



TI-P272-01-US  
Issue 1

# SV5601 and 5708 Series Bronze Safety Valves ASME Section I & VIII - NB Certified for Air, Gas and Steam

## Description

Spirax Sarco Bronze valve line is a high capacity safety valve used for boilers, piping lines and vessel protection. Designed and engineered for heavy-duty industrial use. ASME approved and National Board flow-rated for capacity.

Sizes from ½" to 2½"; NB rated to 250#; Temperatures to 406 °F.

## Usages

SV5601 Series is used for ASME Section I applications to pressure ratings of 250 psi g. V and NB stamped for fired vessels. Boilers, or most areas where steam safety valves are required.

SV5708 Series is used for ASME Section VIII applications to pressure ratings of 250 psi g. UV and NB stamped for unfired vessel protection. Used for many applications to protect or relieve pressure for Air, Gas and Steam.

## Features

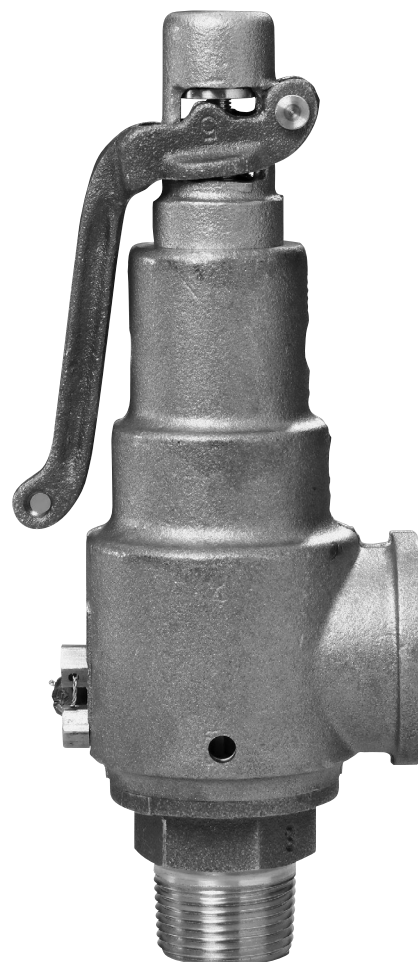
- Designed for durability
- 6 orifices – 12 sizes of piping options
- Top guided seating and discharge
- Full nozzle; high capacity levels
- Excellent re-seating characteristics with pivoting ball-post design
- Short, tuned blow-down and can be adjusted with double ring to meet specific requirements
- Heavy duty hood and lever mechanism
- Standard 17-7 stainless steel springs

## Options

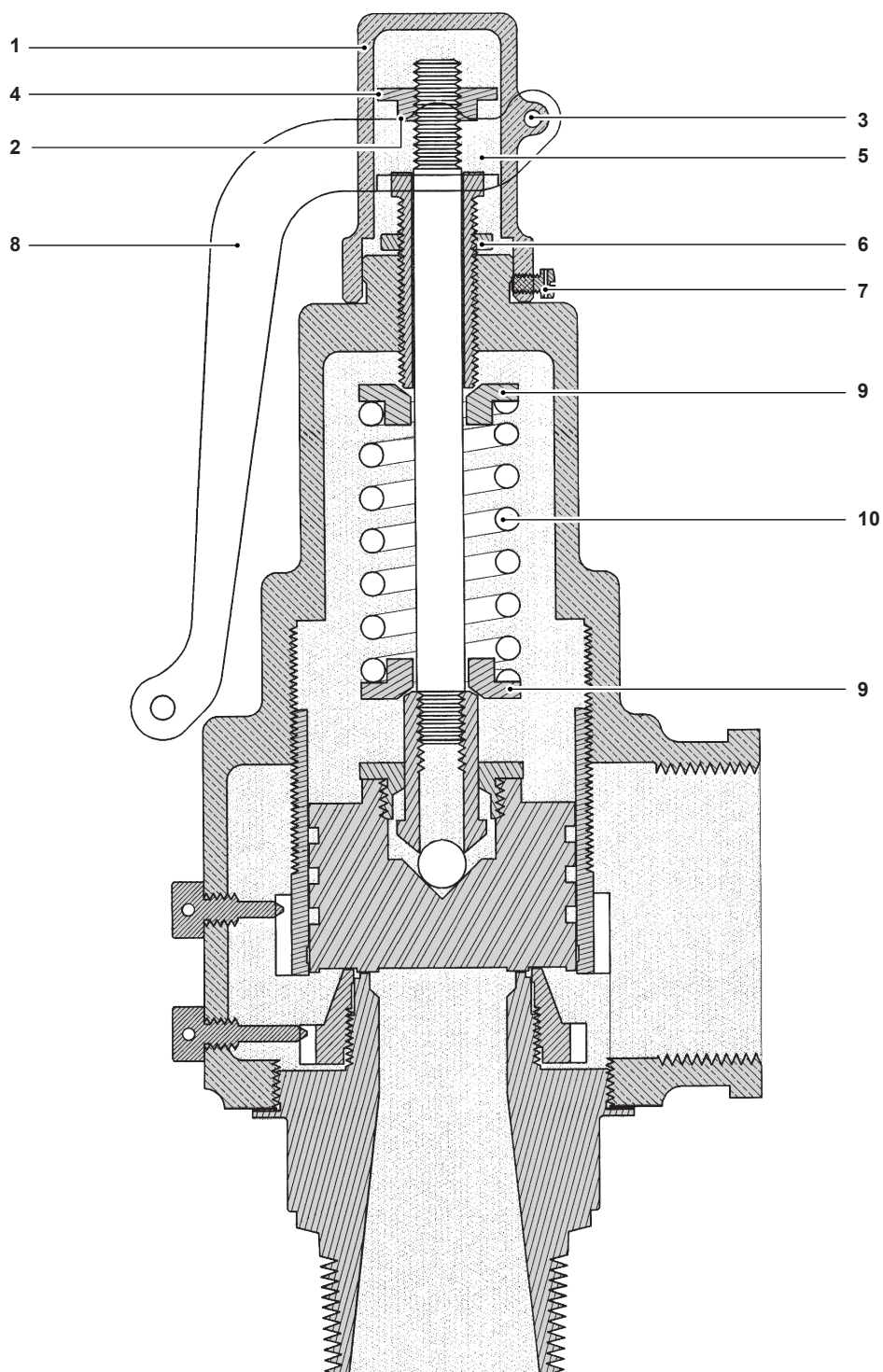
- Stainless steel whetted trimming package (seat, disk and interiors)
- O-ring seating. (Teflon, EDPM, Viton, or as specified)
- Bubble tight seating options
- Anti vibrating spring for lift lever
- Packed lift lever
- BPT pipe threading

## Ordering

Specify Section I or VIII valves, set pressure psi g, capacity requirements when ordering.

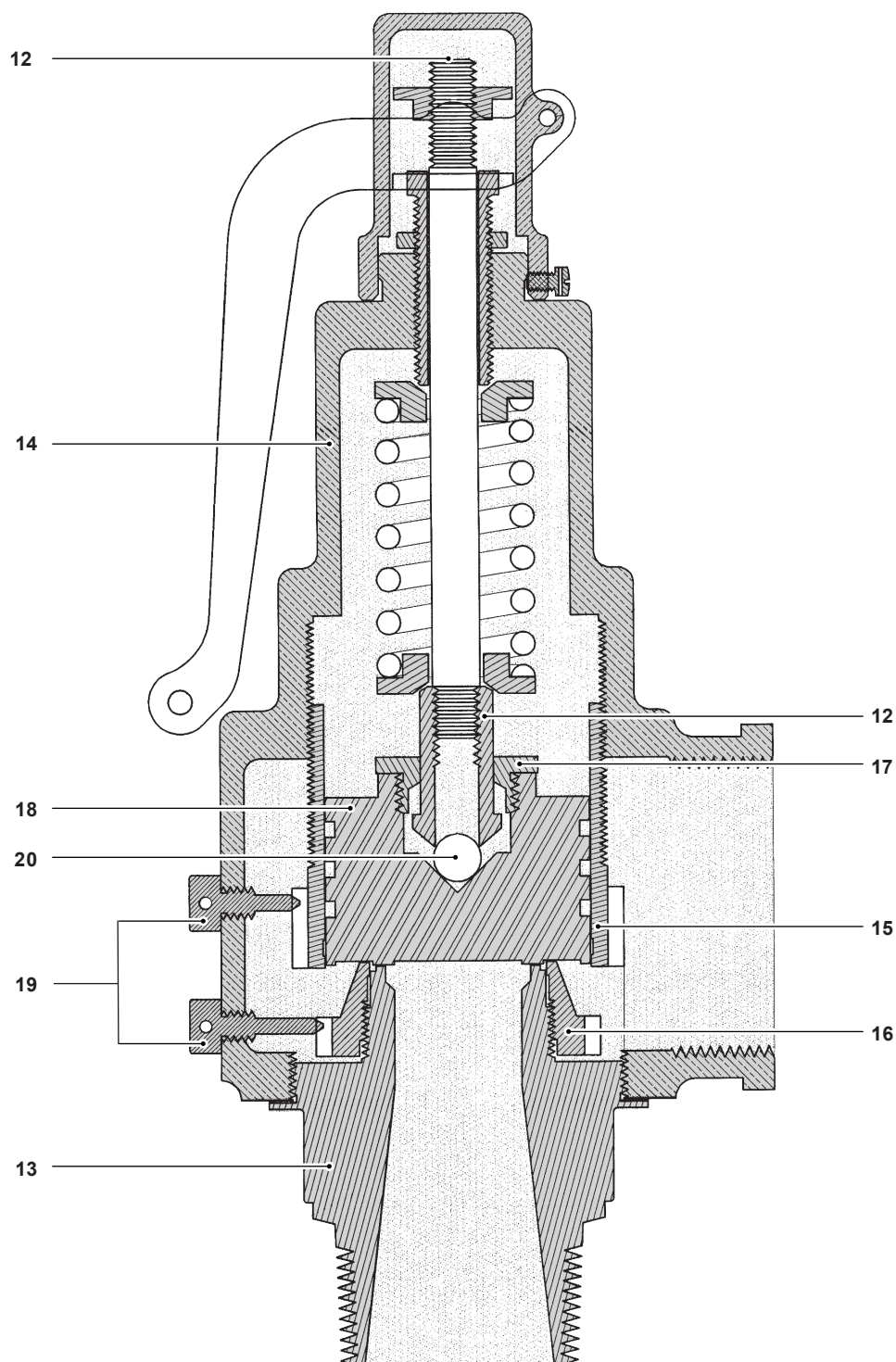


## Materials



| Item | Part           | Material   |
|------|----------------|------------|
| 1    | Hood           | Cast Brass |
| 2    | Cotter Pin     |            |
| 3    | Lift Lever Pin | Brass      |
| 4    | Lifter Nut     | Brass      |
| 5    | Pressure Screw | Brass      |

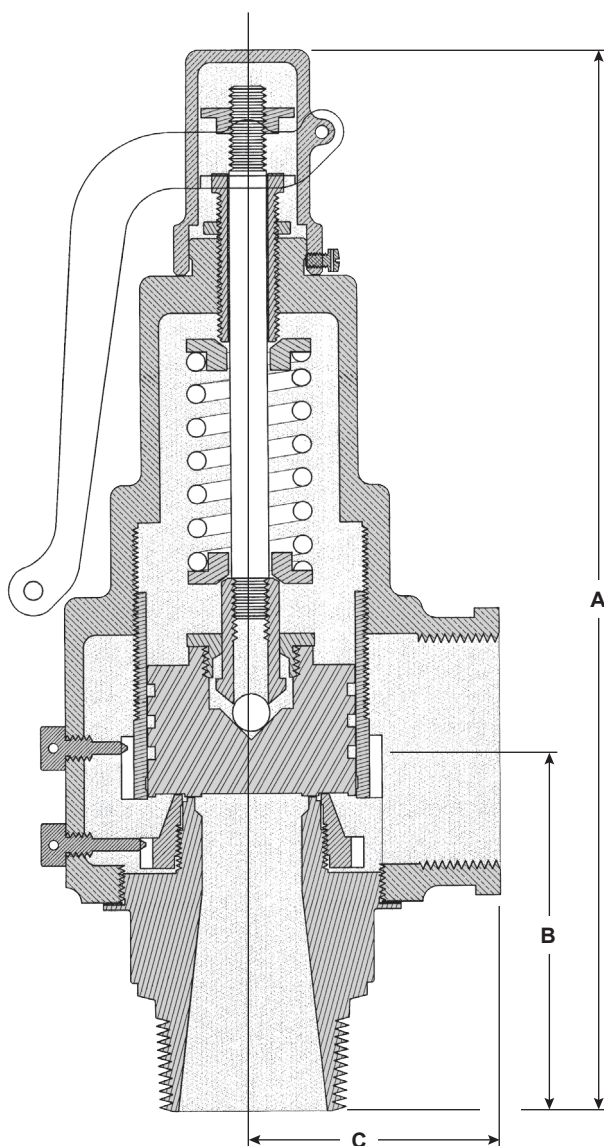
| Item | Part         | Material        |
|------|--------------|-----------------|
| 6    | Lock Nut     | Brass           |
| 7    | Hood Screw   | Brass           |
| 8    | Lift Lever   | Cast Brass      |
| 9    | Spring Plate | Brass           |
| 10   | Spring       | Stainless Steel |



| Item | Part        | Material                              |
|------|-------------|---------------------------------------|
| 11   | Nameplate   | Aluminum                              |
| 12   | Spring Post | Brass<br>ASTM B-16                    |
| 13   | Body        | Brass/Cast Brass<br>ASTM B-16/B-61,62 |
| 14   | Bonnet      | Cast Brass<br>ASTM B-61,62            |
| 15   | Upper Ring  | Cast Brass                            |

|    |                 |                    |
|----|-----------------|--------------------|
| 16 | Lower Ring      | Cast Brass         |
| 17 | Disc Nut        | Brass<br>ASTM B-16 |
| 18 | Disc            | Brass<br>ASTM B-16 |
| 19 | Regulator Screw | Brass<br>ASTM B-16 |
| 20 | Ball Bearing    | Stainless Steel    |

**Orifice, inlet, outlet, size and dimensions/weights (approximate) in inches and lbs**



| Orifice I.D. | Orifice size | Inlet | Outlet | Size I.D. | A    | Dimensions |     | Weight |
|--------------|--------------|-------|--------|-----------|------|------------|-----|--------|
|              |              |       |        |           |      | B          | C   |        |
| D            | 0.125        | ½"    | ¾"     | C         | 7.3  | 2.5        | 1.5 | 1.9    |
| D            | 0.125        | ¾"    |        | D         |      |            |     | 2.2    |
| E            | 0.221        |       | 1"     | D         | 7.6  |            | 1.6 | 2.8    |
| E            | 0.221        | E     |        | 3.0       |      |            |     |        |
| F            | 0.352        | 1"    | 1¼"    | E         | 8.6  | 2.8        | 1.8 | 4.0    |
| F            | 0.352        |       |        | F         |      |            |     | 4.2    |
| G            | 0.567        | 1¼"   | 1½"    | F         | 9.3  | 3.2        | 2.3 | 6.7    |
| G            | 0.567        |       |        | G         |      |            |     | 6.9    |
| H            | 0.899        | 1½"   | 2"     | G         | 10.9 | 3.6        | 2.5 | 11.4   |
| H            | 0.899        |       |        | H         |      |            |     | 11.6   |
| J            | 1.463        | 2"    | 2½"    | H         | 12.1 | 3.9        | 3.1 | 15.6   |
| J            | 1.463        |       |        | 2½"       |      |            |     | J      |

## Sample specification

¾" x E x 1" Spirax Sarco Bronze Series Safety Valve shall be fitted with exclosed spring and external lifting lever. Furnish with manufacturer's standard connections and valve body of cast brass with bronze internals. When ordering Safety Valves for use on power boilers, specify (V) code stamp as required by ASME Code Section I.

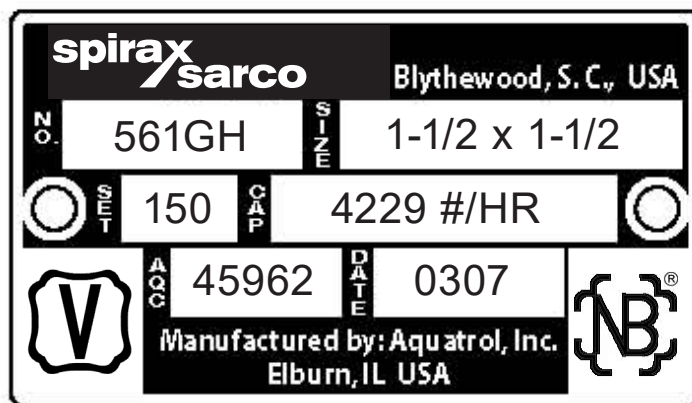
## Installation

Valve should be installed in vertical upright position as close as possible to the connection provided with no unnecessary intervening pipe or fitting. Under no circumstances should there be a shut off valve or restriction of any kind between the safety valve and the connection provided. For full details on proper installation, please refer to the installation, operating and maintenance instructions, IM-3-215-US.

## Maintenance

This product is factory sealed for tamper-proof operation, and no repair parts are available. Test the safety valve every 6 months (depending on plant age and condition), preferably by raising the system pressure to the safety valve's set pressure or operating the hand lever. For full details on proper maintenance, please refer to the installation, operating and maintenance instructions, IM-3-215-US.

## Nameplate identification



NO = Model Identification

G = Orifice

H = Piping Size

SIZE = M x F Piping Size

SET = Set Pressure (psi g)

CAP = SCFM Air/Gas

AQC = Internal Tracking (QA)

DATE = Month/Year

V = Fired Vessel (Sec. I)

UV = Unfired Vessel (Sec. VIII)

NB = National Board Certified

## Capacities - Steam - ASME Section I - Series 5601



Capacity ratings based on pounds per hour of saturated steam at 3% over pressure. NB certified at 90% of accumulated flow.

| Set pressure<br>psi g | Orifice D<br>.125 | Orifice E<br>.221 | Orifice F<br>.352 | Orifice G<br>.567 | Orifice H<br>.899 | Orifice J<br>1.463 |
|-----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| 5*                    | 120               | 211               | 337               | 542               | 860               | 1400               |
| 10*                   | 147               | 260               | 414               | 667               | 1058              | 1722               |
| 15                    | 175               | 309               | 492               | 792               | 1256              | 2044               |
| 20                    | 213               | 377               | 601               | 967               | 1534              | 2496               |
| 25                    | 230               | 406               | 647               | 1042              | 1653              | 2689               |
| 30                    | 257               | 455               | 725               | 1167              | 1851              | 3012               |
| 35                    | 285               | 504               | 802               | 1292              | 2049              | 3334               |
| 40                    | 312               | 552               | 880               | 1417              | 2247              | 3657               |
| 45                    | 340               | 601               | 957               | 1542              | 2445              | 3979               |
| 50                    | 368               | 650               | 1035              | 1667              | 2643              | 4302               |
| 55                    | 395               | 699               | 1113              | 1792              | 2842              | 4624               |
| 60                    | 423               | 747               | 1190              | 1917              | 3040              | 4947               |
| 65                    | 450               | 796               | 1268              | 2042              | 3238              | 5269               |
| 70                    | 478               | 846               | 1347              | 2170              | 3440              | 5598               |
| 75                    | 506               | 895               | 1426              | 2297              | 3642              | 5927               |
| 80                    | 535               | 946               | 1507              | 2427              | 3848              | 6262               |
| 85                    | 563               | 996               | 1586              | 2555              | 4050              | 6591               |
| 90                    | 592               | 1046              | 1667              | 2685              | 4256              | 6927               |
| 95                    | 620               | 1096              | 1746              | 2812              | 4459              | 7256               |
| 100                   | 649               | 1147              | 1826              | 2942              | 4665              | 7591               |
| 110                   | 705               | 1247              | 1986              | 3199              | 5073              | 8255               |
| 120                   | 762               | 1347              | 2146              | 3457              | 5481              | 8920               |
| 130                   | 819               | 1448              | 2306              | 3714              | 5889              | 9584               |
| 140                   | 876               | 1548              | 2466              | 3972              | 6297              | 10248              |
| 150                   | 932               | 1648              | 2626              | 4229              | 6706              | 10913              |
| 160                   | 989               | 1749              | 2785              | 4487              | 7114              | 11577              |
| 170                   | 1046              | 1849              | 2945              | 4744              | 7522              | 12241              |
| 180                   | 1103              | 1949              | 3105              | 5002              | 7930              | 12905              |
| 190                   | 1159              | 2050              | 3265              | 5259              | 8338              | 13570              |
| 200                   | 1216              | 2150              | 3425              | 5517              | 8747              | 14234              |
| 210                   | 1273              | 2251              | 3585              | 5774              | 9155              | 14898              |
| 220                   | 1330              | 2351              | 3744              | 6031              | 9563              | 15563              |
| 230                   | 1386              | 2451              | 3904              | 6289              | 9971              | 16227              |
| 240                   | 1443              | 2552              | 4064              | 6546              | 10379             | 16891              |
| 250                   | 1500              | 2652              | 4224              | 6804              | 10788             | 17556              |

**\*Note:**

Set pressures below 15 psi are not ASME coded and are not certified.

## Capacities - Steam - ASME Section VIII - Series SV 5708



Capacity ratings based on pounds per hour of saturated steam at 10% over pressure. NB certified at 90% of accumulated flow.

| Set pressure<br>psi g | Orifice D<br>.125 | Orifice E<br>.221 | Orifice F<br>.352 | Orifice G<br>.567 | Orifice H<br>.899 | Orifice J<br>1.463 |
|-----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| 5*                    | 125               | 221               | 352               | 567               | 900               | 1464               |
| 10*                   | 153               | 270               | 430               | 692               | 1098              | 1787               |
| 15                    | 180               | 319               | 507               | 817               | 1296              | 2109               |
| 20                    | 208               | 367               | 585               | 942               | 1494              | 2431               |
| 25                    | 235               | 416               | 663               | 1067              | 1692              | 2754               |
| 30                    | 263               | 465               | 740               | 1192              | 1890              | 3076               |
| 35                    | 293               | 518               | 826               | 1330              | 2108              | 3431               |
| 40                    | 323               | 572               | 911               | 1467              | 2326              | 3786               |
| 45                    | 354               | 625               | 996               | 1605              | 2544              | 4141               |
| 50                    | 384               | 679               | 1082              | 1742              | 2762              | 4495               |
| 55                    | 414               | 733               | 1167              | 1880              | 2980              | 4850               |
| 60                    | 445               | 786               | 1252              | 2017              | 3198              | 5205               |
| 65                    | 475               | 840               | 1338              | 2155              | 3416              | 5559               |
| 70                    | 505               | 893               | 1423              | 2292              | 3634              | 5914               |
| 75                    | 536               | 947               | 1508              | 2430              | 3852              | 6269               |
| 80                    | 566               | 1001              | 1594              | 2567              | 4070              | 6624               |
| 85                    | 596               | 1054              | 1679              | 2705              | 4288              | 6978               |
| 90                    | 627               | 1108              | 1764              | 2842              | 4506              | 7333               |
| 95                    | 657               | 1161              | 1850              | 2979              | 4724              | 7688               |
| 100                   | 687               | 1215              | 1935              | 3117              | 4942              | 8043               |
| 110                   | 748               | 1322              | 2106              | 3392              | 5378              | 8752               |
| 120                   | 808               | 1429              | 2276              | 3667              | 5814              | 9461               |
| 130                   | 869               | 1536              | 2447              | 3942              | 6250              | 10171              |
| 140                   | 930               | 1644              | 2618              | 4217              | 6686              | 10880              |
| 150                   | 990               | 1751              | 2789              | 4492              | 7122              | 11590              |
| 160                   | 1051              | 1858              | 2959              | 4767              | 7558              | 12299              |
| 170                   | 1111              | 1965              | 3130              | 5042              | 7994              | 13009              |
| 180                   | 1172              | 2072              | 3301              | 5317              | 8430              | 13718              |
| 190                   | 1233              | 2179              | 3471              | 5592              | 8866              | 14428              |
| 200                   | 1293              | 2287              | 3642              | 5866              | 9302              | 15137              |
| 210                   | 1354              | 2394              | 3813              | 6141              | 9737              | 15846              |
| 220                   | 1415              | 2501              | 3983              | 6416              | 10173             | 16556              |
| 230                   | 1475              | 2608              | 4154              | 6691              | 10609             | 17265              |
| 240                   | 1536              | 2715              | 4325              | 6966              | 11045             | 17975              |
| 250                   | 1596              | 2822              | 4495              | 7241              | 11481             | 18684              |

**\*Note:**

Set pressures below 15 psi are not ASME coded and are not certified.

## Capacities - Air/Gas - ASME Section VIII - Series 5708



Capacity ratings based SCFM (standard cubic feet per minute) of air at 10% over pressure. NB certified at 90% of accumulated flow.

| Set pressure<br>psi g | Orifice D<br>.125 | Orifice E<br>.221 | Orifice F<br>.352 | Orifice G<br>.567 | Orifice H<br>.899 | Orifice J<br>1.463 |
|-----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| 5*                    | 45                | 79                | 125               | 202               | 320               | 521                |
| 10*                   | 54                | 96                | 153               | 246               | 391               | 636                |
| 15                    | 64                | 113               | 181               | 291               | 461               | 751                |
| 20                    | 74                | 131               | 208               | 335               | 532               | 865                |
| 25                    | 84                | 148               | 236               | 380               | 602               | 980                |
| 30                    | 94                | 165               | 263               | 424               | 673               | 1095               |
| 35                    | 104               | 184               | 294               | 473               | 750               | 1221               |
| 40                    | 115               | 204               | 324               | 522               | 828               | 1348               |
| 45                    | 126               | 223               | 355               | 571               | 906               | 1474               |
| 50                    | 137               | 242               | 385               | 620               | 983               | 1600               |
| 55                    | 147               | 261               | 415               | 669               | 1061              | 1726               |
| 60                    | 158               | 280               | 446               | 718               | 1138              | 1853               |
| 65                    | 169               | 299               | 476               | 767               | 1216              | 1979               |
| 70                    | 180               | 318               | 506               | 816               | 1294              | 2105               |
| 75                    | 191               | 337               | 537               | 865               | 1371              | 2231               |
| 80                    | 201               | 356               | 567               | 914               | 1449              | 2358               |
| 85                    | 212               | 375               | 598               | 963               | 1526              | 2484               |
| 90                    | 223               | 394               | 628               | 1012              | 1604              | 2610               |
| 95                    | 234               | 413               | 658               | 1061              | 1681              | 2736               |
| 100                   | 245               | 432               | 689               | 1109              | 1759              | 2863               |
| 110                   | 266               | 471               | 750               | 1207              | 1914              | 3115               |
| 120                   | 288               | 509               | 810               | 1305              | 2069              | 3368               |
| 130                   | 309               | 547               | 871               | 1403              | 2225              | 3620               |
| 140                   | 331               | 585               | 932               | 1501              | 2380              | 3873               |
| 150                   | 352               | 623               | 993               | 1599              | 2535              | 4125               |
| 160                   | 374               | 661               | 1053              | 1697              | 2690              | 4378               |
| 170                   | 396               | 699               | 1114              | 1795              | 2845              | 4630               |
| 180                   | 417               | 738               | 1175              | 1892              | 3000              | 4883               |
| 190                   | 439               | 776               | 1236              | 1990              | 3156              | 5135               |
| 200                   | 460               | 814               | 1296              | 2088              | 3311              | 5388               |
| 210                   | 482               | 852               | 1357              | 2186              | 3466              | 5640               |
| 220                   | 503               | 890               | 1418              | 2284              | 3621              | 5893               |
| 230                   | 525               | 928               | 1479              | 2382              | 3776              | 6145               |
| 240                   | 547               | 966               | 1539              | 2480              | 3931              | 6398               |
| 250                   | 568               | 1005              | 1600              | 2577              | 4087              | 6650               |

**\*Note:**

Set pressures below 15 psi are not ASME coded and are not certified.