



LEVEL  
PRESSURE  
TEMPERATURE  
INSTRUMENTATION  
PASTEURIZATION CONTROLS

## Anderson Sanitary Pressure Gauges

*316L stainless steel wetted surface provides superior, long-term corrosion resistance.*

*Saves time with CIP/SIP capability.*

*Permanently filled and sealed sensing system provides pulsation dampening and long life.*

*Wide variety of sanitary fittings available which are easily matched to existing piping.*

*Meets all applicable 3-A sanitary standards.*

*Operate at process temperatures up to 250°F (121°C).*

*Ranges between 30" Hg and 15,000 psig.*

Anderson sanitary pressure gauges are precision instruments designed for use in pressure-dependent processes in which variation of just a few psi can spell the difference between a mediocre product and one of high quality.

Anderson gauges meet every current sanitary standard and are being used by the thousands in food, dairy, beverage and pharmaceutical manufacturing applications worldwide. Details on the following pages describe the features,

specifications, and ordering information for the standard, pharmaceutical, and 5" direct and remote mount versions. The last page provides dimensional information for all styles.



# Standard (90mm) Sanitary Pressure Gauges

Anderson "Standard" gauges are typically specified for applications throughout the sanitary fluid process industries. They are used to monitor pressures in and around equipment such as pumps, homogenizers, separators, heat exchangers and filters, just to name a few. These gauges are designed and built to withstand the severe environmental and process conditions typically encountered in such applications, while meeting all criteria of the applicable 3-A sanitary standards.

Features include an all-welded, 300 series stainless steel case, stem, and fitting. Wettable parts are 316 "L" stainless steel for superior corrosion resistance.

Options include glycerin-filled case for vibration and

pulsation dampening, and an external re-zero adjustment (standard on compound ranges).<sup>\*</sup> Standard internal capillary fill is 80% food grade glycerin / 20% de-ionized water. For brewery applications, Neobee-20 (propylene glycol) is offered as an option.

Anderson offers the widest array of sanitary fittings in the industry, providing maximum flexibility when ordering pressure gauges for new or existing processes.

<sup>\*</sup> A new option is our "mechanical dampening", a unique feature which eliminates the need for a filled case - recommended for high pulsation processes.

## SPECIFICATIONS

### PERFORMANCE

#### Calibrated Accuracy:

- ± 1.5% of full scale, from 10% - 90% of range (pressure ranges)
- ± 1.5% of full scale, from 25" Hg vacuum to 90% of pressure range (compound ranges)

#### Repeatability:

- ± 0.25% of full scale

#### Hysteresis:

- ± 0.25% of full scale

#### Operating Temperature Limits (process):

- 25 to 250°F (-3 to 121°C)

#### Ambient Temperature Limits:

- 40 to 120°F (4 to 49°C)

#### CIP Temperature Limits:

- 250°F (121°C)

#### Temperature Effect:

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

#### Stability:

- Within specified accuracy for 6 months under normal operating conditions

#### Over-range Capability:

- 10% of span

### CONSTRUCTION/ FINISH

#### Diaphragm and Fitting:

- Welded 316L stainless steel, polished (better than 240 grit). Minimum  $R_a = 25$  microinches (.6 microns)
- Hasteloy "C" optional for acidic applications

#### Case and Stem:

- Welded 304 stainless steel polished (180 grit)

#### Crystal:

- Polysulfone, .080" minimum thickness, corrosion resistant

#### Dial:

- 3.5 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% glycerin (food grade) / 20% USP de-ionized water
- Neobee-20 (propylene glycol) optional for brewery applications

#### Case Fill (optional):

- 100% glycerin (food grade)

#### Mechanical Dampening:

- Dampens up to 95% of pressure variations in high pulsation applications

#### Re-zero Feature

#### (Standard with compound gauges, optional other styles):

- Slotted adjustment; ± 5% of span, non-interactive with span

# 90 mm Gauge Ordering Information

E A [ ] [ ] [ ] O 1 [ ] [ ] [ ] [ ] [ ] 1

- 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)
  - 084 0-1,000 psig (0-70 Bar)
  - 002 \*-1/0/2 Bar
  - 005 \*-1/0/4 Bar
  - 075 0-2 Bar
  - 079 0-4 Bar
  - 208 0-7 Bar
  - 193 0-11 Bar
  - 086 0-20 Bar
  - 089 0-40 Bar

- DIAL NAME/ LOGO**
- 01 Anderson

- PROCESS CONNECTION**
- 004 1-1/2" Tri-Clamp
  - 005 2" Tri-Clamp
  - 016 1-1/2" Cherry-Burrell I-line (male)
  - 017 2" Cherry-Burrell I-line (male)

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

- RE-ZERO & CASE FILL**
- 1 Unfilled/No Re-zero
  - 2 Glycerin Filled/No Re-zero
  - 3 Unfilled/Re-zero
  - 4 Glycerin Filled/Re-zero
  - 5 Mechanical dampening
  - 6 Mechanical dampening/Re-zero

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

- CRYSTAL**
- 1 Polysulfone (Standard)

\* Compound ranges must add for Re-zero feature.

# Pharmaceutical Series Pressure Gauges (90mm)

The 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.

"Pharmaceutical" Gauges maybe specified with an oil-filled case, or our unique mechanical dampening,

for applications where high pulsation is expected.

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.

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 121°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  
Minimum  $R_a = 8$  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% glycerin (food grade); 20% USP de-ionized water

#### Mechanical Dampening:

dampens up to 95% of pressure variations in high pulsation applications

#### Case Fill (optional):

100% glycerin (food grade)

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

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

# Pharmaceutical Gauge Ordering Information

E B    O I

- 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)
  - 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
  - 1 Glycerin Filled 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 (unfilled case)
  - 4 Polysulfone (filled case)

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

# 120mm (5 inch) Sanitary Pressure Gauges

If you've ever stood near a working homogenizer, you've experienced the incessant pounding this powerful multi-piston, high-pressure pump can generate.

Anderson 5 inch diameter gauges are built to withstand the continuous pulsations produced by a homogenizer. This is but one of the many sanitary process applications for which this gauge is suited. In fact, anywhere a large, readable and highly-accurate gauge is required, you'll have found another application for the Anderson 5 inch diameter pressure gauge.

The remote-mount model is a logical choice when the process connection is inaccessible or when process-

induced vibration can shorten gauge life.

The glycerine case fill, standard with direct mount homogenizer gauges, further dampens pointer flutter while it lubricates the internal mechanism.

When process-line cleanup time arrives, the gauge remains in the process or line for CIP, being subjected to hot caustic cleaning solutions and acid rinses.

Homogenizer pressure indication is the toughest application to which a pressure gauge can be subjected. Anderson 5 inch diameter gauges have proven themselves to be more than equal to this task. There is no doubt that any other application will be handled with ease.

## SPECIFICATIONS

### PERFORMANCE

#### Calibrated Accuracy:

- ± 1.0% of full scale, from 10% - 90% of range (pressure ranges)
- ± 1.0% of full scale, from 25" Hg vacuum to 90% of pressure range (compound ranges)

#### Repeatability:

- ± 0.25% of full scale

#### Hysteresis:

- ± 0.25% of full scale

#### Operating Temperature Limits (process):

- 25 to 250°F (-3 to 121°C)

#### Ambient Temperature Limits:

- 40 to 120°F (4 to 49°C)

#### CIP Temperature Limits:

- 250°F (121°C)

#### Temperature Effect:

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

#### Stability:

- Within specified accuracy for 6 months under normal operating conditions.

#### Over-range Capability:

- 10% of span or 1,500 psig (whichever is less)

### CONSTRUCTION

#### Fitting:

- Welded 316L stainless steel, polished (better than 240 grit)

#### Case and Stem:

- Welded 304 stainless steel polished (180 grit)

#### Crystal:

- Polycarbonate, .080" minimum thickness, corrosion resistant

#### Dial:

- 5 inch diameter (125 mm); pressure sensitive adhesive

### OPERATIONAL

#### Capillary (internal) Fill:

- 80% glycerin (food grade) / 20% USP de-ionized water (standard)
- 100% Mineral Oil (food grade) standard for pressure ranges over 600 psig or for remote mount versions.
- Neobee-20 (propylene glycol) for brewery applications

#### Case Fill (optional):

- 100% glycerin (food grade)

#### Diaphragm:

- 316L Stainless Steel\* polished (better than 240 Grit)
- \* Homogenizer Diaphragm: Hastelloy "C"

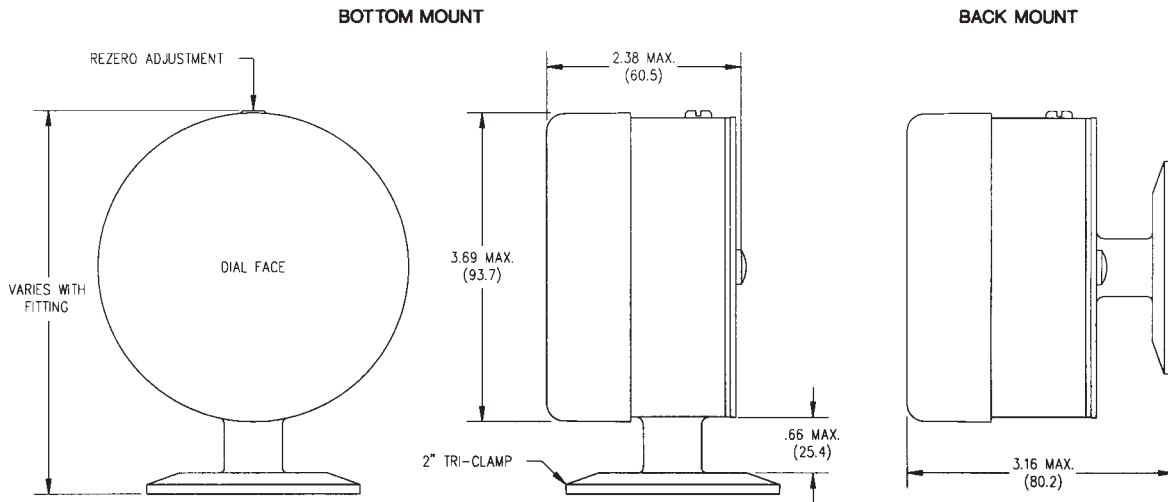
# 120mm Gauge Ordering Information



<p><b>GAUGE TYPE</b></p> <p>EE Homogenizer EC Sanitary</p> <p><b>PRESSURE RANGE</b> Available with Homogenizer Fittings Only</p> <p>084 0-1,000 psig (0-70 Bar) 085 0/1,500 psig 087 0/2,500 psig 090 0/5,000 psig 093 0/10,000 spg 094 0/15,000 psig</p> <p>Not available with Homogenizer Fittings</p> <p>029 30" Hg/0/30 psig (-1/0/2 Bar) 031 30" Hg/0/60 psig (-1/0/4 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)</p> <p><b>DIAL NAME/ LOGO</b></p> <p>01 Anderson</p> <p><b>PROCESS CONNECTIONS</b></p> <p>056 Homogenizer (less flange) 057 Homogenizer (7/8" flange) 058 Homogenizer 1 1/8" flange) 004 1-1/2" Tri-Clamp 005 2" Tri-Clamp 010 1-1/2" APC "K" Clamp 011 2" APC "K" Clamp 016 1-1/2" Cherry-Burrell I-line (male) 017 2" Cherry-Burrell I-line (male) 027 1-1/2" G &amp; H "H" line 028 2" G &amp; H "H" line 032 1-1/2" Cherry-Burrell "Q" 033 2" Cherry-Burrell "Q" 044 1-1/2" #14 Bevel Seat w/13-H Nut 045 2" #14 Bevel Seat w/13-H Nut 048 1-1/2" #15 Bevel Seat 049 2" #15 Bevel Seat 059 1-1/2" NPT male (industrial)</p> <p><b>MOUNTING</b></p> <p>1 Bottom 2 Panel 3 Wall 4 Back 5 Left 6 Right</p> <p><b>CAPILLARY FILL</b></p> <p>1 Mineral Oil (std for homo. fittings) 4 80/20 Glycerin/H<sub>2</sub>O (std for non-homo.) 5 Propylene Glycol (Neobee M-20)</p> <p><b>CASE FILL</b></p> <p>1 Unfilled 2 Glycerin Filled (std. on homo. gauges)</p>	<p><b>ARMOR/ LENGTH*</b> (Panel/ Wall mount Only)</p> <p>00 None 01 5' PVC 02 10' PVC 03 15' PVC 04 20' PVC 05 25' PVC 06 30' PVC 07 35' PVC 08 40' PVC 09 45' PVC 10 50' PVC 11 55' PVC 12 60' PVC</p> <p>21 5' S.S. 22 10' S.S. 23 15' S.S. 24 20' S.S. 25 25' S.S. 26 30' S.S. 27 35' S.S. 28 40' S.S. 29 45' S.S. 30 50' S.S. 31 55' S.S. 32 60' S.S.</p> <p>* NOTE: Maximum capillary lengths as listed below.</p> <table border="0"> <thead> <tr> <th style="text-align: left;"><u>Range</u></th> <th style="text-align: left;"><u>Max. Length</u></th> </tr> </thead> <tbody> <tr> <td>Compound Ranges</td> <td>Remote Mt.</td> </tr> <tr> <td></td> <td>Not Available</td> </tr> <tr> <td>0-15,000 psig</td> <td>5'</td> </tr> <tr> <td>0-10,000 psig</td> <td>10'</td> </tr> <tr> <td>0-5,000 psig</td> <td>15'</td> </tr> <tr> <td>0-2,500 psig</td> <td>20'</td> </tr> <tr> <td>0-1,500 psig</td> <td>25'</td> </tr> <tr> <td>0-1,000/0-30 psig</td> <td>30'</td> </tr> <tr> <td>0-60 psig</td> <td>50'</td> </tr> <tr> <td>All others</td> <td>60'</td> </tr> </tbody> </table> <p><b>NOTE:</b></p> <p>Please add 10 days to standard lead-time for quantity orders on the following fittings: 010,011,027,028,032,033,044,045, 048,049 and 059</p>	<u>Range</u>	<u>Max. Length</u>	Compound Ranges	Remote Mt.		Not Available	0-15,000 psig	5'	0-10,000 psig	10'	0-5,000 psig	15'	0-2,500 psig	20'	0-1,500 psig	25'	0-1,000/0-30 psig	30'	0-60 psig	50'	All others	60'
<u>Range</u>	<u>Max. Length</u>																						
Compound Ranges	Remote Mt.																						
	Not Available																						
0-15,000 psig	5'																						
0-10,000 psig	10'																						
0-5,000 psig	15'																						
0-2,500 psig	20'																						
0-1,500 psig	25'																						
0-1,000/0-30 psig	30'																						
0-60 psig	50'																						
All others	60'																						

# Pressure Gauge Dimensions

## Standard and Pharmaceutical Series (90mm)



## 120mm (5 inch) Series

