# SchuF Blowdown Valves



# **SchuF**

# Blow-down Valves Continuous, Angle-Type

### ASME 150-1500

### Type 71

The primary purpose of blow down valves is the removal of dirt, scale and sediment from boilers or associated pipelines in order to maintain boiler integrity and efficiency. Steam boiler systems in principal utilise a continuous blow-down valve to control the removal of dissolved elements (salt and other chemicals) at the top of the boiler water, and also a discontinuous blow-down valve to remove solids and accumulated sediments from the pipelines.

Code requires that residue cannot accumulate in these valves, and SchuF manufactures continuous blow-down valves that minimise such accumulations and remove dissolved solids and particulate in a continuous process so that the minimum quantity of water is discharged from the boiler.

#### Specific advantages include:





# Blow-down Valves Continuous, Angle-Type

### ASME 150-1500

#### **Dimensions mm/Size**

| Rating $ ightarrow$ | 150# |     |      |      |     | 30  | 0#   |      |
|---------------------|------|-----|------|------|-----|-----|------|------|
| Size $\downarrow$   | Α    | В   | н    | D    | Α   | В   | н    | D    |
| 1" DN025            | 100  | 110 | 435  | Ø160 | 103 | 113 | 435  | Ø160 |
| 11⁄2" DN040         | 118  | 128 | 500  | Ø160 | 122 | 132 | 500  | Ø160 |
| 2" DN050            | 125  | 150 | 565  | Ø225 | 128 | 153 | 565  | Ø160 |
| 3" DN080            | 170  | 225 | 800  | Ø280 | 174 | 229 | 800  | Ø225 |
| 4" DN100            | 205  | 285 | 915  | Ø315 | 213 | 293 | 910  | Ø280 |
| 6" DN150            | 296  | 416 | 1210 | Ø360 | 307 | 427 | 1210 | Ø315 |

Additional Dimensions for larger sizes and higher pressure ratings available on request

# Type 71



#### **CV Values/Size**

| Size        | Cv (300#) |
|-------------|-----------|
| 1" DN025    | 18        |
| 11⁄2" DN032 | 42        |
| 2" DN050    | 65        |
| 21⁄2" DN065 | 102       |
| 3" DN080    | 160       |
| 4" DN100    | 270       |
| 6" DN150    | 565       |

| Description:        | Standard:  | Optional:   |
|---------------------|--|---|
| Size:               | DN 25 (1") to DN 600 (24")                                 | Larger on request   |
| Pressure Class:     | ASME 150 to ASME 600                                       | Higher on request   |
| Body Material:      | A216 WCB, A217 WC6, A351                                   | 316 SS, Super-Duplex, Incoloy, Hastelloy, others on Request |
| Trim:               | Stainless Steel, A182 F6                                   | As above, plus fully stellited                              |
| Sealing:            | Metal-to-metal   | Stelliting, other Hard-facing                               |
| Seal to Atmosphere: | Graphite Packing   | TA-Luft, Low Emissions                                      |
| Connections:        | Flanges, Butt-weld   | Others on Request   |
| Standards / Cert.:  | ASME B16.34, API 598 & 623,<br>EN 12266, Dir. PED 97/23/EC | NACE MR0175, others on request                              |
| Actuation:          | Manual   | Bevel-Gear, Electric, Pneumatic                             |



# **Blow-down Valves Continuous, Y-Type**

### ASME 150-1500

### Type 50SR

The primary purpose of blow down valves is the removal of dirt, scale and sediment from boilers or associated pipelines in order to maintain boiler integrity and efficiency. Steam boiler systems in principal utilise a continuous blow-down valve to control the removal of dissolved elements (salt and other chemicals) at the top of the boiler water, and also a discontinuous blow-down valve to remove solids and accumulated sediments from the pipelines.

Code requires that residue cannot accumulate in these valves, and SchuF manufactures continuous blow-down valves that minimise such accumulations and remove dissolved solids and particulate in a continuous process so that the minimum quantity of water is discharged from the boiler.

#### Specific advantages include:





# **Blow-down Valves Continuous, Y-Type**

### ASME 150-1500

#### **Dimensions mm/Size**

| Size $\checkmark$ | Α   | В   | н    | D    | Α   | В   | н    | D    |
|-------------------|-----|-----|------|------|-----|-----|------|------|
| 1" DN025          | 190 | 130 | 360  | Ø160 | 196 | 133 | 360  | Ø160 |
| 11⁄2" DN040       | 286 | 198 | 440  | Ø160 | 294 | 202 | 440  | Ø160 |
| 2" DN050          | 350 | 245 | 530  | Ø225 | 356 | 248 | 530  | Ø160 |
| 3" DN080          | 530 | 370 | 745  | Ø280 | 538 | 374 | 745  | Ø225 |
| 4" DN100          | 630 | 445 | 845  | Ø360 | 646 | 453 | 840  | Ø280 |
| 6" DN150          | 902 | 636 | 1110 | Ø360 | 924 | 647 | 1110 | Ø315 |

Additional Dimensions for larger sizes and higher pressure ratings available on request

## Type 50SR



CV Values/Size

| Size        | Cv (600#) |
|-------------|-----------|
| 1" DN025    | 25        |
| 2" DN050    | 70        |
| 21⁄2" DN065 | 95        |
| 3" DN080    | 110       |
| 4" DN100    | 190       |
| 6" DN150    | 390       |

| Description:        | Standard:  | Optional:   |
|---------------------|--|---|
| Size:               | DN 25 (1") to DN 600 (24")                                 | Larger on request   |
| Pressure Class:     | ASME 150 to ASME 600                                       | Higher on request   |
| Body Material:      | A216 WCB, A217 WC6, A351                                   | 316 SS, Super-Duplex, Incoloy, Hastelloy, others on Request |
| Trim:               | Stainless Steel, A182 F6                                   | As above, plus fully stellited                              |
| Sealing:            | Metal-to-metal   | Stelliting, other Hard-facing                               |
| Seal to Atmosphere: | Graphite Packing   | TA-Luft, Low Emissions                                      |
| Connections:        | Flanges, Butt-weld   | Others on Request   |
| Standards / Cert.:  | ASME B16.34, API 598 & 623,<br>EN 12266, Dir. PED 97/23/EC | NACE MR0175, others on request                              |
| Actuation:          | Manual   | Bevel-Gear, Electric, Pneumatic                             |



# Blow-down Valves Discontinuous/Intermittent, Angle Type

### ASME 150-1500

### Type 71

The primary purpose of discontinuous/intermittent blow-down valves is the removal of dirt, scale and sediment from boilers in order to maintain boiler integrity and efficiency. Code requires that residue cannot accumulate in these valves.

SchuF manufactures discontinuous blow-down valves that minimise such internal accumulations so that the minimum quantity of water is discharged from the boiler.

#### Specific advantages include:





# Blow-down Valves Discontinuous/Intermittent, Angle Type

### ASME 150-1500

# Type 71

#### **Dimensions mm/Size**

| Rating $ ightarrow$ | 150# |     |      |      |     | 30  | 0#   |      |
|---------------------|------|-----|------|------|-----|-----|------|------|
| Size $\downarrow$   | Α    | В   | н    | D    | Α   | В   | н    | D    |
| 1" DN025            | 100  | 110 | 435  | Ø160 | 103 | 113 | 435  | Ø160 |
| 11⁄2" DN040         | 118  | 128 | 500  | Ø225 | 122 | 132 | 500  | Ø225 |
| 2" DN050            | 125  | 150 | 565  | Ø280 | 128 | 153 | 565  | Ø280 |
| 3" DN080            | 170  | 225 | 825  | Ø315 | 174 | 229 | 825  | Ø315 |
| 4" DN100            | 205  | 285 | 920  | Ø315 | 213 | 293 | 920  | Ø315 |
| 6" DN150            | 296  | 416 | 1225 | Ø400 | 307 | 427 | 1225 | Ø400 |

Additional Dimensions for larger sizes and higher pressure ratings available on request



#### **CV Values/Size**

| Size        | Cv (300#) |
|-------------|-----------|
| 1" DN025    | 19        |
| 11⁄2" DN032 | 44        |
| 2" DN050    | 67        |
| 21⁄2" DN065 | 102       |
| 3" DN080    | 161       |
| 4" DN100    | 268       |
| 6" DN150    | 563       |

| Description:        | Standard:  | Optional:   |
|---------------------|--|---|
| Size:               | DN 25 (1") to DN 600 (24")                                 | Larger on request   |
| Pressure Class:     | ASME 150 to ASME 600                                       | Higher on request   |
| Body Material:      | A216 WCB, A217 WC6, A351                                   | 316 SS, Super-Duplex, Incoloy, Hastelloy, others on Request |
| Trim:               | Stainless Steel, A182 F6                                   | As above, plus fully stellited                              |
| Sealing:            | Metal-to-metal   | Stelliting, other Hard-facing                               |
| Seal to Atmosphere: | Graphite Packing   | TA-Luft, Low Emissions                                      |
| Connections:        | Flanges, Butt-weld   | Others on Request   |
| Standards / Cert.:  | ASME B16.34, API 598 & 623,<br>EN 12266, Dir. PED 97/23/EC | NACE MR0175, others on request                              |
| Actuation:          | Manual   | Bevel-Gear, Electric, Pneumatic                             |



# Blow-down Valves Discontinuous/Intermittent, Y-Type

### ASME 150-1500

### Type 50ST

The primary purpose of blow down valves is the removal of dirt, scale and sediment from boilers in order to maintain boiler integrity and efficiency. Code requires that residue cannot accumulate in these valves

SchuF manufactures discontinuous blow-down valves that minimise such internal accumulations so that the minimum quantity of water is discharged from the boiler.

#### Specific advantages include:





# Blow-down Valves Discontinuous/Intermittent, Y-Type

### ASME 150-1500

#### **Dimensions mm/Size**

| Size $\downarrow$ | Α   | В   | н    | D    | Α   | В   | н    | D    |
|-------------------|-----|-----|------|------|-----|-----|------|------|
| 1" DN025          | 190 | 130 | 395  | Ø160 | 196 | 133 | 395  | Ø160 |
| 11⁄2" DN040       | 286 | 198 | 480  | Ø225 | 294 | 202 | 480  | Ø225 |
| 2" DN050          | 350 | 245 | 530  | Ø280 | 356 | 248 | 530  | Ø280 |
| 3" DN080          | 530 | 370 | 770  | Ø315 | 538 | 374 | 770  | Ø315 |
| 4" DN100          | 630 | 445 | 850  | Ø315 | 646 | 453 | 850  | Ø315 |
| 6" DN150          | 902 | 636 | 1125 | Ø400 | 924 | 647 | 1125 | Ø400 |

Additional Dimensions for larger sizes and higher pressure ratings available on request

Type 50ST



|--|

| Size        | Cv (600#) |
|-------------|-----------|
| 1" DN025    | 25        |
| 2" DN050    | 70        |
| 21⁄2" DN065 | 95        |
| 3" DN080    | 110       |
| 4" DN100    | 190       |
| 6" DN150    | 390       |

| Description:        | Standard:  | Optional:   |
|---------------------|--|---|
| Size:               | DN 25 (1") to DN 150 (6")                                  | Larger on request   |
| Pressure Class:     | ASME 150 to ASME 1500                                      | Higher on request   |
| Body Material:      | A216 WCB, A217 WC6, A351                                   | 316 SS, Super-Duplex, Incoloy, Hastelloy, others on Request |
| Trim:               | Stainless Steel, A182 F6                                   | As above, plus fully stellited                              |
| Sealing:            | Metal-to-metal   | Stelliting, other Hard-facing                               |
| Seal to Atmosphere: | Graphite Packing   | TA-Luft, Low Emissions                                      |
| Connections:        | Flanges, Butt-weld   | Others on Request   |
| Standards / Cert.:  | ASME B16.34, API 598 & 623,<br>EN 12266, Dir. PED 97/23/EC | NACE MR0175, others on request                              |
| Actuation:          | Manual   | Bevel-Gear, Electric, Pneumatic                             |



# **Blow-down Valves Quick-Action Type**

### **Discontinuous Valve**

#### **Quick-Action Discontinuous Blow-Down Valve**

- Steam boiler systems in principal utilise a discontinuous blow-down valve to remove solids and accumulated sediments from the lower levels of boiler vessels. This valve type is placed at the low point of the system where the solids will settle. The most efficient way to clear these solids and sediments is to use a blow-down valve which has the capability of opening quickly before being closed again. This allows the waste to be expelled without excessive loss of system water. Spring provides normally closed sealing force Lever design quickaction manual actuator This Discontinuous Blow-Down valve (right) utilises a Dead-Man's-Handle actuator, which can be opened and closed virtually instantaneously. The valve's sealing force is supplied by the actuator spring. The simple lever action allows an operator to perform the blow-down operation quickly and efficiently Disc rising design Hard-faced seating option Access port
- These Blow-Down valves can also be supplied with powered actuation, such as this pneumatically operated version.



# **Blow-down Valves Combination Type**

### **Tandem Blow-Down Valve**

#### **Tandem Blow-Down Valve**

- ASME Code for Pressure Piping, B31.1, instructs that blow-down piping systems from boiler water spaces require two shutoff valves in series. In addition, one or both of these valves must be slow-opening (requiring at least five 360° turns of the operating mechanism to change from being fully-closed to fully-opened).
- Code states that these two valves may be combined in one body, provided that the two valves operate individually and that the failure of one valve does not affect the operation of the other.
- This valve combines the two functions- blowing and sealing- otherwise carried out by two individual valves. One valve provides isolation from the process, and the other valve is used to blow off high-pressure condensate, where the medium could contain dissolved solids and sludge.
- The isolation valve will not be exposed to the same corrosion as the blow-down valve, as no medium will flow through the system while the blow-down valve is still closed (step 2 below). The blow-down valve will experience strong abrasive flow immediately upon opening. Its performance can be monitored by how well it continues to seal following the opening of the isolation valve.
- This Tandem Valve construction eliminates issues that could arise utilising separate valves with flanged connections, gaskets and bolting, and welded piping connections- and does so in a space-saving layout.



3D Cutaway View

#### Tandem Blow-Down Valve Operation/Schematic



Note- Closure is the reverse of the steps outlined above, i.e. Blow-Down valve closed first.



| Customer Enquiry Sheet                 |                               |  |
|--|-------------------------------|--|
| Part 1 – Your Company Information      |                               |  |
| Name:                                  | Title:                        |  |
| Company:                               | Telephone:                    |  |
| E-mail:                                | Fax:                          |  |
| Part 2 – Your Order Information        |                               |  |
| General:                               |                               |  |
| Quantity:                              | Application:                  |  |
| Tag No.:                               | Project Name:                 |  |
| Valve Model:                           | Project No.:                  |  |
| Part 3 – Valve and Process Information |                               |  |
| Valve Information:                     |                               |  |
| Valve Inlet Size (DN/Inch):            | Valve Pressure Rating:        |  |
| Valve Outlet Size (DN/Inch):           | Valve Delta P:                |  |
| Inlet Flanged/Weld-End:                | Outlet Flanged/Weld-End:      |  |
| Operating Temp.:                       | Operating Pressure:           |  |
| Design Temp.:                          | Design Pressure:              |  |
| Body Material:                         | Trim Material:                |  |
| Medium:                                | Fugitive Emissions/Clean Air: |  |
| Certificates Etc.:                     | Firesafe Rating:              |  |
| Actuator Type:                         | Air Supply Pressure:          |  |
| Air-Fail Position:                     | Manual Override:              |  |
| Part 4 – Further Notes/Topics/Info     |                               |  |
|  |                               |  |
|  |                               |  |
|  |                               |  |
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# **Product Portfolio Overview**

SchuF Fetterolf has delivered over one million valves during its 100 year history to a wide variety of industries in over 50 countries worldwide.

Headquartered near Frankfurt in Germany, the company has additional design and manufacturing centres in Italy, India, Ireland, UK and the USA. The SchuF group has sales and agent offices covering almost every country in the world.

We manufacture valve products that control, isolate, divert, and sample liquids, gases, powders, and slurries. Our product range of engineered, customised valves includes:



#### Globe Valve Client List:

- AirLiquide
- Aluminium Oxid Stade
- BASF
- BAYER
- BP
- Chang Chun Petrochemical
- Cheil
- Clariant
- DSM Hydrocarbons
- Du Pont
- Dow Chemical
- Eastman Chemical
- Evonik
- Far Eastern Industries
- Foster Wheeler

- Indorama Synthetics
- Invista
- Jindal Steel & Power
- Lanxess
- Li Peng Enterprise
- Monsanto
- Reliance
- SABIC
- Samsung
- Saudi Aramco
- Shinkong Synthetic Fibers
- Tianjin Petrochemical
- Uhde Inventa-Fischer
- Vinnolit
- Zhejiang Hengyi Polymer





