

Seven Steps to Select a Pressure Gauge

CODE	DESCRIPTION	PRESSURE GAUGE TYPE												
		TEST & PROCESS GAUGES		STAINLESS STEEL CASE			INDUSTRIAL GAUGES			COMMERCIAL GAUGES				
		TEST GAUGES	PROCESS GAUGES	1009 (2 1/2", 3 1/2")	1009 (4 1/2", 6")	1008S	GENERAL SERVICE	SPECIAL SERVICE	1490/1495 SERIES	100TT	1005/1000 SERIES	1007P	1008A/3005/3005P	1005/1000 SERIES
XLL	PLUS™ Performance		● ⁽²⁾	●	●	●								
XSF	FlutterGuard™									●	●	STD	●	●
XNP	Nickel Plated Socket									●	●		●	
XBF	Wall mounting bracket				●									
XFW	Back flange			●										
XFF	Front flange			●	●	●				●			●	
XUC	U-clamp			●	●			●	●	STD			●	
XLJ	Dry liquid-fillable gauge			●	●	●							●	
XOS	Overload stop	STD	●	STD	●	STD ⁽¹⁾	●	●		●	●		●	
XVS	Underload stop	STD	●	STD	●	STD ⁽¹⁾	●	●					●	
XTS	Throttle screw	●	●	●	●	●	●	●						
XTU	Throttle plug		●	●	●	●			●	●	●	STD	●	●
XS4	Slotted link movement (decrease)		●	●	●	●	●	●						
XRJ	Slotted link (increase)		●	●	●	●	●	●						
XAP	Adjustable pointer			STD	●		●	●		●	●		●	
XMP	Micrometer pointer		STD	●	STD		STD	●						
XSH	Red set hand stationary		●	●	●	●	●	●						
XEO	Red set hand adjustable	●	●	●	●	●	●	●						
XEP	Maximum pointer	●	●	●	●	●	●	●		●	●			
XEQ	Minimum pointer	●	●	●	●	●	●	●						
XPD	Plastic window	●	●	STD	●	STD ⁽¹⁾	●	●	STD	STD	STD	STD	STD	STD
XSG	Safety glass	●	●	●	●	●	●	●						
XDA	Dial marking	●	●	●	●	●	●	●	●	●	●	●	●	●
XNN	Paper tag	●	●	●	●	●	●	●	●	●	●	●	●	●
XNH	Stainless steel tag	●	●	●	●	●	●	●	●	●	●	●	●	●
XAB	Absolute pressure		●	●	●	●	●	●						
XAJ	1/2% optional accuracy		STD	●	●	●	●	●						
XAN	1% optional accuracy			STD	STD		STD	●						
XRA	Retard scale		●	●	●	●	●	●		●	●			
XWN	White dial	STD	STD	STD	STD	STD	●	●	STD	STD	STD	STD	STD	STD
XBD	Black dial	●	●	●	●	●	●	●	●	●	●	●	●	●
X6B	Oxygen-cleaned gauges (gaseous)	●	●	●	●	●	●	●		●	●		●	●
XTB	Tip bleed	●	●											
XED	High and low electric contacts		●											
XEE	Double high-electric contacts		●											
XEF	Double low-electric contacts		●											
XEG	Electric contacts off at low or high and in-between		●											
XGV	Silicone-filled gauge		●	●	●	●							●	
XGX	Halocarbon-filled gauge		●	●	●	●								
XCH	Carrying handle	●												
XC4	Calibration Chart	●	●	●	●	●	●	●	●	●	●	●	●	●

NOTES: The options listed above are only a partial listing. For other options on these or other pressure instruments please call the factory for availability. Not all variations available for each size, connection, range in a specific gauge, model/type. Minimums may also apply.
 (1) Available on 40mm and 50mm.

3-2-3% 0.25%
 0.5%
 2-1-2% 1.0%



1. ACCURACY

For a mechanical pressure gauge, accuracy is defined as a percentage of the full-scale range. While requirements differ from one industry to another, the following are general guidelines:

- Test Gauges and Standards: 0.25% through 0.10% full scale accuracies.
- Critical Processes: 0.5% full scale accuracy.
- General Industrial Processes: 1.0% accuracy. Less Critical Commercial Uses: 2.0% accuracy.

Refer to ASME B40.100 or the DIN specifications for more information on accuracy.

2. DIAL SIZE

Pressure gauge dial sizes range from 1 1/2" to 16" diameters. Generally, readability requirements, space limitations and required gauge accuracy determine dial size. Accuracies of 0.25% or 0.5% generally have dial sizes of 4 1/2" or larger since more dial graduations are required.

3. CASE STYLE / MATERIAL

Environmental considerations include ambient temperature, air-borne particulate, condensation, humidity, water and chemicals, all of which can affect gauge performance. Ambient temperature may affect the accuracy and integrity of the gauge. Gauges are available either temperature compensated or non-temperature compensated. Ambient conditions may require that the gauge be isolated from temperature extremes. When required, the gauge should be isolated from temperature extremes with a flexible line assembly. When ambient conditions are corrosive, contain a large number of particulate or if the gauge will be exposed to a wet or humid environment like humidity, wash-downs or rain, specify a gauge that is weatherproof/hermetically sealed or liquid filled.

4. MEDIA / WETTED PARTS

The wetted parts of the pressure gauge, the Bourdon tube and socket must be compatible with the process media. If not compatible with the wetted parts of the gauge, corrosion will occur. Corrosion of gauge wetted parts will eventually cause gauge failure and possibly safety issues. When the gauge wetted parts are not compatible with the process media, a diaphragm should be considered.

5. CONNECTION SIZE

Gauges are available with a variety of connections including NPT, DIN, JIS, BSP & SAE. Process pressure gauges with 4 1/2" dial sizes or larger are most often supplied with a 1/2" NPT connection to best support the gauge. Factors to consider when selecting a pressure gauge connection include process pressures, gauge size and weight, space limitations, leak integrity, and past experience.

6. CONNECTION LOCATION

Consider the following mounting options when selecting a pressure gauge:

- Stem mount lower connect
- Wall/surface mount lower connect
- Panel mount back connect
- U-clamp flush mount back connect, for panel mounting
- Front flange flush mount back connect, for panel mounting

7. PRESSURE RANGES

ASME B40.100 recommends that normal operating pressure be confined to 25%-75% of the scale. If pulsation is present in the process, maximum operating gauge pressure should not exceed 50% of the full-scale range.

CONCLUSION

To properly select a pressure gauge, consider the gauge process, range, environment, accuracy, dial size, connection and mounting requirements.



