



the corrosion expert

FluoroFlow Check Valves & Sight Glasses

CRP is a world leader in the manufacture of PTFE and PFA lined equipment including pipe, fittings, valves, bellows, sight glasses and other ancillary equipment. CRP supplies in the chemical, agro-chemical, pharmaceutical, petrochemical, biotechnology, pulp & paper, metals refining, food and beverage manufacturing sectors.

CRP's range of check valves are all lined in PFA – the ideal lining material for the most corrosive and permeant chemicals. CRP has developed their own in-house PFA moulding skills over the last 30 years and this combined with their expertise in valve design and function has made their check valves the lined product of choice for the process industry.

The range of lined sight glasses use heavy wall borosilicate glass or reinforced PFA in order to achieve clear viewing for corrosive media at pressure and again have become a standard for end users across the world.



CRP

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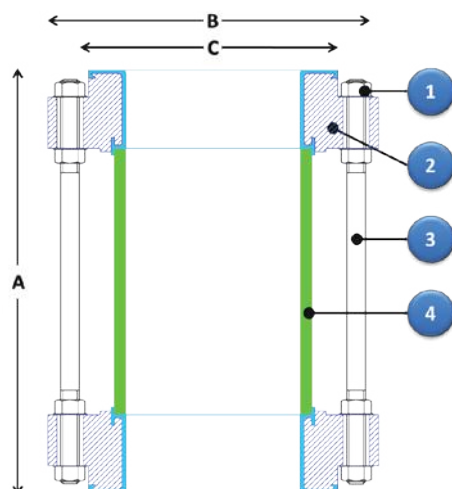
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CTSG - PFA Lined Tubular Pipeline Sight Glass



The CTSG sight glasses' construction provides 360 degree process viewing with a pressure rating of up to 10 bar g. It is manufactured from heavy wall borosilicate glass tube with PFA lined flanges for use in the most demanding applications.

The "cage" construction makes the product extremely strong and capable of withstanding a significant amount of mishandling. The tie rod design is unique - enabling adjustment of the sight glass sealing following any maintenance activity without removing it from the pipeline. The product is manufactured in a fixed length range. For special lengths see the DTSG range.

Features

- Heat treated heavy wall borosilicate glass for pressure retention, general mechanical strength, clear viewing and excellent corrosion resistance.
- Parallel full port flow path prevents liquid retention.
- Adjustable tie rods protect the sight glass from other plant loads and mechanical damage.
- A design proven through thirty years of field experience.
- PFA lined for the most corrosive duties.

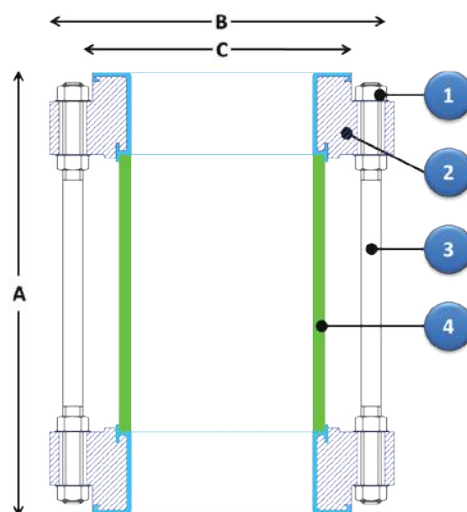
| Performance | |
|----------------------------------|----------------------------|
| Temperature | -29°C to 150°C |
| Pressure | |
| 1 in to 4 in, DN25 to DN100 | 10 bar g |
| 6 in, DN150 | 6 bar g |
| 8 in, DN200 | 5 bar g |
| 10 in and 12 in, DN250 and DN300 | 3 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Horizontal or Vertical |

| Dimensions | | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|--------|-------|---------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Weight | Glass | |
| ASME 150 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 152 | 110 | 51 | 3.7 | 30 | 4.5 |
| 1½ | 40 | 178 | 125 | 73 | 5.1 | 50 | 7.0 |
| 2 | 50 | 203 | 150 | 92 | 7.5 | 60 | 9.0 |
| 3 | 80 | 241 | 190 | 127 | 13.2 | 90 | 9.0 |
| 4 | 100 | 292 | 230 | 157 | 18.5 | 120 | 9.0 |
| 6 | 150 | 356 | 280 | 216 | 25.6 | 170 | 9.0 |
| 8 | 200 | 300 | 345 | 270 | 40.1 | 215 | 9.0 |
| 10 | 250 | 300 | 405 | 324 | 48.2 | 300 | 9.0 |
| 12 | 300 | 300 | 485 | 381 | 76.7 | 325 | 9.0 |
| DIN PN 10/16 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 160 | 115 | 68 | 3.8 | 30 | 4.5 |
| 1 ½ | 40 | 200 | 150 | 88 | 5.5 | 50 | 7.0 |
| 2 | 50 | 230 | 165 | 102 | 8.3 | 60 | 9.0 |
| 3 | 80 | 310 | 200 | 138 | 12.0 | 90 | 9.0 |
| 4 | 100 | 350 | 220 | 158 | 18.5 | 120 | 9.0 |
| 6 | 150 | 480 | 285 | 212 | 29.3 | 170 | 9.0 |
| 8 | 200 | 300 | 340 | 268 | 40.1 | 215 | 9.0 |
| 10 | 250 | 300 | 395/405 | 320 | 48.2 | 300 | 9.0 |
| 12 | 300 | 300 | 445/460 | 370/378 | 76.7 | 325 | 9.0 |

| Options | |
|------------------|---|
| Component | Description |
| Flange Materials | Stainless Steel Grade 304 or 316 |
| Lining | Static Dissipating PFA/PTFE |
| Flange Type | Tri-clamp, RJT, SMS, DIN 11851 etc. (Whether these can be PFA lined depends on the size and fittings type). |
| Shield | Acrylic safety shield Poly (methyl methacrylate) |
| Glass | FEP lined for products which attack glass |
| Body | Flow disturbers, flow indicators and lighting |
| Tie Rods | Live Loaded |

| Material Specification | | | | |
|------------------------|--------------------------------------|----------|------------------------|---|
| Item | Description | Quantity | Materials | Specification |
| 1 | Nuts + Washers | 16/32/48 | Stainless Steel | ASTM F594 Gr.304 |
| 2 | Flange | 2 | Carbon Steel | BS 1501-161-430A / ASTM A216 Gr. WCB |
| | Lining 1 in to 6 in, DN25 to DN150 | | PFA | ASTM D3307 Type II |
| | Lining 8 in to 12 in, DN200 to DN300 | | PTFE | ASTM D4895-91a Type I, Grade 2, Class A |
| 3 | Tie Rods | 4/8/12 | Stainless Steel | BS970 Pt.1 Gr. 303S42 |
| 4 | Glass Tube | 1 | Borosilicate Glass 3.3 | ISO 3585 |
| | Paint Finish | 75µ | Epoxy | Intergard 345 colour blue |

DTSG - PFA Lined Tubular Pipeline Sight Glass



The DTSG sight glasses' construction provides 360 degree process viewing with a pressure rating of up to 10 bar g. It is manufactured from heavy wall borosilicate glass tube with PFA lined flanges for use in the most demanding applications.

The "cage" construction makes the product extremely strong and capable of withstanding a significant amount of mishandling. The tie rod design is unique - enabling adjustment of the sight glass sealing following any maintenance activity. Available in lengths of up to 1500mm these sight glasses are ideal for applications where it is necessary to view an activity such as azeotropic separation.

| Performance | |
|----------------------------------|----------------------------|
| Temperature | -29°C to 150°C |
| Pressure | |
| 1 in to 4 in, DN25 to DN100 | 10 bar g |
| 6 in, DN150 | 6 bar g |
| 8 in, DN200 | 5 bar g |
| 10 in and 12 in, DN250 and DN300 | 3 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Horizontal or Vertical |

| Dimensions | | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|------------------|-------|---------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Weight 500mm lg. | Glass | |
| ASME 150 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 100 – 1500 | 110 | 51 | 5.3 | 30 | 4.5 |
| 1 ½ | 40 | 100 – 1500 | 125 | 73 | 7.1 | 50 | 7.0 |
| 2 | 50 | 100 – 1500 | 150 | 92 | 9.7 | 60 | 9.0 |
| 3 | 80 | 110 – 1500 | 190 | 127 | 15.6 | 90 | 9.0 |
| 4 | 100 | 120 – 1500 | 230 | 157 | 21.4 | 120 | 9.0 |
| 6 | 150 | 120 – 1500 | 280 | 216 | 28.4 | 170 | 9.0 |
| 8 | 200 | 120 – 1500 | 345 | 270 | 45.4 | 215 | 9.0 |
| 10 | 250 | 150 – 1000 | 405 | 324 | 55.8 | 300 | 9.0 |
| 12 | 300 | 150 – 1000 | 485 | 381 | 84.7 | 325 | 9.0 |
| DIN PN 10/16 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 100 – 1500 | 115 | 68 | 5.3 | 30 | 4.5 |
| 1 ½ | 40 | 100 – 1500 | 150 | 88 | 7.1 | 50 | 7.0 |
| 2 | 50 | 100 – 1500 | 165 | 102 | 9.7 | 60 | 9.0 |
| 3 | 80 | 110 – 1500 | 200 | 138 | 15.6 | 90 | 9.0 |
| 4 | 100 | 120 – 1500 | 220 | 158 | 21.4 | 120 | 9.0 |
| 6 | 150 | 120 – 1500 | 285 | 212 | 28.4 | 170 | 9.0 |
| 8 | 200 | 120 – 1500 | 340 | 268 | 45.4 | 215 | 9.0 |
| 10 | 250 | 150 – 1000 | 395/405 | 320 | 55.8 | 300 | 9.0 |
| 12 | 300 | 150 – 1000 | 445/460 | 370/378 | 84.7 | 325 | 9.0 |

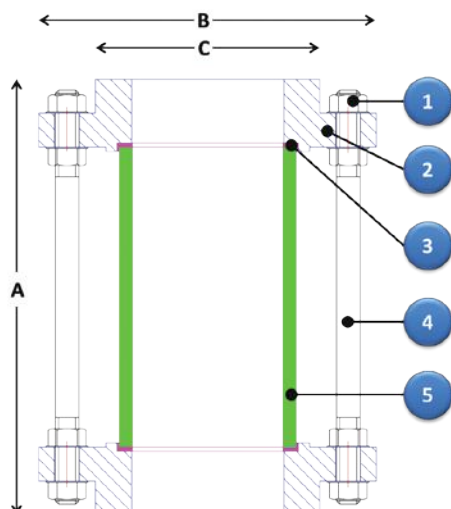
| Material Specification | | | | |
|------------------------|--|----------|--------------------|--|
| Item | Description | Quantity | Materials | Specification |
| 1 | Nuts + Washers | 16/32/48 | Stainless Steel | ASTM F594 Gr.304 |
| 2 | Flange Lining 1in to 6in, DN25 to DN150 Lining 8in to 12in, DN200 to DN300 | 2 | Carbon Steel | BS 1501-161-430A / ASTM A216 Gr. WCB |
| | | | PFA | ASTM D3307 Type II |
| | | | PTFE | ASTM D4895-91 a Type I, Grade 2, Class A |
| 3 | Tie Rods | 4/8/12 | Stainless Steel | BS970 Pt.1 Gr. 303S42 |
| 4 | Glass Tube | 1 | Borosilicate Glass | ISO 3585 |
| | Paint Finish | 75µ | Epoxy | Intergard 345 colour blue |

Features

- Heat treated heavy wall borosilicate glass for pressure retention, general mechanical strength, clear viewing and excellent corrosion resistance.
- Parallel full port flow path prevents liquid retention.
- Adjustable tie rods protect the sight glass from other plant loads and mechanical damage.
- A design proven through thirty years of field experience.
- PFA lined for the most corrosive duties.
- Larger sizes available up to 16in NB / DN400.

| Options | |
|------------------|---|
| Component | Description |
| Flange Materials | Stainless Steel Grade 304 or 316 |
| Lining | Static Dissipating PFA/PTFE |
| Flange Type | Tri-clamp, RJT, SMS, DIN 11851 etc. (Whether these can be PFA lined depends on the size and fittings type). |
| Shield | Acrylic safety shield Poly(methyl methacrylate) |
| Glass | FEP lined for products which attack glass |
| Body | Flow disturbers, flow indicators and lighting |
| Tie Rods | Live Loaded |

CTSG/DTSG - Unlined Tubular Pipeline Sight Glass



CRP has taken the proven design of the CTSG and DTSG to create an unlined sight glass for less corrosive applications. This has all of the construction characteristics of those products, but instead of the flanges being lined in PFA, they are manufactured in 316 stainless steel. Sealing is achieved through the use of a PTFE gasket between the flange and borosilicate glass. This product will suit the end user who is looking for a robust product for their plant. It is available in lengths of up to 1500mm.

Features

- Heat treated heavy wall borosilicate glass for pressure retention, general mechanical strength, clear viewing and excellent corrosion resistance.
- Parallel full port flow path prevents liquid retention.
- Adjustable tie rods protect the sight glass from other plant loads and mechanical damage.
- A design proven through thirty years of field experience.

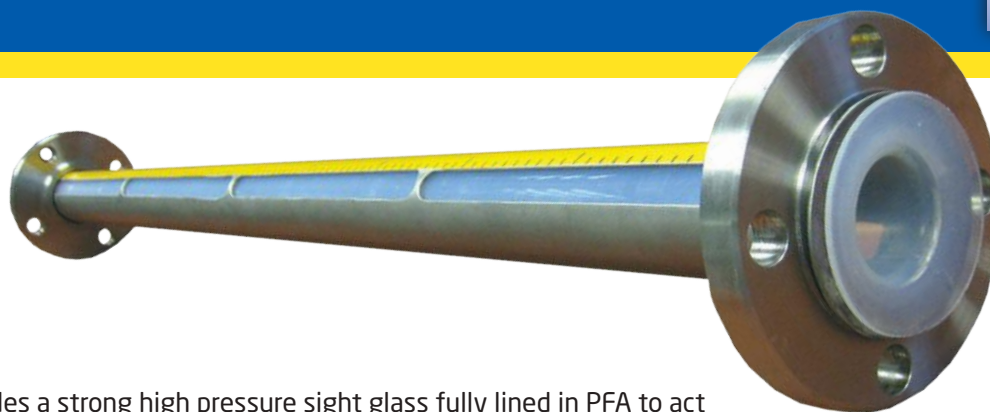
| Performance | |
|----------------------------------|----------------------------|
| Temperature | -29°C to 150°C |
| Pressure | |
| 1 in to 4 in, DN25 to DN100 | 10 bar g |
| 6 in, DN150 | 6 bar g |
| 8 in, DN200 | 5 bar g |
| 10 in and 12 in, DN250 and DN200 | 3 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Horizontal or Vertical |

| Dimensions | | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|------------------|-------|---------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Weight 500mm lg. | Glass | |
| ASME 150 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 100 – 1500 | 110 | 51 | 5.3 | 30 | 4.5 |
| 1½ | 40 | 100 – 1500 | 125 | 73 | 7.1 | 50 | 7.0 |
| 2 | 50 | 100 – 1500 | 150 | 92 | 9.7 | 60 | 9.0 |
| 3 | 80 | 110 – 1500 | 190 | 127 | 15.6 | 90 | 9.0 |
| 4 | 100 | 120 – 1500 | 230 | 157 | 21.4 | 120 | 9.0 |
| 6 | 150 | 120 – 1500 | 280 | 216 | 28.4 | 170 | 9.0 |
| 8 | 200 | 120 – 1500 | 345 | 270 | 45.4 | 215 | 9.0 |
| 10 | 250 | 150 – 1000 | 405 | 324 | 55.8 | 300 | 9.0 |
| 12 | 300 | 150 – 1000 | 485 | 381 | 84.7 | 325 | 9.0 |
| DIN PN 10/16 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 100 – 1500 | 115 | 68 | 5.3 | 30 | 4.5 |
| 1½ | 40 | 100 – 1500 | 150 | 88 | 7.1 | 50 | 7.0 |
| 2 | 50 | 100 – 1500 | 165 | 102 | 9.7 | 60 | 9.0 |
| 3 | 80 | 110 – 1500 | 200 | 138 | 15.6 | 90 | 9.0 |
| 4 | 100 | 120 – 1500 | 220 | 158 | 21.4 | 120 | 9.0 |
| 6 | 150 | 120 – 1500 | 285 | 212 | 28.4 | 170 | 9.0 |
| 8 | 200 | 120 – 1500 | 340 | 268 | 45.4 | 215 | 9.0 |
| 10 | 250 | 150 – 1000 | 395/405 | 320 | 55.8 | 300 | 9.0 |
| 12 | 300 | 150 – 1000 | 445/460 | 370/378 | 84.7 | 325 | 9.0 |

| Options | |
|------------------|---|
| Component | Description |
| Flange Materials | Carbon steel, Hastelloy, other exotics |
| Flange Type | Tri-clamp, RJT, SMS, DIN 11851 etc. |
| Shield | Acrylic safety shield Poly (methyl methacrylate) |
| Glass | FEP lined for products which attack glass |
| Body | Flow disturbers, flow indicators and lighting |

| Material Specification | | | | |
|------------------------|----------------|----------|------------------------|-----------------------------|
| Item | Description | Quantity | Materials | Specification |
| 1 | Nuts + Washers | 16/32/48 | Stainless Steel | ASTM F594 Gr. 304 |
| 2 | Flange | 2 | Stainless Steel | ASTM A182 Gr. F316/Gr. F304 |
| 3 | Gaskets | 2 | PTFE | D4894 |
| 4 | Tie Rods | 4/8/12 | Stainless Steel | BS970 Pt. 1 Gr. 303S42 |
| 5 | Glass Tube | 1 | Borosilicate Glass 3.3 | ISO 3585 |

LGSG - PFA Lined Level Gauge



The LGSG provides a strong high pressure sight glass fully lined in PFA to act as a clear level gauge for corrosive or sticky applications. The shatterproof sight glass is ideal for tough applications.

Features

- Shatterproof sight tube for maximum safety
- Fully PFA lined to all wetted surfaces for maximum corrosion resistance
- Strong housing in stainless steel
- Can be easily manufactured to any length within the range

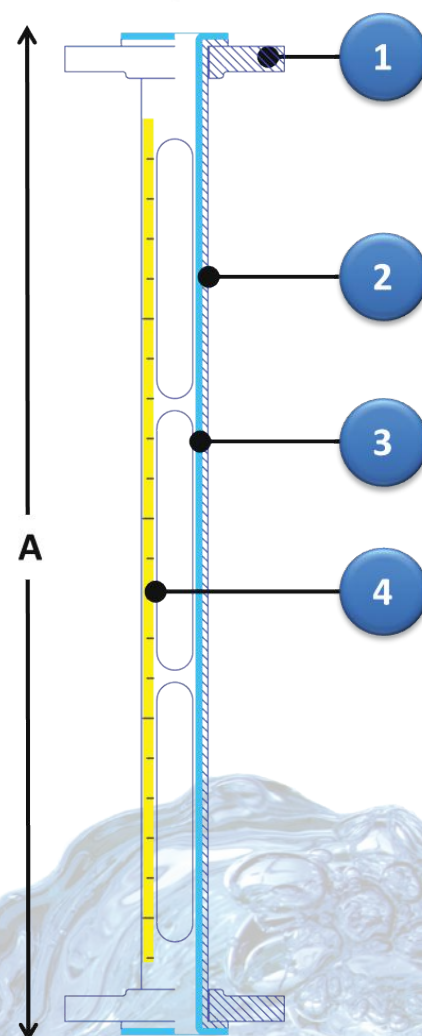
| Performance | |
|---------------|----------------------------|
| Temperature | -29°C to 150°C |
| Pressure | |
| -29°C to 25°C | 10 bar g |
| 50°C | 8.5 bar g |
| 100°C | 5.5 bar g |
| 150°C | 3 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Vertical |

| Dimensions | | | | | | |
|----------------------------|----|--------------|-----------|---------------|-----------------|-------------------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Liner Thickness | Weight 1000mm lg. |
| ASME 150 Piping System | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | mm | Kg |
| 1 | 25 | 250 - 6000 | 110 | 51 | 3.0 | 5.8 |
| 1½ | 40 | 250 - 6000 | 125 | 73 | 3.0 | 9.0 |
| 2 | 50 | 250 - 6000 | 150 | 92 | 3.0 | 12.5 |
| DIN PN 10/16 Piping System | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | mm | Kg |
| 1 | 25 | 250 - 6000 | 115 | 68 | 3.0 | 5.8 |
| 1½ | 40 | 250 - 6000 | 150 | 88 | 3.0 | 9.0 |
| 2 | 50 | 250 - 6000 | 165 | 102 | 3.0 | 12.5 |

| Options | |
|-----------|--|
| Component | Description |
| Viewing | Hollow Ball Indicator |
| | Lamps |
| Slots | Various slot configurations |
| Scale | Graduation or marking to customer requirements |

| Material Specification | | | | |
|------------------------|------------------|----------|----------------------|----------------------------|
| Item | Description | Quantity | Materials | Specification |
| 1 | Flange | 2 | Stainless Steel | ASTM A182 Gr. F304/Gr.F316 |
| 2 | Support Tube | 1 | Stainless Steel | ASTM A312 TP304/TP316 |
| 3 | Sight Tube | 1 | PFA | ASTM D3307 Type II |
| 4 | Graduation Scale | 1 | Reflective Polyester | |

← B →
← C →

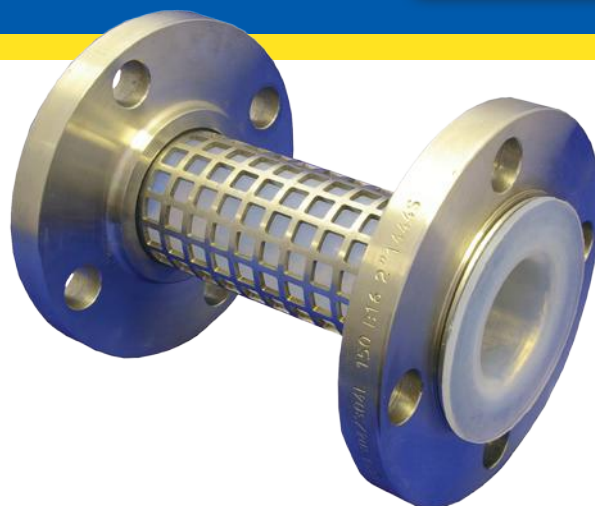


FLSG - PFA Fully Lined Sight Glass

The FLSG provides full 360 degree viewing and a most robust construction employing no glass yet capable of a maximum pressure rating of 15 bar g.

Features

- Stainless steel support tube provides clear viewing whilst remaining capable of retaining high pressures.
- Parallel full port flow path prevents liquid retention and bug traps.
- Shatterproof sight tube for maximum safety.

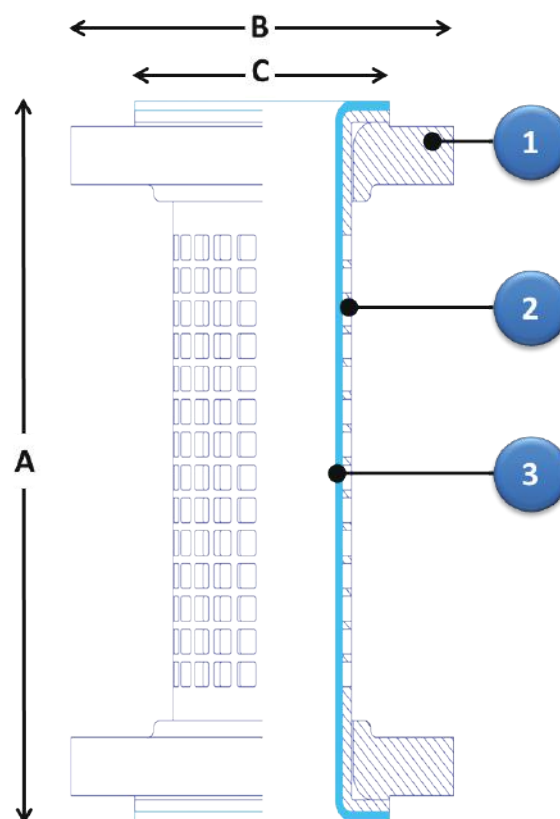


| Performance | |
|---------------|----------------------------|
| Temperature | -29°C to 150°C |
| Pressure | |
| -29°C to 50°C | 15 bar g |
| 100°C | 10 bar g |
| 150°C | 5 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Horizontal or Vertical |

| Dimensions | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|-----------------|------------------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Liner Thickness | Weight 500mm lg. |
| ASME 150 Piping System | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | mm | Kg |
| 1 | 25 | 250 - 2800 | 110 | 51 | 3.0 | 4.4 |
| 1½ | 40 | 250 - 2800 | 125 | 73 | 3.0 | 6.5 |
| 2 | 50 | 250 - 2800 | 150 | 92 | 3.0 | 9.3 |
| 3 | 80 | 250 - 2800 | 190 | 127 | 3.0 | 16.2 |
| 4 | 100 | 250 - 2800 | 230 | 157 | 3.0 | 20.0 |
| DIN PN 10/16 Piping System | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | mm | Kg |
| 1 | 25 | 250 - 2800 | 115 | 68 | 3.0 | 4.4 |
| 1½ | 40 | 250 - 2800 | 150 | 88 | 3.0 | 6.5 |
| 2 | 50 | 250 - 2800 | 165 | 102 | 3.0 | 9.3 |
| 3 | 80 | 250 - 2800 | 200 | 138 | 3.0 | 16.2 |
| 4 | 100 | 250 - 2800 | 220 | 158 | 3.0 | 20.0 |

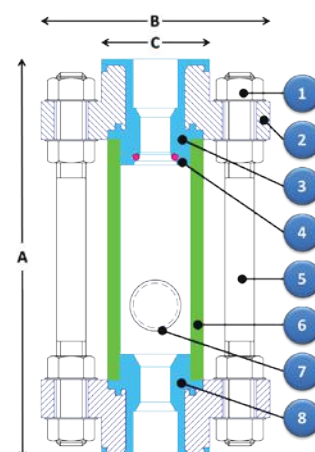
| Options | |
|-----------|--|
| Component | Description |
| Length | Customer Specified |
| Viewing | Hollow Ball Indicator Lamps Flow Disturbers Flow Indicators |

| Material Specification | | | | |
|------------------------|-------------|----------|-----------------|-----------------------------|
| Item | Description | Quantity | Materials | Specification |
| 1 | Flange | 2 | Stainless Steel | ASTM A240 Gr. F304/Gr. F316 |
| 2 | Housing | 1 | Stainless Steel | ASTM A312 TP304 |
| 3 | Liner | 1 | PFA | ASTM D3307 Type II |



BFSG - PFA Lined Ball Float Sight Glass

The BFSG is a floating ball check valve, constructed from a heavy duty borosilicate glass tube held securely between two PFA lined end flanges. Inside the BFSG are two PTFE seats (the lower one castellated and the upper one with a Chemraz® o-ring seal) and a hollow PTFE floating ball trapped between them. These sight glass / check valves are used to safeguard vacuum pumps from failure caused through liquid being drawn into them. Under normal operation the gasses pass up past the ball and through the sight glass into the vacuum pump. If something goes wrong with the process and liquid enters into the vacuum line the sight glass fills with this and the ball floats up to the seat preventing the liquid from passing and damaging the pump. Not only is the pump protected but the sight glass gives clear visual indication of the presence of liquid in the line.



Features

- Heat treated heavy wall borosilicate glass for pressure retention, general mechanical strength, clear viewing and excellent corrosion resistance.
- Adjustable tie rods protect the sight glass from other plant loads and mechanical damage.
- Soft seat for reliable sealing.

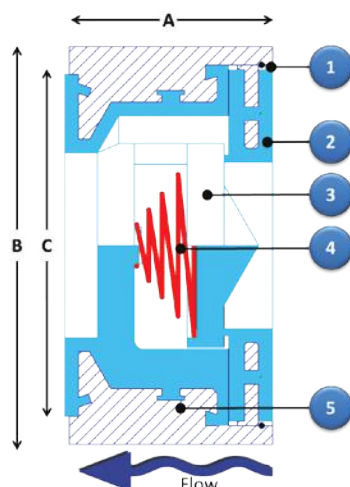
| Performance | |
|-----------------------------|---------------------------------|
| Temperature | -29°C to 150°C |
| Pressure | |
| 1 in to 2 in, DN25 to DN50 | 6 bar g |
| 3 in to 4 in, DN80 to DN100 | 4 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Vertical with ball trap at base |

| Dimensions | | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|--------|-------|---------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Weight | Glass | |
| ASME 150 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 152 | 110 | 51 | 3.8 | 30 | 4.5 |
| 1½ | 40 | 178 | 125 | 73 | 5.2 | 50 | 7.0 |
| 2 | 50 | 203 | 150 | 92 | 7.7 | 60 | 9.0 |
| 3 | 80 | 241 | 190 | 127 | 13.5 | 90 | 9.0 |
| 4 | 100 | 292 | 230 | 157 | 18.9 | 120 | 9.0 |
| DIN PN 10/16 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 160 | 115 | 68 | 4.0 | 30 | 4.5 |
| 1½ | 40 | 200 | 150 | 88 | 5.6 | 50 | 7.0 |
| 2 | 50 | 230 | 165 | 102 | 8.5 | 60 | 9.0 |
| 3 | 80 | 310 | 200 | 138 | 12.3 | 90 | 9.0 |
| 4 | 100 | 350 | 220 | 158 | 18.9 | 120 | 9.0 |

| Options | |
|------------------|---|
| Component | Description |
| Flange Materials | Stainless Steel |
| Lining | Static Dissipating PFA, |
| Flange Type | Unlined stainless steel Tri-clamp, RJT, SMS, DIN 11851 etc. (whether these can be PFA lined depends on the size and fittings type). |
| Shield | Acrylic safety shield Poly (methyl methacrylate) |
| Glass | FEP lined for products which attack glass |
| Body | Back lighting |

| Material Specification | | | | |
|------------------------|-----------------------|----------|------------------------|--|
| Item | Description | Quantity | Materials | Specification |
| 1 | Nuts+Washers | 16/16 | Stainless Steel | ASTM F594 Gr. 304 |
| 2 | Flange | 2 | Carbon Steel PFA | BS1501-161-430A/ASTM A216 Gr.WCB ASTM D3307 Type II |
| 3 | Ball Seat | 1 | Glass Filled PTFE | BS6564 UA1/1 |
| 4 | O Ring | 1 | Chemraz 505 | |
| 5 | Tie Rod | 4 | Stainless Steel | BS970 Pt. 1 Gr. 303S42 |
| 6 | Sight Glass Tube | 1 | Borosilicate Glass 3.3 | ISO 3585 |
| 7 | Hollow Ball | 1 | PTFE | ASTM D4894 |
| 8 | Castellated Ball Trap | 1 | Glass Filled PTFE | BS6564 UA1/1 |
| | Paint Finish | 75µ | Epoxy | Intergard 345 colour blue |

WPCV - Wafer Poppet Check Valve



The WPCV has developed into a global industry standard for a lined poppet check valve with a wide range of process applications. Although initially launched as a true check valve, it quickly became adopted as a simple pressure relief valve and is often used on nitrogen blankets. To this end we are able to produce valves with a wide range of cracking pressures. By limiting the wetted parts to Glass Filled PTFE, PFA and Hastelloy, this ensures long, high cycle life.

In terms of the design, clever features include the conical spring design to ensure that the spring doesn't become "coil bound" on opening, reducing wear and enabling the valve to fully open. The valve has a large open area minimising the pressure drop across the product. Finally a removable seat plate enables the valve to be easily disassembled and cleaned or components replaced.

For very arduous duties the WPCV can be supplied with a PTFE encapsulated spring so that there are no wetted metallic parts.

Features

- Positively located spring and poppet making it secure from misalignment and binding
- A crush resistant design guards against poor installation
- An ideal design for low opening pressure duties
- A full bore design provides the maximum flow with the minimum pressure drop
- Designed for easy disassembly
- Many spring options making a versatile product

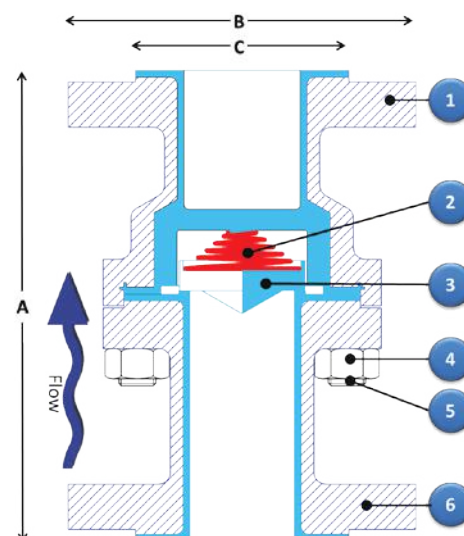
| Options | |
|-----------|---|
| Component | Description |
| Body | 316 Stainless Steel |
| Lining | Static Dissipating PFA |
| Spring | Alternative pressure ratings PTFE encapsulated Alternative spring materials Spring removed (floating poppet) |

| Performance | |
|---------------|----------------------------|
| Temperature | -29°C to 200°C |
| Pressure | |
| -29°C to 38°C | 19.6 bar g |
| 100°C | 17.7 bar g |
| 150°C | 15.8 bar g |
| 200°C | 13.8 bar g |
| Vacuum | Full vacuum -29°C to 200°C |
| Orientation | Horizontal or Vertical |

| Dimensions | | | | | |
|----------------------------|-----|--------------|-----------|---------------|--------|
| To Suit Pipework | | Face to Face | Valve Ø | Raised Face Ø | Weight |
| ASME 150 Piping System | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg |
| ½ | 15 | 30 | 45 | 35 | 0.2 |
| 1 | 25 | 35 | 63 | 51 | 0.5 |
| 1½ | 40 | 45 | 82 | 73 | 1.1 |
| 2 | 50 | 56 | 101 | 92 | 1.7 |
| 3 | 80 | 71 | 133 | 127 | 3.5 |
| 4 | 100 | 80 | 171 | 157 | 5.3 |
| DIN PN 10/16 Piping System | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg |
| ½ | 15 | 30 | 48 | 45 | 0.2 |
| 1 | 25 | 35 | 71 | 68 | 0.6 |
| 1½ | 40 | 45 | 92 | 88 | 1.3 |
| 2 | 50 | 56 | 107 | 102 | 1.8 |
| 3 | 80 | 71 | 142 | 138 | 3.5 |
| 4 | 100 | 80 | 164 | 158 | 5.1 |

| Material Specification | | | | |
|------------------------|-------------|----------|------------------------|---|
| Item | Description | Quantity | Materials | Specification |
| 1 | Circlip | 1 | Stainless Steel | BS2056 Gr. 316S42 |
| 2 | Seat Plate | 1 | Stainless Steel PFA | ASTM A240 Gr. 304 ASTM D3307 Type II |
| 3 | Poppet | 1 | Glass Filled PTFE | BS6564 UA1/1 |
| 4 | Spring | 1 | Hastelloy® C276 | ASTM B574 Gr. UNS N10276 |
| 5 | Valve Body | 1 | Stainless Steel PFA | ASTM A240 Gr. 304 ASTM D3307 Type II |

FPCV - Flanged Poppet Check Valve



| Performance | |
|---------------|----------------------------|
| Temperature | -29°C to 200°C |
| Pressure | |
| -29°C to 38°C | 19.6 bar g |
| 100°C | 17.7 bar g |
| 150°C | 15.8 bar g |
| 200°C | 13.8 bar g |
| Vacuum | Full vacuum -29°C to 200°C |
| Orientation | Horizontal or Vertical |

The FPCV embodies all of the features of the WPCV, but has the additional benefit of providing the valve within bolted flange ends, making installation simple and fitting in standard valve face to face spaces.

Please note that DIN PN10/16 FPCV's are a three part construction and not as depicted.

| Dimensions | | | | | |
|----------------------------|-----|----------------|-----------|---------------|--------|
| To Suit Pipework | | Face to Face | Valve Ø | Raised Face Ø | Weight |
| ASME 150 Piping System | | | | | |
| in | mm | Dim. A mm min. | Dim. B mm | Dim. C mm | Kg |
| 1 | 25 | 152 | 110 | 51 | 3.9 |
| 1½ | 40 | 178 | 125 | 73 | 7.1 |
| 2 | 50 | 203 | 150 | 92 | 9.5 |
| 3 | 80 | 241 | 190 | 127 | 17.1 |
| 4 | 100 | 292 | 230 | 157 | 27.7 |
| DIN PN 10/16 Piping System | | | | | |
| in | mm | Dim. A mm min. | Dim. B mm | Dim. C mm | mm Kg |
| 1 | 25 | 160 | 115 | 68 | 4 |
| 1½ | 40 | 200 | 150 | 88 | 7 |
| 2 | 50 | 230 | 165 | 102 | 10 |
| 3 | 80 | 310 | 200 | 138 | 20 |
| 4 | 100 | 350 | 220 | 158 | 30 |

Features

- Flanged connections for those installations where a wafer pattern design is not wanted
- All the features of the WPCV
- Standard face to face dimensions
- Suitable for both vertical and horizontal applications

| Options | |
|-----------|---|
| Component | Description |
| Body | Stainless Steel |
| Lining | Static Dissipating PFA |
| Length | Special face to face dimensions |
| Spring | Alternative pressure ratings PTFE encapsulated Alternative spring materials Spring removed (floating poppet) |

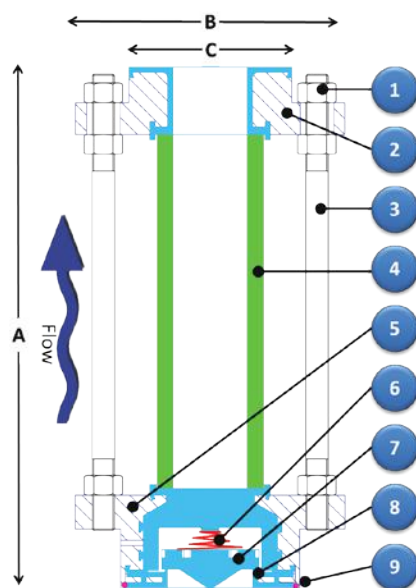
| Material Specification | | | | |
|------------------------|--------------|----------|---------------------|---|
| Item | Description | Quantity | Materials | Specification |
| 1 | Valve Body | 1 | Carbon Steel PFA | ASTM A216 Gr. WCB ASTM D3307 Type II |
| 2 | Spring | 1 | Hastelloy® C276 | ASTM B574 Grade UNS N10276 |
| 3 | Poppet | 1 | Glass Filled PTFE | BS6564 UA 1/1 |
| 4 | Nut | 4/6 | Stainless Steel | ASTM F594 Gr. 304 |
| 5 | Stud | 4/6 | Stainless Steel | BS970 Pt 1 Gr. 303S42 |
| 6 | Valve Inlet | 1 | Carbon Steel PFA | ASTM A216 Gr. WCB ASTM D3307 Type II |
| | Paint Finish | 75µ | Epoxy | Intergard 345 colour blue |

SPCV - Sight Glass Poppet Check Valve

The sight glass poppet check valve is, we believe, unique in combining a poppet check valve and sight glass in one space and cost saving unit.

Features

- Significant cost savings with two products in one.
- Space saving and flange joint reduction
- Full 360 degree viewing of the downstream process flow.
- All the features of the WPCV check valve and CTSG sight glass



| Performance | |
|-------------|----------------------------|
| Temperature | -29°C to 150°C |
| Pressure | 10 bar g |
| Vacuum | Full vacuum -29°C to 150°C |
| Orientation | Horizontal or Vertical |

| Dimensions | | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|--------|-------|---------|
| To Suit Pipework | | Face to Face | Flange Ø | Raised Face Ø | Weight | Glass | |
| ASME 150 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 152 | 110 | 51 | 3.8 | 30 | 4.5 |
| 1½ | 40 | 178 | 125 | 73 | 5.2 | 50 | 7.0 |
| 2 | 50 | 203 | 150 | 92 | 7.7 | 60 | 9.0 |
| 3 | 80 | 241 | 190 | 127 | 13.5 | 90 | 9.0 |
| 4 | 100 | 292 | 230 | 157 | 18.8 | 120 | 9.0 |
| DIN PN 10/16 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | Ø mm | Wall mm |
| 1 | 25 | 160 | 115 | 68 | 3.9 | 30 | 4.5 |
| 1½ | 40 | 200 | 150 | 88 | 5.6 | 50 | 7.0 |
| 2 | 50 | 230 | 165 | 102 | 8.5 | 60 | 9.0 |
| 3 | 80 | 310 | 200 | 138 | 12.3 | 90 | 9.0 |
| 4 | 100 | 350 | 220 | 162 | 18.8 | 120 | 9.0 |

| Options | |
|-----------|---|
| Component | Description |
| Body | Stainless Steel |
| Lining | Static-Dissipating PFA |
| Length | Special face to face dimensions |
| Spring | Alternative pressure ratings PTFE encapsulated Alternative spring materials Spring removed (floating poppet) |
| Shield | Acrylic safety shield Poly (methyl methacrylate) |

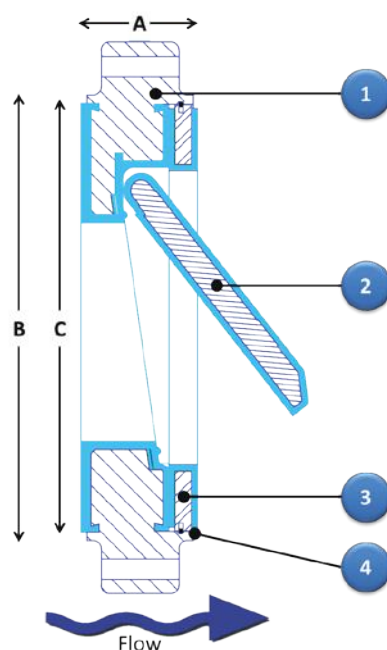
| Material Specification | | | | |
|------------------------|------------------|----------|------------------------|---|
| Item | Description | Quantity | Materials | Specification |
| 1 | Nuts+Washers | 12/12 | Stainless Steel | ASTM F594 Gr. 304 |
| 2 | Flange | 2 | Carbon Steel PFA | BS1501-161-430A/ASTM A216 Gr. WCB ASTM D3307 Type II |
| 3 | Tie Rods | 4 | Stainless Steel | BS970 Pt. 1 Gr.303S42 |
| 4 | Sight Glass Tube | 1 | Borosilicate Glass 3.3 | ISO 3585 |
| 5 | Valve Body | 1 | Carbon Steel PFA | BS1501-141-430A ASTM D3307 Type II |
| 6 | Spring | 1 | Hastelloy C276 | ASTM B574 Gr. UNS N10276 |
| 7 | Poppet | 1 | Glass Filled PTFE | BS 6564 UA1/1 |
| 8 | Seat Plate | 1 | Stainless Steel PFA | ASTM A240 Gr. 304 ASTM D3307 Type II |
| 9 | Circlip | 1 | Stainless Steel | BS2056 Gr. 316S42 |
| | Paint Finish | 75µ | Epoxy | Intergard 345 colour blue |

STCV - Swing Check Valve

A high integrity PFA moulded wafer swing check valve with a fully encapsulated one piece disc and hinge assembly ensuring prolonged maintenance free service. It is suitable for PTFE lined or unlined pipework in severe process conditions.

Features

- Retained hinge design makes the product easy to install and does not rely on mating pipework to trap the disc. This therefore prevents the loss of the disc in service as can happen with other designs.
- Steel liner reinforcement and machined body T slots lock the PFA in position and enable it to perform at full vacuum and 200°C.
- The seat sits at an angle in the closed position ensuring that the disc sits home in a horizontal line.



| Performance | |
|---------------|--|
| Temperature | -29°C to 200°C |
| Pressure | |
| -29°C to 40°C | 19.6 bar g |
| 100°C | 17.7 bar g |
| 150°C | 15.8 bar g |
| 200°C | 13.8 bar g |
| Vacuum | Full vacuum -29°C to 200°C |
| Orientation | Horizontal or Vertical [flow upwards only] |

| Dimensions | | | | | | | |
|----------------------------|-----|--------------|-----------|---------------|-----------|------|------|
| To Suit Pipework | | Face to Face | Valve Ø | Raised Face Ø | Weight | | |
| ASME 150 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | Dim. C mm | Kg | | |
| 4 | 100 | 52 | 171 | 164 | 7.0 | | |
| 6 | 150 | 56 | 219 | 210 | 12.0 | | |
| 8 | 200 | 60 | 275 | 268 | 21.5 | | |
| 10 | 250 | 68 | 336 | 324 | 27.5 | | |
| 12 | 300 | 78 | 406 | 386 | 40.5 | | |
| DIN PN 10/16 Piping System | | | | | | | |
| in | mm | Dim. A mm | Dim. B mm | | Dim. C mm | | Kg |
| | | | PN10 | PN16 | PN10 | PN16 | |
| 4 | 100 | 52 | 162 | 162 | 158 | 158 | 7.0 |
| 6 | 150 | 56 | 218 | 218 | 210 | 210 | 12.0 |
| 8 | 200 | 60 | 273 | 273 | 268 | 268 | 21.5 |
| 10 | 250 | 68 | 328 | 328 | 324 | 324 | 27.5 |
| 12 | 300 | 78 | 378 | 384 | 370 | 378 | 40.5 |

| Options | |
|-----------|------------------------|
| Component | Description |
| Body | Stainless Steel |
| Lining | Static-Dissipating PFA |

| Material Specification | | | | |
|------------------------|-----------------|----------|--------------------|---|
| Item | Description | Quantity | Materials | Specification |
| 1 | Body | 1 | Cast Steel PFA | ASTM A216 Gr. WCB ASTM D3307 Type II |
| 2 | Disc | 1 | Cast Steel PFA | ASTM A216 Gr. WCB ASTM D3307 Type II |
| 3 | Retaining Plate | 1 | Steel Plate PFA | BS4360 Gr. 43A ASTM D3307 Type II |
| 4 | Circlip | 1 | Stainless Steel | ASTM A580 Gr. 304 |
| | Paint Finish | 75µ | Epoxy | Intergard 345 colour blue |



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