

**CURTISS -  
WRIGHT**

**VALVES  
DIVISION**



# 4200 SERIES

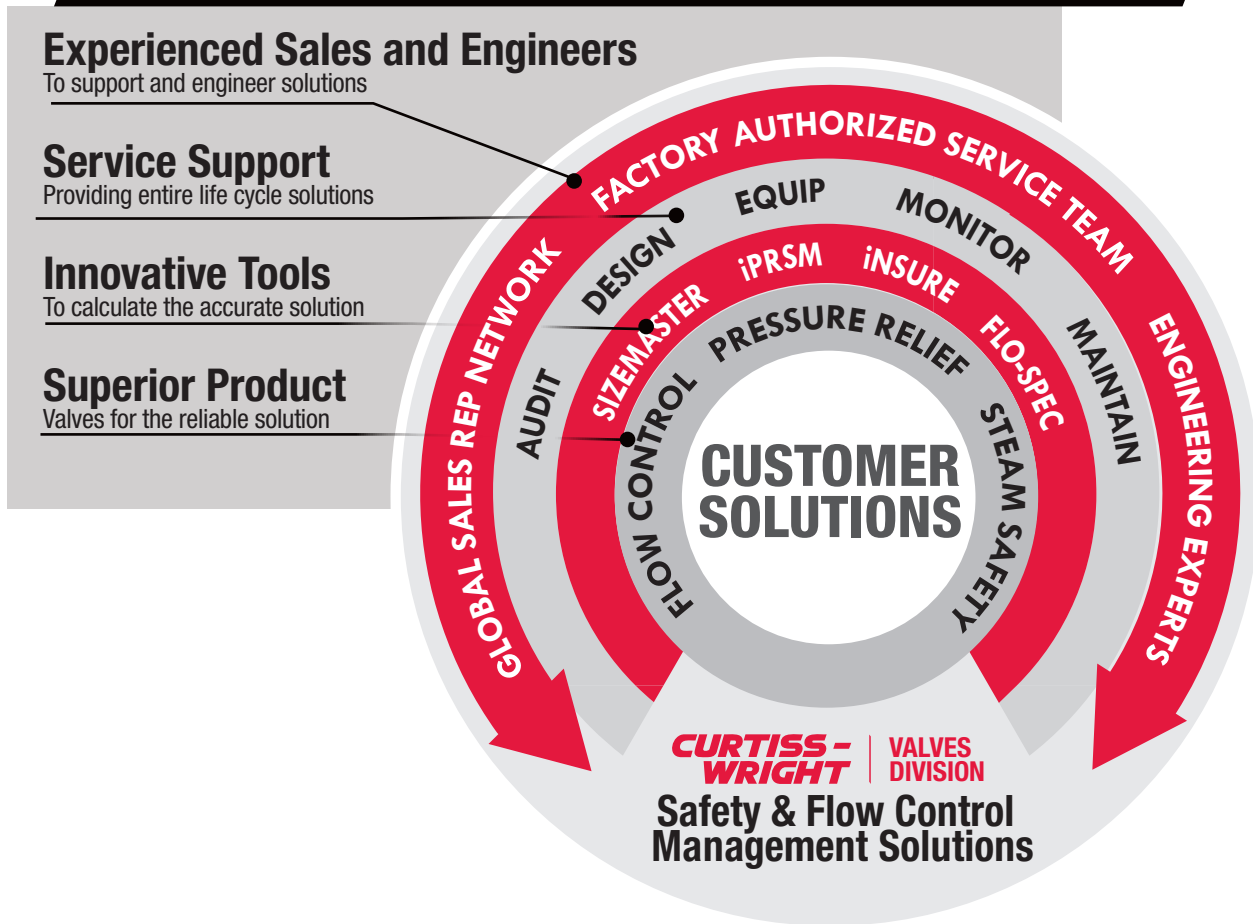
**Safety Valves for ASME Section I and VIII Boiler Applications**

**Curtiss-Wright** is a worldwide leader in delivering solutions to improve safety, plant flexibility, reliability, and efficiency. Farris Engineering, a division of Curtiss-Wright, has been at the forefront in the design and manufacture of spring-loaded and pilot-operated pressure relief valves since 1943.

**Our Commitment:** To provide customers with total pressure and flow control management solutions supporting a facility's entire life cycle, transforming and ensuring plant safety.

## Focused On Customer Solutions

Experienced Engineers • Solution Management • Superior Products



### Factory Authorized Service Team

#### Sales Representative Network

- Factory trained technicians in OEM specifications
- Local service and in-line testing reducing maintenance cost.
- Capability to track and manage relief valve maintenance and repair history
- Access to sales network, and keeping global inventory local

<https://www.cw-valvegroup.com/en-gb/contact-us>



# Solutions Management and Innovative Tools



## SOFTWARE MANAGEMENT TOOL FOR PRESSURE RELIEF SYSTEMS

### Software Capabilities

- Overpressure analysis with relief load calculations
- Inlet and outlet piping hydraulic calculations
- Header blowdown and knockout drum calculations
- Acoustic induced vibration analysis

## VALVE SIZING AND SELECTION SOFTWARE



- Provides sizing for vapor, liquid, steam and two-phase flow
- Capable of multi-scenario sizing. Multi-valve algorithm to easily size from multiple valves
- Built-in catalog selector ensures the proper product appropriate based on pressure and temperature
- Compliant with ASME and API



- Capable of multi-scenario sizing. Multi-valve algorithm to easily size from multiple valves
- Develop, dimensional drawings
- Maintain project data
- Generate orders to be sent direct to production

## Product Training and Seminars



We offer technical training courses learning about valve management and industry scenarios.

### SOME AVAILABLE CLASSES

- Pressure relief valve functionality
- Sizing requirements
- Material selection
- Sizing software training
- Maintenance and repair
- Mitigating overpressure scenarios

Contact your sales rep for more information.

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## Introduction

Farris Engineering, a business unit of Curtiss-Wright Flow Control Company, a leader in pressure relief valves, offers the 4200 Series, an ASME Code Section I and VIII certified safety valve. The 4200 Series was designed to meet your requirements for a dependable, cost effective, high capacity boiler safety valve. This product is manufactured in our Brecksville, Ohio, ISO 9001 certified facility. In addition, the 4200 Series safety valve is available at many of our FAST (Farris Authorized Service Team) Centers which are certified by the National Board of Boiler and Pressure Vessel Inspectors to assemble, set and test steam valves. Please visit our website, <http://farris.cwfc.com>, for a list of Farris representatives and FAST Centers in your region.

### Warranty

All products manufactured by Farris Engineering are warranted free of defects in material and workmanship when used within the range recommended for a period of one year after installation or eighteen months from delivery. When authorized, any defective product may be returned to the factory and if found defective will be repaired or replaced free of charge, solely at the discretion of Farris Engineering, ex-works our factory. No charge for labor or other expense incurred will be allowed, as the liability of Farris Engineering is measured by the refund price of the defective product only. All warranties are based on the product being used within the range recommended and does not cover damages or defects due to normal wear and tear, misuse, alteration or neglect. The purchaser shall determine the suitability of the product for use and assumes all risks and liabilities in connection therewith.

This warranty does not cover the performance of valves tested at site on test equipment that is not to the same technical standard as that used by the manufacturer.

# Type Numbering System

| 42            |                | F                   |                             | A                 |                   | 1                 |          | 2 –                            |                          | 1             |              | 7                |          | 0 |                                |              |       |              |            |
|---------------|----------------|---------------------|-----------------------------|-------------------|-------------------|-------------------|----------|--------------------------------|--------------------------|---------------|--------------|------------------|----------|---|--------------------------------|--------------|-------|--------------|------------|
| Series Number | Orifice Area   |                     |                             | Seat Construction | Temp. & Materials |                   |          |                                | Inlet Class <sup>1</sup> | Inlet Facing  |              | Cap Construction | Test Gag |   |                                |              |       |              |            |
| 42            | Orifice Letter | Actual Area Sq. In. | Actual Area mm <sup>2</sup> | A Metal Seat      | Designation       | Inlet Temperature | Material |                                | 0 150'                   | 1 Raised Face | 7 Open Lever | 0 No Gag         |          |   |                                |              |       |              |            |
|               | F              | 0.316               | 204                         |                   |                   |                   | 1        | up to 800 °F (427 °C)          |                          |               |              |                  |          |   | Carbon Steel                   | Chrome Alloy | 2 300 | 9 Ring Joint | 1 Test Gag |
|               | G              | 0.518               | 334                         |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
|               | H              | 0.809               | 522                         |                   |                   |                   | 3        | 801 to 1000 °F (427 to 538 °C) |                          |               |              |                  |          |   | Chrome Moly Steel <sup>2</sup> | Chrome Alloy |       |              |            |
|               | J              | 1.325               | 855                         |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
|               | K              | 1.897               | 1224                        |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
|               | L              | 2.938               | 1895                        |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
|               | M              | 3.822               | 2466                        |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
|               | N              | 4.471               | 2885                        |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
|               | P              | 6.573               | 4241                        |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |
| Q             | 11.39          | 7348                |                             |                   |                   |                   |          |                                |                          |               |              |                  |          |   |                                |              |       |              |            |

## Ordering Information

In order to assist you in the proper processing of your order, please specify the following information so that we may process your order as quickly and accurately as possible.

- Quantity
- Inlet and outlet sizes\*
- Farris type number\*
- Inlet and outlet flange class\*
- Set pressure\*
- Operating temperature\*
- Relieving temperature\*
- Allowable overpressure\*
- Fluid and state\*
- Required capacity\*
- Materials of construction if other than standard
- Accessories, such as test gag
- Code requirements
- Any special testing or documentation requirements

\*As a customer service, we verify your sizing and selection. To do this, we must have this information.

### General Notes:

- Valves with 150# inlet flanges available on application. Consult the factory.
- The 4200 Series uses a carbon steel open bonnet for all temperature ranges.

## Parts Replacement

**Valves** – If an exact replacement valve is required, then the valve type, size and serial number must be specified to ensure proper dimensions and material being supplied. If a specific valve is obsolete, a recommendation of the current equivalent will be made if possible.

**Spare Parts** – When ordering parts, use part names as listed in the bills of materials. Specify valve type, size and serial number. If the serial number is not available, the original Farris factory order number will help us supply the proper part and material.

**Springs** – Order as an assembly to include spring with upper and lower spring buttons. Specify valve type, size, serial number, set pressure and backpressure, if any.

Note: If valve modification or set pressure changes are required, consideration must be given to correct the nameplate and other data.

## Features and Benefits

**Open bonnet design:** Ensures proper spring cooling for stability and alignment.

**One piece guide:** Ensures precise alignment of valve components.

**Low stem bearing point:** Ensures accurate transmission of spring forces to the disc for greater seat tightness.

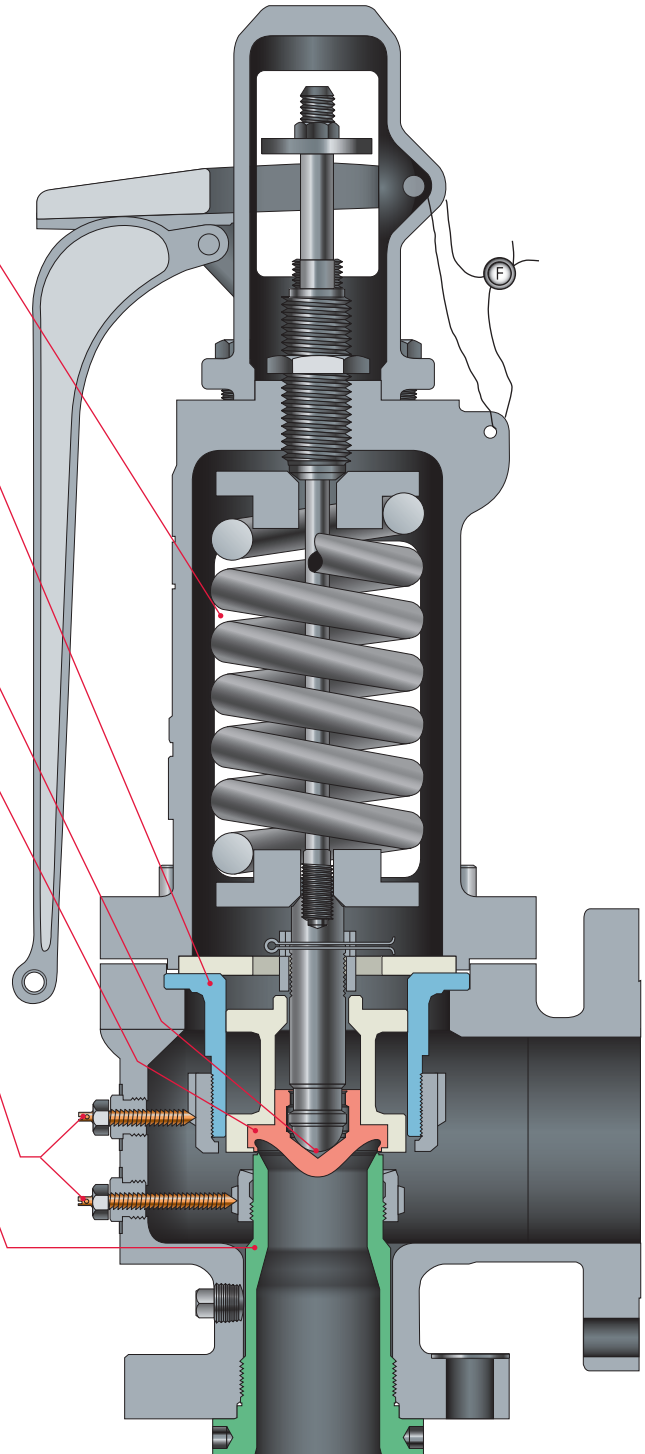
**Temperature equalizing disc:** Quickly conforms to any nozzle distortions experienced during a relief cycle and also assists in maintaining positive sealing.

**Heavy stainless steel lock screw studs:** For positive retention of adjusting ring positions.

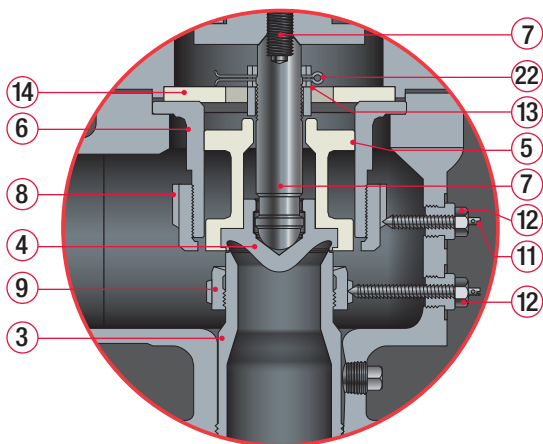
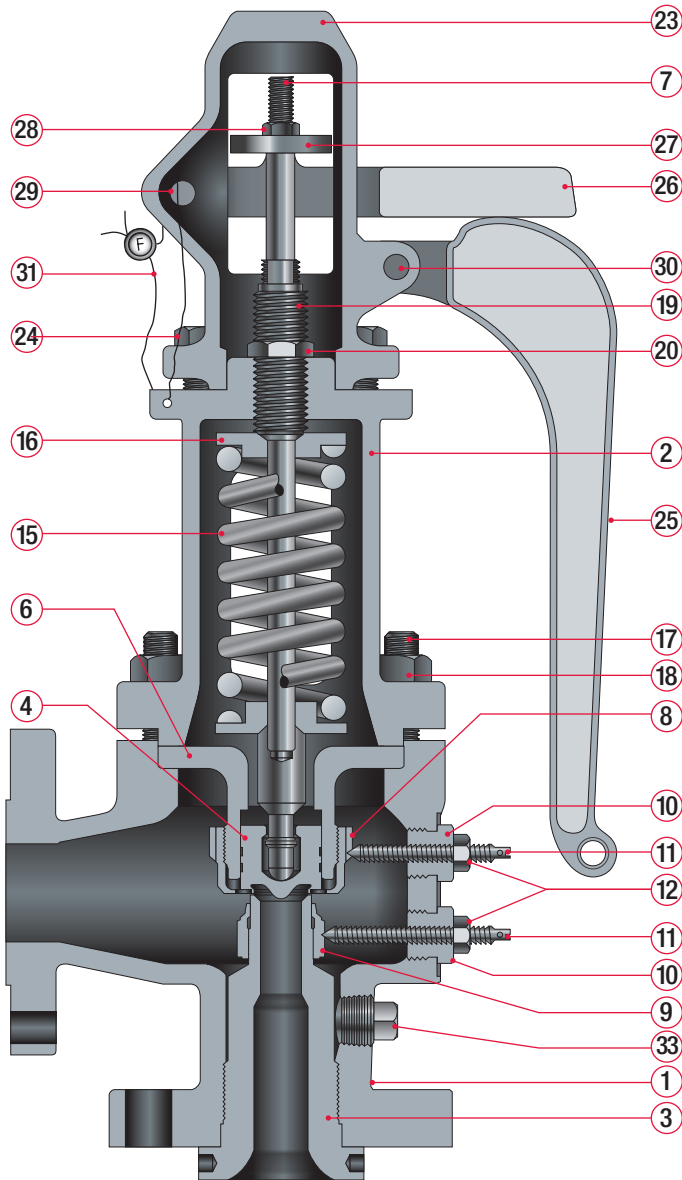
**Full nozzle design:** For longer life and ease of maintenance. Nozzle easier to remove and service than designs using semi-nozzle construction.

### FAST Centers

Look for the FAST tag on every 4200 series safety valve. This tag is your assurance that every valve has been assembled and tested to the highest quality standards. Farris FAST Centers also provide ready access to replacement parts and valves as well as factory trained personnel who can assist you with all of your pressure relief valve requirements.



# 4200 Series Bill of Materials



“L” to “Q” Orifice Detail

## Bill of Materials

| Item | Part Name                                           | Material                                         |
|------|-----------------------------------------------------|--------------------------------------------------|
| 1    | Body (up to 800 °F)                                 | SA-216 GR. WCB<br>Carbon Steel                   |
|      | Body (801 to 1000 °F)                               | SA-217 GR.WC6 Alloy St.<br>(1 1/4 CR – 1/2 Moly) |
| 2    | Bonnet (Open)                                       | SA-216 GR. WCB<br>Carbon Steel                   |
| 3    | Nozzle                                              | 316 St. St.                                      |
| 4    | Disc                                                | Precipitation Hardened St. St.                   |
| 5    | Disc Holder (L to Q Orifice Only)<br>(up to 800 °F) | Stainless Steel                                  |
|      | (801 to 1000 °F)                                    | Monel                                            |
| 6    | Guide (Up to 800 °F)                                | Stainless Steel                                  |
|      | (801 to 1000 °F)                                    | Monel                                            |
| 7    | Stem                                                | Stainless Steel                                  |
| 8    | Adjusting Ring-Upper                                | Stainless Steel                                  |
| 9    | Adjusting Ring-Lower                                | Stainless Steel                                  |
| 10   | Lock Screw (Adj. Ring) (2)                          | Stainless Steel                                  |
| 11   | Lock Screw Stud (Adj. Ring) (2)                     | Stainless Steel                                  |
| 12   | Jam Nut, Lock Screw (2)                             | Stainless Steel                                  |
| 13   | Stem Collar                                         | Stainless Steel                                  |
| 14   | Lift Stop (L-Q only)                                | Stainless Steel                                  |
| 15   | Spring (Up to 1000 °F)                              | Chrome Alloy                                     |
| 16   | Spring Buttons (2)                                  | Steel, Pltd.                                     |
| 17   | Body Stud                                           | ASME A193 Gr. B7 Alloy St.                       |
| 18   | Hex Nut, Body                                       | ASME A194 Gr. 2H Alloy St.                       |
| 19   | Spring Adjusting Screw                              | Stainless Steel                                  |
| 20   | Jam Nut, Spring Adj. Screw                          | Stainless Steel                                  |
| 21   | Spring Pin (Not Shown)                              | Steel                                            |
| 22   | Cotter Pin                                          | Steel, Pltd.                                     |
| 23   | Cap                                                 | Iron                                             |
| 24   | Cap Screw                                           | Steel                                            |
| 25   | Test Lever                                          | Iron                                             |
| 26   | Test Lever Fork                                     | Iron                                             |
| 27   | Stem Test Nut                                       | Stainless Steel                                  |
| 28   | Jam Nut, Stem                                       | Stainless Steel                                  |
| 29   | Round Head Rivet (Fork)                             | Steel                                            |
| 30   | Round Head Rivet (Lever)                            | Steel                                            |
| 31   | Wire Seal                                           | St. St. Wire / Lead Seal                         |
| 32   | Nameplate (Not Shown)                               | Stainless Steel                                  |
| 33   | Pipe Plug, Body                                     | Steel                                            |
| 34   | Cotter Pin (2) Fork & Lever<br>(Not Shown)          | Steel, Pltd.                                     |

Built in conformance to ASME Code Section I & Section VIII. Capacity certified by National Board (steam service).



## Selection Table – 4200 Series

| US Customary System Units |                 |                              |                      |              |                |                            |       |       |       |       |       |       |        |                               |                    |
|---------------------------|-----------------|------------------------------|----------------------|--------------|----------------|----------------------------|-------|-------|-------|-------|-------|-------|--------|-------------------------------|--------------------|
| Orifice                   |                 | Valve Size<br>Inlet x Outlet | ANSI<br>Flange Class |              | Type<br>Number | Maximum Set Pressure, psig |       |       |       |       |       |       |        | Material                      |                    |
| Letter                    | Area<br>sq. in. |                              | Inlet<br>RF          | Outlet<br>RF |                | 300°F                      | 400°F | 500°F | 600°F | 700°F | 800°F | 900°F | 1000°F | Body &<br>Bonnet <sup>2</sup> | Spring             |
| F                         | 0.316           | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42FA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42FA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42FA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42FA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| G                         | 0.518           | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42GA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42GA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42GA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42GA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| H                         | 0.809           | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42HA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42HA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42HA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42HA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| J                         | 1.325           | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42JA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42JA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42JA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42JA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| K                         | 1.897           | 2 x 3                        | 300#                 | 150#         | 42KA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 2 x 3                        | 600#                 | 150#         | 42KA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 2 x 3                        | 300#                 | 150#         | 42KA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 2 x 3                        | 600#                 | 150#         | 42KA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| L                         | 2.938           | 2 1/2 x 4                    | 300#                 | 150#         | 42LA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 2 1/2 x 4                    | 600#                 | 150#         | 42LA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 2 1/2 x 4                    | 300#                 | 150#         | 42LA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 2 1/2 x 4                    | 600#                 | 150#         | 42LA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| M                         | 3.822           | 3 x 4                        | 300#                 | 150#         | 42MA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 3 x 4                        | 600#                 | 150#         | 42MA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 3 x 4                        | 300#                 | 150#         | 42MA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 3 x 4                        | 600#                 | 150#         | 42MA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| N                         | 4.471           | 4 x 6                        | 300#                 | 150#         | 42NA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 4 x 6                        | 600#                 | 150#         | 42NA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 4 x 6                        | 300#                 | 150#         | 42NA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 4 x 6                        | 600#                 | 150#         | 42NA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| P                         | 6.573           | 4 x 6                        | 300#                 | 150#         | 42PA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 4 x 6                        | 600#                 | 150#         | 42PA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 4 x 6                        | 300#                 | 150#         | 42PA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 4 x 6                        | 600#                 | 150#         | 42PA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |
| Q                         | 11.39           | 6 x 8                        | 300#                 | 150#         | 42QA12-170     | 655                        | 635   | 605   | 570   | 530   | 410   | –     | –      | Carbon Steel                  | Chrome Alloy Steel |
|                           |                 | 6 x 8                        | 600#                 | 150#         | 42QA13-170     | 1000                       | 1000  | 1000  | 1000  | 1000  | 825   | –     | –      | Carbon Steel                  |                    |
|                           |                 | 6 x 8                        | 300#                 | 150#         | 42QA32-170     | –                          | –     | –     | –     | –     | 510   | 450   | 215    | Chrome Moly Steel             |                    |
|                           |                 | 6 x 8                        | 600#                 | 150#         | 42QA33-170     | –                          | –     | –     | –     | –     | 1000  | 900   | 430    | Chrome Moly Steel             |                    |

General Notes:

1. Class 150# inlet flanges available on application. Consult the factory.
2. The 4200 Series uses a carbon steel open bonnet for all temperature ranges.

# Selection Table – 4200 Series

| Metric System Units |                 |                              |                      |              |                |                            |       |       |       |       |       |       |       |                               |                    |
|---------------------|-----------------|------------------------------|----------------------|--------------|----------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------------------------------|--------------------|
| Orifice             |                 | Valve Size<br>Inlet x Outlet | ANSI<br>Flange Class |              | Type<br>Number | Maximum Set Pressure, barg |       |       |       |       |       |       |       | Material                      |                    |
| Letter              | Area<br>sq. mm. |                              | Inlet<br>RF          | Outlet<br>RF |                | 149°C                      | 204°C | 260°C | 316°C | 371°C | 427°C | 482°C | 538°C | Body &<br>Bonnet <sup>2</sup> | Spring             |
| F                   | 204             | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42FA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42FA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42FA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42FA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| G                   | 334             | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42GA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42GA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 1 1/4 x 1 1/2                | 300#                 | 150#         | 42GA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 1 1/4 x 1 1/2                | 600#                 | 150#         | 42GA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| H                   | 522             | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42HA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42HA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42HA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42HA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| J                   | 855             | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42JA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42JA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 1 1/2 x 2 1/2                | 300#                 | 150#         | 42JA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 1 1/2 x 2 1/2                | 600#                 | 150#         | 42JA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| K                   | 1224            | 2 x 3                        | 300#                 | 150#         | 42KA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 2 x 3                        | 600#                 | 150#         | 42KA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 2 x 3                        | 300#                 | 150#         | 42KA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 2 x 3                        | 600#                 | 150#         | 42KA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| L                   | 1895            | 2 1/2 x 4                    | 300#                 | 150#         | 42LA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 2 1/2 x 4                    | 600#                 | 150#         | 42LA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 2 1/2 x 4                    | 300#                 | 150#         | 42LA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 2 1/2 x 4                    | 600#                 | 150#         | 42LA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| M                   | 2466            | 3 x 4                        | 300#                 | 150#         | 42MA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 3 x 4                        | 600#                 | 150#         | 42MA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 3 x 4                        | 300#                 | 150#         | 42MA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 3 x 4                        | 600#                 | 150#         | 42MA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| N                   | 2885            | 4 x 6                        | 300#                 | 150#         | 42NA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 4 x 6                        | 600#                 | 150#         | 42NA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 4 x 6                        | 300#                 | 150#         | 42NA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 4 x 6                        | 600#                 | 150#         | 42NA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| P                   | 4241            | 4 x 6                        | 300#                 | 150#         | 42PA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 4 x 6                        | 600#                 | 150#         | 42PA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 4 x 6                        | 300#                 | 150#         | 42PA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 4 x 6                        | 600#                 | 150#         | 42PA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |
| Q                   | 7348            | 6 x 8                        | 300#                 | 150#         | 42QA12-170     | 45.1                       | 43.8  | 41.7  | 39.3  | 36.5  | 28.3  | –     | –     | Carbon Steel                  | Chrome Alloy Steel |
|                     |                 | 6 x 8                        | 600#                 | 150#         | 42QA13-170     | 68.9                       | 68.9  | 68.9  | 68.9  | 68.9  | 56.9  | –     | –     | Carbon Steel                  |                    |
|                     |                 | 6 x 8                        | 300#                 | 150#         | 42QA32-170     | –                          | –     | –     | –     | –     | 35.2  | 31.0  | 14.8  | Chrome Moly Steel             |                    |
|                     |                 | 6 x 8                        | 600#                 | 150#         | 42QA33-170     | –                          | –     | –     | –     | –     | 68.9  | 62.0  | 29.6  | Chrome Moly Steel             |                    |

General Notes:

1. Class 150# inlet flanges available on application. Consult the factory.
2. The 4200 Series uses a carbon steel open bonnet for all temperature ranges.

# Steam Capacities – 4200 Series: 3% Overpressure

US Customary Units

| <b>ASME Pressure Vessel Code Section I, (V) Stamp: Capacities in Pounds per Hour at Saturation Temperature</b> |                                                    |       |       |       |       |        |        |        |        |        |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| Set Pressure (psig)                                                                                            | Orifice Letter Designations & Areas, Square Inches |       |       |       |       |        |        |        |        |        |
|                                                                                                                | F                                                  | G     | H     | J     | K     | L      | M      | N      | P      | Q      |
|                                                                                                                | 0.316                                              | 0.518 | 0.809 | 1.325 | 1.897 | 2.938  | 3.822  | 4.471  | 6.573  | 11.39  |
| 15                                                                                                             | 450                                                | 737   | 1151  | 1886  | 2700  | 4182   | 5440   | 6364   | 9357   | 16214  |
| 20                                                                                                             | 521                                                | 853   | 1333  | 2183  | 3126  | 4842   | 6299   | 7368   | 10833  | 18772  |
| 40                                                                                                             | 805                                                | 1318  | 2059  | 3373  | 4830  | 7480   | 9731   | 11384  | 16736  | 29002  |
| 60                                                                                                             | 1088                                               | 1784  | 2786  | 4563  | 6534  | 10119  | 13164  | 15400  | 22640  | 39232  |
| 80                                                                                                             | 1378                                               | 2258  | 3527  | 5777  | 8271  | 12811  | 16666  | 19496  | 28662  | 49666  |
| 100                                                                                                            | 1670                                               | 2737  | 4276  | 7003  | 10026 | 15529  | 20201  | 23632  | 34742  | 60203  |
| 120                                                                                                            | 1962                                               | 3217  | 5024  | 8229  | 11781 | 18247  | 23737  | 27768  | 40823  | 70740  |
| 140                                                                                                            | 2254                                               | 3696  | 5772  | 9455  | 13536 | 20965  | 27273  | 31904  | 46904  | 81277  |
| 160                                                                                                            | 2547                                               | 4175  | 6521  | 10680 | 15291 | 23683  | 30809  | 36040  | 52984  | 91814  |
| 180                                                                                                            | 2839                                               | 4654  | 7269  | 11906 | 17046 | 26401  | 34344  | 40176  | 59065  | 102351 |
| 200                                                                                                            | 3131                                               | 5133  | 8018  | 13132 | 18801 | 29119  | 37880  | 44312  | 65146  | 112888 |
| 220                                                                                                            | 3424                                               | 5613  | 8766  | 14358 | 20556 | 31837  | 41416  | 48449  | 71227  | 123425 |
| 240                                                                                                            | 3716                                               | 6092  | 9514  | 15583 | 22311 | 34555  | 44952  | 52585  | 77307  | 133962 |
| 260                                                                                                            | 4008                                               | 6571  | 10263 | 16809 | 24066 | 37272  | 48487  | 56721  | 83388  | 144499 |
| 280                                                                                                            | 4301                                               | 7050  | 11011 | 18035 | 25821 | 39990  | 52023  | 60857  | 89469  | 155036 |
| 300                                                                                                            | 4593                                               | 7530  | 11760 | 19261 | 27576 | 42708  | 55559  | 64993  | 95549  | 165573 |
| 320                                                                                                            | 4885                                               | 8009  | 12508 | 20486 | 29331 | 45426  | 59095  | 69129  | 101630 | 176110 |
| 340                                                                                                            | 5178                                               | 8488  | 13257 | 21712 | 31086 | 48144  | 62630  | 73265  | 107711 | 186647 |
| 360                                                                                                            | 5470                                               | 8967  | 14005 | 22938 | 32840 | 50862  | 66166  | 77402  | 113791 | 197184 |
| 380                                                                                                            | 5762                                               | 9446  | 14753 | 24164 | 34596 | 53580  | 69702  | 81538  | 119872 | 207721 |
| 400                                                                                                            | 6055                                               | 9926  | 15502 | 25389 | 36350 | 56298  | 73238  | 85674  | 125953 | 218257 |
| 420                                                                                                            | 6347                                               | 10405 | 16250 | 26615 | 38105 | 59016  | 76773  | 89810  | 132034 | 228794 |
| 440                                                                                                            | 6639                                               | 10884 | 16999 | 27841 | 39860 | 61734  | 80309  | 93946  | 138114 | 239331 |
| 460                                                                                                            | 6932                                               | 11363 | 17747 | 29067 | 41615 | 64452  | 83845  | 98082  | 144195 | 249868 |
| 480                                                                                                            | 7224                                               | 11842 | 18495 | 30293 | 43370 | 67170  | 87381  | 102218 | 150276 | 260405 |
| 500                                                                                                            | 7516                                               | 12322 | 19244 | 31518 | 45125 | 69888  | 90916  | 106355 | 156356 | 270942 |
| 520                                                                                                            | 7809                                               | 12801 | 19992 | 32744 | 46880 | 72606  | 94452  | 110491 | 162437 | 281479 |
| 540                                                                                                            | 8101                                               | 13280 | 20741 | 33970 | 48635 | 75324  | 97988  | 114627 | 168518 | 292016 |
| 560                                                                                                            | 8393                                               | 13759 | 21489 | 35196 | 50390 | 78042  | 101524 | 118763 | 174599 | 302553 |
| 580                                                                                                            | 8686                                               | 14238 | 22237 | 36421 | 52145 | 80760  | 105059 | 122899 | 180679 | 313090 |
| 600                                                                                                            | 8978                                               | 14718 | 22986 | 37647 | 53900 | 83478  | 108595 | 127035 | 186760 | 323627 |
| 620                                                                                                            | 9270                                               | 15197 | 23734 | 38873 | 55654 | 86196  | 112131 | 131171 | 192841 | 334164 |
| 640                                                                                                            | 9563                                               | 15676 | 24483 | 40099 | 57409 | 88914  | 115667 | 135308 | 198921 | 344701 |
| 660                                                                                                            | 9855                                               | 16155 | 25231 | 41324 | 59164 | 91632  | 119202 | 139444 | 205002 | 355238 |
| 680                                                                                                            | 10147                                              | 16634 | 25979 | 42550 | 60919 | 94350  | 122738 | 143580 | 211083 | 365775 |
| 700                                                                                                            | 10440                                              | 17114 | 26728 | 43776 | 62674 | 97068  | 126274 | 147716 | 217164 | 376312 |
| 720                                                                                                            | 10732                                              | 17593 | 27476 | 45002 | 64429 | 99785  | 129810 | 151852 | 223244 | 386849 |
| 740                                                                                                            | 11024                                              | 18072 | 28225 | 46227 | 66184 | 102503 | 133345 | 155988 | 229325 | 397385 |
| 760                                                                                                            | 11317                                              | 18551 | 28973 | 47453 | 67939 | 105221 | 136881 | 160124 | 235406 | 407922 |
| 780                                                                                                            | 11609                                              | 19030 | 29722 | 48679 | 69694 | 107939 | 140417 | 164261 | 241486 | 418459 |
| 800                                                                                                            | 11901                                              | 19510 | 30470 | 49905 | 71449 | 110657 | 143953 | 168397 | 247567 | 428996 |
| 820                                                                                                            | 12194                                              | 19989 | 31218 | 51131 | 73204 | 113375 | 147488 | 172533 | 253648 | 439533 |
| 840                                                                                                            | 12486                                              | 20468 | 31967 | 52356 | 74959 | 116093 | 151024 | 176669 | 259729 | 450070 |
| 860                                                                                                            | 12778                                              | 20947 | 32715 | 53582 | 76714 | 118811 | 154560 | 180805 | 265809 | 460607 |
| 880                                                                                                            | 13071                                              | 21426 | 33464 | 54808 | 78468 | 121529 | 158096 | 184941 | 271890 | 471144 |
| 900                                                                                                            | 13363                                              | 21906 | 34212 | 56034 | 80223 | 124247 | 161631 | 189077 | 277971 | 481681 |
| 920                                                                                                            | 13655                                              | 22385 | 34960 | 57259 | 81978 | 126965 | 165167 | 193214 | 284051 | 492218 |
| 940                                                                                                            | 13948                                              | 22865 | 35709 | 58486 | 83734 | 129684 | 168703 | 197350 | 290133 | 502755 |
| 960                                                                                                            | 14240                                              | 23343 | 36457 | 59711 | 85488 | 132401 | 172239 | 201486 | 296213 | 513292 |
| 980                                                                                                            | 14532                                              | 23822 | 37206 | 60937 | 87243 | 135119 | 175774 | 205622 | 302294 | 523829 |
| 1000                                                                                                           | 14825                                              | 24302 | 37954 | 62162 | 88998 | 137837 | 179310 | 209758 | 308374 | 534366 |

# Steam Capacities – 4200 Series: 3% Overpressure

Metric Units

| ASME Pressure Vessel Code Section I, (V) Stamp: Capacities in Kilograms per Hour at Saturation Temperature |                                             |       |       |       |       |       |       |       |        |        |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Set Pressure (barg)                                                                                        | Orifice Letter Designations & Areas, sq. mm |       |       |       |       |       |       |       |        |        |
|                                                                                                            | F                                           | G     | H     | J     | K     | L     | M     | N     | P      | Q      |
|                                                                                                            | 204                                         | 334   | 522   | 855   | 1224  | 1895  | 2466  | 2885  | 4241   | 7348   |
| 1                                                                                                          | 200                                         | 329   | 514   | 842   | 1206  | 1867  | 2429  | 2842  | 4178   | 7239   |
| 2                                                                                                          | 294                                         | 482   | 753   | 1233  | 1766  | 2735  | 3558  | 4163  | 6120   | 10605  |
| 3                                                                                                          | 387                                         | 635   | 992   | 1625  | 2327  | 3603  | 4688  | 5484  | 8062   | 13970  |
| 4                                                                                                          | 481                                         | 788   | 1231  | 2016  | 2887  | 4472  | 5817  | 6804  | 10004  | 17335  |
| 5                                                                                                          | 575                                         | 943   | 1473  | 2413  | 3454  | 5350  | 6960  | 8142  | 11969  | 20741  |
| 6                                                                                                          | 671                                         | 1101  | 1719  | 2816  | 4032  | 6244  | 8123  | 9502  | 13970  | 24207  |
| 7                                                                                                          | 767                                         | 1258  | 1965  | 3219  | 4609  | 7138  | 9286  | 10863 | 15970  | 27673  |
| 8                                                                                                          | 864                                         | 1416  | 2212  | 3622  | 5186  | 8032  | 10449 | 12223 | 17970  | 31140  |
| 9                                                                                                          | 960                                         | 1574  | 2458  | 4026  | 5763  | 8926  | 11612 | 13584 | 19970  | 34606  |
| 10                                                                                                         | 1056                                        | 1731  | 2704  | 4428  | 6341  | 9820  | 12775 | 14944 | 21971  | 38072  |
| 11                                                                                                         | 1152                                        | 1889  | 2950  | 4832  | 6918  | 10714 | 13938 | 16305 | 23971  | 41538  |
| 12                                                                                                         | 1248                                        | 2047  | 3197  | 5235  | 7495  | 11609 | 15101 | 17665 | 25971  | 45004  |
| 13                                                                                                         | 1344                                        | 2204  | 3442  | 5638  | 8073  | 12503 | 16264 | 19026 | 27971  | 48470  |
| 14                                                                                                         | 1441                                        | 2362  | 3689  | 6041  | 8650  | 13397 | 17427 | 20387 | 29972  | 51936  |
| 15                                                                                                         | 1537                                        | 2519  | 3935  | 6445  | 9227  | 14291 | 18590 | 21747 | 31972  | 55402  |
| 16                                                                                                         | 1633                                        | 2677  | 4181  | 6848  | 9805  | 15185 | 19754 | 23108 | 33972  | 58869  |
| 17                                                                                                         | 1729                                        | 2835  | 4427  | 7251  | 10382 | 16079 | 20917 | 24469 | 35972  | 62335  |
| 18                                                                                                         | 1825                                        | 2992  | 4673  | 7655  | 10959 | 16973 | 22080 | 25829 | 37973  | 65801  |
| 19                                                                                                         | 1921                                        | 3150  | 4920  | 8058  | 11536 | 17867 | 23243 | 27190 | 39973  | 69267  |
| 20                                                                                                         | 2018                                        | 3308  | 5166  | 8461  | 12113 | 18761 | 24406 | 28550 | 41973  | 72733  |
| 21                                                                                                         | 2114                                        | 3465  | 5412  | 8864  | 12691 | 19655 | 25569 | 29911 | 43973  | 76199  |
| 22                                                                                                         | 2210                                        | 3623  | 5658  | 9268  | 13268 | 20549 | 26732 | 31272 | 45974  | 79665  |
| 23                                                                                                         | 2306                                        | 3780  | 5905  | 9670  | 13845 | 21443 | 27895 | 32632 | 47974  | 83132  |
| 24                                                                                                         | 2402                                        | 3938  | 6150  | 10074 | 14423 | 22338 | 29059 | 33993 | 49974  | 86598  |
| 25                                                                                                         | 2498                                        | 4096  | 6397  | 10477 | 15000 | 23232 | 30222 | 35353 | 51974  | 90064  |
| 26                                                                                                         | 2595                                        | 4253  | 6643  | 10880 | 15577 | 24126 | 31385 | 36714 | 53975  | 93530  |
| 27                                                                                                         | 2691                                        | 4411  | 6889  | 11283 | 16155 | 25020 | 32548 | 38074 | 55975  | 96996  |
| 28                                                                                                         | 2787                                        | 4569  | 7135  | 11687 | 16732 | 25914 | 33711 | 39435 | 57975  | 100462 |
| 29                                                                                                         | 2883                                        | 4727  | 7381  | 12090 | 17309 | 26808 | 34874 | 40795 | 59975  | 103928 |
| 30                                                                                                         | 2979                                        | 4884  | 7628  | 12493 | 17886 | 27702 | 36037 | 42156 | 61976  | 107394 |
| 31                                                                                                         | 3075                                        | 5042  | 7874  | 12896 | 18464 | 28596 | 37200 | 43517 | 63976  | 110861 |
| 32                                                                                                         | 3172                                        | 5199  | 8120  | 13300 | 19041 | 29490 | 38363 | 44877 | 65976  | 114327 |
| 33                                                                                                         | 3268                                        | 5357  | 8366  | 13703 | 19618 | 30384 | 39526 | 46238 | 67976  | 117793 |
| 34                                                                                                         | 3364                                        | 5514  | 8613  | 14106 | 20196 | 31278 | 40689 | 47599 | 69977  | 121259 |
| 35                                                                                                         | 3460                                        | 5672  | 8859  | 14509 | 20773 | 32172 | 41852 | 48959 | 71977  | 124725 |
| 36                                                                                                         | 3556                                        | 5830  | 9105  | 14912 | 21350 | 33066 | 43015 | 50320 | 73977  | 128191 |
| 37                                                                                                         | 3652                                        | 5988  | 9351  | 15315 | 21927 | 33960 | 44178 | 51680 | 75978  | 131657 |
| 38                                                                                                         | 3749                                        | 6145  | 9597  | 15719 | 22504 | 34854 | 45341 | 53041 | 77978  | 135123 |
| 39                                                                                                         | 3845                                        | 6303  | 9844  | 16122 | 23082 | 35748 | 46505 | 54402 | 79978  | 138590 |
| 40                                                                                                         | 3941                                        | 6460  | 10089 | 16525 | 23659 | 36643 | 47668 | 55762 | 81978  | 142056 |
| 41                                                                                                         | 4037                                        | 6618  | 10336 | 16928 | 24236 | 37537 | 48831 | 57123 | 83979  | 145522 |
| 42                                                                                                         | 4133                                        | 6775  | 10582 | 17332 | 24814 | 38431 | 49994 | 58483 | 85979  | 148988 |
| 43                                                                                                         | 4229                                        | 6933  | 10828 | 17735 | 25391 | 39325 | 51157 | 59844 | 87979  | 152454 |
| 44                                                                                                         | 4326                                        | 7091  | 11074 | 18138 | 25968 | 40219 | 52320 | 61204 | 89979  | 155920 |
| 45                                                                                                         | 4422                                        | 7249  | 11320 | 18541 | 26546 | 41113 | 53483 | 62565 | 91980  | 159386 |
| 46                                                                                                         | 4518                                        | 7406  | 11567 | 18945 | 27123 | 42007 | 54646 | 63925 | 93980  | 162853 |
| 47                                                                                                         | 4614                                        | 7564  | 11813 | 19348 | 27700 | 42901 | 55810 | 65286 | 95980  | 166319 |
| 48                                                                                                         | 4710                                        | 7721  | 12059 | 19751 | 28277 | 43795 | 56973 | 66647 | 97980  | 169785 |
| 49                                                                                                         | 4806                                        | 7879  | 12305 | 20154 | 28855 | 44689 | 58136 | 68007 | 99981  | 173251 |
| 50                                                                                                         | 4903                                        | 8036  | 12552 | 20557 | 29432 | 45583 | 59299 | 69368 | 101981 | 176717 |
| 51                                                                                                         | 4999                                        | 8194  | 12798 | 20960 | 30009 | 46477 | 60462 | 70728 | 103981 | 180184 |
| 52                                                                                                         | 5095                                        | 8352  | 13044 | 21364 | 30587 | 47371 | 61625 | 72089 | 105981 | 183649 |
| 53                                                                                                         | 5191                                        | 8510  | 13290 | 21767 | 31164 | 48265 | 62788 | 73450 | 107982 | 187115 |
| 54                                                                                                         | 5287                                        | 8667  | 13536 | 22170 | 31741 | 49159 | 63951 | 74810 | 109982 | 190582 |
| 55                                                                                                         | 5383                                        | 8825  | 13783 | 22573 | 32319 | 50053 | 65114 | 76171 | 111982 | 194048 |
| 56                                                                                                         | 5479                                        | 8983  | 14028 | 22977 | 32896 | 50948 | 66277 | 77532 | 113982 | 197514 |
| 57                                                                                                         | 5576                                        | 9140  | 14275 | 23380 | 33473 | 51842 | 67440 | 78892 | 115982 | 200980 |
| 58                                                                                                         | 5672                                        | 9298  | 14521 | 23783 | 34050 | 52736 | 68603 | 80253 | 117983 | 204446 |
| 59                                                                                                         | 5768                                        | 9455  | 14767 | 24186 | 34627 | 53630 | 69766 | 81613 | 119983 | 207913 |
| 60                                                                                                         | 5864                                        | 9613  | 15013 | 24590 | 35205 | 54524 | 70929 | 82974 | 121983 | 211379 |
| 61                                                                                                         | 5960                                        | 9771  | 15260 | 24993 | 35782 | 55418 | 72092 | 84334 | 123983 | 214844 |
| 62                                                                                                         | 6056                                        | 9928  | 15506 | 25396 | 36359 | 56312 | 73255 | 85695 | 125984 | 218311 |
| 63                                                                                                         | 6153                                        | 10086 | 15752 | 25799 | 36937 | 57206 | 74419 | 87055 | 127984 | 221777 |
| 64                                                                                                         | 6249                                        | 10244 | 15998 | 26202 | 37514 | 58100 | 75582 | 88416 | 129985 | 225243 |
| 65                                                                                                         | 6345                                        | 10401 | 16244 | 26605 | 38091 | 58994 | 76745 | 89777 | 131984 | 228709 |
| 66                                                                                                         | 6441                                        | 10559 | 16491 | 27009 | 38668 | 59888 | 77908 | 91137 | 133985 | 232175 |
| 67                                                                                                         | 6537                                        | 10716 | 16737 | 27412 | 39246 | 60782 | 79071 | 92498 | 135985 | 235642 |
| 68                                                                                                         | 6633                                        | 10874 | 16983 | 27815 | 39823 | 61676 | 80234 | 93858 | 137986 | 239108 |
| 69                                                                                                         | 6730                                        | 11032 | 17229 | 28218 | 40400 | 62570 | 81397 | 95219 | 139985 | 242574 |

# Steam Capacities – 4200 Series: 10% Overpressure

US Customary Units

| ASME Pressure Vessel Code Section VIII, (UV) Stamp: Capacities in Pounds per Hour at Saturation Temperature |                                                    |       |       |       |       |        |        |        |        |        |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| Set Pressure (psig)                                                                                         | Orifice Letter Designations & Areas, Square Inches |       |       |       |       |        |        |        |        |        |
|                                                                                                             | F                                                  | G     | H     | J     | K     | L      | M      | N      | P      | Q      |
|                                                                                                             | 0.316                                              | 0.518 | 0.809 | 1.325 | 1.897 | 2.938  | 3.822  | 4.471  | 6.573  | 11.39  |
| 15                                                                                                          | 464                                                | 760   | 1188  | 1945  | 2785  | 4314   | 5612   | 6565   | 9652   | 16726  |
| 20                                                                                                          | 534                                                | 876   | 1369  | 2243  | 3211  | 4974   | 6470   | 7569   | 11128  | 19283  |
| 40                                                                                                          | 833                                                | 1365  | 2132  | 3492  | 5000  | 7744   | 10075  | 11786  | 17327  | 30025  |
| 60                                                                                                          | 1145                                               | 1877  | 2931  | 4801  | 6874  | 10647  | 13851  | 16203  | 23821  | 41278  |
| 80                                                                                                          | 1457                                               | 2389  | 3731  | 6110  | 8749  | 13550  | 17627  | 20620  | 30315  | 52531  |
| 100                                                                                                         | 1769                                               | 2900  | 4530  | 7420  | 10623 | 16452  | 21403  | 25037  | 36808  | 63784  |
| 120                                                                                                         | 2081                                               | 3412  | 5329  | 8729  | 12497 | 19355  | 25179  | 29454  | 43302  | 75037  |
| 140                                                                                                         | 2394                                               | 3924  | 6128  | 10038 | 14371 | 22258  | 28955  | 33872  | 49796  | 86290  |
| 160                                                                                                         | 2706                                               | 4436  | 6928  | 11347 | 16245 | 25160  | 32731  | 38289  | 56290  | 97543  |
| 180                                                                                                         | 3018                                               | 4947  | 7727  | 12656 | 18120 | 28063  | 36507  | 42706  | 62784  | 108796 |
| 200                                                                                                         | 3330                                               | 5459  | 8526  | 13965 | 19994 | 30966  | 40283  | 47123  | 69278  | 120049 |
| 220                                                                                                         | 3642                                               | 5971  | 9326  | 15274 | 21868 | 33868  | 44059  | 51541  | 75772  | 131302 |
| 240                                                                                                         | 3955                                               | 6483  | 10125 | 16583 | 23742 | 36771  | 47835  | 55958  | 82266  | 142555 |
| 260                                                                                                         | 4267                                               | 6994  | 10924 | 17892 | 25616 | 39674  | 51611  | 60375  | 88760  | 153808 |
| 280                                                                                                         | 4579                                               | 7506  | 11723 | 19201 | 27490 | 42576  | 55387  | 64792  | 95254  | 165061 |
| 300                                                                                                         | 4891                                               | 8018  | 12523 | 20510 | 29365 | 45479  | 59163  | 69210  | 101748 | 176314 |
| 320                                                                                                         | 5203                                               | 8530  | 13322 | 21819 | 31239 | 48382  | 62939  | 73627  | 108242 | 187567 |
| 340                                                                                                         | 5516                                               | 9042  | 14121 | 23128 | 33113 | 51284  | 66715  | 78044  | 114736 | 198820 |
| 360                                                                                                         | 5828                                               | 9553  | 14920 | 24437 | 34987 | 54187  | 70491  | 82461  | 121230 | 210073 |
| 380                                                                                                         | 6140                                               | 10065 | 15720 | 25746 | 36861 | 57090  | 74267  | 86879  | 127724 | 221326 |
| 400                                                                                                         | 6452                                               | 10577 | 16519 | 27056 | 38736 | 59992  | 78043  | 91296  | 134218 | 232580 |
| 420                                                                                                         | 6764                                               | 11089 | 17318 | 28365 | 40610 | 62895  | 81820  | 95713  | 140712 | 243833 |
| 440                                                                                                         | 7077                                               | 11600 | 18118 | 29674 | 42484 | 65798  | 85596  | 100130 | 147206 | 255086 |
| 460                                                                                                         | 7389                                               | 12112 | 18917 | 30983 | 44358 | 68701  | 89372  | 104548 | 153700 | 266339 |
| 480                                                                                                         | 7701                                               | 12624 | 19716 | 32292 | 46232 | 71603  | 93148  | 108965 | 160194 | 277592 |
| 500                                                                                                         | 8013                                               | 13136 | 20515 | 33601 | 48107 | 74506  | 96924  | 113382 | 166688 | 288845 |
| 520                                                                                                         | 8325                                               | 13648 | 21315 | 34910 | 49981 | 77409  | 100700 | 117799 | 173182 | 300098 |
| 540                                                                                                         | 8638                                               | 14159 | 22114 | 36219 | 51855 | 80311  | 104476 | 122217 | 179676 | 311351 |
| 560                                                                                                         | 8950                                               | 14671 | 22913 | 37528 | 53729 | 83214  | 108252 | 126634 | 186170 | 322604 |
| 580                                                                                                         | 9262                                               | 15183 | 23712 | 38837 | 55603 | 86117  | 112028 | 131051 | 192664 | 333857 |
| 600                                                                                                         | 9574                                               | 15695 | 24512 | 40146 | 57478 | 89019  | 115804 | 135468 | 199158 | 345110 |
| 620                                                                                                         | 9886                                               | 16206 | 25311 | 41455 | 59352 | 91922  | 119580 | 139885 | 205652 | 356363 |
| 640                                                                                                         | 10199                                              | 16718 | 26110 | 42764 | 61226 | 94825  | 123356 | 144303 | 212146 | 367616 |
| 660                                                                                                         | 10511                                              | 17230 | 26910 | 44073 | 63100 | 97727  | 127132 | 148720 | 218640 | 378869 |
| 680                                                                                                         | 10823                                              | 17742 | 27709 | 45383 | 64974 | 100630 | 130908 | 153137 | 225134 | 390122 |
| 700                                                                                                         | 11135                                              | 18253 | 28508 | 46692 | 66848 | 103533 | 134684 | 157554 | 231627 | 401375 |
| 720                                                                                                         | 10426                                              | 18765 | 29307 | 48001 | 68723 | 106435 | 138460 | 161972 | 238121 | 412628 |
| 740                                                                                                         | 11760                                              | 19277 | 30107 | 49310 | 70597 | 109338 | 142236 | 166389 | 244615 | 423881 |
| 760                                                                                                         | 12072                                              | 19789 | 30906 | 50619 | 72471 | 112241 | 146012 | 170806 | 251109 | 435134 |
| 780                                                                                                         | 12384                                              | 20301 | 31705 | 51928 | 74345 | 115143 | 149788 | 175223 | 257603 | 446387 |
| 800                                                                                                         | 12696                                              | 20812 | 32504 | 53237 | 76219 | 118046 | 153564 | 179641 | 264097 | 457640 |
| 820                                                                                                         | 13008                                              | 21324 | 33304 | 54546 | 78094 | 120949 | 157340 | 184058 | 270591 | 468893 |
| 840                                                                                                         | 13321                                              | 21836 | 34103 | 55855 | 79968 | 123851 | 161116 | 188475 | 277085 | 480147 |
| 860                                                                                                         | 13633                                              | 22348 | 34902 | 57164 | 81842 | 126754 | 164892 | 192892 | 283579 | 491400 |
| 880                                                                                                         | 13945                                              | 22859 | 35702 | 58473 | 83716 | 129657 | 168669 | 197310 | 290073 | 502653 |
| 900                                                                                                         | 14257                                              | 23371 | 36501 | 59782 | 85590 | 132559 | 172445 | 201727 | 296567 | 513906 |
| 920                                                                                                         | 14569                                              | 23883 | 37300 | 61091 | 87465 | 135462 | 176221 | 206144 | 303061 | 525159 |
| 940                                                                                                         | 14882                                              | 24395 | 38099 | 62400 | 89339 | 138365 | 179997 | 210561 | 309555 | 536412 |
| 960                                                                                                         | 15194                                              | 24906 | 38899 | 63709 | 91213 | 141267 | 183773 | 214979 | 316049 | 547665 |
| 980                                                                                                         | 15506                                              | 25418 | 39698 | 65019 | 93087 | 144170 | 187549 | 219396 | 322543 | 558918 |
| 1000                                                                                                        | 15818                                              | 25930 | 40497 | 66328 | 94961 | 147073 | 191325 | 223813 | 329037 | 570171 |

# Steam Capacities – 4200 Series: 10% Overpressure

Metric Units

| ASME Pressure Vessel Code Section VIII, (UV) Stamp: Capacities in Kilograms per Hour at Saturation Temperature |                                             |       |       |       |       |       |       |        |        |        |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Set Pressure (barg)                                                                                            | Orifice Letter Designations & Areas, sq. mm |       |       |       |       |       |       |        |        |        |
|                                                                                                                | F                                           | G     | H     | J     | K     | L     | M     | N      | P      | Q      |
|                                                                                                                | 204                                         | 334   | 522   | 855   | 1224  | 1895  | 2466  | 2885   | 4241   | 7348   |
| 1                                                                                                              | 207                                         | 340   | 530   | 869   | 1244  | 1927  | 2507  | 2933   | 4311   | 7472   |
| 2                                                                                                              | 300                                         | 493   | 769   | 1261  | 1805  | 2795  | 3636  | 4254   | 6254   | 10837  |
| 3                                                                                                              | 402                                         | 660   | 1031  | 1688  | 2417  | 3744  | 4871  | 5698   | 8377   | 14516  |
| 4                                                                                                              | 505                                         | 828   | 1294  | 2119  | 3034  | 4699  | 6113  | 7151   | 10513  | 18217  |
| 5                                                                                                              | 608                                         | 997   | 1557  | 2550  | 3651  | 5654  | 7355  | 8604   | 12649  | 21919  |
| 6                                                                                                              | 711                                         | 1165  | 1819  | 2980  | 4267  | 6608  | 8597  | 10057  | 14785  | 25621  |
| 7                                                                                                              | 813                                         | 1333  | 2082  | 3411  | 4883  | 7563  | 9839  | 11510  | 16922  | 29323  |
| 8                                                                                                              | 916                                         | 1502  | 2346  | 3842  | 5500  | 8518  | 11081 | 12963  | 19058  | 33024  |
| 9                                                                                                              | 1019                                        | 1670  | 2608  | 4272  | 6116  | 9473  | 12323 | 14416  | 21194  | 36726  |
| 10                                                                                                             | 1121                                        | 1838  | 2871  | 4703  | 6733  | 10428 | 13565 | 15869  | 23330  | 40428  |
| 11                                                                                                             | 1224                                        | 2007  | 3134  | 5133  | 7350  | 11383 | 14808 | 17322  | 25466  | 44129  |
| 12                                                                                                             | 1327                                        | 2175  | 3397  | 5564  | 7966  | 12337 | 16050 | 18775  | 27602  | 47831  |
| 13                                                                                                             | 1429                                        | 2343  | 3660  | 5995  | 8583  | 13292 | 17292 | 20228  | 29738  | 51533  |
| 14                                                                                                             | 1532                                        | 2512  | 3923  | 6425  | 9199  | 14247 | 18534 | 21681  | 31875  | 55234  |
| 15                                                                                                             | 1635                                        | 2680  | 4186  | 6856  | 9815  | 15202 | 19776 | 23135  | 34011  | 58936  |
| 16                                                                                                             | 1738                                        | 2849  | 4449  | 7287  | 10432 | 16157 | 21018 | 24587  | 36147  | 62638  |
| 17                                                                                                             | 1840                                        | 3017  | 4712  | 7717  | 11049 | 17112 | 22260 | 26041  | 38283  | 66339  |
| 18                                                                                                             | 1943                                        | 3185  | 4975  | 8148  | 11665 | 18066 | 23503 | 27494  | 40419  | 70041  |
| 19                                                                                                             | 2046                                        | 3353  | 5238  | 8578  | 12282 | 19021 | 24745 | 28946  | 42556  | 73743  |
| 20                                                                                                             | 2148                                        | 3522  | 5500  | 9009  | 12898 | 19976 | 25987 | 30400  | 44692  | 77444  |
| 21                                                                                                             | 2251                                        | 3690  | 5763  | 9439  | 13515 | 20931 | 27229 | 31853  | 46828  | 81146  |
| 22                                                                                                             | 2354                                        | 3858  | 6026  | 9870  | 14131 | 21886 | 28471 | 33306  | 48964  | 84848  |
| 23                                                                                                             | 2456                                        | 4027  | 6289  | 10301 | 14748 | 22841 | 29713 | 34759  | 51100  | 88550  |
| 24                                                                                                             | 2559                                        | 4195  | 6552  | 10731 | 15364 | 23795 | 30955 | 36212  | 53237  | 92251  |
| 25                                                                                                             | 2662                                        | 4364  | 6815  | 11162 | 15981 | 24750 | 32197 | 37665  | 55373  | 95953  |
| 26                                                                                                             | 2765                                        | 4532  | 7078  | 11593 | 16597 | 25706 | 33440 | 39118  | 57509  | 99655  |
| 27                                                                                                             | 2867                                        | 4700  | 7341  | 12023 | 17214 | 26660 | 34682 | 40571  | 59645  | 103356 |
| 28                                                                                                             | 2970                                        | 4868  | 7604  | 12454 | 17830 | 27615 | 35924 | 42024  | 61782  | 107058 |
| 29                                                                                                             | 3073                                        | 5037  | 7867  | 12885 | 18447 | 28570 | 37166 | 43477  | 63918  | 110760 |
| 30                                                                                                             | 3175                                        | 5206  | 8130  | 13315 | 19063 | 29525 | 38408 | 44930  | 66054  | 114461 |
| 31                                                                                                             | 3278                                        | 5374  | 8393  | 13746 | 19680 | 30480 | 39651 | 46383  | 68190  | 118163 |
| 32                                                                                                             | 3381                                        | 5542  | 8656  | 14176 | 20296 | 31434 | 40892 | 47836  | 70326  | 121865 |
| 33                                                                                                             | 3484                                        | 5710  | 8918  | 14607 | 20913 | 32389 | 42134 | 49290  | 72463  | 125566 |
| 34                                                                                                             | 3586                                        | 5879  | 9181  | 15038 | 21529 | 33344 | 43377 | 50742  | 74599  | 129268 |
| 35                                                                                                             | 3689                                        | 6047  | 9444  | 15468 | 22146 | 34299 | 44619 | 52195  | 76735  | 132970 |
| 36                                                                                                             | 3792                                        | 6215  | 9707  | 15899 | 22763 | 35254 | 45861 | 53649  | 78871  | 136671 |
| 37                                                                                                             | 3894                                        | 6384  | 9970  | 16330 | 23379 | 36209 | 47103 | 55102  | 81007  | 140373 |
| 38                                                                                                             | 3997                                        | 6552  | 10233 | 16760 | 23995 | 37163 | 48345 | 56555  | 83144  | 144075 |
| 39                                                                                                             | 4100                                        | 6721  | 10496 | 17191 | 24612 | 38118 | 49588 | 58008  | 85280  | 147777 |
| 40                                                                                                             | 4202                                        | 6889  | 10759 | 17621 | 25228 | 39073 | 50830 | 59461  | 87416  | 151478 |
| 41                                                                                                             | 4305                                        | 7057  | 11022 | 18052 | 25845 | 40028 | 52071 | 60914  | 89552  | 155180 |
| 42                                                                                                             | 4408                                        | 7225  | 11285 | 18482 | 26462 | 40983 | 53314 | 62367  | 91688  | 158882 |
| 43                                                                                                             | 4511                                        | 7394  | 11548 | 18913 | 27078 | 41938 | 54556 | 63820  | 93824  | 162583 |
| 44                                                                                                             | 4613                                        | 7562  | 11810 | 19344 | 27695 | 42892 | 55798 | 65273  | 95960  | 166285 |
| 45                                                                                                             | 4716                                        | 7731  | 12073 | 19774 | 28311 | 43847 | 57040 | 66726  | 98097  | 169987 |
| 46                                                                                                             | 4819                                        | 7899  | 12337 | 20205 | 28927 | 44802 | 58282 | 68179  | 100233 | 173688 |
| 47                                                                                                             | 4921                                        | 8067  | 12599 | 20636 | 29544 | 45757 | 59525 | 69632  | 102369 | 177390 |
| 48                                                                                                             | 5024                                        | 8236  | 12862 | 21066 | 30161 | 46712 | 60767 | 71085  | 104505 | 181092 |
| 49                                                                                                             | 5127                                        | 8404  | 13125 | 21497 | 30777 | 47667 | 62009 | 72538  | 106641 | 184793 |
| 50                                                                                                             | 5229                                        | 8572  | 13388 | 21927 | 31394 | 48621 | 63251 | 73991  | 108778 | 188495 |
| 51                                                                                                             | 5332                                        | 8740  | 13651 | 22358 | 32010 | 49576 | 64493 | 75445  | 110914 | 192197 |
| 52                                                                                                             | 5435                                        | 8909  | 13914 | 22789 | 32627 | 50531 | 65735 | 76897  | 113050 | 195899 |
| 53                                                                                                             | 5538                                        | 9077  | 14177 | 23219 | 33243 | 51486 | 66977 | 78350  | 115186 | 199600 |
| 54                                                                                                             | 5640                                        | 9246  | 14440 | 23650 | 33860 | 52441 | 68219 | 79804  | 117323 | 203302 |
| 55                                                                                                             | 5743                                        | 9414  | 14703 | 24081 | 34476 | 53396 | 69462 | 81257  | 119459 | 207004 |
| 56                                                                                                             | 5846                                        | 9582  | 14966 | 24511 | 35093 | 54350 | 70704 | 82709  | 121595 | 210705 |
| 57                                                                                                             | 5948                                        | 9751  | 15229 | 24942 | 35709 | 55305 | 71946 | 84163  | 123731 | 214407 |
| 58                                                                                                             | 6051                                        | 9919  | 15491 | 25373 | 36326 | 56260 | 73188 | 85616  | 125867 | 218109 |
| 59                                                                                                             | 6154                                        | 10088 | 15754 | 25803 | 36942 | 57215 | 74430 | 87069  | 128004 | 221810 |
| 60                                                                                                             | 6257                                        | 10256 | 16018 | 26234 | 37559 | 58170 | 75672 | 88522  | 130140 | 225512 |
| 61                                                                                                             | 6359                                        | 10424 | 16280 | 26664 | 38175 | 59124 | 76914 | 89975  | 132276 | 229214 |
| 62                                                                                                             | 6462                                        | 10592 | 16543 | 27095 | 38792 | 60079 | 78157 | 91428  | 134412 | 232916 |
| 63                                                                                                             | 6564                                        | 10761 | 16806 | 27525 | 39408 | 61034 | 79399 | 92881  | 136548 | 236617 |
| 64                                                                                                             | 6667                                        | 10929 | 17069 | 27956 | 40025 | 61989 | 80641 | 94334  | 138685 | 240319 |
| 65                                                                                                             | 6770                                        | 11097 | 17332 | 28387 | 40641 | 62944 | 81883 | 95787  | 140821 | 244021 |
| 66                                                                                                             | 6872                                        | 11266 | 17595 | 28817 | 41258 | 63899 | 83125 | 97240  | 142957 | 247722 |
| 67                                                                                                             | 6975                                        | 11434 | 17858 | 29248 | 41875 | 64853 | 84367 | 98693  | 145093 | 251424 |
| 68                                                                                                             | 7078                                        | 11603 | 18121 | 29679 | 42491 | 65808 | 85609 | 100146 | 147229 | 255126 |
| 69                                                                                                             | 7180                                        | 11771 | 18384 | 30109 | 43107 | 66763 | 86851 | 101599 | 149365 | 258828 |

# Sizing Information

The 4200 Series valves are built in conformance to Section I of the ASME Boiler and Pressure Vessel Code. They are primarily intended for use on steam boilers where ASME Code Section I stamped valves are required.

Sizing is per equation listed below. The orifice areas listed in this catalog are actual areas and should not be confused with API effective orifice areas shown in most process valve catalogs.

## For Steam Service

$$A = \frac{W_s}{51.5P K_d K_{sh}}$$

## Where:

A = Required orifice area in square inches.

P = Relieving pressure in pounds per square inch absolute = set pressure + overpressure + 14.7 psig.

**ASME Code Section I:** Overpressure is 3% of set pressure or 2 psig, whichever is greater

P = 1.03 x set pressure + 14.7 psig **OR** P = set pressure + 2 psig + 14.7 psig.

**ASME Code Section VIII:** Overpressure is 10% of set pressure or 3 psi, whichever is greater

P = 1.10 x set pressure + 14.7 psig **OR** P = set pressure + 3 psig + 14.7 psig.

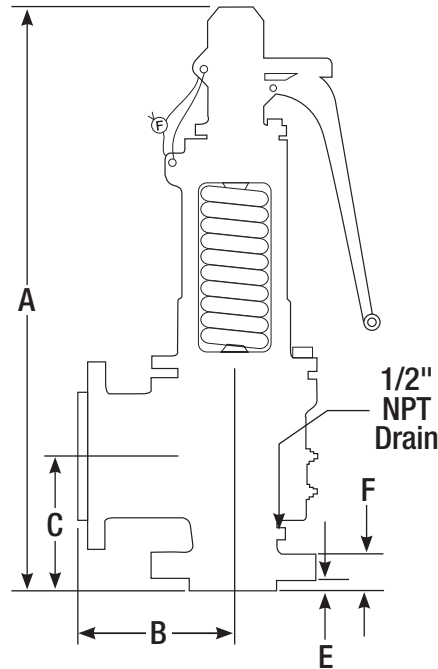
W<sub>s</sub> = Required steam capacity in pounds per hour

K<sub>d</sub> = Coefficient of discharge, 0.872 for all services.

K<sub>sh</sub> = Steam superheat correction factor. See table below.

| K <sub>sh</sub> Superheat Correction Factor |                          | Total Temperature in Degrees Fahrenheit |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |      |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---------------------------------------------|--------------------------|-----------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Set Press psig                              | Saturated Steam Temp. °F | 280                                     | 300  | 320  | 340  | 360  | 380  | 400  | 420  | 440  | 460  | 480  | 500  | 520  | 540  | 560  | 580  | 600  | 620  | 640  | 660  | 680  | 700  | 720  | 740  | 760  | 780  | 800  | 820  | 840  | 860  | 880  | 900  | 920 | 940 | 960 | 980 | 1000 |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 15                                          | 250                      | 1.00                                    | 1.00 | 1.00 | .99  | .99  | .98  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .86  | .85  | .84  | .83  | .83  | .82  | .81  | .81  | .80  | .79  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20                                          | 259                      | 1.00                                    | 1.00 | 1.00 | .99  | .99  | .98  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .86  | .85  | .84  | .83  | .83  | .82  | .81  | .81  | .80  | .79  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 40                                          | 287                      | -                                       | 1.00 | 1.00 | 1.00 | .99  | .99  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .82  | .81  | .80  | .79  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 60                                          | 308                      | -                                       | -    | 1.00 | 1.00 | .99  | .99  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 80                                          | 324                      | -                                       | -    | -    | 1.00 | 1.00 | .99  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 100                                         | 338                      | -                                       | -    | -    | -    | 1.00 | 1.00 | .99  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .85  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 120                                         | 350                      | -                                       | -    | -    | -    | 1.00 | 1.00 | .99  | .98  | .97  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .85  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 140                                         | 361                      | -                                       | -    | -    | -    | -    | 1.00 | 1.00 | .99  | .98  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .85  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .78  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 160                                         | 371                      | -                                       | -    | -    | -    | -    | -    | 1.00 | 1.00 | .99  | .97  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .86  | .85  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .79  | .78  | .77 | .76 | .76 | .75 | .75  |     |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 180                                         | 380                      | -                                       | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .97  | .96  | .95  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .86  | .85  | .84  | .83  | .82  | .82  | .81  | .80  | .80  | .79  | .79  | .78 | .77 | .76 | .76 | .75  | .75 |     |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 200                                         | 388                      | -                                       | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .99  | .97  | .96  | .95  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .86  | .85  | .84  | .83  | .83  | .82  | .81  | .81  | .80  | .79  | .79 | .78 | .77 | .76 | .76  | .75 | .75 |     |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 220                                         | 395                      | -                                       | -    | -    | -    | -    | -    | -    | -    | 1.00 | 1.00 | .99  | .98  | .96  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .81  | .81  | .80  | .79  | .79 | .78 | .78 | .77 | .76  | .76 | .75 | .75 |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 240                                         | 403                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .97  | .95  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .81  | .81  | .80  | .79  | .79 | .78 | .78 | .77 | .76  | .76 | .75 | .75 |     |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 260                                         | 409                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .97  | .96  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .85  | .84  | .83  | .82  | .81  | .81  | .80  | .79 | .79 | .78 | .78 | .77  | .76 | .76 | .75 | .75 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 280                                         | 416                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .96  | .95  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .85  | .84  | .83  | .82  | .82  | .81  | .80  | .80 | .79 | .79 | .78 | .78  | .77 | .76 | .76 | .75 | .75   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 300                                         | 422                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .96  | .95  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .82  | .81  | .80 | .80 | .79 | .79 | .78  | .78 | .77 | .76 | .76 | .75   | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 350                                         | 436                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .96  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .82  | .81 | .81 | .80 | .80 | .79  | .79 | .78 | .78 | .77 | .76   | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 400                                         | 448                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .96  | .95  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83  | .82  | .82 | .81 | .81 | .80 | .80  | .79 | .79 | .78 | .78 | .77   | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 450                                         | 460                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .96  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83  | .82 | .82 | .81 | .81 | .80  | .80 | .79 | .79 | .78 | .78   | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 500                                         | 470                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .96  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83 | .82 | .82 | .81 | .81  | .80 | .80 | .79 | .79 | .78   | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 550                                         | 480                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .95  | .94  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84  | .83 | .82 | .82 | .81 | .81  | .80 | .80 | .79 | .79 | .78   | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 600                                         | 489                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .96  | .94  | .93  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84  | .84 | .83 | .82 | .82 | .81  | .81 | .80 | .80 | .79 | .79   | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |
| 650                                         | 497                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .95  | .94  | .92  | .91  | .90  | .89  | .88  | .87  | .86  | .85  | .84 | .84 | .83 | .82 | .82  | .81 | .81 | .80 | .80 | .79   | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |     |
| 700                                         | 506                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .96  | .94  | .93  | .91  | .90  | .89  | .88  | .87  | .86  | .85 | .84 | .84 | .83 | .82  | .82 | .81 | .81 | .80 | .80   | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |     |
| 750                                         | 513                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | 1.00 | .98  | .96  | .95  | .93  | .92  | .90  | .89  | .88  | .87  | .86 | .85 | .84 | .84 | .83  | .82 | .82 | .81 | .81 | .80   | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |
| 800                                         | 520                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .95  | .94  | .92  | .91  | .90  | .88  | .87  | .86 | .85 | .84 | .84 | .83  | .82 | .82 | .81 | .81 | .80   | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |     |     |
| 850                                         | 527                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .96  | .94  | .93  | .92  | .90  | .89  | .88 | .87 | .86 | .85 | .84  | .84 | .83 | .82 | .82 | .81   | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |     |
| 900                                         | 533                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | 1.00 | .99  | .97  | .95  | .93  | .92  | .90  | .89 | .88 | .87 | .86 | .85  | .84 | .84 | .83 | .82 | .82   | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |
| 950                                         | 540                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .95  | .94  | .92  | .91  | .89 | .88 | .87 | .86 | .85  | .84 | .84 | .83 | .82 | .82   | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |     |
| 1000                                        | 546                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .95  | .94  | .92  | .91 | .89 | .88 | .87 | .86  | .85 | .84 | .84 | .83 | .82   | .82 | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |     |
| 1050                                        | 552                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .97  | .95  | .93  | .92 | .90 | .89 | .88 | .87  | .86 | .85 | .84 | .84 | .83   | .82 | .82 | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |     |
| 1100                                        | 558                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .95  | .94 | .92 | .91 | .89 | .88  | .87 | .86 | .85 | .84 | .84   | .83 | .82 | .82 | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |     |
| 1150                                        | 563                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98  | .96 | .94 | .92 | .91 | .90  | .88 | .87 | .86 | .85 | .84   | .84 | .83 | .82 | .82 | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |     |     |
| 1200                                        | 569                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99  | .98 | .97 | .95 | .93 | .91  | .90 | .89 | .88 | .87 | .86   | .85 | .84 | .84 | .83 | .82 | .82 | .81 | .81 | .80 | .80 | .79 | .79 | .78 | .78 | .77 | .76 | .76 | .75 | .75 |
| 1250                                        | 574                      | -                                       | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | 1.00 | .99 | .97 | .95 | .93 | .92  | .90 | .89 | .88 | .87 | .86</ |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

# Dimensions & Weights



| Valve Size<br>Inlet x Outlet | Type Number | ANSI<br>Flange Class |              | U.S. Standard Dimensions (Inches) |                |                |       |         | Approx.<br>Weight<br>Lbs. | Metric Dimensions (millimeters) |     |     |    |    | Approx.<br>Weight<br>kg |
|------------------------------|-------------|----------------------|--------------|-----------------------------------|----------------|----------------|-------|---------|---------------------------|---------------------------------|-----|-----|----|----|-------------------------|
|                              |             | Inlet<br>RF          | Outlet<br>RF | A                                 | B <sup>1</sup> | C <sup>1</sup> | E     | F       |                           | A                               | B   | C   | E  | F  |                         |
| 1 1/4 x 1 1/2                | 42FA12-170  | 300#                 | 150#         | 17 7/8                            | 4 3/16         | 4 13/32        | 11/16 | 1 9/16  | 40                        | 455                             | 107 | 112 | 18 | 40 | 18                      |
|                              | 42FA13-170  | 600#                 | 150#         | 17 7/8                            | 4 3/16         | 4 13/32        | 11/16 | 1 9/16  | 40                        | 455                             | 107 | 112 | 18 | 40 | 18                      |
| 1 1/4 x 1 1/2                | 42GA12-170  | 300#                 | 150#         | 17 7/8                            | 4 3/16         | 4 13/32        | 11/16 | 1 9/16  | 40                        | 455                             | 107 | 112 | 18 | 40 | 18                      |
|                              | 42GA13-170  | 600#                 | 150#         | 17 7/8                            | 4 3/16         | 4 13/32        | 11/16 | 1 9/16  | 40                        | 455                             | 107 | 112 | 18 | 40 | 18                      |
| 1 1/2 x 2 1/2                | 42HA12-170  | 300#                 | 150#         | 21 1/2                            | 4 7/8          | 4 3/4          | 11/16 | 1 5/8   | 69                        | 547                             | 124 | 121 | 18 | 42 | 31                      |
|                              | 42HA13-170  | 600#                 | 150#         | 21 1/2                            | 4 7/8          | 4 3/4          | 11/16 | 1 5/8   | 69                        | 547                             | 124 | 121 | 18 | 42 | 31                      |
| 1 1/2 x 2 1/2                | 42JA12-170  | 300#                 | 150#         | 21 1/2                            | 4 7/8          | 4 3/4          | 11/16 | 1 5/8   | 71                        | 547                             | 124 | 121 | 18 | 42 | 32                      |
|                              | 42JA13-170  | 600#                 | 150#         | 21 1/2                            | 4 7/8          | 4 3/4          | 11/16 | 1 5/8   | 71                        | 547                             | 124 | 121 | 18 | 42 | 32                      |
| 2 x 3                        | 42KA12-170  | 300#                 | 150#         | 21 3/4                            | 5 9/16         | 5 1/4          | 11/16 | 1 3/4   | 83                        | 553                             | 142 | 134 | 18 | 45 | 38                      |
|                              | 42KA13-170  | 600#                 | 150#         | 21 3/4                            | 5 9/16         | 5 1/4          | 11/16 | 1 3/4   | 83                        | 553                             | 142 | 134 | 18 | 45 | 38                      |
| 2 1/2 x 4                    | 42LA12-170  | 300#                 | 150#         | 28 1/4                            | 6 5/16         | 6 1/8          | 11/16 | 1 15/16 | 138                       | 718                             | 161 | 156 | 18 | 50 | 63                      |
|                              | 42LA13-170  | 600#                 | 150#         | 28 1/4                            | 6 5/16         | 6 1/8          | 11/16 | 1 15/16 | 138                       | 718                             | 161 | 156 | 18 | 50 | 63                      |
| 3 x 4                        | 42MA12-170  | 300#                 | 150#         | 29 1/4                            | 6 7/16         | 6 1/2          | 11/16 | 2       | 164                       | 743                             | 164 | 166 | 18 | 51 | 74                      |
|                              | 42MA13-170  | 600#                 | 150#         | 29 1/4                            | 6 7/16         | 6 1/2          | 11/16 | 2       | 164                       | 743                             | 164 | 166 | 18 | 51 | 74                      |
| 4 x 6                        | 42NA12-170  | 300#                 | 150#         | 33 1/4                            | 7 7/16         | 7 11/16        | 11/16 | 2 1/4   | 250                       | 845                             | 189 | 196 | 18 | 58 | 113                     |
|                              | 42NA13-170  | 600#                 | 150#         | 33 1/4                            | 7 7/16         | 7 11/16        | 11/16 | 2 1/4   | 250                       | 845                             | 189 | 196 | 18 | 58 | 113                     |
| 4 x 6                        | 42PA12-170  | 300#                 | 150#         | 33 1/4                            | 8 3/16         | 7 11/16        | 11/16 | 2 1/4   | 260                       | 845                             | 208 | 196 | 18 | 58 | 118                     |
|                              | 42PA13-170  | 600#                 | 150#         | 33 1/4                            | 8 3/16         | 7 11/16        | 11/16 | 2 1/4   | 260                       | 845                             | 208 | 196 | 18 | 58 | 118                     |
| 6 x 8                        | 42QA12-170  | 300#                 | 150#         | 41 1/8                            | 9 3/8          | 10 5/16        | 11/16 | 2 5/8   | 438                       | 1045                            | 239 | 262 | 18 | 67 | 199                     |
|                              | 42QA13-170  | 600#                 | 150#         | 41 1/8                            | 9 3/8          | 10 5/16        | 11/16 | 2 5/8   | 438                       | 1045                            | 239 | 262 | 18 | 67 | 199                     |

General Notes

1. Tolerances for the B and C center-to-face dimensions are ± 1/16 inch for valve inlet sizes up to and including 4 inch and ± 1/8 inch for valve inlet sizes larger than 4 inch.

# Conversion Factors

| Area            |                    |             |
|-----------------|--------------------|-------------|
| To Convert From | To                 | Multiply By |
| Square Inches   | Square Centimeters | 6.452       |
|                 | Square Millimeters | 645.2       |
|                 | Square Feet        | 0.006944    |

| Density               |                        |             |
|-----------------------|------------------------|-------------|
| To Convert From       | To                     | Multiply By |
| Pounds Per Cubic Foot | Pounds/US Gallon       | 0.1337      |
|                       | Pounds/Cubic Inch      | 0.0005787   |
|                       | Grams/Cubic Centimeter | 0.01602     |
|                       | Kilograms/Cubic Meter  | 16.018      |

| Flow Rate (Mass) |                       |             |
|------------------|-----------------------|-------------|
| To Convert From  | To                    | Multiply By |
| Pounds Per Hour  | Kilograms Per Hour    | 0.4536      |
|                  | Tons Per Hour (Short) | 0.0005      |

| Flow Rate (Volume) |                       |             |
|--------------------|-----------------------|-------------|
| To Convert From    | To                    | Multiply By |
| Gallons Per Minute | Cubic Feet Per Second | 0.02228     |
|                    | Liters Per Minute     | 3.785       |
|                    | Liters Per Second     | 0.06308     |
|                    | Meters Cubed Per Hour | 0.2271      |

| Length          |             |             |
|-----------------|-------------|-------------|
| To Convert From | To          | Multiply By |
| Feet            | Centimeters | 30.48       |
|                 | Inches      | 12          |
|                 | Millimeters | 304.8       |
|                 | Meters      | 0.3048      |
|                 | Miles       | 0.000189    |
| Meters          | Yards       | 0.3333      |
|                 | Centimeters | 100.0       |
|                 | Feet        | 3.281       |
|                 | Inches      | 39.37       |
|                 | Millimeters | 1000.0      |
|                 | Yards       | 1.094       |

| Mass (Weight)   |                     |             |
|-----------------|---------------------|-------------|
| To Convert From | To                  | Multiply By |
| Pounds          | Cubic Feet of Water | 0.01603     |
|                 | Gallons of Water    | 0.11995     |
|                 | Grams               | 453.6       |
|                 | Kilograms           | 0.4536      |
|                 | Ounces              | 16          |
|                 | Tons (Short)        | 0.0005      |
|                 | Tons (Long)         | 0.0004464   |
|                 | Tons (Metric)       | 0.0004536   |

| Pressure           |                               |             |
|--------------------|-------------------------------|-------------|
| To Convert From    | To                            | Multiply By |
| Atmospheres        | Bars                          | 1.013       |
|                    | Feet of Water                 | 33.96       |
|                    | Inches of Mercury             | 29.92       |
|                    | Inches of Water               | 407.50      |
|                    | Kilograms per cm <sup>2</sup> | 1.033       |
|                    | Millimeters of Mercury        | 760.00      |
|                    | Pounds per square inch        | 14.70       |
| Pounds Per Sq. In. | Bars                          | 0.06895     |
|                    | Feet of Water                 | 2.31        |
|                    | Inches of Mercury             | 2.036       |
|                    | Inches of Water               | 27.73       |
|                    | Millimeters of Mercury        | 51.71       |
|                    | Kilograms per square cm       | 0.07031     |
|                    | Kilopascals                   | 6.895       |

| Temperature Conversion Equations |                         |
|----------------------------------|-------------------------|
| Celsius (C) =                    | 5/9 x (Fahrenheit - 32) |
| Fahrenheit (F) =                 | (9/5 x Celsius) + 32    |
| Kelvin (K) =                     | Celsius + 273.15        |
| Rankin (R) =                     | Fahrenheit + 459.67     |

| Viscosity – Absolute or Dynamic |                           |             |
|---------------------------------|---------------------------|-------------|
| To Convert From                 | To                        | Multiply By |
| Centipoise                      | lbf-sec/ft. <sup>2</sup>  | 0.000208854 |
| Centipoise                      | kg-sec/meter <sup>2</sup> | 0.000102    |
| Lbf-sec/sq. ft.                 | Pascal-sec                | 47.8803     |
| Pascal sec.                     | Centipoise                | 1000        |
| Poise (gm/cm-sec)               | Centipoise                | 100         |

| Viscosity – Kinematic |                   |             |
|-----------------------|-------------------|-------------|
| To Convert From       | To                | Multiply By |
| Centistokes           | Stokes            | 0.01        |
| Centistokes           | sq. meters/sec    | 0.000001    |
| Square Feet/Sec.      | Centistokes       | 92903.04    |
| Square Feet/Sec.      | Square meters/sec | 0.092903    |

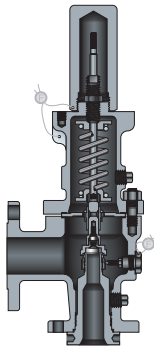
| Viscosity – Absolute to Kinematic |             |                                |
|-----------------------------------|-------------|--------------------------------|
| To Convert From                   | To          | Multiply By                    |
| Centipoise                        | Centistokes | 1/density (g/cm <sup>3</sup> ) |

| Volume          |                           |             |
|-----------------|---------------------------|-------------|
| To Convert From | To                        | Multiply By |
| Gallons (US)    | Barrels                   | 0.02381     |
|                 | Cubic Inches              | 231.0       |
|                 | Cubic Feet                | 0.1337      |
|                 | Cubic Centimeters (or ml) | 3785        |
|                 | Imperial Gallons          | 0.8327      |
|                 | Liters                    | 3.785       |

| Miscellaneous                                   |                              |             |
|-------------------------------------------------|------------------------------|-------------|
| To Convert From                                 | To                           | Multiply By |
| Specific Gravity-Gas, Water (Cubic Feet @ 60°F) | Molecular Weight-Gas         | 28.970      |
|                                                 | Pounds per Cubic Feet @ 60°F | 62.37       |
|                                                 | Imperial Gallons             | 0.8327      |
|                                                 | Liters                       | 3.785       |

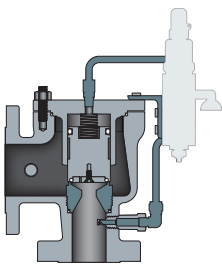
# Farris Engineering Products

## Process Pressure Relief Valves



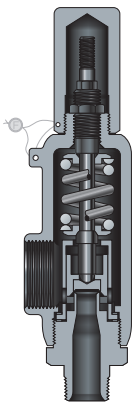
### SERIES 2600/2600L

- ASME NB Certified: Air, Steam & Water
- Sizes: 1" x 2" to 20" x 24"
- Pressure Range: 15 psig to 6000 psig
- Temperature Range: -450°F to +1500°F
- Materials: Carbon Steel, Stainless Steel, Monel & Hastelloy C
- Options: Balanced Bellows, O-Ring Seat, Open Bonnet
- CE Approved



### SERIES 3800 Pilot Operated

- ASME NB Certified: Air, Steam & Water
- Sizes: 1" x 2" to 12" x 16"
- Pressure Range: 15 psig to 6170 psig
- Temperature Range: -450°F to +500°F
- Materials: Carbon Steel, Stainless Steel, Monel & Hastelloy C
- Actuation: Snap and Modulating Controls
- Options: Field Test Connections, Reverse Flow Preventer, Remote Depressurizing & Auxiliary Filters
- CE Approved

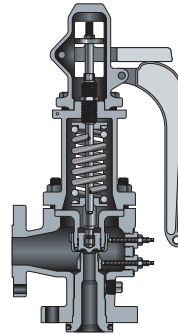


### SERIES 2700

- ASME NB Certified: Air, Steam & Water
- Sizes: 1/2" x 1" to 1 1/2" x 2 1/2"
- Pressure Range: 15 psig to 6500 psig
- Temperature Range: -450°F to +750°F
- Materials: Carbon Steel, Stainless Steel, Monel & Hastelloy C
- Options: Balanced Design, O-Ring Seats, Flanged, Socket Weld, Welding Nipple, & Sanitary Connections
- CE Approved

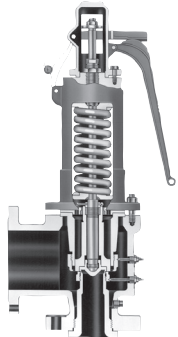
\*Other materials available upon request. Please consult the factory.

## Steam Safety Valves



### SERIES 4200

- ASME NB Section I & VIII Certified: Steam & Air
- Sizes 1 1/4" x 1 1/2" to 6" x 8"
- Pressure Range: 15 psig to 1000 psig
- Temperature Range: -20°F to +1000°F
- Materials: Carbon Steel, Stainless Steel, Chrome-Moly
- Options: Test Gag
- CE Approved



### SERIES 6400/6600

- ASME NB Section I & VIII Certified: Steam & Air
- Sizes: 1" x 2" to 4" x 6"
- Pressure Range: 15 psig to 1500 psig
- Temperature Range: -20°F to +1000°F
- Materials: Carbon Steel, Stainless Steel, Chrome-Moly
- Options: Closed Bonnet (6600) & Test Gag



## WARRANTY

Curtiss-Wright products have a warranty period of twelve months from first installation or eighteen months from delivery, whichever is sooner. All other warranty terms are as per Curtiss-Wright Industrial Standard Terms and Conditions, a copy which is available at [www.cw-industrialgroup.com/About/Group-Policies/Terms-Conditions.aspx](http://www.cw-industrialgroup.com/About/Group-Policies/Terms-Conditions.aspx) or contact your local representative.

## Certifications, Compliances, and Approvals

- ASME V, UV, NV and NPT
- National Board Approval, NB
- NACE MR0175 / ISO15156
- ISO 9001:2015
- ISO 4126
- PED 2014/68/EU (European Pressure Equipment Directive)
- ATEX 2014/34/EU (European Potentially Explosive Atmospheres)
- CRN B51, N285.0 (Canadian Registration)
- CSQL (China Safety Quality License)
- Customs Union Certificates TR CU 010/2001 and TR CU 023/2013
- US Coast Guard
- API 526
- Nuclear Quality - 10 CFR 50 Appendix B, NCA-4000, NQA-1, N285.0 CSA N299.2/3/4"
- First Point Assessment Limited
- KGS (Korea Gas Safety)
- UKCA (United Kingdom) Conformity Assessed)



**CURTISS - WRIGHT** | **VALVES DIVISION**

### Curtiss-Wright, Valves Division

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FE-42C-004  
9/2025