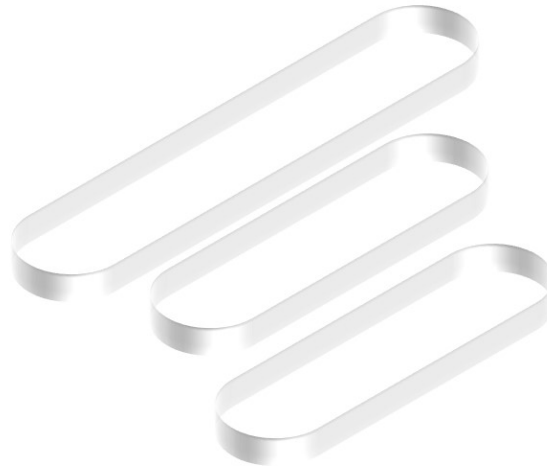




## **WILLIAM JOHNSTON & COMPANY LIMITED**

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### **Reflex Gauge Glasses**

Gauge glasses have high mechanical strength and are exceptionally resistant to alkalis, acids, and boiler water, (within the service limitation). Our glass testing laboratory carries out continuously quality control tests: purity of glass, flaws in glass, dimensional accuracy, etc.

This ensures the high quality standard of gauge glasses.

Both reflex and transparent glasses are manufactured according to the most varied international standards.

#### **Reflex glasses**

The side facing the medium chamber is provided with moulded grooves set at 90° angles. The moulding process increases the resistance of the glass grooves to wear; the “skin” which the glass attains during moulding gives it maximum smoothness and hardness. This makes it extremely resistant to the attack of boiler water.

#### **Applications:**

Up to 35 bar saturated steam, reflex glasses provide the optimum solution, they are corrosion resistant and provide an absolutely clear indication. Reflex glasses can be used with all media except steam at service conditions, up to 400 bar or temperatures up to 400 °C.

#### **Transparent glasses**

Transparent glasses are also manufactured from “extra-hard” borosilicate glass. The surfaces on both sides are finely ground and polished to ensure optimal transparency.

#### **Applications:**

In steam service above 35 bar and with media with a high pH-value. Transparent glasses must be protected by a mica shield on the side facing the medium chamber. Transparent glasses should always be chosen for contaminated, viscous, or corrosive media. Within the given service limitations, they may be used for all media except steam at pressures up to 340 bar or temperatures up to 400 °C.

#### **Packaging**

All our Reflex and transparent glasses are individually packed. We compliment the glass with two gaskets. One sealing gasket and one cushion gasket.

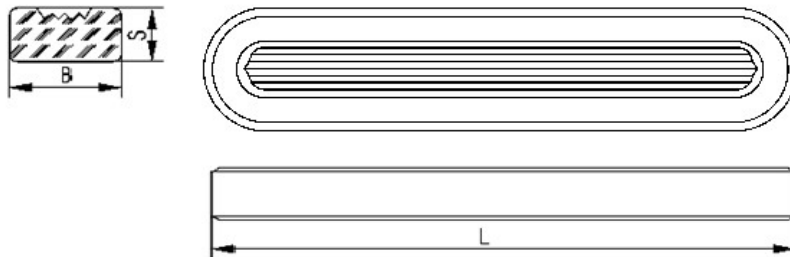
Dimensions of Reflex glasses below.

**Reflex Glasses A, B, H.**

| SIZE | A SERIES |    |    | Weight<br>(g/each) | B SERIES |    |    | Weight<br>(g/each) | H SERIES |    |    | Weight<br>(g/each) |
|------|----------|----|----|--------------------|----------|----|----|--------------------|----------|----|----|--------------------|
|      | L        | B  | S  |                    | L        | B  | D  |                    | L        | B  | S  |                    |
| 0    |          |    |    |                    | 95       | 34 | 17 | 110                |          |    |    |                    |
| I    | 115      | 30 | 17 | 118                | 115      | 34 | 17 | 132                | 115      | 34 | 22 | 176                |
| II   | 140      | 30 | 17 | 146                | 140      | 34 | 17 | 162                | 140      | 34 | 22 | 214                |
| III  | 165      | 30 | 17 | 176                | 165      | 34 | 17 | 195                | 165      | 34 | 22 | 254                |
| IV   | 190      | 30 | 17 | 200                | 190      | 34 | 17 | 228                | 190      | 34 | 22 | 294                |
| V    | 220      | 30 | 17 | 237                | 220      | 34 | 17 | 264                | 220      | 34 | 22 | 344                |
| VI   | 250      | 30 | 17 | 265                | 250      | 34 | 17 | 301                | 250      | 34 | 22 | 392                |
| VII  | 280      | 30 | 17 | 303                | 280      | 34 | 17 | 338                | 280      | 34 | 22 | 445                |
| VIII | 320      | 30 | 17 | 334                | 320      | 34 | 17 | 387                | 320      | 34 | 22 | 503                |
| IX   | 340      | 30 | 17 | 359                | 340      | 34 | 17 | 410                | 340      | 34 | 22 | 536                |
| X    |          |    |    |                    | 370      | 34 | 17 | 461                |          |    |    |                    |

| Application Range  | Series A (1) |     | Series B (1) |     | Series H   |     |
|--|--------------|-----|--------------|-----|------------|-----|
|  | Bar          | °C  | Bar          | °C  | Bar        | °C  |
| For media with no significant glass attack.<br>e.g. Oils, Hydrocarbons         | 400          | 120 | 265          | 120 | 300        | 120 |
|  | 150          | 400 | 180          | 400 | 200        | 400 |
|  | 0.0 - 10.0   | 430 | 0.0 - 10.0   | 430 | 0.0 - 10.0 | 430 |
| For media with significant glass attack e.g.<br>saturated steam, HPHW, Alkalis | 35           | 243 | 35           | 243 | (2)        | 253 |

- (1) Glass types to OeNORM M 7354 or DIN 7081
- (2) For steam pressures above 35 Bar we recommend the use of transparent glass with Mica Shields



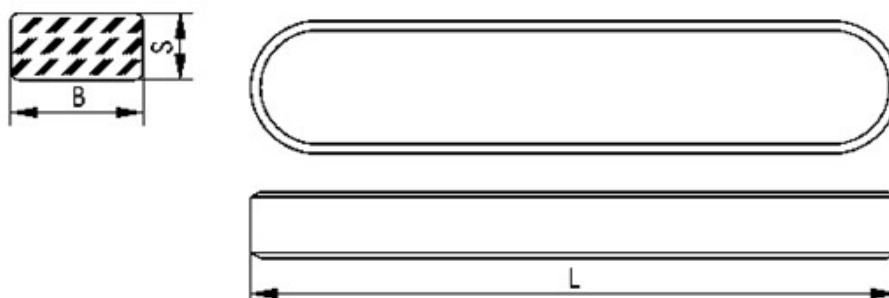
Dimensions of Transparent glasses are detailed below.

## Transparent Glasses

| SIZE | A SERIES |    |    | Weight<br>(g/each) | B SERIES |    |    | Weight<br>(g/each) | H SERIES |    |    | Weight<br>(g/each) |
|------|----------|----|----|--------------------|----------|----|----|--------------------|----------|----|----|--------------------|
|      | L        | B  | S  |                    | L        | B  | D  |                    | L        | B  | S  |                    |
| I    | 115      | 30 | 17 | 122                | 115      | 34 | 17 | 137                |          |    |    |                    |
| II   | 140      | 30 | 17 | 152                | 140      | 34 | 17 | 172                | 140      | 34 | 22 | 218                |
| III  | 165      | 30 | 17 | 176                | 165      | 34 | 17 | 204                | 165      | 34 | 22 | 260                |
| IV   | 190      | 30 | 17 | 211                | 190      | 34 | 17 | 238                | 190      | 34 | 22 | 302                |
| V    | 220      | 30 | 17 | 250                | 220      | 34 | 17 | 280                | 220      | 34 | 22 | 357                |
| VI   | 250      | 30 | 17 | 280                | 250      | 34 | 17 | 317                | 250      | 34 | 22 | 400                |
| VII  | 280      | 30 | 17 | 314                | 280      | 34 | 17 | 256                | 280      | 34 | 22 | 460                |
| VIII | 320      | 30 | 17 | 360                | 320      | 34 | 17 | 407                | 320      | 34 | 22 | 530                |
| IX   | 340      | 30 | 17 | 387                | 340      | 34 | 17 | 430                | 340      | 34 | 22 | 562                |
| X    |          |    |    |                    | 370      | 34 | 17 | 480                |          |    |    |                    |

| Application Range<br>For media with no significant glass attack.<br>e.g. Oils, Hydrocarbons | Series A (1) |     | Series B (1) |     | Series H   |     |
|---|--------------|-----|--------------|-----|------------|-----|
|   | Bar          | °C  | Bar          | °C  | Bar        | °C  |
|   | 240          | 120 | 290          | 120 | 340        | 120 |
|   | 160          | 400 | 200          | 400 | 230        | 400 |
|   | 0.0 - 10.0   | 430 | 0.0 - 10.0   | 430 | 0.0 - 10.0 | 430 |
| For media with significant glass attack e.g.<br>saturated steam, HPHW, Alkalis              | (2)          |     | (2)          |     | (2)        |     |
|   | 35           | 243 | 35           | 243 | 42         | 253 |
|   | 70           | 300 | 85           | 300 | 85         | 300 |

- (1) Glass types to OeNORM M 7354 or DIN 7081  
 (2) For steam pressures above 35 Bar we recommend the use of transparent glass with Mica Shields

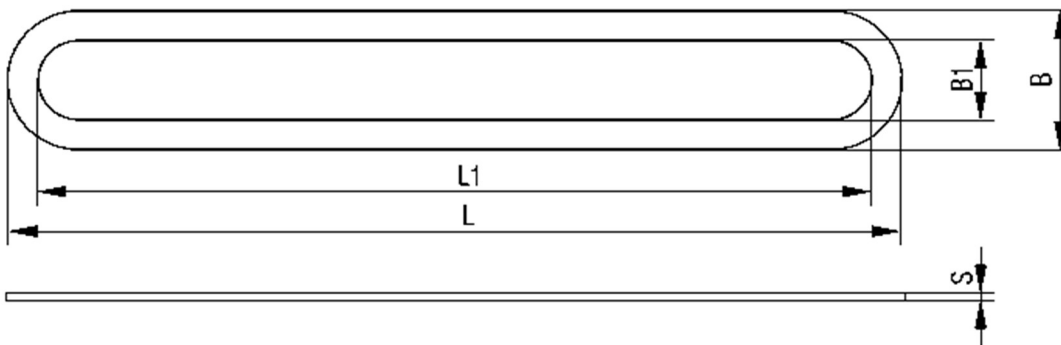


**Sealing gasket, cushion gasket made from asbestos-free material.**

| Size | Type A |     |    |    | Type B |     |    |    |
|------|--------|-----|----|----|--------|-----|----|----|
|      | L      | L1  | B  | B1 | L      | L1  | B  | B1 |
| 0    | 95     | 70  | 30 | 15 | 95     | 70  | 34 | 15 |
| I    | 115    | 90  | 30 | 15 | 115    | 90  | 34 | 15 |
| II   | 140    | 115 | 30 | 15 | 140    | 115 | 34 | 15 |
| III  | 165    | 140 | 30 | 15 | 165    | 140 | 34 | 15 |
| IV   | 190    | 165 | 30 | 15 | 190    | 165 | 34 | 15 |
| V    | 220    | 195 | 30 | 15 | 220    | 195 | 34 | 15 |
| VI   | 250    | 225 | 30 | 15 | 250    | 225 | 34 | 15 |
| VII  | 280    | 255 | 30 | 15 | 280    | 255 | 34 | 15 |
| VIII | 320    | 295 | 30 | 15 | 320    | 295 | 34 | 15 |
| IX   | 340    | 315 | 30 | 15 | 340    | 315 | 34 | 15 |

Sealing and cushion gasket  $s=1.5\text{mm}$

- 1) Protective gaskets  $s=0.5\text{mm}$
- 2) Cushion gasket  $s=0.5\text{mm}$



**Mica Shields**

Mica shields are available on request as are many other associated consumables.

- Packing Sleeves
- KU16 & KU20 graphite rings
- Spindles
- Handles
- Boiler door joints
- Ladder tapes and webbing in glass and ceramic
- Ropes and laggings in glass and ceramic
- High temperature gaskets

#### Disclaimer

Please note, failure to select the correct materials or products we supply (“the Products”) may result in damage to plant, equipment or property. In some instances, it may cause death or personal injury. We are not designers and do not give advice about design related matters concerning the Products. We can help and assist with the technical specifications for the Products. In specific applications, particularly where critical conditions exist, we will try to assist you within the limitations of the services that we offer. All information supplied by us is intended as technical co-operation outlining the specifications of the different Products which we supply. To the extent permitted in law, no warranty is given in respect of any information supplied by us. The customer must satisfy themselves as to the suitability of the Products for their intended application and use. The correct fitting of Products is the responsibility of the customer. Your statutory rights remain unaffected. Save in respect of death, personal injury or fraud, our entire liability to you, however arising from the supply of Products shall be limited to the £10M indemnity amount provided by our insurers.