REPORT NUMBER: SNCAP-CAL-07-13

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

BAYERISCHE MOTORENWERKE AG
2008 MINI COOPER
TWO-DOOR HATCHBACK

NHTSA NUMBER: M80503

PREPARED BY:
CALSPAN CORPORATION
P.O. BOX 400
BUFFALO, NEW YORK 14225

Test Date: January 29, 2008

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
1200 NEW JERSEY AVE SE, ROOM W43-410
WASHINGTON, D.C. 20590

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-03-D-22005.

Prepared by: _____ Date: _____
Vincent M. Paolini, Project Engineer

Reviewed by: _____ Date: _____
David J. Travale, Program Manager
Transportation Sciences Center

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

Technical Report Documentation Page

1. Report No. SNCAP-CAL-07-13	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program 2008 Mini Cooper Two-Door Hatchback NHTSA No.: M80503		*5. Report Date* January 29, 2008 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8765-SNCAP-30
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-22005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards Mail Code: NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered: Final Report* January 2008 – February 2008 *14. Sponsoring Agency Code* NVS-111

15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Mini Cooper Two-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on January 29, 2008.The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 20°C. The target vehicle's maximum post test static crush was 206 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	42.7	67.2
Left Lower Rib (LLR) Accel., g	40.2	61.6
Lower Spine (T_{12}) Accel., g	57.2	76.4
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	69	72
HIC	215.5	No Data

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2007 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-22005. The purpose of this test was to evaluate side impact protection in a 2008 Mini Cooper Two-Door Hatchback manufactured by Bayerische Motorenwerke AG. The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

A model year 2008 Mini Cooper Two-Door Hatchback was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.12 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1383.5 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on January 29, 2008.

One (1) real-time motion picture camera and ten (10) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/HIIIs) can be found in Appendix A.

Two 50th percentile adult male SID/HIII's were placed in the driver (P1) and left rear passenger (P4) designated seating positions according to instructions specified in the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997. Each SID/HIII was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y and Z axes primary and redundant)
- Upper Neck load cell (Fx, Fy, Fz, Mx, My, Mz)

The test vehicle was instrumented with twenty-one (21) structural accelerometers and the MDB was instrumented with five (5) accelerometers.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 206 mm at level 3, 1050 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 906 and 905 respectively, were calibrated just prior to this test.

Test data and observations are presented in this section of the report. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIII's, vehicle, and MDB response data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

The occupant data is summarized below:

ATD position	HIC(36)	T_1	T_2	TTI (G's)	Peak Pelvis (G's)
Driver	215.5	28.2	59.2	50	69
Passenger	*	*	*	72	72

* The Head Y accelerometer contained questionable data thus the Left Rear Passenger ATD HIC values could not be calculated

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	NA
Side Torso Airbag	Yes	Yes	No	NA
Side Head/Torso Combination Airbag	No	NA	No	NA
Curtain Airbag	Yes	Yes	Yes	Yes

The test instrumentation data listed in Appendix B can be found on the NHTSA website: www.nhtsa.dot.gov.

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	Mini	Driver Front Airbag	Yes
Model	Cooper	Driver Side Curtain Airbag	Yes
Body Style	Two-Door Hatchback	Driver Side Torso Airbag	Yes
NHTSA No.	M80503	Driver Pretensioners	Yes
VIN	WMWMF33518TU64480	Driver Load Limiters	Yes
Color	Red	Driver Power Seats	No
Engine Disp.(L)	1.6	Rear Pass. Side Curtain Airbag	Yes
Engine Cylinders	4	Rear Pass. Side Torso Airbag	No
Engine Placement	Lateral	Rear Pass. Pretensioners	No
Transmission Type	Manual	Rear Pass. Load Limiters	No
Transmission Speeds	6	Rear Pass. Power Seats	NA
Final Drive	Front	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	Yes
Power Brakes	Yes	Power Windows	Yes
Delivery Date	01-22-2008	Power Door Locks	Yes
Odometer Reading (km)	18	Automatic Door Locks (ADL)	Yes
Dealer	Towne Mini	Owner's Manual Details Instructions on Disabling ADLs	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Bayerische Motorenwerke AG	GVWR (kg)	1525
		GAWR Front (kg)	875
Date of Manufacture	01/08	GAWR Rear (kg)	755

VEHICLE CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench		
Number Of Occupants	2	2		4
Capacity Wt. (VCW) (kg)				370
Cargo Wt. (RCLW) (kg)				97.8

DATA SHEET NO. 1 (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			Fully Loaded (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	336.0	224.0		379.0	347.0		379.0	315.5	
Right	kg	355.0	216.0		363.0	306.0		391.5	297.5	
Ratio	%	61.1	38.9		53.2	46.8		55.7	44.3	
Totals	kg	691.0	440.0	1131.0	742.0	653.0	1395.0	770.5	613.0	1383.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1131.0
Weight of 2 P572E ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	97.8
Calculated Vehicle Target Weight (TVTW)	kg	1391.2

* Actual As Tested Weight (ATW) will be TVTW -4.5/-9.1 kg

Weight of Ballast (including instrumentation package and cameras): 90.1 kg

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	670	670	677	673
Fully Loaded	mm	655	665	622	624
As Tested	mm	655	665	630	629

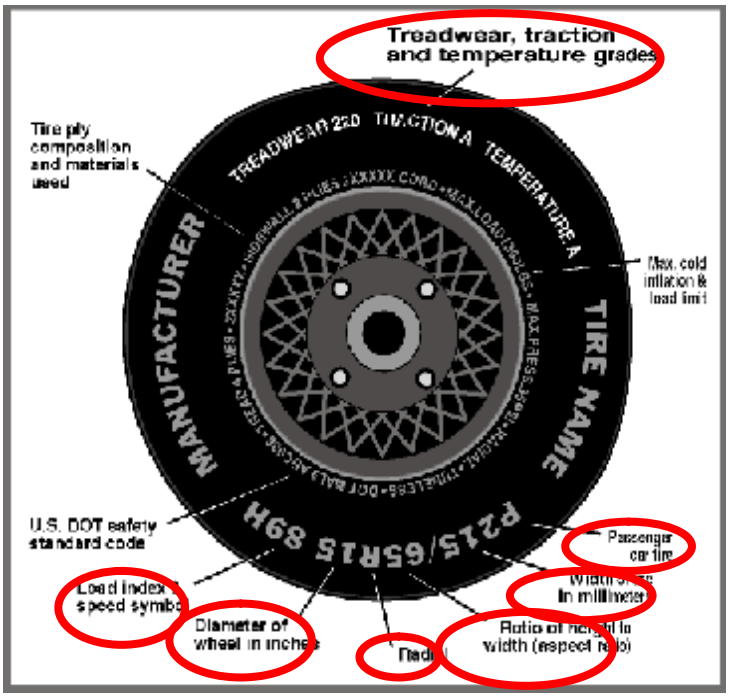
TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2468
Target Impact Point Aft of Front Axle	mm	294
Actual Impact Point Aft of Front Axle	mm	297
As Tested CG (aft of front axle)	mm	1094

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold / Test Pressure (kPa)	230	230
Recommended Tire Size	P175/65R15	P175/65R15
Tire Size on Vehicle	P175/65R15	P175/65R15
Tire Manufacturer	Continental	Continental
Tire Name	ContiPro Contact	ContiPro Contact
Tire Type	Passenger	Passenger
Tire Width (mm)	175	175
Ratio of Height to Width (aspect ratio)	65	65
Radial	Yes	Yes
Wheel Diameter	15	15
Load Index & Speed Symbol	84H	84H
Treadwear	400	400
Traction Grade	AA	AA
Temperature Grade	A	A

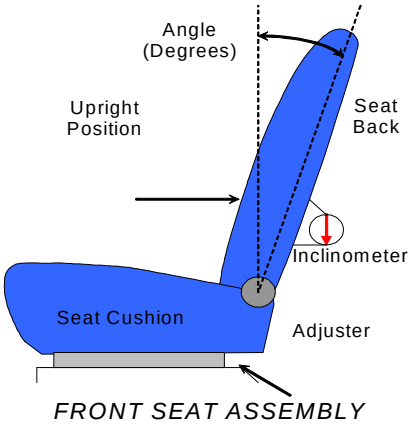
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle.



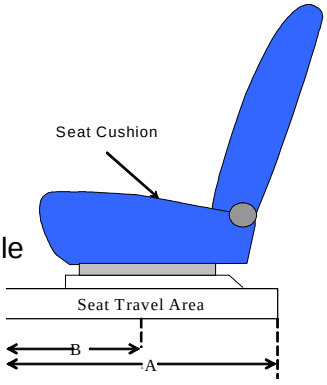
FRONT SEAT ASSEMBLY

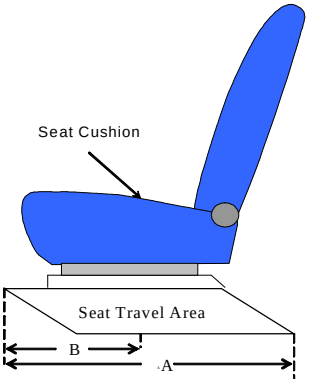
SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	N.A.	Fixed
Angle (deg. from forward-most locking position)	16º	Fixed
Alternative Measurements to Verify Test Position	16º from vertical along level on centerline of seatback with SID in place.	Fixed

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger.





SEAT FORE/AFT POSITION

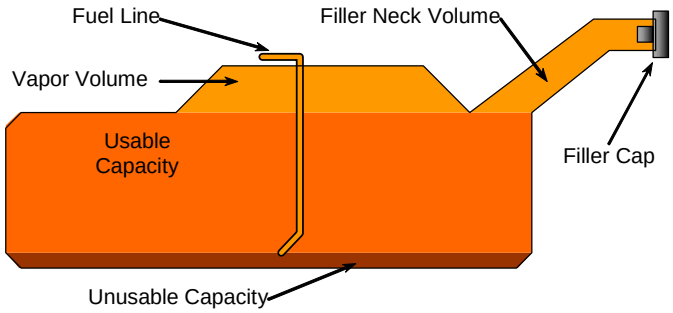
	Driver Seat	Rear Seat
Total Fore/Aft Travel (A) (mm)	276	Fixed
Test Position (B) (mm)	138	Fixed
Test Detent (forward-most detent defined as 0)	N/A	Fixed
Total Number of Detents (including 0)	N/A	Fixed

DATA SHEET NO. 3 (CONTINUED)
TEST VEHICLE INFORMATION

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

FUEL SYSTEM INFORMATION

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.



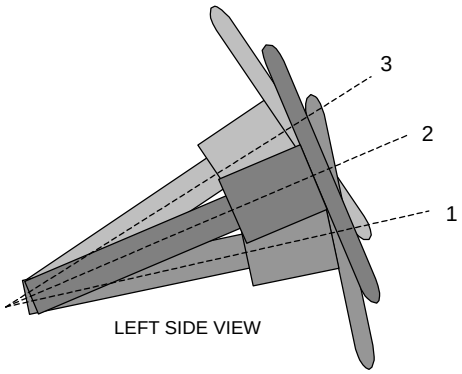
VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard" Fuel Tank	50
Usable Capacity of "Optional" Fuel Tank	-
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	46.9

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITION

	Fore/Aft Position (mm)	Tilt (degrees)	Tilt (detent)
Lowermost Position No. 1	0	17.2	N/A
Geometric Center Position No. 2 *	19	20.1	N/A
Uppermost Position No. 3	38	23.0	N/A

* Test position

DATA SHEET NO. 4

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Face	4120
Wheel base of Framework Carriage	2590
Tread of Framework Carriage (front & rear)	1875
C.G. Location aft of Front Axle	1104

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	409.5	281.5	
Right	kg	372.5	299.0	
Ratio	%	57.4	42.6	
Totals	kg	782.0	580.5	1362.5

MDB SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.12
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.12
Impact angle with respect to impactor	º	88.5º to 91.5º	89.5

POST TEST OBSERVATIONS

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	3 mm rearward
Vertical Offset	mm	+/-20	8 mm above

DATA SHEET NO. 5

POST TEST OBSERVATIONS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 906	SID/HIII / 905
Head Contact	Side of head to side curtain airbag	Side of head to side curtain airbag and side header
Upper Torso Contact	Side Torso Airbag	Side Quarter Trim Panel
Lower Torso Contact	Side Torso Airbag	Side Quarter Trim Panel
Left Knee Contact	Door Trim Panel	Side Quarter Trim Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Unlocked	N/A
Left Side Door Opening	Closed, latched and inoperable without tools	N/A
Right Side Door Opening	Closed, latched and operable without tools	N/A
Seat Movement	None	Seat cushion pushed inboard
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	The A- and B-pillars were pushed inboard during the event
Sill Separation	No visible tears or separations
Windshield Damage	Minor stress cracks along left A-Pillar
Window Damage	The driver and passenger side windows shattered during the event
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT INFORMATION

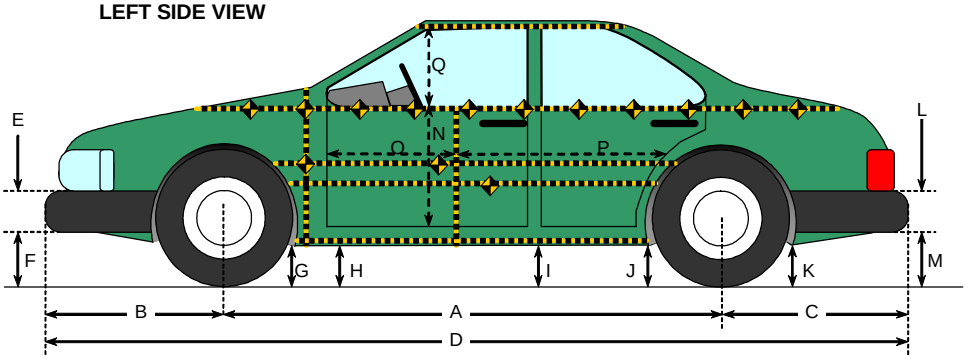
Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	NA
Side Torso Airbag	Yes	Yes	No	NA
Side Head/Torso Combination Airbag	No	NA	No	NA
Curtain Airbag	Yes	Yes	Yes	Yes

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

LEFT SIDE VIEW



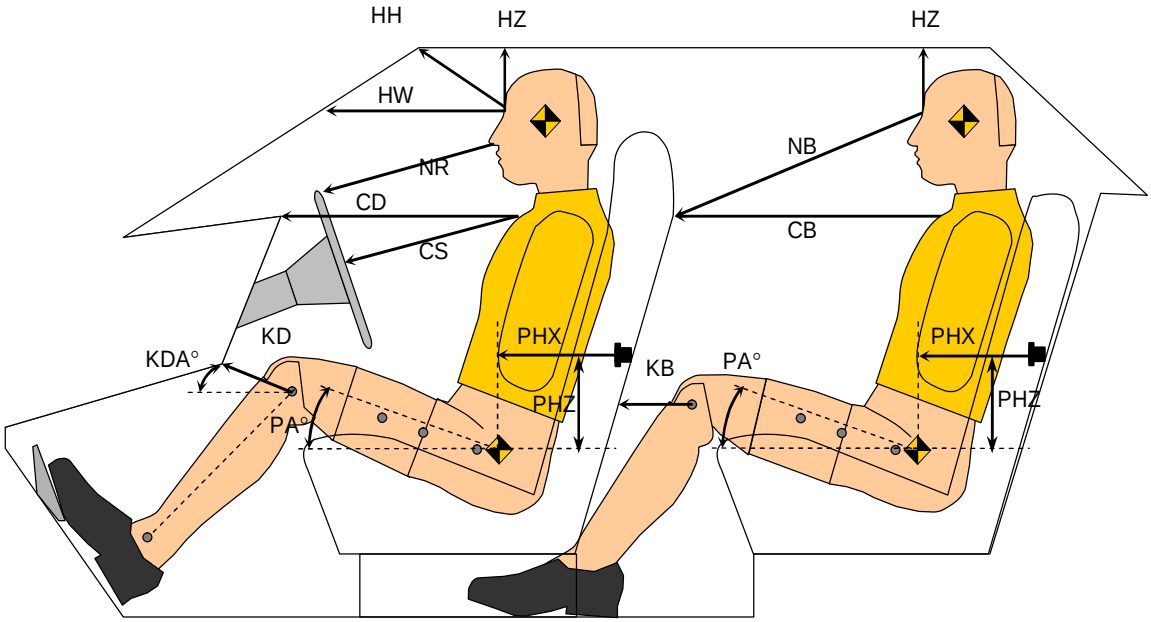
All Measurements in mm

Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2467	2468	2456	12
B	Front Axle to FSOV	667	665	672	-7
C	Rear Axle to RSOV	570	570	566	4
D	Total Length at Centerline	3703	3703	3694	9
E	Front Bumper Thickness	125	125	125	0
F	Front Bumper Bottom to Ground	125	376	364	12
G	Sill Height at Front Wheel Well	378	148	164	-16
H	Sill Height at Front Door Leading Edge	170	150	167	-17
I	Sill Height at "B" Pillar	175	152	182	-30
J1	Sill Height at Rear Wheel Well	195	160	179	-19
J2	Pinch Weld Height at Rear Wheel Well	207	150	183	-33
K	Sill Height Aft of Rear Wheel Well	200	208	223	-15
L	Rear Bumper Thickness	272	272	160	112
M	Rear Bumper Bottom to Ground	407	346	368	-22
N	Sill Height to Window Bottom Sill	644	644	611	33
O	Front Door Leading Edge to Impact CL	611	611	609	2
P	Rear Door Trailing Edge to Impact CL	1037	1037	1009	28
Q	Front Window Opening	430	430	410	20
R	Right Side Length	3601	3601	3597	4
S	Left Side Length	3599	3599	3581	18
T	Vehicle Width at "B" Post	1625	1625	1485	140

DATA SHEET NO. 7

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

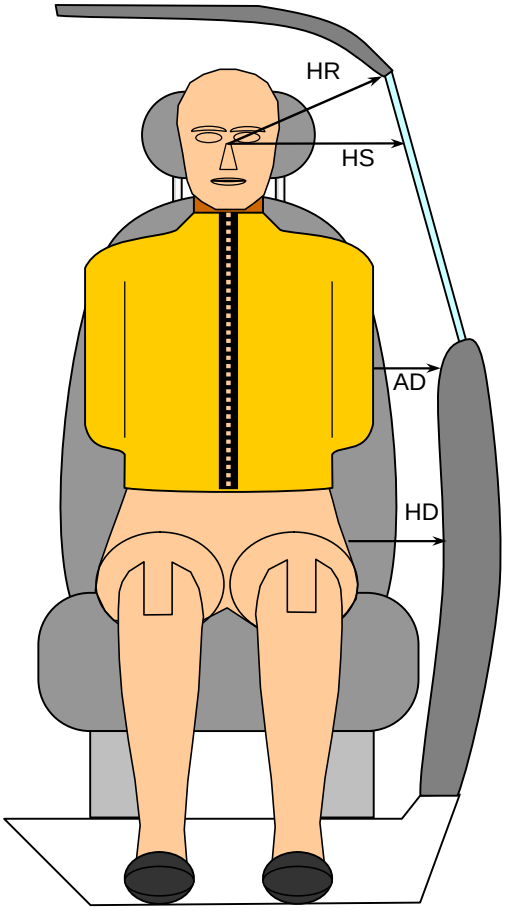


Driver Code	Pass. Code	Measurement Description	Driver S/N 906		Passenger S/N 905	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	596			
HW		Head to Windshield	710			
HZ	HZ	Head to Roof	196		145	
NR	NB	Nose to Rim/Nose to Seatback	403		489	
CD	CB	Chest to Dash or Seatback	520		450	
CS		Chest to Steering Wheel	270			
KDL	KBL	Left Knee to Dash or Seatback	228	33	100	35
KDR	KBR	Right Knee to Dash or Seatback	195	31	90	37
PA	PA	Pelvic Angle		24.0		23.4
PHX	PHX	H-Point to Striker (X-Axis)	363		424	
PHZ	PHZ	H-Point to Striker (Z-Axis)	219		172	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



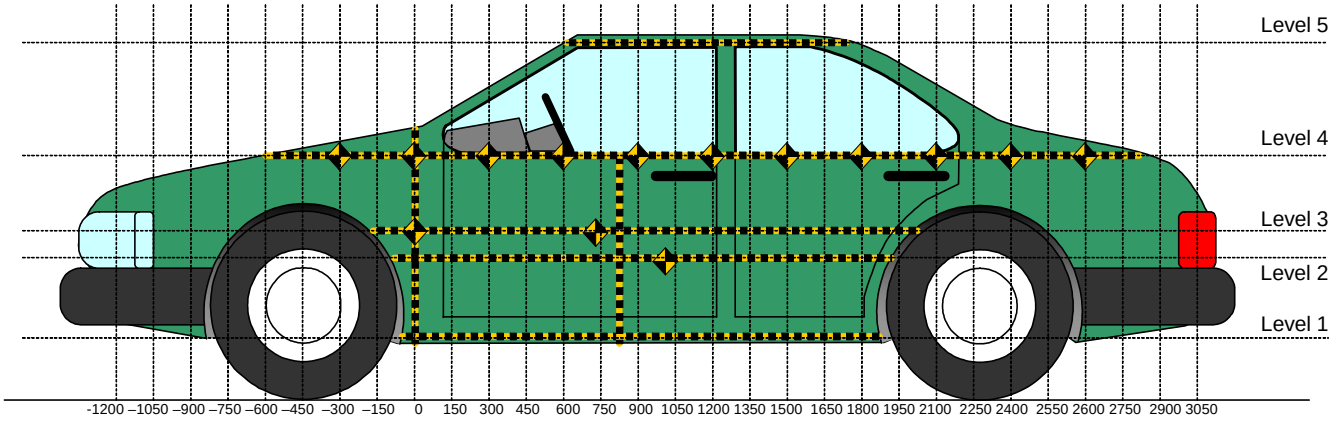
FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 906	Passenger S/N 905
HR	Head to Side Header	mm	195	187
HS	Head to Side Window	mm	285	312
AD_1	Arm to Door (at upper rib level)	mm	79	50
AD_2	Arm to Door (at lower rib level)	mm	121	15
HD	H-Point to Door	mm	108	42

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



All Measurements Shown in mm

LEFT SIDE VIEW

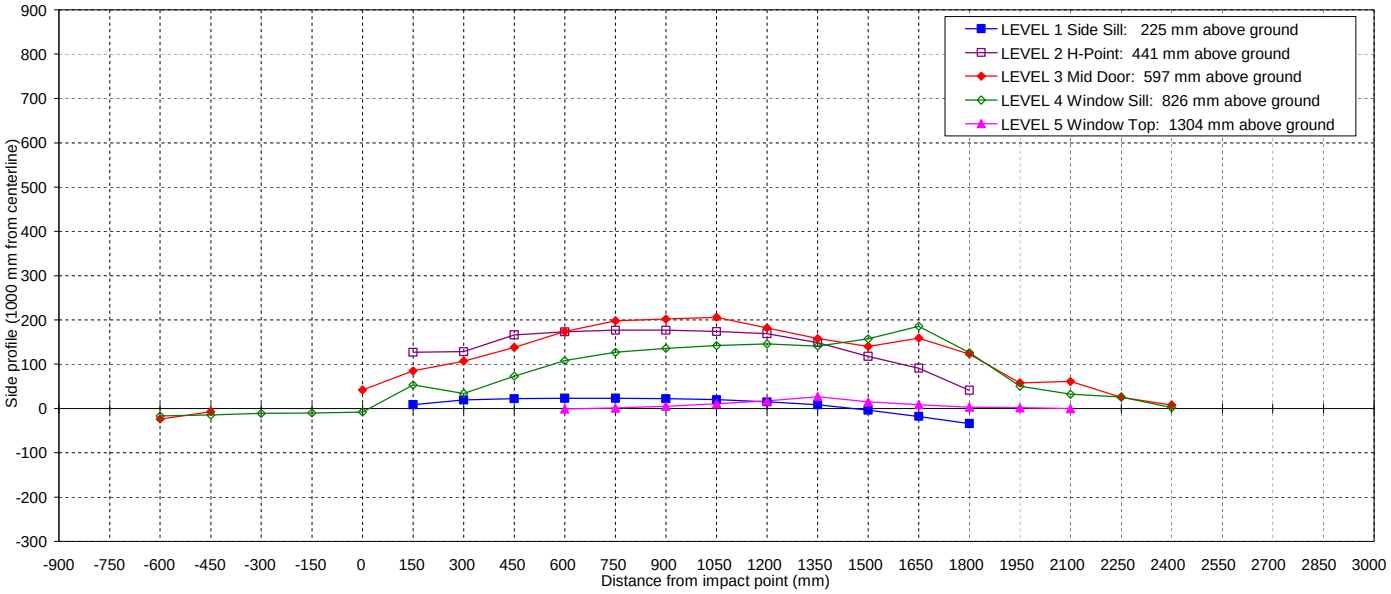
Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 750 mm.
All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	23	225	600
2	Occupant H-Point	177	441	750
3	Mid Door	206	597	1050
4	Window Sill	186	826	1650
5	Window	27	1304	1350
	Maximum Penetration	206		

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



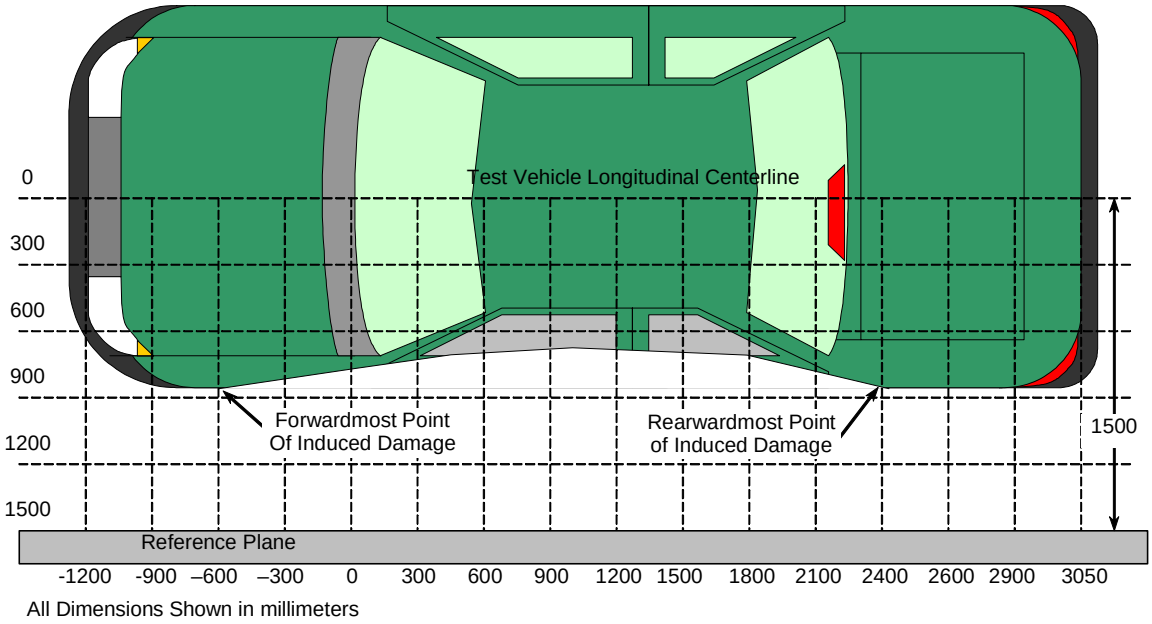
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

			DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
LEVEL 1 SIDE SILL	225	PRE	--	--	--	--	--	--	--	218	229	225	221	220	218	218	221	222	223	222	205	--	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	--	227	248	247	244	243	240	238	236	231	219	204	171	--	--	--	--	--	--	--	--
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	19	22	23	23	22	20	15	9	-4	-18	-34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2 H POINT	441	PRE	--	--	--	--	--	--	--	189	194	191	189	187	187	188	190	193	197	200	184	--	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	--	316	322	357	362	364	364	362	359	342	315	291	225	--	--	--	--	--	--	--	--
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	127	128	166	173	177	177	174	169	149	118	91	41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 3 MID DOOR	597	PRE	--	--	206	165	--	--	167	184	185	182	180	179	178	179	180	183	187	190	190	170	159	160	179	--	--	--	--
		POST	--	--	182	158	--	--	209	269	292	320	354	377	380	385	362	341	327	349	313	228	220	185	187	--	--	--	--
		CRUSH	N/A	N/A	-24	-7	N/A	N/A	42	85	107	138	174	198	202	206	182	158	140	159	123	58	61	25	8	N/A	N/A	N/A	N/A
LEVEL 4 WINDOW SILL	826	PRE	--	--	414	322	278	253	237	225	218	209	209	207	206	205	205	207	209	213	217	223	226	235	257	--	--	--	--
		POST	--	--	397	307	267	243	229	278	252	282	317	334	342	347	351	348	366	399	343	273	258	261	259	--	--	--	--
		CRUSH	N/A	N/A	-17	-15	-11	-10	-8	53	34	73	108	127	136	142	146	141	157	186	126	50	32	26	2	N/A	N/A	N/A	N/A
LEVEL 5 WINDOW TOP	1304	PRE	--	--	--	--	--	--	--	--	--	--	501	459	455	454	455	456	458	461	468	477	499	--	--	--	--	--	--
		POST	--	--	--	--	--	--	--	--	--	--	500	460	460	465	472	483	473	470	471	479	499	--	--	--	--	--	--
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1	1	5	11	17	27	15	9	3	2	0	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



TOP VIEW

DAMAGE PROFILE DISTANCES

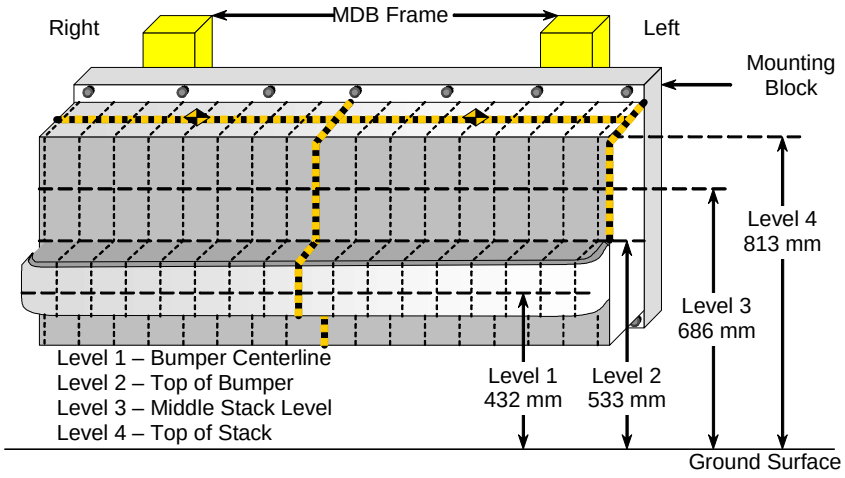
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1 (LR)	2399	597	179	187	8
2	1909	597	175	251	76
3	1419	597	185	335	150
4	930	597	178	381	203
5	440	441	191	355	164
6 (LF)	-50	826	242	234	-8

Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to vehicle body.

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2008 Mini Cooper NHTSA No. M80503



Test Program: NCAP Side Impact Test Date: January 29, 2008

NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

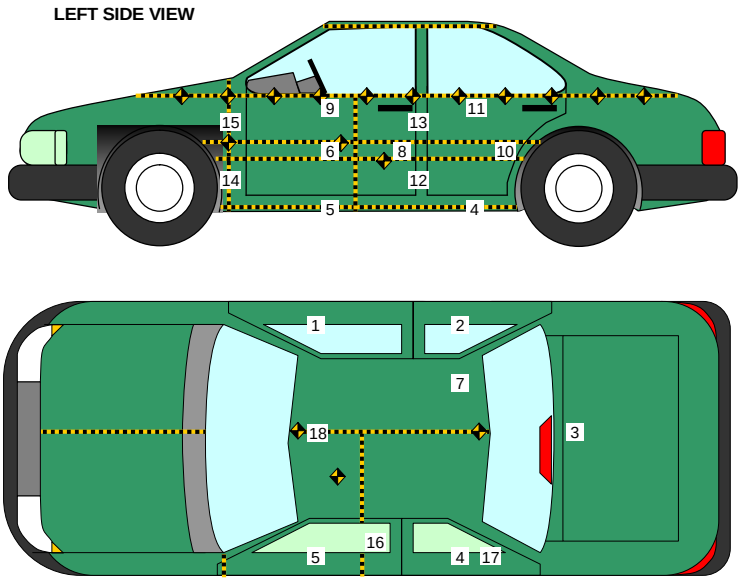
LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)							
			-800	-700	-600	-500	-400	-300	-200	-100	0	100	200	300	400	500	600	700	800
LEVEL 4		PRE	411	412	412	412	412	412	413	413	413	413	413	413	413	413	413	413	412
TOP	811	POST	373	409	392	370	382	387	387	380	375	367	365	346	316	299	272	266	264
STACK		CRUSH	38	3	20	42	30	25	26	33	38	46	48	67	97	114	141	147	148
LEVEL 3		PRE	411	411	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412
MID	682	POST	385	385	369	346	364	378	388	391	392	390	385	373	354	325	282	257	270
LEVEL		CRUSH	26	26	43	66	48	34	24	21	21	22	27	39	58	87	130	155	142
LEVEL 2		PRE	411	412	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412
TOP	542	POST	299	299	301	314	332	340	342	342	340	339	336	332	325	314	298	276	260
BUMPER		CRUSH	112	113	111	98	80	72	70	70	73	73	76	80	87	98	114	136	152
LEVEL 1		PRE	501	513	513	513	513	513	513	514	514	514	514	514	514	514	514	514	505
MID	430	POST	281	295	310	326	345	367	377	382	386	386	386	386	382	369	342	329	323
BUMPER		CRUSH	220	218	203	187	168	146	136	132	128	128	128	128	132	145	172	185	182

LEVEL	HEIGHT AT CL (mm)*	MAX CRUSH
LEVEL 4		
TOP	811	148
STACK		
LEVEL 3		
MID	682	155
LEVEL		
LEVEL 2		
TOP	542	152
BUMPER		
LEVEL 1		
MID	430	220
BUMPER		

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2242	592	-263
2	Right Sill at Rear Seat	1383	604	-249
3	Rear Floorpan Above Axle	662	70	-463
4	Left Sill at Rear Door	1385	-602	-231
5	Left Sill at Front Door	2254	-593	-254
6	Left Front Door C/L**	-	-	-
7	Rear Occupant Compartment	1522	354	-203
8	Left Front Door Mid-Rear**	-	-	-
9	Left Front Door Upper C/L**	-	-	-
10	Left Rear Door Mid-Rear**	-	-	-
11	Left Rear Door Upper C/L**	-	-	-
12	Left Lower B-Post	1292	-630	-556
13	Left Middle B-Post	1317	-604	-934
14	Left Lower A-Post	2563	-578	-436
15	Left Middle A-Post	2369	-606	-937
16	Front Seat Track	1584	-510	-247
17	Rear Seat Track or Structure	606	-469	-476
18	Vehicle CG	1893	-4	-404

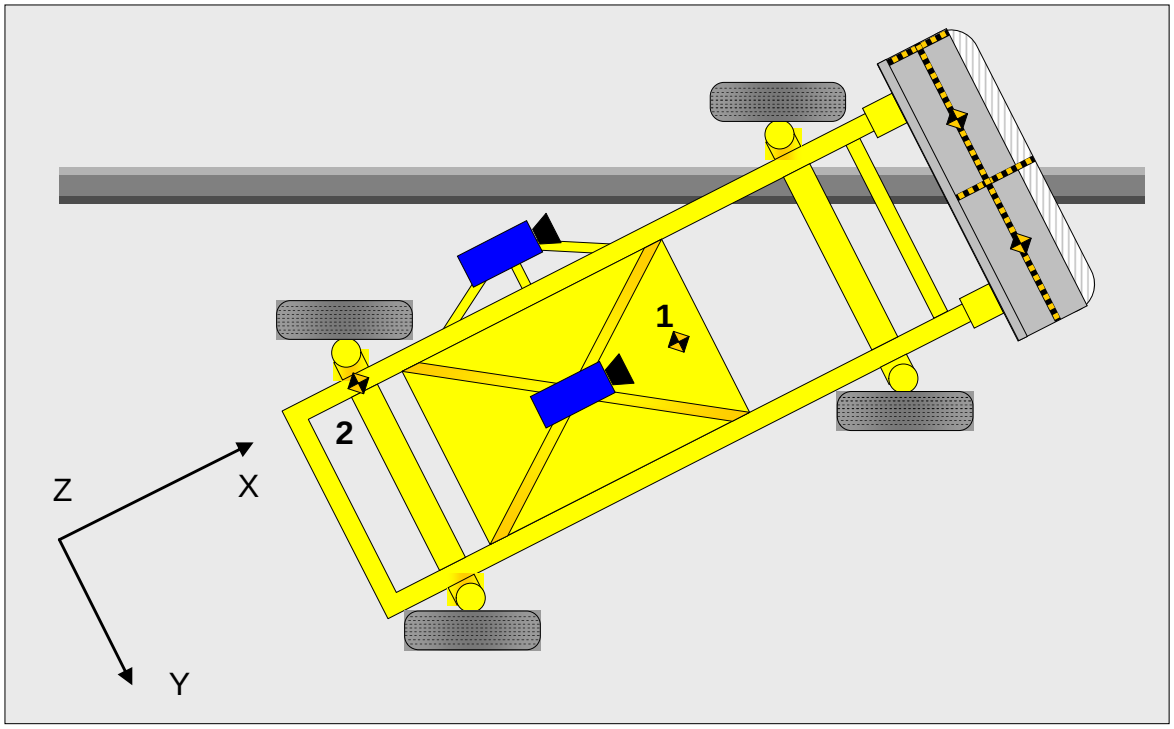
Reference Points X - Test Vehicle Rear Bumper (+ forward)
Y - Test Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	MDB CG	1859	0	-330
2	MDB Rear	386	-660	-660

Reference Points
X - MDB Rear Bumper (+ forward)
Y - MDB Centerline (+ to right)
Z - Ground Plane (+ down)

DATA SHEET NO. 15

VEHICLE STRUCTURAL MEASUREMENTS

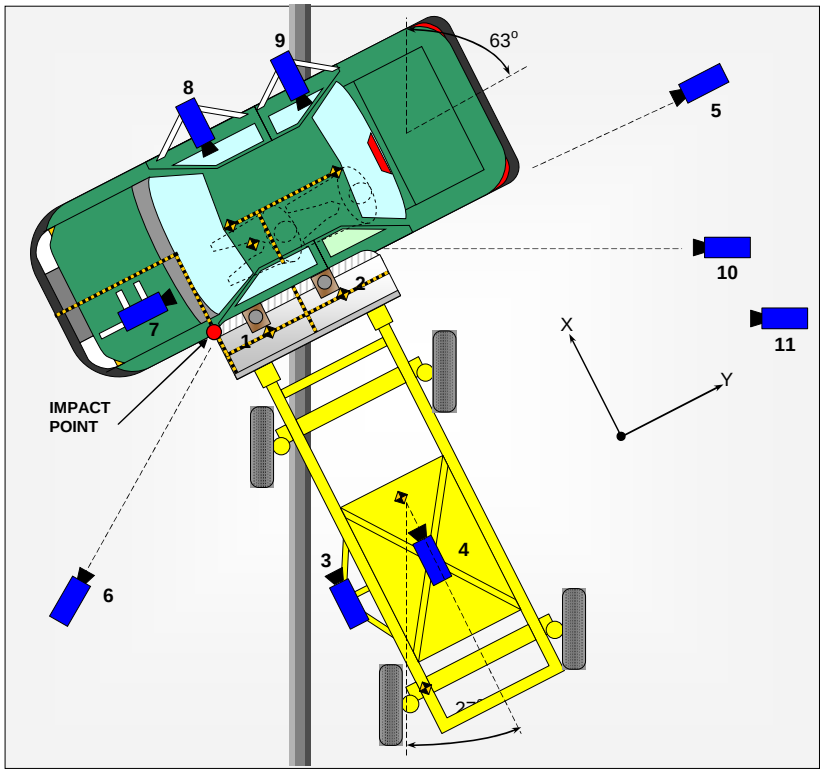
Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

	Elements	Pre-Test (mm)
1	Total Length	3703
2	Total Width	1625
3	Bumper Top Height	499
4	Bumper Bottom Height	425
5	Longitudinal Member Top Height	523
6	Distance between Longitudinal Members	981
7	Longitudinal Member Width	70
8	Engine Top Height	786
9	Engine Bottom Height	239
10	Engine and gearbox width	455
11	Front bumper-engine distance	244
12	Front shock absorber fixing height	776
13	Bonnet leading edge height	685
14	Front shock absorber fixing width	1151
15	Front bumper – front axle distance	667
16	Front axle – a pillar distance	518
17	A-pillar – B-pillar distance	1244
18	B-Pillar – rear axle distance	704
19	B-pillar – C-pillar distance	845
20	Roof sill bottom height	1344
21	Roof sill top height	1249
22	Floor sill bottom height	326
23	Floor sill top height	217

DATA SHEET NO. 16

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008



No.	Camera View	Location (mm)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Overall	72	812	-4880	-90	20	500
2	Overhead Close-up	195	855	-4880	-90	28	1000
3	MDB Onboard, Impact Point Close-up	-1470	0	-847	0	25	500
4	MDB Onboard, Centerline of Impact	-1140	838	-1587	-17	12.5	500
5	Right Side, Ground Level, Overall	356	9664	-914	-2.4	50	1000
6	Left Side, Ground Level, Overall	-2050	-1682	-930	-3.8	28	1000
7	Vehicle Onboard Front SID/HIII, Front	-413	-212	-1992	-7.8	25	1000
8	Vehicle Onboard Front SID/HIII, Side	1360	963	-1030	-10.2	12.5	1000
9	Vehicle Onboard Rear SID/HIII, Side	1310	1800	-1060	-8.8	12.5	1000
10	Secondary Impact Point	2664	5012	-922	-1.7	50	500
11	Real Time Coverage						30

Reference Points X - Impact Line
Y - MDB Left Edge Impact Point
Z - Ground Plane

DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA

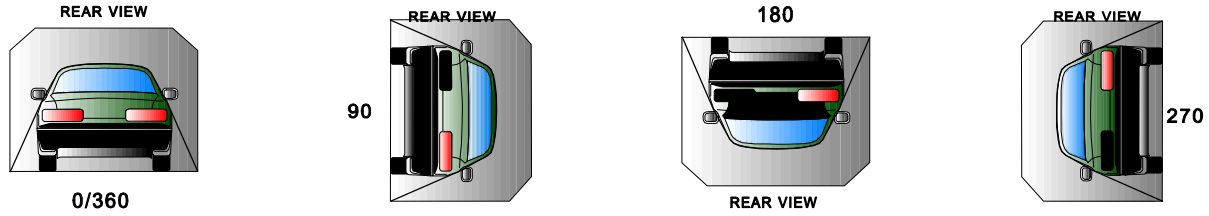
Test Vehicle:	2008 Mini Cooper	NHTSA No.	M80503
Test Program:	NCAP Side Impact	Test Date:	January 29, 2008

FUEL SYSTEM INTEGRITY POST IMPACT DATA

Time Interval	FMVSS 301 Maximum Allowable Spillage	Spillage (g)
Impact Until Motion Ceases	28 g	0
First Five Minutes Following Impact	142 g	0
Next 25 Minutes	28 g / 1 minute	0

Spillage Location(s)	None

STATIC ROLLOVER DATA



Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0º - 90º	1	minutes	14	seconds	5	minutes	6	minutes	14	seconds	7	minutes
90º - 180º	1	minutes	05	seconds	5	minutes	6	minutes	5	seconds	7	minutes
180º-270º	1	minutes	01	seconds	5	minutes	6	minutes	1	seconds	7	minutes
270º-360º	1	minutes	07	seconds	5	minutes	6	minutes	7	seconds	7	minutes

Rollover Stage	Spillage (g)			
	First 5 min. from onset of rotation	6th min.	7th min.	8th min. (if required)
0º - 90º	0	0	0	0
90º - 180º	0	0	0	0
180º-270º	0	0	0	0
270º-360º	0	0	0	0
FMVSS 301 Maximum Allowable (for each 90º stage)	142	28	28	28

Rollover Stage	Spillage Location(s)
0º - 90º	None
90º - 180º	None
180º-270º	None
270º-360º	None

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (continued)

Figure A-1: As Received Left Front ¾ View

Figure A-2: As Received Right Rear ¾ View

Figure A-3: Vehicle Certification Label

Figure A-4: Vehicle Tire Placard Label

Figure A-5: Pre-Test Front View

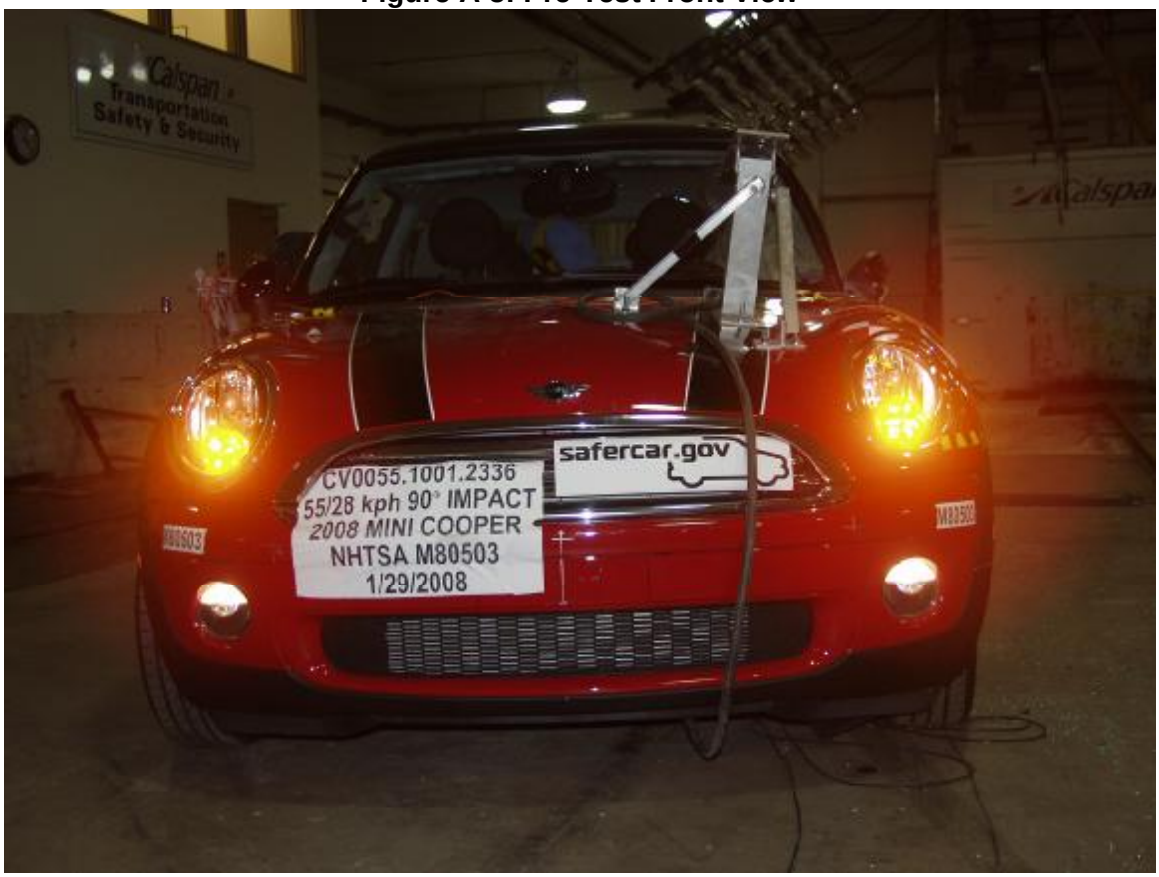


Figure A-6: Post-Test Front View

Figure A-7: Pre-Test Left Front ¾ View

Figure A-8: Post-Test Left Front ¾ View

Figure A-9: Pre-Test Left Side View

Figure A-10: Post-Test Left Side View

Figure A-11: Pre-Test Left Rear ¾ View

Figure A-12: Post-Test Left Rear ¾ View

Figure A-13: Pre-Test Rear View

Figure A-14: Post-Test Rear View

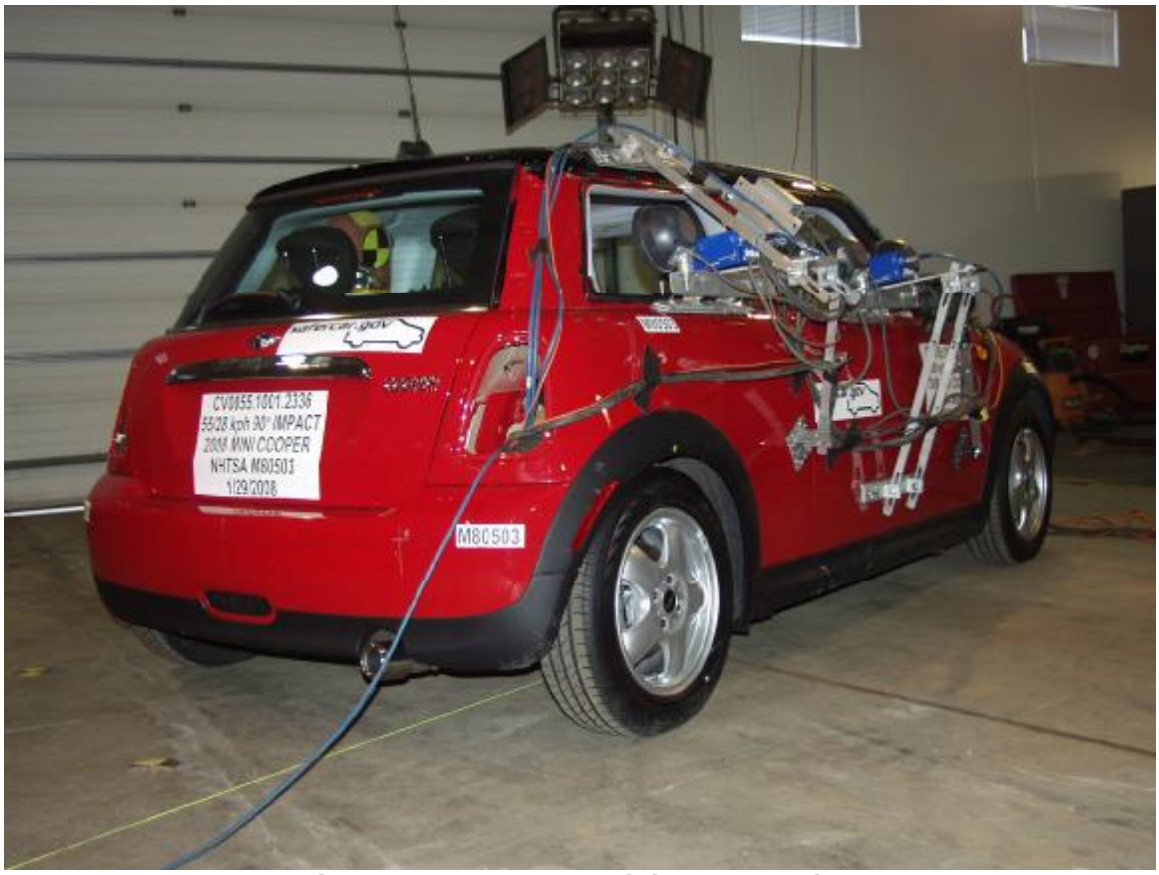


Figure A-15: Pre-Test Right Rear ¾ View

Figure A-16: Post-Test Right Rear ¾ View

Figure A-17: Pre-Test Right Side View

Figure A-18: Post-Test Right Side View

Figure A-19: Pre-Test Right Front ¾ View

Figure A-20: Post-Test Right Front ¾ View

Figure A-21: Pre-Test Frontal View of MDB Impactor Face

Figure A-22: Post-Test Frontal View of MDB Impactor Face

Figure A-23:Pre-Test Left Side View of MDB Impactor Face

Figure A-24: Post-Test Left Side View of MDB Impactor Face

Figure A-25: Pre-Test Right Side View of MDB Impactor Face

Figure A-26: Post-Test Right Side View of MDB Impactor Face

Figure A-27: Pre-Test Top View of MDB Impactor Face

Figure A-28: Post-Test Top View of MDB Impactor Face

Figure A-29: Pre-Test Left Side View of Aligned MDB and Vehicle

Figure A-30: Pre-Test Right Side View of Aligned MDB and Vehicle

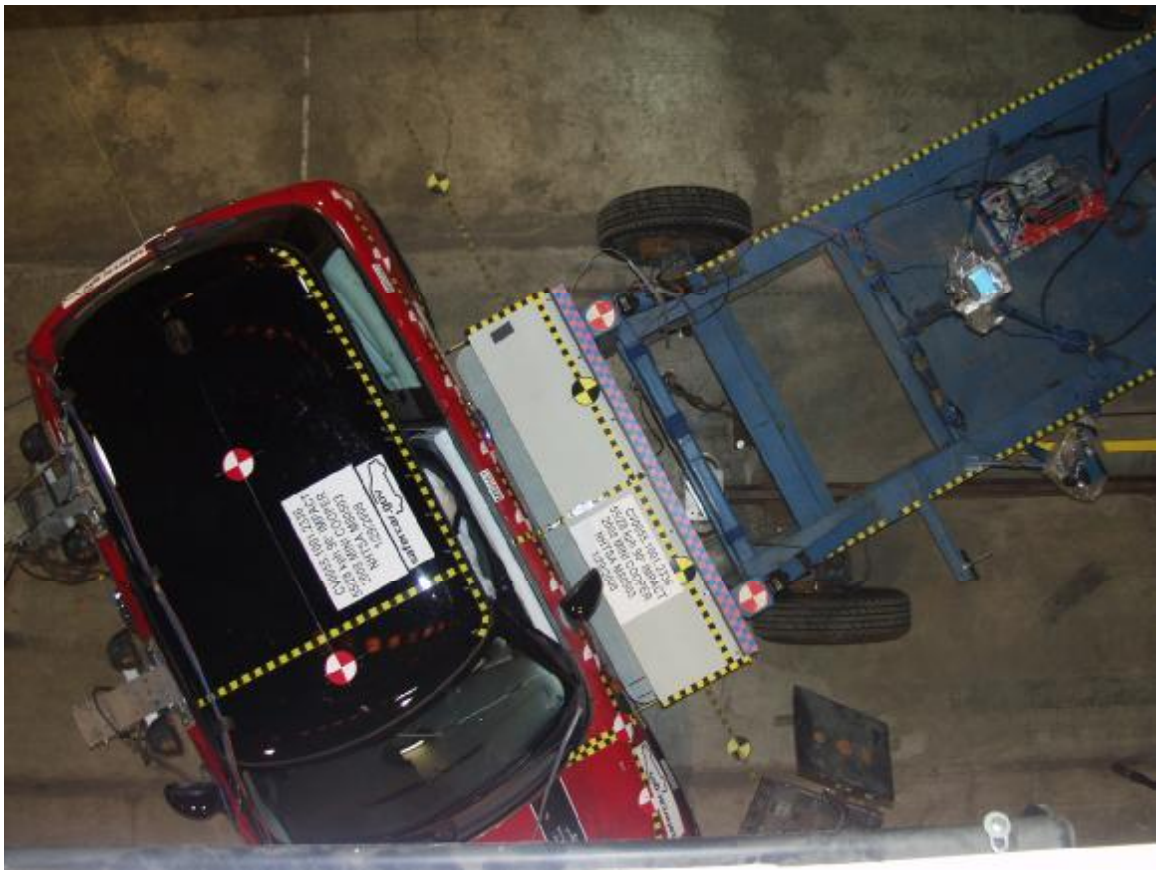


Figure A-31: Pre-Test Overhead View of Aligned MDB and Vehicle

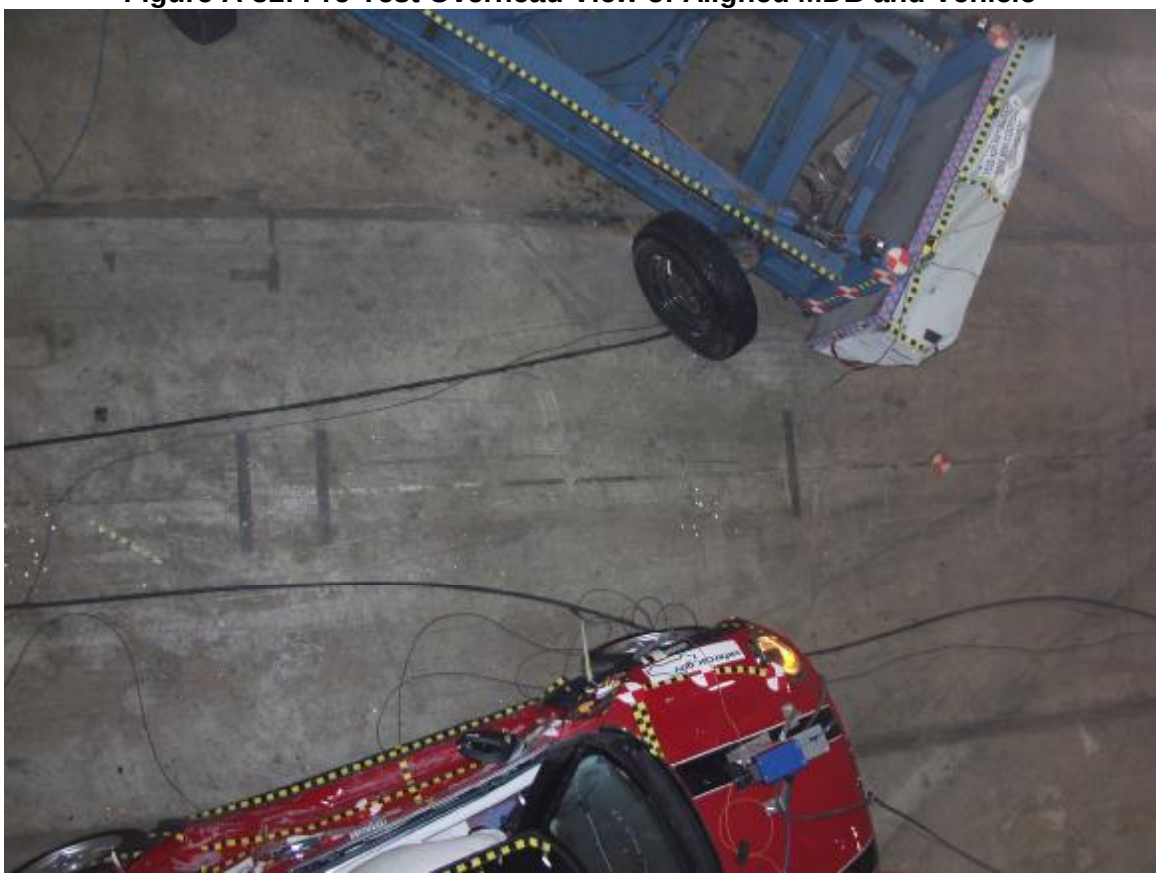


Figure A-32: Post-Test Overhead View of MDB and Vehicle

Figure A-33: Pre-Test Close-Up View of Impact Point Target

Figure A-34: Post-Test Close-Up View of Impact Point Target

Figure A-35: Pre-Test Right Occupant Compartment View of Driver

Figure A-36: Post-Test Right Occupant Compartment View of Driver

Figure A-37: Pre-Test Right Occupant Compartment View of Passenger

Figure A-38: Post-Test Right Occupant Compartment View of Passenger

Figure A-39: Pre-Test Left Occupant Compartment View of Driver

Figure A-40: Post-Test Left Occupant Compartment View of Driver

Figure A-41: Pre-Test Left Occupant Compartment View of Passenger

Figure A-42: Post-Test Left Occupant Compartment View of Passenger

Figure A-43: Pre-Test Left Front Interior Trim

Figure A-44: Post-Test Left Front Interior Trim

Figure A-45: Pre-Test Left Rear Interior Trim

Figure A-46: Post-Test Left Rear Interior Trim

Figure A-47: Pre-Test Left Front ¾ View of Left Side Doors

Figure A-48: Post-Test Left Front ¾ View of Left Side Doors

Figure A-49: Pre-Test Left Rear ¾ View of Left Side Doors

Figure A-50: Post-Test Left Rear ¾ View of Left Side Doors

Figure A-51: Rollover 90 Degrees

Figure A-52: Rollover 180 Degrees

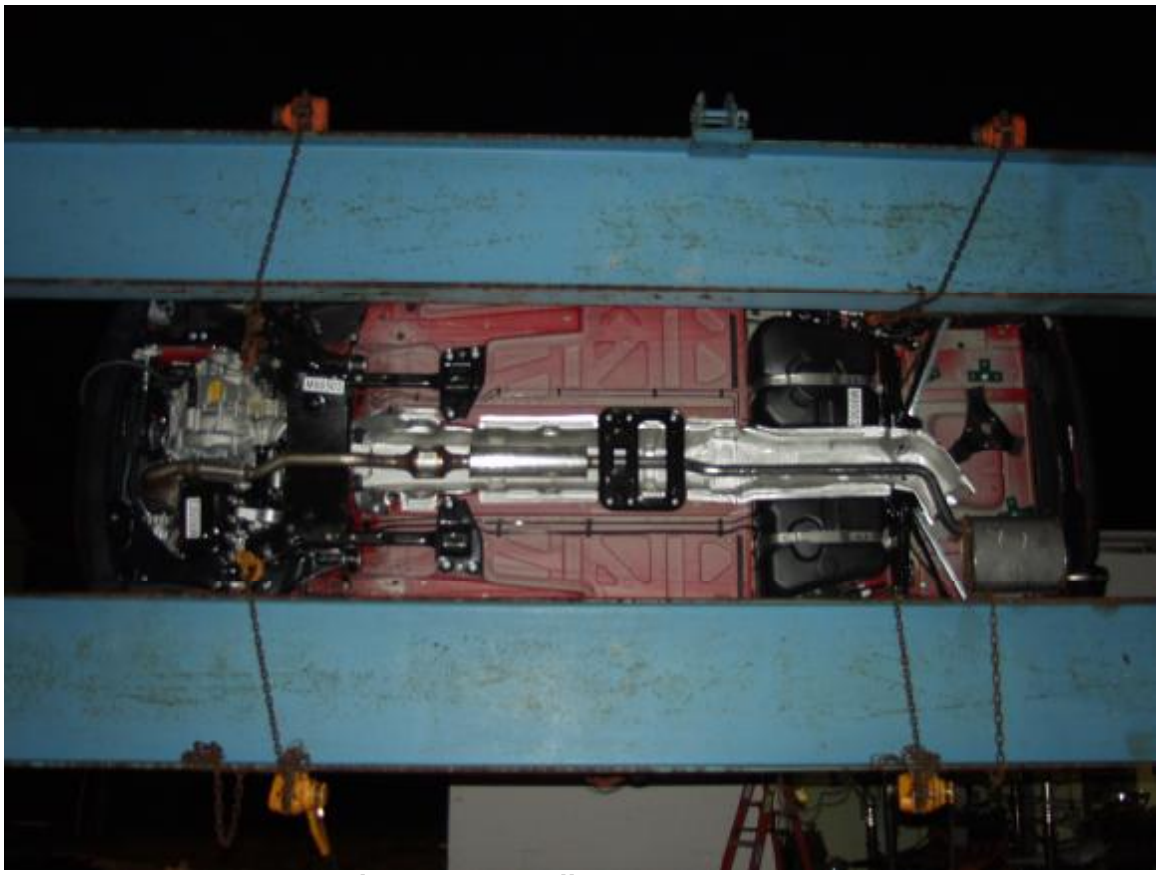


Figure A-53: Rollover 270 Degrees

Figure A-54: Rollover 360 Degrees

Figure A-55: Impact Photo

APPENDIX B

SID/HIII, VEHICLE AND MDB RESPONSE DATA

(SAE sign convention)

DATA CHANNEL FILTER CLASS SUMMARY

Data Type	SAE Filter Class
Dummy Head Accelerations	CFC 1000
Rib Accelerations	FIR 100
Spine Accelerations	FIR 100
Pelvis Accelerations	FIR 100

DATA CHANNEL TITLE KEY

Prefix	Suffix
V1 = Vehicle 1 (Moving Barrier)	Ax = Acceleration, X-direction
V2 = Vehicle 2 (Test Vehicle)	Ay = Acceleration, Y-direction
P1 = Left Front Seating Position (Driver)	Az = Acceleration, Z-direction
P4 = Left Second Row Seating Position (Passenger)	Fx = Force, X-direction
A1-A18 = Accelerometer Location Number	Fy = Force, Y-direction
	Fz = Force, Z-direction
	Mx = Moment about X
	My = Moment about Y
	Mz = Moment about Z

TABLE OF DATA PLOTS

The following dummy, vehicle and load cell response data can be found in the research and development section of the NHTSA website at: www.nhtsa.dot.gov

V2P1 Head Ax
V2P1 Head Ay
V2P1 Head Az
V2P1 Upper Neck Fx
V2P1 Upper Neck Fy
V2P1 Upper Neck Fz
V2P1 Upper Neck Mx
V2P1 Upper Neck My
V2P1 Upper Neck Mz
V2P1 Upper Rib Ay
V2P1 Upper Rib Redundant Ay
V2P1 Lower Rib Ay
V2P1 Lower Rib Redundant Ay
V2P1 Lower Spine Ay
V2P1 Lower Spine Redundant Ay
V2P1 Pelvic Ay
V2P1 Pelvic Redundant Ay
V2P4 Head Ax
V2P4 Head Ay
V2P4 Head Az
V2P4 Upper Neck Fx
V2P4 Upper Neck Fy
V2P4 Upper Neck Fz
V2P4 Upper Neck Mx
V2P4 Upper Neck My
V2P4 Upper Neck Mz
V2P4 Upper Rib Ay
V2P4 Upper Rib Redundant Ay
V2P4 Lower Rib Ay
V2P4 Lower Rib Redundant Ay
V2P4 Lower Spine Ay
V2P4 Lower Spine Redundant Ay
V2P4 Pelvic Ay
V2P4 Pelvic Redundant Ay

V2A1 Right Front Sill Ax
V2A1 Right Front Sill Ay
V2A1 Right Front Sill Az
V2A2 Right Rear Sill Ax
V2A2 Right Rear Sill Ay
V2A2 Right Rear Sill Az
V2A3 Rear Floorpan Ax
V2A3 Rear Floorpan Ay
V2A3 Rear Floorplan Az
V2A4 Left Rear Sill Ay
V2A5 Left Front Sill Ay
V2A7 Right Rear Compartment Ay
V2A12 Left Lower B Post Ay
V2A13 Left Mid B Post Ay
V2A14 Left Lower A Post Ay
V2A15 Left Mid A Post Ay
V2A16 Front Seat Track Ay
V2A17 Rear Seat Track Ay
V2A18 Target CG Ax
V2A18 Target CG Ay
V2A18 Target CG Az
V1 Moving Barrier CG Ax
V1 Moving Barrier CG Ay
V1 Moving Barrier CG Az
V1 Moving Barrier Left Rail Ax
V1 Moving Barrier Left Rail Ay

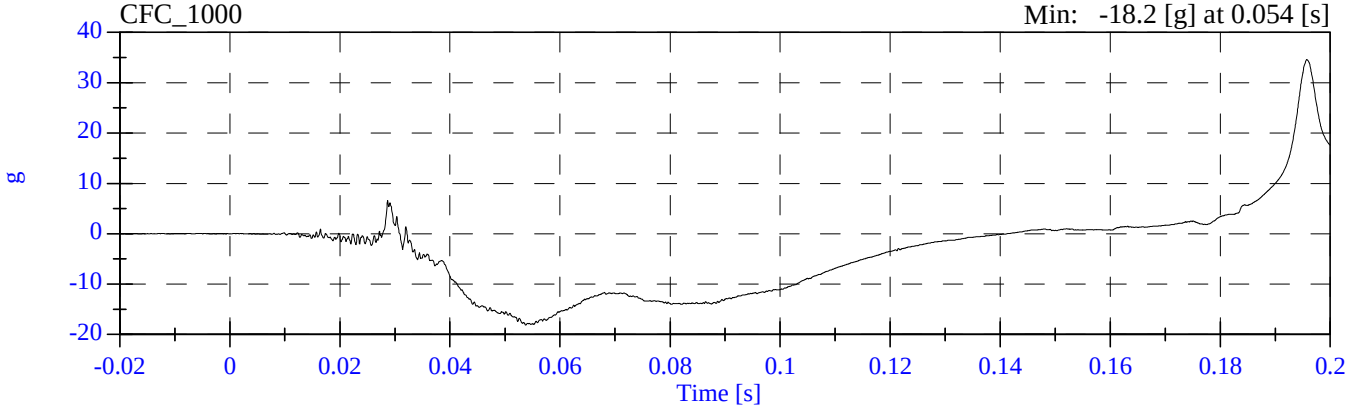
TEST NOTES

The following data anomalies occurred:

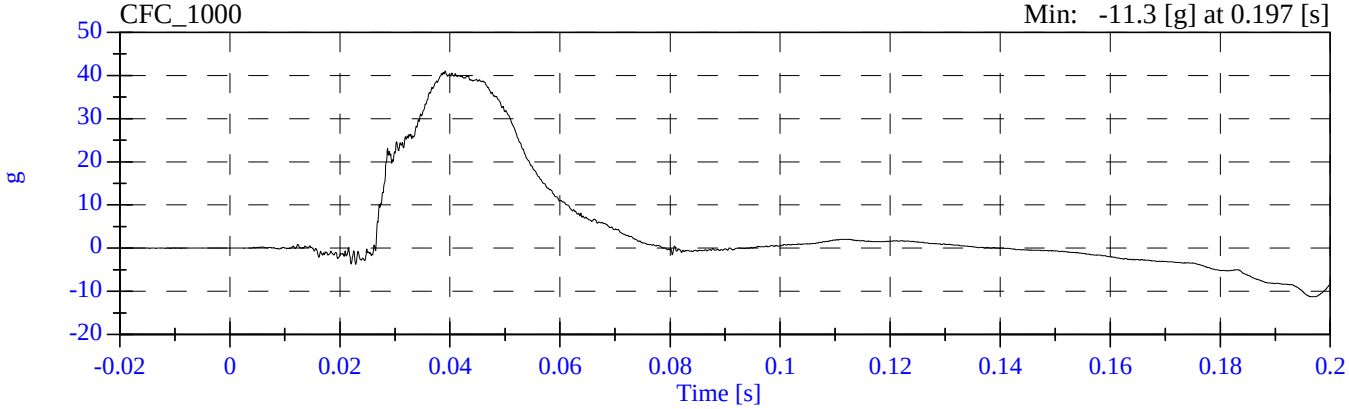
V2P4 Head CG Ax	Spikes in Data

2008 FMVSS 214D Test 4 2008 Mini Cooper
M80503 - January 29, 2008

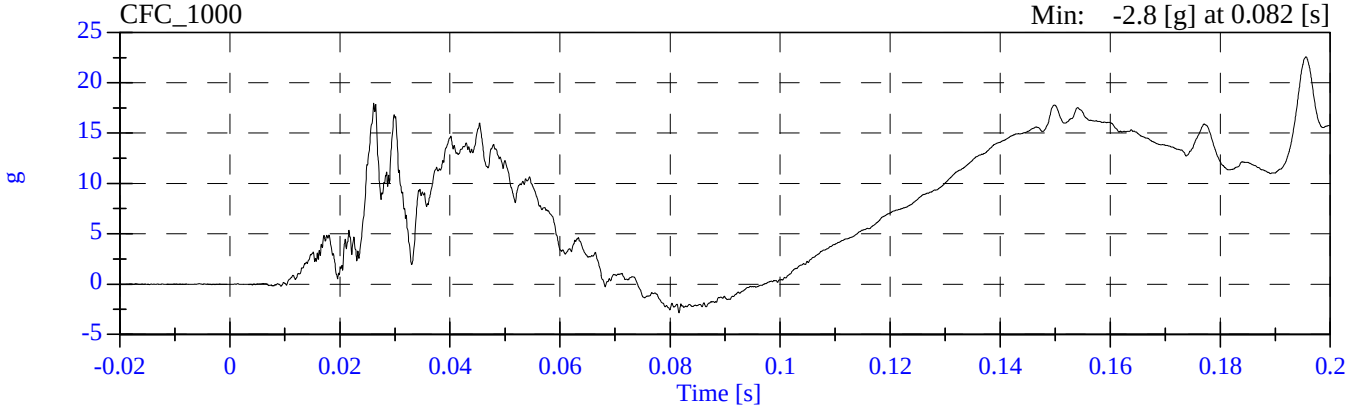
V2P1 Head x
CFC_1000
Max: 34.6 [g] at 0.196 [s]
Min: -18.2 [g] at 0.054 [s]



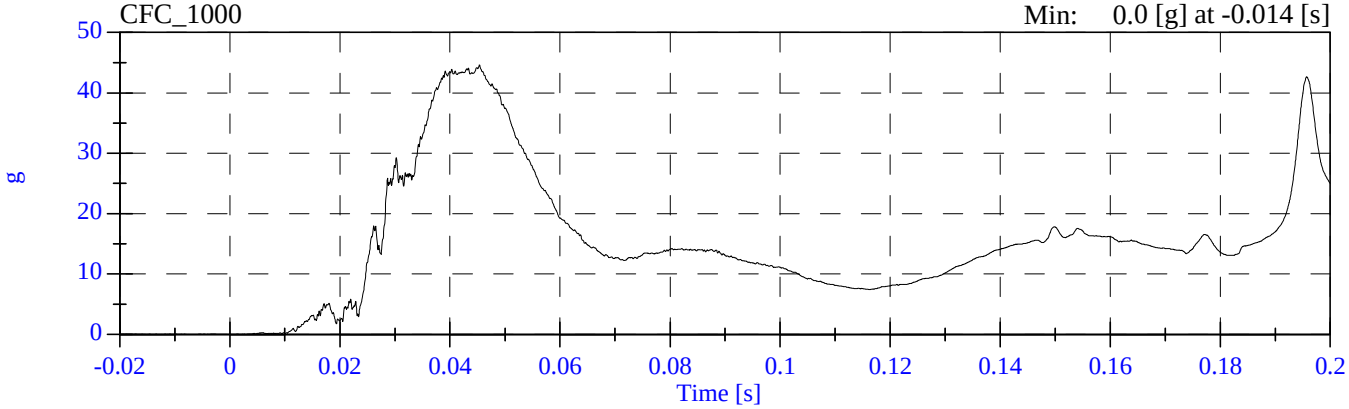
V2P1 Head y
CFC_1000
Max: 41.0 [g] at 0.039 [s]
Min: -11.3 [g] at 0.197 [s]



V2P1 Head z
CFC_1000
Max: 22.6 [g] at 0.196 [s]
Min: -2.8 [g] at 0.082 [s]

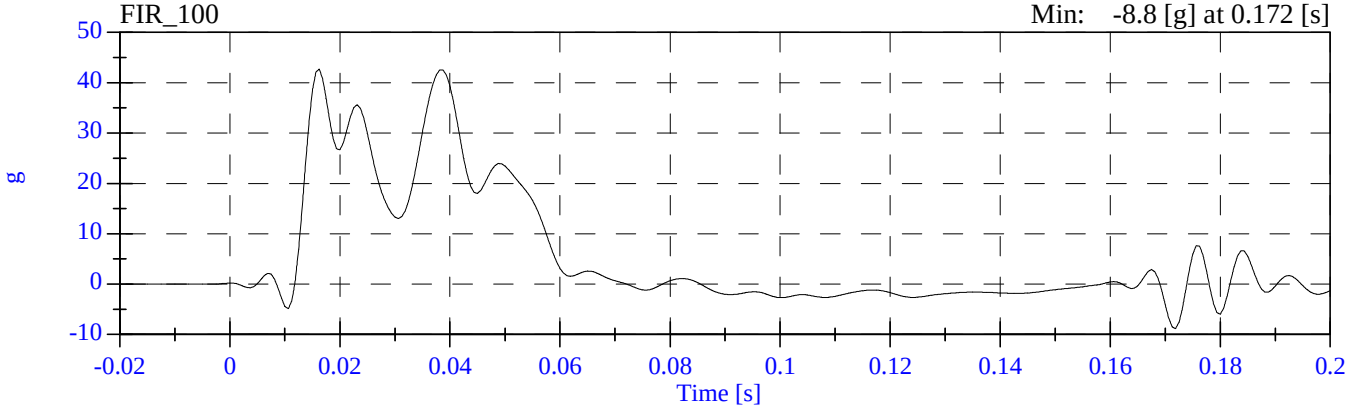


V2P1 Head Resultant
CFC_1000
Max: 44.6 [g] at 0.045 [s]
Min: 0.0 [g] at -0.014 [s]

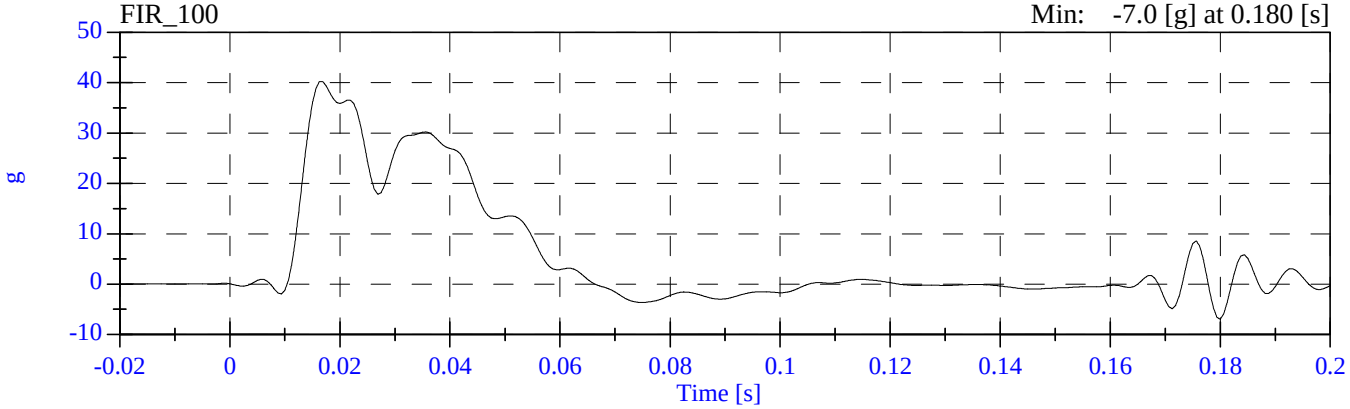


2008 FMVSS 214D Test 4 2008 Mini Cooper
M80503 - January 29, 2008

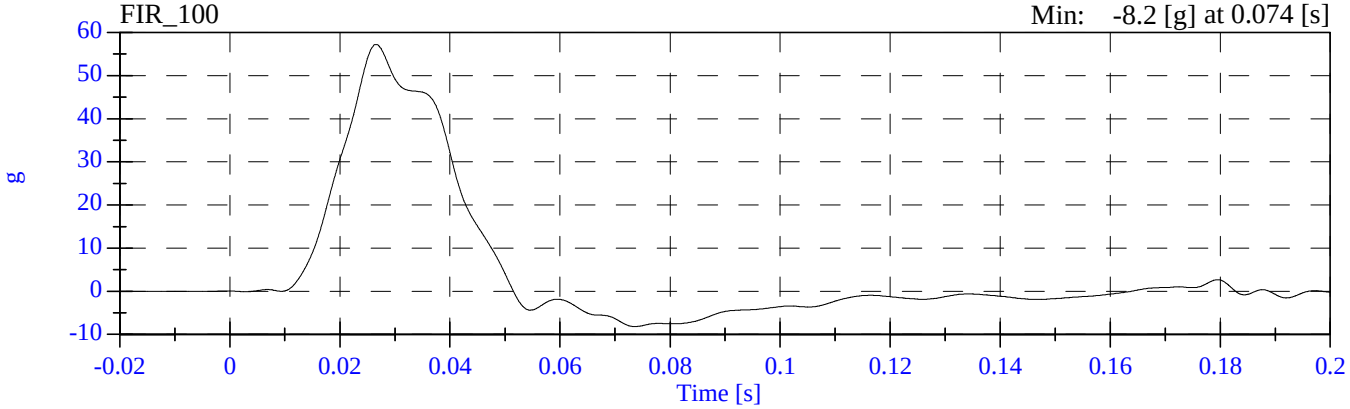
V2P1 Upper Rib y
FIR_100
Max: 42.7 [g] at 0.016 [s]
Min: -8.8 [g] at 0.172 [s]



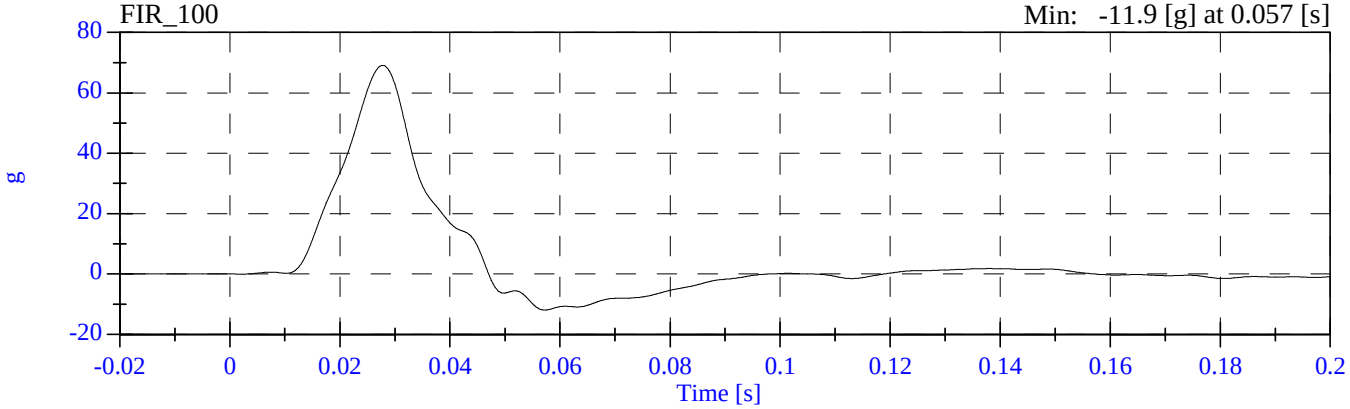
V2P1 Lower Rib y
FIR_100
Max: 40.2 [g] at 0.017 [s]
Min: -7.0 [g] at 0.180 [s]



V2P1 Lower Spine y
FIR_100
Max: 57.2 [g] at 0.026 [s]
Min: -8.2 [g] at 0.074 [s]

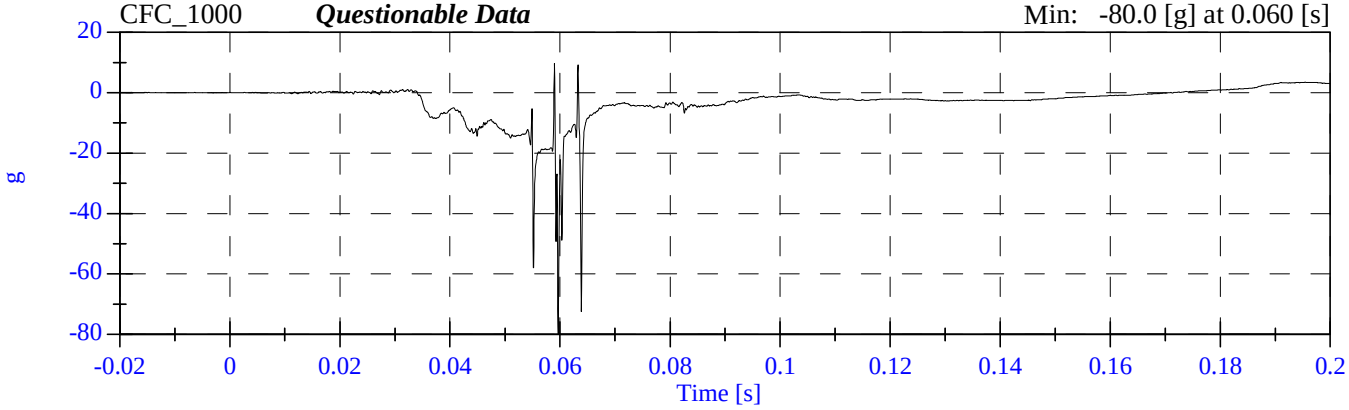


V2P1 Pelvic y
FIR_100
Max: 69.1 [g] at 0.027 [s]
Min: -11.9 [g] at 0.057 [s]

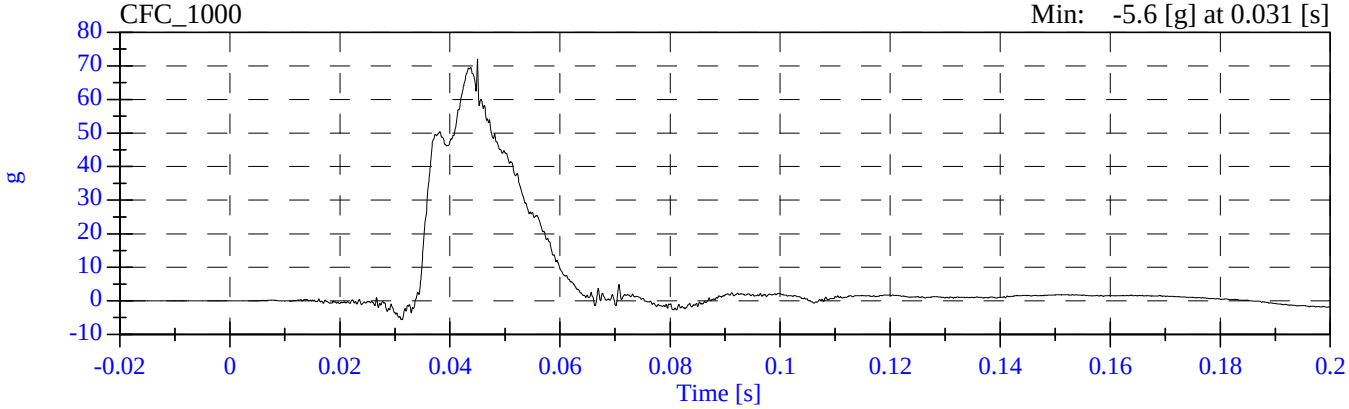


2008 FMVSS 214D Test 4 2008 Mini Cooper
M80503 - January 29, 2008

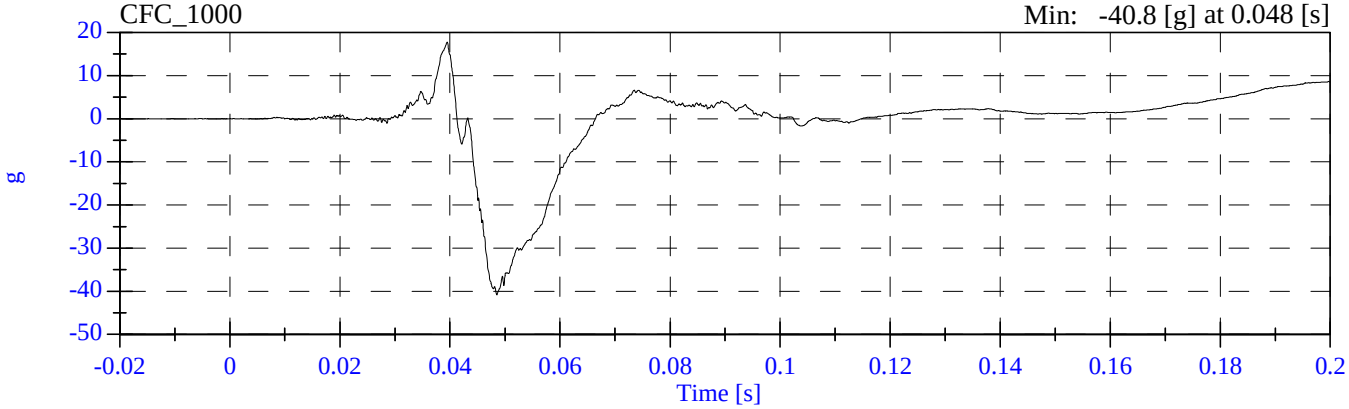
V2P4 Head x
CFC_1000 ***Questionable Data***
Max: 9.6 [g] at 0.059 [s]
Min: -80.0 [g] at 0.060 [s]



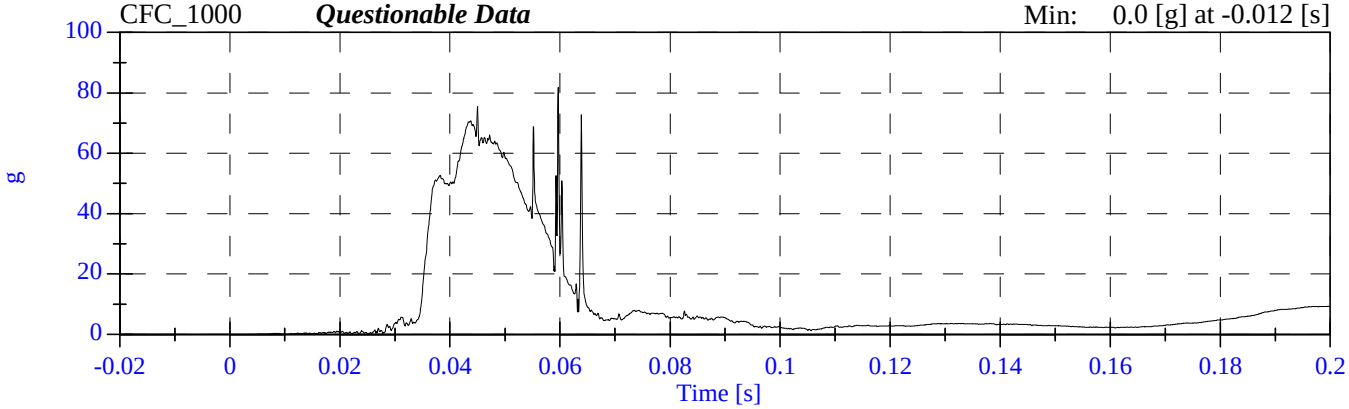
V2P4 Head y
CFC_1000
Max: 72.0 [g] at 0.045 [s]
Min: -5.6 [g] at 0.031 [s]



V2P4 Head z
CFC_1000
Max: 17.8 [g] at 0.039 [s]
Min: -40.8 [g] at 0.048 [s]

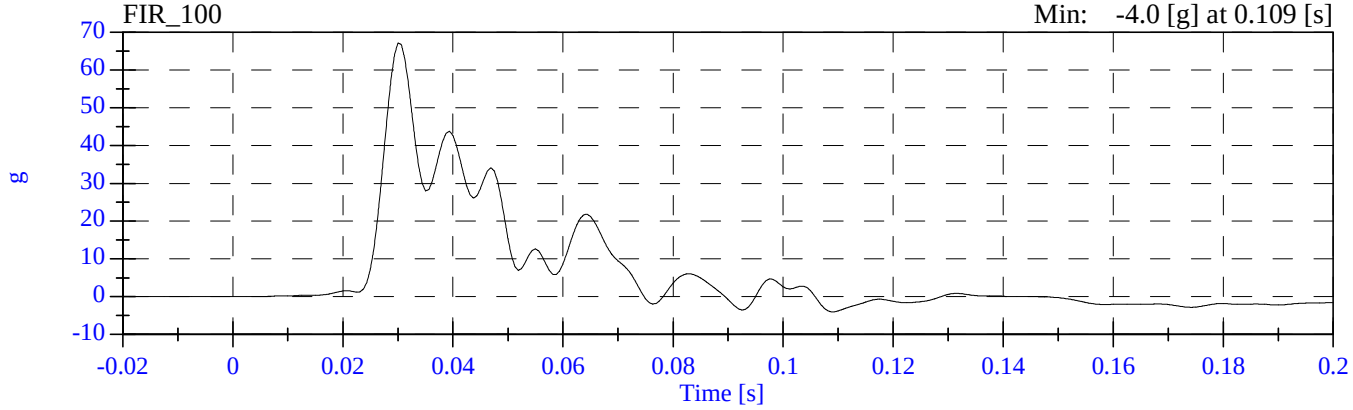


V2P4 Head Resultant
CFC_1000 ***Questionable Data***
Max: 81.8 [g] at 0.060 [s]
Min: 0.0 [g] at -0.012 [s]

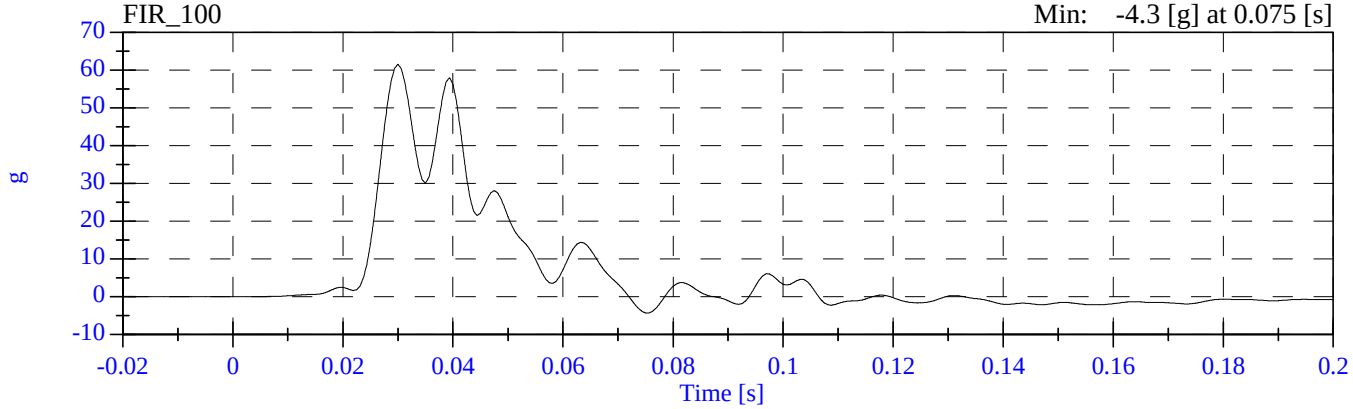


2008 FMVSS 214D Test 4 2008 Mini Cooper
M80503 - January 29, 2008

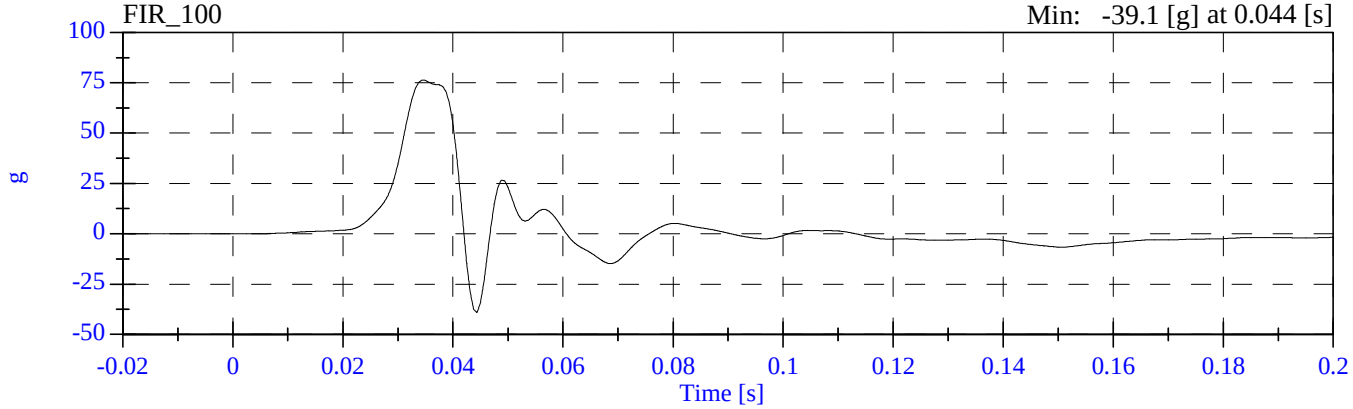
V2P4 Upper Rib y
FIR_100
Max: 67.2 [g] at 0.030 [s]
Min: -4.0 [g] at 0.109 [s]



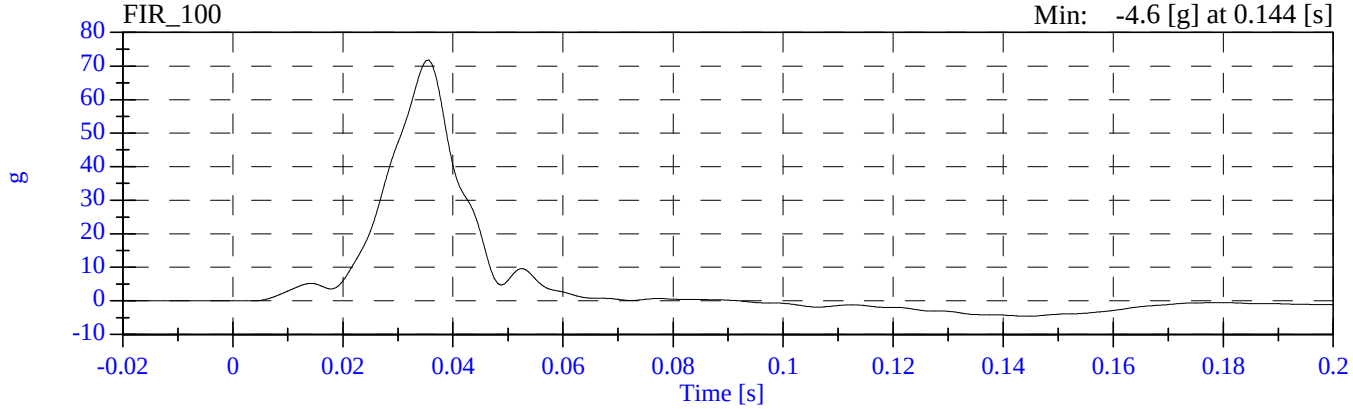
V2P4 Lower Rib y
FIR_100
Max: 61.6 [g] at 0.030 [s]
Min: -4.3 [g] at 0.075 [s]



V2P4 Lower Spine y
FIR_100
Max: 76.4 [g] at 0.034 [s]
Min: -39.1 [g] at 0.044 [s]



V2P4 Pelvic y
FIR_100
Max: 71.8 [g] at 0.036 [s]
Min: -4.6 [g] at 0.144 [s]



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: January 23, 2008; Sequential Test Number: 2;3
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 906		SID H3 NO.: 905	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	902	902
RH- Rib Height (mm)	501 - 521	511	511	513	513
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	239	239	239	239
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518	521	521
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	493	493
HW- Hip Width (mm)	356 - 391	386	386	381	381
THORAX IMPACTS					
TEMPERATURE (• C)	18.9 - 25.5	21.10	21.1	21.10	21.1
RELATIVE. HUMIDITY (%)	10 -70	18.00	33.00	18.00	33.00
PROBE SPEED (m/s)	4.27 - 4.33	4.27	4.29	4.27	4.29
UPPER RIB (g's)	37 - 46	38.11	37.21	43.51	45.31
LOWER RIB (g's)	37 - 46	37.78	37.91	42.60	44.34
LOWER SPINE (g's)	15 -22	20.43	19.82	21.53	21.48
PELVIS IMPACT					
TEMPERATURE (• C)	18.9 - 25.5	21.10	21.1	21.10	21.1
RELATIVE HUMIDITY (%)	10 - 70	20.00	33.00	18.00	33.00
PROBE SPEED (m/s)	4.27 - 4.33	4.27	4.29	4.28	4.27
PELVIS (g's)	40 -60	56.21	52.47	44.31	44.27

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 906

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 2
Date: January 23, 2008 Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 2
Date: January 23, 2008 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	902
RH- Rib Height (mm)	502 – 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	239
KH- Knee Pivot from Back Line (mm)	511 – 526	518
KV- Knee Pivot to Floor (mm)	490 – 505	493
HW- Hip Width (mm)	356 - 391	386

REMARKS: None

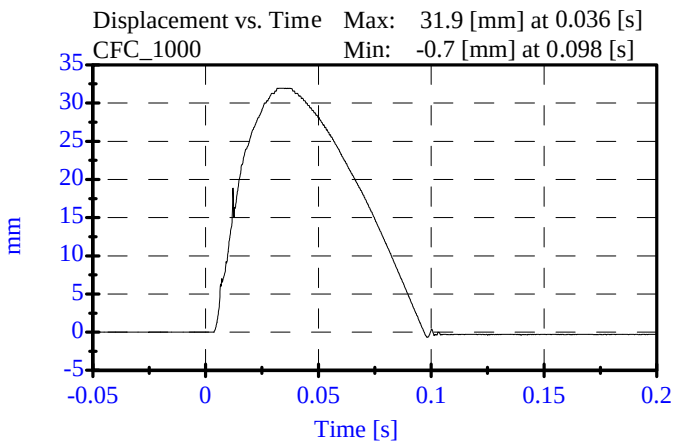
Shock Impact Low (3.05 m/s)
PRE TEST

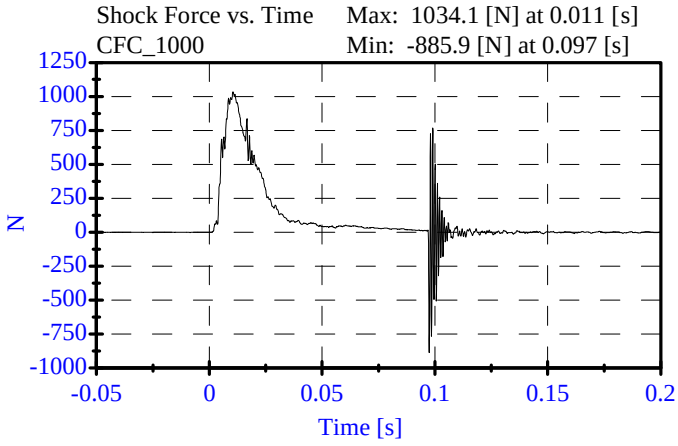
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906 Sequential Test Number: 1 File: 906SL 08-1-07
Date: 08-01-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Displacement:	30.00-35.00 mm	31.95 mm	Passed
Maximum Force:	836.00-1125.00 N	1034.07 N	Passed

Impact Test Velocity: 3.05 m/s
Damper Identification: 906
Damper Setting: 5





Shock Impact Med (4.27 m/s)

PRE TEST

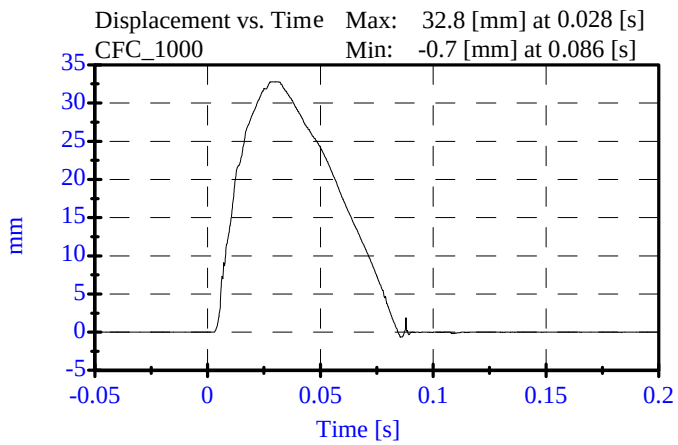
CONFIGURED FOR LEFT SIDE IMPACT

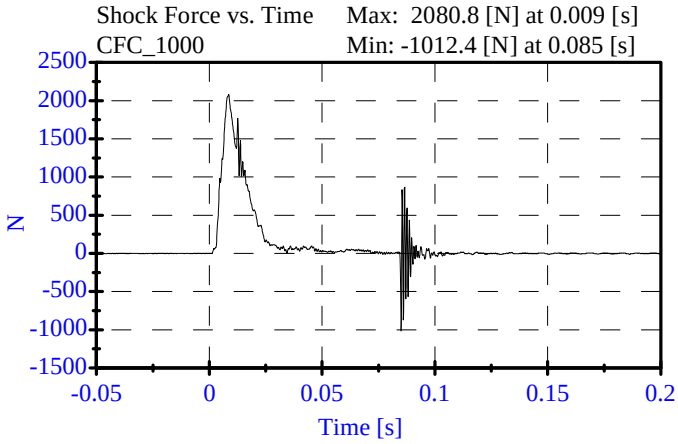
ATD Serial No: 906 Sequential Test Number: 1 File: 906SM 08-1-07

Date: 08-01-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Displacement:	32.00-37.00 mm	32.78 mm	Passed
Maximum Force:	1730.00-2099.00 N	2080.78 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 906
Damper Setting: 5





Shock Impact high (6.10 m/s)

PRE TEST

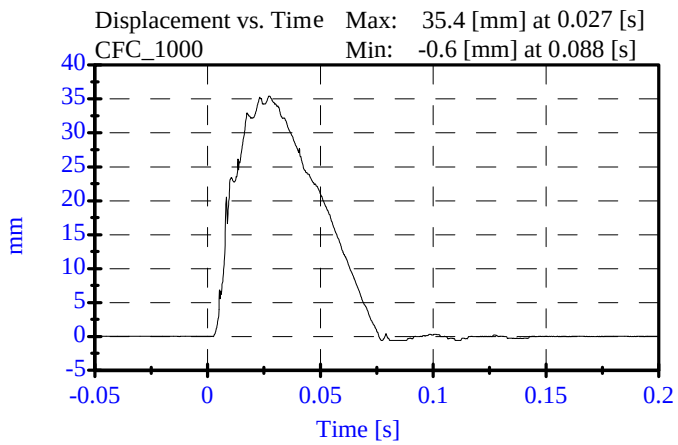
CONFIGURED FOR LEFT SIDE IMPACT

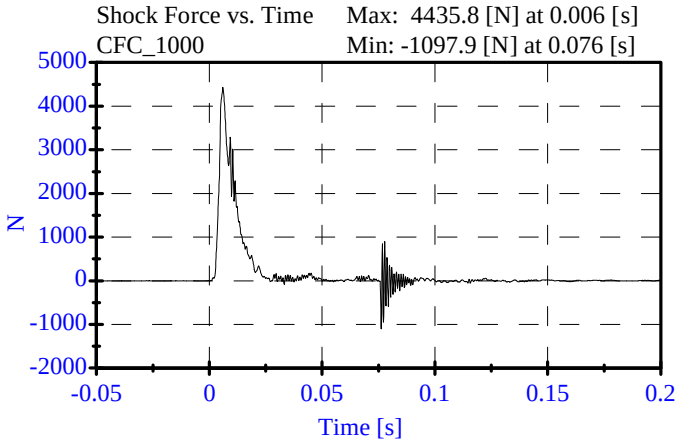
ATD Serial No: 906 Sequential Test Number: 1 File: 906SH 08-1-07

Date: 08-01-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Displacement:	33.00-40.00 mm	35.42 mm	Passed
Maximum Force:	3741.00-4448.00 N	4435.77 N	Passed

Impact Test Velocity: 6.10 m/s
Damper Identification: 906
Damper Setting: 5





Thorax Impact

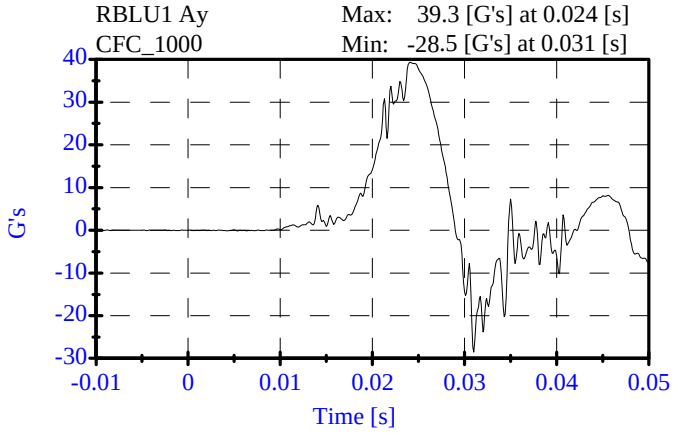
Pre-Test

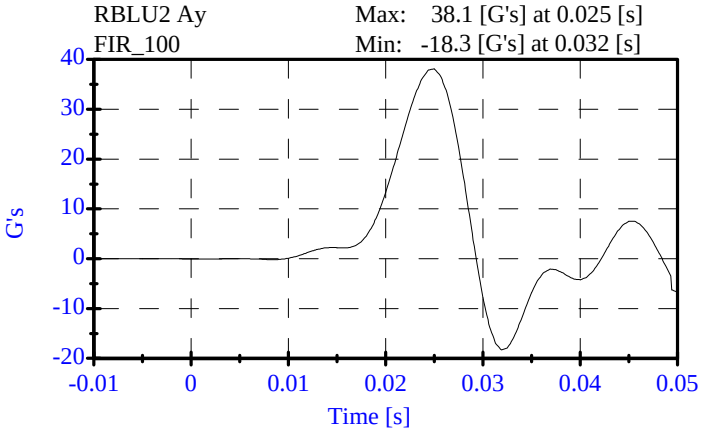
CONFIGURED FOR LEFT SIDE IMPACT

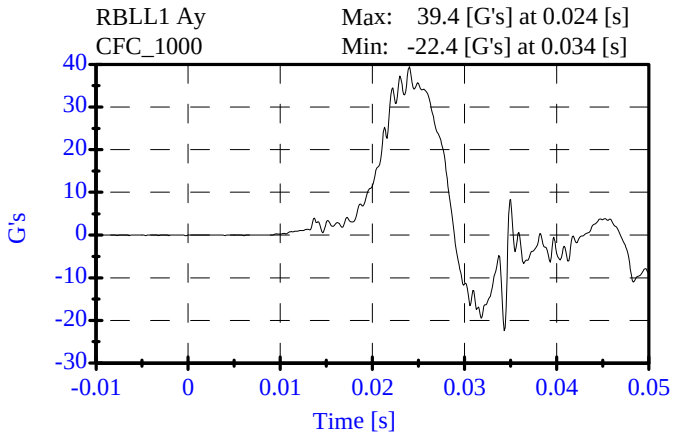
ATD Serial No: 906 Sequential Test Number: 1 File: 906T7 01-21-08

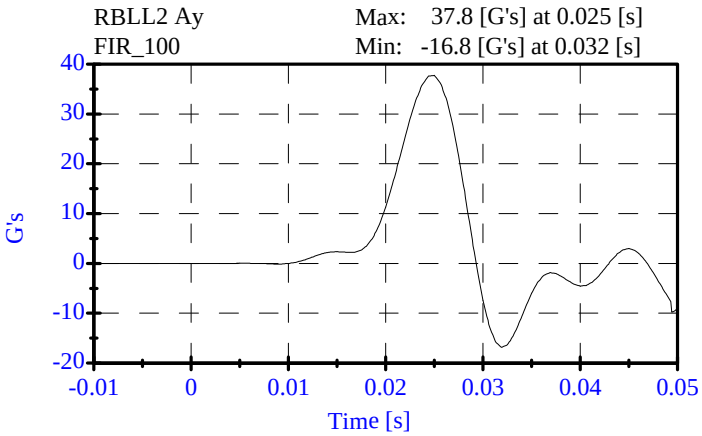
Date: 01-21-08 Laboratory Technician: B. Swiecicki

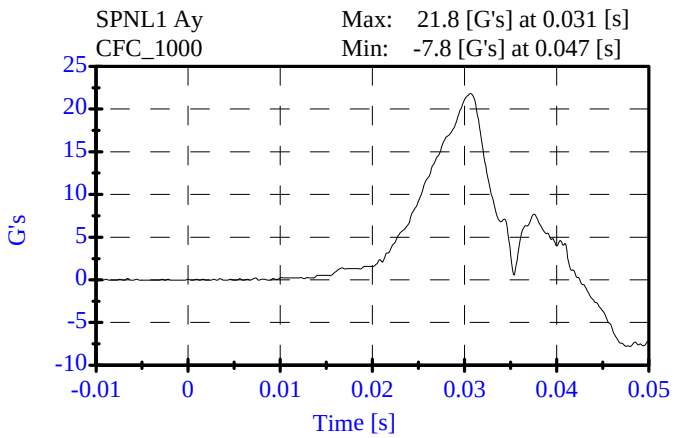
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	38.11 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	37.78 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	20.43 G's	Passed

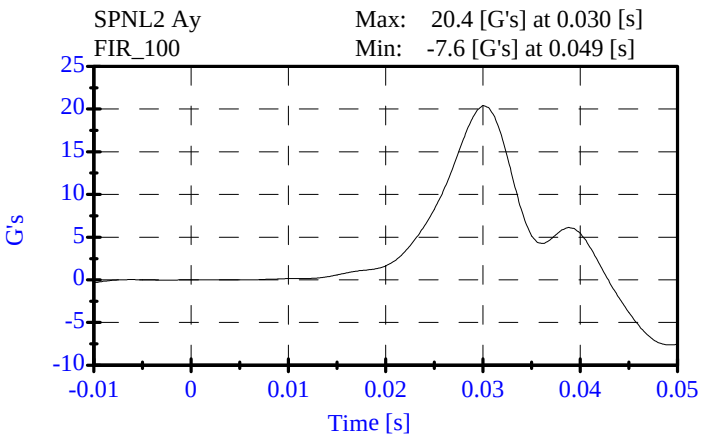












Pelvis Impact

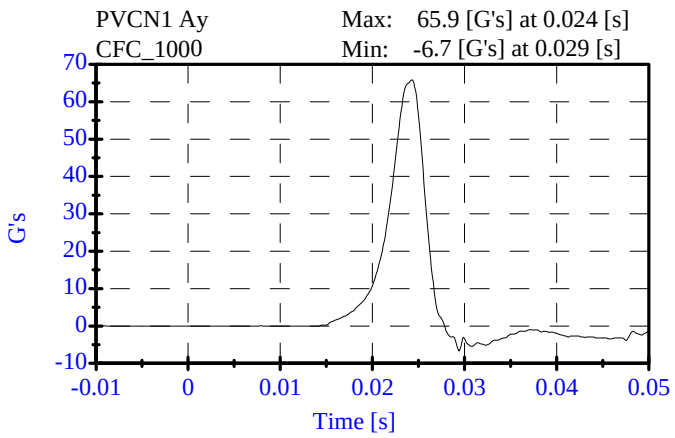
Pre-Test

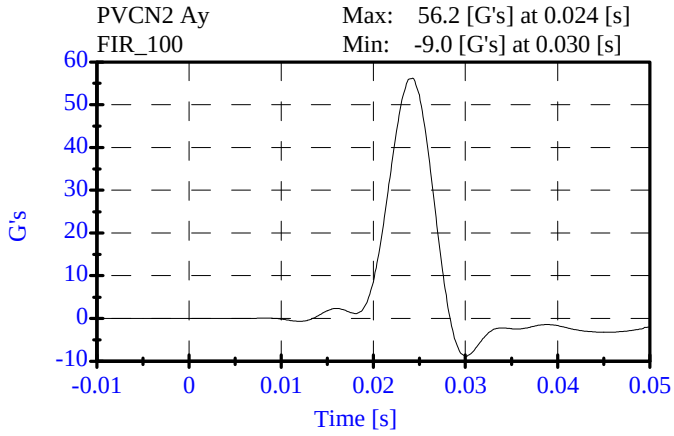
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906 Sequential Test Number: 1 File: 906P 01-17-08

Date: 01-18-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	20.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	56.21 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.1 ms	Passed





Head Drop

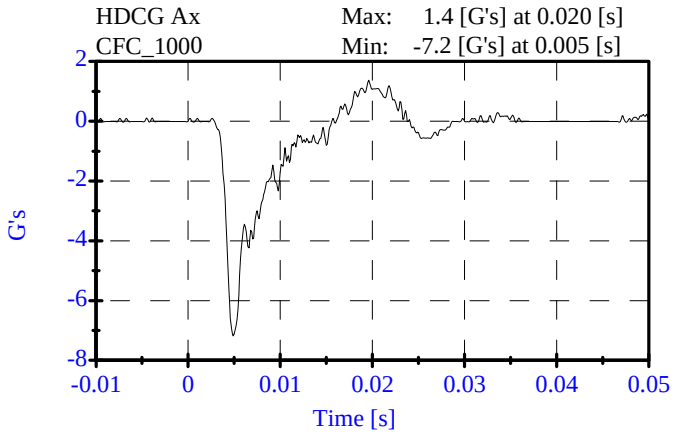
Pre-Test

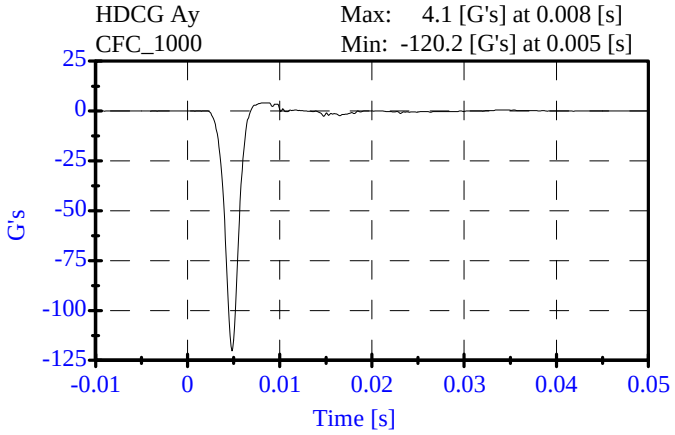
CONFIGURED FOR LEFT SIDE IMPACT

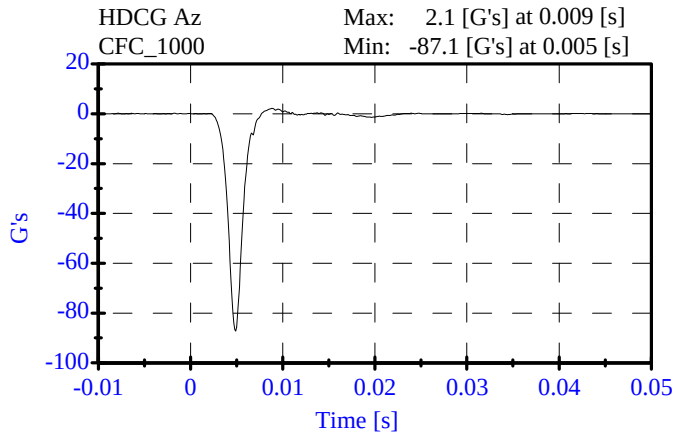
ATD Serial No: 906 Sequential Test Number: 1 File: 906H 01-16-08

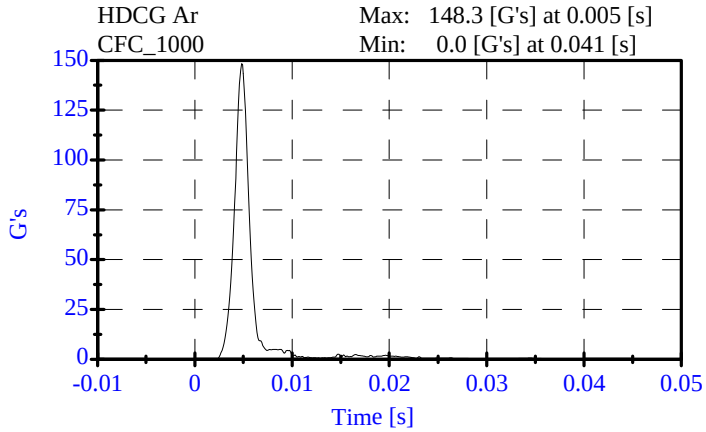
Date: 01-16-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	20.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	148.33 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.36 Gs	Passed
Curve PerCent NonModal:	< 15%	6.25 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906 Sequential Test Number: 1 File: 906N 01-17-08

Date: 01-17-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.35 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.77 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.72 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.03 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	72.05 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.50 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	86.47 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	56.10 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.90 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

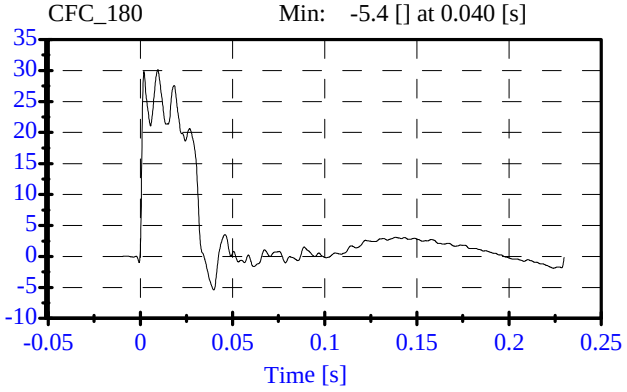
ATD Serial No: 906

Sequential Test Number: 1 File: 906N 01-17-08

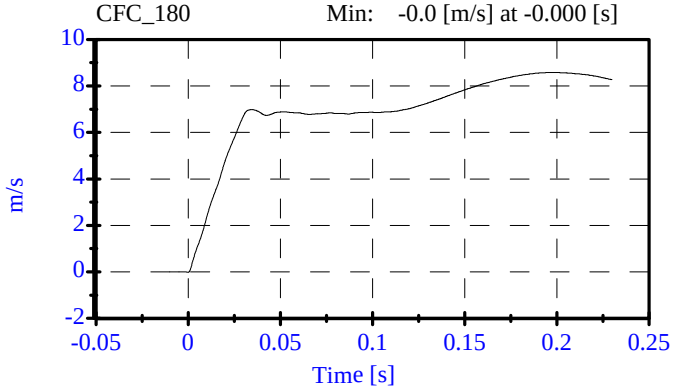
Date: 01-17-08

Laboratory Technician: B. Swiecicki

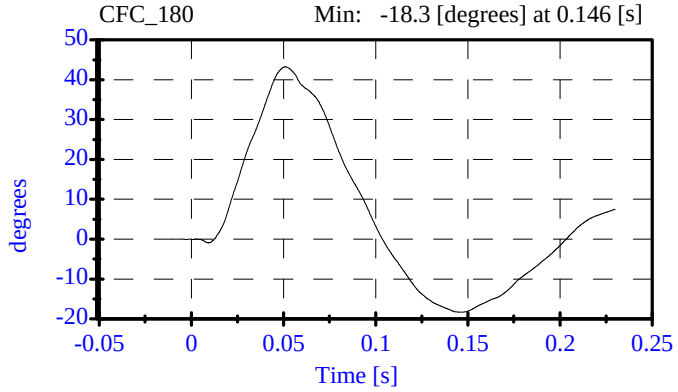
Pend Ax
CFC_180
Max: 30.1 [] at 0.009 [s]
Min: -5.4 [] at 0.040 [s]



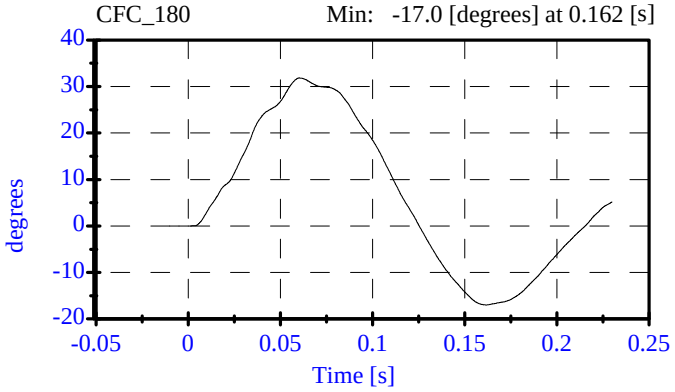
Pend Vx
CFC_180
Max: 8.6 [m/s] at 0.197 [s]
Min: -0.0 [m/s] at -0.000 [s]



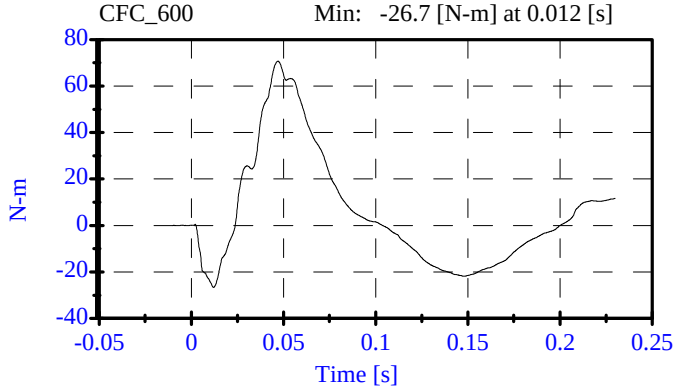
Head Rot
CFC_180
Max: 43.3 [degrees] at 0.051 [s]
Min: -18.3 [degrees] at 0.146 [s]



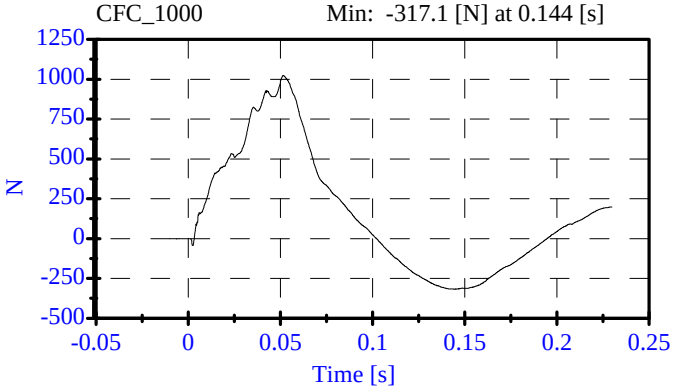
Arm Rot
CFC_180
Max: 31.8 [degrees] at 0.060 [s]
Min: -17.0 [degrees] at 0.162 [s]



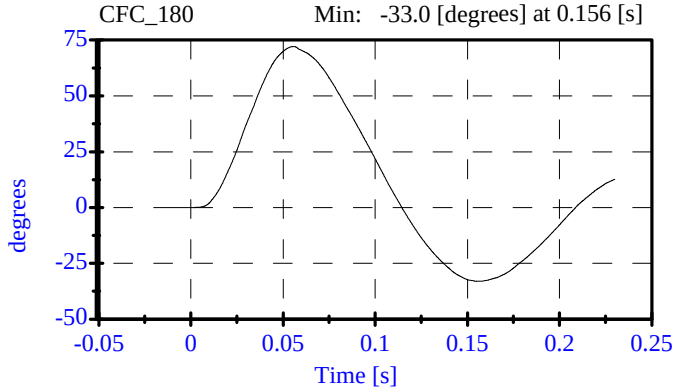
Neck Mx
CFC_600
Max: 70.6 [N-m] at 0.047 [s]
Min: -26.7 [N-m] at 0.012 [s]



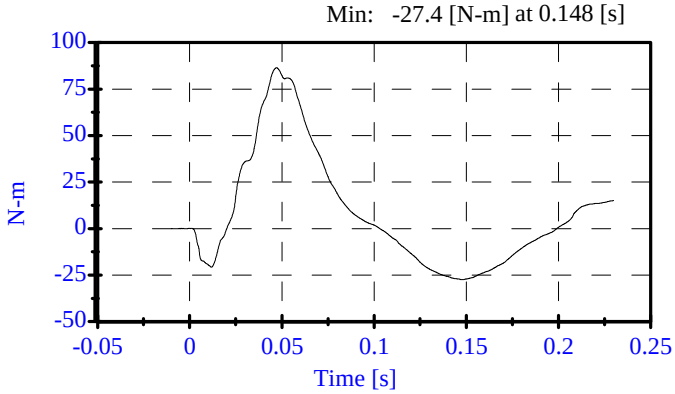
Neck Fy
CFC_1000
Max: 1024.0 [N] at 0.051 [s]
Min: -317.1 [N] at 0.144 [s]



Tot Rot
CFC_180
Max: 72.1 [degrees] at 0.056 [s]
Min: -33.0 [degrees] at 0.156 [s]



MOCX
Max: 86.5 [N-m] at 0.047 [s]
Min: -27.4 [N-m] at 0.148 [s]



Abdominal Compression Test

Pre-Test

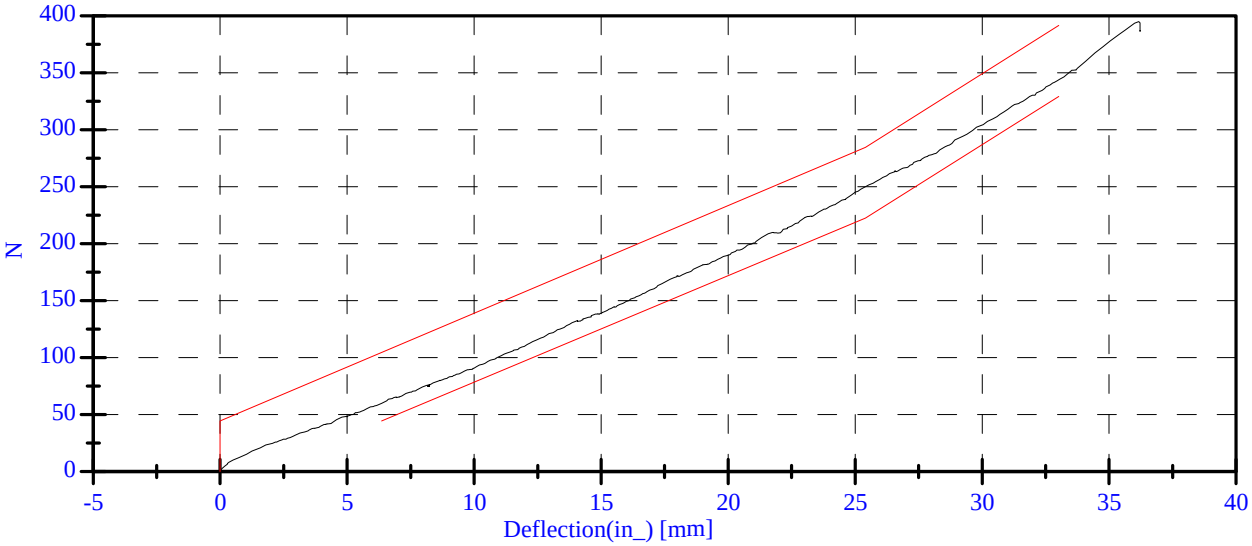
CONFIGURED FOR LEFT SIDE IMPACT

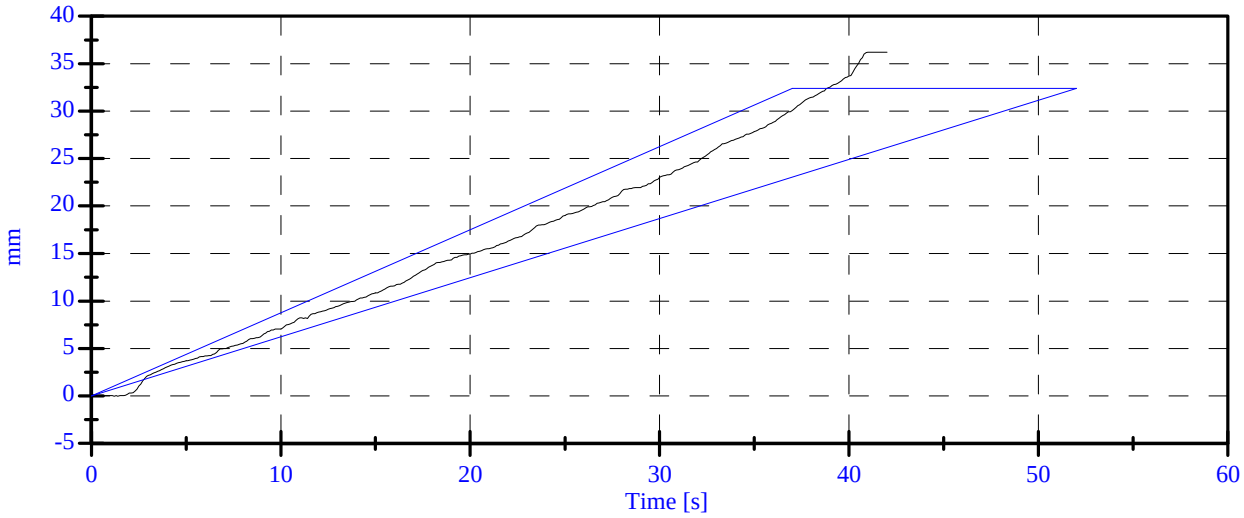
ATD Serial No: 906 Sequential Test Number: 1 File: 906 Ab 01-21-08

Date: 01-21-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	120.87 N	Passed
Force at 19.05 mm :	162.98-220.99 N	181.41 N	Passed
Force at 25.40 mm :	221.97-280.02 N	249.92 N	Passed
Force at 33.02 mm :	324.99-391.00 N	344.52 N	Passed

ABDOMINAL COMPRESSION TEST





Spine Test
Pre-Test

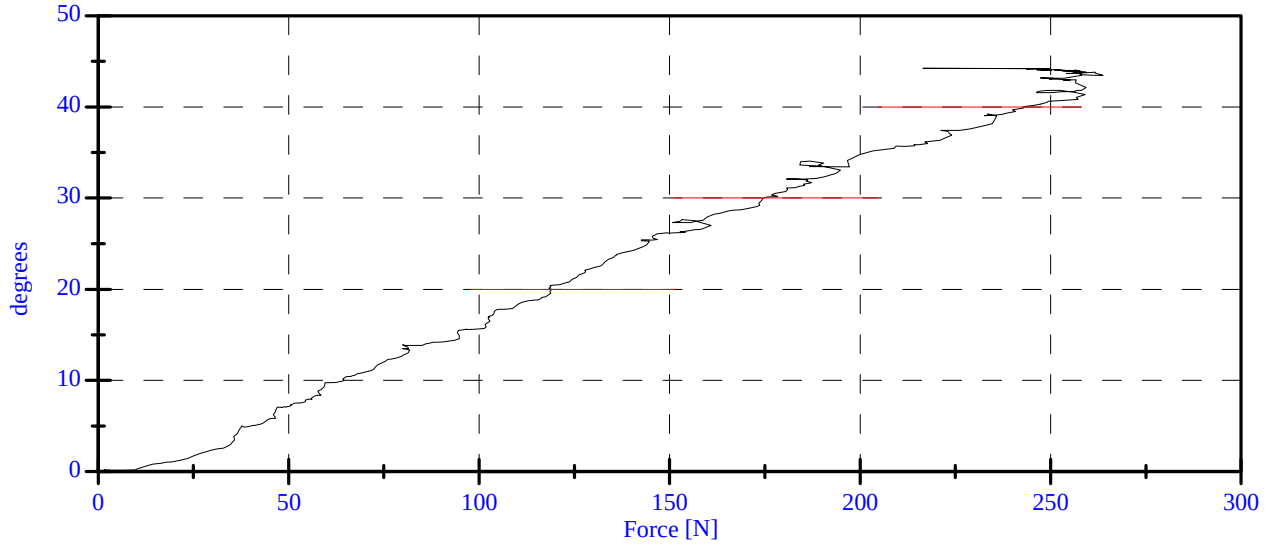
CONFIGURED FOR LEFT SIDE IMPACT

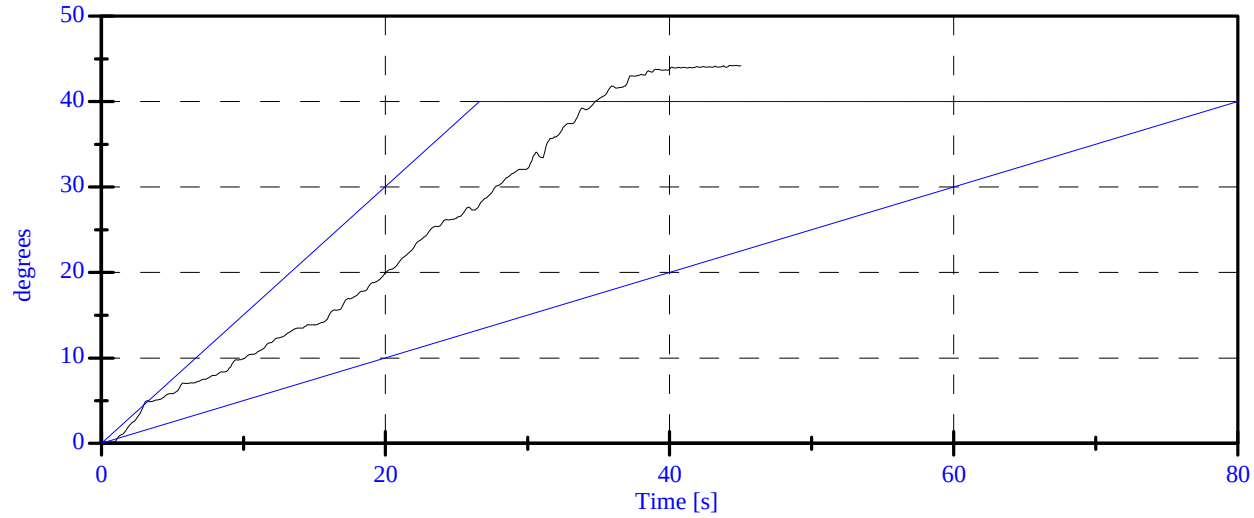
ATD Serial No: 906
Date: 01-21-08

Sequential Test Number: 1 File: 906 Spine 01-21-08
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	1.56 N	Passed
Force at 20 Deg:	97.86-151.24 N	119.08 N	Passed
Force at 30 Deg	151.24-204.62 N	174.45 N	Passed
Force at 40 Deg	204.62-258.00 N	243.39 N	Passed
Return Angle	12 Deg Max	4.66 deg	Passed

LUMBAR SPINE FLEXION TEST





PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 2
Date: January 23, 2008 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 905

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 2
Date: January 23, 2008 Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 2
Date: January 23, 2008 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	381

REMARKS: None

Shock Impact Low (3.05 m/s)

PRE TEST

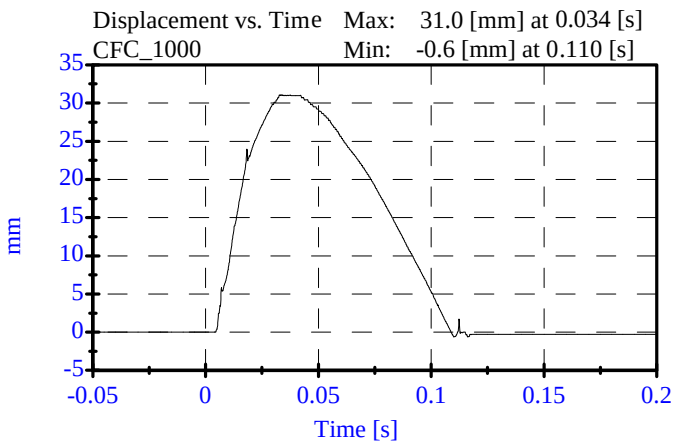
CONFIGURED FOR LEFT SIDE IMPACT

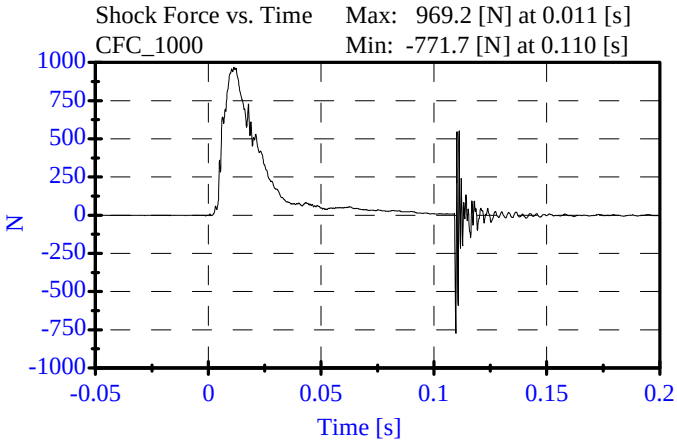
ATD Serial No: 905 Sequential Test Number: 1 File: 905SL 08-1-07

Date: 08-01-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Displacement:	30.00-35.00 mm	31.05 mm	Passed
Maximum Force:	836.00-1125.00 N	969.22 N	Passed

Impact Test Velocity: 3.05 m/s
Damper Identification: 905
Damper Setting: 5





Shock Impact Med (4.27 m/s)

PRE TEST

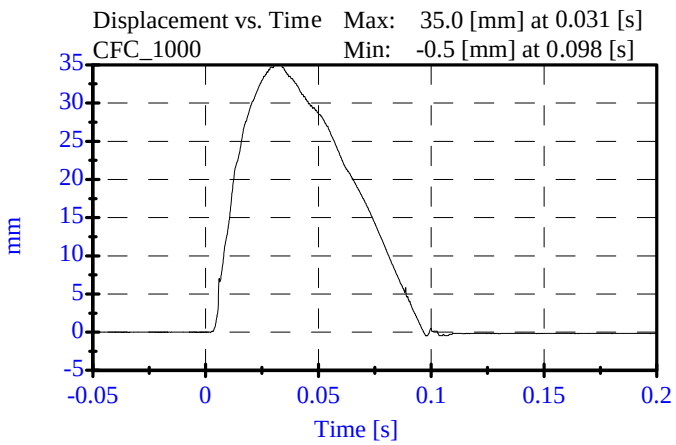
CONFIGURED FOR LEFT SIDE IMPACT

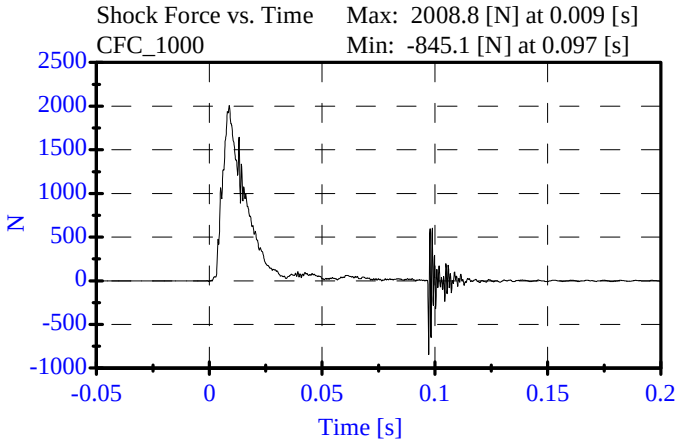
ATD Serial No: 905 Sequential Test Number: 1 File: 905SM 08-1-07

Date: 08-01-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Displacement:	32.00-37.00 mm	34.98 mm	Passed
Maximum Force:	1730.00-2099.00 N	2008.82 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 905
Damper Setting: 5





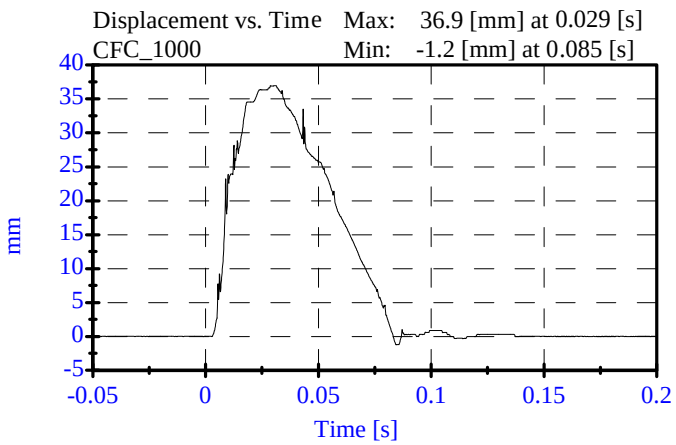
Shock Impact High (6.10 m/s)
PRE TEST

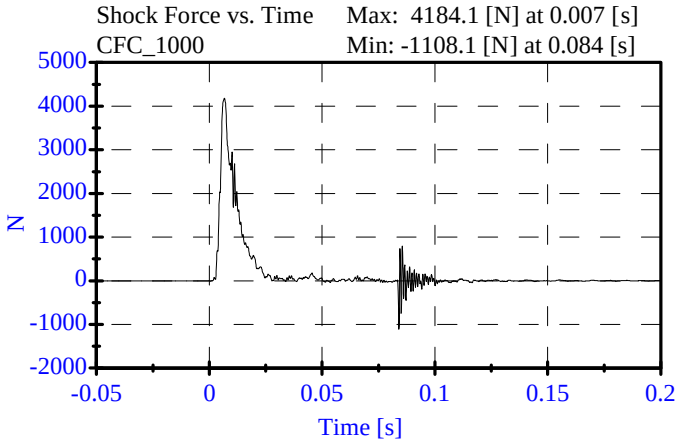
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905SH 08-1-07
Date: 08-01-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Displacement:	33.00-40.00 mm	36.94 mm	Passed
Maximum Force:	3741.00-4448.00 N	4184.07 N	Passed

Impact Test Velocity: 6.10 m/s
Damper Identification: 905
Damper Setting: 5





Thorax Side Impact

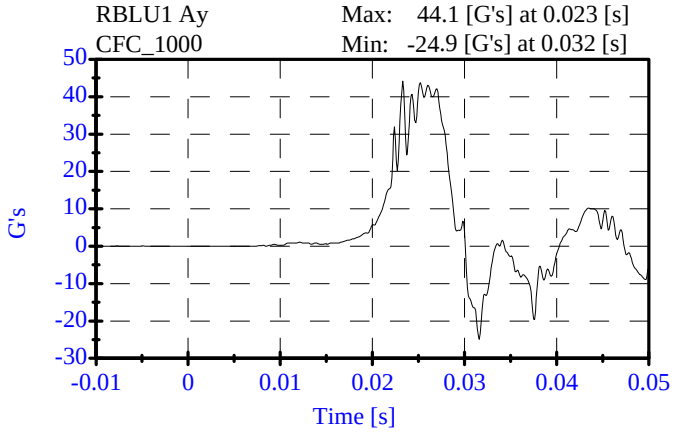
Pre-Test

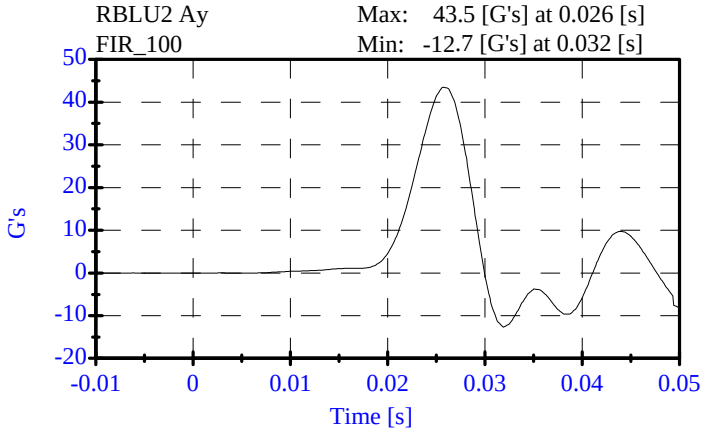
CONFIGURED FOR LEFT SIDE IMPACT

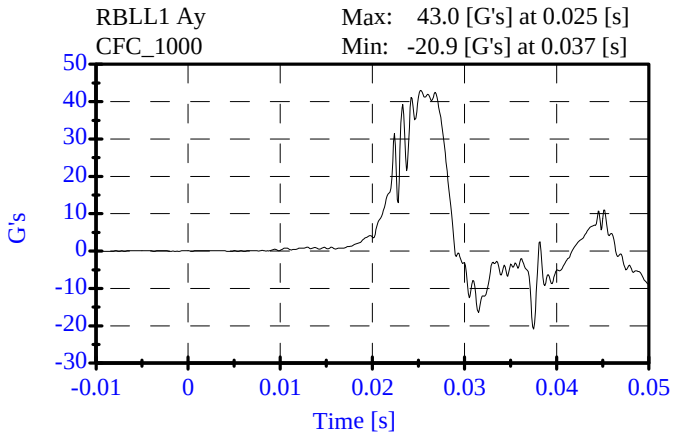
ATD Serial No: 905 Sequential Test Number: 1 File: 905T1 01-18-08

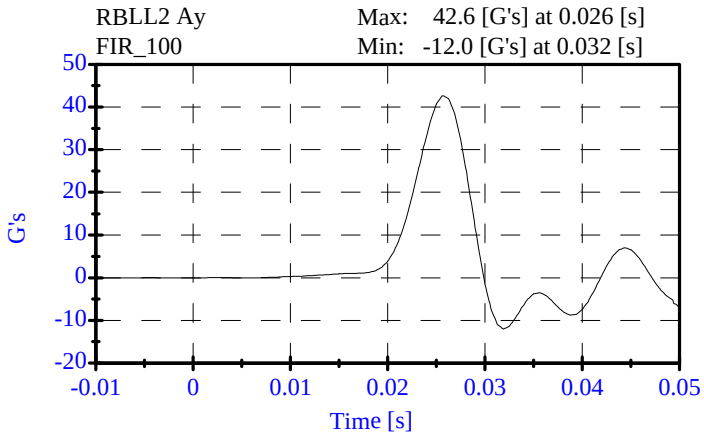
Date: 01-18-08 Laboratory Technician: B. Swiecicki

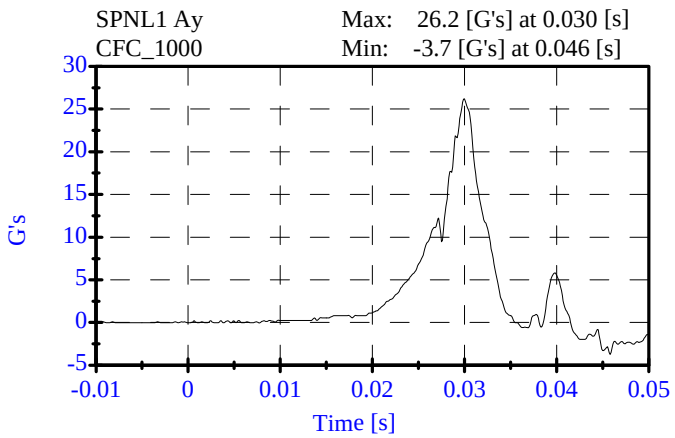
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	43.51 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	42.60 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.53 G's	Passed

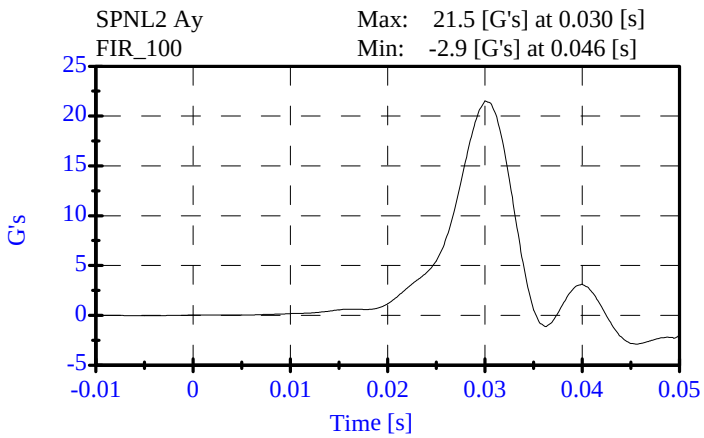












Pelvis Side Impact

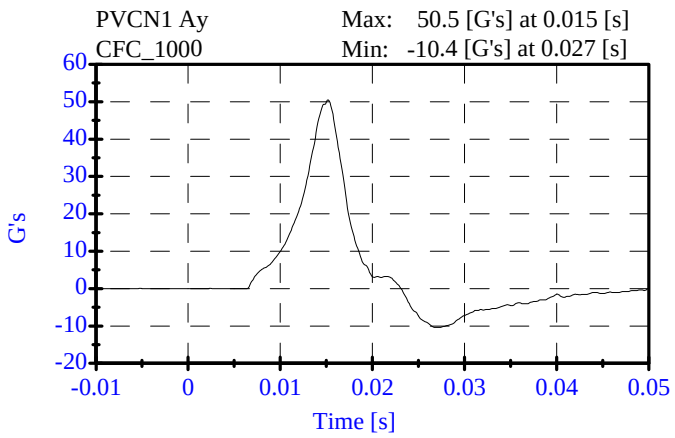
Pre-Test

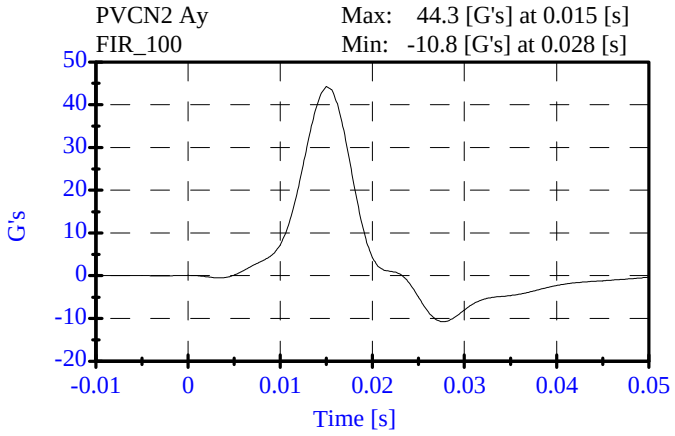
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905P 01-18-08

Date: 01-18-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	44.31 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.2 ms	Passed





Head Drop

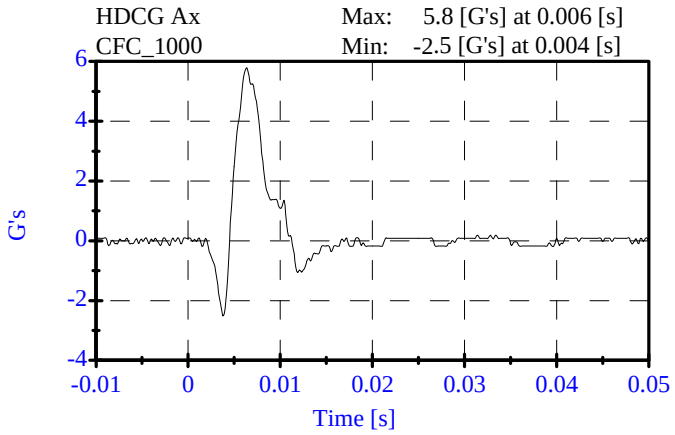
Pre-Test

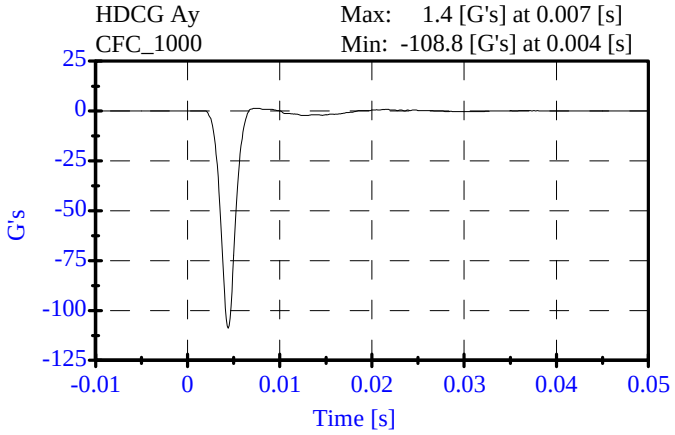
CONFIGURED FOR LEFT SIDE IMPACT

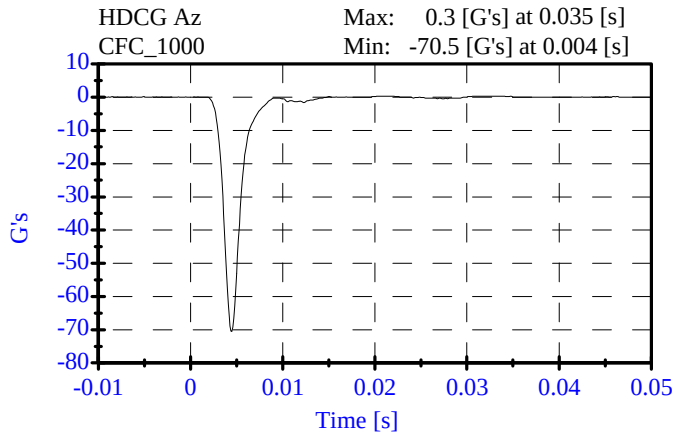
ATD Serial No: 905 Sequential Test Number: 1 File: 905H 01-16-08

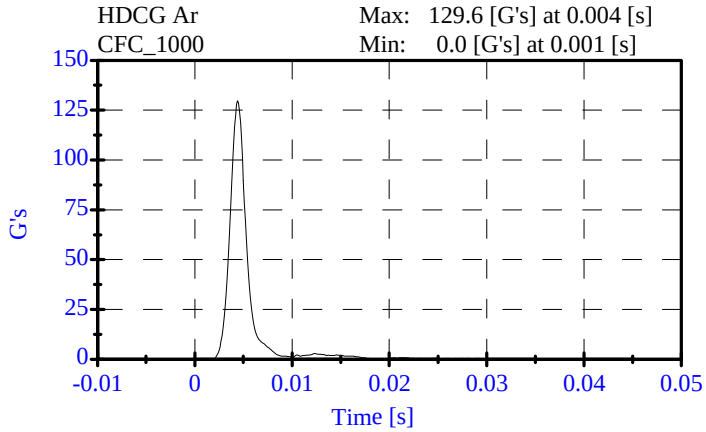
Date: 01-16-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.7 C	Passed
Lab Humidity:	10-70 %	20.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	129.63 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	5.78 Gs	Passed
Curve PerCent NonModal:	< 15%	2.28 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905N1 01-17-08

Date: 01-17-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.99 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.20 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.41 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.05 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.16 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	69.98 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.80 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	85.82 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	53.10 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	7.00 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

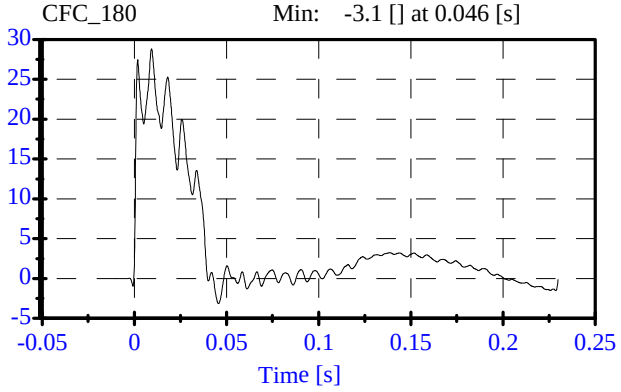
ATD Serial No: 905

Sequential Test Number: 1 File: 905N1 01-17-08

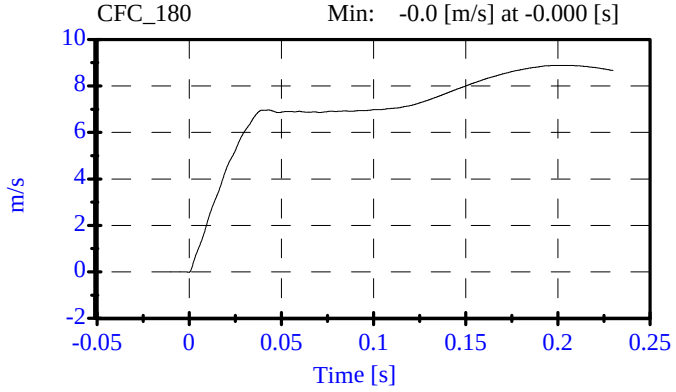
Date: 01-17-08

Laboratory Technician: B. Swiecicki

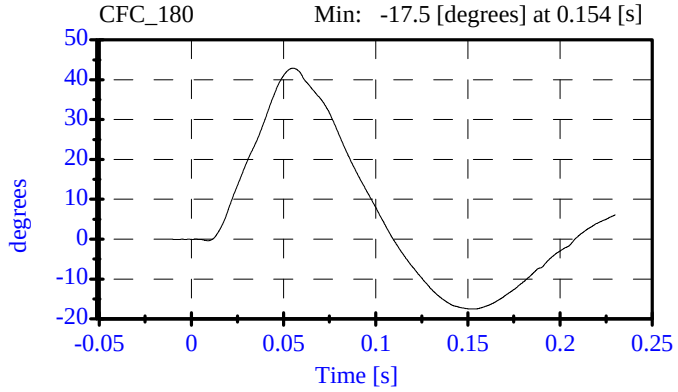
Pend Ax Max: 28.8 [] at 0.009 [s]
CFC_180 Min: -3.1 [] at 0.046 [s]



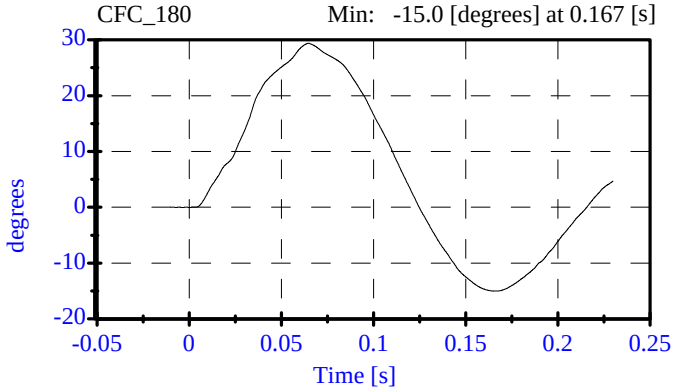
Pend Vx Max: 8.9 [m/s] at 0.201 [s]
CFC_180 Min: -0.0 [m/s] at -0.000 [s]



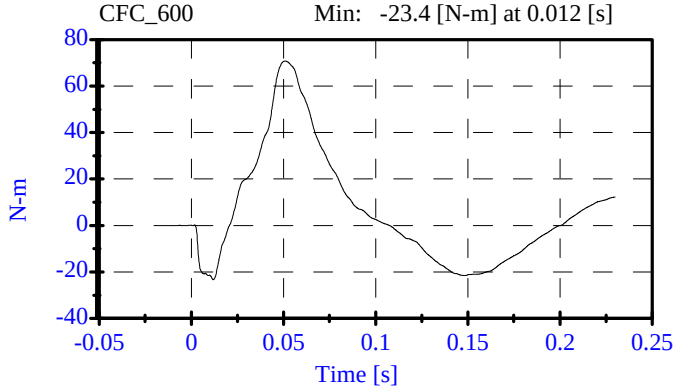
Head Rot Max: 42.9 [degrees] at 0.055 [s]
CFC_180 Min: -17.5 [degrees] at 0.154 [s]



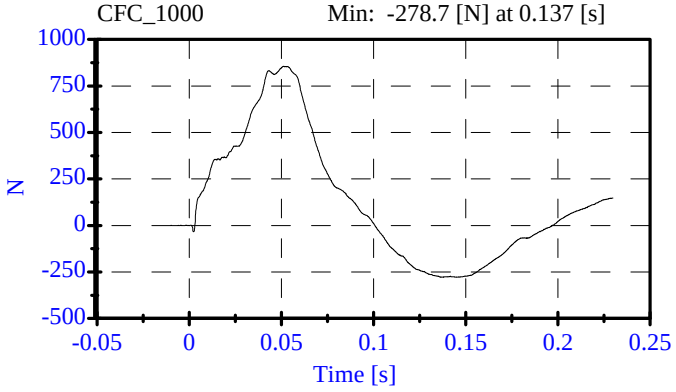
Arm Rot Max: 29.4 [degrees] at 0.065 [s]
CFC_180 Min: -15.0 [degrees] at 0.167 [s]



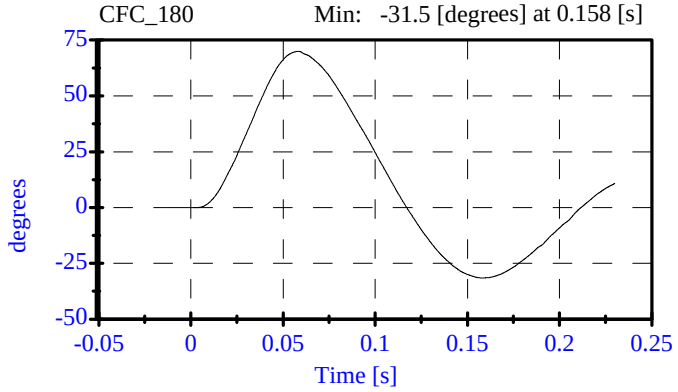
Neck Mx Max: 70.6 [N-m] at 0.051 [s]
CFC_600 Min: -23.4 [N-m] at 0.012 [s]



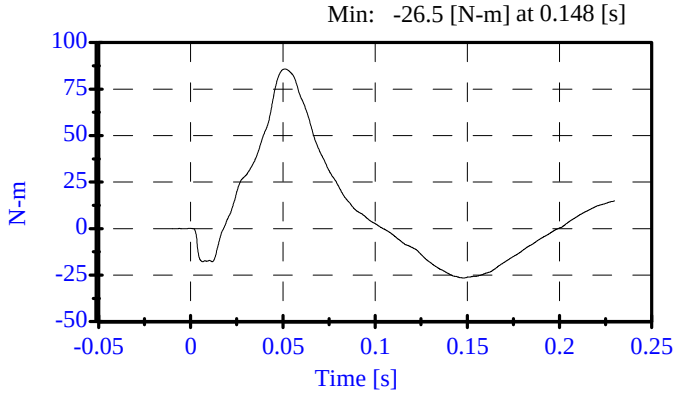
Neck Fy Max: 856.1 [N] at 0.051 [s]
CFC_1000 Min: -278.7 [N] at 0.137 [s]



Tot Rot Max: 70.0 [degrees] at 0.058 [s]
CFC_180 Min: -31.5 [degrees] at 0.158 [s]



MOCX Max: 85.8 [N-m] at 0.051 [s]
Min: -26.5 [N-m] at 0.148 [s]



Abdominal Compression Test

Pre-Test

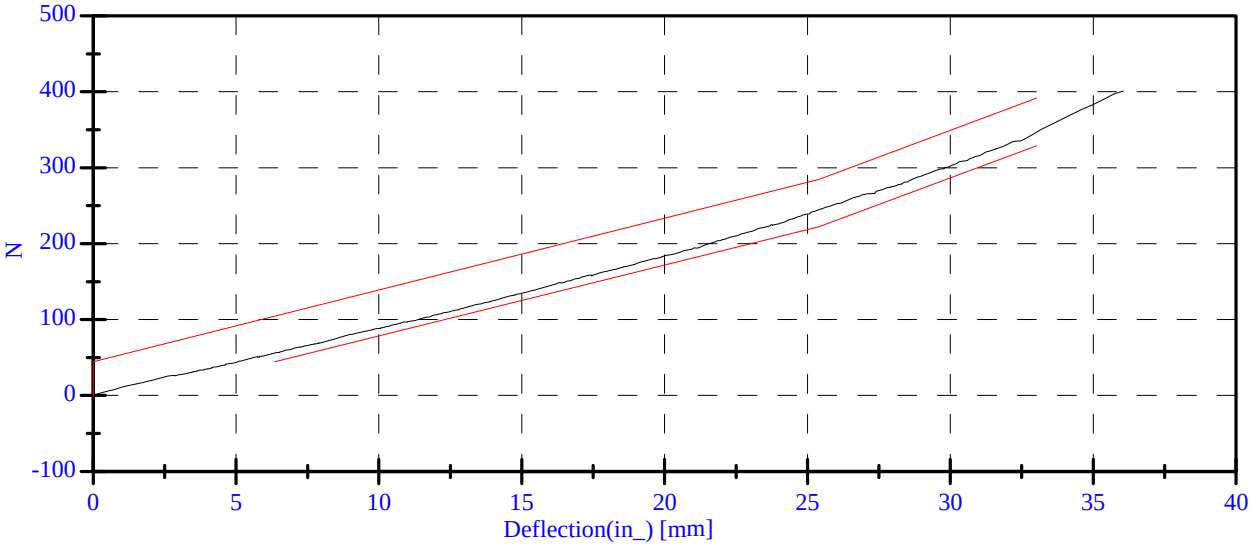
CONFIGURED FOR LEFT SIDE IMPACT

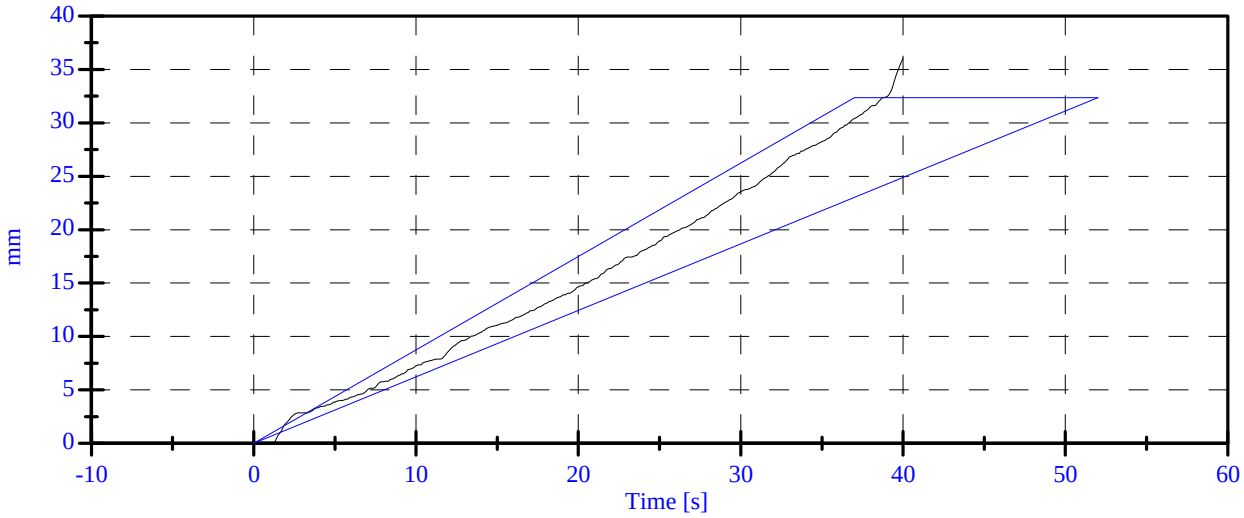
ATD Serial No: 905 Sequential Test Number: 1 File: 905 Ab1 01-21-08

Date: 01-21-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	115.07 N	Passed
Force at 19.05 mm :	162.98-220.99 N	174.16 N	Passed
Force at 25.40 mm :	221.97-280.02 N	244.48 N	Passed
Force at 33.02 mm :	324.99-391.00 N	349.96 N	Passed

ABDOMINAL COMPRESSION TEST





Spine Test
Pre-Test

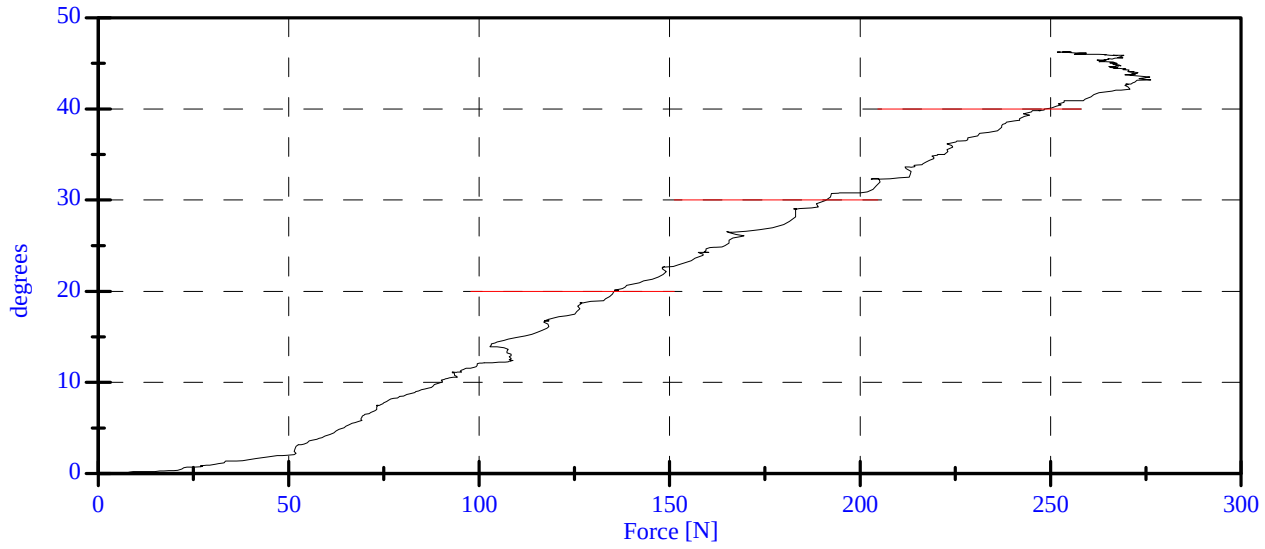
CONFIGURED FOR LEFT SIDE IMPACT

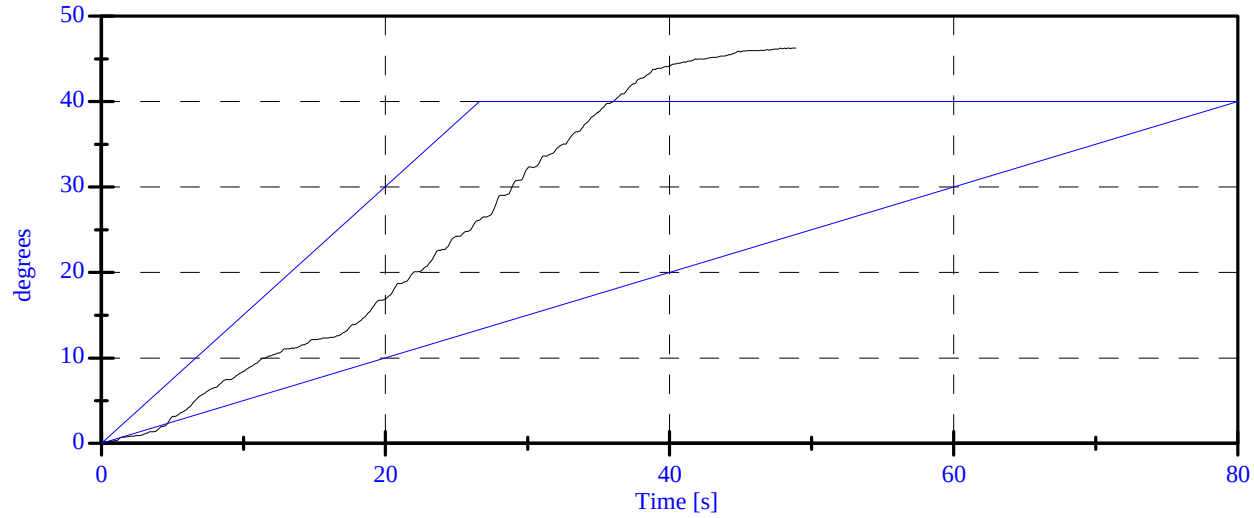
ATD Serial No: 905
Date: 01-21-08

Sequential Test Number: 1 File: 905 Spine1 01-21-08
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	7.31 N	Passed
Force at 20 Deg:	97.86-151.24 N	135.80 N	Passed
Force at 30 Deg	151.24-204.62 N	190.90 N	Passed
Force at 40 Deg	204.62-258.00 N	248.36 N	Passed
Return Angle	12 Deg Max	6.88 deg	Passed

LUMBAR SPINE FLEXION TEST





PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 2
Date: January 23, 2008 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 906

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 3
Date: February 11, 2008 Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 3
Date: February 11, 2008 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	386

REMARKS: None

Thorax Impact Test

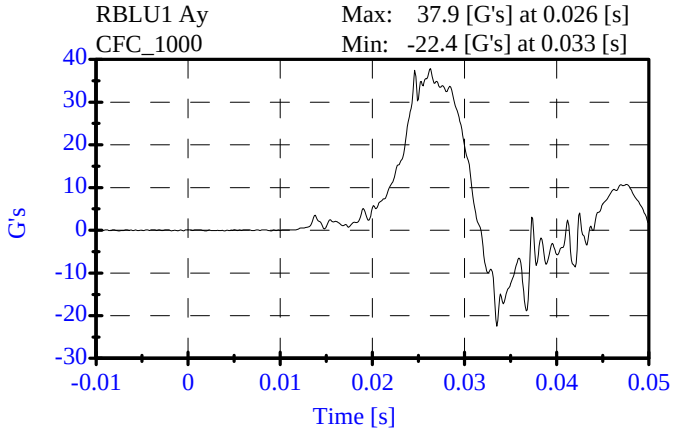
Post-Test

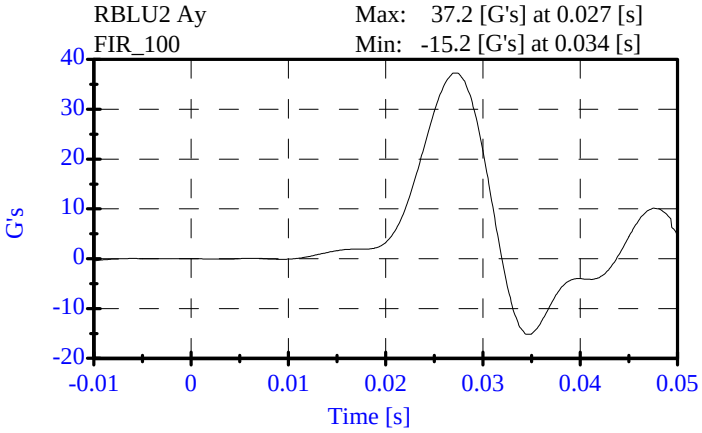
CONFIGURED FOR LEFT SIDE IMPACT

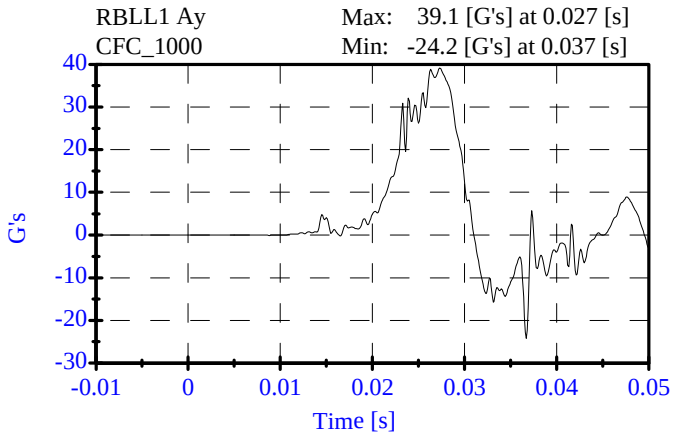
ATD Serial No: 906 Sequential Test Number: 1 File: 906T1 02-11-08

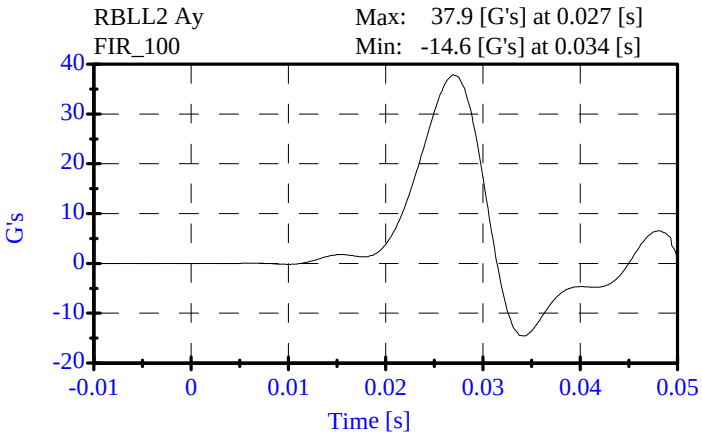
Date: 02-11-08 Laboratory Technician: B. Swiecicki

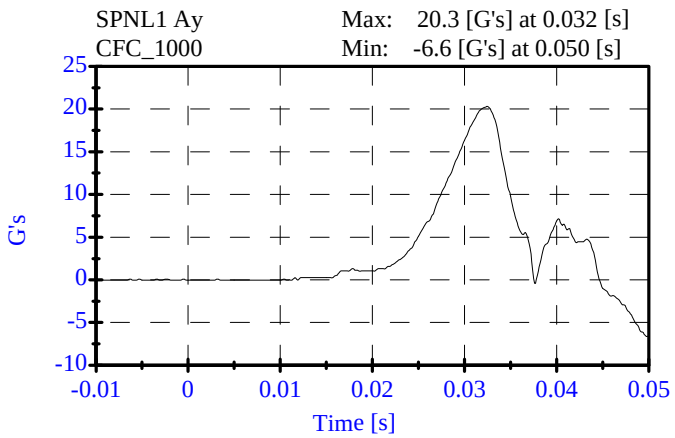
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	37.21 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	37.91 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.82 G's	Passed

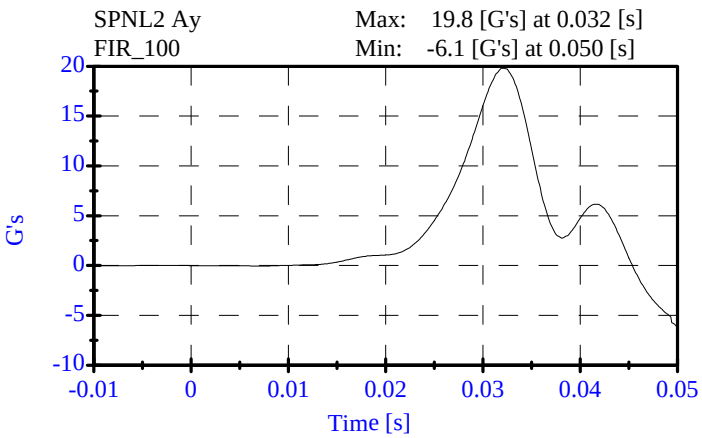












Pelvis Impact Test

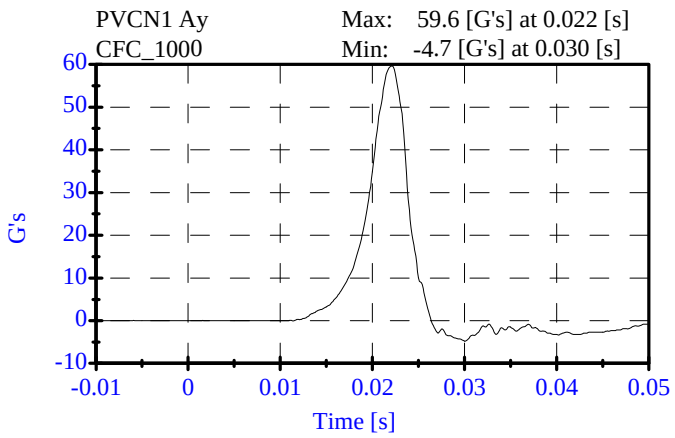
Post-Test

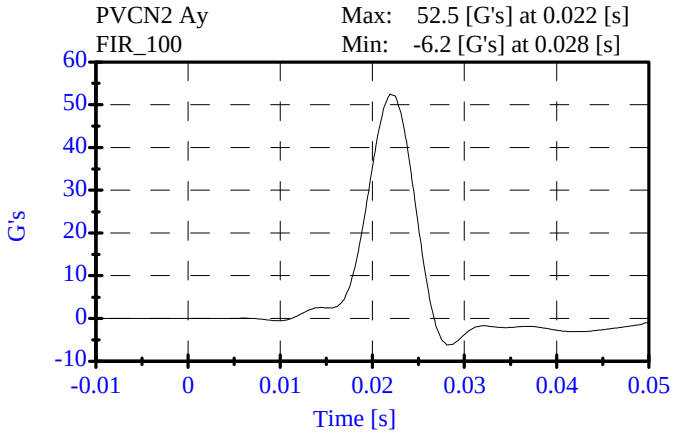
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906 Sequential Test Number: 1 File: 906P 02-11-08

Date: 02-11-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	52.47 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.3 ms	Passed





Head Drop Test

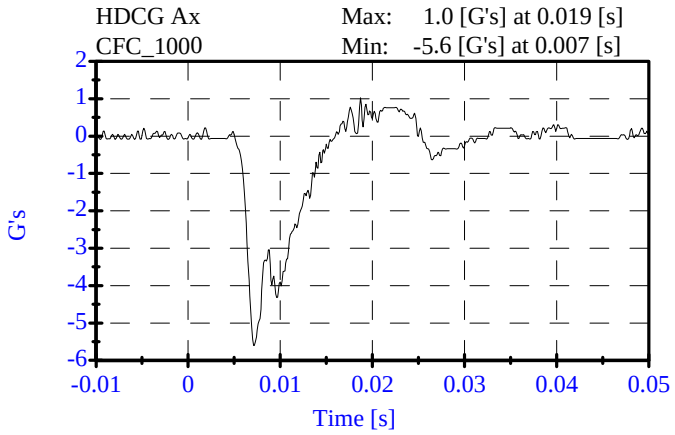
Post-Test

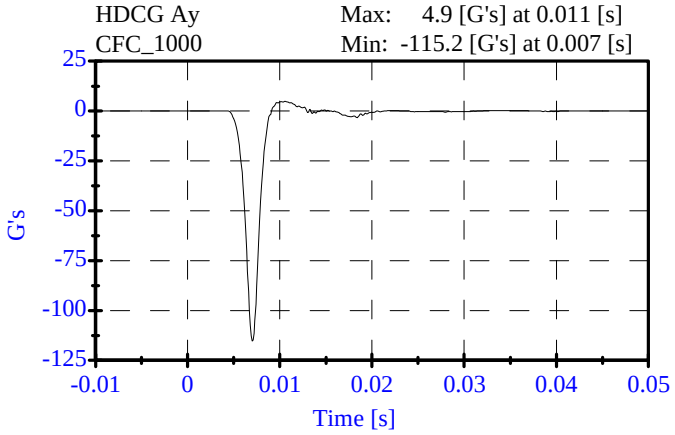
CONFIGURED FOR LEFT SIDE IMPACT

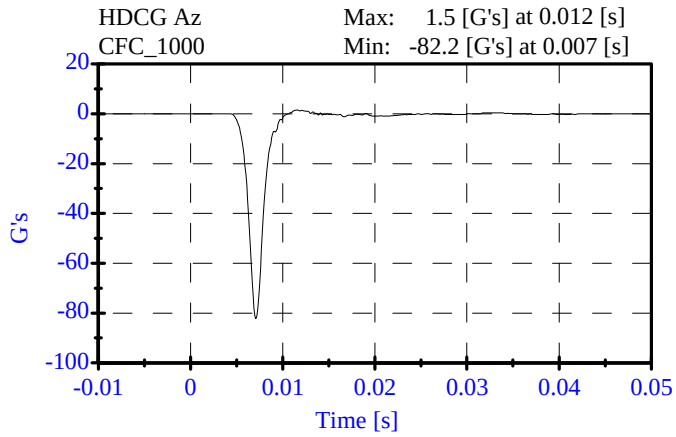
ATD Serial No: 906 Sequential Test Number: 1 File: 906H 02-07-08

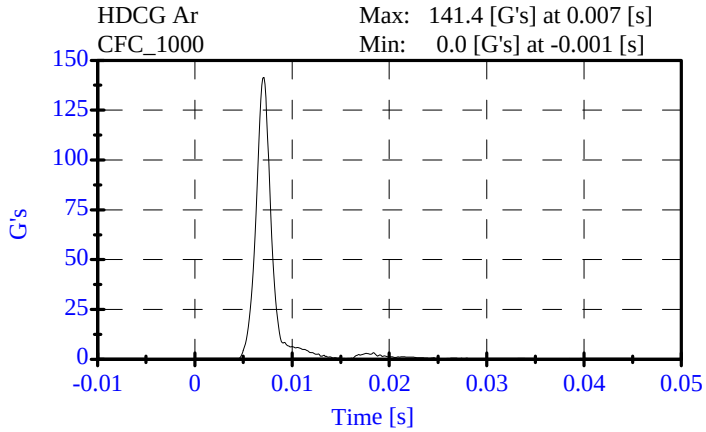
Date: 02-07-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	141.36 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.02 Gs	Passed
Curve PerCent NonModal:	< 15%	5.99 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906 Sequential Test Number: 1 File: 906N 02-07-08

Date: 02-08-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.08 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.14 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	5.84 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.13 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	68.58 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.00 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	81.33 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	53.30 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	5.10 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

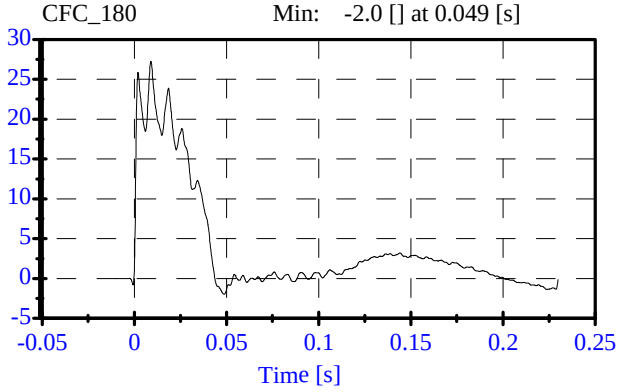
ATD Serial No: 906

Sequential Test Number: 1 File: 906N 02-07-08

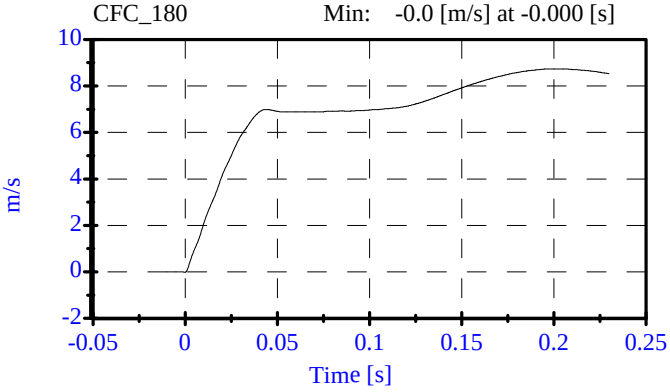
Date: 02-08-08

Laboratory Technician: B. Swiecicki

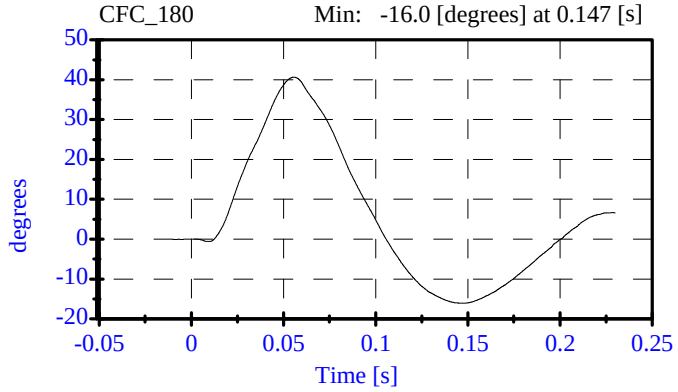
Pend Ax
CFC_180
Max: 27.3 [] at 0.009 [s]
Min: -2.0 [] at 0.049 [s]



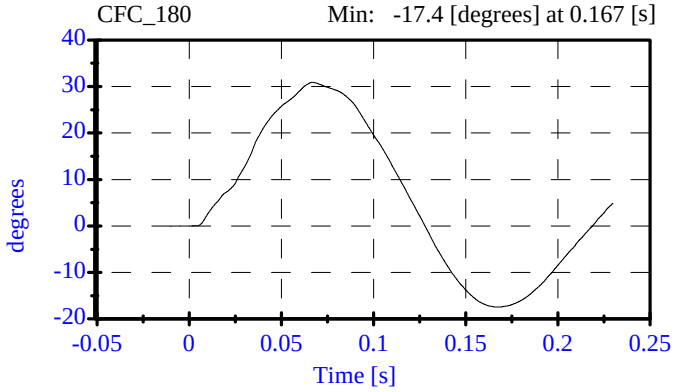
Pend Vx
CFC_180
Max: 8.7 [m/s] at 0.201 [s]
Min: -0.0 [m/s] at -0.000 [s]



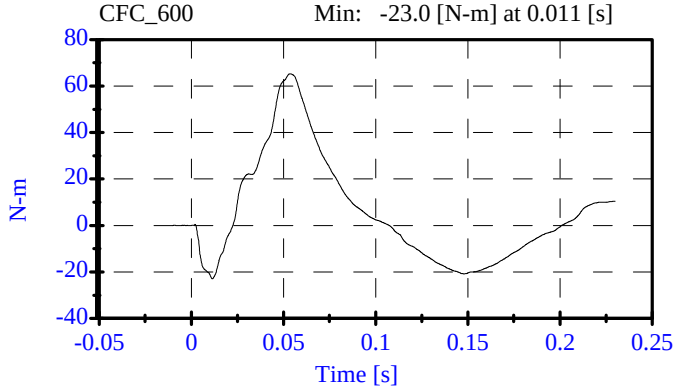
Head Rot
CFC_180
Max: 40.6 [degrees] at 0.056 [s]
Min: -16.0 [degrees] at 0.147 [s]



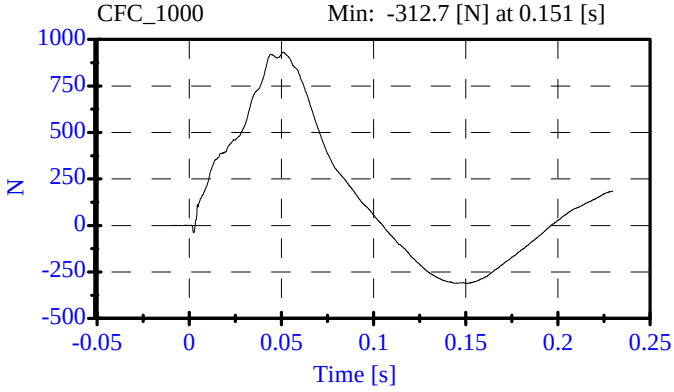
Arm Rot
CFC_180
Max: 30.9 [degrees] at 0.067 [s]
Min: -17.4 [degrees] at 0.167 [s]



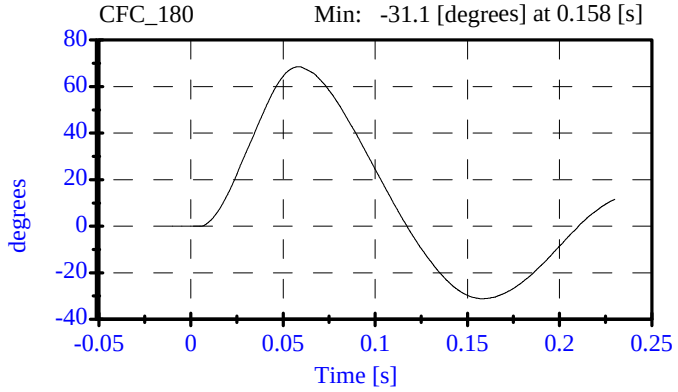
Neck Mx
CFC_600
Max: 65.1 [N-m] at 0.054 [s]
Min: -23.0 [N-m] at 0.011 [s]



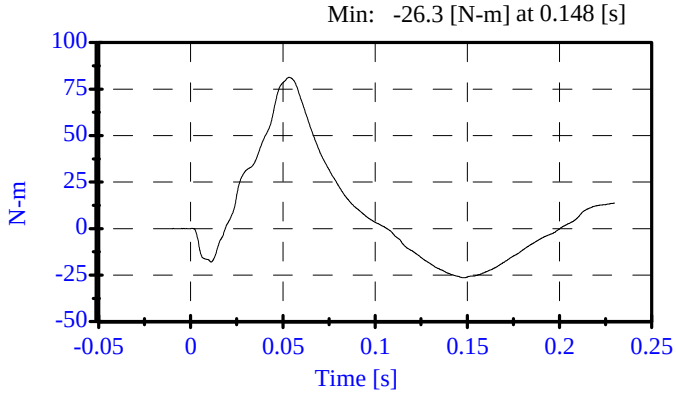
Neck Fy
CFC_1000
Max: 931.8 [N] at 0.051 [s]
Min: -312.7 [N] at 0.151 [s]



Tot Rot
CFC_180
Max: 68.6 [degrees] at 0.058 [s]
Min: -31.1 [degrees] at 0.158 [s]



MOCX
Max: 81.3 [N-m] at 0.053 [s]
Min: -26.3 [N-m] at 0.148 [s]



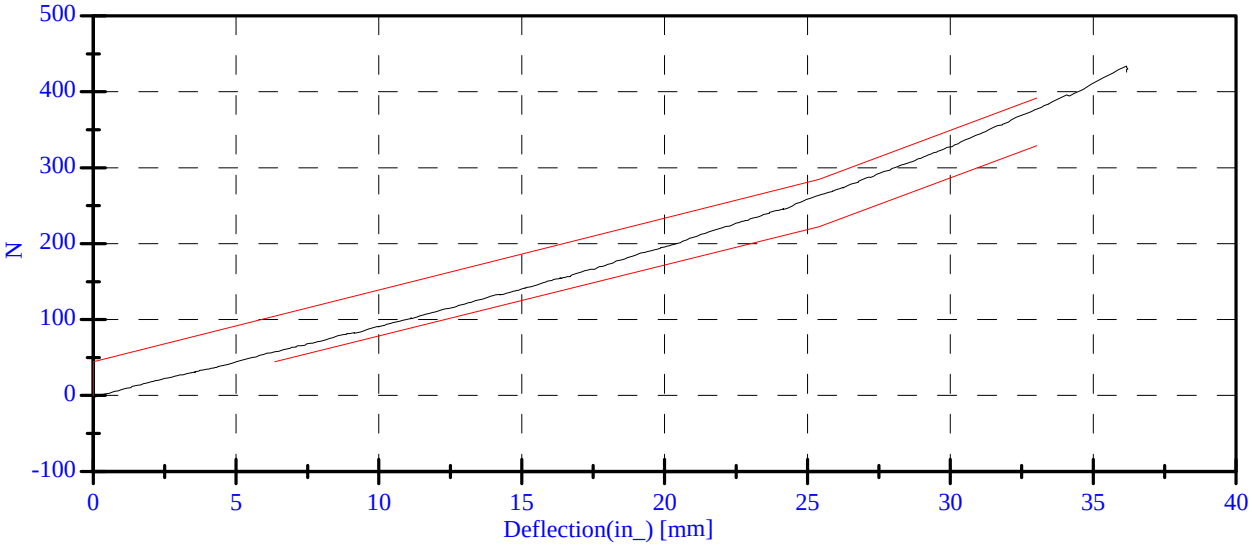
Abdomen Compression Test
Post-Test

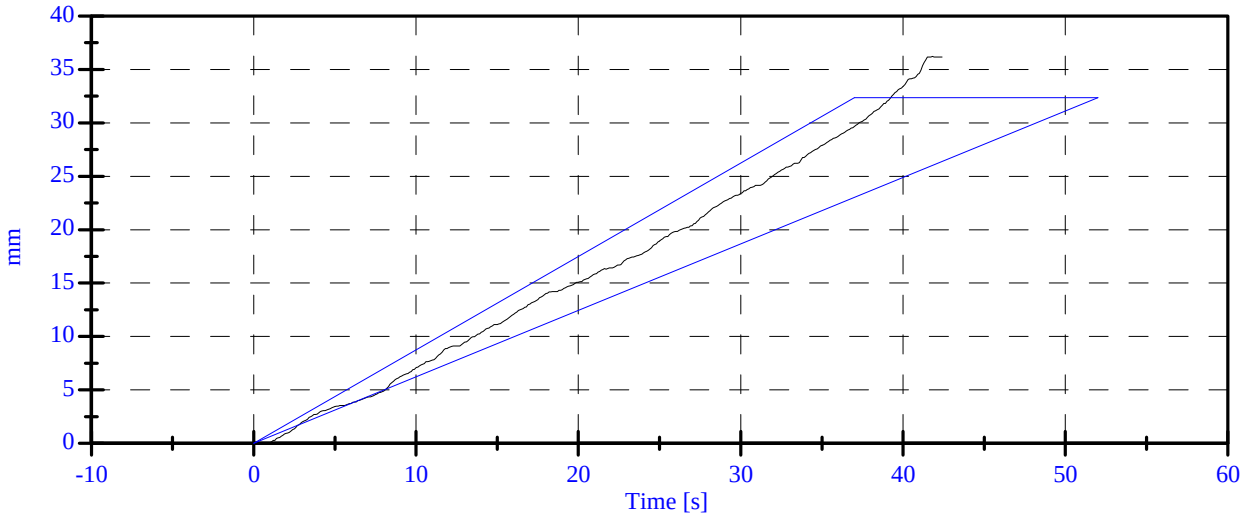
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906 Sequential Test Number: 1 File: 906 Ab 02-12-08
Date: 02-12-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	120.51 N	Passed
Force at 19.05 mm :	162.98-220.99 N	186.12 N	Passed
Force at 25.40 mm :	221.97-280.02 N	263.69 N	Passed
Force at 33.02 mm :	324.99-391.00 N	376.42 N	Passed

ABDOMINAL COMPRESSION TEST





Lumbar Spine Test
Post-Test

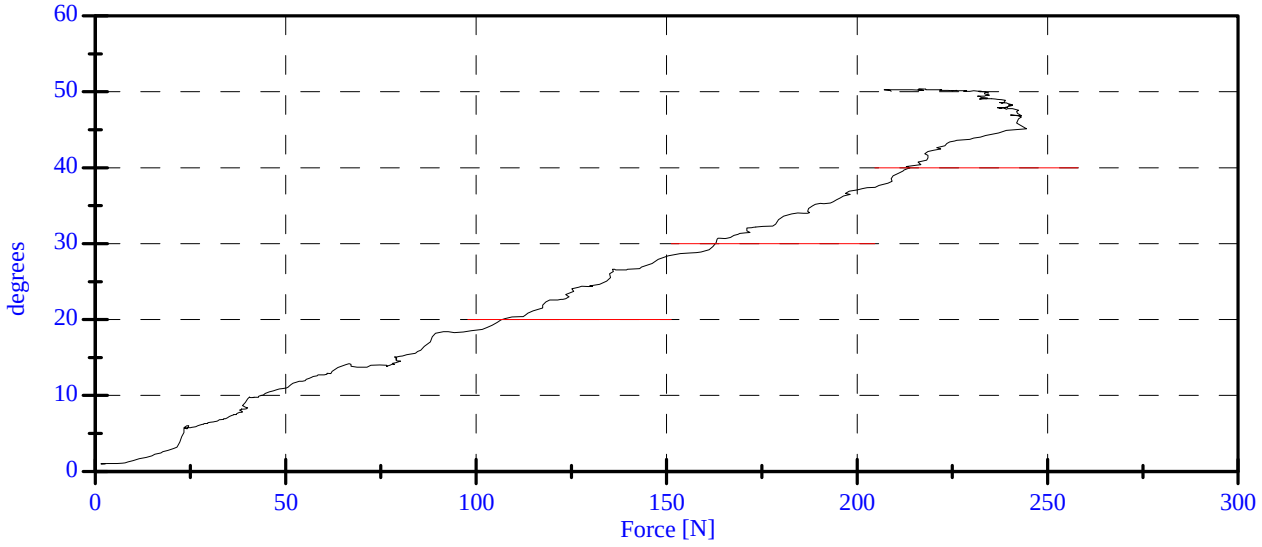
CONFIGURED FOR LEFT SIDE IMPACT

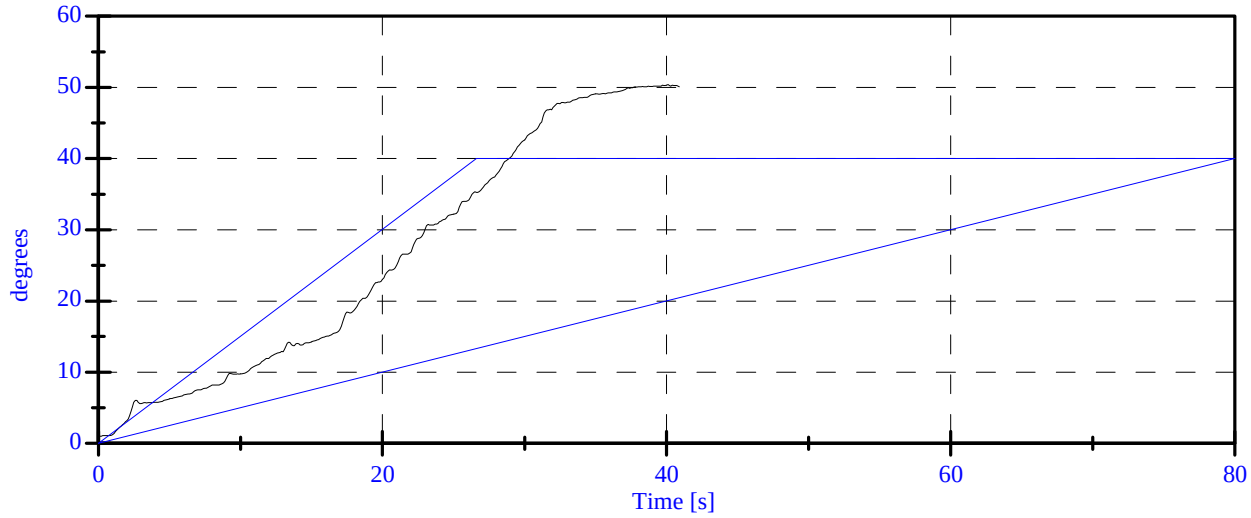
ATD Serial No: 906
Date: 02-11-08

Sequential Test Number: 1 File: 906 Spine 02-11-08
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	2.61 N	Passed
Force at 20 Deg:	97.86-151.24 N	106.55 N	Passed
Force at 30 Deg	151.24-204.62 N	162.96 N	Passed
Force at 40 Deg	204.62-258.00 N	213.88 N	Passed
Return Angle	12 Deg Max	0.40 deg	Passed

LUMBAR SPINE FLEXION TEST





POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 3
Date: February 11, 2008 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 905

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 3
Date: February 11, 2008 Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 3
Date: February 11, 2008 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	381

REMARKS: None

Thorax Impact Test

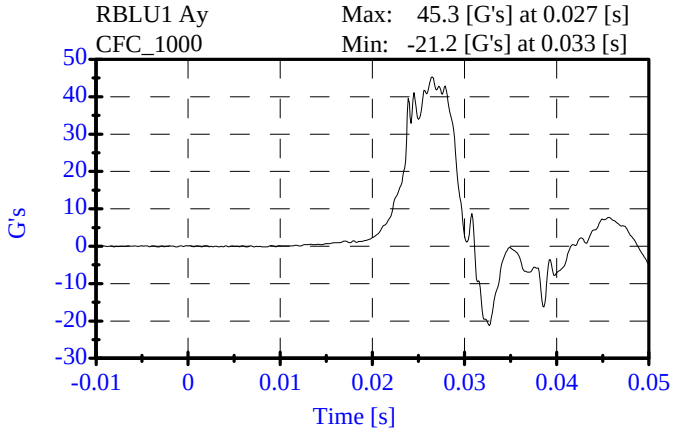
Post-Test

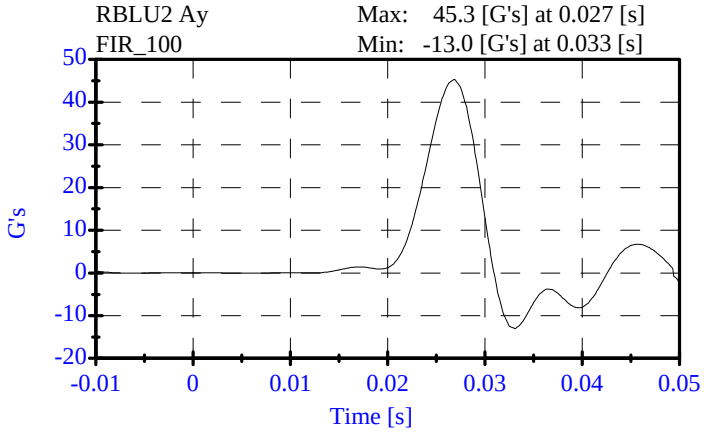
CONFIGURED FOR LEFT SIDE IMPACT

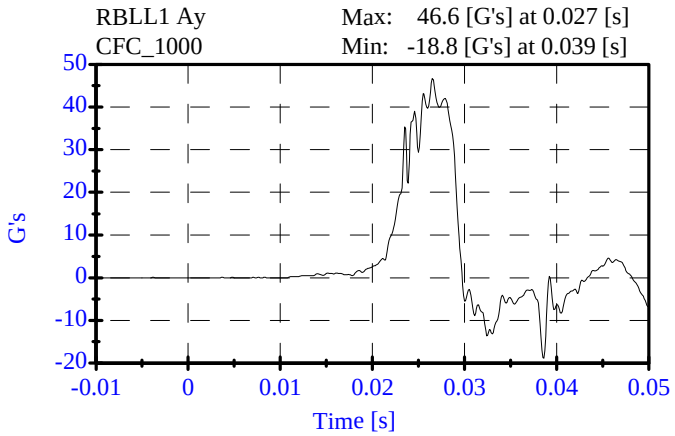
ATD Serial No: 905 Sequential Test Number: 1 File: 905T 02-11-08

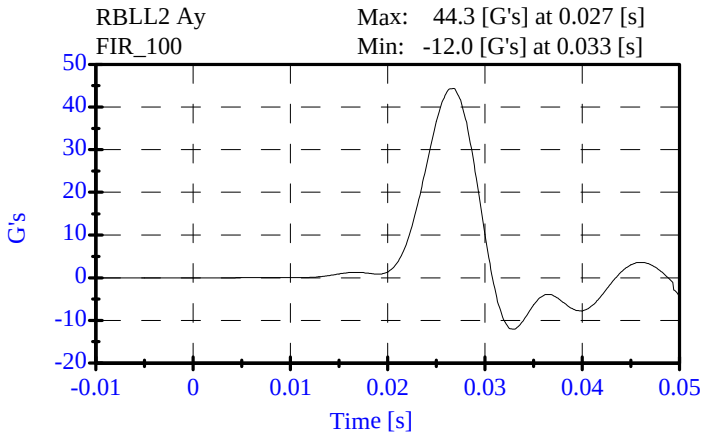
Date: 02-11-08 Laboratory Technician: B. Swiecicki

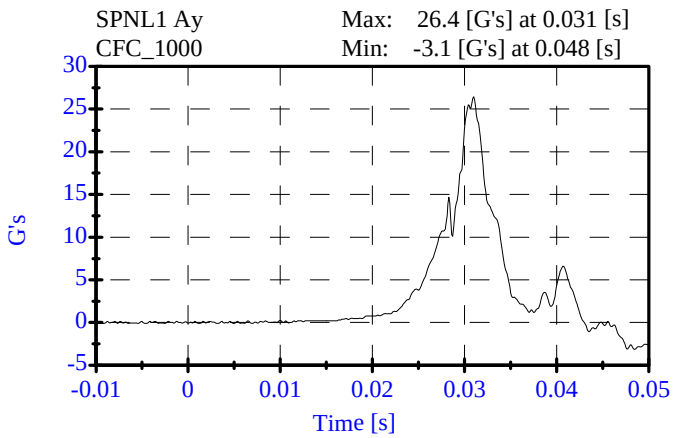
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	45.31 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	44.34 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.48 G's	Passed

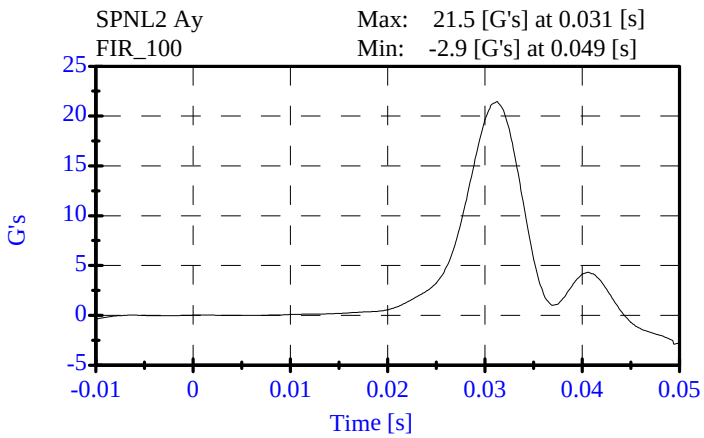












Pelvis Impact Test

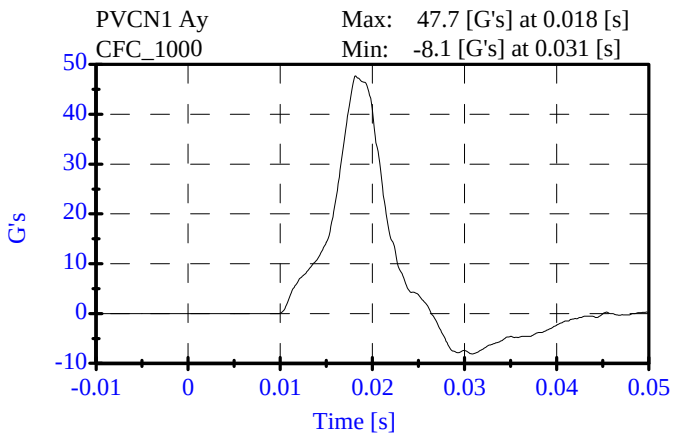
Post-Test

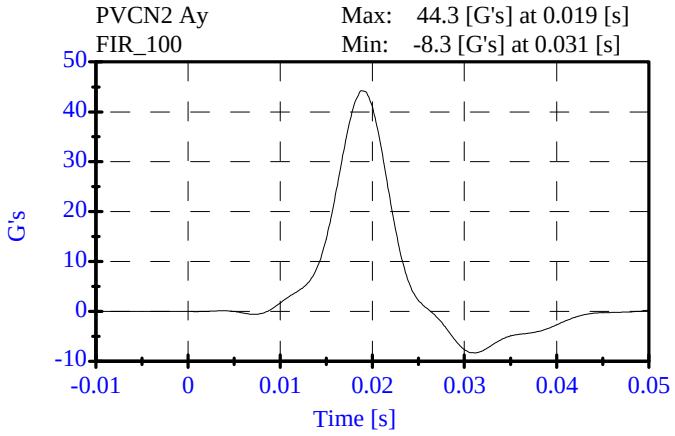
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905P 02-11-08

Date: 02-11-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	44.27 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.5 ms	Passed





Head Drop Test

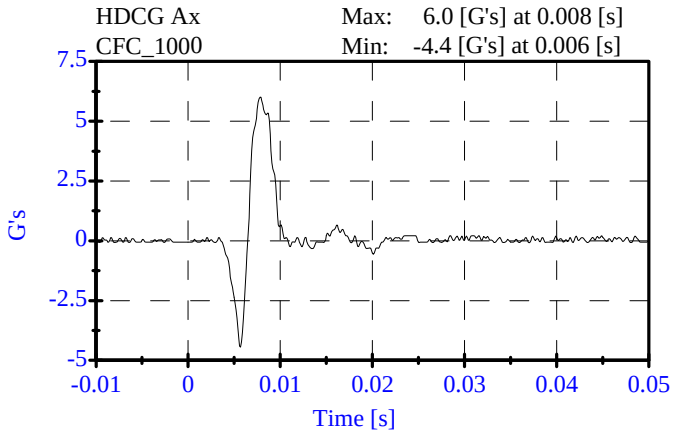
Post-Test

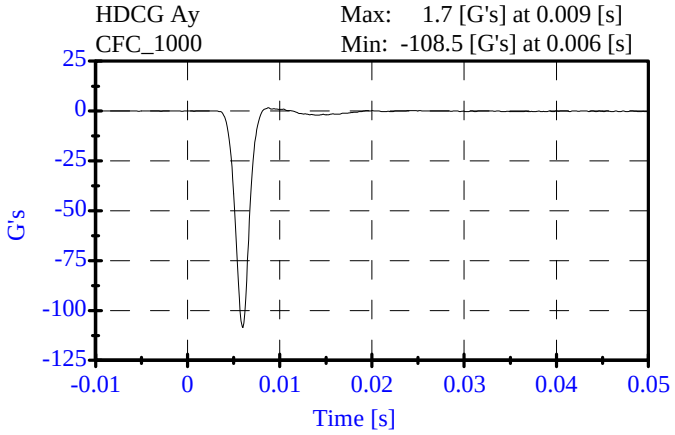
CONFIGURED FOR LEFT SIDE IMPACT

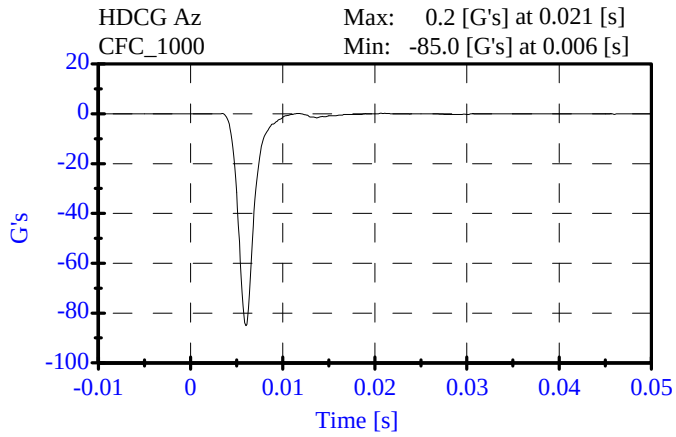
ATD Serial No: 905 Sequential Test Number: 1 File: 905H 02-07-08

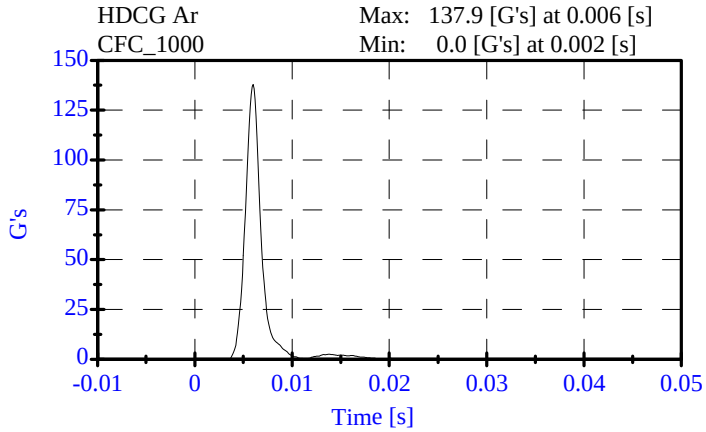
Date: 02-07-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	137.87 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	6.00 Gs	Passed
Curve PerCent NonModal:	< 15%	1.88 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905N7 02-07-08

Date: 02-08-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.10 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.33 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.10 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	6.98 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.95 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	60.10 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	87.09 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	54.40 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	7.50 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

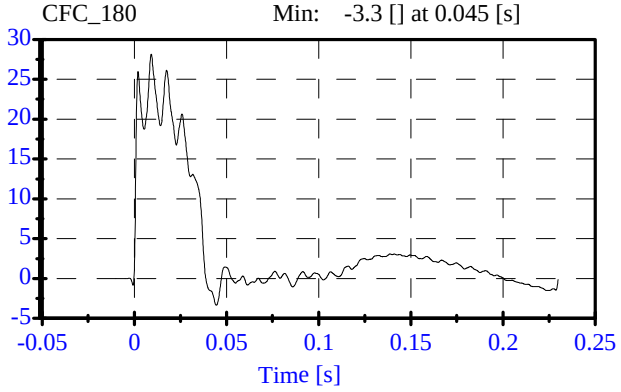
ATD Serial No: 905

Sequential Test Number: 1 File: 905N7 02-07-08

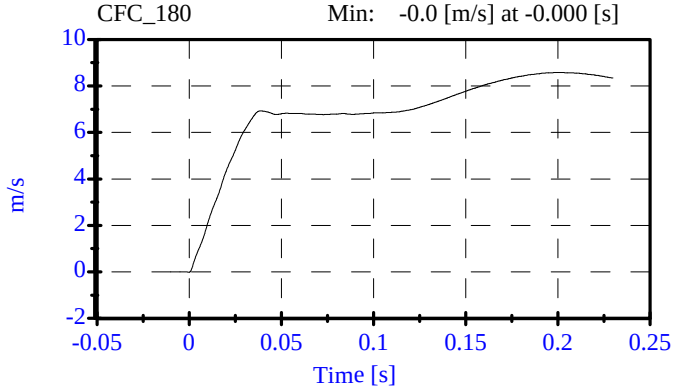
Date: 02-08-08

Laboratory Technician: B. Swiecicki

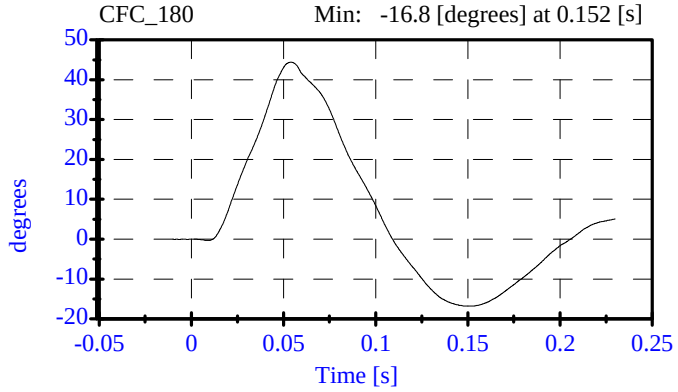
Pend Ax
CFC_180
Max: 28.2 [] at 0.009 [s]
Min: -3.3 [] at 0.045 [s]



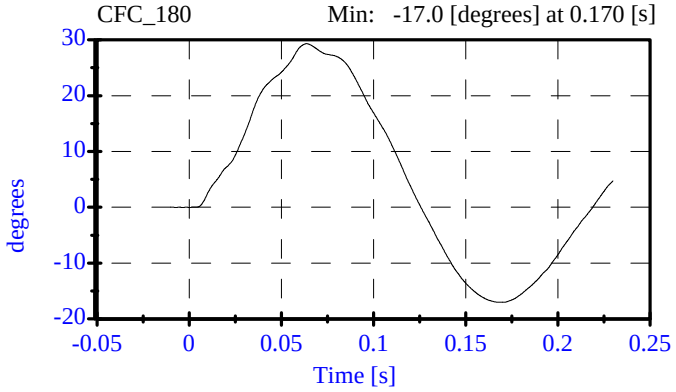
Pend Vx
CFC_180
Max: 8.6 [m/s] at 0.200 [s]
Min: -0.0 [m/s] at -0.000 [s]



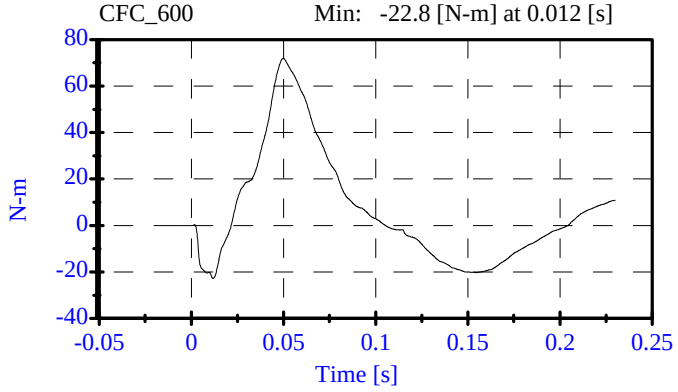
Head Rot
CFC_180
Max: 44.4 [degrees] at 0.054 [s]
Min: -16.8 [degrees] at 0.152 [s]



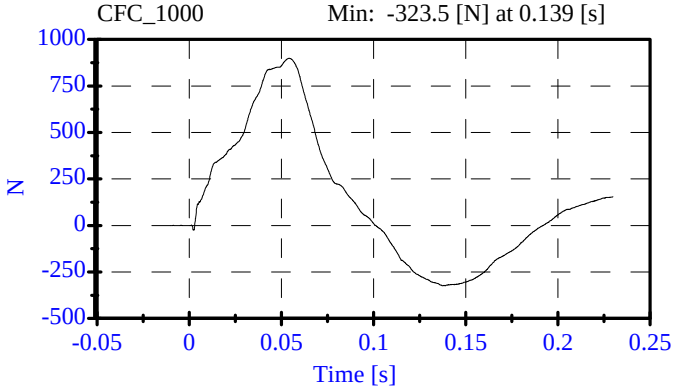
Arm Rot
CFC_180
Max: 29.3 [degrees] at 0.064 [s]
Min: -17.0 [degrees] at 0.170 [s]



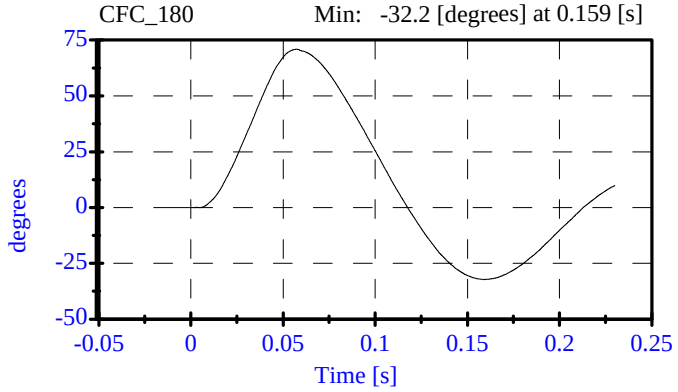
Neck Mx
CFC_600
Max: 71.8 [N-m] at 0.050 [s]
Min: -22.8 [N-m] at 0.012 [s]



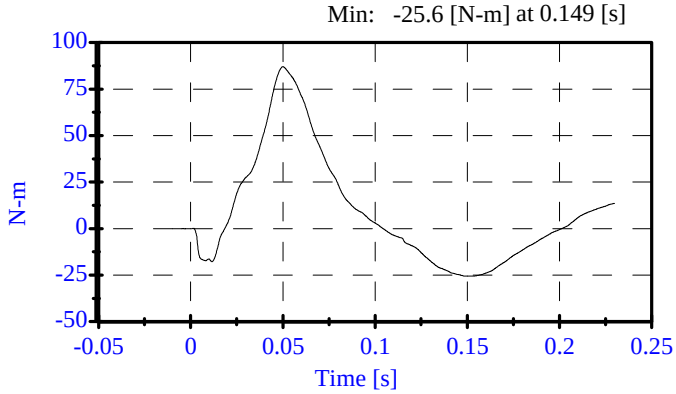
Neck Fy
CFC_1000
Max: 898.9 [N] at 0.054 [s]
Min: -323.5 [N] at 0.139 [s]



Tot Rot
CFC_180
Max: 70.9 [degrees] at 0.057 [s]
Min: -32.2 [degrees] at 0.159 [s]



MOCX
Max: 87.1 [N-m] at 0.050 [s]
Min: -25.6 [N-m] at 0.149 [s]



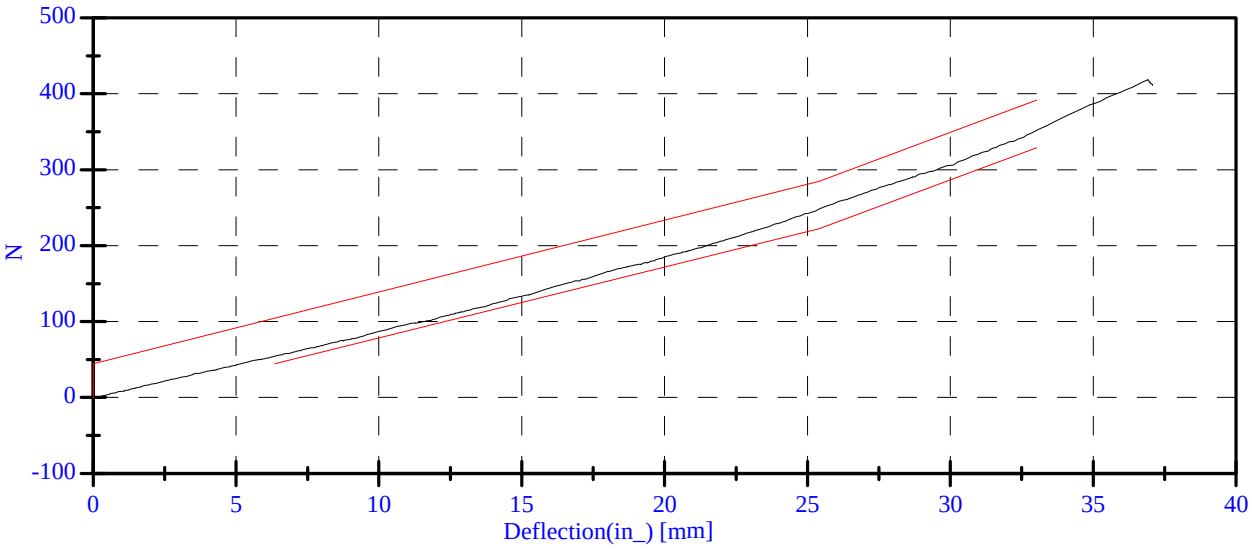
Abdomen Compression Test
Post-Test

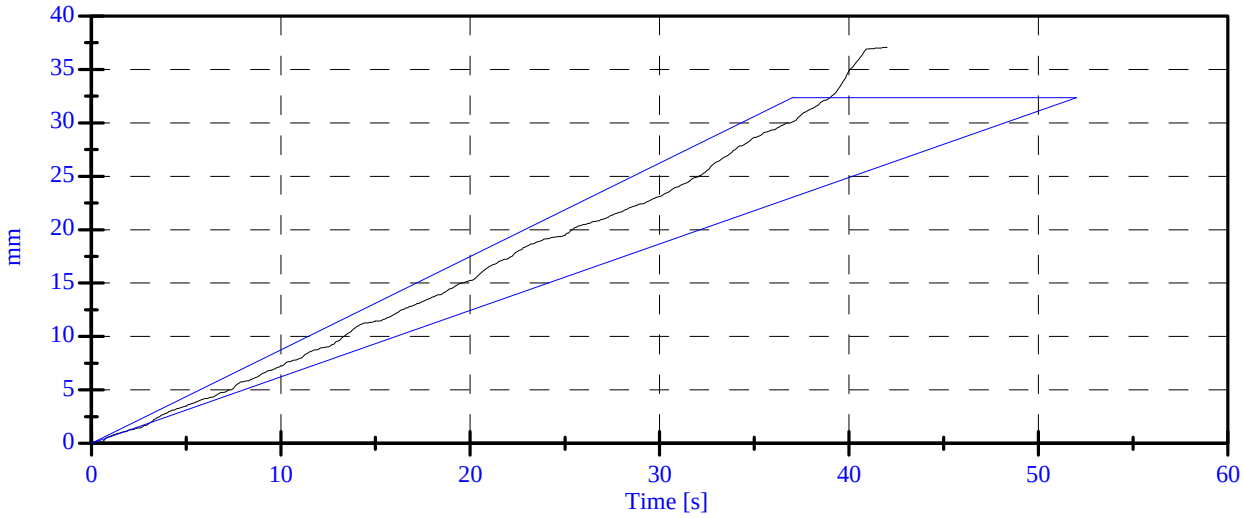
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905 Ab 02-12-08
Date: 02-12-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	112.90 N	Passed
Force at 19.05 mm :	162.98-220.99 N	174.88 N	Passed
Force at 25.40 mm :	221.97-280.02 N	248.10 N	Passed
Force at 33.02 mm :	324.99-391.00 N	353.22 N	Passed

ABDOMINAL COMPRESSION TEST





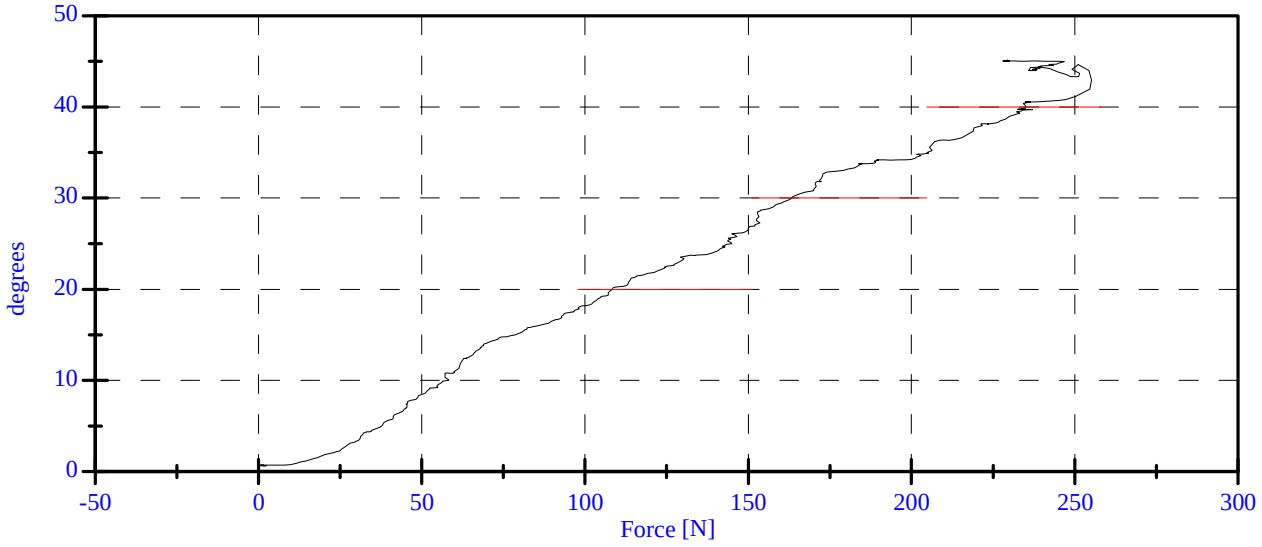
Lumbar Spine Test
Post-Test

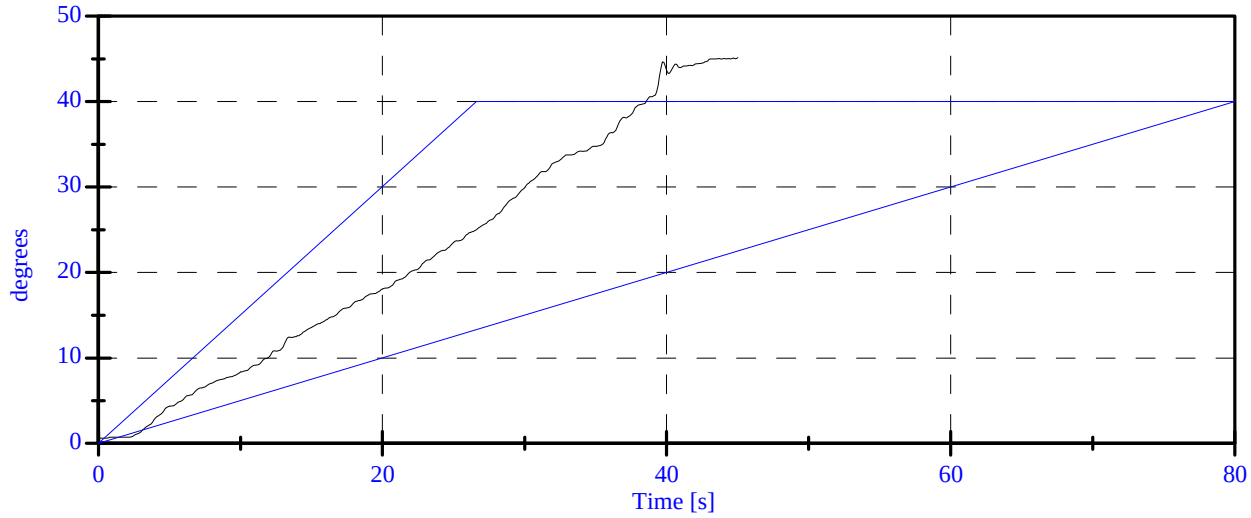
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905 Sequential Test Number: 1 File: 905 Spine 02-11-08
Date: 02-12-08 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.26 N	Passed
Force at 20 Deg:	97.86-151.24 N	108.38 N	Passed
Force at 30 Deg	151.24-204.62 N	163.22 N	Passed
Force at 40 Deg	204.62-258.00 N	235.04 N	Passed
Return Angle	12 Deg Max	9.46 deg	Passed

LUMBAR SPINE FLEXION TEST





POST TEST DUMMY INSPECTION LIST

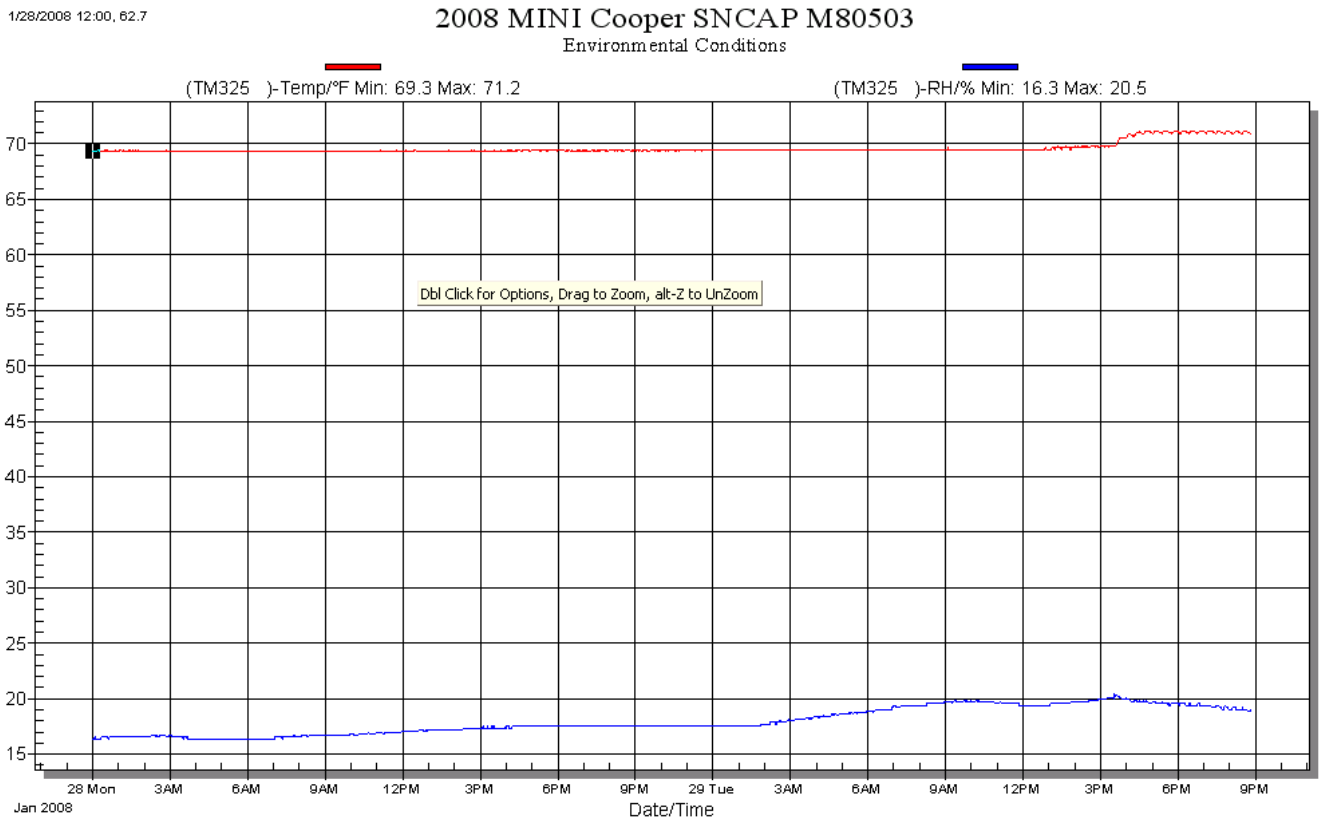
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 3
Date: February 11, 2008 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

	FRONT SID/HIII NO.: 906		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P35764	ENDEVCO	24-Jan-08
HEAD AY	AC-P39736	ENDEVCO	24-Jan-08
HEAD AZ	AC-P39729	ENDEVCO	24-Jan-08
UPPER NECK FX	LC-798Fx	DENTON	12-Jul-07
UPPER NECK FY	LC-798Fy	DENTON	12-Jul-07
UPPER NECK FZ	LC-798Fz	DENTON	12-Jul-07
UPPER NECK MX	LC-798Mx	DENTON	12-Jul-07
UPPER NECK MY	LC-798My	DENTON	12-Jul-07
UPPER NECK MZ	LC-798Mz	DENTON	12-Jul-07
UPPER RIB	AC-P39575	ENDEVCO	24-Jan-08
LOWER RIB	AC-P16866	ENDEVCO	24-Jan-08
LOWER SPINE	AC-P16645	ENDEVCO	25-Jan-08
PELVIS	AC-P23139	ENDEVCO	24-Jan-08
UPPER RIB REDUNDANT	AC-P15526	ENDEVCO	24-Jan-08
LOWER RIB REDUNDANT	AC-P16656	ENDEVCO	24-Jan-08
LOWER SPINE REDUNDANT	AC-P19343	ENDEVCO	24-Jan-08
PELVIS REDUNDANT	AC-P17539	ENDEVCO	24-Jan-08

	REAR SID/HIII NO.: 905		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P21373	ENDEVCO	24-Jan-08
HEAD AY	AC-P23128	ENDEVCO	24-Jan-08
HEAD AZ	AC-P21297	ENDEVCO	24-Jan-08
UPPER NECK FX	LC-1626Fx	DENTON	13-Jul-07
UPPER NECK FY	LC-1626Fy	DENTON	13-Jul-07
UPPER NECK FZ	LC-1626Fz	DENTON	13-Jul-07
UPPER NECK MX	LC-1626Mx	DENTON	13-Jul-07
UPPER NECK MY	LC-1626My	DENTON	13-Jul-07
UPPER NECK MZ	LC-1626Mz	DENTON	13-Jul-07
UPPER RIB	AC-P15736	ENDEVCO	24-Jan-08
LOWER RIB	AC-P16289	ENDEVCO	24-Jan-08
LOWER SPINE	AC-P16761	ENDEVCO	24-Jan-08
PELVIS	AC-P35804	ENDEVCO	24-Jan-08
UPPER RIB REDUNDANT	AC-P16593	ENDEVCO	24-Jan-08
LOWER RIB REDUNDANT	AC-P23142	ENDEVCO	24-Jan-08
LOWER SPINE REDUNDANT	AC-P21516	ENDEVCO	24-Jan-08
PELVIS REDUNDANT	AC-P17242	ENDEVCO	24-Jan-08

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-P18792	ENDEVCO	14-Nov-07
RIGHT FRONT SILL (Y)	AC-P17535	ENDEVCO	14-Nov-07
RIGHT FRONT SILL (Z)	AC-P23134	ENDEVCO	14-Nov-07
RIGHT REAR SILL (X)	AC-P32455	ENDEVCO	07-Aug-07
RIGHT REAR SILL (Y)	AC-P32139	ENDEVCO	07-Aug-07
RIGHT REAR SILL (Z)	AC-P32464	ENDEVCO	06-Aug-07
REAR FLOORPAN ABOVE AXLE (X)	AC-P18524	ENDEVCO	07-Aug-07
REAR FLOORPAN ABOVE AXLE (Y)	AC-P18518	ENDEVCO	07-Aug-07
REAR FLOORPAN ABOVE AXLE (Z)	AC-P32295	ENDEVCO	07-Aug-07
LEFT REAR SILL (Y)	AC-P16676	ENDEVCO	21-Jan-08
LEFT FRONT SILL (Y)	AC-J37854	ENDEVCO	21-Jan-08
LEFT FRONT DOOR CENTERLINE (Y)	-	-	-
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-P24145	ENDEVCO	08-Nov-07
MID REAR OF LEFT FRONT DOOR (Y)	-	-	-
LEFT FRONT DOOR UPPER C\L (Y)	-	-	-
MID REAR OF LEFT REAR DOOR (Y)	-	-	-
LEFT REAR DOOR UPPER C\L (Y)	-	-	-
LOWER LEFT B- PILLAR (Y)	AC-P16863	ENDEVCO	21-Jan-08
MIDDLE LEFT B-PILLAR (Y)	AC-P18785	ENDEVCO	09-Aug-07
LOWER LEFT A-PILLAR (Y)	AC-P23904	ENDEVCO	07-Nov-07
UPPER LEFT A-PILLAR (Y)	AC-P16823	ENDEVCO	26-Nov-07
FRONT SEAT TRACK (Y)	AC-P26269	ENDEVCO	12-Dec-07
REAR SEAT TRACK (Y)	AC-P18728	ENDEVCO	10-Aug-07
VEHICLE CG (X)	AC-P23164	ENDEVCO	11-Sep-07
VEHICLE CG (Y)	AC-P23993	ENDEVCO	09-Aug-07
VEHICLE CG (Z)	AC-P23939	ENDEVCO	09-Aug-07
MDB CG (X)	AC-C15007	ENDEVCO	12-Sep-07
MDB CG (Y)	AC-C16416	ENDEVCO	12-Sep-07
MDB CG (Z)	AC-C16499	ENDEVCO	12-Sep-07
MDB REAR FRAME MEMBER (X)	AC-C14948	ENDEVCO	12-Sep-07
MDB REAR FRAME MEMBER (Y)	AC-C16680	ENDEVCO	12-Sep-07

REMARKS: None