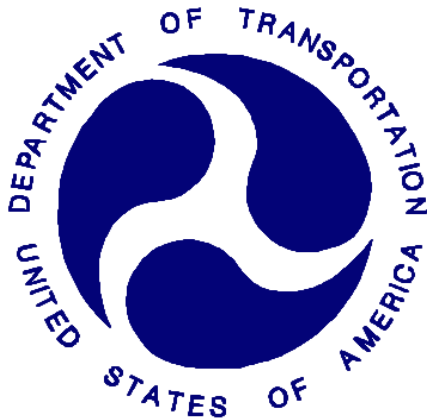


**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**MAZDA MOTORS CORPORATION
2004 MAZDA 3
4 DOOR SEDAN**

NHTSA NUMBER: M45400

**PREPARED BY:
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9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



DECEMBER 17, 2003

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
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400 SEVENTH STREET, SW, ROOM 5311
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Date of Acceptance

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Date of Acceptance

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact test was conducted on a 2004 Mazda ' 3 ' 4 Door Sedan at Karco Engineering, LLC on 12/17/03. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 55.91 km/h. The ambient temperature at the barrier face at the time of impact is 11.1 degrees Celcius. The vehicle's maximum post test static crush is 471mm to the right of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:					
Measurement Description		Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)		N/A	1000	498.7	296.3
Max. Chest Accel. (3 msec Clip)		G's	60	45.1	48.3
Left Femur Force		Newtons	10008	-2229.9	-3758.8
Right Femur Force		Newtons	10008	-4076.9	-2739.7
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2004 Mazda ' 3 ' 4 Door Sedan NHTSA No. M45400				18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
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SECTION 1

PURPOSE AND SUMMARY OF TEST M45400

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the New Car Assessment Program (NCAP) sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-02005. 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 30 mph (48.3 km/h) requirements.

The 35 mph (56.3 km/h) frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Test Procedure.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2004 Mazda 3 4-Door Sedan at a velocity of 55.91 km/h. The test was performed at Karco Engineering, LLC on December 17, 2003.

One real-time and 17 (Seventeen) 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 head, chest and pelvis triaxial accelerometers, chest displacement potentiometers, six-axis upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also placed 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. 34) and the right-front passenger (position 2) ATD (Serial No. 35) were calibrated one test prior to this test.

One Hundred and Nine (109) channels of data were recorded using an on-board data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the vehicle and dummy response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the Instrumentation Data Channel assignments. Appendix E contains the Dummy Calibration data and Appendix F contains the Child Restraint System (CRS). Appendix G contains the Nine Accelerometer Array Head Data.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the impact event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the vehicle was 471 mm and both the driver and the passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver ATD head and chest contacted the airbag. The abdomen had no contact. The left knee contacted the steering column/knee bolster and the right knee contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD head and chest contacted the airbag. The abdomen had no contact. Both knees contacted the glove box.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC	Clip (g)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)
Driver	498.7	45.1	-21.2	-2229.9	-4076.9	428.4
Passenger	296.3	48.3	-24.4	-3758.8	-2739.7	568.2

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	=(tf -32)/1.8
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.91
Test Weight	kg	1476
Impact Angle	degrees	0
Average Rebound	mm	627
Maximum Static Crush	mm	471

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door opening	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Rear Door Opening	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Seat Track Shift (mm)	None	None
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 34	50% Male Hybrid III No. 35
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag
Abdomen Contact	None	None
Left Knee Contact	Steering Column/Bolster	Glovebox
Right Knee Contact	Bolster	Glovebox

16mm MOVIE COVERAGE

High Speed	1
Real Time	17
Total	18

DATA CHANNELS

Driver ATD Sensors	46
Passenger ATD Sensors	46
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	36
Total	145

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M45400	Anti-Lock Brakes	Yes
Make	Mazda	All Wheel Drive	No
Model	3	Power Steering	Yes
Body Style	4-Door Sedan	Driver Front Airbag	Yes
Vin No.	JM1BK323741101144	Driver Side Airbag	Yes
Color	Titanium Gray	Driver Head Airbag	Yes
Delivery Date	12/9/2003	Driver Curtain Airbag	No
Odometer	11	Pass. Airbag	Yes
Dealer	Romero Mazda	Pass. Side Airbag	Yes
Transmission	5 Speed Manual	Pass. Head Airbag	Yes
Final Drive	Front	Pass. Curtain Airbag	No
Type/No. Cyl.	In-line 4	Pre-Tensioners	Yes
Engine Disp. (L)	2.3	Load Limiters	Yes
Engine Placement	Transverse	Bucket Seats	Yes
Roof Rack	No	Air. Cond.	Yes
Sunroof/T-Top	No	AM/FM Cassette	Yes
Tinted Glass	No	Tilt Steering	Yes
Traction Control	No	Power Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	No
Rear Disc	Yes	Other	None

DATA FROM CERTIFICATION LABEL

Manufactured By	Mazda Motor Corp	GWR (kg)	1732
Date of Manufacture	Oct-03	GAWR Front (kg)	928
		GAWR Rear (kg)	804

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

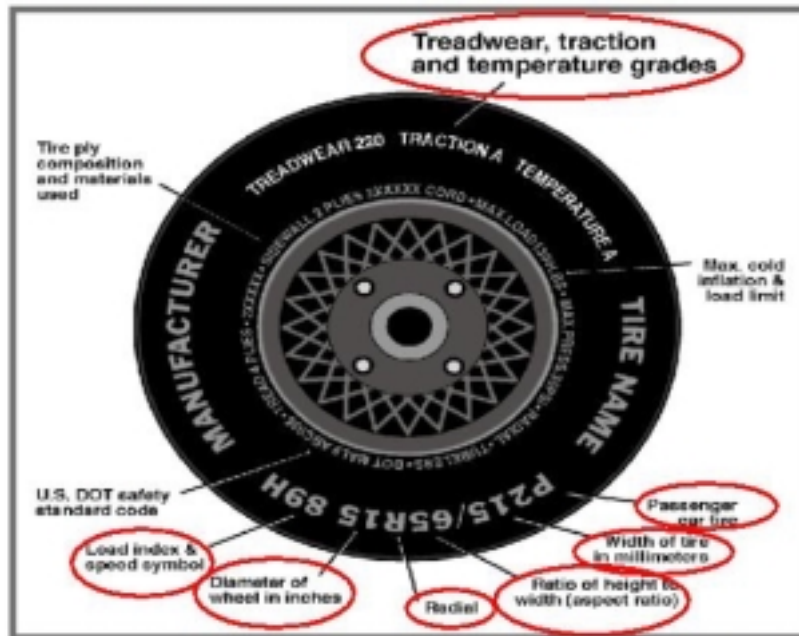
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	None	
Number of Occupants	2	3	N/A	5
Capacity Weight (VCW) (kg)				385
Cargo Weight (RCLW) (kg)				45

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

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

Collect year, make, model, VIN, items circled in red, and tire manufacturer and tire name.



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	220	220
Cold Pressure (kpa)	308	308
Recommended Tire Size	P205/55R16	P205/55R16
Tire Size on Vehicle	P205/55R16	P205/55R16
Tire Manufacturer	Toyo	Toyo
Treadwear	300	300
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	2	2
Load Index/Speed Symbol	89 H	89 H
Tire Material	Polyester/Steel/Nylon	Polyester/Steel/Nylon
DOT Safety Code Right	N38K 98A3B03	N38K 98A3B03
DOT Safety Code Left	N38K 98A3B03	N38K 98A3B03

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

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	394	252		426	312	
Right	393	393	244		433	305	
Ratio	%	61.4	38.6		58.2	41.8	
Totals	kg	787	496	1283	859	617	1476

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1283
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	45
Calculated Vehicle Target Wt. (TVTW)	kg	1481

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	688	690	700	703	1021
As Tested	mm	677	679	670	675	1105

Vehicle Wheel Base (mm) 2643

Weight of Ballast Secured in cargo area (kg) 0

Vehicle Components Removed Rear door panels, rear bumper, rear windows, trunk lid.

* Ballast weight does not include cameras, instrumentation and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 54.89

Usable Capacity Furnished by COTR (L) 55.00

Actual Test Volume with entire fuel System Filled (L) 51.03

1/3 of Usable Capacity (L) 18.33

Test Fluid Type: Stoddard Solvent

Kinematic Viscosity: as per ASTM Standard D484-71 Purple

Is Vehicle Fuel Pump Electric or Mechanical? Electric

If electric, does pump operate with ignition switch "On" & engine "OFF" Yes

Fuel System Particulars: Key operated w/automatic shutoff.

DATA HEET NO. 3
POST TEST IMPACT DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	55.91
Trap No. 1 Entry Distance	mm	<1524	1524
Trap No.1 Exit Distance	mm	<1524	305
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	55.93
Trap No.2 Entry Distance	mm	<1524	1524
Trap No.2 Exit Distance	mm	<1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4288	4044	-244
Center	mm	4500	4029	-471
Right Side	mm	4288	3985	-303

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	585
Center	mm	585
Right Side	mm	710
Average	mm	627

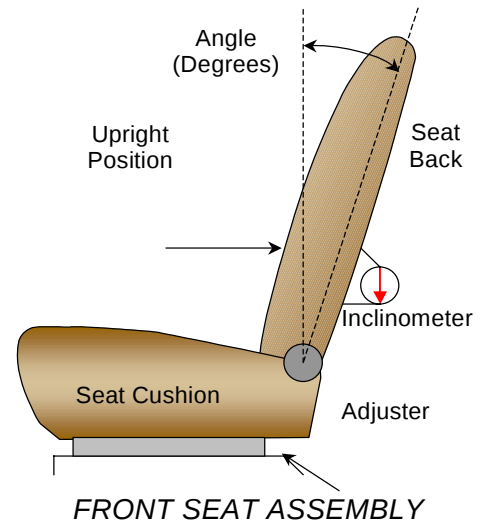
DATA SHEET NO. 4 TEST VEHICLE INFORMATION

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: A special application tool with pointed probes is inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly, approximately 13 inches above the pivot point of the seat back. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.



SEAT BACK ANGLES

	Deg.
Driver w/seated dummy	14.0
Passenger w/seated Dummy	14.7

SEAT FORE/AFT POSITIONS

The first or forward most position is counted as number one (1). The fore/aft position is set aft of the middle position for both the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	27	14
Passenger Seat	26	14

SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

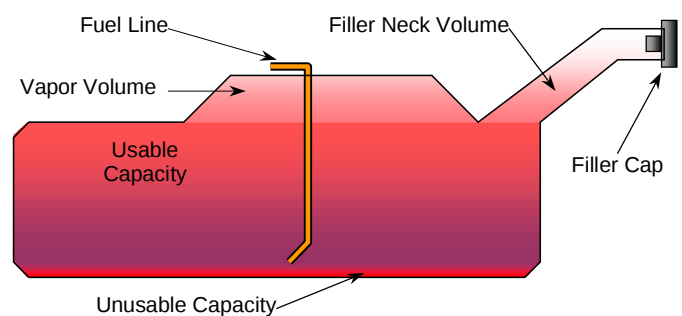
SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	1
Passenger Seat	4	1

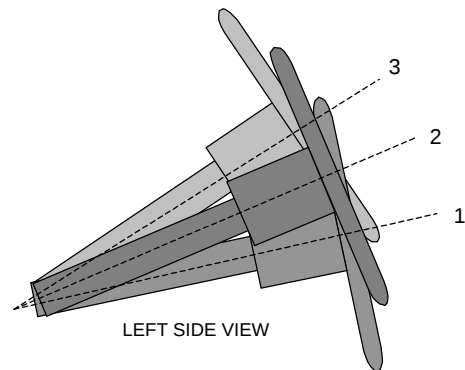
DATA SHEET NO. 4.....(CONTINUED)**TEST VEHICLE INFORMATION**Test Vehicle: 2004 Mazda 3 4 Door SedanNHTSA No.: M45400Test Program: 2004 NHTSA 35mph NCAPTest Date: 12/17/03**FUEL TANK CAPACITY**

	Liters
Usable Capacity of "Standard Tank"	54.89
Usable Capacity of "Optional" Tank	N/A
Usable Capacity used for FMVSS 301	50.50 to 51.60
Actual Amount of Solvent used	51.03
1/3 of Usable Capacity	18.33

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 right rear fender. The standard fuel tank occupies the area under the rear seat.

**VEHICLE FUEL TANK ASSEMBLY****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 POSITIONS**

	Degrees
Lowermost position No. 1	20.0
Geometric center position No. 2	22.7
Uppermost position No. 3	25.5

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

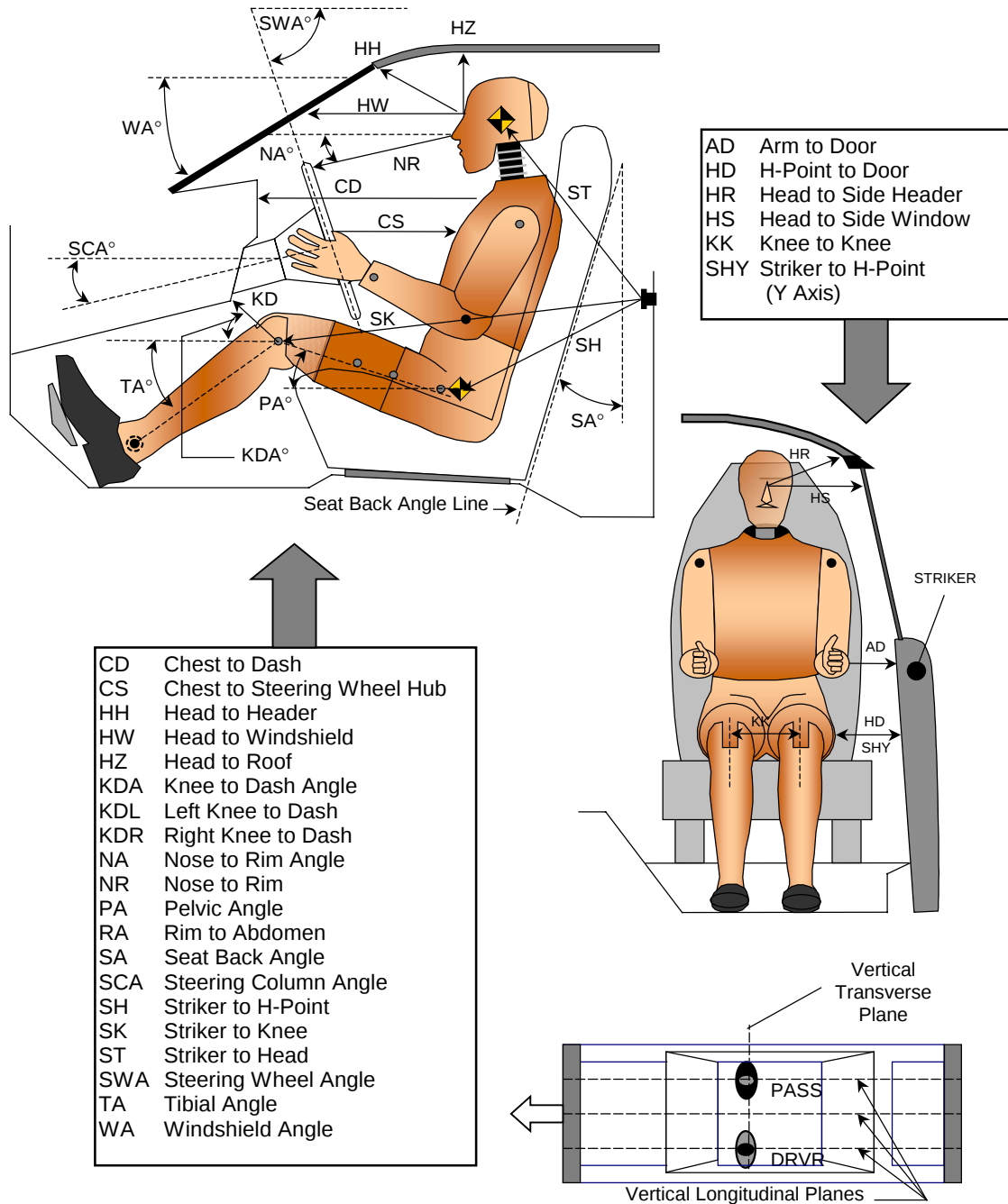
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		62		
SWA	Steering Wheel Angle		66.5		
SCA	Steering Column Angle		23.5		
SA	Seat Back Angle		14.5		14.5
HZ	Head to Roof (Z)	225	90	178	90
HH	Head to Header	390		360	
HW	Head to Windshield	730		655	
HR	Head to Side Header (Y)	280		260	
NR	Nose to Rim	428	11		
CD	Chest to Dash	580		558	
CS	Chest to Steering Hub	328			
RA	Rim to Abdomen	225			
KDL	Left Knee to Dash	160	24	155	
KDR	Right Knee to Dash	130		203	15
PA	Pelvic Angle		23.5		25
TA	Tibia Angle		52		37
KK	Knee to Knee (Y0	305		273	
SK	Striker to Knee	613	9	518	10
ST	Striker to Head	478	76	640	80
SH	Striker to H-Point	298	48	265	33
SHY	Striker to H-Point (Y)	248		235	
HS	Head to Side Window	314		302	
HD	H-Point to Door (Y)	198		185	
AD	Arm to Door (Y)	133		115	

DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

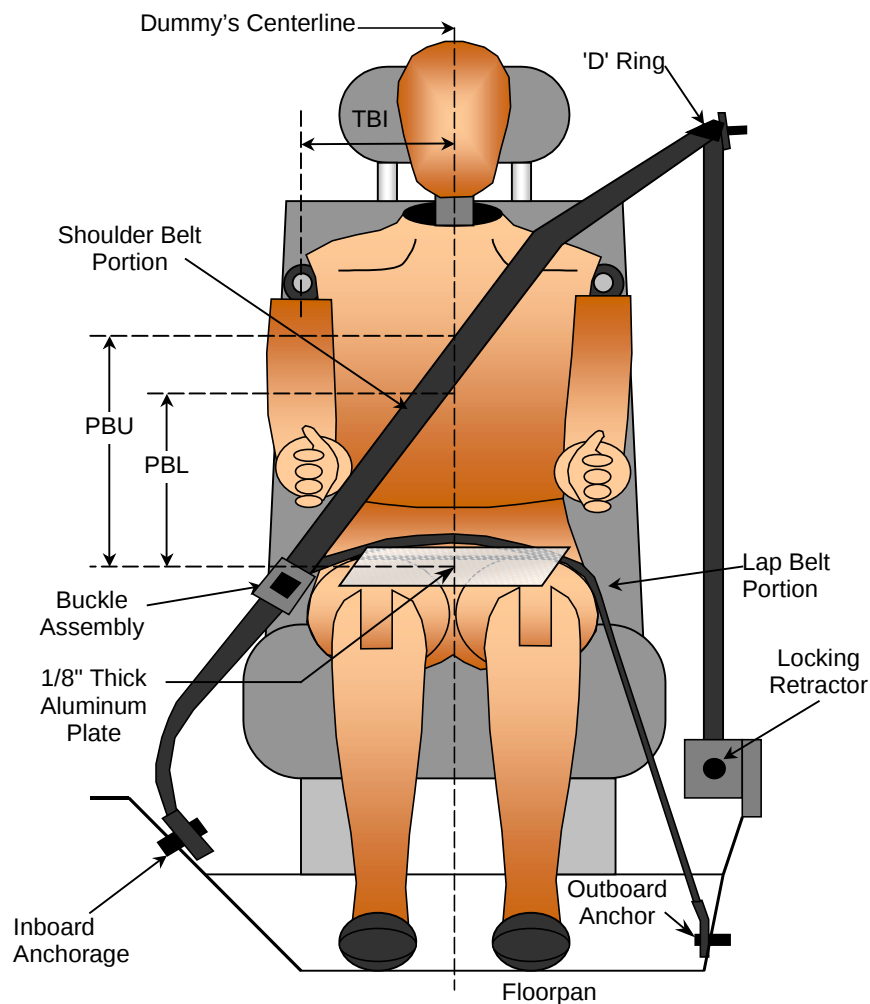


DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6 **SEAT BELT POSITIONING DATA**

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	190	200
PBU - Top Surface of reference to belt upper edge	mm	315	300
PBL - Top Surface of reference to belt lower edge	mm	250	220
Lap Belt Tension	Newton's	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7 - VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

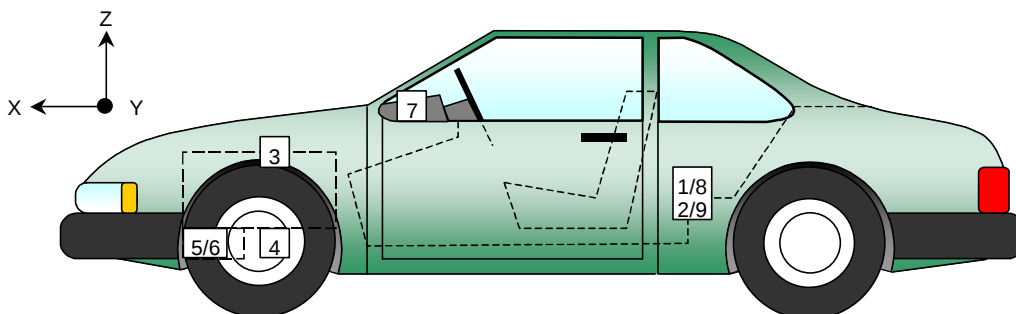
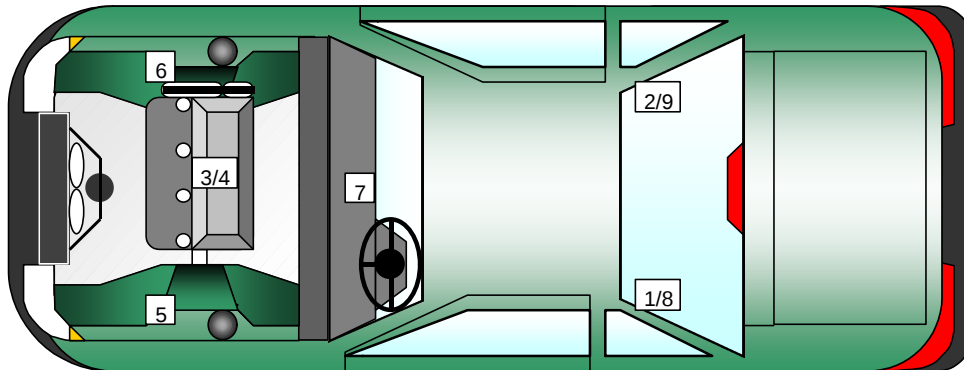
VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member	1910	-650	280	G's	1.2	132.5	-48.9	44.8
2	Right Rear X-Member	1910	50	280	G's	2.1	131.5	-49.0	40.7
3	Engine Top	3820	100	770	G's	80.6	45.7	-106.5	21.3
4	Engine Bottom	3830	200	140	G's	66.5	40.4	-131.3	31.3
5	Left Brake Caliper	3720	-790	260	G's	1.5	6.3	-66.6	46.8 ¹
6	Right Brake Caliper	3720	790	260	G's	40.3	58.0	-128.2	41.0
7	Instrument Panel	2930	0	980	G's	2.6	24.8	-73.3	42.9 ²
8	Left Rear X-Member (Z-Axis)	1710	-630	300	G's	11.9	54.0	-10.8	48.0
9	Right Rear X-Member (Z-Axis)	1710	630	300	G's	6.6	33.4	-12.4	48.7

Reference Planes: X=From Rear Surface of Vehicle, Y=Vehicle Centerline, Z=Ground Plane

1.) Channel failed at 53.5 msec.

2.) Channel failed at 64.9 msec.



DATA SHEET NO. 8 - HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	2.2	18.5	-59.7	81.1	2.7	22.5	-40.0	77.0
Head CG	Y	G's	14.8	85.8	-2.1	28.4	2.3	37.1	-18.9	77.2
Head CG	Z	G's	22.9	70.1	-14.1	90.7	24.9	66.5	-2.7	22.6
Head CG Resultant	N/A	G's	61.2	81.1			46.9	77.1		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	1.7	129.4	-44.9	75.6	2.0	137.4	-48.7	71.0
Chest CG	Y	G's	10.7	93.6	-2.7	48.6	9.2	76.8	-11.0	86.7
Chest CG	Z	G's	10.0	69.1	-11.3	96.5	12.8	65.3	-14.2	98.2
Chest CG Resultant	N/A	G's	45.6	77.1			50.7	70.8		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	1002.7	47.4	-2229.9	57.9	676.5	46.8	-3758.8	59.8
Right Femur	Z	Newtons	606.6	43.1	-4076.9	59.8	1205.5	47.3	-2739.7	56.2

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Shoulder Belt Pullout	N/A	MM	428.4	88.1	-0.1	5.9	568.2	107.9	0.0	3.8
Shoulder Belt Stretch	N/A	MM/CM	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Lap Belt Force	N/A	Newtons	8580.2	64.3	-14.8	181.9	9396.3	59.8	-9.7	5.4
Shoulder Belt Force	N/A	Newtons	3586.8	85.9	-29.7	127.7	3778.8	42.8	-17.9	200.4

1.) Not used with pre-tensioners

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Primary	498.7	60.7	94.5	46.5	296.3	57.2	93.2	36.8

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	45.1	75.3	78.3	48.3	69.5	72.5

DATA SHEET NO. 8...(continued)

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	11.3	84.8	-71.6	61.8	11.5	88.8	-72.9	60.4
Pelvis	Y	G's	13.0	81.6	-8.0	44.8	4.6	42.8	-7.6	78.8
Pelvis	Z	G's	1.5	153.8	-32.6	68.2	2.0	136.7	-23.1	67.7
Pelvis Resultant	N/A	G's	76.1	61.8			76.3	60.4		

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	754.5	77.1	-435.9	132.3	947.0	62.3	-680.4	133.7
Neck Force	Y	Newtons	185.6	127.6	-291.7	86.1	170.5	80.9	-468.1	126.9
Neck Force	Z	Newtons	1725.5	70.2	-258.1	96.9	695.2	67.5	-257.4	96.5
Neck Force Resultant	N/A	Newtons	1866.3	70.2			1140.0	66.3		
Neck Moment	X	N•m	17.6	127.6	-10.8	97.6	20.7	88.4	-31.2	130.1
Neck Moment	Y	N•m	42.2	63.0	-13.1	95.8	81.9	59.4	-10.4	95.3
Neck Moment	Z	N•m	7.6	149.9	-17.6	98.4	27.0	98.2	-17.7	145.3
Neck Moment Resultant	N/A	N•m	42.9	63.2			82.3	59.4		

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	26.6	80.3	-37.5	30.8	82.0	76.0	-123.8	40.6
Left Foot Aft	Z	G's	4.6	93.7	-35.6	41.4	13.0	48.7	-86.1	41.1
Left Foot Fore	Z	G's	14.9	91.4	-67.3	25.5	21.6	72.7	-96.6	40.7
Right Foot Aft	X	G's	32.0	80.6	-141.9	47.6	32.7	79.5	-88.4	40.4
Right Foot Aft	Z	G's	6.1	71.0	-119.4	46.4	12.6	53.8	-84.9	39.7
Right Foot Fore	Z	G's	11.0	91.4	-126.4	46.1	29.5	36.2	-156.0	39.2

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Upper Moment	X	N•m	18.8	57.3	-9.2	67.9	48.9	78.1	-15.8	152.0
Left Upper Moment	Y	N•m	12.6	179.2	-89.0	51.5	27.9	61.6	-163.7	41.5
Right Upper Moment	X	N•m	24.7	64.2	-40.6	48.8	32.0	78.1	-28.0	62.5
Right Upper Moment	Y	N•m	39.3	60.3	-149.3	49.4	22.6	162.9	-128.6	41.4
Left Lower Moment	X	N•m	21.4	80.0	-2.4	44.4	26.4	76.2	-6.0	34.5
Left Lower Moment	Y	N•m	49.7	82.7	-48.9	61.3	53.0	77.0	-35.9	56.8
Left Lower Force	Z	Newtons	99.4	195.4	-2254.8	81.6	44.6	26.6	-7867.8	41.4
Right Lower Moment	X	N•m	10.6	95.0	-19.9	45.6	13.4	75.5	-6.9	33.8
Right Lower Moment	Y	N•m	65.8	82.4	-69.9	49.5	49.8	37.5	-42.9	59.2
Right Lower Force	Z	Newtons	146.5	62.3	-4631.8	46.1	117.8	47.5	-6470.0	39.3

DATA SHEET NO. 8...(continued)Test Vehicle: 2004 Mazda 3 4 Door SedanNHTSA No.: M45400Test Program: 2004 NHTSA 35mph NCAPTest Date: 12/17/03**CHEST PEAK DISPLACEMENTS**

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.0	1.7	-21.2	69.2	0.0	6.2	-24.4	68.3

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	1.8	199.9	-59.1	81.1	2.6	22.5	-39.9	76.9
Head CG	Y	G's	14.2	87.7	-2.3	28.4	2.4	37.0	-19.4	76.2
Head CG	Z	G's	22.6	70.1	-14.2	91.5	25.2	64.8	-2.5	22.6
Head CG Resultant	N/A	G's	60.7	82.3			46.7	77.5		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	1.7	124.4	-44.9	75.6	2.0	137.3	-48.6	71.0
Chest CG	Y	G's	11.1	93.6	-2.8	48.5	9.7	76.8	-11.1	86.6
Chest CG	Z	G's	10.2	70.3	-11.4	96.4	12.7	65.4	-14.2	98.2
Chest CG Resultant	N/A	G's	45.5	77.1			50.6	70.8		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Redundant	503.7	59.9	94.6	46.2	294.9	57.2	93.2	36.7

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	45.0	75.2	78.2	48.3	69.5	72.5

DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	190	200
PBU - Top Surface of reference to belt upper edge	mm	315	300
PBL - Top Surface of reference to belt lower edge	mm	250	220
Lap Belt Tension	Newton's	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	650	650
Shoulder Belt length as measured on ATD	mm	820	820
Lap Belt length as measured on ATD	mm	780	580
Remainder of belt on reel	mm	900	1015
Total belt length for continuous webbing systems	mm	3150	3065

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	N/A	N/A
As determined electronically	mm	428.4	568.2

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm	N/A	N/A

* Not used with shoulder belt pre-tensioner systems

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

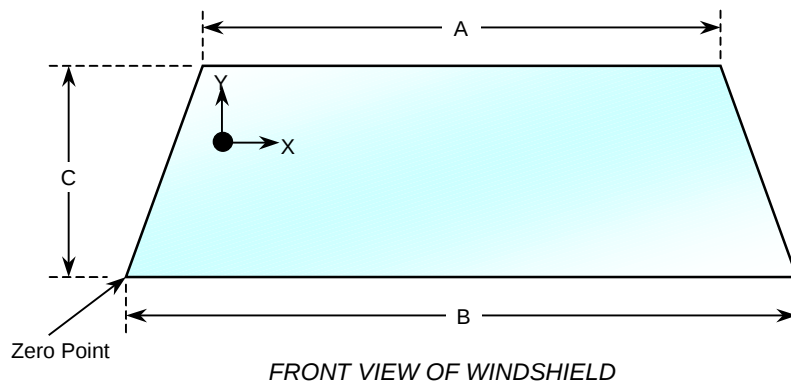
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

The standard requires that the posttest retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles that are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2142.0	2142.0	100.0
Right Side	2142.0	2142.0	100.0
Total	4284.0	4284.0	100.0



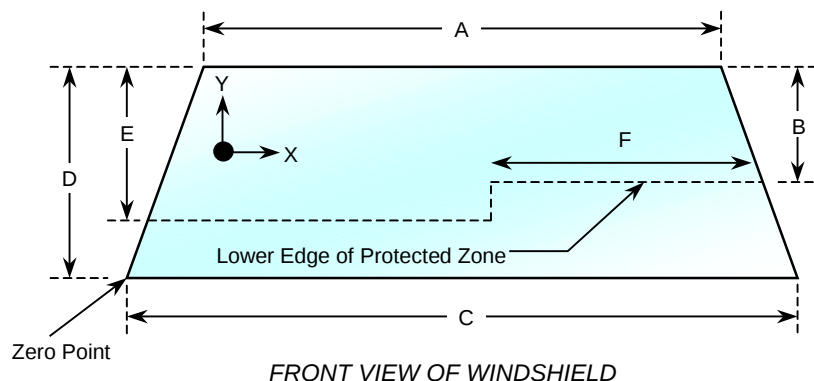
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1164.0	10.0
B	mm	1480.0	N/A
C-Left	mm	820.0	8.0
C-Right	mm	820.0	8.0

DATA SHEET NO. 11
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1164
B	mm	416
C	mm	1480
D	mm	820
E	mm	503
F	mm	502

AREA OF PROTECTED ZONE FAILURES

- A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 in. by a vehicle component other than one that is normally in contact with the windshield.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

- B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

DATA SHEET NO. 12
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

Test Time: 12:10 PM

Temperature: 11.1 Deg. C.

STODDARD SOLVENT SPILLAGE MEASUREMENTS

A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)

B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)

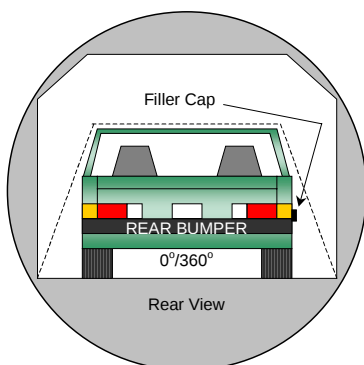
C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)

D. Spillage Location Details: No leakage occurred

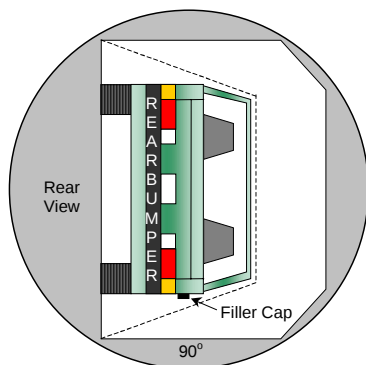
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

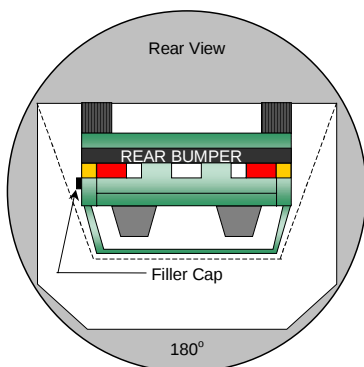
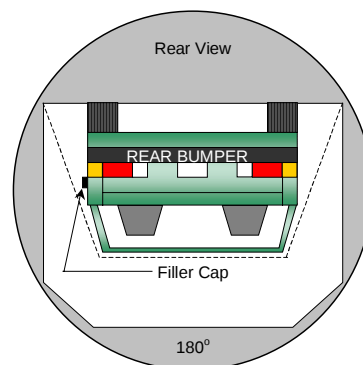
NHTSA No.: M45400
Test Date: 12/17/03



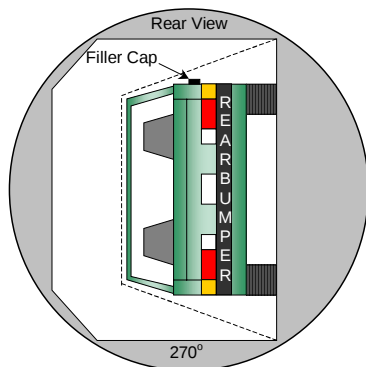
0° to 90°



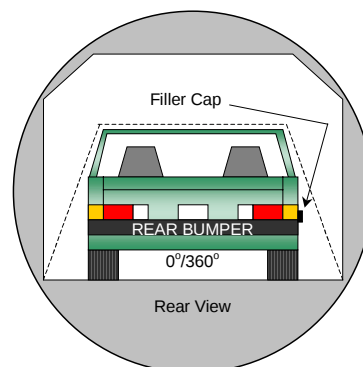
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. No solvent leakage occurred during rollover.

DATA SHEET NO. 13....(CONTINUED)
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	85	300	385
90° to 180°	78	300	378
180° to 270°	80	300	380
270° to 360°	75	300	375

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5.0
Sixth Minute	1.0
Seventh Minute	1.0
Eighth Minute	1.0

ACTUAL TEST VEHICLE SOLVENT SPILLAGE TABLE (oz.)

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	4500	4029	-471
2	RSOV to front of engine	mm	3870	3649	-221
3	RSOV to firewall centerline	mm	3510	3524	14
4	RSOV to leading edge of right door	mm	3090	3091	1
5	RSOV to leading edge of left door	mm	3088	3090	2
6	RSOV to lower leading edge of right door	mm	3072	3064	-8
7	RSOV to lower leading edge of left door	mm	3079	3073	-6
8	RSOV to upper trailing edge of right door	mm	1991	1988	-3
9	RSOV to upper trailing edge of left door	mm	1988	1987	-1
10	RSOV to lower trailing edge of right door	mm	2054	2050	-4
11	RSOV to lower trailing edge of left door	mm	2061	2055	-6
12	RSOV to bottom of right 'A' pillar	mm	3066	3054	-12
13	RSOV to bottom of left 'A' pillar	mm	3060	3058	-2
14	RSOV to firewall on right side	mm	3454	3439	-15
15	RSOV to firewall on left side	mm	3459	3454	-5
16	RSOV to steering column	mm	2660	2224	-436
17	Center of steering column to left 'A' pillar	mm	410	420	10
18	Center of steering column to headlining	mm	433	425	-8
19	RSOV to right side of front bumper	mm	4288	3985	-303
20	RSOV to left side of front bumper	mm	4288	4044	-244
21	Length of engine block	mm	233	233	0
RD	RSOV to right side of dash panel	mm	2865	2856	-9
CD	RSOV to center of dash panel	mm	2814	2856	42
LD	RSOV to left side of dash panel	mm	2876	2870	-6

All measurements in millimeters

DATA SHEET NO. 14.....(CONTINUED)
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

VEHICLE STRUCTURAL MEASUREMENT TABLE

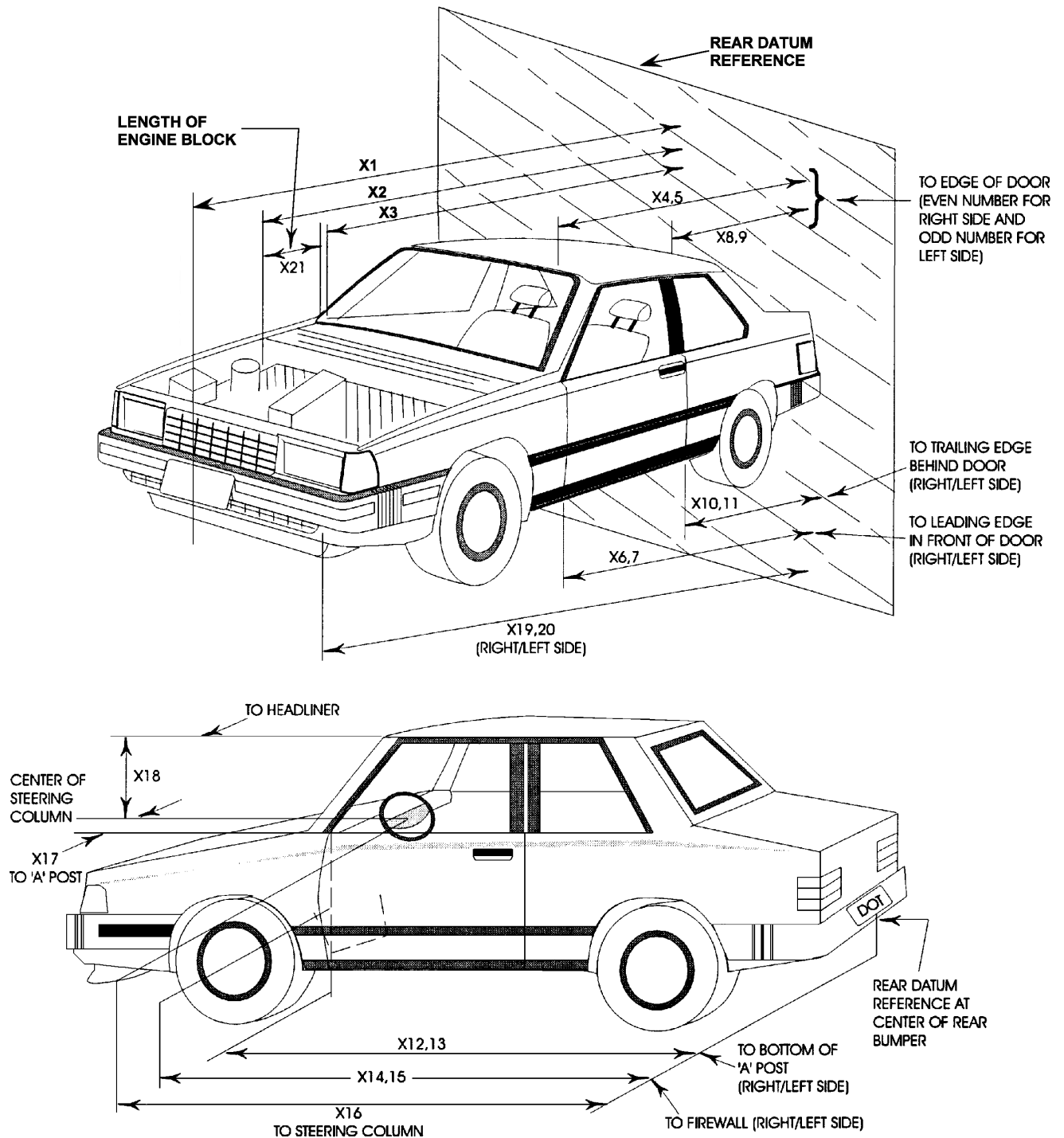
No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	4500	4029	-471
2	Total width	mm	1750	1743	-7
3	Bumper top height	mm	625	585	-40
4	Bumper bottom height	mm	203	165	-38
5	Longitudinal member top height	mm	596	635	39
6	Longitudinal member bottom height	mm	447	490	43
7	Distance between longitudinal members	mm	1000	900	-100
8	Longitudinal member width	mm	149	145	-4
9	Engine top height	mm	805	772	-33
10	Engine bottom height	mm	156	147	-9
11	Engine and gear box width	mm	493	493	0
12	Front bumper to engine distance	mm	597	420	-177
13	Front shock absorber fixing width	mm	838	878	40
14	Bonnet leading edge height	mm	730	822	92
15	Front shock absorber fixing width	mm	1135	1120	-15
16	Front bumper to front axle distance	mm	920	500	-420
17	Front axle to 'A' pillar distance	mm	444	475	31
18	'A' pillar to 'B' pillar distance	mm	1099	1109	10
19	'B' pillar to rear axle distance	mm	1087	1095	8
20	'B' pillar to 'C' pillar distance	mm	882	830	-52
21	Roof sill bottom height	mm	1332	1335	3
22	Roof sill top height	mm	1435	1445	10
23	Floor sill bottom height	mm	199	210	11
24	Floor sill top height	mm	270	295	25

All measurements in millimeters

DATA SHEET NO. 14...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location (mm)			Angle (deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time	18288	-22860	2540	10	N/A	17-70	24
2	Driver Overall	1626	8230	1092	4	7742	17	NTM
3	Driver Close-Up	1626	8230	1600	4	7757	35	980
4	3/4 Driver	6477	10185	4548	13	11159	105	1000
5	Steering Column	1524	8230	3404	20	8080	19	1000
6	Steering Column	1524	8230	2997	16	7974	19	1020
7	Driver Side Child	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7B	Driver Side Child	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Passenger Overall	2286	-8230	1524	6	7733	13	1020
9	Passenger Close-Up	1219	-6096	1524	4	5685	35	1000
10	3/4 Passenger	8026	-8941	2997	9	10429	80	920
11	Passenger Door	1626	-8836	1702	4	8367	50	1000
12	Passenger Side Child	3200	1930	2286	25	2680	6	1020
12B	Passenger Side Child	6096	1830	2286	25	3886	6	1010
13	Overhead	610	0	6172	90	N/A	13	1120
14	Driver Front	-610	406	2743	40	N/A	13	NTM
15	Passenger Front	-610	406	2743	40	N/A	13	NTM
16	Pit Engine	762	0	-1499	90	N/A	9	980
17	Pit Fuel Tank	3658	0	-1499	90	N/A	6	1000

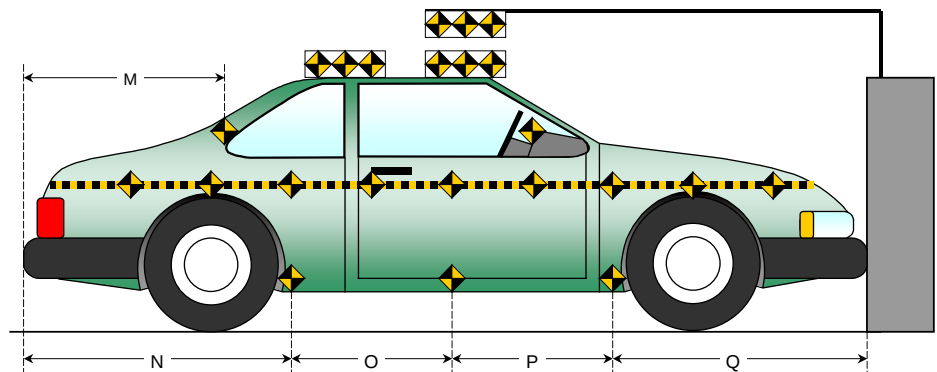
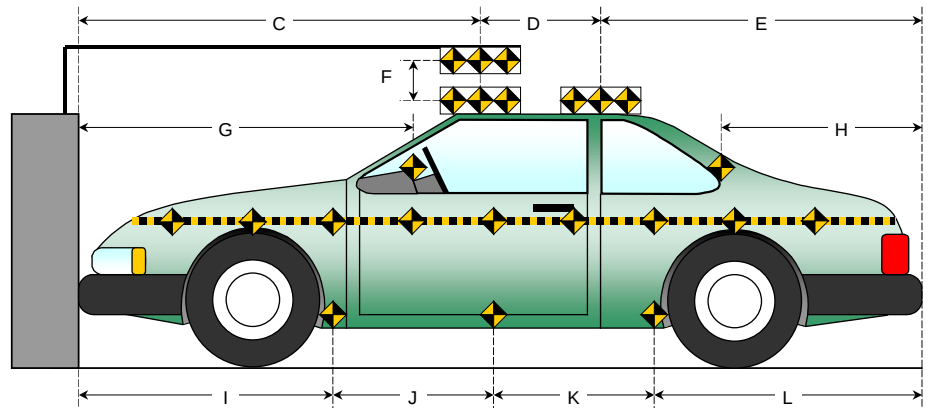
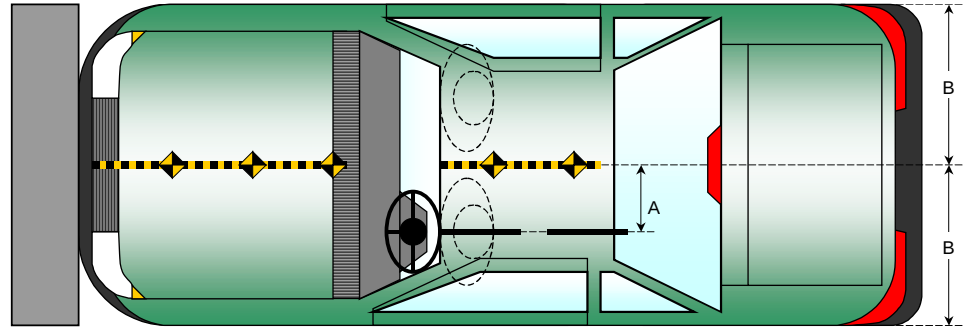
X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run NTM = No Timing Marks

DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

All Dimensions in (mm)	
Item	Value
A	310
B	669
C	2240
D	610
E	1674
F	305
G	1738
H	654
I	1354
J	894
K	894
L	1365
M	954
N	1365
O	885
P	885
Q	1359



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

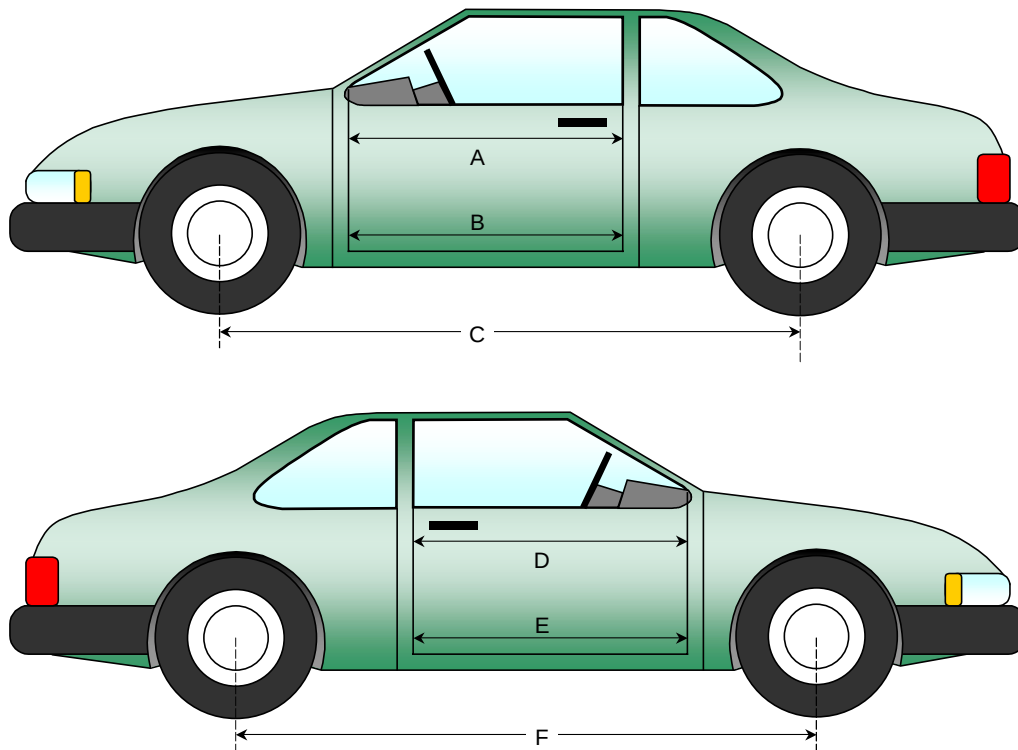
NHTSA No.: M45400
 Test Date: 12/17/03

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	998	996	-2
B	Left Side Lower	mm	878	876	-2
D	Right Side Upper	mm	994	996	2
E	Right Side Lower	mm	878	876	-2

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	2643	2630	-13
F	Right Side Wheel Base	mm	2643	2630	-13



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

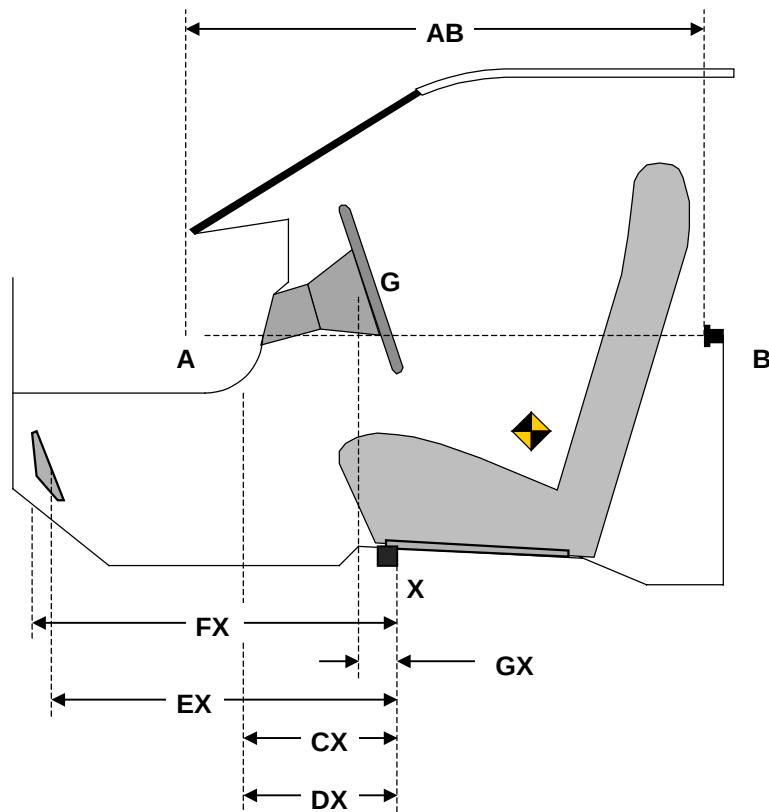
Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	998	996	-2
CX	Left Knee Bolster to X	mm	230	222	-8
DX	Right Knee Bolster to X	mm	210	190	-20
EX	Brake Pedal to X	mm	600	563	-37
FX	Foot Rest to X	mm	555	525	-30
GX	Center of Steering Wheel Hub to X	mm	67	125	58

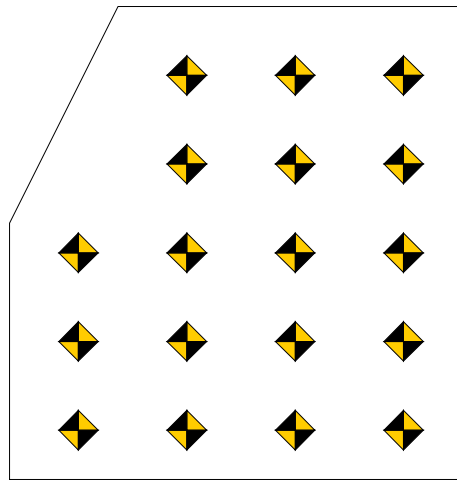
X = Left Front Seat Outboard Anchor Bolt Head



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03



A B C D

1 Measurement reference point for X and Z-axis is the forward outboard seat mounting bolt.

2 Columns A through D are evenly spaced.

3 Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		610	635	610		602	598	597		-8	-37	-13
2		535	535	527		527	530	520		-8	-5	-7
3	454	444	440	436	444	438	430	425	-10	-6	-10	-11
4	348	340	340	335	347	339	335	329	-1	-1	-5	-6
5	249	244	243	244	244	240	256	254	-5	-4	13	10

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		-10	-12	-20		-21	-21	-30		-11	-9	-10
2		-72	-70	-78		-88	-90	-109		-16	-20	-31
3	-110	-105	-109	-98	-118	-120	-130	-124	-8	-15	-21	-26
4	-110	-119	-120	-115	-120	-124	-125	-127	-10	-5	-5	-12
5	-105	-110	-80	-173	-110	-122	-90	-78	-5	-12	-10	95

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

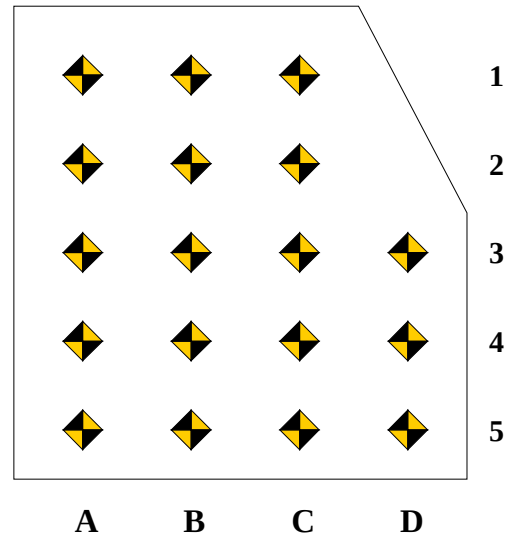
NHTSA No.: M45400
 Test Date: 12/17/03

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	620	625	625		610	614	616		-10	-11	-9	
2	555	886	570		540	537	538		-15	-349	-32	
3	465	466	470	475	445	444	444	448	-20	-22	-26	-27
4	365	366	375	375	347	352	352	355	-18	-14	-23	-20
5	265	266	275	275	246	249	247	247	-19	-17	-28	-28

PASSENGER FLOOR PAN Z-AXIS

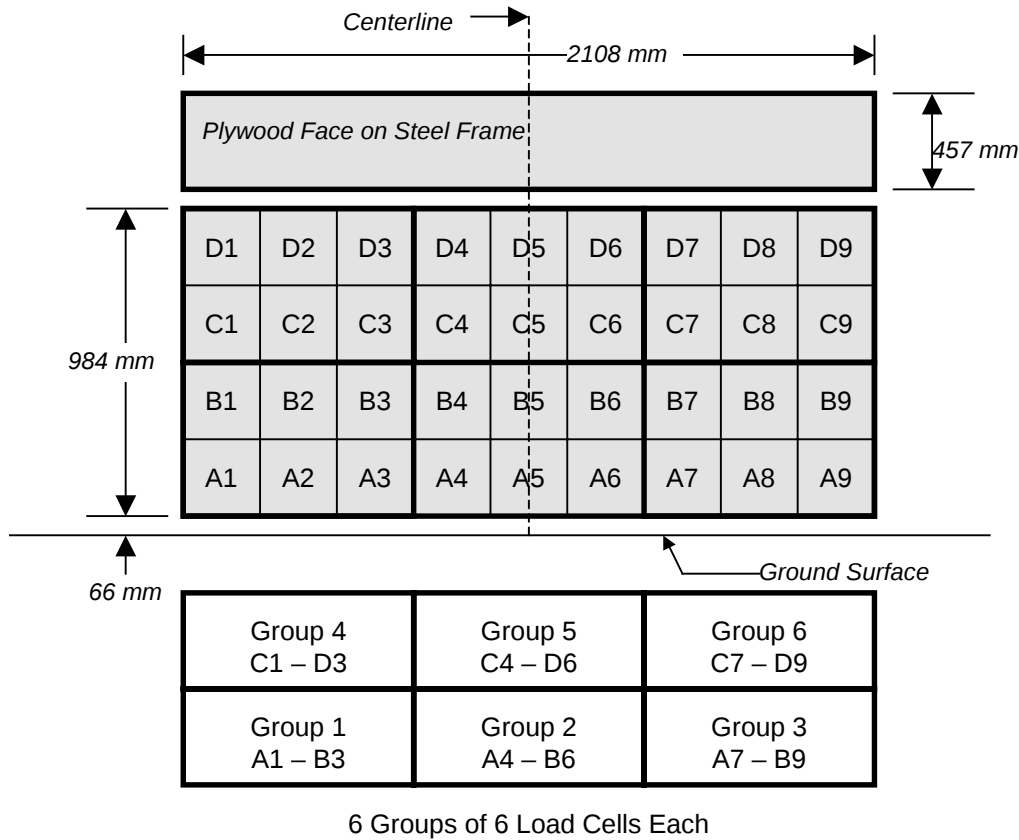
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-13	-11	-10		-18	-18	-12		-5	-7	-2	
2	-73	-65	-62		-80	-76	-76		-7	-11	-14	
3	-95	-110	-105	-105	-115	-118	-110	-108	-20	-8	-5	-3
4	-100	-98	-97	-94	-104	-102	-106	-105	-4	-4	-9	-11
5	-67	-80	-112	-102	-67	-79	-113	-113	0	1	-1	-11

DATA SHEET NO. 18
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier



The Data is presented in Appendix C with the following requirements:

- 1.) Data from 36 individual load cells
- 2.) Sum data from 6 groupings shown above (6 cells/group)
- 3.) Total or sum of all 36 individual load cells
- 4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

DATA SHEET NO. 19
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03

VEHICLE INFORMATION

VIN: JM1BK323741101144
 Vehicle Size Category: 4-Door

Wheel base (mm): 2643
 Test Weight (kg): 1476

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 55.91
 Velocity Change (km/h): 61.72

Linearity: Good

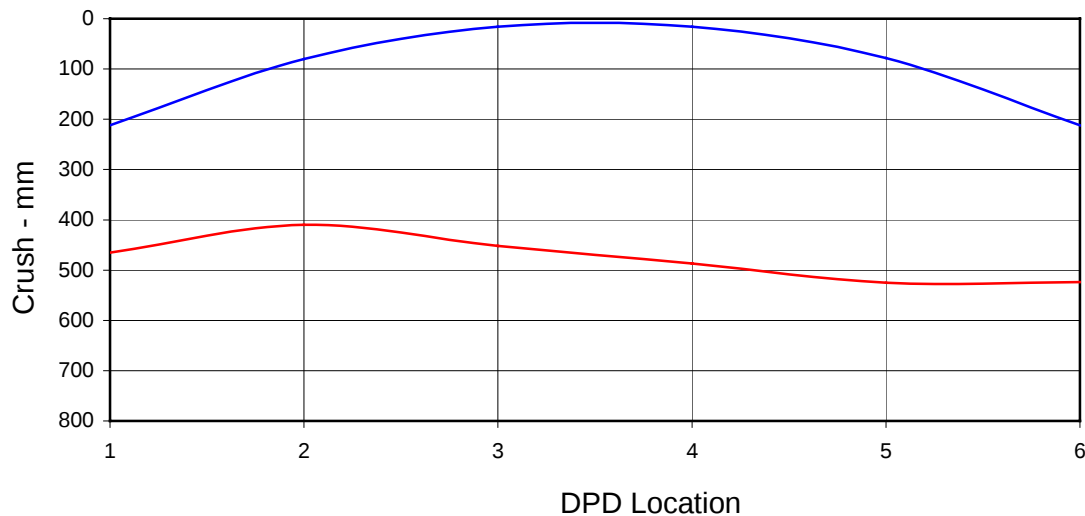
Time of Separation (msec): 64.3

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
 Damage Region Length (mm): 1339

Midpoint of Damage: Vehicle Centerline
 Impact Mode: Full Frontal

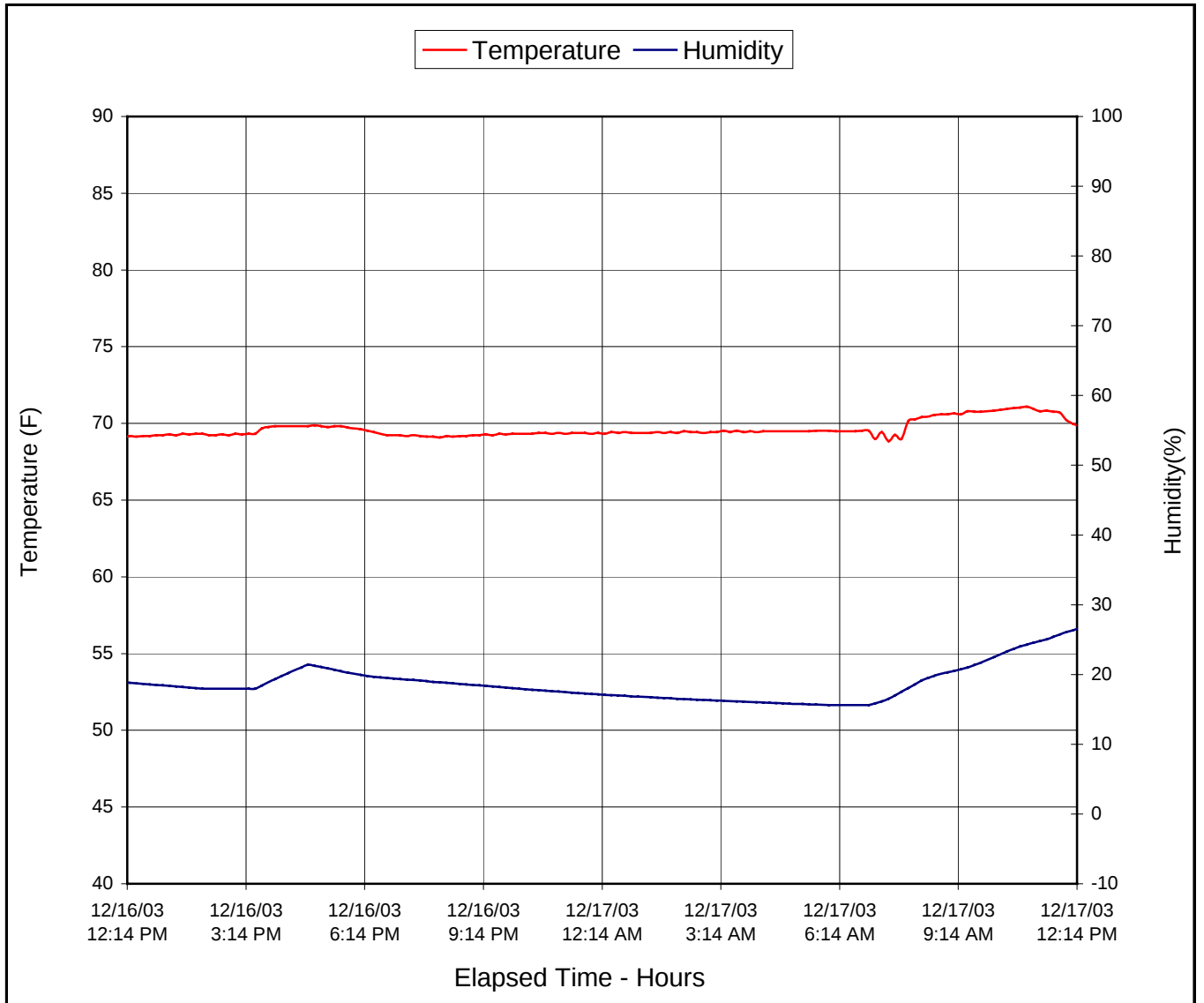
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	212	465	-253
C2	Crush zone 2 on left side	mm	80	410	-330
C3	Crush zone 3 on left side	mm	16	452	-436
C4	Crush zone 4 on right side	mm	16	487	-471
C5	Crush zone 5 on right side	mm	78	525	-447
C6	Crush zone 6 at right side	mm	212	524	-312



DATA SHEET NO. 20
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
Test Date: 12/17/03



APPENDIX A
PHOTOGRAPHS

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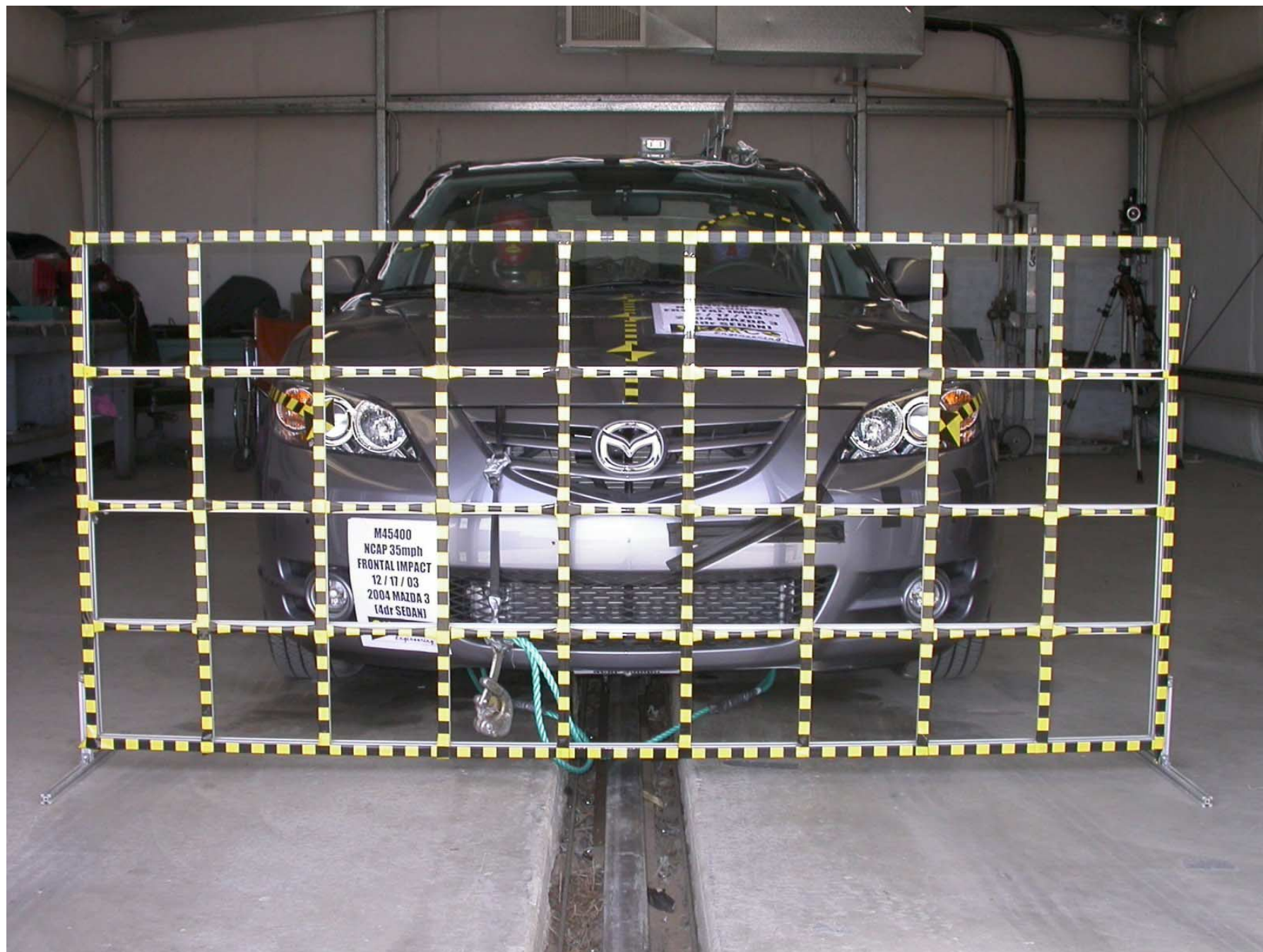


Figure A-1: Load Cell Location

MFD. BY MAZDA MOTOR CORPORATION

DATE	GVWR/PNBV	GAWR/PNBE FRT	GAWR/PNBE RR
10/03	3818 LB	2046 LB	1772 LB
	1732 KG	928 KG	804 KG

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY
/ BUMPER / AND THEFT PREVENTION
STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

JM1BK323741101144

TYPE: PASSENGER



BODY COLOR CODE: 29Y

MADE IN JAPAN

Figure A-2: Vehicle Certification Label

VEHICLE CAPACITY WEIGHT (BN8K)
 CAPACITÉ PORTEUSE DU VÉHICULE 385kg (850lbs)

SEATING CAPACITY FRONT SEAT 2
 NOMBRE DE PLACES SIÈGE AVANT 2

REAR SEAT . . . 3
 SIÈGE ARRIÈRE . . . 3

TOTAL 5

TIRE INFLATION PRESSURE	FRONT/AV.	REAR/AR.
PRESSION DE GONFLAGE DES	220	220
PNEUS kPa(kgf/cm ²)(p.s.i.,lb/po ²)	(2.2)(32)	(2.2)(32)

TIRE SIZE P205/55R16 89H
 TAILLE DES PNEUS P205/50R17 88V

Figure A-3: Vehicle Tire Label



Figure A-4: Right Front $\frac{3}{4}$ View, As Received



Figure A-5: Left Rear $\frac{3}{4}$ View, as Received



Figure A-6: Pre-Test Front View

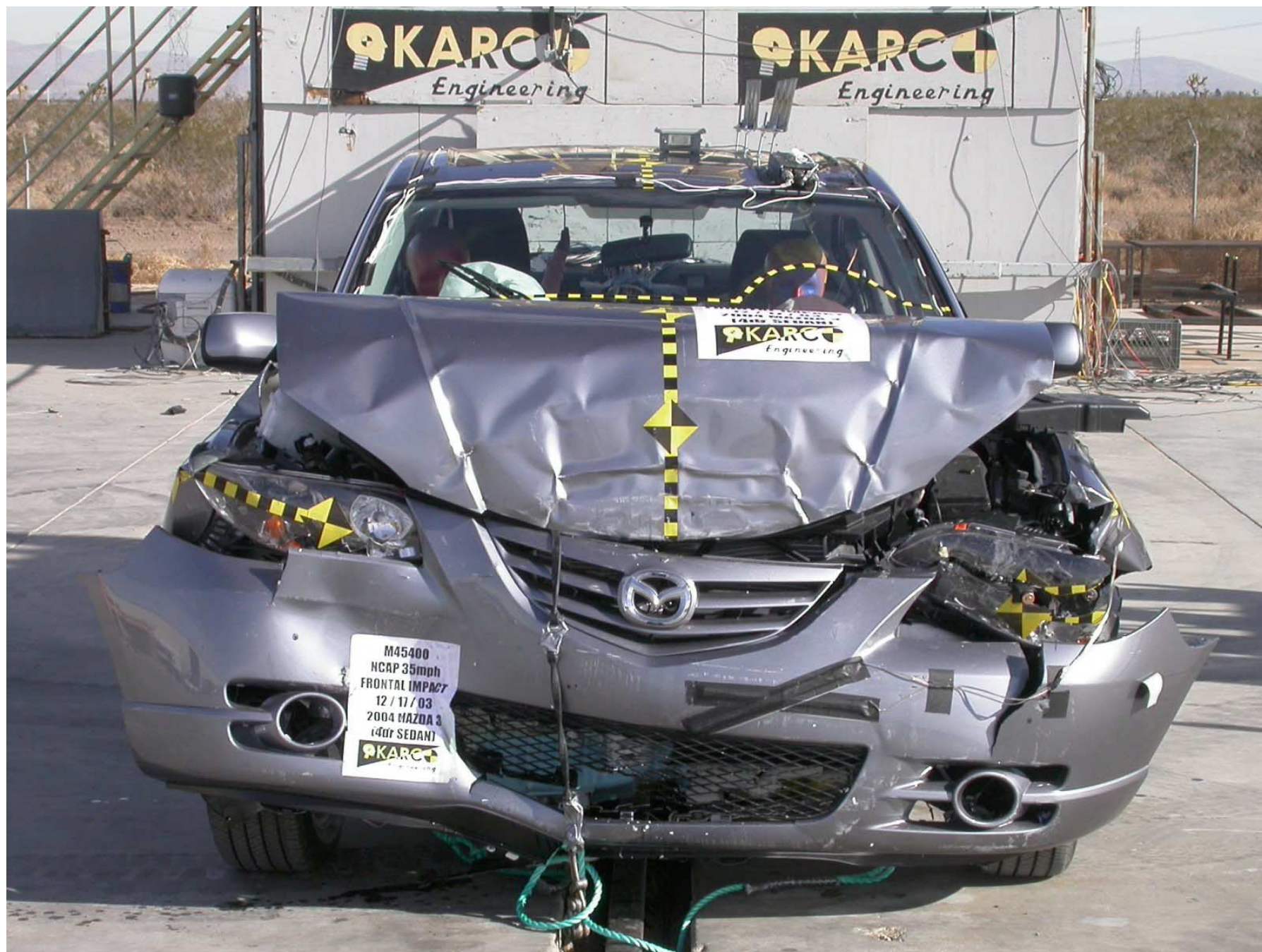


Figure A-7: Post-Test Front View (Vehicle Moved)



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 $\frac{3}{4}$ View



Figure A-13: Post-Test Right Front ¾ View (Vehicle Moved)



Figure A-14: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-15: Post-Test Left Rear $\frac{3}{4}$ View



Figure A-16: Left Rear $\frac{3}{4}$ View of Doors After Impact

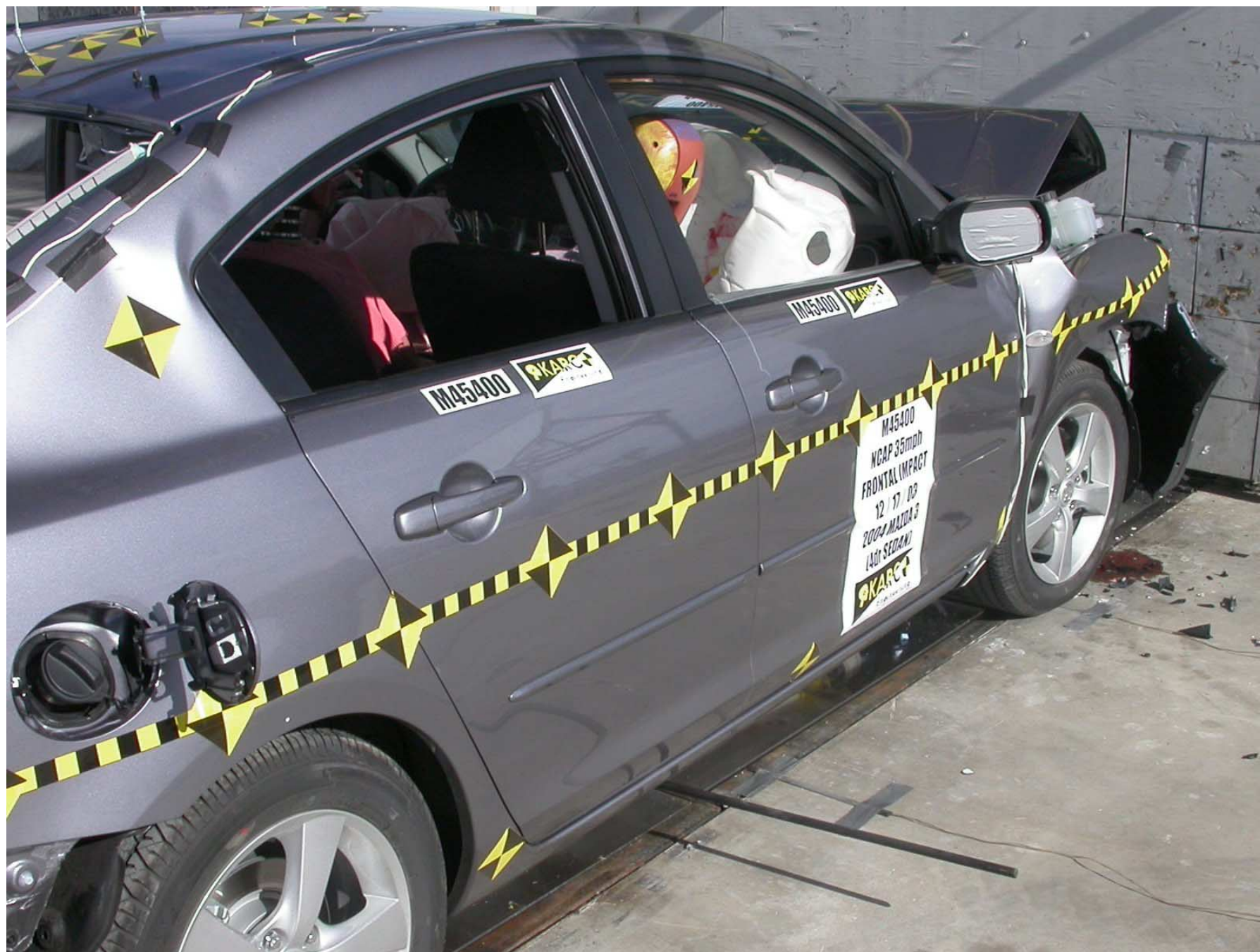


Figure A-17: Right Rear ¾ View of Doors After Impact

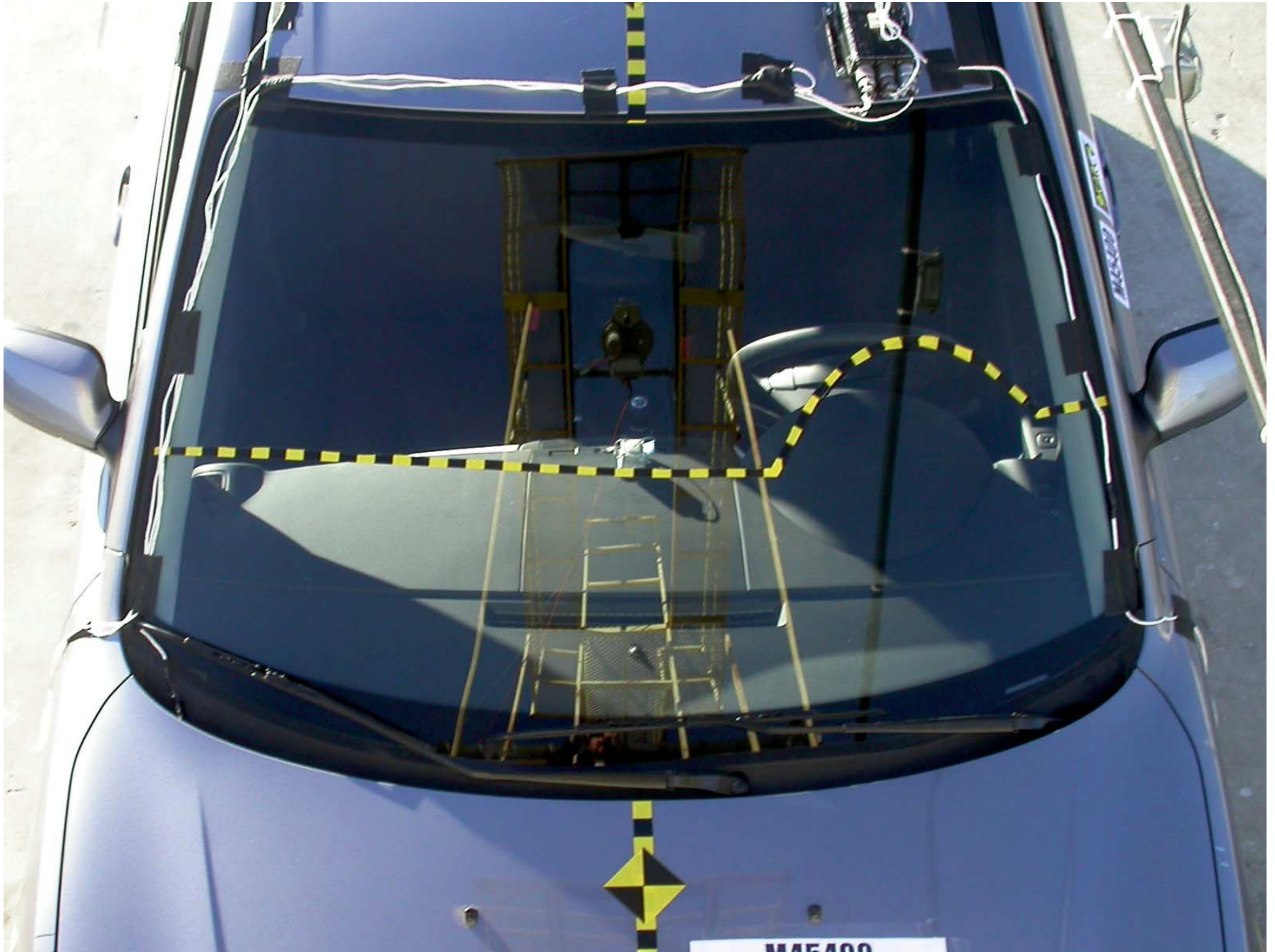


Figure A-18: Pre-Test Windshield View

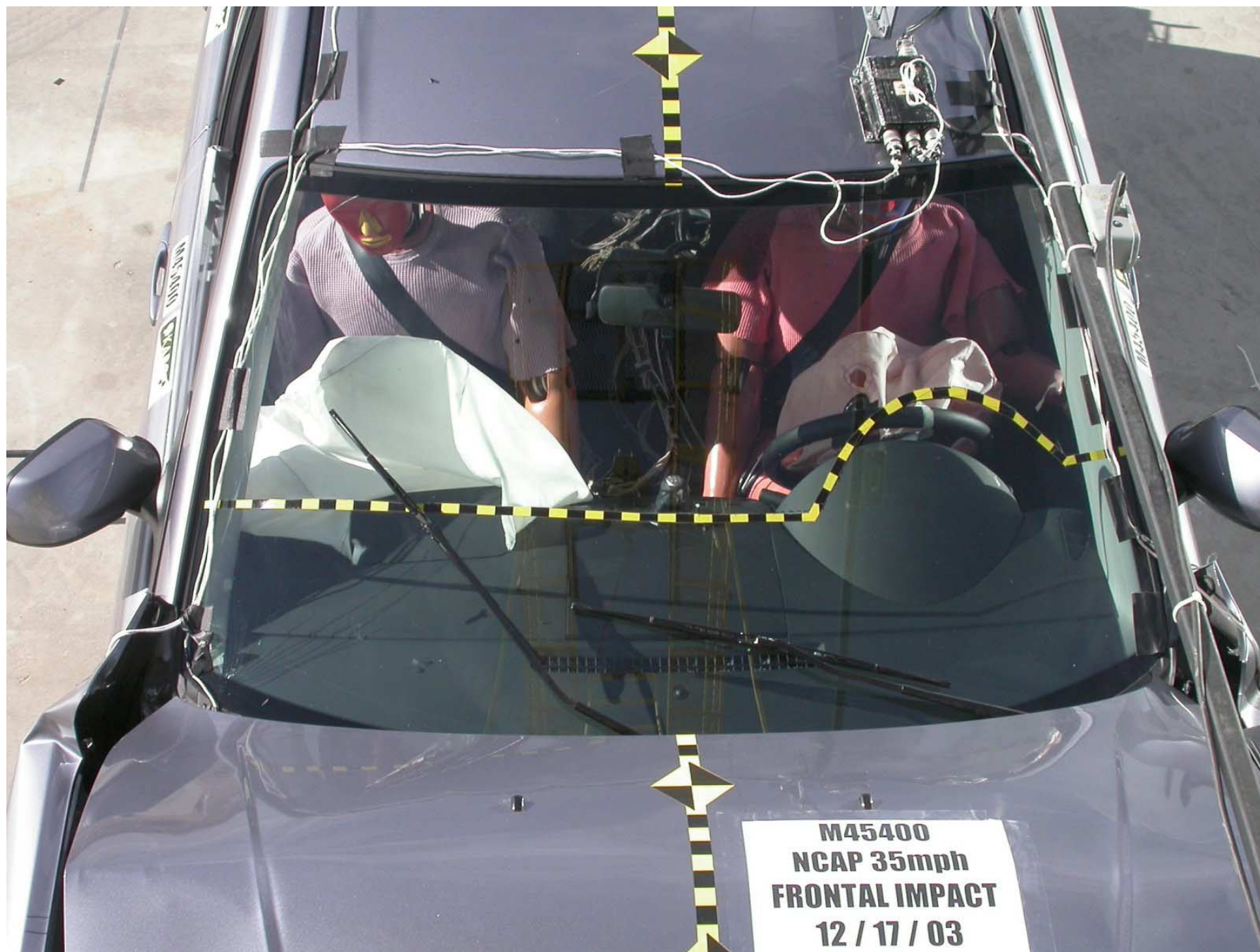


Figure A-19: Post-Test Windshield View



Figure A-20: Pre-Test Engine Compartment

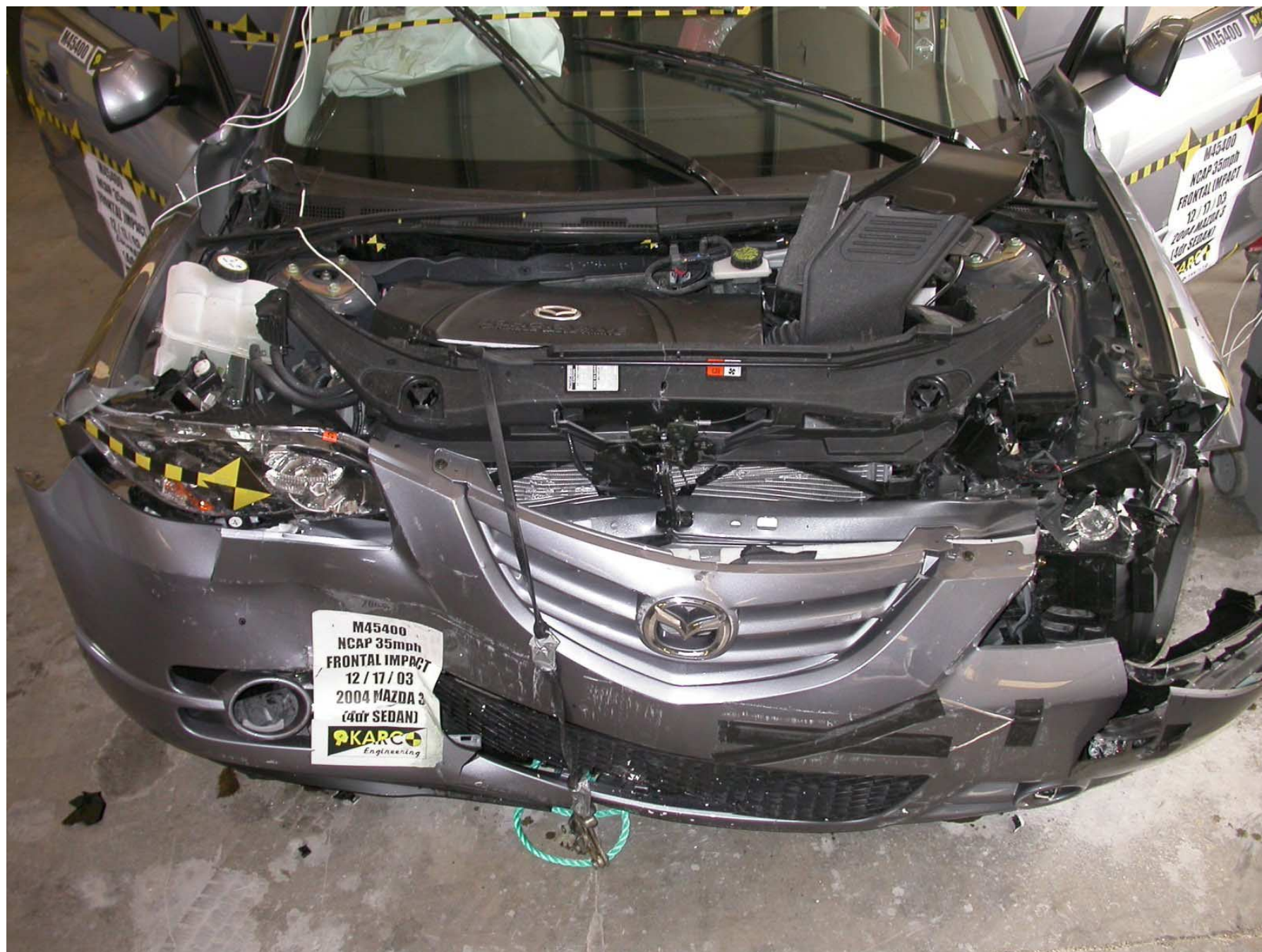


Figure A-21: Post-Test Engine Compartment (Vehicle Moved)



Figure A-22: Pre-Test Fuel Cap



Figure A-23: Post-Test Fuel Cap

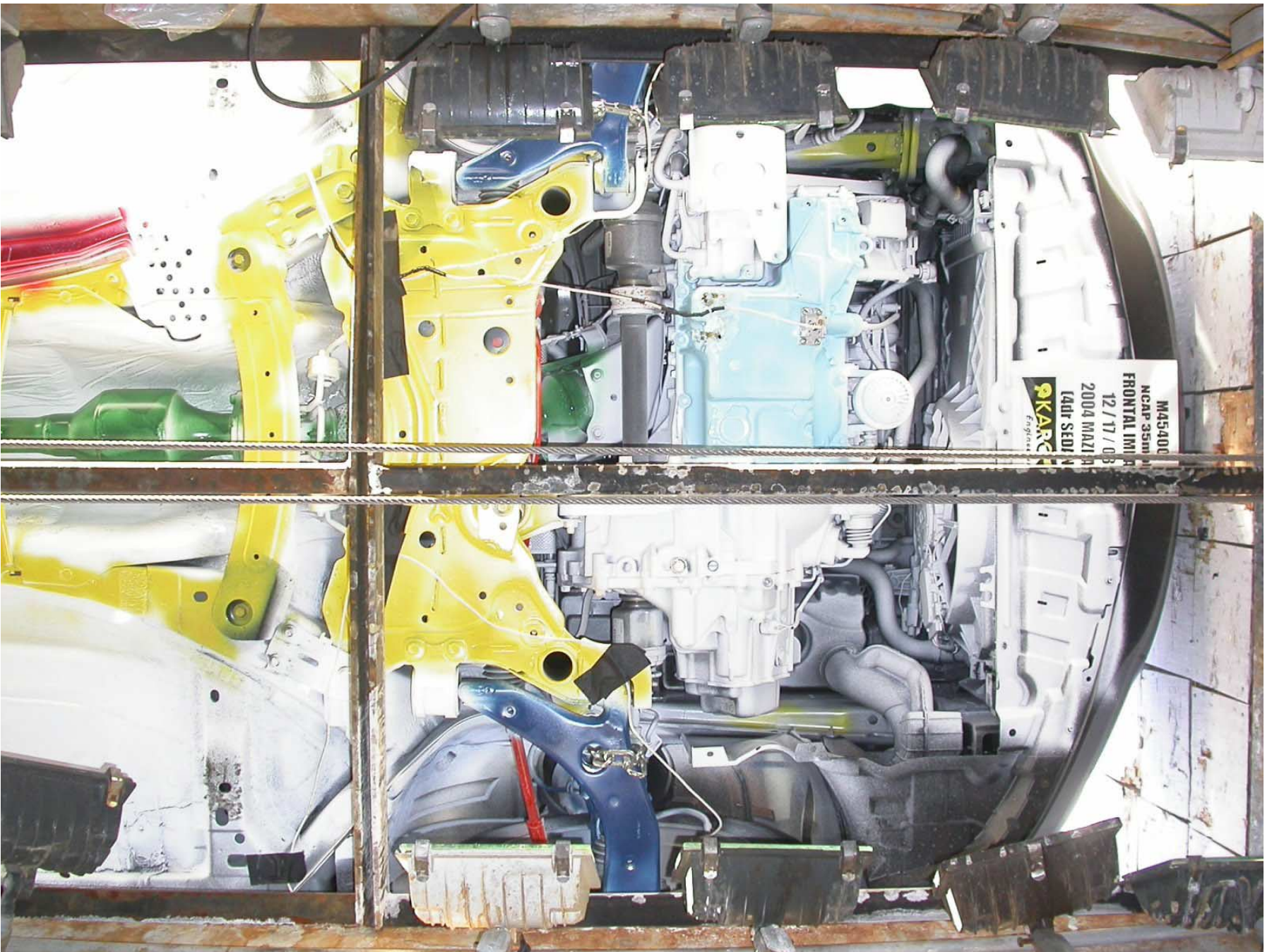


Figure A-24: Pre-Test Front Underbody View

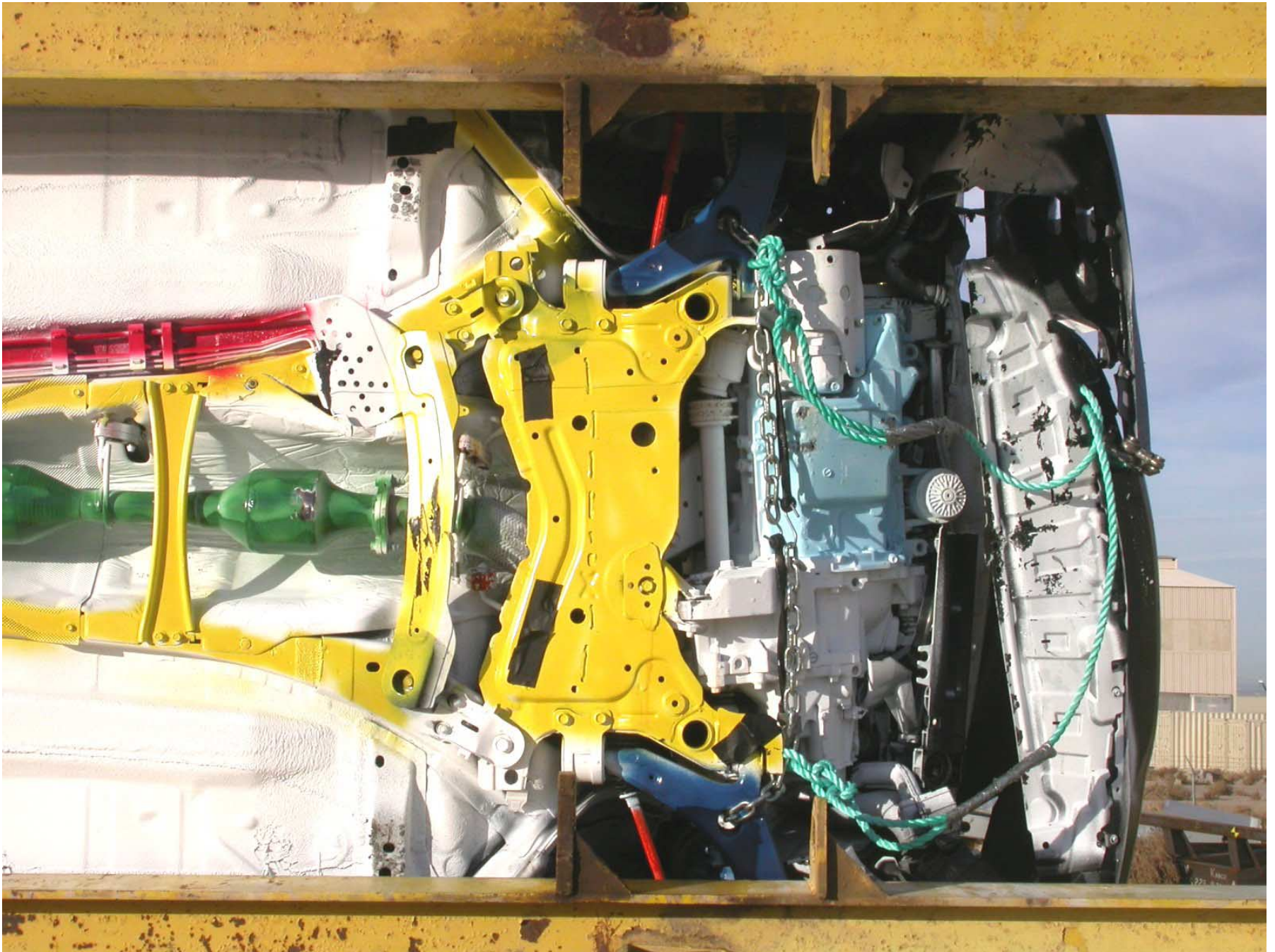


Figure A-25: Post-Test Front Underbody View



Figure A-26: Pre-Test Mid Underbody View

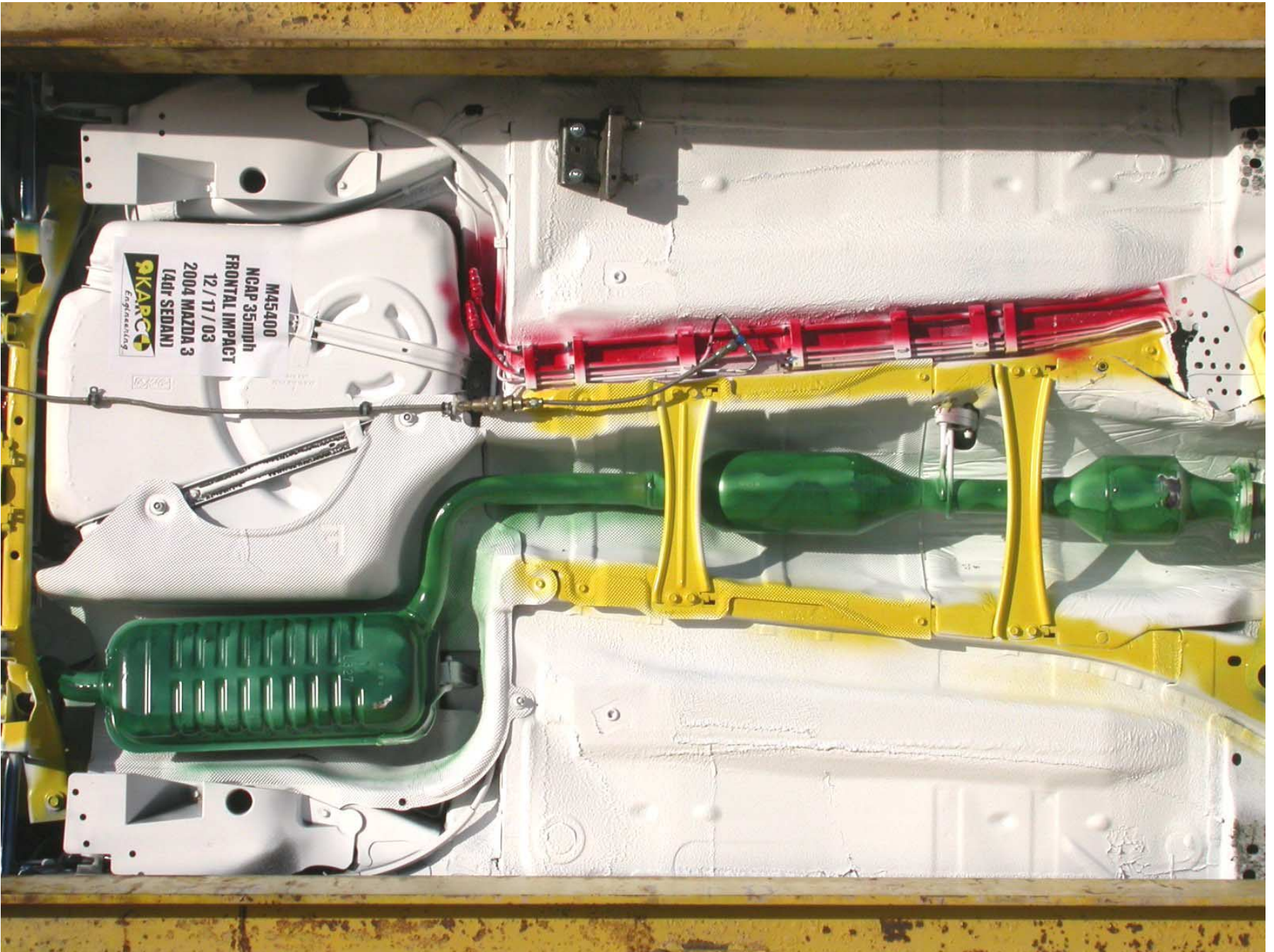


Figure A-27: Post-Test Mid Underbody View

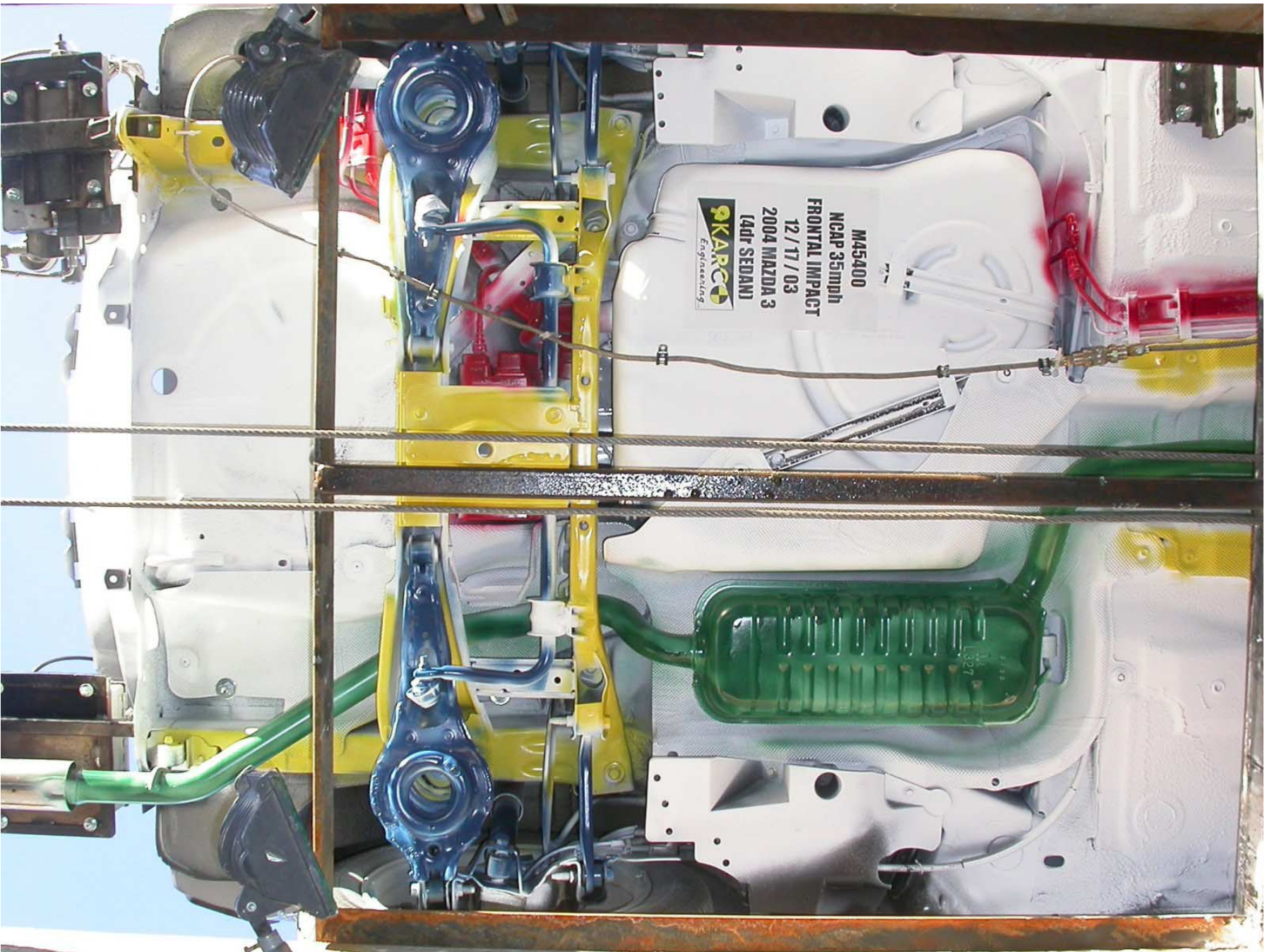


Figure A-28: Pre-Test Rear Underbody View

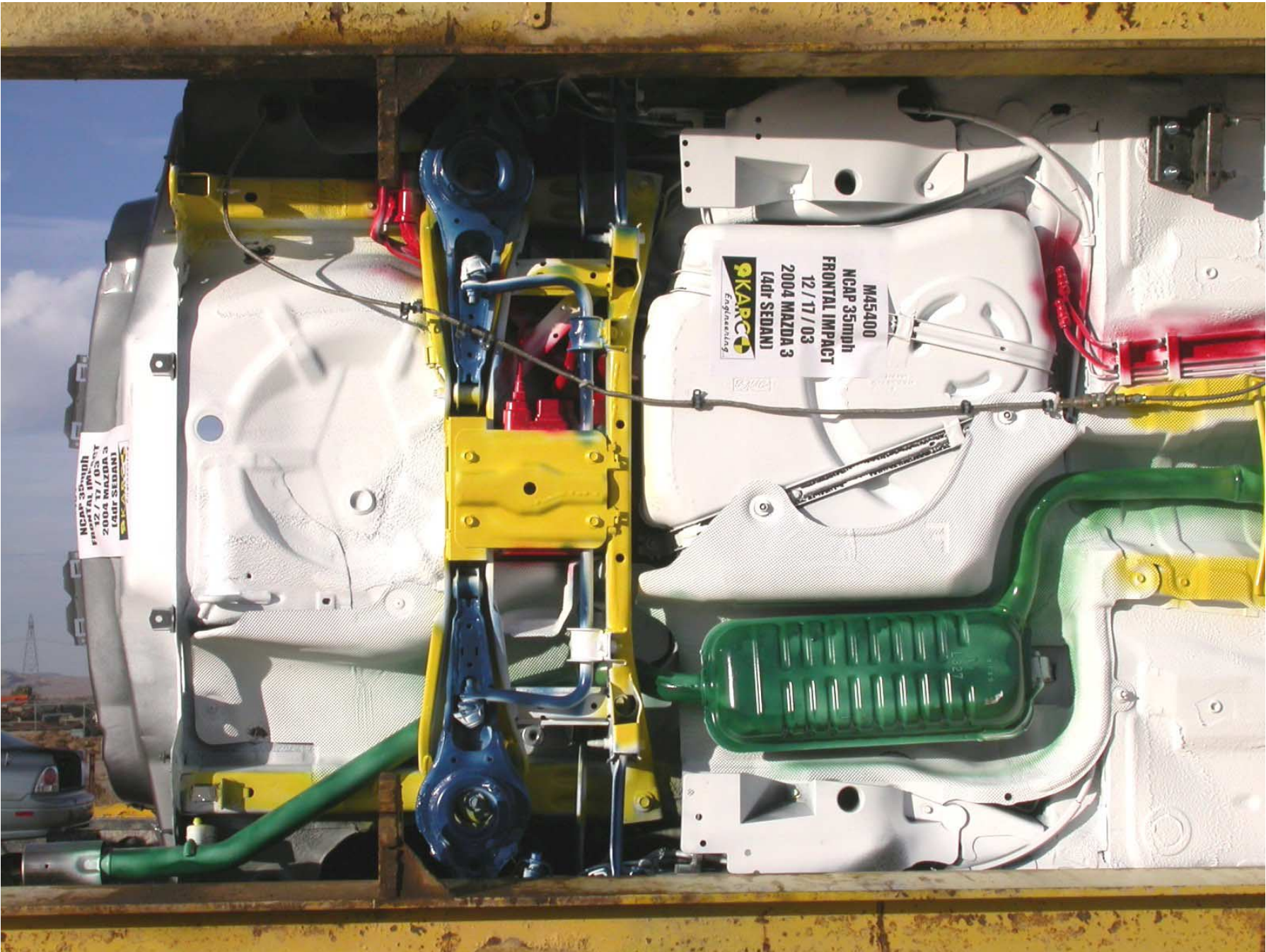


Figure A-29: Post-Test Rear Underbody View



Figure A-30: Pre-Test Driver Dummy Front View (Head Position)



Figure A-31: Post-Test Driver Dummy Front View (Head Position)



Figure A-32: Pre-Test Driver Dummy Front Through Window



Figure A-33: Post-Test Driver Dummy Front Through Window



Figure A-34: Pre-Test Driver Dummy Door Open



Figure A-35: Post-Test Driver Dummy Door Open



Figure A-36: Pre-Test Driver Dummy Feet



Figure A-37: Post-Test Driver Dummy Feet



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



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



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



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



Figure A-42: Post-Test Driver Dummy Head



Figure A-43: Post-Test Driver Dummy Contact to Air Bag



Figure A-44: Pre-Test Passenger Dummy Front View (Head Position)



Figure A-45: Post-Test Passenger Dummy Front View (Head Position)



Figure A-46: Pre-Test Passenger Dummy Front Through Window



Figure A-47: Post-Test Passenger Dummy Front Through Window



Figure A-48: Pre-Test Passenger Dummy Door Open



Figure A-49: Post-Test Passenger Dummy Door Open



Figure A-50: Pre-Test Passenger Dummy Feet



Figure A-51: Post-Test Passenger Dummy Feet



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



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

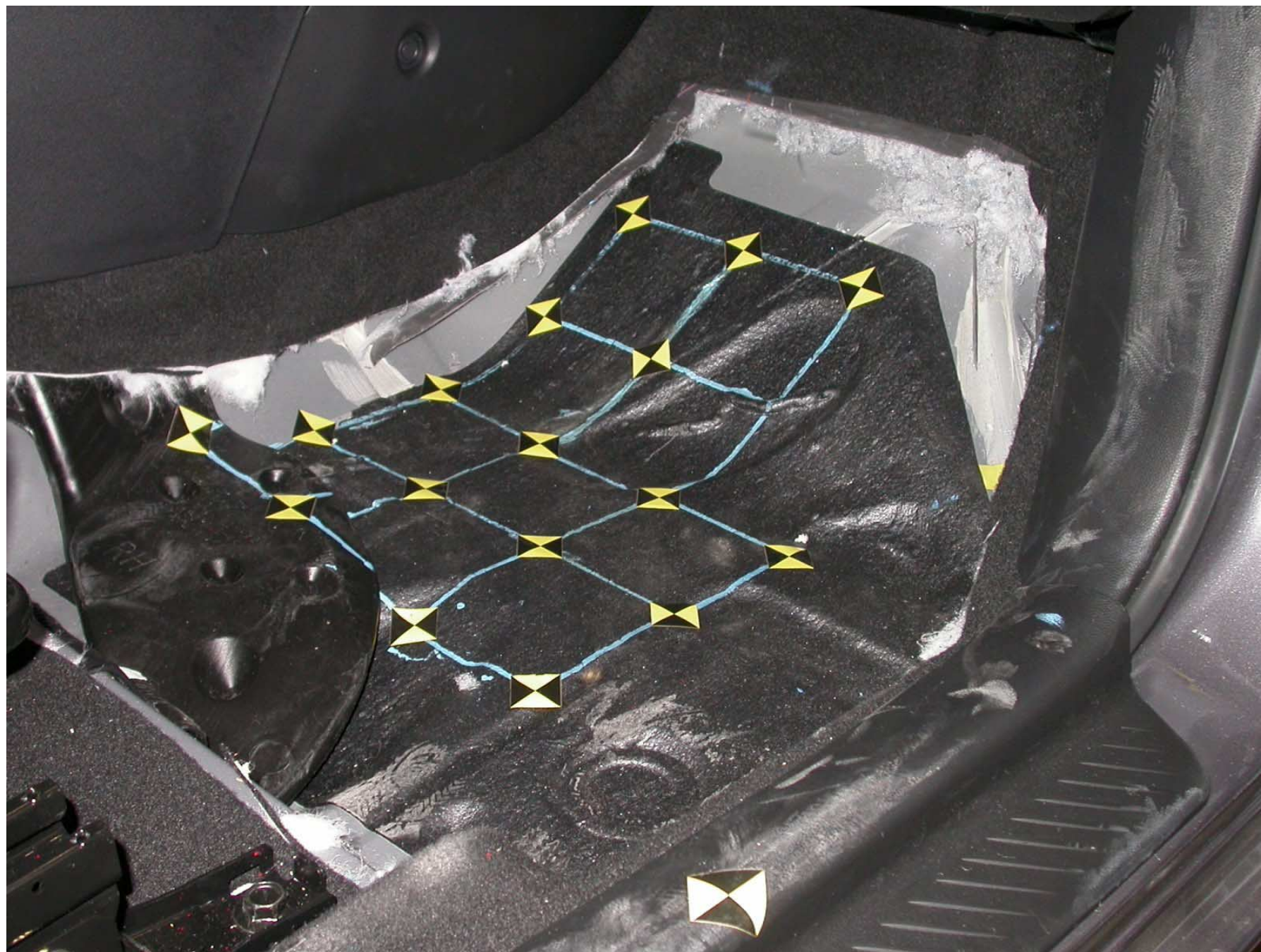


Figure A-54: Pre-Test Passenger Side Floor Pan



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



Figure A-56: Post-Test Passenger Dummy Head



Figure A-57: Post-Test Passenger Dummy Contact to Air Bag



Figure A-58: Vehicle on Rollover Device



Figure A-59: Vehicle on Rollover Device

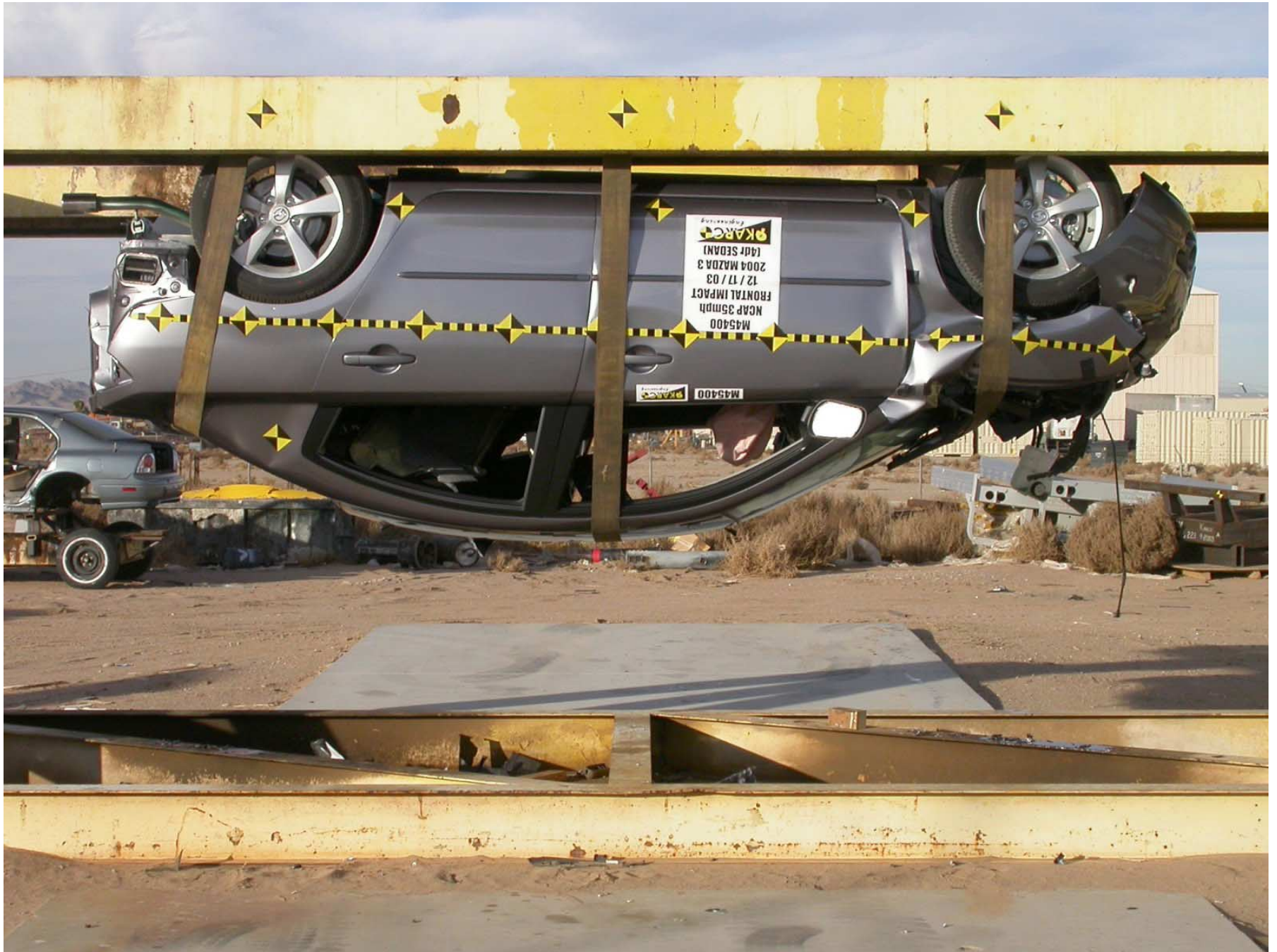


Figure A-60: Vehicle on Rollover Device

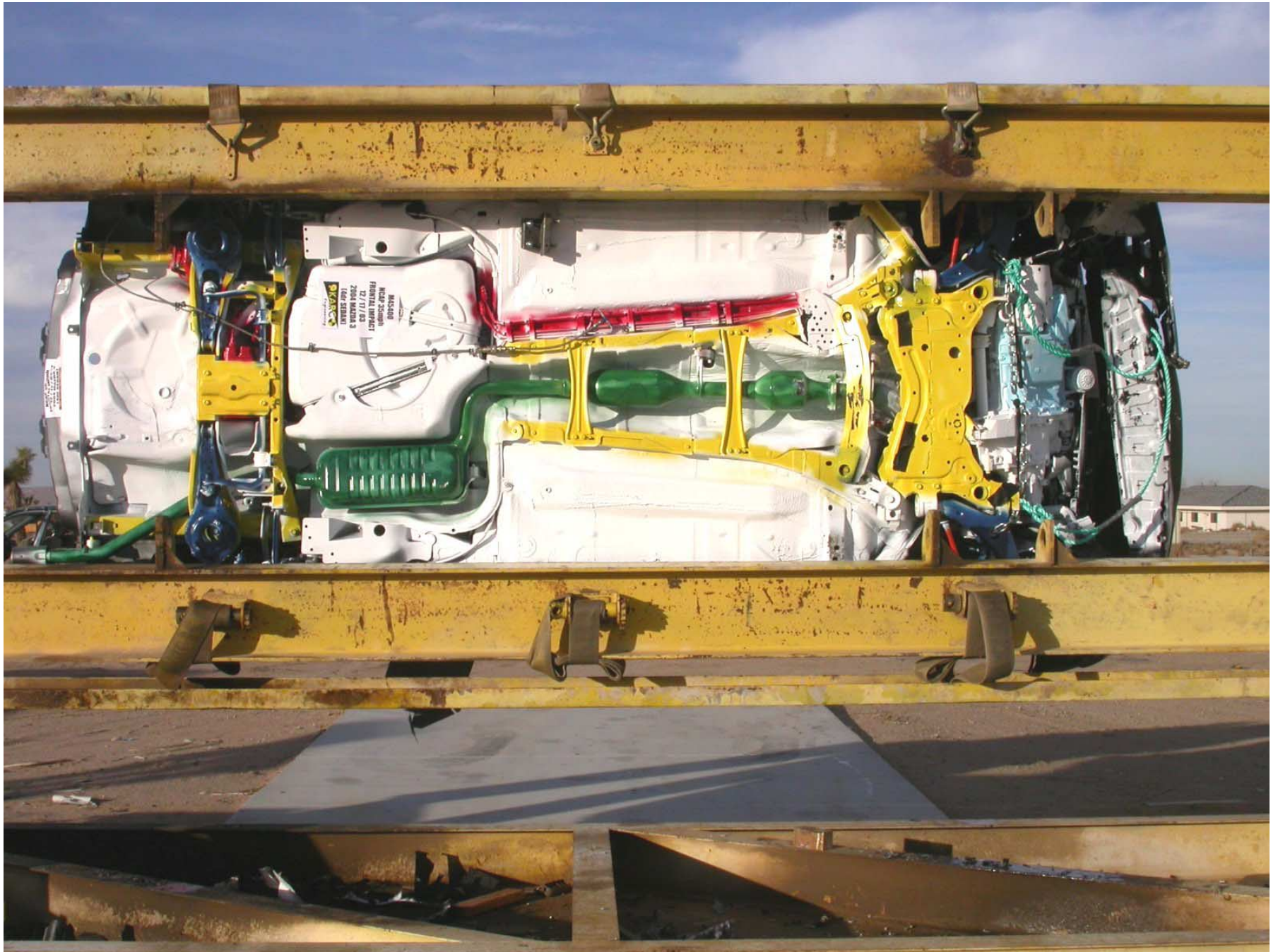


Figure A-61: Vehicle on Rollover Device



Figure A-62: Vehicle During Impact

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

Data Plot	Page
B-1	Driver Head Primary X
	Driver Head Primary Y
	Driver Head Primary Z
	Driver Head Resultant Primary
B-2	Driver Head Primary X Velocity
	Driver Head Primary X Displacement
B-3	Driver Head Redundant X
	Driver Head Redundant Y
	Driver Head Redundant Z
	Driver Head Resultant Redundant
B-4	Driver Head Redundant X Velocity
	Driver Head Redundant X Displacement
B-5	Driver Upper Neck Force X
	Driver Upper Neck Force Y
	Driver Upper Neck Force Z
	Driver Upper Neck Force Resultant
B-6	Driver Upper Neck Moment X
	Driver Upper Neck Moment Y
	Driver Upper Neck Moment Z
	Driver Upper Neck Moment Resultant
B-7	Driver Chest Primary X
	Driver Chest Primary Y
	Driver Chest Primary Z
	Driver Chest Resultant Primary
B-8	Driver Chest Primary X Velocity
	Driver Chest Primary X Displacement
B-9	Driver Chest Redundant X
	Driver Chest Redundant Y
	Driver Chest Redundant Z
	Driver Chest Resultant Redundant
B-10	Driver Chest Redundant X Velocity
	Driver Chest Redundant X Displacement
B-11	Driver Chest Displacement

LIST OF DATA PLOTS...(Continued)

Data Plot	Page
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	Driver Pelvis Y
	Driver Pelvis Z
	Driver Pelvis Resultant
B-13	Driver Pelvis X Velocity
	Driver Pelvis X Displacement
B-14	Driver Left Femur Force
	Driver Right Femur Force
B-15	Driver Left Upper Tibia Moment X
	Driver Left Upper Tibia Moment Y
	Driver Right Upper Tibia Moment X
	Driver Right Upper Tibia Moment Y
B-16	Driver Left Lower Tibia Moment X
	Driver Left Lower Tibia Moment Y
	Driver Left Lower Tibia Force Z
B-17	Driver Right Lower Tibia Moment X
	Driver Right Lower Tibia Moment Y
	Driver Right Lower Tibia Force Z
B-18	Driver Left Foot Aft X
	Driver Left Foot Aft Z
	Driver Left Foot Fore Z
B-19	Driver Right Foot Aft X
	Driver Right Foot Aft Z
	Driver Right Foot Fore Z
B-20	Driver Lap Belt Force
	Driver Shoulder Belt Force
	Driver Shoulder Belt Pullout
	Driver Shoulder Belt Elongation
B-21	Passenger Head Primary X
	Passenger Head Primary Y
	Passenger Head Primary Z
	Passenger Head Resultant Primary
B-22	Passenger Head Primary X Velocity
	Passenger Head Primary X Displacement

LIST OF DATA PLOTS...(Continued)

Data Plot	Page
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	Passenger Head Redundant Y
	Passenger Head Redundant Z
	Passenger Head Resultant Redundant
B-24	Passenger Head Redundant X Velocity
	Passenger Head Redundant X Displacement
B-25	Passenger Upper Neck Force X
	Passenger Upper Neck Force Y
	Passenger Upper Neck Force Z
	Passenger Upper Neck Force Resultant
B-26	Passenger Upper Neck Moment X
	Passenger Upper Neck Moment Y
	Passenger Upper Neck Moment Z
	Passenger Upper Neck Moment Resultant
B-27	Passenger Chest Primary X
	Passenger Chest Primary Y
	Passenger Chest Primary Z
	Passenger Chest Resultant Primary
B-28	Passenger Chest Primary X Velocity
	Passenger Chest Primary X Displacement
B-29	Passenger Chest Redundant X
	Passenger Chest Redundant Y
	Passenger Chest Redundant Z
	Passenger Chest Resultant Redundant
B-30	Passenger Chest Redundant X Velocity
	Passenger Chest Redundant X Displacement
B-31	Passenger Chest Displacement
B-32	Passenger Pelvis X
	Passenger Pelvis Y
	Passenger Pelvis Z
	Passenger Pelvis Resultant
B-33	Passenger Pelvis X Velocity
	Passenger Pelvis X Displacement

LIST OF DATA PLOTS...(Continued)

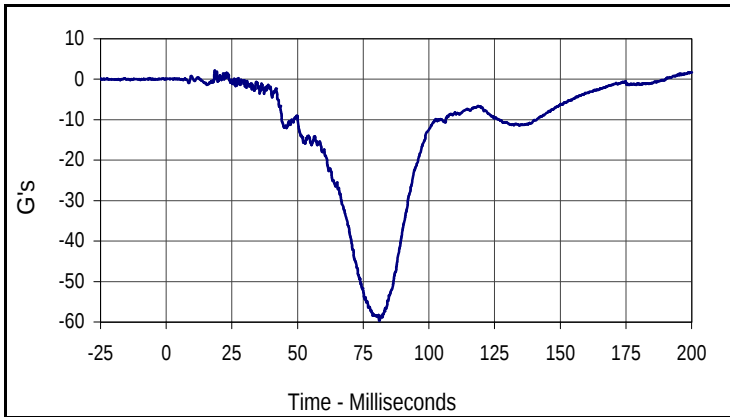
Data Plot		Page
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	Passenger Right Femur Force	B-34
B-35	Passenger Left Upper Tibia Moment X	B-35
	Passenger Left Upper Tibia Moment Y	B-35
	Passenger Right Upper Tibia Moment X	B-35
	Passenger Right Upper Tibia Moment Y	B-35
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	Vehicle Right Rear X Displacement	B-42
B-43	Vehicle Engine Top	B-43
	Vehicle Engine Top Velocity	B-43
	Vehicle Engine Top Displacement	B-43
B-44	Vehicle Engine Bottom	B-44
	Vehicle Engine Bottom Velocity	B-44
	Vehicle Engine Bottom Displacement	B-44

LIST OF DATA PLOTS...(Continued)

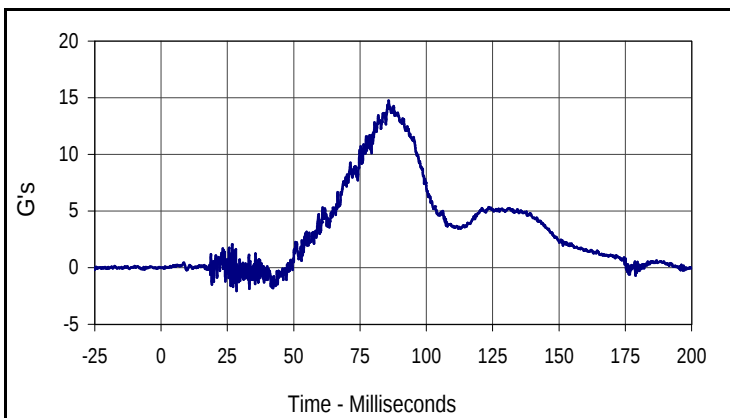
<u>Data Plot</u>	<u>Page</u>
B-45	Vehicle Left Brake Caliper
	Vehicle Left Brake Caliper Velocity
	Vehicle Left Brake Caliper Displacement
B-46	Vehicle Right Brake Caliper
	Vehicle Right Brake Caliper Velocity
	Vehicle Right Brake Caliper Displacement
B-47	Vehicle Instrument Panel
	Vehicle Instrument Panel Velocity
	Vehicle Instrument Panel Displacement
B-48	Vehicle Left Rear Z
	Vehicle Left Rear Z Velocity
	Vehicle Left Rear Z Displacement
B-49	Vehicle Right Rear Z
	Vehicle Right Rear Z Velocity
	Vehicle Right Rear Z Displacement

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

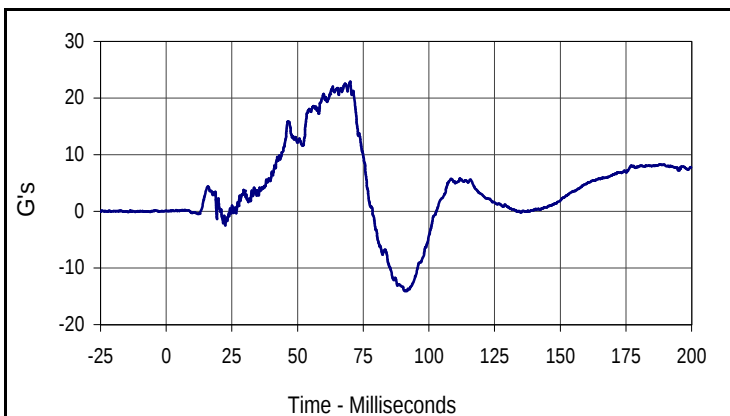
Test Date: 12/17/03
 NHTSA No.: M45400



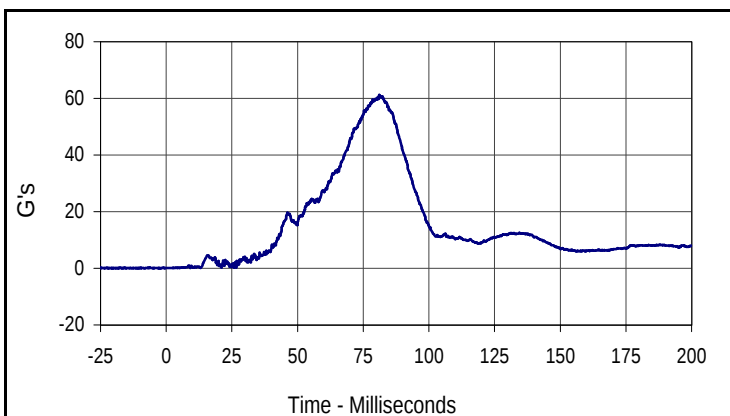
Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.2	18.5	-59.7	81.1



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
14.8	85.8	-2.1	28.4



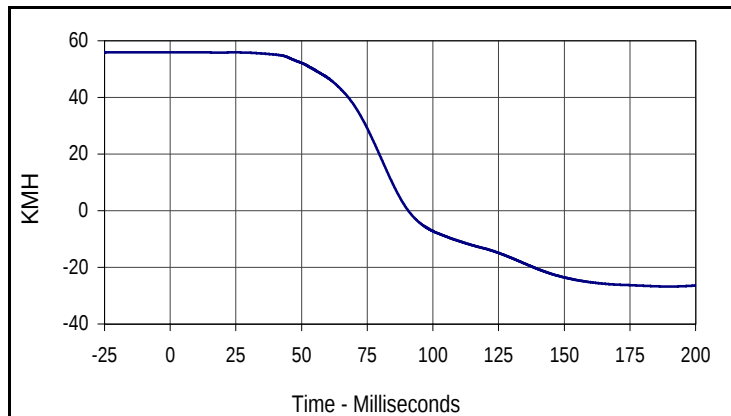
Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
22.9	70.1	-14.1	90.7



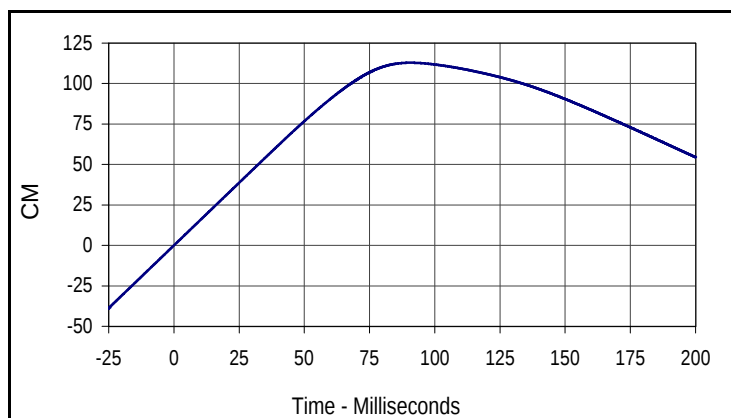
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
61.2	81.1	0.1	2.9

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



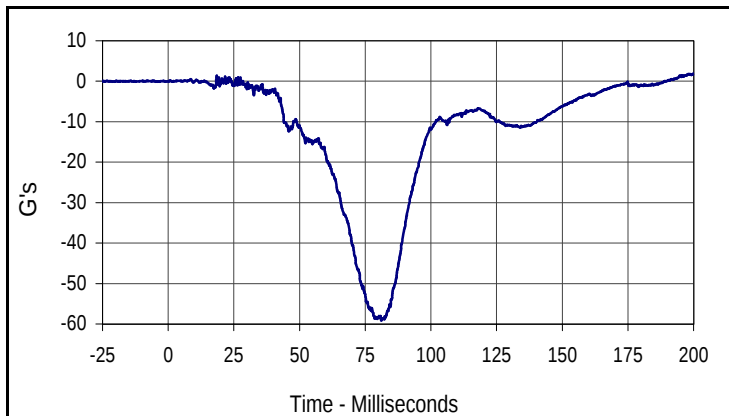
Curve Description			
Driver Head Primary X Velocity			
CURNO	Type	SAE Class	Units
001	IN1	180	KMH
Max	Time	Min	Time
55.9	5.2	-26.8	190.0



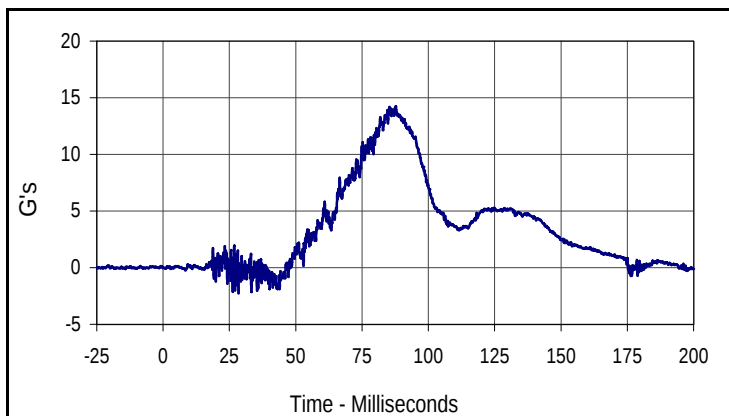
Curve Description			
Driver Head Primary X Displacement			
CURNO	Type	SAE Class	Units
001	IN2	180	CM
Max	Time	Min	Time
112.9	90.6	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

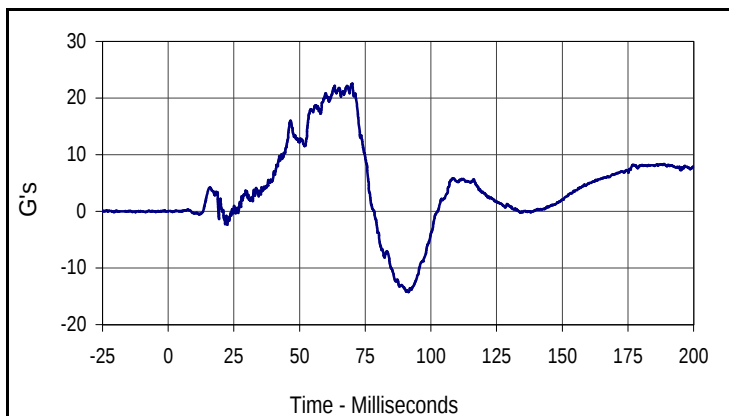
Test Date: 12/17/03
 NHTSA No.: M45400



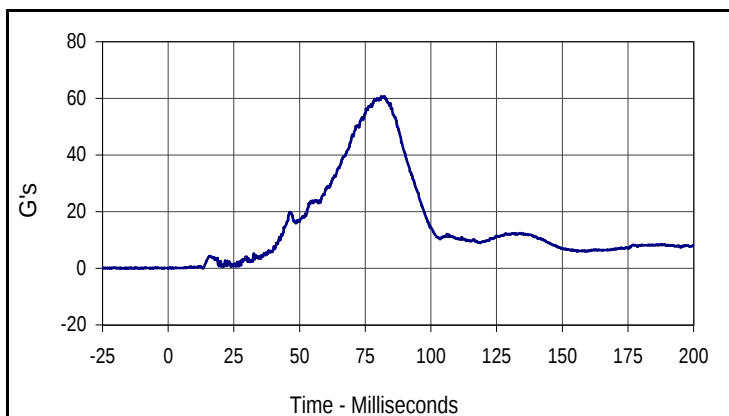
Curve Description			
Driver Head Redundant X			
CURNO	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
1.8	199.9	-59.1	81.1



Curve Description			
Driver Head Redundant Y			
CURNO	Type	SAE Class	Units
005	FIL	1000	G's
Max	Time	Min	Time
14.2	87.7	-2.3	28.4



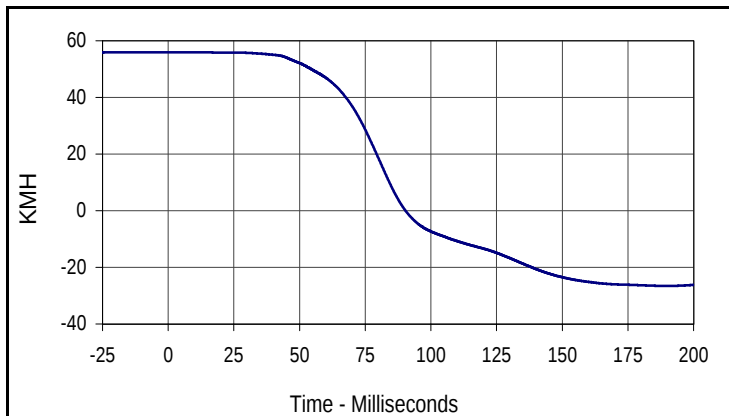
Curve Description			
Driver Head Redundant Z			
CURNO	Type	SAE Class	Units
006	FIL	1000	G's
Max	Time	Min	Time
22.6	70.1	-14.2	91.5



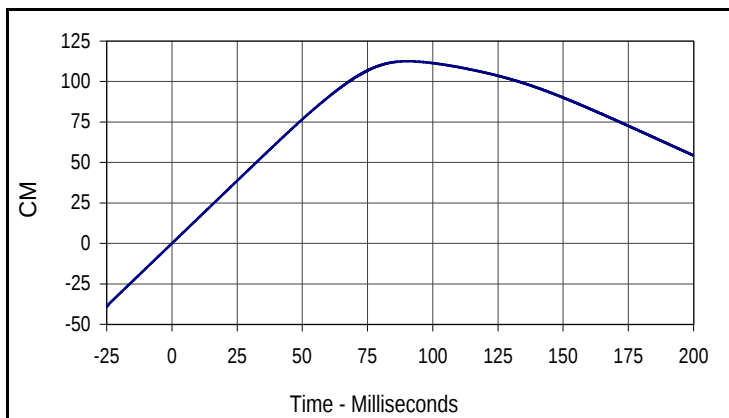
Curve Description			
Driver Head Resultant Redundant			
CURNO	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
60.7	82.3	0.0	0.1

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



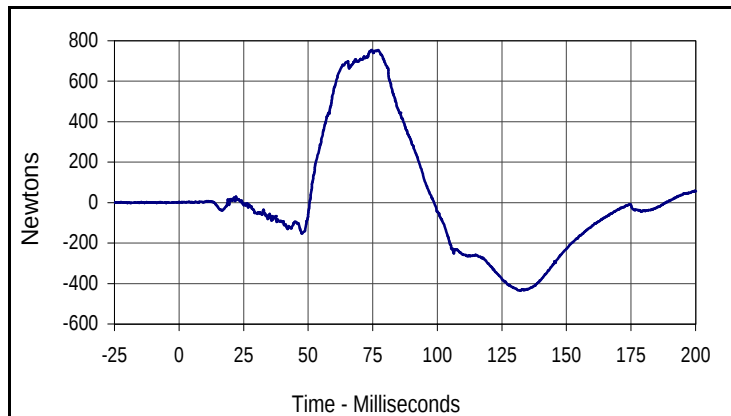
Curve Description			
Driver Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
004	IN1	180	KMH
Max	Time	Min	Time
55.9	11.5	-26.6	189.3



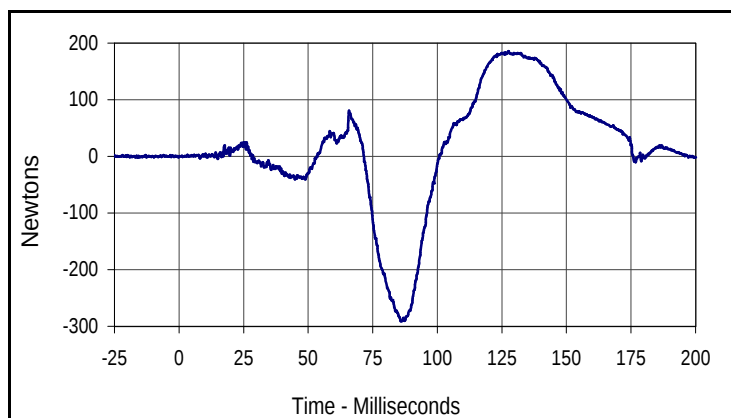
Curve Description			
Driver Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
004	IN2	180	CM
Max	Time	Min	Time
112.6	90.3	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

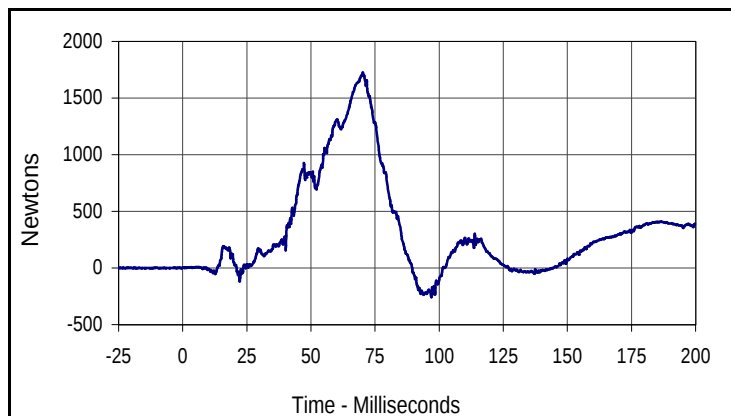
Test Date: 12/17/03
 NHTSA No.: M45400



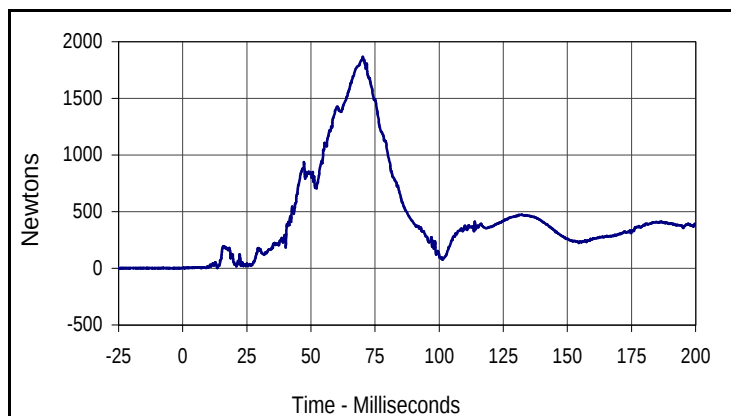
Curve Description			
Driver Upper Neck Force X			
CURNO	Type	SAE Class	Units
007	FIL	1000	Newtons
Max	Time	Min	Time
754.5	77.1	-435.9	132.3



Curve Description			
Driver Upper Neck Force Y			
CURNO	Type	SAE Class	Units
008	FIL	1000	Newtons
Max	Time	Min	Time
185.6	127.6	-291.7	86.1



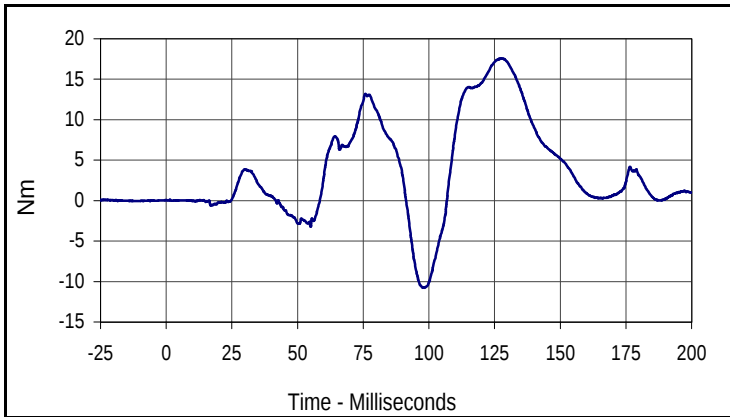
Curve Description			
Driver Upper Neck Force Z			
CURNO	Type	SAE Class	Units
009	FIL	1000	Newtons
Max	Time	Min	Time
1725.5	70.2	-258.1	96.9



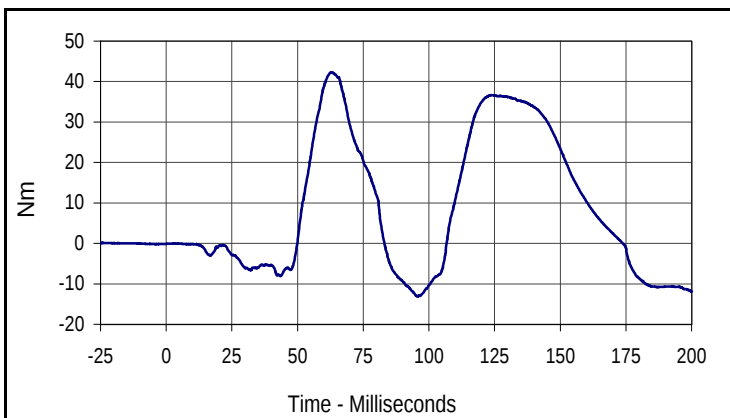
Curve Description			
Driver Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
007	RES	1000	Newtons
Max	Time	Min	Time
1866.3	70.2	1.2	0.6

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

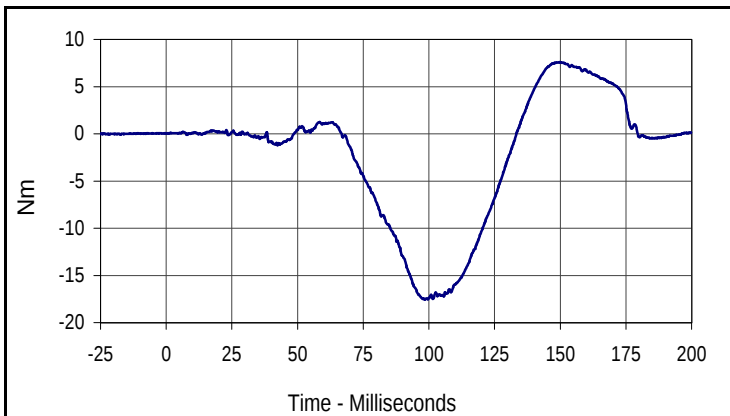
Test Date: 12/17/03
 NHTSA No.: M45400



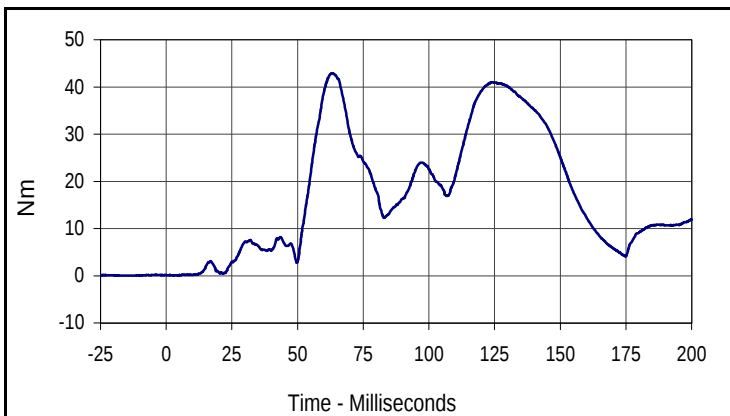
Curve Description			
Driver Upper Neck Moment X			
CURNO	Type	SAE Class	Units
010	FIL	600	Nm
Max	Time	Min	Time
17.6	127.6	-10.8	97.6



Curve Description			
Driver Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
011	FIL	600	Nm
Max	Time	Min	Time
42.2	63.0	-13.1	95.8



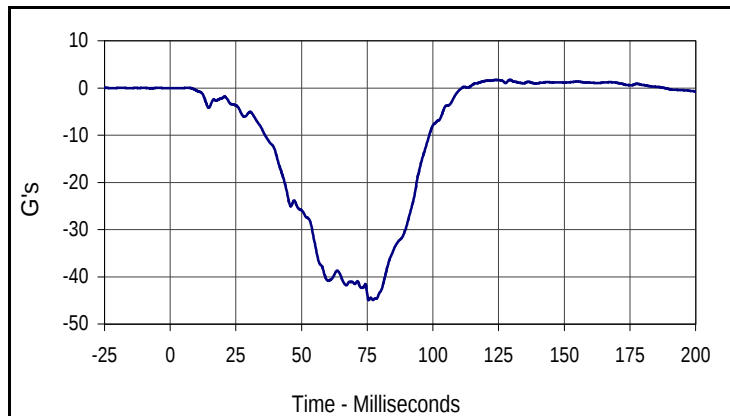
Curve Description			
Driver Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
7.6	149.9	-17.6	98.4



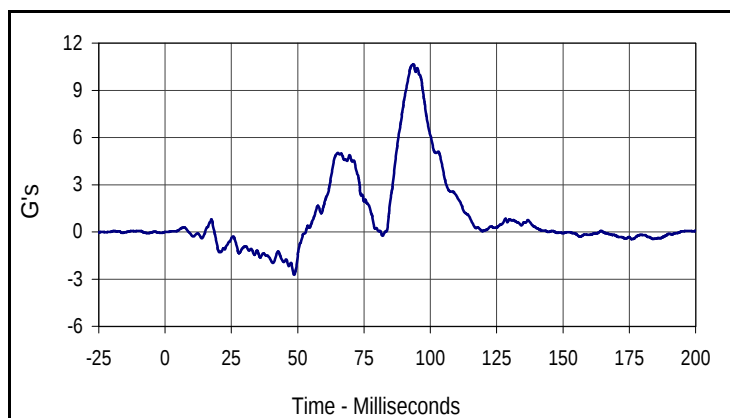
Curve Description			
Driver Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
010	RES	600	Nm
Max	Time	Min	Time
42.9	63.2	0.0	4.5

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

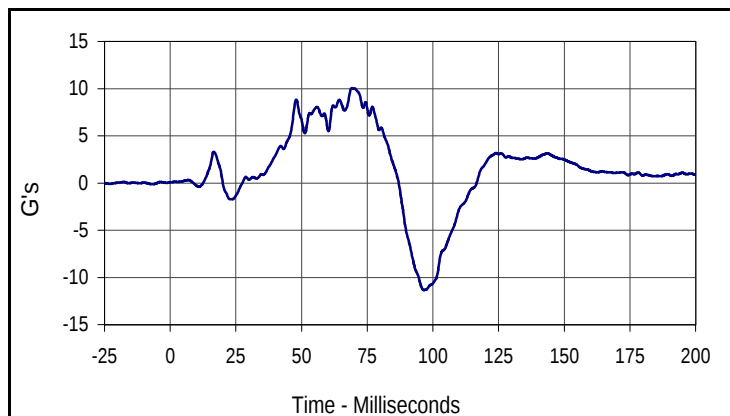
Test Date: 12/17/03
 NHTSA No.: M45400



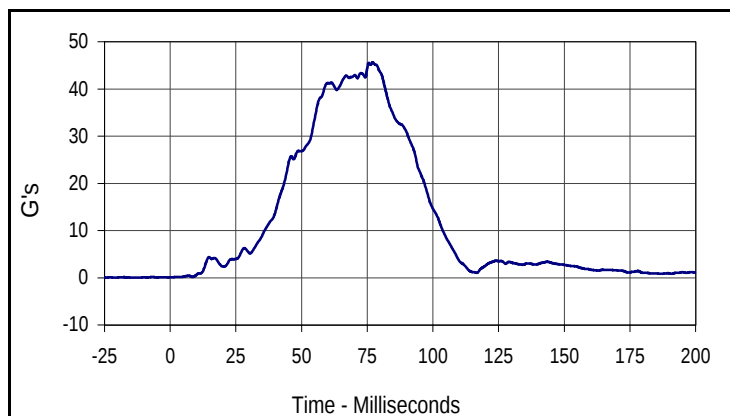
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
1.7	129.4	-44.9	75.6



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
10.7	93.6	-2.7	48.6



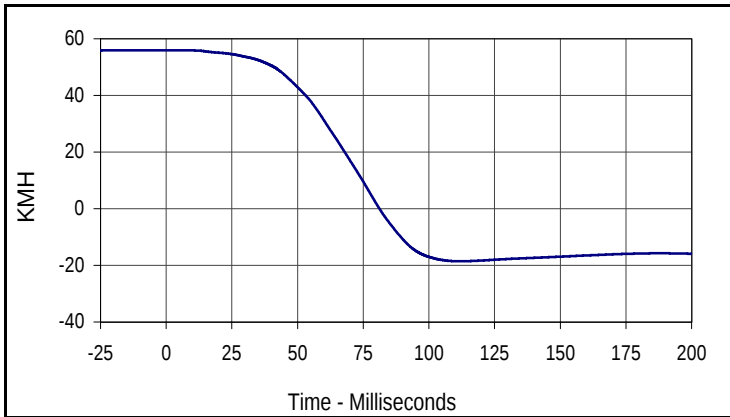
Curve Description			
Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
015	FIL	180	G's
Max	Time	Min	Time
10.0	69.1	-11.3	96.5



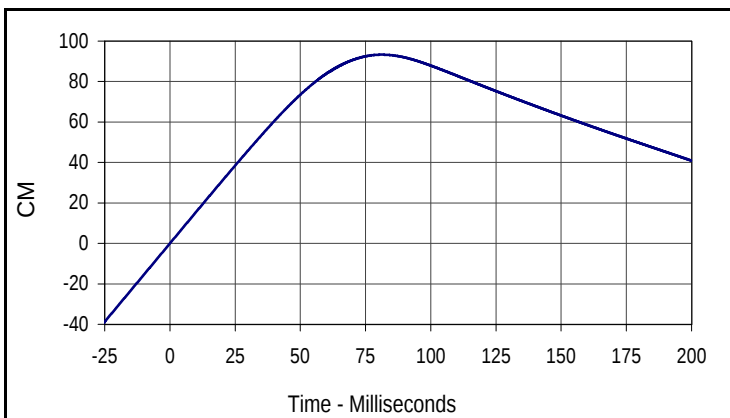
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
013	RES	180	G's
Max	Time	Min	Time
45.6	77.1	0.1	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



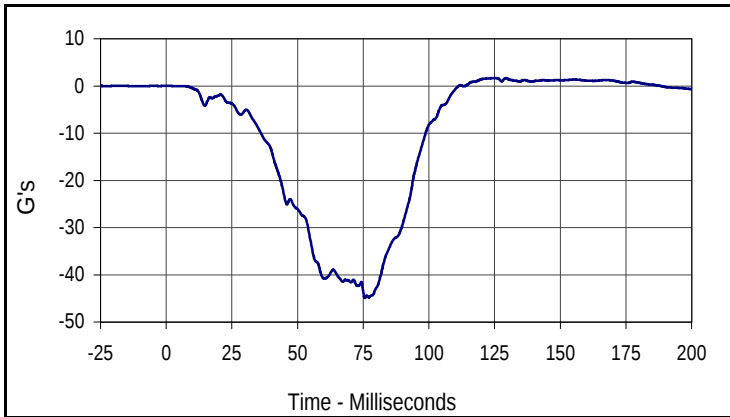
Curve Description			
Driver Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
013	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-18.5	111.0



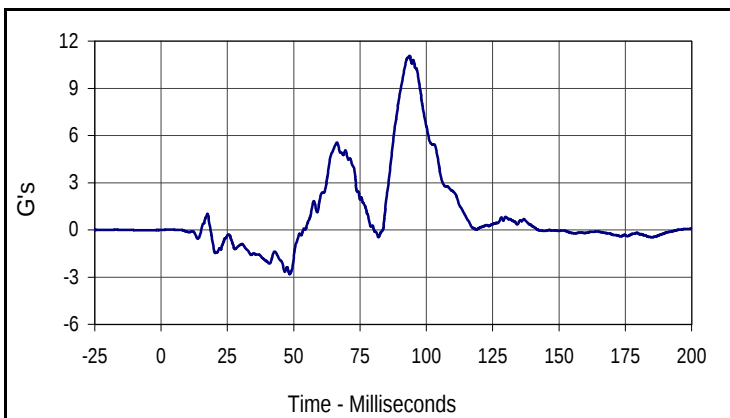
Curve Description			
Driver Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
013	IN2	180	CM
Max	Time	Min	Time
93.3	81.2	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

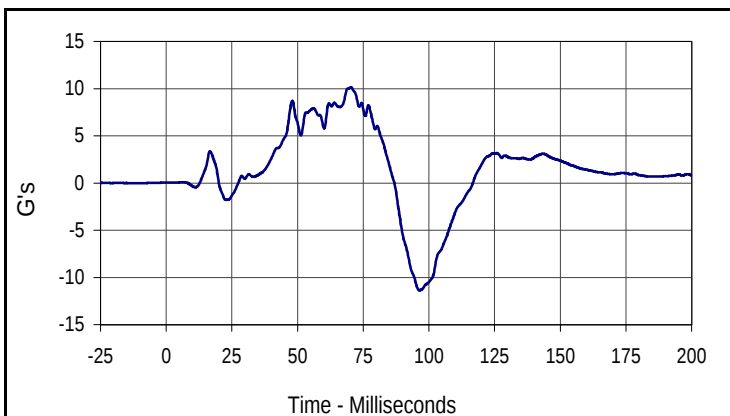
Test Date: 12/17/03
 NHTSA No.: M45400



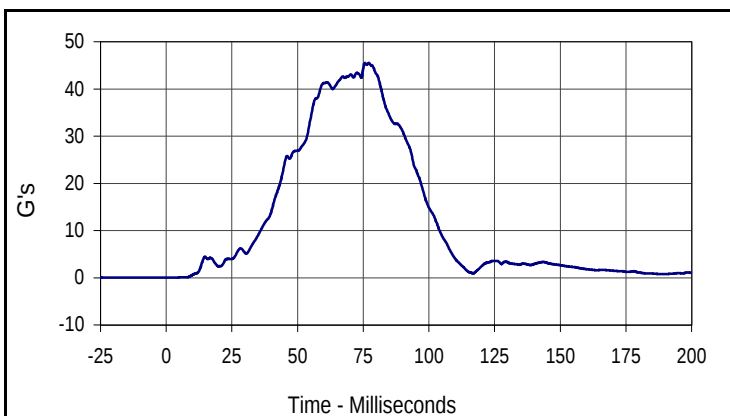
Curve Description			
Driver Chest Redundant X			
CURNO	Type	SAE Class	Units
016	FIL	180	G's
Max	Time	Min	Time
1.7	124.4	-44.9	75.6



Curve Description			
Driver Chest Redundant Y			
CURNO	Type	SAE Class	Units
017	FIL	180	G's
Max	Time	Min	Time
11.1	93.6	-2.8	48.5



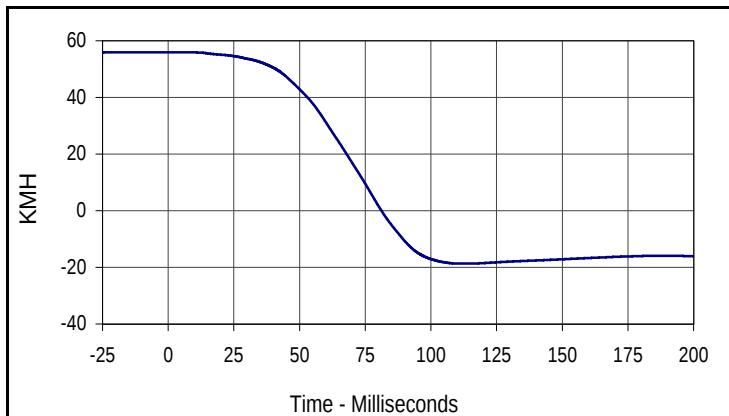
Curve Description			
Driver Chest Redundant Z			
CURNO	Type	SAE Class	Units
018	FIL	180	G's
Max	Time	Min	Time
10.2	70.3	-11.4	96.4



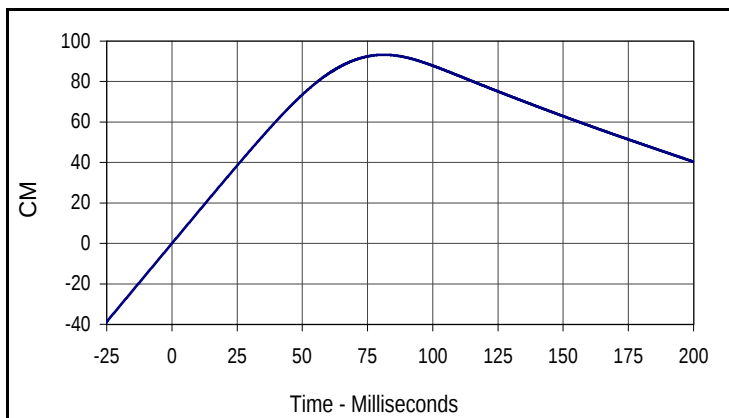
Curve Description			
Driver Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
016	RES	180	G's
Max	Time	Min	Time
45.5	77.1	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



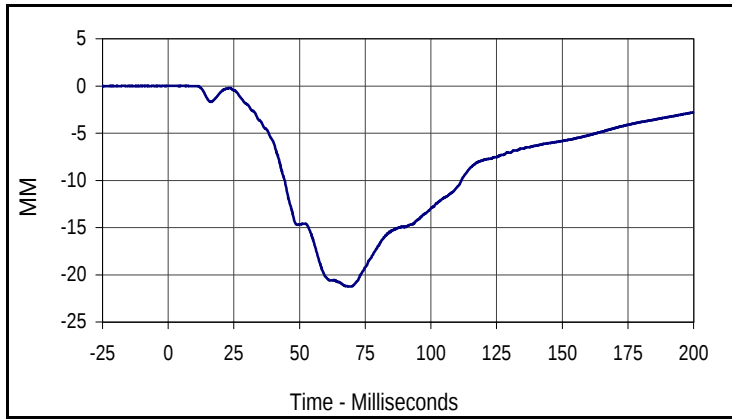
Curve Description			
Driver Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
016	IN1	180	KMH
Max	Time	Min	Time
55.9	2.1	-18.7	111.3



Curve Description			
Driver Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
016	IN2	180	CM
Max	Time	Min	Time
93.3	81.2	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

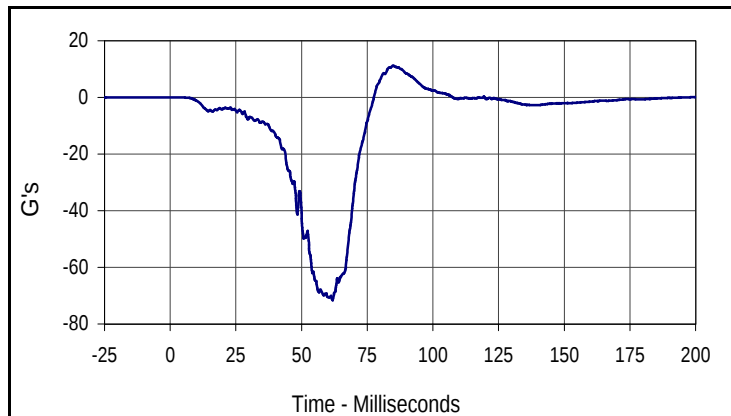
Test Date: 12/17/03
 NHTSA No.: M45400



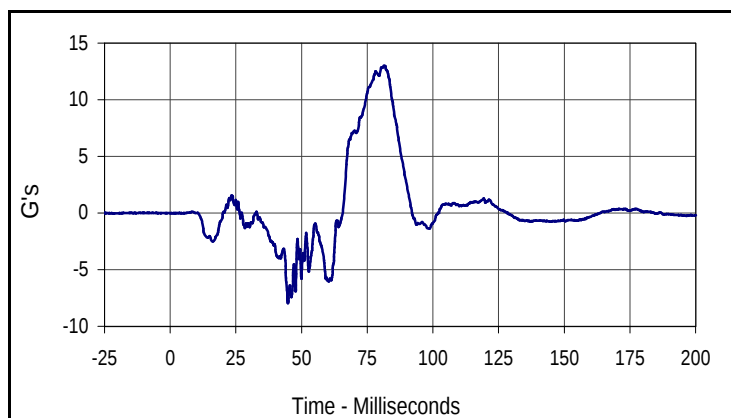
Curve Description			
Driver Chest Displacement			
CURNO	Type	SAE Class	Units
019	FIL	600	MM
Max	Time	Min	Time
0.0	1.7	-21.2	69.2

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

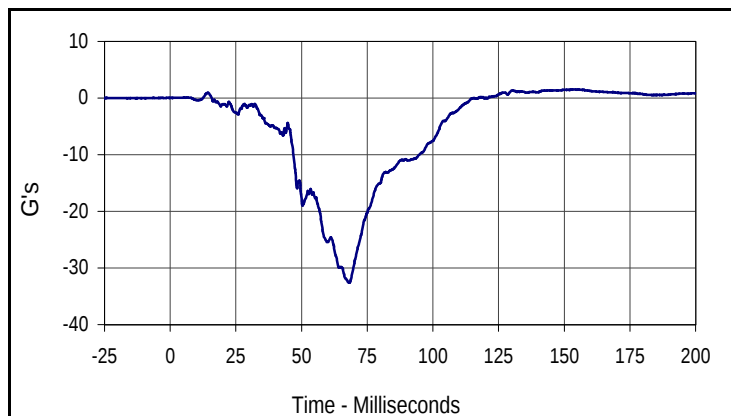
Test Date: 12/17/03
 NHTSA No.: M45400



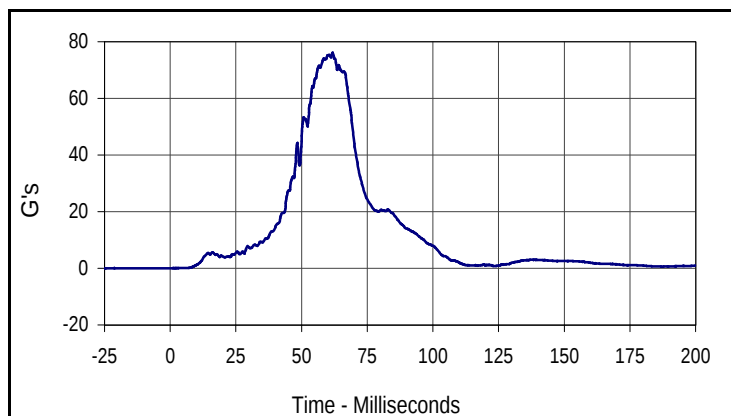
Curve Description			
Driver Pelvis X			
CURNO	Type	SAE Class	Units
020	FIL	1000	G's
Max	Time	Min	Time
11.3	84.8	-71.6	61.8



Curve Description			
Driver Pelvis Y			
CURNO	Type	SAE Class	Units
021	FIL	1000	G's
Max	Time	Min	Time
13.0	81.6	-8.0	44.8



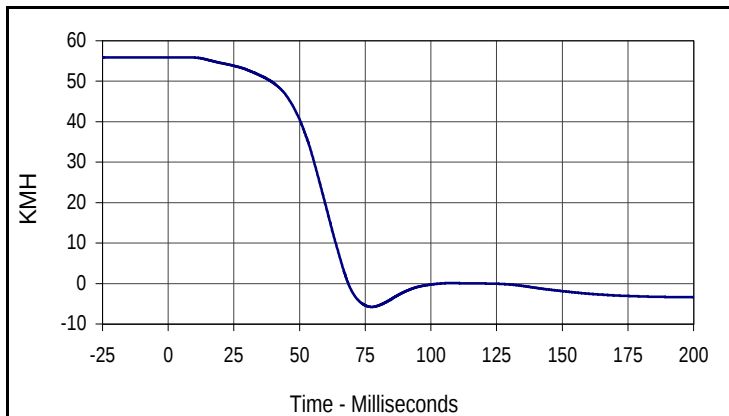
Curve Description			
Driver Pelvis Z			
CURNO	Type	SAE Class	Units
022	FIL	1000	G's
Max	Time	Min	Time
1.5	153.8	-32.6	68.2



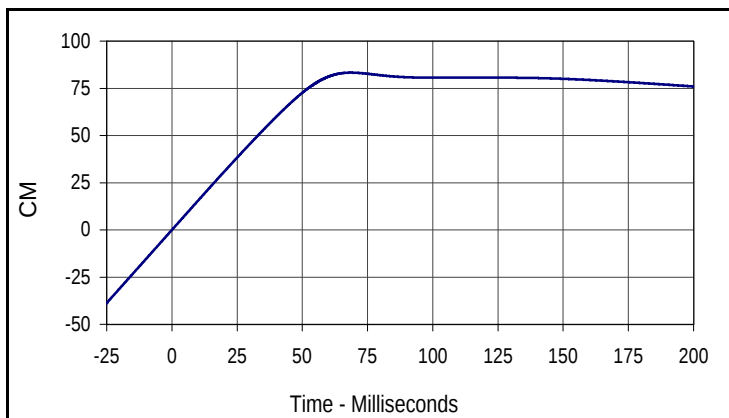
Curve Description			
Driver Pelvis Resultant			
CURNO	Type	SAE Class	Units
020	RES	1000	G's
Max	Time	Min	Time
76.1	61.8	0.0	0.4

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



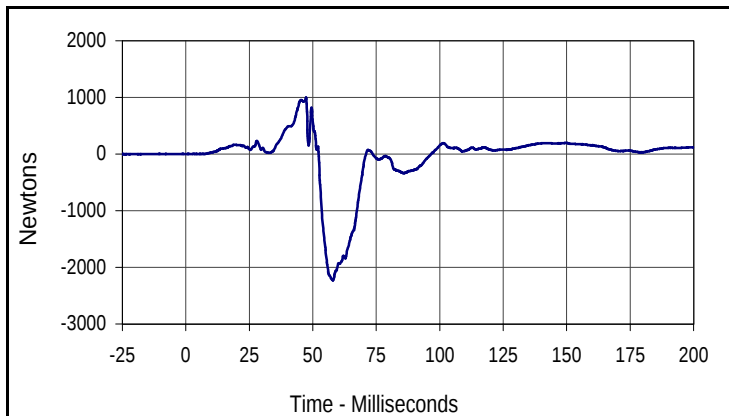
Curve Description			
Driver Pelvis X Velocity			
CURNO	Type	SAE Class	Units
020	IN1	180	KMH
Max	Time	Min	Time
55.9	0.2	-5.8	77.5



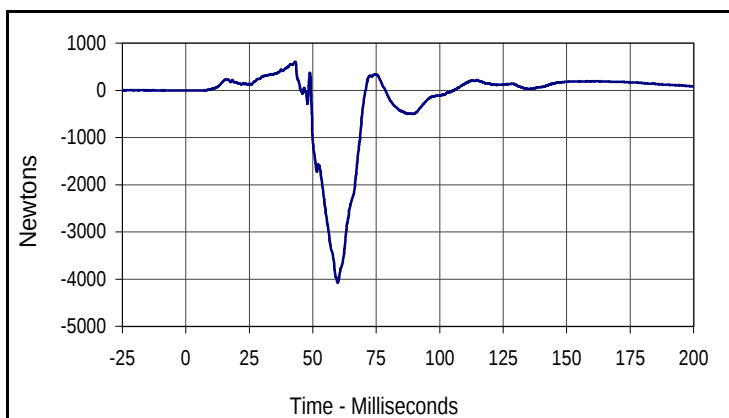
Curve Description			
Driver Pelvis X Displacement			
CURNO	Type	SAE Class	Units
020	IN2	180	CM
Max	Time	Min	Time
83.3	68.5	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



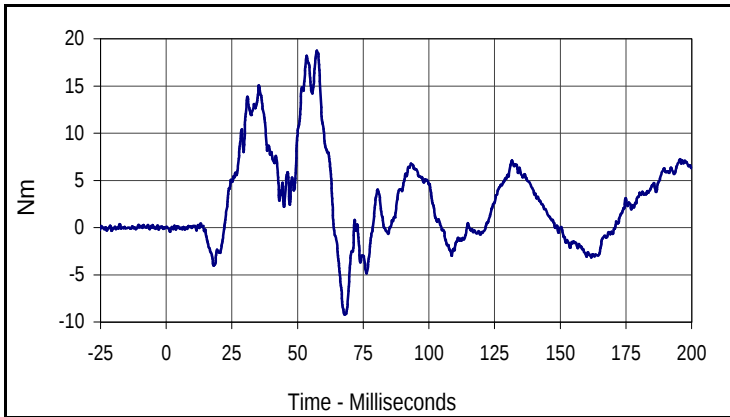
Curve Description			
Driver Left Femur Force			
CURNO	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
1002.7	47.4	-2229.9	57.9



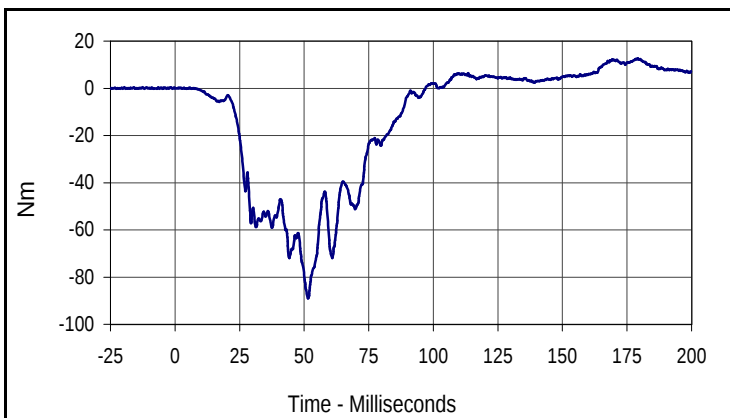
Curve Description			
Driver Right Femur Force			
CURNO	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
606.6	43.1	-4076.9	59.8

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

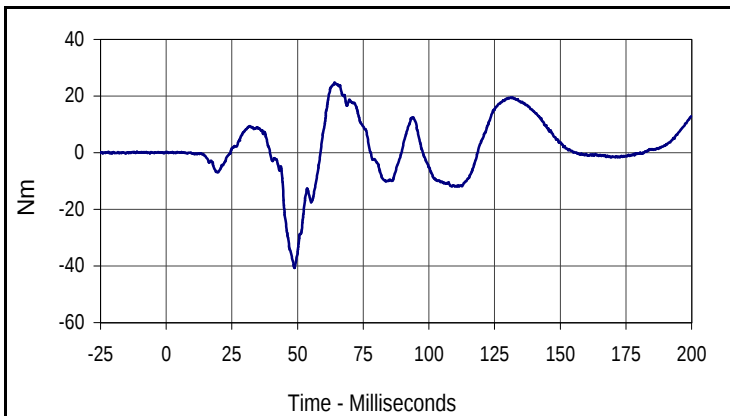
Test Date: 12/17/03
 NHTSA No.: M45400



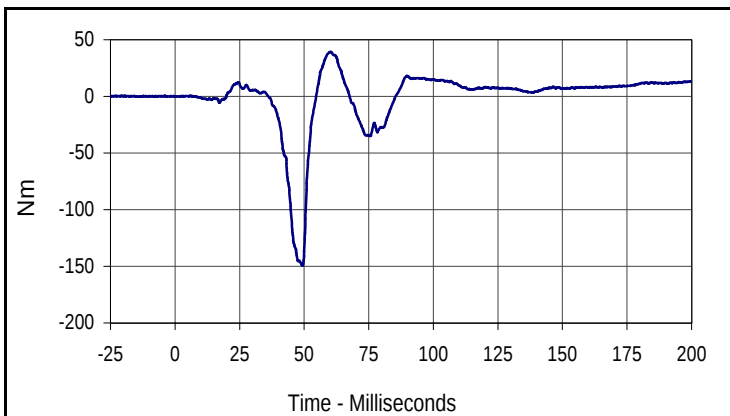
Curve Description			
Driver Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
025	FIL	600	Nm
Max	Time	Min	Time
18.8	57.3	-9.2	67.9



Curve Description			
Driver Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
12.6	179.2	-89.0	51.5



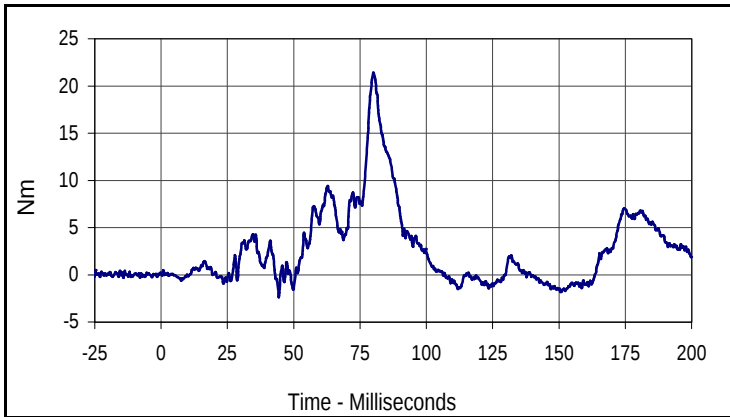
Curve Description			
Driver Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
027	FIL	600	Nm
Max	Time	Min	Time
24.7	64.2	-40.6	48.8



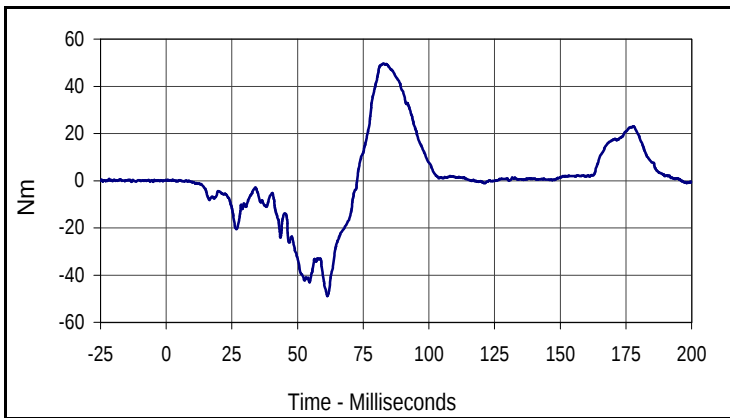
Curve Description			
Driver Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
028	FIL	600	Nm
Max	Time	Min	Time
39.3	60.3	-149.3	49.4

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

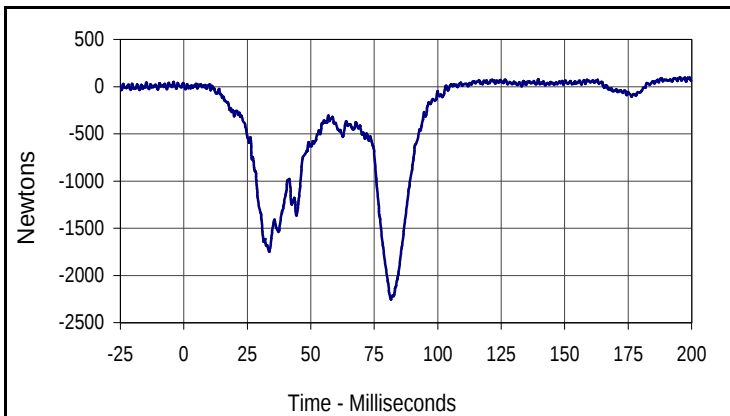
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
029	FIL	600	Nm
Max	Time	Min	Time
21.4	80.0	-2.4	44.4



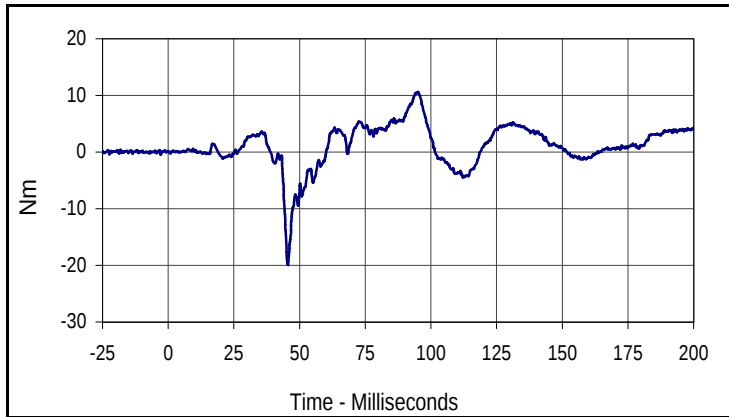
Curve Description			
Driver Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
030	FIL	600	Nm
Max	Time	Min	Time
49.7	82.7	-48.9	61.3



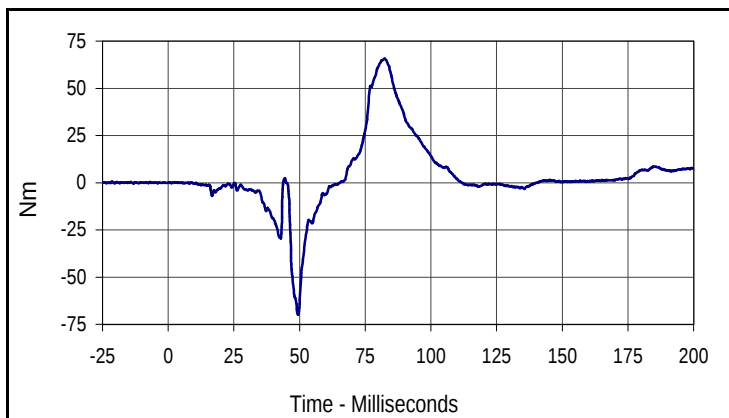
Curve Description			
Driver Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
031	FIL	600	Newtons
Max	Time	Min	Time
99.4	195.4	-2254.8	81.6

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

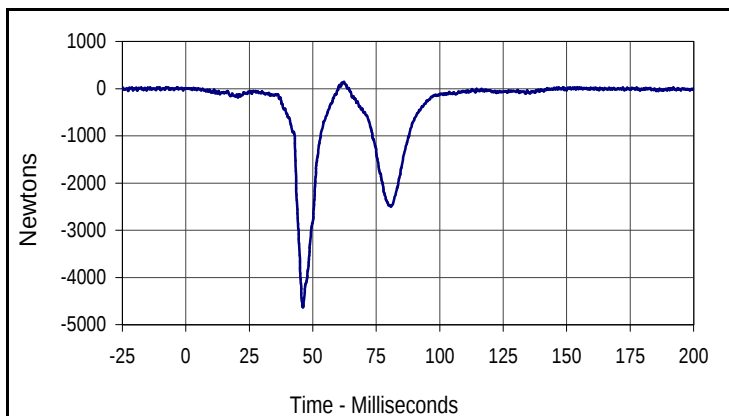
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
032	FIL	600	Nm
Max	Time	Min	Time
10.6	95.0	-19.9	45.6



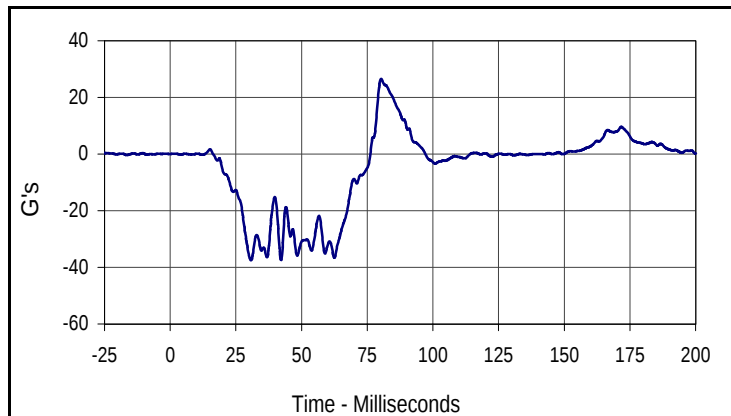
Curve Description			
Driver Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
033	FIL	600	Nm
Max	Time	Min	Time
65.8	82.4	-69.9	49.5



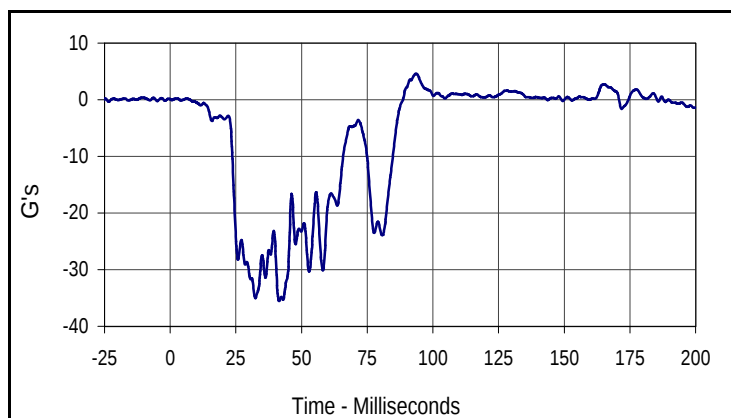
Curve Description			
Driver Right Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
034	FIL	600	Newtons
Max	Time	Min	Time
146.5	62.3	-4631.8	46.1

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

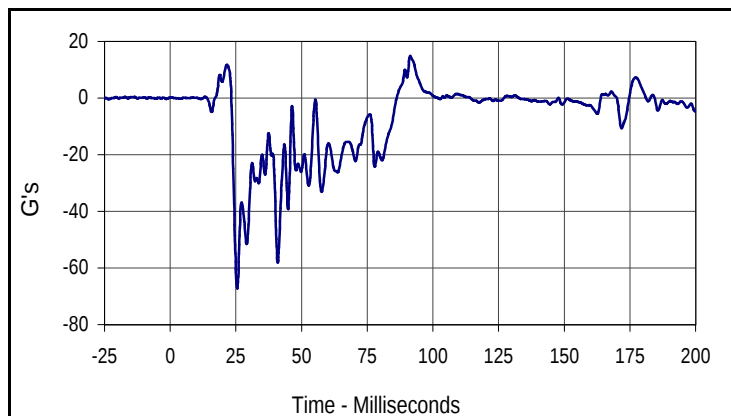
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Left Foot Aft X			
CURNO	Type	SAE Class	Units
035	FIL	180	G's
Max	Time	Min	Time
26.6	80.3	-37.5	30.8



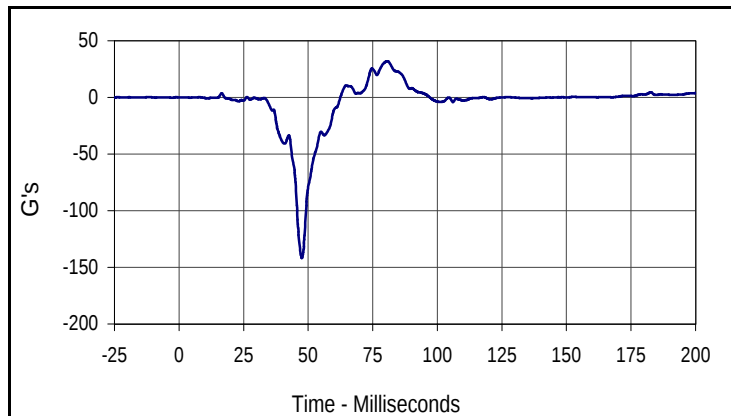
Curve Description			
Driver Left Foot Aft Z			
CURNO	Type	SAE Class	Units
036	FIL	180	G's
Max	Time	Min	Time
4.6	93.7	-35.6	41.4



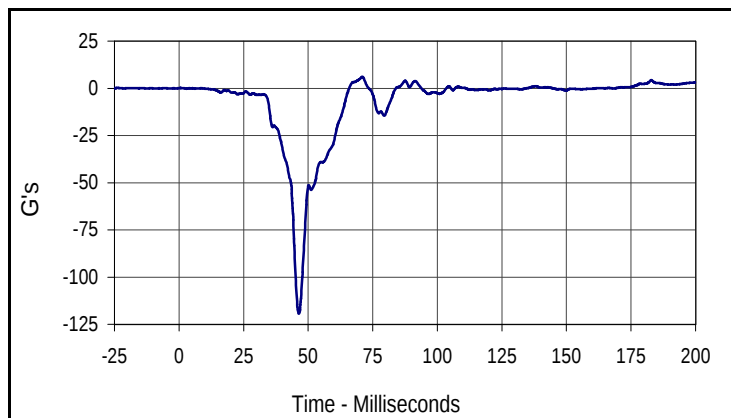
Curve Description			
Driver Left Foot Fore Z			
CURNO	Type	SAE Class	Units
037	FIL	180	G's
Max	Time	Min	Time
14.9	91.4	-67.3	25.5

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

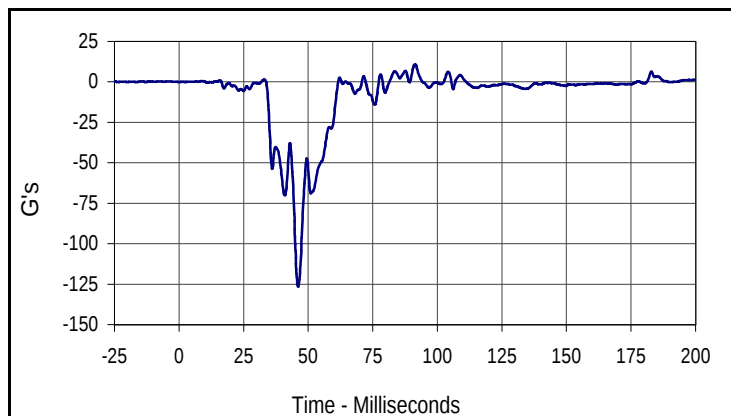
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Right Foot Aft X			
CURNO	Type	SAE Class	Units
038	FIL	180	G's
Max	Time	Min	Time
32.0	80.6	-141.9	47.6



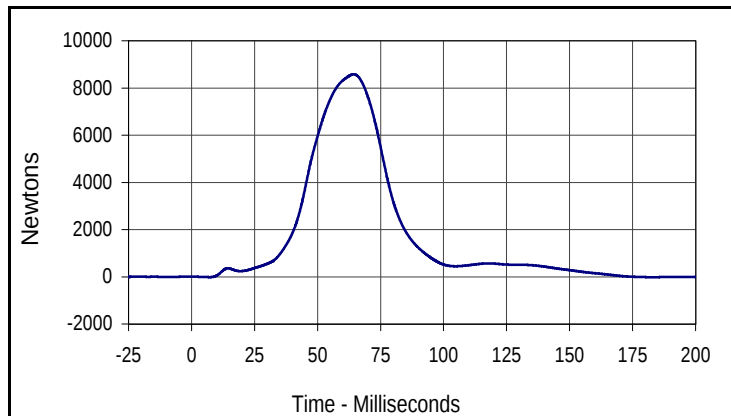
Curve Description			
Driver Right Foot Aft Z			
CURNO	Type	SAE Class	Units
039	FIL	180	G's
Max	Time	Min	Time
6.1	71.0	-119.4	46.4



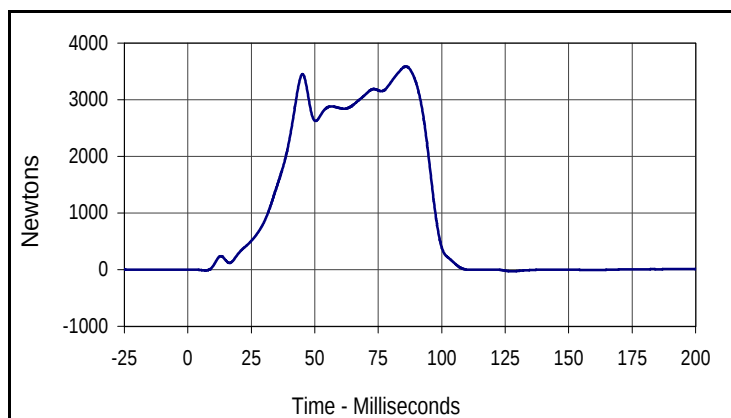
Curve Description			
Driver Right Foot Fore Z			
CURNO	Type	SAE Class	Units
040	FIL	180	G's
Max	Time	Min	Time
11.0	91.4	-126.4	46.1

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

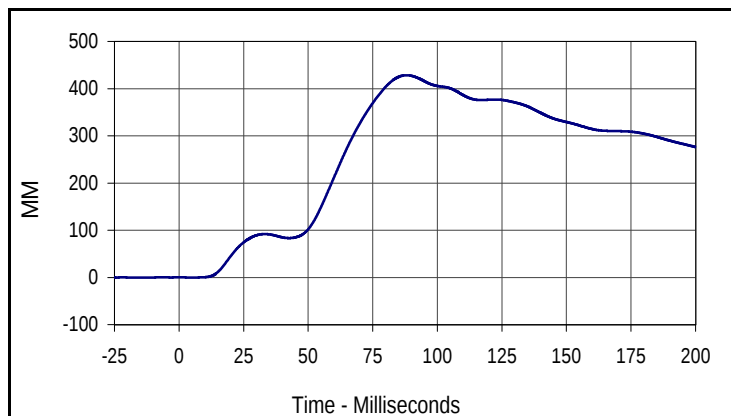
Test Date: 12/17/03
 NHTSA No.: M45400



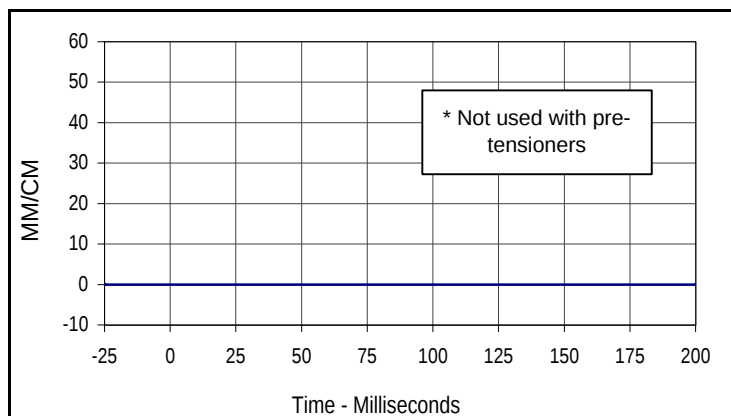
Curve Description			
Driver Lap Belt Force			
CURNO	Type	SAE Class	Units
041	FIL	60	Newtons
Max	Time	Min	Time
8580.2	64.3	-14.8	181.9



Curve Description			
Driver Shoulder Belt Force			
CURNO	Type	SAE Class	Units
042	FIL	60	Newtons
Max	Time	Min	Time
3586.8	85.9	-29.7	127.7



Curve Description			
Driver Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
043	FIL	60	MM
Max	Time	Min	Time
428.4	88.1	-0.1	5.9

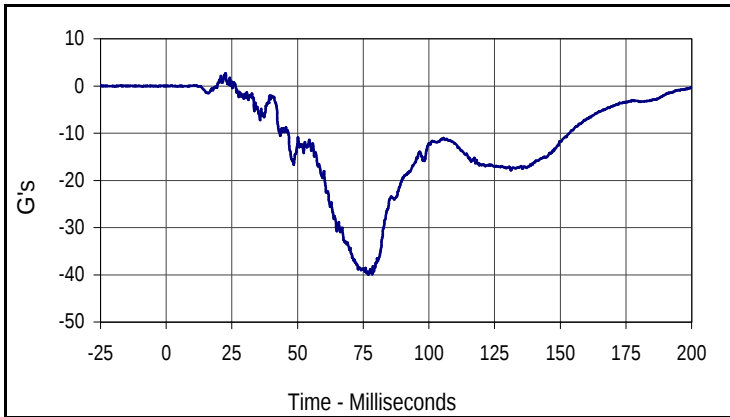


Curve Description			
Driver Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
044	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

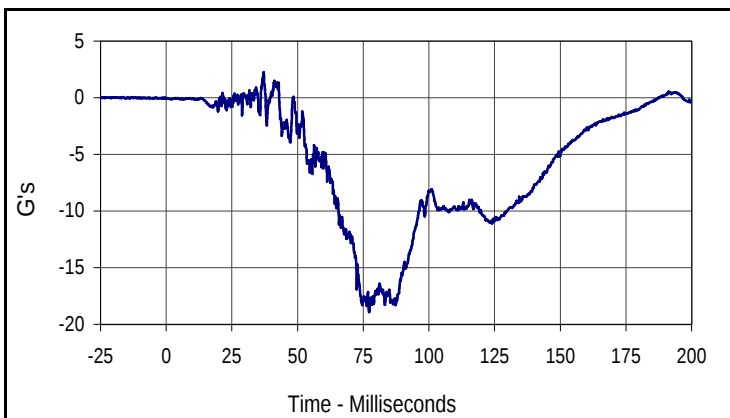
* Not used with pre-tensioners

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

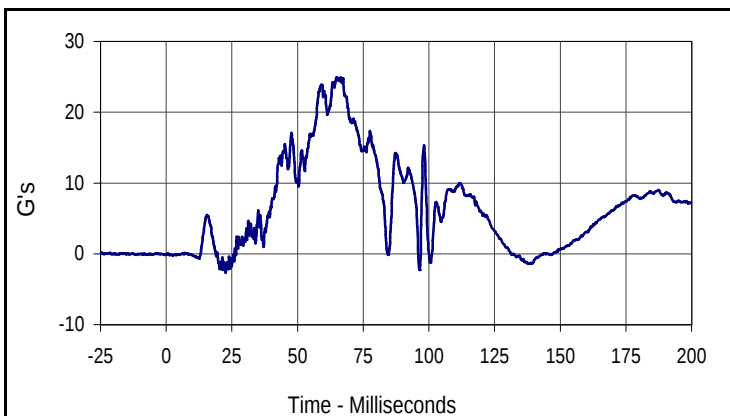
Test Date: 12/17/03
 NHTSA No.: M45400



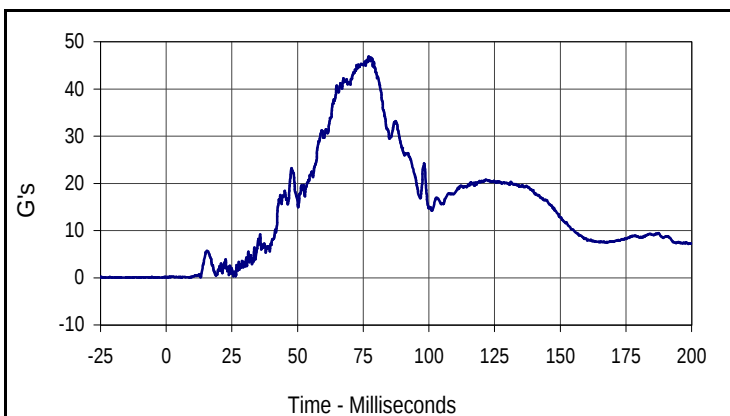
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
2.7	22.5	-40.0	77.0



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
2.3	37.1	-18.9	77.2



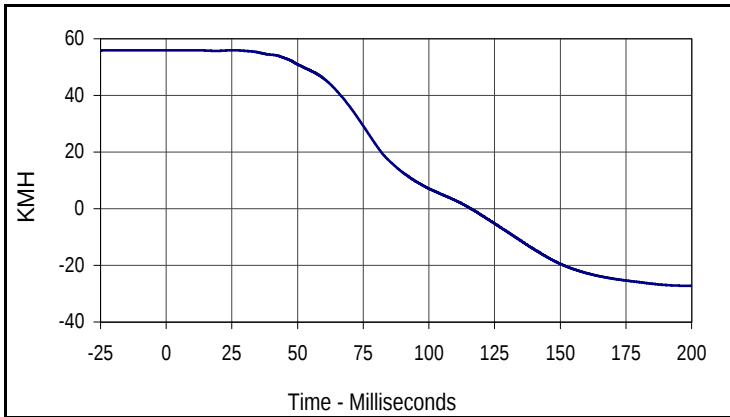
Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
24.9	66.5	-2.7	22.6



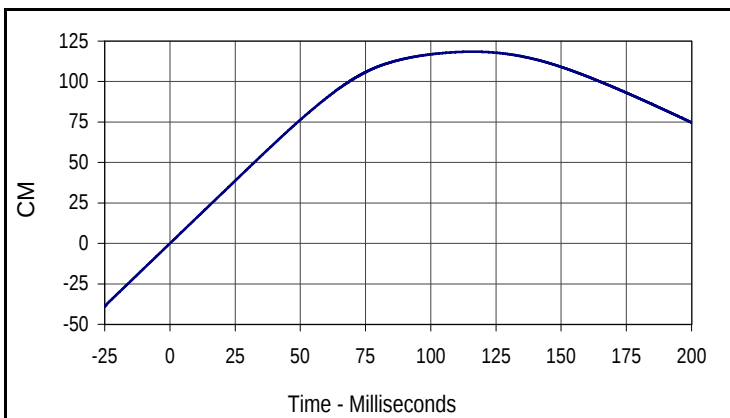
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
045	RES	1000	G's
Max	Time	Min	Time
46.9	77.1	0.1	0.5

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



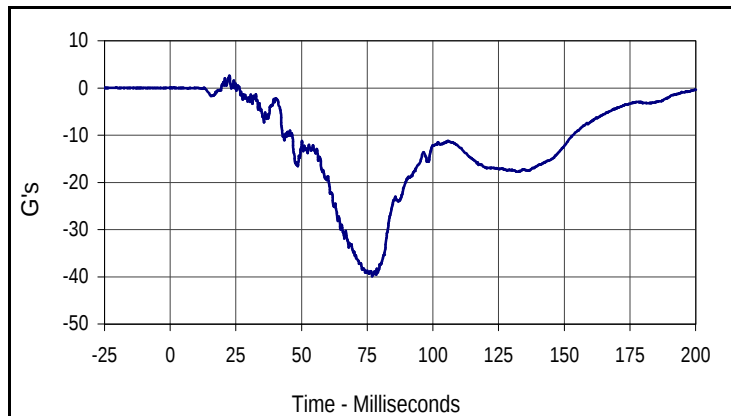
Curve Description			
Passenger Head Primary X Velocity			
CURNO	Type	SAE Class	Units
045	IN1	180	KMH
Max	Time	Min	Time
56.0	26.1	-27.3	200.0



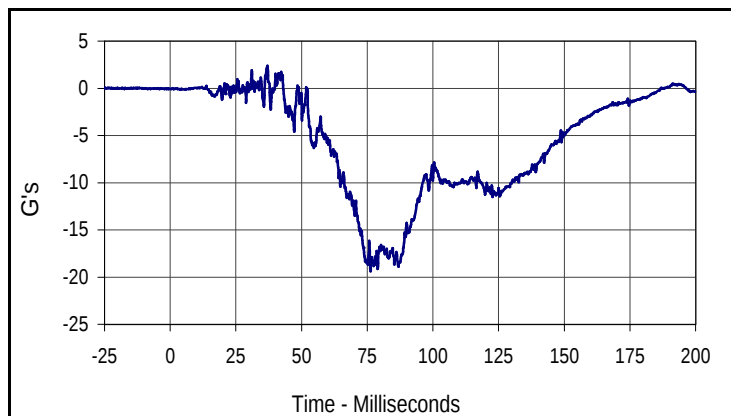
Curve Description			
Passenger Head Primary X Displacement			
CURNO	Type	SAE Class	Units
045	IN2	180	CM
Max	Time	Min	Time
118.5	116.0	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

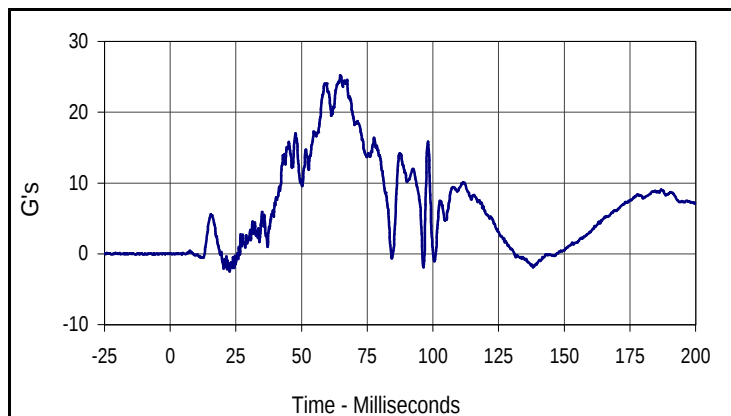
Test Date: 12/17/03
 NHTSA No.: M45400



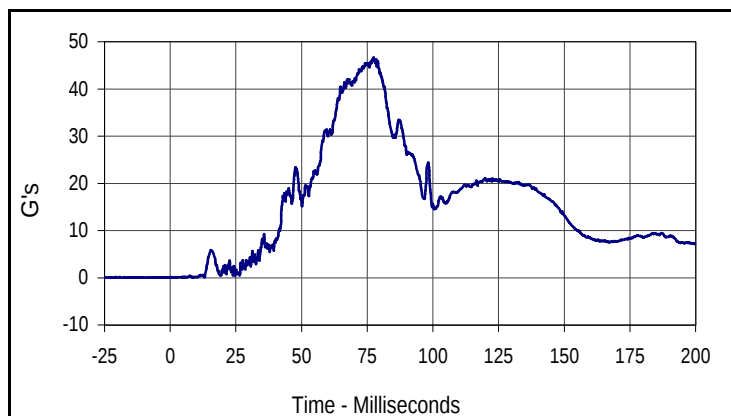
Curve Description			
Passenger Head Redundant X			
CURNO	Type	SAE Class	Units
048	FIL	1000	G's
Max	Time	Min	Time
2.6	22.5	-39.9	76.9



Curve Description			
Passenger Head Redundant Y			
CURNO	Type	SAE Class	Units
049	FIL	1000	G's
Max	Time	Min	Time
2.4	37.0	-19.4	76.2



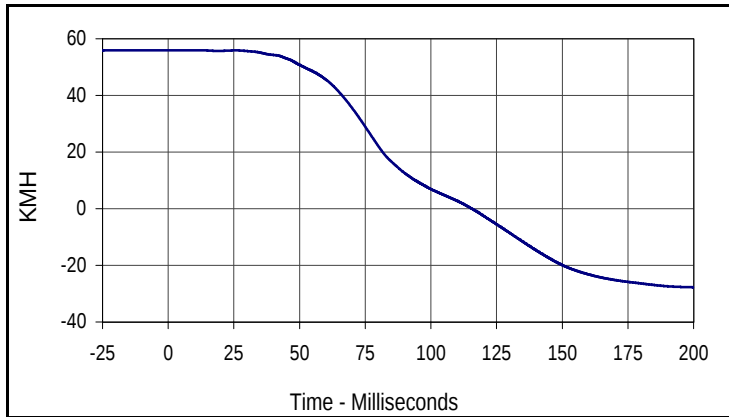
Curve Description			
Passenger Head Redundant Z			
CURNO	Type	SAE Class	Units
050	FIL	1000	G's
Max	Time	Min	Time
25.2	64.8	-2.5	22.6



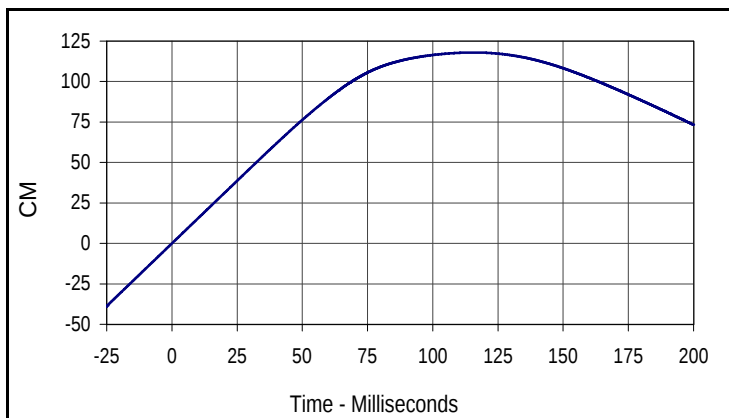
Curve Description			
Passenger Head Resultant Redundant			
CURNO	Type	SAE Class	Units
048	RES	1000	G's
Max	Time	Min	Time
46.7	77.5	0.0	2.5

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



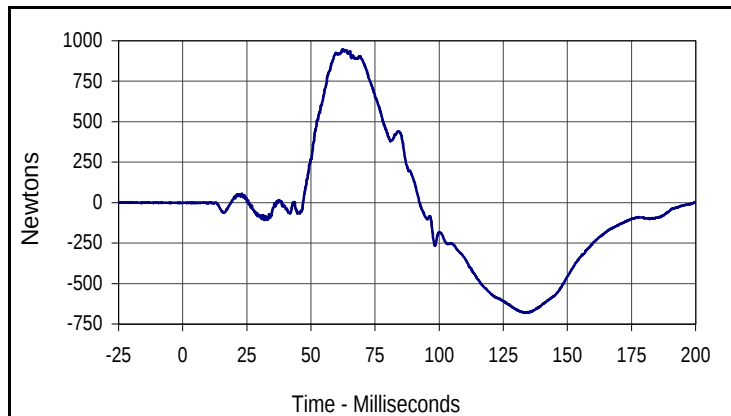
Curve Description			
Passenger Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
048	IN1	180	KMH
Max	Time	Min	Time
55.9	2.3	-27.7	200.0



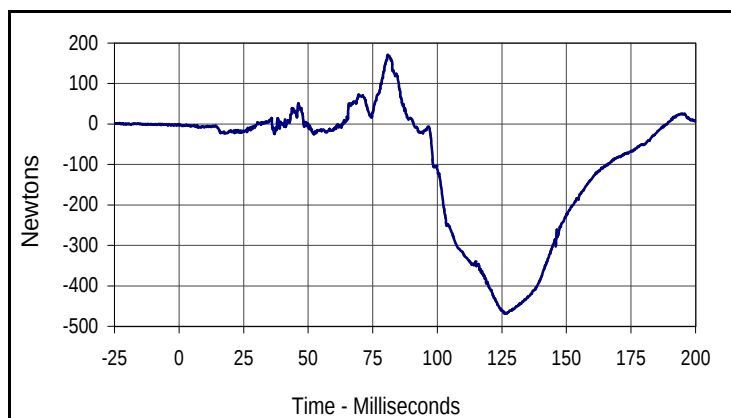
Curve Description			
Passenger Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
048	IN2	180	CM
Max	Time	Min	Time
118.0	115.6	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

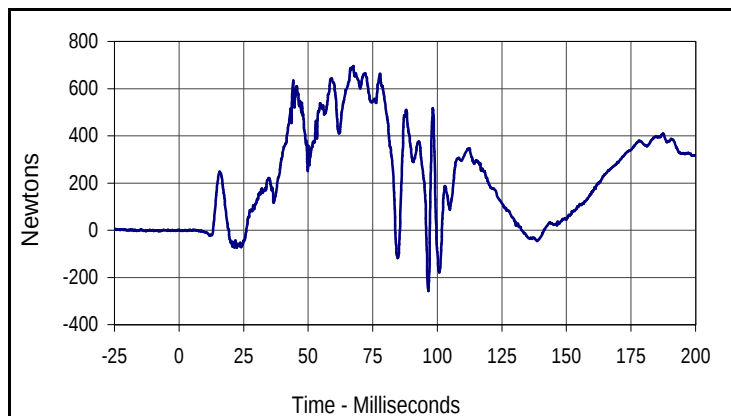
Test Date: 12/17/03
 NHTSA No.: M45400



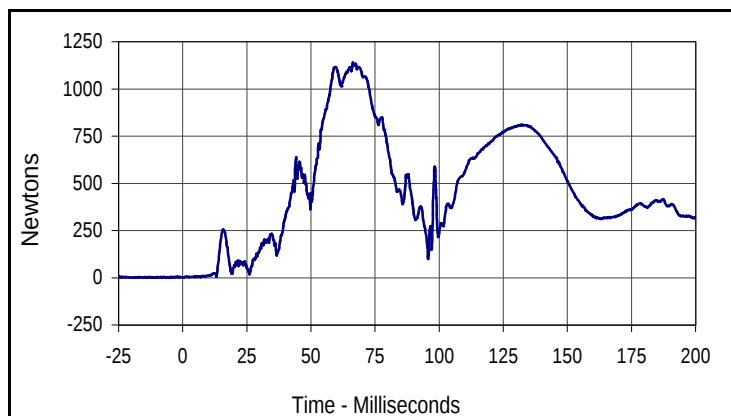
Curve Description			
Passenger Upper Neck Force X			
CURNO	Type	SAE Class	Units
051	FIL	1000	Newtons
Max	Time	Min	Time
947.0	62.3	-680.4	133.7



Curve Description			
Passenger Upper Neck Force Y			
CURNO	Type	SAE Class	Units
052	FIL	1000	Newtons
Max	Time	Min	Time
170.5	80.9	-468.1	126.9



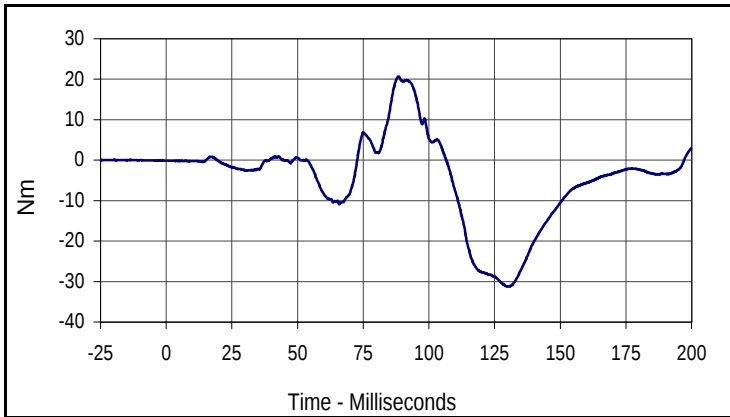
Curve Description			
Passenger Upper Neck Force Z			
CURNO	Type	SAE Class	Units
053	FIL	1000	Newtons
Max	Time	Min	Time
695.2	67.5	-257.4	96.5



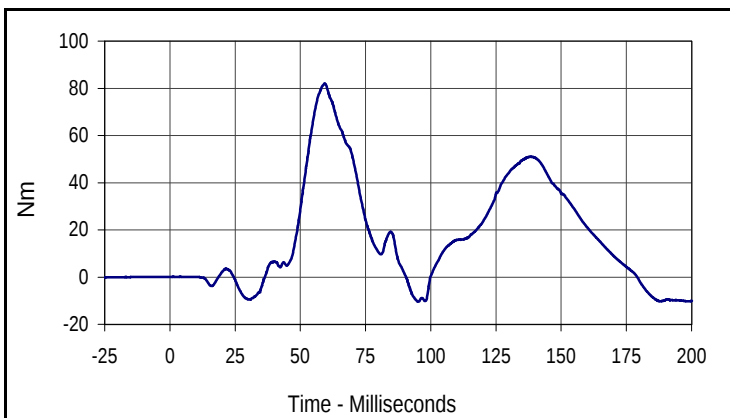
Curve Description			
Passenger Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
051	RES	1000	Newtons
Max	Time	Min	Time
1140.0	66.3	1.6	0.4

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

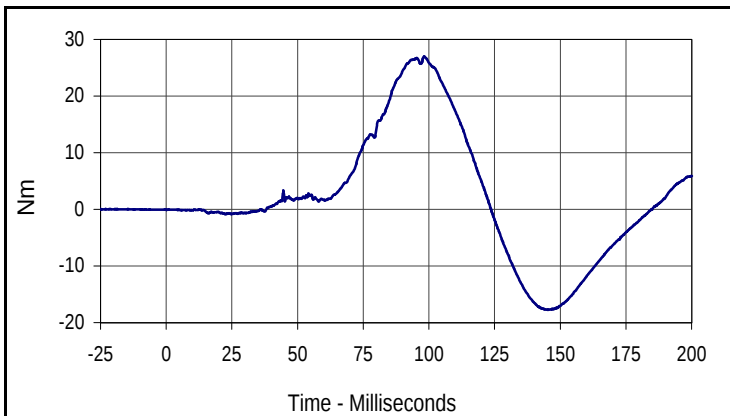
Test Date: 12/17/03
 NHTSA No.: M45400



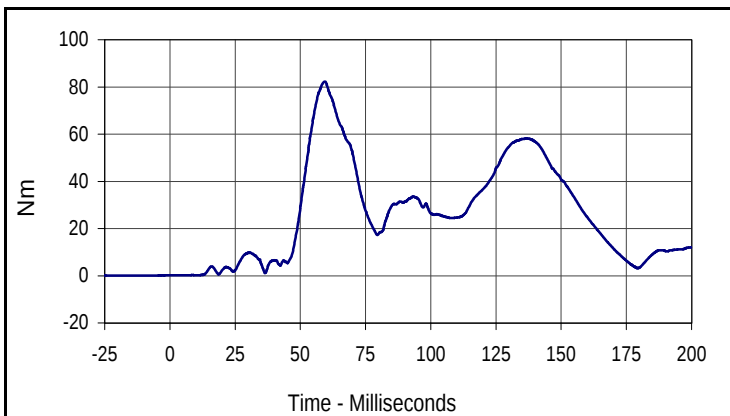
Curve Description			
Passenger Upper Neck Moment X			
CURNO	Type	SAE Class	Units
054	FIL	600	Nm
Max	Time	Min	Time
20.7	88.4	-31.2	130.1



Curve Description			
Passenger Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
055	FIL	600	Nm
Max	Time	Min	Time
81.9	59.4	-10.4	95.3



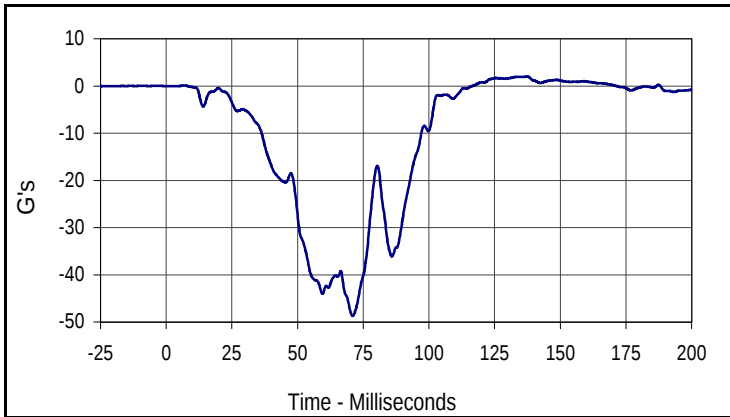
Curve Description			
Passenger Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
056	FIL	600	Nm
Max	Time	Min	Time
27.0	98.2	-17.7	145.3



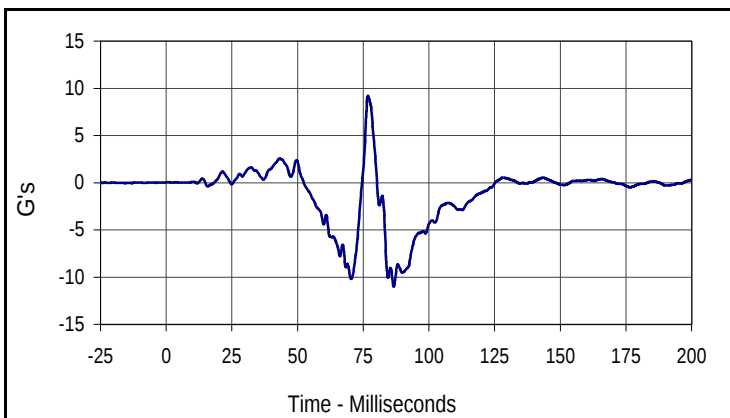
Curve Description			
Passenger Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
054	RES	600	Nm
Max	Time	Min	Time
82.3	59.4	0.2	0.7

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

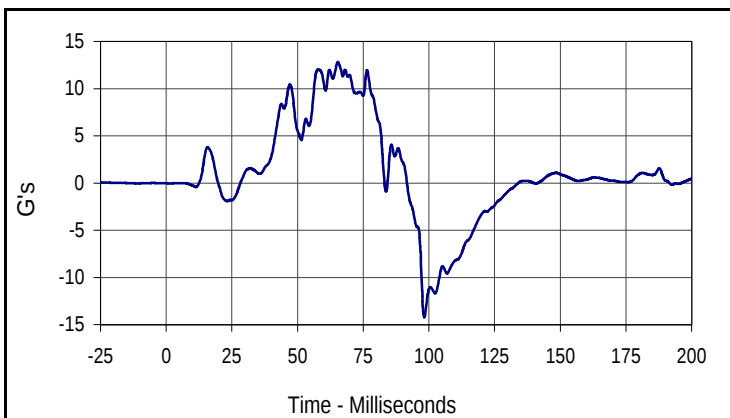
Test Date: 12/17/03
 NHTSA No.: M45400



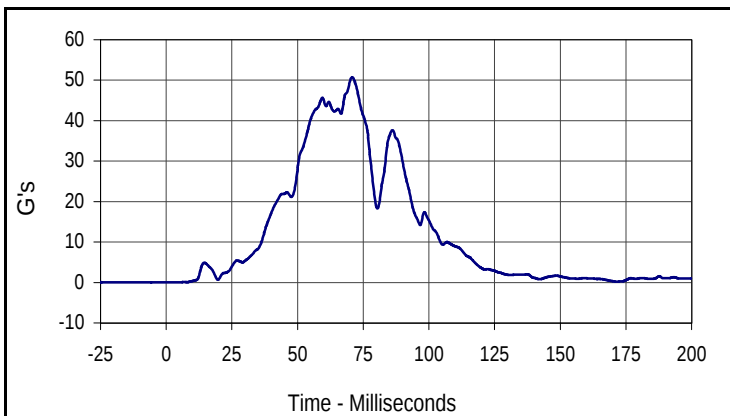
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
057	FIL	180	G's
Max	Time	Min	Time
2.0	137.4	-48.7	71.0



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
058	FIL	180	G's
Max	Time	Min	Time
9.2	76.8	-11.0	86.7



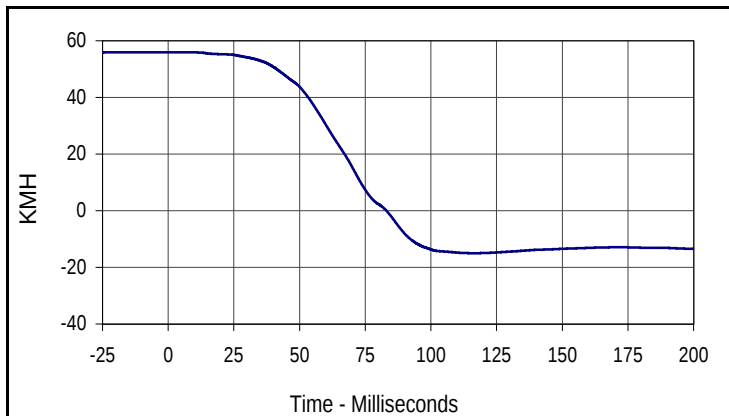
Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
059	FIL	180	G's
Max	Time	Min	Time
12.8	65.3	-14.2	98.2



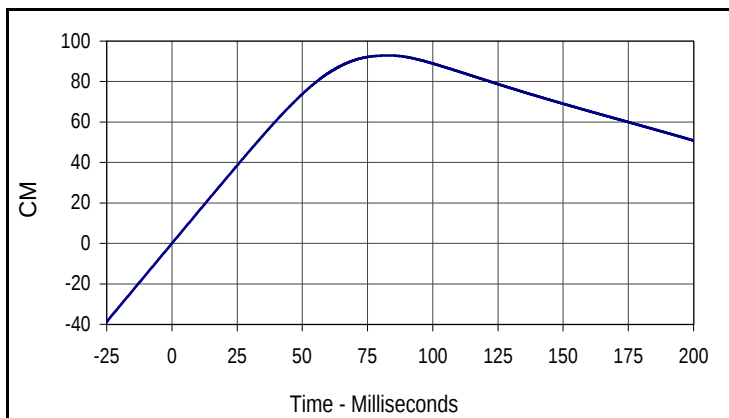
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
057	RES	180	G's
Max	Time	Min	Time
50.7	70.8	0.0	5.3

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



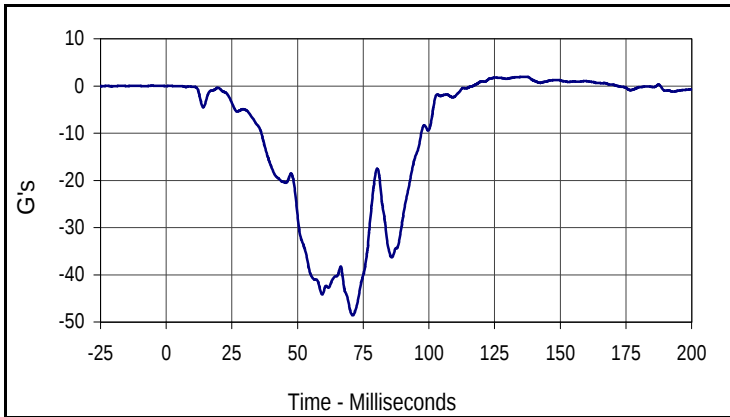
Curve Description			
Passenger Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
057	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-15.0	116.5



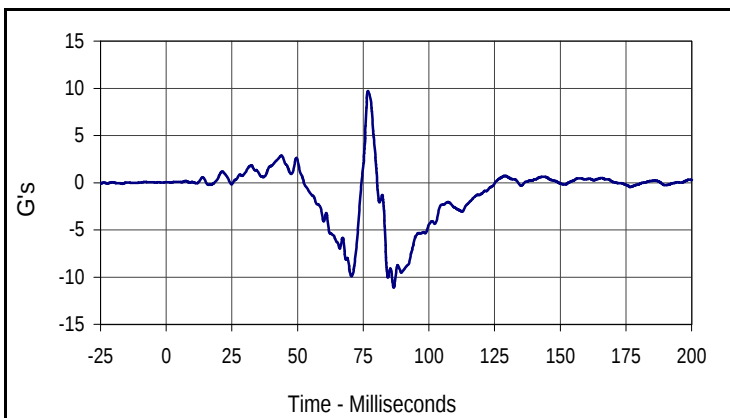
Curve Description			
Passenger Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
057	IN2	180	CM
Max	Time	Min	Time
92.9	83.1	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

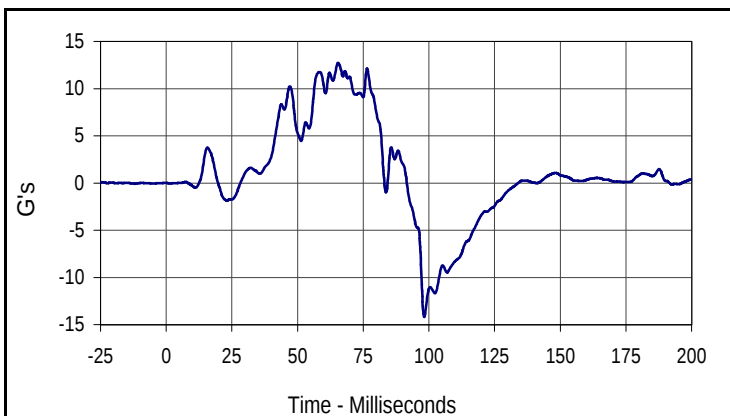
Test Date: 12/17/03
 NHTSA No.: M45400



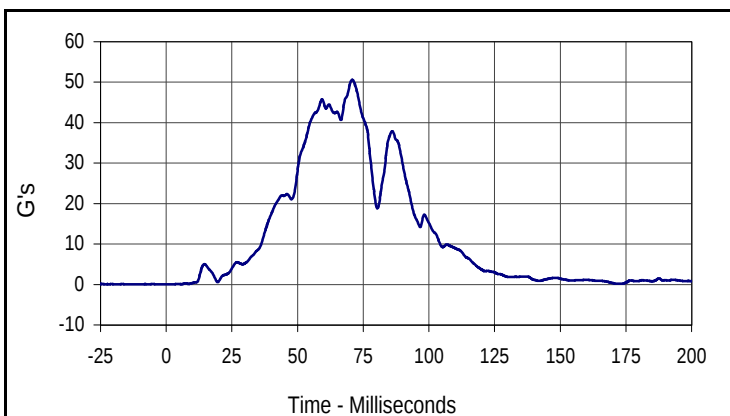
Curve Description			
Passenger Chest Redundant X			
CURNO	Type	SAE Class	Units
060	FIL	180	G's
Max	Time	Min	Time
2.0	137.3	-48.6	71.0



Curve Description			
Passenger Chest Redundant Y			
CURNO	Type	SAE Class	Units
061	FIL	180	G's
Max	Time	Min	Time
9.7	76.8	-11.1	86.6



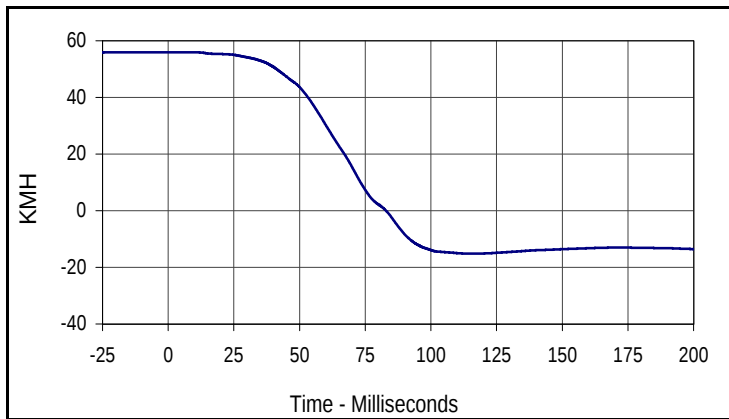
Curve Description			
Passenger Chest Redundant Z			
CURNO	Type	SAE Class	Units
062	FIL	180	G's
Max	Time	Min	Time
12.7	65.4	-14.2	98.2



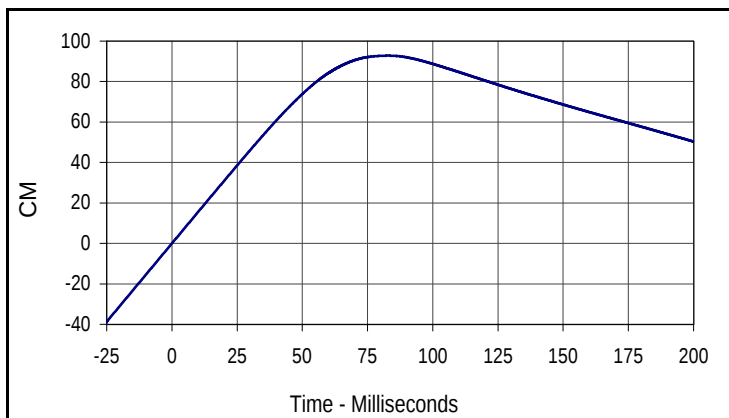
Curve Description			
Passenger Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
060	RES	180	G's
Max	Time	Min	Time
50.6	70.8	0.0	2.2

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



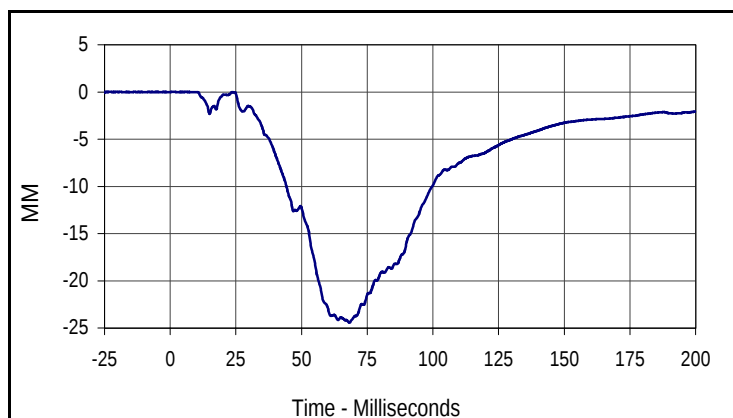
Curve Description			
Passenger Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
060	IN1	180	KMH
Max	Time	Min	Time
55.9	2.3	-15.2	116.7



Curve Description			
Passenger Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
060	IN2	180	CM
Max	Time	Min	Time
92.8	82.9	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

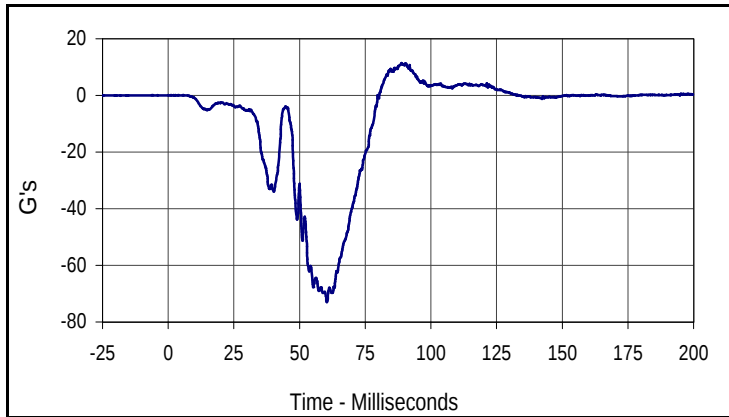
Test Date: 12/17/03
 NHTSA No.: M45400



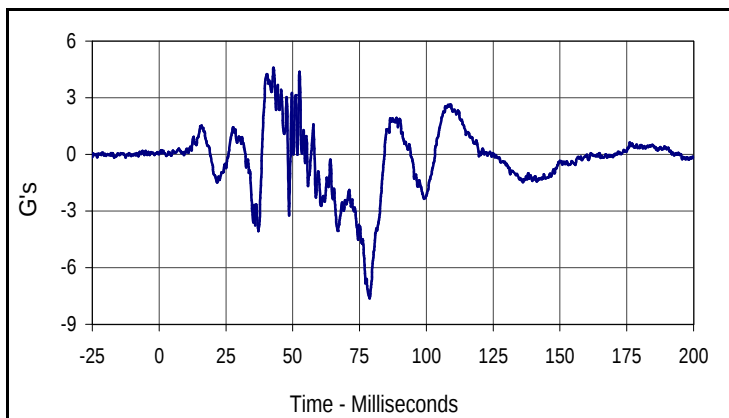
Curve Description			
Passenger Chest Displacement			
CURNO	Type	SAE Class	Units
063	FIL	600	MM
Max	Time	Min	Time
0.0	6.2	-24.4	68.3

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

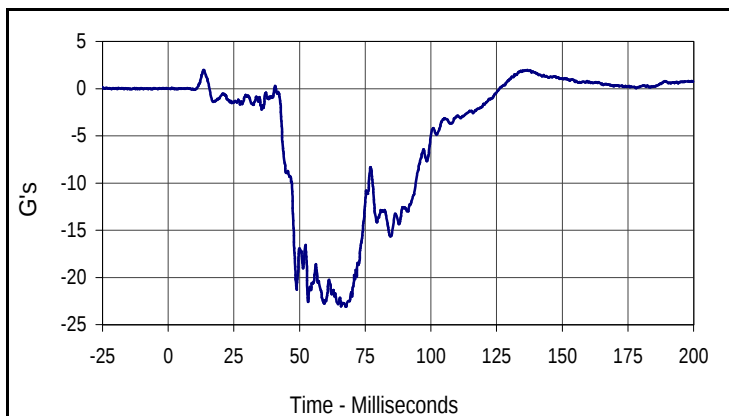
Test Date: 12/17/03
 NHTSA No.: M45400



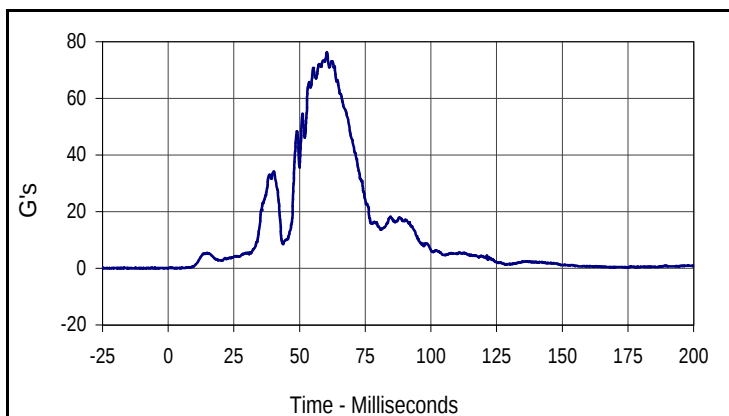
Curve Description			
Passenger Pelvis X			
CURNO	Type	SAE Class	Units
064	FIL	1000	G's
Max	Time	Min	Time
11.5	88.8	-72.9	60.4



Curve Description			
Passenger Pelvis Y			
CURNO	Type	SAE Class	Units
065	FIL	1000	G's
Max	Time	Min	Time
4.6	42.8	-7.6	78.8



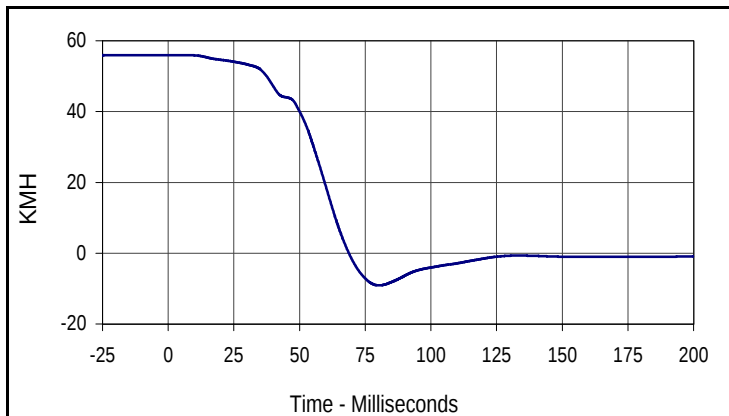
Curve Description			
Passenger Pelvis Z			
CURNO	Type	SAE Class	Units
066	FIL	1000	G's
Max	Time	Min	Time
2.0	136.7	-23.1	67.7



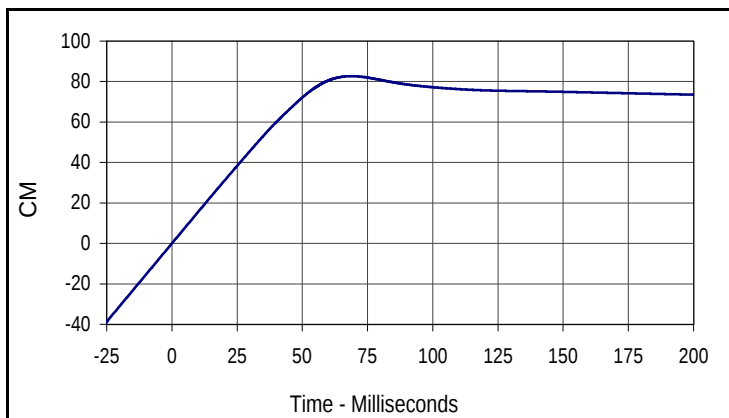
Curve Description			
Passenger Pelvis Resultant			
CURNO	Type	SAE Class	Units
064	RES	1000	G's
Max	Time	Min	Time
76.3	60.4	0.0	3.2

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



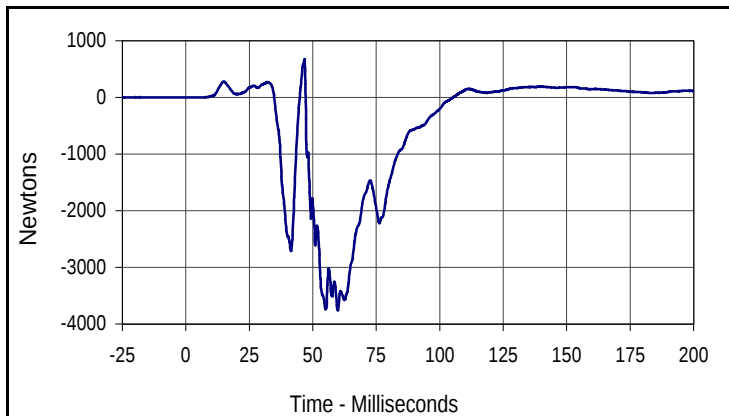
Curve Description			
Passenger Pelvis X Velocity			
CURNO	Type	SAE Class	Units
064	IN1	180	KMH
Max	Time	Min	Time
55.9	6.8	-9.1	80.2



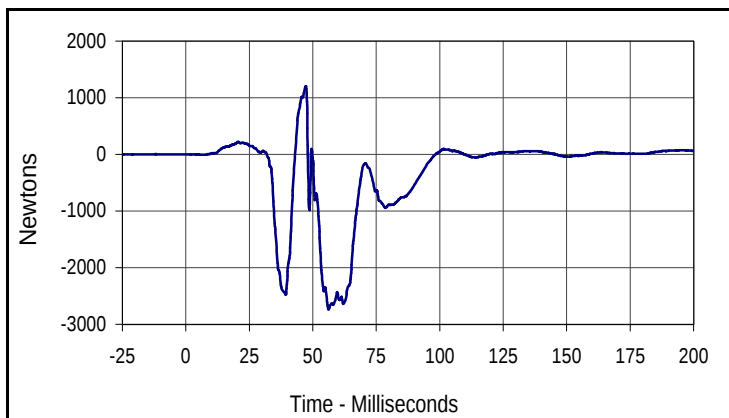
Curve Description			
Passenger Pelvis X Displacement			
CURNO	Type	SAE Class	Units
064	IN2	180	CM
Max	Time	Min	Time
82.7	68.8	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



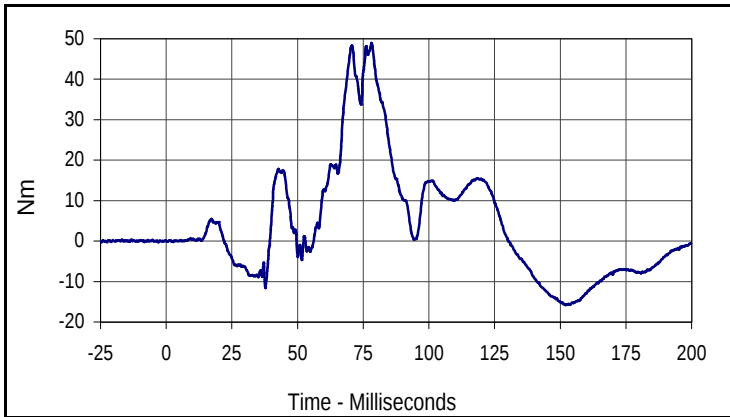
Curve Description			
Passenger Left Femur Force			
CURNO	Type	SAE Class	Units
067	FIL	600	Newtons
Max	Time	Min	Time
676.5	46.8	-3758.8	59.8



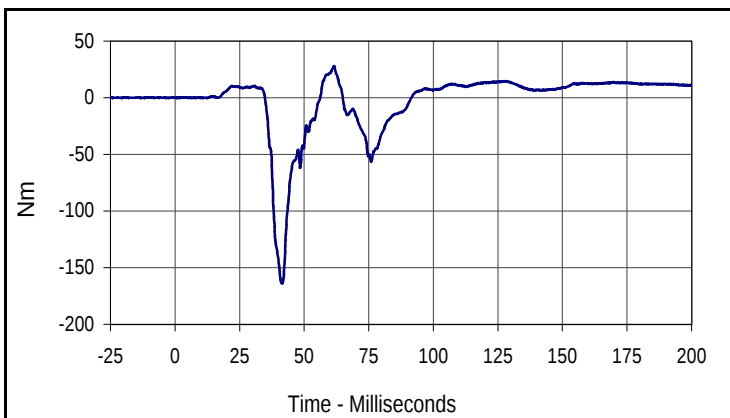
Curve Description			
Passenger Right Femur Force			
CURNO	Type	SAE Class	Units
068	FIL	600	Newtons
Max	Time	Min	Time
1205.5	47.3	-2739.7	56.2

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

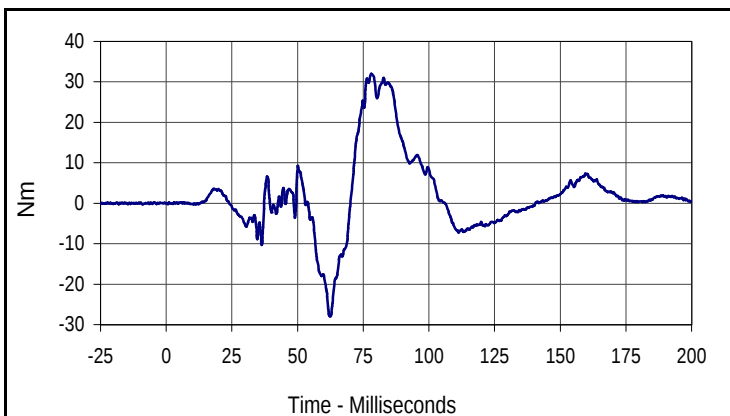
Test Date: 12/17/03
 NHTSA No.: M45400



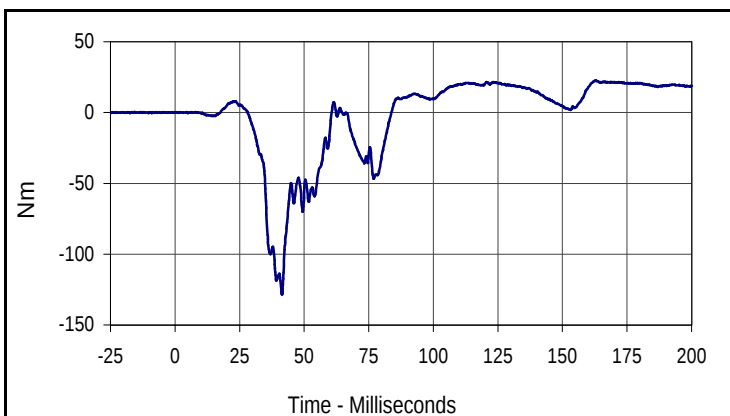
Curve Description			
Passenger Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
069	FIL	600	Nm
Max	Time	Min	Time
48.9	78.1	-15.8	152.0



Curve Description			
Passenger Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
070	FIL	600	Nm
Max	Time	Min	Time
27.9	61.6	-163.7	41.5



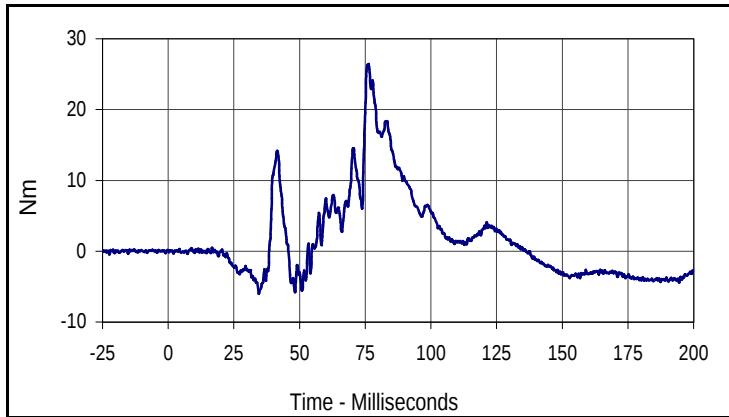
Curve Description			
Passenger Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
071	FIL	600	Nm
Max	Time	Min	Time
32.0	78.1	-28.0	62.5



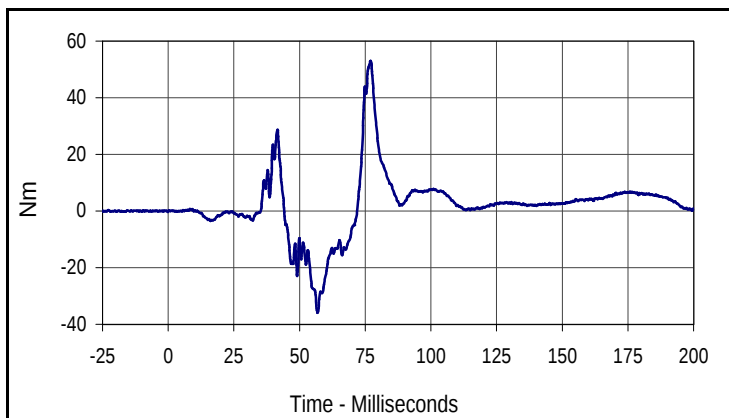
Curve Description			
Passenger Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
072	FIL	600	Nm
Max	Time	Min	Time
22.6	162.9	-128.6	41.4

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

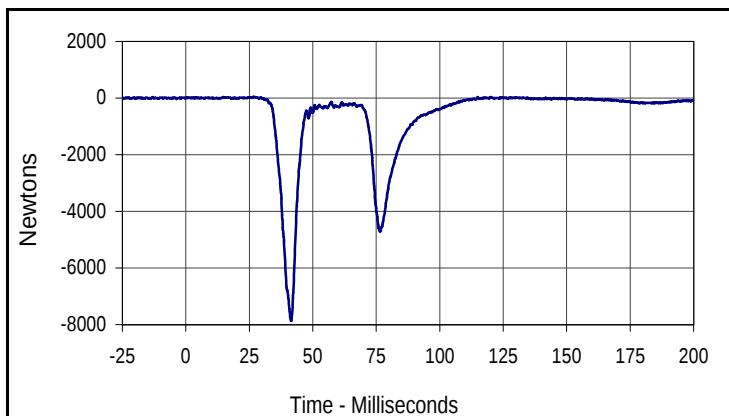
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
073	FIL	600	Nm
Max	Time	Min	Time
26.4	76.2	-6.0	34.5



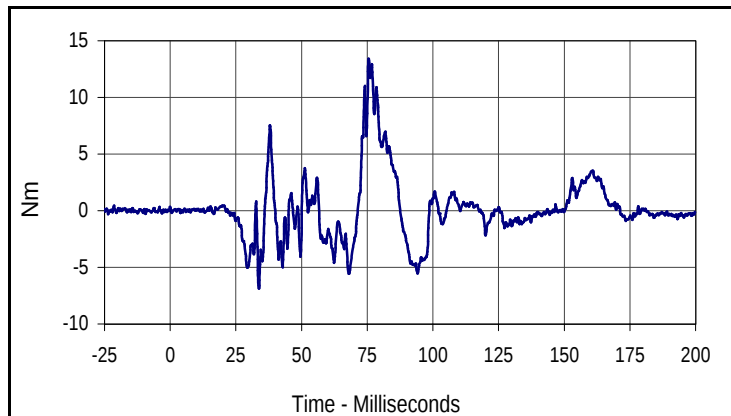
Curve Description			
Passenger Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
074	FIL	600	Nm
Max	Time	Min	Time
53.0	77.0	-35.9	56.8



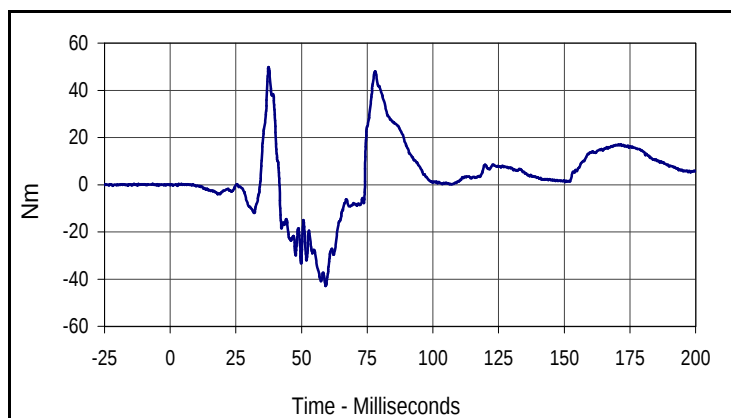
Curve Description			
Passenger Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
075	FIL	600	Newtons
Max	Time	Min	Time
44.6	26.6	-7867.8	41.4

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

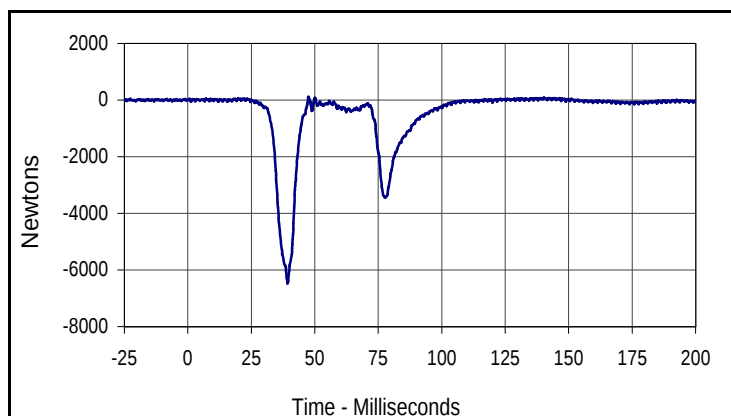
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
076	FIL	600	Nm
Max	Time	Min	Time
13.4	75.5	-6.9	33.8



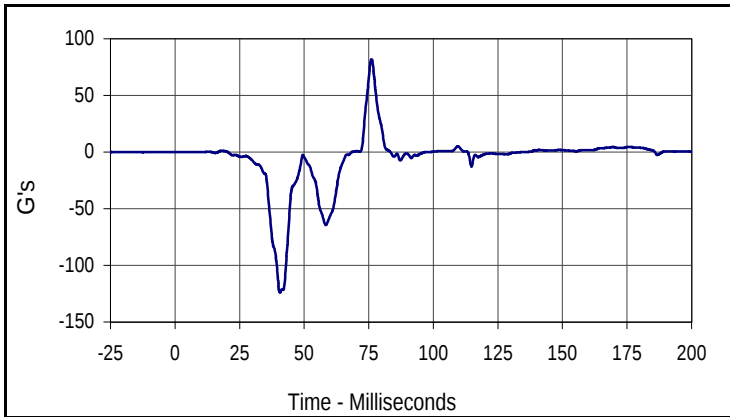
Curve Description			
Passenger Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
077	FIL	600	Nm
Max	Time	Min	Time
49.8	37.5	-42.9	59.2



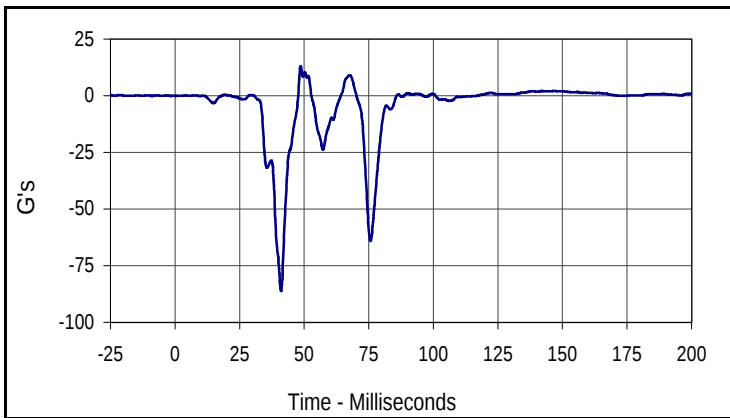
Curve Description			
Passenger Right lower Tibia Force Z			
CURNO	Type	SAE Class	Units
078	FIL	600	Newtons
Max	Time	Min	Time
117.8	47.5	-6470.0	39.3

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

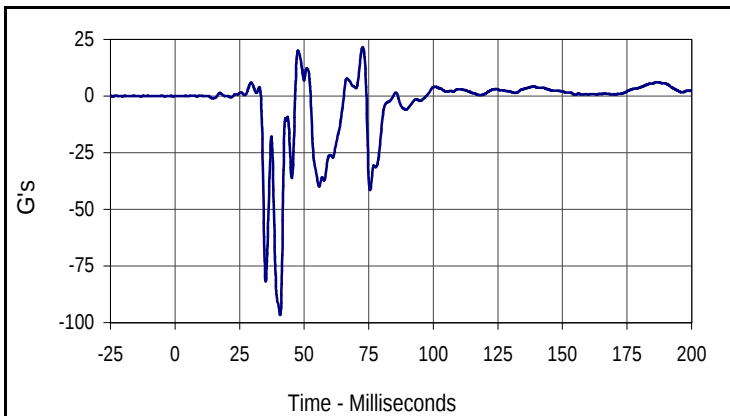
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Left Foot Aft X			
CURNO	Type	SAE Class	Units
079	FIL	180	G's
Max	Time	Min	Time
82.0	76.0	-123.8	40.6



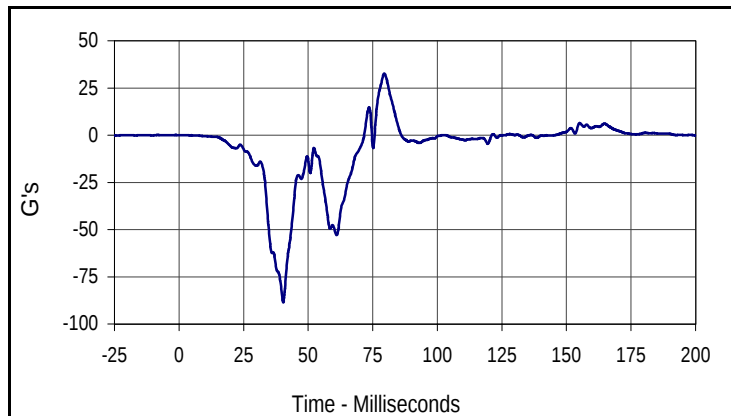
Curve Description			
Passenger Left Foot Aft Z			
CURNO	Type	SAE Class	Units
080	FIL	180	G's
Max	Time	Min	Time
13.0	48.7	-86.1	41.1



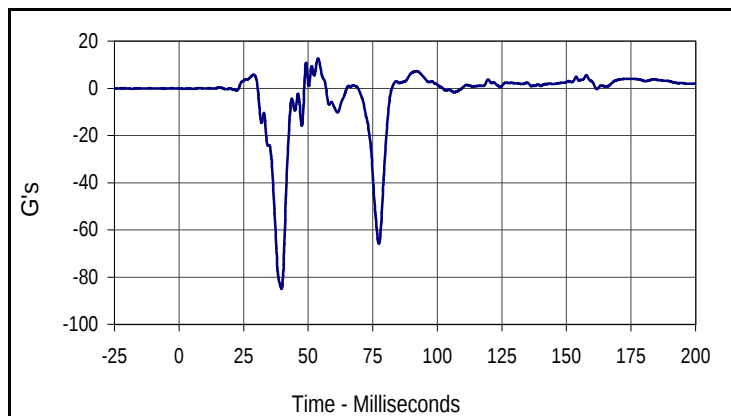
Curve Description			
Passenger Left Foot Fore Z			
CURNO	Type	SAE Class	Units
081	FIL	180	G's
Max	Time	Min	Time
21.6	72.7	-96.6	40.7

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

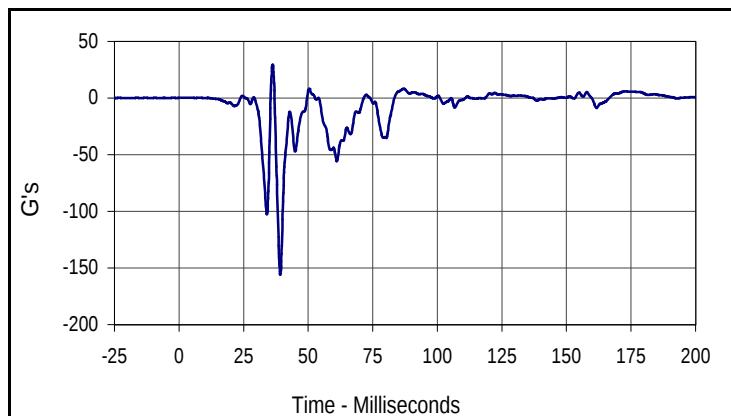
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Right Foot Aft X			
CURNO	Type	SAE Class	Units
082	FIL	180	G's
Max	Time	Min	Time
32.7	79.5	-88.4	40.4



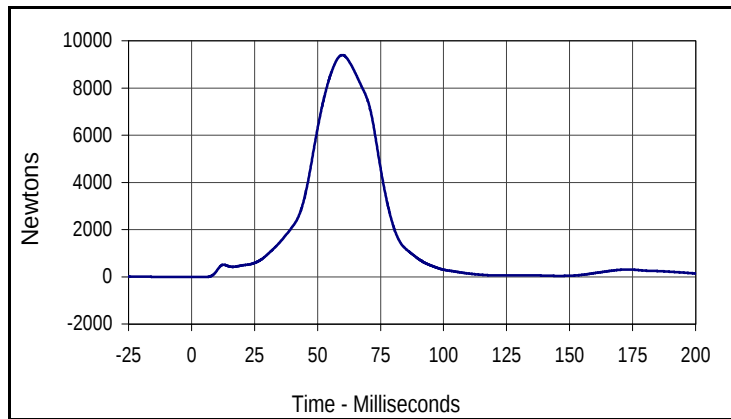
Curve Description			
Passenger Right Foot Aft Z			
CURNO	Type	SAE Class	Units
083	FIL	180	G's
Max	Time	Min	Time
12.6	53.8	-84.9	39.7



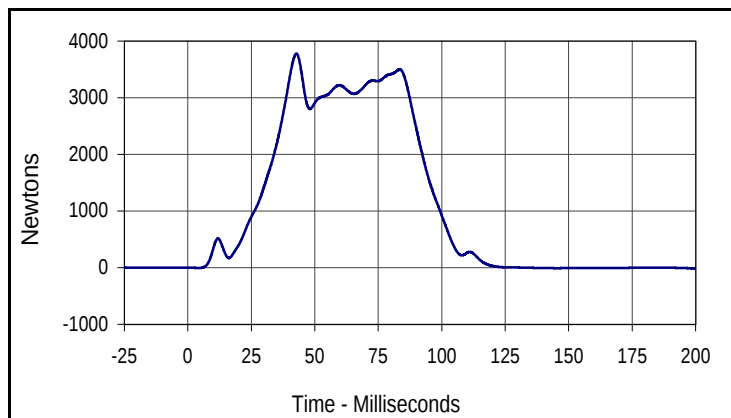
Curve Description			
Passenger Right Foot Fore Z			
CURNO	Type	SAE Class	Units
084	FIL	180	G's
Max	Time	Min	Time
29.5	36.2	-156.0	39.2

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

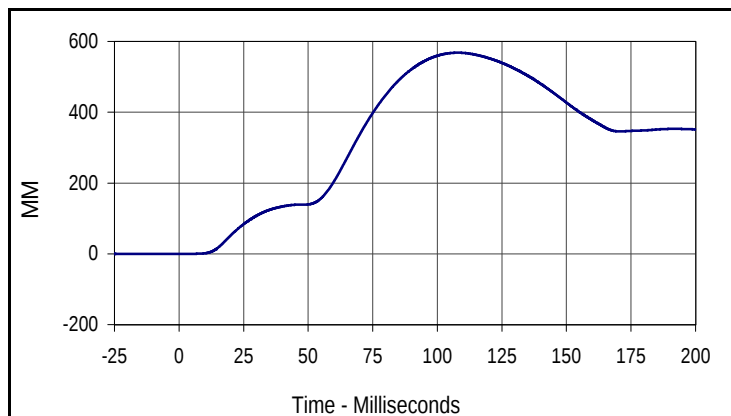
Test Date: 12/17/03
 NHTSA No.: M45400



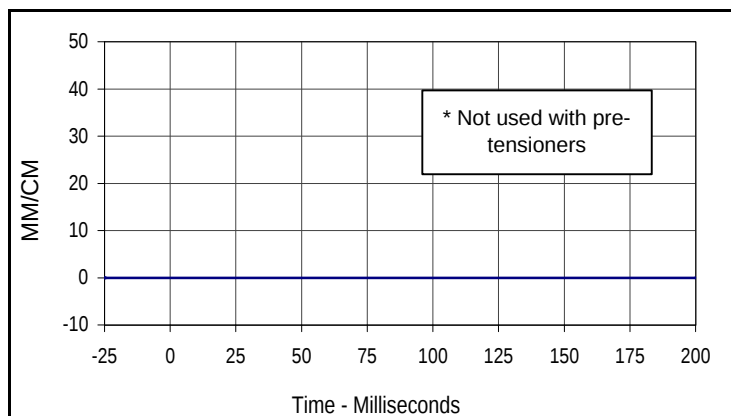
Curve Description			
Passenger Lap Belt Force			
CURNO	Type	SAE Class	Units
085	FIL	60	Newtons
Max	Time	Min	Time
9396.3	59.8	-9.7	5.4



Curve Description			
Passenger Shoulder Belt Force			
CURNO	Type	SAE Class	Units
086	FIL	60	Newtons
Max	Time	Min	Time
3778.8	42.8	-17.9	200.4



Curve Description			
Passenger Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
087	FIL	60	MM
Max	Time	Min	Time
568.2	107.9	0.0	3.8

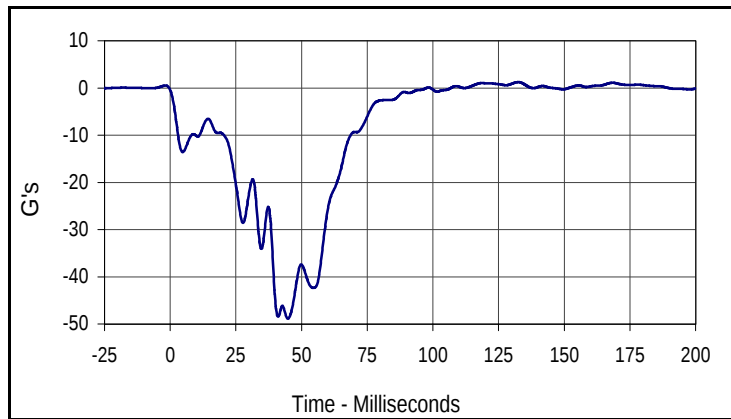


Curve Description			
Passenger Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
088	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

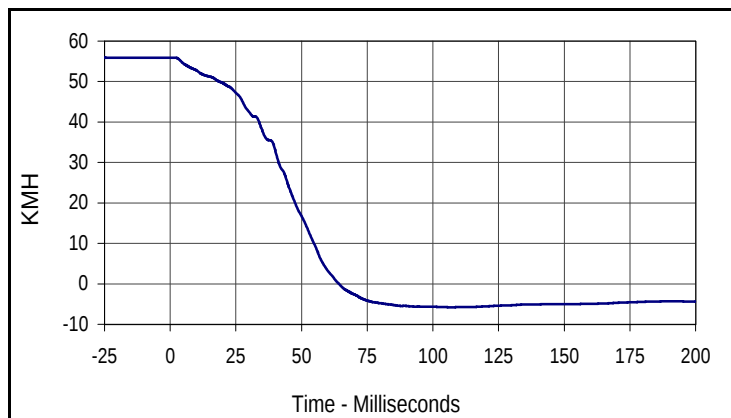
* Not used with pre-tensioners

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

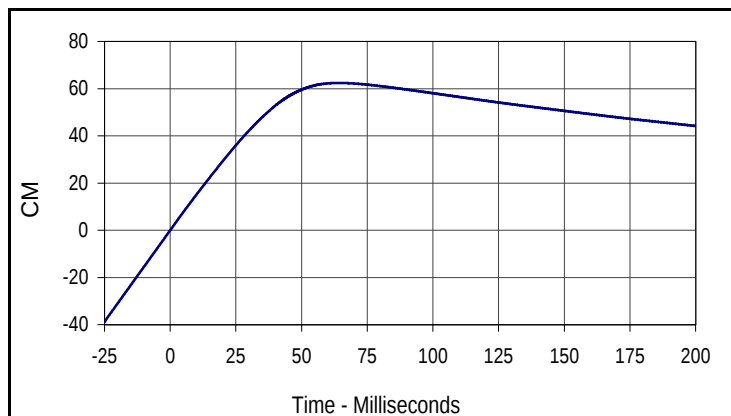
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Left Rear X			
CURNO	Type	SAE Class	Units
089	FIL	60	G's
Max	Time	Min	Time
1.2	132.5	-48.9	44.8



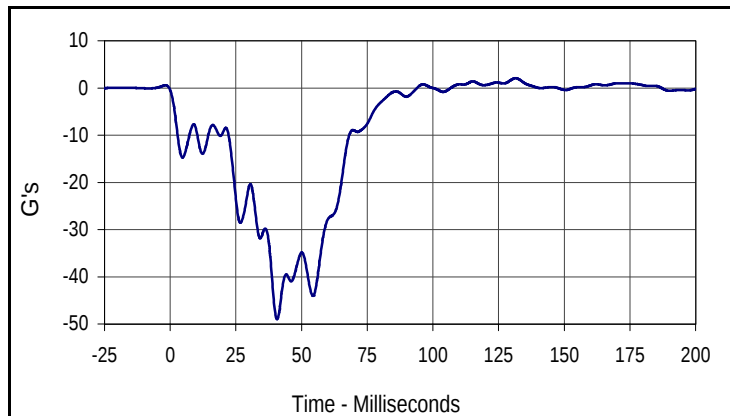
Curve Description			
Vehicle Left Rear X Velocity			
CURNO	Type	SAE Class	Units
089	IN1	180	KMH
Max	Time	Min	Time
55.9	1.5	-5.8	107.0



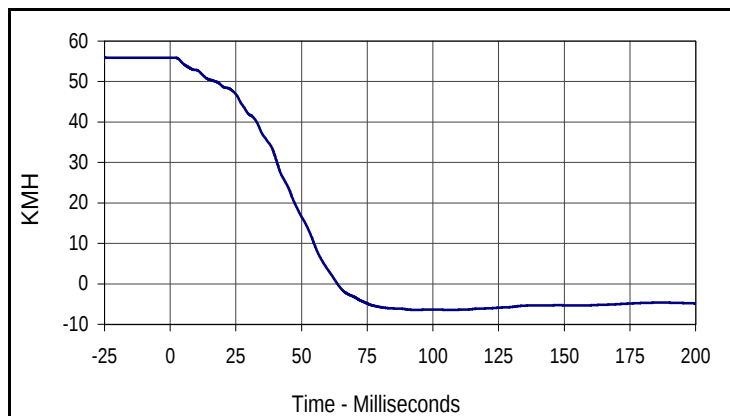
Curve Description			
Vehicle Left Rear X Displacement			
CURNO	Type	SAE Class	Units
089	IN2	180	CM
Max	Time	Min	Time
62.4	64.2	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

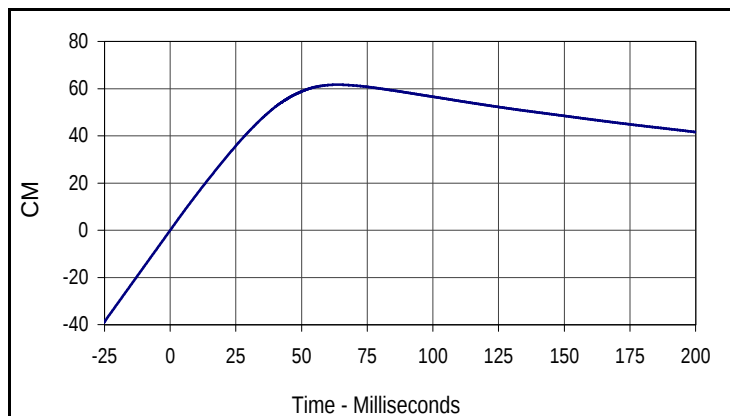
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Right Rear X			
CURNO	Type	SAE Class	Units
090	FIL	60	G's
Max	Time	Min	Time
2.1	131.5	-49.0	40.7



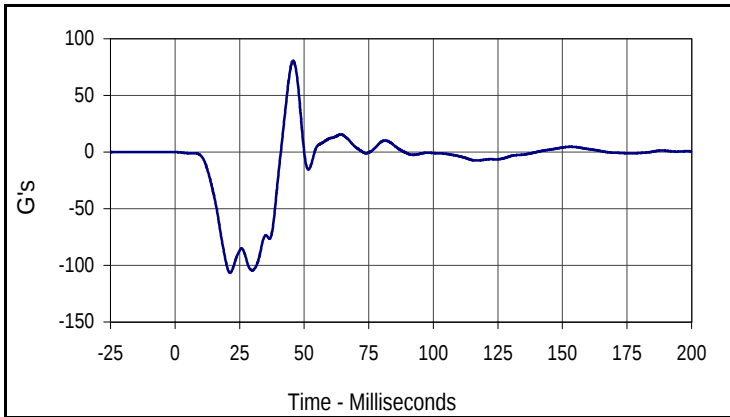
Curve Description			
Vehicle Right Rear X Velocity			
CURNO	Type	SAE Class	Units
090	IN1	180	KMH
Max	Time	Min	Time
55.9	1.4	-6.5	106.4



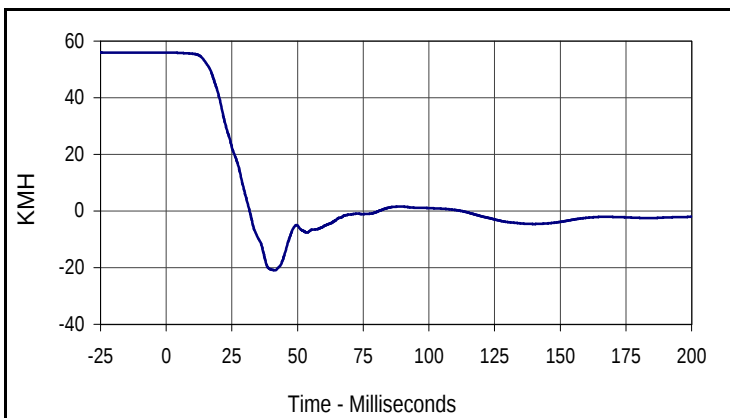
Curve Description			
Vehicle Right Rear X Displacement			
CURNO	Type	SAE Class	Units
090	IN2	180	CM
Max	Time	Min	Time
61.7	63.6	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

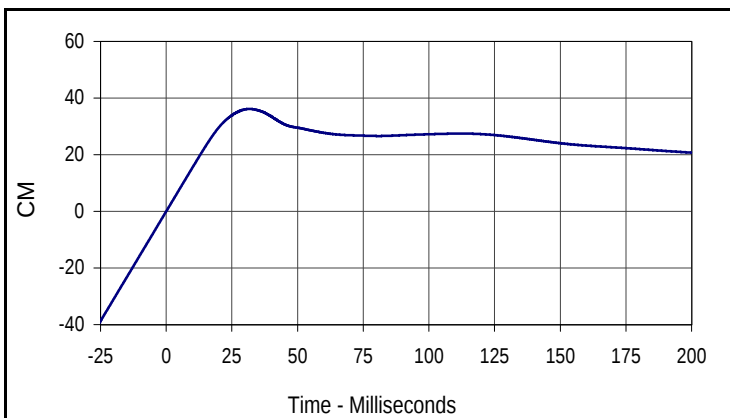
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Engine Top			
CURNO	Type	SAE Class	Units
091	FIL	60	G's
Max	Time	Min	Time
80.6	45.7	-106.5	21.3



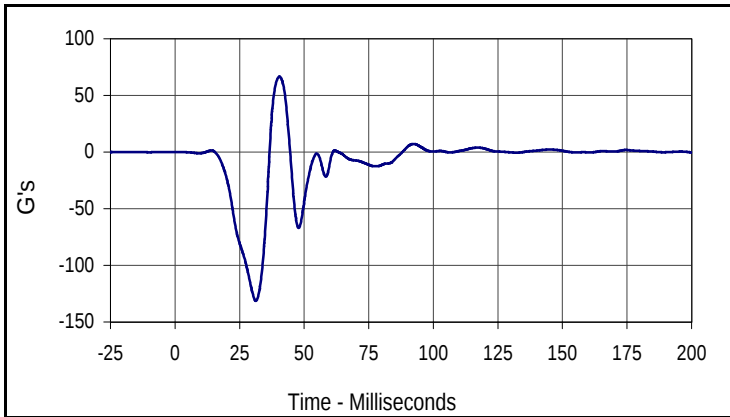
Curve Description			
Vehicle Engine Top Velocity			
CURNO	Type	SAE Class	Units
091	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-21.0	41.4



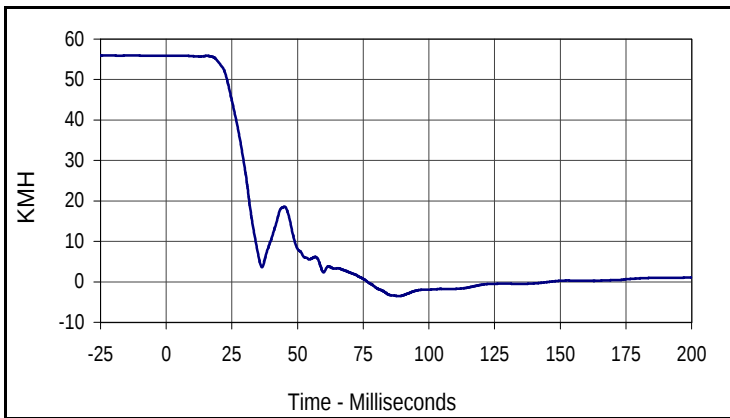
Curve Description			
Vehicle Engine Top Displacement			
CURNO	Type	SAE Class	Units
091	IN2	180	CM
Max	Time	Min	Time
36.2	31.7	0.0	0.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

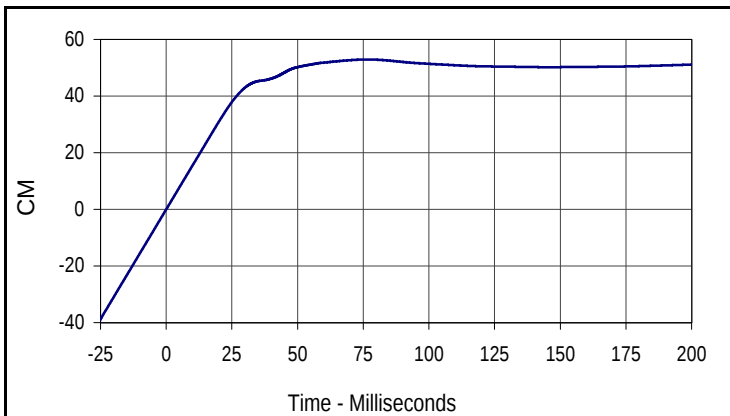
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Engine Bottom			
CURNO	Type	SAE Class	Units
092	FIL	60	G's
Max	Time	Min	Time
66.5	40.4	-131.3	31.3



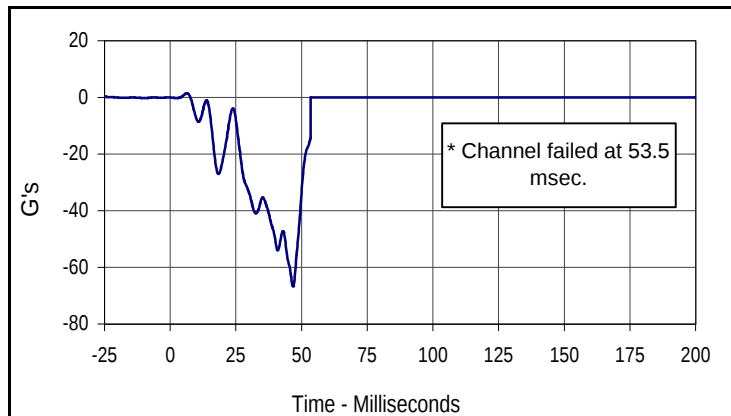
Curve Description			
Vehicle Engine Bottom Velocity			
CURNO	Type	SAE Class	Units
092	IN1	180	KMH
Max	Time	Min	Time
55.9	1.3	-3.5	88.6



Curve Description			
Vehicle Engine Bottom Displacement			
CURNO	Type	SAE Class	Units
092	IN2	180	CM
Max	Time	Min	Time
52.9	76.6	0.0	0.0

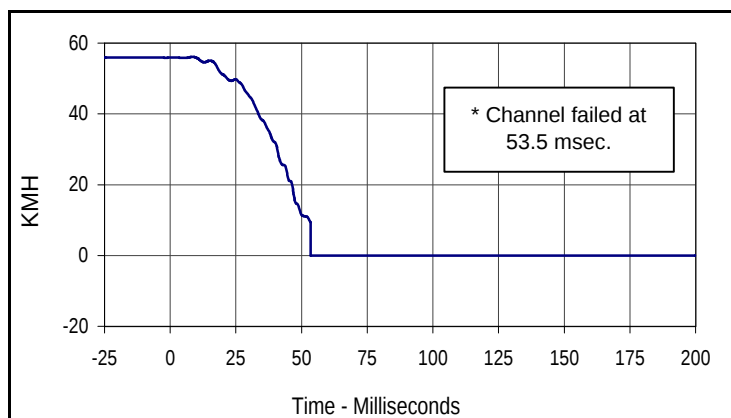
Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



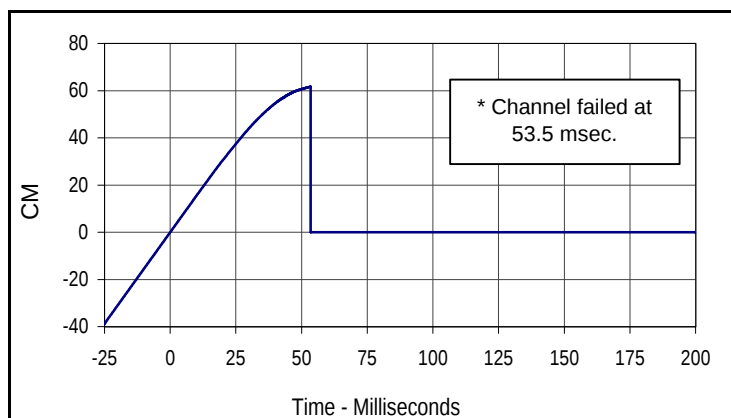
Curve Description			
Vehicle Left Brake Caliper			
CURNO	Type	SAE Class	Units
093	FIL	60	G's
Max	Time	Min	Time
1.5	6.3	-66.6	46.8

* Channel failed at 53.5 msec.



Curve Description			
Vehicle Left Brake Caliper Velocity			
CURNO	Type	SAE Class	Units
093	IN1	180	KMH
Max	Time	Min	Time
56.1	8.6	0.0	53.5

* Channel failed at 53.5 msec.

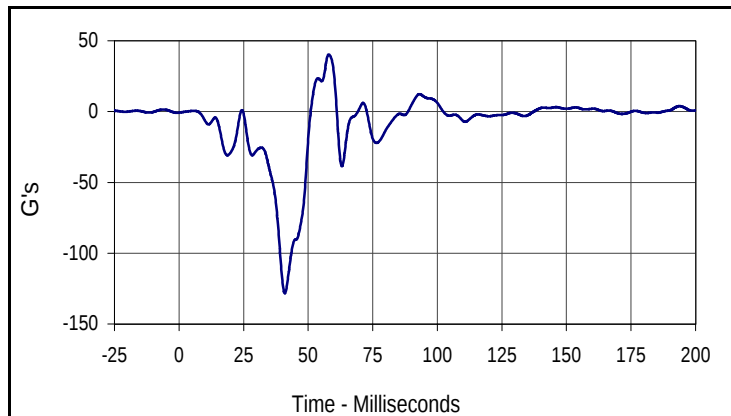


Curve Description			
Vehicle Left Brake Caliper Displacement			
CURNO	Type	SAE Class	Units
093	IN2	180	CM
Max	Time	Min	Time
61.7	53.4	0.0	53.5

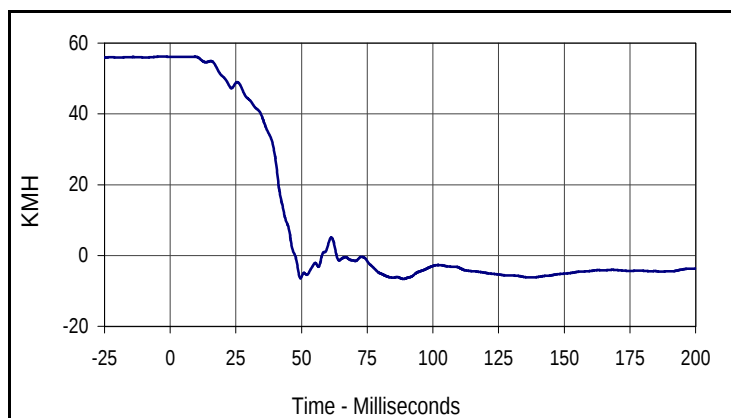
* Channel failed at 53.5 msec.

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

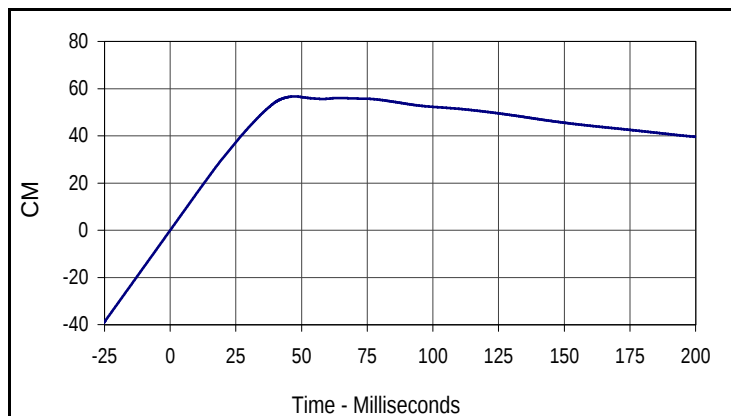
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Right Brake Caliper			
CURNO	Type	SAE Class	Units
094	FIL	60	G's
Max	Time	Min	Time
40.3	58.0	-128.2	41.0



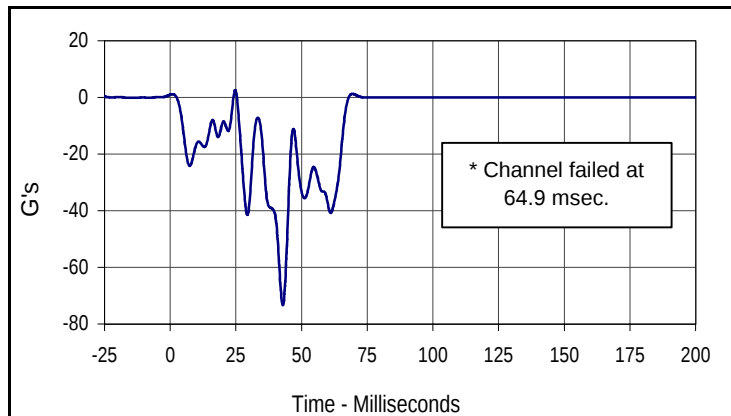
Curve Description			
Vehicle Right Brake Caliper Velocity			
CURNO	Type	SAE Class	Units
094	IN1	180	KMH
Max	Time	Min	Time
56.2	9.5	-6.6	88.8



Curve Description			
Vehicle Right Brake Caliper Displacement			
CURNO	Type	SAE Class	Units
094	IN2	180	CM
Max	Time	Min	Time
56.7	47.6	0.0	0.0

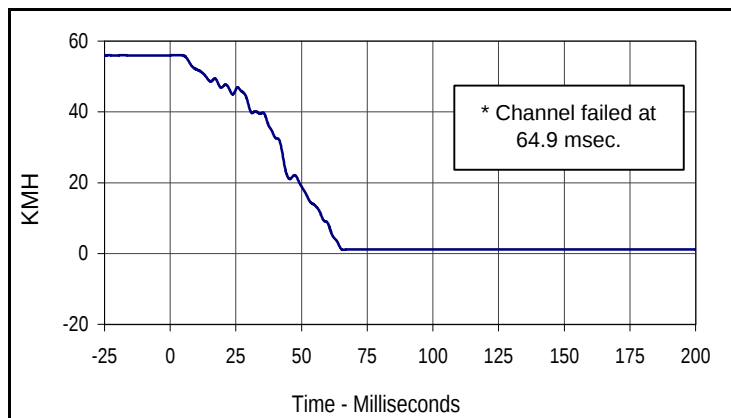
Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



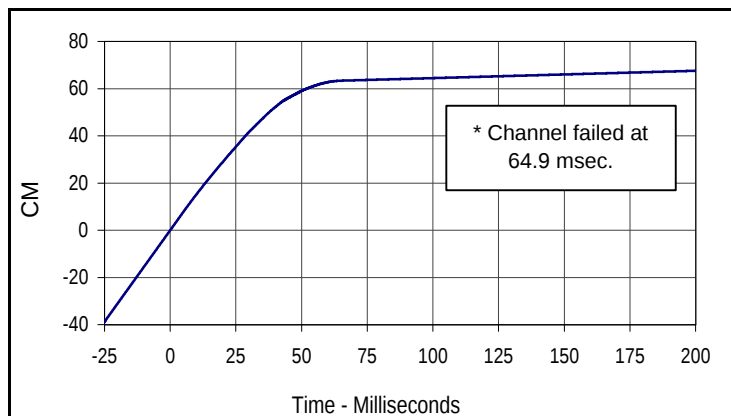
Curve Description			
Vehicle Instrument Panel			
CURNO	Type	SAE Class	Units
095	FIL	60	G's
Max	Time	Min	Time
2.6	24.8	-73.3	42.9

* Channel failed at 64.9 msec.



Curve Description			
Vehicle Instrument Panel Velocity			
CURNO	Type	SAE Class	Units
095	IN1	180	KMH
Max	Time	Min	Time
56.0	4.0	1.1	65.9

* Channel failed at 64.9 msec.

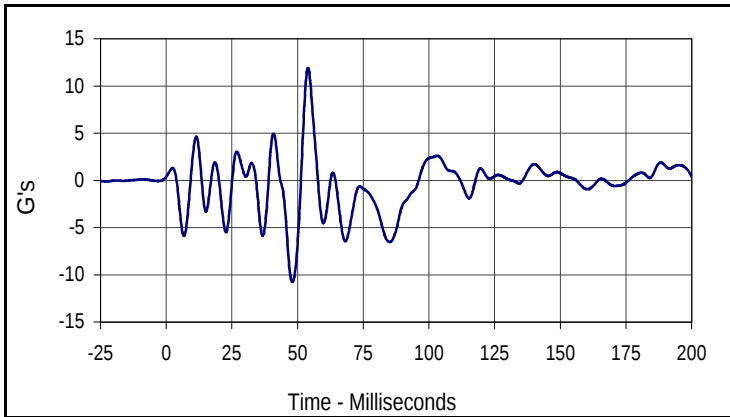


Curve Description			
Vehicle Instrument Panel Displacement			
CURNO	Type	SAE Class	Units
095	IN2	180	CM
Max	Time	Min	Time
67.6	200.0	0.0	0.0

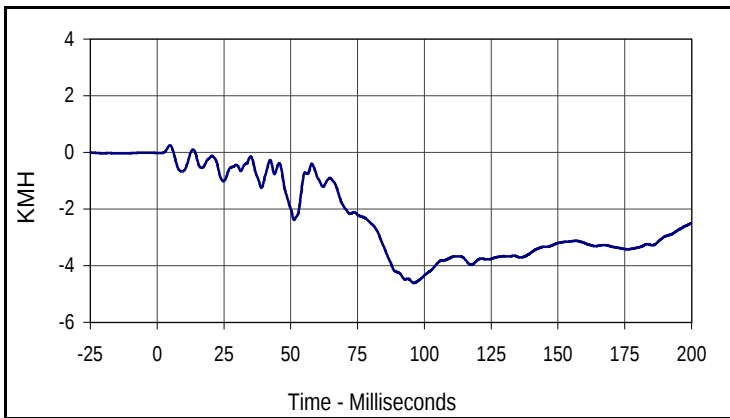
* Channel failed at 64.9 msec.

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

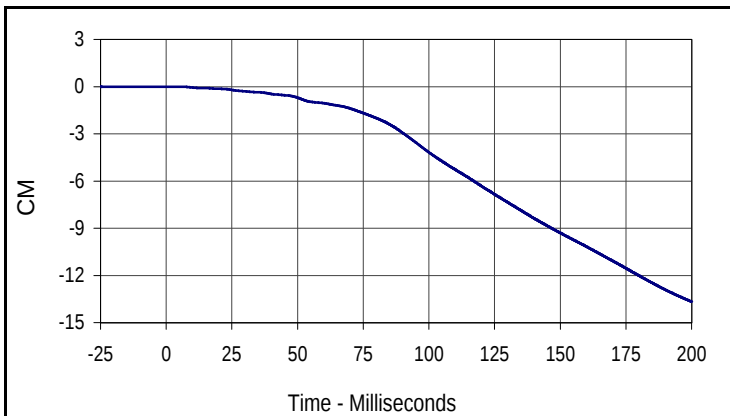
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Left Rear Z			
CURNO	Type	SAE Class	Units
096	FIL	60	G's
Max	Time	Min	Time
11.9	54.0	-10.8	48.0



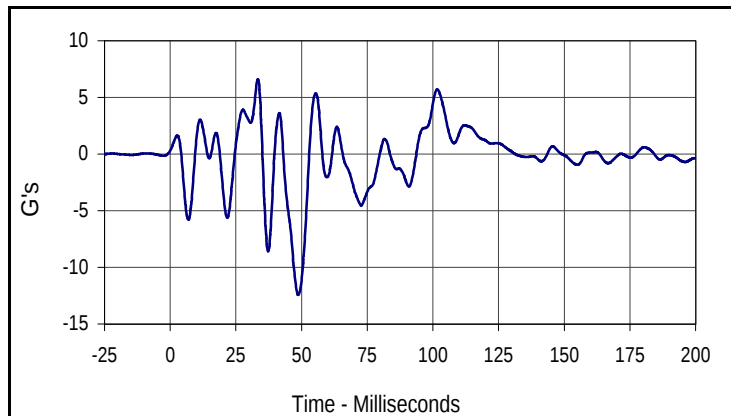
Curve Description			
Vehicle Left Rear Z Velocity			
CURNO	Type	SAE Class	Units
096	IN1	180	KMH
Max	Time	Min	Time
0.3	4.8	-4.6	96.1



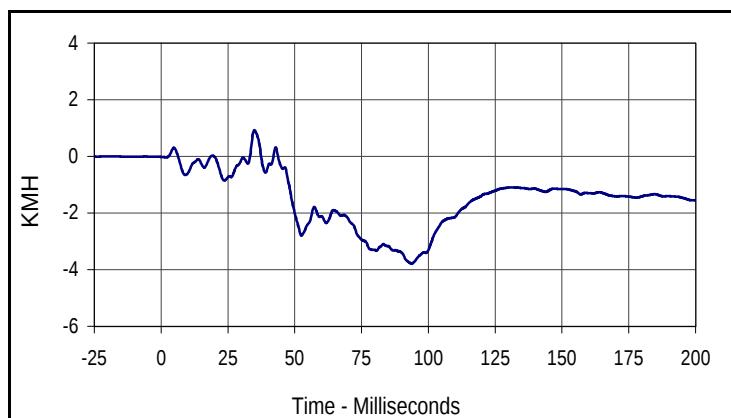
Curve Description			
Vehicle Left Rear Z Displacement			
CURNO	Type	SAE Class	Units
096	IN2	180	CM
Max	Time	Min	Time
0.0	6.1	-13.7	200.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

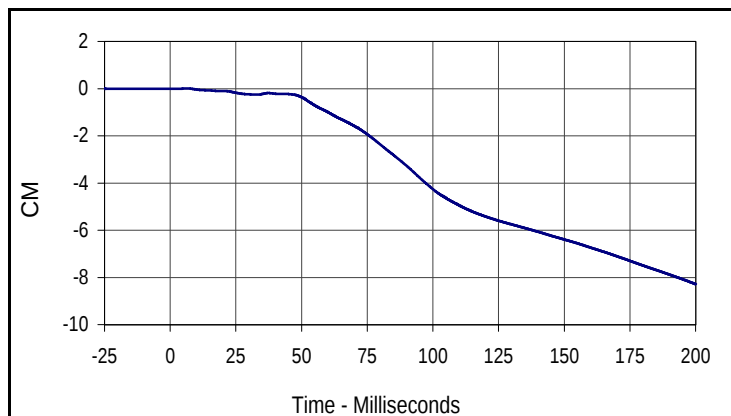
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Vehicle Right Rear Z			
CURNO	Type	SAE Class	Units
097	FIL	60	G's
Max	Time	Min	Time
6.6	33.4	-12.4	48.7



Curve Description			
Vehicle Right Rear Z Velocity			
CURNO	Type	SAE Class	Units
097	IN1	180	KMH
Max	Time	Min	Time
0.9	34.9	-3.8	93.7



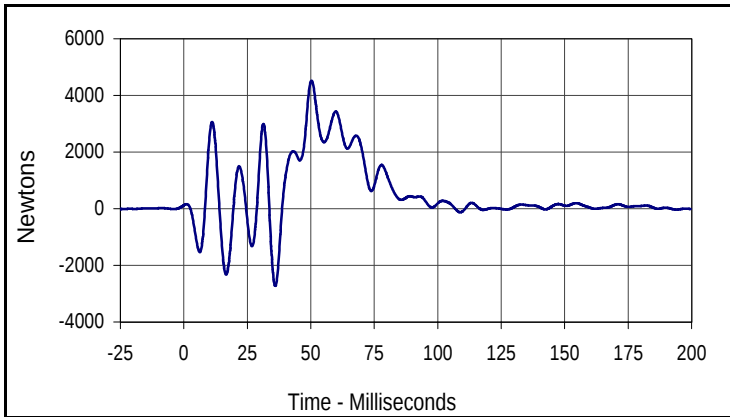
Curve Description			
Vehicle Right Rear Z Displacement			
CURNO	Type	SAE Class	Units
097	IN2	180	CM
Max	Time	Min	Time
0.0	6.3	-8.3	200.0

APPENDIX C

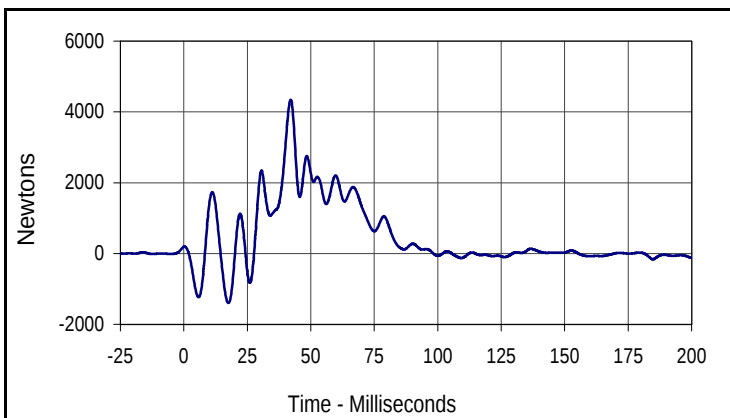
LOAD CELL BARRIER DATA PLOTS

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

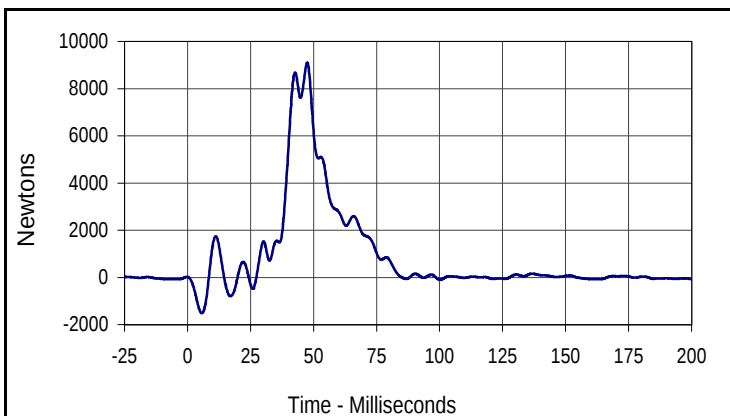
Test Date: 12/17/03
 NHTSA No.: M45400



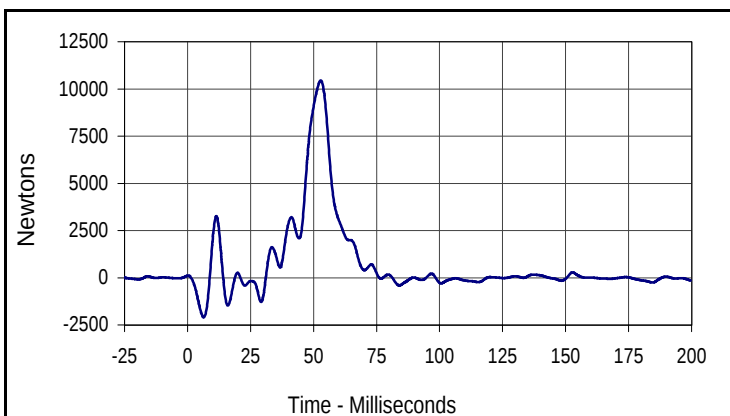
Curve Description			
Barrier Force A1			
CURNO	Type	SAE Class	Units
098	FIL	60	Newtons
Max	Time	Min	Time
4525.4	50.3	-2723.3	36.0



Curve Description			
Barrier Force B1			
CURNO	Type	SAE Class	Units
107	FIL	60	Newtons
Max	Time	Min	Time
4340.5	42.1	-1398.8	17.5



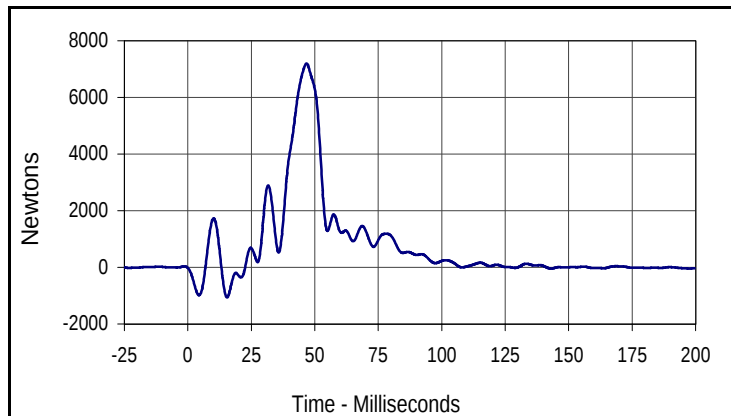
Curve Description			
Barrier Force C1			
CURNO	Type	SAE Class	Units
116	FIL	60	Newtons
Max	Time	Min	Time
9097.0	47.5	-1518.5	5.6



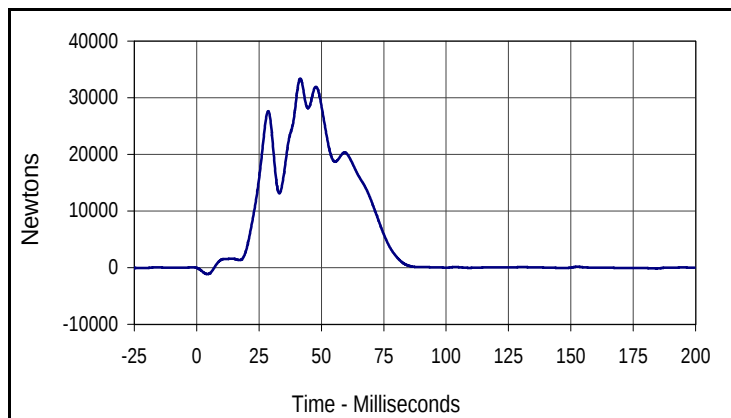
Curve Description			
Barrier Force D1			
CURNO	Type	SAE Class	Units
125	FIL	60	Newtons
Max	Time	Min	Time
10456.1	52.9	-2092.1	6.4

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

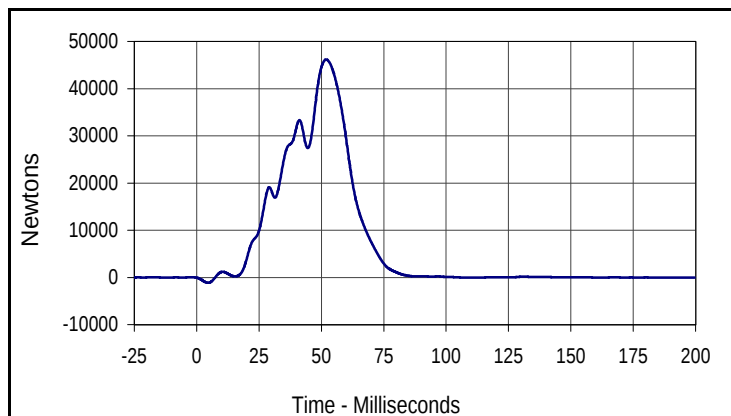
Test Date: 12/17/03
 NHTSA No.: M45400



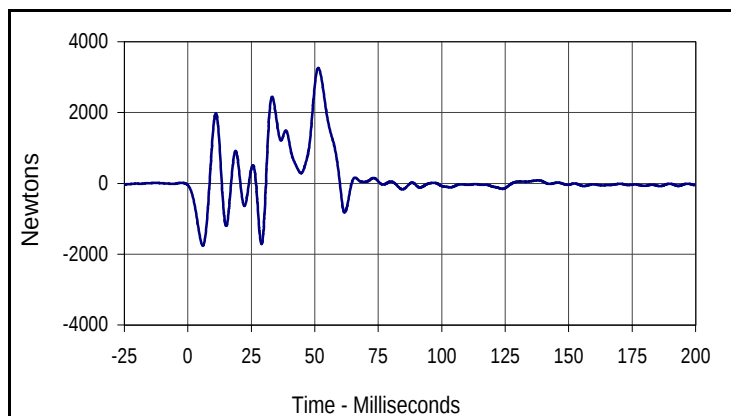
Curve Description			
Barrier Force A2			
CURNO	Type	SAE Class	Units
099	FIL	60	Newtons
Max	Time	Min	Time
7202.8	46.8	-1065.9	15.4



Curve Description			
Barrier Force B2			
CURNO	Type	SAE Class	Units
108	FIL	60	Newtons
Max	Time	Min	Time
33380.2	41.5	-1130.1	4.3



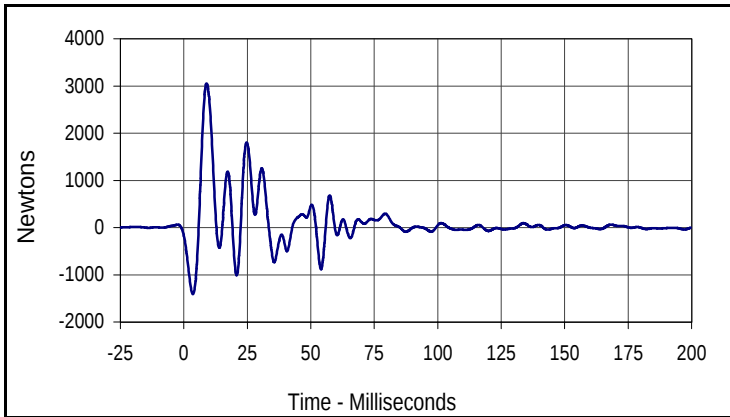
Curve Description			
Barrier Force C2			
CURNO	Type	SAE Class	Units
117	FIL	60	Newtons
Max	Time	Min	Time
46158.6	51.9	-1128.3	4.6



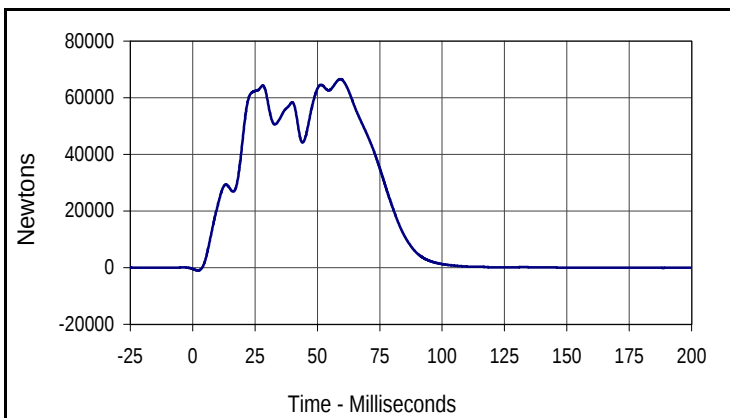
Curve Description			
Barrier Force D2			
CURNO	Type	SAE Class	Units
126	FIL	60	Newtons
Max	Time	Min	Time
3255.0	51.4	-1756.0	5.9

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

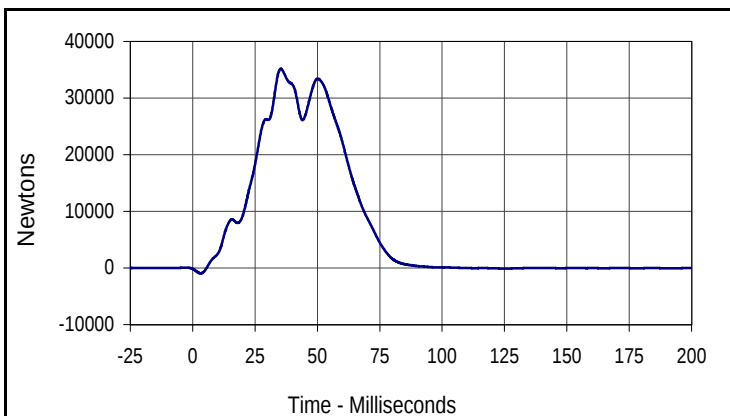
Test Date: 12/17/03
 NHTSA No.: M45400



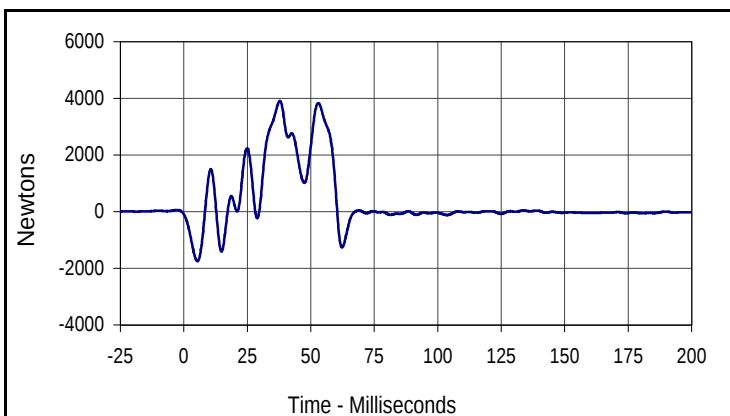
Curve Description			
Barrier Force A3			
CURNO	Type	SAE Class	Units
100	FIL	60	Newtons
Max	Time	Min	Time
3051.6	9.0	-1410.6	3.5



Curve Description			
Barrier Force B3			
CURNO	Type	SAE Class	Units
109	FIL	60	Newtons
Max	Time	Min	Time
66550.9	59.2	-997.6	2.1



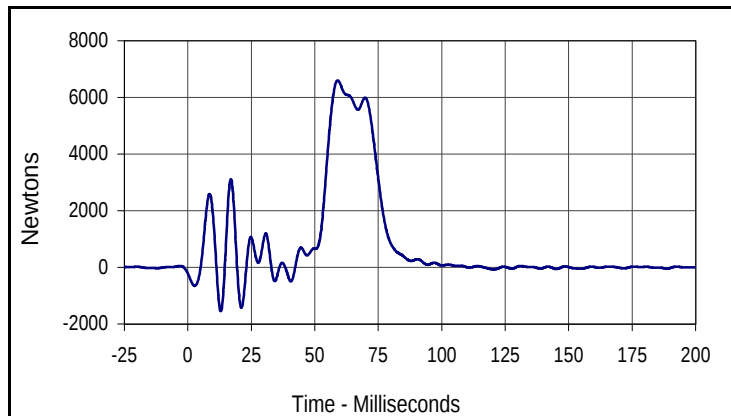
Curve Description			
Barrier Force C3			
CURNO	Type	SAE Class	Units
118	FIL	60	Newtons
Max	Time	Min	Time
35182.3	35.3	-945.2	3.2



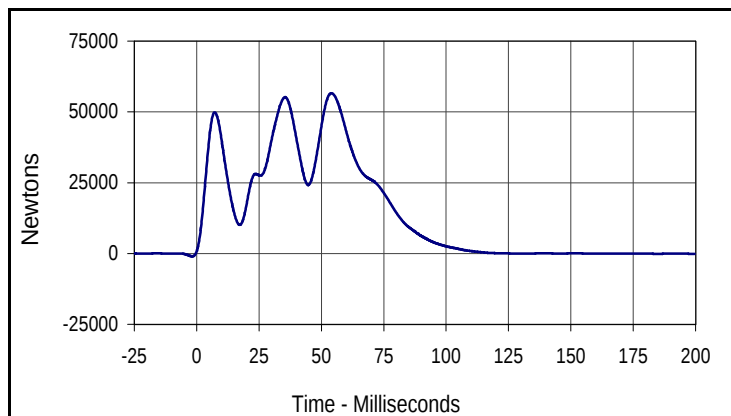
Curve Description			
Barrier Force D3			
CURNO	Type	SAE Class	Units
127	FIL	60	Newtons
Max	Time	Min	Time
3914.0	37.8	-1755.7	5.3

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

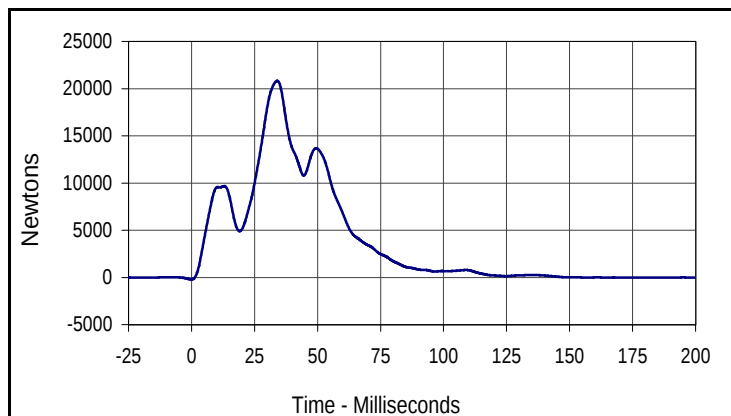
Test Date: 12/17/03
 NHTSA No.: M45400



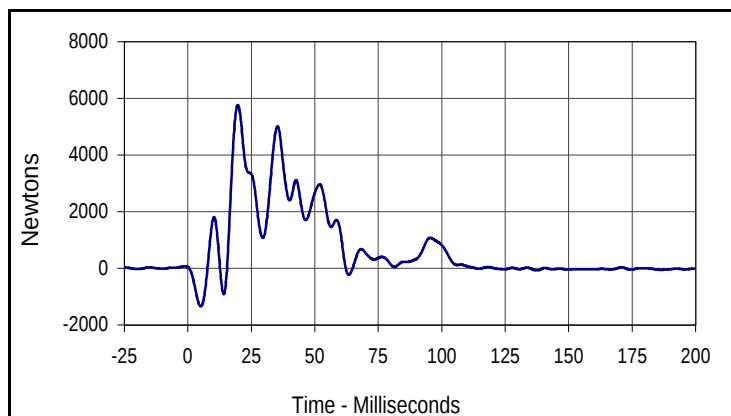
Curve Description			
Barrier Force A4			
CURNO	Type	SAE Class	Units
101	FIL	60	Newtons
Max	Time	Min	Time
6600.4	59.0	-1548.2	13.0



Curve Description			
Barrier Force B4			
CURNO	Type	SAE Class	Units
110	FIL	60	Newtons
Max	Time	Min	Time
56630.2	54.0	-187.2	184.8



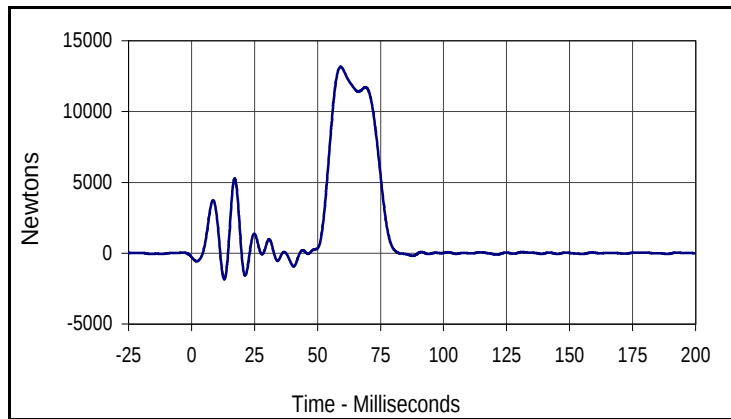
Curve Description			
Barrier Force C4			
CURNO	Type	SAE Class	Units
119	FIL	60	Newtons
Max	Time	Min	Time
20818.0	34.0	-208.2	0.0



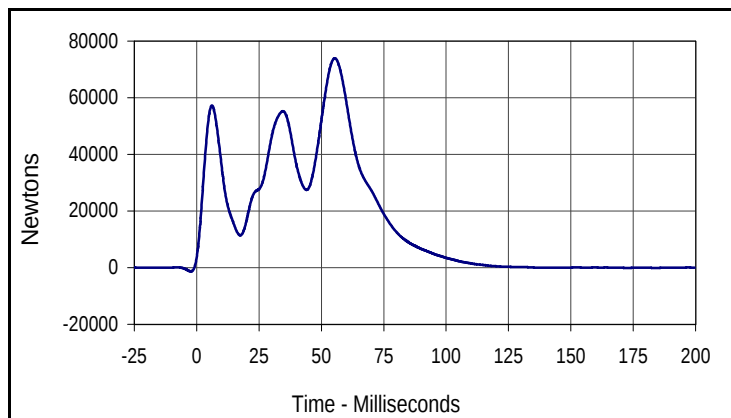
Curve Description			
Barrier Force D4			
CURNO	Type	SAE Class	Units
128	FIL	60	Newtons
Max	Time	Min	Time
5763.0	19.7	-1345.6	5.1

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

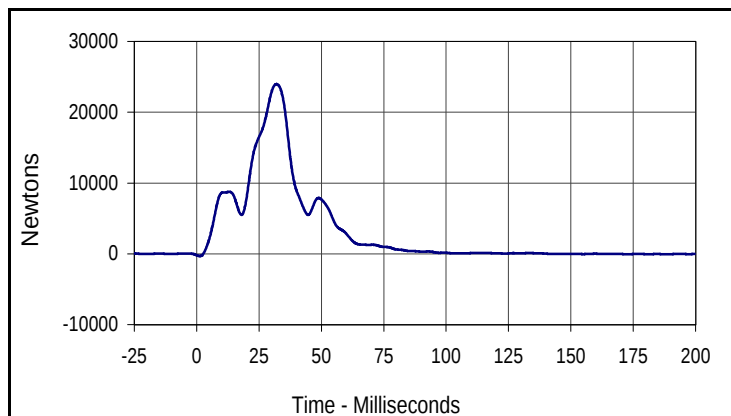
Test Date: 12/17/03
 NHTSA No.: M45400



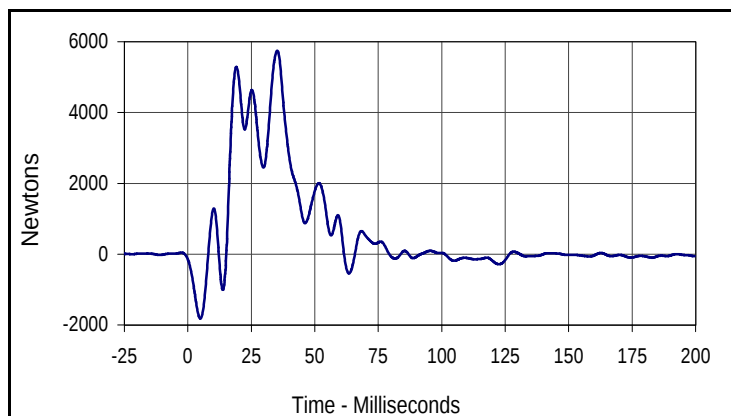
Curve Description			
Barrier Force A5			
CURNO	Type	SAE Class	Units
102	FIL	60	Newtons
Max	Time	Min	Time
13161.6	59.2	-1839.5	13.0



Curve Description			
Barrier Force B5			
CURNO	Type	SAE Class	Units
111	FIL	60	Newtons
Max	Time	Min	Time
73941.6	55.4	-82.0	172.7



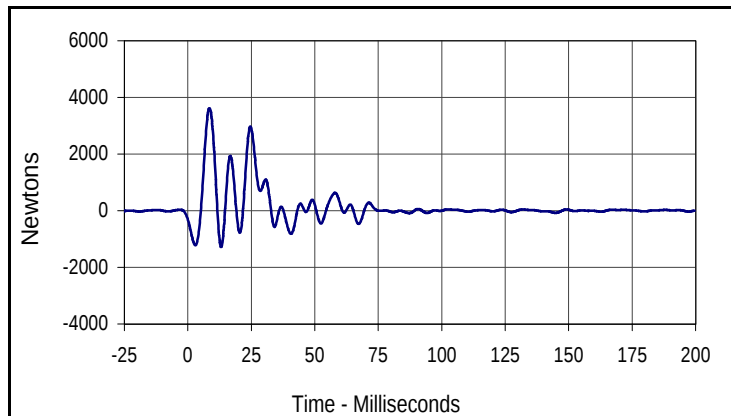
Curve Description			
Barrier Force C5			
CURNO	Type	SAE Class	Units
120	FIL	60	Newtons
Max	Time	Min	Time
23968.6	32.1	-317.7	1.2



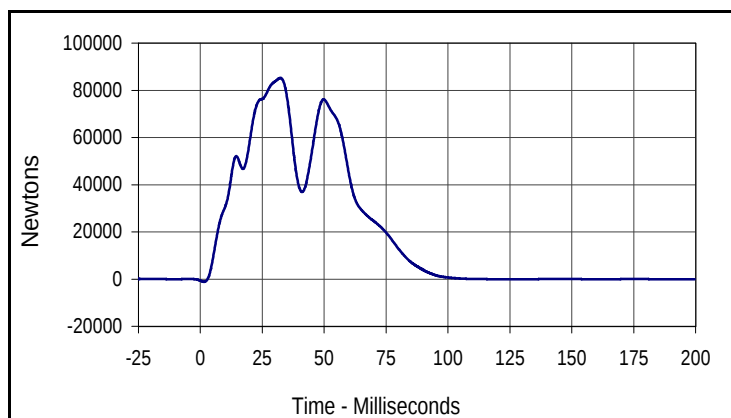
Curve Description			
Barrier Force D5			
CURNO	Type	SAE Class	Units
129	FIL	60	Newtons
Max	Time	Min	Time
5748.7	35.2	-1814.8	4.9

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

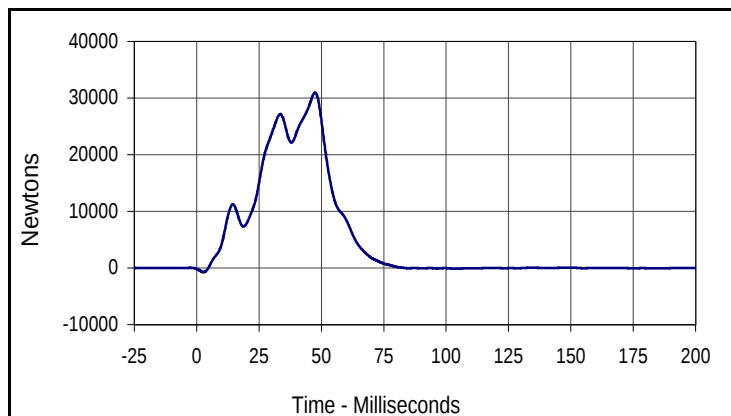
Test Date: 12/17/03
 NHTSA No.: M45400



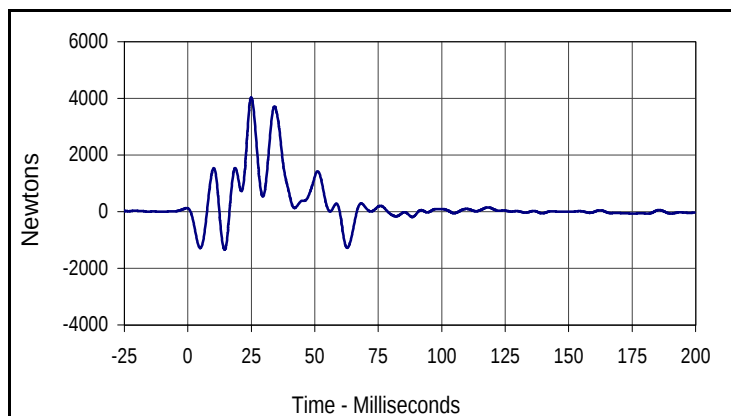
Curve Description			
Barrier Force A6			
CURNO	Type	SAE Class	Units
103	FIL	60	Newtons
Max	Time	Min	Time
3620.1	8.5	-1279.1	13.1



Curve Description			
Barrier Force B6			
CURNO	Type	SAE Class	Units
112	FIL	60	Newtons
Max	Time	Min	Time
85195.4	32.3	-1116.1	1.5



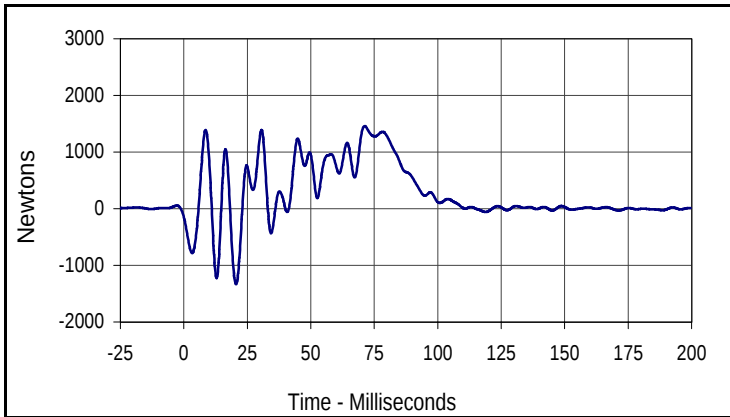
Curve Description			
Barrier Force C6			
CURNO	Type	SAE Class	Units
121	FIL	60	Newtons
Max	Time	Min	Time
30956.5	47.4	-726.3	2.8



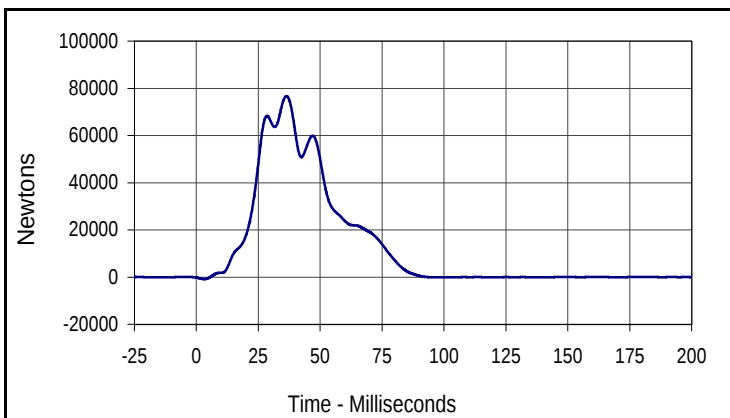
Curve Description			
Barrier Force D6			
CURNO	Type	SAE Class	Units
130	FIL	60	Newtons
Max	Time	Min	Time
4032.3	25.0	-1345.7	14.5

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

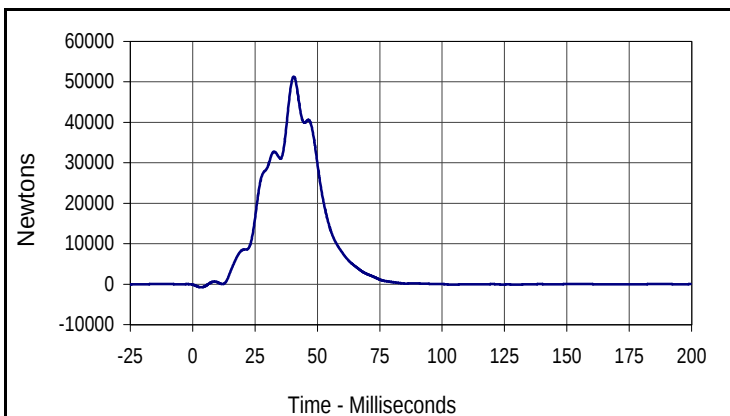
Test Date: 12/17/03
 NHTSA No.: M45400



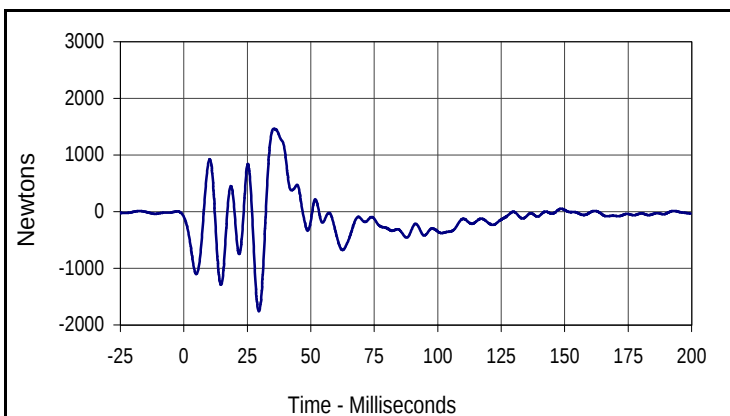
Curve Description			
Barrier Force A7			
CURNO	Type	SAE Class	Units
104	FIL	60	Newtons
Max	Time	Min	Time
1459.7	71.2	-1334.3	20.6



Curve Description			
Barrier Force B7			
CURNO	Type	SAE Class	Units
113	FIL	60	Newtons
Max	Time	Min	Time
76699.4	36.4	-834.0	3.2



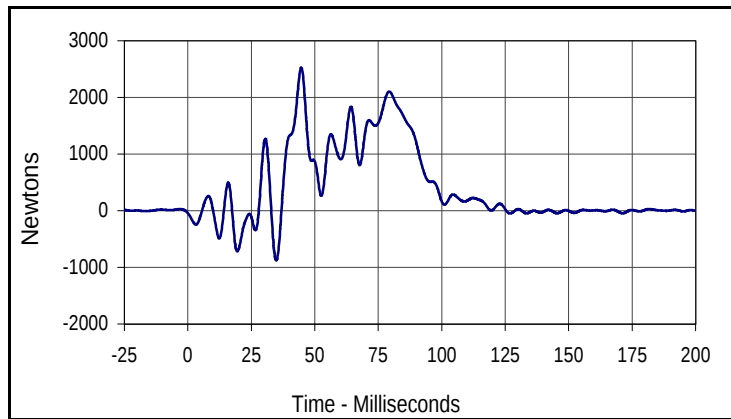
Curve Description			
Barrier Force C7			
CURNO	Type	SAE Class	Units
122	FIL	60	Newtons
Max	Time	Min	Time
51316.0	40.5	-783.2	3.4



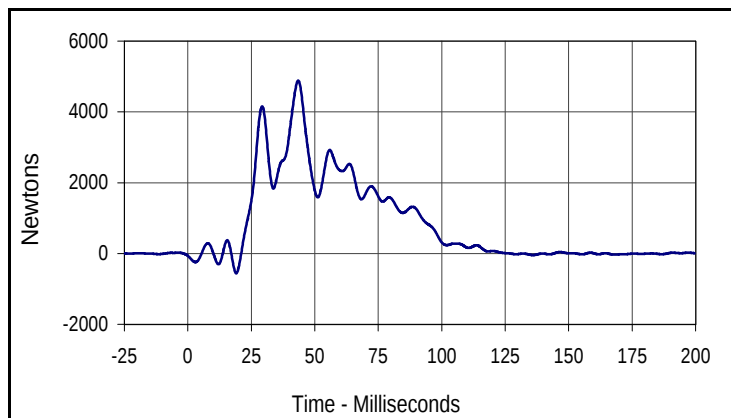
Curve Description			
Barrier Force D7			
CURNO	Type	SAE Class	Units
131	FIL	60	Newtons
Max	Time	Min	Time
1464.2	35.4	-1755.9	29.5

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

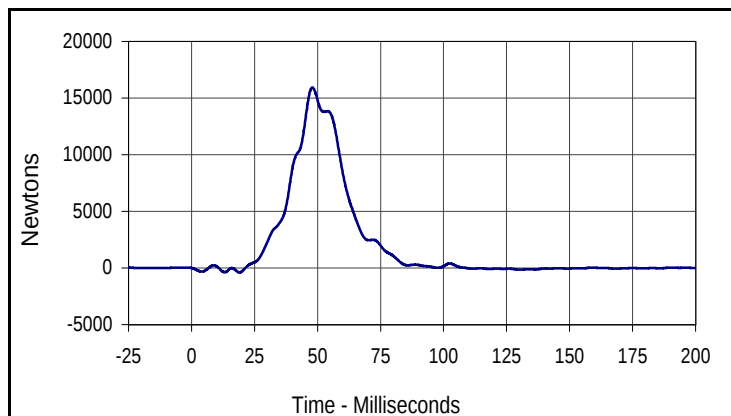
Test Date: 12/17/03
 NHTSA No.: M45400



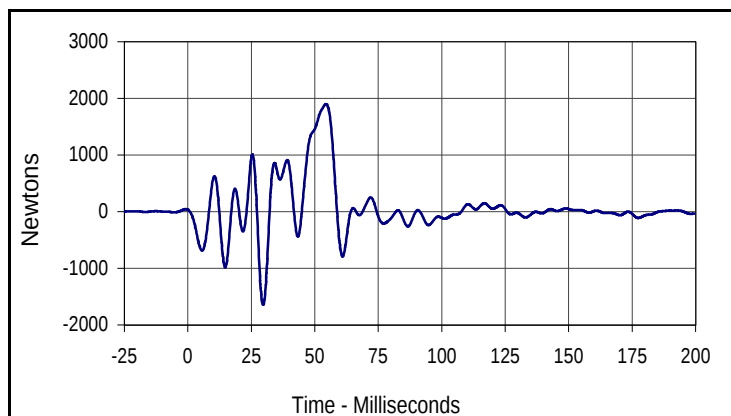
Curve Description			
Barrier Force A8			
CURNO	Type	SAE Class	Units
105	FIL	60	Newtons
Max	Time	Min	Time
2523.7	44.7	-874.7	34.8



Curve Description			
Barrier Force B8			
CURNO	Type	SAE Class	Units
114	FIL	60	Newtons
Max	Time	Min	Time
4887.2	43.5	-559.1	19.1



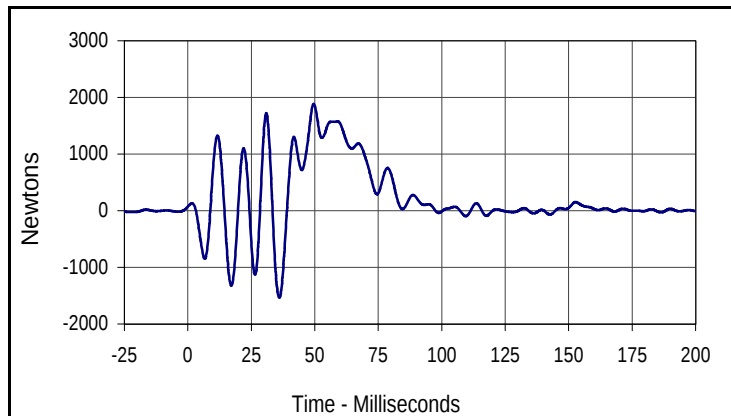
Curve Description			
Barrier Force C8			
CURNO	Type	SAE Class	Units
123	FIL	60	Newtons
Max	Time	Min	Time
15928.6	47.9	-399.8	19.0



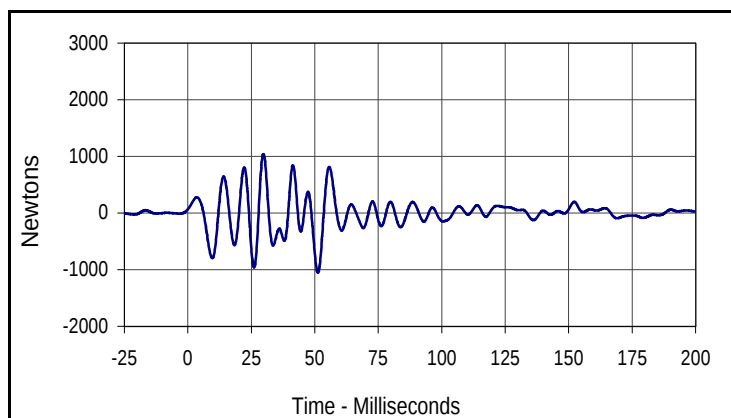
Curve Description			
Barrier Force D8			
CURNO	Type	SAE Class	Units
132	FIL	60	Newtons
Max	Time	Min	Time
1896.4	54.3	-1644.8	29.6

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

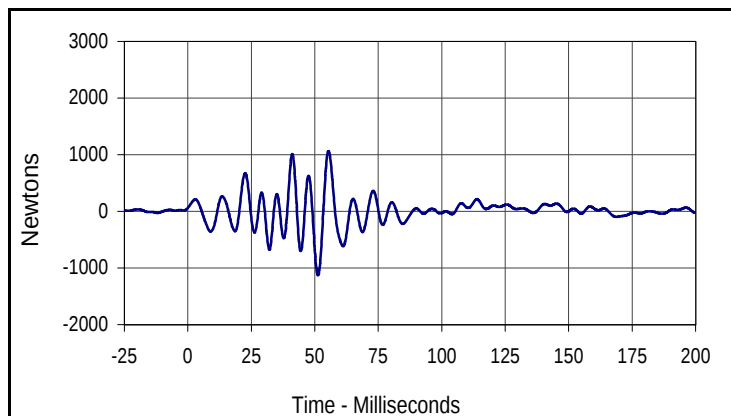
Test Date: 12/17/03
 NHTSA No.: M45400



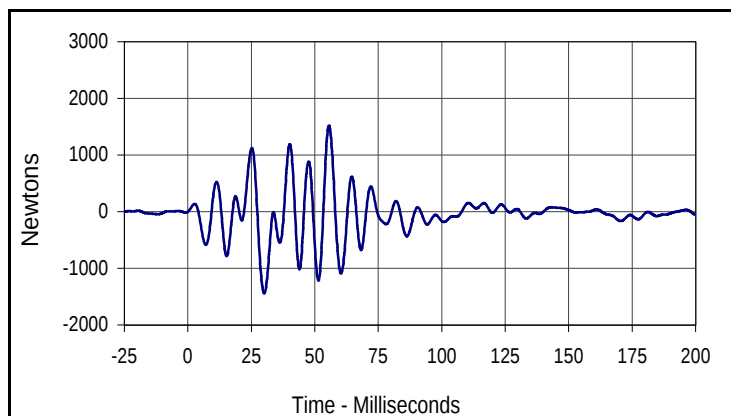
Curve Description			
Barrier Force A9			
CURNO	Type	SAE Class	Units
106	FIL	60	Newtons
Max	Time	Min	Time
1885.2	49.6	-1536.4	36.0



Curve Description			
Barrier Force B9			
CURNO	Type	SAE Class	Units
115	FIL	60	Newtons
Max	Time	Min	Time
1038.9	29.7	-1055.1	51.2



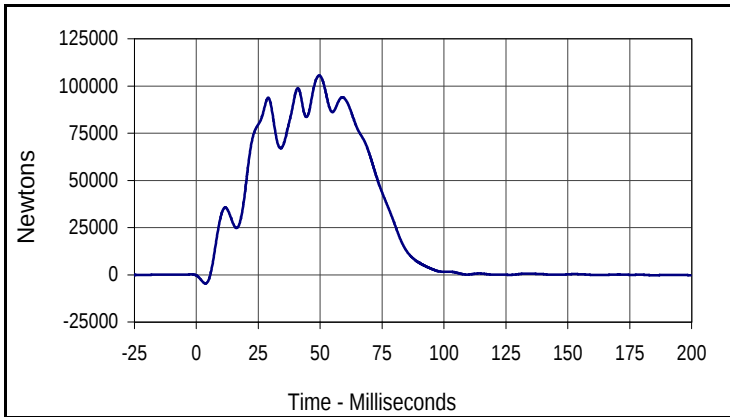
Curve Description			
Barrier Force C9			
CURNO	Type	SAE Class	Units
124	FIL	60	Newtons
Max	Time	Min	Time
1064.3	55.4	-1128.4	51.3



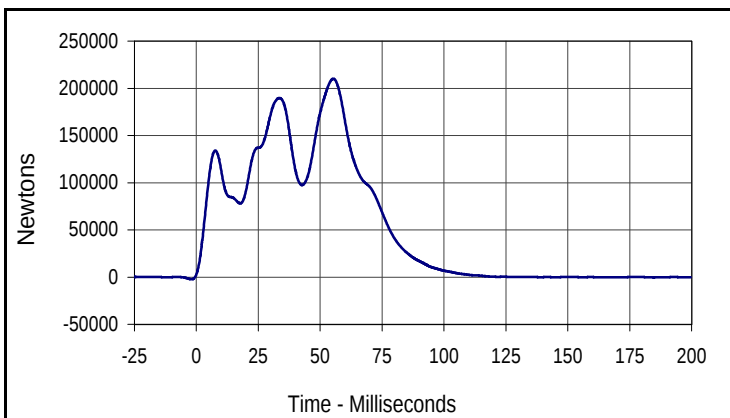
Curve Description			
Barrier Force D9			
CURNO	Type	SAE Class	Units
133	FIL	60	Newtons
Max	Time	Min	Time
1516.2	55.6	-1438.8	30.1

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

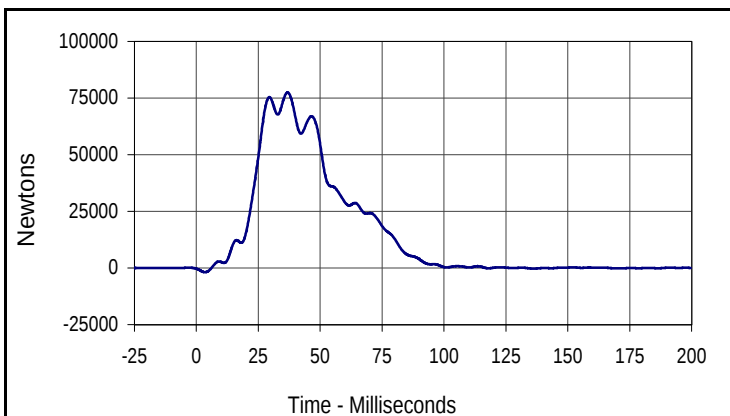
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Barrier Force Sum Group 1			
CURNO	Type	SAE Class	Units
001	SUM	60	Newtons
Max	Time	Min	Time
105523.9	49.6	-4596.7	3.7



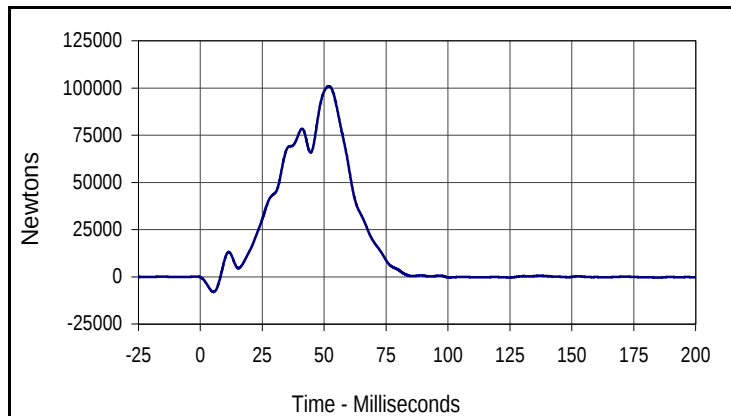
Curve Description			
Barrier Force Sum Group 2			
CURNO	Type	SAE Class	Units
002	SUM	60	Newtons
Max	Time	Min	Time
210089.2	55.3	-343.8	184.7



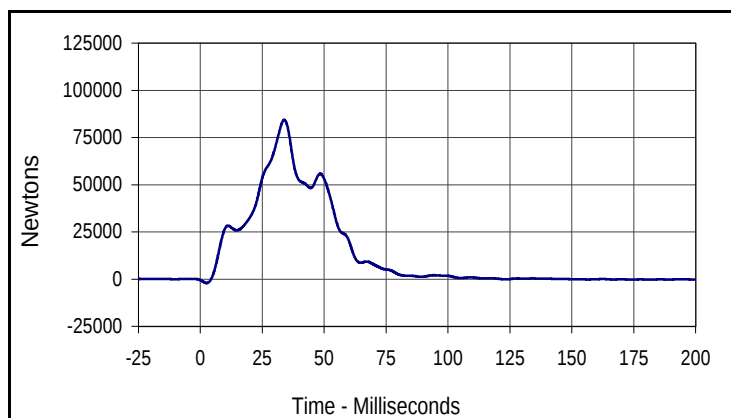
Curve Description			
Barrier Force Sum Group 3			
CURNO	Type	SAE Class	Units
003	SUM	60	Newtons
Max	Time	Min	Time
77473.7	36.8	-1861.2	3.5

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

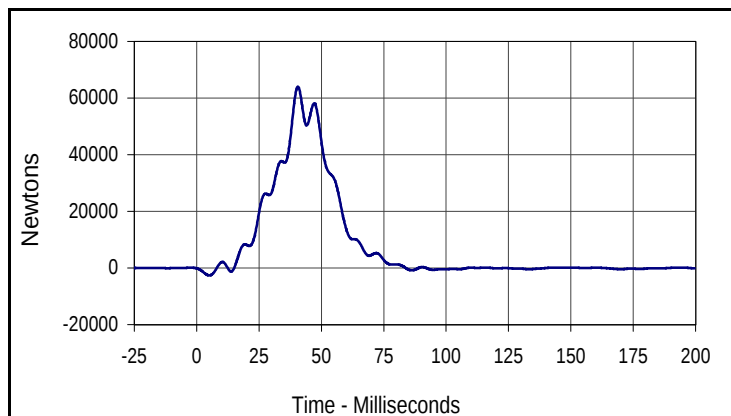
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Barrier Force Sum Group 4			
CURNO	Type	SAE Class	Units
004	SUM	60	Newtons
Max	Time	Min	Time
100941.6	51.9	-7979.0	5.3



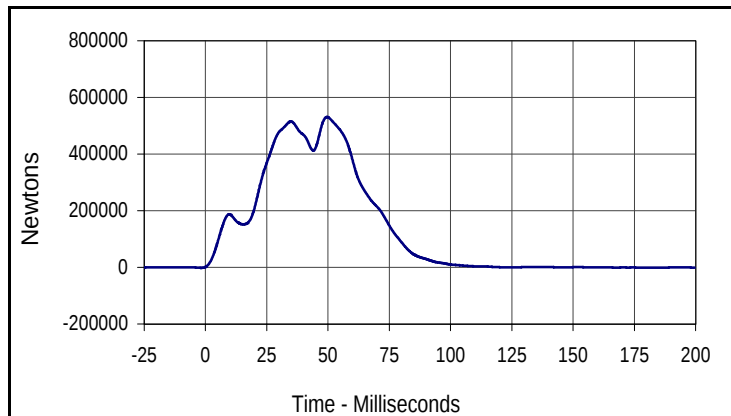
Curve Description			
Barrier Force Sum Group 5			
CURNO	Type	SAE Class	Units
005	SUM	60	Newtons
Max	Time	Min	Time
84347.2	33.9	-2074.1	2.6



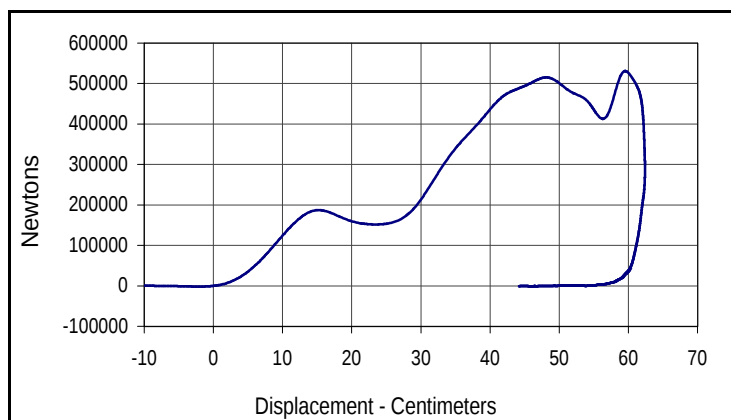
Curve Description			
Barrier Force Sum Group 6			
CURNO	Type	SAE Class	Units
006	SUM	60	Newtons
Max	Time	Min	Time
64051.4	40.6	-2655.0	5.1

Test Vehicle: 2004 Mazda 3
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Barrier Force Total Sum			
CURNO	Type	SAE Class	Units
007	SUM	60	Newtons
Max	Time	Min	Time
530881.1	49.6	-1456.4	184.8



Curve Description			
Barrier Force Total Sum vs. Displ.			
CURNO	Type	SAE Class	Units
001	XVY	60	Newtons
Max	CM	Min	CM
530881.1	59.6	-1456.4	46.0

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

Location	Units	Max	Time	Min	Time
Barrier Force A1	Newtons	4525.4	50.3	-2723.3	36.0
Barrier Force A2	Newtons	7202.8	46.8	-1065.9	15.4
Barrier Force A3	Newtons	3051.6	9.0	-1410.6	3.5
Barrier Force A4	Newtons	6600.4	59.0	-1548.2	13.0
Barrier Force A5	Newtons	13161.6	59.2	-1839.5	13.0
Barrier Force A6	Newtons	3620.1	8.5	-1279.1	13.1
Barrier Force A7	Newtons	1459.7	71.2	-1334.3	20.6
Barrier Force A8	Newtons	2523.7	44.7	-874.7	34.8
Barrier Force A9	Newtons	1885.2	49.6	-1536.4	36.0
Barrier Force B1	Newtons	4340.5	42.1	-1398.8	17.5
Barrier Force B2	Newtons	33380.2	41.5	-1130.1	4.3
Barrier Force B3	Newtons	66550.9	59.2	-997.6	2.1
Barrier Force B4	Newtons	56630.2	54.0	-187.2	184.8
Barrier Force B5	Newtons	73941.6	55.4	-82.0	172.7
Barrier Force B6	Newtons	85195.4	32.3	-1116.1	1.5
Barrier Force B7	Newtons	76699.4	36.4	-834.0	3.2
Barrier Force B8	Newtons	4887.2	43.5	-559.1	19.1
Barrier Force B9	Newtons	1038.9	29.7	-1055.1	51.2
Barrier Force C1	Newtons	9097.0	47.5	-1518.5	5.6
Barrier Force C2	Newtons	46158.6	51.9	-1128.3	4.6
Barrier Force C3	Newtons	35182.3	35.3	-945.2	3.2
Barrier Force C4	Newtons	20818.0	34.0	-208.2	0.0
Barrier Force C5	Newtons	23968.6	32.1	-317.7	1.2
Barrier Force C6	Newtons	30956.5	47.4	-726.3	2.8
Barrier Force C7	Newtons	51316.0	40.5	-783.2	3.4
Barrier Force C8	Newtons	15928.6	47.9	-399.8	19.0
Barrier Force C9	Newtons	1064.3	55.4	-1128.4	51.3
Barrier Force D1	Newtons	10456.1	52.9	-2092.1	6.4
Barrier Force D2	Newtons	3255.0	51.4	-1756.0	5.9
Barrier Force D3	Newtons	3914.0	37.8	-1755.7	5.3
Barrier Force D4	Newtons	5763.0	19.7	-1345.6	5.1
Barrier Force D5	Newtons	5748.7	35.2	-1814.8	4.9
Barrier Force D6	Newtons	4032.3	25.0	-1345.7	14.5
Barrier Force D7	Newtons	1464.2	35.4	-1755.9	29.5
Barrier Force D8	Newtons	1896.4	54.3	-1644.8	29.6
Barrier Force D9	Newtons	1516.2	55.6	-1438.8	30.1
Barrier Force Sum Group 1	Newtons	105523.9	49.6	-4596.7	3.7
Barrier Force Sum Group 2	Newtons	210089.2	55.3	-343.8	184.7
Barrier Force Sum Group 3	Newtons	77473.7	36.8	-1861.2	3.5
Barrier Force Sum Group 4	Newtons	100941.6	51.9	-7979.0	5.3
Barrier Force Sum Group 5	Newtons	84347.2	33.9	-2074.1	2.6
Barrier Force Sum Group 6	Newtons	64051.4	40.6	-2655.0	5.1
Barrier Force Total Sum	Newtons	530881.1	49.6	-1456.4	184.8

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
12/17/03
2004 Mazda 3 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	KEAC027	Accel.,1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	KEAC031	Accel.,1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	KEAC032	Accel.,1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	KEAC026	Accel.,1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	KEAC023	Accel.,1/2 bridge	Endevco	7264-200	G
17	CHEST , REDUNDANT	Y	KEAC022	Accel.,1/2 bridge	Endevco	7264-200	G
18	CHEST , REDUNDANT	Z	KEAC024	Accel.,1/2 bridge	Endevco	7264-200	G
19	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	KEAC019	Accel.,1/2 bridge	Endevco	7264-200	G
21	PELVIS, PRIMARY	Y	KEAC020	Accel.,1/2 bridge	Endevco	7264-200	G
22	PELVIS, PRIMARY	Z	KEAC021	Accel.,1/2 bridge	Endevco	7264-200	G
23	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
12/17/03
2004 Mazda 3 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT, AFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT, AFT	Z	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT, FORE	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT, AFT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT, AFT	Z	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT, FORE	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	BL134	Load cell, Seat belt	FGP	FN4060	N
42	SHOULDER BELT FORCE	X	BL135	Load cell, Seat belt	FGP	FN4060	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
12/17/03
2004 Mazda 3 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
63	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
12/17/03
2004 Mazda 3 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT, AFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT, AFT	Z	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT, FORE	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT, AFT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT, AFT	Z	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT, FORE	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	BL168	Load cell, Seat belt	First Tech	IF-964	N
86	SHOULDER BELT FORCE	X	BL169	Load cell, Seat belt	First Tech	IF-964	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
12/17/03
2004 Mazda 3 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR	X	KEVA002	Accel., Pre-Amp	I.C.S/Karco	3031-500	G
90	RIGHT REAR	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	ENGINE TOP	X	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	ENGINE BOTTOM	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	LEFT BRAKE CALIPER	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT BRAKE CALIPER	X	KEVA012	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	INSTRUMENT PANEL	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	LEFT REAR	Z	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
97	RIGHT REAR	Z	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/17/03
2004 Mazda 3 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
98	BARRIER FORCE A1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
99	BARRIER FORCE A2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
100	BARRIER FORCE A3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
101	BARRIER FORCE A4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
102	BARRIER FORCE A5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
103	BARRIER FORCE A6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
104	BARRIER FORCE A7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
105	BARRIER FORCE A8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
106	BARRIER FORCE A9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
107	BARRIER FORCE B1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
108	BARRIER FORCE B2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
109	BARRIER FORCE B3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
110	BARRIER FORCE B4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
111	BARRIER FORCE B5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
112	BARRIER FORCE B6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
113	BARRIER FORCE B7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
114	BARRIER FORCE B8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
115	BARRIER FORCE B9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/17/03
2004 Mazda 3 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
116	BARRIER FORCE C1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
117	BARRIER FORCE C2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
118	BARRIER FORCE C3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
119	BARRIER FORCE C4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
120	BARRIER FORCE C5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
121	BARRIER FORCE C6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
122	BARRIER FORCE C7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
123	BARRIER FORCE C8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
124	BARRIER FORCE C9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
125	BARRIER FORCE D1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
126	BARRIER FORCE D2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
127	BARRIER FORCE D3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
128	BARRIER FORCE D4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
129	BARRIER FORCE D5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
130	BARRIER FORCE D6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
131	BARRIER FORCE D7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
132	BARRIER FORCE D8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
133	BARRIER FORCE D9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Nine Accelerometer Array Head
12/17/03
2004 Mazda 3 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
160	DRIVER X-ARM	Y	GPAC016	Accel., 1/2 bridge	Endevco	7264-2000	G
161	DRIVER X-ARM	Z	GPAC015	Accel., 1/2 bridge	Endevco	7264-2000	G
162	DRIVER Y-ARM	X	GPAC004	Accel., 1/2 bridge	Endevco	7264-2000	G
163	DRIVER Y-ARM	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
164	DRIVER Z-ARM	X	GPAC006	Accel., 1/2 bridge	Endevco	7264-2000	G
165	DRIVER Z-ARM	Y	GPAC007	Accel., 1/2 bridge	Endevco	7264-2000	G
166	PASS. X-ARM	Y	GPAC012	Accel., 1/2 bridge	Endevco	7264-2000	G
167	PASS. X-ARM	Z	GPAC001	Accel., 1/2 bridge	Endevco	7264-2000	G
168	PASS. Y-ARM	X	GPAC036	Accel., 1/2 bridge	Endevco	7264-2000	G
169	PASS. Y-ARM	Z	GPAC014	Accel., 1/2 bridge	Endevco	7264-2000	G
170	PASS. Z-ARM	X	GPAC030	Accel., 1/2 bridge	Endevco	7264-2000	G
171	PASS. Z-ARM	Y	GPAC037	Accel., 1/2 bridge	Endevco	7264-2000	G

APPENDIX E

DUMMY CALIBRATION DATA



Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Impact Test

ATD Serial No.: 034

Location: Left Knee

Test I.D.: LK11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5634	Pass
Overall Test Results				Pass

ATD Serial No.: 034

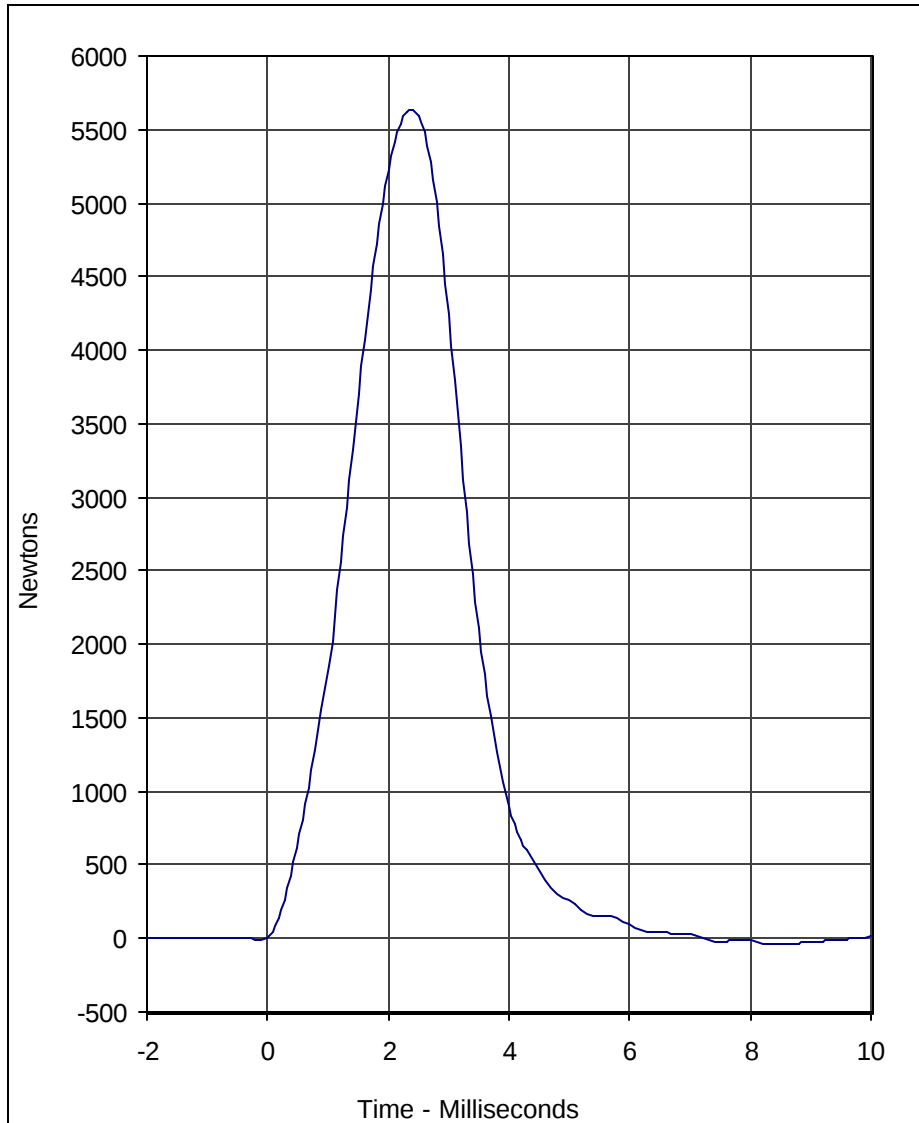
Location: Right Knee

Test I.D.: RK11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	N	4715 to 5782	4827	Pass
Overall Test Results				Pass

Laboratory Technician

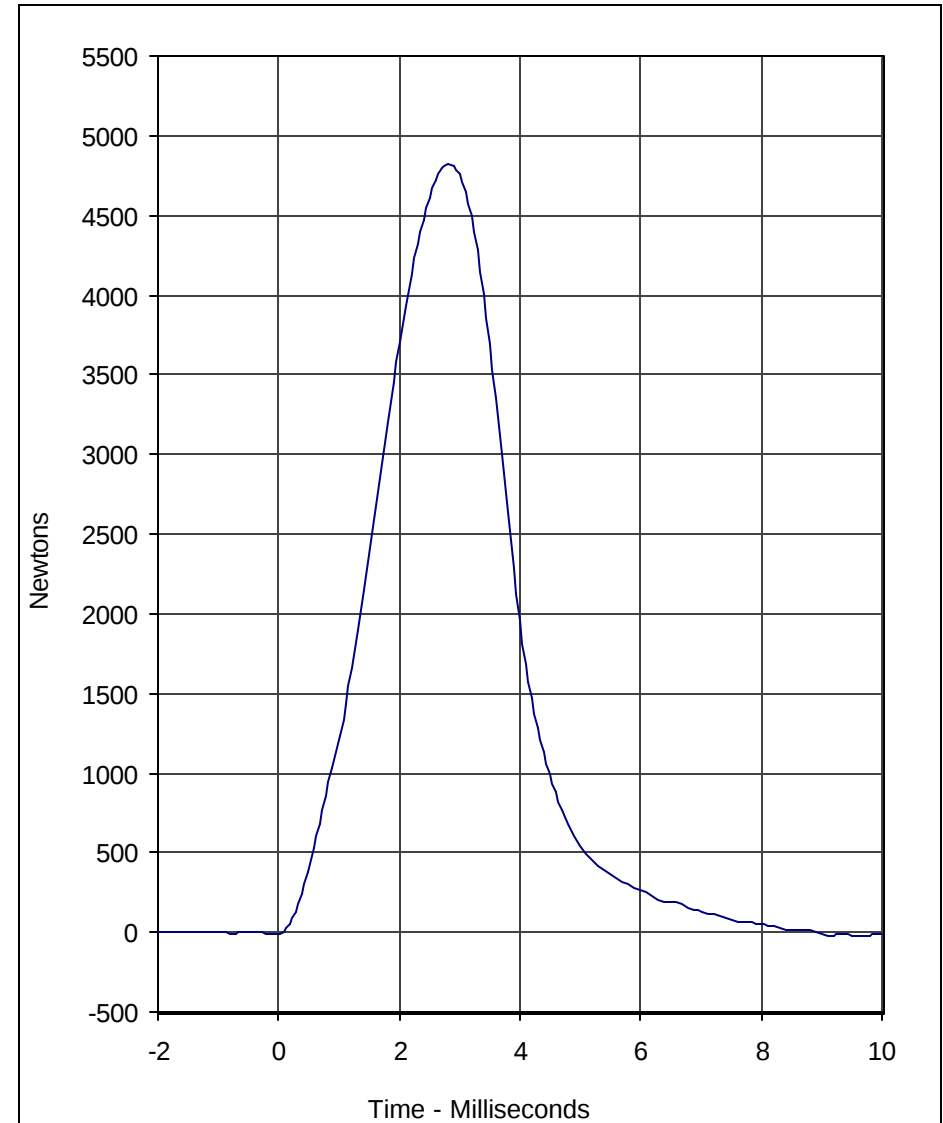
December 10, 2003
Test Date



Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Left Knee	LK11A	001	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5633.9	2.4	-39.0	8.6	600

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 Test Date: 12/10/03



Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Right Knee	RK11A	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	4827.2	2.8	-27.7	9.6	600

A.T.D. Serial No.: 034





Calibration Data Sheet

Hybrid III 50th Percentile Male

Head Drop Test

ATD Serial No.: 034

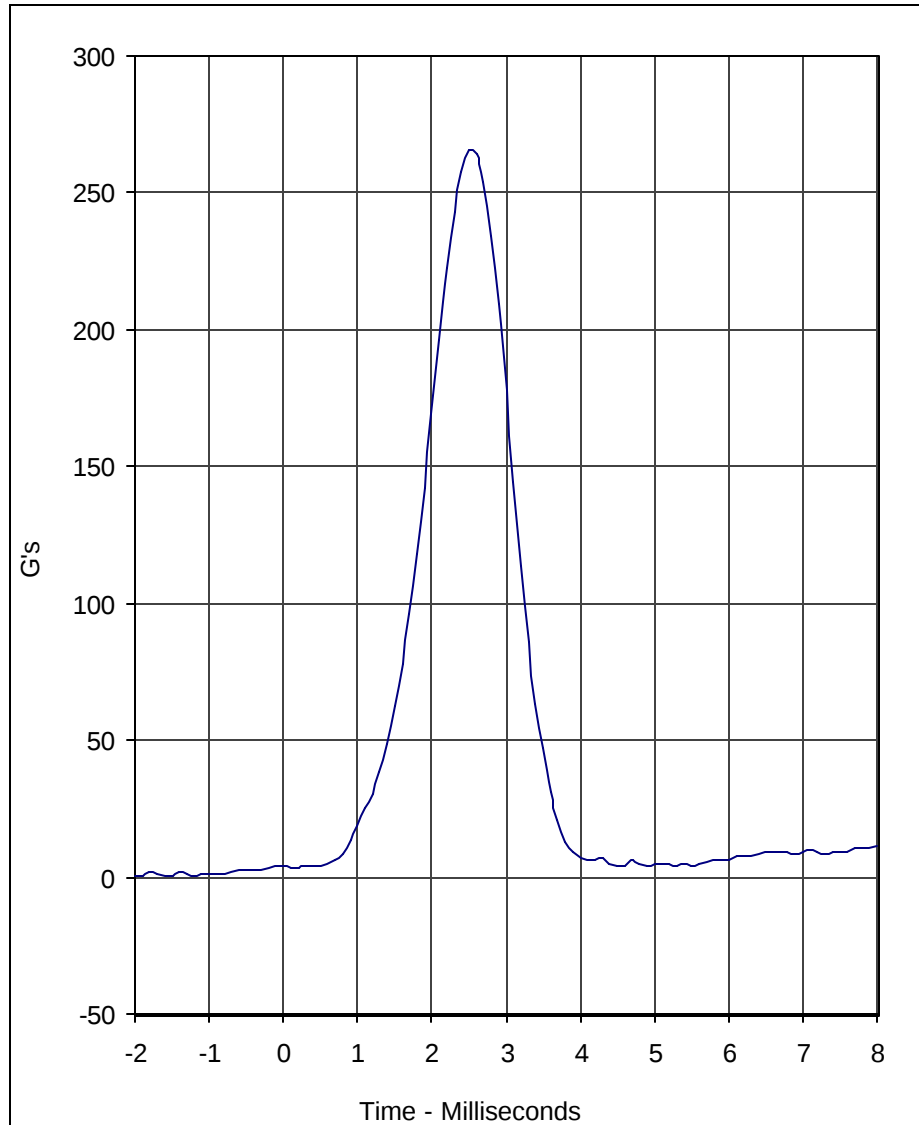
Test I.D.: HD12A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	266.0	Pass
Peak Lateral Acceleration	G's	≤15.0	3.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

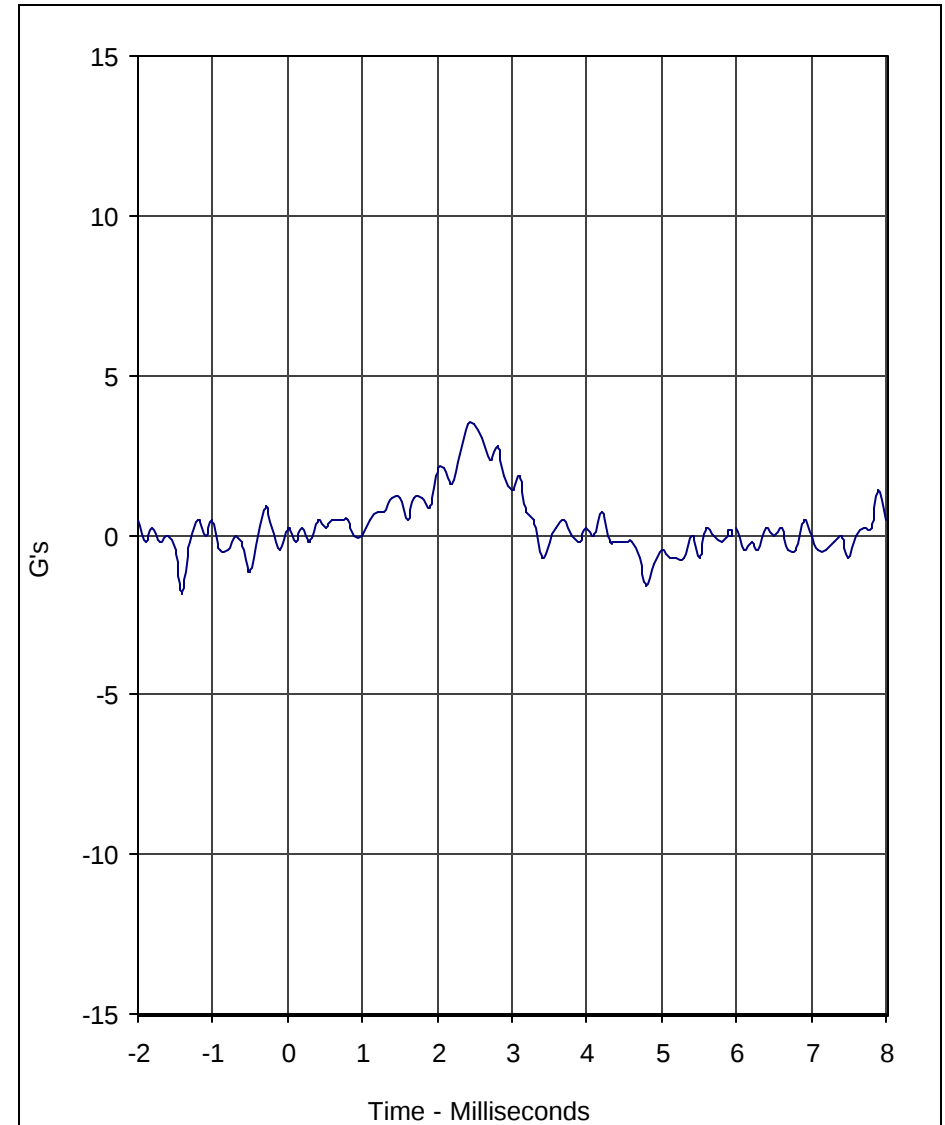
December 10, 2003

Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	266.0	2.5	0.4	-1.9	1000

Test Program: Hybrid III 50th Percentile Male Head Drop Test
 Test Date: 12/10/03



Curve Description				CURNO	Type
Head Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	3.5	2.4	-1.9	-1.4	1000

A.T.D. Serial No.: 034
 Test I.D.: HD12A





Calibration Data Sheet

Hybrid III 50th Percentile Male

Thorax Impact Test

ATD Serial No.: 034

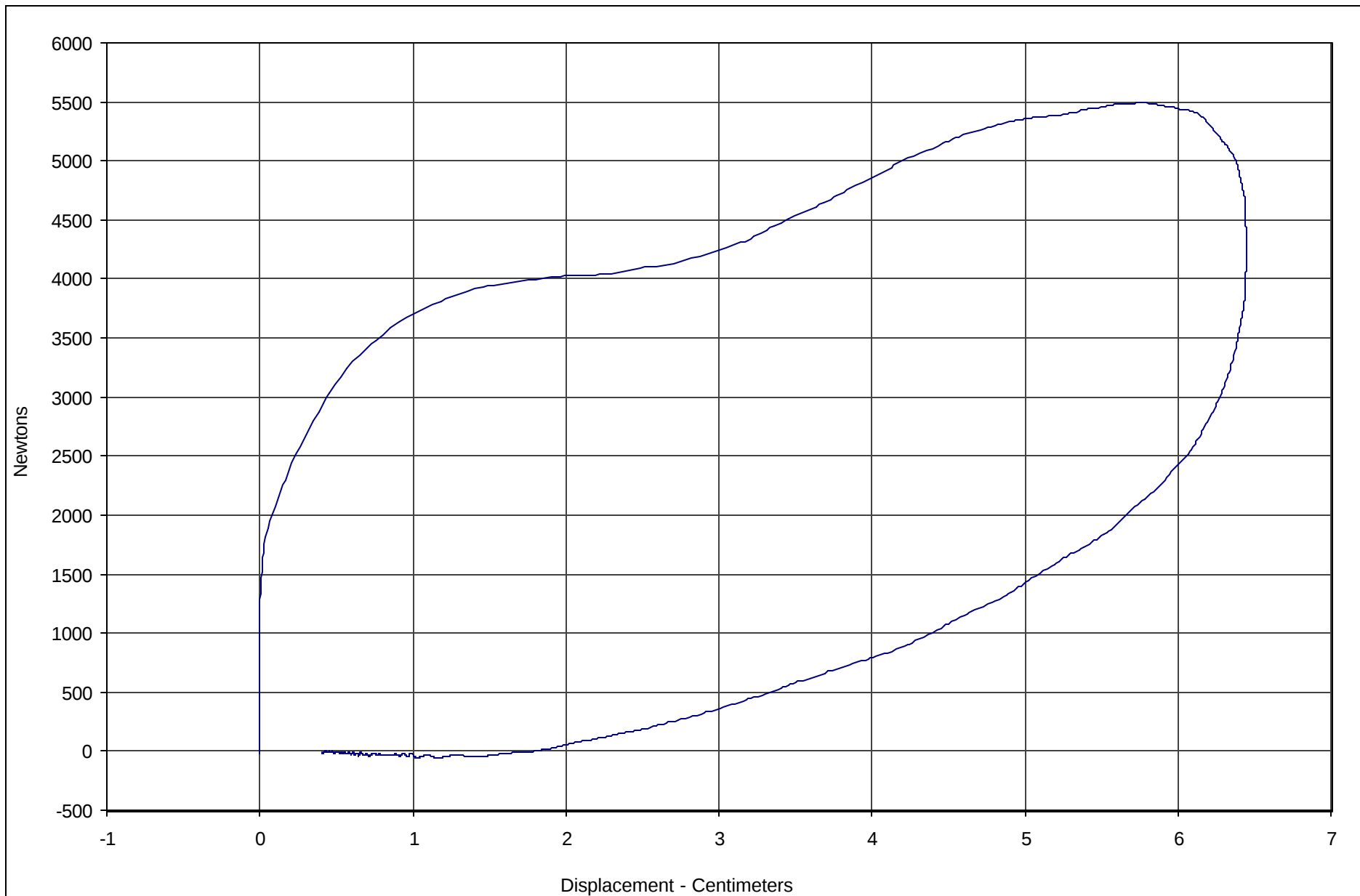
Test I.D.: CH12C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5491	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.44	Pass
Internal Hysteresis	%	69 to 85	82.3	Pass
Overall Test Results				Pass

Laboratory Technician

December 11, 2003

Test Date



Curve Description	CURNO	Type	Hysteresis	Peak Chest Displ.	Peak Probe Force	SAE Class
Probe Force vs. Chest Displacement	001	FIL	82.3	6.44	5490.9	600



Test Program: Hybrid III 50th Percentile Male Thorax Impact

A.T.D. Serial No.: 034

Test Date: 12/11/03

Test I.D.: CH12C



Calibration Data Sheet

Hybrid III 50th Percentile Male

Neck Flexion Test

ATD Serial No.: 034

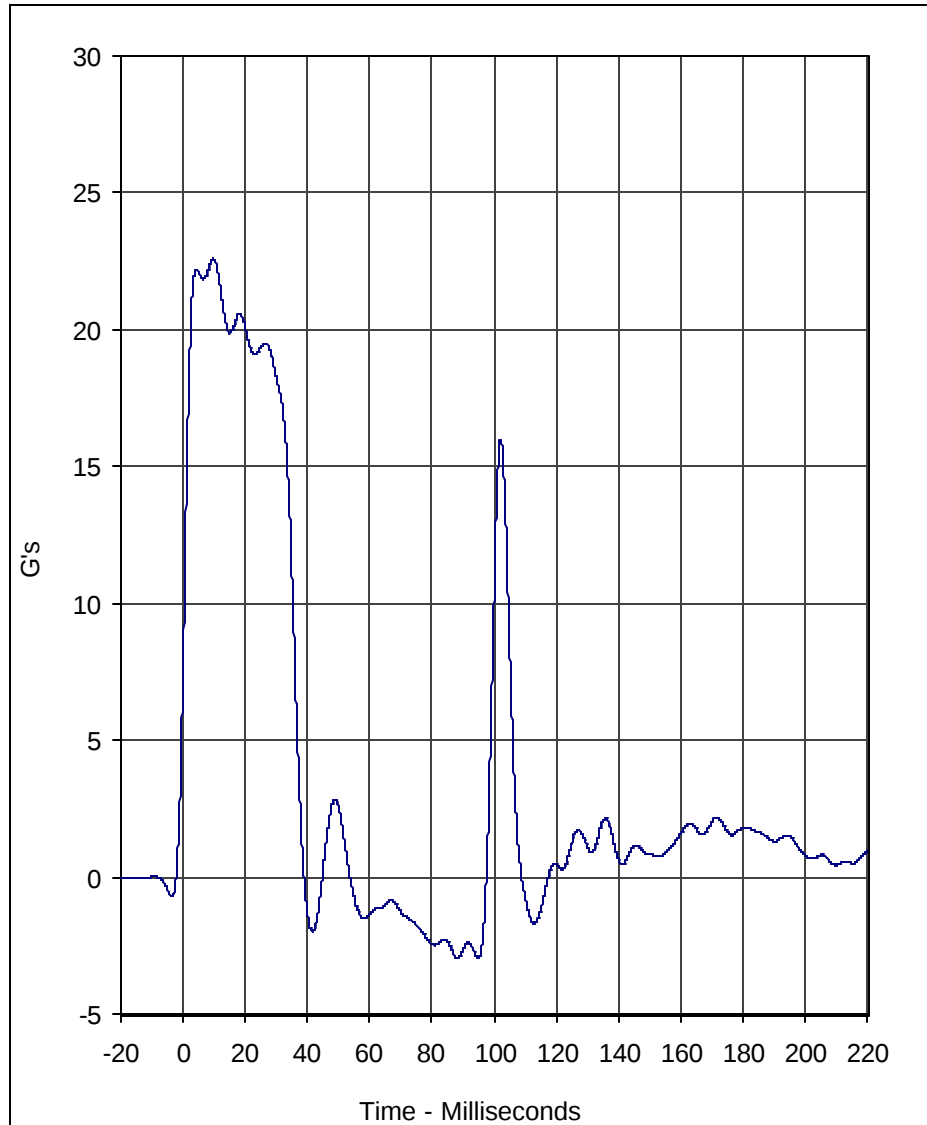
Test I.D.: NF12C

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.07	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.6	Pass
	20 Msec.	G's	17.6 to 22.6	20.1	Pass
	30 Msec.	G's	12.5 to 18.5	18.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.8	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	75.0	Pass
	Time	Msec.	57.0 to 64.0	61.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	121.8	Pass
Moment About Occipital Condyle	Maximum	Nm	84.1 to 108.5	89.7	Pass
	Time	Msec.	47.0 to 58.0	50.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	103.0	Pass
Overall Test Results					Pass

Laboratory Technician

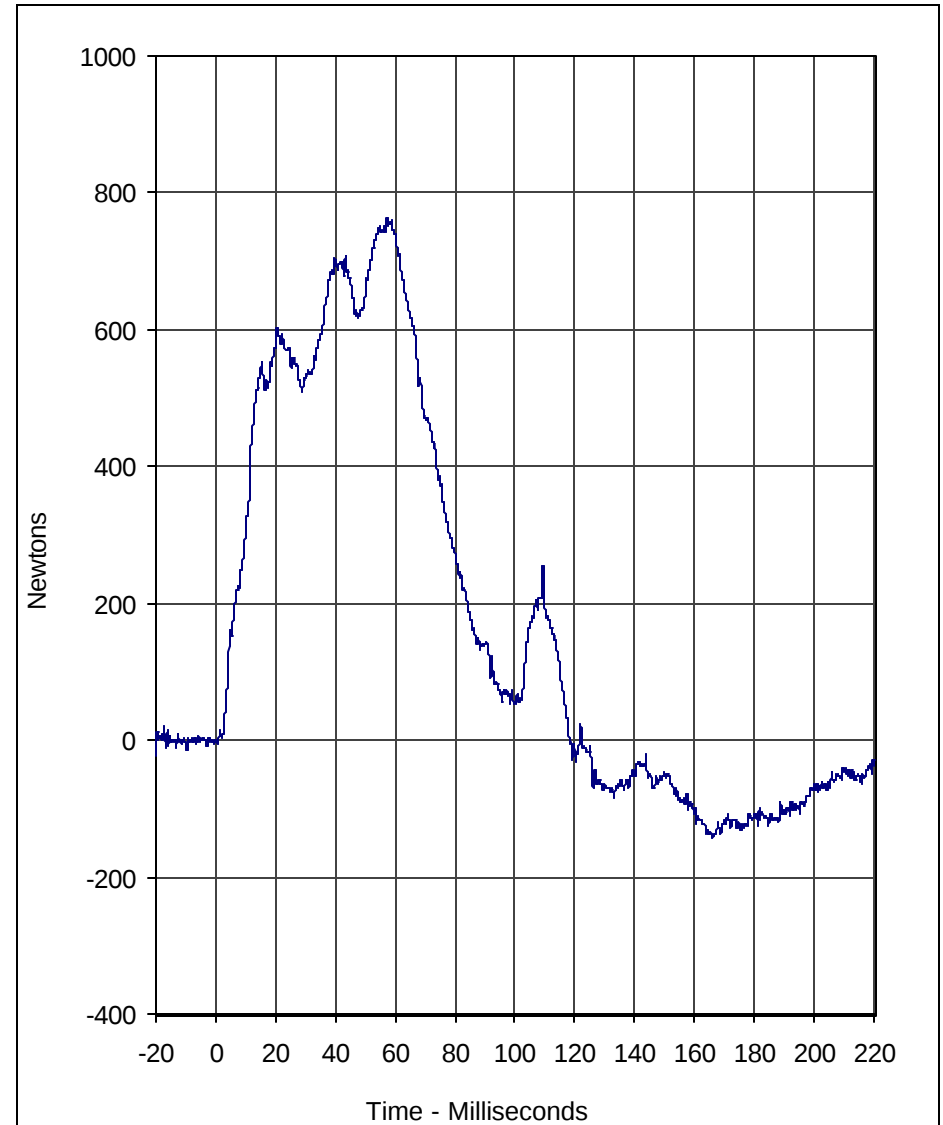
December 11, 2003

Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	22.6	9.7	-3.0	88.2	60

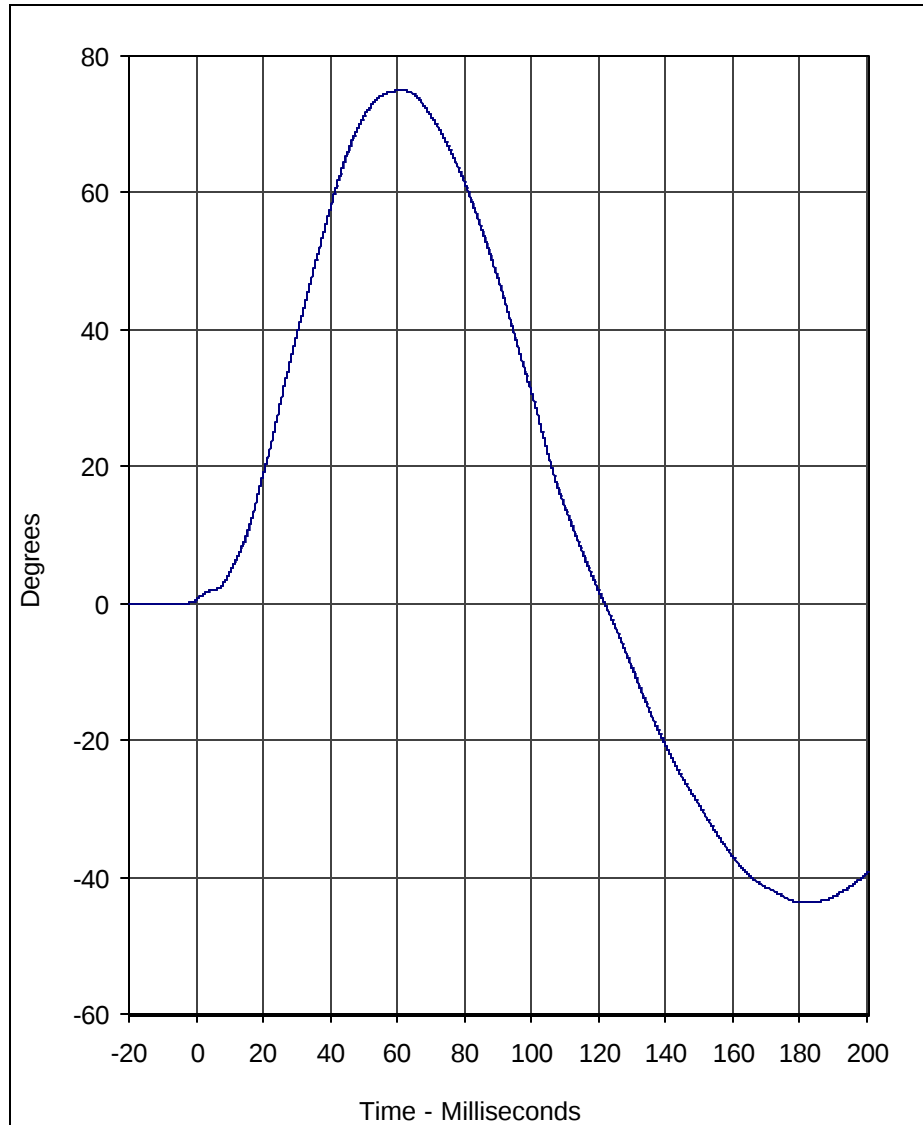
Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Neck Force X				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	762.7	57.3	-142.8	166.0	600

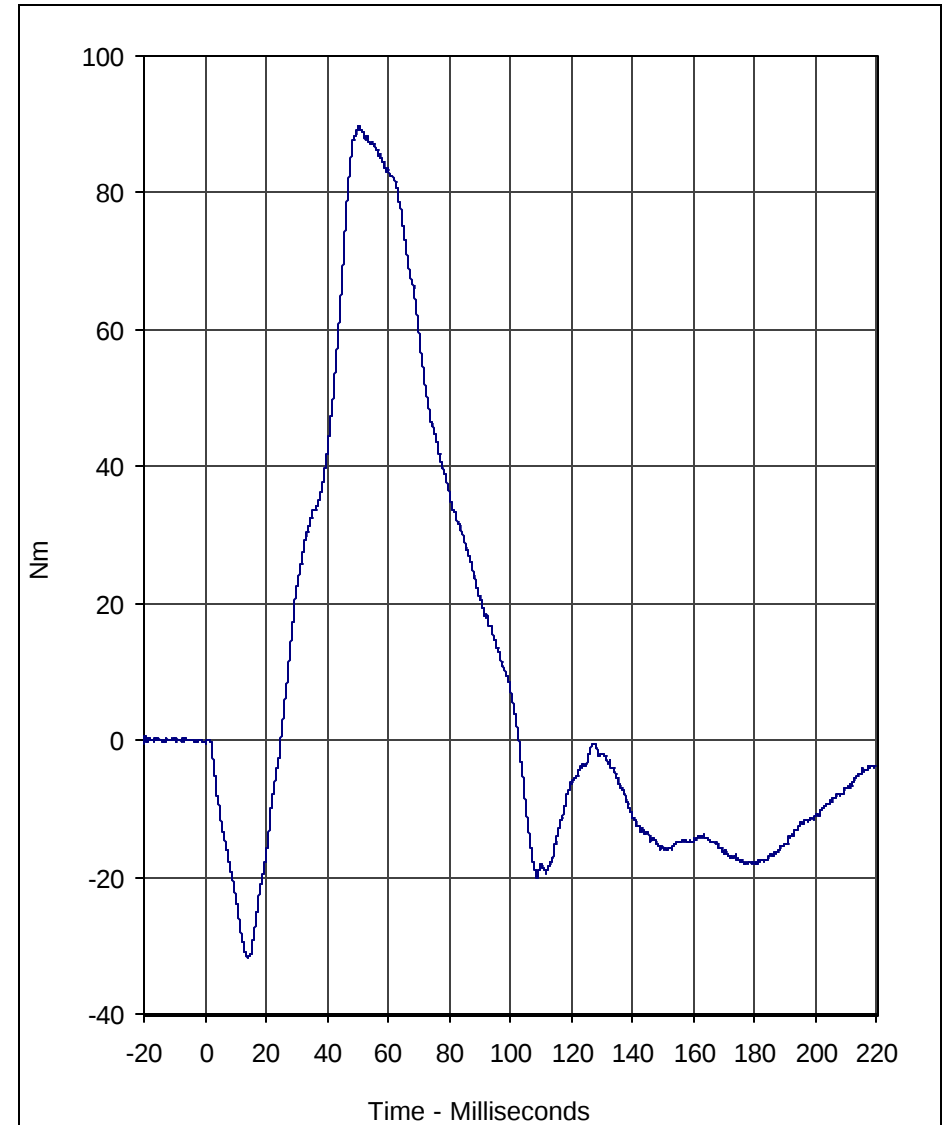
A.T.D. Serial No.: 034
 Test I.D.: NF12C





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	75.0	61.5	-43.7	181.9	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	89.7	50.4	-31.8	14.0	600

A.T.D. Serial No.: 034
 Test I.D.: NF12C





Calibration Data Sheet Hybrid III 50th Percentile Male Neck Extension Test

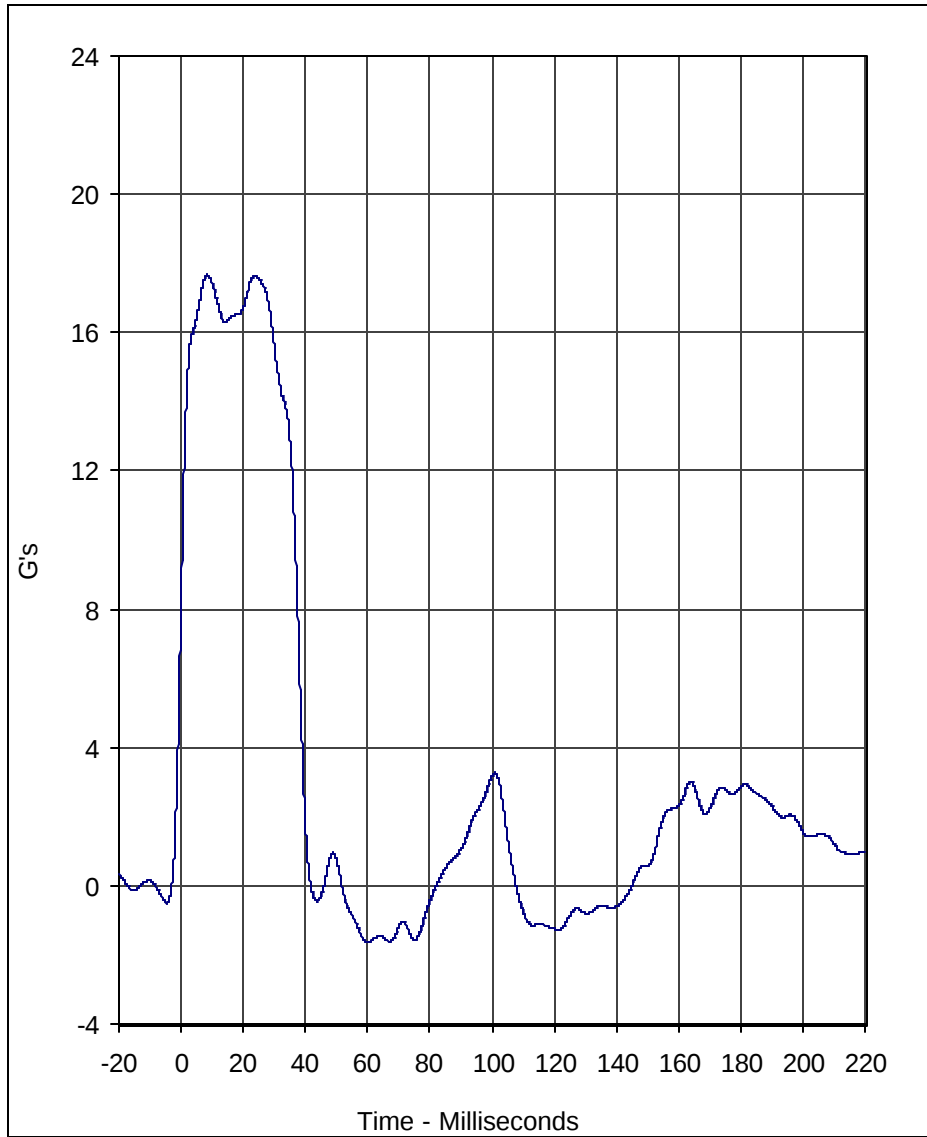
ATD Serial No.: 034

Test I.D.: NE12C

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.16	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.4	Pass
	20 Msec.	G's	14.0 to 19.0	16.7	Pass
	30 Msec.	G's	11.0 to 16.0	15.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	38.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	97.5	Pass
	Time	Msec.	72.0 to 82.0	76.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	156.1	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to- 79.9	-64.8	Pass
	Time	Msec.	65.0 to 79.0	67.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	139.1	Pass
Overall Test Results					Pass

Laboratory Technician

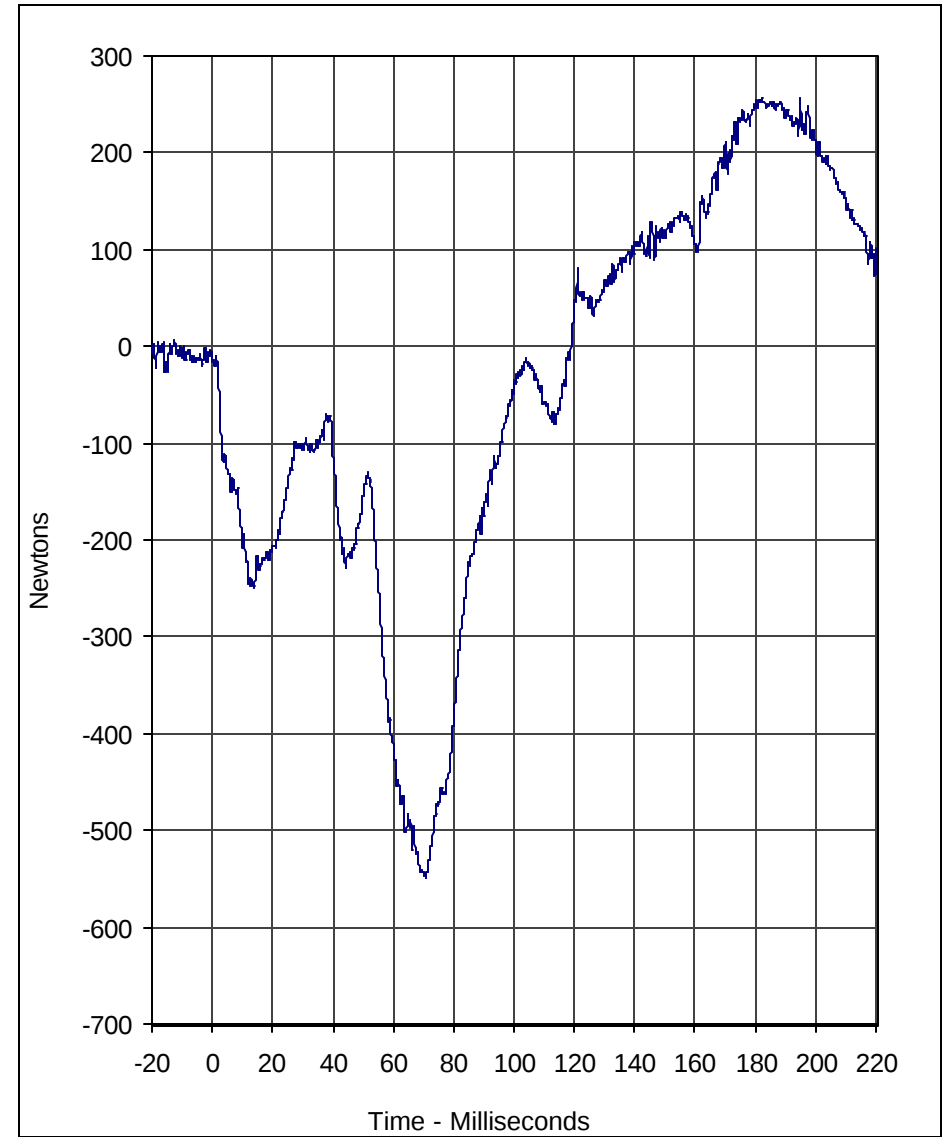
December 11, 2003
Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	17.7	8.3	-1.7	60.1	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 12/11/03

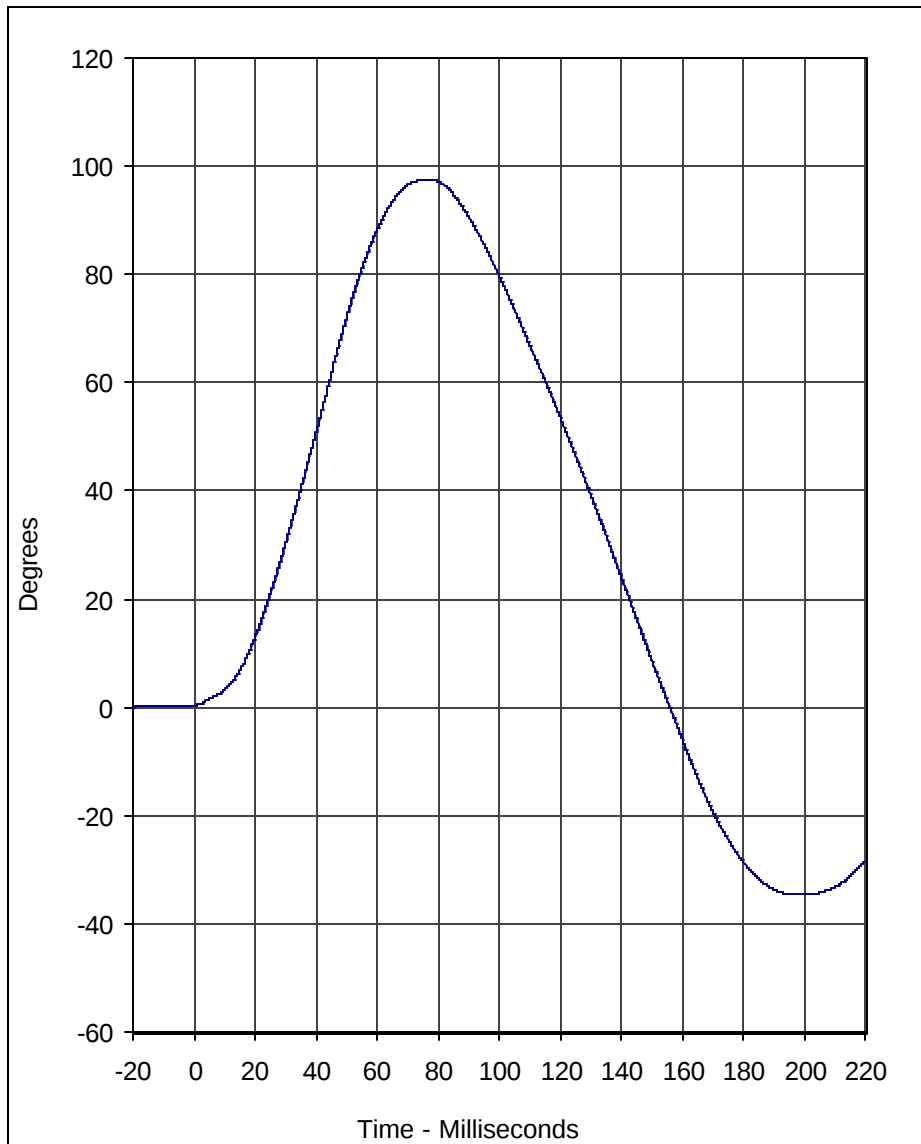


Curve Description				CURNO	Type
Neck Force X				002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	256.0	182.0	-549.8	70.9	600

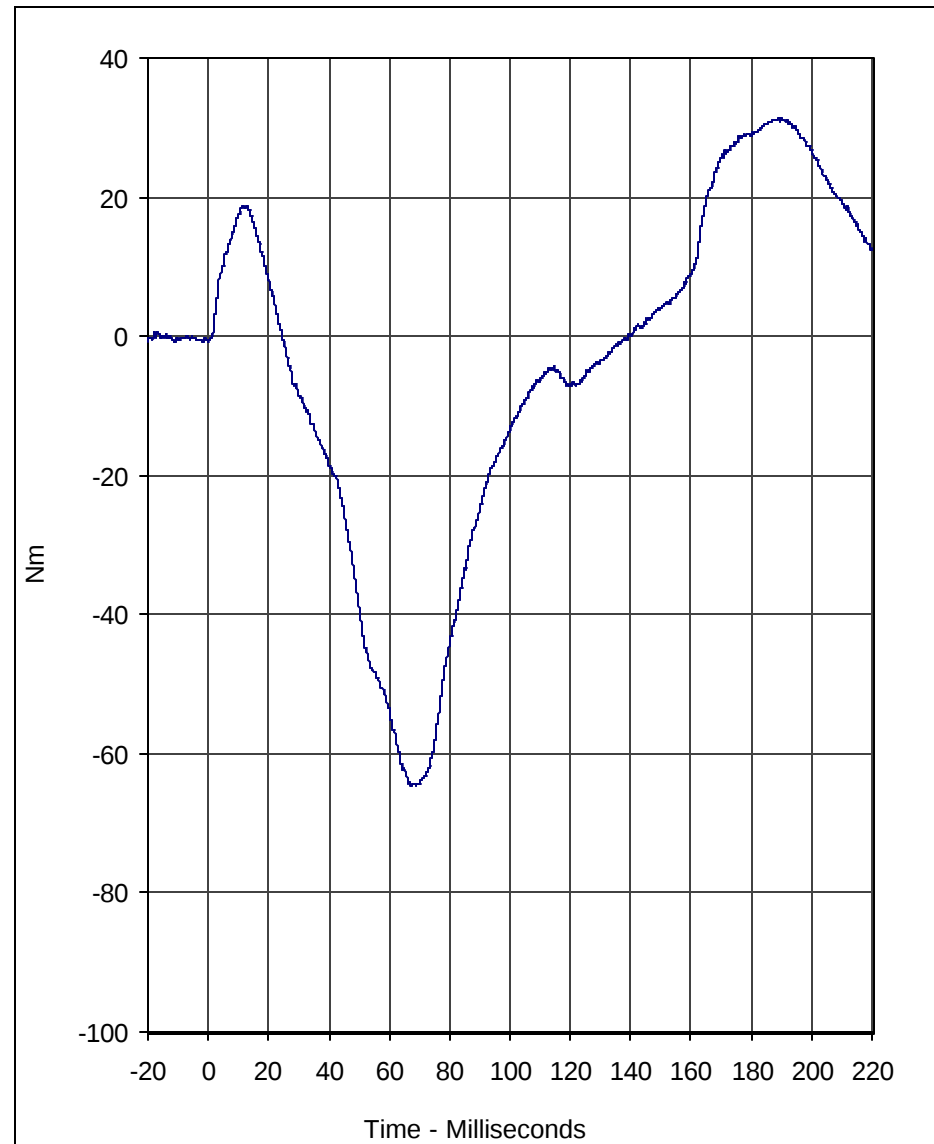
A.T.D. Serial No.: 034
 Test I.D.: NE12C





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	97.5	76.4	-34.6	199.6	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	31.4	190.0	-64.8	67.4	600

A.T.D. Serial No.: 034
 Test I.D.: NE12C





Calibration Data Sheet

Hybrid III 50th Percentile Male

External Measurements

ATD Serial No.: 034

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	880	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	195	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	435	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock popliteal length	mm	452 to 477	475	Pass
O - Chest depth	mm	213 to 229	220	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	435	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	1000	Pass
Z - Waist circumference	mm	836 to 866	845	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results			Pass	

Laboratory Technician

December 11, 2003

Test Date



Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Impact Test

ATD Serial No.: 035

Location: Left Knee

Test I.D.: LK11B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.13	Pass
Peak Probe Force	N	4715 to 5782	5632	Pass
Overall Test Results				Pass

ATD Serial No.: 035

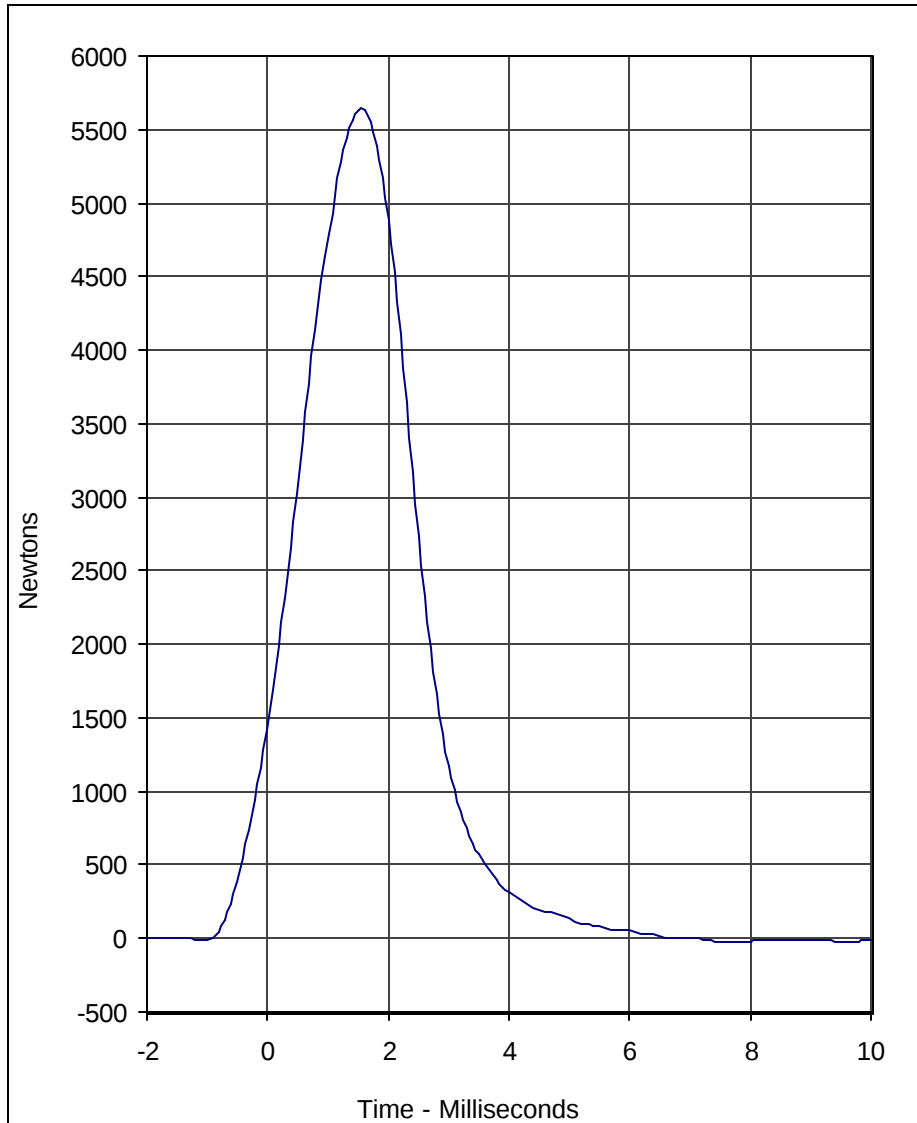
Location: Right Knee

Test I.D.: RK11B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	N	4715 to 5782	4895	Pass
Overall Test Results				Pass

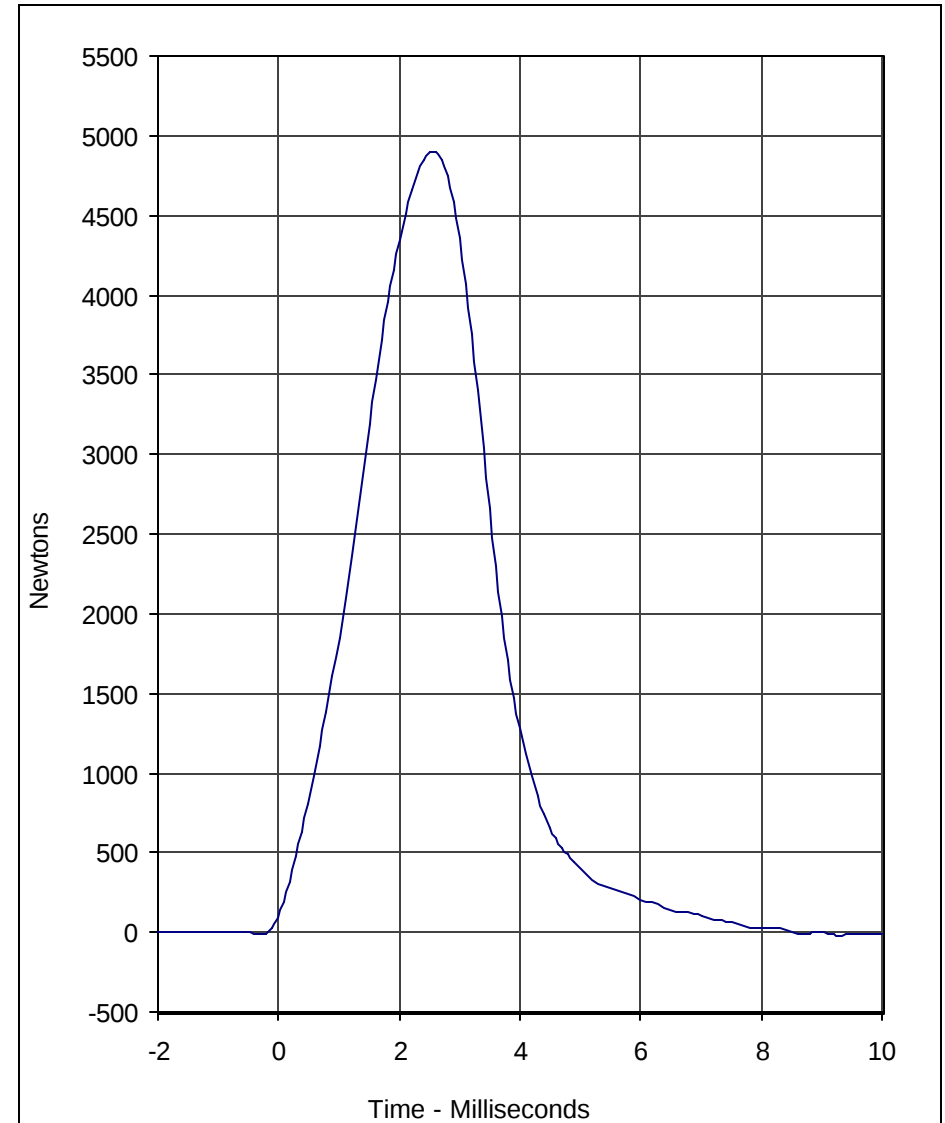
Laboratory Technician

December 10, 2003
Test Date



Curve Description		Location	Test I.D.	CURNO	Type
Probe Force		Left Knee	LK11B	001	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	5632.0	1.5	-30.3	7.6	600

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 Test Date: 12/10/03



Curve Description		Location	Test I.D.	CURNO	Type
Probe Force		Right Knee	RK11B	002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	4894.9	2.6	-19.1	9.3	600

A.T.D. Serial No.: 035





Calibration Data Sheet

Hybrid III 50th Percentile Male

Head Drop Test

ATD Serial No.: 035

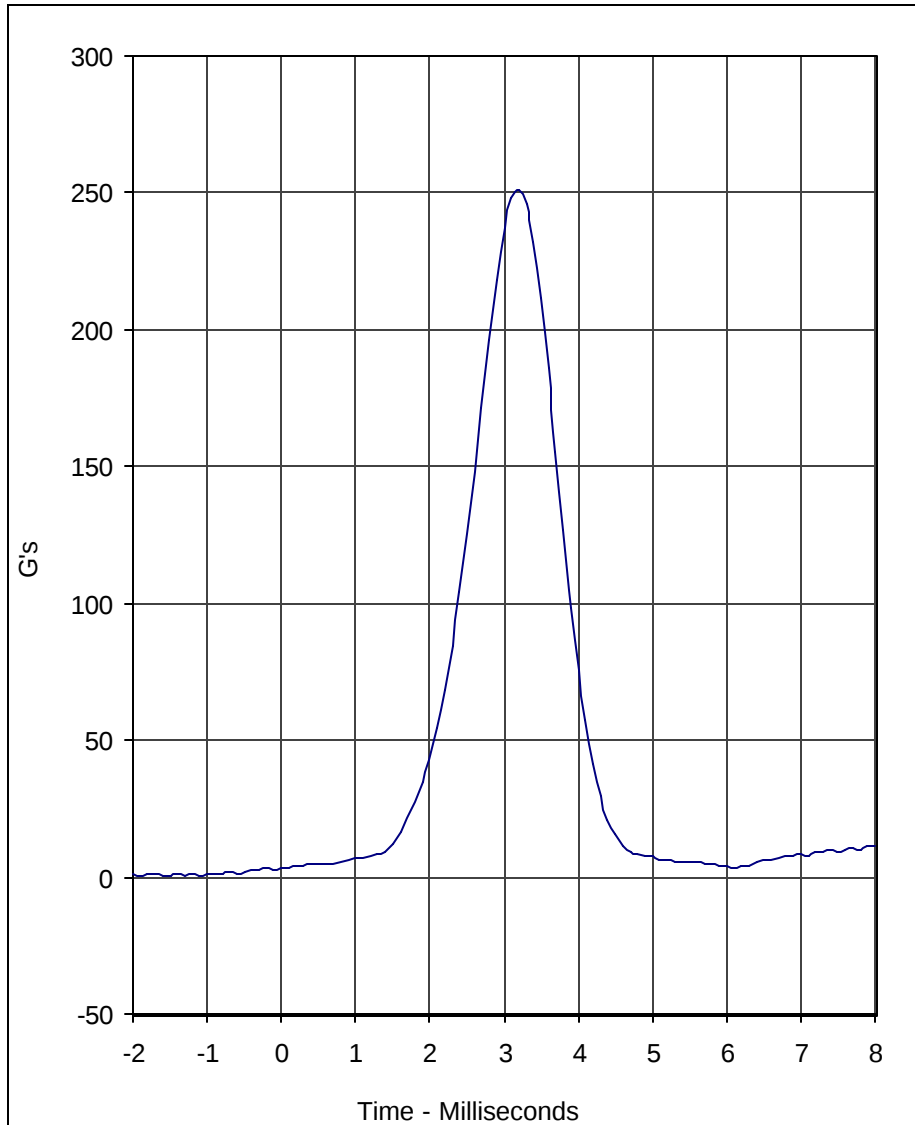
Test I.D.: HD12B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	250.7	Pass
Peak Lateral Acceleration	G's	≤15.0	3.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

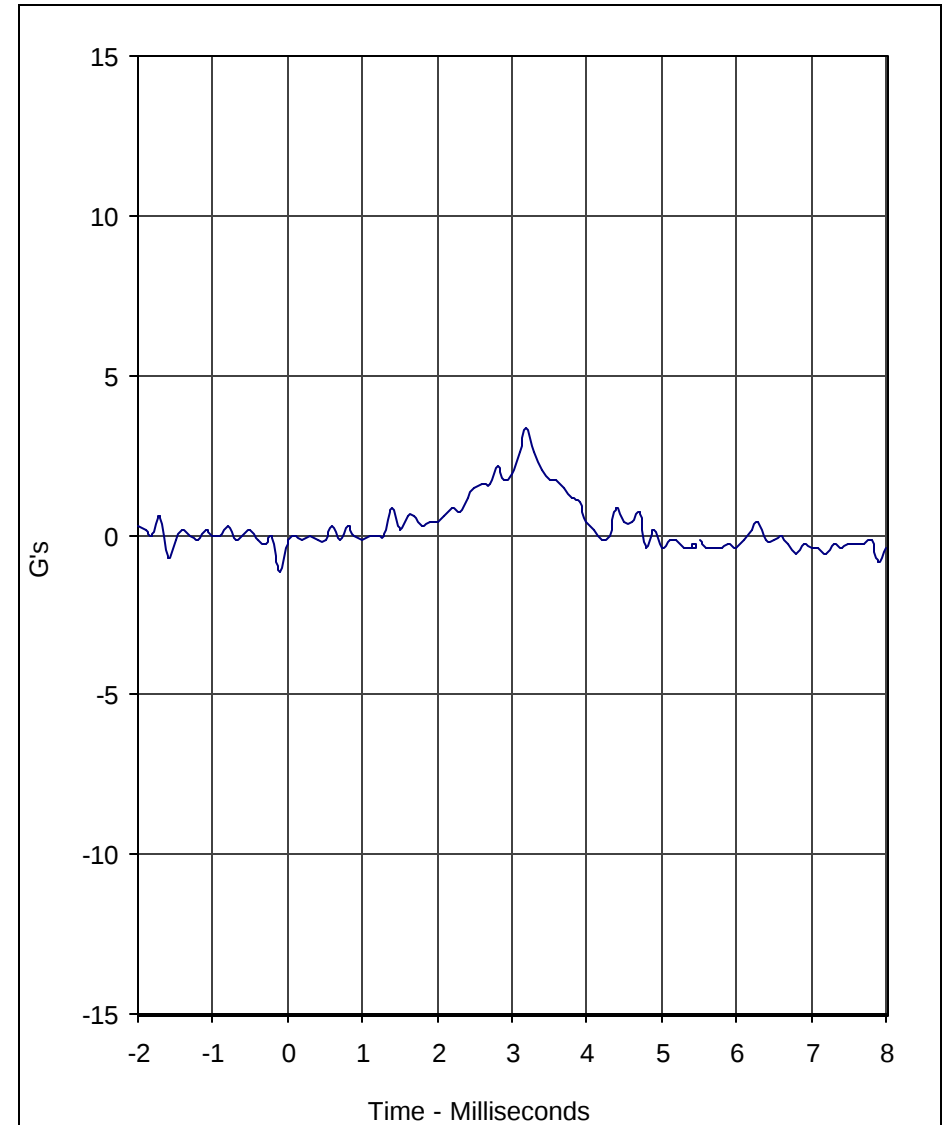
December 10, 2003

Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	250.7	3.2	0.2	-1.1	1000

Test Program: Hybrid III 50th Percentile Male Head Drop Test
 Test Date: 12/10/03



Curve Description				CURNO	Type
Head Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	3.3	3.2	-1.2	-0.1	1000

A.T.D. Serial No.: 035
 Test I.D.: HD12B





Calibration Data Sheet

Hybrid III 50th Percentile Male

Thorax Impact Test

ATD Serial No.: 035

Test I.D.: CH12D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5685	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.44	Pass
Internal Hysteresis	%	69 to 85	77.4	Pass
Overall Test Results				Pass

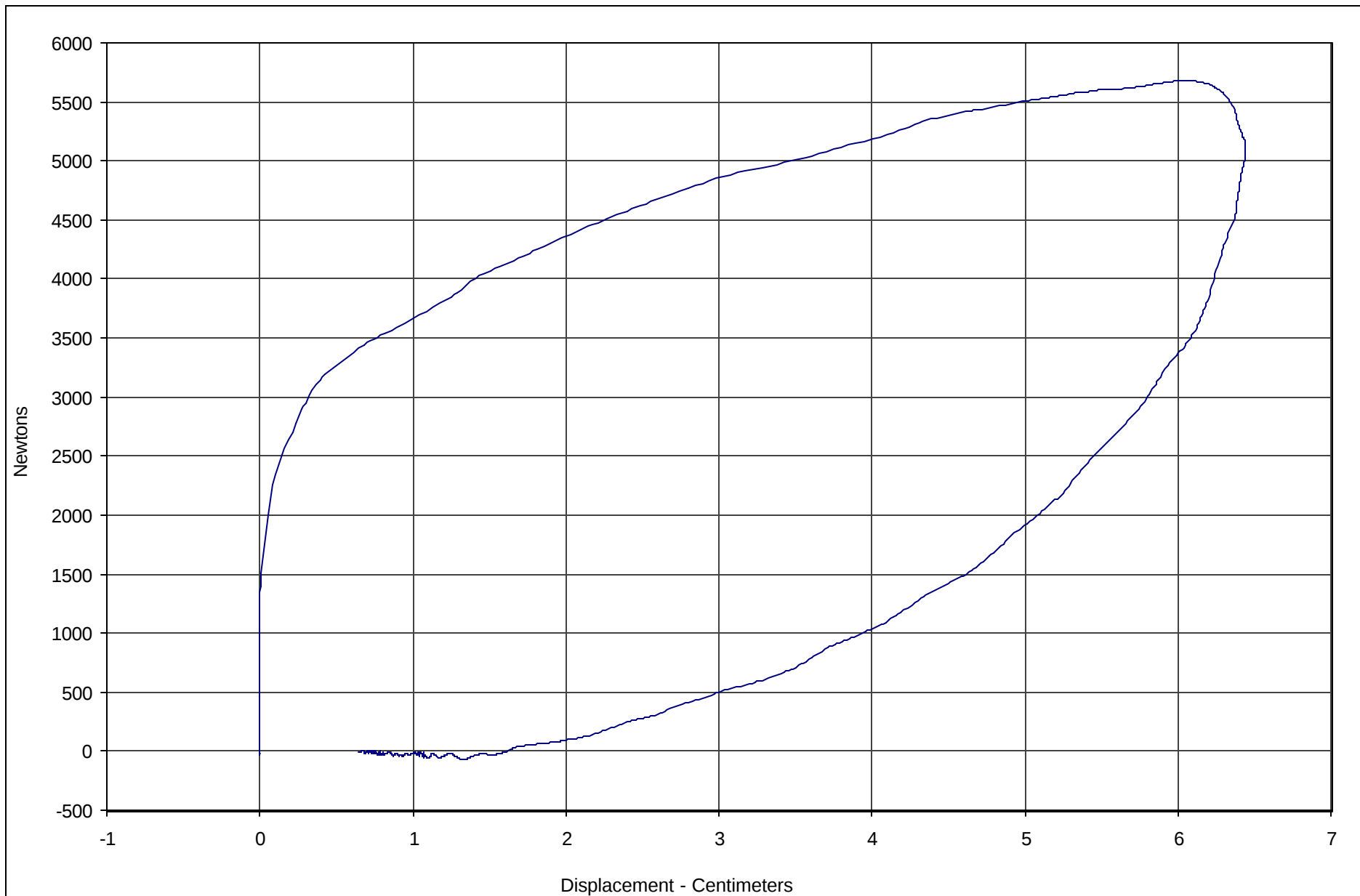
E-18

TR-P24001-05-NC

Laboratory Technician

December 11, 2003

Test Date



Curve Description	CURNO	Type	Hysteresis	Peak Chest Displ.	Peak Probe Force	SAE Class
Probe Force vs. Chest Displacement	001	FIL	77.4	6.44	5685.3	600



Test Program: Hybrid III 50th Percentile Male Thorax Impact

A.T.D. Serial No.: 035

Test Date: 12/11/03

Test I.D.: CH12D



Calibration Data Sheet Hybrid III 50th Percentile Male Neck Flexion Test

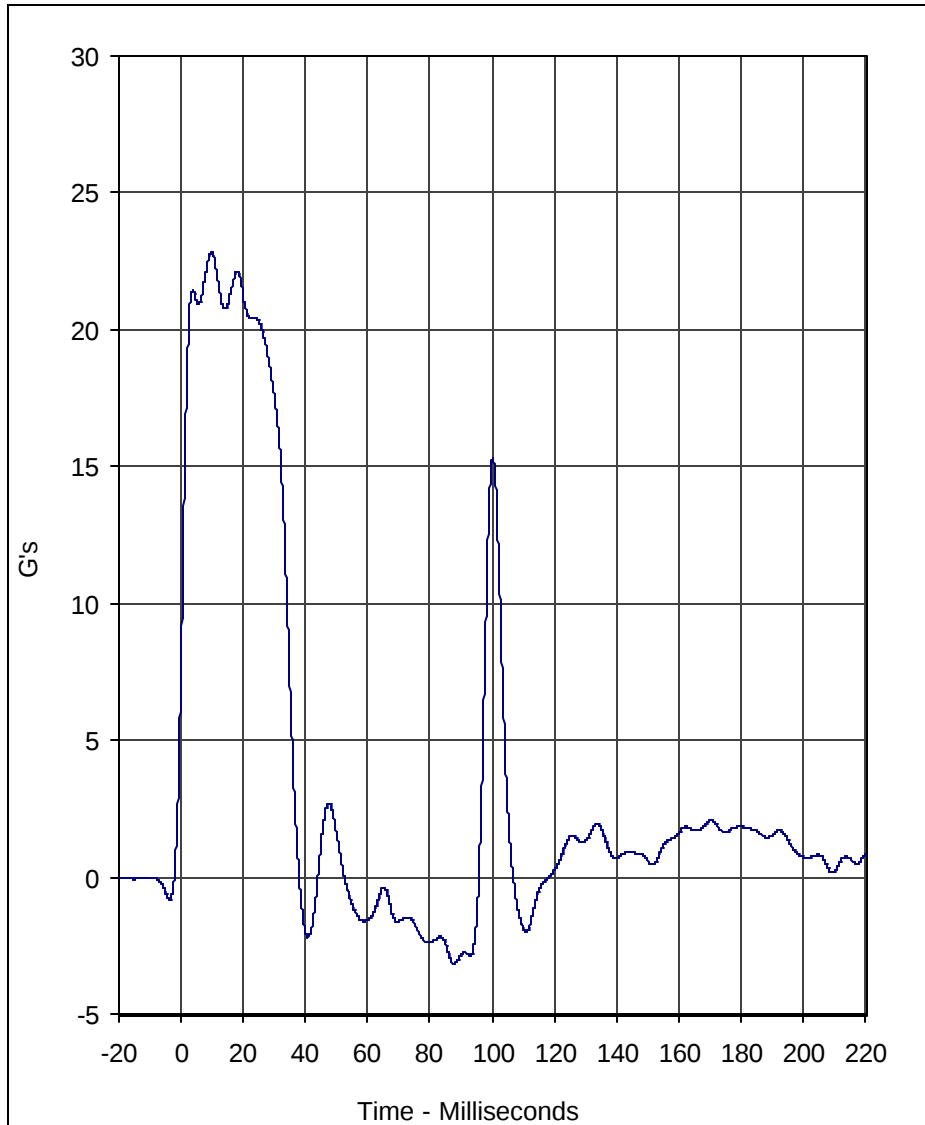
ATD Serial No.: 035

Test I.D.: NF12D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.01	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.8	Pass
	20 Msec.	G's	17.6 to 22.6	21.2	Pass
	30 Msec.	G's	12.5 to 18.5	17.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.7	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	76.0	Pass
	Time	Msec.	57.0 to 64.0	63.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	124.0	Pass
Moment About Occipital Condyle	Maximum	Nm	84.1 to 108.5	87.5	Pass
	Time	Msec.	47.0 to 58.0	48.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	102.0	Pass
Overall Test Results					Pass

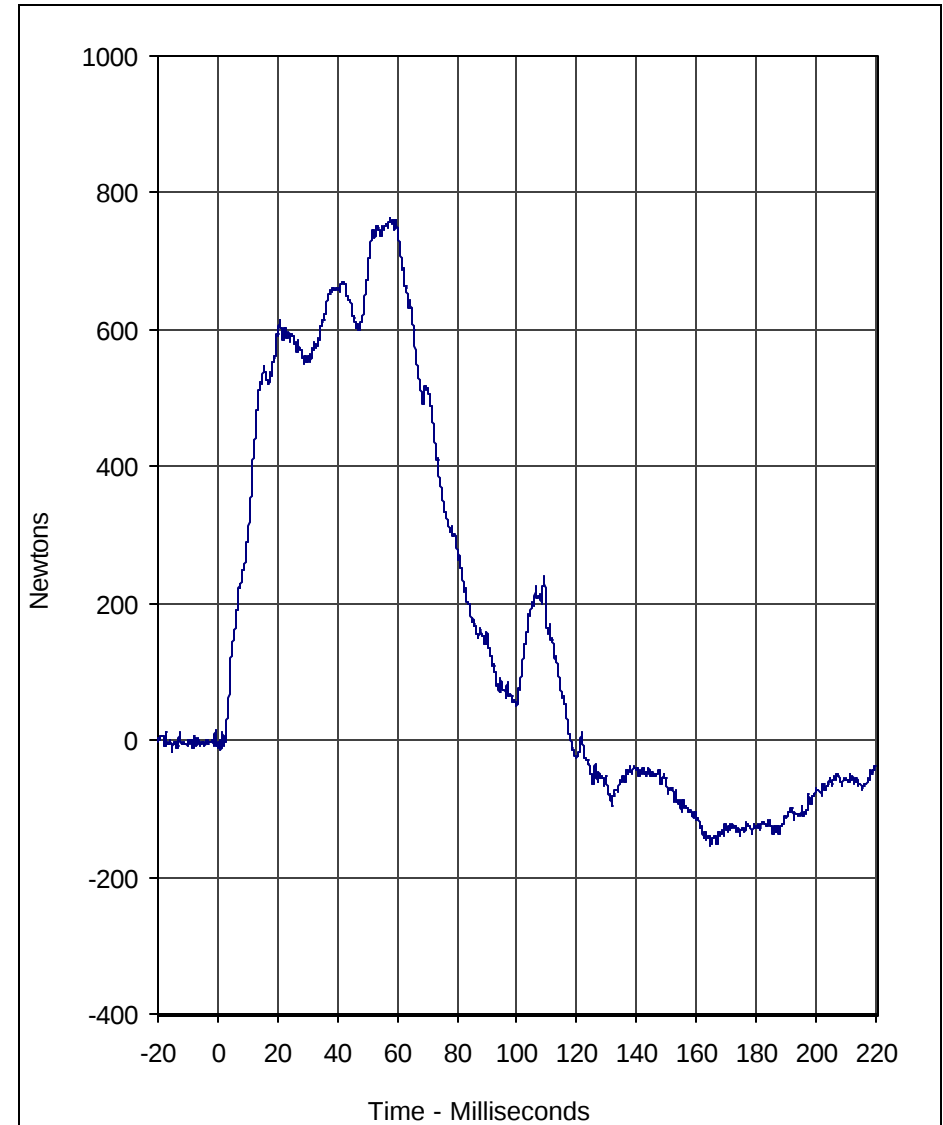
Laboratory Technician

December 11, 2003
Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	22.8	9.7	-3.2	87.8	60

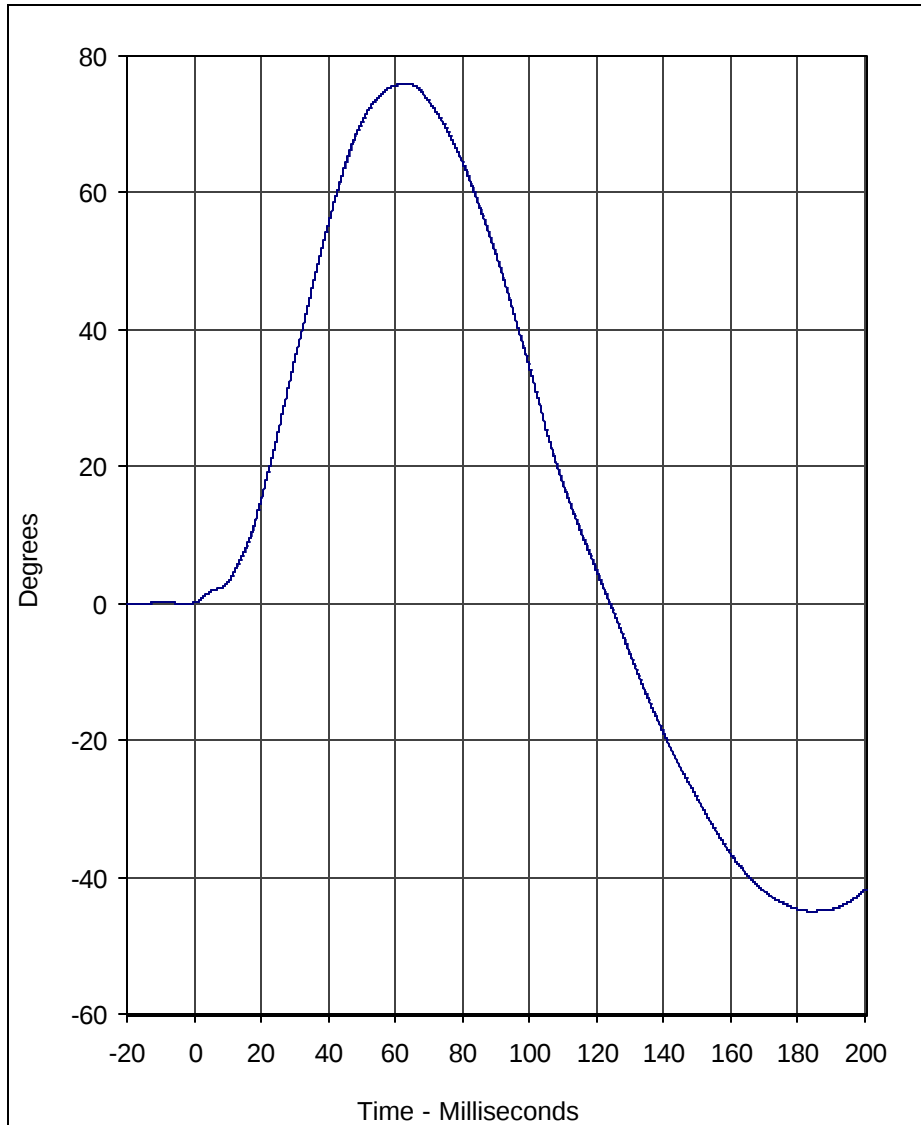
Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Neck Force X				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	763.0	57.6	-154.0	164.7	600

A.T.D. Serial No.: 035
 Test I.D.: NF12D

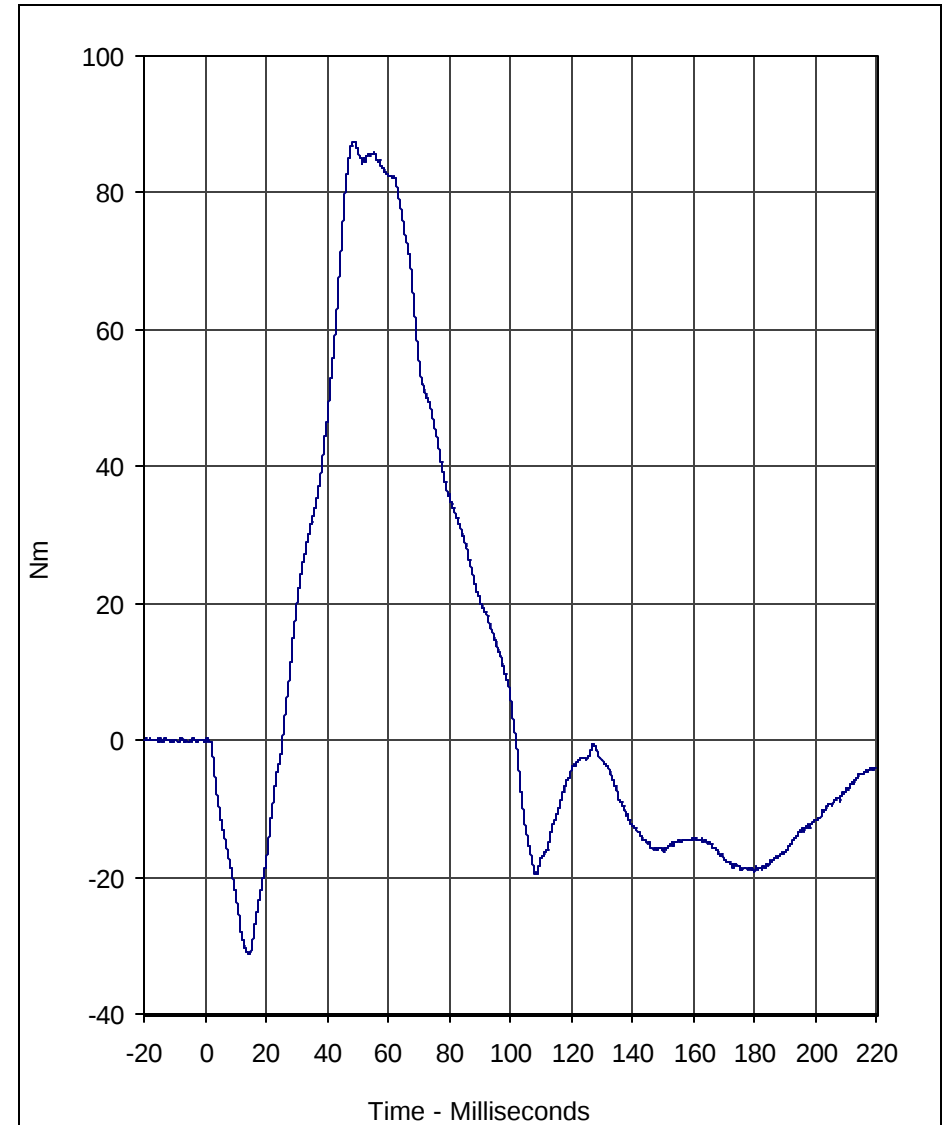




Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	76.0	63.1	-45.0	184.1	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	87.5	48.7	-31.3	14.5	600

A.T.D. Serial No.: 035
 Test I.D.: NF12D





Calibration Data Sheet

Hybrid III 50th Percentile Male

Neck Extension Test

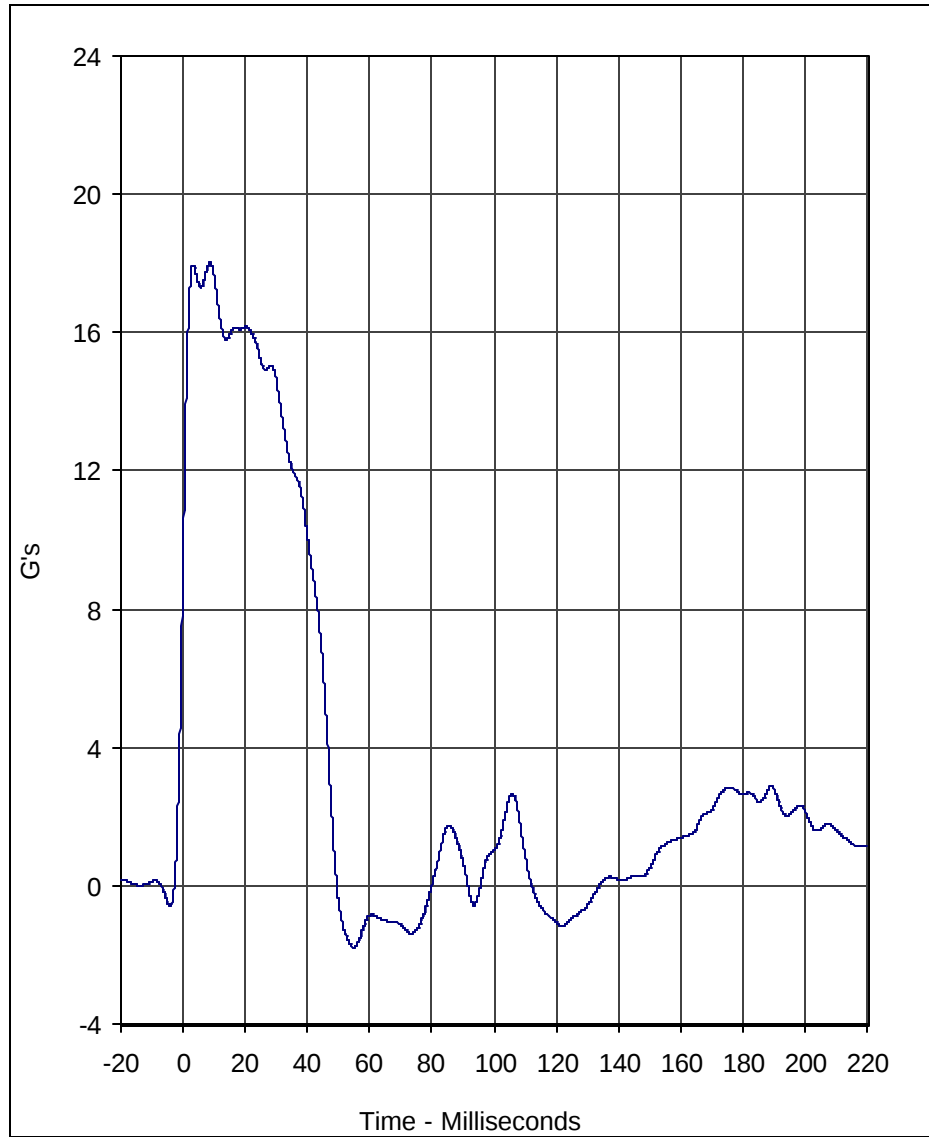
ATD Serial No.: 035

Test I.D.: NB12D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.00	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.6	Pass
	20 Msec.	G's	14.0 to 19.0	16.2	Pass
	30 Msec.	G's	11.0 to 16.0	14.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	46.0	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	98.4	Pass
	Time	Msec.	72.0 to 82.0	79.6	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	159.2	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to- 79.9	-64.2	Pass
	Time	Msec.	65.0 to 79.0	69.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	142.5	Pass
Overall Test Results					Pass

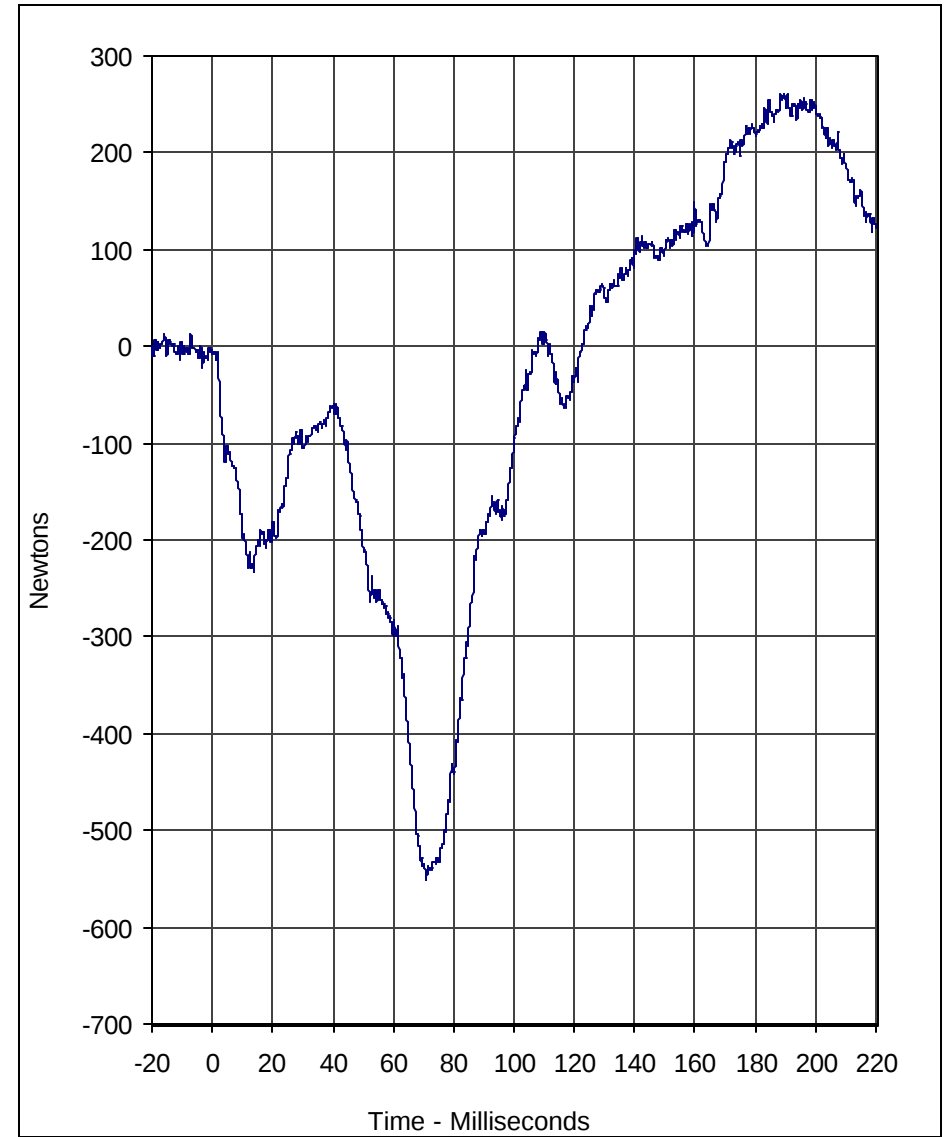
Laboratory Technician

December 11, 2003
Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL
Units	Max	Time	Min	Time	SAE Class
G's	18.0	8.6	-1.8	54.9	60

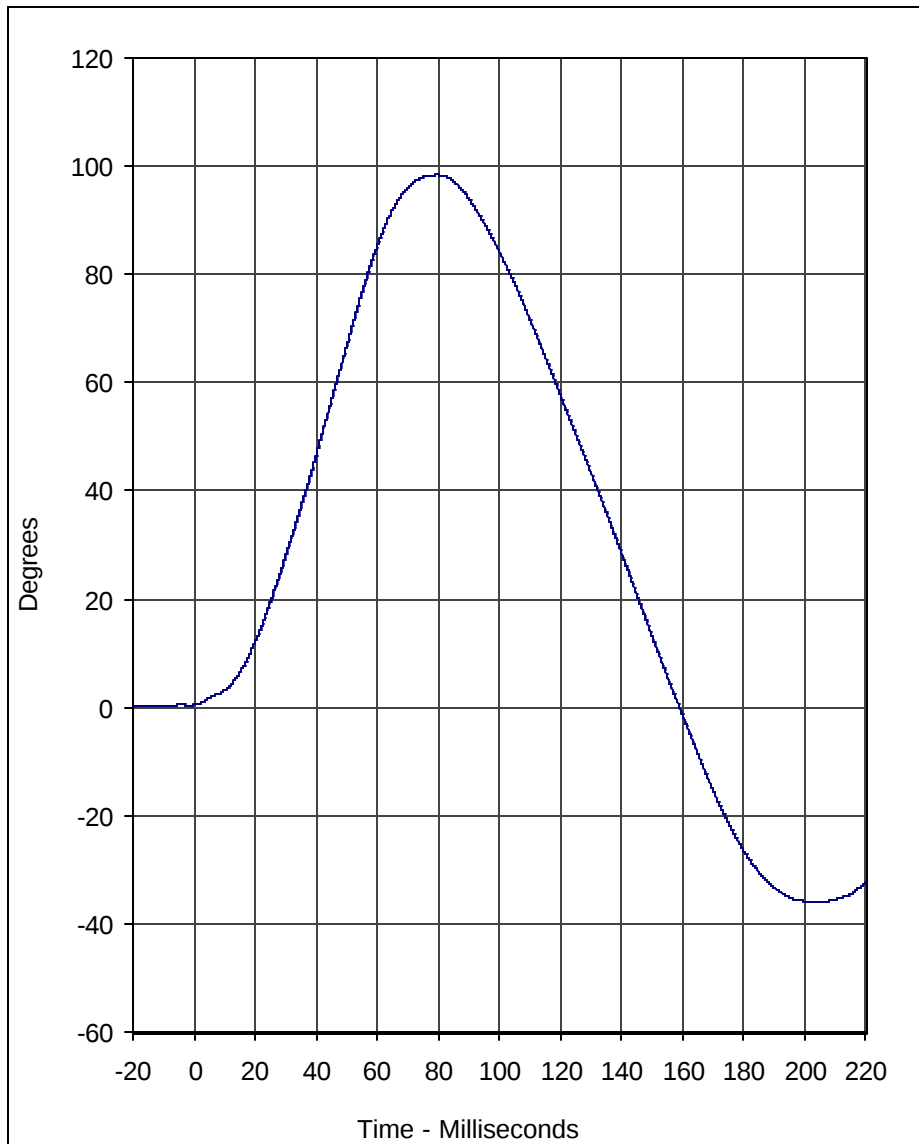
Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Neck Force X				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	261.6	190.6	-550.7	70.9	600

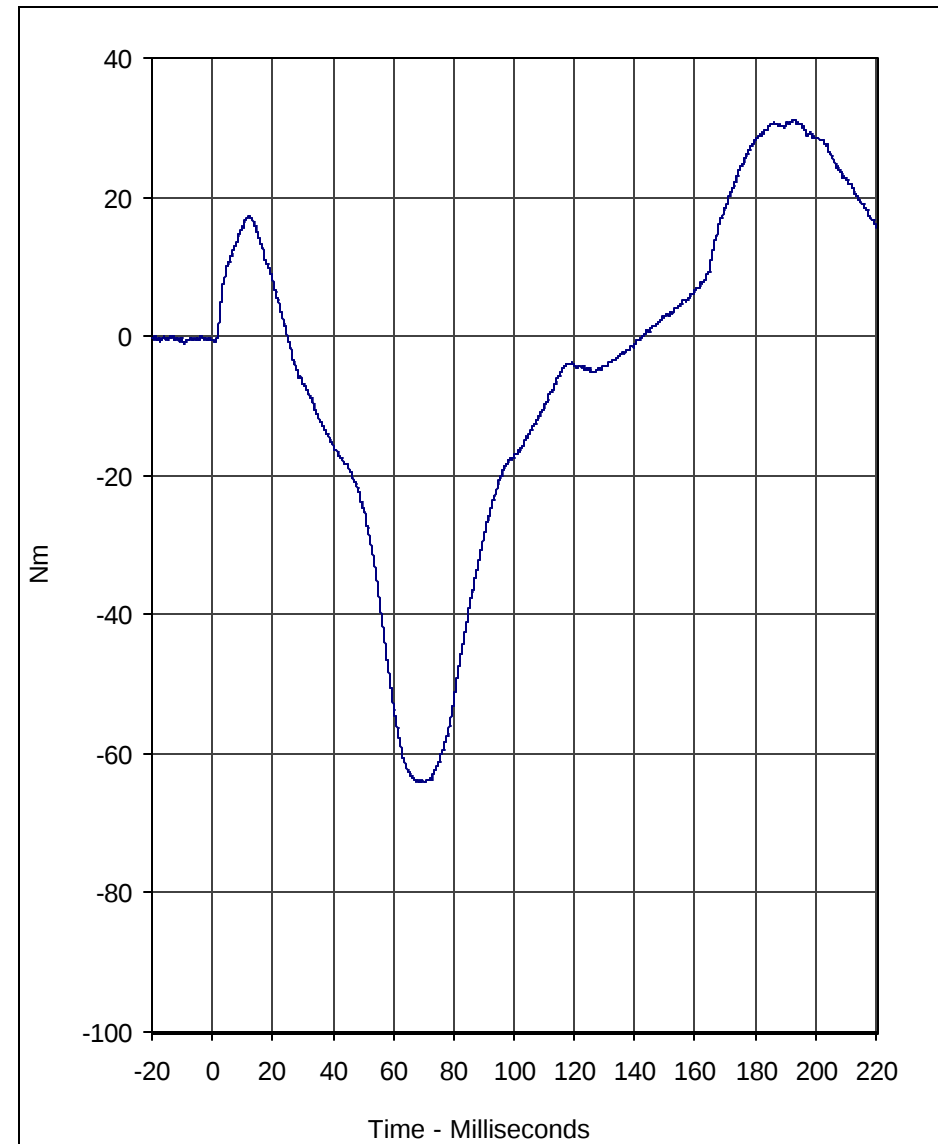
A.T.D. Serial No.: 035
 Test I.D.: NB12D





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	98.4	79.6	-35.9	205.0	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 12/11/03



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	31.1	193.0	-64.2	69.3	600

A.T.D. Serial No.: 035
 Test I.D.: NB12D





Calibration Data Sheet

Hybrid III 50th Percentile Male

External Measurements

ATD Serial No.: 035

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	520	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	295	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	445	Pass
M - Knee pivot height	mm	485 to 500	485	Pass
N - Buttock popliteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	990	Pass
Z - Waist circumference	mm	836 to 866	850	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results			Pass	

Laboratory Technician

December 11, 2003

Test Date

APPENDIX F

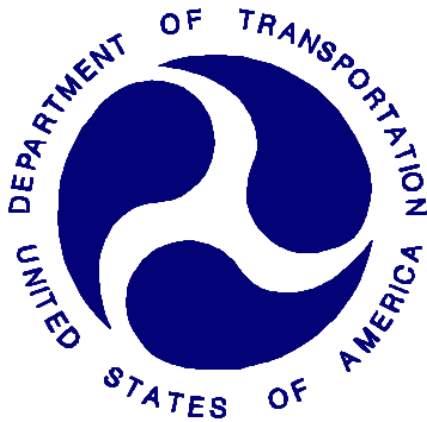
CHILD RESTRAINT SYSTEM

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**MAZDA MOTORS CORPORATION
2004 MAZDA 3
4 DOOR SEDAN**

NHTSA NUMBER: M45400

**PREPARED BY:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



12/17/03

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 5311
WASHINGTON, D.C. 20590**

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Date: December 17, 2003

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KARCO Engineering, LLC

Date: December 17, 2003

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

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4. Title and Subtitle Final Report of an Evenflo Vanguard 5 Convertible CRS NHTSA No. M45400				5. Report Date December 22, 2003	
				6. Performing Organization Code	
7. Authors Mr. James E. Gorth, Project Engineer, Karco Mr. Frank Richardson, Program Manager, Karco				8. Performing Organization Report No. TR-P24001-05-NC	
9. Performing Organization Name and Address Karco Engineering, LLC 9270 Holly Rd. Adelanto, CA, 92301				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-01-D-02005	
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code NPS-111 400 Seventh Street, SW, Room 5311 Washington, D.C 20590				13. Type of Report and Period Covered Final Test Report Option Year 3	
				14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS	
15. Supplementary Notes					
16. Abstract A frontal test was conducted on the subject Evenflo Vanguard 5 Convertible CRS in conjunction with frontal NCAP testing on a 2004 Mazda 3 4 Door Sedan and in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the determination of CRS crashworthiness. This test was conducted at Karco Engineering, LLC on December 17, 2003.					
Measurement Description		Units		Left Rear	Right Rear
Head Injury Criteria (HIC) 36		N/A			418.3
Head Injury Criteria (HIC) 15		N/A			249.6
3 msec. Chest Clip		G's			53.6
Peak Chest Displacement		mm			-17.7
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test Final Report of a Evenflo Vanguard 5 Convertible NHTSA No. M45400				18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
19. Security Classification (this report) Unclassified		20. Security Classification (this page) Unclassified		21. No. of Pages 148	22. Price

Form DOT F1700.7 (8-72)

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SECTION F-1

PURPOSE AND SUMMARY OF TEST M45400

The purpose of this test is to obtain CRS performance data during an NCAP (35mph) frontal impact test.

The 55.91 km/h NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

One three year old child dummy was instrumented with head, chest, and pelvic triaxial accelerometers. In addition chest displacement and upper and lower six axial neck force and moment load cell sensors were utilized. A triaxial accelerometer was installed on the CRS.

The right rear (Position 3) child dummy (Serial No. 082) was calibrated one test prior to this test. Child dummy certification information is found in Section F-5.

CHILD DUMMY VALUES

Location	HIC 36 Values	HIC 15 Values	3 Msec. Chest Clip	Peak Chest Disp.
Right Rear Child	418.3	249.6	53.6	-17.7
Left Rear Child	N/A	N/A	N/A	N/A

SECTION F-1**DATA SHEET NO.1.....CRASH TEST SUMMARY**Test Vehicle: 2004 Mazda 3 4 Door SedanNHTSA No.: M45400Test Program 2004 NHTSA 35mph NCAPTest Date: 12/17/03**CHILD RESTRAINT SYSTEM INFORMATION**

Description	Position # 3 CRS	Position #4 CRS
Manufacturer	Evenflo	
Model Name	Vanguard 5	
Serial No.	3691261 P1	
Type	Convertible	
Forward/Rearward	Forward	

VISIBLE DUMMY CONTACT POINTS

Description	Position #3 CRS	Position #4 CRS
Head Contact	Chest to Retaining Clip	
Chest Contact	None	
Abdomen Contact	None	
Left Knee Contact	None	
Right Knee Contact	None	
Left Toe Contact	Seatback	
Right Toe Contact	Seatback	
Ret. Clip Movement	70mm	

POST TEST DOOR OPENINGS

Description	Position #3 CRS	Position #4 CRS
Left Side Doors	Remained closed/latched, opened w/o of tools	Remained closed/latched, opened w/o of tools
Right Side Doors	Remained closed/latched, opened w/o of tools	Remained closed/latched, opened w/o of tools
Hatch/Other Door	N/A	N/A

POST TEST SEAT DATA

Location	Seat Movement (mm)	Seat Back Failure
Left Front	None	None
Right Front	None	None
Left Rear	N/A	N/A
Right Rear	None	None

CAMERA COVERAGE

High Speed	2
Real Time	2
Total	4

SECTION F-1**DATA SHEET NO.2.....CRS PARAMETER DATA**Test Vehicle: 2004 Mazda 3 4 Door SedanNHTSA No.: M45400Test Program 2004 NHTSA 35mph NCAPTest Date: 12/17/03**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	394	252		426	312	
Right	kg	393	244		433	305	
Ratio	%	61.3	38.7		58.2	41.8	
Totals	kg	787	496	1283	859	617	1476

TARGET TEST WEIGHT CALCULATION

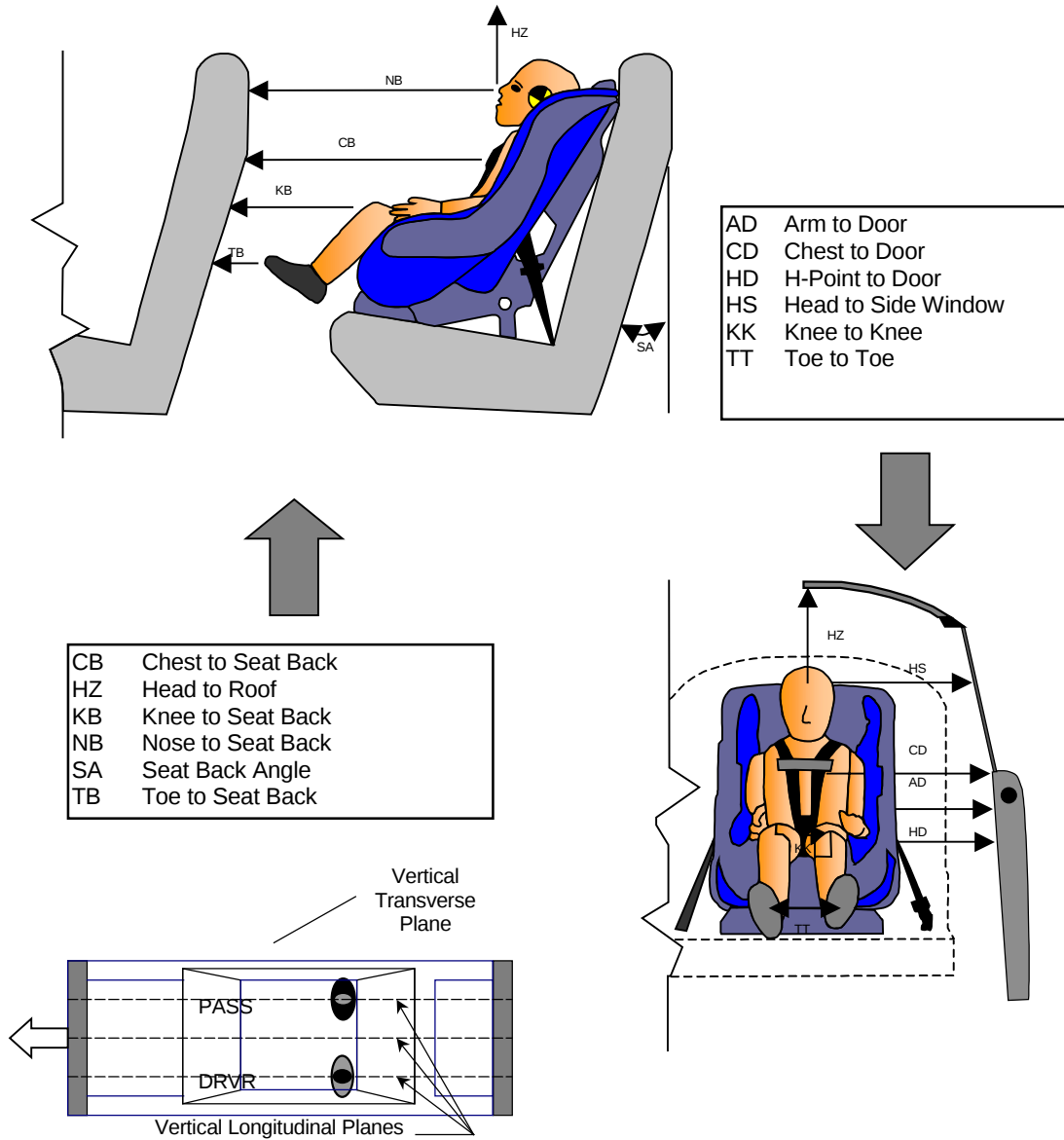
Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1283
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	45
Calculated Vehicle Target Wt. (TVTW)	kg	1481

SECTION F-1

DATA SHEET NO.3.....CHILD DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: M45400
 Test Date: 12/17/03



DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

SECTION F-1

DATA SHEET NO.3.....CHILD DUMMY POSITIONING IN VEHICLE...(continued)

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

CHILD DUMMY POSITION MEASUREMENTS

Code	Measurement	Units	P3 CRS Serial No. 082		
			Pre-Test	Post-Test	Diff.
SA	Seat Back Angle	deg.	65	65	0
HZ	Head to Roof (Z)	mm	355	345	-10
CD	Chest to Dash	mm	395	395	0
KK	Knee to Knee (Y)	mm	165	202	37
HS	Head to Side Window	mm	375	400	25
HD	H-Point to Door (Y)	mm	300	280	-20
AD	Arm to Door	mm	245	250	5
NB	Nose to Seat Back	mm	532	597	65
CB	Chest to Seat Back	mm	518	600	82
FF	Foot to Foot	mm	145	255	110
KB-Left	Knee to Seat Back	mm	270	340	70
KB-Right	Knee to Seat Back	mm	278	370	92
TB-Left	Toe to Seat Back	mm	64	88	24
TB-Right	Toe to Seat Back	mm	62	100	38

DATA SHEET NO. 4 - 3 YEAR OLD HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Head CG	X	G's	52.7	192.9	-41.2	69.6
Head CG	Y	G's	6.0	69.1	-16.2	193.9
Head CG	Z	G's	46.7	81.5	-5.5	36.8
Head CG Resultant	N/A	G's	61.1	193.5		

PRIMARY HEAD INJURY CRITERAS (HIC)

Location	Right Rear (3 Yr.)			
	HIC	T ¹	T ²	Avg G
Head CG Primary (HIC36)	418.3	62.0	98.0	42.2
Head CG Primary (HIC15)	249.6	68.1	83.1	48.8

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Chest CG	X	G's	3.4	147.7	-35.8	70.9
Chest CG	Y	G's	6.2	70.9	-4.9	200.0
Chest CG	Z	G's	16.3	194.9	-43.8	66.4
Chest CG Resultant	N/A	G's	54.4	66.2		

PRIMARY CHEST CLIP (3MSEC)

Location	Right Rear (3 Yr.)		
	CLIP	T ¹	T ²
Chest CG Primary	53.6	65.1	68.1

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Chest CG	X	MM	0.0	8.1	-17.7	71.7

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Pelvis	X	G's	13.8	85.7	-67.3	60.8
Pelvis	Y	G's	13.7	67.2	-11.3	87.4
Pelvis	Z	G's	18.1	195.7	-40.8	64.6
Pelvis Resultant	N/A	G's	75.8	60.9		

DATA SHEET NO. 4...(continued)Test Vehicle: 2004 Mazda 3 4 Door SedanNHTSA No.: M45400Test Program: 2004 NHTSA 35mph NCAPTest Date: 12/17/03**UPPER NECK PEAK FORCES AND MOMENTS**

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Neck Force	X	Newtons	44.6	179.6	-930.5	70.6
Neck Force	Y	Newtons	157.3	200.0	-49.4	90.3
Neck Force	Z	Newtons	1714.4	72.1	-480.3	196.9
Neck Force Resultant	N/A	Newtons	1936.1	72.1		
Neck Moment	X	Nm	6.8	73.9	-4.8	200.0
Neck Moment	Y	Nm	3.3	63.3	-18.7	200.0
Neck Moment	Z	Nm	3.9	90.7	-1.5	109.5
Neck Moment Resultant	N/A	Nm	19.3	200.0		

LOWER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Neck Force	X	Newtons	126.3	190.2	-620.5	81.5
Neck Force	Y	Newtons	105.2	200.0	-206.7	66.2
Neck Force	Z	Newtons	912.3	85.3	-510.3	57.4
Neck Force Resultant	N/A	Newtons	1088.0	82.6		
Neck Moment	X	Nm	19.7	72.3	-3.0	129.3
Neck Moment	Y	Nm	124.1	71.5	-11.7	189.9
Neck Moment	Z	Nm	17.3	70.5	-1.5	112.4
Neck Moment Resultant	N/A	Nm	126.7	71.6		

CHILD SEAT TETHER BELT SENSOR PEAK VALUES

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Car Seat Upper Tether Force	N/A	Newtons	3201.9	66.7	-109.0	189.6

CHILD SEAT ACCELEROMETER PEAK VALUES

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Child Seat	X	G's	18.4	85.2	-68.6	61.4
Child Seat	Y	G's	12.8	66.0	-6.3	91.7
Child Seat	Z	G's	10.2	187.5	-23.7	75.0
Child Seat Resultant	N/A	G's	69.2	61.5		

SECTION F-1

DATA SHEET NO.5CRS PERFORMANCE DATA

Test Vehicle: 2004 Mazda 3 4 Door Sedan

NHTSA No.: M45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 12/17/03

Location	P3 CRS Serial No. 082	
	Damage	Post-Test
Upper Tether Strap	No	None
Upper Tether Buckle	No	None
Upper Tether Hook	No	None
Veh. Upper Tether Anchor	No	None
Lower Anchor Strap	No	None
Lower Anchor Buckle	No	None
Lower Anchor Hooks	No	None
Veh. Lower CRS Anchors	No	None
5 Point Harness Connections	No	None
Cracks on CRS	No	None
Fabric Tears on CRS	No	None
Vehicle Seat Structure	No	None
Vehicle Seat Fabric Tears	No	None

SECTION F-1**DATA SHEET NO.6CRS CAMERA DATA**Test Vehicle: 2004 Mazda 3 4 Door SedanNHTSA No.: M45400Test Program 2004 NHTSA 35mph NCAPTest Date: 12/17/03**CAMERA LOCATIONS**

No.	Camera View	Location(mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Passenger Side Child	3200	1930	2286	25	2680	6	1020
2	Passenger Side Child	6096	1830	2286	25	3886	6	1010

X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run

SECTION F-2
PHOTOGRAPHS

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Figure F2-1: Close-up View Position 3 CRS Label



Figure F2-2: Pre-Test Frontal View of Position 3 CRS



Figure F2-3: Post-Test Frontal View of Position 3 CRS



Figure F2-4: Pre-Test Rear View of Position 3 CRS



Figure F2-5: Post-Test Rear View of Position 3 CRS



Figure F2-6: Pre-Test Left Side View of Position 3 CRS



Figure F2-7: Post-Test Left Side View of Position 3 CRS



Figure F2-8: Pre-Test Right Side View of Position 3 CRS



Figure F2-9: Post-Test Right Side View of Position 3 CRS



Figure F2-10: Pre-Test Position 3 Front View

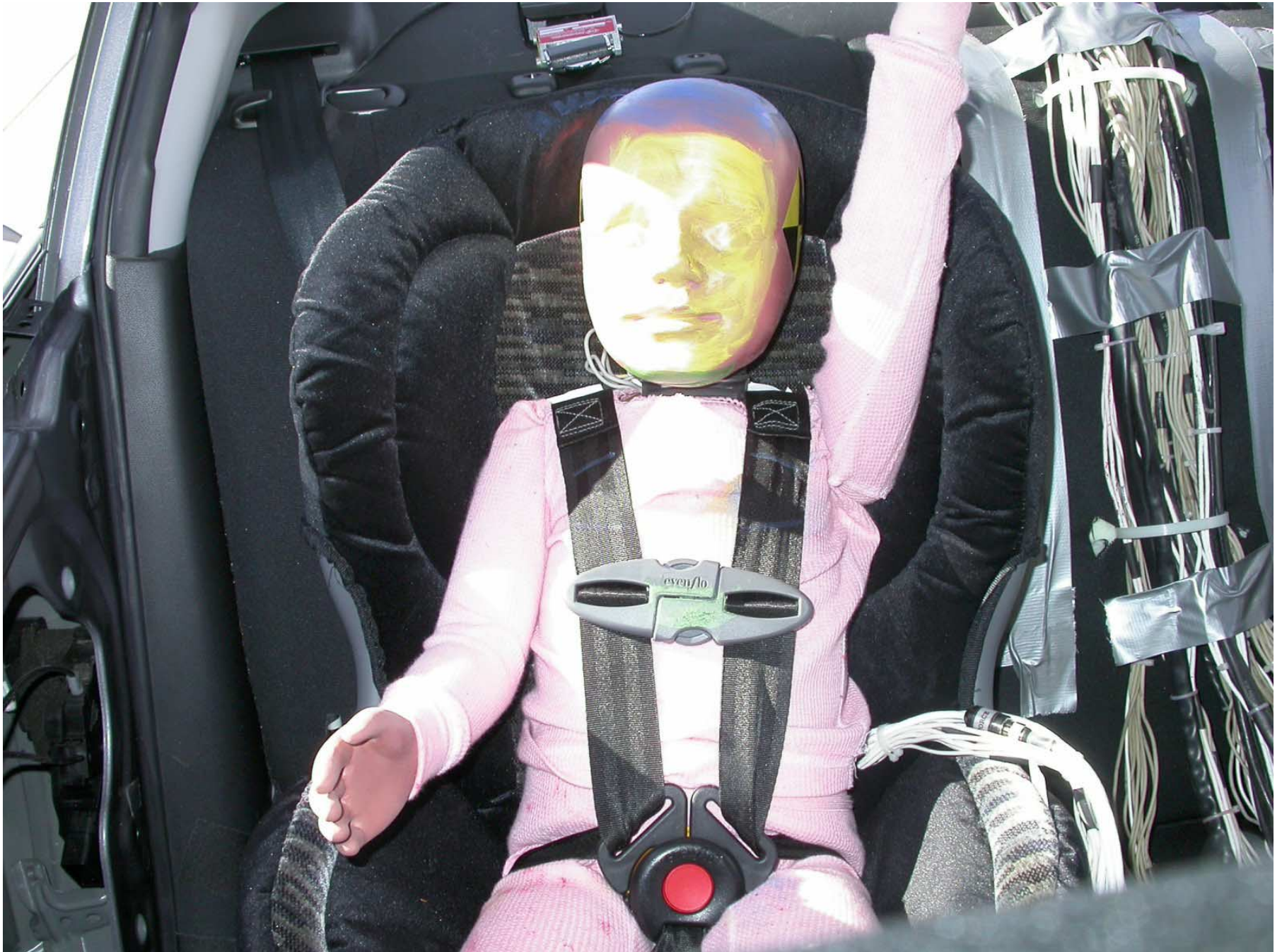


Figure F2-11: Post-Test Position 3 Front View



Figure F2-12: Pre-Test Position 3 Left Side View



Figure F2-13: Post-Test Position 3 Left Side View



Figure F2-14: Pre-Test Position 3 Right Side View



Figure F2-15: Post-Test Position 3 Right Side View



Figure F2-16: Post-Test Position 3 Contact Point (Back of Right Front Seat)

SECTION F-3

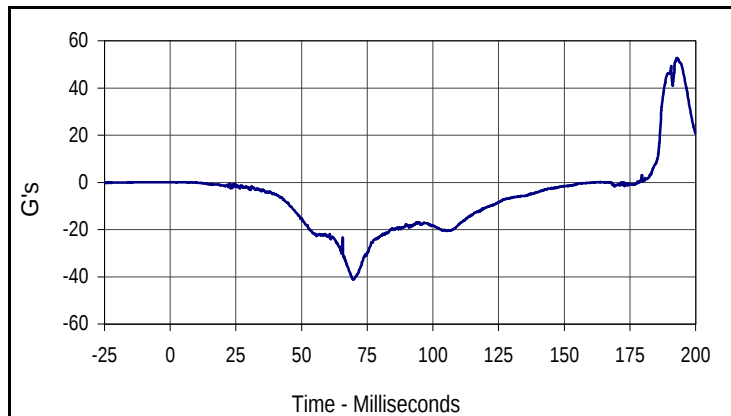
CHILD DUMMY RESPONSE AND CRS DATA TRACES

LIST OF DATA PLOTS #3

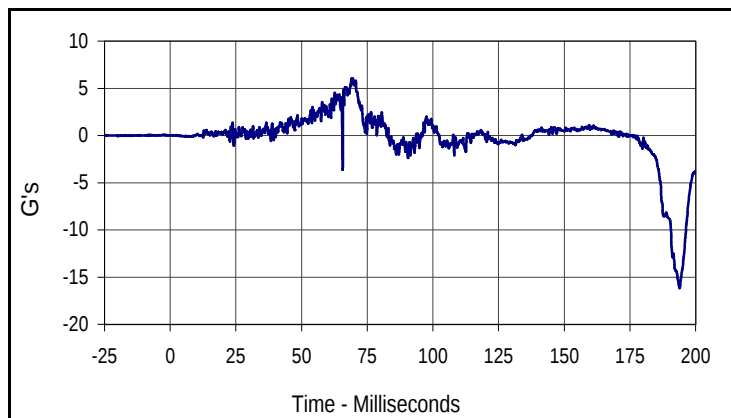
Data Plot	Page
F3-1	Right Rear Child (3 yr. old) Head X F3-1
	Right Rear Child (3 yr. old) Head Y F3-1
	Right Rear Child (3 yr. old) Head Z F3-1
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F3-2	Right Rear Child (3 yr. old) Upper Neck Force X F3-2
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	Right Rear Child (3 yr. old) Upper Neck Moment Y F3-3
	Right Rear Child (3 yr. old) Upper Neck Moment Z F3-3
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	Right Rear Child (3 yr. old) Lower Neck Force Y F3-4
	Right Rear Child (3 yr. old) Lower Neck Force Z F3-4
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	Right Rear Child (3 yr. old) Lower Neck Moment Y F3-5
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	Right Rear Child (3 yr. old) Car Seat Z F3-10
	Right Rear Child (3 yr. old) Car Seat Resultant F3-10

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

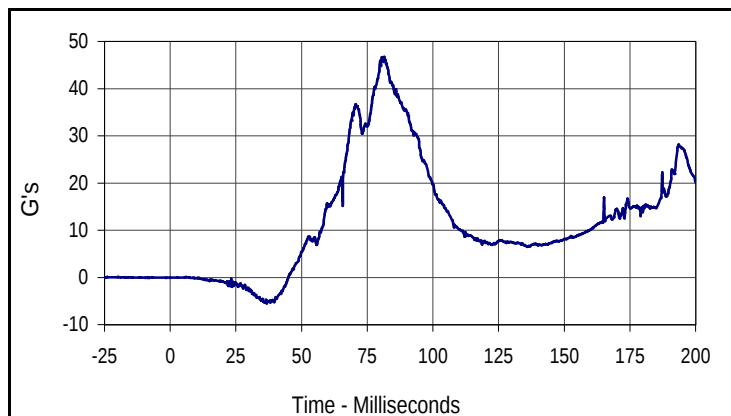
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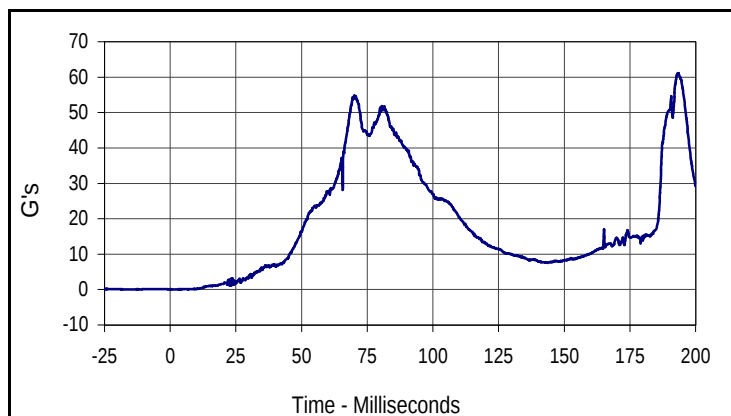
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Right Rear (3 Yr.) Head X			
CURNO	Type	SAE Class	Units
134	FIL	1000	G's
Max	Time	Min	Time
52.7	192.9	-41.2	69.6



Curve Description			
Right Rear (3 Yr.) Head Y			
CURNO	Type	SAE Class	Units
135	FIL	1000	G's
Max	Time	Min	Time
6.0	69.1	-16.2	193.9



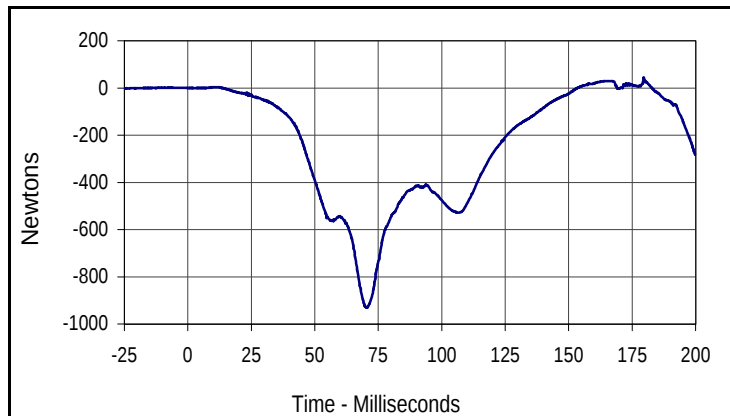
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Max	Time	Min	Time
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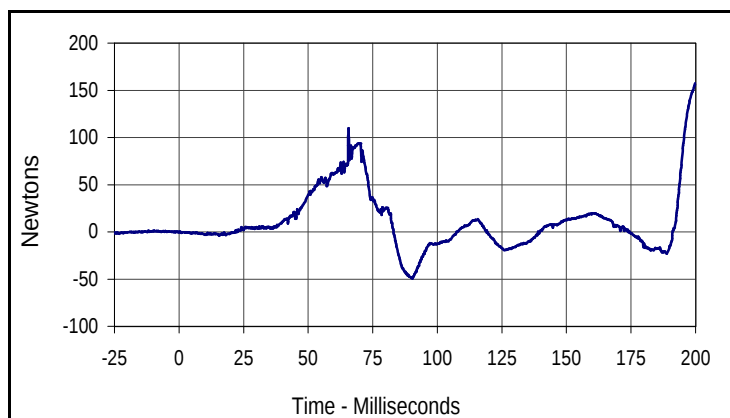
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Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

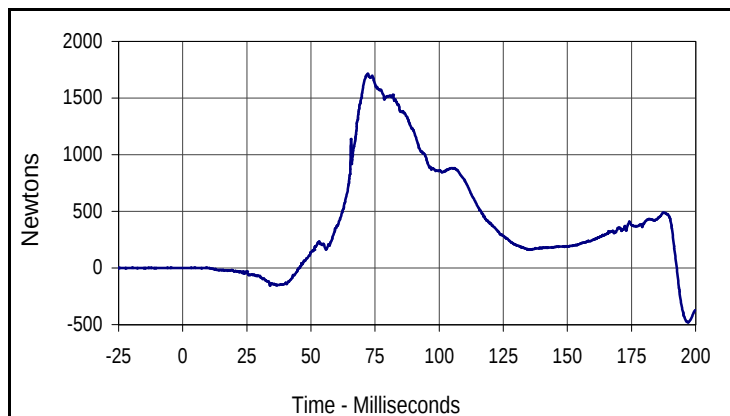
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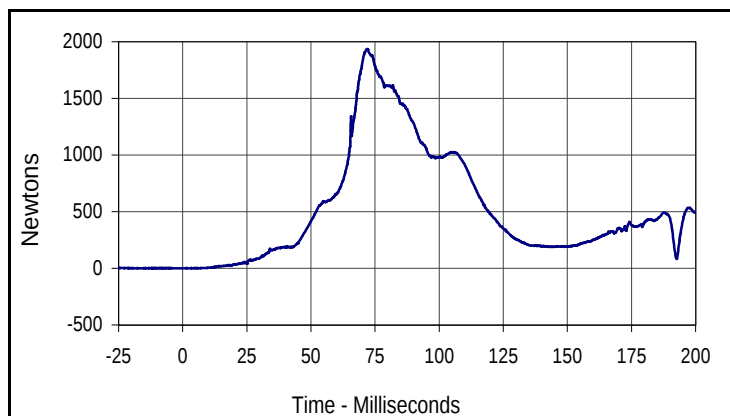
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Right Rear (3 Yr.) Upper Neck Force X			
CURNO	Type	SAE Class	Units
137	FIL	1000	Newtons
Max	Time	Min	Time
44.6	179.6	-930.5	70.6



Curve Description			
Right Rear (3 Yr.) Upper Neck Force Y			
CURNO	Type	SAE Class	Units
138	FIL	1000	Newtons
Max	Time	Min	Time
157.3	200.0	-49.4	90.3



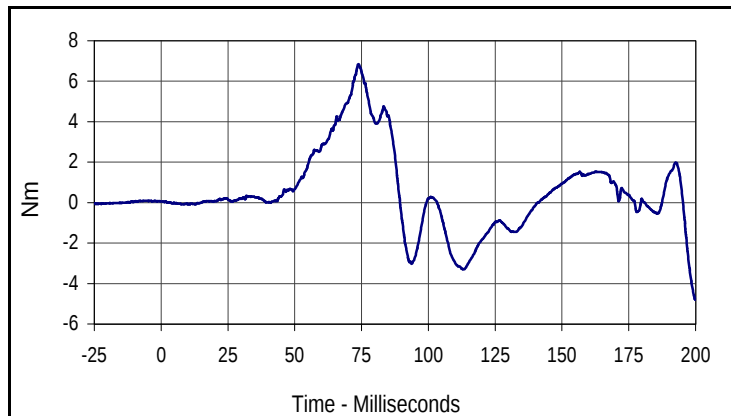
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Right Rear (3 Yr.) Upper Neck Force Z			
CURNO	Type	SAE Class	Units
139	FIL	1000	Newtons
Max	Time	Min	Time
1714.4	72.1	-480.3	196.9



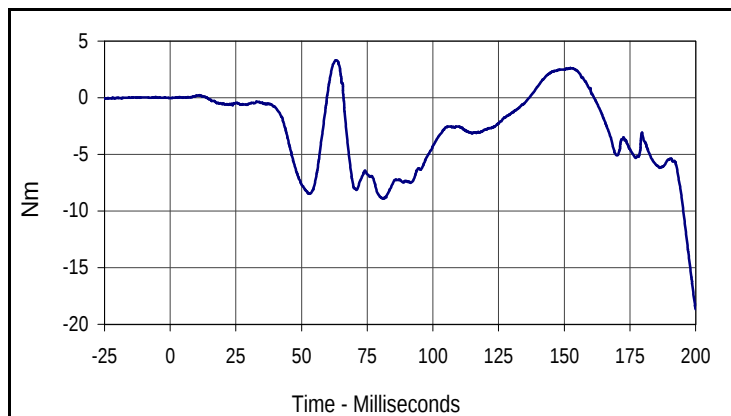
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Right Rear (3 Yr.) Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
137	RES	1000	Newtons
Max	Time	Min	Time
1936.1	72.1	0.4	0.2

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

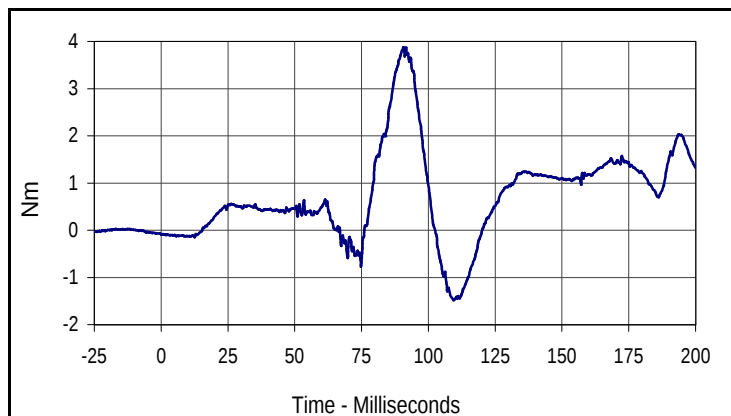
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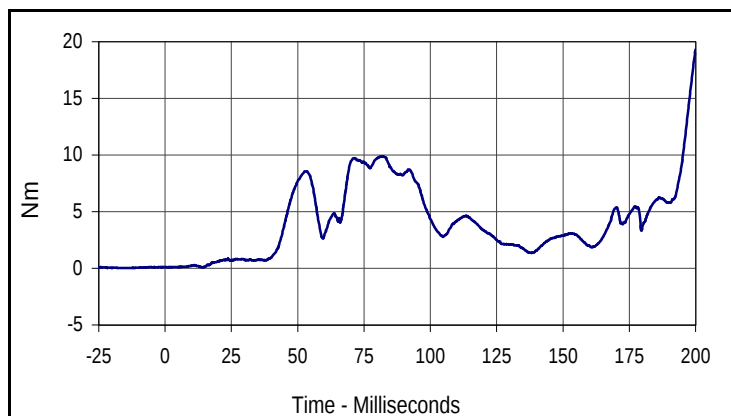
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Right Rear (3 Yr.) Upper Neck Moment X			
CURNO	Type	SAE Class	Units
140	FIL	600	Nm
Max	Time	Min	Time
6.8	73.9	-4.8	200.0



Curve Description			
Right Rear (3 Yr.) Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
141	FIL	600	Nm
Max	Time	Min	Time
3.3	63.3	-18.7	200.0



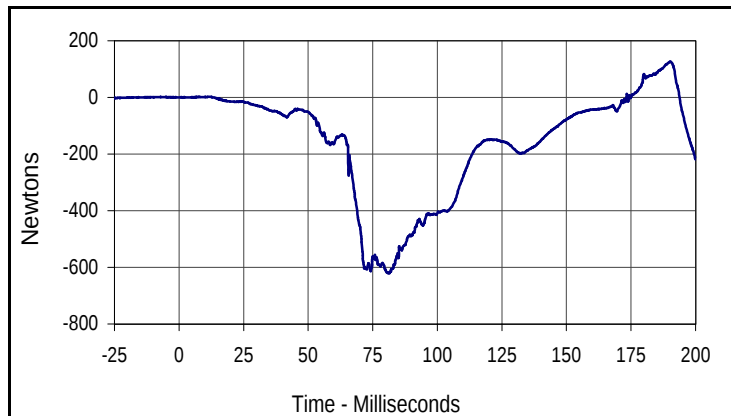
Curve Description			
Right Rear (3 Yr.) Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
142	FIL	600	Nm
Max	Time	Min	Time
3.9	90.7	-1.5	109.5



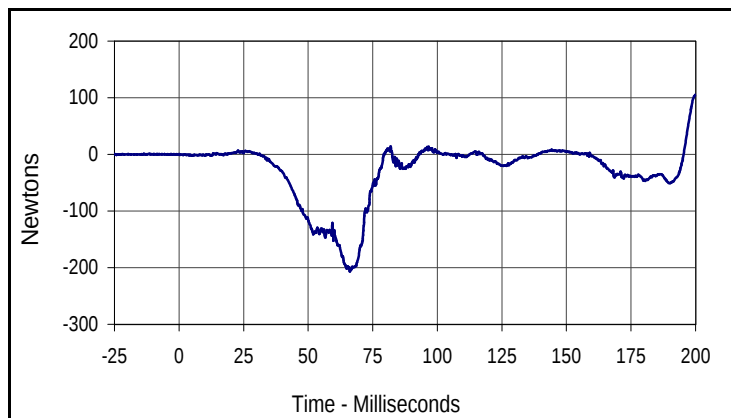
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Right Rear (3 Yr.) Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
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Max	Time	Min	Time
19.3	200.0	0.1	14.3

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

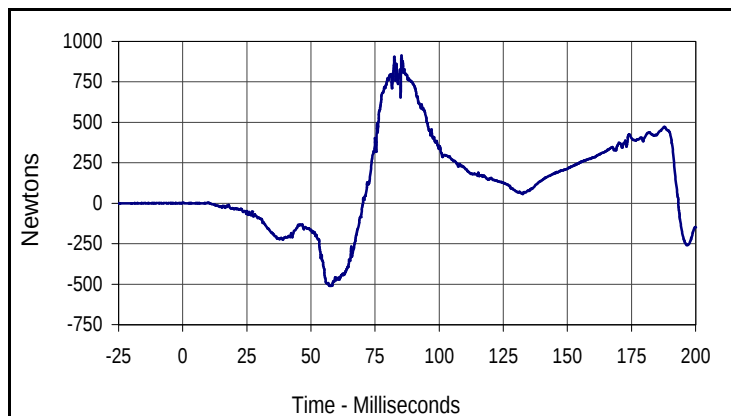
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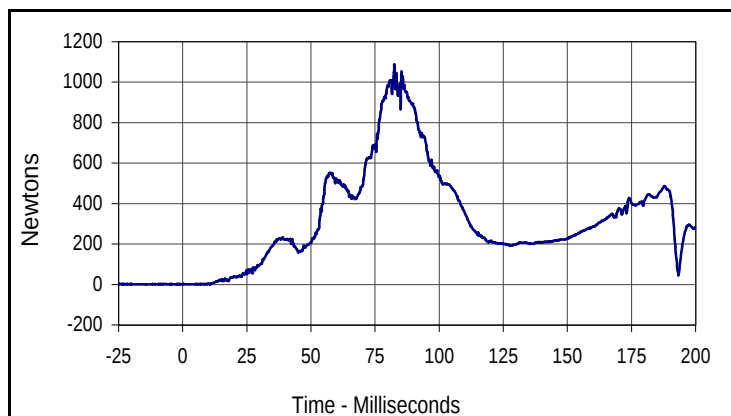
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Right Rear (3 Yr.) Lower Neck Force X			
CURNO	Type	SAE Class	Units
143	FIL	1000	Newtons
Max	Time	Min	Time
126.3	190.2	-620.5	81.5



Curve Description			
Right Rear (3 Yr.) Lower Neck Force Y			
CURNO	Type	SAE Class	Units
144	FIL	1000	Newtons
Max	Time	Min	Time
105.2	200.0	-206.7	66.2



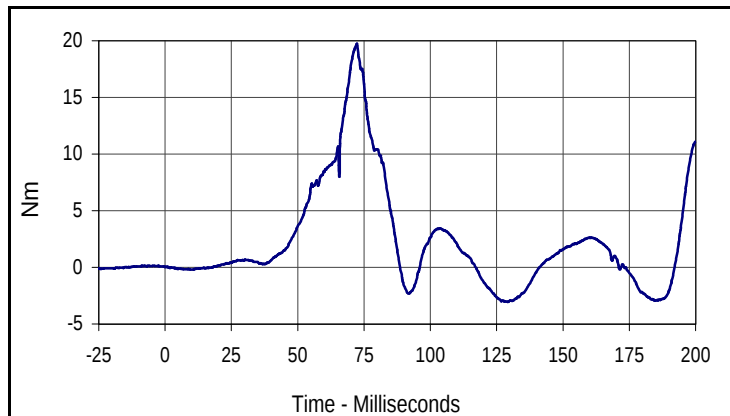
Curve Description			
Right Rear (3 Yr.) Lower Neck Force Z			
CURNO	Type	SAE Class	Units
145	FIL	1000	Newtons
Max	Time	Min	Time
912.3	85.3	-510.3	57.4



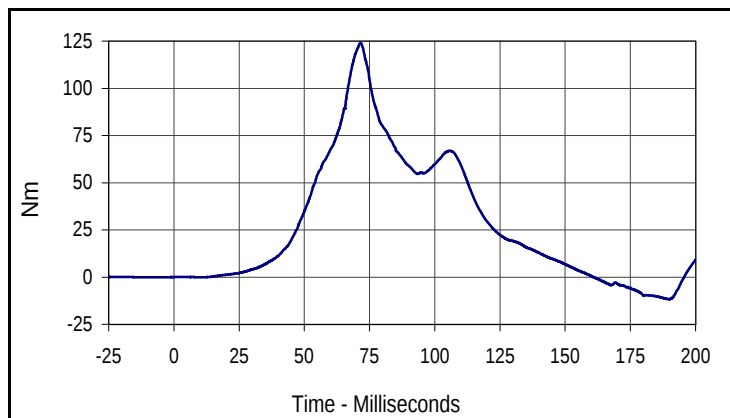
Curve Description			
Right Rear (3 Yr.) Lower Neck Force Res.			
CURNO	Type	SAE Class	Units
143	RES	1000	Newtons
Max	Time	Min	Time
1088.0	82.6	0.5	1.1

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

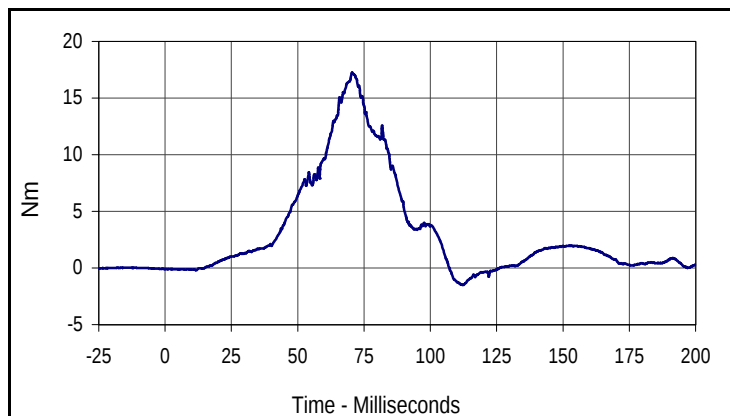
Test Date: 12/17/03
 NHTSA No.: M45400



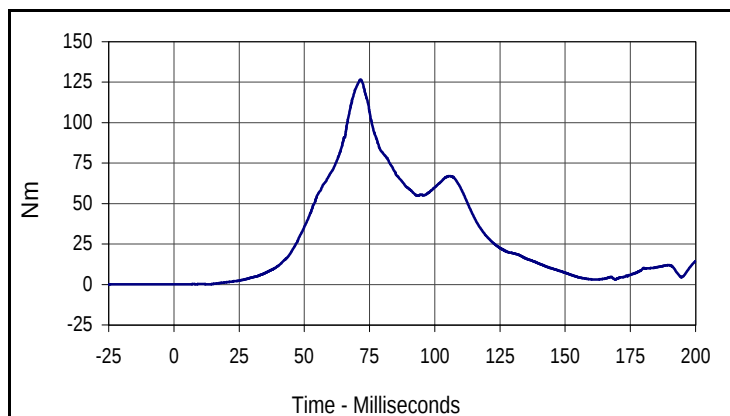
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment X			
CURNO	Type	SAE Class	Units
146	FIL	600	Nm
Max	Time	Min	Time
19.7	72.3	-3.0	129.3



Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Y			
CURNO	Type	SAE Class	Units
147	FIL	600	Nm
Max	Time	Min	Time
124.1	71.5	-11.7	189.9



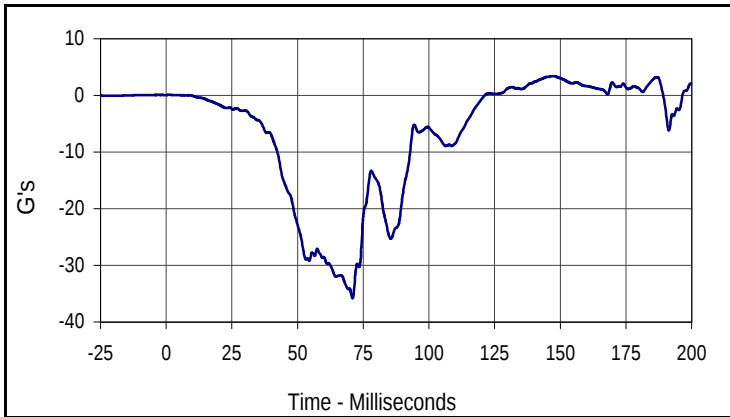
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Z			
CURNO	Type	SAE Class	Units
148	FIL	600	Nm
Max	Time	Min	Time
17.3	70.5	-1.5	112.4



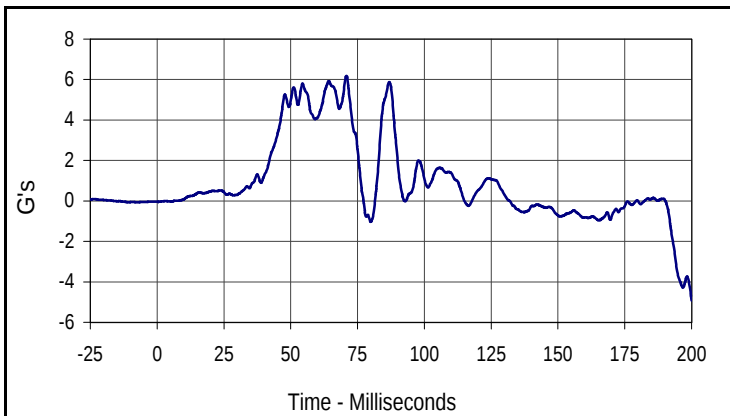
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Res.			
CURNO	Type	SAE Class	Units
146	RES	600	Nm
Max	Time	Min	Time
126.7	71.6	0.1	12.8

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

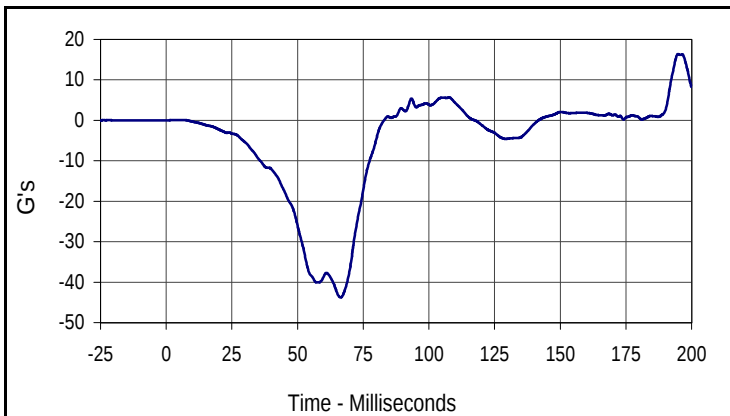
Test Date: 12/17/03
 NHTSA No.: M45400



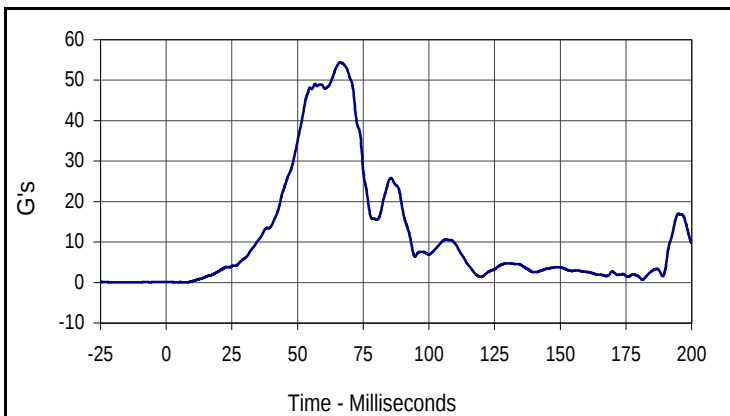
Curve Description			
Right Rear (3 Yr.) Chest X			
CURNO	Type	SAE Class	Units
149	FIL	180	G's
Max	Time	Min	Time
3.4	147.7	-35.8	70.9



Curve Description			
Right Rear (3 Yr.) Chest Y			
CURNO	Type	SAE Class	Units
150	FIL	180	G's
Max	Time	Min	Time
6.2	70.9	-4.9	200.0



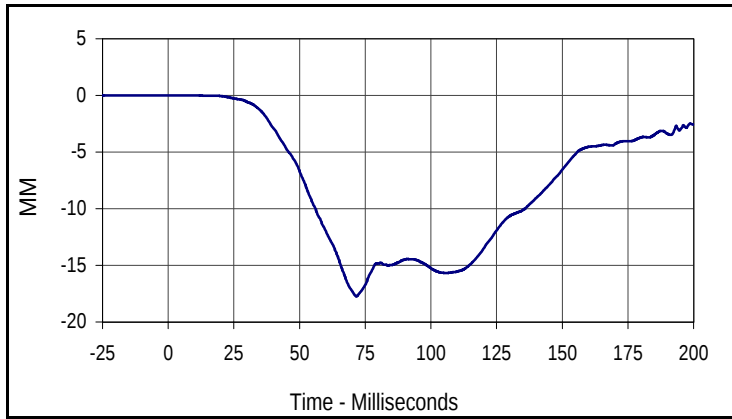
Curve Description			
Right Rear (3 Yr.) Chest Z			
CURNO	Type	SAE Class	Units
151	FIL	180	G's
Max	Time	Min	Time
16.3	194.9	-43.8	66.4



Curve Description			
Right Rear (3 Yr.) Chest Resultant			
CURNO	Type	SAE Class	Units
149	RES	180	G's
Max	Time	Min	Time
54.4	66.2	0.0	7.9

Test Vehicle: 2004 Mazda 3 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

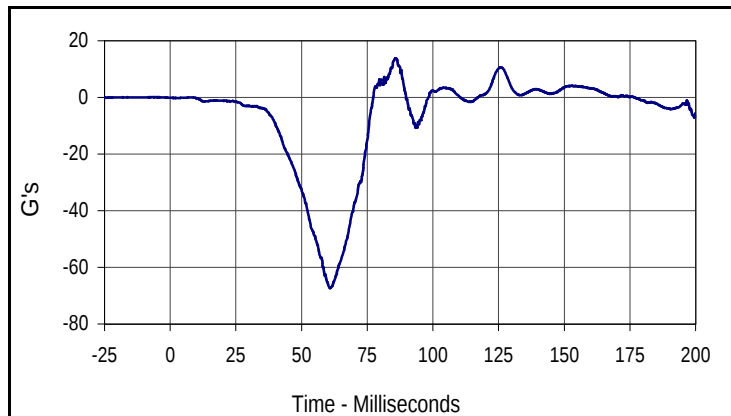
Test Date: 12/17/03
NHTSA No.: M45400



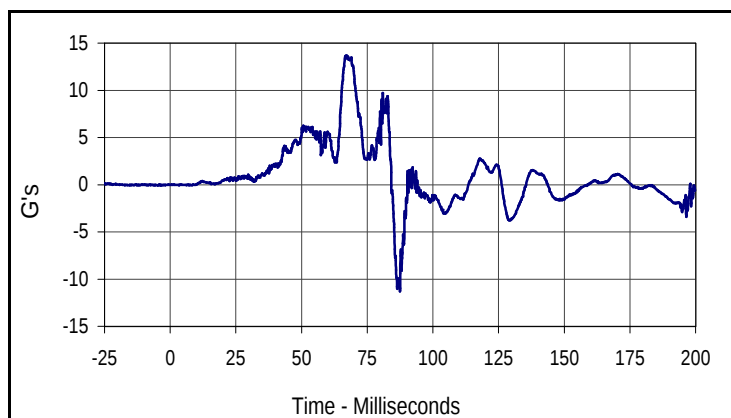
Curve Description			
Right Rear (3 Yr.) Chest Displacement			
CURNO	Type	SAE Class	Units
152	FIL	600	MM
Max	Time	Min	Time
0.0	8.1	-17.7	71.7

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

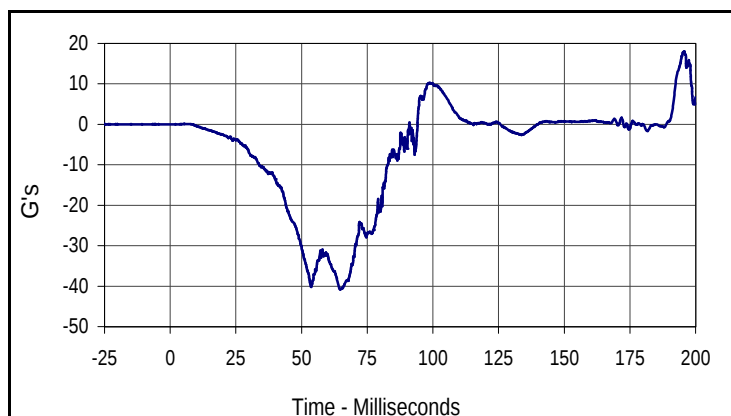
Test Date: 12/17/03
 NHTSA No.: M45400



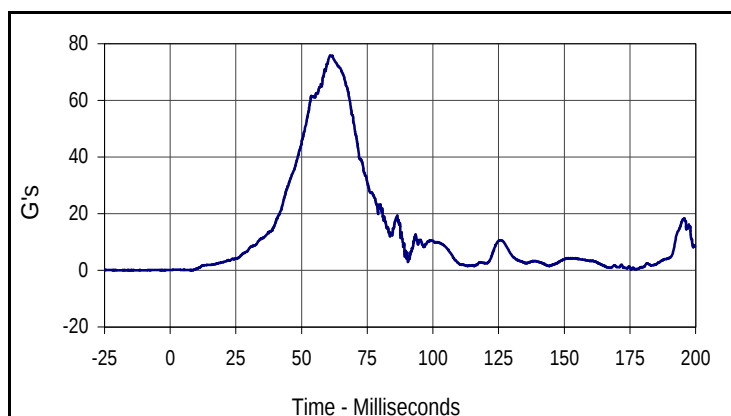
Curve Description			
Right Rear (3 Yr.) Pelvis X			
CURNO	Type	SAE Class	Units
153	FIL	1000	G's
Max	Time	Min	Time
13.8	85.7	-67.3	60.8



Curve Description			
Right Rear (3 Yr.) Pelvis Y			
CURNO	Type	SAE Class	Units
154	FIL	1000	G's
Max	Time	Min	Time
13.7	67.2	-11.3	87.4



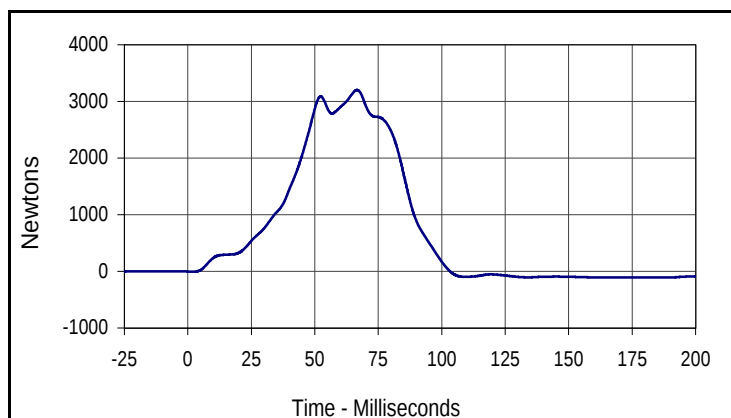
Curve Description			
Right Rear (3 Yr.) Pelvis Z			
CURNO	Type	SAE Class	Units
155	FIL	1000	G's
Max	Time	Min	Time
18.1	195.7	-40.8	64.6



Curve Description			
Right Rear (3 Yr.) Pelvis Resultant			
CURNO	Type	SAE Class	Units
153	RES	1000	G's
Max	Time	Min	Time
75.8	60.9	0.0	8.5

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

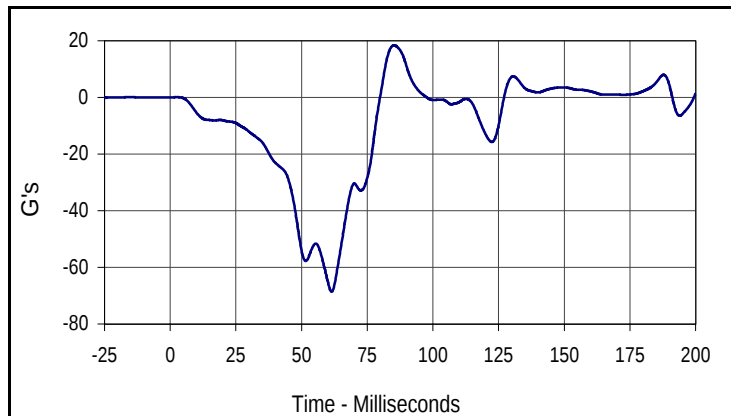
Test Date: 12/17/03
 NHTSA No.: M45400



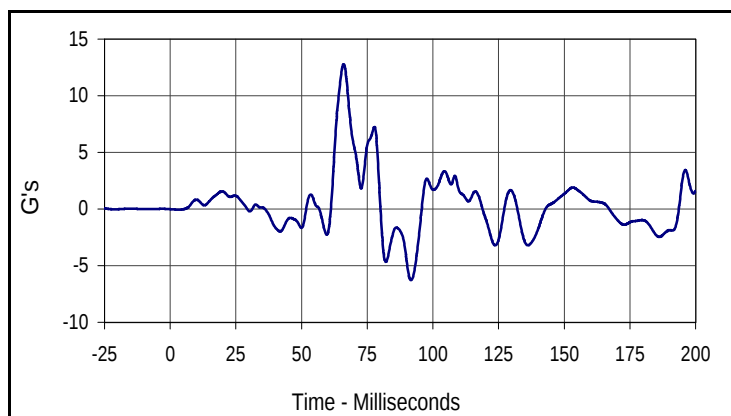
Curve Description			
Right Rear (3 Yr.) Car Seat Upper Tether Force			
CURNO	Type	SAE Class	Units
156	FIL	60	Newtons
Max	Time	Min	Time
3201.9	66.7	-109.0	189.6

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

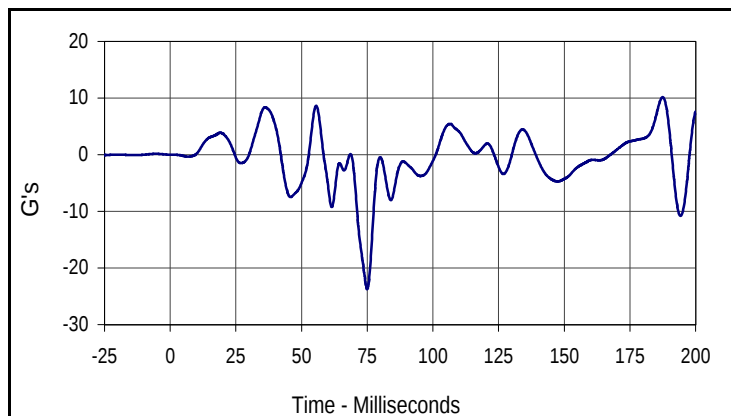
Test Date: 12/17/03
 NHTSA No.: M45400



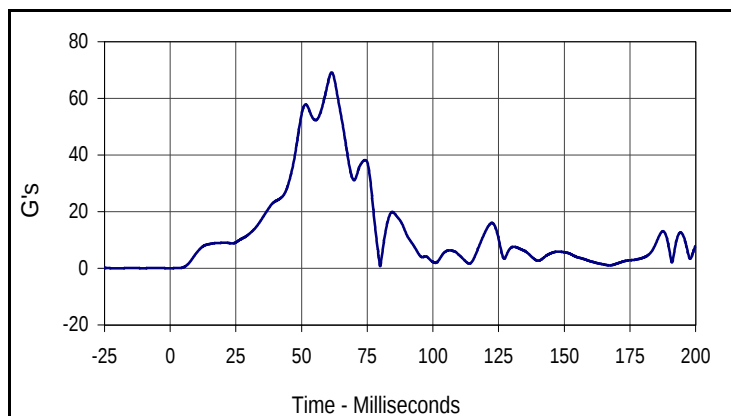
Curve Description			
Right Rear (3 Yr.) Car Seat X			
CURNO	Type	SAE Class	Units
157	FIL	60	G's
Max	Time	Min	Time
18.4	85.2	-68.6	61.4



Curve Description			
Right Rear (3 Yr.) Car Seat Y			
CURNO	Type	SAE Class	Units
158	FIL	60	G's
Max	Time	Min	Time
12.8	66.0	-6.3	91.7



Curve Description			
Right Rear (3 Yr.) Car Seat Z			
CURNO	Type	SAE Class	Units
159	FIL	60	G's
Max	Time	Min	Time
10.2	187.5	-23.7	75.0



Curve Description			
Right Rear (3 Yr.) Car Seat Resultant			
CURNO	Type	SAE Class	Units
157	RES	60	G's
Max	Time	Min	Time
69.2	61.5	0.0	0.0

SECTION F-4

CHILD DUMMY INSTRUMENTATION INFORMATION

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Right Rear Child A.T.D. Serial Number 082
12/17/03
2004 Mazda 3 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
134	HEAD CG	X	GPAC050	Accel.,1/2 bridge	Endevco	7264-2000	G
135	HEAD CG	Y	GPAC051	Accel.,1/2 bridge	Endevco	7264-2000	G
136	HEAD CG	Z	GPAC052	Accel.,1/2 bridge	Endevco	7264-2000	G
137	UPPER NECK FORCE	X	082UNFX	Load cell, six axis neck	R. A. Denton	IF-234	N
138	UPPER NECK FORCE	Y	082UNFY	Load cell, six axis neck	R. A. Denton	IF-234	N
139	UPPER NECK FORCE	Z	082UNFZ	Load cell, six axis neck	R. A. Denton	IF-234	N
140	UPPER NECK MOMENT	X	082UNMX	Load cell, six axis neck	R. A. Denton	IF-234	Nm
141	UPPER NECK MOMENT	Y	082UNMY	Load cell, six axis neck	R. A. Denton	IF-234	Nm
142	UPPER NECK MOMENT	Z	082UNMZ	Load cell, six axis neck	R. A. Denton	IF-234	Nm
143	LOWER NECK FORCE	X	082LNFX	Load cell, six axis neck	R. A. Denton	3303	N
144	LOWER NECK FORCE	Y	082LNFY	Load cell, six axis neck	R. A. Denton	3303	N
145	LOWER NECK FORCE	Z	082LNFZ	Load cell, six axis neck	R. A. Denton	3303	N
146	LOWER NECK MOMENT	X	082LNMX	Load cell, six axis neck	R. A. Denton	3303	Nm
147	LOWER NECK MOMENT	Y	082LNMY	Load cell, six axis neck	R. A. Denton	3303	Nm
148	LOWER NECK MOMENT	Z	082LNMZ	Load cell, six axis neck	R. A. Denton	3303	Nm
149	CHEST CG	X	2116-A11	Accel., Full Bridge	Entran	2000JF	G
150	CHEST CG	Y	2116-A14	Accel., Full Bridge	Entran	2000JF	G
151	CHEST CG	Z	2116-A23	Accel., Full Bridge	Entran	2000JF	G
152	CHEST DISPLACEMENT	X	082CP	Rotary Pot Chest	Servo	14CBI	MM
153	PELVIS	X	2116-A12	Accel., Full Bridge	Entran	2000JF	G
154	PELVIS	Y	2116-A19	Accel., Full Bridge	Entran	2000JF	G
155	PELVIS	Z	2116-A17	Accel., Full Bridge	Entran	2000JF	G
156	CAR SEAT UPPER TETHER FORCE	X	BL112	Load cell, Seat belt	FGP	FN4060	N
157	CAR SEAT	X	KETX1A	Accel.,1/2 bridge	Endevco	7264-200	G
158	CAR SEAT	Y	KETX1B	Accel.,1/2 bridge	Endevco	7264-200	G
159	CAR SEAT	Z	KETX1C	Accel.,1/2 bridge	Endevco	7264-200	G

SECTION F-5

CHILD DUMMY CALIBRATION INFORMATION



Calibration Data Sheet

Hybrid III 3 Year Old

Head Drop Test

ATD Serial No.: 082

Test I.D.: HD11C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 280.0	264.8	Pass
Peak Lateral Acceleration	G's	≤15.0	3.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.6	Pass
Overall Test Results				Pass

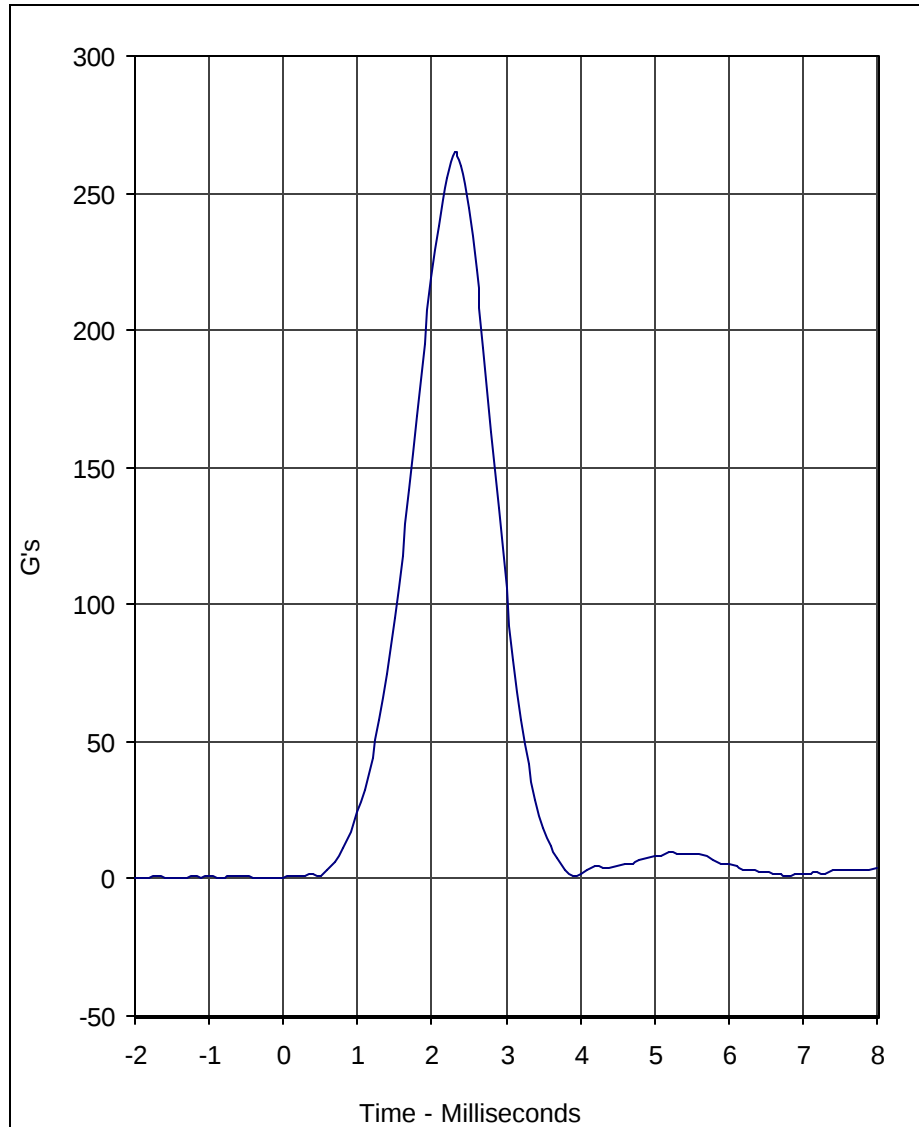
F5-1

TR-P24001-05-NC

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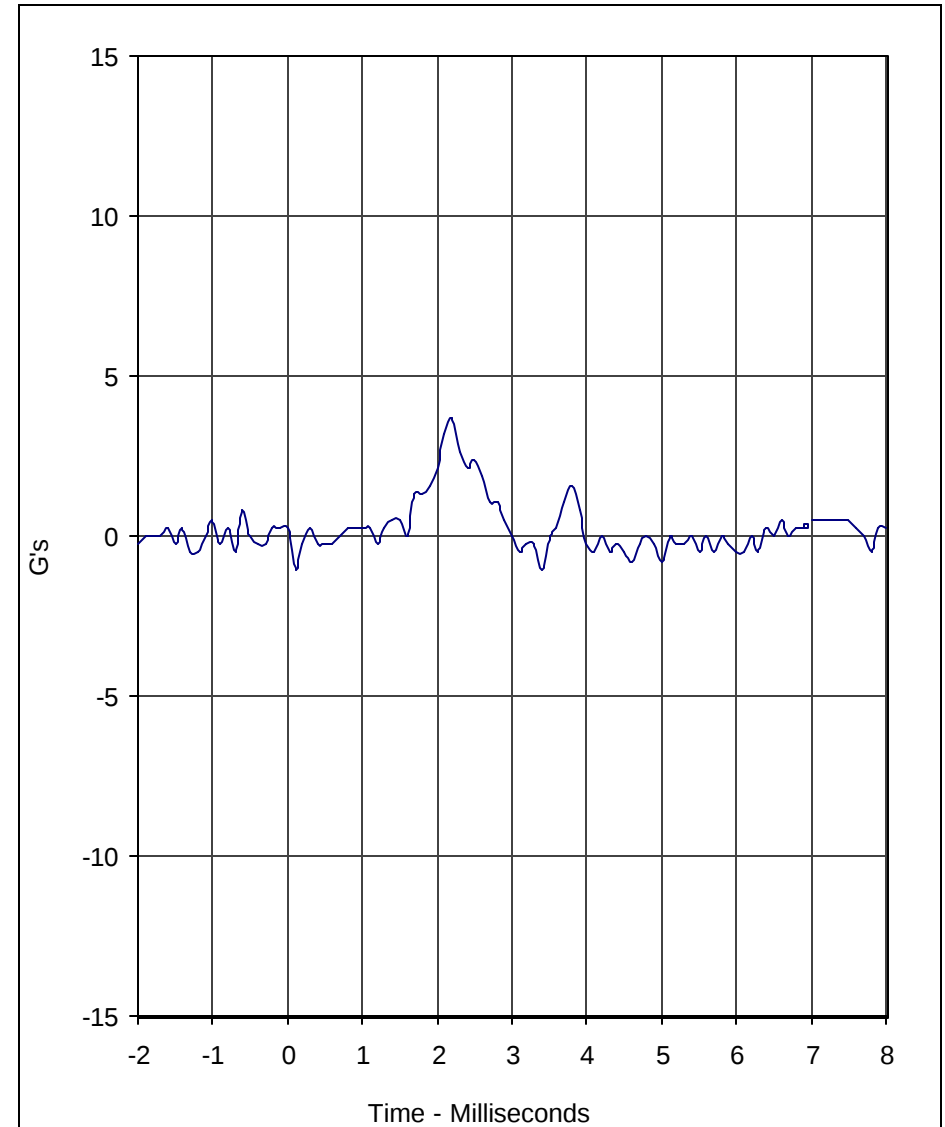
November 24, 2003

Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES
Units	Max	Time	Min	Time	SAE Class
G's	264.8	2.3	0.3	-1.1	1000

Test Program: Hybrid III 3 Year Old Head Drop Test
 Test Date: 11/24/03



Curve Description				CURNO	Type
Head Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	3.7	2.2	-1.1	0.1	1000

A.T.D. Serial No.: 082
 Test I.D.: HD11C





Calibration Data Sheet

Hybrid III 3 Year Old

Thorax Impact Test

ATD Serial No.: 082

Test I.D.: CH11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	5.9 to 6.1	5.93	Pass
Peak Chest Compression	MM	32 to 38	33.2	Pass
Peak Probe Force Between 32 and 38 MM	Newtons	680 to 810	725.9	Pass
Peak Probe Force Between 12.5 and 32 MM	Newtons	≤860	780.9	Pass
Internal Hysteresis	%	65 to 85	76.1	Pass
Overall Test Results				Pass

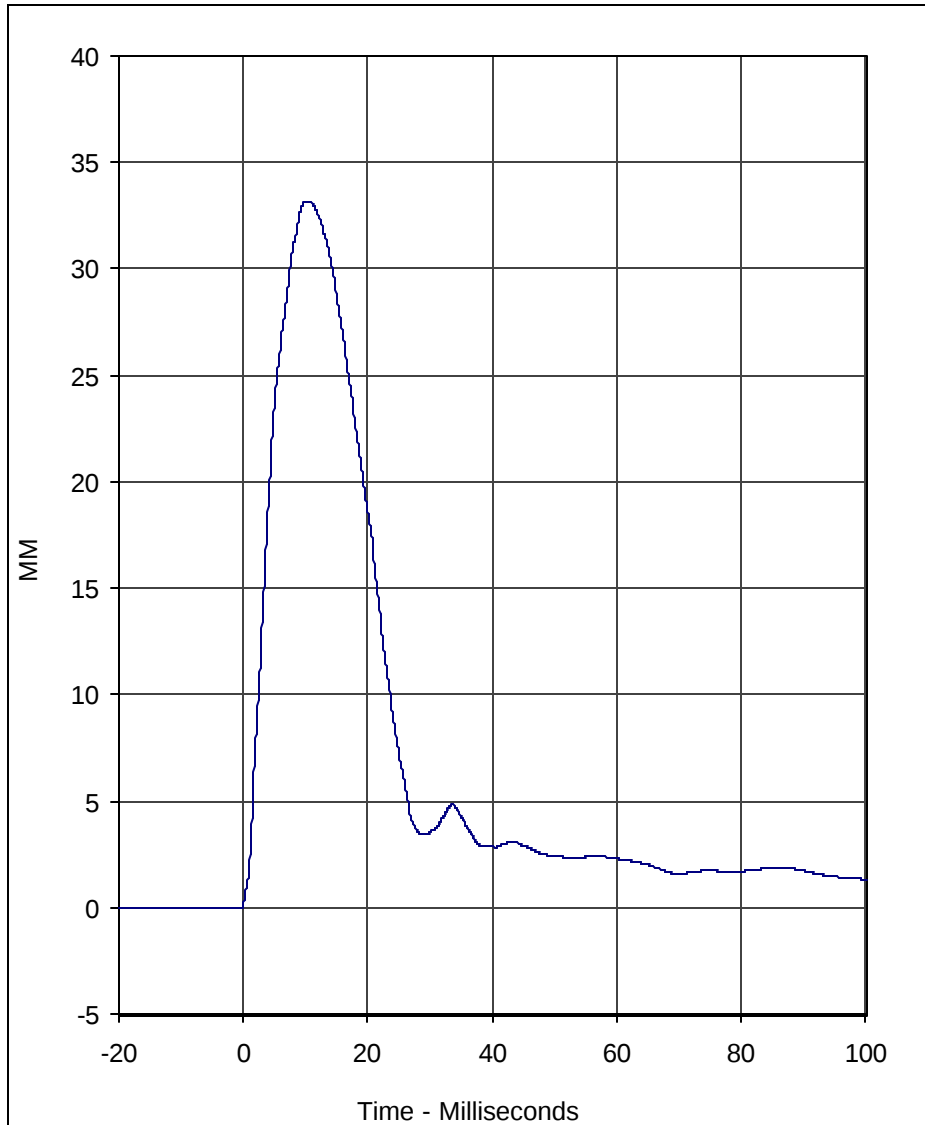
F5-3

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November 25, 2003

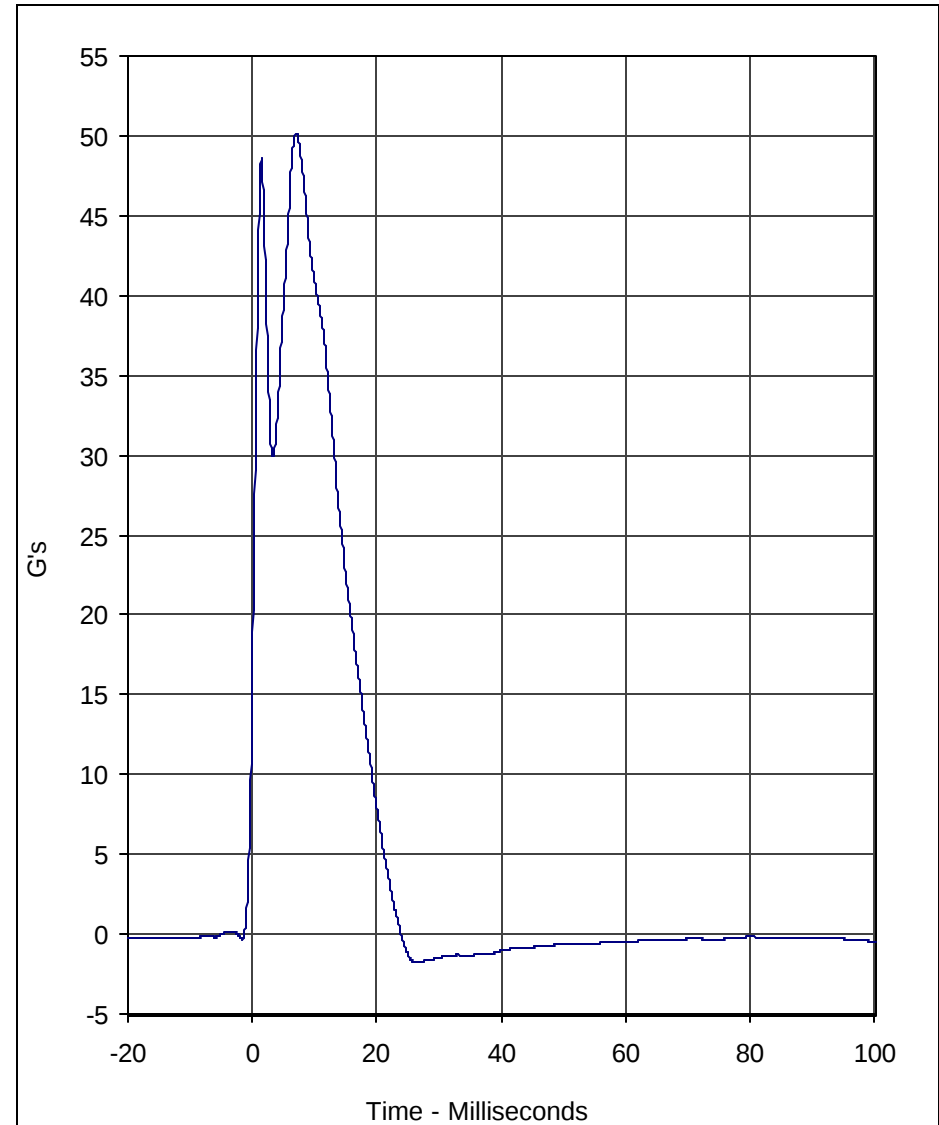
Test Date



Curve Description				CURNO	Type
Chest Compression				001	FIL
Units	Max	Time	Min	Time	SAE Class
MM	33.2	10.3	-0.1	-0.2	600

Test Program: Hybrid III 3 Year Old Thorax Impact

Test Date: 11/25/03

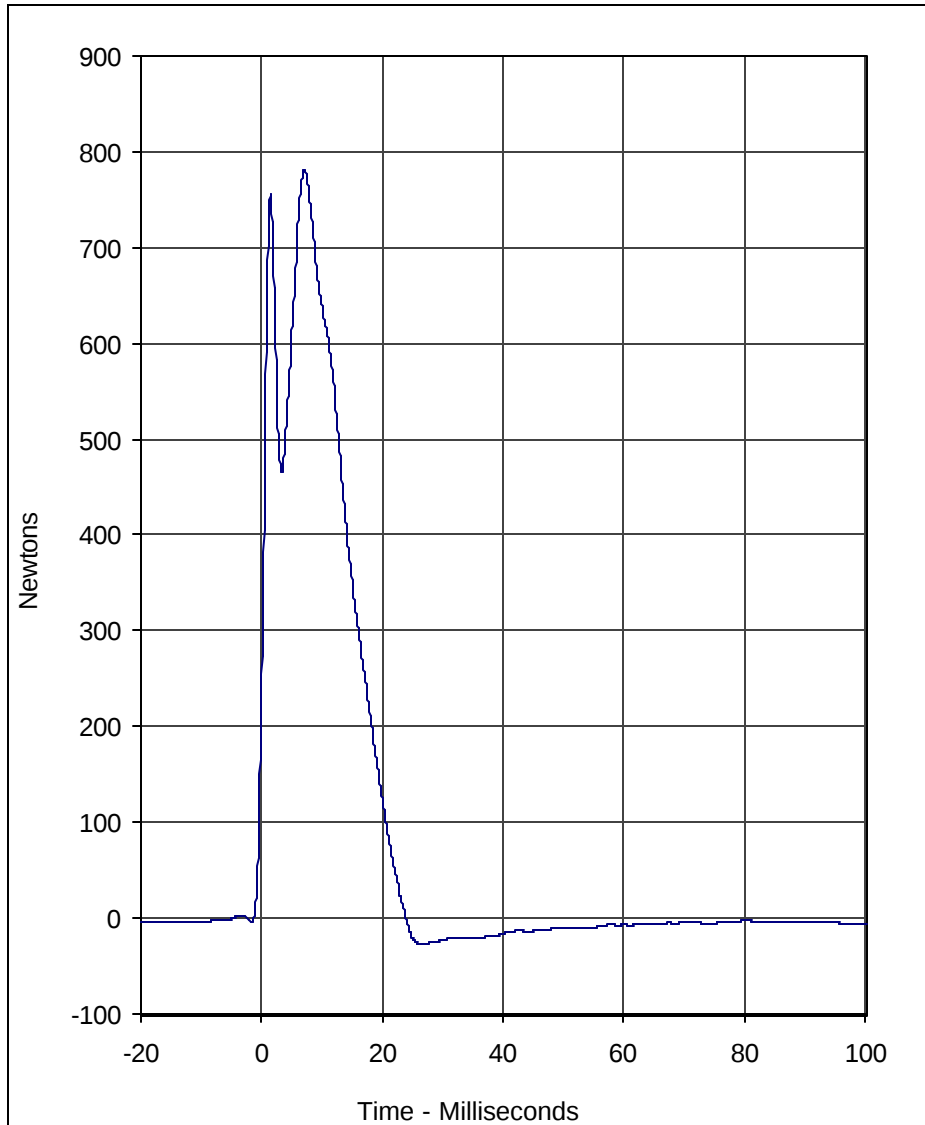


Curve Description				CURNO	Type
Probe Acceleration				002	FIL
Units	Max	Time	Min	Time	SAE Class
G's	50.2	7.1	-1.8	26.6	600

A.T.D. Serial No.: 082

Test I.D.: CH11A

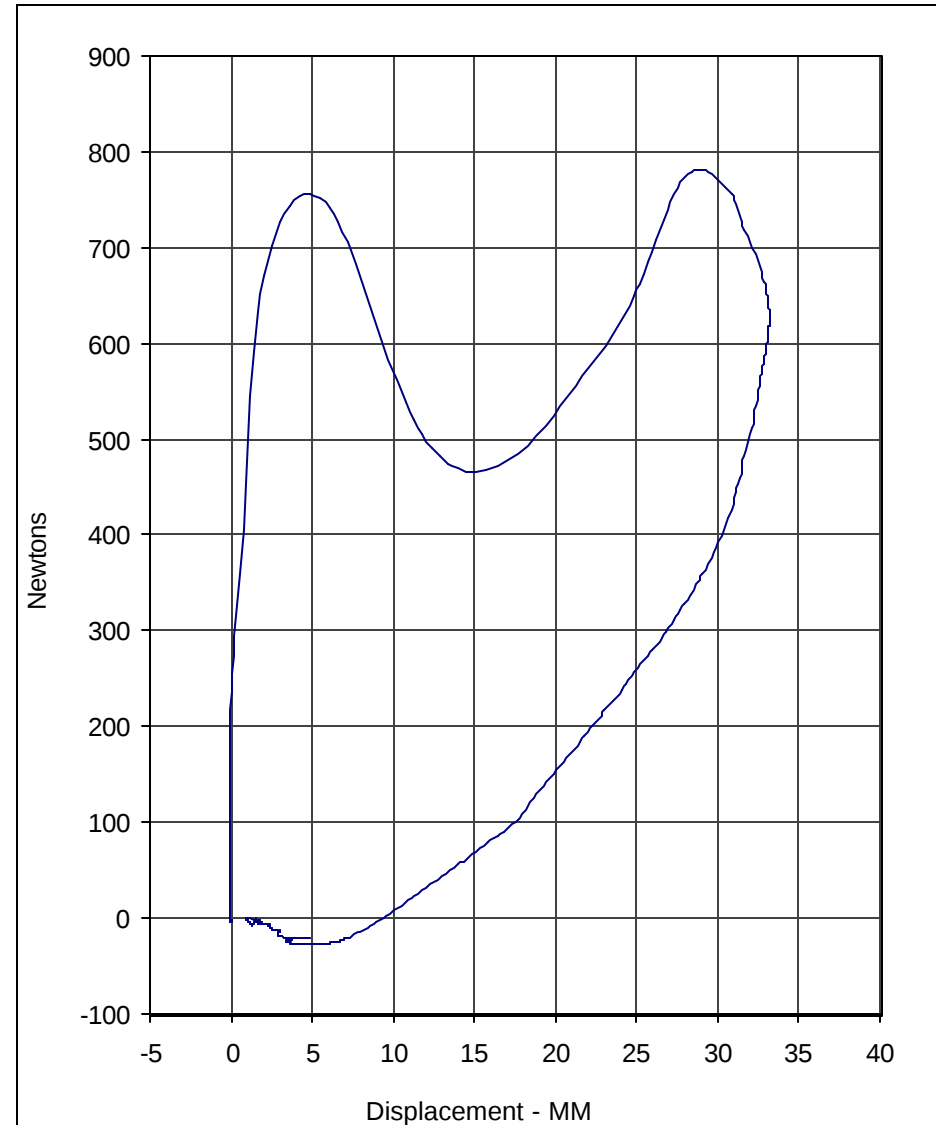




Curve Description				CURNO	Type
Probe Force				003	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	780.9	7.1	-27.3	26.6	180

Test Program: Hybrid III 3 Year Old Thorax Impact

Test Date: 11/25/03



Curve Description			CURNO	Type
Probe Force vs. Chest Compression			004	FIL
Units	Hysteresis	SAE Class		
%	76.1	180/600		

A.T.D. Serial No.: 082

Test I.D.: CH11A





Calibration Data Sheet

Hybrid III 3 Year Old

Neck Flexion Test

ATD Serial No.: 082

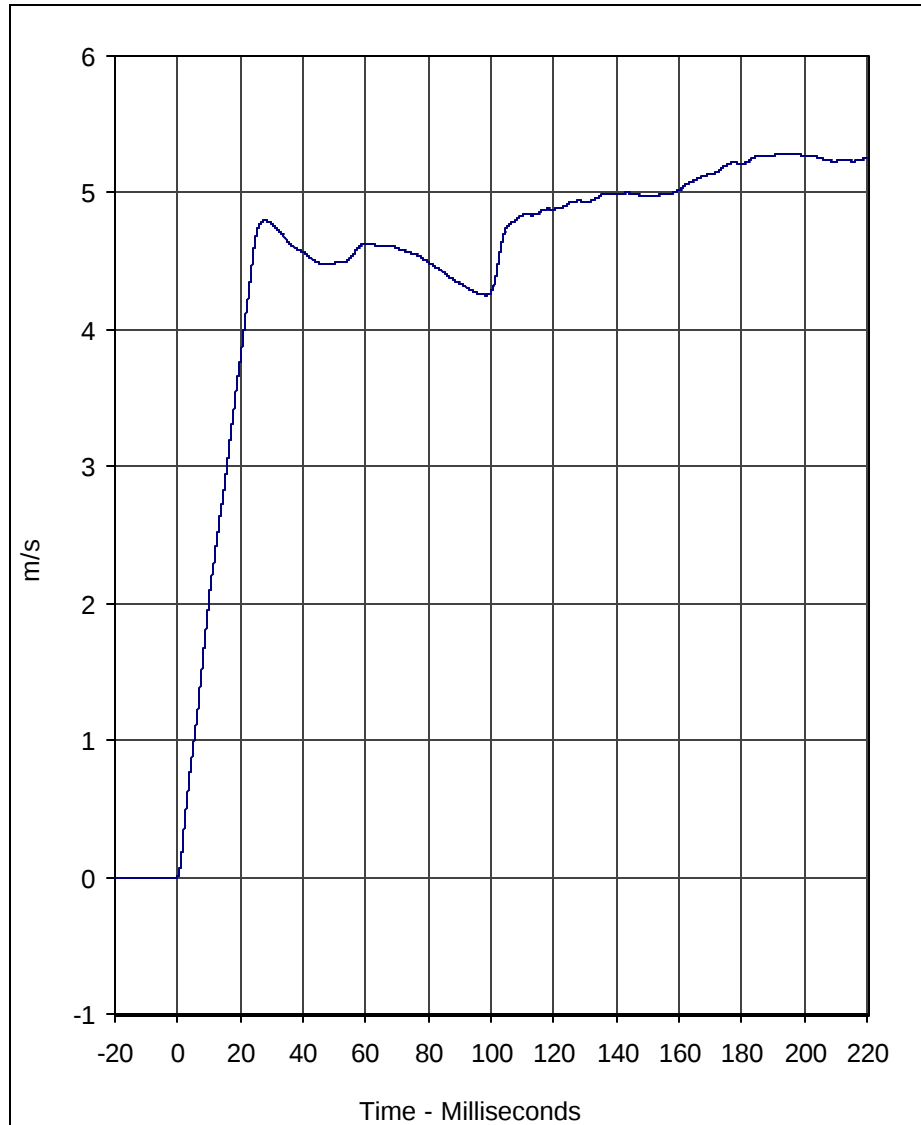
Test I.D.: NF11A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.40 to 5.60	5.55	Pass
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.0	Pass
	20 Msec.	m/s	3.0 to 4.0	3.8	Pass
	30 Msec.	m/s	4.0 to 5.1	4.8	Pass
"D" Plane Rotation	Maximum	Degrees	70.0 to 82.0	76.3	Pass
Peak Moment in Rotation	Maximum	Nm	42.0 to 53.0	44.4	Pass
Positive Moment Decay, Time to 10Nm		Msec.	60.0 to 80.0	69.2	Pass
Overall Test Results					Pass

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November 24, 2003

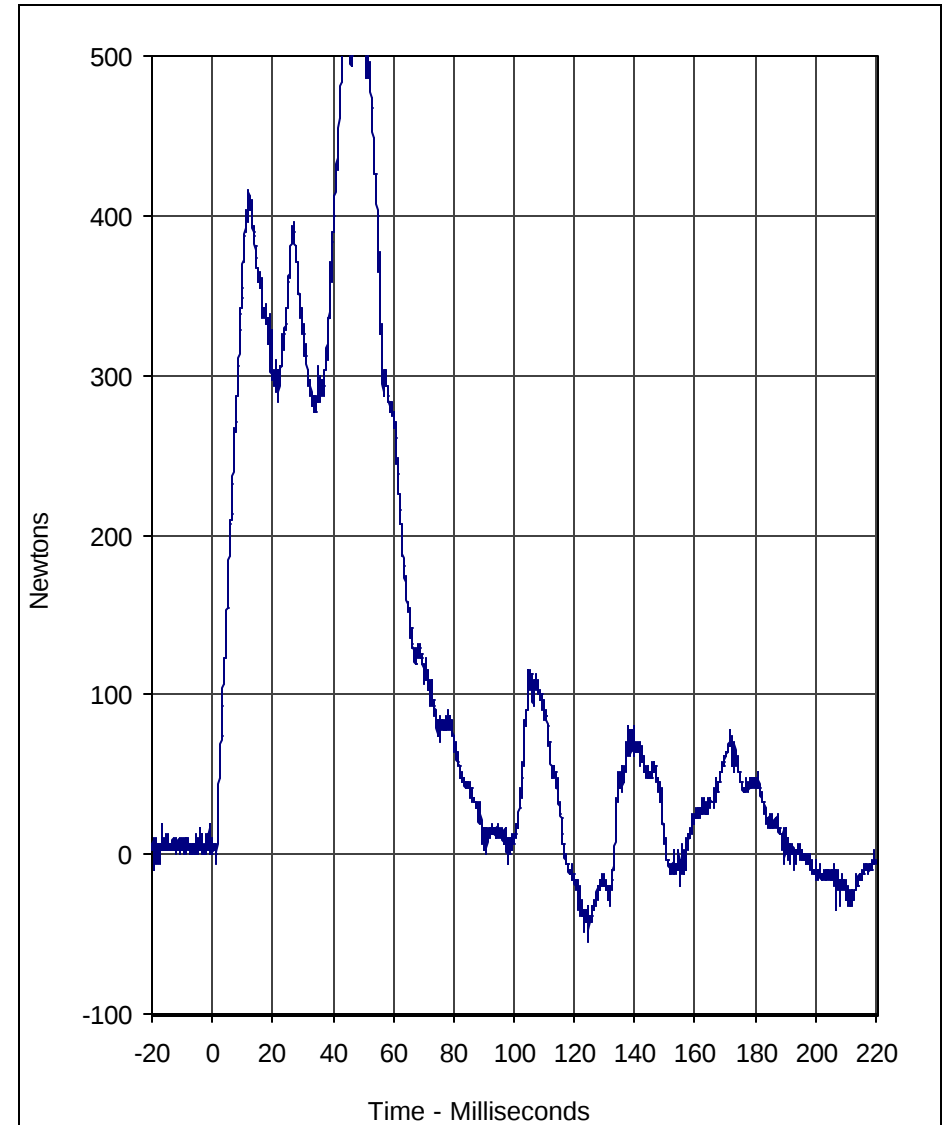
Test Date



Curve Description				CURNO	Type
Pendulum Velocity				001	FIL
Units	Max	Time	Min	Time	SAE Class
m/s	5.3	193.5	0.0	-0.4	180

Test Program: 3 Year Old Hybrid III Neck Flexion Test

Test Date: 11/24/03

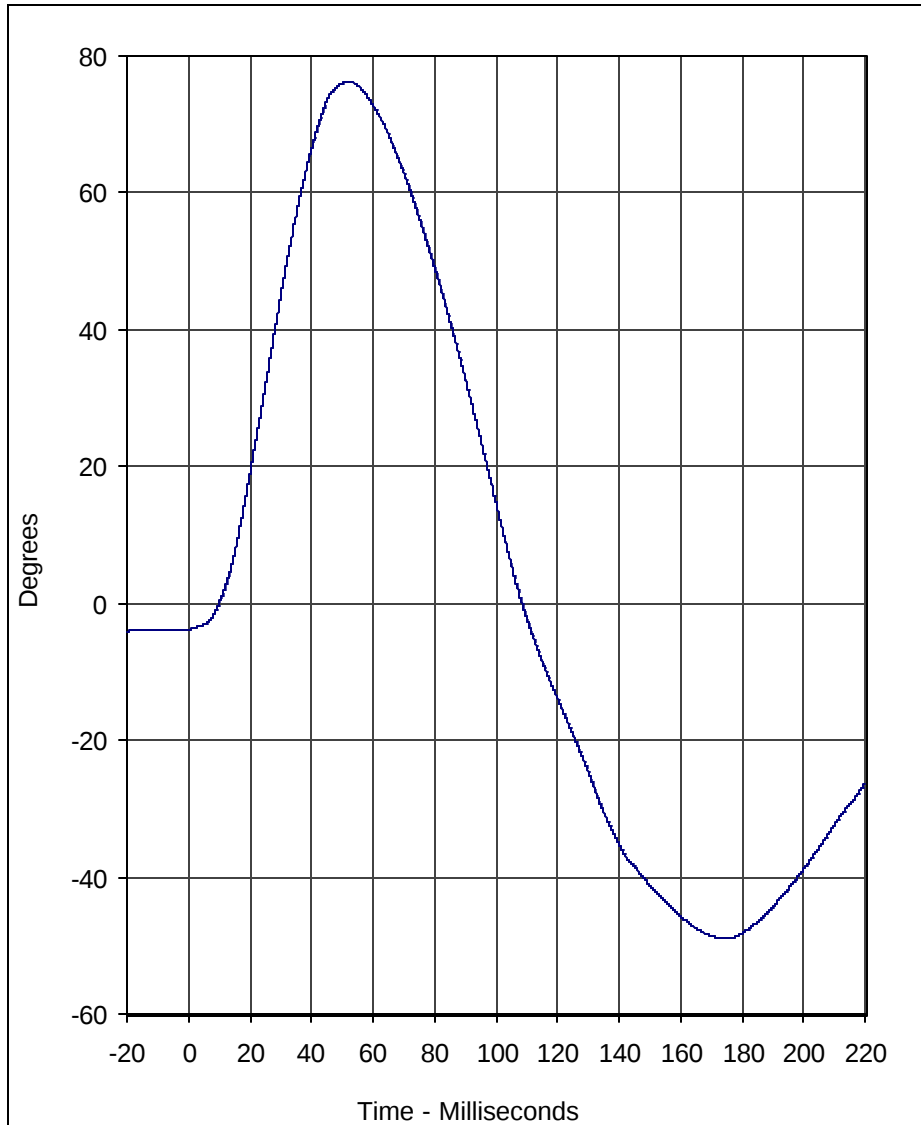


Curve Description				CURNO	Type
Neck Force X				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	557.8	49.7	-54.8	124.8	1000

A.T.D. Serial No.: 082

Test I.D.: NF11A

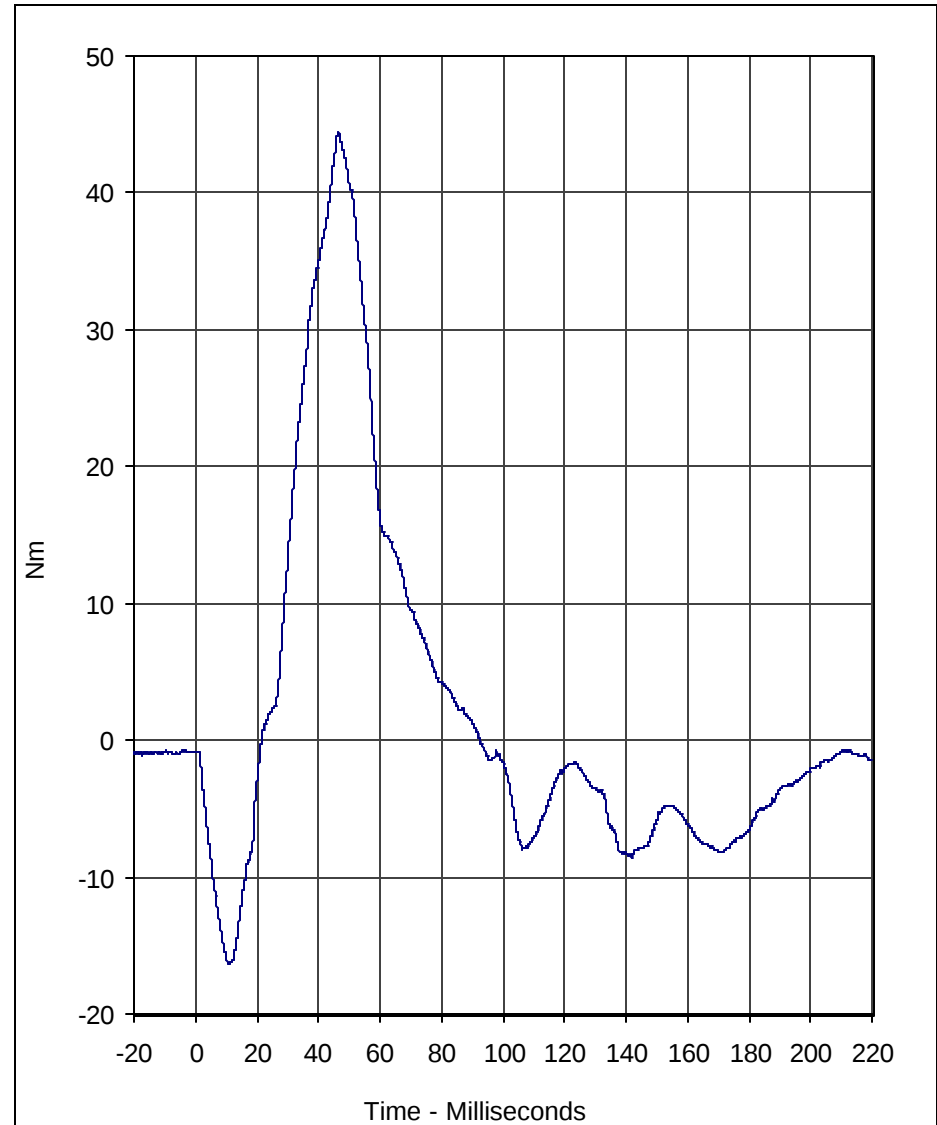




Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	76.3	52.0	-49.0	175.1	60

Test Program: 3 Year Old Hybrid III Neck Flexion Test

Test Date: 11/24/03



Curve Description				CURNO	Type
Neck Moment Y				002	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	44.4	46.4	-16.3	11.0	600

A.T.D. Serial No.: 082

Test I.D.: NF11A





Calibration Data Sheet

Hybrid III 3 Year Old

Neck Extension Test

ATD Serial No.: 082

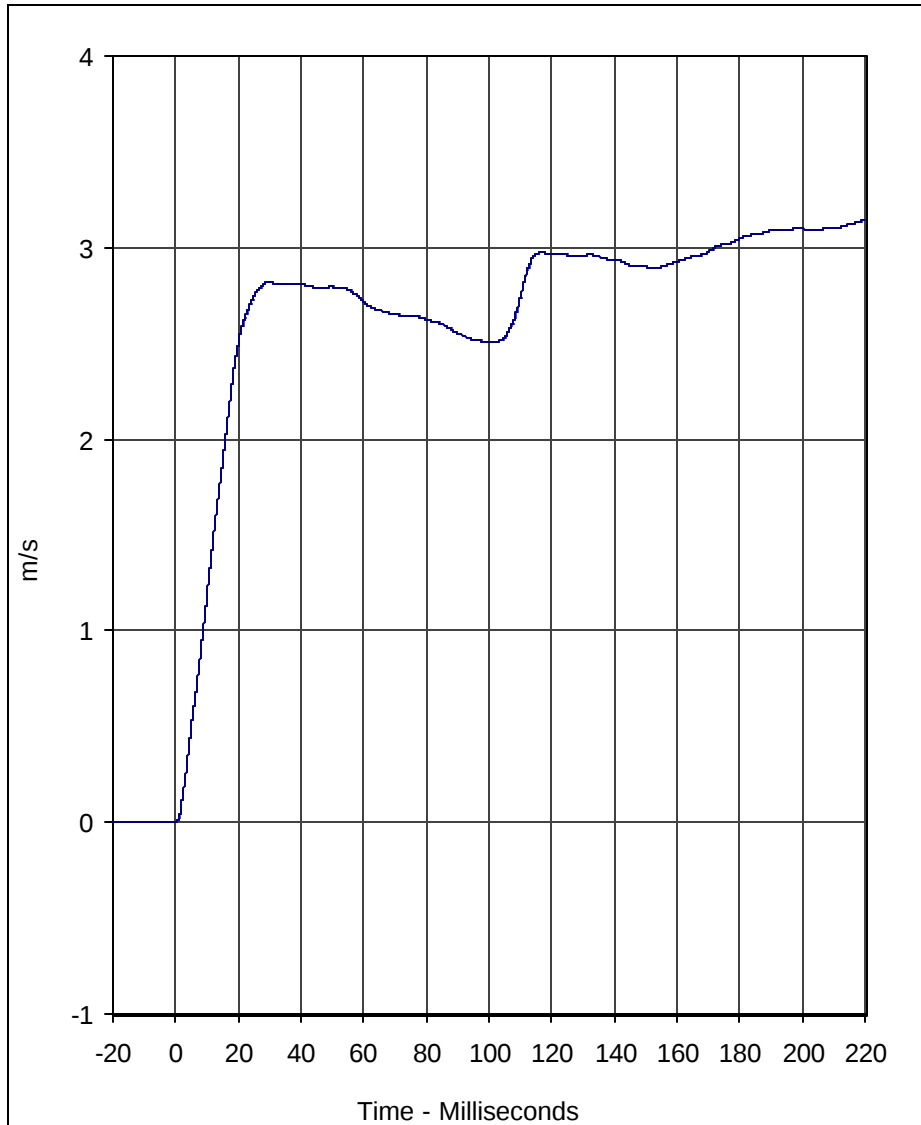
Test I.D.: NE12A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	3.55 to 3.75	3.72	Pass
Pendulum Deceleration	10 Msec.	m/s	1.0 to 1.4	1.2	Pass
	20 Msec.	m/s	1.9 to 2.5	2.5	Pass
	30 Msec.	m/s	2.8 to 3.5	2.8	Pass
"D" Plane Rotation	Maximum	Degrees	83.0 to 93.0	85.1	Pass
Peak Moment in Rotation	Maximum	Nm	-43.7 to -53.3	-51.0	Pass
Positive Moment Decay, Time to 10Nm		Msec.	60.0 to 80.0	68.5	Pass
Overall Test Results					Pass

Laboratory Technician

November 24, 2003

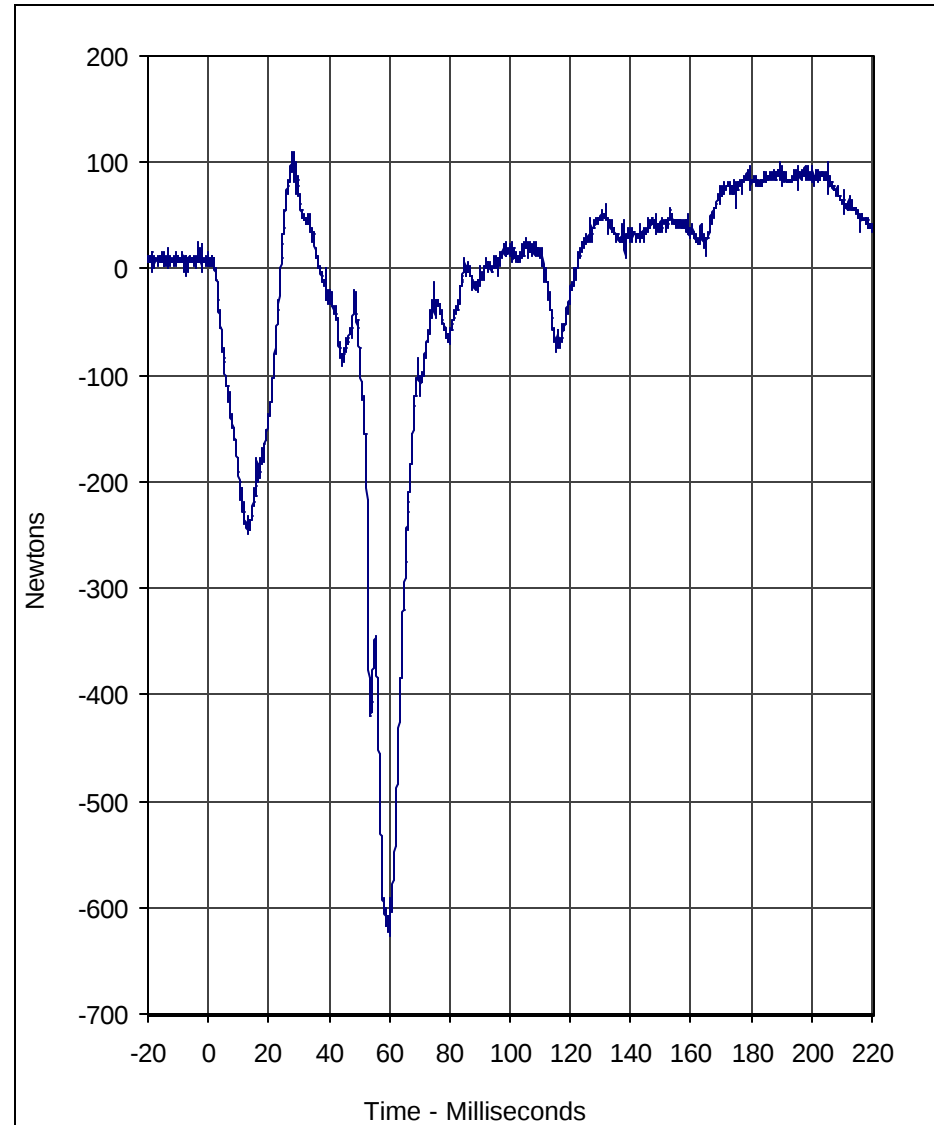
Test Date



Curve Description				CURNO	Type
Pendulum Velocity				001	FIL
Units	Max	Time	Min	Time	SAE Class
m/s	3.1	220.0	0.0	-0.5	180

Test Program: 3 Year Old Hybrid III Neck Extension Test

Test Date: 11/24/03

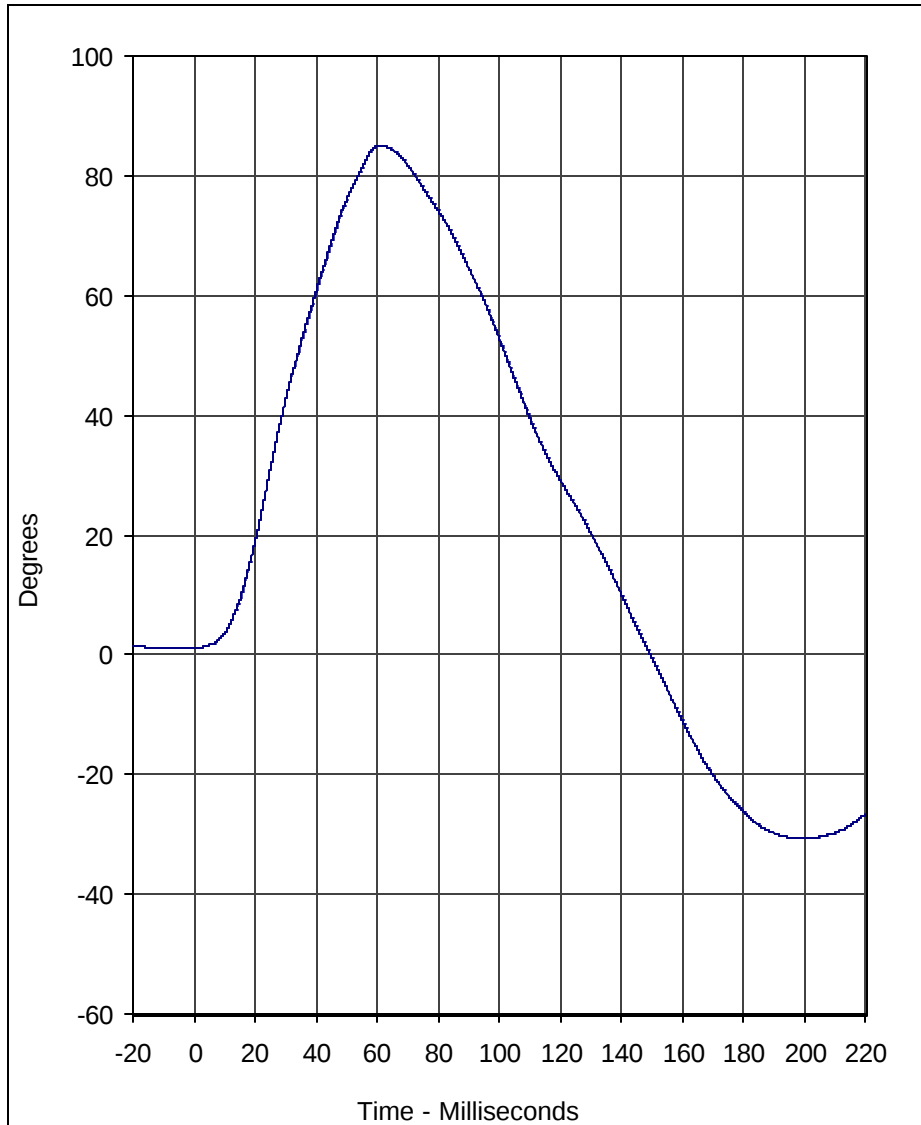


Curve Description				CURNO	Type
Neck Force X				002	FIL
Units	Max	Time	Min	Time	SAE Class
Newtons	109.8	27.9	-626.5	59.9	1000

A.T.D. Serial No.: 082

Test I.D.: NE12A



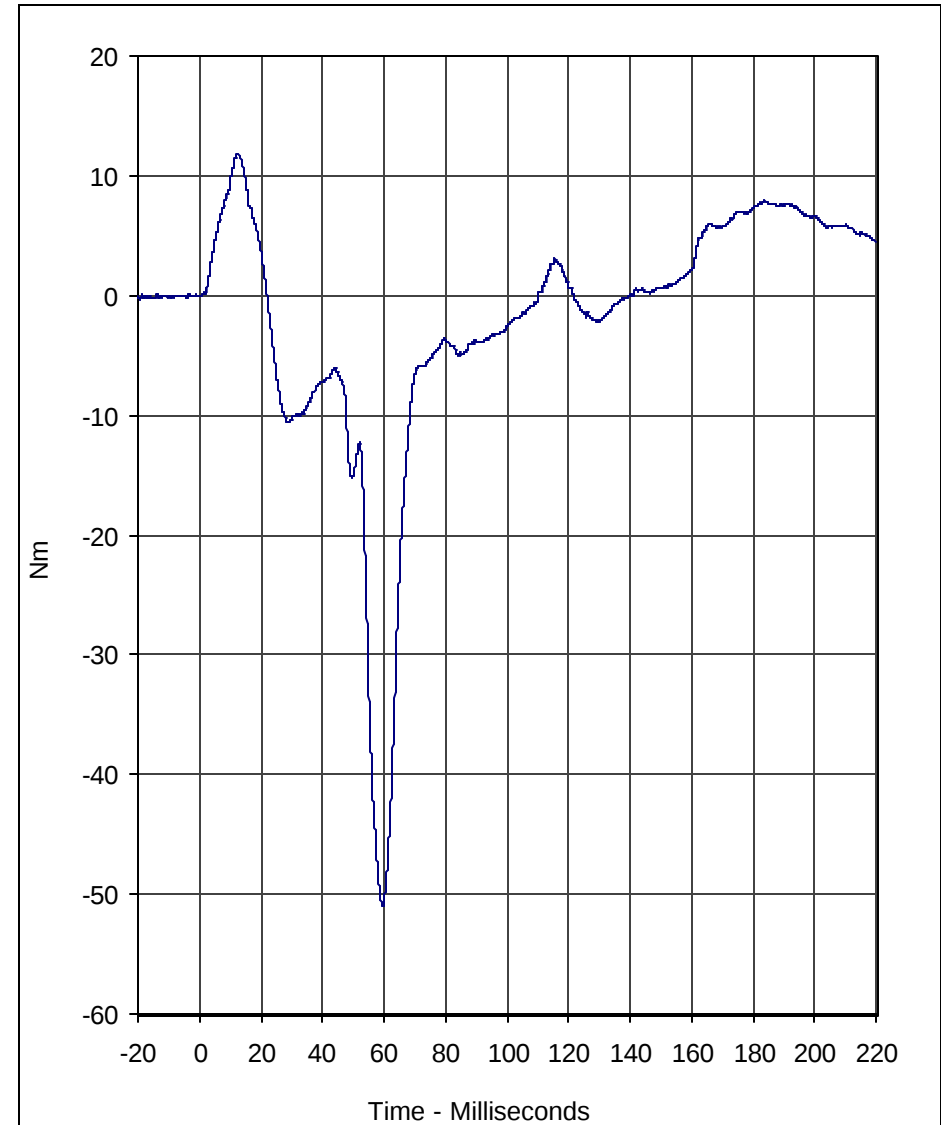


Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	85.1	61.2	-30.7	199.0	60

Test Program: 3 Year Old Hybrid III Neck Extension Test

Test Date: 11/24/03



Curve Description				CURNO	Type
Neck Moment Y				002	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	11.8	12.6	-51.0	59.5	600

A.T.D. Serial No.: 082

Test I.D.: NE12A





Calibration Data Sheet

Hybrid III 3 Year Old

Torso Flexion Test

ATD Serial No.: 082

Test I.D.: FL11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Initial reference plane angle	Degrees	≤15.0	2.5	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	130.0 to 180.0	167.4	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	0.7	Pass
Final reference plane angle	Degrees	+/-10	2.8	Pass
Overall Test Results				Pass

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Laboratory Technician

November 25, 2003

Test Date



Calibration Data Sheet Hybrid III 3 Year Old External Measurements

ATD Serial No.: 082

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	539 to 554	545	Pass
B - Shoulder pivot height	mm	307 to 323	320	Pass
C - "H" point height	mm	34 to 45	35	Pass
D - "H" point from backline	mm	57 to 67	60	Pass
E - Shoulder pivot from back	mm	61 to 71	70	Pass
F - Thigh clearance	mm	81 to 91	85	Pass
G - Elbow back to wrist pivot	mm	247 to 263	255	Pass
H - Skull cap to back line	mm	48 to 58	55	Pass
I - Shoulder to elbow length	mm	185 to 201	195	Pass
J - Elbow rest height	mm	134 to 149	135	Pass
K - Buttock to knee length	mm	285 to 300	295	Pass
L - Popliteal length	mm	219 to 234	225	Pass
M - Knee pivot height	mm	242 to 257	250	Pass
N - Buttock popliteal length	mm	218 to 233	220	Pass
O - Chest depth with jacket	mm	139 to 154	140	Pass
P - Foot length	mm	138 to 148	145	Pass
R - Buttock to knee pivot length	mm	251 to 262	255	Pass
S - Head Breadth	mm	128 to 144	140	Pass
T - Head Depth	mm	167 to 183	175	Pass
U - Hip breadth	mm	201 to 216	215	Pass
V - Shoulder breadth	mm	237 to 252	245	Pass
W - Foot breadth	mm	54 to 64	55	Pass
X - Head circumference	mm	500 to 516	515	Pass
Y - Chest circumference with jacket	mm	527 to 553	535	Pass
Z - Waist circumference	mm	527 to 553	540	Pass
AA - Location for chest circumference	mm	249 to 259	250	Pass
BB - Location for waist circumference	mm	160 to 170	170	Pass
Overall Test Results				Pass

Laboratory Technician

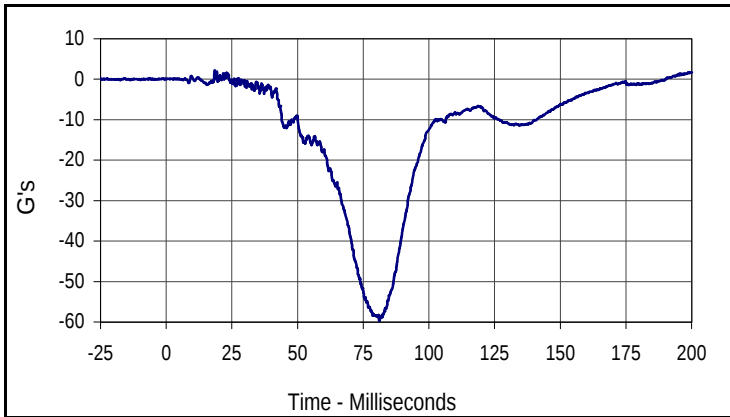
November 25, 2003
Test Date

APPENDIX G

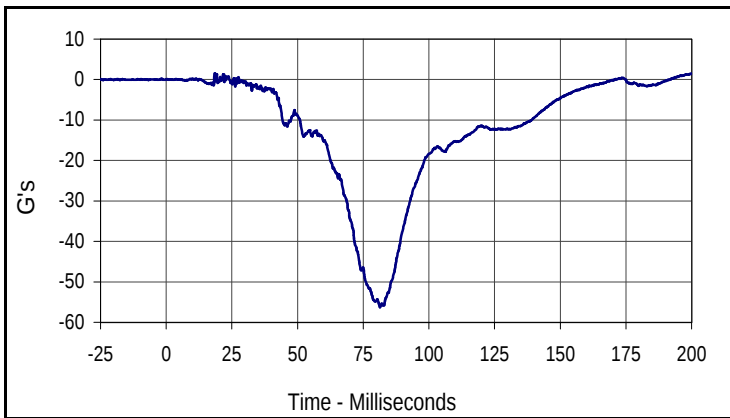
NINE ACCELEROMETER HEAD ARRAY

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

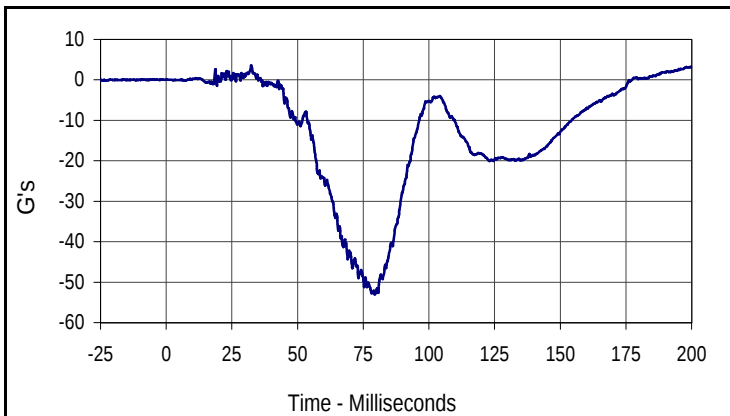
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.2	18.5	-59.7	81.1



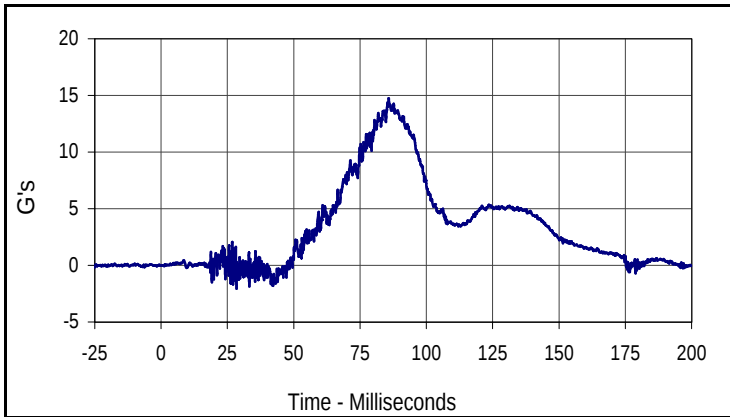
Curve Description			
Driver NAAH Yarm-X			
CURNO	Type	SAE Class	Units
162	FIL	1000	G's
Max	Time	Min	Time
1.6	18.5	-56.3	81.4



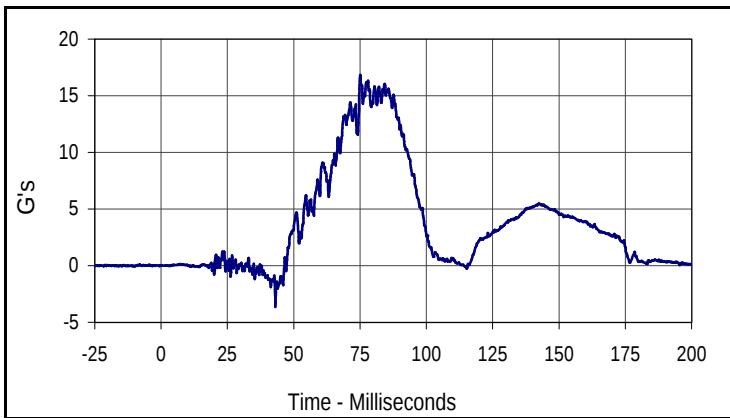
Curve Description			
Driver NAAH Zarm-X			
CURNO	Type	SAE Class	Units
164	FIL	1000	G's
Max	Time	Min	Time
3.6	32.4	-53.0	79.4

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

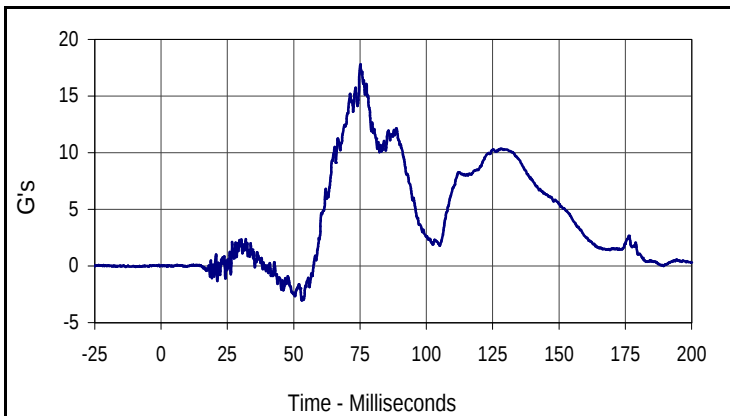
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
14.8	85.8	-2.1	28.4



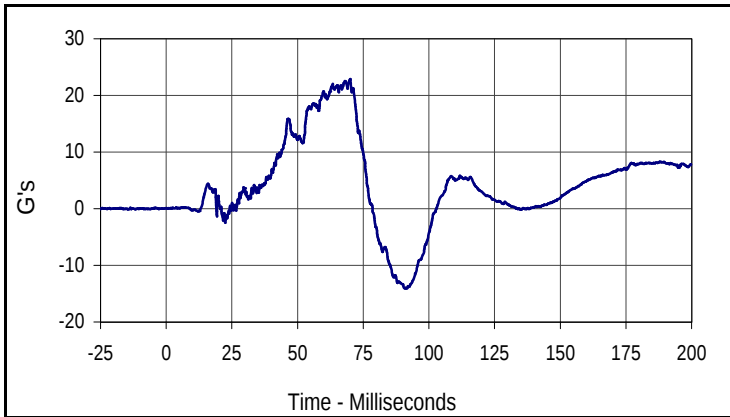
Curve Description			
Driver NAAH Xarm-Y			
CURNO	Type	SAE Class	Units
160	FIL	1000	G's
Max	Time	Min	Time
16.8	75.1	-3.6	43.1



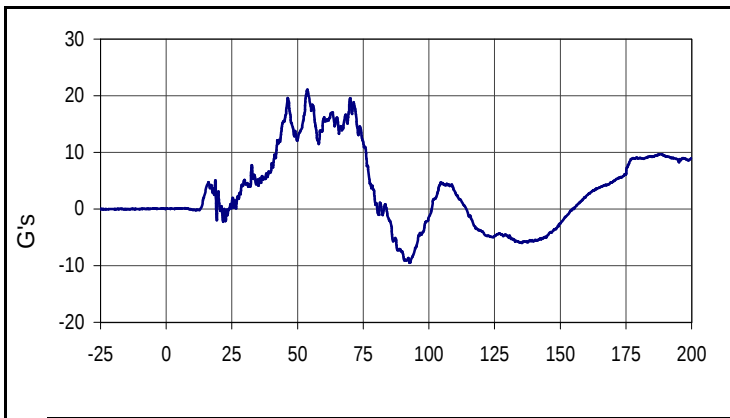
Curve Description			
Driver NAAH Zarm-Y			
CURNO	Type	SAE Class	Units
165	FIL	1000	G's
Max	Time	Min	Time
17.8	75.2	-3.0	53.0

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

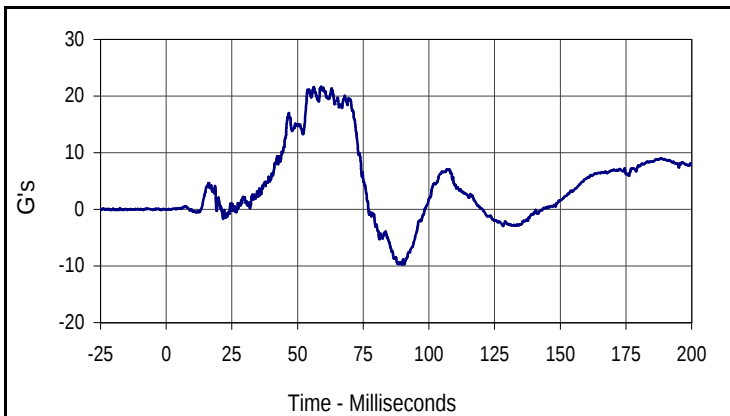
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
22.9	70.1	-14.1	90.7



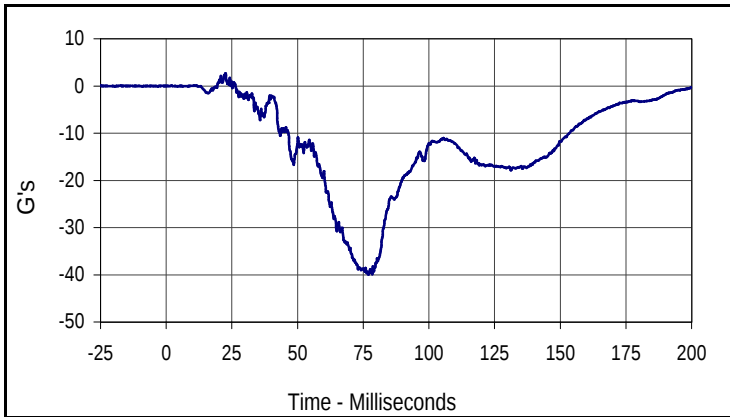
Curve Description			
Driver NAAH Xarm-Z			
CURNO	Type	SAE Class	Units
161	FIL	1000	G's
Max	Time	Min	Time
21.1	53.7	-9.5	92.6



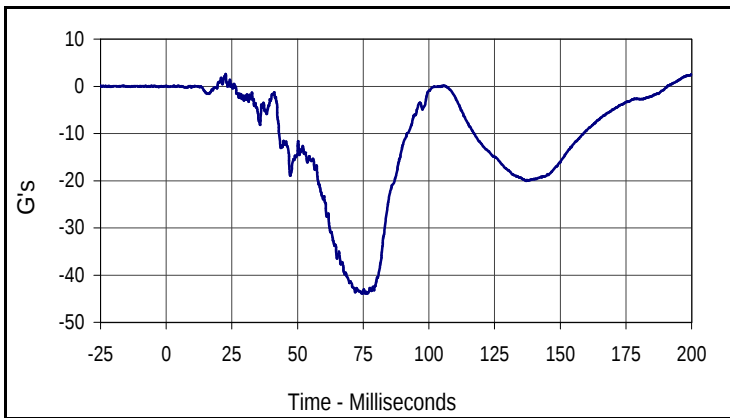
Curve Description			
Driver NAAH Yarm-Z			
CURNO	Type	SAE Class	Units
163	FIL	1000	G's
Max	Time	Min	Time
21.6	58.9	-9.7	90.6

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

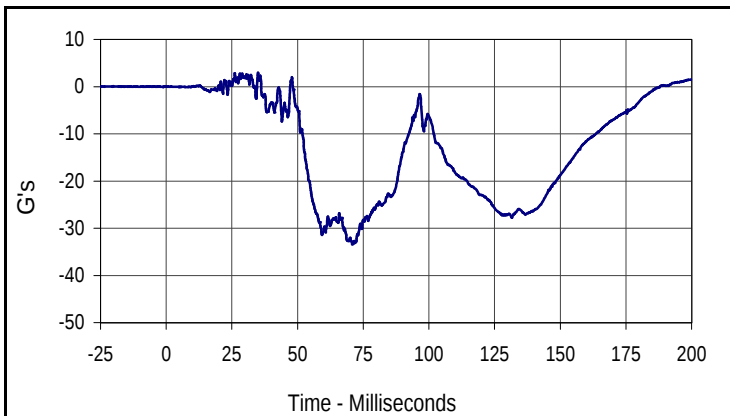
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
2.7	22.5	-40.0	77.0



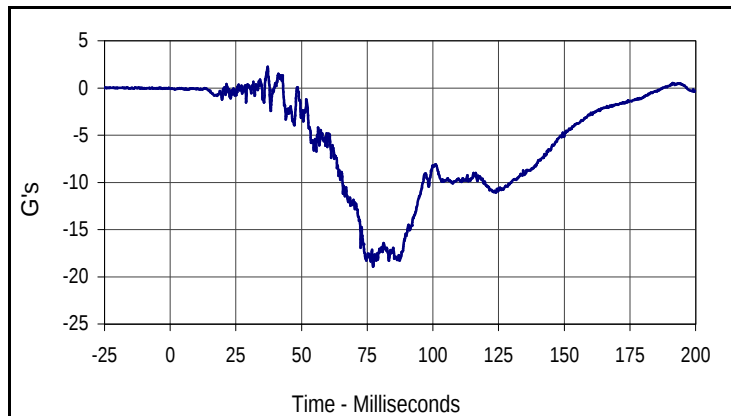
Curve Description			
Passenger NAAH Yarm-X			
CURNO	Type	SAE Class	Units
168	FIL	1000	G's
Max	Time	Min	Time
2.6	22.6	-43.9	74.7



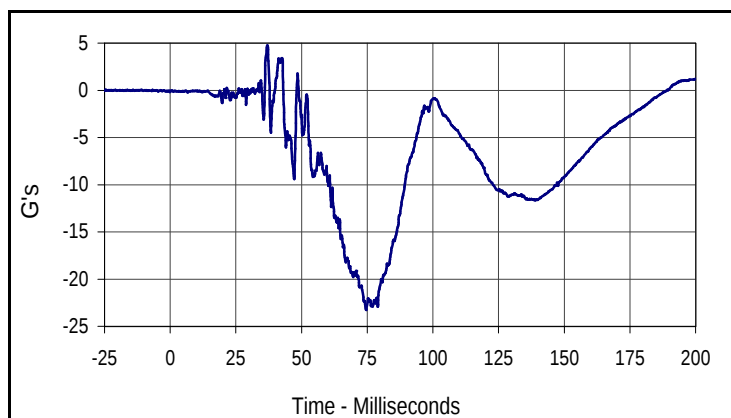
Curve Description			
Passenger NAAH Zarm-X			
CURNO	Type	SAE Class	Units
170	FIL	1000	G's
Max	Time	Min	Time
2.9	34.9	-33.4	70.9

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

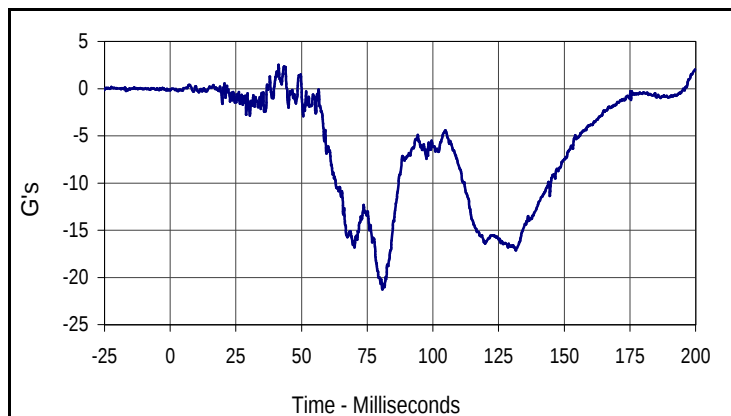
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
2.3	37.1	-18.9	77.2



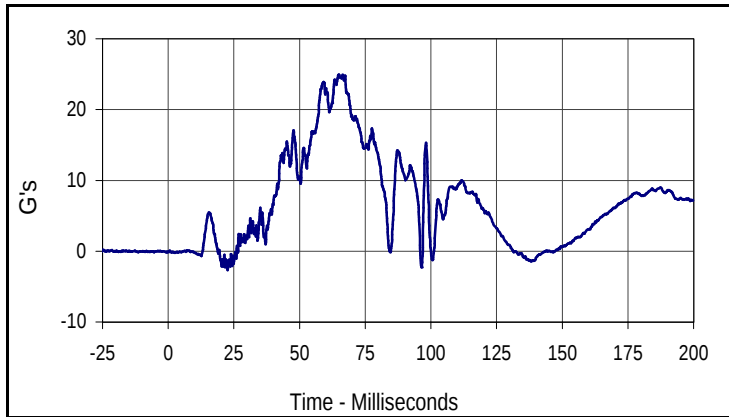
Curve Description			
Passenger NAAH Xarm-Y			
CURNO	Type	SAE Class	Units
166	FIL	1000	G's
Max	Time	Min	Time
4.8	37.0	-23.3	74.6



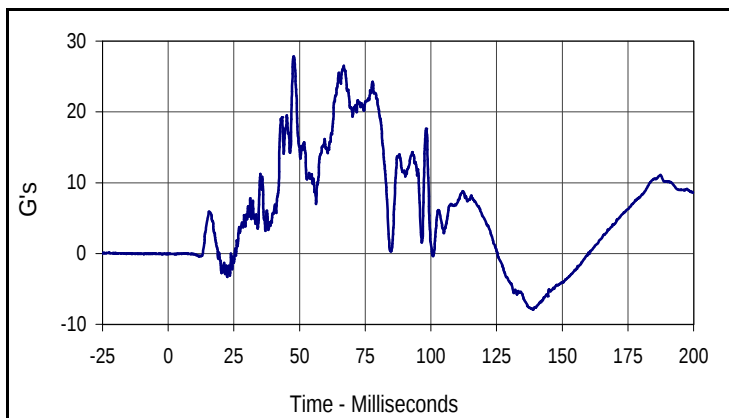
Curve Description			
Passenger NAAH Zarm-Y			
CURNO	Type	SAE Class	Units
171	FIL	1000	G's
Max	Time	Min	Time
2.5	41.3	-21.3	80.7

Test Vehicle: 2004 Mazda 3 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

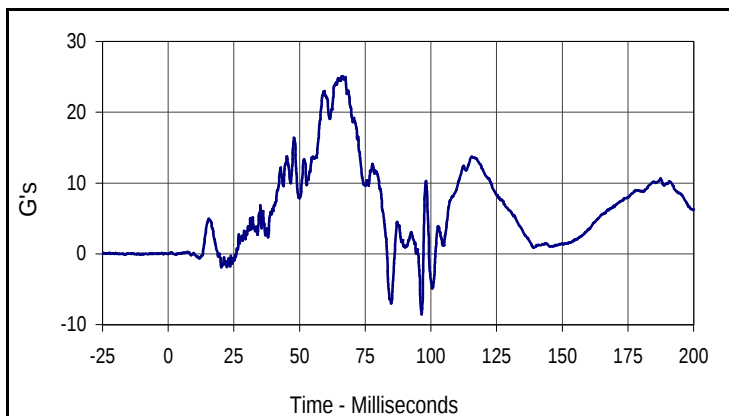
Test Date: 12/17/03
 NHTSA No.: M45400



Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
24.9	66.5	-2.7	22.6



Curve Description			
Passenger NAAH Xarm-Z			
CURNO	Type	SAE Class	Units
167	FIL	1000	G's
Max	Time	Min	Time
27.8	47.7	-7.9	138.9



Curve Description			
Passenger NAAH Yarm-Z			
CURNO	Type	SAE Class	Units
169	FIL	1000	G's
Max	Time	Min	Time
25.1	66.0	-8.5	96.5