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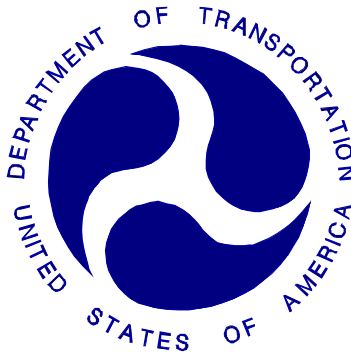
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

GENERAL MOTORS OF CANADA, LTD.
2006 CHEVROLET MONTE CARLO
TWO-DOOR COUPE

NHTSA NUMBER: M60112

CALSPAN TEST NUMBER: 8642-NCAP-66

CALSPAN CORPORATION
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
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January 10, 2006

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Rulemaking
Office of Crashworthiness Standards
Mail Code: NVS-111
400 Seventh Street, SW, Room No. 5311
Washington, DC 20590

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16. Abstract A frontal load cell barrier test of a 2006 Chevrolet Monte Carlo Two-Door Coupe was performed at Calspan Corporation's crash test facility in Buffalo, New York, on January 10, 2006. The impact velocity was 56.33 kph and the temperature at the barrier face was 21 °C. The maximum post-test vehicle crush was 710 mm. The test vehicle was equipped with 3-point restraint systems with torso belt pretensioners and force limiters, knee bolsters, and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger appeared to comply with head, chest, and femur requirements. The occupant injury criteria summary is as follows:					
Measurement Description		Units	Threshold	Driver (061)	Passenger (064)
Head Injury Criteria (HIC - 36 ms)		-	1000	321.5	322.0
Maximum Thorax Acceleration (3 ms Clip)		g's	60 g's	32.3	35.8
Chest Displacement		mm	-76 mm	-20.3	-19.0
Left Femur Force		Newtons	-10000 N	-3075.6	-2854.5
Right Femur Force		Newtons	-10000 N	-4650.1	-2260.7
17. Key Words 56 kph Frontal Barrier Impact test New Car Assessment Program (NCAP)			18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5111 Washington, DC 20590		
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SECTION 1

PURPOSE AND SUMMARY OF TEST

1.1 PURPOSE

This 56.33 kph frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-32005. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 56.33 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

1.2 TEST PROCEDURE

This 56.33 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated December 1999. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

One real-time camera and 16 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with nine accelerometer array heads, chest and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 061) and the right-front passenger (position 2) ATD (Serial No.064) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. The 141 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Appendix C contains the dummy calibration data and Appendix D contains the transducer calibration dates.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 36 load cells was impacted by a 2006 Chevrolet Monte Carlo Two-Door Coupe at a velocity of 56.33 kph. The test was performed at Calspan on January 10, 2006. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The occupant data is summarized below.

ATD	HIC	T ₁	T ₂	Clip (g)	T ₁	T ₂	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)
Driver	321.5	59.5	95.5	32.3	96.1	99.1	-20.3	-3075.6	-4650.1
Passenger	322.0	65.6	101.6	35.8	89.8	92.8	-19.0	-2854.5	-2260.7

The test data can be found on the NHTSA website at www.nhtsa.dot.gov

TEST NOTES	
Data Channel	Anomalies
V1P1 Left Upper Tibia Mx	Did Not Record
V1P1 Left Upper Tibia My	Questionable Data
V1P2 Upper Neck My	Data Clipped
V1 Engine Top #3x	Questionable Data
V1 Engine Bottom #4x	Questionable Data
V1 Left Caliper #7x	Channel Opened at 75 ms
Barrier Load Cell B3 Fx	Did Not Record

SECTION 2
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
CRASH TEST SUMMARY

Vehicle NHTSA No.: M60112 Test Mode: 56.3 kph Frontal Barrier
 Test Date: January 10, 2006 Time: 12:02 Temperature: 21 °C
 Vehicle Make/Model/Body Style: 2006 Chevrolet Monte Carlo Two-Door Coupe
 Vehicle Test Weight: 1779.0 kg Impact Velocity: 56.33 kph (55.5 – 57.1 kph)
 Vehicle/Barrier Impact Angle: 0 ° Max Static Crush: 710 mm

ATD INFORMATION AND VISIBLE CONTACT POINTS

	DRIVER	PASSENGER
ATD Type:	Part 572E	Part 572E
Restraint System:	Seatbelt with torso belt pretensioner and force limiter, Airbag, Knee Bolster, Head Restraint	Seatbelt with torso belt pretensioner and force limiter, Airbag, Knee Bolster, Head Restraint
Head Contact:	The face to the center of the airbag, the back of the head to the left center of the head restraint	The face to the center of the airbag, the back of the head to the left center of the head restraint
Abdomen Contact:	None	None
Chest Contact:	Airbag	Airbag
Left Knee Contact:	Knee Bolster	Knee Bolster
Right Knee Contact:	Knee Bolster	Knee Bolster

DOOR OPENING, SEAT TRACK AND GLAZING INFORMATION

Description	Driver Side	Passenger Side
Door Lock Status	Locked	Locked
Front Door Opening	Closed, latched and operable without tools	Closed, latched and operable without tools
Rear Door Opening	Not applicable	Not applicable
Hatch/Other Door Opening	Not applicable	Not applicable
Front Seat Track Shift (mm)	16 mm forward	18 mm forward
Front Seat Back Failure	None	None
Glazing Damage	The windshield cracked along the lower cowl due to deformation	

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Left Side (mm)	Center (mm)	Right Side (mm)	Average (mm)
Value	406	377	408	397

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Shoulder belt length as measured on ATD	mm	1460	1460
Lap belt length as measured on ATD	mm	930	890
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems	mm	2390	2350

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2006 Chevrolet Monte Carlo Two-Door Coupe

NHTSA No. : M60112 ; VIN: 2G1WJ15K169255304 ; Color: Black

Engine Data: 6 cylinders; - CID; 3.5 Liters; - cc

Placement: - Longitudinal or In-Line; X Transverse or Lateral

Transmission Data: 4 speeds; - Manual; X Automatic; X Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive

AUTOMATIC DOOR LOCKS:

Is test vehicle equipped with Automatic Door Locks (ADLs)? X Yes; - No;

Does vehicle owner's manual describe how to deactivate ADLs? - Yes; X No; - N/A

DEALER AND DELIVERY INFORMATION:

Date Received: 12/23/2005 ; Odometer Reading 39 km

Selling Dealer: Paddock Chevrolet, Inc.

Dealer Address: 3232 Delaware Avenue Kenmore, NY 14217-1798

TEST VEHICLE OPTIONS:

X AC; X Power Steering; X Power Brakes; X Power Locks; X Power Seats (Driver)

- ABS; X Tilt Wheel; - Stability Control - Traction Control - Anti-Theft

SAFETY BELT FEATURES:

Driver: X Pretensioner (Shoulder); X Load Limiter; - Adjustable Anchorage

Passenger: X Pretensioner (Shoulder); X Load Limiter; - Adjustable Anchorage

AIRBAG FEATURES:

Position	Frontal	Knee Bolster	Side Torso	Side Head/Torso Combination	Side Curtain
Driver:	Yes	No	No	No	No
Passenger:	Yes	No	No	No	No
Rear Passenger:	No	No	No	No	No

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: General Motors of Canada, Ltd.

Date of Manufacture 12/05

GVWR: 1974 kg; GAWR: 1087 kg FRONT; 887 kg REAR

VEHICLE CAPACITY DATA:

Type of Front Seats: - Bench; X Bucket; - Split Bench

Number of Occupants: 2 Front; 3 Rear; 5 Total

Vehicle Capacity Weight (VCW) = 416.0 kg

No. of Occupants x 68.04 kg = 340.2 kg

Rated Cargo/Luggage Weight (RCLW) = 75.8 kg

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

	Left Side (kg)	Right Side (kg)	Ratio (%)	Total (kg)
Front =	480.5	505.0	63.3	985.5
Rear =	286.0	285.5	36.7	571.5
Total Delivered Weight (UDW) =				1557.0

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW) =	1557.0	kg
Rated Cargo/Luggage Weight (RCLW) =	75.8	kg
Weight of 2 p.572 Dummies @ 76 each =	152	kg
TARGET TEST WEIGHT =	1784.8	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 70.0 KG OF CARGO WEIGHT:

	Left Side (kg)	Right Side (kg)	Ratio (%)	Total (kg)
Front =	514.5	539.0	59.2	1053.5
Rear =	365.0	360.5	40.8	725.5
Total Vehicle Test Weight (ATW) =				1779.0

Weight of Ballast Secured in Vehicle Trunk Area¹ = 0 kg

Vehicle Components Removed for Weight Reduction: None

VEHICLE ATTITUDE (all dimension in millimeters):

	Left Front	Right Front	Left Rear	Right Rear	CG ²
AS DELIVERED:	746	742	743	744	1031.4
FULLY LOADED:	736	731	709	710	-
AS TESTED:	740	735	713	710	1146.0

Vehicle's Wheel Base: 2810 mm

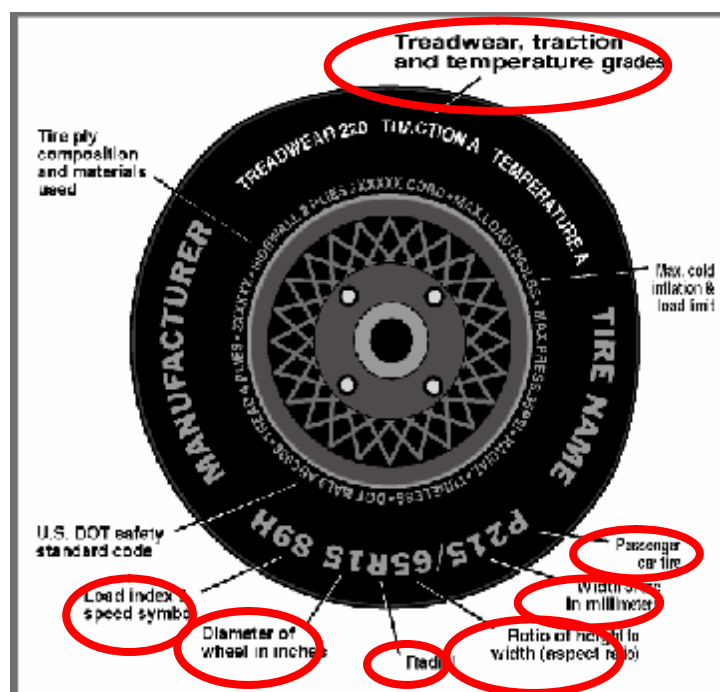
¹Ballast weight does not include the weight of instrumentation, on-board cameras and data acquisition system

²Rearward of the front axle centerline.

DATA SHEET NO. 3
TEST VEHICLE TIRE INFORMATION

Vehicle Year/Make/Model/Body Style: 2006 Chevrolet Monte Carlo Two-Door Coupe

NHTSA Test No.: M60112 Test Date: January 10, 2006



Measured Parameter	Front	Rear
Maximum Tire Pressure (from sidewall - kPa)	300	300
Cold Pressure (from tire placard - kPa)*	210	210
Recommended Tire Size (from tire placard)	P225/60R16	P225/60R16
Tire size on Vehicle	P225/60R16	P225/60R16
Tire Manufacturer	Goodyear	Goodyear
Tire Name	Integrity	Integrity
Tire Type	P	P
Tire Width (mm)	225	225
Ratio of Height to Width (aspect ratio)	60	60
Radial	Yes	Yes
Wheel Diameter	16	16
Load Index & Speed Symbol	97S	97S
Treadwear	460	460
Traction Grade	A	A
Temperature Grade	B	B

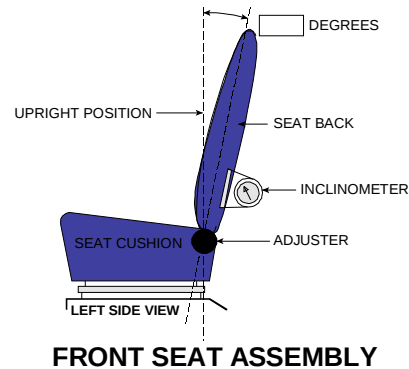
*Tire pressure used for test

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2006 Vehicle Model: Chevrolet Monte Carlo Body Style : Two-Door Coupe

1. NOMINAL DESIGN RIDING POSITION:
for adjustable driver and passenger seat backs.
Please describe how to position the inclinometer to
measure the seat back angle. Include description of
the location of the adjustment latch detent, if
applicable.



Seat back angle for driver's seat: 24°

Measurement instructions: Position at 7th detent rearward from most upright position (0).

Recline seat 8.8° from most upright position.

Seat back angle for passenger's seat: 24°

Measurement instructions: The same as the driver's seat.

2. SEAT FORE AND AFT POSITIONING:

Positioning of the driver's seat: Place seat track at mid-travel of 246 mm (123 mm)

Positioning of the passenger's seat: Detents are numbered 0 to 24, test position is detent 12.

There are 240 mm of total seat track travel, test position is 120 mm from forward most detent (0).

3. FUEL TANK CAPACITY DATA:

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 66.2 liters

B. "Usable Capacity" of the optional equipment fuel tank is - liters

C. "Usable Capacity" of the vehicle(s) used for certification
testing to requirements of FMVSS 301 = 60.9 to 62.2 liters

3.2 Actual Amount of Stoddard solvent added to vehicle for test = 61.7 liters

3.3 One-Third of Useable Capacity = 22.1 liters

3.4 Is vehicle equipped with electric fuel pump? Yes- X ; No- -

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

When the ignition is turned to the 'ON' position to prime the fuel system and while the engine is running.

DATA SHEET NO. 4
TEST VEHICLE INFORMATION (cont.)

4. STEERING COLUMN ADJUSTMENTS:

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: The detents are numbered 0 to 8 with 0 being the upper most position,
test position is detent 4 which gives 22.5° for the steering column angle.

5. SEAT BELT UPPER ANCHORAGE:

Nominal design riding position: Not adjustable, fixed to head restraint.

6. AUTOMATIC DOOR LOCKS: Is test vehicle equipped with ADLs? X Yes; - No;

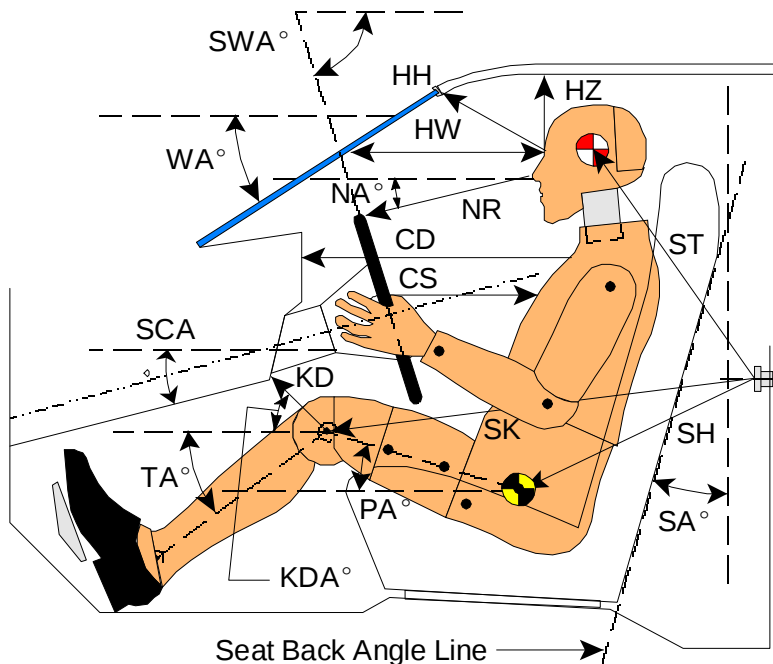
Does vehicle owner's manual describe how to deactivate ADLs? - Yes; X No; - N/A

Comments: Page 2-10 of the owner's manual states that this feature cannot be disabled.

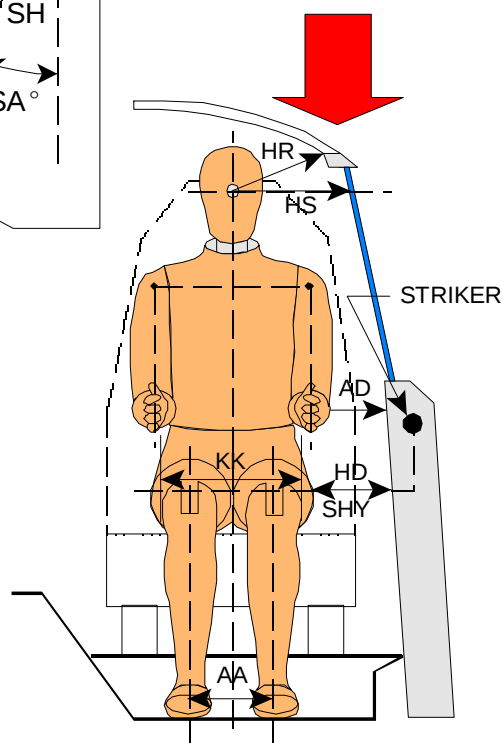
DATA SHEET NO. 5

FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE

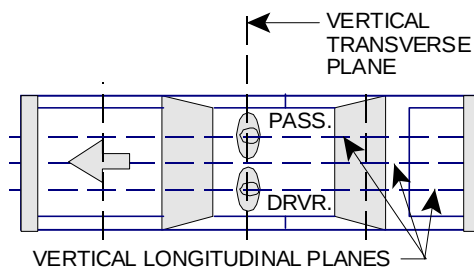
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



AD - Arm to Door
 HD - H-Point to Door
 HR - Head to Side Header
 HS - Head to Side Window
 KK - Knee to Knee
 AA - Ankle to Ankle
 SHY- Striker to H-Point (Y Direction)



CD - Chest to Dash
 CS - Steering Wheel to Chest
 HH - Head to Header
 HW - Head to Windshield
 HZ - Head to Roof
 KDA - Knee to Dash Angle
 KDL- Left Knee to Dash
 KDR - Right Knee to Dash
 NA - Nose to Rim Angle
 NR - Nose to Rim
 PA - Pelvic Angle
 RA - Rim to Abdomen
 SA - Seat Back Angle
 SCA - Steering Column Angle
 SH - Striker to H-Point
 SK - Striker to Knee
 ST - Striker to Head
 SWA- Steering Wheel Angle
 TA - Tibial Angle
 WA - Windshield Angle



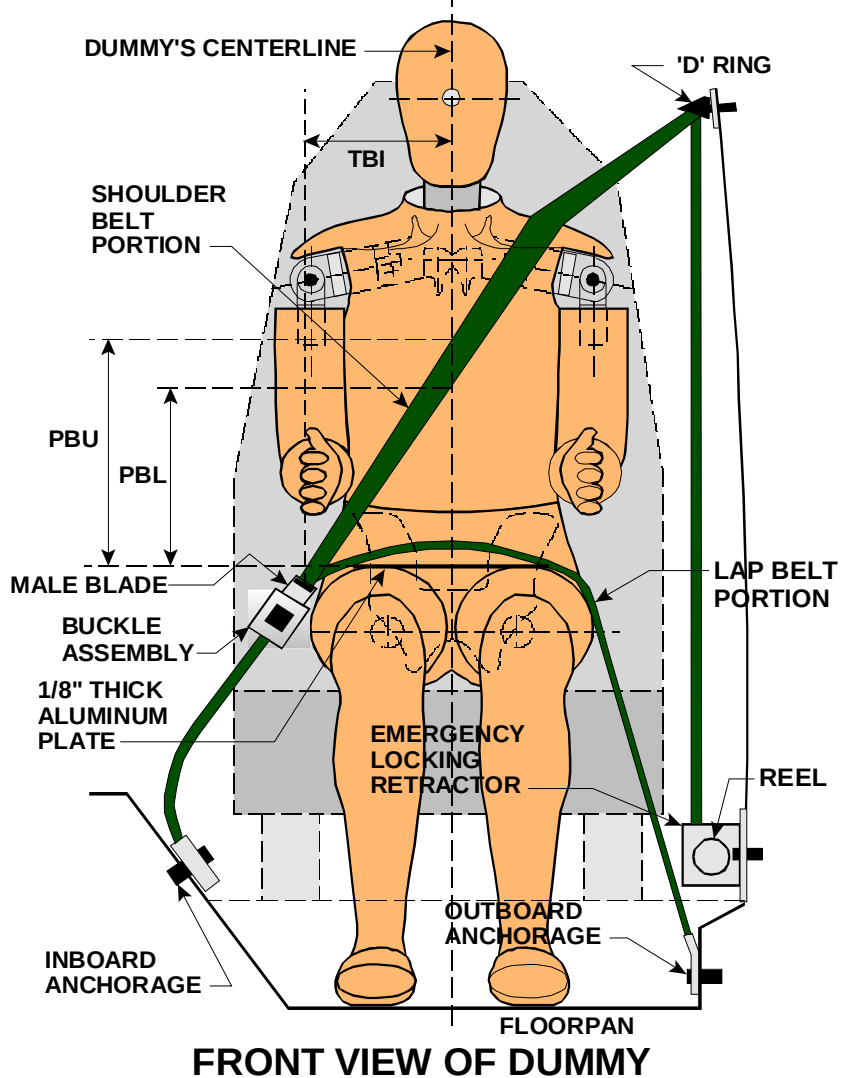
DATA SHEET NO. 5
FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #061)			PASS. (Serial #064)		
WA ^o	23.0 deg.			N/A		
SWA ^o	67.4 deg.			N/A		
SCA ^o	22.6 deg.			N/A		
SA ^o	24.0 deg.			24.0 deg.		
HZ	143			141		
HH	315			318		
HW	600			600		
HR	191			180		
NR	376	Angle	-5 deg.	N/A		
CD	508			506		
CS	305			N/A		
RA	180			N/A		
KDL	167	Angle (KDA)	43 deg.	165		
KDR	171			160	Angle (KDA)	43 deg.
PA ^o	22.5 deg.			24.4 deg.		
TA ^o	40.1 deg.			37.7 deg.		
KK	333			270		
AA	352			222		
ST	620	Angle	36 deg.	615	Angle	31 deg.
SK	855	Angle	95 deg.	865	Angle	94 deg.
SH	495	Angle	115 deg.	500	Angle	109 deg.
SHY	250			245		
HS	317			321		
HD	141			149		
AD	132			116		

Dimensions in millimeters

DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

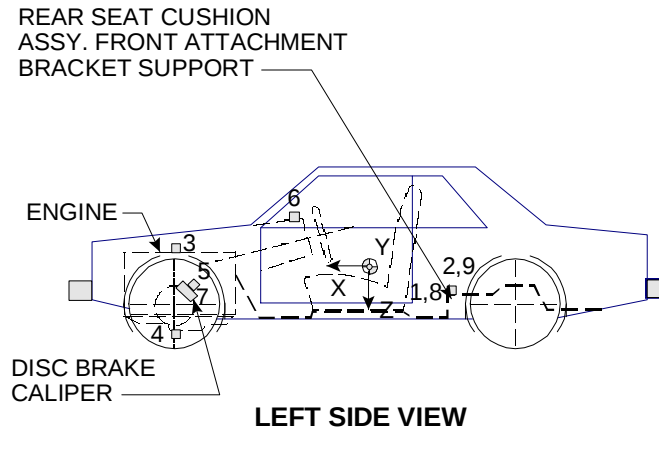
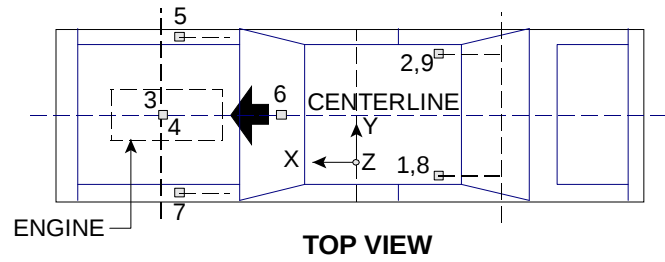
SEAT BELT POSITIONING DATA



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	350	350
PBL-- Top surface of alum. plate to belt lower edge	270	270
LAP BELT TENSION	10 N	10 N
SHOULDER BELT TENSION	Retractor	Retractor

DATA SHEET NO. 7
VEHICLE ACCELEROMETER LOCATIONS

VEHICLE ACCELEROMETER LOCATIONS



No.	LOCATION	PRE-TEST LENGTH (mm)		
		X	Y	Z
1	Left Rear Seat Cross Member X	1682	-651	-349
2	Right Rear Seat Cross Member X	1682	651	-349
3	Top of Engine Block	3965	28	825
4	Bottom of Engine	3818	113	205
5	Disc Brake Caliper @ Right Side	3859	611	366
6	Instrument Panel**	-	-	-
7	Disc Brake Caliper @Left Side	3862	-607	351
8	Left Rear Seat Cross Member Z	1682	-651	-349
9	Right Rear Seat Cross Member Z	1682	651	-349

X – From rear surface of vehicle (+ forward)

Y – From vehicle centerline (+ right)

Z – From ground plane (+ up)

** Accelerometer was not requested by the COTR

DATA SHEET NO.8
SUMMARY OF FMVSS 212 and FMVSS 219 (Partial) DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with a 20 mm molding.

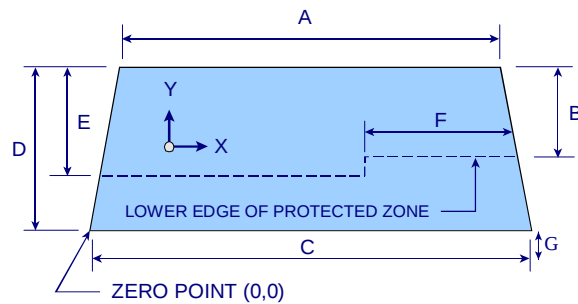
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

Temperature of windshield molding during test: 21°C.

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST (mm)	
RIGHT SIDE	2220	2220	100.0%
LEFT SIDE	2220	2220	100.0%
TOTAL	4440	4440	100.0%



DIMENSIONS (mm)	
A	1220
B	435
C	1700
D	760
E	490
F	770
G	20

FRONT VIEW OF WINDSHIELD

FAILURE DETAILS: None

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm:

	COORDINATES	
	X	Y
1.	-	-
2.	-	-
3.	-	-
4.	-	-

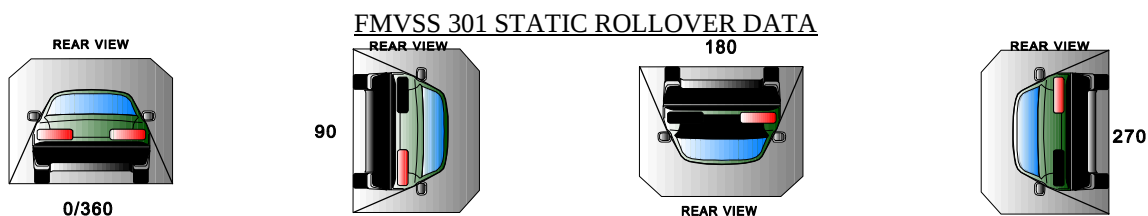
DATA SHEET NO. 9
SUMMARY OF FMVSS NO. 301 DATA

NHTSA TEST No.: _____ M60112 _____ TEST DATE: _____ January 10, 2006
VEHICLE MAKE/MODEL: _____ 2006 Chevrolet Monte Carlo Two-Door Coupe _____
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

FUEL SPILLAGE MEASUREMENT:

Time Interval	Amount	Maximum Allowable Spillage
Impact Until Motion Ceases		28 g
First Five Minutes Following Impact		142 g
Next 25 Minutes		28 g / 1 minute

SOLVENT SPILLAGE DETAILS: None



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes
90° - 180°	1	minutes	00	seconds	5	minutes	6	minutes	0	seconds	7	minutes
180°-270°	1	minutes	06	seconds	5	minutes	6	minutes	6	seconds	7	minutes
270°-360°	1	minutes	13	seconds	5	minutes	6	minutes	13	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

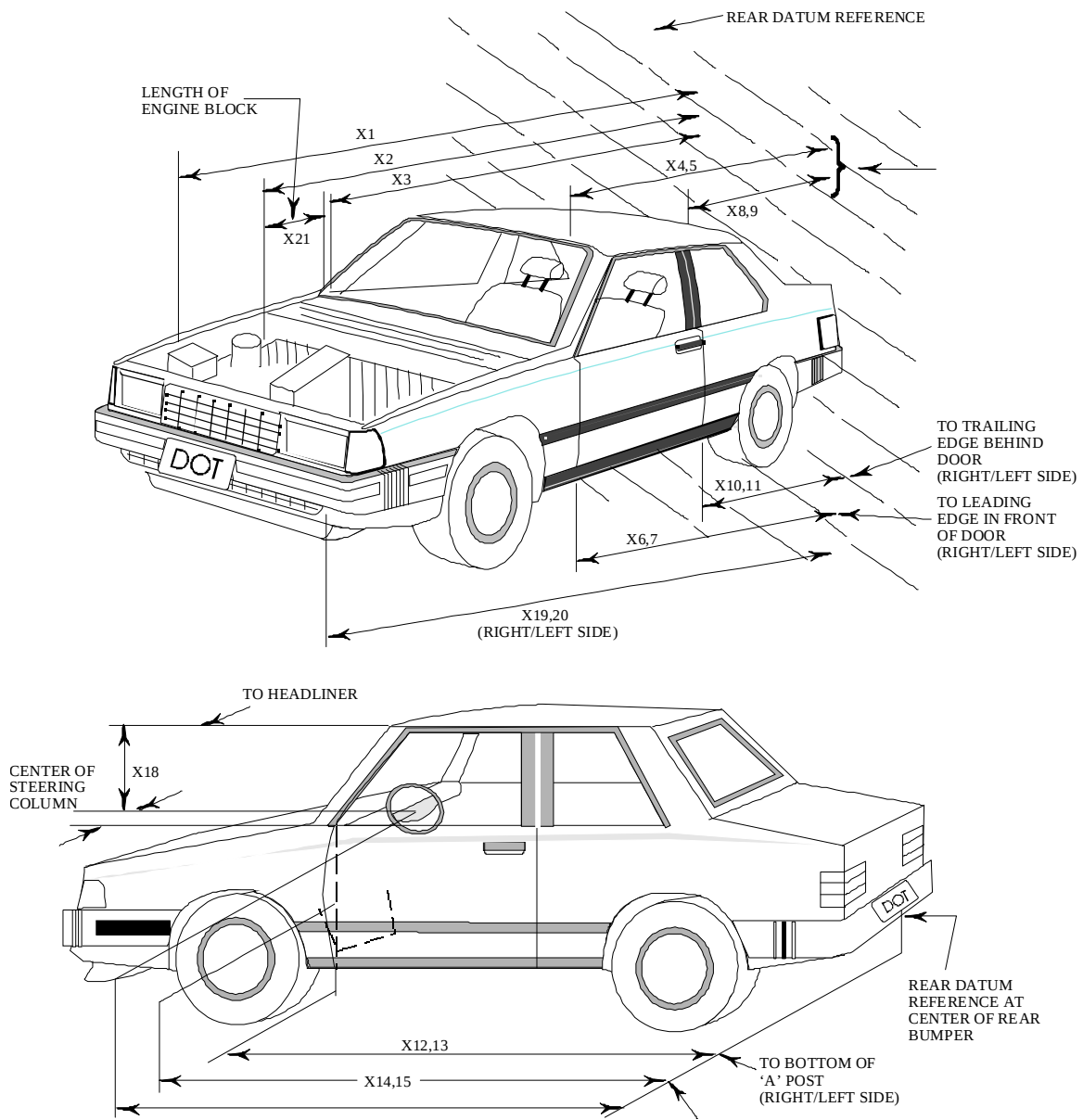
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0° - 90°	None
90° - 180°	None
180°-270°	None
270°-360°	None

DATA SHEET NO. 10
TEST VEHICLE MEASUREMENTS



DATA SHEET NO.10
VEHICLE MEASUREMENTS (cont.)

NHTSA TEST No.: M60112 TEST DATE: January 10, 2006
VEHICLE MAKE/MODEL: 2006 Chevrolet Monte Carlo Two-Door Coupe

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5003	4293	710
X2	Rear Surface of Vehicle to Front of Engine	4410	4016	394
X3	Rear Surface of Vehicle to Firewall	3798	3699	99
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3355	3350	5
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3359	3357	2
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3405	3404	1
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3409	3408	1
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2041	2035	6
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2042	2040	2
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2069	2068	1
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2070	2071	-1
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3385	3379	6
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3389	3386	3
X14	Rear Surface of Vehicle to Firewall, Right Side	3764	3668	96
X15	Rear Surface of Vehicle to Firewall, Left Side	3796	3760	36
X16	Rear Surface of Vehicle to Steering Column	2906	2924	-18
X17	Center of Steering Column to "A" Post	303	278	25
X18	Center of Steering Column to Headliner	383	346	37
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4924	4240	684
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4925	4249	676
X21	Length of Engine Block	486	486	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3058	3050	8
CD	Rear Surface of Vehicle to Center of Dash Panel	3047	3013	34
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3070	3060	10

All Dimensions in mm

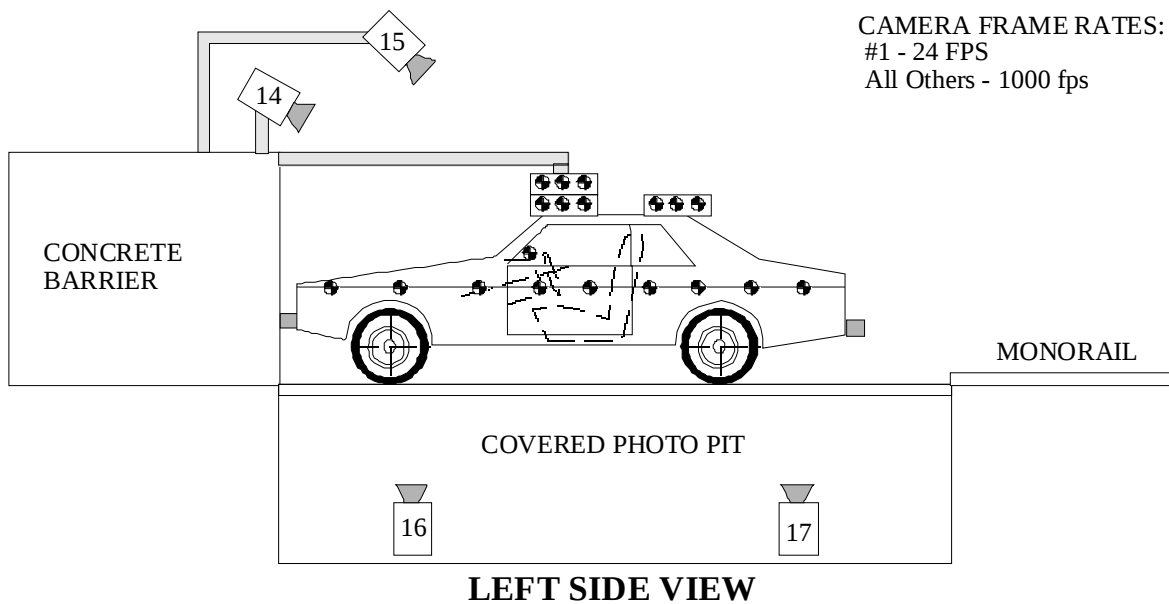
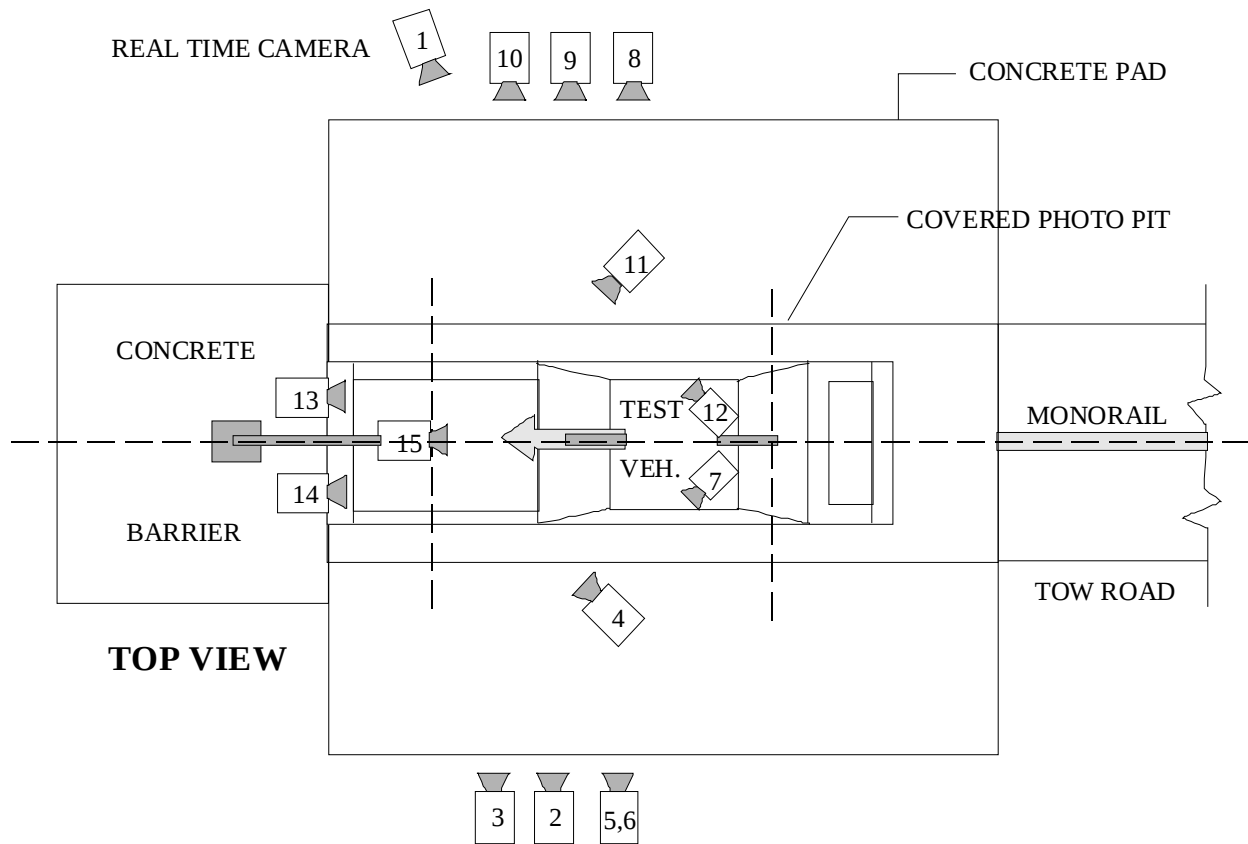
DATA SHEET NO.10
VEHICLE MEASUREMENTS (cont.)

NHTSA TEST No.: M60112 TEST DATE: January 10, 2006
VEHICLE MAKE/MODEL: 2006 Chevrolet Monte Carlo Two-Door Coupe

TARGET VEHICLE STRUCTURAL MEASUREMENTS

	Elements	Pre-Test (mm)
1	Total length	5003
2	Total Width	1818
3	Bumper Top Height	546
4	Bumper Bottom Height	423
5	Longitudinal Member Top Height	520
6	Distance Between Longitudinal Members	968
7	Longitudinal Member Width	100
8	Engine top height	860
9	Engine bottom height	167
10	Engine and gearbox width	790
11	Front bumper-engine distance	590
12	Front shock absorber fixing height	875
13	Bonnet leading edge height	865
14	Front shock absorber fixing width	1185
15	Front bumper – front axle distance	1105
16	Front axle – a pillar distance	450
17	A-pillar – B pillar distance	1410
18	B-pillar – rear axle distance	948
19	B-pillar – C Pillar distance	560
20	Roof sill bottom height	1315
21	Roof sill top height	1378
22	Floor sill bottom height	232
23	Floor sill top height	360

DATA SHEET NO.11
HIGH-SPEED CAMERA LOCATIONS



DATA SHEET NO.11
HIGH-SPEED CAMERA LOCATIONS (cont.)

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	30
2	Overall Left Side	8466	1714	1084	-5	8167	28	1000
3	Left Side View	9624	1147	1083	-2	9325	52	1000
4	Driver and Interior View	7620	3029	2040	-10	-	35	500
5	Steering Column (Bottom)	8070	2259	1177	-3	7771	25	1000
6	Steering Column (Top)	8070	2259	1777	-8	7771	28-70	1000
7	Left CRS Lateral View	-	-	-	-	-	-	-
8	Overall Right Side	7893	2142	1097	-2	8194	28	500
9	Right Side View	9687	1590	1181	-3	9988	52	1000
10	Right Passenger View	8427	1975	1411	-5	8728	35	1000
11	Passenger and Interior View	7816	3159	2003	-10	-	35	500
12	Right CRS Lateral View	-	-	-	-	-	-	-
13	Passenger Front View	620	-92	1987	-33	-	13	500
14	Driver Front View	620	-92	1987	-34	-	13	500
15	Windshield View	0	-530	3374	-50	-	20	500
16	Pit View of Engine	0	615	-3048	90	-	13	500
17	Pit View of Fuel Tank	0	3170	-3048	90	-	13	500

*X = film plane to monorail centerline ** = referenced to horizontal plane

Y = film plane to impact location N.T. indicates No Timing

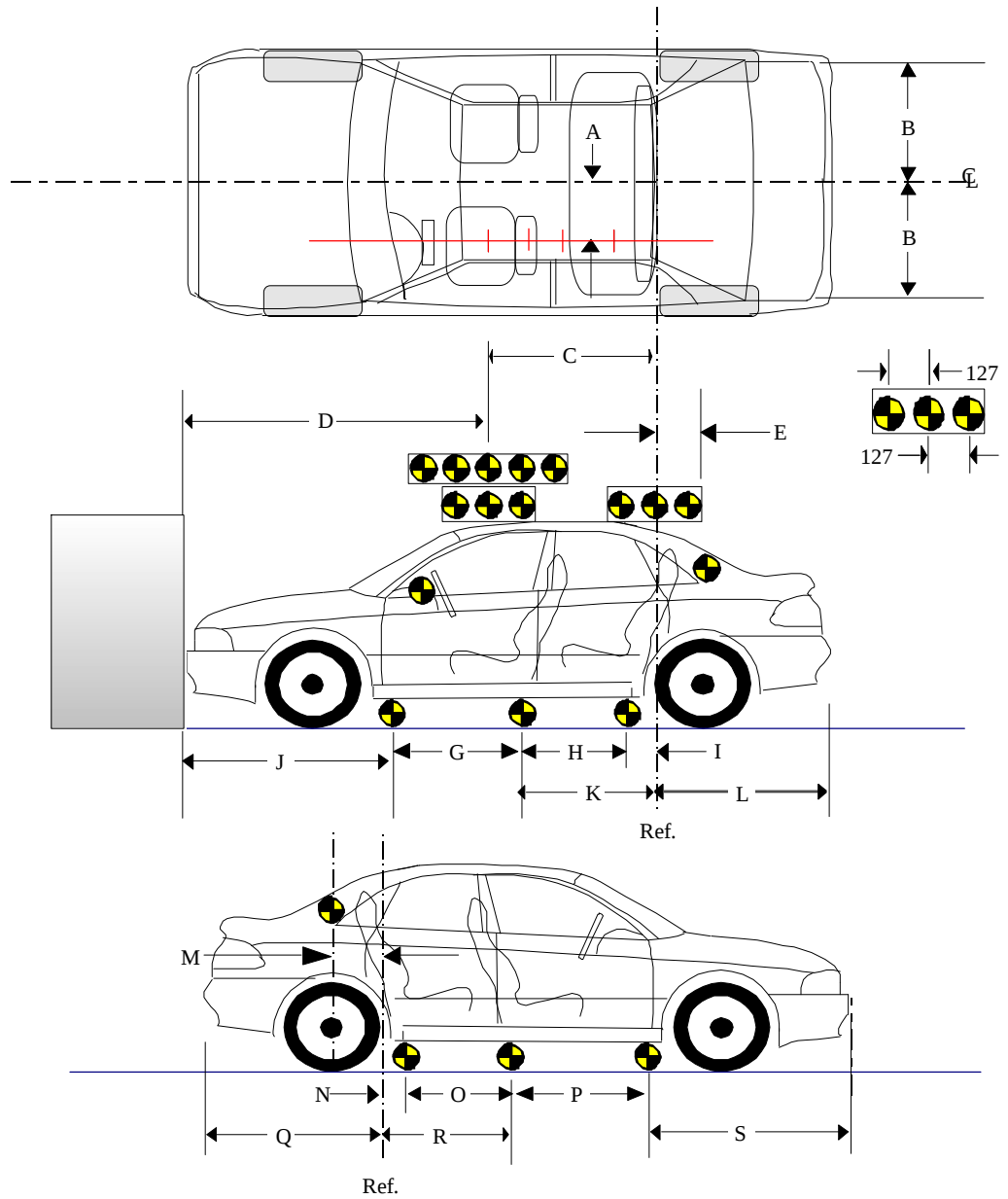
Z = film plane to ground

DATA SHEET NO. 12
VEHICLE REFERENCE PHOTO TARGET LOCATIONS

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

(Dimensions in millimeters)

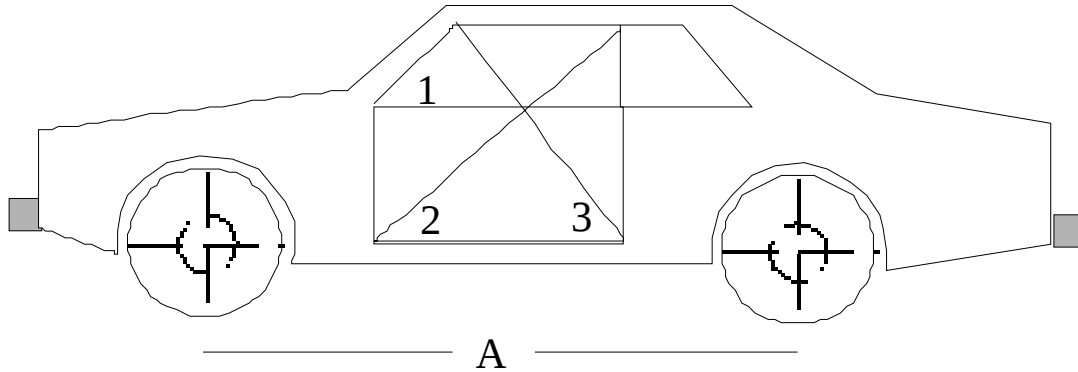
A	377
B	600
C	1220
D	2315
E	14
F	1586
G	951
H	935
I	110
J	1560
K	1045
L	1447
M	12
N	109
O	943
P	945
Q	1443
R	1052
S	1563



DATA SHEET NO. 13
VEHICLE INTRUSION MEASUREMENTS

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

DOOR OPENING WIDTH AND WHEELBASE MEASUREMENTS



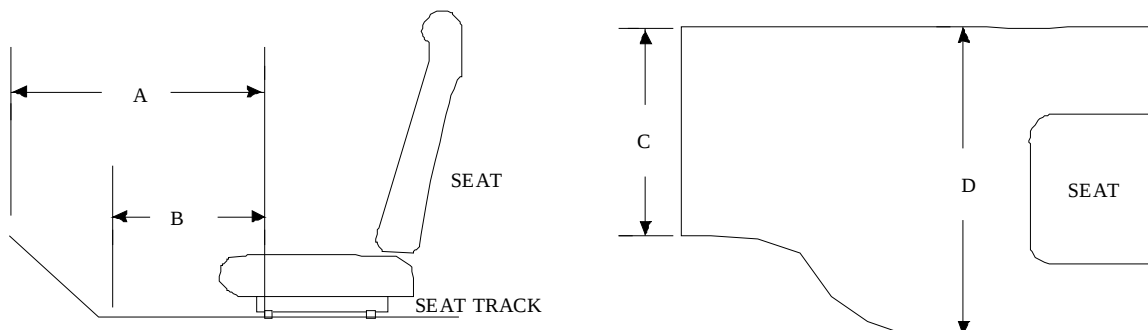
UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1240	1674	1109	1248	1673	1115
AFTER TEST	1237	1675	1110	1246	1675	1115
DIFFERENCE	3	-1	-1	2	-2	0

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2810	2810
AFTER TEST	2722	2672
DIFFERENCE	88	138

DATA SHEET NO.13
VEHICLE INTRUSION MEASUREMENTS (cont)

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

STATIC FOOTWELL DEFORMATION



DRIVER

Measurement	Pre-Test	Post-Test	Difference
A	709	647	62
B	362	334	28
C	482	448	34
D	454	457	-3

PASSENGER

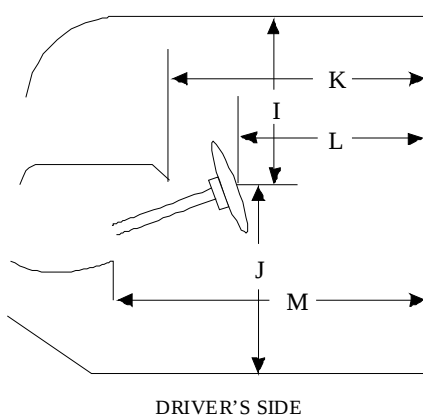
Measurement	Pre-Test	Post-Test	Difference
A	678	621	57
B	329	309	20
C	442	404	38
D	433	434	-1

Units = mm

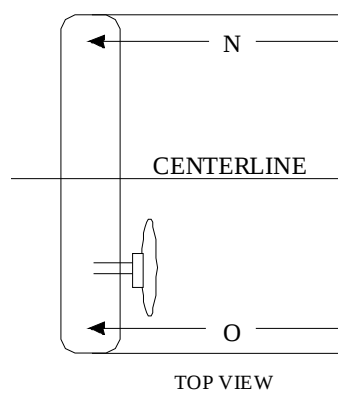
DATA SHEET NO.13
VEHICLE INTRUSION MEASUREMENTS (cont.)

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

STATIC PASSENGER COMPARTMENT INTRUSION

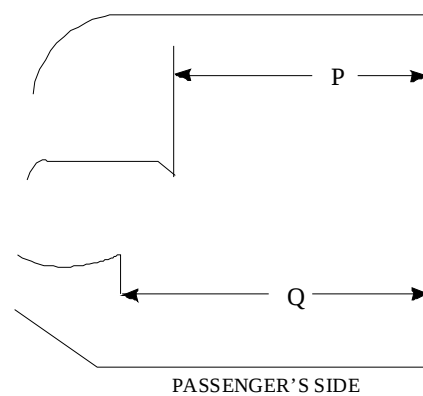


DRIVER'S SIDE



TOP VIEW

MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



PASSENGER'S SIDE

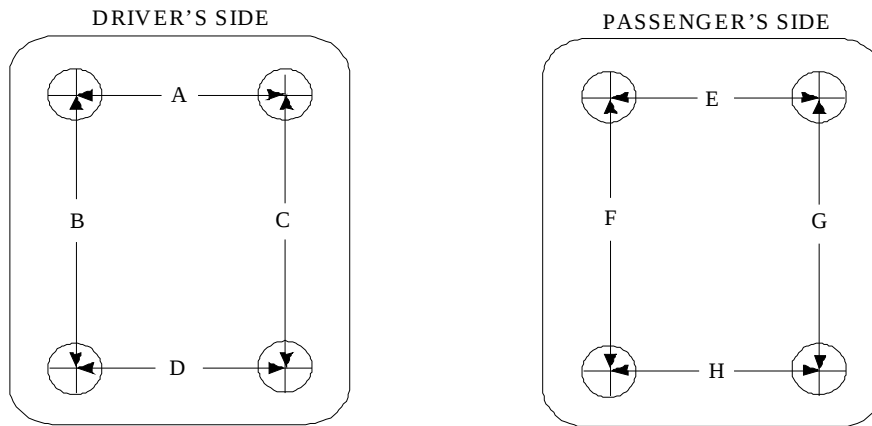
Measurement	Pre-Test	Post-Test	Difference
I	383	346	37
J	667	747	-80
K	993	1004	-11
L	803	823	-20
M	1002	975	27
N	957	954	3
O	968	959	9
P = K (PASS.)	1085	1076	9
Q = M (PASS.)	1089	1041	48

Units = mm

DATA SHEET NO.13
VEHICLE INTRUSION MEASUREMENTS (cont.)

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

FLOORBOARD DEFORMATION



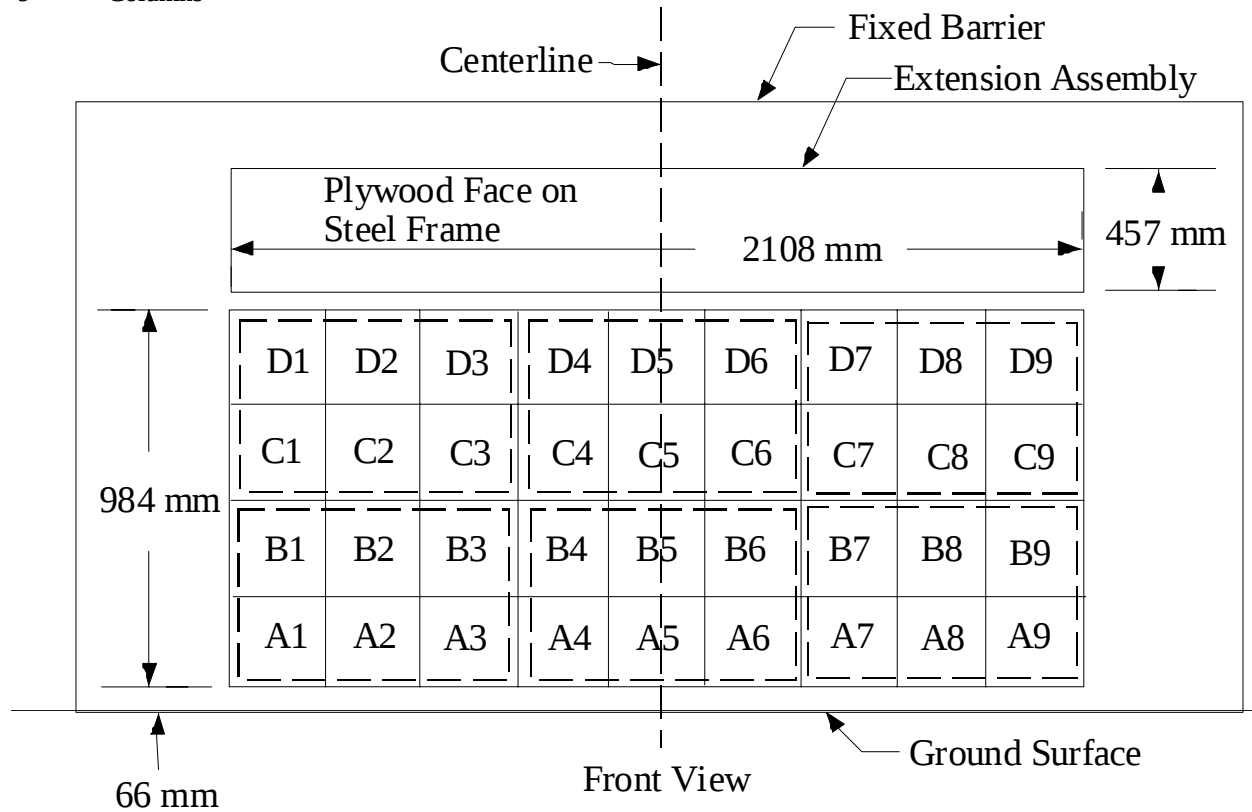
TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	482	448	34
B	431	423	8
C	419	381	38
D	454	457	-3
E	442	404	38
F	391	381	10
G	399	336	63
H	433	434	-1

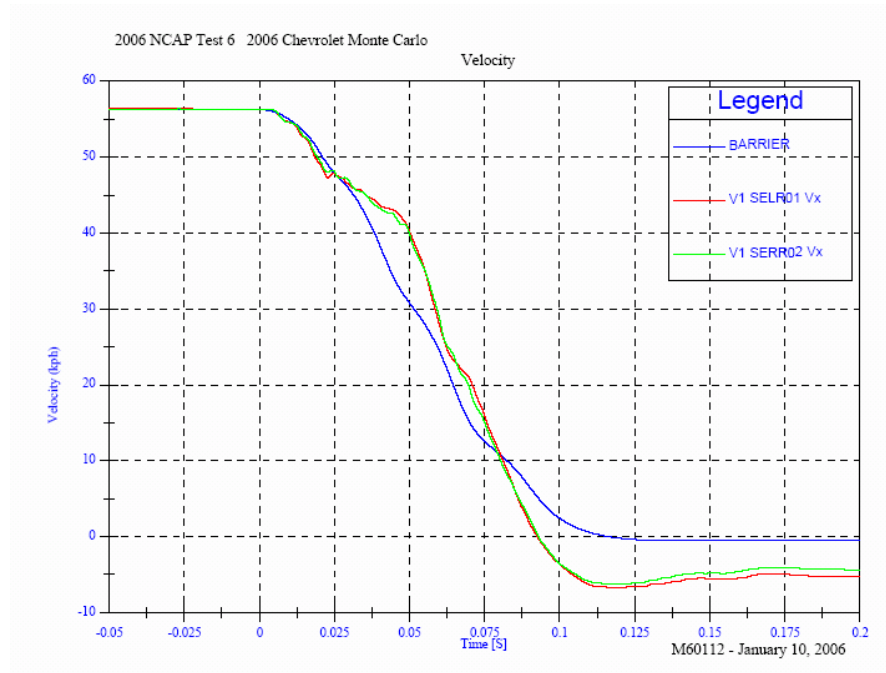
Units = mm

DATA SHEET NO.14
LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
4 Rows
9 Columns



Momentum Plot



DATA SHEET NO. 15
ACCIDENT INVESTIGATION DIVISION DATA

FOR FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Chevrolet Monte Carlo Two-Door Coupe

NHTSA Test No.: M60112 VIN: 2G1WJ15K169255304

Model Year: 2006 Build Date: 12/05 Test Date: January 10, 2006

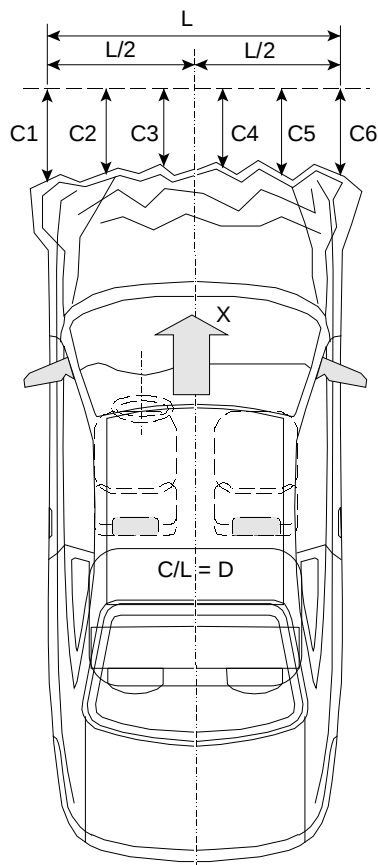
Vehicle Size Category: Mid-Size Test Weight: 1779.0 kg

Vehicle Wheelbase: 2810 mm; Front Overhang: 1093 mm; Overall Width: 1818 mm

Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions

	PRE (mm)	POST (mm)	DIFF (mm)
C1 =	4837	4219	618
C2 =	4950	4274	676
C3 =	4993	4302	691
C4 =	4993	4297	696
C5 =	4949	4267	682
C6 =	4835	4261	574



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region: L1= 1319 mm

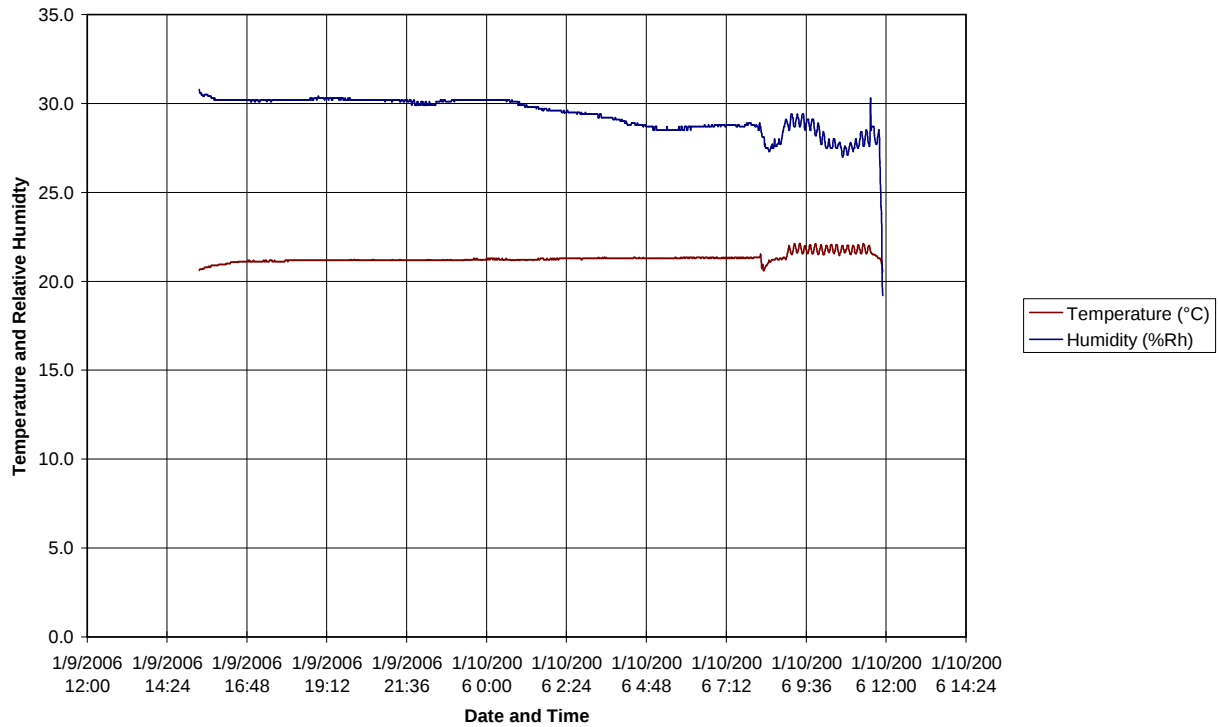
L2= 659.5 mm

L5= 263.8 mm

DATA SHEET NO.16
VEHICLE AND DUMMY TEMPERATURE STABILIZATION CHART

NHTSA Test No.: M60112 Vehicle: 2006 Chevrolet Monte Carlo Two-Door Coupe

M60112 Temperature Trace



APPENDIX A
PHOTOGRAPHS

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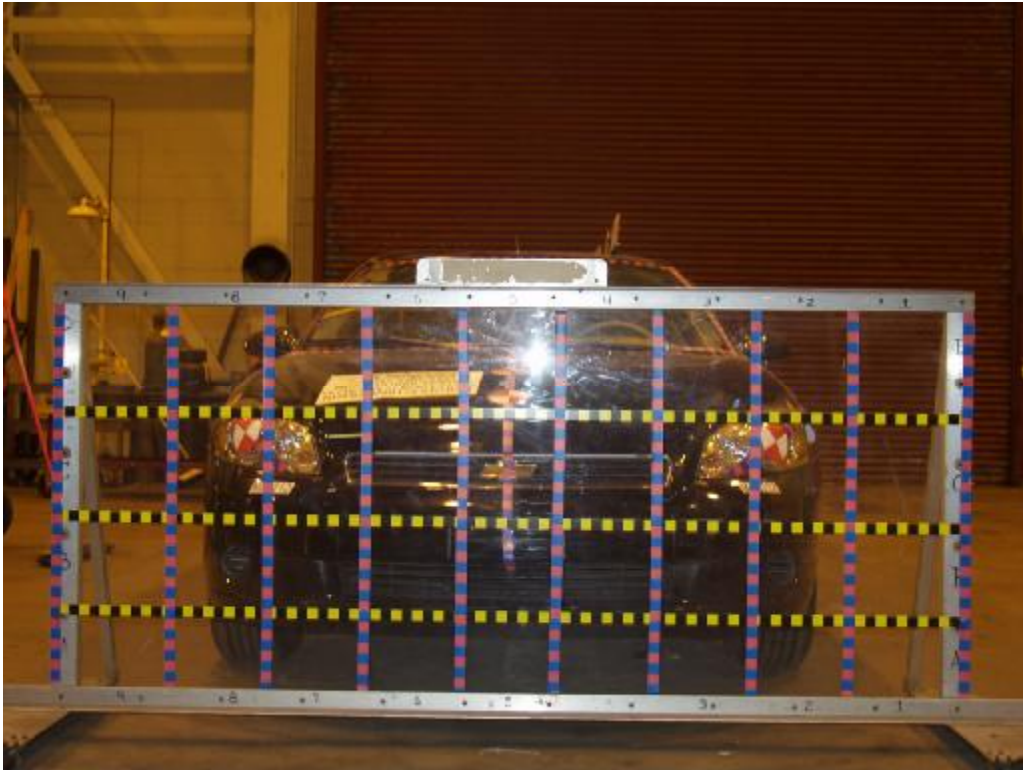


Figure A-1: Load Cell Locations

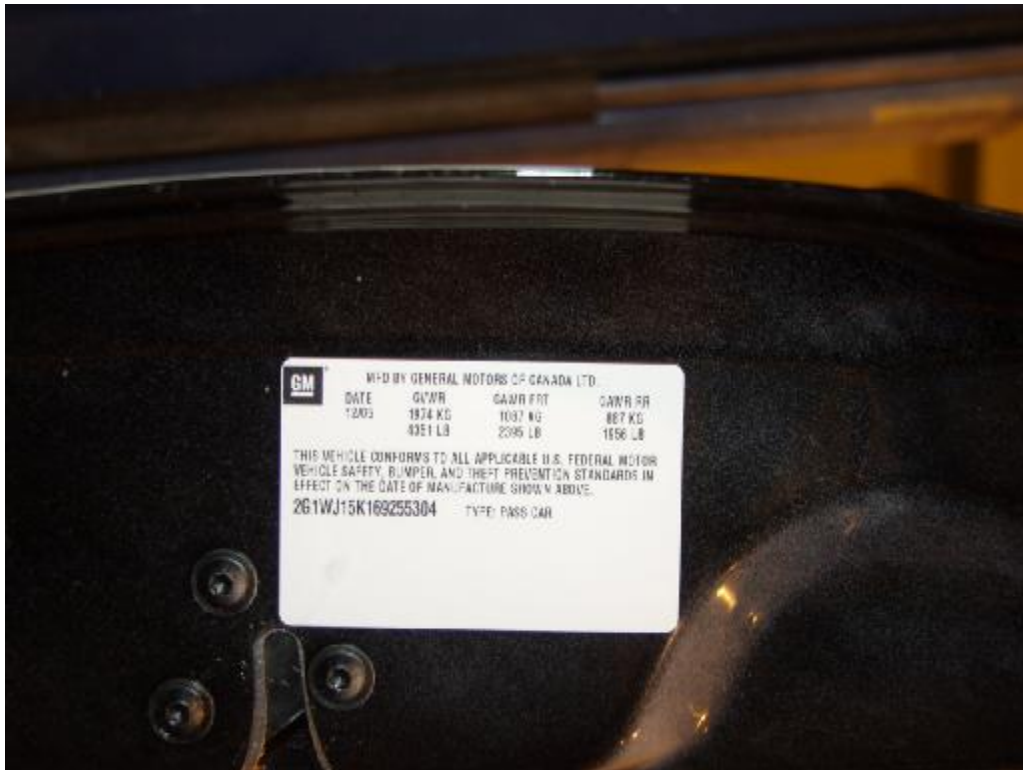


Figure A-2: Vehicle Certification Placard



Figure A-3: Vehicle Tire Placard



Figure A-4: Right Front, As Received



Figure A-5: Left Rear, As Received



Figure A-6: Pre-Test Front View



Figure A-7: Post-Test Front View



Figure A-8: Pre-Test Left Side View



Figure A-9: Post-Test Left Side View



Figure A-10: Pre-Test Right Side View



Figure A-11: Post-Test Right Side View



Figure A-12: Pre-Test Right Front Three-Quarter View



Figure A-13: Post-Test Right Front Three-Quarter View



Figure A-14: Pre-Test Left Rear Three-Quarter View



Figure A-15: Post-Test Left Rear Three-Quarter View



Figure A-16: Left Rear Three-Quarter View of Doors After Impact



Figure A-17: Right Rear Three-Quarter View of Doors After Impact



Figure A-18: Pre-Test Windshield View



Figure A-19: Post-Test Windshield View



Figure A-20: Pre-Test Engine Compartment View



Figure A-21: Post-Test Engine Compartment View



Figure A-22: Pre-Test Fuel Cap View



Figure A-23: Post-Test Fuel Cap View



Figure A-24: Pre-Test Front Underbody View



Figure A-25: Post-Test Front Underbody View



Figure A-26: Pre-Test Mid Underbody View



Figure A-27: Post-Test Mid Underbody View



Figure A-28: Pre-Test Rear Underbody View



Figure A-29: Post-Test Rear Underbody View



Figure A-30: Pre-Test Driver Head Location



Figure A-31: Post-Test Driver Head Location



Figure A-32: Pre-Test Driver Position View



Figure A-33: Post-Test Driver Position View

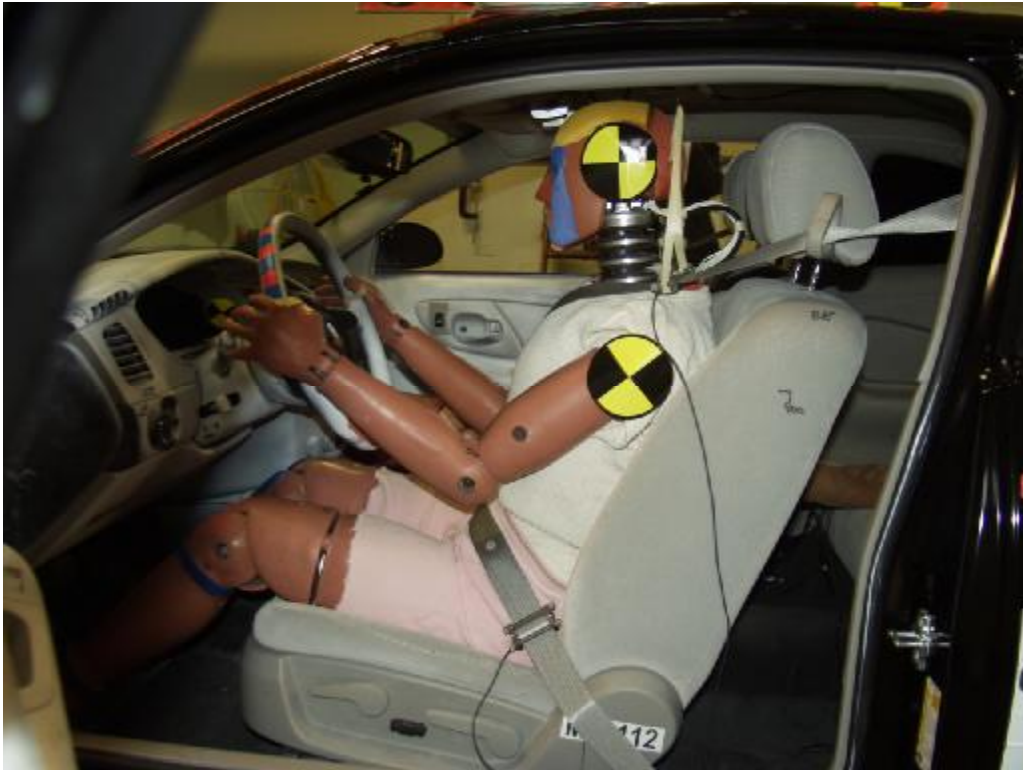


Figure A-34: Pre-Test Driver and Interior View



Figure A-35: Post-Test Driver and Interior View



Figure A-36: Pre-Test Driver Feet View

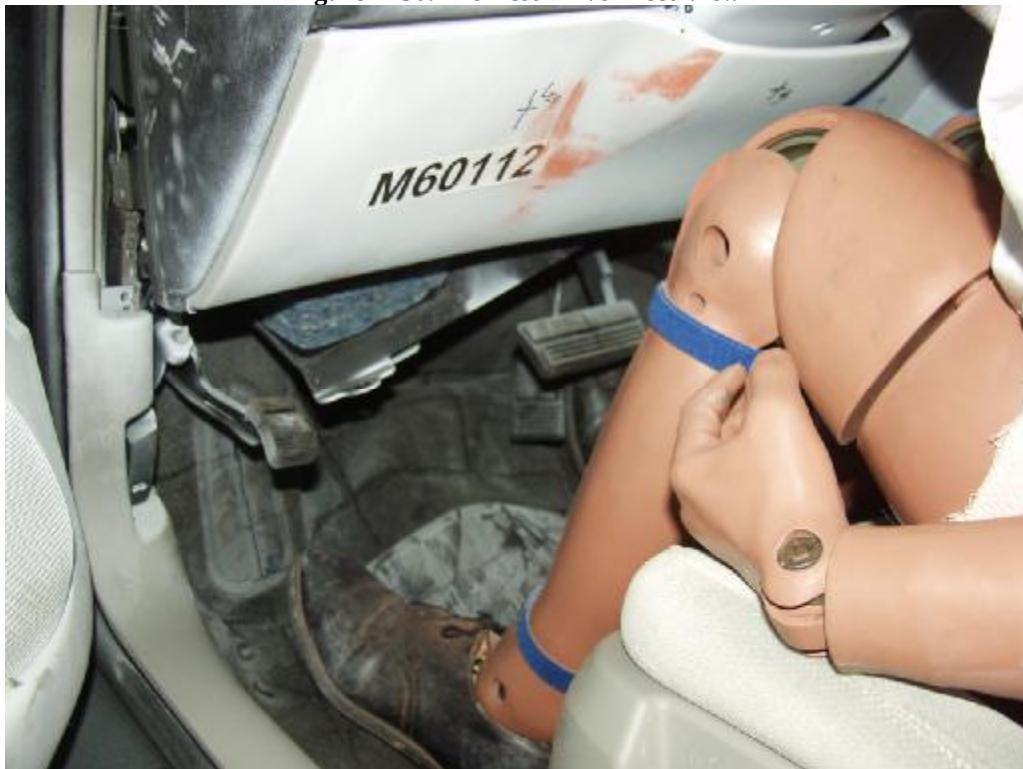


Figure A-37: Post-Test Driver Feet View



Figure A-38: Pre-Test Driver Knee Bolster View



Figure A-39: Post-Test Driver Knee Bolster View



Figure A-40: Pre-Test Driver Floor Pan View



Figure A-41: Post-Test Driver Floor Pan View



Figure A-42: Post-Test Driver Head View



Figure A-43: Post-Test Driver Contact to Airbag



Figure A-44: Pre-Test Passenger Head Location



Figure A-45: Post-Test Passenger Head Location

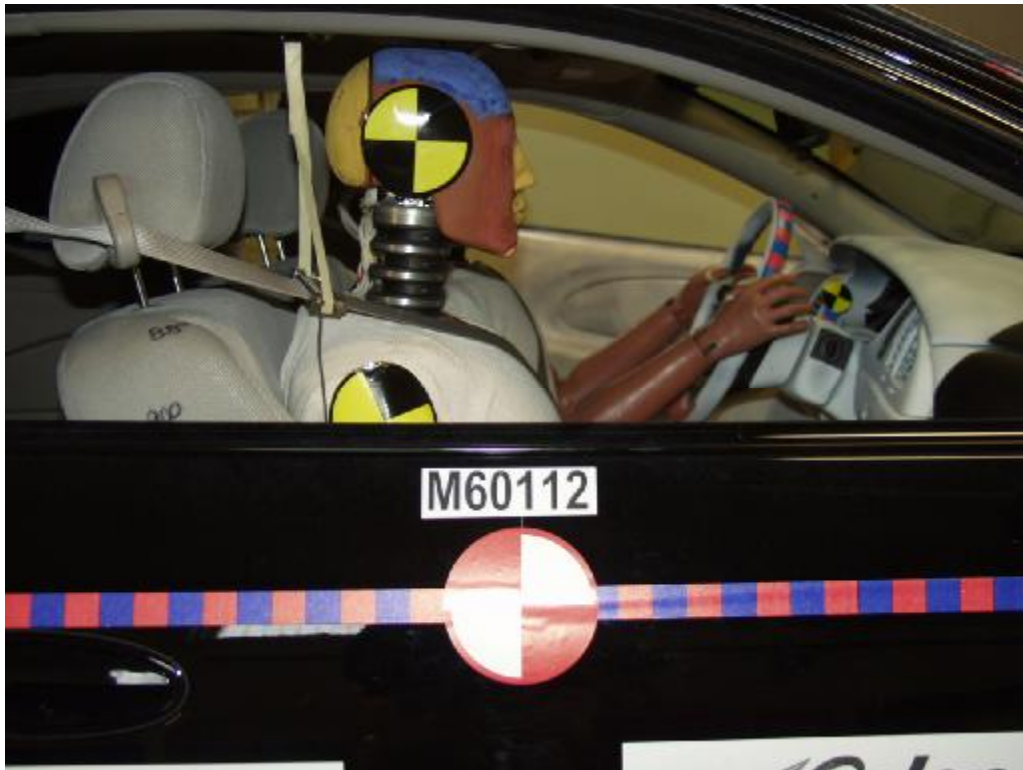


Figure A-46: Pre-Test Passenger Position View



Figure A-47: Post-Test Passenger Position View



Figure A-48: Pre-Test Passenger and Interior View



Figure A-49: Post-Test Passenger and Interior View



Figure A-50: Pre-Test Passenger Feet View



Figure A-51: Post-Test Passenger Feet View



Figure A-52: Pre-Test Passenger Knee Bolster View



Figure A-53: Post-Test Passenger Knee Bolster View



Figure A-54: Pre-Test Passenger Floor Pan View



Figure A-55: Post-Test Passenger Floor Pan View



Figure A-56: Post-Test Passenger Head View



Figure A-57: Post-Test Passenger Contact to Airbag



Figure A-58: Rollover View - 90°



Figure A-59: Rollover View - 180°

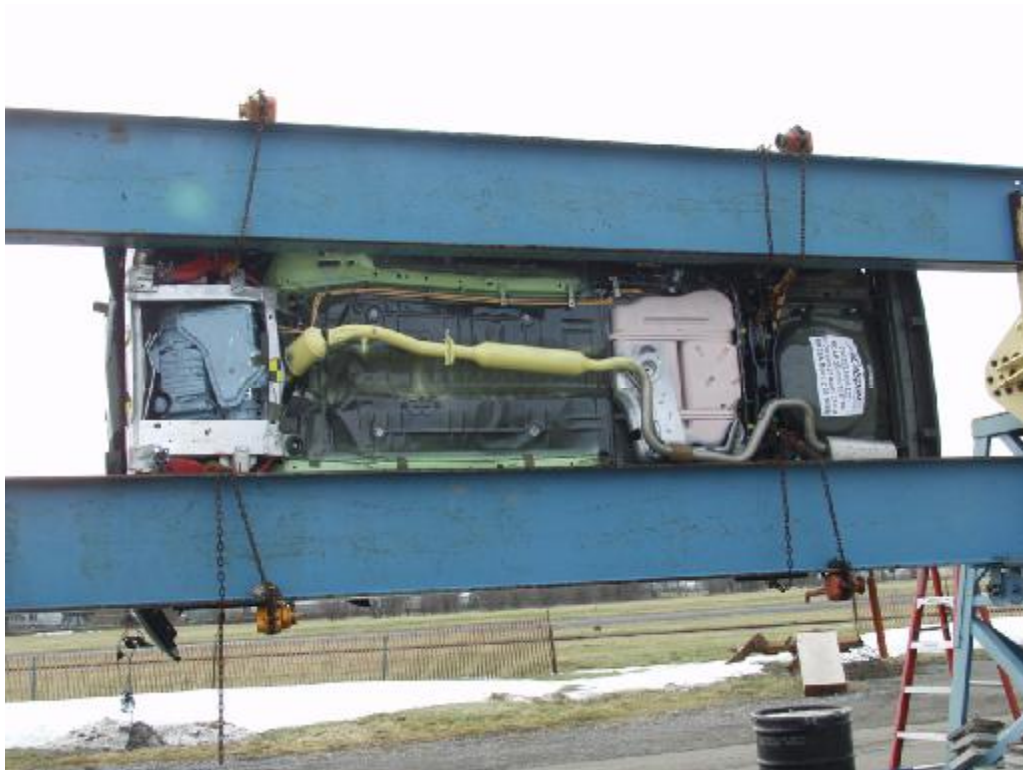


Figure A-60: Rollover View - 270°



Figure A-61: Rollover View - 360°

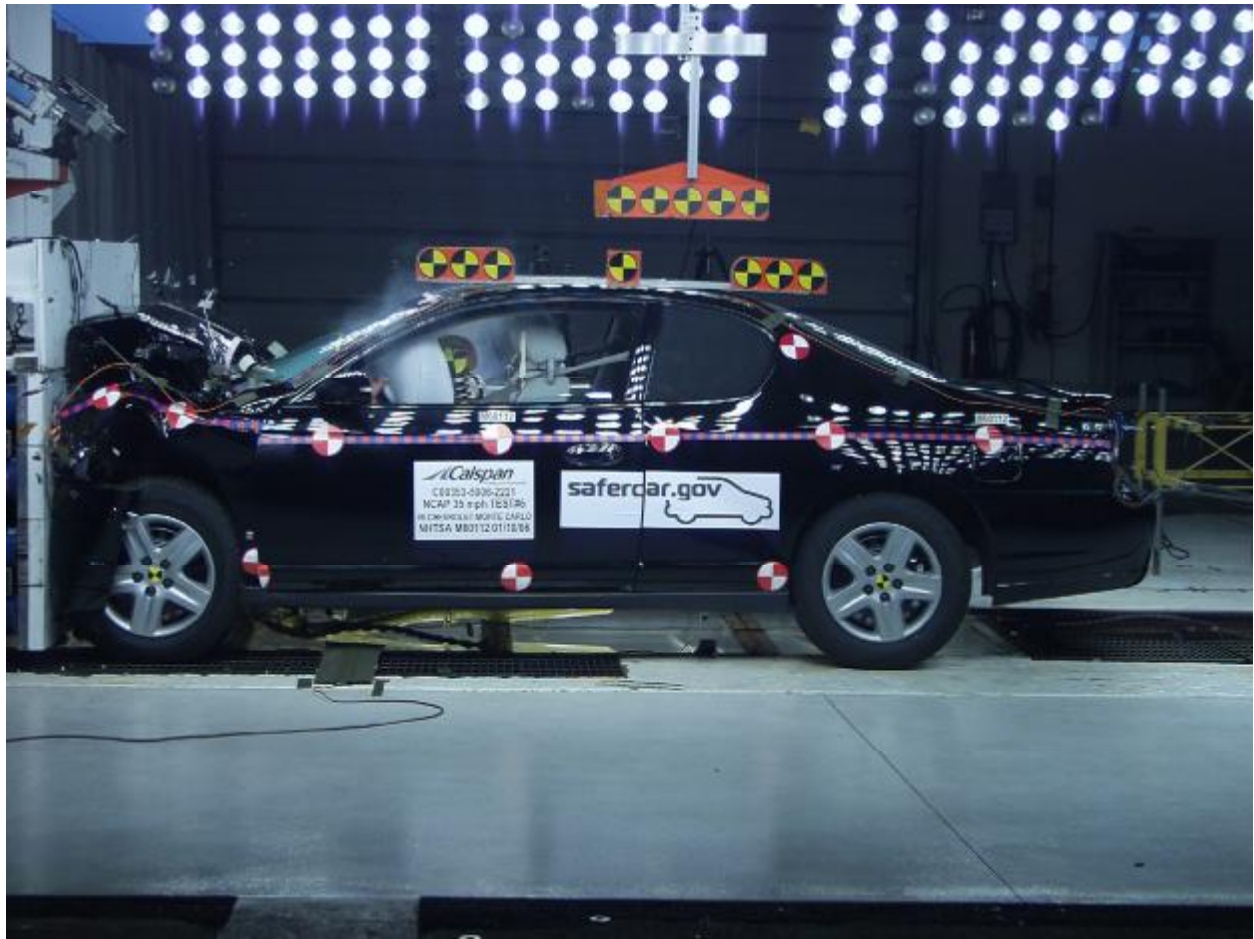


Figure A-62: Impact View

APPENDIX B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	SAE Sign Convention (positive unless noted)	
Upper Neck Load Cell	Fx	Head rearward
	Fy	Head left
	Fz	Neck in tension
	Mx	Left ear to left shoulder
	My	Chin to chest (flexion)
	Mz	Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative	
Pelvic Load Cell (Lower Lumbar)	Fx	Chest rearward
	Fy	Chest left
	Fz	Spine in tension
Femur Load Cell	Compression is negative	
Upper Tibia Load Cell (right and left leg)	Mx	Support tibia at ends, load left side center
	My	Support tibia at ends, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fz	Tibia in tension
	Mx	Support tibia at ends, load left side center
	My	Support tibia at ends, load front (shin) center

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO. M60112

DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	600
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle Displacement Integrations	180
Load Cell Barrier Forces	60

Table of Data Plots

PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
1	V1P1 Head CG x [g, CFC_1000]	B-8
2	V1P1 Head CG y [g, CFC_1000]	B-8
3	V1P1 Head CG z [g, CFC_1000]	B-8
4	V1P1 Head CG Resultant [g, CFC_1000]	B-8
5	V1P1 Chest x [g, CFC_180]	B-9
6	V1P1 Chest y [g, CFC_180]	B-9
7	V1P1 Chest z [g, CFC_180]	B-9
8	V1P1 Chest Resultant [g, CFC_180]	B-9
9	V1P1 Chest Compression x [mm, CFC_600]	B-10
10	V1P1 Left Femur z [N, CFC_600]	B-11
11	V1P1 Right Femur z [N, CFC_600]	B-11
12	V1P2 Head CG x [g, CFC_1000]	B-12
13	V1P2 Head CG y [g, CFC_1000]	B-12
14	V1P2 Head CG z [g, CFC_1000]	B-12
15	V1P2 Head CG Resultant [g, CFC_1000]	B-12
16	V1P2 Chest x [g, CFC_180]	B-13
17	V1P2 Chest y [g, CFC_180]	B-13
18	V1P2 Chest z [g, CFC_180]	B-13
19	V1P2 Chest Resultant [g, CFC_180]	B-13
20	V1P2 Chest Compression x [mm, CFC_600]	B-14
21	V1P2 Left Femur z [N, CFC_600]	B-15
22	V1P2 Right Femur z [N, CFC_600]	B-15

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

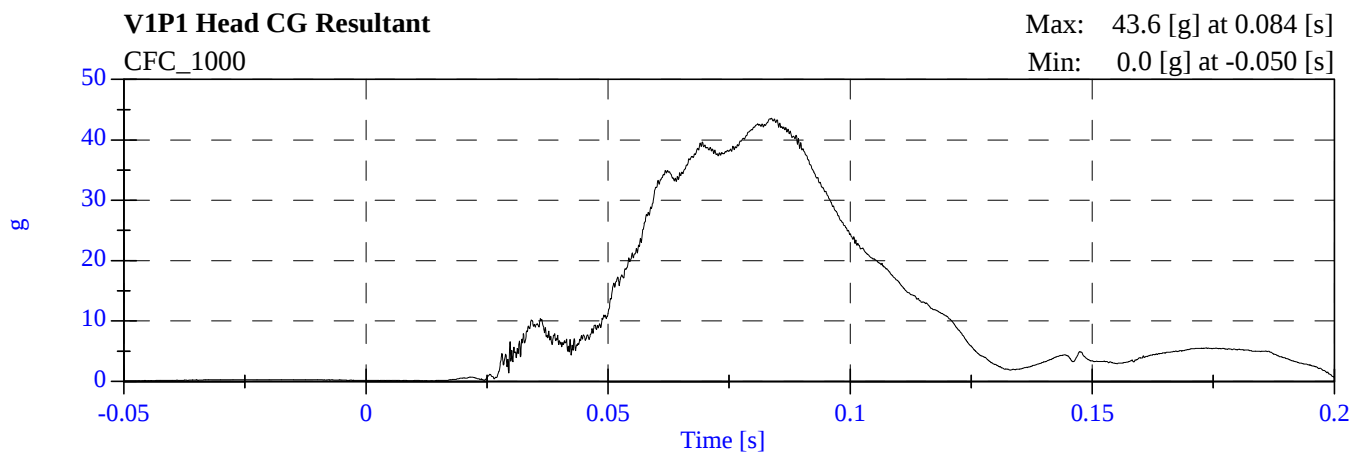
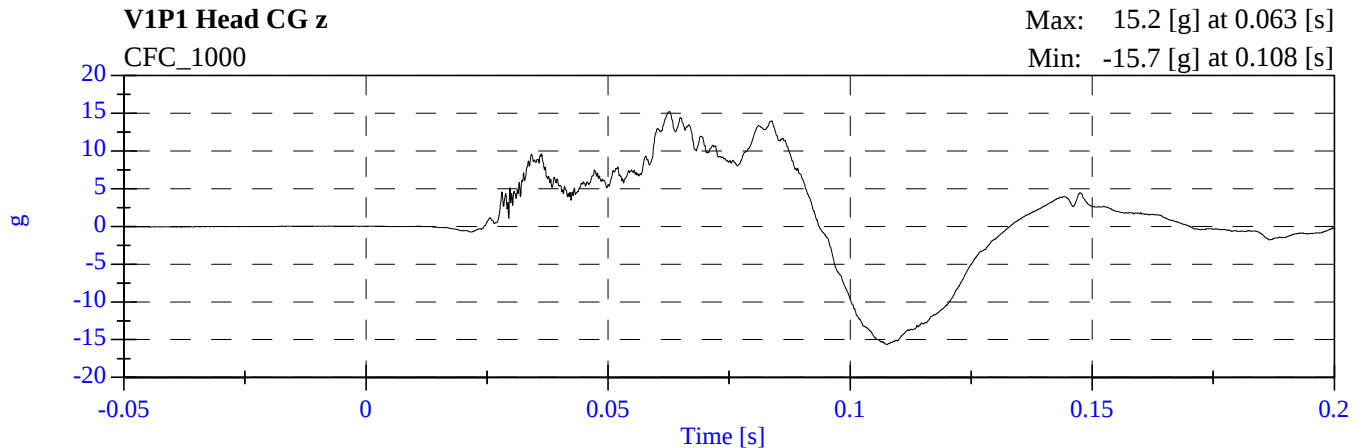
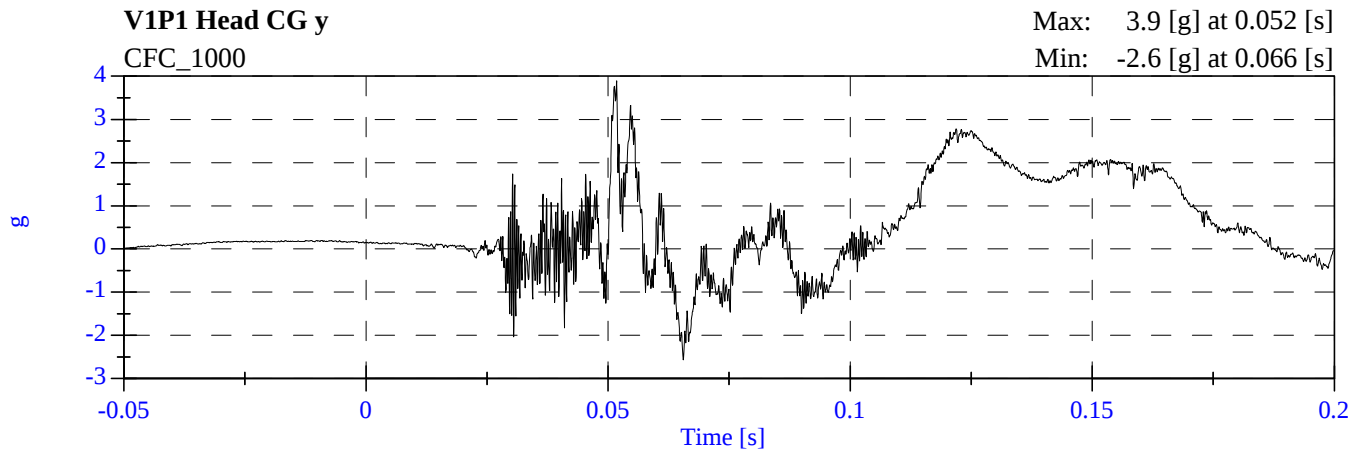
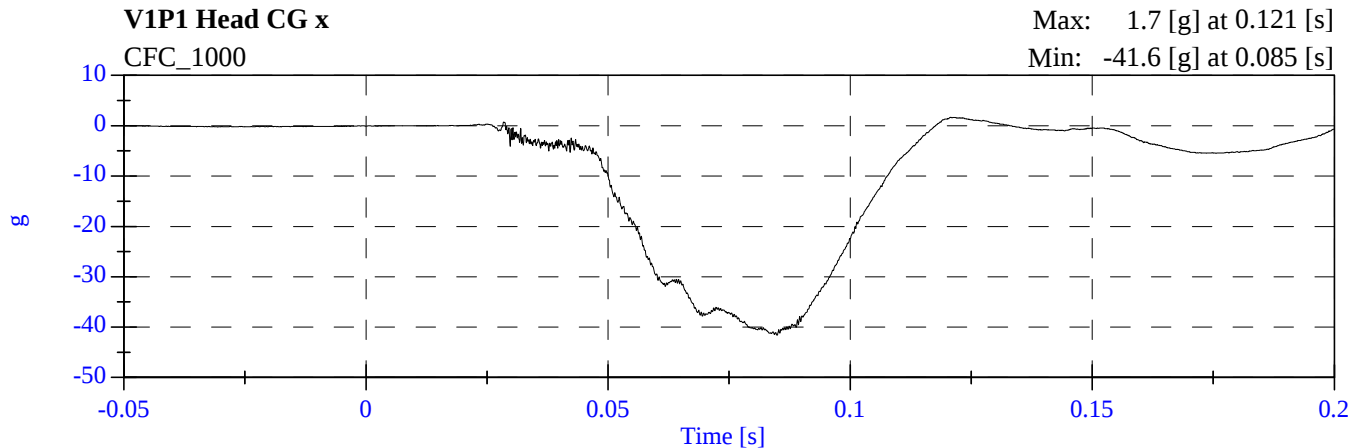
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V1P1 Head 9 Array X Arm Az	V1P1 Shoulder Belt Load
V1P1 Head 9 Array Y Arm Ax	V1P2 Lap Belt Load
V1P1 Head 9 Array Y Arm Az	V1P2 Shoulder Belt Load
V1P1 Head 9 Array Z Arm Ax	V1 Left Rear #1x
V1P1 Head 9 Array Z Arm Ay	V1 Right Rear #2x
V1P1 Head CG Ax	V1 Engine Top #3x
V1P1 Head CG Ay	V1 Engine Bottom #4x
V1P1 Head CG Az	V1 Right Caliper #5x
V1P1 Head CG Red Ax	V1 Left Caliper #7x
V1P1 Head CG Red Ay	V1 Left Rear #8z
V1P1 Head CG Red Az	V1 Right Rear #9z
V1P1 Upper Neck Fx	
V1P1 Upper Neck Fy	
V1P1 Upper Neck Fz	
V1P1 Upper Neck Mx	
V1P1 Upper Neck My	
V1P1 Upper Neck Mz	
V1P1 Chest Ax	
V1P1 Chest Ay	
V1P1 Chest Az	
V1P1 Chest Red Ax	
V1P1 Chest Red Ay	
V1P1 Chest Red Az	
V1P1 Chest Compression	
V1P1 Pelvic Ax	
V1P1 Pelvic Ay	
V1P1 Pelvic Az	
V1P1 Left Femur Fz	
V1P1 Right Femur Fz	
V1P1 Left Upper Tibia Mx	
V1P1 Left Upper Tibia My	
V1P1 Left Lower Tibia Fz	
V1P1 Left Lower Tibia Mx	
V1P1 Left Lower Tibia My	
V1P1 Right Upper Tibia Fz	
V1P1 Right Upper Tibia Mx	
V1P1 Right Upper Tibia My	
V1P1 Right Lower Tibia Mx	
V1P1 Right Lower Tibia My	
V1P1 Left Foot Aft Ax	
V1P1 Left Foot Aft Az	
V1P1 Left Foot Fore Az	
V1P1 Right Foot Aft Ax	
V1P1 Right Foot Aft Az	
V1P1 Right Foot Fore z	
V1P2 Head 9 Array X Arm Ay	

V1P2 Head 9 Array X Arm Az	
V1P2 Head 9 Array Y Arm Ax	
V1P2 Head 9 Array Y Arm Az	
V1P2 Head 9 Array Z Arm Ax	
V1P2 Head 9 Array Z Arm Ay	
V1P2 Head CG Ax	
V1P2 Head CG Ay	
V1P2 Head CG Az	
V1P2 Head CG Red Ax	
V1P2 Head CG Red Ay	
V1P2 Head CG Red Az	
V1P2 Upper Neck Fx	
V1P2 Upper Neck Fy	
V1P2 Upper Neck Fz	
V1P2 Upper Neck Mx	
V1P2 Upper Neck My	
V1P2 Upper Neck Mz	
V1P2 Chest Ax	
V1P2 Chest Ay	
V1P2 Chest Az	
V1P2 Chest Red Ax	
V1P2 Chest Red Ay	
V1P2 Chest Red Az	
V1P2 Chest Compression	
V1P2 Pelvic Ax	
V1P2 Pelvic Ay	
V1P2 Pelvic Az	
V1P2 Left Femur Fz	
V1P2 Right Femur Fz	
V1P2 Left Upper Tibia Fz	
V1P2 Left Upper Tibia Mx	
V1P2 Left Upper Tibia My	
V1P2 Left Lower Tibia Mx	
V1P2 Left Lower Tibia My	
V1P2 Right Upper Tibia Mx	
V1P2 Right Upper Tibia My	
V1P2 Right Lower Tibia Fz	
V1P2 Right Lower Tibia Mx	
V1P2 Right Lower Tibia My	
V1P2 Left Foot Aft Ax	
V1P2 Left Foot Aft Az	
V1P2 Left Foot Fore Az	
V1P2 Right Foot Aft Ax	
V1P2 Right Foot Aft Az	
V1P2 Right Foot Fore Az	
Barrier Load Cell A1 Fx	
Barrier Load Cell A2 Fx	
Barrier Load Cell A3 Fx	
Barrier Load Cell A4 Fx	

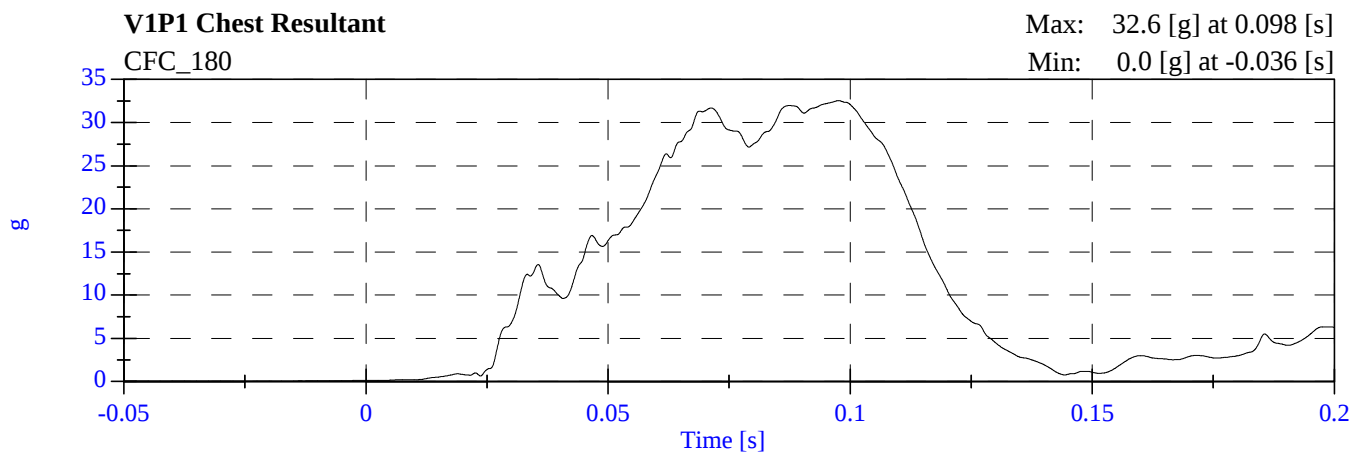
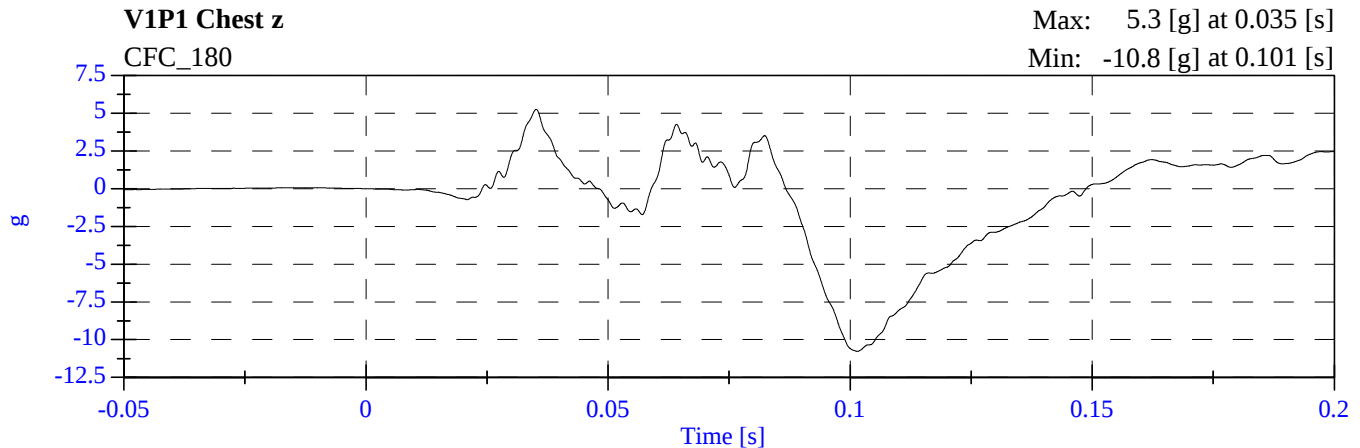
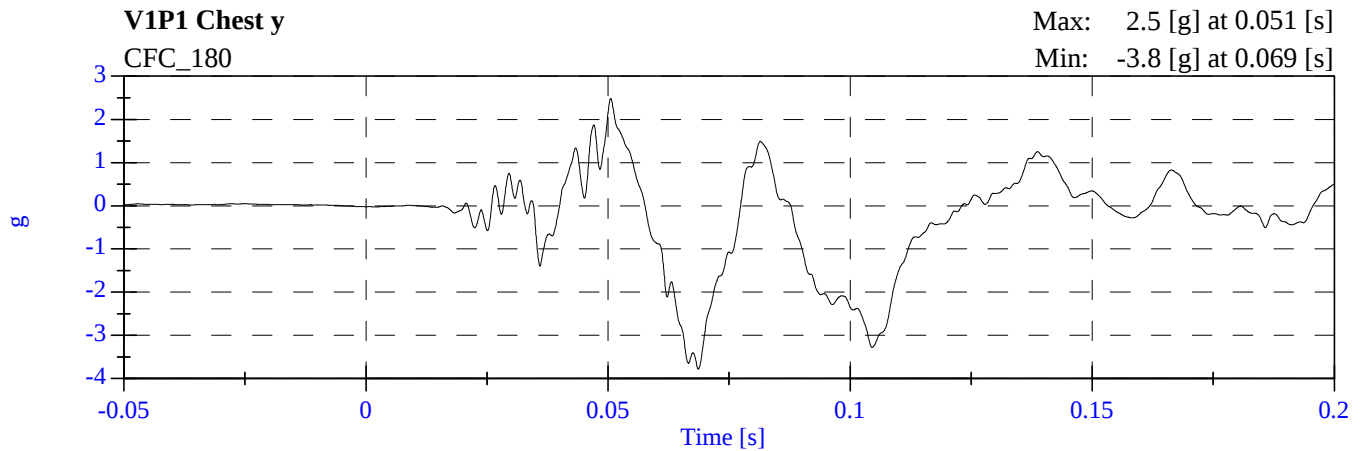
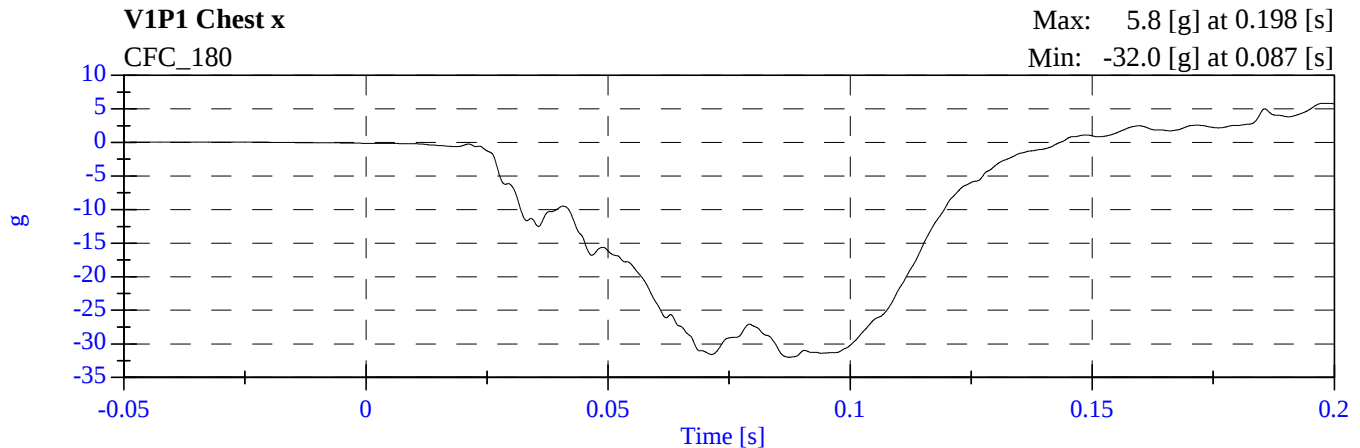
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Barrier Load Cell A6 Fx	
Barrier Load Cell A7 Fx	
Barrier Load Cell A8 Fx	
Barrier Load Cell A9 Fx	
Barrier Load Cell B1 Fx	
Barrier Load Cell B2 Fx	
Barrier Load Cell B3 Fx	
Barrier Load Cell B4 Fx	
Barrier Load Cell B5 Fx	
Barrier Load Cell B6 Fx	
Barrier Load Cell B7 Fx	
Barrier Load Cell B8 Fx	
Barrier Load Cell B9 Fx	
Barrier Load Cell C1 Fx	
Barrier Load Cell C2 Fx	
Barrier Load Cell C3 Fx	
Barrier Load Cell C4 Fx	
Barrier Load Cell C5 Fx	
Barrier Load Cell C6 Fx	
Barrier Load Cell C7 Fx	
Barrier Load Cell C8 Fx	
Barrier Load Cell C9 Fx	
Barrier Load Cell D1 Fx	
Barrier Load Cell D2 Fx	
Barrier Load Cell D3 Fx	
Barrier Load Cell D4 Fx	
Barrier Load Cell D5 Fx	
Barrier Load Cell D6 Fx	
Barrier Load Cell D7 Fx	
Barrier Load Cell D8 Fx	
Barrier Load Cell D9 Fx	

TEST NOTES	
Data Channel	Anomalies
V1P1 Left Upper Tibia Mx	Did Not Record
V1P1 Left Upper Tibia My	Questionable Data
V1P2 Upper Neck My	Data Clipped
V1 Engine Top #3x	Questionable Data
V1 Engine Bottom #4x	Questionable Data
V1 Left Caliper #7x	Channel Opened at 75 ms
Barrier Load Cell B3 Fx	Did Not Record

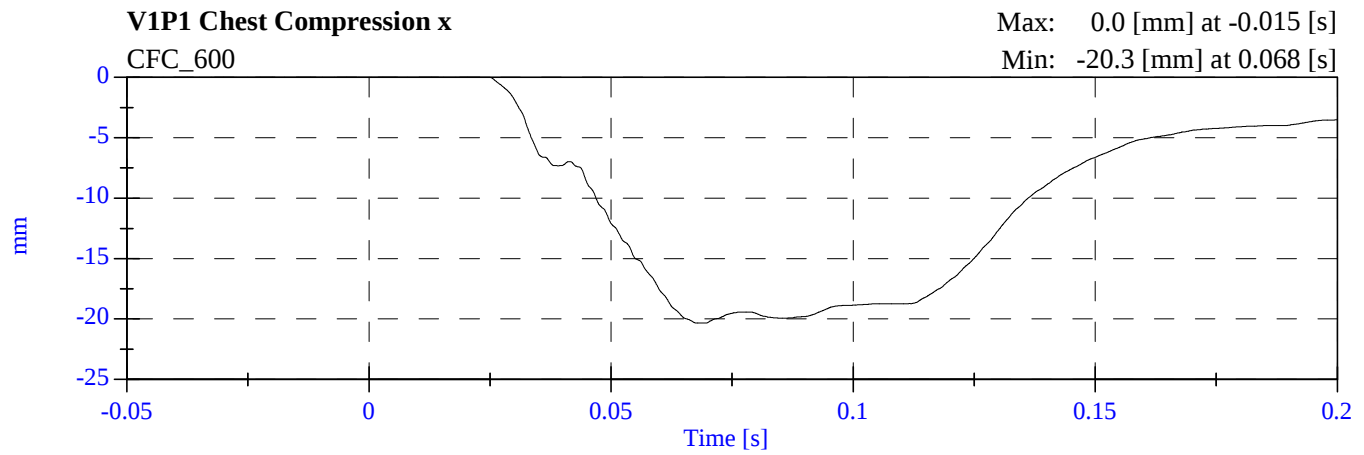
2006 NCAP Test 6 2006 Chevrolet Monte Carlo M60112 - January 10, 2006



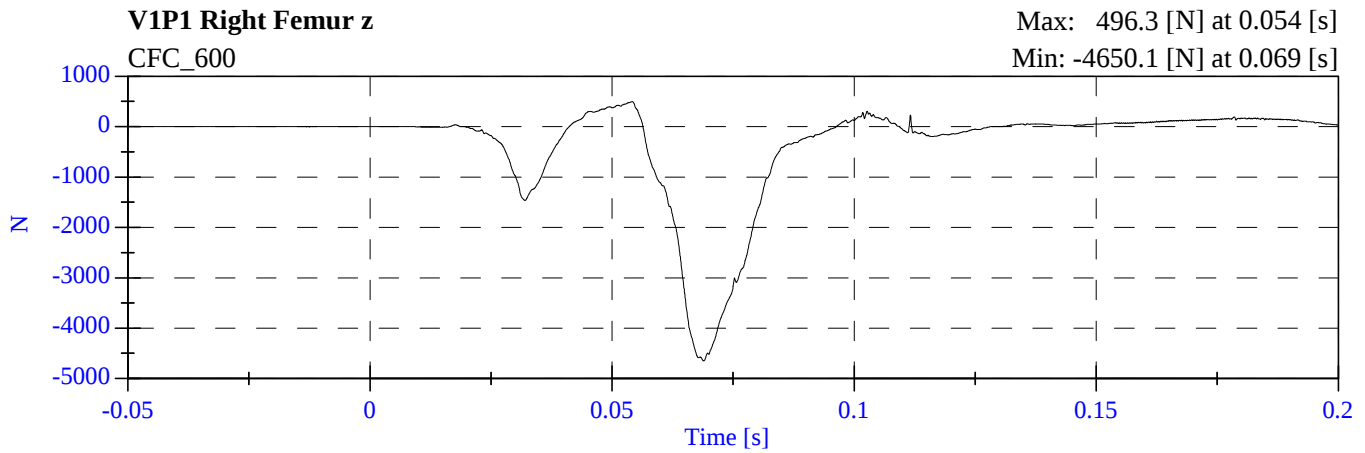
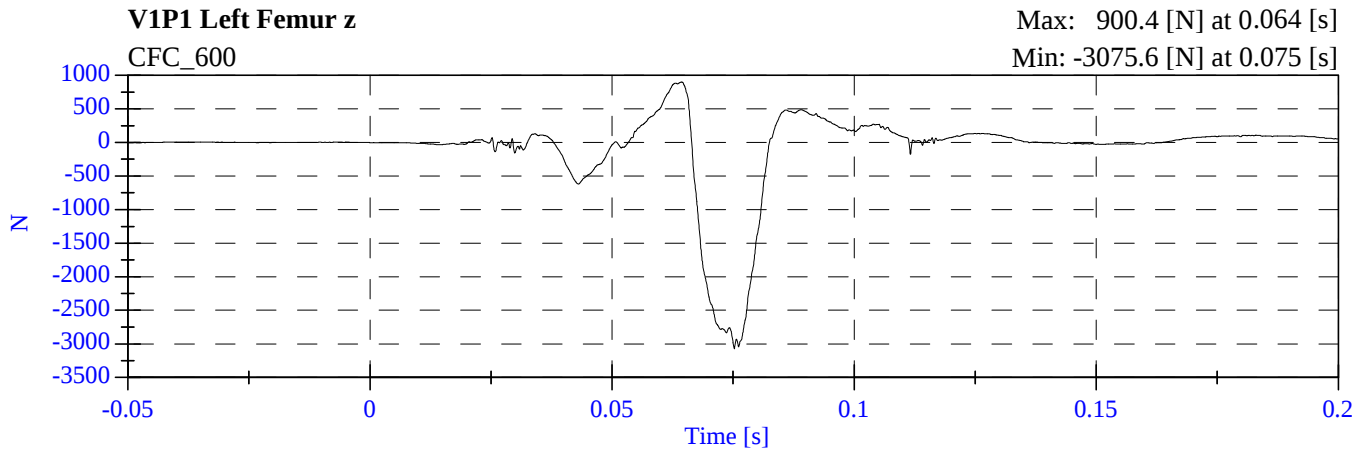
2006 NCAP Test 6 2006 Chevrolet Monte Carlo M60112 - January 10, 2006



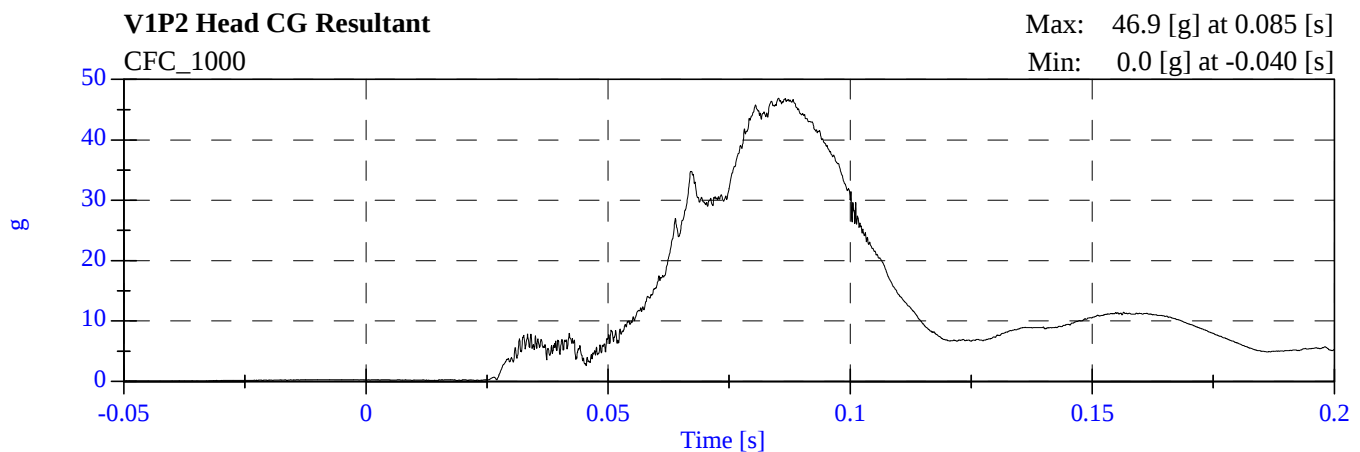
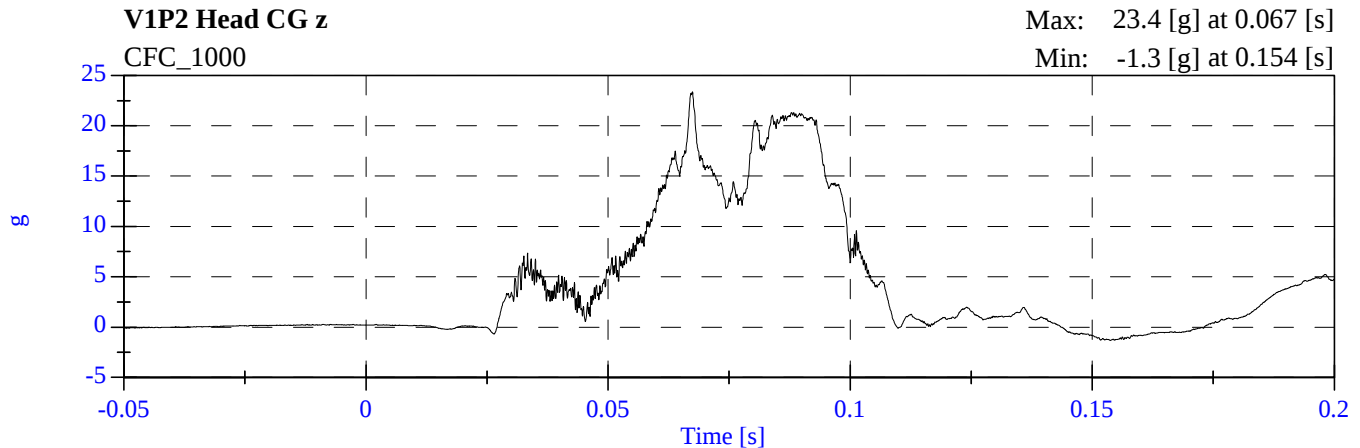
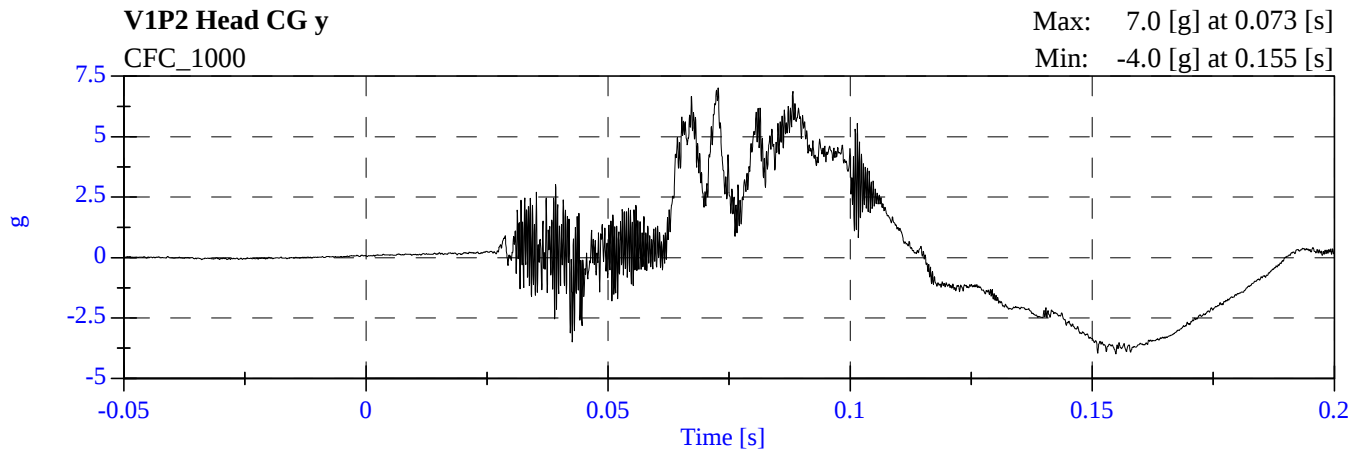
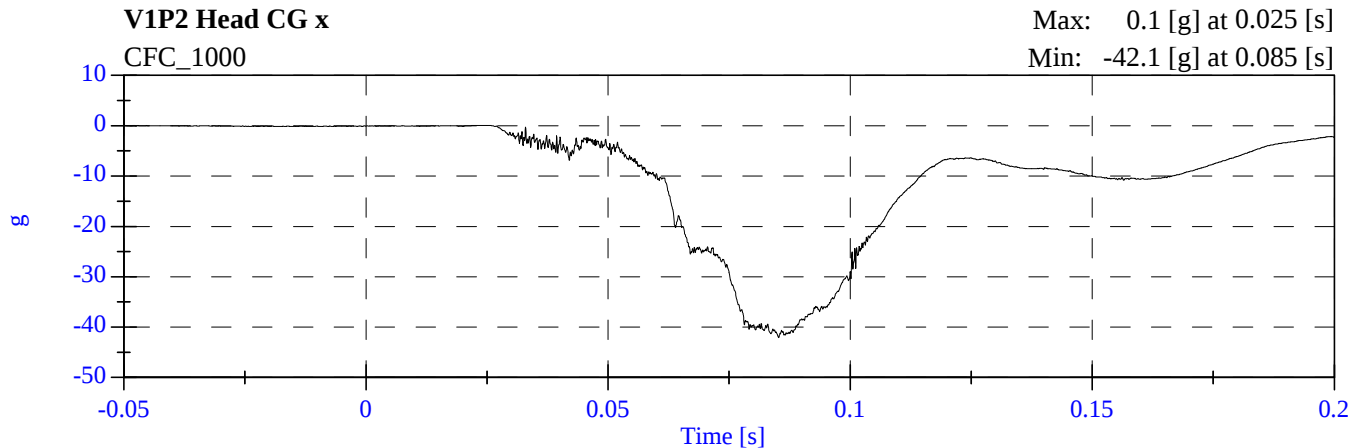
2006 NCAP Test 6 2006 Chevrolet Monte Carlo
M60112 - January 10, 2006



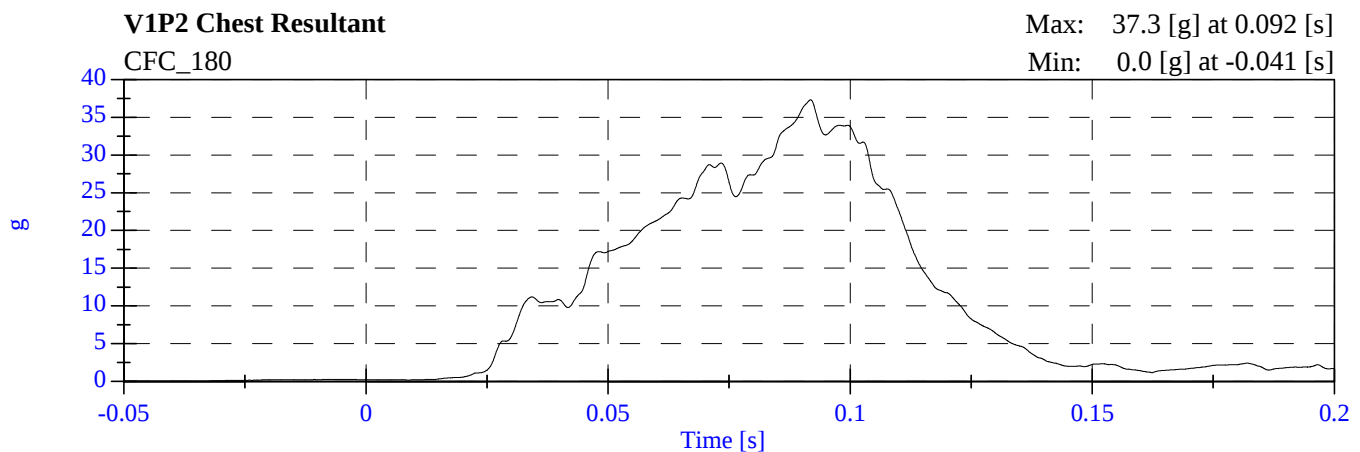
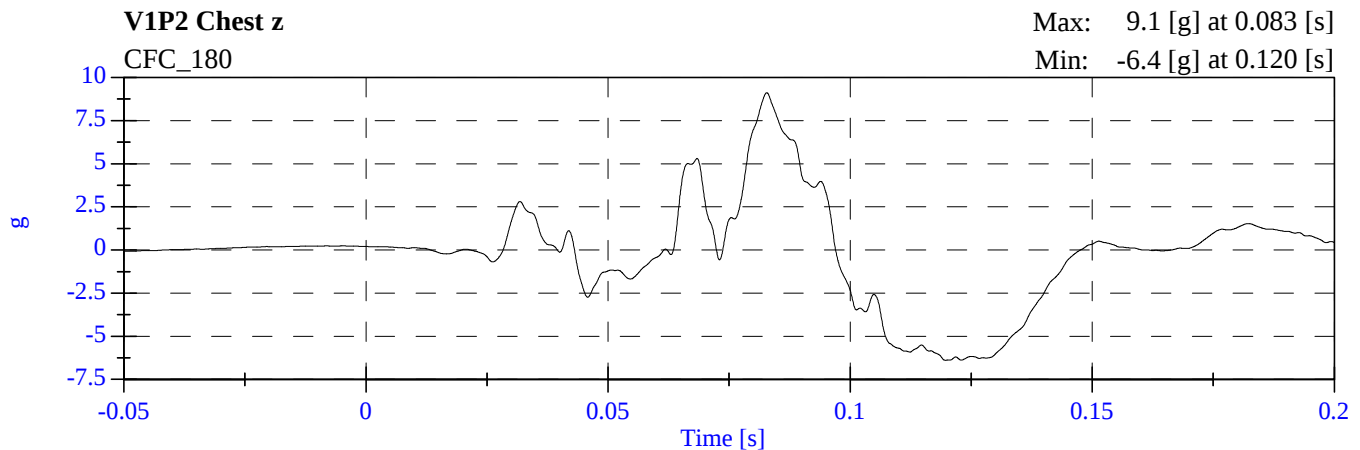
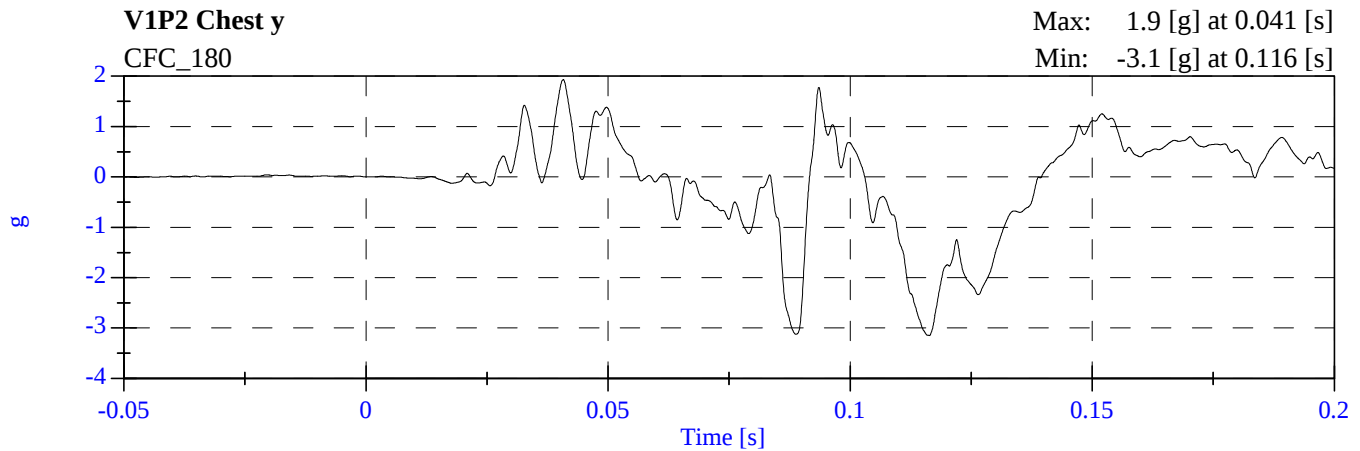
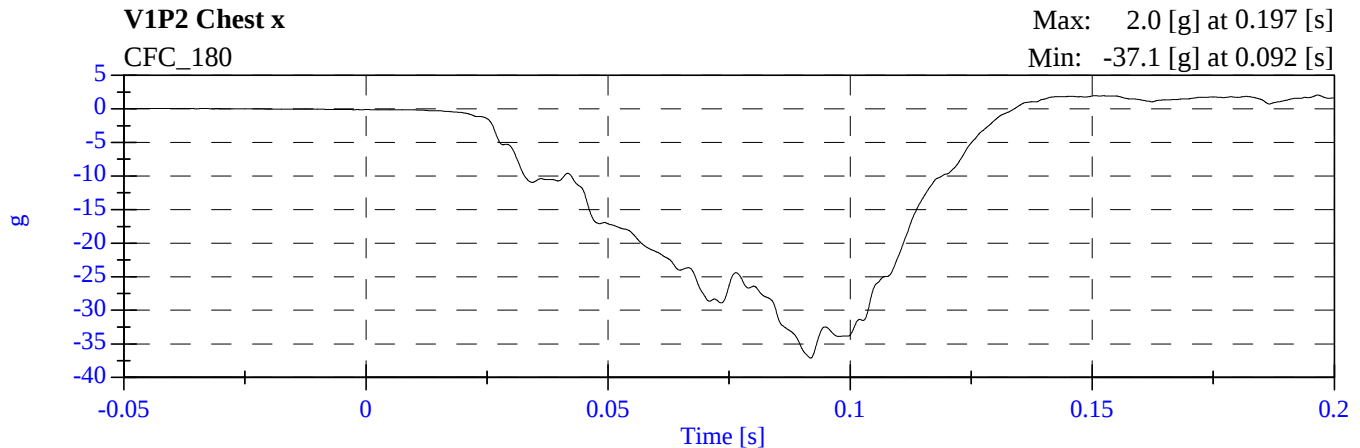
2006 NCAP Test 6 2006 Chevrolet Monte Carlo M60112 - January 10, 2006



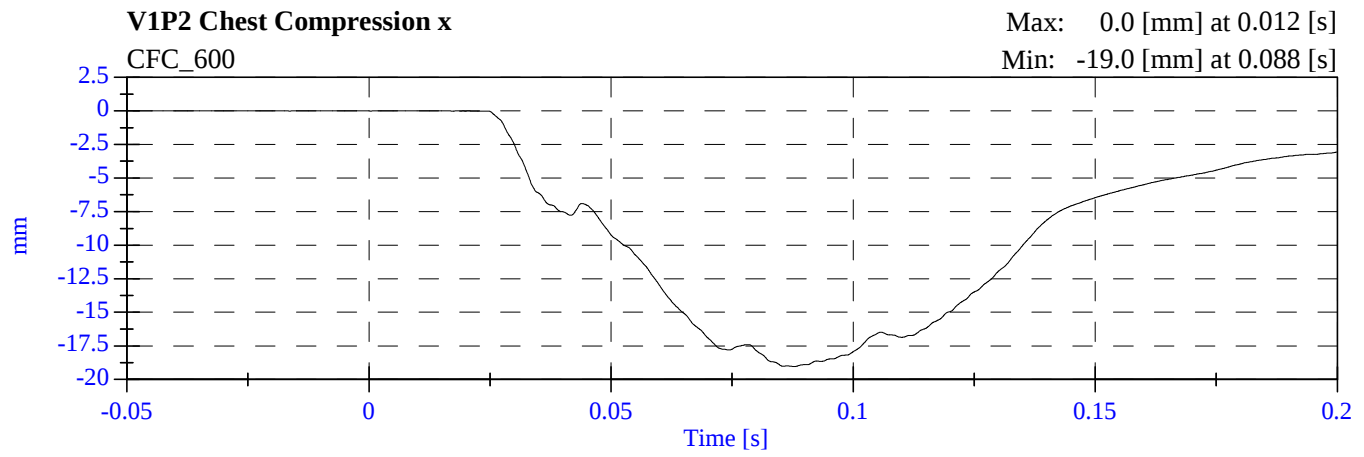
2006 NCAP Test 6 2006 Chevrolet Monte Carlo M60112 - January 10, 2006



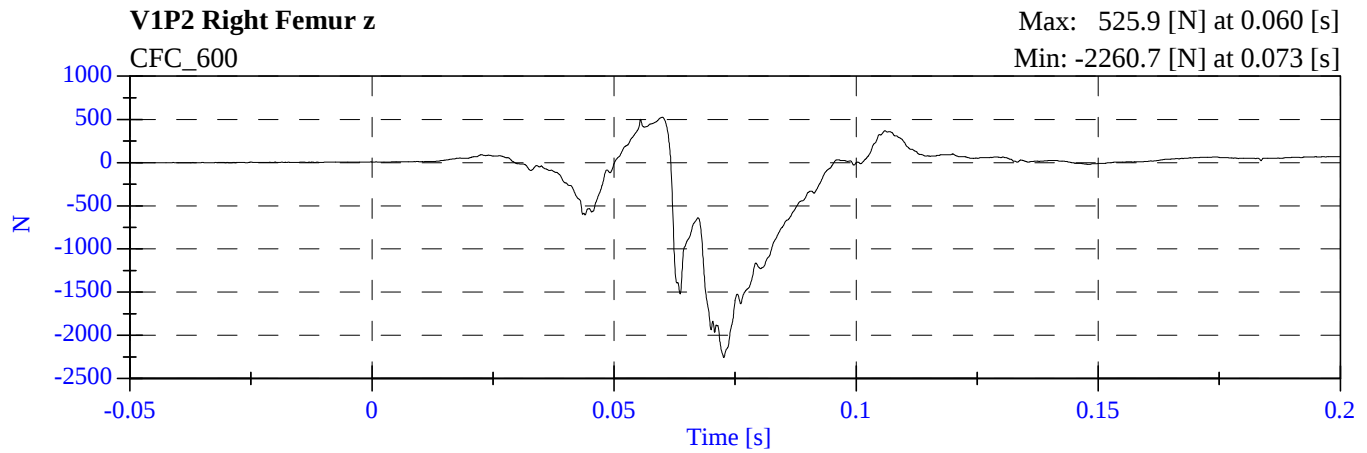
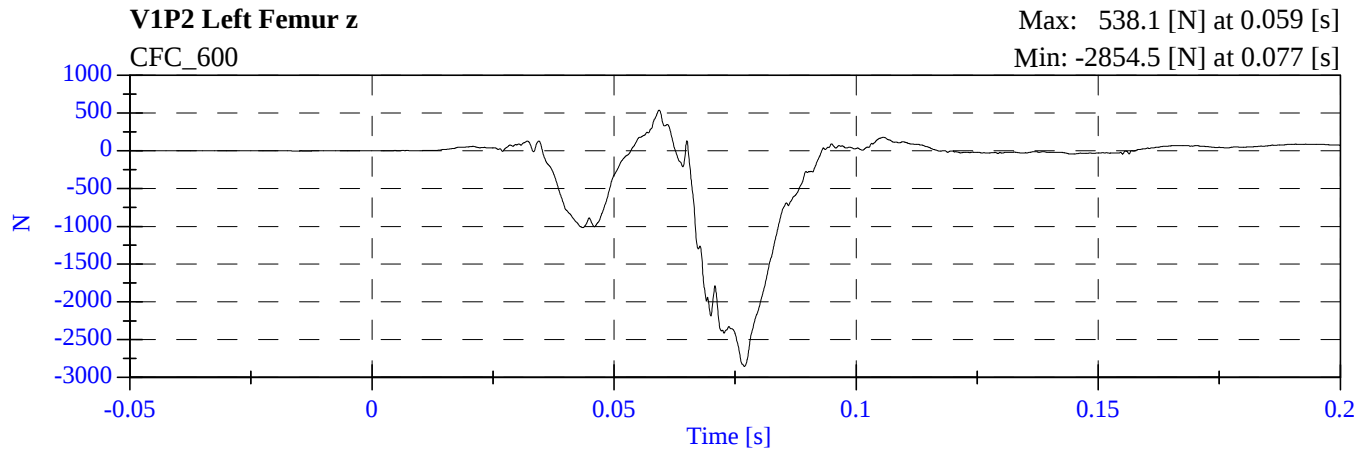
2006 NCAP Test 6 2006 Chevrolet Monte Carlo M60112 - January 10, 2006



2006 NCAP Test 6 2006 Chevrolet Monte Carlo
M60112 - January 10, 2006



2006 NCAP Test 6 2006 Chevrolet Monte Carlo M60112 - January 10, 2006



APPENDIX C

PART 572B/E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Calspan. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

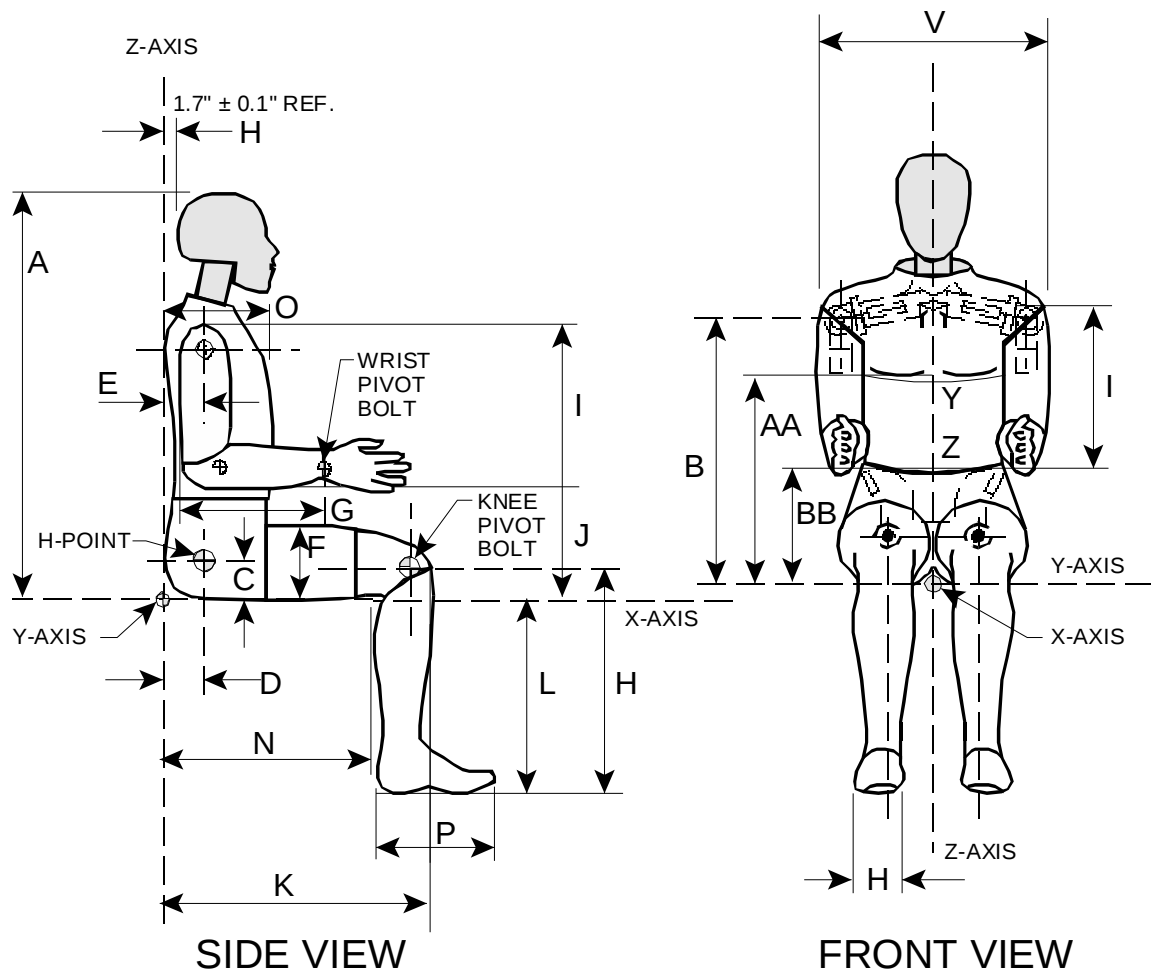
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	061	10/25/2005
#2/Right Front Passenger	064	10/25/2005

Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Inducant Testing Final Report No. 6525-V-1.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

PART 572E
HEAD DROP TEST

Dummy Serial Number 061
Sequential Test Number 1
Date October 18, 2005
Workfile 061h2 10-18-05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 – 25.6 Deg C	21.1
Relative Humidity	10% - 70%	33.00
Peak Resultant Acceleration	225-275 G's	233.56
Peak Lateral Acceleration	15 G's Max	5.59
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	061	
Sequential Test Number	1	
Date	October 19, 2005	6 Axis Neck Transducer
Workfile	061nfl 10-19-05	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	35.00
Impact Velocity		6.89 – 7.13 m/s	6.94
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.87
	20 ms	17.60 - 22.60 G's	22.26
	30 ms	12.50 - 18.50 G's	17.73
Max Pendulum G's Above 30 ms		29 G's Max	17.73
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	38.30
D Plane Rotation	Max	64 - 78 Deg	66.76
	Time	57 - 64 ms	59.40
Moment About Occipital Condyle	Max	88.13 – 108.47 N-m	102.73
	Time	47 - 58 ms	52.40
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	133.40
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	99.00

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	061	
Sequential Test Number	1	
Date	October 19, 2005	6 Axis Neck Transducer
Workfile	061ne1 10-19-05	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	35.00
Impact Velocity		5.94 – 6.19 m/s	6.03
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	19.33
	20 ms	14.00 - 19.00 G's	18.69
	30 ms	11.00 - 16.00 G's	15.65
Max Pendulum G's Above 30 ms		22 G's Max	15.65
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	39.80
D Plane Rotation	Max	81 - 106 Deg	94.48
	Time	72 - 82 ms	73.60
Moment About Occipital Condyle	Max	-79.99 - -52.88 N-m	-79.22
	Time	65 - 79 ms	69.30
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	149.90
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	132.40

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 061
Sequential Test Number 1
Date October 20, 2005
Workfile 061T 10-20-05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	20.6 – 22.2 Deg C	21.11
Relative Humidity	10% - 70%	35.00
Pendulum Velocity	6.58 – 6.83 m/s	6.78
Maximum Deflection	64.52 – 72.64 mm	63.75
Maximum Resistive Force	5159.9 – 5893.9 N	5523.45
Internal Hysteresis	69 - 85 %	76.38

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 061
Sequential Test Number 1
Date October 25, 2005
Workfile 061LF 10-25-05/ 061RF 10-25-05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	18.9 – 25.6 Deg C	21.11
Relative Humidity	10% - 70%	37.00
Probe Velocity	2.07 – 2.13 m/s	2.13
Peak Knee Impact Force	4715.1 – 5782.7 N	5196.6
RIGHT KNEE		
Temperature	18.9 – 25.6 Deg C	21.11
Relative Humidity	10% - 70%	37.00
Probe Velocity	2.07 – 2.13 m/s	2.13
Peak Knee Impact Force	4715.1 – 5782.7 N	4902.5

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 061
Sequential Test Number 1
Date October 25, 2005

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70.00
Relative Humidity			37.00
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Total Sitting Height	A	34.6 - 35.0 in	34.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.1
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.5
Thigh Clearance	F	5.5 - 6.1 in	6.0
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.4
Elbow Rest Height	J	7.5 - 8.3 in	7.8
Buttock Knee Length	K	22.8 - 23.8 in	23.6
Popliteal Height	L	16.9 - 17.9 in	17.7
Knee Pivot Height	M	19.1 - 19.7 in	19.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.4
Chest Depth	O	8.4 - 9.0 in	8.4
Foot Length	P	9.9 - 10.5 in	10.1
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Foot Breadth	W	3.6 - 4.2 in	3.8
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	33.6

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number 064
Sequential Test Number 1
Date October 19, 2005
Workfile 064h 10-19-2005

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 – 25.6 Deg C	21.11
Relative Humidity	10% - 70%	35.00
Peak Resultant Acceleration	225-275 G's	257.17
Peak Lateral Acceleration	15 G's Max	13.59
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	064	
Sequential Test Number	1	
Date	October 19, 2005	6 Axis Neck Transducer
Workfile	064nf 10-19-05	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	35.00
Impact Velocity		6.89 – 7.13 m/s	6.94
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.70
	20 ms	17.60 - 22.60 G's	22.14
	30 ms	12.50 - 18.50 G's	16.29
Max Pendulum G's Above 30 ms		29 G's Max	16.29
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	38.10
D Plane Rotation	Max	64 - 78 Deg	66.71
	Time	57 - 64 ms	57.20
Moment About Occipital Condyle	Max	88.13 – 108.47 N-m	102.43
	Time	47 - 58 ms	50.50
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	114.80
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	97.80

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	064	
Sequential Test Number	1	
Date	October 19, 2005	6 Axis Neck Transducer
Workfile	064ne1 10-19-05	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	35.00
Impact Velocity		5.94 – 6.19 m/s	6.03
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	20.27
	20 ms	14.00 - 19.00 G's	18.95
	30 ms	11.00 - 16.00 G's	14.61
Max Pendulum G's Above 30 ms		22 G's Max	15.49
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	38.36
D Plane Rotation	Max	81 - 106 Deg	99.15
	Time	72 - 82 ms	74.26
Moment About Occipital Condyle	Max	-79.99 - -52.88 N-m	-77.32
	Time	65 - 79 ms	69.86
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	153.86
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	137.96

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 064
Sequential Test Number 1
Date October 21, 2005
Workfile 064T1 10-21-05

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	20.6 – 22.2 Deg C	21.11
Relative Humidity	10% - 70%	35.00
Pendulum Velocity	6.58 – 6.83 m/s	6.75
Maximum Deflection	64.52 – 72.64 mm	64.00
Maximum Resistive Force	5159.9 – 5893.9 N	5528.70
Internal Hysteresis	69 - 85 %	75.02

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 064
Sequential Test Number 1
Date October 25, 2005
Workfile 064LF 10-25-05/064RF 10-25-05/

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	18.9 – 25.6 Deg C	21.11
Relative Humidity	10% - 70%	37.00
Probe Velocity	2.07 – 2.13 m/s	2.13
Peak Knee Impact Force	4715.1 – 5782.7 N	5233.42
RIGHT KNEE		
Temperature	18.9 – 25.6 Deg C	21.11
Relative Humidity	10% - 70%	37.00
Probe Velocity	2.07 – 2.13 m/s	2.13
Peak Knee Impact Force	4715.1 – 5782.7 N	5316.11

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 064
Sequential Test Number 1
Date October 25, 2005

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70.00
Relative Humidity			37.00
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Total Sitting Height	A	34.6 - 35.0 in	34.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.4
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.6
Thigh Clearance	F	5.5 - 6.1 in	6.0
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.4
Elbow Rest Height	J	7.5 - 8.3 in	8.0
Buttock Knee Length	K	22.8 - 23.8 in	23.6
Popliteal Height	L	16.9 - 17.9 in	17.3
Knee Pivot Height	M	19.1 - 19.7 in	19.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.4
Chest Depth	O	8.4 - 9.0 in	8.6
Foot Length	P	9.9 - 10.5 in	10.2
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Foot Breadth	W	3.6 - 4.2 in	3.8
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	34.0

Remarks:

Laboratory Technician:

B. Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 061)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P16832	04-Jan-06	05-Jul-06
	X Arm Z	ENDEVCO	AC-P16286	04-Jan-06	05-Jul-06
	Y Arm X	ENDEVCO	AC-P16591	04-Jan-06	05-Jul-06
	Y Arm Z	ENDEVCO	AC-P17141	04-Jan-06	05-Jul-06
	Z Arm X	ENDEVCO	AC-P17242	04-Jan-06	05-Jul-06
	Z Arm Y	ENDEVCO	AC-P35789	20-Dec-05	20-Jun-06
Head	X	ENDEVCO	AC-P39575	04-Jan-06	05-Jul-06
	Y	ENDEVCO	AC-P35758	04-Jan-06	05-Jul-06
	Z	ENDEVCO	AC-P39743	04-Jan-06	05-Jul-06
Head	X (R)	ENDEVCO	AC-P35803	04-Jan-06	05-Jul-06
	Y (R)	ENDEVCO	AC-P35804	04-Jan-06	05-Jul-06
	Z (R)	ENDEVCO	AC-P35818	04-Jan-06	05-Jul-06
Neck Load Cell	X	DENTON	LC-280Fx	14-Jul-05	12-Jan-06
	Y	DENTON	LC-280Fy	14-Jul-05	12-Jan-06
	Z	DENTON	LC-280Fz	14-Jul-05	12-Jan-06
Neck Moment	X	DENTON	LC-280Mx	14-Jul-05	12-Jan-06
	Y	DENTON	LC-280My	14-Jul-05	12-Jan-06
	Z	DENTON	LC-280Mz	14-Jul-05	12-Jan-06
Chest	X	ENDEVCO	AC-P23303	04-Jan-06	05-Jul-06
	Y	ENDEVCO	AC-P15526	04-Jan-06	05-Jul-06
	Z	ENDEVCO	AC-P19255	04-Jan-06	05-Jul-06
Chest	X (R)	ENDEVCO	AC-P16576	04-Jan-06	05-Jul-06
	Y (R)	ENDEVCO	AC-P15534	04-Jan-06	05-Jul-06
	Z (R)	ENDEVCO	AC-P19216	04-Jan-06	05-Jul-06
Chest Deflection	X	SERVO	DS-061	30-Jun-05	29-Dec-05
Pelvic	X	ENDEVCO	AC-P23993	04-Jan-06	05-Jul-06
	Y	ENDEVCO	AC-P23939	04-Jan-06	05-Jul-06
	Z	ENDEVCO	AC-P23999	04-Jan-06	05-Jul-06

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 061)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	GSE	LC-558	09-Aug-05	07-Feb-06
Right Femur Load Cell	Fz	DENTON	LC-560	09-Aug-05	07-Feb-06
Left Upper Tibia	Mx	DENTON	LC-274Mx	28-Jun-05	27-Dec-05
	My	DENTON	LC-274My	28-Jun-05	27-Dec-05
Left Lower Tibia	Fz	Denton	LC-185Fz	27-Oct-05	27-Apr-06
	Mx	Denton	LC-185Mx	27-Oct-05	27-Apr-06
	My	DENTON	LC-185My	28-Jun-05	27-Dec-05
Right Upper Tibia	Mx	DENTON	LC-200Mx	28-Jun-05	27-Dec-05
	My	DENTON	LC-200My	28-Jun-05	27-Dec-05
Right Lower Tibia	Fz	DENTON	LC-128Fz	29-Jun-05	28-Dec-05
	Mx	DENTON	LC-128Mx	29-Jun-05	28-Dec-05
	My	DENTON	LC-128My	29-Jun-05	28-Dec-05
Left Foot Rear	X	ENDEVCO	AC-P16225	05-Aug-05	03-Feb-06
	Z	ENDEVCO	AC-P15638	04-Jan-06	05-Jul-06
Left Foot Front	Z	ENDEVCO	AC-P16517	04-Jan-06	05-Jul-06
Right Foot Rear	X	ENTRAN	AC-03E03E21-M20	05-Jan-06	06-Jul-06
	Z	ENDEVCO	AC-AGAC4	04-Jan-06	05-Jul-06
Right Foot Front	Z	ENDEVCO	AC-J23946	04-Jan-06	05-Jul-06
Lap Belt Load Cell		First Technology	LC-159	01-Oct-05	01-Apr-06
Shoulder Belt Load Cell		First Technology	LC-178	01-Oct-05	01-Apr-06

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 064)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P18785	22-Dec-05	22-Jun-06
	X Arm Z	ENDEVCO	AC-P32218	22-Dec-05	22-Jun-06
	Y Arm X	ENDEVCO	AC-P23926	22-Dec-05	22-Jun-06
	Y Arm Z	ENDEVCO	AC-P17563	22-Dec-05	22-Jun-06
	Z Arm X	ENDEVCO	AC-P18948	22-Dec-05	22-Jun-06
	Z Arm Y	ENDEVCO	AC-P14965	22-Dec-05	22-Jun-06
Head	X	ENDEVCO	AC-P39736	22-Dec-05	22-Jun-06
	Y	ENDEVCO	AC-P35811	22-Dec-05	22-Jun-06
	Z	ENDEVCO	AC-P39729	22-Dec-05	22-Jun-06
Head	X (R)	ENDEVCO	AC-P35788	22-Dec-05	22-Jun-06
	Y (R)	ENDEVCO	AC-P35761	22-Dec-05	22-Jun-06
	Z (R)	ENDEVCO	AC-P35764	22-Dec-05	22-Jun-06
Neck Load Cell	X	DENTON	LC-441Fx	27-Jun-05	26-Dec-05
	Y	DENTON	LC-441Fy	27-Jun-05	26-Dec-05
	Z	DENTON	LC-441Fz	27-Jun-05	26-Dec-05
Neck Moment	X	DENTON	LC-441Mx	27-Jun-05	26-Dec-05
	Y	DENTON	LC-441My	27-Jun-05	26-Dec-05
	Z	DENTON	LC-441Mz	27-Jun-05	26-Dec-05
Chest	X	ENDEVCO	AC-P16863	23-Dec-05	23-Jun-06
	Y	ENDEVCO	AC-P17285	23-Dec-05	23-Jun-06
	Z	ENDEVCO	AC-P14393	03-Jan-06	04-Jul-06
Chest	X (R)	ENDEVCO	AC-P23640	23-Dec-05	23-Jun-06
	Y (R)	ENDEVCO	AC-P17283	23-Dec-05	23-Jun-06
	Z (R)	ENDEVCO	AC-P17235	03-Jan-06	04-Jul-06
Chest Deflection	X	SERVO	DS-064	29-Jun-05	28-Dec-05
Pelvic	X	ENDEVCO	AC-P35790	23-Dec-05	23-Jun-06
	Y	ENDEVCO	AC-P35817	23-Dec-05	23-Jun-06
	Z	ENDEVCO	AC-P39574	23-Dec-05	23-Jun-06

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 064)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	DENTON	LC-255	09-Aug-05	07-Feb-06
Right Femur Load Cell	Fz	GSE	LC-756	09-Aug-05	07-Feb-06
Left Upper Tibia	Mx	DENTON	LC-108Mx	20-Jun-05	19-Dec-05
	My	DENTON	LC-108My	20-Jun-05	19-Dec-05
Left Lower Tibia	Fz	DENTON	LC-113Fz	20-Jun-05	19-Dec-05
	Mx	DENTON	LC-113Mx	20-Jun-05	19-Dec-05
	My	DENTON	LC-113My	20-Jun-05	19-Dec-05
Right Upper Tibia	Mx	DENTON	LC-103Mx	22-Jun-05	21-Dec-05
	My	DENTON	LC-103My	22-Jun-05	21-Dec-05
Right Lower Tibia	Fz	DENTON	LC-133Fz	22-Jun-05	21-Dec-05
	Mx	DENTON	LC-133Mx	22-Jun-05	21-Dec-05
	My	DENTON	LC-133My	22-Jun-05	21-Dec-05
Left Foot Rear	X	ENDEVCO	AC-J31412	03-Jan-06	04-Jul-06
	Z	ENDEVCO	AC-P15951	03-Jan-06	04-Jul-06
Left Foot Front	Z	ENDEVCO	AC-P12566	03-Jan-06	04-Jul-06
Right Foot Rear	X	ENDEVCO	AC-FG97J	03-Jan-06	04-Jul-06
	Z	ENDEVCO	AC-J23941	03-Jan-06	04-Jul-06
Right Foot Front	Z	ENDEVCO	AC-J28727	03-Jan-06	04-Jul-06
Lap Belt Load Cell		First Technology	LC-168	01-Oct-05	01-Apr-06
Shoulder Belt Load Cell		First Technology	LC-173	01-Oct-05	01-Apr-06

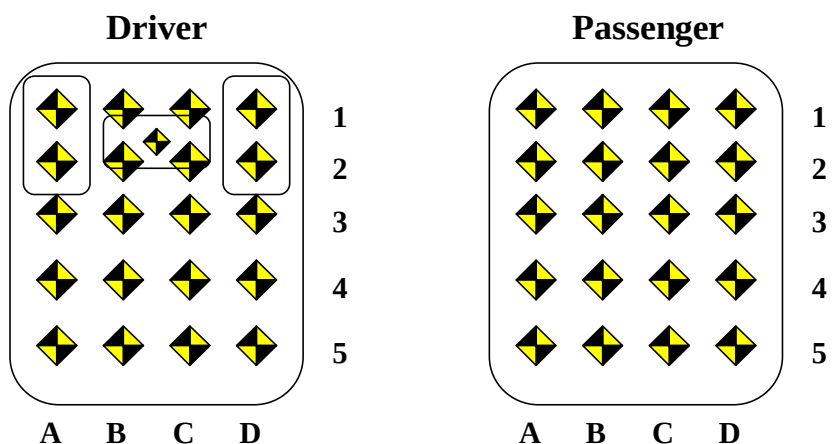
INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(Six Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	GS SENSORS	AC-9440-046	17-Oct-05	17-Apr-06
Right Rear Seat Crossmember X	ICS	AC-FGP19	17-Oct-05	17-Apr-06
Top of Engine	ICS	AC-FGP46	13-Oct-05	13-Apr-06
Bottom of Engine	ICS	AC-FGP22	12-Oct-05	12-Apr-06
Right Disc Brake Caliper	ICS	AC-FGP37	12-Oct-05	12-Apr-06
Left Disc Brake Caliper	ICS	AC-FGP24	12-Oct-05	12-Apr-06
Left Seat Rear Crossmember Z	GS SENSORS	AC-9440-023	17-Oct-05	17-Apr-06
Right Seat Rear Crossmember Z	ICS	AC-FGP29	17-Oct-05	17-Apr-06

APPENDIX E

VEHICLE INTERIOR INTRUSION MEASUREMENTS

DRIVER SIDE INTRUSION MEASUREMENTS

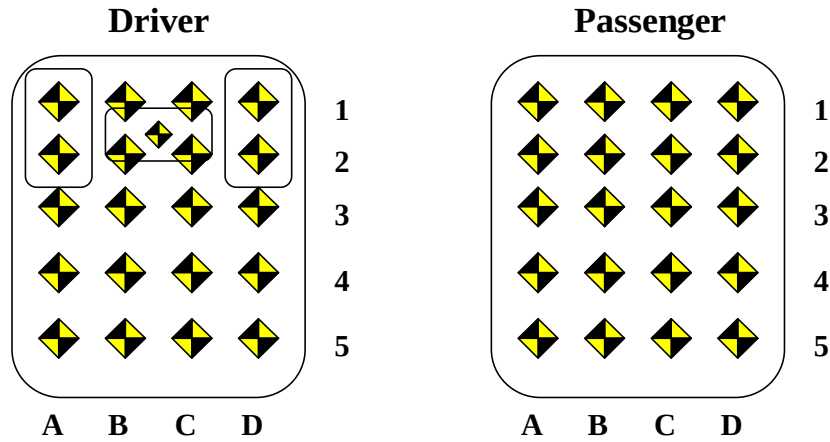


Driver Side Intrusion Measurements

Intrusion Location	PRE-TEST (mm)			POST-TEST (mm)			CHANGE (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3452	-582	396	3434	-562	417	18	-20	-21
B1	3587	-447	397	3566	-423	426	21	-24	-29
C1	3603	-292	399	3542	-279	426	61	-13	-27
D1	3595	-165	394	3519	-172	443	76	7	-49
A2	3430	-581	333	3413	-558	356	17	-23	-23
B2	3532	-446	335	3506	-431	380	26	-15	-45
C2	3545	-297	334	3482	-291	415	63	-6	-81
D2	3531	-167	337	3483	-171	375	48	4	-38
A3	3412	-579	296	3395	-558	317	17	-21	-21
B3	3484	-440	287	3455	-426	346	29	-14	-59
C3	3476	-295	288	3428	-302	355	48	7	-67
D3	3473	-160	292	3438	-171	325	35	11	-33
A4	3371	-576	266	3365	-557	279	6	-19	-13
B4	3363	-440	269	3341	-429	289	22	-11	-20
C4	3367	-303	268	3316	-303	327	51	0	-59
D4	3364	-164	274	3332	-170	292	32	6	-18
A5	3256	-573	258	3254	-567	246	2	-6	12
B5	3255	-435	262	3242	-436	240	13	1	22
C5	3256	-298	262	3229	-304	264	27	6	-2
D5	3258	-163	267	3235	-169	251	23	6	16
BP	3420	-332	469	3291	-293	531	129	-39	-62
G	3144	-556	704	3126	-540	729	18	-16	-25
H	3160	-182	684	3118	-165	750	42	-17	-66
L	2906	-364	917	2924	-384	952	-18	20	-35
AB	2894	-614	332	2895	-609	320	-1	-5	12

BP=Brake Pedal, G=Left side of bolster, H=Right side of bolster, L=Steering wheel center;
 AB = Front outboard seat anchor bolt

PASSENGER SIDE INTRUSION MEASUREMENTS



Passenger Side Intrusion Measurements

Intrusion Location	PRE-TEST (mm)			POST-TEST (mm)			CHANGE (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3510	169	403	3409	206	424	101	-37	-21
B1	3543	304	403	3471	311	417	72	-7	-14
C1	3560	446	406	3504	441	422	56	5	-16
D1	3451	567	402	3397	572	402	54	-5	0
A2	3481	166	335	3389	193	357	92	-27	-22
B2	3499	308	335	3421	314	360	78	-6	-25
C2	3504	441	336	3450	449	347	54	-8	-11
D2	3417	574	333	3375	577	333	42	-3	0
A3	3453	169	297	3370	191	318	83	-22	-21
B3	3466	309	291	3391	319	317	75	-10	-26
C3	3468	443	282	3428	442	291	40	1	-9
D3	3394	583	281	3373	588	278	21	-5	3
A4	3331	167	278	3267	219	361	64	-52	-83
B4	3338	307	267	3277	342	312	61	-35	-45
C4	3343	444	266	3306	458	268	37	-14	-2
D4	3353	588	267	3335	591	270	18	-3	-3
A5	3204	165	267	3197	200	265	7	-35	2
B5	3211	306	255	3185	336	243	26	-30	12
C5	3211	449	255	3191	482	217	20	-33	38
D5	3223	592	255	3213	605	235	10	-13	20
R	3189	247	662	3129	256	727	60	-9	-65
S	3192	520	664	3151	527	710	41	-7	-46
AB	2882	609	327	2882	619	313	0	-10	14

R=Left side of bolster, S=Right side of bolster, L=Steering wheel center;

AB = Front outboard seat anchor bolt