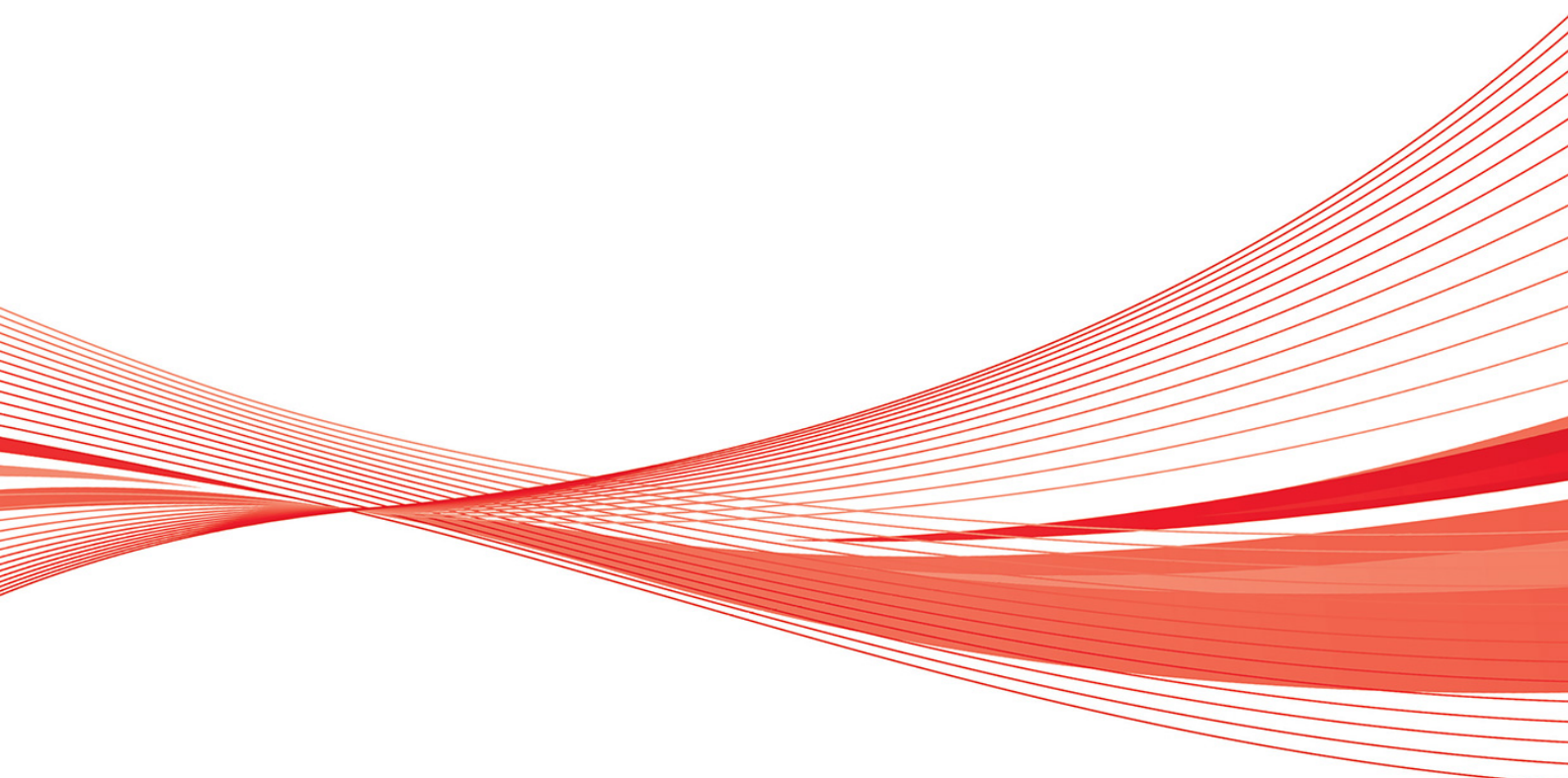




Harwin Test Report Summary

HT04401

Latch Integrity Testing of L-Tek
(M80 Series) Connectors



1. **Introduction.**

1.1. **Description and Purpose.**

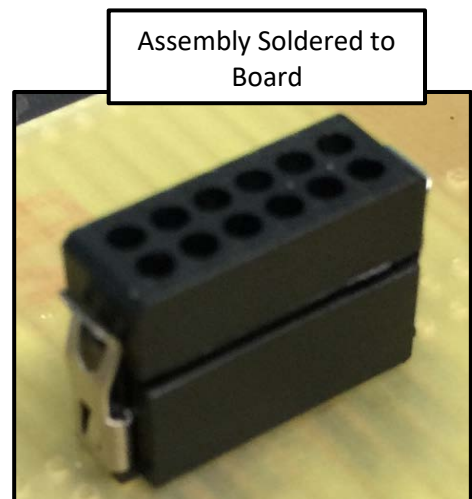
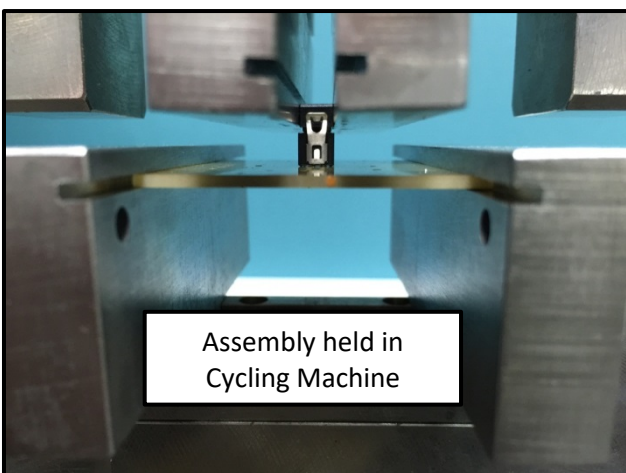
The Harwin L-Tek (M80 Series) connector is a 2mm pitch connector series, the following tests have been carried out using de-latching tools Z80-299 & T5746. Showing the durability of the latches over a number of operations when using either tool.

1.2. **Conclusion.**

The following data has been collated from Harwin test report 1132. These tests show that latches will still meet C005 specification after 3 operations using tool T5746 and 8 operations using tool Z80-299.

2. **Test Method and Requirements.**

Tests performed
2.1. Pull-apart destructive testing of 12-position male and female connectors with female contacts removed so they do not affect the results. Connectors were separated with de-latching tool T5746 and cycled up to 20 times.
2.2. Pull-apart destructive testing of 12-position male and female connectors with contacts removed so they do not affect the results. Connectors were separated with de-latching tool Z80-299 and cycled up to 15 times.



3. Test Method and Requirements.

- 3.1. Pull-apart destructive testing of a 12 way latched connector, with the contacts removed from the female moulding. Connectors were cycled in increasing number of separations using tool T5746 to de-latch then after each specified number of separations, the mated pair was then separated without using a de-latching tool. The force required was measured by the P337 Lloyds Cycling Machine, and recorded in the table below.

Separations	Locking Latch Connector: M80-8671205, with M80-8881205 Results of 24 samples tested with T5746 tool		Average
1	39.5N	44.5N	42.0N
2	43.7N	43.0N	43.4N
3	35.6N	30.7N	33.2N
4	23.7N	20.3N	22.1N
5	22.2N	24.4N	23.3N
6	26.3N	20.2N	23.3N
7	23.4N	21.5N	22.9N
8	28.2N	22.9N	25.6N
9	21.1N	24.0N	22.6N
10	21.9N	22.1N	22.0N
15	22.9N	9.80N	16.4N
20	17.1N	17.3N	17.2N

- 3.2. The typical mode of failure was that the Latch locking feature broached through the plastic of the female moulding. The Male latch remained intact but slightly bent.
- 3.3. Test was then repeated for 15 separations using tool Z80-280.

Separations	Locking Latch Connector: M80-8671205, with M80-8881205 Results of 24 samples tested with Z80-280 tool		Average
1	32.0N	41.5N	36.8N
2	13.0N	42.3N	27.8N
3	44.1N	33.9N	39.0N
4	43.3N	31.5N	37.4N
5	28.9N	24.2N	26.6N
6	22.8N	24.0N	23.9N
7	23.9N	29.6N	26.8N
8	23.0N	20.0N	21.5N
9	18.8N	21.7N	20.3N
10	24.6N	16.6N	20.6N
15	13.4N	14.3N	13.9N

- 3.4. The typical mode of failure was that the Latch locking feature broached through the plastic of the female moulding. The Male latch remained intact but slightly bent.

4. Specifications.

- 4.1. C005xx States that "*when an unloaded female connector moulding is mated with a latched male connector, and a force of 20N is applied for 10 seconds in the directions shown in Figure 3, there shall be no failure of any part of the latch mechanism.*"

