

# MODEL CB

Angle Type Model

TRUSTED  
**SINCE 1958**  
WORLDWIDE

FROM THE  
CREATORS  
OF THE  
*Original*  
BUCKLING  
PIN  
VALVE

Precise.

Quality.

Reliable.



## MODEL CB ADVANTAGES

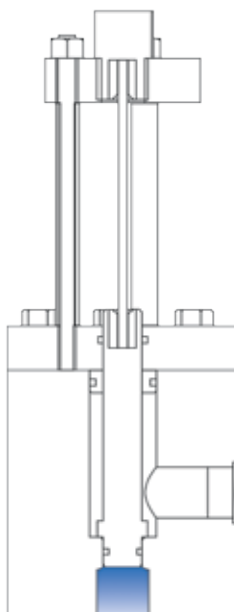
- No fugitive emissions, even on resetting
- Unaffected by pulsating pressures
- Unaffected by changing ambient temperatures on the pin
- Opens in milliseconds
- Operates to within 95% of set point
- Precise pin, obeying Euler's Law, acts as a pressure sensor and actuator
- Valve operates in constant back pressure, variable back pressure or vacuum



## OPERATION

In the closed position, an elastomer seal contacts a machined, stainless-steel piston seat for a bubble-tight shut off. When the pin buckles, the piston moves off seat to allow full flow pressure relief.

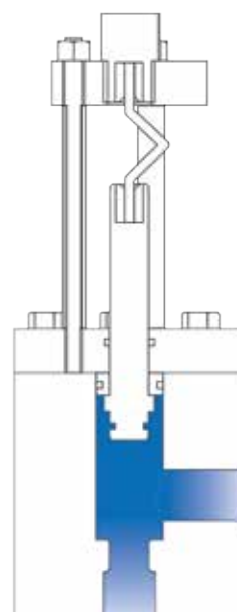
**Closed**



(Straight Pin)

Pressure At Set Point

**Open**



(Buckled Pin)

Pressure Below Set Point

## EULER'S LAW

$$\frac{\text{Axial Force on the Pin Causing the Pin to Buckle (Piston/Plunger Area} \times \text{System Pressure)}}{\text{Pin Diameter}^4 \times \text{Pin Material Modulus of Elasticity}} \sim \frac{\text{Pin Length}^2}{\text{Pin Length}^2}$$

## OPTIONS

### PROXIMITY SENSOR

For remote open indication.

### PIN CONTAINER

Pin storage at the valve.

### STAINLESS-STEEL SAFETY CAGE

Protects your pin from accidental damage.

The **Model CB** holds a bubble-tight, closed position until pressure reaches an exact set point. At set point, the valve instantly opens to relieve pressure from a protected system.

- Wide variety of pressures ratings and settings.
- Orifices full bore or greater.
- Reliable settings.
- Utilizes proven design principle – Euler’s Law.
- Provides bubble-tight seal in closed position.
- $\pm 5\%$  above 40 PSI,  $\pm 2$  PSI at 40 PSI and below.
- Complete stainless-steel body, piston and trim.
- Reseats rapidly without opening the valve or line to atmosphere.
- Pin flag shows the pin code, valve serial number and pin set point in PSIG.
- No loose metal or plastic shards to enter the flow stream upon opening.
- One moving part.
- The pin cannot fatigue.
- Provides a reliable signal with the proximity sensor to monitor the stem movement and gives a remote indication that the valve has opened (*Option*).
- Spare pins can be stored at the valve (*Option*).
- Balanced piston design to negate the effects of back pressure (*Option*).

## APPLICATIONS

Provides safety for a wide variety of pressure relief applications. The ideal substitute for rupture discs.

## SPECIFICATIONS

### VALVE POSITION

Pins are sized with the valve oriented as it will be in actual use; so, piston weight will not affect set point.

### PRESSURE SET POINT RANGE

10 to 2,000 PSI

### SIZES

1/2" to 2"

### CONNECTIONS

Standard and custom connections available.

### VALVE SEALS

Available for high and low temperatures, Viton standard.

### STANDARD MATERIALS

Complete stainless-steel body, piston, and trim.  
Other exotic alloy materials available.

### ACCURACY

$\pm 5\%$

### DOWNSTREAM PRESSURE BALANCED

Valve can be downstream balanced so that downstream pressure does not affect set point.



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