



2440 and 2450 Series are used on liquid storage tanks, vessels, and vapor recovery systems where excess pressure or vacuum may cause damage or permanent deformation and leakage of product must be minimized.

Introduction

The 2440 and 2450 Series help protect low pressure storage tanks and processes from excess positive pressure and vacuum. The wide range of materials and sizes of the 2440 and 2450 Series allows its use in virtually any application encountered in tank farms or liquid storage facilities.

The spring-loaded design allows for higher pressure settings than the standard dead-weight loaded valve used in tanks with higher maximum allowable working pressures.

Flow capacity tables are provided to help you select the proper size for your vacuum or pressure venting requirements. Additionally, Varec's applications engineering staff and factory trained representatives are always available to assist you.

Features

- The Varec 2440 and 2450 Series can be configured for pressure settings up to 50 psig [3.5 barg].
- The optional flange connection (2450) on the pressure side allows for piping away the vapors to a vapor recovery system or flare.
- The Varec 2440 and 2450 Series valves are spring-loaded on the pressure side and dead-weight loaded on the vacuum side with forces proportional to the pallet surface area to achieve the desired setting. The seating design keeps the valve tightly sealed until the pressure or vacuum inside the tank approaches the related valve setting.
- All Varec 2440 and 2450 Series valves feature full formed flanges for easy installation.



- As the pressure or vacuum rises above the required setting, the pressure differential causes the pallet to lift, thereby relieving the excess pressure or vacuum. As the pressure or vacuum is diminished, the center and side guided pallet positively reseats, providing the desired tight seal.

Technical Data

- Oversized port for maximum flow.
- Lowest available Leakage for spring loaded valves — less than 1 SCFH at 90% of setting.
- Full form flanges for easy installation.
- Center and side guided pallets.
- Pressure settings up to 50 psig [3.5 barg].

Varec 2440 and 2450 Series

Spring Loaded Pressure and Vacuum Relief Valve

Specifications

Sizes

Vent to Atmosphere (2440)	2", 3", 4", 6", 8", 10", 12"
Pipe-Away (2450)	2" x 2", 3" x 3", 4" x 4", 6" x 6", 8" x 8", 10" x 10", 12" x 12"

Materials

Body	Aluminum Carbon Steel 316 Stainless Steel
Trim	316 Stainless Steel
Seat	PTFE

Flanged Connections

125# ANSI Flat Faced Flange Drilling
150# ANSI Raised Faced Flange Drilling
DIN PN16 Flat Faced Flange Drilling
DIN PN16 Raised Faced Flange Drilling

Setting Information

Pressure Setting Range ¹	1 psig to 50 psig [0.07 barg to 3.5 barg]
Vacuum Setting Range	0.7 oz/in ² to 14 oz/in ² [3.0 mbarg to 60 mbarg]

Testing

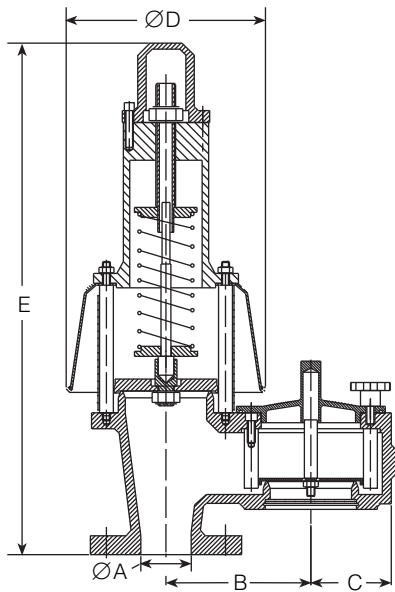
Each valve is tested for proper setting and for a leakage rate of less than 1 SCFH of air at 90% of the set point.

Notes

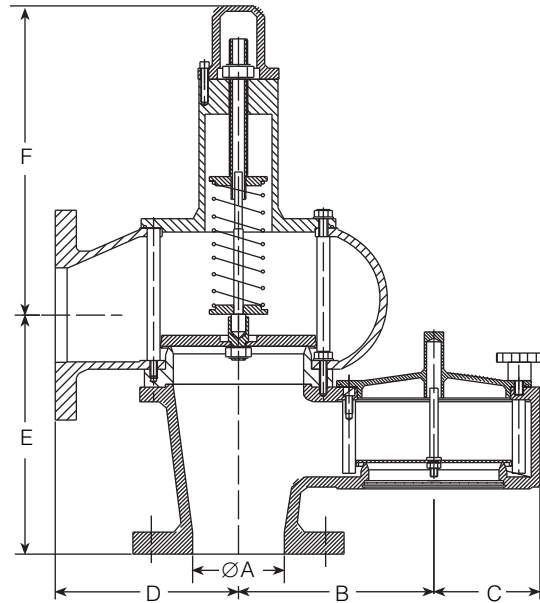
- Maximum setting on Aluminum valves is 14.5 psig (1.0 barg). Maximum pressure setting is limited on larger sizes:
6" - 39 psig (2.7 barg)
8" - 32.5 psig (2.25 barg)
10" - 26 psig (1.8 barg)
12" - 26 psig (1.8 barg)

Dimensions, inches [millimeters]

Model 2440



Model 2450



2440

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	2 [51]	3 [76]	4 [102]	6 [152]	8 [203]	10 [254]	12 [300]
B	5 ³ / ₄ [146]	7 ¹ / ₄ [185]	8 ³ / ₈ [213]	11 [280]	13 ³ / ₁₆ [335]	15 ⁵ / ₈ [397]	17 ³ / ₄ [450]
C	3 ³ / ₁₆ [81]	3 ¹⁵ / ₁₆ [100]	4 ¹¹ / ₁₆ [119]	5 ⁵ / ₈ [143]	6 ¹³ / ₁₆ [173]	7 ¹⁵ / ₁₆ [202]	9 ¹ / ₄ [235]
D	7 ¹⁵ / ₁₆ [202]	10 [253]	11 ¹⁵ / ₁₆ [303]	15 ⁷ / ₁₆ [392]	21 ¹ / ₁₆ [535]	24 ⁷ / ₁₆ [620]	26 ⁷ / ₈ [682]
E	21 [533]	22 ³ / ₁₆ [564]	23 ¹ / ₄ [591]	25 ¹⁵ / ₁₆ [659]	27 ¹³ / ₁₆ [707]	31 ⁷ / ₈ [810]	32 ¹ / ₂ [826]

2450

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	2 [51]	3 [76]	4 [102]	6 [152]	8 [203]	10 [254]	12 [300]
B	5 ³ / ₄ [146]	7 ¹ / ₄ [185]	8 ³ / ₈ [213]	11 [280]	13 ³ / ₁₆ [335]	15 ⁵ / ₈ [397]	17 ³ / ₄ [450]
C	3 ³ / ₁₆ [81]	3 ¹⁵ / ₁₆ [100]	4 ¹¹ / ₁₆ [119]	5 ⁵ / ₈ [143]	6 ¹³ / ₁₆ [173]	7 ¹⁵ / ₁₆ [202]	9 ¹ / ₄ [235]
D	5 ¹ / ₂ [140]	7 ¹ / ₈ [180]	7 ⁷ / ₈ [200]	9 ¹ / ₂ [242]	12 ³ / ₁₆ [310]	14 ¹ / ₈ [358]	15 ¹ / ₂ [393]
E	7 ³ / ₄ [197]	9 ³ / ₈ [238]	10 ¹ / ₄ [261]	12 ³ / ₁₆ [310]	14 ¹ / ₄ [362]	15 ³ / ₄ [400]	17 ¹ / ₈ [435]
F	13 ¹ / ₁₆ [331]	13 ¹ / ₈ [333]	13 ¹³ / ₁₆ [351]	14 ³ / ₁₆ [360]	14 ¹ / ₂ [368]	17 [431]	17 ¹ / ₈ [435]

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

Specifications - Flow Capacity

Size, in [mm]	2" [50]			3" [80]			4" [100]			6" [150]			8" [200]			10" [250]			12" [300]		
Overpressure	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%

2440 Vent-to-Atmosphere – Flow Capacity (English Units) SCFH x 1000 Air

Pressure Setting

1.0 psig	6.90	8.60	9.83	15.53	19.34	22.12	27.62	34.38	39.32	62.14	77.37	88.47	110.47	137.54	157.28	172.61	214.90	245.75	248.55	309.46	353.88
1.3 psig	7.80	9.71	11.11	17.56	21.86	24.99	31.21	38.86	44.43	70.23	87.44	99.98	124.85	155.44	177.73	195.09	242.87	277.71	280.92	349.74	399.90
2.0 psig	9.66	12.02	13.75	21.73	27.05	30.93	38.64	48.09	54.98	86.93	108.21	123.71	154.55	192.37	219.93	241.48	300.58	343.64	347.73	432.84	494.84
2.8 psig	11.40	14.19	16.22	25.66	31.93	36.50	45.61	56.76	64.88	102.62	127.72	145.98	182.44	227.05	259.52	285.06	354.76	405.50	410.49	510.86	583.92
3.5 psig	12.72	15.83	18.09	28.63	35.62	40.71	50.89	63.32	72.37	114.50	142.48	162.83	203.56	253.29	289.47	318.06	395.77	452.30	458.01	569.91	651.32
4.2 psig	13.91	17.30	19.77	31.30	38.94	44.49	55.63	69.21	79.09	125.18	155.74	177.96	222.54	276.87	316.36	347.72	432.61	494.32	500.72	622.96	711.82
5.3 psig	15.58	19.37	22.13	35.05	43.59	49.80	62.30	77.49	88.52	140.18	174.36	199.19	249.21	309.97	354.11	389.39	484.33	553.30	560.73	697.44	796.75

Vacuum Setting

1" WC	1.63	2.02	2.40	3.67	4.54	5.39	6.53	8.06	9.58	14.70	18.15	21.56	26.12	32.26	38.33	40.82	50.40	59.89	58.78	72.58	86.25
2" WC	2.31	2.85	3.39	5.19	6.41	7.62	9.23	11.40	13.55	20.78	25.66	30.49	36.94	45.61	54.20	57.72	71.27	84.69	83.12	102.63	121.95
3.6" WC	3.10	3.82	4.54	6.97	8.60	10.22	12.39	15.30	18.18	27.87	34.42	40.90	49.55	61.19	72.70	77.43	95.61	113.60	111.50	137.67	163.58
5.2" WC	3.72	4.60	5.46	8.37	10.34	12.29	14.89	18.38	21.84	33.50	41.36	49.14	59.55	73.52	87.36	93.04	114.88	136.50	133.98	165.43	196.56
6.8" WC	4.25	5.25	6.24	9.57	11.82	14.05	17.02	21.02	24.97	38.30	47.29	56.18	68.08	84.06	99.88	106.38	131.35	156.07	153.18	189.14	224.74

2440 Vent-to-Atmosphere – Flow Capacity (Metric Units) Nm³/H x 1000 Air

Pressure Setting

70 mbarg	0.18	0.23	0.26	0.42	0.52	0.59	0.74	0.92	1.05	1.66	2.07	2.37	2.96	3.68	4.21	4.62	5.76	6.58	6.66	8.29	9.48
90 mbarg	0.21	0.26	0.30	0.47	0.59	0.67	0.84	1.04	1.19	1.88	2.35	2.68	3.35	4.17	4.77	5.24	6.52	7.46	7.54	9.39	10.74
140 mbarg	0.26	0.32	0.37	0.59	0.73	0.83	1.04	1.30	1.48	2.35	2.92	3.34	4.17	5.19	5.93	6.52	8.11	9.27	9.39	11.68	13.35
190 mbarg	0.30	0.38	0.43	0.68	0.85	0.97	1.21	1.51	1.72	2.73	3.39	3.88	4.85	6.03	6.90	7.58	9.43	10.78	10.91	13.58	15.52
240 mbarg	0.34	0.42	0.48	0.76	0.95	1.09	1.36	1.69	1.93	3.06	3.81	4.35	5.44	6.77	7.73	8.50	10.57	12.08	12.24	15.23	17.40
290 mbarg	0.37	0.46	0.53	0.84	1.04	1.19	1.49	1.86	2.12	3.36	4.17	4.77	5.96	7.42	8.48	9.32	11.60	13.25	13.42	16.70	19.08
340 mbarg	0.40	0.50	0.57	0.91	1.13	1.29	1.61	2.00	2.29	3.63	4.51	5.15	6.45	8.02	9.16	10.07	12.53	14.31	14.50	18.04	20.61

Vacuum Setting

2.5 mbarg	0.04	0.05	0.06	0.10	0.12	0.14	0.18	0.22	0.26	0.39	0.49	0.58	0.70	0.87	1.03	1.10	1.35	1.61	1.58	1.95	2.31
5 mbarg	0.06	0.08	0.09	0.14	0.17	0.20	0.25	0.31	0.36	0.56	0.69	0.82	0.99	1.23	1.46	1.55	1.92	2.28	2.23	2.76	3.28
9 mbarg	0.08	0.10	0.12	0.19	0.23	0.27	0.33	0.41	0.49	0.75	0.92	1.10	1.33	1.64	1.95	2.08	2.57	3.05	3.00	3.70	4.39
13 mbarg	0.10	0.12	0.15	0.22	0.28	0.33	0.40	0.49	0.59	0.90	1.11	1.32	1.60	1.97	2.35	2.50	3.09	3.67	3.60	4.44	5.28
17 mbarg	0.11	0.14	0.17	0.26	0.32	0.38	0.46	0.56	0.67	1.03	1.27	1.51	1.83	2.26	2.68	2.86	3.53	4.19	4.11	5.08	6.03

2450 Pipe-Away – Flow Capacity (English Units) SCFH x 1000 Air

Pressure Setting

1.0 psig	4.64	5.84	6.84	10.45	13.13	15.38	18.57	23.34	27.34	41.79	52.52	61.52	74.29	93.36	109.36	116.08	145.88	170.88	167.15	210.07	246.07
1.3 psig	5.25	6.59	7.72	11.81	14.84	17.38	20.99	26.38	30.90	47.23	59.35	69.52	83.96	105.52	123.59	131.19	164.87	193.11	188.92	237.42	278.08
2.0 psig	6.50	8.16	9.56	14.62	18.36	21.51	25.98	32.65	38.23	58.46	73.46	86.02	103.93	130.59	152.93	162.39	204.05	238.95	233.84	293.83	344.09
2.8 psig	7.67	9.63	11.28	17.25	21.67	25.38	30.67	38.53	45.11	69.01	86.70	101.51	122.69	154.12	180.46	191.70	240.82	281.97	276.04	346.78	406.04
3.5 psig	8.56	10.75	12.58	19.25	24.18	28.31	34.22	42.98	50.32	77.00	96.72	113.23	136.89	171.94	201.29	213.89	268.66	314.51	308.01	386.87	452.90
4.2 psig	9.35	11.75	13.75	21.05	26.43	30.94	37.41	46.98	55.00	84.18	105.72	123.75	149.65	187.94	219.99	233.84	293.67	343.73	336.73	422.88	494.98
5.3 psig	10.47	13.15	15.39	23.57	29.59	34.63	41.90	52.60	61.56	94.27	118.36	138.51	167.59	210.42	246.23	261.86	328.78	384.74	377.08	473.44	554.03

Vacuum Setting

1" WC	1.63	2.02	2.40	3.67	4.54	5.39	6.53	8.06	9.58	14.70	18.15	21.56	26.12	32.26	38.33	40.82	50.40	59.89	58.78	72.58	86.25
2" WC	2.31	2.85	3.39	5.19	6.41	7.62	9.23	11.40	13.55	20.78	25.66	30.49	36.94	45.61	54.20	57.72	71.27	84.69	83.12	102.63	121.95
3.6" WC	3.10	3.82	4.54	6.97	8.60	10.22	12.39	15.30	18.18	27.87	34.42	40.90	49.55	61.19	72.70	77.43	95.61	113.60	111.50	137.67	163.58
5.2" WC	3.72	4.60	5.46	8.37	10.34	12.29	14.89	18.38	21.84	33.50	41.36	49.14	59.55	73.52	87.36	93.04	114.88	136.50	133.98	165.43	196.56
6.8" WC	4.25	5.25	6.24	9.57	11.82	14.05	17.02	21.02	24.97	38.30	47.29	56.18	68.08	84.06	99.88	106.38	131.35	156.07	153.18	189.14	224.74

Varec 2440 and 2450 Series

Spring Loaded Pressure and Vacuum Relief Valve

Specifications - Flow Capacity (continued)

Size, in [mm]	2" [50]			3" [80]			4" [100]			6" [150]			8" [200]			10" [250]			12" [300]		
Overpressure	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%	20%	30%	40%

2450 Pipe-Away – Flow Capacity (Metric Units) Nm³/H x 1000 Air

Pressure Setting

70 mbarg	0.12	0.16	0.18	0.28	0.35	0.41	0.50	0.62	0.73	1.12	1.41	1.65	1.99	2.50	2.93	3.11	3.91	4.58	4.47	5.62	6.59
90 mbarg	0.14	0.18	0.21	0.32	0.40	0.47	0.56	0.71	0.83	1.27	1.59	1.87	2.25	2.83	3.32	3.52	4.43	5.18	5.07	6.37	7.46
140 mbarg	0.18	0.22	0.26	0.39	0.50	0.58	0.70	0.88	1.03	1.58	1.98	2.32	2.80	3.52	4.12	4.38	5.51	6.43	6.31	7.93	9.26
190 mbarg	0.20	0.26	0.30	0.46	0.58	0.67	0.82	1.02	1.20	1.83	2.30	2.70	3.26	4.10	4.80	5.10	6.40	7.50	7.34	9.22	10.79
240 mbarg	0.23	0.29	0.34	0.51	0.65	0.76	0.91	1.15	1.34	2.06	2.58	3.03	3.66	4.59	5.38	5.72	7.18	8.40	8.23	10.34	12.10
290 mbarg	0.25	0.31	0.37	0.56	0.71	0.83	1.00	1.26	1.47	2.26	2.83	3.32	4.01	5.04	5.90	6.27	7.87	9.21	9.03	11.34	13.27
340 mbarg	0.27	0.34	0.40	0.61	0.77	0.90	1.08	1.36	1.59	2.44	3.06	3.58	4.33	5.44	6.37	6.77	8.51	9.95	9.75	12.25	14.33

Vacuum Setting

2.5 mbarg	0.04	0.05	0.06	0.10	0.12	0.14	0.18	0.22	0.26	0.39	0.49	0.58	0.70	0.87	1.03	1.10	1.35	1.61	1.58	1.95	2.31
5 mbarg	0.06	0.08	0.09	0.14	0.17	0.20	0.25	0.31	0.36	0.56	0.69	0.82	0.99	1.23	1.46	1.55	1.92	2.28	2.23	2.76	3.28
9 mbarg	0.08	0.10	0.12	0.19	0.23	0.27	0.33	0.41	0.49	0.75	0.92	1.10	1.33	1.64	1.95	2.08	2.57	3.05	3.00	3.70	4.39
13 mbarg	0.10	0.12	0.15	0.22	0.28	0.33	0.40	0.49	0.59	0.90	1.11	1.32	1.60	1.97	2.35	2.50	3.09	3.67	3.60	4.44	5.28
17 mbarg	0.11	0.14	0.17	0.26	0.32	0.38	0.46	0.56	0.67	1.03	1.27	1.51	1.83	2.26	2.68	2.86	3.53	4.19	4.11	5.08	6.03

Ordering Information

Model Description

24 Spring Loaded Pressure and Vacuum Relief Valve

Code	Model
40	Vent to Atmosphere
50	Pipe-Away

Code	Size
2	2" (2" x 2")
3	3" (3" x 3")
4	4" (4" x 4")
6	6" (6" x 6")
8	8" (8" x 8")
0	10" (10" x 10")
1	12" (12" x 12")

Code	Body/Trim/Insert Material
2	Aluminum/316 Stainless Steel
3	Carbon Steel/316 Stainless Steel
4	316 Stainless Steel/316 Stainless Steel

Code	Flange Finish
FF	Flat Faced Flange - 125# ANSI Drilling
RF	Raised Faced Flange - 150# ANSI Drilling (Carbon Steel and 316 Stainless Steel Bodies Only)
DF	Flat Faced Flange - DIN PN16 Drilling
DR	Raised Faced Flange - DIN PN16 Drilling (Carbon Steel and 316 Stainless Steel Bodies Only)

24 40 2 2 FF Example

Example: 2" vent-to-atmosphere, Aluminum body with 316 Stainless Steel trim, flat faced 125# ANSI flange drilling.

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