

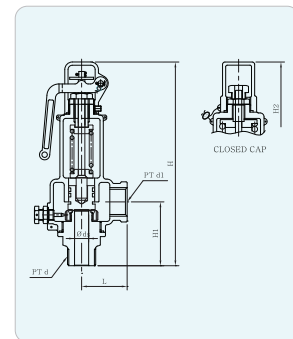
## HSV-3S | High Lift Safety Relief Valve

### ► Specifications

| Type     | Working Fluid | Setting Pressure (kgf/cm <sup>2</sup> ) | Working Temperature | Materials       |             |                 | Connection |
|----------|---------------|---|---------------------|-----------------|-------------|-----------------|------------|
|          |               |   |                     | Body            | Bonnet      | Trim            |            |
| Lever    | Steam, Air    | 0.35~33                                 | MAX. 220°C          | Stainless Steel | Cast Bronze | Stainless Steel | PT Screwed |
| No Lever | Water, Oil    |   |                     |                 |             |                 |            |

### ► Dimensions

| Size      | Part | d  | ds | L  | H1 | H   | LIFT | Inlet      | Outlet     |
|-----------|------|----|----|----|----|-----|------|------------|------------|
| 15A × 20A |      | 15 | 14 | 42 | 60 | 192 | 1.0  | PT Screwed | PT Screwed |
| 20A × 20A |      | 20 | 14 | 42 | 63 | 195 | 1.0  |            |            |
| 25A × 25A |      | 25 | 19 | 44 | 69 | 211 | 1.7  |            |            |
| 32A × 32A |      | 32 | 24 | 45 | 71 | 200 | 2.0  |            |            |
| 40A × 40A |      | 40 | 27 | 50 | 79 | 221 | 2.2  |            |            |
| 50A × 50A |      | 50 | 33 | 62 | 93 | 244 | 4.5  |            |            |



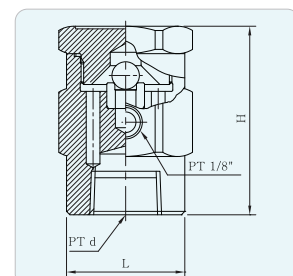
## VSV-1S | Vacuum Breaker

### ► Specifications

| Type  | Setting Pressure (kgf/cm <sup>2</sup> ) | Working Temperature | Materials |                 | Connection |
|-------|---|---------------------|-----------|-----------------|------------|
|       |   |                     | Body      | Trim            |            |
| Steam | –                                       | MAX. 220°C          | Brass     | Stainless Steel | PT Screwed |

### ► Dimensions

| Size | Part | d       | L  | H  | Inlet      |
|------|------|---------|----|----|------------|
| 15A  |      | PT 1/2" | 35 | 55 | PT Screwed |
| 20A  |      | PT 3/4" | 35 | 55 |            |



# Discharge Capacities

S : Saturated Steam (kg/h with 3% accumulation)  
 A : Air (kg/h at 20°C with 10% accumulation)  
 W : Water (m³/h at G=1 with 15% accumulation)

## ► Model (LSV-1S)

| Size      | Effective Area(m²) | Fluid | Set Pressure kg/cm² |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         |         |
|-----------|--------------------|-------|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
|           |                    |       | 0.3                 | 0.4    | 0.5    | 0.6    | 0.7    | 0.8    | 0.9    | 1.0    | 2.0    | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     | 9.0     | 10.0    |
| 15A ~ 20A | 62.83              | S     | 35.78               | 38.17  | 40.56  | 42.94  | 45.33  | 47.71  | 50.10  | 52.48  | 76.34  | 100.20  | 124.05  | 147.91  | 171.77  | 195.62  | 219.48  | 243.34  | 267.19  |
|           |                    | A     | 52.65               | 56.90  | 61.15  | 65.40  | 69.65  | 73.90  | 78.15  | 82.40  | 124.89 | 167.39  | 209.88  | 252.38  | 294.87  | 337.36  | 379.86  | 422.35  | 464.85  |
| 25A       | 133.52             | S     | 0.72                | 0.83   | 0.93   | 1.02   | 1.10   | 1.18   | 1.25   | 1.32   | 1.86   | 2.28    | 2.63    | 2.94    | 3.23    | 3.48    | 3.73    | 3.95    | 4.16    |
|           |                    | A     | 76.05               | 81.12  | 86.19  | 91.26  | 96.33  | 101.40 | 106.47 | 111.53 | 162.23 | 212.93  | 263.63  | 314.33  | 365.02  | 415.72  | 466.42  | 517.12  | 567.81  |
| 32A       | 221.17             | S     | 1.53                | 1.77   | 1.98   | 2.17   | 2.34   | 2.50   | 2.66   | 2.80   | 3.96   | 4.85    | 5.60    | 6.26    | 6.86    | 7.40    | 7.92    | 8.40    | 8.85    |
|           |                    | A     | 125.97              | 134.37 | 142.76 | 151.16 | 159.56 | 167.96 | 176.35 | 184.75 | 268.73 | 352.71  | 436.69  | 520.67  | 604.64  | 688.62  | 772.60  | 856.58  | 940.56  |
| 40A       | 289.03             | S     | 185.35              | 200.31 | 215.27 | 230.22 | 245.18 | 260.14 | 275.10 | 290.06 | 439.64 | 589.23  | 738.81  | 888.40  | 1037.98 | 1187.56 | 1337.15 | 1486.73 | 1636.32 |
|           |                    | A     | 111.89              | 120.93 | 129.96 | 138.99 | 148.02 | 157.05 | 166.08 | 175.11 | 265.41 | 355.72  | 446.02  | 536.32  | 626.63  | 716.93  | 807.24  | 897.54  | 987.84  |
| 50A       | 392.7              | S     | 164.62              | 175.59 | 186.57 | 197.54 | 208.52 | 219.49 | 230.46 | 241.44 | 351.18 | 460.93  | 570.67  | 680.42  | 790.16  | 899.91  | 1009.65 | 1119.40 | 1229.14 |
|           |                    | A     | 242.22              | 261.77 | 281.31 | 300.86 | 320.41 | 339.96 | 359.51 | 379.05 | 574.53 | 770.02  | 965.50  | 1160.98 | 1356.46 | 1551.94 | 1747.42 | 1942.90 | 2138.38 |
| 50A       | 392.7              | S     | 223.66              | 238.57 | 253.48 | 268.39 | 283.31 | 298.22 | 313.13 | 328.04 | 477.15 | 626.26  | 775.36  | 924.47  | 1073.58 | 1222.69 | 1371.80 | 1520.91 | 1670.02 |
|           |                    | A     | 329.10              | 355.66 | 382.22 | 408.78 | 435.34 | 461.90 | 488.45 | 515.01 | 780.61 | 1046.21 | 1311.80 | 1577.40 | 1842.99 | 2108.59 | 2374.19 | 2639.78 | 2905.38 |

## ► Model (HSV-3S)

| Size     | Effective Area(m²) | Fluid | Set Pressure kg/cm² |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----------|--------------------|-------|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|          |                    |       | 11                  | 12      | 13      | 14      | 15      | 16      | 17      | 18      | 19      | 20      | 21      | 22      | 24      | 26      | 28      | 30      | 32      |
| 15A~ 20A | 408.4              | S     | 189.19              | 204.69  | 220.20  | 235.71  | 251.21  | 266.72  | 282.23  | 297.73  | 313.24  | 328.75  | 344.26  | 359.76  | 375.27  | 390.78  | 406.29  | 421.79  | 437.30  |
|          |                    | A     | 329.77              | 357.40  | 385.02  | 412.64  | 440.26  | 467.88  | 495.50  | 523.12  | 550.75  | 578.37  | 605.99  | 633.61  | 661.23  | 688.85  | 716.47  | 744.09  | 771.71  |
| 25A      | 96.13              | S     | 284                 | 297     | 309     | 320     | 332     | 342     | 353     | 363     | 373     | 383     | 392     | 402     | 419     | 437     | 453     | 469     | 484     |
|          |                    | A     | 445.31              | 481.81  | 518.31  | 554.81  | 591.31  | 627.81  | 664.31  | 700.81  | 737.31  | 773.81  | 810.31  | 846.82  | 883.32  | 919.82  | 956.32  | 992.82  | 1029.32 |
| 32A      | 144.51             | S     | 7.6                 | 8.1     | 8.6     | 9.1     | 9.6     | 10.1    | 10.6    | 11.1    | 11.6    | 12.1    | 12.6    | 13.1    | 13.6    | 14.1    | 14.6    | 15.1    | 15.6    |
|          |                    | A     | 776.23              | 841.25  | 906.26  | 971.28  | 1036.29 | 1101.31 | 1166.33 | 1231.34 | 1296.36 | 1361.37 | 1426.39 | 1491.40 | 1556.42 | 1621.44 | 1686.45 | 1751.47 | 1816.48 |
| 40A      | 179.7              | S     | 669.42              | 724.29  | 779.16  | 834.03  | 888.90  | 943.77  | 998.64  | 1053.52 | 1108.39 | 1163.26 | 1218.13 | 1273.00 | 1327.87 | 1382.74 | 1437.61 | 1492.48 | 1547.35 |
|          |                    | A     | 1166.89             | 1264.63 | 1362.36 | 1460.10 | 1557.84 | 1655.57 | 1753.31 | 1851.05 | 1948.78 | 2046.52 | 2144.26 | 2241.99 | 2339.73 | 2437.47 | 2535.20 | 2632.94 | 2730.68 |
| 50A      | 452.39             | S     | 832.43              | 900.67  | 968.90  | 1037.13 | 1105.36 | 1173.60 | 1241.83 | 1310.06 | 1378.29 | 1446.52 | 1514.76 | 1582.99 | 1651.23 | 1719.46 | 1787.70 | 1855.93 | 1924.17 |
|          |                    | A     | 1451.04             | 1572.58 | 1694.12 | 1815.65 | 1937.19 | 2058.73 | 2180.26 | 2301.80 | 2423.34 | 2544.87 | 2666.41 | 2787.95 | 2909.48 | 3031.02 | 3152.55 | 3274.09 | 3395.62 |

## ► Model (FSV-1F / 2F)

| Size     | Effective Area(m²) | Fluid | Set Pressure kg/cm² |         |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |  |
|----------|--------------------|-------|---------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|
|          |                    |       | 1                   | 2       | 3        | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 11       | 12       | 14       | 16       | 18       | 19       | 20       |  |
| 15A      | 108.87             | S     | 91.4                | 132.98  | 174.53   | 216.08   | 257.63   | 299.18   | 340.73   | 382.28   | 423.83   | 465.38   | 506.93   | 548.48   | 590.03   | 631.58   | 673.13   | 714.68   | 756.23   |  |
|          |                    | A     | 143.53              | 217.55  | 291.57   | 365.59   | 439.61   | 513.63   | 587.65   | 661.67   | 735.69   | 809.71   | 883.73   | 957.75   | 1031.77  | 1105.79  | 1179.81  | 1253.83  | 1327.85  |  |
| 20A      | 176.71             | S     | 2.18                | 3.08    | 3.77     | 4.35     | 4.87     | 5.33     | 5.76     | 6.16     | 6.53     | 6.89     | 7.22     | 7.54     | 8.15     | 8.71     | 9.24     | 9.49     | 9.74     |  |
|          |                    | A     | 155.53              | 226.23  | 296.93   | 367.63   | 438.32   | 509.02   | 579.72   | 650.42   | 721.11   | 791.81   | 862.51   | 933.20   | 1003.90  | 1074.60  | 1145.30  | 1216.00  | 1286.70  |  |
| 25A      | 283.53             | S     | 244.19              | 370.11  | 496.04   | 621.97   | 747.90   | 873.82   | 999.75   | 1125.68  | 1251.61  | 1377.53  | 1503.46  | 1629.39  | 1755.32  | 1881.24  | 2007.17  | 2133.10  | 2259.02  |  |
|          |                    | A     | 3.70                | 5.24    | 6.42     | 7.41     | 8.28     | 9.07     | 9.80     | 10.48    | 11.11    | 11.71    | 12.29    | 12.83    | 13.36    | 14.22    | 14.82    | 15.72    | 16.15    |  |
| 32A~ 40A | 706.86             | S     | 249.55              | 362.99  | 476.42   | 589.85   | 703.29   | 816.72   | 930.15   | 1043.59  | 1157.02  | 1270.45  | 1383.89  | 1497.32  | 1610.75  | 1724.19  | 1837.62  | 1951.05  | 2064.48  |  |
|          |                    | A     | 391.79              | 588.84  | 785.89   | 982.94   | 1179.99  | 1377.04  | 1574.09  | 1771.14  | 1968.19  | 2165.24  | 2362.29  | 2559.34  | 2756.39  | 2953.44  | 3150.49  | 3347.54  | 3544.59  |  |
| 50A      | 1134.11            | S     | 5.94                | 8.41    | 10.29    | 11.89    | 13.29    | 14.56    | 15.72    | 16.81    | 17.83    | 18.79    | 19.71    | 20.59    | 22.24    | 23.77    | 25.22    | 26.58    | 27.88    |  |
|          |                    | A     | 62.15               | 90.95   | 118.75   | 145.55   | 172.34   | 209.14   | 245.94   | 282.73   | 319.53   | 356.33   | 393.13   | 429.92   | 466.72   | 503.52   | 540.32   | 577.12   | 613.92   |  |
| 65A      | 1885.74            | S     | 976.77              | 1480.49 | 1984.22  | 2487.94  | 2991.67  | 3495.40  | 3999.12  | 4502.85  | 5006.57  | 5510.30  | 6014.02  | 6517.75  | 7021.47  | 7525.20  | 8028.92  | 8532.65  | 9036.37  |  |
|          |                    | A     | 14.82               | 20.95   | 25.66    | 29.63    | 33.13    | 36.29    | 39.20    | 41.91    | 44.45    | 46.86    | 49.14    | 51.33    | 54.4     | 57.35    | 60.19    | 62.86    | 65.4     |  |
| 80A      | 2922.47            | S     | 98.20               | 145.93  | 190.66   | 235.39   | 280.12   | 324.85   | 369.58   | 414.31   | 459.04   | 503.77   | 548.50   | 593.23   | 637.96   | 682.69   | 727.42   | 772.15   | 816.88   |  |
|          |                    | A     | 1567.16             | 2377.53 | 3187.90  | 3998.27  | 4808.64  | 5619.01  | 6429.38  | 7239.75  | 8050.12  | 8860.49  | 9670.86  | 10481.23 | 11291.60 | 12101.97 | 12912.34 | 13722.71 | 14533.08 |  |
| 100A     | 4536.46            | S     | 1639.76             | 2442.20 | 3244.64  | 4047.08  | 4849.52  | 5651.96  | 6454.40  | 7256.84  | 8059.28  | 8861.72  | 9664.16  | 10466.60 | 11269.04 | 12071.48 | 12873.92 | 13676.36 | 14478.80 |  |
|          |                    | A     | 2605.80             | 3949.62 | 5293.44  | 6637.26  | 7981.09  | 9324.91  | 10668.73 | 12012.56 | 13356.38 | 14700.20 | 16044.03 | 17387.85 | 18731.67 | 20075.50 | 21419.32 | 22763.14 | 24106.96 |  |
| 125A     | 7088.22            | S     | 3953                | 5590    | 7226     | 8863     | 10500    | 12137    | 13774    | 15411    | 17048    | 18685    | 20322    | 21959    | 23596    | 25233    | 26870    | 28507    | 30144    |  |
|          |                    | A     | 2572.26             | 3741.46 | 4910.67  | 6079.88  | 7249.09  | 8418.29  | 9587.50  | 10756.71 | 11925.92 | 13095.13 | 14264.33 | 15433.54 | 16602.74 | 17771.95 | 18941.15 | 20110.36 | 21279.56 |  |
| 150A     | 10886.89           | S     | 4038.39             | 6121.01 | 8203.64  | 10286.26 | 12368.88 | 14451.50 | 16534.12 | 18616.74 | 20699.36 | 22781.98 | 24864.60 | 26947.22 | 29029.84 | 31112.46 | 33195.08 | 35277.70 | 37360.32 |  |
|          |                    | A     | 6126                | 86.64   | 106.11   | 122.52   | 136.98   | 150.06   | 162.08   | 173.27   | 183.78   | 193.72   | 203.10   | 211.97   | 220.34   | 228.21   | 235.58   | 242.45   | 248.82   |  |
| 200A     | 17671.46           | S     | 3992.84             | 5807.76 | 7622.69  | 9437.61  | 11252.54 | 13067.46 | 14882.39 | 16697.31 | 18512.24 | 20327.16 | 22142.09 | 23957.01 | 25771.94 | 27586.86 | 29401.78 | 31216.70 | 33031.62 |  |
|          |                    | A     | 6288.67             | 9501.46 | 12734.25 | 15967.04 | 19199.83 | 22432.62 | 25665.41 | 28898.20 | 32131.00 | 35363.79 | 38596.58 | 41829.37 | 45062.16 | 48294.95 | 51527.74 | 54760.53 | 57993.32 |  |