



Fig. 971

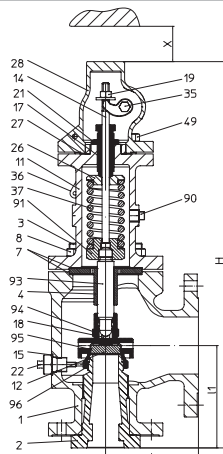


Fig. ... 971  
closed lifting device

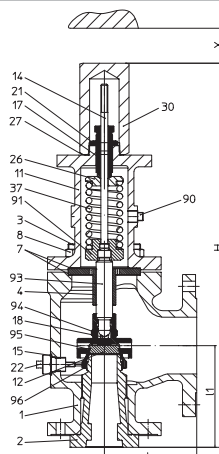


Fig. ... 973  
gastight cap

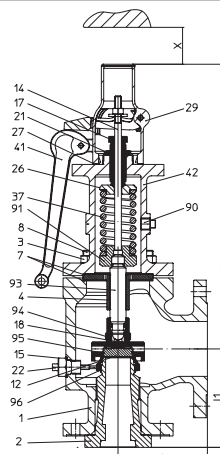


Fig. ... 974  
open lifting device

### Features

- Direct loaded with spring
- Wear resistant seat/disc
- Precision disc alignment and guide
- Possible with soft seal disc
- Possible with stainless steel bellow



| Figure             | Nom. pressure     | Material  | Valve size          |
|--------------------|-------------------|-----------|---------------------|
| 32.971 / 973 / 974 | ANSI150/150       | SA216WCC  | 1" x 2" - 8" x 10"  |
| 35.971 / 973 / 974 | ANSI300/150       | SA216WCC  | 1" x 2" - 8" x 10"  |
| 37.971 / 973 / 974 | ANSI600/150       | SA216WCC  | 1" x 2" - 6" x 10"  |
| 38.971 / 973 / 974 | ANSI900/(150)300  | SA216WCC  | 1,5" x 2" - 4" x 6" |
| 39.971 / 973 / 974 | ANSI1500/(150)300 | SA216WCC  | 1,5" x 2" - 4" x 6" |
| 3c.971 / 973 / 974 | ANSI2500/300      | SA216WCC  | 1,5" x 3" - 2" x 3" |
| 35.971 / 973 / 974 | ANSI300/150       | SA217WC6  | 1" x 2" - 8" x 10"  |
| 37.971 / 973 / 974 | ANSI600/150       | SA217WC6  | 1" x 2" - 6" x 10"  |
| 38.971 / 973 / 974 | ANSI900/(150)300  | SA217WC6  | 1,5" x 2" - 4" x 6" |
| 39.971 / 973 / 974 | ANSI1500/(150)300 | SA217WC6  | 1,5" x 2" - 4" x 6" |
| 3c.971 / 973 / 974 | ANSI2500/300      | SA217WC6  | 1,5" x 3" - 2" x 3" |
| 52.971 / 973       | ANSI150/150       | SA351CF8M | 1" x 2" - 8" x 10"  |
| 55.971 / 973       | ANSI300/150       | SA351CF8M | 1" x 2" - 8" x 10"  |
| 57.971 / 973       | ANSI600/150       | SA351CF8M | 1" x 2" - 6" x 10"  |
| 58.971 / 973       | ANSI900/(150)300  | SA351CF8M | 1,5" x 2" - 4" x 6" |
| 59.971 / 973       | ANSI1500/300      | SA351CF8M | 1,5" x 2" - 3" x 6" |
| 5c.971 / 973       | ANSI2500/300      | SA351CF8M | 1,5" x 3" - 2" x 3" |

### Details required

- Medium gasform: Mass flow (lb/h), SCFM, molar mass (kg/kmol), temperature (°F), set gauge pressure (psig), back gauge pressure (psig)
- Medium liquid: Volume flow (gal/min), density, viscosity, temperature (°F), set gauge pressure (psi gauge), back gauge pressure (psi gauge)

### Selection of possible applications

Industrial installations, processing technology, plant manufacturing, etc.  
(other applications on request)

### Selection of possible flow media

Steam, gases, vapours and liquids (other flow media on request)

|                            | without metal bellow                                   | with metal bellow |
|----------------------------|--------------------------------------------------------|-------------------|
| Superimposed back pressure | no backpressure allowed                                | on request        |
| Built up back pressure     | max. 10% from set pressure (gauge) (higher on request) | on request        |

| Material |                          |                                                     |          |                                     |
|----------|--------------------------|-----------------------------------------------------|----------|-------------------------------------|
| Pos.     | Description              | Fig. 32.971/973/974 3c.971/973/974                  |          | Fig. 52.971/973 - 5c.971/973        |
| 1        | Body                     | SA216WCC                                            | SA217WC6 | SA351CF8M                           |
| 2        | Nozzle *                 | SA351CF8M (>2": SA479Gr.316L)                       |          |                                     |
| 4        | Guide                    | SA351CF8M (liquid+air) / Monel SA494M35-2 (steam)   |          |                                     |
| 7        | Gasket (body/bonnet) *   | Corrugated soft iron                                |          |                                     |
| 11       | Bonnet, closed           | SA216WCC                                            | SA217WC6 | SA351CF8M                           |
| 12       | Disc *                   | SA479Gr.316L                                        |          |                                     |
| 14       | Stem, top                | SA479Gr.316L                                        |          |                                     |
| 26       | Top spring step          | SA108Gr.1018                                        |          |                                     |
| 28       | Cap, closed (Fig. 971)   | SA216WCC                                            |          | SA351CF8M                           |
| 29       | Cap, open (Fig. 974)     | Gray iron                                           |          |                                     |
| 30       | Cap, gastight (Fig. 973) | SA216WCC                                            |          | SA351CF8M                           |
| 36       | Lifting lever            | Gray iron                                           |          |                                     |
| 37       | Spring                   | SA231/401 (Chrome vanadium) / > 450°F: Inconel X750 |          | SA313Gr.316 / > 550°F: Inconel X750 |
| 42       | Bonnet, open             | SA216WCC                                            | SA217WC6 | SA351CF8M                           |
| 75       | O-ring *                 | Viton                                               |          |                                     |
| 91       | Bottom spring step       | SA108Gr.1018                                        |          | SA479Gr.316L                        |
| 93       | Point                    | SA479Gr.316L                                        |          |                                     |
| 96       | Adjusting screw          | SA351CF8M                                           |          |                                     |

\* Spare parts

\*last updated 10/16



| Orifice Size<br>Set Pressure<br>psig       |                                                 | D                                                                                                                                 | E                      | F                     | G                     | H                     | J                     | K                     | L                     |
|--------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                                            |                                                 | 0.1219 in <sup>2</sup>                                                                                                            | 0.2173 in <sup>2</sup> | 0.340 in <sup>2</sup> | 0.558 in <sup>2</sup> | 0.869 in <sup>2</sup> | 1.427 in <sup>2</sup> | 2.036 in <sup>2</sup> | 3.160 in <sup>2</sup> |
| Coeff. of discharge : 0.860                |                                                 | Capacity Charts „Air & Gas in SCFM” <sup>1)</sup> (incl. 10% overpressure): Orifices D - L<br><sup>1)</sup> at 60°F and 14.7 psia |                        |                       |                       |                       |                       |                       |                       |
| < 30 psig<br>with + 3 psig<br>overpressure | 5                                               | 44                                                                                                                                | 78                     | 122                   | 200                   | 311                   | 511                   | 729                   | 1131                  |
|                                            | 10                                              | 53                                                                                                                                | 95                     | 148                   | 244                   | 379                   | 623                   | 889                   | 1380                  |
|                                            | No Code Stamp or NB on Nameplates Below 15 psig |                                                                                                                                   |                        |                       |                       |                       |                       |                       |                       |
|                                            | 15                                              | 63                                                                                                                                | 112                    | 175                   | 288                   | 448                   | 736                   | 1050                  | 1629                  |
|                                            | 20                                              | 72                                                                                                                                | 129                    | 202                   | 332                   | 516                   | 848                   | 1210                  | 1878                  |
|                                            | 30                                              | 92                                                                                                                                | 163                    | 256                   | 420                   | 653                   | 1073                  | 1531                  | 2376                  |
| 40                                         |                                                 | 113                                                                                                                               | 201                    | 315                   | 516                   | 804                   | 1321                  | 1884                  | 2924                  |
| 50                                         |                                                 | 134                                                                                                                               | 239                    | 374                   | 613                   | 955                   | 1568                  | 2237                  | 3472                  |
| 60                                         |                                                 | 155                                                                                                                               | 276                    | 433                   | 710                   | 1106                  | 1815                  | 2590                  | 4020                  |
| 70                                         |                                                 | 176                                                                                                                               | 314                    | 492                   | 807                   | 1256                  | 2063                  | 2943                  | 4568                  |
| 80                                         |                                                 | 197                                                                                                                               | 352                    | 550                   | 903                   | 1407                  | 2310                  | 3296                  | 5116                  |
| 90                                         |                                                 | 218                                                                                                                               | 389                    | 609                   | 1000                  | 1558                  | 2558                  | 3649                  | 5664                  |
| 100                                        |                                                 | 240                                                                                                                               | 427                    | 668                   | 1097                  | 1708                  | 2805                  | 4002                  | 6212                  |
| 110                                        |                                                 | 261                                                                                                                               | 465                    | 727                   | 1194                  | 1859                  | 3053                  | 4356                  | 6760                  |
| 120                                        |                                                 | 282                                                                                                                               | 503                    | 786                   | 1290                  | 2010                  | 3300                  | 4709                  | 7308                  |
| 130                                        |                                                 | 303                                                                                                                               | 540                    | 845                   | 1387                  | 2160                  | 3548                  | 5062                  | 7856                  |
| 140                                        |                                                 | 324                                                                                                                               | 578                    | 904                   | 1484                  | 2311                  | 3795                  | 5415                  | 8404                  |
| 150                                        |                                                 | 345                                                                                                                               | 616                    | 963                   | 1581                  | 2462                  | 4043                  | 5768                  | 8952                  |
| 1 pound increment                          |                                                 | 2                                                                                                                                 | 4                      | 6                     | 10                    | 15                    | 25                    | 35                    | 55                    |
| Coeff. of discharge: 0.860                 |                                                 | Capacity Charts „Steam in Lb/Hr” (incl. 10% overpressure): Orifices D - L                                                         |                        |                       |                       |                       |                       |                       |                       |
| < 30 psig<br>with + 3 psig<br>overpressure | 5                                               | 123                                                                                                                               | 218                    | 342                   | 561                   | 874                   | 1435                  | 2047                  | 3177                  |
|                                            | 10                                              | 150                                                                                                                               | 267                    | 417                   | 685                   | 1066                  | 1751                  | 2498                  | 3877                  |
|                                            | No Code Stamp or NB on Nameplates Below 15 psig |                                                                                                                                   |                        |                       |                       |                       |                       |                       |                       |
|                                            | 15                                              | 177                                                                                                                               | 315                    | 492                   | 808                   | 1259                  | 2067                  | 2949                  | 4577                  |
|                                            | 20                                              | 204                                                                                                                               | 363                    | 568                   | 932                   | 1451                  | 2383                  | 3400                  | 5276                  |
|                                            | 30                                              | 258                                                                                                                               | 459                    | 718                   | 1179                  | 1836                  | 3015                  | 4301                  | 6676                  |
| 40                                         |                                                 | 317                                                                                                                               | 565                    | 884                   | 1451                  | 2259                  | 3710                  | 5293                  | 8215                  |
| 50                                         |                                                 | 376                                                                                                                               | 671                    | 1050                  | 1723                  | 2683                  | 4405                  | 6285                  | 9755                  |
| 60                                         |                                                 | 436                                                                                                                               | 777                    | 1215                  | 1994                  | 3106                  | 5100                  | 7277                  | 11294                 |
| 70                                         |                                                 | 495                                                                                                                               | 883                    | 1381                  | 2266                  | 3529                  | 5796                  | 8269                  | 12834                 |
| 80                                         |                                                 | 554                                                                                                                               | 988                    | 1547                  | 2538                  | 3953                  | 6491                  | 9261                  | 14374                 |
| 90                                         |                                                 | 614                                                                                                                               | 1094                   | 1712                  | 2810                  | 4376                  | 7186                  | 10253                 | 15913                 |
| 100                                        |                                                 | 673                                                                                                                               | 1200                   | 1878                  | 3082                  | 4799                  | 7881                  | 11245                 | 17453                 |
| 110                                        |                                                 | 733                                                                                                                               | 1306                   | 2043                  | 3354                  | 5223                  | 8576                  | 12237                 | 18992                 |
| 120                                        |                                                 | 792                                                                                                                               | 1412                   | 2209                  | 3626                  | 5646                  | 9272                  | 13229                 | 20532                 |
| 130                                        |                                                 | 851                                                                                                                               | 1518                   | 2375                  | 3897                  | 6070                  | 9967                  | 14221                 | 22071                 |
| 140                                        |                                                 | 911                                                                                                                               | 1624                   | 2540                  | 4169                  | 6493                  | 10662                 | 15212                 | 23611                 |
| 150                                        |                                                 | 970                                                                                                                               | 1729                   | 2706                  | 4441                  | 6916                  | 11357                 | 16204                 | 25150                 |
| 1 pound increment                          |                                                 | 6                                                                                                                                 | 11                     | 17                    | 27                    | 42                    | 70                    | 99                    | 154                   |
| Coeff. of discharge: 0.724                 |                                                 | Capacity Charts „Water&Liquid in Gal/Min” (incl. 10% overpressure): Orifices D - L                                                |                        |                       |                       |                       |                       |                       |                       |
| < 30 psig<br>with + 3 psig<br>overpressure | 5                                               | 9                                                                                                                                 | 17                     | 26                    | 43                    | 68                    | 111                   | 158                   | 246                   |
|                                            | 10                                              | 12                                                                                                                                | 22                     | 34                    | 55                    | 86                    | 142                   | 202                   | 313                   |
|                                            | No Code Stamp or NB on Nameplates Below 15 psig |                                                                                                                                   |                        |                       |                       |                       |                       |                       |                       |
|                                            | 15                                              | 14                                                                                                                                | 25                     | 40                    | 65                    | 101                   | 167                   | 238                   | 369                   |
|                                            | 20                                              | 16                                                                                                                                | 29                     | 45                    | 74                    | 115                   | 188                   | 269                   | 417                   |
|                                            | 30                                              | 19                                                                                                                                | 34                     | 54                    | 88                    | 137                   | 226                   | 322                   | 499                   |
| 40                                         |                                                 | 22                                                                                                                                | 40                     | 62                    | 102                   | 159                   | 260                   | 372                   | 577                   |
| 50                                         |                                                 | 25                                                                                                                                | 44                     | 69                    | 114                   | 177                   | 291                   | 415                   | 645                   |
| 60                                         |                                                 | 27                                                                                                                                | 49                     | 76                    | 125                   | 194                   | 319                   | 455                   | 706                   |
| 70                                         |                                                 | 29                                                                                                                                | 52                     | 82                    | 135                   | 210                   | 344                   | 492                   | 763                   |
| 80                                         |                                                 | 31                                                                                                                                | 56                     | 88                    | 144                   | 224                   | 368                   | 525                   | 816                   |
| 90                                         |                                                 | 33                                                                                                                                | 59                     | 93                    | 153                   | 238                   | 391                   | 557                   | 865                   |
| 100                                        |                                                 | 35                                                                                                                                | 63                     | 98                    | 161                   | 251                   | 412                   | 587                   | 912                   |
| 110                                        |                                                 | 37                                                                                                                                | 66                     | 103                   | 169                   | 263                   | 432                   | 616                   | 956                   |
| 120                                        |                                                 | 39                                                                                                                                | 69                     | 107                   | 176                   | 275                   | 451                   | 644                   | 999                   |
| 130                                        |                                                 | 40                                                                                                                                | 71                     | 112                   | 184                   | 286                   | 469                   | 670                   | 1040                  |
| 140                                        |                                                 | 42                                                                                                                                | 74                     | 116                   | 191                   | 297                   | 487                   | 695                   | 1079                  |
| 150                                        |                                                 | 43                                                                                                                                | 77                     | 120                   | 197                   | 307                   | 504                   | 719                   | 1117                  |

\*last updated 10/16

