



Product Guide

# **PLUS!**™ Performance Option

## What is **PLUS!**™ Performance?

For applications where pulsation and vibration are present, a dry gauge can be difficult to read and have a limited life span. Liquid fill gauges are costly and have their own set of challenges. But, **PLUS!**™ Performance is an award-winning dry case pressure gauge that dampens pulsation and vibration, improves gauge readability and avoids all the headaches of a liquid filled gauge. This proven technology has been sold in more than 1 million gauges worldwide since it was patented in 1998, and it is an industry standard when it comes to pulsation and vibration management.

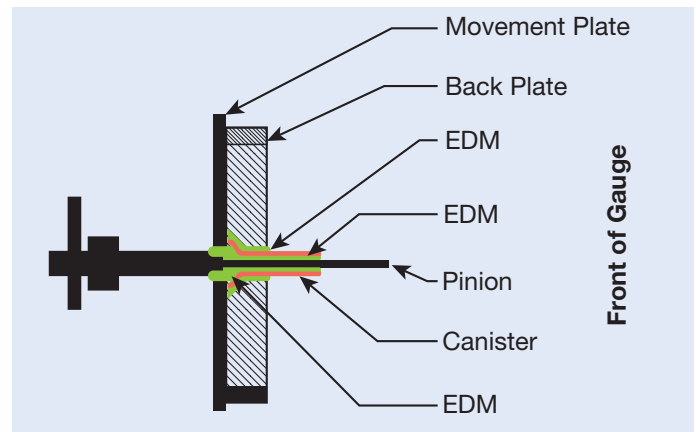


**Problem:**  
Pressure gauge experiencing excessive pressure and vibration

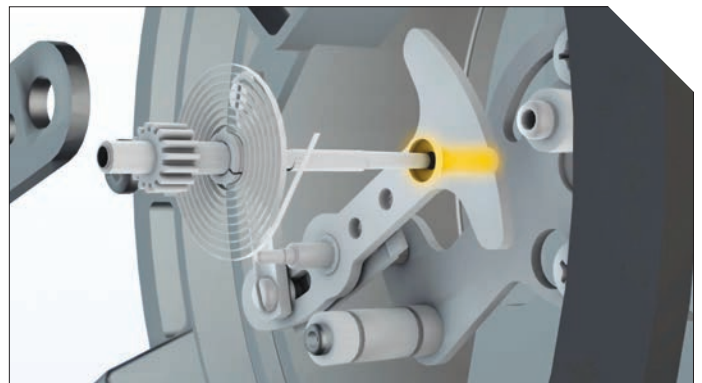
**Solution:**  
**PLUS!**™ Performance option

## How Does **PLUS!**™ Performance Work?

This proprietary Engineered Dampening Media (EDM) of a gauge with the **PLUS!**™ Performance option is injected into a canister that surrounds the gauge movement pinion shaft, movement plate, and backplate.




This movement technology, or **PLUS!**™ Performance, utilizes a thixotropic liquid that adheres to the pinion. As gauge pressure increases or decreases, movement of the gauge pinion creates shear load, which causes EDM molecules to scatter. The EDM material gets thinner at the layer being sheared. With applications involving vibration, this allows dampening of the gauge pointer. This action allows for a steady, flutter-free pointer.



1279 **PLUS!**™ Shown

## How to Specify **PLUS!™**

Gauges with **PLUS!™** Performance are specified using the **XLL** variation code. For applications requiring silicone free, the variation code is **XNZ**.

Gauges with <b>PLUS!™</b> Performance	Vs. Dry Gauge	Vs. Liquid-Filled Gauge
	Dampens pulsation and vibration	Because <b>PLUS!™</b> Performance comes with a dry gauge case, no leaks Wider ambient temperature range than a glycerin filled gauge
	Provides an easier to read steady pointer	Easier to recalibrate No process contamination of fill fluid
	Reduces inventory by not having to stock both dry and liquid filled gauges	Eliminates the need for costly speciality fills in oxidizing applications Reduces inventory by not having to stock both dry and liquid-filled gauges

**Case Study**

Improve plant safety while reducing the number of SKUs in inventory



**The Problem:**

Industry surveys indicate that pressure gauges are often misapplied and prematurely fail due to vibration and pulsation. While liquid filled gauges do offer protection against pulsation and vibration, they can be expensive, forcing buyers and planners to stock both liquid filled and dry gauges.

**The Solution:**

Standardizing on **PLUS!™** Performance allows buyers to reduce the amount of SKUs while maintaining the safety of their facilities and attending to the demand of their processes.

**Case Study**

Protect against pulsation and vibration



**The Problem:**

A large automotive paint spray supplier expressed concern about surface contamination of the automobile body from a potentially leaky liquid filled gauge case. Often times, liquid filled gauges are used in the automotive paint spray process to protect the gauge from the rigors of pulsation and vibration.

The liquid fill in the gauge case, either silicone or glycerin when in contact with the automotive body could cause *cratering*, a term meaning low surface tension of the paint to the metal. Cratering causes dish shaped deformations in the paint surface. Some are shallow dimples; others penetrate the substrate or layer below. Cratering results in disruption of the assembly line, additional labor for sanding, repairs, and rework, or in the worst case, the car bodies may need to be scrapped. All resulting in increased costs and lost revenue. Worst case, car bodies may be scrapped. All of these add up to thousands of dollars' worth of loss.

**The Solution:**

Ashcroft recommended a dry 1279 gauge with silicone free Duragauge **PLUS!™**, option XNZ. This option provides protection against process pulsation and vibration without the headaches of a liquid filled gauge.

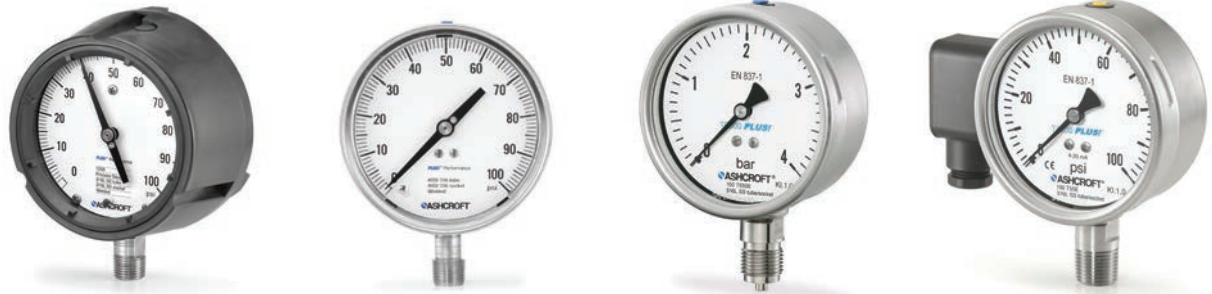
## Process Pressure Gauges available with **PLUS!™** Performance



	<b>1279</b>	<b>1377</b>	<b>1379</b>	<b>2462</b>
Size	4½"	4½", 6", 8½"	4½", 6", 8½"	6"
Accuracy	±0.5% of span (ASME B40.100 Grade 2A)	±0.5% of span (ASME B40.100 Grade 2A)	±0.5% of span (ASME B40.100 Grade 2A)	±0.5% of span (ASME B40.100 Grade 2A)
Process Connection	¼ NPT, ½ NPT, ⅝-18 UNF-2B standard for 30,000 psi range	¼ NPT, ½ NPT, ⅝-18 UNF-2B standard for 30,000 psi range	¼ NPT, ½ NPT, ⅝-18 UNF-2B standard for 30,000 psi range	¼ NPT, ½ NPT, ⅝-18 UNF-2B standard for 30,000 psi range
Bourdon Tube Material	Bronze, 316L Stainless steel, Monel® 500	Bronze, 316L Stainless steel, Monel® 500	Bronze, 316L Stainless steel, Monel® 500	Bronze, 316L Stainless steel, Monel® 500
Dampening	Duragauge® <b>PLUS!™</b> (XLL OPT.)	Duragauge® <b>PLUS!™</b> (XLL OPT.)	Duragauge® <b>PLUS!™</b> (XLL OPT.)	Duragauge® <b>PLUS!™</b> (XLL OPT.)
Ranges	Vacuum, compound, 15 to 30,000 psi	Vacuum, compound, 15 to 30,000 psi	Vacuum, compound, 15 to 30,000 psi	Vacuum, compound, 15 to 30,000 psi
Case Type	Solid front with pressure relief back	Solid front with pressure relief back	Solid front with pressure relief back	Solid front with pressure relief back
Case Material	Phenolic	Aluminum, black epoxy	Aluminum, black epoxy	Black, polypropylene
Ring Material	Polycarbonate (Meets UL 94 V-0)	Steel, black enamel	Polycarbonate (Meets UL 94 V-0)	Polypropylene
Window	Glass	Glass	Glass	Glass
Pressure Relief Back	Polycarbonate (Meets UL 94 V-0)	300 Stainless steel	Polycarbonate (Meets UL 94 V-0)	Polycarbonate
Process Connection Material	Brass, 316L Stainless steel, Monel® 400	Brass, 316L Stainless steel, Monel® 400	Brass, 316L Stainless steel, Monel® 400	Brass, 316L Stainless steel, Monel® 400
Movement	Stainless steel, rotary design, Teflon™ S coated pinion and bearings	Stainless steel, rotary design, Teflon™ S coated pinion and bearings	Stainless steel, rotary design, Teflon™ S coated pinion and bearings	Stainless steel, rotary design, Teflon™ S coated pinion and bearings
Pointer	Micrometer adjustable, aluminum	Micrometer, adjustable, aluminum	Micrometer, adjustable, aluminum	Micrometer, adjustable, aluminum
Agency Approval	CRN	CRN	CRN	CRN

Note: **PLUS!™** design is not recommended for gauges expected to be exposed to temperatures over 200 °F (93 °C). This includes gauges subject to autoclaving.

## Process Pressure Gauges available with **PLUS!™** Performance



	<b>1259</b>	<b>1209</b>	<b>T5500 &amp; 6500</b>	<b>T5500E</b>
Size	4½"	4½"	4½", 6", 8½"	100 mm (4½")
Accuracy	±0.5% of span (ASME B40.100 Grade 2A)	±0.5% of span (ASME B40.100 Grade 2A)	±1% of span (DIN EN 837-1)	±1% of span (DIN EN 837-1)
Process Connection	¼ NPT, ½ NPT	¼ NPT, ½ NPT	¼ NPT, ½ NPT	¼ NPT, ½ NPT
Bourdon Tube Material	316L Stainless steel, Monel® 500	316L Stainless steel	316L Stainless steel, Monel® 500	316L Stainless steel
Dampening	<b>PLUS!™</b> Performance (XLL OPT.)	<b>PLUS!™</b> Performance (XLL OPT.)	<b>PLUS!™</b> Performance (XLL OPT.)	<b>PLUS!™</b> Performance (XLL OPT.)
Ranges	Vacuum, compound, 15 to 20,000 psi	Vacuum, compound, 15 to 20,000 psi	Vacuum, compound, 15 to 20,000 psi	Vacuum, compound, 15 to 15,000 psi
Case Type	Solid front with pressure relief back	Solid front with pressure relief back	T5500: Open front T6500: Solid front with pressure relief back	Open front
Case Material	PBT Polybutylene terephthalate (Meets UL 94 V-0)	316L Stainless steel	304 Stainless steel (316L Stainless steel OPT.)	304 Stainless steel
Ring Material	PBT Polybutylene terephthalate (Meets UL 94 V-0)	316L Stainless steel	304 Stainless steel (316L Stainless steel OPT.)	304 Stainless steel
Window	Glass, safety glass, acrylic (OPT.)	Acrylic	T5500: Glass T6500: Safety glass	Safety glass
Pressure Relief Back	PBT Polybutylene terephthalate (Meets UL 94 V-0)	316L Stainless steel	304 Stainless steel (316L Stainless steel OPT.)	304 Stainless steel
Process Connection Material	316L Stainless steel	316L Stainless steel	316L Stainless steel, Monel® 400	316L Stainless steel, Monel® 400
Movement	304 Stainless steel adjustable	304 Stainless steel adjustable	304 Stainless steel adjustable	304 Stainless steel adjustable
Pointer	Micrometer adjustable, aluminum	Micrometer adjustable, aluminum	Adjustable, aluminum (316 SS OPT.)	Adjustable, aluminum
Agency Approval	CRN	CRN	CRN, ATEX (OPT.)	CRN, RoHS
Power Supply Requirements	NA	NA	NA	Supply voltage: 12-30 Vdc Supply current: 20 mA (Max.) Output signal: 4-20 mA Isolation voltage: 350 Vac
Electrical Termination	NA	NA	NA	Type B Universal box cable connector DIN EN 175301-803 Angle connector

Note: **PLUS!™** design is not recommended for gauges expected to be exposed to temperatures over 200 °F (93 °C). This includes gauges subject to autoclaving.

All specifications are subject to change without notice. All sales subject to standards terms and conditions.

Ashcroft®, Duragauge®, Plus!™, PowerFlex™, Trust the Shield® are trademarks of Ashcroft Inc.

The following non-Ashcroft trademarks are the property of their respective owners: Monel®, Teflon™, Tri-Clamp®

For more information, see [Ashcroft Brands & Trademarks](#) ©2023 Ashcroft Inc. Plus\_Gauge\_pg\_RevA\_11-28-23

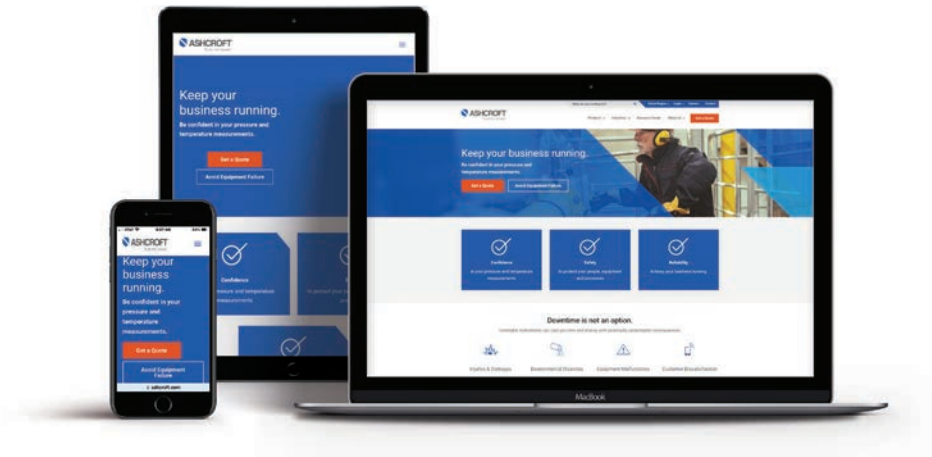
## Industrial & Sanitary Pressure Gauges available with **PLUS!™** Performance



	<b>1009</b>	<b>1008S SS</b>	<b>1032</b>
Size	2½", 3½", 4½", 6"	63 mm, 100 mm	2½", 3½", 4½"
Accuracy	Dry: 1% full scale (ASME B40.100 Grade 1A) Liquid Fill: ±1.5% of span	1.6% full scale (ASME B40.100 Grade 1A)	1.5%-2% depending on range
Bourdon Tube Material	2½", 3½": 316 Stainless steel 4½", 6": Bronze, 316 Stainless steel, Monel®	316 Stainless steel	316 Stainless steel
Dampening	<b>PLUS!™</b> Performance (XLL OPT.)	<b>PLUS!™</b> Performance (XLL OPT.)	<b>PLUS!™</b> Performance (XLL OPT.)
Process Connection	¼ NPT, ½ NPT	⅜ NPT, ¼ NPT, 100mm: ½ NPT	1½", 2" Tri-Clamp®
Ranges	Vacuum, compound to 30,000 (4½" & 6" only) 2½" & 3½" to 15,000 psi	Vacuum, compound to 15,000 psi	Vacuum, compound, 15 to 1,000 psi
Case/Ring Material	304 Stainless steel w/crimped or bayonet ring	304 Stainless steel w/crimped ring	304 Stainless steel, w/bayonet ring
Case Style	Open front	Open front	Open front
Movement	2½", 3½": PowerFlex™ 4½", 6": Stainless steel	Stainless steel, PowerFlex™	Stainless steel, PowerFlex™
Window	2½", 3½": Polycarbonate 4½", 6": Glass	Polycarbonate	2½", 3½": Polycarbonate 4½": Glass
Clean & Stem in Place (CIS, SIP)	NA	NA	Temp. limits to 300 °F (140 °C)
Autoclave or Sterilize	NA	NA	Temp. limits to 280 °F (138 °C) with Polysulfone window
Agency Approval	CRN, RoHS	CRN, RoHS	Meets 3-A Standard 74

Note: **PLUS!™** design is not recommended for gauges expected to be exposed to temperatures over 200 °F (93 °C). This includes gauges subject to autoclaving.

Learn more about Ashcroft instrumentation  
by visiting our website:



[ashcroft.com](https://www.ashcroft.com) 

## Keep your critical equipment and processes running with confidence.

Process, industrial and manufacturing companies need quality pressure and temperature measurements to keep their critical equipment and processes running. Understanding that your business can't stop, Ashcroft designs and manufactures reliable instrumentation to meet the most challenging applications worldwide so you can confidently run your business.

For more information about pressure and temperature measurement solutions, please [contact us](#) to discuss your specific requirements.