



## SV60 Safety Valve

### Description

The SV60 is a range of full lift flanged safety valves suitable for use on steam, inert industrial gas and water services. Please contact Spirax Sarco for suitability of any other media.

### Available types

| Model and material |              | Bonnet and cap configuration |                                          |
|--------------------|--------------|------------------------------|------------------------------------------|
| SV604              | Carbon steel | Closed bonnet                | Open type easing lever                   |
|                    |              |                              | Sealed cap                               |
| SV607              | SG iron      | Open bonnet                  | Packed easing lever - DN20 to DN100 only |
|                    |              |                              | Open type easing lever                   |

### Applications

The SV60 is suitable for the protection of steam boilers, pipelines, pressure vessels, compressors and receivers and most general process industry applications.

### Certification

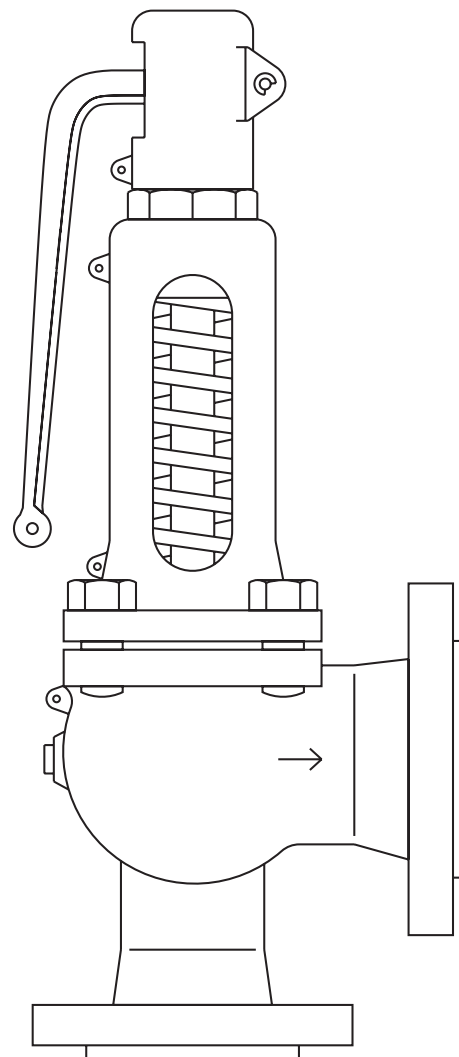
A manufacturers' Typical Test Report is provided as standard for each valve which will include valve set and hydraulic test pressure. Also available on request is material certification in accordance with EN 10204 3.1.

### Standards and approvals

The SV60 carries the  mark and complies with the requirements of the European Pressure Equipment Directive 2014/68/EU falling within Category 4 for Group 2 gases.

Seat tightness to ASME/API Standard 527-1992.

Lloyds Register (LR) type approval - Certificate number 01/00125 (E2).  
The **SV604** (PN flanged) is approved by the TÜV to AD-Merkblatt A2, AD-Merkblatt A4, TRD 421, Vd TÜV 100, 100/4.



### Sizes and end connections

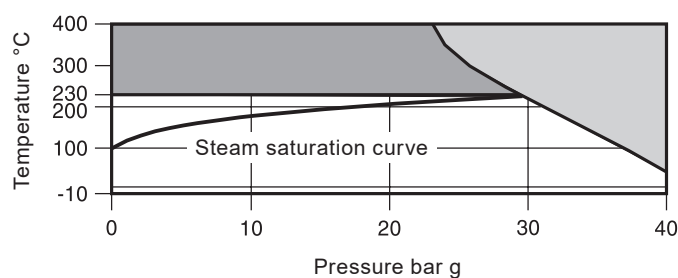
Inlet sizes: DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125 and DN150.

| Valve type | Inlet connection          | Outlet connection |
|------------|---------------------------|-------------------|
| SV607      | PN16 (DN65 to DN150 only) | PN16              |
|            | PN25                      | PN16              |
| SV604      | PN40                      | PN16              |
|            | ASME 300                  | ASME 150          |

Standard PN flanges are to EN 1092 and ASME 300 flanges to EN 1759-1.

## Pressure/temperature limits - SV604

### PN40 inlet



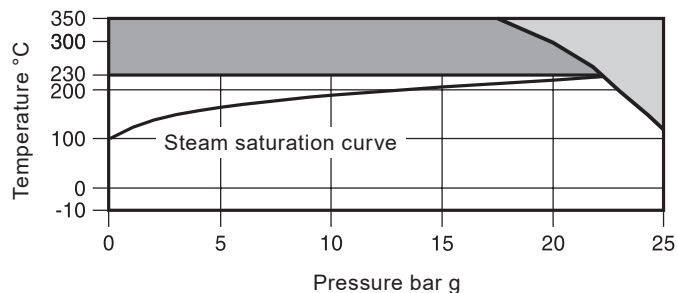
 The product **must not** be used in this region.

 A tungsten alloy spring **must be used** in this region. Consult Spirax Sarco for further information.

| Body design conditions                                        |                    |                 |                 |          | PN40                |
|---------------------------------------------------------------|--------------------|-----------------|-----------------|----------|---------------------|
|                                                               |                    | Size            | Saturated steam | Air      | Water               |
| Set pressure range maximum                                    | PN40               | DN20 x DN32     | 29 bar g        | 40 bar g | 40 bar g            |
|                                                               |                    | DN25 x DN40     | 29 bar g        | 40 bar g | 40 bar g            |
|                                                               |                    | DN32 x DN50     | 29 bar g        | 40 bar g | 40 bar g            |
|                                                               |                    | DN40 x DN65     | 29 bar g        | 40 bar g | 40 bar g            |
|                                                               |                    | DN50 x DN80     | 29 bar g        | 40 bar g | 40 bar g            |
|                                                               |                    | DN65 x DN100    | 29 bar g        | 32 bar g | 32 bar g            |
|                                                               |                    | DN80 x DN125    | 29 bar g        | 32 bar g | 32 bar g            |
|                                                               |                    | DN100 x DN150   | 25 bar g        | 25 bar g | 25 bar g            |
|                                                               |                    | DN125 x DN200   | 20 bar g        | 20 bar g | 20 bar g            |
|                                                               |                    | DN150 x DN250   | 16 bar g        | 16 bar g | 16 bar g            |
| Set pressure range minimum                                    |                    |                 |                 |          | 0.2 bar g           |
| Temperature                                                   | Maximum            |                 |                 |          | 400 °C              |
|                                                               | Minimum            |                 |                 |          | -10 °C              |
| Performance data                                              | Overpressure       | Steam           |                 |          | 5%                  |
|                                                               |                    | Liquids and gas |                 |          | 10%                 |
|                                                               | Blowdown limit     | Steam and gas   |                 |          | 10%                 |
|                                                               |                    | Liquids         |                 |          | 20%                 |
|                                                               | Backpressure limit |                 |                 |          | 10% of set pressure |
| Designed for a maximum inlet cold hydraulic test pressure of: |                    |                 |                 |          | 60 bar g            |

## Pressure/temperature limits - SV607

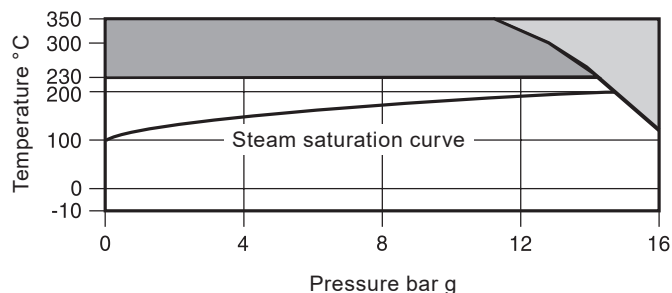
### PN25 inlet



The product **must not** be used in this region.

A tungsten alloy spring **must be used** in this region. Consult Spirax Sarco for further information.

### PN16 inlet

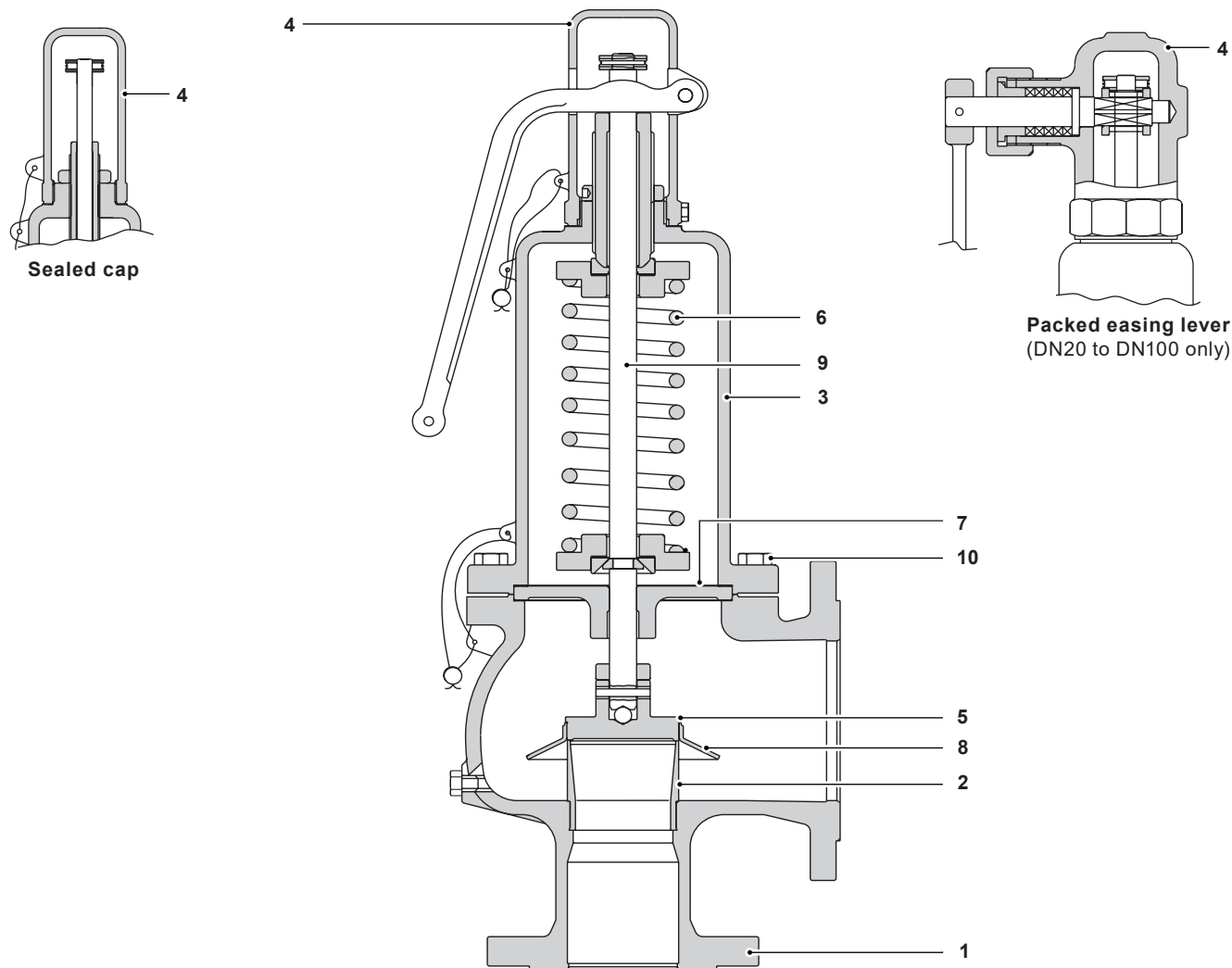


Body design conditions

PN16 or PN25

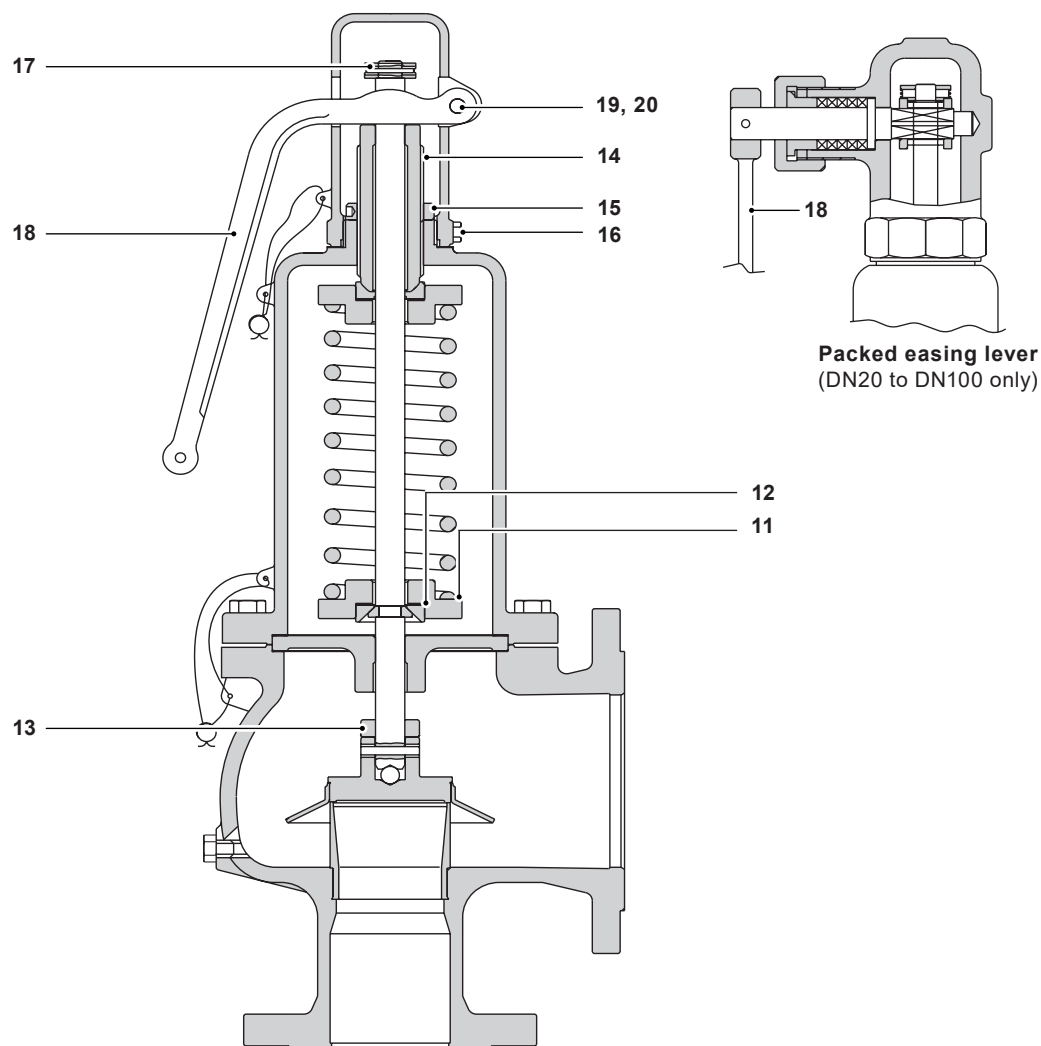
|                                                               |                    | Size            | Saturated steam | Air      | Water     |                     |
|---------------------------------------------------------------|--------------------|-----------------|-----------------|----------|-----------|---------------------|
|                                                               |                    |                 |                 |          |           |                     |
| Set pressure range maximum                                    | PN25               | DN20 x DN32     | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN25 x DN40     | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN32 x DN50     | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN40 x DN65     | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN50 x DN80     | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN65 x DN100    | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN80 x DN125    | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN100 x DN150   | 22.5 bar g      | 25 bar g | 25 bar g  |                     |
|                                                               |                    | DN125 x DN200   | 20 bar g        | 20 bar g | 20 bar g  |                     |
|                                                               |                    | DN150 x DN250   | 16 bar g        | 16 bar g | 16 bar g  |                     |
| PN16                                                          | DN65 x DN100       | 14.6 bar g      | 16 bar g        | 16 bar g |           |                     |
|                                                               | DN80 x DN125       | 14.6 bar g      | 16 bar g        | 16 bar g |           |                     |
|                                                               | DN100 x DN150      | 14.6 bar g      | 16 bar g        | 16 bar g |           |                     |
|                                                               | DN125 x DN200      | 14.6 bar g      | 16 bar g        | 16 bar g |           |                     |
|                                                               | DN150 x DN250      | 14.6 bar g      | 16 bar g        | 16 bar g |           |                     |
| Set pressure range minimum                                    |                    |                 |                 |          | 0.2 bar g |                     |
| Temperature                                                   | Maximum            |                 |                 |          | 350 °C    |                     |
|                                                               | Minimum            |                 |                 |          | -10 °C    |                     |
| Performance data                                              | Overpressure       | Steam           |                 |          |           | 5%                  |
|                                                               |                    | Liquids and gas |                 |          |           | 10%                 |
|                                                               | Blowdown limit     | Steam and gas   |                 |          |           | 10%                 |
|                                                               |                    | Liquids         |                 |          |           | 20%                 |
|                                                               | Backpressure limit |                 |                 |          |           | 10% of set pressure |
| Designed for a maximum inlet cold hydraulic test pressure of: |                    | PN25            |                 |          |           | 38 bar g            |
|                                                               |                    | PN16            |                 |          |           | 24 bar g            |

## Materials



| No. | Part        | Material                                                                | SV607/SV604                                        |
|-----|-------------|-------------------------------------------------------------------------|----------------------------------------------------|
| 1   | Body        | SG iron/carbon steel                                                    | GJS-400-18LT/1.0619 + N                            |
| 2   | Seat        | Stainless steel                                                         | DN20 - DN100 1.4057 or for<br>DN125 - DN150 ANC2   |
| 3   | Bonnet      | SG iron/carbon steel                                                    | GJS-400-18LT/1.0619 + N                            |
| 4   | Cap         | SG iron                                                                 | GJS-400-15                                         |
| 5   | Disc        | Stainless steel,<br>hardened 47-52 HRC<br>(Hardened Rockwell 'C' Scale) | DN20 - DN100 1.4021 or for<br>DN125 - DN150 CA15   |
| 6   | Spring      | Standard                                                                | Chrome-vanadium alloy steel                        |
|     |             | For temperatures above 230 °C                                           | Tungsten alloy steel                               |
| 7   | Guide plate | SG iron                                                                 | GJS-400-15                                         |
| 8   | Skirt       | Stainless steel                                                         | DN20 - DN100 1.4301 or for<br>DN125 - DN150 1.4308 |
| 9   | Stem        | Stainless steel                                                         | 1.4021                                             |
| 10  | Body bolts  | Steel                                                                   | CK35                                               |

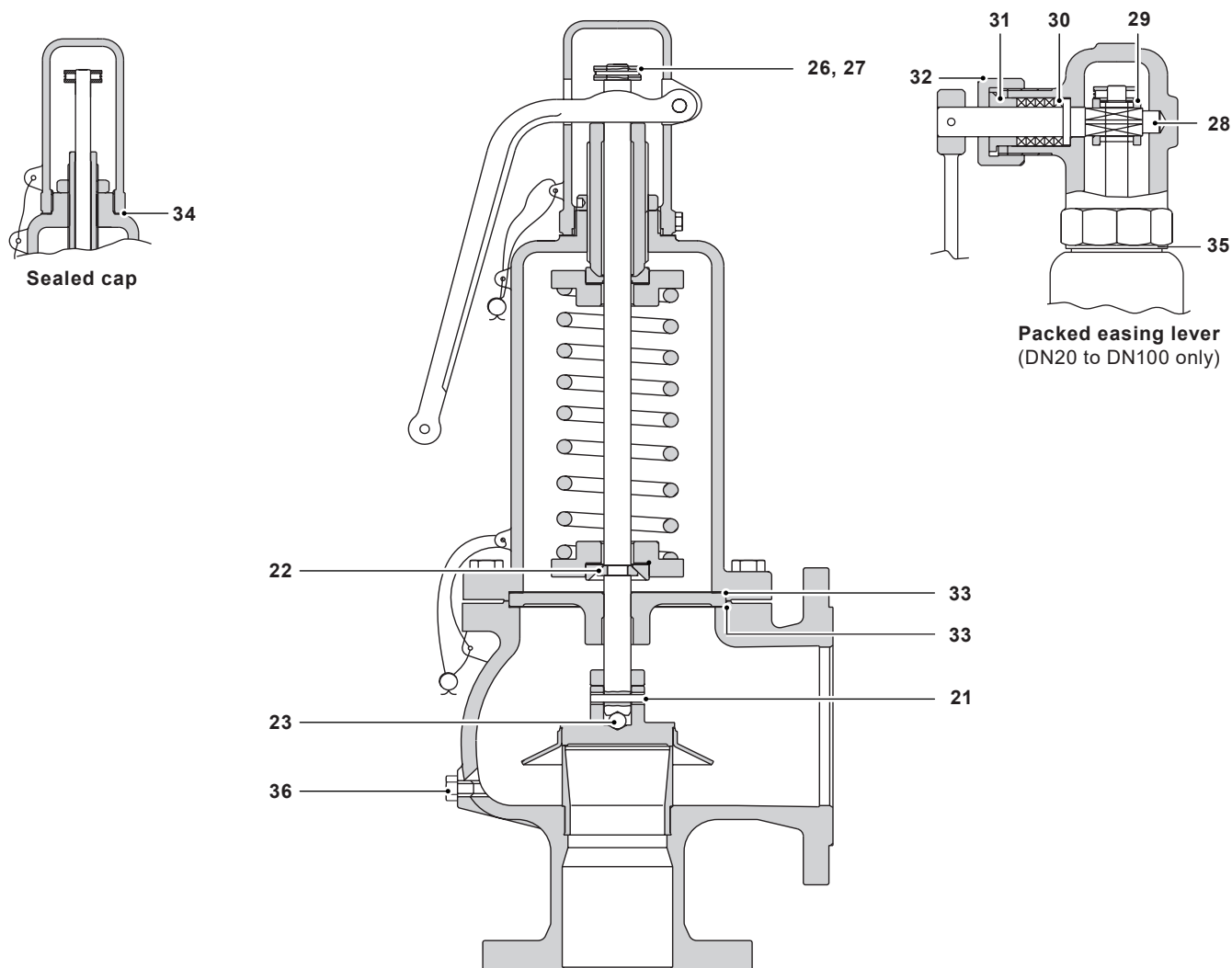
## Materials (continued)



| No. | Part                              | Material                 | SV607/SV604 |
|-----|-----------------------------------|--------------------------|-------------|
| 11* | Spring plate                      | Carbon steel             | C45E        |
| 12* | Bearing ring (DN80 to DN150 only) | Stainless steel          | 1.4021      |
| 13  | Spacer                            | Stainless steel          | 1.4021      |
| 14  | Adjustment screw                  | Stainless steel          | 1.4021      |
| 15  | Lock-nut                          | Zinc plated carbon steel |             |
| 16  | Screw                             | Zinc plated steel        |             |
| 17  | Collar                            | Zinc plated carbon steel |             |
| 18  | Lever                             | SG iron                  | GJS-400-15  |
| 19  | Cross pin                         | Zinc plated carbon steel |             |
| 20  | Circlip                           | Spring steel             |             |

\* **Note:** The spring plate (11) and bearing ring design (12) varies according to the valve size and set pressure.

## Materials (continued)



| No. | Part                        | Material                       | SV607/SV604    |
|-----|-----------------------------|--------------------------------|----------------|
| 21  | Disc pin                    | Spring steel                   | DIN 7343, A304 |
| 22  | Collets                     | Stainless steel                | 1.4021         |
| 23  | Stem ball                   | Stainless steel                |                |
| 26  | Collar pin                  | Zinc plated carbon steel       |                |
| 27  | Collar circlip              | Spring stainless steel         |                |
| 28  | Packed lever spindle        | Stainless steel                | ASTM A276 431  |
| 29  | Lifting fork                | Carbon steel                   |                |
| 30  | Gland packing               | Graphite                       |                |
| 31  | Gland                       | Stainless steel                | ASTM A276 304  |
| 32  | Gland nut                   | Carbon steel                   |                |
| 33  | Guide plate gaskets (2 off) | Reinforced exfoliated graphite |                |
| 34  | Sealed cap gasket           | Universal SA                   |                |
| 35  | Packed lever cap gasket     | Universal SA                   |                |
| 36  | Body drain plug ½ BSP       | Steel                          |                |

**Table 1 - SV60 flow capacity for dry saturated steam in kilogrammes per hour (kg/h)**  
(calculated at 5% overpressure. In accordance with EN ISO 4126)

| Valve size DN in/out | 20/32 | 25/40 | 32/50 | 40/65 | 50/80 | 65/100 | 80/125 | 100/150 | 125/200 | 150/250 |
|----------------------|-------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| Flow area (mm²)      | 230   | 445   | 740   | 1140  | 1979  | 2734   | 4185   | 6504    | 8659    | 12272   |

| Set pressure (bar g) | Dry saturated steam, kg/h |      |      |       |       |       |       |       |       |       |
|----------------------|---------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 0.5                  | 121                       | 254  | 378  | 494   | 825   | 1279  | 1779  | 2876  | 4050  | 5844  |
| 1.0                  | 180                       | 379  | 571  | 763   | 1235  | 1893  | 2660  | 4355  | 5994  | 8635  |
| 1.5                  | 238                       | 504  | 765  | 1034  | 1654  | 2556  | 3557  | 5805  | 7974  | 11475 |
| 2.0                  | 293                       | 619  | 942  | 1277  | 2049  | 3155  | 4474  | 7285  | 9992  | 14370 |
| 2.5                  | 345                       | 739  | 1111 | 1532  | 2464  | 3728  | 5293  | 8611  | 11978 | 17218 |
| 3.0                  | 399                       | 853  | 1268 | 1748  | 2811  | 4314  | 6132  | 9970  | 13859 | 19918 |
| 3.5                  | 454                       | 958  | 1424 | 1963  | 3156  | 4914  | 6993  | 11361 | 15783 | 22680 |
| 4.0                  | 504                       | 1075 | 1579 | 2177  | 3557  | 5451  | 7757  | 12786 | 17509 | 25159 |
| 4.5                  | 553                       | 1180 | 1735 | 2391  | 3907  | 5987  | 8520  | 14043 | 19230 | 27633 |
| 5.0                  | 603                       | 1286 | 1890 | 2604  | 4255  | 6522  | 9280  | 15296 | 20946 | 30098 |
| 5.5                  | 652                       | 1391 | 2044 | 2817  | 4603  | 7054  | 10037 | 16544 | 22655 | 32554 |
| 6.0                  | 701                       | 1495 | 2198 | 3029  | 4949  | 7585  | 10793 | 17790 | 24361 | 35006 |
| 6.5                  | 750                       | 1600 | 2351 | 3241  | 5295  | 8116  | 11548 | 19034 | 26065 | 37454 |
| 7.0                  | 799                       | 1704 | 2505 | 3452  | 5641  | 8645  | 12302 | 20277 | 27766 | 39899 |
| 7.5                  | 848                       | 1809 | 2658 | 3664  | 5986  | 9174  | 13054 | 21518 | 29466 | 42340 |
| 8.0                  | 897                       | 1913 | 2811 | 3875  | 6331  | 9703  | 13806 | 22757 | 31163 | 44779 |
| 8.5                  | 946                       | 2017 | 2964 | 4086  | 6675  | 10231 | 14558 | 23996 | 32859 | 47216 |
| 9.0                  | 994                       | 2121 | 3117 | 4296  | 7020  | 10758 | 15308 | 25233 | 34553 | 49651 |
| 9.5                  | 1043                      | 2225 | 3270 | 4507  | 7364  | 11285 | 16058 | 26469 | 36246 | 52083 |
| 10.0                 | 1092                      | 2329 | 3422 | 4717  | 7707  | 11812 | 16808 | 27705 | 37938 | 54515 |
| 11.0                 | 1189                      | 2536 | 3727 | 5138  | 8394  | 12865 | 18306 | 30174 | 41319 | 59373 |
| 12.0                 | 1286                      | 2744 | 4032 | 5558  | 9080  | 13917 | 19802 | 32640 | 44697 | 64226 |
| 13.0                 | 1383                      | 2951 | 4336 | 5977  | 9766  | 14967 | 21298 | 35105 | 48072 | 69077 |
| 14.0                 | 1480                      | 3158 | 4641 | 6397  | 10451 | 16018 | 22792 | 37569 | 51446 | 73924 |
| 15.0                 | 1577                      | 3365 | 4945 | 6816  | 11137 | 17068 | 24286 | 40032 | 54818 | 78770 |
| 16.0                 | 1674                      | 3572 | 5249 | 7235  | 11822 | 18118 | 25780 | 42494 | 58190 | 83615 |
| 17.0                 | 1771                      | 3779 | 5553 | 7655  | 12506 | 19168 | 27274 | 44956 | 61562 |       |
| 18.0                 | 1868                      | 3986 | 5857 | 8074  | 13191 | 20217 | 28768 | 47418 | 64933 |       |
| 19.0                 | 1966                      | 4193 | 6162 | 8493  | 13877 | 21267 | 30262 | 49881 | 68306 |       |
| 20.0                 | 2063                      | 4400 | 6466 | 8913  | 14562 | 22318 | 31756 | 52344 | 71679 |       |
| 21.0                 | 2160                      | 4607 | 6770 | 9332  | 15247 | 23368 | 33251 | 54808 |       |       |
| 22.0                 | 2257                      | 4814 | 7075 | 9752  | 15933 | 24419 | 34746 | 57273 |       |       |
| 23.0                 | 2354                      | 5021 | 7378 | 10170 | 16616 | 25466 | 36236 | 59729 |       |       |
| 24.0                 | 2450                      | 5227 | 7682 | 10589 | 17300 | 26514 | 37728 | 62188 |       |       |
| 25.0                 | 2548                      | 5435 | 7987 | 11009 | 17987 | 27567 | 39226 | 64656 |       |       |
| 26.0                 | 2645                      | 5642 | 8292 | 11429 | 18673 | 28619 | 40722 |       |       |       |
| 27.0                 | 2742                      | 5849 | 8595 | 11848 | 19358 | 29668 | 42215 |       |       |       |
| 28.0                 | 2839                      | 6056 | 8900 | 12268 | 20044 | 30719 | 43711 |       |       |       |
| 29.0                 | 2937                      | 6264 | 9206 | 12689 | 20732 | 31774 | 45213 |       |       |       |

**Table 2 - SV60 flow capacity for air - normal m<sup>3</sup>/h at 0 °C and 1013 mbar**  
(calculated in accordance with AD-MERKBLATT A2 and TRD 421)

| Valve size DN in/out         | 20/32 | 25/40 | 32/50 | 40/65 | 50/80 | 65/100 | 80/125 | 100/150 | 125/200 | 150/250 |
|------------------------------|-------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| Orifice (mm)                 | 17.0  | 23.8  | 30.6  | 38.0  | 50.1  | 59.0   | 73.0   | 91.0    | 105     | 125     |
| Flow area (mm <sup>2</sup> ) | 230   | 445   | 740   | 1 140 | 1 979 | 2 734  | 4 185  | 6 504   | 8 659   | 12 272  |
| $\alpha^W$ (P > 4 bar)       | 0.78  | 0.86  | 0.76  | 0.68  | 0.64  | 0.71   | 0.66   | 0.70    | 0.72    | 0.73    |

| Set pressure (bar g) | Flow capacity for air m <sup>3</sup> /h |       |       |        |        |        |        |        |        |         |
|----------------------|-----------------------------------------|-------|-------|--------|--------|--------|--------|--------|--------|---------|
| 0.5                  | 145                                     | 304   | 456   | 472    | 996    | 1 521  | 2 115  | 3 466  | 4 809  | 6 955   |
| 1.0                  | 227                                     | 480   | 728   | 973    | 1 578  | 2 419  | 3 383  | 5 514  | 7 621  | 10 975  |
| 1.5                  | 303                                     | 643   | 975   | 1 323  | 2 125  | 3 251  | 4 572  | 7 434  | 10 267 | 14 753  |
| 2.0                  | 377                                     | 802   | 1 211 | 1 657  | 2 657  | 4 062  | 5 742  | 9 328  | 12 885 | 18 509  |
| 2.5                  | 450                                     | 956   | 1 438 | 1 978  | 3 171  | 4 853  | 6 892  | 11 195 | 15 467 | 22 232  |
| 3.0                  | 522                                     | 1 107 | 1 656 | 2 289  | 3 672  | 5 627  | 8 026  | 13 015 | 18 018 | 25 924  |
| 3.5                  | 593                                     | 1 255 | 1 868 | 2 591  | 4 161  | 6 388  | 9 146  | 14 837 | 20 542 | 29 590  |
| 4.0                  | 660                                     | 1 411 | 2 074 | 2 858  | 4 670  | 7 157  | 10 184 | 16 785 | 22 986 | 33 029  |
| 4.5                  | 728                                     | 1 554 | 2 285 | 3 149  | 5 145  | 7 884  | 11 219 | 18 491 | 25 321 | 36 385  |
| 5.0                  | 795                                     | 1 697 | 2 496 | 3 439  | 5 619  | 8 611  | 12 254 | 20 196 | 27 657 | 39 741  |
| 5.5                  | 862                                     | 1 841 | 2 706 | 3 730  | 6 094  | 9 338  | 13 289 | 21 902 | 29 992 | 43 097  |
| 6.0                  | 929                                     | 1 984 | 2 917 | 4 020  | 6 568  | 10 065 | 14 324 | 23 607 | 32 328 | 46 452  |
| 6.5                  | 996                                     | 2 127 | 3 128 | 4 310  | 7 043  | 10 793 | 15 359 | 25 313 | 34 663 | 49 808  |
| 7.0                  | 1 063                                   | 2 271 | 3 339 | 4 601  | 7 517  | 11 520 | 16 393 | 27 018 | 36 999 | 53 164  |
| 7.5                  | 1 130                                   | 2 414 | 3 549 | 4 891  | 7 992  | 12 247 | 17 428 | 28 724 | 39 334 | 56 520  |
| 8.0                  | 1 197                                   | 2 557 | 3 760 | 5 182  | 8 466  | 12 974 | 18 463 | 30 429 | 41 670 | 59 876  |
| 8.5                  | 1 264                                   | 2 701 | 3 971 | 5 472  | 8 941  | 13 701 | 19 498 | 32 135 | 44 005 | 63 232  |
| 9.0                  | 1 332                                   | 2 844 | 4 182 | 5 763  | 9 415  | 14 428 | 20 533 | 33 840 | 46 341 | 66 588  |
| 9.5                  | 1 399                                   | 2 987 | 4 392 | 6 053  | 9 890  | 15 156 | 21 567 | 35 546 | 48 677 | 69 944  |
| 10.0                 | 1 466                                   | 3 131 | 4 603 | 6 343  | 10 365 | 15 883 | 22 602 | 37 251 | 51 012 | 73 300  |
| 11.0                 | 1 600                                   | 3 417 | 5 025 | 6 924  | 11 314 | 17 337 | 24 672 | 40 662 | 55 683 | 80 012  |
| 12.0                 | 1 734                                   | 3 704 | 5 446 | 7 505  | 12 263 | 18 791 | 26 741 | 44 073 | 60 354 | 86 724  |
| 13.0                 | 1 868                                   | 3 990 | 5 868 | 8 086  | 13 212 | 20 246 | 28 811 | 47 484 | 65 025 | 93 436  |
| 14.0                 | 2 003                                   | 4 277 | 6 289 | 8 667  | 14 161 | 21 700 | 30 881 | 50 895 | 69 696 | 100 148 |
| 15.0                 | 2 137                                   | 4 564 | 6 711 | 9 248  | 15 110 | 23 154 | 32 950 | 54 306 | 74 367 | 106 860 |
| 16.0                 | 2 271                                   | 4 850 | 7 132 | 9 828  | 16 059 | 24 609 | 35 020 | 57 717 | 79 038 | 113 572 |
| 17.0                 | 2 405                                   | 5 137 | 7 554 | 10 409 | 17 008 | 26 063 | 37 090 | 61 129 | 83 709 |         |
| 18.0                 | 2 539                                   | 5 424 | 7 975 | 10 990 | 17 957 | 27 517 | 39 159 | 64 540 | 88 380 |         |
| 19.0                 | 2 674                                   | 5 710 | 8 397 | 11 571 | 18 906 | 28 972 | 41 229 | 67 951 | 93 051 |         |

Continued on next page



**Table 2 - SV60 flow capacity for air - normal m<sup>3</sup>/h at 0 °C and 1013 mbar**  
(calculated in accordance with AD-MERKBLATT A2 and TRD 421)

| Valve size DN in/out         | 20/32 | 25/40 | 32/50 | 40/65 | 50/80 | 65/100 | 80/125 | 100/150 | 125/200 | 150/250 |
|------------------------------|-------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| Orifice (mm)                 | 17.0  | 23.8  | 30.6  | 38.0  | 50.1  | 59.0   | 73.0   | 91.0    | 105     | 125     |
| Flow area (mm <sup>2</sup> ) | 230   | 445   | 740   | 1 140 | 1 979 | 2 734  | 4 185  | 6 504   | 8 659   | 12 272  |
| $\alpha_w$ (P > 4 bar)       | 0.78  | 0.86  | 0.76  | 0.68  | 0.64  | 0.71   | 0.66   | 0.70    | 0.72    | 0.73    |

| Set pressure (bar g) | Flow capacity for air m <sup>3</sup> /h |        |        |        |        |        |        |        |        |  |
|----------------------|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| 20.0                 | 2 808                                   | 5 997  | 8 818  | 12 152 | 19 855 | 30 426 | 43 299 | 71 362 | 97 723 |  |
| 21.0                 | 2 942                                   | 6 284  | 9 240  | 12 733 | 20 804 | 31 880 | 45 368 | 74 773 |        |  |
| 22.0                 | 3 076                                   | 6 570  | 9 661  | 13 314 | 21 753 | 33 335 | 47 438 | 78 184 |        |  |
| 23.0                 | 3 210                                   | 6 857  | 10 083 | 13 894 | 22 702 | 34 789 | 49 507 | 81 595 |        |  |
| 24.0                 | 3 345                                   | 7 144  | 10 504 | 14 475 | 23 651 | 36 243 | 51 577 | 85 006 |        |  |
| 25.0                 | 3 479                                   | 7 430  | 10 926 | 15 056 | 24 600 | 37 698 | 53 647 | 88 417 |        |  |
| 26.0                 | 3 613                                   | 7 717  | 11 347 | 15 637 | 25 549 | 39 152 | 55 716 |        |        |  |
| 27.0                 | 3 747                                   | 8 004  | 11 769 | 16 218 | 26 498 | 40 606 | 57 786 |        |        |  |
| 28.0                 | 3 882                                   | 8 290  | 12 190 | 16 799 | 27 447 | 42 061 | 59 856 |        |        |  |
| 29.0                 | 4 016                                   | 8 577  | 12 612 | 17 379 | 28 397 | 43 515 | 61 925 |        |        |  |
| 30.0                 | 4 150                                   | 8 864  | 13 033 | 17 960 | 29 346 | 44 969 | 63 995 |        |        |  |
| 31.0                 | 4 284                                   | 9 150  | 13 455 | 18 541 | 30 295 | 46 424 | 66 064 |        |        |  |
| 32.0                 | 4 418                                   | 9 437  | 13 876 | 19 122 | 31 244 | 47 878 | 68 134 |        |        |  |
| 33.0                 | 4 553                                   | 9 724  | 14 298 | 19 703 | 31 907 |        |        |        |        |  |
| 34.0                 | 4 687                                   | 10 010 | 14 719 | 20 284 | 32 865 |        |        |        |        |  |
| 35.0                 | 4 821                                   | 10 297 | 15 141 | 20 865 | 33 809 |        |        |        |        |  |
| 36.0                 | 4 955                                   | 10 583 | 15 562 | 21 445 | 34 749 |        |        |        |        |  |
| 37.0                 | 5 089                                   | 10 870 | 15 984 | 22 026 | 35 690 |        |        |        |        |  |
| 38.0                 | 5 224                                   | 11 157 | 16 405 | 22 607 | 36 631 |        |        |        |        |  |
| 39.0                 | 5 358                                   | 11 443 | 16 826 | 23 188 | 37 572 |        |        |        |        |  |
| 40.0                 | 5 492                                   | 11 730 | 17 248 | 23 769 | 38 514 |        |        |        |        |  |

**Table 3 - SV60 flow capacity for water in tonnes/h at 25% overpressure**  
(calculated in accordance with AD-MERKBLATT A2 and TRD 421)

| Valve size DN in/out | 20/32 | 25/40 | 32/50 | 40/65 | 50/80 | 65/100 | 80/125 | 100/150 | 125/200 | 150/250 |
|----------------------|-------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| Orifice (mm)         | 17.0  | 23.8  | 30.6  | 38.0  | 50.1  | 59.0   | 73.0   | 91.0    | 105     | 125     |
| Flow area (mm²)      | 230   | 445   | 740   | 1140  | 1979  | 2734   | 4185   | 6504    | 8659    | 12272   |
| $\alpha W$           | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5    | 0.5    | 0.5     | 0.5     | 0.5     |

| Set pressure (bar g) | Flow capacity for water tonnes/h |      |       |       |       |       |       |       |        |        |
|----------------------|----------------------------------|------|-------|-------|-------|-------|-------|-------|--------|--------|
| 0.5                  | 4.6                              | 8.9  | 14.9  | 22.9  | 39.8  | 55.0  | 84.1  | 130.8 | 174.1  | 246.7  |
| 1.0                  | 6.5                              | 12.6 | 21.0  | 32.4  | 56.3  | 77.7  | 119.0 | 184.9 | 246.2  | 348.9  |
| 2.0                  | 9.2                              | 17.9 | 29.8  | 45.8  | 79.6  | 109.9 | 168.3 | 261.5 | 348.2  | 493.5  |
| 3.0                  | 11.3                             | 21.9 | 36.5  | 56.1  | 97.5  | 134.6 | 206.1 | 320.3 | 426.4  | 604.4  |
| 4.0                  | 13.1                             | 25.3 | 42.1  | 64.8  | 112.6 | 155.5 | 238.0 | 369.9 | 492.4  | 697.9  |
| 5.0                  | 14.6                             | 28.3 | 47.1  | 72.5  | 125.8 | 173.8 | 266.1 | 413.5 | 550.5  | 780.2  |
| 6.0                  | 16.0                             | 31.0 | 51.6  | 79.4  | 137.8 | 190.4 | 291.5 | 453.0 | 603.1  | 854.7  |
| 7.0                  | 17.3                             | 33.5 | 55.7  | 85.8  | 148.9 | 205.7 | 314.9 | 489.3 | 651.4  | 923.2  |
| 8.0                  | 18.5                             | 35.8 | 59.5  | 91.7  | 159.2 | 219.9 | 336.6 | 523.1 | 696.4  | 986.9  |
| 9.0                  | 19.6                             | 37.9 | 63.1  | 97.2  | 168.8 | 233.2 | 357.0 | 554.8 | 738.6  | 1046.8 |
| 10.0                 | 20.6                             | 40.0 | 66.6  | 102.5 | 178.0 | 245.8 | 376.3 | 584.8 | 778.6  | 1103.4 |
| 11.0                 | 21.7                             | 42.0 | 69.8  | 107.5 | 186.6 | 257.8 | 394.7 | 613.3 | 816.6  | 1157.3 |
| 12.0                 | 22.6                             | 43.8 | 72.9  | 112.3 | 194.9 | 269.3 | 412.2 | 640.6 | 852.9  | 1208.7 |
| 13.0                 | 23.5                             | 45.6 | 75.9  | 116.9 | 202.9 | 280.3 | 429.1 | 666.8 | 887.7  | 1258.1 |
| 14.0                 | 24.4                             | 47.3 | 78.8  | 121.3 | 210.6 | 290.9 | 445.3 | 691.9 | 921.2  | 1305.6 |
| 15.0                 | 25.3                             | 49.0 | 81.5  | 125.5 | 218.0 | 301.1 | 460.9 | 716.2 | 953.5  | 1351.4 |
| 16.0                 | 26.1                             | 50.6 | 84.2  | 129.7 | 225.1 | 310.9 | 476.0 | 739.7 | 984.8  | 1395.7 |
| 17.0                 | 26.9                             | 52.2 | 86.8  | 133.7 | 232.0 | 320.5 | 490.7 | 762.5 | 1015.1 |        |
| 18.0                 | 27.7                             | 53.7 | 89.3  | 137.5 | 238.8 | 329.8 | 504.9 | 784.6 | 1044.6 |        |
| 19.0                 | 28.5                             | 55.1 | 91.7  | 141.3 | 245.3 | 338.8 | 518.7 | 806.1 | 1073.2 |        |
| 20.0                 | 29.2                             | 56.6 | 94.1  | 145.0 | 251.7 | 347.6 | 532.2 | 827.0 | 1101.1 |        |
| 21.0                 | 29.9                             | 58.0 | 96.5  | 148.6 | 257.9 | 356.2 | 545.3 | 847.4 |        |        |
| 22.0                 | 30.6                             | 59.3 | 98.7  | 152.0 | 264.0 | 364.6 | 558.2 | 867.4 |        |        |
| 23.0                 | 31.3                             | 60.7 | 100.9 | 155.5 | 269.9 | 372.8 | 570.7 | 886.9 |        |        |
| 24.0                 | 32.0                             | 62.0 | 103.1 | 158.8 | 275.7 | 380.8 | 583.0 | 906.0 |        |        |
| 25.0                 | 32.6                             | 63.2 | 105.2 | 162.1 | 281.4 | 388.7 | 595.0 | 940.0 |        |        |
| 26.0                 | 33.3                             | 64.5 | 107.3 | 165.3 | 287.0 | 396.4 | 606.8 |       |        |        |
| 27.0                 | 33.9                             | 65.7 | 109.4 | 168.4 | 292.4 | 403.9 | 618.4 |       |        |        |
| 28.0                 | 34.6                             | 66.9 | 111.4 | 171.5 | 297.8 | 411.3 | 629.7 |       |        |        |
| 29.0                 | 35.2                             | 68.1 | 113.3 | 174.6 | 303.1 | 418.6 | 640.9 |       |        |        |

Continued on next page

**Table 3 - SV60 flow capacity for water in tonnes/h at 25% overpressure**  
(calculated in accordance with AD-MERKBLATT A2 and TRD 421)

| Valve size DN in/out | 20/32 | 25/40 | 32/50 | 40/65 | 50/80 | 65/100 | 80/125 | 100/150 | 125/200 | 150/250 |
|----------------------|-------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| Orifice (mm)         | 17.0  | 23.8  | 30.6  | 38.0  | 50.1  | 59.0   | 73.0   | 91.0    | 105     | 125     |
| Flow area (mm²)      | 230   | 445   | 740   | 1140  | 1979  | 2734   | 4185   | 6504    | 8659    | 12272   |
| $\alpha_w$           | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5    | 0.5    | 0.5     | 0.5     | 0.5     |

| Set pressure (bar g) | Flow capacity for water tonnes/h |      |       |       |       |       |       |  |  |  |
|----------------------|----------------------------------|------|-------|-------|-------|-------|-------|--|--|--|
| 30.0                 | 35.8                             | 69.3 | 115.3 | 177.6 | 308.2 | 425.8 | 651.8 |  |  |  |
| 31.0                 | 36.4                             | 70.4 | 117.2 | 180.5 | 313.3 | 432.8 | 662.6 |  |  |  |
| 32.0                 | 36.9                             | 71.6 | 119.1 | 183.4 | 318.3 | 439.7 | 673.2 |  |  |  |
| 33.0                 | 37.5                             | 72.7 | 120.9 | 186.2 | 323.3 |       |       |  |  |  |
| 34.0                 | 38.1                             | 73.8 | 122.7 | 189.0 | 328.1 |       |       |  |  |  |
| 35.0                 | 38.6                             | 74.8 | 124.5 | 191.8 | 332.9 |       |       |  |  |  |
| 36.0                 | 39.2                             | 75.9 | 126.3 | 194.5 | 337.7 |       |       |  |  |  |
| 37.0                 | 39.7                             | 76.9 | 128.0 | 197.2 | 342.3 |       |       |  |  |  |
| 38.0                 | 40.3                             | 78.0 | 129.7 | 199.8 | 346.9 |       |       |  |  |  |
| 39.0                 | 40.8                             | 79.0 | 131.4 | 202.4 | 351.4 |       |       |  |  |  |
| 40.0                 | 41.3                             | 80.0 | 133.1 | 205.0 | 355.9 |       |       |  |  |  |

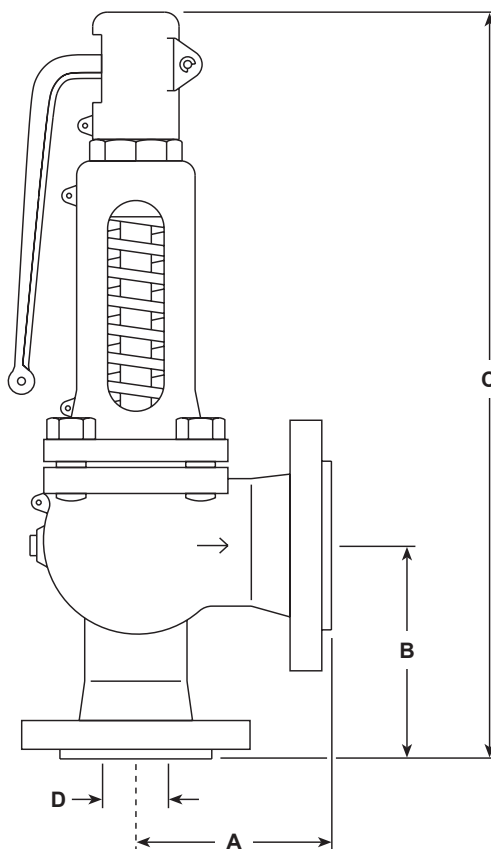
**Table 4  $\alpha_w/K_{dr}$  values for SV60 safety valves**

| Set pressure (bar g) |            |            |            |            |            |            |            |            |           |
|----------------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|
| Size                 | 0.2 - 0.49 | 0.5 - 0.99 | 1.0 - 1.49 | 1.5 - 1.99 | 2.0 - 2.49 | 2.5 - 2.99 | 3.0 - 3.49 | 3.5 - 3.99 | Above 4.0 |
| DN20 x DN32          | 0.56       | 0.62       | 0.69       | 0.73       | 0.75       | 0.76       | 0.77       | 0.78       | 0.78      |
| DN25 x DN40          | 0.62       | 0.67       | 0.75       | 0.80       | 0.82       | 0.84       | 0.85       | 0.85       | 0.86      |
| DN32 x DN50          | 0.56       | 0.60       | 0.68       | 0.73       | 0.75       | 0.76       | 0.76       | 0.76       | 0.76      |
| DN40 x DN65          | 0.45       | 0.51       | 0.59       | 0.64       | 0.66       | 0.68       | 0.68       | 0.68       | 0.68      |
| DN50 x DN80          | 0.47       | 0.49       | 0.55       | 0.59       | 0.61       | 0.63       | 0.63       | 0.63       | 0.64      |
| DN65 x DN100         | 0.50       | 0.55       | 0.61       | 0.66       | 0.68       | 0.69       | 0.70       | 0.71       | 0.71      |
| DN80 x DN125         | 0.45       | 0.50       | 0.56       | 0.60       | 0.63       | 0.64       | 0.65       | 0.66       | 0.66      |
| DN100 x DN150        | 0.48       | 0.52       | 0.59       | 0.63       | 0.66       | 0.67       | 0.68       | 0.69       | 0.70      |
| DN125 x DN200        | 0.50       | 0.55       | 0.61       | 0.65       | 0.68       | 0.70       | 0.71       | 0.72       | 0.72      |
| DN150 x DN250        | 0.51       | 0.56       | 0.62       | 0.66       | 0.69       | 0.71       | 0.72       | 0.73       | 0.73      |

## Sizing and selection

Refer to:- <http://www.spiraxsarco.com/prs/product-sizing.asp>

### Dimensions/weights (approximate) in mm and kg



| Size<br>Inlet/Outlet | Dimensions |     |      |             | Weight |       |
|----------------------|------------|-----|------|-------------|--------|-------|
|                      | A          | B   | C *  | Flow Ø<br>D | SV604  | SV607 |
| DN20 - DN32          | 85         | 95  | 385  | 17.0        | 10.5   | 10.5  |
| DN25 - DN40          | 100        | 105 | 435  | 23.8        | 12.5   | 11.5  |
| DN32 - DN50          | 110        | 115 | 450  | 30.6        | 16.0   | 15.0  |
| DN40 - DN65          | 115        | 140 | 520  | 38.0        | 18.0   | 18.0  |
| DN50 - DN80          | 120        | 150 | 535  | 50.1        | 20.0   | 22.0  |
| DN65 - DN100         | 140        | 170 | 710  | 59.0        | 40.0   | 38.0  |
| DN80 - DN125         | 160        | 195 | 790  | 73.0        | 56.0   | 53.0  |
| DN100 - DN150        | 180        | 220 | 835  | 91.0        | 77.0   | 75.0  |
| DN125 - DN200        | 200        | 250 | 1042 | 105.0       | 120.0  | 115.0 |
| DN150 - DN250        | 225        | 285 | 1165 | 125.0       | 190.0  | 180.0 |

**\*Note:** Please note that dimension C may vary by up to 10 mm depending on which bonnet/cap configuration is selected.

## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P137-01) supplied with the product.

### Installation note:

The safety valve should always be fitted with the centre line of the spring housing vertically above the valve.

Open bonnet valves are recommended for all steam boiler applications and **must be used** for valves fitted with Tungsten alloy springs.

### SV60 safety valve selection guide:

|                   |                                                                                                                                  |                                                          |   |   |   |      |      |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---|---|---|------|------|
| Model type        |                                                                                                                                  | SV60                                                     |   |   |   |      | SV60 |
| Body material     | 4 = Carbon steel                                                                                                                 |                                                          |   |   |   |      | 4    |
|                   | 7 = SG iron                                                                                                                      |                                                          |   |   |   |      |      |
| Configuration     | A = Closed bonnet/easing lever                                                                                                   |                                                          |   |   |   |      | A    |
|                   | B = Closed bonnet/sealed cap                                                                                                     |                                                          |   |   |   |      |      |
|                   | C = Closed bonnet/packed lever (DN20 to DN100 only)                                                                              |                                                          |   |   |   |      |      |
|                   | D = Open bonnet/easing lever                                                                                                     |                                                          |   |   |   |      |      |
| Seal material     | S = Stainless steel with chrome-vanadium alloy steel spring                                                                      |                                                          |   |   |   |      | S    |
|                   | T = Stainless steel with tungsten alloy steel spring<br>(only available in combination with the 'D' (open bonnet) configuration) |                                                          |   |   |   |      |      |
| Size              |                                                                                                                                  | DN20 to DN150                                            |   |   |   |      | DN20 |
| Inlet connection  |                                                                                                                                  | PN16 (DN65 to DN150 only), PN25, PN40 or ASME (ANSI) 300 |   |   |   |      | PN40 |
| Selection example |                                                                                                                                  | SV60                                                     | 4 | A | S | DN20 | PN40 |

### How to order example

1 off Spirax Sarco SV604AS, DN20 flanged PN40 safety valve with a set pressure of 6 bar g.