REPORT NUMBER: 222-MGA-2007-004

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 222 SCHOOL BUS PASSENGER SEATING AND CRASH PROTECTION

THOMAS BUILT BUSES INC.
2007 THOMAS SAF-T-LINER C2
NHTSA No.: C70900

PREPARED BY:
MGA RESEARCH CORPORATION
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BURLINGTON, WI 53105

Final Report Date: April 23, 2007

FINAL REPORT

PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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Technical Report Documentation Page

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16. Abstract Compliance tests were conducted on the subject 2007 Thomas SAF-T-LINER C2 School Bus, NHTSA No. C70900, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-222-03 for the determination of FMVSS 222 compliance. Test Failure: None			
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PURPOSE OF COMPLIANCE TEST

Tests were conducted on a 2007 Thomas SAF-T-LINER C2 School Bus, NHTSA No. C70900, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-222-03 to determine compliance to the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 222, “School Bus Passenger Seating and Crash Protection”.

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-02-D-01057.

SECTION 2
TEST DATA SUMMARY

The passenger seating and crash protection tests were conducted during January through March 2007. All tests were conducted by MGA Research Corporation at the Wisconsin Operations. The test vehicle, 2007 Thomas SAF-T-LINER C2 School Bus, NHTSA No. C70900, appears to meet all the requirements of FMVSS 222.

LINEAR AND AREA MEASUREMENTS

Seat to seat/barrier spacing was checked on all seats and found to be 610 mm or less as shown on Data Sheet 1.

The seat back height and front surface area of Seat Nos. 1 and 16 were measured in accordance with Section 12.1 of OVSC TP-222-03. As shown in Data Sheet 2 for Seat Nos. 1 and 16, the seat back area is greater than ninety percent of the seat bench width multiplied by 508.

Restraining barriers positions and projected rear surface areas of Barrier Nos. 1 and 16 were measured in accordance with OVSC TP-222-03. As shown in Data Sheet 6 for Barrier Nos. 1 and 16, the projected perimeters of the seats fall completely within the perimeters of the restraining barriers.

SEAT CUSHION RETENTION

Seat Nos. 8 and 9 were tested in accordance with Section 12.3 of OVSC TP-222-03. Seat cushion weight was 4.7 kg for both S8 and S9. The maximum force reached for S8 was 231.0 N and 234.0 N for S9. For S8, the lower time limit boundary (t1) was approximately 3.5 seconds with an approximate load duration of 5.0 seconds. For S9, the lower time limit boundary (t1) was approximately 2.5 seconds with an approximate load duration of 5.0 seconds. As shown in Data Sheet 3, the seat cushions tested complied with all requirements.

SECTION 2 (CONTINUED)
TEST DATA SUMMARY

SEAT BACK FORCE/DEFLECTION TEST - FORWARD

Seat Nos. 2 and 15 were tested in accordance with Section 12.4 of OVSC TP-222-03. Seat bench width was determined to be 985 mm for S2 and 977 mm for S15. “W” was calculated to be 3 for both S2 and S15. The seating reference point (SRP) was 476 mm above the bus floor. The deflection of the seat back at conclusion of lower loading bar loading at 1557 W N load was 85.0 mm for S2 and 89.2 mm for S15. The allowable maximum deflection without moving the seat back to within 102 mm of another seat or restraining barrier was 356 mm. The stroke rate of the upper loading bar was determined by the test engineer to be 14.4 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The tests were stopped when the maximum deflection of 356 mm was reached. The minimum required area under the force versus deflection curve of the upper loading bar was 452 W or 1,356 joules for S2 and 1,356 joules for S15. As shown on Data Sheet No. 4, Seat Nos. 2 and 15 met the force deflection forward requirements. See Plots 3, 4, 5, and 6.

SEAT BACK FORCE/DEFLECTION TEST - REARWARD

Seat Nos. 11 and 12 were tested in accordance with Section 12.4 of OVSC TP-222-03. Seat bench width was determined to be 989 for S11 and 990 mm for S12. “W” was calculated to be 3 for both seats. The seating reference point (SRP) was 476 mm above the bus floor. The allowable maximum deflection without moving the seat back to within 102 mm of another seat or restraining barrier was 254 mm. The stroke rate of the upper loading bar was determined by the test engineer to be 14.4 mm/sec for both seats. The location of the loading bar was 343 mm above the SRP. The test was stopped when the maximum deflection of the seat back of 254 mm was achieved.

The area under the force versus deflection curve of the loading bar was 1,215 joules for S11 and 1,169 joules for S12. The minimum required area under the force versus deflection curve of the loading bar was 316 W or 948 joules for both seats. As shown on Data Sheet No. 5, Seat Nos. 11 and 12 met the force deflection rearward requirements. See Plots 7 and 8.

RESTRAINING BARRIER FORCE/DEFLECTION TEST - FORWARD

Both front restraining barriers (B1 and B16) were tested in accordance with Section 12.4 of OVSC TP-222-03. Seat bench width of the aft seats was determined to be 980 mm for B1 and 985 for B16. “W” was calculated to be 3 for B1 and B16. The SRP was 476 mm above the bus floor. The deflection of the restraining barrier at the conclusion of the lower loading bar loading at 1557W was 84.4 mm for B1 and 79.4 mm for B16. The allowable maximum deflection without moving the restraining barriers to within interference of a seat or door was 356 mm. The stroke rate of the upper loading bar was determined by the test engineer from test data to be 14.4 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The tests were stopped when the maximum deflection of 356 mm was reached for B1 and B16. The area under the force versus deflection curve of the upper loading bar was 2,042 joules for B1 and 2,228 joules for B16. The minimum required area under the force versus deflection curve of the upper loading bar was 452 W or 1,356 joules for both barriers.

SECTION 2 (CONTINUED)
TEST DATA SUMMARY

KNEE FORM IMPACT ZONE TESTS

Seat No. S3 was tested in accordance with Section 12.7 of OVSC TP-222-03. The mass of the knee form was 4.53 kg. All knee form contact area criteria and impact energy criteria were met for the seat.

HEAD FORM IMPACT ZONE TESTS

Seat No. S3 was tested in accordance with Section 12.6 of OVSC TP-222-03. The mass of the head form was 5.21 kg. All head form contact area criteria was met for the seat. The impact energy criteria and head injury criteria for all impact locations were met.

WHEELCHAIR SECUREMENT ANCHORAGES AND DEVICES

Securement anchorage for wheelchair locations W8.5 was tested in accordance with Appendix 3 of OVSC TP-222-03. Wheelchair locations W8.5 is located as shown in the seating diagram in Section 8 and designed for forward facing occupants.

Anchorage attachments and webbing straps provided with the vehicle were used to conduct the tests. Type A and C anchorages were tested in location W8.5 at the LF and LR locations. A Type D anchorage was tested in location W8.5 at the upper torso location. All anchorages met the required minimum loads. See Data Sheet 10.

ADMINISTRATIVE DATA SHEET

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **11/15/2006**

INCOMPLETE VEHICLE (IF APPLICABLE)

Manufacturer:	Freightliner
Model:	89382-0662768-281TS
VIN:	4UZABPDG27CY03914
Build Date:	07/2006
Certification Date:	07/2006

COMPLETED VEHICLE (SCHOOL BUS)

Manufacturer:	Thomas Built Buses Inc.
Make/Model:	Thomas SAF-T-LINER C2
VIN:	4UZABPDG27CY03914
NHTSA No.:	C70900
Color:	Yellow
GVWR:	11,569 kg / 25,500 lbs
Build Date:	07/2006
Certification Date:	07/2006

DATES

Vehicle Receipt:	11/15/2006
Start of Compliance Test:	1/12/2007
Completion of Compliance Test:	3/19/2007

COMPLIANCE TEST:
All tests were performed in accordance with the references outlined in TP-222-03.

Recorded By:_____

Approved By:_____ DATE: 11/15/2006

GENERAL TEST DATA SHEET

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**1/12/2007**

SCHOOL BUS IDENTIFICATION

Model Year/Mfr./Make/Model:	2007/Thomas/SAF-T-LINER C2
Passenger Capacity:	(1 Driver, 48 Passengers, 1 Wheelchair)
NHTSA No.:	C70900
VIN:	4UZABPDG27CY03914
Conventional or Forward Control:	Conventional
GVWR (Certification Label) FRONT:	3,630 kg / 8,000 lbs
GVWR (Certification Label) REAR:	7,940 kg / 17,500 lbs
GVWR (Certification Label) TOTAL:	11,569 kg / 25,500 lbs

TEST CONDITIONS

Date(s) of Test:	1/12/2007 – 3/19/2007
Ambient Temperature (°C):	21
Required Temperature Range:	0°C to 32°C

SEAT IDENTIFICATION

Seat Manufacturer:	THOMAS BUILT BUSES INC.
Model Name & Number:	
Description of Seats:	Seat frames are constructed of 25.4 mm round welded tubing. The seat back has a 0.75 mm steel pan welded to the tubing and is covered with 20 mm foam on the front side and 11 mm foam on the rear side. In the knee impact areas, 45 mm Styrofoam is covered by 20 mm foam. The seat cushion is constructed of 10 mm plywood with 100 mm foam which tapers to 70 mm. The seat back and seat cushion are wrapped with 0.7 mm vinyl.

SECTION 3
COMPLIANCE TEST DATA

The following data sheets document the results of testing on the 2007 Thomas SAF-T-LINER C2 School Bus, NHTSA No. C70900.

DATA SHEET 1

SEAT TO SEAT/BARRIER SPACING

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **1/12/2007**

SEAT NUMBER	MEASUREMENT OF SPACING FROM SRP FORWARD TO SEAT/BARIER (mm)	REQMT ≤ 610 MM (≤ 24") CLASS 1 BUSES ONLY PASS/FAIL
1	**540**	**PASS**
2	**530**	**PASS**
3	**524**	**PASS**
4	**519**	**PASS**
5	**521**	**PASS**
6	**520**	**PASS**
7	**535**	**PASS**
8	**539**	**PASS**
9	**445**	**PASS**
10	**464**	**PASS**
11	**443**	**PASS**
12	**457**	**PASS**
13	**452**	**PASS**
14	**440**	**PASS**
15	**456**	**PASS**
16	**443**	**PASS**

COMMENTS: None

Recorded By:_____

Approved By:_____ DATE: 1/12/2007

DATA SHEET 2

SEAT BACK HEIGHT & FRONT SURFACE AREA TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/14/2007**

SEAT NUMBER: S1

		PASS/FAIL
1.	Is the seat back height at least 508 mm vertically above the SRP? (S5.1.2)	**PASS**

2. Measure the seat back front projected area in a vertical plane bound by horizontal planes through the SRP and 508 mm above the SRP according to the following procedure:

   Width, a = 820 mm; width, b = 957 mm; radius = N/A

   Area = ½ (a+b) x 508 mm = 451,358 mm^2 – N/A mm^2 = 451,358 mm^2

3. Measure the seat cushion width - W1 = 978 mm

   If the seat cushion is not rectangular, measure the cushion at the forward most edge and the rearward most edge, average the widths, and use the average width as W1.

4. Calculate the following: 0.9 x W1 x 508 mm = 447,142 mm^2

		PASS/FAIL
5.	Is item 2 greater than item 4? (S5.1.2)	**PASS**

NOTE: For a seat back or a seat cushion that has a nonsymmetrical shape or has a large radius at the corner, the above described measuring method must be modified as required to obtain accurate area measurements.

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/14/2007

DATA SHEET 2 (CONTINUED)

SEAT BACK HEIGHT & FRONT SURFACE AREA TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/14/2007**

SEAT NUMBER: S16

		PASS/FAIL
1.	Is the seat back height at least 508 mm vertically above the SRP? (S5.1.2)	**PASS**

2. Measure the seat back front projected area in a vertical plane bound by horizontal planes through the SRP and 508 mm above the SRP according to the following procedure:

   Width, a = 794 mm; width, b = 956 mm; radius = N/A

   Area = ½ (a+b) x 508 mm = 444,500 mm^2 – N/A mm^2 = 444,500 mm^2

3. Measure the seat cushion width - W1 = 972 mm

   If the seat cushion is not rectangular, measure the cushion at the forward most edge and the rearward most edge, average the widths, and use the average width as W1.

4. Calculate the following: 0.9 x W1 x 508 mm = 444,398 mm^2

		PASS/FAIL
5.	Is item 2 greater than item 4? (S5.1.2)	**PASS**

NOTE: For a seat back or a seat cushion that has a nonsymmetrical shape or has a large radius at the corner, the above described measuring method must be modified as required to obtain accurate area measurements.

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/14/2007

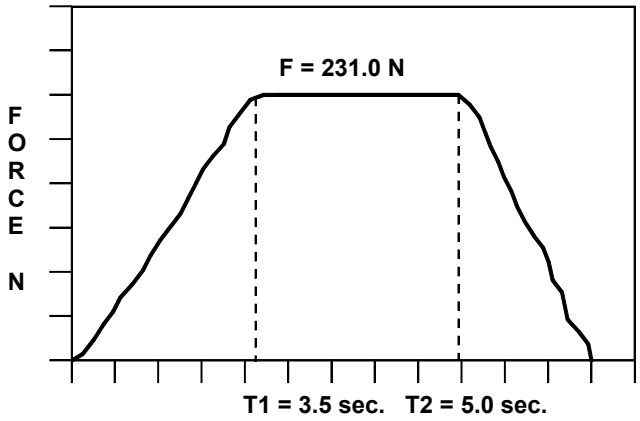
DATA SHEET 3

SEAT CUSHION RETENTION TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**1/12/2007**

SEAT NUMBER: S8

1. Cushion Weight/Mass = 4.7 kg
2. Cushion Weight x 5 = F = 230.5 N (S5.1.5)
3. Complete the following force/time graph:



F must be 5 x Cushion Weight; t1 and t2 must be according to the following expressions: T1=>1 sec., <5 sec., t2 = t1 + 5 sec., + 0 sec. and -0.10 sec.

		PASS/FAIL
4.	Did seat cushion separate from the seat structure at any attachment point? (S5.1.5)	**PASS**

DESCRIBE SEAT CUSHION ATTACHMENTS: Two half shell clamps on front of seat and one pivoting latch on rear.

Comments: None

Recorded By:_____

Approved By:_____ DATE: 1/12/2007

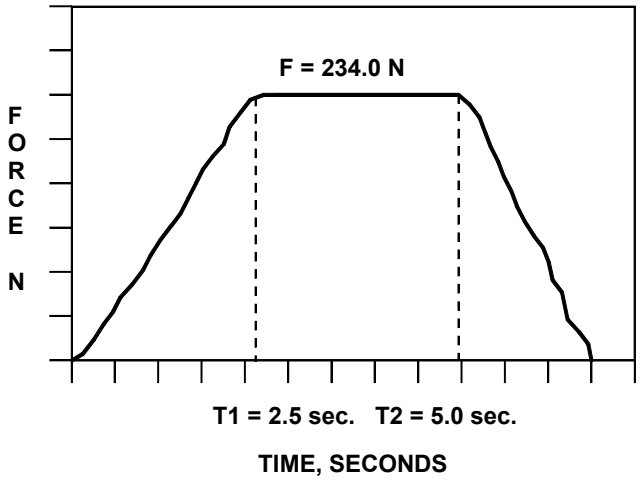
DATA SHEET 3 (CONTINUED)

SEAT CUSHION RETENTION TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**1/12/2007**

SEAT NUMBER: S9

1. Cushion Weight/Mass = 4.7 kg
2. Cushion Weight x 5 = F = 230.5 N (S5.1.5)
3. Complete the following force/time graph:



F must be 5 x Cushion Weight; t1 and t2 must be according to the following expressions: T1=>1 sec., <5 sec., t2 = t1 + 5 sec., + 0 sec. and -0.10 sec.

		PASS/FAIL
4.	Did seat cushion separate from the seat structure at any attachment point? (S5.1.5)	**PASS**

DESCRIBE SEAT CUSHION ATTACHMENTS: Two half shell clamps on front of seat and one pivoting latch on rear.

Comments: None

Recorded By:_____

Approved By:_____ DATE: 1/12/2007

DATA SHEET 4

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/23/2007**

SEAT NUMBER: S2

1. Seat Bench Width = 985 mm
   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (3)
   Seat Reference Point (SRP) location is: (Description of location as supplied by the COTR): 476 mm Above Floor, 135 mm forward from the front of seat back.
2. Location of lower loading bar is 0 mm above the SRP.
   (Requirement: Between 102 mm above and 102 mm below the SRP) (S5.1.3.1)
   Length of lower loading bar = 850 mm
   Seat Back width at SRP = 954 mm
3. Include x-y plot of Force vs. Time for the lower loading bar.
4. Deflection of the seat back at conclusion of lower bar loading (1557 W Newtons position) = 85.0 mm, at start of upper bar loading 85.0 mm, at end of upper bar loading 85.0 mm.
5. Maximum deflection allowed without moving the seat back to within 102 mm of another seat or restraining barrier = 356 mm (must be 356 mm of less) (S5.1.3)
6. Seat back movement rate selected by the test engineer = 14.4 mm/sec
7. Location of upper loading bar is in a horizontal plane 406 mm above the SRP. (Requirement: 406 mm) (S5.1.3.3). Length of upper loading bar = 770 mm. Width of seat back at 406 mm above SRP = 870 mm.
8. Reason for stopping seat back deflection:
   ___ Reached deflection determined in Item 6 above (if less than 356 mm)
   _X_ Reached 356 mm maximum allowed deflection (Actual deflection was 362 mm)
   ___ Separation was about to occur
9. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222-3) superimposed.

DATA SHEET 4 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – FORWARD

		PASS/FAIL
10.	Is the seat in its final deflected position within 102 mm of the next seat or barrier?	**PASS**

		PASS/FAIL
11.	Does the forward force vs. deflection trace of the seat back lie within the corridor? (S5.1.3)	**PASS**

12. Include a deflection vs. time plot for the upper loading bar.
13. The area within the force vs. deflection curve = 1,688 joules
14. 452W = 1,356 joules (S5.1.3.4)

		PASS/FAIL
15.	Is item 13 greater than or equal to item 14? (S5.1.3.4)	**PASS**

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/23/2007

DATA SHEET 4 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/16/2007**

SEAT NUMBER: S15

1. Seat Bench Width = 977 mm
   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (3)
   Seat Reference Point (SRP) location is: (Description of location as supplied by the COTR: 476 mm Above Floor, 135 mm forward from the front of seat back.
2. Location of lower loading bar is 0 mm above the SRP.
   (Requirement: Between 102 mm above and 102 mm below the SRP) (S5.1.3.1)
   Length of lower loading bar = 838 mm
   Seat Back width at SRP = 776 mm
3. Include x-y plot of Force vs. Time for the lower loading bar.
4. Deflection of the seat back at conclusion of lower bar loading (1557 W Newtons position) = 89.2 mm, at start of upper bar loading 89.2 mm, at end of upper bar loading 89.2 mm.
5. Maximum deflection allowed without moving the seat back to within 102 mm of another seat or restraining barrier = 356 mm (must be 356 mm of less) (S5.1.3)
6. Seat back movement rate selected by the test engineer = 14.4 mm/sec
7. Location of upper loading bar is in a horizontal plane 406 mm above the SRP. (Requirement: 406 mm) (S5.1.3.3). Length of upper loading bar = 760 mm. Width of seat back at 406 mm above SRP = 860 mm.
8. Reason for stopping seat back deflection:
   ___ Reached deflection determined in Item 6 above (if less than 356 mm)
   _X_ Reached 356 mm maximum allowed deflection (Actual deflection was 361 mm)
   ___ Separation was about to occur
9. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222-3) superimposed.

DATA SHEET 4 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – FORWARD

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/16/2007**

		PASS/FAIL
10.	Is the seat in its final deflected position within 102 mm of the next seat or barrier?	**PASS**

		PASS/FAIL
11.	Does the forward force vs. deflection trace of the seat back lie within the corridor? (S5.1.3)	**PASS**

12. Include a deflection vs. time plot for the upper loading bar.
13. The area within the force vs. deflection curve = 1,576 joules
14. 452W = 1,356 joules (S5.1.3.4)

		PASS/FAIL
15.	Is item 13 greater than or equal to item 14? (S5.1.3.4)	**PASS**

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/16/2007

DATA SHEET 5

SEAT BACK FORCE DEFLECTION TEST – REARWARD

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/26/2007**

SEAT NUMBER: S11

1. Seat Bench Width = 989 mm
   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (3)
2. Location of the loading bar is in a horizontal plane 343 mm above the SRP of the test seat. (Requirement: 343 mm above the SRP) (S5.1.4.1)
   Length of loading bar = 800 mm
   Width of seat back at 343 mm above SRP = 904 mm
3. Deflection of seat back at 222 N preload = 15.0 mm
4. Maximum deflection allowed without moving the seat back to within 102 mm of another seat = 254 mm (maximum allowed = 254 mm) (S5.1.4)
5. Seat back movement rate selected by the test engineer = 14.4 mm/sec
6. Reason for stopping deflection:
   ___ Reached deflection determined in Item 4 above (if less than 254 mm)
   _X_ Reached 254 mm maximum allowed deflection (Actual deflection was 256 mm)
   ___ Separation was about to occur
7. Include the x-y plot of force vs. deflection for the loading bar with boundaries of Figure 18 (OVSC TP-222-3) superimposed.

		PASS/FAIL
8.	Does the force vs. deflection plot lie within the boundaries of Figure 18 (OVSC TP-222-03)?	**PASS**

9. Include a deflection vs. time plot for the upper loading bar.
10. 316W = 948 joules
11. The area within the force vs. deflection curve = 1,215 joules

DATA SHEET 5 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – REARWARD

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/26/2007**

		PASS/FAIL
12.	Is item 11 greater than or equal to item 10? (S5.1.4.2)	**PASS**

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/26/2007

DATA SHEET 5 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – REARWARD

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/16/2007**

SEAT NUMBER: S12

1. Seat Bench Width = 990 mm
   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (3)
2. Location of the loading bar is in a horizontal plane 343 mm above the SRP of the test seat. (Requirement: 343 mm above the SRP) (S5.1.4.1)
   Length of loading bar = 798 mm
   Width of seat back at 343 mm above SRP = 900 mm
3. Deflection of seat back at 222 N preload = 10 mm
4. Maximum deflection allowed without moving the seat back to within 102 mm of another seat = 254 mm (maximum allowed = 254 mm) (S5.1.4)
5. Seat back movement rate selected by the test engineer = 14.4 mm/sec
6. Reason for stopping deflection:
   ___ Reached deflection determined in Item 4 above (if less than 254 mm)
   _X_ Reached 254 mm maximum allowed deflection (Actual deflection was 256 mm)
   ___ Separation was about to occur
7. Include the x-y plot of force vs. deflection for the loading bar with boundaries of Figure 18 (OVSC TP-222-3) superimposed.

		PASS/FAIL
8.	Does the force vs. deflection plot lie within the boundaries of Figure 18 (OVSC TP-222-03)?	**PASS**

9. Include a deflection vs. time plot for the upper loading bar.
10. 316W = 948 joules
11. The area within the force vs. deflection curve = 1,169 joules

DATA SHEET 5 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – REARWARD

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/16/2007**

		PASS/FAIL
12.	Is item 11 greater than or equal to item 10? (S5.1.4.2)	**PASS**

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/16/2007

DATA SHEET 6

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/15/2007**

SEAT NUMBER: B1

1. Measure distance T from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. T= 539 mm.

		PASS/FAIL
2.	Is distance T equal to or less than 610 mm? (S5.2)	**PASS**

3. Measure distance D at top (t) and bottom (b) of barrier.
   D_t = 78 mm D_b = 0 mm
4. Measure distance C at top (t) and bottom (b) of barrier.
   C_t = 84 mm C_b = 0 mm

		PASS/FAIL
5.	Is D_t equal to or less than C_t?	**PASS**

		PASS/FAIL
6.	Is D_b equal to or less than C_b?	**PASS**

7. Measure distance E at top of barrier and bottom of barrier.
   E_t = 768 mm E_b = 969 mm
8. Measure distance A at top of seat back and bottom of seat.
   A_t = 751 mm A_b = 969 mm

		PASS/FAIL
9.	Is distance $E_t + D_t$ equal to or greater than distance $A_t + C_t$?	**PASS**

		PASS/FAIL
10.	Is distance $E_b + D_b$ equal to or greater than distance $A_b + C_b$	**PASS**

11. Measure distance U at inboard (i) and outboard (o) side of barrier.
    U_i = 297 mm U_o = 291 mm
12. Measure distance V at inboard (i) and outboard (o) sides of seat.
    V_i = 307 mm V_o = 307 mm

DATA SHEET 6 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

		PASS/FAIL
13.	Is U_i equal to or less than V_i?	**PASS**

		PASS/FAIL
14.	Is U_o equal to or less than V_o?	**PASS**

15. Measure distance S at inboard (I) and outboard (o) side of barrier.

S_i = 745 mm S_o = 735 mm

16. Measure distance W at inboard (i) and outboard (o) sides of seat.

W_i = 710 mm W_o = 717 mm

		PASS/FAIL
17.	Is $S_i + U_i$ equal to or greater than $W_i + V_i$?	**PASS**

		PASS/FAIL
18.	Is $S_o + U_o$ equal to or greater than $W_o + V_o$?	**PASS**

19. Compute area (W x A) = 613,610 mm^2

20. Compute area (E x S) = 642,690 mm^2

		PASS/FAIL
21.	Is (W x A) equal to or less than (E x S)?	**PASS**

Comments: None

Recorded By:_____

Approved By: Michael Janosz DATE: 2/15/2007

DATA SHEET 6 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/15/2007**

SEAT NUMBER: B16

1. Measure distance T from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. T= 443 mm.

		PASS/FAIL
2.	Is distance T equal to or less than 610 mm? (S5.2)	**PASS**

3. Measure distance D at top (t) and bottom (b) of barrier.
   D_t = 96 mm D_b = 11 mm
4. Measure distance C at top (t) and bottom (b) of barrier.
   C_t = 105 mm C_b = 16 mm

		PASS/FAIL
5.	Is D_t equal to or less than C_t?	**PASS**

		PASS/FAIL
6.	Is D_b equal to or less than C_b?	**PASS**

7. Measure distance E at top of barrier and bottom of barrier.
   E_t = 758 mm E_b = 963 mm
8. Measure distance A at top of seat back and bottom of seat.
   A_t = 724 mm A_b = 940 mm

		PASS/FAIL
9.	Is distance $E_t + D_t$ equal to or greater than distance $A_t + C_t$?	**PASS**

		PASS/FAIL
10.	Is distance $E_b + D_b$ equal to or greater than distance $A_b + C_b$	**PASS**

11. Measure distance U at inboard (i) and outboard (o) side of barrier.
    U_i = 294 mm U_o = 290 mm
12. Measure distance V at inboard (i) and outboard (o) sides of seat.
    V_i = 320 mm V_o = 298 mm

DATA SHEET 6 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

		PASS/FAIL
13.	Is U_i equal to or less than V_i?	**PASS**

		PASS/FAIL
14.	Is U_o equal to or less than V_o?	**PASS**

15. Measure distance S at inboard (I) and outboard (o) side of barrier.

S_i = 735 mm S_o = 740 mm

16. Measure distance W at inboard (i) and outboard (o) sides of seat.

W_i = 695 mm W_o = 727 mm

		PASS/FAIL
17.	Is $S_i + U_i$ equal to or greater than $W_i + V_i$?	**PASS**

		PASS/FAIL
18.	Is $S_o + U_o$ equal to or greater than $W_o + V_o$?	**PASS**

19. Compute area (W x A) = 591,552 mm^2

20. Compute area (E x S) = 634,619 mm^2

		PASS/FAIL
21.	Is (W x A) equal to or less than (E x S)?	**PASS**

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/15/2007

DATA SHEET 7

RESTRAINING BARRIER FORCE/DEFLECTION TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/23/2007**

BARRIER IDENTIFICATION: B1

1. Seat cushion width of seat immediately rearward of restraining barrier = 980 mm
   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (3)
2. Location of SRP of seat rearward of restraining barrier is: (Description of location as supplied by the manufacturer): 476 mm Above Floor, 135 mm forward from the front of seat back.
3. Location of lower loading bar is 0 mm above/below the SRP.
   (Requirement: between 102 mm above and 102 mm below the SRP) (S5.1.3.1)
   Length of loading bar = 850 mm
   Width of barrier at SRP = 950 mm
4. Include the x-y plot of force vs. time for the lower loading bar.
5. Deflection of the barrier at the conclusion of lower bar loading (1557W position) = 84.4 mm.
6. Maximum deflection allowed without moving the restraining barrier to within interference of door operation = 356 mm (must be 356 mm or less).
7. Barrier movement rate selected by the test engineer = 14.4 mm/sec
8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP.
   (Requirement: 406 mm) (S5.1.3.3)
   Length of loading bar = 770 mm
   Width of Barrier at 406 mm above the SRP = 870 mm
9. Reason for stopping restraining barrier deflection:
   _X_ Reached 356 mm maximum
   ___ Separation was about to occur
   ___ Interference with door operation
   ___ Exceeded maximum load of 10675
10. Maximum deflection of barrier back 361 mm.
    (Requirement: maximum allowed is 356 mm) (S5.2.3(b))

DATA SHEET 7 (CONTINUED)

RESTRAINING BARRIER FORCE/DEFLECTION TEST

		PASS/FAIL
11.	Does the restraining barrier interfere with the normal operation of the door. (S5.2.3 (c))	**PASS**

		PASS/FAIL
12.	Did any separation of barrier component or the separation of the barrier from the vehicle occur? (S5.1.3 (d) & (e))	**PASS**

13. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222-3) superimposed.

		PASS/FAIL
14.	Does the forward force vs. deflection trace of the barrier back lie within the unshaded area? (S5.2.3(a))	**PASS**

15. Include a deflection vs. time plot for the upper loading bar.
16. The area within the force vs. deflection curve = 2,042 joules
17. 452W = 1,356 joules (S5.2.3) (S5.1.3.4)

		PASS/FAIL
18.	Is item 16 greater than item 17?	**PASS**

Comments: None

Recorded By:_____

Approved By:_____ DATE: 2/23/2007

DATA SHEET 7 (CONTINUED)

RESTRAINING BARRIER FORCE/DEFLECTION TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/26/2007**

BARRIER IDENTIFICATION: B16

1. Seat cushion width of seat immediately rearward of restraining barrier = 985 mm
   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (3)
2. Location of SRP of seat rearward of restraining barrier is: (Description of location as supplied by the manufacturer): 476 mm Above Floor, 135 mm forward from the front of seat back.
3. Location of lower loading bar is 0 mm above/below the SRP.
   (Requirement: between 102 mm above and 102 mm below the SRP) (S5.1.3.1)
   Length of lower loading bar = 880 mm
   Width of barrier at SRP = 980 mm
4. Include the x-y plot of force vs. time for the lower loading bar.
5. Deflection of the barrier at the conclusion of lower bar loading (1557W position) = 79.4 mm.
6. Maximum deflection allowed without moving the restraining barrier to within interference of door operation = 356 mm (must be 356 mm or less).
7. Barrier movement rate selected by the test engineer = 14.4 mm/sec
8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP.
   (Requirement: 406 mm) (S5.1.3.3)
   Length of loading bar = 770 mm
   Width of Barrier at 406 mm above the SRP = 870 mm
9. Reason for stopping restraining barrier deflection:
   _X_ Reached 356 mm maximum
   ___ Separation was about to occur
   ___ Interference with door operation
   ___ Exceeded maximum load of 10675
10. Maximum deflection of barrier back 362 mm.
    (Requirement: maximum allowed is 356 mm) (S5.2.3(b))

DATA SHEET 7 (CONTINUED)

RESTRAINING BARRIER FORCE/DEFLECTION TEST

		PASS/FAIL
11.	Does the restraining barrier interfere with the normal operation of the door. (S5.2.3 (c))	**PASS**

		PASS/FAIL
12.	Did any separation of barrier component or the separation of the barrier from the vehicle occur? (S5.1.3 (d) & (e))	**PASS (1)**

13. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222-3) superimposed.

		PASS/FAIL
14.	Does the forward force vs. deflection trace of the barrier back lie within the unshaded area? (S5.2.3(a))	**PASS (2)**

15. Include a deflection vs. time plot for the upper loading bar.

16. The area within the force vs. deflection curve = 2,228 joules

17. 452W = 1,356 joules (S5.2.3) (S5.1.3.4)

		PASS/FAIL
18.	Is item 16 greater than item 17?	**PASS**

Comments:

(1) The bolts anchoring the restraining barrier to the floor broke at 11,490 N. However, it would appear that the required energy was already absorbed by this point.

(2) The Force vs. Deflection trace did exceed the upper force limit at 279 mm displacement. However, it would appear that the required energy was already absorbed by this point.

Recorded By:_____

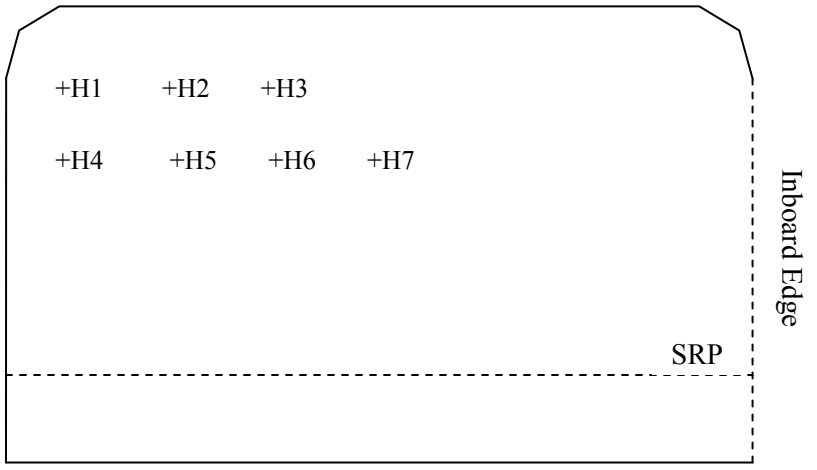
Approved By:_____ DATE: 2/26/2007

DATA SHEET 8

HEAD FORM IMPACT CONTACT AREA AND ENERGY REQUIREMENTS

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

SEAT NUMBER: S3



SEAT BACK REAR SURFACE

NOTE: SHADED AREA IS NONCONTACTABLE SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H1, H2, H3, H4, H5, H6, and H7 in the appropriate location.
3. Define and mark on graphic above, the plane of reference for head form impact angle:

   0° = Parallel With Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of Seat

   Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA AND ENERGY REQUIREMENTS

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)
Head Impact & Test #	Location (a)			Speed Trap Impact Velocity** mps	Derived Velocity mps	Contact Area (CA) mm^2	CA ≥ 1935 mm^2	
	X	Y	Angle				Yes-Pass	No-Fail
H1	780	440	0	1.55	1.84	4,410	PASS	
H2	670	440	0	1.55	1.55	3,070	PASS	
H3	560	440	0	1.53	1.36	3,680	PASS	
H4	780	320	0	1.54	1.79	3,820	PASS	
H5	670	320	0	1.55	1.75	3,620	PASS	
H6	560	320	0	1.54	1.61	3,950	PASS	
H7	450	320	0	1.55	1.52	3,450	PASS	

* Contact Velocity from Item 7 below

** Velocity Range = 1.52 mps, +0.08, -0 mps

5. Attach Contact Area Prints.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: (a) All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By:_____

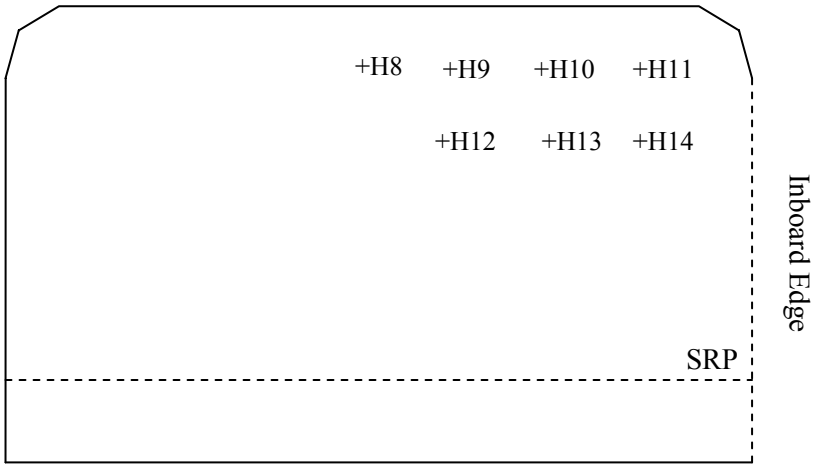
Approved By:_____ DATE: 2/21/2007

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA AND ENERGY REQUIREMENTS

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/19/2007**

SEAT NUMBER: S3



SEAT BACK REAR SURFACE

NOTE: SHADED AREA IS NONCONTACTABLE SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H8, H9, H10, H11, H12, H13 and H14 in the appropriate location.
3. Define and mark on graphic above, the plane of reference for head form impact angle:
   0° = Parallel With Floor, (+) is Up, (-) is Down
   X = From Inboard Edge of Seat
   Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA AND ENERGY REQUIREMENTS

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Head impact & Test #	Location (a)			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Max HIC	Engy Reqd Joules	Column 5 < 1000		Column 6 > 4.5 joules	
	X	Y	Angle					Yes-Pass	No-Fail	Yes-Pass	No-Fail
H8	450	440	0	6.63	6.48	129	4.73	PASS		PASS	
H9	340	440	0	6.66	6.54	127	4.97	PASS		PASS	
H10	230	440	0	6.63	6.72	130	5.07	PASS		PASS	
H11	120	440	0	6.62	6.30	112	6.48	PASS		PASS	
H12	340	320	0	6.63	6.60	117	14.30	PASS		PASS	
H13	230	320	0	6.65	6.74	117	10.63	PASS		PASS	
H14	120	320	0	6.65	6.32	172	6.41	PASS		PASS	

* Impact velocity from item No. 6 below

** Impact velocity range = 6.69 mps, +0, -0.08 mps

5. Attach acceleration versus time plots for each impact.
6. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: (a) All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By:_____

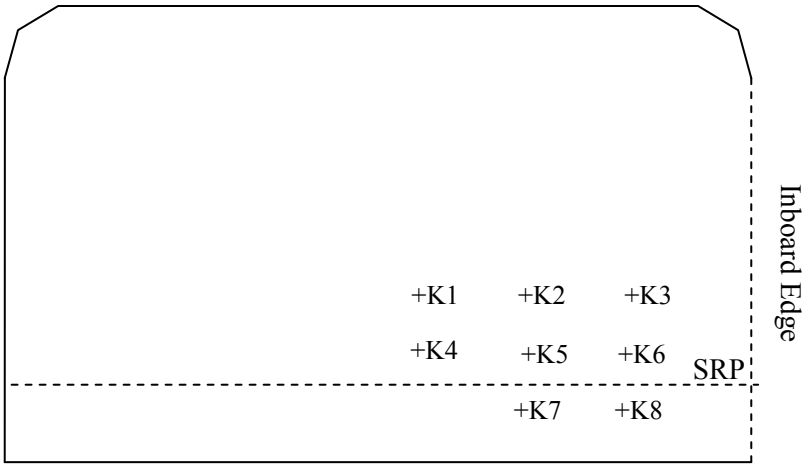
Approved By:_____ DATE: 2/19/2007

DATA SHEET 9

KNEE FORM IMPACT TEST

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

SEAT NUMBER: S3



SEAT BACK REAR SURFACE

1. Locate x-y reference point on sketch above for knee form impact locations. (Label the positive and negative directions, if applicable)
2. Identify knee form impact location on sketch by placing K1, K2, K3, K4, K5, K6, K7, and K8 in the appropriate location.
3. Define the plane of reference for knee form impact angle:
   0° = Parallel With Floor, (+) is Up, (-) is Down
   X = From Inboard Edge of the Seat
   Y = Measured Vertically from the SRP

DATA SHEET 9 (CONTINUED)

KNEE FORM IMPACT TEST

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Knee impact & Test #	Location (a)			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Cont. Area mm^2	Resist Force (N)	Column 5 > 1935 mm^2		Column 6 < 2669N	
	X	Y	Angle					Yes-Pass	No-Fail	Yes-Pass	No-Fail
K1	365	220	0	4.88	4.90	3,720	1,814	PASS		PASS	
K2	225	220	0	4.87	4.89	4,040	1,435	PASS		PASS	
K3	85	220	0	4.89	4.71	3,660	1,675	PASS		PASS	
K4	365	80	0	4.87	4.80	2,970	2,014	PASS		PASS	
K5	225	80	0	4.86	4.54		1,810			PASS	
K6	85	80	0	4.80	4.60		1,571			PASS	
K7	225	-60	0	4.85	5.07		1,678			PASS	
K8	85	-60	0	4.83	5.00		1,688			PASS	

* Impact velocity from item No. 7 below

** Impact velocity range = 4.86 mps, +0.08, -0 mps for contact area, +0, -0.08 mps for force

5. Attach Contact Area Prints for K1, K2, K3 and K4.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time for each impact K1 through K8.
8. Attach force vs. time plots for K5, K6, K7 and K8.

Comments: (a) All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By:_____

Approved By:_____ DATE: 2/21/2007

DATA SHEET 10

WHEELCHAIR SECUREMENT ANCHORAGES AND DEVICES

WHEELCHAIR OCCUPANT RESTRAINT ANCHORAGES AND RESTRAINTS

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **3/15/2007**

WHEELCHAIR LOCATIONS: W8.5

		PASS/FAIL
1.	Are all wheelchair securement and occupant restraint anchorages designed for forward wheelchair position?	**PASS**

		PASS/FAIL
2.	Each wheelchair location shall have not less than four wheelchair securement anchorages (Type A or C) – two located in front of the wheelchair and two in the rear. Type C anchorage may be used in rear of the wheelchair only. Number of Type A anchorages in front of the wheelchair (≥2 Pass;<2 Fail)	**PASS**

		PASS/FAIL
3.	Number of anchorages behind the wheelchair (≥2 Pass;<2 Fail): Type A 0; Type C 2; Total: 2	**PASS**

		PASS/FAIL
4.	Each wheelchair location shall have not less than two wheelchair occupant pelvis and upper torso restraint anchorage (Type B, C , or combination). The pelvic belt must not terminate at the wheelchair. Number of anchorages (≥2 Pass;<2 Fail): Type B 0; Type C 2; Total: 2	**PASS**

		PASS/FAIL
5.	The wheelchair location has at least one Type D anchorage:	**PASS**

		PASS/FAIL
6.	The wheelchair securement device has means to limit movement of the wheelchair.	**PASS**

DATA SHEET 10 (CONTINUED)

WHEELCHAIR SECUREMENT ANCHORAGES AND DEVICES

WHEELCHAIR OCCUPANT RESTRAINT ANCHORAGES AND RESTRAINTS

Wheelchair Location	Anchorage Location	Anchorage Type	Required Load (Newtons)	Actual Max. Test Load (Newtons)	Pass/ Fail	Comment
W8.5	LF	A	13,344	13,287	PASS	
	RF					
	LR	C	26,688	26,737	PASS	
	RR					
	Upper Torso	D	6,672	6,852	PASS	

Comments: None

Recorded By:_____

Approved By:_____ DATE: 3/15/2007

SECTION 4

INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **1/12/2007**

Equipment	Description	Model/Serial No.	Cal. Date	Next Cal. Date
Computer	HP	Vectra / US03263612	---	---
Test Fixture	MGA	TF2003	---	---
A/D Interface	Metrabyte	DAS-1802	---	---
Load Cell	Interface	1210AF-SK / 62736	1/29/07	7/24/07
Load Cell	Interface	1210AF / 137778	11/3/06	5/3/07
Inclinometer	Digital Protractor	Pro 360 / Comp Lab	10/4/06	4/4/07
Steel Tape	Stanley	Powerlock / 278	9/26/06	3/26/07
Impact Fixture	MGA	IF2003A	---	---
Camera	Sony	DSC-S75	---	---
Planimeter	Sokkia Corp.	Planix5 007319	11/22/06	5/22/07
Accelerometer	Endevco	7264-2000 / W04807	10/4/06	4/4/07
Linear Motion Transducer	Ametek	P-25A / 1202-19366	10/30/06	4/30/07
Linear Motion Transducer	Ametek	P25A / 21954	10/30/06	4/30/07

SECTION 5
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Left Side View of School Bus

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

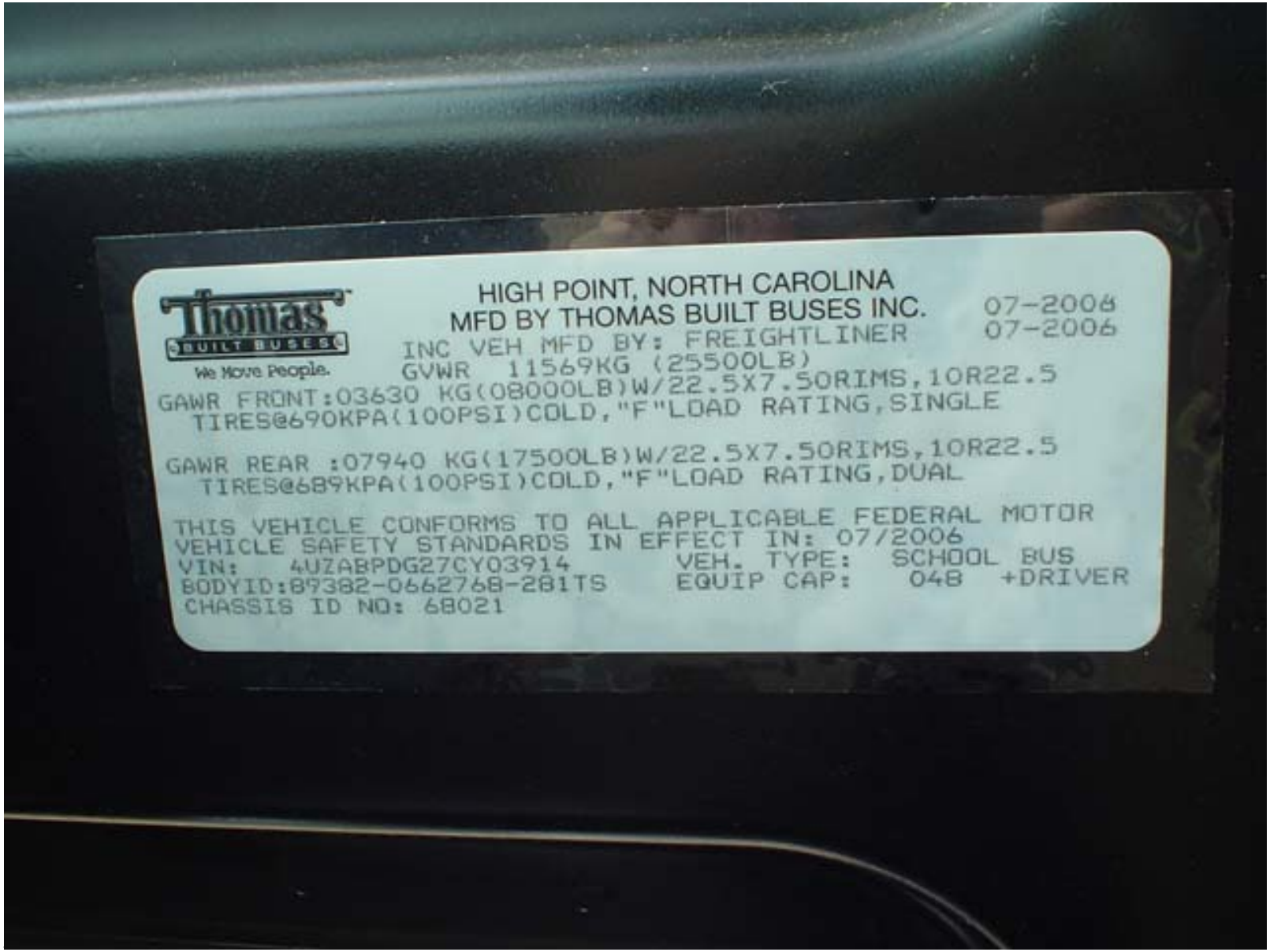
Right Side View of School Bus

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

¾ Front View From Left Side of School Bus

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

¾ Rear View From Right Side of School Bus



Certification Label and Tire Placard

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Vehicle Interior View From Front to Rear

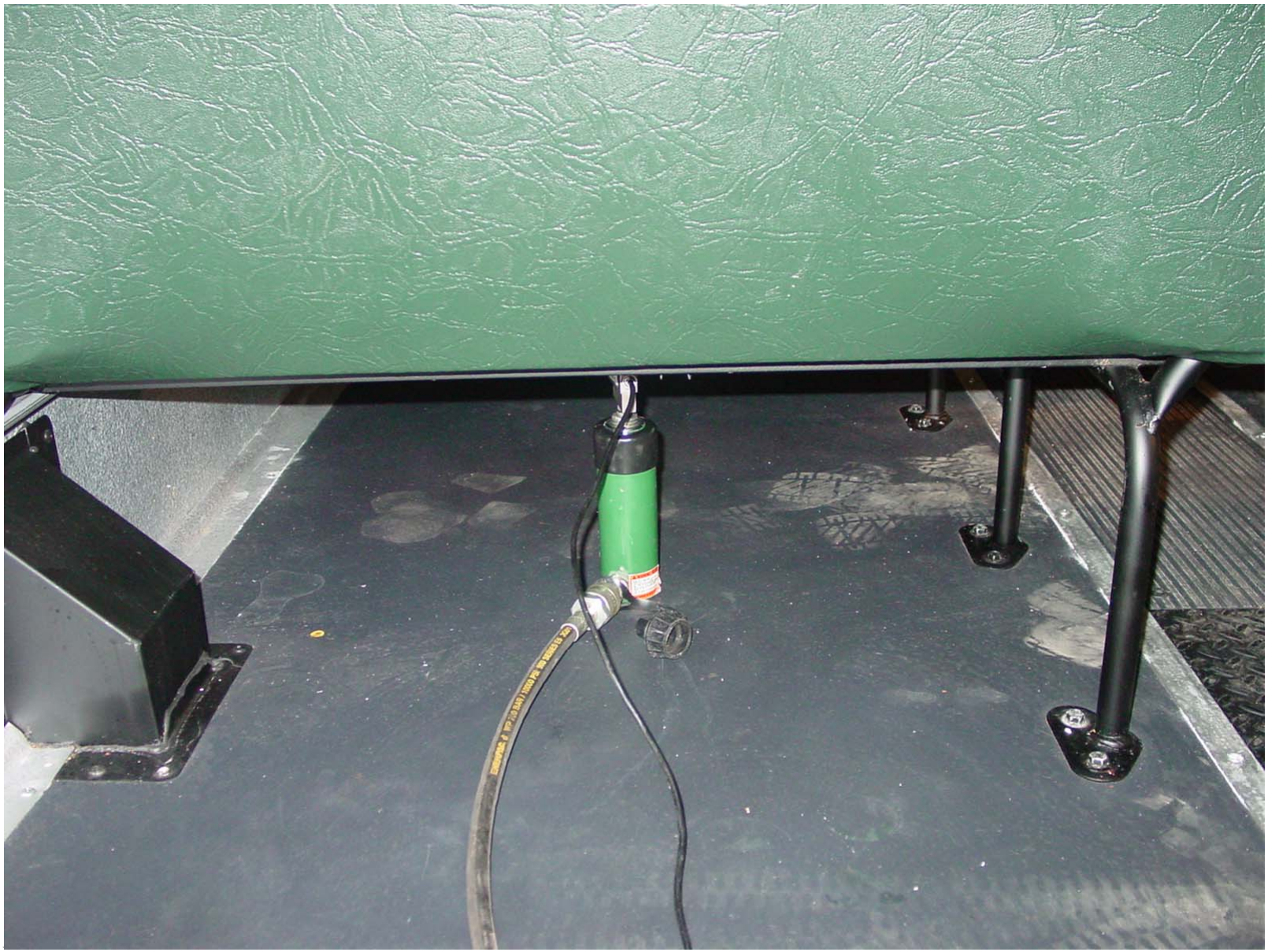
Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Vehicle Interior View From Rear to Front

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Pre-Test of Seat Cushion S8

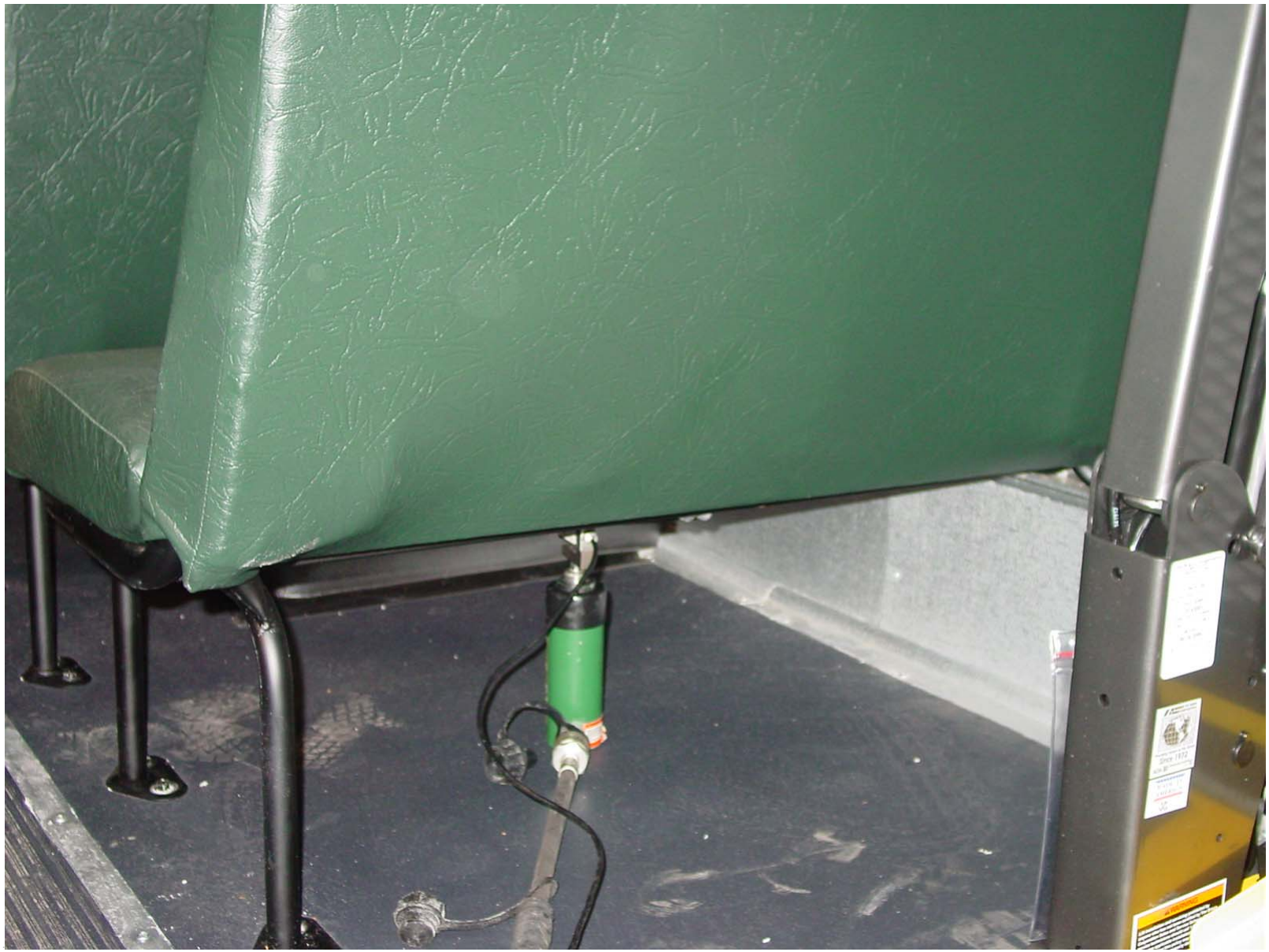
Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



Post-Test of Seat Cushion S8

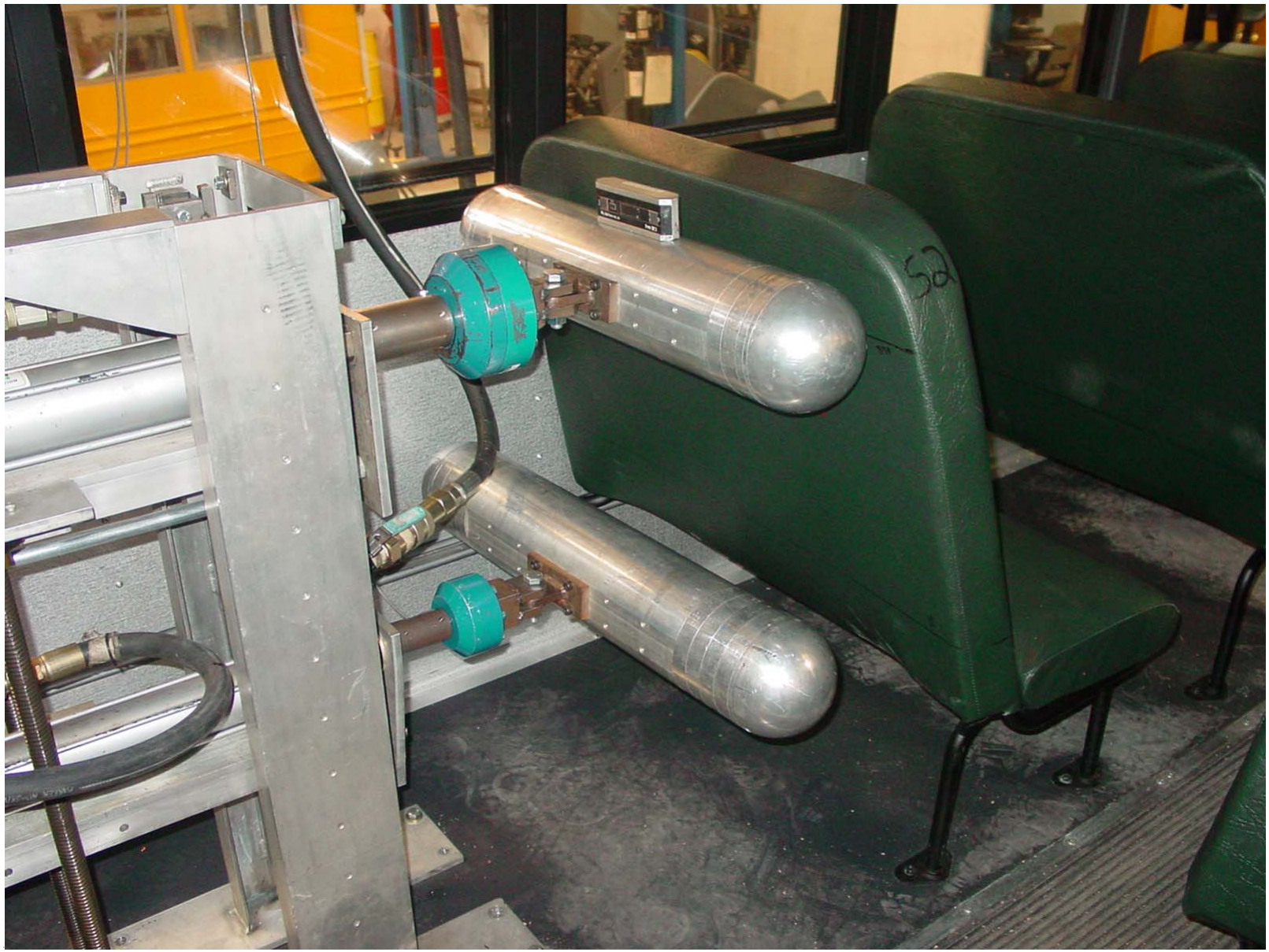
Pre-Test of Seat Cushion S9

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



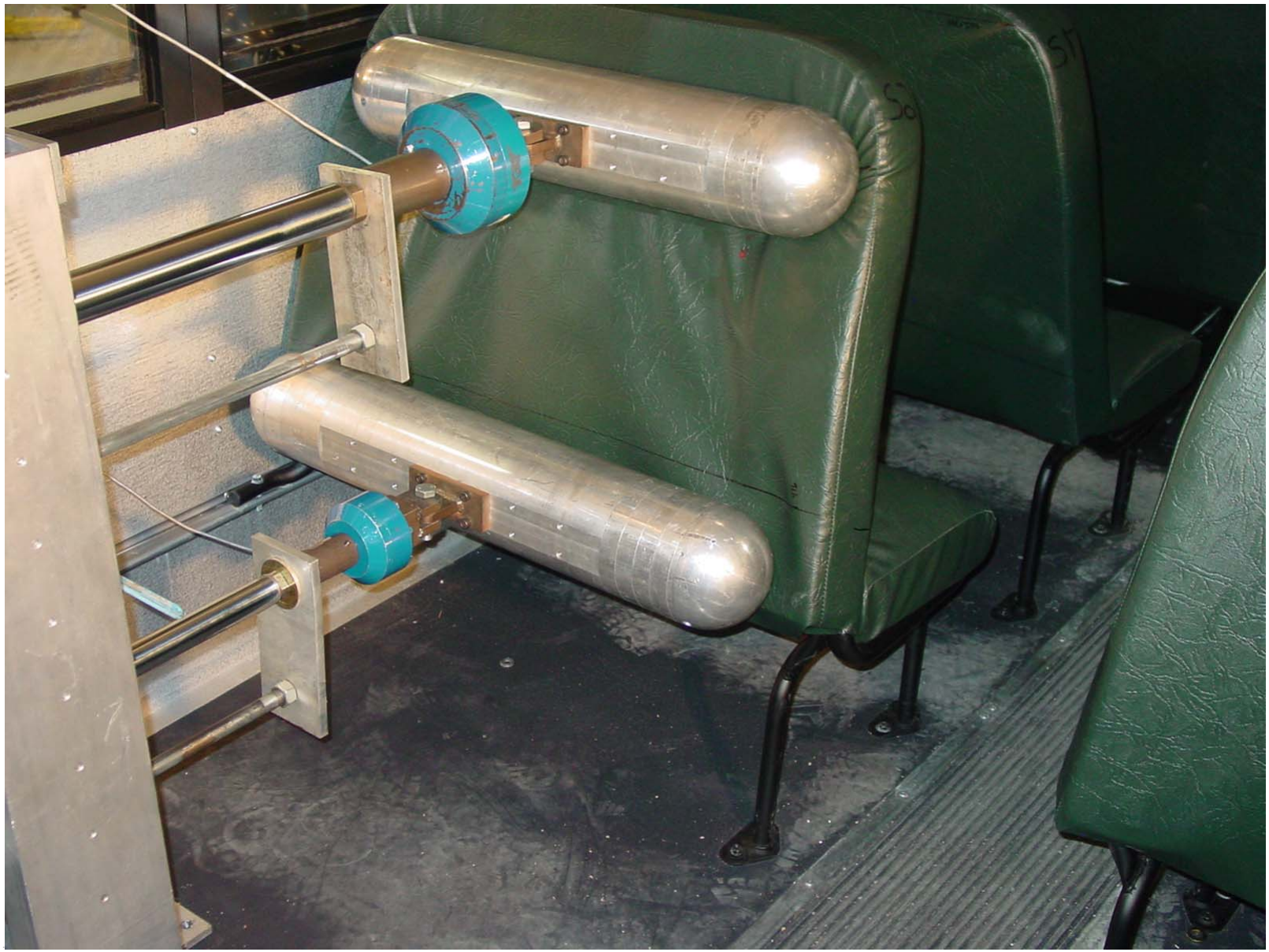
Post-Test of Seat Cushion S9

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



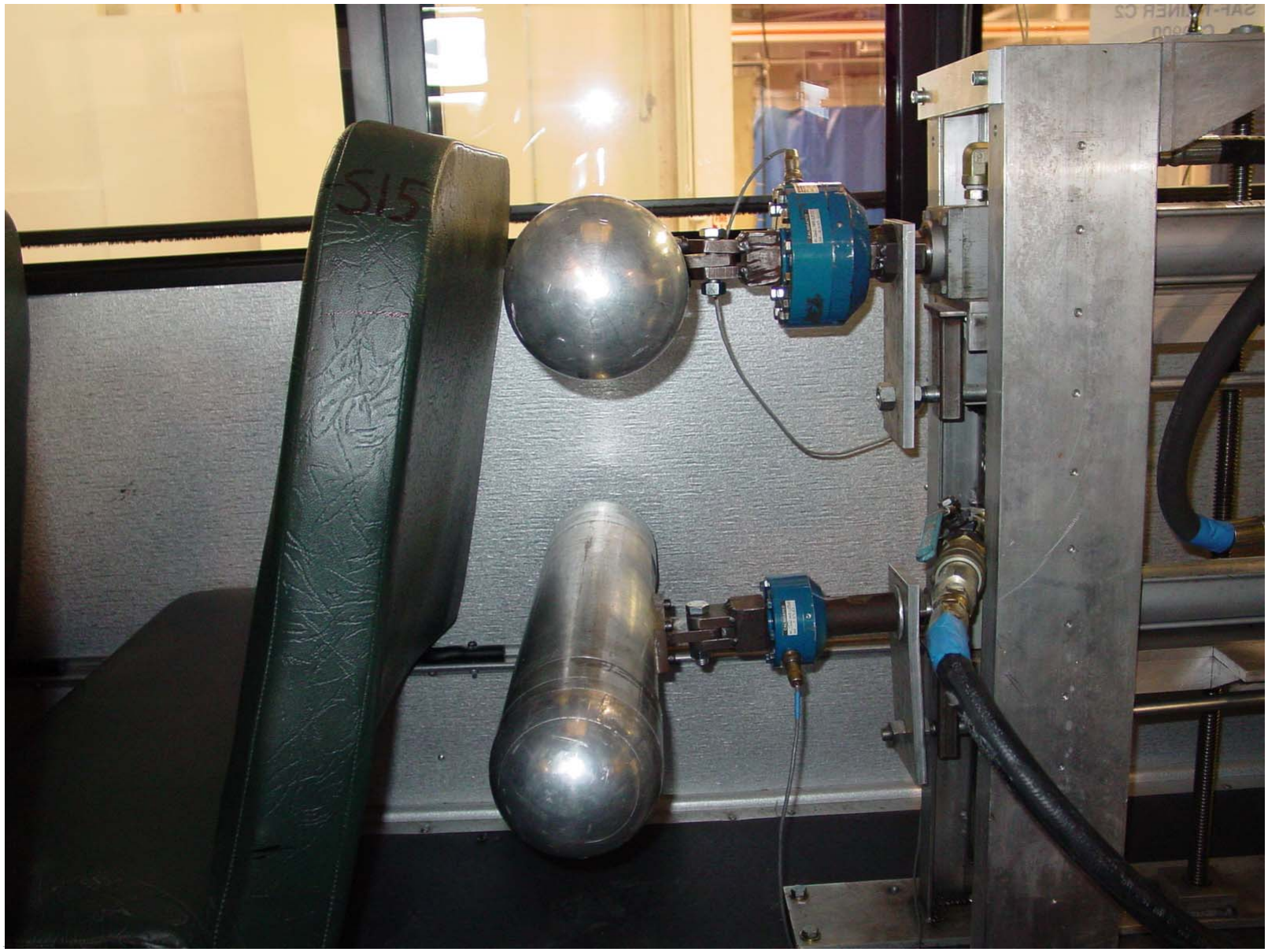
Pre-Test of Seat Back S2 Force Deflection Forward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

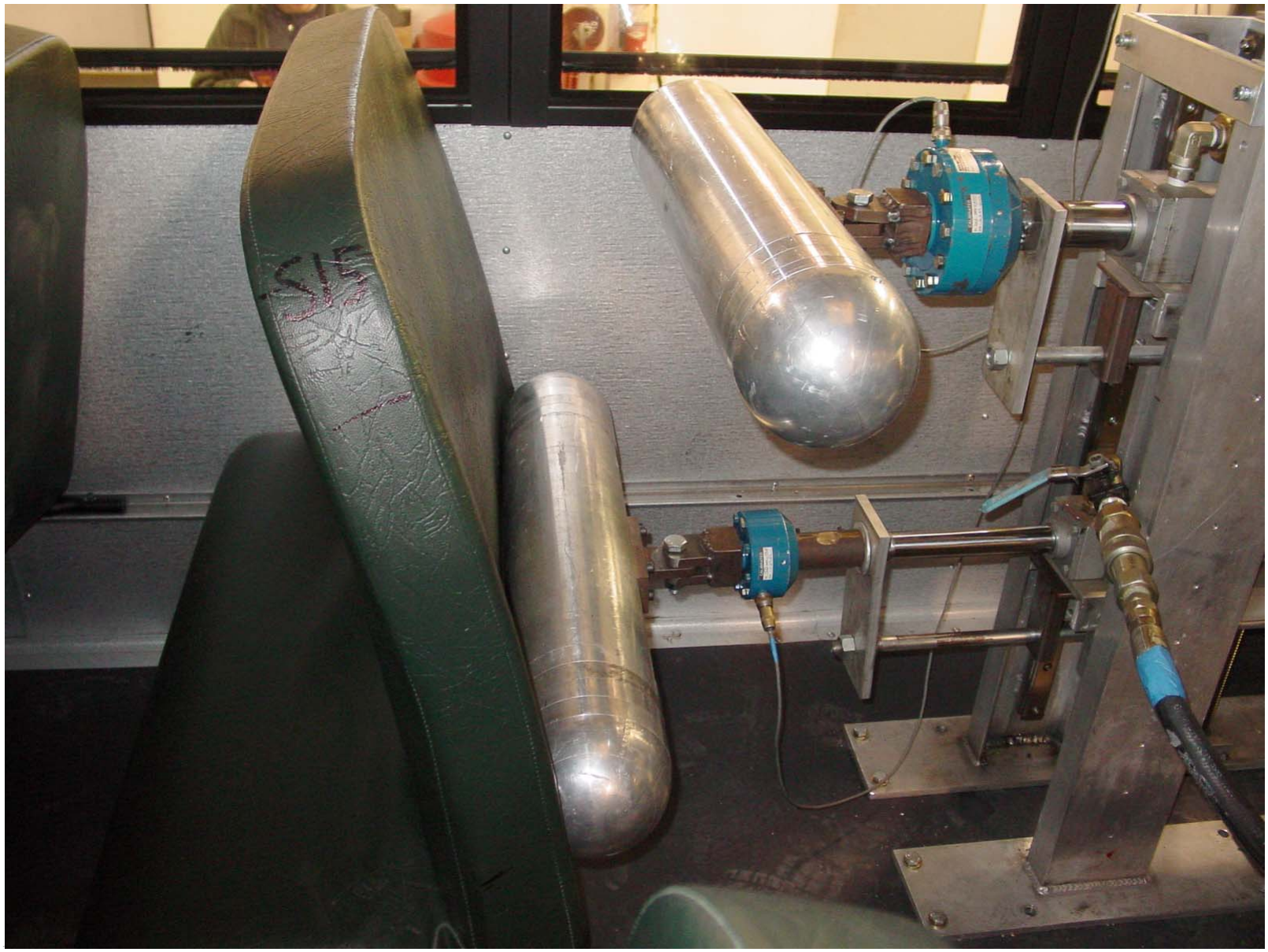


Test (In Progress) of Seat Back S2 Force Deflection Forward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

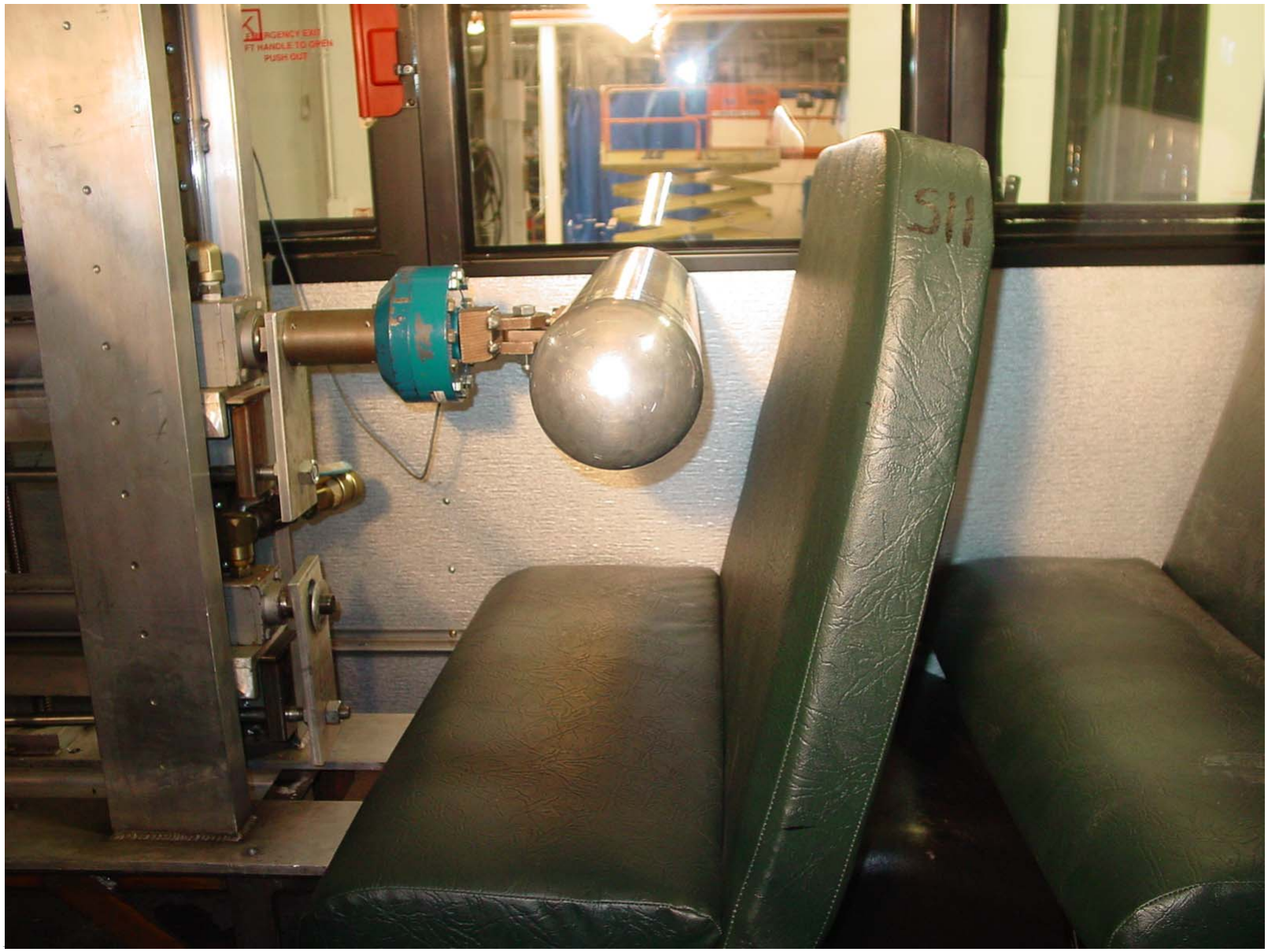


Pre-Test of Seat Back S15 Force Deflection Forward Test



Post-Test of Seat Back S15 Force Deflection Forward Test

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Procedure: **FMVSS 222** Test Date: **01/12/2007**

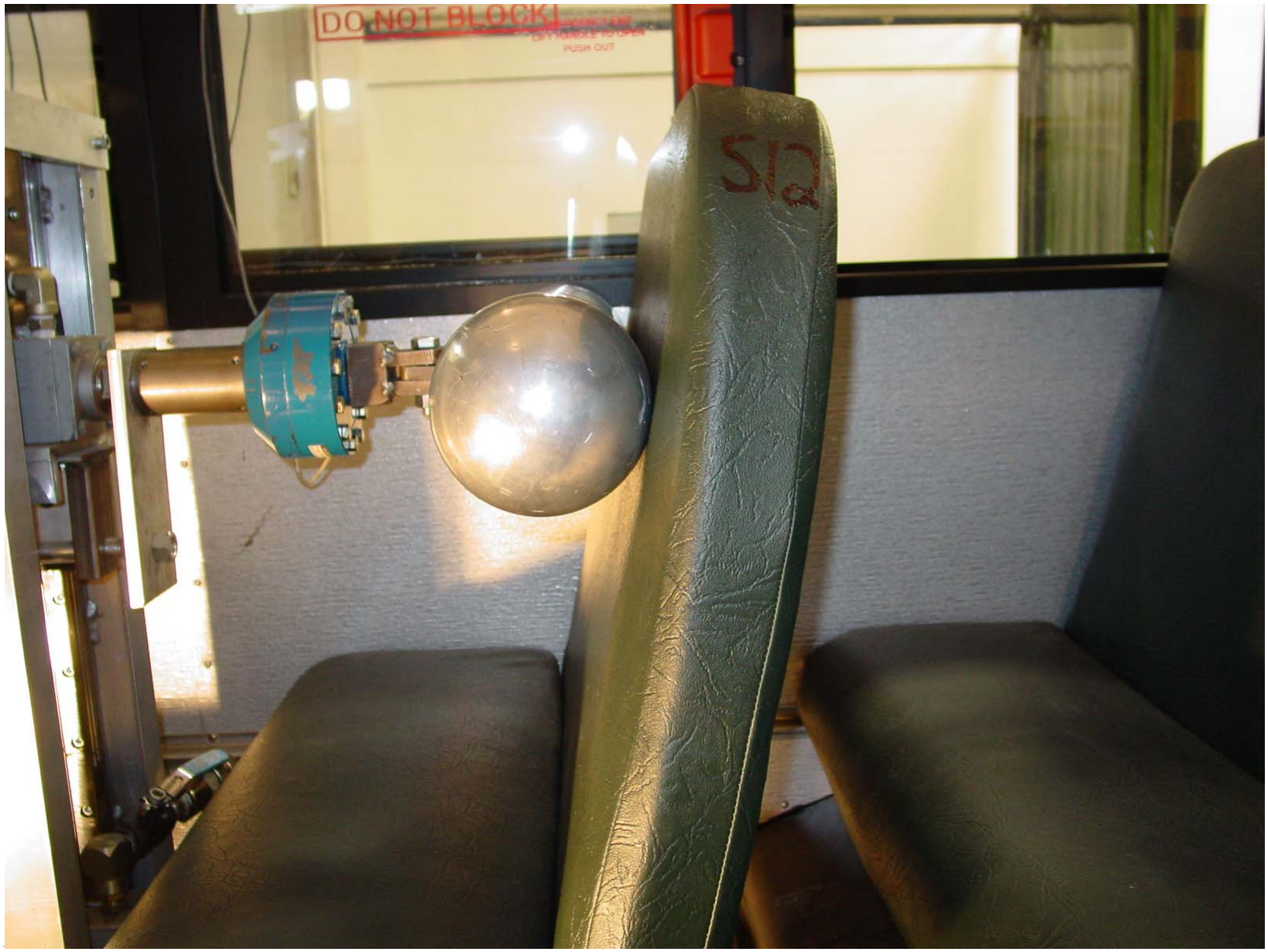


Pre-Test of Seat Back S11 Force Deflection Rearward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Post-Test of Seat Back S11 Force Deflection Rearward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



Pre-Test of Seat Back S12 Force Deflection Rearward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Post-Test of Seat Back S12 Force Deflection Rearward Test

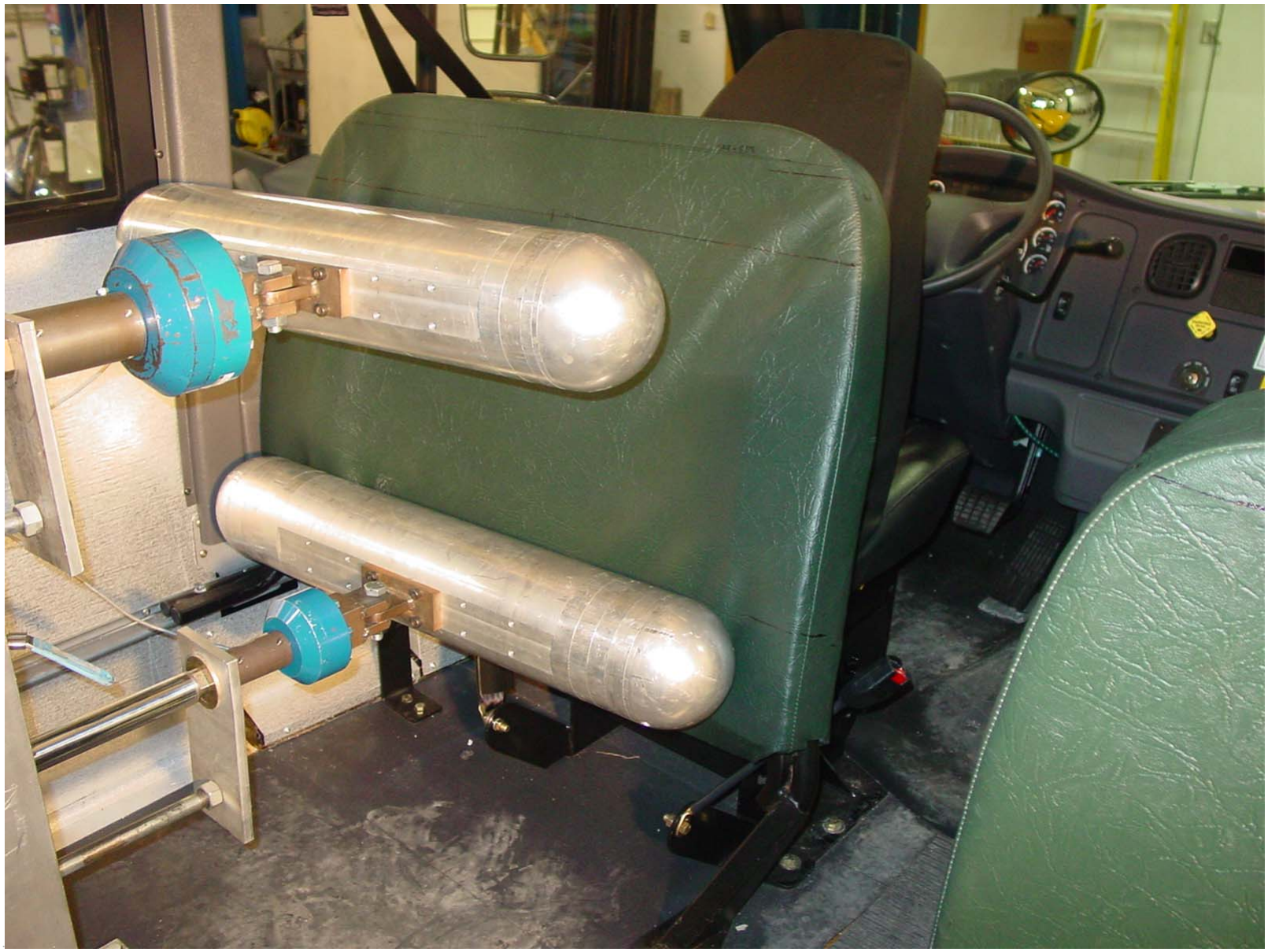
Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

Post-Test of Head and Knee Impact Locations on Seat S3

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

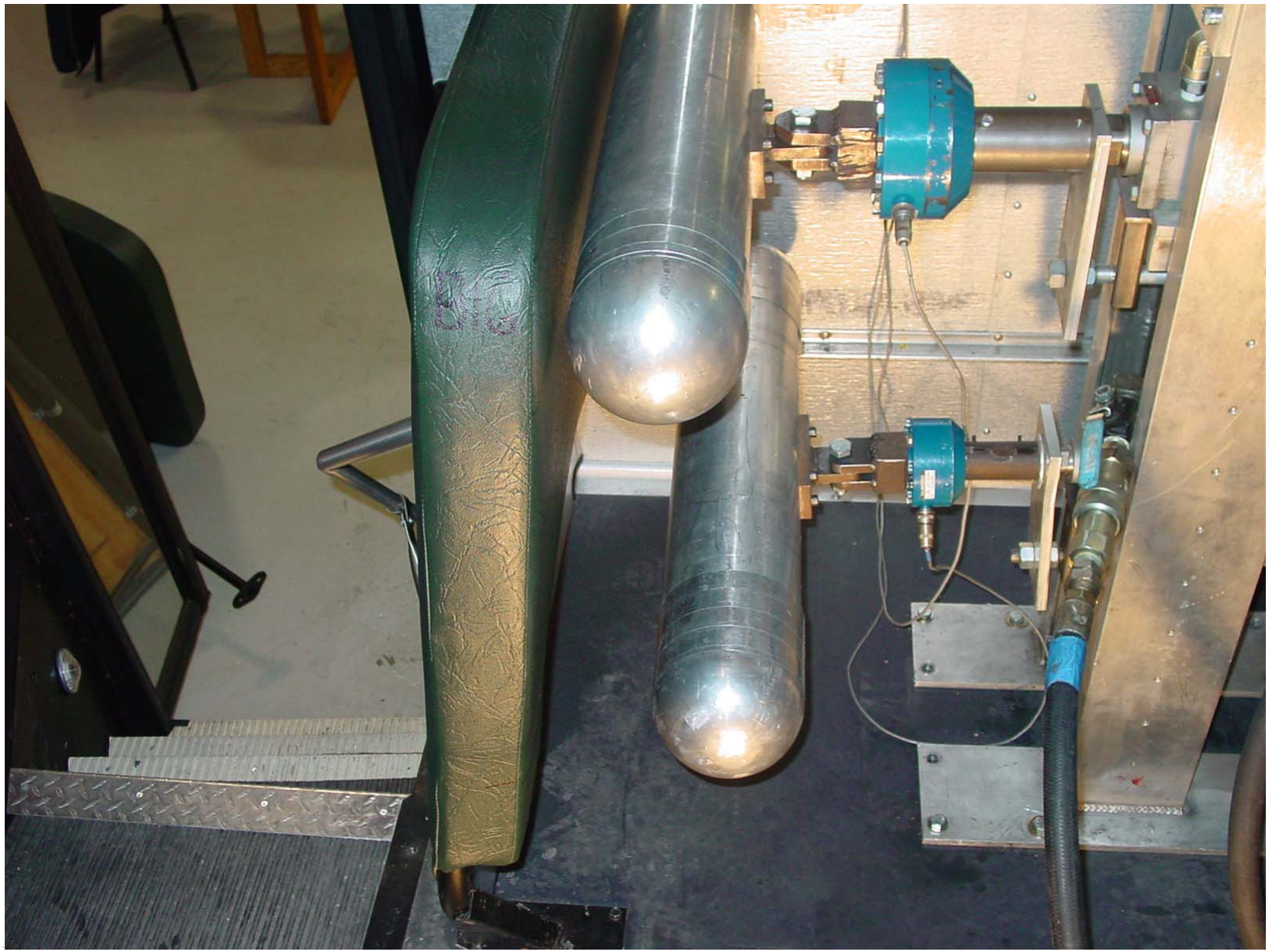
Pre-Test of Barrier B1 Force Deflection Forward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



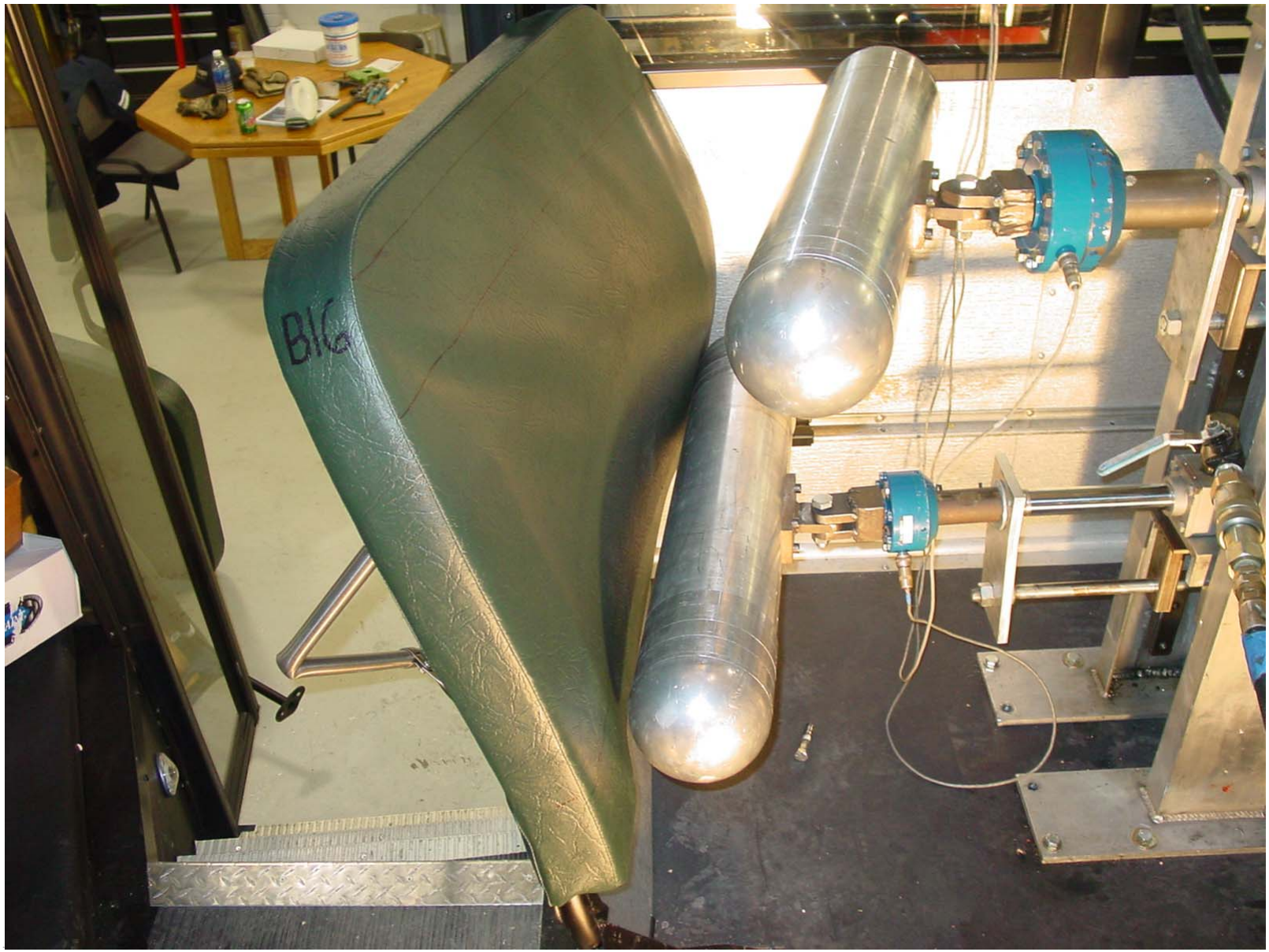
Post-Test of Barrier B1 Force Deflection Forward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



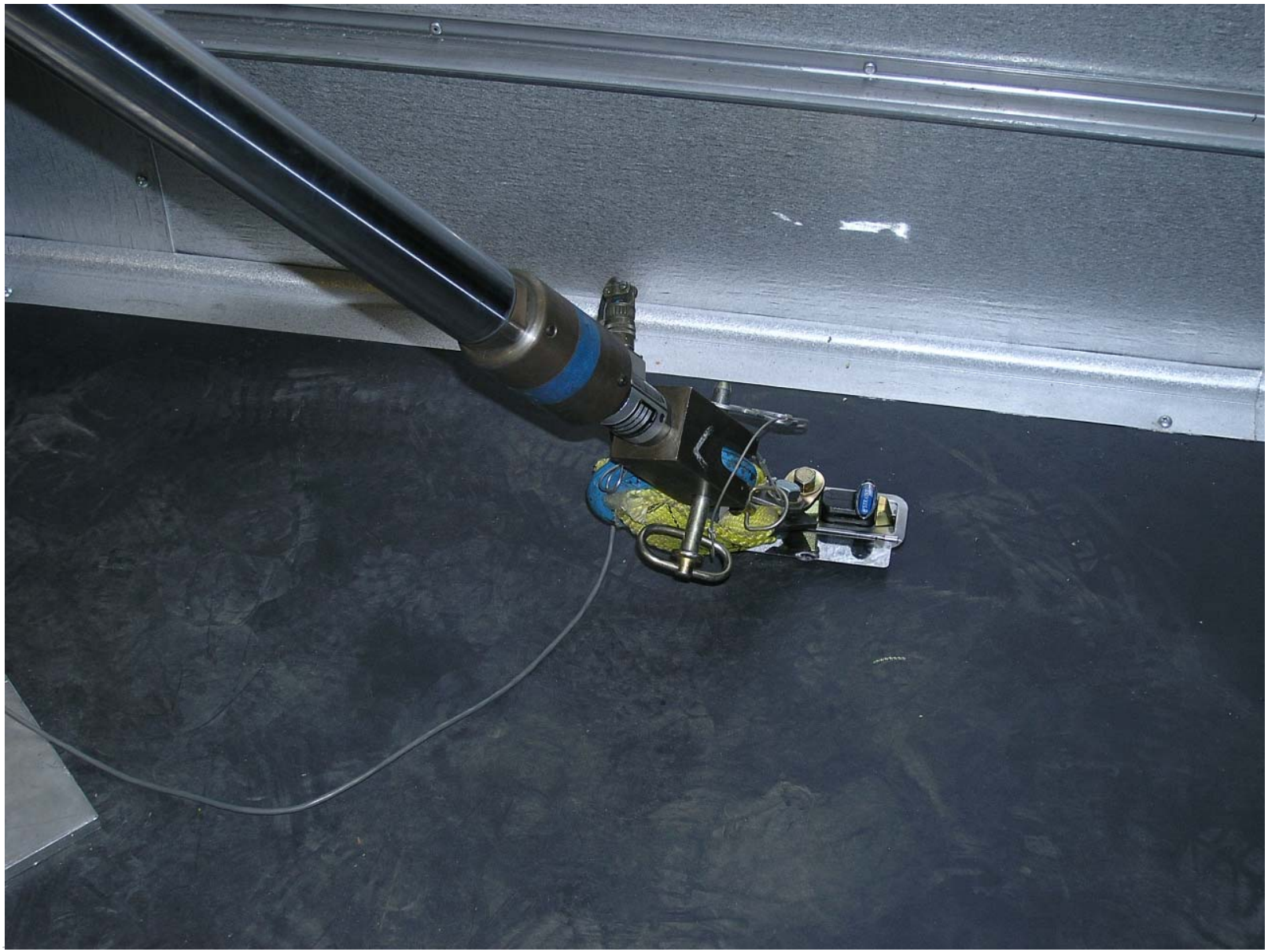
Pre-Test of Barrier B16 Force Deflection Forward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



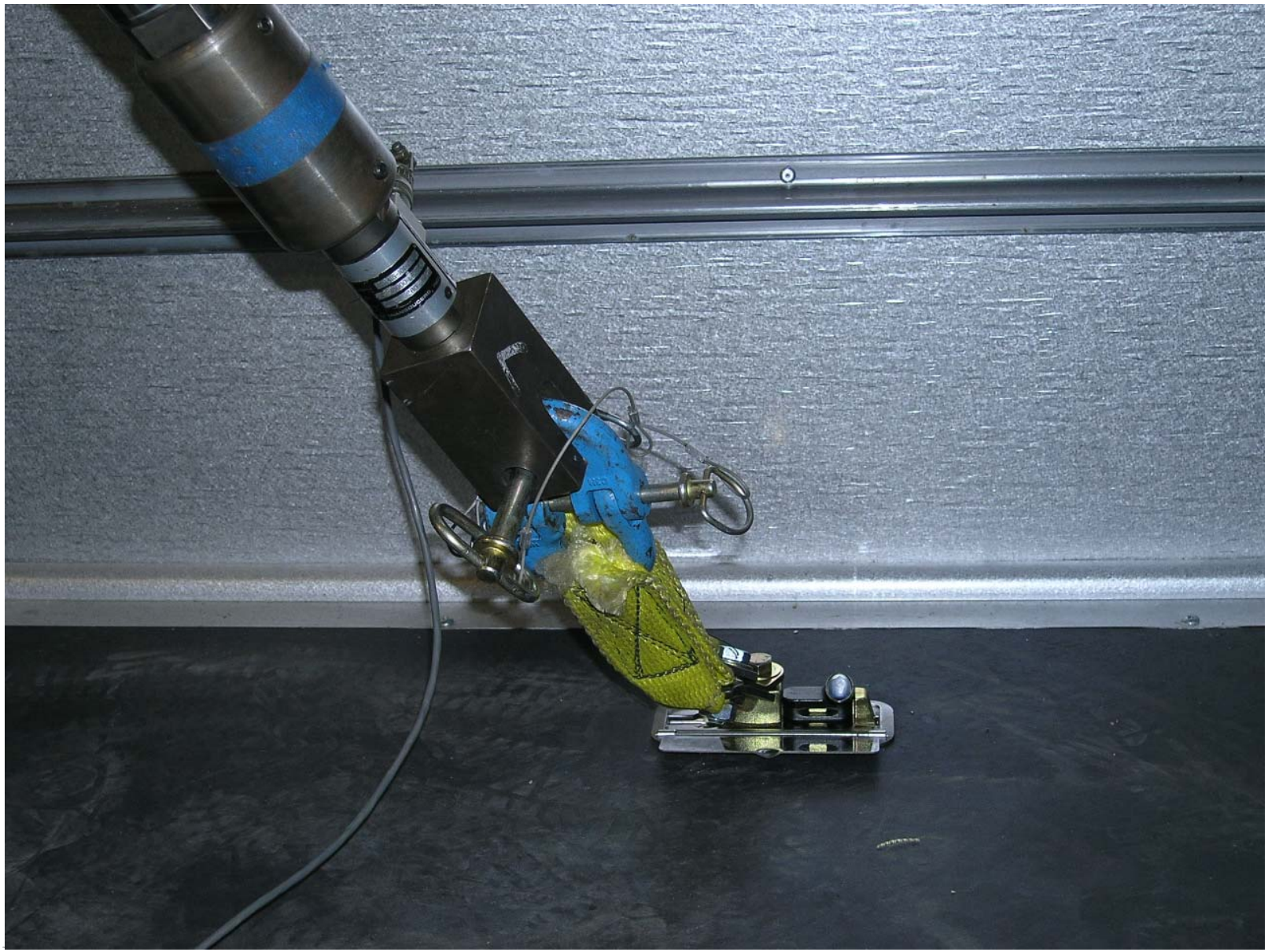
Post-Test of Barrier B16 Force Deflection Forward Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



Pre-Test of Wheelchair Anchorage W8.5 Left Front Type A Load Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

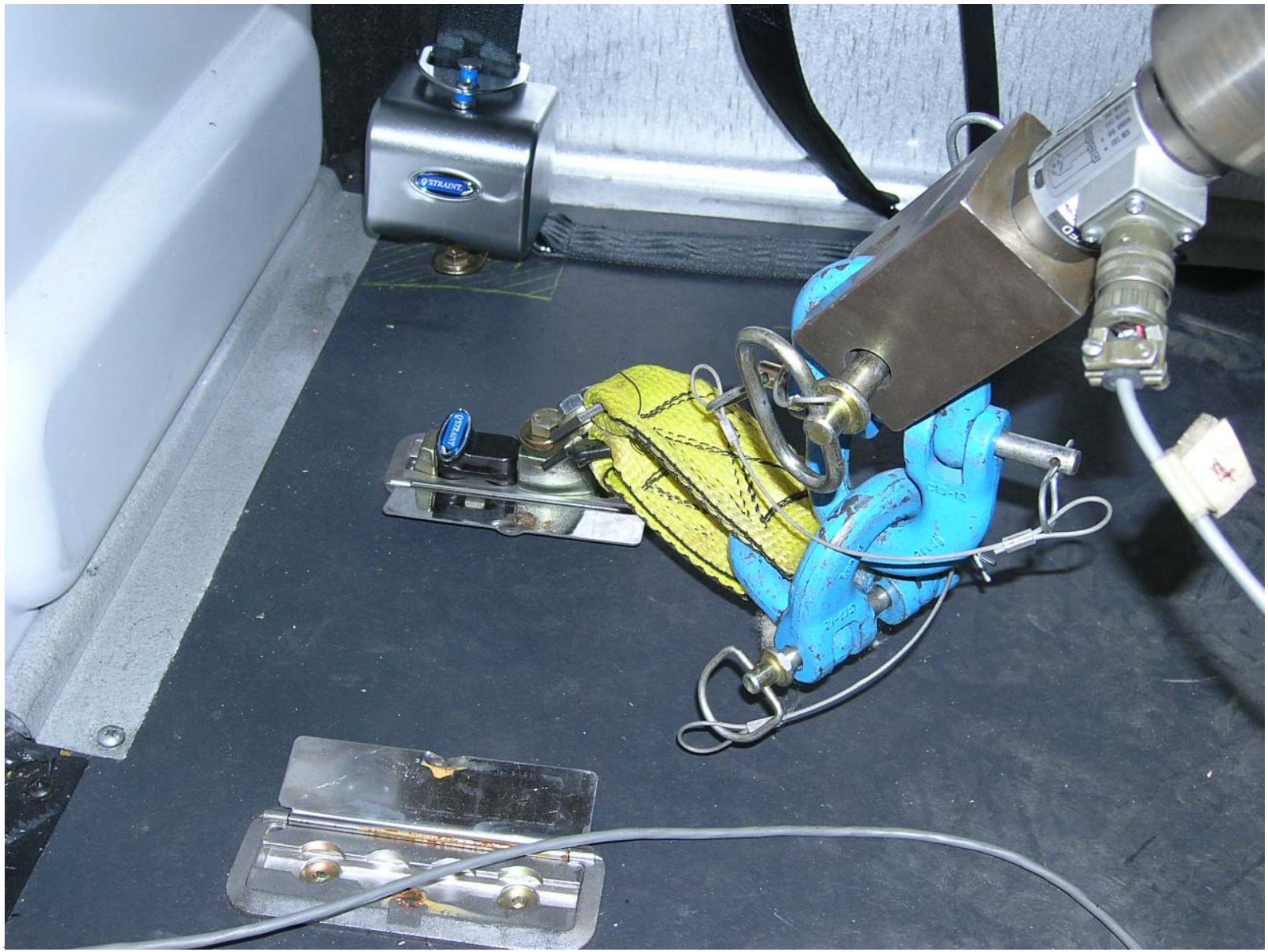


Post-Test of Wheelchair Anchorage W8.5 Left Front Type A Load Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**

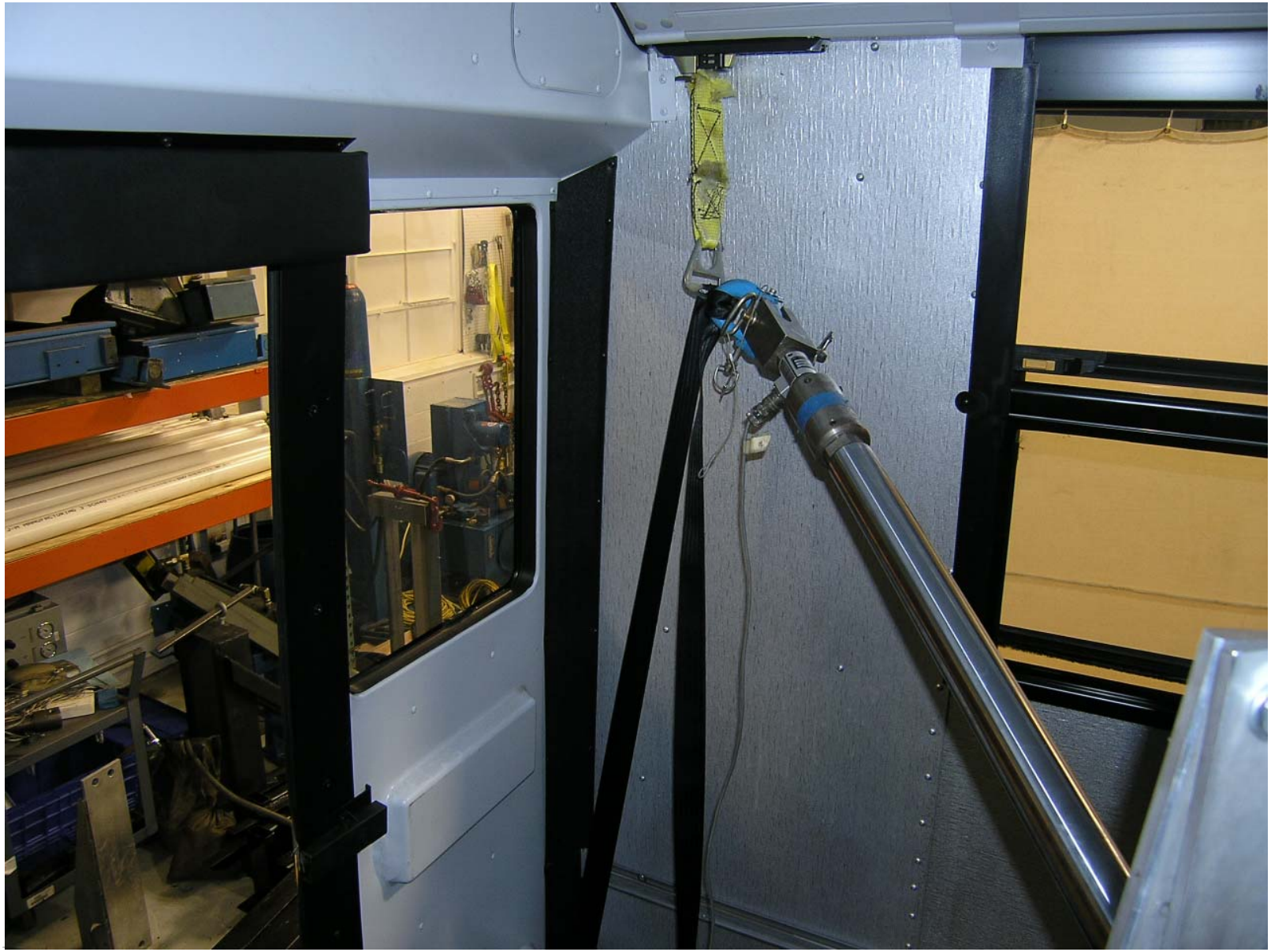
Pre-Test of Wheelchair Anchorage W8.5 Left Rear Type C Load Test

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Procedure: **FMVSS 222** Test Date: **01/12/2007**



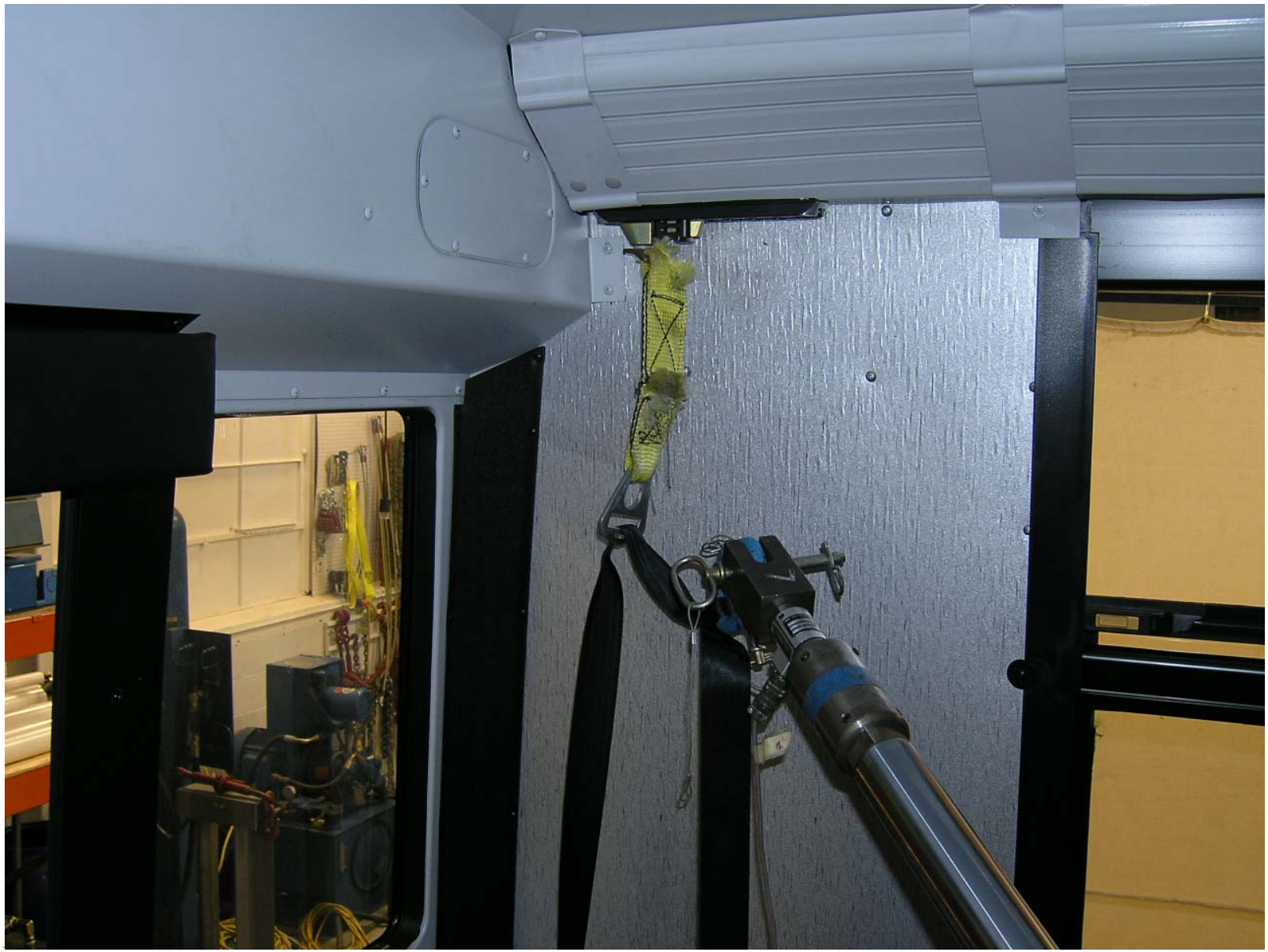
Post-Test of Wheelchair Anchorage W8.5 Left Rear Type C Load Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



Pre-Test of Wheelchair Anchorage W8.5 Upper Torso Type D Load Test

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Procedure:	**FMVSS 222**	Test Date:	**01/12/2007**



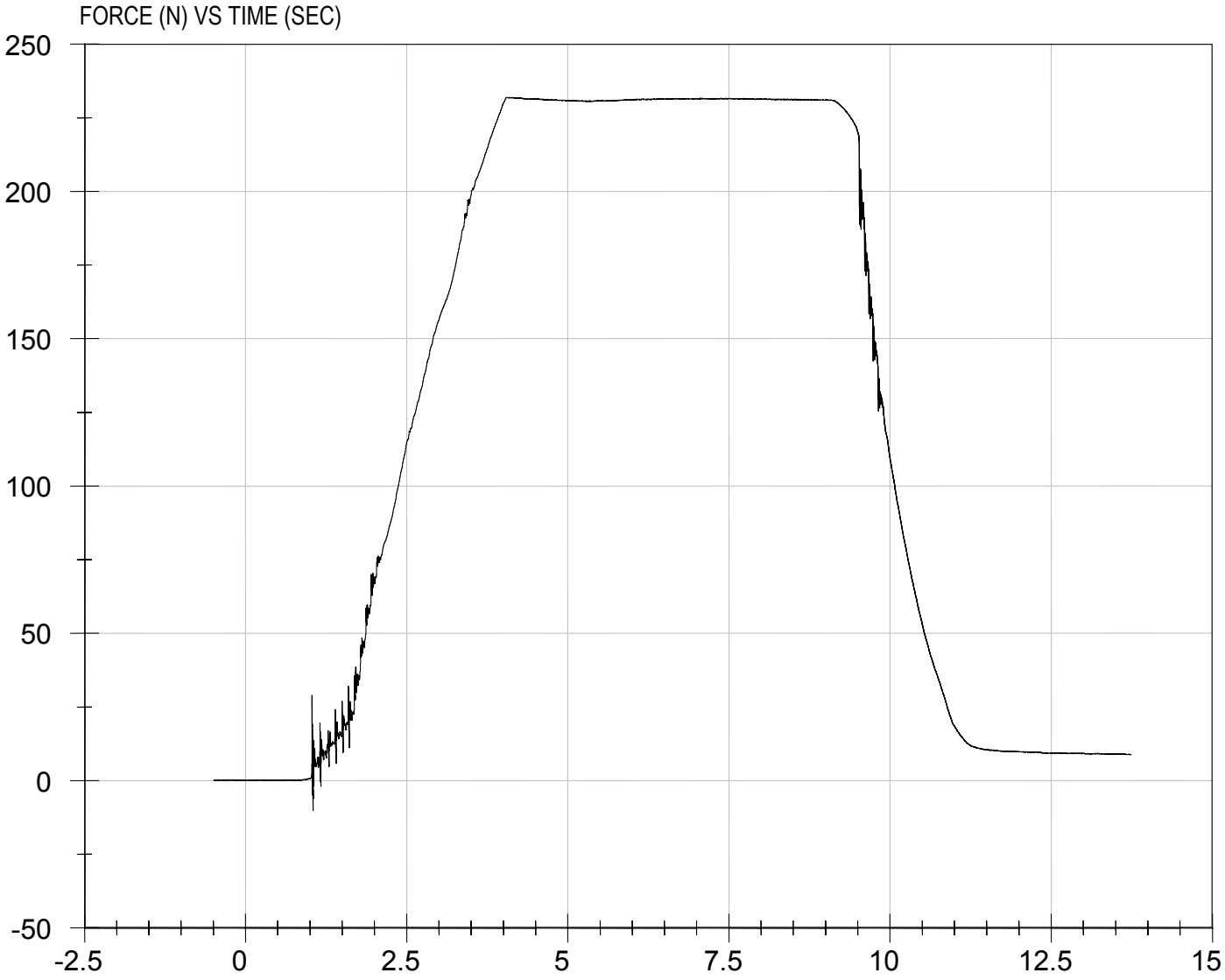
Post-Test of Wheelchair Anchorage W8.5 Upper Torso Type D Load Test

SECTION 6

TEST PLOTS

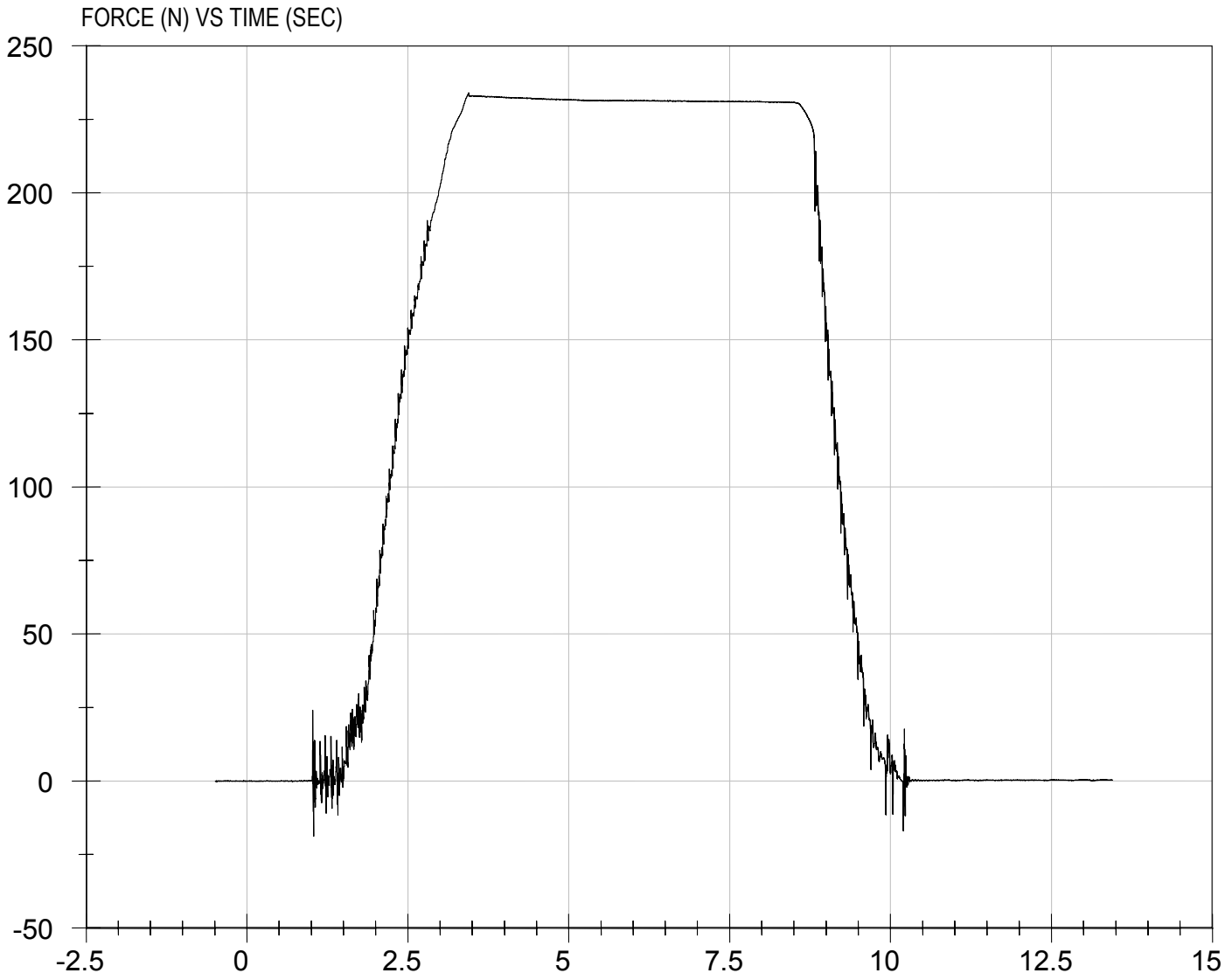
TABLE OF TEST PLOTS

Test Desc: Seat Cushion Retention
Test Date: 1/12/2007
Component ID: Thomas Saf-T-Liner C2 S8
NHTSA #: C70900



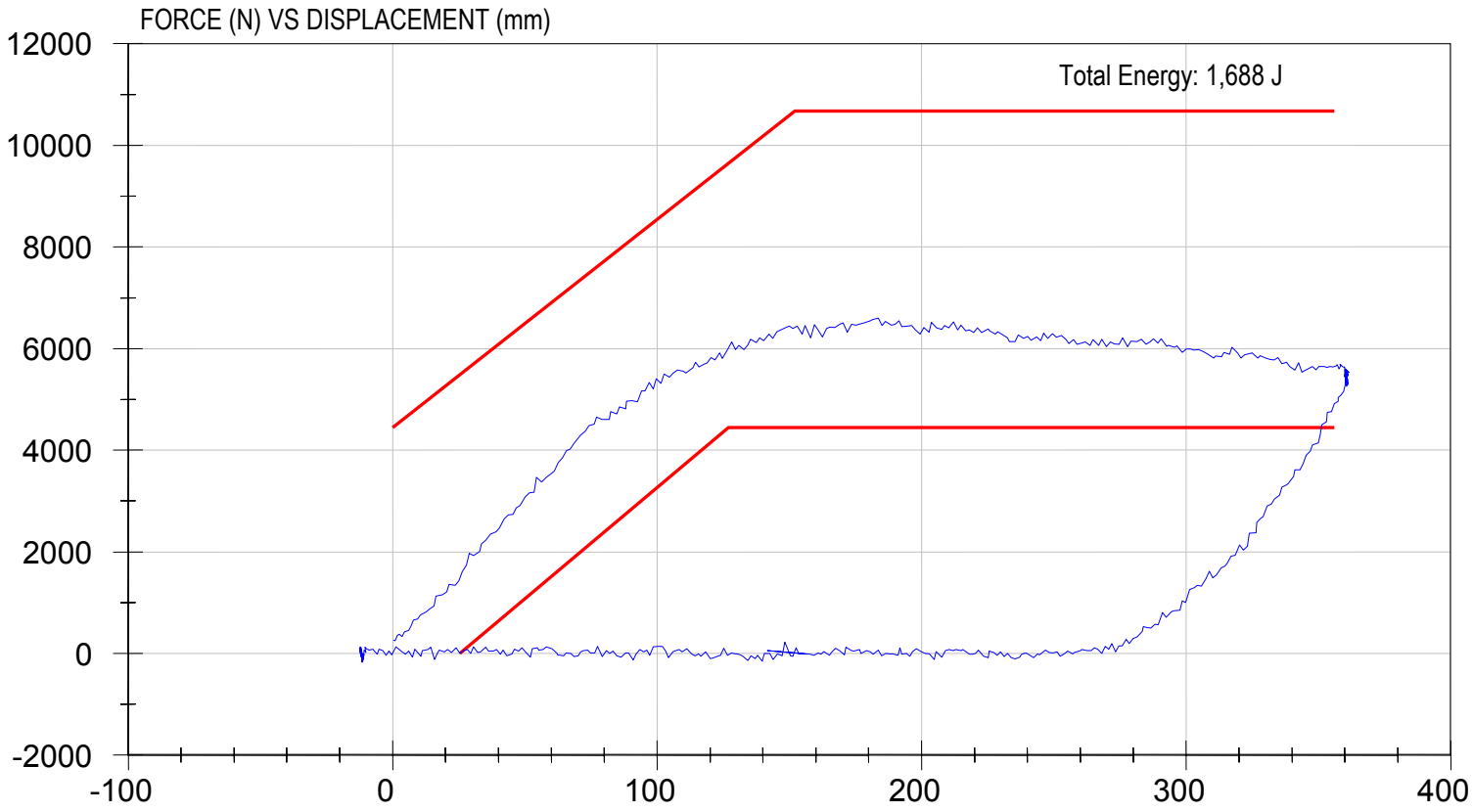
Test Desc: Seat Cushion Retention. Test Date: 1/12/2007

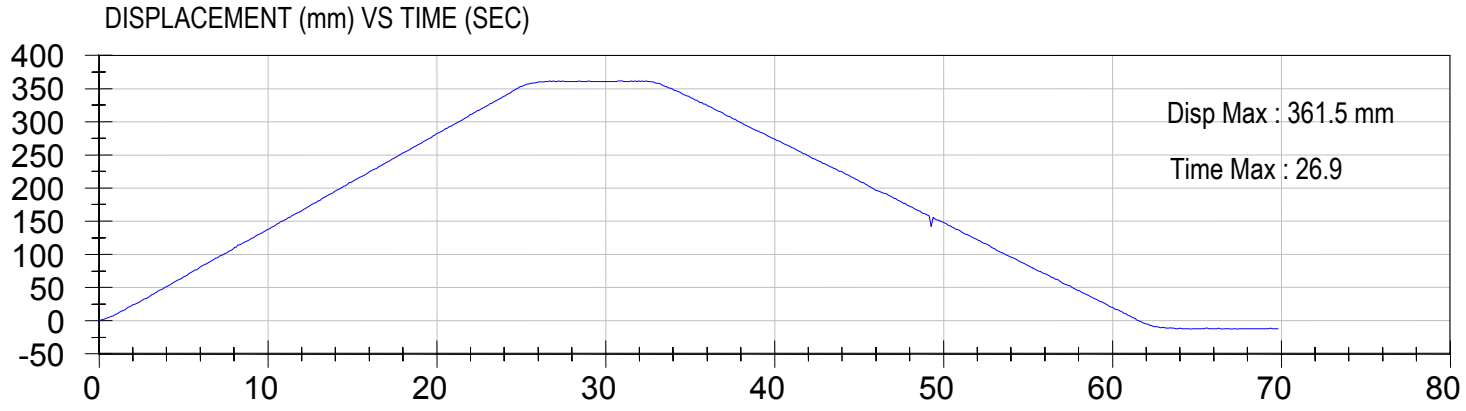
Component ID: Thomas Saf-T-Liner C2 S9 NHTSA #: C70900

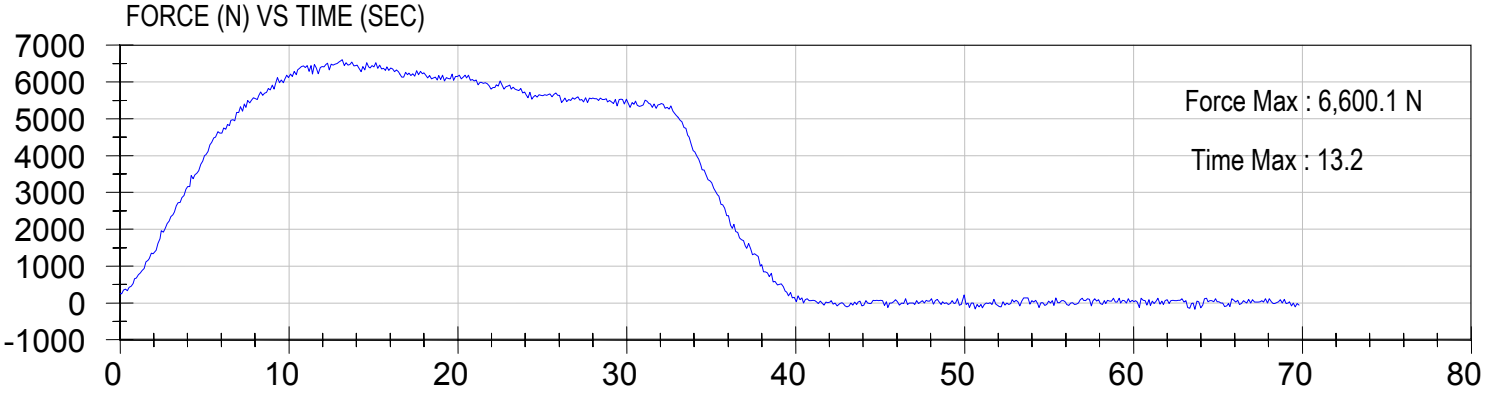


Test Desc: Seat Back Forward Deflection (Upper)
Component ID: Thomas Saf-T-Liner C2 S2

Test Date: 2/23/2007
NHTSA #: C70900



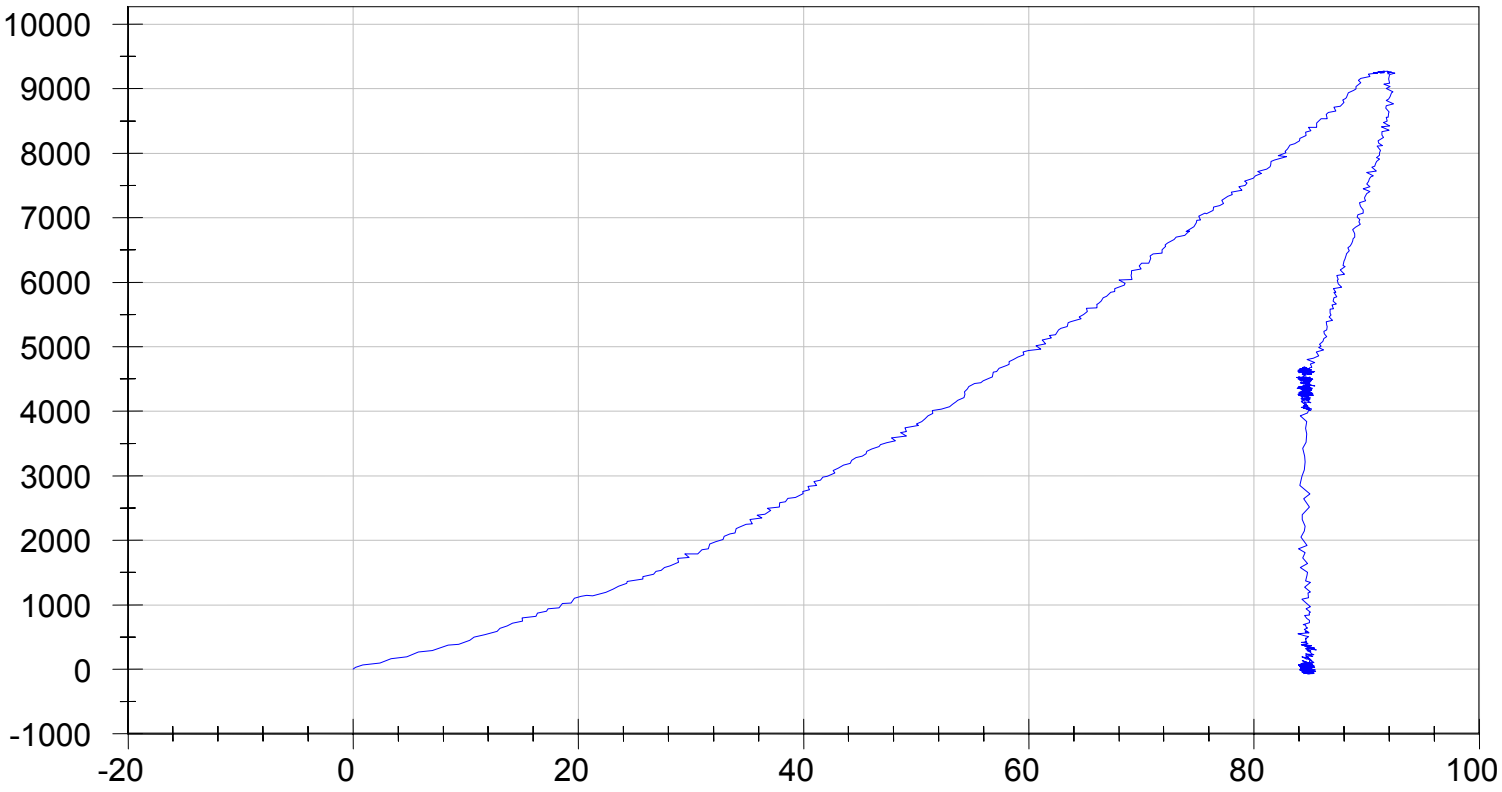




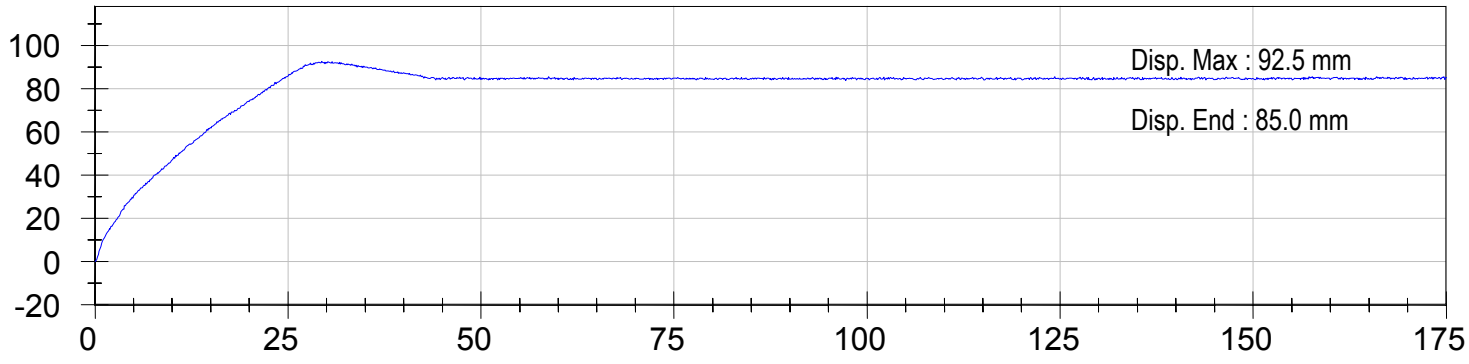
Test Desc: Seat Back Forward Deflection (Lower)
Component ID: Thomas Saf-T-Liner C2 S2

Test Date: 2/23/2007
NHTSA #: C70900

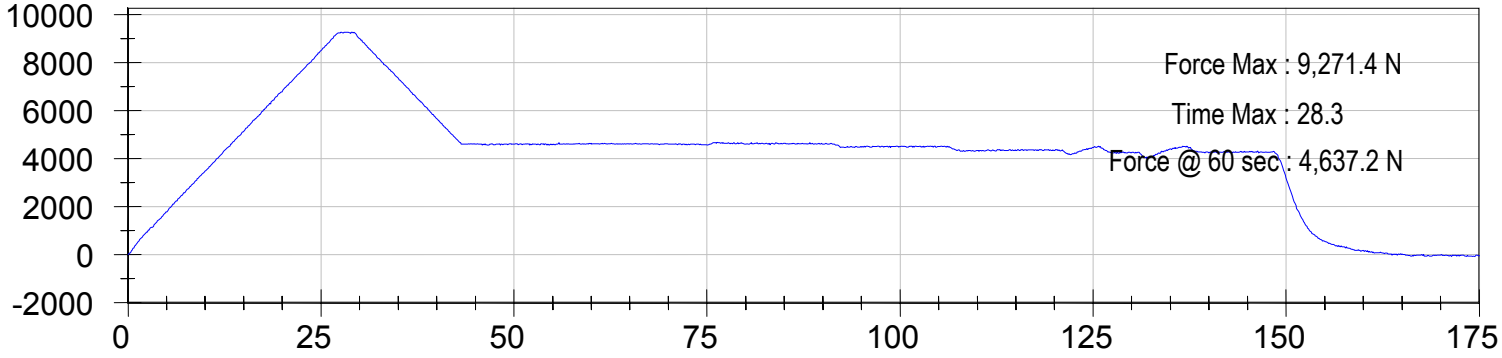
FORCE (N) VS DISPLACEMENT (mm)



DISPLACEMENT (mm) VS TIME (SEC)

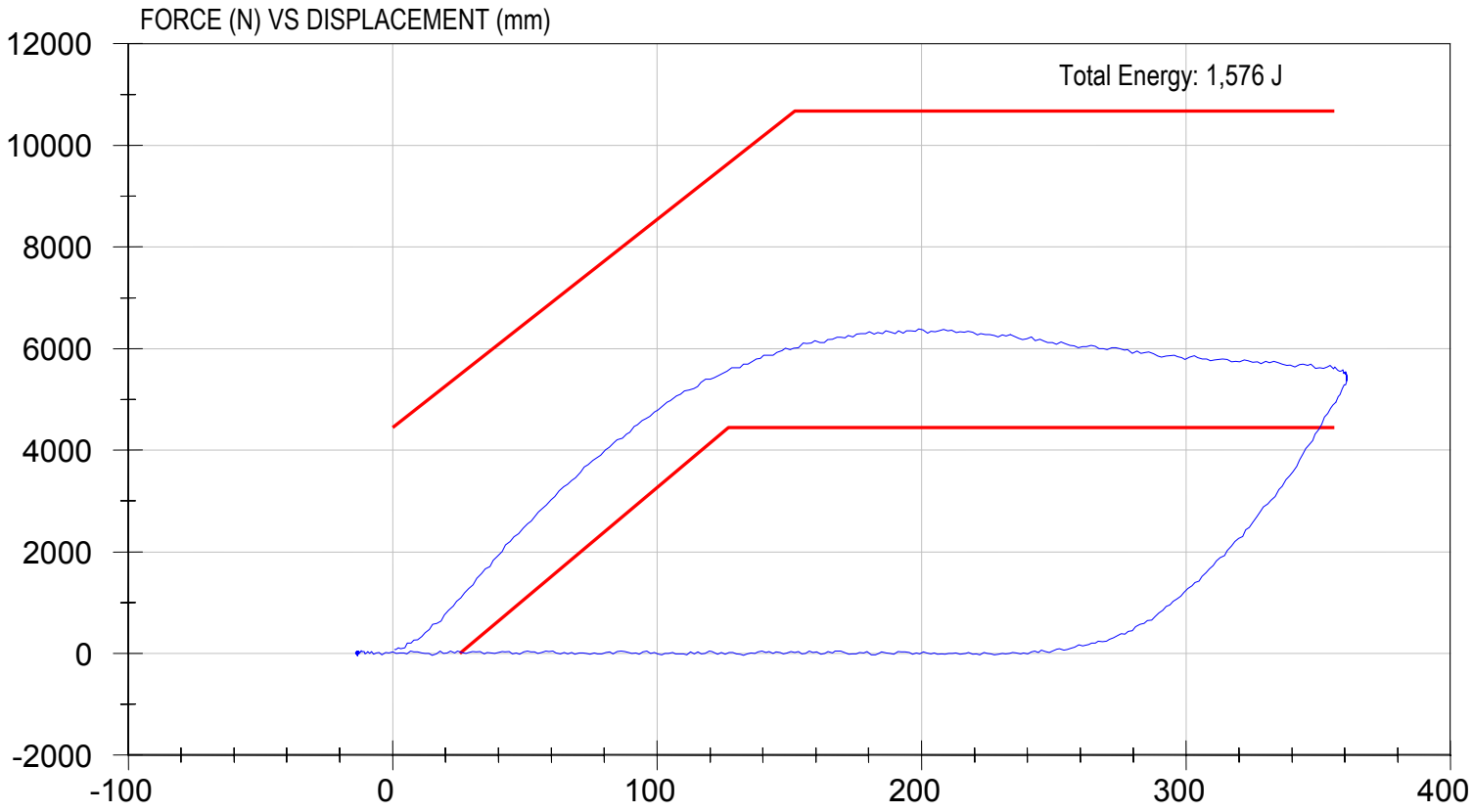


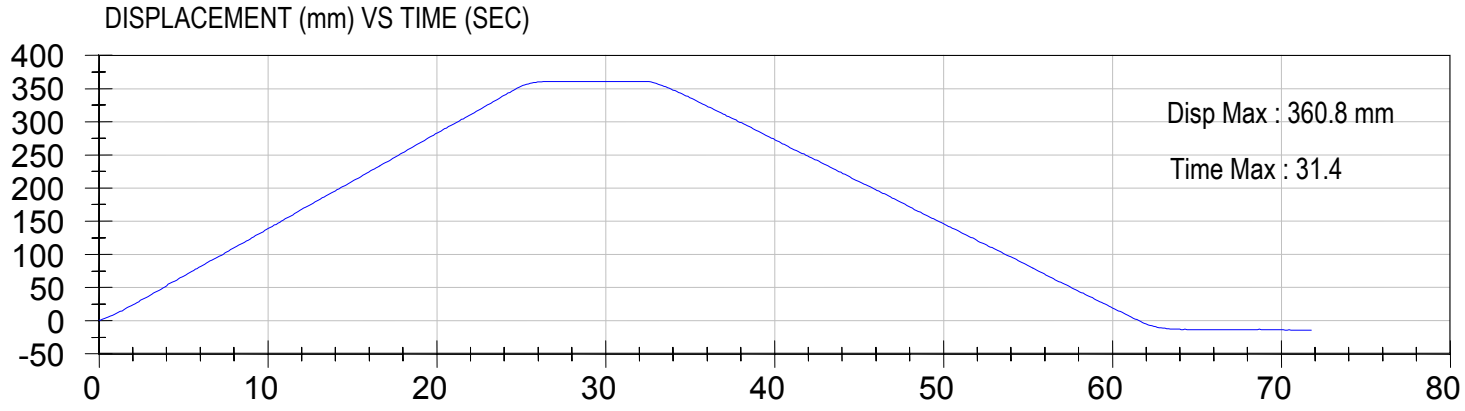
FORCE (N) VS TIME (SEC)

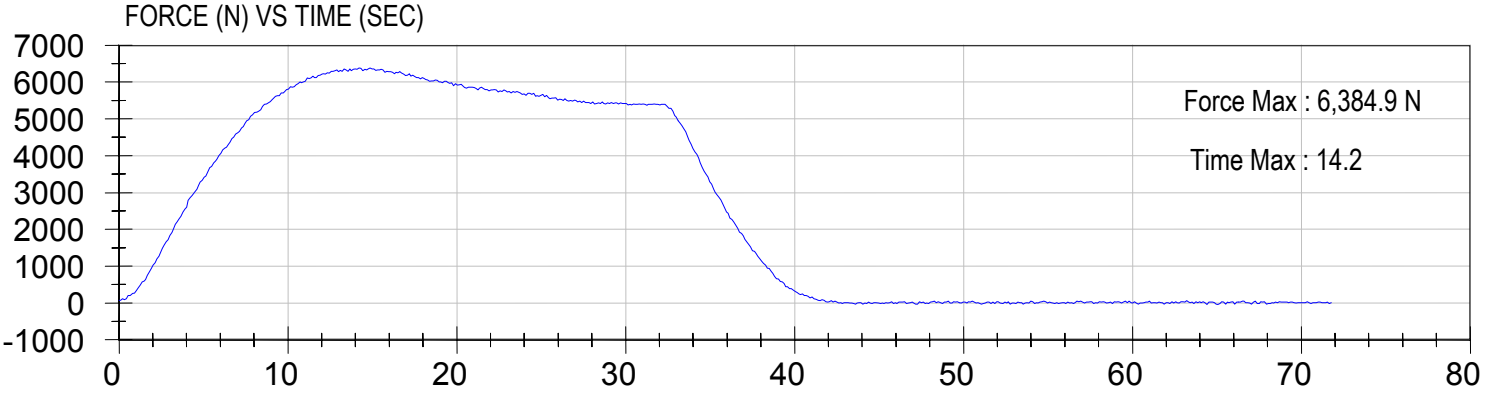


Test Desc: Seat Back Forward Deflection (Upper)
Component ID: Thomas Saf-T-Liner C2 S15

Test Date: 2/16/2007
NHTSA #: C70900



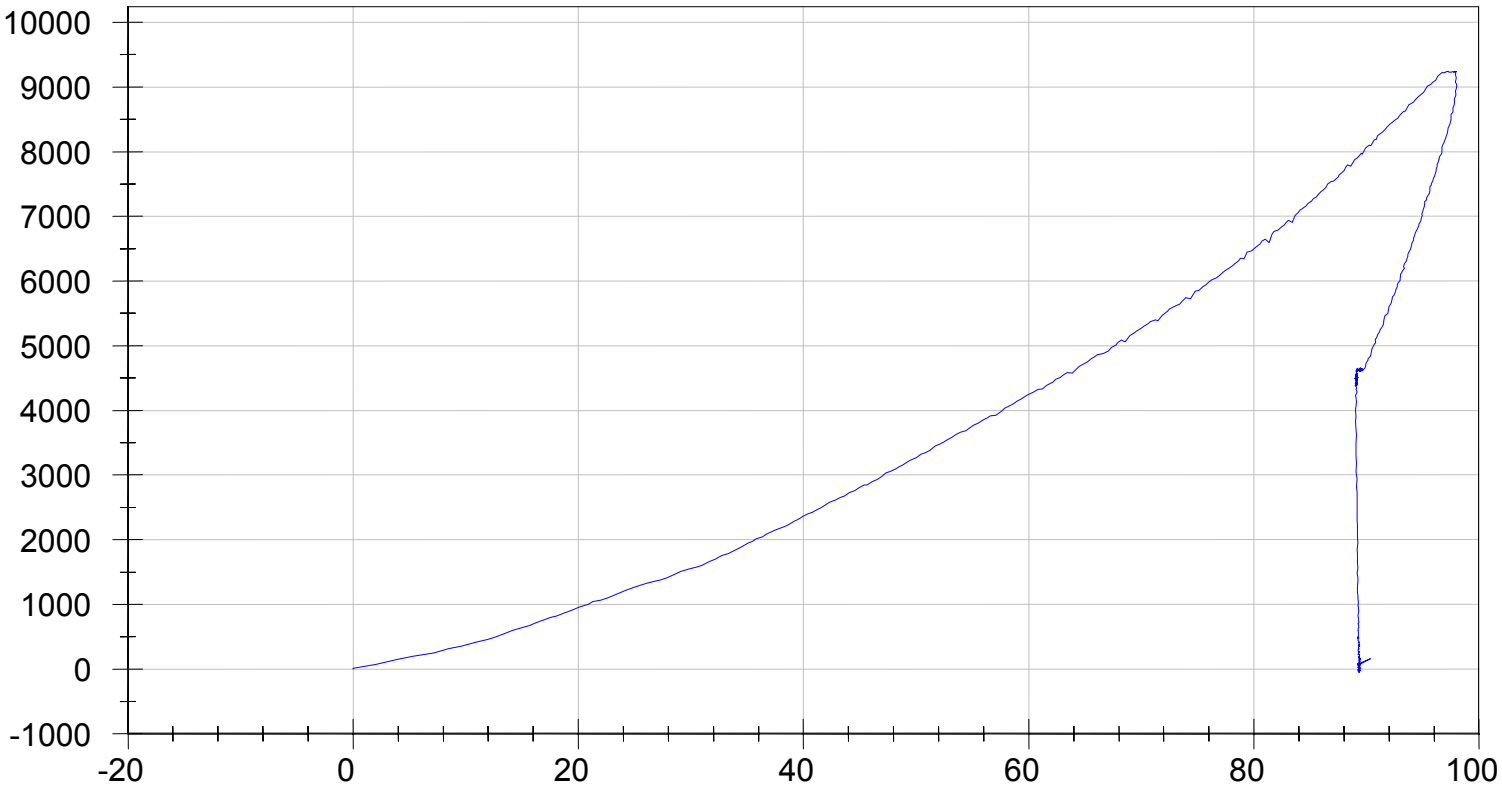




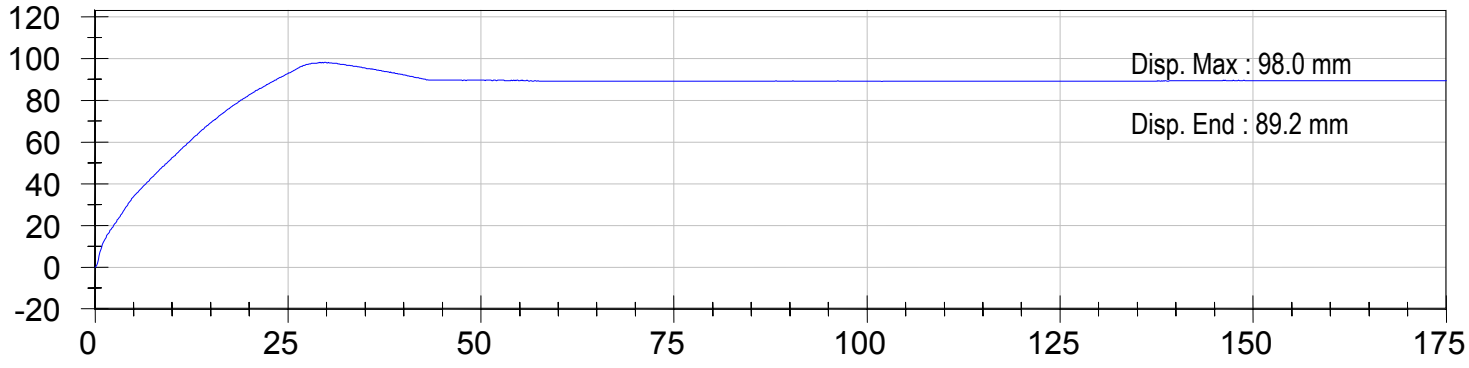
Test Desc: Seat Back Forward Deflection (Lower)
Component ID: Thomas Saf-T-Liner C2 S15

Test Date: 2/16/2007
NHTSA #: C70900

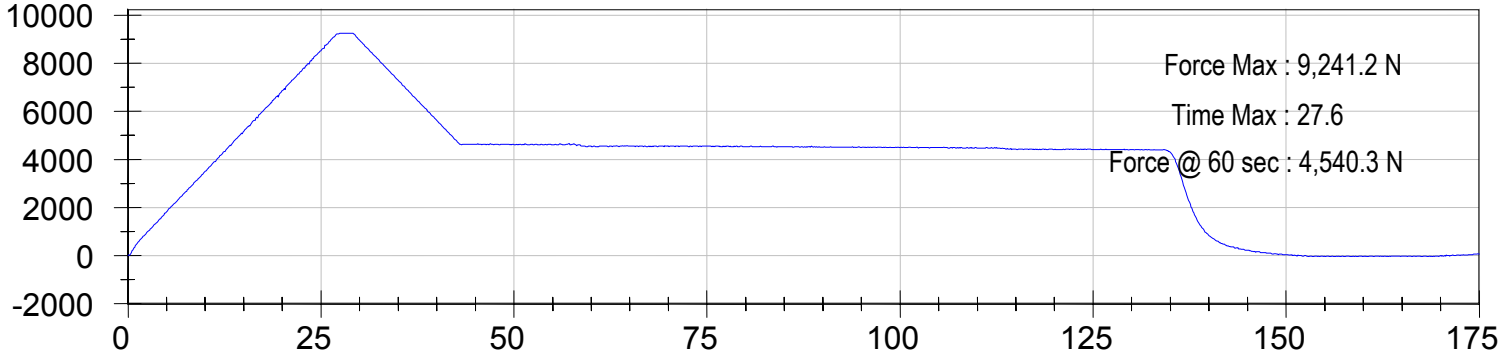
FORCE (N) VS DISPLACEMENT (mm)



DISPLACEMENT (mm) VS TIME (SEC)

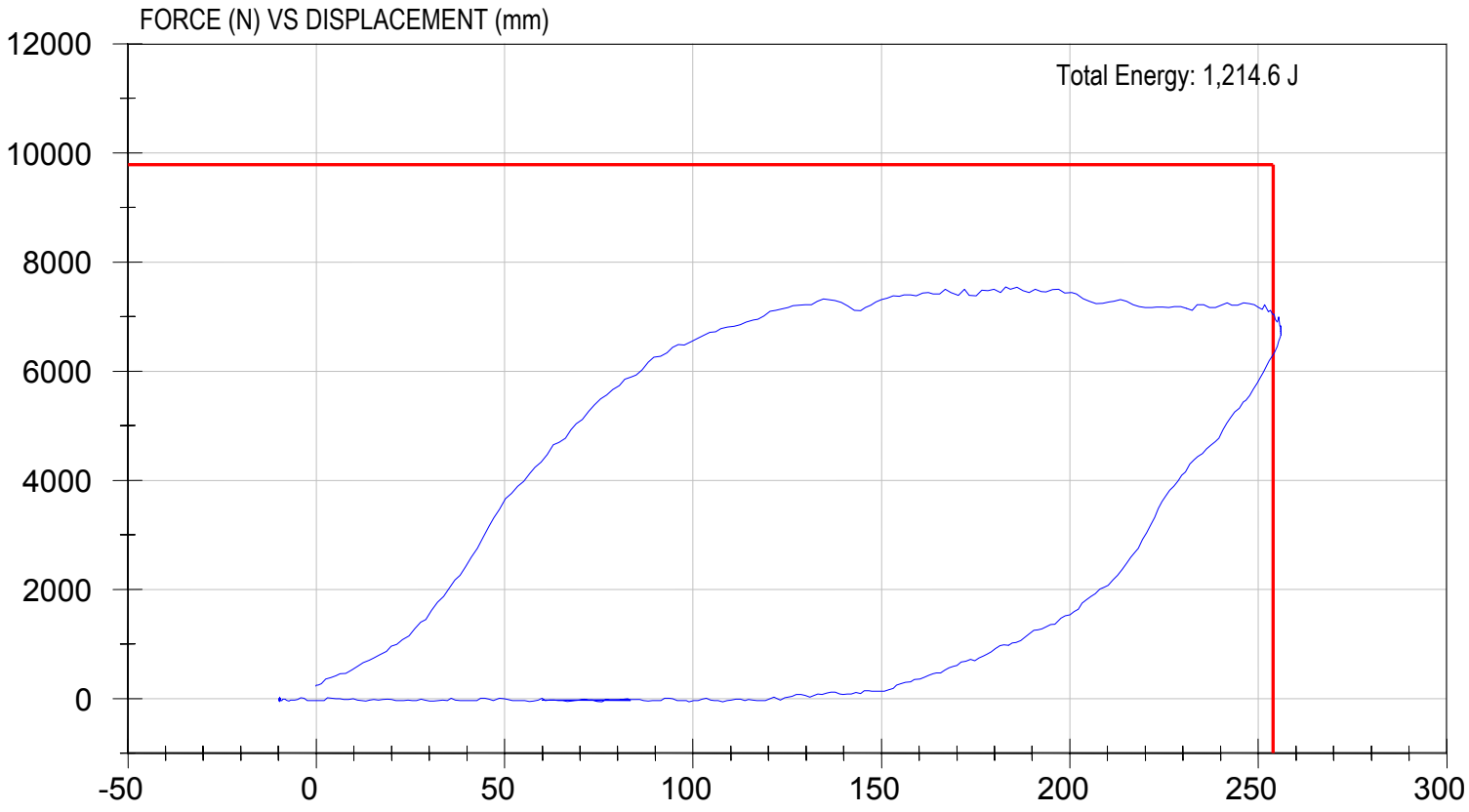


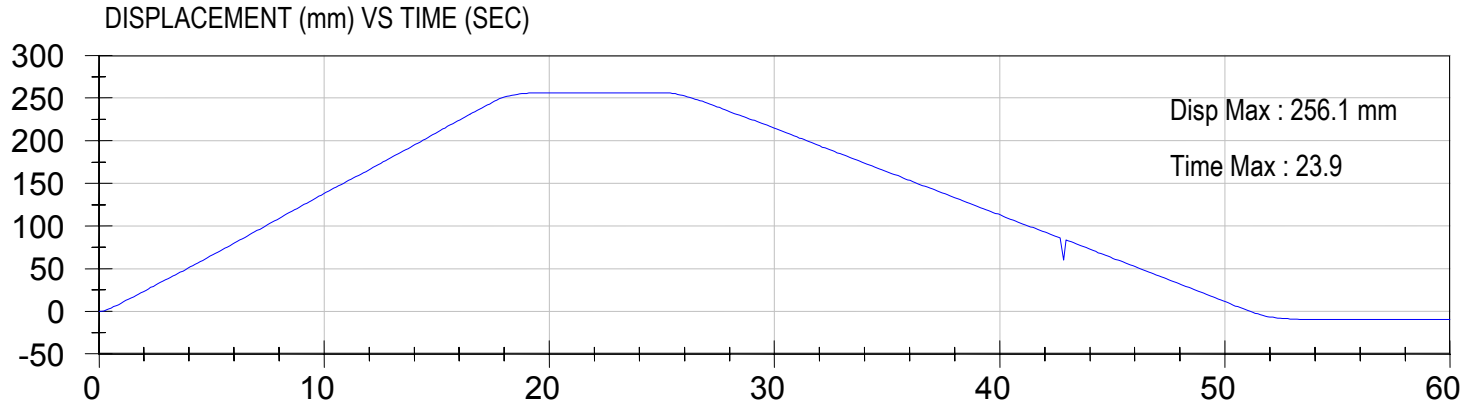
FORCE (N) VS TIME (SEC)

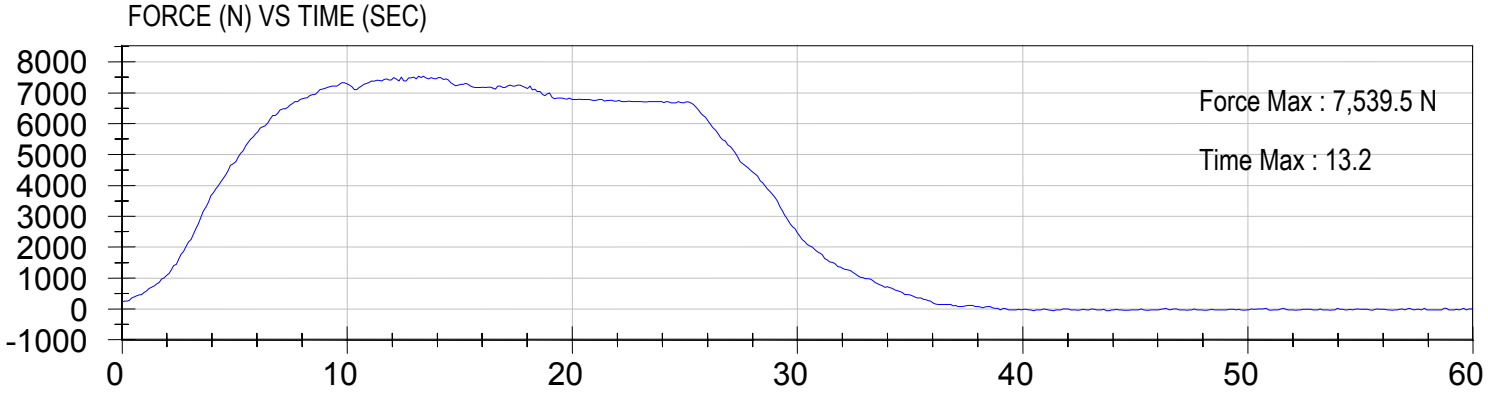


Test Desc: Seat Back Rearward Deflection
Component ID: Thomas Saf-T-Liner C2 S11

Test Date: 2/26/2007
NHTSA #: C70900

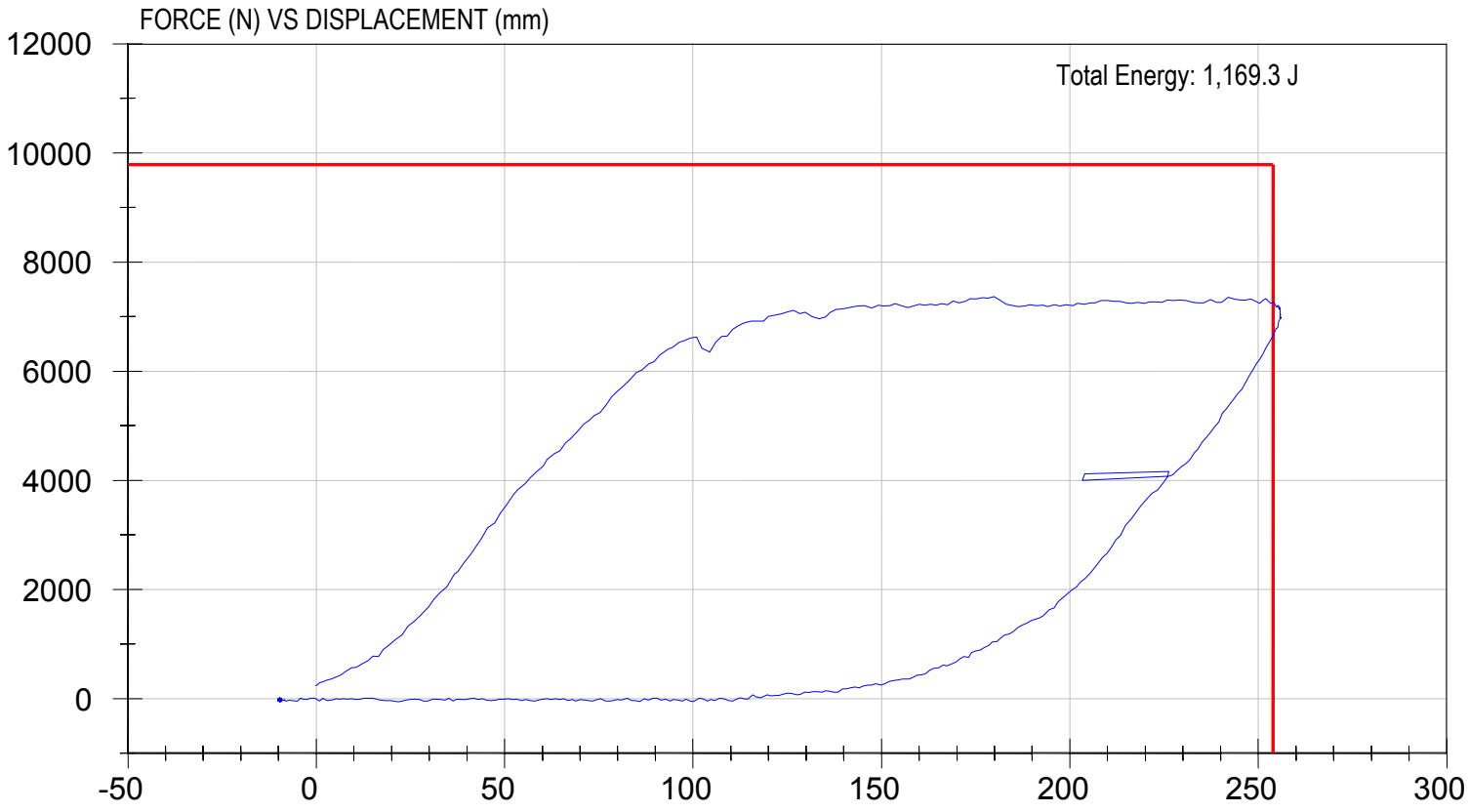


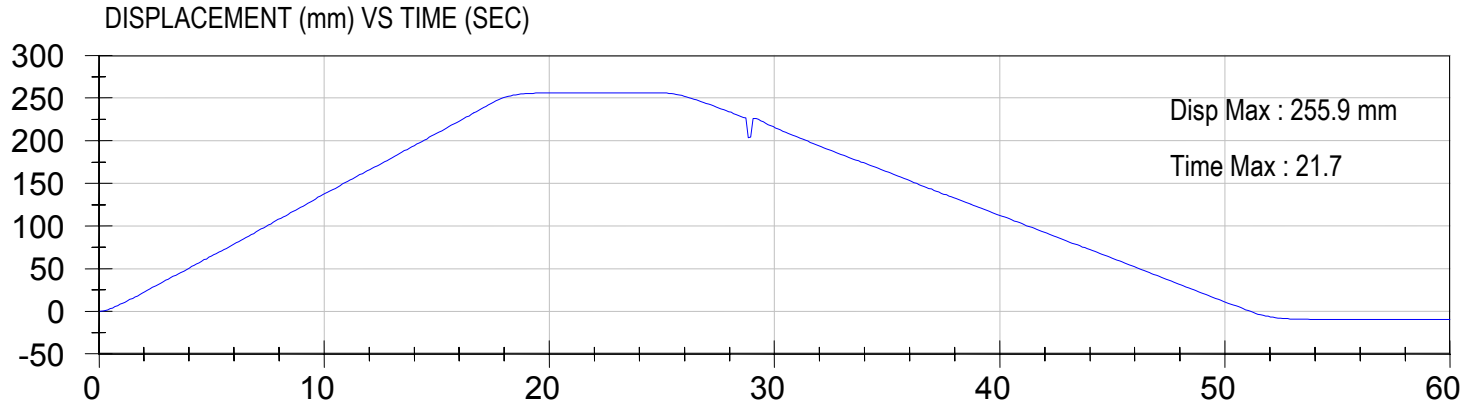


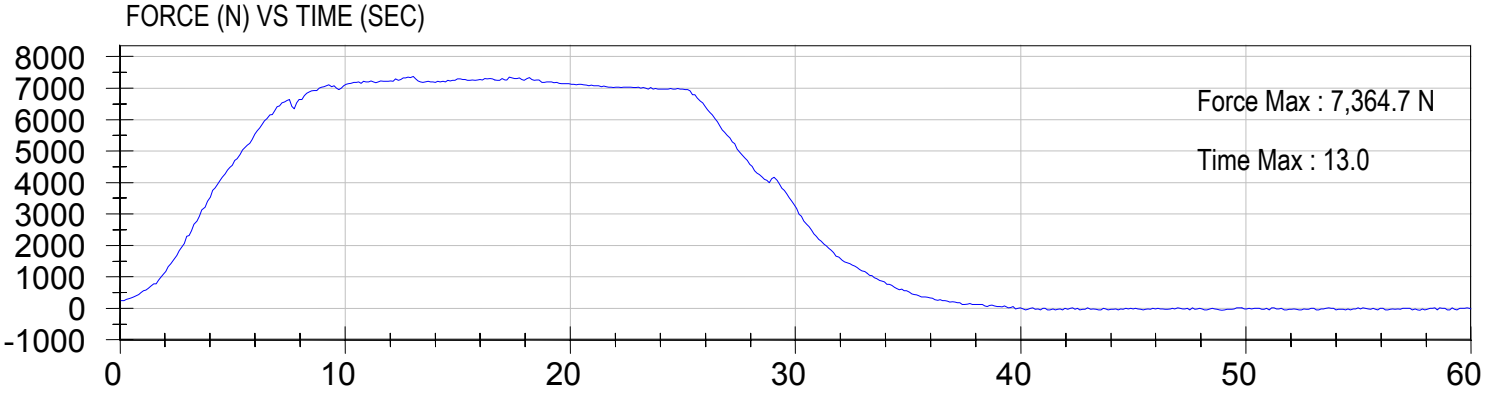


Test Desc: Seat Back Rearward Deflection
Component ID: Thomas Saf-T-Liner C2 S12

Test Date: 2/16/2007
NHTSA #: C70900

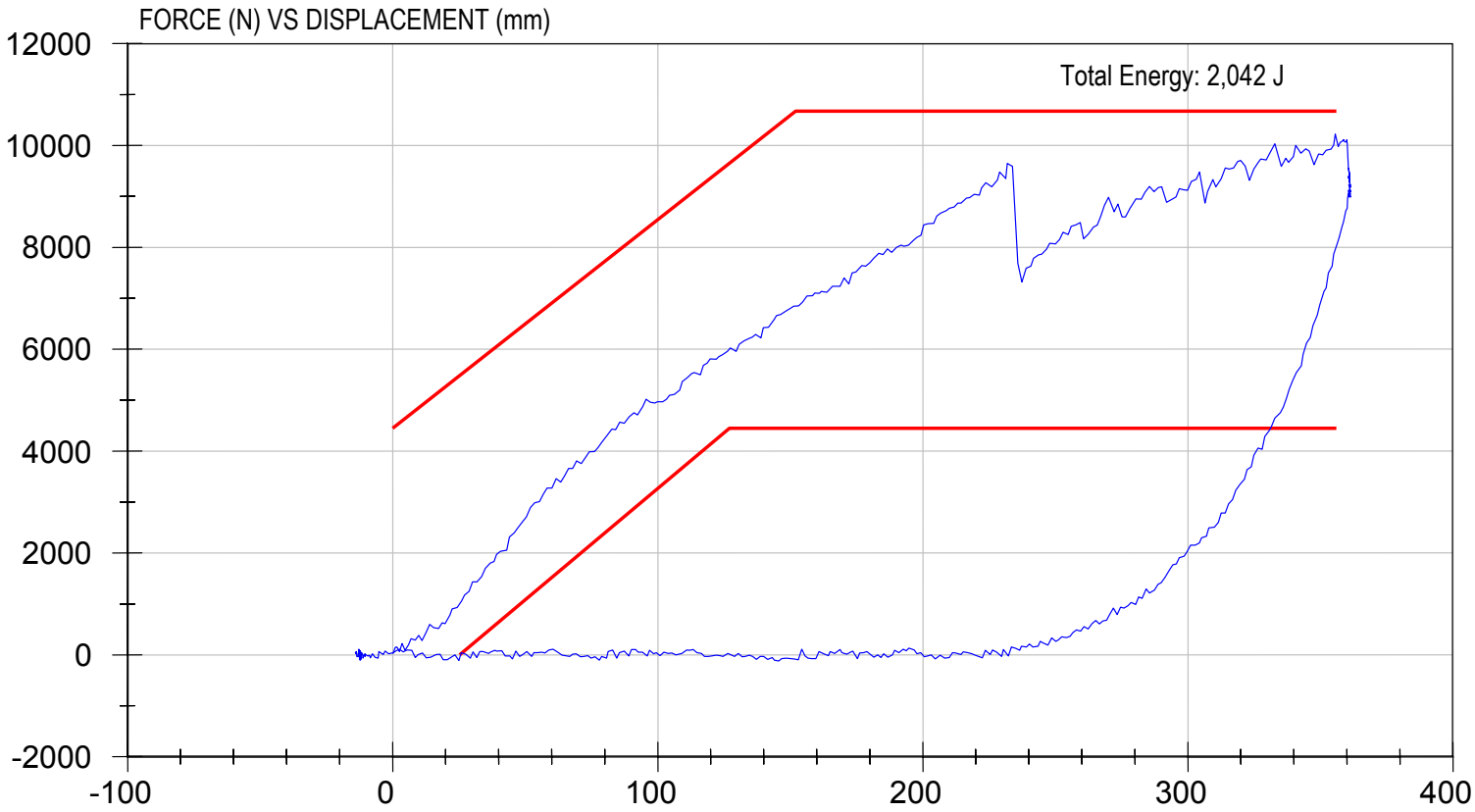


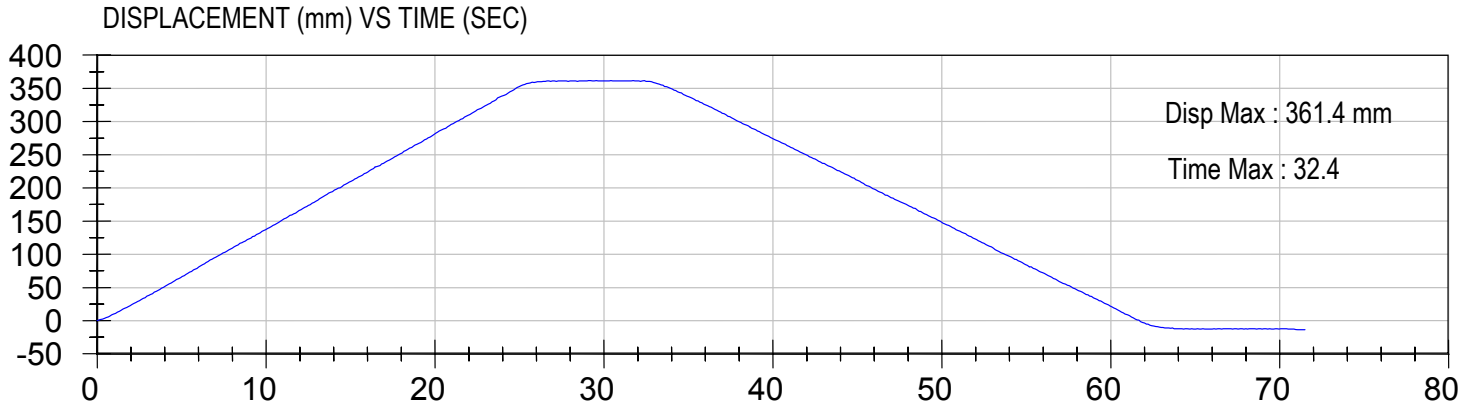


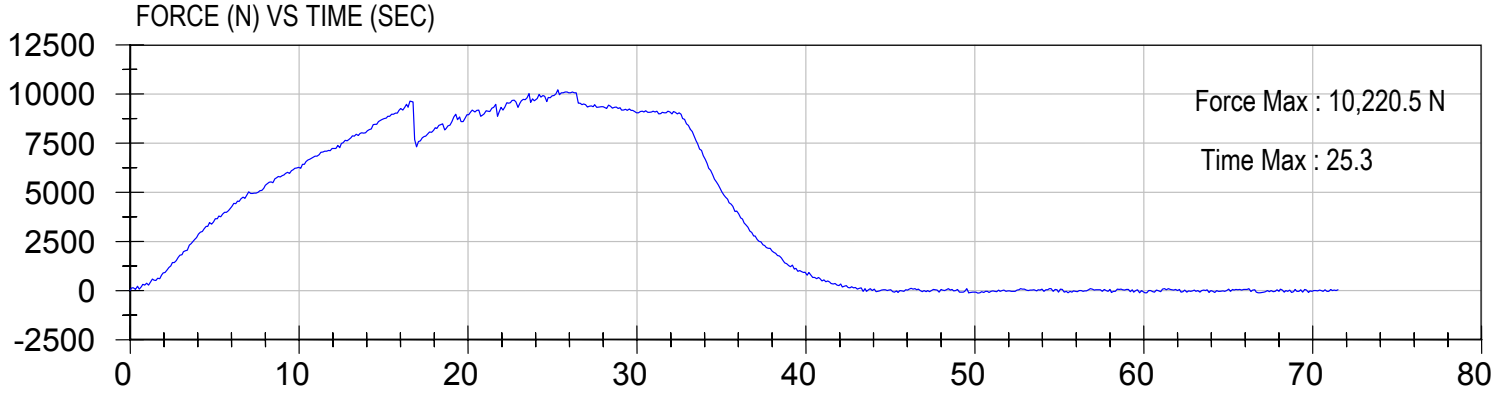


Test Desc: Barrier Forward Deflection (Upper)
Component ID: Thomas Saf-T-Liner C2 B1

Test Date: 2/27/2007
NHTSA #: C70900



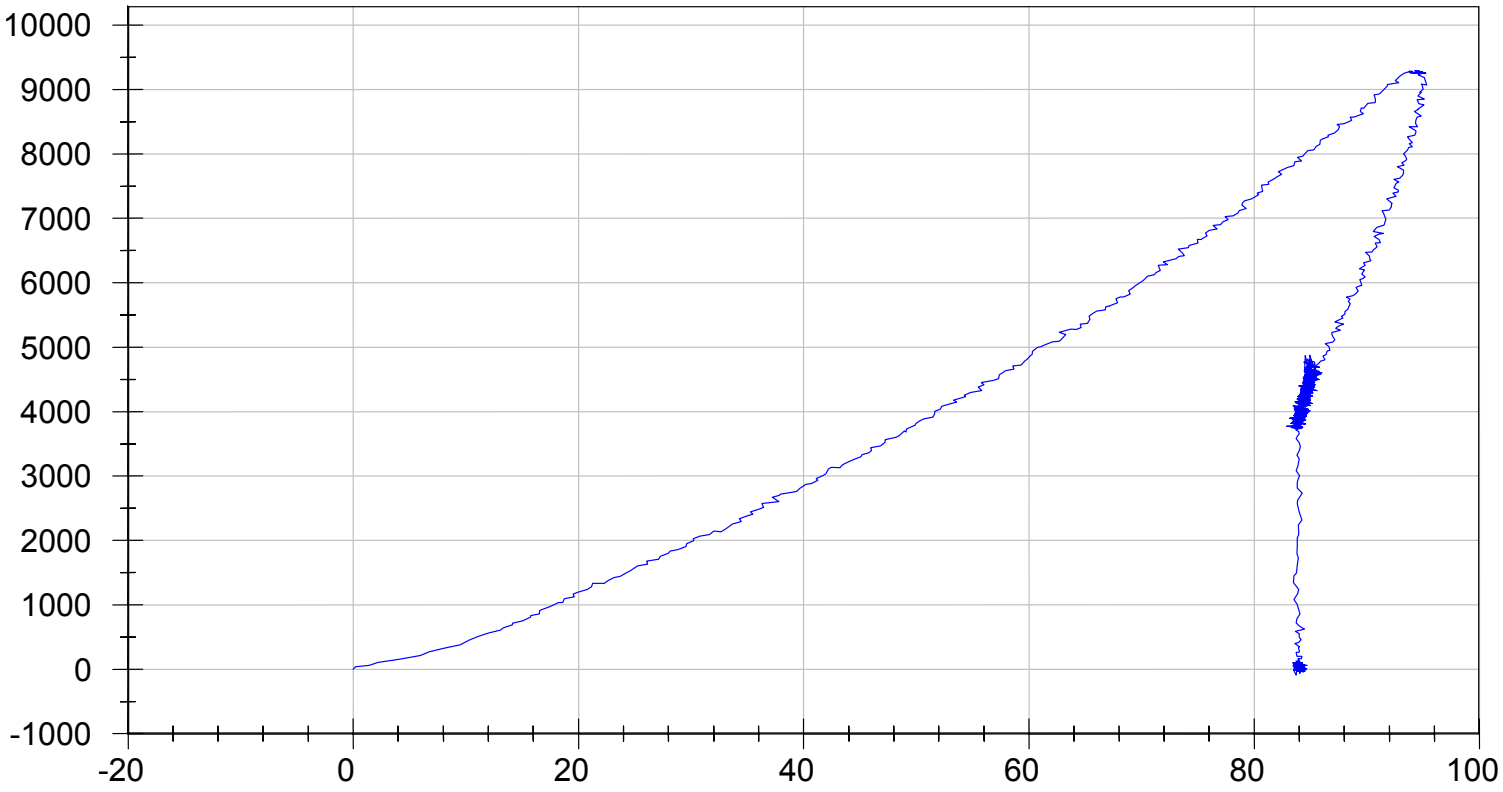




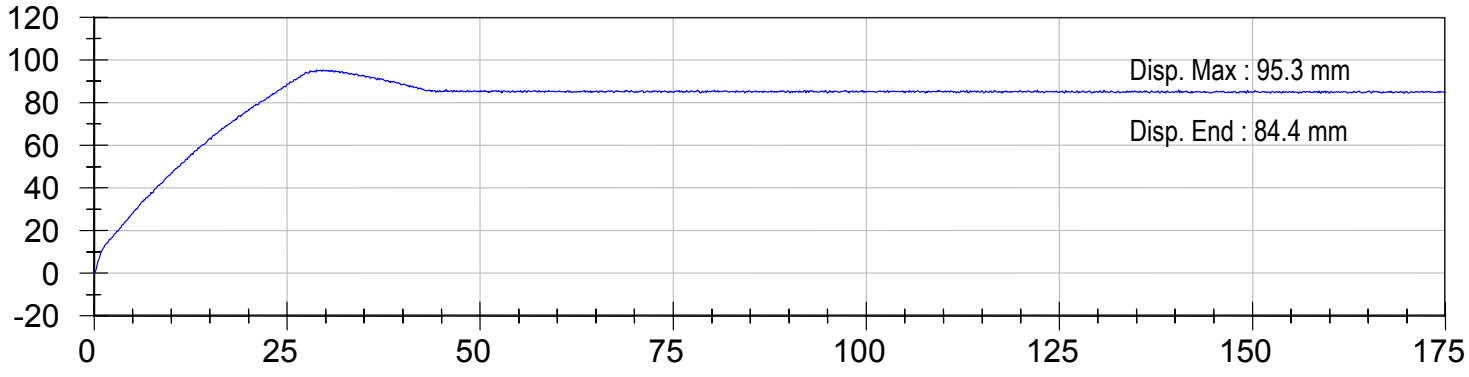
Test Desc: Barrier Forward Deflection (Lower)
Component ID: Thomas Saf-T-Liner C2 B1

Test Date: 2/27/2007
NHTSA #: C70900

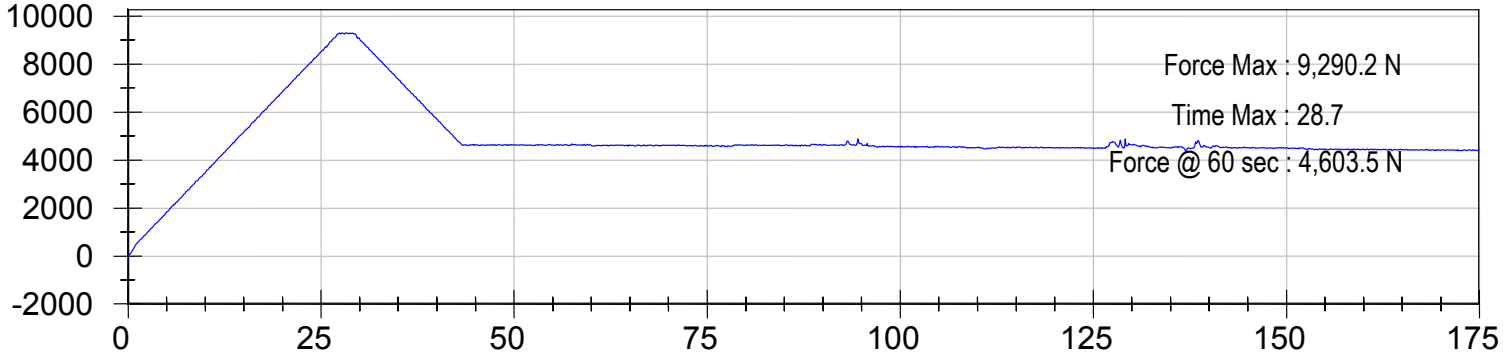
FORCE (N) VS DISPLACEMENT (mm)



DISPLACEMENT (mm) VS TIME (SEC)

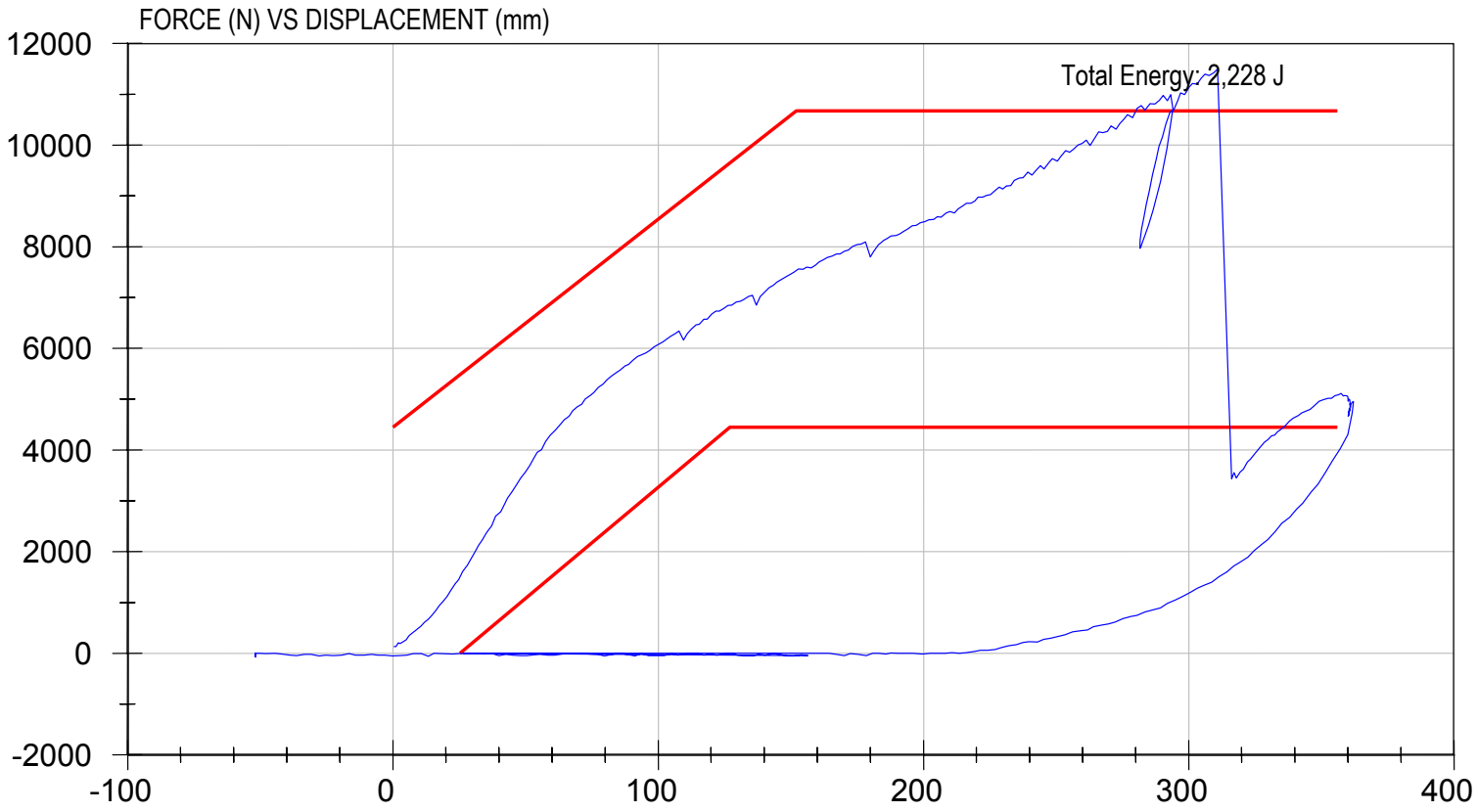


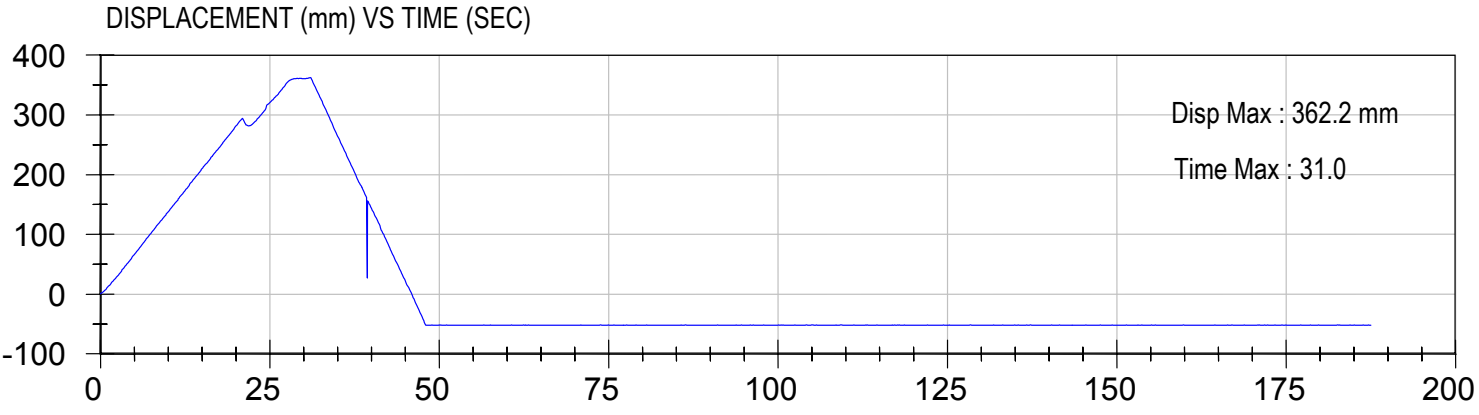
FORCE (N) VS TIME (SEC)

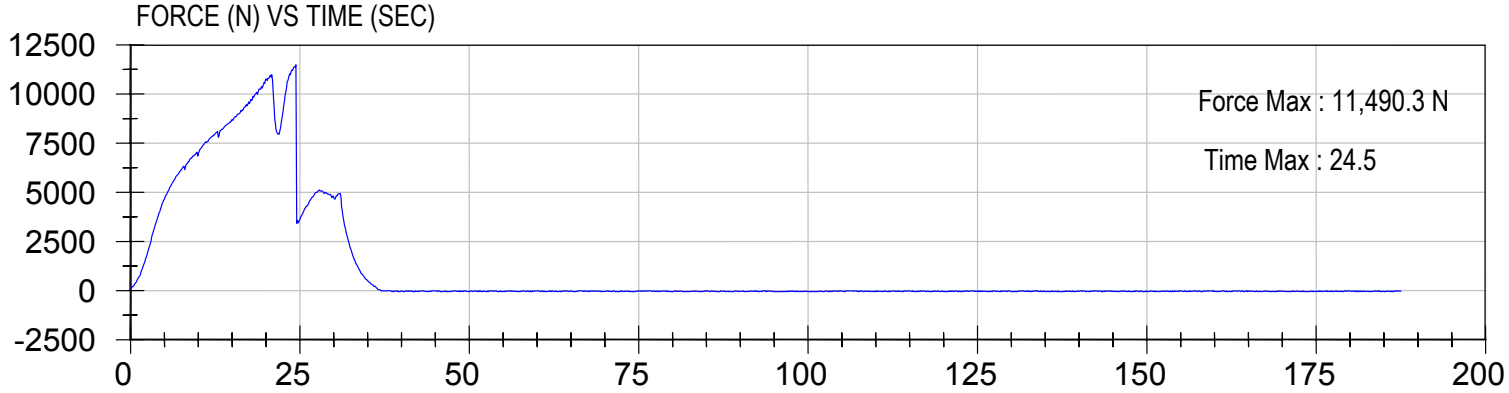


Test Desc: Barrier Forward Deflection (Upper)
Component ID: Thomas Saf-T-Liner C2 B16

Test Date: 2/26/2007
NHTSA #: C70900



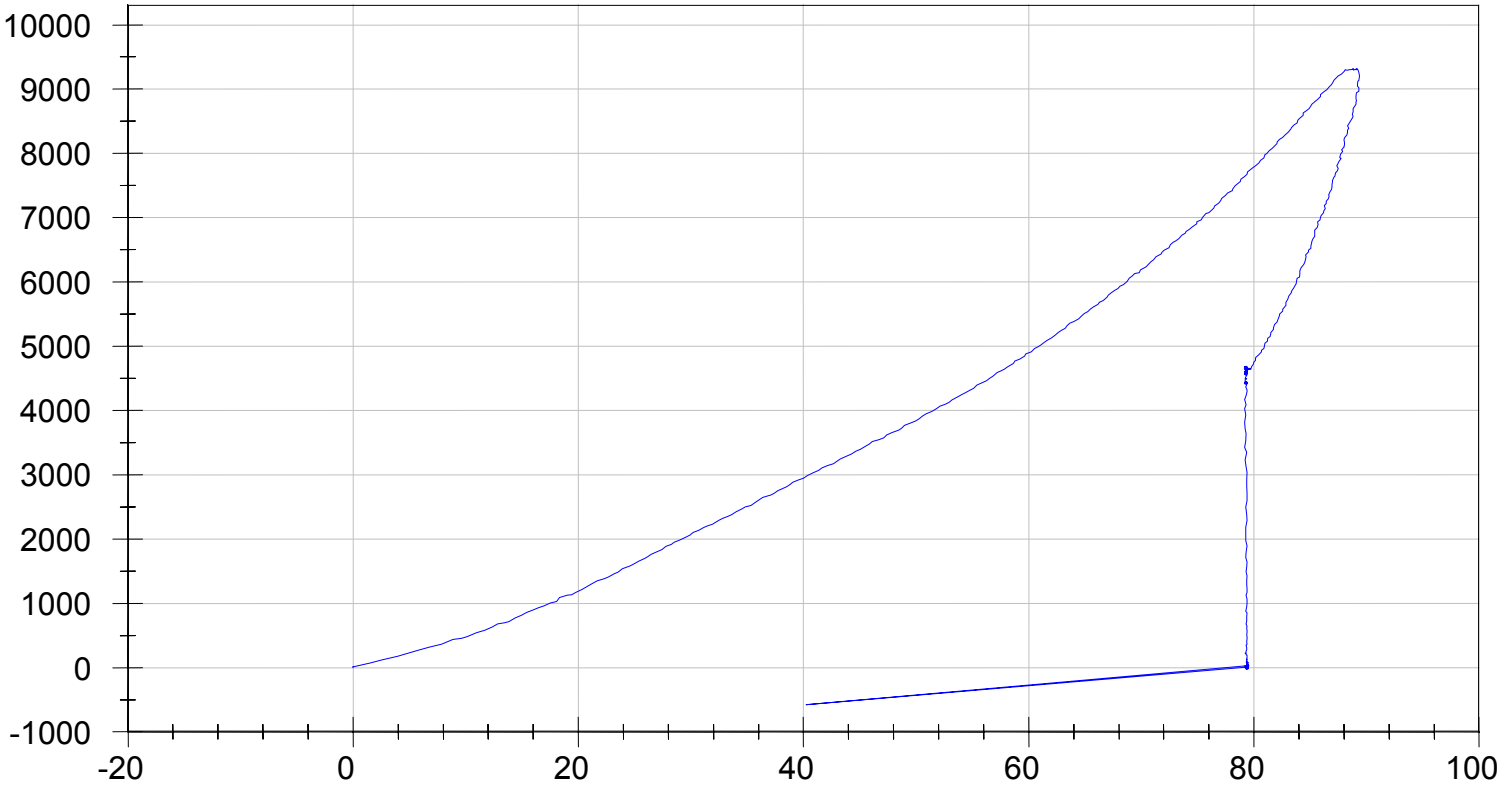




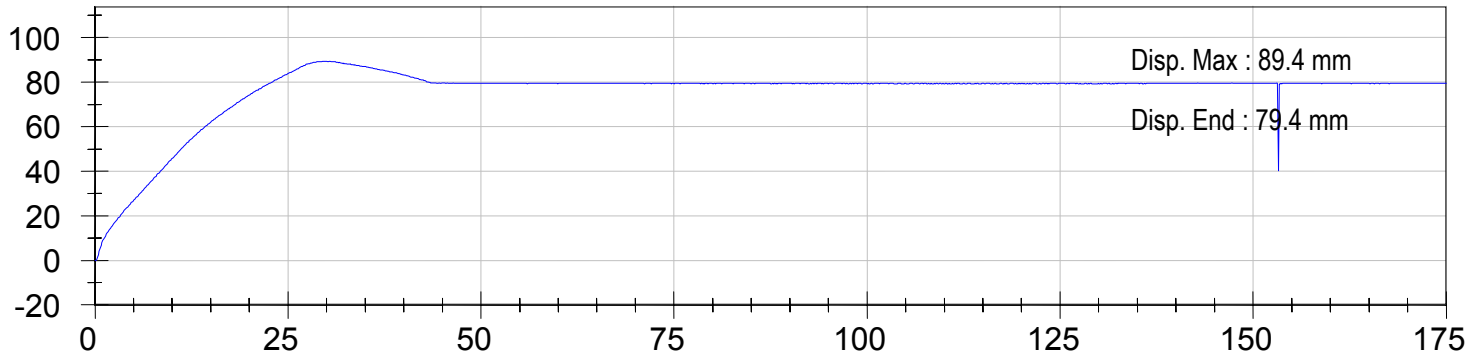
Test Desc: Barrier Force Deflection (Lower)
Component ID: Thomas Saf-T-Liner C2 B16

Test Date: 2/26/2007
NHTSA #: C70900

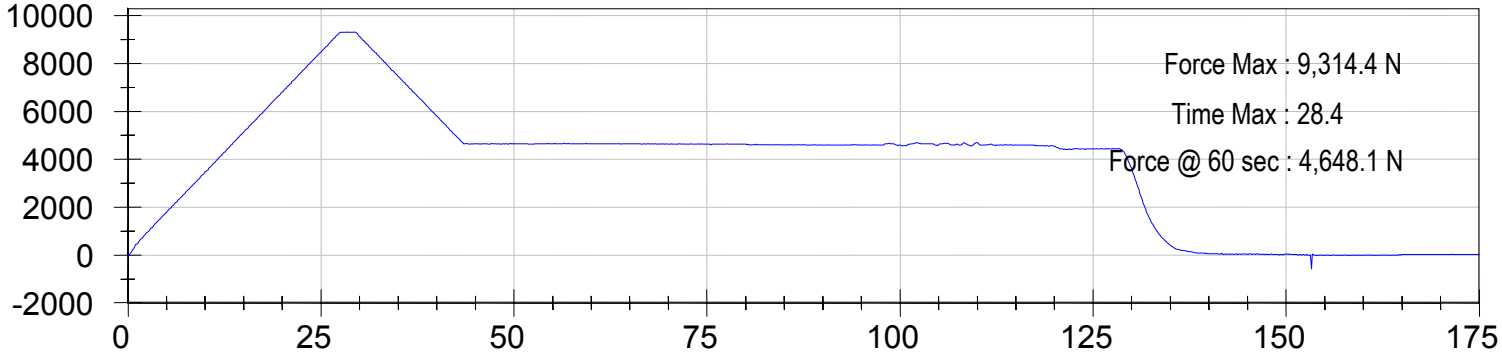
FORCE (N) VS DISPLACEMENT (mm)



DISPLACEMENT (mm) VS TIME (SEC)



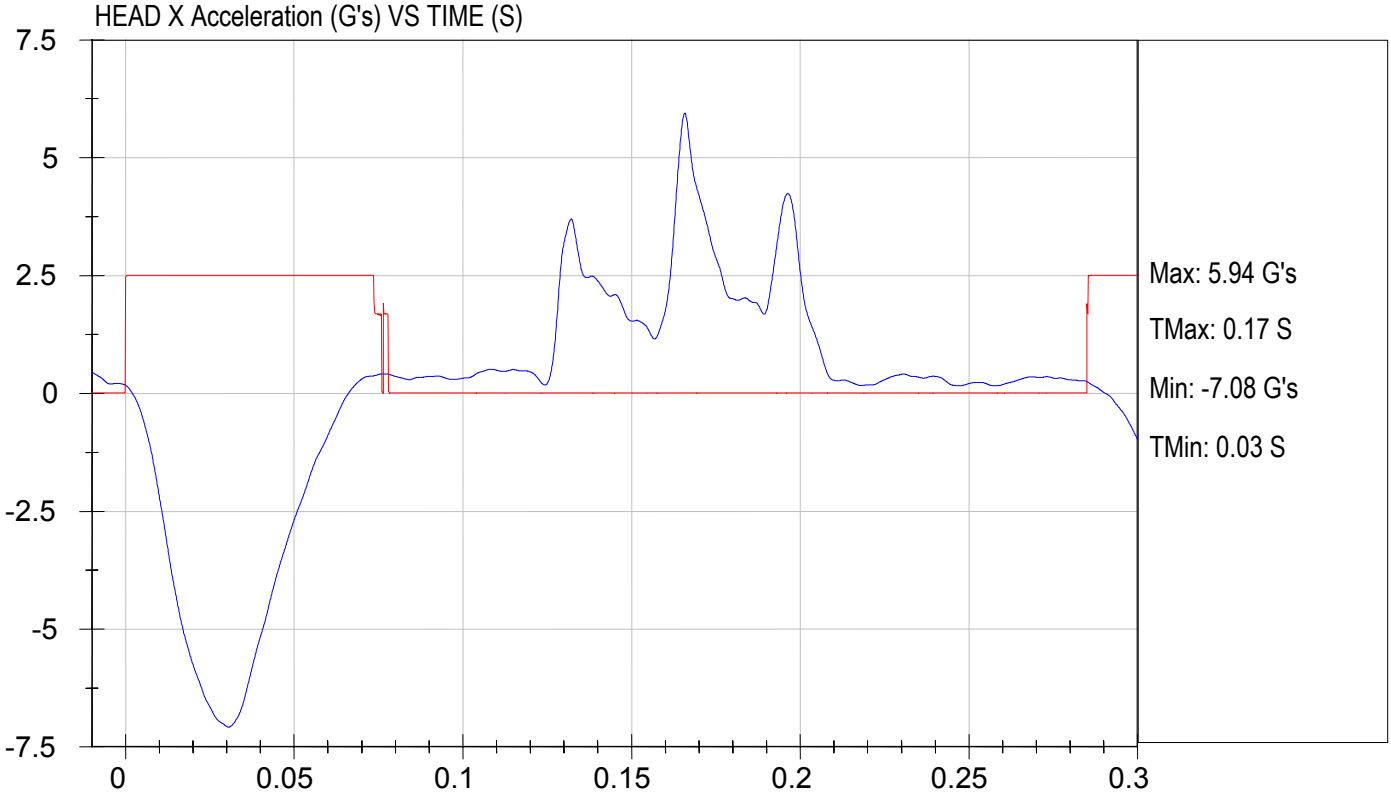
FORCE (N) VS TIME (SEC)



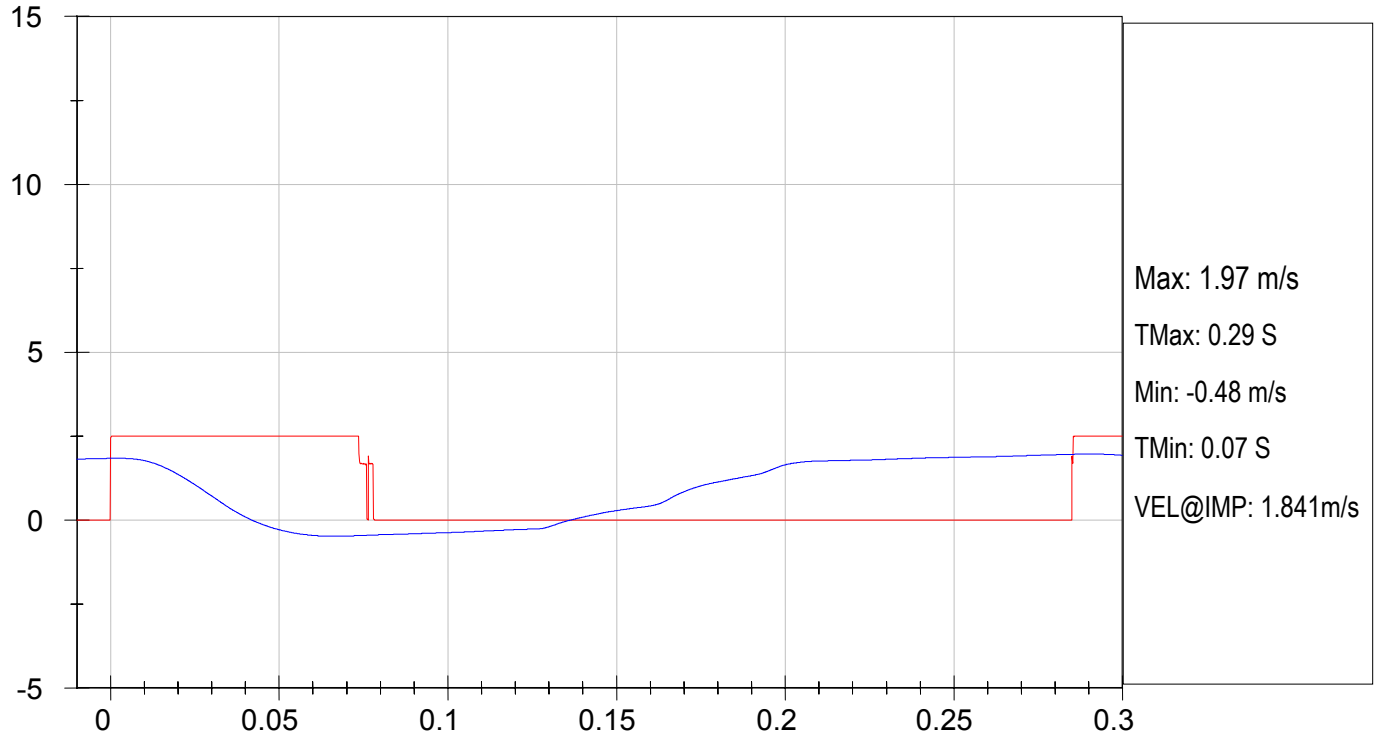
Test Desc: Head Form Impact (1.5 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H1

Test Date: 2/21/2007
NHTSA #: C70900

HEAD X Acceleration (G's) VS TIME (S)

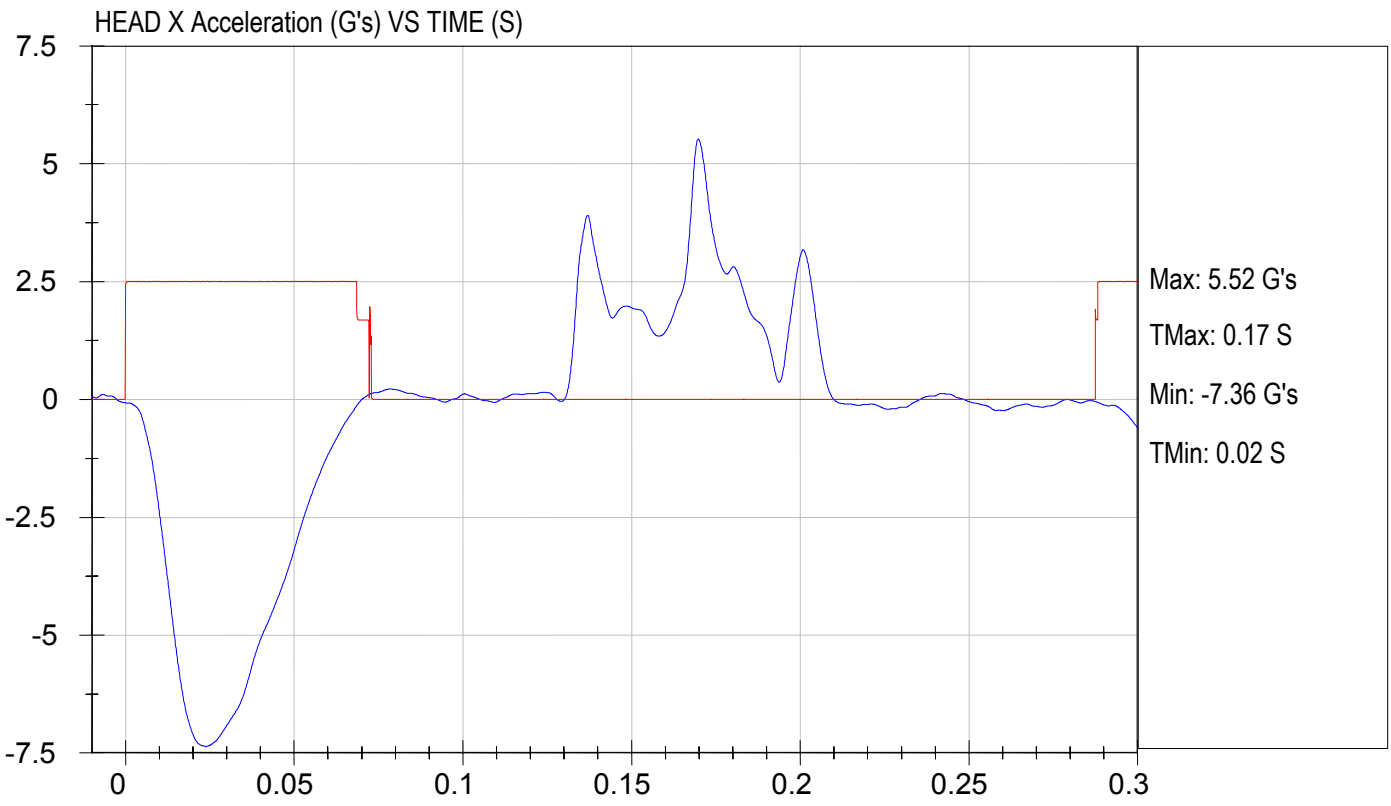


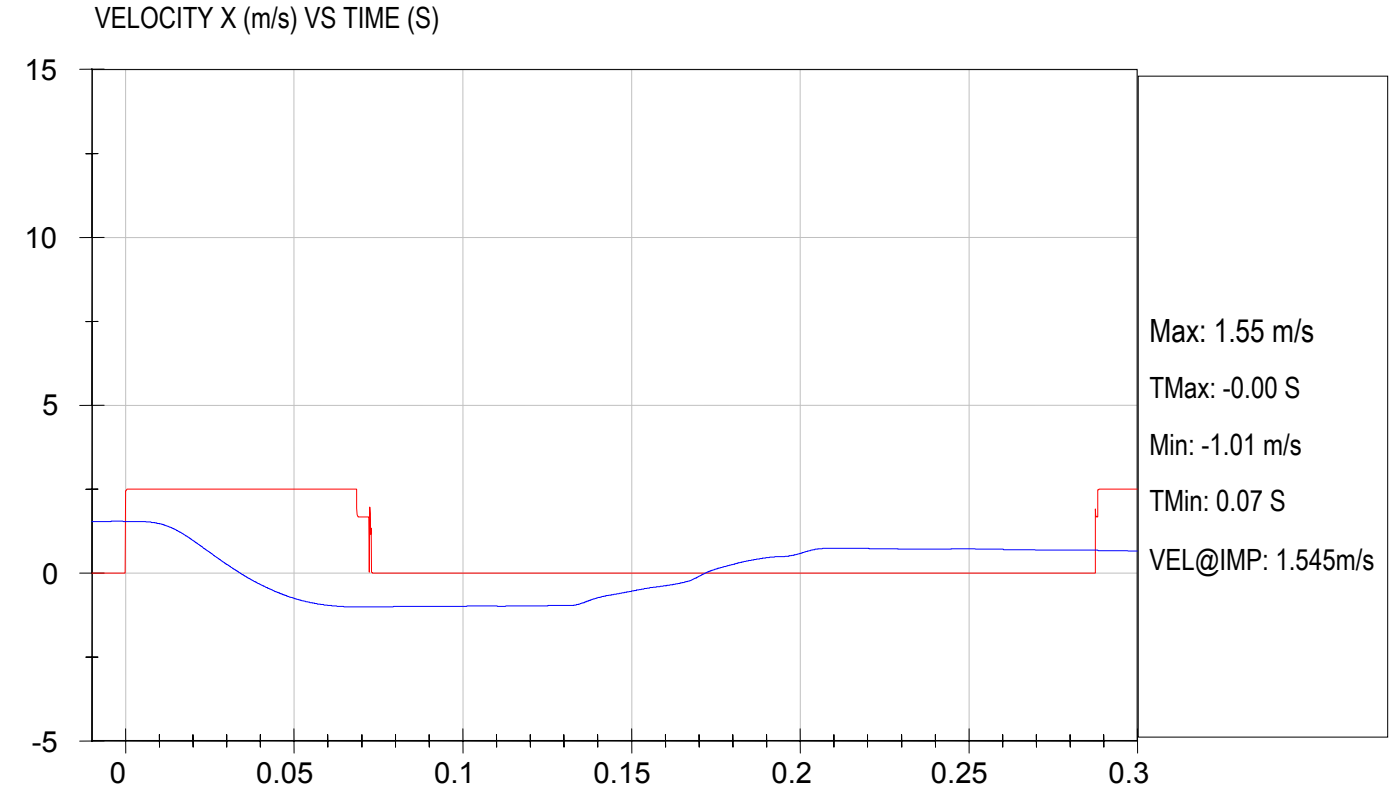
VELOCITY X (m/s) VS TIME (S)



Test Desc: Head Form Impact (1.5 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H2

Test Date: 2/21/2007
NHTSA #: C70900

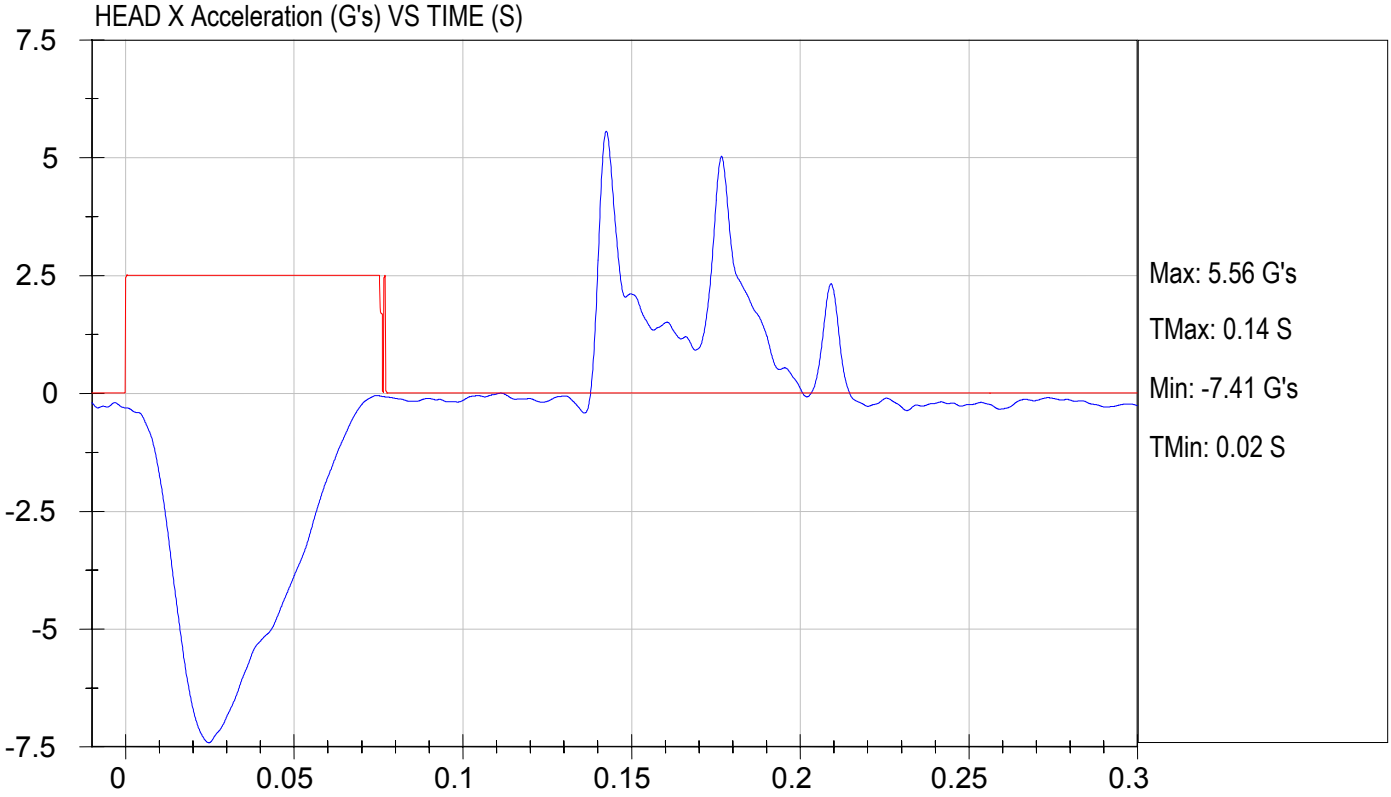




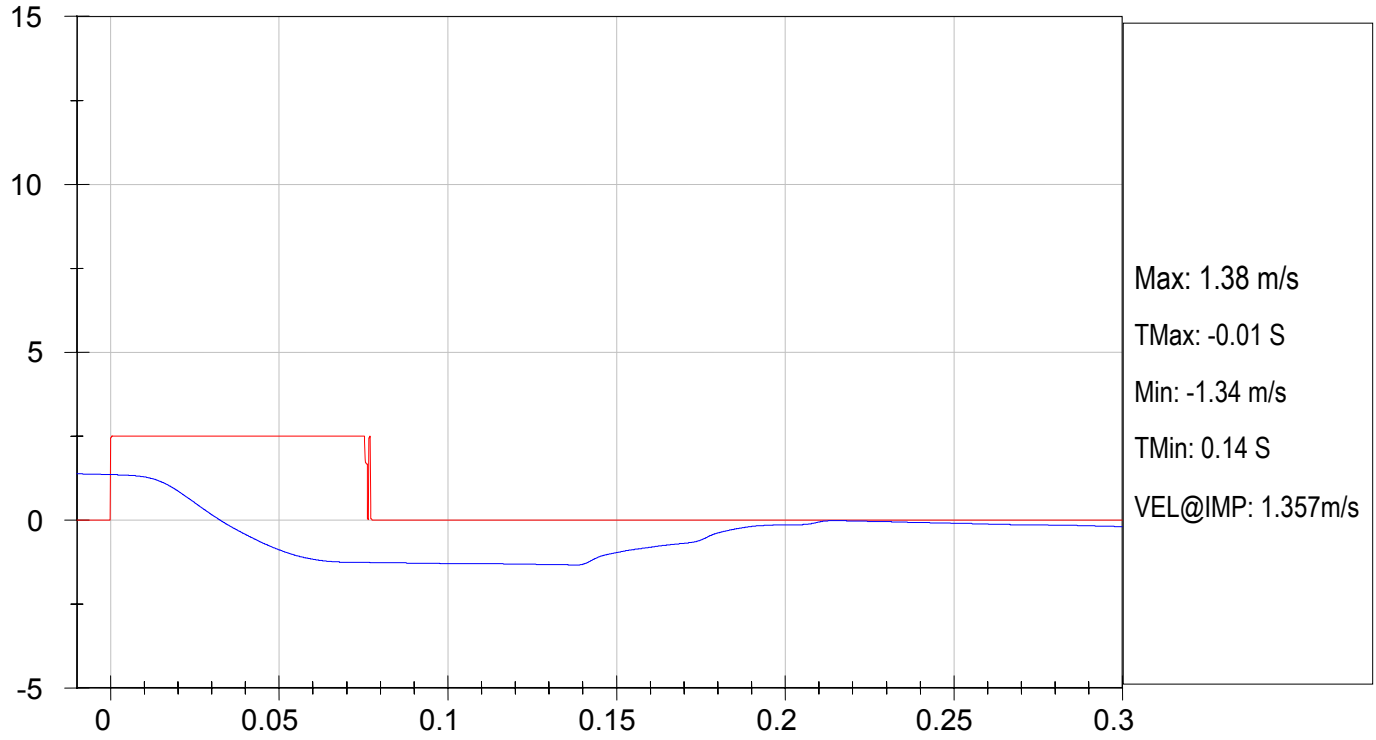
Test Desc: Head Form Impact (1.5 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H3

Test Date: 2/21/2007
NHTSA #: C70900

HEAD X Acceleration (G's) VS TIME (S)



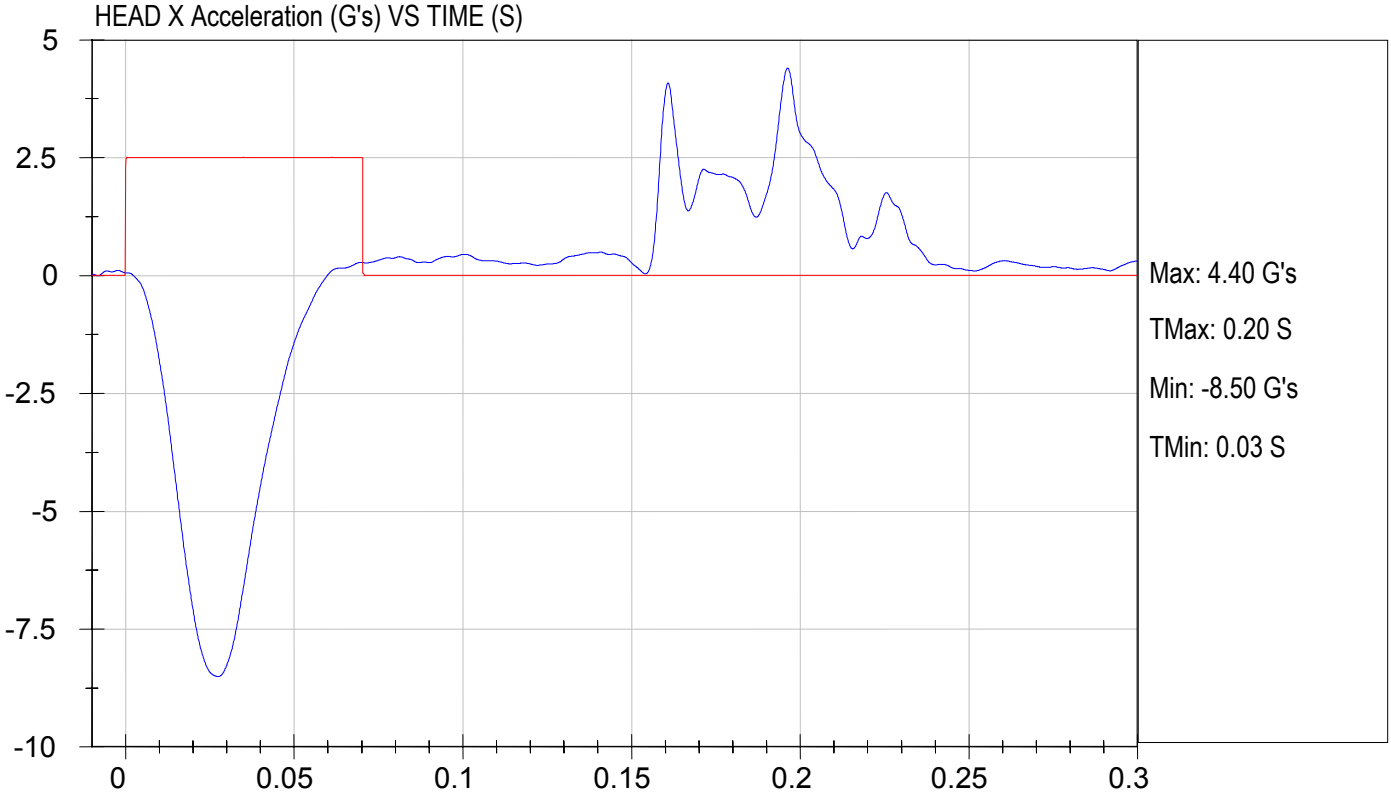
VELOCITY X (m/s) VS TIME (S)



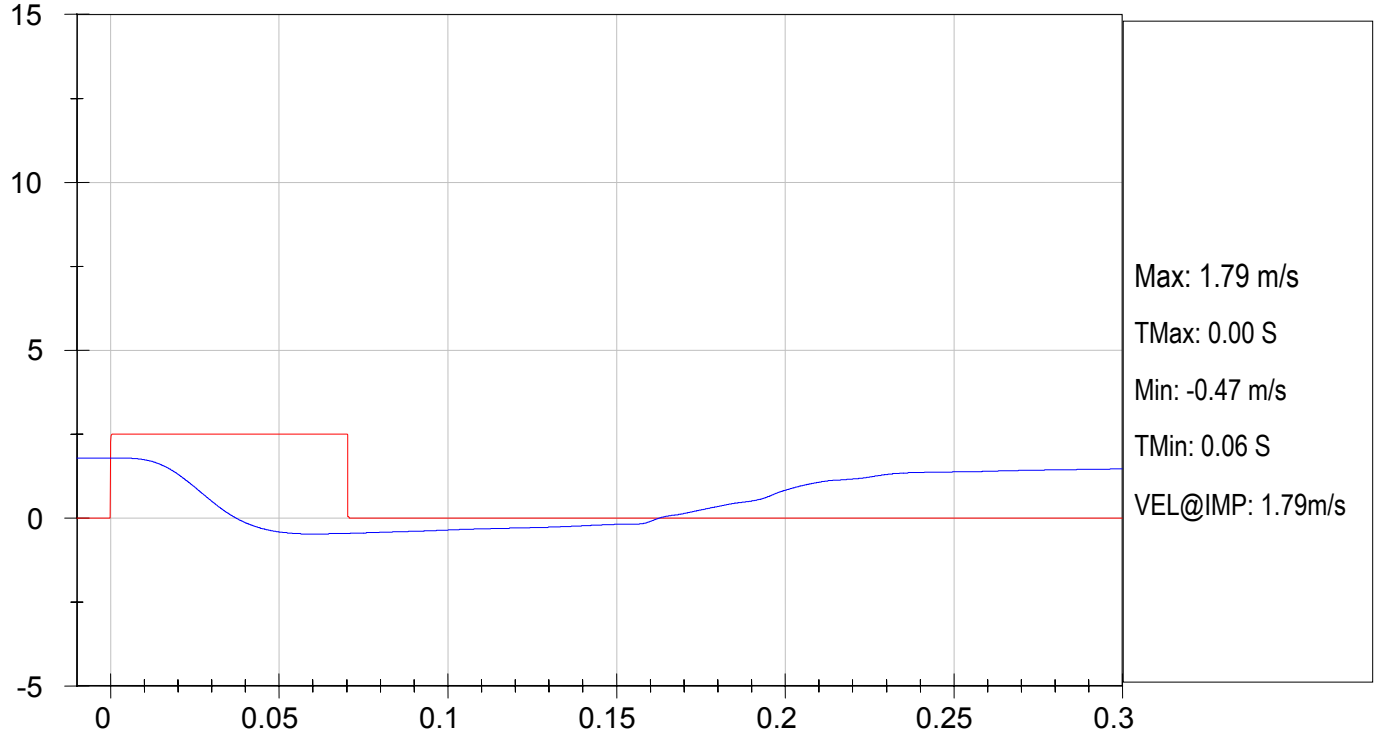
Test Desc: Head Form Impact (1.5 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H4

Test Date: 2/21/2007
NHTSA #: C70900

HEAD X Acceleration (G's) VS TIME (S)

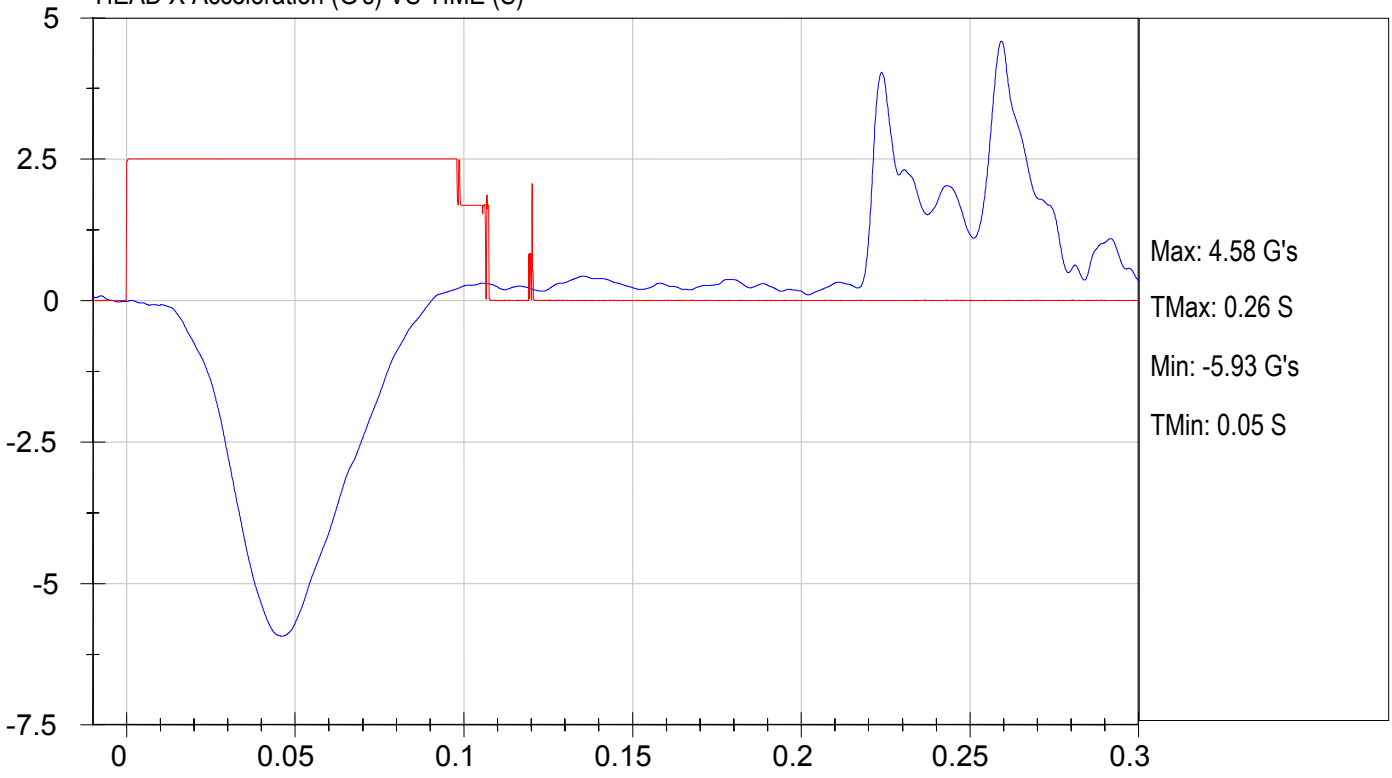


VELOCITY X (m/s) VS TIME (S)

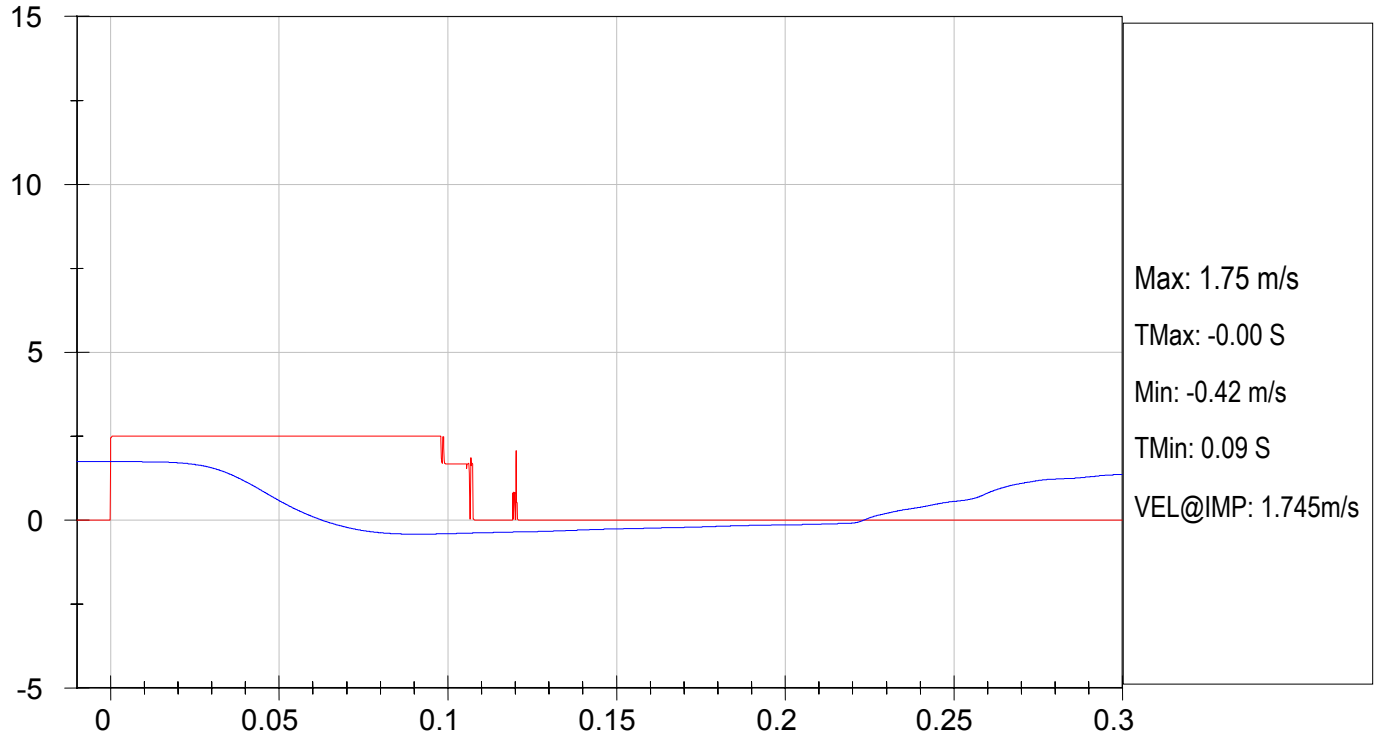


Test Desc: Head Form Impact (1.5 m/s) Test Date: 2/21/2007
Component ID: Thomas Saf-T-Liner C2 S3, Location H5 NHTSA #: C70900

HEAD X Acceleration (G's) VS TIME (S)



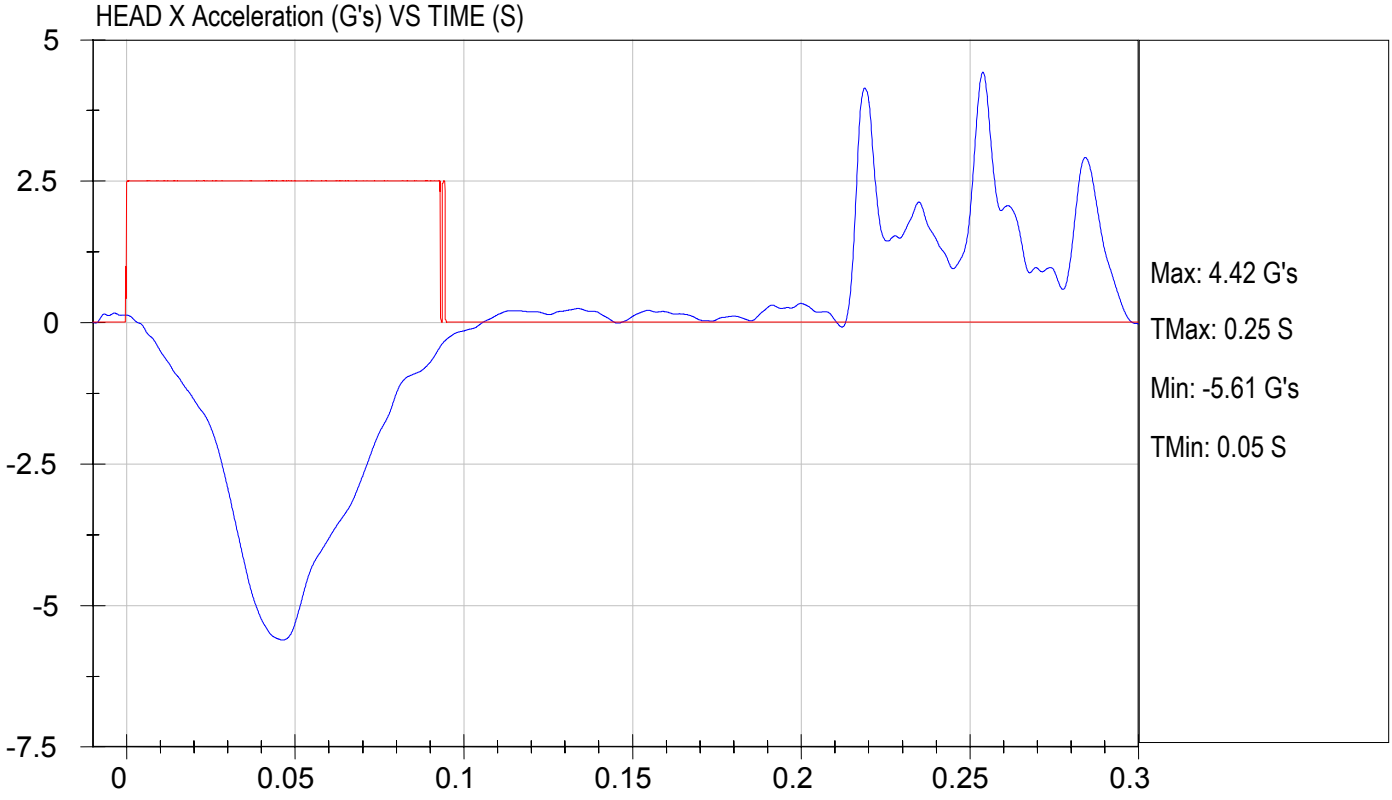
VELOCITY X (m/s) VS TIME (S)



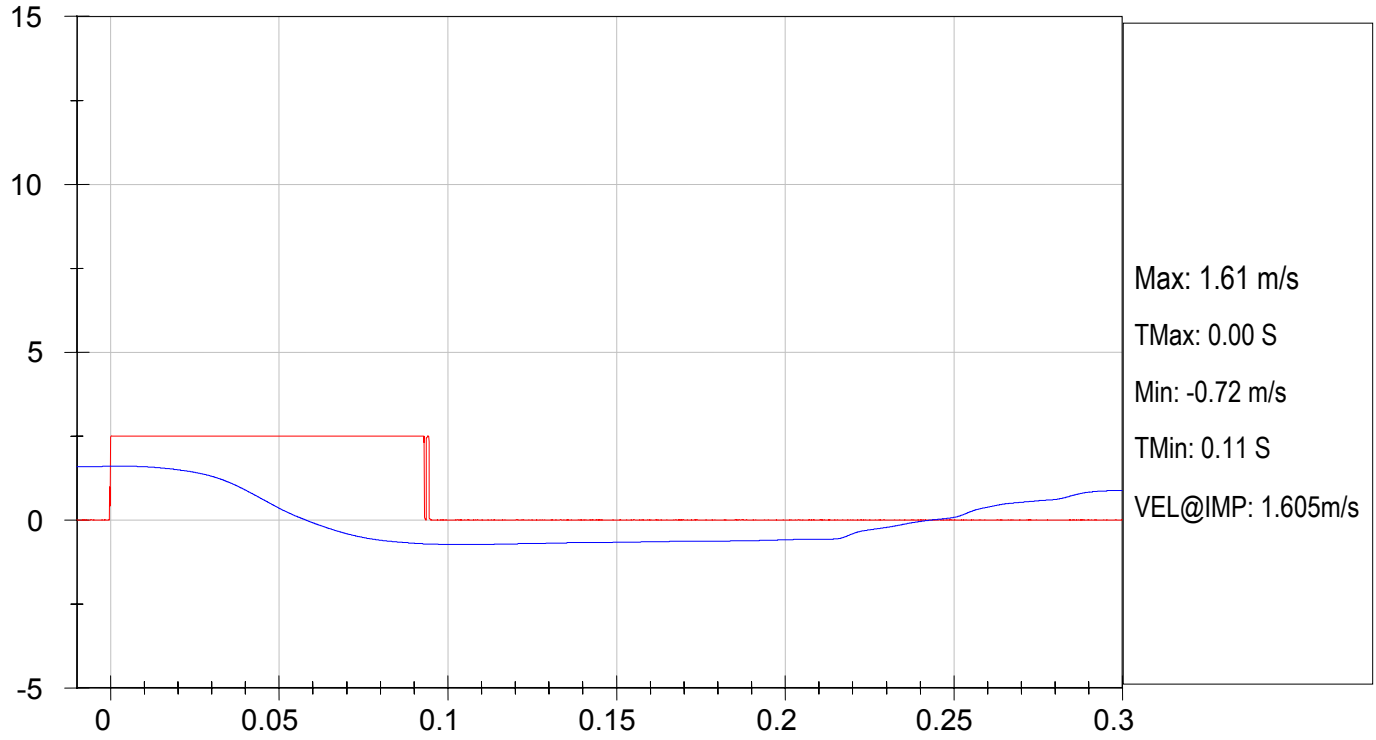
Test Desc: Head Form Impact (1.5 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H6

Test Date: 2/21/2007
NHTSA #: C70900

HEAD X Acceleration (G's) VS TIME (S)



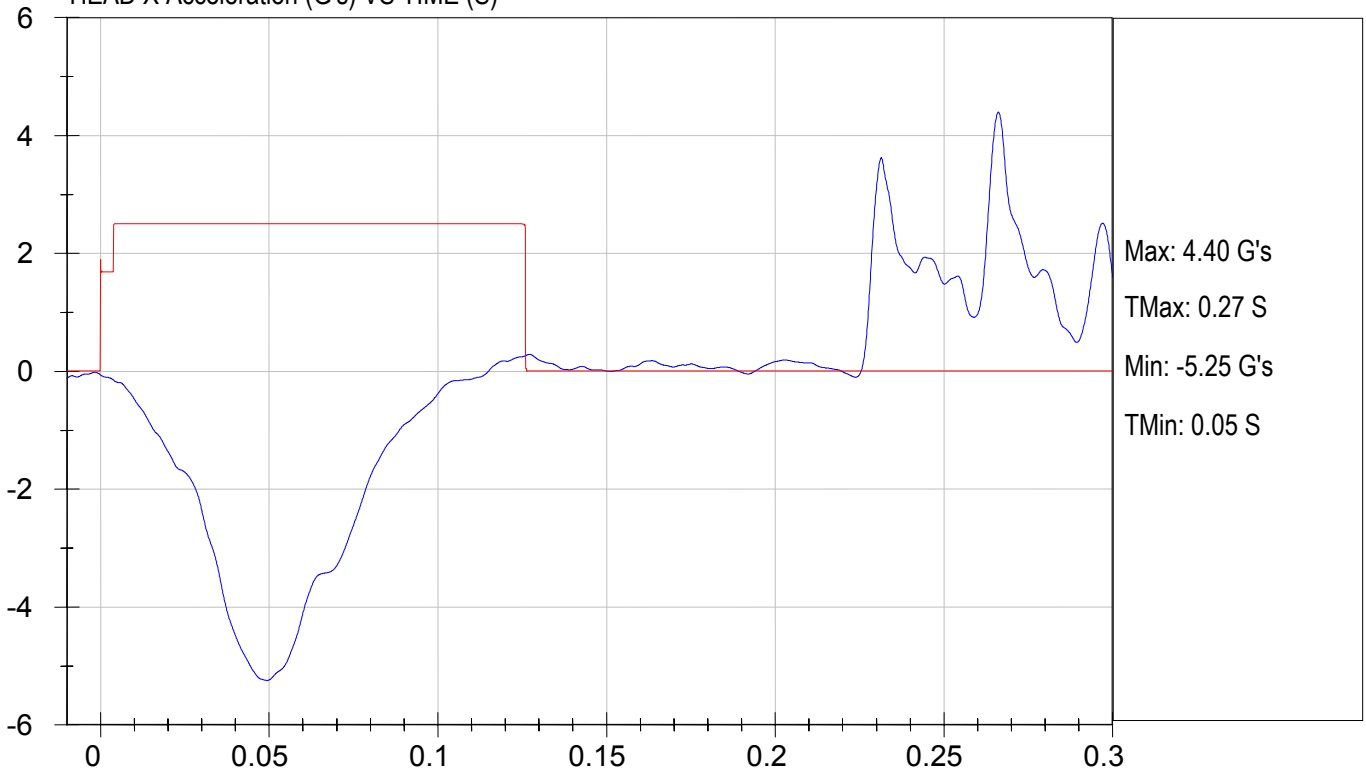
VELOCITY X (m/s) VS TIME (S)



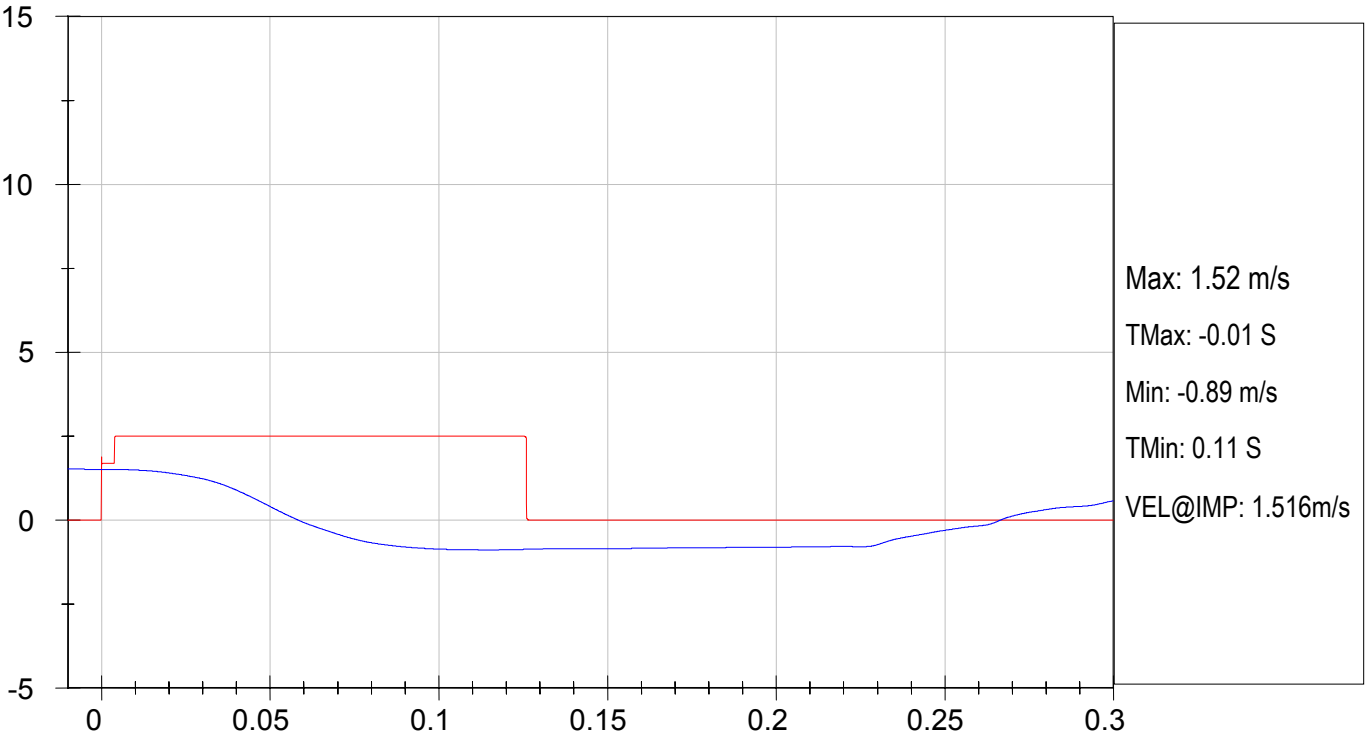
Test Desc: Head Form Impact (1.5 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H7

Test Date: 2/21/2007
NHTSA #: C70900

HEAD X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)

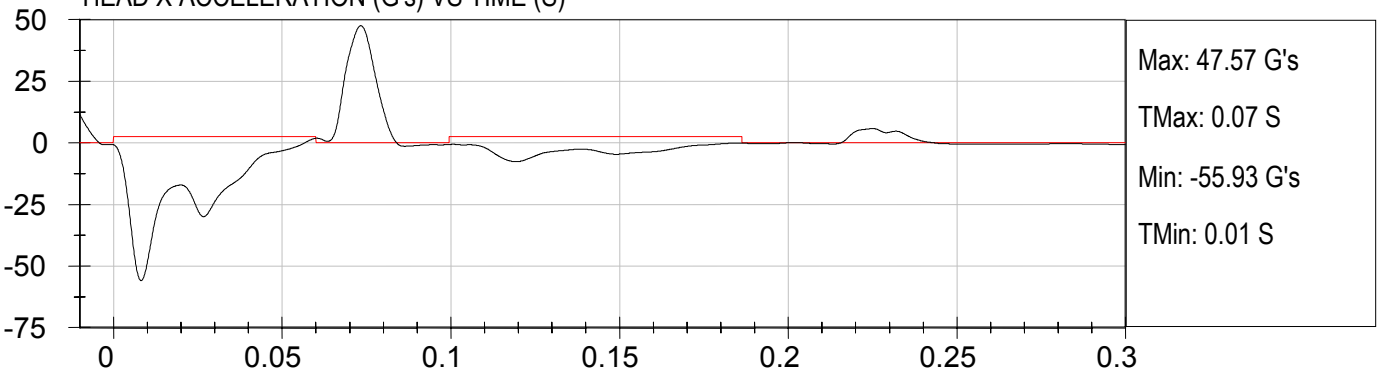


Test Desc: Head Form Impact (6.69 m/s)
Component ID: Thomas Saf-T-Liner C2 S3, Location H8

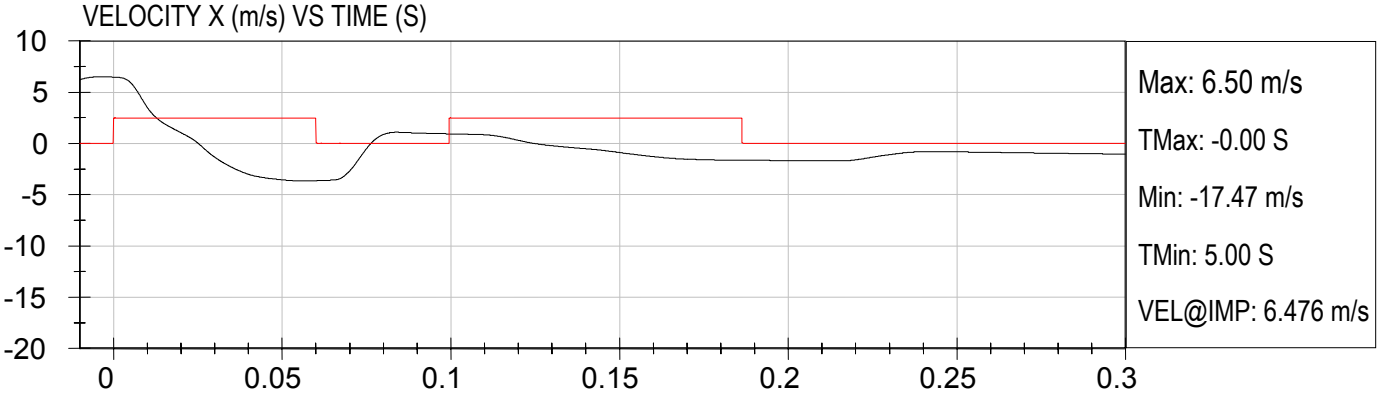
Test Date: 2/16/2007
NHTSA #: C70900

HEAD X ACCELERATION (G's) VS TIME (S)

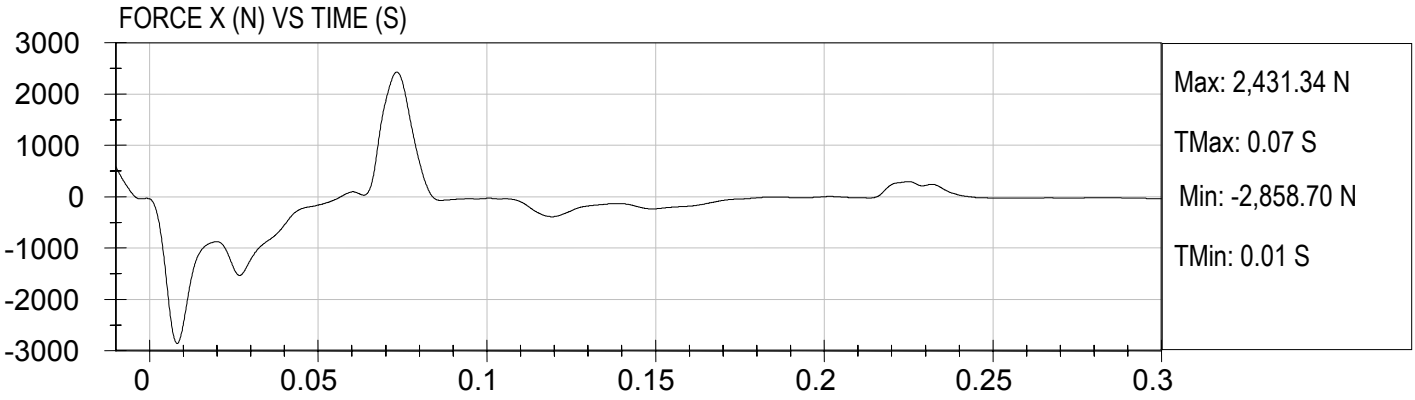
Hic: 128.90 T1: 3.70 ms T2: 35.20 ms



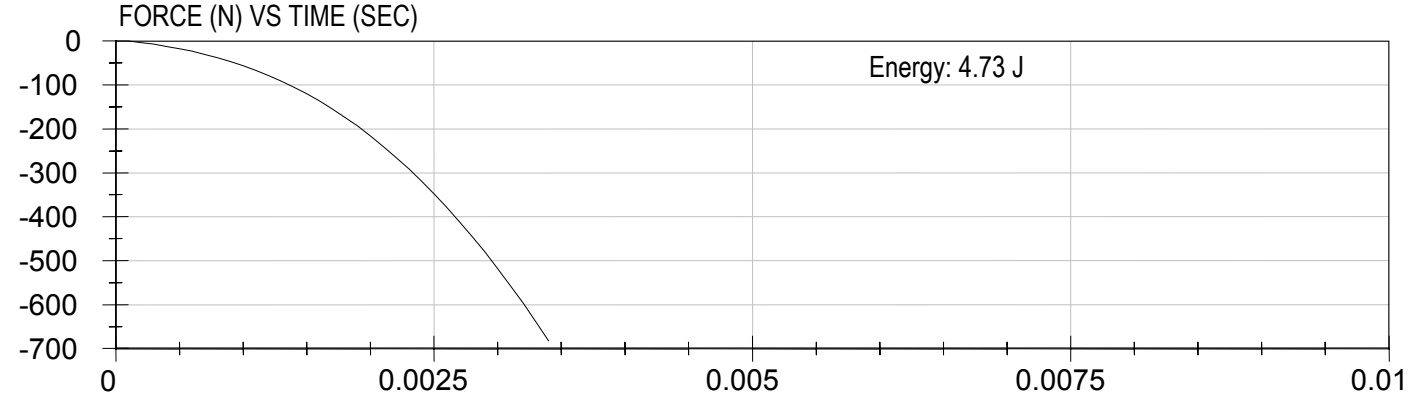
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)

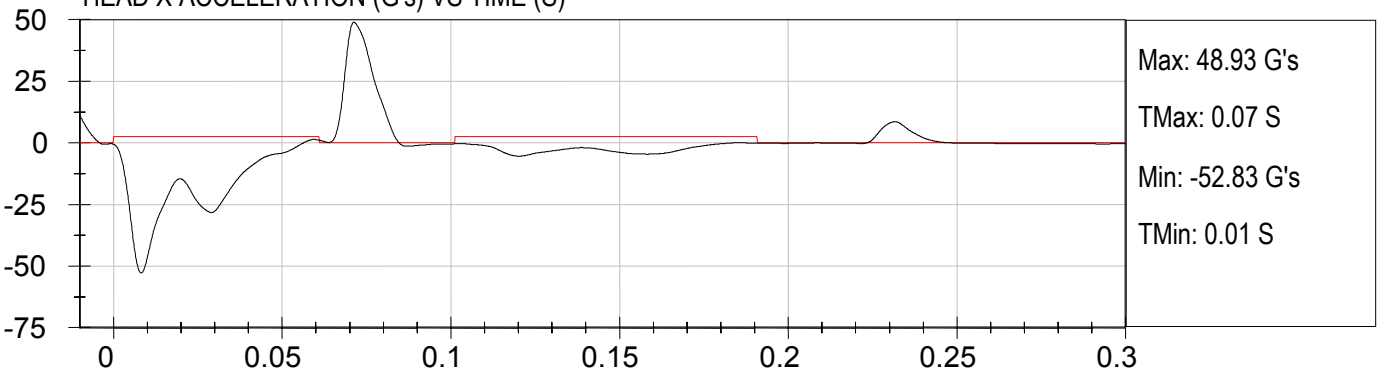


Test Desc: Head Form Impact (6.69 m/s) Test Date: 2/16/2007

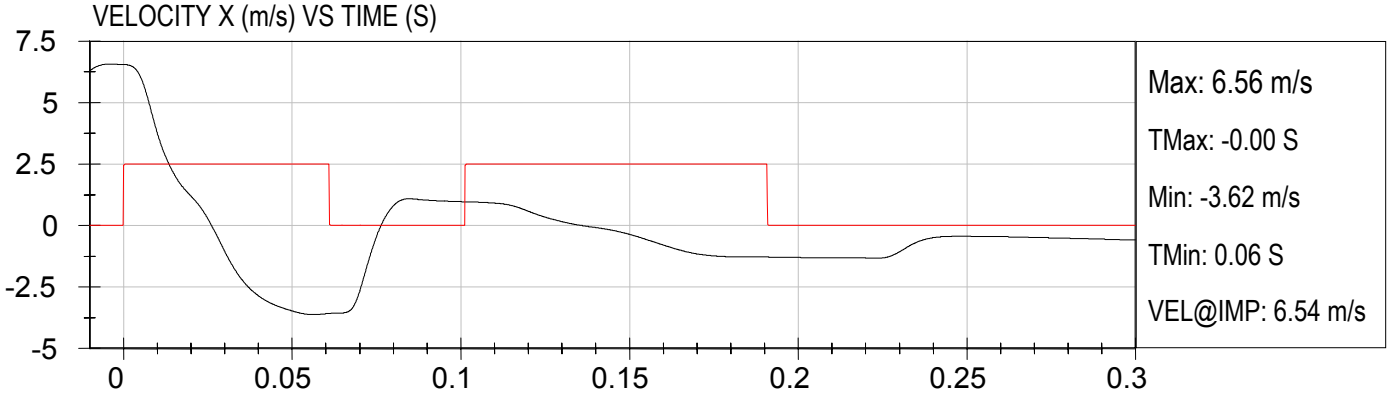
Component ID: Thomas Saf-T-Liner C2 S3, Location H9 NHTSA #: C70900

Hic: 127.36 T1: 3.80 ms T2: 35.80 ms

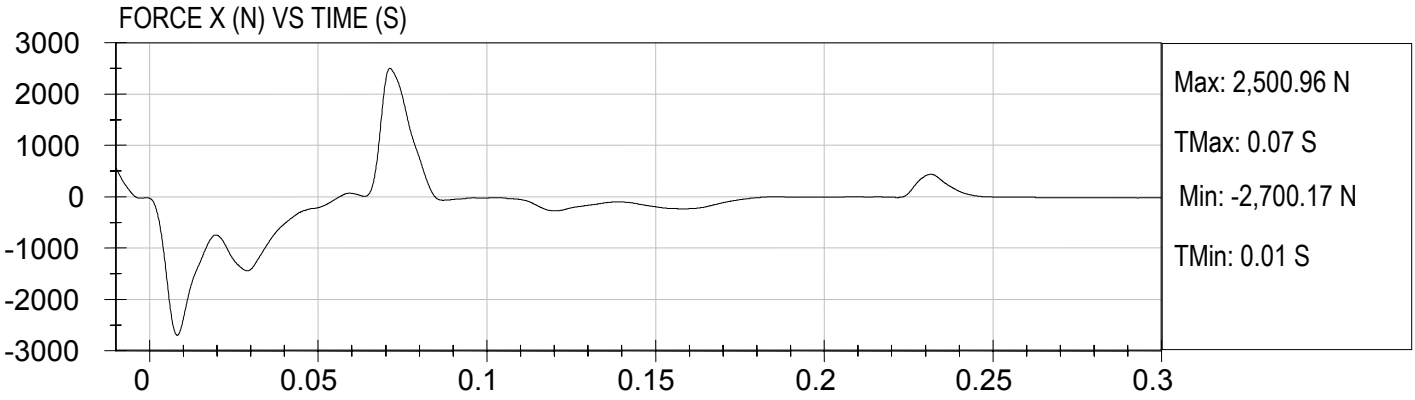
HEAD X ACCELERATION (G's) VS TIME (S)



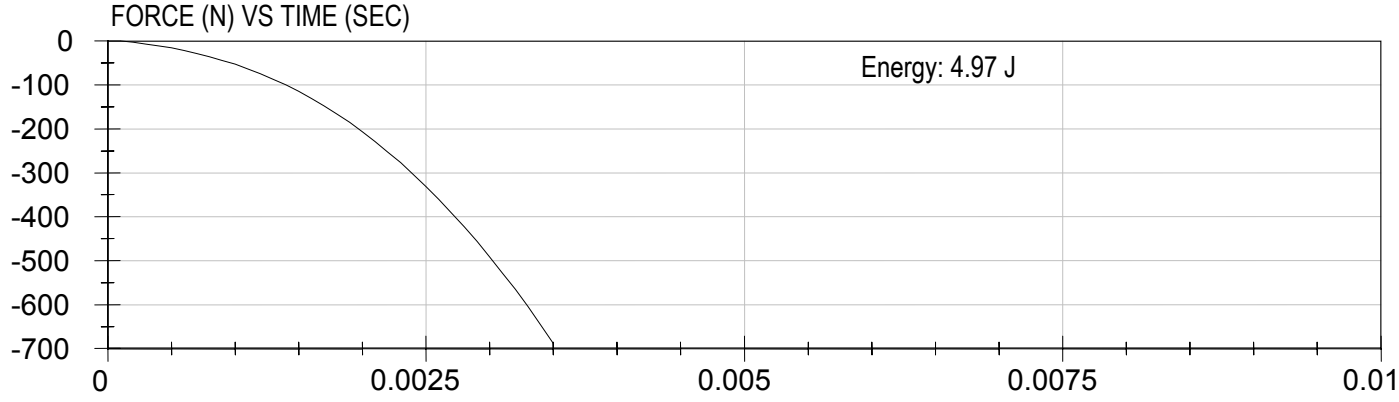
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



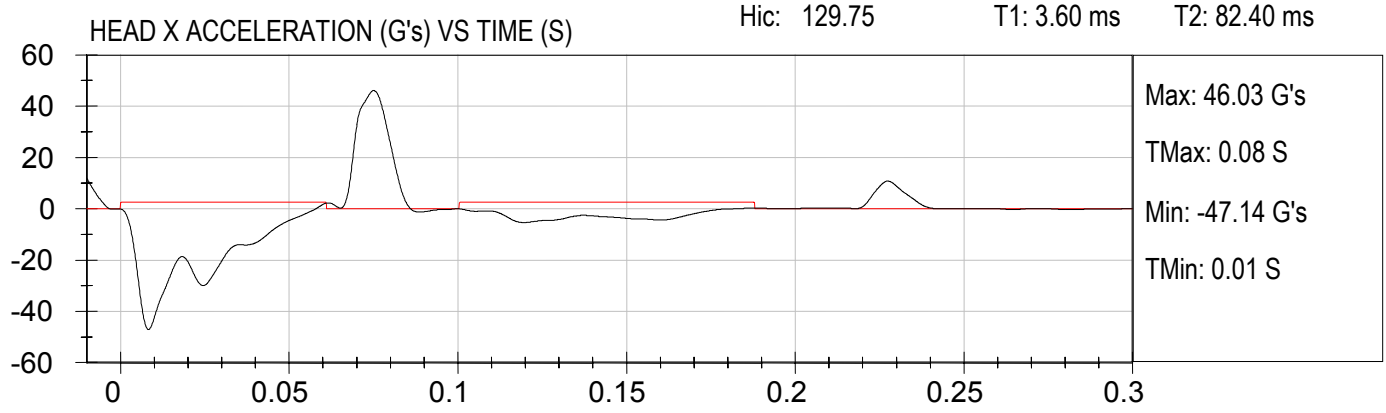
FORCE (N) VS TIME (SEC)

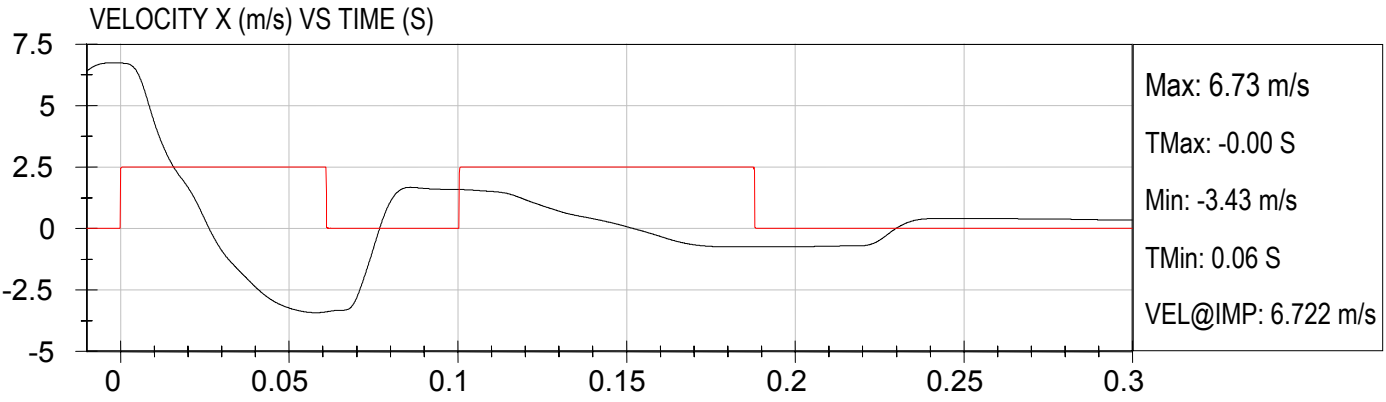


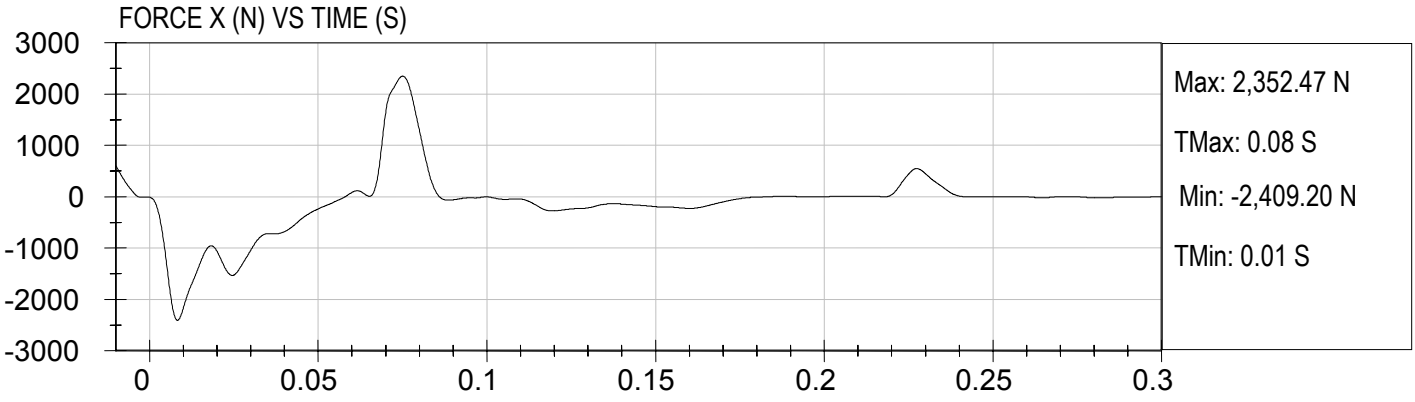
Test Desc: Head Form Impact (6.69 m/s) Test Date: 2/19/2007

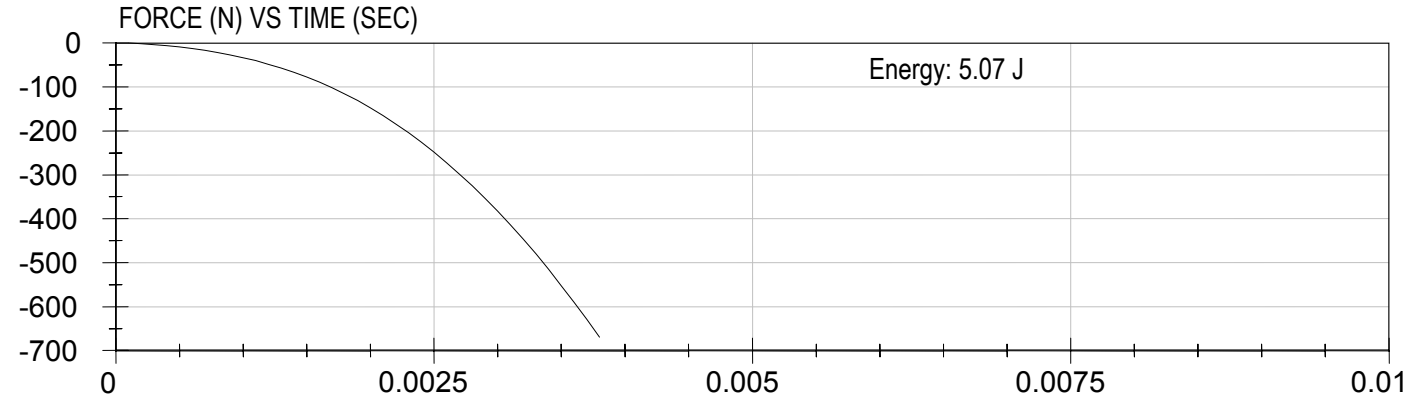
Component ID: Thomas Saf-T-Liner C2 S3, Location H10 NHTSA #: C70900

Hic: 129.75 T1: 3.60 ms T2: 82.40 ms







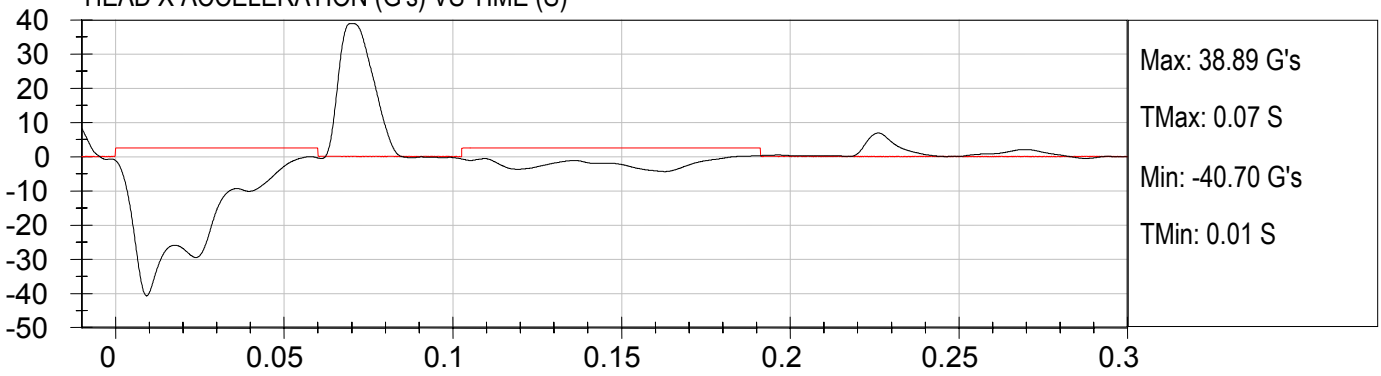


Test Desc: Head Form Impact (6.69 m/s) Test Date: 2/19/2007

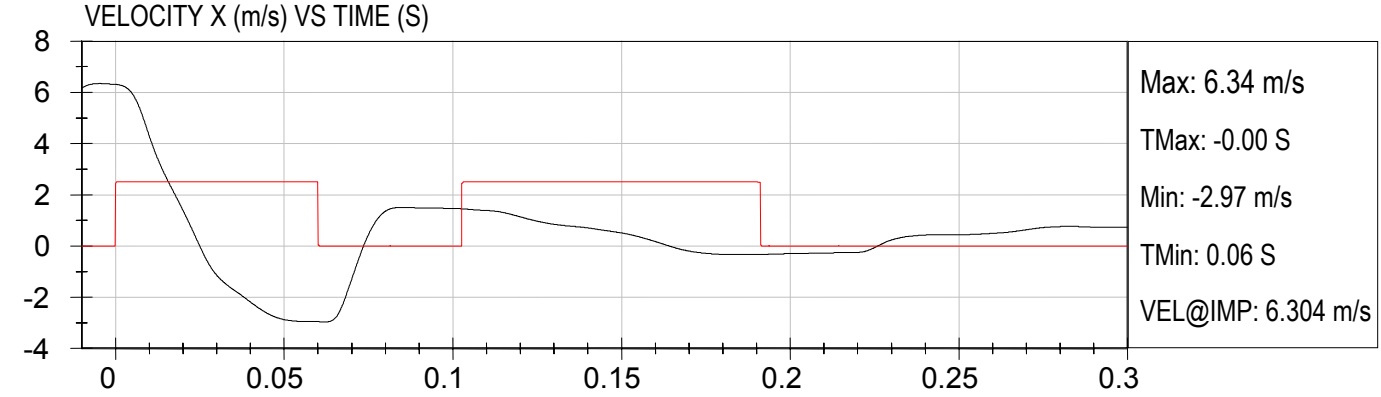
Component ID: Thomas Saf-T-Liner C2 S3, Location H11 NHTSA #: C70900

Hic: 112.23 T1: 4.80 ms T2: 29.40 ms

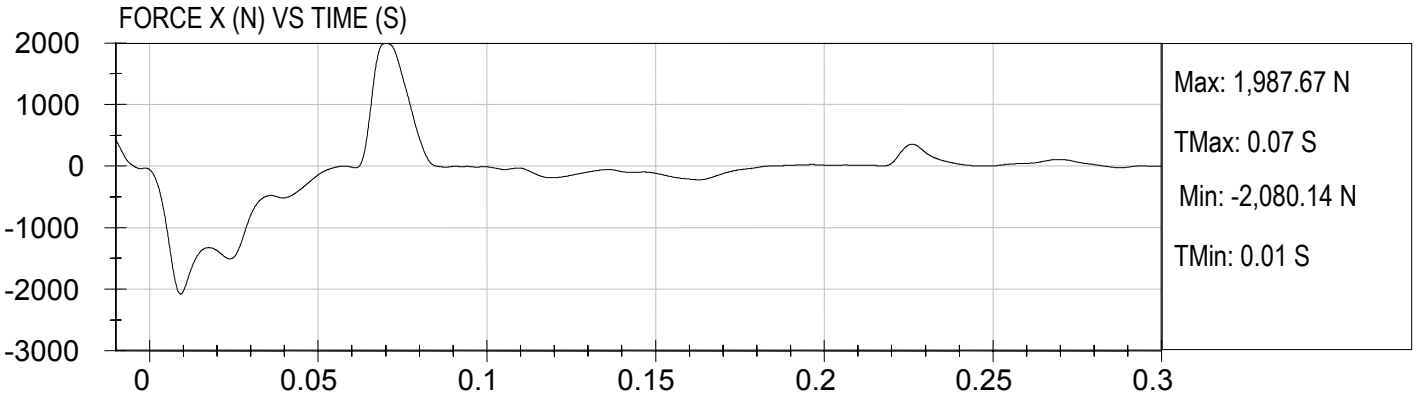
HEAD X ACCELERATION (G's) VS TIME (S)



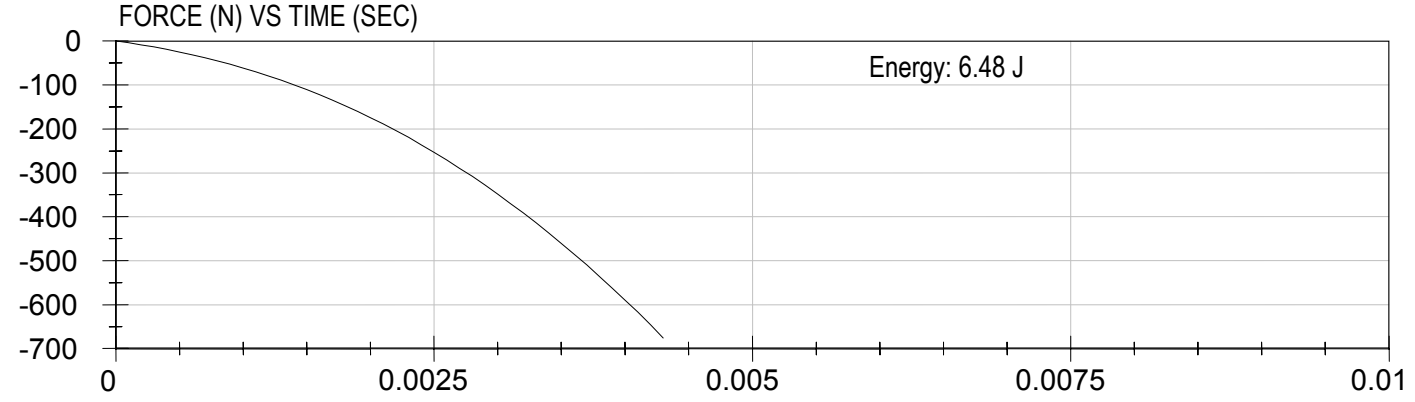
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)

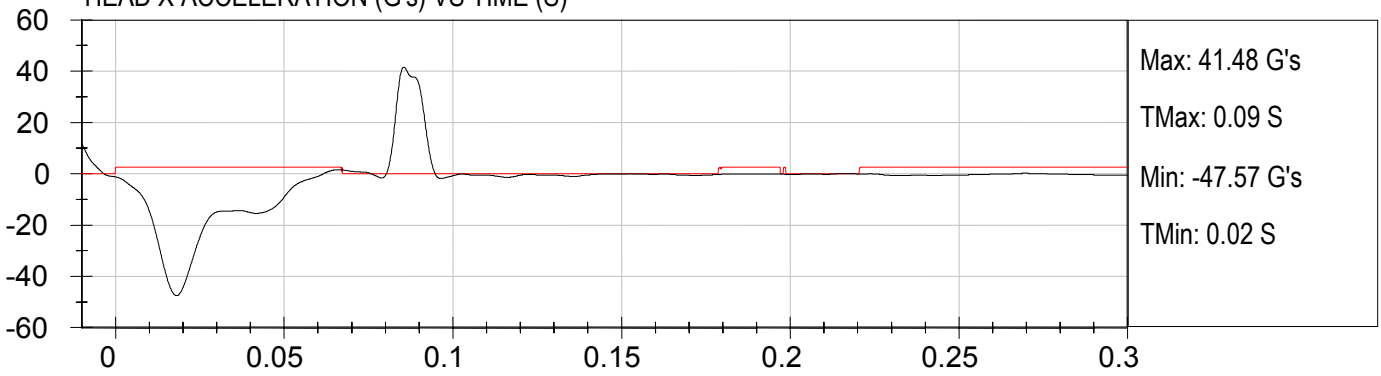


Test Desc: Head Form Impact (6.69 m/s) Test Date: 2/19/2007

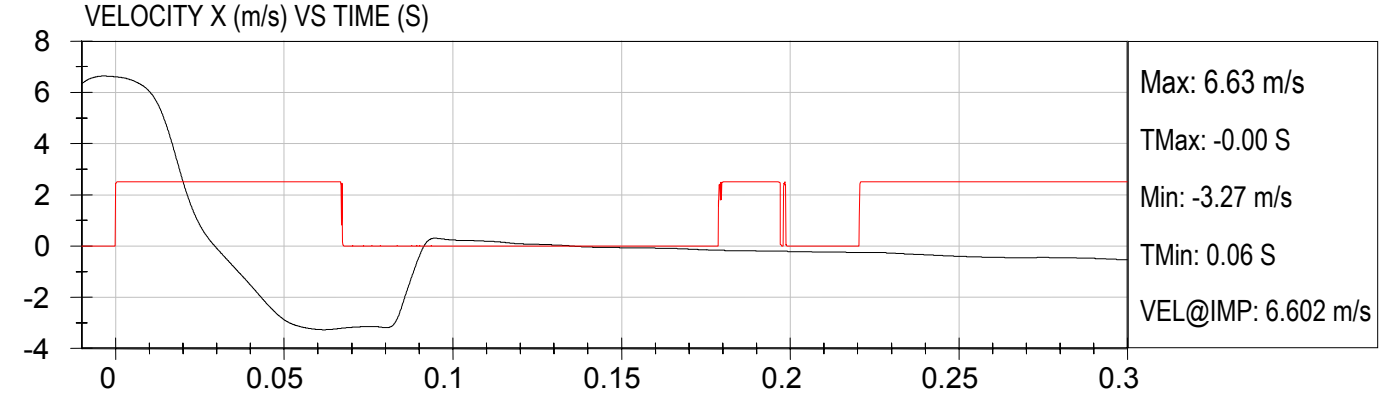
Component ID: Thomas Saf-T-Liner C2 S3, Location H12 NHTSA #: C70900

Hic: 116.73 T1: 11.80 ms T2: 25.80 ms

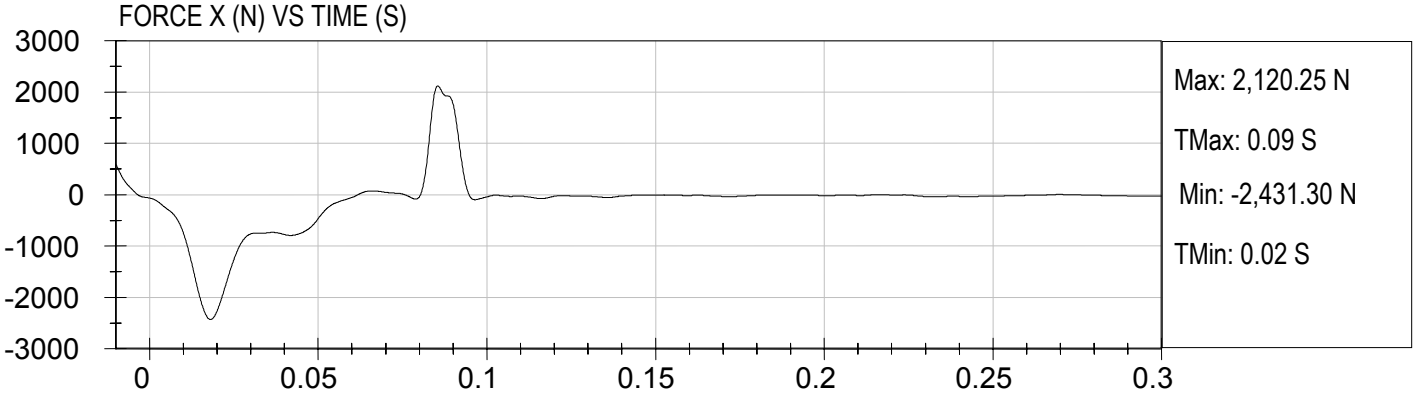
HEAD X ACCELERATION (G's) VS TIME (S)



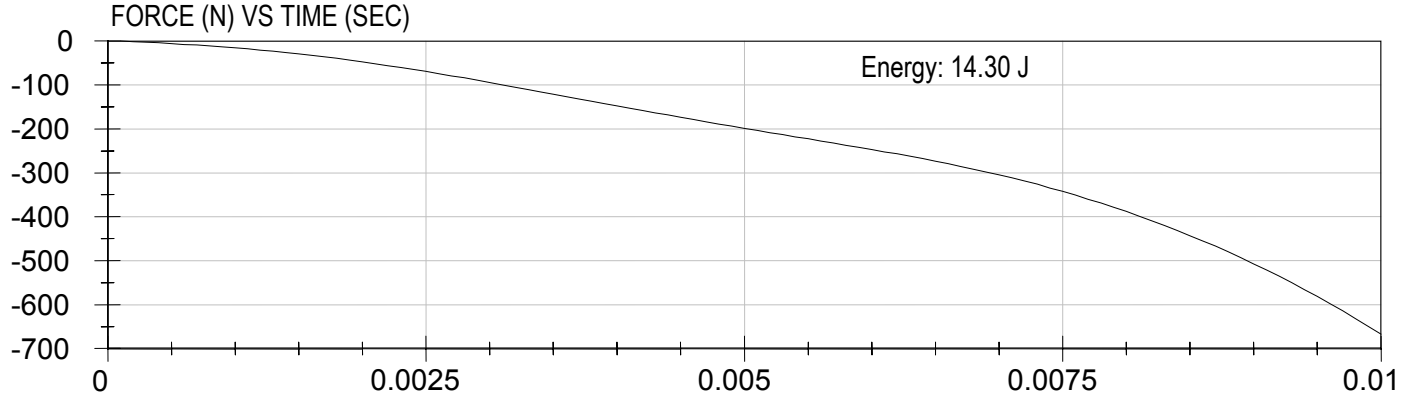
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)

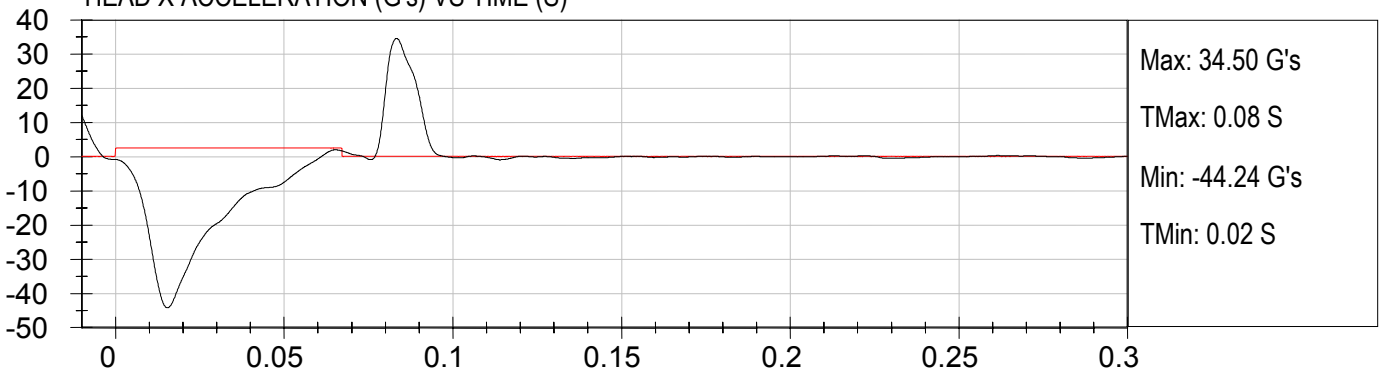


Test Desc: Head Form Impact (6.69 m/s) Test Date: 2/19/2007

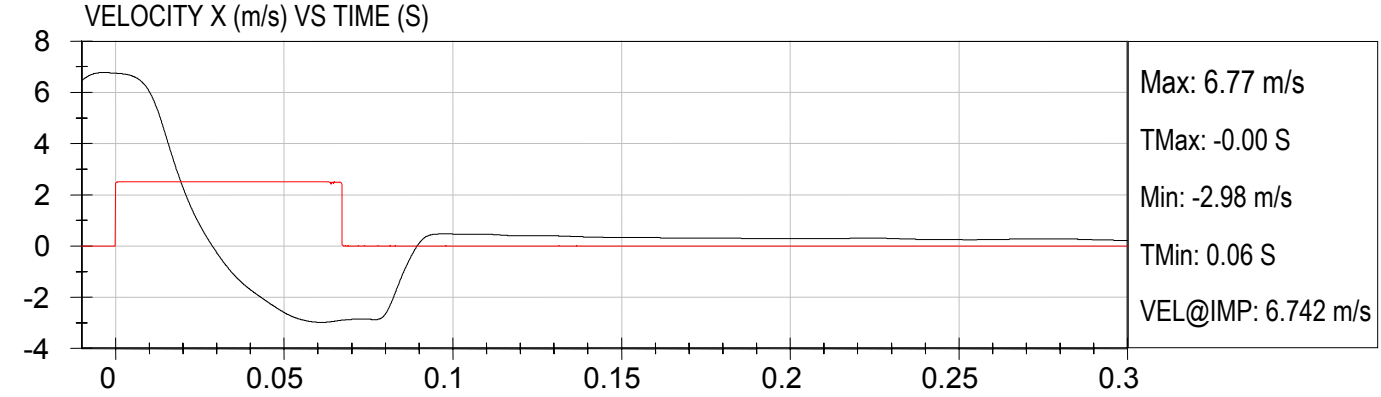
Component ID: Thomas Saf-T-Liner C2 S3, Location H13 NHTSA #: C70900

Hic: 117.07 T1: 9.20 ms T2: 31.70 ms

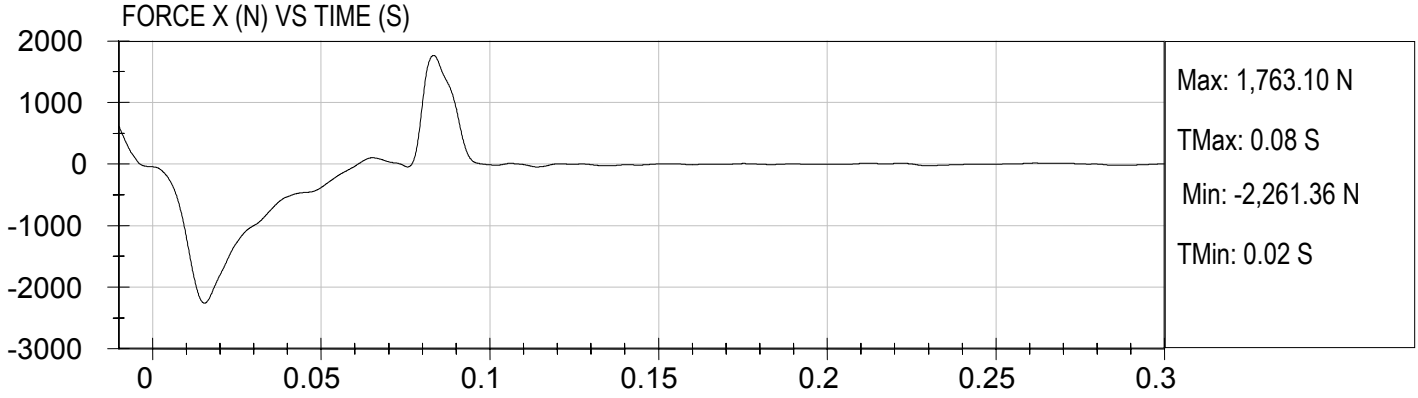
HEAD X ACCELERATION (G's) VS TIME (S)



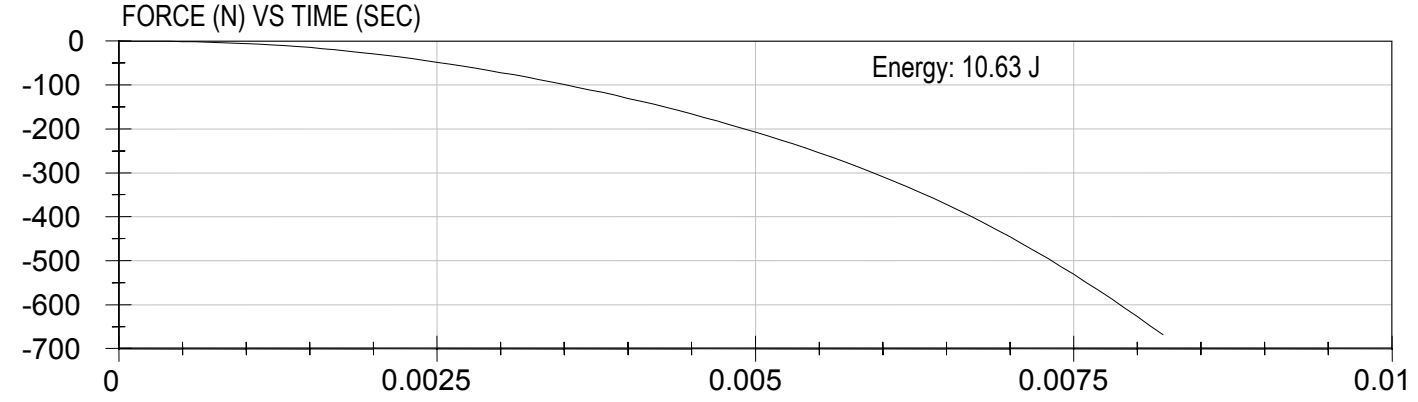
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)

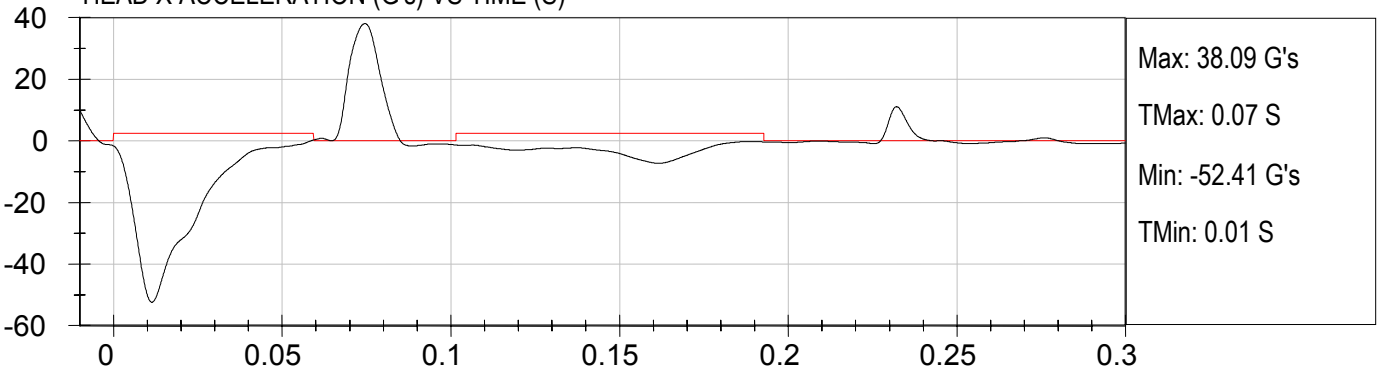


Test Desc: Head Form Impact (6.69 m/s) Test Date: 2/19/2007

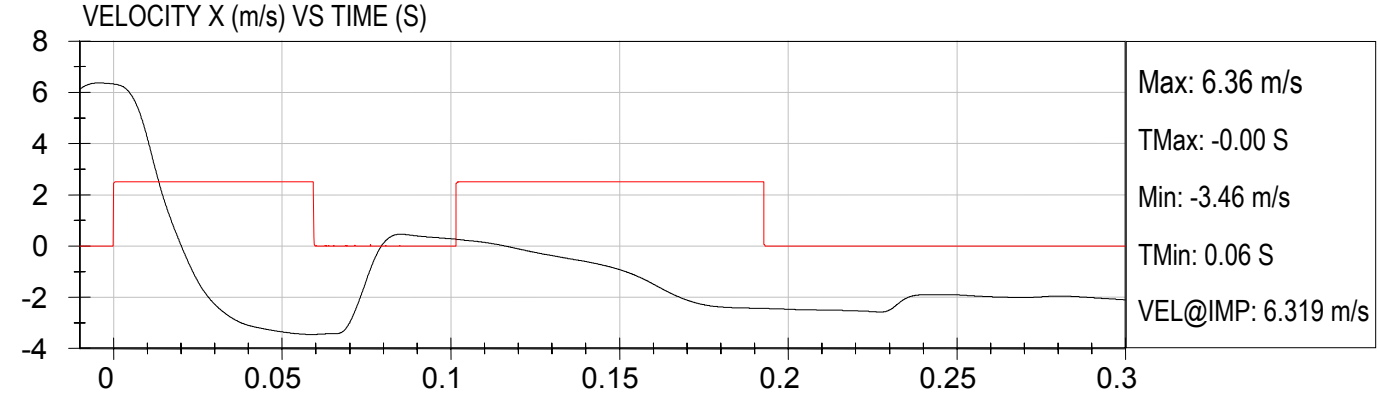
Component ID: Thomas Saf-T-Liner C2 S3, Location H14 NHTSA #: C70900

Hic: 171.76 T1: 5.70 ms T2: 25.50 ms

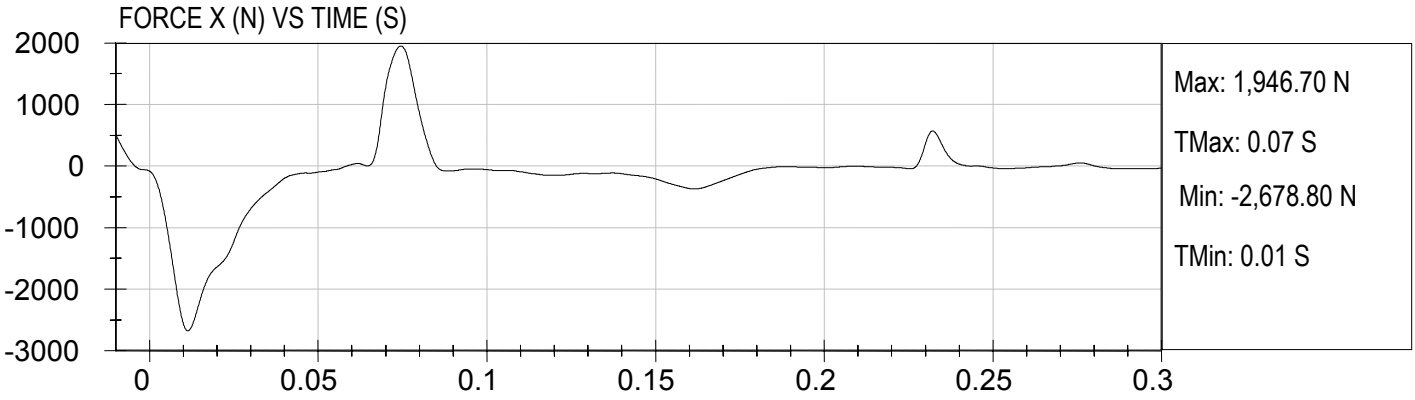
HEAD X ACCELERATION (G's) VS TIME (S)



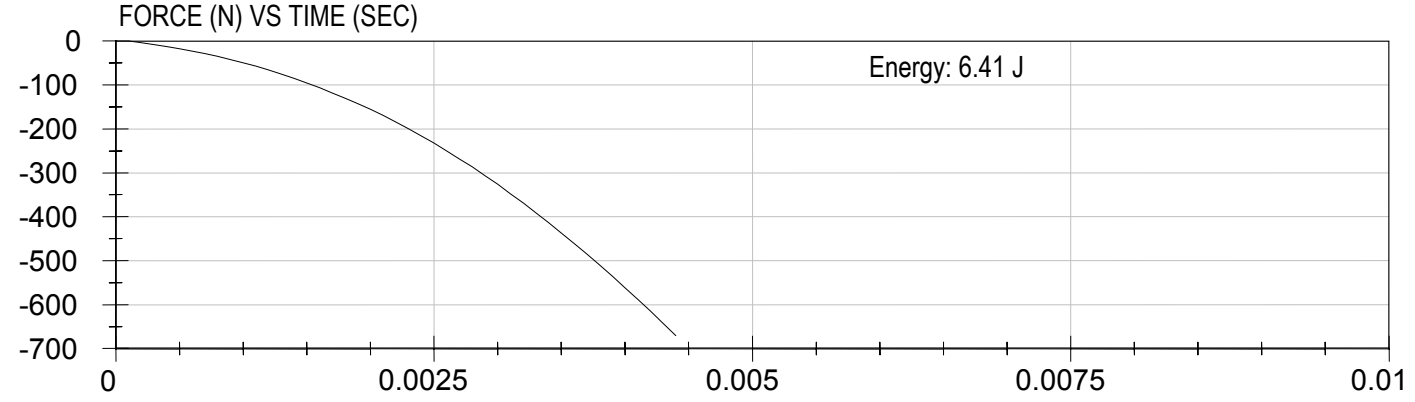
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



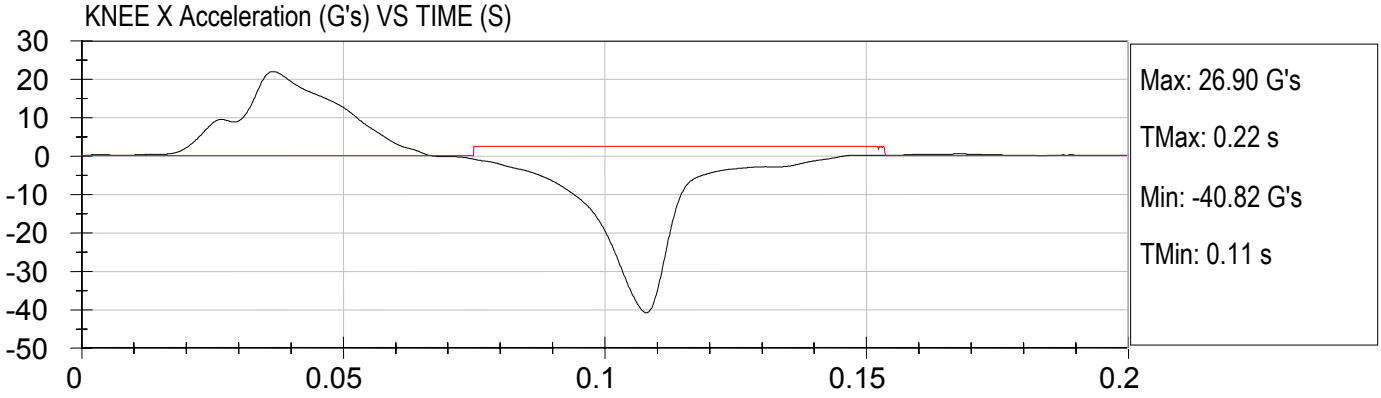
FORCE (N) VS TIME (SEC)



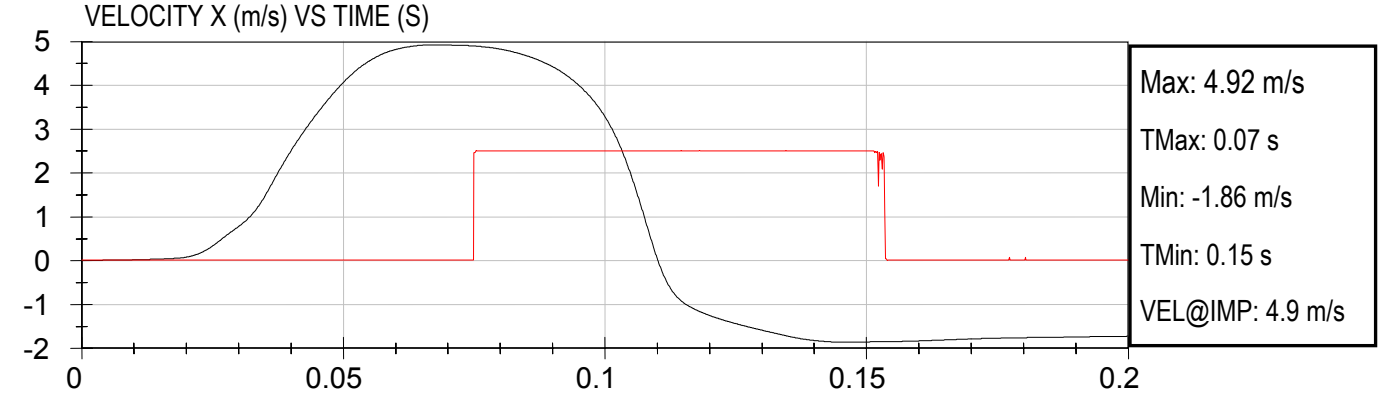
Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K1

Test Date: 2/21/2007
NHTSA #: C70900

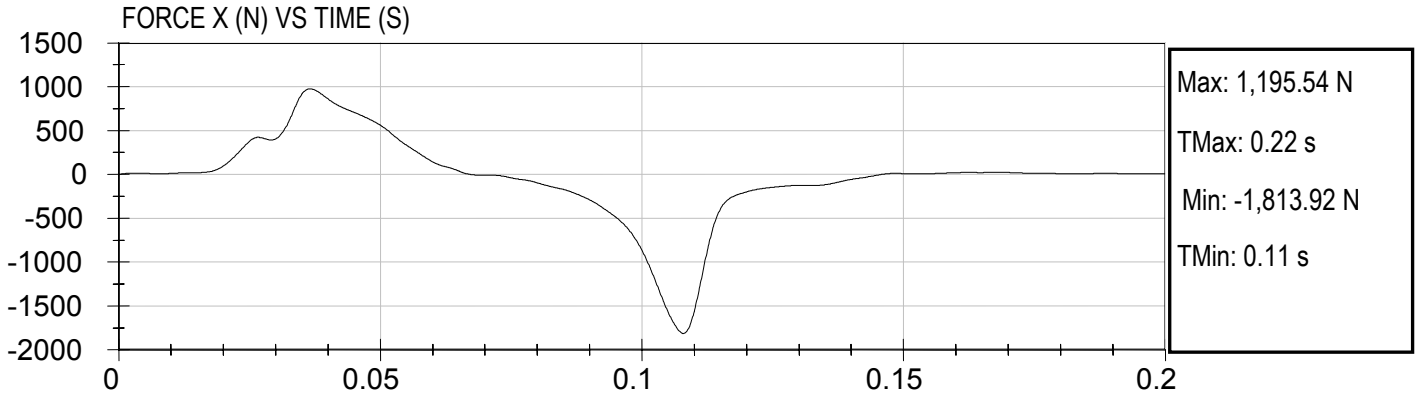
KNEE X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)

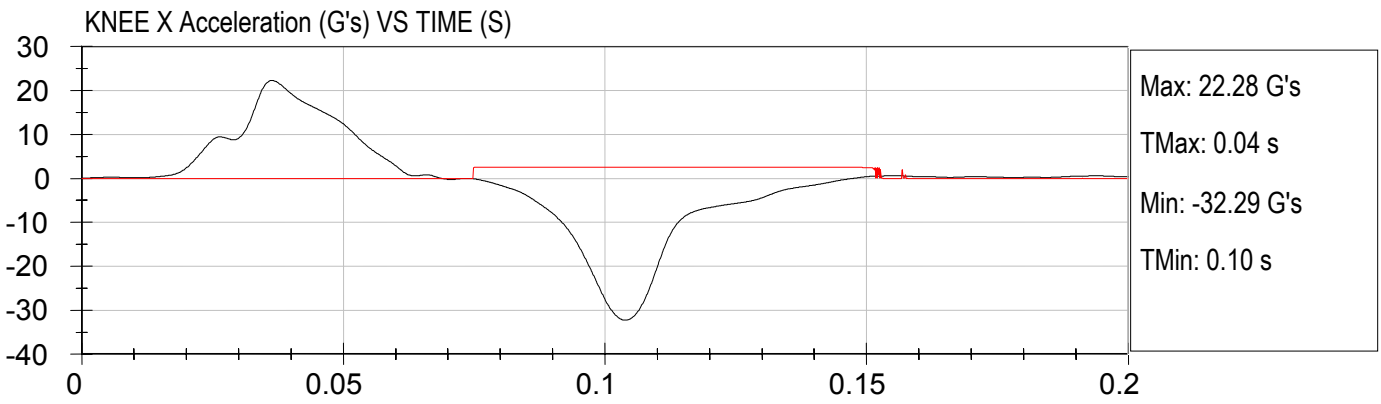


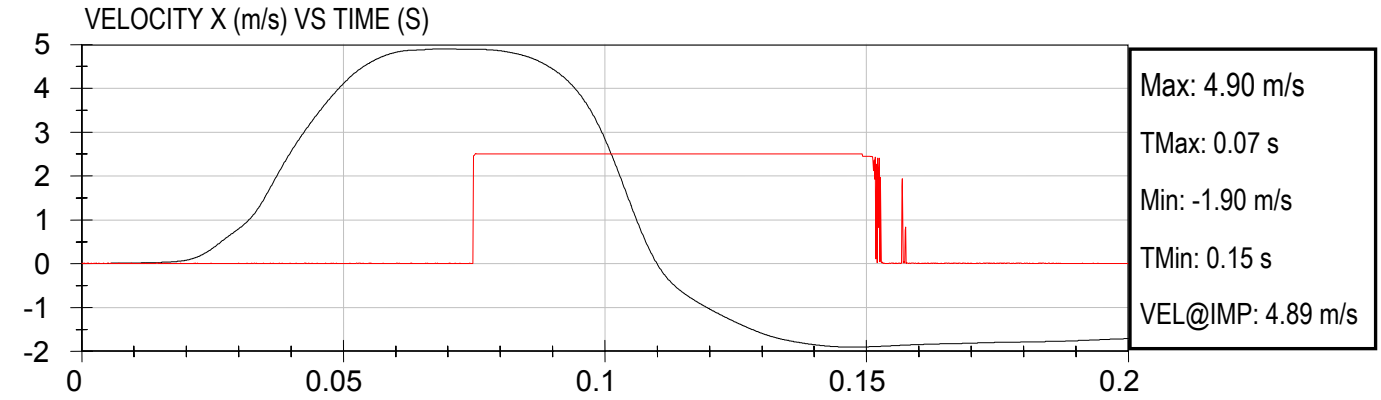
FORCE X (N) VS TIME (S)

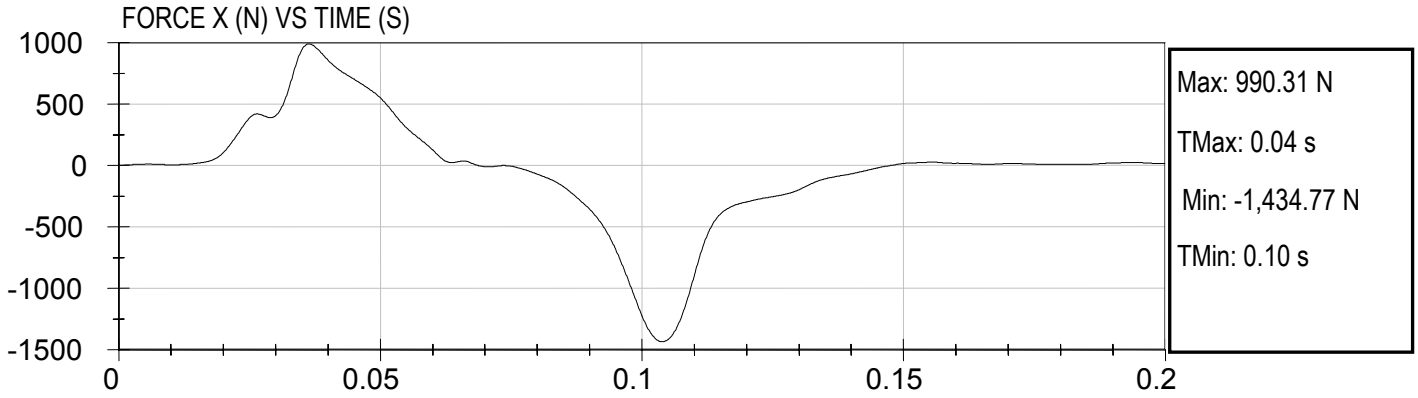


Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K2

Test Date: 2/21/2007
NHTSA #: C70900

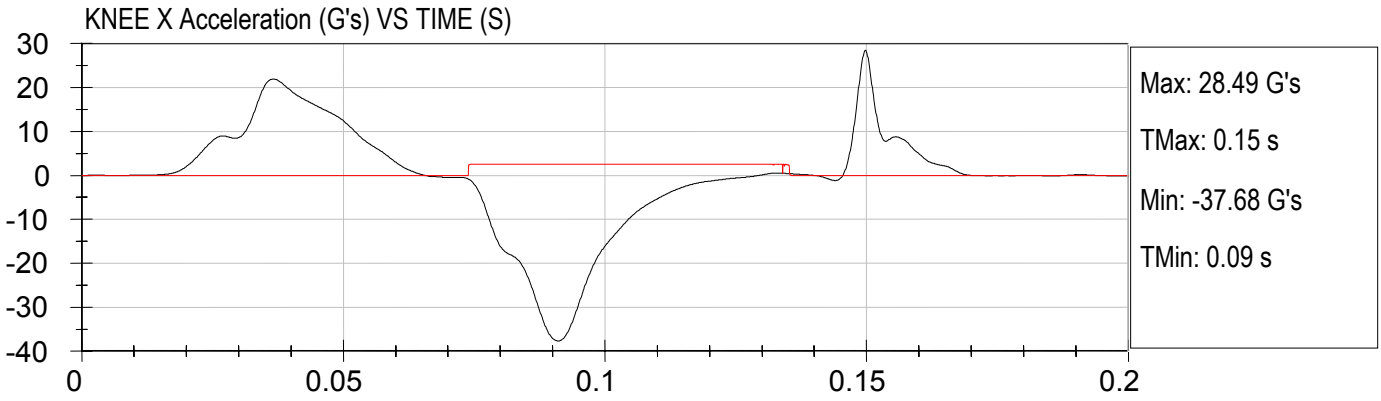


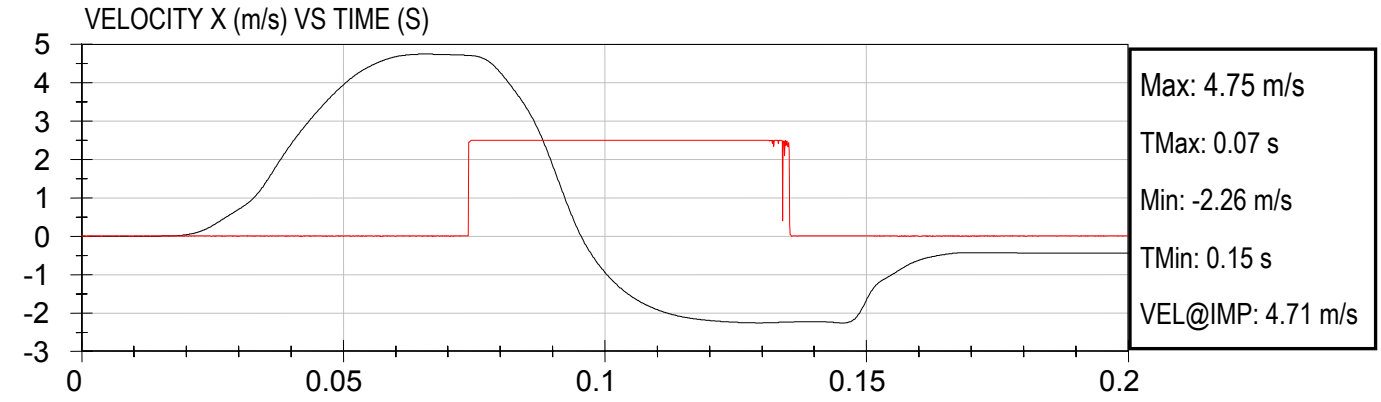


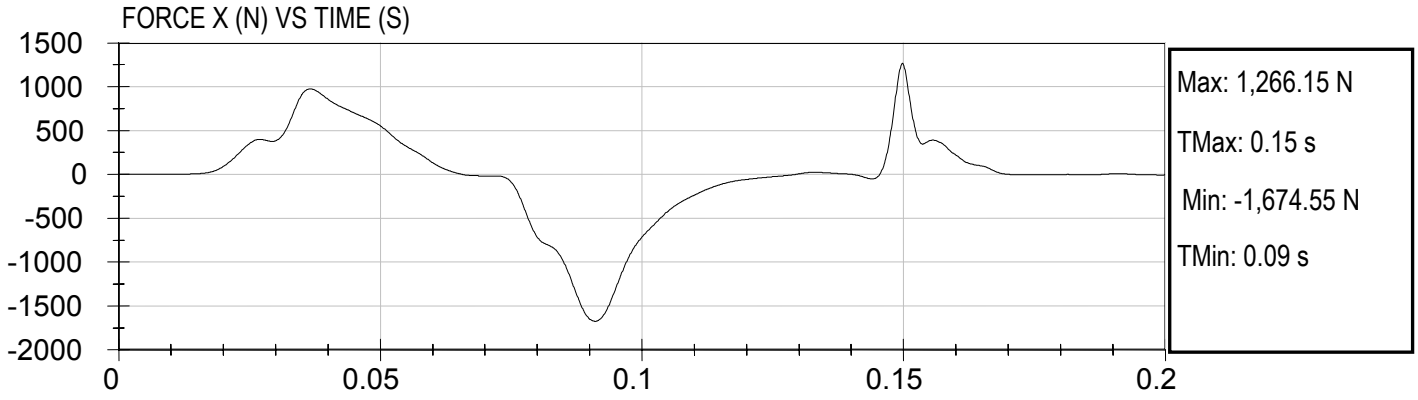


Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K3

Test Date: 2/21/2007
NHTSA #: C70900



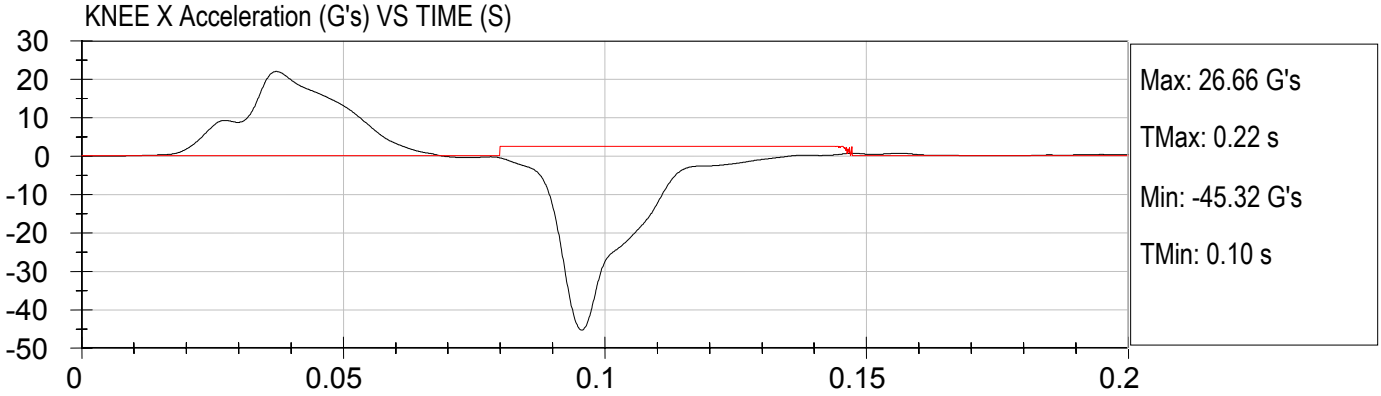




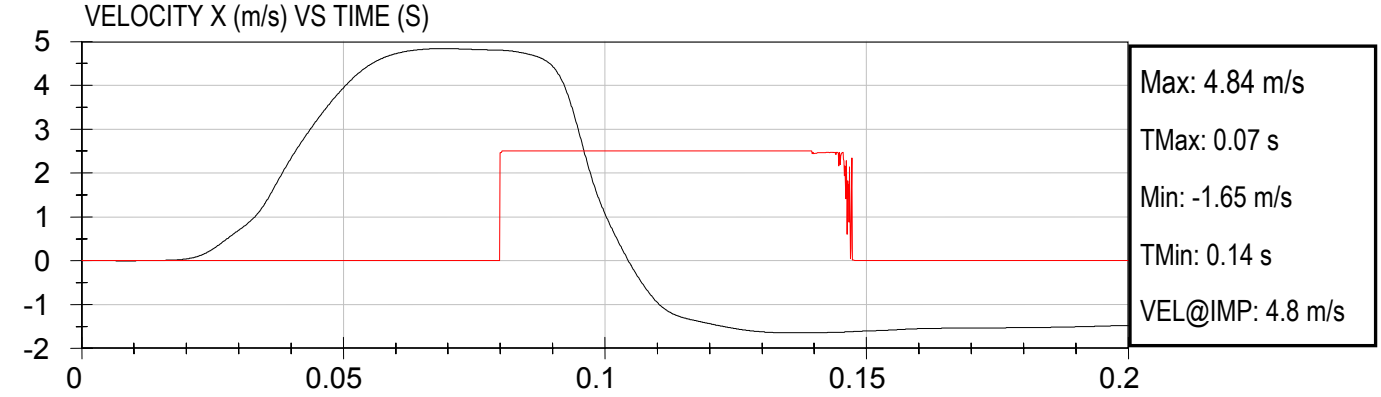
Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K4

Test Date: 2/21/2007
NHTSA #: C70900

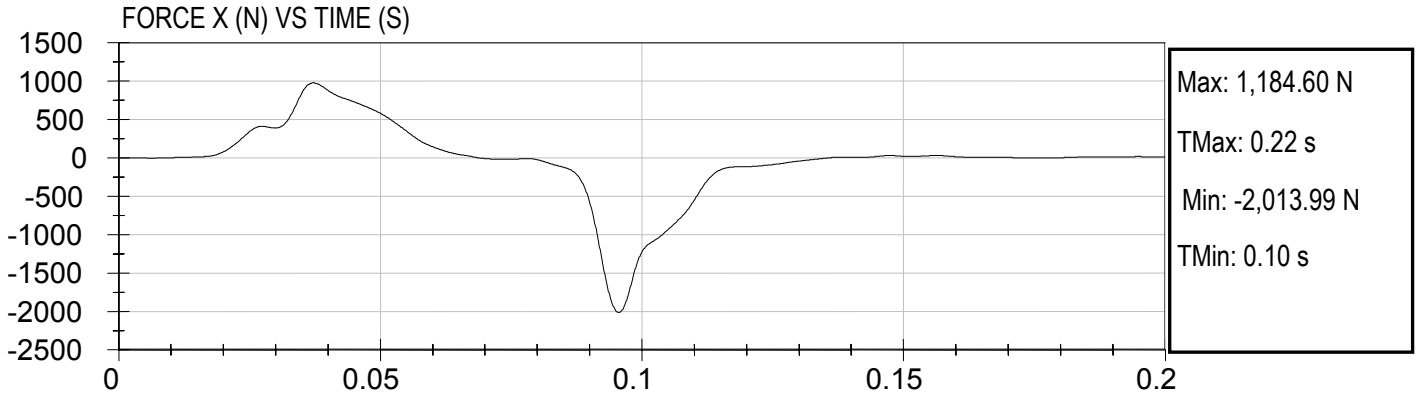
KNEE X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)



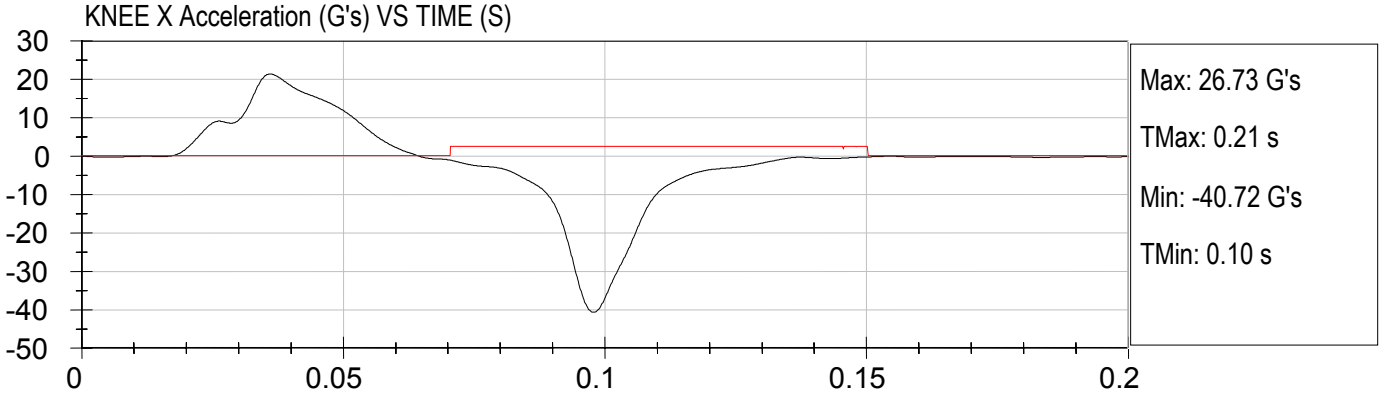
FORCE X (N) VS TIME (S)



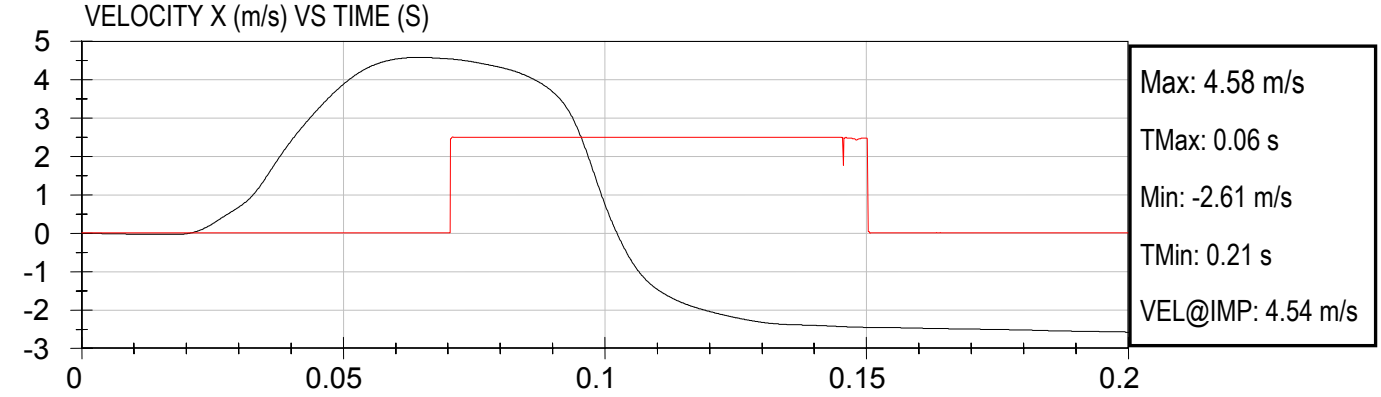
Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K5

Test Date: 2/21/2007
NHTSA #: C70900

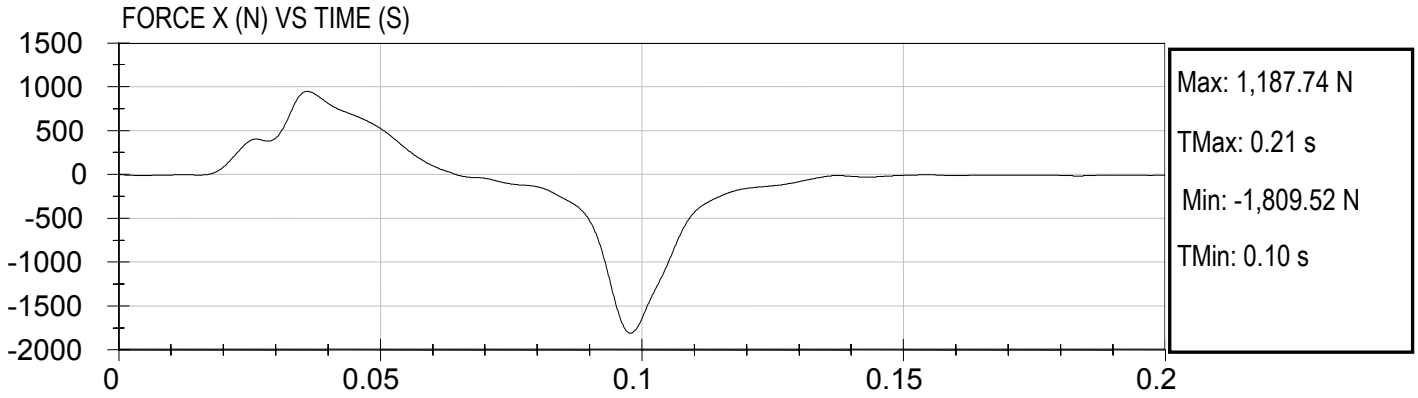
KNEE X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)



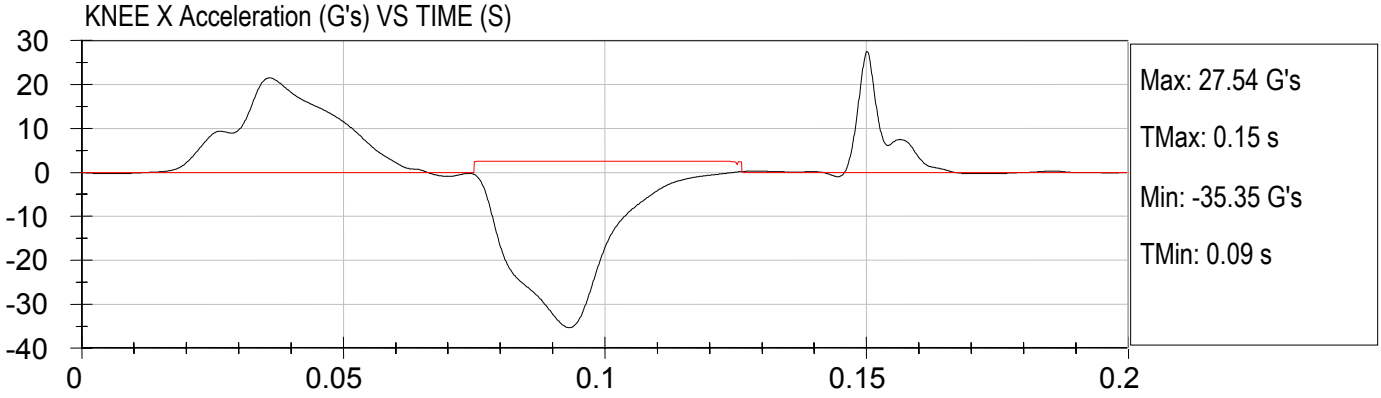
FORCE X (N) VS TIME (S)



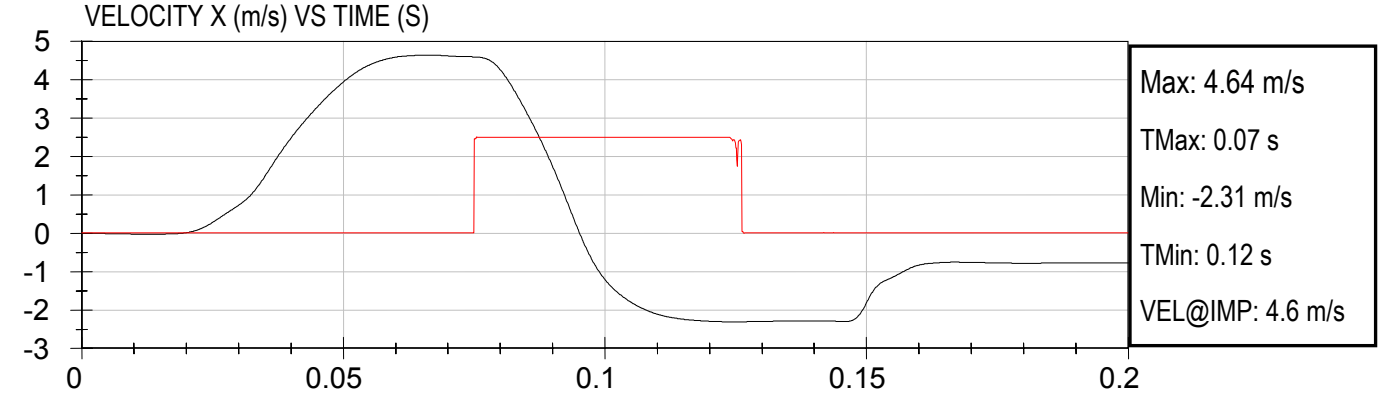
Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K6

Test Date: 2/21/2007
NHTSA #: C70900

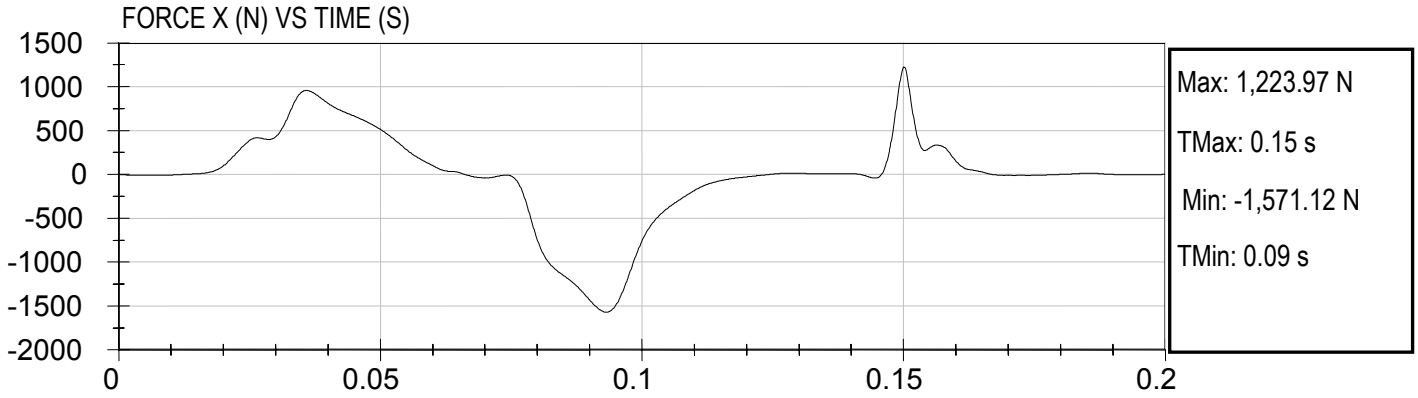
KNEE X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)



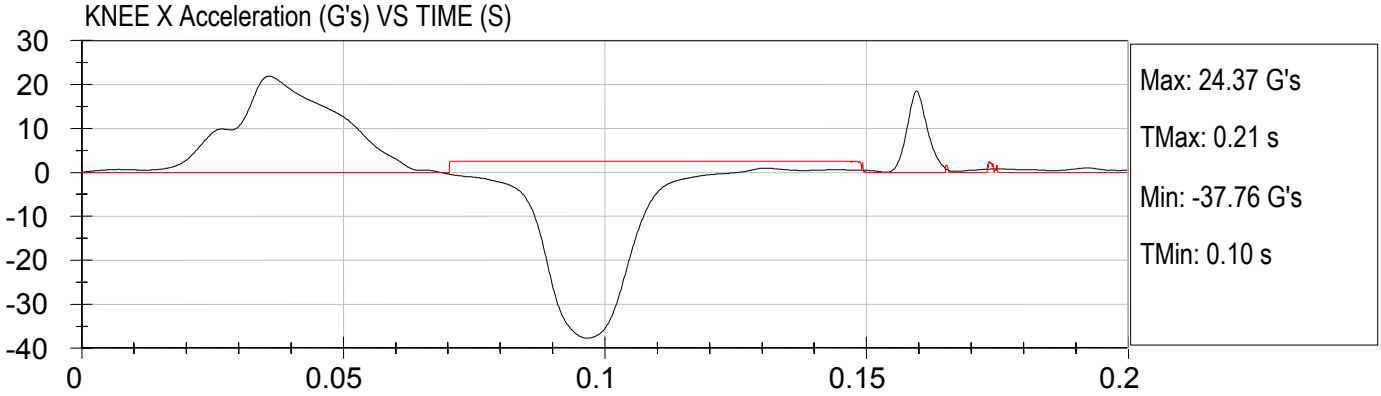
FORCE X (N) VS TIME (S)



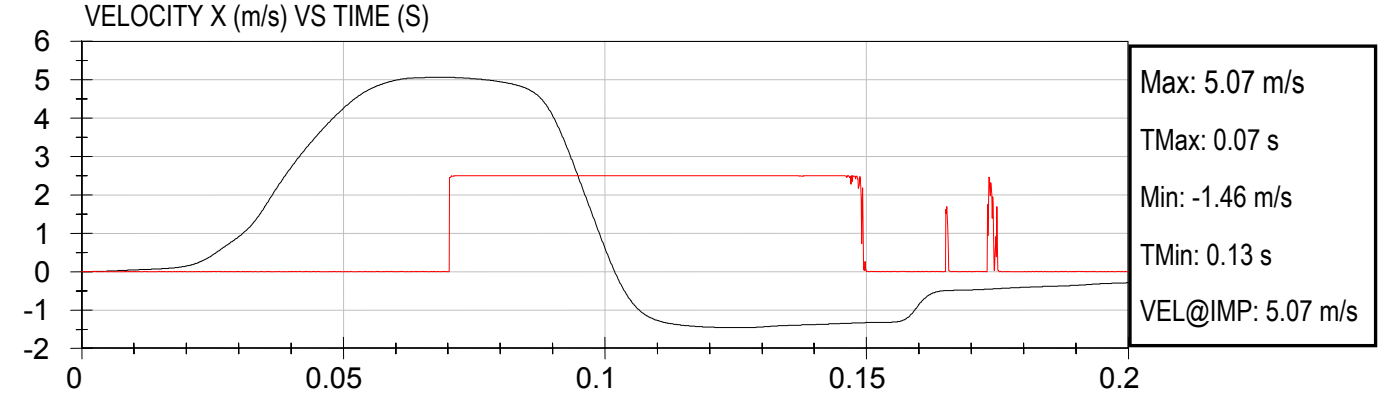
Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K7

Test Date: 2/21/2007
NHTSA #: C70900

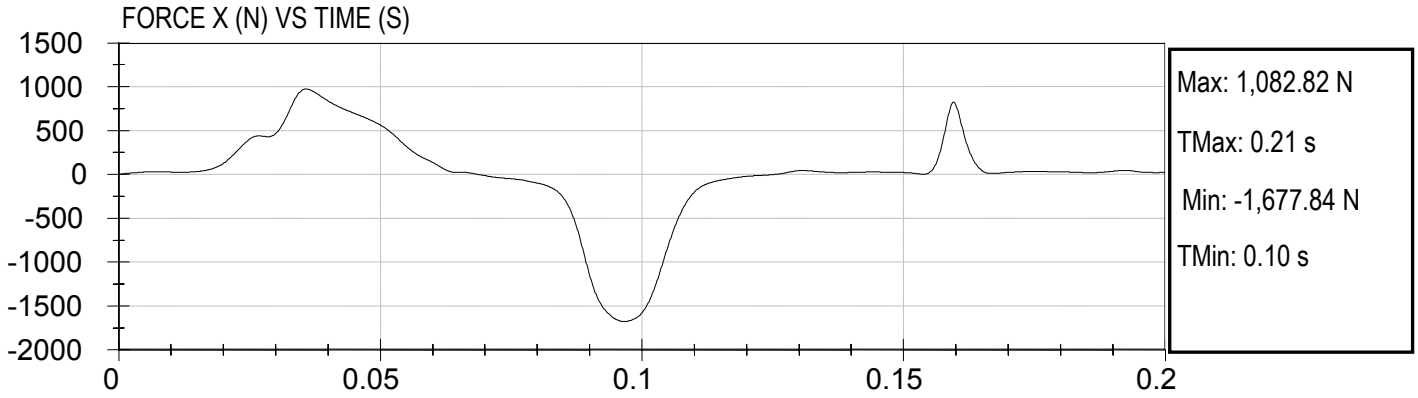
KNEE X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)



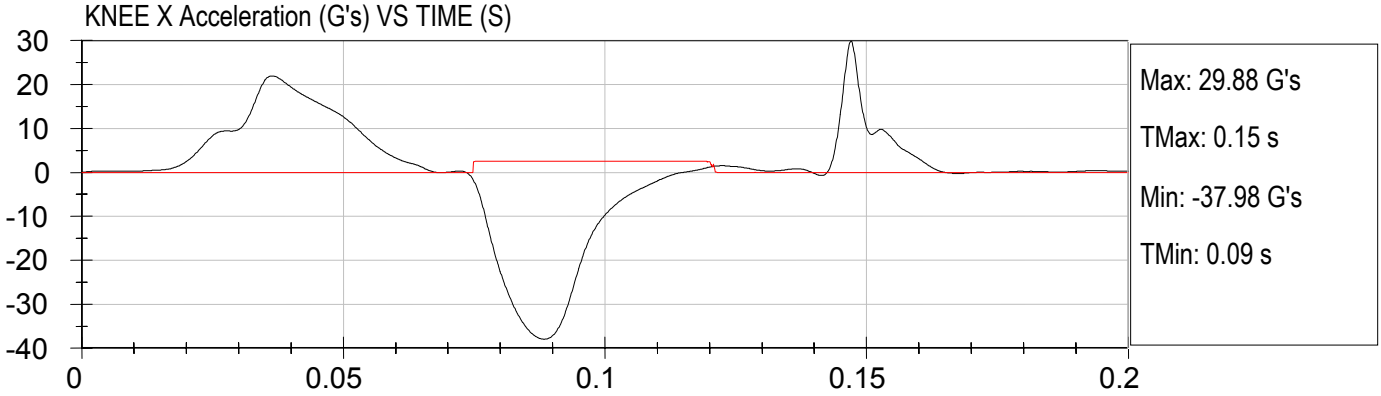
FORCE X (N) VS TIME (S)



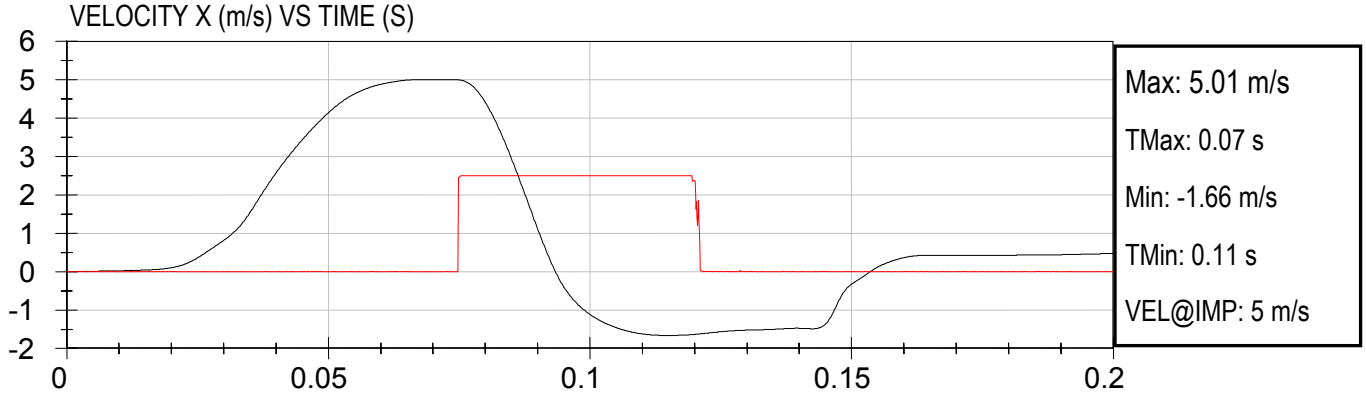
Test Desc: Knee Form Impact
Component ID: Thomas Saf-T-Liner C2 S3, Location K8

Test Date: 2/21/2007
NHTSA #: C70900

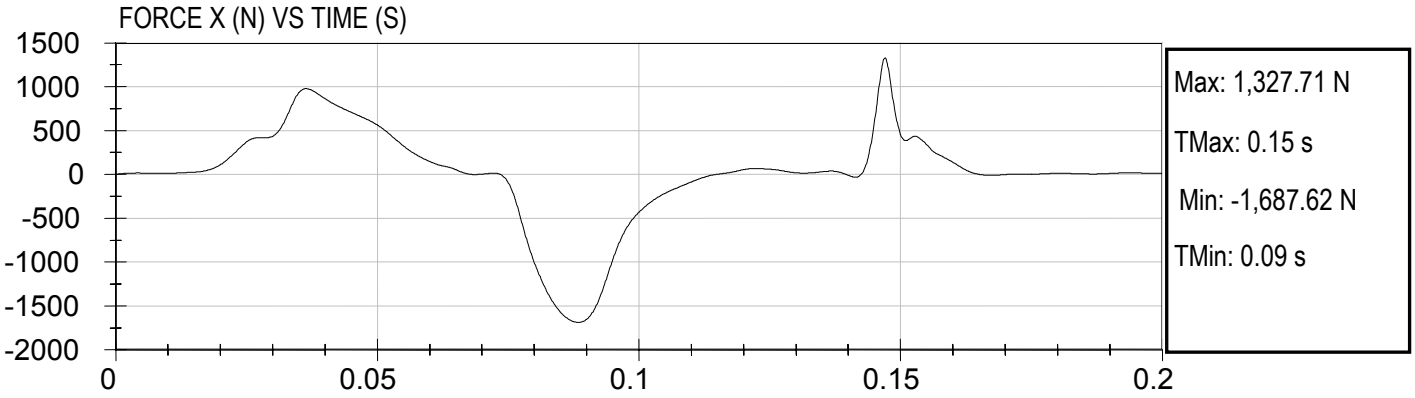
KNEE X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)

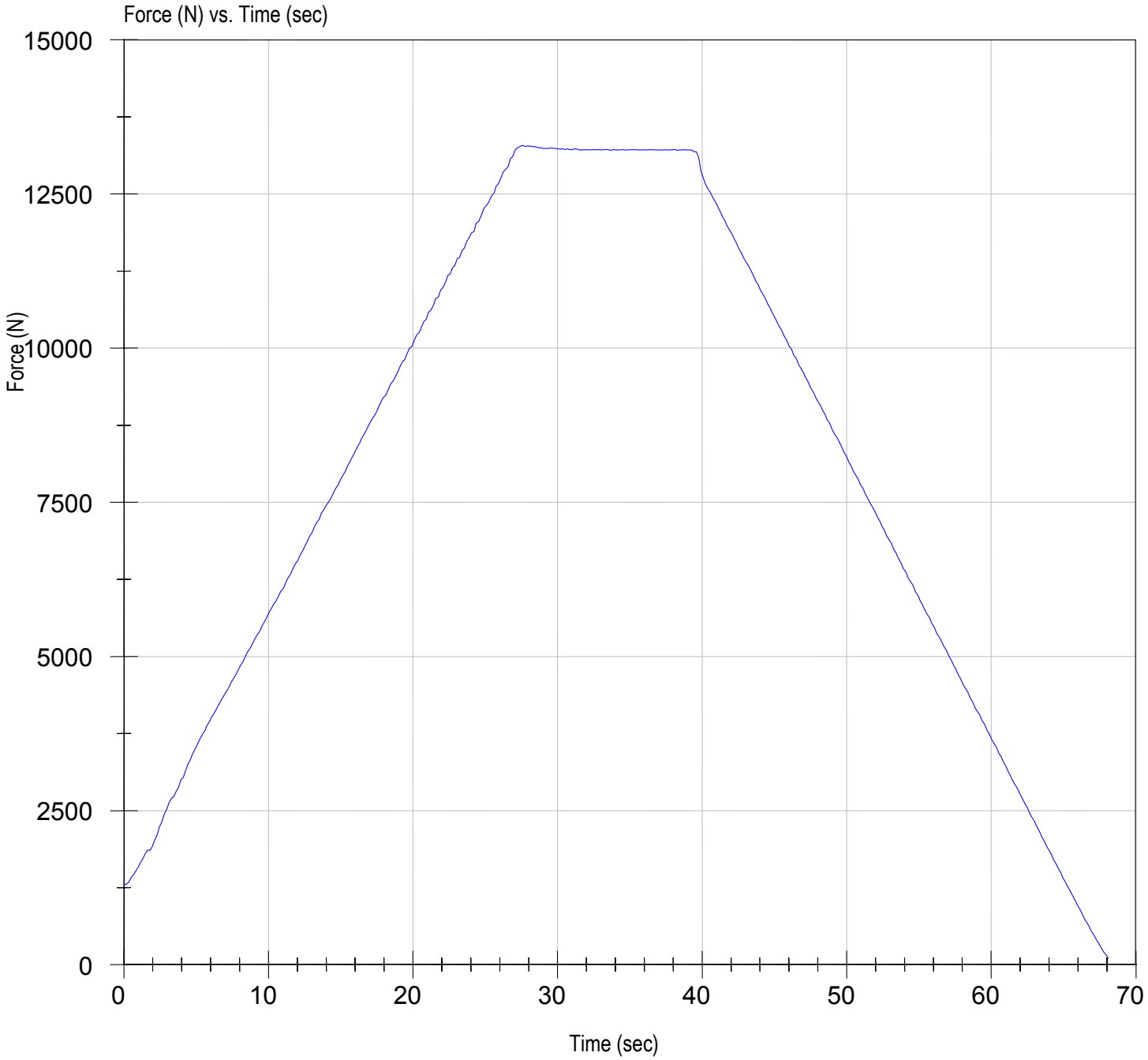


FORCE X (N) VS TIME (S)



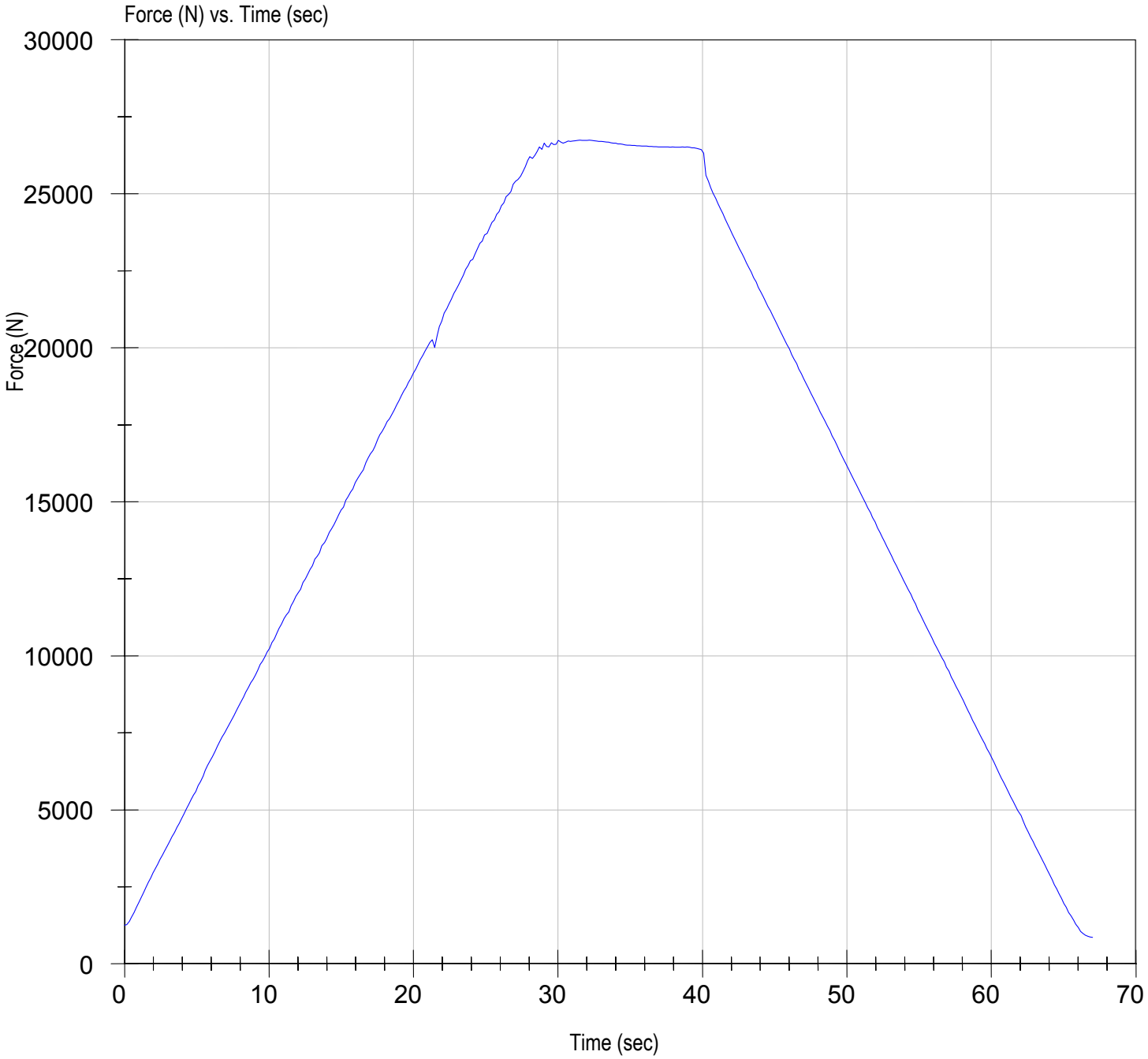
Test Desc: Left Front Type A Anchorage
Component ID: Thomas Saf-T-Liner C2 W8.5

Test Date: 3/14/2007
NHTSA No: C70900



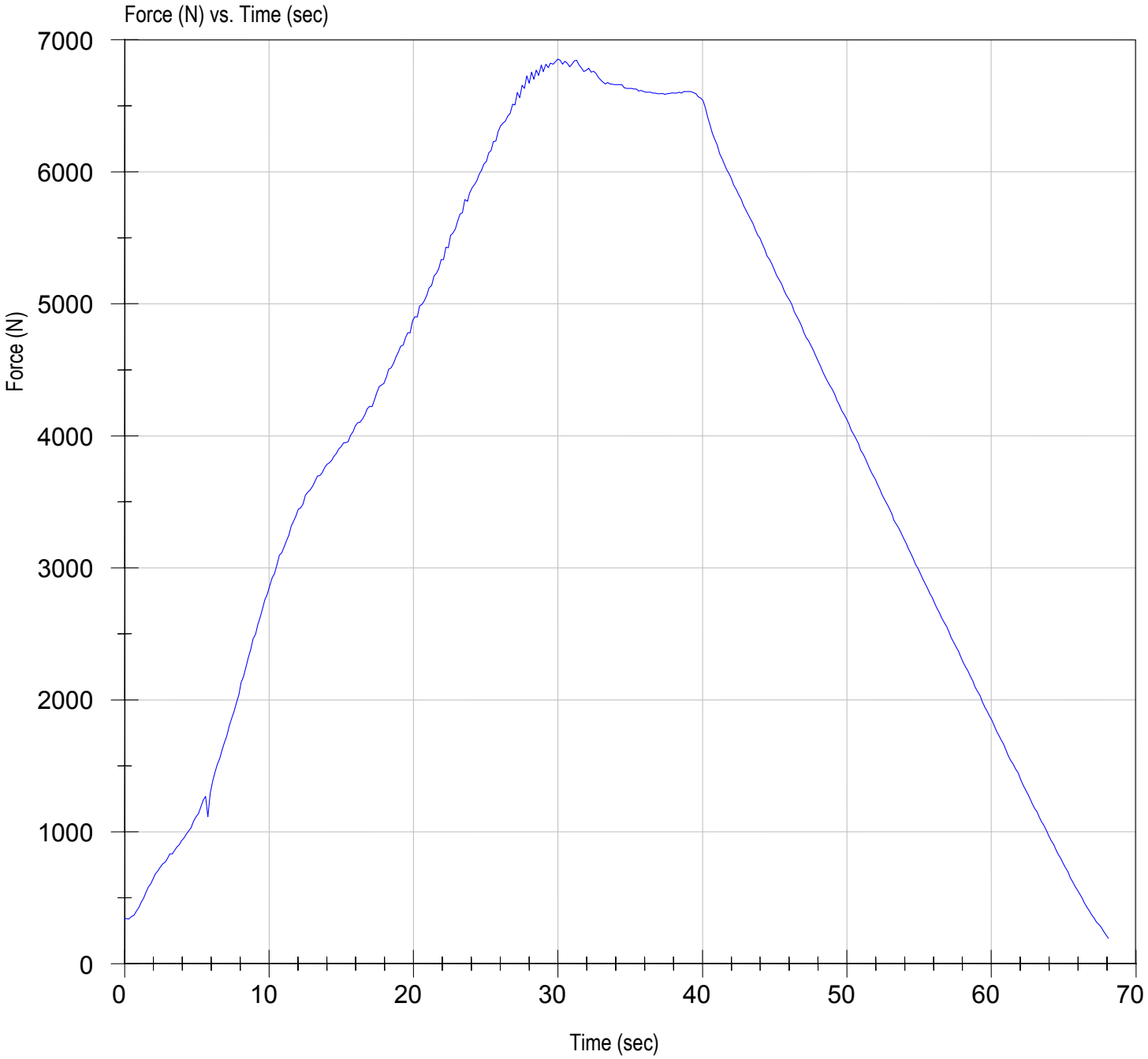
Test Desc: Left Rear Type C Anchorage
Componet ID: Thomas Saf-T-Liner C2 W8.5

Test Date: 3/15/2007
NHTSA No: C70900



Test Desc: Upper Torso Type D Anchorage
Component ID: Thomas Saf-T-Liner C2 W8.5

Test Date: 3/15/2007
NHTSA No: C70900

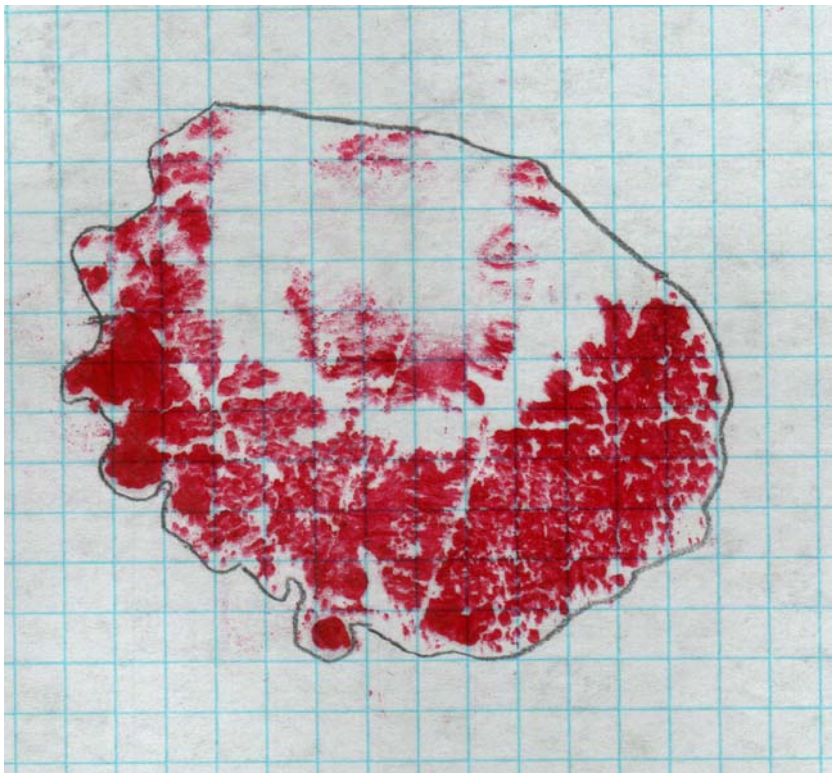


SECTION 7

WELT CONTACT POINTS

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

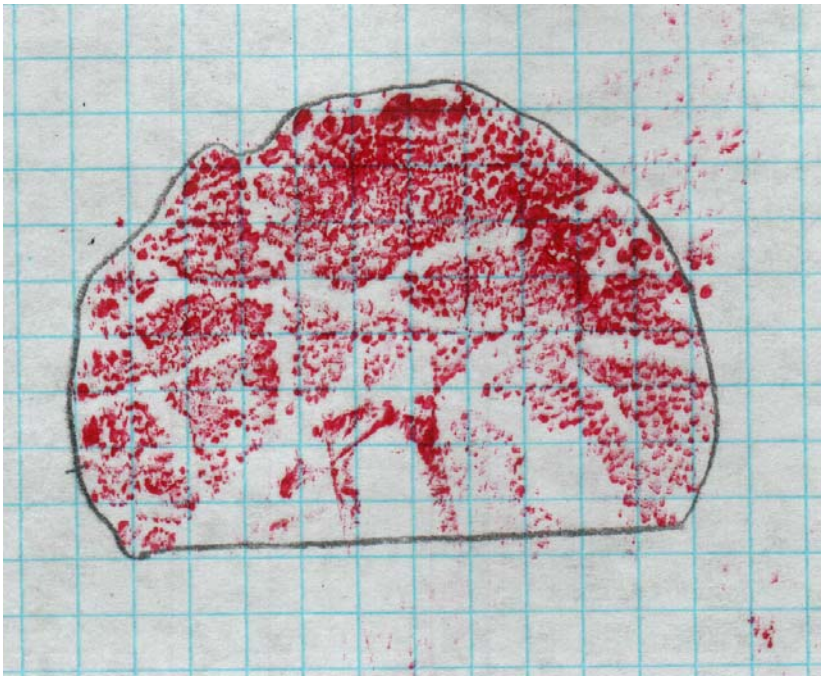
H1 / SEAT S3



H1 THOMAS SAF-T-LINER C2 44.1 cm^2

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

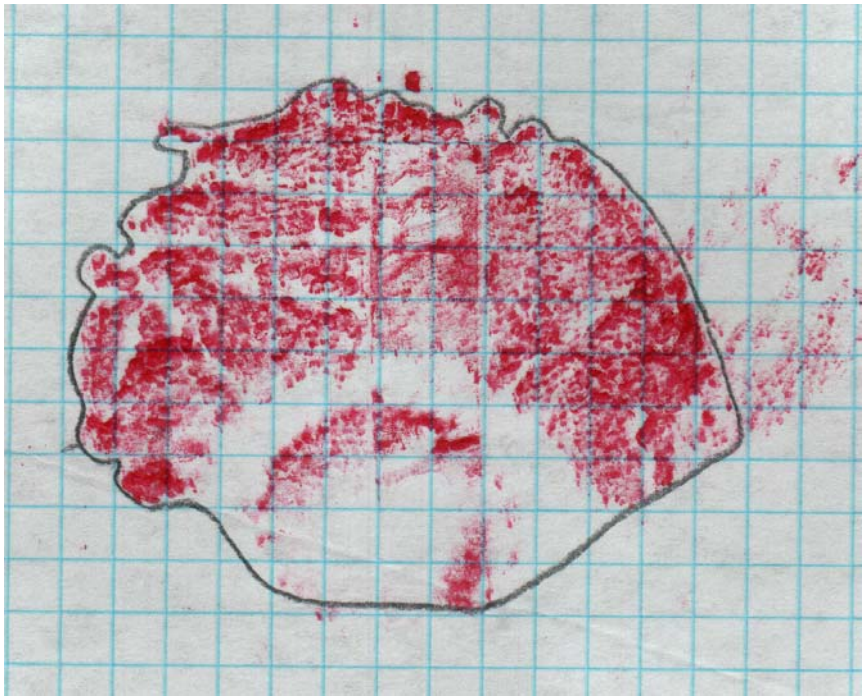
H2 / SEAT S3



H2 THOMAS SAF-T-LINER C2 30.7 cm^2

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/21/2007**

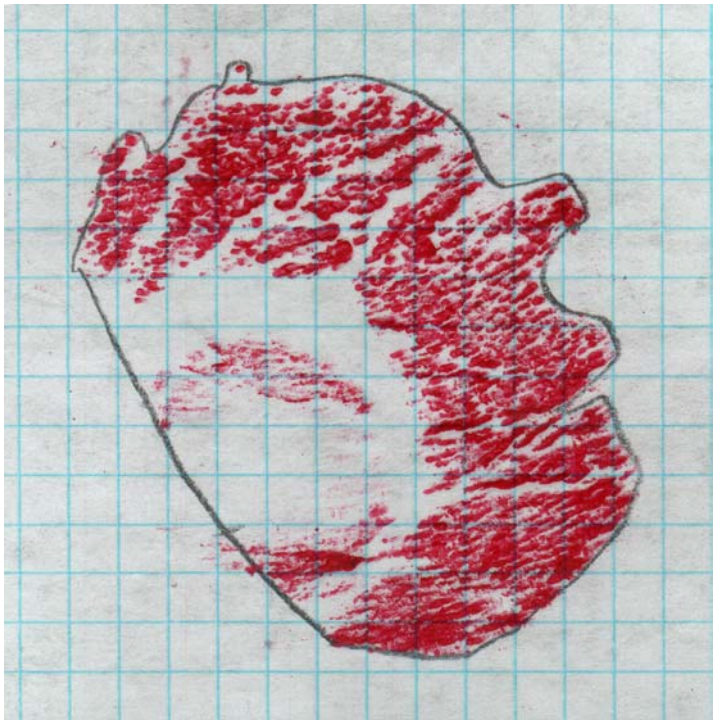
H3 / SEAT S3



H3 THOMAS SAF-T-LINER C2 36.8 cm^2

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/21/2007**

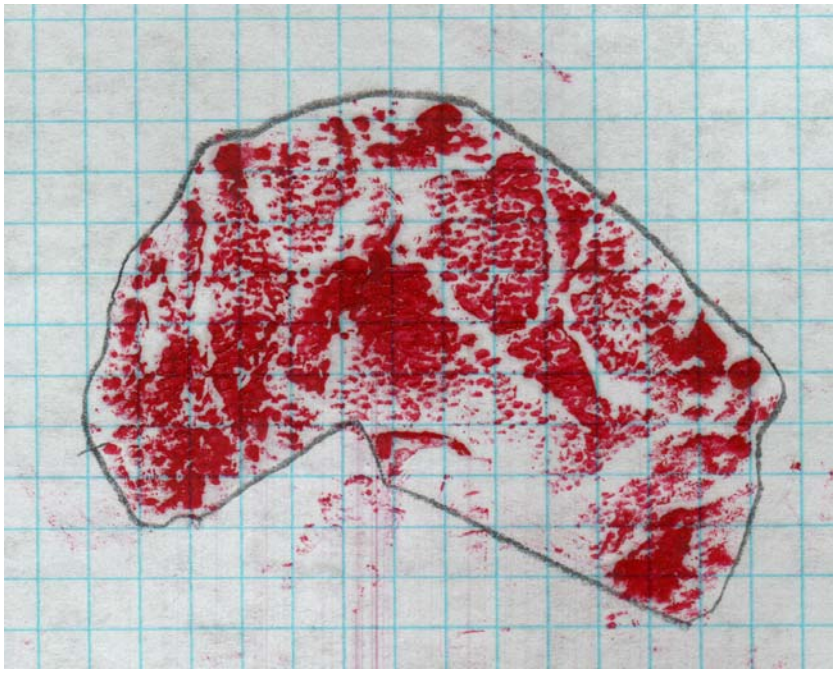
H4 / SEAT S3



H4 THOMAS SAF-T-LINER C2 38.2 cm^2

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/21/2007**

H5 / SEAT S3



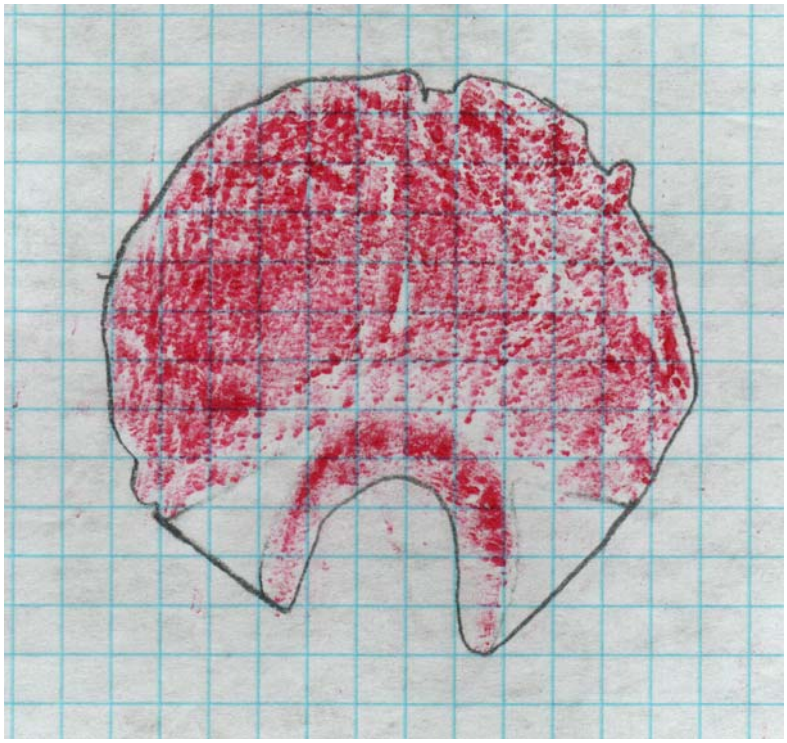
H5 THOMAS SAF-T-LINER C2 36.2 cm^2

SECTION 7 (CONTINUED)

WELT CONTACT POINTS

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

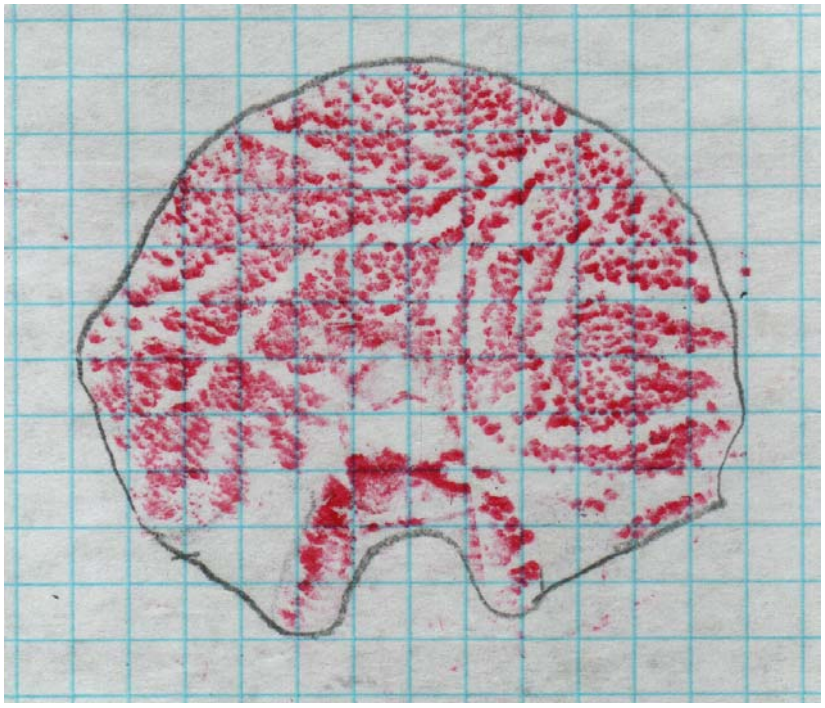
H6 / SEAT S3



H6 THOMAS SAF-T-LINER C2 39.5 cm^2

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

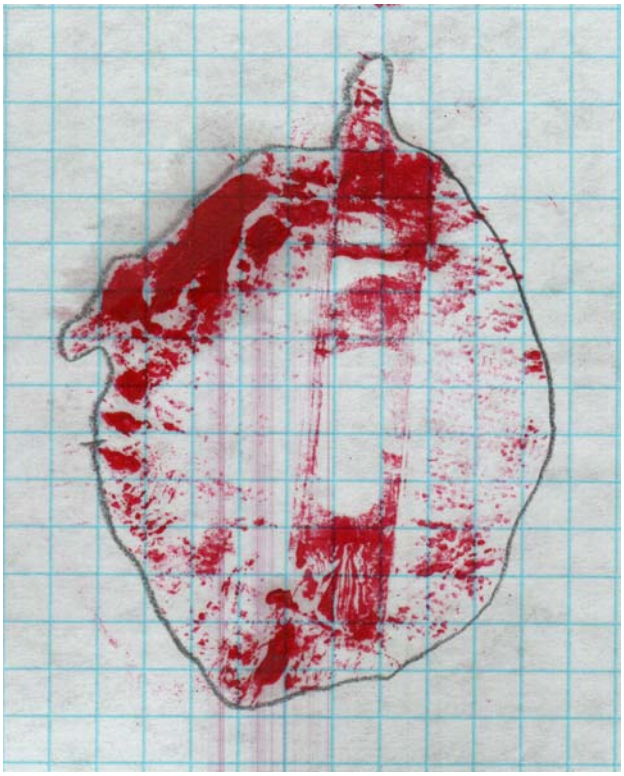
H7 / SEAT S3



H7 THOMAS SAF-T-LINER C2 34.5 cm^2

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/21/2007**

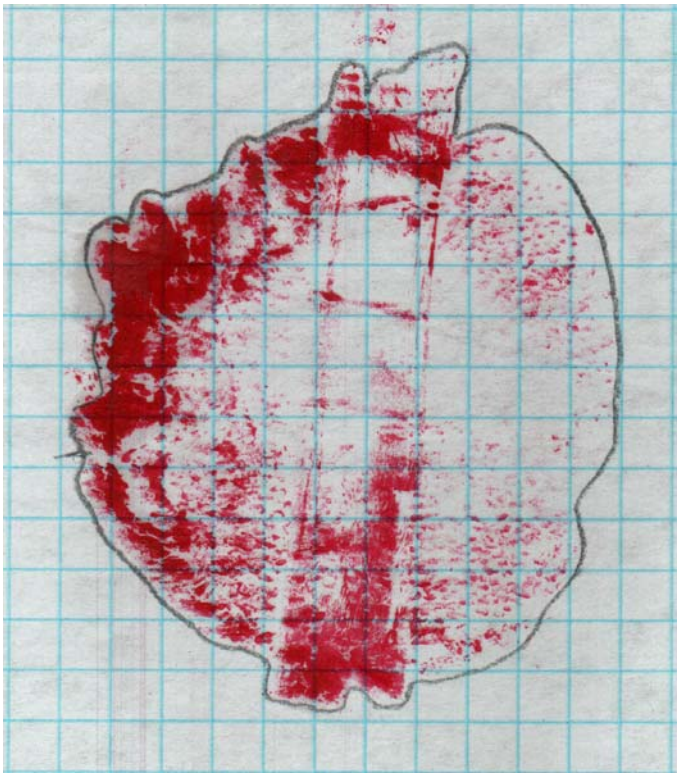
K1 / SEAT S3



K1 THOMAS SAF-T-LINER C2 37.2 cm^2

Test Vehicle: **2007 THOMAS SAF-T-LINER C2 SCHOOL BUS** NHTSA No.: **C70900**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **2/21/2007**

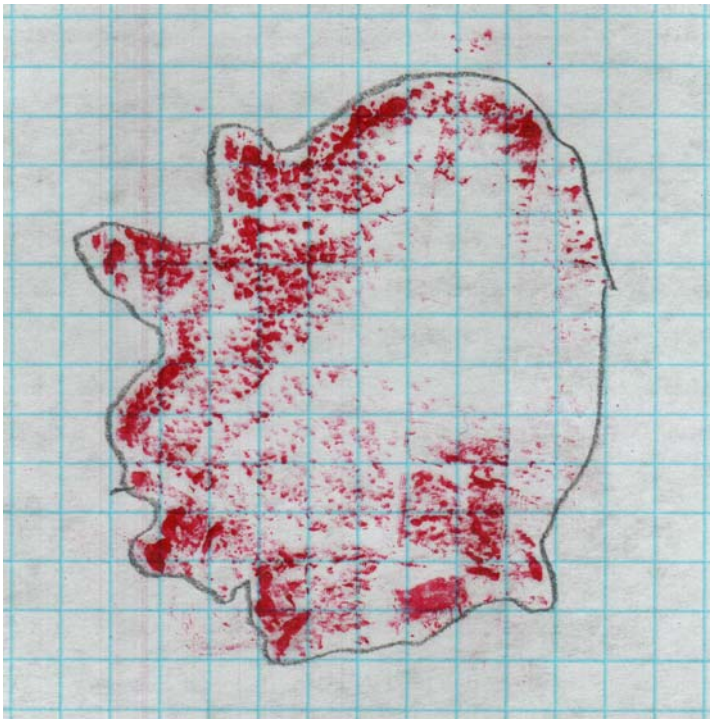
K2 / SEAT S3



K2 THOMAS SAF-T-LINER C2 40.4 cm^2

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

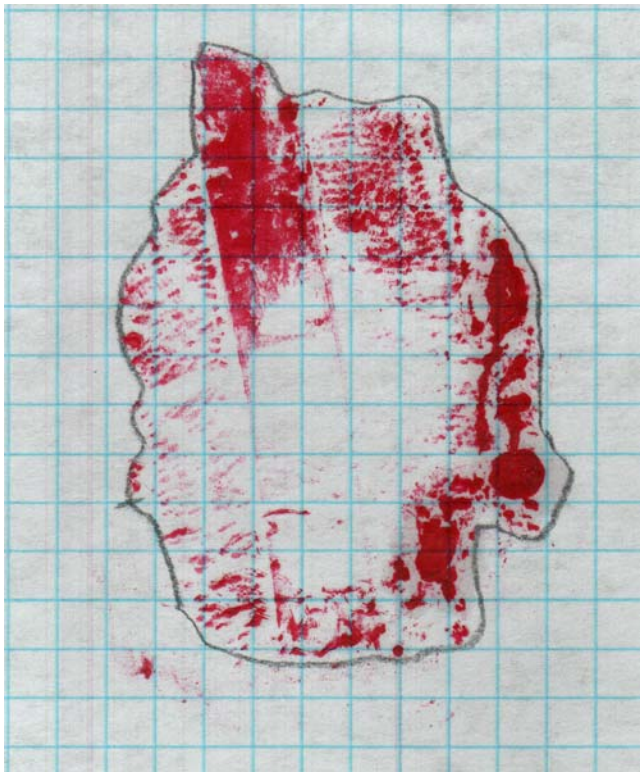
K3 / SEAT S3



K3 THOMAS SAF-T-LINER C2 36.6 cm^2

Test Vehicle:	**2007 THOMAS SAF-T-LINER C2 SCHOOL BUS**	NHTSA No.:	**C70900**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**2/21/2007**

K4 / SEAT S3



K4 THOMAS SAF-T-LINER C2 29.7 cm^2

SECTION 8

BUS FLOOR PLAN