

# spirax sarco

TI-S13-30  
 CH Issue 13

## SV74 Carbon Steel Safety Valve

### Description

The SV74 steel series safety valves are built in conformance to Section I and VIII of the ASME Boiler and Pressure Vessel Code. They are primarily intended for use on power boilers and unfired pressure vessels where ASME Section I and VIII stamped valves are required.

### Applications

Protection of steam systems downstream of pressure regulating stations, on inlet to such equipment as air coils, heat exchangers and process vessels. Also for use on flash recovery vessels on condensate return systems to protect vessels. Air systems to protect accumulation vessels and air equipment from overpressurisation. Steam boilers and generators.

### Available types

The SV74 is available with carbon steel body and stainless steel trim in orifice sizes from 'F' to 'R'. It has an open bonnet and easing lever and flanged connections.

### 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

Approved by National Board of Boiler and Pressure Vessel Inspectors to ASME Boiler and Pressure Vessel Code Sections I and VIII. Seat tightness is in accordance with ASME/API STD 527-1992.

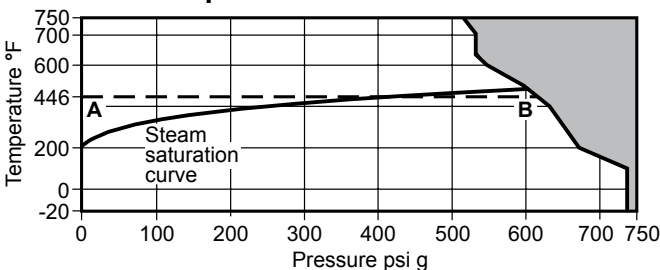
If National Board 'V' or 'UV' stamp is required, then this must be specified at the time of ordering.

The SV74 fully complies with the requirements of the European Pressure Equipment Directive 97/23/EC and carries the CE mark when so required.

### Sizes and end connections

|                     |               |                           |
|---------------------|---------------|---------------------------|
| 1½" x 2" to 6" x 8" | <b>Inlet</b>  | Flanged ASME class 300 RF |
|                     | <b>Outlet</b> | Flanged ASME class 150 RF |

### Pressure / temperature limits



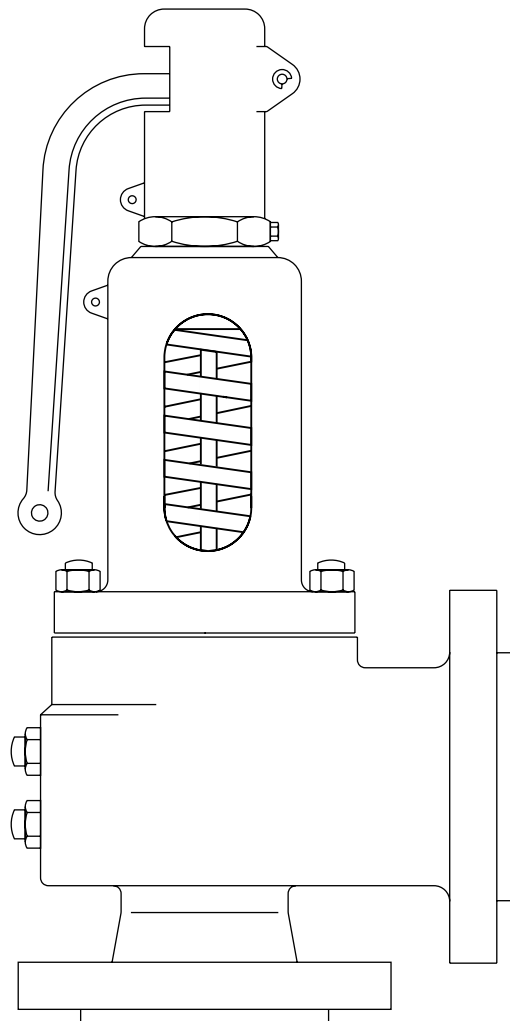
The product **must not** be used in this region.

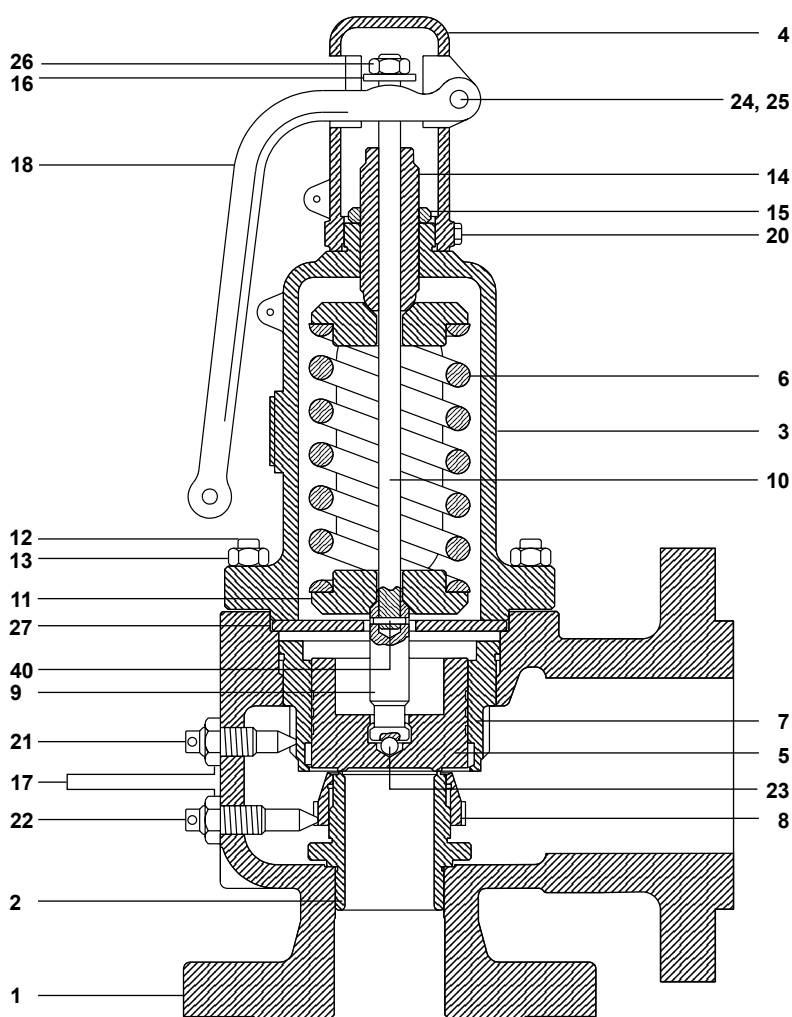
**A - B** To avoid spring damage, **do not exceed** an operating temperature of 446°F.

|   |                 |           |              |
|---|-----------------|-----------|--------------|
| Body design conditions                  |                 | ASME 300  |              |
| Set pressure range                      | Maximum         | 300 psi g |              |
|   | Minimum         | 5 psi g   |              |
| Design temperature                      | Maximum         | 750°F     |              |
|   | Minimum         | -20°F     |              |
| Operating temperature                   |                 | Maximum   | 446°F        |
| Performance data                        | Overpressure    | ASME I    | Steam 3%     |
|   |                 | ASME VIII | Steam 10%    |
|   |                 |           | Air/gas 10%  |
|   | Blowdown limits | ASME I    | Steam 2 - 6% |
|   |                 | ASME VIII | Steam 7%     |
|   |                 |           | Air/gas 7%   |
| Derated coefficient of discharge values |                 | Steam     | 0.955        |
|   |                 | Air/gas   | 0.955        |

Maximum permitted backpressure up to: 10% of set pressure

Tested at a maximum inlet cold hydraulic test pressure of 1015 psi g





## Materials

| No. | Part                     | Material   |
|-----|--------------------------|--|
| 1   | Body                     | Carbon steel<br>ASME SA 216 Gr. WCB  |
| 2   | Seat                     | F to H orifice<br>Stainless steel<br>ASTM A479 304<br>J to R orifice<br>Stainless steel<br>ASTM A351 Grade CF8 |
| 3   | Bonnet                   | Carbon steel<br>ASME SA 216 Gr. WCB  |
| 4   | Cap                      | Cast iron<br>ASTM A126 Class B   |
| 5   | Disc                     | F to H orifice<br>Stainless steel<br>ASTM A479 304<br>J to R orifice<br>Stainless steel<br>ASTM A217 CA15      |
| 6   | Spring                   | Chrome-vanadium alloy steel  |
| 7   | Upper adjusting ring     | Stainless steel<br>ASTM A351 Grade CF8   |
| 8   | Lower adjusting ring     | Stainless steel<br>ASTM A351 Grade CF8   |
| 9   | Stem (lower)             | Stainless steel<br>ASTM A479 Type 410  |
| 10  | Stem (upper)             | Stainless steel<br>ASTM A479 Type 410  |
| 11  | Spring washers (2 off)   | Steel<br>ASTM A105   |
| 12  | Bonnet stud              | Steel<br>ASTM A193 Grade B7  |
| 13  | Bonnet nut               | Steel<br>ASTM A194 Grade 2H  |
| 14  | Adjusting screw          | Stainless steel<br>ASTM A479 Type 410  |
| 15  | Adjusting screw nut      | Carbon steel   |
| 16  | Release ring             | Carbon steel   |
| 17  | Lock-nuts (2 off)        | Carbon steel   |
| 18  | Lever                    | Grey iron  |
| 20  | Cap set screw            | Carbon steel   |
| 21  | Upper adjusting ring pin | Stainless steel  |
| 22  | Lower adjusting ring pin | Stainless steel  |
| 23  | Disc ball                | Stainless steel  |
| 24  | Pin washer               | Carbon steel   |
| 25  | Lever pin                | Carbon steel   |
| 26  | Lock-nut                 | Carbon steel   |
| 27  | Guide plate              | Carbon steel   |
| 40  | Stem pin                 | Carbon steel   |

**Capacities**

1. lb/h steam, 90% of actual capacity at 3% accumulation in accordance with ASME Code, Section I.
2. lb/h steam, 90% of actual capacity at 10% accumulation in accordance with ASME Code, Section VIII.

| Steam saturation temperature °F | F         |      |      | G         |       |       | H         |       |       | J         |       |       | K         |       |       | L         |       |       | M         |        |     | N         |    |     | P         |    |     | Q         |    |     | R         |    |     |           |  |  |
|---------------------------------|-----------|------|------|-----------|-------|-------|-----------|-------|-------|-----------|-------|-------|-----------|-------|-------|-----------|-------|-------|-----------|--------|-----|-----------|----|-----|-----------|----|-----|-----------|----|-----|-----------|----|-----|-----------|--|--|
|                                 | Real flow |      |      | Real flow |       |       | Real flow |       |       | Real flow |       |       | Real flow |       |       | Real flow |       |       | Real flow |        |     | Real flow |    |     | Real flow |    |     | Real flow |    |     | Real flow |    |     | Real flow |  |  |
|                                 | lb/h      | 3%   | 10%  | lb/h      | 3%    | 10%   | lb/h      | 3%    | 10%   | lb/h      | 3%    | 10%   | lb/h      | 3%    | 10%   | lb/h      | 3%    | 10%   | lb/h      | 3%     | 10% | lb/h      | 3% | 10% | lb/h      | 3% | 10% | lb/h      | 3% | 10% | lb/h      | 3% | 10% |           |  |  |
| 250                             | 438       | 453  | 716  | 1161      | 1122  | 1387  | 1897      | 2625  | 2717  | 4216      | 5131  | 5308  | 6181      | 6395  | 9111  | 9427      | 15756 | 16302 | 22842     | 23634  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 259                             | 512       | 533  | 839  | 1366      | 1314  | 1697  | 2231      | 3074  | 3196  | 4959      | 6007  | 6244  | 7236      | 7522  | 10688 | 11089     | 18447 | 19176 | 26744     | 27800  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 267                             | 587       | 612  | 961  | 1505      | 1505  | 1975  | 2566      | 3522  | 3675  | 5466      | 6883  | 7180  | 8292      | 8649  | 12224 | 12751     | 21139 | 22050 | 30646     | 31966  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 274                             | 662       | 692  | 1083 | 1697      | 1775  | 2390  | 3171      | 4249  | 4419  | 6462      | 8036  | 8366  | 9648      | 9976  | 14337 | 14913     | 23830 | 24923 | 34548     | 36133  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 281                             | 737       | 772  | 1206 | 1888      | 1980  | 2644  | 3524      | 4719  | 4932  | 7058      | 8811  | 9187  | 10611     | 10993 | 15617 | 16274     | 25251 | 27797 | 38449     | 40299  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 287                             | 811       | 852  | 1328 | 2080      | 2184  | 2911  | 3938      | 5208  | 5468  | 7654      | 9533  | 9987  | 11459     | 12031 | 16893 | 17736     | 29213 | 30671 | 42351     | 44465  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 292                             | 886       | 932  | 1451 | 2272      | 2389  | 3171  | 4303      | 5616  | 5900  | 8250      | 10389 | 10923 | 12515     | 13158 | 18449 | 19398     | 31904 | 33545 | 46253     | 48631  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 298                             | 961       | 1012 | 1573 | 2463      | 2594  | 3425  | 4611      | 6000  | 6361  | 8748      | 11085 | 11689 | 13350     | 14062 | 20006 | 21060     | 34595 | 36418 | 50557     | 52797  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 303                             | 1035      | 1091 | 1695 | 2655      | 2798  | 3711  | 4964      | 6448  | 6861  | 9348      | 11785 | 12425 | 14143     | 14922 | 21562 | 22722     | 37287 | 39292 | 54057     | 56964  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 307                             | 1110      | 1171 | 1818 | 2847      | 3003  | 4003  | 5311      | 6900  | 7324  | 9900      | 12425 | 13134 | 14922     | 15733 | 22707 | 24062     | 39978 | 42166 | 57958     | 61130  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 312                             | 1185      | 1251 | 1940 | 3038      | 3208  | 4244  | 5611      | 7388  | 7832  | 10566     | 13183 | 13948 | 15811     | 16666 | 24675 | 26045     | 42670 | 45040 | 61860     | 65296  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 316                             | 1260      | 1331 | 2062 | 3230      | 3412  | 4494  | 5933      | 7811  | 8275  | 11000     | 13711 | 14525 | 16443     | 17333 | 25621 | 27077     | 45361 | 47913 | 65762     | 69462  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 320                             | 1334      | 1411 | 2185 | 3422      | 3617  | 4744  | 6244      | 8211  | 8694  | 11500     | 14311 | 15166 | 17143     | 18066 | 26885 | 28422     | 46800 | 49450 | 67664     | 73229  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 324                             | 1409      | 1490 | 2307 | 3613      | 3822  | 5000  | 6544      | 8611  | 9100  | 12000     | 14911 | 15811 | 17866     | 18833 | 28111 | 29733     | 50744 | 53661 | 73565     | 77795  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 328                             | 1484      | 1570 | 2429 | 3805      | 4026  | 5211  | 6811      | 9000  | 9500  | 12500     | 15411 | 16311 | 18466     | 19433 | 28811 | 30533     | 52535 | 55535 | 77467     | 81961  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 331                             | 1559      | 1650 | 2562 | 3996      | 4231  | 5488  | 7188      | 9488  | 10000 | 13000     | 16011 | 16911 | 19166     | 20133 | 29511 | 31233     | 53535 | 56535 | 79467     | 84061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 335                             | 1633      | 1730 | 2674 | 4188      | 4436  | 5744  | 7488      | 9888  | 10400 | 13400     | 16411 | 17311 | 19566     | 20533 | 30011 | 31733     | 54535 | 57535 | 80467     | 85061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 338                             | 1708      | 1810 | 2797 | 4380      | 4640  | 5950  | 7700      | 10100 | 10600 | 13600     | 16611 | 17511 | 19766     | 20733 | 30211 | 31933     | 55535 | 58535 | 81367     | 86061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 341                             | 1783      | 1890 | 2919 | 4571      | 4845  | 6166  | 7933      | 10366 | 10866 | 13866     | 16877 | 17777 | 20033     | 21000 | 30511 | 32233     | 56535 | 59535 | 82267     | 87061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 344                             | 1858      | 1969 | 3041 | 4763      | 5050  | 6388  | 8166      | 10566 | 11066 | 14066     | 17077 | 17977 | 20233     | 21200 | 30811 | 32533     | 57535 | 60535 | 83167     | 88061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 347                             | 1932      | 2049 | 3164 | 4955      | 5254  | 6600  | 8388      | 10788 | 11288 | 14288     | 17299 | 18199 | 20455     | 21422 | 31111 | 32833     | 58535 | 61535 | 84067     | 89061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 350                             | 2007      | 2129 | 3286 | 5146      | 5459  | 6811  | 8599      | 11011 | 11511 | 14511     | 17522 | 18422 | 20677     | 21644 | 31411 | 33133     | 59535 | 62535 | 84967     | 89961  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 353                             | 2082      | 2209 | 3408 | 5338      | 5663  | 7022  | 8811      | 11222 | 11722 | 14722     | 17733 | 18633 | 20888     | 21855 | 31711 | 33433     | 60535 | 63535 | 85867     | 90861  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 356                             | 2157      | 2289 | 3531 | 5530      | 5868  | 7211  | 9000      | 11411 | 11911 | 14911     | 17922 | 18822 | 21077     | 22044 | 32011 | 33733     | 61535 | 64535 | 86767     | 91761  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 358                             | 2231      | 2368 | 3652 | 5721      | 6073  | 7422  | 9211      | 11622 | 12122 | 15122     | 18133 | 19033 | 21288     | 22255 | 32311 | 34033     | 62535 | 65535 | 87667     | 92661  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 361                             | 2306      | 2448 | 3775 | 5913      | 6277  | 7633  | 9400      | 11811 | 12311 | 15311     | 18322 | 19222 | 21477     | 22444 | 32611 | 34333     | 63535 | 66535 | 88567     | 93561  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 363                             | 2381      | 2528 | 3898 | 6104      | 6482  | 7844  | 9588      | 12000 | 12500 | 15500     | 18511 | 19411 | 21666     | 22633 | 32911 | 34633     | 64535 | 67535 | 89467     | 94461  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 366                             | 2456      | 2608 | 4020 | 6296      | 6687  | 8044  | 9777      | 12188 | 12688 | 15688     | 18699 | 19599 | 21855     | 22822 | 33211 | 34933     | 65535 | 68535 | 90367     | 95361  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 368                             | 2530      | 2688 | 4143 | 6488      | 6891  | 8244  | 9966      | 12377 | 12877 | 15877     | 18888 | 19788 | 22044     | 23011 | 33511 | 35233     | 66535 | 69535 | 91267     | 96261  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 371                             | 2605      | 2768 | 4265 | 6679      | 7096  | 8444  | 10155     | 12566 | 13066 | 16066     | 19077 | 19977 | 22200     | 23166 | 33811 | 35533     | 67535 | 70535 | 92167     | 97161  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 373                             | 2680      | 2847 | 4387 | 6871      | 7301  | 8699  | 10344     | 12755 | 13255 | 16255     | 19266 | 20166 | 22411     | 23377 | 34111 | 35833     | 68535 | 71535 | 93067     | 98061  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 375                             | 2755      | 2927 | 4510 | 7063      | 7505  | 8899  | 10533     | 12944 | 13444 | 16444     | 19455 | 20355 | 22600     | 23566 | 34411 | 36133     | 69535 | 72535 | 93967     | 98961  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 377                             | 2829      | 3007 | 4632 | 7254      | 7710  | 9199  | 10722     | 13133 | 13633 | 16633     | 19644 | 20544 | 22800     | 23766 | 34711 | 36433     | 70535 | 73535 | 94867     | 99861  |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 380                             | 2904      | 3087 | 4754 | 7446      | 7915  | 9388  | 10911     | 13322 | 13822 | 16822     | 19833 | 20733 | 23000     | 23966 | 35011 | 36733     | 71535 | 74535 | 95767     | 100761 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 382                             | 2979      | 3167 | 4877 | 7638      | 8119  | 9577  | 11099     | 13511 | 14011 | 17011     | 20022 | 20922 | 23277     | 24244 | 35311 | 37033     | 72535 | 75535 | 96667     | 101661 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 384                             | 3053      | 3246 | 4999 | 7829      | 8324  | 9766  | 11288     | 13699 | 14199 | 17200     | 20111 | 21011 | 23322     | 24288 | 35611 | 37333     | 73535 | 76535 | 97567     | 102561 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 386                             | 3128      | 3326 | 5122 | 8021      | 8529  | 9911  | 11477     | 13888 | 14388 | 17388     | 20299 | 21199 | 23500     | 24466 | 35911 | 37633     | 74535 | 77535 | 98467     | 103461 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 388                             | 3203      | 3406 | 5244 | 8212      | 8733  | 10099 | 11666     | 14077 | 14577 | 17477     | 20388 | 21288 | 23599     | 24566 | 36211 | 37933     | 75535 | 78535 | 99367     | 104361 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 392                             | 3352      | 3566 | 5489 | 8416      | 8943  | 10311 | 11855     | 14266 | 14766 | 17566     | 20477 | 21377 | 23688     | 24655 | 36511 | 38233     | 76535 | 79535 | 100267    | 105261 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 396                             | 3502      | 3733 | 5733 | 8611      | 9152  | 10500 | 12044     | 14455 | 14955 | 17655     | 20588 | 21488 | 23799     | 24766 | 36811 | 38533     | 77535 | 80535 | 101167    | 106161 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 399                             | 3651      | 3885 | 5978 | 8766      | 9303  | 10688 | 12233     | 14644 | 15144 | 17744     | 20699 | 21599 | 23900     | 24866 | 37111 | 38833     | 78535 | 81535 | 102067    | 107061 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 403                             | 3801      | 4045 | 6223 | 8922      | 9459  | 10877 | 12422     | 14833 | 15333 | 17833     | 20811 | 21711 | 24022     | 24988 | 37411 | 39133     | 79535 | 82535 | 102967    | 107961 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 406                             | 3950      | 4204 | 6468 | 9077      | 9616  | 11066 | 12611     | 15022 | 15522 | 17922     | 20911 | 21811 | 24122     | 25088 | 37711 | 39433     | 80535 | 83535 | 103867    | 108861 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 409                             | 4100      | 4364 | 6712 | 9233      | 9771  | 11255 | 12800     | 15211 | 15711 | 18011     | 21000 | 21900 | 24233     | 25199 | 38011 | 39733     | 81535 | 84535 | 104767    | 109761 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 413                             | 4249      | 4524 | 6957 | 9388      | 9910  | 11444 | 13000     | 15400 | 15900 | 18100     | 21100 | 22000 | 24344     | 25311 | 38311 | 40033     | 82535 | 85535 | 105667    | 110661 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 416                             | 4399      | 4683 | 7202 | 9544      | 10055 | 11633 | 13188     | 15588 | 16088 | 18288     | 21200 | 22100 | 24455     | 25422 | 38611 | 40333     | 83535 | 86535 | 106567    | 111561 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 417                             | 4548      | 4843 | 7446 | 9700      | 10211 | 11822 | 13377     | 15777 | 16277 | 18477     | 21300 | 22200 | 24566     | 25533 | 38911 | 40633     | 84535 | 87535 | 107467    | 112461 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |
| 422                             | 4698      | 5003 | 7691 | 9855      | 10366 | 12011 | 13566     | 15966 | 16466 | 18666     | 21400 | 22300 | 24677     | 25644 | 39211 | 40933     | 85535 | 88535 | 108367    | 113361 |     |           |    |     |           |    |     |           |    |     |           |    |     |           |  |  |

## Safety valve sizing information

**Formulas:**

**For steam service:**  $A = \frac{\dot{m}_s}{0.9 (51.45 P K_d K_{sh})}$

**For organic fluid vaporizers - lb/h:**  $A = \frac{\dot{m} \sqrt{T} \sqrt{Z}}{0.9 C K_d P \sqrt{M}}$

**Where:**

- A = Required orifice area in square inches
- P = Relieving pressure in pounds per square inch absolute = set pressure (psi g) + overpressure + 14.7 where the overpressure is 3% or 2 psi, whichever is the greater. P = 1.03 x set pressure + 14.7 or P = set pressure + 2 psi + 14.7.
- T = Inlet temperature, °F. Absolute (°F plus 460).
- $\dot{m}_s$  = Required steam capacity in pounds per hour.
- $\dot{m}$  = Required vapor capacity in pounds per hour.
- K<sub>d</sub> = Coefficient of discharge, 0.955 for steam, air and vapour service.
- K<sub>sh</sub> = Steam superheat correction factor. See Table 1 below.
- M = Average molecular weight of vapour. See Table 3, page 5.
- C = Gas or vapour flow constant. See Table 2, page 5.
- Z = Compressibility factor corresponding to T and P. If this factor is not available, compressibility correction can be safely ignored using a value of Z = 1.0.

**Table 1 K<sub>sh</sub> superheat correction factor**

| Total steam temperature °F | Set pressure psi g             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------|--------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                            | 15                             | 20   | 40   | 60   | 80   | 100  | 120  | 140  | 160  | 180  | 200  | 220  | 240  | 260  | 280  | 300  |
|                            | Saturated steam temperature °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                            | 250                            | 259  | 287  | 308  | 324  | 338  | 350  | 361  | 371  | 380  | 388  | 395  | 403  | 409  | 416  | 422  |
| 280                        | 1.00                           | 1.00 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 300                        | 1.00                           | 1.00 | 1.00 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 320                        | 1.00                           | 1.00 | 1.00 | 1.00 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 340                        | 0.99                           | 0.99 | 1.00 | 1.00 | 1.00 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 360                        | 0.99                           | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 380                        | 0.98                           | 0.98 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | -    | -    | -    | -    | -    | -    | -    |
| 400                        | 0.98                           | 0.98 | 0.98 | 0.98 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | -    | -    | -    | -    |
| 420                        | 0.97                           | 0.97 | 0.97 | 0.97 | 0.98 | 0.98 | 0.98 | 0.99 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | -    |
| 440                        | 0.96                           | 0.96 | 0.96 | 0.96 | 0.97 | 0.97 | 0.97 | 0.97 | 0.98 | 0.98 | 0.98 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 |
| 460                        | 0.95                           | 0.95 | 0.95 | 0.95 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.97 | 0.97 | 0.97 | 0.98 | 0.98 | 0.98 | 0.99 |

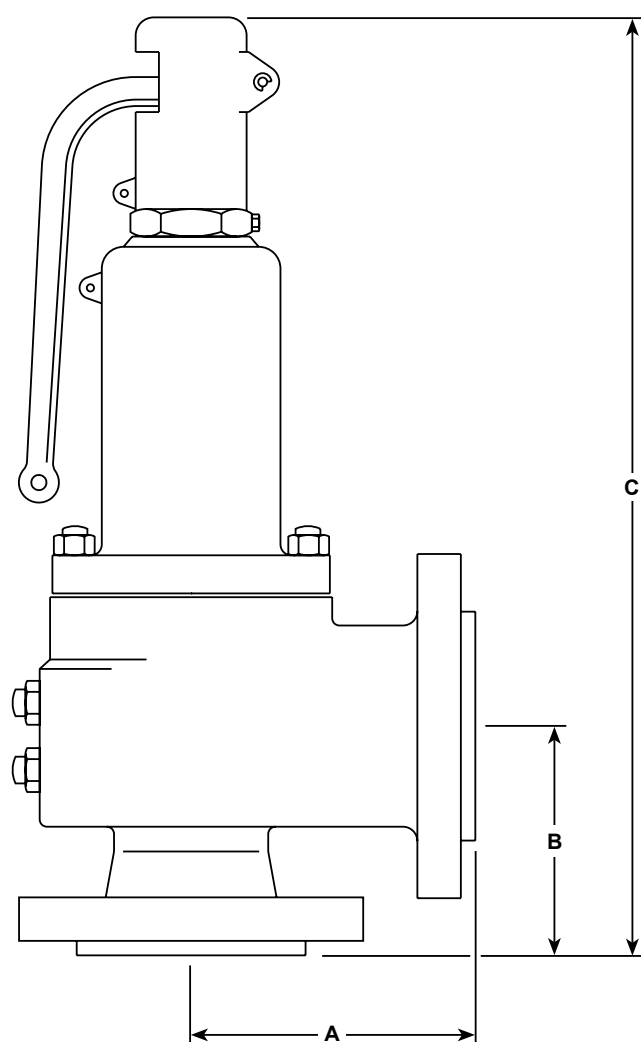
**Do not exceed the maximum operating temperature of 446°F.**

## Sizing and selection

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

### Dimensions, weights and orifice sizes (approximate) in inches and lbs

| Valve inlet |            | Valve outlet |            | Orifice letter | A ins | B ins | C ins | Weight lbs |
|-------------|------------|--------------|------------|----------------|-------|-------|-------|------------|
| Size        | Connection | Size         | Connection |                |       |       |       |            |
| 1½"         | ASME 300   | 2"           | ASME 150   | F              | 4.25  | 4.5   | 15.7  | 31         |
| 1½"         | ASME 300   | 2"           | ASME 150   | G              | 4.25  | 4.5   | 15.7  | 31         |
| 1½"         | ASME 300   | 2½"          | ASME 150   | H              | 4.90  | 4.8   | 16.2  | 46         |
| 1½"         | ASME 300   | 2½"          | ASME 150   | J              | 4.90  | 4.8   | 16.2  | 46         |
| 2"          | ASME 300   | 3"           | ASME 150   | K              | 5.60  | 5.1   | 18.5  | 62         |
| 2½"         | ASME 300   | 4"           | ASME 150   | L              | 6.40  | 6.1   | 20.1  | 90         |
| 3"          | ASME 300   | 4"           | ASME 150   | M              | 6.50  | 6.5   | 25.0  | 117        |
| 4"          | ASME 300   | 6"           | ASME 150   | N              | 7.50  | 7.2   | 26.7  | 198        |
| 4"          | ASME 300   | 6"           | ASME 150   | P              | 8.30  | 7.1   | 28.7  | 212        |
| 6"          | ASME 300   | 8"           | ASME 150   | Q              | 9.40  | 9.9   | 34.8  | 384        |
| 6"          | ASME 300   | 8"           | ASME 150   | R              | 10.00 | 10.9  | 43.9  | 633        |



### Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-S13-33) 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.

### SV7 safety valve selection guide

|                              |  |            |
|------------------------------|--|------------|
| Series number                | SV7  | <b>SV7</b> |
| Construction                 | 4 = Cast steel                                 | <b>4</b>   |
|                              | V = ASME Code Section I                        |            |
| ASME section                 | U = ASME Code Section VIII                     | <b>V</b>   |
|                              | Blank = Valve without code stamp               |            |
|                              | S = 1½" ASME 300 x 2" ASME 150                 |            |
|                              | T = 1½" ASME 300 x 2½" ASME 150                |            |
|                              | U = 2" ASME 300 x 3" ASME 150                  |            |
|                              | V = 2½" ASME 300 x 4" ASME 150                 |            |
|                              | W = 3" ASME 300 x 4" ASME 150                  |            |
|                              | X = 4" ASME 300 x 6" ASME 150                  | <b>X</b>   |
|                              | Y = 6" ASME 300 x 8" ASME 150                  |            |
|                              | F = 0.328                                      |            |
|                              | G = 0.537                                      |            |
|                              | H = 0.841                                      |            |
|                              | J = 1.374                                      |            |
|                              | K = 1.968                                      |            |
|                              | L = 3.054                                      |            |
|                              | M = 3.846                                      |            |
|                              | N = 4.633                                      |            |
|                              | P = 6.830                                      | <b>P</b>   |
|                              | Q = 11.811                                     |            |
|                              | R = 17.123                                     |            |
| Set pressure                 | Specify set pressure from 5 psi g to 250 psi g | <b>180</b> |
| <b>SV7 4 - V - X P - 180</b> |  |            |

### How to order

**Example 1:** 1 off Spirax Sarco SV74-V-XP-180 safety valve having a set pressure of 180 psi g.