

# VR Series Vacuum Relief Valves

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**Vacuum Relief Valve: Sizes 3" thru 36" available**



**Crispin**  
Since 1905

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# VR SERIES

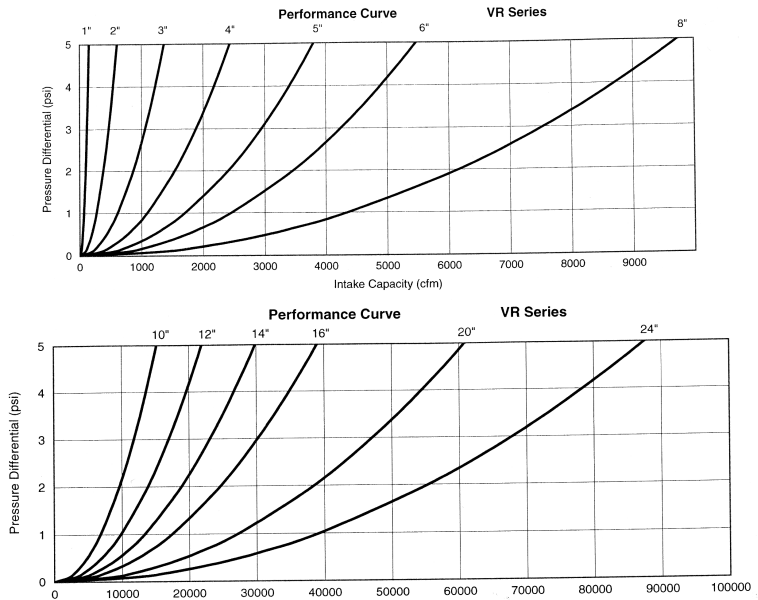
## Vacuum Relief Valves

# Crispin Vacuum Relief Valves

Valve Function
<ul style="list-style-type: none"> <li>• Allows air to enter system when vacuum occurs</li> <li>• Prevents air exhaustion during pump start-up</li> </ul>
Features
<ul style="list-style-type: none"> <li>• Cracks open to admit air at .25 PSIG differential pressure</li> <li>• Resilient drip tight seat</li> <li>• ANSI Class 150 &amp; Class 300 flanged connection</li> <li>• Sizes 3" to 36"</li> </ul>

**C**RISPIN Vacuum Relief Valves allow large volumes of air to enter a system when a vacuum occurs, but prevent air from being exhausted upon pump start-up. If desired, this trapped air column could be exhausted by the addition of a small orifice air release valve. This controlled release allows air to act as a cushion to help prevent potential surge. Vacuum Relief Valves are installed at high points in the line, or as directed by the engineer, to relieve a vacuum due to column separation or draining the line.

### Vacuum Relief Performance Curves



### ANSI Class 150 & 300 Flanged Valves†

MODEL	INLET SIZE	INLET CLASS	O.D.	VALVE HEIGHT	HEIGHT W/ AR VALVE	WEIGHT (LBS)	WEIGHT W/ AR VALVE
VR31	3"	150	7 1/2"	9 1/2"	12 1/4"	36lbs	45lbs
VR33	3"	300	8 1/4"	9 1/2"	12 1/4"	52lbs	61lbs
VR41	4"	150	9"	11 1/4"	13 1/4"	56lbs	65lbs
VR43	4"	300	10"	11 1/2"	13 1/4"	85lbs	94lbs
VR81	8"	150	13 1/2"	18 1/4"	21 1/4"	158lbs	183lbs
VR83	8"	300	15"	18 3/4"	21 1/4"	243lbs	268lbs
VR101	10"	150	16"	22 1/4"	24 1/4"	269lbs	294lbs
VR103	10"	300	17 1/2"	22 3/4"	24 1/4"	385lbs	410lbs
VR121	12"	150	19"	22 1/4"	24"	387lbs	439lbs
VR123	12"	300	20 1/2"	23"	24"	562lbs	614lbs
VR141	14"	150	21"	24 1/4"	24 3/4"	453lbs	492lbs
VR143	14"	300	23"	24 3/4"	24 3/4"	700lbs	752lbs
VR161	16"	150	23 1/2"	25 3/4"	25 3/4"	580lbs	632lbs
VR163	16"	300	25 1/2"	25 3/4"	25 3/4"	960lbs	1012lbs

### Standard Materials

NAME	MATERIAL (Standard)
<b>BODY</b>	Ductile Iron*
<b>SEAT</b>	Stainless Steel w/ Buna-N Seat*
<b>DISC</b>	Stainless Steel*
<b>BUSHING</b>	Stainless Steel*
<b>FLANGE</b>	Ductile Iron*
<b>SPRING</b>	Stainless Steel*
<b>BOLTS &amp; NUTS</b>	Steel*

\*Consult factory for optional construction materials.

†For Sizes 1" and 2", and 18" thru 36", please consult the factory.

# Submittal Sheet for Crispin VR Series

## 3"-4" Vacuum Relief Valve

Air Release Valve manufactured in compliance with ANSI/AWWA C512

Date: 2016

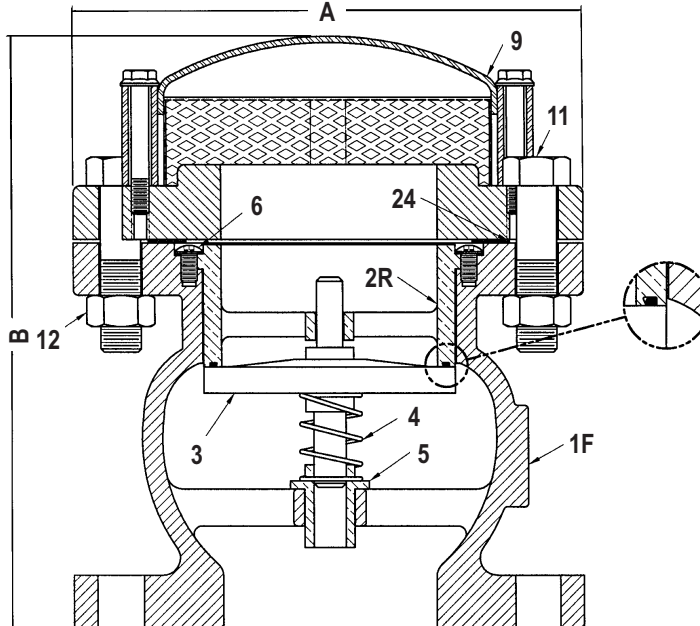


### Specifications

Vacuum Relief valve(s) shall be installed at high points in the line, or as directed by the engineer to relieve a vacuum due to column separation or draining the line.

The valve disc shall be center guided and held normally closed by a stainless steel spring. The seat surfaces shall be stainless steel and Buna-N. The minimum flow area, perpendicular to the direction of flow thru the valve, shall be equal to the pipe area. The outlet shall be protected by a hood and screen.

3"-4"—The valve(s) materials shall include a ductile iron body, stainless steel spring, and cast stainless steel disc with a Buna-N seat. The inlet shall be \_\_\_\_\_ ANSI Class (150, 300) Flange. The valve(s) shall be model \_\_\_\_\_ as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.



• OPTIONAL TRIM MATERIAL: STAINLESS STEEL

### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WEIGHT
VR31	3" 150# FLG.	3" HOODED	7.50	9.50	36
VR33	3" 300# FLG.	3" HOODED	8.25	9.50	52
VR41	4" 150# FLG.	4" HOODED	9.00	11.25	56
VR43	4" 300# FLG.	4" HOODED	10.00	11.50	85

### Vacuum Relief Valve Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
1F	BODY	DUCTILE IRON	A536
2R	RESILIENT SEAT	CAST STAINLESS STEEL/BUNA-N RUBBER	T316/D2000
3	DISC	CAST STAINLESS STEEL	T316
4	SPRING	STAINLESS STEEL	A313
5	BUSHING	STAINLESS STEEL	T316
6	SCREW	STAINLESS STEEL	A193
9	HOOD ASSEMBLY	STEEL	N/A
11	BOLT	STEEL	A307
12	NUT	STEEL	A563
24	FLANGE GASKET	ARMSTRONG N—8092	N/A

SUBMITTAL SHEET FOR VR SERIES





# Submittal Sheet for Crispin VR Series

## 6"-24" Vacuum Relief Valve

Air Release Valve manufactured in compliance with ANSI/AWWA C512

Date: 2016

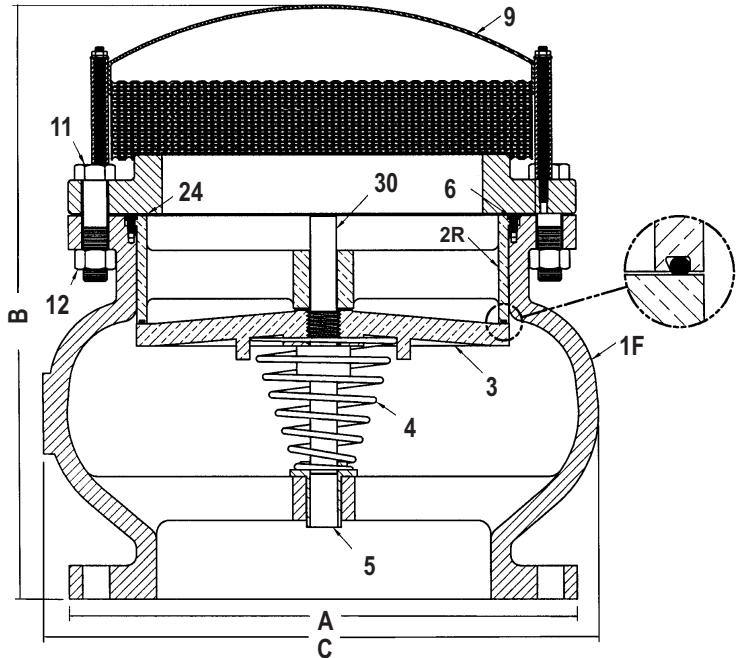
SUBMITTAL SHEET FOR VR SERIES

### Specifications

Vacuum Relief valve(s) shall be installed at high points in the line, or as directed by the engineer to relieve a vacuum due to column separation or draining the line.

The valve disc shall be center guided and held normally closed by a stainless steel spring. The seat surfaces shall be bronze and Buna-N. The minimum flow area, perpendicular to the direction of flow thru the valve, shall be equal to the pipe area. The outlet shall be protected by a hood and screen.

6"-24"—The valve(s) materials shall include a ductile iron body, stainless steel spring, and cast stainless steel disc with a Buna-N seat. The inlet shall be \_\_\_\_\_ ANSI Class (150, 300) Flange. The valve(s) shall be model \_\_\_\_\_ as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.



• OPTIONAL TRIM MATERIAL: STAINLESS STEEL

### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	C	WGHT.
VR61	6" 150# FLG.	6" HOODED	11.00	14.50		94
VR63	6" 300# FLG.	6" HOODED	12.50	15.00		151
VR81	8" 150# FLG.	8" HOODED	13.50	18.25		158
VR83	8" 300# FLG.	8" HOODED	15.00	18.75		243
VR101	10" 150# FLG.	10" HOODED	16.00	22.25	17.00	269
VR103	10" 300# FLG.	10" HOODED	17.50	22.75	17.00	385
VR121	12" 150# FLG.	12" HOODED	19.00	22.25	20.50	387
VR123	12" 300# FLG.	12" HOODED	20.50	23.00	20.50	562
VR141	14" 150# FLG.	14" HOODED	21.00	24.25	22.50	453
VR143	14" 300# FLG.	14" HOODED	23.00	25.00	22.50	700
VR161	16" 150# FLG.	16" HOODED	23.50	26.75	26.00	580
VR163	16" 300# FLG.	16" HOODED	25.50	27.75	26.00	960
VR181	18" 150# FLG.	18" HOODED	25.00	28.25	29.75	892
VR183	18" 300# FLG.	18" HOODED	28.00	30.00	30.00	1238
VR201	20" 150# FLG.	20" HOODED	27.50	31.00	31.25	1050
VR203	20" 300# FLG.	20" HOODED	30.50	31.00	31.25	1200
VR241	24" 150# FLG.	24" HOODED	32.00	39.25	37.25	1400
VR243	24" 300# FLG.	24" HOODED	36.00	39.25	37.25	1650

### Valve Parts List

ITEM	DESC.	MATERIAL	ASTM
1F	Body	Ductile Iron	A536
2R	Resilient Seat	Cast Stainless Steel/ Buna-N Rubber	T316/ D2000
3	Disc	Stainless Steel	T316
4	Spring	Stainless Steel	A313
5	Bushing	Stainless Steel	T316
6	Screw	Stainless Steel	A193
9	Hood Assembly	Steel	N/A
11	Bolt	Steel	A193
12	Nut	Steel	A194
24	Flange Gasket	Armstrong N-8092	N/A
30	Shaft	Stainless Steel	T316

# Submittal Sheet for Crispin VR/M Series

## 3"-4" VR w/Pressure Air Release Valve

Air Release Valve manufactured in compliance with ANSI/AWWA C512

Date: 2016



### Specifications

Vacuum Relief valve(s) shall be installed at high points in the line, or as directed by the engineer to relieve a vacuum due to column separation or draining the line. The valve disc shall be center guided and held normally closed by a stainless steel spring. The seat surfaces shall be stainless steel and Buna-N. The minimum flow area, perpendicular to the direction of flow thru the valve, shall be equal to the pipe area. The outlet shall be protected by a hood and screen. All Crispin Valves are hydrostatically tested at 150% of their maximum working pressure.

3"-4"—The valve(s) materials shall include a ductile iron body, stainless steel spring, stainless steel disc, bushing and seat ring with a Buna-N seat. The inlet shall be \_\_\_\_\_" ANSI Class (150, 300) Flange. The valve(s) shall be model \_\_\_\_\_ as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.

**Option:** A Pressure Air Release Valve shall be piped out of the side of the Vacuum Relief Valve. Refer to the Pressure Air Release Valve Specification. **\* For #300 only**

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:

- \_\_\_\_\_ 2 to 40 PSIG
- \_\_\_\_\_ 151 to 300 PSIG

### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WGHT.
VR31/M5	3" 150# FLG.	3" NPT	11.75	12.25	45
VR33/M5	3" 300# FLG.	3" NPT	11.75	12.25	61
VR41/M5	4" 150# FLG.	4" NPT	13.50	13.25	65
VR43/M5	4" 300# FLG.	4" NPT	13.50	13.25	94

### Pressure Air Release Parts

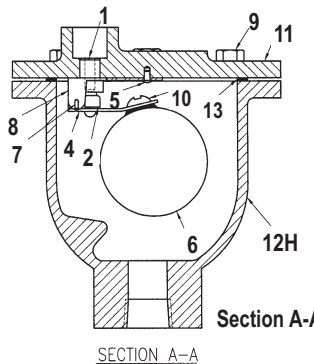
ITEM	DESCRIPTION	MATERIAL	ASTM
1	Valve Seat	Stainless Steel	A276
2	Plunger Button	Viton	D2000
4	Valve Lever	Stainless Steel	A276
5	Screw (Drive)	Stainless Steel	A193
6	Ball Float	Stainless Steel	A240
7	Hinge Pin	Stainless Steel	A580
8	Hinge Butt	Stainless Steel	A240
9	Bolt	Steel	A307
10	Screw	Stainless Steel	A193
11	Flange	Cast Iron	A126 CL.B
12H	1/2 NPT Body	Cast Iron	A126 CL.B
13	Flange Gasket	Armstrong N-8092	N/A
29	Plug	Brass	B505

### Vacuum Relief Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
1FH*	Body	Ductile Iron	A536
2R	Resilient Seat	Cast Stainless Steel/Buna-N	T316/D2000
3	Disc	Cast Stainless Steel	T316
4	Spring	Stainless Steel	A313
5	Bushing	Stainless Steel	T316
6	Screw	Stainless Steel	A193
9	Hood Assembly	Steel	N/A
11	Bolt	Steel	A307
12	Nut	Steel	A563
24	Flange Gasket	Armstrong N-8092	N/A

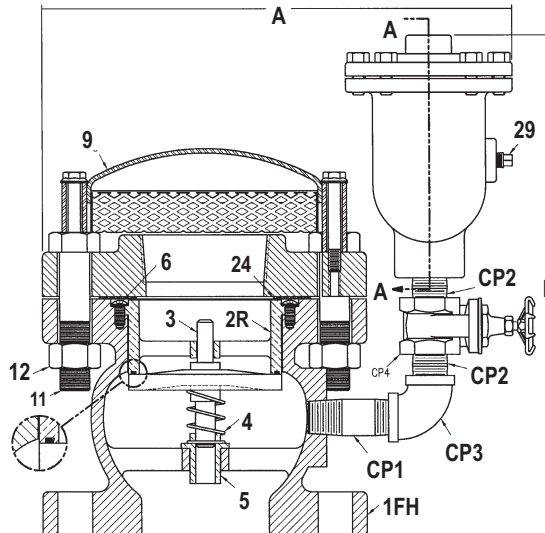
### Connecting Parts

ITEM	DESCRIPTION	MATERIAL	ASTM
CP1	1 x 3 Nipple	Steel	A312
CP2	1 x CL. Nipple	Steel	A312
CP3	1/2"—90° Elbow	Malleable Iron	N/A
CP4	1" Gate Valve	Brass	N/A



### Orifice Options

DIAMETER	MAXIMUM PRESSURE
5/32	40 PSIG
1/8	50 PSIG
3/32	85 PSIG
1/16	150 PSIG
3/64	200 PSIG
1/32	300 PSIG



SUBMITTAL FOR VR/M SERIES



# Submittal Sheet for Crispin VR/PL Series

## 4"-10" VR w/Pressure Air Release (1 of 3)

Air Release Valve manufactured in compliance with ANSI/AWWA C512

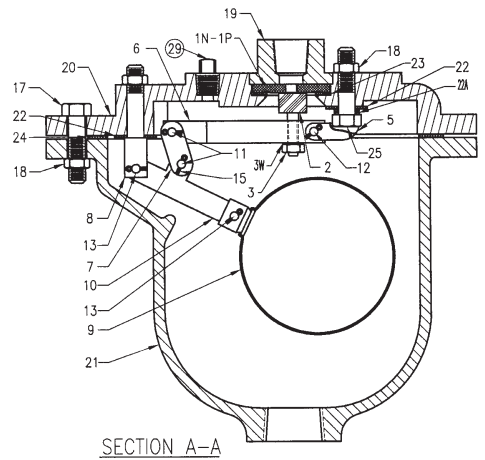
Date: 2016

### Specifications

Vacuum Relief valve(s) shall be installed at high points in the line, or as directed by the engineer to relieve a vacuum due to column separation or draining the line. The valve disc shall be center guided and held normally closed by a stainless steel spring. The seat surfaces shall be stainless steel and Buna-N. The minimum flow area, perpendicular to the direction of flow thru the valve, shall be equal to the pipe area. The outlet shall be protected by a hood and screen. All Crispin Valves are hydrostatically tested at 150% of their maximum working pressure.

4"-10"—The valve(s) materials shall include a ductile iron body, stainless steel spring, stainless steel disc, bushing and seat ring with a Buna-N seat. The inlet shall be \_\_\_\_\_" ANSI Class (150, 300) Flange. The valve(s) shall be model \_\_\_\_\_ as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.

**Option:** A Pressure Air Release Valve shall be piped out of the side of the Vacuum Relief Valve. Refer to the Pressure Air Release Valve Specification.



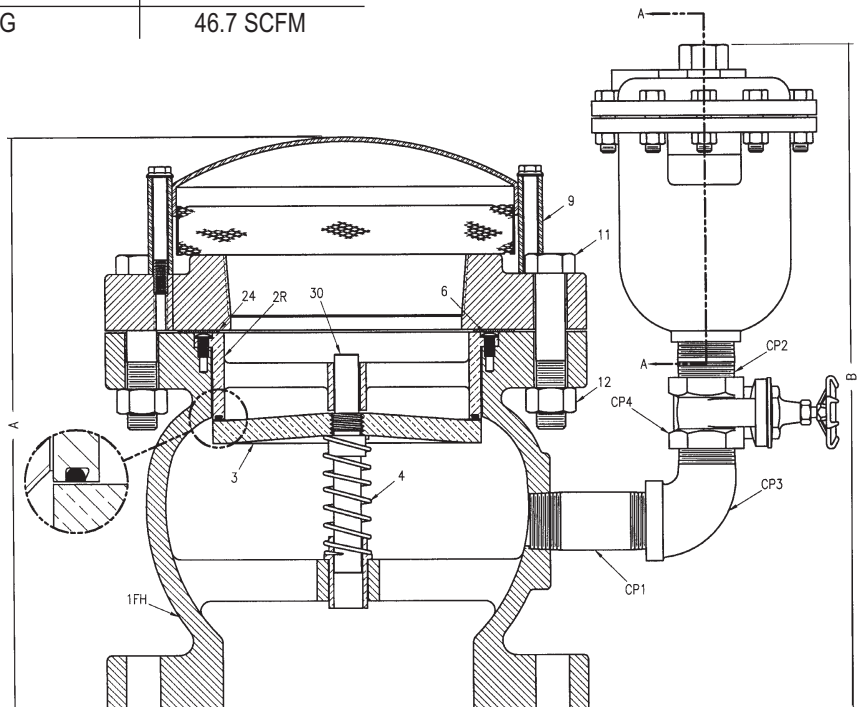
### Orifice Options

DIAMETER	MAXIMUM PRESSURE	DISCHARGE RATE
5/16"	100 PSIG	105 SCFM
1/4"	150 PSIG	98 SCFM
3/16"	200 PSIG	72 SCFM
5/32"	250 PSIG	61.1 SCFM
1/8"	300 PSIG	46.7 SCFM

VR41/43 has a single piece shaft and disc.

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:

- \_\_\_ 2 to 40 PSIG
- \_\_\_ 151 to 300 PSIG



SUBMITTAL FOR VR/PL SERIES

# Submittal Sheet for Crispin VR/PL Series

## 4"-10" VR w/Pressure Air Release (2 of 3)

Air Release Valve manufactured in compliance with ANSI/AWWA C512

Date: 2016



### Pressure Air Relief Parts

ITEM	DESCRIPTION	MATERIAL	ASTM
1N*	Seat	PVC	1784
1P*	Seat	Stainless Steel	A240
2	Valve Plunger	Buna-N & S/S	D2000
3	Plunger Nut	Stainless Steel	A194
3W	Lock Washer	Stainless Steel	A240
5	Valve Fulcrum	Stainless Steel	A240
6	Valve Lever	Stainless Steel	A240
7	Link	Stainless Steel	A240
8	Ball Fulcrum	Stainless Steel	A582
9	Ball Float	Stainless Steel	A240
10	Ball Lever	Stainless Steel	A240
11	Bearing Pin	Stainless Steel	A582
12	Bearing Pin	Stainless Steel	A582
13	Bearing Pin	Stainless Steel	A582
15	Cotter Pin	Stainless Steel	A313
17	Bolt	Steel	A307
18	Nut	Steel	A563
19	Top	Cast Iron	A126CL.B
20	Flange	Cast Iron	A126CL.B
21	Body	Cast Iron	A126CL.B
22	Fulcrum Washer	Fiber	N/A
22A	Fulcrum Washer	Fiber	N/A
23	Seat Gasket	Buna-N Rubber	D2000
24	Flange Gasket	Armstrong N-8092	A193
25	Bolt	Stainless Steel	A193
29	Plug	Brass	B505

(\*) Parts are interchangeable and optional at customers' request.



SUBMITTAL FOR VR/PL SERIES



# Submittal Sheet for Crispin VR/PL Series

## 4"-10" VR w/Pressure Air Release (3 of 3)

Air Release Valve manufactured in compliance with ANSI/AWWA C512

Date: 2016

SUBMITTAL FOR VR/PL SERIES

### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WGHT.
VR41/PL10	4" 150# FLG.	4" Hooded	13.50	11.25	93
VR43/PL10	4" 300# FLG.	4" Hooded	13.50	11.50	105
VR61/PL10	6" 150# FLG.	6" Hooded	17.50	14.50	99
VR63/PL10	6" 300# FLG.	6" Hooded	17.50	15.00	139
VR81/PL10	8" 150# FLG.	8" Hooded	20.75	18.25	127
VR83/PL10	8" 300# FLG.	8" Hooded	20.75	18.75	144
VR101/PL10	10" 150# FLG.	10" Hooded	23.75	22.25	137
VR103/PL10	10" 300# FLG.	10" Hooded	23.75	22.75	190

### Vacuum Relief Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
1FH	Body	Ductile Iron	A536
2R	Resilient Seat	Cast Stainless Steel/Buna-N	T316/D2000
3	Disc	Cast Stainless Steel	T316
4	Spring	Stainless Steel	A313
5	Bushing	Stainless Steel	T316
6	Screw	Stainless Steel	A193
9	Hood Assembly	Steel	N/A
11	Bolt	Steel	A307
12	Nut	Steel	A563
24	Flange Gasket	Armstrong N-8092	N/A
30	Shaft	Stainless Steel	T316

### Connecting Parts

ITEM	DESCRIPTION	MATERIAL	ASTM
CP1	1 x 3 Nipple	Steel	A312
CP2	1 x CL. Nipple	Steel	A312
CP3	1/2"—90° Elbow	Malleable Iron	N/A
CP4	1" Gate Valve	Brass	N/A