



Harwin Test Report Summary

HT02502

Detailed Environmental Testing of
Datamate (M80 Series) Connectors

Datamate

A decorative graphic consisting of numerous thin, red, wavy lines that flow across the bottom half of the page, creating a sense of motion and depth.

1. **Introduction.**

1.1. **Description and Purpose.**

The Harwin Datamate (M80 Series) connector is manufactured to the requirements of BS9525-F0033 and has been designed to withstand 500 successive engagements and separations without impairing its mechanical or electrical performance. The following tests were carried out to establish whether the connector’s performance would be impaired when subjected to bump, shock and vibration above the levels specified in BS9525-F0033.

1.2. **Conclusion.**

The following data has been collated from Harwin test report ET3858. During the product testing no mechanical failures occurred, connectors remained latched together securely and no electrical discontinuity was observed.

The results contained within this report are representative of all M80 series connectors utilising latches. Unlatched and friction latch connectors may perform differently when subjected to the intensive test methods used within this report.

Results:

Sample	1
Bump	OK ✓
Vibration	OK ✓
Shock	OK ✓
Visual Examination	OK ✓

Test Method, Requirements and Results.

1.3. **List of Test Samples.**

Mated sample	Male connector (L-Tek with locking latch)	Female connector (L-Tek)
1	M80-8531042	M80-8501042

1.4. Specification Parameters.

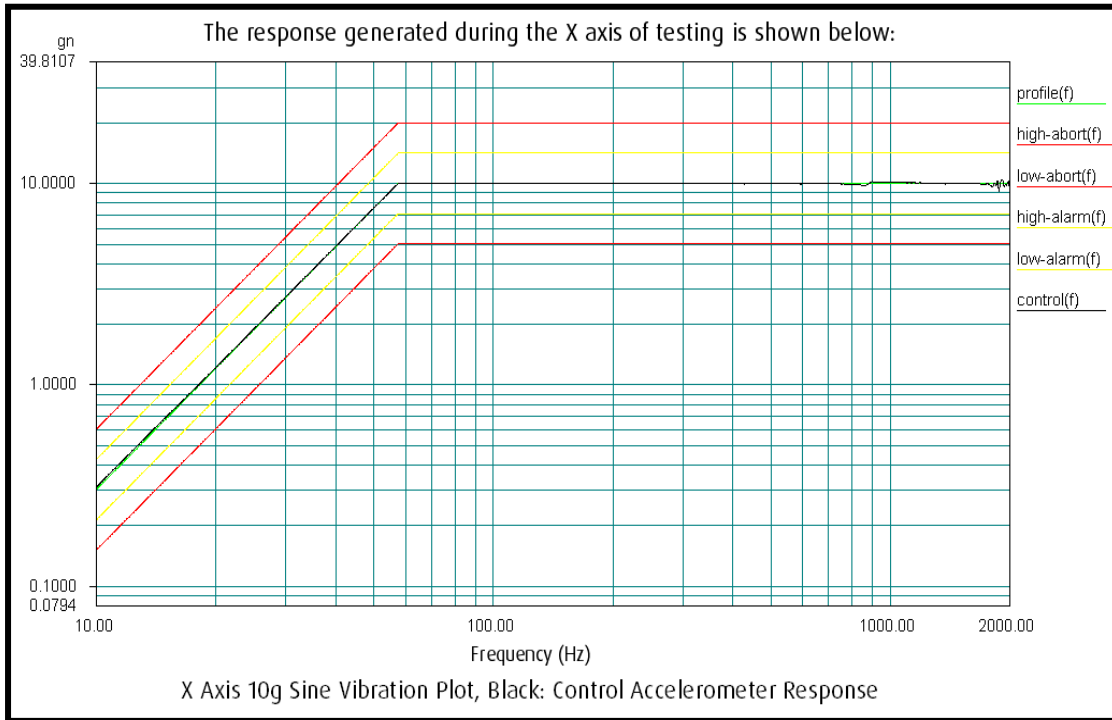
Test	BS9520	Parameters
Vibration A.)	1.2.6.3.1	In general accordance with BS2011: Part 2.1 Fc: 1977 10Hz to 2kHz 1.5mm peak/10g duration 1.5 hours total (0.5hr/axis) Continuously monitoring of electrical continuity during frequency sweep
Vibration B.)	1.2.6.3.1	In general accordance with BS2011: Part 2.1 Fc: 1977 10Hz to 2kHz 1.5mm peak/20g duration 1.5 hours total (0.5hr/axis) Continuously monitoring of electrical continuity during frequency sweep
Vibration C.)	1.2.6.3.1	In general accordance with BS2011: Part 2.1 Fc: 1977 10Hz to 2kHz 1.5mm peak/20g duration 6 hours total (2hr/axis) Continuously monitoring of electrical continuity during frequency sweep
Shock D.)	1.2.6.4	In general accordance with BS2011: Part 2.1 Ea: 1977. 981 m/s ² (100g) 1msTrapezoidal pulse, both directions of three axis, 6 shocks total, continuously monitoring of electrical continuity during application of shocks
Bump E.)	1.2.6.2	In general accordance with BS2011: Part 2.1 Eb: 1977 390 m/s ² (40g) 10ms 4000 ±40 Bumps, both directions of three axis continuously monitoring of electrical continuity during the last 200 bumps
Visual Examination	1.2.2 (d)	Mechanical damage, movement or displacement of parts such as would impair operation

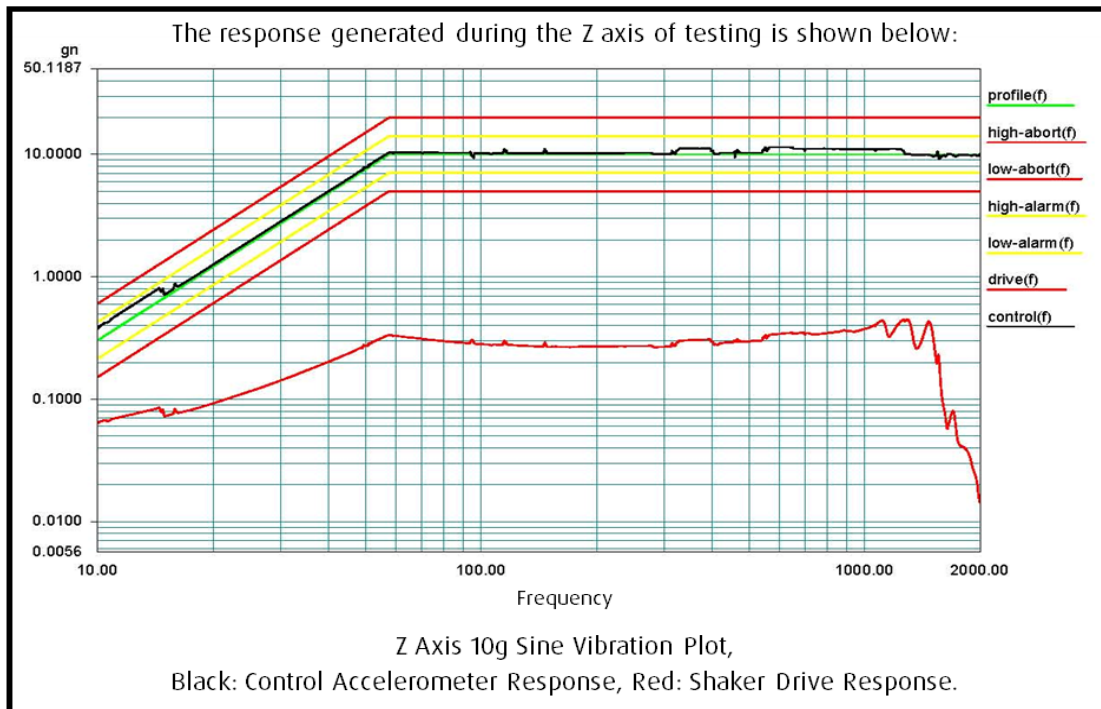
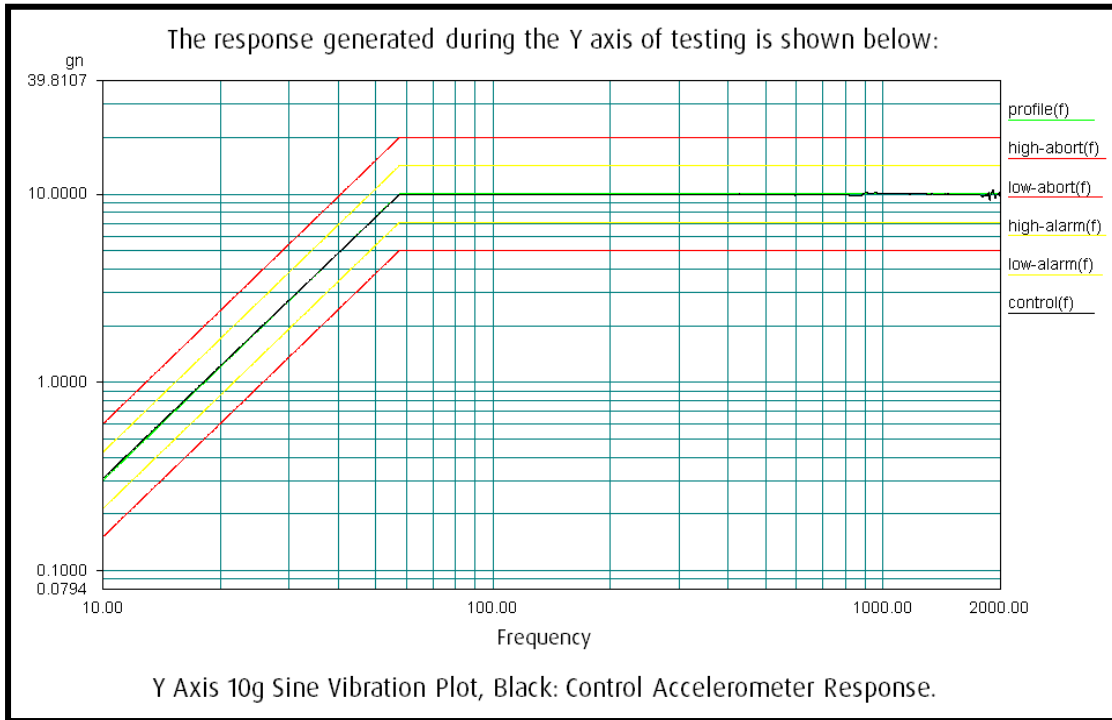
1.5. Test Method and Results.

All tests were carried out with connectors in the mated condition.

A. Vibration – 10g

The sample was subjected to a Swept Sine Test carried out generally in accordance with BS 9525 and BS EN 60068-2-6 test Fc, under the following conditions:
10-57.55Hz @ 1.5mm peak-peak, 57.55-2000Hz @ 10g. Sweep rate 1 octave/minute for 30 minutes in each axis, intermittencies on each connector to be recorded.

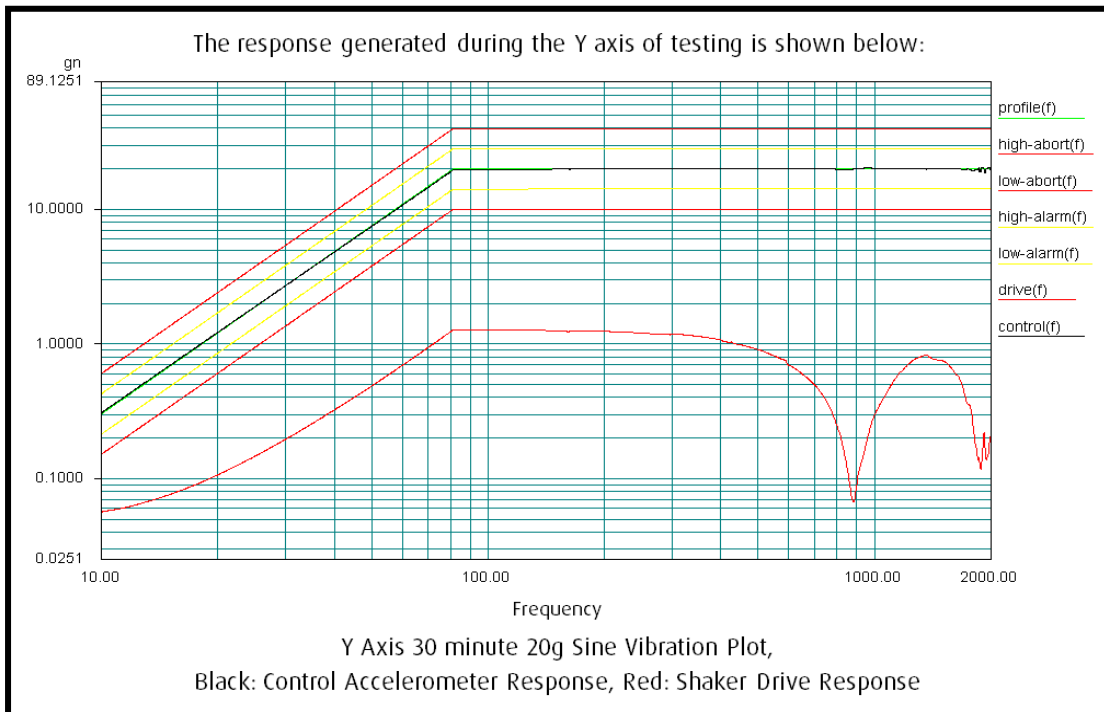
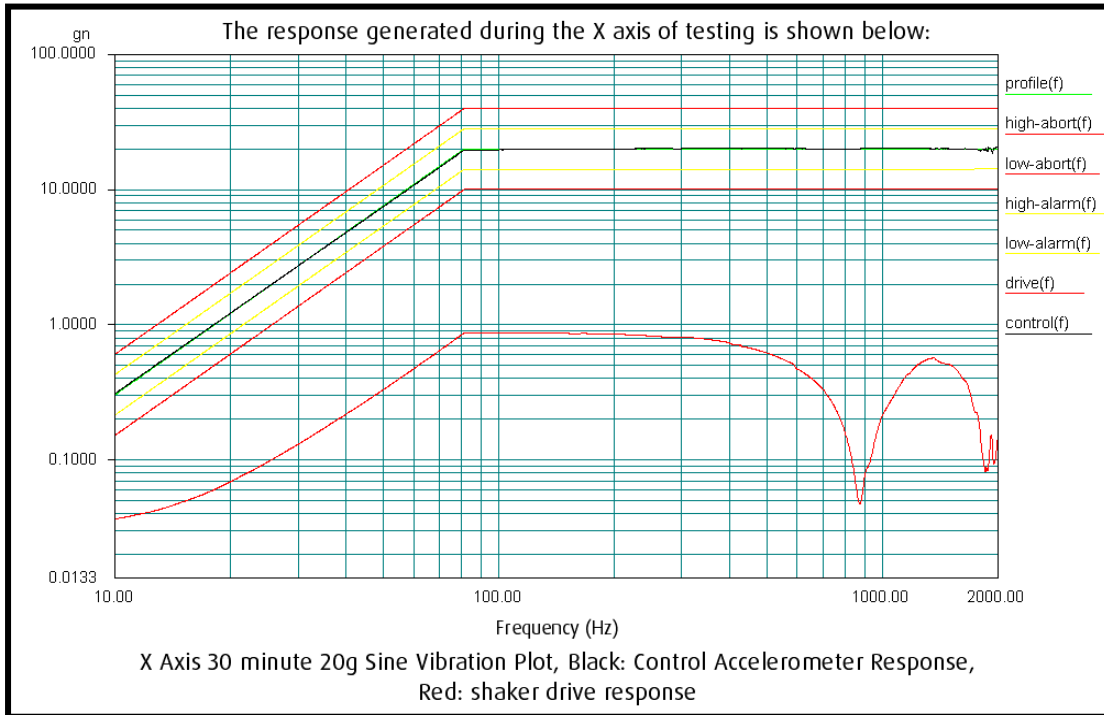




B. Vibration – 20g

The sample was subjected to a Swept Sine Test carried out generally in accordance with BS 9525 and BS EN 60068-2-6 test Fc, under the following conditions:

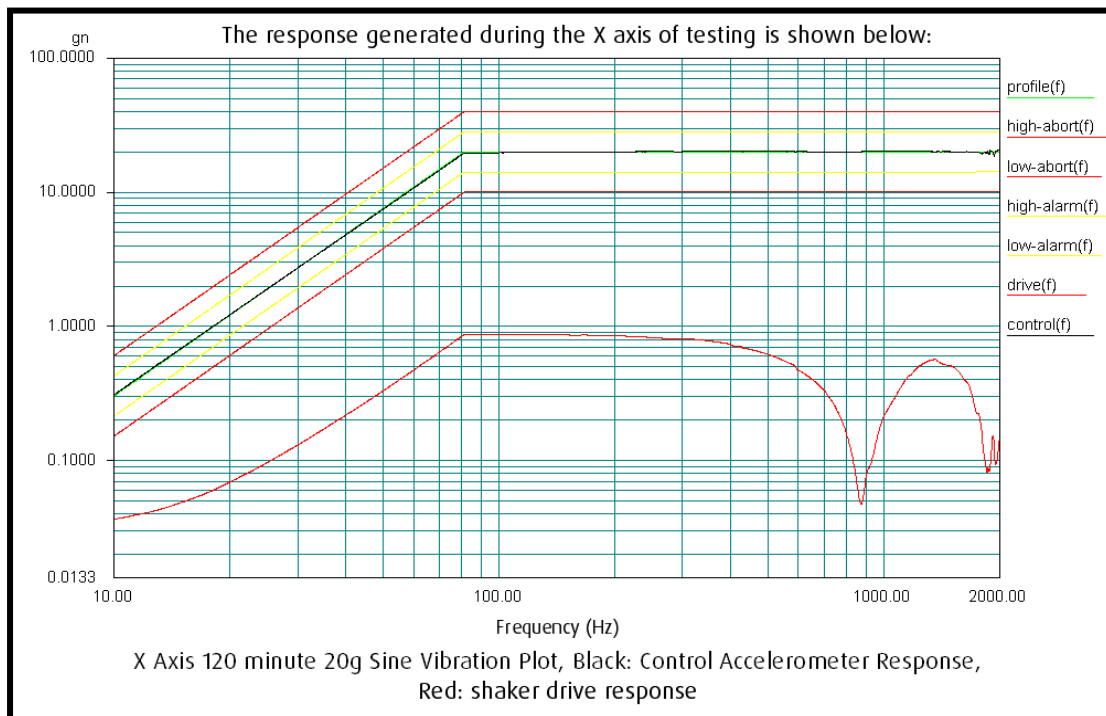
10-81.73Hz @ 1.5mm peak-peak, 57.55-2000Hz @ 20g. Sweep rate 1 octave/minute for 30 minutes, intermittencies on each connector to be recorded.

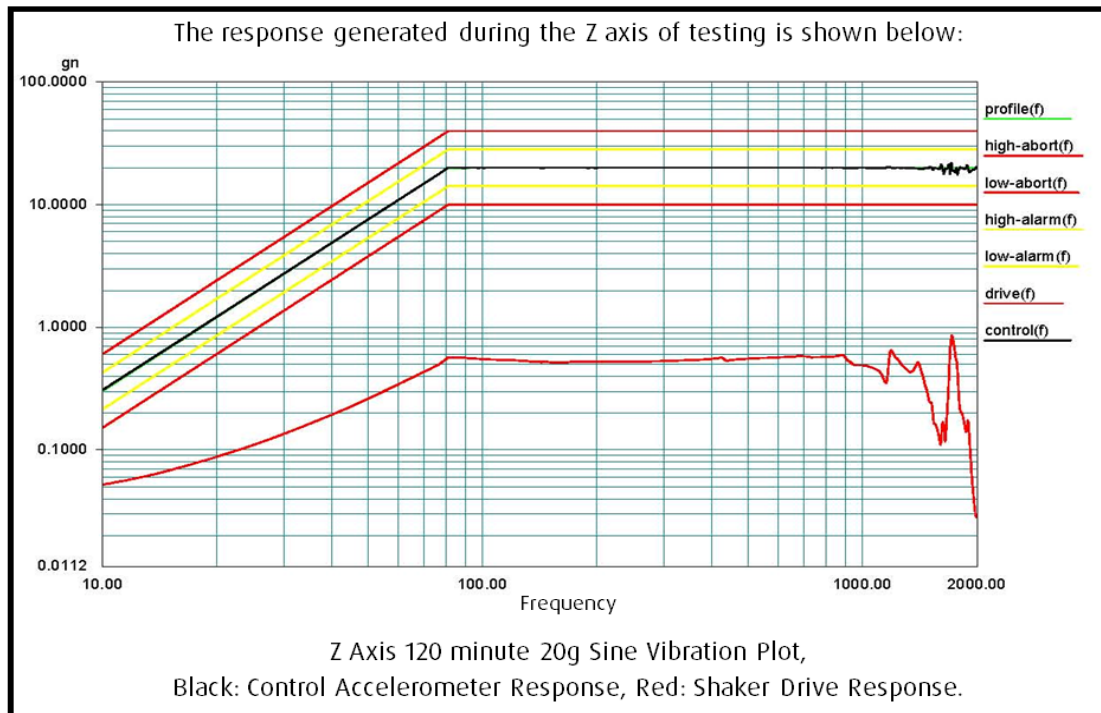
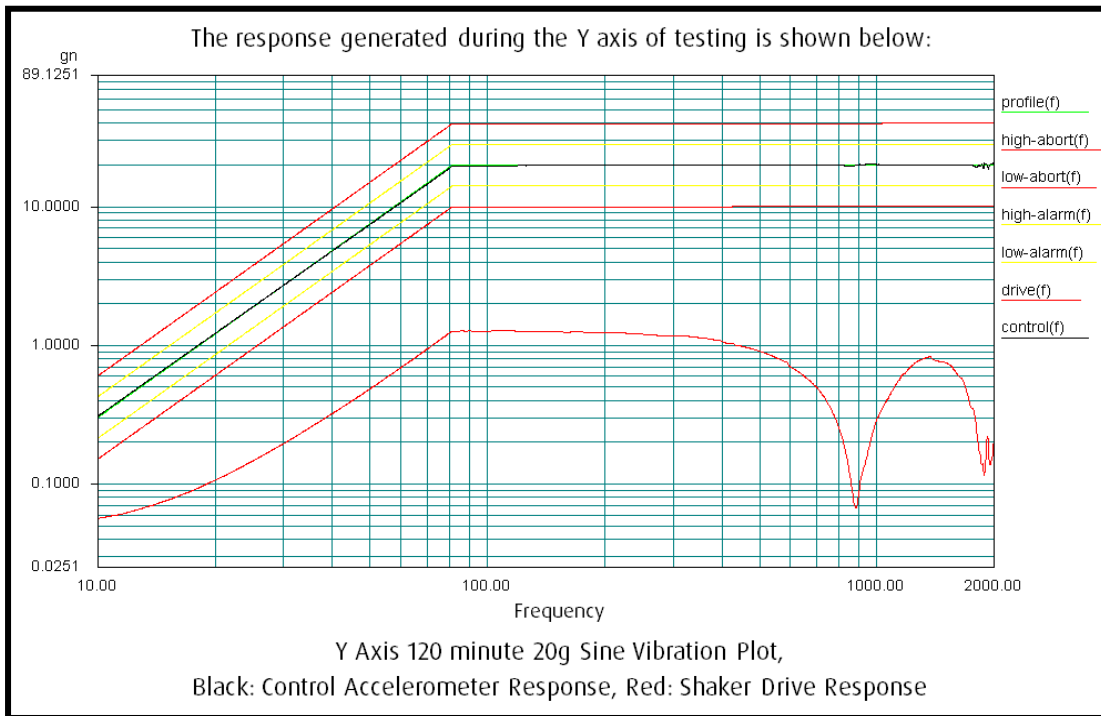




C. Vibration – 20g

The sample was subjected to a Swept Sine Test carried out generally in accordance with BS 9525 and BS EN 60068-2-6 test Fc, under the following conditions:
10-81.73Hz @ 1.5mm peak-peak, 57.55-2000Hz @ 20g. Sweep rate 1 octave/minute for 2 hours, intermittencies on each connector to be recorded.

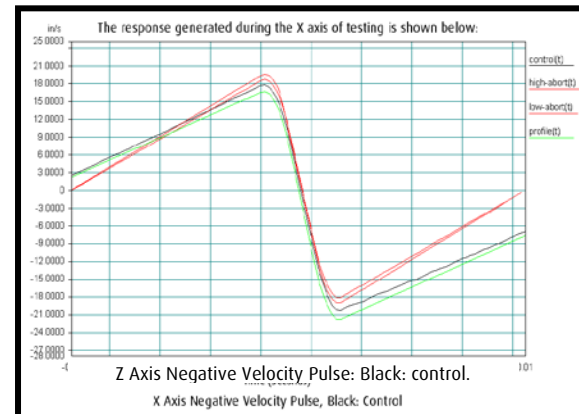
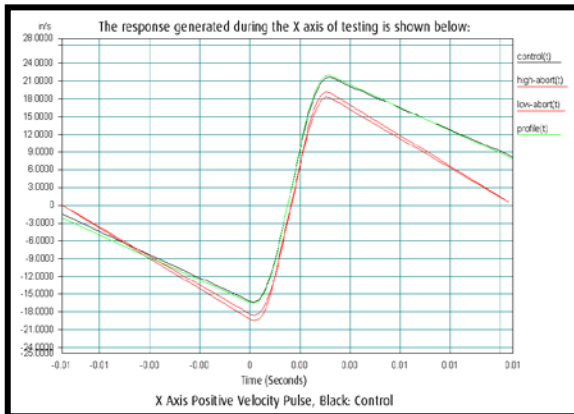
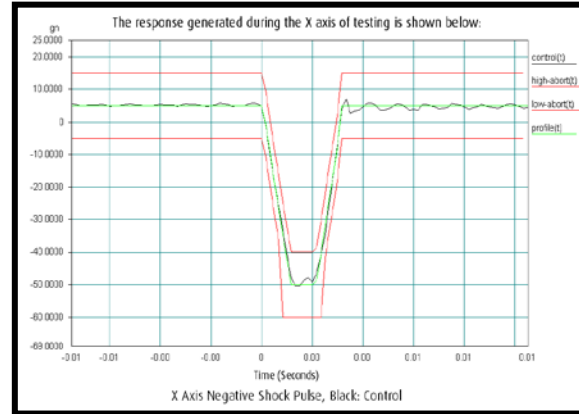
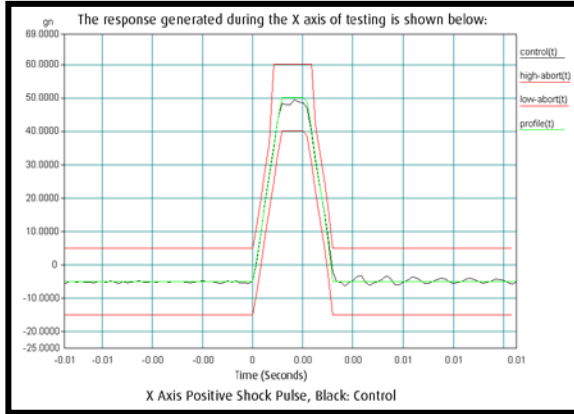


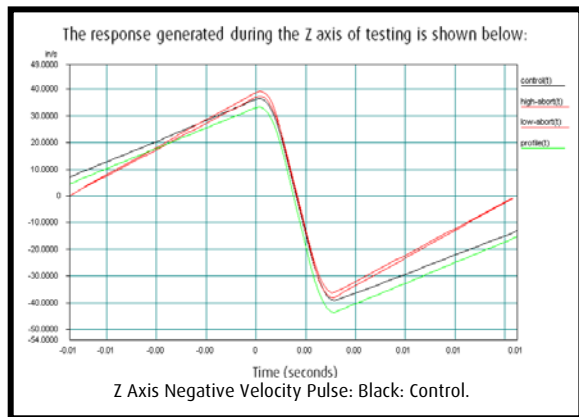
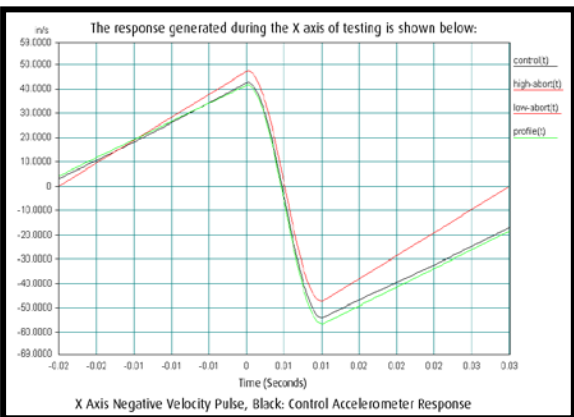
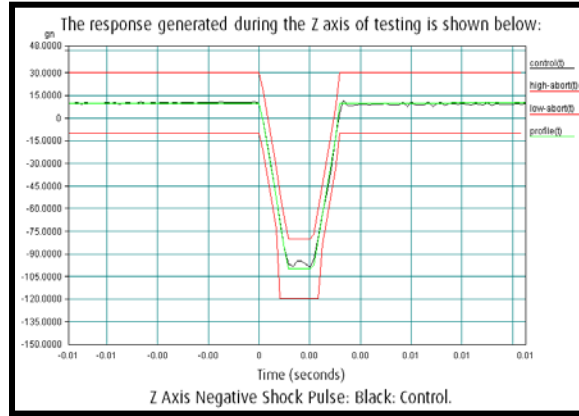
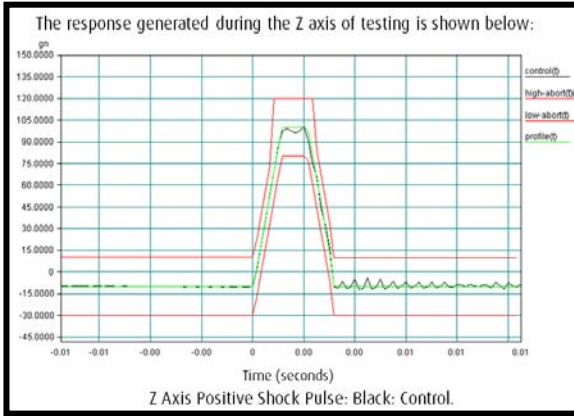
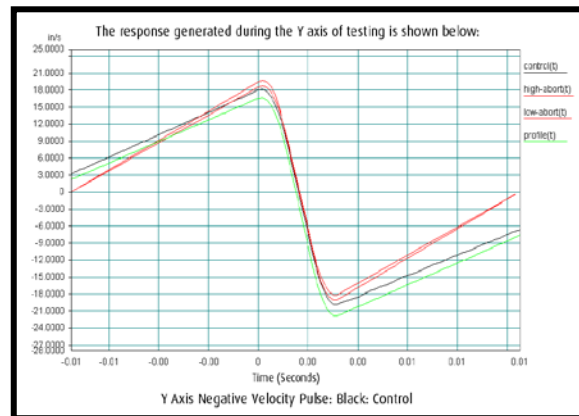
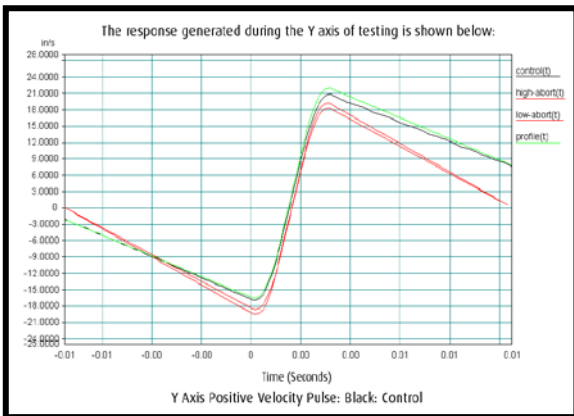
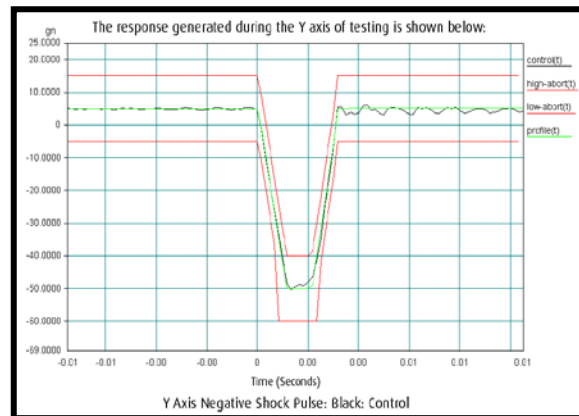
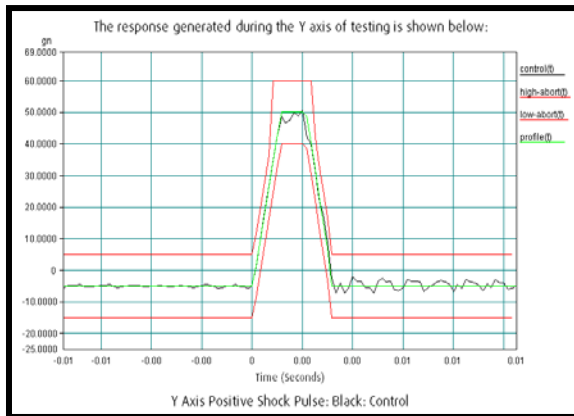


D. Shock - 100g

The sample was subjected to a Shock Test carried out generally in accordance with BS 9525 and BS EN 60068-2-6 test Ea, under the following conditions:

Severity = 100g, duration = 1ms, shape = trapezoidal, number of shocks = 1 per direction, 2 per axis, 6 in total.





E. Bump – 40g

The sample was subjected to a Bump Test carried out generally in accordance with BS 9525 and BS EN 60068-2-27 test Ea, under the following conditions:

Severity = 40g, duration = 10ms, shape = Half-sine, number of bumps = 666 per direction, 1333 per axis, 4000 in total.

