

# KUNKLE

## Non-Code Liquid Relief, ASME Section VIII, Air/Gas and Steam, National Board Certified, Safety and Relief Valves

### Features

- Top guided design offers high capacity with 0.110 in<sup>2</sup> [0.710 cm<sup>2</sup>] orifice area.
- Ball pivot between disc and spring corrects misalignment and compensates for spring side thrust.
- Standard outlet with 1" Female NPT.
- Each Kunkle valve is tested and inspected for pressure setting and leakage.

### Model Descriptions

**Model 264:** Carbon Steel (CS) housing with 316 Stainless Steel (SS) trim (nozzle and disc), SS spring. Pressure-tight cap.

**Model 265:** Same as model 264 except high-temperature alloy spring (temperatures to 750°F [400°C]).

**Model 266:** Same as model 264 except all 316 SS materials.

**Model 267:** Same as model 266 except high-temperature alloy spring (temperatures to 750°F [399°C]).

**Model 264P:** Same as model 264 with pressure-tight packed lift lever.

**Model 265P:** Same as model 265 with pressure-tight packed lift lever.

**Model 266P:** Same as model 266 with pressure-tight packed lift lever.

**Model 267P:** Same as model 267 with pressure-tight packed lift lever.

### Applications

- Protection of pumps, compressors, pressure vessels or systems handling corrosive fluids or vapors at high pressure and/or temperature.
- Sentinel (warning) on steam equipment.



Model 264



### Pressure and Temperature Limits<sup>1</sup>

#### Model 264:

4 to 3300 psig [0.28 to 227 barg]  
-20° to 550°F [-29° to 288°C]

#### Model 266:

4 to 3300 psig [0.28 to 227 barg]  
-320° to 550°F [-195° to 288°C]

#### Model 265:

4 to 3300 psig [0.28 to 227 barg]  
-20° to 750°F [-29° to 399°C]

#### Model 267:

4 to 3300 psig [0.28 to 227 barg]  
-320° to 750°F [-195° to 316°C]

Pressures listed are for female NPT inlets only, see chart on page 5 for male NPT.

Maximum back pressure 400 psig [27.6 barg]<sup>4</sup>.

### Notes

1. Pressures are female NPT inlets only. For maximum pressures for male NPT inlets see chart on page 5.
2. ASME standard valves for air or steam service must have lift lever.
3. Due to the capacity of this valve, thrust calculations should be reviewed and valve supported accordingly.
4. Back pressure increases set pressure on a one to one basis, and reduces capacity. Back pressure in excess of 10% of set pressure is not recommended.

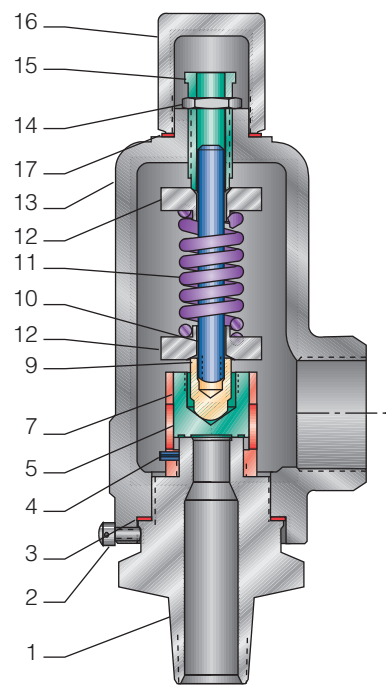
## Parts and Materials

### Models 264, 265, 266 and 267 - Threaded Cap

No.	Part Name	264, 265	266, 267
1	Nozzle <sup>1</sup>	SS SA351-CF8M	SS SA351-CF8M
2	Lock Screw	SS Commercial 18-8	SS Commercial 18-8
3	Gasket	Teflon®	Teflon®
4	Spring Pin	SS Commercial	SS Commercial
5	Guide	SS A743-CF8M	SS A743-CF8M
7	Disc	SS A479-316	SS A479-316
9	Stem Retainer	SS A479-316	SS A479-316
10	Stem	SS A479-316	SS A479-316
11	Spring <sup>2</sup>	A313-316 or 6312 <sup>2</sup>	SS A313-316 or 6312 <sup>2</sup>
12	Spring Step	SS A479-316	SS A479-316
13	Bonnet	Steel SA216-WCB	SS A351-CF8M
14	Jam Nut	SS A479-316	SS A479-316
15	Compression Screw	SS A479-316	SS A479-316
16	Cap	Steel A108	SS A479-316
17	Cap Gasket	Teflon®	Teflon®

### Notes

1. SA479-316 for internal thread.
2. Tungsten alloy steel (X750 B637 or ASM5699) for Models 265, 267.
3. For maximum pressures for male NPT inlets see chart on page 4.
4. Due to the capacity of this valve, thrust calculations should be reviewed and valve supported accordingly.

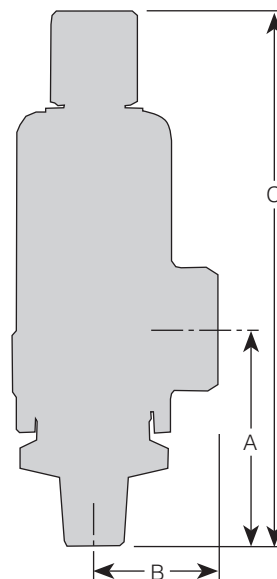


Models 264, 265, 266 and 267

### Specifications

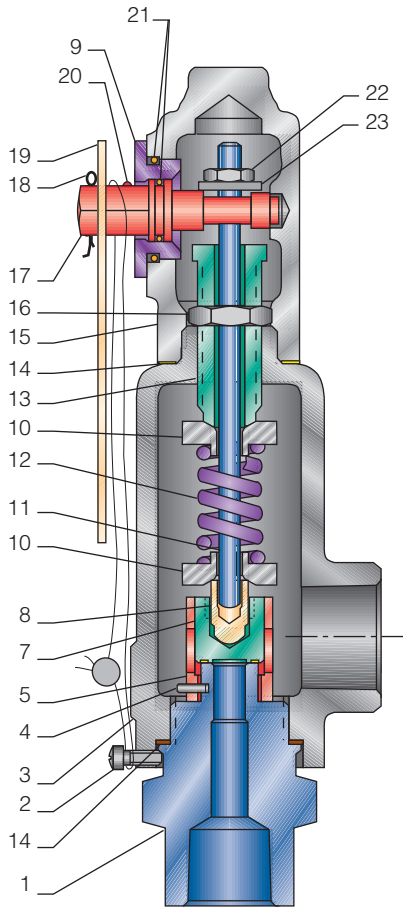
Inlet	Size Outlet	Dimensions, in [mm]			Weight (lb) [kg]
		A	B	C	
1/2", 3/4", 1"	3/4", 1"	3 1/16 [77.8]	1 3/4 [44.5]	9 [228.6]	4 1/2 [2.3]

Dimensions are for reference only.

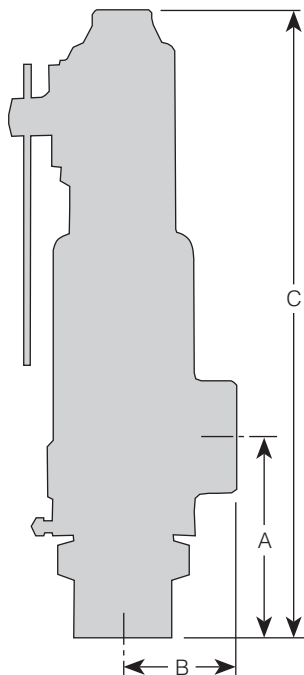


Models 264, 265, 266 and 267

**Parts and Materials**



**Models 264P, 265P, 266P and 267P**



**Models 264P, 265P, 266P and 267P**

**Models 264P, 265P, 266P and 267P - Packed Lever**

No.	Part Name	264P/265P	266P/267P
1	Nozzle <sup>1</sup>	SS SA479-316	SS SA479-316
2	Lock Screw	SS Commercial	SS Commercial
3	Bonnet	Steel SA216-WCB	SS A351-CF8M
4	Spring Pin	SS Commercial	SS Commercial
5	Guide	SS A743-CF8M	SS A743-CF8M
7	Disc	SS A479-316	SS A479-316
8	Stem Retainer	SS A479-316	SS A479-316
9	Retainer Nut	SS A479-316	SS A479-316
10	Spring Step	SS A479-316	SS A479-316
11	Stem	SS A479-316	SS A479-316
12	Spring <sup>2</sup>	SS A313-316, Optional 6312	SS A313-316, Optional 6312
13	Compression Screw	SS A479-316	SS A479-316
14	Gasket - Body	Teflon®	Teflon®
15	Cap	SS A743-CF8M	SS A473-CF8M
16	Jam Nut	SS A479-316	SS A479-316
17	Lift Cam	SS A743-CF8M	SS A743-CF8M
18	Cotter Pin	Steel Commercial	Steel Commercial
19	Lever	Steel A108 Zinc Plated	Steel A108 Zinc Plated
20	Drive Screw	SS Commercial	SS Commercial
21	O-ring	BUNA-N	BUNA-N
22	Lift Disc Nut	SS A479-316	SS A479-316
23	Lift Disc	SS A756-440C	SS A756-440C
24	Cap Gasket	Teflon®	Teflon®

**Notes**

1. SA351-CF8M for external thread.
2. Tungsten alloy steel for Models 265, 267.
3. For maximum pressures for male NPT inlets see chart on page 4.
4. Due to the capacity of this valve, thrust calculations should be reviewed and valve supported accordingly.

**Specifications**

Inlet	Size Outlet	Dimensions, in [mm]			Weight (lb) [kg]
		A	B	C	
1/2", 3/4", 1"	3/4", 1"	3 <sup>1</sup> / <sub>16</sub> [77.8]	1 <sup>3</sup> / <sub>4</sub> [44.5]	9 [228.6]	4 <sup>1</sup> / <sub>2</sub> [2.3]

Dimensions are for reference only.

## Capacities

### ASME Section VIII, Air/Gas, and Steam, Non-Code Liquid

Set Pressure psig [barg]	Water Non-code GPM [m <sup>3</sup> /h]	Air SCFM [Nm <sup>3</sup> /h]	Steam lb/h [kg/h]
4 [0.3]	5 [1]	25 [44]	79 [37]
6 [0.4]	5 [1]	31 [50]	96 [42]
8 [0.6]	6 [1]	36 [61]	109 [51]
10 [0.7]	6 [1]	40 [66]	120 [55]
20 [1.4]	8 [2]	58 [97]	164 [75]
30 [2.1]	10 [2]	74 [123]	207 [95]
40 [2.8]	11 [3]	91 [152]	255 [117]
50 [3.5]	13 [3]	108 [180]	302 [139]
75 [5.2]	15 [4]	150 [249]	422 [192]
100 [6.9]	18 [4]	193 [319]	541 [246]
125 [8.6]	20 [5]	235 [388]	660 [299]
150 [10.3]	22 [5]	278 [457]	780 [353]
200 [13.8]	25 [6]	363 [600]	1018 [463]
250 [17.2]	28 [6]	447 [738]	1257 [570]
300 [20.7]	31 [7]	532 [881]	1496 [680]
350 [24.1]	33 [8]	617 [1020]	1734 [787]
400 [27.6]	36 [8]	702 [1162]	1973 [897]
500 [34.5]	40 [9]	872 [1444]	2450 [1113]
600 [41.4]	44 [10]	1042 [1725]	2928 [1330]
700 [48.3]	47 [11]	1212 [2006]	3405 [1547]
800 [55.2]	51 [11]	1382 [2287]	3882 [1764]
900 [62.1]	54 [12]	1552 [2569]	4360 [1981]
1000 [69.0]	57 [13]	1722 [2850]	4837 [2198]
1200 [83.0]	62 [14]	2062 [3421]	5792 [2638]
1400 [96.5]	67 [15]	2401 [3971]	6746 [3063]
1600 [111]	72 [16]	2741 [4562]	7789 [3561]
1800 [124]	76 [17]	3081 [5092]	8885 [4031]
2000 [138]	80 [18]	3421 [5662]	10036 [4541]
2250 [155]	85 [19]	3846 [6355]	—
2500 [173]	89 [20]	4270 [7089]	—
2750 [190]	94 [21]	4695 [7782]	—
3000 [207]	98 [22]	5120 [8475]	—
3300 [227]	103 [23]	5630 [9290]	—

### Notes

1. 10% or 3 psig [0.2 barg] accumulation, whichever is greater.
2. Below 15 psig is non-code.
3. For maximum pressures for male NPT inlets see chart below.
4. Due to the capacity of this valve, thrust calculations should be reviewed and valve supported accordingly.
5. Orifice Area = 0.110 square inch

### Maximum Pressure and Temperature Limits - Male NPT Inlet Connections

Temperature °F [°C]	Air, Steam, Water psig [barg]		Air psig [barg]	Steam, Water psig [barg]
	1/2"	3/4"	1"	1"
100 [38]	1950 [134.4]	3299 [227.5]	3300 [227.5]	3300 [227.5]
200 [93]	1675 [115.5]	2836 [195.5]	3300 [227.5]	2933 [202.2]
300 [149]	1508 [104]	2554 [176.1]	3300 [227.5]	2643 [182.2]
350 [177]	1435 [98.9]	2432 [167.7]	3300 [227.5]	2539 [175.1]
400 [204]	1334 [92]	2269 [156.4]	3300 [227.5]	2421 [166.9]
450 [232]	1257 [86.7]	2146 [148]	3300 [227.5]	2335 [161]
500 [260]	1186 [81.8]	2030 [140]	3300 [227.5]	2268 [156.4]
550 [288]	1127 [77.7]	1935 [133.4]	3300 [227.5]	2186 [150.7]
600 [316]	1108 [76.4]	1844 [127]	3300 [227.5]	2148 [148.1]
650 [343]	1095 [75.5]	1805 [124.5]	3300 [227.5]	2090 [144.1]
700 [371]	1084 [74.7]	1779 [122.7]	3211 [221.4]	2063 [142.2]
750 [399]	1055 [72.7]	1770 [122]	3157 [217.7]	2029 [139.9]

#### Notes

1. For male inlet valves with pressures exceeding the pressure limits in chart, please consult your sales representative.
2. Female inlet is rated to 3300 psi at 550°F for 264/266 and 750°F for 265/267.
3. Due to the capacity of this valve, thrust calculations should be reviewed and valve supported accordingly.

### Service Recommendations for Resilient Seat/Seal Materials

Seat/Seal Materials	Service Recommendation
BUNA-N (-40° to 275°F) [-40° to 135°C]	Air, Anhydrous Ammonia, Butane, Carbon Dioxide, Diesel Oil, Ethyl Chloride, Ethyl Ether, Freons #11 and 12, Fuel Oil, Gasoline, Helium, Hydrogen Sulphide, Kerosene, Lube Oil, Natural Gas, Nitrogen, Oxygen (Gas), Propane, Propylene, Sulphur Dioxide, Vinyl Chloride
Viton® A (-10° to 406°F) [-23° to 208°C]	Acetone, Air, Amyl Alcohol, Aniline, Benzene, Butane, Carbon Disulphide, Carbon Tetrachloride, Dowtherm "A" and "J," Ethyl Chloride, Ethylene, Ethylene Glycol, Ethyl Alcohol, Gasoline, Hexane, Hydrogen Sulphide, Isobutyl Alcohol, JP - 4 Fuel, JP - 5 Fuel, Kerosene, Lube Oil, Natural Gas, Naphtha, Nitrogen, Propane, Propylene, Propyl Alcohol, Sulphur Dioxide, Toluene, Trichloroethylene, Turpentine, Water, Xylene
Silicone (-100° to 406°F) [-73° to 208°C]	Air, Helium, Nitrogen, Oxygen (Gas)
Ethylene Propylene (-70° to 400°F) [-57° to 205°C]	Steam, Hot Water
Neoprene (-45° to 300°F) [-43° to 149°C]	Air, Anhydrous Ammonia, Butane, Butyl Alcohol, Castor Oil, Denatured Alcohol, Ethanol, Ethyl Alcohol, Freons (12, 13, 14 and 22), Glycols, Natural Gas and Silicate Esters

# Kunkle Safety and Relief Products

Models 264, 265, 266, 267, 264P, 265P, 266P and 267P

## Model Number/Order Guide

### Model Number Position

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Example

0 2 6 4 — D 0 1 — K G 1 0 0 0

### Model

0264 264P  
0265 265P  
0266 266P  
0267 267P

### Seat Material

M - Metal  
B - Buna<sup>1,2</sup>  
E - EPR<sup>1,2</sup>  
S - Silicone<sup>1,2</sup>  
V - Viton<sup>1,2</sup>  
N - Neoprene<sup>1,2</sup>

### Inlet Size

C - 1/2" [12.7 mm]  
D - 3/4" [19.0 mm]  
E - 1" [25.4 mm]

### Variation (01 to 99)

01 - MNPT x 1" FNPT      04 - FNPT x 3/4" FNPT  
02 - MNPT x 3/4" FNPT    60 - MBSPT x FBSPT  
03 - FNPT x 1" FNPT

### Design Revision

Indicates non-interchangeable revision.  
Dash (-) if original design

### Valve Service

K - Air/Gas ASME Section VIII Models 264P, 265P, 266P, 267P required for air code service  
L - Steam ASME Section VIII Models 264P, 265P, 266P, 267P required for steam code service  
M - Non-code liquid, all models  
P - Non-code steam, all models

### Spring Material

F - High-temperature (tungsten alloy steel), (temperatures above 550°F)  
G - SS (ASTM A313-316 or T631, 17-7) standard  
M - SS (ASTM A313-316 or T631, 17-7) 2700 psi and above

### Set Pressure

4 psig [0.3 barg] (0004) to 3300 psig [227 barg] (3300)

### Notes

1. Soft seat not available below 150 psi.
2. Not available for Section VIII steam service.

## KUNKLE

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[www.kunklevalve.com](http://www.kunklevalve.com)

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