

# Pressure Relief Valves



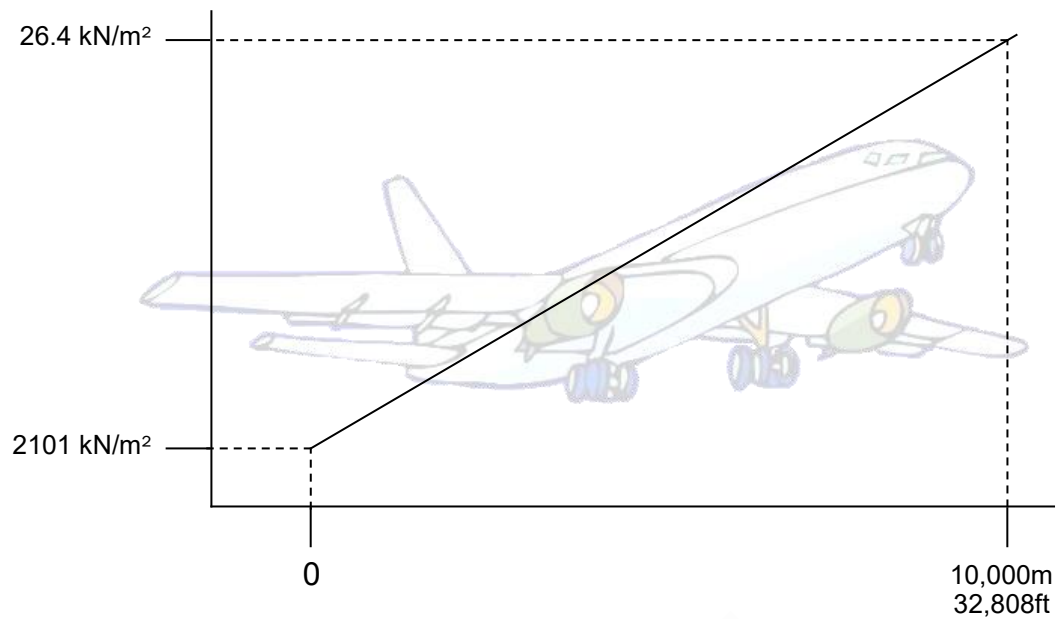
*Protecting instruments and enclosures from excessive pressures and vacuum*

# Principal Features

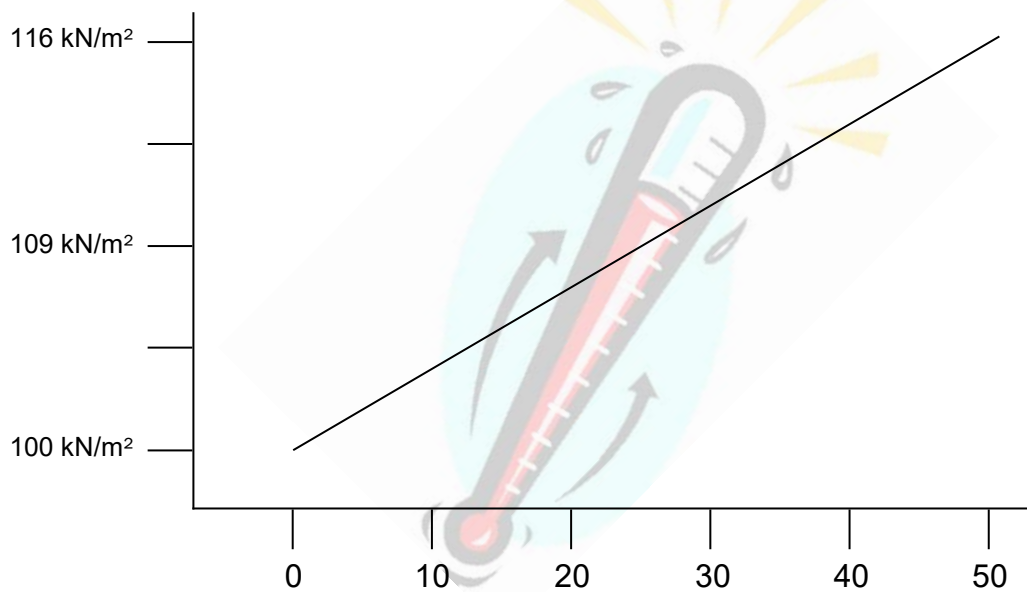
- ★ Two way valves for pressure and vacuum relief
- ★ Low cohesion providing reliable opening
- ★ Compatibility with air and gases including nitrogen, argon and SF6
- ★ Fully automatic opening and closing
- ★ Wide operating temperature range
- ★ Manual override facility for pressure equalisation
- ★ Available in aluminium, brass, stainless steel and plastics
- ★ Flow rate ranges from cc/min to litres/h
- ★ Optional valve operated indicator
- ★ Compatible desiccant holders to remove moisture and other contaminants during vacuum operation

## Changes in pressure & vacuum are caused by:

### ALTITUDE

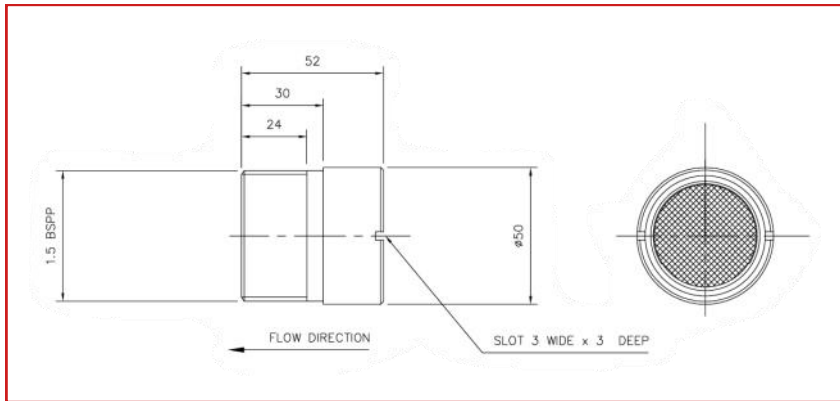


### TEMPERATURE

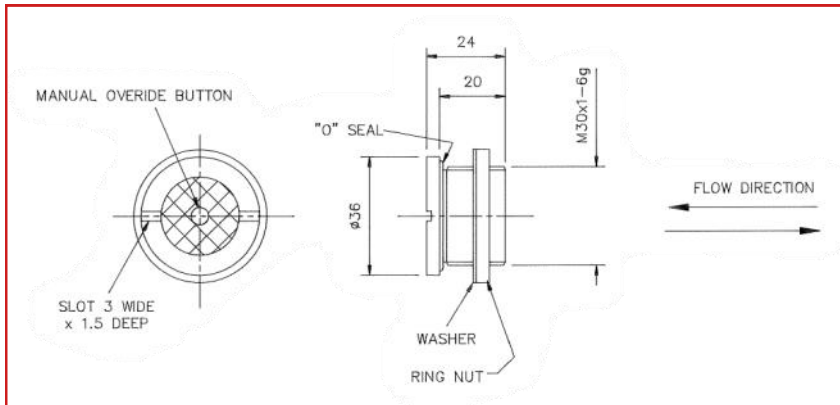


# Typical Breather Valves

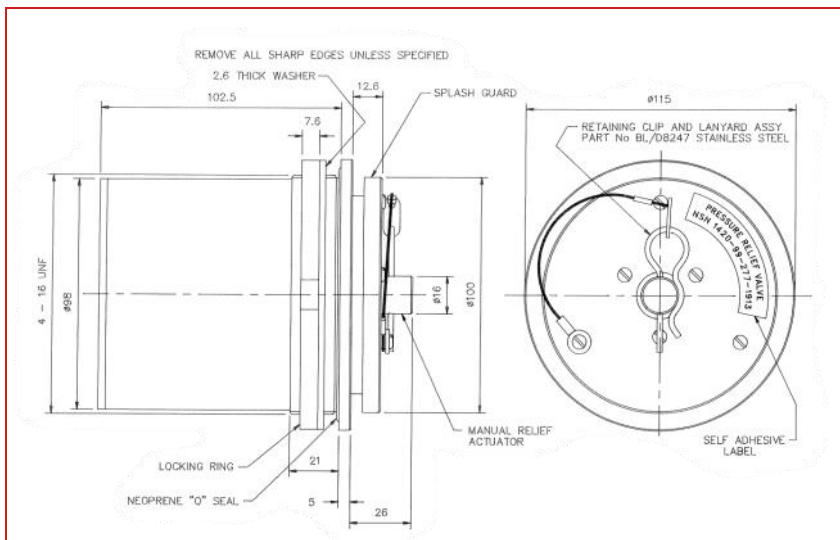
BL/D 6017



BL/D 6637



BL/D 9156



PRESSURISED RELIEF VALVES



# Technical Features

- ★ Operating temperature -30°C to 90°C
- ★ Pressure or vacuum opening - minimum 250 N/m<sup>2</sup>
- ★ Pressure opening - maximum 206 kN/m<sup>2</sup>
- ★ Vacuum opening - maximum
- ★ Opening tolerance typical ±5%
- ★ Stability ±10%
- ★ Vibration to BS2011 Part 2.1Ea
- ★ Maximum reserve leak rate 10-3 cc/sec
- ★ Salt mist (subject to material) BS2011 Part 2Ka
- ★ Mould growth to BS2011 Part 2.1J
- ★ Protection against water spray (optional)

# Pressure Relief Valves

## Pipelines & Pressure Sensitive Applications

Bottled gases and compressed air often require pressure reduction before they can be used for many industrial applications.

Supply pressures can vary between 7 and 150 bar and must often be reduced before use. A regulator may be required to reduce the pressure to the nominal working level.

Relief valves are used to prevent the gas pressure exceeding the working limit, thus eliminating possible equipment damage.

Where solenoid valves are used to control the supply of air or gas to pressure sensitive applications, relief valves are used to prevent an over-pressure occurring.

Relief valves are also used to reduce pressure differentials to the working level in containers, tanks and storage vessels which may be subject to environmental heating or cooling, thereby preventing distortion and damage.

## Equipment & Transit Containers

Pressure and vacuum differentials will occur in equipment and transit containers when they are subject to changes in temperature and/or altitude.

The installation of relief valves in equipment and transit containers will prevent damage caused by pressure or vacuum differentials.

The use of relief valves allows designers to reduce the constructional strength and weight in equipment or transit containers.

As an aircraft ascends from sea level the containers on board will be subject to changes in pressure caused by the reduction in atmospheric pressure.

For an equipment container being carried in an unpressurised part of an aircraft the pressure difference between sea level and 10,000m (32,808ft) is 74.95 kN/m<sup>2</sup> (10.8 PSI).

From the above it may be seen that unless relief valves are fitted, an equipment or transit container will be subject to pressure differentials which would cause damage or destruction.

# Ordering Information

The following information is required for ordering:

1. EQUIPMENT VOLUME \_\_\_\_\_ m<sup>3</sup>
2. RATE OF CHANGE OF PRESSURE/FLOW RATE \_\_\_\_\_ kN PER m<sup>2</sup>/m<sup>3</sup> PRE MIN
3. AIR OR GAS TYPE \_\_\_\_\_
4. MAXIMUM OPERATION PRESSURE \_\_\_\_\_ kN/m<sup>3</sup>
5. ANY SPECIAL REQUIREMENTS \_\_\_\_\_

Contact the Brownell Technical Staff, if you require further assistance or guidance

# Typical Applications

- AIRBOURNE EQUIPMENT
- AIR PORTABLE CONTAINERS
- PRESSURE OR VACUUM SENSITIVE APPLICATIONS
- GAS PIPELINES
- LIQUID STORAGE TANK AIRSPACE VENTING
- NON RETURN VALVES
- OUT GASSING PROTECTION
- SEALED ENCLOSURES

