

## The Top Five Pressure Gauge Failure Causes



### 1. Overpressure

A gauge with its **pointer pegged against the stop pin** indicates it is operating near or past its maximum pressure. This means the installed gauge has an incorrect pressure range for the application and is incapable of reflecting the system pressure. As a result, the Bourdon tube may rupture and cause complete gauge failure.



### 4. Pulsation

Frequent, fast cycling of fluid through the system creates wear on the gauge movement components. This can affect the ability of the gauge to measure pressure and will be indicated by a **fluttering pointer**. This condition can lead to a Bourdon tube rupture and complete gauge failure. Redesign your system to reposition the gauge within your application to reduce the cycling speed seen by the gauge and maintain the needed measurement integrity. Should you be unable to redesign your system, using a gauge with liquid fill, a gauge orifice restrictor, or a snubber will help reduce the effects of pulsation.



### 2. Pressure Spikes

When you see a **gauge pointer bent, broken, or nicked**, the gauge has likely been subjected to a sudden spike in system pressure caused by a pump cycling on/off or a valve being open/closed upstream. The pointer can be damaged from the force of hitting the stop pin. This abrupt change in pressure can lead to a Bourdon tube rupture and gauge failure.



### 5. Excessive Temperature/Overheating

A gauge that is incorrectly mounted or located too close to excessively hot system liquid/gas or components can have a **discolored dial or liquid case fill** from the breakdown of the gauge components. Elevated temperature stresses the pressure system and affects measurement accuracy by causing a strain on the metal Bourdon tube and other gauge components. Selecting a gauge with a different temperature rating will better accommodate the possible range the system will see. For extreme temperature applications choose a gauge with a diaphragm seal or a diaphragm seal with a cooling element.



### 3. Mechanical Vibration

A misaligned pump, reciprocating compressor, or a poorly mounted gauge can result in a **missing pointer, window, window ring, or back plate**. You may also see **black dust on the dial or scrapes on the dial** from a loose pointer. The gauge movement connects to the Bourdon tube, and vibration can break the movement component, meaning the dial no longer reflects the system pressure. Using a liquid case fill will dampen the movement and eliminate or reduce the avoidable vibration in the system. In extreme system conditions, use a snubber or a gauge with a diaphragm seal.

