An Ovivo Company

VAREC 7100B Series
PRESSURE RELIEF VALVES

The 7100B Series is designed to protect low pressure storage tanks and systems from being over pressured.

Introduction

The Varec 7100B Series is a pressure relief valve designed to protect atmospheric and low pressure storage tanks. The dead-weight loaded valve utilizes weights proportional to the seat surface area to achieve the desired setting. The “Air-Cushion” seating design keeps the valve tightly sealed until the pressure inside the tank approaches the valve setting.

The 7100B is part of Varec’s modular products which use interchangeable components for assembling a variety of functional configurations. The modular design provides flexibility of field installation and allows the valve to be reconfigured, repaired and even upgraded on-site by simply replacing or adding components.

The wide range of materials and sizes allows for its use in virtually any application encountered in the typical tank farm or liquid storage facility. The 7100B vents to atmosphere. For the outlet flange option, please refer to Varec Series 3650B.

Flow curves are provided to help you select the proper size for your venting requirements. In addition, your local Varec sales engineer can provide sizing software to assist you in your selection. If you would like sizing and selection assistance, Varec’s applications engineering staff and factory trained representatives are available to assist you.

An “All-Weather” option is offered for freezing climates. The design features a special non-frosting and icing-resistant coating on the pallet perimeter and stem, guide posts and tipof- seat ring. The coating, along with the flexible PTFE seat insert, provides additional protection against pallets freezing closed.

For high temperature and chemical applications, Varec recommends the extended service option which features PTFE or FKM O-ring and gasket.

Features

- The hood is easily removed for inspection and maintenance.
- The seat rings are field replaceable.
- A protective screen is provided to prevent entrance of foreign material.
- The Varec 7100B Series valve features a pallet drip ring and self-draining housing to protect the seating surface from condensate and freezing.
- The pallet is side-and-center guided for reliability and stability, and is less likely to bind than hinged pallets.
- The port area is oversized to provide maximum flow capacity

Technical Data

- 2" to 12" [50 to 300 mm] sizes available.
- Oversized port for maximum flow.
- “Air Cushion” seating for lowest available leakage for weight-loaded valves.
- “All-Weather” option.
- Wide range of materials available for service in most applications.
- Center and side guided pallet.
- Pressure settings to 2 psig [0.14 barg].
- Replaceable seat ring for ease of maintenance.
- Leakage rate of 1 SCFH [0.03 Nm^3/hr] or less at 90% of set-point.

Available Materials

- Aluminum
- Carbon Steel
- Stainless Steel
- Ductile Iron
- Special Materials on Application

Specifications

Sizes
2” [50 mm]
3” [80 mm]
4” [100 mm]
6” [150 mm]
8” [200 mm]
10” [250 mm]
12” [300 mm]

Testing
Each valve is tested for proper setting and for a leakage rate of 1 SCFH (0.03 Nm^3/hr) or less of air at 90% of the set point. Each valve is tested for leak tightness at 75% of set point as required by API standard 2000.

Flanged Connections
(STANDARD FLANGE DRILLING)
Aluminum
Drilled to ANSI Class 150 Dimensions (Flat-Faced)

Drilled to DIN 2633 [16 Bar] Dimensions (Flat-Faced)

Drilled to JPI or JIS (Flat Faced)
Consult your sales representative

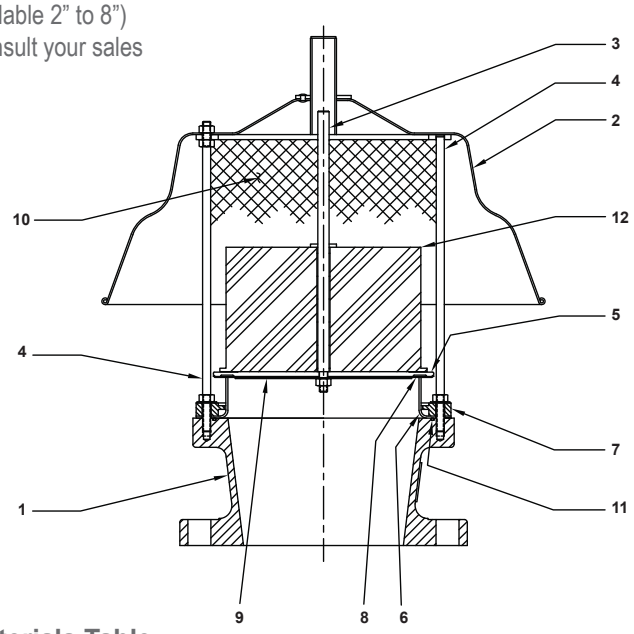
CS, DI and SS Body
Drilled to ANSI Class 150 Dimensions, (Raised or Flat-Faced)

Drilled to Imperial DIN 2633 [16 bar] Dimensions (Raised or Flat-Faced)

Drilled to JPI or JIS (Raised or Flat-Faced)
Consult your sales representative

Materials of Construction

Body	Trim	Insert
Aluminum	Aluminum	PTFE
Carbon Steel	316 SS	NBR
316 Stainless Steel		FKM
Ductile Iron (Available 2” to 8”)		
10” and 12” - Consult your sales representative		



Parts and Materials Table

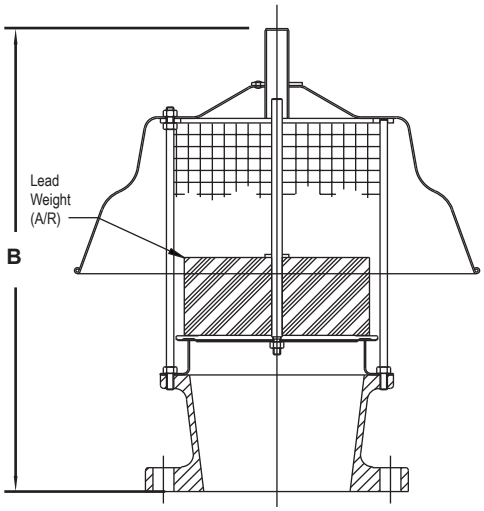
		Material Code				
	Item	1	2	3	4	5
1	Body	Aluminum	Aluminum	Carbon Steel	316 SS	Ductile Iron
2	Weatherhood	Aluminum	Aluminum	Carbon Steel	316 SS	Carbon Steel
3	Guide Stem	Aluminum	316 SS	316 SS	316 SS	316 SS
4	Guide Posts	316 SS	316 SS	316 SS	316 SS	316 SS
5	Pallet	Aluminum	316 SS	316 SS	316 SS	316 SS
6	Seat Ring	Aluminum	316 SS	316 SS	316 SS	316 SS
7	Seat Ring Retainer [1]	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene
8	Insert [1]	PTFE	PTFE	PTFE	PTFE	PTFE
9	Insert Retainer	Aluminum	316 SS	316 SS	316 SS	316 SS
10	Screen [1]	HDPE	HDPE	HDPE	HDPE	HDPE
11	O-Ring [1]	NBR	NBR	NBR	NBR	NBR
12	Weights	Lead	Lead	Lead	Lead	Lead

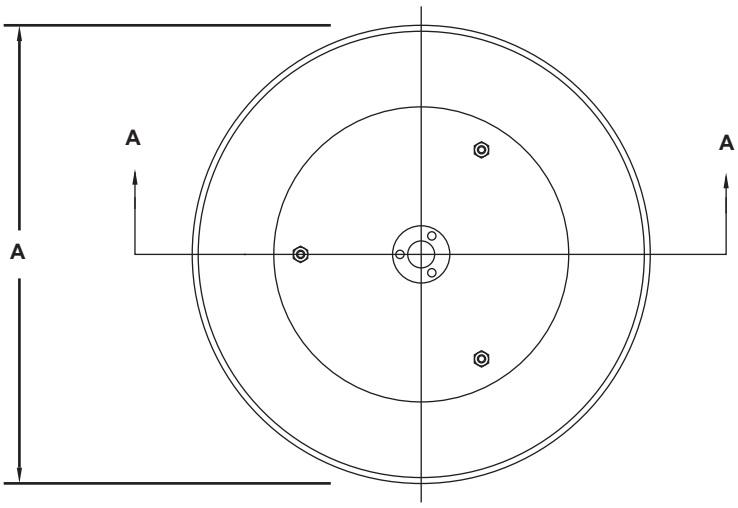
Note: 1 - Materials are as standard. See model option code for other materials and their associated temperature ranges.
2 - PTFE coated aluminum may be supplied with material codes 2 - 5 to achieve lower settings.
3 - All nuts and cap screws are 316 SS.

Specifications

Dimensions, inches [mm]

Size Code	2	3	4	6	8	0	1
Nominal Pipe Size	2 [50]	3 [80]	4 [100]	6 [150]	8 [200]	10 [250]	12 [300]
A	8 1/2 [216]	10 3/4 [273]	13 3/8 [340]	17 [432]	20 5/8 [524]	27 [686]	34 [864]
B Low Set	11 [279]	12 11/16 [322]	14 [356]	16 3/16 [411]	18 1/8 [460]	24 [610]	29 3/4 [756]
B High Set	13 7/8 [352]	15 5/8 [397]	16 1/8 [410]	19 1/2 [495]	21 1/4 [539]	26 [660]	29 3/4 [756]





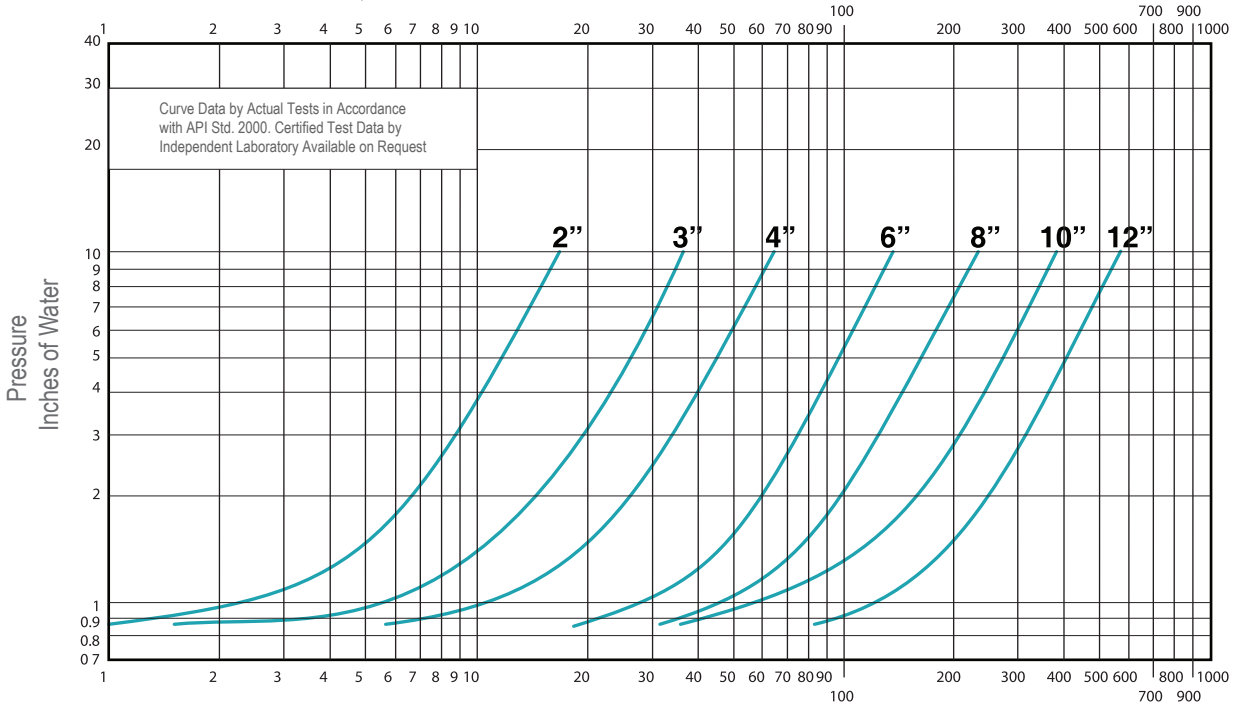
Setting Information

Size	Minimum Pressure Low Set, oz/ in² Aluminum	316 SS	Low Set Range (min. to oz/in²)	High Set Range (oz/in² to psig)
2”	0.29	0.70	^16	16.01 - 2
3”	0.23	0.55	^16	16.01 - 2
4”	0.29	0.60	^16	16.01 - 2
6”	0.26	0.61	^16	16.01 - 2
8”	0.25	0.55	^16	16.01 - 2
10”	0.25	0.63	^16	16.01 - 2
12”	0.23	0.59	^16	16.01 - 2

Specifications

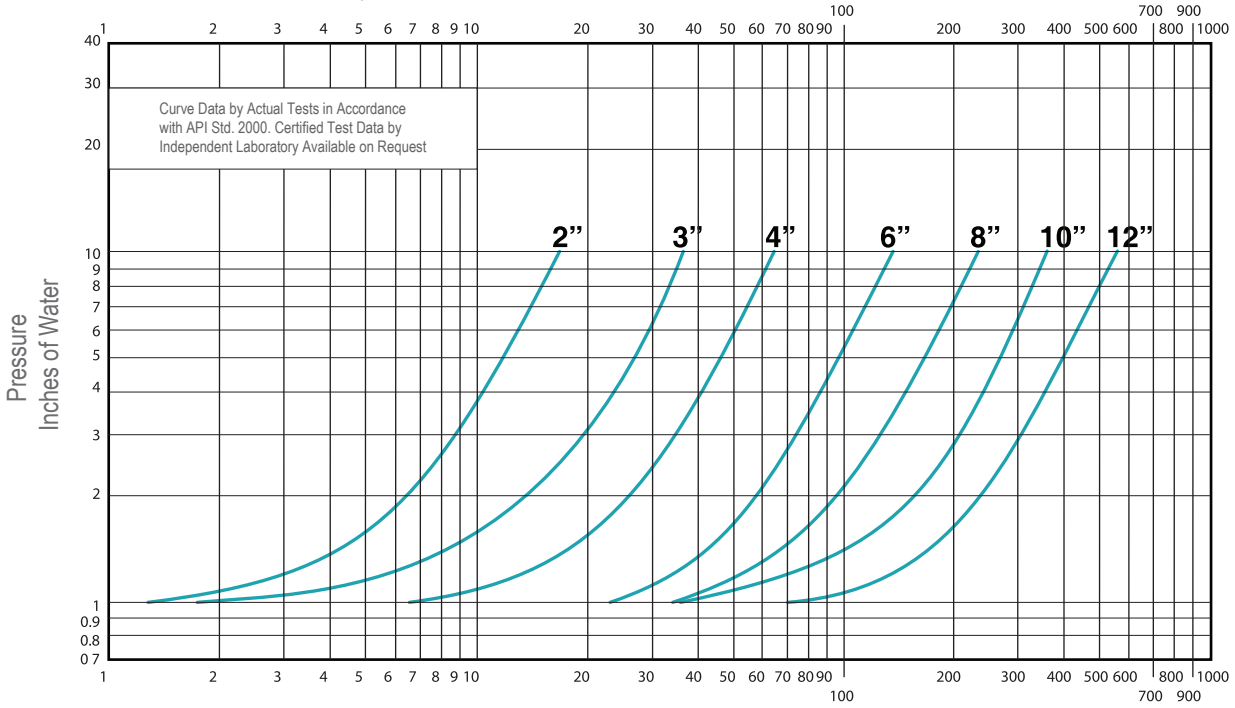
Flow Curves

7100B Series Relief Valve, Set at 0.865 inches of Water



Flow Curves

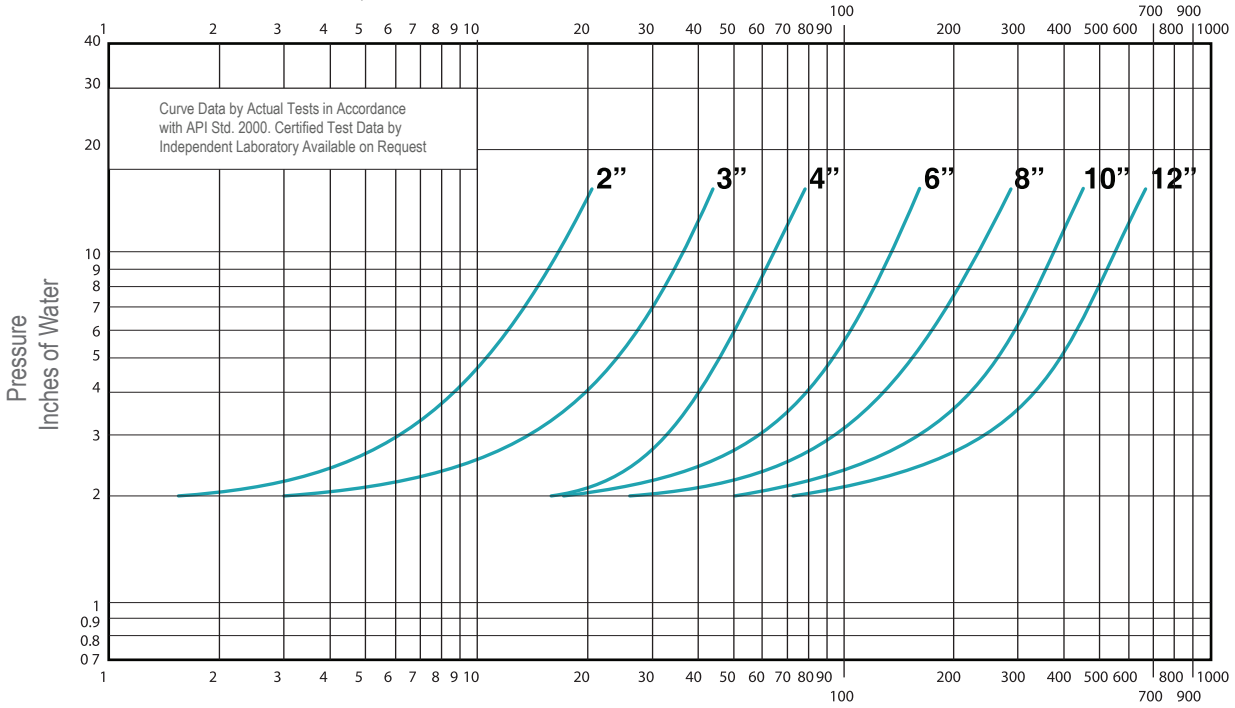
7100B Series Relief Valve, Set at 1 inches of Water



Specifications

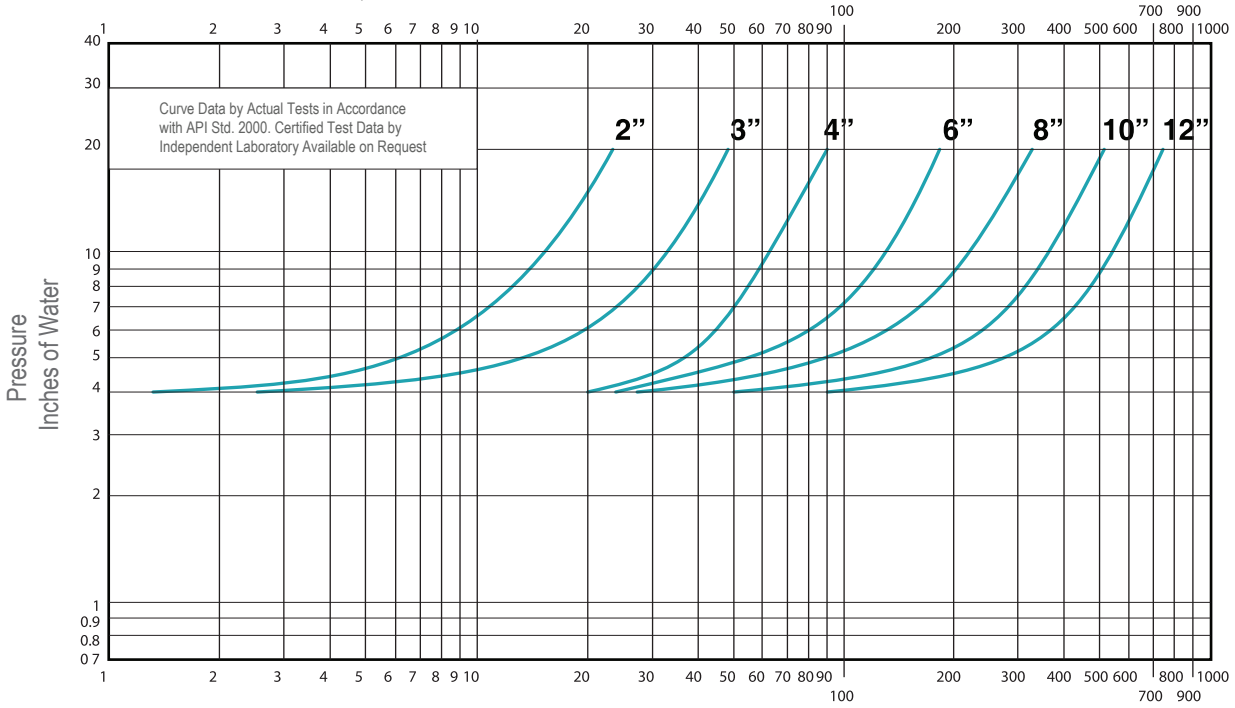
Flow Curves

7100B Series Relief Valve, Set at 2 inches of Water



Flow Curves

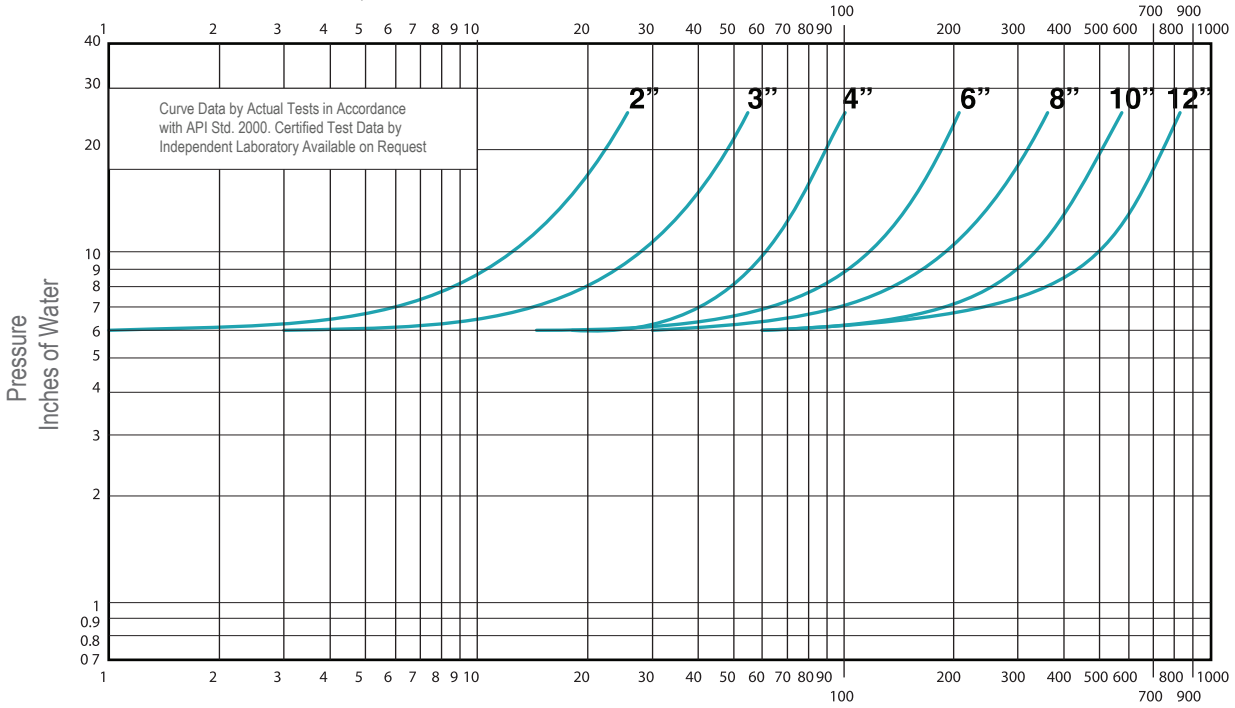
7100B Series Relief Valve, Set at 4 inches of Water



Specifications

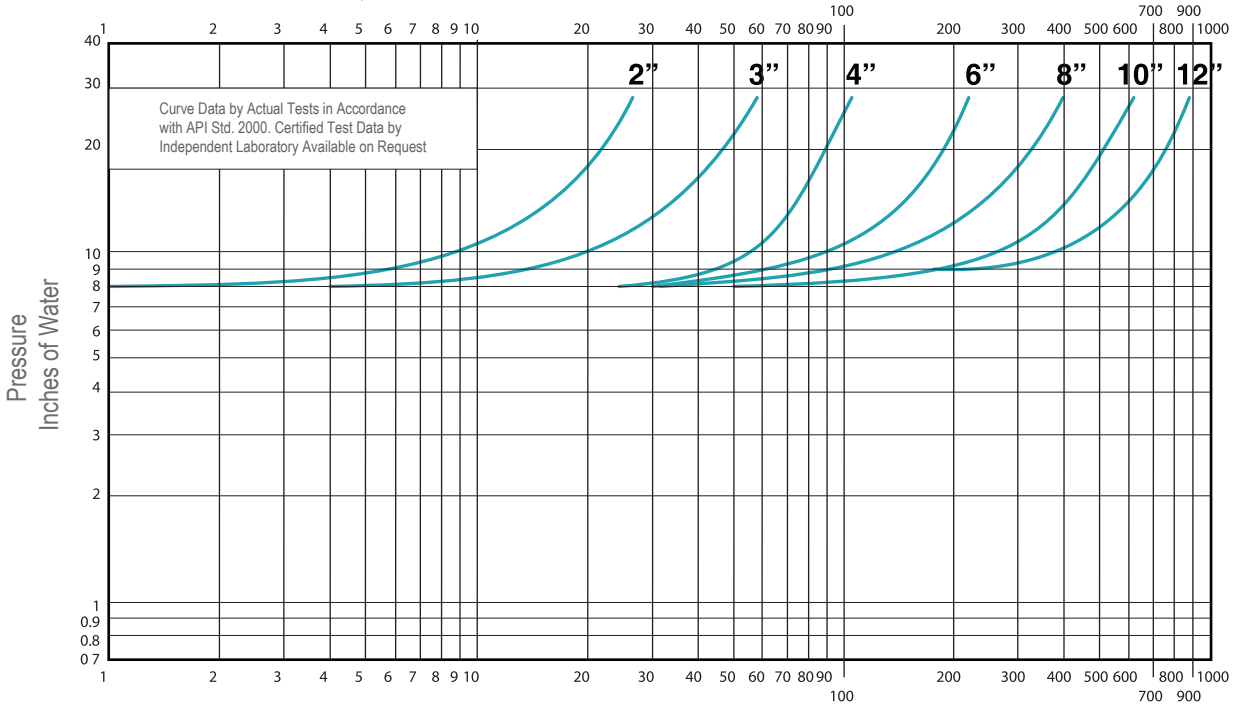
Flow Curves

7100B Series Relief Valve, Set at 6 inches of Water



Flow Curves

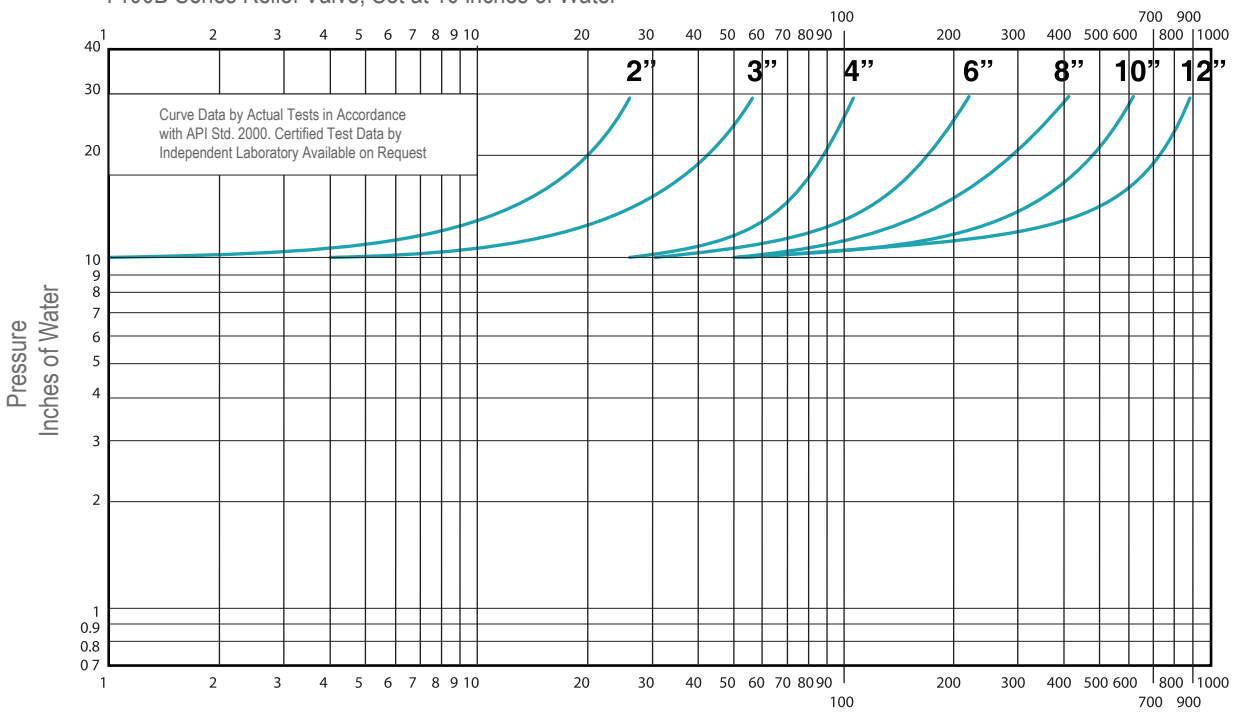
7100B Series Relief Valve, Set at 8 inches of Water



Specifications

Flow Curves

7100B Series Relief Valve, Set at 10 inches of Water



Ordering Information

Model	Description
710	Air Cushion Pressure Relief Valve

Code	Configuration
0B	Standard
1B	All Weather Type (25º F to 200º F)

Code	Size
2	2”
3	3”
4	4”
6	6”
8	8”
0	10”
1	12”

Code	Body / Trim Material
1	Aluminum / Aluminum (-65º F - 250º F)
2	Aluminum / 316 Stainless Steel (-65º F - 250º F)
3	Carbon Steel / 316 Stainless Steel (-20º F - 350º F)
4	316 Stainless Steel / 316 Stainless Steel (-65º F - 350º F)
5	Ductile Iron / 316 Stainless Steel (2” - 8” ONLY) (-20º F - 325º F)

Code	Insert Material
T	PTFE (-65º F - 400º F)
B	NBR (-40º F - 250º F)
V	FKM (-15º F - 400º F)

Code	Flange Connection
FF	125# ANSI Flat Face Flange Drilling with Fractional Studs
FR	150# ANSI Raised Face Flange Drilling with Fractional Studs (Not Available on Aluminum)
DF	DIN Flat Face Flange Drilling
DR	DIN Raised Face Flange Drilling (Not Available on Aluminum)

Code	Gasket/O-Ring & Retainer/Screen Material
OP	Standard (Fiber / NBR) and Plastic (-40º F - 250º F)
OS	Standard (Fiber / NBR) and Stainless Steel (-40º F - 250º F)
TP	PTFE and Plastic (-65º F - 250º F)
TS	PTFE and Stainless Steel (-65º F - 250º F)
BP	NBR and Plastic (-40º F - 250º F)
BS	NBR and Stainless Steel (-40º F - 250º F)
VP	FKM and Plastic (-15º F - 250º F)
VS	FKM and Stainless Steel (-15º F - 400º F)

Code	**Setting Range** (See Table, page 3)
02	Low Setting
04	High Setting

710	0B	2	1	T	FF	OP	02	(Example)

Example: 2” Pressure Relief Valve, Aluminum Body with Aluminum Trim, PTFE insert, Flat Faced Flange, Standard Fiber / NBR Gaskets, Low Pressure Set Range, Temperature Range -40º F - 250º F