smiths connectors

SPRING PROBES

Loose Probe & Connector Solutions

HYPERTAC IDI INTERCONNECT DEVICES SABRITEC

SPRING PROBE TECHNOLOGY

Smiths Connectors is the world leader in spring contact probe design and the industry's expert in applying spring probes as connector contacts. Embodied in our connector products, probes are an enabling technology that fundamentally changes the capabilities of the products in which they are incorporated.

FEATURES

LOW PROFILE, HIGH COMPLIANCE RATIO

Spring probe technology permits a very high compliance-to-length ratio. This allows Smiths Connectors to design connectors as dense as 2mm, while maintaining 0.5mm of compliance. Spring probe connectors are low profile designs which are forgiving of challenging mating conditions and vibration environments.

HIGH FREQUENCY

A short signal path, combined with design and signal integrity expertise, ensures remarkable connector solutions for both analog and digital applications.

LOW STABLE RESISTANCE

Smiths Connectors' spring probes feature several innovations for control of DC performance. Advanced biasing techniques provide excellent stability of contact resistance, even under conditions of heavy shock and vibration. Our connectors can be designed to withstand up to 30 Amps of current.

HIGHER CURRENT RATINGS

The design parameters of the contact (e.g., the number, diameter and angle of the wires) may be modified for any requirement. The number of wires can be increased so the contact area is distributed over a larger surface. Thus, the high current carried by each wire because of its intimate line contact, can be multiplied many times.

HIGH INSERTION LIFE

Spring contact probes are capable of remarkable longevity from 20K to 300K cycles based on design. Our probes are drvien by helical coil springs, which maintain a constant force of contact over millions of cycles. Our extensive plating and materials knowledge combined with engineering expertise, delivers contacts that exceed the highest customer specifications for insertion life.

BENEFITS

EXCELLENT FOR BLIND MATE

Spring probe connectors are compliant on the surface of their mating half, rather than extending into it as with conventional pin and socket connectors, allowing unique blind-mate capabilities. Designed to engage and disengage at a 90° angle to its target and wiping into position to clear contaminants, probe technology is an ideal approach to quick-disconnect applications.

EXCEPTIONAL MISALIGNMENT TOLERANCE

Spring probes require a flat pad for their target; providing contact if the probe's tip touches any point within the target's diameter. This ensures their forgiveness of any X, Y, Z, angular and rotational misalignment.

ENVIRONMENTALLY SEALED

Smiths Connectors' application expertise and the durable nature of spring probes allows for connectors which are designed for high performance in the harshest conditions. IP68 and MIL810 requirements can be accommodated without sacrificing performance.

SHOCK & VIBRATION

Spring contact probes provide a constant force against the mating contact surface, ensuring uninterrupted contact and easily absorbing and compensating for movement seen during shock and vibration.

SPRING PROBE CONNECTORS

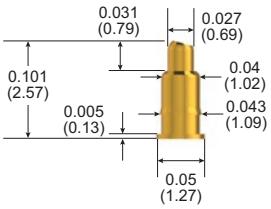
Spring contact probes provide repeatable contact in the field for modular components, reduce costs and eliminate cable connections by providing a dependable direct connection in rotating or sliding joints.

TABLE OF CONTENTS

STANDARD CONNECTOR PROBES

Dimensions & Specifications

101582 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.07 (1.78) 0.05 (1.27)) staggered rows
Current Rating	20 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	48 g @ 0.03 (0.76) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.03 (0.76)
Working Travel	0.03 (0.76)

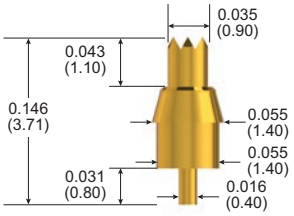
MATERIALS

Barrel	Brass, gold plated
Spring	Stainless steel
Plungers	Beryllium copper, gold plated

HOW TO ORDER

Part Number	101582-000

101438 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.08 (2.03)
Current Rating	1 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	99 g @ 0.02 (0.51) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.039 (0.99)
Working Travel	0.02 (0.51)

MATERIALS

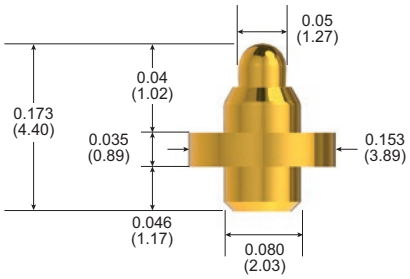
Barrel	Brass, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	101438-000

Dimensions are in inches (mm).

100671 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.175 (4.45)
Current Rating	3 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	145 g @ 0.027 (0.69) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.04 (1.02)*
Working Travel	0.027 (0.69)

MATERIALS

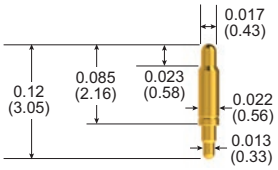
Barrel	Nickel/silver, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	100671-000

**Not recommended for use at maximum travel*

101111 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.029 (0.75)
Current Rating	6 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	43 g @ 0.022 (0.55) travel
Typical Resistance	< 50 mΩ
Maximum Travel	0.025 (0.58)
Working Travel	0.022 (0.55)

MATERIALS

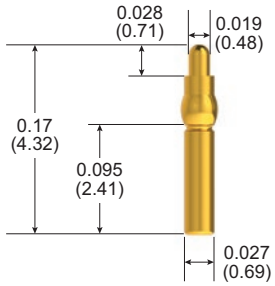
Barrel	Phosphor bronze, gold plated
Spring	Music wire, gold plated
Plunger	Phosphor bronze, gold plated

HOW TO ORDER

Part Number	101111-000

Dimensions are in inches (mm)

101506 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.05 (1.27)
Current Rating	5 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	39 g @ 0.02 (0.51) travel
Typical Resistance	< 20 mΩ
Maximum Travel	0.028 (0.71)
Working Travel	0.02 (0.51)

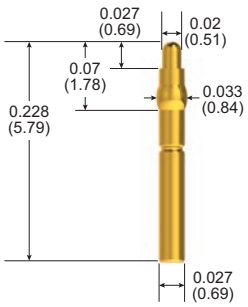
MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	101506-000

101294 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.05 (1.27)
Current Rating	5 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	26 g @ 0.02 (0.51) travel
Typical Resistance	< 20 mΩ
Maximum Travel	0.027 (0.69)
Working Travel	0.02 (0.51)

MATERIALS

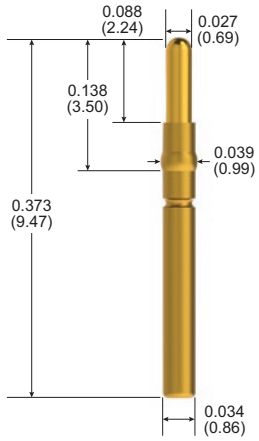
Barrel	Nickel/silver, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	101294-000

Dimensions are in inches (mm).

100803 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.05 (1.27)
Current Rating	5 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	34 g @ 0.05 (1.27) travel
Typical Resistance	< 50 mΩ
Maximum Travel	0.06 (1.52)
Working Travel	0.05 (1.27)

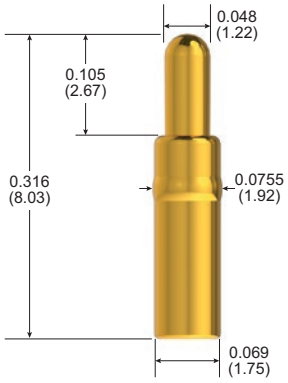
MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	100803-011

101190 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.10 (2.54)
Current Rating	15 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	74 g @ 0.067 (1.70) travel
Typical Resistance	< 6 mΩ
Maximum Travel	0.10 (2.54)
Working Travel	0.067 (1.70)

MATERIALS

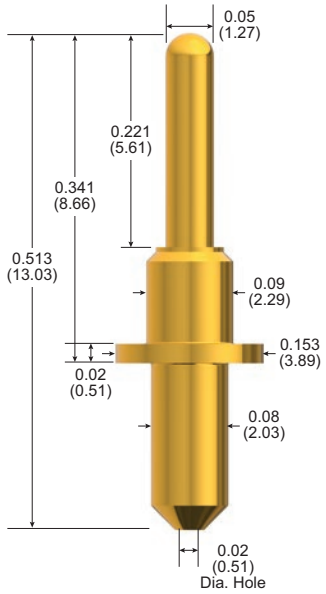
Barrel	Nickel/silver, gold plated
Spring	Stainless steel
Plungers	Beryllium copper, gold plated

HOW TO ORDER

Part Number	101190-002

Dimensions are in inches (mm)

100606 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.175 (4.45)
Current Rating	15 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	176 g @ 0.06 (1.52) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.09 (2.29)
Working Travel	0.06 (1.52)

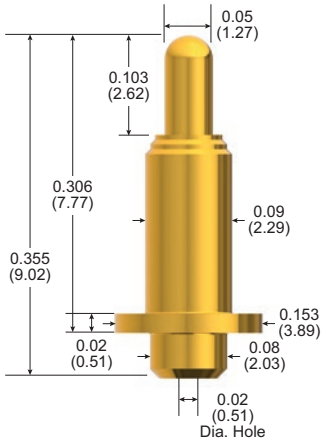
MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, passivated
Plunger	Beryllium copper, gold plated
Bias Ball	Stainless steel

HOW TO ORDER

Part Number	100606-000

100891 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.175 (4.45)
Current Rating	15 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	256 g @ 0.067 (1.70) travel
Typical Resistance	< 5 mΩ
Maximum Travel	0.10 (2.54)
Working Travel	0.067 (1.70)

MATERIALS

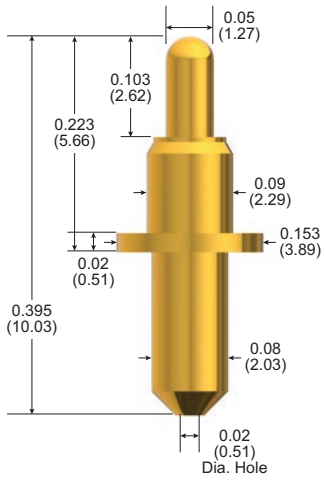
Barrel	Nickel/silver, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	100891-002

Dimensions are in inches (mm).

100410 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.175 (4.45)
Current Rating	15 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	176 g @ 0.06 (1.52) travel
Typical Resistance	< 5 mΩ
Maximum Travel	0.09 (2.29)
Working Travel	0.06 (1.52)

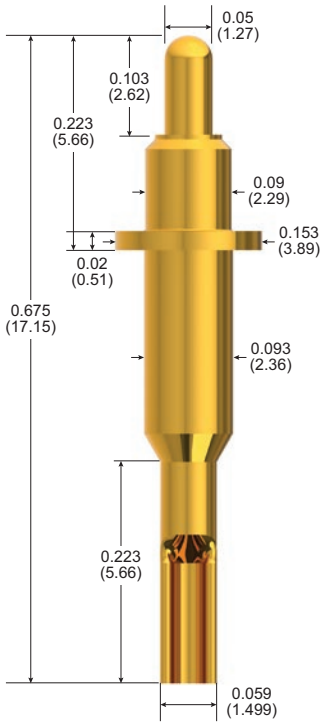
MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel
Plunger	Beryllium copper, gold plated
Bias Ball	Stainless steel

HOW TO ORDER

Part Number	100410-005

101190 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.175 (4.45)
Current Rating	15 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	176 g @ 0.06 (1.52) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.09 (2.29)
Working Travel	0.06 (1.52)

MATERIALS

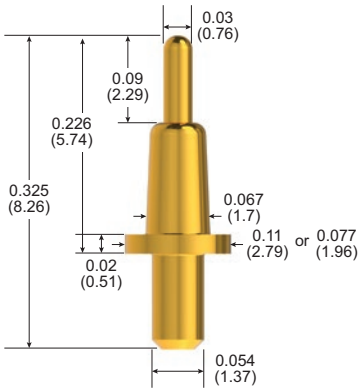
Barrel	Nickel/silver, gold plated
Spring	Stainless steel
Plunger	Beryllium copper, gold plated
Bias Ball	Stainless steed
Receptacle	Nickel/silver, gold plated

HOW TO ORDER

Part Number	101119-001

Dimensions are in inches (mm)

101050 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.125 (3.18)
Current Rating	10 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	65 g @ 0.06 (1.52) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.09 (2.29)
Working Travel	0.06 (1.52)

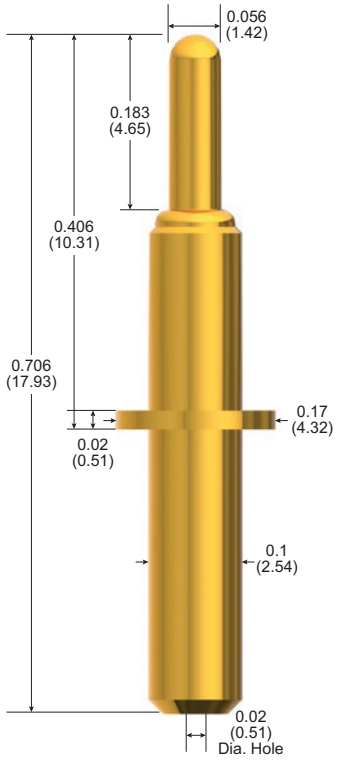
MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, passivated
Plunger	Beryllium copper, gold plated
Ball	Stainless steel, gold plated

HOW TO ORDER

Part Number	101050-003 (0.11 dia. flange) 101050-005 (0.077 dia. flange)

101247 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.20 (5.08)
Current Rating	20 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	256 g @ 0.147 (3.73) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.180 (4.57)
Working Travel	0.147 (3.73)

MATERIALS

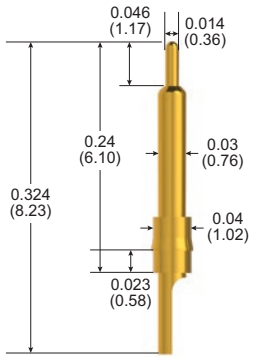
Barrel	Brass, gold plated
Spring	Stainless steel, passivated
Plunger	Beryllium copper, gold plated

HOW TO ORDER

Part Number	101247-001

Dimensions are in inches (mm).

101679 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.055 (1.40)
Current Rating	3 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	37 g @ 0.023 (0.58) travel
Typical Resistance	< 25 mΩ
Maximum Travel	0.023 (0.58)
Working Travel	0.023 (0.58)

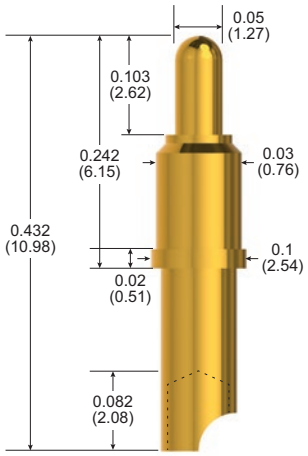
MATERIALS

Barrel	Brass, gold plated
Spring	Stainless steel
Plunger	Brass, gold plated

HOW TO ORDER

Part Number	101679-000

101628 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.125 (3.18)
Current Rating	25 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	150 g @ 0.04 (1.02) travel
Typical Resistance	< 5 mΩ
Maximum Travel	0.04 (1.02)
Working Travel	0.04 (1.02)

MATERIALS

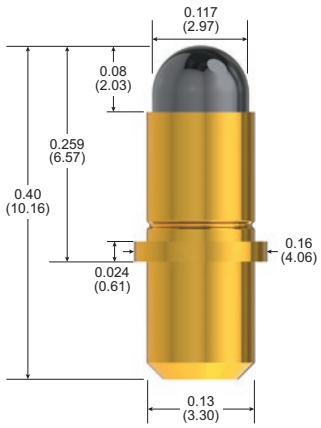
Barrel	Brass, gold plated
Spring	Music wire, nickel plated
Plunger	Beryllium copper, gold plated
Ball	Stainless steed

HOW TO ORDER

Part Number	101628-000

Dimensions are in inches (mm)

101402 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.175 (4.45)
Current Rating	20 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	275 g @ 0.05 (1.27) travel
Typical Resistance	< 10 mΩ
Maximum Travel	0.08 (2.03)
Working Travel	0.05 (1.27)

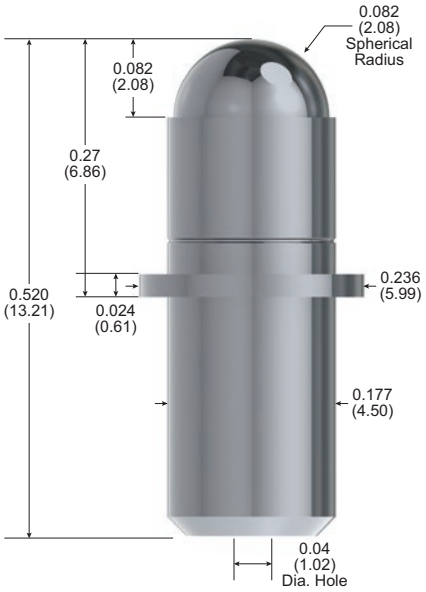
MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, passivated
Plunger	Brass, Duralloy™

HOW TO ORDER

Part Number	101402-000

100804 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.25 (6.35)
Current Rating	30 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	252 g @ 0.54 (1.37) travel
Typical Resistance	< 5 mΩ
Maximum Travel	0.082 (2.08)
Working Travel	0.054 (1.37)

MATERIALS

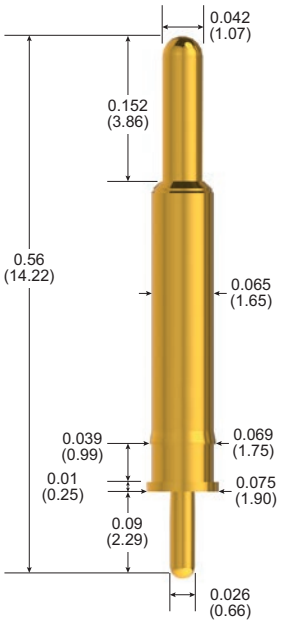
Barrel	Brass, Duralloy™ plated
Spring	Stainless steel, passivated
Plunger	Brass, Duralloy™ plated

HOW TO ORDER

Part Number	100804-002

Dimensions are in inches (mm).

101712 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.10 (2.54)
Current Rating	3 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	102 g @ 0.06 (1.52) travel
Typical Resistance	< 50 mΩ
Maximum Travel	0.12 (3.05)
Working Travel	0.06 (1.52)

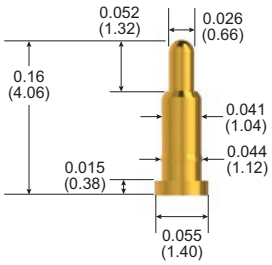
MATERIALS

Barrel	Brass, gold plated
Spring	Stainless steel
Plunger	Brass, gold plated

HOW TO ORDER

Part Number	101712-000

101530 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.07 (1.78)
Current Rating	1 A continuous *(individual probe in free air @ ambient temperature)*
Spring Force	70 g @ 1.00 (0.039) travel
Typical Resistance	< 50 mΩ
Maximum Travel	0.05 (1.27)
Working Travel	0.042 (1.07)

MATERIALS

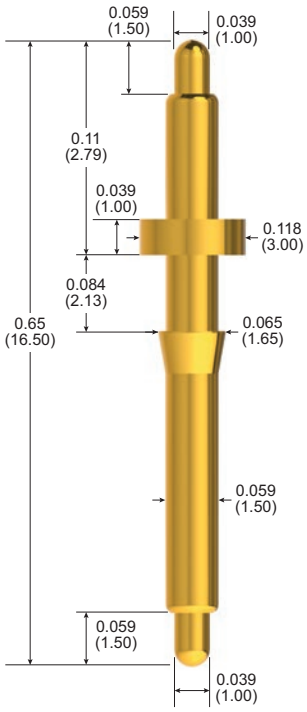
Barrel	Brass, gold plated
Spring	Stainless steel
Plunger	Full-hard beryllium copper, gold plated

HOW TO ORDER

Part Number	101530-000

Dimensions are in inches (mm)

101549 PROBE



PROBE SPECIFICATIONS

Minimum Centers	0.125 (3.18)
Current Rating	3 A continuous with 80°C rise *(individual probe in free air @ ambient temperature)*
Spring Force	100 g @ 0.039 (1.00) travel, each end
Typical Resistance	< 50 mΩ
Maximum Travel	0.059 (1.50), each end
Working Travel	0.039 (1.00), each end

MATERIALS

Barrel	Nickel/silver, gold plated
Spring	Stainless steel
Plunger	Full-hard beryllium copper, gold plated

HOW TO ORDER

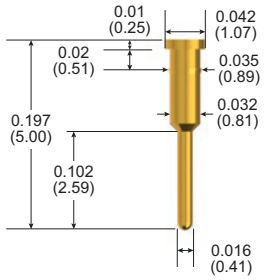
Part Number	101549-000

Dimensions are in inches (mm).

CONNECTOR TARGET CONTACTS

Dimensions & Specifications

PI-5328



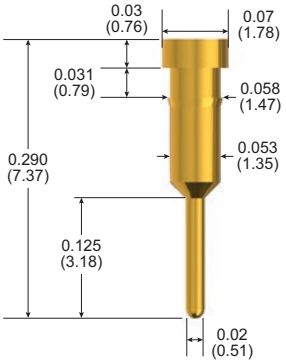
PIN SPECIFICATIONS

Mounting Hole	0.034 (0.86)
Pin Material	Brass
Plating Material	Gold over nickel

HOW TO ORDER

Part Number	305328-000

PI-5329



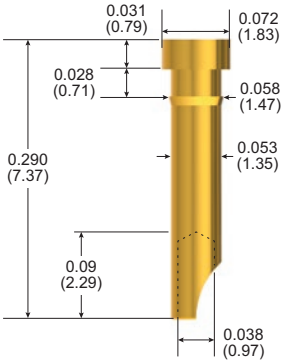
PIN SPECIFICATIONS

Mounting Hole	0.057 (1.45)
Pin Material	Brass
Plating Material	Gold over nickel

HOW TO ORDER

Part Number	305329-000

PI-5327



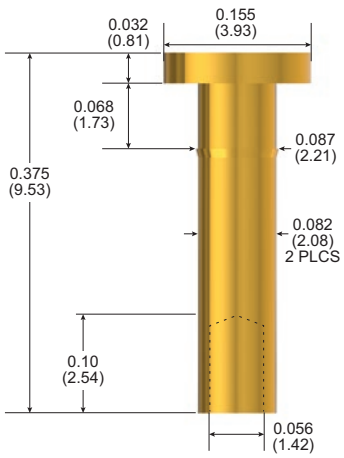
PIN SPECIFICATIONS

Mounting Hole	0.057 (1.45)
Pin Material	Brass
Plating Material	Gold over nickel

HOW TO ORDER

Part Number	305327-000

PI-5330



PIN SPECIFICATIONS

Mounting Hole	0.084 (2.15)
Pin Material	Brass
Plating Material	Gold over nickel

HOW TO ORDER

Part Number	305330-000

Dimensions are in inches (mm)

SMITHS CONNECTORS
GLOBAL SUPPORT

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