



ASME SECTION I & VIII  
STEAM, AIR AND GAS SERVICE



**119 series cast  
iron flanged  
safety valves**





# Conbraco Cast Iron Safety Valves For Steam, Air & Gas Service

## ASME Sections I & VIII

Conbraco's 119 Series cast iron safety relief valves are flanged, heavy duty and high capacity safety valves ideal for use on all types of boilers, pressure vessels and pressure piping systems. These ruggedly built valves offer you a cost-saving alternative to conventional steel bodied valves — without compromising quality or level of performance.

These valves feature a top guided design and two control rings to ensure tightness of the seat, repeatable performance and extended service life. Flow ratings are National Board certified in accordance with ASME Sections I & VIII.

### • FEATURES

Metal to metal seating, lapped to optical flatness

Set pressures to 250 psig and 450°F maximum, for steam, air or gas service

Designed for new installations and replacement of existing valves (high flow rates and face to face dimensions enable direct replacement of most competitive models)

High-capacity semi-nozzle design available in 8 orifice sizes

Flanged inlet sizes: 1 1/2" through 6" ANSI 250 lb. (selected sizes available in FNPT)

Two control rings assure maximum performance and dependability

Rust-proofed steel stem, spring & spring washers

Registered in all Canadian provinces under CSA B51, CRN OG2663.1C



### • APPLICATIONS

Overpressure protection of steam boilers, deaerators, accumulators, pressure reducing stations and pressure piping systems. Pneumatic conveying equipment, air and gas compressors, receivers and dryers. Cast iron safety relief valves must not be used for lethal, flammable or corrosive fluid service.

### • OPTIONS

Stainless steel wetted trim  
Drip pan elbows for discharge piping

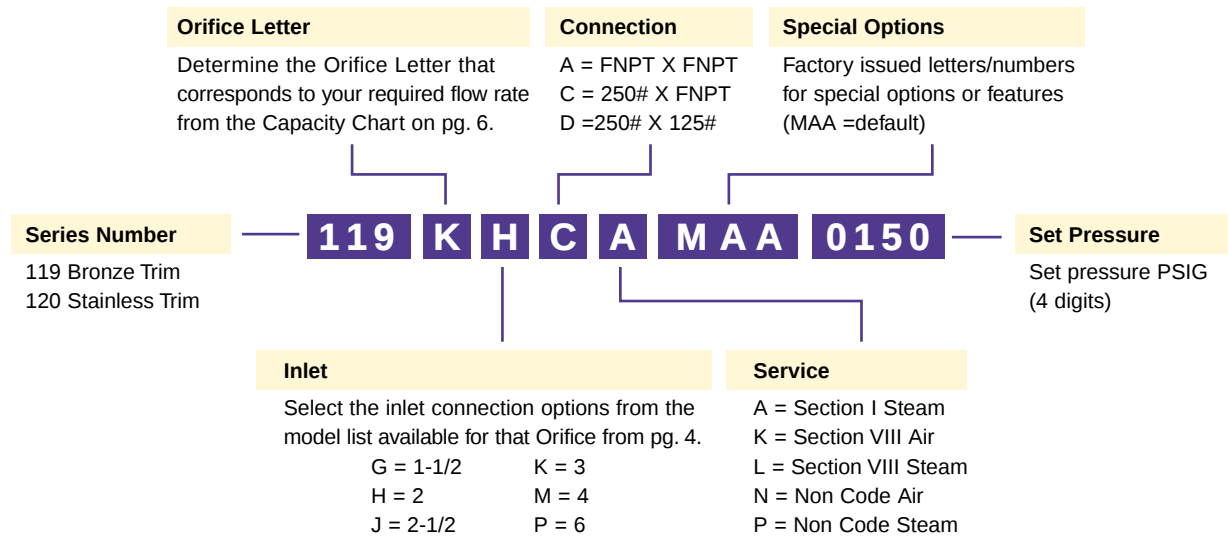
# Model Numbering System

## Examples of how to select your valve\*:

**119 KHCA MAA 0150** = 119 Series 2" 'K' 3" ASME Sec. I Steam Service Valve Set at 150 psig, with Flanged Inlet.

**120 QPDL MAA 0025** = 6" 'Q' 8" ASME Sec. VIII Steam Service Valve Set at 25 psig, with Flanged Inlet & Optional Stainless Trim.

\*See page 4 for Inlet connection options and page 6 for Orifice Letter options.



# AMSE Codes

## Section I — Power Boilers

### • OPENING PRESSURE TOLERANCES

Pressures from 15 to 70 psig = +/- 2 psi

Pressures from 71 to 300 psig = +/- 3%

### • BLOWDOWN (Closing Pressure)

After blowing down, all valves shall close at a pressure not greater than that specified in the following table.

| Set Pressure, psig | Maximum Blowdown   |
|--------------------|--------------------|
| 15 to 66           | 4 psi              |
| 67 to 250          | 6% of set pressure |

The minimum blowdown shall be 2 psi or 2% of the set pressure, whichever is greater.

### • SEAT TIGHTNESS

A tightness test shall be conducted at the maximum expected operating pressure, but at a pressure not exceeding the reseating pressure of the valve. When testing, a valve exhibiting no visible signs of leakage shall be considered adequately tight.

### • RECOMMENDED OPERATING GAP

For boilers having design pressures over 15 psig but not exceeding 300 psig, the minimum recommended differential between system operating and valve set pressure is 10% of design pressure, but not less than 7 psi.

## Section VIII — Unfired Pressure Vessels

### • OPENING PRESSURE TOLERANCES

Pressures from 15 to 70 psig = +/- 2 psi

Pressures from 71 to 300 psig = +/- 3%

### • BLOWDOWN (Closing Pressure)

Section VIII does not specify a blowdown requirement for production testing by the valve manufacturer or assembler. Conbraco pressure relief valves — which have adjustable blowdowns — are capable of being set for 5% blowdown on compressible fluids.

The user should specify blowdown based on reclosing the valve above the normal system operating pressure.

### • SEAT TIGHTNESS

A tightness test shall be conducted using steam, air or water as appropriate for the type of service. Test methods and acceptance criteria shall be in accordance with industry standards or API 527 as applicable.

### • RECOMMENDED OPERATING GAP

Set pressures to 70 psig: 5 psig minimum operating differential; valve set pressures above 70 psig — minimum of 10% of pressure setting.

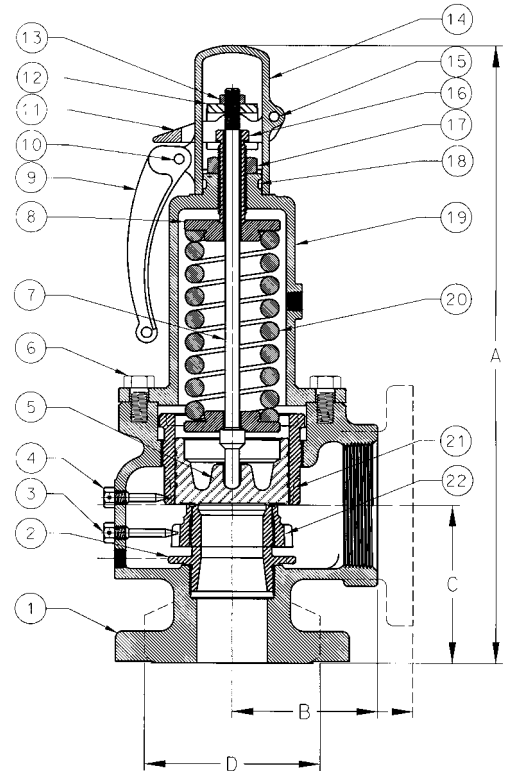


## Conbraco's 119 Series

### 119 Series Standard Materials

| Item | Component          | Material               |
|------|--------------------|------------------------|
| 1    | Body               | Gray Iron              |
| 2    | Nozzle             | Brass or Bronze*       |
| 3    | Nozzle Ring Screw  | Brass                  |
| 4    | Guide Ring Screw   | Brass                  |
| 5    | Disc               | Brass or Bronze*       |
| 6    | Bonnet Bolt        | Steel (Plated)         |
| 7    | Stem               | Steel (Plated)         |
| 8    | Spring Washer      | Steel (Plated)         |
| 9    | Test Lever         | Ductile Iron or Bronze |
| 10   | Clevis Pin         | Steel (Plated)         |
| 11   | Lifting Fork       | Ductile Iron           |
| 12   | Stem Nut           | Steel (Plated)         |
| 13   | Stem Nut Locknut   | Steel (Plated)         |
| 14   | Lifting Cap        | Ductile Iron           |
| 15   | Clevis Pin         | Steel (Plated)         |
| 16   | Adjusting Screw    | Brass                  |
| 17   | Locknut            | Steel (Plated)         |
| 18   | Lift Cap Lockscrew | Steel (Plated)         |
| 19   | Bonnet             | Gray Iron              |
| 20   | Spring             | Steel (Plated) or SS   |
| 21   | Disc Guide         | Brass or Bronze        |
| 22   | Nozzle Ring        | Brass or Bronze        |
| -    | Nameplate          | Aluminum               |
| -    | Seal and Wire      | Lead/Steel             |

\*Note: For optional stainless steel wetted trim, specify 120 Series.



### Dimensions and Weights

| MODEL NUMBER* | VALVE SIZE<br>INLET X OUTLET |      |   |       |      | ORIFICE SIZE | A  | B     | C      | HEX FLAT D | WEIGHT-LBS (APPROX.) |
|---------------|------------------------------|------|---|-------|------|--------------|----|-------|--------|------------|----------------------|
| 119 JGC       | 1-1/2                        | 250# | X | 2-1/2 | FNPT | J            | 15 | 4     | 4-5/16 |            | 35                   |
| 119 KHC       | 2                            | 250# | X | 3     | FNPT | K            | 16 | 4     | 4-5/8  |            | 36                   |
| 119 KHA       | 2                            | FNPT | X | 3     | FNPT | K            | 16 | 4     | 4-5/8  | 3-3/4      | 37                   |
| 119 KJC       | 2-1/2                        | 250# | X | 3     | FNPT | K            | 16 | 4     | 4-5/8  |            | 41                   |
| 119 LJC       | 2-1/2                        | 250# | X | 4     | FNPT | L            | 22 | 5-1/8 | 5-5/8  |            | 84                   |
| 119 LJA       | 2-1/2                        | FNPT | X | 4     | FNPT | L            | 22 | 5-1/8 | 5-5/8  | 5-3/8      | 81                   |
| 119 LKC       | 3                            | 250# | X | 4     | FNPT | L            | 22 | 5-1/8 | 5-5/8  |            | 85                   |
| 119 MKA       | 3                            | FNPT | X | 4     | FNPT | M            | 22 | 5-1/8 | 5-5/8  | 5-3/4      | 80                   |
| 119 MKC       | 3                            | 250# | X | 4     | FNPT | M            | 22 | 5-1/8 | 5-5/8  |            | 87                   |
| 119 NMD       | 4                            | 250# | X | 6     | 125# | N            | 28 | 7-1/4 | 6-3/4  |            | 210                  |
| 119 PMD       | 4                            | 250# | X | 6     | 125# | P            | 28 | 7-1/4 | 6-3/4  |            | 215                  |
| 119 QPD       | 6                            | 250# | X | 8     | 125# | Q            | 42 | 10    | 9-1/4  |            | 530                  |
| 119 RPD       | 6                            | 250# | X | 8     | 125# | R            | 42 | 10    | 9-1/4  |            | 530                  |

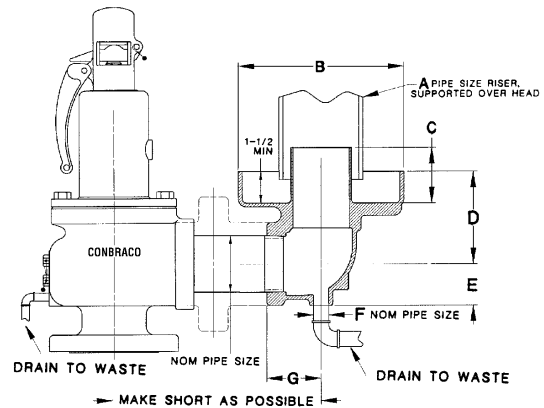
\*See page 3 for model numbering system.

## Optional Drip Pan Elbow

The use of a drip pan elbow is highly recommended for steam service safety valves. When attached to the valve outlet, these elbows collect and remove condensate as well as isolate the valve from discharge piping stresses.

Elbows through 4" feature female NPT threads and connect to the valve outlet using a short nipple of the appropriate pipe size. 6" and 8" elbows have integral 125# ANSI B16.1 flanges and bolt directly to the valve outlet.

Select the drip pan elbow model to match the outlet size of the safety valve.



| Drip Pan Dimensions |        |       |        |       |       |       |     |        |              |
|---------------------|--------|-------|--------|-------|-------|-------|-----|--------|--------------|
| Part No.            | Size*  | A     | B      | C     | D     | E     | F   | G      | App.Wt./Lbs. |
| Q-5740-00           | 3/4"   | 1-1/2 | 3-3/4  | 1-5/8 | 2-1/4 | 1     | 1/4 | 1-1/2  | 2            |
| Q-5739-00           | 1"     | 1-1/2 | 3-3/4  | 1-5/8 | 2-1/4 | 1     | 1/4 | 1-1/2  | 2            |
| Q-5736-00           | 1-1/4" | 2     | 5-1/2  | 2-1/8 | 3-3/8 | 1-1/2 | 3/8 | 2-1/8  | 5            |
| Q-5737-00           | 1-1/2" | 2     | 5-1/2  | 2-1/8 | 3-3/8 | 1-1/2 | 3/8 | 2-1/8  | 5            |
| Q-5734-00           | 2"     | 3     | 6-1/4  | 2-1/4 | 3-5/8 | 1-5/8 | 1/2 | 2-1/4  | 7            |
| N-4098-00           | 2-1/2" | 4     | 7-3/8  | 3     | 4-3/8 | 1-7/8 | 3/4 | 2-3/4  | 11           |
| N-4100-00           | 3"     | 4     | 8      | 3-1/2 | 4-7/8 | 2-1/8 | 3/4 | 3-1/8  | 17           |
| N-4102-00           | 4"     | 6     | 9-5/8  | 4-1/2 | 5-3/4 | 2-5/8 | 3/4 | 3-3/4  | 30           |
| N-4104-00           | 6"     | 8     | 12-3/4 | 6-5/8 | 7-5/8 | 3     | 3/4 | 8      | 84           |
| N-4106-00           | 8"     | 10    | 16-1/2 | 7-1/2 | 8-5/8 | 4-1/8 | 1   | 10-3/4 | 151          |

\*Ordering size of Drip Pan Elbow is also nominal outlet size of Safety Valve.

## Correction Factors For Air & Gas Service

### Temperature Correction

To correct for temperatures other than 60°F at the inlet of the valve, multiply the SCFM from the capacity tables by factor Kt.

| Temp°F | Kt    | Temp°F | Kt   | Temp°F | Kt   |
|--------|-------|--------|------|--------|------|
| 0      | 1.062 | 90     | .972 | 260    | .849 |
| 10     | 1.051 | 100    | .964 | 280    | .838 |
| 20     | 1.041 | 120    | .947 | 300    | .828 |
| 30     | 1.030 | 140    | .931 | 320    | .817 |
| 40     | 1.020 | 160    | .916 | 340    | .806 |
| 50     | 1.009 | 180    | .902 | 360    | .796 |
| 60     | 1.000 | 200    | .888 | 380    | .787 |
| 70     | .991  | 220    | .874 | 400    | .778 |
| 80     | .981  | 240    | .862 | 420    | .769 |

### Specific Gravity Correction

To correct for specific gravities other than air (=1.0), multiply the SCFM from the capacity tables by factor Ksg.

| Specific Gravity | Ksg   | Specific Gravity | Ksg   | Specific Gravity | Ksg  |
|------------------|-------|------------------|-------|------------------|------|
| .10              | 3.160 | .75              | 1.155 | 1.20             | .913 |
| .20              | 2.240 | .80              | 1.117 | 1.25             | .895 |
| .30              | 1.825 | .85              | 1.085 | 1.30             | .877 |
| .40              | 1.580 | .90              | 1.055 | 1.40             | .845 |
| .50              | 1.414 | .95              | 1.025 | 1.50             | .817 |
| .55              | 1.350 | 1.00             | 1.000 | 1.60             | .791 |
| .60              | 1.290 | 1.05             | .975  | 1.70             | .768 |
| .65              | 1.240 | 1.10             | .955  | 1.80             | .745 |
| .70              | 1.195 | 1.15             | .933  | 1.90             | .725 |



## 119 Series Steam/Air Capacities



Certified by the National Board of Boiler & Pressure Vessel Inspectors. Ratings are 90% of actual.

**O** = Orifice Letter  
**A** = Area (IN<sup>2</sup>)

| O            | J      |          |          | K      |          |          | L      |          |          | M      |          |          | N      |          |          | P      |          |          | Q      |          |          | R      |          |          |
|--------------|--------|----------|----------|--------|----------|----------|--------|----------|----------|--------|----------|----------|--------|----------|----------|--------|----------|----------|--------|----------|----------|--------|----------|----------|
| A            | 1.358  |          |          | 1.926  |          |          | 2.990  |          |          | 3.774  |          |          | 4.550  |          |          | 6.692  |          |          | 11.593 |          |          | 16.786 |          |          |
| Set Pressure | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air | Sec. I | VIII Stm | VIII Air |
| 15           | 1947   | 2008     | 715      | 2761   | 2848     | 1014     | 4286   | 4421     | 1574     | 5410   | 5580     | 1986     | 6522   | 6728     | 2395     | 9592   | 9895     | 3522     | 16617  | 17141    | 6101     | 24061  | 24820    | 8834     |
| 20           | 2254   | 2315     | 824      | 3196   | 3283     | 1169     | 4962   | 5097     | 1814     | 6263   | 6433     | 2290     | 7551   | 7756     | 2761     | 11105  | 11408    | 4060     | 19238  | 19762    | 7034     | 27856  | 28615    | 10185    |
| 25           | 2561   | 2622     | 933      | 3632   | 3719     | 1324     | 5638   | 5773     | 2055     | 7116   | 7287     | 2594     | 8579   | 8785     | 3127     | 12618  | 12921    | 4599     | 21859  | 22383    | 7967     | 31651  | 32410    | 11536    |
| 30           | 2868   | 2929     | 1043     | 4067   | 4154     | 1479     | 6314   | 6449     | 2295     | 7969   | 8140     | 2897     | 9608   | 9814     | 3493     | 14131  | 14434    | 5138     | 24480  | 25004    | 8900     | 35446  | 36205    | 12887    |
| 35           | 3175   | 3267     | 1163     | 4502   | 4633     | 1649     | 6990   | 7193     | 2560     | 8823   | 9079     | 3231     | 10637  | 10945    | 3896     | 15644  | 16098    | 5730     | 27101  | 27887    | 9926     | 39241  | 40379    | 14373    |
| 40           | 3482   | 3604     | 1283     | 4938   | 5112     | 1820     | 7666   | 7936     | 2825     | 9676   | 10017    | 3566     | 11665  | 12077    | 4299     | 17157  | 17762    | 6322     | 29722  | 30771    | 10953    | 43036  | 44554    | 15859    |
| 45           | 3789   | 3942     | 1403     | 5373   | 5591     | 1990     | 8342   | 8680     | 3089     | 10529  | 10956    | 3900     | 12694  | 13208    | 4701     | 18670  | 19426    | 6915     | 32343  | 33654    | 11979    | 46831  | 48729    | 17345    |
| 50           | 4096   | 4280     | 1523     | 5809   | 6070     | 2161     | 9018   | 9423     | 3354     | 11382  | 11894    | 4234     | 13723  | 14340    | 5104     | 20183  | 21091    | 7507     | 34964  | 36537    | 13005    | 50626  | 52903    | 18830    |
| 55           | 4403   | 4618     | 1644     | 6244   | 6549     | 2331     | 9694   | 10167    | 3619     | 12236  | 12833    | 4568     | 14751  | 15471    | 5507     | 21696  | 22755    | 8099     | 37585  | 39420    | 14031    | 54421  | 57078    | 20316    |
| 60           | 4710   | 4955     | 1764     | 6680   | 7028     | 2502     | 10370  | 10911    | 3884     | 13089  | 13771    | 4902     | 15780  | 16603    | 5910     | 23209  | 24419    | 8692     | 40206  | 42303    | 15057    | 58216  | 61252    | 21802    |
| 65           | 5017   | 5293     | 1884     | 7115   | 7507     | 2672     | 11046  | 11654    | 4148     | 13942  | 14710    | 5236     | 16809  | 17735    | 6312     | 24722  | 26083    | 9284     | 42827  | 45186    | 16084    | 62011  | 65427    | 23288    |
| 70           | 5330   | 5631     | 2004     | 7559   | 7986     | 2843     | 11735  | 12398    | 4413     | 14812  | 15649    | 5570     | 17858  | 18866    | 6715     | 26265  | 27748    | 9877     | 45501  | 48069    | 17110    | 65882  | 69601    | 24774    |
| 75           | 5646   | 5969     | 2124     | 8008   | 8465     | 3013     | 12432  | 13141    | 4678     | 15691  | 16587    | 5904     | 18918  | 19998    | 7118     | 27823  | 29412    | 10469    | 48200  | 50952    | 18136    | 69791  | 73776    | 26260    |
| 80           | 5962   | 6306     | 2245     | 8456   | 8944     | 3184     | 13128  | 13885    | 4942     | 16570  | 17526    | 6238     | 19977  | 21129    | 7521     | 29382  | 31076    | 11061    | 50900  | 53835    | 19162    | 73700  | 77951    | 27746    |
| 85           | 6279   | 6644     | 2365     | 8905   | 9423     | 3354     | 13824  | 14629    | 5207     | 17449  | 18464    | 6572     | 21037  | 22261    | 7924     | 30940  | 32740    | 11654    | 53600  | 56719    | 20188    | 77609  | 82125    | 29232    |
| 90           | 6595   | 6982     | 2485     | 9353   | 9902     | 3524     | 14520  | 15372    | 5472     | 18328  | 19403    | 6906     | 22096  | 23392    | 8326     | 32498  | 34405    | 12246    | 56299  | 59602    | 21215    | 81518  | 86300    | 30718    |
| 95           | 6911   | 7319     | 2605     | 9802   | 10381    | 3695     | 15217  | 16116    | 5736     | 19207  | 20341    | 7240     | 23156  | 24524    | 8729     | 34057  | 36069    | 12838    | 58999  | 62485    | 22241    | 85427  | 90474    | 32204    |
| 100          | 7227   | 7657     | 2726     | 10250  | 10860    | 3865     | 15913  | 16859    | 6001     | 20085  | 21280    | 7574     | 24215  | 25655    | 9132     | 35615  | 37733    | 13431    | 61698  | 65368    | 23267    | 89336  | 94649    | 33689    |
| 105          | 7544   | 7995     | 2846     | 10699  | 11339    | 4036     | 16609  | 17603    | 6266     | 20964  | 22218    | 7908     | 25275  | 26787    | 9535     | 37173  | 39397    | 14023    | 64398  | 68251    | 24293    | 93245  | 98823    | 35175    |
| 110          | 7860   | 8333     | 2966     | 11147  | 11818    | 4206     | 17305  | 18346    | 6530     | 21843  | 23157    | 8243     | 26334  | 27919    | 9937     | 38732  | 41062    | 14616    | 67098  | 71134    | 25320    | 97154  | 102998   | 36661    |
| 115          | 8176   | 8670     | 3086     | 11596  | 12297    | 4377     | 18002  | 19090    | 6795     | 22722  | 24096    | 8577     | 27394  | 29050    | 10340    | 40290  | 42726    | 15208    | 69797  | 74017    | 26346    | 101063 | 107173   | 38147    |
| 120          | 8492   | 9008     | 3206     | 12044  | 12776    | 4547     | 18698  | 19834    | 7060     | 23601  | 25034    | 8911     | 28453  | 30182    | 10743    | 41848  | 44390    | 15800    | 72497  | 76900    | 27372    | 104971 | 111347   | 39633    |
| 125          | 8809   | 9346     | 3327     | 12493  | 13255    | 4718     | 19394  | 20577    | 7324     | 24480  | 25973    | 9245     | 29513  | 31313    | 11146    | 43407  | 46055    | 16393    | 75197  | 79783    | 28398    | 108880 | 115522   | 41119    |
| 130          | 9125   | 9684     | 3447     | 12941  | 13734    | 4888     | 20091  | 21321    | 7589     | 25358  | 26911    | 9579     | 30573  | 32445    | 11548    | 44965  | 47719    | 16985    | 77896  | 82666    | 29424    | 112789 | 119696   | 42605    |
| 135          | 9441   | 10021    | 3567     | 13390  | 14213    | 5059     | 20787  | 22064    | 7854     | 26237  | 27850    | 9913     | 31632  | 33576    | 11951    | 46524  | 49383    | 17577    | 80596  | 85550    | 30451    | 116698 | 123871   | 44091    |
| 140          | 9757   | 10359    | 3687     | 13838  | 14692    | 5229     | 21483  | 22808    | 8118     | 27116  | 28788    | 10247    | 32692  | 34708    | 12354    | 48082  | 51047    | 18170    | 83295  | 88433    | 31477    | 120607 | 128045   | 45577    |
| 145          | 10073  | 10697    | 3807     | 14287  | 15171    | 5400     | 22179  | 23552    | 8383     | 27995  | 29727    | 10581    | 33751  | 35839    | 12757    | 49640  | 52712    | 18762    | 85995  | 91316    | 32503    | 124516 | 132220   | 47063    |
| 150          | 10390  | 11034    | 3928     | 14735  | 15650    | 5570     | 22876  | 24295    | 8648     | 28874  | 30666    | 10915    | 34811  | 36971    | 13160    | 51199  | 54376    | 19355    | 88695  | 94199    | 33529    | 128425 | 136395   | 48549    |
| 155          | 10706  | 11372    | 4048     | 15184  | 16129    | 5741     | 23572  | 25039    | 8912     | 29753  | 31604    | 11249    | 35870  | 38103    | 13562    | 52757  | 56040    | 19947    | 91394  | 97082    | 34556    | 132334 | 140569   | 50034    |
| 160          | 11022  | 11710    | 4168     | 15632  | 16608    | 5911     | 24268  | 25782    | 9177     | 30631  | 32543    | 11583    | 36930  | 39234    | 13965    | 54315  | 57704    | 20539    | 94094  | 99965    | 35582    | 136243 | 144744   | 51520    |
| 165          | 11338  | 12048    | 4288     | 16081  | 17087    | 6082     | 24964  | 26526    | 9442     | 31510  | 33481    | 11917    | 37989  | 40366    | 14368    | 55874  | 59369    | 21132    | 96794  | 102848   | 36608    | 140152 | 148918   | 53006    |
| 170          | 11655  | 12385    | 4408     | 16529  | 17566    | 6252     | 25661  | 27270    | 9706     | 32389  | 34420    | 12251    | 39049  | 41497    | 14771    | 57432  | 61033    | 21724    | 99493  | 105731   | 37634    | 144061 | 153093   | 54492    |
| 175          | 11971  | 12723    | 4529     | 16978  | 18045    | 6423     | 26357  | 28013    | 9971     | 33268  | 35358    | 12586    | 40108  | 42629    | 15173    | 58990  | 62697    | 22317    | 102193 | 108614   | 38660    | 147969 | 157267   | 55978    |
| 180          | 12287  | 13061    | 4649     | 17426  | 18524    | 6593     | 27053  | 28757    | 10236    | 34147  | 36297    | 12920    | 41168  | 43760    | 15576    | 60549  | 64361    | 22909    | 104893 | 111497   | 39687    | 151878 | 161442   | 57464    |
| 185          | 12603  | 13399    | 4769     | 17875  | 19003    | 6764     | 27750  | 29500    | 10500    | 35026  | 37236    | 13254    | 42228  | 44892    | 15979    | 62107  | 66026    | 23501    | 107592 | 114381   | 40713    | 155787 | 165617   | 58950    |
| 190          | 12920  | 13736    | 4889     | 18323  | 19482    | 6934     | 28446  | 30244    | 10765    | 35905  | 38174    | 13588    | 43287  | 46023    | 16382    | 63665  | 67690    | 24094    | 110292 | 117264   | 41739    | 159696 | 169791   | 60436    |
| 195          | 13236  | 14074    | 5010     | 18772  | 19961    | 7105     | 29142  | 30988    | 11030    | 36783  | 39113    | 13922    | 44347  | 47155    | 16784    | 65224  | 69354    | 24686    | 112991 | 120147   | 42765    | 163605 | 173966   | 61922    |
| 200          | 13552  | 14412    | 5130     | 19220  | 20440    | 7275     | 29838  | 31731    | 11294    | 37662  | 40051    | 14256    | 45406  | 48287    | 17187    | 66782  | 71018    | 25278    | 115691 | 123030   | 43791    | 167514 | 178140   | 63408    |
| 205          | 13868  | 14749    | 5250     | 19669  | 20919    | 7446     | 30535  | 32475    | 11559    | 38541  | 40990    | 14590    | 46466  | 49418    | 17590    | 68340  | 72683    | 25871    | 118391 | 125913   | 44818    | 171423 | 182315   | 64893    |
| 210          | 14184  | 15087    | 5370     | 20117  | 21398    | 7616     | 31231  | 33218    | 11824    | 39420  | 41928    | 14924    | 47525  | 50550    | 17993    | 69899  | 74347    | 26463    | 121090 | 128796   | 45844    | 175332 | 186489   | 66379    |
| 215          | 14501  | 15425    | 5490     | 20566  | 21876    | 7787     | 31927  | 33962    | 12088    | 40299  | 42867    | 15258    | 48585  | 51681    | 18396    | 71457  | 76011    | 27056    | 123790 | 131679   | 4        |        |          |          |

# Installation, Operation and Maintenance Guidelines

## Planning Your Installation

Install the 119 Series iron safety relief valve upright with the spindle vertical. ASME Section I models must be connected to the boiler independent of any other connection and as close to the boiler or normal steam flow path as possible without unnecessary intervening pipe or fittings. Make sure any intervening pipe or fitting is not longer than the face-to-face dimension of the corresponding tee fitting of the same diameter and pressure rating.

For ASME Section VIII service, the valve should be connected to the vessel in the vapor space above any contained liquid or to piping connected to the vapor space in the vessel which is to be protected. The connection between the valve and boiler or vessel shall have an area at least equal to the valve inlet. (Stop valves are not permitted between the vessel and safety/relief valve and the discharge to atmosphere except per ASME Section VIII UG-135(d).

Discharge lines from the pressure relieving device shall be at least the same size as the valve outlet and as short and direct as possible. Discharge lines shall prevent liquid from collecting in the discharge side of the valve and must be directed to a safe discharge area. The valve body drain and vent holes must not be plugged. Consider both the weight of the discharge pipe and the reaction forces generated by discharging. Adequately supported discharge piping relieves stress on the valve. (A Conbraco drip pan elbow is an ideal choice).

Remember to free the valve of all packaging materials and remove dirt, sediment and scale from mounting flanges and nozzles prior to installation. The use of proper handling equipment will prevent damage to the flange facings or misalignment of internal components caused by rough handling. Do not use the test lever to hoist the valve during installation.

Special considerations are required when bolting cast iron valves to steel flanges. When class 250 cast iron valves are to be bolted to class 300 steel flanges, the diameter of the raised face of the steel flange shall be at least equal to the raised face of the valve flange, or the steel flange may be supplied with a flat face. When class 125 cast iron outlet flanges are to be bolted to class 150 steel flanges the steel flanges shall be flat faced.

Make sure gasketing and bolting meet service pressure and temperature standards. Keep operating pressure of the system at least 10 percent (or 5 psi, whichever is greater) below the set pressure of the valve to assure seat tightness. Do not install cast iron safety valves on vessels used in lethal or flammable service. Note: These are general guidelines only, and it is the responsibility of the user to ensure the installation is in accordance with ASME Code and jurisdictional requirements.



## Scheduled Maintenance

119 Series safety relief valves are 100% tested and then sealed to prevent unauthorized adjustment or repair. All warranties are void if the seals are broken.

Valves should be inspected regularly to assure continued safe operation and long service life. A visual inspection is recommended at two month intervals while in service, followed by a complete pressure test at least once per year. Pressure testing prior to bringing down the boiler or system is suggested so that needed service or repairs can be made if required.

These valves can be operated manually by means of the test lever when the system pressure is at least 75% of the set pressure, or the system pressure may be carefully increased until the valve operates.

Any valve that fails to open at the nameplate set pressure or fails to open or close properly must be removed from the vessel for replacement or repair. Never attempt to stop leakage by compressing the spring or gagging the valve! For resetting, adjustment or repairs contact Conbraco for the name of competent, authorized personnel who are familiar with the servicing of our safety valves. Use only authentic unmodified Conbraco replacement parts to maintain original performance.



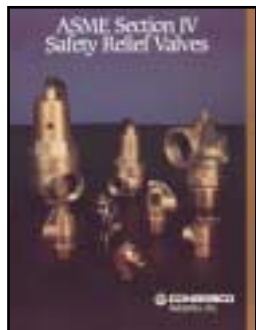
## Other Conbraco Literature For Your Specification Library



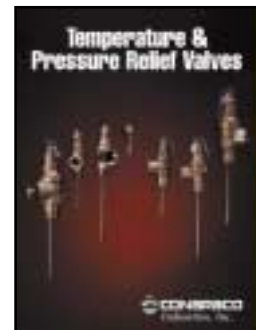
Pressure Relief Flyer



Bronze Safety Valve Catalog



ASME Relief Valves Brochure



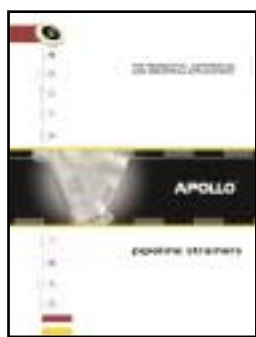
Temperature & Pressure  
Relief Valves Brochure



Plumbing/Heating Catalog



RP&C Products Catalog



Pipeline Strainers Catalog



SRCA500 Catalog

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Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of one year from the date of delivery to you, our initial purchaser.

Should any failure to conform to this warranty appear within one year after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco's recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco's own expense.

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