



## KUNKLE MODELS 230/330/330S/333S RELIEF VALVES

SAFETY AND RELIEF PRODUCTS

Relief valves for air and gas services with models to ASME section VIII and XIII, gas 'UV', National Board certified and PED certified for non-hazardous gas



MODEL 330

### FEATURES

- Lightweight aluminum construction is resistant to environmental and internal corrosion.
- Repetitively consistent opening pressure.
- Smooth relief action.
- Positive reseating with minimal pressure drop.
- Soft seat provides repeatable leak-tight performance; allows reduced maintenance costs, multiple cycles with tight shut-off and high seating integrity.
- Model 230 (non-code) is direct spring-loaded design.
- Model 330 series' differential mechanism maintains a predetermined seat contact load.
- Full spring load is never imparted to seat (Models 330, 330S and 333S).
- Seat tightness increases as inlet pressure approaches set (opening) pressure.
- Each valve tested and inspected for pressure setting and leakage.

### GENERAL APPLICATION

These valves are suitable for use on multi-stage high pressure compressors, intercoolers and aftercoolers; on high pressure receivers and storage bottles, for thermal expansion relief and on breathing air pac and SCUBA recharge compressors.

### TECHNICAL DATA

Connections:	Threaded NPT or SAE
Temperature range:	-20 to 185°F (-29 to 85°C)
Pressure ranges	
Model 230:	300 to 1500 psig (20.7 to 103.4 barg)
Model 330	1000 to 5500 psig (69 to 379.3 barg)
Models 330S/333S:	1000 to 7500 psig (69 to 517.1 barg)
Max. back pressure	
(Model 333S):	100 psig (6.9 barg) <sup>[1]</sup>
Codes:	ASME VIII, XIII and PED <sup>[2]</sup>



### NOTE

1. Back pressure reduces set pressure on a one to one basis and reduces capacity. Back pressure in excess of 10% of set pressure is not recommended.
2. PED certification limited to a maximum of 7000 psig [482.8 barg].

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## SAFETY AND RELIEF PRODUCTS

### MODELS OVERVIEW

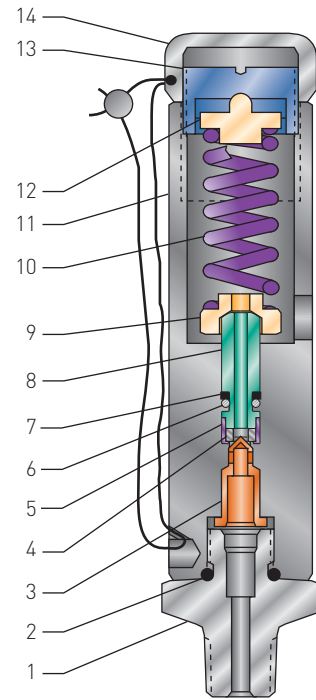
- Model 230: Aluminum housing with SS trim. Sidewall discharge.
- Model 330: Aluminum housing with SS trim. Sidewall discharge.
- Model 330S: As 330 except SS body.
- Model 333S: As 330S except female NPT side outlet. Pressure-tight cap.

### Parts and materials

#### MODEL 230

No.	Part name	Materials
1	Nozzle <sup>[1]</sup>	SS SA479-304
2	O-ring	PTFE3
3	Bottom disc	SS A582-303
4	Seat	Urethane
5	Disc cap	SS A582 303
6	O-ring	EPDM
7	Back up ring	PTFE
8	Top disc	SS A582-303
9	Spring step	Aluminum B211 alloy 2024 T351
10	Spring	Steel A231, aluminum or polyester coated
11	Cap	Aluminum B211 alloy 2024 T351
12	Top spring plate	Aluminum B211 alloy 2024 T351
13	Compression screw	Aluminum B211 alloy 2024 T351
14	Hood	Aluminum B211 alloy 2024 T351

1. Inlet size G - 7/16" SAE thread equipped with EPDM O-ring seal (not shown).



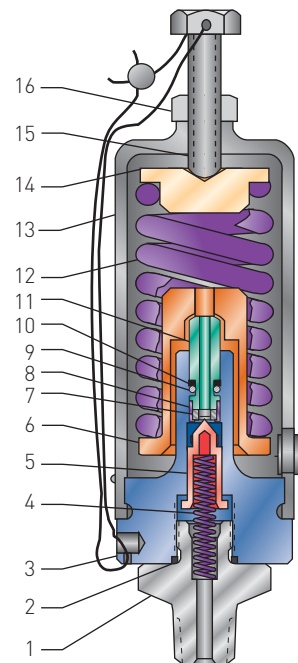
MODEL 230

#### MODELS 330 AND 330S

No.	Part name	Materials
1	Nozzle <sup>[1]</sup>	SS SA479-304
2	O-ring	PTFE
3	Body	Aluminum SB211 alloy 2024 T351 <sup>[2]</sup>
4	Bottom spring	SS A313-302
5	Bottom disc	SS A582-303
6	Bottom spring step	Aluminum B211 alloy 2024 T351
7	Seat	Urethane
8	Disc cap	SS A582 303
9	O-ring	EPDM
10	Back up ring	PTFE
11	Top disc	SS A582-303
12	Top spring	SS A313-631 or Steel A231 aluminum or polyester coated
13	Cap	Aluminum SB-211 alloy 6061-T6
14	Top spring step	Aluminum B211 alloy 2024 T351
15	Compression screw	SS A582-303
16	Jam nut	SS 18-8

1. Inlet size G - 7/16" SAE thread equipped with EPDM O-ring seal (not shown).

2. Model 330S, SS SA479-304.



MODELS 330 AND 330S

# KUNKLE MODELS 230/330/330S/333S RELIEF VALVES

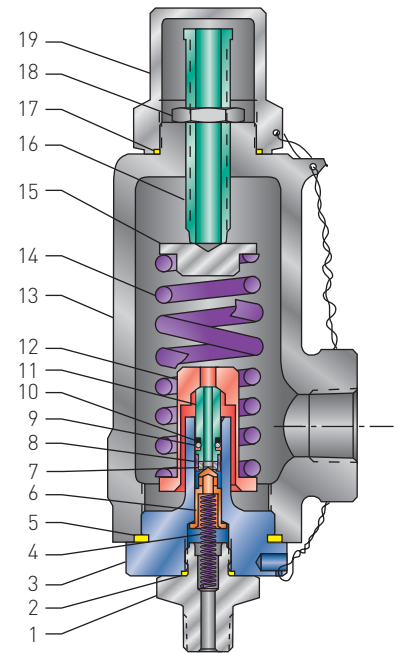
## SAFETY AND RELIEF PRODUCTS

### Parts and materials

#### MODEL 333S

No.	Part name	Material
1	Nozzle <sup>(1)</sup>	SS SA479-304
2	O-ring	PTFE
3	Body	SS SA479-304
4	Bottom spring	SS A313-302
5	O-ring	NBR
6	Bottom disc	SS A582 303
7	Seat	Urethane
8	Disc cap	SS A582 303
9	O-ring	EPDM
10	Back up ring	PTFE
11	Top disc	SS A582 303
12	Spring step - bottom	Aluminum B211 alloy 2024-T351
13	Bonnet	Aluminum SB26 alloy 356-T6
14	Top spring	SS A313-631 or Steel A231 aluminum or polyester coated
15	Spring step - top	Aluminum B211 alloy 2024-T351
16	Compression screw	SS A479-316
17	O-ring	NBR
18	Jam nut	SS A479-316
19	Cap	Aluminum B211 alloy 2024-T351

1. Inlet size G - 7/16" SAE thread equipped with EPDM O-ring seal (not shown).

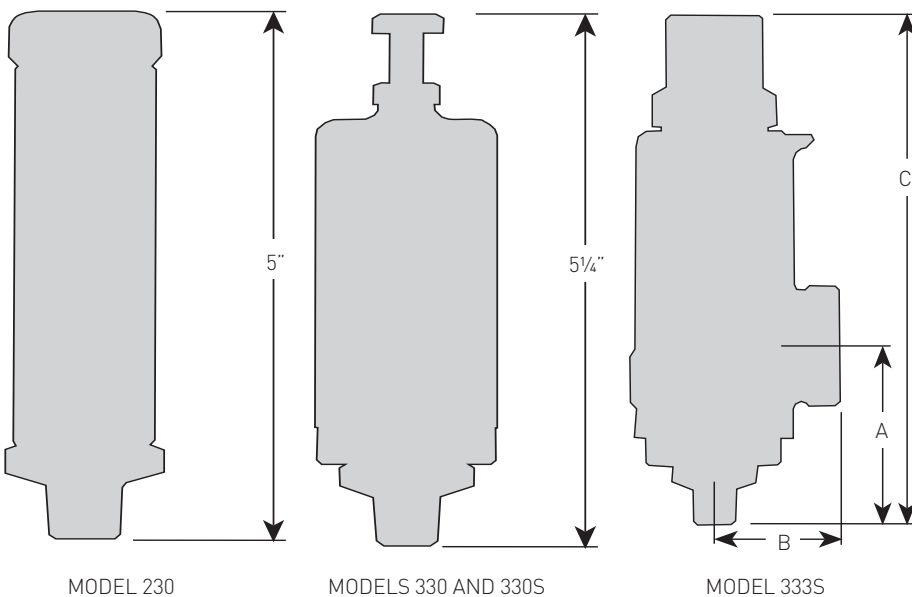


MODEL 333S

### SPECIFICATIONS

Size (Model 333S)		Dimensions, in			Weight (lb)
Inlet	Outlet	A	B	C	
1/4", 7/16" and 1/2"	1/2" and 3/4"	2 5/8"	1 5/8"	7 11/16"	1

Dimensions are for reference only.



MODEL 230

MODELS 330 AND 330S

MODEL 333S

# KUNKLE MODELS 230/330/330S/333S RELIEF VALVES

## SAFETY AND RELIEF PRODUCTS

### SELECTION GUIDE

<b>Example:</b>	<b>0230</b>	<b>U</b>	<b>A</b>	<b>01</b>	<b>-</b>	<b>N</b>	<b>C</b>	<b>1400</b>
<b>Model</b>								
<b>0230</b>								
<b>0330</b>								
<b>330S</b>								
<b>333S</b>								
<b>Seat material</b>								
<b>U</b>	Urethane soft seat							
<b>Inlet</b>								
<b>A</b>	1/4" MNPT							
<b>C</b>	1/2" MNPT							
<b>G</b>	7/16" SAE							
<b>Variation (01 to 99)</b>								
<b>01</b>	Catalog standard							
<b>01</b>	1/2" FNPT outlet (model 333S only)							
<b>02</b>	3/4" FNPT outlet (model 333S only)							
<b>Design revision</b>								
	Indicates non-interchangeable revision							
	Dash (-) if original design							
<b>Valve service</b>								
<b>N</b>	Non-code air/gas (model 230 only)							
<b>K</b>	Gas ASME section VIII and XIII (models 330, 330S, and 333S only)							
<b>Spring material</b>								
<b>C</b>	SS A313-631 or Steel A231, aluminum or polyester coated							
<b>Set pressure</b>								
	Model 230 - 300 psig (0300) to 1500 psig (1500)							
	Model 330 - 1000 psig (1000) to 5500 psig (5500)							
	Models 330S and 333S - 1000 psig (1000) to 7500 psig (7500)							

### MODEL 230 CAPACITIES

SCFM air, 10% accumulation	
Set pressure psig	Capacity (non-code)
300	14
500	23
750	34
1000	45
1250	56
1500	67

### MODELS 330, 330S, 333S CAPACITIES

SCFM air, 10% accumulation	
Set pressure psig	Capacity
1000	29
1100	32
1200	35
1300	38
1400	40
1500	43
1750	50
2000	58
2250	65
2500	72
2750	79
3000	86
3500	100
4000	115
4500	129
5000	143
5500	158
6000	172
6500	186
7000	201
7500	215

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