



## Introduction

Valves and filters form an essential part of any process plant or system in a wide range of applications from relatively simple on/off function to control, pressure relief and filtering.

All wetted parts of valves and filters described in this section of the catalogue are constructed from Borosilicate glass and PTFE, thus ensuring maximum resistance to corrosion. In addition, as valves have a glass body, visual monitoring of the valve operation is possible at all times. Complete valve consists of Glass Valve Body, PTFE Bellow with nut, Bakelite Valve Bonnet with MS Spindle etc. Aluminum Valve Bonnet is also available and can be supplied upon request.

DN refers to the nominal bore. Unless otherwise stated, all dimensions are given in mm.

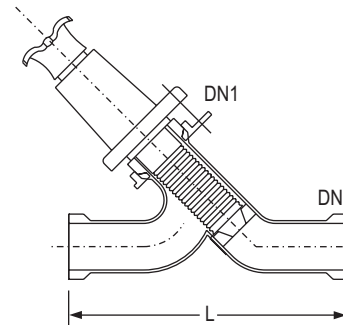
For permissible operating conditions, unless otherwise stated in the individual descriptions, please see Chapter 1- Technical Information. Generally, the maximum operating temperatures above ambient, particularly in the range from 120°C to 200°C, impose restrictions on the permissible operating pressure. In case of doubt, please consult our Technical Department for further information.

For Super Coated items, add a suffix C to the standard catalogue reference. Therefore a SGPVD 25 becomes a SGPVD 25 C.

The following standard spares are available for valves.

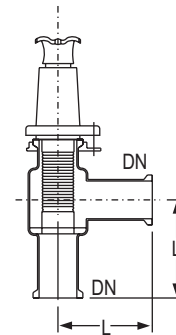
- Glass Body
- Valve Bellow (PTFE)
- Valve Nut (GFT)
- Bonnet Assembly
- Bonnet Assembly with Valve Bellow

## STRAIGHT THROUGH VALVES (LINE VALVES)



| DN  | DN1 | L   | Bar.g. | Catalogue Reference |
|-----|-----|-----|--------|---------------------|
| 25  | 25  | 175 | 3.0    | SGPV 25             |
| 40  | 25  | 225 | 3.0    | SGPV 40/25          |
| 40  | 40  | 225 | 3.0    | SGPV 40             |
| 50  | 40  | 300 | 2.0    | SGPV 50             |
| 50  | 50  | 300 | 2.0    | SGPV 50             |
| 80  | 80  | 375 | 1.5    | SGPV 80             |
| 100 | 100 | 575 | 1.0    | SGPV 100            |

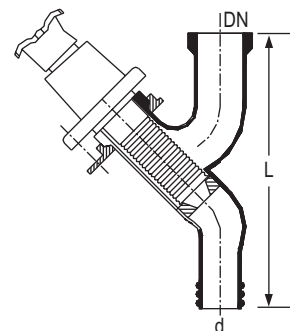
## ANGLE VALVES 90°



| DN | L   | Bar.g. | Catalogue Reference |
|----|-----|--------|---------------------|
| 25 | 100 | 3.0    | SGPVE 25            |
| 40 | 150 | 3.0    | SGPVE 40            |
| 50 | 150 | 2.0    | SGPVE 50            |
| 80 | 200 | 1.5    | SGPVE 80            |

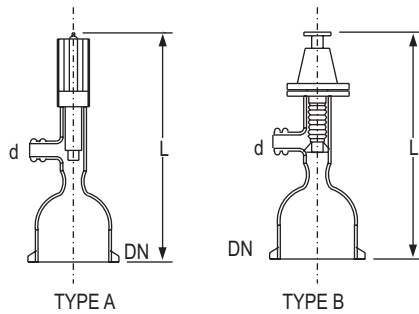
\*Angle Valve can also be provided in 80°

## Drain Valves



| DN    | d  | L   | Bar.g. | Catalogue Reference |
|-------|----|-----|--------|---------------------|
| 25    | 18 | 175 | 3.0    | SGPVD 25            |
| 40/25 | 18 | 200 | 3.0    | SGPVD 40/25         |
| 40    | 18 | 200 | 3.0    | SGPVD 40            |

## Vent Valves

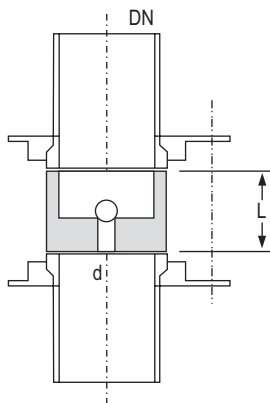


| DN | L   | d  | Type | Bar.g. | Catalogue Reference |
|----|-----|----|------|--------|---------------------|
| 25 | 145 | 10 | A    | 3.0    | SGVST 25A           |
| 25 | 140 | 10 | B    | 3.0    | SGVST 25B           |
| 40 | 165 | 10 | A    | 3.0    | SGVST 40A           |
| 40 | 140 | 10 | B    | 3.0    | SGVST 40B           |

## Non-Return Valves ball type

These valves are for use only in vertical lines. They are clamped between buttress ends using long bolts.

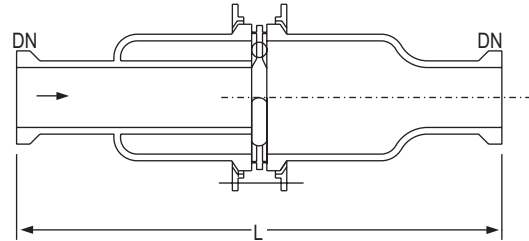
The complete assembly comprises the glass body, the glass Ball and the PTFE retaining plate.



| DN | L  | d  | Catalogue Reference |
|----|----|----|---------------------|
| 25 | 25 | 10 | SGNRD 25            |
| 40 | 33 | 15 | SGNRD 40            |
| 50 | 41 | 19 | SGNRD 50            |
| 80 | 65 | 30 | SGNRD 80            |

## Non-Return Valves flap type

These valves can be used in both horizontal and vertical lines. The flap is made of PTFE and is mounted on a tantalum hinge to ensure maximum corrosion resistance.

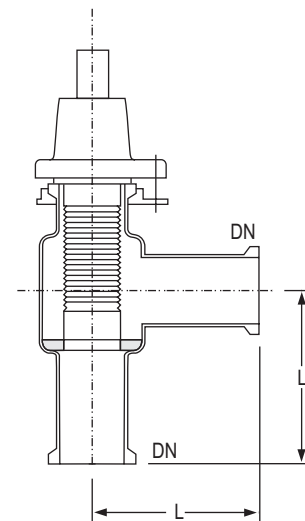


| DN  | L   | Bar.g. | Catalogue Reference |
|-----|-----|--------|---------------------|
| 25  | 230 | 3.0    | SGRK 25             |
| 40  | 285 | 3.0    | SGRK 40             |
| 50  | 365 | 2.0    | SGRK 50             |
| 80  | 395 | 1.5    | SGRK 80             |
| 100 | 575 | 1.0    | SGRK 100            |

## Loading Valves

Loading valves (or constant pressure valves) are used to maintain constant pressure in a pipeline and to create an artificial head, typically for a pump to work against. They are particularly suitable for installation on the outlet of centrifugal and dosing pump. They must not be used as safety or pressure relief valves.

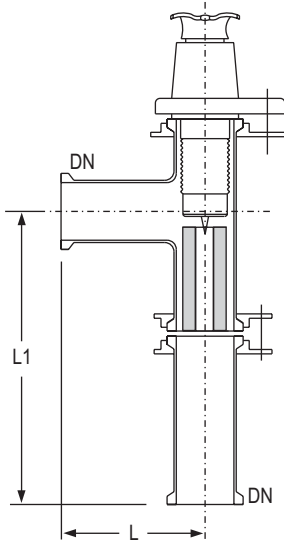
The valves comprise a spring assembly (in place of the normal handwheel and bonnet assembly) which can be adjusted to vary the pressure from 0.2 bar.g. to the maximum operating pressure of the valve.



| DN | L   | Catalogue Reference |
|----|-----|---------------------|
| 25 | 100 | SGPVF 25            |
| 40 | 150 | SGPVF 40            |
| 50 | 150 | SGPVF 50            |

## Hand Control Valves

Hand control valves incorporate a handwheel and bonnet assembly.



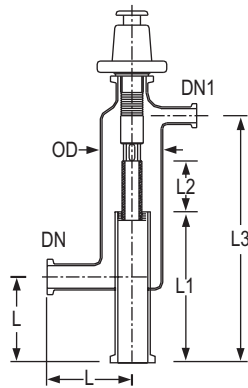
| DN | L   | L1  | Catalogue Reference |
|----|-----|-----|---------------------|
| 25 | 100 | 170 | SGPRV 25            |
| 40 | 150 | 185 | SGPRV 40            |
| 50 | 150 | 195 | SGPRV 50            |

## Adjustable Overflow Valves

These valves provide a means of externally adjusting the level inside a vessel. They are ideal for use with liquid separators or liquid/liquid extractors.

Within the valve, the lower end of the PTFE bellows is in the form of a tube of accurately machined external diameter which operates inside a precision bore glass tube. Its position can be adjusted within given limits to set the required overflow level.

In application where the system is not self-venting via the overflow line, a vent line can be connected to the DN1 branch.



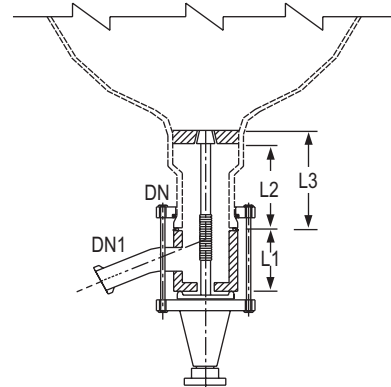
| DN | OD  | DN1 | L   | L1  | L2  | L3  | Catalogue Reference |
|----|-----|-----|-----|-----|-----|-----|---------------------|
| 25 | 90  | 25  | 100 | 165 | 50  | 255 | SGOF 25             |
| 40 | 90  | 25  | 150 | 265 | 90  | 435 | SGOF 40             |
| 50 | 115 | 25  | 150 | 270 | 90  | 435 | SGOF 50             |
| 80 | 165 | 25  | 200 | 330 | 120 | 555 | SGOF 75             |

## Bottom Outlet Valves

Type SGBAL and SGBAS bottom outlet valves are designed specifically for use with SUPER glass items which have an integral glass seat sealed into the bottom outlet.

The position of the valve seat is such that it reduces the accumulation of solids in the vessels or drain neck.

Valve seats can be sealed into either spherical or cylindrical vessels to special order.



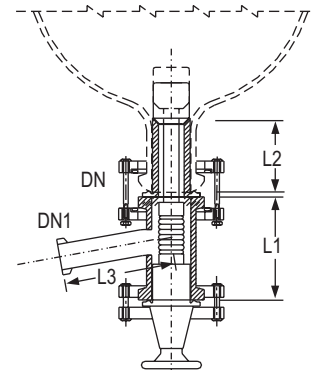
| DN | DN1 | L1 | L2  | L3  | Catalogue Reference |
|----|-----|----|-----|-----|---------------------|
| 25 | 25  | 60 | 120 | 150 | SGBAL 25/25         |
| 40 | 25  | 60 | 120 | 150 | SGBAL 40/25         |
| 50 | 25  | 70 | 120 | 150 | SGBAL 50/25         |
| 50 | 40  | 70 | 120 | 150 | SGBAL 50/40         |

## Typical Applications

**SGBAL 40** This is used with Spherical and Cylinder vessels with long bottom outlet fitted with sealed-in valve seat. For example where a vessels is to be installed in heating/cooling or heating mantle.

**SGBAS 40** This is used with cylindrical or spherical vessels with short bottom nozzles.

Unlike type SGBAS and SGBAL bottom outlet valves shown above the type SGRFC bottom outlet valve is designed for use with spherical and cylindrical vessels which do not have an integral glass seat sealed into the bottom outlet.

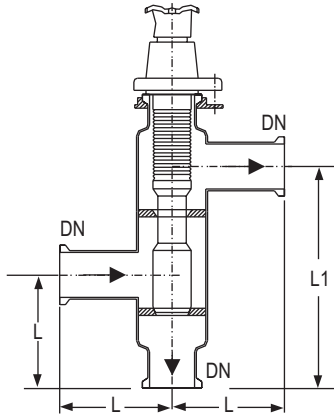


| DN | DN1 | L1  | L2 | L3  | Catalogue Reference |
|----|-----|-----|----|-----|---------------------|
| 40 | 25  | 100 | 85 | 125 | SGRFC 40            |
| 50 | 25  | 100 | 85 | 135 | SGRFC 50            |

## Three Way Flow Change Valves

With normal three way valves it is possible to close both outlets at the same time by mistake which can result in the build-up of excess pressure in the line and also in the plant itself. The valve described here provided a safe solution to this problem since the design ensures that free flow through the valve is never impeded.

The use of a three way flow change valve is recommended when a plant is operated batch wise, under vacuum and needs to be vented at regular intervals in such circumstances one outlet is connected to the vacuum pump and the other (in reverse direction of flow) is used for venting purpose.



| DN | L   | L1  | Catalogue Reference |
|----|-----|-----|---------------------|
| 25 | 100 | 160 | SGPVW 25            |
| 40 | 150 | 225 | SGPVW 40            |

## Gas Mixing Valves

These valves are used to feed gas into bubble columns without internals and reaction vessels. The gas enters through holes drilled radially at the narrowest cross-section of the PTFE jet and the flow of liquid cause it to shear off into very fine bubbles. This also ensure uniform distribution in the liquid even when used with large reaction vessels or similar equipment.

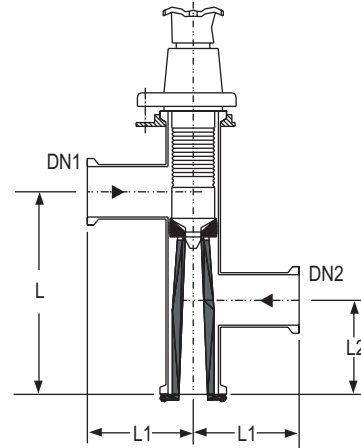
The liquid and gas through put ratio can be selected within wide limits with the valves fully opened. This is achieved by appropriate adjustment of the gas feed pressure, selection of an appropriate diameter for the gas inlet holes or changing the liquid flow rate. It is also possible to vary the ratio of the two flow rates to each other by adjusting the setting of the control cone.

These valve should not be used as cut off valves due to the risk of distortion of the gas inlet holes.

## Technical Data

The throughputs for water and gas refer to a pressure drop of 2 bar in the valve and were measured with an input pressure (air) of 0.4 bar.g and a hole diameter of 1.5 mm.

| Valve Size                               | DN    | 25                 | 40   | 50   |      |
|--|-------|--------------------|------|------|------|
| Permissible operating pressure at 120 °C | bar.g | 3.5                | 3.5  | 3.0  |      |
| Throughput                               | Water | l/h                | 1000 | 2000 | 4000 |
|  | Air   | Nm <sup>3</sup> /h | 2.3  | 8.0  | 13.0 |



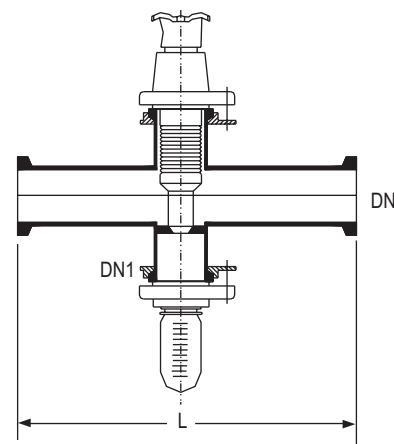
| DN | DN1 Liquid | DN2 Gas | L   | L1 | L2  | Catalogue Reference |
|----|------------|---------|-----|----|-----|---------------------|
| 25 | 25         | 25      | 120 | 50 | 80  | SGGMV 25            |
| 40 | 25         | 25      | 155 | 75 | 95  | SGGMV 40            |
| 50 | 40         | 25      | 190 | 95 | 110 | SGGMV 50            |

## Sampling Valves

These valves are void of dead space and are designed for installation in horizontal pipelines. They are used to take samples from plant and other equipment. There are two different versions which should be selected according to whether they are to operate under positive or atmospheric pressure or alternatively, under vacuum.

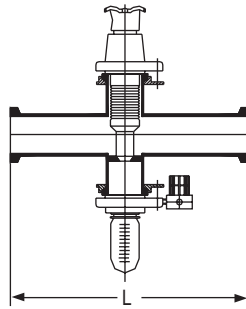
The two-part sampling flange below the outlet neck has a PPH feed pipe inside it and has a GL 45 screw thread (usual with laboratory glass ware) It will therefore, accept a laboratory bottle (which is included in the supply), for example, Sampling flange are in two part which is connected below the outlet neck Laboratory bottle is fitted at the bottom flange. It can also be vented via hole provided in the flange. To evacuate the bottle when taking samples from a vacuum, this hole is fitted with a three way valve.

## Sampling Valves for Atmospheric and Positive Pressure

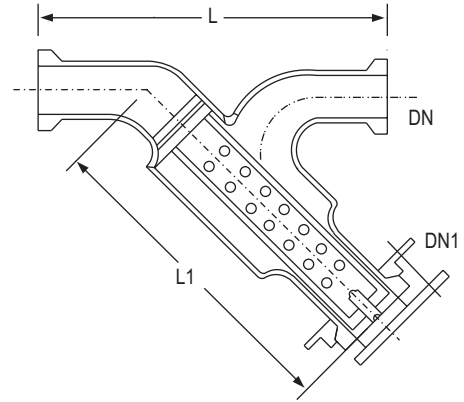


| DN | DN1 | L   | Catalogue Reference |
|----|-----|-----|---------------------|
| 25 | 40  | 200 | SGSVA 25            |
| 40 | 40  | 300 | SGSVA 40            |
| 50 | 40  | 300 | SGSVA 50            |

## Sampling Valves for Vacuum



| DN | DN1 | L   | Reference |
|----|-----|-----|-----------|
| 25 | 40  | 200 | SGSVV 25  |
| 40 | 40  | 300 | SGSVV 40  |
| 50 | 40  | 300 | SGSVV 50  |



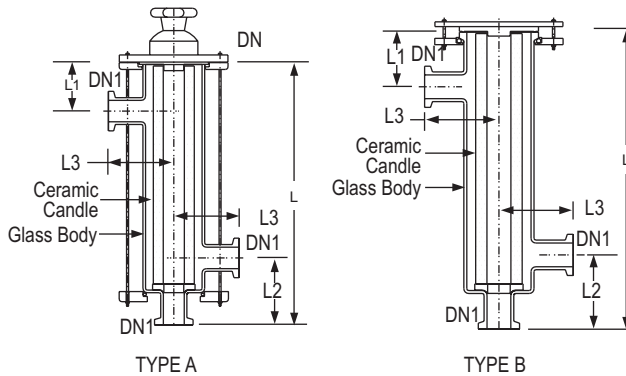
| DN | DN1 | L   | L1  | Catalogue Reference |
|----|-----|-----|-----|---------------------|
| 25 | 40  | 175 | 180 | SGPSF 25            |
| 40 | 50  | 225 | 190 | SGPSF 40            |
| 50 | 80  | 300 | 280 | SGPSF 50            |

1 Catalogue reference to be completed by mesh size i.e. 100, 300 or 500 e.g. SGPSF 40/300

## Pipeline Filters

Pipeline filters are recommended for use in glass pipeline systems to remove impurities from liquid and gas streams.

The assembly is so designed that the ceramic filter element can be easily removed for replacement or cleaning.



| DN  | DN1 | L   | L1 | L2  | L3  | Type | Catalogue Reference |
|-----|-----|-----|----|-----|-----|------|---------------------|
| 80  | 25  | 365 | 60 | 175 | 100 | A    | SGPFC 80            |
| 100 | 40  | 500 | 85 | 225 | 125 | B    | SGPFC 100           |

## Dirt traps

Dirt traps are designed for pipeline where high product purity is required. They are of particular importance when pump have to be protected against abrasive constituents and other impurities. They can be supplied as coarse filters with 2mm diameter holes as standard or fine filters with mesh sizes of 100, 300 or 500  $\mu\text{m}$ .

The filter element is PTFE and the casing Borosilicate glass providing almost universal corrosion-resistance.