

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

**VOLKSWAGEN AG GERMANY
2006 VOLKSWAGEN NEW PASSAT
4-DOOR SEDAN**

NHTSA NUMBER: M65800

**PREPARED BY:
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OCTOBER 18, 2005

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**

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-01-D-02005.

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Technical Report Documentation Page

1. Report No. TR-P26001-01-NC		2. Government Accession No.		3. Recipients Catalog No.	
4. Title and Subtitle Final Report of New Car Assessment Program Testing of a 2006 Volkswagen New Passat 4-Door Sedan NHTSA No. M65800				5. Report Date October 18, 2005	
				6. Performing Organization Code KAR	
7. Authors Mr. Matthew Ivory, Project Engineer, Karco Mr. Frank Richardson, Program Manager, Karco				8. Performing Organization Report No. TR-P26001-01-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 5	
				14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS	
15. Supplementary Notes					
16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2006 Volkswagen New Passat 4-Door Sedan at Karco Engineering, LLC on 10/18/05. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 56.09 km/h. The ambient temperature at the barrier face at the time of impact is 16.1 degrees Celcius. The vehicle's maximum post-test static crush is 398mm at the vehicle's 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	502.3	472.3
Max. Chest Accel. (3 msec Clip)		G's	60	48.6	46.3
Left Femur Force		Newtons	10008	-1245.2	-2775.8
Right Femur Force		Newtons	10008	-4024.9	-898.1
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2006 Volkswagen New Passat 4-Door Sedan NHTSA No. M65800				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 127	22. Price

Form DOT F1700.7 (8-72)

TR-P26001-01-NC

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SECTION 1

PURPOSE AND SUMMARY OF TEST M65800

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

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2006 Volkswagen New Passat 4-Door Sedan at a velocity of 56.09 km/h. The test was performed at Karco Engineering, LLC on October 18, 2005.

Two (2) real-time and fifteen (15) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet number 14 (page number 24) of 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 head (primary and redundant), chest (primary and redundant) 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. Also, shoulder belt spool-off was measured for the driver and passenger dummy. The driver (position 1) ATD (Serial No. 35) and the right-front passenger (position 2) ATD (Serial No. 34) were calibrated prior this test.

One hundred and thirty three (133) channels of data were recorded using an on-board data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the Dummy Response data traces. Appendix C contains the Dummy Calibration 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 398 mm at the vehicle centerline and both the driver and the passenger side doors remained closed and latched during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver ATD's head contacted the airbag, the abdomen had no contact. Both knees contacted the knee bolster.

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

Occupant injury data is contained in the table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC 36	Clip (g)	Chest Defl. (mm)	Left Femur (N)	Right Femur (N)
Driver	502.3	48.6	-31.5	-1245.2	-4024.9
Passenger	472.3	46.3	-19.1	-2775.8	-898.1

Additional data plots for this test are available in the research and development section of the NHTSA website. The website can be found at: www.NHTSA.Dot.Gov

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

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: 2006 Volkswagen New Passat 4-Door Sedan
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
Test Date: 10/18/05

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.09
Test Weight	kg	1765
Impact Angle	degrees	0
Average Rebound	mm	1163
Maximum Static Crush	mm	398

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door opening	Remained closed and latched, opened w/o tools	Remained closed and latched, opened w/o tools
Rear Door Opening	Remained closed and latched, opened w/o tools	Remained closed and latched, opened w/o tools
Seat Track Shift (mm)	0	20
Seat Back Failure	No	No

TEST DUMMY INFORMATION

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

MOVIE COVERAGE

Cameras	Standard	Additional
High Speed	14	1
Real Time	1	1
Total	15	2

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	36
Total	133

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M65800
Make	Volkswagen
Model	Passat
Body Style	4-Door
Vin No.	WVWAK73C06P046103
Color	Blue
Delivery Date	10/3/2005
Odometer	117
Dealer	Valencia Volkswagen
Transmission	6 Speed Automatic
Final Drive	Front
Type/No. Cyl.	4 Cylinder
Engine Disp. (L)	2.0
Engine Placement	Transverse
Roof Rack	No
Sunroof/T-Top	No
Tinted Glass	No
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes

Anti-Lock Brakes	Yes
All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Side Airbag	Yes
Driver Head Airbag	No
Driver Curtain Airbag	Yes
Pass. Airbag	Yes
Pass. Side Airbag	Yes
Pass. Head Airbag	No
Pass. Curtain Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Air. Cond.	Yes
AM/FM Cassette	Yes
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	Yes
Other	None

Does Owners Manual provide instructions to turn off automatic door locks.

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Volkswagen AG Germany
Date of Manufacture	Jul-05

GVWR (kg)	2040
GAWR Front (kg)	1100
GAWR Rear (kg)	990

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

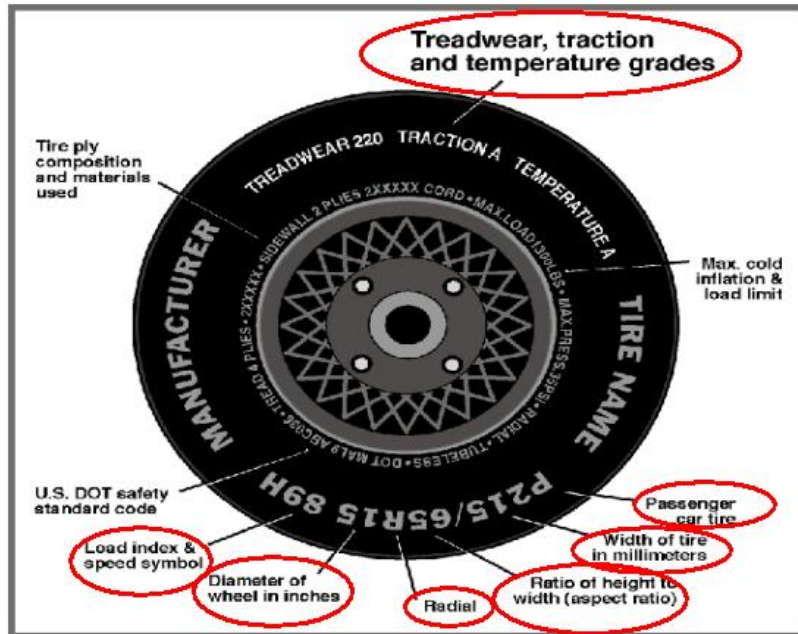
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				440
Cargo Weight (RCLW) (kg)				102

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

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

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)	350	350
Cold Pressure (kpa)	230	230
Recommended Tire Size	215/55R16 XL	215/55R16 XL
Tire Size on Vehicle	215/55R16 XL	215/55R16 XL
Tire Manufacturer	Goodyear	Goodyear
Treadwear	400	400
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2 Rayon Cord	2 Rayon Cord
Tire Plies Body	2 Rayon + 1 Nylon + 2 Steel	2 Rayon + 1 Nylon + 2 Steel
Load Index/Speed Symbol	97H	97H
Tire Material	Rayon + Nylon + Steel	Rayon + Nylon + Steel
DOT Safety Code Right	NDB3 ZYAR 2905	NDB3 ZYAR 2905
DOT Safety Code Left	NDB3 ZYAR 2905	NDB3 ZYAR 2905

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

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	454	317	770	486	400	886
Right	kg	448	300	748	486	393	879
Ratio	%	59.4	40.6	100	55.1	44.9	100
Totals	kg	902	617	1519	972	793	1765

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1519
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	102
Calculated Vehicle Target Wt. (TVTW)	kg	1773

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	690	685	695	695	1101
As Tested	mm	674	672	663	658	1218

Vehicle Wheel Base (mm) 2712

Weight of Ballast Secured in cargo area (kg) 41

Weight of Items Removed (kg) 42

Vehicle Components Removed Spare tire and tools.

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

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 70.0

Actual Test Volume with entire fuel System Filled (L) 65.0

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: Electric fuel pump. Activated when electrical system is activated
Fuel pump will run for 3 seconds when ignition is in "on" position.

DATA SHEET NO. 3
POST-TEST IMPACT DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	56.09
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	56.11
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	4647	4287	-360
Center	mm	4770	4372	-398
Right Side	mm	4647	4320	-327

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1120
Center	mm	1170
Right Side	mm	1200
Average	mm	1163

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

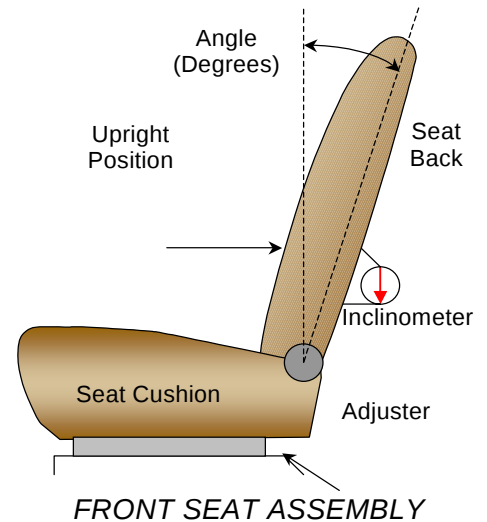
NHTSA No.: M65800
 Test Date: 10/18/05

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturer's designated angle. The procedure is as follows:
 Seat back angle was measured at the headrest of the seat back using a digital inclinometer.

SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	5.3@headrest
Passenger w/seated Dummy	5.4@headrest

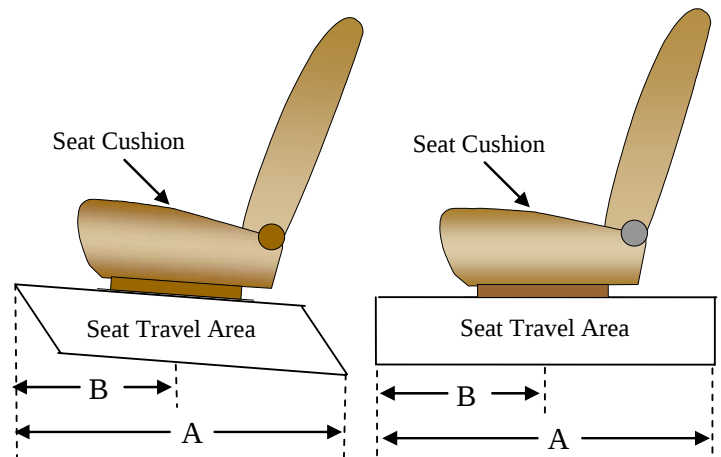


SEAT FORE/AFT POSITIONS

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

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel (Detent)	Placed in Position (Detent)
Driver Seat	37	19
Passenger Seat	37	19



SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	5	5
Passenger Seat	5	5

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

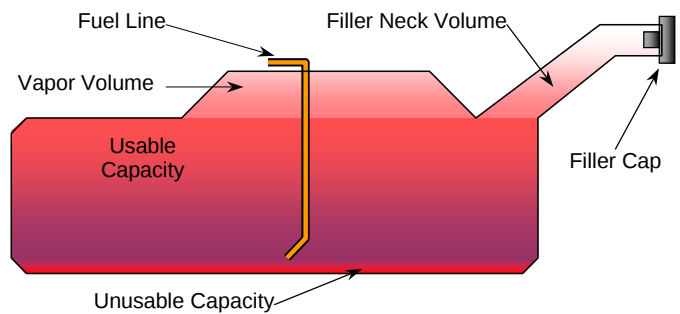
Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	70.03
Usable Capacity of "Optional" Tank	N/A
Usable Capacity used for FMVSS 301	64.43 to 65.83
Actual Amount of Solvent used	65.11

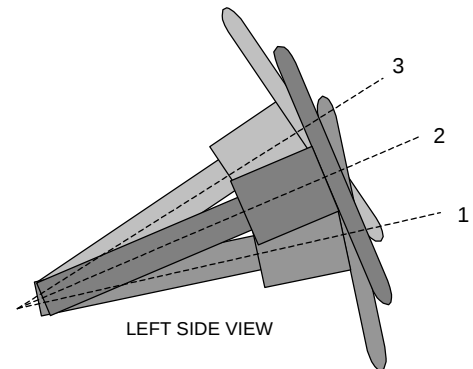
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies 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	Fore/Aft Position (mm)
Lowermost position No. 1	21.8	
Geometric center position No. 2	23.4	
Uppermost position No. 3	25.0	

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
Test Date: 10/18/05

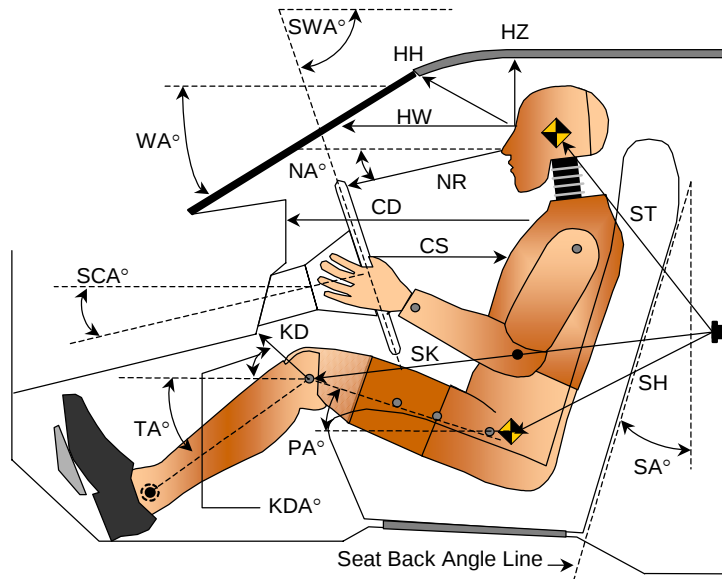
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		27.4		
SWA	Steering Wheel Angle		66.6		
SCA	Steering Column Angle		23.4		
SA	Seat Back Angle		5.3@headrest		5.4@headrest
HZ	Head to Roof (Z)	230	90.0	250	90.0
HH	Head to Header	405		360	
HW	Head to Windshield	668		710	
HR	Head to Side Header (Y)	275		280	
NR	Nose to Rim	435	17.3		
CD	Chest to Dash	565		610	
CS	Chest to Steering Hub	330			
RA	Rim to Abdomen	240			
KDL	Left Knee to Dash	250	24.0	360	
KDR	Right Knee to Dash	255		330	24.0
PA	Pelvic Angle		24.6		22.0
TA	Tibia Angle		37.0		42.1
KK	Knee to Knee (Y)	320		330	
SK	Striker to Knee	576		430	13.3
ST	Striker to Head	430	78.0	600	22.5
SH	Striker to H-Point	280	61.2	270	
SHY	Striker to H-Point (Y)	257		247	
HS	Head to Side Window	367		360	
HD	H-Point to Door (Y)	140		150	
AD	Arm to Door (Y)	130		150	

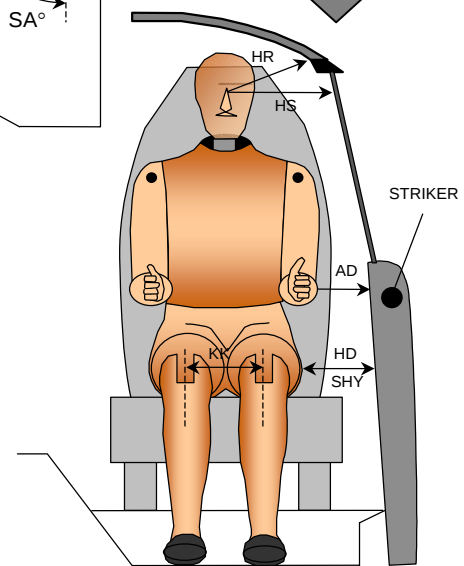
DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

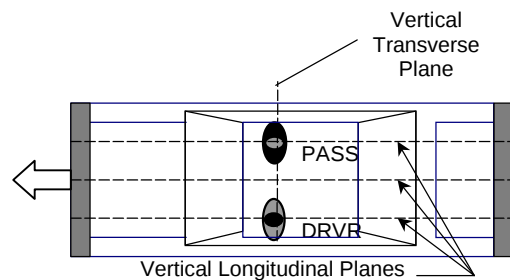
NHTSA No.: M65800
 Test Date: 10/18/05



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



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



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

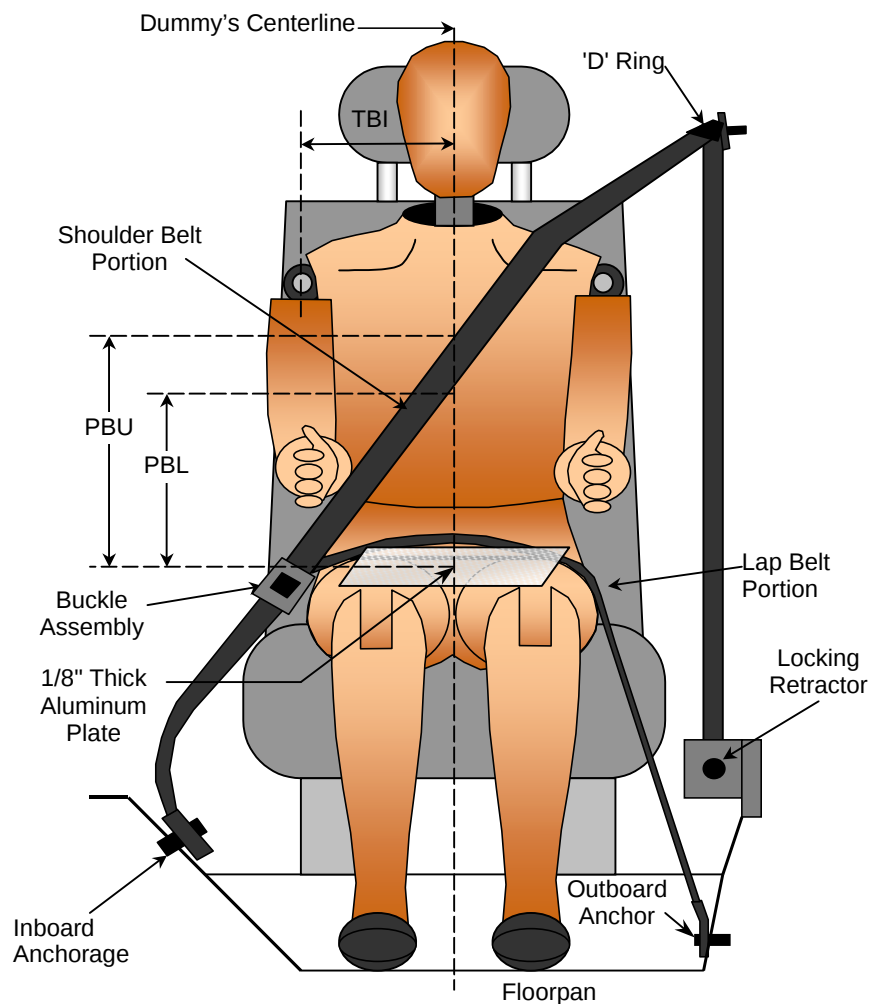
DATA SHEET NO. 6 **SEAT BELT POSITIONING DATA**

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	200	195
PBU - Top Surface of reference to belt upper edge	mm	324	320
PBL - Top Surface of reference to belt lower edge	mm	265	230
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7
VEHICLE ACCELEROMETER LOCATION

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

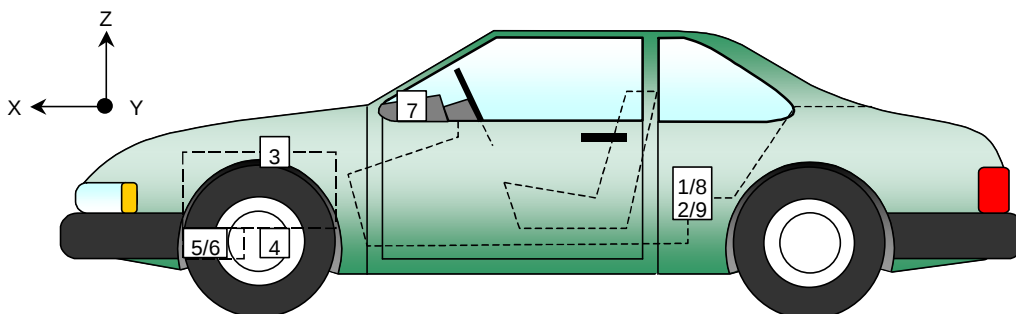
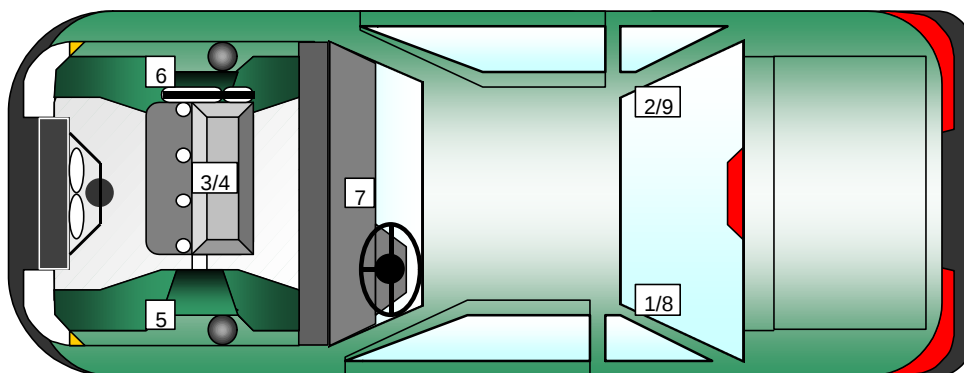
Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Left Rear X-Member	1915	-620	270
2	Right Rear X-Member	1915	620	270
3	Engine Top	3836	250	870
4	Engine Bottom	4052	-340	180
5	Left Brake Caliper	3470	-650	330
6	Right Brake Caliper	3470	650	330
7	Instrument Panel	3070	0	994
8	Left Rear X-Member (Z-Axis)	1915	-620	270
9	Right Rear X-Member (Z-Axis)	1915	620	270

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



DATA SHEET NO. 8
SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	200	195
PBU - Top Surface of reference to belt upper edge	mm	324	320
PBL - Top Surface of reference to belt lower edge	mm	265	230
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	700	700
Shoulder Belt length as measured on ATD	mm	870	840
Lap Belt length as measured on ATD	mm	560	600
Remainder of belt on reel	mm	920	1020
Total belt length for continuous webbing systems	mm	3050	3160

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	267.0	445.0
As determined electronically	mm	*	*

* Questionable data

BELT STRETCH DATA

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

* Not used with shoulder belt pre-tensioner systems

DATA SHEET NO. 9
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

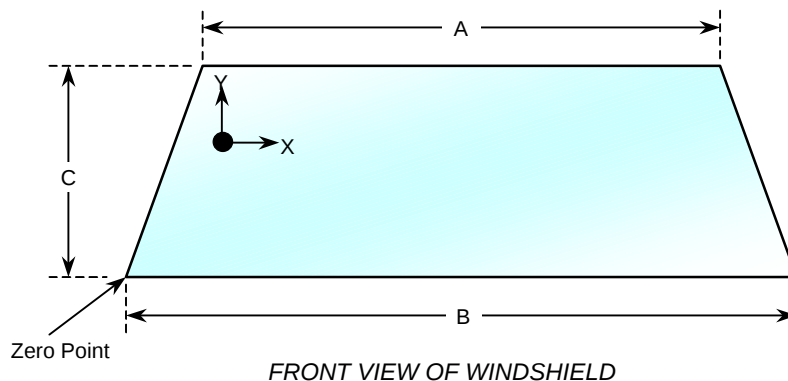
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

The standard requires that the post-test 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	2095	2095	100
Right Side	2095	2095	100
Total	4190	4190	100



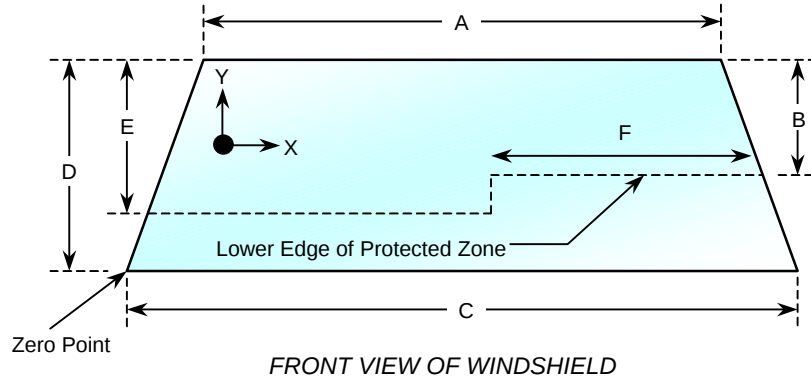
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1200	0
B	mm	1470	0
C-Left	mm	760	10
C-Right	mm	760	10

DATA SHEET NO. 10
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1200
B	mm	510
C	mm	1470
D	mm	760
E	mm	475
F	mm	485

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

- 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

DATA SHEET NO. 11
FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

Test Time: 3:41 PM

Temperature: 16.1 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.

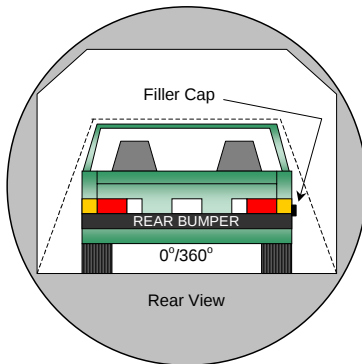
(Maximum Allowable = 1 oz./minute)

D. Spillage Location Details: No leakage occurred

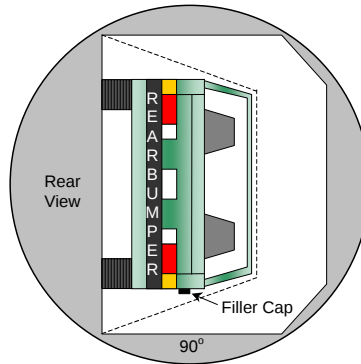
DATA SHEET NO. 12
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
Test Program: 2006 NHTSA 35mph NCAP

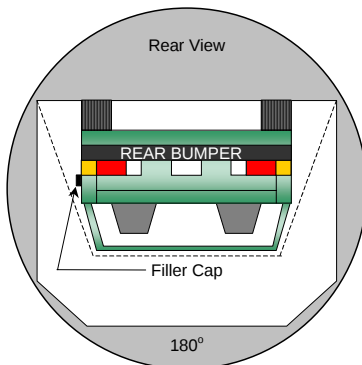
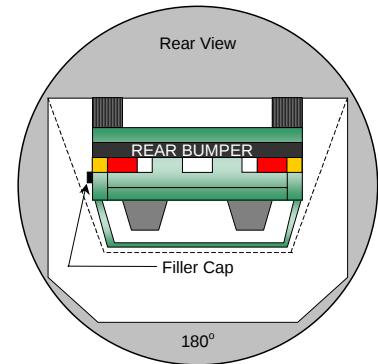
NHTSA No.: M65800
Test Date: 10/18/05



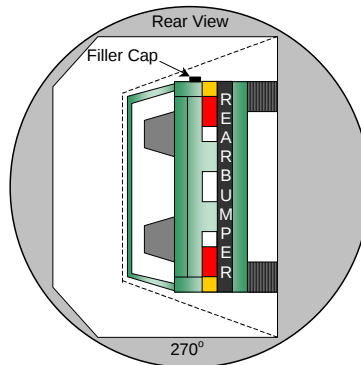
0° to 90°



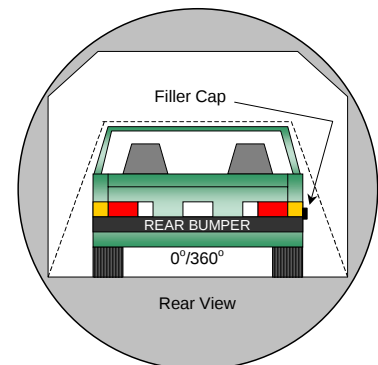
90° to 180°



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. 12...(CONTINUED)
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	85	300	385
90° to 180°	81	300	381
180° to 270°	78	300	378
270° to 360°	78	300	378

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. 13
VEHICLE MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
Test Date: 10/18/05

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	4770	4372	-398
2	RSOV to front of engine	mm	4295	4084	-211
3	RSOV to firewall centerline	mm	3785	3734	-51
4	RSOV to leading edge of right door	mm	3348	3344	-4
5	RSOV to leading edge of left door	mm	3345	3335	-10
6	RSOV to lower leading edge of right door	mm	3345	3335	-10
7	RSOV to lower leading edge of left door	mm	3342	3337	-5
8	RSOV to upper trailing edge of right door	mm	2245	2245	0
9	RSOV to upper trailing edge of left door	mm	2245	2225	-20
10	RSOV to lower trailing edge of right door	mm	2278	2275	-3
11	RSOV to lower trailing edge of left door	mm	2282	2280	-2
12	RSOV to bottom of right 'A' pillar	mm	3293	3281	-12
13	RSOV to bottom of left 'A' pillar	mm	3293	3286	-7
14	RSOV to firewall on right side	mm	3737	3698	-39
15	RSOV to firewall on left side	mm	3775	3742	-33
16	RSOV to steering column	mm	2841	2970	129
17	Center of steering column to left 'A' pillar	mm	420	430	10
18	Center of steering column to headlining	mm	450	480	30
19	RSOV to right side of front bumper	mm	4647	4320	-327
20	RSOV to left side of front bumper	mm	4647	4287	-360
21	Length of engine block	mm	517	517	0
RD	RSOV to right side of dash panel	mm	3091	3085	-6
CD	RSOV to center of dash panel	mm	3094	3085	-9
LD	RSOV to left side of dash panel	mm	3078	3101	23

DATA SHEET NO. 13...(CONTINUED)
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

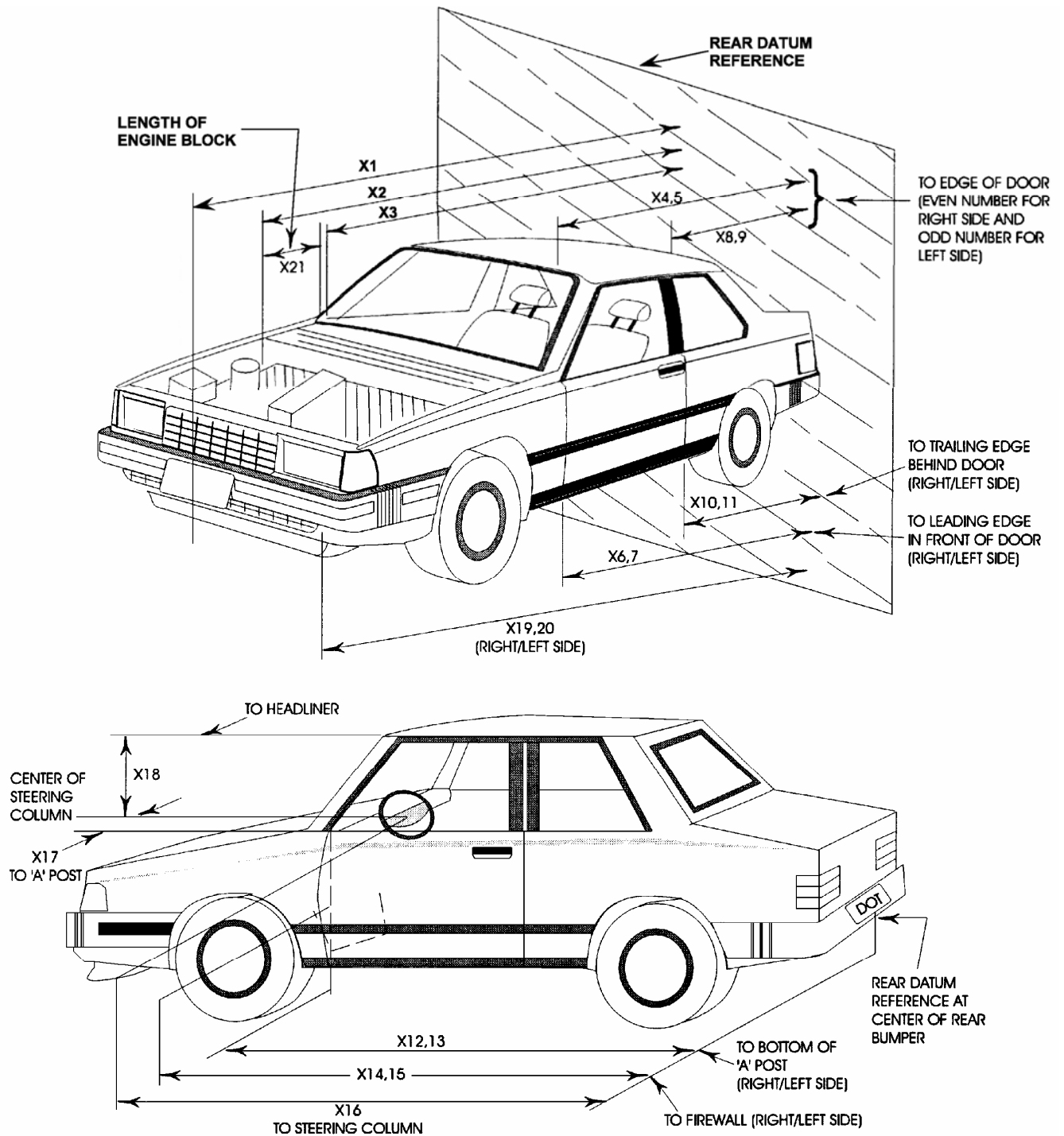
VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	4770	4372	-398
2	Total width	mm	1802	1800	-2
3	Bumper top height	mm	595	657	62
4	Bumper bottom height	mm	210	280	70
5	Longitudinal member top height	mm	503	620	117
6	Longitudinal member bottom height	mm	411	480	69
7	Distance between longitudinal members	mm	840	940	100
8	Longitudinal member width	mm	130	131	1
9	Engine top height	mm	830	846	16
10	Engine bottom height	mm	186	228	42
11	Engine and gear box width	mm	585	585	0
12	Front bumper to engine distance	mm	485	220	-265
13	Front shock absorber fixing width	mm	821	900	79
14	Bonnet leading edge height	mm	729	878	149
15	Front shock absorber fixing width	mm	1200	1092	-108
16	Front bumper to front axle distance	mm	964	795	-169
17	Front axle to 'A' pillar distance	mm	437	430	-7
18	'A' pillar to 'B' pillar distance	mm	1105	1094	-11
19	'B' pillar to rear axle distance	mm	1173	1173	0
20	'B' pillar to 'C' pillar distance	mm	900	900	0
21	Roof sill bottom height	mm	1290	1302	12
22	Roof sill top height	mm	1402	1424	22
23	Floor sill bottom height	mm	178	204	26
24	Floor sill top height	mm	356	440	84

DATA SHEET NO. 13...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05



DATA SHEET NO. 14
CAMERA LOCATIONS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
Test Date: 10/18/05

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 Camera (Panning)	-15318	-7899	-1584	-5	N/A	Zoom	30
2	Overall Left Side	-1795	-7137	-1127	0	6685	20mm	1000
3	Left Side View	1533	-7126	-1188	-3	7697	50mm	1000
4	Driver and Interior View	-8696	-12562	-4511	-13	14098	50mm	1000
5	Steering Column (Bottom)	-1631	-8244	-2682	-13	7977	35mm	1000
6	Steering Column (Top)	-1663	-8153	-3078	-17	7979	35mm	1000
7	Overall Right Side	-2536	6556	-1066	-2	6084	20mm	1000
8	Right Side View	-1999	6510	-1249	-4	6049	50mm	1000
9	Passenger and Interior View	-5330	9365	-2407	-10	9483	40mm	1000
10	Right Side View	-2006	6967	-1463	-8	6516	25mm	1000
11	Windshield View	-601	0	-5547	-85	N/A	25mm	1000
12	Driver Front View	376	-286	-2438	-35	N/A	25mm	1000
13	Passenger Front View	371	413	-2439	-35	N/A	25mm	1000
14	Pit View of Engine	-823	0	1493	90	N/A	12mm	1000
15	Pit View of Fuel Tank	-2705	0	1493	90	N/A	8mm	1000
16	Real Time Camera	-3295	7934	-1341	0	N/A	Zoom	30
17	Driver & Pass Front View	334	-18	-2468	-32	N/A	12mm	1000

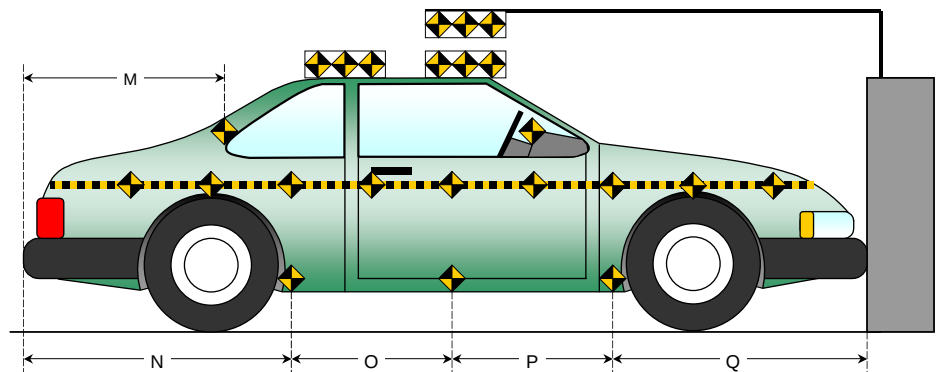
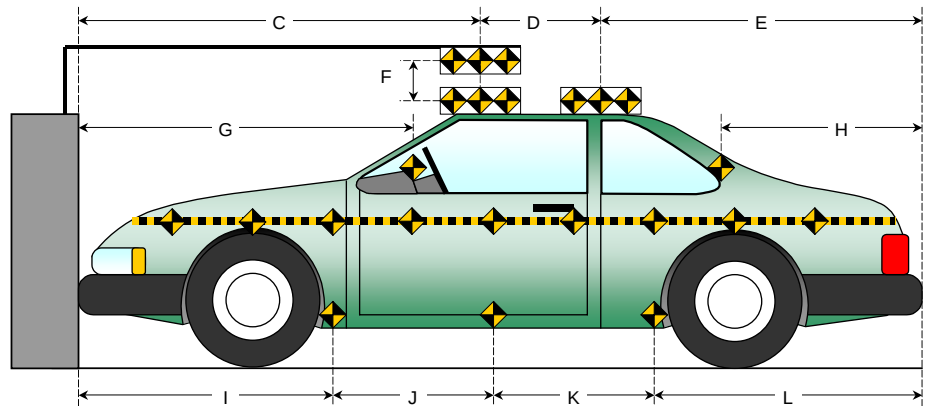
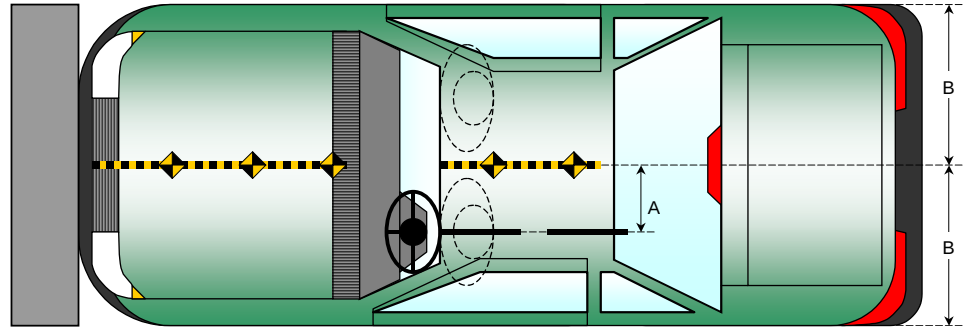
X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run NTM = No Timing Marks

DATA SHEET NO. 15
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

All Dimensions in (mm)	
Item	Value
A	*
B	901
C	*
D	*
E	*
F	*
G	1756
H	1053
I	1386
J	936
K	936
L	1515
M	1020
N	1520
O	934
P	934
Q	1385



* Targets are not installed due to curtain airbags.

DATA SHEET NO. 16
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

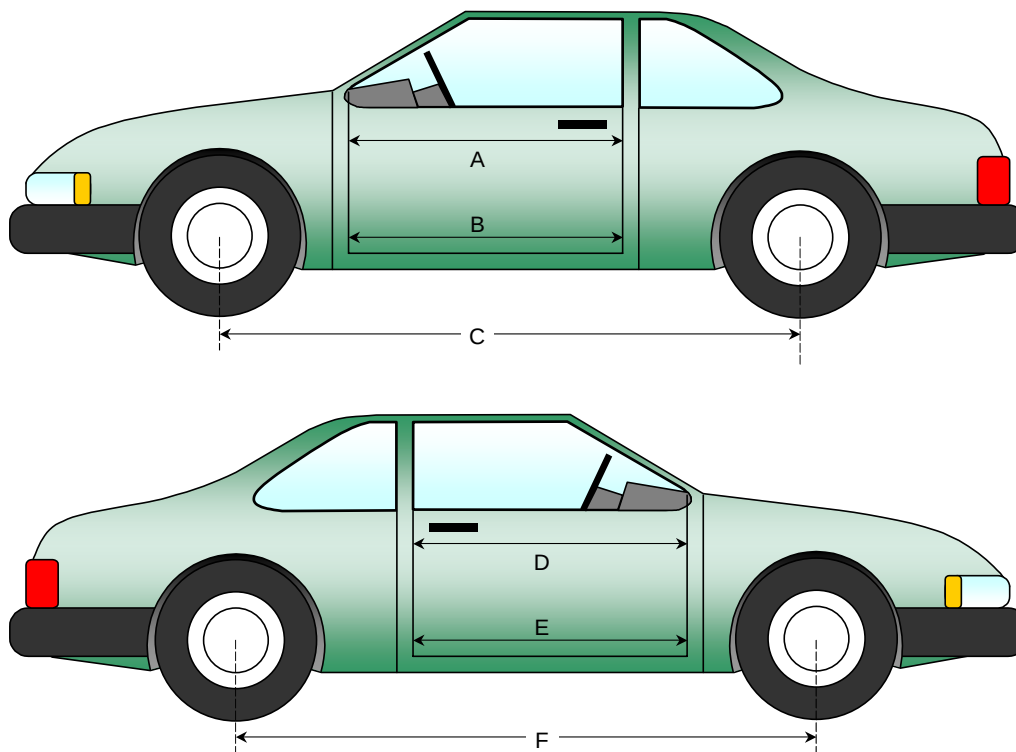
Test Date: 10/18/05

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	956	954	-2
B	Left Side Lower	mm	851	850	-1
D	Right Side Upper	mm	956	955	-1
E	Right Side Lower	mm	841	841	0

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	2712	2693	-19
F	Right Side Wheel Base	mm	2712	2677	-35



DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

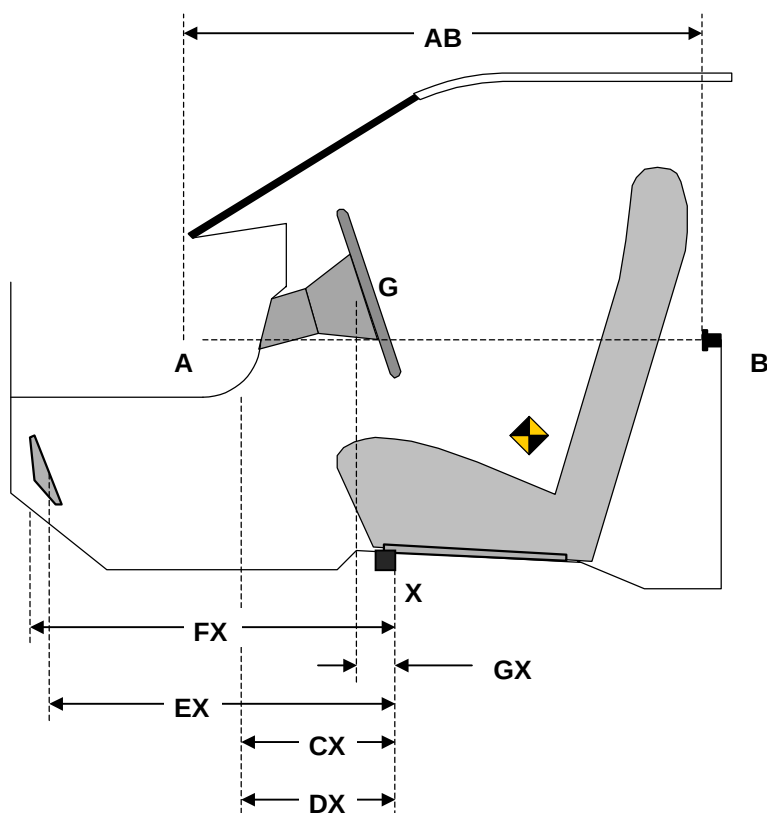
Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	956	954	-2
CX	Left Knee Bolster to X	mm	307	311	4
DX	Right Knee Bolster to X	mm	280	300	20
EX	Brake Pedal to X	mm	542	600	58
FX	Foot Rest to X	mm	600	618	18
GX	Center of Steering Wheel Hub to X	mm	50	155	105

X = Left Front Seat Outboard Anchor Bolt Head



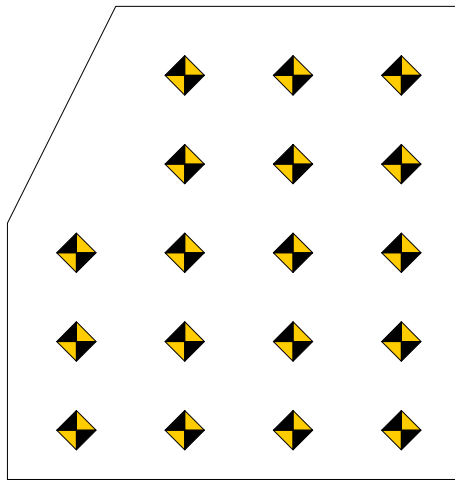
DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05



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.

4

5

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		-655	-661	-658		-655	-668	-673		0	-7	-15
2		-576	-580	-576		-577	-587	-592		-1	-7	-16
3	-485	-482	-477	-475	-482	-483	-489	-496	3	-1	-12	-21
4	-387	-382	-379	-373	-382	-386	-390	-392	5	-4	-11	-19
5	-284	-280	-276	-276	-282	-284	-286	-294	2	-4	-10	-18

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		-29	-45	-49		-26	-42	-49		3	3	0
2		-79	-99	-104		-74	-99	-109		5	0	-5
3	-107	-113	-108	-109	-99	-112	-112	-115	8	1	-4	-6
4	-118	-116	-113	-116	-114	-116	-120	-124	4	0	-7	-8
5	-125	-121	-118	-121	-120	-122	-126	-127	5	-1	-8	-6

DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

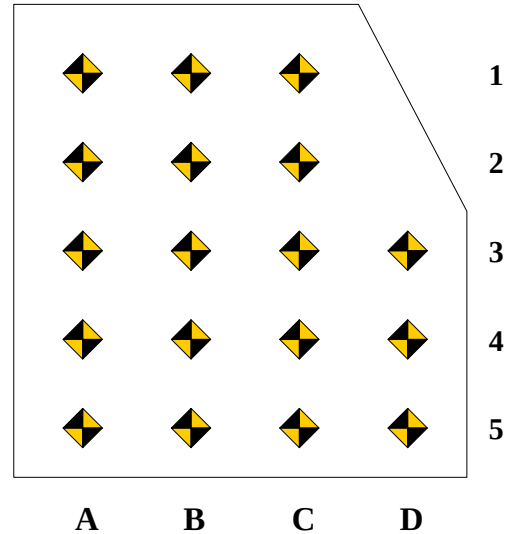
NHTSA No.: M65800
 Test Date: 10/18/05

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	675	673	675		676	671	671		1	-2	-4	
2	590	593	594		596	596	596		6	3	2	
3	489	500	510	517	501	503	511	516	12	3	1	-1
4	396	401	412	422	401	405	414	419	5	4	2	-3
5	290	299	311	322	293	303	313	321	3	4	2	-1

PASSENGER FLOOR PAN Z-AXIS

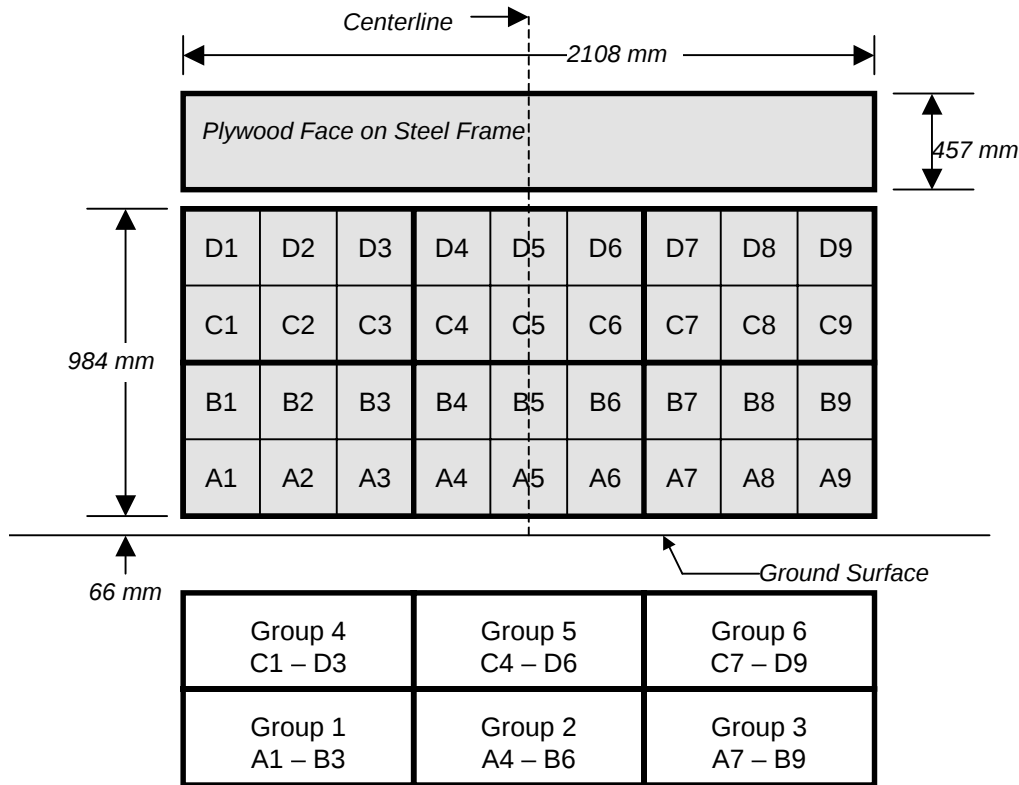
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-34	-21	-11		-15	-7	3		19	14	14	
2	-94	-86	-71		-82	-74	-61		12	12	10	
3	-121	-117	-117	-106	-114	-111	-109	-99	7	6	8	7
4	-124	-122	-121	-122	-118	-118	-117	-109	6	4	4	13
5	-129	-127	-123	-127	-124	-125	-123	-124	5	2	0	3

DATA SHEET NO. 17
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

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



6 Groups of 6 Load Cells Each

DATA SHEET NO. 18
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M65800
 Test Date: 10/18/05

VEHICLE INFORMATION

VIN: WVWAK73C06P046103
 Vehicle Size Category: 4-Door

Wheel base (mm): 2712
 Test Weight (kg): 1765

ACCELEROMETER DATA

Accelerometer Location: Left rear cross member
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 56.09
 Velocity Change (km/h): 63.7

Linearity: Good

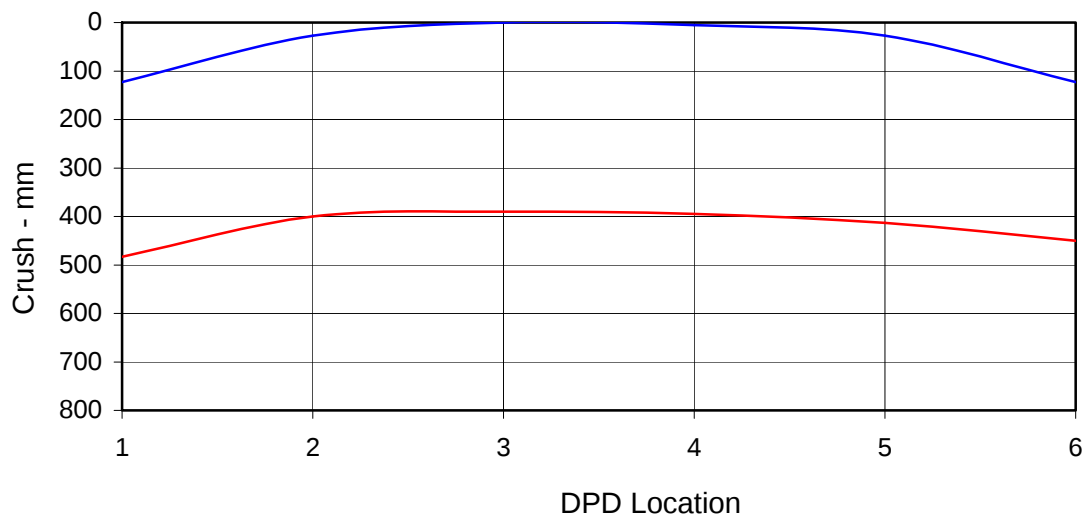
Time of Separation (msec): 60.4

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
 Damage Region Length (mm): 1162

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	123	483	-360
C2	Crush zone 2 on left side	mm	27	400	-373
C3	Crush zone 3 on left side	mm	0	390	-390
C4	Crush zone 4 on right side	mm	5	395	-390
C5	Crush zone 5 on right side	mm	27	413	-386
C6	Crush zone 6 at right side	mm	123	450	-327



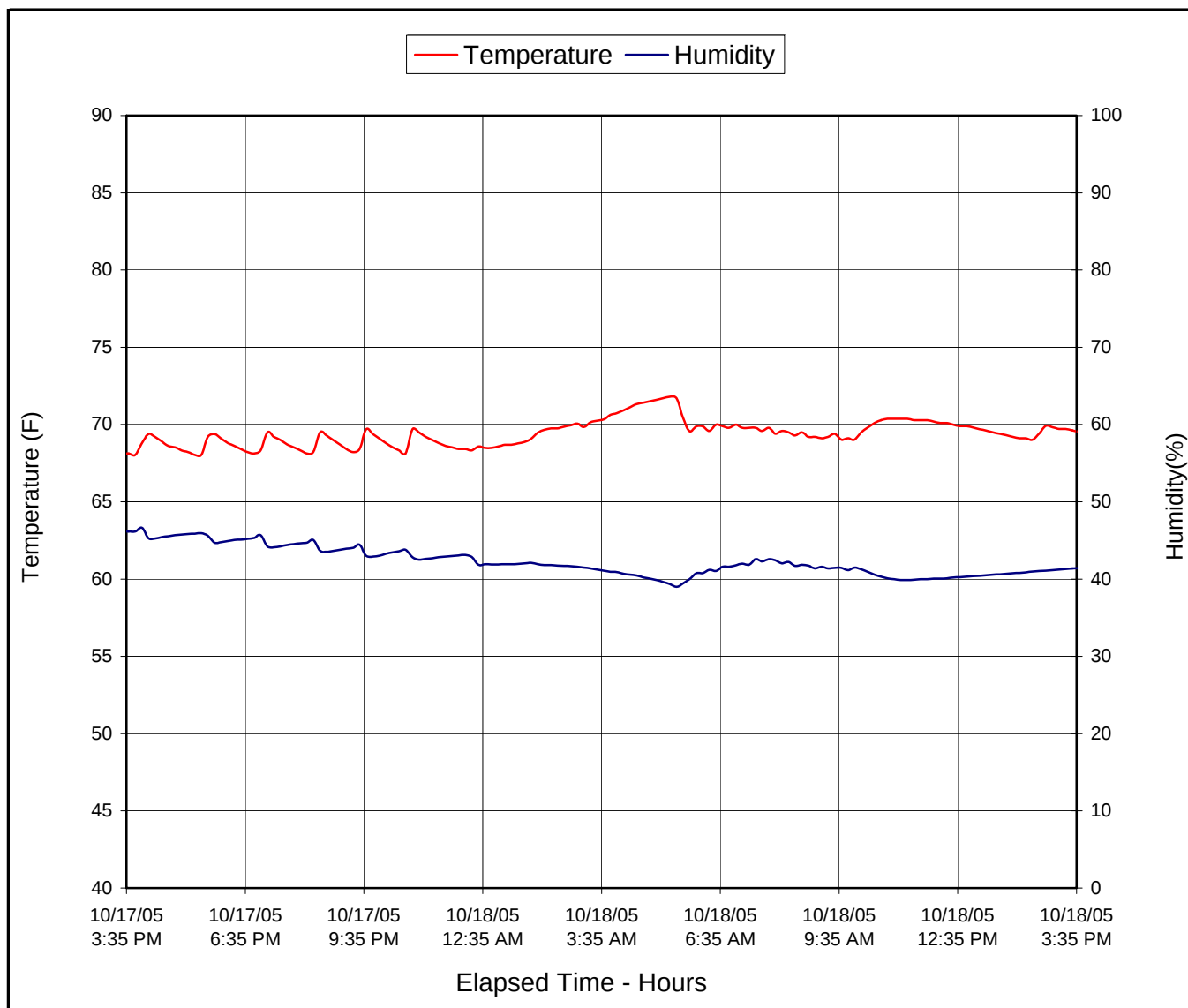
DATA SHEET NO. 19
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan

NHTSA No.: M65800

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05



APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

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A-2	Manufacturer's Label	A-2
A-3	Tire Placard	A-3
A-4	Right Front ¾ View, As Received	A-4
A-5	Left Rear ¾ View, As Received	A-5
A-6	Pre-Test Front View	A-6
A-7	Post-Test Front View (Vehicle Moved)	A-7
A-8	Pre-Test Left Side View	A-8
A-9	Post-Test Left Side View	A-9
A-10	Pre-Test Right Side View	A-10
A-11	Post-Test Right Side View	A-11
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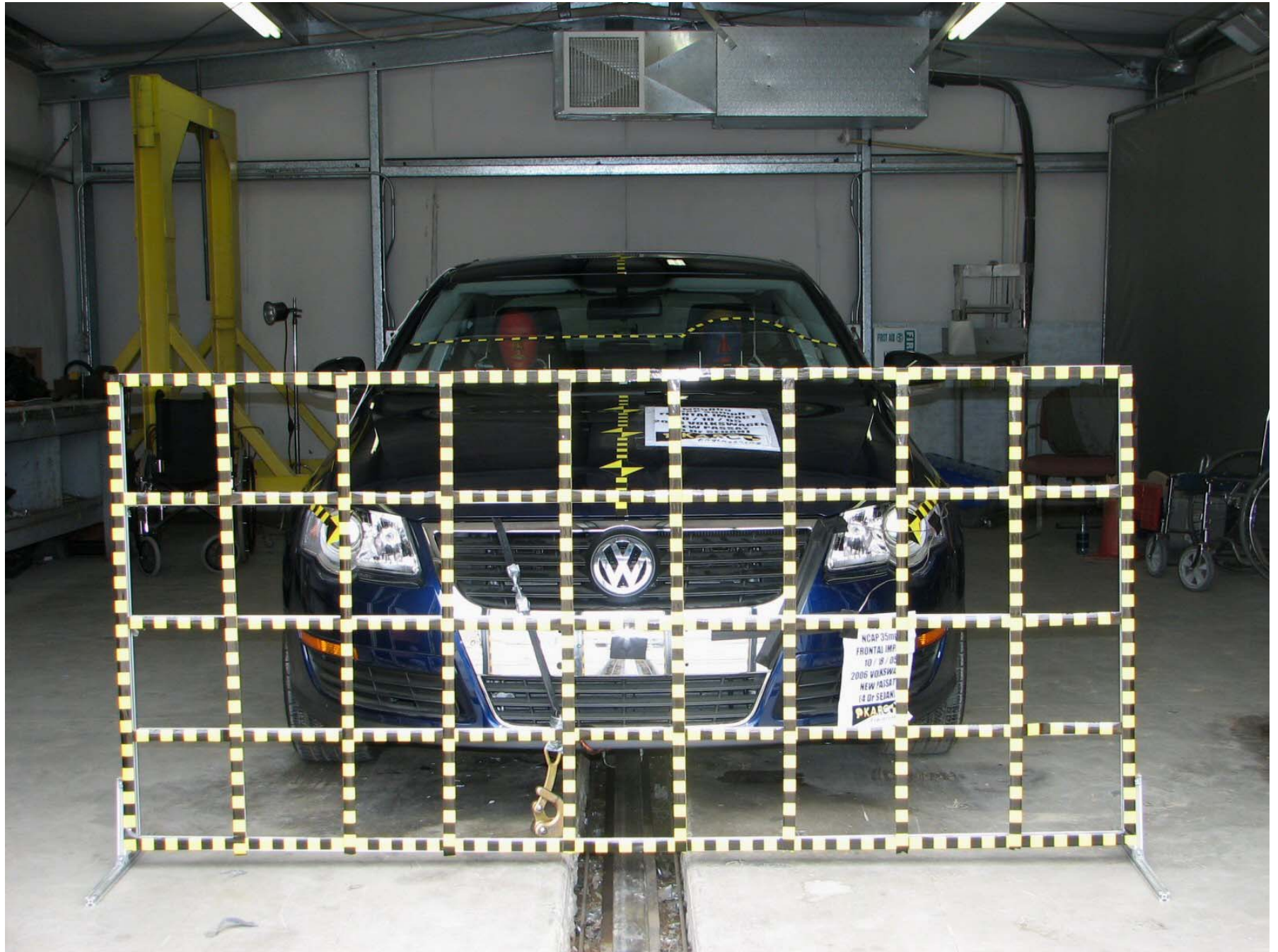


Figure A-1: Load Cell Location

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MFD BY VOLKSWAGEN AG GERMANY 07/05
GVWR 4498 GAWR FRONT 2426 / REAR 2183 LBS
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S.
FEDERAL MOTOR VEHICLE SAFETY, BUMPER AND
THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

WVWAK73C06P046103

PASSENGER CAR

3017096 1087 02



Figure A-2: Manufacturer's Label

ATTENTION-CONSIGNEES
DE SECURITE

ATTENTION-SAFETY
INFORMATION !
This vehicle is equipped with
SIDE-AIRBAG in the seats
DO NOT USE SEAT COVERS
For further IMPORTANT INFOR-
MATION see OWNER'S MANUAL

TIRE AND LOADING INFORMATION

SEATING CAPACITY TOTAL 5 FRONT 2 REAR 3

THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED 440 KG OR 975 LBS

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	215/55 R16 XL	230 KPA, 33 PSI
REAR	215/55 R16 XL	230 KPA, 33 PSI
SPARE	—	—

**SEE OWNER'S
MANUAL FOR
ADDITIONAL
INFORMATION**

3C0 010 479 F

Figure A-3: Tire Placard



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



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

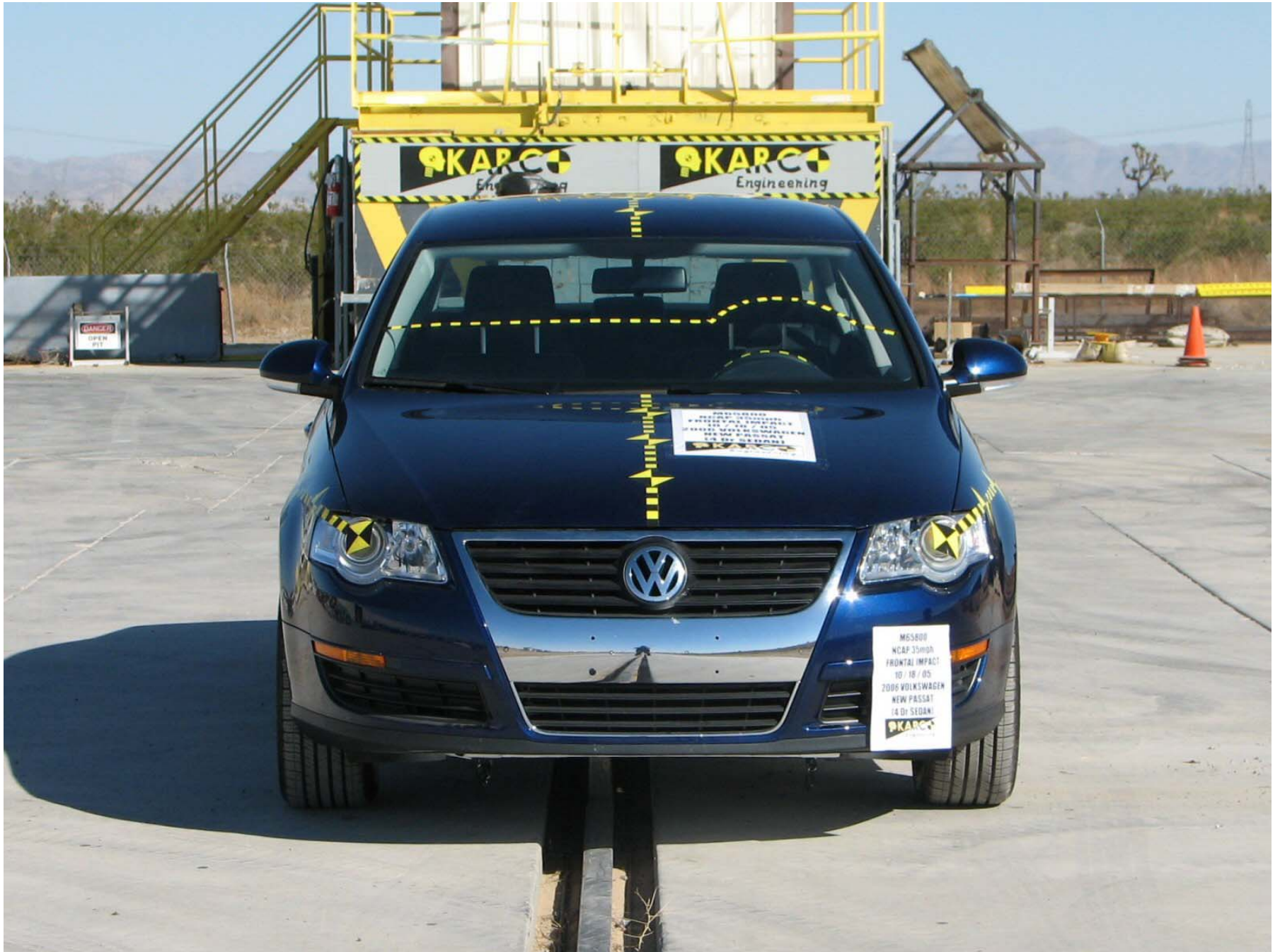


Figure A-6: Pre-Test Front View



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 ¾ 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-16: Post-Test Left Side $\frac{3}{4}$ View of Doors After Impact



Figure A-17: Post-Test Right Side $\frac{3}{4}$ View of Doors After Impact

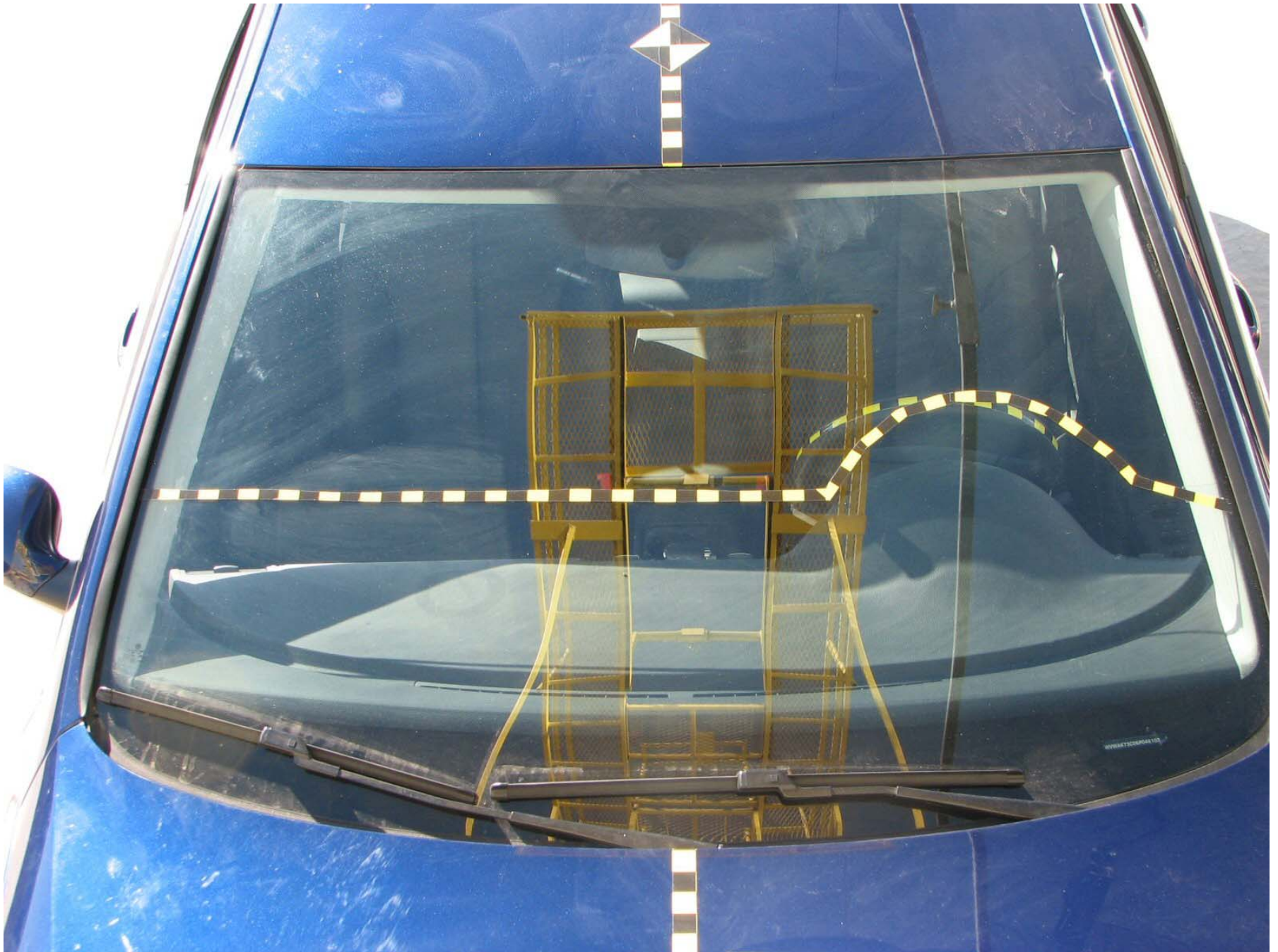


Figure A-18: Pre-Test Windshield



Figure A-19: Post-Test Windshield



Figure A-20: Pre-Test Engine Compartment



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



2006 VOLKSWAGEN NEW PASSAT
M65800
STODDARD SOLVENT ADDED
17.2 GALLONS
(65.102 LITERS)



Figure A-22: Pre-Test Fuel Cap



Figure A-23: Post-Test Fuel Cap

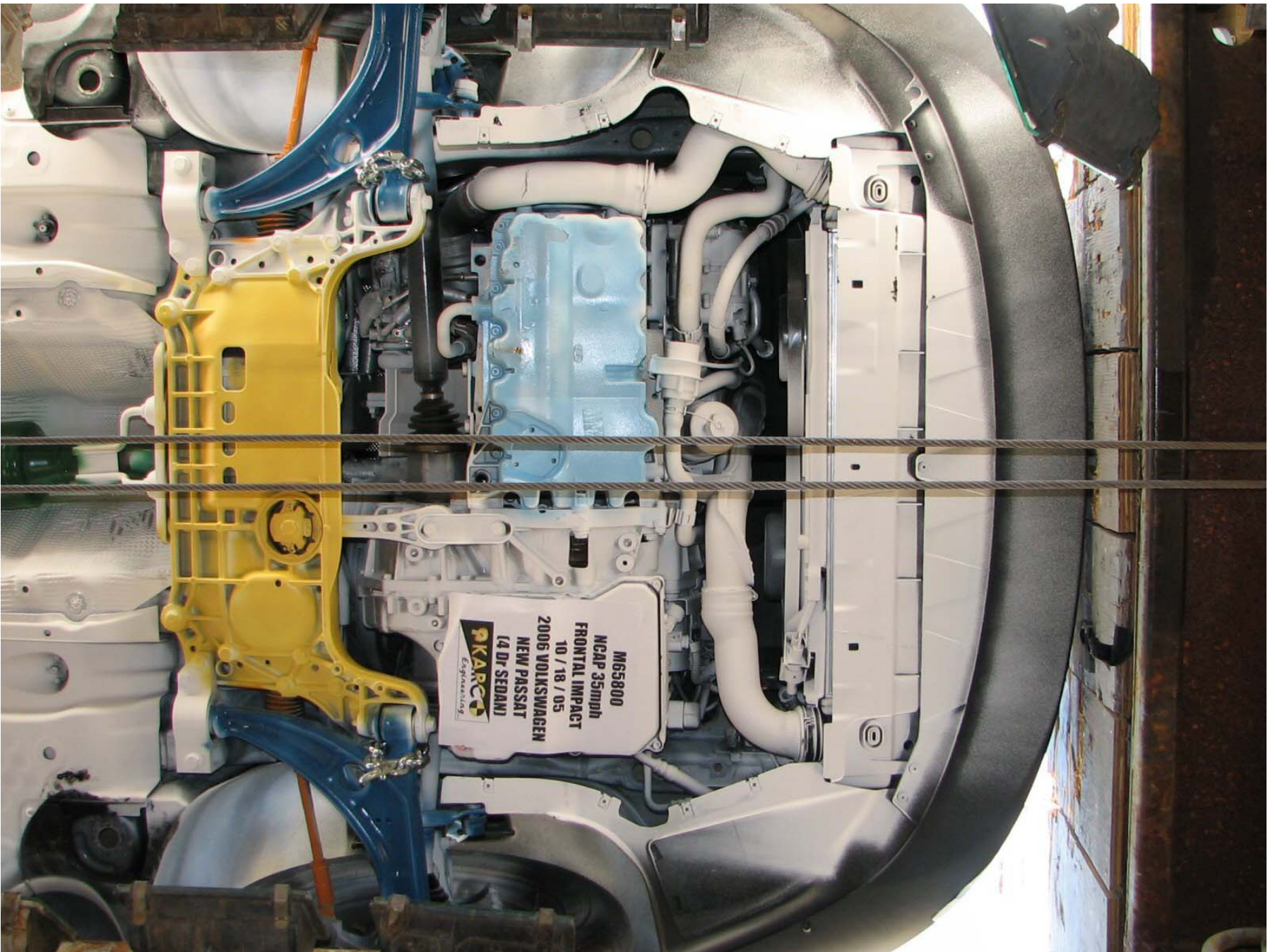


Figure A-24: Pre-Test Front Underbody

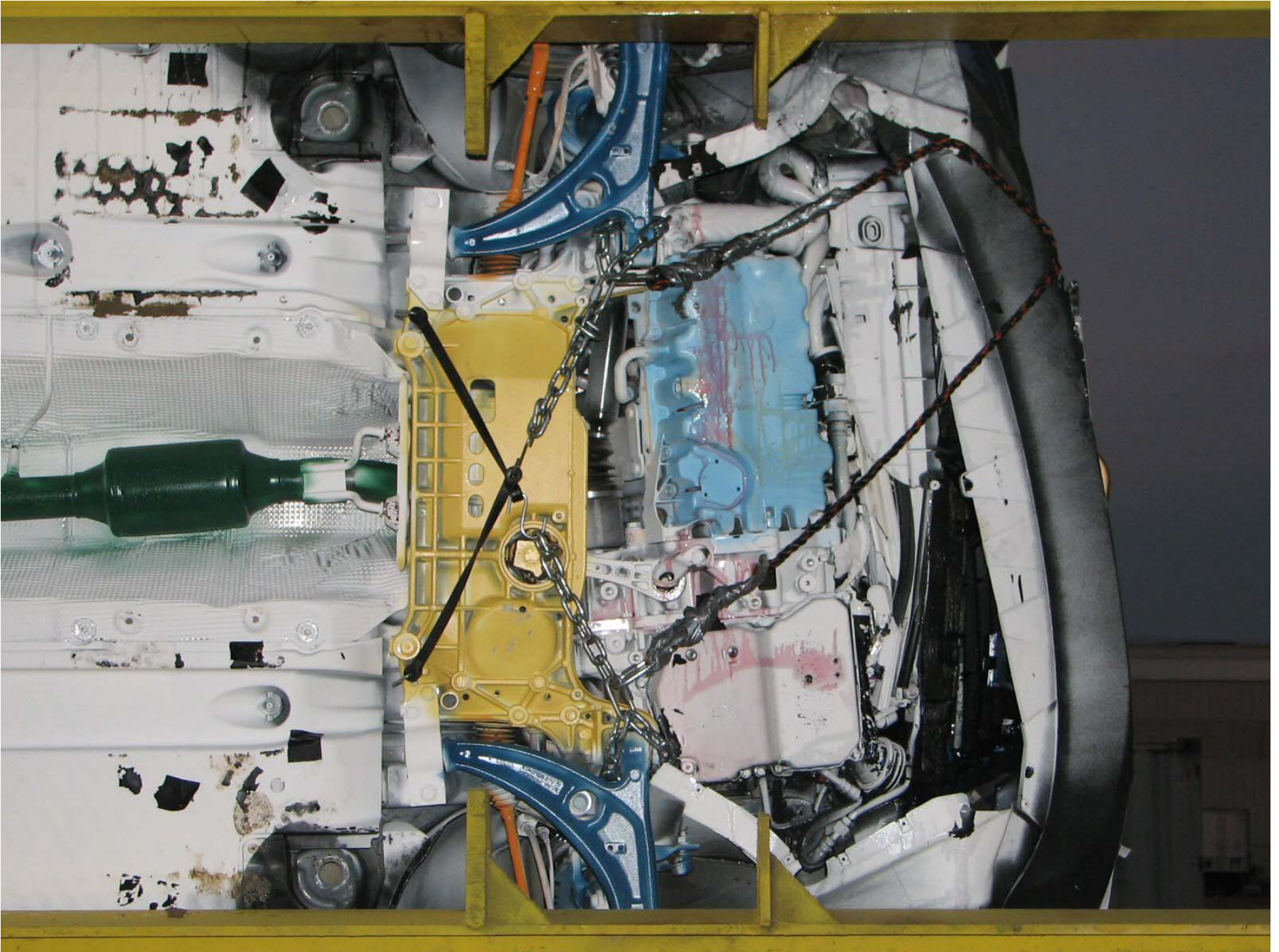


Figure A-25: Post-Test Front Underbody

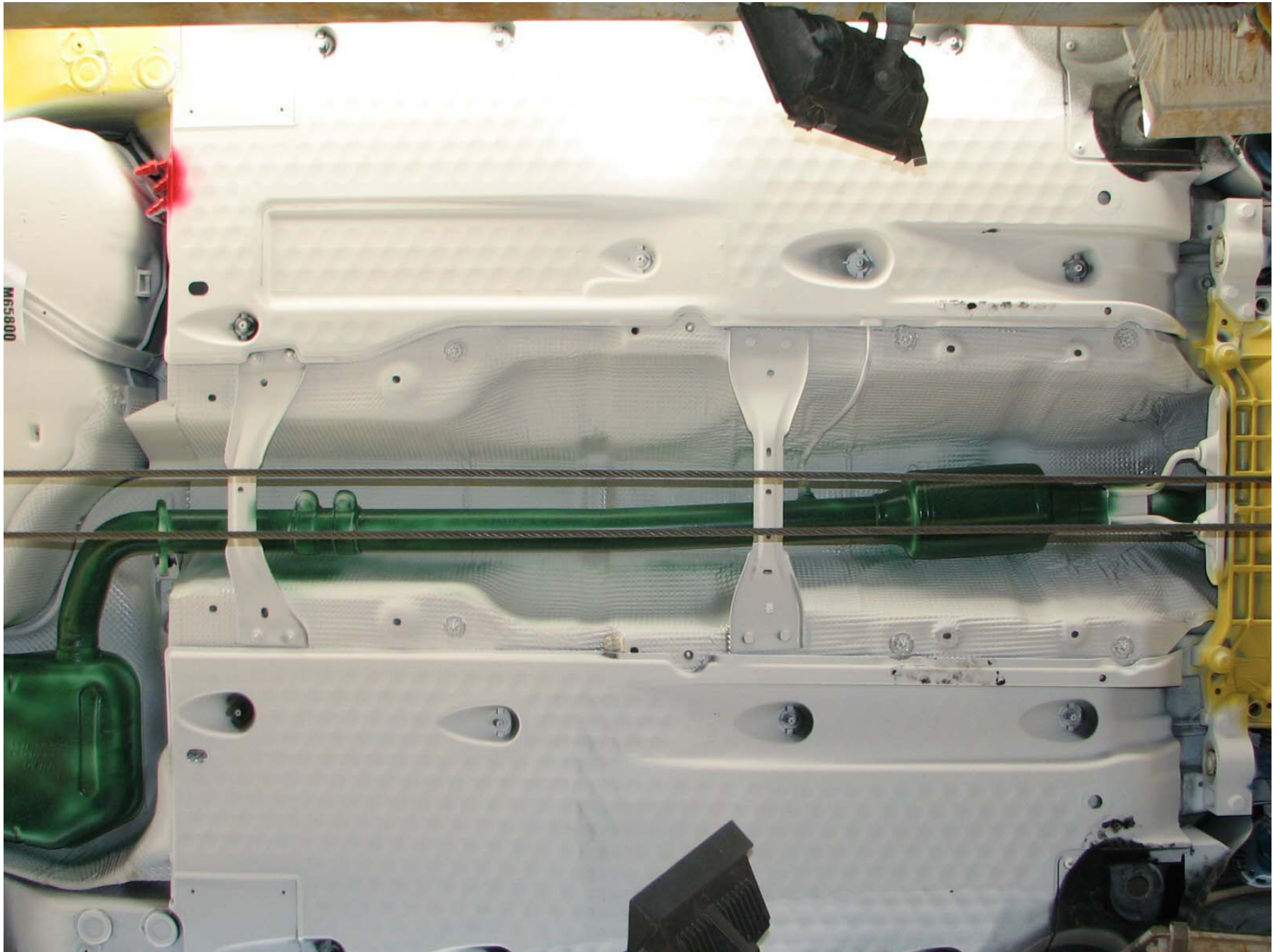


Figure A-26: Pre-Test Mid Underbody

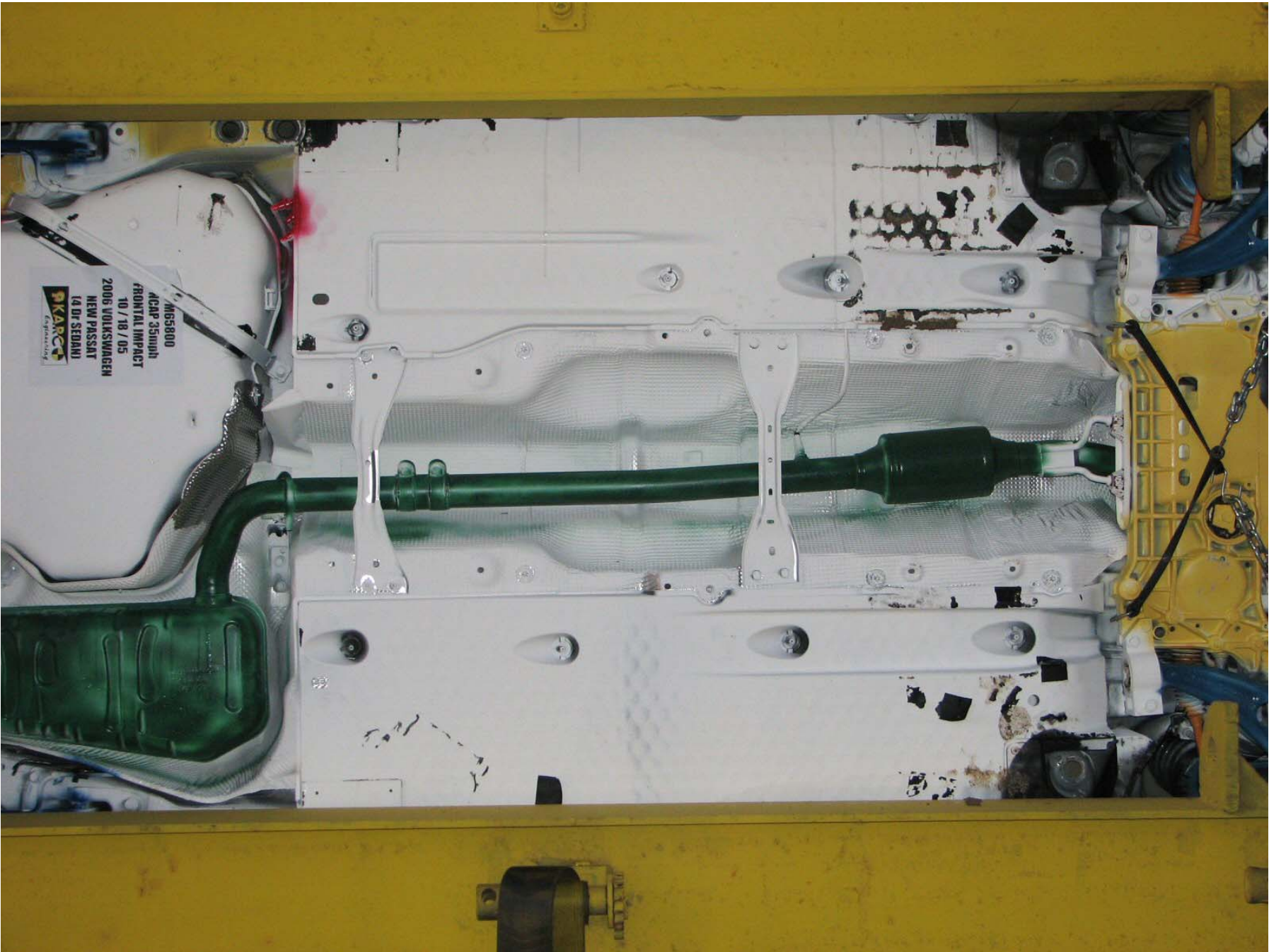


Figure A-27: Post-Test Mid Underbody

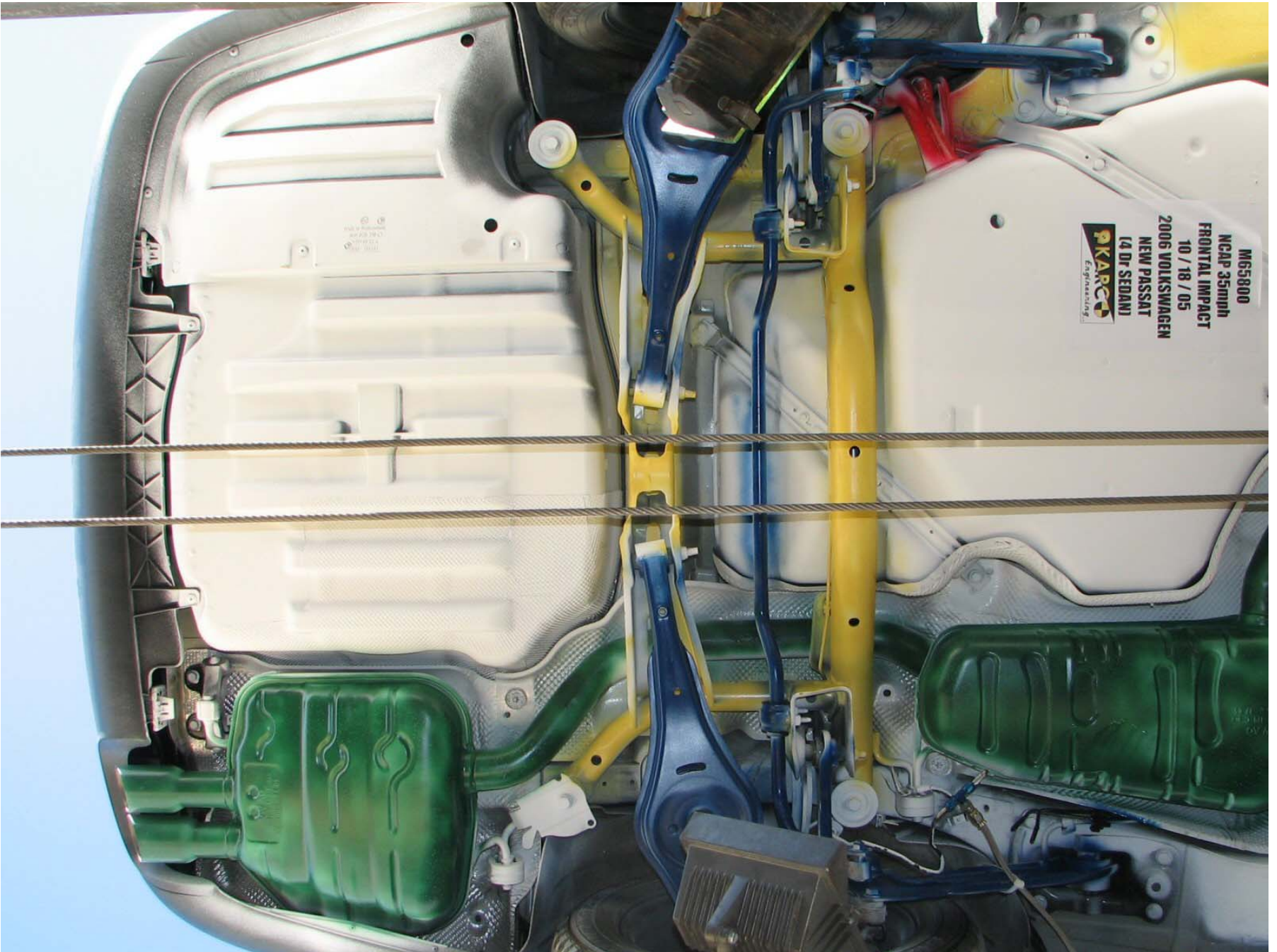


Figure A-28: Pre-Test Rear Underbody

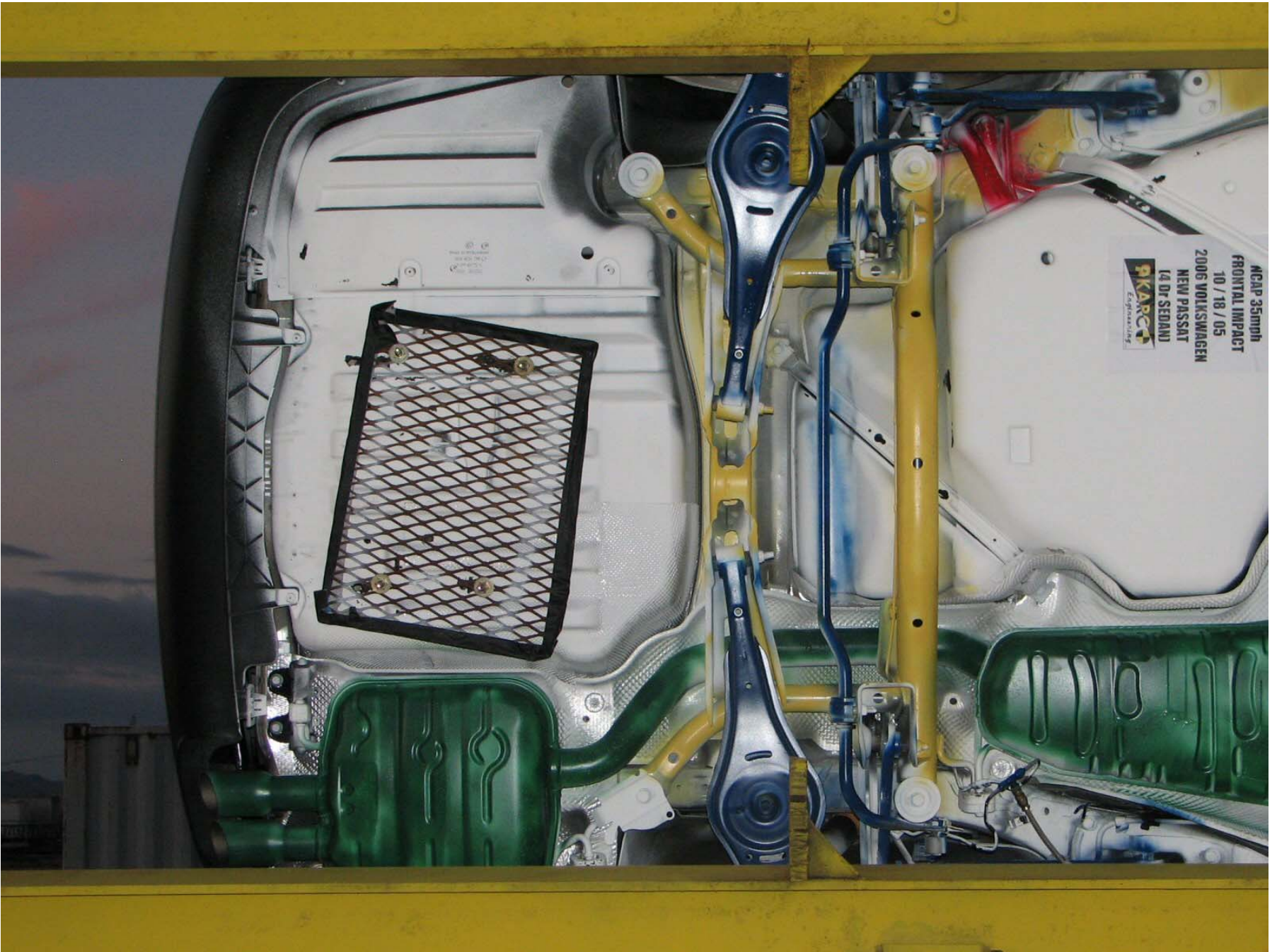


Figure A-29: Post-Test Rear Underbody



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 (Through Window)



Figure A-33: Post-Test Driver Dummy (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 Airbag Contact



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 (Through Window)



Figure A-47: Post-Test Passenger Dummy (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 Glove Box



Figure A-53: Post-Test Passenger Side Glove Box



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 Airbag Contact



Figure A-58: Vehicle on Rollover Device (0°)



Figure A-59: Vehicle on Rollover Device (90°)



Figure A-60: Vehicle on Rollover Device (180°)



Figure A-61: Vehicle on Rollover Device (270°)



Figure A-62: Vehicle 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 Chest Primary X
	Driver Chest Primary Y
	Driver Chest Primary Z
	Driver Chest Resultant Primary
B-3	Driver Left Femur Force Z
	Driver Right Femur Force Z
B-4	Passenger Head Primary X
	Passenger Head Primary Y
	Passenger Head Primary Z
	Passenger Head Resultant Primary
B-5	Passenger Chest Primary X
	Passenger Chest Primary Y
	Passenger Chest Primary Z
	Passenger Chest Resultant Primary
B-6	Passenger Left Femur Force Z
	Passenger Right Femur Force Z

LIST OF DATA PLOTS...(CONTINUED)

The following additional data plots for this test can be obtained from the research and development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

- Driver Head Primary X Velocity
- Driver Head Primary X Displacement
- Driver Head Redundant X
- Driver Head Redundant Y
- Driver Head Redundant Z
- Driver Head Resultant Redundant
- Driver Head Redundant X Velocity
- Driver Head Redundant X Displacement
- Driver Upper Neck Force X
- Driver Upper Neck Force Y
- Driver Upper Neck Force Z
- Driver Upper Neck Force Resultant
- Driver Upper Neck Moment X
- Driver Upper Neck Moment Y
- Driver Upper Neck Moment Z
- Driver Upper Neck Moment Resultant
- Driver Chest Primary X Velocity
- Driver Chest Primary X Displacement
- Driver Chest Redundant X
- Driver Chest Redundant Y
- Driver Chest Redundant Z
- Driver Chest Resultant Redundant
- Driver Chest Redundant X Velocity
- Driver Chest Redundant X Displacement
- Driver Chest Displacement
- Driver Pelvis X
- Driver Pelvis Y
- Driver Pelvis Z
- Driver Pelvis Resultant
- Driver Pelvis X Velocity
- Driver Pelvis X Displacement
- Driver Left Upper Tibia Moment X
- Driver Left Upper Tibia Moment Y
- Driver Right Upper Tibia Moment X

LIST OF DATA PLOTS...(CONTINUED)

Driver Right Upper Tibia Moment Y
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Left Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Driver Right Foot Fore Z
Driver Lap Belt Force
Driver Shoulder Belt Force
Driver Shoulder Belt Pullout
Driver Shoulder Belt Elongation
Passenger Head Primary X Velocity
Passenger Head Primary X Displacement
Passenger Head Redundant X
Passenger Head Redundant Y
Passenger Head Redundant Z
Passenger Head Resultant Redundant
Passenger Head Redundant X Velocity
Passenger Head Redundant X Displacement
Passenger Upper Neck Force X
Passenger Upper Neck Force Y
Passenger Upper Neck Force Z
Passenger Upper Neck Force Resultant
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Y
Passenger Upper Neck Moment Z
Passenger Upper Neck Moment Resultant
Passenger Chest Primary X Velocity
Passenger Chest Primary X Displacement
Passenger Chest Redundant X

LIST OF DATA PLOTS...(CONTINUED)

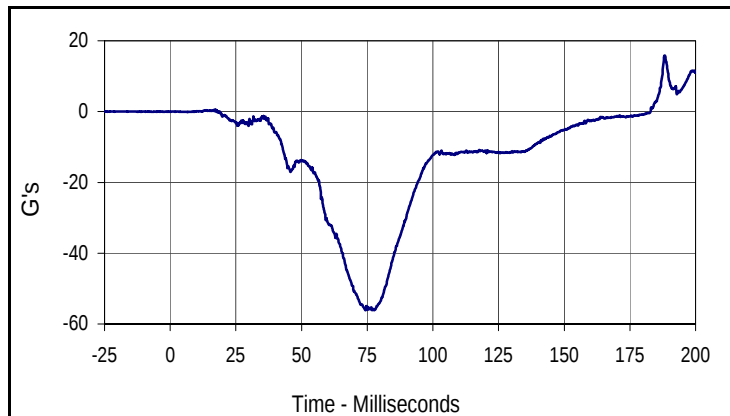
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Passenger Chest Redundant Z
Passenger Chest Resultant Redundant
Passenger Chest Redundant X Velocity
Passenger Chest Redundant X Displacement
Passenger Chest Displacement
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Passenger Pelvis Y
Passenger Pelvis Z
Passenger Pelvis Resultant
Passenger Pelvis X Velocity
Passenger Pelvis X Displacement
Passenger Left Femur Force
Passenger Right Femur Force
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Left Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Right Foot Fore Z
Passenger Lap Belt Force
Passenger Shoulder Belt Force
Passenger Shoulder Belt Pullout
Passenger Shoulder Belt Elongation
Vehicle Left Rear X
Vehicle Left Rear X Velocity

LIST OF DATA PLOTS...(CONTINUED)

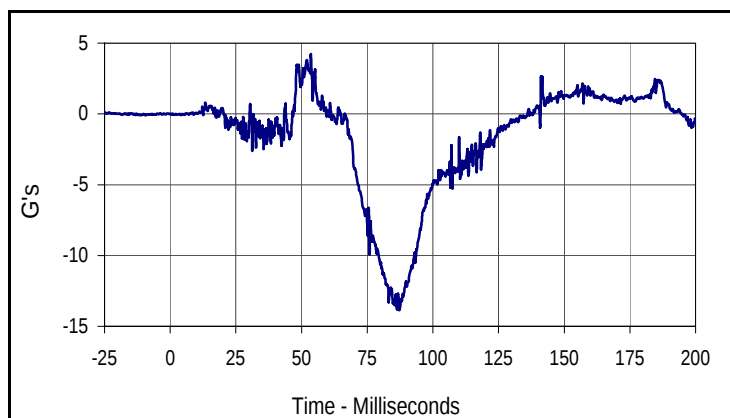
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Vehicle Right Rear X
Vehicle Right Rear X Velocity
Vehicle Right Rear X Displacement
Vehicle Engine Top
Vehicle Engine Top Velocity
Vehicle Engine Top Displacement
Vehicle Engine Bottom
Vehicle Engine Bottom Velocity
Vehicle Engine Bottom Displacement
Vehicle Left Brake Caliper
Vehicle Left Brake Caliper Velocity
Vehicle Left Brake Caliper Displacement
Vehicle Right Brake Caliper
Vehicle Right Brake Caliper Velocity
Vehicle Right Brake Caliper Displacement
Vehicle Instrument Panel
Vehicle Instrument Panel Velocity
Vehicle Instrument Panel Displacement
Vehicle Left Rear Z
Vehicle Left Rear Z Velocity
Vehicle Left Rear Z Displacement
Vehicle Right Rear Z
Vehicle Right Rear Z Velocity
Vehicle Right Rear Z Displacement

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

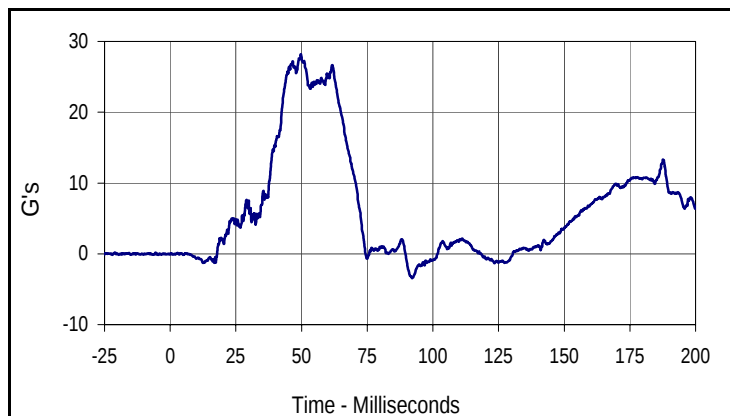
Test Date: 10/18/05
 NHTSA No.: M65800



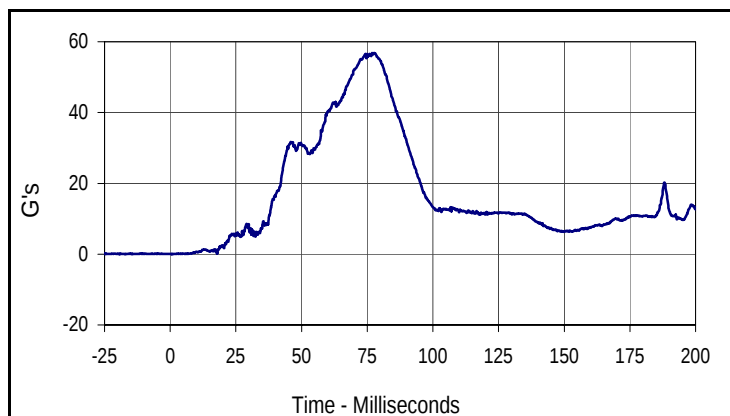
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Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
15.8	188.3	-56.1	76.9



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.2	53.6	-13.9	87.2



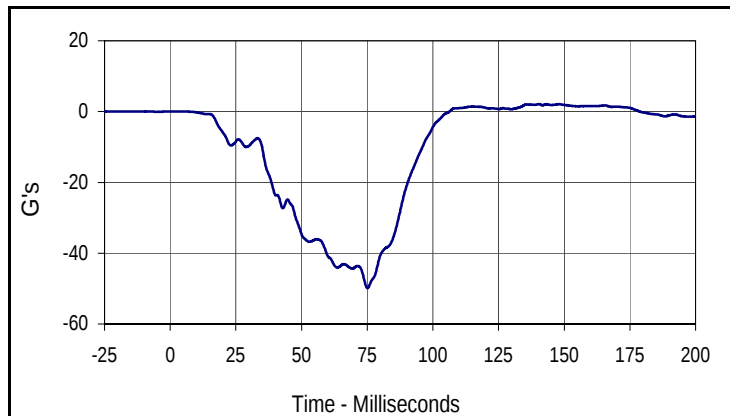
Curve Description			
Driver Head Primary Z			
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Max	Time	Min	Time
28.2	49.8	-3.4	92.1



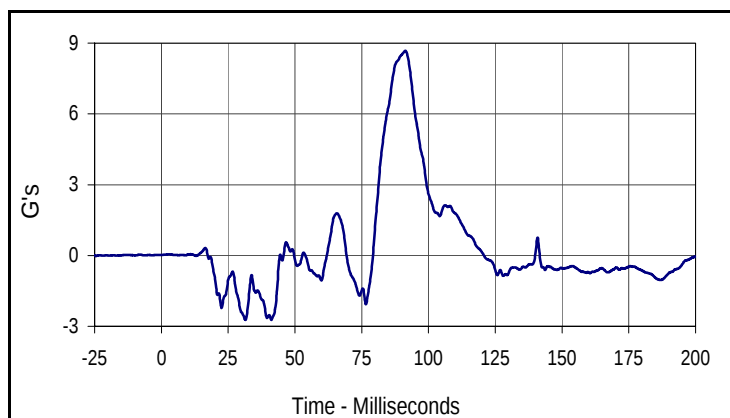
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Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
56.9	76.9	0.0	0.8

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

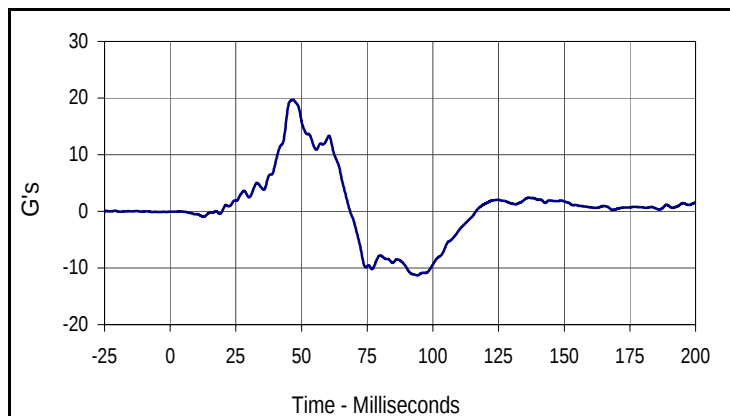
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 NHTSA No.: M65800



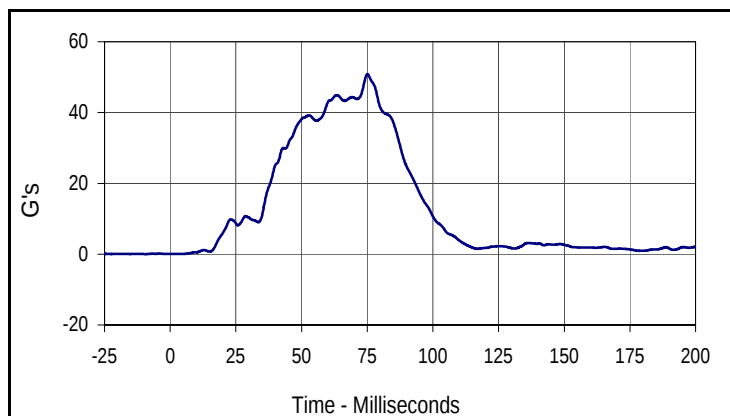
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CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.7	91.3	-2.7	31.5



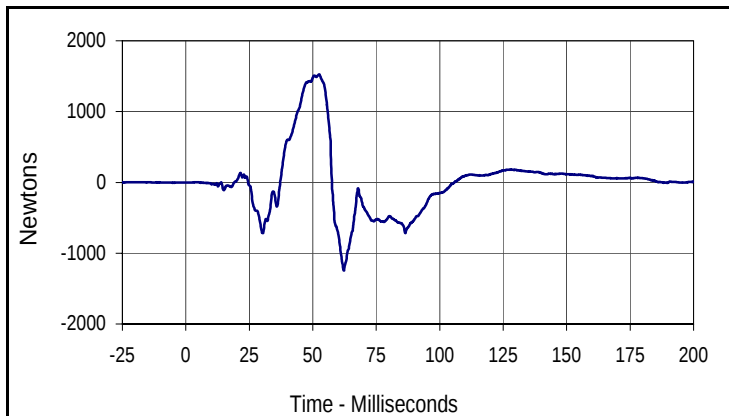
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Driver Chest Primary Z			
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Max	Time	Min	Time
19.7	46.7	-11.3	94.1



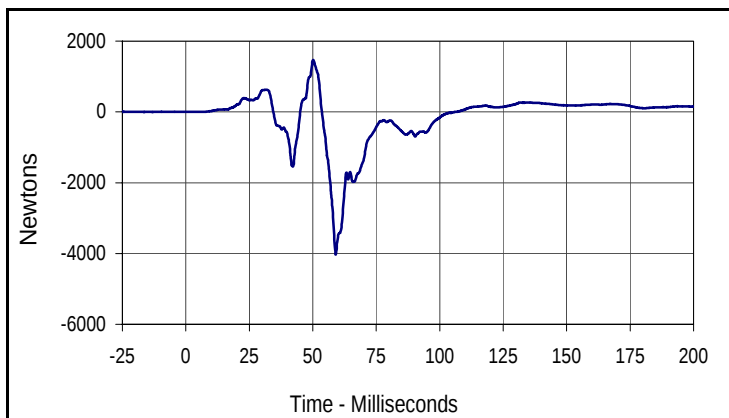
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Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
004	RES	180	G's
Max	Time	Min	Time
50.8	75.1	0.0	4.3

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05
 NHTSA No.: M65800



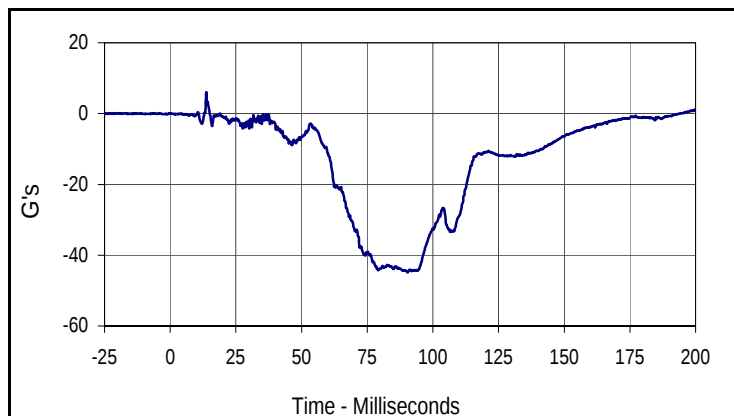
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Driver Left Femur Force Z			
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007	FIL	600	Newtons
Max	Time	Min	Time
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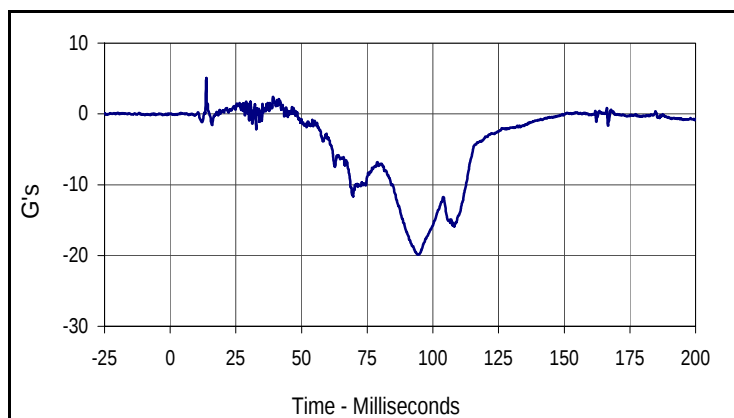
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Driver Right Femur Force Z			
CURNO	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
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Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

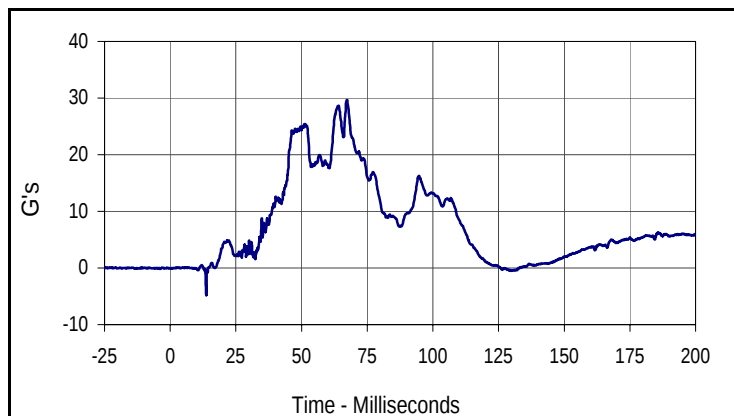
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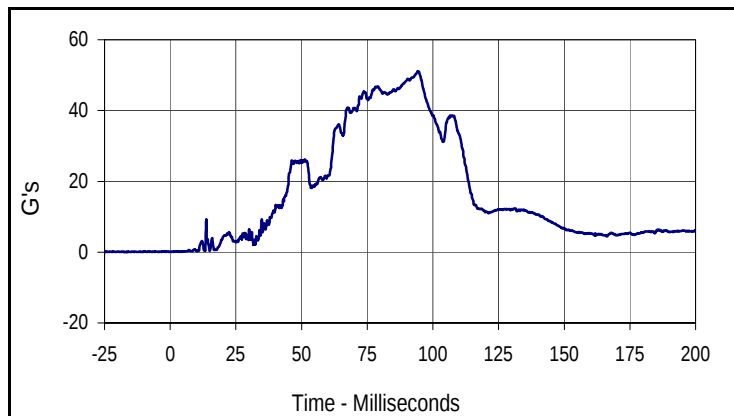
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CURNO	Type	SAE Class	Units
009	FIL	1000	G's
Max	Time	Min	Time
6.0	13.7	-44.9	90.4



Curve Description			
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CURNO	Type	SAE Class	Units
010	FIL	1000	G's
Max	Time	Min	Time
5.1	13.7	-19.9	94.6



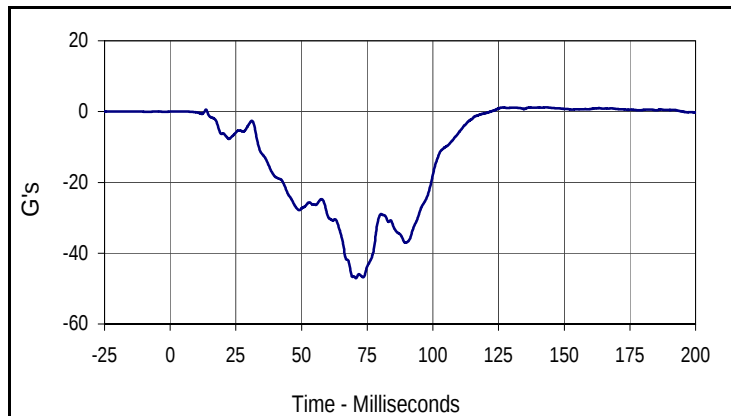
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011	FIL	1000	G's
Max	Time	Min	Time
29.7	67.3	-4.8	13.7



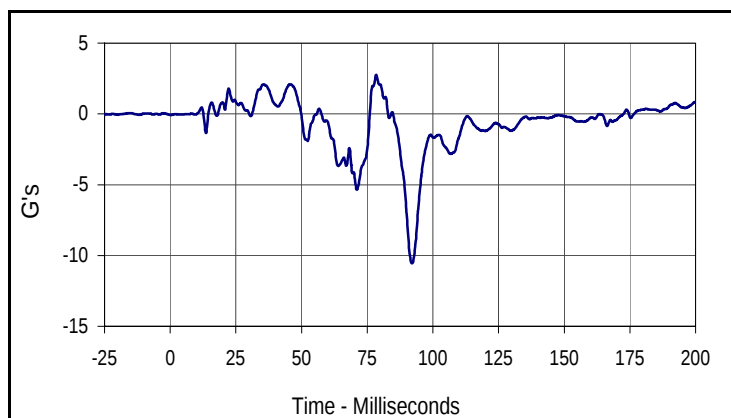
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
51.1	94.3	0.0	0.3

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

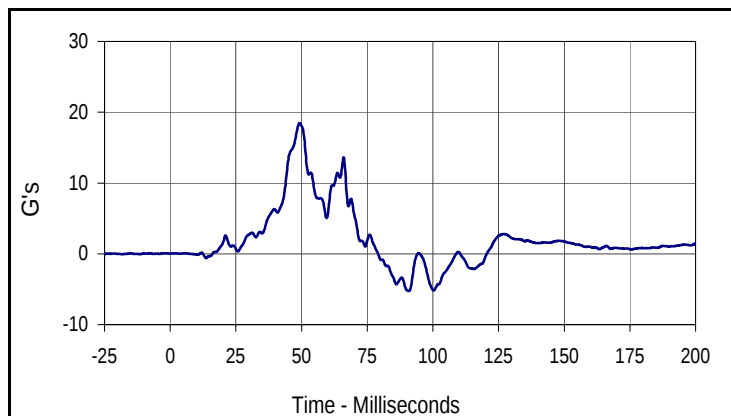
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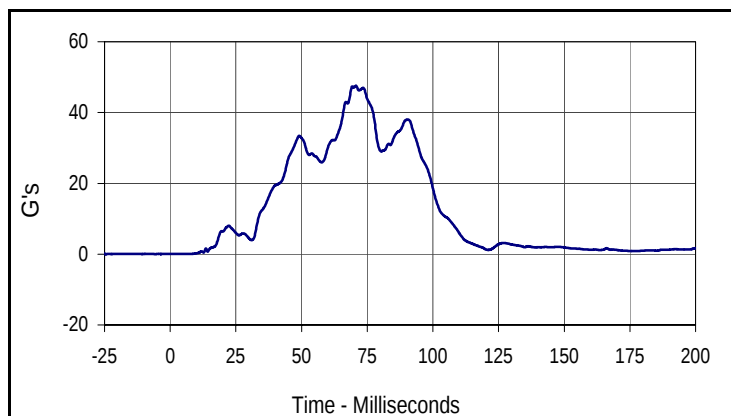
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012	FIL	180	G's
Max	Time	Min	Time
1.2	143.1	-47.1	70.7



Curve Description			
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Max	Time	Min	Time
2.8	78.4	-10.6	92.0



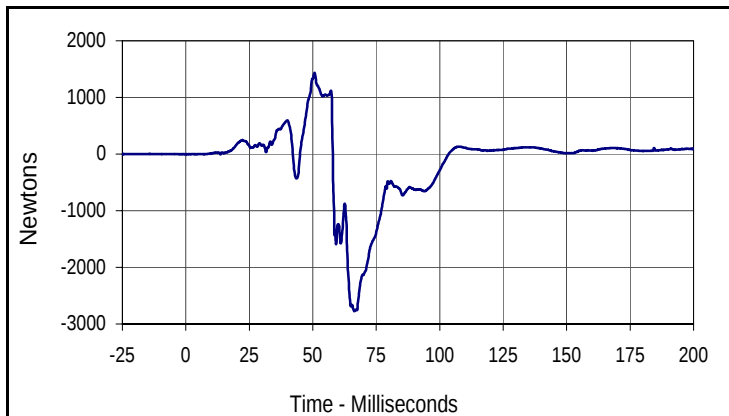
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Max	Time	Min	Time
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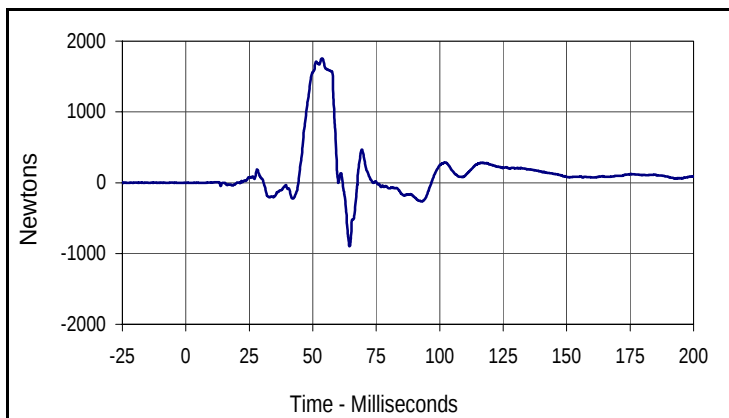
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
47.6	70.7	0.0	7.5

Test Vehicle: 2006 Volkswagen New Passat 4-Door Sedan
 Test Program: 2006 NHTSA 35mph NCAP

Test Date: 10/18/05
 NHTSA No.: M65800



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
1434.3	50.7	-2775.8	66.4



Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
1755.0	53.7	-898.1	64.5

APPENDIX C

DUMMY CALIBRATION DATA

Test Program: Hybrid III 50th Percentile Male Head Drop Test

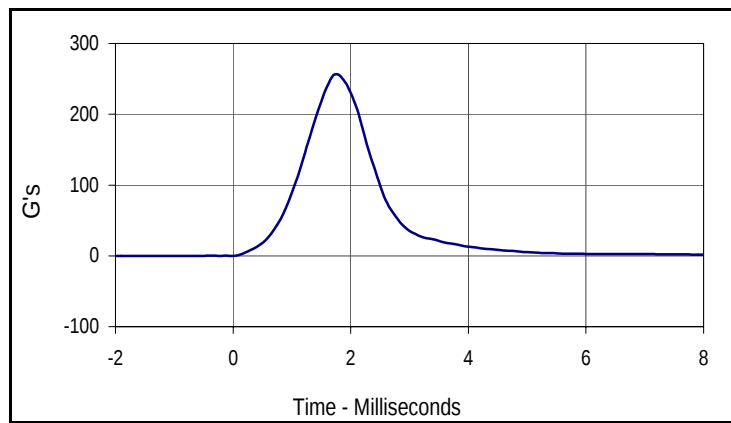
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ATD Serial No.: 034

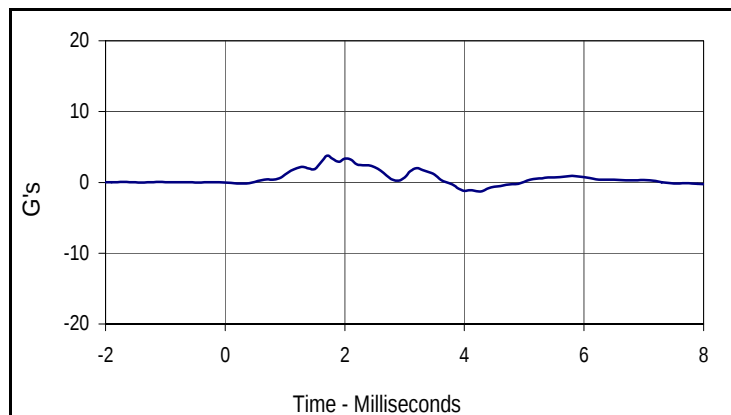
Test I.D.: HD10A



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	255.9	Pass
Peak Lateral Acceleration	G's	≤15.0	3.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
255.9	1.8	0.0	-1.5



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.8	1.7	-1.2	4.2

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

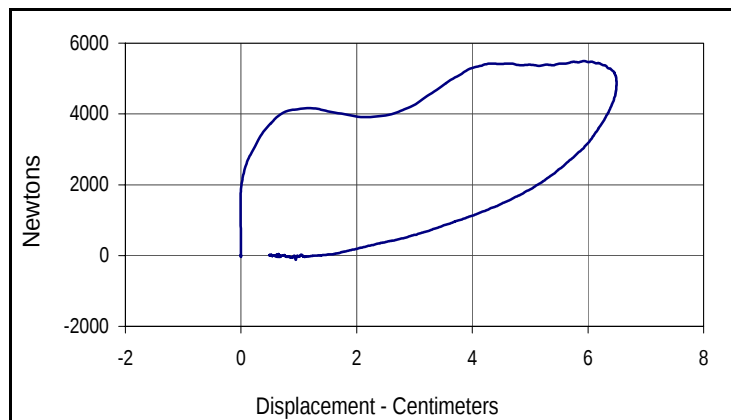
Test Date: 10/7/05

ATD Serial No.: 034

Test I.D.: CH10A



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	5493	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.49	Pass
Internal Hysteresis	%	69 to 85	76.3	Pass
Overall Test Results				Pass



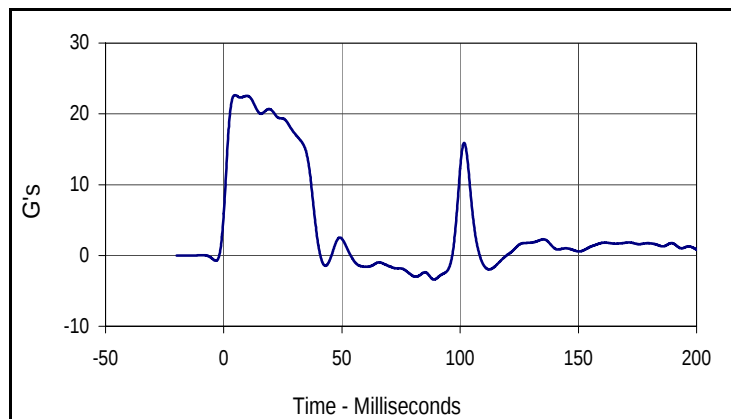
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	76.3
Peak Probe Force		Peak Chest Deflection	
5493		6.49	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 034

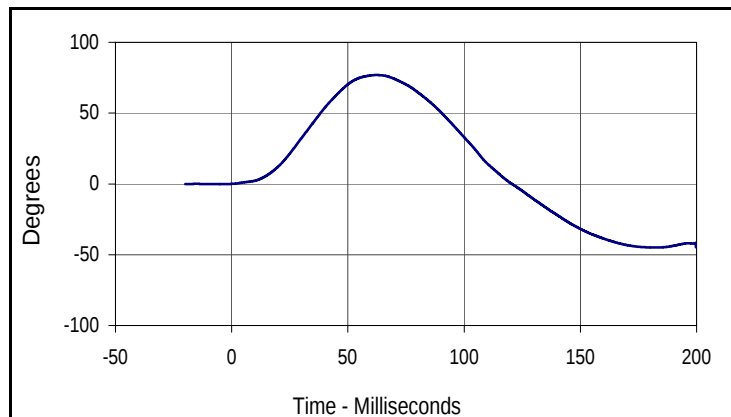
Test Date: 10/6/05
 Test I.D.: NF10A



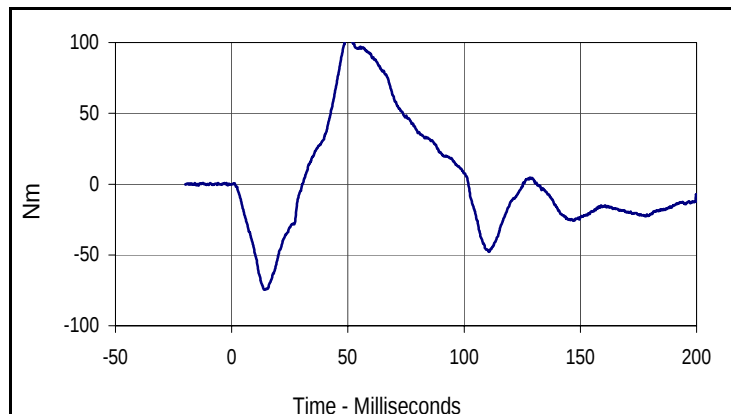
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.5	Pass
	20 Msec.	G's	17.6 to 22.6	20.6	Pass
	30 Msec.	G's	12.5 to 18.5	17.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.6	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	76.9	Pass
	Time	Msec.	57.0 to 64.0	62.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	120.6	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	105.6	Pass
	Time	Msec.	47.0 to 58.0	49.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.9	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
22.6	4.7	-3.4	88.9



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
76.9	62.3	-44.9	182.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
105.6	49.9	-74.6	14.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

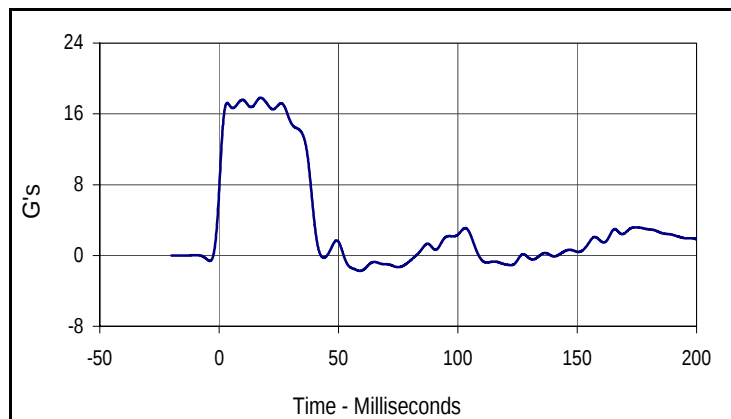
Test Date: 10/6/05

ATD Serial No.: 034

Test I.D.: NE10A



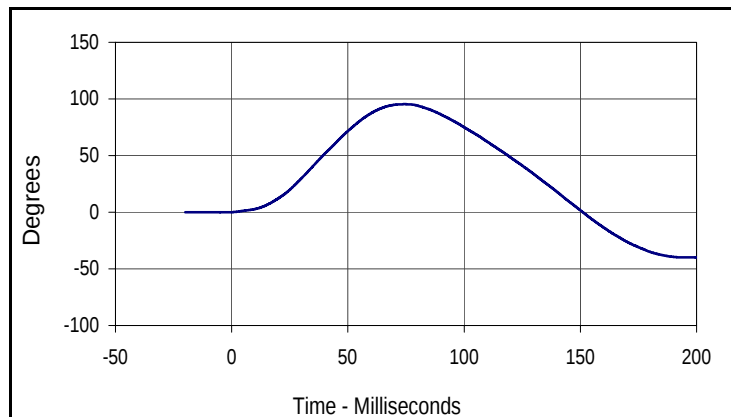
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.01	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.6	Pass
	20 Msec.	G's	14.0 to 19.0	17.2	Pass
	30 Msec.	G's	11.0 to 16.0	15.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.5	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	95.4	Pass
	Time	Msec.	72.0 to 82.0	74.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.1	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-76.2	Pass
	Time	Msec.	65.0 to 79.0	66.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	140.0	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

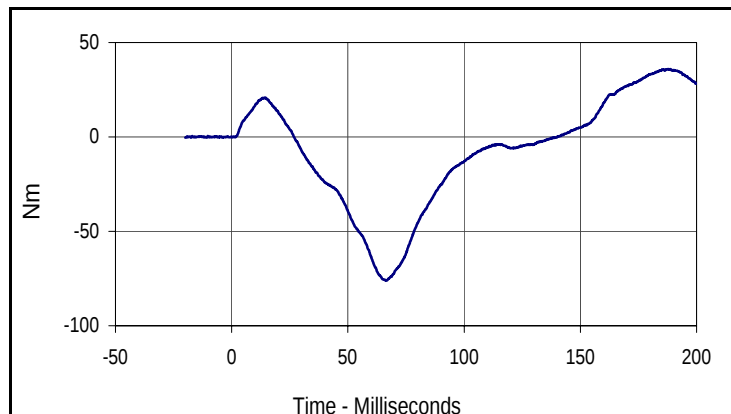
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.8	17.3	-1.7	59.0



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
95.4	74.4	-39.9	197.4



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
36.0	187.9	-76.2	66.5

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 10/5/05

ATD Serial No.: 034

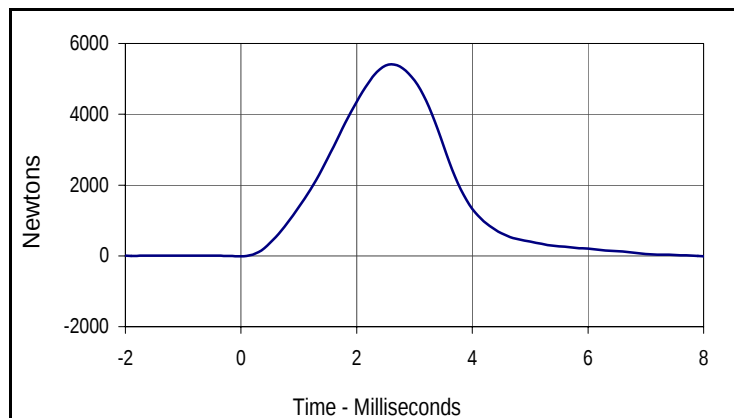
Test I.D.: LK10A , RK10A

**Left Knee**

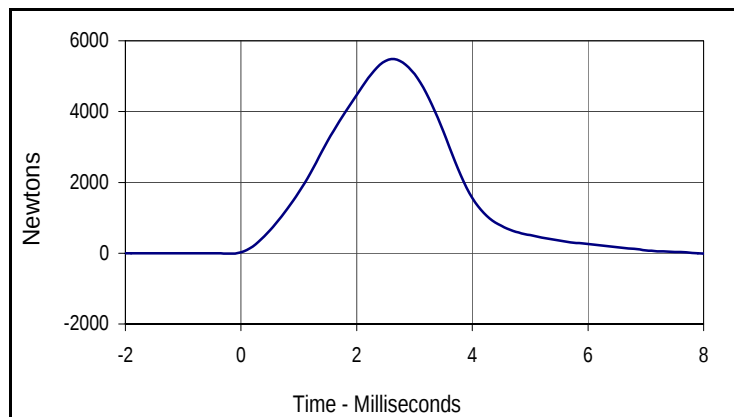
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5414	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5482	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5414.2	2.6	-29.6	8.7

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5481.7	2.6	-32.4	8.8

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 10/7/05

ATD Serial No.: 034

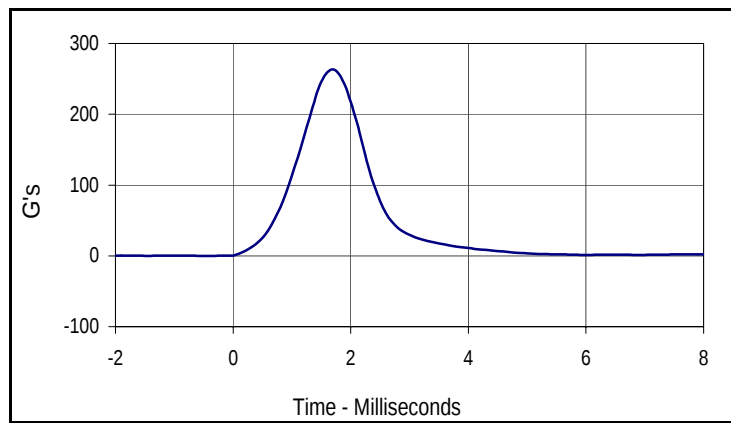
Test I.D.: N/A



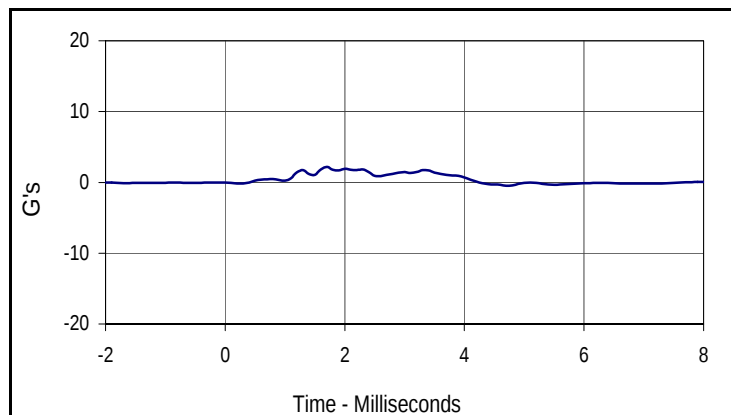
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	140	Pass
E - Shoulder pivot from back	mm	84 to 94	91	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	333	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	495	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	265	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	855	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	227	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop TestTest Date: 10/5/05ATD Serial No.: 035Test I.D.: HD10B

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	263.3	Pass
Peak Lateral Acceleration	G's	≤15.0	2.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
263.3	1.7	0.1	-0.4



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.2	1.7	-0.5	4.7

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

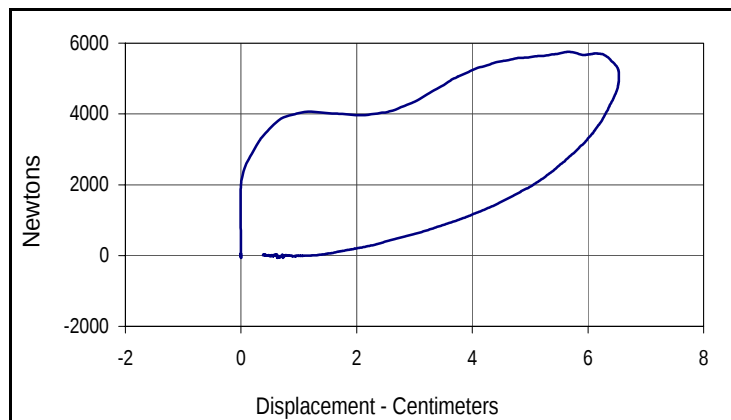
Test Date: 10/7/05

ATD Serial No.: 035

Test I.D.: CH10B



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	6.66	Pass
Peak Probe Force	Newtons	5159 to 5893	5752	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.53	Pass
Internal Hysteresis	%	69 to 85	75.3	Pass
Overall Test Results				Pass



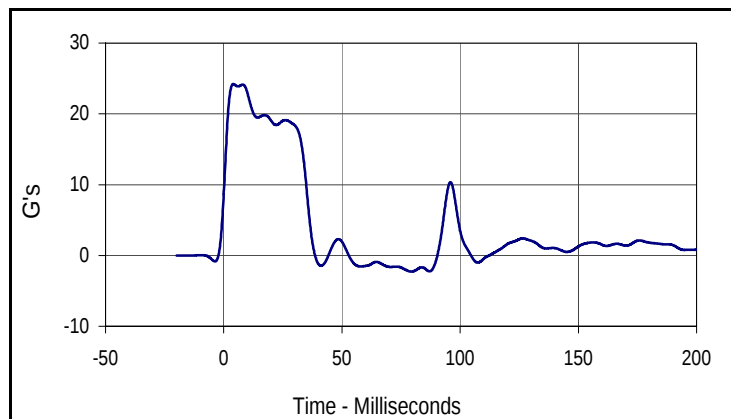
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	75.3
Peak Probe Force		Peak Chest Deflection	
5752		6.53	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 035

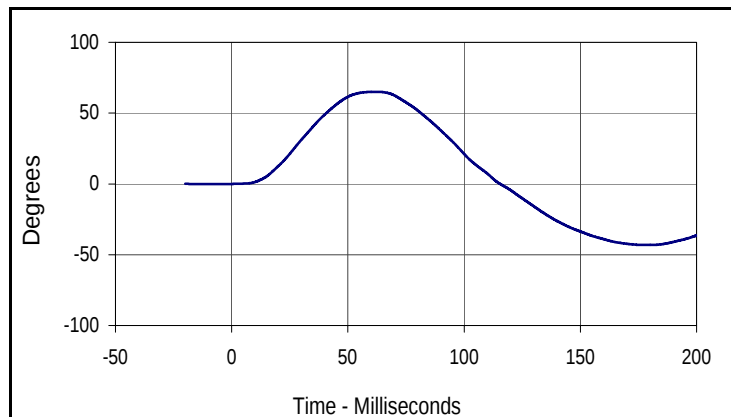
Test Date: 10/6/05
 Test I.D.: NF10B



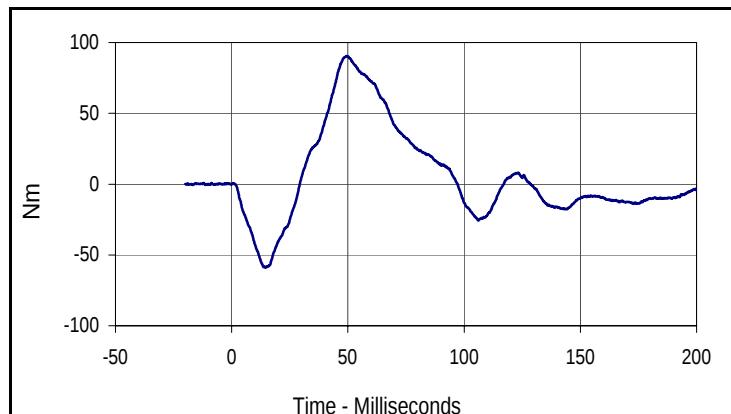
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.0	Pass
	20 Msec.	G's	17.6 to 22.6	19.1	Pass
	30 Msec.	G's	12.5 to 18.5	18.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.4	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	65.1	Pass
	Time	Msec.	57.0 to 64.0	62.0	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	115.5	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	90.5	Pass
	Time	Msec.	47.0 to 58.0	49.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.2	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
24.2	4.0	-2.3	79.4



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
65.1	62.0	-43.1	178.1



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
90.5	49.7	-59.1	14.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

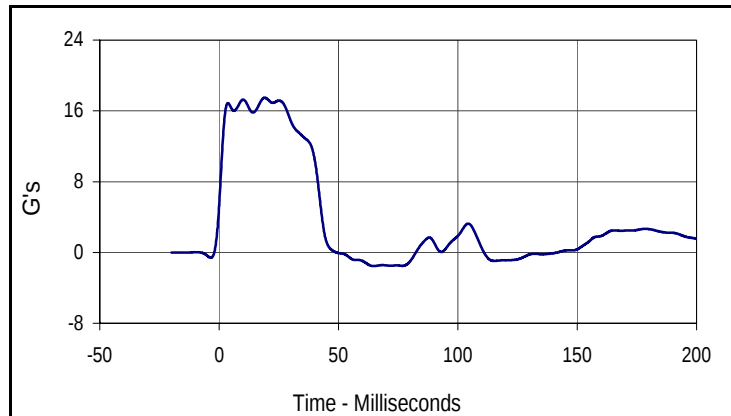
Test Date: 10/6/05

ATD Serial No.: 035

Test I.D.: NE10B



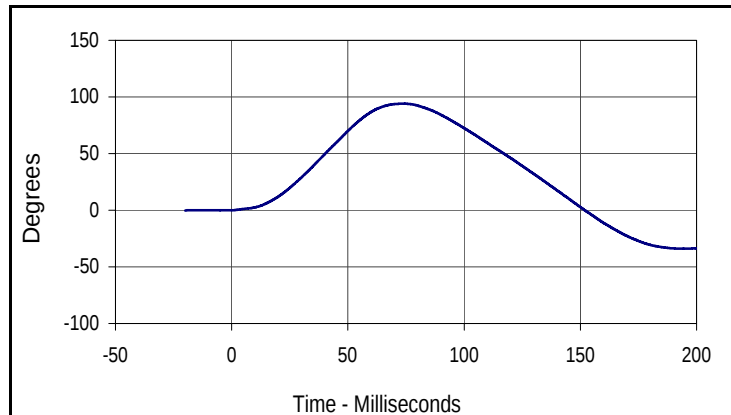
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.10	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.3	Pass
	20 Msec.	G's	14.0 to 19.0	17.4	Pass
	30 Msec.	G's	11.0 to 16.0	14.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	94.0	Pass
	Time	Msec.	72.0 to 82.0	73.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.9	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-78.2	Pass
	Time	Msec.	65.0 to 79.0	66.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	139.5	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

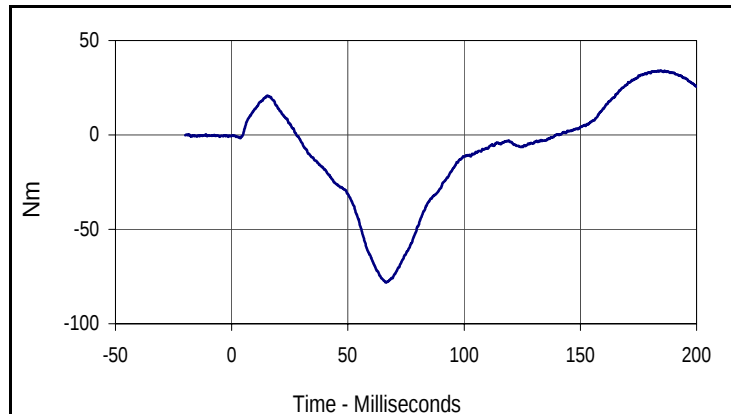
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.5	19.1	-1.5	64.7



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
94.0	73.9	-34.0	194.6



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
34.1	183.4	-78.2	66.3

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 10/5/05

ATD Serial No.: 035

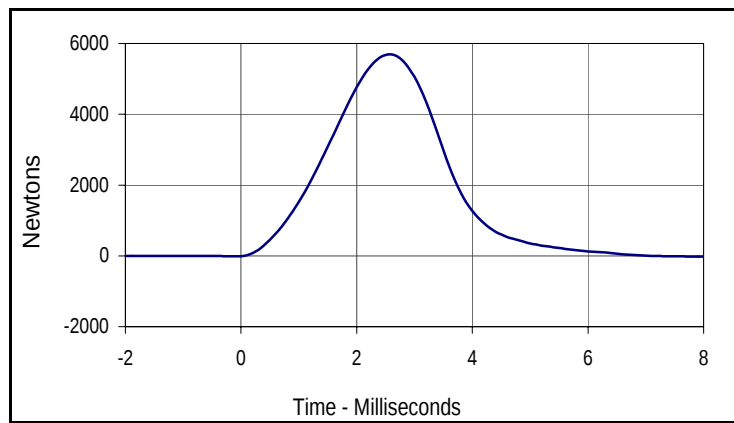
Test I.D.: LK10B , RK10B

**Left Knee**

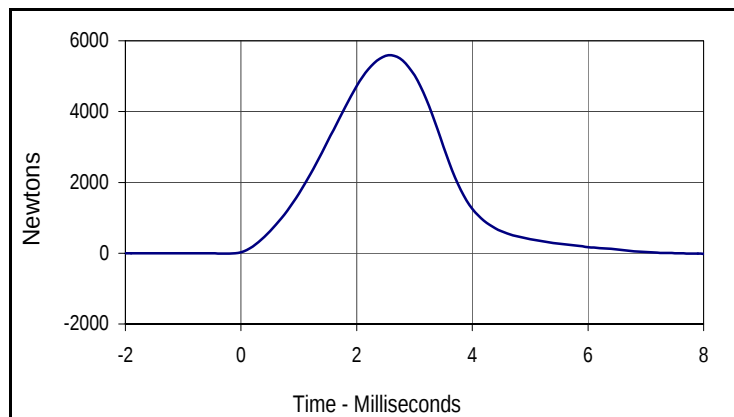
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5694	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5590	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5693.6	2.6	-25.0	8.9

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5590.4	2.6	-26.1	9.0

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 10/7/05

ATD Serial No.: 035

Test I.D.: N/A



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	883	Pass
B - Shoulder pivot height	mm	505 to 521	511	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	138	Pass
E - Shoulder pivot from back	mm	84 to 94	86	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	294	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	585	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	490	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	255	Pass
V - Shoulder breadth	mm	422 to 437	429	Pass
W - Foot breadth	mm	91 to 107	95	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	861	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	228	Pass
Overall Test Results				Pass