

VAREC 7100B SERIES
 PRESSURE RELIEF VALVES

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


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.

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

Available materials

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

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 tipoff-seat ring. The coating, along with the flexible Teflon® seat insert, provides additional protection against pallets freezing closed.

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

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 Nm³/hr] or less at 90% of setpoint.

Specifications

Sizes

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

Flanged Connections - Standard Flange Drilling

Aluminum

- Drilled to ANSI Class 150 dimensions (Flat Face)
- Drilled to DIN 2633 [16 Bar] dimensions (Flat Face)
- Drilled to JPI or JIS (Flat Face) - consult sales

CS, DI and SS Body

- Drilled to ANSI Class 150 dimensions (Raised or Flat Face)
- Drilled to Imperial DIN 2633 [16 Bar] dimensions (Raised or Flat Face)
- Drilled to JPI or JIS (Raised or Flat Face) - consult sales

Materials

Body	Trim	Insert
Aluminum	Aluminum	Teflon®
Carbon Steel	316 Stainless Steel	BUNA-N
316 Stainless Steel		Viton®-A
Ductile Iron		
(Available 2" to 8", 10" and 12" - consult sales)		

Testing

Each valve is tested for proper setting and for a leakage rate of 1 SCFH (0.03 Nm³/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.

Setting Information

**Minimum Pressure
Low Set Range**

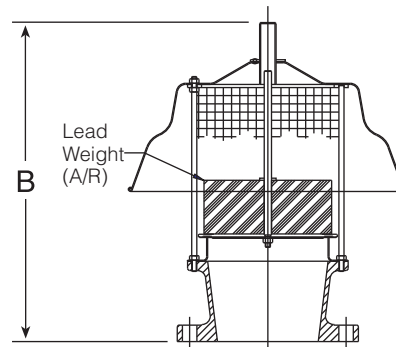
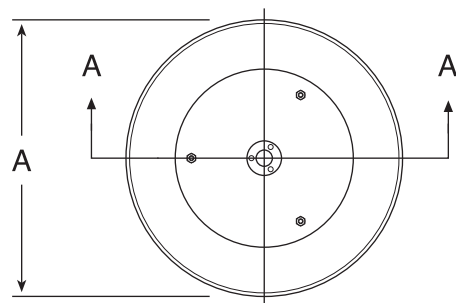
Size	Aluminum	316 SS	Low Set Range	High Set Range
2"	0.29 oz/in ²	0.70 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig
3"	0.23 oz/in ²	0.55 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig
4"	0.29 oz/in ²	0.60 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig
6"	0.26 oz/in ²	0.61 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig
8"	0.25 oz/in ²	0.55 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig
10"	0.25 oz/in ²	0.63 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig
12"	0.23 oz/in ²	0.59 oz/in ²	Min to 16 oz/in ²	16.01 oz/in ² to 2 psig

1. Minimum set for 10" and 12" 7101B with aluminum trim 0.5 oz/in².
2. Minimum set for 10" and 12" 7101B with stainless steel trim 1.35 oz/in².

Dimensions, in. [mm]

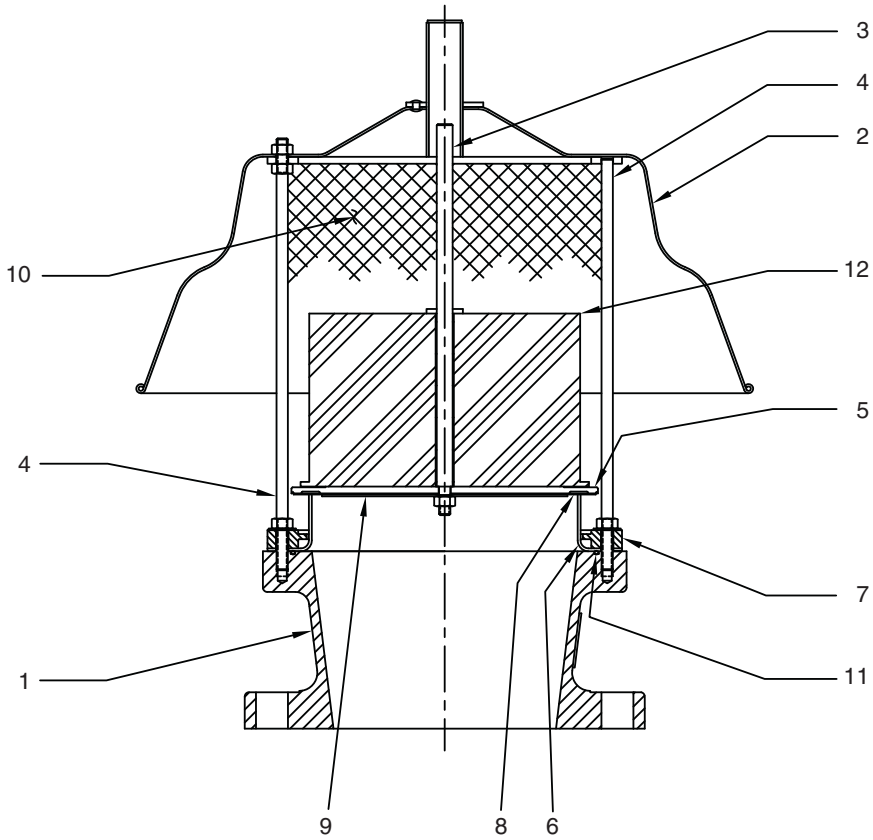
Size Code	2	3	4	6	8	10	12
Nominal Pipe Size	[50]	[80]	[100]	[150]	[200]	[250]	[300]
A	8 ¹ / ₂ [216]	10 ³ / ₄ [273]	13 ³ / ₈ [340]	17 [432]	20 ⁵ / ₈ [524]	27 [686]	34 [864]
B	11 [279]	12 ¹¹ / ₁₆ [322]	14 [356]	16 ³ / ₁₆ [411]	18 ¹ / ₈ [460]	24 [610]	29 ³ / ₄ [756]
Low Set							
B	13 ⁷ / ₈ [352]	15 ⁵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

Dimensions are for preliminary general information and should not be used for construction purposes. Certified dimensional drawings are available upon request.



Section A-A

Specifications



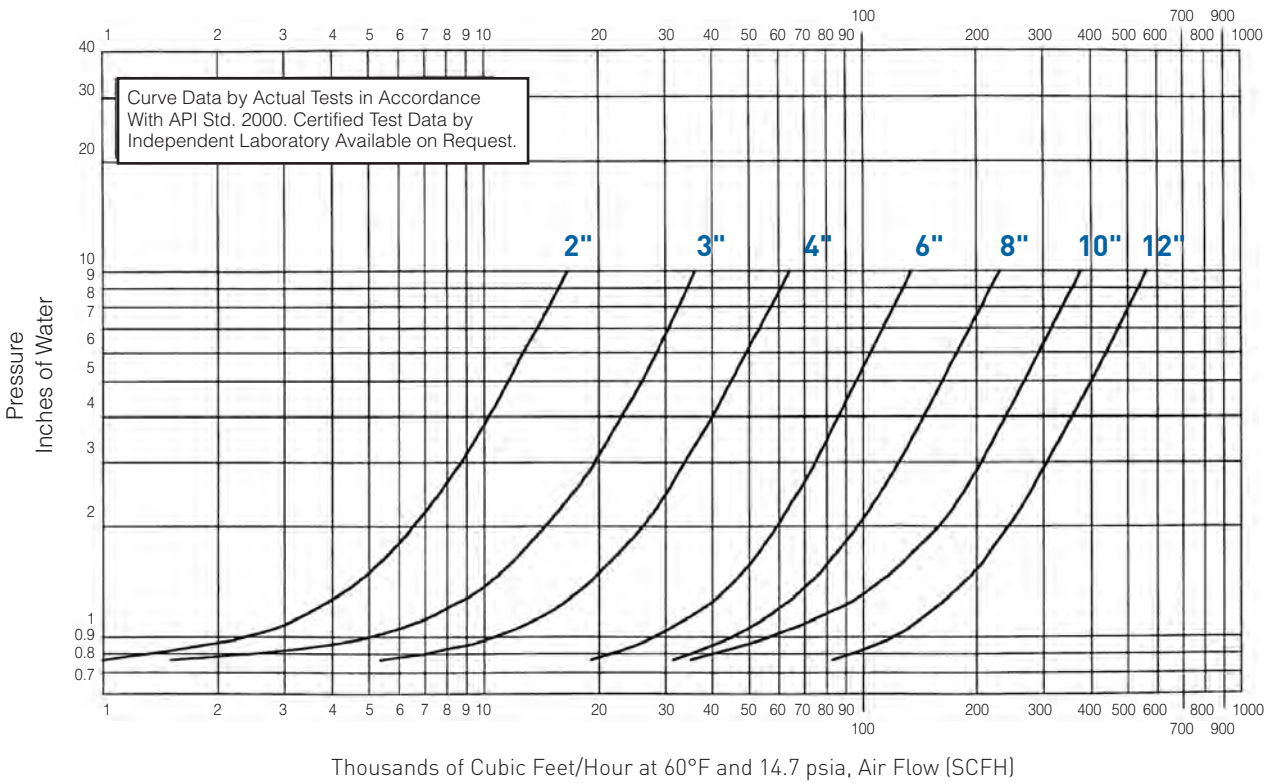
Materials					
Item	1	2	3	4	5
1 Body	Aluminum	Aluminum	Carbon Steel	316 SS	Ductile Iron
2 Weatherhood	Aluminum	Aluminum	Carbon Steel	316 SS	Carbon Steel
3 Guide Stem	Aluminum	316 SS	316 SS	316 SS	316 SS
4 Guide Posts	316 SS	316 SS	316 SS	316 SS	316 SS
5 Pallet	Aluminum	316 SS	316 SS	316 SS	316 SS
6 Seat Ring	Aluminum	316 SS	316 SS	316 SS	316 SS
7 Seat Ring Retainer ¹	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene
8 Insert ¹	Teflon®	Teflon®	Teflon®	Teflon®	Teflon®
9 Insert Retainer	Aluminum	316 SS	316 SS	316 SS	316 SS
10 Screen ¹	HDPE	HDPE	HDPE	HDPE	HDPE
11 O-ring ¹	BUNA-N	BUNA-N	BUNA-N	BUNA-N	BUNA-N
12 Weights	Lead	Lead	Lead	Lead	Lead

Notes:

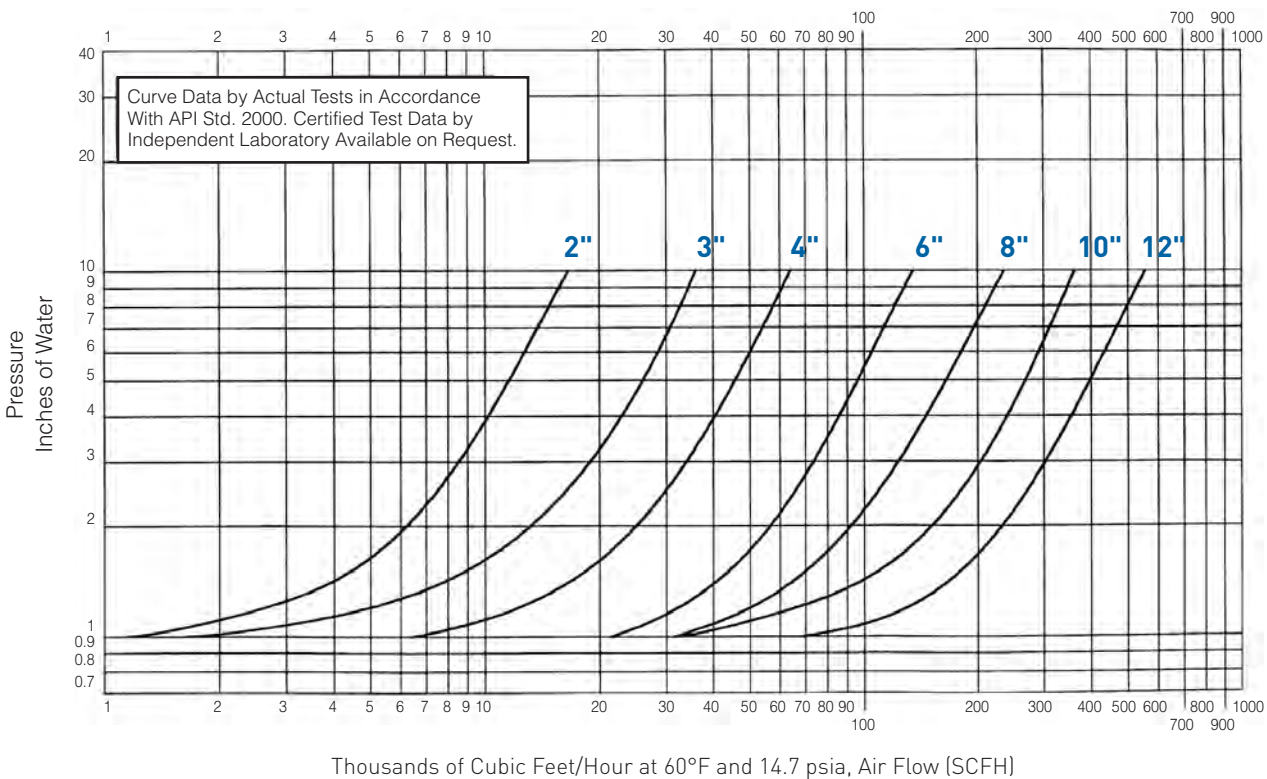
1. Materials are as standard. Refer to page 8 for other materials and their corresponding temperature ranges.
2. Teflon® coated aluminum may be supplied with material codes 2 - 5 to achieve lower settings.
3. All nuts and cap screws are 316 SS.

Flow Curves

7100B Series relief valve, set at 0.865 inch of water



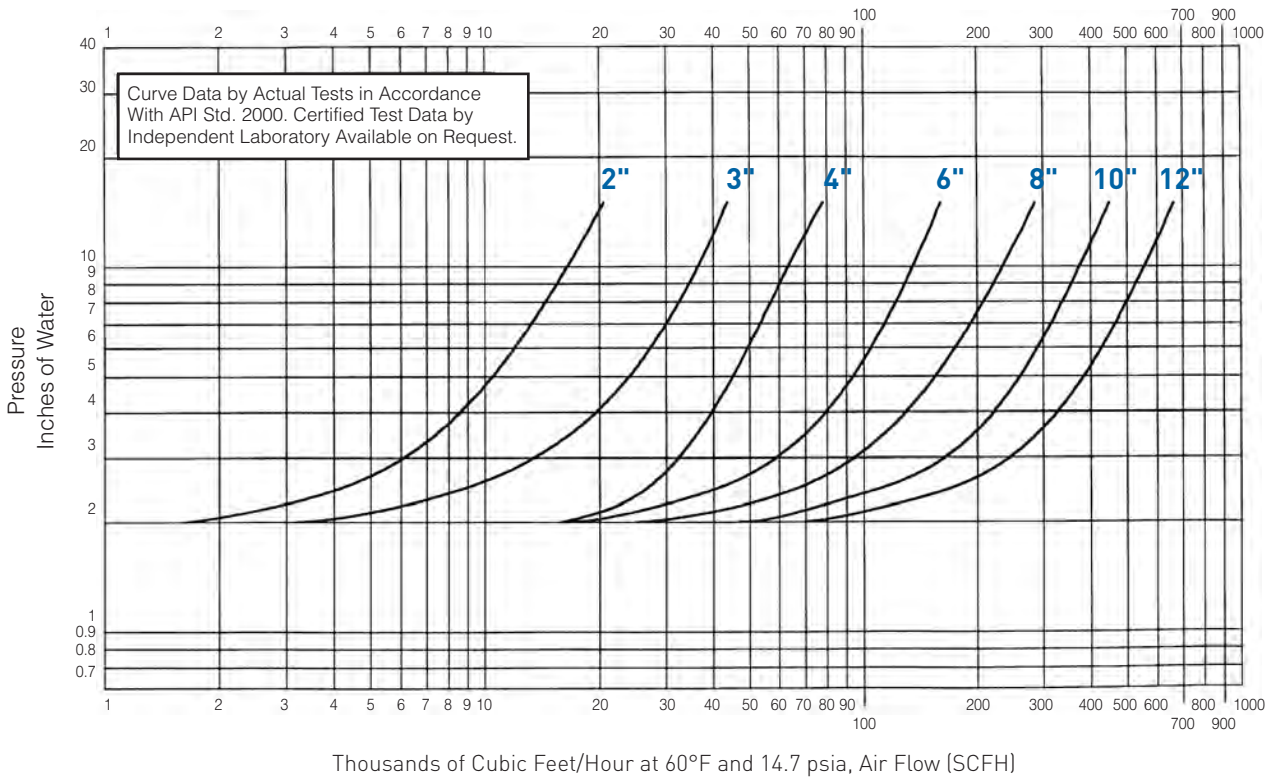
7100B Series relief valve, set at 1 inch of water



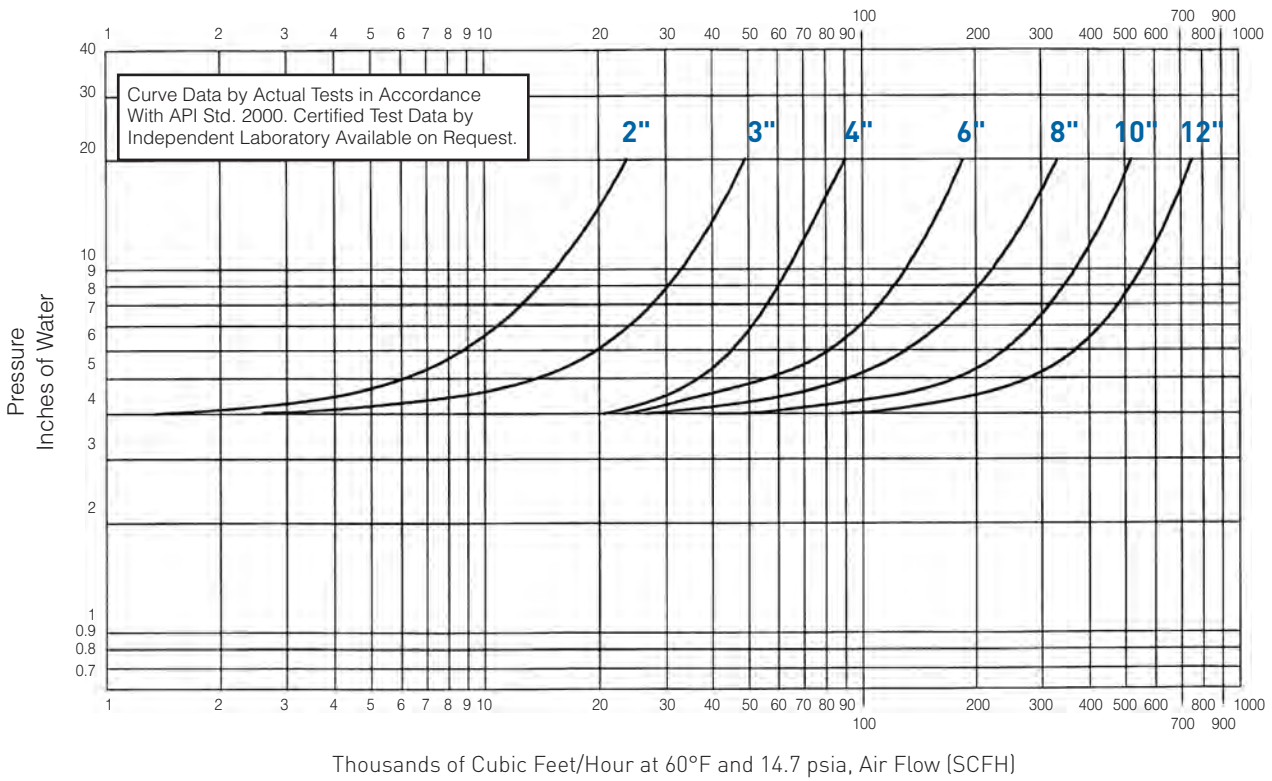
VAREC 7100B SERIES
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Flow Curves

7100B Series relief valve, set at 2 inches of water

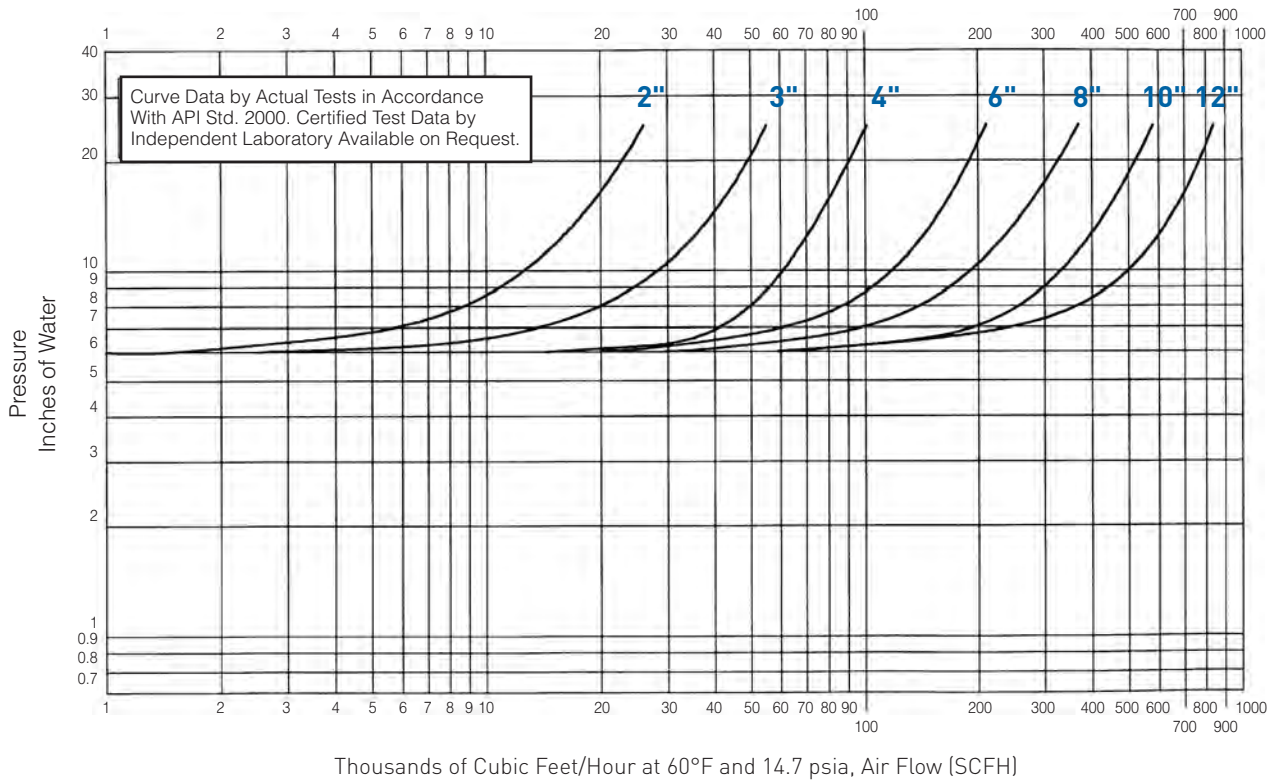


7100B Series relief valve, set at 4 inches of water

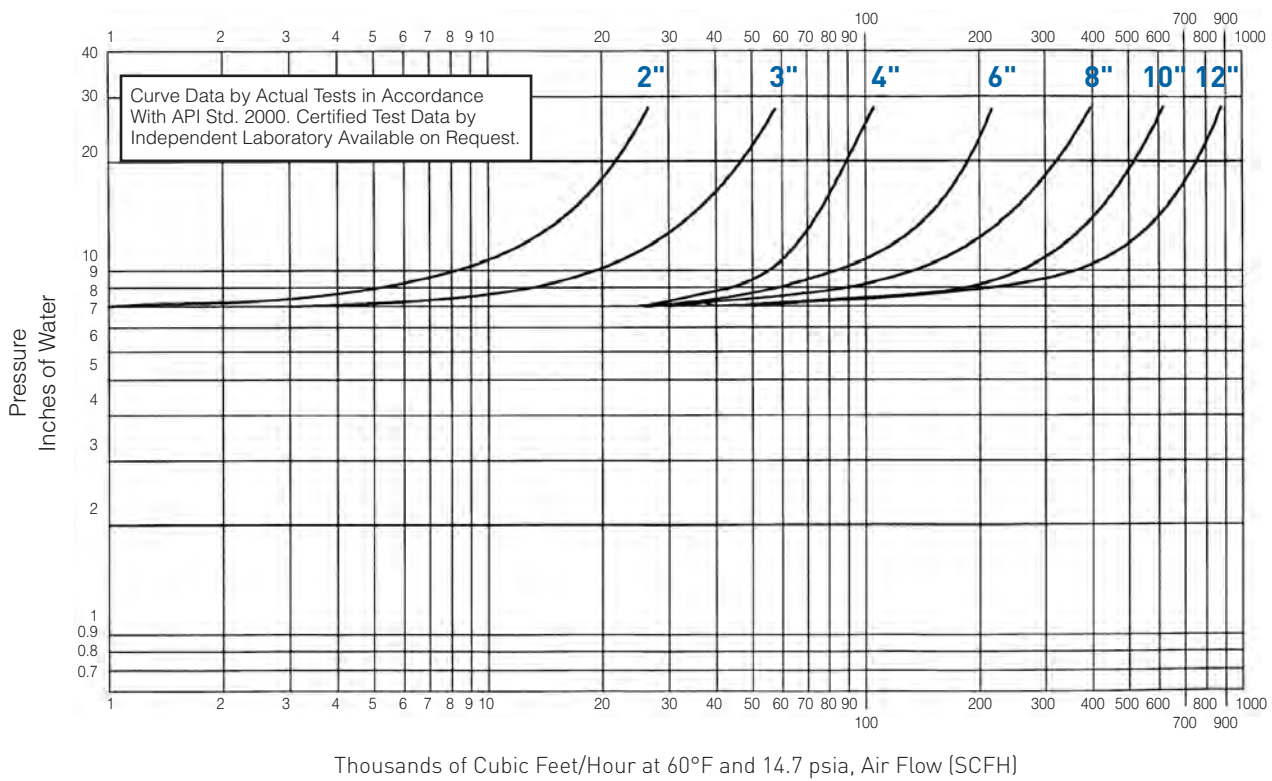


Flow Curves

7100B Series relief valve, set at 6 inches of water



7100B Series relief valve, set at 8 inches of water

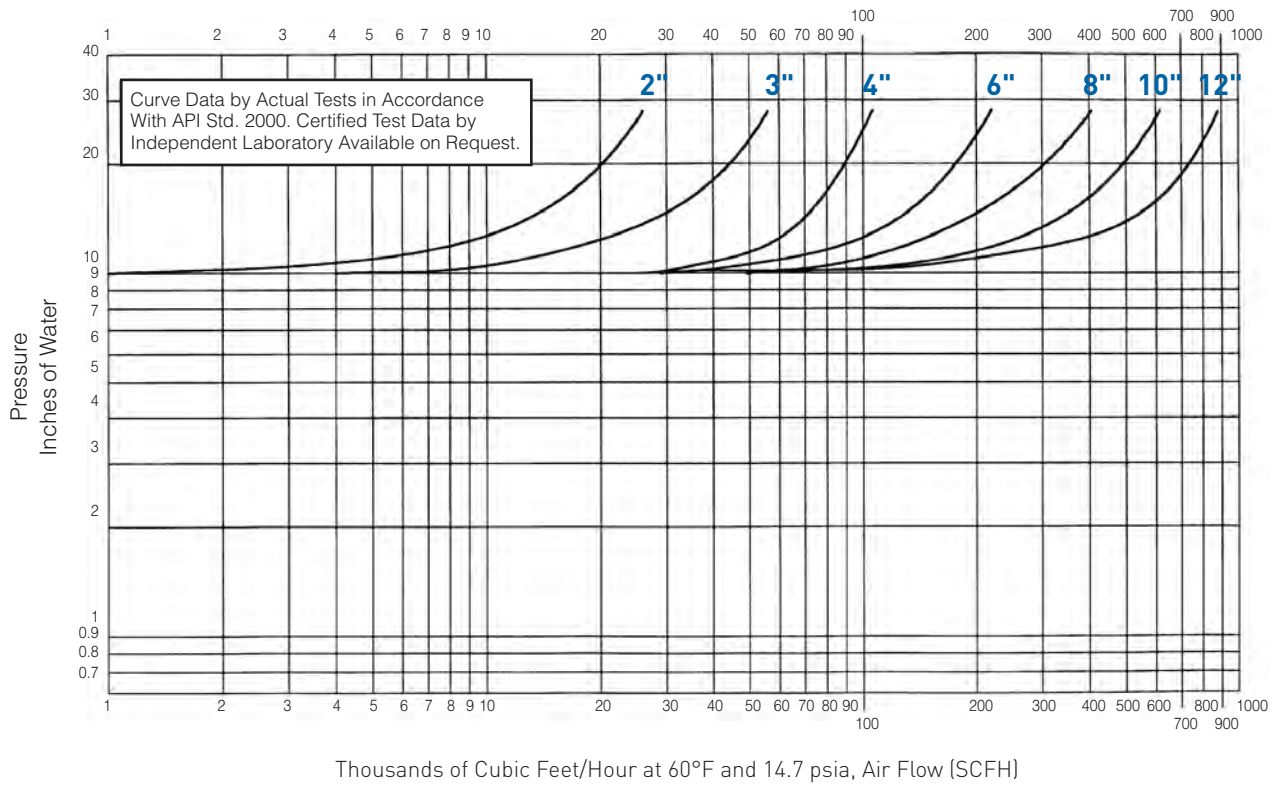


VAREC 7100B SERIES

PRESSURE RELIEF VALVES

Flow Curves

7100B Series relief valve, set at 10 inches of water



Ordering Information

Model Description

710 Air Cushion Pressure Relief Valve

Code

0B
1B

Configuration

Standard
All Weather Type (25°F to 200°F)

Code

2
3
4
6
8
0
1

Size

2"
3"
4"
6"
8"
10"
12"

Code

1
2
3
4
5

Body/Trim Material

Aluminum/Aluminum (-65°F to 250°F)
Aluminum/316 Stainless Steel (-65°F to 250°F)
Carbon Steel/316 Stainless Steel (-20°F to 350°F)
316 Stainless Steel/316 Stainless Steel (-65°F to 350°F)
Ductile Iron/316 Stainless Steel (2" to 8" only) (-20°F to 325°F)

Code

T
B
V

Insert Material

Teflon® (-65°F to 400°F)
BUNA-N (-40°F to 250°F)
Viton® (-15°F to 400°F)

Code

FF
FR
DF
DR

Flange Connection

Flat Face flange drilled to ANSI 150 with Fractional Studs
Raised Face flange drilled to ANSI 150 with Fractional Studs (not available on Aluminum)
DIN Flat Face Flange Drilling
DIN Raised Face Flange Drilling (not available on Aluminum)

Code

OP
OS
TP
TS
BP
BS
VP
VS

Gasket/O-ring and Retainer/Screen Material

Standard (Fiber/BUNA-N) and Plastic (-40°F to 250°F)
Standard (Fiber/BUNA-N) and Stainless Steel (-40°F to 250°F)
Teflon® and Plastic (-65°F to 250°F)
Teflon® and Stainless Steel (-65°F to 350°F)
BUNA-N and Plastic (-40°F to 250°F)
BUNA-N and Stainless Steel (-40°F to 250°F)
Viton® and Plastic (-15°F to 250°F)
Viton® and Stainless Steel (-15°F to 350°F)

Code

02
04

Setting Range (see table, page 2)

Low Setting
High Setting

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

Example: 2" pressure relief valve, aluminum body with aluminum trim, Teflon® insert, Flat Faced Flange, Standard Fiber/BUNA-N gaskets, low pressure set range, temperature range: -40°F to 250°F



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