

1394B “LEGACY CONNECTOR” SECTION  
PROPOSAL FOR MODIFICATIONS TO WORDING IN SECTION 4.2.1.1,  
AND FIGURE 4-7  
(Ref. IEEE 1394-1995 AS BASIS)  
BILL NORTHEY, JUNE 7, 1999

Proposed changes are highlighted

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4.2.1.1.1 Connector Plug  
(Paragraph 2 reworded)

It is **suggested** that the plug contacts have a cylindrical section in the contact area that makes contact at a right angle to the cylindrical section of the socket contacts, thus creating a “crossed cylinders” configuration. The contacts should be designed to create a **theoretical** Hertzian stress (combination of cylindrical radius, normal force, and base and surface material hardnesses) of 1,550,000 – 1,900,000 kPa in the mating area. This is to assure that the low-energy signals used in this physical layer are transmitted through the nonconductive films that are typically absorbed on connector contacts.



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#### 4.2.1.1.3 Connector Socket

(Starting at Paragraph 3)

Figures 4-6, 4-7, and 4-7a describe the “socket insertion wafer,” a dielectric structure that positions and retains the contacts within the outer shell. They also define the “first make, last break” power contact (#1) and ground contact (#2). The leading edge of contacts #1 and #2 are intended to confine any erosion during “hot plugging” to a nonfunctional area of the contact surface. This will minimize contamination of the final resting area of the contact.

Both the Hertzian and Non-Hertzian variations shown in Section D-D and Section E-E provide alternative and acceptable constructions of “plug compatible” designs. Regardless of the contact variation, the connectors must adhere to the performance criteria defined in 4.2.1.3.

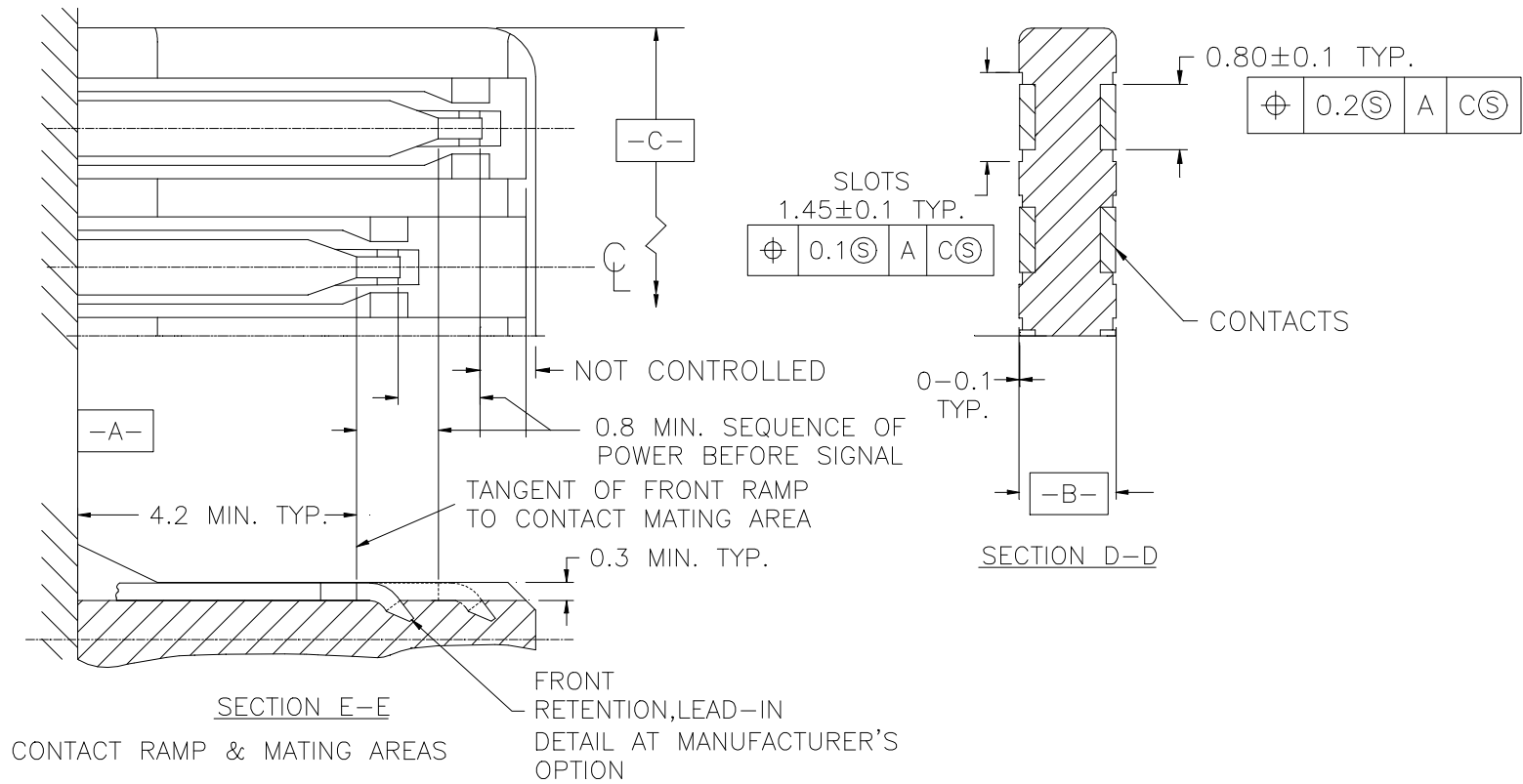
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#### Figure 4-6 Connector Insertion Wafer

Add to Notes: 3 – Hertzian contact profile shown for reference only.



Add Figure 4-7a as shown here:



NOTE - REFER TO FIGURE 4-6 FOR DATUM AND SECTION DEFINITIONS

FIGURE 4-7A - SOCKET INSERTION WAFER DETAILS



#### 4.2.1.1.3 Connector Socket (continued)

(Insertion of wording between last two sentences)

It is likely that there will be several variations of sockets to meet differing mounting orientation requirements, panel/bulkhead mounting, and/or assembly techniques. The socket contacts may also vary, as shown in Alternative Section D-D of Figure 4-7a, while remaining plug compatible. Regardless of these variations, the connectors must adhere to the performance criteria defined in 4.2.1.3. The holes and patterns (footprint) for the mounting of some of the possible versions of connectors to the printed circuit board (PCB) are recommended in annex I.