1 Scope This test method is used to determine the mechanical forces required to mate connectors before and after the connectors are subjected to various environmental stresses.

2 Applicable Documents None

3 Test Specimen

3.1 One piece connector (plug and receptacle), complete with all applicable guide, keying, and engaging hardware or a carot edge receptacle

3.2 Two piece connector (header and receptacle or plug and receptacle), complete with all applicable guide, keying, and engaging hardware and appropriate flat cable

3.3 Unless otherwise specified in the individual connector specification, the test samples (or engaging hardware) shall not be lubricated or otherwise coated prior to the test.

4 Apparatus

4.1 Test blade as shown in Figure 1, to simulate a mating PWB of maximum thickness for card edge (one-piece) connector

4.2 Mating connector to test for mating and unmating force of two piece connectors

4.3 Force gauges of applicable range

4.4 Clamps, jaws, or other means to hold the receptacle and header or receptacle and plug

4.5 Automatic or semi-automatic tester to mate and unmate the connector at the specified rate.

Note: While manual cycling of the connectors is permitted, proper alignment and orientation is most readily maintained in a mechanical device specifically designed for this test.

5 Procedure

5.1 The samples shall be mounted in the tester and carefully aligned.

5.2 Mating Force The samples shall be brought to a position where mechanical mating begins and the force gauge is at zero indication. The samples shall then be fully mated and the force required for mating shall be recorded.

5.3 Unmating Force Once the mechanical mating is complete and the force gage is at zero indication, the samples shall be separated and the force required for separation shall be recorded.

5.4 At the intervals specified in the individual connector specification, inspections or tests may be performed.

5.5 During the final cycle, the force required for both mating and unmating shall again be recorded.

6 Notes

6.1 Acceptance criteria shall be established in terms of the maximum allowable total mating force and the minimum allowable total separation force during the test.

6.2 The information in this test method is intended to parallel the test method described in EIA-RS-364/TP-13.
Figure 1  One-Piece Edge Connector Mechanical Gauges