

# 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 psig. Available with the full array of metal and seating options.

**SERIES  
740**



## SERIES 740

Brass nozzle, stainless steel ring, disc and springs. Brass / bronze body, bonnet. 350 psig (24.1 barg) for air/gas and liquid, 250 psig (17.2 barg) 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 psig (103.4 barg) for air/gas and liquid, 300 psig (20.7 barg) 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 psig (103.4 barg) for air/gas and liquid, 300 psig (20.7 barg) for steam. Temperatures -20°F (-29°C) to 800°F (427°C)

**SERIES  
743**



## SERIES 743

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

## SERIES 744 THRU 748

Specialty metals with distinct options, contact Aquatrol for specs, dimensions and cut sheets.

**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:**

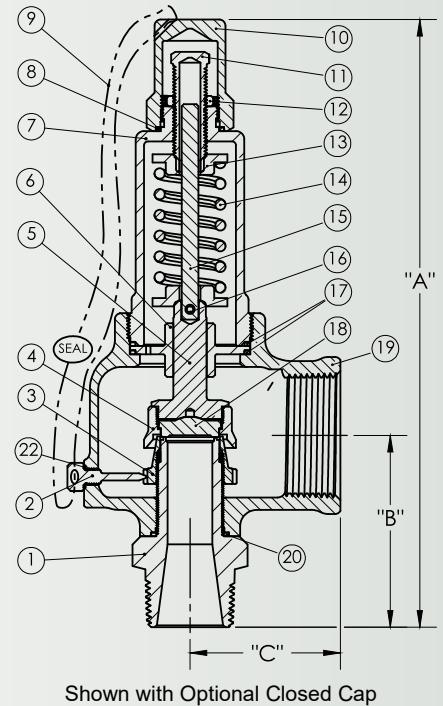
- O-ring seating options (see charts)
- Packed lift lever or Closed cap
- BSPT and BSPP Piping
- Tri-Clamp Inlets
- Full array of metal options
- API 527 Seating
- Lap Joint Flanges
- Lead-Free (D,E, and F orifice only)
- O2 Cleaning

<sup>1</sup>For temperatures above 650°F contact aquatrol for high-temp springs



## SERIES 740 THRU 743

#	DESCRIPTION	740	741	742	743
1	Nozzle	B16 Brass	SA479-316 SS	SA479-316 SS	SA479-316 SS
2	Lock Screw	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
3	Lower Ring	SA351-CF8M	SA351-CF8M	SA351-CF8M	SA351-CF8M
4	Disc Holder	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
5	Disc Holder Shaft	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
6	Disc Guide	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
7	Bonnet	B16 Brass	B16 Brass	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 Brass	B16 Brass	SA108-1018	SA479-316 SS
11	Pressure Screw	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
12	Lock Nut	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
13	Spring Plate	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
14	Spring	302/17-7 SS	302/17-7 SS	302/17-7 SS	302/17-7 SS
15	Spring Post	B16 Brass	B16 Brass	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



## SERIES 740 THRU 743

ORIFICE	FLOW AREA In <sup>2</sup> (mm <sup>2</sup> )	INLET	OUTLET	DN	SIZE ID	DIMENSIONS – in (mm)				WEIGHT Lbs. (Kg)
						A CLOSED CAP	A LIFT LEVER	B	C	
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 <sup>1</sup>	.217 (140.0)	1/2"	1"	15	A	8-1/8" (206)	9" (229)	2-5/8" (67)	2" (51)	3 (1.4)
E <sup>1</sup>	.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" (229)	2-5/8" (67)	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)	12-1/4" (311)	3-1/2" (89)	2-7/8" (73)	16 (7.3)
H	.923 (595.5)	2"	2"	50	G	11-3/4" (298)	12-1/4" (311)	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)	12-1/4" (311)	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)	12-1/4" (311)	3-1/2" (89)	2-7/8" (73)	16 (7.3)
H	.923 (595.5)	2-1/2"	2-1/2"	65	K	12" (305)	12-1/2" (318)	3-3/4" (95)	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)

<sup>1</sup> – 1/2" Inlet for "E" orifice is ASME/CE Air/Gas and Steam

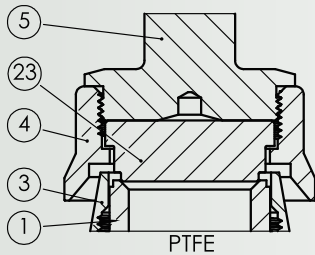
# SEATING OPTIONS

## SEATING MATERIALS

MATERIAL	NAMES	MIN TEMP °F (°C)	MAX TEMP °F (°C)	USE FOR:
FKM	Viton-A	-13° (-25°)	446° (230°)	Acetone, Air, Alcohol, Benzene, 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 (under 55 psig), Water, Hot Water, Acetone, Beer, Brake Fluid, Hydrogen Gas, Sulfur Dioxide, Acids, Alkalies
FFKM	Markez®	5° (-15°)	500° (260°)	Aromatic Hydrocarbons, Chlorinated Hydrocarbons, Polar Solvents (ketones, esters, ethers), Inorganic and Organic Acids, Water, and Steam.
	Kalrez®	-4° (-20°)	525° (274°)	
PTFE		-450° (-268°)	500° (260°)	Cryogenic Service including Argon, Carbon Dioxide, Helium, Hydrogen, Nitrogen, Oxygen, Steam

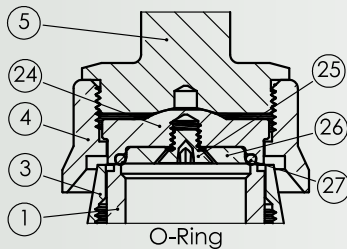
Note:

This is just a partial listing. Visit [www.aquatrol.com](http://www.aquatrol.com) for links to websites with more specific applications.



## PTFE SEATING

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



## RING SEATING

#	DESCRIPTION	740	741	742	743
1	Nozzle	B16 Brass	SA479-316 SS	SA479-316 SS	SA479-316 SS
3	Lower Ring	SA351-CF8M	SA351-CF8M	SA351-CF8M	SA351-CF8M
4	Disc Holder	B16 Brass	B16 Brass	SA479-316 SS	SA479-316 SS
5	Disc Holder Shaft	B16 Brass	B16 Brass	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 <sup>1</sup>	MIN. TEMP °F (°C)	MAX. TEMP <sup>4,5</sup> °F (°C)	MAX PRESSURE <sup>2,3</sup> psig (barg)	SERVICES	CERTIFICATIONS
740	1/2" to 3"	Brass/Bronze	-320° (-196°)	406° (208°)	350 (24.1)	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
744	1/2" to 3"	Monel/Bronze	-320° (-196°)	800° (427°)	1500 (103.4)	Air / Gas / Steam / Liquid	ASME VIII, CE, CRN
745	1/2" to 3"	Monel/Carbon	-320° (-196°)	800° (427°)	1500 (103.4)	Air / Gas / Steam / Liquid	ASME VIII, CE, CRN
746	1/2" to 3"	Monel/Stainless	-320° (-196°)	800° (427°)	1500 (103.4)	Air / Gas / Steam / Liquid	ASME VIII, CE, CRN
747	1/2" to 3"	No-Lead Brass/Bronze	-320° (-196°)	406° (208°)	350 (24.1)	Air / Gas / Steam / Liquid	Non-Code
748	1/2" to 3"	No-Lead Brass/Stainless	-320° (-196°)	406° (208°)	1500 (103.4)	Air / Gas / Steam / Liquid	Non-Code

<sup>1</sup> Other metal options available, contact Aquatrol.

<sup>2</sup> Maximum set pressure for steam service is 300 psig (20.7 barg)

<sup>3</sup> Maximum set pressure for steam on Series 740 is 250 psig (17.2 barg)

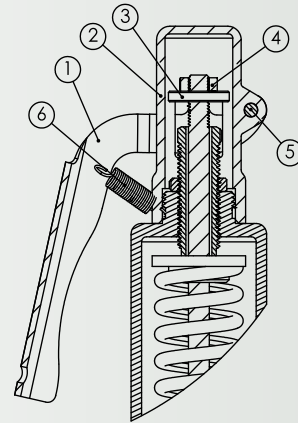
<sup>4</sup> Maximum temperatures depend upon seating material.

<sup>5</sup> For temps over 425°F (218°C) contact Aquatrol. (Inconel spring used temperatures above 650°F)

# INLET and LIFT LEVER OPTIONS

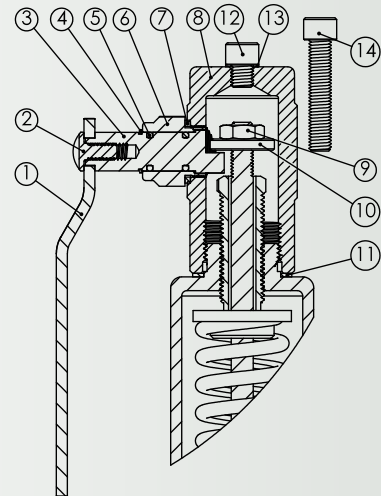
## OPEN LIFT LEVER - STANDARD

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 SS	18-8 SS	18-8 SS
5	Lift Lever Pin	B16 Brass	SA479-316 SS	SA479-316 SS
6	Spring	Optional Stainless Anti-Vibration Spring		

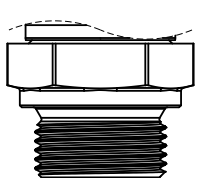


## PACKED LIFT LEVER - OPTION

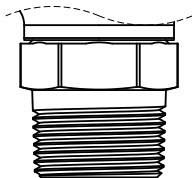
ITEM	DESCRIPTION	MATERIALS		
		740 / 741	742	743
1	Handle	B16 Brass	B16/Plated	B16/Plated
2	Handle Screw	Steel/Plated	Steel/Plated	Steel/Plated
3	Cam	B16 Brass	SA479-316 SS	SA479-316 SS
4	Retaining Ring	Steel/Plated	17-7 SS	17-7 SS
5	Cam O-Rings	Viton	Viton	Viton
6	Cam Nut	B16 Brass	SA479-316 SS	SA479-316 SS
7	Packed Nut Washer	PTFE	PTFE	PTFE
8	Hood	B16 Brass	SA108-C1018	SA479-316 SS
9	Jam Nut	18-8 SS	18-8 SS	18-8 SS
10	Lifter Nut	B16 Brass	SA479-316 SS	SA479-316 SS
11	Hood Seal	PTFE	PTFE	PTFE
12	Plug	18-8 SS	12,13,14 are part of the additional Gag Screw option	
13	Seal	PTFE		
14	Gag Screw	18-8 SS		



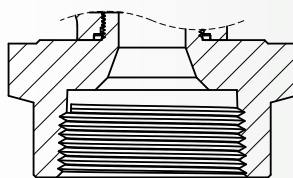
### Inlet Options:



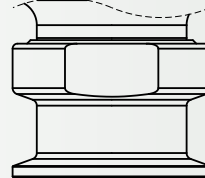
BSPP



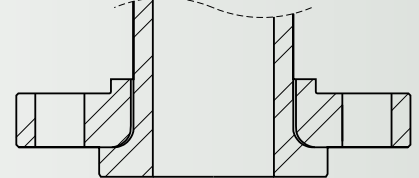
NPT - BSPT



Female NPT - BSPT



Tri-Clamp



Lap Joint Flange

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 740-748 THREADED INLET - PART NUMBERS

740		ED	1	V	3	J	1	125
SERIES	DESCRIPTION	ORIFICE/SIZE ID	CONNECTION	SEATING	CAP	SERVICE	OPTIONS	SET
740	<b>Brass/Bronze</b>	DC- 1/2" x 3/4"	1- NPT MxF	M- Metal	1- Lift lever	K- ASME VIII-Air/gas	1- <b>None</b>	<b>Ex.125</b>
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- <b>Packed lift lever</b>	<b>J- ASME VIII-Liquid</b>	3- O2 Cleaned	
743	316 SS / 316 SS	DF- 3/4" x 1"	4- BSPT FxF	<b>V- Viton</b>	4- Lift Lever with Anti-Vibe Spring	P- CE - Air/gas	4- API Seating	
744	Monel / Bronze	DG- 1" x 1"	8 <sup>3</sup> - BSPP MxF	E- EPDM	5- Closed Cap with Test Gag	E- CE - Steam	5- O2 Clean / API Seating	
745	Monel / Carbon	EA <sup>2</sup> - 1/2" x 1"	9 <sup>3</sup> - BSPP FxF	K- Kalrez	6- Packed Lever with Test Gag	D- CE - Liquid	6- O2 Clean / Chrome	
746	Monel / 316 SS	EB <sup>2</sup> - 1/2" x 1-1/4"		Z- Markez		N- Non-code Air/gas	7- O2 / API / Chrome	
747 <sup>1</sup>	No-Lead / No-Lead	EC- 3/4" x 1"				T- Non-code Steam	8- API / Chrome	
748 <sup>1</sup>	316 SS / No-Lead	<b>ED- 3/4" x 1-1/4"</b>				U- Non-code Liquid	9- High-Temp	
		EG- 1" x 1"						
		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.

<sup>1</sup> - No-Lead is non-code and available for D,E,F Orifice only

<sup>2</sup> - 1/2" Inlet for "E" orifice is ASME/CE Air/Gas, Steam Only

<sup>3</sup> - BSPP Outlet is available for 740 and 741 Series Only

## SERIES 741-743 AND 748 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- <b>Tri-clamp x NPT</b>	M- Metal	1- Lift lever	K- ASME VIII - Air/gas	1- <b>None</b>	<b>Ex.125</b>
742	316 SS / Carbon	DF- 3/4" x 1"		P- PTFE	2- Closed cap	<b>L- ASME VIII - Steam</b>	2- Chrome Plating	
743	<b>316 Stainless</b>	DH- 1" x 3/4"	6- Tri-clamp x BSPT	B- Buna	3- Packed lift lever	J- ASME VIII - Liquid	3- O2 Cleaned	
748 <sup>1</sup>	316 SS / No-Lead	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	5- Closed Cap with Test Gag	E- CE - Steam	5- O2 Clean / API Seating		
		<b>ED- 3/4" x 1-1/4"</b>	K- Kalrez	6- Packed Lever with Test Gag	D- CE - Liquid	6- O2 Clean / Chrome		
		EG- 1" x 1"	Z- Markez		N- Non-code Air/gas	7- O2 / API / Chrome		
		EF- 1" x 1-1/4"			T- Non-code Steam	8- API / Chrome		
		EJ- 1-1/2" x 1"			U- Non-code Liquid	9- High-Temp		
		EK- 1-1/2" x 1-1/4"						
		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"						

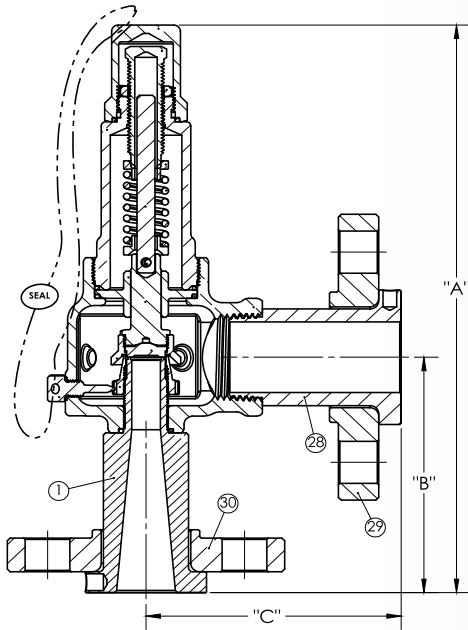


**Note:**  
This chart is for Tri-Clamp inlets only

<sup>1</sup> - No-Lead is non-code and available for D,E,F Orifice only



# FLANGE OPTIONS



## SERIES 741 THRU 743 FLANGE OPTION

#	DESCRIPTION	MATERIALS		
		741	742	743
1	Lap Joint Nozzle	SA479-316 SS	SA479-316 SS	SA479-316 SS
28	Outlet Fitting	SA479-316 SS	SA479-316 SS	SA479-316 SS
29	Lap Joint Flange	A182-F316	CS A-105	A182-F316
30	Lap Joint Flange	A182-F316	CS A-105	A182-F316

See page 4 for internal parts  
Options Note: B + C dimensions are customizable

## SERIES 741 THRU 743 LAP JOINT FLANGE

ORIFICE	FLOW AREA In2 (mm2)	INLET	OUTLET	DN	SIZE ID	DIMENSIONS – in (mm)			
						A CLOSED CAP	A LIFT LEVER	B	C
D	.125 (80.6)	1/2"	3/4"	15	C	9-5/8" (244)	10-1/4" (260)	4-5/8" (117)	4-1/4" (108)
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"	3/4"	20	E	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 <sup>1</sup>	.217 (140.0)	1/2"	1"	15	A	10-1/4" (260)	10-7/8" (276)	4-5/8" (117)	4-1/4" (108)
E <sup>1</sup>	.217 (140.0)	1/2"	1-1/4"	15	B	10-1/4" (260)	10-7/8" (276)	4-5/8" (117)	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"	25	G	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)
E	.217 (140.0)	1-1/4"	1-1/4"	32	H	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)	1-1/4"	1-1/2"	32	H	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"	40	F	14" (356)	14-5/8" (371)	5-7/8" (149)	5-3/8" (137)
H	.923 (595.5)	2"	2"	50	G	14" (356)	14-5/8" (371)	5-7/8" (149)	5-3/8" (137)
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)
H	.923 (595.5)	2"	2-1/2"	50	J	14" (356)	14-5/8" (371)	5-7/8" (149)	5-3/8" (137)
H	.923 (595.5)	2-1/2"	2-1/2"	65	K	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)
J	1.418 (914.8)	2-1/2"	3"	65	K	16-5/8" (422)	17-1/8" (435)	6-1/2" (165)	6" (152)
J	1.418 (914.8)	3"	3"	80	L	16-5/8" (422)	17-1/8" (435)	6-1/2" (165)	6" (152)

<sup>1</sup> – 1/2" Inlet for "E" orifice is ASME/CE Air/Gas and

# FLANGE PART NUMBERS

## SERIES 741 THRU 746 AND 748 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
741	316 SS/Bronze	DC- 1/2" x 3/4"	<b>A- 150# x 150#</b>	M- Metal	1- Lift lever	K- ASME VIII-Air/gas	<b>1- None</b>	<b>A- Serrated x Serrated</b>	<b>Ex.125</b>
<b>742</b>	<b>316 SS/Carbon</b>	DD- 1/2" x 1"	B- 300# x 150#	P- PTFE	2- Closed cap	L- ASME VIII-Steam	2- Chrome Plating		
743	316 S.S.	DE- 3/4" x 3/4"	C- 600# x 150#	B- Buna	<b>3- Packed lift lever</b>	<b>J- ASME VIII-Liquid</b>	3- O2 Cleaned	<b>B- Smooth x Serrated</b>	
744	Monel/Bronze	DF- 3/4" x 1"	D- 900# x 150#	<b>V- Viton</b>	4- Lift Lever with Anti-Vibe Spring	P- CE - Air/gas	4- API Seating		
745	Monel/Carbon	DG- 1" x 1"	E- 150# x FNPT	E- EPDM	5- Closed Cap with Test Gag	E- CE - Steam	5- O2 Clean / API Seating	<b>C- Smooth x Smooth</b>	
746	Monel/316 SS	EA <sup>2</sup> - 1/2" x 1"	F- 300# x FNPT	K- Kalrez		D- CE - Liquid	6- O2 Clean / Chrome		
748 <sup>1</sup>	316 SS/No Lead	EB <sup>2</sup> - 1/2" x 1-1/4"	G- 600# x FNPT	Z- Markez	6- Packed Lever with Test Gag	N- Non-code Air/gas	7- O2 / API / Chrome	<b>D- Serrated x Smooth</b>	
		EC- 3/4" x 1"	H- 900# x FNPT			T- Non-code Steam	8- API / Chrome		
		<b>ED- 3/4" x 1-1/4"</b>	J- 300# x 300#			U- Non-code Liquid	9- High-Temp		
		EG- 1" x 1"	K- 600# x 600#						
		EF- 1" x 1-1/4"	L- 900# x 900#						
		EH- 1-1/4" x 1-1/4"	M- 150# x FBSPT						
		FF- 1" x 1-1/2"	N- 300# x FBSPT						
		FH- 1-1/4" x 1-1/2"	P- 600# x FBSPT						
		FG- 1-1/2" x 1-1/2"	R- 900# x FBSPT						
		GG- 1-1/4" x 2"	S- 600# x 300#						
		GH- 1-1/2" x 2"	T- 900# x 300#						
		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"							

<sup>1</sup> - No-Lead is non-code and available for D,E,F Orifice only

<sup>2</sup> - 1/2" Inlet for "E" orifice is ASME/CE Air/Gas, Steam Only



# AIR CAPACITY

## SERIES 740 THRU 748 CAPACITIES AIR SCFM - ASME SECTION VIII

SET psig	ORIFICE AREA in <sup>2</sup> 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 748 CAPACITIES AIR NM<sup>3</sup>/HR - ASME SECTION VIII

SET barg	ORIFICE AREA mm <sup>2</sup> 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				

Set pressures not limited to this chart. Specify when ordering.  
 Capacities are at 3 psig or 10% (whichever is greater) over set pressure  
 Set pressures below 15 psig (1.03 barg) are NON-Code.  
 Maximum back-pressure is 10% of set pressure or 50 psig (3.45 barg)  
 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.



# LIQUID CAPACITY

## SERIES 740 THRU 748 CAPACITIES LIQUID GPM - ASME SECTION VIII

SET psig	ORIFICE AREA in <sup>2</sup> FLOW COEFFICIENT = .791					
	"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 748 CAPACITIES LIQUID LPM - ASME SECTION VIII

SET barg	ORIFICE AREA mm <sup>2</sup> FLOW COEFFICIENT = .791					
	"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				

Set pressures not limited to this chart. Specify when ordering.  
 Capacities are at 3 psig or 10% (whichever is greater) over set pressure  
 Set pressures below 15 psig (1.03 barg) are NON-Code.  
 Maximum back-pressure is 10% of set pressure or 50 psig (3.45 barg)  
 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 748 CAPACITIES STEAM LBS/HR - ASME SECTION VIII

SET psig	ORIFICE AREA in <sup>2</sup> 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 748 CAPACITIES STEAM KG/HR - ASME SECTION VIII

SET barg	ORIFICE AREA mm <sup>2</sup> 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



Set pressures not limited to this chart. Specify when ordering.  
 Capacities are at 3 psig or 10% (whichever is greater) over set pressure  
 Set pressures below 15 psig (1.03 barg) are NON-Code.  
 Maximum back-pressure is 10% of set pressure or 50 psig (3.45 barg)  
 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.