

KUNKLE MODELS 71S/171/171P/171S LIQUID RELIEF VALVES

SAFETY AND RELIEF PRODUCTS

Extra heavy, rugged construction non-code liquid relief valves with a variety of model options to meet specific applications

MODEL 171



FEATURES

- Suitable for back pressure to 50 psig (3.45 barg)^[1].
- Seats lapped for optimum performance.
- Spherical pivot between disc and spring corrects misalignment and compensates for spring side thrust.
- Stainless steel springs.
- Tested and inspected for pressure setting and leakage.
- All SS 316 model 171S suitable for sanitary applications, depending on requirements.

NOTE

1. 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.

GENERAL APPLICATION

Suitable for overpressure relief, pressure regulation, by-pass relief and protection of pumps, tanks, lines and hydraulic systems containing acid, caustic, ammonia and other corrosive liquids requiring iron, steel or SS materials.

TECHNICAL DATA

Connections:	FNPT
Temperature range:	
Model 71S:	-20°F to 406°F (-29°C to 208°C)
Models 171, 171P, 171S:	-20°F to 550°F (-29°C to 288°C)
Pressure range:	
Model 71S:	1 to 250 psig (.07 to 17.2 barg)
Models 171, 171P, 171S:	1 to 400 psig (.07 to 27.6 barg)

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MODELS OVERVIEW

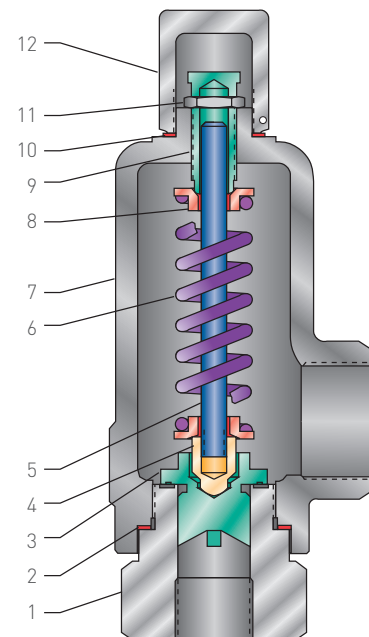
Model 71S: cast iron body with SS seat and disc. Pressure-tight hood.

Model 171: carbon steel with SS seat and disc. Pressure-tight hood.

Model 171P: as model 171 with packed lift lever.

Model 171S: all 316 SS construction including spring. Available with pressure-tight hood or packed lift lever.

MODELS 71S, 171, 171S



PARTS AND MATERIALS - MODELS 71S, 171, 171S

No.	Part name	71S	171	171S
1	Nozzle	SS A479-316 ^[1]	SS A479-316 ^[1]	SS A479-316 ^[1]
2	Body gasket	PTFE	PTFE	PTFE
3	Disc	SS A743-CF8M	SS A743-CF8M	SS A743-CF8M
4	Stem end	SS A479-316	SS A479-316	SS A479-316
5	Stem	SS A479-316	SS A479-316	SS A479-316
6	Spring	SS A313-316	SS A313-316	SS A313-316
7	Body	Cast iron 126	Steel A216-WCB	SS A351-CF8M
8	Spring step	SS A479-316	SS A479-316	SS A479-316
9	Compression screw	SS A479-316	SS A479-316	SS A479-316
10	Cap gasket	PTFE	PTFE	PTFE
11	Jam nut	SS A479-316	SS A479-316	SS A479-316
12	Cap	Steel A108	Steel A108	SS A479-316

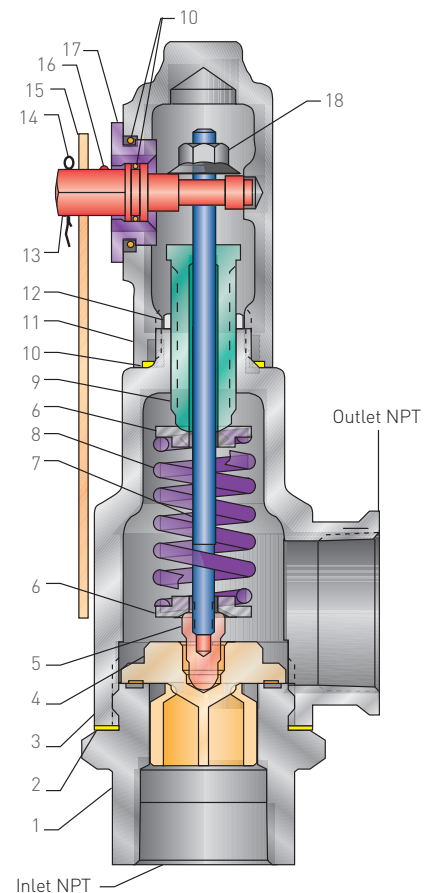
PARTS AND MATERIALS - MODELS 171P, 171S WITH PACKED LIFT LEVER

No.	Part Name	171P	171S
1	Nozzle	SS A479-316 ^[1]	SS A479-316 ^[1]
2	Body gasket	PTFE	PTFE
3	Body	Steel A216-WCB	SS A351-CF8M
4	Disc	SS A743-CF8M	SS A743-CF8M
5	Stem end	SS A479-316	SS A479-316
6	Spring step	SS A479-316	SS A479-316
7	Stem	SS A479-316	SS A479-316
8	Spring	SS A313-316	SS A313-316
9	Compression screw	SS A479-316	SS A479-316
10	O-ring	NBR	NBR
11	Cap	SS A296-CF8M	SS A296-CF8M
12	Jam nut	SS A479-316	SS A479-316
13	Lift cam	SS A296-CF8M	SS A296-CF8M
14	Cotter pin	Steel commercial	Steel commercial
15	Lever	Steel A108 zinc plated	Steel A108 zinc plated
16	Drive screw	SS commercial	SS commercial
17	Retainer nut	SS A479-316	SS A479-316
18	Lift nut	Steel A108 zinc plated	Steel A108 zinc plated

NOTE

1. SS A351-CF8M for 1½" and 2" size.

MODELS 171P, 171S



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CAPACITIES - NON-CODE LIQUID - 25% ACCUMULATION (GPM)

Set pressure (psig)	Valve inlet and outlet size					
	½"	¾"	1"	1¼"	1½"	2"
1	1	2	4	6	10	19
3	2	4	6	11	17	32
5	2	5	8	14	22	42
7	2	6	9	16	26	49
10	3	7	11	20	31	59
20	4	9	16	28	43	84
30	5	11	20	34	53	102
40	6	13	23	39	61	118
50	7	15	25	44	68	132
60	7	16	28	48	75	145
70	8	17	30	52	81	156
80	8	19	32	55	87	167
90	9	20	34	59	92	177
100	9	21	36	62	97	187
110	10	22	37	65	102	196
120	10	23	39	68	106	205
130	11	24	41	71	110	213
140	11	25	42	73	115	221
150	11	25	44	76	119	229
160	12	26	45	78	123	236
170	12	27	47	81	126	244
180	13	28	48	83	130	251
190	13	29	49	86	134	258
200	13	29	50	88	137	264
210	14	30	52	90	140	271
220	14	31	53	92	144	277
230	14	32	54	94	147	284
240	14	32	55	96	150	290
250	15	33	56	98	153	296
260	15	34	58	100	156	301
270	15	34	59	102	159	307
280	16	35	60	104	162	313
290	16	35	61	106	165	318
300	16	36	62	107	168	324
310	16	37	63	109	171	329
320	17	37	64	111	173	334
330	17	38	65	113	176	340
340	17	38	66	114	179	345
350	17	39	67	116	181	350
360	18	39	68	118	184	355
370	18	40	69	119	186	360
380	18	41	70	121	189	364
390	18	41	70	122	191	369
400	19	42	71	124	194	374

NOTE

1. Liquid overpressure factors

To determine capacities at other than 25% overpressure/accumulation, multiply capacity shown by:

10% acc. = 0.6

15% acc. = 0.8

20% acc. = 0.9

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DIMENSIONS - MODELS 71S, 171, 171P, 171S

Inlet and outlet female, NPT (in)	Dimensions (in)				Weight (lb)
	A	B	C	C	
			71S, 171, 171S	171P, 171S	
1/2 ^[1]	2 ⁷ / ₁₆	1 ³ / ₄	6 ⁷ / ₈	8 ³ / ₈	2 ¹ / ₂
3/4	2 ⁷ / ₁₆	1 ³ / ₄	6 ⁷ / ₈	8 ³ / ₈	2 ⁵ / ₈
1	2 ¹¹ / ₁₆	1 ³ / ₄	7	8 ⁷ / ₁₆	3 ¹ / ₄
1 ¹ / ₄	3 ⁵ / ₁₆	2 ¹ / ₈	7 ³ / ₄	8 ³ / ₄	5 ¹ / ₂
1 ¹ / ₂	3 ¹ / ₈	2 ⁷ / ₁₆	8 ¹ / ₄	9 ³ / ₄	7 ¹ / ₄
2	4 ³ / ₁₆	2 ³ / ₄	9 ³ / ₄	11 ¹ / ₈	12

Dimensions are for reference only

NOTE

1. 1/2" size has 3/4" outlet.

SELECTION GUIDE

Example:	071S	-	C	01	-	M	G	0250
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Model								
071S	Cast iron							
0171	Cast steel							
171S	Cast SS							
171P	Cast steel							
Connection size								
C	1/2" inlet x 3/4" outlet							
D	3/4" inlet x 3/4" outlet							
E	1" inlet x 1" outlet							
F	1 ¹ / ₄ " inlet x 1 ¹ / ₄ " outlet							
G	1 ¹ / ₂ " inlet x 1 ¹ / ₂ " outlet							
H	2" inlet x 2" outlet							
Variation								
01	Catalog standard							
02	Packed lever (Model 171S)							
Design revision								
Indicates non-interchangeable revision								
Dash (-) if original design								
Service								
M	Non-code liquid							
Spring material								
G	316 SS							
Set pressure								
0005	5 psig							
0400	400 psig							

