

# 0.039" Centers

Standard Spring Probes

Board Test Fixture Probes & Receptacles



# Board Test Spring Probes

Smiths Interconnect offers a wide range of spring contact probes to meet your testing requirements and has long been recognized as the world's largest probe manufacturer. With over 60 different probe series that includes our standard Board Test Fixture Probes as well as our Specialty Test Probes, we provide a full portfolio designed for general purpose test on bare boards, loaded printed circuit boards, surface mount assemblies and other forms of test.



## MICRO SERIES PROBES

The Micro probe series range in pitch from 0.20" (0.51 mm) to 0.030" (0.76 mm) pitch and are typically between half an inch to an inch in length.

## ROTATOR PROBES

Ideal for non-clean and lead-free applications, this aggressive probe rotates 90° at the rated travel, virtually drilling through contaminants with a low spring force.

## STANDARD PROBES

Our standard probes range in pitch from 0.039" (1.00 mm) to 0.187" (4.75 mm). Within most series, there are multiple length and travel options, including more aggressive probes dimensionally equivalent to the standard probes.

## HIGH CURRENT PROBES

We offer two different high current probe designs in four different pitches. The SH series features a bias ball, which is the most aggressive biasing technique to aid in assuring a low and consistent resistance, cycle after cycle. The SHE Series features a bias spring, an effective biasing technique for many applications.

## DOUBLE-ENDED PROBES & RECEPTACLES

Double-ended probes feature both a top-side and bottom-side compliant plunger. Double-ended receptacles are available with a permanent bottom-side plunger and a replaceable probe on the top side. They are also available with both a top and bottom-side replaceable probe.

## SWITCH PROBES

A Switch Probe is a spring contact probe and receptacle that has two individual current paths. One current path is closed, the other is open and after a designated travel the second current path closes.

## LEAD FREE PROBES

The Lead Free probe series is based on our ICT Probe Series. The plunger material, plating and tip geometry have been optimized to provide less wear and contamination build-up while using a moderate spring force of 7 to 8 ounces.

## THERMOCOUPLE PROBES

The Thermocouple Probe is an ungrounded, thermally conductive probe used for the measurement of variations in temperature. We offer two Thermocouple Probes: Type T for up to 220°F, and Type K for up to 350°F.

## ICT PROBES

The ICT probe design features a bifurcated barrel with four separate fingers. The barrel is compliant and formed against the plunger, thus eliminating any gap between the plunger and barrel. ICT probes are more accurate and stable in resistance than standard designs.

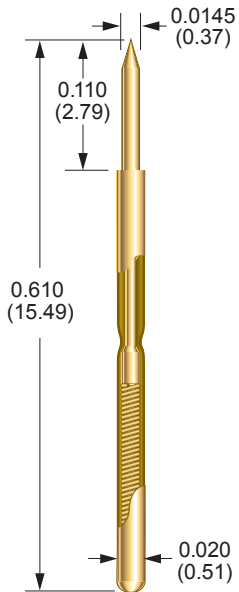
## COAXIAL PROBES

Our Coax Probes provide a low noise, controlled impedance signal path with reliable, easy connect/disconnect options. Our designs include a spring-loaded signal probe and a spring-loaded shielding plunger for the ground.

# SS-30 Series

## 0.039 (1.00) Centers

For RSS-30 Series Receptacles see pg. 6



### BeCu Tips Diameter

Tip Style	Tip Angle	Diameter
B	30°	0.0145 (0.37)
J		0.0145 (0.37)
U	60°	0.0145 (0.37)
UT		0.011 (0.28) / 0.145 (0.37)

### Probe Specifications

Minimum Centers	0.039 (1.00)
Current Rating	Up to 3 Amps
Spring Force	1.30 oz (37 g) or 1.60 oz (45 g) @ 0.067 (1.70) travel
Preload Force	0.50 oz (14 g)
Typical Resistance	< 40 mΩ
Maximum Travel	0.100 (2.54)
Working Travel	0.067 (1.70)

### Materials

Barrel	Nickel/silver, preplated gold
Spring	Stainless steel or music wire, gold plated
Plunger	Beryllium copper, gold plated over nickel, or Duralloy™

### How to Order

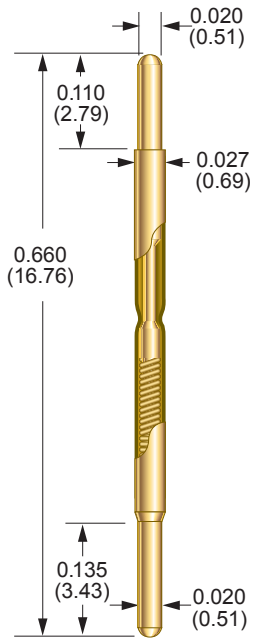
SS - 30 - B - 1.3 - G  
1 2 3 4 5

1 Series	SS
2 Size	30
3 Tip Style	B, J, U, UT
4 Spring Force	1.3 oz 1.6 oz
5 Plunger Plating	G Gold D Duralloy™

# S-00 Series

## 0.039 (1.00) Centers

For R-00 Series Receptacles see pg. 7



### BeCu Tips Diameter

Tip Style	Diameter
30° B	0.020 (0.51)
C	0.020 (0.51)
90° G	0.020 (0.51)
J	0.020 (0.51)
60° U	0.020 (0.51)

### Probe Specifications

Minimum Centers	0.039 (1.00)
Current Rating	Up to 3 Amps
Spring Force	1.30 oz (37 g) or 1.60 oz (45 g) @ 0.050 (1.27) travel
Preload Force	0.60 oz (17 g) (1.30 oz spring/BeCu) 0.70 oz (20 g) (1.60 oz spring/stainless steel)
Typical Resistance	< 55 mΩ
Maximum Travel	0.090 (2.29)
Working Travel	0.050 (1.27)

### Materials

Barrel	Nickel/silver, preplated gold
Spring	Beryllium copper or stainless steel, gold plated
Plunger	Beryllium copper, gold plated over nickel, or Duralloy™

### How to Order

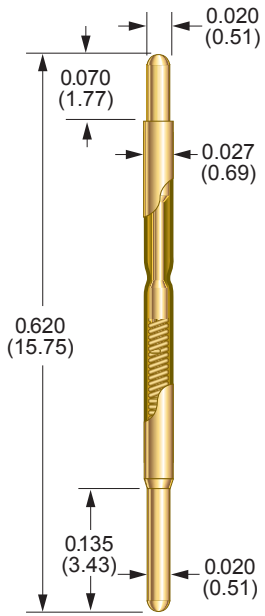
S - 00 - J - 1.3 - G  
1 2 3 4 5

1 Series	S
2 Size	00
3 Tip Style	B, C, G, J, U
4 Spring Force	1.3 oz 1.6 oz
5 Plunger Plating	G Gold D Duralloy™

# SS-40 Series

## 0.039 (1.00) Centers

For R-00 Series Receptacles see pg. 7



### BeCu Tips Diameter

Tip Style	Diameter
<b>B</b> 30°	0.020 (0.51)
<b>C</b>	0.020 (0.51)
<b>G</b> 90°	0.020 (0.51)
<b>J</b>	0.020 (0.51)
<b>U</b> 60°	0.020 (0.51)

### Probe Specifications

Minimum Centers	0.039 (1.00)
Current Rating	Up to 3 Amps
Spring Force	1.80 oz (51 g) or 2.40 oz (68 g) @ 0.050 (1.27) travel
Preload Force	1.10 oz (31 g) (1.80 oz spring/BeCu) 1.50 oz (43 g) (2.40 oz spring/stainless steel)
Typical Resistance	< 55 mΩ
Maximum Travel	0.050 (1.27)
Working Travel	0.050 (1.27)

### Materials

Barrel	Nickel/silver, preplated gold
Spring	Beryllium copper or stainless steel, gold plated
Plunger	Beryllium copper, gold plated over nickel, or Duralloy™

### How to Order

SS - 40 - J - 1.8 - G  
1 2 3 4 5

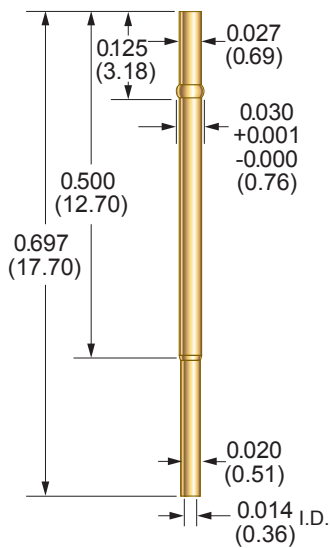
1 Series	SS
2 Size	40
3 Tip Style	B, C, G, J, U
4 Spring Force	1.8 oz 2.4 oz
5 Plunger Plating	G Gold D Duralloy™

# RSS-30 Series

## 0.039 (1.00) Centers

For SS-30 Series Probes see pg. 3

Part Number	Style/Termination	Receptacle Length	Probe/Receptacle Combined Length
R-SS-30-CR	Crimp	0.697 (17.70)	0.807 (20.50)
R-SS-30-SC	Solder Cup	0.697 (17.70)	0.807 (20.50)
R-SS-30-PW	Preattached Wire <sup>(1)</sup>	0.697 (17.70)	0.807 (20.50)



### Probe Specifications

Minimum Centers	0.039 (1.00)
Drill Size	0.75 mm
Mounting Hole Size	0.028/0.0295 (0.71/0.75)
Recommended Wire	30 gage
Materials	Nickel/silver, preplated gold

### Tools

Crimping Pliers	CP-SS-30 (for 30 gage solid conductor)
Insertion Tool	RT-SS-30 (for flush mount)

### How to Order

R - S S - 3 0 - C R  
 1                      2                      3

1 Series	R - S S
2 Size	3 0
3 Termination	C R Crimp                      S C Solder Cup
	P W - 1 2 - 1 Preattached wire 12", 1" strip length <sup>(1)</sup>
	P W - 3 6 - 1 Preattached wire 36", 1" strip length <sup>(1)</sup>

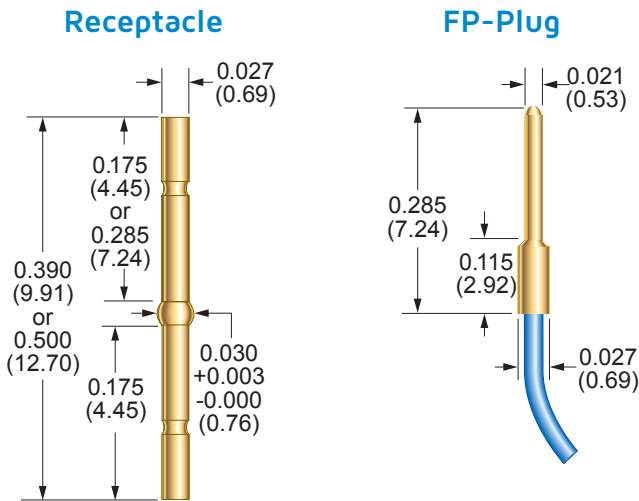
1. Wire length 36" with a 1" strip length, 12" & 36" standard, blue solid conductor Kynar wire  
 Dimensions are in inches (mm) | All specifications are subject to change

# R-00 Series

## 0.039 (1.00) Centers

For S-00 Series Probes see pg. 4 For SS-40 Series Probes see pg. 5

Part Number	Style/Termination	Receptacle or Terminal Length	Probe/Receptacle Combined Length		Probe/Receptacle Combined Length	
			S-00	SS-40	S-00	SS-40
<b>R-00-W-390</b>	Receptacle	0.390 (9.91)	0.915 (23.24)	0.875 (22.23)	1.030 (26.16)	0.990 (25.15)
<b>R-00-W-500</b>	Receptacle	0.500 (12.70)	1.025 (26.04)	0.985 (25.02)	1.140 (28.96)	1.100 (27.94)
<b>FP-Plug</b>	Plug-In Terminal <sup>(1)</sup>	0.285 (7.24)	—	—	—	—



### Probe Specifications

Minimum Centers	0.039 (1.00)
Drill Size	0.75 mm
Mounting Hole Size	0.028/0.0295 (0.71/0.75)
Recommended Wire	30 gage
Receptacle Materials	Nickel/silver, gold plated
Plug-In Terminal Materials	Beryllium copper, preplated gold

### Tools

Crimping Pliers	CP-00-390 (for 30 gage solid conductor) CP-00-500 (for 30 gage solid conductor)
Insertion Tool	RT-00

### How to Order: Receptacle

**R - 00 - W - 390**  
 1 2 3 4

1 Series	R
2 Size	00
3 Termination	W Receptacle
4 Length	390 0.390 in. 500 0.500 in.

### How to Order: Terminal

**FP - PLUG - 36 - 1**  
 1 2

1 Series	FP - PLUG
2 Wire <sup>(1)(2)</sup>	00 - 0 No wire
	12 - 1 Wire length 12", 1" strip length
	36 - 1 Wire length 36", 1" strip length

1. Wire length 36" with a 1" strip length, 12" & 36" standard, blue solid conductor Kynar wire 2. To order without preattached wire, wire length and strip length from end of the part number. Dimensions are in inches (mm) | All specifications are subject to change

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