

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) |

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

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MODELS OVERVIEW

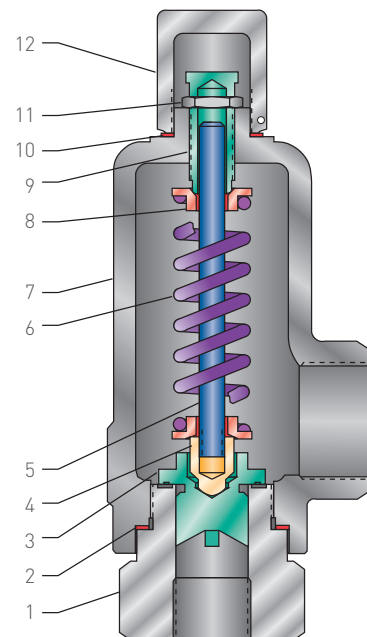
Model 71S: cast iron body with SS seat and disc. Pressure-tight hood.

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 |

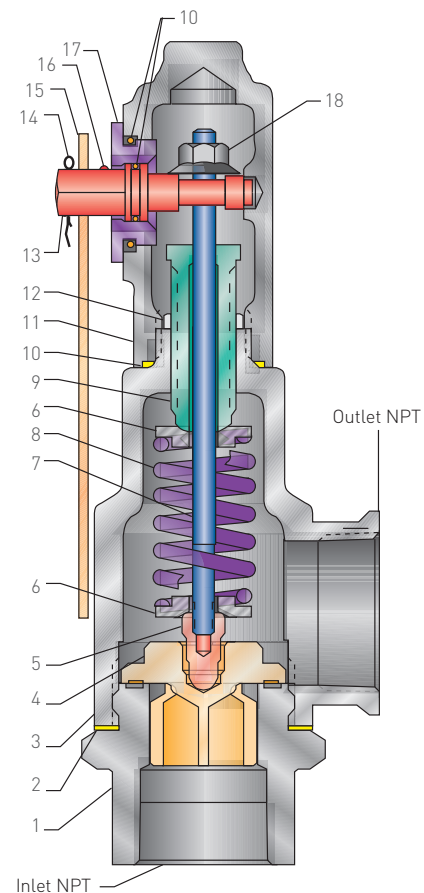
PARTS AND MATERIALS - MODELS 171P, 171S WITH PACKED LIFT LEVER

| 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



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

SAFETY AND RELIEF PRODUCTS

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

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

SAFETY AND RELIEF PRODUCTS

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 |
|-----------------|-------------|----------|----------|-----------|----------|----------|----------|-------------|

| | | | | | | | | |
|--|--|--|--|--|--|--|--|--|
| 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 | | | | | | | |

