



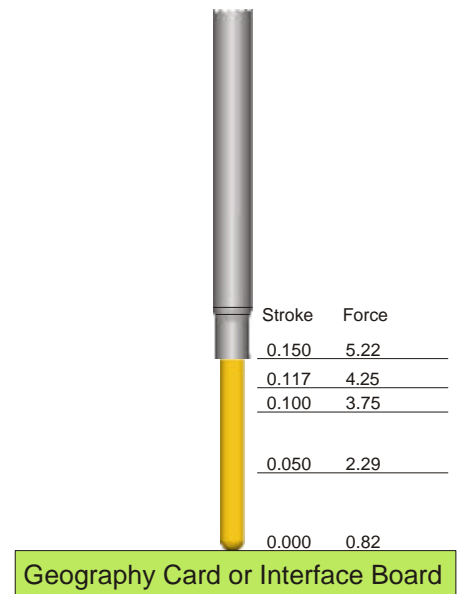
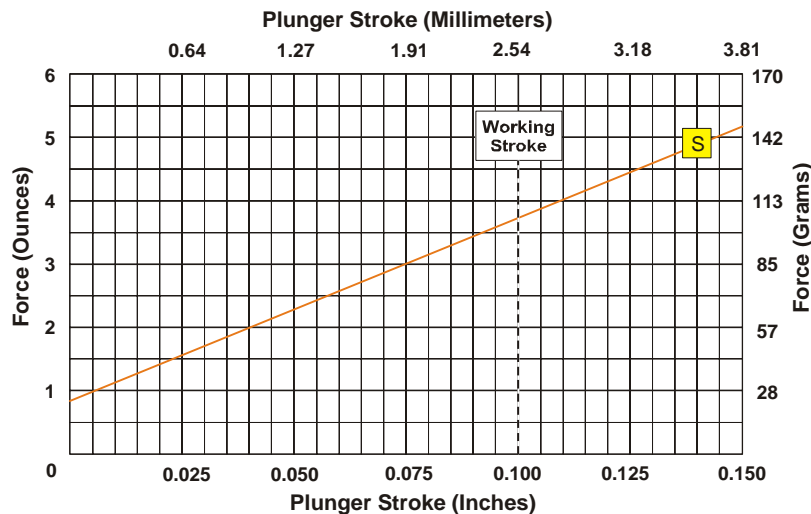
QA Technology Company, Inc.

A p p l i c a t i o n s N o t e
Double Ended Sockets for Wireless Fixturing
(High Frequency Testing)
Document# D10011 Rev D ECN# 2049 Page 1 of 2

Double-Ended Sockets allow construction of fixtures with shorter signal path lengths compared to conventional wire-wrapped designs. The shorter path length allows for improved signal integrity from the tester circuits to the Unit Under Test (UUT). Fixtures built in this manner are referred to as “wireless,” type test fixtures. The impedance characteristics are improved, allowing greater bandwidths for analog test signals and higher vector rates for digital testing. For three probes on .100 inch centers (signal between two grounds), excellent performance to more than 2 Ghz was achieved. For more information on high frequency testing, please request *Frequency Response for Double-Ended Socket and Probe Configurations*.

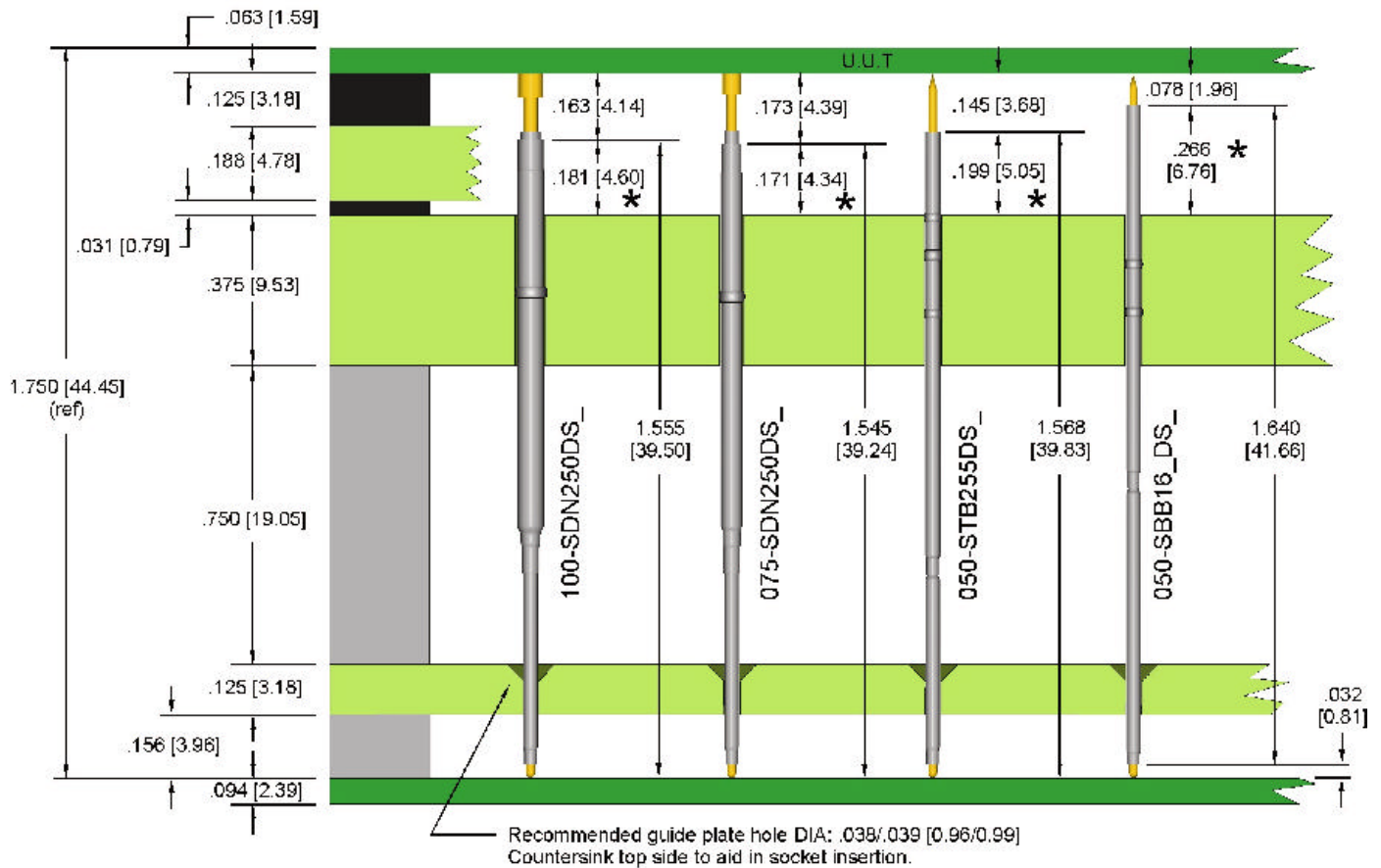
A Double-Ended Socket consists of a conventional socket with a non-replaceable interface probe contact as its termination. The interface probe typically contacts a flat plated surface, which is part of a dedicated PCB that interfaces with the interface probes on the specified tester. Basic tip styles such as spherical and chisel, are offered on the bottom side probe due to the flat contact surface. Because the bottom probe is used in non-cycling applications, it will last the life of the socket. In the event that the socket is damaged or worn, the complete Double-Ended assembly is replaced. The top of the socket accepts standard probes from QA Technology 050-16, 050-PT25, 075-25, and 100-25 series and is replaceable, as routine maintenance requires.

Double-Ended sockets have bottom side probes with a total stroke of .150 [3.81]. This allows a set height variation between .047 [1.19] and .137 [3.48] or a total of .090 [2.29]. This design allows a much larger variation in set height to accommodate the majority of component heights found on loaded boards.



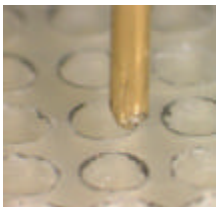
Spring Force Chart for .150 [3.81] Stroke Interface Probes

Interface Probe

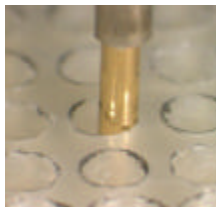


Suggested Mixed-Mounting Fixture for Double-Ended Sockets
Note Differences in Socket Set Heights (marked with *)

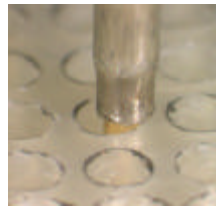
Double-ended plunger enters straight hole.



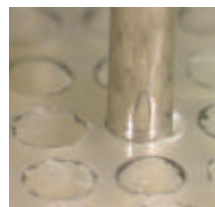
Plunger aligns itself to pass thru.



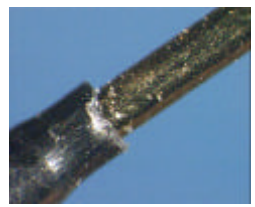
Leading edge of socket tube catches on edge of straight hole.



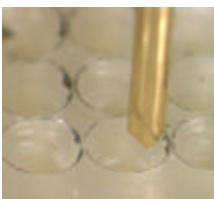
Edge of straight hole is skived by the socket tube during insertion.



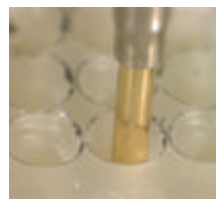
Damage to the socket tube will occur.



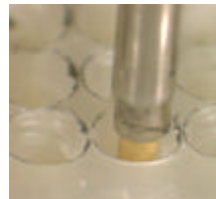
Comparison of straight hole versus the recommended countersunk hole.



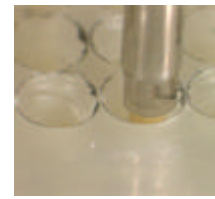
Double ended plunger enters countersunk hole.



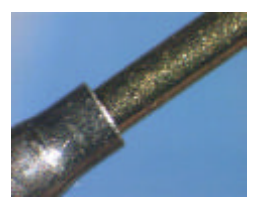
Plunger passes easily thru countersunk hole.



Clearance at leading edge of socket tube is good.



Countersunk hole is left intact.



Socket damage has not occurred.