Z-Adjustable Probes

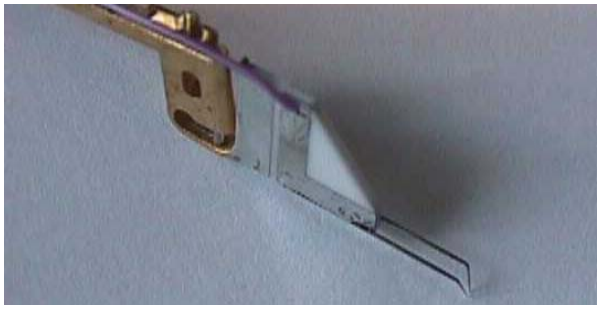
Z-ADJUSTABLE PROBES

Accuprobe fixed pattern Z-adjustable probes are robust, long lasting precision probes that are intended for critical contact applications. These probes feature a unique Z adjustment capability that allows a probe card repair technician to precisely adjust the Z axis of the probes for optimum probe co-planarity. Precision adjustment is made easy with a convenient top mounted screw. The adjustment mechanism is designed with an indirect lever assembly so that step and repeat action does not affect the Z axis stability of the probe.

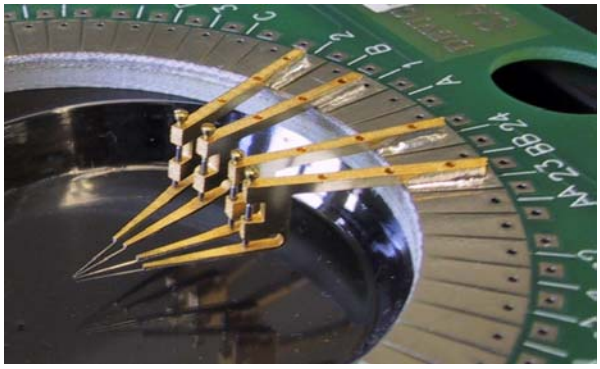
The S or standard Z-adjustable probe are available in either short of long versions with arm lengths from 430 to 1720 mils. The standard probe incorporates probe holders made of cast beryllium copper (BeCu) and then plated with gold for excellent conductivity and to resist oxidation during storage. Tin plated probes are optionally available. A flexible body version is available for the long probes to allow the probes to be more readily bent to access difficult probe locations. Flexible body probes are also tin plated

K-TYPE KELVIN PROBES

Kelvin probes have the same general dimensions as the S-Type probes above except that a ceramic substrate is attached for mounting force and sense Kelvin probe tips. Kelvin Z-adjustable probes provide the basis for true 4 point Kelvin measurement capability. This unique probe is particularly valuable in laser trim applications where space is at a premium.



Kelvin Probe



The standard Kelvin probe features side-by-side probe needles. An available configuration places the probe needles inline to minimize the space taken by the probe and to allow effective probing of higher density devices. Specify IK, or FIK for the inline needle K probe variant.

D-TYPE DUAL PROBES

Dual probes are essentially the same as the S-Type single contact probes above except that they have two probe tips instead of only one. Dual probes are the perfect solution when redundant contact is necessary for lower contact resistance or where high current applications can benefit with probe tips that can handle high current density. D-Types can also be used for probing power devices, pulse DC tests where forcing current could damage a normal single tip probe.

MI-TYPE PROBES - FOR HIGH SPEED AND RF APPLICATIONS

MI-Type probes utilize stripline ceramic construction for high speed applications. These matched-impedance probes are designed for testing high speed/high frequency devices at test rates up to 2 GHz.

The probes have a dual impedance stripline layout for either 50 ohm or 100 ohm applications. The MI-Type probes are offered with single tip probes or co-planar dual needle probes. Provision is made on the ceramic sub-

Z-Adjustable Probes

strate for mounting series or parallel passive components.

Accuprobe's proven Z-adjustable probe holders provides precision probe to probe planarization and complete compatibility with all other Z-adjustable probes for mixed use applications. Each probe is supplied with 24 inch (61cm) coaxial cable.

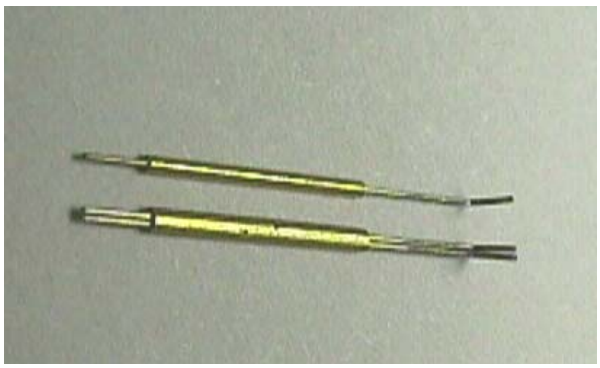
REPLACEMENT PROBE TIPS

Probe tips can easily be replaced when worn out or damaged on Z-Adjustable probes. Single and dual tips are available as replacement tips. All replacement tips are crimped into a copper tube with a flat face on one side to make attachment orientation on the probe holder simple and easy to solder.

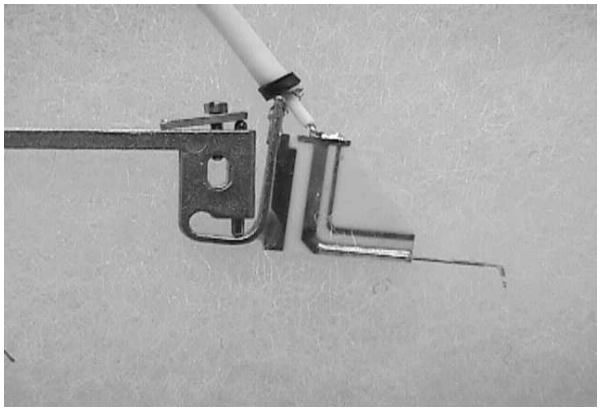
To order replacement tips select the model number from the S-Type or D-Type model number selection charts (excluding prefix 1 or 2 for short or long), then specify the tip material, tip diameter, tip drop "B" and tip extension. Examples: SW8D1 or DW8D1

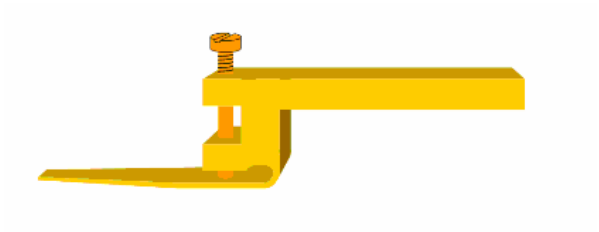
GENERAL Z-ADJUSTABLE PROBE SPECIFICATIONS:

Probe Holder:	Hardened BeCu
Plating:	Gold
Flexible probes:	Tin
Z Axis adjustment:	±.025" (.635mm)
Probe Depth:	.317" to .369" (8.051 to 9.372mm)
Tip Diameters:	.0005" to .015" ±.0002" (.0127 to .381mm)

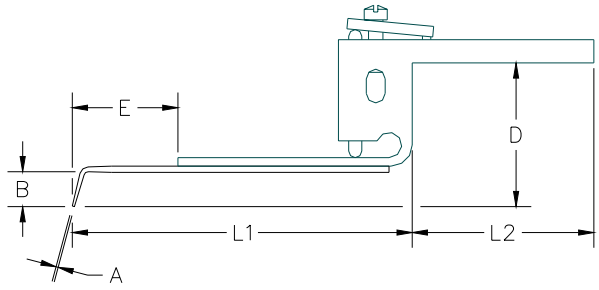


Replacement Tips

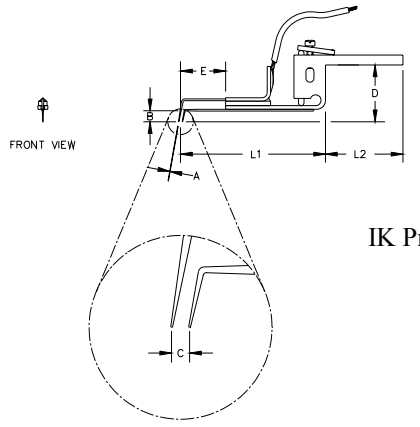




New adjust mechanism



Z-Adjustable Geometry



IK Probe

Z-Adjustable Probes

Standard S-Type Probes

S Type	2 Holder		"L2"
S	Standard	1	Short .430"(10.922mm)
FS	Flexible	2	Long 1.720" (43.688mm)

W	Tip Material	Diameter
A	Tungsten	.006" (.152mm)
W	Tungsten	.010" (.254mm)
WR	Tungsten Rh	.010" (.254mm)
D	BeCu	.010" (.254mm)
E	Tungsten	.012" (.3048mm)
ER	Tungsten Rh	.012" (.3048mm)
C	BeCu	.012" (.3048mm)
T	Tungsten	.015" (.381mm)
TR	Tungsten Rh	.015" (.381mm)
B	BeCu	.015" (.381mm)

8	Tip Diameter "A"
1*	.0005" (.0127mm)
2	.001" (.0254mm)
3	.0015" (.0381mm)
4	.002" (.0508mm)
5	.0025" (.0635mm)
6	.0035" (.0889mm)
7	.005" (.127mm)
8	.010" (.254mm)
9	.012" (.3048mm)
10	.015" (.381mm)

D	Tip Drop "B"	Depth "D"
A	.008" (.2032mm)	.317" (8.052mm)
B	.015" (.381mm)	.324" (8.230mm)
C	.030" (.762mm)	.339" (8.611mm)
D	.060" (1.524mm)	.369" (9.373mm)

1	Tip Extension	"L1"
1	.250" (6.35mm)	.800" (20.32mm)
2	.300" (7.62mm)	.850" (21.59mm)
3	.350" (8.89mm)	.900" (22.86mm)

Notes:
1. **BeCu not available in .0005" tip.**
2. **Not all combinations of tip material, Tip Drop "B", and tip diameter "A", are possible.**
3. **Flexible probes are available with Long probe body only.**

Kelvin K-Type Probes

K Type	2 Holder		"L2"
K	Standard	1	Short .430"(10.922mm)
FK	Flexible	2	Long 1.720" (43.688mm)
IK	InLine K		
FIK	Flex Inline		

W	Needle Material Diameter	
A	Tungsten	.006" (.152mm)
W	Tungsten	.010" (.254mm)
WR	Tungsten Rh	.010" (.254mm)
D	BeCu	.010" (.254mm)
HD	Hard BeCu	.010" (.254mm)
P	Palladium	.010" (.254mm)
E	Tungsten	.012" (.3048mm)
ER	Tungsten Rh	.012" (.3048mm)
C	BeCu	.012" (.3048mm)
HC	Hard BeCu	.012" (.3048mm)
T	Tungsten	.015" (.381mm)
TR	Tungsten Rh	.015" (.381mm)
B	BeCu	.015" (.381mm)
HB	Hard BeCu	.015" (.381mm)

8	Tip Diameter "A"
1*	.0005" (.0127mm)
2	.001" (.0254mm)
3	.0015" (.0381mm)
4	.002" (.0508mm)
5	.0025" (.0635mm)
6	.0035" (.0889mm)
7	.005" (.127mm)
8	.010" (.254mm)
9	.012" (.3048mm)
10	.015" (.381mm)

D	Tip Drop "B"	Depth "D"
A	.060" (1.524mm)	.317" (8.052mm)
B	.060" (1.524mm)	.324" (8.230mm)
C	.060" (1.524mm)	.339" (8.611mm)
D	.060" (1.524mm)	.369" (9.373mm)

1	Tip Extension	"L1"
1	.250" (6.35mm)	.800" (20.32mm)
2	.300" (7.62mm)	.850" (21.59mm)
3	.350" (8.89mm)	.900" (22.86mm)

C	CONTACT CTR "C"
A	.002" (.0508mm)
B	.005" (.127mm)
C	.010" (.254mm)
D	.015" (.381mm)
E	.020" (.508mm)
F	.025" (.635mm)
H	.030" (.762mm)
J	.035" (.889mm)
K	.040" (1.016mm)
L	.045" (1.143mm)
M	.050" (1.27mm)
N	.055" (1.397mm)
P	.060" (1.524MM)

Notes:
1. **BeCu not available in .0005" tip.**
2. **Not all combinations of tip material, Tip Drop "B", and tip diameter "A", are possible.**
3. **Flexible probes are available with Long probe body only**

Dual D-Type Probes

D Type	2 Holder		"L2"
D	Standard	1	Short .430"(10.922mm)
FD	Flexible	2	Long 1.720" (43.688mm)

W	Tip Material	Diameter
A	Tungsten	.006" (.152mm)
W	Tungsten	.010" (.254mm)
WR	Tungsten Rh	.010" (.254mm)
D	BeCu	.010" (.254mm)
E	Tungsten	.012" (.3048mm)
ER	Tungsten Rh	.012" (.3048mm)
C	BeCu	.012" (.3048mm)
T	Tungsten	.015" (.381mm)
TR	Tungsten Rh	.015" (.381mm)
B	BeCu	.015" (.381mm)

8	Tip Diameter "A"
1*	.0005" (.0127mm)
2	.001" (.0254mm)
3	.0015" (.0381mm)
4	.002" (.0508mm)
5	.0025" (.0635mm)
6	.0035" (.0889mm)
7	.005" (.127mm)
8	.010" (.254mm)
9	.012" (.3048mm)
10	.015" (.381mm)

D	Tip Drop "B"	Depth "D"
A	.008" (.2032mm)	.317" (8.052mm)
B	.015" (.381mm)	.324" (8.230mm)
C	.030" (.762mm)	.339" (8.611mm)
D	.060" (1.524mm)	.369" (9.373mm)

1	Tip Extension	"L1"
1	.250" (6.35mm)	.800" (20.32mm)
2	.300" (7.62mm)	.850" (21.59mm)
3	.350" (8.89mm)	.900" (22.86mm)

Notes:
1. **BeCu not available in .0005" tip.**
2. **Not all combinations of tip material, Tip Drop "B", and tip diameter "A", are possible.**
3. **Flexible probes are available with Long probe body only.**

MI-Type Probes

MI Type	1 Holder		"L2"	50 Impedance
MI	Standard	1	Short .430"(10.922mm)	50 ohms
		2	Long 1.720" (43.688mm)	100 ohms

W	Tip Material	Diameter
W	Tungsten	.010" (.254mm)
B	BeCu	.010" (.254mm)

4	Tip Diameter "A"
1*	.0005" (.0127mm)
2	.001" (.0254mm)
3	.0015" (.0381mm)
4	.002" (.0508mm)
5	.0025" (.0635mm)
6	.0035" (.0889mm)
7	.005" (.127mm)

C	Tip Drop "B"	Depth "D"
A	.008" (.2032mm)	.317" (8.052mm)
B	.015" (.381mm)	.324" (8.230mm)
C	.030" (.762mm)	.339" (8.611mm)
D	.060" (1.524mm)	.369" (9.373mm)

1	Tip Extension	"L1"
1	.250" (6.35mm)	.800" (20.32mm)
2	.300" (7.62mm)	.850" (21.59mm)
3	.350" (8.89mm)	.900" (22.86mm)

C	CONTACT CTR "C"
S	Single probe tip
A	.002" (.0508mm)
B	.005" (.127mm)
C	.010" (.254mm)
D	.015" (.381mm)
E	.020" (.508mm)
F	.025" (.635mm)
H	.030" (.762mm)
J	.035" (.889mm)
K	.040" (1.016mm)
L	.045" (1.143mm)
M	.050" (1.27mm)

* **Notes:**
1. **BeCu not available in .0005" tip.**
2. **Not all combinations of tip material, Tip Drop "B", and tio diameter "A", are possible.**

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