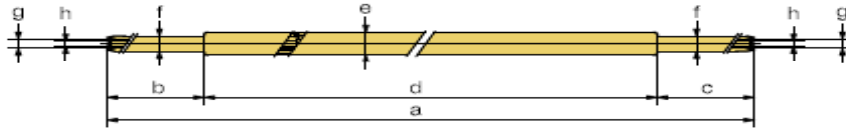


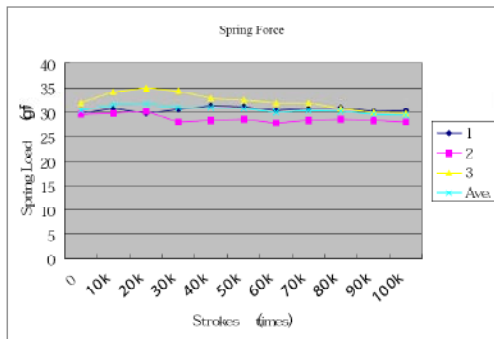


Liberty Research Co. Kelvin Sockets for Fine Pitch Devices

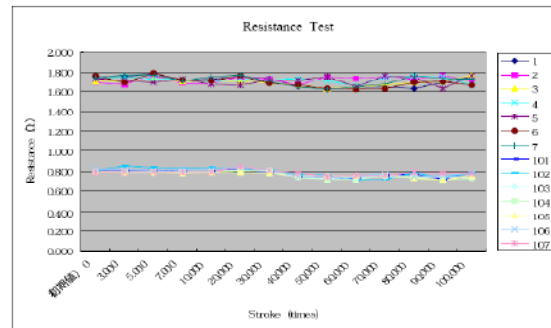
The Liberty Research Kelvin socket for fine pitch uses a patented coaxial pin design from **Toyo Electronics Eng. Co. Ltd.** The pin employs two; mechanically and electrically isolated, spring loaded conductors. The outer sleeve is normally the **force** conductor and the inner pin is the **sense** conductor. This pin design allows our Socket users to more accurately align the package pad or ball to the pin and make a **more accurate measurement** and maintain **stable contact** with the DUT. Pin is used for QFP, MLF & WLCSP ball sizes down to **0.2mm diameter**



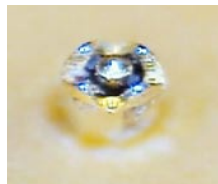
Pitch	Part #	Pin Dimensions - in mm								Recommended Force/Deflection		Max I	Cres (mΩ)
		a	b	c	d	e	f	g	h	Force Sleeve	Sense Pin		
0.8mm	D03-NP080W	7.4	1.1	1.1	5.2	0.7	0.52	0.42	0.1	Force Sleeve	7gf@1mm	.6A	150
										Sense Pin	22gf@0.5mm		
0.5mm	D01-NP050W	7.4	1.1	1.1	5.2	0.38	0.28	0.18	0.05	Force Sleeve	7gf @ 1.0mm	0.4A	40
										Sense Pin	20gf@0.5mm		
0.4mm	D02-NP040W	7.4	1.1	1.1	5.2	0.33	0.25	0.15	0.05	Force Sleeve	7gf@1.0mm	0.4A	40
										Sense Pin	20gf@0.5mm		



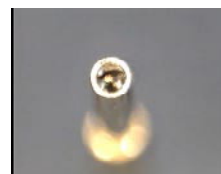
Data from D01 pin shows Stable Spring Force is maintained to provide reliable measurements



Stable Contact Resistance to > 100K strokes insures more accurate readings.



Crown "Force" outer Sleeve



Flat outer "Force" Sleeve