

REPORT NUMBER: SPNCAP-KAR-11-020

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**HONDA MOTOR CO., LTD.
2011 HONDA CR-Z EX NAVI 3-DOOR HATCHBACK**

NHTSA No: HB5300

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



SEPTEMBER 22, 2010

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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NHTSA, Office of Crashworthiness Standards

Date: 


COTR, New Car Assessment Program
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Date: 

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15. Supplementary Notes																						
16. Abstract A 32.2 km/h (20 mph) 75° oblique impact Side NCAP test was conducted on the subject 2011 Honda CR-Z EX NAVI 3-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on September 22, 2010. The impact velocity was 31.90 km/h and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 24.4° C. The test vehicle's post-test maximum crush was 384 mm at level 3. The test vehicle's performance was as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Passenger ATD</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>251.8</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>G</td> <td>82</td> <td>39</td> </tr> <tr> <td>Combined Acetabular and Iliac Pelvic Force</td> <td>N</td> <td>5525</td> <td>3788</td> </tr> </tbody> </table> The door on the struck side of the vehicle did not separate from the vehicle at the hinges or latches. The opposite side door did not open during the impact event.				Measurement Description	Passenger ATD			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	251.8	Resultant Lower Spine Acceleration	G	82	39	Combined Acetabular and Iliac Pelvic Force	N	5525	3788
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Combined Acetabular and Iliac Pelvic Force	N	5525	3788																			
17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Washington, DC 20590																				
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2011 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2011 Honda CR-Z EX NAVI 3-Door Hatchback. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2011 Honda CR-Z EX NAVI 3-Door Hatchback. The subject vehicle was towed into the rigid pole at an angle of 75.5° and a velocity of 31.90 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California, on September 22, 2010. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010. Camera location and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) dummy was instrumented as follows:

- Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper and Lower Rib Displacement Potentiometers
- Lower Spine Triaxial Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report.

The following table summarizes the results of the test:

Dummy	HIC (36ms)	Resultant Lower Spine Acceleration	Pelvic Force (N)	
SID-IIs 5th Percentile Adult Female	252	39	Iliac Wing	1138
			Acetabulur	2665
			Sum	3788

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Airbag 1 (Torso/Pelvis)	Yes	Yes		
Side Airbag 2 (Curtain)	Yes	Yes		
Seat Belt Pretensioner	Yes	No		
Seat Belt Load Limiter	Yes	No		
Other				

GENERAL COMMENTS

The struck side door of the test vehicle remained closed and latched and was jammed shut after the impact. There was no separation at the hinges or the latches. The non-struck side door remained closed and latched. There were no driver injury values that exceeded their limits. There was no FMVSS 301 Stoddard solvent spillage or FMVSS 305 Electrolyte spillage as a result of the impact.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback NHTSA No. HB5300
Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 09/22/10

CONVERSION FACTORS

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	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback NHTSA No. HB5300
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 09/22/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	HB5300
Model Year	2011
Make	Honda
Model	CR-Z EX NAVI
Body Style	3-Door Hatchback
VIN	JHMZF1D68BS002868
Body Color	Storm Silver Metallic
Delivery Date	9/7/2010
Odometer Reading (km / mi)	117/73
Dealer	Metro Honda
Transmission	CVT
Final Drive	Front
Type / No. of Cylinders	Inline 4
Engine Displacement (L)	1.5
Engine Placement	Transverse
Roof Rack	No
Sunroof / T-Top	No
Tinted Glass	Yes
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 Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	
Rear Pass. Head/Torso Airbag	
Rear Pass. Torso Airbag	
Rear Pass. Toso/Pelvis Airbag	
Rear Pass. Pelvis Airbag	
Pretensioners	Yes
Load Limiters	Yes
Automatic Door Locks	Yes
Bucket Seats	Yes
Tilt Steering	Yes
Other	
Other	

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda Motor Co., Ltd.
Date of Manufacture	Jul-10

GVWR (kg)	1435
GAWR Front (kg)	815
GAWR Rear (kg)	625

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2			2	
Capacity Weight (VCW) (kg)				181.0	A
DSC x 68.04 (kg)				136.1	B
Cargo Weight (RCLW) (kg)				44.9	A-B

VEHICLE SEAT TYPE

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	Yes					Yes	
Rear or Second Row Seat							
Third Row Seat							

DATA SHEET NO. 1 ... (CONTINUED)

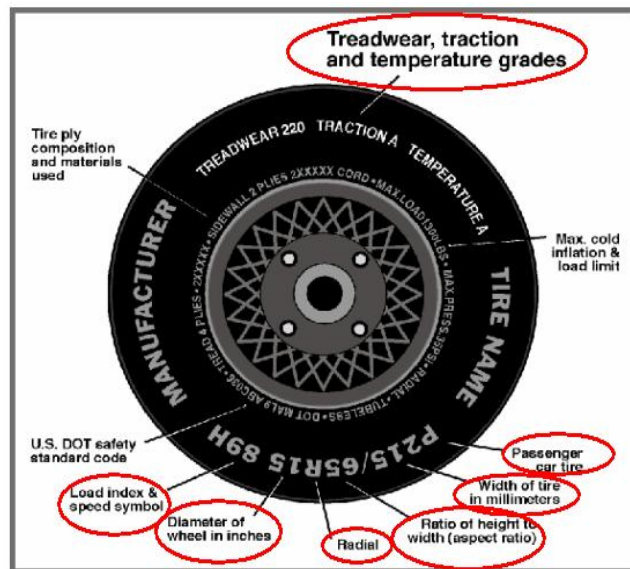
GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 09/22/10



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	350	350
Cold Pressure (kpa)	210	210
Recommended Tire Size	P195/55R16	P195/55R16
Tire Size on Vehicle	P195/55R16	P195/55R16
Tire Model	SP Sport 7000 AS	SP Sport 7000 AS
Tire Manufacturer	Dunlop	Dunlop
Treadwear	340	340
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	86V	86V
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Right	EUL3 4M7R 2710	EUL3 4M7R 2710
DOT Safety Code Left	EUL3 4M7R 2710	EUL3 4M7R 2710

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback NHTSA No. HB5300
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 09/22/10

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	375.5	259.0		403.0	287.0		391.5	302.5	
Right	kg	351.0	231.0		363.0	252.0		352.0	264.5	
Ratio	%	59.7%	40.3%	100.0%	58.7%	41.3%	100.0%	56.7%	43.3%	100.0%
Total	kg	726.5	490.0	1216.5	766.0	539.0	1305.0	743.5	567.0	1310.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1216.5	A
Actual Weight of 1 P572V ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.9	C
Calculated Vehicle Target Wt (TVTW)	kg	1310.4	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	As Delivered	As Tested	Fully Loaded
Driver Door Sill Angle (front-to-rear)	Deg	-0.4	-0.4	-0.1
Front Passenger Sill Angle (front-to-rear)	Deg	-0.4	-0.5	-0.1
Front Bumper Angle (left-to-right)	Deg	-0.1	-0.4	-0.4
Rear Bumper Angle (left-to-right)	Deg	0.0	-0.2	-0.4
Vehicle CG (Aft of Front Axle)	mm	981	1006	1054
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	32	43	45

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Weight of Ballast in Cargo Area	kg	46.5
Weight of Vehicle Components Removed	kg	38.5

Vehicle components removed to make Target Vehicle Test Weight:

Tail Lights (4.0 kg), Rear Wiper and Motor (1.0 kg), Rear Bumper Cover and Beam (12.0 kg),
Right Side Door Panel (3.5 kg), Trunk Liner and Trim (3.0 kg), Spare Tire and Tools (12.5 kg),
Right Side Mirror (1.5 kg), Cargo Cover (1.0 kg)

TEST VEHICLE IMPACT POINT DATA

Measurement Description	Units	Value
Vertical Impact Reference Line (Aft of Front Axle)	mm	1067
Actual Impact Point (Aft of Front Axle)	mm	1059
Impact Point Difference (- forward/+ rearward)	mm	-8

DATA SHEET NO. 2

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

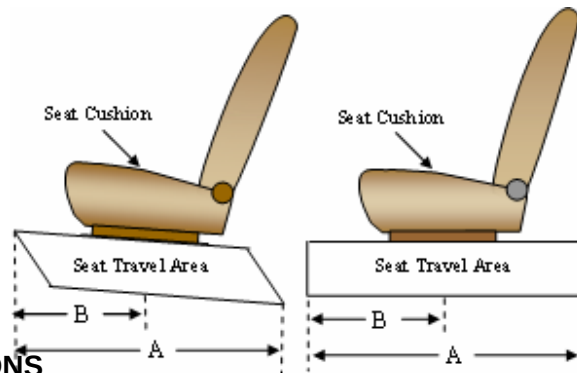
NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 09/22/10

SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rearmost possible position with the seat set at mid height. The driver's seat is set to the forward most position where the ATD will not contact any interior panels at the mid height position.

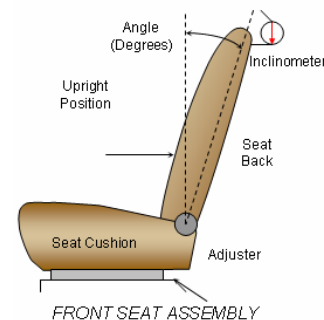


SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position	Cushion Range	Placed in Position
Driver Seat	240 mm	0 mm	4.7 - 5.9	5.3
Front Passenger Seat	180 mm	0 mm	Fixed	Fixed
Rear Seat - Struck Side				
Rear Seat - Non-Struck Side				

SEAT BACK ANGLE POSITIONING

The procedure for the driver is as follows: the seat back is set to level the driver ATD's (SID-IIs) head transverse instrumentation platform. The driver seat back angle is measured at the headrest post using a digital inclinometer.



SEAT BACK ANGLE POSITIONS

Seating Position	Degrees	Detent
Driver Seat Back Angle w/Seated Dummy	1.8	1
Front Passenger Seat Back Angle	1.8	1
Struck Side Rear Seat Back Angle		
Non-Struck Side Rear Seat Back Angle		

SEAT BELT UPPER ANCHORAGE POSITIONING

The seat belt upper anchorage is positioned to the manufacturer's design position for a 5th percentile adult female ATD. The seat belt upper anchorage was fixed.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

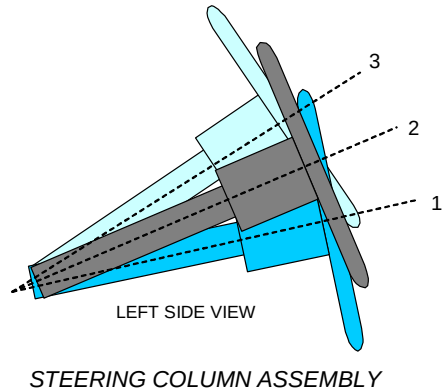
NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 09/22/10

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. A digital inclinometer is used to measure a plate placed across the rim of the steering wheel for angle.

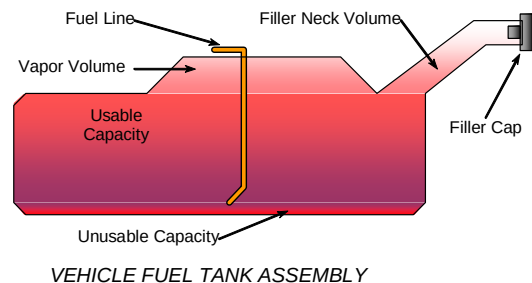


STEERING COLUMN POSITIONS

	Angle (°)	Fore-Aft Position (mm)
Lowermost Position, No. 1	15.2	0
Geometric Center Position, No. 2	17.1	17
Uppermost Position, No. 3	18.9	34
Steering Wheel Travel	3.7	34
Test Position	17.1	17

FUEL PUMP

The test vehicle is equipped with an electric fuel pump. The fuel filler door is located on the left rear fender. The standard fuel tank is located under the area behind the front seats.



FUEL CAPACITY DATA

Description	Liters
Usable Capacity of "Standard Tank"	40.12
Usable Capacity of "Optional Tank"	
Usable Capacity of Standard Tank as Specified In Owner's Manual	
Usable Capacity of Optional Tank as Specified in Owner's Manual	
92 - 94% of Usable Capacity	36.91 to 37.71
Actual Amount of Stoddard Solvent Used	37.31
1/3 of Usable Capacity	13.37

DATA SHEET NO. 3

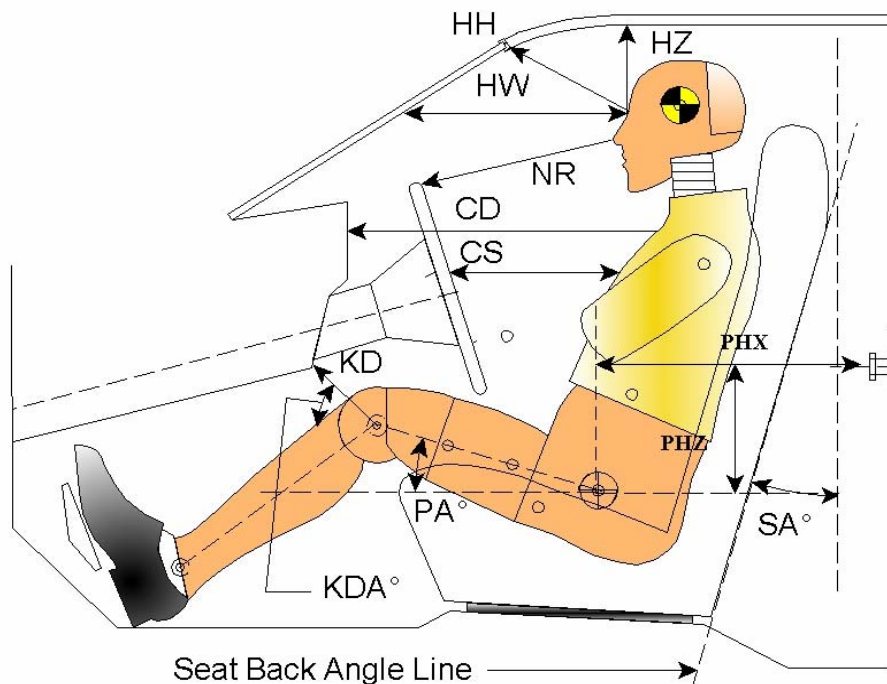
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10



DUMMY LONGITUDINAL CLEARANCE DIMENSIONS (S/N: 307)

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	277	36.8
HW	Head to Windshield	632	0.0
HZ	Head to Roof	181	90.0
NR	Nose to Rim	210	7.0
CD	Chest to Dash	390	16.0
CS	Chest to Steering Wheel	175	0.0
KDL / KDAL°	Left Knee to Dash	109	46.4
KDR / KDAR°	Right Knee to Dash	63	
PA°	Pelvic Angle		17.9
PHX	H-Point to Striker (x-direction)	613	
PHZ	H-Point to Striker (z-direction)	301	
SA°	Seat Back Angle		1.8

DATA SHEET NO. 4

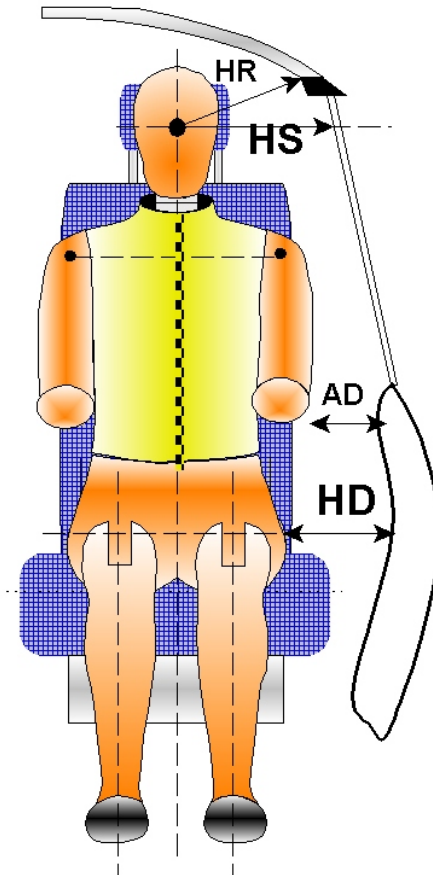
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10



DUMMY LATERAL CLEARANCE DIMENSIONS (S/N: 307)

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	241
HS	Head to Side Window	mm	333
AD	Arm to Door	mm	160
HD	H-Point to Door	mm	177

DATA SHEET NO. 5

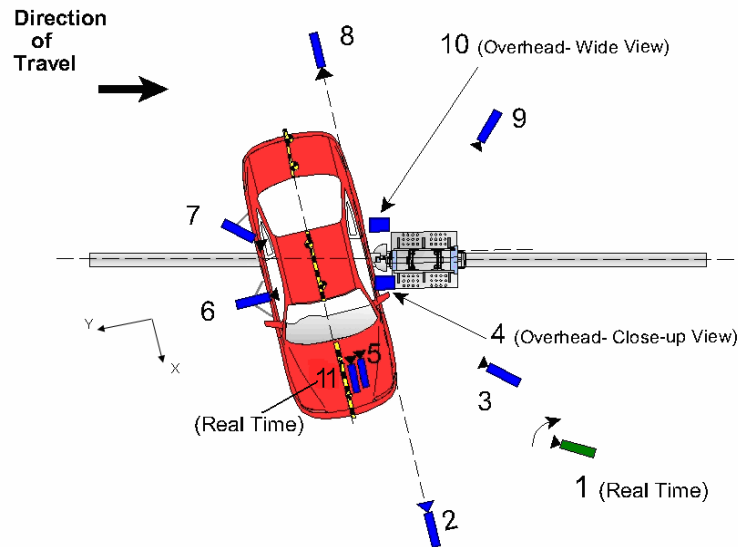
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10



CAMERA LOCATIONS

Camera No.	View	Coordinates (mm)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	24	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	8.5	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	12.5	1000
5	On-Board - Dummy Front View	1.46	0.41	-1.18	35	400
6	On-Board - Dummy Side View	-0.09	1.36	-1.06	14	1000
7	On-Board - Dummy Rear Oblique View	0.17	2.19	0.02	20	1000
8	Rear Ground Level - Impact View	-6.12	-6.23	-0.96	24	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	35	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	14	1000
11	Real Time Dummy Front View	1.66	0.56	-1.11		30

Reference: +X = Forward of Vehicle

+Y = Right of Vehicle

+Z = Down

* All Measurements accurate to ± 6 mm

NOTE: Vehicle was at a 15° angle to the rigid pole

INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	21
Pole Load Cells	8
Contact Switches	3
Airbag Timing Sensor	2
Total No. of Data Channels	50

DATA SHEET NO. 6

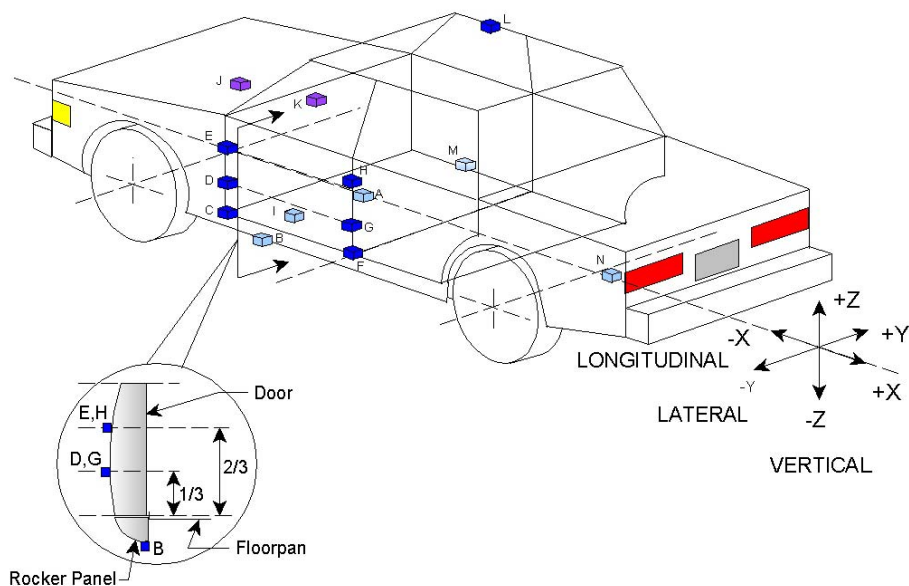
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

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VEHICLE ACCELEROMETER LOCATIONS

	Sensor Description	Coordinates (mm)		
		X	Y	Z
A	Vehicle CG Accelerometer	1160	0	560
	Vehicle CG ARS	1160	0	560
B	Left Floor Sill	2360	770	170
C	A-Pillar Sill	2510	810	330
D	A-Pillar Lower	2510	810	540
E	A-Pillar Mid	2510	80	720
F	B-Pillar Sill			
G	B-Pillar Lower			
H	B-Pillar Mid			
I	Driver Seat	1720	560	240
J	Engine Top	3100	-350	750
K	Firewall	1820	-200	740
L	Right Roof Sill	1595	-455	1310
M	Right Floor Sill	1580	-650	260
N	Rear Floorpan	570	370	450

Reference: +X = Forward
 • +Y = To Right
 • +Z = Down

DATA SHEET NO. 7

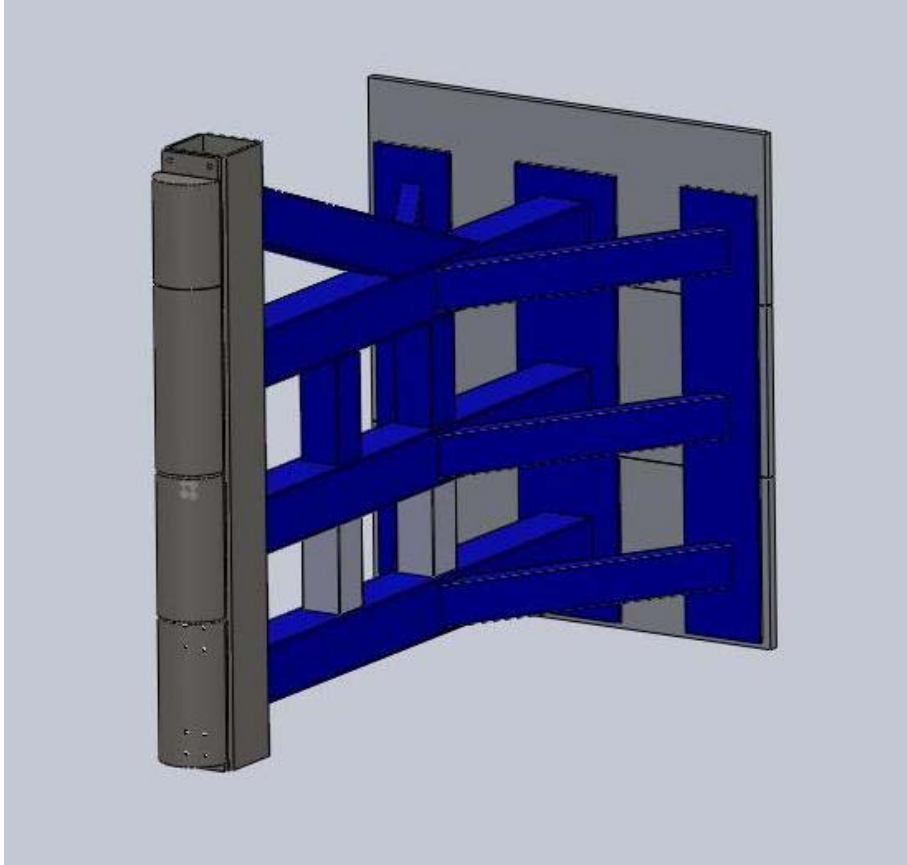
RIGID POLE LOAD CELL DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 09/22/10



RIGID POLE LOAD CELL LOCATIONS

ID	Units	Height From Ground
1	mm	87
2	mm	468
3	mm	648
4	mm	978
5	mm	1168
6	mm	1651
7	mm	1816
8	mm	2057

DATA SHEET NO. 8

POST-TEST OBSERVATIONS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback NHTSA No. HB5300
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 09/22/10

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver Dummy
Dummy Type/Serial No.	P572V (SID-IIs) / Serial No. 299
Head Contact	Curtain Airbag, Seat Back, Head Restraint
Upper Torso Contact	Side Torso Airbag
Lower Torso Contact	Door Panel
Left Knee Contact	Right Knee, Door Panel, Knee Bolster
Right Knee Contact	Left Knee

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Jammed shut	
Right Side Door Opening	Remained closed and operational	
Seat Movement	None	
Seatback Failure	No	

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation occurred
Sill Separation	No separation occurred
Windshield Damage	Broken
Window Damage	Left front window broken
Other Notable Effects	

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Installed	Deployed	Installed	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Airbag 1 (Torso/Pelvis)	Yes	Yes		
Side Airbag 2 (Curtain)	Yes	Yes		
Seat Belt Pretensioner	Yes	No		
Seat Belt Load Limiter	Yes	No		
Other				

VEHICLE SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset From Vertical Reference Line	mm	+/- 38	-8 (Left)
Trap No. 1 Velocity (Primary)	km/h	30.4 to 32.0	31.9
Trap No. 2 Velocity (Redundant)	km/h	30.4 to 32.0	31.9

DATA SHEET NO. 9

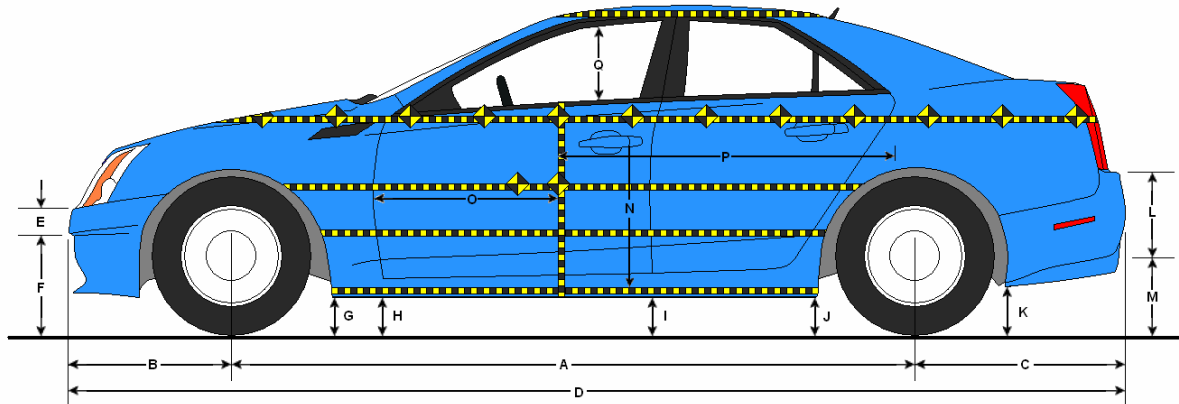
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 09/22/10



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Vehicle Wheelbase	2436	2371	-65
B	Front Axle to FSOV	952	964	12
C	Rear Axle to RSOV	529	549	20
D1	Total Vehicle Length at Left Side	2714	2593	-121
D2	Total Vehicle Length at Centerline	3920	3884	-36
D3	Total Vehicle Length at Right Side	2710	2723	13
E	Front Bumper Thickness	110	110	0
F	Front Bumper Bottom to Ground	376	413	37
G	Sill Height at Front Wheel Well	139	183	44
H	Sill Height at Front Door Leading Edge	140	179	39
I	Sill Height at B-Pillar	187	248	61
J1	Sill Height at Rear Wheel Well	183	274	91
J2	Pinch Weld Height at Rear Wheel Well	176	207	31
K	Sill Aft of Rear Wheel Well	435	444	9
L	Rear Bumper Thickness	121	123	2
M	Rear Bumper Bottom to Ground	506	518	12
N	Sill Height to Window Bottom Sill	517	562	45
O	Front Door Leading Edge to Impact CL	640	551	-89
P	Rear Door Trailing Edge to Impact CL	1716	1641	-75
Q	Front Window Opening	408	423	15
R	Right Side Length	2710	2723	13
S	Left Side Length	2714	2593	-121
T	Vehicle Width at B-Pillar	1744	1700	-44

All measurements in (mm) with tolerance of ± 3 mm

DATA SHEET NO. 10

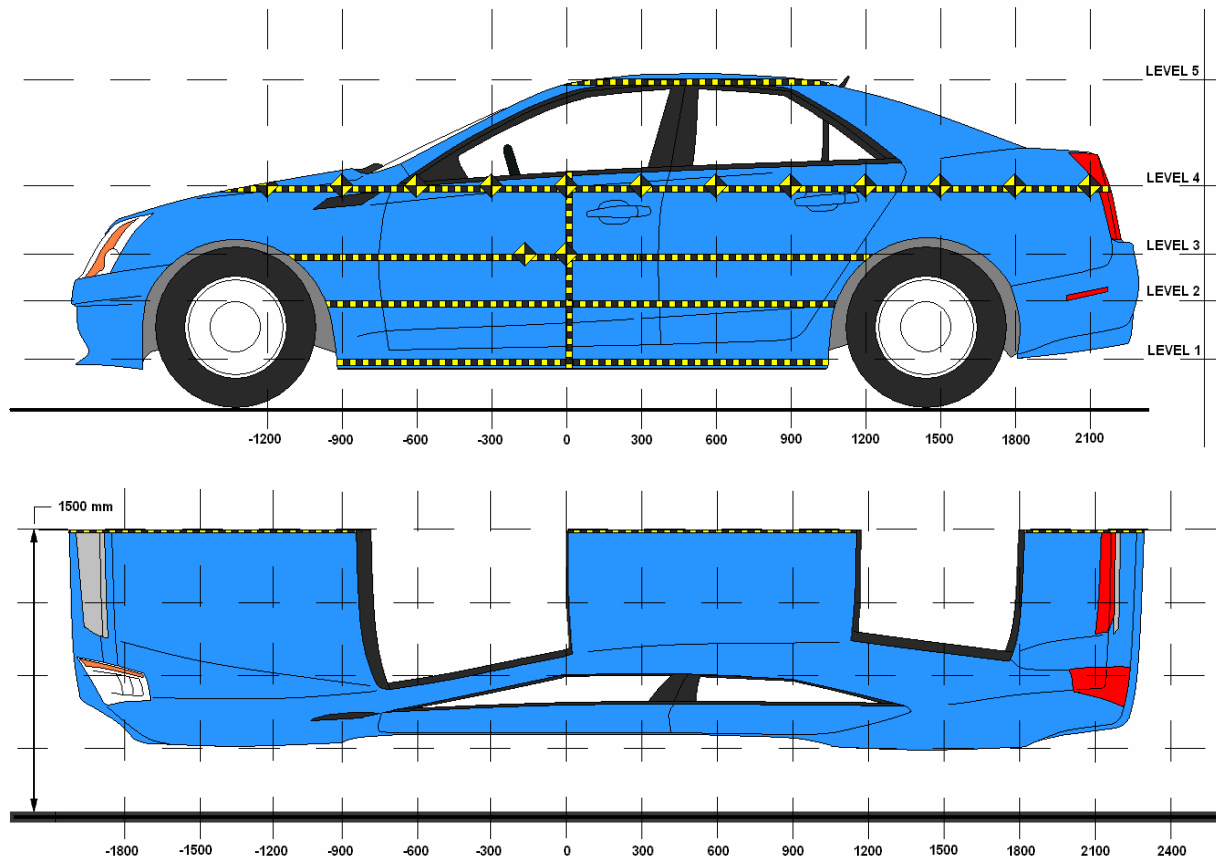
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10



NOTE: All measurements are in millimeters (mm)

Level	Description	Height Above Ground (mm)
1	Sill Top Height	215
2	Occupant H-Point Height	464
3	Mid-Door Height	627
4	Window Sill Height	790
5	Window Top Height	1267

DATA SHEET NO. 10 ... (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 09/22/10

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900			635	723				685	765				50	42	
-750			642	712				698	764				56	52	
-600	659	637	650	700		718	709	715	808		59	72	65	108	
-450	663	640	649	691		782	784	789	876		119	144	140	185	
-300	666	641	647	683		843	856	866	956		177	215	219	273	
-150	669	643	645	678		910	944	948	1035		241	301	303	357	
0	670	646	645	676	949	979	1025	1029	1008	1113	309	379	384	332	164
150	674	650	646	681	944	923	978	993	922	1106	249	328	347	241	162
300	678	653	647	683	946	823	898	902	847	1085	145	245	255	164	139
450	680	656	650	682	953	736	819	825	782	1054	56	163	175	100	101
600	682	655	652	683	964	659	732	749	751	1030	-23	77	97	68	66
750	675	651	651	685	979	603	683	704	751	1016	-72	32	53	66	37
900	662	640	645	687	996	571	648	707	743	1017	-91	8	62	56	21
1050			634	683				695	729				61	46	
1200			625	676				676	721				51	45	
1350															
1500															
1650															
1800															
1950															
2100															
2250															
2400															
2550															
2700															
2850															

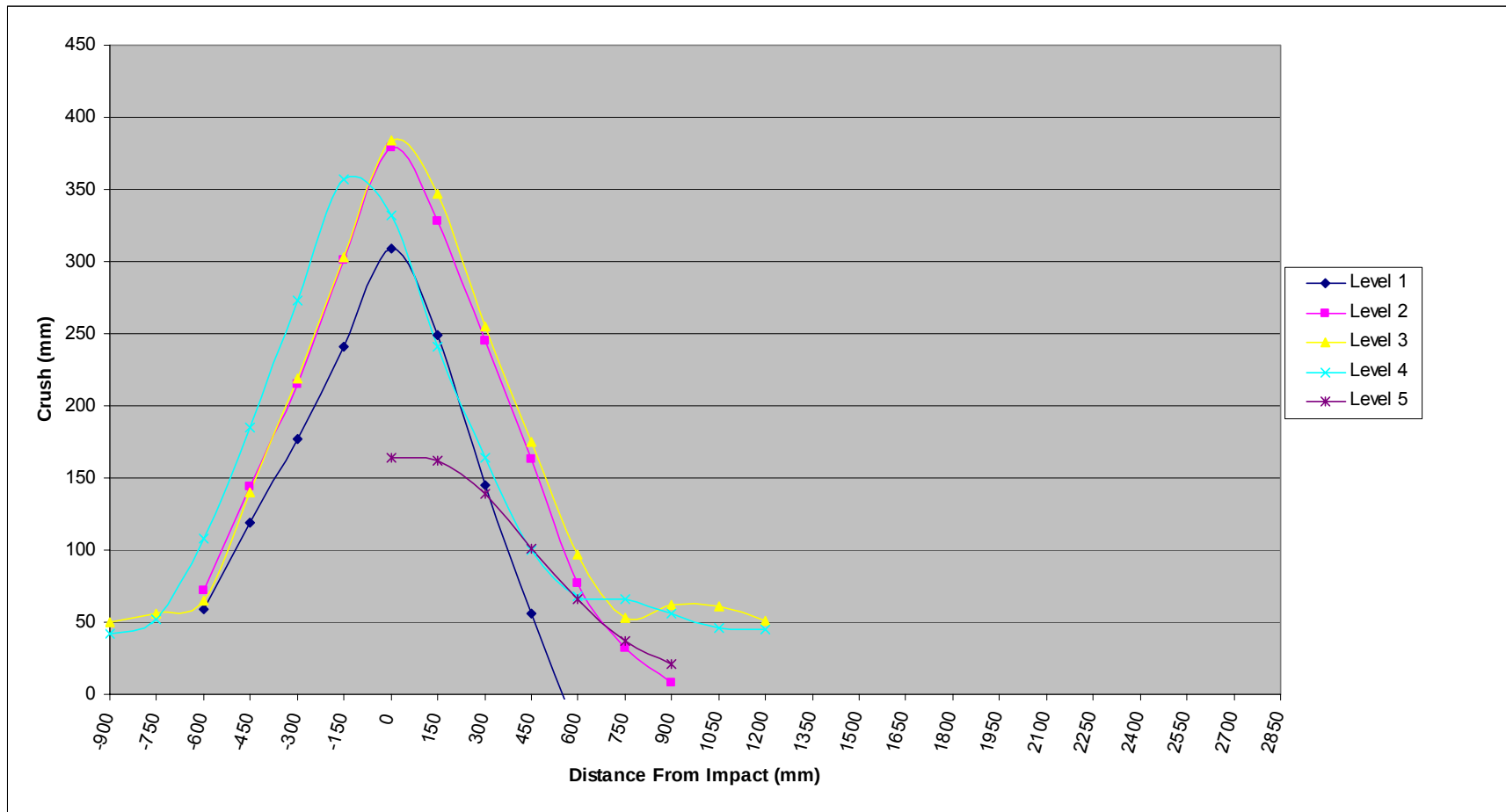
MAXIMUM CRUSH DATA

	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	309	379	384	357	164
Distance From Impact	mm	0	0	0	-150	0

DATA SHEET NO. 10 ... (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback
Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

NHTSA No. HB5300
Test Date: 09/22/10



DATA SHEET NO. 11

FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

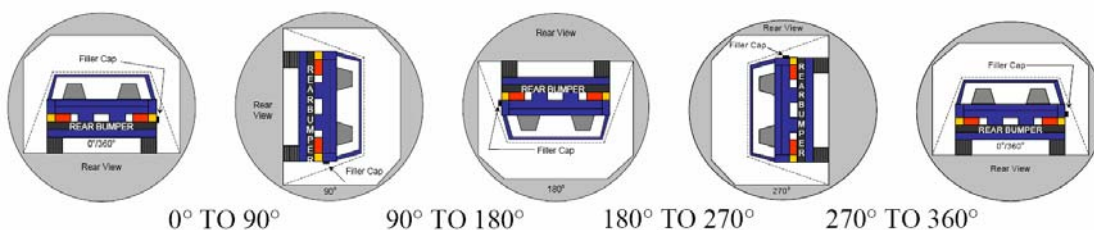
Test Date: 09/22/10

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 24.4° C

Test Time: 4:00 PM

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



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	83	307	390
90° To 180°	82	300	382
180° To 270°	75	300	375
270° To 360°	85	300	385

FMVSS 301 SPILLAGE TABLE

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° To 90°	0	0		
90° To 180°	0			
180° To 270°	0			
270° To 360°	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. 12**FMVSS NO. 305 ELECTRIC VEHICLE PROPULSION SYSTEM DATA**Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door HatchbackNHTSA No.: HB5300Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid PoleTest Date: 09/22/10**ELECTRIC VEHICLE PROPULSION SYSTEM DATA**

Type of Electric Vehicle	Gas-Electric Hybrid
Propulsion Battery Type	Ni-MH
Nominal Voltage	100 V
Physical Location of Automatic Propulsion Battery Disconnect	No Automatic Disconnect
Auxilliary Battery Type	Lead-Acid Battery

PROPULSION BATTERY SYSTEM DATA

Electrolyte Fluid Type	
Electrolyte Fluid Specific Gravity	
Electrolyte Fluid Kinematic Viscosity	
Electrolyte Fluid Color	Orange
Propulsion Battery Coolant Type, Color, Specific Gravity	
Location of Battery Modules	Rear Cargo Compartment

DATA SHEET NO. 13

FMVSS NO. 305 POST-IMPACT DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No.: HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10

ELECTROLYTE SPILLAGE MEASUREMENTS

A. From impact until 30 minutes later: 0.0 L

(Maximum Allowable = 5.0 L total)

B. Spillage Details: No leakage occurred

MEASUREMENT DESCRIPTIONS

Code	Units	Description
V_b	V	Propulsion Battery Voltage
V_1	V	Propulsion Battery Negative to Chassis
V_2	V	Propulsion Battery Positive to Chassis
R_o	Ω	Resistance of Grounding Circuit
V_1'	V	Propulsion Battery Negative to Chassis with R_o installed
V_2'	V	Propulsion Battery Positive to Chassis with R_o installed
R_{i1}	Ω	Electrical Isolation Value of Propulsion Battery Negative to Chassis Ground
R_{i2}	Ω	Electrical Isolation Value of Propulsion Battery Positive to Chassis Ground
R_i	Ω	Electrical Isolation Value of Propulsion Battery - The Minimum of R_{i1} and R_{i2}
R_i/V_b	Ω/v	Electrical Isolation per Volt of Propulsion Battery

ELECTRICAL ISOLATION DATA

Code	Units	Threshold	Pre-Test	Post-Test
V_b	V		108.5	108.5
V_1	V		0.0	0.0
V_2	V		0.0	0.0
R_o	Ω		218,000	218,000
V_1'	V		0.0	0.0
V_2'	V		0.0	0.0
R_{i1}	Ω		Zero Volts	Zero Volts
R_{i2}	Ω		Zero Volts	Zero Volts
R_i	Ω		Zero Volts	Zero Volts
R_i/V_b	Ω/V	500	Zero Volts*	Zero Volts*

* "Zero Volts" is considered as being compliant.

DATA SHEET NO. 14

FMVSS NO. 305 STATIC ROLLOVER DATA

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No.: HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10

STATIC ROLLOVER ELECTRICAL ISOLATION DATA

Code	Units	Threshold	Rollover Position			
			90°	180°	270°	360°
V_b	V		108.2	108.2	108.2	108.2
V_1	V		0.0	0.0	0.0	0.0
V_2	V		0.0	0.0	0.0	0.0
R_o	Ω		219,500	219,500	219,500	219,500
V_1'	V		0.0	0.0	0.0	0.0
V_2'	V		0.0	0.0	0.0	0.0
R_{i1}	Ω		Zero Volts	Zero Volts	Zero Volts	Zero Volts
R_{i2}	Ω		Zero Volts	Zero Volts	Zero Volts	Zero Volts
R_i	Ω		Zero Volts	Zero Volts	Zero Volts	Zero Volts
R_i/V_b	Ω/V	500	Zero Volts*	Zero Volts*	Zero Volts*	Zero Volts*

FMVSS 305 Requirements: Maximum allowable propulsion battery electrolyte spillage is 5.0 L.

FMVSS 305 ELECTROLYTE SPILLAGE REQUIREMENT

Maximum Allowable Spillage	5.0L throughout impact test and static rollover
----------------------------	---

FMVSS 305 ELECTROLYTE COLLECTED

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

ELECTROLYTE SPILLAGE LOCATION TABLE

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

* - "Zero Volts" is considered as being compliant.

DATA SHEET NO. 15

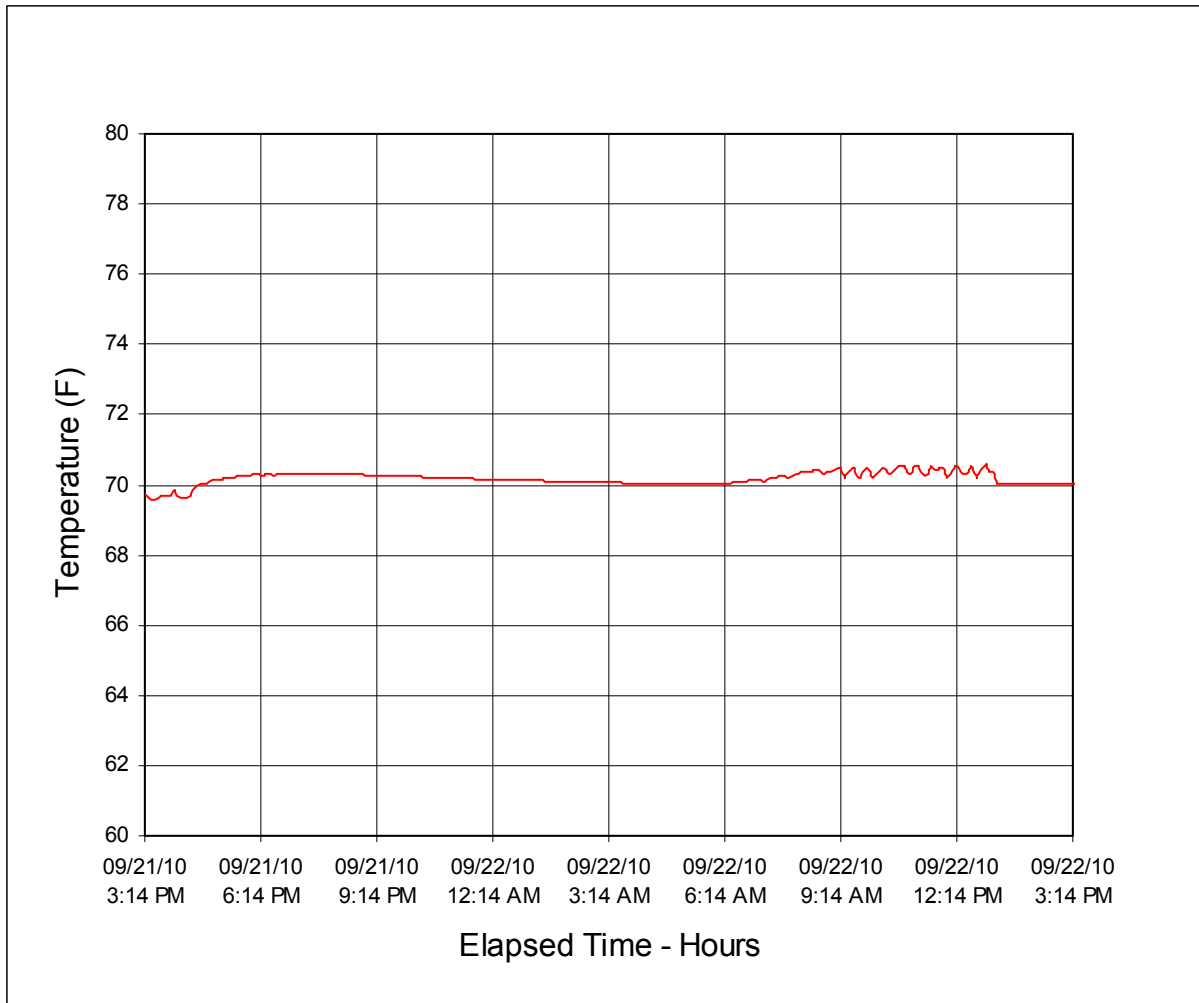
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback

NHTSA No. HB5300

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 09/22/10



APPENDIX A
PHOTOGRAPHS

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96	Post-Test Battery Mounting Hardware	A-48
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FIGURE 1. As-Delivered Right Front Three-Quarter View of Test Vehicle



FIGURE 2. As-Delivered Left Rear Three-Quarter View of Test Vehicle



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front Three-Quarter View of Test Vehicle



FIGURE 6. Post-Test Left Front Three-Quarter View of Test Vehicle



FIGURE 7. Pre-Test Left Side View of Test Vehicle



FIGURE 8. Post-Test Left Side View of Test Vehicle



FIGURE 9. Pre-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 10. Post-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



FIGURE 13. Pre-Test Right Side View of Test Vehicle



FIGURE 14. Post-Test Right Side View of Test Vehicle



FIGURE 15. Pre-Test Overhead View of Test Vehicle and Pole



FIGURE 16. Post-Test Overhead View of Test Vehicle and Pole



FIGURE 17. Pre-Test Left Side View of Pole
Positioned Against Side of Vehicle at Impact Point



FIGURE 18. Pre-Test Right Side View of Pole
Positioned Against Side of Vehicle at Impact Point



FIGURE 19. Pre-Test Close-Up View of Impact Point Target

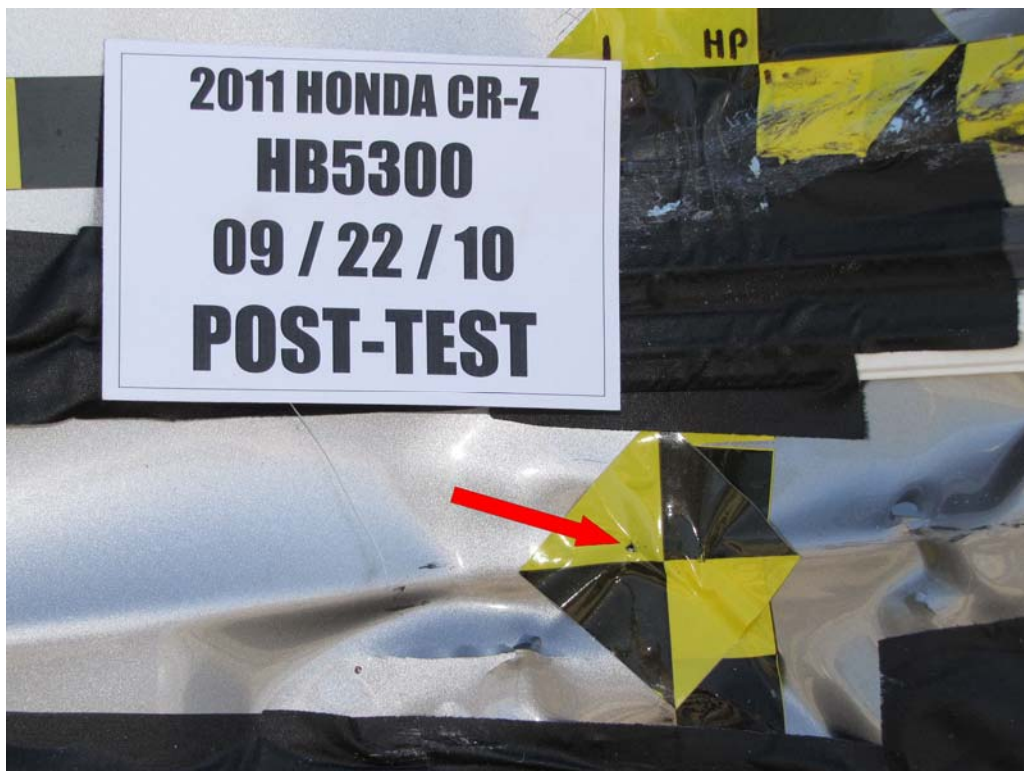


FIGURE 20. Post-Test Close-Up View of Impact Point Target Showing Impact Location



FIGURE 21. Pre-Test Front Close-Up View of Dummy



FIGURE 22. Post-Test Front Close-Up View of Dummy



FIGURE 23. Pre-Test Left Side View of Dummy Showing Belt, Chalking, and Contact Switches



FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Driver Door Top View



FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Driver Door Top View



FIGURE 26. Pre-Test Frontal View of Seat Back Prior to Dummy Positioning



FIGURE 27. Pre-Test Frontal View of Dummy Head and Shoulders
in Relation to Head Restraint



FIGURE 28. Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning



FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



FIGURE 30. Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test View of Dummy's Head Showing Dummy's Head Is Level

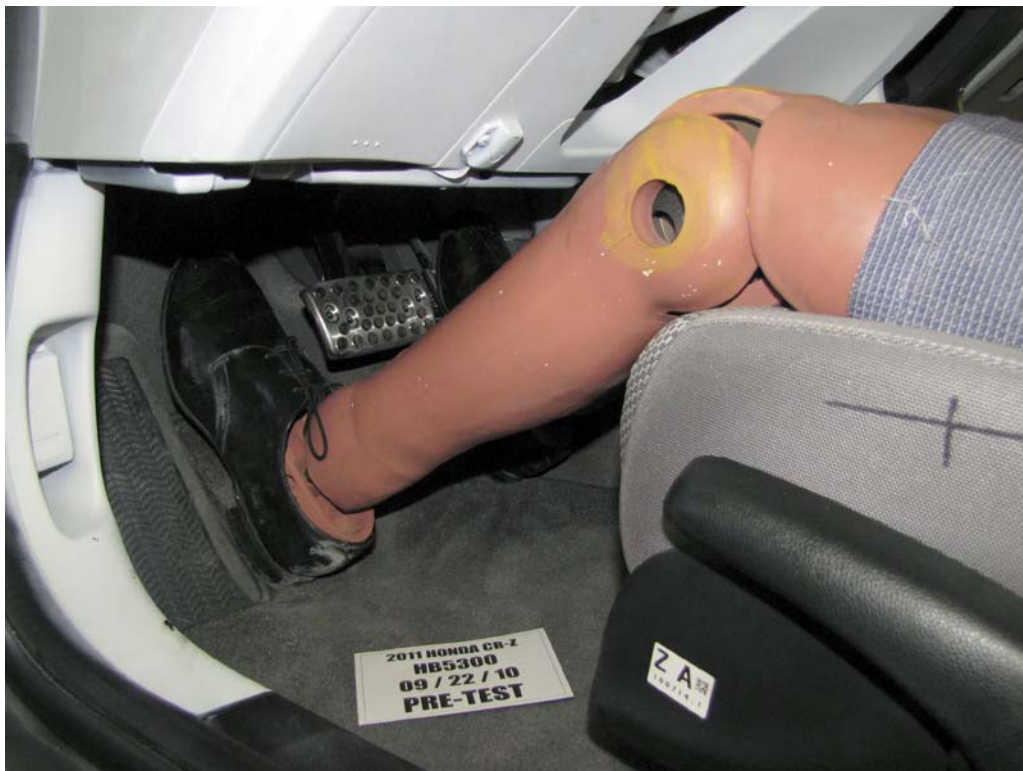


FIGURE 32. Pre-Test Placement of Dummy's Feet



FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. Pre-Test View of Parking Brake



FIGURE 36. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 38. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 39. Pre-Test Dummy and Driver Door Clearance View



FIGURE 40. Post-Test Dummy and Driver Door Clearance View



FIGURE 41. Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment



FIGURE 42. Post-Test Right Side View of Dummy and Front Seat Occupant Compartment



FIGURE 43. Pre-Test Inner Driver Door Panel View



FIGURE 44. Post-Test Inner Driver Door Panel View
Showing Dummy Contact Locations



FIGURE 45. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View

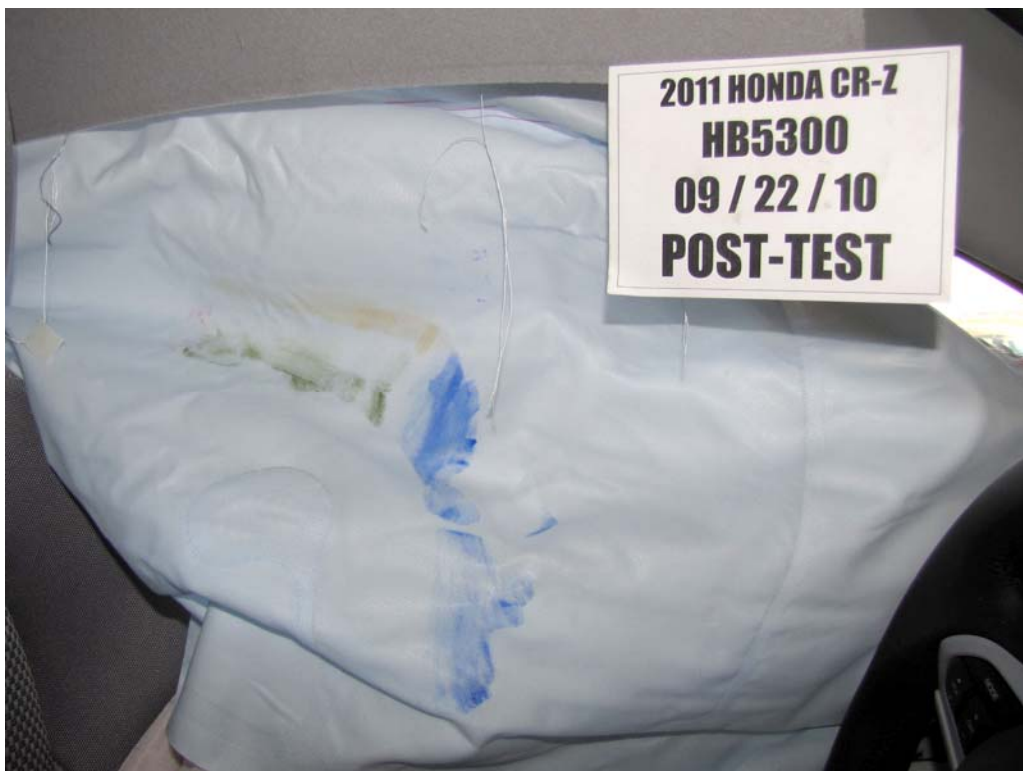


FIGURE 46. Post-Test Dummy Close-Up Head Contact with Side Airbag View



FIGURE 47. Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact with Side Airbag View



FIGURE 49. Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View

**No Contact with
Side Airbag
Photograph Not Applicable**

FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



FIGURE 51. Pre-Test View of Fuel Filler Cap



FIGURE 52. Post-Test View of Fuel Filler Cap

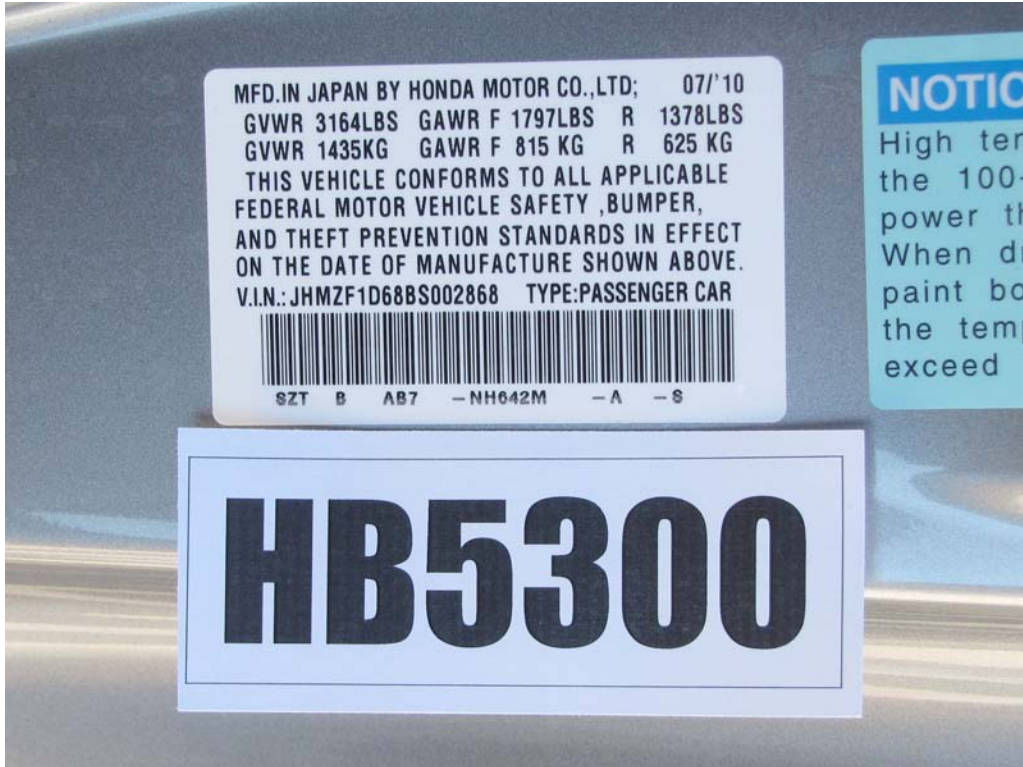


FIGURE 53. Close-Up View of Vehicle's Certification Label



FIGURE 54. Close-Up View of Vehicle's Tire Information Placard



FIGURE 55. Pre-Test Pole Barrier Front View



FIGURE 56. Post-Test Pole Barrier Front View



FIGURE 57. Pre-Test Pole Barrier Side View



FIGURE 58. Post-Test Pole Barrier Side View

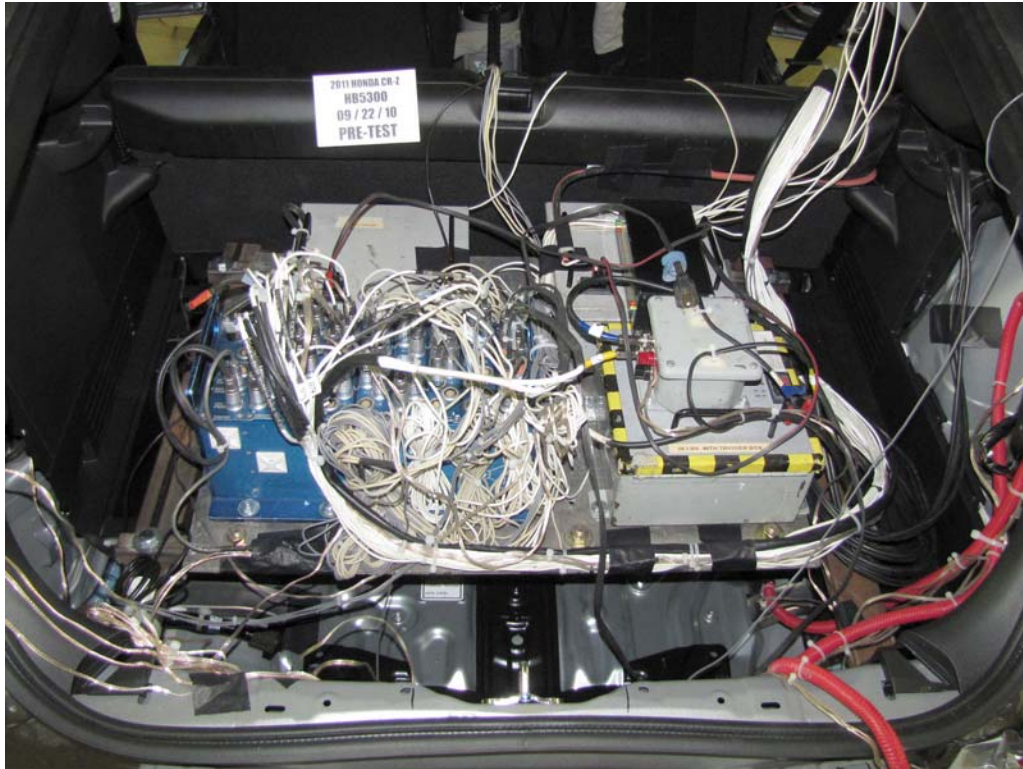


FIGURE 59. Pre-Test Ballast View



FIGURE 60. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 61. FMVSS No. 301-305 Rollover 0 Degrees



FIGURE 62. FMVSS No. 301-305 Rollover 90 Degrees



FIGURE 63. FMVSS No. 301-305 Rollover 180 Degrees



FIGURE 64. FMVSS No. 301-305 Rollover 270 Degrees



FIGURE 65. FMVSS No. 301-305 Rollover 360 Degrees



FIGURE 66. Impact Event

HONDA

2011 CR-Z 3DR EX NAVI

VIN: JHMZF1468S002868
 ENGINE NUMBER: LEA1-1012035
 CONTROL NUMBER: 471832

Manufacturer's Suggested Retail Price
\$23,210.00

Full Truck of Fuel
 No Charge

City MPG
35
 Expected range for most drivers
 29 to 41 MPG

Estimated Annual Fuel Cost
\$1,215
 Based on 15,000 miles at \$3.00 per gallon

Highway MPG
39
 Expected range for most drivers
 32 to 46 MPG

Combined Fuel Economy
37
 At Two Seaters

Your actual mileage will vary depending on how you drive and maintain your vehicle.

STANDARD EQUIPMENT AT NO EXTRA COST

TECHNICAL FEATURES *

- 122hp 1.5L SOHC 16-Valve i-VTEC 4-Cylinder Engine with Integrated Motor Assisted (IMA)
- Idle Stop Function
- Continuously Variable Transmission (CVT)
- Electric Power-Assisted Rack-and-Pinion Steering
- Cruise Aid System
- 3-Mode Drive System (Sport/Normal/Eco)
- ECO Assist System
- Immobilizer Theft-Deterrent System
- CARIS-Certified AT-PZEV

SAFETY FEATURES *

- Driver's and Front Passenger's Dual-Stage Airbags (SRS)
- Driver's and Front Passenger's Side Airbags
- Side Curtain Airbags
- Anti-Lock Braking System (ABS)
- Brake Assist
- Electronic Brake Distribution (EBD)
- Vehicle Stability Assist (VSA)
- 3-Point Seat Belts
- Tire Pressure Monitoring System
- Active Front Head Restraints
- Side Impact Door Beams
- Front and Rear Crumple Zones
- ACE Body Structure
- Daytime Running Lights (DRL)

INTERIOR FEATURES *

- Honda Navigation System with Voice Recognition
- 260-Watt AM/FM/CD Premium Audio System with 7 Speakers Incl. Subwoofer and MP3/WMA Playback

- Leather-Wrapped Steering Wheel
- Steering Wheel Mounted Controls
- MP3/Auxiliary Input Jack
- USB Audio Interface
- Bluetooth Hands-FreeLink
- Automatic Climate Control System with Air Filtration System
- ECO Assist Indicators
- Mesh Sport Seats
- Driver's Seat Height Adjustment
- Power Windows and Programmable Auto Door Locks
- Driver's Auto Up/Down Window
- Tilt & Telescopic Steering Column
- Front Map Lights & Cargo Area Light
- Illuminated Mirror Vanity Mirrors
- 12-Volt Power Outlet
- Upper Instrument Panel Storage
- Paper Cargo Console
- Retractable Cargo Area Cover
- Exterior Temperature Gauge
- Aluminum Pedals
- Floor Mats
- Cruise Control
- Maintenance Minder System

EXTERIOR FEATURES *

- 18" x 4.5" Alloy Wheels
- P155/55 R16 All-Season Tires
- Variable Intermittent Windshield Wipers
- Rear Wiper with Washer
- Rear Window Outliner
- Heated Power Door Mirrors with Turn Indicators
- High-Intensity Discharge Headlights
- Auto-On/Off Headlights
- Fog Lights
- LED Brake Lights
- Remote Entry with Security System

Destination and Handling
 750.00

TOTAL VEHICLE PRICE
 (Includes Pre-Delivery Service)
\$23,960.00

License and title fees, state and local taxes and dealer options and accessories are not included in the manufacturer's suggested retail price.

Environmental Performance

Protect the environment, choose vehicles with higher scores:

Global Warming Score

10
 Average new vehicle
 Cleanest

Smog Score

9
 Average new vehicle
 Cleanest

Vehicle emissions are a primary contributor to global warming and smog. Scores are determined by the California Air Resources Board based on this vehicle's measured emissions. Please visit www.DriveClean.ca.gov for more information. AIR RESOURCES BOARD

METRO HONDA
 9399 AUTOPLEX DRIVE
 MONTCLAIR, CA 91763

PORT OF ENTRY: SAN DIEGO
 DELIVERY POINT: LOS ANGELES
 SHIP: 601-401542
 ROWSPACE:
 TRANS METHOD: TRUCK
 VIN: JHMZF1468S002868

ORIG. DLN: 207427
 REF. NO: 40279
 HN CODE: HN-4692
 EMISSION: 50 STATE
 DEALER: 207427

FOR THIS VEHICLE
 First Assembly Plant:
SUZUKA, MIE JAPAN
 Country of Origin: Engine:
JAPAN
 Transmission:
JAPAN

HSC 39037.05 Low-Emission Motor Vehicle

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS COUNTRY
 U.S./Canadian Parts Content: **0 %**
 Major Sources of Foreign Parts Content:
JAPAN 95 %

NOTE: Parts content does not include final assembly, distribution or other non-parts costs.

GOVERNMENT SAFETY RATINGS

Crash	Driver	Passenger	Not Rated
Frontal	Driver	Passenger	Not Rated
Star ratings based on the risk of injury in a frontal impact.			
Side	Front seat	Rear seat	Not Rated
Star ratings based on the risk of injury in a side impact.			
Rollover	Not Rated		
Star ratings based on the risk of rollover in a single vehicle crash.			

Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest.
 Source: National Highway Traffic Safety Administration (NHTSA).

www.safercar.gov or 1-888-327-4236

This vehicle is equipped with a front bumper of a type that has been tested at an impact speed of 5 miles per hour, and a rear bumper of a type that has been tested at an impact speed of 5 miles per hour, resulting in no damage to the vehicle's body and safety systems and minimal damage to the bumper and attachment hardware. "Minimal damage to the bumper" means minor cosmetic damage that can be repaired with the use of common repair materials, and without replacing any parts. The stronger the bumper, the less likely the vehicle will require repair after a low-speed collision. This vehicle exceeds the current federal bumper standard of 2.5 miles per hour.

FIGURE 67. Monroney Label

Head Restraints

Your vehicle is equipped with head restraints in both seating positions. However, they are non-adjustable. Head restraints are effective for protection against whiplash and other rear-impact crash injuries.

Removing and Installing the Head Restraint for Cleaning

To remove the head restraint:

1. Unhook the strap on the outside edge of the seat-back.
2. Pull out the strap throughout the band on the outside edge of the head restraint.
3. Push the release button, and pull the head restraint upward.

To install the head restraint:

1. Put the legs back in place, then slightly lower it.
2. Do not pull it down fully until it locks in place.
3. Insert the strap onto the band, then hook it to the magnet on the outside edge of the seat-back.
4. Push the head restraint down until it locks. Make sure the head restraint locks in place when you reinstall it.

Head Restraints

WARNING
 Failure to reinstall the head restraints can result in severe injury during a crash. Always replace the head restraints before driving.

The driver's and passenger's seats have active head restraints.

Maintain a Proper Sitting Position

After all occupants have adjusted their seats, and put on their seat belts, it is very important that they continue to sit upright, well back in their seats, with their feet on the floor, until the vehicle is safely parked and the engine is off.

Sitting improperly can increase the chance of injury during a crash. For example, if an occupant slouches, lies down, turns sideways, sits forward, leans forward or sideways, or puts one or both feet up, the chance of injury during a crash is greatly increased.

In addition, an occupant who is out of position in the seat can be seriously or fatally injured in a crash by striking interior parts of the vehicle or being struck by an inflating front airbag.

Active Head Restraints

The driver's and passenger's seats have active head restraints. In a rear impact, an occupant properly secured by a seat belt will be pushed against the seat back and the head restraint will move forward. This reduces the distance between the restraint and the occupant's head. It also helps protect the occupants against the likelihood of whiplash and injuries to the neck and upper spine.

After a collision, the activated restraint should return to its normal position. If the restraints do not return to their normal position, or in the event of a severe collision, have the vehicle inspected by a dealer.

Maintain a Proper Sitting Position

WARNING
 Sitting improperly or out of position can result in serious injury or death in a crash. Always sit upright, well back in the seat, with your feet on the floor.

Active Head Restraints

To look for the active head restraint to operate properly:

- Do not hang any items on the head restraints or from the restraint legs.
- Do not place any objects between an occupant and the seat back.

After a collision, the activated restraint should return to its normal position. If the restraints do not return to their normal position, or in the event of a severe collision, have the vehicle inspected by a dealer.

FIGURE 68. Head Restraint Use and Adjustment Information from Vehicle Manual

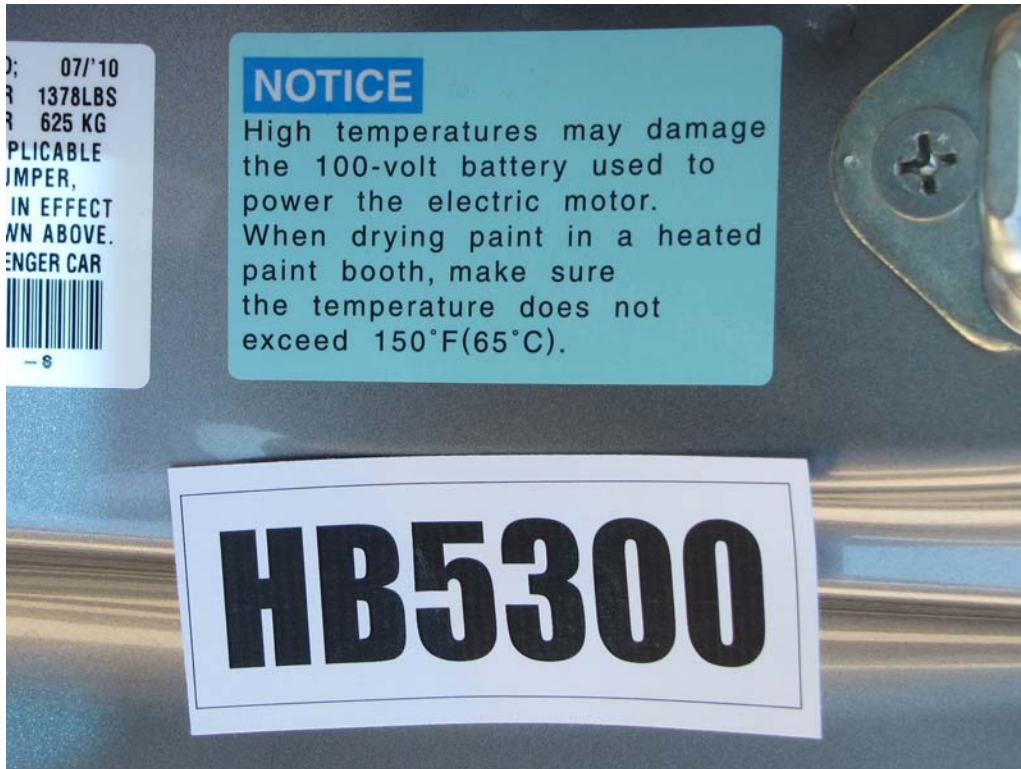


FIGURE 69. Hybrid System Label



FIGURE 70. Hybrid System Label



FIGURE 71. Hybrid System Label



FIGURE 72. Hybrid System Label



FIGURE 73. Hybrid System Label



FIGURE 74. Pre-Test Electrical Propulsion Components



FIGURE 75. Post-Test Electrical Propulsion Components

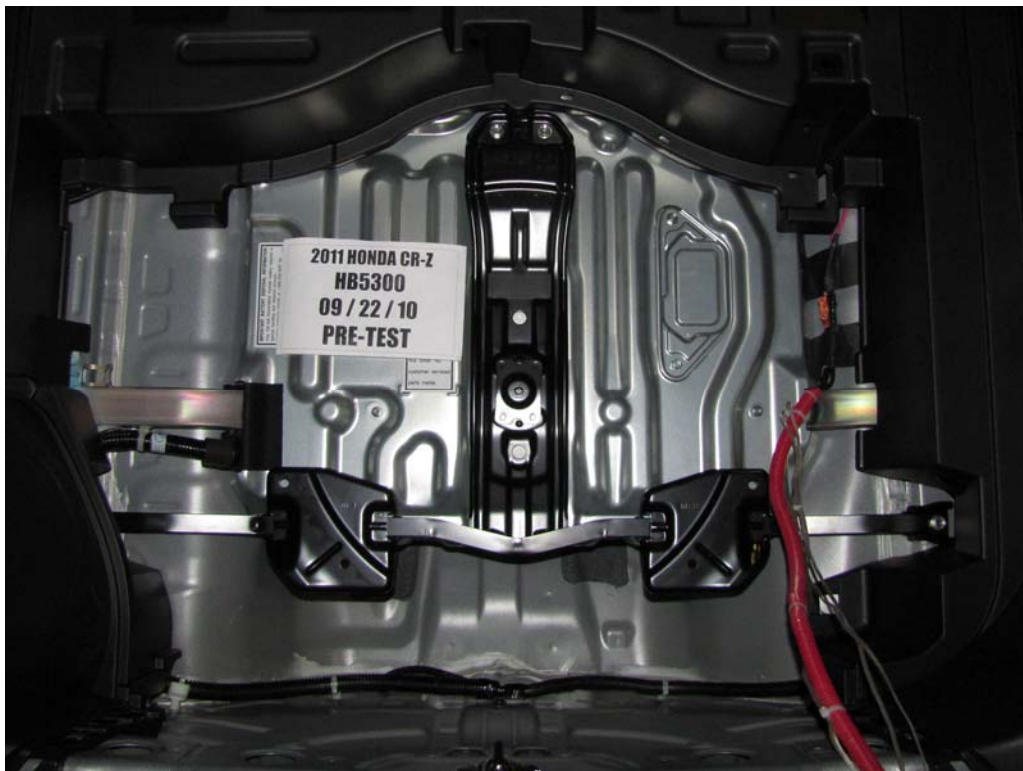


FIGURE 76. Pre-Test Battery Compartment



FIGURE 77. Post-Test Battery Compartment



FIGURE 78. Pre-Test Battery Compartment



FIGURE 79. Post-Test Battery Compartment



FIGURE 80. Pre-Test Propulsion Battery Disconnect



FIGURE 81. Post-Test Propulsion Battery Disconnect



FIGURE 82. Pre-Test Propulsion Battery Disconnect

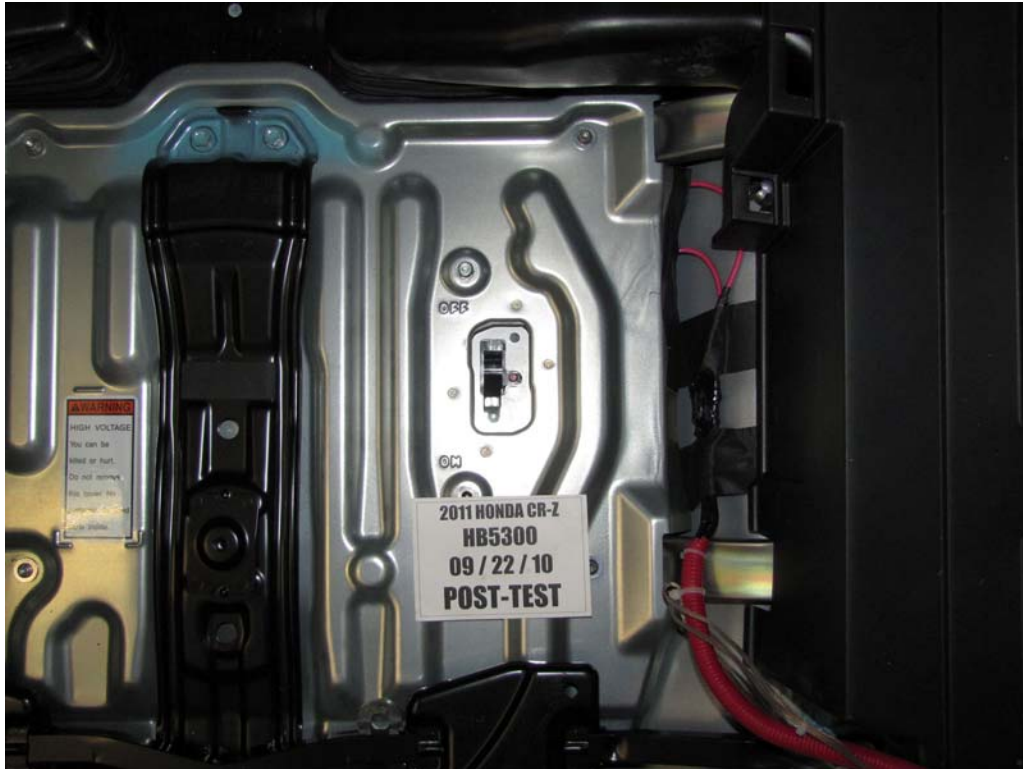


FIGURE 83. Post-Test Propulsion Battery Disconnect

Photograph Not Applicable
No Electrolyte Leakage

FIGURE 84. Post-Test Electrolyte Leakage



FIGURE 85. Pre-Test Battery Mounting Hardware



FIGURE 86. Post-Test Battery Mounting Hardware



FIGURE 87. Pre-Test Battery Mounting Hardware



FIGURE 88. Post-Test Battery Mounting Hardware



FIGURE 89. Pre-Test Battery Mounting Hardware



FIGURE 90. Post-Test Battery Mounting Hardware

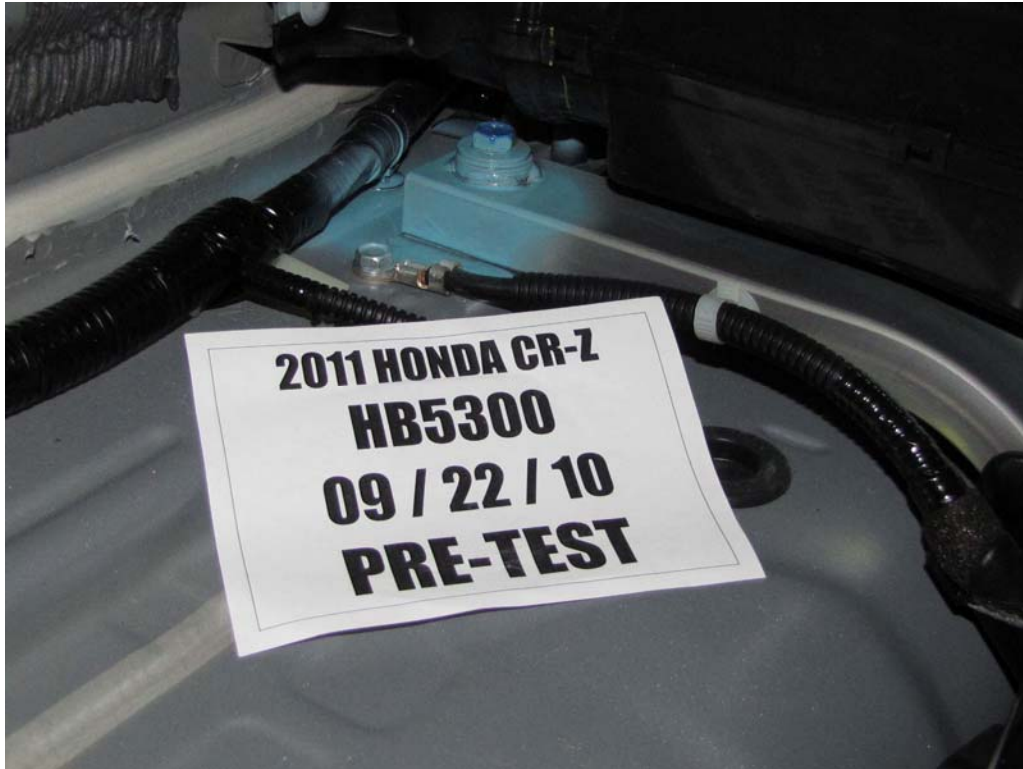


FIGURE 91. Pre-Test Battery Mounting Hardware



FIGURE 92. Post-Test Battery Mounting Hardware



FIGURE 93. Pre-Test Battery Mounting Hardware



FIGURE 94. Post-Test Battery Mounting Hardware



FIGURE 95. Pre-Test Battery Mounting Hardware



FIGURE 96. Post-Test Battery Mounting Hardware



FIGURE 97. Pre-Test Battery Mounting Hardware



FIGURE 98. Post-Test Battery Mounting Hardware



FIGURE 99. Pre-Test Battery Mounting Hardware



FIGURE 100. Post-Test Battery Mounting Hardware



FIGURE 101. Pre-Test Battery Mounting Hardware



FIGURE 102. Post-Test Battery Mounting Hardware



FIGURE 103. Pre-Test Battery Mounting Hardware



FIGURE 104. Post-Test Battery Mounting Hardware



FIGURE 105. Pre-Test Battery Mounting Hardware

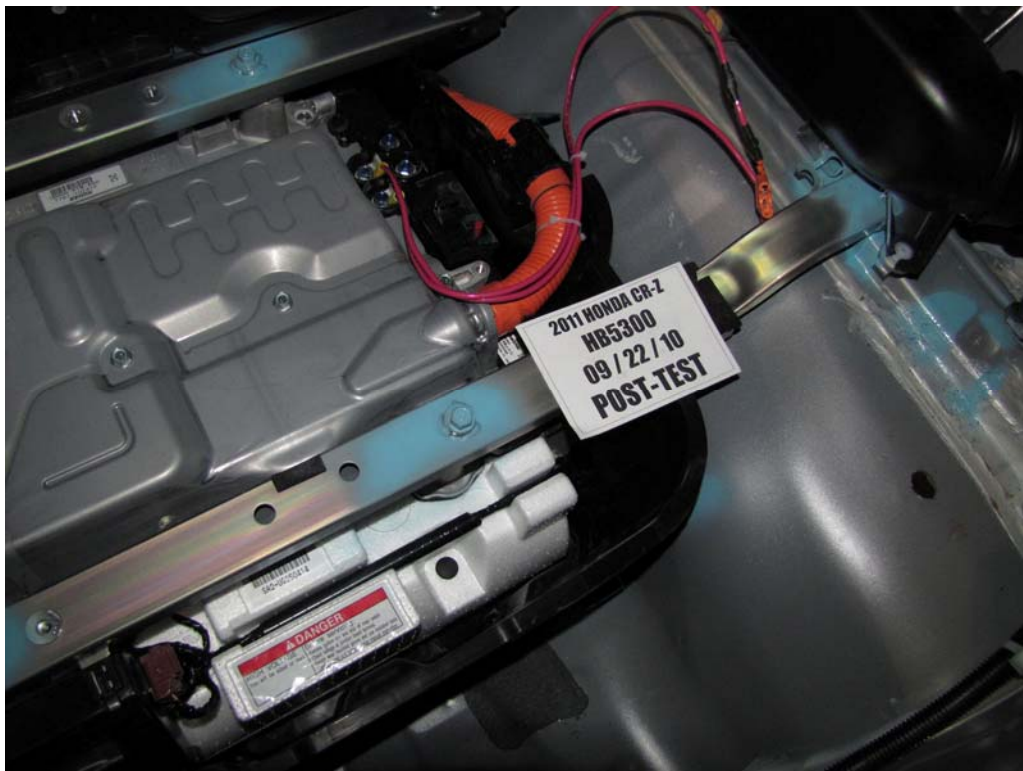


FIGURE 106. Post-Test Battery Mounting Hardware

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary	B-1
2	Driver Head Acceleration (Y) Primary	B-1
3	Driver Head Acceleration(Z) Primary	B-1
4	Driver Head Resultant Primary	B-1
5	Driver Lower Spine T12 Acceleration (X)	B-2
6	Driver Lower Spine T12 Acceleration (Y)	B-2
7	Driver Lower Spine T12 Acceleration (Z)	B-2
8	Driver Lower Spine Y12 Resultant Acceleration	B-2
9	Driver Iliac Wing Force on Impact Side (Y)	B-3
10	Driver Acetabulum Force on Impact Side (Y)	B-3
11	Driver Total Pelvis Force on Impact Side (Y)	B-3

The following additional data 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.

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration (X) Redundant
 Driver Head Acceleration (Y) Redundant
 Driver Head Acceleration (Z) Redundant
 Driver Upper Thorax Rib Deflection (Y)
 Driver Middle Thorax Rib Deflection (Y)
 Driver Lower Thorax Rib Deflection (Y)
 Driver Upper Abdomen Rib Deflection (Y)
 Driver Lower Abdomen Rib Deflection (Y)
 Driver Shoulder Contact Switch
 Driver Torso Contact Switch
 Driver Pelvis Contact Switch
 Center of Gravity Acceleration (X)
 Vehicle Center of Gravity Acceleration (Y)
 Vehicle Center of Gravity Acceleration (Z)
 Vehicle Center of Gravity Angular Rate About X (Roll)
 Vehicle Center of Gravity Angular Rate About Y (Pitch)
 Vehicle Center of Gravity Angular Rate About Z (Yaw)

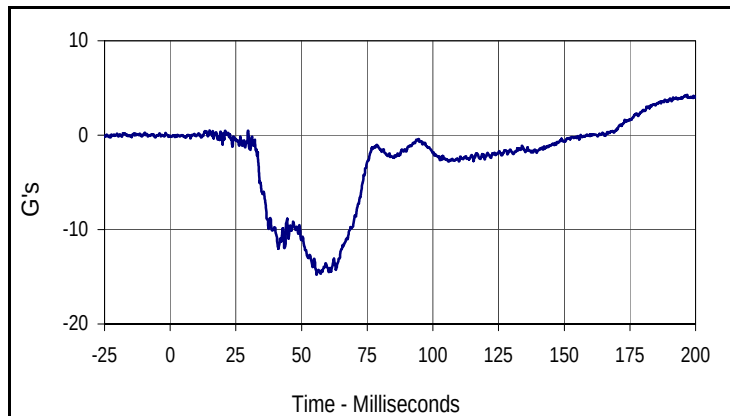
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration (Y)
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy H-Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)
Driver Side Airbag Timing
Driver Side Curtain Airbag Timing

Pole Instrumentation Data

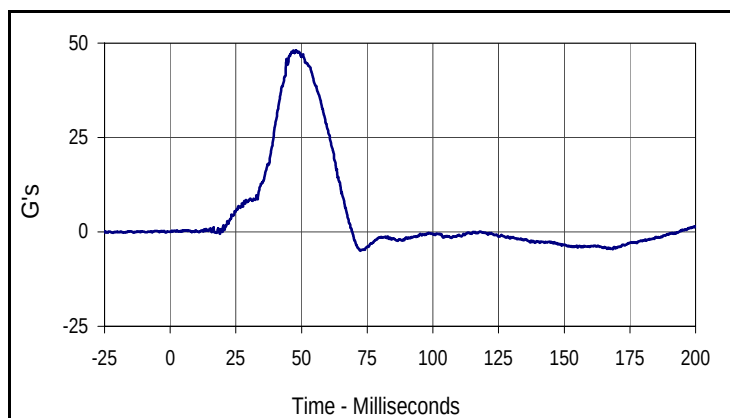
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

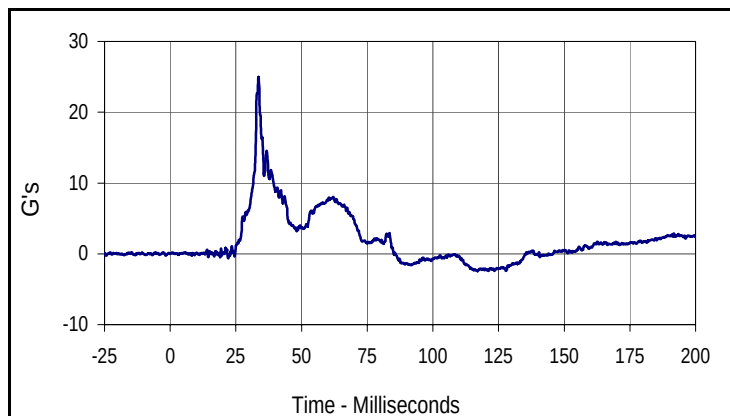
Test Date: 9/22/10
 NHTSA No.: HB5300



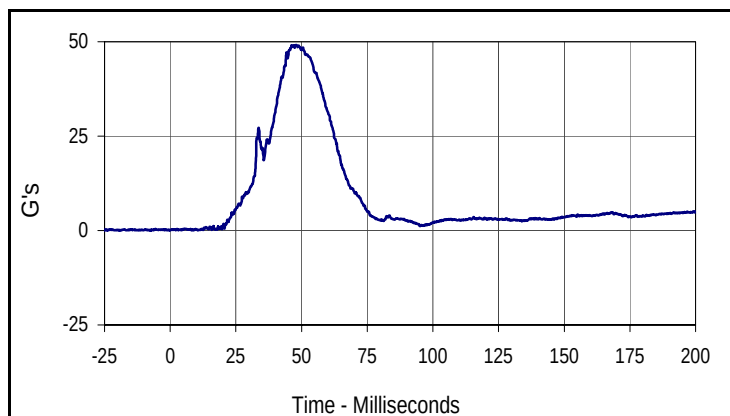
Curve Description			
Driver Head Acceleration X Primary			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
4.3	196.8	-14.8	55.8



Curve Description			
Driver Head Acceleration Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
48.1	48.0	-5.0	72.3



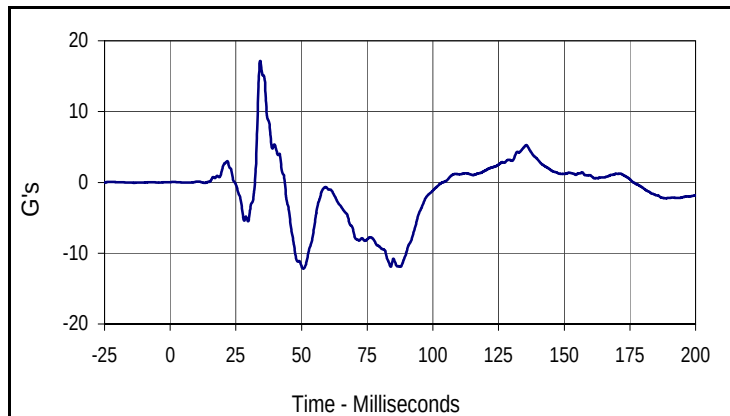
Curve Description			
Driver Head Acceleration Z Primary			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
25.0	33.6	-2.5	117.1



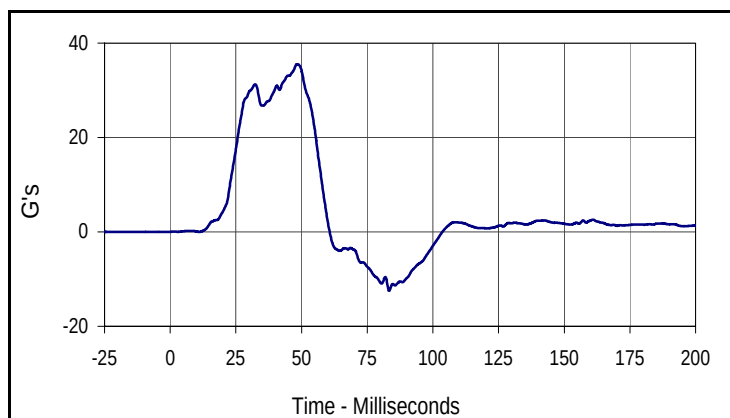
Curve Description			
Driver Head Acceleration Primary Res.			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
49.2	47.9	0.0	8.4

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

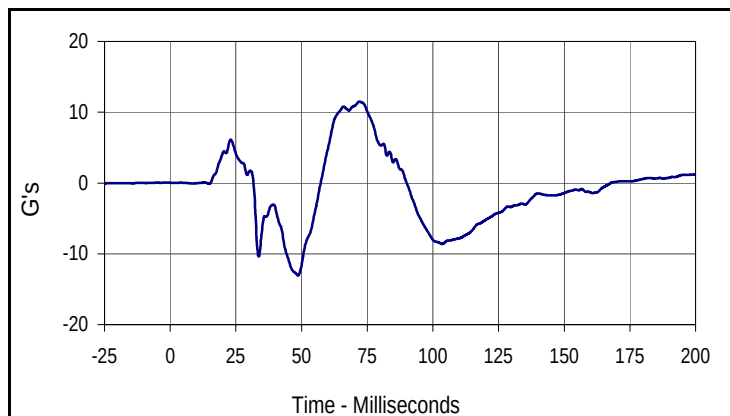
Test Date: 9/22/10
 NHTSA No.: HB5300



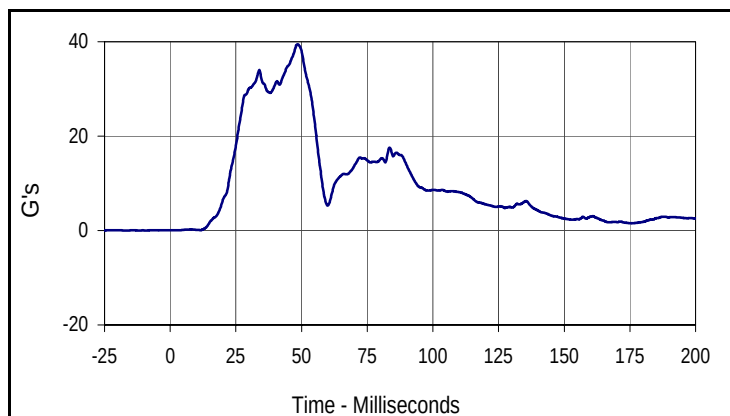
Curve Description			
Driver Lower Spine T12 Acceleration X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
17.1	34.3	-12.2	50.6



Curve Description			
Driver Lower Spine T12 Acceleration Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
35.5	48.4	-12.5	83.3



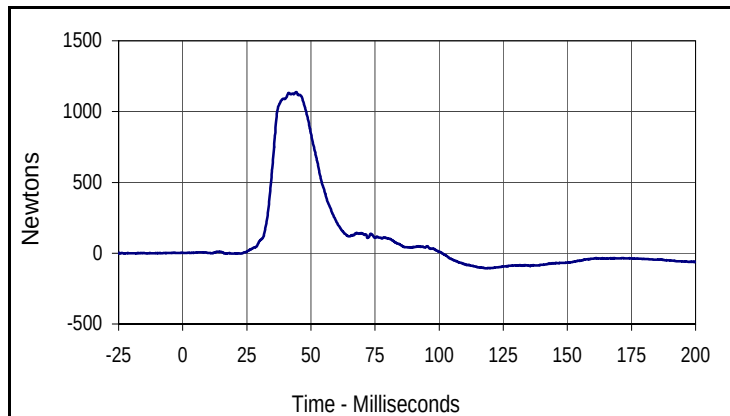
Curve Description			
Driver Lower Spine T12 Acceleration Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
11.5	72.0	-13.1	48.7



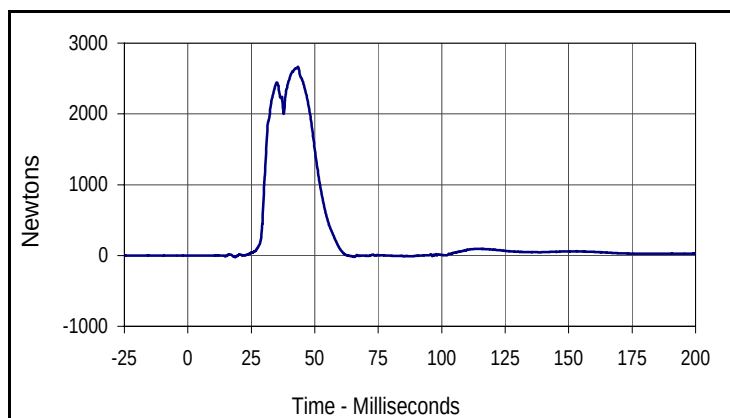
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
39.5	48.5	0.1	3.2

Test Vehicle: 2011 Honda CR-Z EX NAVI 3-Door Hatchback
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

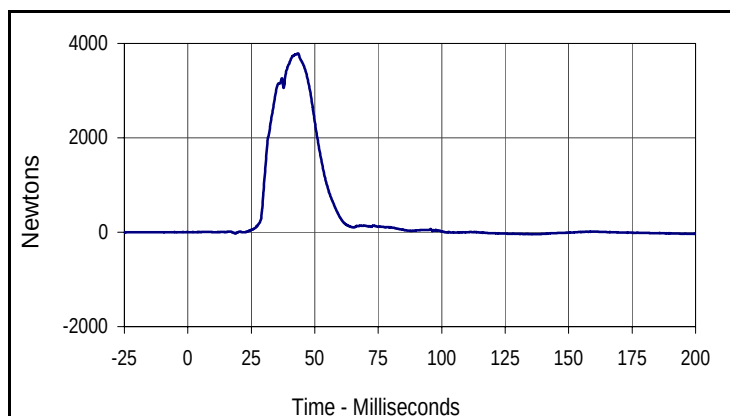
Test Date: 9/22/10
 NHTSA No.: HB5300



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
1137.5	44.2	-106.4	118.3



Curve Description			
Driver Acetabulum Force on Impact Side Y			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
2664.9	43.4	-23.4	18.6



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
CURNO	Type	SAE Class	Units
015	SUM	600	Newtons
Max	Time	Min	Time
3788.5	43.4	-44.0	135.5

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

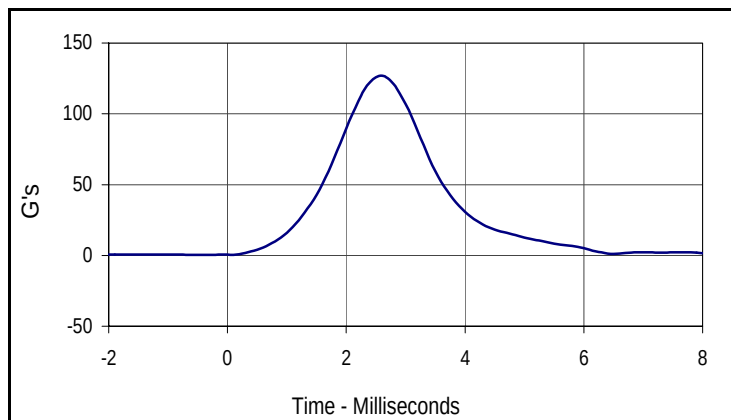
APPENDIX C
PRE-TEST / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID IIs Lateral Head Drop Calibration
 ATD Serial No.: 299

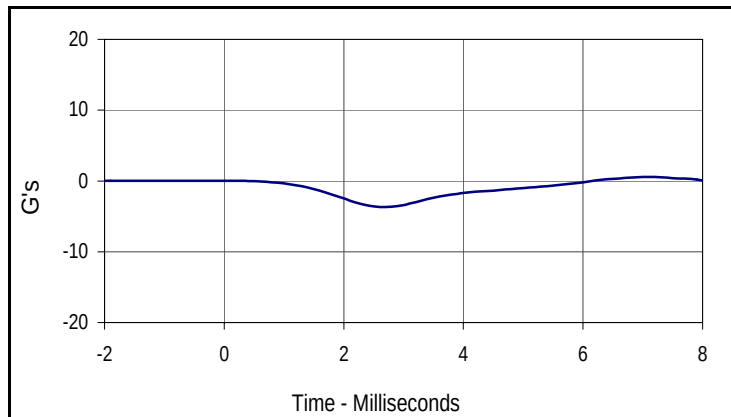
Test Date: 9/16/10
 Test I.D.: HDP09E



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
Peak Resultant Acceleration	G's	115 to 137	126.8	Pass
Peak Longitudinal Acceleration	G's	≤15	3.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	9.9	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
126.8	2.6	0.4	0.1



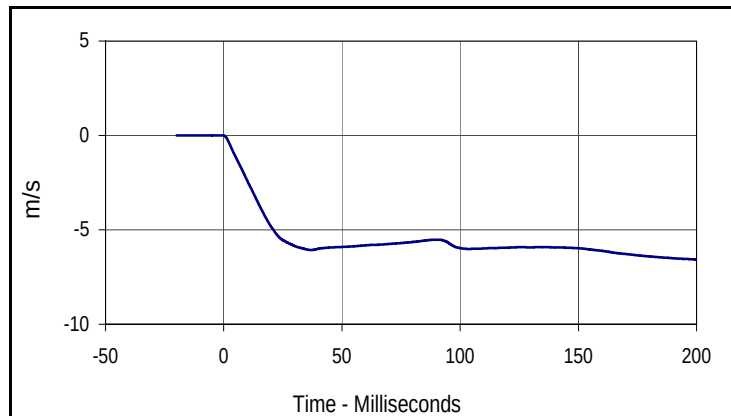
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.0	-2.0	-3.7	2.7

Test Program: SID IIs Neck Calibration
 ATD Serial No.: 299

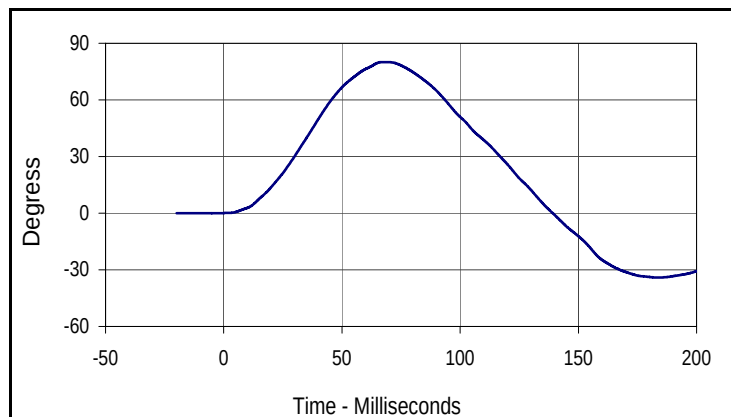
Test Date: 9/16/10
 Test I.D.: NBP09E



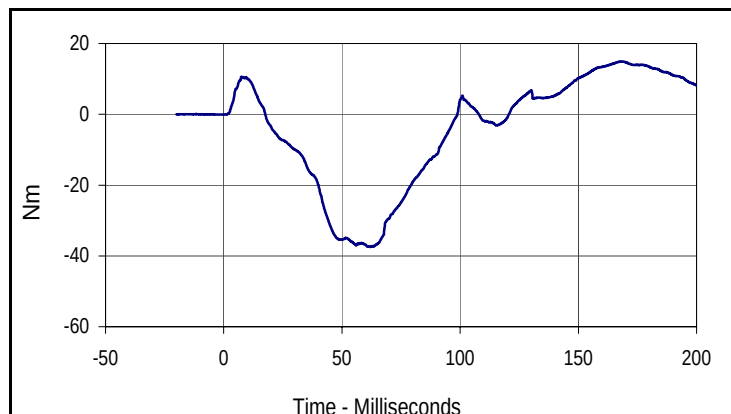
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.6	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.4	Pass
	15 msec	m/s	-3.30 to -4.10	-3.7	Pass
	20 msec	m/s	-4.40 to -5.40	-4.8	Pass
	25 msec	m/s	-5.40 to -6.10	-5.5	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.1	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	80.1	Pass
	Time	msec	50.0 to 70.0	67.2	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-37.5	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	120.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.6	-6.6	200.0



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
80.1	67.2	-34.1	183.4



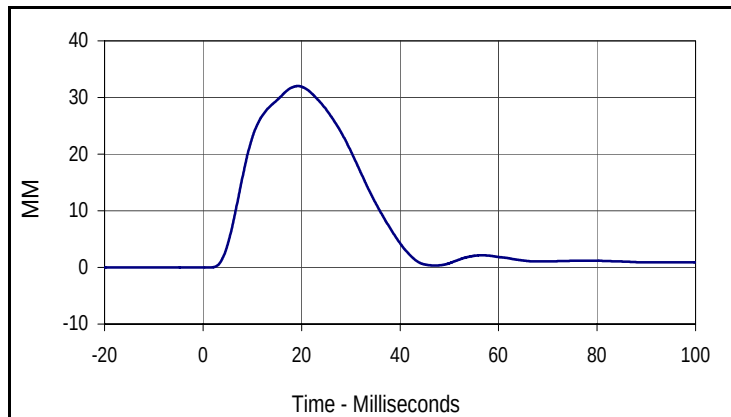
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.9	168.5	-37.5	62.0

Test Program: SID IIs Shoulder Calibration
 ATD Serial No.: 299

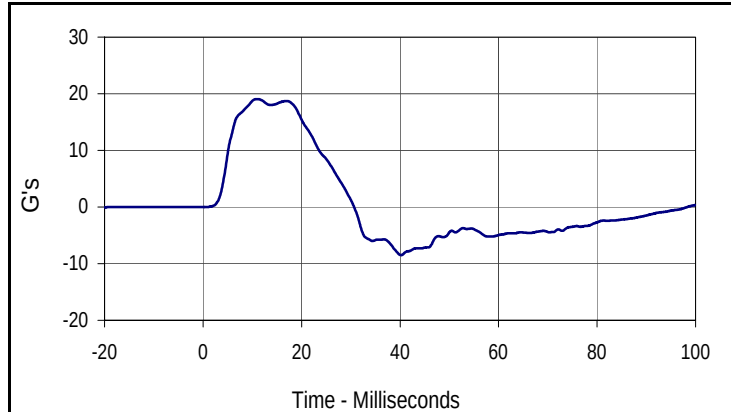
Test Date: 9/16/10
 Test I.D.: SHP09E



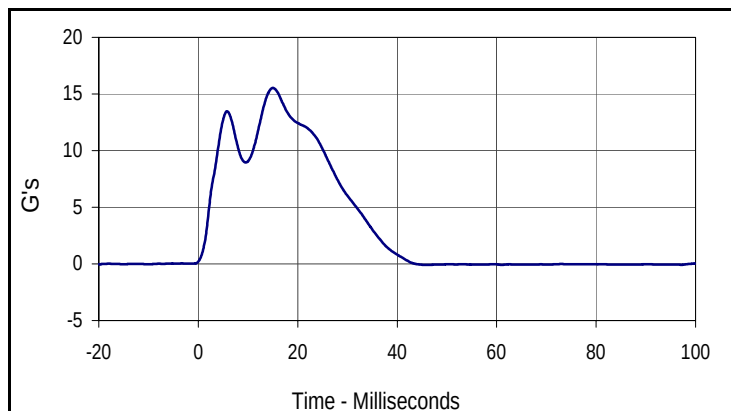
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.27	Pass
Shoulder Deflection	MM	28 to 37	32.0	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	19.1	Pass
Peak Impactor Acceleration	G's	13 to 18	15.5	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
32.0	19.3	0.0	1.4



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.1	10.9	-8.5	40.2



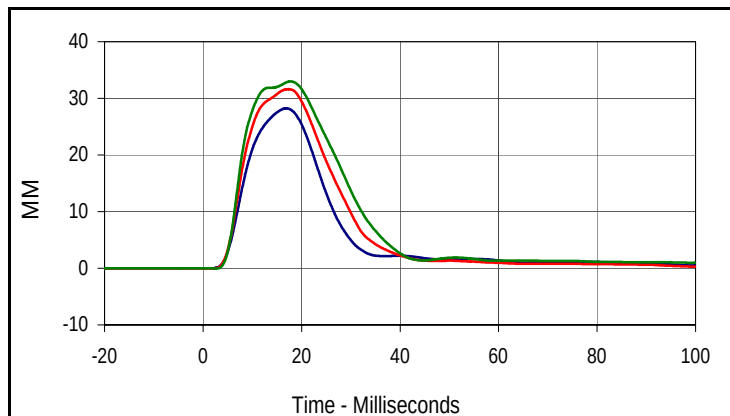
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.5	15.0	-0.1	45.7

Test Program: SID IIs Thorax with Arm Calibration
 ATD Serial No.: 299

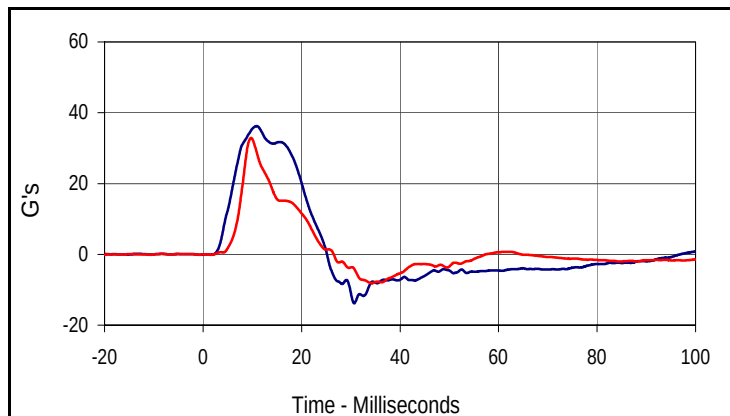
Test Date: 9/16/10
 Test I.D.: TWAP09E



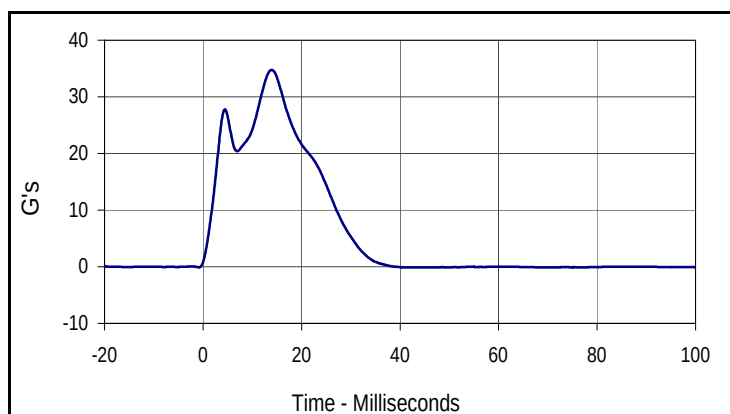
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.63	Pass
Shoulder Deflection	MM	31 to 40	37.3	Pass
Upper Thorax Rib Deflection	MM	25 to 32	28.2	Pass
Middle Thorax Rib Deflection	MM	30 to 36	31.6	Pass
Lower Thorax Rib Deflection	MM	32 to 38	33.0	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.2	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.9	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	34.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
28.2	16.9	0.0	-5.8
Middle Thorax Deflection			
Max	Time	Min	Time
31.6	17.4	0.0	2.2
Lower Thorax Deflection			
Max	Time	Min	Time
33.0	17.7	0.0	2.7



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.2	10.9	-13.8	30.7
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.9	9.7	-8.1	34.2



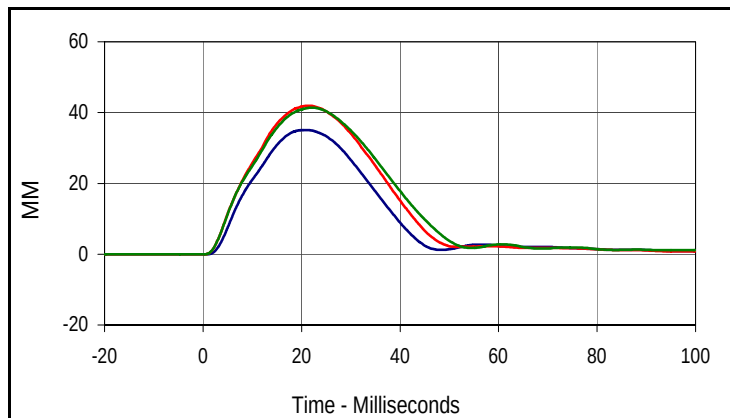
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.8	13.9	-0.1	42.5

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 299

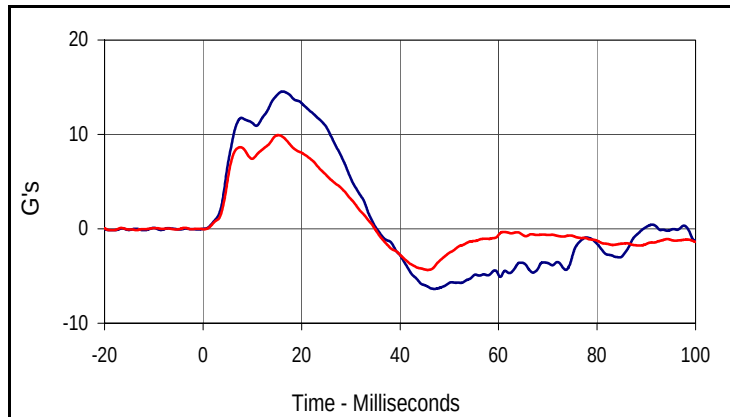
Test Date: 9/16/10
 Test I.D.: TOAP09E



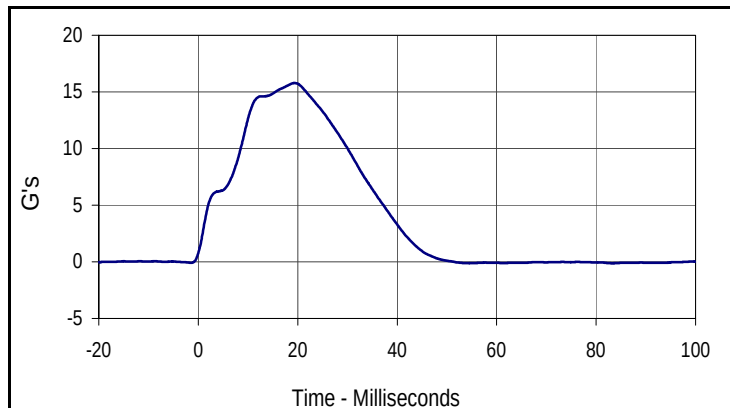
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.34	Pass
Upper Thorax Rib Deflection	MM	32 to 40	35.1	Pass
Middle Thorax Rib Deflection	MM	39 to 45	41.9	Pass
Lower Thorax Rib Deflection	MM	35 to 43	41.4	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	14.5	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.9	Pass
Peak Impactor Acceleration	G's	14 to 18	15.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.1	20.9	0.0	-2.5
Middle Thorax Deflection			
Max	Time	Min	Time
41.9	21.5	0.0	-9.7
Lower Thorax Deflection			
Max	Time	Min	Time
41.4	22.1	0.0	-2.1



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.5	16.2	-6.4	46.9
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.9	15.2	-4.4	45.6



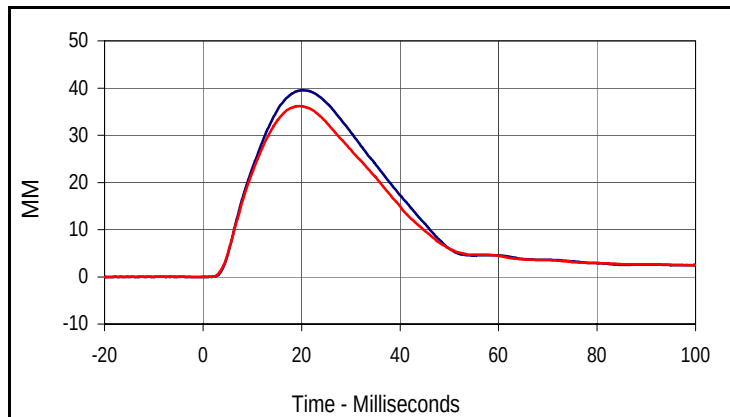
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.8	19.4	-0.1	83.2

Test Program: SID IIs Abdomen Calibration
 ATD Serial No.: 299

Test Date: 9/16/10
 Test I.D.: ABDP09E

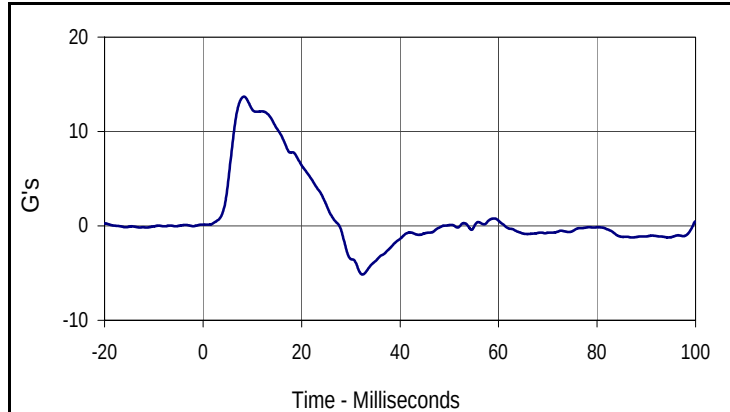


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.27	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	39.5	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	36.2	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	13.7	Pass
Peak Impactor Acceleration	G's	12 to 16	15.1	Pass
Overall Test Results			Pass	

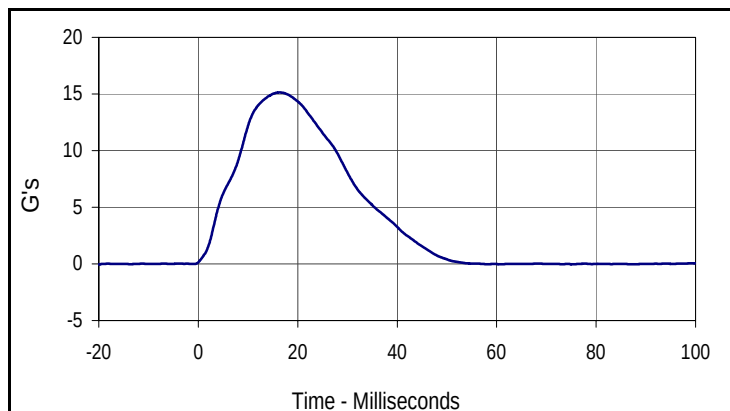


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
39.5	20.2	0.0	-2.7

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
36.2	19.5	0.0	-2.3



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
13.7	8.3	-5.1	32.3



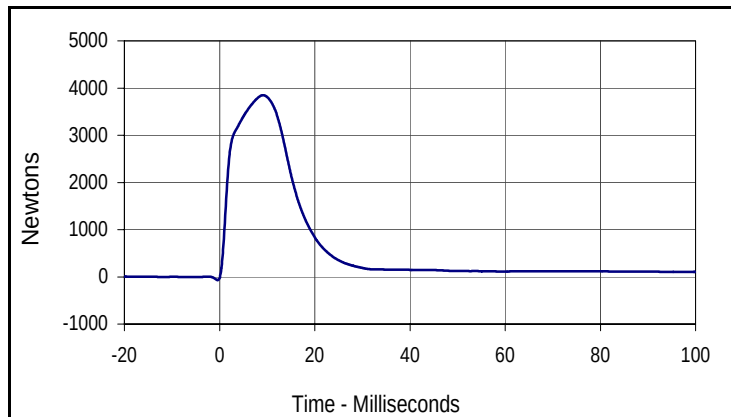
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	16.3	0.0	-20.0

Test Program: SID IIs Pelvis Acetabulum Calibration
 ATD Serial No.: 299

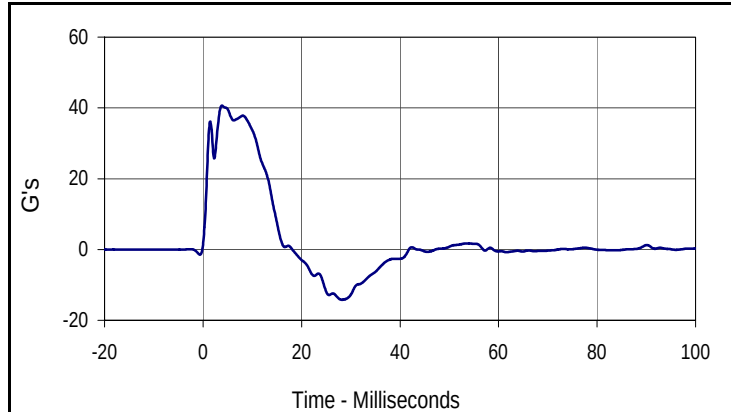
Test Date: 9/16/10
 Test I.D.: PAP09E



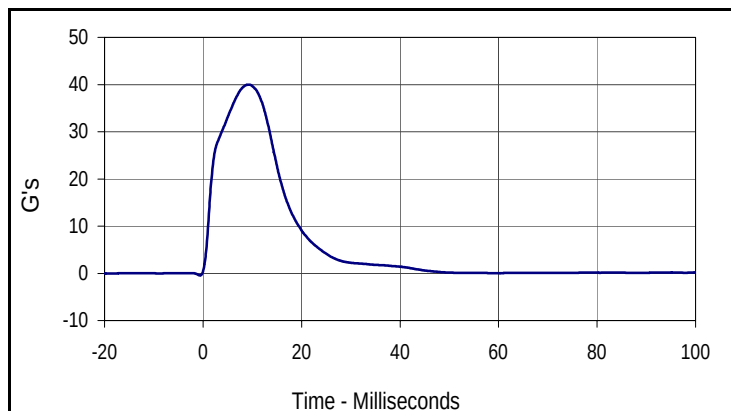
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.76	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3848.4	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.8	Pass
Peak Impactor Acceleration	G's	38 to 47	40.0	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
3848.4	9.1	-67.8	-0.4



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
40.7	3.8	-14.2	28.2



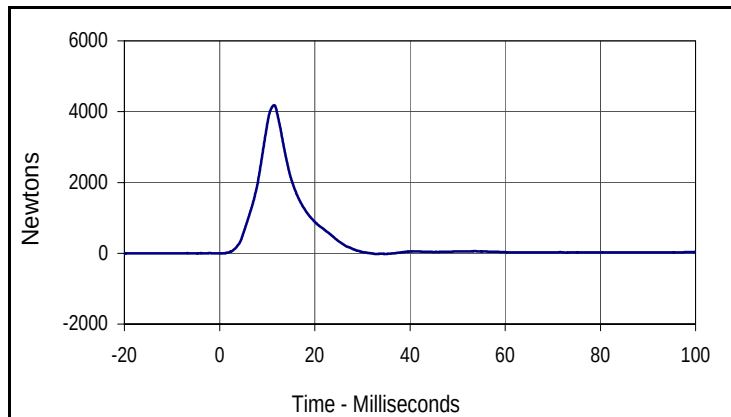
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.0	9.3	-0.4	-0.6

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

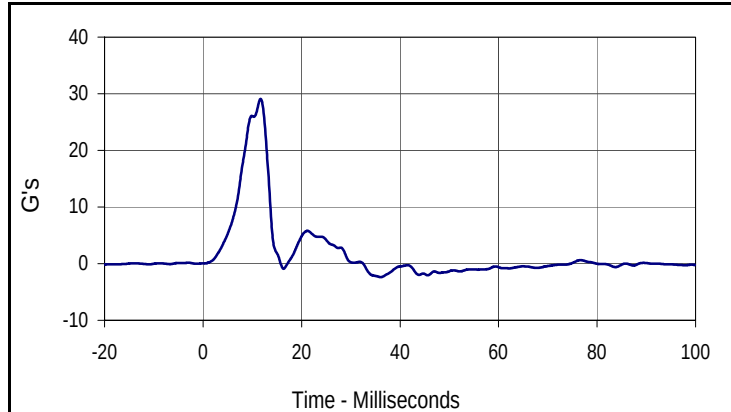
Test Date: 9/16/10
 Test I.D.: PLP09E



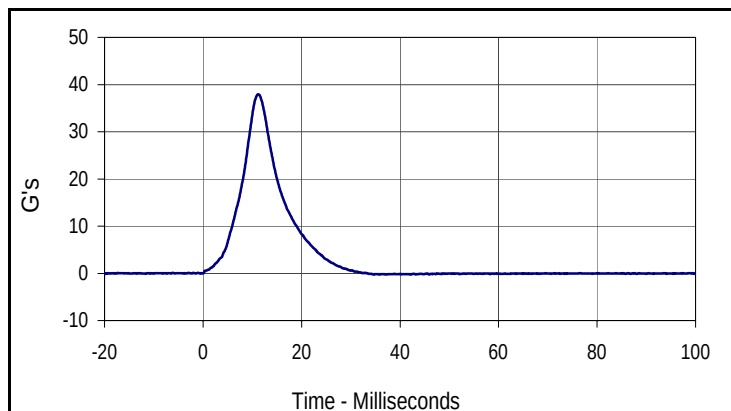
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.21	Pass
Peak Iliac Force	Newtons	4100 to 5100	4182.9	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	29.1	Pass
Peak Impactor Acceleration	G's	36 to 45	37.9	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4182.9	11.5	-23.5	32.9



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
29.1	11.7	-2.4	36.0



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
37.9	11.2	-0.2	34.6

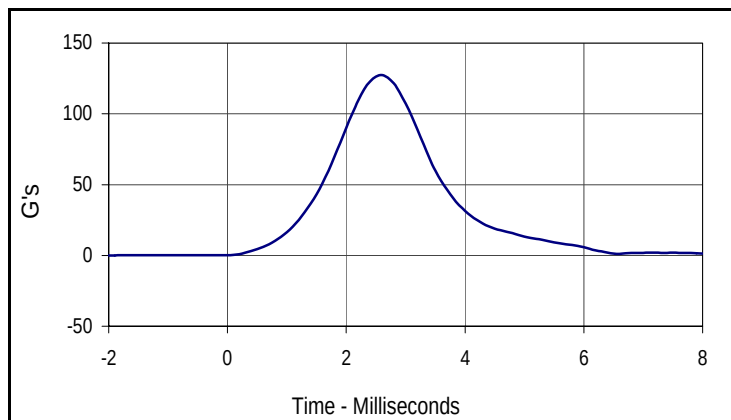
APPENDIX C
POST-TEST / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID IIs Lateral Head Drop Calibration
 ATD Serial No.: 299

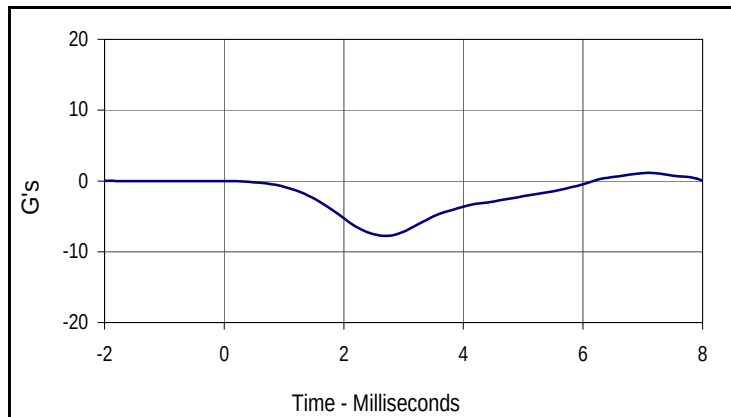
Test Date: 9/25/10
 Test I.D.: HDP09F



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
Peak Resultant Acceleration	G's	115 to 137	127.4	Pass
Peak Longitudinal Acceleration	G's	≤15	7.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	10.5	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
127.4	2.6	0.0	-1.9



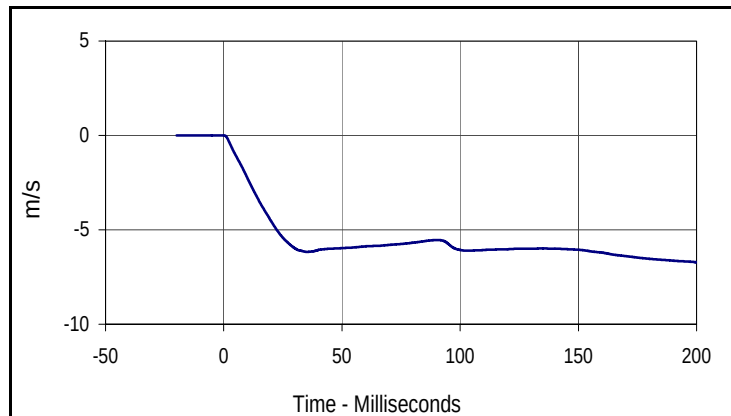
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.0	-2.0	-7.8	2.7

Test Program: SID IIs Neck Calibration
 ATD Serial No.: 299

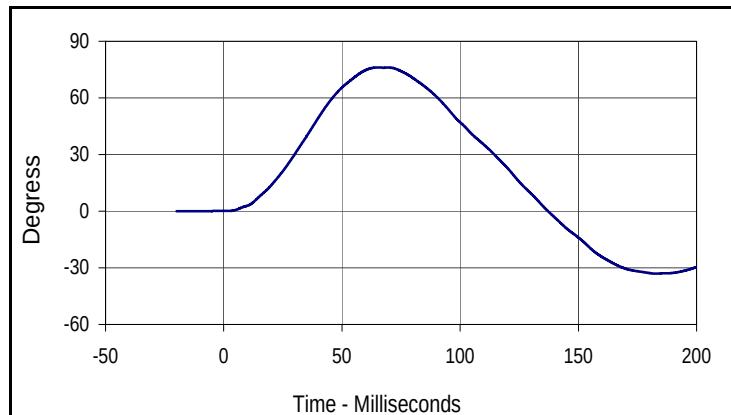
Test Date: 9/25/10
 Test I.D.: NBP09F



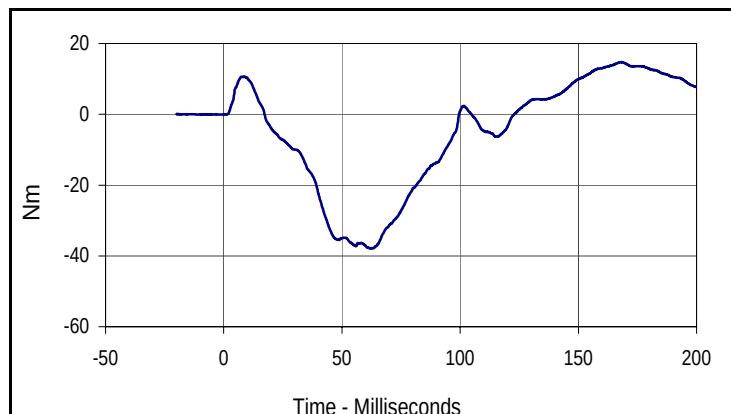
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.6	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.3	Pass
	15 msec	m/s	-3.30 to -4.10	-3.5	Pass
	20 msec	m/s	-4.40 to -5.40	-4.5	Pass
	25 msec	m/s	-5.40 to -6.10	-5.4	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.2	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	76.1	Pass
	Time	msec	50.0 to 70.0	64.9	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-38.0	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	122.9	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.2	-6.7	200.0



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
76.1	64.9	-33.1	182.6



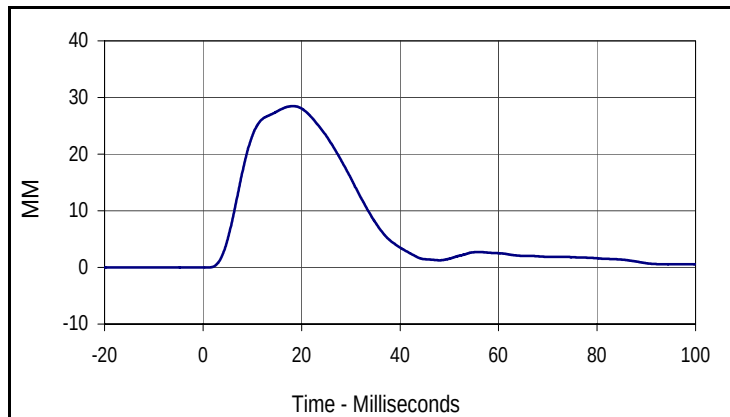
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.7	168.3	-38.0	61.9

Test Program: SID IIs Shoulder Calibration
 ATD Serial No.: 299

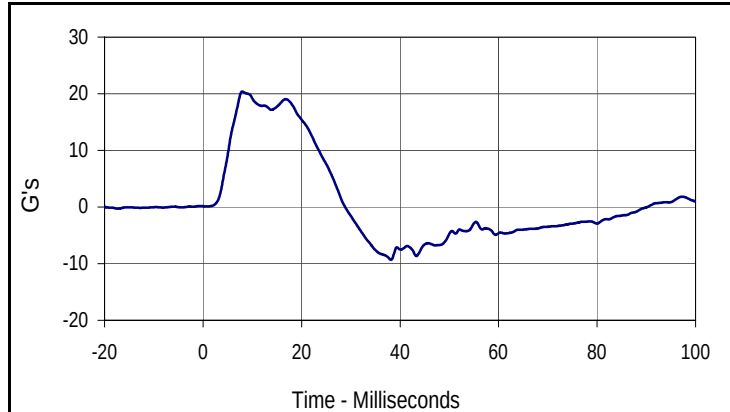
Test Date: 9/25/10
 Test I.D.: SHP09F



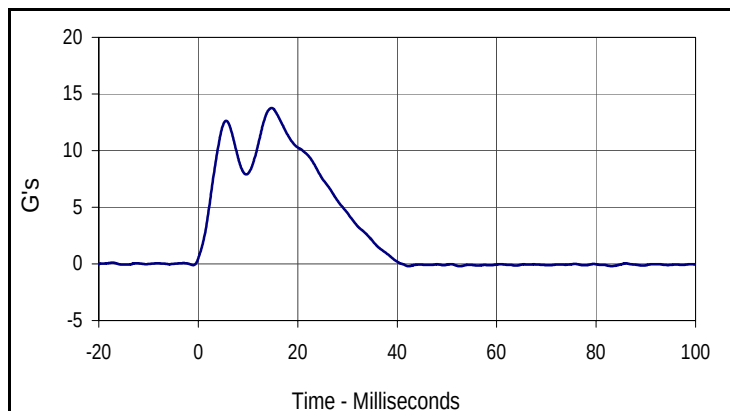
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.39	Pass
Shoulder Deflection	MM	28 to 37	28.5	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	20.4	Pass
Peak Impactor Acceleration	G's	13 to 18	13.8	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
28.5	18.3	0.0	1.0



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
20.4	7.9	-9.3	38.2



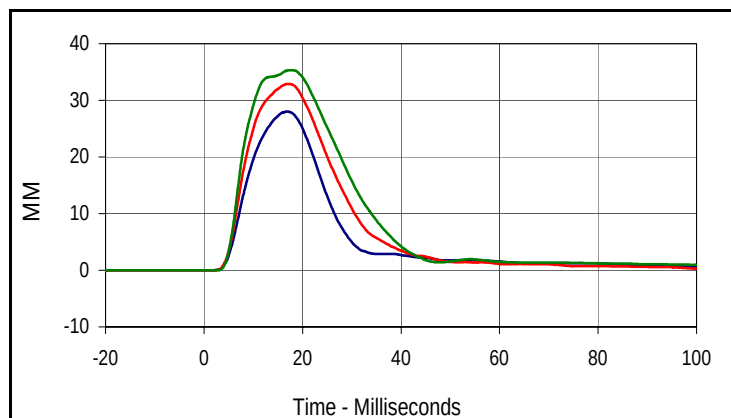
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
13.8	14.7	-0.2	42.3

Test Program: SID IIs Thorax with Arm Calibration
 ATD Serial No.: 299

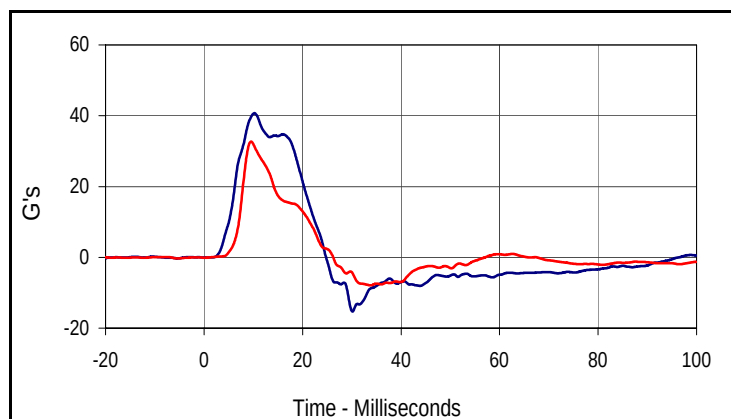
Test Date: 9/25/10
 Test I.D.: TWAP09F



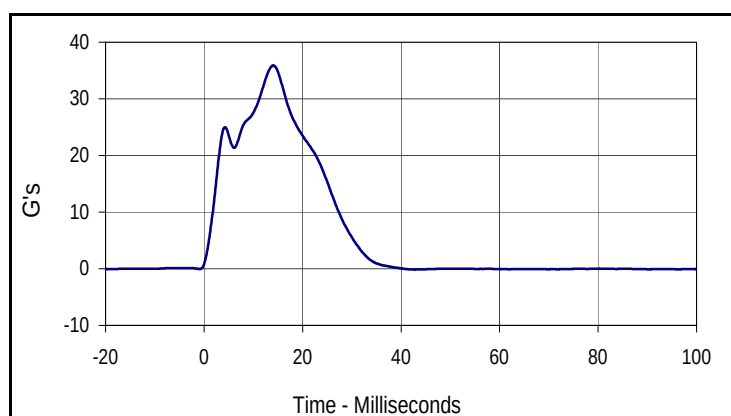
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.61	Pass
Shoulder Deflection	MM	31 to 40	35.2	Pass
Upper Thorax Rib Deflection	MM	25 to 32	28.0	Pass
Middle Thorax Rib Deflection	MM	30 to 36	32.9	Pass
Lower Thorax Rib Deflection	MM	32 to 38	35.3	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	40.7	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.7	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	35.9	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.0	16.9	0.0	-14.0
Middle Thorax Deflection			
Max	Time	Min	Time
32.9	17.0	0.0	-15.2
Lower Thorax Deflection			
Max	Time	Min	Time
35.3	17.7	0.0	-12.2



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
40.7	10.2	-15.3	30.1
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.7	9.5	-7.9	33.8



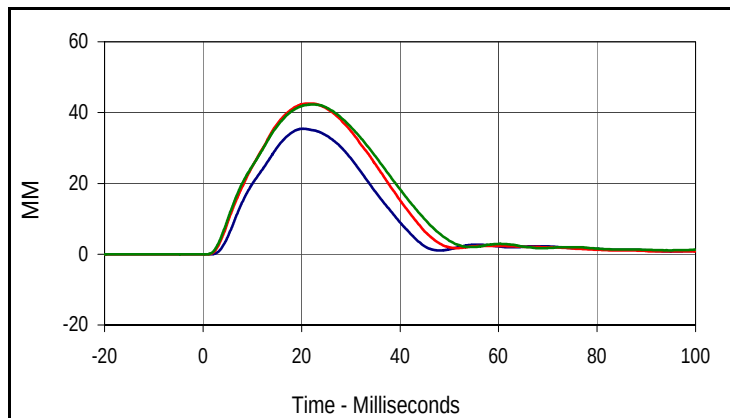
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
35.9	14.1	-0.1	42.8

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 299

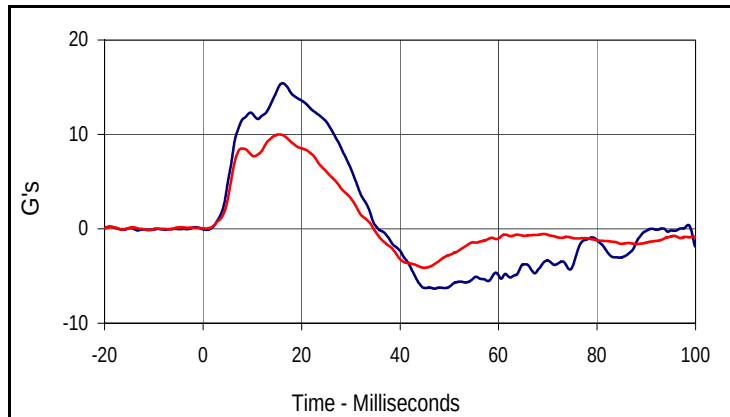
Test Date: 9/25/10
 Test I.D.: TOAP09F



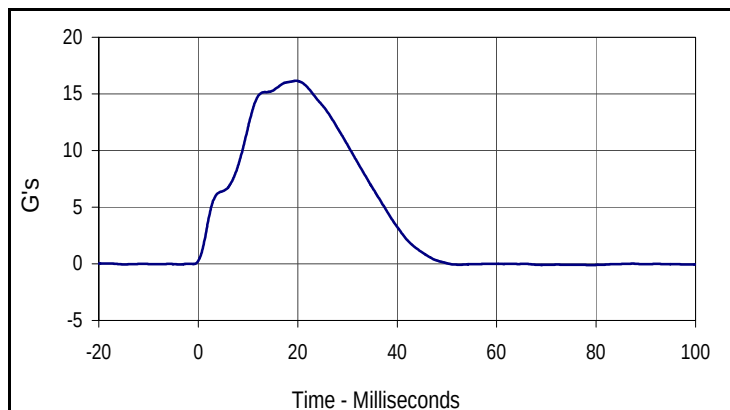
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.37	Pass
Upper Thorax Rib Deflection	MM	32 to 40	35.4	Pass
Middle Thorax Rib Deflection	MM	39 to 45	42.6	Pass
Lower Thorax Rib Deflection	MM	35 to 43	42.3	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.4	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	10.0	Pass
Peak Impactor Acceleration	G's	14 to 18	16.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.4	20.3	0.0	-10.1
Middle Thorax Deflection			
Max	Time	Min	Time
42.6	21.6	0.0	-14.5
Lower Thorax Deflection			
Max	Time	Min	Time
42.3	22.2	0.0	0.8



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.4	16.1	-6.3	47.0
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.0	15.4	-4.1	44.9



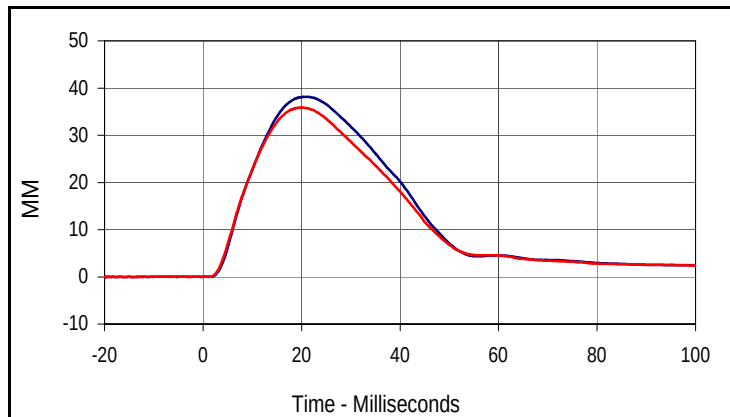
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.2	19.7	-0.1	0.0

Test Program: SID IIs Abdomen Calibration
 ATD Serial No.: 299

Test Date: 9/25/10
 Test I.D.: ABDP09F

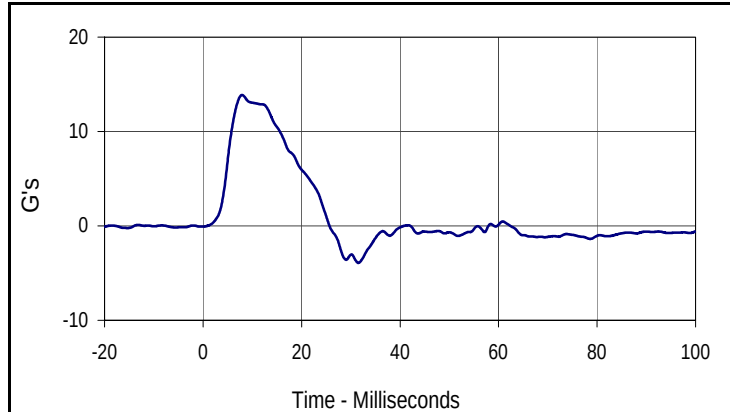


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.30	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	38.2	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	35.9	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	13.9	Pass
Peak Impactor Acceleration	G's	12 to 16	15.8	Pass
Overall Test Results			Pass	

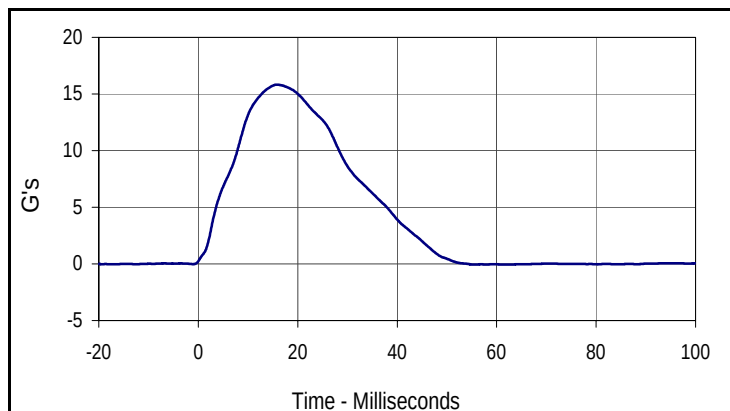


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.2	20.9	0.0	-16.3

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
35.9	20.0	0.0	-2.5



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
13.9	7.9	-3.9	31.5



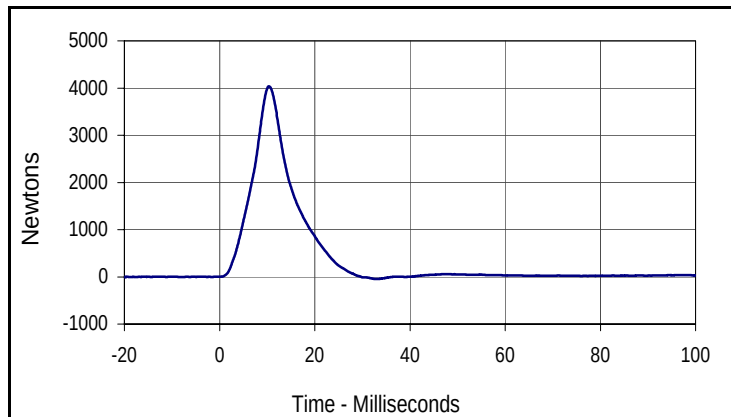
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.8	15.8	-0.1	55.4

Test Program: SID IIs Pelvis Acetabulum Calibration
 ATD Serial No.: 299

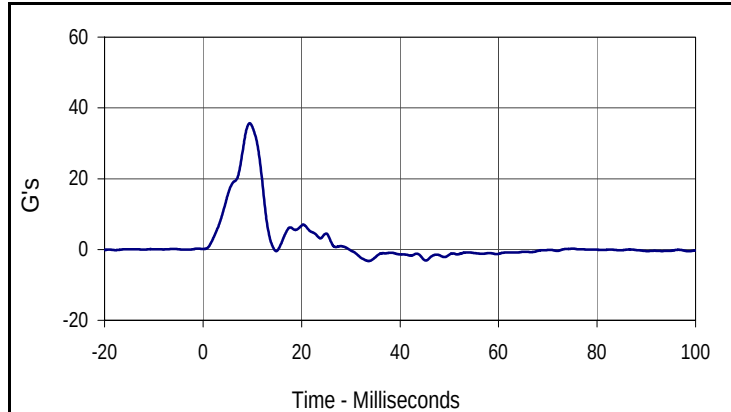
Test Date: 9/25/10
 Test I.D.: PAP09F



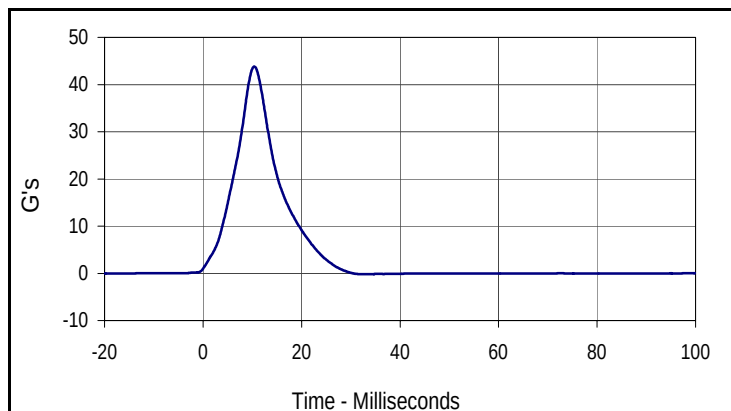
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	4037.6	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	35.6	Pass
Peak Impactor Acceleration	G's	38 to 47	43.8	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4037.6	10.4	-43.8	33.0



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
35.6	9.5	-3.2	33.6



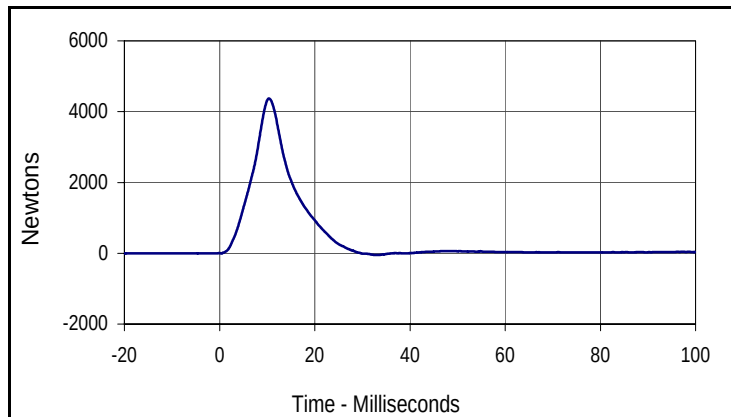
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.8	10.4	-0.2	32.3

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

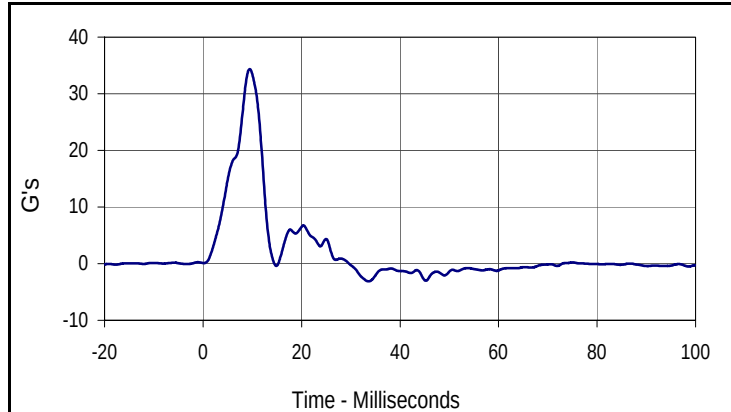
Test Date: 9/25/10
 Test I.D.: PLP09F



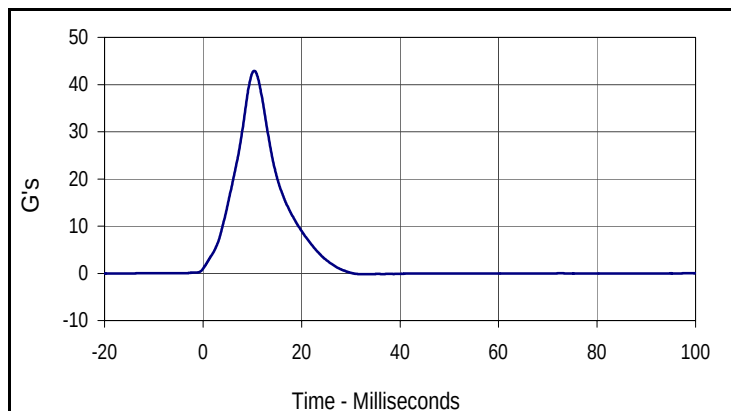
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.30	Pass
Peak Iliac Force	Newtons	4100 to 5100	4370.6	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	34.4	Pass
Peak Impactor Acceleration	G's	36 to 45	42.9	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4370.6	10.4	-47.3	33.0



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
34.4	9.5	-3.1	33.6



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
42.9	10.4	-0.2	32.3