

**KUNKLE BAILEY 616D SAFETY VALVE**

A spring operated high capacity safety valve for low-pressure air applications



**FEATURES**

- Designed to deliver precise relieving and re-seating pressures.
- Protected open discharge gives downward flow.
- Non-stick seating surfaces give positive shut-off and freedom from sticking.
- Mixture of aluminum and gunmetal creates a light but very robust construction.

**GENERAL APPLICATION**

Typically used on blowers or bulk transfer road/rail transport vehicles, the 616D is specially designed to give overpressure protection of positive displacement air blowers and associated tanks or pressure vessels.

**TECHNICAL DATA**

Material: Aluminum  
Sizes: 1½" to 2" (DN 40 to 50)  
Connections  
Inlet: Threaded  
Outlet: Open discharge  
Pressure range: 2.9 to 36.3 psig (0.2 to 2.5 barg)  
Temperature range: -22°F to 392°F (-30°C to 200°C)

# KUNKLE BAILEY 616D SAFETY VALVE

## SPECIFICATIONS

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#### Materials

Body - Aluminum from -22°F to 392°F [-30°C to 200°C]  
 Trim - PTFE/bronze

#### SIZE RANGE

| Size, in (DN) | Orifice, mm <sup>2</sup> | Min pressure, barg | Max pressure, barg |
|---------------|--------------------------|--------------------|--------------------|
| 1½ (40)       | 1140                     | 0.2                | 2.5                |
| 2 (50)        | 2027                     | 0.2                | 2.5                |

#### Kd (coefficient of discharge)

Air Variable

#### Construction

Top guided

#### Connections

Screwed in x open discharge

#### Cap options

Dome

#### Approvals

BS6759 Pt 2  
 PED certified category IV

### INSTALLATION

Mount the valve in a vertical position whenever possible (although it may be mounted at any angle up to 45° without detriment). Ensure that the valve discharge is unobstructed and does not create a hazard to personnel or property.

The branch leading to the valve must be the same nominal bore as the valve (or larger) and bushed down at the valve entry. The length must be kept as short as possible.

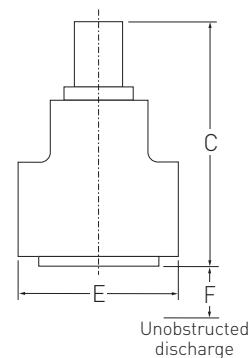
Due to the adverse effect of pressure pulsations from the usual Rootes-type blowers, the valve should not be mounted within 1.25 m of the blower outlet. However, no valve or other obstruction must intervene between the blower and the safety valve.

### DIMENSIONS

| Valve size DN | Inlet (NPS) | C<br>mm | E<br>mm | F<br>mm | Weight<br>(kg) |
|---------------|-------------|---------|---------|---------|----------------|
| 40            | 1½          | 194     | 102     | 10      | 1.8            |
| 50            | 2           | 205     | 127     | 13      | 2.0            |

All dimensions in mm.

Male x Female

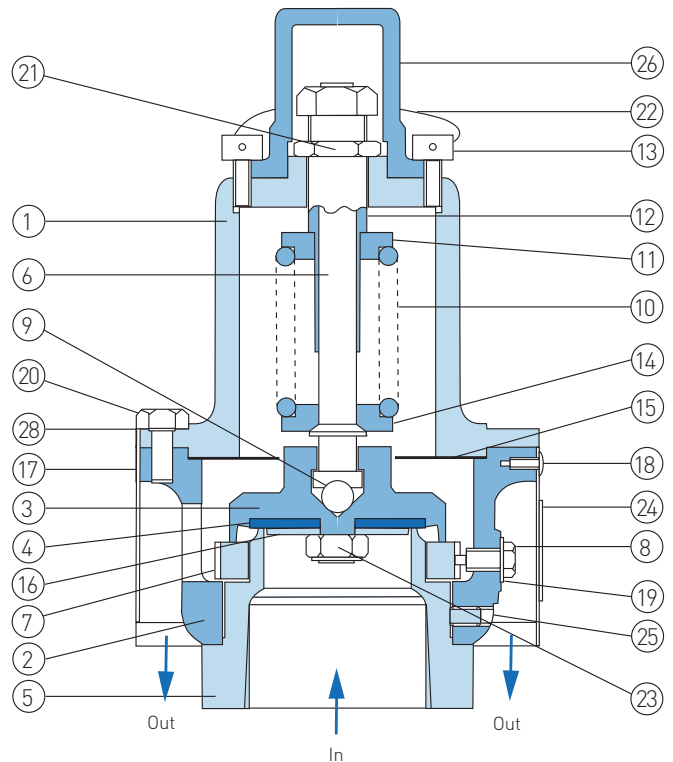


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## PARTS AND MATERIALS/SPRING SELECTION

### MATERIALS

| Item | Part               | Material         |
|------|--------------------|------------------|
| 1    | Cover              | Aluminum         |
| 2    | Body               | Aluminum         |
| 3    | Disc holder        | Aluminum         |
| 4    | Disc               | PTFE             |
| 5    | Seat               | Bronze           |
| 6    | Spindle            | St. St.          |
| 7    | Blow down ring     | Bronze           |
| 8    | Setting screw      | Ni. Pl. Steel    |
| 9    | Spindle ball       | St. St.          |
| 10   | Spring             | St. St.          |
| 11   | Upper spring cap   | Mild steel       |
| 12   | Adjusting screw    | Brass            |
| 13   | Cap screw          | St. St.          |
| 14   | Bottom spring cap  | Mild steel       |
| 15   | Dust shield        | Aluminum         |
| 16   | Disc support       | Zi. Pl. Steel    |
| 17   | Cowl               | Zi. Pl. Steel    |
| 18   | Self tapping screw | Zi. Pl. Steel    |
| 19   | Shakeproof washer  | St. St.          |
| 20   | Set screw          | St. St.          |
| 21   | Locknut            | Brass            |
| 22   | Wire and lead seal | Lead and St. St. |
| 23   | Self locking nut   | Brass            |
| 24   | Nameplate          | Aluminum         |
| 25   | Grub screw         | Steel            |
| 26   | Locking dome       | Nylon            |
| 28   | Starwasher         | St. St.          |



### SPRING SELECTION

The valves are fitted with a suitable spring. Every valve is tested thoroughly for efficient operation before leaving the factory. Ensure the set pressure is within the range of the existing spring. If not, select and fit the correct spring from the table below. All our springs are low stressed and painted to minimize corrosion.

### SPRING RANGE AND SELECTION

| Barg        | Psig        | Color code     |
|-------------|-------------|----------------|
| 0.21 - 0.38 | 3.1 - 5.5   | Red            |
| 0.38 - 0.67 | 5.5 - 9.8   | Yellow         |
| 0.67 - 0.99 | 9.8 - 14.4  | Blue           |
| 0.99 - 1.30 | 14.4 - 18.9 | Orange         |
| 1.30 - 2.5  | 18.9 - 36.3 | Purple (DN 40) |
| 1.30 - 2.07 | 18.9 - 30.0 | Purple (DN 50) |
| 2.07 - 2.20 | 30.0 - 31.9 | C2901 (DN 50)  |
| 2.20 - 2.50 | 31.9 - 36.3 | C2902 (DN 50)  |

### NOTE

Springs listed above comply with the requirements of BS6759: Part 1.

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## CAPACITIES/SELECTION

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### AIR CAPACITY (l/s) at 0.07\* barg or 10% overpressure and 15°C

| Set pressure (barg) | Valve size |       |
|---------------------|------------|-------|
|                     | DN 40      | DN 50 |
| 0.2*                | 64.2       | 115   |
| 0.35*               | 75.7       | 132   |
| 0.5*                | 87.9       | 150   |
| 0.65*               | 101.0      | 169   |
| 0.8                 | 116.0      | 191   |
| 1.0                 | 137.0      | 222   |
| 1.2                 | 160.0      | 252   |
| 1.4                 | 186.0      | 286   |
| 1.6                 | 212.0      | 322   |
| 1.8                 | 241.0      | 359   |
| 2.0                 | 271.0      | 398   |
| 2.5                 | 340.0      | 490   |

\* Minimum overpressure = 0.07 barg at set pressure less than 0.7 barg.

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