

# PogoPlus<sup>®</sup> High Performance Probe

Achieve Higher Test Productivity – Overnight!



*A variety of innovative tip styles  
give you the flexibility to  
match the PogoPlus®  
to your specific  
test application*

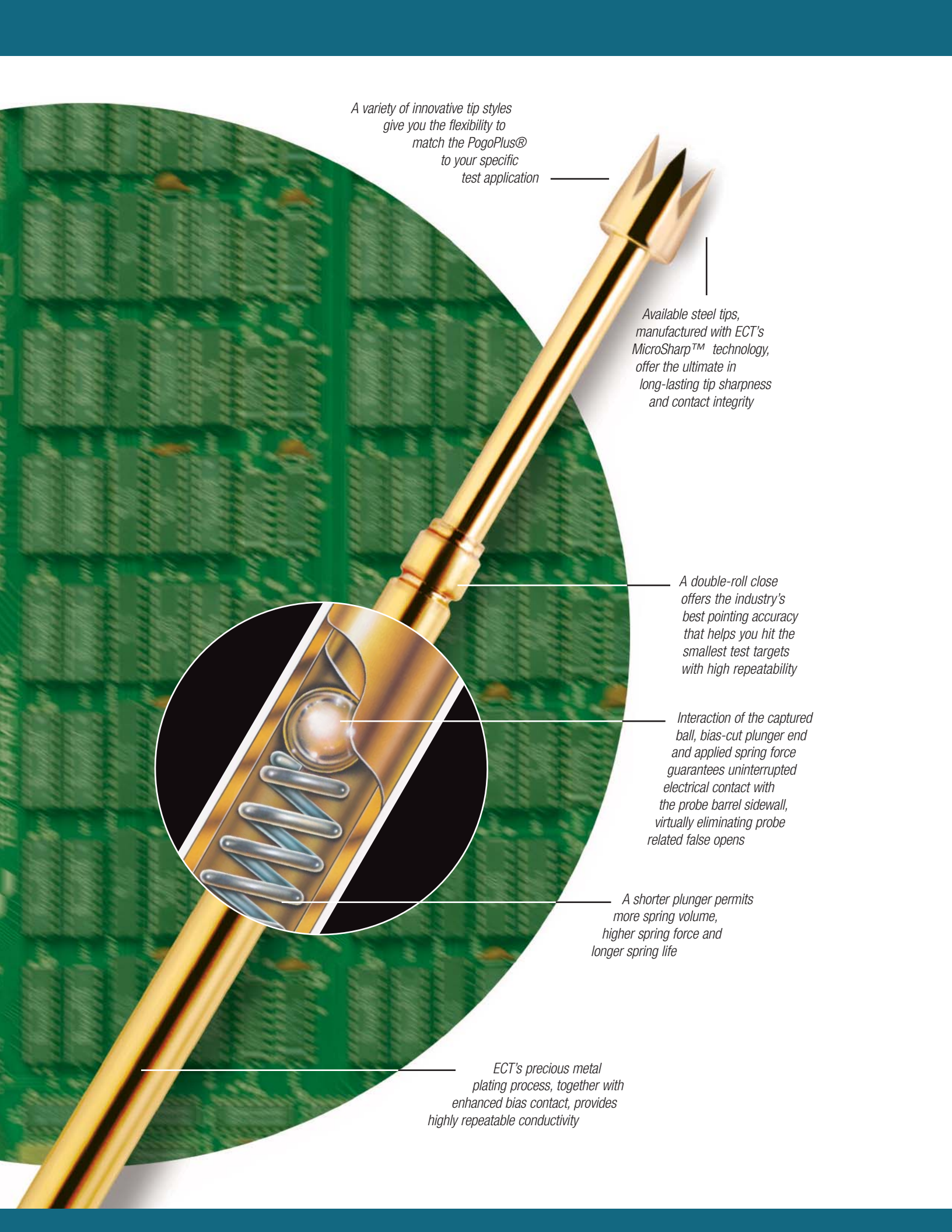
*Available steel tips,  
manufactured with ECT's  
MicroSharp™ technology,  
offer the ultimate in  
long-lasting tip sharpness  
and contact integrity*

*A double-roll close  
offers the industry's  
best pointing accuracy  
that helps you hit the  
smallest test targets  
with high repeatability*

*Interaction of the captured  
ball, bias-cut plunger end  
and applied spring force  
guarantees uninterrupted  
electrical contact with  
the probe barrel sidewall,  
virtually eliminating probe  
related false opens*

*A shorter plunger permits  
more spring volume,  
higher spring force and  
longer spring life*

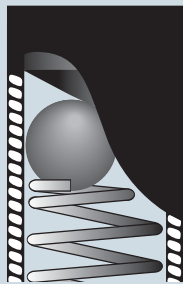
*ECT's precious metal  
plating process, together with  
enhanced bias contact, provides  
highly repeatable conductivity*



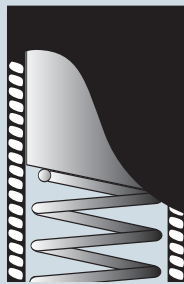
# How Much Better is the PogoPlus? Here's the Proof.



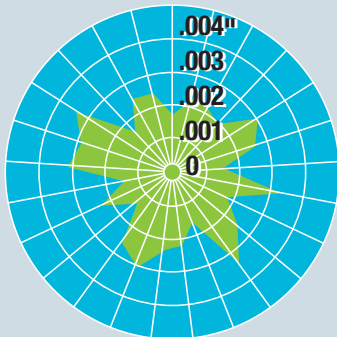
Conventional single-close probes (bottom) provide marginal pointing accuracy. The double-close design of the PogoPlus probe (top) constrains the plunger to a tighter range of vertical motion for more accurate pointing precision.



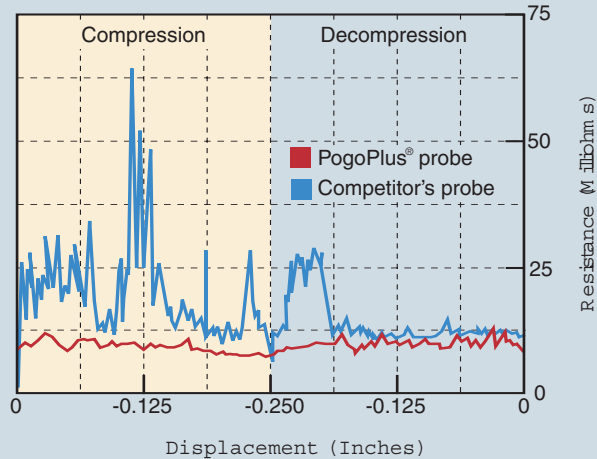
**PogoPlus Bias Design**  
The enhanced bias-ball design forces contact between plunger and barrel wall at all times, virtually eliminating probe-related false opens.



**Conventional Bias Design**  
Angle of spring coil end matches biased plunger end, compromising bias force and electrical contact.



**Tighter Pointing Tolerances**  
ECT Pogo<sup>®</sup> contacts deliver superior pointing accuracy demonstrated by test results measuring sideload TIR.



Resistance vs. displacement tests show the PogoPlus probe's more consistent resistivity performance resulting in significantly fewer probe false opens and tighter control of the test process.

## Objective

Measure the resistance of the PogoPlus and a standard high performance probe as they are compressed and decompressed. For reliable results, a probe should have a resistance of less than 10 milliohms (with a standard deviation of <5 milliohms) throughout the compression/decompression cycle.

## Method

Each probe is placed in a calibrated test station that dynamically measures resistance relative to probe displacement. Displacement resolution is 0.0001 inch. For each increment in displacement, resistance is simultaneously measured with a resolution of 1 milliohm.

## Results

Test results for the PogoPlus and a competitor's high performance probe are shown in the graph above.

## Discussion

As the displacement vs. resistance graph clearly shows, the bias design of the PogoPlus outperforms the competitor's probe by demonstrating more repeatable resistivity across its travel range. Because false opens occur when large changes in resistivity occur over short displacements, a steeper slope in the displacement/resistivity curve indicates a greater likelihood of a false reject.

For a more detailed discussion of the test method and results, please ask your ECT salesperson for a copy of the complete test report.



# HIGH - PERFORMANCE BIAS BALL PROBE

## POGO-25

**Test Centers**  
**.100" (2.54)**

### Specifications

**Mechanical**  
Full Travel: .250 (6.35)  
Recommended Working Travel: .167 (4.24)  
Mechanical Life Exceeds:  $1 \times 10^6$  cycles

**Operating Temperature** -55°C to +105°C  
Consult factory for other temperature requirements, and other applications below -40°C

**Electrical (Static Conditions)**  
Current Rating: 8 amps  
Maximum continuous current, non-inductive at working travel

**Probe Resistance** 8mΩ  
With a standard deviation of <1 mΩ @ 25 mA test current

### Materials and Finishes

Steel Plunger: Heat-treated tool steel, gold plated over hard nickel  
BeCu Plunger: Heat-treated beryllium copper, gold plated over hard nickel  
Barrel: Work hardened phosphor bronze, HPA-GOLD™ plated (I.D. and O.D.) over hard nickel  
Spring: Music wire  
Ball: Stainless steel

### Spring Force in oz. (grams)

	Order Code	Preload	2/3 travel
Light	-2	0.99 (20)	2.0 (57)
Standard	-4	1.46 (41)	4.0 (114)
Alternate	-6	3.39 (96)	6.0 (170)
High	-8	2.98 (84)	8.0 (227)
Ultra High	-10	2.60 (74)	10.0 (283)
Super	-16	4.49 (127)	16.0 (455)

### Receptacle Specifications

SPR-25W-2 ☑ (wire wrap, square post)



SPR-25W (Crimp termination)  
SPR-25W-1 (Solder cup termination)  
SPR-25W-2 (Wire wrap, square post)  
SPR-25W-3 (Connector pin/round post)

## POGO-1

**Test Centers**  
**.075" (1.91)**

### Specifications

**Mechanical**  
Full Travel: .250 (6.35)  
Recommended Working Travel: .167 (4.24)  
Mechanical Life Exceeds:  $1 \times 10^6$  cycles

**Operating Temperature** -55°C to +105°C  
Consult factory for other temperature requirements, and other applications below -40°C

**Electrical (Static Conditions)**  
Current Rating: 6 amps  
Maximum continuous current, non-inductive at working travel

**Probe Resistance** 10mΩ  
With a standard deviation of <3 mΩ @ 25 mA test current

### Materials and Finishes

Steel Plunger: Heat-treated tool steel, gold plated over hard nickel  
BeCu Plunger: Heat-treated beryllium copper, gold plated over hard nickel  
Barrel: Work hardened phosphor bronze, HPA-GOLD™ plated (I.D. and O.D.) over hard nickel  
Spring: Music wire  
Ball: Stainless steel

### Spring Force in oz. (grams)

	Order Code	Preload	2/3 travel
Light	-2	0.94 (27)	2.0 (57)
Standard	-4	0.33 (9)	4.0 (114)
Alternate	-6	2.88 (82)	6.0 (170)
High	-8	2.04 (58)	8.0 (227)
Ultra High	-10	3.65 (103)	10.0 (283)

### Receptacle Specifications

LTR-1W-2 ☑ (wire wrap, square post)



LTR-1W (Crimp termination)  
LTR-1W-1 (Solder cup termination)  
LTR-1W-2 (Wire wrap, square post)

## POGO-72

**Test Centers**  
**.050" (1.27)**

### Specifications

**Mechanical**  
Full Travel: .250 (6.35)  
Recommended Working Travel: .167 (4.24)  
Mechanical Life Exceeds:  $1 \times 10^6$  cycles

**Operating Temperature** -55°C to +105°C  
Consult factory for other temperature requirements, and other applications below -40°C

**Electrical (Static Conditions)**  
Current Rating: 3 amps ± .002  
Maximum continuous current, non-inductive at working travel

**Probe Resistance** 15mΩ  
With a standard deviation of <2 mΩ @ 25 mA test current

### Materials and Finishes

Steel Plunger: Heat-treated tool steel, gold plated over hard nickel  
BeCu Plunger: Heat-treated beryllium copper, gold plated over hard nickel  
Barrel: Work hardened beryllium copper, HPA-GOLD™ plated (I.D. and O.D.) over hard nickel  
Spring: Music wire  
Ball: Stainless steel

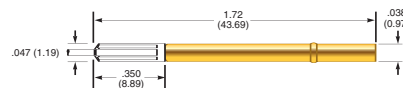
### Spring Force in oz. (grams)

	Order Code	Preload	2/3 travel
Light	-2	0.35 (10)	2.0 (57)
Standard	-4	1.05 (30)	4.0 (114)
Alternate	-6	2.63 (75)	6.0 (170)
High	-8	1.48 (42)	8.0 (227)
Ultra High	-10	3.32 (94)	10.0 (283)

### Receptacle Specifications

HPR-72W-4 ☑ (Fastite™ wire termination)

(Shown with DS-62-1 installed)



HPR-72W (Crimp termination)  
HPR-72W-1 (Solder cup termination)  
HPR-72W-4 (FASTITE® wire termination)  
HPR-72W-28 (Preterminated with 28 AWG wire)  
HPR-72W-30 (Preterminated with 30 AWG wire)

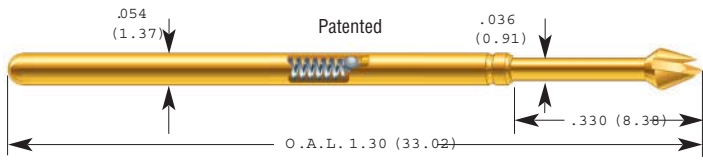
## HOW TO ORDER

1. For each probe, specify the probe model, spring force and tip material (if applicable) as shown in the example.

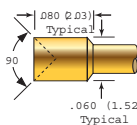
2. Place your order via phone or fax.  
Phone 909-625-9390 Fax 909-624-9746

Example: POGO-72J-2-S

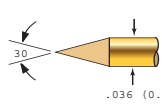
probe model	tip style	spring force	Optional steel plunger/ tip material
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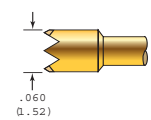
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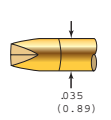
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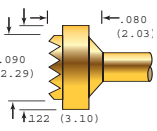
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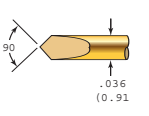
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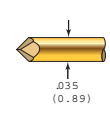
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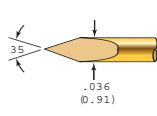
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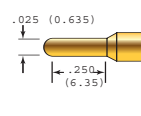
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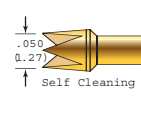
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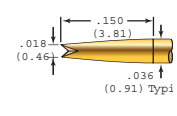
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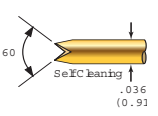
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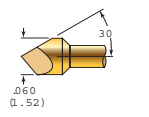
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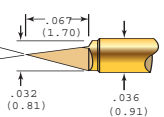
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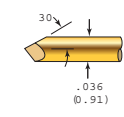
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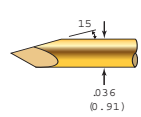
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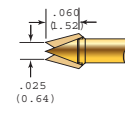
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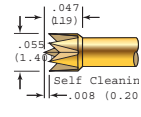
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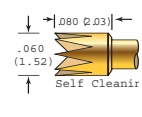
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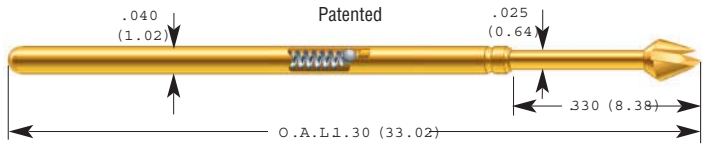
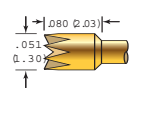
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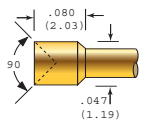
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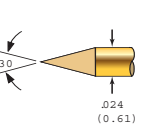
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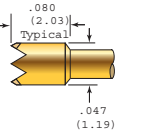
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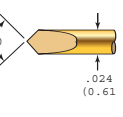
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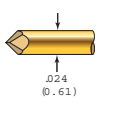
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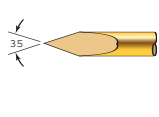
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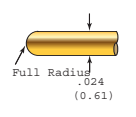
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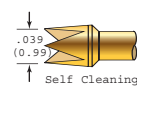
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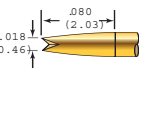
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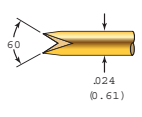
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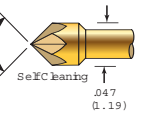
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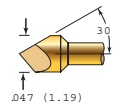
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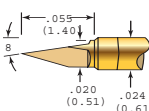
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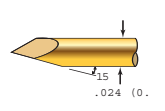
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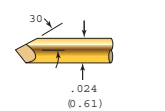
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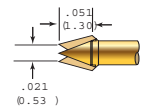
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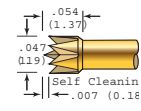
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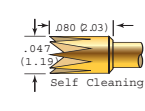
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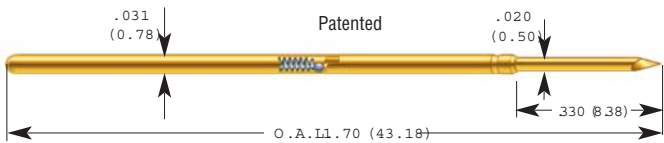
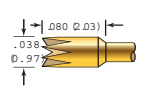
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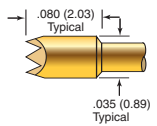
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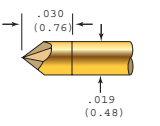
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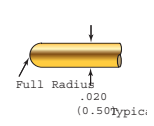
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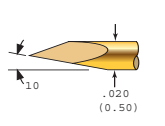
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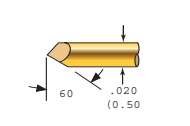
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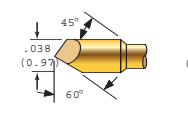
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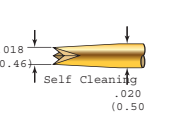
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**POGO-72T20-S**



**POGO-72T38**  
**POGO-72T38-S**



**POGO-72U**  
**POGO-72U-S**



**EVERETT CHARLES  
TECHNOLOGIES**

**World Headquarters**  
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Pomona, CA 91767  
Tel: 909-625-9390  
Fax: 909-624-9746

■ Beryllium copper plunger with gold plating ■ Steel plunger with gold plating (add -S to order number)  
**ADDITIONAL TIPS AVAILABLE — CONTACT FACTORY**

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# B M P — B O A R D M A R K E R P R O B E

## Application Examples:

- Bare Board Test
- Loaded Board Test
- Connector / Wire Harness
- Package Test

## Benefits:

- Hands Free Operation
- No Hazardous Consumables
- Durable
- > 50000 Cycles before Tip Replacement
- Easy to Fixture

## Features:

- Permanent Mark
- Controllable Mark Intensity
- Driven by Test Program
- MicroGrain Carbide Tip
- Replaceable Tip



## Requirements:

- 15 VDC Power Source
- .050" Diameter Flat area for Mark
- Component Clearance for Loaded Board Test

## BMP-1 BMP-2

### Board Marker Probe

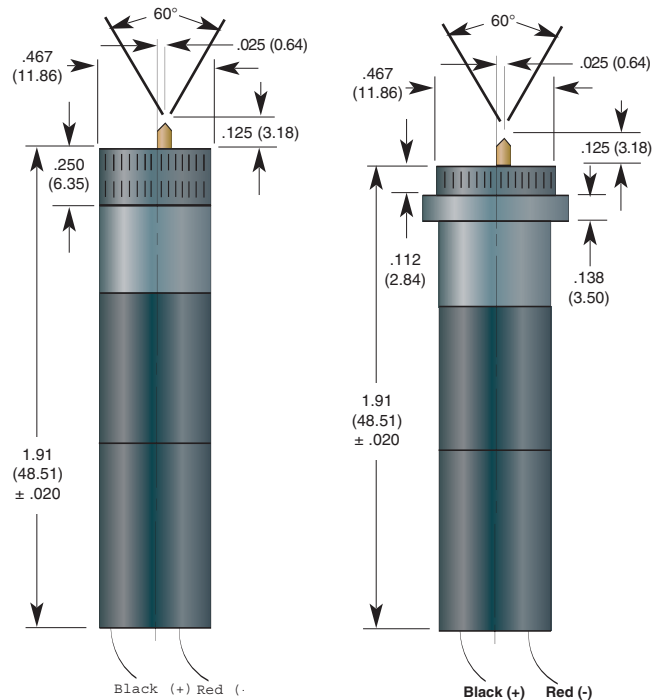
The BMP-1 Board Marker Probe patented design is for installation on bare board or loaded board test fixtures. When your tester is equipped with the appropriate electronics and software, the BMP-1 scribes a permanent .050" circle on every "passed" PCB tested. Boards that fail the test are not marked. The risk of human error is eliminated in PCB testing and sorting.

The unit requires less than .500" of fixture area. It is designed to mark board areas of bare glass (FR4), solder mask over glass or copper, or bare tinned copper.

The BMP-1 includes a mounting receptacle with press ring, and a motor/transmission assembly. It can be easily removed from the receptacle for use in other fixtures. Spare receptacles and tip replacement assemblies are available. The thread between receptacle and housing is 7/16-20 UNF.

### Probe Specifications

	BMP-1	BMP-2
<b>Mechanical</b>		
Full Marker Tip Travel:	.062 (1.57)	.062 (1.57)
Recommended Working Travel:	.050 (1.27)	.050 (1.27)
Direction of Rotation:	CCW	CCW
Scribed Diameter:	.050 (1.27)	.050 (1.27)
Special diameters available.		
<b>Electrical (Operating Conditions)</b>		
Current Rating:	50 mA	50 mA
Voltage Rating:	15VDC	15VDC
Recommended Duty Cycle:	1 sec. On (min.), 5 sec. Off	1 sec. On (min.), 5 sec. Off
<b>Materials and Finishes</b>		
Plunger Tip:	Carbide	Carbide
Receptacle:	Stainless steel	Stainless steel
<b>Mounting Hole Size:</b>		
	.468/.469 (11.89/11.91)	.468/.469 (11.89/11.91)



**BMP-1**  
For use in Series 32  
G-10 fixtures  
Patent Pending

**BMP-2**  
For use in Lexan  
Drop Pin Fixtures  
Patent Pending

## HOW TO ORDER

Specify model number of components or tools you require:

**BMP-1, -2:** Probe and receptacle, wires and connector attached, mating connector supplied, (-red, + black).

**BMR-1, -2:** Receptacle only.

**BMT-1:** Tip replacement assembly for both BMT-1 and BMT-2.

**RIT-BMP:** Receptacle insertion tool for BMR-1.

**EXT-BMP:** Receptacle extraction tool for BMR-1.