REPORT NUMBER TR-P29043-01-NC

NEW CAR ASSESMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

AUDI AG
2009 AUDI Q5 3.2 QUATTRO TIPTRONIC
5-DOOR MPV

NHTSA NUMBER: V95800

Prepared By:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301

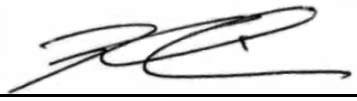
MAY 20, 2009

FINAL REPORT

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

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-06-D-00027.

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by:  Date: May 20, 2009

Mr. Kelsey A. Chiu, Project Engineer
KARCO Engineering, LLC

Reviewed by:  Date: May 20, 2009

Mr. Michael L. Dunlap, Director of Operations
KARCO Engineering, LLC

Approved by:  Date: May 20, 2009

Mr. Frank D. Richardson, Program Manager
KARCO Engineering, LLC

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipients Catalog No.
TR-P29043-01-NC		

4. Title and Subtitle	5. Report Date
Final Report of New Car Assessment Program Testing of a 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No. V95800	May 20, 2009
	6. Performing Organization Code KAR
7. Authors Mr. Kelsey A. Chiu, Project Engineer, KARCO Mr. Frank Richardson, Program Manager, KARCO	**8. Performing Organization Report No.** TR-P29043-01-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. DTNH22-06-D-00027
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code NVS-111 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C 20590	**13. Type of Report and Period Covered** Final Test Report
	14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS

15. Supplementary Notes

16. Abstract

A 35 mph (56.3 km/h) frontal barrier impact test was conducted on the subject 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV at KARCO Engineering, LLC, in Adelanto, CA, on May 20, 2009. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.51 km/h. The ambient temperature at the barrier at the time of the crash was 30 degrees Celsius. The vehicle's maximum post static crush was 473 mm at DPD 5, to the right of the vehicle's centerline. The test vehicle was equipped with a 3-point continuous belt system and a second generation airbag at both front outboard 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	343.6	494.1
Max. Chest Accel. (3 msec. Chest Clip)	G's	60	45.0	42.2
Left Femur Force	Newtons	10008	-4042.3	-2387.4
Right Femur Force	Newtons	10008	-4387.8	-2282.0

17. Key Words	18. Distribution Statement
56.3 km/h NCAP Frontal Impact Test New Car Assesment Program (NCAP) 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No. V95800	Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 1200 New Jersey Ave., SE, Room W43-410 Washington, DC 20590

19. Security Classification of this report	20. Security Classification of this page	21. No. of Pages	22. Price
UNCLASSIFIED	UNCLASSIFIED	131	

Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

SECTION 1
PURPOSE AND SUMMARY OF TEST V95800

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. DTNH22-06-D-00027. 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 July 2005. 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 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV at a velocity of 56.51 km/h. The test was performed at KARCO Engineering, LLC on May 20, 2009

Three (3) real-time and fourteen (14) 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 placed on the driver’s and passenger’s lap and shoulder belts to measure dummy torso and pelvic section loading. Shoulder belt spool-off was measured for the driver and passenger dummies. The driver (position 1) ATD (Serial No.034) and the right-front passenger (position 2) ATD (Serial No. 035) were calibrated prior to this test.

One hundred and thirty-two (132) channels of data were recorded using a TDAS data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the Dummy Response data traces, and Appendix C contains the Dummy Calibration data.

There was 100% windshield retention and no intrusion into the protected zone of the windshield during impact. 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 473 mm at DPD 5, to the right of the vehicle's centerline. Both the driver and 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 and chest contacted the airbag. The head also contacted the headrest. Both knees contacted the bolster.

The passenger’s visible contact points were as follows: The passenger ATD's head and chest contacted the airbag. The head also contacted the headrest. Both knees contacted the glovebox.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC 36	3 msec Chest Clip	Chest Defl. (mm)	Left Femur (N)	Right Femur (N)
Driver	343.6	45.0	-35.5	-4042.3	-4387.8
Passenger	494.1	42.2	-26.4	-2387.4	-2282.0

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: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

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	miles/hr	km/hr	1.609344
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	^oF	^oC	=(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: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.51
Test Weight	kg	2241
Impact Angle	degrees	0
Average Rebound	mm	1550
Maximum Static Crush	mm	473

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Remained closed and latched, opened without tools	Remained closed and latched, opened without tools
Rear Door Opening	Remained closed and latched, opened without tools	Remained closed and latched, opened without tools
Seat Track Shift (mm)	5 mm	None
Seatback Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/Serial No.	50% Male Hybrid III No.034	50% Male Hybrid III No. 035
Head Contact	Airbag, Headrest	Airbag, Headrest
Chest Contact	Airbag	Airbag
Abdomen Contact	None	None
Left Knee Contact	Bolster	Glovebox
Right Knee Contact	Bolster	Glovebox

MOVIE COVERAGE

Cameras	Standard	Additional
High Speed	16	0
Real Time	1	2
Total	15	2

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	8
Vehicle Structure Acclerometers	8
Rigid Barrier Load Cells	36
Total	132

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	V95800
Make	Audi
Model	Q5 3.2 Quattro Tiptronic
Body Style	5-Door MPV
VIN No.	WA1KK78R09A019499
Color	Black
Delivery Date	04/29/09
Odometer (Miles)	76.0
Dealer	Walter's Audi Riverside
Transmission	6-Speed Automatic
Final Drive	AWD
Type/No. of Cylinders	V6
Engine Displ. (L)	3.2
Engine Placement	Longitudinal
Roof Rack	No
Sunroof/T-top	Yes
Tinted Glass	Yes
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes

Anti-Lock Brakes	Yes
All Wheel Drive	Yes
Power Steering	Yes
Driver Front Airbag	Yes
Driver Side Torso Airbag	Yes
Driver Side Head Airbag	No
Driver Curtain Airbag	Yes
Pass. Front Airbag	Yes
Pass. Side Torso Airbag	Yes
Pass. Head Airbag	No
Pass. Curtain Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Air Conditioning	Yes
AM/FM CD	Yes
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	Yes
Other	N/A

Does the Owner's Manual provide instructions to turn off automatic door locks? Yes

DATA FROM MANUFACTURER'S LABEL

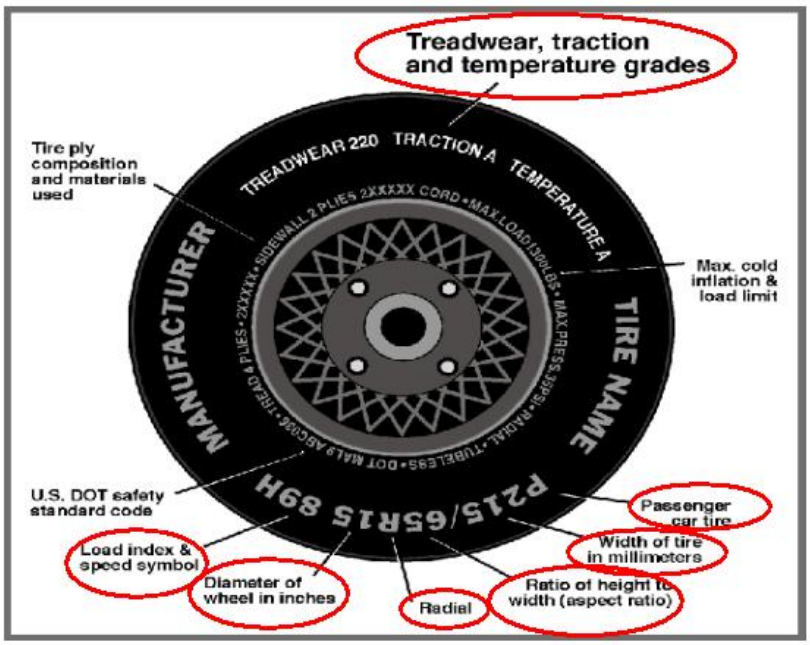
Manufactured By	Audi AG
Date of Manufacture	Dec-08

GVWR (kg)	2475
GAWR Front (kg)	1280
GAWR Rear (kg)	1350

VEHICLE SEATING CAPACITY AND WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				475
Cargo Weight (RCLW) (kg)				135

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



TIRE INFORMATION

Measured Paramater	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Tire Pressure (kPa)	220	220
Recommended Tire Size	235/60R18	235/60R18
Tire Size on Vehicle	235/60R18	235/60R18
Tire Manufacturer	Dunlop	Dunlop
Treadwear	200	200
Traction	A	A
Temperature Grades	A	A
Tire Plies - Sidewall	2 Rayon	2 Rayon
Tire Plies - Body	2 Rayon, 2 Steel, 1 Polyamide	2 Rayon, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	103H	103H
Tire Material	Rayon, Steel, Polyamide	Rayon, Steel, Polyamide
DOT Safety Code Right	K545 JA1R 4608	K545 JA1R 4608
DOT Safety Code Left	K545 JA1R 4708	K545 JA1R 4708

DATA SHEET NO. 2…(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	508	453	960	532	576	1108
Right	kg	531	450	981	556	578	1134
Ratio	%	53.5	46.5	100.0	48.5	51.5	100.0
Totals	kg	1039	902	1941	1087	1154	2241

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1941
Weight of 2 P572 ATD's	kg	170
Rated Cargo/Luggage Weight (RCLW)	kg	135
Calculated Target Vehicle Test Weight (TVTW)	kg	2246

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	831	831	828	826	1302
As Tested	mm	821	816	800	802	1442

Vehicle Wheel Base (mm): 2800

Weight of Ballast Secured in Cargo Area (kg): 24

Weight of Items Removed (kg): 43

Vehicle Components Removed: Rear trunk cover, rear trunk lining, spare tire, tools, roof rack

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

FUEL SYSTEM DATA

Fuel System Capacity from Owner's Manual (L): 74.98

Actual Test Volume with Entire Fuel System Filled (L): 69.73

Test Fluid Type: Stoddard Solvent

Kinematic Viscosity: as per ASTM Standard D484-71 Red

Is Vehicle Fuel Pump Electric or Mechanical? Electric

If electric, does pump operate with the ignition switch "ON" & engine "OFF"? Yes

Fuel System Particulars: The fuel pump will run for 2 seconds when the key is turned to the "ON" position.

DATA SHEET NO. 3

POST-TEST IMPACT DATA

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

SPEED TRAP DATA

Measured Paramater	Units	Requirement	Value
Trap No. 1 Velocity	km/h	55.1 to 57.12	56.51
Trap No. 2 Velocity	km/h	55.1 to 57.12	56.57

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4050	4045	5
Center	mm	4645	4255	390
Right Side	mm	4050	4100	-50

VEHICLE REBOUND FROM BARRIER

Measured Paramater	Units	Value
Left Side	mm	1500
Center	mm	1545
Right Side	mm	1605
Average	mm	1550

DATA SHEET NO. 4

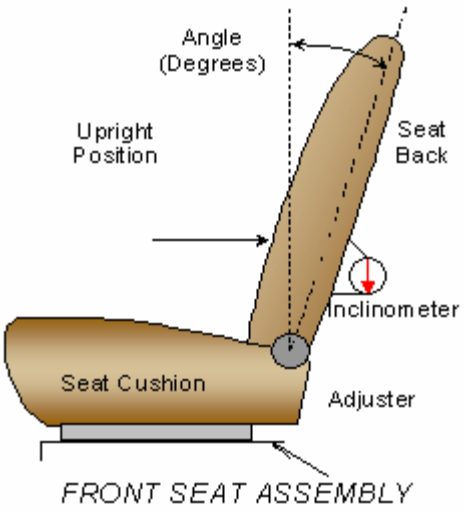
TEST VEHICLE INFORMATION

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

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 seat back, using a digital inclinometer.



SEAT BACK ANGLES

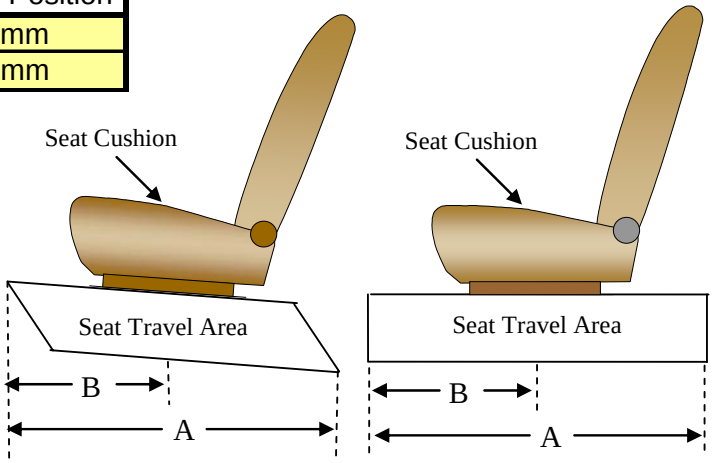
Position	Degrees
Driver w/ Seated Dummy	70.6 @ seat back
Passenger w/ Seated Dummy	70.6 @ seat back

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position. The seat was set at the longitudinal mid position. There were vertical adjustments on the driver seat that was equipped with the vehicle. There were no adjustments on the passenger seat. The driver seat was placed in the lowermost position.

SEAT FORE/AFT POSITIONING

Position	Total Fore/Aft Travel	Placed in Position
Driver Seat	318 mm	159 mm
Passenger Seat	318 mm	159 mm



SEAT BELT ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT ANCHORAGE POSITIONING

	Total Number of Positions	Placed in Position
Driver Seat	5	1
Passenger Seat	5	1

TEST VEHICLE INFORMATION

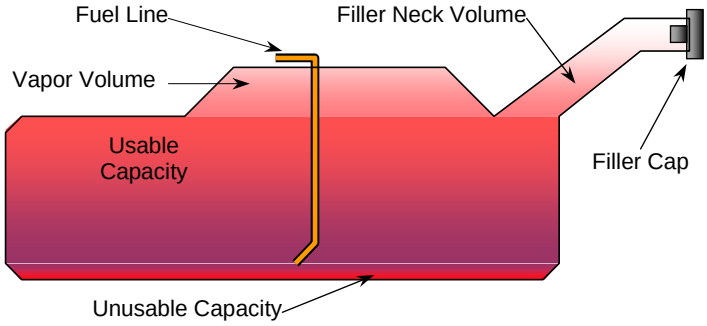
Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

FUEL TANK CAPACITY

	Liters
Usable Capacity of Standard Tank	74.98
Usable Capacity of Optional Tank	
Usable Capacity Used for FMVSS 301	68.98 to 70.48
Actual Amount of Solvent Used	69.73

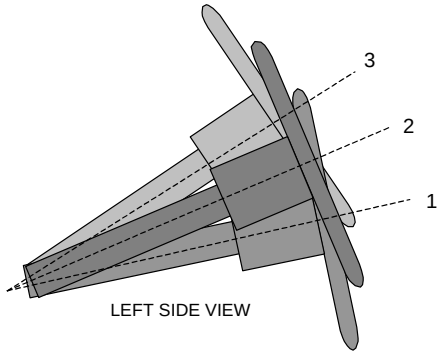
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately two (2) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under right rear passenger 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
Lowermost - Position No. 1	22.8	65
Geometric Center - Position No. 2	24.9	95
Uppermost - Position No. 3	27.1	115

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

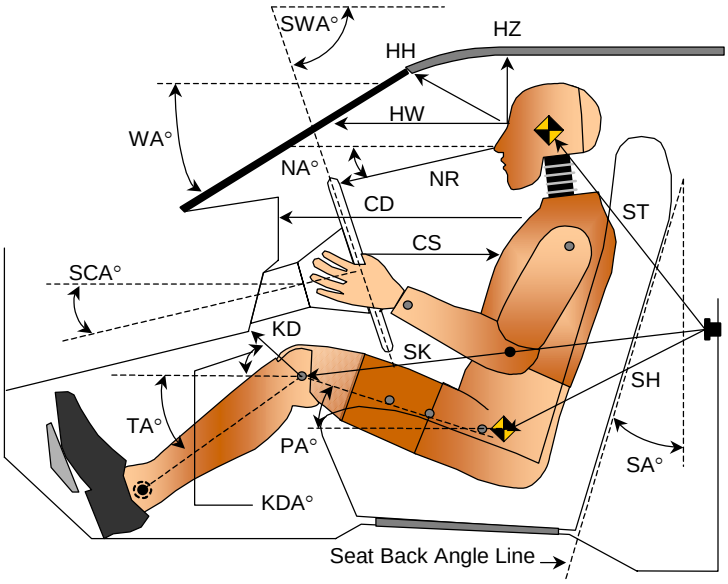
Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

TEST DUMMY POSITION MEASUREMENTS

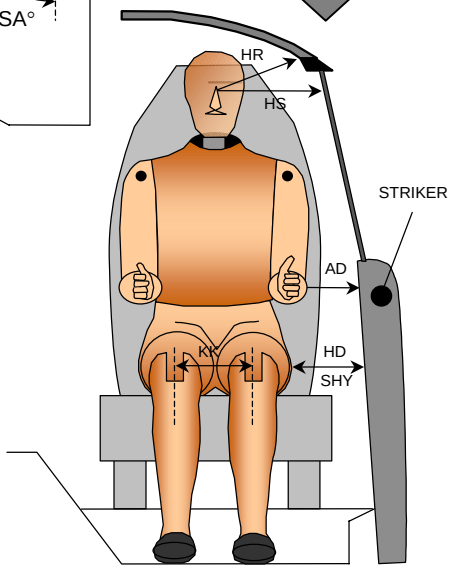
Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield angle		30.3		
SWA	Steering wheel angle		24.7		
SCA	Steering column angle		65.3		
SA	Seat Back angle		70.6		70.9
HZ	Head to roof (Z)	232	90.0	226	90.0
HH	Head to header	377		375	
HW	Head to windshield	701		678	
HR	Head to side header (Y)	278		280	
NR	Nose to rim	394	7.0		
CD	Chest to dash	528		465	
CS	Chest to steering hub	310			
RA	Rim to abdomen	195			
KDL	Left knee to dash	146	33.5	152	
KDR	Right knee to dash	159		150	38.6
PA	Pelvic angle		24.0		24.2
TA	Tibia Angle		49.0		42.8
KK	Knee to knee	340		270	
SK	Striker to outboard knee	591	4.8	604	3.8
ST	Striker to head	471	74.5	440	6.6
SH	Striker to H-Point	251	52.5	265	43.0
SHY	Striker to H-Point (Y)	240		240	
HS	Head to side window	351		349	
HD	H-Point to door	214		220	
AD	Arm to door	144		75	

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

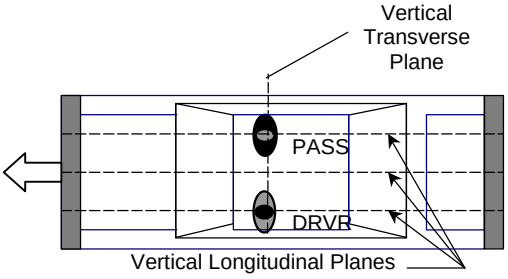
Test Program: NHTSA 35mph NCAP Test Date: 5/20/09



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

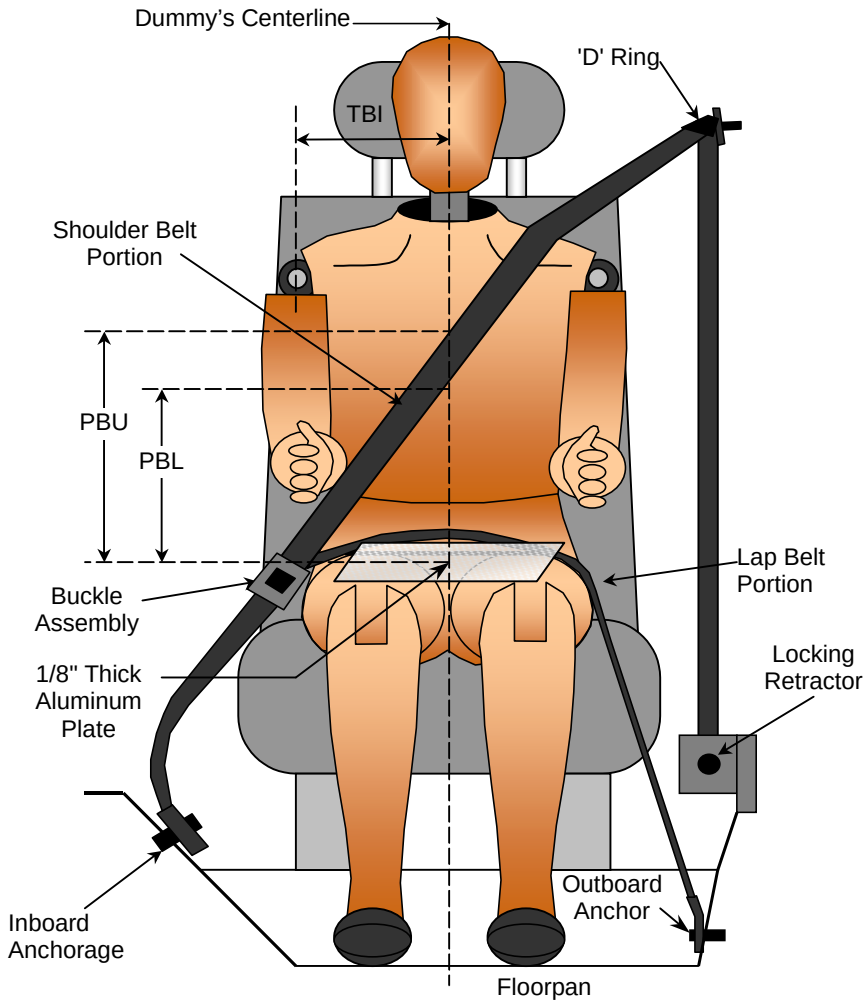


DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	150	125
PBU - Top Surface of Reference to Belt Upper Edge	mm	345	318
PBL - Top Surface of Reference to Belt Lower Edge	mm	265	240
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurement (mm)		
		X	Y	Z
1	Left Rear X-Member	1920	710	435
2	Right Rear X-Member	1900	-730	428
3	Engine Top	4200	0	915
4	Engine Bottom	3900	35	265
5	Left Brake Caliper	3600	730	450
6	Right Brake Caliper	3600	-700	445
7	Instrument Panel			[1]
8	Left Rear X-Member (Z-Axis)	1920	710	465
9	Right Rear X-Member (Z-Axis)	1900	-730	428

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

1.) Instrument Panel no longer used by NHTSA.

2.) Not installed

DATA SHEET NO. 8

SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to D-Ring	mm	750	750
Shoulder Belt Length as Measured on ATD	mm	826	829
Lap Belt Length as Measured on ATD	mm	800	705
Remainder of Belt on Reel	mm	1119	1147
Total Belt Length for Continuous Webbing Systems	mm	3495	3431

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	160	264
As determined electronically	mm	359.1	266

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: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

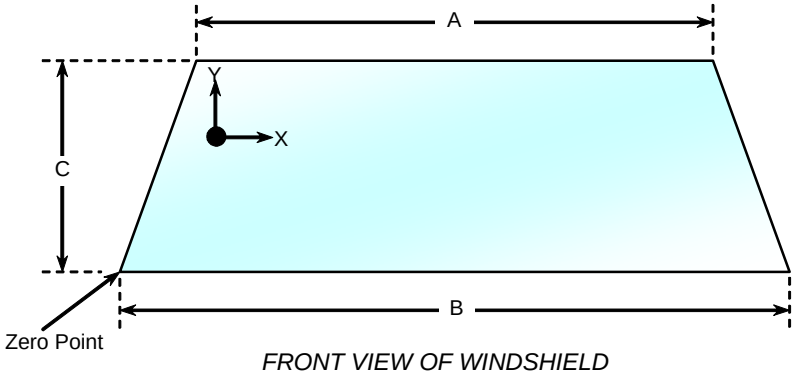
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with Rubber cement type adhesive. plastic and rubber molding covers the windshield periphery.

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: 30 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% of Retention
Left Side	2123	2123	100.0
Right Side	2123	2123	100.0
Total	4246	4246	100.0



FRONT VIEW OF WINDSHIELD

WINDSHIELD DIMENSIONS

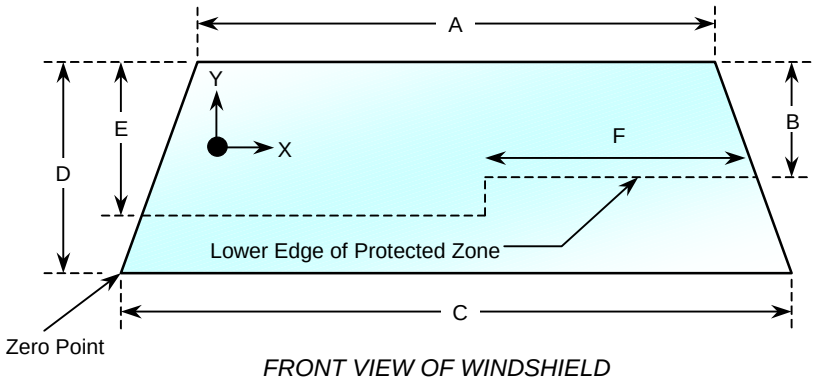
Item	Units	Segment Length	Molding Width
A	mm	1220	0
B	mm	1465	50
C-Left	mm	780	20
C-Right	mm	780	20

DATA SHEET NO. 10

WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09



FRONT VIEW OF WINDSHIELD

WINDSHIELD AND PROTECTED ZONE

Item	Units	Value
A	mm	1220
B	mm	380
C	mm	1465
D	mm	780
E	mm	500
F	mm	500

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: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

Test Time: 2:03 PM Temperature: 30 ° C

STODDARD SOLVENT SPILLAGE MEASUREMENTS

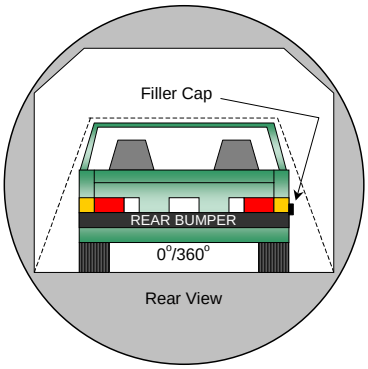
A.	From impact until vehicle motion ceases: (Maximum allowable = 1 ounce)	0
B.	For the 5 minute period after motion ceases: (Maximum allowable = 5 ounces)	0
C.	For the following 25 minutes: (Maximum allowable = 1 oz/minute)	0
D.	Spillage Details:	No leakage occurred

DATA SHEET NO. 12

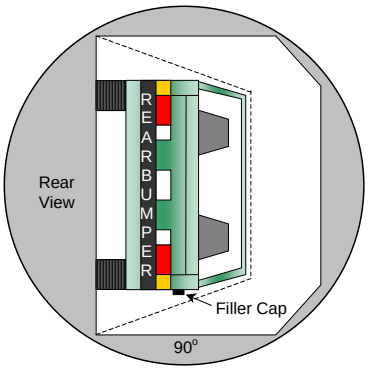
FMVSS 301 STATIC ROLLOVER DATA

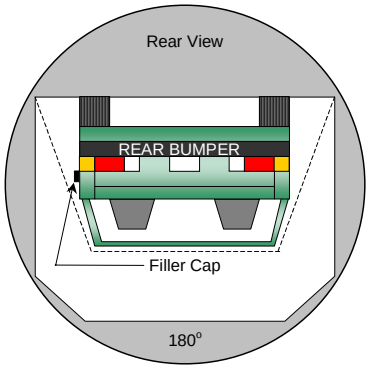
Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

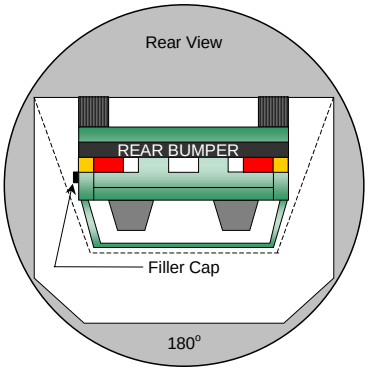


0° to 90°

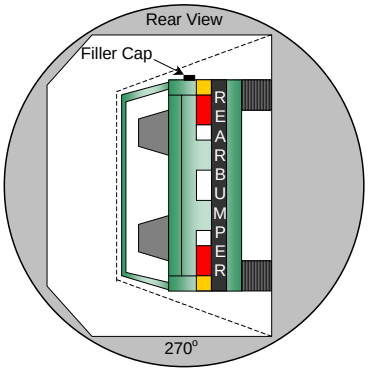


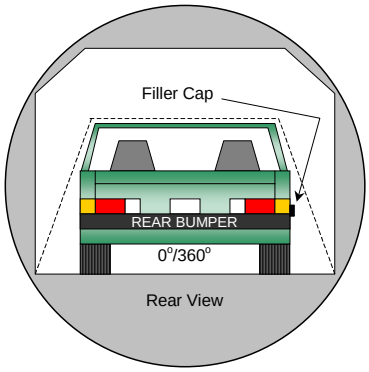


90° to 180°



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: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	83	305	388
90° to 180°	83	315	398
180° to 270°	78	300	378
270° to 360°	81	303	384

FMVSS 301 SPILLAGE TABLE REQUIREMENT

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: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Length of test vehicle at centerline	mm	4645	4255	-390
2	RSOV to front of engine	mm	4105	3799	-306
3	RSOV to firewall centerline	mm	3625	3577	-48
4	RSOV to upper leading edge of right door	mm	3164	3169	5
5	RSOV to upper leading edge of left door	mm	3168	3166	-2
6	RSOV to lower leading edge of right door	mm	3156	3159	3
7	RSOV to lower leading edge of left door	mm	3157	3155	-2
8	RSOV to upper trailing edge of right door	mm	2060	2061	1
9	RSOV to upper trailing edge of left door	mm	2062	2060	-2
10	RSOV to lower trailing edge of right door	mm	2092	2096	4
11	RSOV to lower trailing edge of left door	mm	2097	2092	-5
12	RSOV to bottom of right A-pillar	mm	3018	3023	5
13	RSOV to bottom of left A-pillar	mm	3033	3040	7
14	RSOV to firewall on right side	mm	3235	3619	384
15	RSOV to firewall on left side	mm	3635	3607	-28
16	RSOV to steering column hub	mm	2683	2730	47
17	Center of steering column to left A-pillar, Y	mm	435	435	0
18	Center of steering column to headlining, Z	mm	425	503	78
19	RSOV to right side of front bumper	mm	4050	4100	50
20	RSOV to left side of front bumper	mm	4050	4045	-5
21	Length of engine block	mm	555	555	0
RD	RSOV to right side of dash panel	mm	2810	2821	11
CD	RSOV to center of dash panel	mm	2700	2790	90
LD	RSOV to left side of dash panel	mm	2785	2808	23

DATA SHEET NO. 13…(CONTINUED)

VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

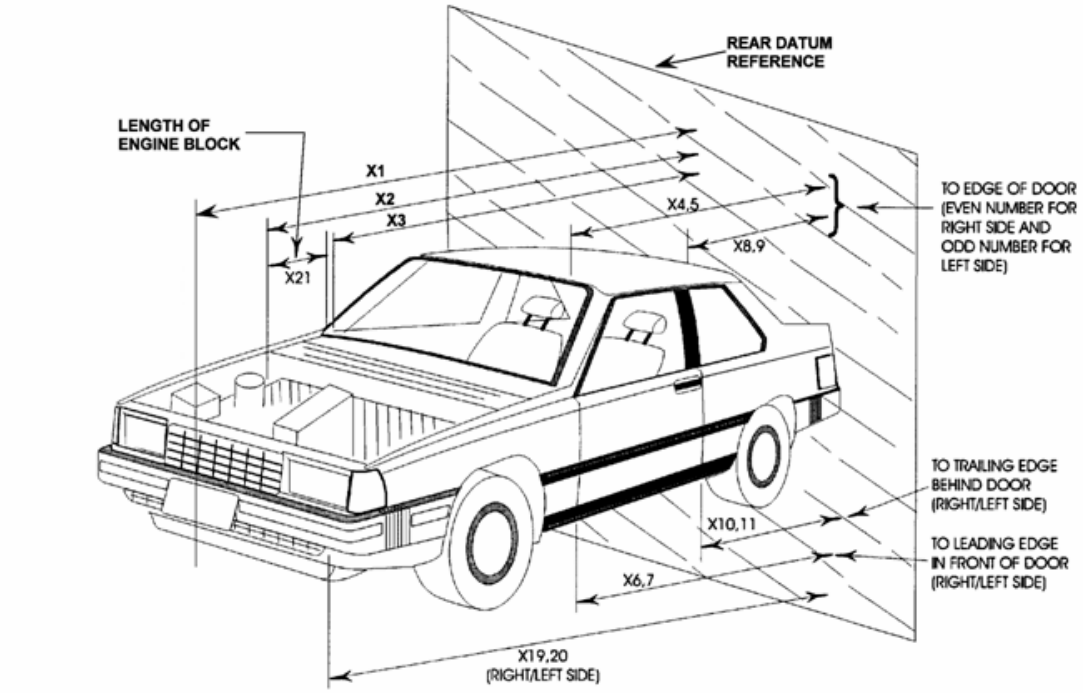
VEHICLE STRUCTURAL MEASUREMENT TABLE

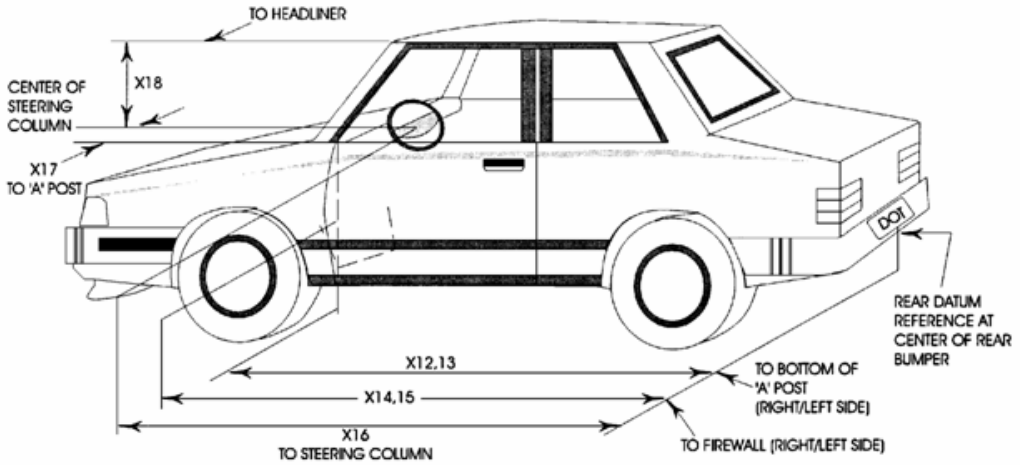
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length	mm	4645	4255	-390
2	Total width	mm	1843	1873	30
3	Front bumper top height	mm	625	656	31
4	Front bumper bottom height	mm	338	451	113
5	Longitudinal member top height	mm	630	661	31
6	Longtidunal member bottom height	mm	460	646	186
7	Distance between longitudinal members	mm	760	895	135
8	Longitudinal member width	mm	70	105	35
9	Engine top height	mm	905	944	39
10	Engine bottom height	mm	263	138	-125
11	Engine and gearbox width	mm	740	740	0
12	Front bumper-engine distance	mm	540	439	-101
13	Front shock absorber height	mm	925	926	1
14	Front hood leading edge height	mm	890	978	88
15	Distance between front shock absorbers	mm	885	838	-47
16	Front bumper-front axle distance	mm	895	537	-358
17	Front axle to A-pillar distance	mm	563	555	-8
18	A Pillar to B Pillar distance	mm	928	918	-10
19	B Pillar to rear axle distance	mm	1151	1164	13
20	B Pillar to C Pillar distance	mm	863	858	-5
21	Roof sill bottom height	mm	1510	1446	-64
22	Roof sill top height	mm	1610	1600	-10
23	Floor sill bottom height	mm	293	283	-10
24	Floor sill top height	mm	440	490	50

VEHICLE MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09





DATA SHEET NO. 14

CAMERA LOCATIONS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location			Angle (deg)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-11412	-8150	-1484	0			30
2	Overall Left Side	-1981	-8026	-1193	0	8105	20	1000
3	Closeup Left Side	-1701	-8051	-1498	0	7844	50	1000
4	Driver and Interior View	-6696	-5987	-1071	-17	15570	ZOOM	1000
5	Steering Column (Bottom)	-1972	-8184	-2879	-13	9453	35	1000
6	Steering Column (Top)	-1966	-8141	-3258	-13	9549	35	1000
7	Overall Right Side	-2260	8204	-1168	0	7409	20	1000
8	Closeup Right Side	-1625	8027	-1422	0	7079	50	1000
9	Passenger and Interior View	-5136	9516	-2460	-10	10211	ZOOM	1000
10	Right Side View	-1582	7995	-1713	-6	7134	ZOOM	1000
11	Windshield View	-354	0	-5749	-90		24	1000
12	Driver Front View	363	-543	-2548	-34		25	1000
13	Passenger Front View	381	445	-2548	-34		25	1000
14	Pit View of Engine	-756	0	1495	90		12	1000
15	Pit View of Fuel Tank	-3398	0	1495	90		8	1000
16	Driver Side Dummy On-Board	3435	-250	-2028	-5	927	12	1000
17	Passenger Side Dummy On-Board	3435	250	-2028	-5	939	12	1000
18	Real Time Driver	-1926	-8089	-1704	-1	-1704	-1	30
19	Real Time Passenger	-1433	8047	-1704	-1	-1704	-1	30

All measurements are made relative to the point of impact.

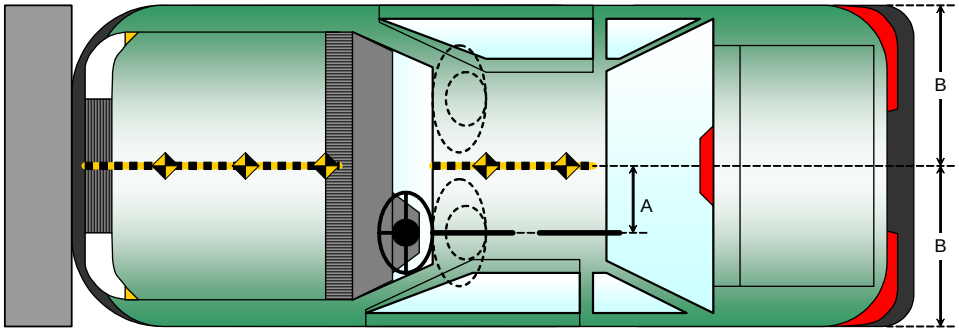
DATA SHEET NO. 15

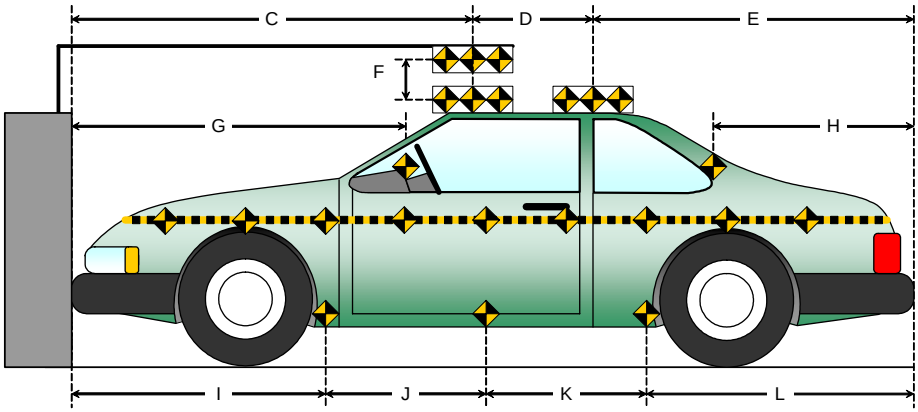
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

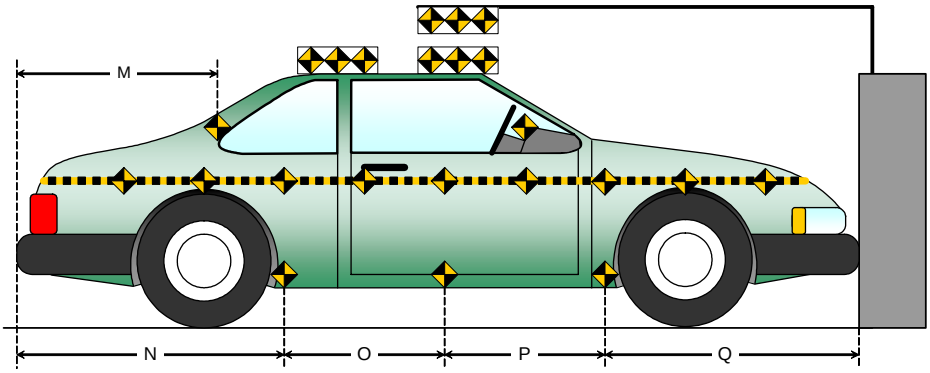
Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

All Dimensions in Millimeters (mm)	
Item	Value
A	
B	
C	
D	
E	
F	
G	1815
H	666
I	1400
J	897
K	897
L	1430
M	683
N	1420
O	400
P	900
Q	1405







DATA SHEET NO. 16

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

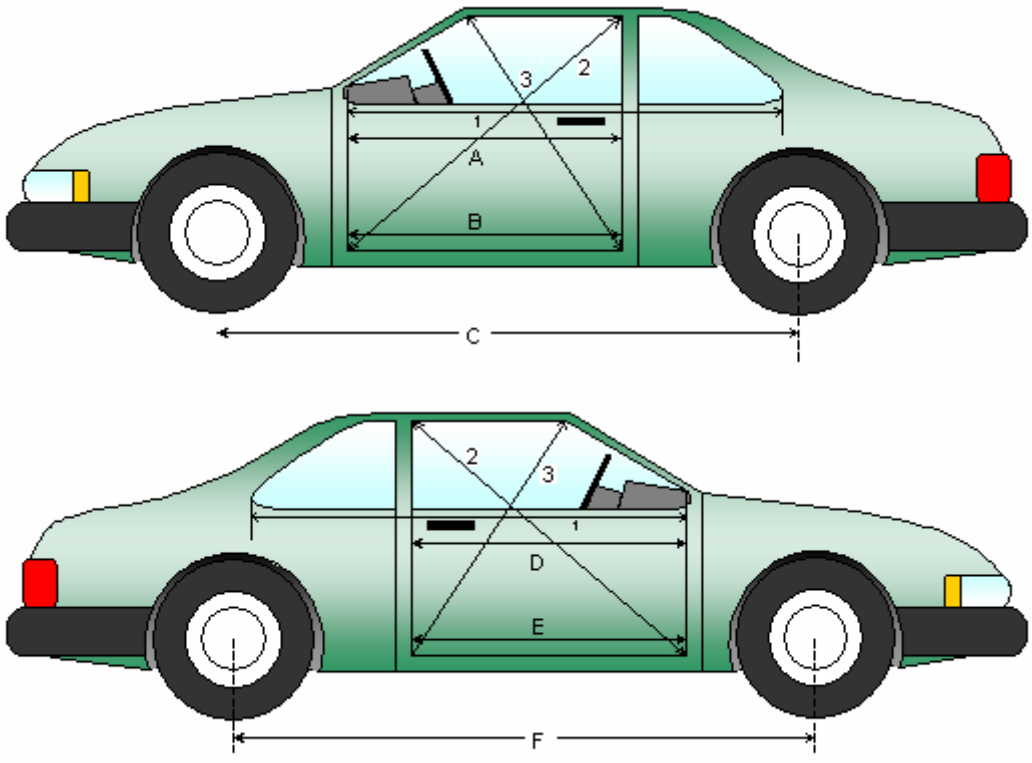
Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Difference
1L	Left Side	mm	928	918	10
2L	Left Side (Diagonally)	mm	1448	1458	-10
3L	Left Side (Diagonally)	mm	1008	1007	1
1R	Right Side	mm	928	918	10
2R	Right Side (Diagonally)	mm	1463	1467	-4
3R	Right Side (Diagonally)	mm	1023	1023	0

WHEELBASE MEASURMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2800	2773	27
F	Right Side Wheelbase	mm	2800	2772	28



DATA SHEET NO. 16…(CONTINUED)

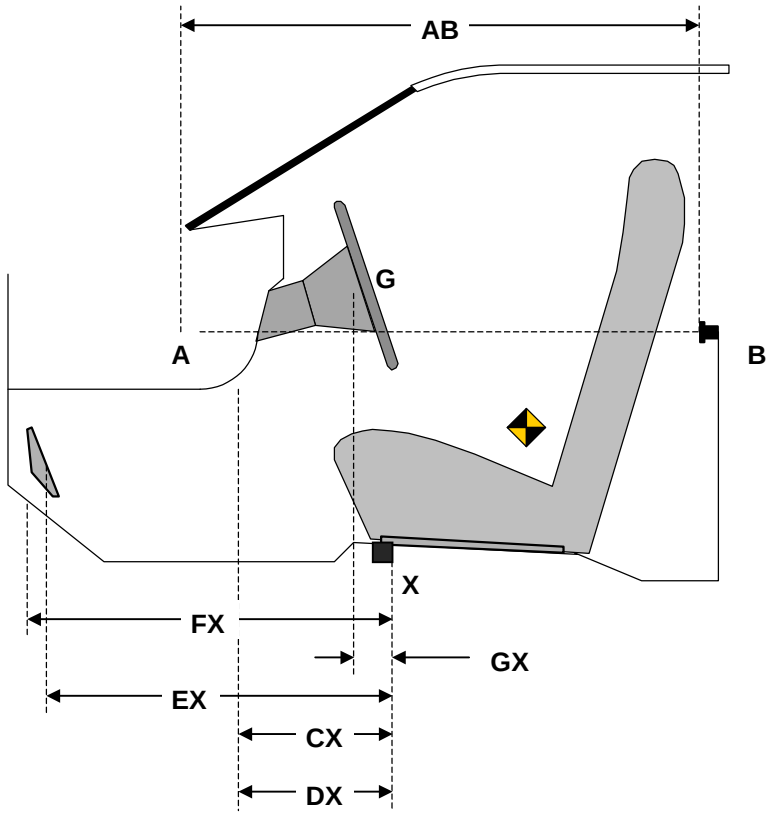
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Windown Jam)	mm	928	918	10
CX	Left Knee Bolster to X	mm	250	200	50
DX	Right Knee Bolster to X	mm	270	230	40
EX	Brake Pedal to X	mm	520	505	15
FX	Foot Rest to X	mm	545	555	-10
GX	Center of Steering Wheel Hub to X	mm	50	63	-13

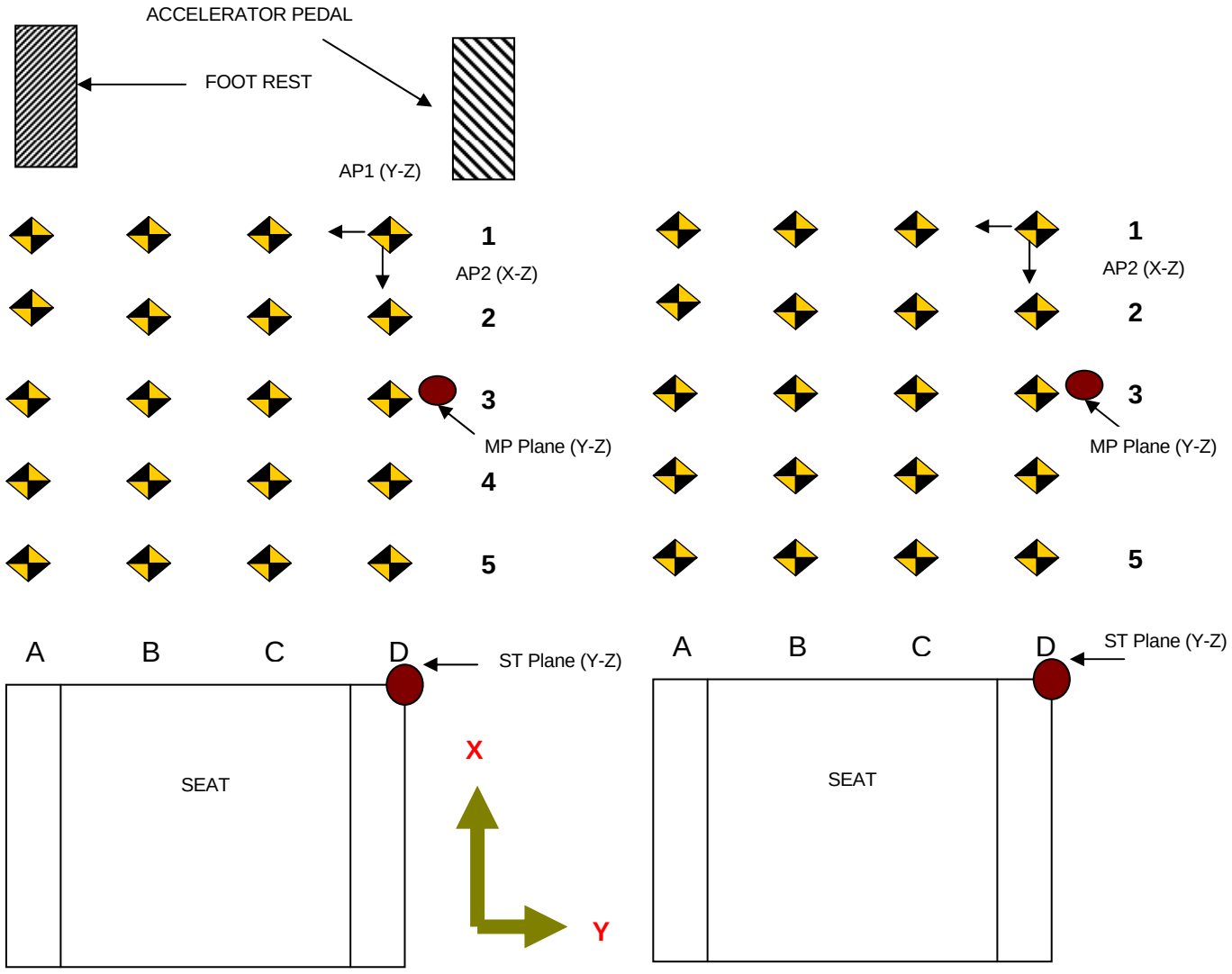


DATA SHEET NO. 16…(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09



AP1: Y-Z Plane passing through D1
AP2: X-Z Plane passing through D1
AP3: X-Y plane passing through D1
MP: Y-Z plane, halfway between the ST plane and AP1 plane
CF Plane: X-Z plane passes through center of footrest.
BP Plane: X-Z plane passes through center of brake pedal
TP Plane: Y-Z plane, intersection of BP Plane and the intersection of the toe pan and floorboard
Column A: intersection of vehicle and CF plane
Column D: Intersection of vehicle and AP2 plane
Row 1: intersection of the vehicle and the AP3 Plane
Row 3: intersection of the vehicle and TP plane
Row 5: intersection of the vehicle and MP plane
Row 2: evenly spaced between row 1 and 3
Row 4: evenly spaced between row 3 and 5

DATA SHEET NO. 16…(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

All measurements in mm

DRIVER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-727	-724	-720	-713	-679	-673	-661	-617	-48	-51	-59	-96
2	-655	-649	-647	-641	-610	-602	-594	-585	-45	-47	-53	-56
3	-565	-560	-561	-558	-524	-514	-515	-513	-41	-46	-46	-45
4	-469	-462	-463	-462	-425	-418	-417	-417	-44	-44	-46	-45
5	-373	-370	-367	-365	-328	-325	-322	-322	-45	-45	-45	-43

DRIVER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	99	189	288	433	116	202	299	430	-17	-13	-11	3
2	-99	195	291	438	-106	203	297	439	7	-8	-6	-1
3	103	197	293	436	110	203	298	439	-7	-6	-5	-3
4	105	200	296	435	110	207	300	440	-5	-7	-4	-5
5	110	199	299	431	116	205	304	436	-6	-6	-5	-5

DRIVER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-57	-56	-62	-73	-47	-41	-45	-77	-10	-15	-17	4
2	-17	9	4	-6	-30	28	26	14	13	-19	-22	-20
3	64	49	54	43	84	72	83	76	-20	-23	-29	-33
4	100	69	71	60	110	93	99	95	-10	-24	-28	-35
5	120	74	73	64	121	101	107	98	-1	-27	-34	-34

DATA SHEET NO. 16…(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

All measurements in mm

PASSENGER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	730	742	746	749	646	682	694	705	84	60	52	44
2	642	656	657	566	585	606	611	617	57	50	46	42
3	450	554	555	471	493	509	509	525	50	45	46	41
4	369	458	464	364	403	410	418	428	47	48	46	43
5	369	369	364	364	321	320	320	320	48	49	44	44

PASSENGER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	408	281	206	106	403	284	212	114	5	-3	-6	-8
2	417	291	204	106	424	297	210	112	-7	-6	-6	-6
3	418	297	205	108	429	299	209	113	-11	-2	-4	-5
4	412	307	209	107	412	306	213	110	0	1	-4	-3
5	416	315	212	111	415	313	216	116	1	2	-4	-5

PASSENGER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	96	86	87	97	95	69	68	78	1	17	19	19
2	36	5	1	-6	10	-17	-22	-30	26	22	23	24
3	20	-50	-46	-60	-16	-73	-72	-80	36	23	26	20
4	7	-50	-65	-96	-19	-79	-93	-109	26	29	28	13
5	-6	-65	-71	-120	-32	-98	-99	-119	26	33	28	-1

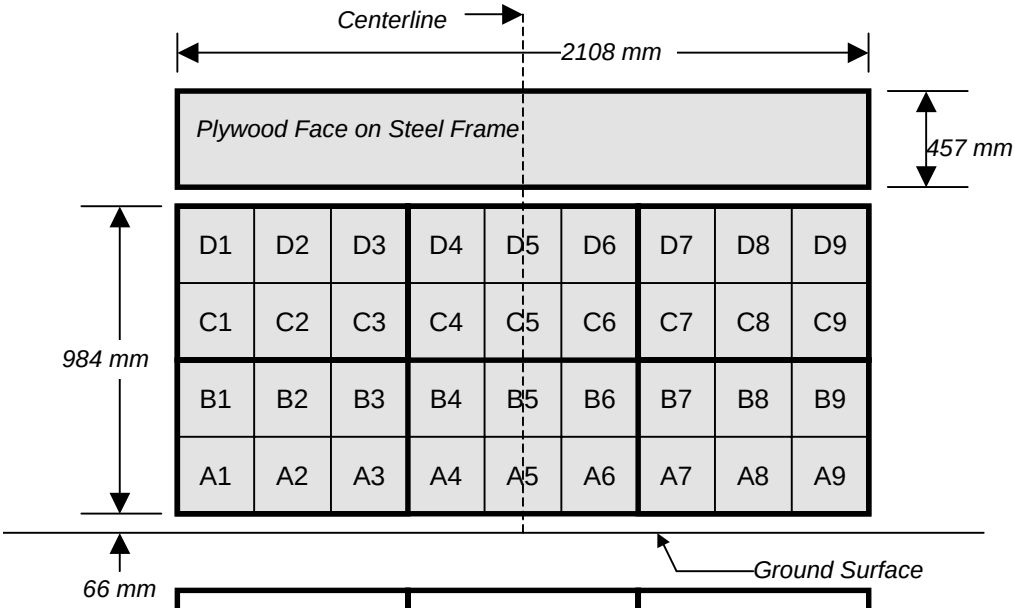
DATA SHEET NO. 17

FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

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



D1	D2	D3	D4	D5	D6	D7	D8	D9
C1	C2	C3	C4	C5	C6	C7	C8	C9
B1	B2	B3	B4	B5	B6	B7	B8	B9
A1	A2	A3	A4	A5	A6	A7	A8	A9

Group 4 C1 – D3	Group 5 C4 – D6	Group 6 C7 – D9
Group 1 A1 – B3	Group 2 A4 – B6	Group 3 A7 – B9

6 Groups of 6 Load Cells Each

DATA SHEET NO. 18

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09

VEHICLE INFORMATION

VIN: WA1KK78R09A019499 Wheelbase (mm): 2800

Vehicle Size Category: 5-Door MPV Test Weight (kg): 2241

ACCELEROMETER DATA

Accelerometer Location: Left rear cross member

Cal. Procedure/Interval: 6 months/drop test

Integration Algorithm: NHTSA Standard Linearity: Good

Impact Velocity (km/h): 56.51

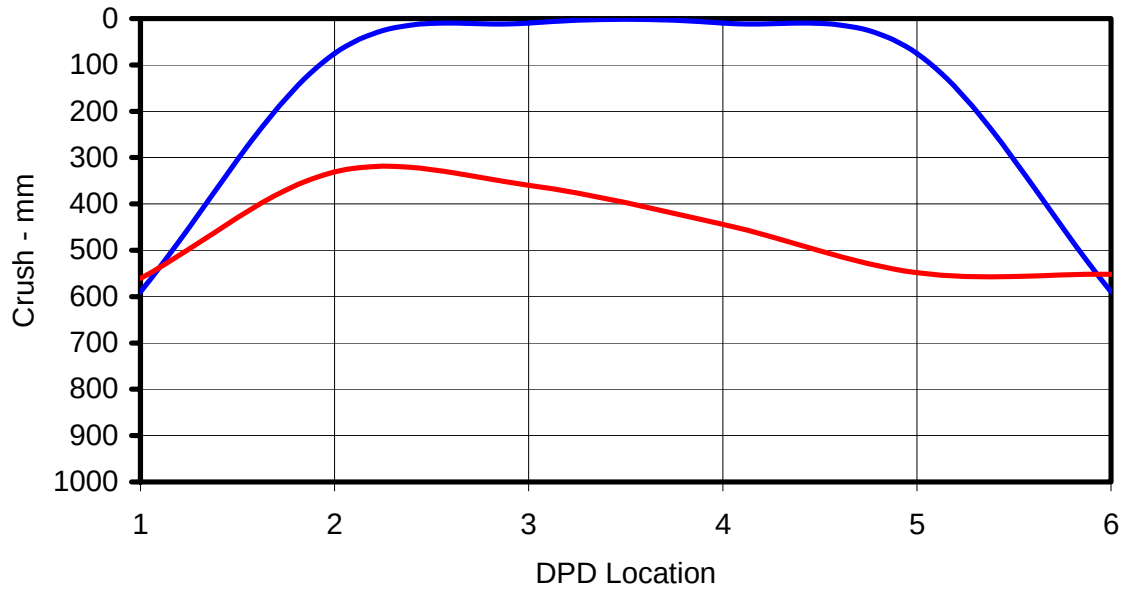
Velocity Change (km/h): 67.8 Time of Separation (msec): 5.4

CRUSH PROFILE

Collision Deformation Classification: 12FCEW2 Midpoint of Damage: Vehicle Centerline

Damage Region Length: 1843 Impact Mode: Full frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side of vehicle	mm	590	561	29
C2	Crush zone 2 on left side of vehicle	mm	75	331	-256
C3	Crush zone 3 on left side of vehicle	mm	10	360	-350
C4	Crush zone 4 on right side of vehicle	mm	10	444	-434
C5	Crush zone 5 on right side of vehicle	mm	75	548	-473
C6	Crush zone 6 at right side of vehicle	mm	590	552	38

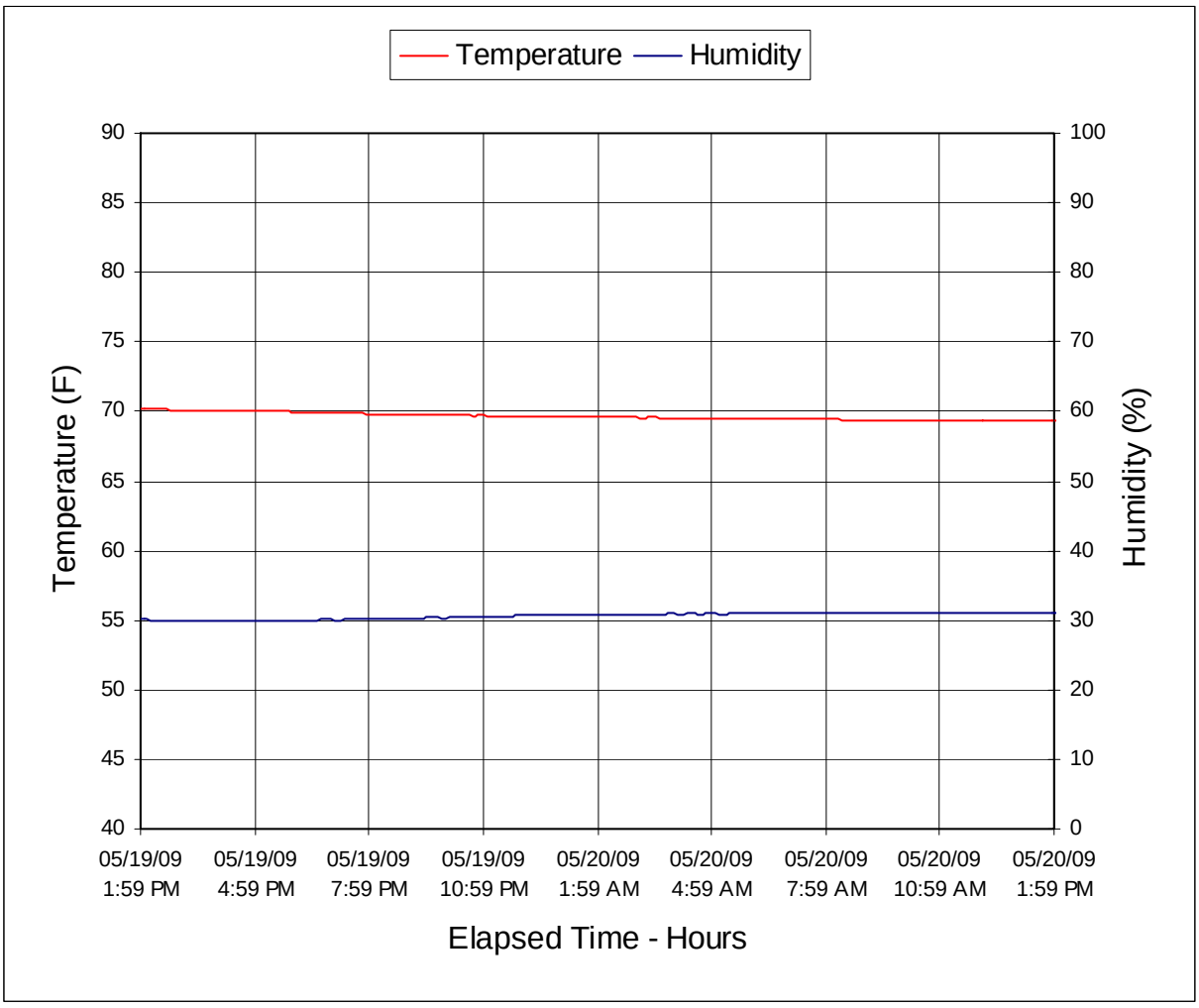


DATA SHEET NO. 19

DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV NHTSA No.: V95800

Test Program: NHTSA 35mph NCAP Test Date: 5/20/09



APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

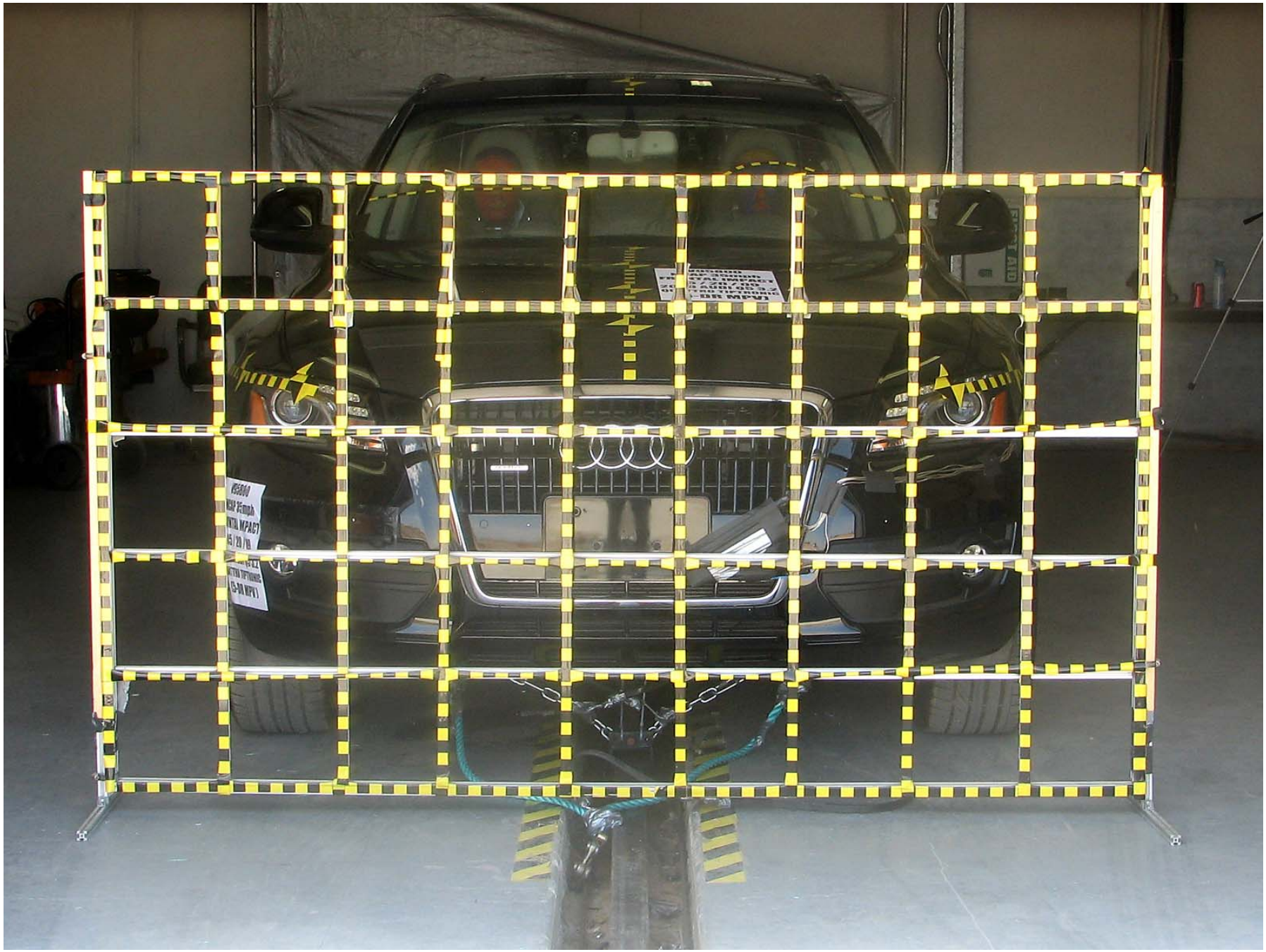


Figure A-1: Load Cell Location

Figure A-2: Manufacturer's Label

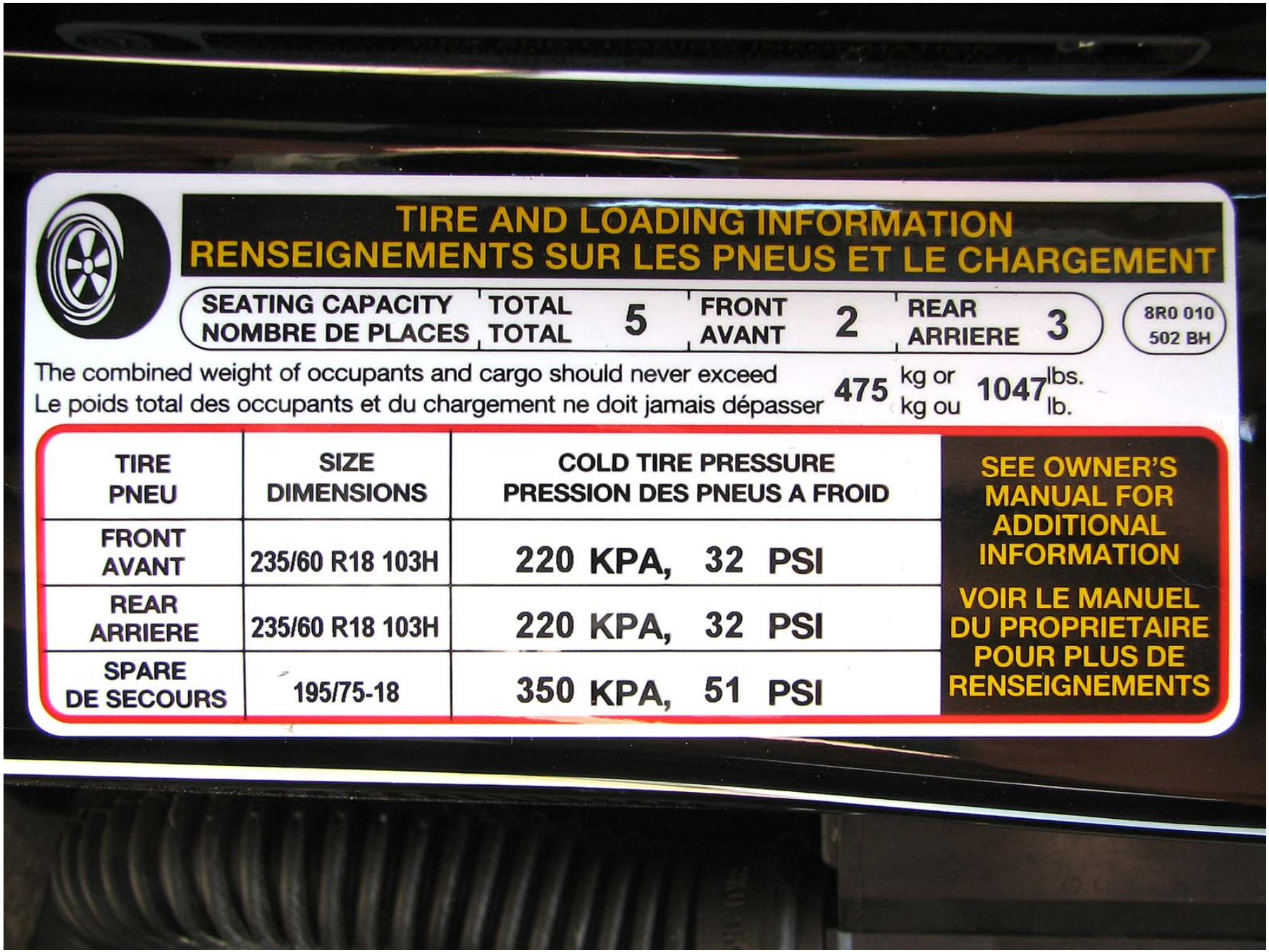


Figure A-3: Tire Placard

Figure A-4: Right Front ¾ View, As Received

Figure A-5: Left Rear ¾ View, as Received

Figure A-6: Pre-Test Front View

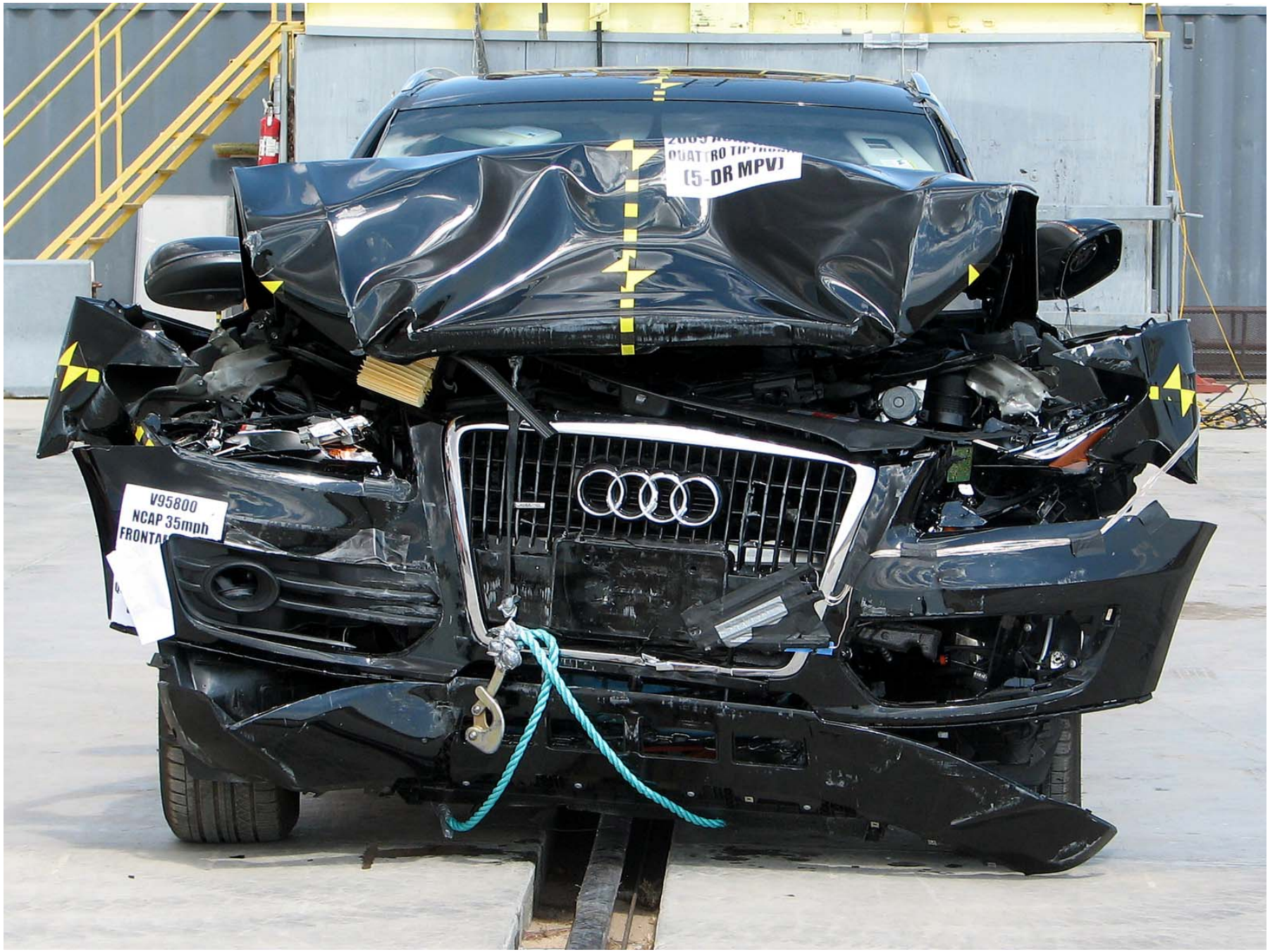


Figure A-7: Post-Test Front View (Vehicle Moved)

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 ¾ View

Figure A-15: Post-Test Left Rear ¾ View

Figure A-16: Post-Test Left Side ¾ View of Doors After Impact

Figure A-17: Post-Test Right Side ¾ View of Doors After Impact

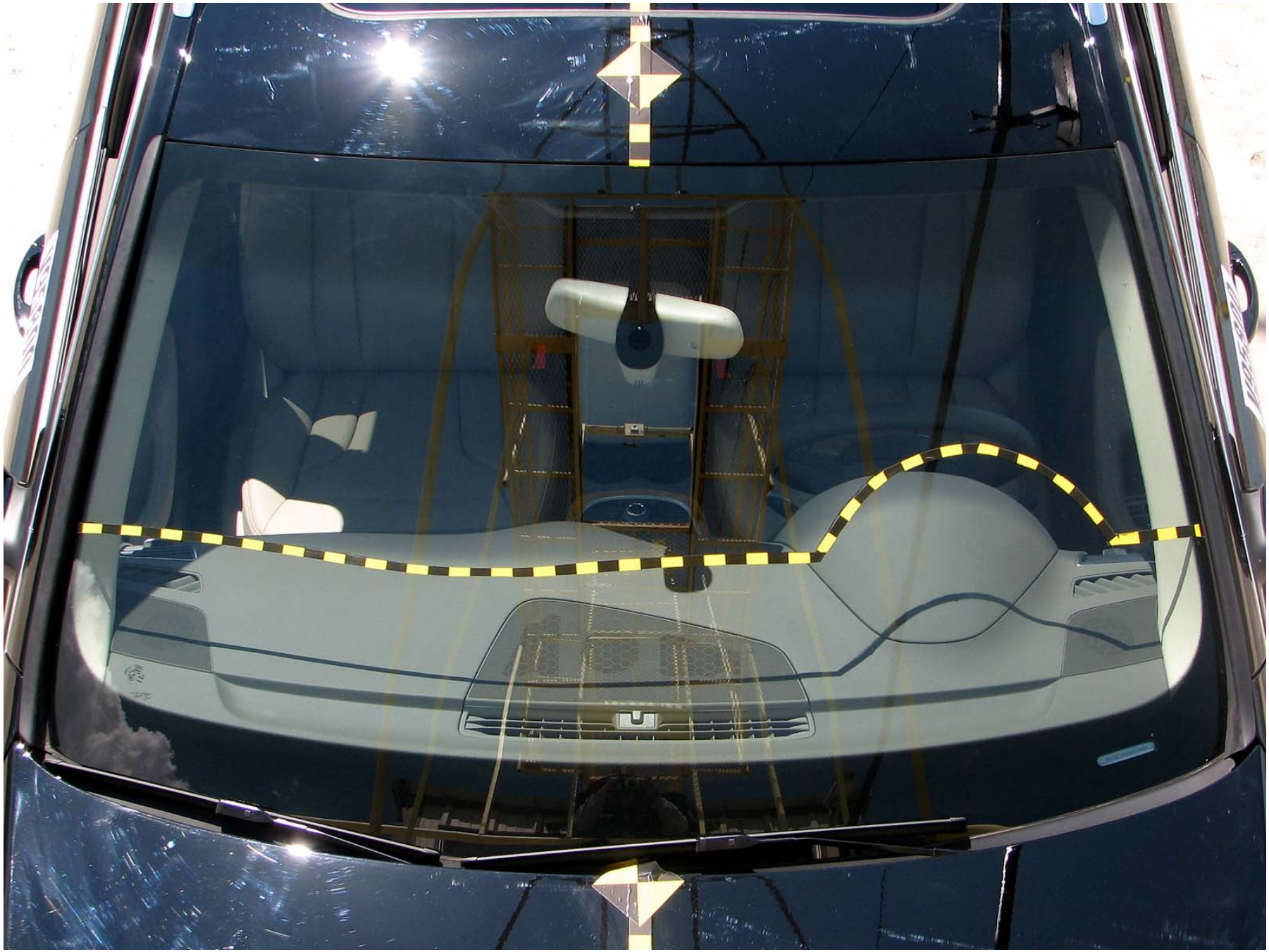


Figure A-18: Pre-Test Windshield

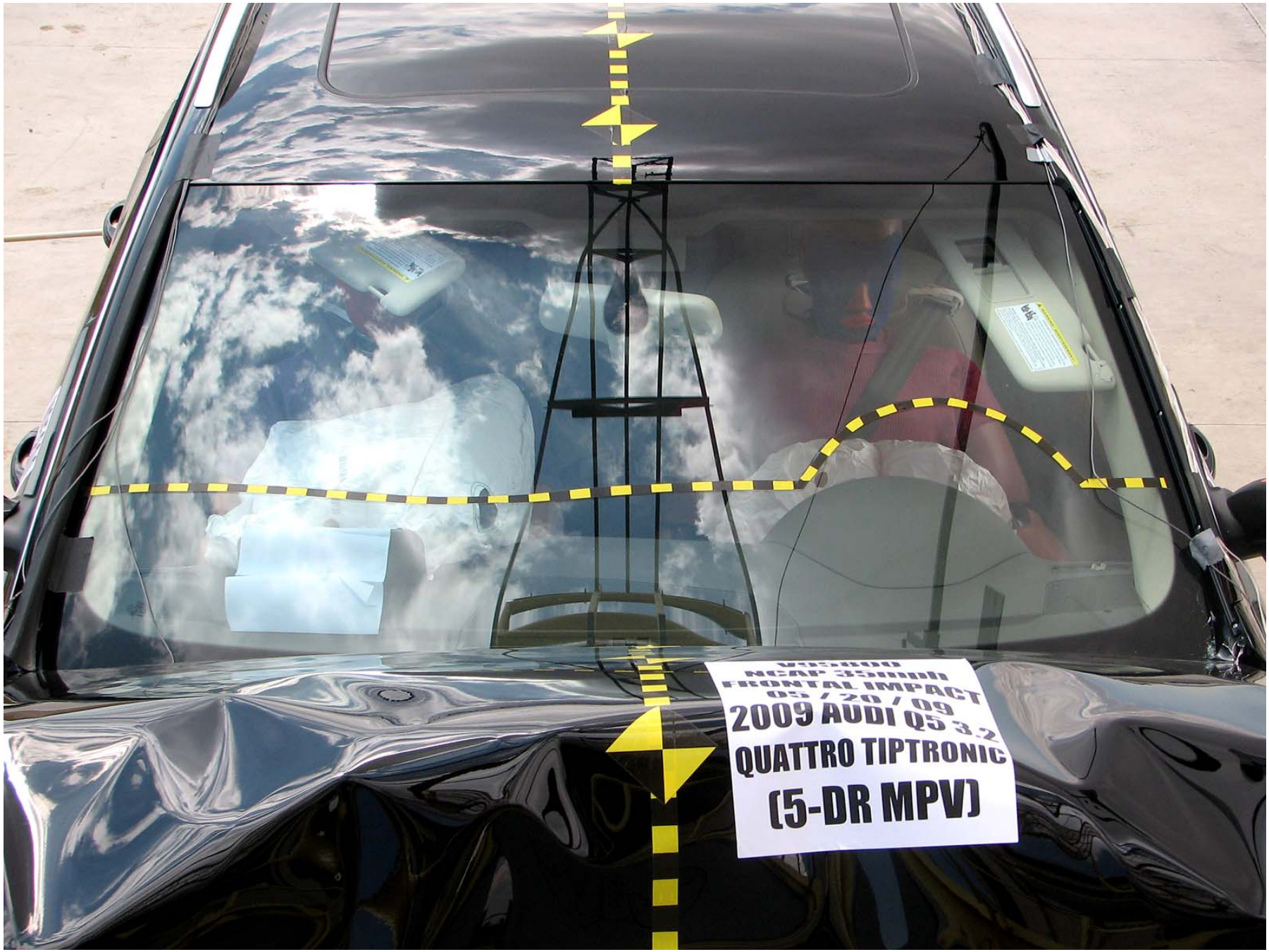


Figure A-19: Post-Test Windshield

Figure A-20: Pre-Test Engine Compartment

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

Figure A-22: Pre-Test Fuel Cap

Figure A-23: Post-Test Fuel Cap

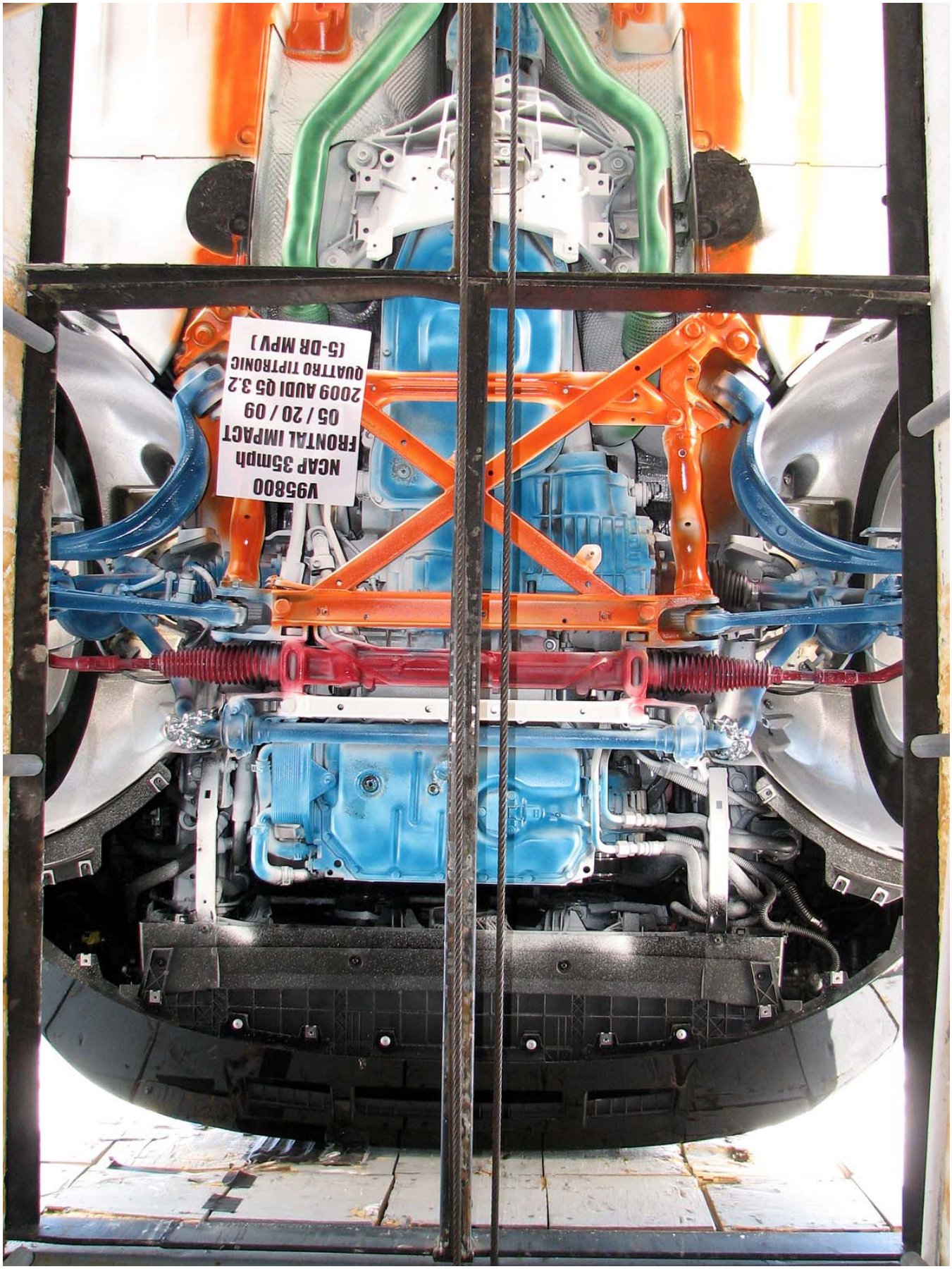


Figure A-24: Pre-Test Front Underbody

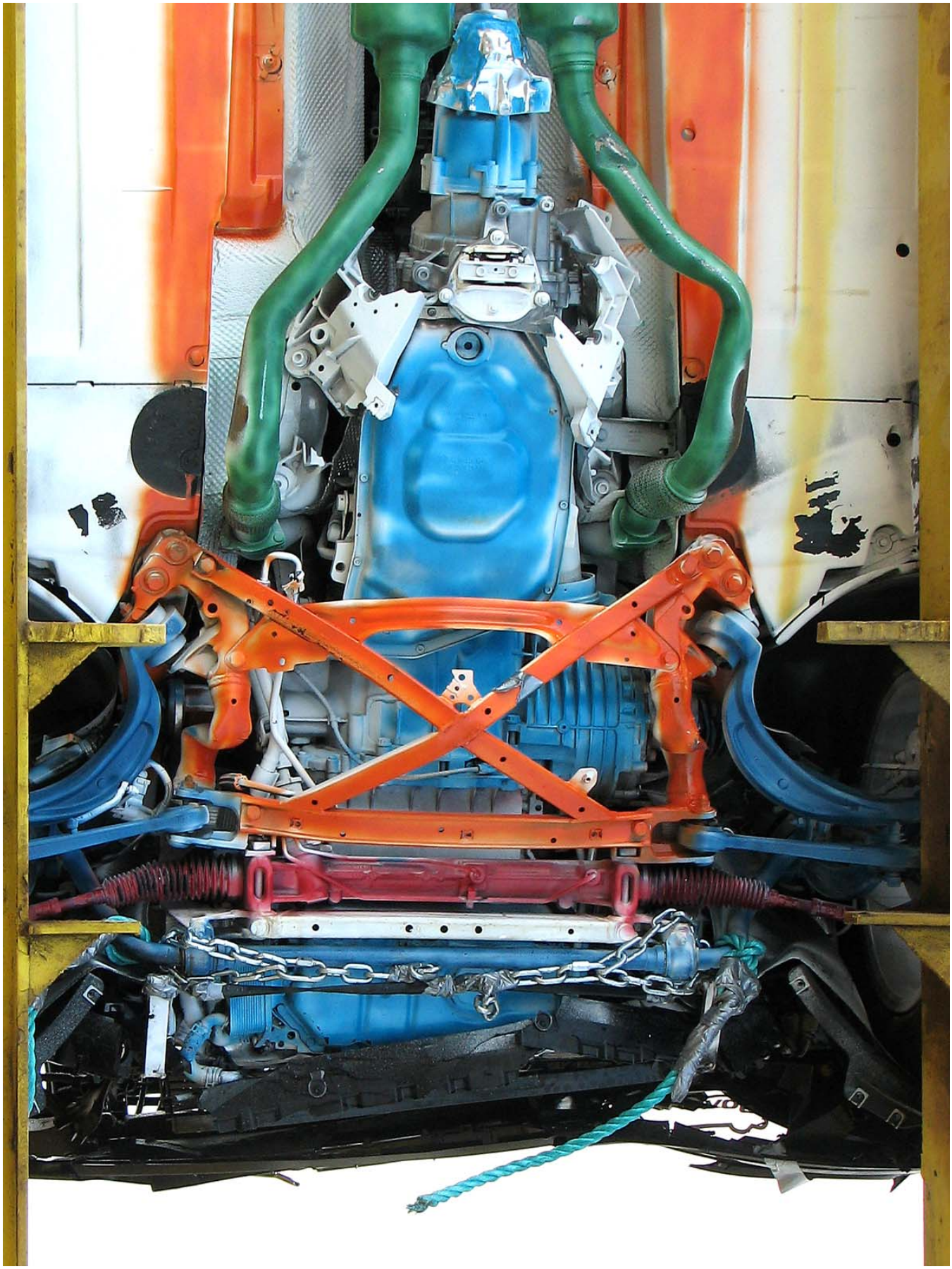


Figure A-25: Post-Test Front Underbody

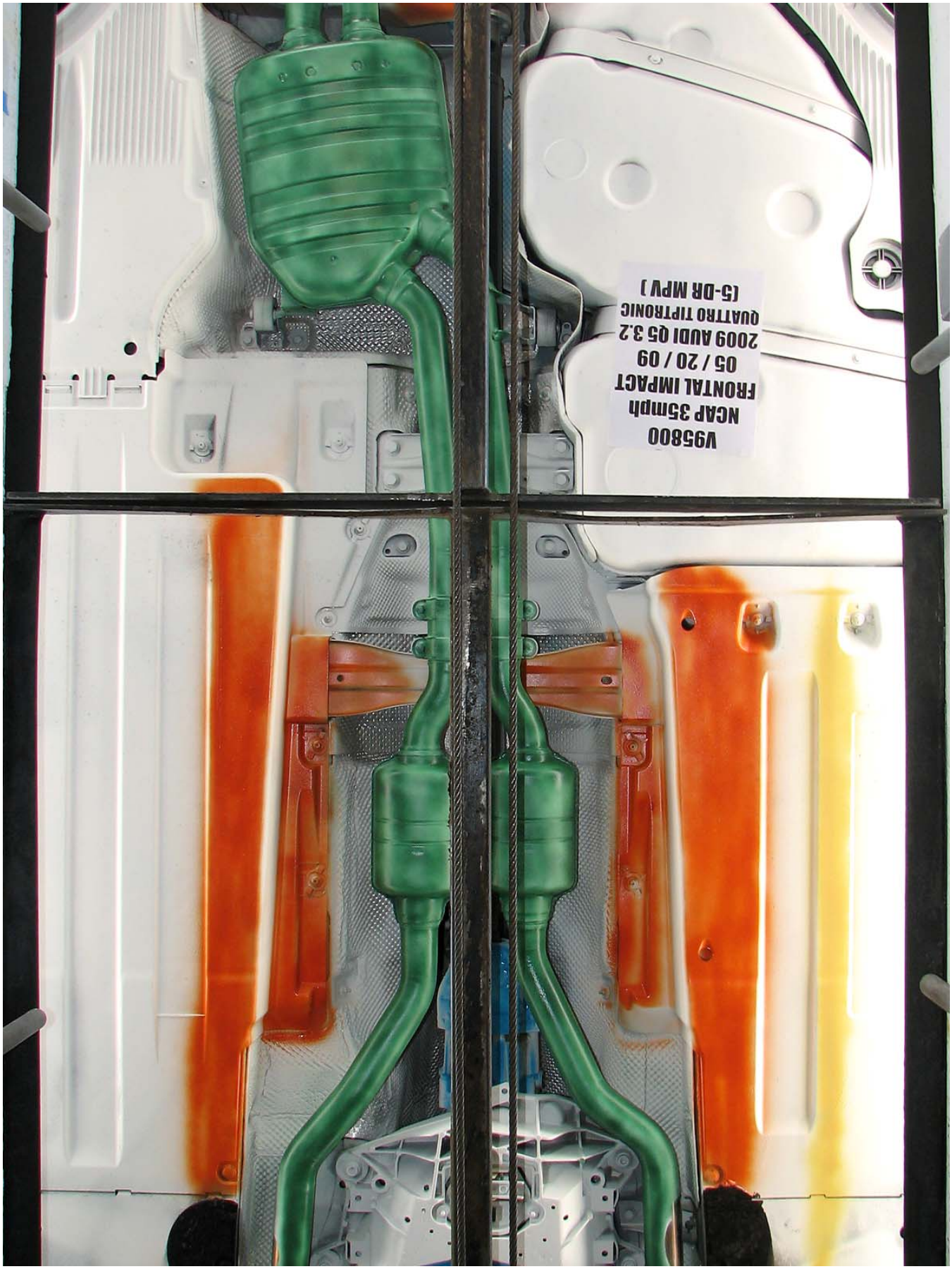


Figure A-26: Pre-Test Mid Underbody

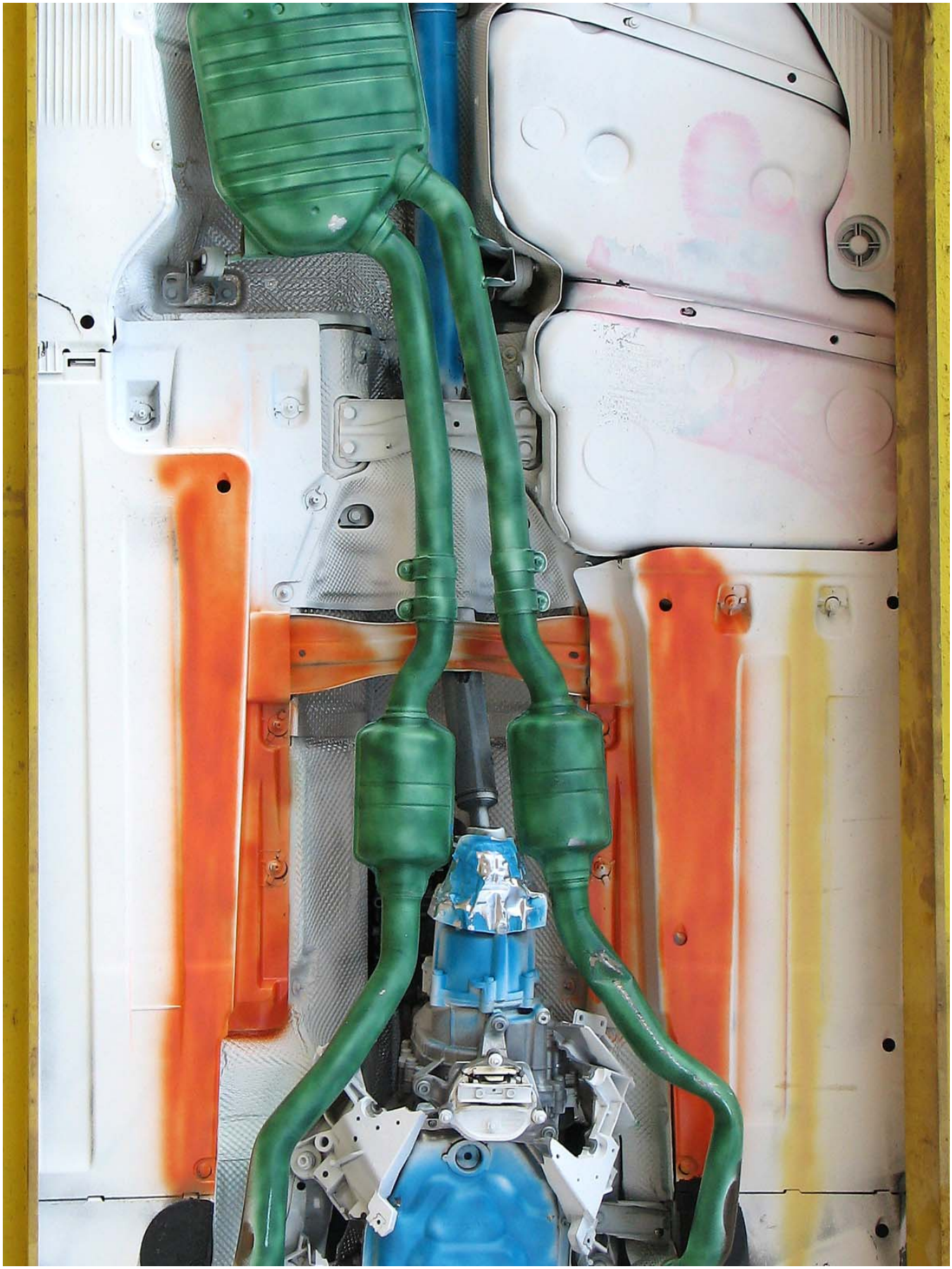


Figure A-27: Post-Test Mid Underbody

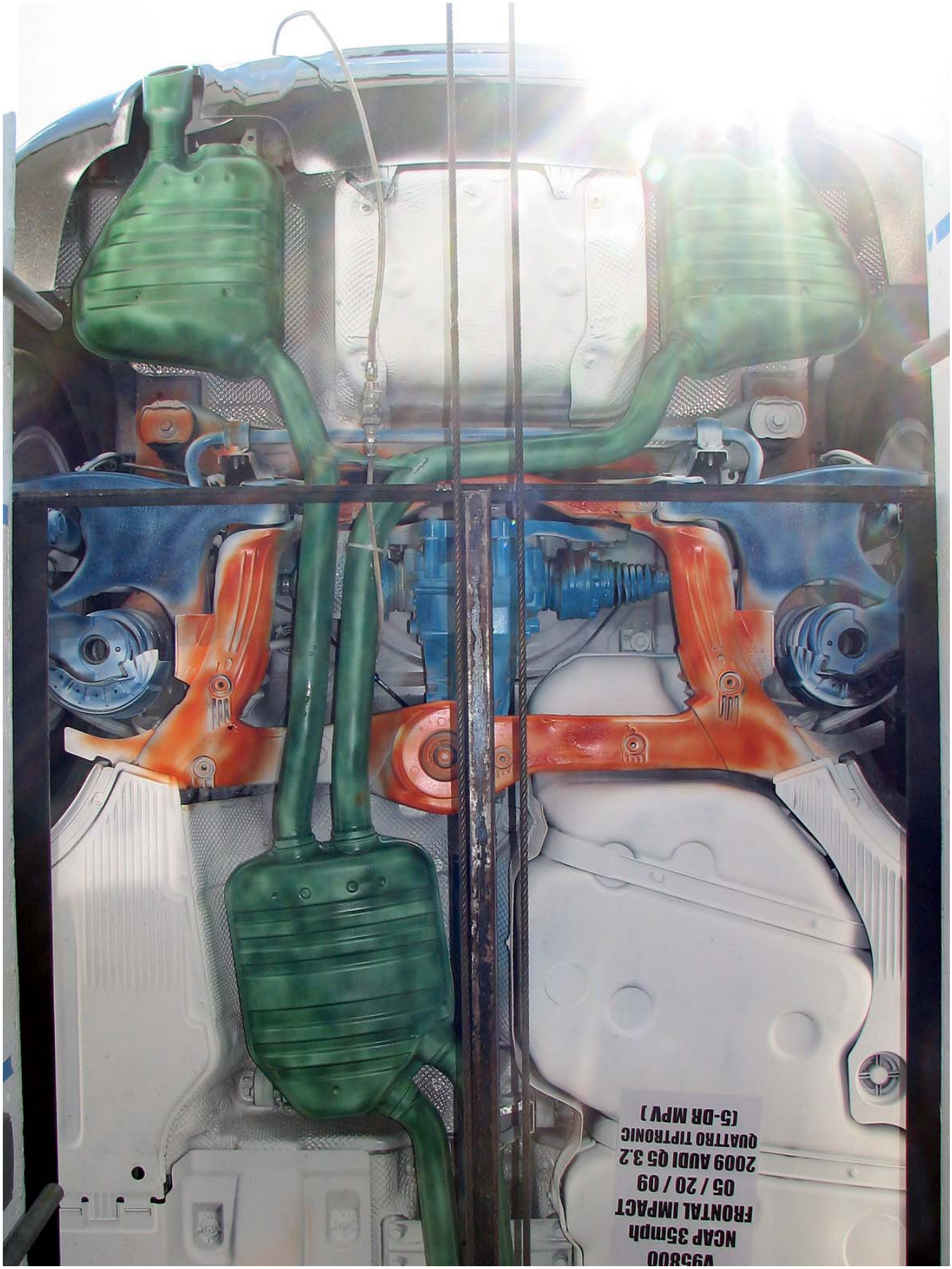


Figure A-28: Pre-Test Rear Underbody

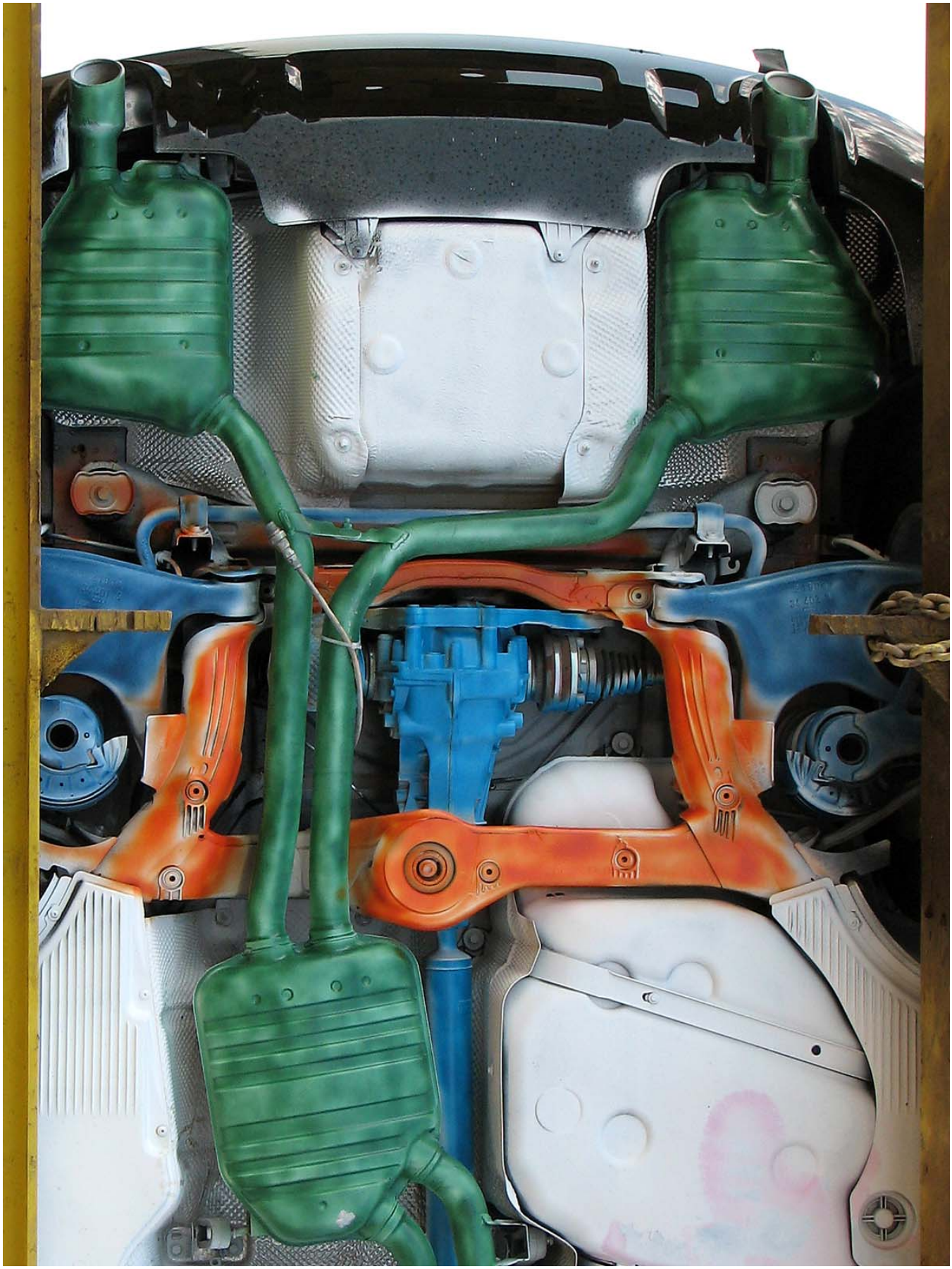


Figure A-29: Post-Test Rear Underbody

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°)

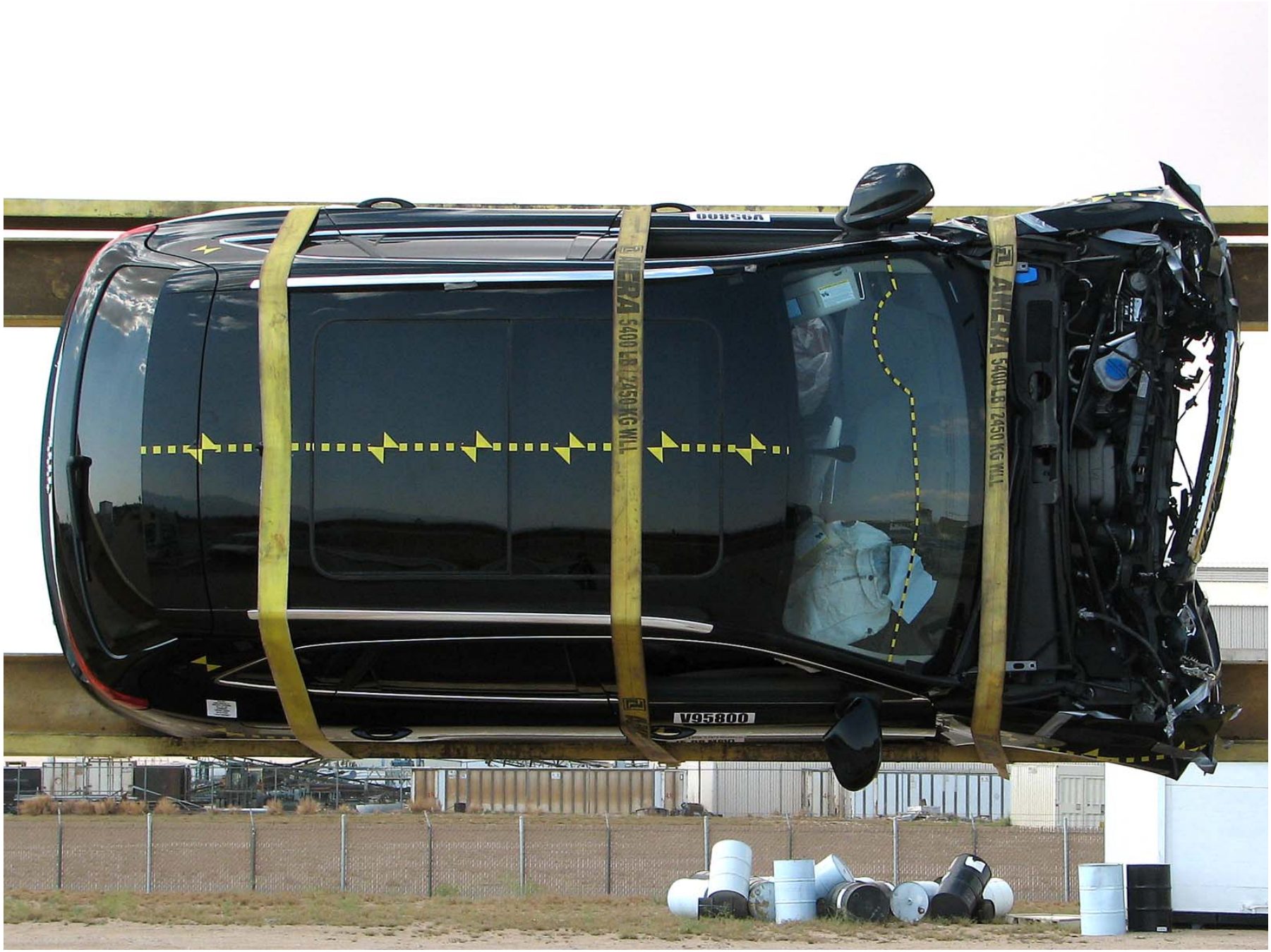


Figure A-59: Vehicle on Rollover Device (90°)

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

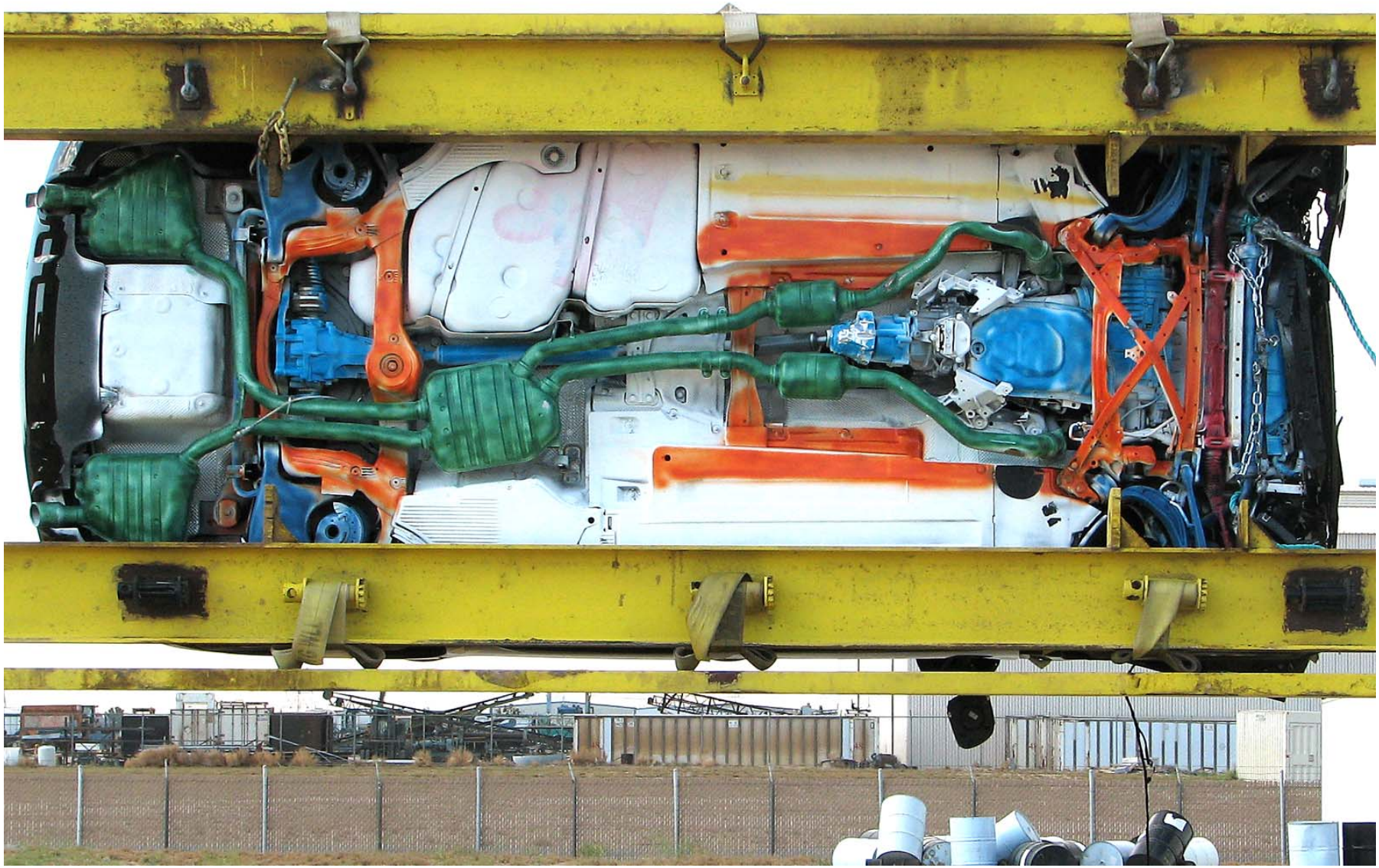


Figure A-61: Vehicle on Rollover Device (270°)

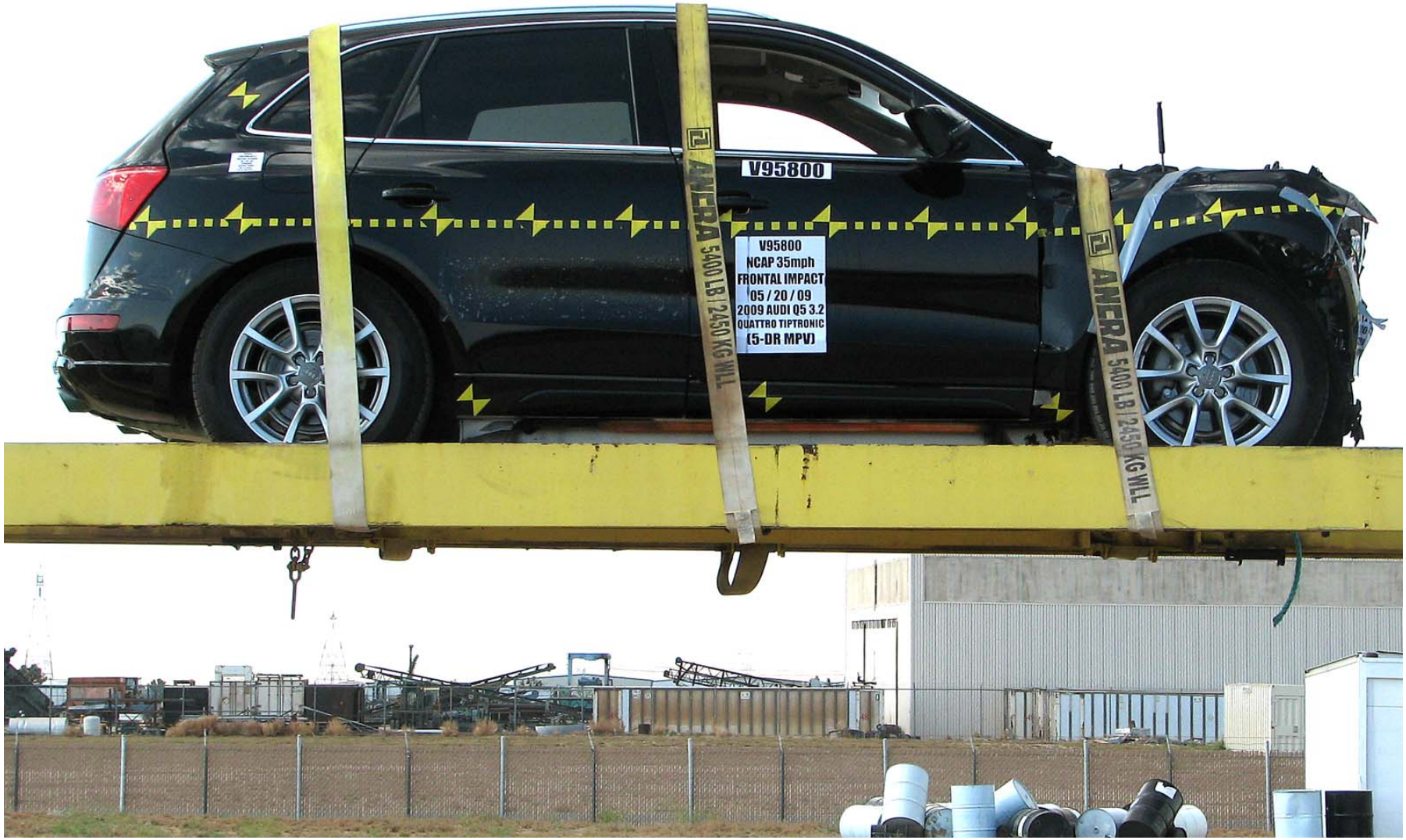


Figure A-62: Vehicle on Rollover Device (360°)

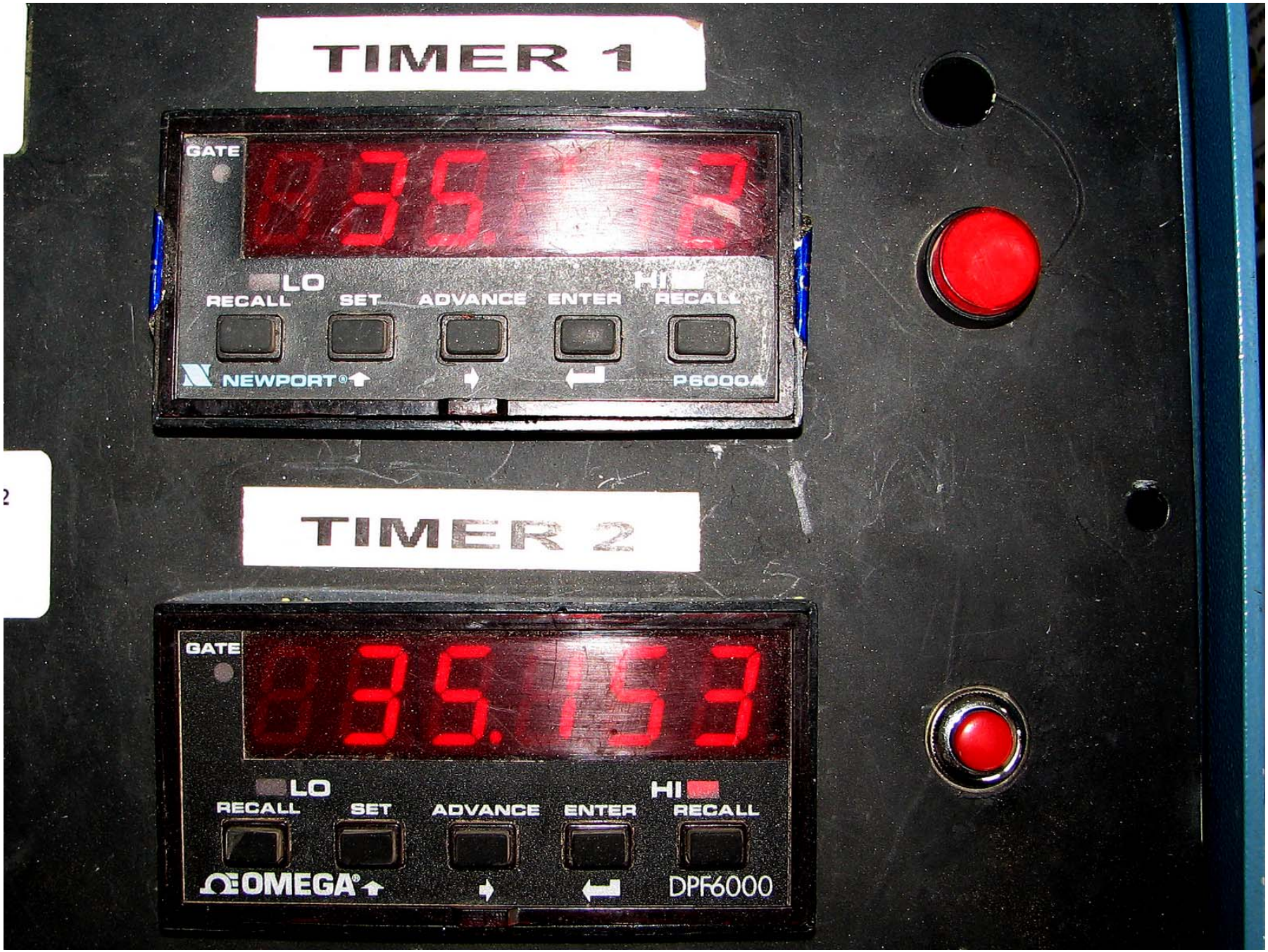


Figure A-63: Timers

Figure A-64: Vehicle Impact

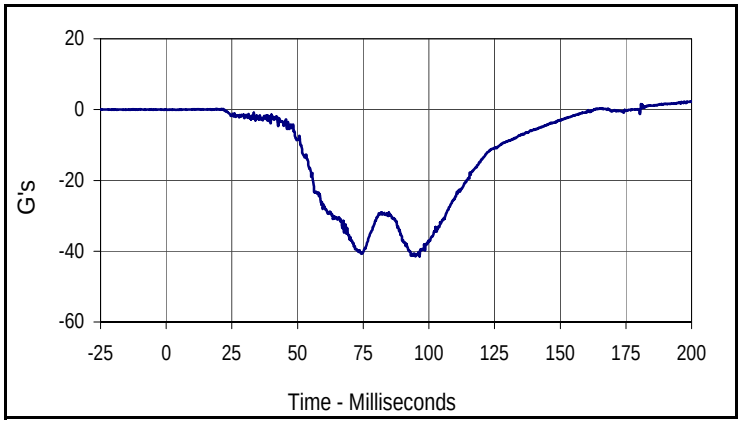
APPENDIX B
DATA PLOTS

LIST OF DATA PLOTS

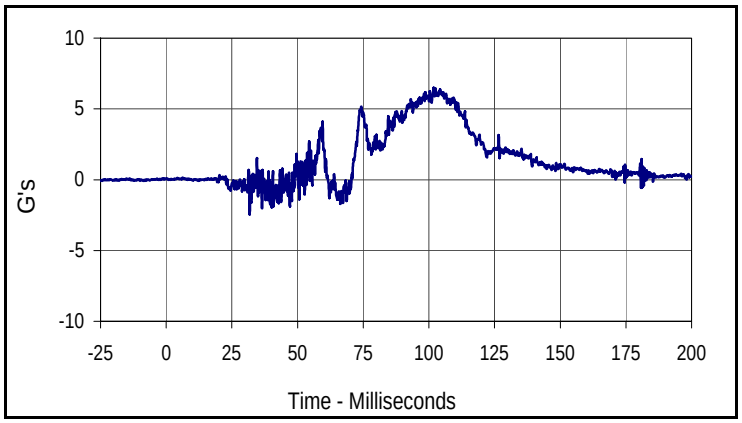
The following additional data plots for this test can be obtained from the research and development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

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

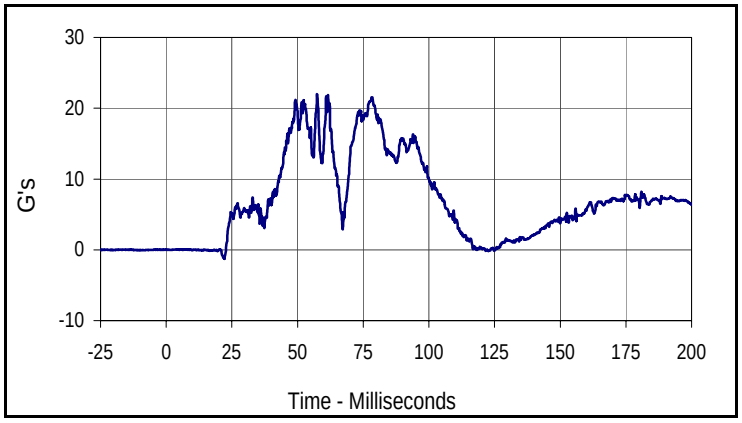
Test Vehicle:	2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV	Test Date:	5/20/09
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	V95800



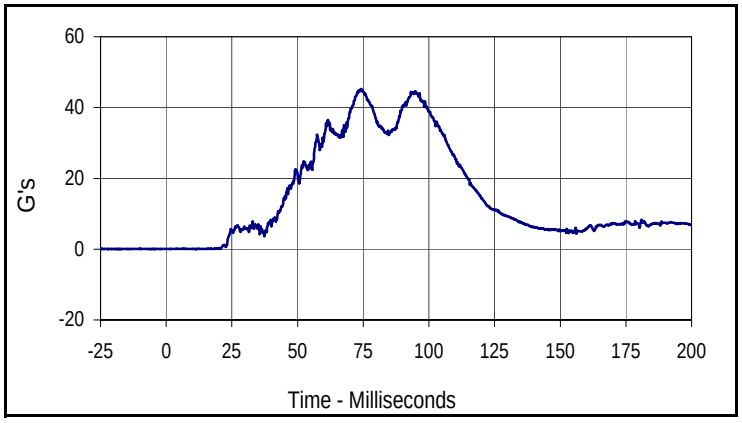
Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.3	199.9	-41.5	96.5



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.5	101.8	-2.5	31.8

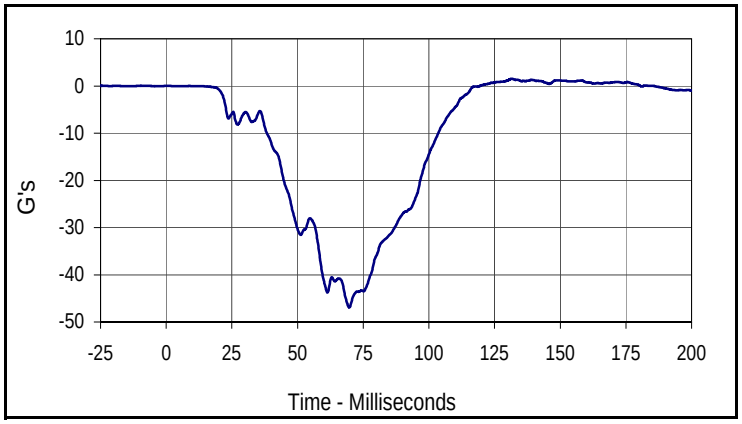


Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
22.0	57.4	-1.3	22.1

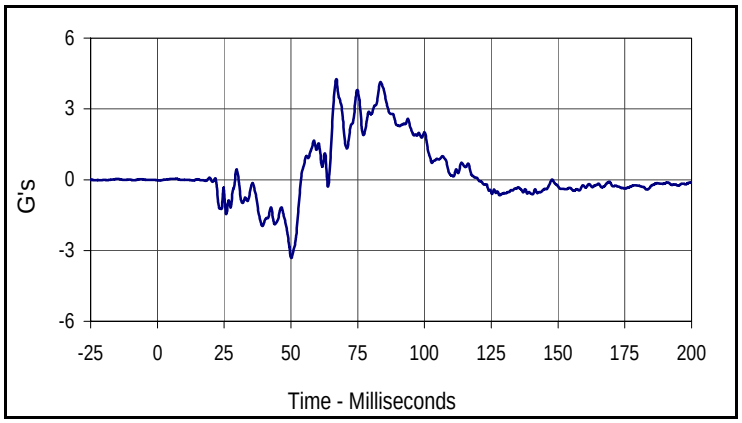


Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
45.3	74.2	0.0	11.4

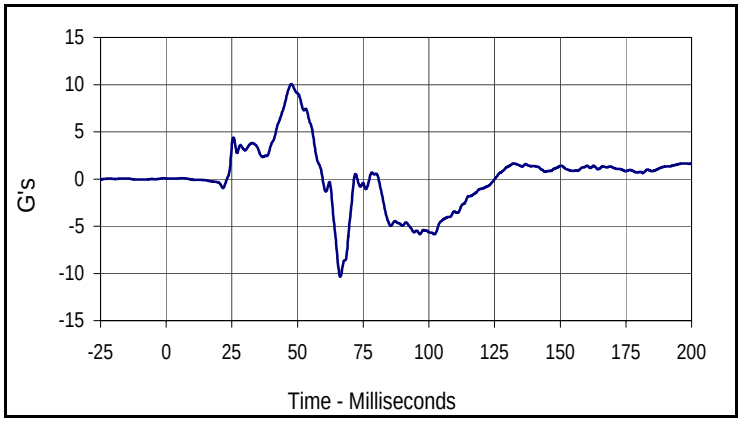
Test Vehicle:	2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV	Test Date:	5/20/09
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	V95800



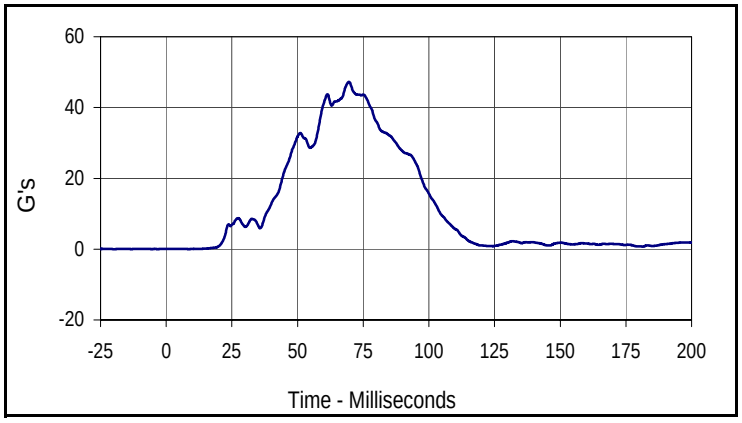
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
1.5	131.7	-46.9	69.7



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
4.3	67.0	-3.3	50.1

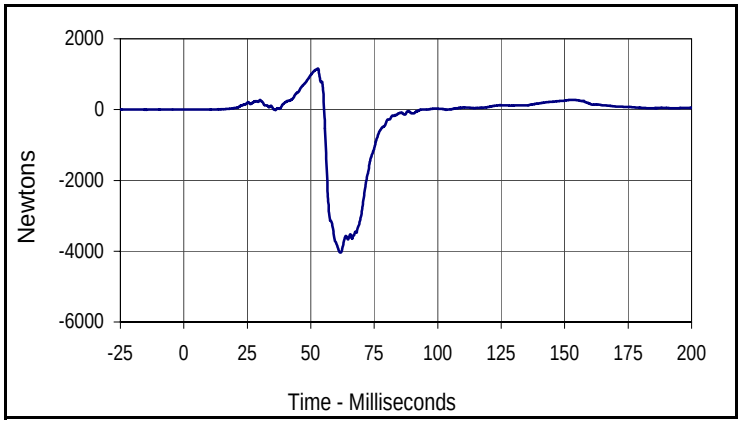


Curve Description			
Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
10.0	47.6	-10.4	66.3

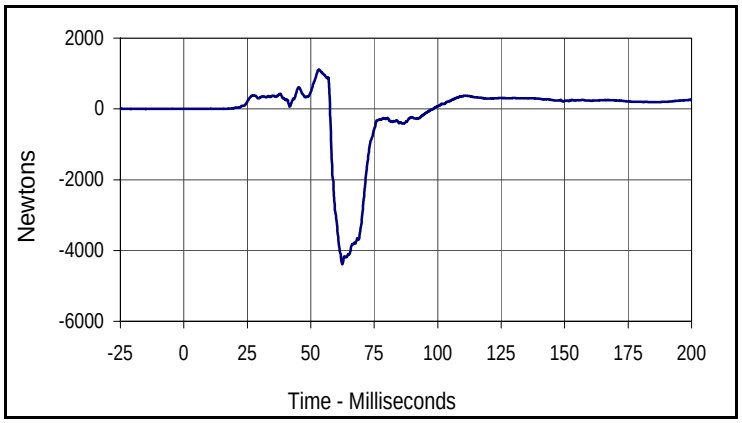


Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
004	RES	180	G's
Max	Time	Min	Time
47.2	69.6	0.0	8.6

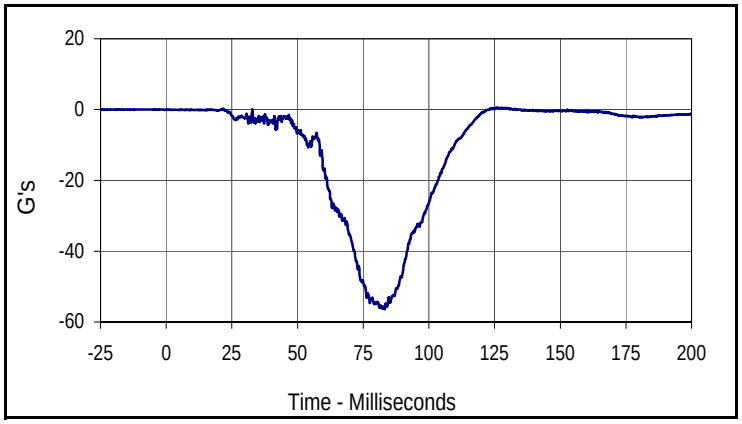
Test Vehicle:	2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV	Test Date:	5/20/09
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	V95800



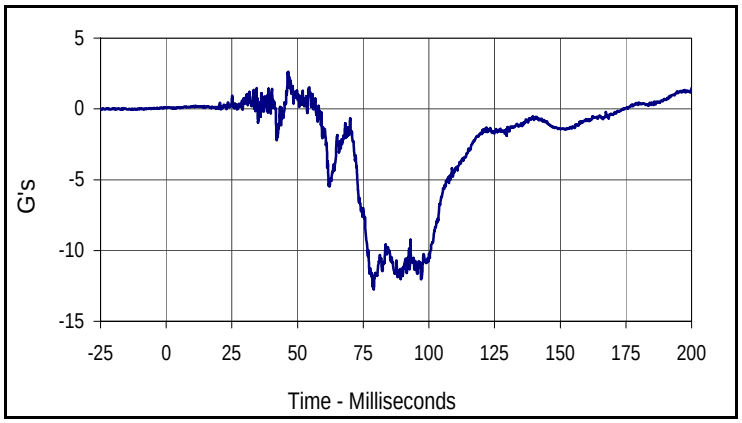
Curve Description			
Driver Left Femur Force Z			
CURNO	Type	SAE Class	Units
007	FIL	600	Newtons
Max	Time	Min	Time
1157.7	52.8	-4042.3	61.8



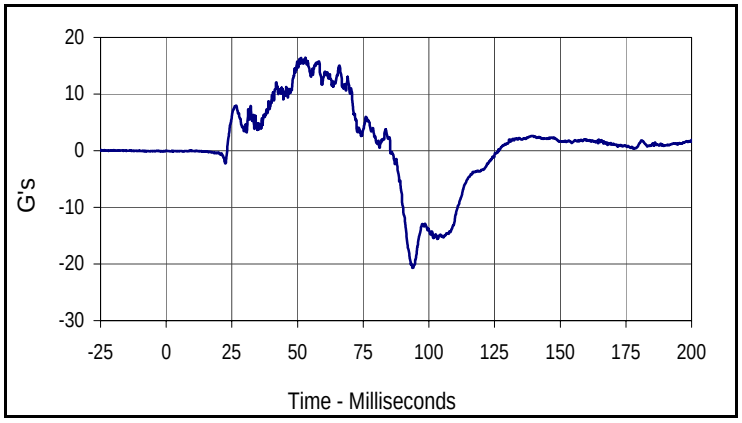
Curve Description			
Driver Right Femur Force Z			
CURNO	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
1113.3	53.2	-4387.8	62.4



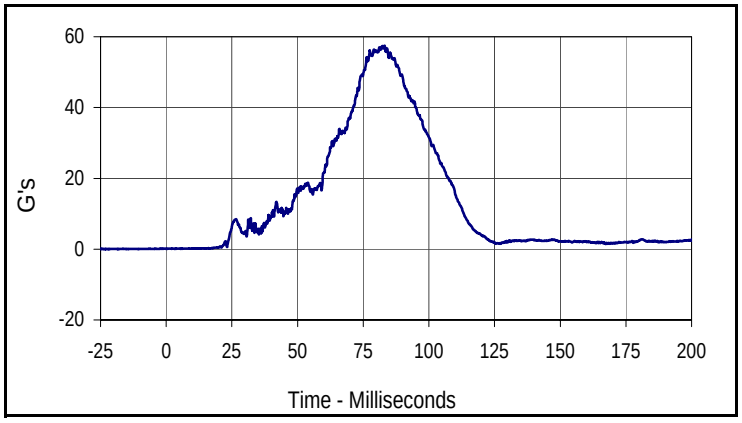
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
009	FIL	1000	G's
Max	Time	Min	Time
0.6	125.9	-56.4	83.2



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
010	FIL	1000	G's
Max	Time	Min	Time
2.6	46.5	-12.8	79.0

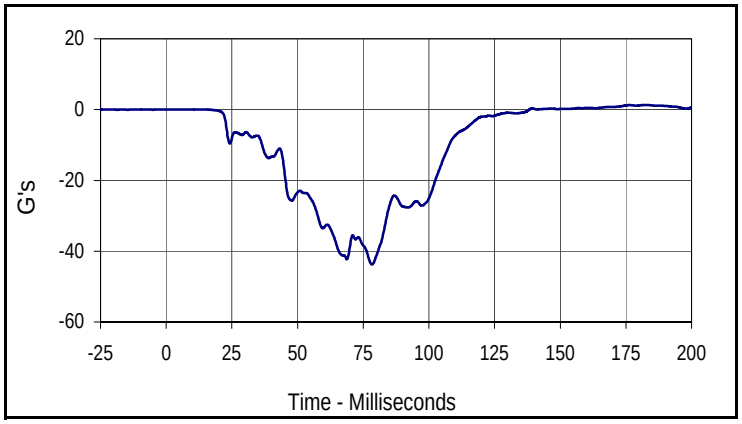


Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
011	FIL	1000	G's
Max	Time	Min	Time
16.4	53.0	-20.7	93.8

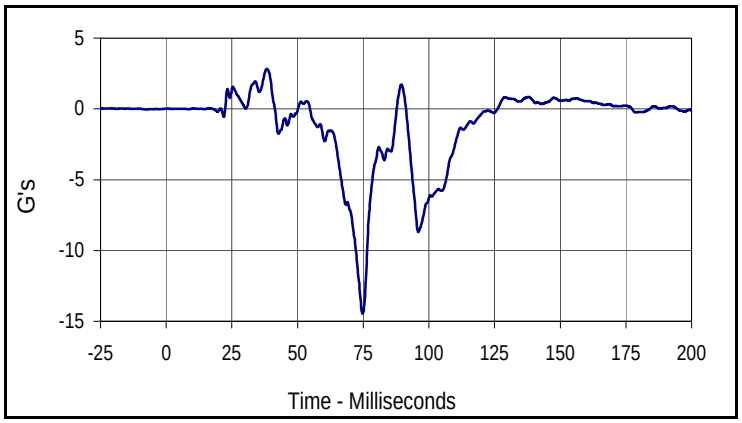


Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
57.5	83.2	0.1	0.2

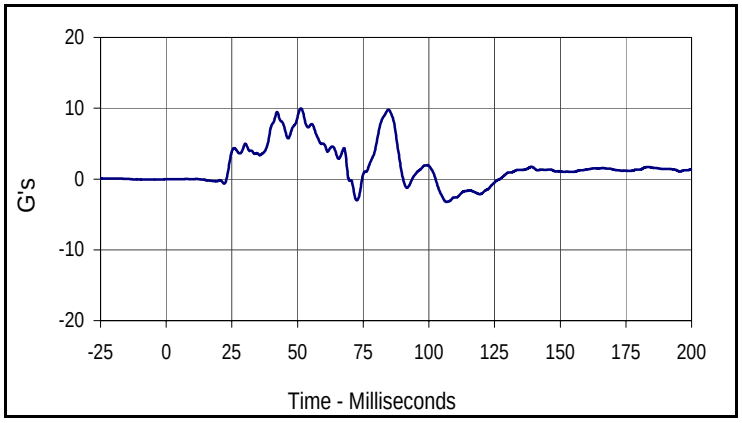
Test Vehicle:	2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV	Test Date:	5/20/09
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	V95800



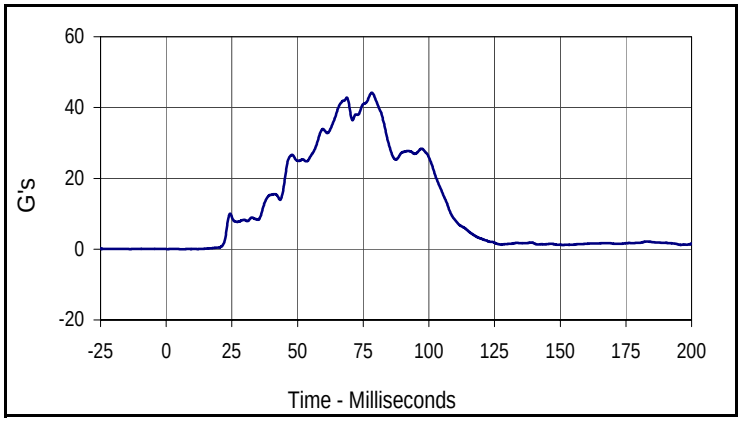
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
1.3	182.7	-43.7	78.3



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
2.8	38.3	-14.5	74.8

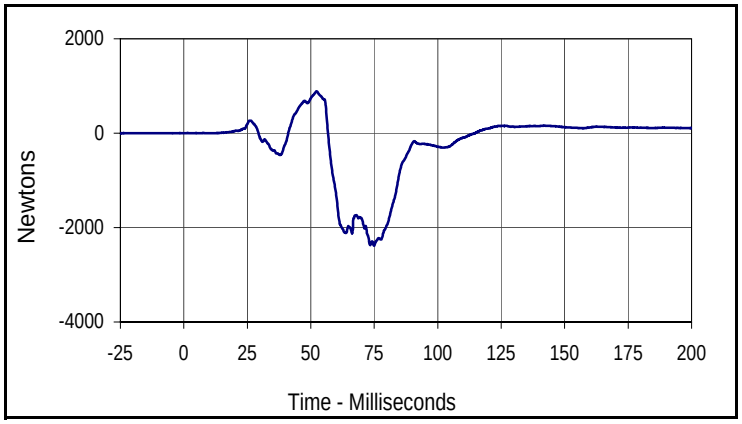


Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
10.0	51.3	-3.2	106.6

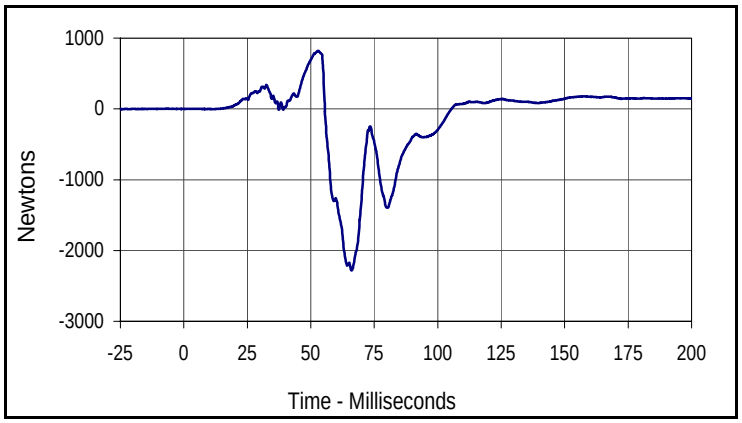


Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
44.2	78.3	0.0	5.6

Test Vehicle:	2009 Audi Q5 3.2 Quattro Tiptronic 5-Door MPV	Test Date:	5/20/09
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	V95800



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
885.3	52.3	-2387.4	74.9

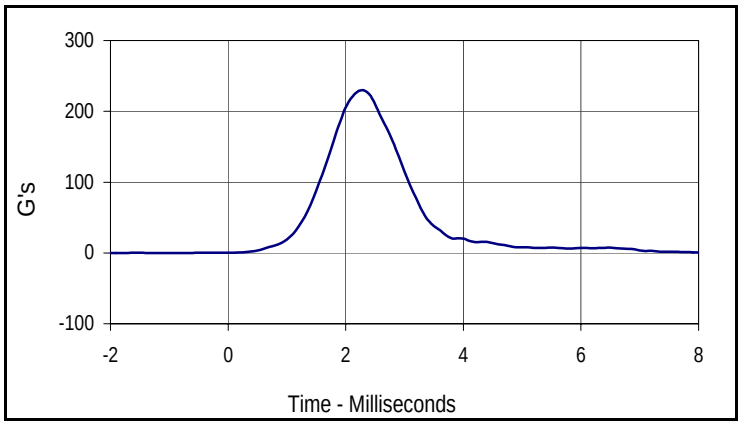


Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
819.5	53.0	-2282.0	66.0

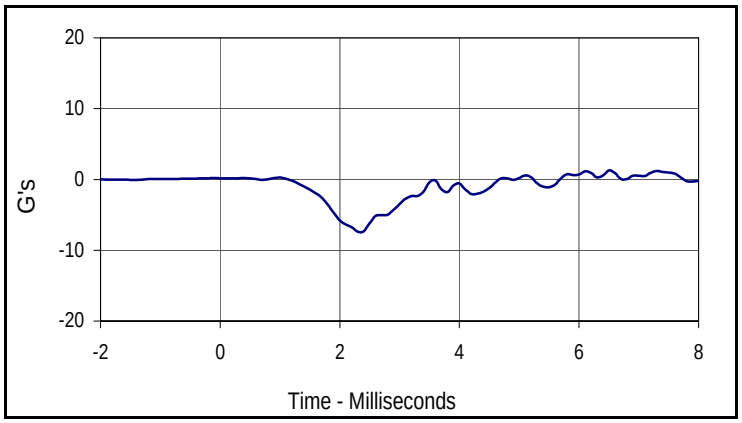
APPENDIX C
DUMMY CALIBRATION DATA

Test Program:	Hybrid III 50th Percentile Male Head Drop Test	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	H035H

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	229.8	Pass
Peak Lateral Acceleration	G's	≤15.0	7.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass



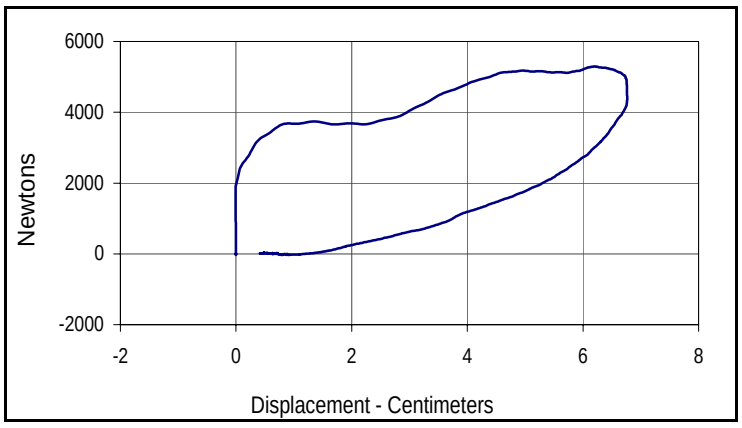
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
229.8	2.3	0.0	-2.0



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.7	5.8	-7.4	2.3

Test Program:	Hybrid III 50th Percentile Male Thorax Impact Test	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	CH034H

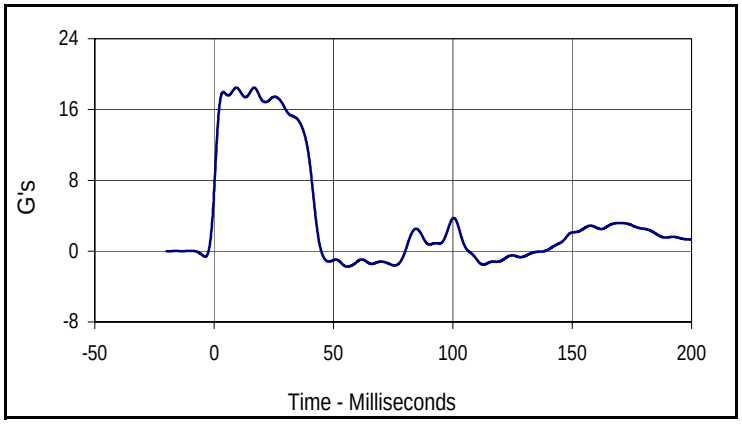
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.79	Pass
Peak Probe Force	Newtons	5159 to 5893	5292	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.76	Pass
Internal Hysterysis	%	69 to 85	74.0	Pass
		Overall Test Results		Pass



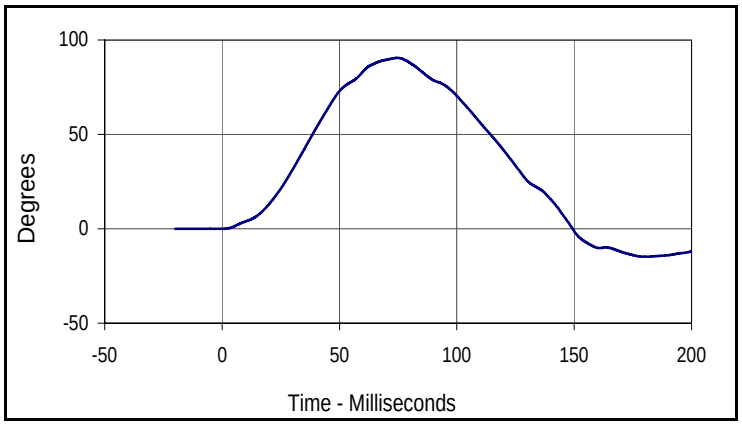
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysterysis
001	FIL	180	74.0
Peak Probe Force		Peak Chest Deflection	
5292		6.76	

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	E034G

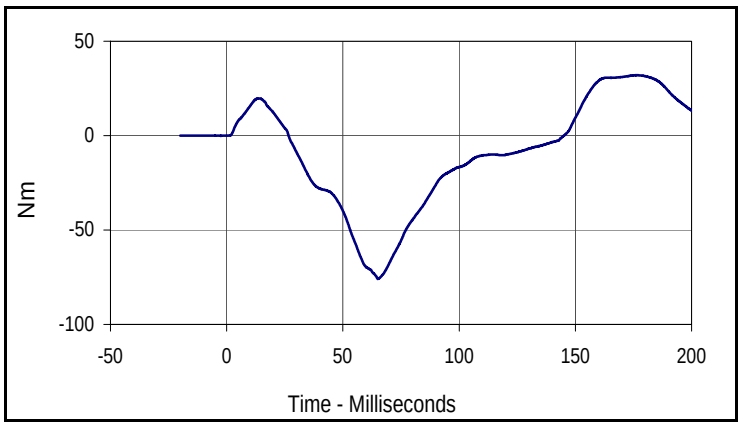
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	5.99	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.4	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	16.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	16.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	90.5	Pass
	Time	Msec.	72.0 to 82.0	74.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	149.4	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-75.9	Pass
	Time	Msec.	65.0 to 79.0	65.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.2	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.5	9.3	-1.7	55.8



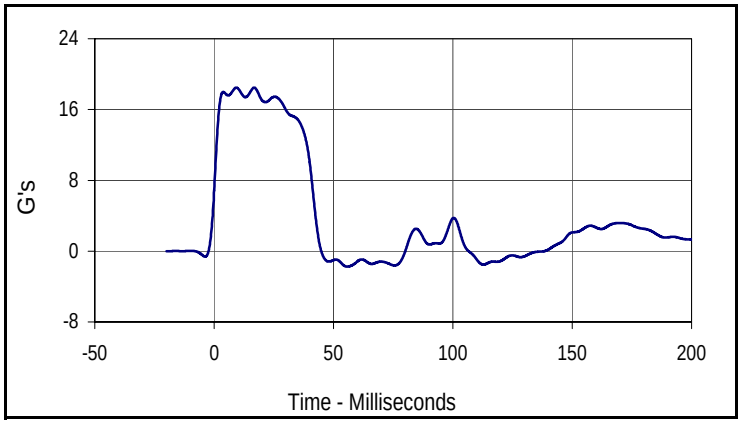
Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
90.5	74.7	-14.8	180.3



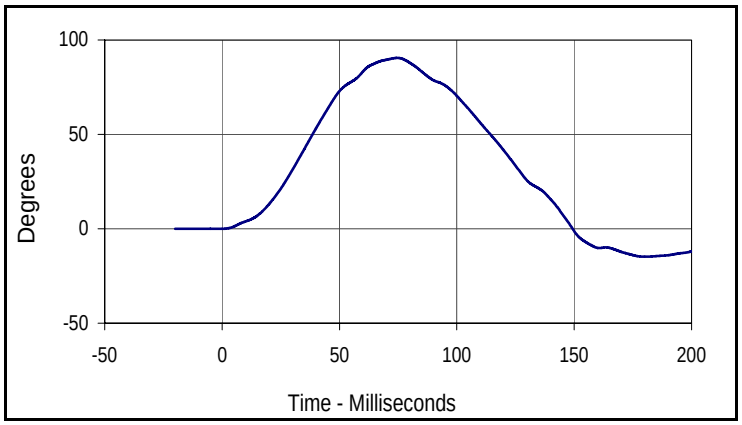
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
32.0	176.6	-75.9	65.0

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	E034G

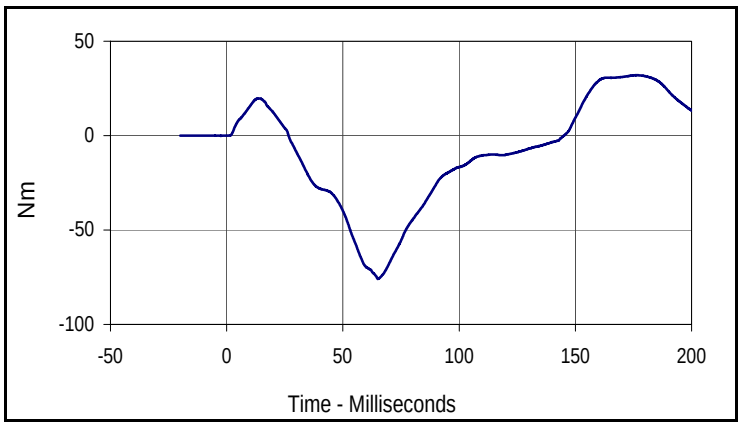
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	5.99	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.4	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	16.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	16.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	90.5	Pass
	Time	Msec.	72.0 to 82.0	74.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	149.4	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-75.9	Pass
	Time	Msec.	65.0 to 79.0	65.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.2	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.5	9.3	-1.7	55.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
90.5	74.7	-14.8	180.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
32.0	176.6	-75.9	65.0

Test Program:	Hybrid III 50th Percentile Male Knee Impact Test	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	L034H , R034H

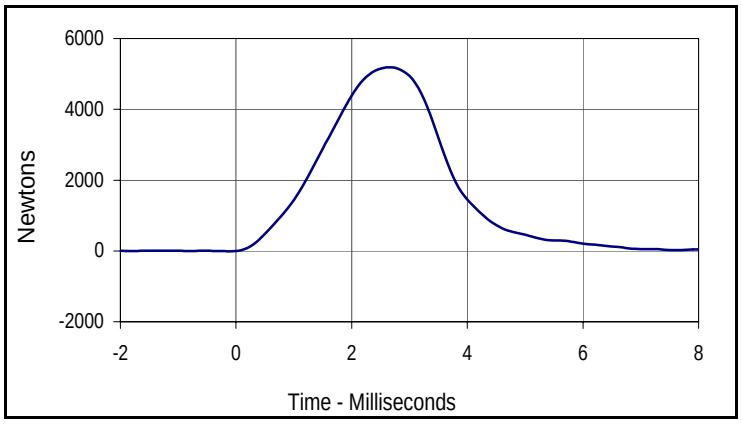
Left Knee

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	5326	Pass
		Overall Test Results		Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5187	Pass
		Overall Test Results		Pass

Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5326.2	2.8	-13.9	8.7



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5186.9	2.6	-20.2	10.0

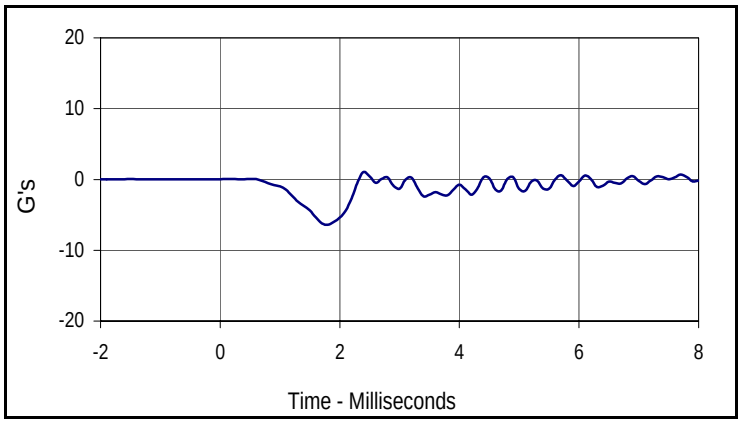
Test Program:	Hybrid III 50th Percentile Male External Measurements	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	N/A

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	886	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	91	Pass
F - Thigh clearance	mm	140 to 155	153	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	336	Pass
J - Elbow rest height	mm	190 to 211	211	Pass
K - Buttock to knee length	mm	579 to 604	595	Pass
L - Poplipteal length	mm	429 to 455	445	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock poplipteal length	mm	452 to 477	467	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	254	Pass
V - Shoulder breadth	mm	422 to 437	426	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	991	Pass
Z - Waist circumference	mm	836 to 866	855	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
		Overall Test Results		Pass

Test Program:	Hybrid III 50th Percentile Male Head Drop Test	Test Date:	5/10/09
ATD Serial No.:	035	Test I.D.:	H035L

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	268.2	Pass
Peak Lateral Acceleration	G's	≤15.0	6.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass

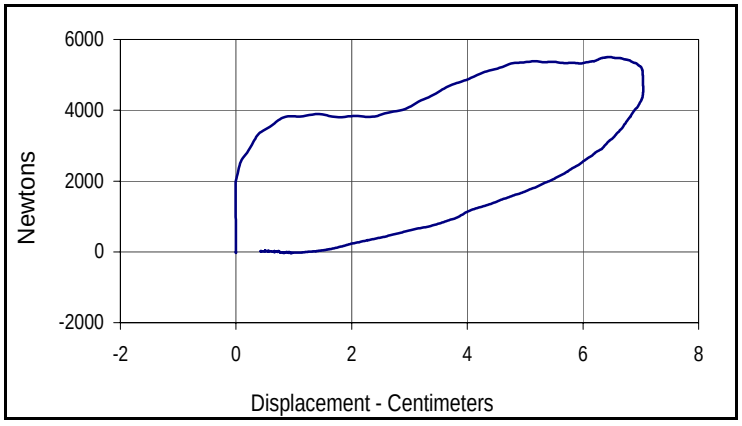
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
268.2	1.9	0.4	0.4



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.1	2.4	-6.4	1.8

Test Program:	Hybrid III 50th Percentile Male Thorax Impact Test	Test Date:	5/10/09
ATD Serial No.:	035	Test I.D.:	CH035F

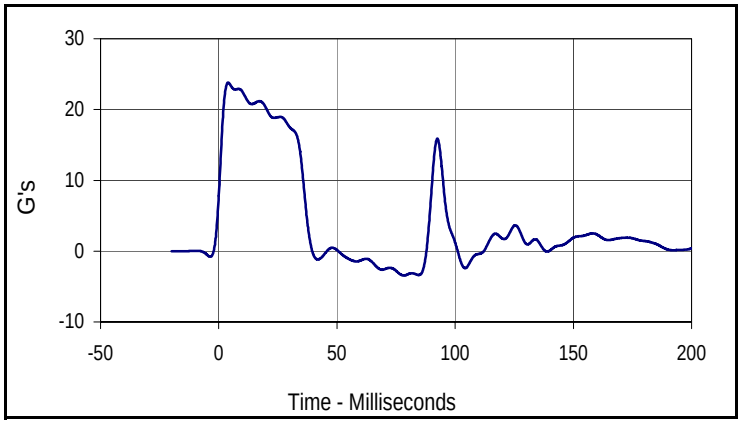
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.81	Pass
Peak Probe Force	Newtons	5159 to 5893	5506	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	7.04	Pass
Internal Hysterysis	%	69 to 85	73.8	Pass
		Overall Test Results		Pass



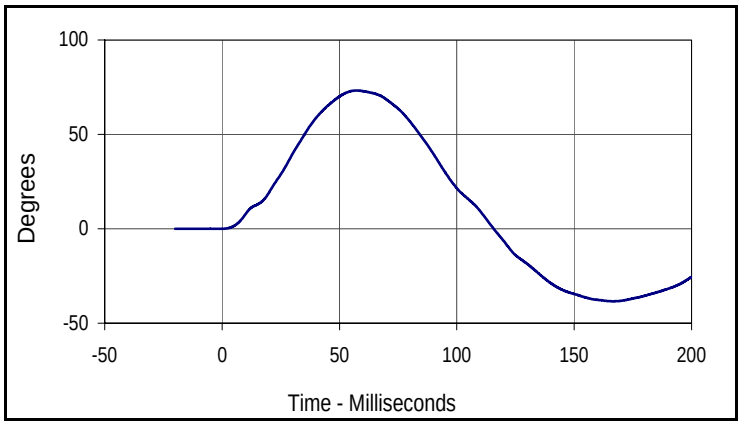
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysterysis
001	FIL	180	73.8
Peak Probe Force		Peak Chest Deflection	
5506		7.04	

Test Program:	Hybrid III 50th Percentile Male Neck Flexion Test	Test Date:	5/10/09
ATD Serial No.:	035	Test I.D.:	F035G

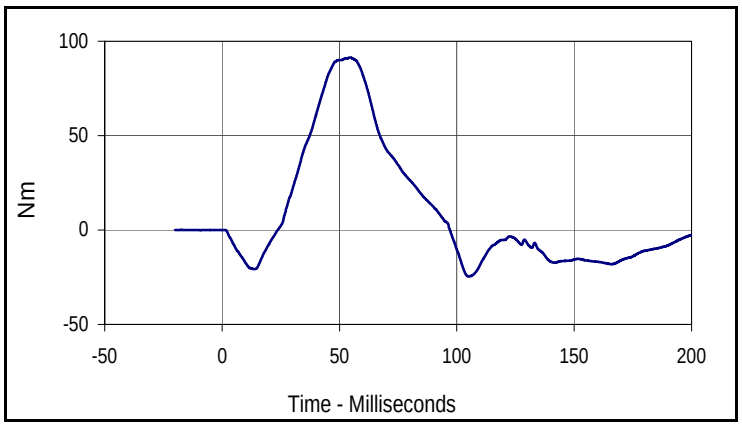
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.90	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.5	Pass
	20 Msec.	G's	17.6 to 22.6	20.2	Pass
	30 Msec.	G's	12.5 to 18.5	17.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	37.2	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	73.2	Pass
	Time	Msec.	57.0 to 64.0	57.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	115.7	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	91.3	Pass
	Time	Msec.	47.0 to 58.0	54.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.1	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.8	4.0	-3.4	78.3



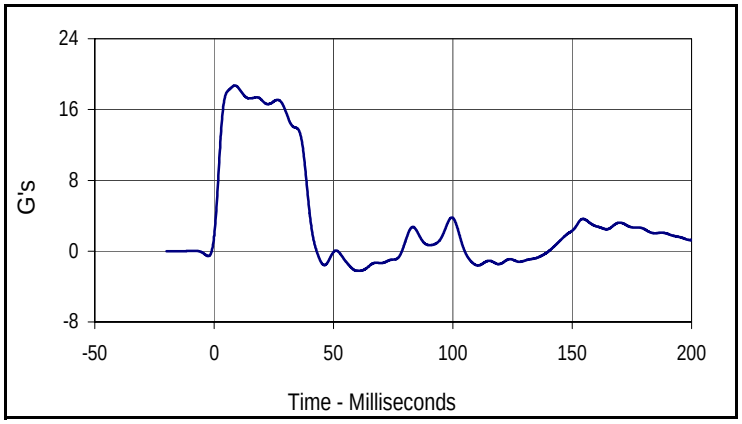
Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
73.2	57.2	-38.4	166.6



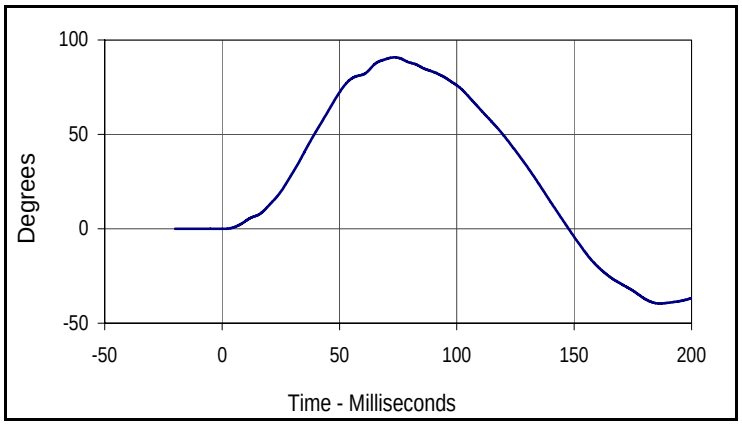
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
91.3	54.7	-24.5	105.1

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	5/10/09
ATD Serial No.:	035	Test I.D.:	E035A

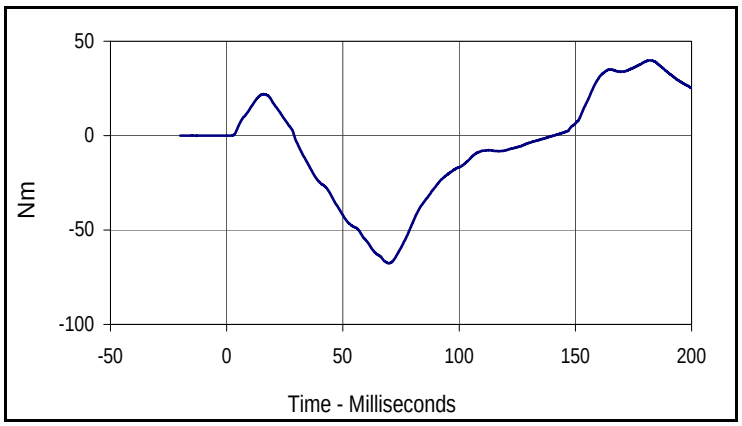
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.02	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.5	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.8	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	90.8	Pass
	Time	Msec.	72.0 to 82.0	73.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	147.7	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-67.6	Pass
	Time	Msec.	65.0 to 79.0	69.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	140.7	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.7	8.7	-2.2	60.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
90.8	73.5	-39.6	186.5



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
39.9	181.7	-67.6	69.9

Test Program:	Hybrid III 50th Percentile Male Knee Impact Test	Test Date:	5/10/09
ATD Serial No.:	035	Test I.D.:	L035A , R035A

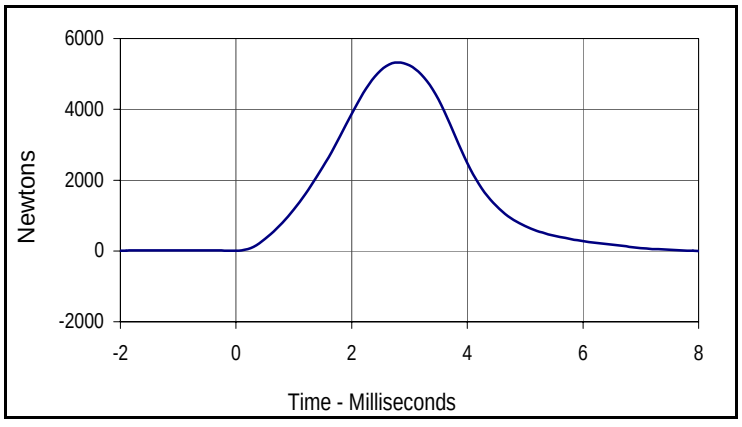
Left Knee

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	4950	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	5326	Pass
		Overall Test Results		Pass

Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4950.1	2.7	-45.7	9.0



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5326.2	2.8	-13.9	8.7

Test Program:	Hybrid III 50th Percentile Male External Measurements	Test Date:	5/10/09
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	886	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	87	Pass
F - Thigh clearance	mm	140 to 155	152	Pass
G - Elbow back to wrist pivot	mm	290 to 305	301	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	339	Pass
J - Elbow rest height	mm	190 to 211	209	Pass
K - Buttock to knee length	mm	579 to 604	594	Pass
L - Poplipteal length	mm	429 to 455	447	Pass
M - Knee pivot height	mm	485 to 500	486	Pass
N - Buttock poplipteal length	mm	452 to 477	468	Pass
O - Chest depth	mm	213 to 229	214	Pass
P - Foot length	mm	251 to 267	253	Pass
V - Shoulder breadth	mm	422 to 437	428	Pass
W - Foot breadth	mm	91 to 107	103	Pass
Y - Chest circumference	mm	970 to 1001	990	Pass
Z - Waist circumference	mm	836 to 866	854	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:	Dummy Damage Checklist	Test Date:	5/11/09
ATD Serial No.:	034	Test I.D.:	N/A

GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:

Test Program:	Dummy Damage Checklist	Test Date:	5/10/09
ATD Serial No.:	035	Test I.D.:	N/A

GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts: