



# Bestobell Valves

Product Catalogue 2015 - 2016

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



**Bestobell Valves** ENGINEERING YOUR SUCCESS.

## Company Background

Bestobell Valves is a world leader in the design and manufacture of cryogenic valves, recognized globally for product quality and innovation.

Our valves are used with numerous cryogenic gases including oxygen, carbon dioxide, nitrogen, liquid natural gas (LNG) and argon.

The applications supported by our cryogenic valves include static storage tanks, trailers, environmental control, management of medical gases used in hospitals, through to gas handling systems on LNG ships.

In addition, Bestobell Valves supplies a complete portfolio of fluid control technology from the Birflo range, which includes Truflo & Constaflor. These are used in flow control systems for food/beverage plants, pharmaceutical production facilities and cooling plants used for defence weapons systems.

## Quality

Bestobell Valves manufactures for a wide range of applications and in a comprehensive range of materials. In addition to our manufacturing capability, Bestobell Valves also has full design capability.

Our highly skilled engineering team is always available to provide users and engineering contractors with the solution to difficult or unusual valve applications.

Bestobell's range of products fully complies with the pressure equipment directive (PED) 97/23/EC



Bestobell's notified body is LR.

Bestobell is ISO 9001 2008 Approved.

Bestobell is ISO 14001 2004 Approved.



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# Cryogenic Bronze Manual Globe Valve

## Bolted Bonnet - Extended Stem - Bronze Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

The Bestobell range of extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either screwed ends, socket ends or stubs and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Bronze extended stem globe valve has a bolted bonnet, integral cone seat and renewable seal, complete with bronze internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN15 Bronze Globe Valve - Extended Stem with Socket Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE/PCTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Lightweight ergonomic aluminium hand wheel
- Screwed and welded high strength extension tube/ bonnet joints
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

DN40  
Screwed Ends



DN15 Stainless  
Steel Stubs

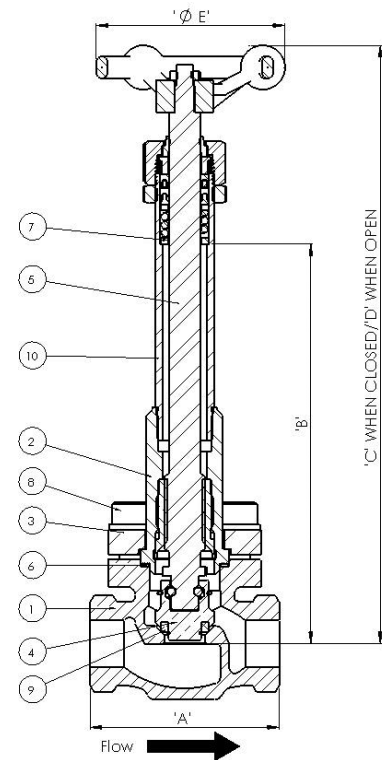


# Cryogenic Bronze Manual Globe Valve

## Bolted Bonnet - Extended Stem - Bronze Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (1/4" - 2")

Materials	
	<b>Bronze</b>
1. Body	Gun Metal BSEN 1982 CC491K
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Disc	HT Brass BSEN 12164 CW 721R
5. Stem	Stainless Steel BSEN 10088-3 1.4401
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
9. Seal	Virgin PTFE/PCTFE
10. Tube	Stainless Steel ASTM A312 TP304L



Specifications								
Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
A	mm	68	68	68	76	92	121	146
B	mm	230/300	230/300	230/300	230/300	230/300	230/300	230/300
C : Closed	mm	300/370	300/370	300/370	300/370	310/380	310/380	310/380
D : Open	mm	310/380	310/380	310/380	310/380	320/390	320/390	330/400
E	mm	80	80	80	80	101	121	144
Cv	US GPM	3.6	3.6	3.6	6.2	13.2	26.5	43
Weight	kg	1.5	1.5	1.5	2.5	2.5	4.5	7.6

\*Other extensions available on request

### End Connections

Screwed / Stainless Steel or Copper Stubs / Socket Ends

# Cryogenic Bronze Manual Globe Valve

## Bolted Bonnet - Non Extended Stem - Bronze Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

The Bestobell range of non-extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either screwed ends, socket ends or stubs and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Bronze non-extended stem globe valve has a bolted bonnet, integral cone seat and renewable seal, complete with bronze internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN25 Bronze Non-Extended Stem Globe Valve with Socket Ends)*

### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C



### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE/PCTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Lightweight ergonomic aluminium hand wheel
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

DN40  
Screwed Ends



DN25 Stainless Steel Stubs

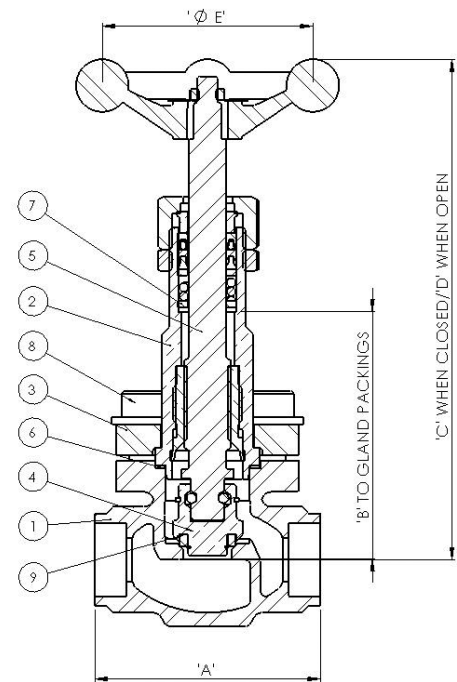


# Cryogenic Bronze Manual Globe Valve

## Bolted Bonnet - Non Extended Stem - Bronze Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

Materials	
	<b>Bronze</b>
1. Body	Gun Metal BSEN 1982 CC491K
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Disc	HT Brass BSEN 12164 CW 721R
5. Stem	Stainless Steel BSEN 10088-3 1.4401
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
9. Seal	Virgin PTFE/PCTFE



Specifications								
Size	Unit	DN6 ¼"	DN10	DN15 ½"	DN20 ¾"	DN25 1"	DN40 1½"	DN50 2"
A	mm	68	68	68	76	92	121	146
B	mm	80	80	80	80	90	110	140
D	mm	160	160	160	180	180	200	240
E	mm	80	80	80	80	101	121	144
Cv	US GPM	3.6	3.6	3.6	6.2	13.2	26.5	43
Weight	kg	1	1	1	1.6	2	3.7	6

### End Connections

Screwed / Stainless Steel or Copper Stubs / Socket Ends

# Cryogenic Full Stainless Steel Globe Valve

## Bolted Bonnet - Extended Stem - Full Stainless Steel

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

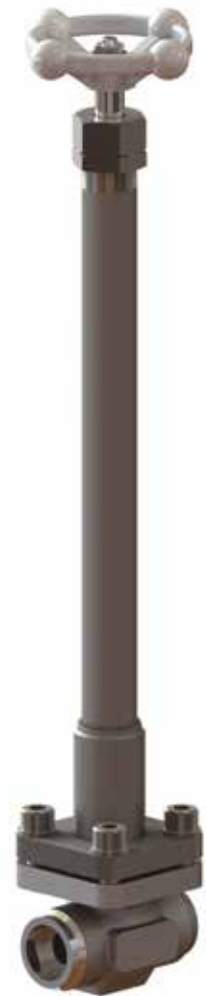
The Bestobell range of extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either butt weld, socket end or flanged options and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

Stainless Steel extended stem globe valves with bolted bonnet, integral cone seat and renewable seal, complete with stainless steel internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN15 Stainless Steel with Socket Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE/PCTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Lightweight ergonomic aluminium hand wheel
- Screwed and welded high strength extension tube/ bonnet joints
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN50  
Flanged Ends



DN40 Butt  
Weld Ends

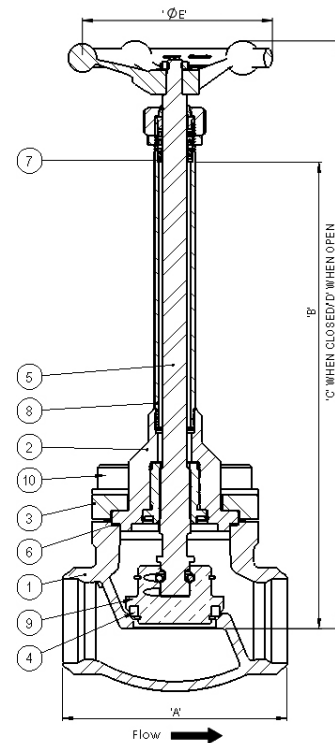


# Cryogenic Full Stainless Steel Globe Valve

Bolted Bonnet - Extended Stem - Full Stainless Steel

DN6, 10, 15, 20, 25, 40 & 50 (1/4" - 2")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Seal	Virgin PTFE/PCTFE
5. Stem	Stainless Steel BSEN 10088-3 1.4401
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Tube	Stainless Steel ASTM A312 TP304L
9. Disc	Stainless Steel BSEN 10088-3 1.4401
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



## Specifications

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
A	mm	68	68	68	92	92	121	146
B	mm	300	300	300	300	300	300	300
C : Closed	mm	370	370	370	380	380	380	380
D : Open	mm	380	380	380	390	390	390	390
E	mm	80	80	80	80	101	121	144
Cv	US GPM	3.6	3.6	3.6	13.2	13.2	26.5	43
Weight	kg	1.6	1.6	1.6	2.3	2.3	4.2	6.8

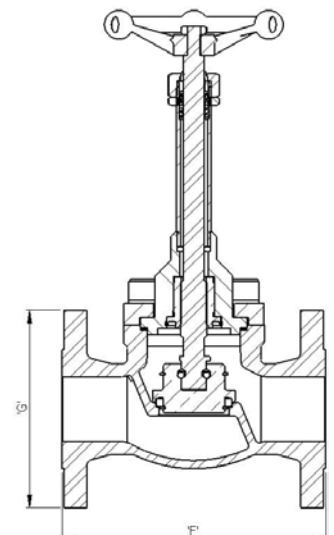
### Flanged Ends (Class 300)

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
F	mm	130	130	130	160	160	200	230
G	mm	95	95	95	124	124	155	165
Flange Thickness	mm	14	14	14	18	18	21	22
Weight	kg	2.8	2.8	2.8	5.3	5.3	9.6	13.8

\*Class 150 available on request

### End Connections

Butt Weld / Socket Ends / Flanged



w: [www.bestobellvalves.com](http://www.bestobellvalves.com) e: [sales@bestobellvalves.com](mailto:sales@bestobellvalves.com)

# Cryogenic Full Stainless Steel Globe Valve

## Bolted Bonnet - Non-Extended Stem - Full Stainless Steel

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

The Bestobell range of non-extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either butt weld, socket end or flanged options and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Stainless Steel non-extended stem globe valve has a bolted bonnet, integral cone seat and renewable seal, complete with stainless steel internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN15 Full Stainless Steel Globe Valve – Non-Extended Stem with Socket Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE/PCTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Lightweight ergonomic aluminium hand wheel
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing

### Technical

- Designed and engineered for use with Group 1 gases.
- ISO 9001 accreditation- design and manufacture to ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

DN25 Flanged Ends



DN15 Butt Weld Ends

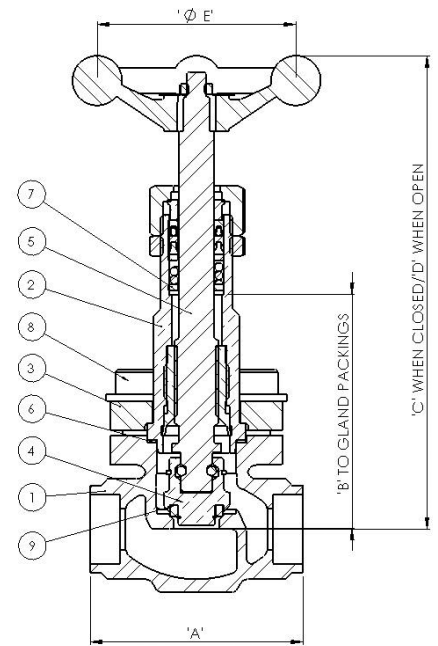


# Cryogenic Full Stainless Steel Globe Valve

Bolted Bonnet - Non-Extended Stem - Full Stainless Steel

DN6, 10, 15, 20, 25, 40 & 50 (1/4" - 2")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Disc	Stainless Steel BSEN 10088-3 1.4401
5. Stem	Stainless Steel BSEN 10088-3 1.4401
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
9. Seal	Virgin PTFE/PCTFE



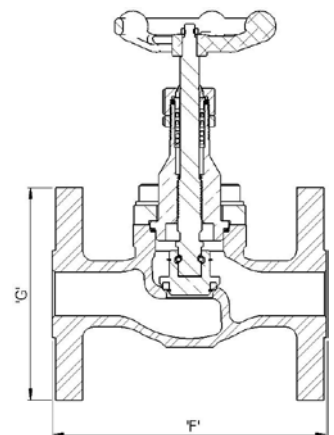
## Specifications

### Butt Weld Ends

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
A	mm	68	68	68	92	92	121	146
B	mm	80	80	80	80	90	110	140
D	mm	160	160	160	180	180	200	240
E	mm	80	80	80	101	101	121	144
Cv	US GPM	3.6	3.6	3.6	13.2	13.2	26.5	43
Weight	kg	1.2	1.2	1.2	2	2	3.7	5.8

### Flanged Ends (Class 300)

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
F	mm	130	130	130	160	160	200	230
G	mm	95	95	95	124	124	155	165
Flange Thickness	mm	14	14	14	18	18	21	22
Weight	kg	2.8	2.8	2.8	5.3	5.3	9.6	13.8



\*Class 150 available on request

### End Connections

Butt Weld / Socket Ends / Flanged

# Cryogenic Stainless Steel Globe Valve

## Bolted Bonnet - Extended Stem - Stainless Steel

DN65, 80 & 100 (2½" - 4")

The Bestobell range of stainless steel, extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares.

The range is available with butt weld, socket ends or flanged options and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Stainless steel extended stem globe valve has a bolted bonnet, integral cone seat and renewable PTFE seal, complete with bronze internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN65 Stainless Steel Globe Valve –Extended Stem with Socket Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- Precision investment cast body – smooth surface finish
- PTFE seal to ensure tight shut off at all times
- Lightweight therefore excellent thermal characteristics and increased payload on mobile tanker application
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Screwed and welded high strength extension tube / bonnet joints
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing (Available on 2½" & 3")

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

DN80  
Butt Weld Ends



DN80  
Flanged Ends

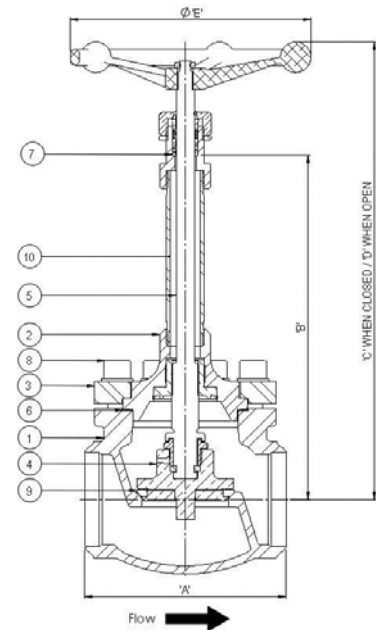


# Cryogenic Stainless Steel Globe Valve

Bolted Bonnet - Extended Stem - Stainless Steel

DN65, 80 & 100 (2½" - 4")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel ASTM A351 CF8M
3. Loose Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Disc	HT Brass BS EN 12164 CW721R
5. Stem	Stainless Steel BS EN 10088-3 1.4401
6. Gasket	Sigma 511
7. Gland Packing	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
9. Seal	Virgin PTFE
10. Tube	Stainless Steel ASTM A312 TP304L



## Specifications

### Butt Weld Ends

Size	Unit	DN65	DN80	DN100
A	mm	178	178	292
B	mm	300	300	400
C	mm	392	407	578
D	mm	412	437	613
E	mm	171	222	380
Weight	kg	13	15	55
Cv	US GPM	75	108	198



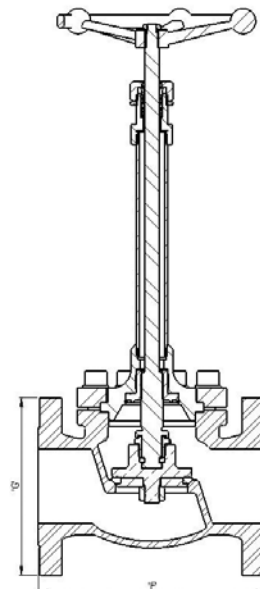
DN100 Butt Weld Ends

### Flanged Ends (Class 300)

Size	Unit	DN65	DN80	DN100
F	mm	290	310	350
G	mm	191	210	254
Flange Thickness	mm	25	28	32
Weight	kg	21	27	74



DN100 Flanged Ends



\*Class 150 available on request

### End Connections

Butt Weld / Flanged

w: [www.bestobellvalves.com](http://www.bestobellvalves.com) e: [sales@bestobellvalves.com](mailto:sales@bestobellvalves.com)

# Cryogenic Stainless Steel Globe Valve

## Bolted Bonnet – Extended Stem – Full Stainless Steel

DN150, 200, 250 & DN300 (6" - 12")

The Bestobell range of extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either butt weld, socket end or flanged options and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Stainless Steel extended stem globe valves has a bolted bonnet, integral cone seat and renewable PTFE/PCTFE seal, complete with stainless steel internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN150 Stainless Steel Globe Valve - Extended Stem with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 19 bar (275 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- Lightweight therefore excellent thermal characteristics
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Screwed and welded high strength extension tube / bonnet joints
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE components

### Technical

- Designed and engineered for use with LNG.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN150 with Flanged Ends



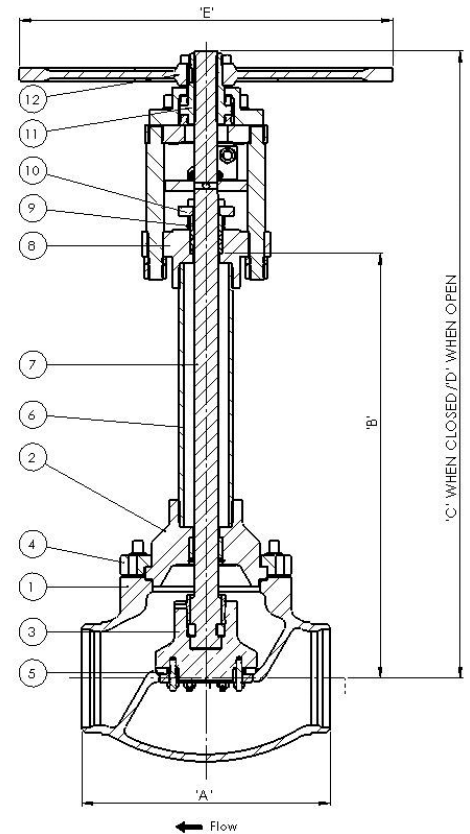
DN200 with Flanged Ends

# Cryogenic Stainless Steel Globe Valve

Bolted Bonnet – Extended Stem – Full Stainless Steel

DN150, 200, 250 & DN300 (6" - 12")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel ASTM A351 CF8M
3. Disc	Stainless Steel ASTM A351 CF8M
4. Fasteners	Stainless Steel BS6105 A4 Gr.70
5. Seal	Hostafion TF3105 25% Glass Fill PTFE
6. Extension Tube	Stainless Steel ASTM A312 TP304L
7. Stem	Stainless Steel 316 BS EN 10088-3 1.4401
8. Gland Housing	Stainless Steel 316 BS EN 10088-3 1.4401
9. Gland Follower	HT Brass BS EN 12164 CW721R
10. Gland Plate	HT Brass BS EN 12164 CW721R
11. Handwheel Boss	AL BRZ BS 2874 CA104
12. Handwheel	Cast Iron GR.250



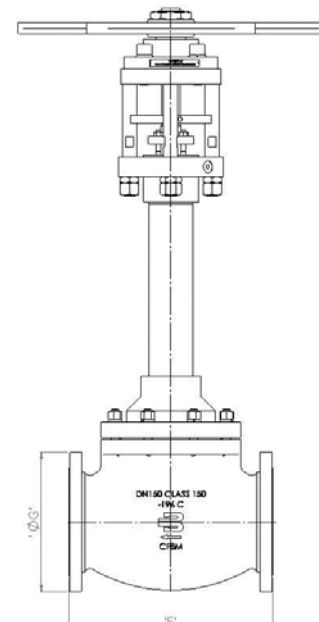
Specifications								
Size	A (mm)	B (mm)	C (mm)	D (mm)	ØE (mm)	BW / SCHD	Cv (US GPM)	Weight (kg)
DN150	406	700	1023	1075	600	N/A	400	125
DN200	495	700	1363	1442	500	N/A	715	219
DN250	Available upon request							
DN300	Available upon request							

## Flanged Ends (Class 150)

Size	Unit	DN150	DN200
F	mm	406	495
G	mm	279	343
Flange Thickness	mm	25	28
Weight	kg	140	250

## End Connections

Butt Weld / Socket Ends / Flanged



# Cryogenic Stainless Steel Globe Valve

## Bolted Bonnet - Extended Stem – Stainless Steel Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

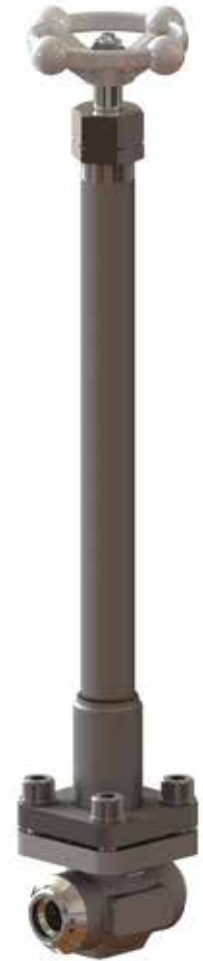
The Bestobell range of extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either butt weld, socket end or flanged options and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Stainless Steel extended stem globe valve has a bolted bonnet, integral cone seat and renewable PTFE/PCTFE seal, complete with stainless steel internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN15 Stainless Steel Globe Valve - Extended Stem with Bronze Internals and Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C (extended spindle)

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE/PCTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Lightweight ergonomic aluminium handwheel
- Screwed and welded high strength extension tube / bonnet joints
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN50 Butt Weld Ends



DN50 Butt Weld Ends Sectioned View

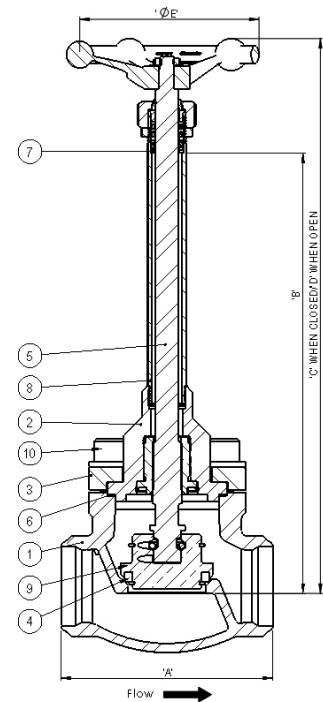


# Cryogenic Stainless Steel Globe Valve

Bolted Bonnet - Extended Stem - Stainless Steel Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (1/4" - 2")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Seal	Virgin PTFE/PCTFE
5. Stem	Stainless Steel BSEN 10088-3 1.4401
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Tube	Stainless Steel ASTM A312 TP304L
9. Disc	HT Brass BSEN 12164 CW721R
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



## Specifications

### Butt Weld Ends

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
A	mm	68	68	68	92	92	121	146
B	mm	230/300	230/300	230/300	230/300	230/300	230/300	230/300
C : Closed	mm	300/370	300/370	300/370	310/380	310/380	310/380	310/380
D : Open	mm	310/380	310/380	310/380	320/390	320/390	320/390	320/390
E	mm	80	80	80	101	101	121	144
Cv	US GPM	3.6	3.6	3.6	13.2	13.2	26.5	43
Weight	kg	1.6	1.6	1.6	2.3	2.3	4.2	6.8

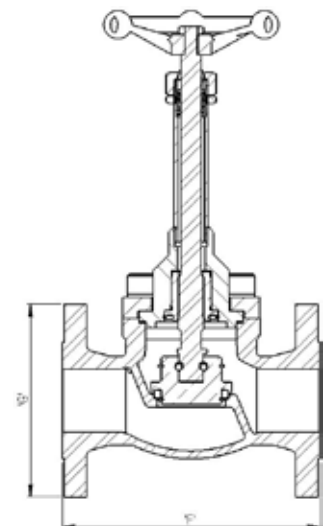
### Flanged Ends (Class 300)

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
F	mm	130	130	130	160	160	200	230
G	mm	95	95	95	124	124	155	165
Flange Thickness	mm	14	14	14	18	18	21	22
Weight	kg	2.8	2.8	2.8	5.3	5.3	9.6	13.8

\*Class 150 available on request

### End Connections

Butt Weld / Socket Ends / Flanged



# Cryogenic Stainless Steel Globe Valve

## Bolted Bonnet – Non-Extended Stem – Stainless Steel Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

The Bestobell range of non-extended globe valves have been designed to eliminate leakages, maximize lifetime operation and reduce maintenance and spares cost.

The range is available with either butt weld, socket end or flanged options and utilizes Bestobell's unique independent bonnet and flange design, eliminating leakage through the flange gasket.

The Stainless Steel non-extended stem globe valve has a bolted bonnet, integral cone seat and renewable PTFE/PCTFE seal, complete with stainless steel internals. Available with various ends, the valve is of the cone seat design for drop tight shut off. The bolted bonnet allows easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN15 Stainless Steel Globe Valve – Non-Extended Stem with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE/PCTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Anti-blowout spindle and one-piece high strength design for operator safety
- Long life, low torque spindle thread
- Lightweight ergonomic aluminium handwheel
- Revolving disc ensures non-rotating seat contact for an extended leak free life
- Full bore
- Fast/easy maintenance of PTFE/PCTFE components
- Long life spring loaded gland packing

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN15  
Socket Ends



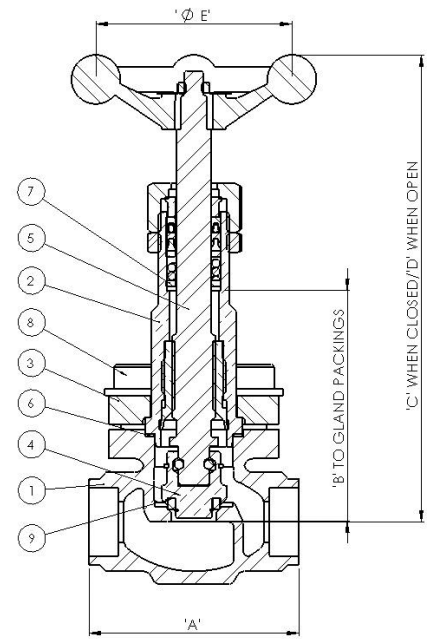
DN15 Socket  
Ends Sectioned

# Cryogenic Stainless Steel Globe Valve

Bolted Bonnet – Non-Extended Stem - Stainless Steel Body with Bronze Internals

DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Disc	HT Brass BSEN 12164 CW721R
5. Stem	Stainless Steel BSEN 10088-3 1.4401
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
9. Seal	Virgin PTFE/PCTFE



## Specifications

### Butt Weld Ends

Size	Unit	DN6 ¼"	DN10 ⅜"	DN15 ½"	DN20 ¾"	DN25 1"	DN40 1½"	DN50 2"
A	mm	68	68	68	92	92	121	146
B	mm	80	80	80	90	90	110	140
C	mm	150	150	150	170	170	190	200
D	mm	160	160	160	180	180	200	237
E	mm	80	80	80	101	101	121	144
Cv	US GPM	3.6	3.6	3.6	13.2	13.2	26.5	43
Weight	kg	1.3	1.3	1.3	2	2	4	7

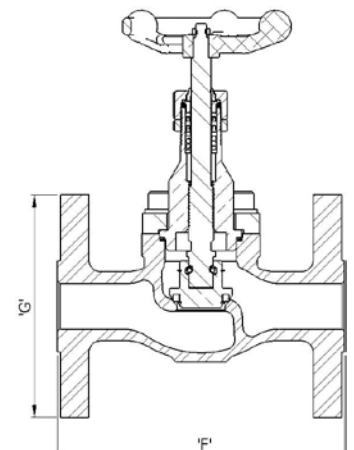
### Flanged Ends (Class 300)

Size	Unit	DN6 ¼"	DN10 ⅜"	DN15 ½"	DN20 ¾"	DN25 1"	DN40 1½"	DN50 2"
F	mm	130	130	130	160	160	200	230
G	mm	95	95	95	124	124	155	165
Flange Thickness	mm	14	14	14	18	18	21	22
Weight	kg	2.8	2.8	2.8	5.3	5.3	9.6	13.8

\*Class 150 available on request

### End Connections

Butt Weld / Socket Ends / Flanged



# Cryogenic Actuated Globe Valve

## Pneumatically Actuated Globe Valve

DN15, 20, 25, 40, 50, 65, 80, 100 & DN150 (½" – 6")

The Bestobell on/off and control valves are fitted with a pneumatic diaphragm type actuator.

The actuator uses compressed air to open and a spring to close. Double actuation (i.e. actuated opening and closing) is available upon request.

The range is available with either butt weld, socket ends or flanged options.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN25 Pneumatically Actuated Globe Valve with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections/Actuator)

Up to 50 bar (725 psi) at -196°C to + 65°C

### Features

- Full range of Class 150 Stainless Steel extended globe valves.
- Class 300 available for sizes up to DN100
- Independent bonnet and flange design
- Full Bore
- Throttling and On/Off functions available

### Technical

- Designed and engineered for use with Group 1 gases.
- Full material traceability backed by BS EN 10204 3.1/3.2 certification.
- Available in Butt Weld (ANSI B16.25) and Flange (ANSI B16.5) connections.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

DN50  
Flanged Ends



DN80  
Socket Ends



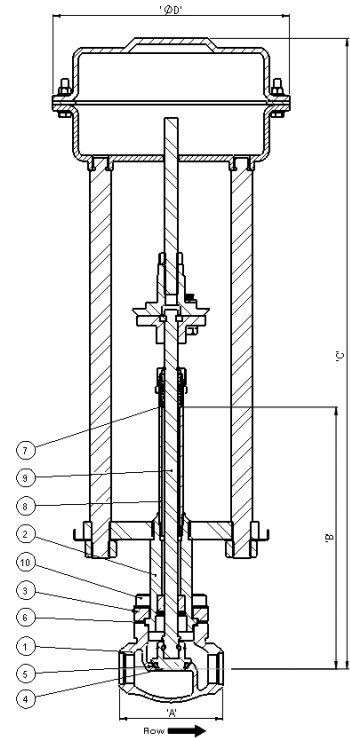
# Cryogenic Actuated Globe Valve

## Pneumatically Actuated Globe Valve

DN15, 20, 25, 40, 50, 65, 80, 100 & DN150 (1/2" – 6")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BSEN 10088-3 1.4301
3. Bonnet Flange	Stainless Steel ASTM A351 CF8M
4. Disc	Stainless Steel BSEN 10088-3 1.4401
5. Seal	PTFE TF7196
6. Gasket Bonnet	Sigma 511
7. Gland Packing	Virgin PTFE
8. Extension Tube	Stainless Steel ASTM A312 TP316L
9. Stem	Stainless Steel BSEN 10088-3 1.4401
10. Fasteners	Stainless Steel BS6105 A2/A4 .Gr.70

\*Bronze body available on request



## Specifications

### Butt Weld Ends

Size	Unit	DN15 1/2"	DN25 1"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"	DN150 6"
A	mm	68	92	121	146	178	178	292	406
B	mm	300	300	300	300	300	300	400	600
C	mm	480	620	637	647	662	682	862	1120
D	mm	162	210	310	310	310	310	415	512
Weight	kg	12	12	40	43	54	60	120	195
Cv	US GPM	3.6	13.2	26.5	43	75	108	198	400

### Flanged Ends (Class 300)

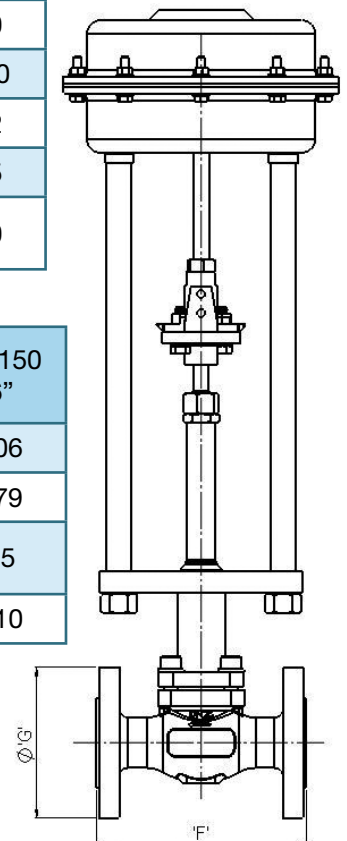
Size	Unit	DN15 1/2"	DN25 1"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"	DN150 6"
F	mm	130	160	200	230	290	310	350	406
G	mm	95	124	155	165	191	210	254	279
Flange Thickness	mm	14	18	21	22	25	28	32	25
Weight	kg	14	15	46	50	62	72	140	210

Class 150 valves available on request

DN100 & DN150 sizes are to Class 150 pressures only

### End Connections

Butt Weld / Socket Ends / Flanged



w: [www.bestobellvalves.com](http://www.bestobellvalves.com) e: [sales@bestobellvalves.com](mailto:sales@bestobellvalves.com)

# Cryogenic Stainless Steel Manual Gate Valve

## Bolted Bonnet - Extended Spindle

DN40, 50, 65, 80, 100 (1½" - 4")

The Stainless Steel uni-directional extended spindle gate valve has a bolted bonnet, integral soft seat and bronze internals. Available with butt weld ends, the valve has a wedge seat design for tight shut off designed to seal on downstream seat only in order to prevent liquid lock. The bolted bonnet allows for simple site maintenance with easy access to the serviceable parts of the valve.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN40 Stainless Steel Gate Valve with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 40 bar (580 psi) at -196°C to +65°C

### Features

- Replaceable body seat that is part of the headwork assembly (excluding DN40)
- Precision investment cast body - smooth surface finish
- Lapped seat and PTFE seal ensure a tight shut off at all time
- Lightweight design gives excellent thermal characteristics
- Anti-blow out spindle and one-piece high strength stem design for operator safety
- Long life, low torque stem thread
- Screwed and welded high strength extension tube and bonnet joints
- Lightweight ergonomic handwheel
- Quick removal of headworks allows fast/easy maintenance

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN50 Butt Weld Ends



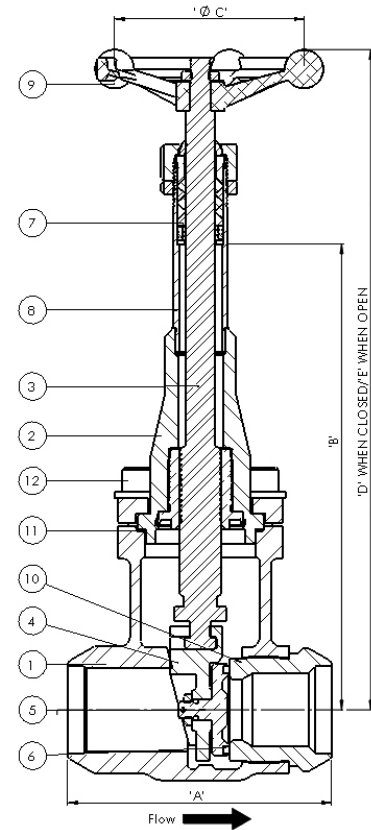
DN80 Butt Weld Ends

# Cryogenic Stainless Steel Manual Gate Valve

Bolted Bonnet, Extended Spindle

DN40, 50, 65, 80, 100 (1½" - 4")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel ASTM A351 CF8M
3. Stem	Stainless Steel BSEN 10088-3 1.4401
4. Wedge	Stainless Steel ASTM A351 CF8M
5. Disc	Phosphor Bronze
6. Disc/Seat Seal	Virgin PTFE
7. Packing Assembly	HT Brass/Virgin PTFE
8. Extension Tube	Stainless Steel ASTM A312 TP304L
9. Handwheel	Aluminium
10. Seat	Stainless Steel BSEN 10088-3 1.4401
11. Bonnet Gasket	Sigma 511
12. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



Specifications						
Size	Unit	DN40 1½"	DN50 2"	DN65 2½"	DN80 3"	DN100 4"
A	mm	130	140	150	150	229
B	mm	230	300	300	400	400
C	mm	102	146	146	146	146
D	mm	326	396	389	496	496
E	mm	363	456	464	586	586
Cv	US GPM	132	240	380	560	560
Weight	kg	5.3	10.4	12.9	18.2	20.5

## End Connections

DN40 – DN100	Butt Weld
DN50 – DN80	Socket Ends

# Cryogenic Actuated Gate Valve

## Bolted Bonnet - Pneumatic Tyre Design - Fail to Close

DN40, 50, 65, 80, 100 (1½" – 4")

The Stainless Steel uni-directional cryogenic emergency shut off valve has a bolted bonnet and integral pneumatic actuator. The valve is of fail to close design with automatic operation. The valve is equipped with a manual override system in case air has been lost and an emergency discharge is required. The valve has an integral seat and bronze internals. Available with butt weld ends, the valve has a wedge seat design for tight shut off designed to seal on downstream seat only in order to prevent liquid lock. The bolted bonnet allows for simple site maintenance with easy access to the serviceable parts of the valve.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN80 Actuated Gate Valve with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 40 bar (580 psi) at -196°C to +65°C

### Features

- Replaceable body seat that is part of the headwork assembly (excluding DN40)
- Precision investment cast body - smooth surface finish
- Lapped seat and PTFE seal ensure a tight shut off at all time
- Lightweight design gives excellent thermal characteristics
- Anti-blow out spindle and one-piece high strength stem design for operator safety
- Screwed and welded high strength extension tube and bonnet joints
- Quick removal of headworks allows fast/easy maintenance
- 316 Stainless Steel construction with bronze internal components
- Manual override hand wheel available on request

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN40 Butt Weld Ends



DN50 Socket Ends

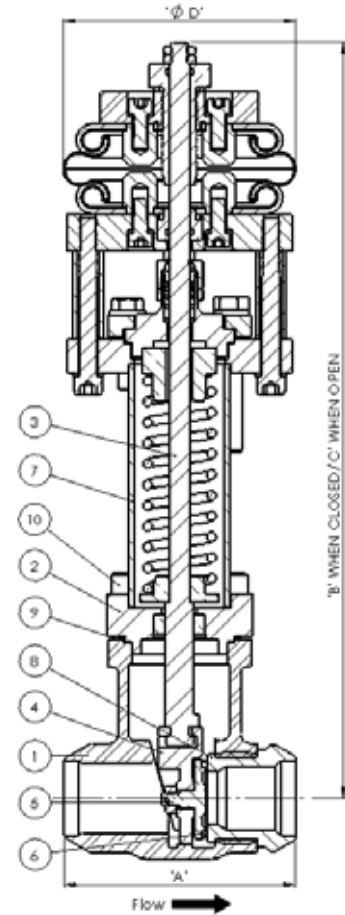


# Cryogenic Actuated Gate Valve

Bolted Bonnet - Pneumatic Tyre Design - Fail to Close

DN40, 50, 65, 80, 100 (1½" - 4")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel ASTM A351 CF8M
3. Stem	Stainless Steel BSEN 10088-3 1.4401
4. Wedge	Stainless Steel ASTM A351 CF8M
5. Disc	Phosphor Bronze
6. Disc/Seat Seal	Virgin PTFE
7. Extension Tube	Stainless Steel ASTM A312 TP304L
8. Seat	Stainless Steel ASTM A312 TP304L
9. Gasket	Sigma 511
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



Specifications						
Size	Unit	DN40 1½"	DN50 2"	DN65 2½"	DN80 3"	DN100 4"
A	mm	130	140	150	150	229
B	mm	450	495	502	535	535
C	mm	490	540	567	615	615
D	mm	165	240	240	240	240
Cv	US GPM	132	240	380	560	560
Weight	kg	13	19	21.7	27.1	30

## End Connections

DN40 – DN100	Butt Weld
DN50 – DN80	Socket Ends

# Cryogenic Bronze Ball Valve

## Reduced Bore

DN15, 25, 40 & DN50 (½" - 2")

A Bronze uni-directional ball valve designed specifically for cryogenic applications. Available with NPT or BSP threaded ends.

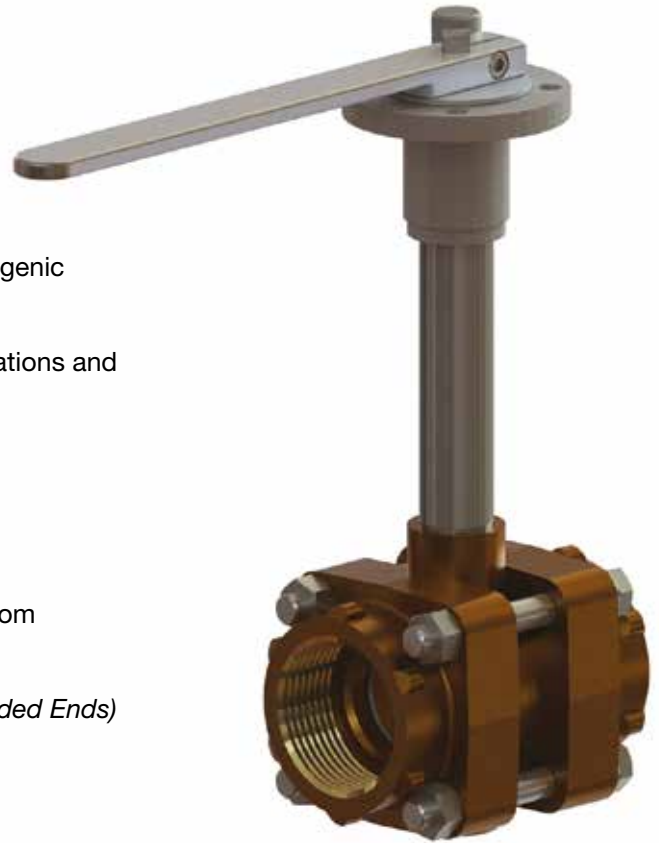
The flow co-efficient (CV) allows full flow of media from filling stations and portable delivery systems therefore no delay in filling time.

### Other variations include:

- Stainless Steel Version
- Actuated
- Full Bore

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

(Main image shown is a DN50 Bronze Ball Valve with NPT Threaded Ends)



## Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

## Features

- Spring loaded gland seal giving low torque levels under both ambient and cryogenic conditions
- One piece, anti-blow-out stem
- Relief hole to prevent trapping of liquefied gases
- Designed to prevent incorrect, and hence dangerous, re-assembly after stripping for maintenance
- Removable centre section designed to industry standard dimensions, allowing interchangeability in existing installations
- Valves can be supplied with actuators fitted allowing fast, remote automatic operation
- Long life spring loaded gland packing

## Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN15 NPT  
Threaded Ends



DN25 NPT  
Threaded Ends

# Cryogenic Bronze Ball Valve

Reduced Bore

DN15 – DN50 (1/2" – 2")

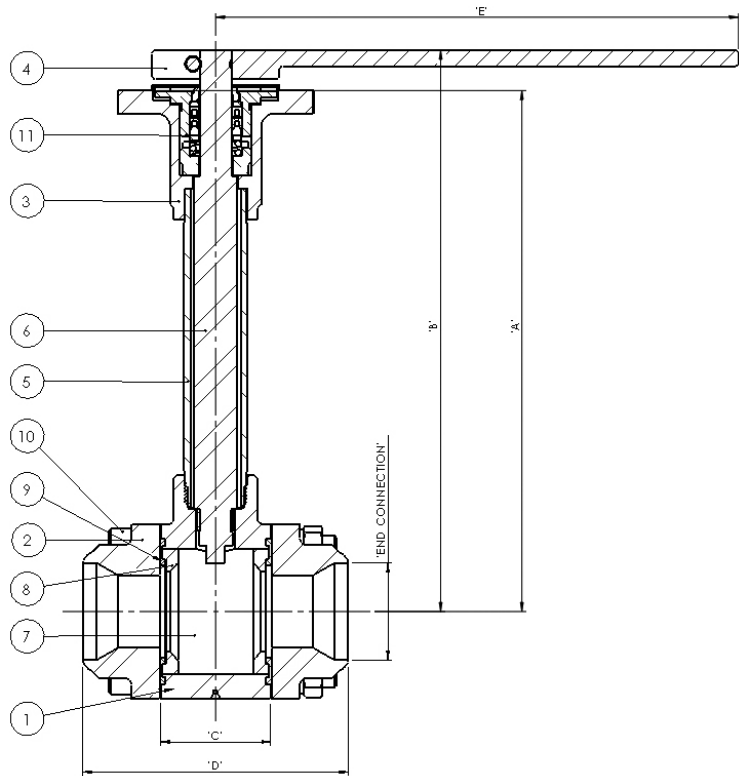
Materials	
	Bronze
1. Body	Gunmetal BSEN 1982 CC491K
2. End Adaptors	Gunmetal BSEN 1982 CC491K
3. Gland Housing	Stainless Steel ASTM A351 CF8M
4. Lever	Stainless Steel ASTM A351 CF8M
5. Extension Tube	Stainless Steel ASTM A269 TP304L
6. Stem	Stainless Steel BSEN 10088-3 1.4401
7. Ball	Brass BSEN 12164 CW614N
8. Ball Seal	Hostaflon
9. End Adaptor Seal	Virgin PTFE
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
11. Gland Packings	Virgin PTFE

## Specifications

Size	Valve Size		Reduced Bore Size		Dimension						Torque		CV USGPM	Weight Kg
	mm	in	mm	in	A	B	C	D	E	P.C.D	Nm	lbft		
DN15	15	1/2	11	3/8	230	250	21	67	190	50	10	7	9	2
DN25	25	1	20	3/4	230	250	32	96	190	60	23	17	30	3
DN40	40	1 1/2	32	1 1/4	230	250	49	117	230	80	40	30	90	5
DN50	50	2	37	1 1/2	230	250	56	129	230	100	62	46	138	7

### End Connections

BSP / NPT Threaded



# Cryogenic Stainless Steel Ball Valve

## Reduced Bore

DN15, 25, 40 & DN50 (½" - 2")

A Stainless Steel uni-directional ball valve designed specifically for cryogenic applications. Available with socket weld and butt weld ends.

The flow co-efficient (CV) allows full flow of media from filling stations and portable delivery systems therefore no delay in filling time.

*Other variations include:*

- Bronze Version
- Actuated
- Full Bore

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN40 Stainless Steel Ball Valve – Reduced Bore with Butt Weld Ends)*



## Maximum Working Pressure (MWP)

(Subject to End Connections)


Up to 50 bar (725 psi) at -196°C to +65°C

## Features

- Spring loaded gland seal giving low torque levels under both ambient and cryogenic conditions
- Precision investment cast body - smooth surface finish
- Once piece, anti-blow-out stem
- Relief hole to prevent trapping of liquefied gases
- Designed to prevent incorrect, and hence dangerous, re-assembly after stripping for maintenance
- Removable centre section designed to industry standard dimensions, allowing interchangeability in existing installations
- Valves can be supplied with actuators fitted allowing fast, remote automatic operation
- Long life spring loaded gland packing

## Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

 Marked according to the Pressure Equipment Directive

Please contact us for other options.



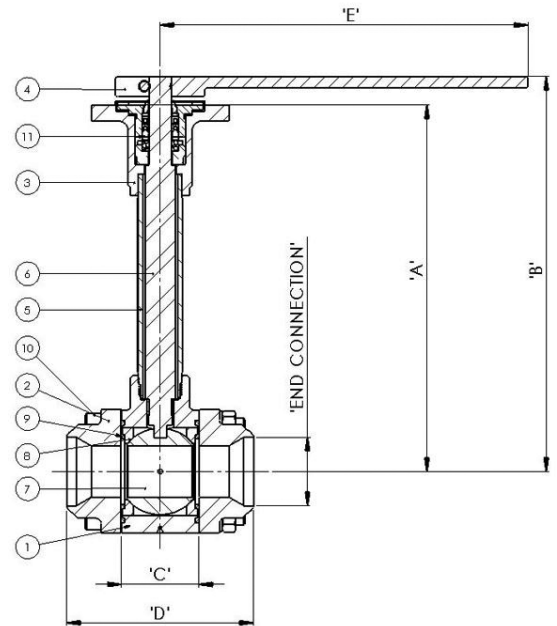
DN40  
Socket Ends

# Cryogenic Stainless Steel Ball Valve

Reduced Bore

DN15 – DN50 (1/2" – 2")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. End Adaptors	Stainless Steel ASTM A351 CF8M
3. Gland Housing	Stainless Steel ASTM A351 CF8M
4. Lever	Stainless Steel ASTM A351 CF8M
5. Extension Tube	Stainless Steel ASTM A312 TP304L
6. Stem	Stainless Steel BSEN 10088-3 1.4401
7. Ball	Stainless Steel 316 S31 BS970
8. Ball Seal	Hostaflon
9. End Adaptor Seal	Virgin PTFE
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
11. Gland Packings	Virgin PTFE



Specifications														
Size	Valve Size		Reduced Bore Size		Dimension						Torque		CV USGPM	Weight Kg
	mm	in	mm	in	A	B	C	D	E	P.C.D	Nm	lbft		
	mm	in	mm	in	mm	mm	mm	mm	mm	mm				
DN15	15	1/2	11	3/8	230	250	21	67	190	50	10	7	9	3
DN25	25	1	20	3/4	230	250	32	96	190	60	23	17	30	5.5
DN40	40	1 1/2	32	1 1/4	230	250	49	117	230	80	40	30	90	7
DN50	50	2	37	1 1/2	230	250	56	129	230	100	62	46	138	7.2

## End Connections

Butt Weld / Socket Ends

# Cryogenic Wafer Ball Valve

## Reduced Bore

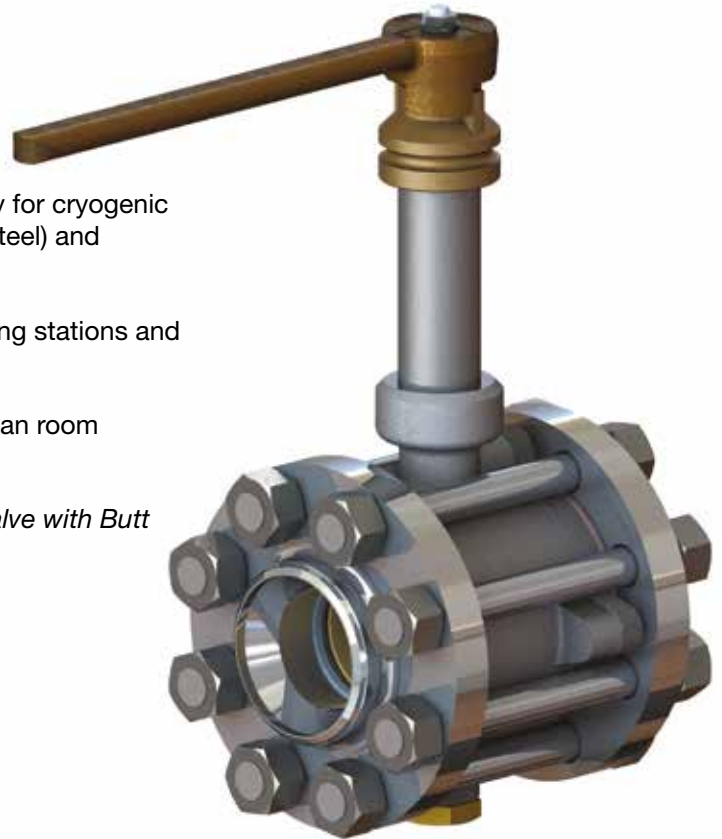
DN80 (3")

A uni-directional wafer type ball valve designed specifically for cryogenic applications. Available with butt weld ends (for Stainless Steel) and threaded ends (for Bronze).

The flow co-efficient (CV) allows full flow of media from filling stations and portable delivery systems therefore no delay in filling time.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a Stainless Steel DN80 Wafer Ball Valve with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 34 bar (500 psi) at -196°C to +65°C

### Features

- Precision investment cast body – smooth surface finish (for Stainless Steel Valves)
- One piece, anti-blowout stem
- Relief hole to prevent trapping of liquefied gases
- Designed to prevent incorrect, and hence dangerous, re-assembly after stripping for maintenance
- Removable centre section wafer pattern designed to suit industrial standard dimensions, allowing interchangeability in existing installations
- Valves can be supplied with pneumatic actuators fitted allowing fast, remote or automatic operation

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

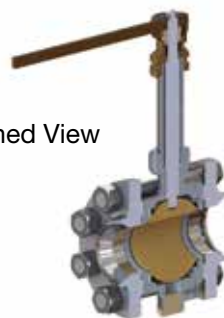
CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

Pneumatically Actuated



Sectioned View



Centre Section

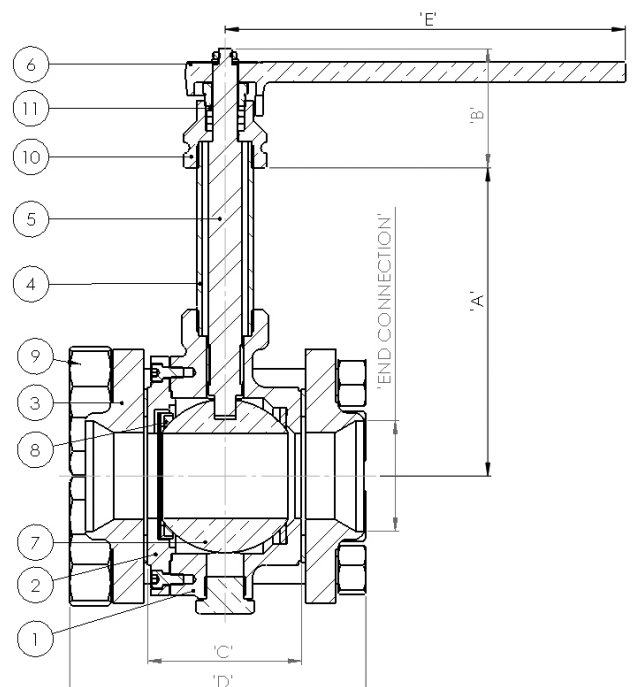


Materials		
	Stainless Steel	Bronze
1. Body	Stainless Steel ASTM A351 CF8M	Gunmetal BSEN 1982 CC491K
2. End Adaptors	Stainless Steel ASTM A351 CF8M	Gunmetal BSEN 1982 CC491K
3. Gland Housing	Stainless Steel ASTM A351 CF8M	Stainless Steel ASTM A351 CF8M
4. Extension Tube	Stainless Steel ASTM A312 TP304L	Stainless Steel ASTM A312 TP304L
5. Stem	Stainless Steel BSEN 10088-3 1.4401	Stainless Steel BSEN 10088-3 1.4401
6. Lever	Stainless Steel ASTM A351 CF8M	Stainless Steel ASTM A351 CF8M
7. Ball	Stainless Steel Series 300	Stainless Steel Series 300 / Brass
8. Retainer	HT Brass BSEN 12164 CW721R	HT Brass BSEN 12164 CW721R
9. Fasteners	Stainless Steel BS6105 A2/A4 Gr. 70	Stainless Steel BS6105 A2/A4 Gr. A4
10. Packings	Virgin PTFE	Virgin PTFE
11. Seal to Ball	Virgin PTFE	Virgin PTFE

Specifications												
Size	Valve Size		Dimension						Torque		CV USGPM	Weight
			A	B	C	D	E	H	Nm	lbft		
	mm	in	mm	mm	mm	mm	mm	mm	mm			
DN80	80	3	230	80	110	215	300	64	102	75	300	30 kg

## End Connections

Stainless Steel	Butt Weld
Bronze	BSP / NPT Threaded



# Cryogenic Actuated Bronze Ball Valve

## Reduced Bore

DN15, 25, 40 & DN50 (½" - 2")

A Bronze uni-directional three-piece ball valve designed specifically for cryogenic applications. Available with threaded ends.

Pressure tested prior to dispatch.

The flow co-efficient (CV) allows full flow of media from filling stations and portable delivery systems therefore no delay in filling time.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN50 Bronze Ball Valve with NPT Threaded Ends)*



## Maximum Working Pressure (MWP)

(Subject to End Connections)


Up to 50 bar (725 psi) at -196°C to +65°C

## Features

- Spring loaded gland seal giving low torque levels under both ambient and cryogenic conditions
- One piece, anti-blow-out stem
- Relief hole to prevent trapping of liquefied gases
- Designed to prevent incorrect, and hence dangerous, re-assembly after stripping for maintenance
- Removable centre section designed to industry standard dimensions, allowing interchangeability in existing installations

## Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

 Marked according to the Pressure Equipment Directive

Please contact us for other options.

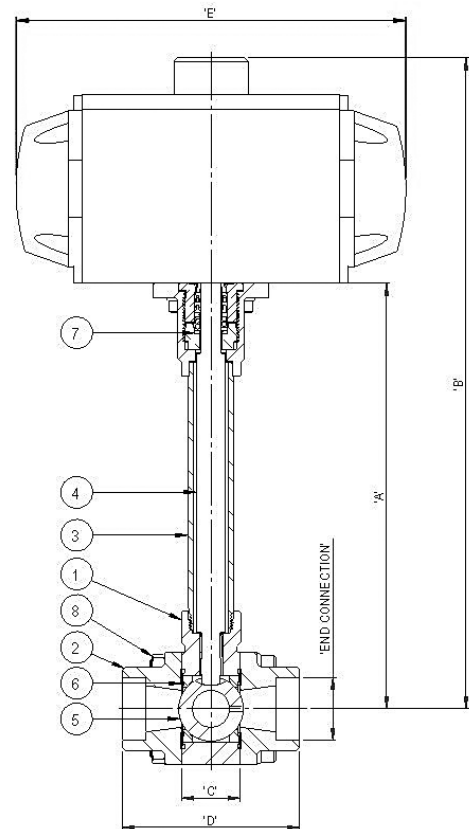


# Cryogenic Actuated Bronze Ball Valve

Reduced Bore

DN15, 25, 40 & DN50 (½" - 2")

Materials	
	Bronze
1. Body	Gunmetal BSEN 1982 CC491K
2. End Adaptors	Gunmetal BSEN 1982 CC491K
3. Extension Tube	Stainless Steel ASTM A312 304L
4. Stem	Stainless Steel BSEN 10088-3 1.4401
5. Ball	Stainless Steel Series 300 / Brass
6. Seal	Virgin PTFE
7. Packings	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



Specifications															
Size	Valve Size		Reduced Bore Size		Dimension						Ball Valve Torque		CV USGPM	Weight Kg	
	mm	in	mm	in	A	B	C	D	E	P.C.D	Nm	lbft			
	mm	in	mm	in	mm	mm	mm	mm	mm	mm	mm	mm			
DN15	15	½	10	3/8	230	352	21	67	210	45	10	7	9	4.7	
DN25	25	1	20	¾	230	352	32	96	210	63	23	17	30	5.5	
DN40	40	1 ½	30	1 ¼	230	405	49	117	315	81	40	30	90	15.5	
DN50	50	2	40	1 ½	230	405	56	129	315	95	62	46	138	16	

## End Connections

BSP / NPT Threaded

# Cryogenic Actuated Stainless Steel Ball Valve

## Reduced Bore

DN15, 25, 40 & DN50 (½" - 2")

A stainless steel uni-directional three-piece ball valve designed specifically for cryogenic applications. Available with socket weld and butt weld ends.

The flow co-efficient (CV) allows full flow of media from filling stations and portable delivery systems therefore no delay in filling time.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN25 Stainless Steel Actuated Ball Valve – Reduced Bore with Butt Weld Ends)*



## Maximum Working Pressure (MWP)

(Subject to End Connections)


Up to 50 bar (725 psi) at -196°C to +65°C

## Features

- Spring loaded gland seal giving low torque levels under both ambient and cryogenic conditions
- Precision investment cast body – smooth surface finish
- One piece, anti-blow-out stem
- Relief hole to prevent trapping of liquefied gases
- Designed to prevent incorrect, and hence dangerous, re-assembly after stripping for maintenance
- Removable centre section designed to industry standard dimensions, allowing interchangeability in existing installations

## Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

 Marked according to the Pressure Equipment Directive

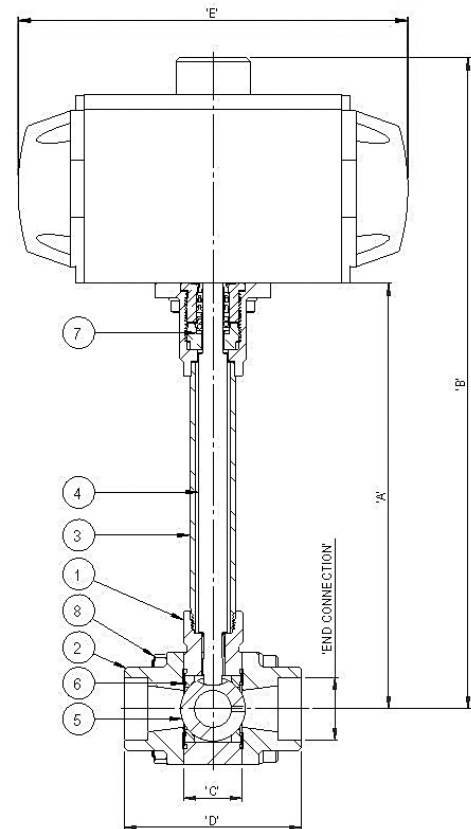
Please contact us for other options.

# Cryogenic Actuated Stainless Steel Ball Valve

Reduced Bore

DN15, 25, 40 & DN50 (½" - 2")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. End Adaptors	Stainless Steel ASTM A351 CF8M
3. Extension Tube	Stainless Steel ASTM A312 TP304L
4. Stem	Stainless Steel BSEN 10088-3 1.4401
5. Ball	Stainless Steel Series 300
6. Seal	Virgin PTFE
7. Packings	Virgin PTFE
8. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



Specifications															
Size	Valve Size		Reduced Bore Size		Dimension						Ball Valve Torque		CV USGPM	Weight Kg	
	mm	in	mm	in	A	B	C	D	E	P.C.D	Nm	lbft			
	mm	in	mm	in	mm	mm	mm	mm	mm	mm	mm	mm			
DN15	15	½	10	3/8	230	352	21	67	210	45	10	7	9	4.7	
DN25	25	1	20	¾	230	352	32	96	210	63	23	17	30	5.5	
DN40	40	1½	30	1 ¼	230	405	49	117	315	81	40	30	90	15.5	
DN50	50	2	40	1 ½	230	405	56	129	315	95	62	46	138	16	

## End Connections

Butt Weld / Socket Ends

# Safety Relief Valve

## Bronze

Nozzle 10, 15 & 20 ( $\frac{3}{8}$ ",  $\frac{1}{2}$ " &  $\frac{3}{4}$ " )

A range of high quality bronze relief valves designed to comply with ISO 4126 (Safety Valves General Requirement), Ad-Merkblatt A2 (Safety Devices against Excess Pressure) and TUV requirements. They are eminently suited to the protection of static and road going cryogenic storage tanks against damaging over pressure.

There are three basic sizes, defined by the throat diameter and each is available with a variety of inlet and outlet connections.

The valve is designed and factory set to lift repeatedly within 2% of the set pressure and to reseat above 92% of set pressure. Spring pre-compression and blow down ring settings are sealed after test to inhibit unauthorized tampering.

Flow rates at 10% above set pressure.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a Nozzle 15 Bronze Safety Relief Valve)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 40 bar (580 psi) at -196°C to + 65°C

### Features

Each valve is individually set and flow tested and then stamped with the date of manufacture and its own unique serial number prior to dispatch

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured to ISO 4126 (SVGR) ASTM B31.1, BSEN 1626
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



Nozzle 15 Relief Valve with Manual Lever



Nozzle 15 Relief Valve with Adaptor & Elbow



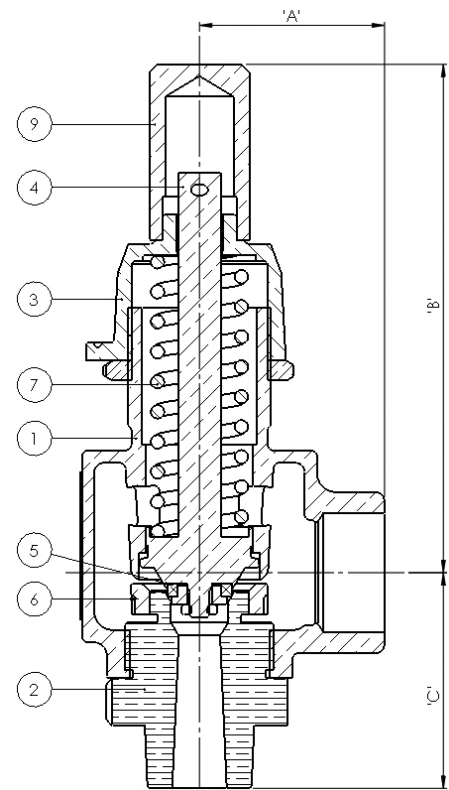
Nozzle 20 Relief Valve

# Safety Relief Valve

**Bronze**

Nozzle 10, 15 & 20 ( $\frac{3}{8}$ ",  $\frac{1}{2}$ " &  $\frac{3}{4}$ "")

Materials	
	<b>Bronze</b>
1. Body	Gunmetal BSEN 1982 CC491K
2. Seat	HT Brass BSEN 12164 CW721R
3. Adjusting Cap	Gunmetal BSEN 1982 CC491K
4. Disc (Nozzle 10) Disc (Nozzle 15, 20)	Brass BSEN 12163 CW712R Phosphor Bronze BSEN 12163 CW451R
5. Seal	PTFE TF7196
6. Blow Down Ring	Gunmetal BSEN 1982 CC491K
7. Spring	Stainless Steel 302 S26 BS2056
8. Weather Proof Cap	HT Brass BSEN 12164 CW721R



Specifications				
Size	Unit	DN10	DN15	DN20
A	mm	48	64	64
B	mm	130	133	133
C	mm	60	73	73
Weight	kg	1.5	3	3

Technical Data			
Inlet Orifice Dia (mm)	Set Pressure Range (Bar)	Inlet Sizes (BSP/NPT)	Outlet Sizes (BSP/NPT)
11.4	1.7 - 40	$\frac{1}{2}$ " or $\frac{3}{4}$ "	1"
14	1.7 - 40	$\frac{3}{4}$ " or 1"	1 $\frac{1}{4}$ "
20.50	1.7 - 30	1" or 1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "

# Safety Relief Valve

## Stainless Steel

Nozzle 10, 15 & 20 ( $\frac{3}{8}$ ",  $\frac{1}{2}$ " &  $\frac{3}{4}$ " )

A range of high quality stainless steel relief valves designed to comply with ISO 4126 (Safety Valves General Requirement), Ad-Merkblatt A2 (Safety Devices against Excess Pressure) and TUV requirements. They are eminently suited to the protection of static and road going cryogenic storage tanks against damaging over pressure.

There are three basic sizes, defined by the throat diameter and each is available with a variety of inlet and outlet connections.

The valve is designed and factory set to lift repeatedly within 2% of the set pressure and to reseat above 92% of set pressure. Spring pre-compression and blow down ring settings are sealed after test to inhibit unauthorized tampering.

Flow rates at 10% above set pressure.

All valves are degreased for oxygen duty, assembled in clean room conditions and sealed in robust polythene bags prior to dispatch.

*(Main image shown is a Nozzle 10 Stainless Steel Relief Valve)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 40 bar (580 psi) at -196°C to + 65°C

### Features

Each valve is individually set and flow tested and then stamped with the date of manufacture and its own unique serial number prior to dispatch

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured to ISO 4126 (SVGR) ASTM B31.1, BSEN 1626
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



Nozzle 10 Stainless Steel



Nozzle 20 Stainless Steel

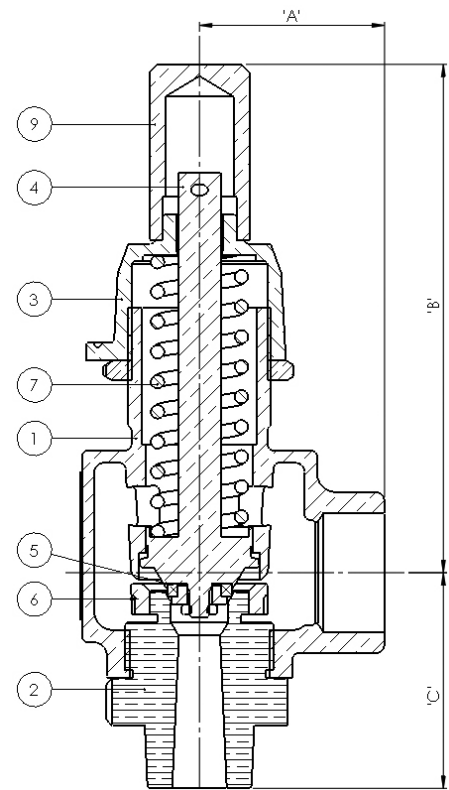
# Safety Relief Valve

Stainless Steel

Nozzle 10, 15 & 20 ( $\frac{3}{8}$ ",  $\frac{1}{2}$ " &  $\frac{3}{4}$ "")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. Seat	HT Brass BSEN 12164 CW721R
3. Adjusting Cap	SS ASTM A351 CF8M
4. Disc (Nozzle 10) Disc (Nozzle 15, 20)	Brass BSEN 12163 CW712R Phosphor Bronze BSEN 12163 CW451R
5. Seal	PTFE TF7196
6. Blow Down Ring	Gunmetal BSEN 1982 CC491K
7. Spring	Stainless Steel 302 S26 BS2056
8. Weather Proof Cap	SS 316 BS EN 10088-3 1.4401

\* Full Stainless Steel Relief Valve available on request.



Specifications				
Size	Unit	Nozzle 10	Nozzle 15	Nozzle 20
A	mm	48	64	64
B	mm	130	133	133
C	mm	60	73	73
Weight	kg	1.5	3	3

Technical Data			
Inlet Orifice Dia (mm)	Set Pressure Range (Bar)	Inlet Sizes (BSP/NPT)	Outlet Sizes (BSP/NPT)
11.4	1.7 - 40	$\frac{1}{2}$ " or $\frac{3}{4}$ "	1"
14	1.7 - 40	$\frac{3}{4}$ " or 1"	1 $\frac{1}{4}$ "
20.50	1.7 - 30	1" or 1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "

# Thermal Relief Valve

## Brass

Nozzle 6 (1/4")

A compact cryogenic relief valve designed to prevent damage to piping and equipment caused by the expansion of liquefied gases.

When liquefied gases are trapped between two closed valves (a situation known as liquid lock) the reheating and consequent boiling can lead to a dangerous rise in pressure.

The Bestobell Thermal Relief Valve has been designed with this application specifically in mind using materials which are particularly suited to this purpose. One major benefit of this is that the valve will not stick in its seat even when left unused for long periods of time. The valve also reseats correctly after venting off the expanding fluid, thus preventing the waste of expensive

cryogenic gases. It is available with a variety of outlet connections to suit the customers' requirements.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a Brass Thermal Relief Valve Nozzle 6 - Open to Atmosphere)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 40 bar (580 psi) at -196°C to + 65°C

### Features

- Valve will not stick in its seat even when left unused for long periods of time
- Design allows the valve to reseal correctly after venting off the expanding fluid which prevents wastage of cryogenic gases
- Accuracy of lifting pressure is +/- 3%
- Valve is tight up until 90% of set pressure
- Valve reseats before 50% of set pressure
- Orifice diameter is 8mm

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

 Marked according to the Pressure Equipment Directive

Please contact us for other options.



Pipe Away Adaptor



Ring Pull



Open to Atmosphere



# Thermal Relief Valve

Brass

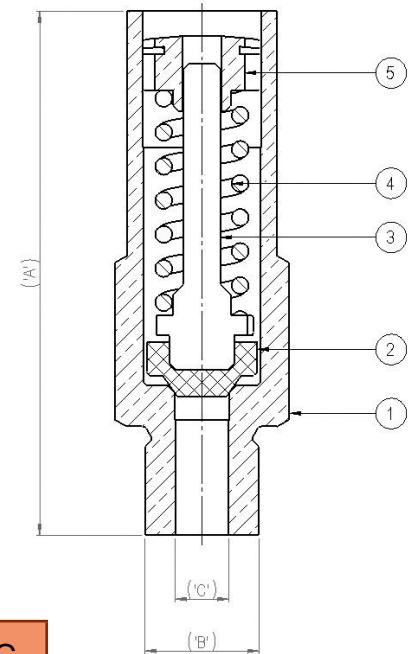
Nozzle 6 (1/4")

Materials	
	Brass
1. Body	Naval Brass BSEN 12163 CW712R
2. Disc	Hostafion Electro Carbon Filled
3. Spindle	Stainless Steel 10088-3 1.4401
4. Spring	Stainless Steel 302
5. Adjuster	Naval Brass BSEN 12163 CW712R

\* Stainless Steel version available on request.

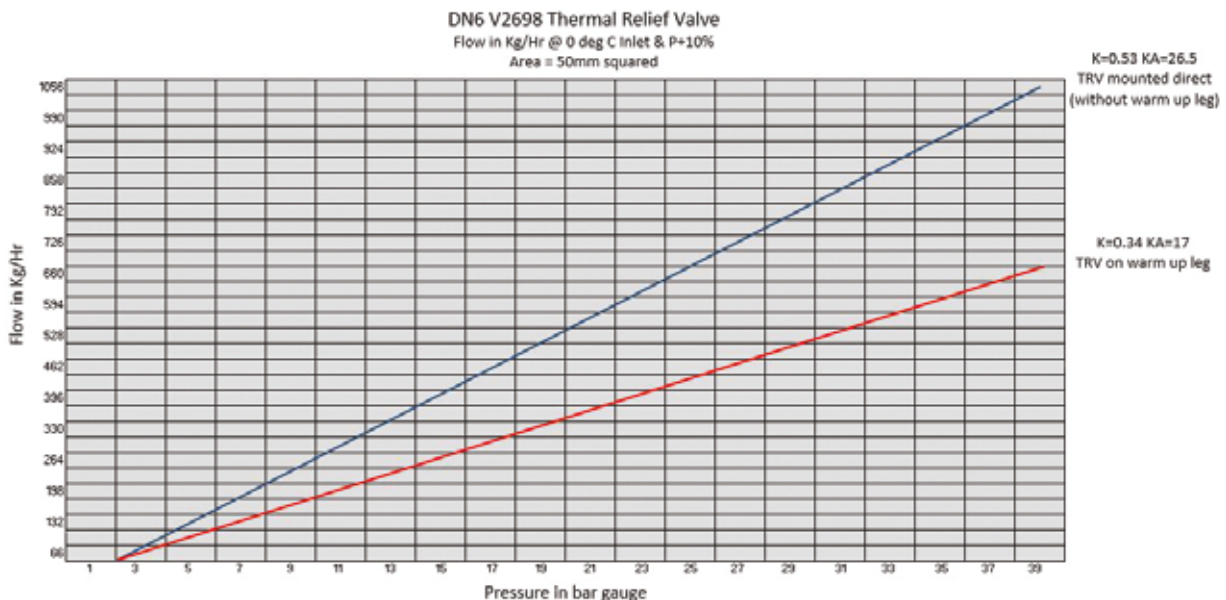
Specifications	
Spring Ranges	
psi	bar
25 - 49	1.72 - 3.38
50 - 99	3.45 - 6.83
100 - 199	6.90 - 13.72
200 - 434	13.80 - 29.90
435 - 580	30.00 - 40.00

Outlet Type	Unit	A	C
Plain	mm	73	8
Ring Pull	mm	84	8
Male Threaded	mm	99	8
Shrouded	mm	93	8



## End Connections

Inlet 'B'	Male Threaded BSPT or NPT
Outlet	Ring pull for manual lifting Male threaded, 1/2" BSPT to allow piping away of vented gas or Shrouded outlet to provide additional protection to the stem and help prevent dirt and water ingress



# Cryogenic Pressure Regulator

## Pressure Build-Up Regulator and Economiser

DN15 (½")

The Cryoreg is designed to provide all pressure regulation functions within one valve. Standard body material is bronze, yet also available in stainless steel. For use on all cryogenic pressure vessels including static tanks and transportable tanks, the Cryoreg valve combines all the following functions in one unit:

1. Pressure build up regulator
2. Economiser valve
3. Thermal relief\* on two of the ports

\*The Cryoreg provides thermal relief into the economiser outlet port for either of the other two ports (pressure build-up inlet and economiser inlet port). If a stop valve (as opposed to the Bestobell check valve) is fitted to the economiser outlet port, a thermal relief valve should also be fitted.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 25 bar (360 psi) at -196°C to + 65°C

*(Main image shown is a DN15 Cryogenic Pressure Regulator Valve)*



### Features

- Combined pressure build-up regulator and economiser functions for simpler pipework and fewer joints
- High flow characteristics – for closer control of tank pressure
- Operates on liquid or gas – to suit every installation
- Single adjustment for both functions – for simpler tank setting
- High accuracy/low deadband allows higher tank pressure – reduced boil-off in pipelines
- Dual thermal relief valve action – for added system protection
- Strainer fitted as standard on inlet and outlet
- Ball check fitted to economiser outlet as standard

### Technical

- Designed and engineered for use with Group 1 gases.
- DN15 – DN25 bull nose end connections available. Please contact us with your requirements.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

The Cryoreg is available with a choice of springs to give optimum control in all applications. Set pressure tolerance will normally be held on gas  $\pm 3\%$  and liquid side  $\pm 5\%$ .

Please contact us for other options.



DN15 with Bull Nose End Connections and Extended Stubs



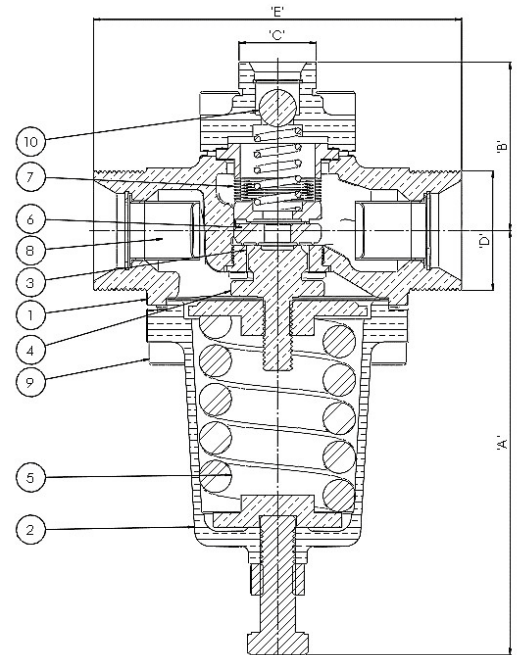
DN15 with Bull Nose Connector and Socket Ends

# Cryogenic Pressure Regulator

Pressure Build-Up Regulator and Economiser

DN15 (1/2")

Materials	
	Bronze
1. Body	Gunmetal BSEN1982 CC491K
2. Spring Housing	Gunmetal BSEN1982 CC491K
3. Seat	Bronze BSEN 12163 CW451K
4. Disc Assembly	Beryllium Copper/Phosphor Bronze
5. Spring	Stainless Steel Series 300
6. Seal	Virgin PTFE
7. Bellows Assembly	Stainless Steel Series 300
8. Strainer	Monel
9. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
10. Ball	Phosphor Bronze BSEN 12163 CW451K



Specifications						
Spring range	Dimension 'A'	Dimension 'B'	Dimension 'C'	Dimension 'D'	Dimension 'E'	Weight (kg)
1.5 - 5 Bar	134	57.5	3/4 BSP	1.1/4 BSP	126	3.5
4 - 12 Bar	134	57.5	3/4 BSP	1.1/4 BSP	126	3.5
10 - 25 Bar	134	57.5	3/4 BSP	1.1/4 BSP	126	3.5

## End Connections

Gunmetal	1 1/4 BSP Parallel Male with Internal Cone
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# Cryogenic Pressure Regulator

## Pressure Build-Up Regulator and Economiser

DN15 (1/2")

### Description of Operation

In the following explanation of the Cryoreg it is assumed to be fitted downstream of the pressure build-up coil and will therefore be controlling a gaseous flow during the pressure build-up phase of its operation. Operation is identical when fitted upstream of the PBU coil except that liquid will be passed during the pressure build-up phase.

#### First Function

##### *Pressure build-up regulator*

As the customer draws liquid or gas from the tank the pressure inside the tank will fall. To compensate for this, the Cryoreg will open to allow liquid to pass through the pressure build-up coil. Sufficient gas will thus be generated to bring the tank back to its normal working pressure.

In this phase of operation, flow is from port A to port B via the pressure build-up seat on the multi-function disc, the flow path being formed from the upward movement of the diaphragm assembly lifting the multi-function disc away from the main seat. This upward movement arises as a result of the force in the pressure setting spring overcoming the pressure force acting over the sensing diaphragm. As soon as the pressure in the tank has recovered, the diaphragm assembly is pushed back down again, closing off the flow path.

#### Second Function

##### *Economiser Valve*

When heat leaks into a cryogenic storage tank, liquid will revert to its gas phase leading to a pressure rise in the tank. Left unchecked, the process may continue until the relief valve lifts, wastefully venting gas to atmosphere. The function of an economiser valve is to divert excess gas into the customer's supply line. Providing the customer is drawing gas, diverting the flow in this manner will prevent the relief valve lifting, avoiding waste and reducing the overall cost of storing the liquefied gas. To accomplish this; a flow path is formed within the Cryoreg to allow gas to pass from port B, up through the centre of the valve to exit via the economiser port C. The flow path is formed from the downward movement of the diaphragm (which senses tank pressure) having overcome over the force in the pressure setting spring. This occurs when the tank pressure exceeds the valve set pressure by more than 0.54 barg.

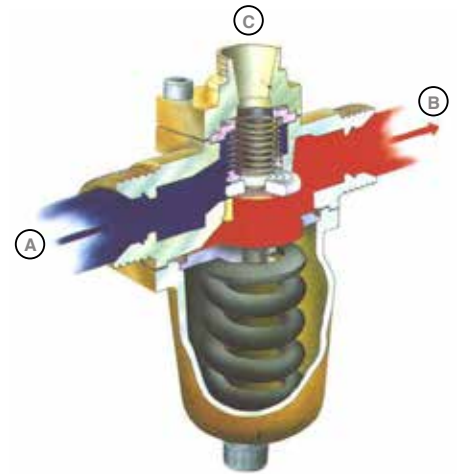
*Note that this mechanism is also used to provide thermal relief into the economiser from outlet B.*

#### Third function

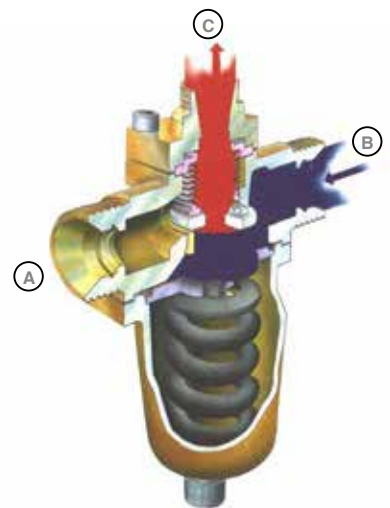
##### *Thermal relief*

Inadvertent closure of the valve supplying the pressure build-up coil could lead to liquid being trapped between the coil and the Cryoreg. A thermal relief valve would normally be required to protect the coil-associated pipework from the high pressures generated by warming of the trapped liquid. This function, however, is built in to the Cryoreg, which will automatically vent the gas into either the economiser line (port C) or the gas supply line to the tank (port A). This function is accomplished by the differential pressure across the bellows assembly forcing it to compress, leaving the multi-function disc in place. This allows a flow path to form from port A, up through the centre of the bellows to exit from the economiser port. Remember that thermal relief is provided on port B by the economiser function described above giving protection under all foreseeable circumstances.

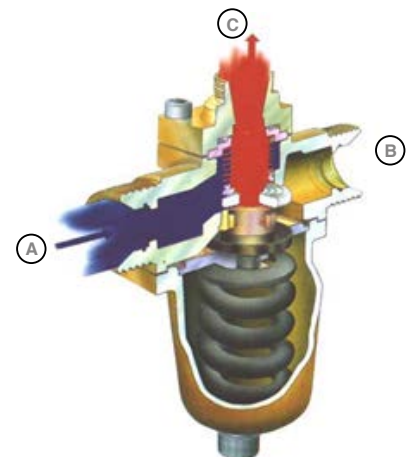
*Note that if an isolating valve is fitted in the economiser line it will be necessary to fit a separate Thermal Relief Valve between the economiser port (C) and the isolation valve. This is not necessary if a Bestobell Check Valve is installed.*



First function



Second function



Third function

# Cryogenic Pressure Regulator

Pressure Build-Up Regulator and Economiser

DN15 (½")

$Q = kw \sqrt{\Delta p} / \rho$  where

Q = Actual flow in m<sup>3</sup>/h

$\Delta p$  = Pressure drop in bar

$\rho$  = Liquid density in kg/m<sup>3</sup>

## Cryoreg Flow Data

Cryoreg on liquid side of vapouriser

Flow rates given are in kg/hr with 1 meter liquid head in vessel, for change in liquid head multiply flow by square root liquid head

Maximum Flow through regulator to give pressure build kg/hr

Bar g		2	4	6	8	10	12	14	16	18	20	25	30	35	40
psi g		29	58	87	116	145	174	203	232	261	290	362.5	435	507.5	580
LIN	kg/hr	513	499	477	460	445	431	418	407	393	378	347	310	-	-
LOX	kg/hr	728	711	686	667	651	636	622	609	595	581	551	524	495	467
LAR	kg/hr	888	888	837	813	792	774	757	741	726	704	669	634	597	563
CO2	kg/hr	-	-	758	746	727	715	703	692	681	672	648	627	607	586

Maximum gas withdrawal from tank M<sup>3</sup>/hr

Bar g	psi g	LIN M <sup>3</sup> /hr	LOX M <sup>3</sup> /hr	LAR M <sup>3</sup> /hr	CO2 M <sup>3</sup> /hr
2	29	25313	48940	43151	-
4	58	14544	28991	25388	-
6	87	9434	18940	16929	24155
8	116	6708	13798	12359	17835
10	145	5014	10680	9494	13646
12	174	3861	8533	7549	11184
14	203	3040	6998	6141	9379
16	232	2436	5805	5080	8006
18	261	1938	4867	4267	6786
20	290	1537	3991	3552	5968
25	362.5	877	2664	2409	4285
30	435	507	1841	1669	3281
35	507.5	-	1262	1131	2522
40	580	-	853	750	1901

Liquid Density kg/M <sup>3</sup>				Vapour Density kg/M <sup>3</sup>			
LIN	LOX	LAR	CO2	LIN	LOX	LAR	CO2
780	1106	1350	-	12.45	11.4	15.4	-
758	1080	1319	-	20.24	18.2	24.8	-
725	1043	1272	1152	28.19	25.8	34.3	18
699	1014	1235	1134	36.35	33.2	43.9	23.5
676	989	1204	1105	44.8	40.4	53.8	29
655	966	1176	1086	53.7	47.9	63.9	34
636	946	1150	1068	63.1	55.4	74.3	39
618	925	1126	1051	72.8	63.2	85.1	44
597	904	1103	1035	83.3	71.2	96	50
574	883	1070	1021	94.3	81.6	107	55
527	838	1017	985	126.6	106.0	137	70
471	796	963	953	154.6	132.2	169	84
-	752	907	922		162.0	207	100
-	710	855	890		196.8	253	120

# Cryogenic Pressure Build Up Valve

## Stainless Steel

DN50 (2")

The Pressure Build Up Valve is designed to provide an 'easy adjust' pressure regulation function in one valve.

For use on cryogenic static tanks and road trailers. The valve operation is such that it maintains a system pressure on a container or storage unit during transfer of gas from the trailer to a storage unit or vice versa. Pressure must be maintained to allow flow to occur at desired rates during transfer.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN50 Cryogenic Stainless Steel Pressure Build Up Valve)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- High flow characteristics for closer control of tank pressure
- Operates on liquid or gas to suit every installation
- Single adjustment for ease of tank setting
- Inlet strainer fitted as standard fitted as standard to all valves
- Removable cartridge internal system for ease of maintenance
- Available with a choice of springs to give optimum control in all applications

### Technical

- Designed for use with: C, Ar, O<sub>2</sub>, CO<sub>2</sub>
- DN50 Flow data: Cv = 12.5 usgpm; Kv = 10.8 M<sup>3</sup>/hr
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

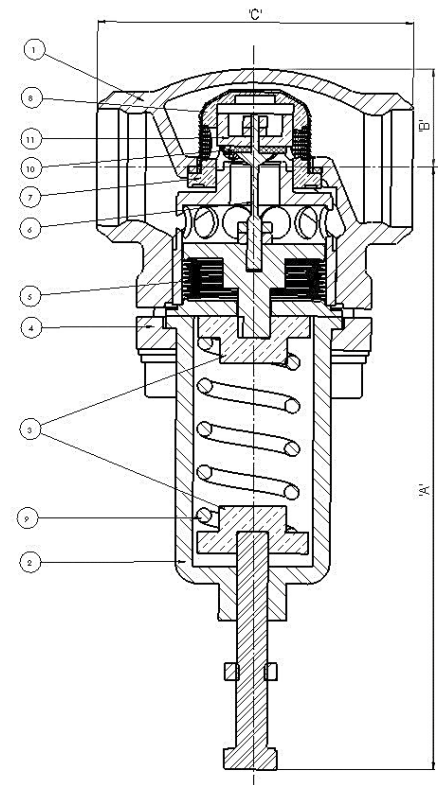
# Cryogenic Pressure Build Up Valve

Stainless Steel

DN50 (2")

## Materials

	Bronze
1. Body	Stainless Steel ASTM A351 CF3M
2. Spring Housing	HT Brass BSEN 12164 CW721R
3. Pressure Plates	HT Brass BSEN 12164 CW721R
4. Cover	Stainless Steel ASTM A351 CF8M
5. Bellows	Stainless Steel
6. Stem	Brass HT Brass BSEN 12164 CW721R
7. Piston Housing	Phosphor Bronze BSEN 12163 CW451K
8. Strainer	Stainless Steel 316
9. Spring	Stainless Steel 302
10. Seal	Virgin PTFE
11. Piston	HT Brass BSEN 12164 CW721R



## Specifications

### Butt Weld Ends

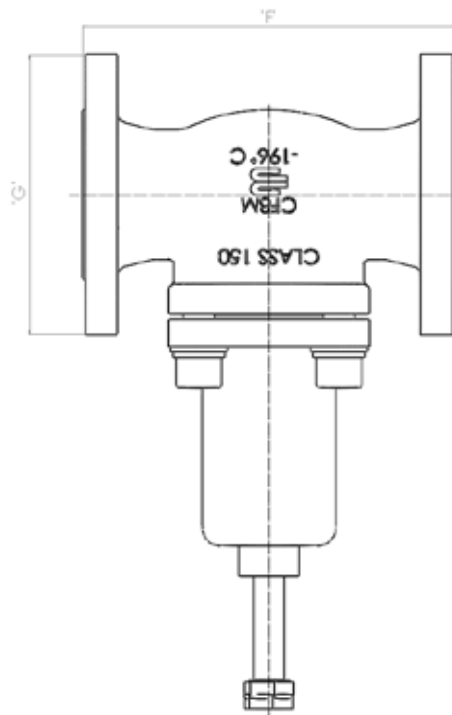
Size	Unit	DN50 2"
A	mm	243
B	mm	48
C	mm	146
Weight	kg	9

Size	Spring Adjustment Range (psi)
DN50 (1.5-9 bar)	22-130

### Flanged Ends (Class 150)

Size	Unit	DN50 2"
F	mm	203
G	mm	152
Flange Thickness	mm	19
Weight	kg	14

Class 300 valves available on request



# Cryogenic Manifold Fill Assemblies

## Stainless Steel

DN25 & DN40 (1" & 1½")

The Bestobell cryogenic main fill valve manifold is specifically designed for cryogenic static storage tanks to replace the traditional gang of valves linked together with piping and a large amount of welding and brazing.

It is the joining together of four valves: top fill, bottom fill, check valve and drain valve. It is available in two sizes 25mm (1") and 40mm (1½").

The design makes it a simple valve to operate from the user perspective. Two styles are available both with short and long centres (See Table). The Manifold can be supplied with various inlet connections to suit customer requirements.

Located within the valve is a spring to close the check valve to prevent back wash of media at the end of the filling cycle. A drain valve is fitted to release any trapped media in the fill block. A warm-up leg is also included for the connection of a thermal relief valve.

The unit is supplied ready to be fitted to the tank, with pipe specifications supplied by the customer. All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch

*(Main image shown is a DN40 Stainless Steel Manifold Fill Assembly)*

### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C  
(extended spindle)

### Features

- A one piece body reduces the number of potential leak paths and simplifies the piping system
- The unique internal characteristics reduces the pressure drop and vessel filling time
- Complete valve assembly reduces the tank build time
- Check valve for additional safety
- Self-draining strainer prevents debris entering the system
- Bolted bonnet headworks allow for easy maintenance



### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.
- Manual operated inside screw globe valves, size range DN25 and DN40.
- Available with stainless stubs.

CE Marked according to the Pressure Equipment Directive

Please contact us for other options.



DN40 Stainless Steel Manifold Fill Assembly



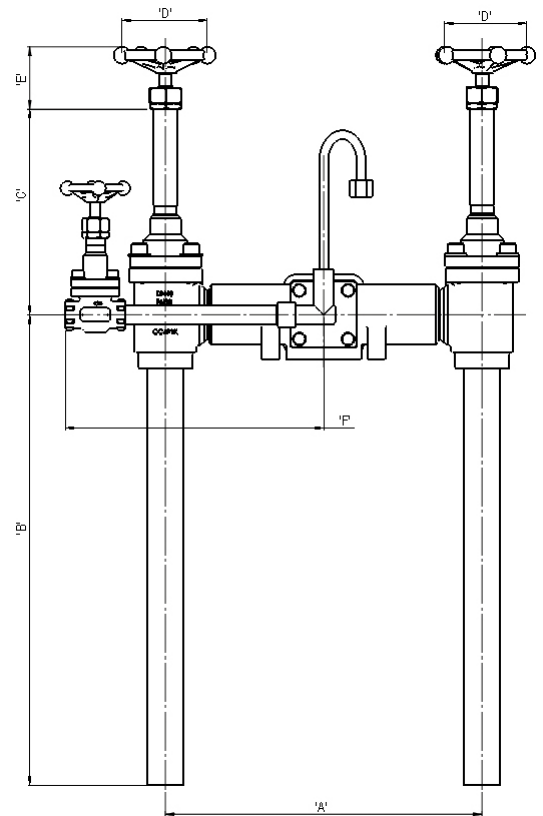
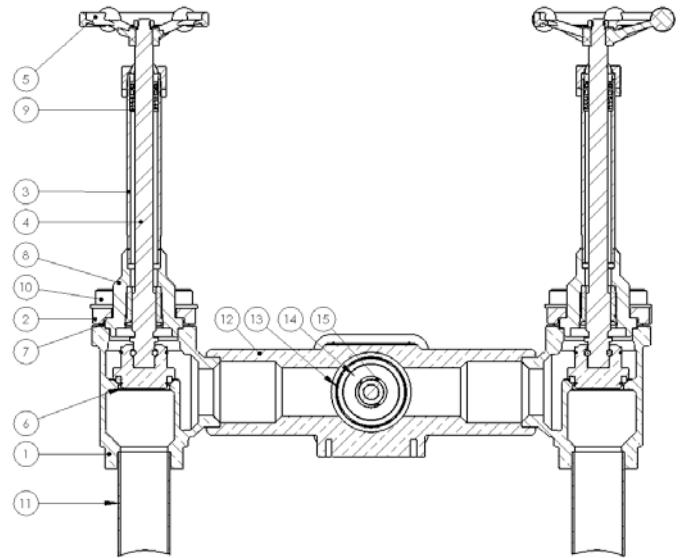
# Cryogenic Manifold Fill Assemblies

Stainless Steel

DN25 & DN40 (1" & 1½")

## Materials

	Bronze
1. Body	Stainless Steel ASTM A351 CF8M
2. Bonnet	Stainless Steel BSEN 10088-3 1.4401
3. Tube, Extension	Stainless Steel ASTM A312 TP 304L
4. Stem	Stainless Steel BSEN 10088-3 1.4401
5. Handwheel	Aluminium
6. Disc	HT Brass BSEN 12164 CW721R
7. Gasket	Sigma 511
8. Seal	PCTFE
9. Gland Packing	Virgin PTFE Sigma 511
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
11. Down Pipe	Copper ASTM B88
12. Central Body	Gunmetal BSEN 1982 CC491K
13. Strainer	Brass
14. Disc	HT Brass BSEN 12164 CW721R



## Specifications

### Stainless Steel Stubs

Size	Unit	DN40
A	mm	359
B	mm	(137 Schd 10 St.St Stub) (533 B88 Table K)
C	mm	230
D	mm	121
E	mm	90
F	mm	292

### Long Centre Type Stainless Steel

Size	Unit	DN25	DN40
A	mm	295	301
B	mm	85	85
C	mm	230	230
D	mm	101	121
E	mm	90	90
F	mm	118	118
G	mm	Socket End To Suit 1" NB Schd.10	Socket End To Suit 1½" NB Schd.10

All dimensions / weights are approximate

# Cryogenic Manifold Fill Assemblies

## Bronze

DN25 & DN40 (1" & 1½")

The Bestobell cryogenic main fill valve manifold is specifically designed for cryogenic static storage tanks to replace the traditional gang of valves linked together with piping and a large amount of welding and brazing.

It is the joining together of four valves: top fill, bottom fill, check valve and drain valve. It is available in two sizes 25mm (1") and 40mm (1½").

The design makes it a simple valve to operate from the user perspective. Two styles are available both with short and long centres (See Table). The Manifold can be supplied with various inlet connections to suit customer requirements.

Located within the valve is a spring to close the check valve to prevent back wash of media at the end of the filling cycle. A drain valve is fitted to release any trapped media in the fill block. A warm-up leg is also included for the connection of a thermal relief valve.

The unit is supplied ready to be fitted to the tank, with pipe specifications supplied by the customer. All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch

*(Main image shown is a DN40 Bronze Manifold Fill Assembly)*

### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C  
(extended spindle)

### Features

- A one piece body reduces the number of potential leak paths and simplifies the piping system
- The unique internal characteristics reduces the pressure drop and vessel filling time
- Complete valve assembly reduces the tank build time
- Check valve for additional safety
- Self-draining strainer prevents debris entering the system
- Bolted bonnet headworks allow for easy maintenance



### Technical

- Designed and engineered for use with Group 1 gases.
  - Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011
  - Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.
  - Manual operated inside screw globe valves, size range DN25 and DN40.
  - Available with copper and stainless steel stubs.
- CE Marked according to the Pressure Equipment Directive

Please contact us for other options.

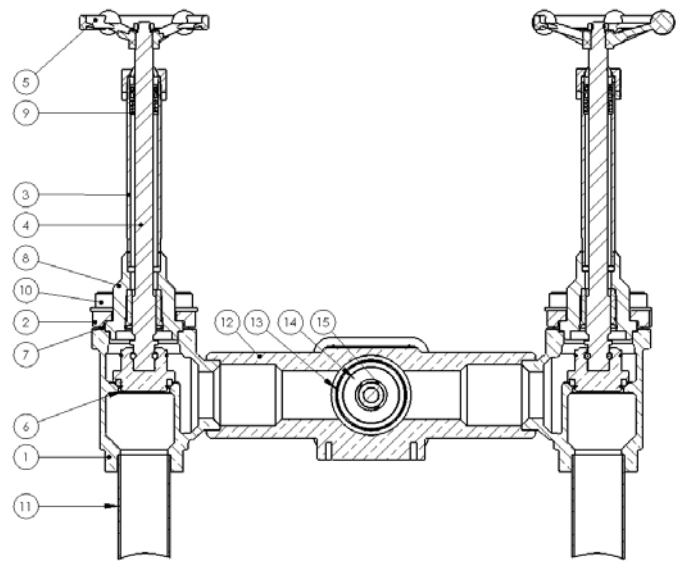


# Cryogenic Manifold Fill Assemblies

Bronze

DN25 & DN40 (1" & 1½")

Materials	
	Bronze
1. Body	Gunmetal BSEN 1982 CC491K
2. Bonnet	Gunmetal BSEN 1982 CC491K
3. Tube, Extension	Stainless Steel ASTM A312 TP 304L
4. Stem	Stainless Steel BSEN 10088-3 1.4401
5. Handwheel	Aluminium
6. Disc	HT Brass BSEN 12164 CW721R
7. Gasket	Sigma 511
8. Seal	PCTFE
9. Gland Packing	Virgin PTFE Sigma 511
10. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
11. Down Pipe	Stainless Steel ASTM A312 TP304L
12. Central Body	Gunmetal BSEN 1982 CC491K
13. Strainer	Brass
14. Disc	HT Brass BSEN 12164 CW721R



## Specifications

### Short Centre Type Bronze Casting

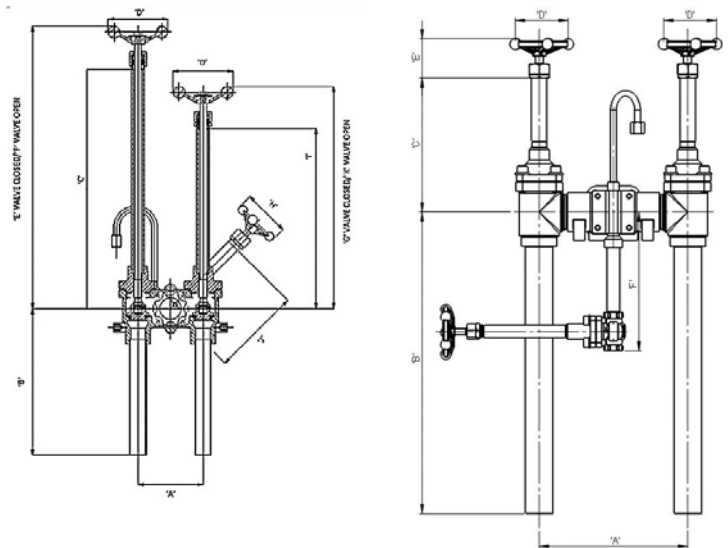
Size	Unit	DN25	DN40
A	mm	110	121
B	mm	248	248
C	mm	356	406
D	mm	102	146
E	mm	429	483
F	mm	445	502
G	mm	378	381
H	mm	79	102
I	mm	305	305
J	mm	152	152
K	mm	394	400
Cv	US GPM	13.2	26.5
Weight	kg	12.5	15

### Short Centre Type Bronze Casting

Size	Unit	DN25	DN40
A	mm	110	120
B	mm	248	248
C	mm	400	400
D	mm	101	121
E	mm	75	80
F	mm	300	300
G	mm	1" NB Schd.10	1½" NB Schd.10
H	mm	79	112
J	mm	111	156
Cv	US GPM	13.2	26.5
Weight	kg	12.5	15
F	mm	292	292

### Long Centre Type Bronze Casting

Size	Unit	DN25	DN40
A	mm	295	301
B	mm	85	85
C	mm	230	230
D	Dia mm	101	121
E	mm	90	90
F	mm	118	118
G	mm	Socket End To Suit 1" NB Schd.10	Socket End To Suit 1½" NB Schd.10



All dimensions are approximate

# Cryogenic Lift Check Valve

## Stainless Steel

DN6, 10, 15, 20, 25, 40, 50, 65, 80, 100 & DN150 (1/4" – 6")

Lift check valves with bolted bonnet, integral seat and renewable PTFE seal, complete with bronze internals. Stainless steel body available with flanged, butt weld and socket ends. The Lift Check is of a cone seat design for zero leak shut off.

The bolted bonnet allows for easy maintenance, even in confined spaces.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN80 Stainless Steel Lift Check Valve with Socket Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- Precision investment cast body – smooth surface finish
- PTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Full bore
- Fast/easy maintenance of PTFE components

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive.

Please contact us for other options.



DN40 Butt Weld



DN40 Flanged Ends



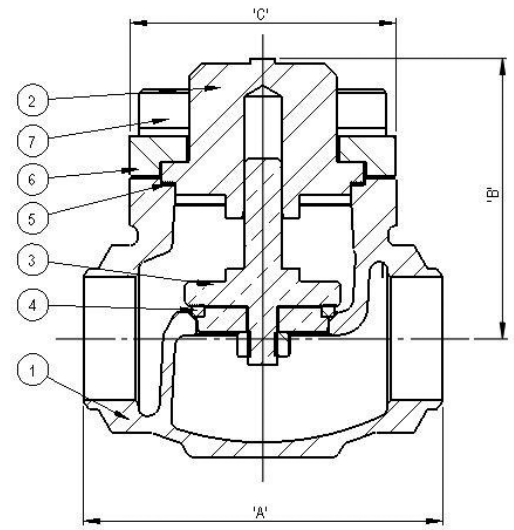
DN40 Socket Ends

# Cryogenic Lift Check Valve

Stainless Steel

DN6, 10, 15, 20, 25, 40, 50, 65, 80, 100 & DN150 (1/4" – 6")

Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BSEN 10088-3 1.4401
3. Disc	HT Brass BSEN 12164 CW721R
4. Seal	Virgin PTFE
5. Gasket Bonnet	Sigma 511
6. Bonnet Flange	Stainless Steel - ASTM A351 CF8M
7. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



## Specifications

### Butt Weld Ends

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"	DN150 6"
A	mm	68	68	68	92	92	121	146	178	178	292	400
B	mm	51	51	51	60	71	84	107	145	145	193	260
C	mm	55	55	55	66	66	81	108	130	133	169	305
Cv	US GPM	3.6	3.6	3.6	13.2	13.2	26.5	43	68	98	174	400
Weight	Kg	1	1	1	1.5	1.6	3.2	6.5	9	13.4	35	110
Opening Pressure	PSI	0.37	0.37	0.37	0.37	0.37	0.24	0.21	0.25	0.27	0.34	0.5

### Flanged Ends (Class 300)

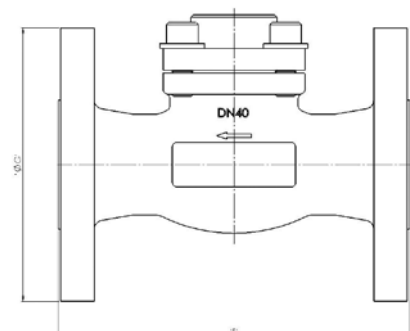
Size	Unit	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"	DN150 6"
F	mm	130	160	160	200	230	290	310	350	406
G	mm	95	124	124	155	165	191	210	254	279
Flange Thickness	mm	14	18	18	21	22	25	28	32	25
Weight	Kg	2.2	4.5	4.5	8.6	13.5	19.5	27.4	53	125

Class 150 valves available on request

DN150 sizes are to Class 150 pressures only

### End Connections

DN6 - DN50	Socket Ends
DN6 - DN150	Butt Weld
DN15 - DN150	Flanged



# Cryogenic Lift Check Valve

## Bronze

DN6, 10, 15, 20, 25, 40 & DN50 (1/4" – 2")

Lift check valves with bolted bonnet, integral seat and renewable PTFE disc, complete with bronze internals. Bronze body available with Socket Ends or BSP Parallel/NPT threaded end connections and Stainless Steel stubs. The Lift Check is of a cone seat design for zero leak shut off.

The bolted bonnet allows for easy maintenance, even in confined spaces with lower bolting torques.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN15 Bronze Lift Check Valve with Socket Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)


Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- PTFE seal to ensure tight shut off at all times
- Designed and engineered specifically for cryogenic service
- Full bore
- Fast/easy maintenance of PTFE components

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

 Marked according to the Pressure Equipment Directive.

Please contact us for other options.



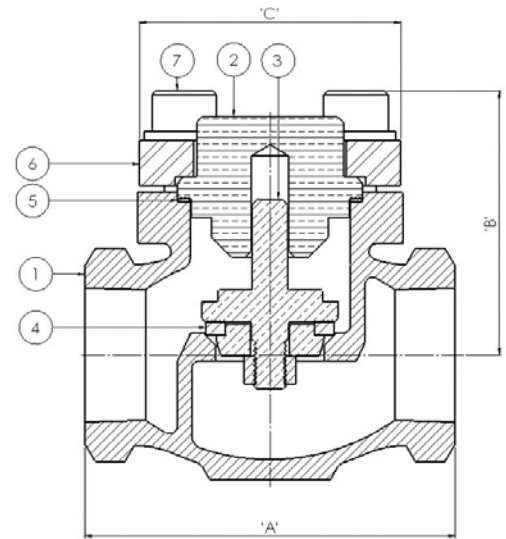
DN25 with Stainless Steel Stubs

# Cryogenic Lift Check Valve

**Bronze**

DN6, 10, 15, 20, 25, 40 & DN50 (1/4" – 2")

Materials	
	<b>Bronze</b>
1. Body	Gunmetal BSEN 1982 CC491K
2. Cover	Stainless Steel BSEN 10088-3 1.4401
3. Disc	HT Brass BSEN 12164 CW721R
4. Seal	Virgin PTFE
5. Gasket Bonnet	Sigma 511
6. Bonnet Flange	Stainless Steel - ASTM A351 CF8M
7. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



## Specifications

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
A	mm	68	68	68	76	92	121	146
B	mm	51	51	51	60	71	84	107
C	mm	55	55	55	66	66	81	108
Cv	US GPM	3.6	3.6	3.6	6.2	13.2	26.5	43
Weight	Kg	1	1	1	1.3	1.8	3.7	6.4
Opening Pressure	PSI	0.37	0.37	0.37	0.37	0.37	0.24	0.21

### End Connections

BSP Parallel / NPT / Stainless Steel Stubs / Socket Ends

# Cryogenic Swing Check Valve

## Stainless Steel

DN25, 40, 50 & DN80 (1", 1½", 2" & 3")

A Stainless Steel swing check valve with a PTFE seal incorporated into the valve disc ensures a drop tight shut off at ambient temperatures and a leakage rate complying with EN1626 "Valves for Cryogenic Service" under cryogenic conditions.

A wide opening allows high flow rates at low-pressure drops.

The design incorporates a bolted bonnet and a unique easy assemble valve disc assembly.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN50 Stainless Steel Swing Check Valve with Butt Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Designed and engineered specifically for cryogenic service
- Precision investment cast body – smooth surface finish
- Lapped seating face to ensure tight shut-off
- Offset centre of gravity of the disc assembly
- The disc hits the seat face squarely giving even wear across the seal
- Improved low differential pressure seating
- Very low leak rates achievable
- Unique Bestobell cover to avoid incorrect assembly
- PTFE seal to ensure tight shut off

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive.

Please contact us for other options.



DN25 Butt Weld Ends



DN50 Flanged Ends



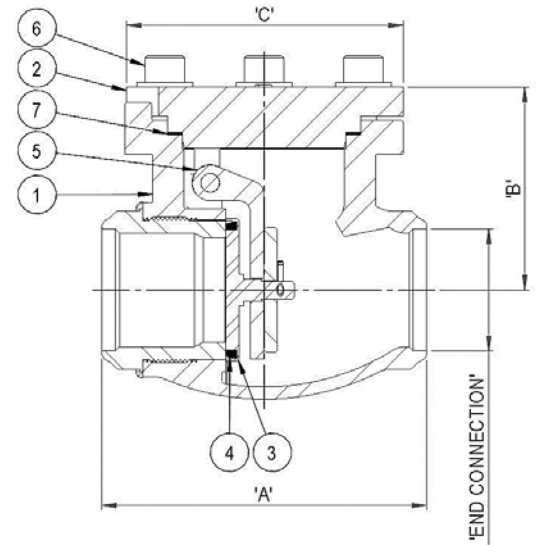
# Cryogenic Swing Check Valve

Stainless Steel

DN25, 40, 50 & DN80 (1", 1½", 2" & 3")

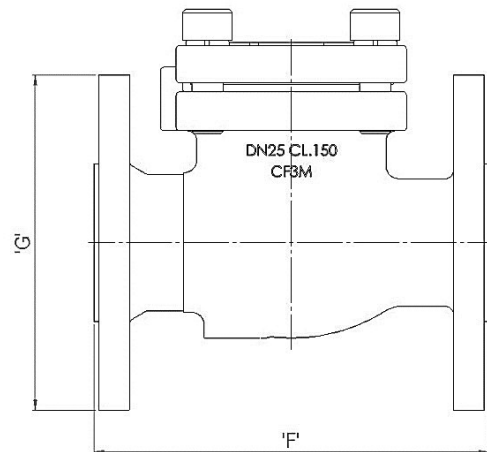
Materials	
	Stainless Steel
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel ASTM A351 CF8M
3. Disc	Stainless Steel BSEN 10088-3 1.4401
4. Seal	Virgin PTFE
5. Arm	Stainless Steel ASTM A351 CF8M
6. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70
7. Gasket	Sigma 511

\* Bronze version available on request.



## Specifications

Size	Unit	DN25	DN40	DN50	DN80
A	mm	92	121	146	260
B	mm	64	73	92	110
C	mm	70	110	125	155
Cv	US GPM	20	48	90	192
Weight	kg	2	3.8	5.9	15.2
Opening Pressure	PSI	0.21	0.22	0.22	0.5



Size	Unit	DN25 1"	DN50 2"	DN80 3"
F	mm	127	203	241
G	mm	108	152.4	190.5
Flange Thickness	mm	11	19	23.8
Weight	Kg	3.3	10	20

## End Connections

Butt Weld / Flanged

# Cryogenic Strainer

## Stainless Steel

DN6, 10, 15, 20, 25, 40, 50, 65, 80 & DN100 (¼" – 4")

Cryogenic strainers can be supplied with stainless steel bodies and are available with socket weld, butt weld & flanged ends. Bolted bonnet allows for easy maintenance.

100 mesh filters are supplied as standard however other mesh sizes can be supplied on request.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN40 Stainless Steel Strainer with Butt Weld Ends)*



### Maximum Working Pressure (MWP)


(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- Precision investment cast body – smooth surface finish
- Designed and engineered specifically for cryogenic service
- Full bore
- Adequate strainer area to ensure full flow of fluid through the unit

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.
-  Marked according to the Pressure Equipment Directive.

Please contact us for other options.



DN40 Flanged Ends



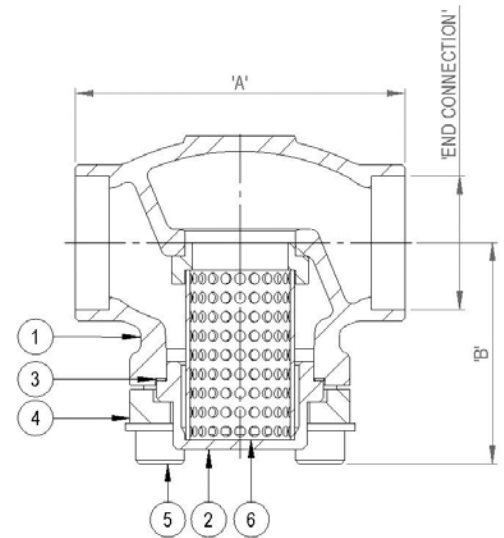
DN100 Butt Weld Ends

# Cryogenic Strainer

Stainless Steel

DN6, 10, 15, 20, 25, 40, 50, 65, 80 & DN100 (1/4" – 4")

Materials	
	<b>Stainless Steel</b>
1. Body	Stainless Steel ASTM A351 CF8M
2. Cover	Stainless Steel BS EN 10088-3 1.4401
3. Gasket	Sigma 511
4. Loose Flange	Stainless Steel ASTM A351 CF8M
5. Fasteners	Stainless Steel BS6105 A2 / A4 Gr.70
6. Filter	Copper / Monel Gauze



## Specifications

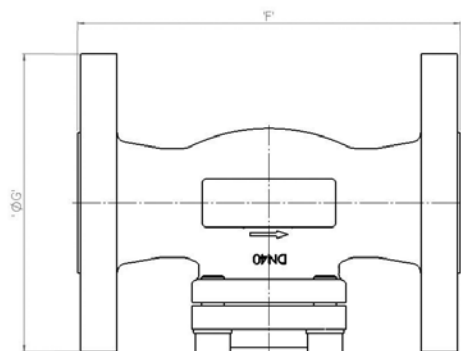
Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"
A	mm	68	68	68	92	92	121	146	178	178	292
B	mm	55	55	55	66	66	81	108	145	160	229
Cv	US GPM	16	16	16	44	44	80	128	192	260	390
Weight	kg	1	1	1	1.6	2	2.6	5.4	7	10	33

### Flanged Ends (Class 300)

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"
F	mm	130	130	130	160	160	200	230	290	310	350
G	mm	95	95	95	124	124	155	165	191	210	254
Flange Thickness	mm	14	14	14	18	18	21	22	25	28	32
Weight	kg	2.2	2.2	2.2	5	5	8	12.4	17.5	24	51

### End Connections

Butt Weld / Socket Ends / Flanged



# Cryogenic Strainer

## Bronze

DN6, 10, 15, 20, 25, 40 & DN50 (1/4" – 2")

Cryogenic strainers can be supplied with bronze bodies and are available with socket weld and threaded ends. Bolted bonnet allows for easy maintenance.

100 mesh filters are supplied as standard however other mesh sizes can be supplied on request.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN25 Bronze Strainer with Socket Weld Ends)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

### Features

- Unique Bestobell loose flange bolted bonnet design allows for thermal expansion and contraction and eliminates leakage at the bonnet gasket
- Designed and engineered specifically for cryogenic service
- Full bore
- Adequate strainer area to ensure full flow of fluid through the unit

### Technical

- Designed and engineered for use with Group 1 gases.
  - Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
  - Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.
- CE Marked according to the Pressure Equipment Directive.
- Please contact us for other options.



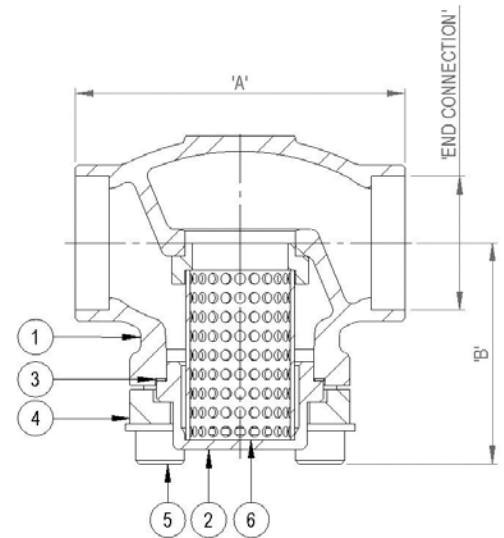
DN25 with Stainless Steel Stubs

# Cryogenic Strainer

**Bronze**

DN6, 10, 15, 20, 25, 40, & DN50 (1/4" – 2")

Materials	
	<b>Stainless Steel</b>
1. Body	Gunmetal BS EN 1982 CC491K
2. Cover	Stainless Steel BS EN 10088-3 1.4401
3. Gasket	Sigma 511
4. Loose Flange	Stainless Steel ASTM A351 CF8M
5. Fasteners	Stainless Steel BS6105 A2 / A4 Gr.70
6. Filter	Copper / Monel Gauze



## Specifications

Size	Unit	DN6 1/4"	DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN40 1 1/2"	DN50 2"
A	mm	68	68	68	76	92	121	146
B	mm	55	55	55	66	66	81	108
Cv	US GPM	16	16	16	44	44	80	128
Weight	kg	1	1	1	1.6	1.8	3.1	5.1

### End Connections

Socket Ends / BSP / NPT Threaded

# ASPRO

## Stainless Steel

DN6 & DN20 (1/4" & 3/4")

The ASPRO (Automatic Sensing Pressure Reversing Obturator) is a concept that addresses the issue of back contamination from high-pressure carbon dioxide cylinders removing the opportunity for gas contamination. This is a particular problem in the food and beverage industry, where on numerous occasions, contamination has occurred leading to product recalls and brand damage.

There are also a growing number of applications in pharmaceutical production and clean process used in industrial production.

The ASPRO was developed for the prevention of back contamination of CO2 from a high-pressure cylinder, or dewar to the main flow stream, preventing back flow pressures up to 3600psi (250bar), in accordance with recommendations requested by EIGA and BCGA.

The flow co-efficient (CV) allows full flow of media from filling stations and portable delivery systems therefore no delay in filling time.

*(Main image shown is a DN20 Stainless Steel ASPRO Valve)*



### Maximum Working Pressure (MWP)

(Subject to End Connections)

DN6 - 110bar (1600 psi)

DN20 - 207bar (3000 psi)

Temperature range -20°C to +65°C

### Features

- Fully automatic: no operator involvement required to operate the valve

(Please note - The above temperature rating is primarily for CO2. Other operating temperatures, for different media, are available upon request)

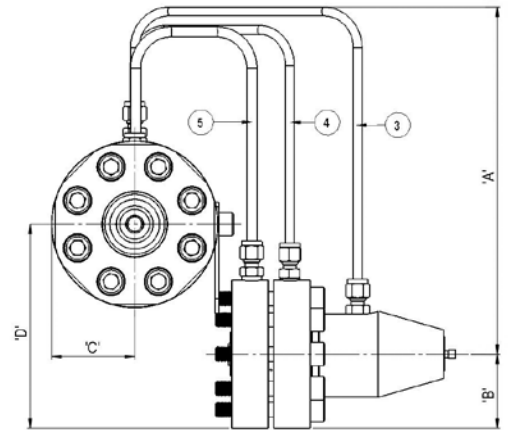
- Designed for single point filling lines
- Weight: 4kgs (8.9lbs)

### Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.

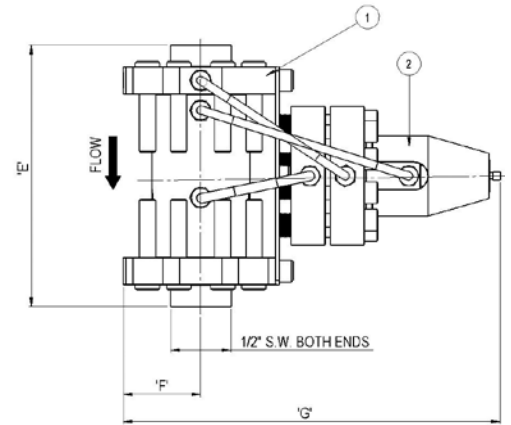
Please contact us for other options.

Materials	
	<b>Stainless Steel</b>
1. Shuttle Valve	Stainless Steel 316 BS EN 10088-3 1.4401
2. Diaphragm Valve	Stainless Steel 316 BS EN 10088-3 1.4401
3. Pipe to Upstream	Stainless Steel ASTM A351 TP316L
4. Pipe to Vent	Stainless Steel ASTM A351 TP316L
5. Pipe to Downstream	Stainless Steel ASTM A351 TP316L

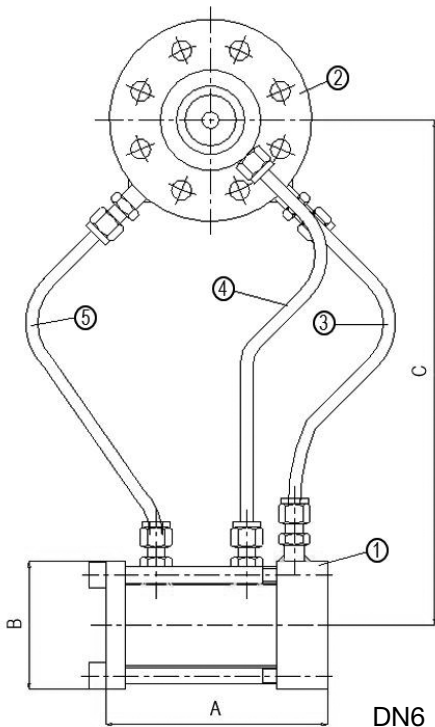


**Specifications**

Size	Unit	DN6 1/4"	DN20 3/4"
A	mm	110	238
B	mm	64	51
C	mm	230	57
D	mm	-	140
E	mm	-	192
F	mm	-	57
G	mm	-	278



DN20



DN6: 1/4" TR ONLY  
 DN20: 3/4" TR, 1/2" Socket Weld

# Flow Diverter Ball Valve

## Bronze

DN20, 25, 32 & DN50 (¾", 1", 1¼" & 2")

It is essential that a cryogenic liquid storage vessel is always protected by a relief valve. If only one relief valve was fitted to the vessel it would be impossible to disconnect for routine maintenance or checking of lifting pressures without prejudicing the safety of the vessel.

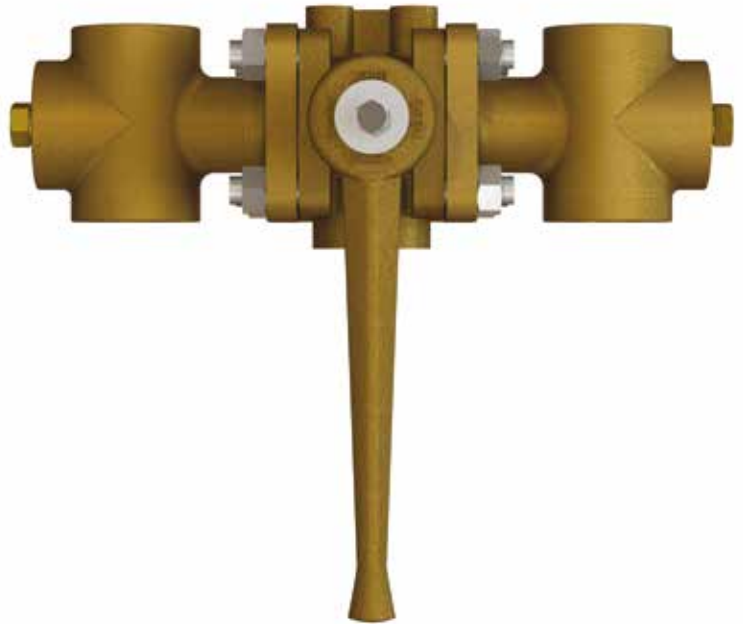
For this reason, all cryogenic storage tanks require two relief valves to be connected to the tank via a flow diverter valve. This allows one relief valve to remain connected to the vessel while the other undergoes maintenance.

The Bestobell flow diverter is a quarter turn ball valve design allowing for fast changeover between relief valves. It is available in a very wide range of configurations to suit the customer's requirements. The valve comprises three main components: the centre body incorporating the inlet port, ball and operating lever, and the two end adaptors incorporating the various outlet ports. It is available in four basic sizes (DN20, DN25, DN32 and DN50) determined by the diameter of the flow passages through the ball.

This valve is usually at the hub of a fairly complex piping system and many variations on the basic design have evolved to suit customers' specific requirements. An outline of the various options is given below for simplicity; the centre body is described separately from the end flanges.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN20 Bronze Flow Diverter Ball Valve)*



## Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

CE Marked according to the Pressure Equipment Directive.

Please contact us for other options.

## Maximum Working Pressure (MWP)

(Subject to End Connections)

Up to 50 bar (725 psi) at -196°C to +65°C

## Features

The position of the entry port helps the system designer to fit the valve into the particular space and position he has available. With the bottom entry valve, the inlet port is on the opposite side of the centre body from the opening lever (see drawing). The front entry valve has the inlet port on the face at 90° to the operating lever (photograph). The DN20, DN32 and DN50 valves are available with bottom or front entry configurations.

The three position "T"-port offers significant advantages. The first of these is that it is possible to have both relief valves connected to the storage vessel (or mobile tanker) at one time. This enables the discharge of higher volumes of gas, which in turn allows faster filling or quicker tank turnaround. The second main advantage is that, even during movement of the operating lever from one position to another, the flow capacity of the valve is not reduced below that available from one fully open port. The integrity of the vessel is not threatened, therefore, even if the operator inadvertently leaves the operating lever mid-position.

The vital part that the diverter valve plays in the integrity of a storage system requires it to be designed with safety in mind. The following features help to ensure that the valve fulfils its role reliably.

Anti-blow out stem, porting indications on handle, handle designed to prevent attachment to valve in wrong position, ball machined to prevent incorrect assembly & drilled and tapped mounting bosses to allow rigid mounting.



# Flow Diverter Ball Valve

Bronze

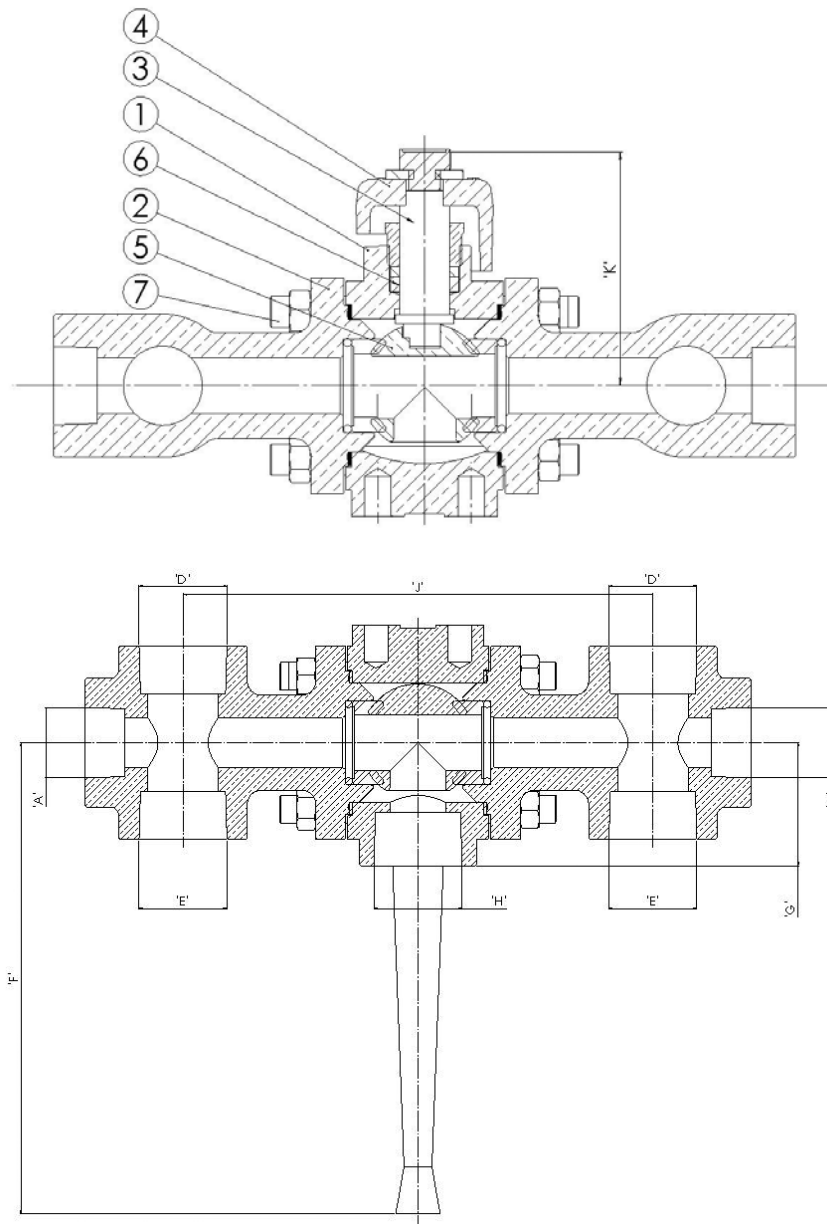
DN20, 25, 32 & DN50 (¾", 1", 1¼" & 2")

Materials	
	Bronze
1. Body	Gunmetal BSEN 1982 CC491K
2. End Adaptors	Gunmetal BSEN 1982 CC491K
3. Spindle	HT Brass BSEN 12164 CW721R
4. Lever	Gunmetal BSEN 1982 CC491K
5. Ball	Brass
6. Seat, Gland	Virgin PTFE
7. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70

## Specifications

### End Adaptors Configuration

The main function of the end flanges is to duct the flow from the centre body to the relief valves. In addition to this primary function however, is the subsidiary one of providing additional ports to allow connection of pressure test apparatus and/or bursting disc. The variety of options is laid out in tables 1 to 4. Note that the end flanges can be fitted in any one of four positions, each at 90° to the other. The operating arc of the valve lever may prevent several of these positions being used because of the 180° lever operation.



DN20 Diverter

A	D	E	F	G	H	J	K	Bottom or Front Entry	Part No.	Weight	CV
-	¾" PL	¾" PL	170	44	1"NB	168	75	B	CJB40SS5ABT1T	6	10.8 USGPM (1 port)
-	½" PL	½" PL	170	44	1"NB	168	75	B	CJB40TA5AAT1T	6	10.8 USGPM (1 port)
¾" NPT	1" NPT	1" NPT	170	44	1"NPT	168	75	B	CJB40TE5BZT1T	6	10.8 USGPM (1 port)
¼" NPT	¾" NPT	¾" NPT	170	44	1" NPT	168	75	F	CJF40SS5APT1T	6	10.8 USGPM (1 port)
-	1" PL	1" PL	170	44	1" NB	168	75	F	CJF40SS5B2T1T	6	10.8 USGPM (1 port)
¼" NPT Plugged	½" NPT	½" NPT	170	44	1" NB	168	75	F	CJF40555H4E1T	6	10.8 USGPM (1 port)
¼" NPT Plugged	1" TR	1" TR	170	44	1" NB	168	75	F	CJF40555H6E1T	6	10.8 USGPM (1 port)
½" PL Plugged	3/8" PL Plugged	¾" PL	170	44	1"PL	168	75	F	CJF40TA5AKE1TVA	6	10.8 USGPM (1 port)
¾" TR Plugged	¼" NPT	¾" TR	170	44	1" TR	168	75	F	CJF40TC5B8E1TVA	6	10.8 USGPM (1 port)
¼" NPT	¾" NPT Plugged	¾" NPT	170	44	1" NPT	168	75	F	CJF40TE5APT1T	6	10.8 USGPM (1 port)
-	¾" NPT Plugged	¾" NPT	170	44	1" NPT	168	75	F	CJF40TE5BEE1TVA	6	10.8 USGPM (1 port)
-	½" NPT Plugged	½" NPT	170	44	1" NPT	168	75	F	CJF40TE5BFE1TVA	6	10.8 USGPM (1 port)
-	½" PL	½" PL	170	44	M40/2	168	75	F	CJF40TH5B8E1TVA	6	10.8 USGPM (1 port)

DN25 Diverter

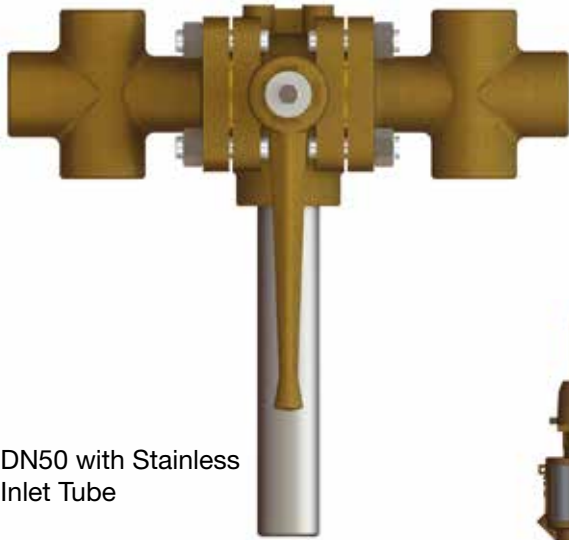
A	D	E	F	G	H	J	K	Bottom or Front Entry	Part No.	Weight	CV
¼" NPT	¾" NPT	¾" NPT	170	60	1"NPT	200	75	B	CJF50TE5APE1T	8.2	19 USGPM (1 port)

DN32 Diverter

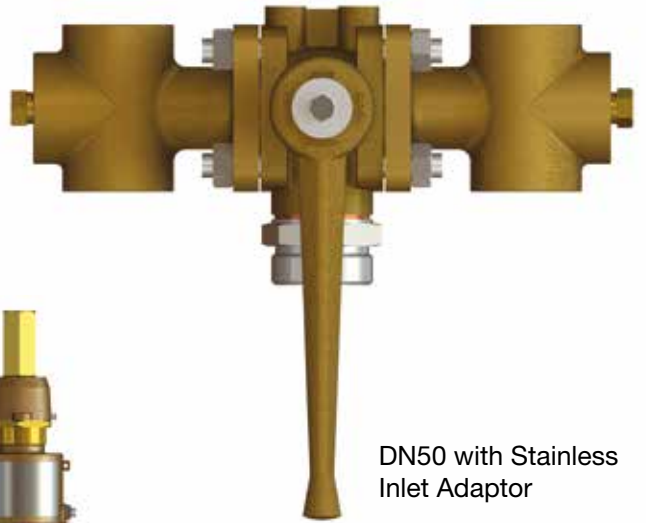
A	D	E	F	G	H	J	K	Bottom or Front Entry	Part No.	Weight	CV
1 ½" NPT	-	-	225	67.5	1 ½" NPT	223	75	B	CJB60TE6C9E1T	12	31 USGPM (1 port)
-	1 ¼" TR	1 ¼" TR	225	67.5	1 ½" NB	223	75	F	CJF60SS7BEE1T	12	31 USGPM (1 port)
¼" NPT	¾" NPT	1" NPT	225	67.5	1 ½" NB	223	75	F	CJF60SS7CHE1T	12	31 USGPM (1 port)
-	1" TR	1" TR	225	67.5	1 ½" NB	223	75	F	CJF60SS7CJEITQ5	12	31 USGPM (1 port)
¼" NPT	1" NPT	1" NPT	225	67.5	1 ½" NB	223	75	F	CJF60SS7CLE1T	12	31 USGPM (1 port)
¼" NPT	1" NPT	1" NPT	225	67.5	1 ½" NPT	223	75	F	CJF600SS7CLE1T	12	31 USGPM (1 port)
-	1 ¼" TR	1 ¼" TR	225	67.5	1 ½" TR	223	75	F	CJF60TC6BE1T	12	31 USGPM (1 port)

DN50 Diverter

A	D	E	F	G	H	J	K	Bottom or Front Entry	Part No.	Weight	CV
3/8" TR	1 1/4" PL	1 1/4" PL	225	95	1 1/2" NB	222	75	B	CJB80TA6E4T1T	19	84 USGPM (1 port)
3/8" TR	1 1/2" PL	1 1/2" PL	225	95	1 1/2" NB	222	75	B	CJB08TA6EDT1T	19	84 USGPM (1 port)
-	1" TR	1" TR	225	95	2" TR	222	75	B	CJB80TC7FGE1T	19	84 USGPM (1 port)
1/4" TR	1" TR	1 1/4" TR	225	95	1 1/2" NB	222	75	F	CJF80SS6F4TITQC	19	84 USGPM (1 port)
3/4" TR Plugged	1/4" NPT Plugged	1 1/4" TR	225	95	2" TR	222	75	F	CJF80TC7EPEITVA	19	84 USGPM (1 port)
-	2" TR	2" TR	225	95	2" NB	222	75	F	CJF80SS7F2T1T	19	84 USGPM (1 port)
1" TR Plugged	1/4" NPT Plugged	3/4" NPT	225	95	2" TR	222	75	F	CJF807FDEITVA	19	84 USGPM (1 port)
3/4" TR	1/4" NPT	3/4" TR	225	95	2" TR	222	75	F	CJF80TC7F6E1T	19	84 USGPM (1 port)
-	2" PL	2" PL	225	95	2" TR	222	75	F	CJF80TC7F6E1T	19	84 USGPM (1 port)
-	1 1/2" TR	1 1/2" TR	225	95	2" TR	222	75	F	CJF80TC7EDE1T	19	84 USGPM (1 port)



DN50 with Stainless Inlet Tube



DN50 with Stainless Inlet Adaptor



DN20 (1" Coupling) with Safety Relief Valves

# Flow Diverter Globe Valve

## Bronze

DN25 (1")

It is essential that a cryogenic liquid storage vessel is always protected by a relief valve. If only one relief valve was fitted to the vessel it would be impossible to disconnect for routine maintenance or checking of lifting pressures without prejudicing the safety of the vessel.

For this reason, all cryogenic storage tanks require two relief valves to be connected to the tank via a flow diverter valve. This allows one relief valve to remain connected to the vessel while the other undergoes maintenance.

The Bestobell Flow Diverter Globe Valve has a design that allows for a fast changeover between relief valves. It is available with various inlet/outlet connections to suit the customer's requirements.

The valve design is similar to a globe valve but with two internal seats which will allow one relief valve to be live or both relief valves to be live depending on the position of the centre body incorporating the inlet port, ball and operating lever, and the two end adaptors incorporating the various outlet ports.

This valve is usually at the hub of a fairly complex piping system and many variations on the basic design have evolved to suit customers' specific requirements. An outline of the various options is given below for simplicity; the centre body is described separately from the end flanges.

All valves are degreased for oxygen duty, assembled in clean room conditions and pressure tested prior to dispatch.

*(Main image shown is a DN25 Bronze Flow Diverter Globe Valve)*



DN25 with Inlet Adaptor

## Technical

- Designed and engineered for use with Group 1 gases.
- Designed and manufactured in accordance with ASTM B31.1, BSEN 1626 and BS ISO 21011.
- Optional full material traceability backed by BSEN 10204 3.1/3.2 certification.

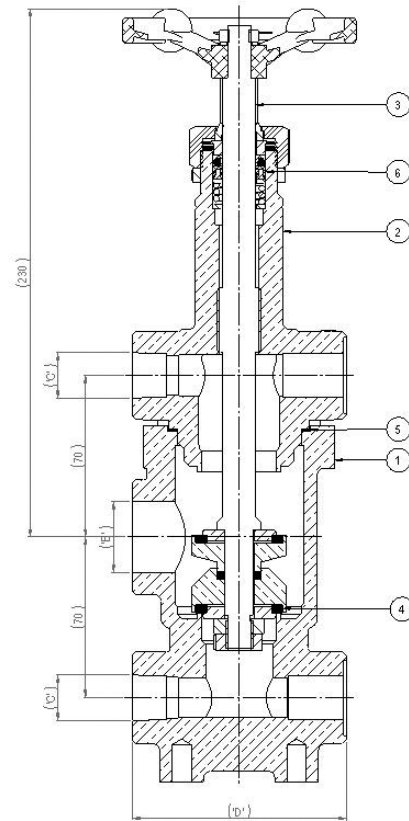
CE Marked according to the Pressure Equipment Directive.

Please contact us for other options.

# Flow Diverter Globe Valve

Bronze  
DN25 (1")

Materials	
	Bronze
1. Body	Gunmetal BSEN 1982 CC491K
2. Cover	Gunmetal BSEN 1982 CC491K
3. Stem	HT Brass BSEN 12164 CW721R
4. Seal	Hostafion 25% Glass Filled PTFE
5. Gasket	Sigma 511
6. Packings	Virgin PTFE
7. Fasteners	Stainless Steel BS6105 A2/A4 Gr.70



## Specifications

A	B	C	D	E	F	G	H	J	Part No.	Weight (kg)	CV (USGPM)
70	70	1/2" BSP-PL	1" BSP-PL	93	1/2" BSP-TR	116	318	291	CND50MRL1FA12	5.6	6.5
70	70	1/2" NPT	1" NPT	93	3/4" NPT	116	318	291	CND50MRL1FA19	5.6	6.5
70	70	1/2" NPT	1" NPT	93	1/2" NPT	116	318	291	CND50MRL1FA23	5.6	6.5

# Truflo

## Bronze

DN10, 15, 20, 25, 32 & DN40 (3/8" – 1 1/2")

The TRUFLO switch ensures protection against flow changes that could be detrimental to equipment and processes. The TRUFLO functions by diaphragm action brought about by a flow through a calibrated nozzle. The movement of the diaphragm is used to operate a microswitch.

The underside of the diaphragm is in direct contact with the inlet flow, the upper side with the outlet flow from the calibrated nozzle. With no flow through the TRUFLO a spring loaded plunger holds the diaphragm in the down position.

Flow through the calibrated nozzle causes a pressure differential between top and bottom of the diaphragm, with the higher pressure on the underside of the diaphragm, pushing it upwards. This in turn causes the plunger to move, which activates the microswitch.

*(Main image shown is a DN15 Bronze Truflo)*



### Maximum Working Pressure (MWP)

Max. Working Pressure: 150psi (10.6 kg/cm<sup>2</sup>)

Min. Working Pressure: 3psi (0.21 kg/cm<sup>2</sup>)

Pressure Differential to Activate Switch: 2psi

Max Temp: 70 °C (160 °F)

Min Temp: 1 °C (34 °F)

### Features

To warn against insufficient flow as standard or to warn against excessive flow on request

Life Expectancy - 500,000 operations @ 15amps /  
6,000,000 operations @ 5amps

Further models available:

- Standard; Freshwater, etc.
- Industrial; Waterproof & for demineralised water
- Marine M.O.D. (N) and NATO materials

Main Diaphragm – Nitrile (Silicone available on request)

Electrical Data:

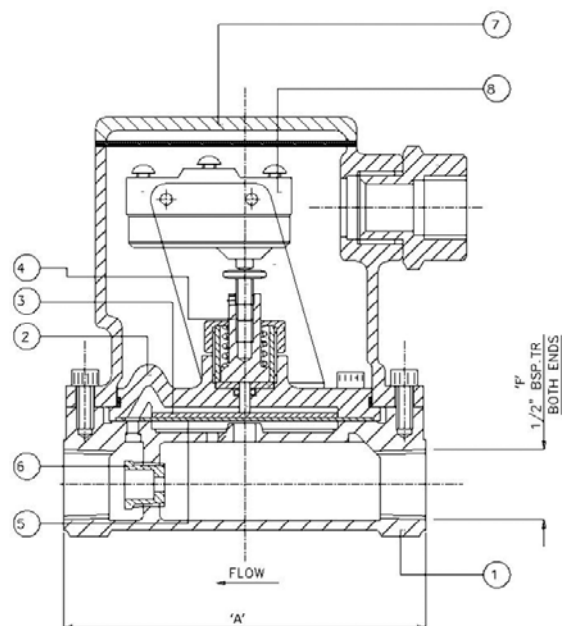
- 125,250 or 480V AC-15 amps
- 250V DC-1/4 amp
- 125V DC-1/2 amp

### Models Available

Industrial (Waterproof and for Demineralised water)

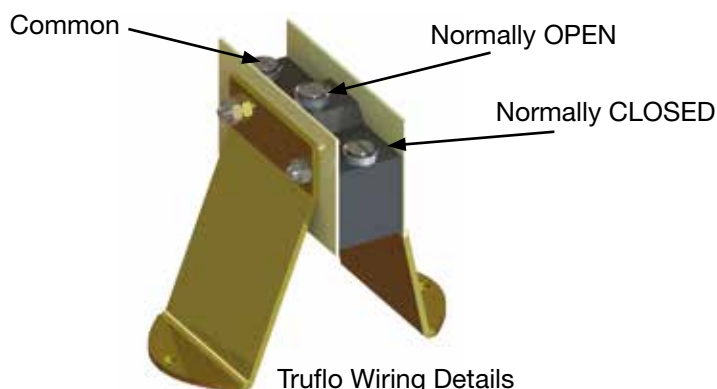
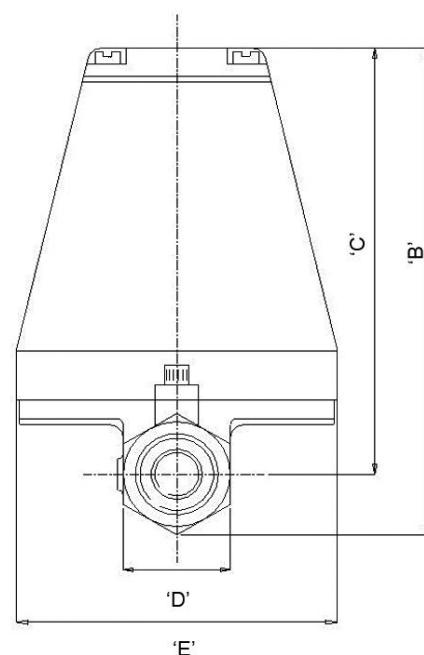
Marine M.O.D. (N) and NATO materials

Materials	
	Bronze
1. Body	Gunmetal BS EN 1982 CC491K
2. Flange Plate	Naval Brass BS EN 12163 CW712R
3. Pressure Plate	SS 316 BS EN 10088-3 1.4401
4. Plunger	Naval Brass BS EN 12163 CW712R
5. Main Diaphragm	Nitrile (Standard)
6. Nozzle	Naval Brass BS EN 12163 CW712R
7. Cover Lid	Gunmetal BSEN 1982 CC492K
8. Microswitch	N/A



### Installation

1. It is advisable that the Truflo switch be fitted downstream of all items of equipment which require its protection. Should a Truflo be fixed upstream, and a burst takes place downstream, then no warning will be given.
2. Always fit a Truflo switch in a non-turbulent part of the circuit, i.e. always away from needle valves, sharps bends, etc., as these can cause switch 'Flutter'.
3. Do not grip the switch bracket when installing, always use the spanner flats provided. Do not use excessive pressure when making connections on to the terminals.
4. The Truflo switch is a precision, factory calibrated instrument, and any interference with its setting or with the switch mounting brackets will result in a variation of the flow warning rate.
5. The switch may be connected to a warning light, cut-off switch, or contactor relay.
6. For low flow rates, particularly of 1/2 G.P.M. and below, and where the fluid is likely to be unclean, we recommend that a strainer be fitted upstream.
7. If it is desired to restrict excess flow whilst protecting against minimum flow we suggest fitting a 'Constaflo' flow control unit upstream of the Truflo, this should be chosen to give a flow-rate of 50% above critical. The total pressure drop requirement then being 18 psi.



	Marine / Industrial	
No.	102988	102989
	94424	94425
Size	1/2" B.S.P.T.	1 1/4" B.S.P.T.
A	108mm	113mm
B	125mm	153mm
C	109mm	120mm
D	27mm	51mm
E	82mm	82mm
F	1/2" B.S.P.T.	1 1/4" B.S.P.T.

## How to order

Specify pipe size, duty, flow rate and model number

Model No.	Flow Suffix	Water Flow (2psi - 136 atm) galls/min	Water Flow (2psi - 136 atm) l/min	Air Flow (2psi - 136 atm) cu.ft./min	Air Flow (2psi - 136 atm) m3/hr	Min Pipe Diameter
Industrial Type 94424	/01N	1/10			.75	Reducers to ¼ inch or ¾ inch BSPT if required
	/02N		.50	½		
	/03N	⅛				
	/04N		.65	⅝	1.00	
	/05N		.75	¾	1.25	
	/06N	3/16				
	/07N	1/5	.88	7/8	1.50	
	/08N		1.00	1	1.75	
	/09N	¼	1.13	1 ⅛	2.00	
Marine Type 102988 Marine FT10 FT20 FT30	/10N		1.25	1 ¼	2.13	Reducers to ⅜ inch BSP if required
	/12N	5/16		1 ⅜	2.50	
	/14N	⅜	1.50	1 ⅝	2.75	
	/15N		1.75	1 7/8	3.00	
	/16N		2.00	2	3.50	
	/17N	½	2.25	2 ¼	3.75	
	/18N		2.50	2 ½	4.25	
	/20N	⅝	3.00	2 7/8	4.75	
	/21N	¾	3.25	3 ¼	5.50	
	/22N		3.50	3 ⅝	6.00	
	/23N	7/8	4.00	4	7.00	
	/24N	1	4.50	4 ½	7.75	
	/25N	1 ⅛	5.00	5	8.50	
	/26N	1 ¼	5.50	5 ⅝	9.50	
	/27N	1 ⅜	6.25	6 ¼	10.00	
	/28N	1 ½	7.25	7 ¼	12.25	
	/29N	1 ¾	8.00	8	14.00	
	/30N	2	9.00	9	15.00	
/31N	2 ¼	10.00	10 ⅛	17.00	½ inch BSPT	
/32N	2 ½	11.00	11 ¼	19.00		
/33N	2 ¾	12.50	12 ½	21.50		
/34N	3	14.00	14 ¼	24.00		
/35N	3 ½	16.00	16	27		
/36N	4	18.00	18	31.00		



Model numbers 102917, 94425, and 102989 with 1 ¼" BSPT (BS21/ISO R7) female end connections.  
May be fitted with reducers as stated.

FT40	/37N	4 ½	20.00	20	34.00	Reducers to ¾" or 1" BSPT if required
	/38N	5	23.00	23	38.00	
	/39N	5 ½	25.00	26	45.00	
	/41N	6 ¼	29.00	29	48.00	
	/43N	7	32.00	32	54.00	
FT50 Industrial (Type 94425)	/45N	8	36.00	36	61.00	Reducers to 1" BSPT if required
	/47N	9	41.00	41	69.00	
	/48N	10	45.00	45	77.00	
	/50N	11	51.00	51	86.00	
	/52N	12 ½	57.00	57	96.00	
	/55N	14	64.00	63	107.00	
FT60 Marine Type (102989)	/58N	16	73.00	72	123.00	1 ¼" BSPT
	/61N	18	82.00	81	138.00	
	/63N	20	91.00	90	153.00	

No. Size	Commercial		Marine Industrial	
	102194 ½" B.S.P.T.	102917 1 ¼" B.S.P.T.	102988 94424 ½" B.S.P.T.	102989 94425 1 ¼" B.S.P.T.
A	108mm	133mm	108mm	113mm
B	122mm	121mm	125mm	153mm
C	106mm	117mm	109mm	120mm
D	27mm	51mm	27mm	51mm
E	119mm	119mm	82mm	82mm
F	54mm	54mm	81mm	94mm
G	½" B.S.P.T.	1 ¼" B.S.P.T.	½" B.S.P.T.	1 ¼" B.S.P.T.

When Ordering, please quote:	Example
Model No. and Flow Suffix	102194/24N
Pipe Size	¾
Fluid	Fresh Water
Max. Pressure	120psi
Max. Temp	60 °C
Critical Flow	1gall/min
Switch Action	To make on flow falling to 1gall/min
G	½" B.S.P.T.

# Constaflo

## Bronze

DN6, 10, 15, 20, 25, 32, 40 & DN50 (¼" – 2")

The Constaflo is a simple water flow controller using a device that ensures the maintaining of flow rates with  $\pm 10\%$  of its rated capacity when operating within the limits of temperature and pressure specified in the 'Maximum Working Pressure' section.

*(Main image shown is a DN50 Bronze Constaflo)*



### Maximum Working Pressure (MWP)

Max. Working Pressure: 200psi (14kg/cm<sup>2</sup>)

Max. Working Temperature: 65 °C

Min. Working Temperature: 1 °C

Max. Pressure Difference: 200psi (14kg/cm<sup>2</sup>)

Min. Pressure Difference: 15psi (1.06kg/cm<sup>2</sup>)

Accuracy  $\pm 10\%$  when operating in the range 15 to 200psi (1.06 to 14kg/cm<sup>2</sup>) pressure difference

## Operation

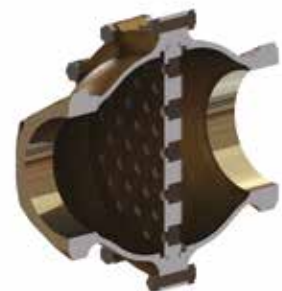
An EPDM diaphragm, working in conjunction with a profiled orifice - when subjected to pressure differences between 15 and 200psi (1.06 and 14kg/cm<sup>2</sup>) flexes on to the orifice to vary the orifice area, so maintaining a rate of flow irrespective of varying upstream or downstream pressures, within the operating range of the unit. An initial pressure drop of 15psi (1.06kg/cm<sup>2</sup>) is necessary before the unit reaches control point.



DN6

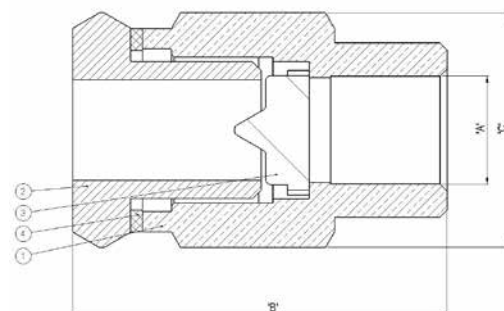


DN20

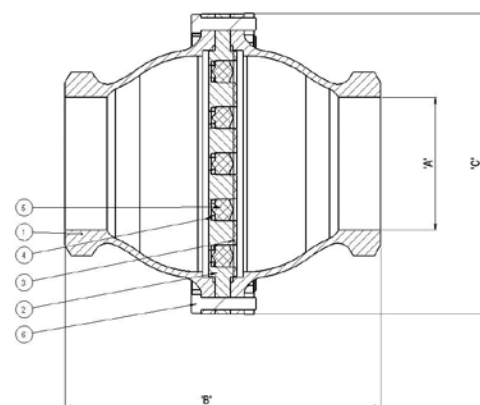


DN50 Sectioned View

Materials	
DN6-DN15	
1. Body	Gunmetal BSEN 1982 CC491K
2. Nozzle	HT Brass BS EN 12164 CW721R
3. Diaphragm	EPDM (or silicone)
4. Gasket	Nylon 66



DN20-DN50	
1. Body	Gunmetal BSEN 1982 CC491K
2. Retainer	Gunmetal BSEN 1982 CC491K
3. Retainer Diaphragm	Rigid PVC
4. Nozzle	Acetal
5. Diaphragm	EPDM (or silicone)
6. Fasteners	AL BRZ BS 2874 CA104



1/4" & 1/2" Stainless Versions Available On Request

## Specifications

Part No.		Size A.	B	B	C	C
BSPT	BSP.PL	BSPT & BSP.PL	in.	mm	in.	mm
FC10TC--BCIE	FC10TA--BC2E	1/4" (DN6)	1 19/32	41	1 1/32	26
FC20TC--BCIE	FC20TA--BC2E	3/8" (DN10)	2 1/32	51	1 1/4	32
FC30TC--BCIE	FC30TA--BC2E	1/2" (DN15)	2 3/32	53	1 15/32	37
FC40TC--BCIE	FC40TA--BC2E	3/4" (DN20)	3 17/32	91	2 7/8	73
FC50TC--BCIE	FC50TA--BC2E	1" (DN25)	3 17/32	91	2 7/8	73
FC60TC--BCIE	FC60TA--BC2E	1 1/4" (DN30)	6 3/16	157	5 1/4	133
FC70TC--BCIE	FC70TA--BC2E	1 1/2" (DN40)	8 7/8	225	7 3/8	187
FC80TC--BCIE	FC80TA--BC2E	2" (DN50)	10 5/8	270	8 3/8	213

## How to order

Specify pipe size, duty, flow rate and model number

	IMP. GALLS/MIN.	L/MIN.	Constaflo		
			¼"	⅜"	½"
Flow Data	⅙	.57	03	-	-
	¼	1.14	09	-	-
	⅓	1.70	13	-	-
	½	2.30	17	-	-
	⅚	2.80	20	-	-
	¾	3.40	21	-	-
	⅞	4.00	23	23	23
	1	4.50	24	24	24
	1 ¼	5.70	26	26	26
	1 ½	6.80	28	28	28
	1 ¾	8.00	29	29	29
	2	9.00	-	30	30
	2 ½	11.50	-	32	32
	3	13.50	-	34	34
	3 ½	16.00	-	35	35
	4	18.00	-	36	36
	4 ½	20.50	-	37	37
	5	23.00	-	38	38
6	27.00	-	40	40	

	IMP. GALLS/ MIN.	L/MIN.	Multi-Constaflo				
			¾"	1"	1 ¼"	1 ½"	2"
Flow Data	6	27.00	40	40	-	-	-
	7	32.00	43	43	-	-	-
	8	36.00	45	45	-	-	-
	9	41.00	47	47	-	-	-
	10	45.00	48	48	-	-	-
	11	50.00	50	50	-	-	-
	12	55.00	51	51	-	-	-
	13	59.00	53	53	-	-	-
	14	64.00	55	55	-	-	-
	15	68.00	-	56	56	-	-
	16	73.00	-	58	58	-	-
	17	77.00	-	59	59	-	-
	18	82.00	-	61	61	-	-
	20	90.91	-	63	63	-	-
	22	100.00	-	64	64	-	-
	24	109.00	-	65	65	-	-
	25	114.00	-	66	66	-	-
	26	118.00	-	67	67	-	-
	28	127.00	-	68	68	-	-
	30	136.00	-	-	69	69	69
	35	159.00	-	-	71	71	71
	40	182.00	-	-	73	73	73
	45	205.00	-	-	-	75	75
	50	227.00	-	-	-	77	77
	55	250.00	-	-	-	78	78
	60	277.00	-	-	-	80	80
	65	295.00	-	-	-	81	81
	70	318.00	-	-	-	83	83
	75	341.00	-	-	-	85	85
	80	363.00	-	-	-	-	87
85	386.00	-	-	-	-	89	
90	409.00	-	-	-	-	90	
95	432.00	-	-	-	-	93	
100	455.00	-	-	-	-	95	

# Spares Kits

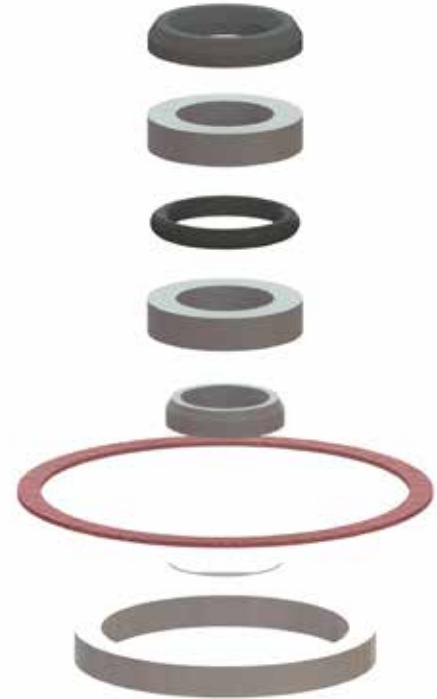
## Globe Valves & Manifold Fill Assemblies – Soft Goods Kit

DN6, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100 & DN150 (1/8" - 6")

Soft Goods Kit to suit cryogenic globe valves and manifold fill assemblies.

Suitable for use with products on the following pages:

- DS A001 - Page 4
- DS A002 - Page 6
- DS A003 - Page 8
- DS A004 - Page 10
- DS A007 - Page 16
- DS A008 - Page 18
- DS B001 - Page 20
- DS I001 - Page 48
- DS I002 - Page 50



### Consisting Of

- 1 x Wiper Seal
- 2 x Chevron Top
- 1 x 'O' Seal
- 1 x Chevron BTM
- 1 x Gasket
- 1 x A/F Disc
- 1 x Seal

### Specifications

DN	Part Numbers	Weight (kg)	Notes
6	CNBR30C	0.1	
10	CNBR30C	0.1	
15	CNBR30C	0.1	
20	CNBR40C	0.1	Bronze Valve Only
25	CNBR50C	0.1	
32	CNBR70C	0.1	
40	CNBR70C	0.1	
50	CNBR80C	0.1	
65	CNBR90C	0.1	
80	CNBRA0C	0.2	
100	CNBRB0C	0.2	
150	CNBRD0C	0.2	

# Spares Kits

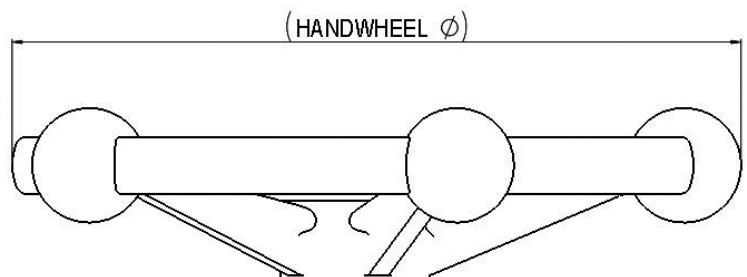
## Globe Valves, Gate Valves, Manifold Fill Assemblies & Globe Diverters - Handwheels

DN6, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100 & DN150 (1/8" - 6")

Spare Handwheel to suit cryogenic globe valves, gate valves, manifold fill assemblies and globe diverters.

Suitable for use with products on the following pages:

- DS A001 - Page 4
- DS A002 - Page 6
- DS A003 - Page 8
- DS A004 - Page 10
- DS A005 - Page 12
- DS A006 - Page 14
- DS A007 - Page 16
- DS A008 - Page 18
- DS C001 - Page 22
- DS I001 - Page 48
- DS M002 - Page 68



### Consisting Of

- 1 x Handwheel

## Specifications

Nominal Size	DN	6	10	15	20	25	32	40	50	65	80	100	150
Handwheel -Ø	B	63.5	63.5	63.5	82.55	82.55	101.6	101.6	127	152.4	203.2	380	600
Weight (kg)	kg	0.05	0.05	0.05	0.09	0.09	0.1	0.1	0.2	0.25	0.4	7	14

All weights are approximate

# Spares Kits

## Gate Valves – Wedge Disc Assembly

DN40, 50, 65, 80 & DN100 (1½” - 4”)

Disc and seal assembly replacements for cryogenic gate valves.

Suitable for use with products on the following pages:

- DS C001 - Page 22
- DS D001 - Page 24



### Consisting Of

- 1 x Disc (Phosphor Bronze) & Seal (Virgin PTFE)
- 1 x Locknut
- 1 x Spring Pin

## Specifications

Manual			Actuated		
DN	Part Numbers	Weight (kg)	DN	Part Numbers	Weight (kg)
40	S-SUBCMT7004002	0.1	-	-	-
50	S-SUBCMT8004002	0.3	50	S-SUBCMD8004000	0.3
65	S-SUBCMT9004002	0.4	65	S-SUBCMD9004000	0.4
80	S-SUBCMTA004002	0.6	80	S-SUBCMDA004001	0.6
100	S-SUBCMTA004002	0.6	-	-	-

All weights are approximate

# Spares Kits

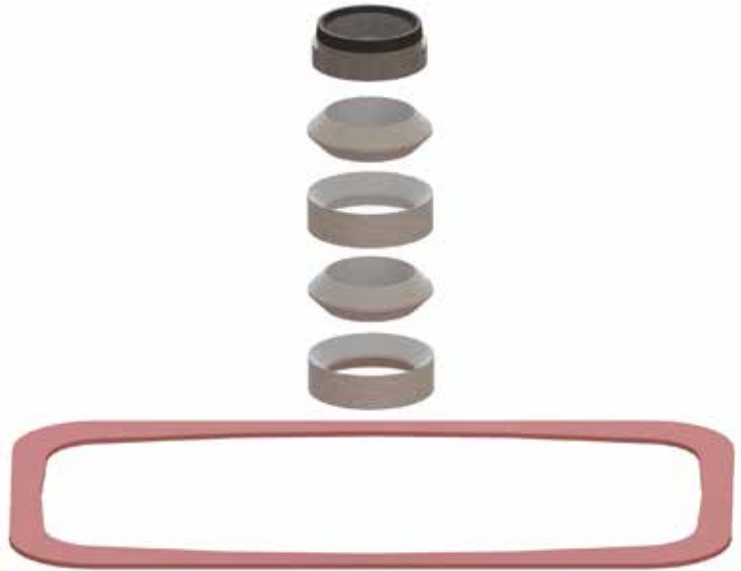
## Gate Valves - Soft Goods Kit

DN40, 50, 65, 80 & DN100 (1½" - 4")

Soft Goods Kit to suit cryogenic gate valves.

Suitable for use with products on the following page:

- DS C001 - Page 22



### Consisting Of

- 1 x Wiper Seal
- 1 x Gland Packing Set
- 1 x Gasket

### Specifications

DN	Part Numbers	Weight (kg)
40	CMCR70	0.1
50	CMCR80	0.1
65	CMCR90	0.1
80	CMCRA0	0.1
100	CMCRA0	0.1

All weights are approximate



# Spares Kits

## Ball Valves – Soft Goods Kit

DN15, 25, 40 & DN50 (½" - 2")

Cryogenic ball valve soft goods kit.

Suitable for use with products on the following pages:

- DS E001 - Page 26
- DS E002 - Page 28
- DS E003 - Page 30
- DS F001 - Page 32
- DS F002 - Page 34



### Consisting Of

- 2 x Inner/Outer Ball Seal
- 1 x Wiper Seal
- 2 x Chevron Top
- 1 x Chevron Bottom
- 1 x PTFE Bush
- 1 x Protection Cap
- 1 x 'O' Seal
- 1 x Gasket
- 2 x Brass Washer
- 1 x Spring
- 1 x Shim

### Specifications

DN	Bore	Part Numbers	Weight (kg)
10	Full	CZREPKIT15RB	0.1
15	Reduced	CZREPKIT15RB	0.1
20	Full	CZREPKIT25RB	0.1
25	Reduced	CZREPKIT25RB	0.1
25	Full	CZREPKIT40RB	0.1
40	Reduced	CZREPKIT40RB	0.1
40	Full	CZREPKIT50RB	0.1
50	Reduced	CZREPKIT50RB	0.1
65	Full	CZ0P65/80	0.3
80	Reduced	CZ0P65/80	0.3

All weights are approximate

# Spares Kits

## Gate Valves – Seat

DN50, 65, 80 & DN100 (2" - 4")

Cryogenic gate valve replacement seat.

Suitable for use with products on the following pages:

- DS C001 - Page 22
- DS D001 - Page 24



### Consisting Of

- 1 x Seat (316L) & Seal (Virgin PTFE)
- 1 x Circlip

### Specifications

DN	Part Numbers	Weight (kg)
50	CMCR80SEAT	0.3
65	CMCR90SEAT	0.4
80	CMCRA0SEAT	0.5
100	CMCRA0SEAT	0.5

All weights are approximate

# Spares Kits

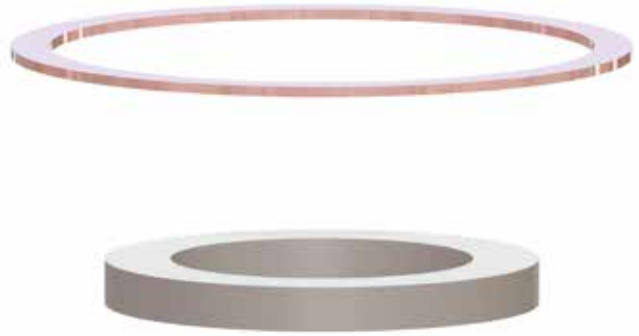
## Lift Check Valves – Soft Goods Kit

DN6, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100 & DN150 (1/8" - 6")

Soft Goods Kit to suit cryogenic lift check valves.

Suitable for use with products on the following pages:

- DS J001 - Page 52
- DS J002 - Page 54



### Consisting Of

- 1 x Gasket
- 1 x Seal

## Specifications

DN	Part Numbers	Weight (kg)	Notes
6	CGR30C	0.1	
10	CGR30C	0.1	
15	CGR30C	0.1	
20	CGR40C	0.1	Bronze Valve Only
25	CGR50C	0.1	
32	CGR70C	0.1	
40	CGR70C	0.1	
50	CGR80C	0.1	
65	CGR90C	0.1	
80	CGRA0C	0.1	
100	CGRB0C	0.1	
150	CGRD0C	0.1	

All weights are approximate

# Spares Kits

## Cryogenic Pressure Regulators – Spares Kits DN15 (1/2")

Spares kits for Cryogenic Pressure Regulators.

Suitable for use with products on the following page:

- DS H001 - Page 42



### Consisting Of

#### Seal Kit (CKCSP1)

- 1 x Seal (Item 2)
- 2 x Gaskets (Item 1)

#### Bellows/Seal Kit (CKCSP2)

- 1 x Bellows (Item 4)
- 1 x Spring (Item 3)
- 1 x Seal (Item 2)
- 2 x Gaskets (Item 1)

#### Diaphragm Kit - High Pressure (CKCSP3)

- 1 x Diaphragm Assembly (Item 5)
- 1 x Gasket (Item 6)

#### Diaphragm Kit – Low Pressure (CKCSP4)

- 1 x Diaphragm Assembly (Item 5)
- 1 x Gasket (Item 6)

#### Main Spring Kit – High Pressure (CKCSP5)

- 1 x Spring (Item 3)
- 1 x Gasket (Item 6)

#### Main Spring Kit – Medium Pressure (CKCSP6)

- 1 x Spring (Item 3)
- 1 x Gasket (Item 6)

#### Main Spring Kit – Low Pressure (CKCSP7)

- 1 x Spring (Item 3)
- 1 x Gasket (Item 6)

#### Gasket Set (CKCSP8)

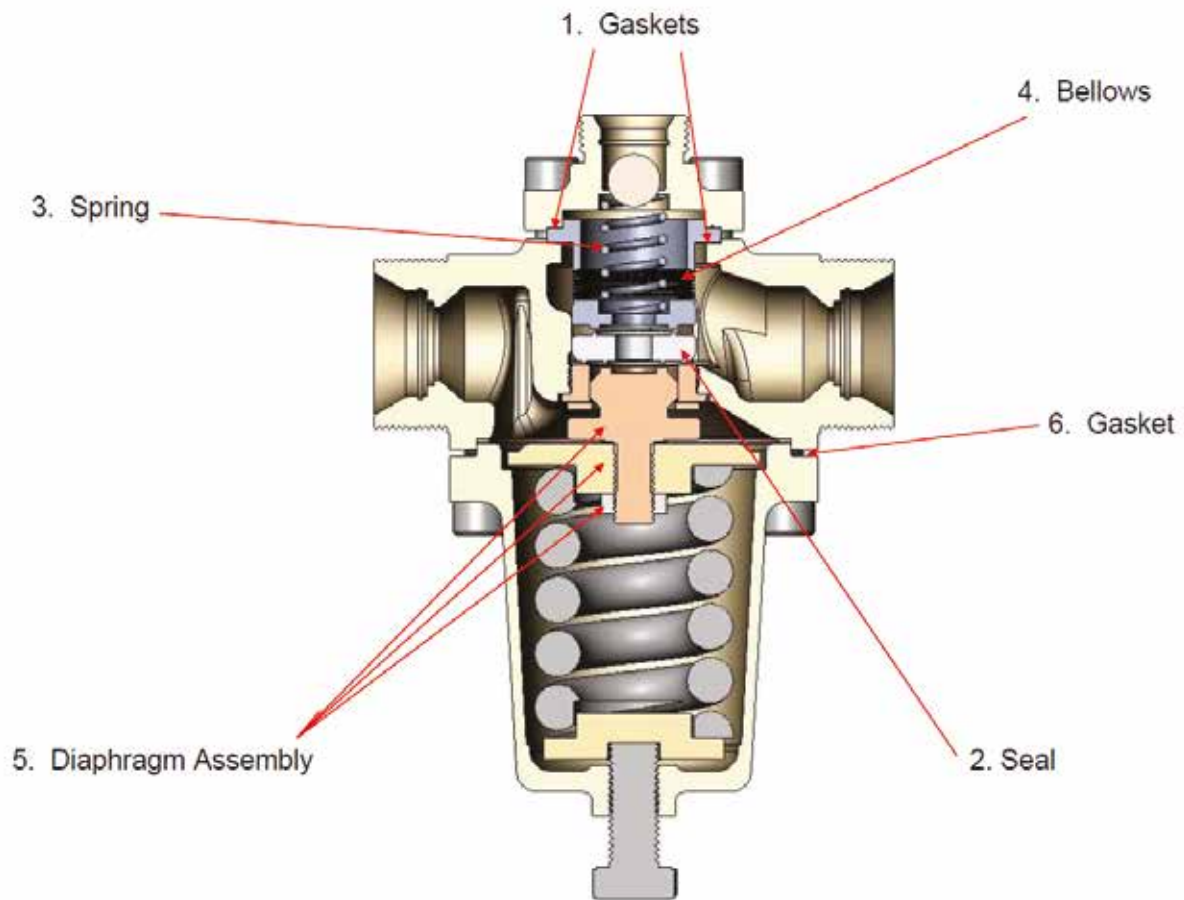
- 2 x Gaskets (Item 1)
- 1 x Gasket (Item 6)

#### Repair Kit – High Pressure (CK30A1REPKITHP)

- 1 x Diaphragm Kit - High Pressure (CKCSP3)
- 1 x Seal (Item 2)
- 2 x Gaskets (Item 1)

#### Repair Kit – Low Pressure (CK30A1REPKITLP)

- 1 x Diaphragm Kit – Low Pressure (CKCSP4)
- 1 x Seal (Item 2)
- 2 x Gaskets (Item 1)



### Specifications

DN	Part Numbers	Weight (kg)
15	CKCSP1	0.1
15	CKCSP2	0.1
15	CKCSP3	0.5
15	CKCSP4	0.5
15	CKCSP5	0.7
15	CKCSP6	0.4
15	CKCSP7	0.4
15	CKCSP8	0.1
15	CK30A1REPKITHP	0.1
15	CK30A1REPKITLP	0.5

All weights are approximate

# Spares Kits

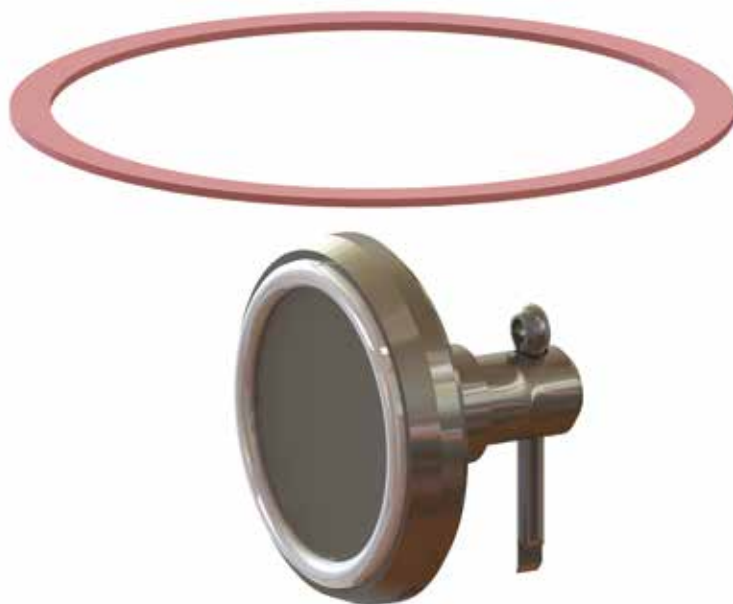
## Swing Check Valves – Disc, Seal Assembly & Gasket

DN50, 65, 80 & DN100 (2" - 4")

Spares kit to suit cryogenic swing check valves.

Suitable for use with products on the following page:

- DS J003 - Page 56



### Consisting Of

- 1 x Gasket
- 1 x Disc (316) & Seal (Virgin PTFE)
- 1 x Split Pin

### Specifications

DN	Part Numbers	Weight (kg)
25	CHCR50	0.1
40	CHCR70	0.1
50	CHCR80	0.2
80	CHCRA0	0.4

All weights are approximate

# Spares Kits

## Lift Check Valves – Soft Goods Kit

DN6, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100 & DN150 (1/8" - 6")

Spare Gasket to suit cryogenic globes, lift checks & strainers.

Suitable for use with products on the following pages:

- DS A001 - Page 4
- DS A002 - Page 6
- DS A003 - Page 8
- DS A004 - Page 10
- DS A005 - Page 12
- DS A007 - Page 16
- DS A008 - Page 18
- DS B001 - Page 20
- DS I001 - Page 48
- DS I002 - Page 50
- DS J001 - Page 52
- DS J002 - Page 54
- DS K001 - Page 58
- DS K002 - Page 60



### Consisting Of

- 1 x Gasket

### Specifications

DN	Order Code	Weight (kg)
6	S-B0A61BLZ76A90000	0.01
10	S-B0A61BLZ76A90000	0.01
15	S-B0A61BLZ76A90000	0.01
20	S-B0A61BLZA9A90000	0.01
25	S-B0A61BLZA9A90000	0.01
32	S-B0A61BLZCBA90000	0.01
40	S-B0A61BLZCBA90000	0.01
50	S-B0A61BLZEDA90000	0.01
65	S-B0A61BLZFEAC0000	0.01
80	S-B0A61BR176AC0020	0.01
100	S-B0A61BL5HGAC0000	0.01
150	S-B0A61BL2KKAC0000	0.01

All weights are approximate

# Spares Kits

## Ball Diverter Valves – Soft Goods Kit

DN20, 32 & DN50 (¾" - 2")

Soft Goods Kit to suit cryogenic ball diverters.

Suitable for use with products on the following page:

- DS M001 - Page 64



### Consisting Of

- 2 x Ball Seal
- 2 x End Cover Gasket
- 2 x 'O' Seal
- 1 x Packing
- 2 x Support to Valve Seal (Only on DN32 & DN50 versions)

### Specifications

DN	Part Numbers	Weight (kg)
20	CJR40	0.1
32	CJR60	0.1
50	CJR80	0.2

All weights are approximate



# Spares Kits

## Globe Diverter Valves – Soft Goods Kit

DN25 (1")

Soft Goods Kit to suit cryogenic globe diverter valves.

Suitable for use with products on the following page:

- DS M002 - Page 68

### Consisting Of

- 1 x Wiper Seal
- 1 x Chevron Set
- 2 x Brass Washer
- 1 x Gasket
- 2 x Outer Seal
- 1 x Inner Seal
- 1 x Spring



### Specifications

DN	Part Numbers	Weight (kg)
25	CNDR50	0.1

All weights are approximate

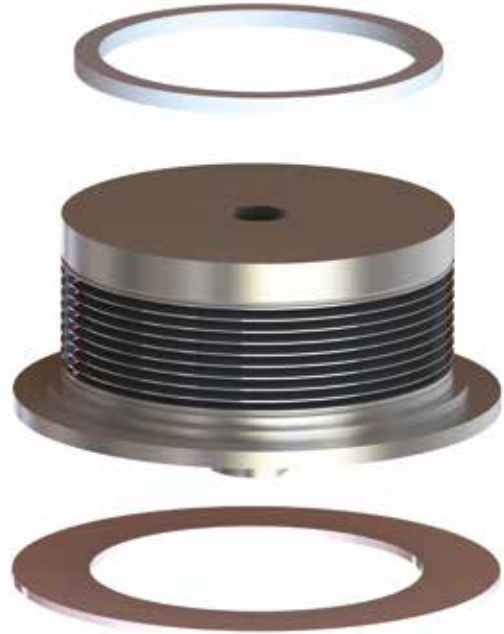
# Spares Kits

## Pressure Build Up Valves – Gasket, Seal & Bellows DN50 (2")

Soft Goods Kit to suit DN50 Pressure Build Up Valves.

Suitable for use with products on the following page:

- DS H002 - Page 46



### Consisting Of

- 1 x Bellows
- 1 x Seal
- 1 x Gasket

### Specifications

DN	Part Numbers	Weight (kg)
50	CFR80	0.3

All weights are approximate

# Spares Kits

## Constaflo – Diaphragm, Nozzle & Gasket

DN6, 10, 15, 20, 25, 32, 40 & DN50 (1/4" – 2")

Spares kits to suit Constaflo Valves

Suitable for use with products on the following page

- DS N001 - Page 74



DN6 Diaphragm & Nozzle



DN10-DN50 Diaphragm & Nozzle



Gasket & 'O' Seal

### Consisting Of

- Orifice Plate Sub Assembly
  - Diaphragm (EPDM) & Nozzle – DN6 (Bronze) or DN10-DN50 (Acetal)
  - Gasket
  - 'O' Seal

## Specifications

DN	Diaphragm & Nozzle		Gasket	
	Part Numbers	Weight (kg)	Part Numbers	Weight (kg)
6	FC10SP--BE	0.2	S-B0A61BN354AB0000	0.1
10	FC20SP--BE	0.1	S-B0A61BN376AB0000	0.1
15	FC30SP--BE	0.1	S-B0A61BN376AB0000	0.1
20	FC40SP--BE	0.2	S-B0A61BJBBAC0000	0.1
25	FC50SP--BE	0.2	S-B0A61BJBBAC0000	0.1
32	FC60SP--BE	0.3	S-B0A60JJ1D100	0.1
40	FC70SP--BE	0.4	S-B0A60JJ1DA00	0.1
50	FC80SP--BE	0.5	S-B0A60JJ1DD00	0.1

All weights are approximate

# Spares Kits

## Truflo – Nozzle & Diaphragm

DN10, 15, 20, 25, 32 & DN40 (3/8" – 1 1/2")

Spares Kit to suit Truflo Valves.

Suitable for use with products on the following page:

- DS N002 - Page 70



### Consisting Of

- 1 x Nozzle
- 1 x Diaphragm

## Specifications

DN	Nozzle		Gasket	
	Part Numbers	Weight (kg)	Part Numbers	Weight (kg)
10	S-MFT31DC5302600	0.2	S-BFT24CJ100	0.1
15	S-MFT31DC5302600	0.2	S-BFT24CJ100	0.1
20	S-MFT31DC5302600	0.2	S-BFT24CJ100	0.1
25	S-MFT31DC5302600	0.2	S-BFT24CJ100	0.1
32	S-MFT31DA2603700	0.2	S-BFT24CJ100	0.1
40	S-MFT31DA2603700	0.2	S-BFT24CJ100	0.1

All weights are approximate

# Spares Kits

## Actuated Gate Valves – Soft Goods Kit & Tyre

DN50, 65 & DN80 (2" - 3")

Spares kits to suit cryogenic actuated gate valves.

Suitable for use with products on the following page:

- DS D001 - Page 24



### Consisting Of

#### Soft Goods Kit

- 1 x Wiper Seal
- 1 x Gland Packing Set
- 1 x Gasket

#### Tyre

- 1 x Spare Tyre

## Specifications

Soft Goods Kit			Tyre		
DN	Part Numbers	Weight (kg)	DN	Part Numbers	Weight (kg)
50	CMCR80	0.4	50	S-L0708F012	2
65	CMCR90	0.4	65	S-L0708F012	2
80	CMCRA0	0.4	80	S-L0708F012	2

All weights are approximate

Both kits supplied separately

## Index

Datasheet Category	Product No.	Part Numbers	Product	Sizes	Pressure	Temperature Range	Page No.	Spares Kits Page No.
A	DS A001	CNB10TED3C, CNB10TED6C, CNB20TED3C, CNB20TED6C, CNB30TED3C, CNB30TED6C, CNB40TED3C, CNB40TED6C, CNB50TED3C, CNB50TED6C, CNB70TED3C, CNB70TED6C, CNB80TED3C, CNB80TED6C, CNB10TAD3C, CNB10TAD6C, CNB20TAD3C, CNB20TAD6C, CNB30TAD3C, CNB30TAD6C, CNB40TAD3C, CNB40TAD6C, CNB50TAD3C, CNB50TAD6C, CNB70TAD3C, CNB70TAD6C, CNB80TAD3C, CNB80TAD6C, CNB20SSTD3CQ2, CNB20SSTD6CQ2, CNB30SSTD3CQ2, CNB30SSTD6CQ2, CNB40SSTD3CQ2, CNB40SSTD6CQ2, CNB50SSTD3CQ2, CNB50SSTD6CQ2, CNB70SSTD3CQ2, CNB70SSTD6CQ2, CNB80SSTD3C, CNB80SSTD6C	Cryogenic Bronze Manual Globe Valve with Bolted Bonnet, Extended Stem, Bronze Body with Bronze Internals	DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	4	77,78,87
	DS A002	CNB10TEC1C, CNB10TEC1C, CNB20TEC1C, CNB20TEC1C, CNB30TEC1C, CNB30TEC1C, CNB40TEC1C, CNB40TEC1C, CNB50TEC1C, CNB50TEC1C, CNB70TEC1C, CNB70TEC1C, CNB80TEC1C, CNB80TEC1C, CNB10TAC1C, CNB10TAC1C, CNB20TAC1C, CNB20TAC1C, CNB30TAC1C, CNB30TAC1C, CNB40TAC1C, CNB40TAC1C, CNB50TAC1C, CNB50TAC1C, CNB70TAC1C, CNB70TAC1C, CNB80TAC1C, CNB80TAC1C, CNB20SSTC1CQ2, CNB20SSTC1CQ2, CNB30SSTC1CQ2, CNB30SSTC1CQ2, CNB40SSTC1CQ2, CNB40SSTC1CQ2, CNB50SSTC1CQ2, CNB50SSTC1CQ2, CNB70SSTC1CQ2, CNB70SSTC1CQ2, CNB80SSTC1C, CNB80SSTC1C	Cryogenic Bronze Manual Globe Valve with Bolted Bonnet, Non-Extended Stem, Bronze Body with Bronze Internals	DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	6	77,78,87
	DS A003	CNS10SNED6C, CNS20SNED6C, CNS30SNED6C, CNS40SNED6C, CNS50SNED6C, CNS70SNED6C, CNS80SNED6C, CNS10B1D6C, CNS20B1D6C, CNS30B1D6C, CNS40B1D6C, CNS50B1D6C, CNS70B1D6C, CNS80B1D6C, CNS20FAD6C, CNS30FAD6C, CNS40FAD6C, CNS50FAD6C, CNS70FAD6C, CNS80FAD6C	Cryogenic Full Stainless Steel Globe Valve with Bolted Bonnet, Extended Stem, Full Stainless Steel	DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	8	77,78,87
	DS A004	CNS10SNEC1C, CNS20SNEC1C, CNS30SNEC1C, CNS40SNEC1C, CNS50SNEC1C, CNS70SNEC1C, CNS80SNEC1C, CNS10B1C1C, CNS20B1C1C, CNS30B1C1C, CNS40B1C1C, CNS50B1C1C, CNS70B1C1C, CNS80B1C1C, CNS20FAC1C, CNS30FAC1C, CNS40FAC1C, CNS50FAC1C, CNS70FAC1C, CNS80FAC1C	Cryogenic Full Stainless Steel Globe Valve with Bolted Bonnet, Non-Extended Stem, Full Stainless Steel	DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	10	77,78,87
	DS A005	CNT90B1D4C, CNTA0B1D4C, CNTB0B1D7C, CNT90F1D4C, CNTA0FAD4C, CNTB0FAD7C	Cryogenic Stainless Steel Globe Valve with Bolted Bonnet, Extended Stem, Stainless Steel	DN65, 80 & 100 (2½" - 4")	Up to 50 bar (725 psi)	-196°C to +65°C	12	78, 87
	DS A006	CNMD0B100M1030, CNME0B100M11101, CNME0B10JM1100	Cryogenic Stainless Steel Globe Valve with Bolted Bonnet, Extended Stem, Full Stainless Steel	DN150, 200, 250 & 300 (6" - 12")	Up to 19 bar (275 psi)	-196°C to +65°C	14	78
	DS A007	CNT10SNED3C, CNT10SNED6C, CNT20SNED3C, CNT20SNED6C, CNT30SNED3C, CNT30SNED6C, CNT40SNED3C, CNT40SNED6C, CNT50SNED3C, CNT50SNED6C, CNT70SNED3C, CNT70SNED6C, CNT80SNED3C, CNT80SNED6C, CNT10B1D3C, CNT10B1D6C, CNT20B1D3C, CNT20B1D6C, CNT30B1D3C, CNT30B1D6C, CNT40B1D3C, CNT40B1D6C, CNT50B1D3C, CNT50B1D6C, CNT70B1D3C, CNT70B1D6C, CNT80B1D3C, CNT80B1D6C, CNT10FAD3C, CNT10FAD6C, CNT20FAD3C, CNT20FAD6C, CNT30FAD3C, CNT30FAD6C, CNT40FAD3C, CNT40FAD6C, CNT50FAD3C, CNT50FAD6C, CNT70FAD3C, CNT70FAD6C, CNT80FAD3C, CNT80FAD6C	Cryogenic Stainless Steel Globe Valve with Bolted Bonnet, Extended Stem, Stainless Steel Body with Bronze Internals	DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	16	77, 87
	DS A008	CNT10SNEC1C, CNT20SNEC1C, CNT30SNEC1C, CNT40SNEC1C, CNT50SNEC1C, CNT70SNEC1C, CNT80SNEC1C, CNT10B1C1C, CNT20B1C1C, CNT30B1C1C, CNT40B1C1C, CNT50B1C1C, CNT70B1C1C, CNT80B1C1C, CNT20FAC1C, CNT30FAC1C, CNT40FAC1C, CNT50FAC1C, CNT70FAC1C, CNT80FAC1C	Cryogenic Stainless Steel Globe Valve with Bolted Bonnet, Non-Extended Stem, Stainless Steel Body with Bronze Internals	DN6, 10, 15, 20, 25, 40 & 50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	18	77, 87
B	DS B001	CNT30B1D6CPA, CNT50B1D6CPA, CNT70B1D6CPA, CNT80B1D6CPA, CNT90B1D4CPA, CNTA0B1D4CPA, CNTB0B1D7CPA, CNTD0B1DDCPA, CNT30FAD6CPA, CNT50FAD6CPA, CNT70FAD6CPA, CNT80FAD6CPA, CNT90FAD4CPA, CNTA0FAD4CPA, CNTB0FAD7CPA, CNTD0FADDCPA	Cryogenic Pneumatically Actuated Globe Valve	DN15, 20, 25, 40, 50, 65, 80, 100 & 150 (½" - 6")	Up to 50 bar (725 psi)	-196°C to +65°C	20	77, 87
C	DS C001	CMC70B1D3S00, CMC80B1D6S00, CMC90B1D4S00, CMCA0B1D7S00, CMC80STED6S00, CMC90STED4S00, CMCA0STED7S00	Cryogenic Stainless Steel Manual Gate Valve with Bolted Bonnet and Extended Spindle	DN40, 50, 65, 80, 100 (1½" - 4")	Up to 40 bar (580 psi)	-196°C to +65°C	22	78, 79, 80, 82
D	DS D001	CMD70B1D6STY, CMD80B1D8STY, CMD90B1D8STY, CMDA0B1D8STY, CMD80SNED8STY, CMD90SNED8STY, CMDA0SNED8STY	Cryogenic Actuated Gate Valve with Bolted Bonnet, Pneumatic Tyre Design, Fail to Close	DN40, 50, 65, 80, 100 (1½" - 4")	Up to 40 bar (580 psi)	-196°C to +65°C	24	79, 82, 93
E	DS E001	CZFR30GTAE4BND, CZFR50GTAE4BND, CZFR70GTAE4BND, CZFR80GTAE4BND, CZFR30GTEE4BND, CZFR50GTEE4BND, CZFR70GTEE4BND, CZFR80GTEE4BND	Cryogenic Bronze Ball Valve Reduced Bore	DN15, 25, 40 & 50 (½" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	26	81
	DS E002	CZFR30SNE4S00, CZFR50SNE4S00, CZFR70SNE4S00, CZFR80SNE4S00, CZFR30SB1E4S00, CZFR50SB1E4S00, CZFR70SB1E4S00, CZFR80SB1E4S00	Cryogenic Stainless Steel Ball Valve Reduced Bore	DN15, 25, 40 & 50 (½" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	28	81

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Datasheet Category	Product No.	Part Numbers	Product	Sizes	Pressure	Temperature Range	Page No.	Spares Kits Page No.
E	DS E003	CZFRA0GTAE5A00, CZFRA0GTEE5A00, CZFRA0SB1E4S00	Cryogenic Wafer Ball Valve	DN80 (3")	Up to 34 bar (500 psi)	-196°C to +65°C	30	81
F	DS F001	CZFR30GTAE4BAM, CZFR50GTAE4BAM, CZFR70GTAE4BAM, CZFR80GTAE4BAM, CZFR30GTEE4BAM, CZFR50GTEE4BAM, CZFR70GTEE4BAM, CZFR80GTEE4BAM	Cryogenic Actuated Bronze Ball Valve Reduced Bore	DN15, 25, 40 & 50 (½" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	32	81
	DS F002	CZFR30SSNE4SAM, CZFR50SSNE4SAM, CZFR70SSNE4SAM, CZFR80SSNE4SAM, CZFR30SB1E4SAM, CZFR50SB1E4SAM, CZFR70SB1E4SAM, CZFR80SB1E4SAM	Cryogenic Actuated Stainless Steel Ball Valve Reduced Bore	DN15, 25, 40 & 50 (½" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	34	81
G	DS G001	CWF20JL**N00, CWF20ML**N00, CWF20LR**N00, CWF20RR**N00, CWF30RV**N00, CWF30UV**N00, CWF40UZ**N00, CWF40YZ**N00	Bronze Safety Relief Valve	Nozzle 10, 15 & 20 (¾", ½" & ¾")	Up to 40 bar (580 psi)	-196°C to +65°C	36	-
	DS G002	CWT20LK**N00, CWT20LR**N00, CWT30RV**N00, CWT50UV**N00	Stainless Steel Safety Relief Valve	Nozzle 10, 15 & 20 (¾", ½" & ¾")	Up to 40 bar (580 psi)	-196°C to +65°C	38	-
	DS G003	CVF10B1**N00, CVF10C1**N00, CVF10B2**N00, CVF10C2**N00, CVF10B3**N00, CVF10C3**N00, CVF10B3**N00, CVF10C3**N00, CVF10CE**N00	Brass Thermal Relief Valve	Nozzle 6 (¼")	Up to 40 bar (580 psi)	-196°C to +65°C	40	-
H	DS H001	CK3010101017000, CK3010101017100, CK3010101017200, CK3010101016900	Cryogenic Pressure Regulator - Pressure Build-Up Regulator and Economiser	DN15 (½")	Up to 25 bar (360 psi)	-196°C to +65°C	42	84
	DS H002	CF80B1B17000, CF80B1B17500	Cryogenic Pressure Build Up Valve	DN50 (2")	-	-	46	90
I	DS I001	CTS50PPD63CIN, CTS70PPD63CIN, CTS50PPD63CAL, CTS70PPD63CAL,	Cryogenic Stainless Steel Manifold Fill Assemblies	DN25 & DN40 (1" & 1½")	Up to 50 bar (725 psi)	-196°C to +65°C	48	77, 78, 87
	DS I002	CTB70F1LLET00, CTB70PUDA6CCQ	Cryogenic Bronze Manifold Fill Assemblies	DN25 & DN40 (1" & 1½")	Up to 50 bar (725 psi)	-196°C to +65°C	50	77, 87
J	DS J001	CGT30B1B0C, CGT40B1B0C, CGT50B1B0C, CGT70B1B0C, CGT80B1B0C, CGT80B1B0C, CGT80B1B0C, CGT30SNEB0C, CGT40SNEB0C, CGT50SNEB0C, CGT70SNEB0C, CGT80SNEB0C, CGT30F1B0C, CGT50FAB0C, CGT70FAB0C, CGT80FAB0C, CGT80FAB0C, CGT80FAB0C	Cryogenic Stainless Steel Lift Check Valve	DN6, 10, 15, 20, 25, 40, 50, 65, 80, 100 & DN150 (¼" - 6")	Up to 50 bar (725 psi)	-196°C to +65°C	52	83, 87
	DS J002	CGB10TEB0C, CGB20TEB0C, CGB30TEB0C, CGB40TEB0C, CGB50TEB0C, CGB70TEB0C, CGB80TEB0C, CGB10TAB0C, CGB20TAB0C, CGB30TAB0C, CGB40TAB0C, CGB50TAB0C, CGB70TAB0C, CGB80TAB0C, CGB30SSTB0CQ2, CGB40SSTB0CQ2, CGB50SSTB0CQ2, CGB70SSTB0CQ2, CGB80SSTB0C	Cryogenic Bronze Lift Check Valve	DN6, 10, 15, 20, 25, 40 & DN50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	54	83, 87
	DS J003	CHC50UB100, CHC70UB100, CHC80UB100, CHCA0UB100, CHC50UFA00, CHC70UFA00, CHC80UFA00, CHCA0UFA00	Cryogenic Stainless Steel Swing Check Valve	DN25, 40, 50 & DN80 (1", 1½", 2" & 3")	Up to 50 bar (725 psi)	-196°C to +65°C	56	86
K	DS K001	CS30B1FBY, CS40B1FBY, CS50B1FBY, CS70B1FBY, CS80B1FBY, CS90B1FBY, CSA0B1FBY, CSB0B1FBY, CS30SNEFBY, CS40SNEFBY, CS50SNEFBY, CS70SNEFBY, CS80SNEFBY, CS30FAFBY, CS50FAFBY, CS70FAFBY, CS80FAFBY, CS90FAFBY, CSA0FAFBY, CSB0FAFBY	Cryogenic Stainless Steel Strainer	DN6, 10, 15, 20, 25, 40, 50, 65, 80 & DN100 (¼" - 4")	Up to 50 bar (725 psi)	-196°C to +65°C	58	87
	DS K002	CS10TEFBY, CS20TEFBY, CS30TEFBY, CS40TEFBY, CS50TEFBY, CS70TEFBY, CS80TEFBY, CS10TAFBY, CS20TAFBY, CS30TAFBY, CS40TAFBY, CS50TAFBY, CS70TAFBY, CS80TAFBY,	Cryogenic Bronze Strainer	DN6, 10, 15, 20, 25, 40, DN50 (¼" - 2")	Up to 50 bar (725 psi)	-196°C to +65°C	60	87
L	DS L001	CXC10TC00, CXC40TC00, CXC40SNB0C	ASPRO - Stainless Steel	DN6 & DN20 (¼" & ¾")	DN6 - 110 bar (1600 psi); DN20 - 207 bar (3000 psi)	-20°C to +65°C	62	-
M	DS M001	"CJB40SS5ABT1T, CJB40TA5AAT1T, CJB40TE5BZT1T, CJF40SS5APT1T, CJF40SS5BZT1T, CJF40S55H4E1T, CJF40S55H6E1T, CJF40TA5AKE1TVA, CJF40TC5B8E1TVA, CJF40TE5APT1T,	Bronze Flow Diverter Ball Valve	DN20, 25, 32 & DN50 (¾", 1", 1¼" & 2")	Up to 50 bar (725 psi)	-196°C to +65°C	64	88
	DS M002	CND50MRL1FA12, CND50MRL1FA19, CND50MRL1FA23	Bronze Flow Diverter Globe Valve	DN25 (1")	-	-	68	78, 89
N	DS N001	FT20TC**BA3A, FT30TC**BA3A, FT40TC**BA3A, FT50TC**BA3A, FT60TC**BA3A, FT20TA**BA3A, FT30TA**BA3A, FT40TA**BA3A, FT50TA**BA3A, FT60TA**BA3A	Trufflo - Bronze	DN6, 10, 15, 20, 25, 30 & DN40 (¼" - 1¼")	-	-	70	92
	DS N002	FC10TC**BC1E, FC20TC**BC1E, FC30TC**BC1E, FC40TC**BC1E, FC50TC**BC1E, FC60TC**BC1E, FC70TC**BC1E, FC80TC**BC1E, FC10TA**BC2E, FC20TA**BC2E, FC30TA**BC2E, FC40TA**BC2E, FC50TA**BC2E, FC60TA**BC2E, FC70TA**BC2E, FC80TA**BC2E	Constaflor - Bronze	DN6, 10, 15, 20, 25, 30, 40 & DN50 (¼" - 2")	-	-	74	91

## Useful Conversion Charts

### Gases Conversion Table

Gas	*m3 gas per kilogram	*m3 gas per litre of liquid	Boiling point °C	Relative Density
Oxygen	0.738	0.842	-183	1.1
Nitrogen	0.844	0.682	-196	1.0
Carbon Dioxide	0.535	-	-78#	1.5
Argon	0.591	0.822	-186	1.4
Air	0.816	-	-194	1.0
Helium	5.913	0.737	-269	0.14
Hydrogen	11.73	0.831	-253	0.07
LPG (85% Propane)	0.531	0.271	-42	2.0
Acetylene	0.901	-	-75	0.9
Sulphur Dioxide	0.366	0.534	-10	2.3
Nitrous Oxide	0.534	0.654	-89	1.5
At 15°C and 101.33 kPa			#dry ice (solid)	

Bar to psi	Divide psi figure by 14.5
Bar to kg per cm2	Bar multiplied by 1.0197
mbar to kpa	mbar multiplied x 0.1
kpa to bar	Divide by 100
mpa to bar	Multiply by 10
kg per cm2 to bar	Multiply by 0.98
1 UK gallon	4.546 litres
1 UK gallon	1.201 US gallon
1 US gallon	3.785 litres
1 kilogram	2.2 lb



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