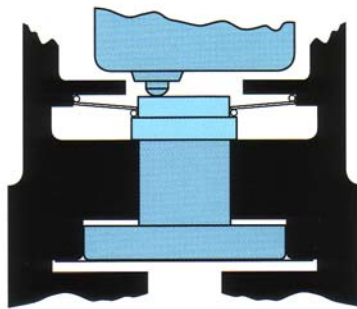
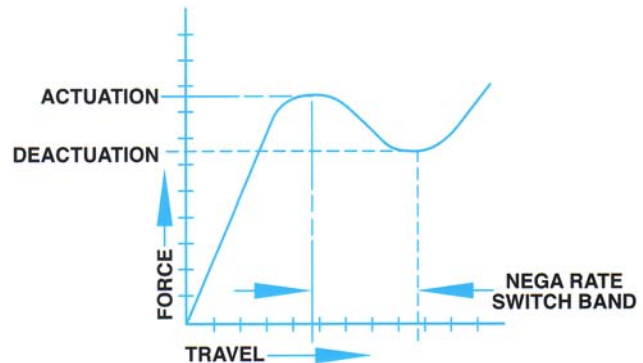


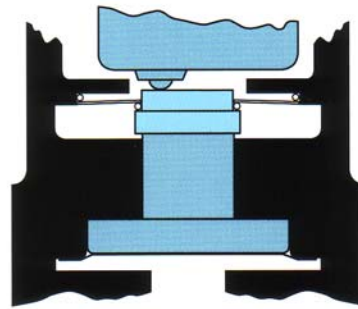
# Neo-Dyn® Pressure Switch Design

## Nega-Rate® Belleville Spring

A negative rate type pressure switch (i.e., a Belleville spring) is a snap acting device. At a certain pressure (apex of the spring curve) the spring snaps over center. At this point, it takes less pressure (force) to continue its movement. The pressure switch set point is a function of the Belleville spring. The electrical switch is in a fixed position and is synchronized to the movement of the Belleville.



DEACTUATED



ACTUATED

## Advantages of the Nega-Rate® Belleville Disc Spring Switches

### STABLE SET POINTS - "Eliminates Constant Recalibration"

#### BECAUSE:

- No moving parts except during actuation—no spring fatigue or wear.
- Set point is mostly a function of the negative rate Belleville spring—variables in snap action electrical have little effect on the set point.
- Total movement of the Belleville spring compensates for any relocation of the electrical due to case growth—consistent set point over temperature change.
- No linkage utilized—no wear which can affect accuracy.

### VIBRATION RESISTANT - "Eliminates Contact Chatter"

#### BECAUSE:

- Belleville spring does not preload the electrical prior to actuation—snap action electrical maintains its vibration resistant characteristic.
- Small mass and inherent stability of the Belleville spring resists chatter caused by vibration.
- Snap action electrical is ruggedly mounted with minimal bracketry—no spring mounted electricals or linkages.

### HIGH OVER-PRESSURE CAPABILITY - "No Affect on Set Point Accuracy"

#### BECAUSE:

- Belleville spring does not contain the pressure—no affect on system or proof pressure capability.
- The pressure sensing portion bottoms out after actuation and is fully supported—pressure sensing parts are designed for high pressure conditions.
- Limited movement of spring mechanism—no overtravel of the snap action electrical due to high pressure.

### HIGH CYCLE LIFE - "Millions of Cycles"

#### BECAUSE:

- Short stroke minimizes wear—Belleville spring mechanism is exercised less than .020".
- Snap action of Belleville spring reduces electrical arc—prolongs contact life.