



# Pressure Gauges (90mm)



The 90mm Anderson "Pharmaceutical" gauge has rapidly become the pressure gauge of choice for applications in the pharmaceutical and biotechnology industries. It is designed to meet the most stringent of specifications, including those for accuracy, surface finish, and temperature stability. Applications include process lines and vessels, filtration equipment, pumps, heat exchangers and other pressure dependent devices or processes. These gauges are particularly appropriate when the process line or equipment will be steam sterilized. The unfilled version can even be completely autoclaved while on the equipment.

A few of the unique features of this gauge include the

electropolished diaphragm and standard re-zero feature, along with a special polysulfone crystal that withstands autoclave temperatures as well as cleaning chemicals that readily etch other lenses. Each gauge is shipped with a certificate of calibration, your assurance that it has been calibrated to the most exacting tolerances.

A new available option provides increased dampening, without oil-filling the case.

For complete peace of mind in specifying sanitary pressure gauges that meet or exceed the CGMP's of the Pharmaceutical Industry, specify the Anderson "Pharmaceutical Series".

## SPECIFICATIONS

### PERFORMANCE

#### Calibrated Accuracy:

- ± 0.75% of full scale, from 10% - 90% of range (pressure ranges)
- ± 0.75% of full scale, from 25" vacuum to 90% of pressure range (compound ranges)

#### Repeatability:

- ± 0.25% of full scale

#### Hysteresis:

- ± 0.25% of full scale

#### Linearity:

- ± 0.25% of full scale

#### Operating Temperature Limits (process):

- 25 to 250°F (-3 to 124°C)

#### Ambient Temperature Limits:

- 40 to 120°F (4 to 49°C)

#### In-line Steam Sterilization Limits:

- Up to 300°F (149°C) for 1 hour

#### Autoclave Sterilization Limits:

- Up to 300°F (149°C) for 1 hour (unfilled case only)

#### Temperature Effect:

- ± 0.16% /10°F change in process or ambient temperature

#### Stability:

Within specified accuracy for 6 months under normal operating conditions. Calibration check recommended at 3 month intervals for gauges being steam sterilized or autoclaved

#### Over-range Capability:

- 10% of span

### CONSTRUCTION/FINISH

#### Diaphragm:

- Welded 316L stainless steel, electropolished.
- Maximum  $R_a = 8$  microinches (.2 microns)

#### Fitting:

- Welded 316L stainless steel polished (180 grit)

#### Case and Stem:

- Welded 304 stainless steel polished (180 grit)

#### Crystal:

- Polysulfone, .080" minimum thickness, corrosion resistant

#### Dial:

- 3.50 inch diameter (90 mm); pressure sensitive adhesive

#### Standards:

- Designed and manufactured to sound engineering practices in accordance with Article 3.3 of the PED 97/23/EC

#### Environmental Rating:

- NEMA 4X, IP-66

### OPERATIONAL

#### Capillary (internal) Fill:

- 80% glycerine (food grade) / 20% USP de-ionized water

#### Re-zero Feature (standard):

- Tamper-resistant; ± 5% of span, non-interactive with span

#### Response Characteristics (Typical):

- Unfilled: 40%  
(Gauge dampens 40% of pulsation)
- Filled: 45%
- Mechanically Dampened: 95%

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# Complete Product Ordering Matrix



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- PRESSURE RANGE**
- 029 30" Hg/0/30 psig (-1/0/2 Bar)
  - 031 30" Hg/0/ 60 psig (-1/0/4 Bar)
  - 032 30" Hg/0/100 psig (-1/0/7 Bar)
  - 033 30" Hg/0/160 psig (-1/0/11 Bar)
  - 034 30" Hg/0/300 psig (-1/0/20 Bar)
  - 066 0-30 psig (0-2 Bar)
  - 069 0-60 psig (0-4 Bar)
  - 071 0-100 psig (0-7 Bar)
  - 074 0-160 psig (0-11 Bar)
  - 077 0-300 psig (0-20 Bar)
  - 082 0-600 psig (0-40 Bar)
  - 055 -1/0/2 Bar
  - 056 -1/0/4 Bar
  - 058 0/2.5 Bar
  - 060 0/6 Bar
  - 061 0/10 Bar
  - 064 0/16 Bar
  - 067 0/40 Bar

- DIAL NAME/LOGO**
- 01 Anderson

- PROCESS CONNECTION**
- 004 1-1/2" Tri-Clamp
  - 005 2" Tri-Clamp
  - 016 1-1/2" C.B. "I" Line (male)
  - 017 2" C.B. "I" Line (male)
  - 123 Anderson "CPM" Flushmount

- MOUNTING**
- 1 Bottom
  - 4 Back
  - 5 Left
  - 6 Right

- CASE FILL**
- 0 Unfilled Case
  - 2 Mechanical Dampening

- CAPILLARY FILL**
- 1 Mineral Oil
  - 4 80/20 Glycerin/H<sub>2</sub>O (Standard)
  - 5 Propylene Glycol (Neobee M-20)

- CRYSTAL**
- 3\* Polysulfone

\* Polysulfone with unfilled case enables gauge to withstand autoclave cycles