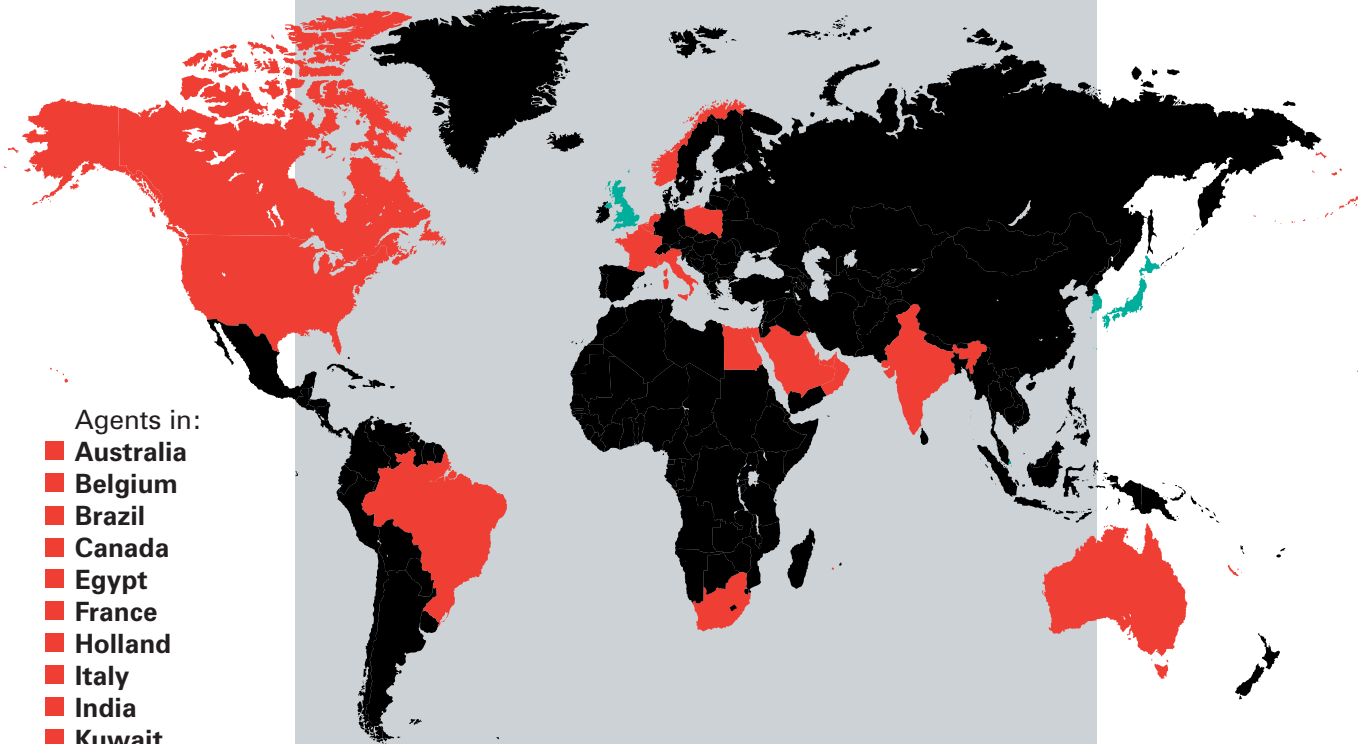
Typical Double Block and Bleed References

Location	Application	Scope of Supply	Case History
Refinery, Wales	Crude Oil	6 x 4", 20 x 16", 70 x 12" Carbon St. / St. Steel Class 150 Option 1	Jetty oil loading. Ball valves replaced in design as a cost saving.
Refinery, Wales	Crude Oil / Seawater	8 x 10" Super Duplex Class 150 Option 1	Jetty oil loading. Ball valves replaced in design as a cost saving.
UK North Sea Platform	Process Oil	5 x 6" Super Duplex Class 300 Option 2	Replaced gate valves to give double isolation.
Refinery, Scotland	Benzene	2 x 4" Carbon St. / St. Steel Class 150 Option 2	Replaced gate valves to give double isolation.
UK North Sea Platform	Gas	1 x 3" Duplex Class 600 Option 3	Replaced ball valves to give double isolation.
Chemical Plant, Wales	Carbonylgas	4" - 24", Lugged Carbon St. / St. Steel Class 150 & 300 Option 3	Installed due to Health and Safety concerns and Fugitive Emissions.
UK North Sea FPSO	Heating Medium	8" - 16", Lugged Carbon St. / St. Steel Class 150 & 300 Option 3	Replaced single seated ball valves to give double isolation with no pipework modifications.
UK North Sea Platform	Water Injection	2 x 8", 4 x 16", 5 x 16" Carbon St. / St. Steel Class 300 & 900 Option 2	Installed in lieu of Plug Valves to give double isolation with space restrictions.

Benefits of Tomoe Tritec Double Block & Bleed Valve

- Bubbletight shut-off
- Low weight, hence low initial material cost
- Low weight, hence low cost of construction / support
- Ease of maintenance, therefore lower cost of ownership
- Friction free operation
- Long sealing life





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- Belgium
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- Italy
- India
- Kuwait
- Norway
- Oman
- Poland
- Qatar
- Saudi Arabia
- South Africa
- U.A.E.
- U.S.A.

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