

VENTING | DEDICATED VENT

## SERIES 6000 PVRV



### Features

- Direct-acting pressure and vacuum relief vent (PVRV) with light-weight aluminum construction.
- Two size families, offering venting from 2" to 12" ANSI 150" Connections.
- Patented Unidirectional Binary Relief (UBR) valve technology offers higher flow rates with less overpressure while offering flutter-free operation on 2 - 6" sizes.
- Offered with flexible pressure and vacuum relief settings in a wide array of inline and end-of-line configurations.
- Soft Viton gaskets standard and four-point pallet guides for repeatable reseating with bubble-tight sealing up to 90% of set pressure, helping combat fugitive emissions.
- Flow rates third-party verified.
- Made and stocked in Canada.



## FEATURES

### Direct Acting Pressure and Vacuum Relief Vent

- The Series 6000 PVRV is actuated by tank pressures and vacuums directly. No external instrumentation or controls required.
- Relief values set via weights on valve pallets, and adjustable in 0.5 ozsi [0.22 kPa] increments.

### Two Size Variants

- The Series 6000 PVRV offers devices with either a 6" or 12" throat diameter.
- 6" throat devices can support 2, 3, 4 and 6" flat-face ANSI/ASME B16.5 150# bolt pattern tank connections. The 6" device can also be configured with a 8" API 12F thief hatch bolt pattern, with the same flow characteristics of the 6" device.
- 12" throat devices can support 8, 10 and 12" flat-face ANSI/ASME B16.5 150# bolt pattern tank connections.

### Optional UBR Valve Technology

- Patented<sup>1</sup> Unidirectional Binary Relief (UBR) technology can achieve a higher fraction of rated relief capacity at lower pressures as compared to a standard direct-acting valve.
- UBR is recommended for use only when high relief flow rate at low overpressure are required, or if the application demands a set point outside the range of a standard valve.
- Both the pressure and vacuum valves in the 2" to 6" vents can be configured with Hawkeye's patented UBR valve or as a standard weight-loaded direct-acting valve. Vents in the 8" to 12" range are only available in standard configuration at this time.

### Flexible Configuration

- The PVRV can be configured as an end-of-line vent, with pressure and vacuum relief to atmosphere, or optionally as an in-line vent with pressure relief to an integral pipe-away connection.
- 6" throat variants support a 6" flat-face ANSI/ASME 150# bolt pattern pipe-away connection.
- 12" throat variants support a 12" flat-face ANSI/ASME 150# bolt pattern pipe-away connection.

### Enhanced Fluorocarbon Gaskets

- 6" throat Series 6000 PVRV come standard with Vitocore (eFKM + FKM) composite gaskets.
- Vitocore is permanently bonded soft and hard Viton materials, providing excellent sealing performance of soft Viton and the resiliency of hard Viton.
- The 12" throat Series 6000 PVRV comes standard with mechanically-retained expanded Viton (eFKM) gaskets.

- Bubble-tight sealing to 90% of set pressure typically achievable with the Series 6000 line-up.

### Precision Components

- Precision molded and machined sealing components provide consistent sealing and venting performance.
- Glass-filled Nylon pallets and seats provide excellent chemical, corrosion, temperature and wear resistance while remaining light, strong and extremely durable.

### Full Encompassing Guide

- Each of the pressure and vacuum pallets are retained by two full encompassing pallet guides across their full travel, providing full confidence that the internal moving components will not become dislodged or misaligned.
- 4 point contact reduces friction, wear and the risk of becoming stuck over a full contact guide.

### Empirical Flow Characteristic Data

- Data used to determine the pressure and vacuum relief flow rates was generated from full-scale flow characteristic determination conducted on all vents configurations.
- All data was collected and verified by C-FER Technologies (1999) Inc. in accordance with API 2000, 7th Ed. Full report available upon request.

### Design, Manufactured and Stocked in Canada

- The Series 6000 is manufactured and stocked for quick delivery at Hawkeye's Edmonton plant.



**Made in Canada.**

<sup>1</sup> Patented US10,208,866 CAN2,955,724

## SPECIFICATIONS

Function	Pressure + Vacuum Relief Vent (PVRV)		
Size Family	6" Throat		12" Throat
Operating Principle	<b>Unidirection Binary Relief (UBR)</b> Hybrid Direct-acting / Pilot Operated Valve	<b>Standard (STD)</b> Direct-acting Valve, Weight-loaded pallet	<b>Standard (STD)</b> Direct-acting Valve, Weight-loaded pallet
Maximum allowable pressure	4 psig [28 kPag]		
Pressure Relief Set Range	8 ozsi to 32 ozsi [3.4 kPa to 13.8 kPa] <sup>1</sup>	0.25 ozsi to 16 ozsi [0.11 kPa to 6.9 kPa]	0.4 ozsi to 48 ozsi [0.17 kPa to 20.7 kPa]
Vacuum Relief Set Range	4 ozsi to 16 ozsi [1.7 kPa to 6.9 kPa] <sup>1</sup>	0.25 ozsi to 8 ozsi [0.11 kPa to 3.4 kPa]	0.4 ozsi to 32 ozsi [0.17 kPa to 13.8 kPa]
Relief Setting Accuracy	±10%	±5%	
Leakage Rate (Typical) <sup>2</sup>	< 1 SCFH [ $< 0.03 \text{ Nm}^3/\text{hr}$ ] @ 90% of set 0 SCFH [0 $\text{Nm}^3/\text{hr}$ ] @ 75% of set	< 1 SCFH [ $< 0.03 \text{ Nm}^3/\text{hr}$ ] @ 90% of set 0 SCFH [0 $\text{Nm}^3/\text{hr}$ ] @ 75% of set	
Reset Pressure	At 70% of Relief Setting (Approx.)	At Relief Setting (approx)	
Process Connection <sup>3</sup>	2", 3", 4" or 6" x 1/2" Thick FF Flange with ANSI/ASME B16.5 150# Bolt Pattern 8" x 1/2" Thick FF Flange with API 12B/F Gauge Hatch Bolt Pattern (6" device only)		8", 10" or 12" FF ANSI/ASME B16.5 Flange.
Temperature Range	-26°C to 204°C [-15°F - 400°F] for FKM (Viton) <sup>4</sup> Extended service: -40°C to 250°C [-58°F - 482°F] for FKM (Viton) <sup>5</sup>		

<sup>1</sup> Although the UBR valve can have settings as low as 0.5 ozsi, it is strongly recommended to use in the indicated range for best sealing performance.

<sup>2</sup> When equipped with standard FKM + FKM composite seals. Other seal options may not meet the leak rate requirements of API 2000 in some situations.

<sup>3</sup> All Series 6000 vents are furnished with Flat-Face (FF) connections. For low pressure tank equipment, connecting Raised-Face (RF) to FF flanges is allowed, provided the use of flat-face gasket and filler flange are used and the fasteners are torqued per the Hawkeye installation instruction for the specific venting product.

<sup>4</sup> Temperatures provided are continuous service temperatures for the indicated seal materials. Powercoating may lose abrasion resistance starting at temperatures over 100°C [212°F].

<sup>5</sup> Hawkeye tested the sealing performance of FKM (Viton) at -40°C [-40°F] and found only a slight decrease in sealing performance, returning to baseline at continuous operating temperatures.

## UNIDIRECTIONAL BINARY RELIEF (UBR) TECHNOLOGY

Hawkeye's patented UBR valve technology combines the ease and simplicity of a weight-loaded pallet device with precise "off-on" operation of a pilot-controlled valve. UBR technology opens the valve quicker and more fully in comparison to conventional direct-acting valves at same fractional overpressures up to the rated flow capacity. The UBR valve uses the process pressure itself to assist in valve operation, and does not require any external controls or instrumentation. It is a complete, intrinsic capability available on 6" Throat Series 6000 PVRVs (2 to 6" 150# and 8" API connections).

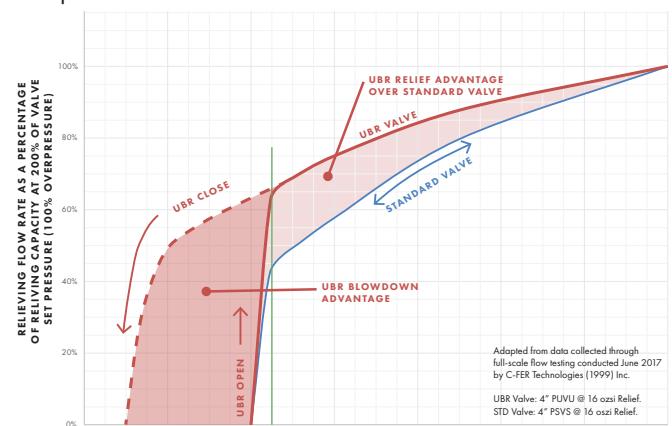
### Operation

Unidirectional Binary Relief (UBR) describes how pallets respond to tank or process pressures. In the opening direction, the valve acts as a binary (off-on) device; in closing, it operates like a traditional direct-acting valve. Although the UBR valve has the same rated relief capacity at 100% overpressure (2x relief setting) as a conventional PVRV, it achieves a higher percentage of that flow rate with less overpressure (see chart).

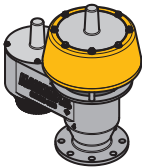
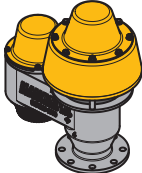
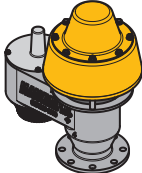
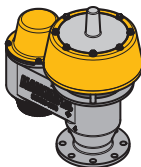
At only 5% over the set relief pressure the UBR valve is venting approximately 65% of its rated relief capacity, compared to 45% for the standard valve. As inlet pressure decreases, the pallet resets, reseating and closing the valve around 70% of the set pressure.

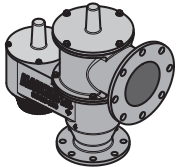
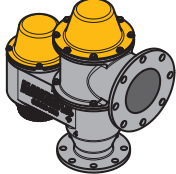
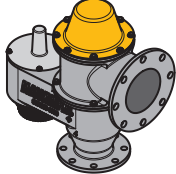
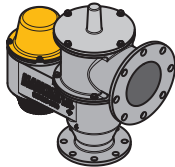
### Benefits

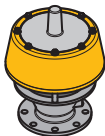
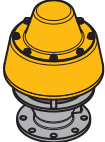
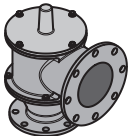
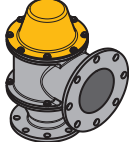
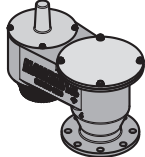
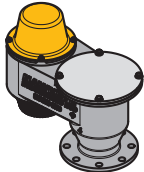
- UBR valves open less frequently, due to the greater difference between opening and closing pressures (blowdown), resulting in reduced flutter, and is less prone to freezing due to emitted condensation.
- In high-flow applications, UBR valve-equipped PVRVs achieve higher pressure and vacuum set points, provided normal operating pressures and/or vacuums are less than 70% of the set point.
- PVRVs with UBR valves achieve higher flow rates than a comparable standard valve at low overpressures. A standard valve maintains better sealing performance near the set pressure of the valve.



## CONFIGURATIONS

6" Throat		PRESSURE + VACUUM RELIEF - END OF LINE			
DEVICE					
	<b>PSVS (6x01)</b>	<b>PUVU (6x00)</b>	<b>PUVS (6x02)</b>	<b>PSVU (6x03)</b>	
CONNECTION	2 – 6 ANSI/ASME B16.5 150# FF, 8 API 12B/F BOLT PATTERNS <sup>1</sup>				
OUTLET	ATMOSPHERE	ATMOSPHERE	ATMOSPHERE	ATMOSPHERE	
PRESSURE VALVE	STD	UBR	UBR	STD	
VACUUM VALVE	STD	UBR	STD	UBR	
PRESSURE RELIEF	0.25 TO 16 OZSI	8 TO 32 OZSI	8 TO 32 OZSI	0.25 TO 16 OZSI	
VACUUM RELIEF	0.25 TO 8 OZSI	4 TO 16 OZSI	0.25 TO 8 OZSI	4 TO 16 OZSI	

6" Throat		PRESSURE + VACUUM RELIEF - INLINE			
DEVICE					
	<b>PSPAVS (6x11)</b>	<b>PUPAVU (6x10)</b>	<b>PUPAVS (6x12)</b>	<b>PSPAVU (6x13)</b>	
CONNECTION	2 – 6 ANSI/ASME B16.5 150# FF, 8 API 12B/F BOLT PATTERNS <sup>1</sup>				
OUTLET	6 ANSI/ASME B16.5 150# FF BOLT PATTERN <sup>2</sup>				
PRESSURE VALVE	STD	UBR	UBR	STD	
VACUUM VALVE	STD	UBR	STD	UBR	
PRESSURE RELIEF	0.25 TO 16 OZSI	8 TO 32 OZSI	8 TO 32 OZSI	0.25 TO 16 OZSI	
VACUUM RELIEF	0.25 TO 8 OZSI	4 TO 16 OZSI	0.25 TO 8 OZSI	4 TO 16 OZSI	

6" Throat		PRESSURE RELIEF - END OF LINE		PRESSURE RELIEF - INLINE		VACUUM RELIEF ONLY	
DEVICE							
	<b>PS (6x24)</b>	<b>PU (6x25)</b>	<b>PSPA (6x34)</b>	<b>PUPA (6x35)</b>	<b>VS (6x46)</b>	<b>VU (6x47)</b>	
CONNECTION	2 – 6 ANSI/ASME B16.5 150# FF, 8 API 12B/F BOLT PATTERNS <sup>1</sup>						
OUTLET	ATMOSPHERE	ATMOSPHERE	6 ANSI/ASME B16.5 150# FF <sup>2</sup>		ATMOSPHERE	ATMOSPHERE	
PRESSURE VALVE	STD	UBR	STD	UBR	—	—	
VACUUM VALVE	—	—	—	—	STD	UBR	
PRESSURE RELIEF	0.25 TO 16 OZSI	8 TO 32 OZSI	0.25 TO 16 OZSI	8 TO 32 OZSI	—	—	
VACUUM RELIEF	—	—	—	—	0.25 TO 8 OZSI	4 TO 16 OZSI	

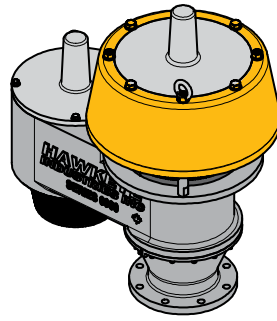
<sup>1</sup> Inlet diameter of 8" API connection is 6" and shares the flow characteristic of the 6" device.

<sup>2</sup> Reported flow rates are with 6" outlet.

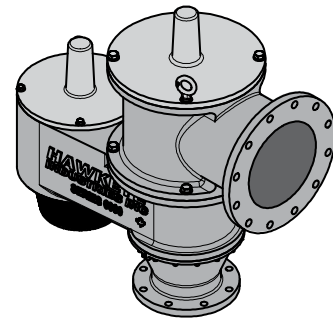
**12" Throat**

**PRESSURE + VACUUM RELIEF**

DEVICE



**PSVS (6x01)**



**PSPAVS (6x11)**

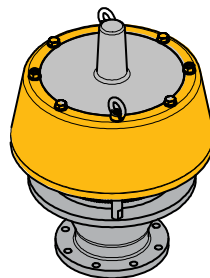
<b>CONNECTION</b>	8 – 12 ANSI/ASME B16.5 150# FF	
<b>OUTLET</b>	ATMOSPHERE	12 ANSI 150# <sup>3</sup>
<b>PRESSURE VALVE</b>	STD	STD
<b>VACUUM VALVE</b>	STD	STD
<b>PRESSURE RELIEF</b>	0.4 TO 32 OZSI	0.4 TO 32 OZSI
<b>VACUUM RELIEF</b>	0.4 TO 16 OZSI	0.4 TO 16 OZSI

**12" Throat**

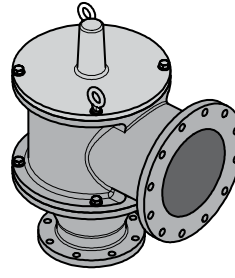
**PRESSURE RELIEF ONLY**

**VACUUM RELIEF ONLY**

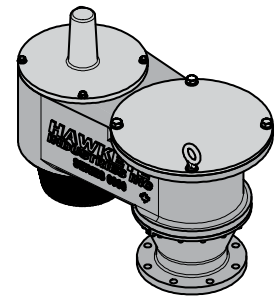
DEVICE



**PS (6x24)**



**PSPA (6x34)**



**VS (6x46)**

<b>CONNECTION</b>	8 – 12 ANSI/ASME B16.5 150# FF		
<b>OUTLET</b>	ATMOSPHERE	12 ANSI/ASME B16.5 150# FF <sup>3</sup>	ATMOSPHERE
<b>PRESSURE VALVE</b>	STD	STD	—
<b>VACUUM VALVE</b>	—	—	STD
<b>PRESSURE RELIEF</b>	0.4 TO 32 OZSI	0.4 TO 32 OZSI	—
<b>VACUUM RELIEF</b>	—	—	0.4 TO 16 OZSI

<sup>3</sup> Reported flow rates are with 12" outlet.

**VALVE OPENING SENSORS**

Select PVRVs can be ordered with ready-to-install proximity switches to indicate when a valve is open or closed. The Class 1 Div 1 / Zone 0 rated sensors can be configured NO or NC and come complete with conduit, mounting hardware and junction boxes for a compliant HazLoc installation.

Sensors are available for pressure- and vacuum-side standard valves.

Not available with UBR valves.

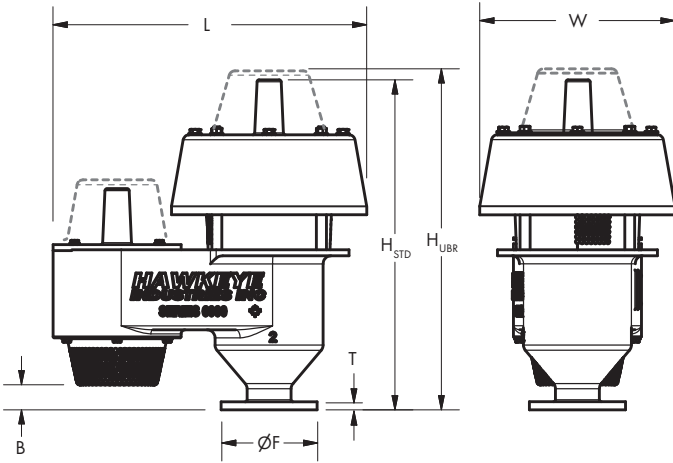
**SENSOR SPECIFICATIONS**

HazLoc	UL/CSA Class I, II, III Div 1 Intrinsically Safe Zone 0
Group	A, B, C, D, E, F, G
Temperature Class	T4
Environmental Protection	IP66, 67 & 68 / NEMA 4X & 6P
Safety Rating	SIL 2 / SC3
Electrical Rating †	3A @ 24 VDC, 4A @ 110/120 VAC, 2A @ 230/240 VAC

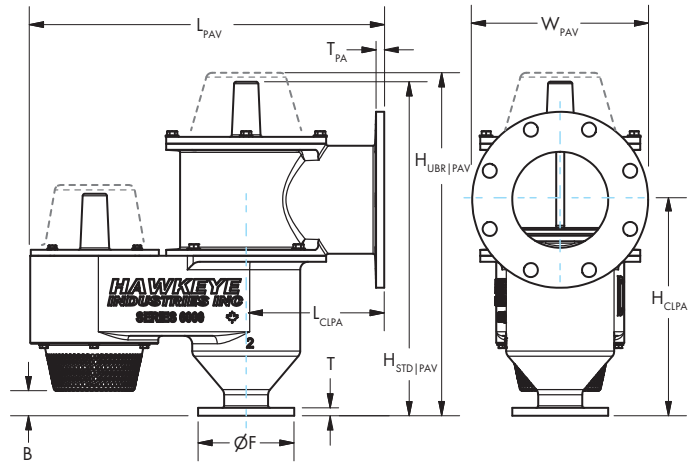
† Electrical rating limited to 30V, 250 mA, 1.3W for intrinsically safe applications.

**DIMENSIONS, WEIGHTS AND MOUNTING**

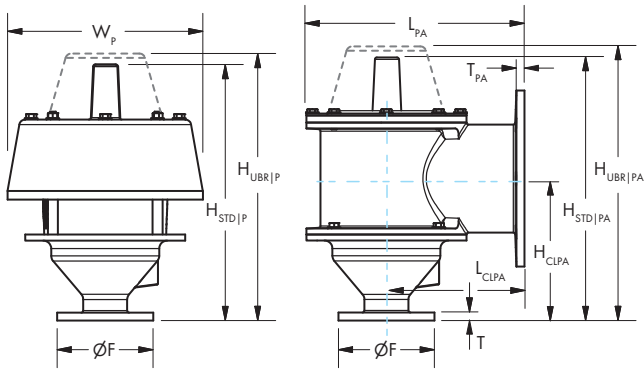
**PSVS, PUVU, PSVU, PUVS**



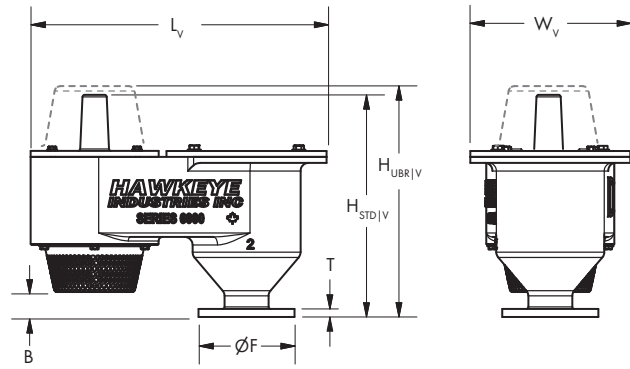
**PSPAVS, PUPAVU, PUPAVS, PSPAVU**



**PS, PU, PSPA, PUPA**



**VS, VU**



Dimension	Value	Value			
		2 - 6"		8 - 12"	
		[in]	[mm]	[in]	[mm]
B	Vacuum Inlet Clearance	1.6	41	2.5	64
<b>Height</b>					
H <sub>STD</sub>	Pressure + Vacuum, STD	20.6	523	41.6	1057
H <sub>UBR</sub>	Pressure + Vacuum, UBR	21.3	541	—	—
H <sub>STD P</sub>	Pressure only, STD	16.0	406	32.1	815
H <sub>UBR P</sub>	Pressure only, UBR	16.7	424	—	—
H <sub>STD PA</sub>	Pressure only Pipe-away, STD	16.2	411	32.9	836
H <sub>UBR PA</sub>	Pressure only Pipe-away, UBR	16.9	429	—	—
H <sub>STD PAV</sub>	Pressure Pipe-away + Vacuum, STD	20.9	531	42.4	1077
H <sub>UBR PAV</sub>	Pressure Pipe-away + Vacuum, UBR	21.6	549	—	—
H <sub>STD V</sub>	Vacuum only, STD Valves	13.8	351	28.1	714
H <sub>UBR V</sub>	Vacuum only, UBR Valves	14.5	368	—	—
H <sub>CLPA</sub>	Mount Flange to PA CL	13.5	343	27.4	696

Dimension	Value	Value			
		2 - 6"		8 - 12"	
		[in]	[mm]	[in]	[mm]
<b>Length</b>					
L	Length, Pressure + Vacuum	19.6	498	39.1	993
L <sub>PA</sub>	Length, Pressure only Pipe-away	13.6	345	27.2	691
L <sub>PAV</sub>	Length, Pressure + Vacuum Pipe-away	22.1	561	44.2	1123
L <sub>V</sub>	Length, Vacuum only	18.5	470	37.0	940
L <sub>CLPA</sub>	Length, Flange CL to PA Face	8.63	219	17.2	437
<b>Width</b>					
W, W <sub>P</sub>	Width, Pressure + Vacuum & Pressure only	12.2	310	24.2	615
W <sub>PAV</sub>	Width, Pressure + Vacuum Pipe-away	11	279	20.0	508
W <sub>V</sub>	Width, Vacuum Only	10	254	20.0	508
<b>Connection</b>					
T	Flange Thickness, Base	0.5	12.7	See mounting table	
T <sub>PA</sub>	Flange Thickness, Pipe-away	0.44	11.1		

Device	Device Weight, no weight plates (lb [kg])						
	2"	3"	4"	6"	8"	10"	12"
<b>Pressure + Vacuum</b>							
PSVS (6x01)	32 [14.5]	33 [14.9]	33.5 [15.2]	35 [15.8]	196 [88.9]	200 [90.7]	208 [94.3]
PUVU (6x00)	34 [15.4]	35 [15.8]	35.5 [16.1]	37 [16.7]	—	—	—
PSVU (6x03)	33 [14.9]	34 [15.4]	34.5 [15.6]	36 [16.3]	—	—	—
PUVS (6x02)	33 [14.9]	34 [15.4]	34.5 [15.6]	36 [16.3]	—	—	—
<b>Pressure Pipe-away + Vacuum</b>							
PSPAVS (6x11)	41 [18.6]	42 [19]	42.5 [19.2]	44 [19.9]	260 [118.0]	265 [120.2]	272 [123.4]
PUPAVU (6x10)	43.5 [19.7]	44.5 [20.1]	45 [20.4]	46.5 [21]	—	—	—
PUPAVS (6x12)	42 [19]	43 [19.5]	43.5 [19.7]	45 [20.4]	—	—	—
PSPAVU (6x13)	42 [19]	43 [19.5]	43.5 [19.7]	45 [20.4]	—	—	—
<b>Pressure Only</b>							
PS (6x24)	18 [8.14]	18.5 [8.37]	19 [8.6]	20.5 [9.28]	113 [51.3]	117 [53.1]	124 [56.2]
PU (6x25)	19 [8.6]	19.5 [8.82]	20 [9.05]	21.5 [9.73]	—	—	—
<b>Pressure Pipe-away Only</b>							
PSPA (6x34)	27 [12.2]	27.5 [12.4]	28 [12.7]	29.5 [13.3]	178 [80.7]	182 [82.6]	189 [85.7]
PUPA (6x35)	28 [12.7]	28.5 [12.9]	29 [13.1]	30.5 [13.8]	—	—	—
<b>Vacuum Only</b>							
VS (6x46)	24 [10.9]	25 [11.3]	25.5 [11.5]	27 [12.2]	147 [66.7]	151 [68.5]	158 [71.7]
VU (6x47)	25 [11.3]	26 [11.8]	26.5 [12]	28 [12.7]	—	—	—

DIM	Mounting							
	2"	3"	4"	6"	8"	10"	12"	
CCN	ANSI/ASME B 16.5 150# FF BOLT PATTERN			8 API 12B/F	ANSI/ASME B 16.5 150# FF			
BCD	4.75	6.00	7.50	9.50	10.38	11.75	14.25	17.00
# Bolts	4	4	8	8	16	8	12	12
Hole Ø	3/4	3/4	3/4	7/8	9/16	7/8	1	1
F	6.0	7.5	9.0	11.5	11.5	13.5	16	19
T	0.5	0.5	0.5	0.5	0.5	1.06	1.12	1.19
T <sub>PA</sub>	0.44	0.44	0.44	0.44	0.44	1.19	1.19	1.19

### FLOW CHARACTERISTIC

All Series 6000 PVRV configurations and valve types have flow characteristic information available for sizing purposes.

Relieving rates and behavior determined empirically in accordance with a test regime in consideration of API 2000 7th Ed from data collected and verified by C-FER Technologies (1999) Inc. Their third-party test report outlining the apparatus, procedure, error propagation and other experimental considerations available upon request.

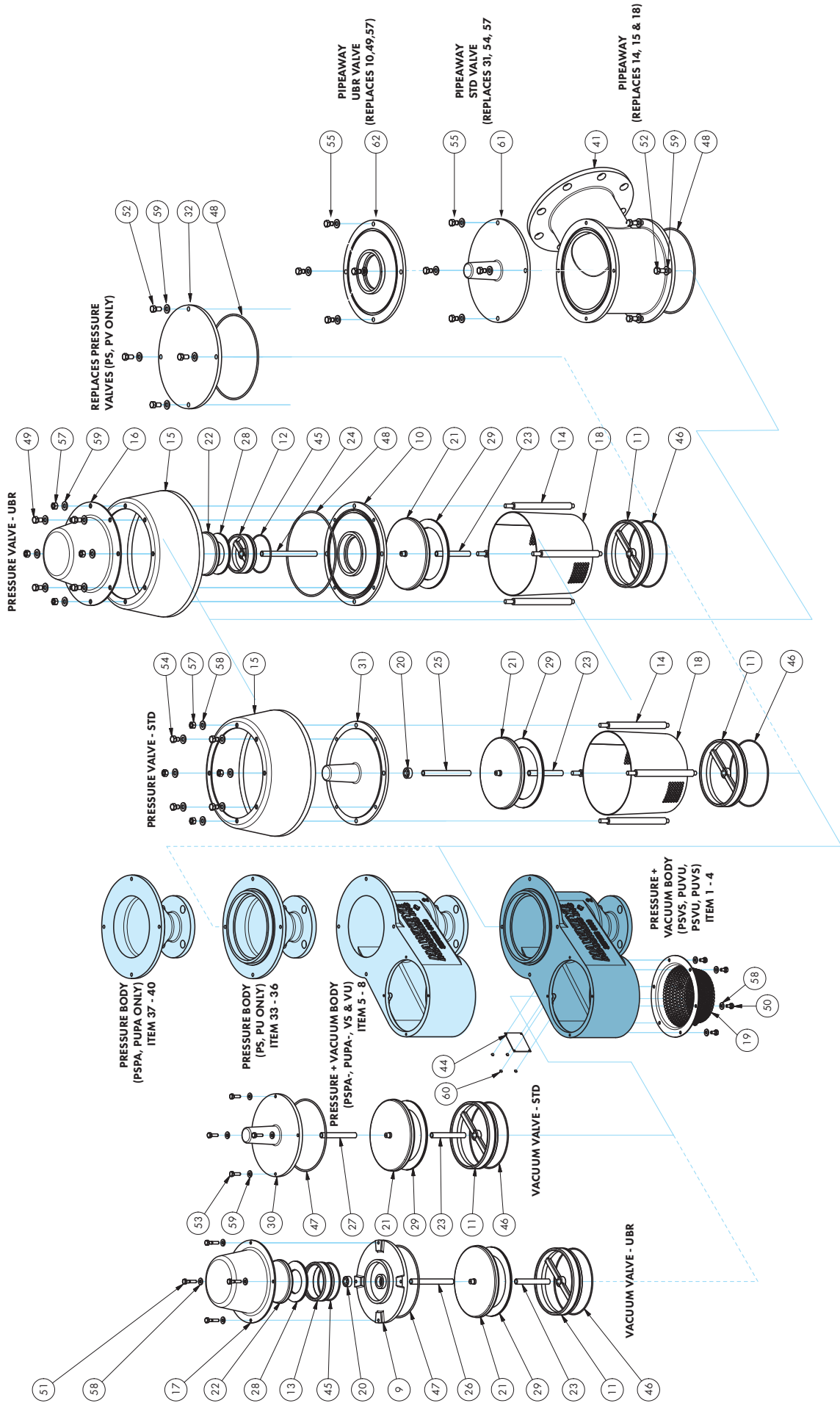
Analysis of the data and presentation of relieving rates and behavior is the product of Hawkeye Industries Inc., based on API 2000 7th Ed section 5.3.2.1.

### LEAK TESTING

Series 6000 PVRVs are tested per API 2000 7th Ed section 5.4 for pressure-tightness, relief setting accuracy and leak rate. Items passing the quality control measures are marked with the label at right.



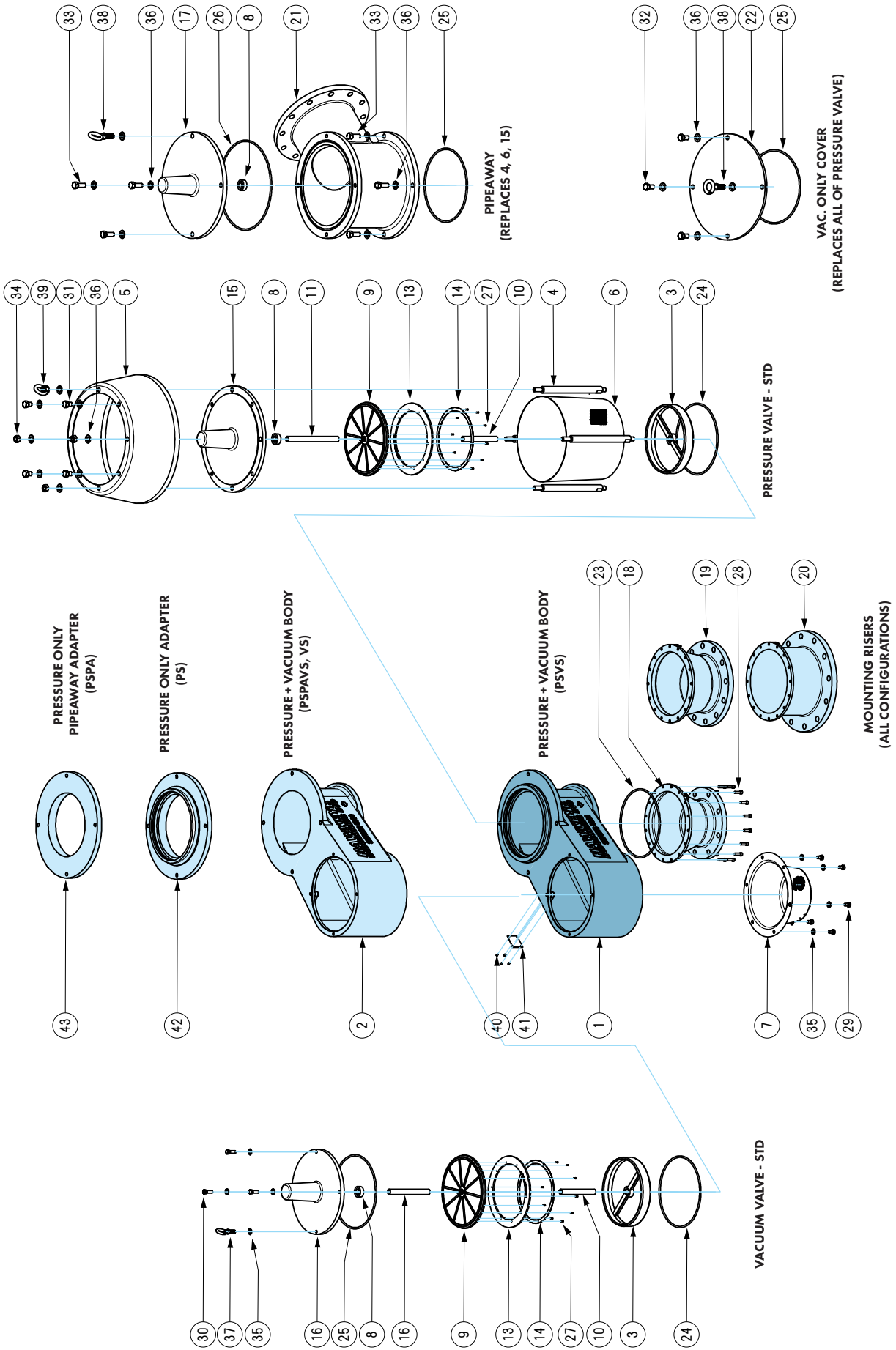
**PARTS LIST - 6" THROAT (2" TO 6" ANSI 150#)**



#	Part Name	Part #	Material
1	PVRV Base - 2"	220.302.010	319 Al
2	PVRV Base - 3"	220.303.010	319 Al
3	PVRV Base - 4"	220.304.010	319 Al
4	PVRV Base - 6"	220.306.010	319 Al
5	PVRV PA Base - 2"	220.302.020	319 Al
6	PVRV PA Base - 3"	220.303.020	319 Al
7	PVRV PA Base - 4"	220.304.020	319 Al
8	PVRV PA Base - 6"	220.306.020	319 Al
9	Vac. Pilot Pallet Seat Holder	220.300.120	GF PA66
10	Pres. Pilot Pallet Seat Holder	220.300.130	GF PA66
11	Relief Pallet Seat	220.300.320	GF PA66
12	Pres. Pilot Pallet Seat	220.300.140	GF PA66
13	Vac. Pilot Pallet Seat	220.300.040	GF PA66
14	Pres. Stand-off	220.300.100	6061 Al
15	Pres. Hood	220.300.530	3003 Al
16	Pres. Cap	220.300.520	3003 Al
17	Vac. Hood	220.300.510	3003 Al
18	Pres. Screen	220.800.620	304 SS
19	Vac. Screen	220.800.610	304 SS
20	Guide Insert	220.800.310	GF PA66
21	Relief Pallet	220.300.330	GF PA66
22	Pilot Pallet	220.300.310	GF PA66
23	Lower Pallet Guide Rod	220.300.050	6061 Al Red
24	Pres. Pallet Center Guide Rod	220.300.090	6061 Al Blue
25	Pres. Pallet Top Guide Rod	220.300.080	6061 Al Green
26	Vac. Pallet Center Guide Rod	220.300.070	6061 Al Orange
27	Vac. Pallet Top Guide Rod	220.300.060	6061 Al Gold
28	Composite Pilot Gasket	220.200.710	EFKM/NEOCORE/ VITOCORE/EPTFE
29	Composite Relief Gasket	220.200.000	EFKM/NEOCORE/ VITOCORE/EPTFE
30	Vac. Cover	220.300.010	319 Al

#	Part Name	Part #	Material
31	Pres. Cover	220.300.020	319 Al
32	Vac.-Only Cover	220.300.030	319 Al
33	Pres.-Only Base 2"	220.302.110	319 Al
34	Pres.-Only Base 3"	220.303.110	319 Al
35	Pres.-Only Base 4"	220.304.110	319 Al
36	Pres.-Only Base 6"	220.306.110	319 Al
37	Pres.-Only Base 2" PA	220.302.120	319 Al
38	Pres.-Only Base 3" PA	220.303.120	319 Al
39	Pres.-Only Base 4" PA	220.304.120	319 Al
40	Pres.-Only Base 6" PA	220.306.120	319 Al
41	Pipe-away Body	220.306.000	319 Al
42	Pipe-away Pres. Cover	220.300.110	319 Al
43	Pres. Pilot Pallet Seat Hldr (PA)	220.300.150	319 Al
44	Vapour Control Tag	010.909.060	6061 Al
45	153 O-Ring	010.338.110	FKM
46	164 O-Ring	010.338.130	FKM
47	261 O-Ring	010.338.280	FKM
48	266 O-Ring	010.338.290	FKM
49	3/8 UNC x 1 Hex Bolt	010.006.140	18-8 SS
50	1/4 UNC x 1/2 Hex Bolt	010.006.070	18-8 SS
51	1/4 UNC x 1-1/4 Hex Bolt	010.006.040	18-8 SS
52	3/8 UNC x 3/4 Hex Bolt	010.006.160	18-8 SS
53	1/4 UNC x 7/8 Hex Bolt	010.006.090	18-8 SS
54	3/8 UNC x 1/2 Hex Bolt	010.006.150	18-8 SS
55	3/8 UNC x 7/8 Hex Bolt	010.006.180	18-8 SS
57	3/8 UNC Hex Nut	010.0A6.100	18-8 SS
58	1/4 SAE Flat Washer	010.0B6.040	18-8 SS
59	3/8 SAE Flat Washer	010.0B6.060	18-8 SS
60	#4x5/16 ZP Drive Screw	010.0F6.020	CS ZP
61	Pres. Cover for PA	220.300.110	319 Al
62	Pres. Pilot Pallet Seat Holder for PA	220.300.150	319 Al

**PARTS LIST - 12" THROAT (8" TO 12" ANSI 150#)**



#	Part Name	Part #	Material
1	PVRV Body – STD	220.312.010	319 Al
2	PVRV Body – Pipe-Away/Vacuum-Only	220.312.010	319 Al
3	Relief Pallet Seat	220.312.320	GF PA66
4	Pres. Stand-off	220.312.100	6061 Al
5	Pres. Hood	220.312.530	3003 Al
6	Pres. Screen	220.812.620	304 SS
7	Vac. Screen	220.812.610	304 SS
8	Guide Insert	220.812.310	GF PA66
9	Relief Pallet	220.812.330	GF PA66
10	Lower Pallet Guide Rod	220.312.050	6061 Al Red
11	Pres. Pallet Upper Guide Rod	220.312.080	6061 Al Green
12	Vac. Pallet Upper Guide Rod	220.312.060	6061 Al Gold
13	Relief Pallet Gasket	220.212.XXX	EFKM/NEOCORE/ VITOCORE/EPTFE
14	Relief Pallet Gasket Retainer	220.812.340	316 SS
15	Pres. Cover	220.312.040	319 Al
16	Vac. Cover	220.312.030	319 Al
17	Pipe-away Pres. Cover	220.312.070	319 Al
18	PVRV Nozzle, 8"	220.308.400	319 Al
19	PVRV Nozzle, 10"	220.310.400	319 Al
20	PVRV Nozzle, 12"	220.312.400	319 Al
21	Pipe-away Body	220.312.000	319 Al
22	Vac.-Only Cover	220.312.090	5052 Al

#	Part Name	Part #	Material
23	454 O-Ring	010.338.390	FKM
24	455 O-Ring	010.338.400	FKM
25	456 O-Ring	010.338.410	FKM
26	462 O-Ring	010.338.420	FKM
27	#4-40 UNC x 3/8 Hex Socket Head Bolt	010.006.020	18-8 SS
28	3/8-16 UNC x 1-1/4 Hex Socket Head Bolt	010.006.300	18-8 SS
29	1/2-13 UNC x 3/4 Hex Bolt	010.006.240	18-8 SS
30	1/2-13 UNC x 1-1/2 Hex Bolt	010.006.250	18-8 SS
31	3/4-10 UNC x 1 Hex Bolt	010.006.260	18-8 SS
32	3/4-10 UNC x 1-1/2 Hex Bolt	010.006.270	18-8 SS
33	3/4-10 UNC x 2 Hex Bolt	010.006.280	18-8 SS
34	3/4-10 UNC Hex Nut	010.006.150	18-8 SS
35	1/2 SAE Flat Washer	010.006.010	18-8 SS
36	3/4 SAE Flat Washer	010.006.150	18-8 SS
37	1/2-13 UNC x 1-1/2 Shldr Eye Bolt	010.076.020	18-8 SS
38	3/4-10 UNC x 2 Shldr Eye Bolt	010.076.030	18-8 SS
39	3/4-10 UNC Eye Nut	010.006.160	18-8 SS
40	#4x5/16 ZP Drive Screw	010.0F6.020	CS ZP
41	Vapour Control Tag	010.909.060	6061 Al
42	PVRV Pres.-Only Adapter – STD	220.312.110	319 Al
43	PVRV Pres.-Only Adapter – Pipe-away	220.312.120	319 Al

## ORDERING INFORMATION

PVRVs are configured to order from stocked components for target delivery in under 2 weeks. Configure your desired vent using the part number legend below, and contact your Hawkeye sales rep to place an order. Items in **bold** are standard items.

**PVRV** — **6** **A** **B** **C** — **D** **D** **D** **E** **E** **E** — **F** **G** **H** **J**

**[A] Size**

CXN Size	Throat Ø	Flag
2 in.	6 in.	2
3 in.		3
4 in.		4
6 in.†		6
8 in.	12 in.	A
10 in.		B
12 in.		C

† For 8" API 12B/F connections, select the 6 for Size Flag A, and set Bolt Pattern Flag F to 1. 8" API 12B/F connections only available on 6 in. connection size devices.

**[D] Pressure\***

Setting (ozsi)	Flag
n/a	000
0.25	002
0.4 †	004
0.5	005
1.0	010
⋮	⋮
47.0	470
47.5	475
48.0	480

**[E] Vacuum\***

Setting (ozsi)	Flag
n/a	000
0.25	002
0.4 †	004
0.5	005
1.0	010
⋮	⋮
31.0	310
31.5	315
32.0	320

**[C] Valve Type**

Pressure	Vacuum	Flag
UBR	UBR	0
STD	STD	1
UBR	STD	2
STD	UBR	3
STD	—	4
UBR	—	5
—	STD	6
—	UBR	7

**[B] Relief Type**

Configuration	Flag
Pres. + Vac.	0
Pres. Pipeaway + Vac.	1
Pres. only	2
Pres. only Pipeaway	3
Vac. only	4

**\* Allowable Pressure and Vacuum Relief Setting Ranges**

Throat Ø	Valve	Pressure (ozsi)			Vacuum (ozsi)		
		Min	Max	Inc.	Min	Max	Inc.
6 in.	UBR	8.0	32	0.5	4.0	16	0.5
	Standard	0.25	16	0.5	0.25	8	0.5
12 in.	Standard	0.4	48	0.5	0.4	32	0.5

† 0.4 ozsi setting available on Standard Valve only.

**[F] Bolt Pattern**

Configuration	Flag
ANSI B16.5 150# FF	0
API 12B/F 650 †	1

**[G] Valve Opening Sensors**

Configuration	Flag
<b>No Sensors</b>	<b>0</b>
Pressure + Vacuum Valve	1
Pressure Valve Only	2
Vacuum Valve Only	3

**[H] Body Material / Coating**

Configuration	Flag
<b>Bare Aluminum</b>	<b>0</b>
Severe Service (Teflon) Coating	1

**[J] Seal Material**

Configuration	Flag
<b>Vitocore (eFKM + FKM) composite<sup>1</sup></b>	<b>Z</b>
Neocore (eCR + CR) composite seals	C
<b>eFKM (Sponge Viton)<sup>2</sup></b>	<b>S</b>
ePTFE (Sponge Teflon)† (STD VALVE ONLY)	T

**Examples**

Series 6000 PVRV, 4" ANSI 150# Pressure Pipe Away Std + Vacuum UBR, 8 ozsi / 0.5 ozsi relief, STD Trim  
Grade 8 Bolts, FKM Base Gasket  
**PVRV-6413-080005-000Z**  
with **VCBK-0418-0** & **VCGA-045V-0**

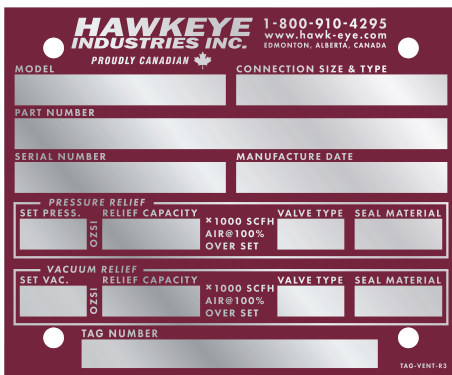
Series 6000 PVRV, 6 NPS x 8 API, Pressure Std + Vacuum Std, 12 ozsi / 0.4 ozsi relief, STD Trim  
Grade 5 Bolts, 1/4" Viton Base Gasket  
**PVRV-6601-120004-100Z**  
& **VCBK-0805-0** + **VCGA-080V-1**

Series 6000 PVRV, 10" ANSI 150# Pressure Pipe Away Std + Vacuum Std, 32 ozsi / 16 ozsi relief, STD Trim  
Grade 5 Bolts, CR Base Gasket  
**PVRV-6B11-320160-000S**  
with **VCBK-1005-0** & **VCGA-105V-0**

<sup>1</sup> Standard on 6" Throat devices  
<sup>2</sup> Standard and available only on 12" Throat devices  
† Valves equipped with solid elastomer or expanded polymer seals may not meet API 2000 leak rate requirements, and are not available with UBR valve configurations.

## VENT MARKING

Series 6000 PVRVs are tagged permanently with the the information illustrated on the tag below, per API 2000 7th Ed, Section 6.



## PACKAGING

Series 6000 PVRVs with 6" throat are shipped complete and boxed. Separate boxes for the weights, documentation and connection accessories are inside the box.

6" throat shipping weight varies with configuration between 44 and 100 lb [20 to 46 kg]. Two person lift is strongly recommended.

Series 6000 PVRVs with 12" throat are shipped complete and crated. Documentation and connection accessories supplied boxed inside. Weights may be secured directly to the floor of the crate.

12" throat shipping weight varies with configuration between 115 and 400 lb [52 to 182 kg]. Lifting lugs are included to lift the vent.

