



Red Dragon Valves®

The Solutions Specialists

Valves For Cryogenic Applications





Red Dragon Valves®

Red Dragon has been supplying specialist valve products to all industries for over 20 years and we are proud of our reputation for service, quality and speed of delivery. By concentrating on certain valve products rather than trying to be all things to all people, we can fully support our products technically through our trained staff and the design departments of our exclusive manufacturers.

In this overview brochure we would like to introduce the range of cryogenic valve products we can offer by highlighting the models available and giving an indication of the basic specifications available. For full details on these or any of our other products please visit our website at www.reddragonvalves.co.uk or call us on ++44 (0)1443 772500.



Page	Contents
3	Solenoid Valves
4	Globe Valves
5	Check Valves
6	Economizers & Reducing Valves
7	Manifold & Needle Valves
8	Selection Tables
9	Manufacturing



Red Dragon Valves®

Cryogenic Solenoid Valves

- Compact high flow normally closed solenoid valves.
- Cryogenic optimised design for maximum reliability.
- Suitable for high dependency applications
- Standard sizes from 1/4" to 3/4"
- BSP or NPT connections.
- Choice of IP65, IP67 or ATEX Eexd solenoids.
- Body materials in Brass or 316 stainless steel (L89 1/2" only).
- Options for ANSI 150 or 300 flanges for SS version.
- PTFE seals for fluids down to -196C.
- Installation in any orientation.



The Nadi L88 & L89 series solenoid valves comprises a direct lift piston operator for failsafe operation from 0Bar. This gives excellent flow performance through the valve with reliability and ease of servicing.

The optimised design for cryogenic duty results in a valve that will not freeze up in operation and offers proven superior performance to models from other manufacturers.

For the L89, the IP67 and Eexd coil housings are available with M20 x 1.5, 1/2"NPT and 1/2"BSP conduit thread options. IP67 and Eexd not available on L88 model.

	Sizes			Pressure Ranges
L88	1/4"			0-15Bar
L89	3/8"	1/2"	3/4"	0-10Bar

Options

L88 Brass or 316 SS body; O2 cleaned;

L89 Brass or 316 SS body; O2 cleaned; IP67 or IP67 Eexd housing; ANSI 150 or 300 flanges on 1/2" 316SS model;

Coil Voltages

12, 24, 48, 110, 230Vac - 50/60Hz or 12, 24, 48, 110, 220Vdc





Red Dragon Valves®

Cryogenic Globe Valves

- High integrity designs
- Standard sizes from 1/4" to 2"
- BW, SW, ANSI flanged, NPT or BSP connections.
- ATEX 94/9/CE and PED 97/23/CE certified
- Body materials in 304 or 316 stainless steel.
- Straight or Angled bodies
- Long or short stems
- Nominal pressure 40Bar / 580psi (Class 300)
- Operating temperature -196C to +50C
- Standards: ANSI/ASME B16.34, B16.11, B16.25, B16.5, EN 1626, ISO 5208.



The Boscarol globe valves are functional and easy to maintain. They meet the loading and drawing requirements for fluids at very low temperature (-196C) constantly respecting the required safety margins. Intended for use in delicate applications, for example with oxygen, each component of the valve is degreased and assembled in a clean environment.

Bodies are available in straight or angled patterns and two stem length options: longer for cryogenic temperatures (cold line) or standard length for ambient temperature gas (hot line).

Size Range

Imperial:	1/4"	3/8"	1/2"	3/4"	1"	1.25"	1.5"	2"
Metric:	DN6	DN10	DN15	DN20	DN25	DN32	DN40	DN50

Options

Long or short stems.

Stem connection by thread or flange.

Fluid connections welded (BW or SW), threaded (BSP or NPT) or flanged (ANSI 150 or 300).

Other body materials on request.



BOSCAROL srl



Red Dragon Valves®

Cryogenic Check Valves

- High integrity designs
- Standard sizes from 3/8" to 2"
- BW or SW connections.
- ATEX 94/9/CE and PED 97/23/CE certified
- Body materials in 304 stainless steel.
- Flanged or threaded bonnet.
- Nominal pressure 40Bar / 580psi (Class 300)
- Operating temperature -196C to +50C
- Standards: ANSI/ASME B16.34, B16.11, B16.25, B16.5, EN 1626, ISO 5208.



The Boscarol globe type check valves prevent back flow of pressurised liquid in cryogenic fluid systems. Easy to maintain through the flanged or threaded bonnets, they are available in weld connections only in order to offer maximum system integrity. Intended for use in delicate applications, for example with oxygen, each component of the valve is degreased and assembled in a clean environment.

The body and flanged bonnet design is fully A479 304 stainless steel and the threaded style has the same 304 body but with a CW617N brass bonnet. The shutter seal is PTFE.

Size Range

Imperial:	3/8"	1/2"	3/4"	1"	1.25"	1.5"	2"
Metric:	DN10	DN15	DN20	DN25	DN32	DN40	DN50

Options

Flanged or threaded bonnet.

Fluid connections welded - BW or SW.

Other body materials on request.



BOSCAROL srl



Red Dragon Valves®

Economizers & Reducing Valves

- High Quality materials and construction.
- Threaded or SW connections.
- ATEX 94/9/CE certified
- Brass, Bronze, 304SS or 316SS constructions
- Nominal pressure 40Bar / 580psi (Class 300)
- Operating temperature -196C to +50C
- Standards: ANSI/ASME B16.34, EN 12300, 738-2, ISO 5208.



The economizer acts to prevent downstream overpressures but unlike a conventional relief valve, it recovers the excess fluid and returns it in the normal operating cycle thus providing safety and economy of the complete system. Through choices of top quality materials and proven design, the Boscarol economizer offers high performance for all cryogenic system applications.

While visibly similar to the economiser, the pressure reducing valve offers precise and fast acting control of the downstream fluid pressure at all times to ensure that your process is operating at the optimum. These valves are extremely sensitive and offer precise and constant control over the set pressure.

Size Range

Orifice (ND):	6.5	15	15	25
Threaded (BSP Male):	5/8"	1"	1"	1.25"
Socket Weld:	12.1mm	17.2mm	23.2mm	27.6mm
Range:	1-25Bar	1-35Bar	1-35Bar	1-20Bar
Cv:	0.58	1.8	1.8	4.8

Options

Bronze or 304SS diaphragm

Brass, Bronze, 304SS or 316SS bonnet and Brass, 304SS or 316SS body materials



BOSCAROL srl



Red Dragon Valves®

Bypass or Manifold Valves

- High Quality materials and construction.
- Threaded connections.
- ATEX 94/9/CE certified
- Stainless steel body
- Nominal pressure 40Bar / 580psi (Class 300)
- Operating temperature -196C to +50C



Designed for tank instrument blocks, these manifolds are ideal for differential pressure measurement applications. Available with 3 or 4 valves and straight or square couplings, NPT, BSP or UNF threaded. The Tapered needle valve has a rotating tip thus preventing wear during closure and ensuring a long working life.

There is a non-cryogenic variant of this 3 valve manifold available for fluid temperatures up to 200deg C with BSP or NPT threads (below).

Non Cryogenic Needle Valves

- For fluid media up to 400deg C at 100Bar or 100deg C at 400Bar
- 2 way or 3 way designs
- Threaded NPT, BSP, BSPT or API inM or F connections.
- ATEX 94/9/CE certified
- Body materials in brass, A105 carbon steel or 316 stainless steel.
- Standards: DIN 16270 - 16271



BOSCAROL srl



Red Dragon Valves®

Examples of popular manual valves

Part No.	Valve Type	Orifice	Port Size	Material
32004020	Cryogenic Bypass Valve	4mm	1/4" BSPM	304 SS
32004050	Cryogenic Bypass Valve	4mm	1/2" - 20 UNF	304 SS
32006090	Cryogenic Bypass Valve	4mm	1/4" BSPM	304 SS
32006096	Cryogenic Bypass Valve	4mm	1/4" BSPM	304 SS
32006110	Cryogenic Bypass Valve	4mm	1/2" - 20 UNF	304 SS
Separator				
44302010	Cryogenic Check Valve	15mm	1/2" Butt Weld	304 SS
44302115	Cryogenic Check Valve	15mm	1/2" ANSI 150	304 SS
44303010	Cryogenic Check Valve	20mm	3/4" Butt Weld	304 SS
44304010	Cryogenic Check Valve	25mm	1" Butt Weld	304 SS
44304115	Cryogenic Check Valve	25mm	1" ANSI 150	304 SS
44305010	Cryogenic Check Valve	32mm	1 1/4" Butt Weld	304 SS
44306010	Cryogenic Check Valve	40mm	1 1/2" Butt Weld	304 SS
44306115	Cryogenic Check Valve	40mm	1 1/2" ANSI 150	304 SS
44307010	Cryogenic Check Valve	50mm	2" Butt Weld	304 SS
44307115	Cryogenic Check Valve	50mm	2" ANSI 150	304 SS
Separator				
31301024	Cryogenic Globe Valve	6mm	12,5mm Weld x 1/2" BSP	304 SS
31301072	Cryogenic Globe Valve	6mm	1/2" BSP with 12mm Weld Couplings	304 SS
31303070	Cryogenic Globe Valve	15mm	1/2" x 1/2" Butt Weld	304 SS
31303082	Cryogenic Globe Valve	15mm	1/2" ANSI 150	304 SS
31304070	Cryogenic Globe Valve	20mm	3/4" x 3/4" Butt Weld	304 SS
31305070	Cryogenic Globe Valve	25mm	1" x 1" Butt Weld	304 SS
31305082	Cryogenic Globe Valve	25mm	1" ANSI 150	304 SS
31306070	Cryogenic Globe Valve	32mm	1 1/4" x 1 1/4" Butt Weld	304 SS
31307070	Cryogenic Globe Valve	40mm	1 1/2" x 1 1/2" Butt Weld	304 SS
31307082	Cryogenic Globe Valve	40mm	1 1/2" ANSI 150	304 SS
31308070	Cryogenic Globe Valve	50mm	2" x 2" Butt Weld	304 SS
31308082	Cryogenic Globe Valve	50mm	2" ANSI 150	304 SS
Separator				
30012058	Cryogenic Needle Valve	3mm	1/2" BSPM Union	316 SS
42302018	Cryogenic Needle Valve	4mm	1/4" BSPM Union	304 SS

This is only a small selection of the many standard variants available in the Boscarol range of isolation valves and it is possible to supply special executions to suit particular applications. Please contact us with your requirements so that we can offer the most appropriate solution.



BOSCAROL^{sr1}



Red Dragon Valves®

About our manufacturing partners

Solenoid Valves



Nadi Srl have been specialising in manufacturing solenoid valves for over 30 years. Based near Milan in Italy, their factory produces a huge variety of conventional and highly specialist valves for applications and markets throughout the world. Their in house design and testing facilities enables their development and production to be entirely self contained and through stringent quality control and material traceability, Nadi are able to ensure that their high standards are maintained at all times. By having complete control over the design of the valves and coils, they are able to evaluate new applications and develop new products without having to rely on external partners.



Manual Cryogenic Valves



BOSCAROL^{srl}

Boscarol Srl are also based near to Milan in Italy and have been manufacturing valves since 1954. In the early seventies and following extensive design and development work, Boscarol started production of their first cryogenic valve, a range which has since become the main focus of the company. By concentrating on these specialist valves, Boscarol ensure that performance and quality are key factors in their ongoing development process resulting in reduced operating costs and increased reliability for cryogenic plants throughout the world.





Red Dragon Valves®

Some Of Our Other Products...

Solenoid Valves

We have a range of Solenoid Valves for a huge variety of applications including air, water, light oil, steam, cryogenic, liquid CO2 and many more. ATEX certification is also available for many of our valves.

Pressure Control Valves

A comprehensive range of pressure reducing, sustaining, relief and associated valves in materials to suit all common industrial applications. Sizes range from 1/2" (DN15) to 20" (DN500).

Air/Gas Preparation and Flow Control Instrumentation

We have a range of high quality European manufactured regulators, filters, valves and accessories all in 316L stainless steel and carrying ATEX and GOST certification. Some models are available in aluminium alloys suitable for use in ammonia plants or where weight saving is an important factor.

Condition Monitoring

Air & gas quality is crucial to production standards, plant reliability and user safety. Our range of dew point, flow, oil content, power, temperature, pressure, particle and leakage sensors combine with displays, data logging and software to offer complete monitoring solutions for improved plant performance and reduced operating costs.

Bespoke Solutions

Red Dragon can produce individual components or complete assemblies and turnkey control panels designed to your specific requirements.

Please contact us to discuss how we can help further.

Red Dragon Limited
Unit 15 Abergorki Industrial Estate
Ynyswen Road
Treorchy
CF42 6LW

T: +44 (0)1443 772500
E: sales@reddragonvalves.co.uk
www.reddragonvalves.co.uk
Skype: Red_dragon_valves_ltd



Red Dragon Valves®

Red Dragon Limited
Unit 15 Abergorki Industrial Estate
Ynyswen Road
Treorchy
CF42 6DL

T: +44 (0)1443 772500

E: sales@reddragonvalves.co.uk

www.reddragonvalves.co.uk

Skype: Red_dragon_valves_ltd

Cryogenic Valves:

Solenoid

Globe

Check

Needle

Bypass Manifold

Reducing

Economizer