

PRESSURE CONTROL

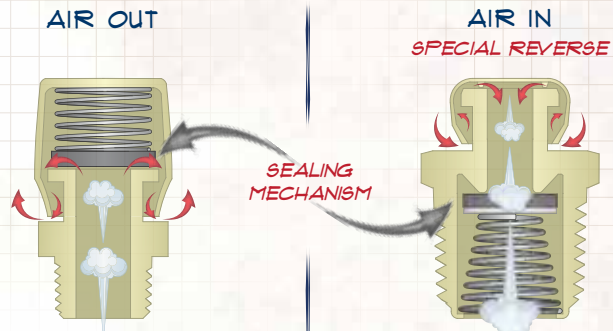
There are three groups of pressure control fittings: vents, breathers and relief vents. Breathers do not restrict airflow and allow the gearbox to "breathe" in and out. Vents are different from breathers because air is only allowed to flow in one direction, and the vent closes to prevent airflow in the opposite direction. Relief vents have a small interior valve that relieves pressure at prescribed pressure ratings.



VENTS

Vents open and close within a predetermined pressure range. As internal pressures rise, a flat seal (typically composed of rubber) opens, allowing pressure to vent. As the pressure decreases, the seal closes. The rubber seal has the added advantage of sealing the port opening while closed, thus preventing dirt, water and other contaminants from entering.

VENT FITTINGS ARE AVAILABLE IN TWO STYLES - REGULAR AND REVERSE FLOW. SEE PAGES 52-54.



THE VENT OPENS AND CLOSES AT A PREDETERMINED PRESSURE. THE VENT SEALS SO THAT AIR IS ONLY ALLOWED TO MOVE OUT OF THE ASSEMBLY.

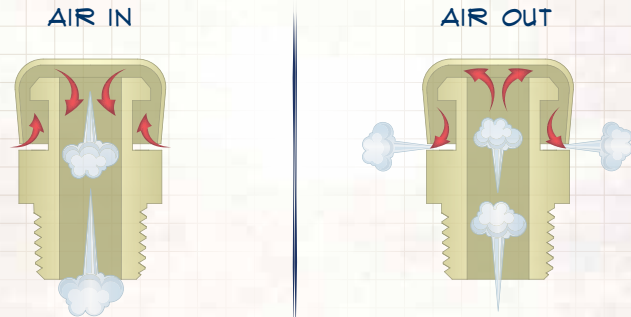
THE VENT REMAINS CLOSED, BUT THEN OPENS WHEN INTERNAL VACUUM BUILDS TO A PREDETERMINED LEVEL, AND AIR CAN FLOW INTO THE ASSEMBLY.

BREATHERS



Breather fittings feature specially designed ports that allow air to move in-and-out, thus creating the effect of "breathing." They have a special cap which reduces contamination. For additional contamination protection, some breathers are equipped with a felt filter.

BREATHERS ALLOW A COMPONENT TO "INHALE" AND "EXHALE." SEE PAGE 55.



BREATHERS DO NOT RESTRICT AIRFLOW KEEPING THE INTERNAL PRESSURE AT A SAFE OPERATING LEVEL.



RELIEF VENTS

Pressure relief vents open and close within a predetermined pressure range. As internal pressures rise, the plunger or check ball opens, allowing pressure to vent. As pressures decrease to below the minimum threshold, the valve closes.

RELIEF VALVES ARE AVAILABLE IN BOTH A TOP VENT AND SIDE VENT DESIGN. SEE PAGES 56-57.



THE BASIC DESIGN CONSISTS OF A PRE-ENGINEERED SPRING THAT CONTROLS A POP-UP VALVE. AT PEAK PERFORMANCE, THE VALVE IS CLOSED, SEALING THE BEARING.

ONCE INTERNAL PRESSURES REACH THE PREDETERMINED OPENING PSI, THE POP-UP VALVE ENGAGES AND THE FITTING ALLOWS PRESSURE TO ESCAPE.

PRESSURE CONTROL

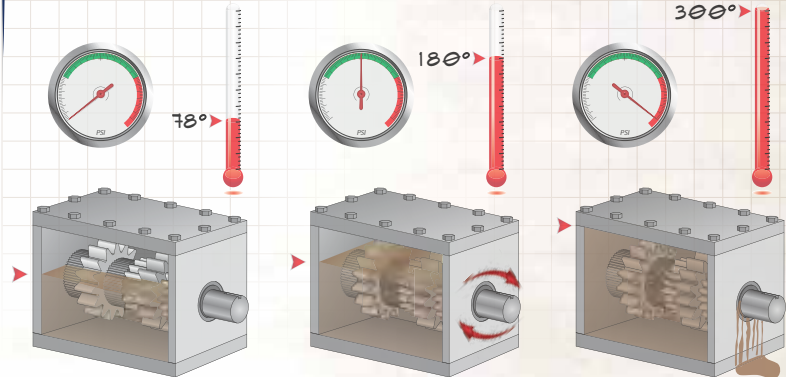
Pressure control fittings are designed to maintain selected pressures inside of gearboxes and bearing housings. These fittings are designed in a variety of styles and types. For custom designs, please contact our Sales Team for details.

OVER LUBRICATION

As components turn inside gearboxes, the friction of the moving parts produces heat, which in turn causes the interior liquids and gases to expand.

As the volume of liquids and gases expand, pressure increases. If not controlled, the excess pressure can cause seals to break, resulting in damage to the gearbox components.

PRESSURE CONTROL FITTINGS ARE AVAILABLE IN VARIOUS PSI RATINGS TO FIT YOUR APPLICATION.



IN A REST CONDITION, FLUID AND GASES INSIDE THE GEARBOX ARE AMBIENT.

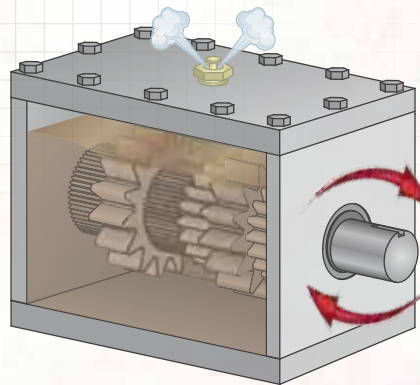
WHILE IN OPERATION, THE TEMPERATURE INSIDE THE GEARBOX INCREASES CAUSING FLUID LEVELS & PRESSURES TO RISE.

IF NOT MONITORED, THE INCREASED PRESSURE CAN BLOWOUT SEALS.

PREVENTION

In the application to the right, the pressure relief valve on top of the gear box has successfully vented excess pressure. This pressure relief allows the gearbox to operate safely at a variety of RPM's and various atmospheric conditions.

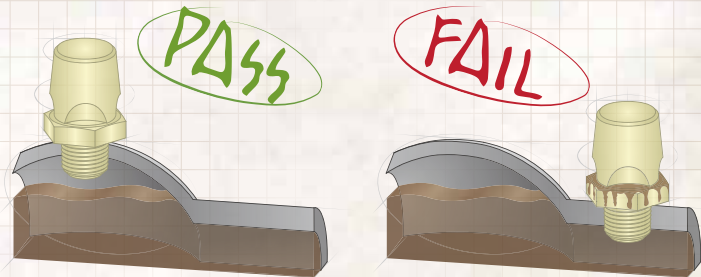
USE OF TOP VENT FITTING ALLOWS EXCESS PRESSURES TO VENT OUT OF COMPONENT.



INSTALLATION

In most applications, it is best to install pressure control fittings above the stationary fluid line. Be sure to have the proper pressure control fitting with the correct pressure rating for the application.

PRESSURE CONTROL FITTINGS ASSIST IN REDUCING DAMAGE FROM OVER PRESSURIZATION IN AN APPLICATION.



ABOVE FLUID LEVEL VS. BELOW FLUID LEVEL