

Top Reasons for Gauge Failures

Working with customers throughout our region, Cross company has seen thousands of gauge applications. Our team of instrumentation experts has gained a wealth of knowledge, identifying some of the top reasons we see gauge failures and the need for gauge replacement. Take a look at our list below and know the signs of failure so you can update your gauges before it's too late.

Pressure Spikes

One of the visible signs of pressure spikes is a bent pointer. Sometimes called a fishtail, this occurs when the pointer hits or is forced into the stop pin. Risks of operating with a gauge that has seen pressure spikes include increased wear on movement and components, as well as Bourdon tube damage.

Overpressure/ High Pressure

Some visible signs that a gauge has incurred overpressure or high pressure damage include having a pointer pegged against the stop pin, or located near (or past) the full scale of the gauge. Risks operating a gauge that has seen an over-pressure or high pressure event include inaccurate measurement and bourdon tube damage.

Pulsation

Signs of pulsation include flutter of the pointer, and sometimes a loose or even broken pointer. Operating a gauge with pulsation can make it difficult to obtain accurate readings, and continuous pulsation subjects the internal components of the gauge to more wear, and potentially a pressure system failure.

Vibration

One of the easiest ways to determine if a gauge has experienced vibration is metal dust on the inside of the gauge window. A detached or loose pointer is another sign, however can also be caused by a number of other issues listed here. Vibration causes friction of metal components which causes the components to create dust. The obvious risk with operating a gauge that is experiencing vibration is wear and tear to the components which can cause system failure.

Corrosion

Depending on substances in your process or atmosphere, corrosion can cause

Top Reasons for Gauge Failures

deterioration or discoloration of the gauge components. This frequently occurs externally (on the gauge case or window) first, and then eventually you might see discoloration on the gauge dial or pointers. Another common sign is deterioration at connection sites. One of the most obvious risks here is simply the readability of a gauge with discoloration on the window, however deterioration of connections or other components can cause pressure system failures.

Temperature

Gauges subjected to extreme temperatures often have discolored dials or liquid fill (usually orange, yellow, brown, or black). You might even see a melted dial or if the gauge has experienced an ambient temperature extreme, a discolored or melted gauge case. Risks of operating a gauge that has experience a temperature extreme include accuracy loss and breakdown of system components.

Clogging

This can happen when debris or other solid materials are introduced to the system. Often this results in no pressure reading when system is in operation and can potentially cause overpressure occurrences due to false pressure indication.

Maintenance or Improper Use

This category can range quite a bit. However, the most common signs we see with improper use or maintenance include; cracked case or dented bezel, broken lenses, or crooked/bent intake (if threaded, sometimes with damaged threads). Most of these are signs of a drop or other physical damage resulting in improper use. All of the above can cause loss of functionality.

If your team is seeing any of the above signs with your gauges, contact a Cross instrumentation specialist to reduce risk, and improve your operation. No matter your process, gauge failures can lead to loss in efficiency, reduced quality, or worse, line shut down and even personal injury. Start a discussion with our team and learn more.

Are your pressure systems part of a tank setup? See how our team can help reduce risk and keep your plant safe.