



## SOLFRUNT® Pressure Gauges and Other Products for the Process Industries

AMETEK's line of high quality process gauges are specifically designed to meet the demanding needs of the chemical and petroleum processing industries, and are also widely used in industries such as fossil fuel and nuclear power generation, aerospace and marine. The gauge's design and materials of construction provide reliable service in applications where corrosive atmospheres, corrosive media, pressure pulsation, vibration, and wide variations in ambient temperatures are present. SOLFRUNT gauge cases feature an integral wall between the measuring element and the window, and a pressure relieving back for increased safety<sup>1</sup>. They are available in various

styles, case materials, and mounting arrangements, and wetted parts are available in bronze, stainless steel, alloy steel, and MONEL®. Recalibration adjustments can be made from the rear of the case without removing the internals. On the 1900 Series the pointer is adjusted by removing the ring and front window. Most SOLFRUNT gauges are factory stock and are readily available through your U.S. Gauge Distributor.

Visit our Web site for a list of local stocking distributors:  
[www.ametekusg.com/products/distributors.cfm](http://www.ametekusg.com/products/distributors.cfm)

<sup>1</sup> It is recommended that users of gauges become familiar with American National Standard ASME B40.100-1998 entitled "Pressure Gauges and Gauge Attachments." This specification is available from the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, New York 10017.



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820 Pennsylvania Blvd.  
Feasterville, PA 19053 U.S.A.  
Tel: (215) 355-6900  
Fax: (215) 354-1802  
[www.ametekusg.com](http://www.ametekusg.com)

Customer Service Tel: (863) 534-1504  
Customer Service Fax: (863) 533-7465

For Electronic Products:

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For Diaphragm Seals:

**M&G PRODUCTS**  
8600 Somerset Drive  
Largo, FL 33773 U.S.A.  
Tel: (727) 536-7831  
Fax: (727) 539-6882  
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## Process Gauges

# All-welded Process Gauge and Diaphragm Seal

### DESCRIPTION

AMETEK's All-welded Gauge and Seal offers customers a lower cost alternative to an individual gauge and diaphragm seal with the added benefit of a reduction in potential leaks. Our high quality, rugged SOLFRUNT<sup>®</sup> 1981 (SST internals) gauge is mounted and welded onto our M&G Diaphragm Seal. These units are in inventory at our Bartow, Florida, plant and available for quick delivery. Please contact Product Marketing for more information regarding other configurations at 215-355-6900.

The diaphragm seal is available with either 316L SST or Hastelloy<sup>®</sup> C wetted parts. The standard unit has a female top for the instrument connection and a 1/2 NPT male bottom for the process connection. Other connections or materials are available.

### FEATURES

- All-welded seal-to-gauge design and seamless Bourdon tube provides fewer leak paths than competitive models
- Reduced installation cost
- Tamper resistance design
- Compact size to fit into applications with space restrictions

### APPLICATIONS

- Chemical and petrochemical processing plants
- Petrochemical refineries
- General processing such as food and pharmaceutical

### SPECIFICATIONS

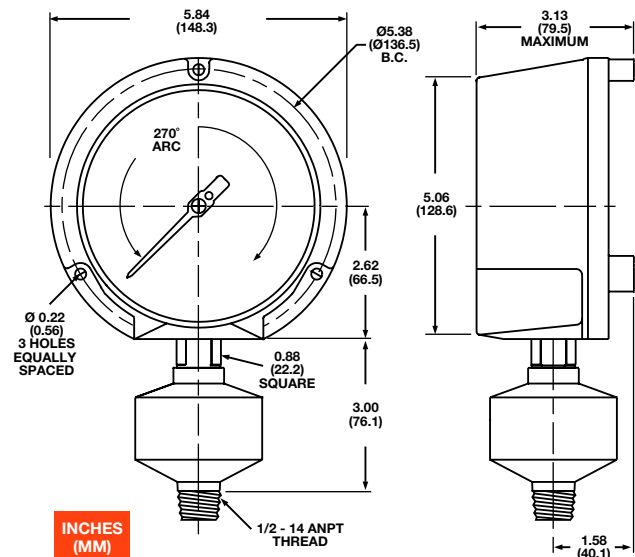
**GAUGE:** Model 1981 with PET case, 316L SST socket and 316L SST seamless Bourdon tube

**RANGES:** From 0 to 30" Hg VAC to 0 to 5000 psi

**PROCESS CONNECTION:** 1/2 NPT male connection standard, other connections available upon request

**WETTED PARTS:** 316L stainless steel, HASTELLOY<sup>®</sup> C; other materials available upon request

**SEAL FILL FLUID:** DC Silicone 200 cc standard; other fills available upon request



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# Process Gauges

## All-welded Process Gauge and Diaphragm Seal

### SPEC NUMBER SELECTION CHART

	1981 Dry with All Welded Seal	1981 Liquid Filled* with All Welded Seal
<b>Model</b>	<b>1981SS</b>	<b>1981SSLG</b>
<b>Pressure Gauge Size</b>	<b>4-1/2"</b>	<b>4-1/2"</b>
<b>Pressure Gauge Internals</b>	<b>316L Stainless Steel</b>	<b>316L Stainless Steel</b>
<b>Diaphragm Seal Material</b>	<b>316L Stainless Steel</b>	<b>316L Stainless Steel</b>
<b>Instrument Connection</b>	<b>1/2" NPT male</b>	<b>1/2" NPT male</b>
<b>Range</b>	<b>Spec No.</b>	<b>Spec No.</b>
30" Hg	150016SS	170016SSLG
30"-0-15 psi	150017SS	170017SSLG
30"-0-30 psi	150018SS	170018SSLG
0-15 psi	150022SS	170022SSLG
0-30 psi	150023SS	170023SSLG
0-60 psi	150024SS	170024SSLG
0-100 psi	150025SS	170025SSLG
0-160 psi	150026SS	170026SSLG
0-200 psi	150027SS	170027SSLG
0-300 psi	150028SS	170028SSLG
0-400 psi	150029SS	170029SSLG
0-600 psi	150030SS	170030SSLG
0-800 psi	150031SS	170031SSLG
0-1000 psi	150032SS	170032SSLG
0-1500 psi	150033SS	170033SSLG

\* Glycerin filled

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## Process Gauges

# SOLFRUNT® 4-1/2" Model 1981 and Model 1981 Advantage

# New!

### DESCRIPTION

The Model 1981 and 1981 Advantage 4-1/2" Process Gauges have all 316L stainless steel wetted surfaces with a seamless bourdon tube. The 1981 Advantage includes a dampened movement option to provide users with some of the benefits of liquid filling. These gauges have a PET turret style case for chemical and petrochemical processing applications. The PET material gives this case superior impact strength and a broad spectrum of chemical resistance. They are available dry, with a dampened movement, or liquid filled from the factory or your local stocking distributor, liquid fill kit, or the E-Z Fill design to facilitate filling in the field without special tools.

The Model 1981 and 1981 Advantage 4-1/2" SOLFRUNT gauges are supplied in 30 vacuum, compound, and pressure ranges from 30" Hg vacuum through 11,600 psi. The low-connected PET turret case can be easily liquid filled in the field using the appropriate conversion kit.

Span adjustments can be accomplished from rear of case without disturbing the gauge internals. Pointer adjustments are easily made by removing ring and window.



### SPECIFICATIONS

DIAL SIZE: 4-1/2"

#### CASE AND RING:

For Stem or Wall Mounting:  
 PET TURRET CASE (black) with glass-filled polypropylene threaded ring and pressure-relieving back

WINDOW: High temperature acrylic, other options available

POINTER: Anodized aluminum, micro-adjustable with black finish

DIAL: Aluminum with baked white background and black markings

MOVEMENT: Geared movement with components of corrosion-resistant 300 series stainless steel. Optional dampened movement available

BOURDON TUBE: 316L stainless steel/TIG welded

CONNECTION: 316L stainless steel, 1/2-14 ANPT standard (1/4-18 ANPT, optional)

ACCURACY:  $\pm 0.5\%$  of span (Grade 2A), except where stainless steel bourdon tubes are used in following ranges: Type 316L from 10,000 to 11,600 psi; accuracy is  $\pm 0.5\%$  on ascending pressure and  $\pm 1.0\%$  on descending pressure

LIQUID FILLING: The Model 1981 is also available in liquid filled or field fillable configurations. Please reference Spec Number Selection Chart on page A5



**Model 1981  
Advantage**

**Please see the MODEL SELECTION CHART on page A13**

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For Diaphragm Seals:

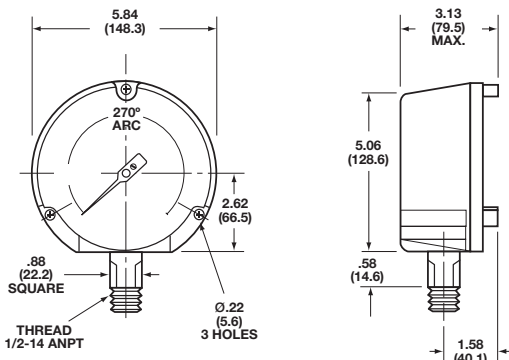
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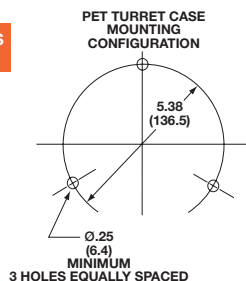


Process Gauges

# SOLFRUNT® 4-1/2" Model 1981 and Model 1981 Advantage



**INCHES  
(MM)**



## SPEC NUMBER SELECTION CHART

Model Number	1981 Advantage	1981
<b>Boudon Tube</b>	<b>316L Stainless Steel</b>	<b>316L Stainless Steel</b>
<b>Socket</b>	<b>316L Stainless Steel</b>	<b>316L Stainless Steel</b>
<b>Movement</b>	<b>Dampened</b>	<b>Standard</b>
<b>Size</b>	<b>4-1/2"</b>	<b>4-1/2"</b>
<b>Range*</b>	<b>Spec No.</b>	<b>Spec No.</b>
0-30" Hg VAC	150016DM	150016
30"-0-15 psi	150017DM	150017
30"-0-30 psi	150018DM	150018
30"-0-60 psi	150019DM	150019
30"-0-100 psi	150020DM	150020
30"-0-150 psi	150021DM	150021
0-15 psi	150022DM	150022
0-30 psi	150023DM	150023
0-60 psi	150024DM	150024
0-100 psi	150025DM	150025
0-160 psi	150026DM	150026
0-200 psi	150027DM	150027
0-300 psi	150028DM	150028
0-400 psi	150029DM	150029
0-600 psi	150030DM	150030
0-800 psi	150031DM	150031
0-1000 psi	150032DM	150032
0-1500 psi	150033DM	150033
0-2000 psi	150523DM	150523
0-2300 psi	150034DM	150034
0-3000 psi	150509DM	150509
0-3500 psi	150035DM	150035
0-5000 psi	150510DM	150510
0-6000 psi	150036DM	150036
0-10,000 psi	150524DM	150524
0-11,600 psi	150037DM	150037

\* Metric and dual scale dials are available on all 1900 Series gauges. Please refer to page A14 for part numbers or call Customer Service at (863) 534-1504

1/4-18 ANPT available - use 155XXX when ordering

When ordering EZ-Fill Option - use 170XXX (for 1/2-14 ANPT); use 175XXX (for 1/4-18 ANPT)

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## Process Gauges

# SOLFRUNT<sup>®</sup> 4-1/2" Models 1980, 1982, and 1986

### DESCRIPTION

The Models 1980, 1982, and 1986 4-1/2" Process Gauges have a PET turret style case for chemical and petrochemical processing applications. The PET material gives this case superior impact strength and a broad spectrum of chemical resistance. These models are available with wetted surface material in brass/phosphor bronze, alloy steel/316L or MONEL<sup>®</sup> for NACE Standard MR0175 applications. They are available dry or liquid filled from the factory or your local stocking distributor, liquid fill kit, or the E-Z Fill design to facilitate filling in the field without special tools.



Models 1980, 1982, and 1986 4-1/2" SOLFRUNT gauges are supplied in 30 vacuum, compound, and pressure ranges from 30" Hg vacuum through 11,600 psi. The low-connected PET turret case can be easily liquid filled in the field using the appropriate conversion kit.

Span adjustments can be accomplished from rear of case without disturbing the gauge internals. Pointer adjustments are easily made by removing ring and window.

### SPECIFICATIONS

DIAL SIZE: 4-1/2"

#### CASE AND RING:

For Stem or Wall Mounting:  
 PET TURRET CASE (black) with glass-filled polypropylene threaded ring and pressure-relieving back

WINDOW: High temperature acrylic, other options available

POINTER: Anodized aluminum, micro-adjustable with black finish

DIAL: Aluminum with baked white background and black markings

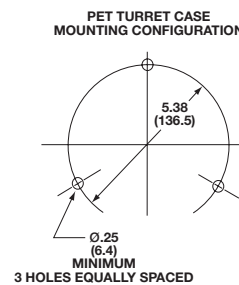
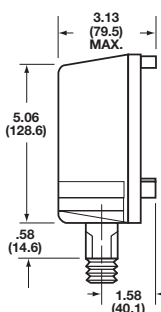
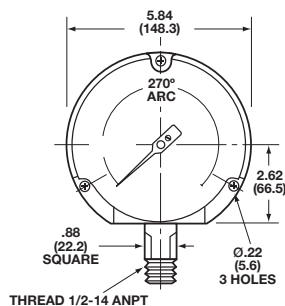
MOVEMENT: Geared movement with components of corrosion-resistant 300 series stainless steel

BOURDON TUBE: Phosphor bronze/silver brazed; 316L stainless steel/TIG welded; or K MONEL<sup>®</sup>, MONEL<sup>®</sup>/micro-brazed

CONNECTION: Brass, alloy steel, or MONEL, 1/2-14 ANPT standard (1/4-18 ANPT, optional)

ACCURACY:  $\pm 0.5\%$  of span (Grade 2A), except where stainless steel bourdon tubes are used in following ranges: Type 316L from 10,000 to 11,600 psi; accuracy is  $\pm 0.5\%$  on ascending pressure and  $\pm 1.0\%$  on descending pressure

INCHES  
(MM)



Please see the **MODEL SELECTION CHART** on page **A13**

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## Process Gauges

# SOLFRUNT® 4-1/2" Models 1980, 1982, and 1986

### SPEC NUMBER SELECTION CHART

Model Number	1980	1982	1986
Bourdon Tube	Phosphor Bronze	316L Stainless Steel	K MONEL®
Socket	Brass	Alloy Steel	MONEL®
Size	4-1/2"	4-1/2"	4-1/2"
Range*	Spec No.	Spec No.	Spec No.
0-30" Hg VAC	150000	150038	150060
30"-0-15 psi	150001	150039	150061
30"-0-30 psi	150002	150040	-
30"-0-60 psi	150003	150041	150063
30"-0-100 psi	150004	150042	150064
30"-0-150 psi	150005	150043	150065
0-15 psi	150006	150044	150066
0-30 psi	150007	150045	150067
0-60 psi	150008	150046	150068
0-100 psi	150009	150047	150069
0-160 psi	150010	150048	150070
0-200 psi	150011	150049	150071
0-300 psi	150012	150050	150072
0-400 psi	150013	150051	150073
0-600 psi	150014	150052	150074
0-800 psi	-	150053	-
0-1000 psi	150015	150054	150075
0-1500 psi	-	150055	-
0-2000 psi	-	150525	150529
0-2300 psi	-	150056	-
0-3000 psi	-	150526	150530
0-3500 psi	-	150057	-
0-5000 psi	-	150527	150531
0-6000 psi	-	150058	-
0-10,000 psi	-	150528	150532
0-11,600 psi	-	150059	-

\* Metric and dual scale dials are available on all 1900 Series gauges. Please refer to page A14 for part numbers or call Customer Service at (863) 534-1504

1/4-18 ANPT available – use 155XXX when ordering

When ordering EZ Fill Option – use 170XXX (for 1/2-14 ANPT); use 175XXX (for 1/4-18 ANPT)

### SPARE PARTS

Item	Description	Part No.
Lazy Hand	Lazy Hand 1980	132371
Fill Kit	1980 Series Bladder Design	150300
Fill Kit	1980 Series O-Ring Design	150298

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## Process Gauges

# SOLFRUNT<sup>®</sup> 4-1/2" Models 1901, 1931, and 1911

### DESCRIPTION

The Models 1901, 1931, and 1911 4-1/2"

Process Gauges have an aluminum back-flanged case for applications needing stem or wall

mounting. These models are available with wetted surface material in brass/phosphor bronze, 316L stainless steel, or alloy steel/316L stainless steel. They are available dry or liquid filled from the factory or your local stocking distributors, or can be ordered with a liquid fill kit for filling in the field.

Models 1901, 1931, and 1911 4-1/2" SOLFRUNT gauges are supplied in 30 vacuum, compound, and pressure ranges from 30" Hg vacuum through 11,600 psi. The low-connected aluminum back-flanged case can be easily liquid filled in the field using the appropriate conversion kit.

Span adjustments can be accomplished from rear of case without disturbing the gauge internals. Pointer adjustments are easily made by removing ring and window.



### SPECIFICATIONS

DIAL SIZE: 4-1/2"

#### CASE AND RING:

For Stem or Wall Mounting:  
 CAST ALUMINUM, BACK-FLANGED CASE with bayonet ring, black finish and stainless steel pressure-relieving back

WINDOW: High temperature acrylic, other options available

POINTER: Anodized aluminum, micro-adjustable with black finish

DIAL: Aluminum with baked white background and black markings

MOVEMENT: Geared movement with components of corrosion-resistant 300 series stainless steel. Movement can be removed for examination and cleaning without disturbing span and scale shape adjustments

BOURDON TUBE: Phosphor bronze/silver brazed or 316L stainless steel/TIG welded

CONNECTION: Brass, alloy steel, or 316L stainless steel, 1/2-14 ANPT standard (1/4-18 ANPT, optional)

ACCURACY:  $\pm 0.5\%$  of span (Grade 2A), except where stainless steel bourdon tubes are used in following ranges: Type 316L from 10,000 to 11,600 psi; accuracy is  $\pm 0.5\%$  on ascending pressure and  $\pm 1.0\%$  on descending pressure

**Please see the MODEL SELECTION CHART on page A13**

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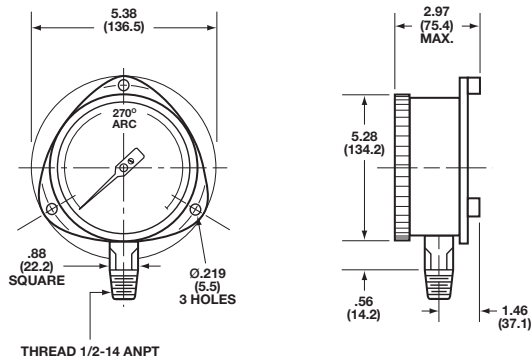




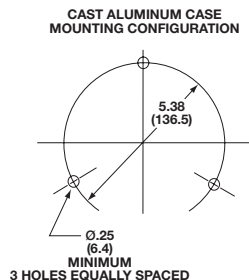


## Process Gauges

# SOLFRUNT® 4-1/2" Models 1901, 1931, and 1911



**INCHES  
(MM)**



### SPEC NUMBER SELECTION CHART

Model Number	1901	1931	1911
<b>Bourdon Tube</b>	Phosphor Bronze	316L Stainless Steel	316 Stainless Steel
<b>Socket</b>	Brass	316L Stainless Steel	Alloy Steel
<b>Size</b>	4-1/2"	4-1/2"	4-1/2"
<b>Range*</b>	<b>Spec No.</b>	<b>Spec No.</b>	<b>Spec No.</b>
0-30" Hg VAC	150200	150215	-
30"-0-15 psi	150201	150216	-
30"-0-30 psi	150202	150217	-
30"-0-100 psi	150204	150219	-
0-15 psi	150205	150220	150241
0-30 psi	150206	150221	150242
0-60 psi	150207	150222	150243
0-100 psi	150208	150223	150244
0-160 psi	150209	150224	150245
0-200 psi	150210	150225	150246
0-300 psi	150211	150226	150247
0-400 psi	150212	150227	150248
0-600 psi	150213	150228	150249
0-1000 psi	150214	150230	150251
0-1500 psi	-	150231	150252
0-2300 psi	-	150232	150253
0-3500 psi	-	150233	150254
0-6000 psi	-	150234	150255

\* Metric and dual scale dials are available on all 1900 Series gauges. Please refer to page A14 for part numbers or call Customer Service at (863) 534-1504

1/4-18 ANPT available – use 155XXX when ordering

### SPARE PARTS

Part	Description	Stock No.
Lazy Hand	Lazy Hand 1901, 1931, 1911	156147

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## Process Gauges

# SOLFRUNT<sup>®</sup> 4-1/2" Models 1903, 1933, and 1913

### DESCRIPTION

The Models 1903, 1933, and 1913 4-1/2" Process Gauges are designed for process applications that require a panel mounted gauge. The 1903, 1933, and 1913 gauges have a cast aluminum front flange case with a lower-back mount process connection. These models are available with wetted surface material in brass/phosphor bronze, 316L, stainless steel and alloy steel/316L stainless steel, depending upon your needs.

Models 1903, 1933, and 1913 4-1/2" SOLFRUNT gauges are supplied in 30 vacuum, compound, and pressure ranges from 30" Hg vacuum through 11,600 psi.

Calibration adjustments (scale shape and span) can be accomplished from rear of case without disturbing the gauge internals. Pointer adjustments are easily made by removing ring and window.



### SPECIFICATIONS

DIAL SIZE: 4-1/2"

#### CASE AND RING:

For Panel Mounting:  
 CAST ALUMINUM, FRONT FLANGED CASE with steel hinged ring, black finish and pressure-relieving back

WINDOW: High temperature acrylic, other options available

POINTER: Anodized aluminum, micro-adjustable with black finish

DIAL: Aluminum with baked white background and black markings

MOVEMENT: Geared ARC-LOC<sup>®</sup> with components of corrosion-resistant 300 series stainless steel. Movement can be removed for examination and cleaning without disturbing span and scale shape adjustments

BOURDON TUBE: Phosphor bronze/silver brazed or 316L stainless steel/TIG welded

CONNECTION: Brass, alloy steel, or 316L stainless steel, 1/2-14 ANPT standard (1/4-18 ANPT, optional)

ACCURACY:  $\pm 0.5\%$  of span (Grade 2A), except where stainless steel bourdon tubes are used in following ranges: Type 316L from 10,000 to 11,600 psi; accuracy is  $\pm 0.5\%$  on ascending pressure and  $\pm 1.0\%$  on descending pressure

**Please see the MODEL SELECTION CHART on page A13**

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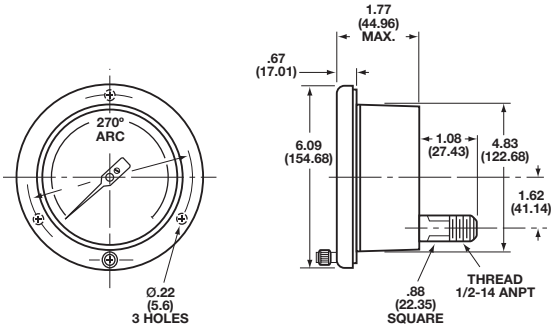
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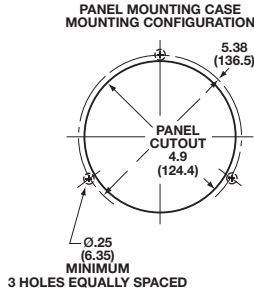


Process Gauges

SOLFRUNT® 4-1/2" Models 1903, 1933, and 1913



INCHES  
(MM)



**SPEC NUMBER SELECTION CHART**

Model Number	1903	1933	1913
<b>Bourdon Tube</b>	Phosphor Bronze	316L Stainless Steel	316L Stainless Steel
<b>Socket</b>	Brass	316L Stainless Steel	Alloy Steel
<b>Size</b>	4-1/2"	4-1/2"	4-1/2"
<b>Range*</b>	<b>Spec No.</b>	<b>Spec No.</b>	<b>Spec No.</b>
0-30" Hg VAC	150350	150365	150385
30"-0-15 psi	150351	150366	150386
30"-0-30 psi	150352	150367	150387
30"-0-60 psi	150353	150368	150388
30"-0-100 psi	150354	150369	150389
0-15 psi	150355	150370	150390
0-30 psi	150356	150371	150391
0-60 psi	150357	150372	150392
0-100 psi	150358	150373	150393
0-160 psi	150359	150374	150394
0-200 psi	150360	150375	150395
0-300 psi	150361	150376	150396
0-400 psi	150362	150377	-
0-600 psi	150363	150378	150398
0-800 psi	-	-	-
0-1000 psi	150364	150379	150399
0-1500 psi	-	150380	150400
0-2300 psi	-	150381	150401
0-3500 psi	-	150382	150402
0-6000 psi	-	150383	150403
0-11,600 psi	-	150384	150404

\* Metric and dual scale dials are available on all 1900 Series gauges. Please refer to page A14 for part numbers or call Customer Service at (863) 534-1504  
1/4-18 ANPT available - use 155XXX when ordering

**SPARE PARTS**

Part	Description	Stock No.
Lazy Hand	Lazy Hand 1903, 1933, 1913	132371



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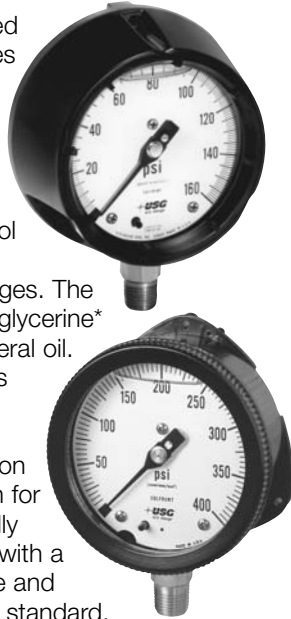


## Process Gauges

# SOLFRUNT® 4-1/2" Liquid Filled Gauges

### DESCRIPTION

4-1/2" PET or aluminum cased SOLFRUNT liquid filled gauges are designed to extend service life wherever corrosive atmosphere and/or severe operating conditions (such as compressors, pulsating pumps, machine tool applications, etc.) affect the performance of standard gauges. The liquid fill may be a mixture of glycerine\* and water, silicone oil, or mineral oil. The liquid effectively dampens mechanism and pointer oscillation and vibration while providing continuous lubrication and protection from corrosion for the gauge internals. A specially designed rear blowout panel with a vent for atmospheric pressure and temperature compensation is standard. U.S. Gauge liquid filled gauges are available in three optional configurations: liquid filled at factory; dry with liquid fill kit sold separately; E-Z Fill® (PET case only) design to facilitate filling in the field without special tools or fixtures.



\* NOTE: Glycerin not suitable for use with alloy steel or 403 stainless steel sockets.

### SPECIFICATIONS

DIAL SIZE: 4-1/2"

WINDOW: High temperature acrylic, other options available

POINTER: Anodized aluminum with black finish

DIAL: Aluminum with baked white background and black markings

MOVEMENT: Geared movement with components of corrosion-resistant 300 series stainless steel

BOURDON TUBE: Phosphor bronze/silver brazed; 316L stainless steel/TIG welded; or K MONEL®, MONEL®/micro-brazed

CONNECTION: Brass, alloy steel, 316L stainless steel or MONEL. 1/2-14 ANPT, standard (1/4-18 ANPT, optional)

ACCURACY: ±0.5% of span (Grade 2A), except where stainless steel bourdon tubes are used in following ranges: Type 316L from 10,000 to 11,600 psi; accuracy is ±0.5% on ascending pressure and ±1.0% on descending pressure

RANGES: See Standard Dial Ranges charts on page A13

DIMENSIONS: See drawings on page A6 for PET turret case and page A9 cast aluminum case

### MODEL SELECTION CHART

MODEL NUMBER	MOUNTING	CASE	RING	BOURDON TUBE	SOCKET	CONNECTION*
1901L	Stem/Wall	Aluminum Back Flange	Aluminum Bayonet	Phosphor Bronze	Brass	1/2-14 ANPT LM
1911L	Stem/Wall	Aluminum Back Flange	Aluminum Bayonet	316L Stainless Steel	Alloy Steel	1/2-14 ANPT LM
1931L	Stem/Wall	Aluminum Back Flange	Aluminum Bayonet	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM
1980L	Stem/Wall	PET turret	Threaded Polypropylene	Phosphor Bronze	Brass	1/2-14 ANPT LM
1981L	Stem/Wall	PET turret	Threaded Polypropylene	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM
1982L	Stem/Wall	PET turret	Threaded Polypropylene	316L Stainless Steel	Alloy Steel	1/2-14 ANPT LM
1986L	Stem/Wall	PET turret	Threaded Polypropylene	MONEL	MONEL	1/2-14 ANPT LM

\* 1/4-18 ANPT optional

### Liquid Fill Conversion Kits

U.S. Gauge offers two liquid fill kits; one provides a hermetically sealed case incorporating a pressure equalizing diaphragm, the other contains a vent for temperature/pressure compensation. These kits, complete with easy-to-follow instructions, enable the user to quickly and conveniently fill dry gauges without special tools or fixtures.

For hermetically sealed gauges the kit contains: window and socket O-rings, an elastomeric diaphragm with integral O-ring, a stainless steel

back cover with screws and a special window retaining ring. Kits available for both PET and aluminum case styles.

Vented case kits contain: window, socket and back cover O-rings, a rubber vent plug with metal vent pin, stainless steel back cover with screws and a special window retaining ring. Kits available for both PET and aluminum case styles.

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## Process Gauges

# SOLFRUNT® 4-1/2" Standard Gauge Summary

This information applies for all 4-1/2" Process Gauges:

Models 1981, 1981 Advantage, 1980, 1982, 1986, 1901, 1931, 1911, 1903, 1933, and 1913

### STANDARD DIAL RANGES

#### PRESSURE RANGES (psi)

MAXIMUM INDICATIONS	FIGURE INTERVALS	INTERMEDIATE GRADUATIONS	MINOR GRADUATIONS
15	1	0.5	0.1
30	5	1	0.2
60	5	1	0.5
100	10	5	1
160	20	5	1
200	20	10	2
300	30	10	2
400	50	25	5
600	50	25	5
800	100	50	10
1,000	100	50	10
1,500	300	50	10
2,000	2,000	100	20
2,300	500	100	20
3,000	500	100	20
3,500	500	100	50
5,000	500	100	50
6,000	1,000	200	50
10,000	1,000	500	100
11,600	2,000	500	100

### STANDARD DIAL RANGES

#### COMPOUND & VACUUM RANGES (In. Hg-0-psi)

RANGE	FIGURE INTERVALS	INTERMEDIATE GRADUATIONS	MINOR GRADUATIONS
30-0-15	5 3	1 1	0.5 0.2
30-0-30	10 5	5 1	1 0.5
30-0-60	10 10	5 5	1 1
30-0-100	30 10	10 5	2 1
30-0-150	30 25	10 5	5 2
30-0-200	30 20	— 10	5 2
30-0-300	30 30	— 10	5 2
30-0	5	1	0.2

### BOURDON ASSEMBLIES

Bourdon and connection assemblies are stamped with the following codes plus the bourdon tube pressure range:

BOURDON TUBE MATERIAL	MATERIAL CODE	CONNECTION MATERIAL	MATERIAL CODE
Phosphor Bronze	C51000	Brass	C36000
316L Stainless Steel	S31600	316L Stainless Steel	S31600
K MONEL®	N05500	Alloy Steel	G10180
—	—	MONEL®	N04405

### MODEL SELECTION CHART

MODEL NUMBER	MOUNTING	CASE	RING	BOURDON TUBE	SOCKET	CONNECTION*
1980	Stem/Wall	PET Turret	Threaded Polypropylene	Phosphor Bronze	Brass	1/2-14 ANPT LM
1981	Stem/Wall	PET Turret	Threaded Polypropylene	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM
1981 Advantage	Stem/Wall	PET Turret	Threaded Polypropylene	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM
1982	Stem/Wall	PET Turret	Threaded Polypropylene	316L Stainless Steel	Alloy Steel	1/2-14 ANPT LM
1986	Stem/Wall	PET Turret	Threaded Polypropylene	K-MONEL / MONEL	K-MONEL / MONEL	1/2-14 ANPT LM
1901	Stem/Wall	Aluminum Back Flange	Aluminum Bayonet	Phosphor Bronze	Brass	1/2-14 ANPT LM
1931	Stem/Wall	Aluminum Back Flange	Aluminum Bayonet	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM
1911	Stem/Wall	Aluminum Back Flange	Aluminum Bayonet	316L Stainless Steel	Alloy Steel	1/2-14 ANPT LM
1903	Flush Panel	Cast Aluminum	Hinged Steel	Phosphor Bronze	Brass	1/2-14 ANPT LBM
1933	Flush Panel	Cast Aluminum	Hinged Steel	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LBM
1913	Flush Panel	Cast Aluminum	Hinged Steel	316L Stainless Steel	Alloy Steel	1/2-14 ANPT LBM

\* 1/4-18 ANPT optional

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## Process Gauges

# SOLFRUNT<sup>®</sup> 4-1/2" Metric and Dual Scale Dial Part Numbers

The metric and dual scale dials listed below can be used on any of the following SOLFRUNT 4-1/2" Gauges: Models 1981, 1981 Advantage, 1980, 1982, 1986, 1901, 1931, 1911, 1903, 1933, and 1913. Please call Customer Service at (863) 534-1504 for questions about metric or dual scale dials.

### kPa Scales

Single Scale		Dual Scale	
Range	Part No.	Range	Part No.
(vac)-100 Kpa	D110421	(vac) 30" hg / -100 Kpa	D166661M
-100-0-100 Kpa	D131401M	30"-0-15 psi / -100-0-100 Kpa	D124381M
-100-0-150 Kpa	D245360		
-100-0- 200 Kpa	D110721M	30"-0-30 psi / -100-0-200 Kpa	D124141M
-100-0-400 Kpa	D110741M	30"-0-60 psi / -10-0-400 Kpa	D193760M
-100-0-700 Kpa	D110761	30"-0-100 psi / -100-0-700 Kpa	D128063M
-100-0-900 Kpa	D216340		
-100-0-1000 Kpa	D110781	30"-0-150 psi / -100-0-1000 Kpa	D193840M
-100-0-2000 Kpa	D110821		
0-100 Kpa	D131261M	0-15 psi / 0-100 Kpa	D131281M
0-200 Kpa	D110441M	0-30 psi / 0-200 Kpa	D124181M
0-250 Kpa	D187920M		
0-400 Kpa	D110462M	0-60 psi / 0-400 Kpa	D124201M
0-600 Kpa	D108941M		
0-700 Kpa	D108841M	0-100 psi / 0-700 Kpa	D124221M
0-800 Kpa	D101680M		
0-1000 Kpa	D099701		
0-1100 Kpa	D110481M	0-160 psi / 0-1100 Kpa	D124241M
0-1400 Kpa	D110502M	0-200 psi / 0-1400 Kpa	D129201M
0-1600 Kpa	D101700M		
0-2100 Kpa	D110522M	0-300 psi / 0-2100 Kpa	D131441M
0-2500 Kpa	D107960M		
0-2800 Kpa	D110541M	0-400 psi / 0-2800 Kpa	D129221M
0-4000 Kpa	D110561M	0-600 psi / 0-4000 Kpa	D126801M
0-5500 Kpa	D110581M	0-800 psi / 0-5500 Kpa	D129241M
0-6000 Kpa	D189120M		
0-7000 Kpa	D110601M	0-1000 psi / 0-7000 Kpa	D131421M
0-8000 Kpa	D187940M		
0-10000 Kpa	D131321M	0-1500 psi / 0-10000 Kpa	D131341M
		0-2000 psi / 0-14000 Kpa	D226280M
0-16000 Kpa	D110621M	0-2300 psi / 0-16000 Kpa	D165440M
0-20000 Kpa	D245980	0-3000 psi / 0-21000 Kpa	D226300M
0-25000 Kpa	D110641M	0-3500 psi / 0-25000 Kpa	D165460M
		0-5000 psi / 0-35000 Kpa	D215220M
0-40000 Kpa	D110661M	0-6000 psi / 0-40000 Kpa	D190260
0-60000 Kpa	D108000		
		0-10000 psi / 0-70000 kpa	D239400
0-80000 Kpa	D101740	0-11600 psi / 0-80000 kpa	D220740
0-100000 Kpa	D108801		

### Bar Scales

Single Scale		Dual Scale	
Range	Part No.	Range	Part No.
-1 bar	D216580	30" Hg / -1 bar	D132181
-1-0-1 bar	D220400	30"-0-15 psi / -1-0-1 bar	D132161
-1-0-1.5 bar	D220780		
-1-0-2 bar	D916200	30"-0-30 psi / -1-0-2 bar	D127983
-1-0-3 bar	D220760		
-1-0-4 bar	D896621	30"-0-60 psi / -1-0-4 bar	D130441M
		30"-0-100 psi / -1-0-7 bar	D149240
		30"-0-150 psi / -1-0-10 bar	D129740
0-1 bar	D165160	0-15 psi / 0-1 bar	D128181M
0-2 bar	D154360	0-30 psi / 0-2 bar	D124121M
0-2.5 bar	D214780		
0-4 bar	D137782	0-60 psi / 0-4 bar	D124261M
0-6 bar	D214800M		
0-7 bar	D137802	0-100 psi / 0-7 bar	D128023
0-8 bar	D187980		
0-10 bar	D188000		
0-11 bar	D134982	0-160 psi / 0-11 bar	D124101
0-14 bar	D115902	0-200 psi / 0-14 bar	D128241
0-16 bar	D188020M		
0-21 bar	D154380M	0-300 psi / 0-21 bar	D128281M
0-25 bar	D188040		
0-28 bar	D165200	0-400 psi / 0-28 bar	D128201
0-40 bar	D214840		
0-42 bar	D165240	0-600 psi / 0-42 bar	D128161
0-55 bar	D237340M	0-800 psi / 0-56 bar	D106302
0-60 bar	D214860		
0-70 bar	D154400	0-1000 psi / 0-70 bar	D128221
0-105 bar	D154420M	0-1500 psi / 0-105 bar	D128141
0-140 bar	D246360		
0-160 bar	D154440	0-2300 psi / 0-160 bar	D083380
0-210 bar	D246380		
0-240 bar	D154460	0-3500 psi / 0-240 bar	D128261
0-420 bar	D154480	0-6000 psi / 0-420 bar	D145521
		0-11600 psi / 0-800 bar	D129720

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## Process Gauges

# SOLFRUNT® 4-1/2" Metric and Dual Scale Dial Part Numbers

*The metric and dual scale dials listed below can be used on any of the following SOLFRUNT 4-1/2" Gauges: Models 1981, 1981 Advantage, 1980, 1982, 1986, 1901, 1931, 1911, 1903, 1933, and 1913. Please call Customer Service at (863) 534-1504 for questions about metric or dual scale dials.*

### kgcm<sup>2</sup> Scales

Single Scale		Dual Scale	
Range	Part No.	Range	Part No.
-1 kgcm <sup>2</sup>	D216680		
760 mm Hg (Vac)	D150420	30" Hg / 760 mm Hg (Vac)	D211580
		30" Hg / 76 cm Hg (Vac)	D167940
-1-0-1 kg/cm <sup>2</sup>	D188860	30"-0-15 psi / -1-0-1 kgcm <sup>2</sup>	D137921
760 mm-0-1 kgcm <sup>2</sup>	D208580		
-1-0-1.5 kgcm <sup>2</sup>	D228100		
760 mm-0-2 kgcm <sup>2</sup>	D849302	30"-0-30psi / 76 cm-0-2 kgcm <sup>2</sup>	D128003
-1-0-3 kgcm <sup>2</sup>	D213440		
760 mm-0-4 kgcm <sup>2</sup>	D188840	30"-0-60 psi / 76 cm-0-4 kgcm <sup>2</sup>	D192860M
-1-0-4 kgcm <sup>2</sup>	D215740		
-1-0-5 kgcm <sup>2</sup>	D212380		
76 cm-0-7 kgcm <sup>2</sup>	D189480	30"-0-100 psi / 76 cm-0-7 kgcm <sup>2</sup>	D127923M
760 mm-0-7 kgcm <sup>2</sup>	D209420		
-1-0-7 kgcm <sup>2</sup>	D215760		
-1-0-9 kg/cm <sup>2</sup>	D212400		
76 cm-0-10 kgcm <sup>2</sup>	D190820	30"-0-150 psi / 76 cm-0-10 kgcm <sup>2</sup>	D128861
-1-0-10 kgcm <sup>2</sup>	D215780		
0-1 kgcm <sup>2</sup>	D154221	0-15 psi / 0-1 kgcm <sup>2</sup>	D127960
0-2 kgcm <sup>2</sup>	D127441M	0-30 psi / 0-2 kgcm <sup>2</sup>	D124281
0-2.5 kgcm <sup>2</sup>	D212420		
0-4 kgcm <sup>2</sup>	D111501M	0-60 psi / 0-4 kgcm <sup>2</sup>	D124301M
0-6 kgcm <sup>2</sup>	D212440	0-85 psi / 0-6 kgcm <sup>2</sup>	D236740
0-7 kgcm <sup>2</sup>	D139221	0-100 psi / 0-7 kgcm <sup>2</sup>	D124321M
0-10 kgcm <sup>2</sup>	D192480		
0-11 kgcm <sup>2</sup>	D111521	0-160 psi / 0-11 kgcm <sup>2</sup>	D127943M
0-14 kgcm <sup>2</sup>	D134181M	0-200 psi / 0-14 kgcm <sup>2</sup>	D128841M
0-16 kgcm <sup>2</sup>	D212480		
0-20 kgcm <sup>2</sup>	D192500		
0-21 kgcm <sup>2</sup>	D132041M	0-300 psi / 0-21 kgcm <sup>2</sup>	D135541M
0-25 kgcm <sup>2</sup>	D212500		
0-28 kgcm <sup>2</sup>	D153421	0-400 psi / 0-28 kgcm <sup>2</sup>	D131241M
0-40 kgcm <sup>2</sup>	D212520		
0-42 kgcm <sup>2</sup>	D146820	0-600 psi / 0-42 kgcm <sup>2</sup>	D124161M
0-60 kgcm <sup>2</sup>	D216620	0-800 psi / 0-56 kgcm <sup>2</sup>	D192840M
0-70 kgcm <sup>2</sup>	D146840	0-1000 psi / 0-70 kgcm <sup>2</sup>	D167440
0-100 kgcm <sup>2</sup>	D213700		
0-105 kgcm <sup>2</sup>	D140820	0-1500 psi / 0-105 kgcm <sup>2</sup>	D137901M
		0-2000 psi / 0-140 kgcm <sup>2</sup>	D192880M
0-160 kgcm <sup>2</sup>	D216640	0-2300 psi / 0-160 kgcm <sup>2</sup>	D167460M
		0-3000 psi / 0-210 kgcm <sup>2</sup>	D192900
0-250 kgcm <sup>2</sup>	D215100	0-3500 psi / 0-250 kgcm <sup>2</sup>	D166541
0-350 kgcm <sup>2</sup>	D242420	0-5000 psi / 0-350 kgcm <sup>2</sup>	D192920
0-400 kgcm <sup>2</sup>	D215120	0-6000 psi / 0-400 kgcm <sup>2</sup>	D167480M
		0-10000 psi / 0-700 kgcm <sup>2</sup>	D218140
0-800 kgcm <sup>2</sup>	D208600		

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## Process Gauges

# SOLFRUNT<sup>®</sup> 4-1/2" Low Pressure Gauges

### DESCRIPTION

Designed for pressure measurements as low as a few inches of water, these gauges, in spans from 30" H<sub>2</sub>O to 10 psi utilize a unique sensing element. It is composed of a stack of diaphragm capsules, each consisting of two plates contoured into a convex/concave configuration to nest into one another. This results in a low internal volume element developing large forces to drive the mechanism in extremely low pressure ranges. The measuring element may be filled and attached to a Mansfield & Green diaphragm seal (Type L) to permit use of the gauge with corrosive or viscous fluids.

Calibration adjustments (scale shape and linearity) are made from rear of case without removing internals. The pointer is adjusted by removing the front ring and window.



### SPECIFICATIONS

DIAL SIZE: 4-1/2"

#### CASE AND RING:

For Stem or Wall Mounting:

PET TURRET CASE (black) with glass-filled, threaded, polypropylene ring and plastic pressure-relieving back

WINDOW: Acrylic

POINTER: Knife-edged, micrometer adjustable, black finish

DIAL: Aluminum with white background and black markings

MOVEMENT: Heavy brass U-frame construction with nickel silver rocker arm on stainless steel pivots. Brass sector and nickel silver pinion operate on brass bearings. Minimum and maximum stops prevent segment and pinion disengagement

#### DIAPHRAGM:

1919: NiSpan C, silver brazed

1929: 316L stainless steel, heli-arc welded

CONNECTION: 1919: brass; 1929: 316L stainless steel; 1/2-14 ANPT standard (1/4-18 ANPT optional)

ACCURACY: ±1% of span (Grade 1A)

### STANDARD DIAL RANGES

MAXIMUM INDICATION	FIGURE INTERVALS	INTERMEDIATE GRADUATIONS	MINOR GRADUATIONS
0-30" H <sub>2</sub> O VAC	5	1	0.2
0-60" H <sub>2</sub> O VAC	5	1	0.5
15"-0-15" H <sub>2</sub> O	3	1	0.2
30"-0-30" H <sub>2</sub> O	5	1	0.5
60"-0-60" H <sub>2</sub> O	10	5	1
0-30" H <sub>2</sub> O	5	1	0.2
0-60" H <sub>2</sub> O	5	1	0.5
0-100" H <sub>2</sub> O	10	5	1
0-200" H <sub>2</sub> O	20	10	2
0-3 psi	0.5	0.1	0.02
0-5 psi	1	0.25	0.05
0-10 psi	1	0.5	0.1

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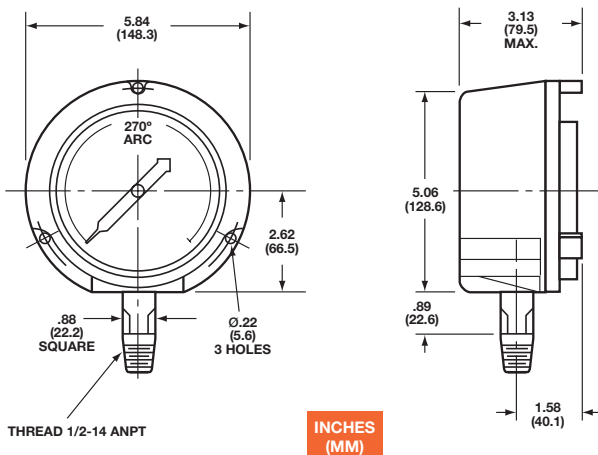
## Process Gauges

# SOLFRUNT® 4-1/2" Low Pressure Gauges

### MODEL SELECTION CHART

MODEL NUMBER	MOUNTING	CASE	RING	BOURDON	SOCKET	CONNECTION*
1919	Stem/Wall	PET Turret	Threaded Polypropylene	NI-SPAN C	Brass	1/2-14 ANPT LM
1929	Stem/Wall	PET Turret	Threaded Polypropylene	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM

\* 1/4-18 ANPT optional



### SPEC NUMBER SELECTION CHART

#### SOLFRUNT 4-1/2" Low Pressure Gauges

Model Number	1919	1929
<b>Capsule</b>	<b>Ni-Span C</b>	<b>316L Stainless Steel</b>
<b>Socket</b>	<b>Brass</b>	<b>316L Stainless Steel</b>
<b>Size</b>	<b>4-1/2"</b>	<b>4-1/2"</b>
<b>Range*</b>	<b>Spec No.</b>	<b>Spec No.</b>
0-30" H <sub>2</sub> O VAC	132779	132789
0-60" H <sub>2</sub> O VAC	132780	132790
15"-0-15" H <sub>2</sub> O	130298	132872
30"-0-30" H <sub>2</sub> O	132777	132787
60"-0-60" H <sub>2</sub> O	132778	132788
0-30" H <sub>2</sub> O	132774	132784
0-60" H <sub>2</sub> O	132775	132785
0-100" H <sub>2</sub> O	132776	132786
0-200" H <sub>2</sub> O	132794	132795
0-3 psi	132781	132791
0-5 psi	132782	132792
0-10 psi	132783	132793

\* Metric and dual scale dials are available. Please call Customer Service at (863) 534-1504 for more information.

1/4-18 ANPT available – use 133XXX when ordering

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## Process Gauges

# SOLFRUNT<sup>®</sup> 6" Gauges

### DESCRIPTION

Series 1900 6" SOLFRUNT gauges are used where the distance between operator and gauge requires expanded dial graduations for increased readability. Panel or stem mounted, these gauges offer the same rugged construction, accuracy and calibration features as the 4-1/2" series.



### SPECIFICATIONS

SIZE: 6"

#### CASE AND RING:

For Stem or Wall Mounting:  
 CAST ALUMINUM, BACK FLANGED CASE with threaded ring, black finish, and BUNA-N<sup>®</sup> pressure-relieving back (Model 1901, 1931)

#### For Panel Mounting:

CAST ALUMINUM, FRONT FLANGED CASE with steel hinged ring with black finish and BUNA-N pressure-relieving back (Model 1903)

WINDOW: Acrylic

POINTER: Aluminum, micrometer adjustable with black finish

DIAL: Aluminum, white background and black markings

MOVEMENT: Geared ARC-LOC<sup>®</sup> with components of corrosion resistant 300 series stainless steel. Movement can be removed for examination and cleaning without disturbing span and scale shape adjustments

BOURDON TUBE: Phosphor bronze/silver brazed; 316L stainless steel/heli-arc welded

CONNECTION: Brass, alloy steel, or 316L stainless steel, 1/2-14 ANPT standard (1/4-18 ANPT optional). Tube, tip, and socket assemblies coded per chart on page A17

RANGES: 30" Hg VAC 0-15, 30, 60, 100, 160, 200, 300, 400, 600, 1000, 1500, 2300, 3500, 6000. For figure intervals and graduations, see the Standard Dial Ranges charts on page A13

ACCURACY:  $\pm 0.5\%$  of span (Grade 2A)

### MODEL SELECTION CHART

MODEL NUMBER	MOUNTING	CASE	RING	BOURDON TUBE	SOCKET	CONNECTION
1901	Stem/Wall	Aluminum Back Flanged	Threaded Aluminum	Phosphor Bronze	Brass	1/2-14 ANPT LM
1931	Stem/Wall	Aluminum Back Flanged	Threaded Aluminum	316L Stainless Steel	316L Stainless Steel	1/2-14 ANPT LM
1903	Flush Panel	Aluminum Front Flanged	Hinged Steel	Phosphor Bronze	Brass	1/2-14 ANPT LBM

\* 1/4-18 ANPT optional

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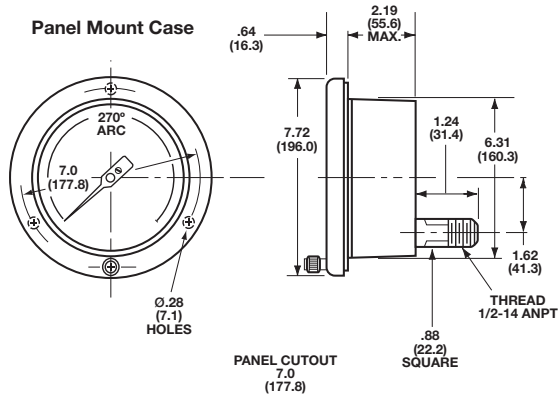
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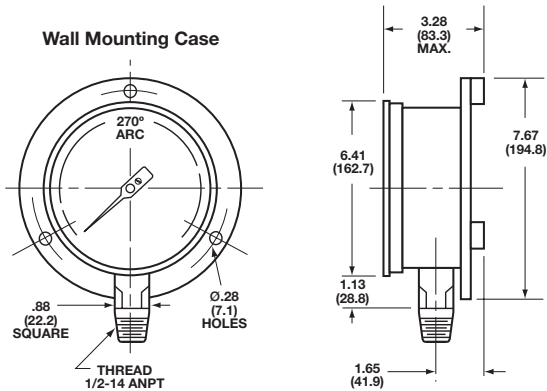


## Process Gauges

# SOLFRUNT<sup>®</sup> 6" Gauges



INCHES  
(MM)



### SPEC NUMBER SELECTION CHART

#### SOLFRUNT 6" Gauges

Model Number	1901	1931	1903
<b>Bourdon Tube</b>	Phosphor Bronze	316L Stainless Steel	Phosphor Bronze
<b>Socket</b>	Brass	316L Stainless Steel	Brass
<b>Size</b>	6"	6"	6"
<b>Range</b>	<b>Spec No.</b>	<b>Spec No.</b>	<b>Spec No.</b>
30"-0-15 psi	132502	132518	132540
0-15 psi	132507	132523	132545
0-30 psi	132508	132524	132546
0-60 psi	132509	132525	132547
0-100 psi	132510	132526	132548
0-160 psi	132511	132527	132549
0-200 psi	132512	132528	132550
0-300 psi	132513	132529	132551
0-400 psi	132514	-	132552
0-600 psi	132515	132531	132553
0-1000 psi	132516	132533	132554
0-1500 psi	-	132534	-
0-2300 psi	-	130394	-
0-3500 psi	-	130395	-
0-6000 psi	-	130396	-

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