

# PALMER

Designed and Built in Asheville,  
North Carolina - USA

## All Star Bimetal Thermometers

### Models 3BC • 5BC Back Connected Case

### Models 3BCJ • 5BCJ Back Connected Case with Adjustable Union Fitting

### Models 3A • 5A All Angle Case

### Models 3AJ • 5AJ All Angle Case with Adjustable Union Fitting

Palmer's experience in the thermometer field enables us to offer a line of Bimetal Dial Thermometers with the design, quality and craftsmanship that make our bimetal thermometers an industry standard for rugged reliability and consistent accuracy.

**Rugged Design Features:** All 316 Stainless Steel Case with 304SS Fitting and Stem in Fixed Center Back Connected or versatile All Angle case with easy adjustability for the optimal viewing angle. Glass Lens in a quick-lock, cam-action bezel ring with heavy duty, heat-resistant hermetically sealed gasket seals out moisture to prevent lens icing or fogging and bimetal coil freeze-up in extreme conditions. Built-in over-range protection and adjustable pointer are standard.

**Easy-To-Read 3" or 5" Dial:** Specially fabricated of low-glare finished metal using a deep draw design for anti-parallax alignment of pointer to graduation marks. Dial can be seen from a greater distance and from more angles than mercury-in-glass thermometers. High-visibility numerals and graduations on a low-glare background with graduations and pointer on the same surface level help minimize reading errors.

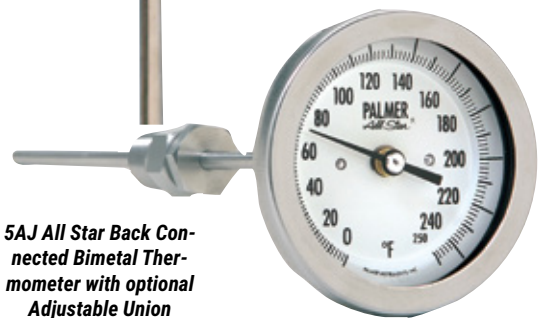
**Fast Response:** Superior heat transfer characteristics, fast response, and consistent repeatability are achieved through the use of a high-torque, low mass bimetal sensing element. Materials and design combine to convert the sensor's movement quickly and accurately into a dial reading. Ambient temperature changes at the case will not affect accuracy.

**Adjustable Union Fitting:** Optional Adjustable Union easily adjusts the stem to the full depth of your thermowell for metal to metal tip contact, giving maximum exposure to your process. Eliminates the need to stock several different stem lengths.

**316 Stainless Steel Fitting and Stem option:** for deep water drillers and offshore rigs, resists the harsh environmental conditions of outdoor use.



5A All Star Adjustable Angle Bimetal Thermometer



5AJ All Star Back Connected Bimetal Thermometer with optional Adjustable Union

### Models 3BC • 5BC • 3A • 5A Series Specifications

<b>All Angle:</b>	3A and 5A - All Angle Connected Case 3AJ and 5AJ - All Angle Connected Case with Adjustable Union
<b>Fixed Back Connected:</b>	3BC and 5BC - Fixed Center Back Connected Case 3BCJ and 5BCJ - Fixed Center Back Connected Case with Adjustable Union
<b>Case:</b>	Polished-Type 316 Stainless Steel case and bezel in 3" (3-5/16 inch, 84 mm actual) or 5" (5-1/16 inch, 129 mm actual) Size. Hermetically sealed cases.
<b>Element:</b>	Single helix bimetallic coil sensing element (with silicone gel coated coil for ranges below 500°F), located in bottom 2-1/2 inches of thermometer stem.
<b>Dial Face:</b>	Black graduations and numerals on white background. Anti-parallax dial design linear scale with high-visibility tapered-tip black pointer.
<b>Lens:</b>	Glass, Standard. Optional Plexiglass or Shatter-Proof Safety Glass.
<b>Fitting:</b>	304 Stainless Steel 7/8" hex with 1/2" NPT threads or 304SS adjustable union compression fitting with 7/8" hex with 1/2" NPT threads. Optional 316 Stainless Steel. Other fittings available.
<b>Stem:</b>	Polished-Type 304 Stainless Steel. All welded. Optional 316 Stainless Steel.
<b>Stem Lengths:</b>	Standard lengths from 2.5 inches (63.5 mm) to 24 inches (610 mm). Special Order lengths up to 60 inches (1524 mm).
<b>Recalibration:</b>	Adjustable pointer.
<b>Over-Range:</b>	Protected design allows temporary swings of up to 50% of range without permanent damage to thermometer.
<b>Accuracy:</b>	ASME B-40.3 Grade A, ± 1% of Full Scale. Ambient temperature changes at the case will not affect accuracy.

Specifications subject to change without notice.

### Applications

- Chemical and Petrochemical
- Compressor Controls
- Deep Water Drilling
- Hazardous Environments
- Offshore Rigs
- Process Engineering
- Pulp and Paper Industry
- Pneumatics
- Pump Protection
- Shipping
- Water Treatment Systems



# All Star Models 3BC • 5BC • 3A • 5A • 3BCJ • 5BCJ • 3AJ • 5AJ Ordering Guide

Models 3BC • 5BC • 3A • 5A • 3BCJ • 5BCJ • 3AJ • 5AJ Series All Star Bimetal Thermometers	
Step 1 - Select: Bimetal Size and Case Style	
Code	Bimetal Size and Case Style
<b>3BC</b>	3" Fixed Center Back Connected All Star Bimetal Thermometer
<b>3BCJ</b>	3" Fixed Center Back Connected, Adjustable Union All Star Bimetal Thermometer
<b>5BC</b>	5" Fixed Center Back Connected All Star Bimetal Thermometer
<b>5BCJ</b>	5" Fixed Center Back Connected, Adjustable Union All Star Bimetal Thermometer
<b>3A</b>	3" All Angle Connected All Star Bimetal Thermometer
<b>3AJ</b>	3" All Angle Connected, Adjustable Union All Star Bimetal Thermometer
<b>5A</b>	5" All Angle Connected All Star Bimetal Thermometer
<b>5AJ</b>	5" All Angle Connected, Adjustable Union All Star Bimetal Thermometer

Step 2 - Select: Stem Length	
Code	Length
<b>2.5</b>	2.5 inches (63.5 mm)
<b>4</b>	4 inches (102 mm)
<b>6</b>	6 inches (152 mm)
<b>9</b>	9 inches (229 mm)
<b>12</b>	12 inches (305 mm)
<b>15</b>	15 inches (381 mm)
<b>18</b>	18 inches (457 mm)
<b>24</b>	24 inches (610 mm)
<b>30*</b>	30 inches (762 mm)
<b>36*</b>	36 inches (914 mm)
<b>42*</b>	42 inches (1067 mm)
<b>48*</b>	48 inches (1219 mm)
<b>54*</b>	54 inches (1372 mm)
<b>60*</b>	60 inches (1524 mm)

Adjustable Union Option minimum stem length is 6".  
Stem lengths over 30" have a 3/8" diameter support tubing.  
\* Special order stem length.

Step 3 - Select: Temperature Range: Single Scale or Dual Scale (below)					
Code	°F Range	° Div	Code	°C Range	° Div
<b>-100/100F</b>	-100° to 100°	2°	<b>-50/50C</b>	-50° to 50°	1°
<b>-40/120F</b>	-40° to 120°	1°	<b>-50/100C</b>	-50° to 100°	1°
<b>0/200F</b>	0° to 200°	2°	<b>-20/120C</b>	-20° to 120°	1°
<b>0/250F</b>	0° to 250°	2°	<b>0/50C</b>	0° to 50° <sup>1</sup>	0.5°
<b>25/125F</b>	25° to 125° <sup>1</sup>	1°	<b>0/100C</b>	0° to 100°	1°
<b>50/300F</b>	50° to 300°	2°	<b>0/150C</b>	0° to 150°	1°
<b>50/400F</b>	50° to 400°	5°	<b>0/200C</b>	0° to 200°	2°
<b>50/500F</b>	50° to 500°	5°	<b>0/300C</b>	0° to 300°	5°
<b>150/750F</b>	150° to 750° <sup>1</sup>	5°	<b>100/400C</b>	100° to 400° <sup>1</sup>	5°
<b>200/1000F</b>	200° to 1000° <sup>1,2</sup>	10°	<b>100/500C</b>	100° to 500° <sup>1,2</sup>	5°

<sup>1</sup> Minimum stem length for these ranges is these ranges is 4" on All Angle models and 6" on Back Connected models.  
<sup>2</sup> Recommended for continuous service up to 800°F or 427°C. Can be used for intermittent service up to 1000°F or 500°C.

Dual Scale Options are available and shown in the table below for 5" Bimetals only.

5" Dial Dual Range Scales		
Code	°F / °C Range	° Div
<b>0/200F&amp;C</b>	0° to 200°/-15° to 90°	2°F/1°C
<b>0/250F&amp;C</b>	0° to 250°/-20° to 120°	2°F/1°C
<b>50/300F&amp;C</b>	50° to 300°/10° to 150°	2°F/1°C
<b>50/400F&amp;C</b>	50° to 400°/10° to 200°	5°F/2°C
<b>50/500F&amp;C</b>	50° to 500°/10° to 260°	5°F/2°C
<b>150/750F&amp;C</b>	150° to 750°/65° to 400°	10°F/5°C
<b>200/1000F&amp;C</b>	200° to 1000°/100° to 540° <sup>1,2</sup>	10°F/5°C

Step 4 - Select: Options	
Code	Options
<b>(FS)</b>	316 Stainless Steel Fitting and Stem
<b>(PC)</b>	Plexiglass Cover
<b>(SPG)</b>	Shatter Proof Safety Glass
<b>(1/4NPT)</b>	1/4" NPT Fixed Thread Fitting*
<b>(3/8D)</b>	3/8" Diameter Stem with Pointed Tip*
<b>(3/8NPT)</b>	3/8" NPT Fixed Thread Fitting*
<b>(7/8SN)</b>	7/8"-22 Swivel Nut Fitting*
<b>(1/2NPS)</b>	1/2" NPSM Union Swivel Nut*

\* Not available with Adjustable Union

**Model # Example:**  
**5BCJ24-40/120F(SPG):** 5 inch All Star Bimetal Thermometer, Fixed Center Back Connected Case with Adjustable Union, 24 inch Stem Length, -40° to 120°F Fahrenheit Temperature Range, Shatter Proof Glass.

All Star Bimetal	Stem Length	Temperature Range	Options
Insert Codes in boxes above to build part number			

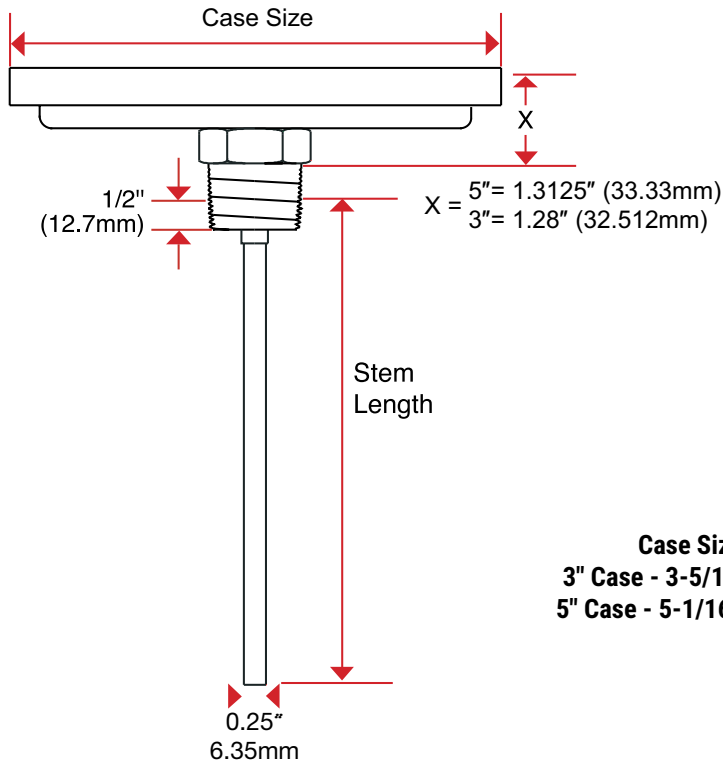


**We build to order: if your process requires an option not shown here please call Customer Service.**

**All Star Models 3BC • 5BC • 3A • 5A • 3BCJ • 5BCJ • 3AJ • 5AJ Dimensional Drawings**

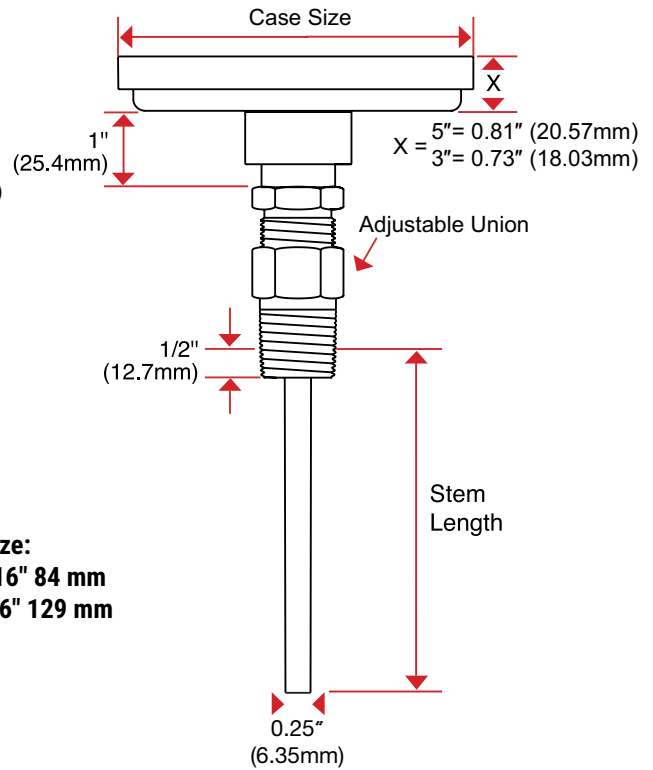
**Fixed Center Back Connected All Star Bimetal**

3" Dial - Model 3BC, 5" Dial - Model 5BC



**Fixed Center Back Connected with Adjustable Union All Star Bimetal**

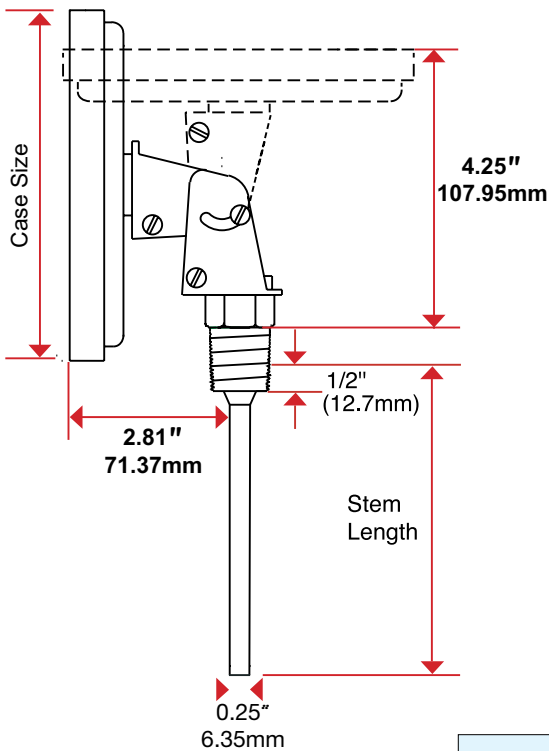
3" Dial - Model 3BCJ, 5" Dial - Model 5BCJ



**Case Size:**  
3" Case - 3-5/16" 84 mm  
5" Case - 5-1/16" 129 mm

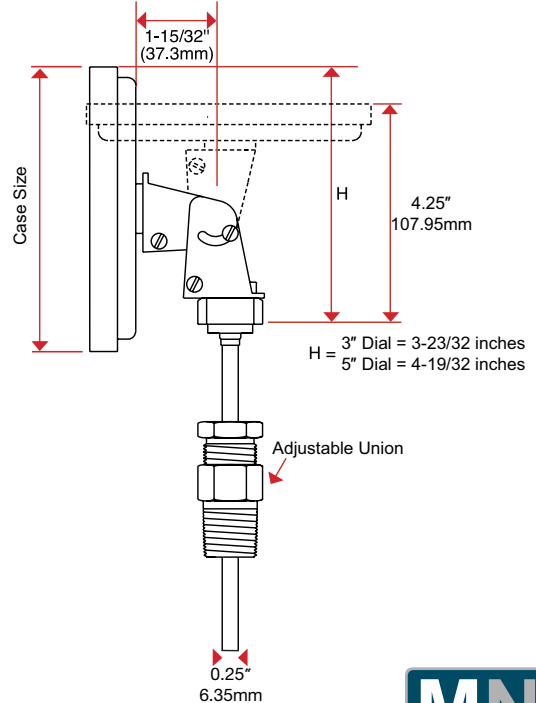
**All Angle Connected All Star Bimetal**

3" Dial - Model 3A, 5" Dial - Model 5A



**All Angle Connected with Adjustable Union All Star Bimetal**

3" Dial - Model 3AJ, 5" Dial - Model 5AJ



To measure stem length measure from 1/2" up on threads of fitting to tip of stem.  
Adjustable union fitting should be slid to top of stem and tightened before measuring.

Specifications subject to change without notice.

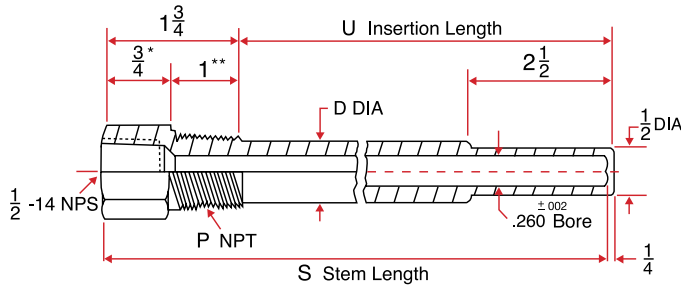
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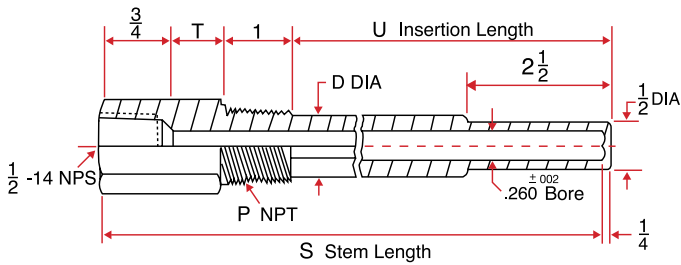
# Thermowells for use with Bimetal Thermometers

## Thermowell Series 112: 260" Diameter Bore, 1/2"-14 NPS Internal Thread

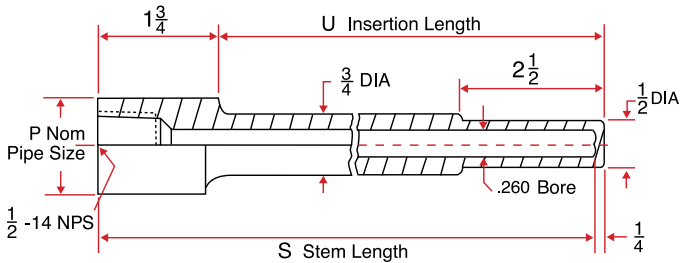


Threaded Regular: Series 1120				
"S" Stem Length	"U" Insertion Length	"P" NPT External Thread Size		
		1/2" - 14	3/4" - 14	1" - 11-1/2
2-1/2"	1-5/8"	1120-102 <sup>1</sup>	1120-202 <sup>1</sup>	1120-302 <sup>1</sup>
4"	2-1/2"	1120-104	1120-204	1120-304
6"	4-1/2"	1120-106	1120-206	1120-306
9"	7-1/2"	1120-109	1120-209	1120-309
12"	10-1/2"	1120-112	1120-212	1120-312 <sup>2</sup>
15"	13-1/2"	1120-115	1120-215	1120-315 <sup>2</sup>
18"	16-1/2"	1120-118	1120-218	1120-318 <sup>2</sup>
<b>Diameter</b>		5/8"	3/4"	3/4"

<sup>1</sup> 1" on the 1/2"-14 NPT External Thread    <sup>2</sup> 3/4" on the 1/2"-14 NPT External Thread



Threaded Regular - Lagging Extension: Series 1121					
"S" Stem Length	"U" Insertion Length	"T" Lagging Extension	"P" NPT External Thread Size		
			1/2" - 14	3/4" - 14	1" - 11-1/2
6"	2-1/2"	2"	1121-106	1121-206	1121-306
9"	4-1/2"	3"	1121-109	1121-209	1121-309
12"	7-1/2"	3"	1121-112	1121-212	1121-312 <sup>2</sup>
15"	10-1/2"	3"	1121-115	1121-215	1121-315 <sup>2</sup>
18"	13-1/2"	3"	1121-118	1121-218	1121-318 <sup>2</sup>
<b>Diameter</b>			5/8"	5/8"	5/8"



Weld-In: Series 1126			
"S" Stem Length	"U" Insertion Length	"P" Nominal Pipe Size	
		3/4" - 1.050	1" - 1.315
4"	2-1/2"	1126-204	1126-304
6"	4-1/2"	1126-206	1126-306
9"	7-1/2"	1126-209	1126-309
12"	10-1/2"	1126-212	1126-312 <sup>2</sup>
15"	13-1/2"	1126-215	1126-315 <sup>2</sup>
18"	16-1/2"	1126-218	1126-318 <sup>2</sup>
<b>Diameter</b>		3/4"	3/4"

<sup>1</sup> Contact factory for prints on these series

<sup>2</sup> Contact factory for Built-up models

**We build to order:  
if your require an option not  
shown here please call  
Customer Service.**

### How to Build a Thermowell Part Number:

Well Series	NPT / NPS and Stem Length	Material
Designates Bore Diameter, Internal Thread and Well Type	Determines External Thread and Stem Length	Determines Material such as Brass or 304SS
Insert Codes in boxes above to build part number		

**Model Number Example:**  
**1120-109-01:** 1120 Series, Regular Thermowell,  
 1/2"-14 NPT and 9" Stem, Brass

Thermowells Material Codes			
Code	Material	Code	Material
01*	Brass* †	07	Monel R-405
02*	Carbon Steel C-1018*	08	Hastelloy C
03*	304SS*	09	Hastelloy B
04	304LSS*	10	Titanium (Special Order)
05*	316SS*	11	Tantalum Sheath** (Special Order)
06	316LSS*		

\* Standard materials in stock. All other materials available upon request.

\*\* All wells with sheaths are continuous outside diameters, regardless of any steps shown on illustrations.

† Not available in Built-up wells.

*Specifications subject to change without notice.*



# PALMER

Designed and Built in Asheville,  
North Carolina - USA

## Sanitary Bimetal Thermometers

### Models 3BES • 5BES Back Connected Case

### Models 3AES • 5AES All Angle Case

Palmer's Sanitary Bimetal Thermometers are specifically designed for all sterile processing environments. Choice of 12 temperature ranges in Fahrenheit or Celsius ensures just the right thermometer for your sanitary processing or storage applications. Our experience in the field enables us to offer a line of sanitary thermometers with the design, quality and craftsmanship that make them an industry standard for rugged reliability and consistent accuracy.

**Installed Directly into Process:** No thermowell needed. Palmer Sanitary Bimetal Thermometers utilize standard Tri-Clamp® sanitary fittings for faster installation and speed of response with reduced installation costs.

**Complies with 3A Sanitary Standard:** All product contact surfaces and radius's comply with this industry wide standard.

**Accurate:** Consistent accuracy is achieved within one scale division. Ambient temperature changes in the thermometer's case location will not affect accuracy.

**Environmentally Conscious:** Bimetal sensor eliminates any concern over mercury or glass tubes.

**Simple, Convenient Recalibration:** An adjustable pointer provides easy, precise recalibration. This feature also permits setting for zero calibration error at any desired temperature point within scale range.

**Easy-to-Read Dials in 3" or 5" Diameter:** Deep-drawn metal dial with aligned pointer provides an anti-parallax design, creating significantly improved legibility and reduced reading errors. Low glare dial background surface printed with high-contrast numerals and graduations.

**Hermetically Sealed Case and Plexiglass Lens:** Internal elements are secured in the stainless steel case by means of a quick-lock, cam-action bezel ring. A heavy-duty, heat-resistant gasket seals out moisture, preventing icing and condensation, even in wash-down areas.



5AES Adjustable Angle  
Sanitary Bimetal  
Thermometer

3BES Back Connected  
Sanitary Bimetal  
Thermometer

### Models 3BES • 5BES • 3AES • 5AES Series Specifications

<b>All Angle:</b>	3AES and 5AES - All Angle Connected Case
<b>Fixed Back Connected:</b>	3BES and 5BES - Fixed Center Back Connected Case
<b>Case:</b>	Polished-Type 316 Stainless Steel case and bezel in 3" (3-5/16 inch, 84 mm actual) or 5" (5-1/16 inch, 129 mm actual) Size. Hermetically sealed cases.
<b>Element:</b>	Single helix bimetallic coil sensing element (with silicone gel coated coil for ranges below 500°F), located in bottom 2-1/2 inches of thermometer stem.
<b>Dial Face:</b>	Black graduations and numerals on white background. Anti-parallax dial design linear scale with high-visibility tapered-tip black pointer.
<b>Lens:</b>	Shatter-resistant plexiglass.
<b>Fitting:</b>	One Piece Solid Bar stock, 3A15 Sanitary Fitting, 316 Stainless Steel. Tri-Clamp® sizes: 1-1/2", 2", or 3".
<b>Stem:</b>	Polished-Type 304 Stainless Steel. All welded. 5/16" Diameter.
<b>Stem Lengths:</b>	Standard length: 2.5 inches (63.5 mm), 4.5 inches (114.3 mm), 6 inches (152 mm) and 9 inches (229 mm). Same immersion as sanitary thermowell.
<b>Recalibration:</b>	Adjustable pointer.
<b>Over-Range:</b>	Protected design allows temporary swings of up to 50% of range without permanent damage to thermometer.
<b>Accuracy:</b>	ASME B-40.3 Grade A, ± 1% of Full Scale. Ambient temperature changes at the case will not affect accuracy.

### Applications

- Pharmaceutical
- Bio-Technologies
- Aseptic Beverage Processing
- Dairy Product Lines & Storage Tanks
- Aseptic Food Processing & Storage Tanks
- Cosmetics



Specifications subject to change without notice.

Tri-Clamp is a registered trademark of the Alfa Laval Company.

April  
2021

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# Sanitary Bimetals Models 3BES • 5BES • 3AES • 5AES Ordering Guide

Models 3BES • 5BES • 3AES • 5AES Series Sanitary Bimetal Thermometers	
Step 1 - Select: Bimetal Size and Case Style	
Code	Bimetal Size and Case Style
3BES	3" Fixed Center Back Connected Sanitary Bimetal Thermometer
5BES	5" Fixed Center Back Connected Sanitary Bimetal Thermometer
3AES	3" All Angle Connected Sanitary Bimetal Thermometer
5AES	5" All Angle Connected Sanitary Bimetal Thermometer

Step 2 - Select: Tri-Clamp® Size	
Code	Length
1.5	1.5 inches (38.1 mm)
2.0	2 inches (50.8 mm)
3.0	3 inches (76.2 mm)

Step 3 - Select: Stem Length	
Code	Length
2.5	2.5 inches (63.5 mm)
4.5	4 inches (114.3 mm)
6	6 inches (152 mm)
9	9 inches (229 mm)

Step 4 - Select: Temperature Range					
Code	°F Range	° Div	Code	°C Range	° Div
-40/120F	-40° to 120°	1°	-50/100C	-50° to 100°	1°
0/200F	0° to 200°	2°	-20/120C	-20° to 120°	1°
0/250F	0° to 250°	2°	0/50C	0° to 50° *	0.5°
25/125F	25° to 125° *	1°	0/100C	0° to 100°	1°
50/300F	50° to 300°	2°	0/150C	0° to 150°	1°
50/400F	50° to 400°	5°	0/200C	0° to 200°	2°

\* 4.5" Stem only

Step 4 - Select: Options	
Code	Options
(GF)	Glycerin Filled
(PC)	Plastic Crystal

Sanitary Bimetal	Tri-Clamp® Size	Stem Length	Temperature Range	Options
Insert Codes in boxes above to build part number				

**Model # Example:**  
**3AES2.02.0-50/100C(GF):** 3 inch (76.2 mm) Sanitary Bimetal Thermometer, All Angle Connected Case, 2 inch (50.8 mm) Tri-clamp, 2.5 inches (63.5 mm) Stem Length, -50° to 100° Celsius temperature range, Glycerin Filled



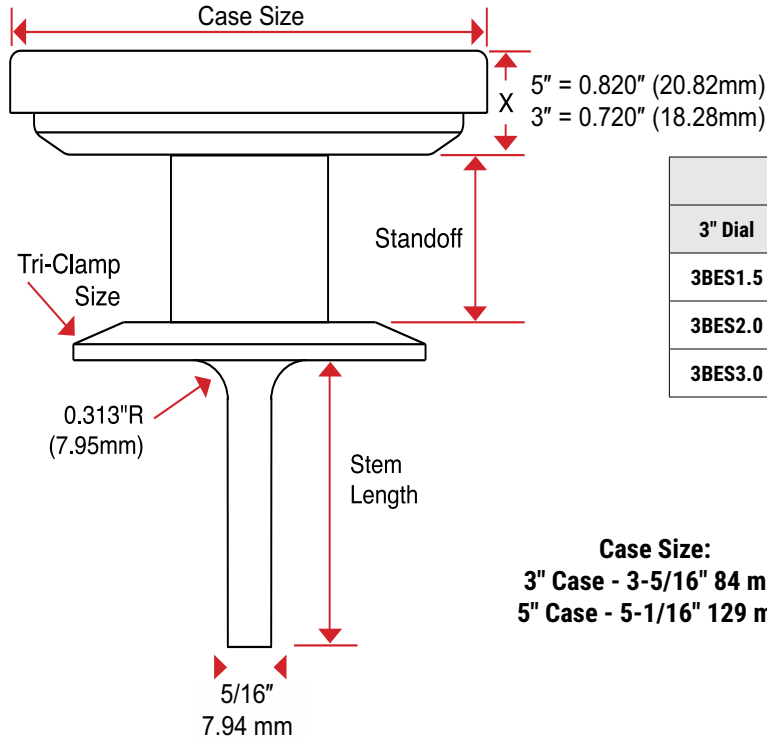
**We build to order:**  
**if your process requires**  
**an option not shown here**  
**please call**  
**Customer Service.**

*Specifications subject to change without notice.*

# Sanitary Bimetals Models 3BES • 5BES • 3AES • 5AES Dimensional Drawings

## Fixed Center Back Connected Sanitary Bimetal

3" Dial - Model 3BES, 5" Dial - Model 5BES

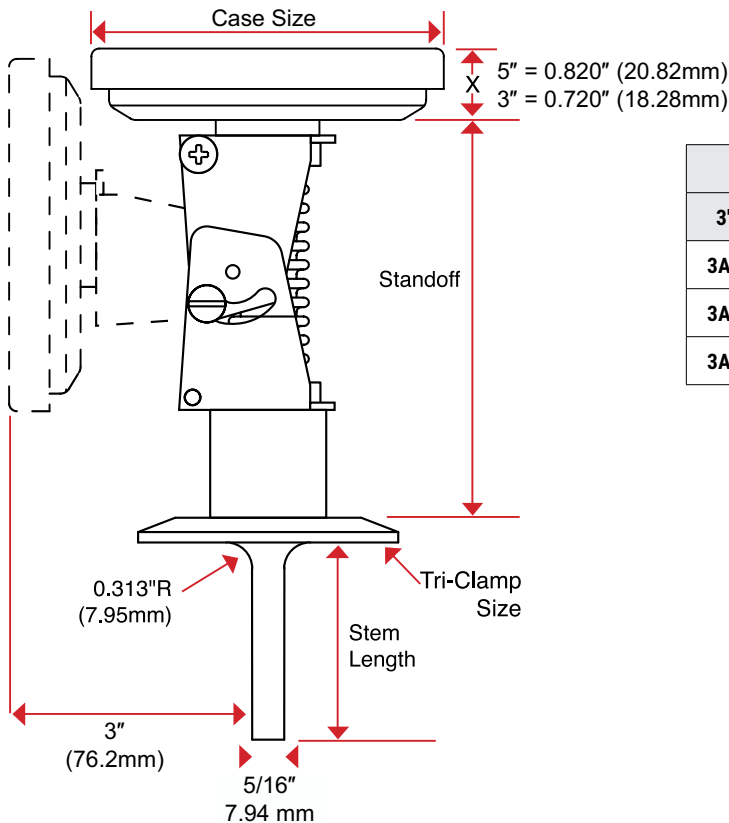


Back Connected Case Standoff Dimensions					
3" Dial	Standoff		5" Dial	Standoff	
3BES1.5	0.5 in	12.7 mm	5BES1.5	0.5 in	12.7 mm
3BES2.0	0.875 in	22.22 mm	5BES2.0	0.875 in	22.22 mm
3BES3.0	0.875 in	22.22 mm	5BES3.0	0.875 in	22.22 mm

**Case Size:**  
 3" Case - 3-5/16" 84 mm  
 5" Case - 5-1/16" 129 mm

## All Angle Connected Sanitary Bimetal

3" Dial - Model 3AES, 5" Dial - Model 5AES



All Angle Case Standoff Dimensions					
3" Dial	Standoff		5" Dial	Standoff	
3AES1.5	2.875 in	73.02 mm	5AES1.5	2.875 in	73.02 mm
3AES2.0	3.438 in	87.32 mm	5AES2.0	3.438 in	87.32 mm
3AES3.0	3.0 in	76.2 mm	5AES3.0	3.0 in	76.2 mm

Specifications subject to change without notice.

April 2021

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# PALMER

*Economy and performance  
for most applications*

## All Pro Bimetal Thermometers Models 3BCP • 5BCP Back Connected Case Models 3AP • 5AP All Angle Case

Palmer's All Pro Thermometers are an economical alternative to our All Star line. All Pro's feature all welded 304 stainless steel construction which provides the resistance needed in corrosive working environments, vibration, and other rugged conditions. The instrument has been designed to handle accurate temperature measurement for most industrial and laboratory applications, giving these thermometers a long service life. The low cost and high quality of the All Pro Thermometers make it a popular instrument for many applications.

**Easy-to-Read Dials in 3" or 5" Diameter:** Dials are specially fabricated of low-glare finished metal using a deep drawn design for anti-parallax alignment of the pointer to graduation marks. High-visibility dual scale numerals and graduations help minimize reading errors.

**Temperature Ranges:** All Pros are available in °F scales, and Dual °F & °C scales with exceptional legibility. Ranges cover temperatures from -40°F (-40°C) up to 500°F (260°C).

**Simple, Convenient Recalibration:** with a hex nut located on the back of the case allows for easy recalibration.

**Environmentally Conscious:** Bimetal sensor eliminates any concern over mercury or glass tubes.

**Fast Response:** Superior heat transfer characteristics, fast response, and consistent repeatability are achieved through the use of a high-torque, low mass bimetal sensing element. Materials and design combine to convert the sensor's movement quickly and accurately into a dial reading. Ambient temperature changes at the case will not affect accuracy.

### Models 3BCP • 5BCP • 3AP • 5AP Series Specifications

<b>All Angle:</b>	Models 3AP and 5AP - All Angle Connected Case
<b>Fixed Back Connected:</b>	Models 3BCP and 5BCP - Fixed Center Back Connected Case
<b>Case:</b>	Polished-Type 304 Stainless Steel case and bezel in 3" (76 mm) or 5" (127 mm) Size. Cases are hermetically sealed.
<b>Element:</b>	Single helix bimetallic coil sensing element located in bottom 2-1/2 inches of thermometer stem.
<b>Dial Face:</b>	Black graduations and numerals on outer °F scale, red graduations and numerals on °C inner scale; on white background. Anti-parallax dial design linear scale with high-visibility tapered-tip black pointer.
<b>Lens:</b>	Instrument quality glass, Standard.
<b>Fitting:</b>	304 Stainless Steel 7/8" hex with 1/2" NPT Threads.
<b>Stem:</b>	Polished-Type 304 Stainless Steel. All Welded.
<b>Stem Lengths:</b>	Standard Lengths from 2.5 inches (63.5 mm) to 12 inches (305 mm).
<b>Recalibration:</b>	External recalibration mechanism by hex nut located on back of case.
<b>Accuracy:</b>	ASME B-40.3 Grade A, ± 1% of Full Scale. Ambient temperature changes at the case will not affect accuracy.



*5AP Adjustable Angle All Pro  
Bimetal Thermometer*



*5AP All Pro Adjustable  
Angle All Pro Bimetal  
Thermometer offers  
flexibility for  
easy reading*

### Applications

- Chemical and Petrochemical
- Compressor Controls
- Deep Water Drilling
- Hazardous Environments
- Offshore Rigs
- Process Engineering
- Pulp and Paper Industry
- Pneumatics
- Pump Protection
- Shipping
- Water Treatment Systems



*Specifications subject to change without notice.*

March  
2021

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**Palmer / Wahl**  
BEYOND THE SCALE



## All Pro Bimetals Models 3BCP • 5BCP • 3AP • 5AP Ordering Guide

### MODELS 3BCP • 5BCP • 3AP • 5AP Series All Pro Bimetal Thermometers

#### Step 1 - Select: Bimetal Size and Case Style

Code	Bimetal Size and Case Style
<b>3BCP</b>	3" Fixed Center Back Connected All Pro Bimetal Thermometer
<b>5BCP</b>	5" Fixed Center Back Connected All Pro Bimetal Thermometer
<b>3AP</b>	3" All Angle Connected All Pro Bimetal Thermometer
<b>5AP</b>	5" All Angle Connected All Pro Bimetal Thermometer

#### Step 2 - Select: Stem Length

Code	Length
<b>2.5</b>	2.5 inches (63.5 mm)
<b>4</b>	4 inches (102 mm)
<b>6</b>	6 inches (152 mm)
<b>9</b>	9 inches (229 mm)
<b>12</b>	12 inches (305 mm)

#### Step 3 - Select: Temperature Range

Single Range Scale			Dual Range Scales		
Code	°F Range	° Div	Code	°F/ °C Range	° Div
<b>0/200F</b>	0° to 200°	2°	<b>-40/160F&amp;C</b>	-40° to 160° / -40° to 71°	2°F/1°C
<b>0/250F</b>	0° to 250°	2°	<b>25/125F&amp;C</b>	25° to 125° / -5° to 50° <sup>1</sup>	1°F/1/2°C
<b>50/300F</b>	50° to 300°	2°	<b>0/250F&amp;C</b>	0° to 250° / -20° to 120°	2°F/1°C
<b>50/400F</b>	50° to 400°	5°	<b>50/300F&amp;C</b>	50° to 300° / 10° to 150°	2°F/1°C
<b>50/500F</b>	50° to 500°	5°	<b>50/500F&amp;C</b>	50° to 500° / 10° to 260°	5°F/2°C

For ranges not shown here, please see our All Star Bimetal Thermometers

All Pro Bimetal	Stem Length	Temperature Range
Insert Codes in boxes above to build part number		

**Model # Example:**  
**3BCP120/200F:** 3 inch All Pro Bimetal Thermometer, Fixed Center Back Connected Case, 12 inch Stem Length, 0° to 200°F Fahrenheit Temperature Range.



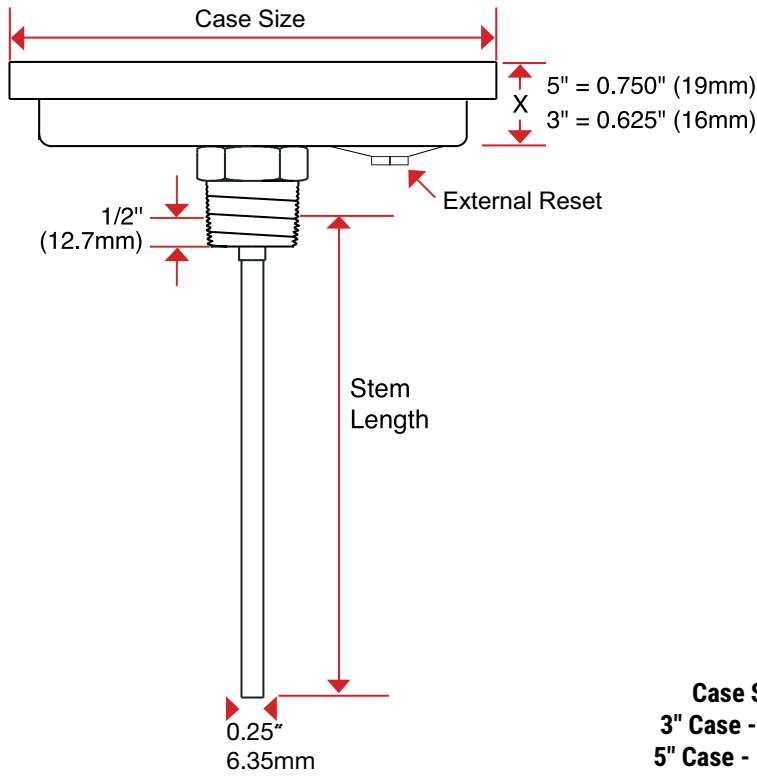
No Options are available for All Pro Bimetals.

**We build to order: if your process requires an option not shown here please call Customer Service.**

*Specifications subject to change without notice.*

**Fixed Center Back Connected All Pro Bimetal**

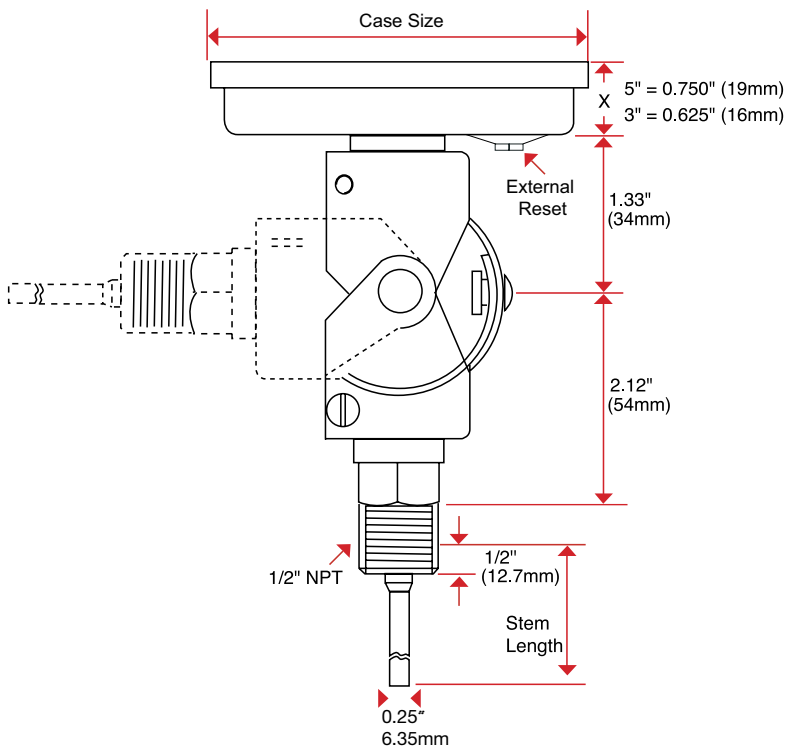
3" Dial - Model 3BCP, 5" Dial - Model 5BCP



**Case Size:**  
**3" Case - 76 mm**  
**5" Case - 127 mm**

**All Angle Connected All Pro Bimetal**

3" Dial - Model 3AP, 5" Dial - Model 5AP



To measure stem length measure from 1/2" up on threads of fitting to tip of stem.

Specifications subject to change without notice.

March 2021

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ONE YEAR  
**1**  
 WARRANTY

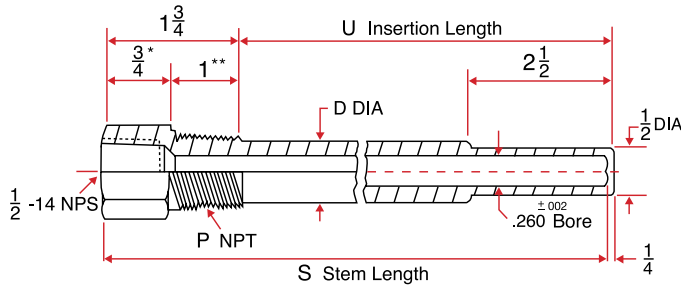


**ISO 9001:2015**  
 CERTIFIED QUALITY  
 MANAGEMENT SYSTEM



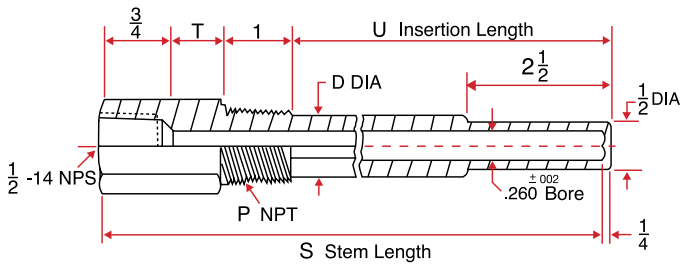
# Thermowells for use with Bimetal Thermometers

## Thermowell Series 112: 260" Diameter Bore, 1/2"-14 NPS Internal Thread

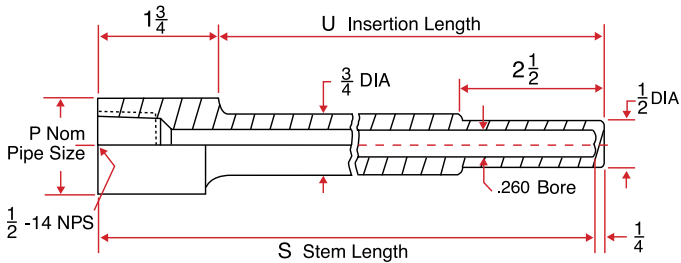


Threaded Regular: Series 1120				
"S" Stem Length	"U" Insertion Length	"P" NPT External Thread Size		
		1/2" - 14	3/4" - 14	1" - 11-1/2
2-1/2"	1-5/8"	1120-102 <sup>1</sup>	1120-202 <sup>1</sup>	1120-302 <sup>1</sup>
4"	2-1/2"	1120-104	1120-204	1120-304
6"	4-1/2"	1120-106	1120-206	1120-306
9"	7-1/2"	1120-109	1120-209	1120-309
12"	10-1/2"	1120-112	1120-212	1120-312 <sup>2</sup>
15"	13-1/2"	1120-115	1120-215	1120-315 <sup>2</sup>
18"	16-1/2"	1120-118	1120-218	1120-318 <sup>2</sup>
<b>Diameter</b>		5/8"	3/4"	3/4"

<sup>1</sup> 1" on the 1/2"-14 NPT External Thread    <sup>2</sup> 3/4" on the 1/2"-14 NPT External Thread



Threaded Regular - Lagging Extension: Series 1121					
"S" Stem Length	"U" Insertion Length	"T" Lagging Extension	"P" NPT External Thread Size		
			1/2" - 14	3/4" - 14	1" - 11-1/2
6"	2-1/2"	2"	1121-106	1121-206	1121-306
9"	4-1/2"	3"	1121-109	1121-209	1121-309
12"	7-1/2"	3"	1121-112	1121-212	1121-312 <sup>2</sup>
15"	10-1/2"	3"	1121-115	1121-215	1121-315 <sup>2</sup>
18"	13-1/2"	3"	1121-118	1121-218	1121-318 <sup>2</sup>
<b>Diameter</b>			5/8"	5/8"	5/8"



Weld-In: Series 1126			
"S" Stem Length	"U" Insertion Length	"P" Nominal Pipe Size	
		3/4" - 1.050	1" - 1.315
4"	2-1/2"	1126-204	1126-304
6"	4-1/2"	1126-206	1126-306
9"	7-1/2"	1126-209	1126-309
12"	10-1/2"	1126-212	1126-312 <sup>2</sup>
15"	13-1/2"	1126-215	1126-315 <sup>2</sup>
18"	16-1/2"	1126-218	1126-318 <sup>2</sup>
<b>Diameter</b>		3/4"	3/4"

<sup>1</sup> Contact factory for prints on these series

<sup>2</sup> Contact factory for Built-up models

**We build to order:  
if your require an option not  
shown here please call  
Customer Service.**

### How to Build a Thermowell Part Number:

Well Series	NPT / NPS and Stem Length	Material
Designates Bore Diameter, Internal Thread and Well Type	Determines External Thread and Stem Length	Determines Material such as Brass or 304SS
Insert Codes in boxes above to build part number		

**Model Number Example:**  
**1120-109-01:** 1120 Series, Regular Thermowell,  
 1/2"-14 NPT and 9" Stem, Brass

Thermowells Material Codes			
Code	Material	Code	Material
01*	Brass* †	07	Monel R-405
02*	Carbon Steel C-1018*	08	Hastelloy C
03*	304SS*	09	Hastelloy B
04	304LSS*	10	Titanium (Special Order)
05*	316SS*	11	Tantalum Sheath** (Special Order)
06	316LSS*		

\* Standard materials in stock. All other materials available upon request.

\*\* All wells with sheaths are continuous outside diameters, regardless of any steps shown on illustrations.

† Not available in Built-up wells.

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