# SERIES 740 SAFETY VALVES




Series 740 safety and relief valve is engineered for heavy-duty industrial usage
Multiple purpose safety and relief valve for all services: Liquid, Steam and Air/Gas.
ASME and National Board Certified for Section VIII as well as CE and CRN Certifications.
Pressures are to 1500 PSI. Available with the full array of metal and seating options.

## SERIES 740

Brass nozzle, stainless steel ring, disc and springs. Brass / bronze body, bonnet.
300 PSI (20.7 Bar) for air/gas and liquid, 250 PSI (17.2 Bar) for steam.
Temperatures -320°F (-196°C) to 406°F (208°C)

## SERIES 741

Stainless steel nozzle, ring, disc and springs. Brass / bronze body, bonnet.
1500 PSI (103.4 Bar) for air/gas and liquid, 300 PSI (20.7 Bar) for steam.
Temperatures -320°F (-196°C) to 425°F (218°C)

## SERIES 742

Stainless steel nozzle, ring, disc, all internals and springs. Carbon steel body, bonnet.
1500 PSI (103.4 Bar) for air/gas and liquid, 300 PSI (20.7 Bar) for steam.
Temperatures -20°F (-29°C) to 800°F (427°C)

## SERIES 743

Stainless steel nozzle, ring, disc, all internals and springs. Stainless steel body, bonnet.
1500 PSI (103.4 Bar) for air/gas and liquid, 300 PSI (20.7 Bar) for steam.
Temperatures -320°F (-196°C) to 800°F (427°C)

**Usages:** Pressure Vessels, Pumps, Hydraulics, Tanks, Steam Systems, Chemical, Cryogenic, Air and Gas Compressors, Separators, by-pass and over pressure protection. Choose for most industrial applications requiring a safety relief valve.

**Features:**

- Full nozzle – Top guided design
- Short, precise blow-down
- Wide choice of inlet/outlet sizes
- Dual-lapped precision seating
- 100% Back-pressure tight
- Drain hole with threaded plug
- Cryogenic compatible

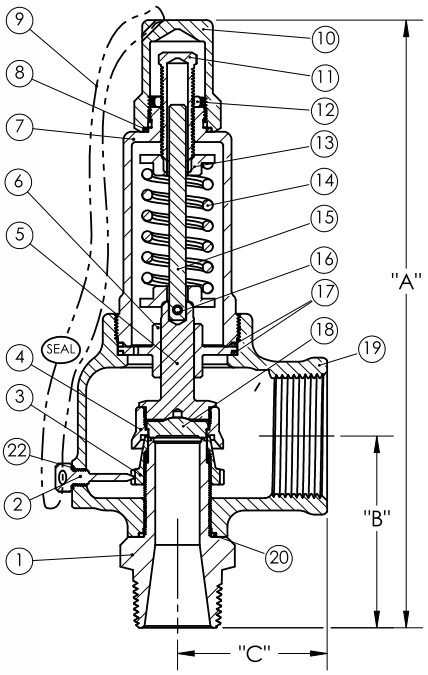
**Options:**

- O-ring seating options (see charts)
- Packed lift lever or Closed cap
- BSPT Piping
- Tri-Clamp Inlets
- Full array of metal options
- API 527 Seating
- Lap Joint Flanges

CE CRN

## SERIES 740 THRU 743

| # | Description | 740 | 741 | 742 | 743 |
|---|---|---|---|---|---|
| 1 | Nozzle | B16 | SA479-316 SS | SA479-316 SS | SA479-316 SS |
| 2 | Lock Screw | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 3 | Lower Ring | SA351-CF8M | SA351-CF8M | SA351-CF8M | SA351-CF8M |
| 4 | Disc Holder | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 5 | Disc Holder Shaft | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 6 | Disc Guide | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 7 | Bonnet | B16 | B16 | SA216-WCB | SA351-CF8M |
| 8 | Hood Seal | PTFE | PTFE | PTFE | PTFE |
| 9 | Seal Wire | Steel / Lead | Steel / Lead | Steel / Lead | Stainless / Lead |
| 10 | Hood | B16 | B16 | SA108-1018 | SA479-316 SS |
| 11 | Pressure Screw | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 12 | Lock Nut | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 13 | Spring Plate | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 14 | Spring | 302/17-7 | 302/17-7 | 302/17-7 | 302/17-7 |
| 15 | Spring Post | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 16 | Spring Pin | 18-8 SS | 18-8 SS | 18-8 SS | 18-8 SS |
| 17 | Guide Seals (2) | PTFE | PTFE | PTFE | PTFE |
| 18 | Disc | SA479-316 SS | SA479-316 SS | SA479-316 SS | SA479-316 SS |
| 19 | Body | B584-C84400 | B584-C84400 | SA216-WCB | SA351-CF8M |
| 20 | Nozzle Seal | PTFE | PTFE | PTFE | PTFE |
| 21 | Nameplate | Stainless | Stainless | Stainless | Stainless |
| 22 | Lock Screw Seal | PTFE | PTFE | PTFE | PTFE |



Shown with Optional Closed Cap

## SERIES 740 THRU 743

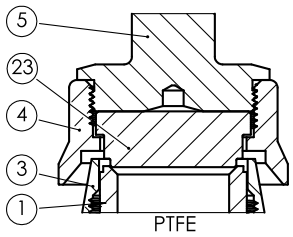
| Orifice | Flow Area In2 (mm2) | Inlet | Outlet | DN | Size I.D. | Dimensions – In. (mm) A Closed Cap | A Lift Lever | B | C | Weight Lb (Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| D | .125 (80.6) | 1/2" | 3/4" | 15 | C | 7-3/8" (187) | 8-1/8" (206) | 2-3/8" (60) | 1-5/8" (41) | 2 (0.9) |
| D | .125 (80.6) | 1/2" | 1" | 15 | D | 7-3/8" (187) | 8-1/8" (206) | 2-3/8" (60) | 1-5/8" (41) | 2 (0.9) |
| D | .125 (80.6) | 3/4" | 3/4" | 20 | E | 7-3/8" (187) | 8-1/8" (206) | 2-3/8" (60) | 1-5/8" (41) | 2 (0.9) |
| D | .125 (80.6) | 3/4" | 1" | 20 | F | 7-3/8" (187) | 8-1/8" (206) | 2-3/8" (60) | 1-5/8" (41) | 2 (0.9) |
| D | .125 (80.6) | 1" | 1" | 25 | G | 7-3/8" (187) | 8-1/8" (206) | 2-3/8" (60) | 1-5/8" (41) | 2 (0.9) |
| E* | .217 (140.0) | 1/2" | 1" | 15 | A | 8-1/8" (206) | 9" (229) | 2-5/8" (67) | 2" (51) | 3 (1.4) |
| E* | .217 (140.0) | 1/2" | 1-1/4" | 15 | B | 8-1/8" (206) | 9" (229) | 2-5/8" (67) | 2" (51) | 3 (1.4) |
| E | .217 (140.0) | 3/4" | 1" | 20 | C | 8-1/8" (206) | 9" (229) | 2-5/8" (67) | 2" (51) | 3 (1.4) |
| E | .217 (140.0) | 3/4" | 1-1/4" | 20 | D | 8-1/8" (206) | 9" (229) | 2-5/8" (67) | 2" (51) | 3 (1.4) |
| E | .217 (140.0) | 1" | 1" | 25 | G | 8-1/8" (206) | 9" (229) | 2-5/8" (67) | 2" (51) | 3 (1.4) |
| E | .217 (140.0) | 1" | 1-1/4" | 25 | F | 8-1/8" (206) | 9" (229) | 2-5/8" (67) | 2" (51) | 3 (1.4) |
| E | .217 (140.0) | 1-1/4" | 1-1/4" | 32 | H | 8-1/8" (206) | 9-1/4" (235) | 2-7/8" (73) | 2" (51) | 3 (1.4) |
| F | .353 (227.7) | 1" | 1-1/2" | 25 | F | 9-1/4" (235) | 9-5/8" (244) | 2-7/8" (73) | 2-1/4" (57) | 5 (2.3) |
| F | .353 (227.7) | 1-1/4" | 1-1/2" | 32 | H | 9-1/4" (235) | 9-5/8" (244) | 2-7/8" (73) | 2-1/4" (57) | 5 (2.3) |
| F | .353 (227.7) | 1-1/2" | 1-1/2" | 40 | G | 9-1/4" (235) | 9-5/8" (244) | 2-7/8" (73) | 2-1/4" (57) | 5 (2.3) |
| G | .554 (357.4) | 1-1/4" | 2" | 32 | G | 10-1/4" (260) | 10-5/8" (270) | 3-3/8" (86) | 2-5/8" (67) | 9 (4.1) |
| G | .554 (357.4) | 1-1/2" | 2" | 40 | H | 10-1/4" (260) | 10-5/8" (270) | 3-3/8" (86) | 2-5/8" (67) | 9 (4.1) |
| G | .554 (357.4) | 2" | 2" | 50 | F | 10-1/4" (260) | 10-5/8" (270) | 3-3/8" (86) | 2-5/8" (67) | 9 (4.1) |
| H* | .923 (595.5) | 1-1/2" | 2" | 40 | F | 11-3/4" (298) | 12-1/8" (308) | 3-1/2" (89) | 2-7/8" (73) | 16 (7.3) |
| H* | .923 (595.5) | 2" | 2" | 50 | G | 11-3/4" (298) | 12-1/8" (308) | 3-1/2" (89) | 2-7/8" (73) | 16 (7.3) |
| H | .923 (595.5) | 1-1/2" | 2-1/2" | 40 | H | 11-3/4" (298) | 12-1/8" (308) | 3-1/2" (89) | 2-7/8" (73) | 16 (7.3) |
| H | .923 (595.5) | 2" | 2-1/2" | 50 | J | 11-3/4" (298) | 12-1/8" (308) | 3-1/2" (89) | 2-7/8" (73) | 16 (7.3) |
| H | .923 (595.5) | 2-1/2" | 2-1/2" | 65 | K | 11-3/4" (298) | 12-1/8" (308) | 3-1/2" (89) | 2-7/8" (73) | 16 (7.3) |
| J | 1.418 (914.8) | 2" | 3" | 50 | J | 14-1/4" (362) | 14-1/2" (368) | 4" (102) | 3-1/4" (83) | 18 (8.2) |
| J | 1.418 (914.8) | 2-1/2" | 3" | 65 | K | 14-1/4" (362) | 14-1/2" (368) | 4" (102) | 3-1/4" (83) | 18 (8.2) |
| J | 1.418 (914.8) | 3" | 3" | 80 | L | 14-1/4" (362) | 14-1/2" (368) | 4" (102) | 3-1/4" (83) | 18 (8.2) |

* - Non-Code

## SEATING MATERIALS

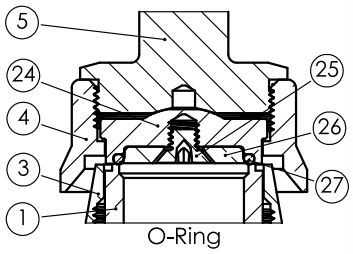
| Material | Names | Min Temp °F (°C) | Max Temp °F (°C) | *Use for: |
|---|---|---|---|---|
| FKM | Viton-A | -13° -(25°) | 446° (230°) | Acetone, Air, Alcohol, Benzine, Butane, Ethylene, Ethylene Glycol, Ethyl Alcohol, Gasoline, Isobutyl Alcohol, Kerosene, Lube Oil, Natural Gas, Naphtha, Nitrogen, Propane, Water, Xylene |
| Nitrile | Buna-N | -40° -(40°) | 250° (121°) | Air, Butane, Carbon Dioxide, Diesel Oil, Ethyl Chloride, Ethyl Ether, Fuel Oil, Gasoline, Helium, Hydrogen Sulphide, Kerosene, Natural Gas, Nitrogen, Oxygen (Gas), Propane |
| EPDM | | -40° -(40°) | 303° (151°) | Steam, Water, Hot Water, Acetone, Beer, Brake Fluid, Hydrogen Gas, Sulfur Dioxide, Acids, Alkalies |
| FFKM | Kalrez® | -10° -(23°) | 550° (288°) | Aromatic Hydrocarbons, Chlorinated Hydrocarbons, Polar Solvents (ketones, esters, ethers), Inorganic and Organic Acids, Water, and Steam (Steam service up to 380°F (193°C) saturated) |
| PTFE | | -300° -(184°) | 450° (232°) | Cryogenic Service including Argon, Carbon Dioxide, Helium, Hydrogen, Nitrogen, Oxygen, Steam |

Note:
This is just a partial listing.
Visit www.aquatrol.com for links to websites with more specific applications.




## PTFE SEATING

| # | DESCRIPTION | 740 | 741 | 742 | 743 |
|---|---|---|---|---|---|
| 1 | Nozzle | B16 | SA479-316 SS | SA479-316 SS | SA479-316 SS |
| 3 | Lower Ring | SA351-CF8M | SA351-CF8M | SA351-CF8M | SA351-CF8M |
| 4 | Disc Holder | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 5 | Disc Holder Shaft | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 23 | Disc | PTFE | PTFE | PTFE | PTFE |




## O-RING SEATING

| # | DESCRIPTION | 740 | 741 | 742 | 743 |
|---|---|---|---|---|---|
| 1 | Nozzle | B16 | SA479-316 SS | SA479-316 SS | SA479-316 SS |
| 3 | Lower Ring | SA351-CF8M | SA351-CF8M | SA351-CF8M | SA351-CF8M |
| 4 | Disc Holder | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 5 | Disc Holder Shaft | B16 | B16 | SA479-316 SS | SA479-316 SS |
| 24 | O-Ring Disc | SA479-316 SS | SA479-316 SS | SA479-316 SS | SA479-316 SS |
| 25 | Screw | 18-8 SS | 18-8 SS | 18-8 SS | 18-8 SS |
| 26 | Disc Insert | SA479-316 SS | SA479-316 SS | SA479-316 SS | SA479-316 SS |
| 27 | O-Ring | Various | Various | Various | Various |

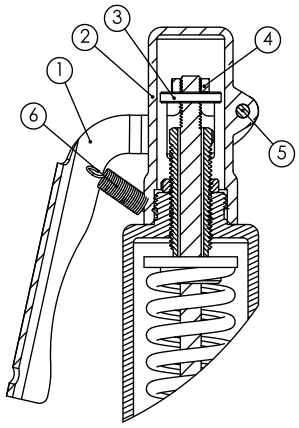
| SERIES | INLET SIZES | METALS | MIN. TEMP °F (°C) | MAX. TEMP[3,4] °F (°C) | MAX PRESSURE[1,2] PSI (BAR) | SERVICES | CERTIFICATIONS |
|---|---|---|---|---|---|---|---|
| 740 | 1/2" to 3" | Brass/Bronze | -320° -(196°) | 406° (208°) | 300 (20.7) | Air / Gas / Steam / Liquid | ASME VIII, CE, CRN |
| 741 | 1/2" to 3" | Stainless/Bronze | -320° -(196°) | 425° (218°) | 1500 (103.4) | Air / Gas / Steam / Liquid | ASME VIII, CE, CRN |
| 742 | 1/2" to 3" | Stainless/Carbon | -20° -(29°) | 800° (427°) | 1500 (103.4) | Air / Gas / Steam / Liquid | ASME VIII, CE, CRN |
| 743 | 1/2" to 3" | Stainless | -320° -(196°) | 800° (427°) | 1500 (103.4) | Air / Gas / Steam / Liquid | ASME VIII, CE, CRN |

1) Maximum set pressure for steam service is 300 PSI (20.7 Bar)
2) Maximum set pressure for steam on Series 740 is 250 PSI (17.2 Bar)
3) Maximum temperatures depend upon seating material.
4) Contact Aquatrol for temps over 425°F (218°C)

# INLET / LIFT LEVER OPTIONS

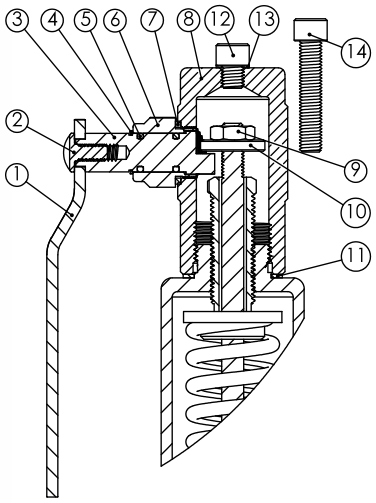
## OPEN LIFT LEVER - STANDARD

| Item | Description | Materials | | |
|---|---|---|---|---|
| | | **740 / 741** | **742** | **743** |
| 1 | Handle | C1018/Plated | C1018/Plated | C1018/Plated |
| 2 | Hood | Anodized Alum. | Anodized Alum. | Anodized Alum. |
| 3 | Lifter Nut | B16 Brass | SA479-316 SS | SA479-316 SS |
| 4 | Jam Nut | 18-8 Stainless | 18-8 Stainless | 18-8 Stainless |
| 5 | Lift Lever Pin | B16 Brass | SA479-316 SS | SA479-316 SS |
| 6 | Spring | Optional Stainless Anti-Vibration Spring | | |

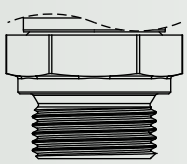


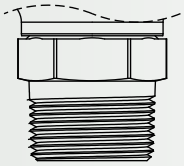

## PACKED LIFT LEVER - OPTION

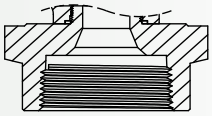
| Item | Description | Materials | | |
|---|---|---|---|---|
| | | **740 / 741** | **742** | **743** |
| 1 | Handle | B16 Brass | B16 Brass/Plated | B16 Brass/Plated |
| 2 | Handle Screw | Steel/Plated | Steel/Plated | Steel/Plated |
| 3 | Cam | B16 Brass | SA479-316 SS | SA479-316 SS |
| 4 | Retaining Ring | Steel/Plated | 17-7 SS | 17-7 SS |
| 5 | O-RIngs | Viton | Viton | Viton |
| 6 | Cam Nut | B16 Brass | SA479-316 SS | SA479-316 SS |
| 7 | O-RIng | PTFE | PTFE | PTFE |
| 8 | Hood | B16 Brass | SA108-C1018 | SA479-316 SS |
| 9 | Jam Nut | 18-8 Stainless | 18-8 Stainless | 18-8 Stainless |
| 10 | Lifter Nut | B16 Brass | SA479-316 SS | SA479-316 SS |
| 11 | Hood Seal | PTFE | PTFE | PTFE |
| 12 | Plug | 18-8 Stainless | 12,13,14 are part of the additional Gag Screw option | |
| 13 | Seal | PTFE | | |
| 14 | Gag Screw | 18-8 Stainless | | |

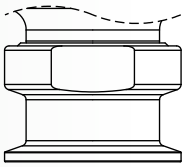



## Inlet Options:


BSPP


NPT - BSPT


NPT - BSPT


Tri-Clamp

Unless otherwise specified, All valves will be shipped with the standard open lift lever option.
Lifting Device as required by the ASME, ASME Section VIII: UG136(3)
Each pressure relief valve on air, water at the valve inlet that exceeds 140°F (60°C), excluding over-pressure or relief events, or steam service shall have a substantial lifting device which when activated will release the seating force on the disc when the pressure relief valve is subjected to a pressure of at least 75% of the set pressure of the valve.

## SERIES 740 THRU 743 - THREADED INLET – PART NUMBERS

| 740 | | ED | 1 | V | 3 | J | 1 | 125 |
|---|---|---|---|---|---|---|---|---|
| **Series** | **Description** | **Orifice/Size ID** | **Connection** | **Seating** | **Cap** | **Service** | **Options** | **Set** |
| ***740*** | ***Brass/Bronze*** | DC- 1/2" x 3/4" | ***1- NPT MxF*** | M- Metal | 1- Lift lever | K- ASME VIII-Air/gas | ***1- None*** | ***Ex.125*** |
| 741 | 316 SS / Bronze | DD- 1/2" x 1" | 2- NPT FxF | P- PTFE | 2- Closed cap | L- ASME VIII-Steam | 2- Chrome Plating | |
| 742 | 316 SS / Carbon | DE- 3/4" x 3/4" | 3- BSPT MxF | B- Buna | ***3- Packed lift lever*** | ***J- ASME VIII-Liquid*** | 3- O2 Cleaned | |
| 743 | 316 SS / 316 SS | DF- 3/4" x 1" | 4- BSPT FxF | ***V- Viton*** | 4- Lift Lever with Anti-Vibe Spring | P- CE - Air/gas | 4- API Seating | |
| 744 | Monel / Bronze | DG- 1" x 1" | 8- BSPP MxF | E- EPDM | | E- CE - Steam | 5- O2 Clean / API Seating | |
| 745 | Monel / Carbon | EA-* 1/2" x 1" | 9- BSPP FxF | K- Kalrez | 5- Closed Cap with Test Gag | D- CE - Liquid | | |
| 746 | Monel / 316 SS | EB-* 1/2" x 1-1/4" | | | | N- Non-code Air/gas | 6- O2 Clean / Chrome | |
| 747* | LF / LF | EC- 3/4" x 1" | | | 6- Packed Lever with Test Gag | T- Non-code Steam | | |
| 748* | 316 SS / LF | ***ED- 3/4" x 1-1/4"*** | | | | U- Non-code Liquid | 7- O2 / API / Chrome | |
| | | EG- 1" x 1" | | | | | 8- API / Chrome | |
| | | EF- 1" x 1-1/4" | | | | | | |
| | | EH- 1-1/4" x 1-1/4" | | | | | | |
| | | FF- 1" x 1-1/2" | | | | | | |
| | | FH- 1-1/4" x 1-1/2" | | | | | | |
| | | FG- 1-1/2" x 1-1/2" | | | | | | |
| | | GG- 1-1/4" x 2" | | | | | | |
| | | GH- 1-1/2" x 2" | | | | | | |
| | | GF- 2" x 2" | | | | | | |
| | | HF-* 1-1/2" x 2" | | | | | | |
| | | HG-* 2" x 2" | | | | | | |
| | | HH- 1-1/2" x 2-1/2" | | | | | | |
| | | HJ- 2" x 2-1/2" | | | | | | |
| | | HK- 2-1/2" x 2-1/2" | | | | | | |
| | | JJ- 2" x 3" | | | | | | |
| | | JK- 2-1/2" x 3" | | | | | | |
| | | JL- 3" x 3" | | | | | | |

**Note:**
**This chart is for threaded inlets only.**

* - Non-Code

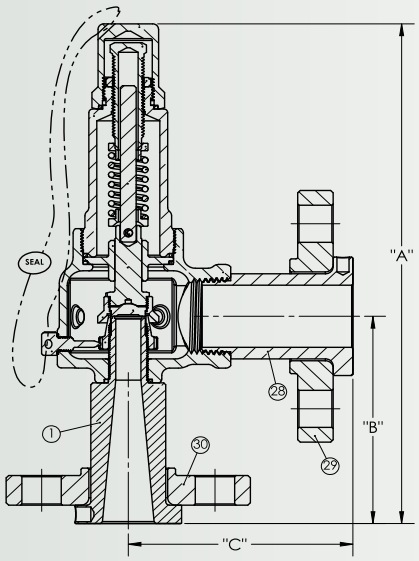
## SERIES 740 THRU 743 - TRI-CLAMP INLET – PART NUMBERS

| 743 | | ED | 5 | M | 1 | L | 1 | 125 |
|---|---|---|---|---|---|---|---|---|
| **Series** | **Description** | **Orifice/Size ID** | **Connection** | **Seating** | **Cap** | **Service** | **Options** | **Set** |
| 741 | 316 SS/Bronze | DE- 3/4" x 3/4" | ***5- Tri-clamp x NPT*** | ***M- Metal*** | ***1- Lift lever*** | K- ASME VIII - Air/gas | ***1- None*** | ***Ex.125*** |
| 742 | 316 SS/Carbon | DF- 3/4" x 1" | 6- Tri-clamp x BSPT | P- PTFE | 2- Closed cap | ***L- ASME VIII - Steam*** | 2- Chrome Plating | |
| ***743*** | ***316 Stainless*** | DH- 1" x 3/4" | | B- Buna | 3- Packed lift lever | J- ASME VIII - Liquid | 3- O2 Cleaned | |
| | | DG- 1" x 1" | | V- Viton | 4- Lift Lever with Anti-Vibe Spring | P- CE - Air/gas | 4- API Seating | |
| | | EC- 3/4" x 1" | | E- EPDM | | E- CE - Steam | 5- O2 Clean / API Seating | |
| | | ***ED- 3/4" x 1-1/4"*** | | K- Kalrez | 5- Closed Cap with Test Gag | D- CE - Liquid | | |
| | | EG- 1" x 1" | | | | N- Non-code Air/gas | 6- O2 Clean / Chrome | |
| | | EF- 1" x 1-1/4" | | | 6- Packed Lever with Test Gag | T- Non-code Steam | | |
| | | EJ- 1-1/2" x 1" | | | | U- Non-code Liquid | 7- O2 / API / Chrome | |
| | | EK- 1-1/2" x 1-1/4" | | | | | 8- API / Chrome | |
| | | FF- 1" x 1-1/2" | | | | | | |
| | | FG- 1-1/2" x 1-1/2" | | | | | | |
| | | GH- 1-1/2" x 2" | | | | | | |
| | | GF- 2" x 2" | | | | | | |
| | | HF-* 1-1/2" x 2" | | | | | | |
| | | HG-* 2" x 2" | | | | | | |
| | | HH- 1-1/2" x 2-1/2" | | | | | | |
| | | HJ- 2" x 2-1/2" | | | | | | |
| | | HK- 2-1/2" x 2-1/2" | | | | | | |
| | | JJ- 2" x 3" | | | | | | |
| | | JK- 2-1/2" x 3" | | | | | | |
| | | JL- 3" x 3" | | | | | | |

**Note:**
**This chart is for Tri-Clamp inlets only**

* - Non-Code

# SERIES 742-743 FLANGE OPTIONS




## SERIES 742 / 743 FLANGE OPTION

| # | Description | Materials | |
|---|---|---|---|
| | | 742 | 743 |
| 1 | Lap Joint Nozzle | SA479-316 SS | SA479-316 SS |
| 28 | Outlet Fitting | SA479-316 SS | SA479-316 SS |
| 29 | Lap Joint Flange | CS A-105 | A182-F316 |
| 30 | Lap Joint Flange | CS A-105 | A182-F316 |

See page 4 for basic cutaway view
Options Note: B + C dimensions are customizable

## SERIES 742 AND 743 LAP JOINT FLANGE

| Orifice | Flow Area In2 (mm2) | Inlet | Outlet | DN | Size I.D. | Dimensions – In. (mm) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Overall Height (A) | | Center to Face | |
| | | | | | | Closed Cap | Lift Lever | Inlet (B) | Outlet (C) |
| D | .125 (80.6) | 1/2" | 1" | 15 | D | 9-5/8" (244) | 10-1/4" (260) | 4-5/8" (117) | 4-1/4" (108) |
| D | .125 (80.6) | 3/4" | 1" | 20 | F | 9-5/8" (244) | 10-1/4" (260) | 4-5/8" (117) | 4-1/4" (108) |
| D | .125 (80.6) | 1" | 1" | 25 | G | 11-1/2" (292) | 12-1/8" (308) | 6-1/2" (165) | 4-1/4" (108) |
| E | .217 (140.0) | 3/4" | 1" | 20 | C | 10-1/4" (260) | 10-7/8" (276) | 4-5/8" (117) | 4-1/4" (108) |
| E | .217 (140.0) | 3/4" | 1-1/4" | 20 | D | 10-1/4" (260) | 10-7/8" (276) | 4-5/8" (117) | 4-1/4" (108) |
| E | .217 (140.0) | 1" | 1-1/4" | 25 | F | 10-1/4" (260) | 10-7/8" (276) | 4-5/8" (117) | 4-1/4" (108) |
| F | .353 (227.7) | 1" | 1-1/2" | 25 | F | 11" (279) | 11-5/8" (295) | 4-5/8" (117) | 4-5/8" (117) |
| F | .353 (227.7) | 1-1/2" | 1-1/2" | 40 | G | 11" (279) | 11-5/8" (295) | 4-5/8" (117) | 4-5/8" (117) |
| G | .554 (357.4) | 1-1/4" | 2" | 32 | G | 12-3/8" (314) | 13" (330) | 5-5/8" (143) | 4-3/4" (121) |
| G | .554 (357.4) | 1-1/2" | 2" | 40 | H | 12-3/8" (314) | 13" (330) | 5-5/8" (143) | 4-3/4" (121) |
| G | .554 (357.4) | 2" | 2" | 50 | F | 14" (356) | 14-1/2" (368) | 7-1/8" (181) | 6-1/2" (165) |
| H | .923 (595.5) | 1-1/2" | 2-1/2" | 40 | H | 14" (356) | 14-5/8" (371) | 5-7/8" (149) | 5-3/8" (137) |
| J | 1.418 (914.8) | 2" | 3" | 50 | J | 16-5/8" (422) | 17-1/8" (435) | 6-1/2" (165) | 6" (152) |

## SERIES 742 AND 743 – LAP JOINT FLANGE – PART NUMBERS

| 742 | | ED | A | V | 3 | J | 1 | A | 125 |
|---|---|---|---|---|---|---|---|---|---|
| Series | Descr. | Orifice/Size ID | Connection | Seating | Cap | Service | Options | Face finish | Set |
| ***742*** | ***316 SS/ Carbon*** | DC- 1/2" x 3/4" | ***A- 150# x 150#*** | M- Metal | 1- Lift lever | K- ASME VIII-Air/gas | ***1- None*** | ***A- Serrated x Serrated*** | ***Ex.125*** |
| 743 | 316 S.S. | DD- 1/2" x 1" | B- 300# x 150# | P- PTFE | 2- Closed cap | L- ASME VIII-Steam | 2- Chrome Plated | B- Flat x Serrated | |
| 745 | Monel / Carbon | DF- 3/4" x 1" | C- 600# x 150# | B- Buna | ***3- Packed lift lever*** | ***J- ASME VIII-Liquid*** | 3- O2 Cleaned | C- Flat x Flat | |
| 746 | Monel / 316 SS | EC- 3/4" x 1" | D- 900# x 150# | ***V- Viton*** | 4- Lift Lever with Anti-Vibe Spring | P- CE - Air/gas | 4- API Seating | D- Serrated x Flat | |
| | | ***ED- 3/4" x 1-1/4"*** | E- 150# x FNPT | E- EPDM | | E- CE - Steam | 5- O2 / API | | |
| | | FF- 1" x 1-1/2" | F- 300# x FNPT | K- Kalrez | 5- Closed Cap with Test Gag | D- CE - Liquid | 6- O2 / Chrome | | |
| | | FG- 1-1/2" x 1-1/2" | G- 600# x FNPT | | | N- Non-code Air/gas | 7- O2 / API / Chrome | | |
| | | GG- 1-1/4" x 2" | H- 900# x FNPT | | 6- Packed Lever with Test Gag | T- Non-code Steam | | | |
| | | HH- 1-1/2" x 2-1/2" | | | | U- Non-code Liquid | 8- API / Chrome | | |
| | | JJ- 2" x 3" | | | | | | | |

Other sizes and options available - Contact us for details

# LIQUID CAPACITY

## SERIES 740 THRU 743 CAPACITIES
## LIQUID GPM – ASME SECTION VIII

| | Orifice area in^2 | | Flow Coefficient = .791 | | | |
|---|---|---|---|---|---|---|
| Set PSI | "D" .126 | "E" .217 | "F" .353 | "G" .554 | "H" .923 | "J" 1.418 |
| 5 | 11 | 18 | 30 | 47 | 78 | 121 |
| 10 | 14 | 24 | 38 | 60 | 100 | 154 |
| 15 | 16 | 28 | 45 | 71 | 118 | 181 |
| 20 | 18 | 31 | 51 | 80 | 133 | 204 |
| 25 | 20 | 35 | 56 | 88 | 147 | 226 |
| 30 | 22 | 37 | 61 | 96 | 159 | 245 |
| 35 | 23 | 40 | 66 | 103 | 172 | 264 |
| 40 | 25 | 43 | 70 | 110 | 184 | 283 |
| 45 | 27 | 46 | 75 | 117 | 195 | 300 |
| 50 | 28 | 48 | 79 | 123 | 206 | 316 |
| 55 | 29 | 51 | 83 | 130 | 216 | 332 |
| 60 | 31 | 53 | 86 | 135 | 225 | 346 |
| 65 | 32 | 55 | 90 | 141 | 235 | 360 |
| 70 | 33 | 57 | 93 | 146 | 243 | 374 |
| 75 | 34 | 59 | 96 | 151 | 252 | 387 |
| 80 | 36 | 61 | 100 | 156 | 260 | 400 |
| 85 | 37 | 63 | 103 | 161 | 268 | 412 |
| 90 | 38 | 65 | 106 | 166 | 276 | 424 |
| 95 | 39 | 67 | 108 | 170 | 284 | 436 |
| 100 | 40 | 68 | 111 | 175 | 291 | 447 |
| 125 | 44 | 76 | 124 | 195 | 325 | 500 |
| 150 | 49 | 84 | 136 | 214 | 356 | 547 |
| 175 | 53 | 90 | 147 | 231 | 385 | 591 |
| 200 | 56 | 97 | 157 | 247 | 411 | 632 |
| 225 | 60 | 103 | 167 | 262 | 436 | 671 |
| 250 | 63 | 108 | 176 | 276 | 460 | 707 |
| 300 | 69 | 118 | 193 | 302 | 504 | 774 |
| 350 | 74 | 128 | 208 | 327 | 544 | 836 |
| 400 | 79 | 137 | 223 | 349 | 582 | 894 |
| 450 | 84 | 145 | 236 | 370 | 617 | 948 |
| 500 | 89 | 153 | 249 | 391 | 651 | 1000 |
| 550 | 93 | 160 | 261 | 410 | 682 | 1048 |
| 600 | 97 | 168 | 273 | 428 | 713 | 1095 |
| 650 | 101 | 174 | 284 | 445 | | |
| 700 | 105 | 181 | 294 | 462 | | |
| 750 | 109 | 187 | 305 | | | |
| 800 | 112 | 193 | | | | |
| 850 | 116 | 199 | | | | |
| 900 | 119 | 205 | | | | |
| 950 | 122 | 211 | | | | |
| 1000 | 126 | 216 | | | | |
| 1100 | 132 | 227 | | | | |
| 1200 | 138 | 237 | | | | |
| 1300 | 143 | 247 | | | | |
| 1400 | 149 | 256 | | | | |
| 1500 | 154 | 265 | | | | |

## SERIES 740 THRU 743 CAPACITIES
## LIQUID LPM – ASME SECTION VIII

| | Orifice area mm^2 | | Flow Coefficient = .791 | | | |
|---|---|---|---|---|---|---|
| Set Bar | "D" 81.3 | "E" 140.0 | "F" 227.7 | "G" 357.4 | "H" 595.5 | "J" 914.8 |
| 0.2 | 35 | 60 | 98 | 153 | 255 | 392 |
| 0.5 | 46 | 79 | 129 | 202 | 336 | 517 |
| 1 | 60 | 103 | 168 | 264 | 439 | 675 |
| 2 | 81 | 140 | 227 | 357 | 594 | 913 |
| 3 | 99 | 171 | 278 | 436 | 726 | 1116 |
| 4 | 115 | 197 | 321 | 503 | 839 | 1289 |
| 5 | 128 | 220 | 359 | 563 | 938 | 1441 |
| 6 | 140 | 242 | 393 | 617 | 1027 | 1578 |
| 7 | 151 | 261 | 424 | 666 | 1110 | 1705 |
| 8 | 162 | 279 | 454 | 712 | 1186 | 1822 |
| 9 | 172 | 296 | 481 | 755 | 1258 | 1933 |
| 10 | 181 | 312 | 507 | 796 | 1326 | 2038 |
| 11 | 190 | 327 | 532 | 835 | 1391 | 2137 |
| 12 | 198 | 342 | 556 | 872 | 1453 | 2232 |
| 13 | 206 | 356 | 578 | 908 | 1512 | 2323 |
| 14 | 214 | 369 | 600 | 942 | 1569 | 2411 |
| 15 | 222 | 382 | 621 | 975 | 1624 | 2496 |
| 16 | 229 | 394 | 642 | 1007 | 1678 | 2577 |
| 17 | 236 | 407 | 661 | 1038 | 1729 | 2657 |
| 18 | 243 | 418 | 681 | 1068 | 1779 | 2734 |
| 19 | 250 | 430 | 699 | 1097 | 1828 | 2809 |
| 20 | 256 | 441 | 717 | 1126 | 1876 | 2882 |
| 22 | 269 | 462 | 752 | 1181 | 1967 | 3022 |
| 24 | 280 | 483 | 786 | 1233 | 2055 | 3157 |
| 26 | 292 | 503 | 818 | 1284 | 2139 | 3286 |
| 30 | 314 | 540 | 879 | 1379 | 2297 | 3529 |
| 35 | 339 | 583 | 949 | 1489 | 2481 | 3812 |
| 40 | 362 | 624 | 1014 | 1592 | 2653 | 4075 |
| 41.38 | 368 | 634 | 1032 | 1619 | 2698 | 4145 |
| 45 | 384 | 661 | 1076 | 1689 | | |
| 48.27 | 398 | 685 | 1114 | 1749 | | |
| 51.72 | 412 | 709 | 1154 | | | |
| 60 | 443 | 764 | | | | |
| 70 | 479 | 825 | | | | |
| 80 | 512 | 882 | | | | |
| 90 | 543 | 935 | | | | |
| 103.42 | 582 | 1003 | | | | |

Capacities are at 3 PSI or 10% (whichever is greater) over set pressure
Set pressures below 15 PSI (1.03 Bar) are NON-Code.
Maximum back-pressure is 10% of set pressure or 50 PSI (3.45 Bar) whichever is less.

Lifting Device as required by the ASME,
ASME Section VIII: UG136(3)
Each pressure relief valve on air, water at the valve inlet that exceeds 140°F (60°C), excluding over-pressure or relief events, or steam service shall have a substantial lifting device which when activated will release the seating force on the disc when the pressure relief valve is subjected to a pressure of at least 75% of the set pressure of the valve.

## SERIES 740 THRU 743 CAPACITIES
## AIR SCFM – ASME SECTION VIII

| Set PSI | Orifice area in^2 Flow Coefficient = .878 | | | | | |
|---|---|---|---|---|---|---|
| | "D" .126 | "E" .217 | "F" .353 | "G" .554 | "H" .923 | "J" 1.418 |
| 5 | 46 | 79 | 129 | 202 | 337 | 518 |
| 10 | 56 | 97 | 157 | 247 | 411 | 632 |
| 15 | 66 | 114 | 186 | 292 | 486 | 746 |
| 20 | 76 | 132 | 214 | 336 | 560 | 860 |
| 25 | 87 | 149 | 243 | 381 | 634 | 975 |
| 30 | 97 | 167 | 271 | 425 | 709 | 1089 |
| 35 | 108 | 186 | 302 | 474 | 790 | 1214 |
| 40 | 119 | 205 | 333 | 523 | 872 | 1340 |
| 45 | 130 | 224 | 365 | 572 | 954 | 1465 |
| 50 | 141 | 243 | 396 | 621 | 1035 | 1591 |
| 55 | 152 | 263 | 427 | 671 | 1117 | 1716 |
| 60 | 164 | 282 | 458 | 720 | 1199 | 1842 |
| 65 | 175 | 301 | 490 | 769 | 1281 | 1967 |
| 70 | 186 | 320 | 521 | 818 | 1362 | 2093 |
| 75 | 197 | 339 | 552 | 867 | 1444 | 2218 |
| 80 | 208 | 359 | 583 | 916 | 1526 | 2344 |
| 85 | 219 | 378 | 615 | 965 | 1607 | 2469 |
| 90 | 231 | 397 | 646 | 1014 | 1689 | 2595 |
| 95 | 242 | 416 | 677 | 1063 | 1771 | 2720 |
| 100 | 253 | 436 | 708 | 1112 | 1852 | 2846 |
| 125 | 309 | 532 | 865 | 1357 | 2261 | 3474 |
| 150 | 364 | 628 | 1021 | 1602 | 2670 | 4101 |
| 175 | 420 | 724 | 1177 | 1847 | 3078 | 4729 |
| 200 | 476 | 820 | 1333 | 2093 | 3487 | 5356 |
| 225 | 532 | 916 | 1490 | 2338 | 3895 | 5984 |
| 250 | 587 | 1012 | 1646 | 2583 | 4304 | 6612 |
| 300 | 699 | 1204 | 1958 | 3073 | 5121 | 7867 |
| 350 | 811 | 1396 | 2271 | 3564 | 5938 | 9122 |
| 400 | 922 | 1588 | 2583 | 4054 | 6755 | 10377 |
| 450 | 1034 | 1780 | 2896 | 4545 | 7572 | 11632 |
| 500 | 1145 | 1972 | 3208 | 5035 | 8389 | 12888 |
| 550 | 1257 | 2164 | 3521 | 5526 | 9206 | 14143 |
| 600 | 1368 | 2356 | 3833 | 6016 | 10023 | 15398 |
| 650 | 1480 | 2549 | 4146 | 6506 | | |
| 700 | 1591 | 2741 | 4458 | 6997 | | |
| 750 | 1703 | 2933 | 4771 | | | |
| 800 | 1814 | 3125 | | | | |
| 850 | 1926 | 3317 | | | | |
| 900 | 2037 | 3509 | | | | |
| 950 | 2149 | 3701 | | | | |
| 1000 | 2261 | 3893 | | | | |
| 1100 | 2484 | 4277 | | | | |
| 1200 | 2707 | 4661 | | | | |
| 1300 | 2930 | 5046 | | | | |
| 1400 | 3153 | 5430 | | | | |
| 1500 | 3376 | 5814 | | | | |

## SERIES 740 THRU 743 CAPACITIES
## AIR NM3/HR – ASME SECTION VIII

| Set Bar | Orifice area mm^2 Flow Coefficient = .878 | | | | | |
|---|---|---|---|---|---|---|
| | "D" 81.3 | "E" 140.0 | "F" 227.7 | "G" 357.4 | "H" 595.5 | "J" 914.8 |
| 0.2 | 71 | 122 | 199 | 312 | 520 | 799 |
| 0.5 | 86 | 148 | 241 | 378 | 630 | 967 |
| 1 | 111 | 191 | 311 | 488 | 813 | 1248 |
| 2 | 161 | 277 | 451 | 707 | 1179 | 1811 |
| 3 | 215 | 371 | 604 | 948 | 1579 | 2425 |
| 4 | 270 | 466 | 758 | 1189 | 1981 | 3044 |
| 5 | 325 | 560 | 912 | 1431 | 2384 | 3662 |
| 6 | 380 | 655 | 1066 | 1672 | 2786 | 4280 |
| 7 | 435 | 750 | 1220 | 1914 | 3189 | 4899 |
| 8 | 490 | 844 | 1373 | 2156 | 3591 | 5517 |
| 9 | 545 | 939 | 1527 | 2397 | 3994 | 6136 |
| 10 | 600 | 1034 | 1681 | 2639 | 4396 | 6754 |
| 11 | 655 | 1128 | 1835 | 2880 | 4799 | 7373 |
| 12 | 710 | 1223 | 1989 | 3122 | 5201 | 7991 |
| 13 | 765 | 1318 | 2143 | 3364 | 5604 | 8609 |
| 14 | 820 | 1412 | 2297 | 3605 | 6007 | 9228 |
| 15 | 875 | 1507 | 2451 | 3847 | 6409 | 9846 |
| 16 | 930 | 1601 | 2605 | 4088 | 6812 | 10465 |
| 17 | 985 | 1696 | 2759 | 4330 | 7214 | 11083 |
| 18 | 1040 | 1791 | 2913 | 4572 | 7617 | 11702 |
| 19 | 1095 | 1885 | 3067 | 4813 | 8019 | 12320 |
| 20 | 1150 | 1980 | 3221 | 5055 | 8422 | 12938 |
| 22 | 1260 | 2169 | 3529 | 5538 | 9227 | 14175 |
| 24 | 1369 | 2359 | 3837 | 6021 | 10032 | 15412 |
| 26 | 1479 | 2548 | 4145 | 6505 | 10837 | 16649 |
| 30 | 1699 | 2926 | 4760 | 7471 | 12447 | 19123 |
| 35 | 1974 | 3400 | 5530 | 8679 | 14460 | 22215 |
| 40 | 2249 | 3873 | 6300 | 9887 | 16473 | 25307 |
| 41.38 | 2325 | 4003 | 6512 | 10221 | 17028 | 26160 |
| 45 | 2523 | 4346 | 7070 | 11095 | | |
| 48.27 | 2703 | 4655 | 7573 | 11885 | | |
| 51.72 | 2893 | 4982 | 8104 | | | |
| 60 | 3348 | 5766 | | | | |
| 70 | 3897 | 6712 | | | | |
| 80 | 4447 | 7658 | | | | |
| 90 | 4996 | 8605 | | | | |
| 103.42 | 5734 | 9875 | | | | |

Capacities are at 3 PSI or 10% (whichever is greater) over set pressure
Set pressures below 15 PSI (1.03 Bar) are NON-Code.
Maximum back-pressure is 10% of set pressure or 50 PSI (3.45 Bar) whichever is less.

Lifting Device as required by the ASME,
ASME Section VIII: UG136(3)
Each pressure relief valve on air, water at the valve inlet that exceeds 140°F (60°C), excluding over-pressure or relief events, or steam service shall have a substantial lifting device which when activated will release the seating force on the disc when the pressure relief valve is subjected to a pressure of at least 75% of the set pressure of the valve.

# STEAM CAPACITY

## SERIES 740 THRU 743 CAPACITIES
## STEAM LBS/HR – ASME SECTION VIII

| Set PSI | Orifice area in^2 Flow Coefficient = .878 | | | | | |
|---|---|---|---|---|---|---|
| | "D" .126 | "E" .217 | "F" .353 | "G" .554 | "H" .923 | "J" 1.418 |
| 5 | 129 | 223 | 362 | 569 | 947 | 1455 |
| 10 | 158 | 272 | 442 | 694 | 1156 | 1776 |
| 15 | 186 | 321 | 522 | 819 | 1365 | 2097 |
| 20 | 215 | 370 | 602 | 944 | 1573 | 2417 |
| 25 | 243 | 419 | 682 | 1070 | 1782 | 2738 |
| 30 | 272 | 468 | 761 | 1195 | 1991 | 3058 |
| 35 | 303 | 522 | 849 | 1333 | 2220 | 3411 |
| 40 | 334 | 576 | 937 | 1470 | 2450 | 3764 |
| 45 | 366 | 630 | 1025 | 1608 | 2679 | 4116 |
| 50 | 397 | 684 | 1113 | 1746 | 2909 | 4469 |
| 55 | 428 | 738 | 1200 | 1884 | 3138 | 4822 |
| 60 | 460 | 792 | 1288 | 2022 | 3368 | 5174 |
| 65 | 491 | 846 | 1376 | 2159 | 3598 | 5527 |
| 70 | 522 | 900 | 1464 | 2297 | 3827 | 5880 |
| 75 | 554 | 954 | 1551 | 2435 | 4057 | 6232 |
| 80 | 585 | 1008 | 1639 | 2573 | 4286 | 6585 |
| 85 | 616 | 1062 | 1727 | 2710 | 4516 | 6938 |
| 90 | 648 | 1116 | 1815 | 2848 | 4745 | 7290 |
| 95 | 679 | 1170 | 1903 | 2986 | 4975 | 7643 |
| 100 | 710 | 1224 | 1990 | 3124 | 5204 | 7995 |
| 125 | 867 | 1493 | 2429 | 3813 | 6352 | 9759 |
| 150 | 1024 | 1763 | 2868 | 4502 | 7500 | 11522 |
| 175 | 1180 | 2033 | 3307 | 5190 | 8648 | 13285 |
| 200 | 1337 | 2303 | 3746 | 5879 | 9795 | 15048 |
| 225 | 1494 | 2573 | 4185 | 6568 | 10943 | 16812 |
| 250 | 1651 | 2843 | 4624 | 7257 | 12091 | 18575 |
| 275 | 1807 | 3112 | 5063 | 7946 | 13238 | 20338 |
| 300 | 1964 | 3382 | 5502 | 8635 | 14386 | 22101 |

## SERIES 740 THRU 743 CAPACITIES
## STEAM KG/HR – ASME SECTION VIII

| Set Bar | Orifice area mm^2 Flow Coefficient = .878 | | | | | |
|---|---|---|---|---|---|---|
| | "D" 81.3 | "E" 140.0 | "F" 227.7 | "G" 357.4 | "H" 595.5 | "J" 914.8 |
| 0.2 | 53 | 92 | 149 | 234 | 390 | 599 |
| 0.5 | 64 | 111 | 181 | 284 | 472 | 726 |
| 1 | 83 | 143 | 233 | 366 | 610 | 936 |
| 2 | 121 | 208 | 338 | 531 | 884 | 1358 |
| 3 | 162 | 278 | 453 | 711 | 1184 | 1819 |
| 4 | 203 | 349 | 568 | 892 | 1486 | 2283 |
| 5 | 244 | 420 | 684 | 1073 | 1788 | 2747 |
| 6 | 285 | 491 | 799 | 1254 | 2090 | 3211 |
| 7 | 327 | 562 | 915 | 1436 | 2392 | 3675 |
| 8 | 368 | 633 | 1030 | 1617 | 2694 | 4139 |
| 9 | 409 | 704 | 1146 | 1798 | 2996 | 4603 |
| 10 | 450 | 775 | 1261 | 1979 | 3298 | 5066 |
| 11 | 491 | 846 | 1377 | 2161 | 3600 | 5530 |
| 12 | 533 | 917 | 1492 | 2342 | 3902 | 5994 |
| 13 | 574 | 988 | 1608 | 2523 | 4204 | 6458 |
| 14 | 615 | 1059 | 1723 | 2704 | 4506 | 6922 |
| 15 | 656 | 1130 | 1839 | 2886 | 4808 | 7386 |
| 16 | 698 | 1201 | 1954 | 3067 | 5110 | 7850 |
| 17 | 739 | 1272 | 2070 | 3248 | 5411 | 8314 |
| 18 | 780 | 1343 | 2185 | 3429 | 5713 | 8777 |
| 19 | 821 | 1414 | 2301 | 3611 | 6015 | 9241 |
| 20 | 862 | 1485 | 2416 | 3792 | 6317 | 9705 |
| 20.7 | 891 | 1535 | 2497 | 3919 | 6529 | 10030 |

Capacities are at 3 PSI or 10% (whichever is greater) over set pressure
Set pressures below 15 PSI (1.03 Bar) are NON-Code.
Maximum back-pressure is 10% of set pressure or 50 PSI (3.45 Bar) whichever is less.
Series 740 Maximum set pressure on steam is 250 P.S.I. (17.2 Bar)

Lifting Device as required by the ASME,
ASME Section VIII: UG136(3)
Each pressure relief valve on air, water at the valve inlet that exceeds 140°F (60°C), excluding over-pressure or relief events, or steam service shall have a substantial lifting device which when activated will release the seating force on the disc when the pressure relief valve is subjected to a pressure of at least 75% of the set pressure of the valve.