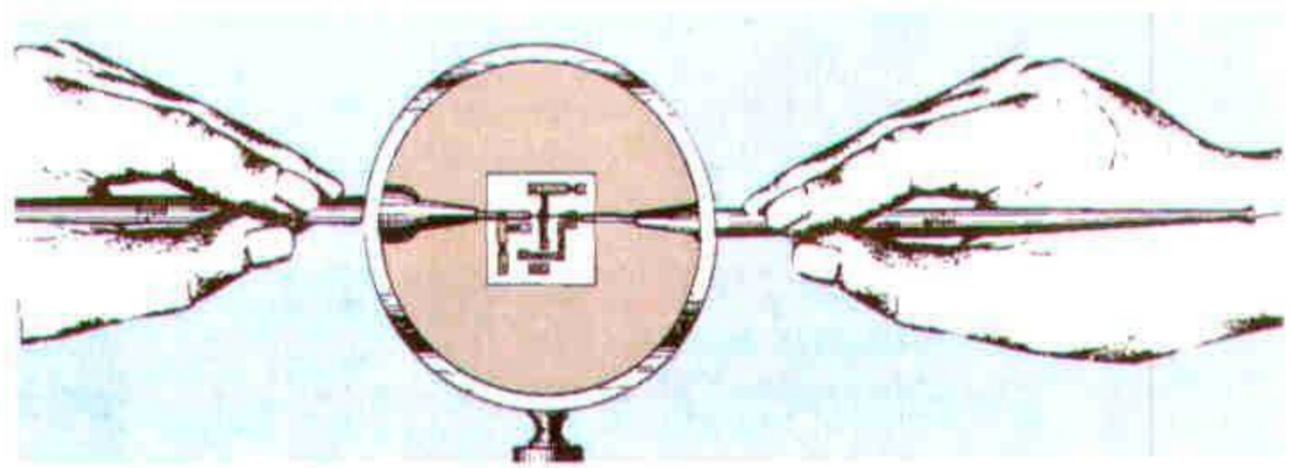


MicroProbe For Electrical Testing

- Micro Size
- Interchangeable Tips
- 12 Configurations
- Lightweight Handle
- Special Purpose Sets



CIRCON™ MicroProbes are handheld micro-electrodes designed specifically for testing micro circuits and miniature electronic equipment. Each of the screw based, interchangeable MicroProbes is ideal for testing under a microscope. Distinctive features of CIRCON MicroProbes are the wide range of tip designs, the micro-sized working tips, and the delicately balanced handles. The red or black anodized aluminum handle is fully insulated and mated to a lightweight lead wire to permit perfect control.

There are 12 interchangeable tip configurations to meet your requirements. The smallest tip is the tungsten Ultra MicroProbe which has a tip radius of 0.0005". Also available are the Flexible MicroPoint, the Sharp MicroProbe and the Blunt MicroProbe. Each MicroProbe is available in straight, 30°, or 90° tip.

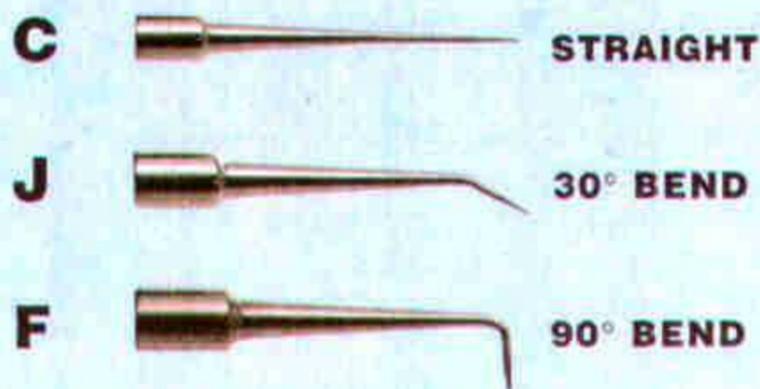
CIRCON™ MicroProbes are offered in two sets: the eight-piece Hybrid Circuit Set and the 21-piece Quality Control Set. A MicroProbe Duplicate Set is also available which consists of a MicroProbe Handle and two tips of your choice.

MICROPROBE HANDLE - MP-I

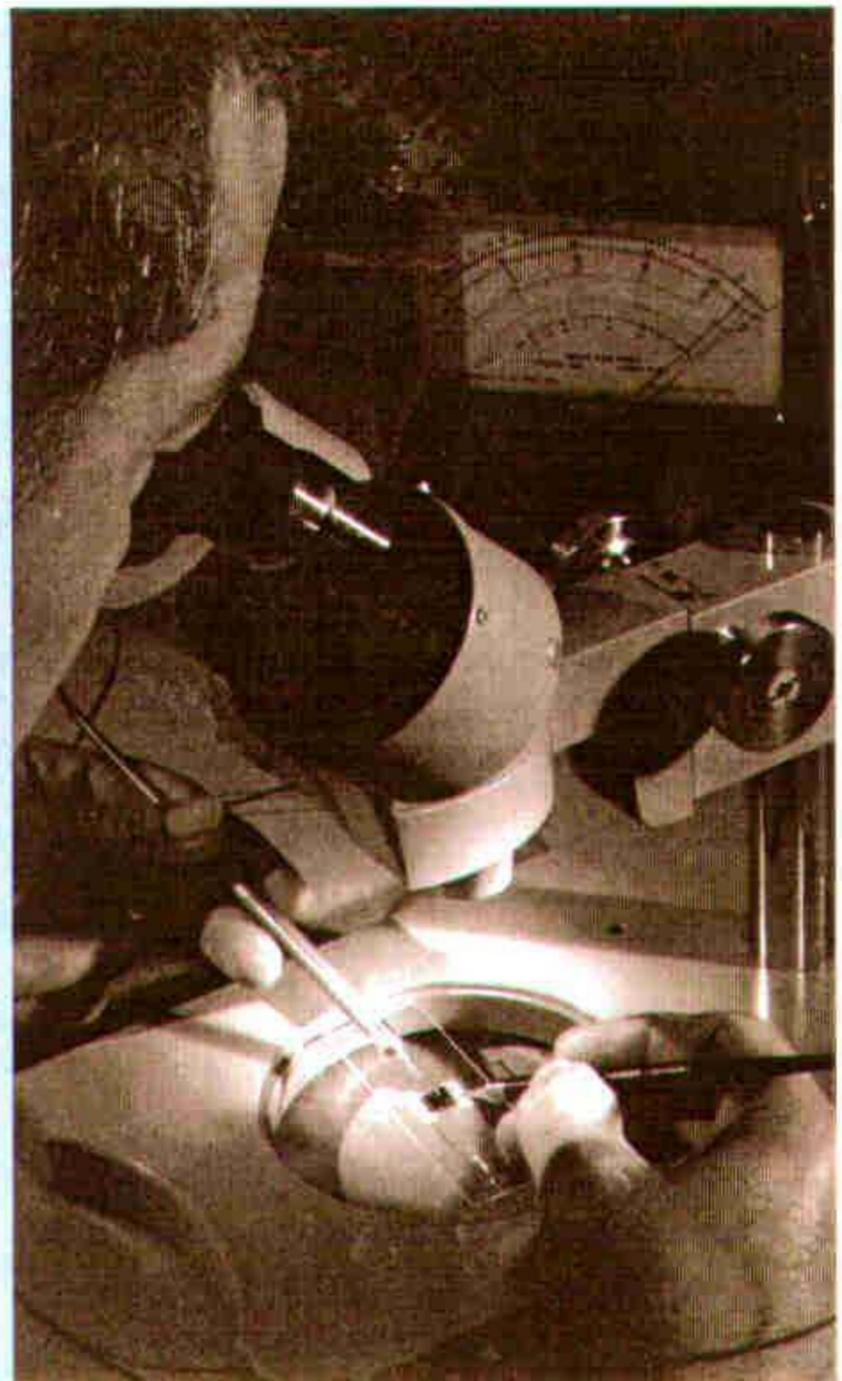
CIRCON's MicroProbe Handle is designed for comfortable, long duration examination of circuits under a microscope. Each delicately balanced, interchangeable handle is constructed of anodized aluminum and is mated to a light lead wire to provide optimum tip control. A conventional banana plug is mounted on the lead wire for connection to an appropriate test instrument. MicroProbe Handles may be ordered in a red or black anodized satin finish.*

THREE TIP STYLES

All tips may be ordered in any of the three styles below. To specify the angle required, place the corresponding letter in front of the MicroProbe tip number. For example, to order a MicroPoint with a 90° bend, specify MP F-510.



MP-I



* Unless specified at time of order, MP-I-B (black handle) will be sent.

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MicroProbe Specifications

INTERCHANGEABLE TIPS

Each MicroProbe Tip has a threaded base and may be used interchangeably on any MicroProbe Handle. All tips are constructed of corrosion-resistant, gold plated, high carbon steel unless specified otherwise. Electrical connection from the tip to the banana plug is completely insulated.

Ultra MicroProbe • MP 500

The high strength tungsten Ultra MicroProbe has a tip radius of 0.0005" and 10° angled tip. The Ultra MicroProbe is ideal for testing the smallest micro circuits under a microscope. The tip is electro formed and polished from 0.020" diameter tungsten alloy stock. The durable tungsten Ultra MicroProbe Tip will tend to bend rather than break, even if dropped. Rated at 100 ma.



MicroPoint • MP 510

The MicroPoint consists of a 0.005" diameter, heat treated, platinum gold wire, mounted in a 0.020" stainless steel tube. The resilient tip gives under pressure and acts as a force-limiting spring. Due to the noble metal tip, the MicroProbe maintains its corrosion-resistant character. Its smoothly rounded 0.0025" radius point adds additional protection for the contact points being tested. The unique MicroPoint is ideal for testing 0.004" pads on integrated circuits. Rated at 100 ma.



Sharp MicroProbe • MP 520

The gold plated Sharp MicroProbe is a valuable tool for most circuit testing applications. Its sharp tip is ground onto a 0.020" diameter polished steel shaft to form an angle at the tip of 15°. The MP 520 design has a basic ruggedness, and the corrosion free gold plate guarantees a long and useful life. Rated at 1 amp.



Blunt MicroProbe • MP 530

The Blunt MicroProbe has a 0.010" radius point formed on a tapering 0.020" diameter shaft. The tip is rounded smooth by hand to insure that no irregularities will mar the surface being tested. The gold plated MP 530 is a valuable standard tip design for a wide variety of circuit testing applications. Rated at 1 amp.



PREPARED SETS

INSTRUMENT CASE

Any selection of MicroProbe tips you order may be protected in an attractive, stained walnut instrument case. Up to 21 tips and two handles may be stored for ready use.

QUALITY CONTROL SET • MPK 20

The Quality Control Set provides a complete selection of the four basic MicroProbe configurations. The set is comprised of 21 interchangeable tips including two each of the three tip styles of the Ultra MicroProbe, MicroPoint, and Sharp MicroProbe, and one each of the Blunt MicroProbes. Two interchangeable handles are included. The complete selection is protected in an attractive foam-lined hardwood instrument case.



HYBRID CIRCUIT SET • MPK 21

The Hybrid Circuit Set provides one interchangeable handle and eight interchangeable tips. One each of the C and J tip styles for each MicroProbe configuration is included. The selection is protected in an attractive, foam-lined hardwood instrument case.



DUPLICATE SET

To obtain two MicroProbe tips and one interchangeable handle, simply add a "K" before the MicroProbe part number when ordering.





MicroTechnology

Miniature Precision MicroTools

CIRCON™ MicroTools are the smallest available precision production instruments. Each of the interchangeable tips has a threaded base and may be used on any MicroTool handle. Tips may be ordered straight or with a 30° or a 90° bend, unless otherwise specified. To order, select a handle and the desired tip. Unless specified at time of order, the C version will be sent on any tip.

MT-2 MICROTOOL INTERCHANGEABLE HANDLE



INTERCHANGEABLE TIPS



Ultra MicroNeedle

- High strength tungsten alloy
 - Durable 0.0002" radius tip
- MT C-100 Straight*
MT J-100 30° Bend*
MT F-100 90° Bend*

Sharp MicroNeedle

- MT C-110 Straight*
MT J-110 30° Bend*
MT F-110 90° Bend

Blunt MicroNeedle

- MT C-111 Straight*
MT J-111 30° Bend*
MT F-111 90° Bend

90° MicroHook

- MT C-115*

Blunt MicroHook, Straight (90° Hook)

- MT C-116*

180° MicroHook

- MT C-120*
MT J-120

Guarded MicroHook

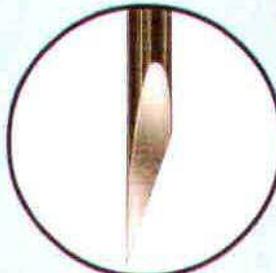
- Thread wires through congested areas
 - Guard prevents snagging upon withdrawal
- MT C-150 1" long*

MicroSaw

- MT C-220*

MicroBrush

- MT C-270*



Ultra MicroKnife

- 0.040" edge
- MT C-185*

MicroKnife

- 0.100" edge
- MT C-186

Ultra MicroLance

- 0.040" double edge
- MT C-195*

MicroLance

- 0.100" double edge
- MT C-196*

Sharp MicroChisel

- 0.030" edge
- MT C-200*

MicroMirror

- MT C-400 Straight*
MT J-400 Forward*
MT J-401 Reverse*

Stiff MicroSpatula

- MT C-250 Straight
MT-J-250 30° Bend*

Diamond MicroScribe

- Top grade diamond mounted on a steel shaft
 - Microscopically sharp point
 - 60° included angle.
- MT C-451*
MT J-451*

Carbide MicroScribe

- Tungsten carbide
 - 0.0005" radius tip
 - Suitable for probing or scribing
- MT C-440*

The Duplicate Set consists of one handle and two interchangeable Tips of the same configuration.

All Tips Are Shown Approximately Four Times Actual Size

*Included in Project Set MTK-15 (see page 5)

BREIZ'ELEC, INC.
breiz@comcast.net



Authorized distributor of
Circon microTools

5555 Morningside Drive, Suite 205

Houston, TX 77005

Téléphone: 001.713.623.8440

Fax: 001.713.623.8483

Breiz'Elec now offers precision miniature hand tools produced by Scope Tools (successor company to Circon Corp. aka Circon-ACMI and GyrusACMI). Made by skilled USA craftsmen with quality USA materials these tools are used for many industrial and educational/research lab applications where magnification is required (some are noted below). For solutions to microscopy applications in your organization consider these precise and realistically proportioned miniature tools.



Anodized aluminum handle, featherweight 0.21 ounces (6 g), .24" (6.1 mm) diameter, 4.8" (12.2 cm) long, black

MT-275 Anodized aluminum handle for confined work areas, 0.18 ounces (5 g), .24" (6.1 mm) diameter, 2.75" (7 cm) long, black

Standard configurations are straight, 30° & 90°						
Image of Tool Tip	Tool Description	Nominal Diameter	Part Number			General Tool Uses
Sharp Tungsten Needle/Probe - tungsten alloy with long straight taper and 0.0005" radius tip						
	Straight shaft	.028" .7mm	MTC-100			Specialized probe often used to place micron sized wire into connectors and harnesses and/or for component or Particle manipulation.. Tends to bend rather than break
	30° Bent shaft	.028" .7mm	MTJ-100			
	90° Bent shaft	.028" .7mm	MTF-100			
Sharp Stainless Steel Needle/Probe - strong parabolic/convex taper point						
	Straight shaft	.028" .7mm	MTC-110			All purpose sharp probe for numerous uses
	30° Bent shaft	.028" .7mm	MTJ-110			
	90° Bent shaft	.028" .7mm	MTF-110			
Blunt Stainless Steel Needle/Probe - Useful in tandem with sharp probes to hold micron size wires prior to insertion						
	Straight shaft	.028" .7mm	MTC-111			All purpose blunt probe. The 30° bent version is the most popular companion to the sharp probes to insert wires into connectors or harnesses
	30° Bent shaft	.028" .7mm	MTJ-111			
	90° Bent shaft	.028" .7mm	MTF-111			
Sharp Stainless Steel Needle/Probe Hook - Very tight radius hooks for working in confined spaces						
	90° Hook on straight shaft	.025" .64mm	MTC-115			Multi-use probe for hard to reach locations
	180° Hook on straight shaft	.025" .64mm	MTC-120			Often used to grab & pull wires in congested areas
Ultra-Sharp Hardened Stainless Steel Microscopic Chisel – hand honed cutting edge on the from finest cutlery stainless steel						
	Straight shaft, 0.030" cutting edge	.032" .8mm	MTC-200			Multi-use tool for breaking & cleaning hardened epoxy & solder, scraping, and cutting
	30° Bent shaft, 0.030" cutting edge	.032" .8mm	MTJ-200			
	Straight shaft, 0.050" cutting edge	.050" 1.3mm	MTC-205			
	Straight shaft, 0.100" cutting edge	.100" 2.5mm	MTC-210			
Ultra-Sharp Hardened Stainless Steel Microscopic Knife, – hand honed cutting edge on the from finest cutlery stainless steel						
	Straight shaft, 0.040" cutting edge	.032" .8mm	MTC-185			Same as the chisel but with an emphasis on cutting
	Straight shaft, 0.100" cutting edge	.050" 1.3mm	MTC-186			
Tungsten Carbide Scribe - hardest tungsten alloy, tip ground to 20 deg included angle, 0.0005" radius tip						
	Straight shaft only	.028" .7mm	MTC-440			Use in deep recesses where diamonds cannot reach
Diamond Scribes - quality natural diamond sharpened to 60° or 75° included angle cone point						
	Straight shaft, 60° included angle	.020" .5mm	MTC-451			Industry standard 60° included angle point for all purpose microscopic scribing including cleaning & cleaving. Mounted on a stiff shaft for more control & reduced tip deflection
	30° Bent shaft, 60° included angle	.020" .5mm	MTJ-451			
	90° Bent shaft, 60° included angle	.020" .5mm	MTF-451			
	Straight shaft, 75° included angle	.020" .5mm	MTC-451-75			75° included angle point for longer wear and/or more aggressive scribing although with slightly less visibility of the working area. Mounted on a stiff shaft
	30° Bent shaft, 75° included angle	.020" .5mm	MTJ-451-75			
	90° Bent shaft, 75° included angle	.020" .5mm	MTF-451-75			
	Straight shaft, 60° included angle	.010" .25mm	MTC-451-10			Smallest available hand held diamond scribe for removing tiny amounts of material and for locations unreachable by other diamond scribes
	30° Bent shaft, 60° included angle	.010" .25mm	MTJ-451-10			
	90° Bent shaft, 60° included angle	.010" .25mm	MTF-451-10			
	Straight shaft, 60° included angle	.028" .7mm	MTC-451-28			Slightly larger diamond mounted onto a long flexible shaft