



VR SERIES

Crispin Vacuum Relief Valves

Valve Function

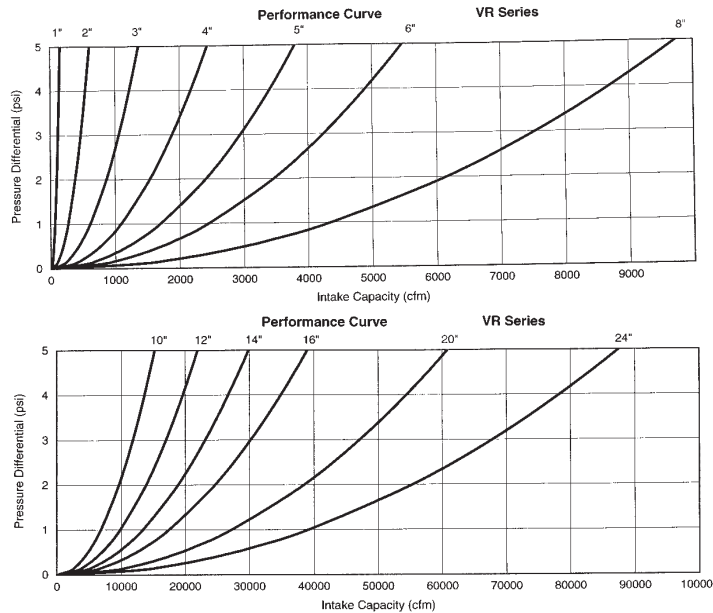
- Allows air to enter system when vacuum occurs
- Prevents air exhaustion during pump start-up

Features

- Cracks open to admit air at .25 PSIG differential pressure
- Resilient drip tight seat
- ANSI Class 125 & Class 250 flanged connection
- Sizes 3" to 36"

CRISPIN 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 125 & 250 Flanged Valves[†]

| MODEL | INLET SIZE | INLET CLASS | O.D. | VALVE HEIGHT | HEIGHT W/ AR VALVE | WEIGHT (LBS) | WEIGHT W/ AR VALVE |
|-------|------------|-------------|---------|--------------|--------------------|--------------|--------------------|
| VR31 | 3" | 125 | 7 1/2" | 9 1/2" | 12 1/4" | 36lbs | 45lbs |
| VR32 | 3" | 250 | 8 1/4" | 9 1/2" | 12 1/4" | 52lbs | 61lbs |
| VR41 | 4" | 125 | 9" | 11 1/4" | 13 1/4" | 56lbs | 65lbs |
| VR42 | 4" | 250 | 10" | 11 1/2" | 13 1/4" | 85lbs | 94lbs |
| VR51 | 5" | 125 | 10" | 13 1/4" | 18 1/2" | 70lbs | 115lbs |
| VR52 | 5" | 250 | 11" | 13 3/4" | 18 1/2" | 115lbs | 140lbs |
| VR61 | 6" | 125 | 11" | 14 1/2" | 20" | 94lbs | 119lbs |
| VR62 | 6" | 250 | 12 1/2" | 15" | 20" | 151lbs | 176lbs |
| VR81 | 8" | 125 | 13 1/2" | 18 1/4" | 21 1/4" | 158lbs | 183lbs |
| VR82 | 8" | 250 | 15" | 18 3/4" | 21 1/4" | 243lbs | 268lbs |
| VR101 | 10" | 125 | 16" | 22 1/4" | 24 1/4" | 269lbs | 294lbs |
| VR102 | 10" | 250 | 17 1/2" | 22 3/4" | 24 1/4" | 385lbs | 410lbs |
| VR121 | 12" | 125 | 19" | 22 1/4" | 24" | 387lbs | 439lbs |
| VR122 | 12" | 250 | 20 1/2" | 23" | 24" | 562lbs | 614lbs |
| VR141 | 14" | 125 | 21" | 24 1/4" | 24 3/4" | 453lbs | 492lbs |
| VR142 | 14" | 250 | 23" | 24 3/4" | 24 3/4" | 700lbs | 752lbs |
| VR161 | 16" | 125 | 23 1/2" | 25 3/4" | 25 3/4" | 580lbs | 632lbs |
| VR162 | 16" | 250 | 25 1/2" | 25 3/4" | 25 3/4" | 960lbs | 1012lbs |

Standard Materials

| NAME | MATERIAL (Standard) |
|--------------|------------------------|
| BODY | Cast Iron* |
| SEAT | Bronze w/ Buna-N Seat* |
| DISC | Bronze* |
| BUSHING | Bronze* |
| FLANGE | Cast Iron* |
| SPRING | Stainless Steel* |
| BOLTS & NUTS | 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"-5" Vacuum Relief Valve

Date: October, 2001

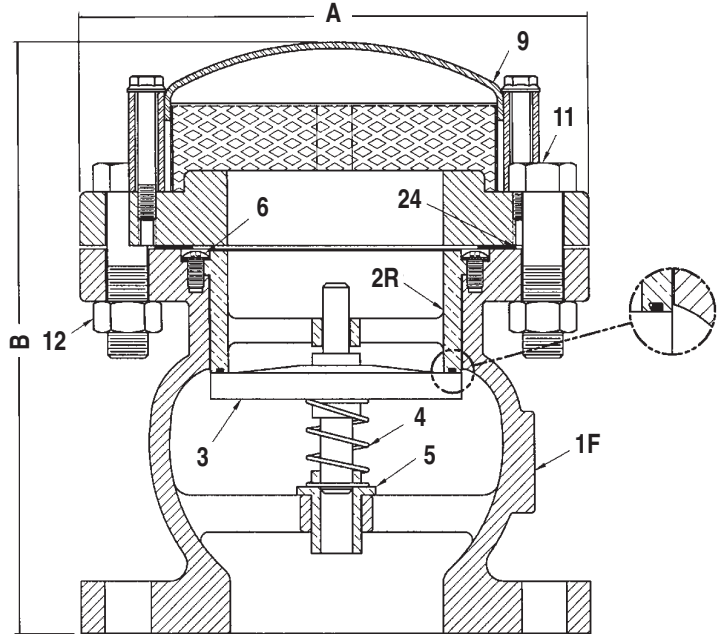
SUBMITTAL SHEET FOR VR SERIES

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.

3"-5"—The valve(s) materials shall include a cast iron body, stainless steel spring, and cast bronze disc with a Buna-N seat. The inlet shall be _____ ANSI Class (125, 250) 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" 125# FLG. | 3" HOODED | 7.50 | 9.50 | 36 |
| VR32 | 3" 250# FLG. | 3" HOODED | 8.25 | 9.50 | 52 |
| VR41 | 4" 125# FLG. | 4" HOODED | 9.00 | 11.25 | 56 |
| VR42 | 4" 250# FLG. | 4" HOODED | 10.00 | 11.50 | 85 |
| VR51 | 5" 125# FLG. | 5" HOODED | 10.00 | 13.25 | 70 |
| VR52 | 5" 250# FLG. | 5" HOODED | 11.00 | 13.75 | 115 |

Vacuum Relief Valve Parts List

| ITEM | DESCRIPTION | MATERIAL | ASTM |
|------|----------------|---------------------------|------------|
| 1F | BODY | CAST IRON | A126 CL. B |
| 2R | RESILIENT SEAT | CAST BRONZE/BUNA-N RUBBER | B62/D2000 |
| 3 | DISC | CAST BRONZE | B62 |
| 4 | SPRING | STAINLESS STEEL | A313 |
| 5 | BUSHING | BRONZE | B62 |
| 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 |



6"-24" Vacuum Relief Valve

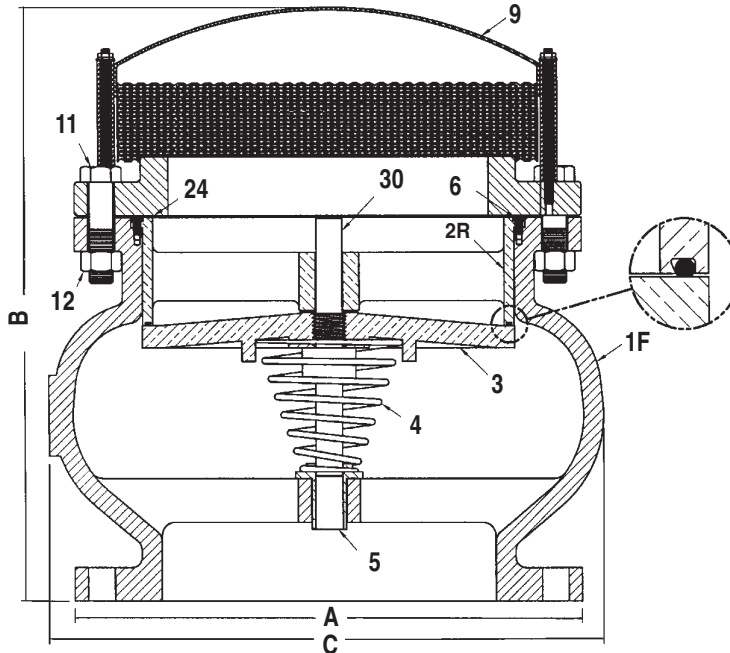
Date: October, 2001

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 cast iron body, stainless steel spring, and cast bronze disc with a Buna-N seat. The inlet shall be _____ ANSI Class (125, 250) 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" 125# FLG. | 6" HOODED | 11.00 | 14.50 | | 94 |
| VR62 | 6" 250# FLG. | 6" HOODED | 12.50 | 15.00 | | 151 |
| VR81 | 8" 125# FLG. | 8" HOODED | 13.50 | 18.25 | | 158 |
| VR82 | 8" 250# FLG. | 8" HOODED | 15.00 | 18.75 | | 243 |
| VR101 | 10" 125# FLG. | 10" HOODED | 16.00 | 22.25 | 17.00 | 269 |
| VR102 | 10" 250# FLG. | 10" HOODED | 17.50 | 22.75 | 17.00 | 385 |
| VR121 | 12" 125# FLG. | 12" HOODED | 19.00 | 22.25 | 20.50 | 387 |
| VR122 | 12" 250# FLG. | 12" HOODED | 20.50 | 23.00 | 20.50 | 562 |
| VR141 | 14" 125# FLG. | 14" HOODED | 21.00 | 24.25 | 22.50 | 453 |
| VR142 | 14" 250# FLG. | 14" HOODED | 23.00 | 25.00 | 22.50 | 700 |
| VR161 | 16" 125# FLG. | 16" HOODED | 23.50 | 26.75 | 26.00 | 580 |
| VR162 | 16" 250# FLG. | 16" HOODED | 25.50 | 27.75 | 26.00 | 960 |
| VR181 | 18" 125# FLG. | 18" HOODED | 25.00 | 28.25 | 29.75 | 892 |
| VR182 | 18" 250# FLG. | 18" HOODED | 28.00 | 30.00 | 30.00 | 1238 |
| VR201 | 20" 125# FLG. | 20" HOODED | 27.50 | 31.00 | 31.25 | 1050 |
| VR202 | 20" 250# FLG. | 20" HOODED | 30.50 | 31.00 | 31.25 | 1200 |
| VR241 | 24" 125# FLG. | 24" HOODED | 32.00 | 39.25 | 37.25 | 1400 |
| VR242 | 24" 250# FLG. | 24" HOODED | 36.00 | 39.25 | 37.25 | 1650 |

Valve Parts List

| ITEM | DESC. | MATERIAL | ASTM |
|------|----------------|-------------------------------|---------------|
| 1F | Body | Cast Iron | A126 CL.B |
| 2R | Resilient Seat | Cast Bronze/ Buna-N Rubber | B62/ D2000 |
| 3 | Disc | Cast Bronze | B62 |
| 4 | Spring | Stainless Steel | A313 |
| 5 | Bushing | Bronze | B62 |
| 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 | Bronze | B62 |

SUBMITTAL SHEET FOR VR SERIES



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: October, 2001

SUBMITTAL FOR VR/M 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, 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 cast iron body, stainless steel spring, bronze disc, bushing and seat ring with a Buna-N seat. The inlet shall be _____" ANSI Class (125, 250) 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.

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" 125# FLG. | 3" NPT | 11.75 | 12.25 | 45 |
| VR32/M5 | 3" 250# FLG. | 3" NPT | 11.75 | 12.25 | 61 |
| VR41/M5 | 4" 125# FLG. | 4" NPT | 13.50 | 13.25 | 65 |
| VR42/M5 | 4" 250# FLG. | 4" NPT | 13.50 | 13.25 | 94 |

Pressure Air Release Parts

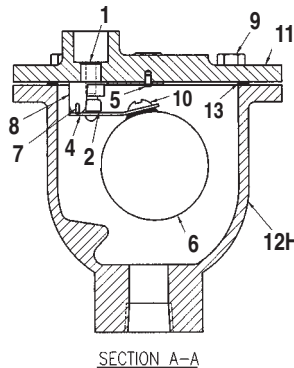
| ITEM | DESCRIPTION | MATERIAL | ASTM |
|------|----------------|------------------|-----------|
| 1 | Valve Seat | Stainless Steel | A276 |
| 2 | Plunger Button | Viton | D2000 |
| 4 | Valve Lever | Stainless Steel | A276 |
| 5 | Screw (Drive) | Stainless Steel | A193 |
| 6 | Ball Float | Stainless 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 | Cast Iron | A126/CL.B |
| 2R | Resilient Seat | Cast Bronze/Buna-N | B62/D2000 |
| 3 | Disc | Cast Bronze | B62 |
| 4 | Spring | Stainless Steel | A313 |
| 5 | Bushing | Bronze | B62 |
| 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 |

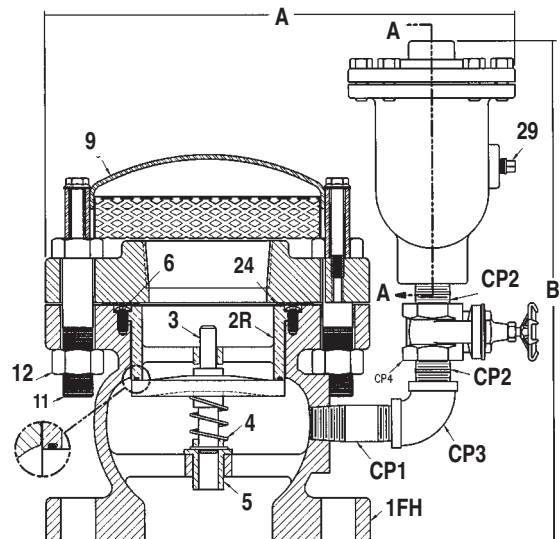
Connecting Parts

| 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 Sheet for Crispin VR/PL Series

4"-10" VR w/Pressure Air Release (1 of 2)

Air Release Valve manufactured in compliance with ANSI/AWWA C512

Date: October, 2001

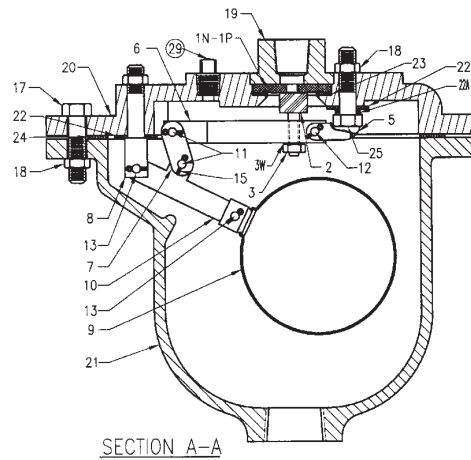


Specifications

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, 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 cast iron body, stainless steel spring, bronze disc, bushing and seat ring with a Buna-N seat. The inlet shall be _____" ANSI Class (125, 250) 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

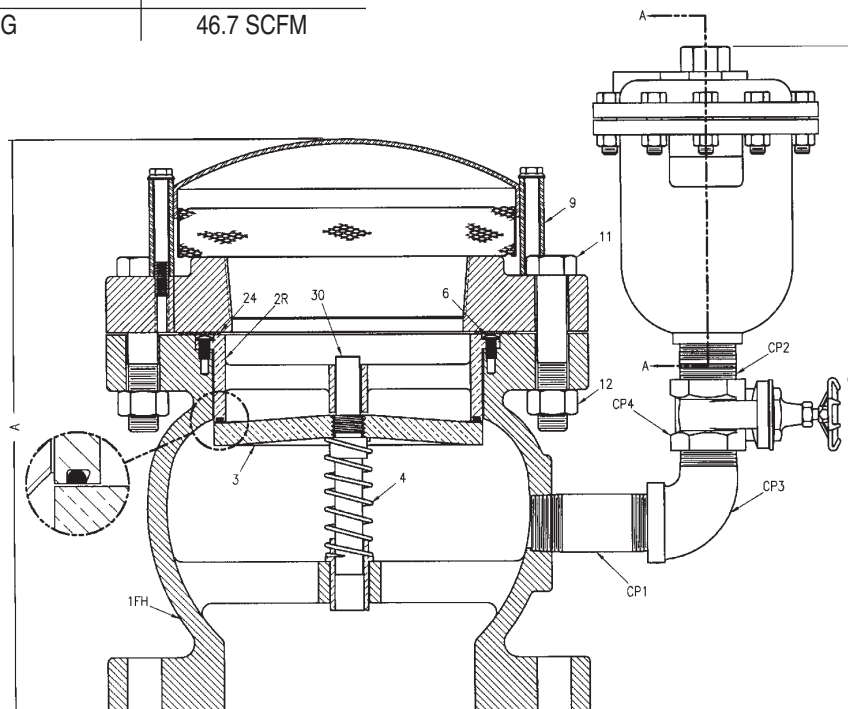
| DIAMETER | MAXIMUM PRESSURE | DISCHARGE RATE |
|----------|------------------|----------------|
| 5/16" | 100 PSIG | 105 SCFM |
| 1/4" | 150 PSIG | 98 SCFM |
| 3/16" | 200 PSIG | 72 SCFM |
| 5/32" | 250 PSIG | 61.1 SCFM |
| 1/8" | 300 PSIG | 46.7 SCFM |

Optional Trim Material:
Stainless Steel

VR41/42 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 2)

Drawing Date: October, 2001

SUBMITTAL FOR VR/PL SERIES

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.



Size Specifications

| MODEL | INLET SIZE | OUTLET SIZE | A | B | WGHT. |
|------------|---------------|-------------|-------|-------|-------|
| VR41/PL10 | 4" 125# FLG. | 4" Hooded | 13.50 | 11.25 | 93 |
| VR42/PL10 | 4" 250# FLG. | 4" Hooded | 13.50 | 11.50 | 105 |
| VR61/PL10 | 6" 125# FLG. | 6" Hooded | 17.50 | 14.50 | 99 |
| VR62/PL10 | 6" 250# FLG. | 6" Hooded | 17.50 | 15.00 | 139 |
| VR81/PL10 | 8" 125# FLG. | 8" Hooded | 20.75 | 18.25 | 127 |
| VR82/PL10 | 8" 250# FLG. | 8" Hooded | 20.75 | 18.75 | 144 |
| VR101/PL10 | 10" 125# FLG. | 10" Hooded | 23.75 | 22.25 | 137 |
| VR102/PL10 | 10" 250# FLG. | 10" Hooded | 23.75 | 22.75 | 190 |

Vacuum Relief Parts List

| ITEM | DESCRIPTION | MATERIAL | ASTM |
|------|----------------|--------------------|-----------|
| 1FH | Body | Cast Iron | A126/CL.B |
| 2R | Resilient Seat | Cast Bronze/Buna-N | B62/D2000 |
| 3 | Disc | Cast Bronze | B62 |
| 4 | Spring | Stainless Steel | A313 |
| 5 | Bushing | Bronze | B62 |
| 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 | Bronze | B62 |

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 |

