FINAL REPORT NUMBER 201UI-MGA-07-06

SAFETY COMPLIANCE TESTING FOR FMVSS 201
Occupant Protection In Interior Impact
Upper Interior Head Impact Protection

HONDA MOTOR CO., LTD.
2007 Honda Fit, 5-Door Sport
NHTSA No. C75302

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

Test Dates: September 13-17, 2007
Report Date: November 21, 2007

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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16. Abstract A compliance test series was conducted on the subject 2007 Honda Fit, 5-Door Sport, NHTSA No. C75302, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-201U-01 for the determination of FMVSS 201 compliance. The testing was conducted at MGA Research Corporation in Troy, Michigan on September 13-17, 2007. Test failures identified were as follows: None The data recorded indicates that the 2007 Honda Fit, 5-Door Sport, tested appears to comply with the upper interior requirements of FMVSS 201.			
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1.0 PURPOSE OF COMPLIANCE TEST

The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2007 Honda Fit, 5-Door Sport, meets the performance requirements of FMVSS 201, Occupant Protection in Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted on September 13-17, 2007 on a 2007 Honda Fit, 5-Door Sport, manufactured by Honda Motor Co., Ltd.

All tests were conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-201U-01 dated April 3, 1998 and the corresponding MGA Research Corporation's FMVSS 201U procedure number MGATP201U_FRAME#2 dated July 1, 2005.

All tests were conducted at MGA Research Corporation in Troy, Michigan and were performed by MGA engineers and technicians. The FMVSS 201U impactor test machine was used to conduct the testing. Target locations were determined by using a Coordinate Measurement Machine in conjunction with the MGA EZ-Target™ program and MGA procedure MGATP201U_Test Series dated July 1, 2005.

2.0 COMPLIANCE TEST DATA SUMMARY

The 2007 Honda Fit, 5-Door Sport, was equipped with A, B, Other, and rear-pillars, an adjustable seat belt anchorage on each B-pillar, each side rail and the left rear upper roof, a grab handle located on the front and rear driver and passenger side rails, and a dome light located in the center of the upper roof.

Upon completion of targeting the test vehicle, twelve (12) targets were chosen to be impacted based upon engineering judgment and certification test data provided by the manufacturer. The twelve (12) targets chosen were:

AP1	BP2	OP2	UR2@BPR
AP2	BP4	RP2	UR3@Rear Side Rail
AP3	OP1	RH	UR5@SR3-2

The 2007 Honda Fit, 5-Door Sport, tested appears to comply with the upper interior performance criteria for FMVSS 201. The HIC(d) measured using the Part 572L (Free Motion Headform) was below 1000 for each tested component.

TABLE 2-1

SUMMARY TABLE OF TEST RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Honda Fit, 5-Door Sport

VEH. NHTSA NO.: C75302 VIN: JHMGD38697S058117 COLOR: Red

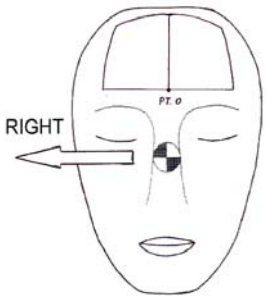
VEH. BUILD DATE: June, 2007 TEST DATES: September 13-17, 2007

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	115	20	18.5	318	201	45	6 Left
AP2	Left	203	50	18.8	559	521	15	4 Left
AP3	Right	159	31	18.8	539	493	36	7 Left
BP2	Left	270	7	23.6	565	529	19	7 Left
BP4	Right	160	-7	23.7	493	433	26	5 Left
OP1	Right	90	28	18.4	479	415	47	4 Right
OP2	Left	270	0	23.4	543	499	18	5 Left
RP2	Right	43	-2	24.0	437	358	35	0
RH	Left	0	50	23.9	321	205	39	5 Left
UR2@BPR	Left	270	28	24.0	770	800	67	4 Right
UR3@Rear Side Rail	Left	270	35	18.6	345	237	29	6 Left
UR5@SR3-2	Right	90	30	23.6	544	501	60	3 Right

Above and left/right refers to the position relative to reference pt. 0 where the target made contact with the Free Motion Headform. See the diagram below for details.



POST TEST COMMENTS:

The following description lists any post-test damage or other test observations for each target.

AP2 Left: Slight displacement on top of A-Pillar trim.

BP4 Right: Slight displacement on bottom of B-Pillar trim.

RH Left: Seat belt retractor cover displacement.

UR2 Left: Indent on upper roof.

REMARKS:

The targets listed were impacted in the following order:

Left: AP2, BP2, UR2@BPR, OP2, UR3@Rear Side Rail, RH

Right: AP3, AP1, BP4, UR5@SR3-2, OP1, RP2

The 150 mm rule was observed for targets horizontal to each other and the 200 mm rule was observed for vertical components.

RECORDED BY: Louis Campbell DATE: September 17, 2007

APPROVED BY: Helen A. Kaleto

TABLE 2-2

GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Honda Fit, 5-Door Sport

VEH. NHTSA NO.: C75302 VIN: JHMGD38697S058117 COLOR: Red

VEH. BUILD DATE: June, 2007 TEST DATES: September 13-17, 2007

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell

INTERIOR TRIM INFORMATION: A, B, Other, and rear-pillars, an adjustable seat belt anchorage on each B-pillar, each side rail and the left rear upper roof, a grab handle located on the front and rear driver and passenger side rails, and a dome light located in the center of the upper roof.

SUNROOF INFORMATION:

Installed: _____Yes __X__ No

Operation: _____Electric ____ Manual

SIDE RAIL CURTAIN AIRBAG INFORMATION:

Installed: __X__Yes ____ No

ROLL-BAR INFORMATION:

Installed: _____Yes __X__ No

Padded: _____Yes __X__ No

Braces: _____Yes __X__ No

GENERAL INFORMATION:

Date Received: 7/26/07; Odometer Reading 13 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Honda Motor Co., Ltd.

Date of Manufacture: June, 2007; VIN: JHMGD38697S058117

GVWR: 3446 lbs; GAWR FRONT: 1876 lbs;

GAWR REAR: 1587 lbs

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 220 kPa REAR: 220 kPa

Recommended Tire Size: P195/55R15 84H

Recommended Cold Tire Pressure:

FRONT: 220 kPa REAR: 220 kPa

Size of Tire on Test Vehicle: P195/55R15 84H

Type of Spare Tire: T125/70D14 93M; Space Saver: X; Standard_____

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench__; Bucket X; Split Bench __

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

VEHICLE CAPACITY WEIGHT:

Vehicle Capacity Weight (VCW) = 385 kg

No. of Occupants x 68 kg = 340 kg

Rated Cargo/Luggage Weight (RCLW) = 45 kg (difference)

WEIGHT OF TEST VEHICLE AS DELIVERED AT LABORATORY: (with maximum fluids)

Right Front =	351.5 kg	Right Rear =	216.5 kg
Left Front =	377.0 kg	Left Rear =	209.5 kg
TOTAL FRONT =	728.5 kg	TOTAL REAR =	426.0 kg
% Total Weight =	63.1 %	% Total Weight =	36.9 %

TOTAL DELIVERED WEIGHT = 1154.5 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 1154.5 kg

Max. Test Cargo/Luggage Weight = 45.0 kg

Target Test Weight = 1199.5 kg

WEIGHT OF TEST VEHICLE FULLY LOADED:

Right Front =	350.0 kg	Right Rear =	240.5 kg
Left Front =	375.5 kg	Left Rear =	233.5 kg
TOTAL FRONT =	725.5 kg	TOTAL REAR =	474.0 kg
% Total Weight =	60.5 %	% Total Weight =	39.5 %

TOTAL TEST WEIGHT = 1199.5 kg

Weight of ballast secured in vehicle's cargo area = 45.0 kg

TEST VEHICLE ATTITUDE:

AS DELIVERED: Right Front 642 mm; Left Front 636 mm;
Right Rear 650 mm; Left Rear 644 mm;
Pitch Angle at Right Door Sill = 0.9 Rear is higher
Pitch Angle at Left Door Sill = 0.4 Rear is higher
Roll Angle at Front Bumper = 0.6 Right is higher
Roll Angle at Rear Bumper = 0.2 Right is higher

FULLY LOADED: Right Front 645 mm; Left Front 632 mm;
Right Rear 634 mm; Left Rear 630 mm;
Pitch Angle at Right Door Sill = 0.6 Rear is higher
Pitch Angle at Left Door Sill = 0.1 Rear is higher
Roll Angle at Front Bumper = 0.6 Right is higher
Roll Angle at Rear Bumper = 0.2 Right is higher

AS TARGETED: Right Front 850 mm; Left Front 849 mm;
Right Rear 852 mm; Left Rear 842 mm;
Pitch Angle at Right Door Sill = 0.7 Rear is higher
Pitch Angle at Left Door Sill = 0.2 Rear is higher
Roll Angle at Front Bumper = 0.6 Right is higher
Roll Angle at Rear Bumper = 0.2 Right is higher

AS TESTED ON RIGHT SIDE:

Pitch Angle at Right Door Sill =	0.6 Rear is higher
Pitch Angle at Left Door Sill =	0.1 Rear is higher
Roll Angle at Front Bumper =	0.6 Right is higher
Roll Angle at Rear Bumper =	0.2 Right is higher

AS TESTED ON LEFT SIDE:

Pitch Angle at Right Door Sill =	0.7 Rear is higher
Pitch Angle at Left Door Sill =	0.2 Rear is higher
Roll Angle at Front Bumper =	0.6 Right is higher
Roll Angle at Rear Bumper =	0.2 Right is higher

VEHICLE WHEELBASE = 2455 mm

REMARKS: The seat travel distance was measured to be 240 mm for the driver front seat and 210 mm for the passenger front seat.

RECORDED BY: Louis Campbell DATE: September 12, 2007

APPROVED BY: Helen A. Kaleto

TABLE 2-3

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Honda Fit, 5-Door Sport

VEH. NHTSA NO.: C75302 VIN: JHMGD38697S058117 COLOR: Red

VEH. BUILD DATE: June, 2007 TEST DATES: September 13-17, 2007

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

	HORIZONTAL ANGLE SPECIFIED RANGE	MINIMUM HORIZONTAL ANGLE	MAXIMUM HORIZONTAL ANGLE
A-PILLAR	L 195º-255º	L 202.5º	L 243.3º
	R 105º-165º	R 115.3º	R 158.5º
B-PILLAR	L 195º-345º	L 199.5º	L 278.5º
	R 15º-165º	R 73.7º	R 159.7º

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: Louis Campbell DATE: September 12, 2007

APPROVED BY: Helen A. Kaleto

TABLE 2-4

VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Honda Fit, 5-Door Sport

VEH. NHTSA NO.: C75302 VIN: JHMGD38697S058117 COLOR: Red

VEH. BUILD DATE: June, 2007 TEST DATES: September 13-17, 2007

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell

VERTICAL IMPACT ANGLE RANGES

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
FRONT HEADER	FH1	L 0º-50º	L 0º	L 50º
		R 0º-50º	R 0º	R 50º
	FH2	L 0º-50º	L 0º	L 50º
		R 0º-50º	R 0º	R 50º
SIDE RAIL	SR1	L 0º-50º	L 0º	L 16º
		R 0º-50º	R 0º	R 17º
	SR2A	L 0º-50º	L 0º	L 28º
		R 0º-50º	R 0º	R 28º
	SR2B	L 0º-50º	L 0º	L 31º
		R 0º-50º	R 0º	R 32º
	SR3-1	L 0º-50º	L 0º	L 25º
		R 0º-50º	R 0º	R 25º
	SR3-2	L 0º-50º	L 0º	L 26º
		R 0º-50º	R 0º	R 25º
	SR3-3*	L 0º-50º	L 0º	L 45º
		R 0º-50º	R 0º	R 45º
REAR HEADER	RH	L 0º-50º	L 0º	L 50º
		R 0º-50º	R 0º	R 50º

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
A-PILLAR	AP1	L -5º-50º	L -5º	L 21º
		R -5º-50º	R -5º	R 20º
	AP2	L -5º-50º	L -5º	L 50º
		R -5º-50º	R -5º	R 50º
	AP3	L -5º-50º	L -5º	L 31º
		R -5º-50º	R -5º	R 31º
B-PILLAR	BP1	L -10º-50º	L -10º	L 5º
		R -10º-50º	R -10º	R 6º
	BP2*	L 0º-50º	L 0º	L 7º
		R 0º-50º	R 0º	R 9º
	BP3	L -10º-50º	L -10º	L -6º
		R -10º-50º	R -10º	R -5º
	BP4	L -10º-50º	L -10º	L -7º
		R -10º-50º	R -10º	R -7º
OTHER PILLAR	OP1	L -10º-50º	L -10º	L 29º
		R -10º-50º	R -10º	R 28º
	OP2	L -10º-50º	L -10º	L 0º
		R -10º-50º	R -10º	R 0º
REAR PILLAR	RP1	L -10º-50º	L -10º	L 15º
		R -10º-50º	R -10º	R 15º
	RP2	L -10º-50º	L -10º	L -4º
		R -10º-50º	R -10º	R -2º
UPPER ROOF 1		0º-50º	0º	25º
UPPER ROOF 2		0º-50º	0º	28º
UPPER ROOF 3		0º-50º	0º	35º
UPPER ROOF 4		0º-50º	0º	37º
UPPER ROOF 5		0º-50º	0º	30º

	VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
UPPER ROOF 6	0º-50º	0º	30º

As determined using the Procedures specified in S8.13.4.2. *Targets BP2 and SR3-3 are seat belt anchorage locations.

RECORDED BY: Louis Campbell DATE: September 12, 2007

APPROVED BY: Helen A. Kaleto

TABLE 2-5

TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Honda Fit, 5-Door Sport

VEH. NHTSA NO.: C75302 VIN: JHMGD38697S058117 COLOR: Red

VEH. BUILD DATE: June, 2007 TEST DATES: September 13-17, 2007

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	240 mm	210 mm
Tº	Horizontal < {CG-F1 (Left Seat) to (Right A-Pillar)}	116.7º	--
A1º	360º - Tº	243.3º	--
Wº	Horizontal < {CG-2 (Left Seat) to (Left A-Pillar)}	202.5º	--
A2º	A2º = Wº	202.5º	--
Uº	Horizontal < {CG-2 (Left Seat) to (Left B-Pillar)}	278.5º	--
B1º	B1º = Uº	278.5º	--
Vº	Horizontal < {CG-R (Left Seat) to (Left B-Pillar)}	199.5º	--
B2º	B2º = Vº	199.5º	--
Wº (right)	Horizontal < {CG-F2 (Right Seat) to (Right A-Pillar)}	--	158.5º
A1º (right)	A1º (right) = Wº (right)	--	158.5º
T º (right)	Horizontal < {CG-F1 (Right Seat) to (Left A-Pillar)}	--	244.7º
A2º (right)	360º-Tº (right)	--	115.3º
V º (right)	Horizontal < {CG-R (Right Seat) to (Right B-Pillar)}	--	159.7º
B1º (right)	B1º (right) = Vº (right)	--	159.7º
U º (right)	Horizontal < {CG-F2 (Right Seat) to (Right B-Pillar)}	--	73.7º
B2º (right)	B2º (right) = Uº (right)	--	73.7º
J	A-Pillar {(Plane 3) - (Plane 5)}	361.1 mm	357.1 mm
J/2	J ÷ 2	180.6 mm	178.6 mm
D1	Upper Roof {(Plane A) - (Plane B)}	1933.0 mm	
D1/2	D1 ÷ 2	966.5 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1155.9 mm	

Measurement	Description	Left Side	Right Side
D2/2	D2 ÷ 2	578.0 mm	
.35D1	.35 x D1	676.6 mm	
.35D2	.35 x D2	404.6 mm	
N	B-Pillar {(BPR) - (lowest point on daylight opening forward of B-Pillar)}	499.9 mm	504.9 mm
N/2	B-Pillar {(BP3) - (lowest point on daylight opening forward of B-Pillar)}	250.0 mm	252.5 mm
N/4	B-Pillar {(BP4) - (lowest point on daylight opening forward of B-Pillar)}	125.0 mm	126.2 mm
Q	O-Pillar (Plane 13 – Plane 14)	412.5 mm	413.0 mm
Q/2	Q / 2	206.3 mm	206.5 mm
D	R-Pillar (Point 7 – Point M)	810.0 mm	804.0 mm
3D/7	3*D / 7	347.1 mm	344.6 mm

As determined using the Procedures specified in S10.1-10.13.

SgRP Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	-134.8	398.5	-160.8	-163.8	1058.5	-151.8
Rear	635.2	398.5	-124.8	635.2	1058.5	-124.8

SgRP Locations (vehicle coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	-134.8	398.5	-160.8	-163.8	1058.5	-151.8
Rear	635.2	398.5	-124.8	635.2	1058.5	-124.8

CG Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
CGF1	-214.8	398.5	499.2	-213.8	1058.5	508.2
CGF2	25.2	398.5	499.2	-3.8	1058.5	508.2
CGR	795.2	398.5	535.2	795.2	1058.5	535.2

REFERENCE FOR VEHICLE COORDINATE SYSTEM (measured in millimeters):

Upper door, front outboard seat bolt hole (x, y, z) = 0, 0, 0

REMARKS:

RECORDED BY: Louis Campbell DATE: September 12, 2007

APPROVED BY: Helen A. Kaleto

TABLE 2-6

SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Honda Fit, 5-Door Sport

VEH. NHTSA NO.: C75302 VIN: JHMGD38697S058117 COLOR: Red

VEH. BUILD DATE: June, 2007 TEST DATES: September 13-17, 2007

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell

SUMMARY OF TARGETING RESULTS								
Target	**Location (mm)**			**Horizontal Angle (deg)**	**Vertical Angle (deg)**	**Relocation (Yes/No)**	**Extension (# of 25 mm Spheres)**	**Impact (Yes/No)**
	x	**y**	**z**					
A-Pillar Left Side								
AP1	-442.6	202.7	639.0	--	--	Yes	--	--
REL	-438.6	194.1	617.6	243	21	--	1	No
AP2	-557.9	156.3	552.0	203	50	No	--	Yes
AP3	-737.6	122.2	459.3	203	31	No	--	No
A-Pillar Right Side								
AP1	-443.3	1250.2	639.4	--	--	Yes	--	--
REL	-440.9	1260.5	616.6	115	20	--	1	Yes
AP2	-569.6	1300.1	552.2	159	50	No	--	No
AP3	-745.2	1330.8	461.6	159	31	No	--	Yes
B-Pillar Left Side								
BP1	134.7	264.7	715.8	270	5	No	--	No
BP2	102.0	177.5	450.6	270	7	No	--	Yes
BP3	55.6	149.3	466.4	279	-6	No	--	No
BP4	147.4	98.0	342.5	200	-7	No	--	No
B-Pillar Right Side								
BP1	128.5	1187.1	722.8	90	6	No	--	No
BP2	102.8	1278.3	453.5	90	9	No	--	No
BP3	52.8	1306.5	470.2	74	-5	No	--	No
BP4	141.5	1350.9	344.6	160	-7	No	--	Yes

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
Other Pillar Left Side								
OPR	789.9	296.4	688.3	--	--	--	--	--
OP1	789.9	296.4	688.3	270	29	No	--	No
OP2	847.8	157.2	482.2	270	0	No	--	Yes
Other Pillar Right Side								
OPR	785.7	1157.2	696.7	--	--	--	--	--
OP1	785.7	1157.2	696.7	90	28	No	--	Yes
OP2	850.8	1298.8	490.5	90	0	No	--	No
Rear Pillar Left Side								
RP1	1185.0	239.5	588.4	315	15	No	--	No
RP2	1178.4	130.1	439.0	--	--	Yes	--	No
REL	1198.5	169.6	497.4	317	-4	--	3	--
Rear Pillar Right Side								
RP1	1179.0	1209.8	602.5	45	15	No	--	No
RP2	1185.6	1321.3	453.4	--	--	Yes	--	--
REL	1199.9	1280.6	511.9	43	-2	--	3	Yes
Front Header Left Side								
FH1	-514.1	309.2	664.0	180	50	No	--	No
FH2	-529.6	458.1	673.5	180	50	No	--	No
Front Header Right Side								
FH1	-512.2	1145.9	666.4	180	50	No	--	No
FH2	-526.9	995.2	675.1	180	50	No	--	No
Side Rail Left Side								
SR1	-293.3	239.2	689.5	270	16	No	--	No
SR2A	-143.0	246.8	707.9	--	--	Yes	--	--
REL	-121.5	269.6	666.9	270	28	--	2	No
SR2B	-164.4	246.6	707.3	--	--	Yes	--	--
REL	-184.7	266.2	662.3	270	31	--	2	No
SR3-1	416.2	285.5	687.2	270	25	No	--	No

SUMMARY OF TARGETING RESULTS								
Target	**Location (mm)**			**Horizontal Angle (deg)**	**Vertical Angle (deg)**	**Relocation (Yes/No)**	**Extension (# of 25 mm Spheres)**	**Impact (Yes/No)**
	x	**y**	**z**					
SR3-2	556.9	289.5	681.7	270	26	No	--	No
SR3-3	1040.5	208.8	631.7	--	--	Yes	--	--
REL	1037.6	256.2	638.2	270	45	--	2	No
Side Rail Right Side								
SR1	-293.8	1210.2	696.7	90	17	No	--	No
SR2A	-143.1	1206.8	711.3	--	--	Yes	--	--
REL	-124.4	1182.7	672.0	90	28	--	2	No
SR2B	-171.7	1208.8	709.0	--	--	Yes	--	--
REL	-193.1	1187.9	663.6	90	32	--	2	No
SR3-1	415.5	1167.4	689.8	90	25	No	--	No
SR3-2	553.6	1162.4	685.6	90	25	No	--	No
SR3-3	1039.6	1246.5	635.9	--	--	Yes	--	--
REL	1034.2	1196.0	641.7	90	45	--	2	No
Rear Header Left Side								
RH	1120.1	398.1	638.3	0	50	No	--	Yes
Rear Header Right Side								
RH	1227.6	1059.0	651.6	0	50	No	--	No
Upper Roof Left Side								
UR1@B-Pillar	-145.8	364.7	753.9	270	25	No	--	No
UR2@BPR	135.5	336.2	753.6	270	28	No	--	Yes
UR3@Rear Side Rail	884.3	336.6	704.3	270	35	No	--	Yes
Upper Roof Right Side								
UR4	16.6	1114.1	758.7	90	37	No	--	No
UR5@SR3-2	364.9	1100.9	765.9	90	30	No	--	Yes
UR6	670.2	1107.1	752.7	90	30	No	--	No

As determined using the Procedures specified in S10.1-10.13.

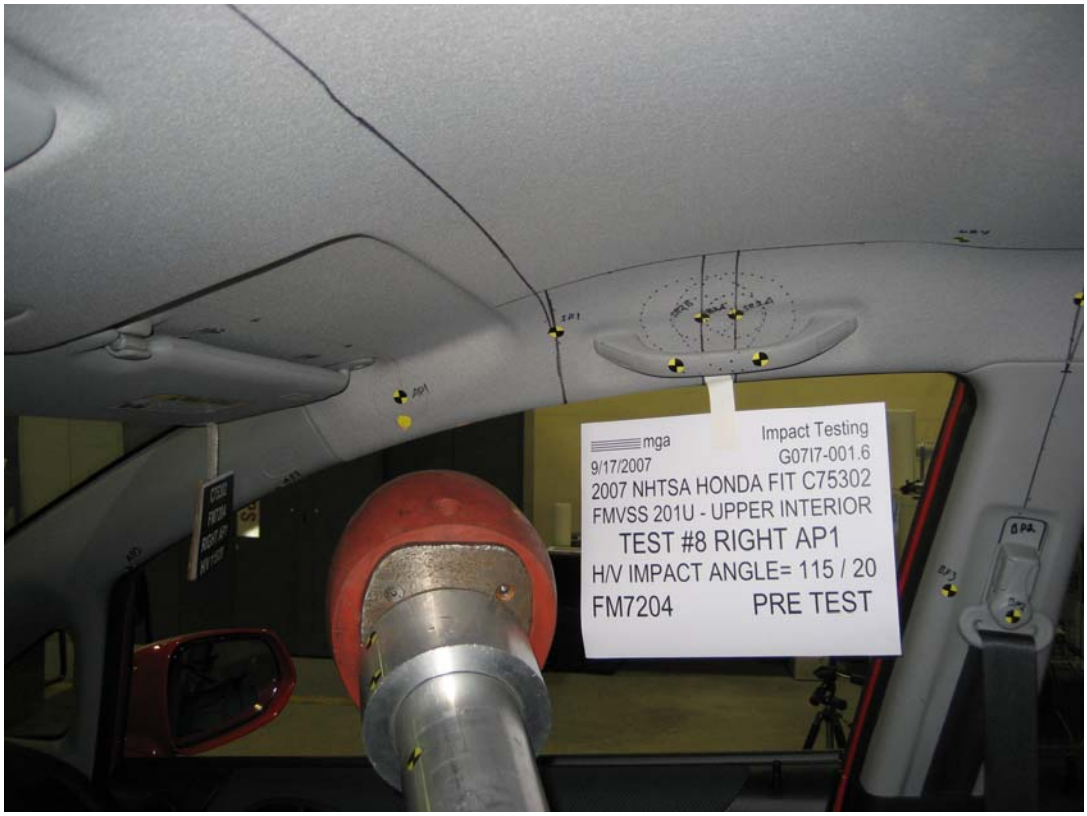
REMARKS: The following targets on the left side of the vehicle are located in the curtain airbag zone and are subject to a reduced velocity impact if tested: AP1, AP2, AP3, BP1, OP1, SR1, SR2(A), SR2(B), SR3-1, SR3-2, SR3-3, UR3@Rear Side Rail.

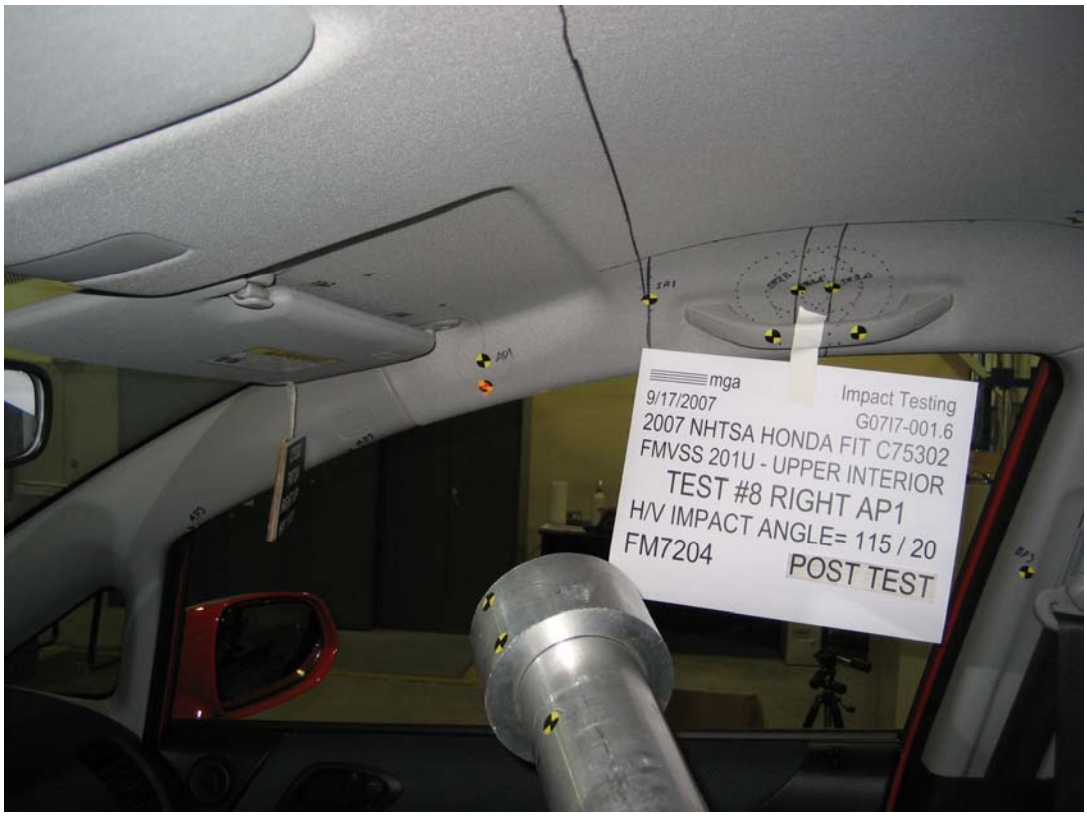
The following targets on the right side of the vehicle are located in the curtain airbag zone and are subject to a reduced velocity impact if tested: AP1, AP2, AP3, BP1, OP1, SR1, SR2(A), SR2(B), SR3-1, SR3-2, and SR3-3.

RECORDED BY: Louis Campbell DATE: September 12, 2007

APPROVED BY: Helen A. Kaleto

3.0 TEST DATA (Including Acceleration and Velocity Plots)




mga
9/17/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #8 RIGHT AP1
H/V IMPACT ANGLE= 115 / 20
FM7204
POST TEST


mga
9/17/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #8 RIGHT AP1
H/V IMPACT ANGLE= 115 / 20
FM7204
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#8

Target (Vehicle Side): AP1 Right

Temperature:22C

MGA Test Reference No.:FM7204

Humidity:48%

Approach Horizontal Angles:115º

Time of Test:12:08:52 PM

Approach Vertical Angles:20º

FMH Serial No:[037]

Additional Description: 1 Relocation

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
318	201	5.9	18.5	45	6 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22696	-100.013	1.33	1.33
Y	6	J35791	91.856	1.89	1.89
Z	7	J35800	97.996	1.83	1.83

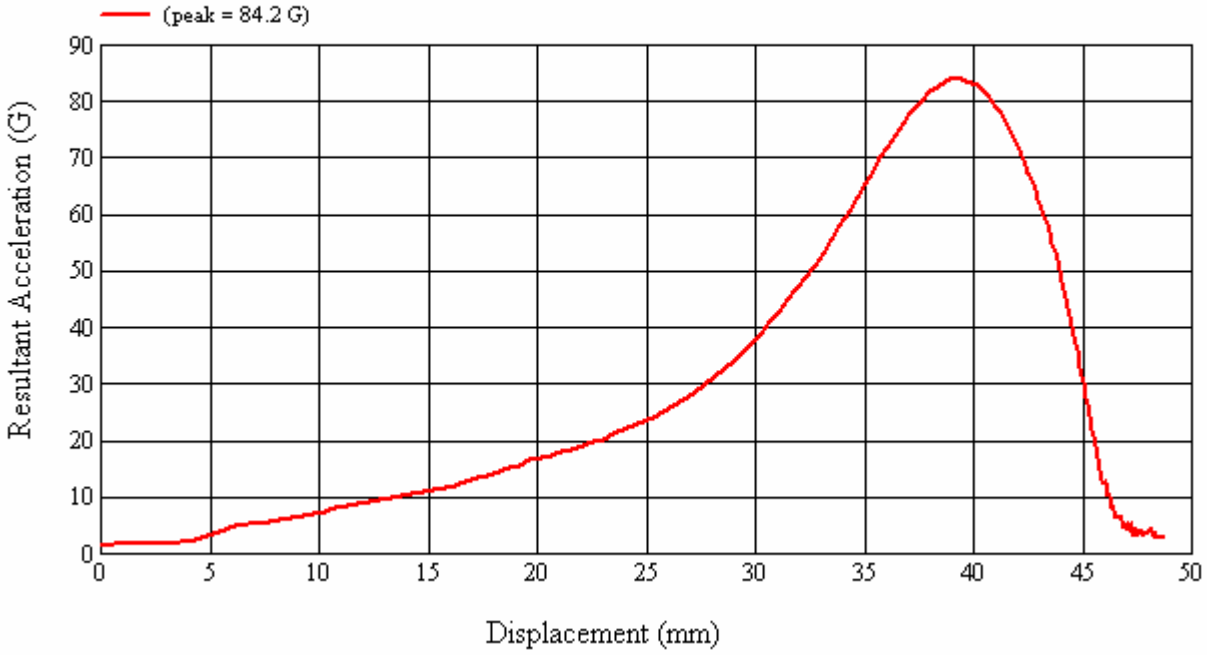
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

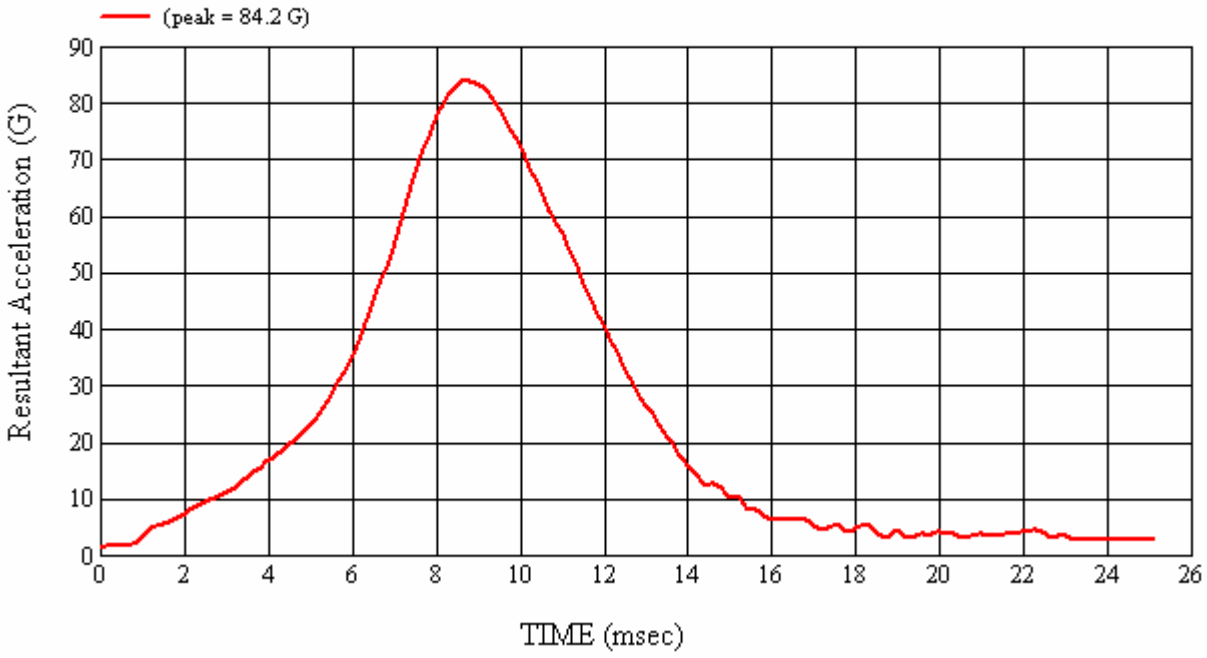
No visible damage.

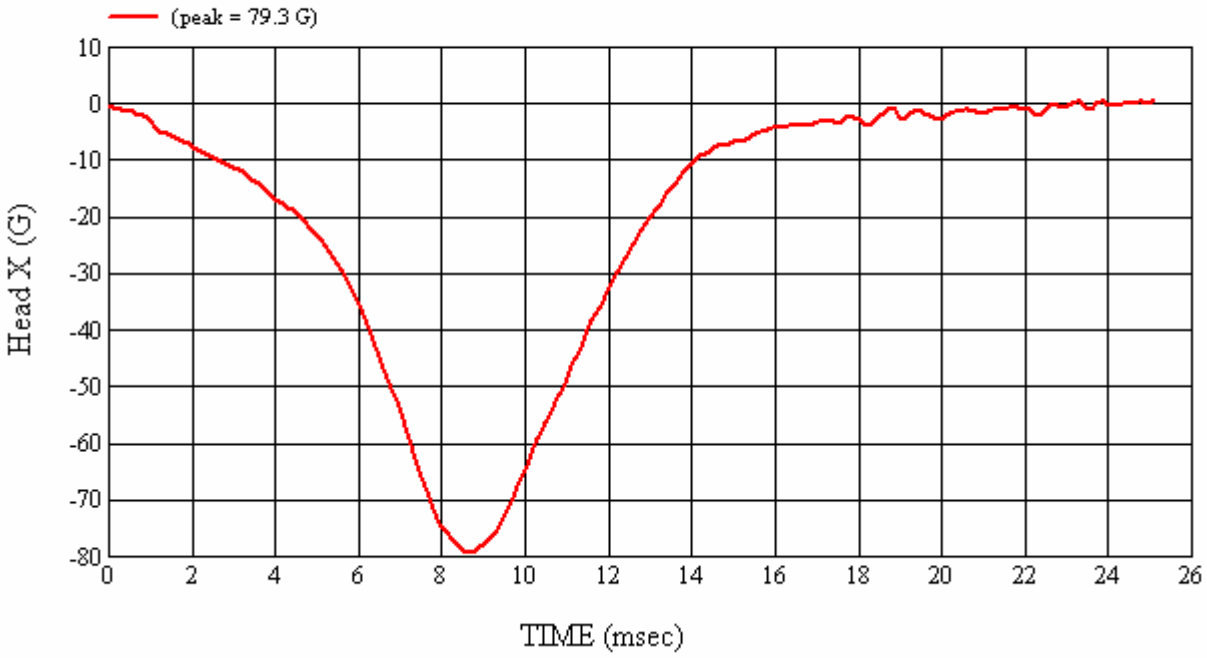
Recorded By: _____ Approved By*: _____ Date: 9/17/2007

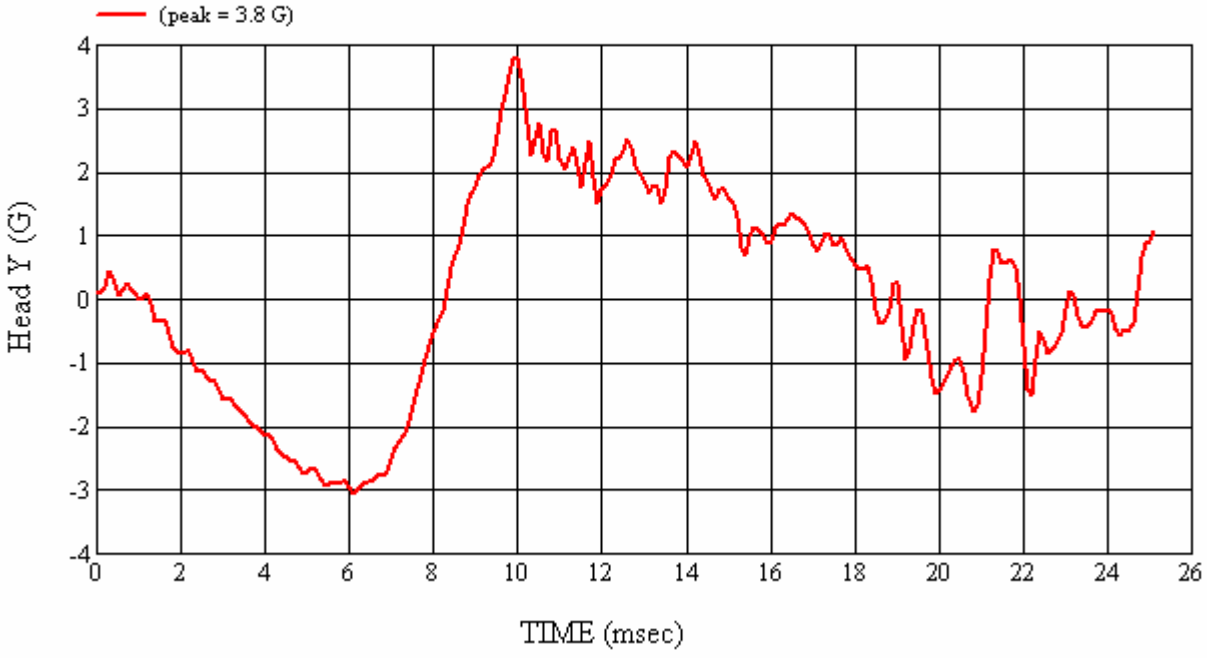
*Only necessary for NHTSA (Government) Compliance testing.

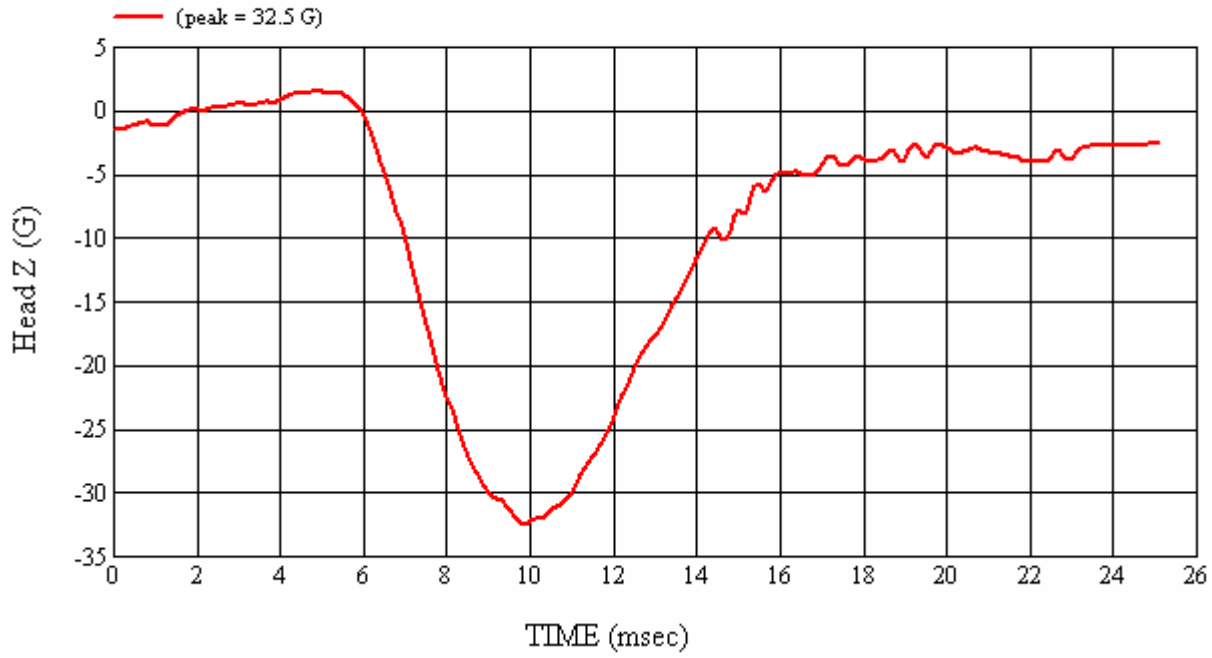
MGA Test #: FM7204 Target Location: AP1, Right Side Test Date: 9/17/2007

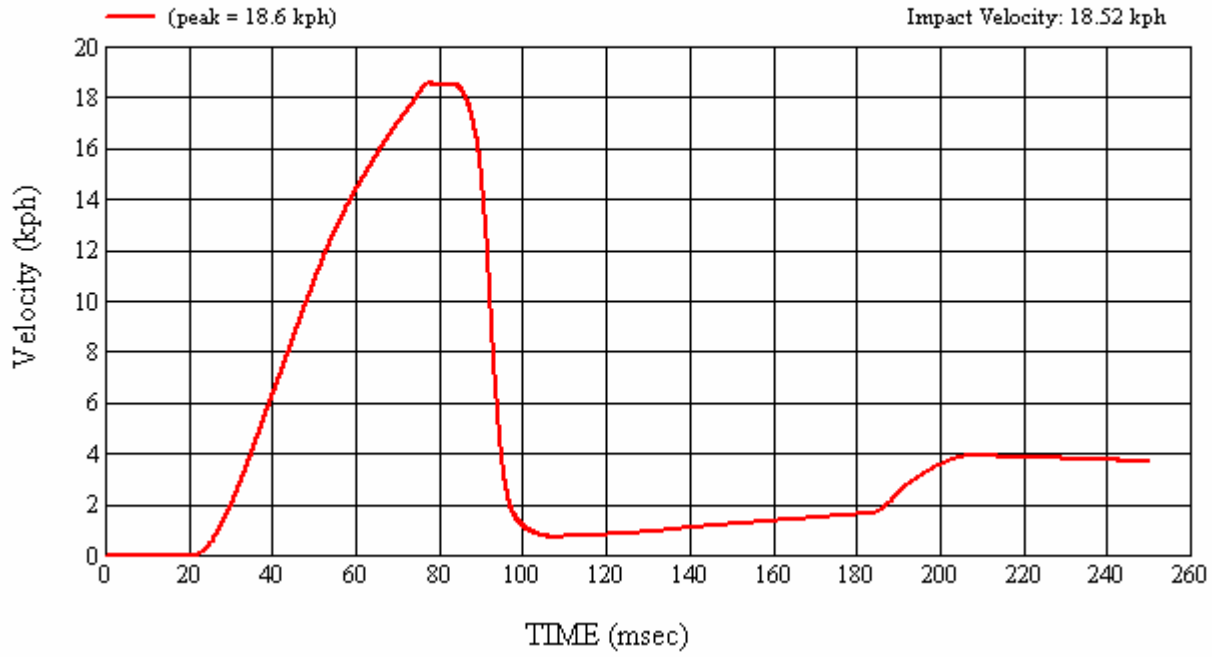


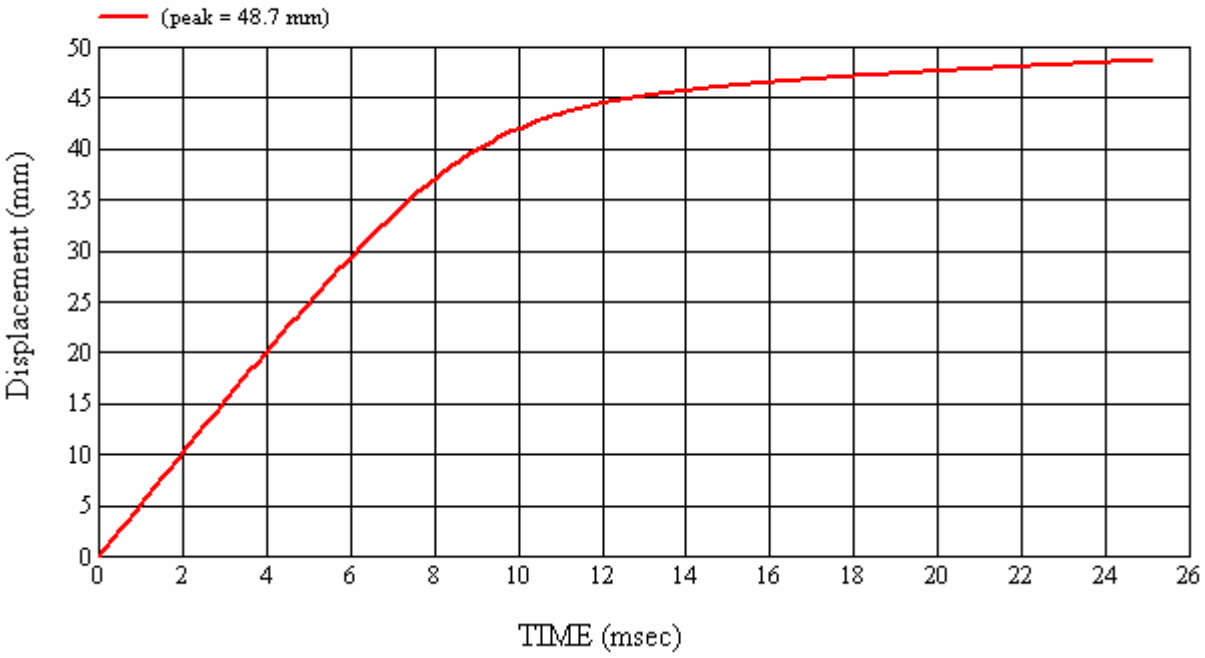



(peak = 79.3 G)
Head X (G)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


(peak = 3.8 G)
Head Y (G)
4
3
2
1
0
-1
-2
-3
-4
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


(peak = 32.5 G)
Head Z (G)
5
0
-5
-10
-15
-20
-25
-30
-35
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


(peak = 18.6 kph)
Impact Velocity: 18.52 kph
Velocity (kph)
20
18
16
14
12
10
8
6
4
2
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 48.7 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
45
50
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


mga
9/13/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #1 LEFT AP2
H/V IMPACT ANGLE= 203 / 50
FM7197
PRE TEST


mga
9/13/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #1 LEFT AP2
H/V IMPACT ANGLE= 203 / 50
FM7197
POST TEST


mga
9/13/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #1 LEFT AP2
H/V IMPACT ANGLE= 203 / 50
FM7197
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#1

Target (Vehicle Side): AP2 Left

Temperature:21C

MGA Test Reference No.:FM7197

Humidity:57%

Approach Horizontal Angles:203º

Time of Test:12:54:52 PM

Approach Vertical Angles:50º

FMH Serial No:[035]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
559	521	5.8	18.8	15	4 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22664	-94.161	1.32	1.32
Y	6	J35919	97.442	1.89	1.89
Z	7	J35924	93.891	1.83	1.83

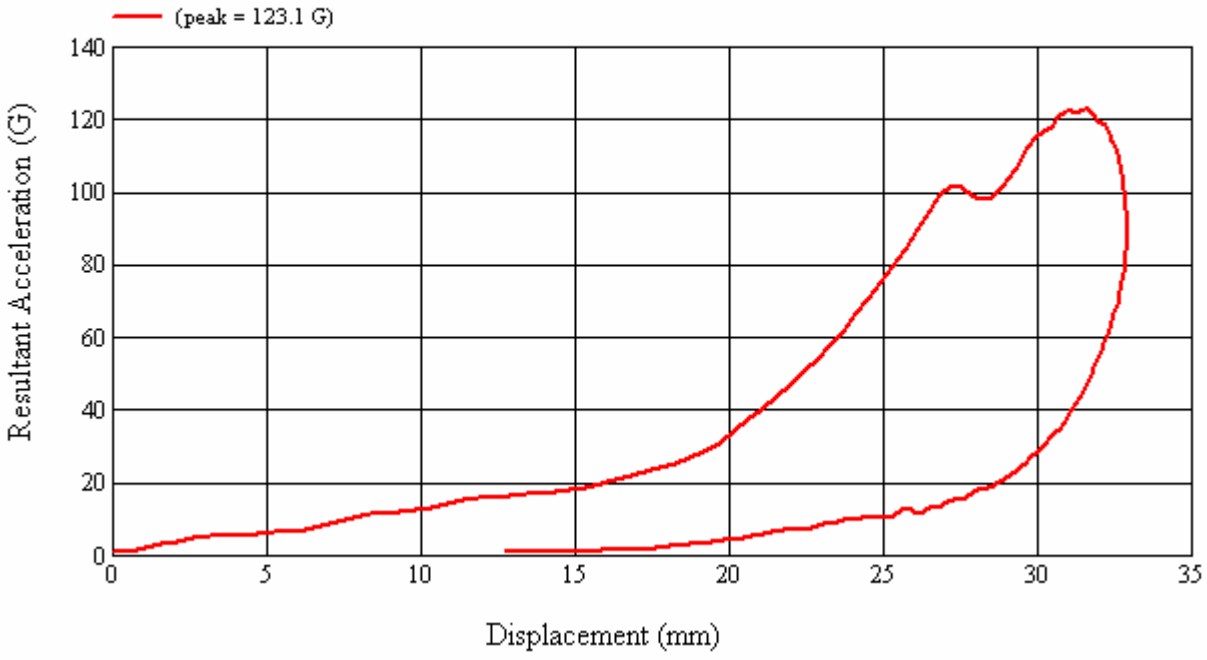
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

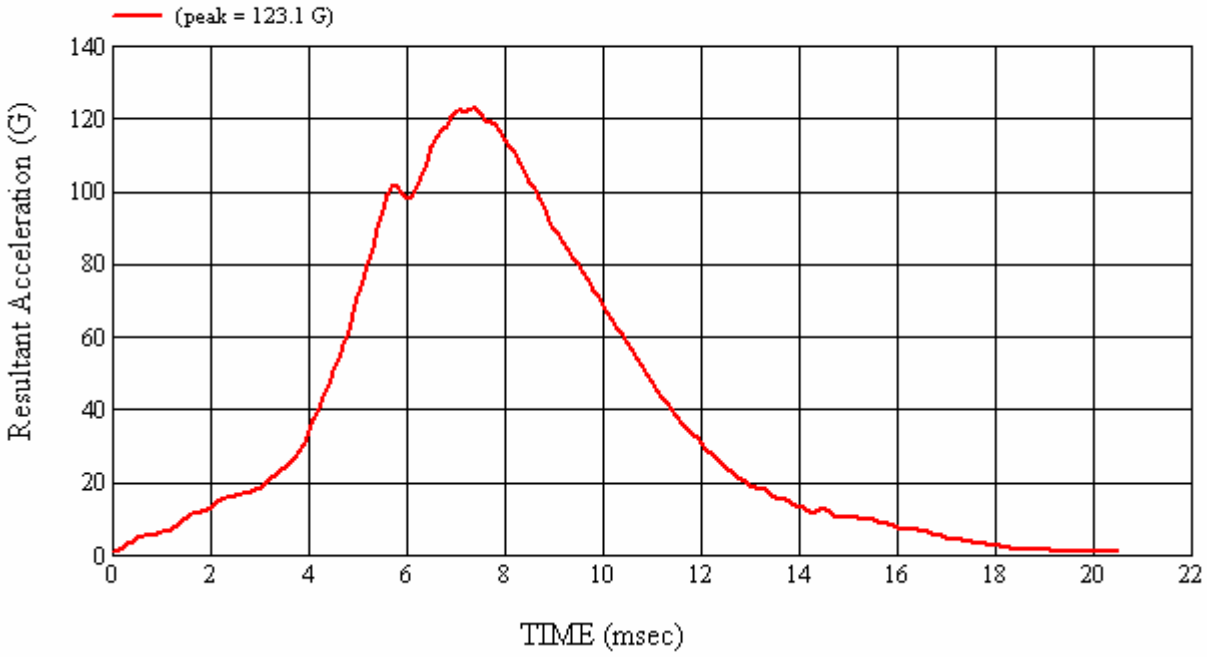
Slight displacement on top of A-pillar trim.

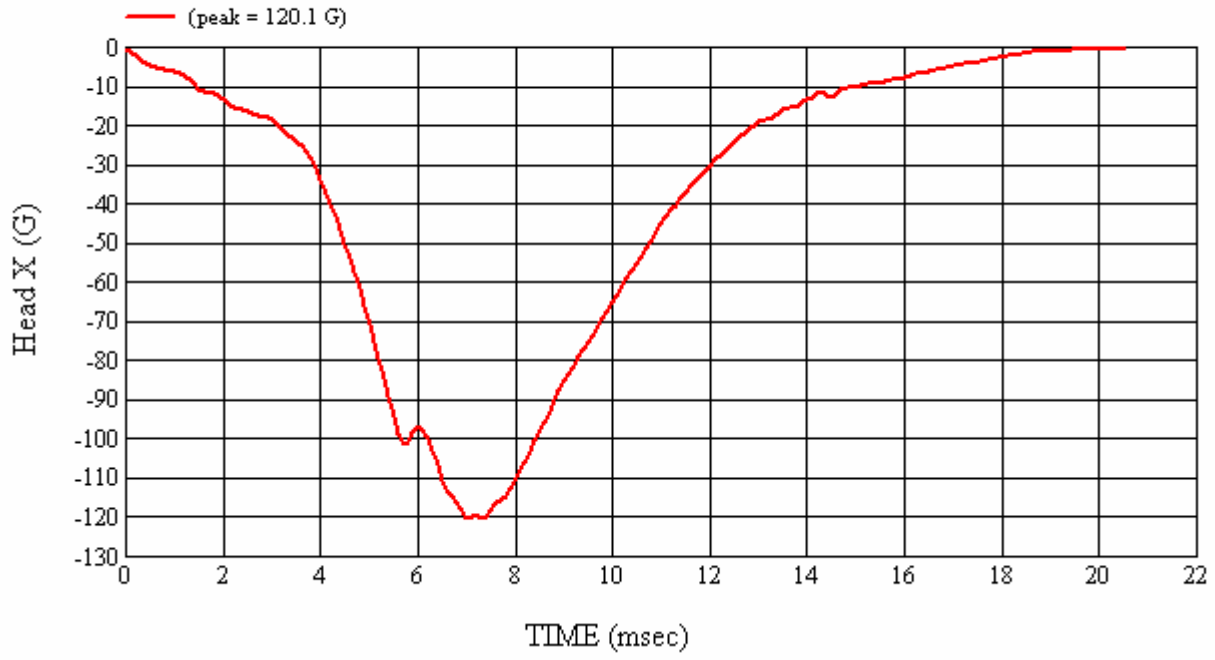
Recorded By: _____ Approved By*: _____ Date: 9/13/2007

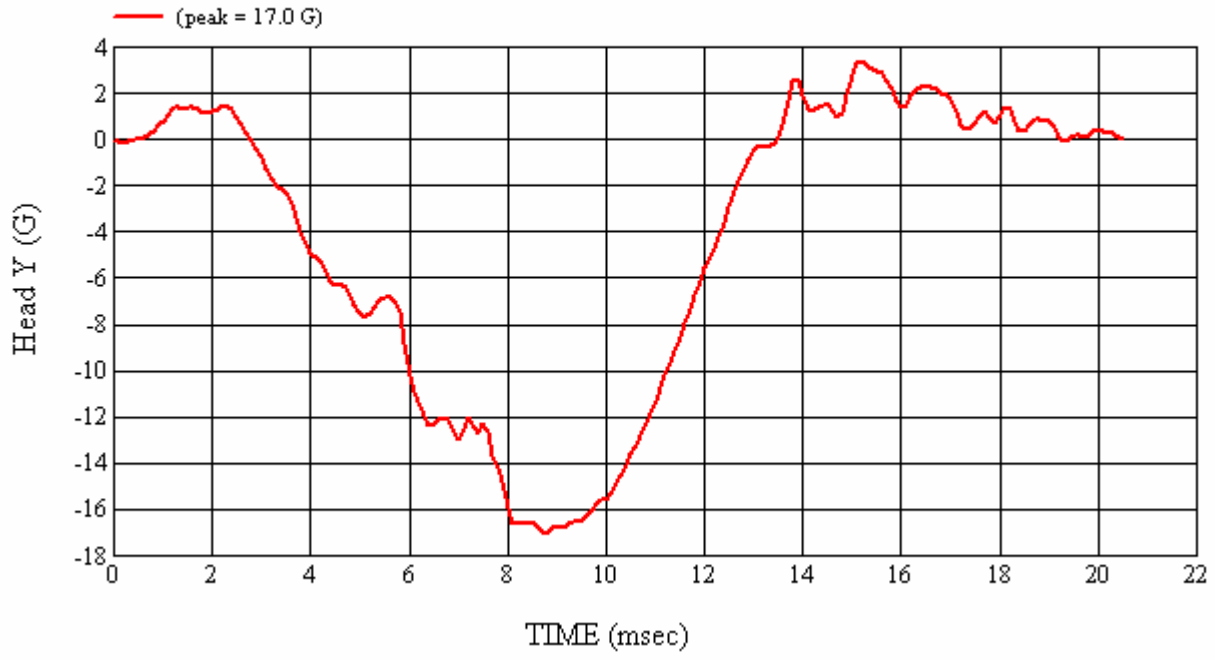
*Only necessary for NHTSA (Government) Compliance testing.

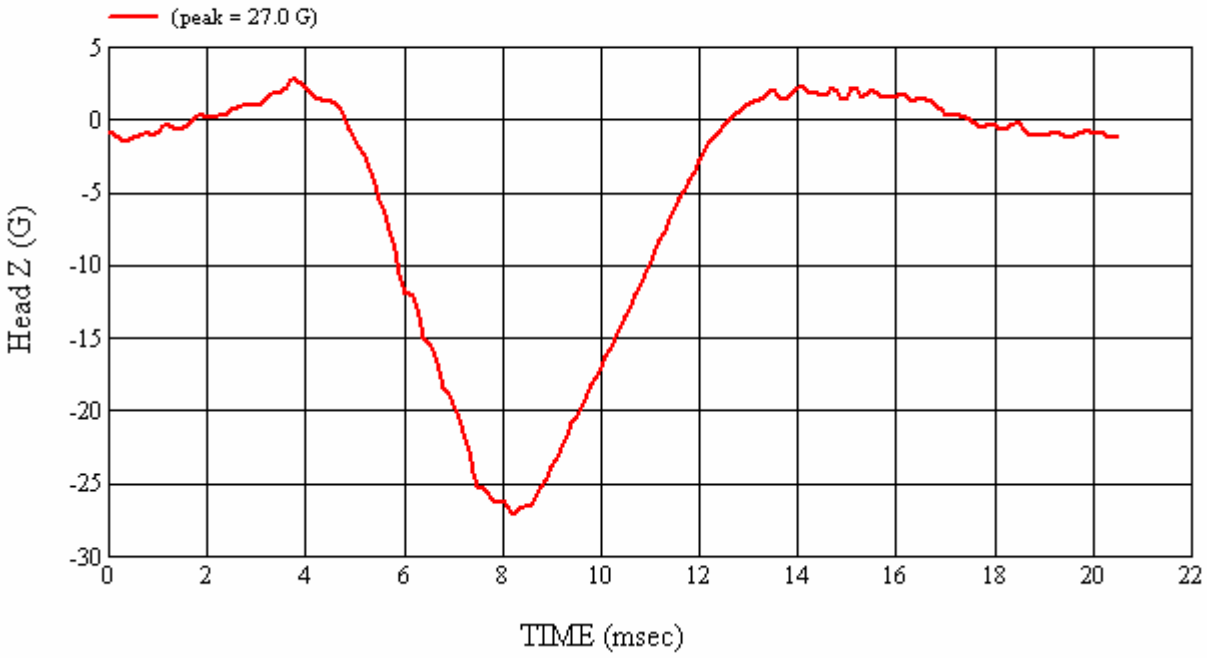
MGA Test #: FM7197 Target Location: AP2, Left Side Test Date: 9/13/2007

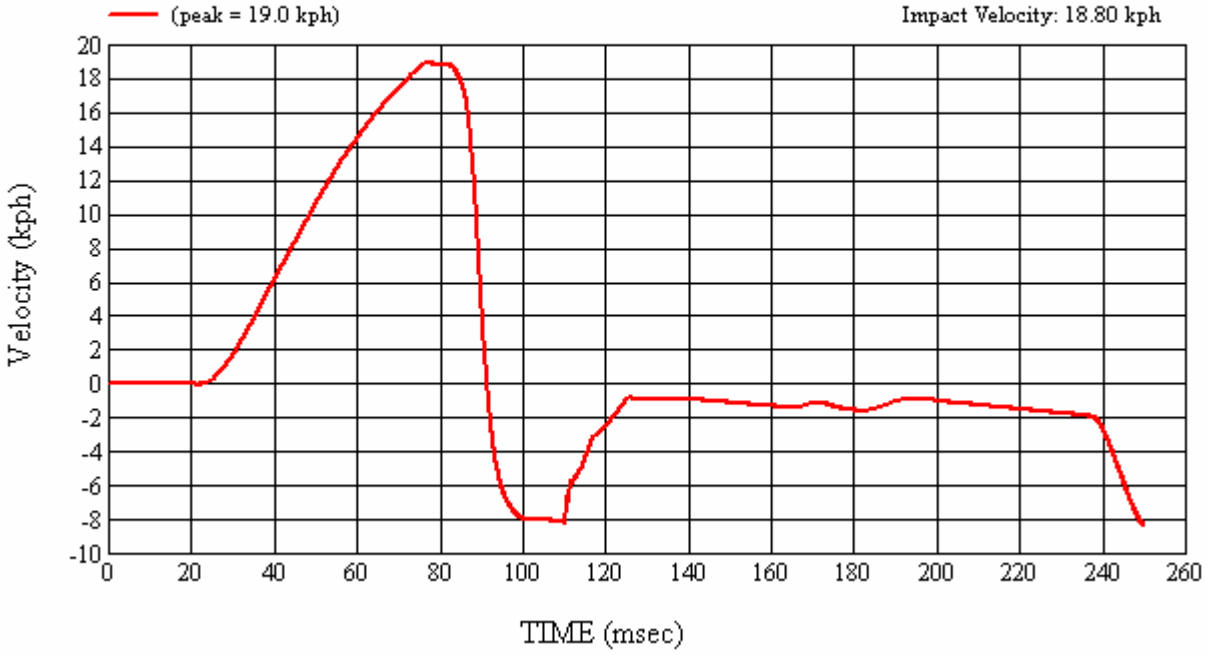


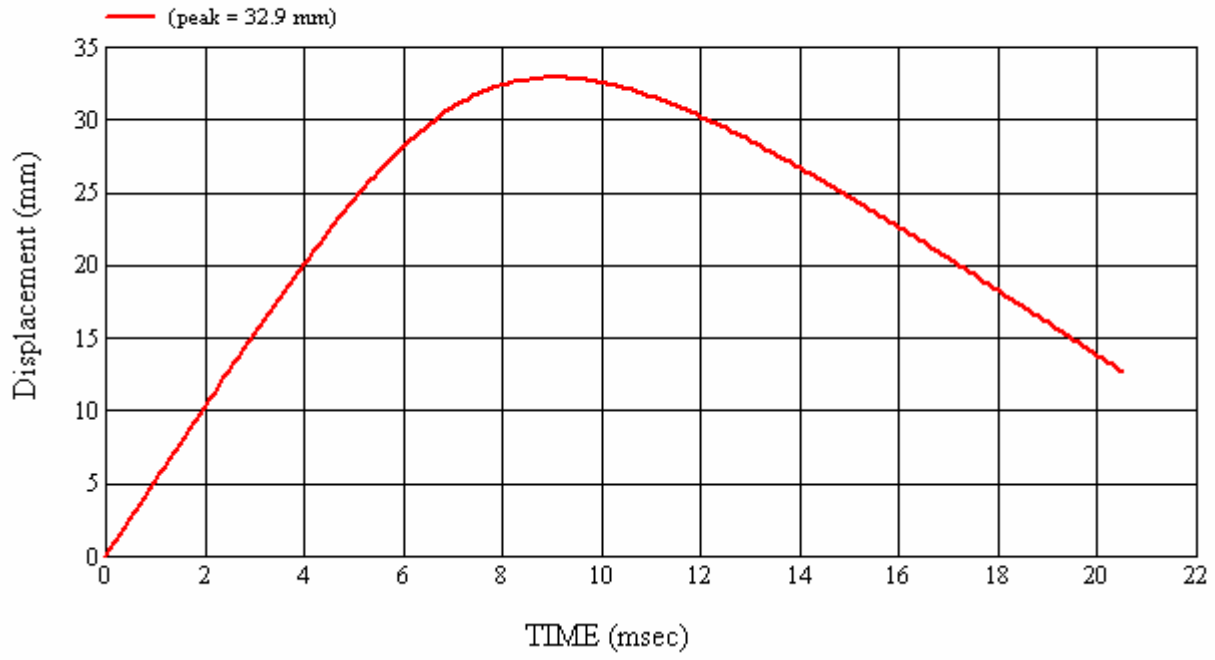


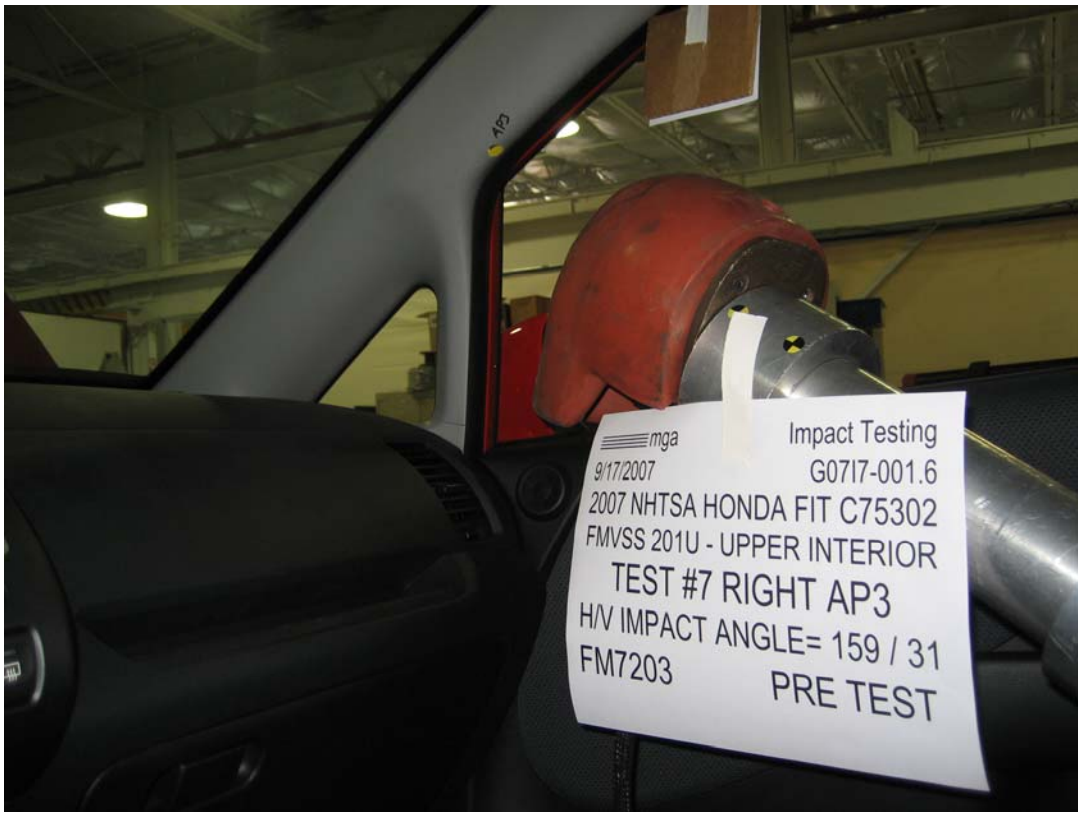

(peak = 120.1 G)
Head X (G)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 17.0 G)
Head Y (G)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 27.0 G)
Head Z (G)
5
0
-5
-10
-15
-20
-25
-30
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 19.0 kph)
Impact Velocity: 18.80 kph
Velocity (kph)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 32.9 mm)
Displacement (mm)
35
30
25
20
15
10
5
0
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #7 RIGHT AP3
H/V IMPACT ANGLE= 159 / 31
FM7203
PRE TEST


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #7 RIGHT AP3
H/V IMPACT ANGLE= 159 / 31
FM7203
POST TEST


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #7 RIGHT AP3
H/V IMPACT ANGLE= 159 / 31
FM7203
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#7

Target (Vehicle Side): AP3 Right

Temperature:22C

MGA Test Reference No.:FM7203

Humidity:48%

Approach Horizontal Angles:159º

Time of Test:10:59:28 AM

Approach Vertical Angles:31º

FMH Serial No:[035]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
539	493	6.6	18.8	36	7 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22664	-94.161	1.32	1.32
Y	6	J35919	97.442	1.89	1.89
Z	7	J35924	93.891	1.83	1.83

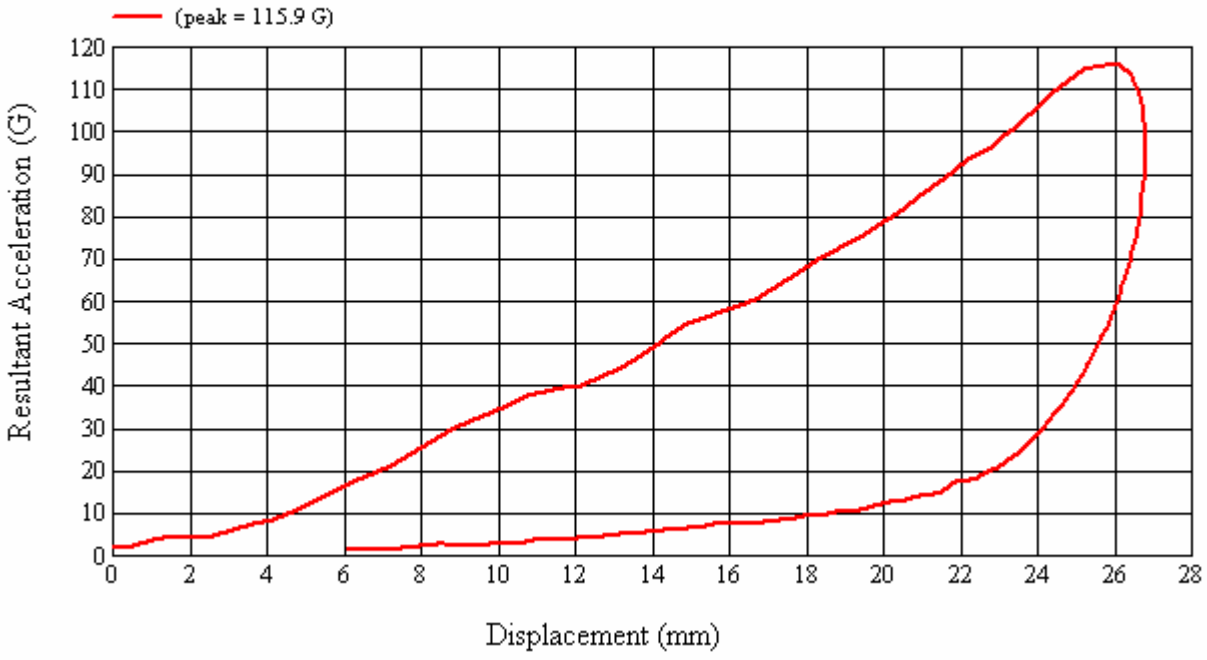
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

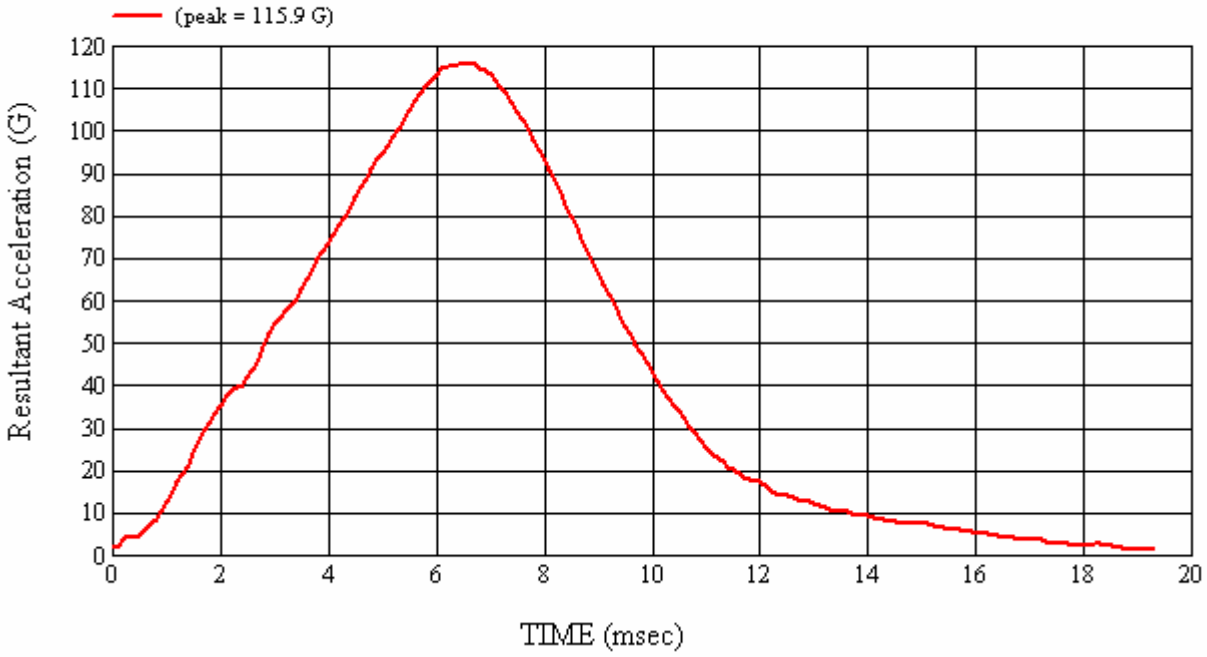
No visible damage.

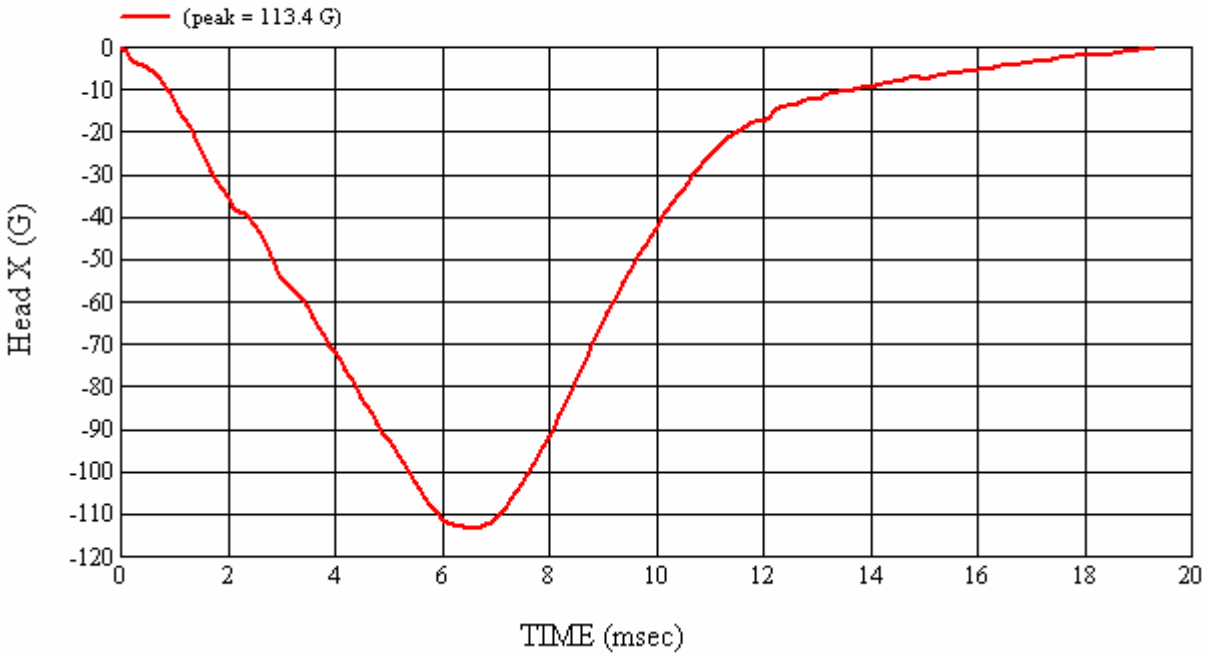
Recorded By: [signature] Approved By*: [signature] Date: 9/17/2007

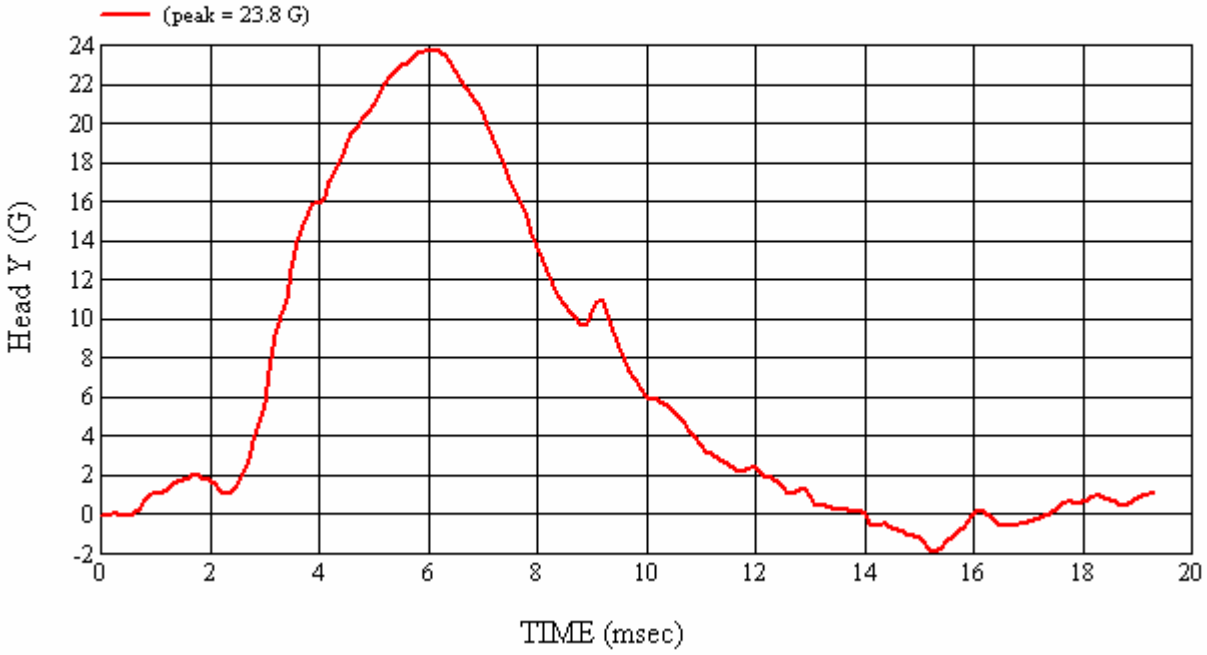
*Only necessary for NHTSA (Government) Compliance testing.

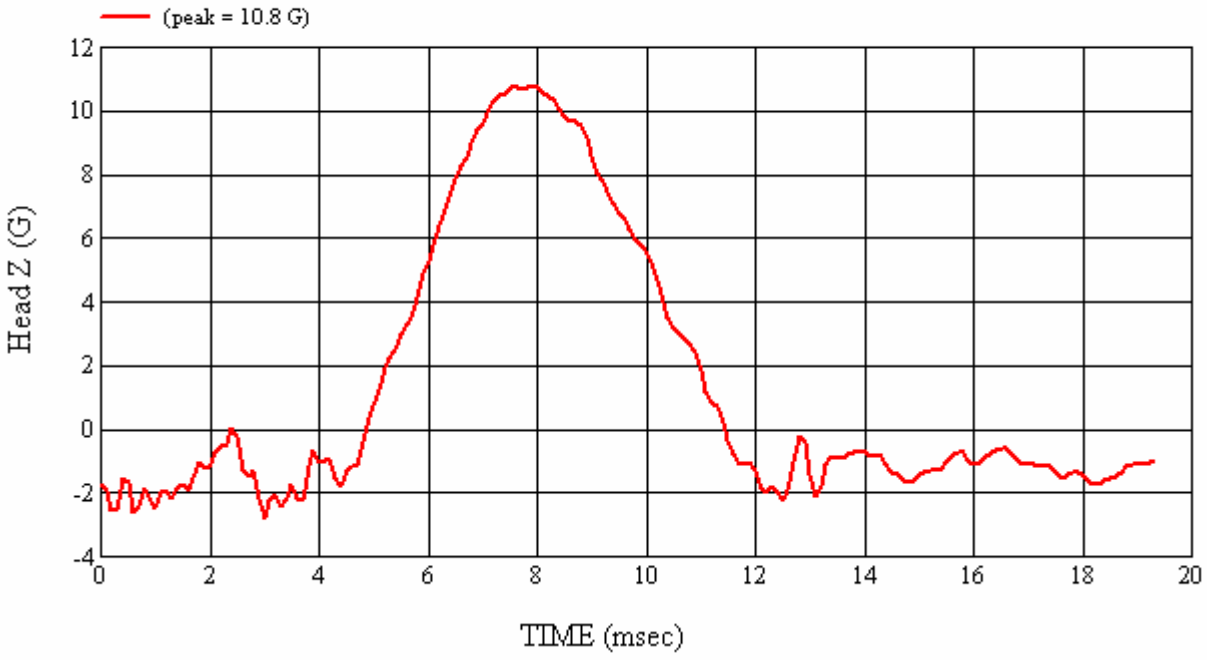
MGA Test #: FM7203 Target Location: AP3, Right Side Test Date: 9/17/2007

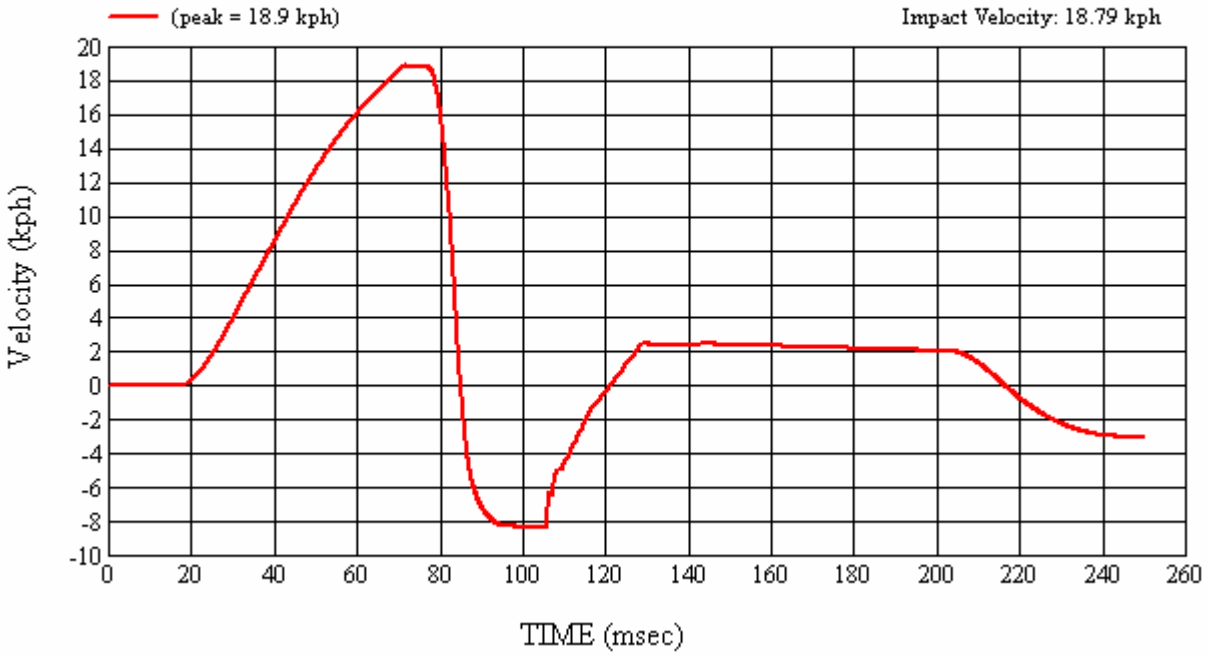


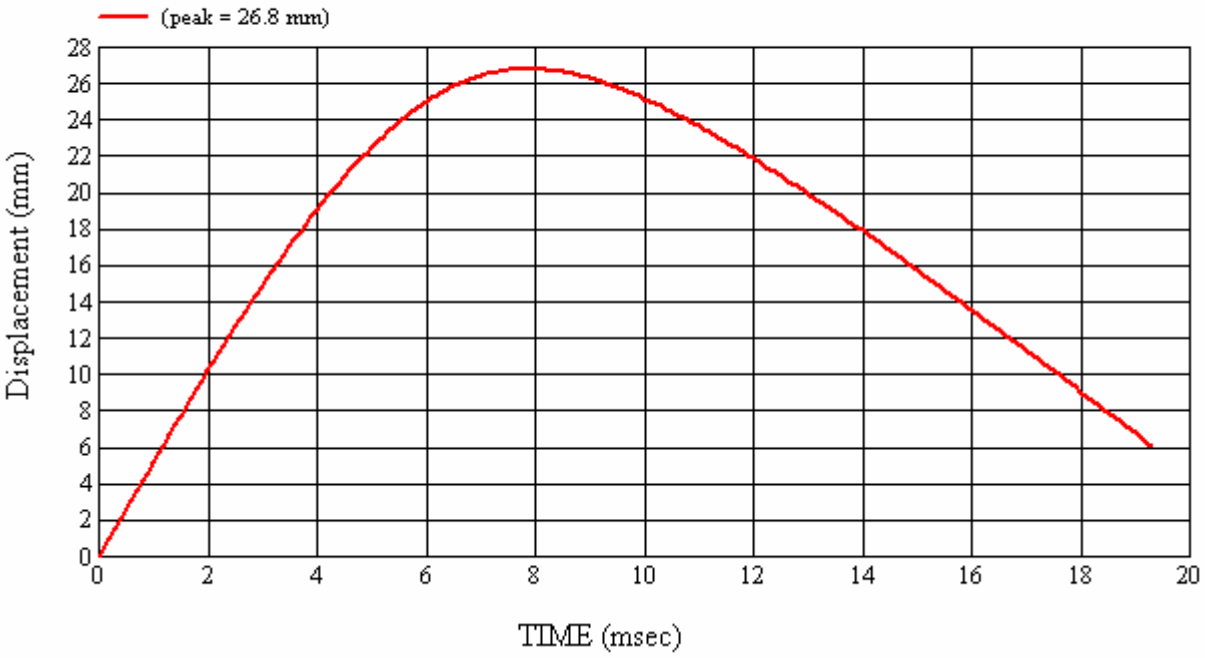


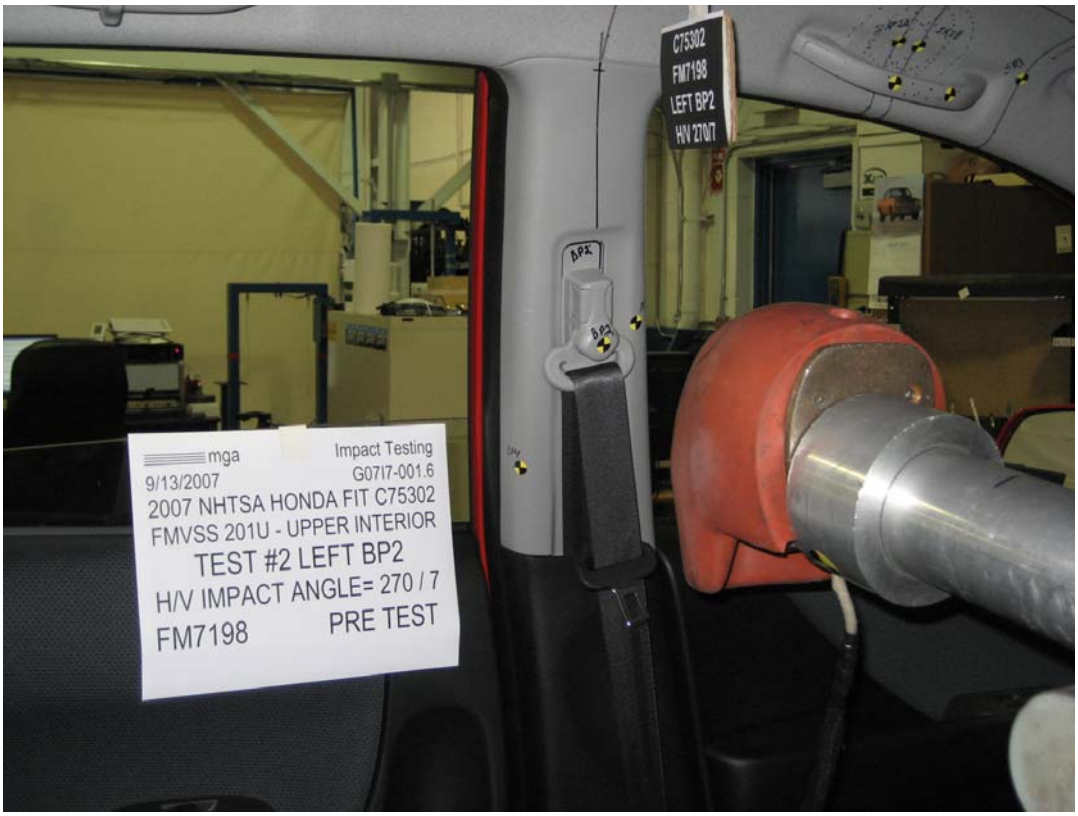

(peak = 113.4 G)
Head X (G)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
0
2
4
6
8
10
12
14
16
18
20
TIME (msec)


(peak = 23.8 G)
Head Y (G)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
0
2
4
6
8
10
12
14
16
18
20
TIME (msec)


(peak = 10.8 G)
Head Z (G)
12
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10
12
14
16
18
20
TIME (msec)


(peak = 18.9 kph)
Impact Velocity: 18.79 kph
Velocity (kph)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 26.8 mm)
Displacement (mm)
TIME (msec)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28


C75302
FM7198
LEFT BP2
H/V 270/7
mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #2 LEFT BP2
H/V IMPACT ANGLE= 270 / 7
FM7198
PRE TEST


mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #2 LEFT BP2
H/V IMPACT ANGLE= 270 / 7
FM7198
POST TEST


mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #2 LEFT BP2
H/V IMPACT ANGLE= 270 / 7
FM7198
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#2

Target (Vehicle Side): BP2Left

Temperature:21C

MGA Test Reference No.:FM7198

Humidity:56%

Approach Horizontal Angles:270º

Time of Test:2:02:06 PM

Approach Vertical Angles:7º

FMH Serial No:[037]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
565	529	8.6	23.6	19	7 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22696	-100.013	1.33	1.32
Y	6	J35791	91.856	1.89	1.89
Z	7	J35800	97.996	1.83	1.83

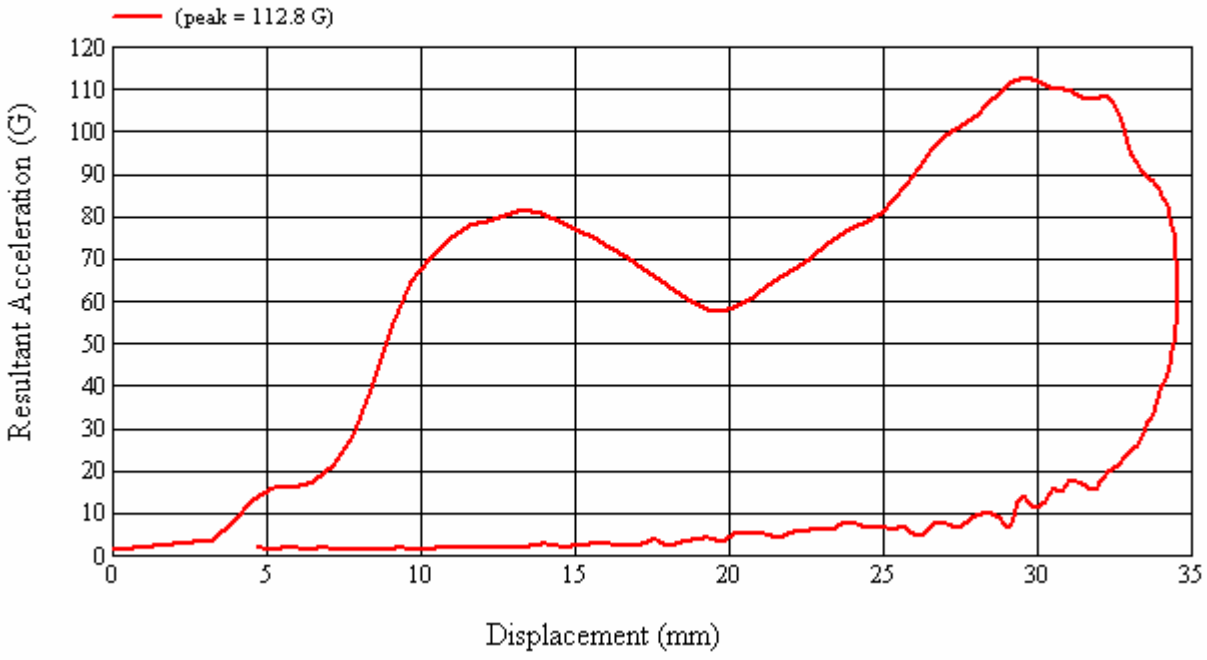
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

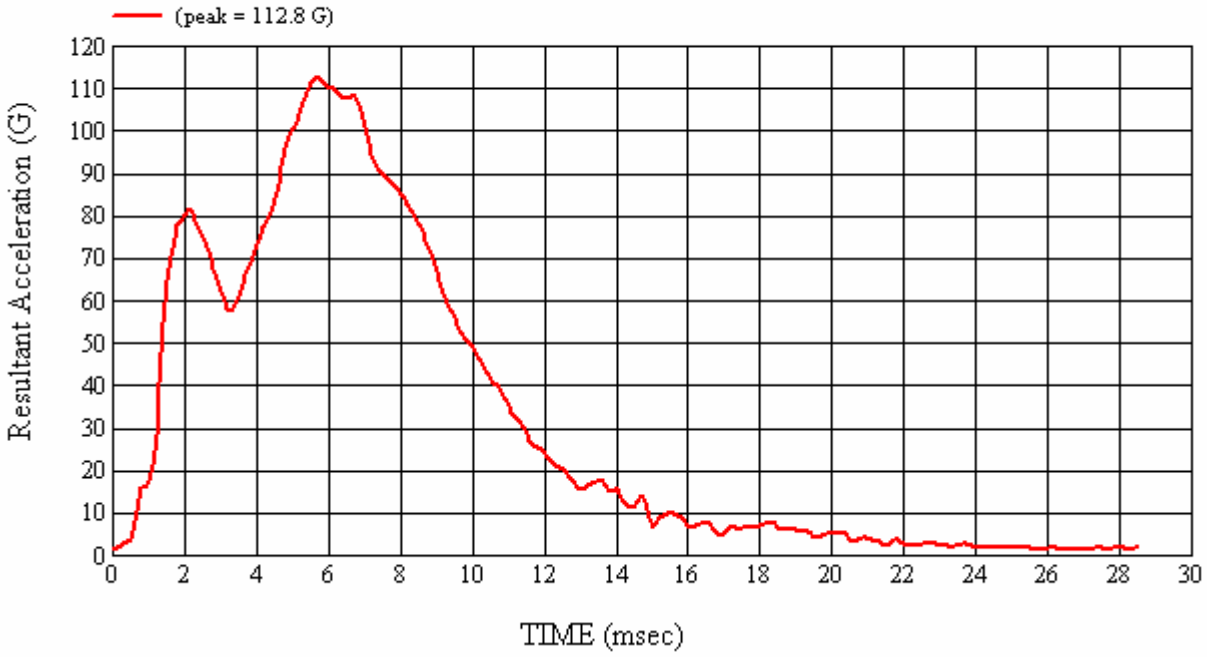
No visible damage.

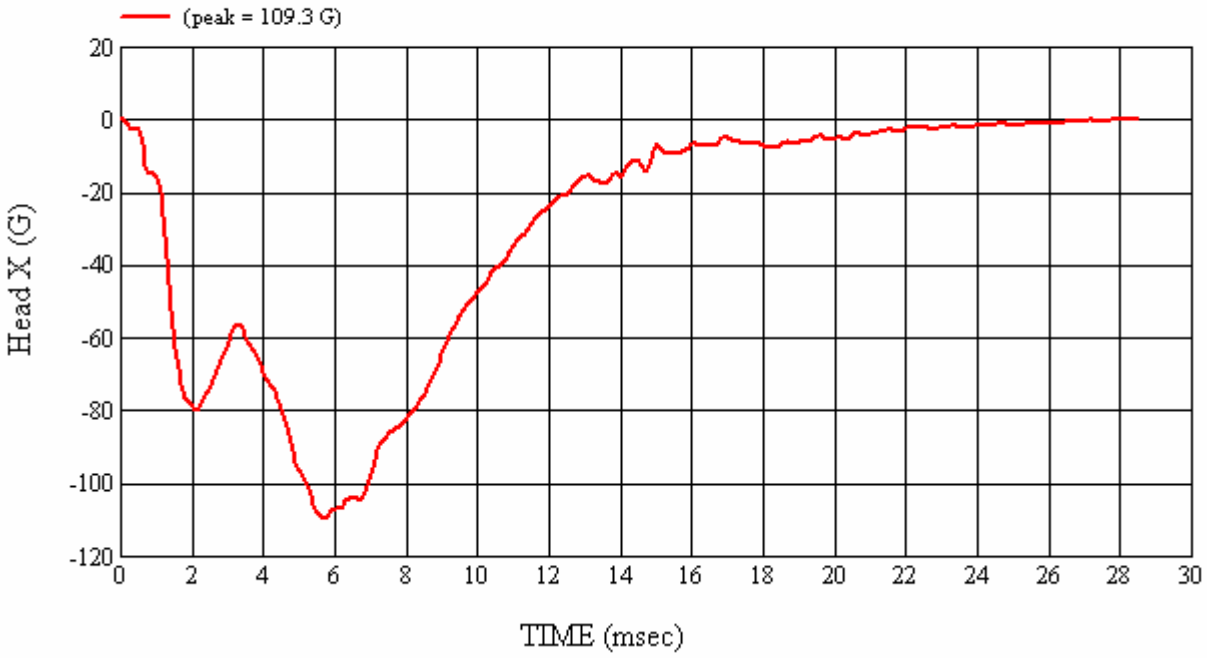
Recorded By: ____________ Approved By*: ____________ Date: 9/13/2007

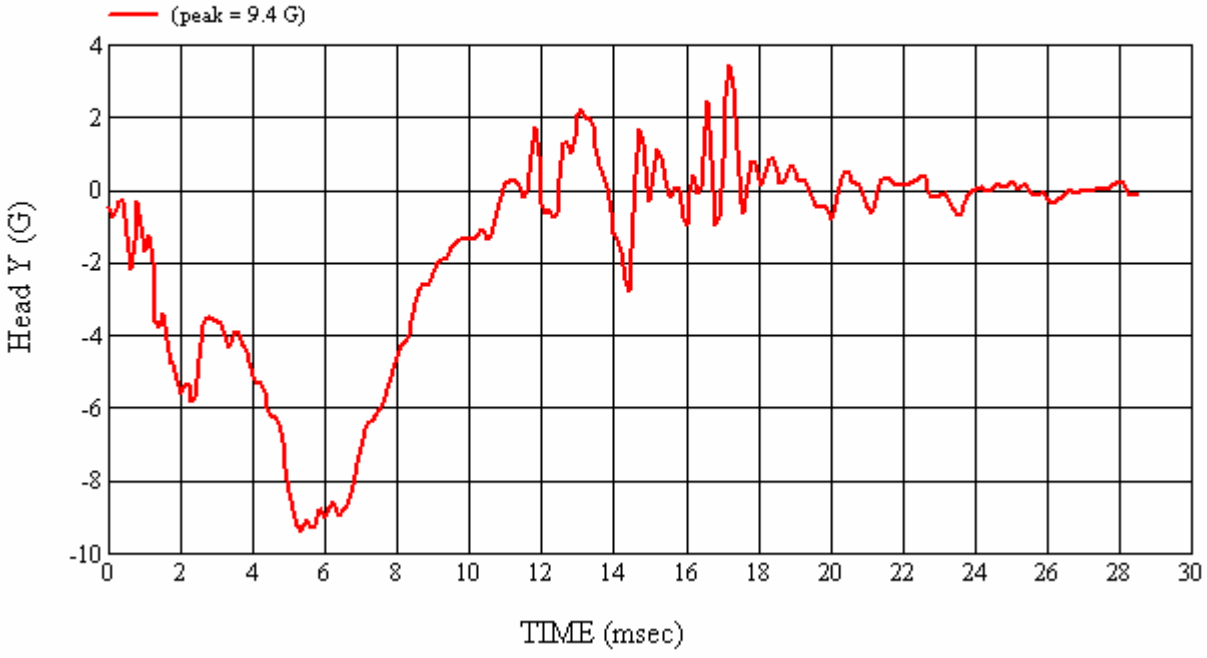
*Only necessary for NHTSA (Government) Compliance testing.

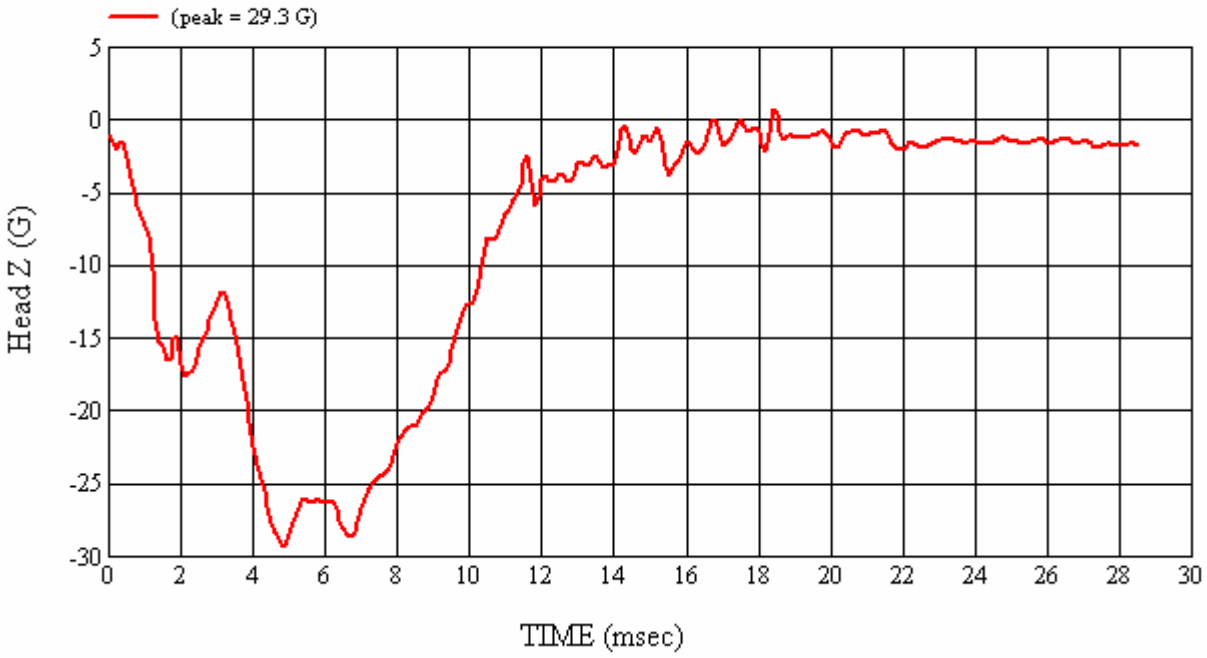
MGA Test #: FM7198 Target Location: BP2, Left Side Test Date: 9/13/2007

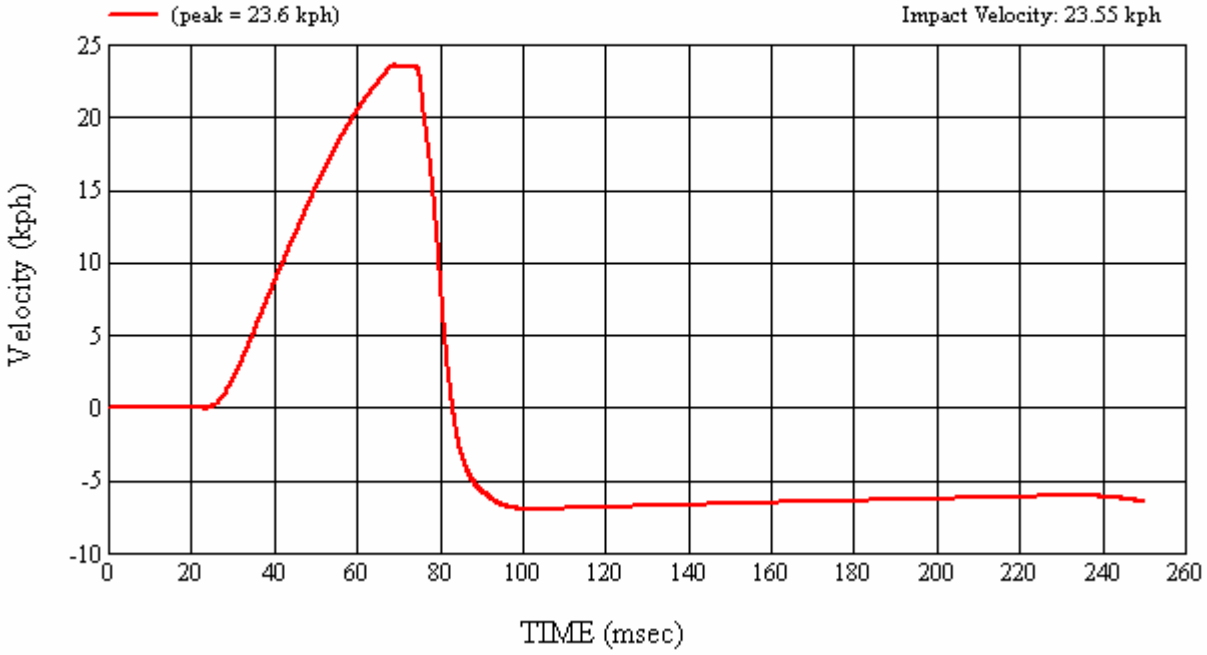


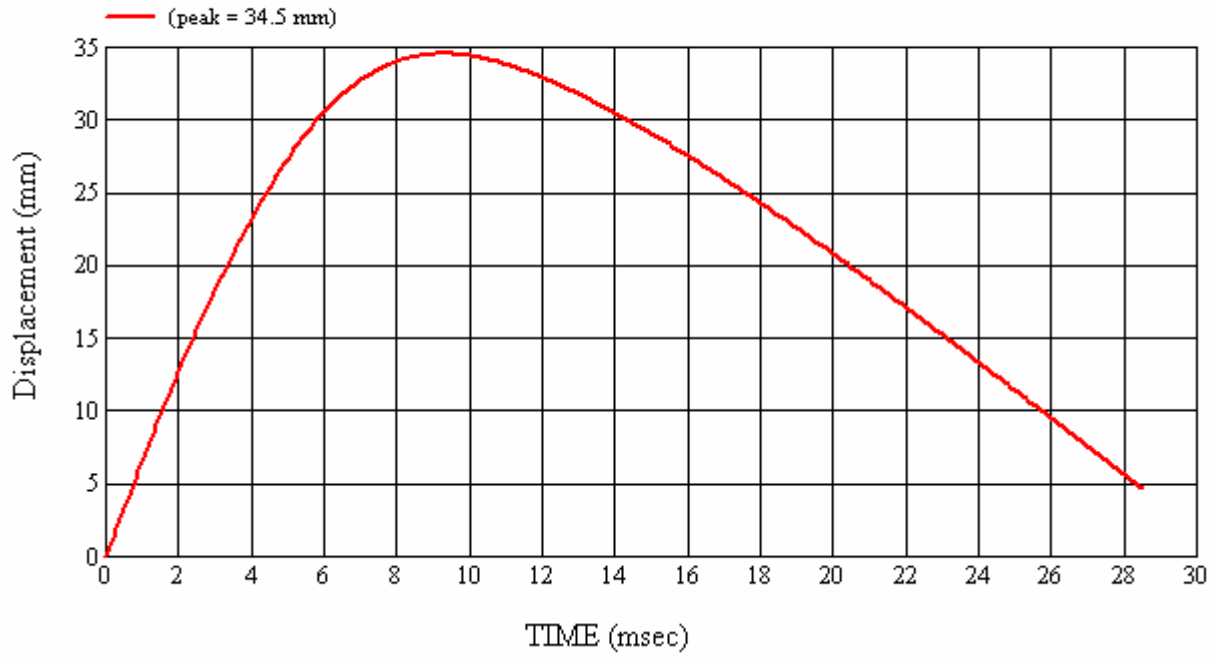



(peak = 109.3 G)
Head X (G)
20
0
-20
-40
-60
-80
-100
-120
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


(peak = 9.4 G)
Head Y (G)
4
2
0
-2
-4
-6
-8
-10
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


(peak = 29.3 G)
Head Z (G)
5
0
-5
-10
-15
-20
-25
-30
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


(peak = 23.6 kph)
Impact Velocity: 23.55 kph
Velocity (kph)
25
20
15
10
5
0
-5
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 34.5 mm)
Displacement (mm)
TIME (msec)
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #9 RIGHT BP4
H/V IMPACT ANGLE= 160 / -7
FM7205
PRE TEST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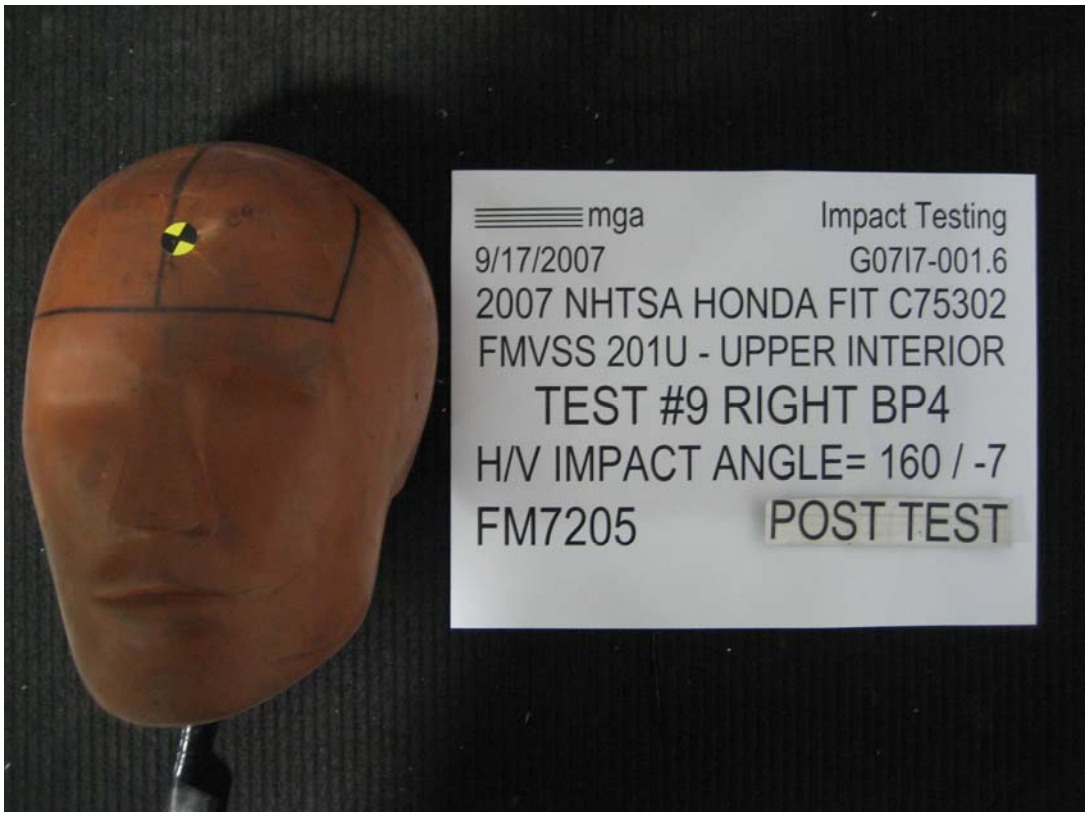
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #9 RIGHT BP4
H/V IMPACT ANGLE= 160 / -7
FM7205
POST TEST


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #9 RIGHT BP4
H/V IMPACT ANGLE= 160 / -7
FM7205
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Target (Vehicle Side): BP4 Right

MGA Test Reference No.:FM7205

Approach Horizontal Angles:160º

Approach Vertical Angles:-7º

Additional Description:

Test Number:#9

Temperature:22C

Humidity:48%

Time of Test:2:40:53 PM

FMH Serial No:[038]

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
493	433	7.7	23.7	26	5 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J14103	-94.598	1.32	1.32
Y	6	J36197	110.692	1.89	1.89
Z	7	J36353	99.391	1.83	1.83

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

Slight displacement on bottom of B-pilar trim.

Recorded By: _____ Approved By*: _____ Date: 9/17/2007

*Only necessary for NHTSA (Government) Compliance testing.

MGA Test #: FM7205 Target Location: BP4, Right Side Test Date: 9/17/2007

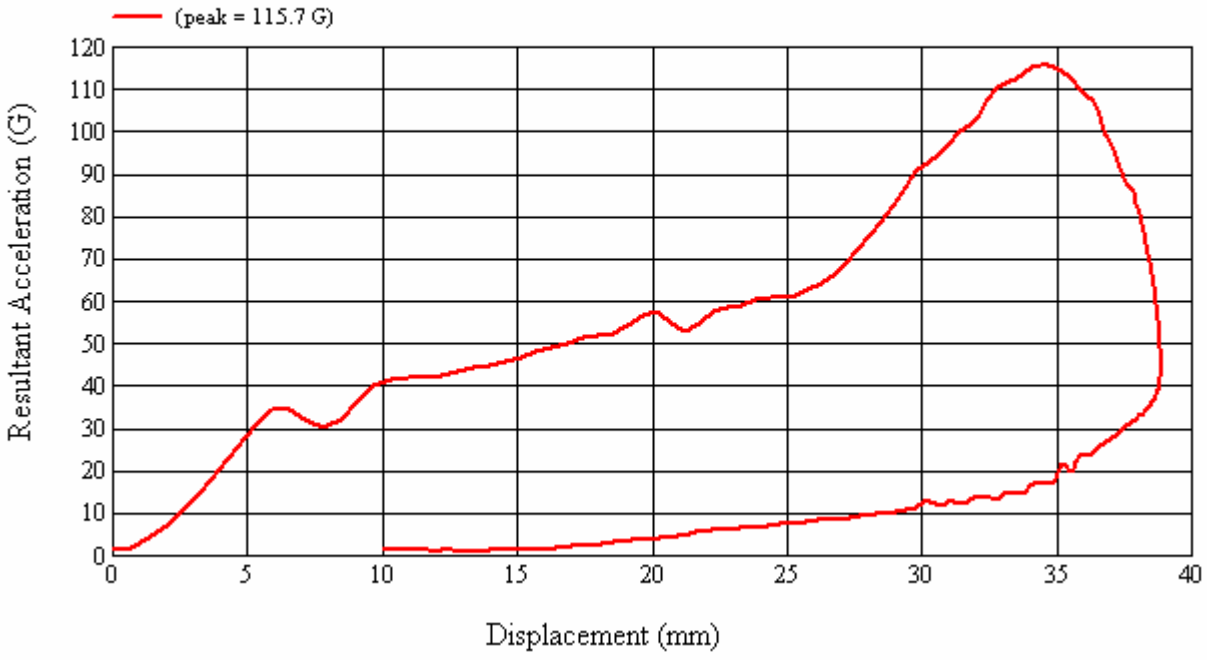


Figure 57 Test #FM7205

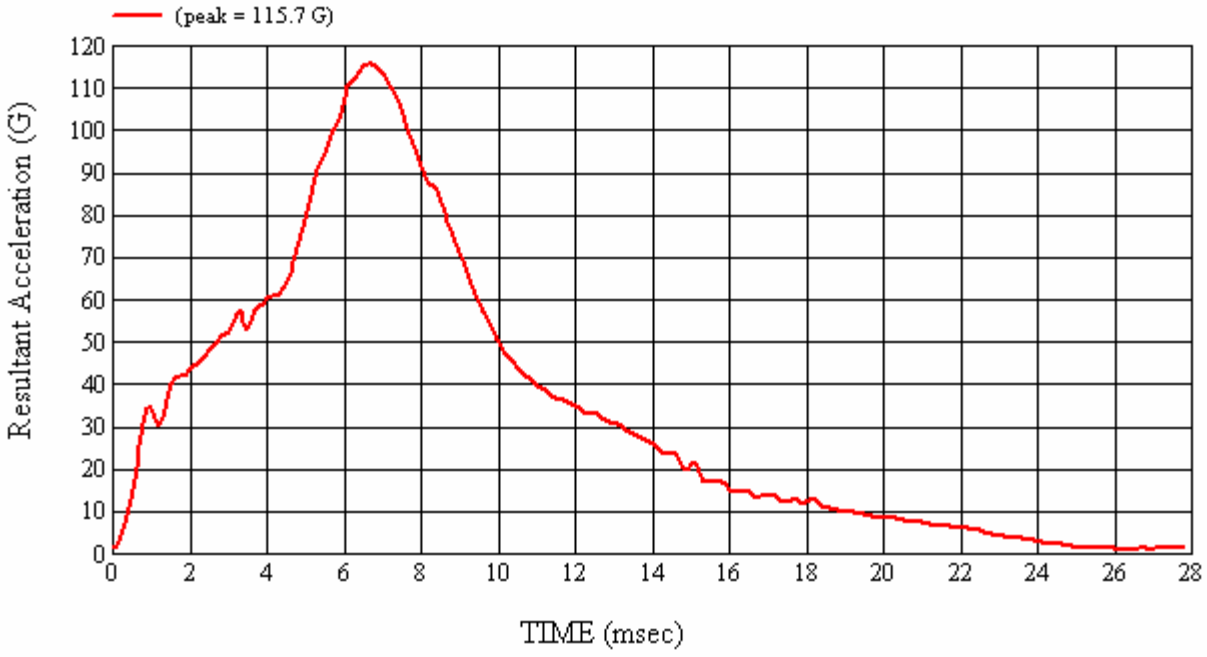
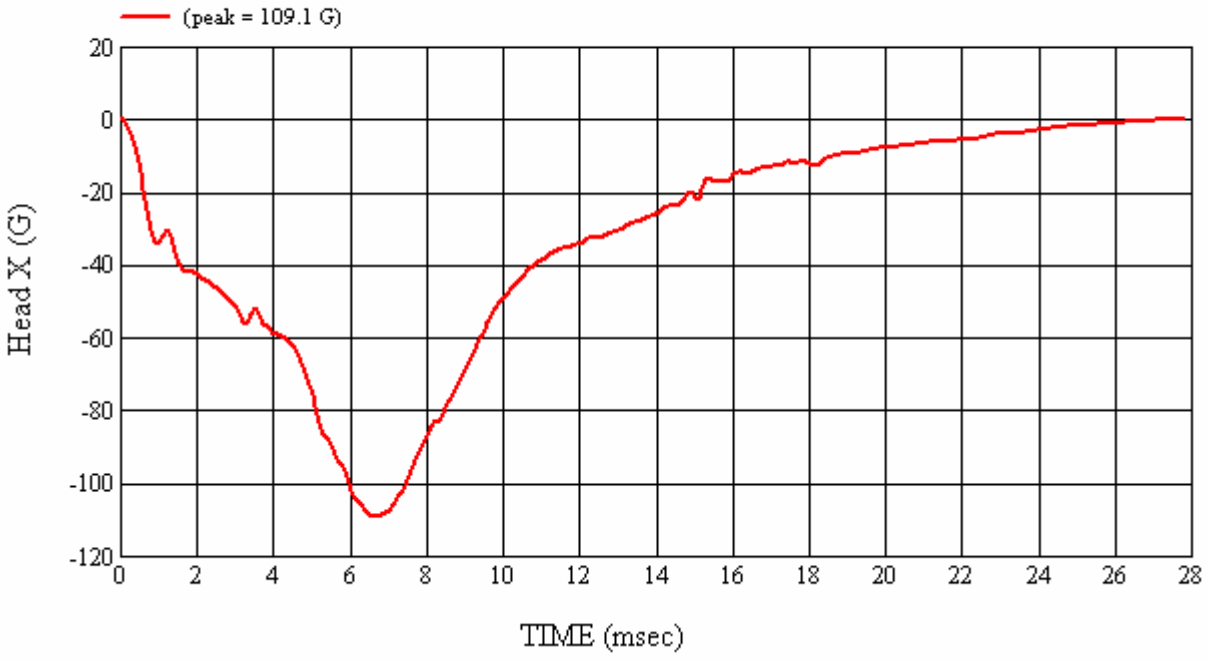
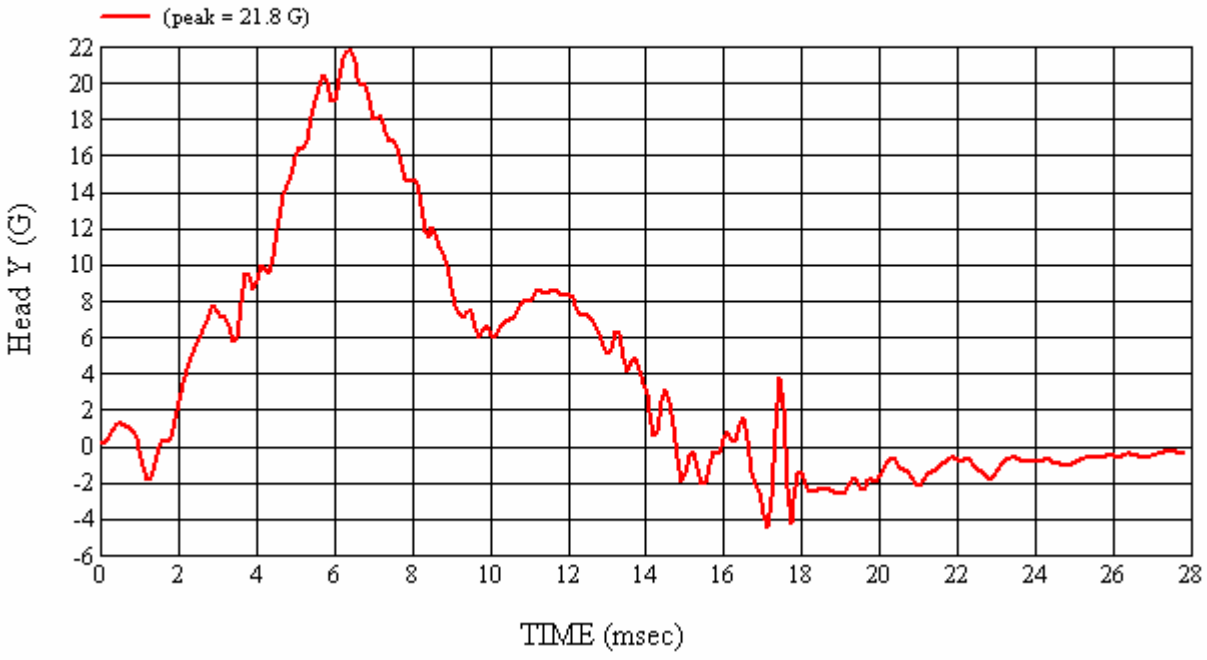
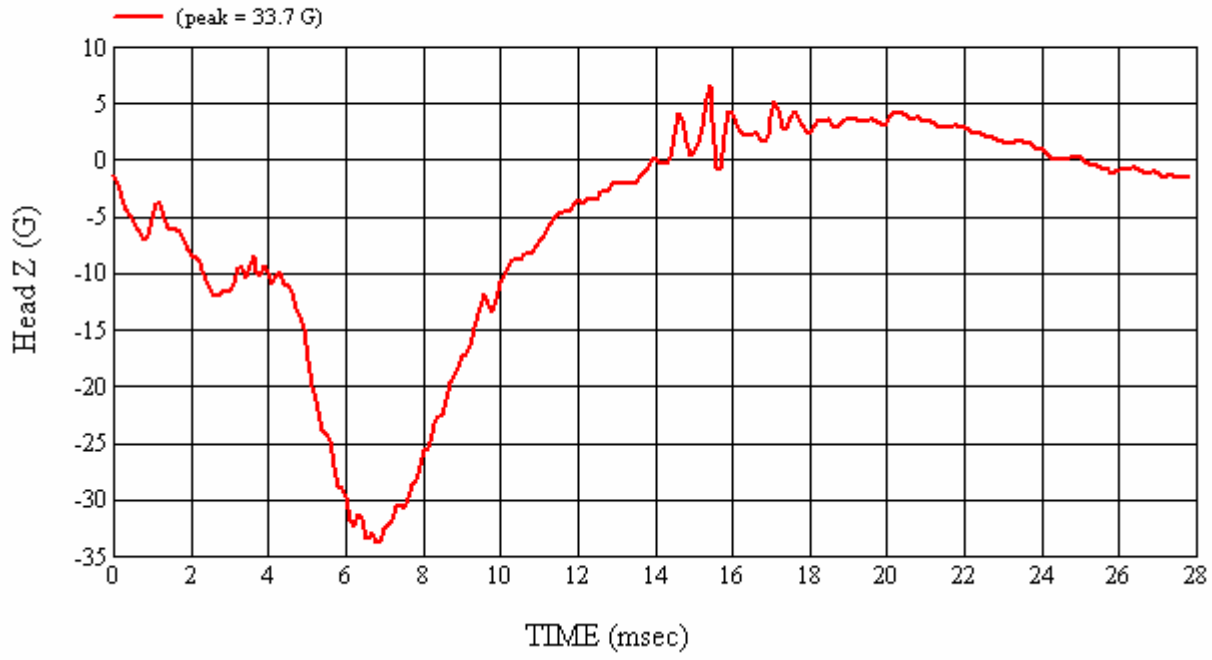
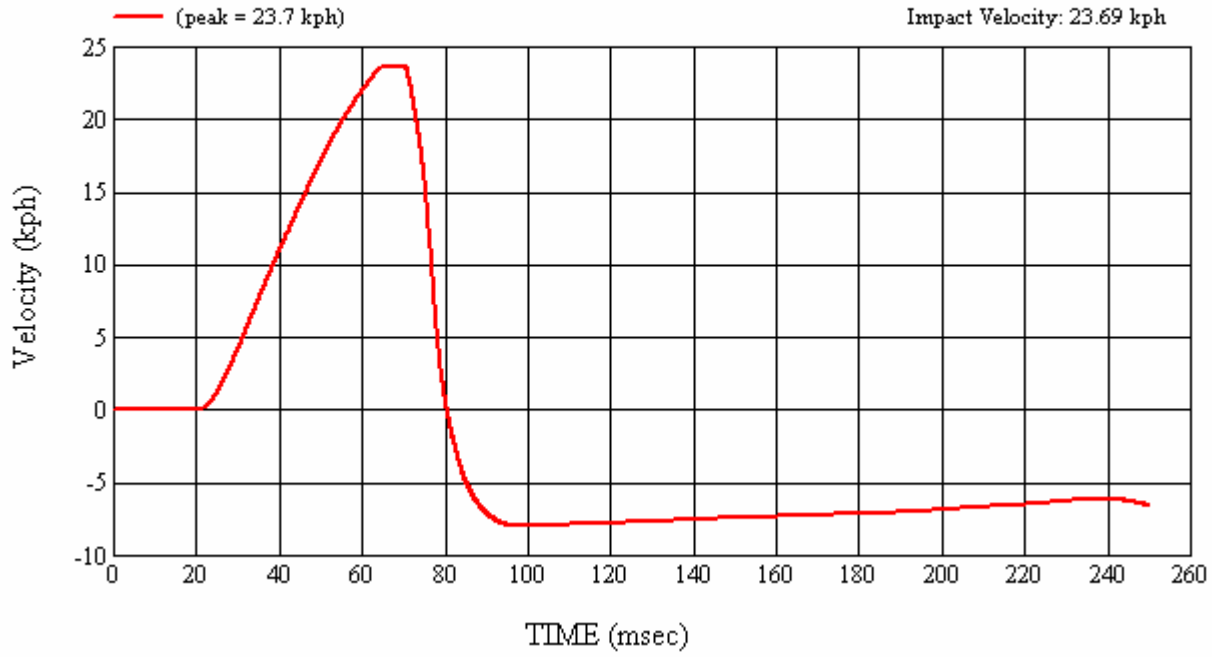


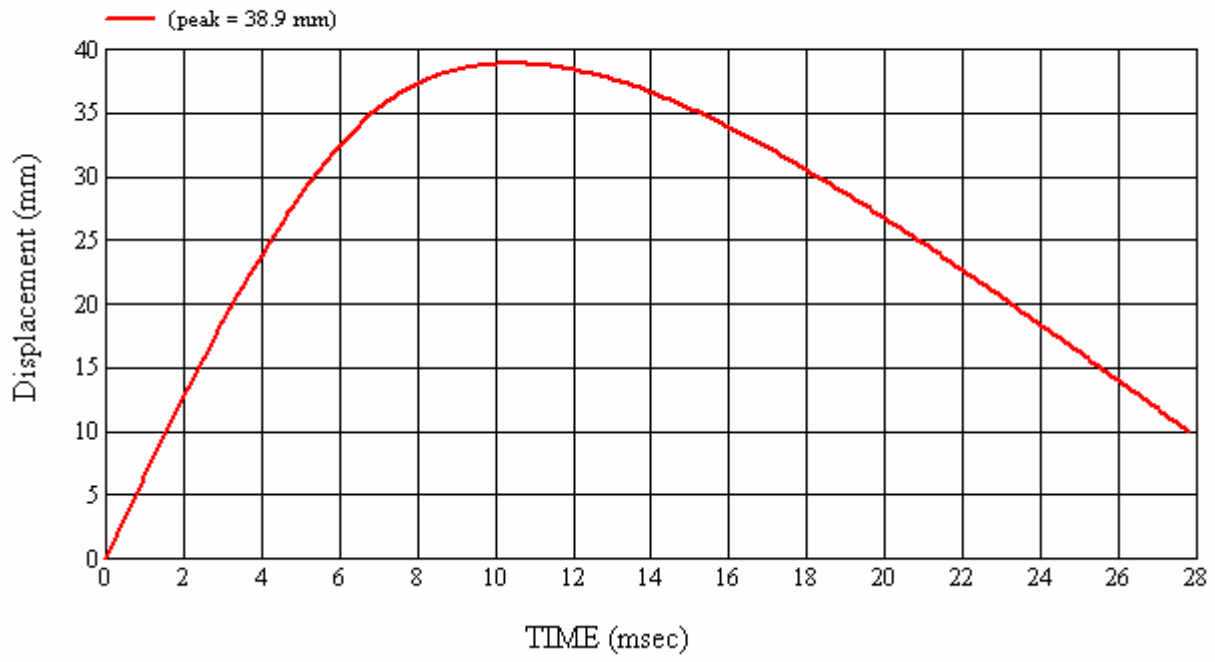
Figure 58 Test #FM7205


(peak = 109.1 G)
Head X (G)
20
0
-20
-40
-60
-80
-100
-120
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
TIME (msec)

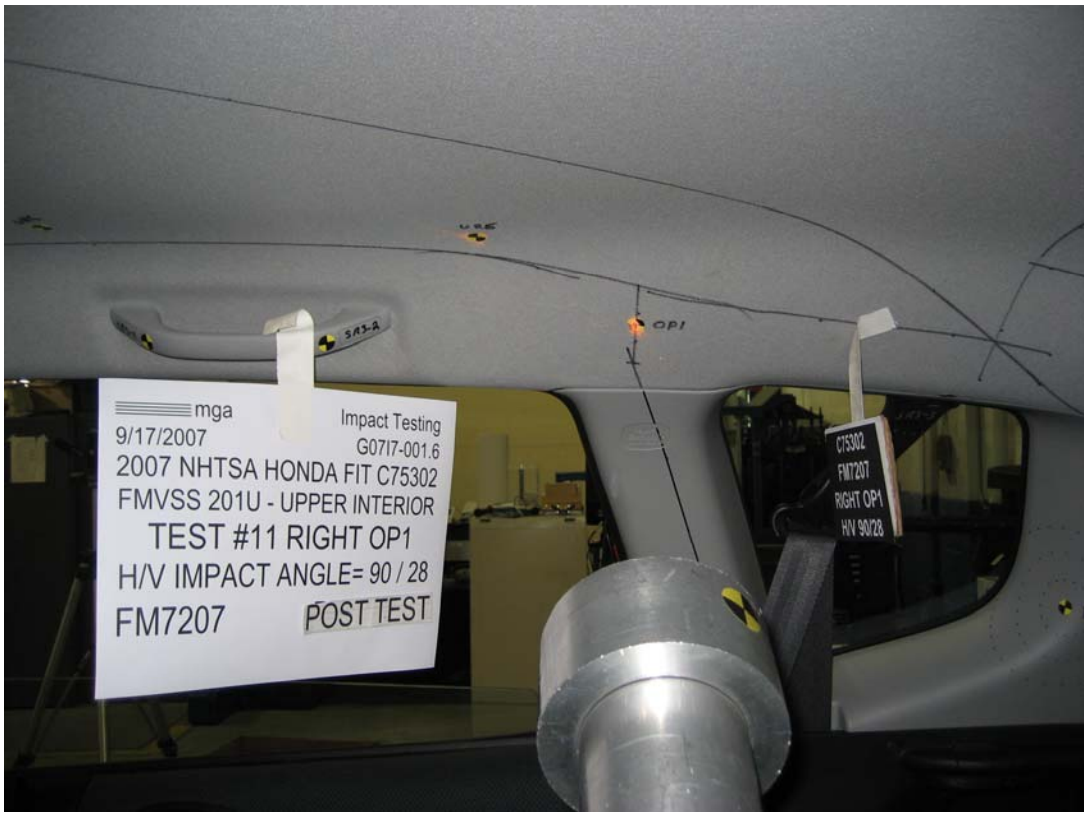

(peak = 21.8 G)
Head Y (G)
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
TIME (msec)


(peak = 33.7 G)
Head Z (G)
10
5
0
-5
-10
-15
-20
-25
-30
-35
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
TIME (msec)


(peak = 23.7 kph)
Impact Velocity: 23.69 kph
Velocity (kph)
25
20
15
10
5
0
-5
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 38.9 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
TIME (msec)


mga
9/17/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #11 RIGHT OP1
H/V IMPACT ANGLE= 90 / 28
FM7207
PRE TEST
OP1


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #11 RIGHT OP1
H/V IMPACT ANGLE= 90 / 28
FM7207
POST TEST
C75302
FM7207
RIGHT OP1
H/V 90/28


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #11 RIGHT OP1
H/V IMPACT ANGLE= 90 / 28
FM7207
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Target (Vehicle Side): OP1 Right

MGA Test Reference No.:FM7207

Approach Horizontal Angles:90º

Approach Vertical Angles:28º

Additional Description:

Test Number:#11

Temperature:22C

Humidity:47%

Time of Test:4:05:27 PM

FMH Serial No:[037]

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
479	415	7.4	18.4	47	4 Right

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22696	-100.013	1.33	1.33
Y	6	J35791	91.856	1.89	1.89
Z	7	J35800	97.996	1.83	1.83

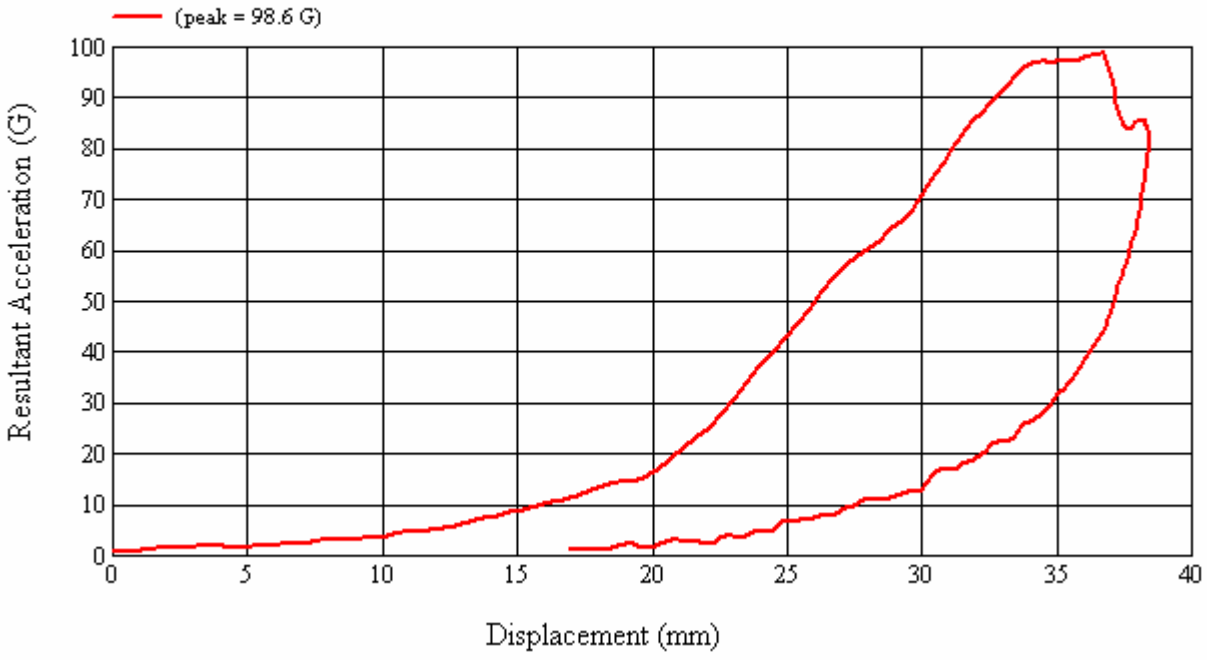
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

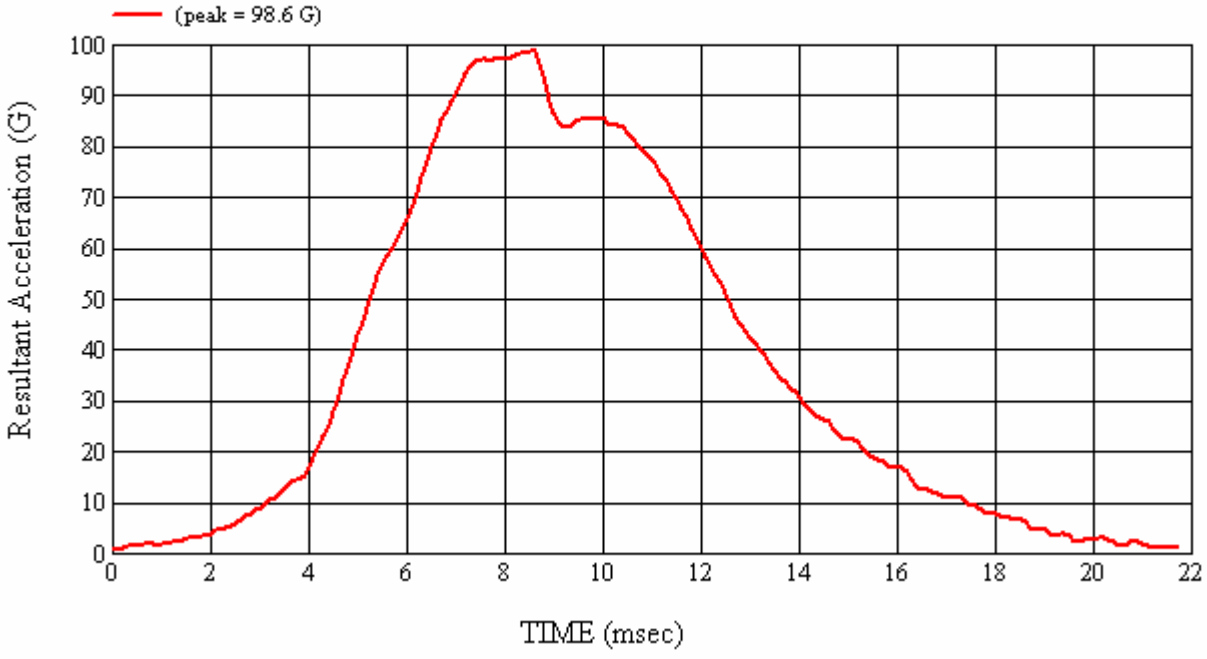
No visible damage.

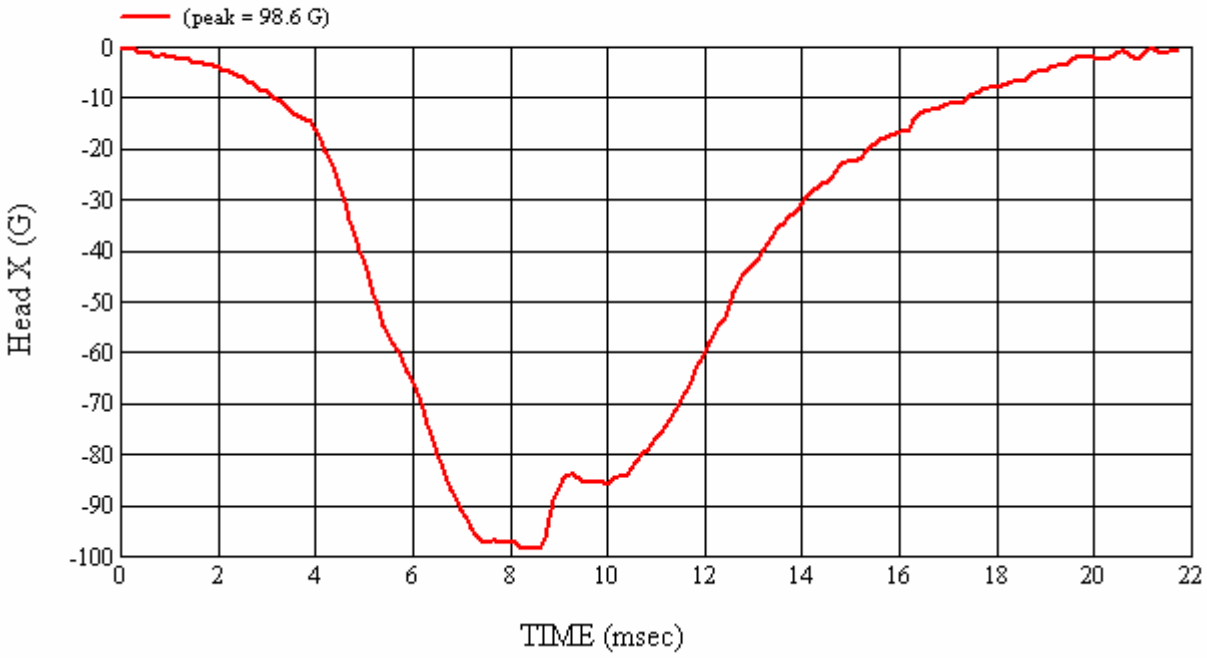
Recorded By: Louis Campbell Approved By*: Helen A. Kaleta Date: 9/17/2007

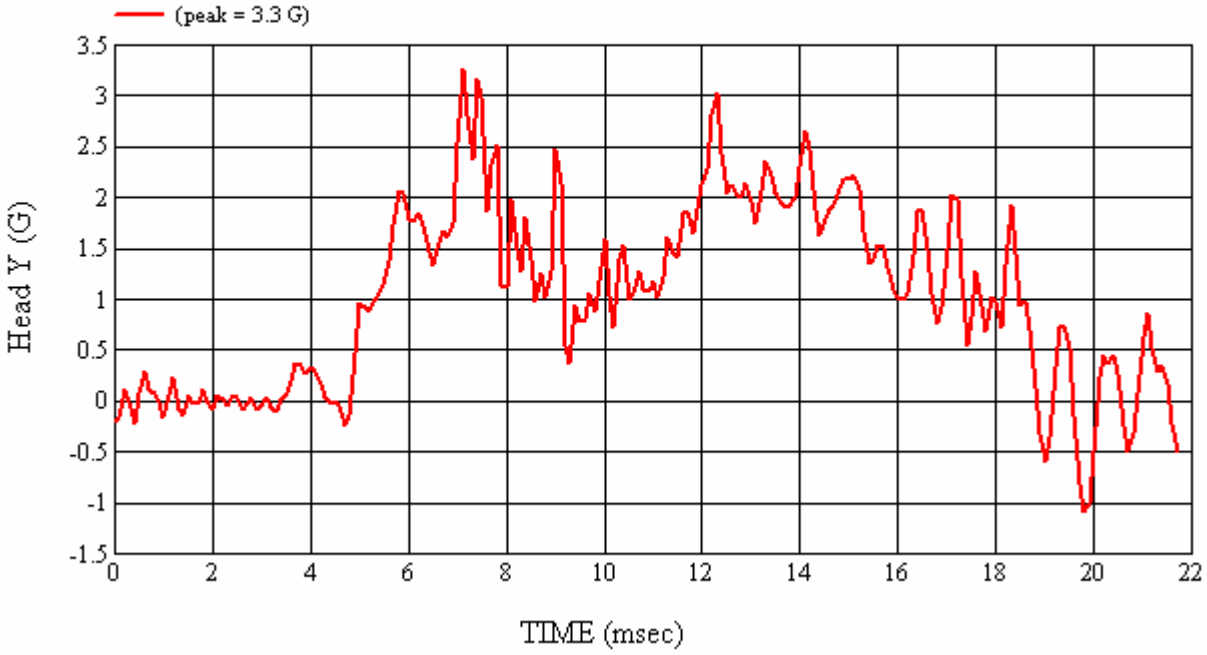
*Only necessary for NHTSA (Government) Compliance testing.

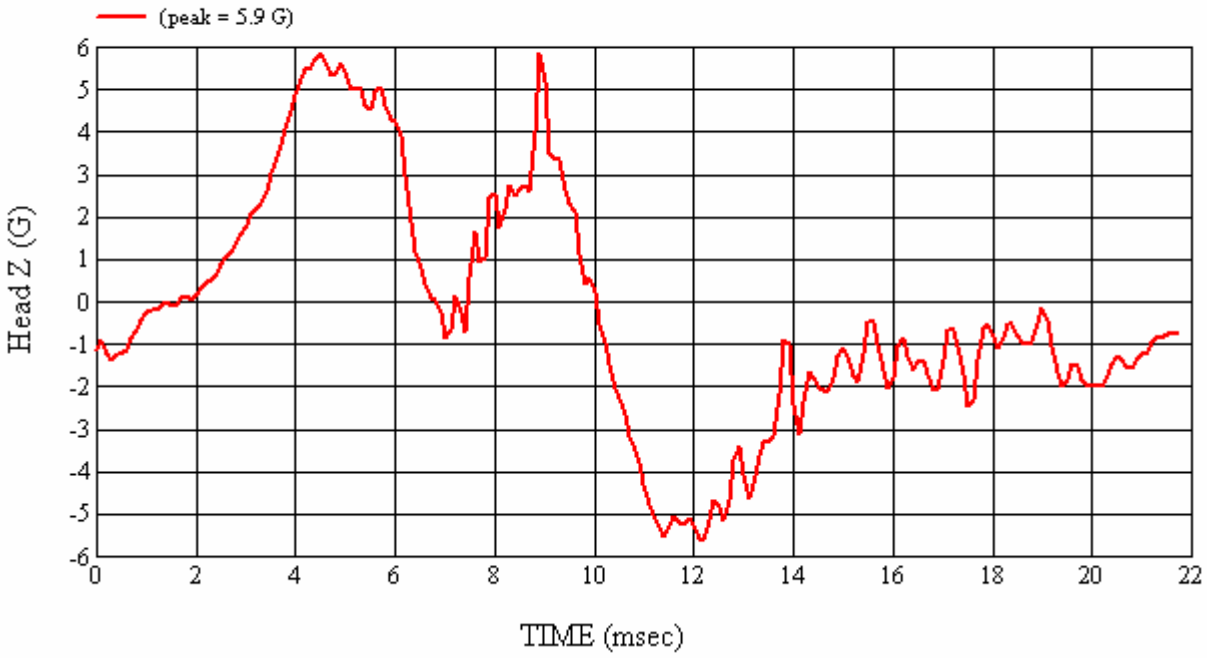
MGA Test #: FM7207 Target Location: OP1, Right Side Test Date: 9/17/2007

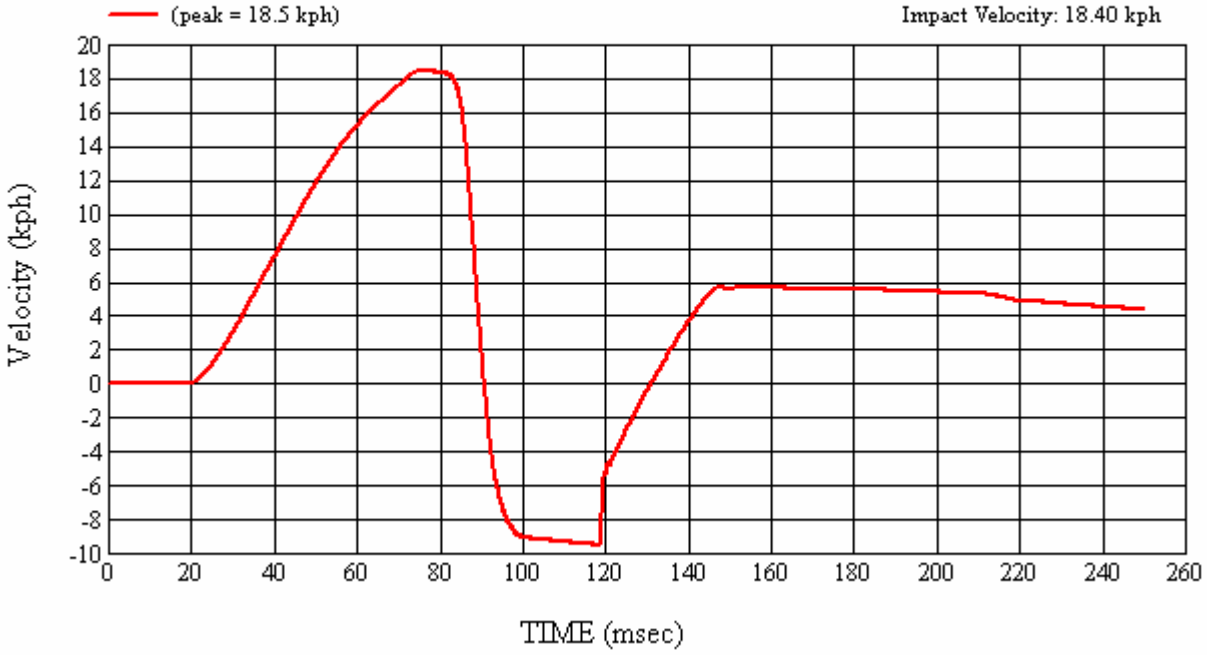


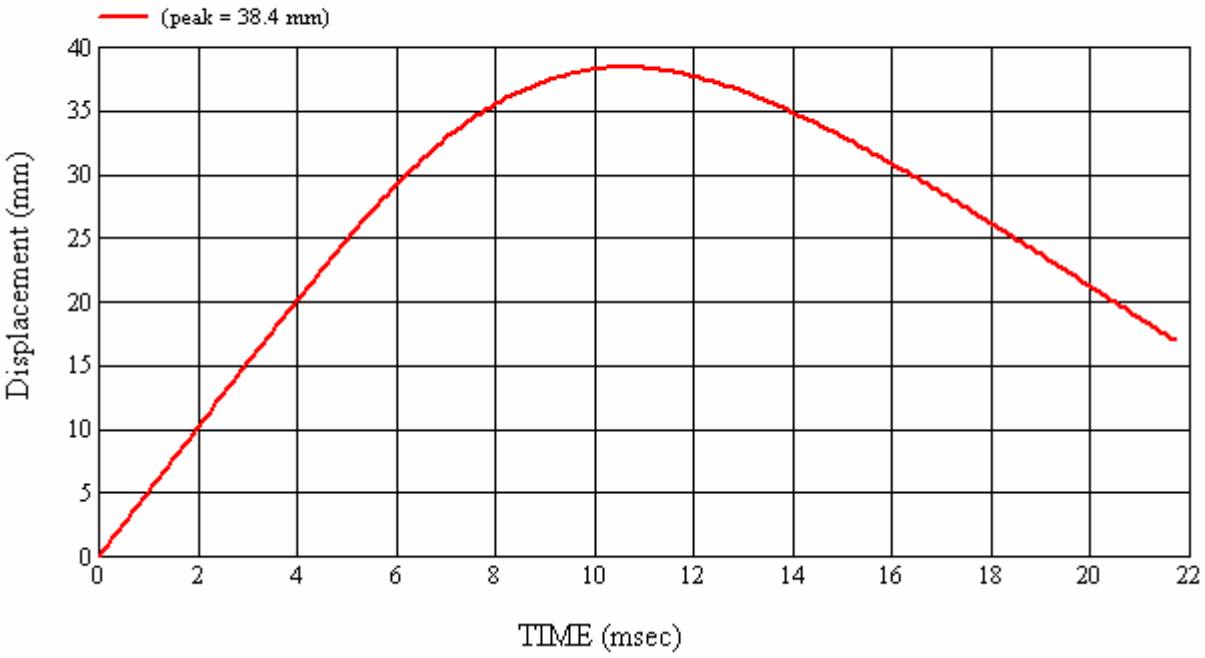


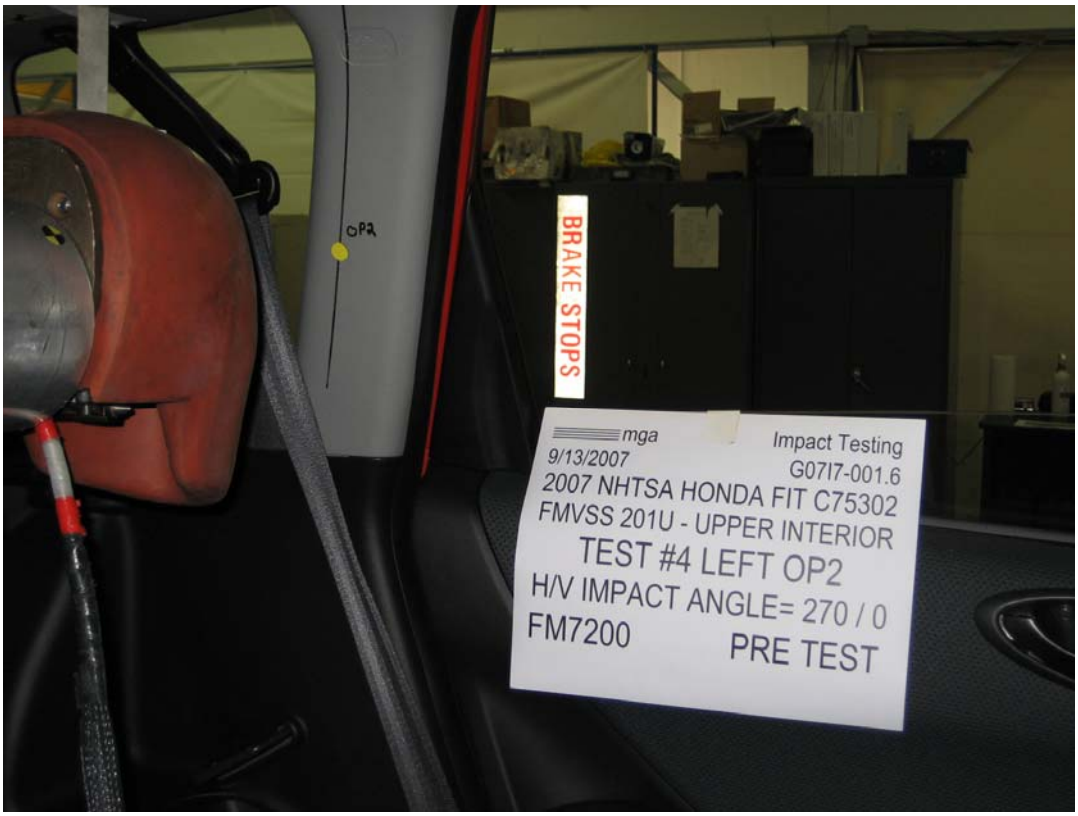

(peak = 98.6 G)
Head X (G)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 3.3 G)
Head Y (G)
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 5.9 G)
Head Z (G)
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 18.5 kph)
Impact Velocity: 18.40 kph
Velocity (kph)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 38.4 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


OP2
BRAKE STOPS
mga
9/13/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #4 LEFT OP2
H/V IMPACT ANGLE= 270 / 0
FM7200
PRE TEST


C75302
FM7200
LEFT OP2
270/0
OP2
BRAKE STOPS
mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #4 LEFT OP2
H/V IMPACT ANGLE= 270 / 0
FM7200
POST TEST


mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #4 LEFT OP2
H/V IMPACT ANGLE= 270 / 0
FM7200
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#4

Target (Vehicle Side): OP2 Left

Temperature:21C

MGA Test Reference No.:FM7200

Humidity:56%

Approach Horizontal Angles:270º

Time of Test:3:55:37 PM

Approach Vertical Angles:0º

FMH Serial No:[035]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
543	499	9.3	23.4	18	5 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22664	-94.161	1.32	1.32
Y	6	J35919	97.442	1.88	1.89
Z	7	J35924	93.891	1.83	1.83

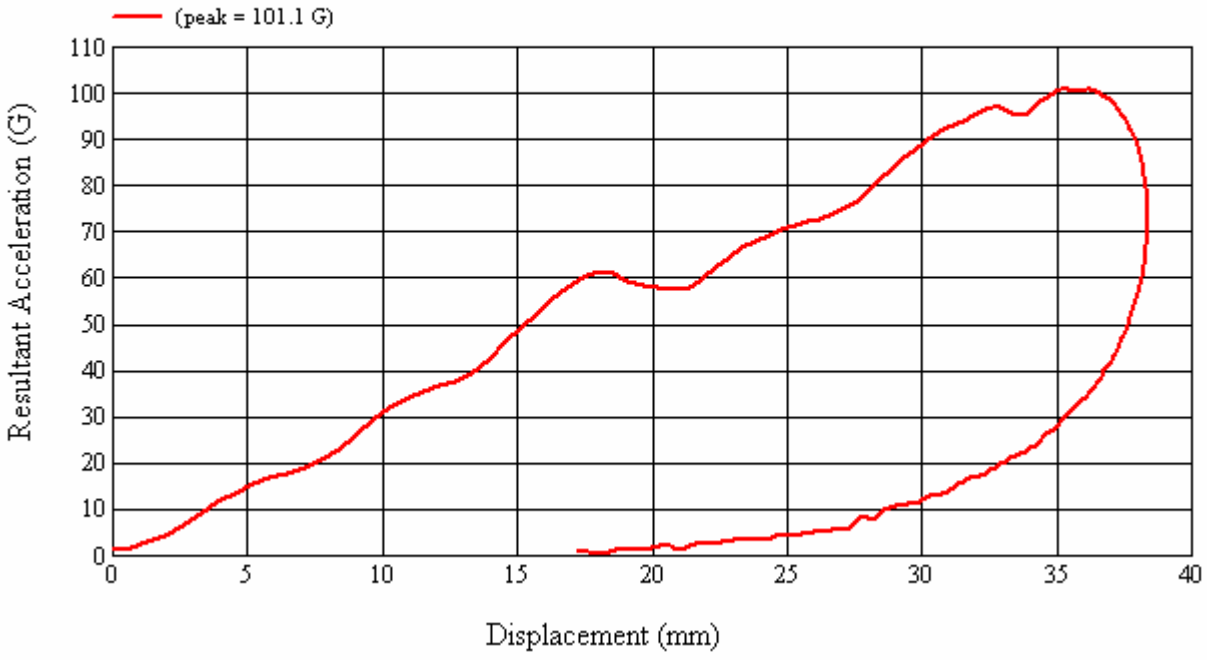
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

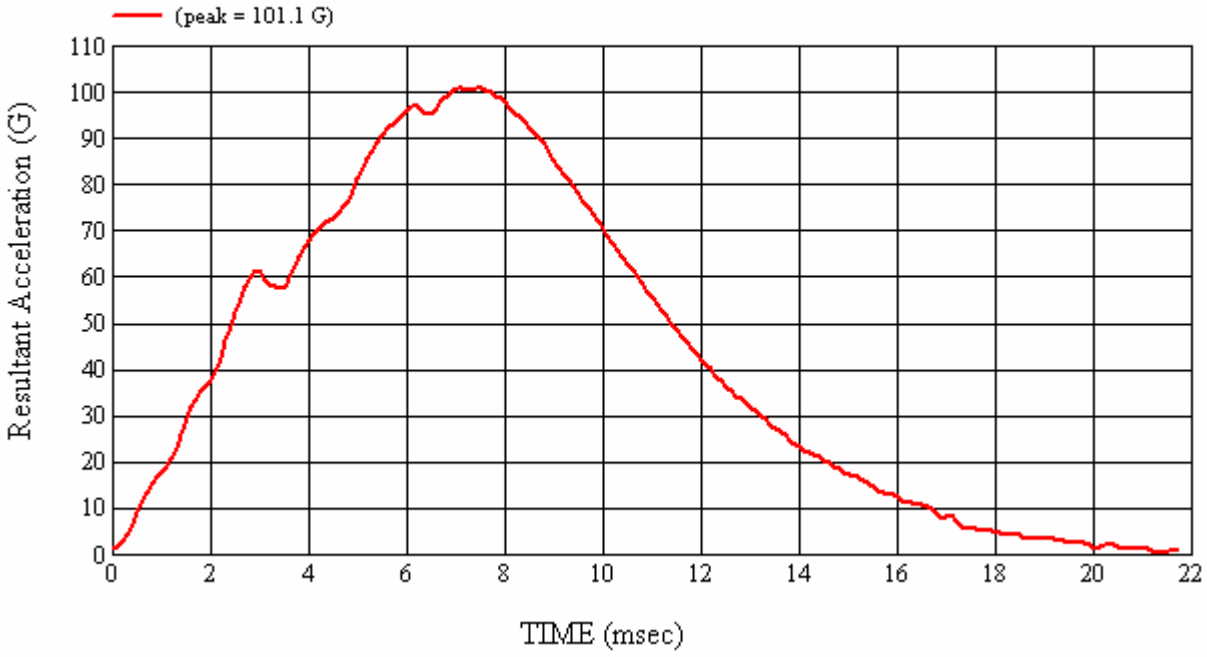
No visible damage.

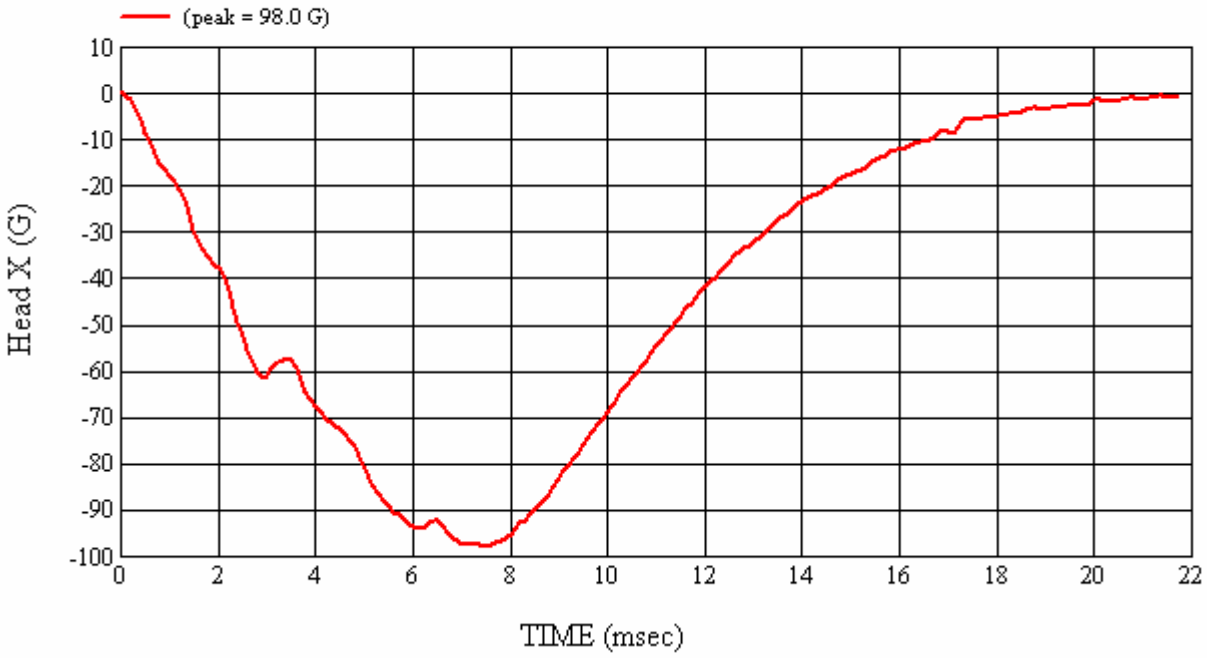
Recorded By: Janis Campbell Approved By*: Eileen A. Kaleto Date: 9/13/2007

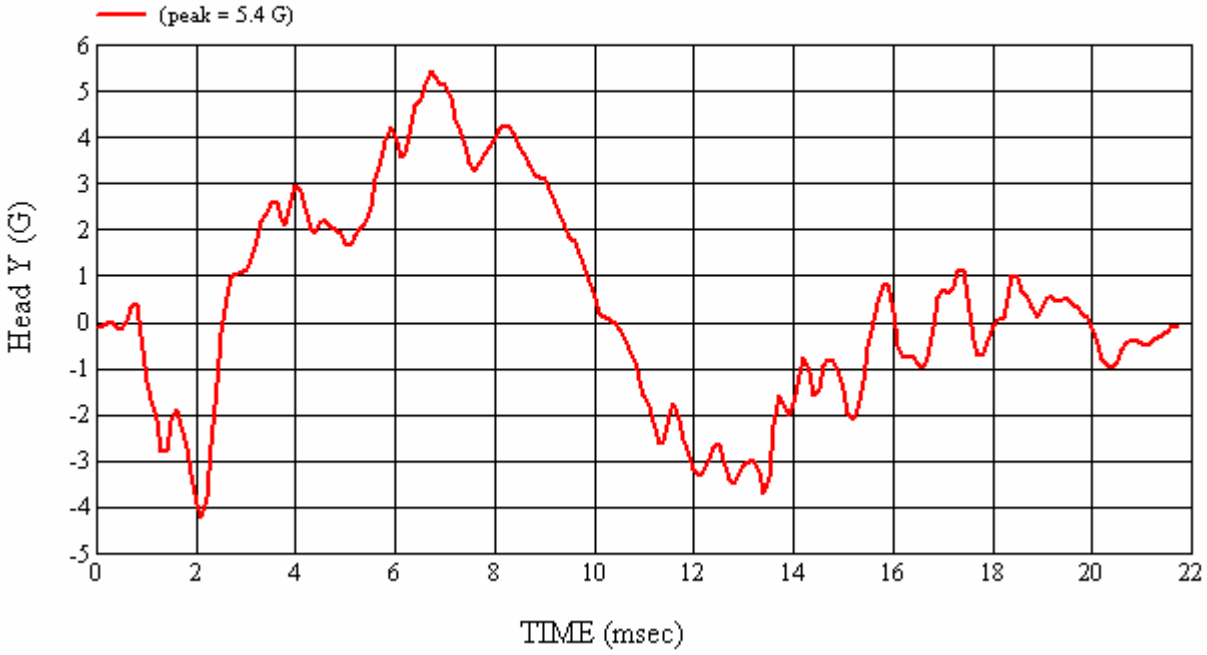
*Only necessary for NHTSA (Government) Compliance testing.

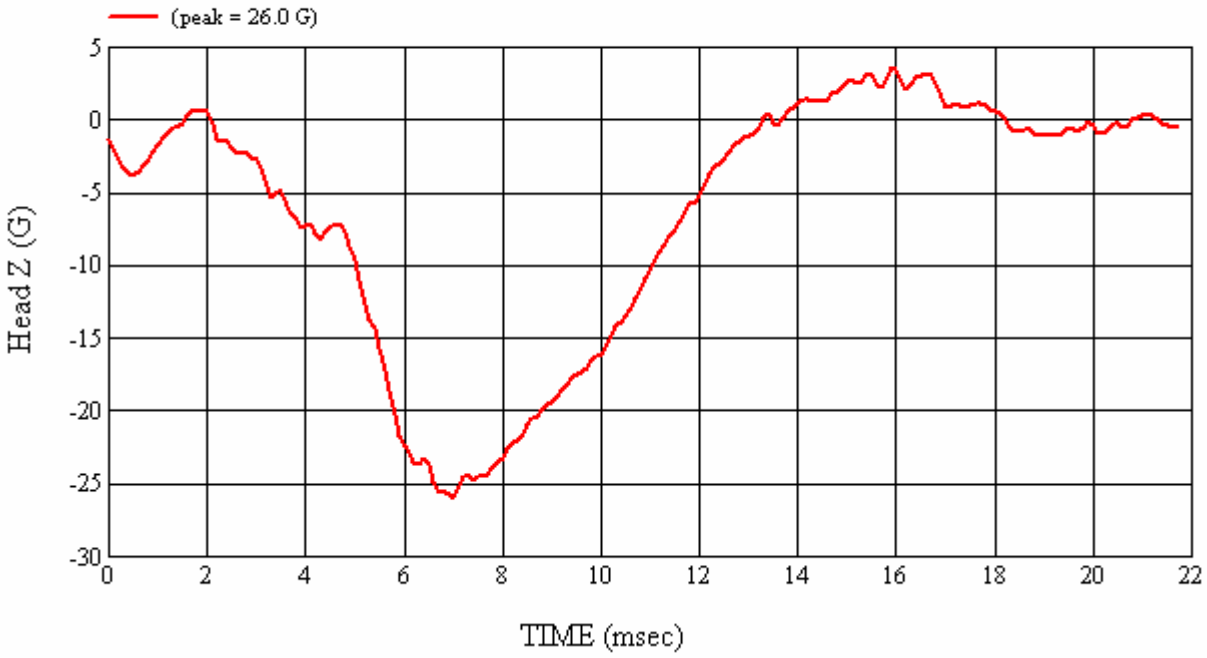
MGA Test #: FM7200 Target Location: OP2, Left Side Test Date: 9/13/2007

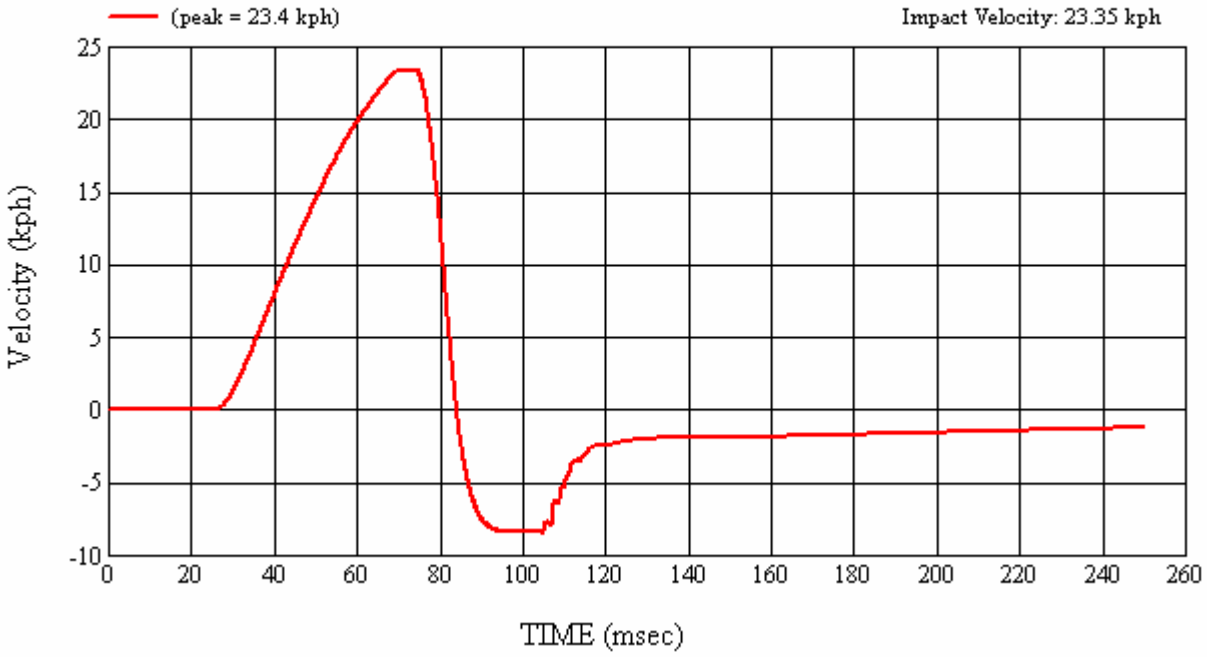


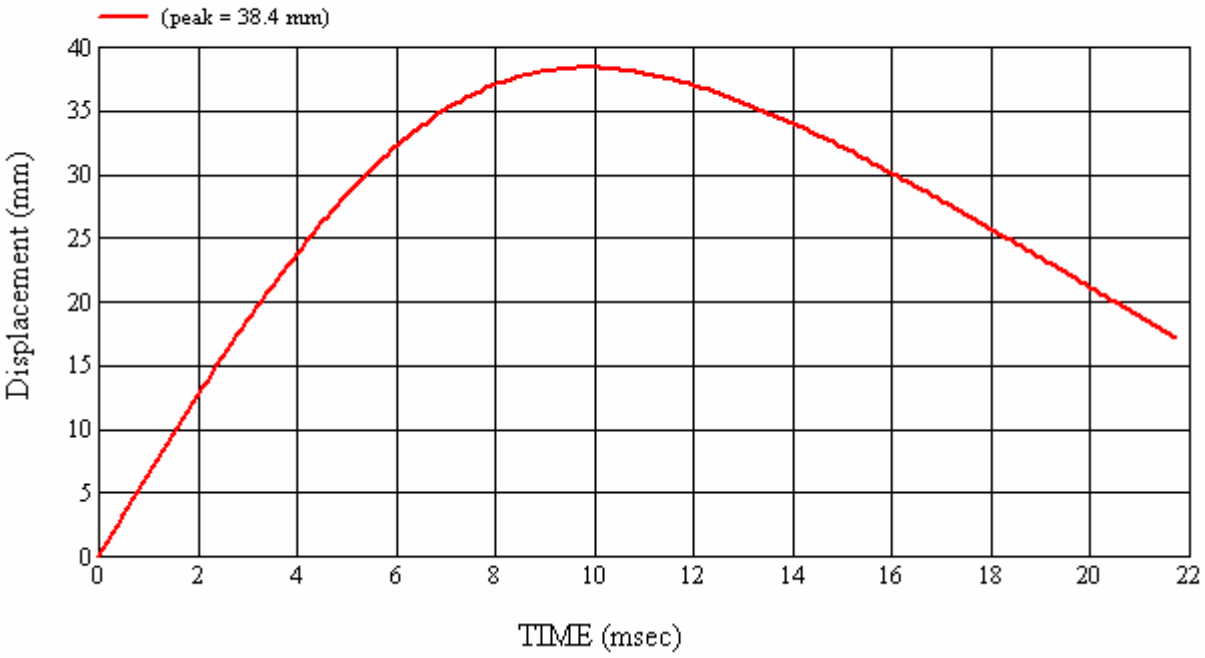



(peak = 98.0 G)
Head X (G)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 5.4 G)
Head Y (G)
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 26.0 G)
Head Z (G)
5
0
-5
-10
-15
-20
-25
-30
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 23.4 kph)
Impact Velocity: 23.35 kph
Velocity (kph)
25
20
15
10
5
0
-5
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 38.4 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #12 RIGHT RP2
H/V IMPACT ANGLE= 43 / -2
FM7208
PRE TEST


C75302
FM7208
RIGHT RP2
H/V 43/-2
mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPER INTERIOR
TEST #12 RIGHT RP2
H/V IMPACT ANGLE= 43 / -2
FM7208
POST TEST


mga
Impact Testing
9/17/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #12 RIGHT RP2
H/V IMPACT ANGLE= 43 / -2
FM7208
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#12

Target (Vehicle Side): RP2 Right

Temperature:22C

MGA Test Reference No.:FM7208

Humidity:45%

Approach Horizontal Angles:43º

Time of Test:5:56:07 PM

Approach Vertical Angles:-2º

FMH Serial No:[038]

Additional Description: 3 Relocations

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
437	358	12.3	24.0	35	0

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J14103	-94.598	1.32	1.32
Y	6	J36197	110.692	1.89	1.89
Z	7	J36353	99.391	1.83	1.83

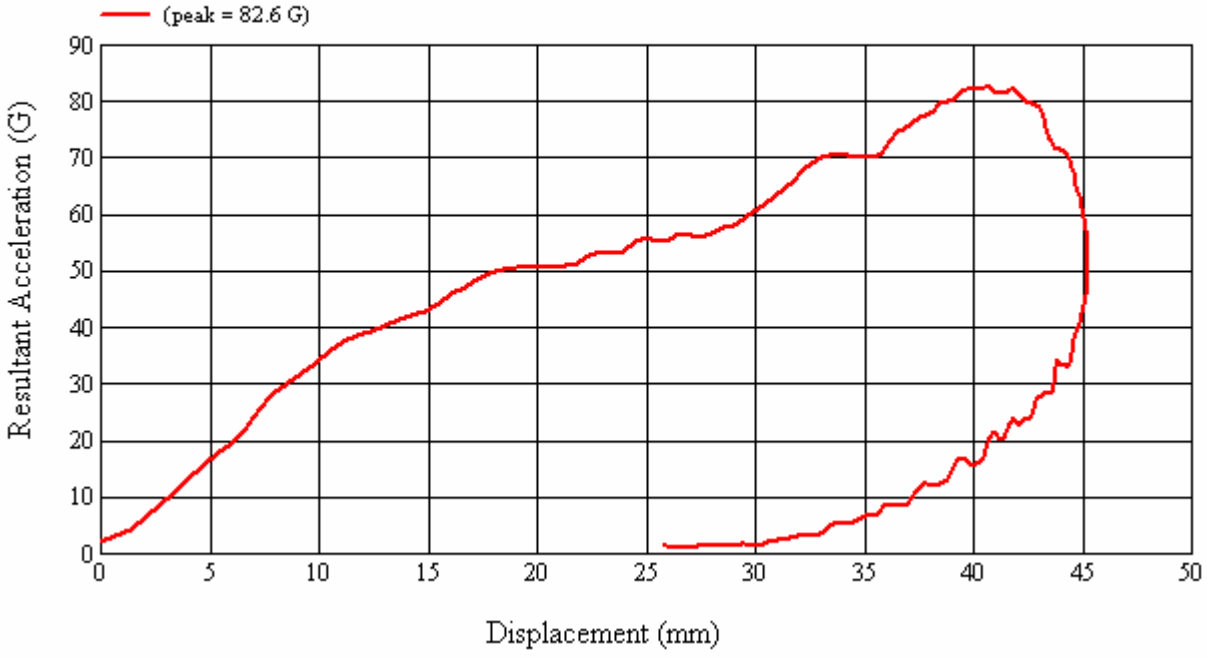
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

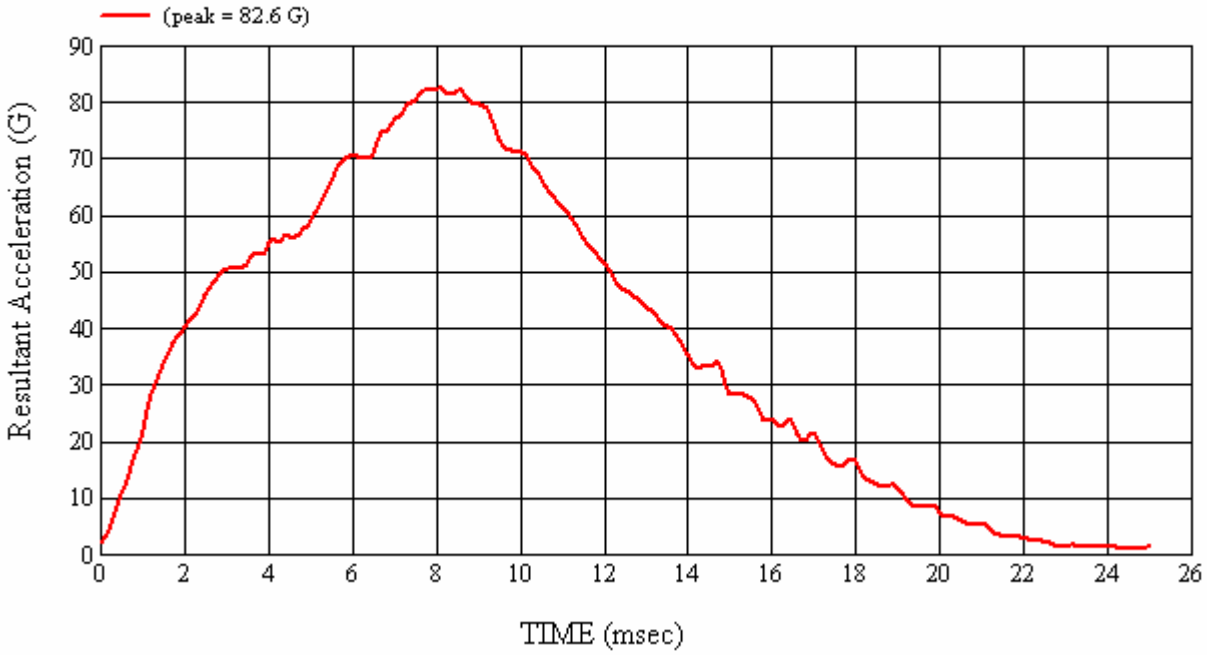
No visible damage.

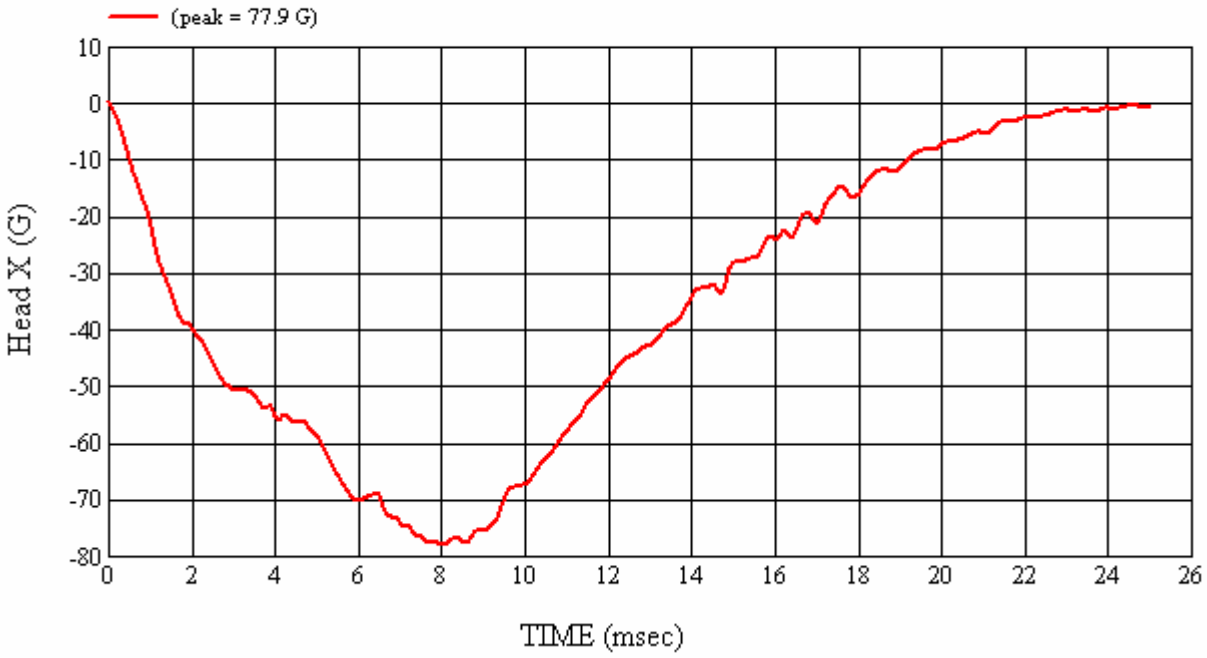
Recorded By: _____ Approved By*: _____ Date: 9/17/2007

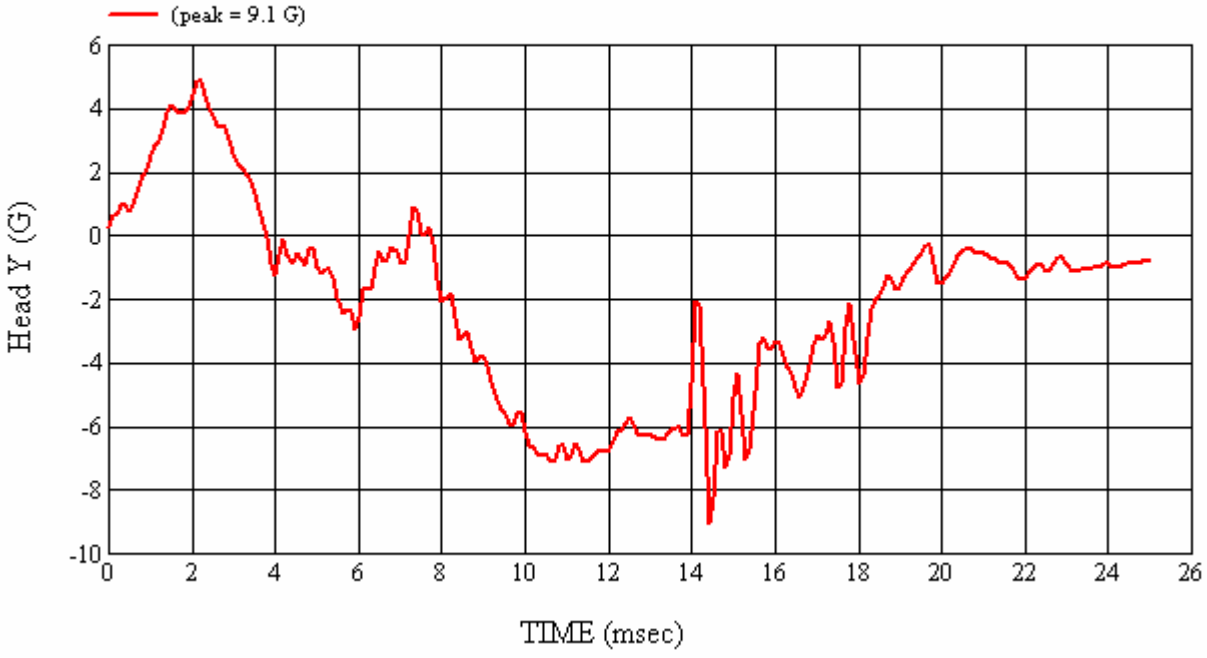
*Only necessary for NHTSA (Government) Compliance testing.

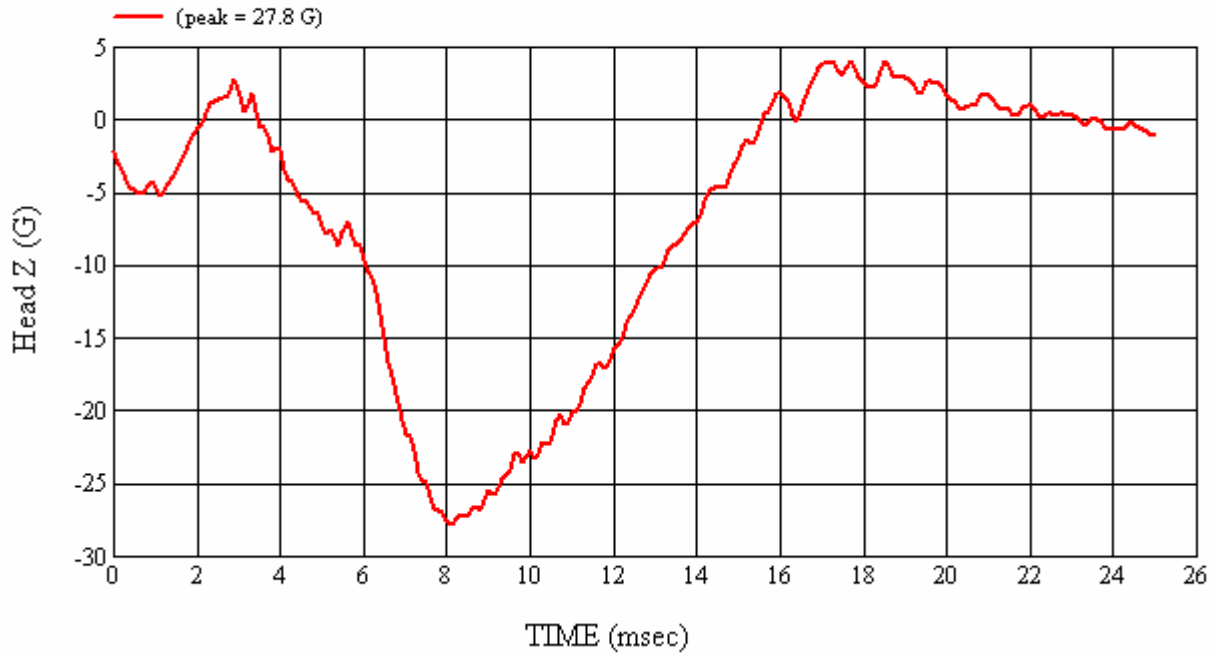
MGA Test #: FM7208 Target Location: RP2, Right Side Test Date: 9/17/2007

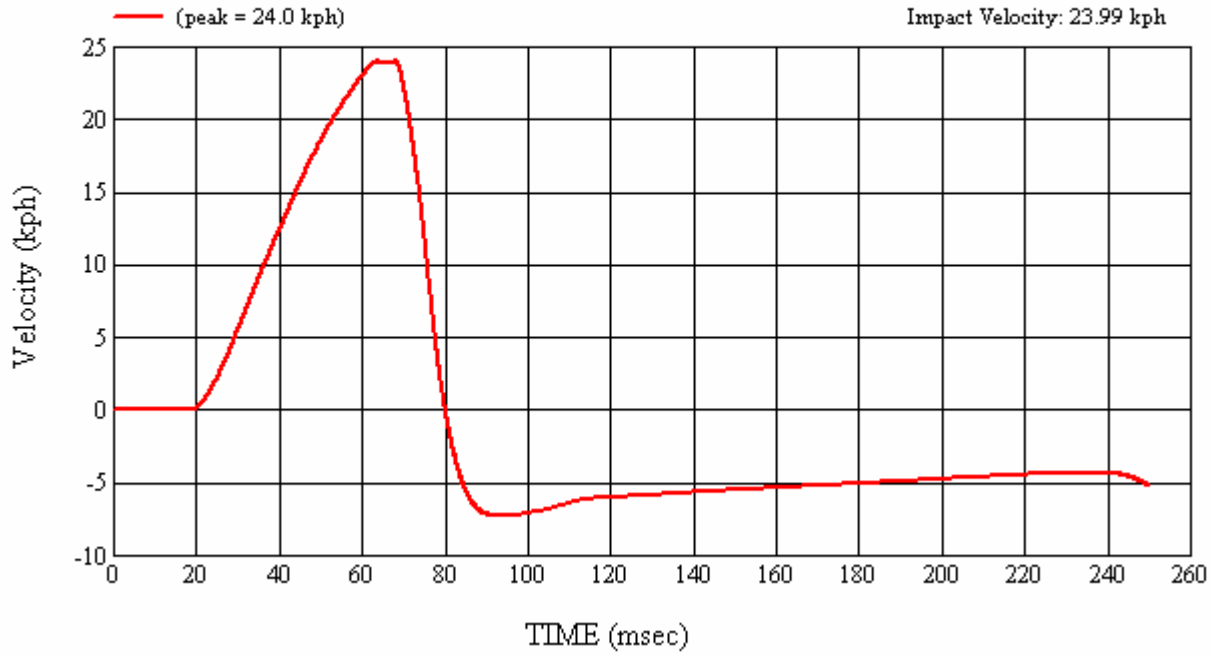


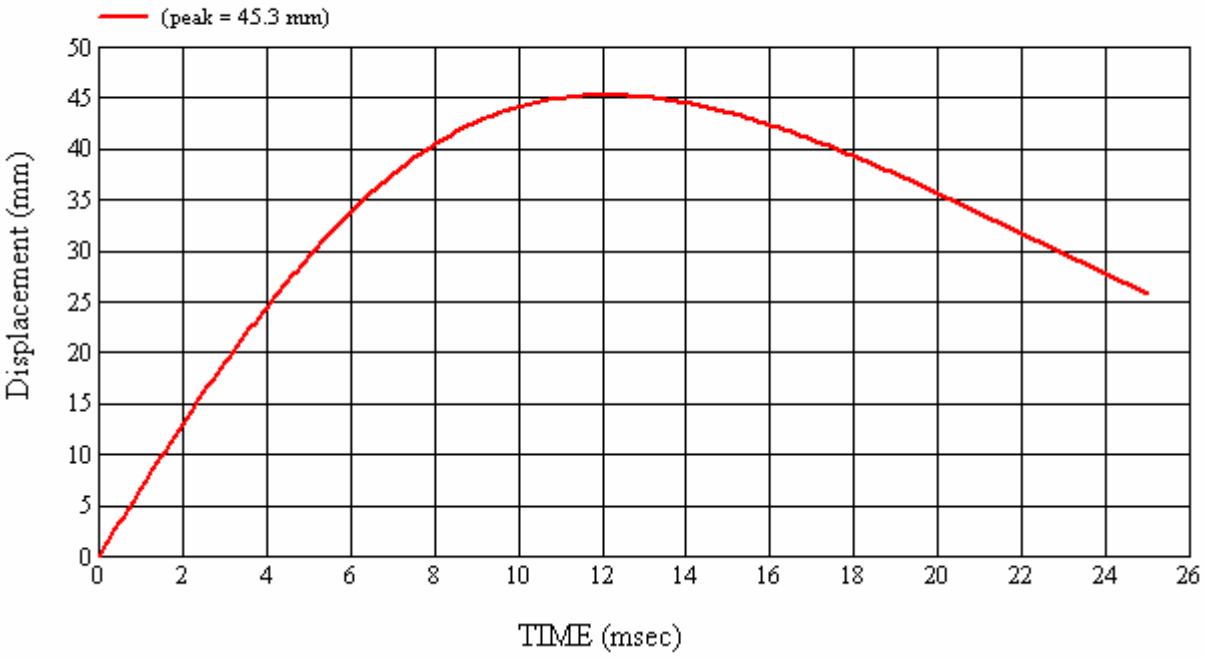


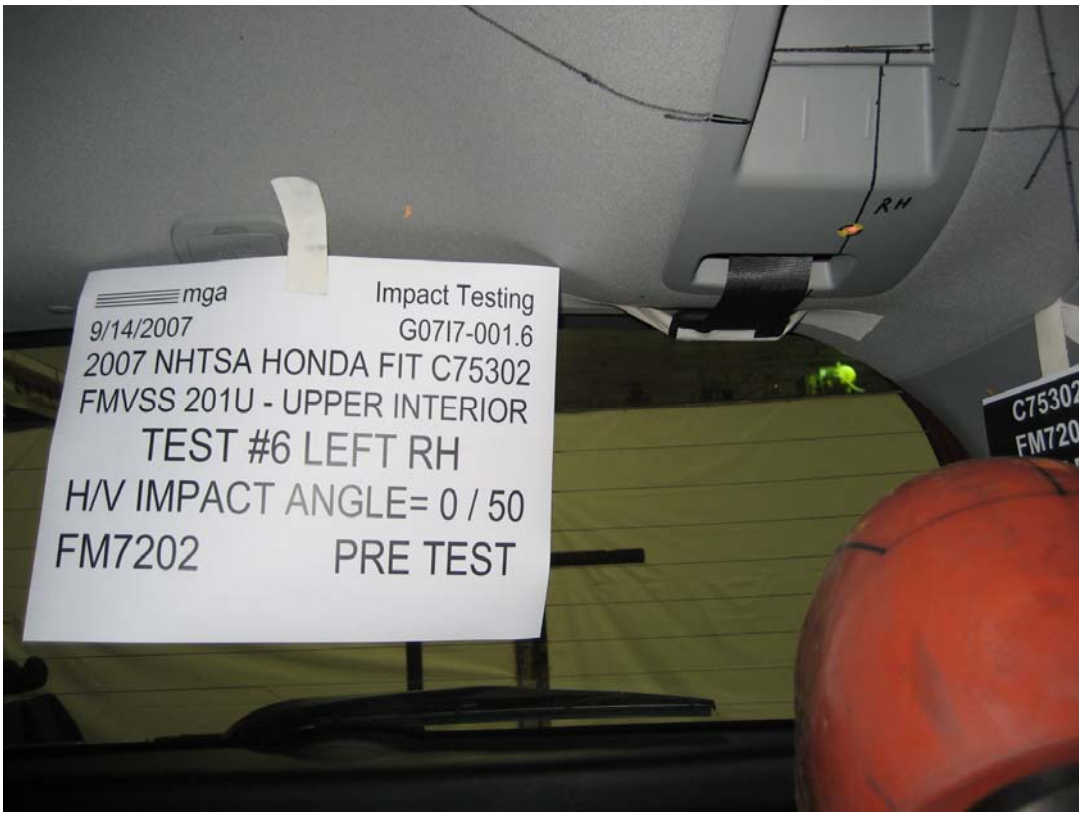

(peak = 77.9 G)
Head X (G)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)

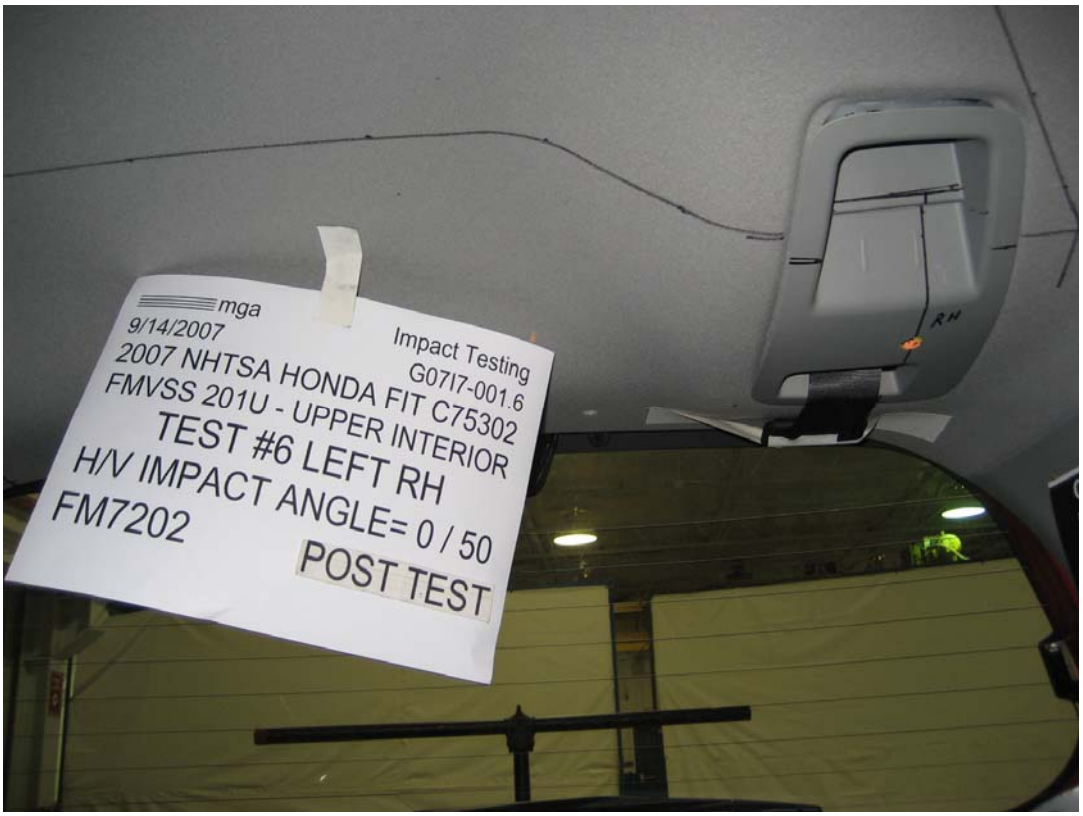

(peak = 9.1 G)
Head Y (G)
6
4
2
0
-2
-4
-6
-8
-10
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


(peak = 27.8 G)
Head Z (G)
5
0
-5
-10
-15
-20
-25
-30
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


(peak = 24.0 kph)
Impact Velocity: 23.99 kph
Velocity (kph)
25
20
15
10
5
0
-5
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 45.3 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
45
50
0
2
4
6
8
10
12
14
16
18
20
22
24
26
TIME (msec)


mga
Impact Testing
9/14/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #6 LEFT RH
H/V IMPACT ANGLE= 0 / 50
FM7202
PRE TEST
RH


mga
9/14/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #6 LEFT RH
H/V IMPACT ANGLE= 0 / 50
FM7202
POST TEST
RH


mga
Impact Testing
9/14/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #6 LEFT RH
H/V IMPACT ANGLE= 0 / 50
FM7202
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Target (Vehicle Side): RH Left

MGA Test Reference No.:FM7202

Approach Horizontal Angles:0º

Approach Vertical Angles:50º

Additional Description:

Test Number:#6

Temperature:22C

Humidity:64%

Time of Test:3:41:28 PM

FMH Serial No:[038]

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
321	205	12	23.9	39	5 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J14103	-94.598	1.32	1.32
Y	6	J36197	110.692	1.89	1.89
Z	7	J36353	99.391	1.83	1.83

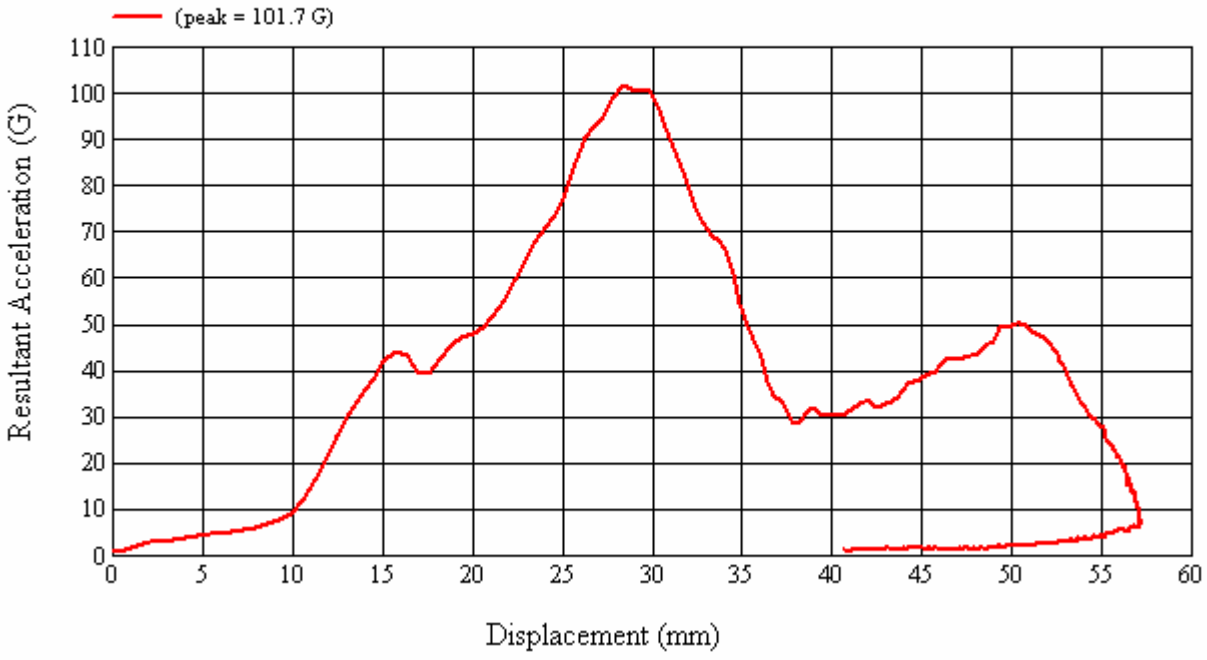
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

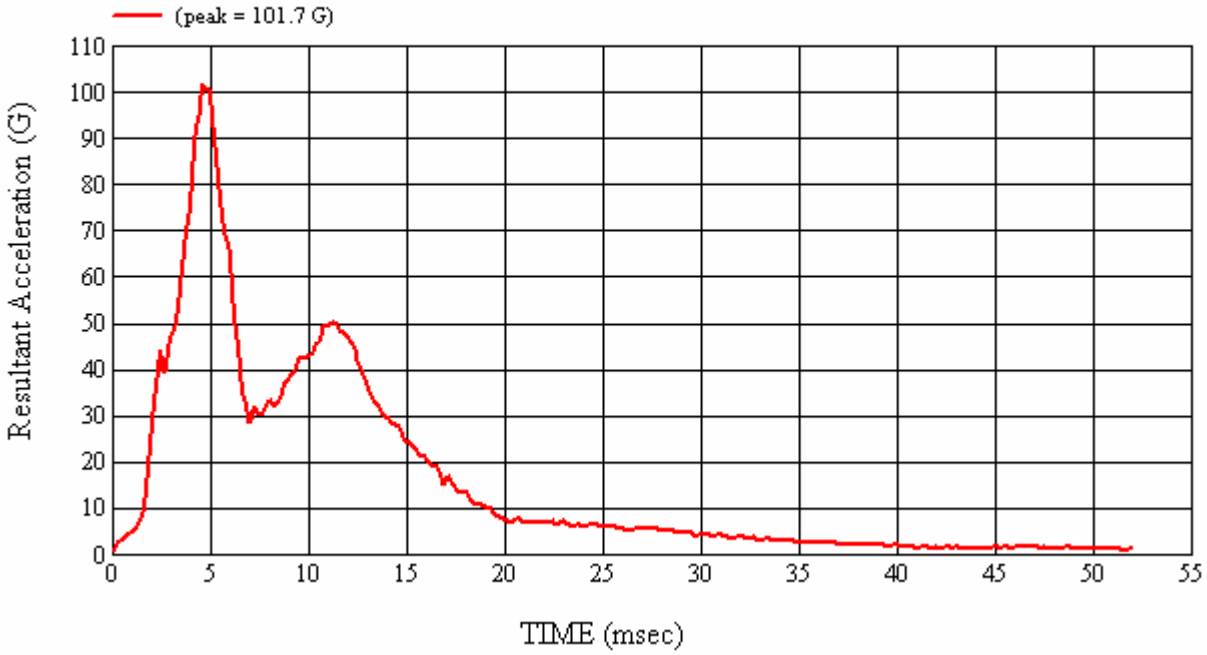
Seat belt retractor cover displacement.

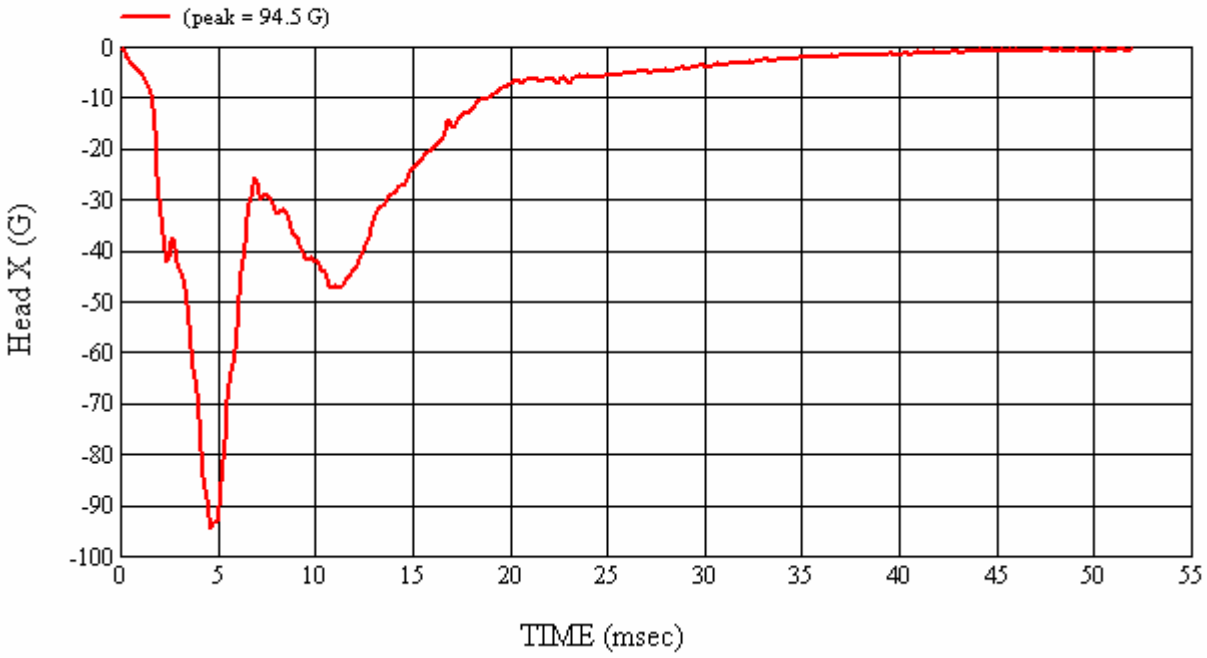
Recorded By: _____ Approved By*: _____ Date: 9/14/2007

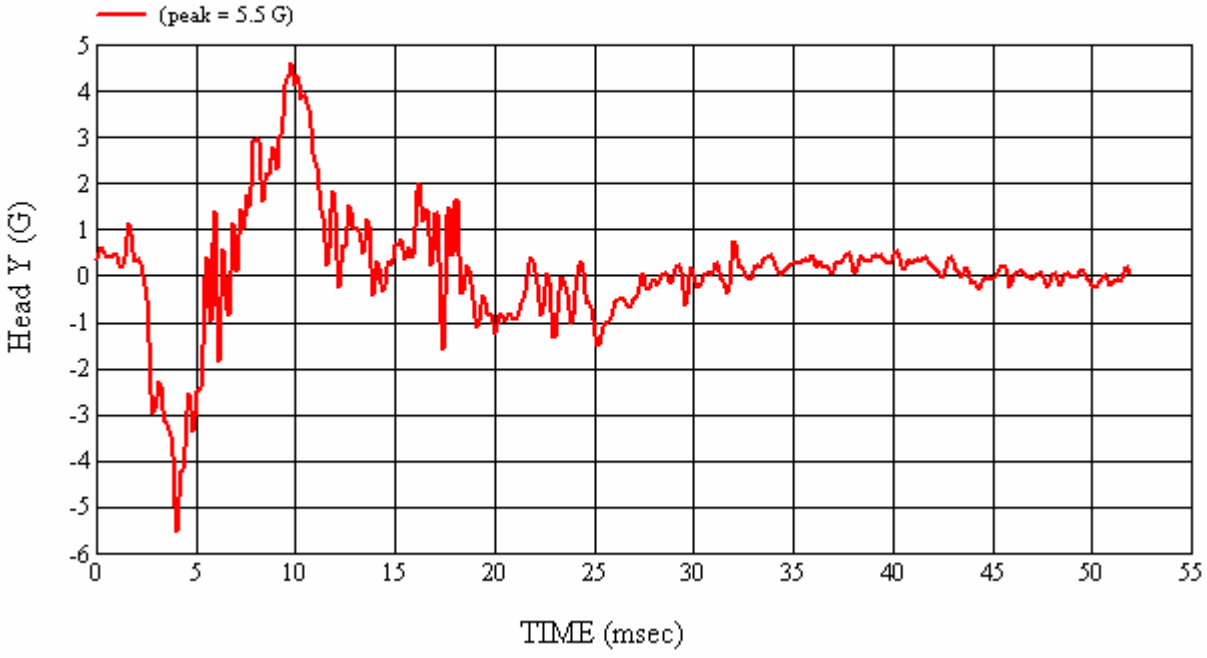
*Only necessary for NHTSA (Government) Compliance testing.

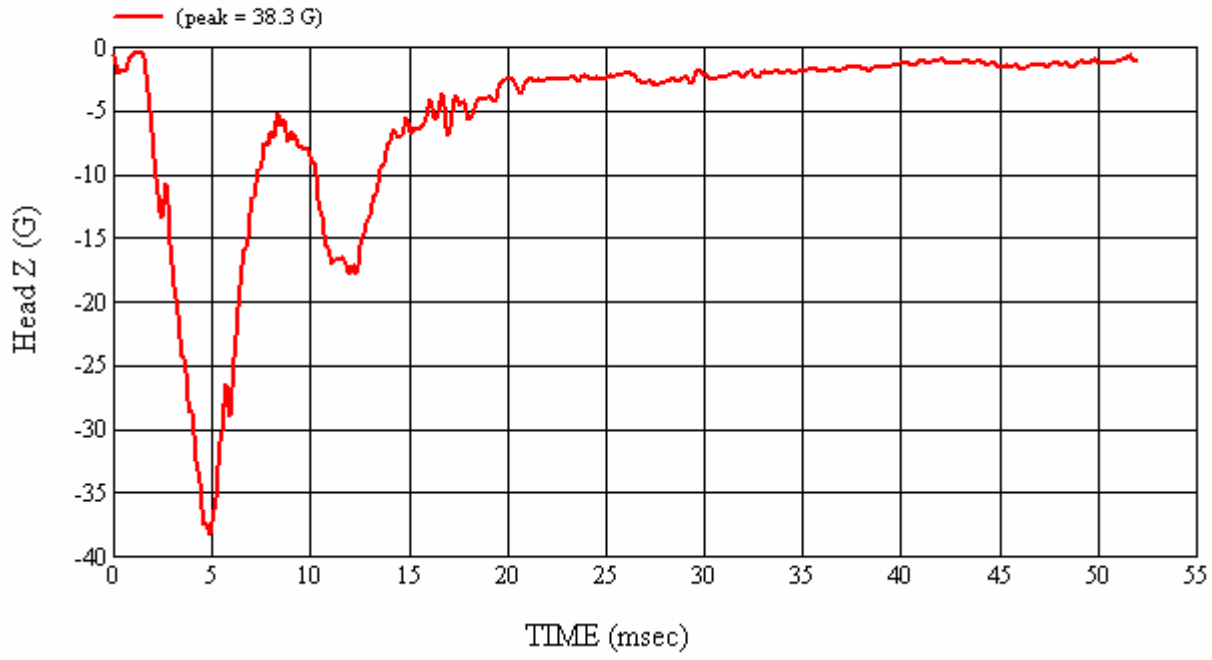
MGA Test #: FM7202 Target Location: RH, Left Side Test Date: 9/14/2007

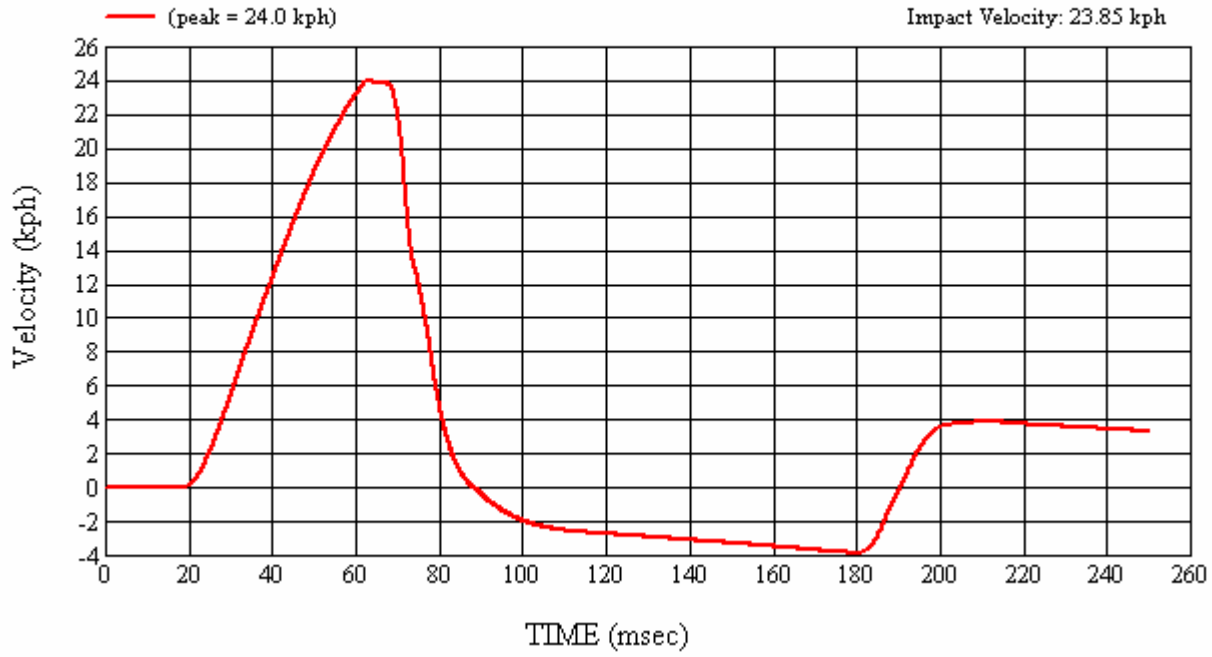


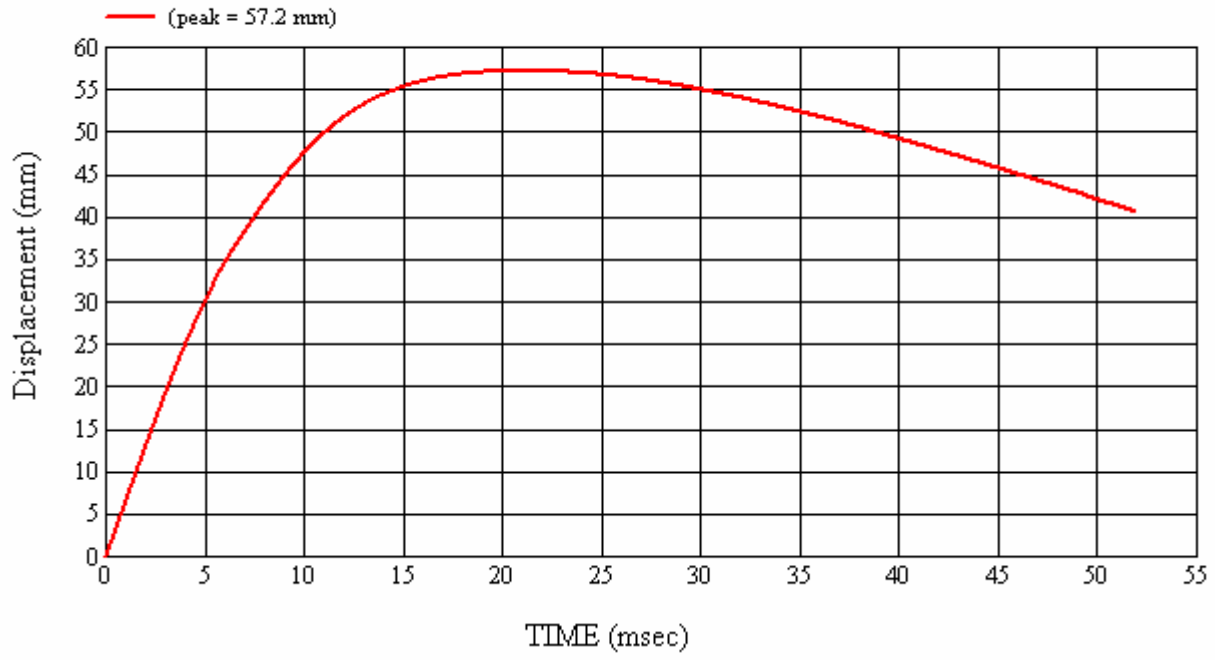



(peak = 94.5 G)
Head X (G)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
0
5
10
15
20
25
30
35
40
45
50
55
TIME (msec)

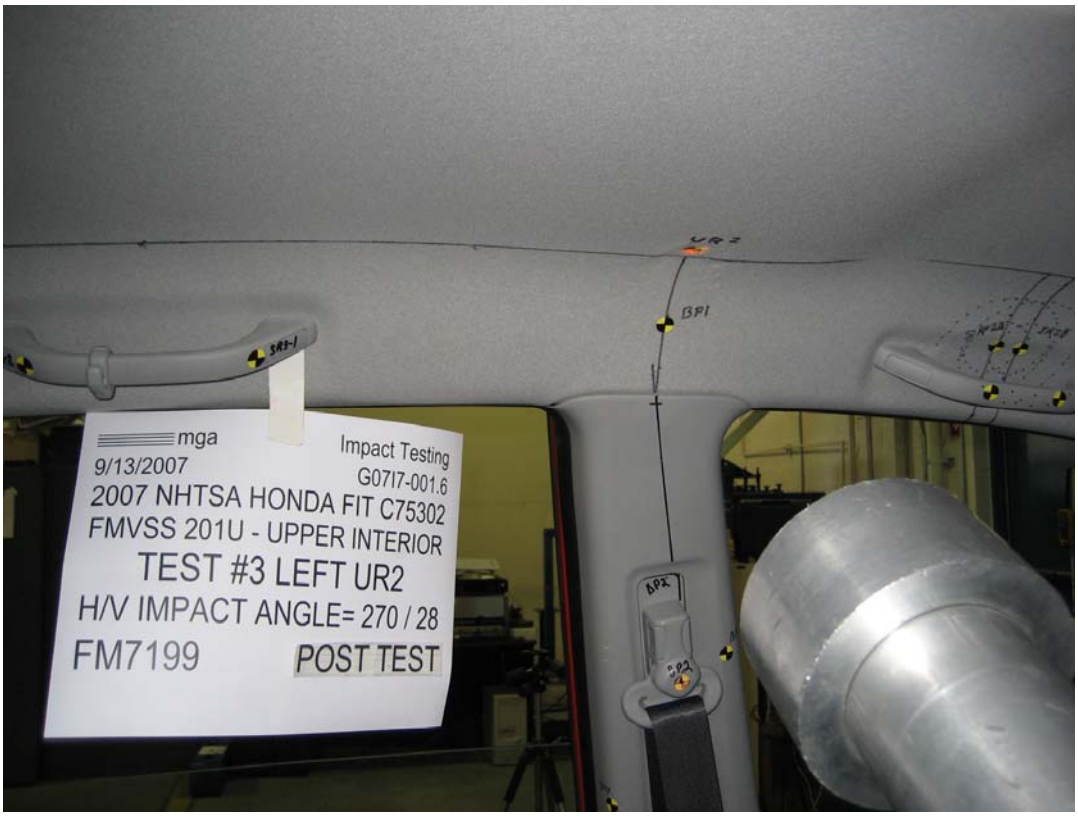

(peak = 5.5 G)
Head Y (G)
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
0
5
10
15
20
25
30
35
40
45
50
55
TIME (msec)


(peak = 38.3 G)
Head Z (G)
0
-5
-10
-15
-20
-25
-30
-35
-40
0
5
10
15
20
25
30
35
40
45
50
55
TIME (msec)


(peak = 24.0 kph)
Impact Velocity: 23.85 kph
Velocity (kph)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 57.2 mm)
Displacement (mm)
TIME (msec)
0
5
10
15
20
25
30
35
40
45
50
55
60


mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #3 LEFT UR2
H/V IMPACT ANGLE= 270 / 28
FM7199
PRE TEST


mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #3 LEFT UR2
H/V IMPACT ANGLE= 270 / 28
FM7199
POST TEST


mga
Impact Testing
9/13/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #3 LEFT UR2
H/V IMPACT ANGLE= 270 / 28
FM7199
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#3

Target (Vehicle Side): UR2 Left

Temperature:21C

MGA Test Reference No.:FM7199

Humidity:56%

Approach Horizontal Angles:270º

Time of Test:2:48:43 PM

Approach Vertical Angles:28º

FMH Serial No:[038]

Additional Description: @ BPR

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
770	800	7.3	24.0	67	4 Right

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J14103	-94.598	1.32	1.32
Y	6	J36197	110.692	1.89	1.89
Z	7	J36353	99.391	1.83	1.83

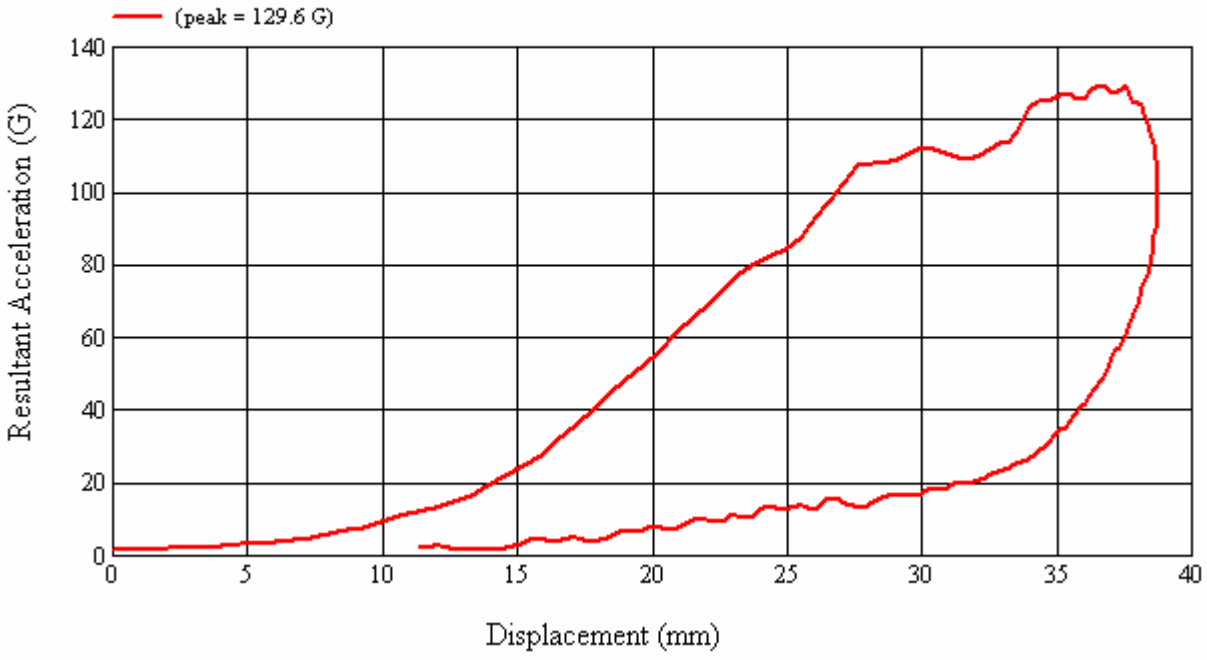
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

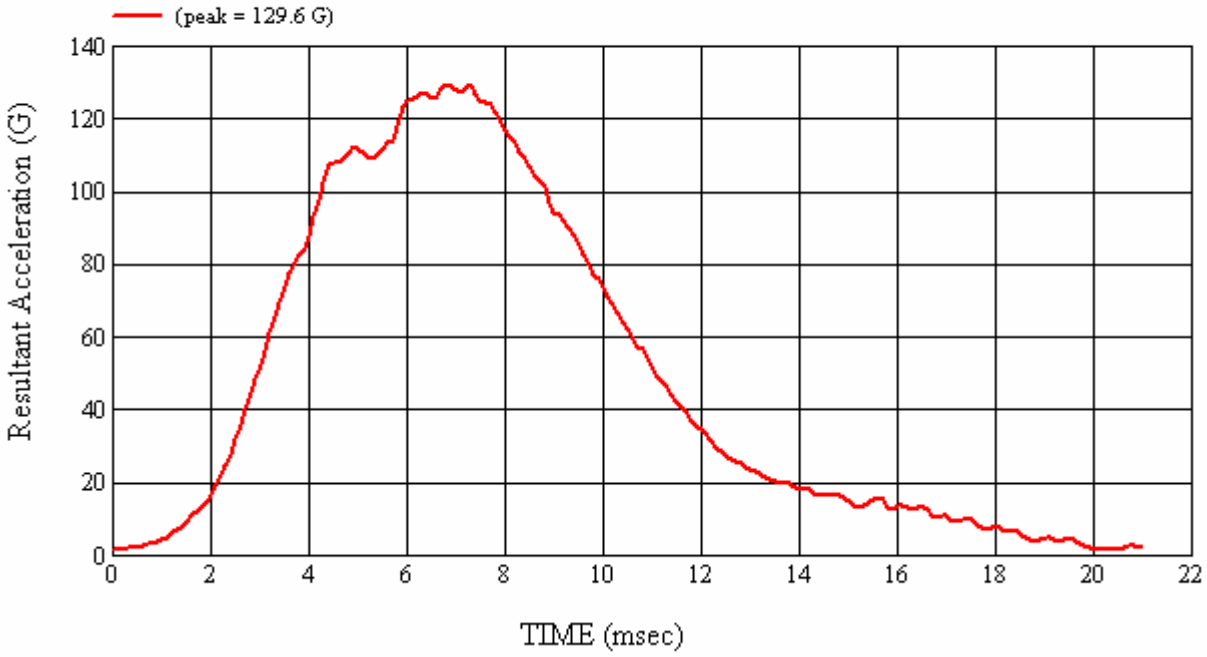
Indent on upper roof.

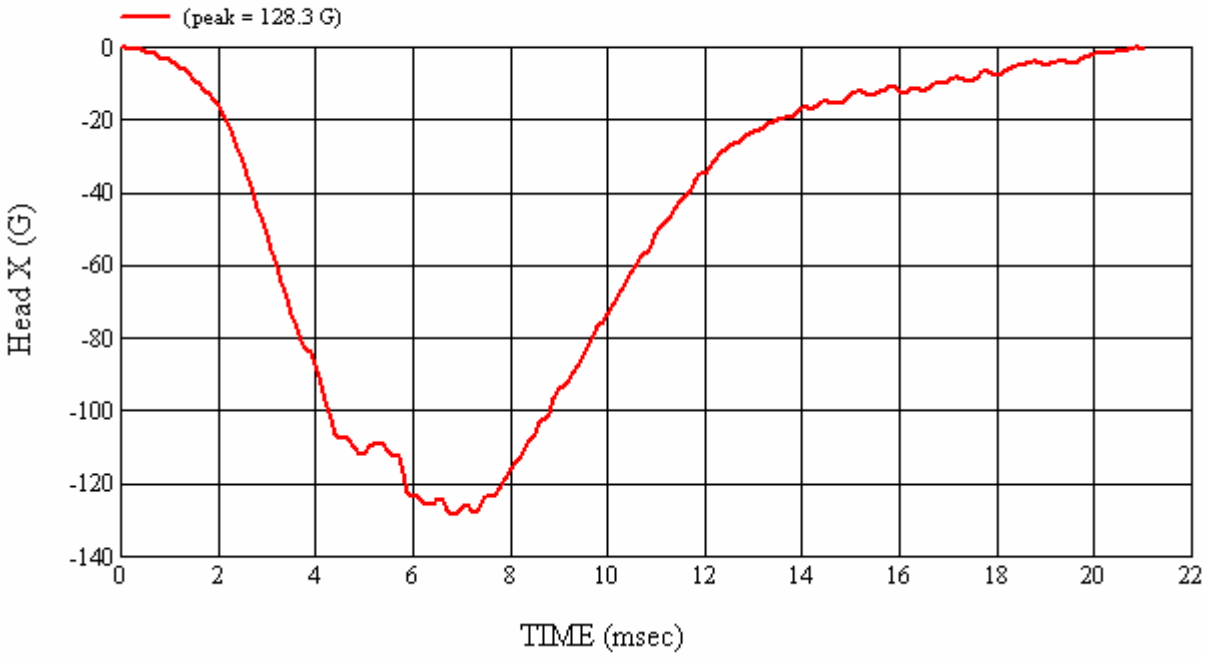
Recorded By: Louis Campbell Approved By*: Helen A. Kaleto Date: 9/13/2007

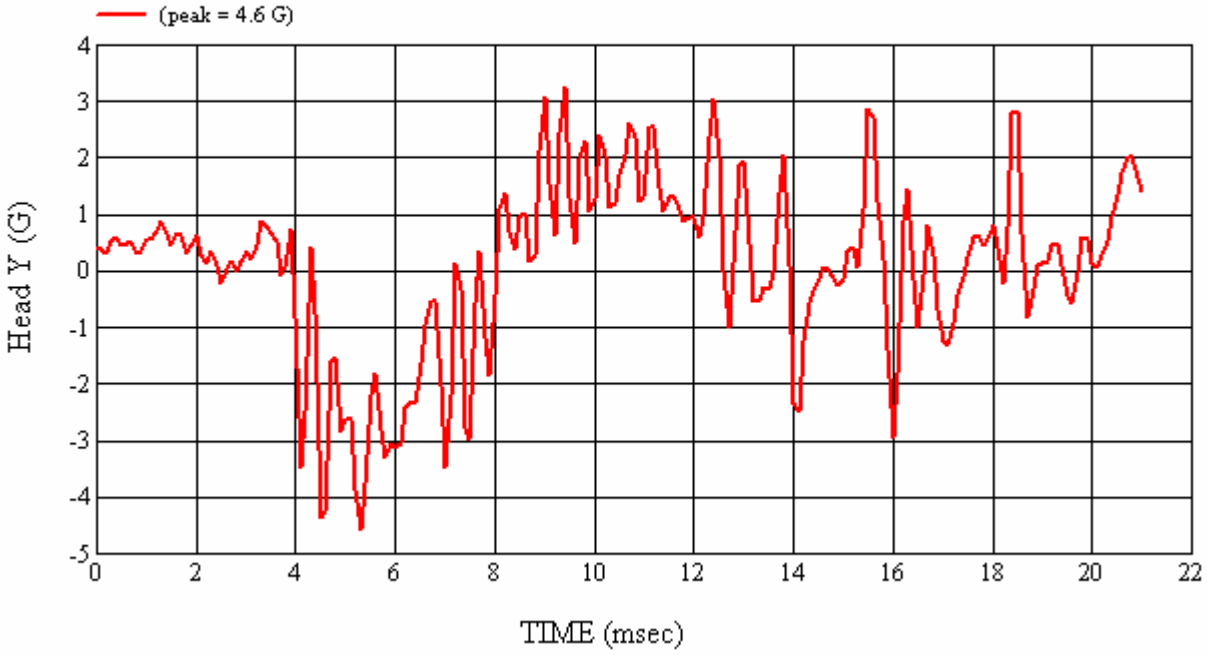
*Only necessary for NHTSA (Government) Compliance testing.

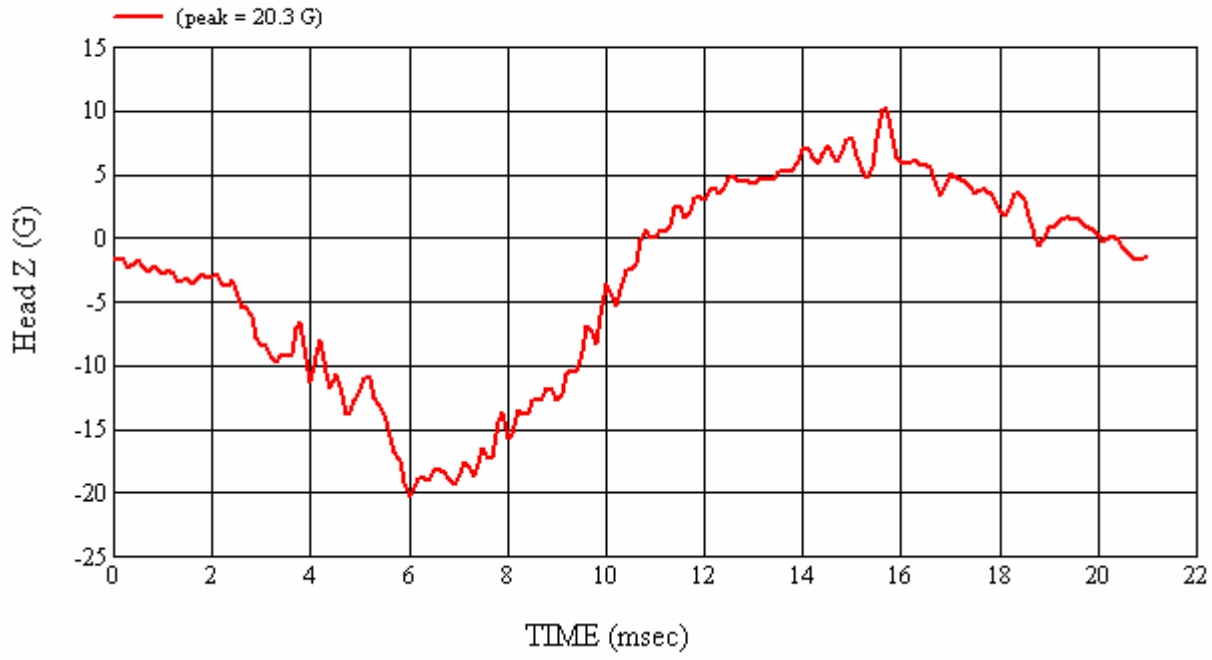
MGA Test #: FM7199 Target Location: UR2, Left Side Test Date: 9/13/2007

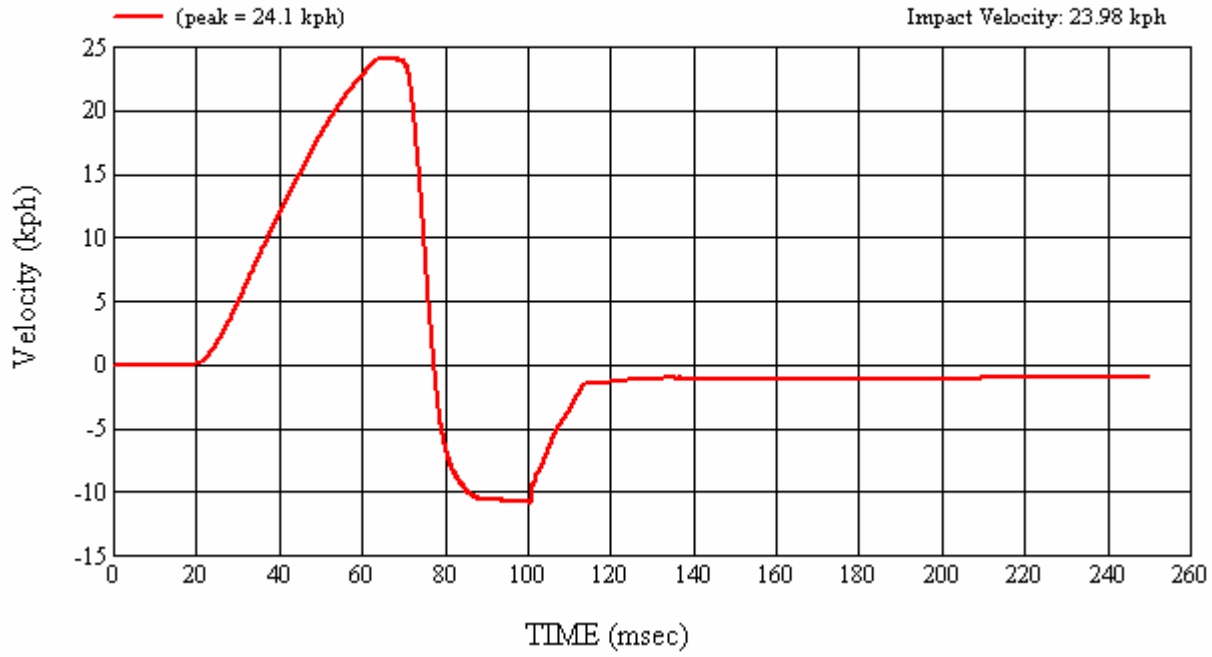


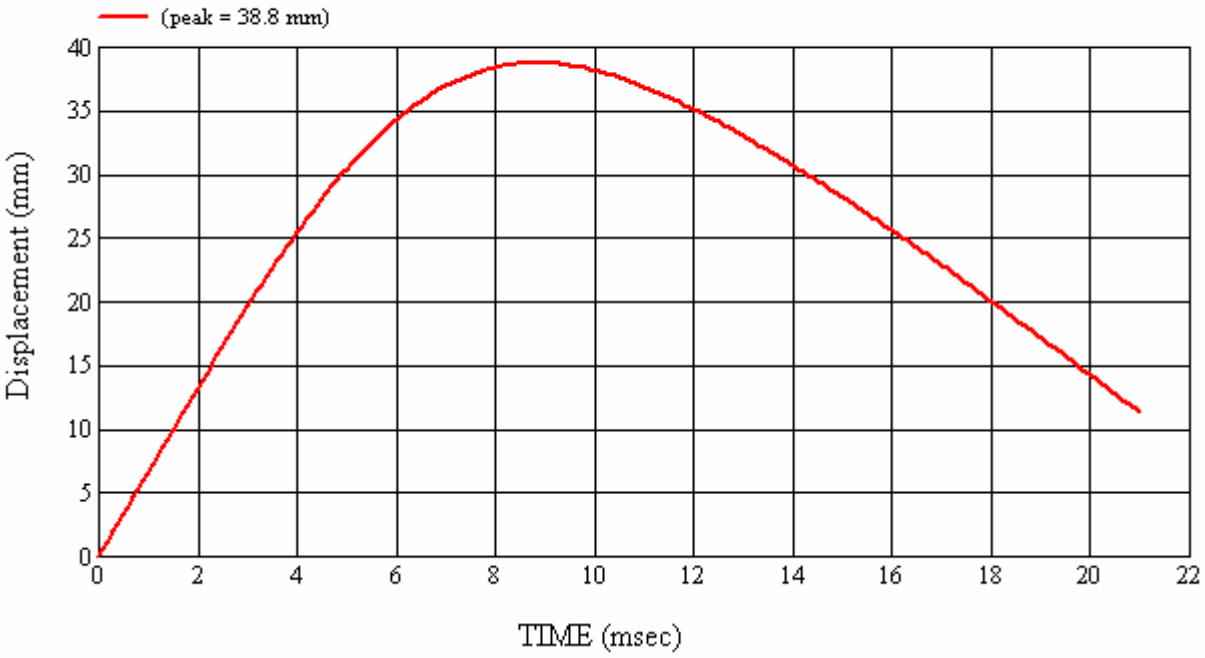



(peak = 128.3 G)
Head X (G)
0
-20
-40
-60
-80
-100
-120
-140
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 4.6 G)
Head Y (G)
4
3
2
1
0
-1
-2
-3
-4
-5
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 20.3 G)
Head Z (G)
15
10
5
0
-5
-10
-15
-20
-25
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


(peak = 24.1 kph)
Impact Velocity: 23.98 kph
Velocity (kph)
25
20
15
10
5
0
-5
-10
-15
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 38.8 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
0
2
4
6
8
10
12
14
16
18
20
22
TIME (msec)


UR3
OP1
OP2
mga
Impact Testing
9/14/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #5 LEFT UR3
H/V IMPACT ANGLE= 270 / 35
FM7201
PRE TEST


mga
Impact Testing
9/14/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #5 LEFT UR3
H/V IMPACT ANGLE= 270 / 35
FM7201
POST TEST


mga
Impact Testing
9/14/2007
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #5 LEFT UR3
H/V IMPACT ANGLE= 270 / 35
FM7201
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Target (Vehicle Side): UR3 Left

MGA Test Reference No.:FM7201

Approach Horizontal Angles:270º

Approach Vertical Angles:35º

Additional Description: @ Rear side rail

Test Number:#5

Temperature:22C

Humidity:64%

Time of Test:2:39:30 PM

FMH Serial No:[037]

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
345	237	10.5	18.6	29	6 Left

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22696	-100.013	1.32	1.33
Y	6	J35791	91.856	1.89	1.89
Z	7	J35800	97.996	1.83	1.83

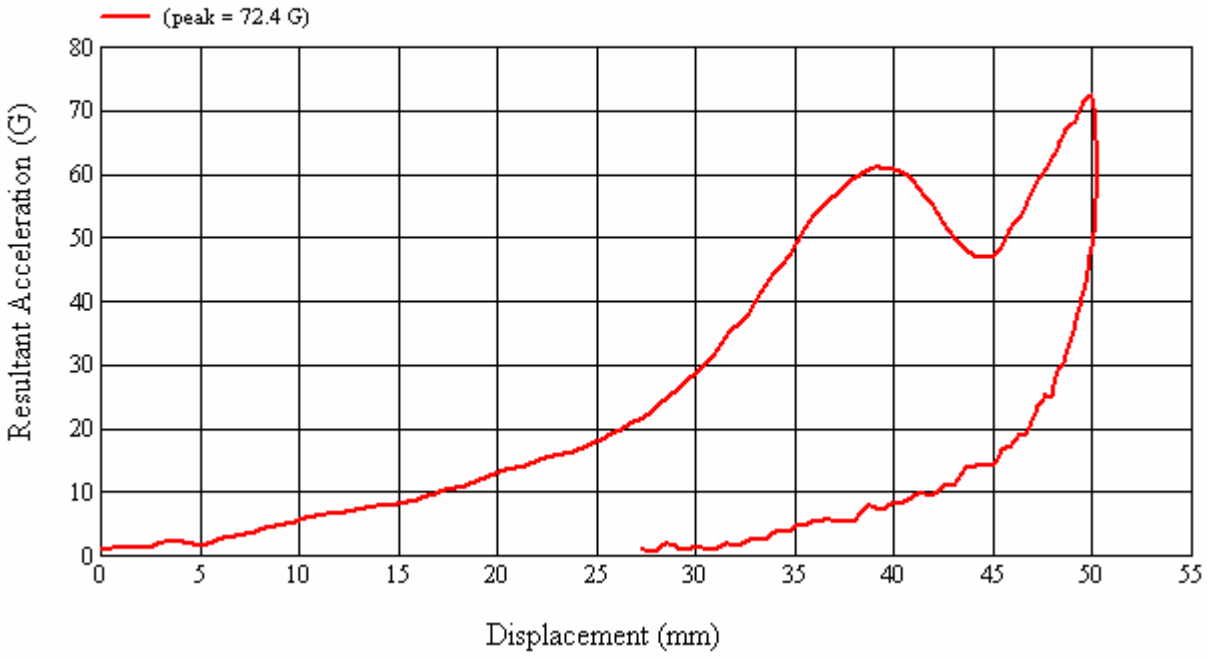
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

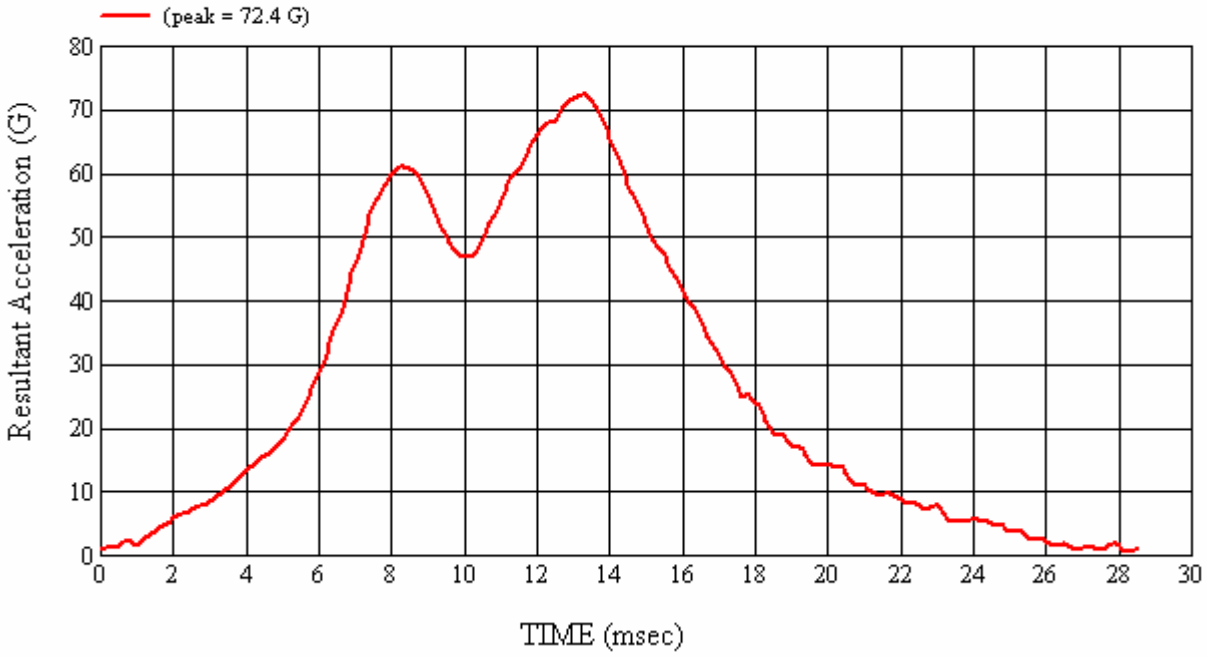
No visible damage.

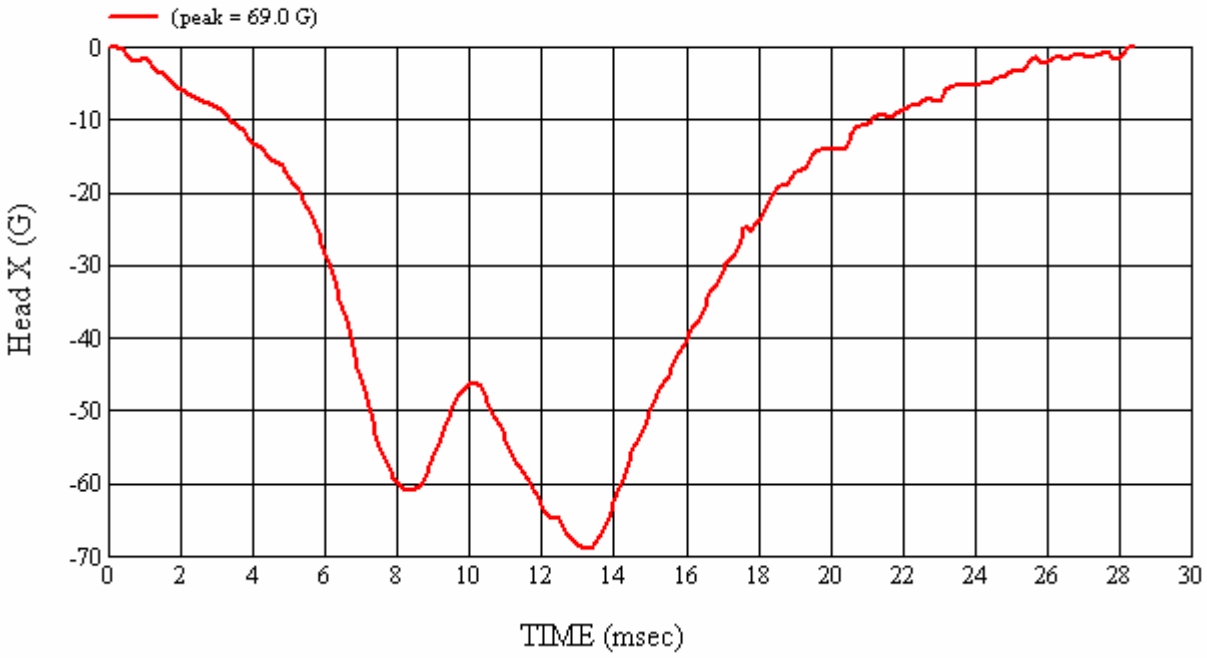
Recorded By: Louis Campbell Approved By*: Helen A. Kaleta Date: 9/14/2007

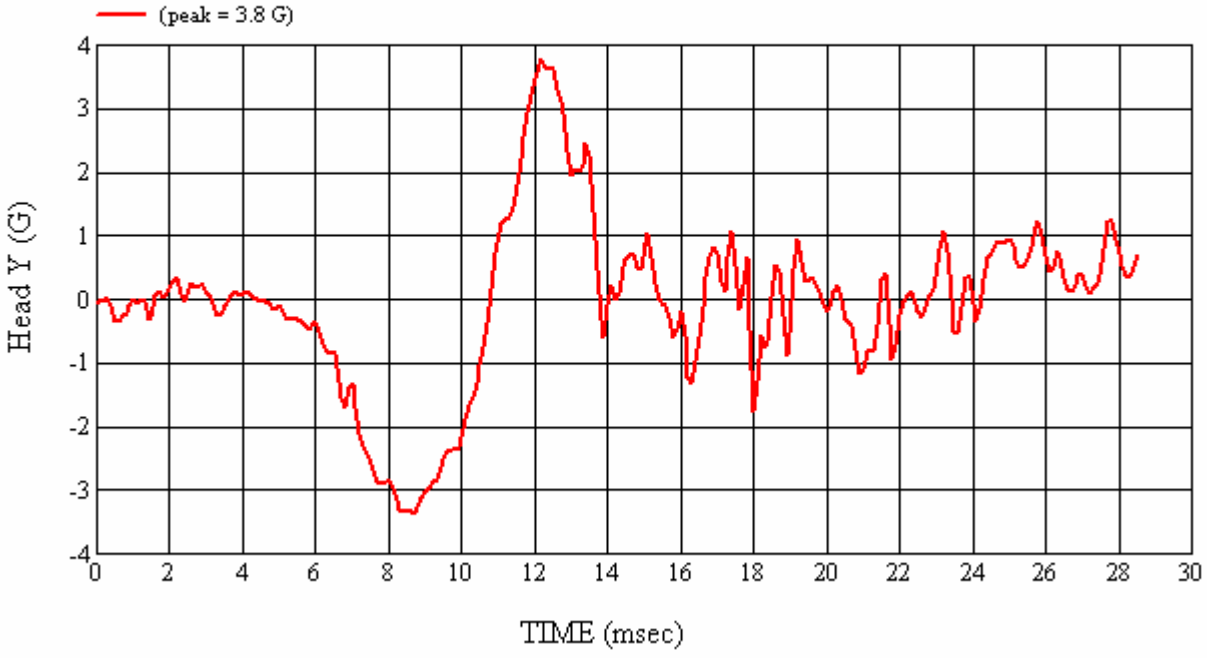
*Only necessary for NHTSA (Government) Compliance testing.

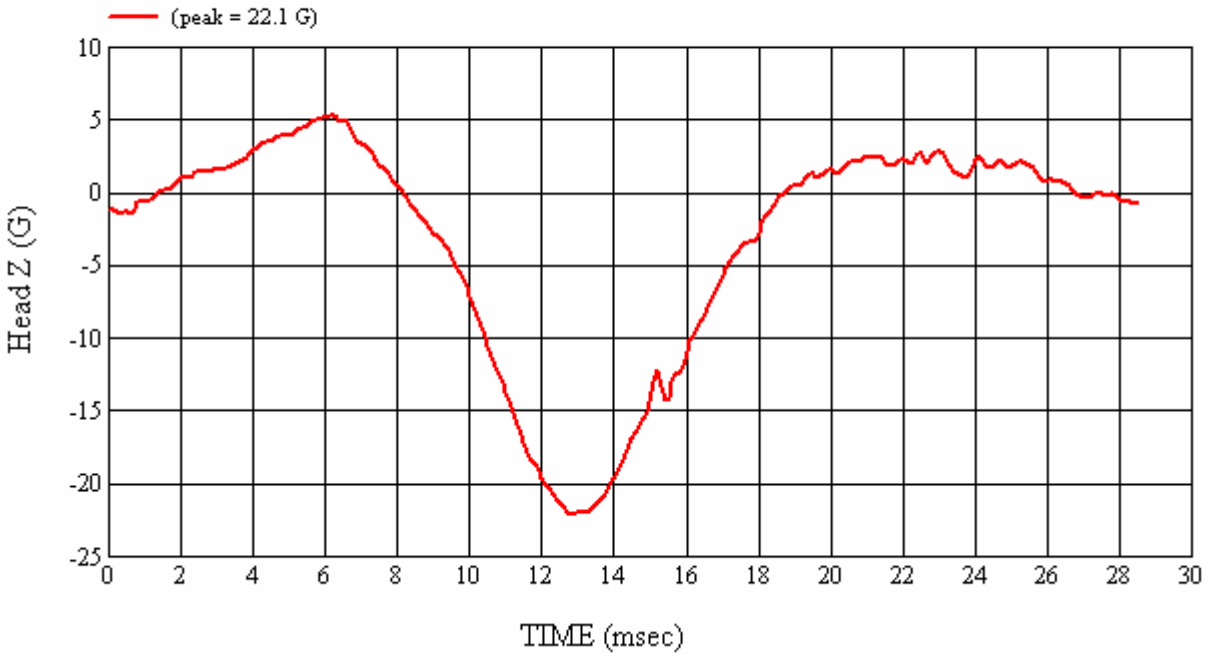
MGA Test #: FM7201 Target Location: UR3, Left Side Test Date: 9/14/2007

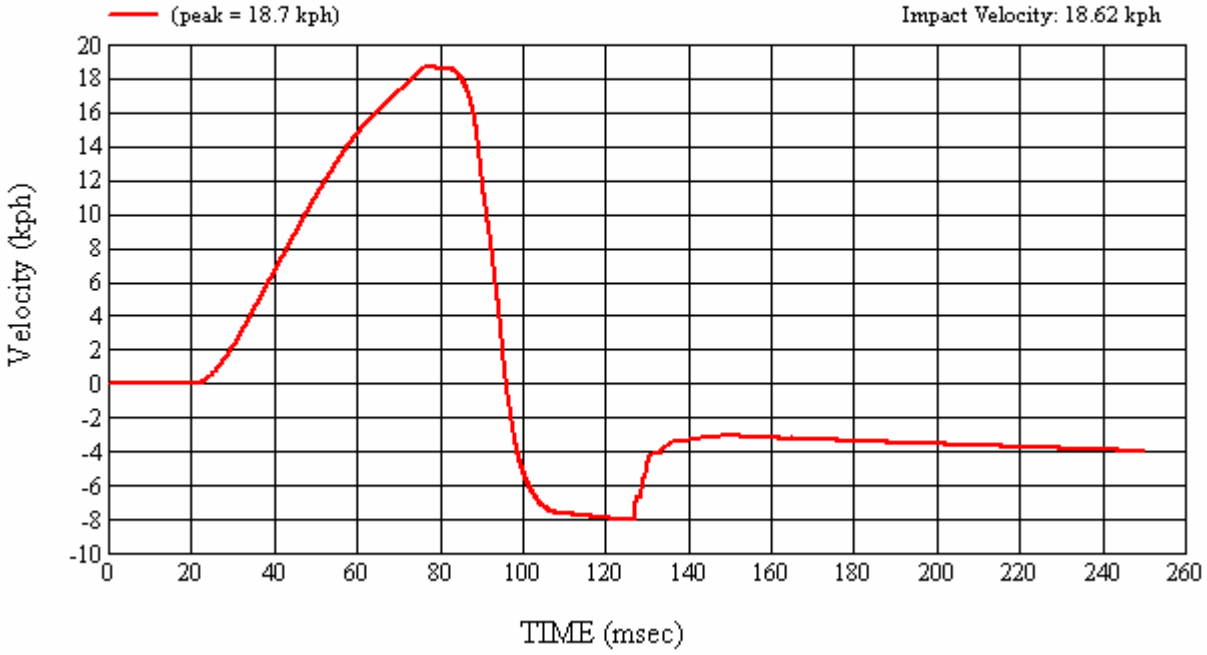


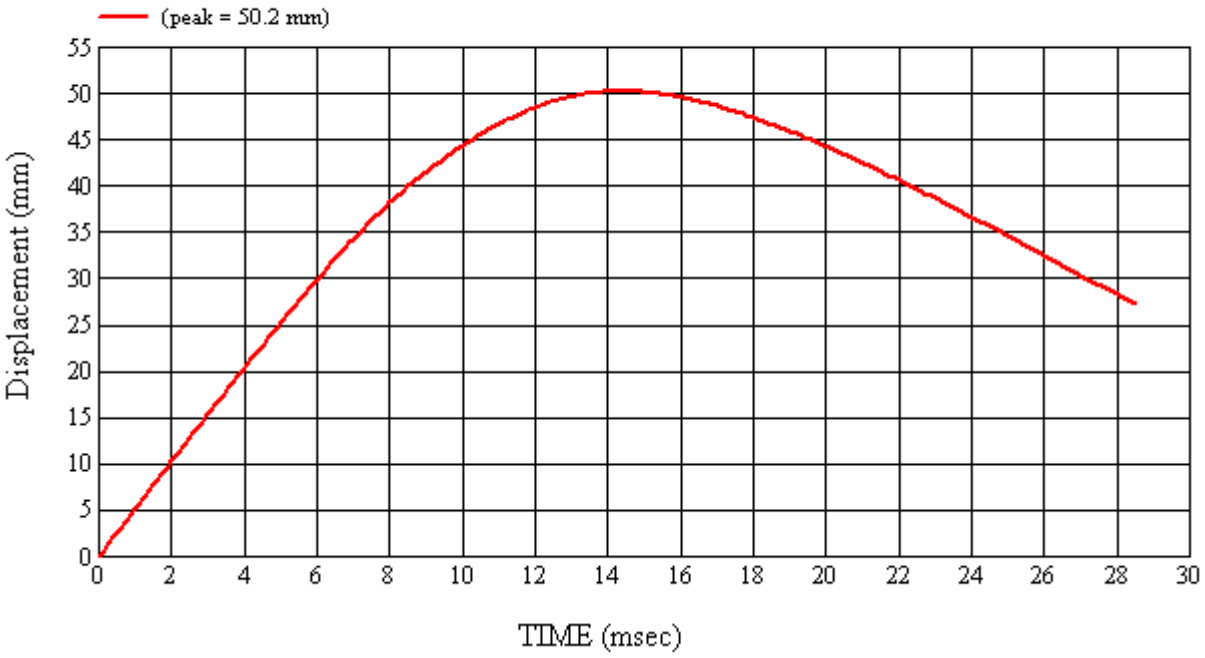



(peak = 69.0 G)
Head X (G)
0
-10
-20
-30
-40
-50
-60
-70
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


(peak = 3.8 G)
Head Y (G)
4
3
2
1
0
-1
-2
-3
-4
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


(peak = 22.1 G)
Head Z (G)
10
5
0
-5
-10
-15
-20
-25
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


(peak = 18.7 kph)
Impact Velocity: 18.62 kph
Velocity (kph)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 50.2 mm)
Displacement (mm)
55
50
45
40
35
30
25
20
15
10
5
0
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
TIME (msec)


mga
9/17/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #10 RIGHT UR5
H/V IMPACT ANGLE= 90 / 30
FM7206
PRE TEST


mga
9/17/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #10 RIGHT UR5
H/V IMPACT ANGLE= 90 / 30
FM7206
POST TEST
C75302
FM7206
RIGHT UR5


mga
9/17/2007
Impact Testing
G07I7-001.6
2007 NHTSA HONDA FIT C75302
FMVSS 201U - UPPER INTERIOR
TEST #10 RIGHT UR5
H/V IMPACT ANGLE= 90 / 30
FM7206
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G07I7-001.6 VEHICLE YR/MAKE/MODEL:2007/NHTSA/Honda Fit C75302

GENERAL TEST PARAMETERS:

Test Number:#10

Target (Vehicle Side): UR5 Right

Temperature:22C

MGA Test Reference No.:FM7206

Humidity:47%

Approach Horizontal Angles:90º

Time of Test:3:32:08 PM

Approach Vertical Angles:30º

FMH Serial No:[035]

Additional Description: @ SR3-2

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
544	501	8.6	23.6	60	3 Right

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J22664	-94.161	1.32	1.32
Y	6	J35919	97.442	1.89	1.89
Z	7	J35924	93.891	1.83	1.83

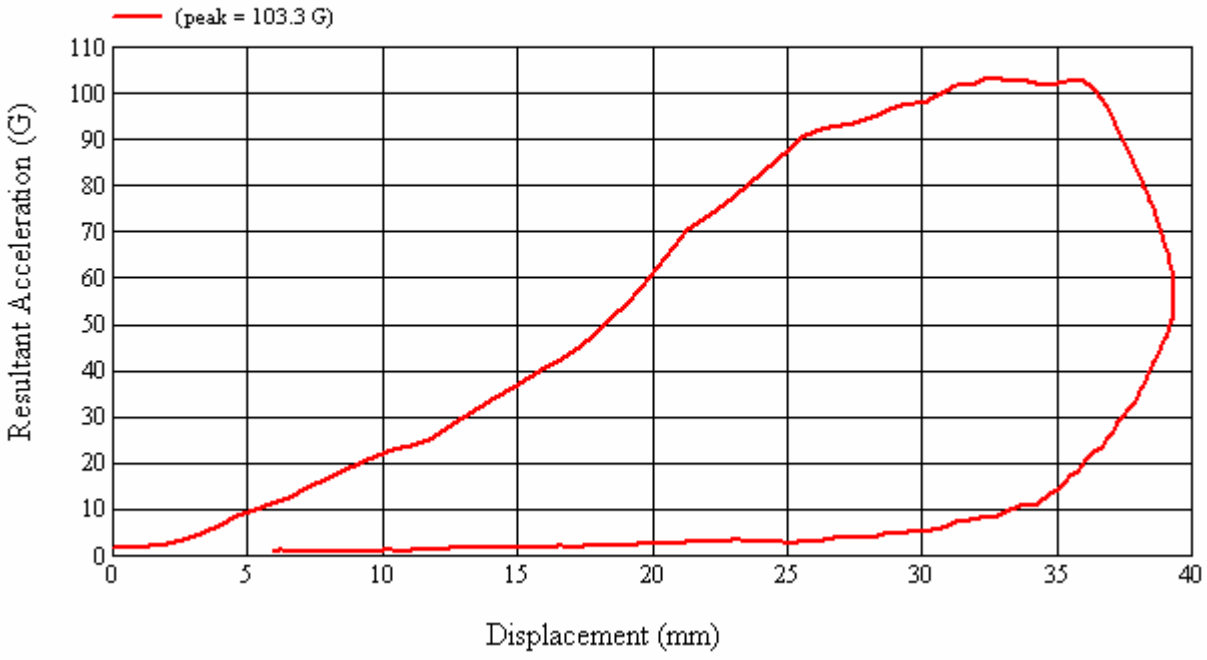
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

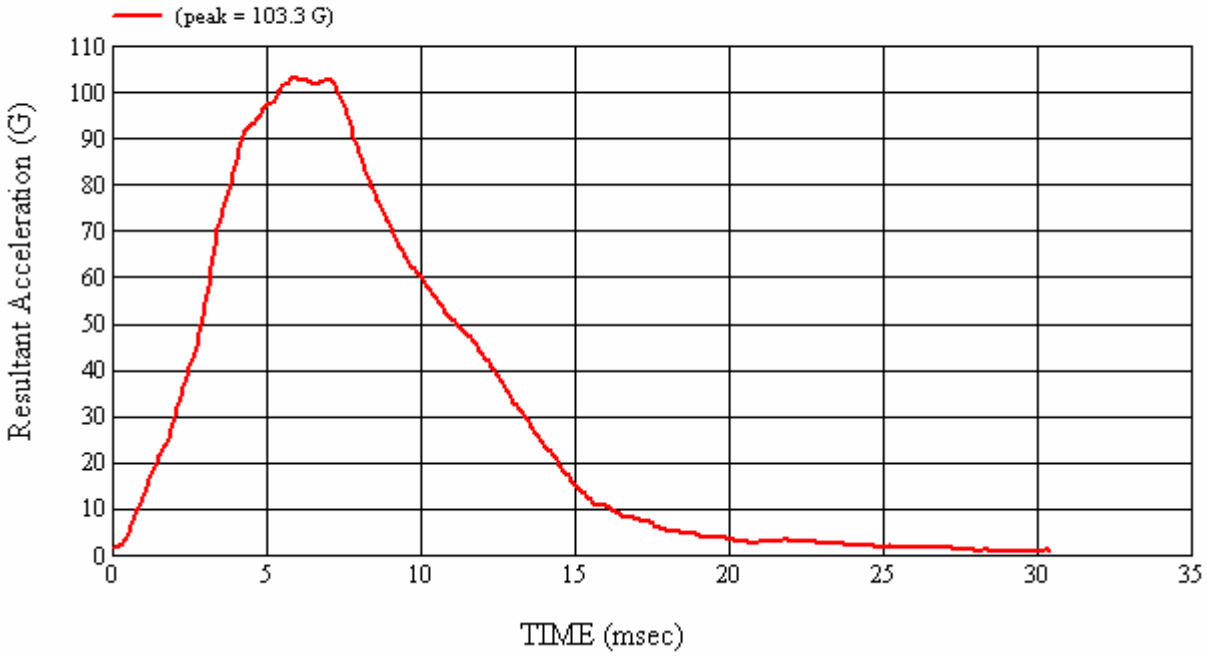
No visible damage

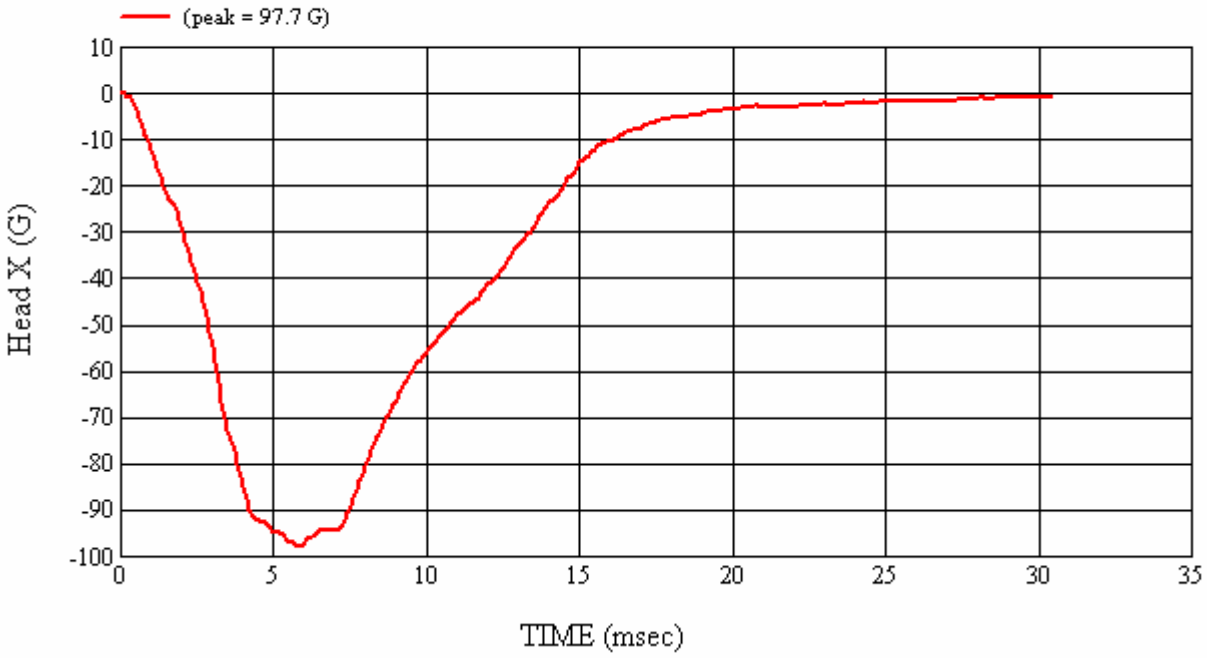
Recorded By: _____ Approved By*: _____ Date: 9/17/2007

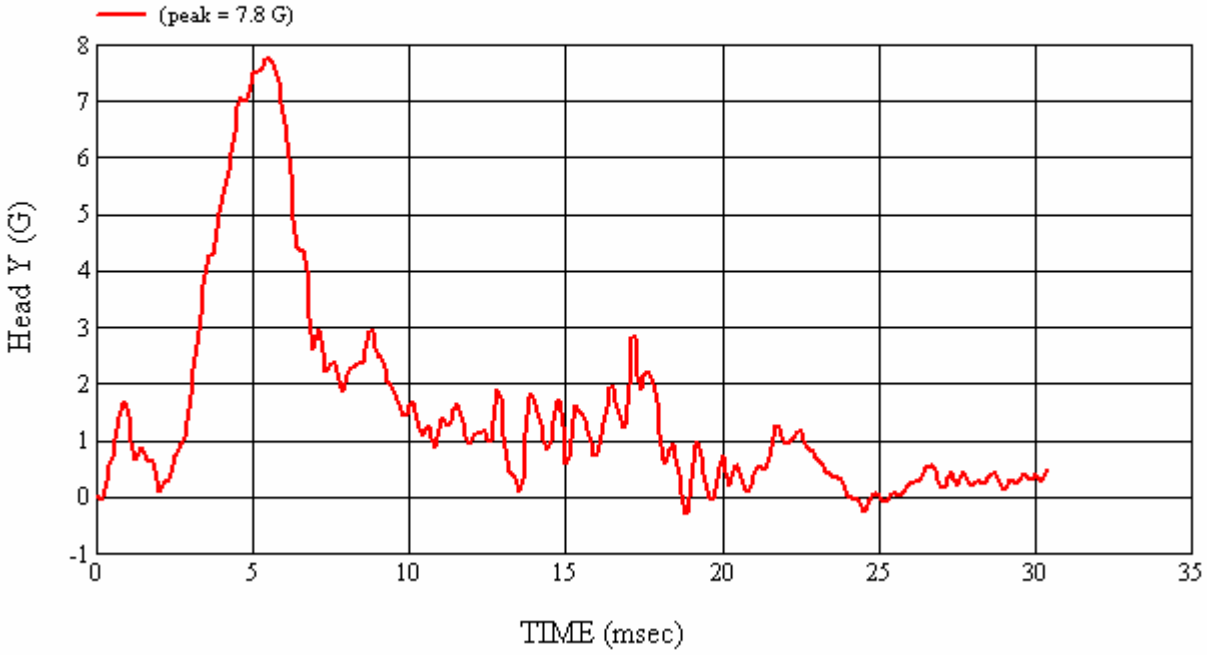
*Only necessary for NHTSA (Government) Compliance testing.

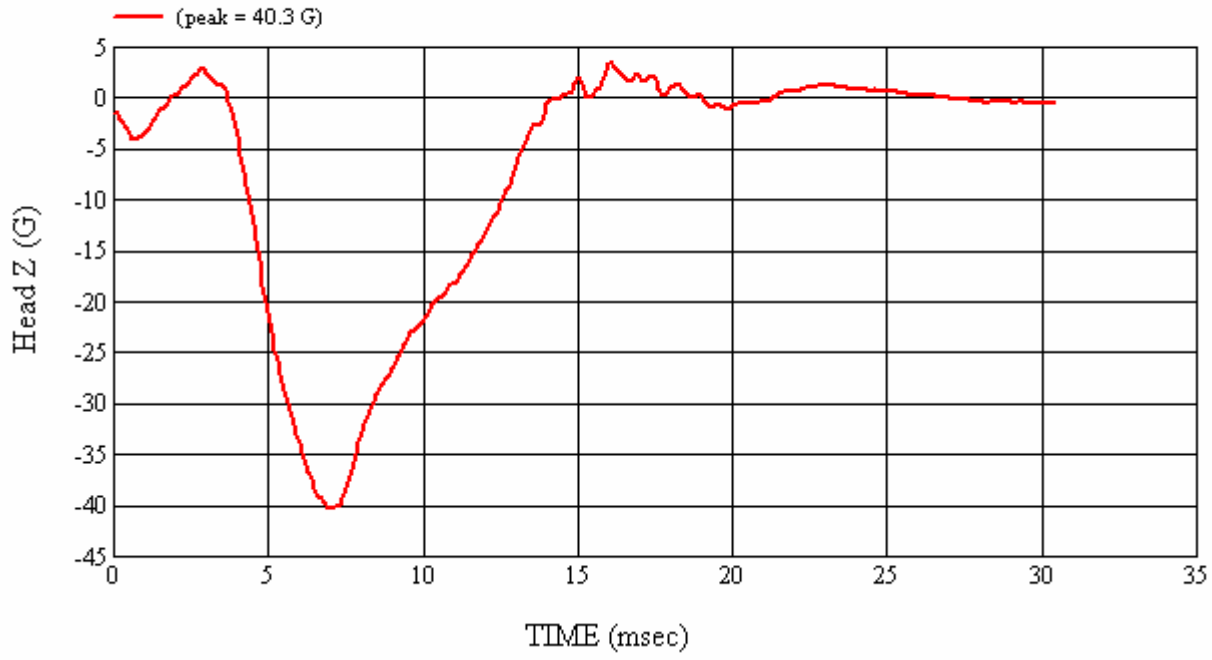
MGA Test #: FM7206 Target Location: UR5, Right Side Test Date: 9/17/2007

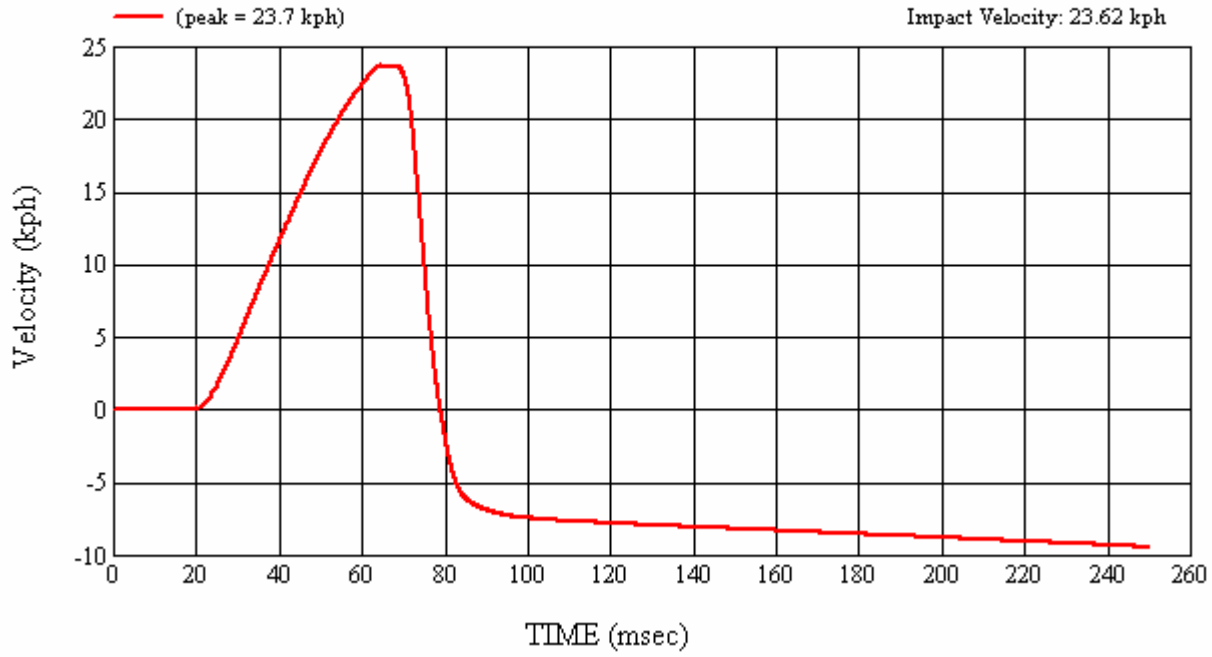


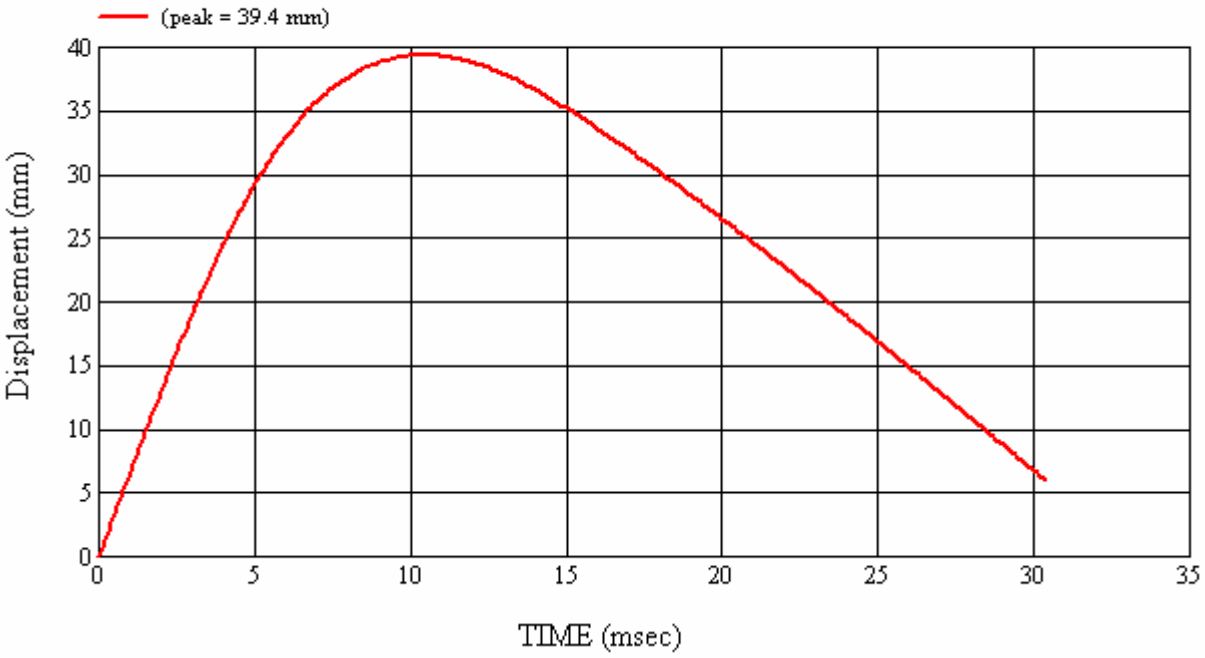



(peak = 97.7 G)
Head X (G)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
0
5
10
15
20
25
30
35
TIME (msec)


(peak = 7.8 G)
Head Y (G)
8
7
6
5
4
3
2
1
0
-1
0
5
10
15
20
25
30
35
TIME (msec)


(peak = 40.3 G)
Head Z (G)
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
0
5
10
15
20
25
30
35
TIME (msec)


(peak = 23.7 kph)
Impact Velocity: 23.62 kph
Velocity (kph)
25
20
15
10
5
0
-5
-10
0
20
40
60
80
100
120
140
160
180
200
220
240
260
TIME (msec)


(peak = 39.4 mm)
Displacement (mm)
0
5
10
15
20
25
30
35
40
TIME (msec)
0
5
10
15
20
25
30
35

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

The following section lists the test equipment for the compliance test series. Items marked with an asterisk are calibrated by an external lab. An additional summary table is given for the pre and post-test calibration data for the Free Motion Headforms. The temperature trace to confirm testing was conducted between 66ºF and 78ºF (19ºC - 26ºC) is included in Appendix A. Calibration certificates can be found in Appendix B.

TABLE 4-1 LIST OF ITEMS USED

ITEM	MANUFACTURER NAME	MODEL #	FUNCTION OF ITEM	ACCURACY	CAL. INTERNAL
Head Drop Tower (includes test frame and DAS)	MGA Research Corp.	MGA-100-DC	FMH Calibration	N/A	N/A
Accelerometers	Endevco	7264-2000	Acceleration Data	±0.5%	6 months
*Digital Inclinometer	Macklanburg-Duncan	PRO 360 (MGA00048)	Set Angle of FMH/Targeting	0.1°	Annual
FMVSS 201U Test Frame (includes the propulsion control system, actuator, test frame, and DAS)	MGA Research Corp.	MGA-100-FMH	Test System	N/A	N/A
Free Motion Headforms	UTAMA UTAMA UTAMA	035 037 038	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Redlake	HGLE	Record Event	N/A	N/A
*FARO™	Faro Technologies	S08059801273	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Digital Protractor	 Stanley N/A Macklanburg-Duncan	 TPM719 -- MGA00048	 Measurement Targeting FMH setup Horizontal Measurement	 1 mm N/A 0.5°	Annual
*Temperature Recorder	Dickson	FH125	Record Temperature and Humidity	± 1°C ± 1% RH	Annual
* Scale	Detecto	MGA00081	Weigh FMH Head	± 0.01 lb	Annual
*Vehicle Scale	Sterling Scale Co.	26032389	Weighing Vehicle	± .5 kg	Annual

Each headform was calibrated by an engineer after the headform had soaked in an environment of 66ºF to 78ºF (19ºC to 26ºC) for a period of at least four hours.

Each headform was found to comply with the performance criteria under Part 572L for pre and post-test calibrations. That is, the peak resultant acceleration was between 225 and 275 G's, the peak lateral acceleration was less than 15 G's, the headform weighed between 9.9 and 10.1 lbs., the pulse was determined to be unimodal, and there was no major damage to the headform.

TABLE 4-2 FMH CALIBRATION SUMMARY

FMH Serial #		Headform Calibration Date	Weight (lbs)	Temp (ºC)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#035	9/12/2007	10.08	23.0	38.0	239.1	5.7	Yes
Post	#035	9/18/2007	10.08	25.0	39.0	241.6	2.4	Yes
Pre	#037	9/12/2007	9.96	23.0	38.0	246.3	6.5	Yes
Post	#037	9/18/2007	9.96	25.0	37.0	240.8	13.1	Yes
Pre	#038	9/12/2007	9.90	23.0	38.0	269.6	4.3	Yes
Post	#038	9/18/2007	9.90	25.0	36.0	272.9	14.3	Yes

4.1 Pre-Test Calibration

HEAD DROP TEST SUMMARY
PART 572L

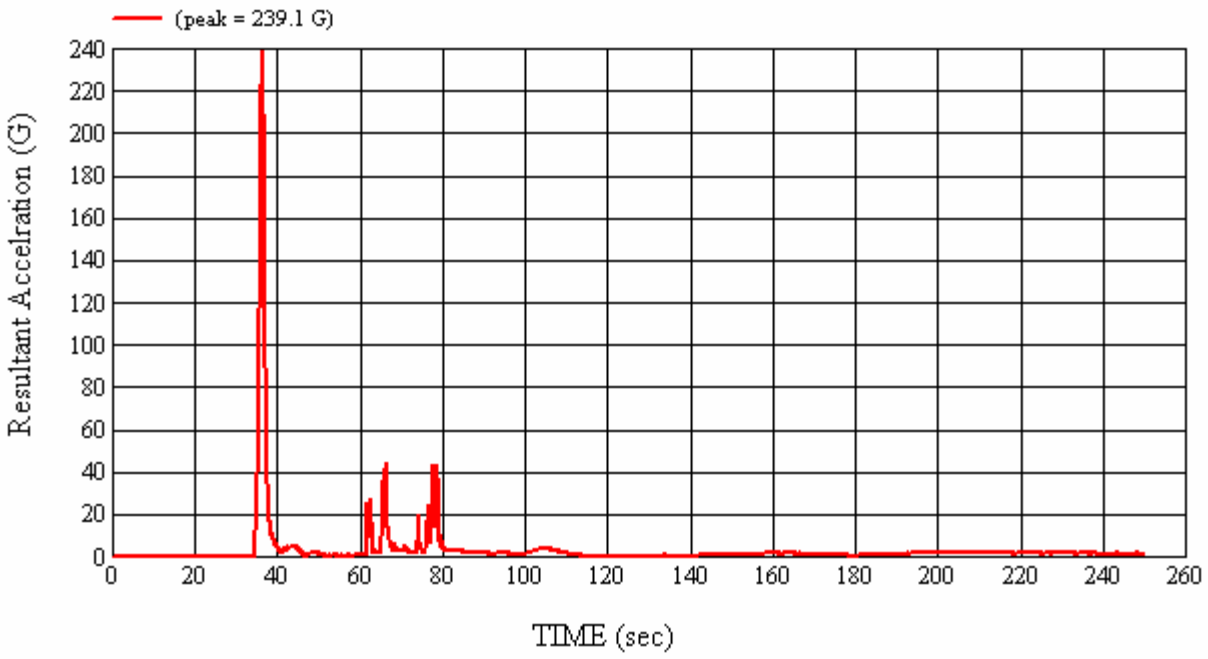
HEADFORM SERIAL NUMBER: 035	CALIBRATION DATE: 9/12/2007 CALIBRATION TIME: 3:48:03 PM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	10.08
Temperature	19° C to 26° C	23
Relative Humidity	10% to 70%	38
Peak Resultant Acceleration	225 G's to 275 G's	239.1
Peak Lateral Acceleration	15 G's Maximum	5.7
Unimodal Acceleration Curve	YES	YES

FMH INSTRUMENTATION					
HEAD ACCELEROMETERS					
Channel Number	**Manufacturer**	**Model Number**	**Serial Number**	**Date of Last Calibration**	**Date of Next Calibration**
1	ENDEVCO	7264-2000	J22664	04/30/07	10/30/07
2	ENDEVCO	7264-2000	J35919	04/30/07	10/30/07
3	ENDEVCO	7264-2000	J35924	04/30/07	10/30/07

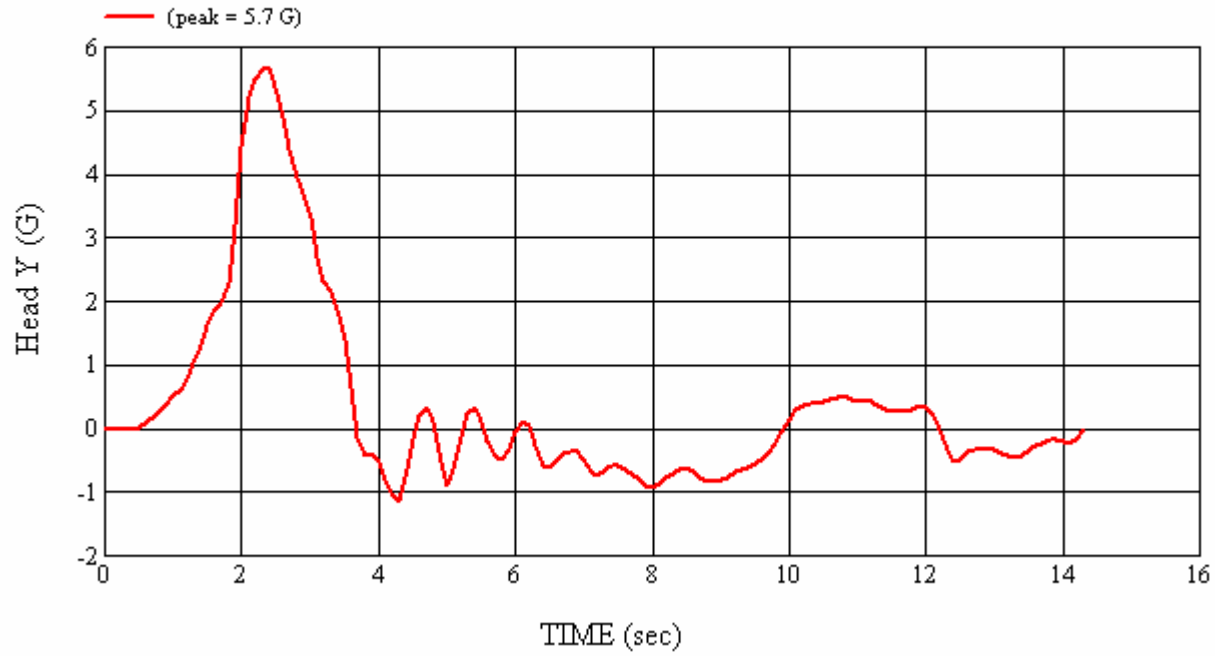
REMARKS:

RECORDED BY: Kaitlin Campbell DATE: 9/12/2007

APPROVED BY: Helen A. Kalista



Head 035 (Pre) Calibration #H35009



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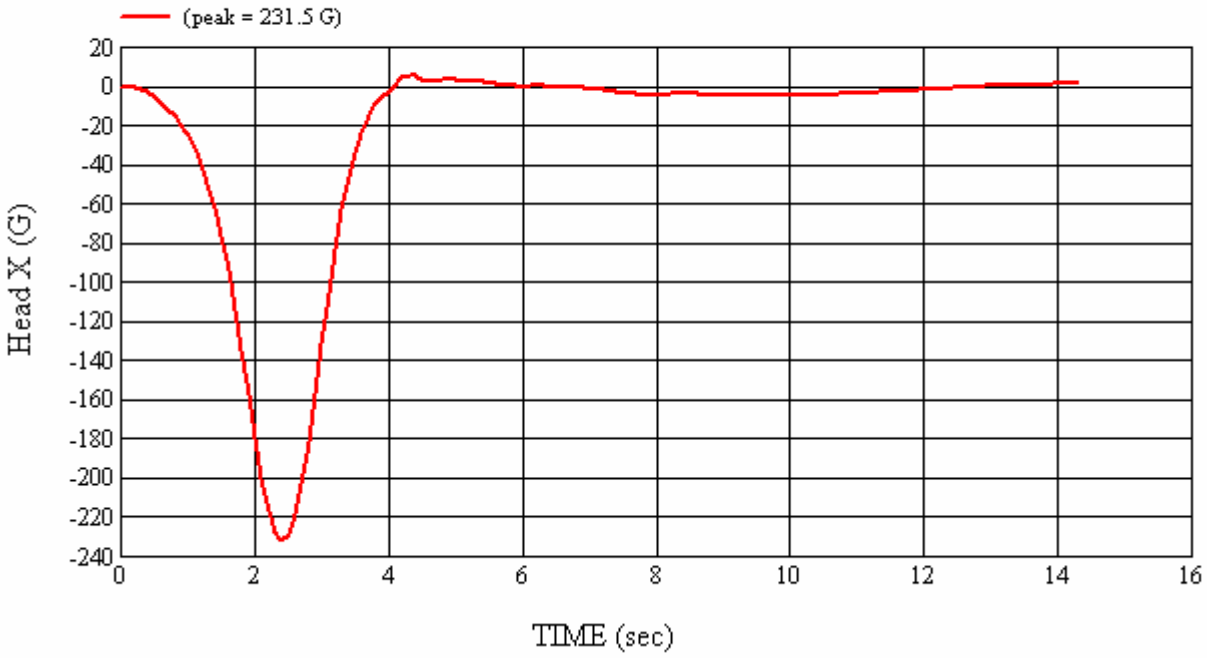
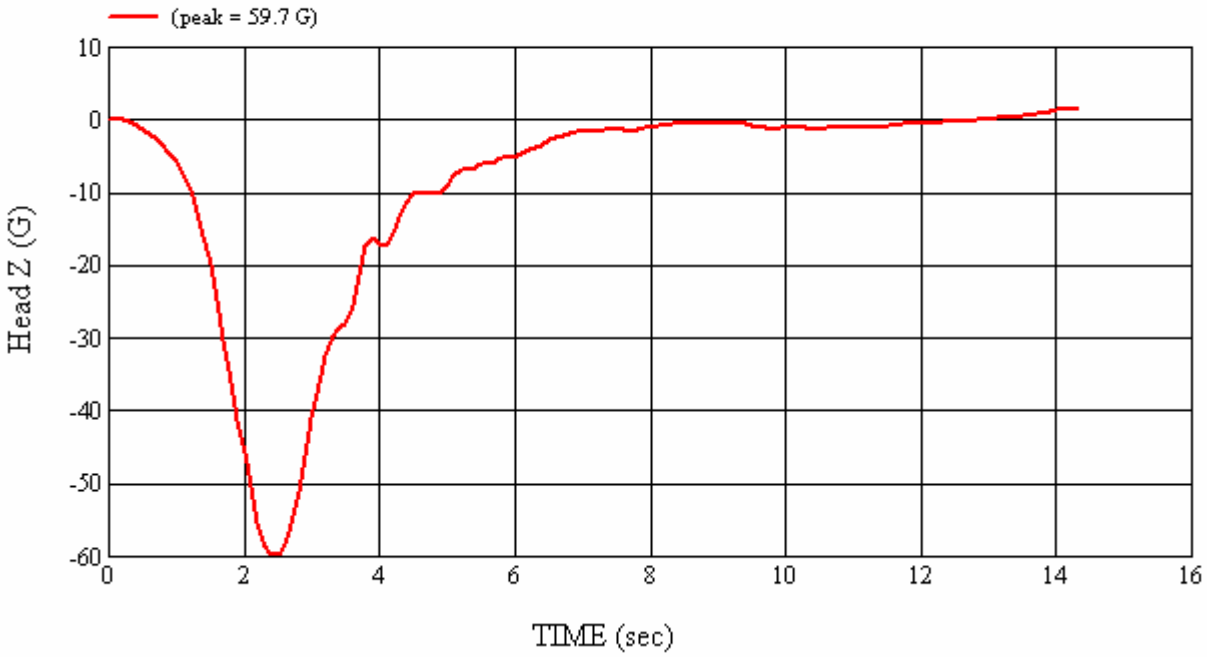


Head 035 (Pre) Calibration #H35009



Head 035 (Pre) Calibration #H35009

4.2 Post-Test Calibration

HEAD DROP TEST SUMMARY
PART 572L

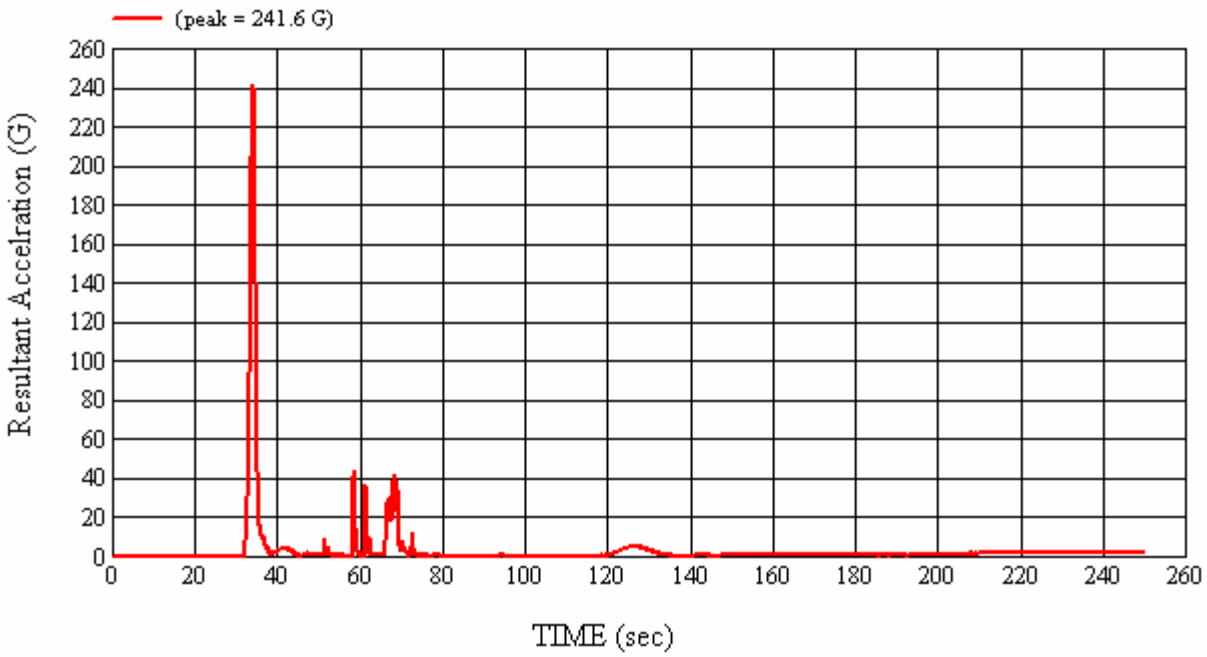
HEADFORM SERIAL NUMBER: 035	CALIBRATION DATE: 9/18/2007 CALIBRATION TIME: 3:22:56 PM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	10.08
Temperature	19° C to 26° C	25
Relative Humidity	10% to 70%	39
Peak Resultant Acceleration	225 G's to 275 G's	241.6
Peak Lateral Acceleration	15 G's Maximum	2.4
Unimodal Acceleration Curve	YES	YES

FMH INSTRUMENTATION					
HEAD ACCELEROMETERS					
Channel Number	**Manufacturer**	**Model Number**	**Serial Number**	**Date of Last Calibration**	**Date of Next Calibration**
1	ENDEVCO	7264-2000	J22664	04/30/07	10/30/07
2	ENDEVCO	7264-2000	J35919	04/30/07	10/30/07
3	ENDEVCO	7264-2000	J35924	04/30/07	10/30/07

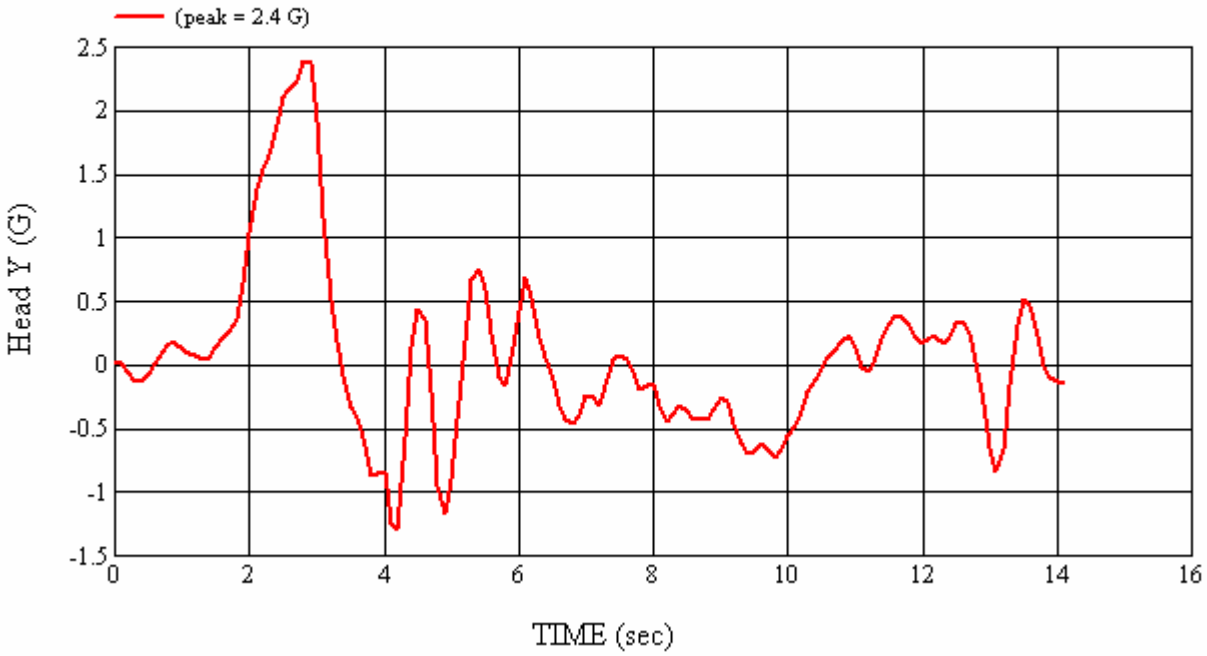
REMARKS:

RECORDED BY: Kaitlin Campbell DATE: 9/18/2007

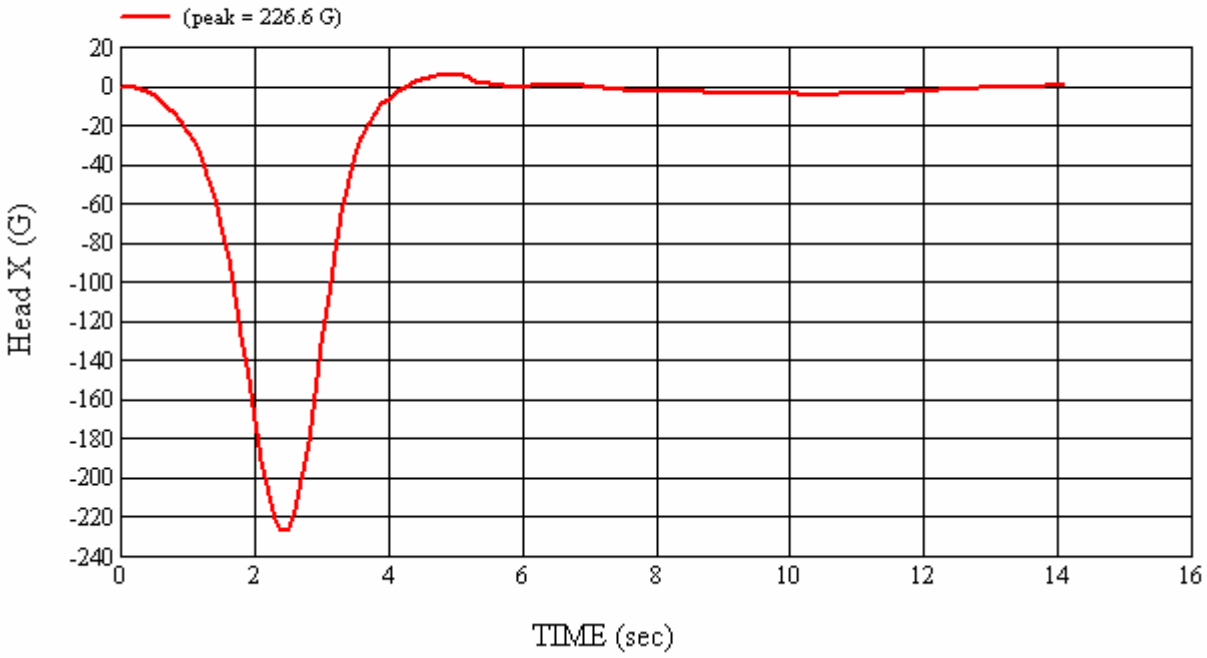
APPROVED BY: Helen A. Kalafus



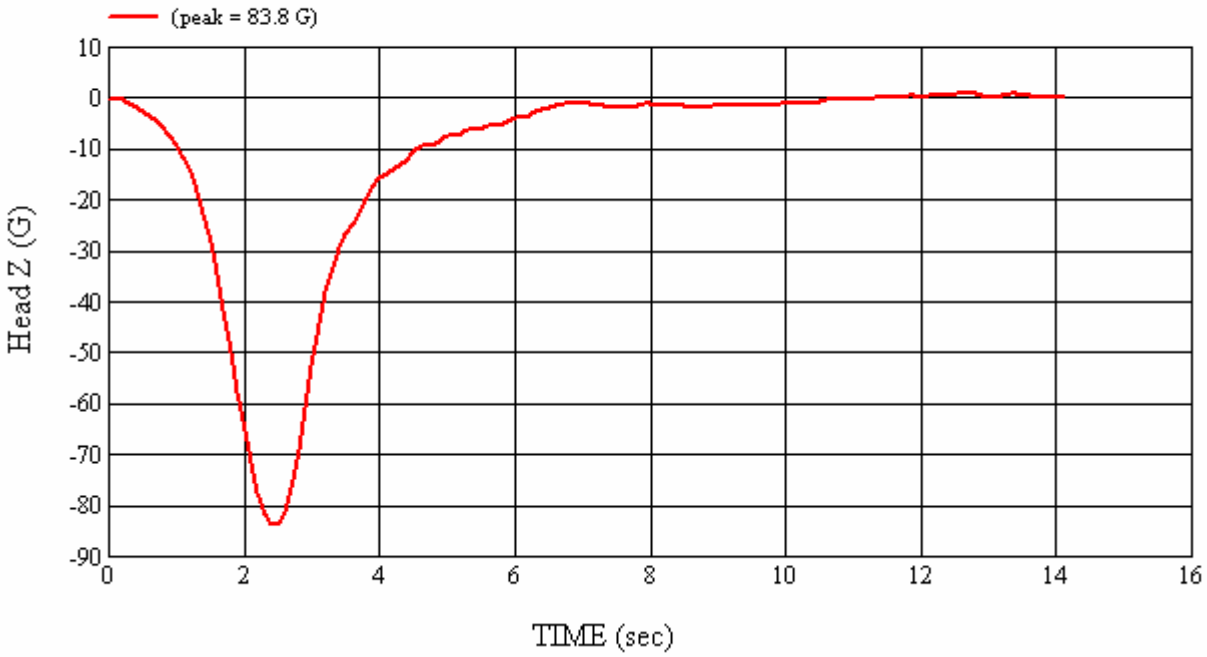
Head 035 (Post) Calibration #H35010



Head 035 (Post) Calibration #H35010



Head 035 (Post) Calibration #H35010



Head 035 (Post) Calibration #H35010

4.3 Pre-Test Calibration

HEAD DROP TEST SUMMARY
PART 572L

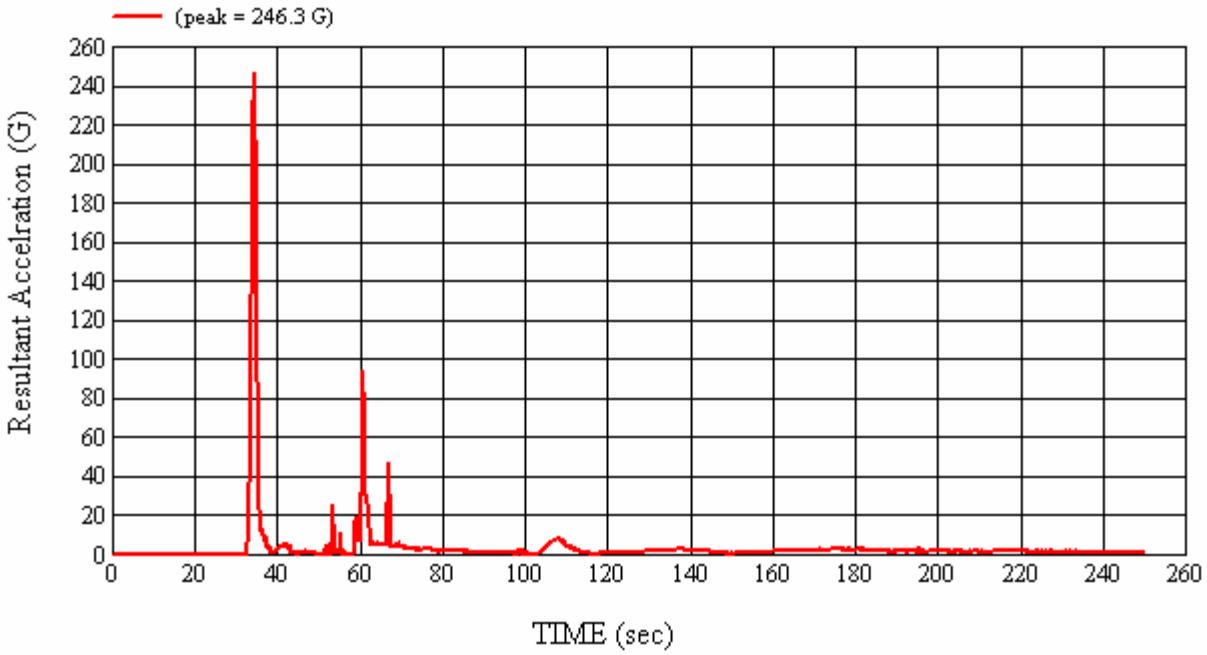
HEADFORM SERIAL NUMBER: 037	CALIBRATION DATE: 9/12/2007 CALIBRATION TIME: 4:37:23 PM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	9.96
Temperature	19° C to 26° C	23
Relative Humidity	10% to 70%	38
Peak Resultant Acceleration	225 G's to 275 G's	246.3
Peak Lateral Acceleration	15 G's Maximum	6.5
Unimodal Acceleration Curve	YES	YES

FMH INSTRUMENTATION					
HEAD ACCELEROMETERS					
Channel Number	**Manufacturer**	**Model Number**	**Serial Number**	**Date of Last Calibration**	**Date of Next Calibration**
1	ENDEVCO	7264-2000	J22696	04/30/07	10/30/07
2	ENDEVCO	7264-2000	J35791	04/30/07	10/30/07
3	ENDEVCO	7264-2000	J35800	04/30/07	10/30/07

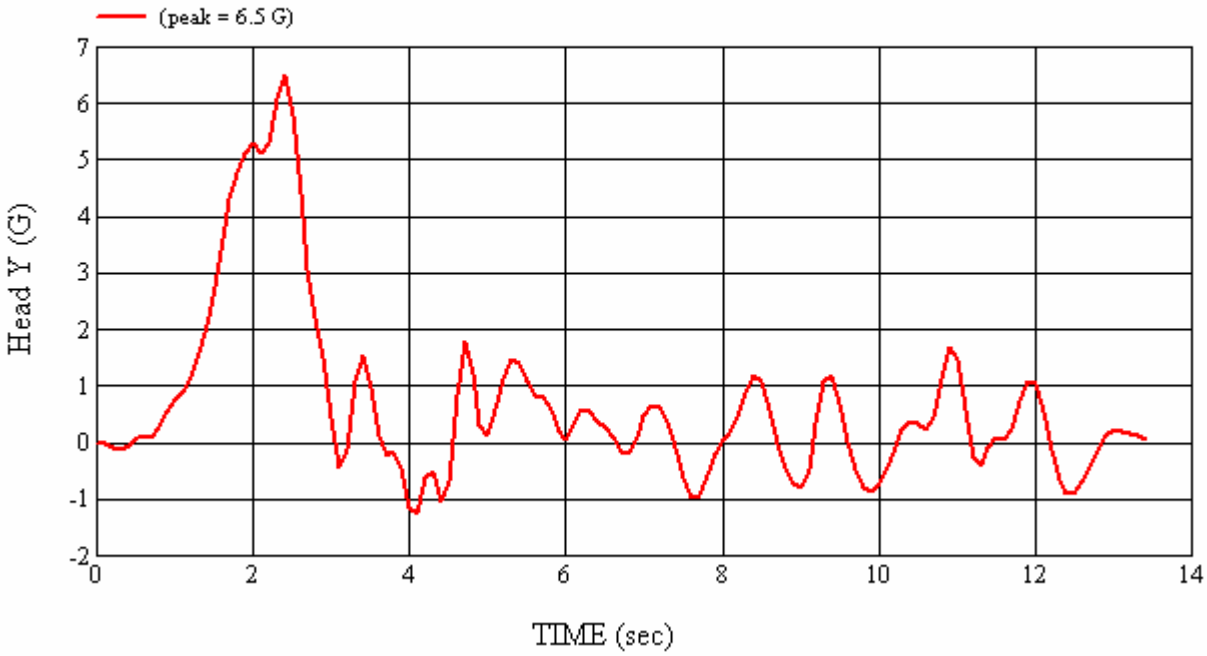
REMARKS:

RECORDED BY: Kaitlin Campbell DATE: 9/12/2007

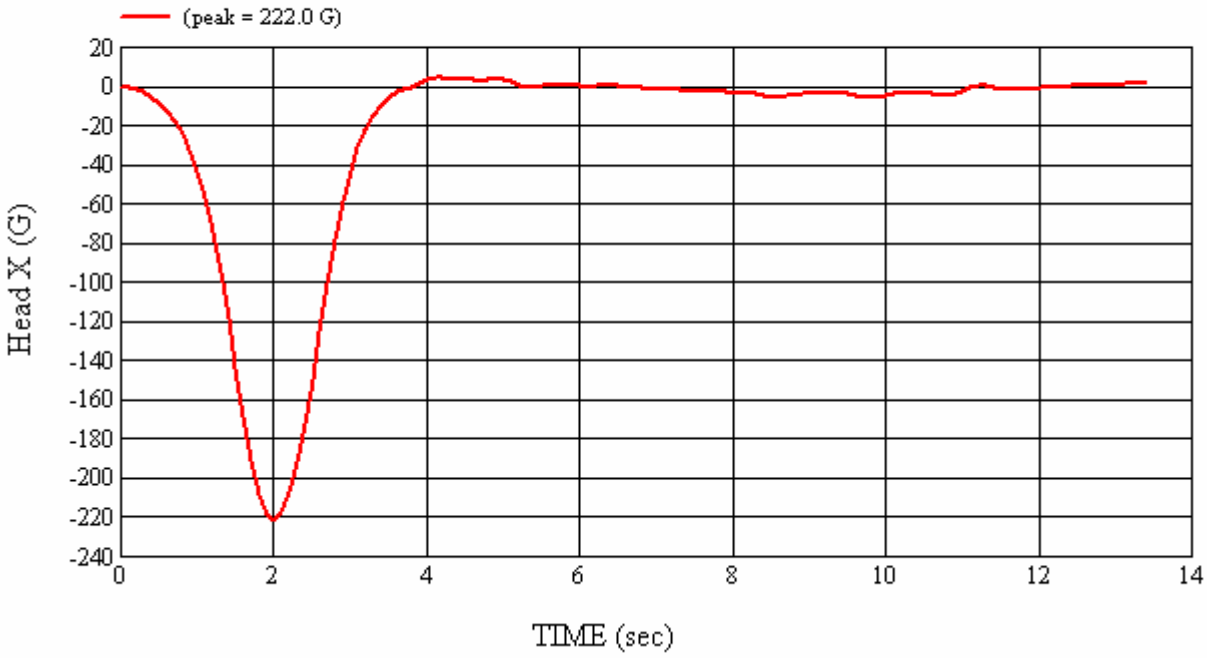
APPROVED BY: Helen A. Kalista



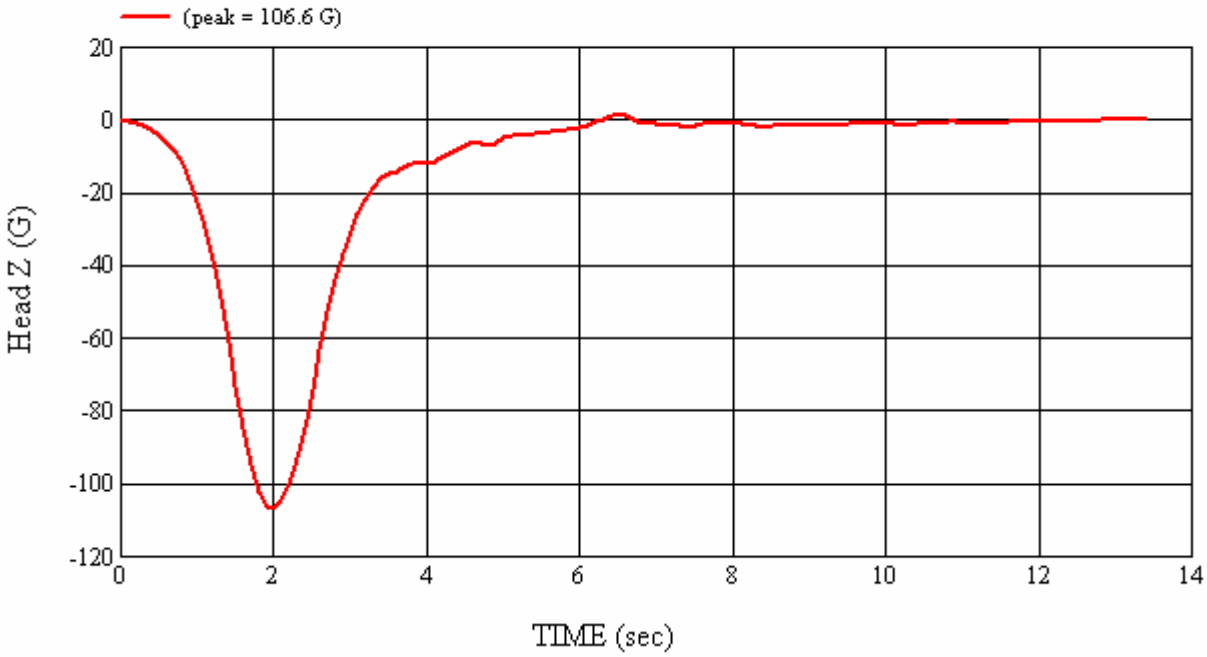
Head 037 (Pre) Calibration #H37013



Head 037 (Pre) Calibration #H37013



Head 037 (Pre) Calibration #H37013



Head 037 (Pre) Calibration #H37013

4.4 Post-Test Calibration

HEAD DROP TEST SUMMARY
PART 572L

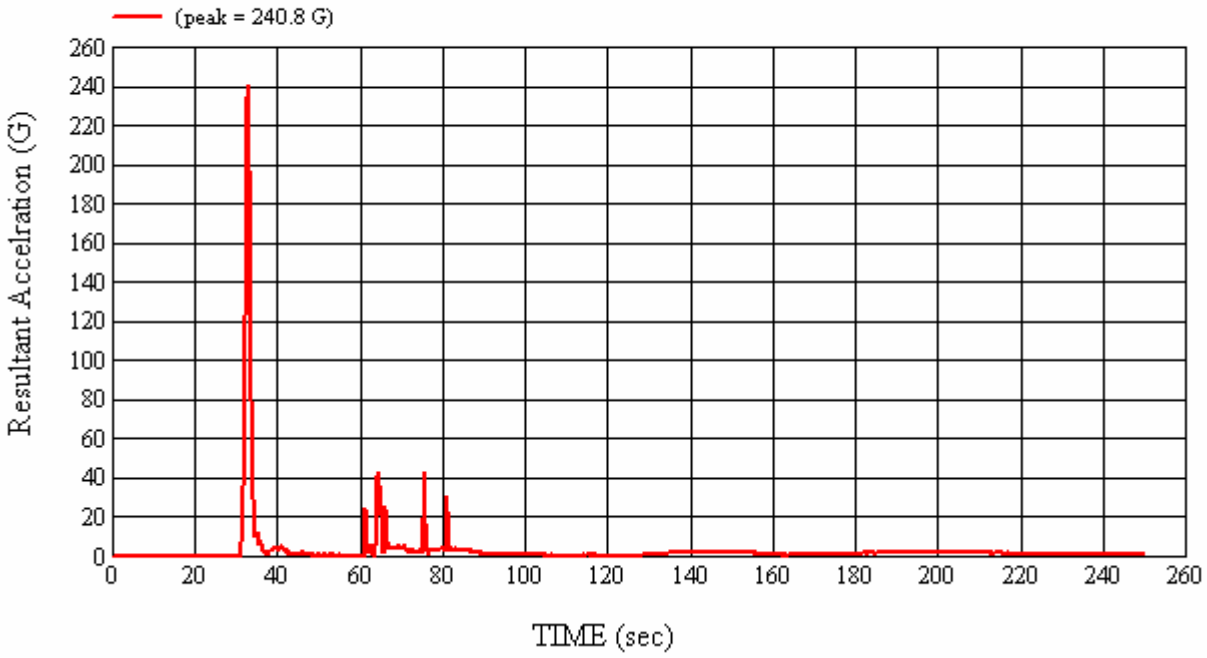
HEADFORM SERIAL NUMBER: 037	CALIBRATION DATE: 9/18/2007 CALIBRATION TIME: 4:23:53 PM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	9.96
Temperature	19° C to 26° C	25
Relative Humidity	10% to 70%	37
Peak Resultant Acceleration	225 G's to 275 G's	240.8
Peak Lateral Acceleration	15 G's Maximum	13.1
Unimodal Acceleration Curve	YES	YES

FMH INSTRUMENTATION					
HEAD ACCELEROMETERS					
Channel Number	**Manufacturer**	**Model Number**	**Serial Number**	**Date of Last Calibration**	**Date of Next Calibration**
1	ENDEVCO	7264-2000	J22696	04/30/07	10/30/07
2	ENDEVCO	7264-2000	J35791	04/30/07	10/30/07
3	ENDEVCO	7264-2000	J35800	04/30/07	10/30/07

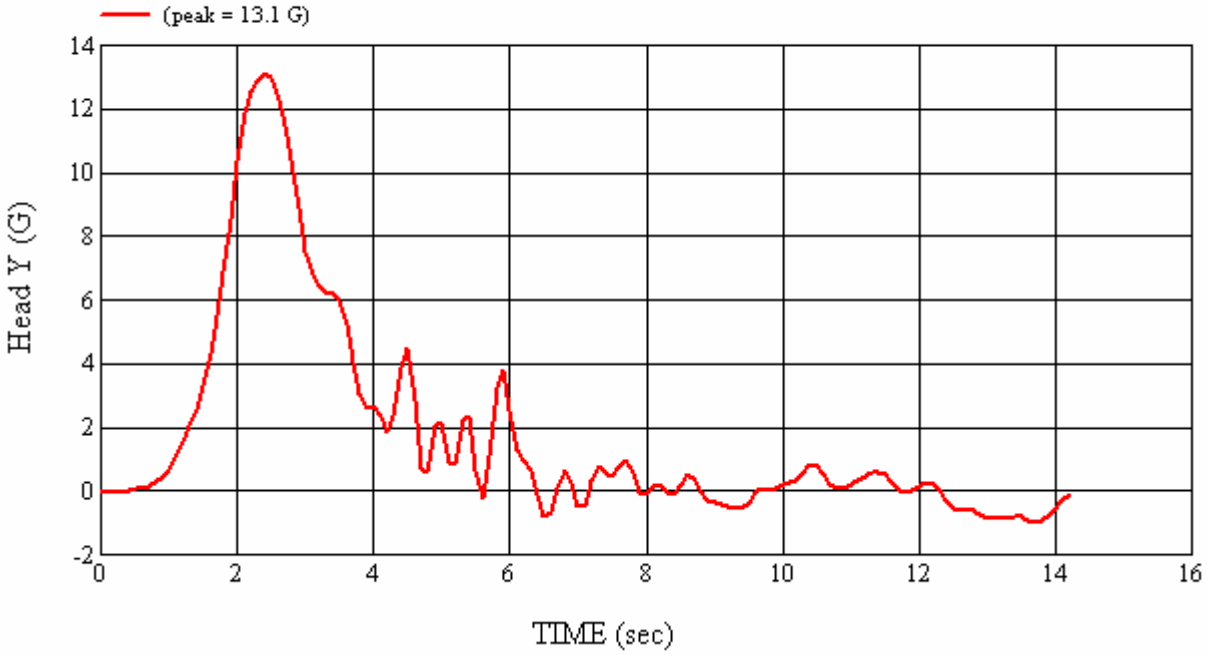
REMARKS:

RECORDED BY: Travis Campbell DATE: 9/18/2007

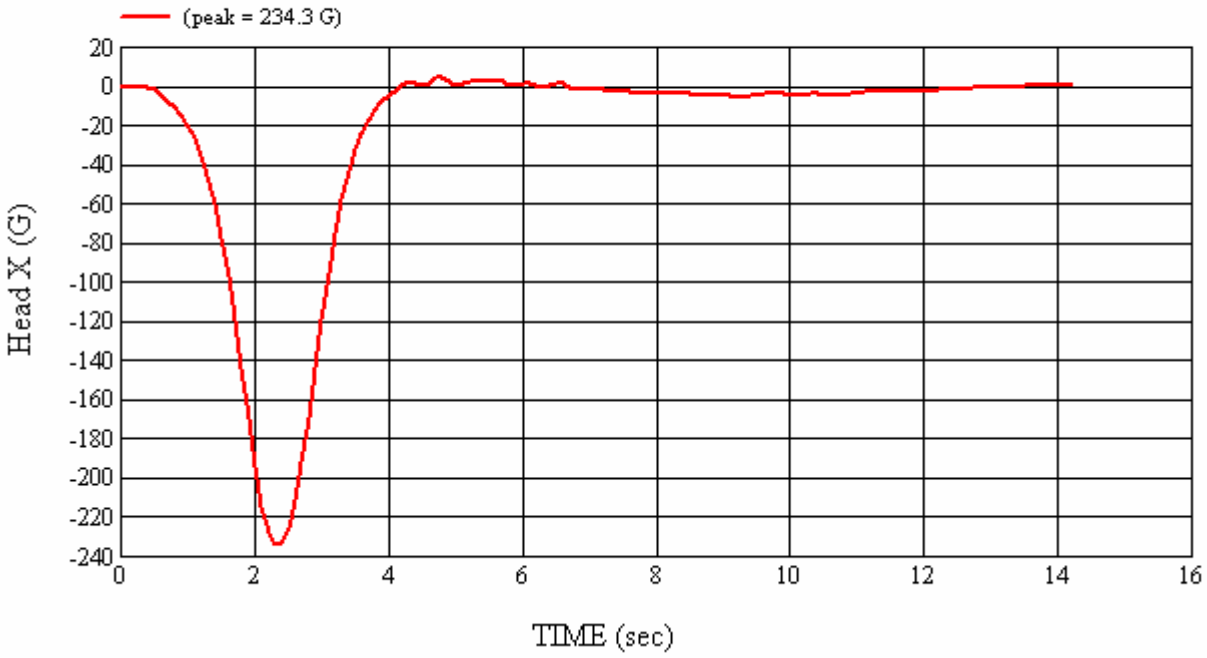
APPROVED BY: Helen A. Kalafus



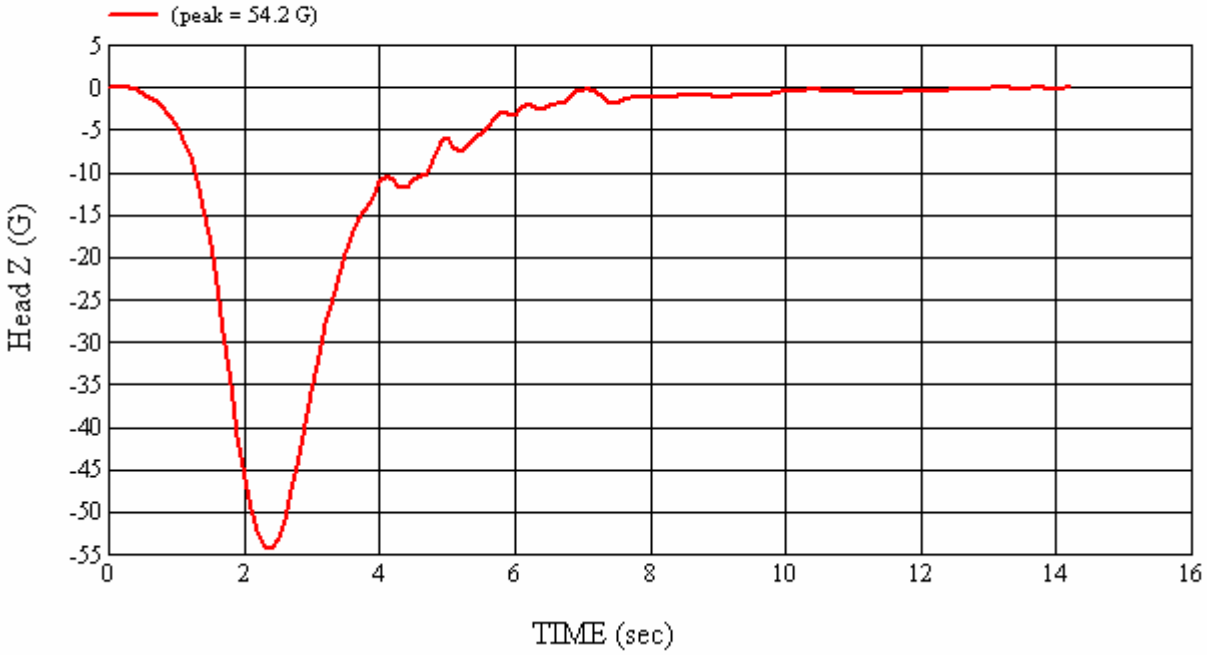
Head 037 (Post) Calibration #H37014



Head 037 (Post) Calibration #H37014



Head 037 (Post) Calibration #H37014



Head 037 (Post) Calibration #H37014

4.5 Pre-Test Calibration

HEAD DROP TEST SUMMARY
PART 572L

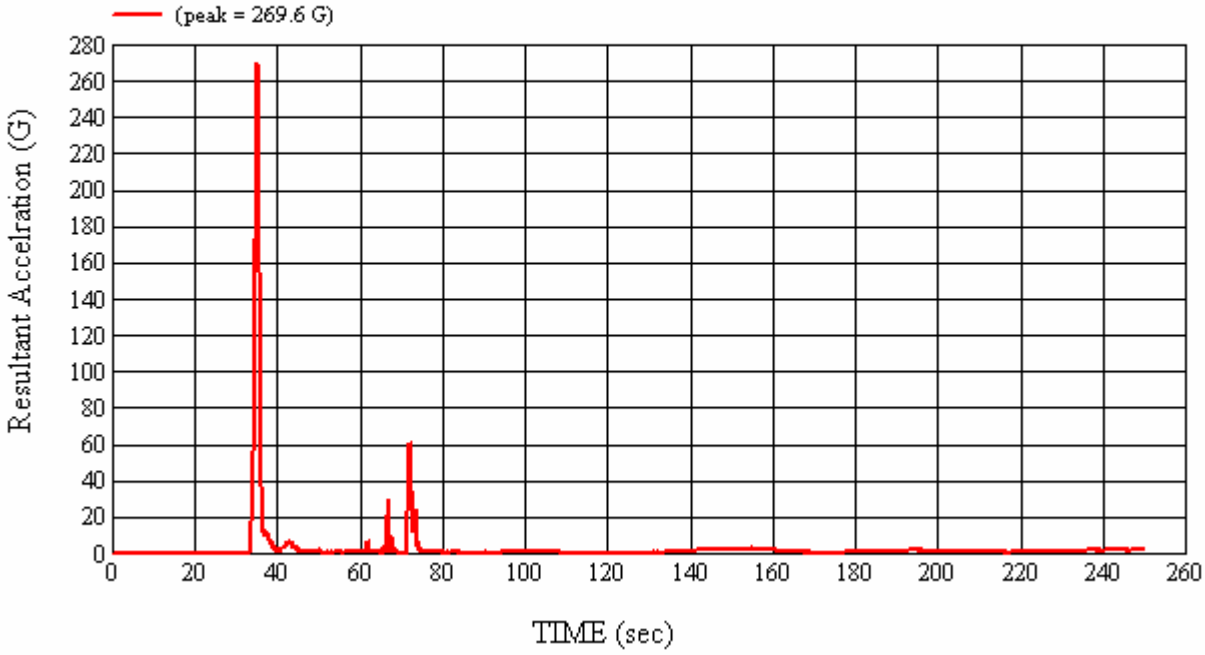
HEADFORM SERIAL NUMBER: 038	CALIBRATION DATE: 9/12/2007 CALIBRATION TIME: 7:41:46 AM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	9.90
Temperature	19° C to 26° C	23
Relative Humidity	10% to 70%	38
Peak Resultant Acceleration	225 G's to 275 G's	269.6
Peak Lateral Acceleration	15 G's Maximum	4.3
Unimodal Acceleration Curve	YES	YES

FMH INSTRUMENTATION					
HEAD ACCELEROMETERS					
Channel Number	**Manufacturer**	**Model Number**	**Serial Number**	**Date of Last Calibration**	**Date of Next Calibration**
1	ENDEVCO	7264-2000	J14103	04/30/07	10/30/07
2	ENDEVCO	7264-2000	J36197	04/30/07	10/30/07
3	ENDEVCO	7264-2000	J36353	04/30/07	10/30/07

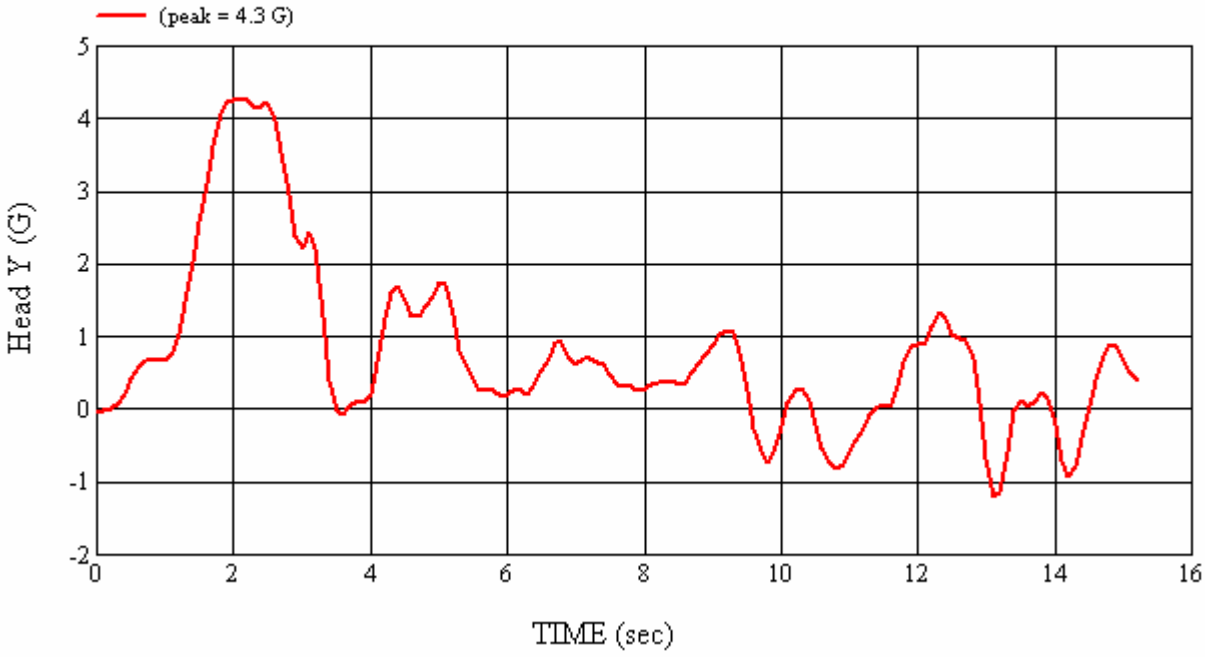
REMARKS:

RECORDED BY: Kaitlin Campbell DATE: 9/12/2007

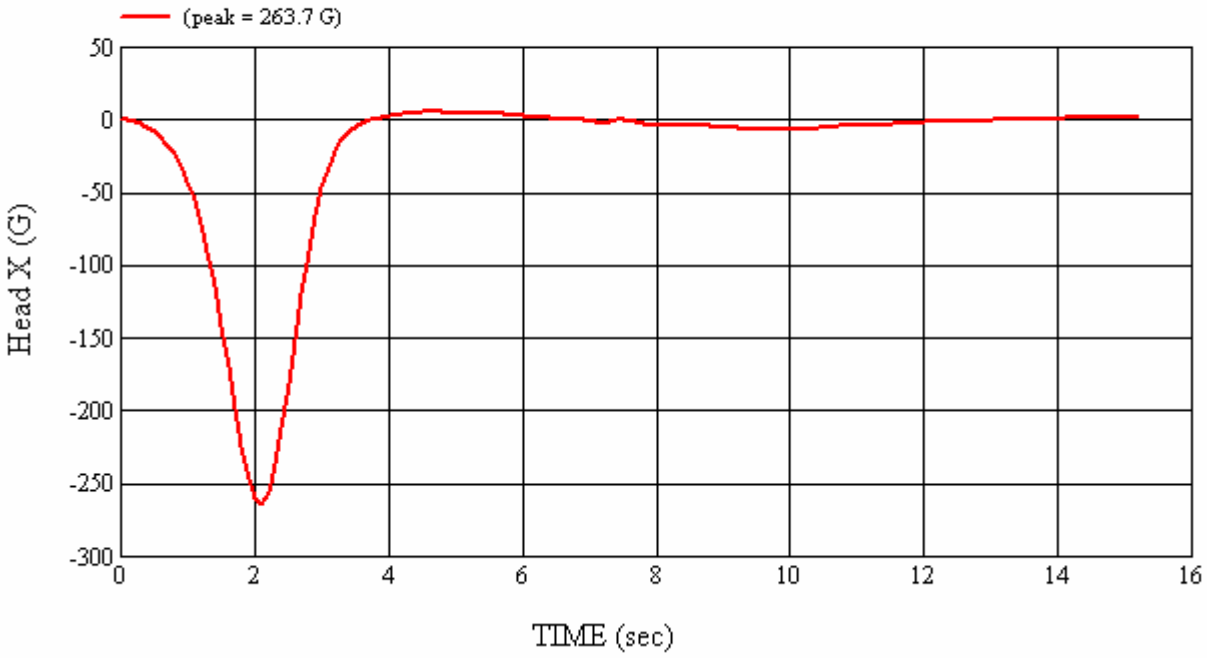
APPROVED BY: Helen A. Kalista



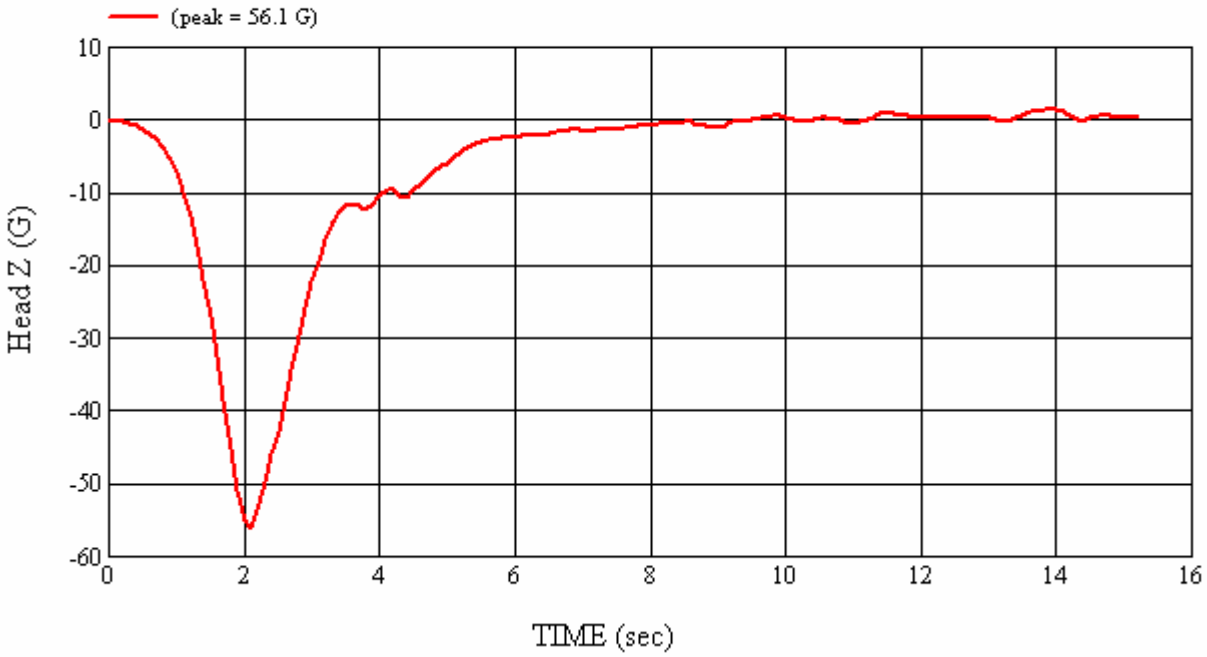
Head 038 (Pre) Calibration #H38013



Head 038 (Pre) Calibration #H38013



Head 038 (Pre) Calibration #H38013



Head 038 (Pre) Calibration #H38013

4.6 Post-Test Calibration

HEAD DROP TEST SUMMARY
PART 572L

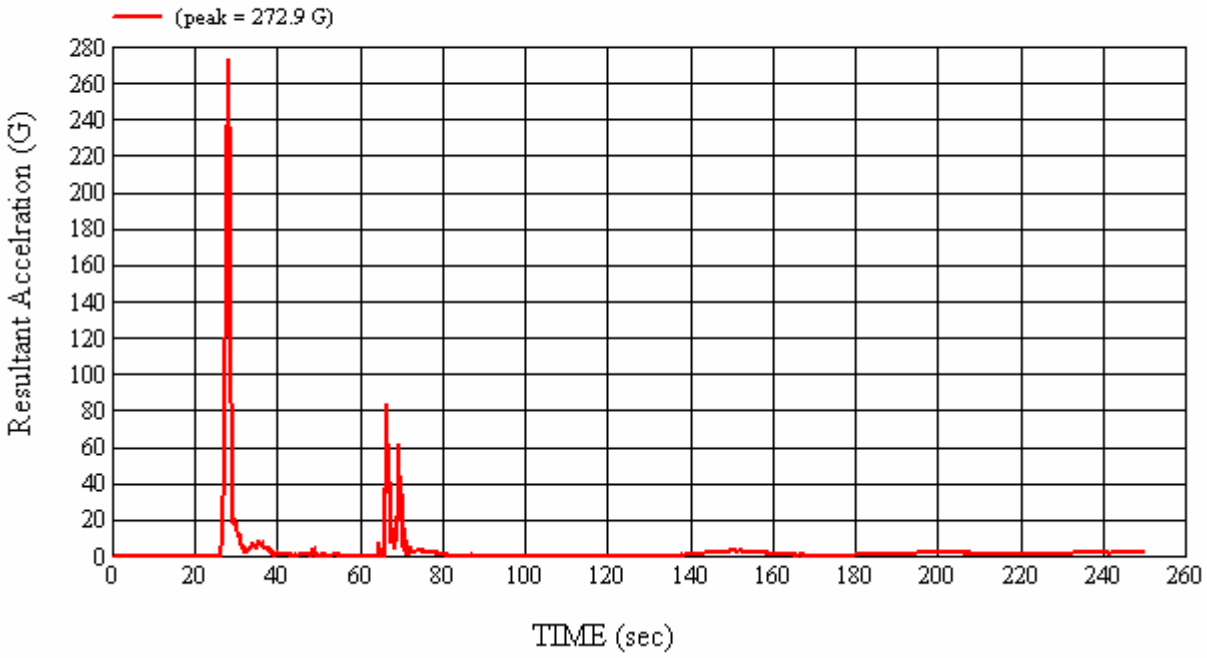
HEADFORM SERIAL NUMBER: 038	CALIBRATION DATE: 9/18/2007 CALIBRATION TIME: 4:45:19 PM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	9.90
Temperature	19° C to 26° C	25
Relative Humidity	10% to 70%	36
Peak Resultant Acceleration	225 G's to 275 G's	272.9
Peak Lateral Acceleration	15 G's Maximum	14.3
Unimodal Acceleration Curve	YES	YES

FMH INSTRUMENTATION					
HEAD ACCELEROMETERS					
Channel Number	**Manufacturer**	**Model Number**	**Serial Number**	**Date of Last Calibration**	**Date of Next Calibration**
1	ENDEVCO	7264-2000	J14103	04/30/07	10/30/07
2	ENDEVCO	7264-2000	J36197	04/30/07	10/30/07
3	ENDEVCO	7264-2000	J36353	04/30/07	10/30/07

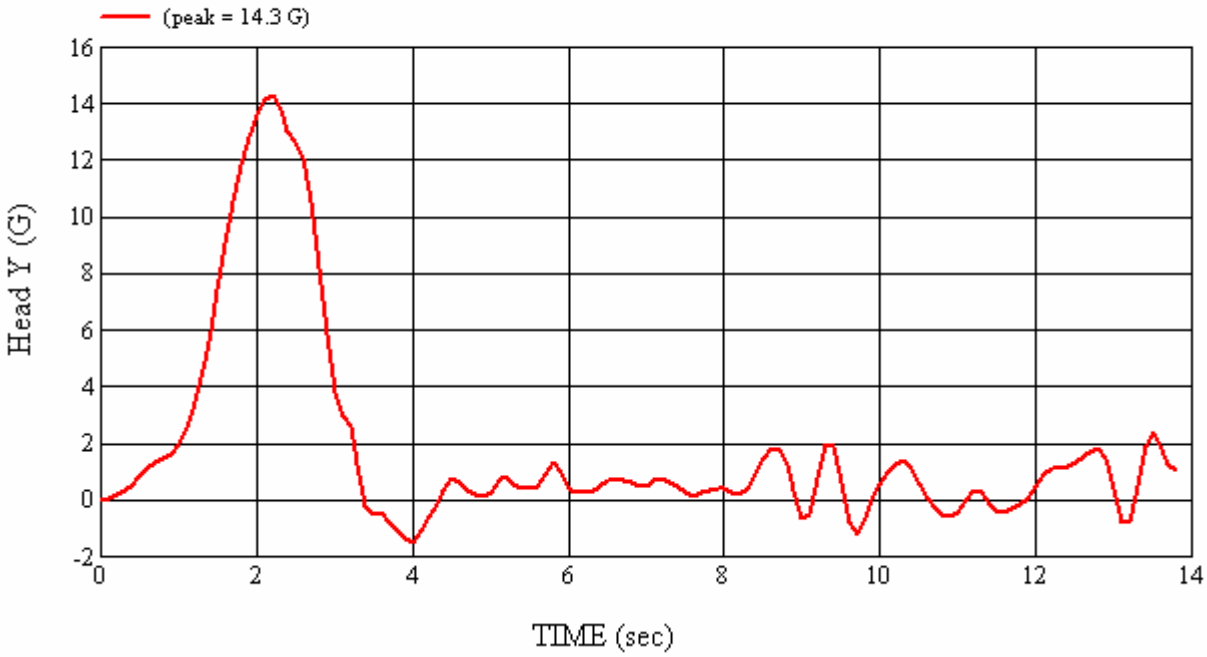
REMARKS:

RECORDED BY: Kaitlin Campbell DATE: 9/18/2007

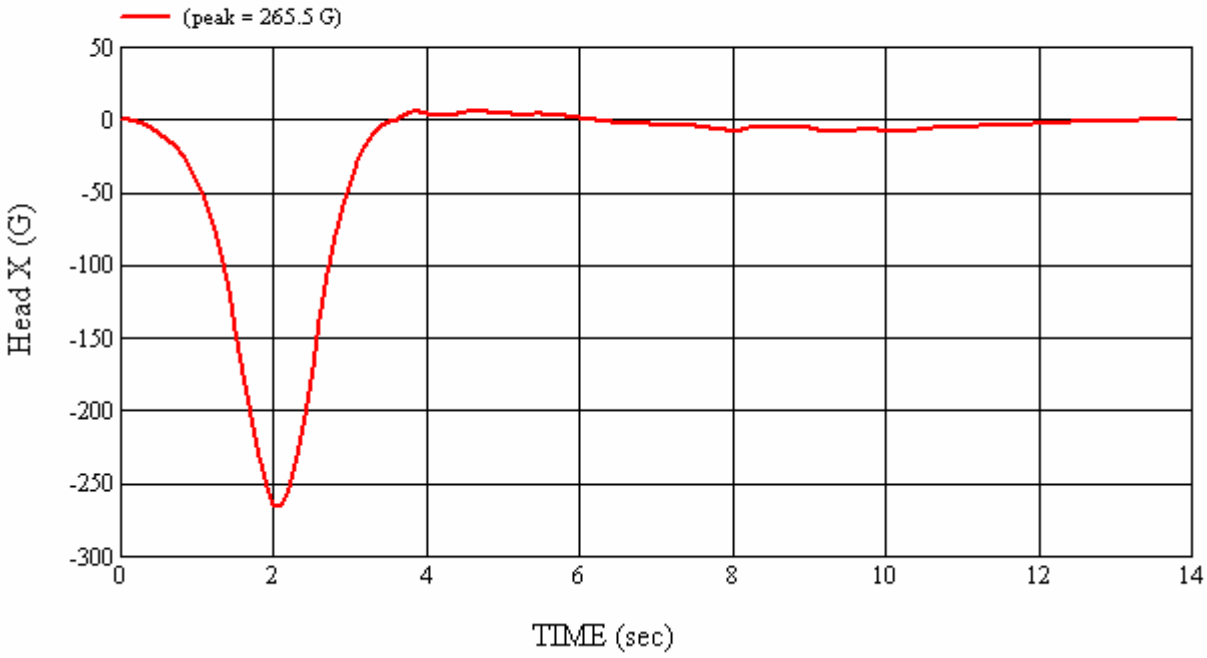
APPROVED BY: Helen A. Kalafut



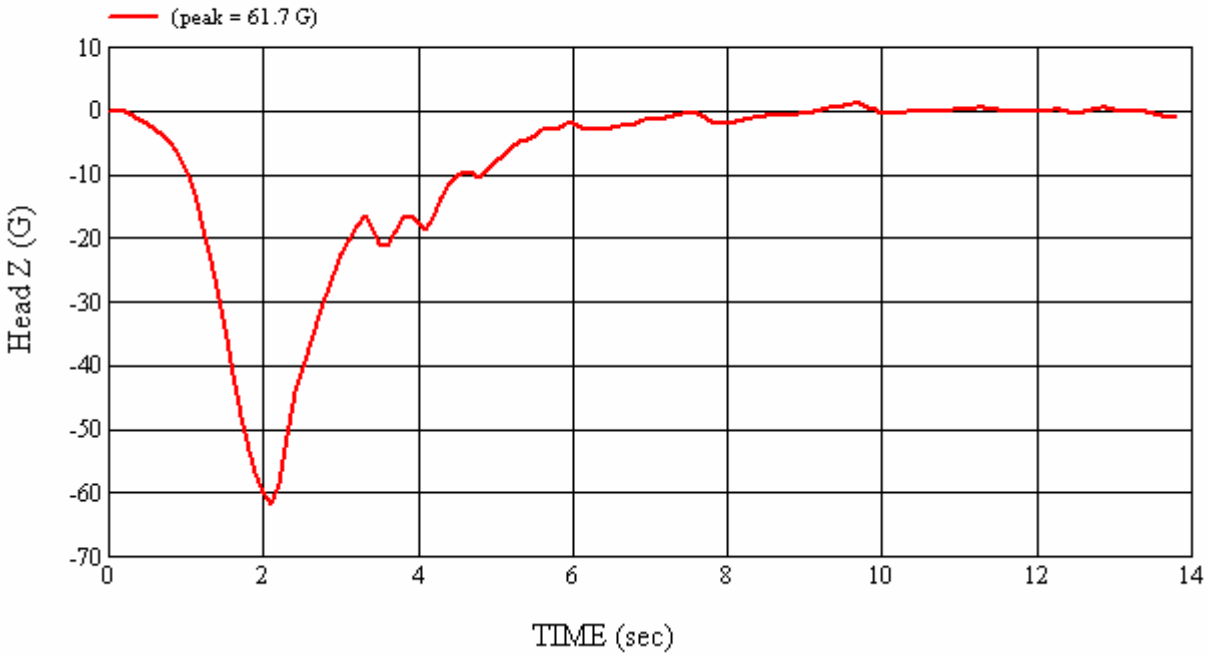
Head 038 (Post) Calibration #H38014



Head 038 (Post) Calibration #H38014



Head 038 (Post) Calibration #H38014

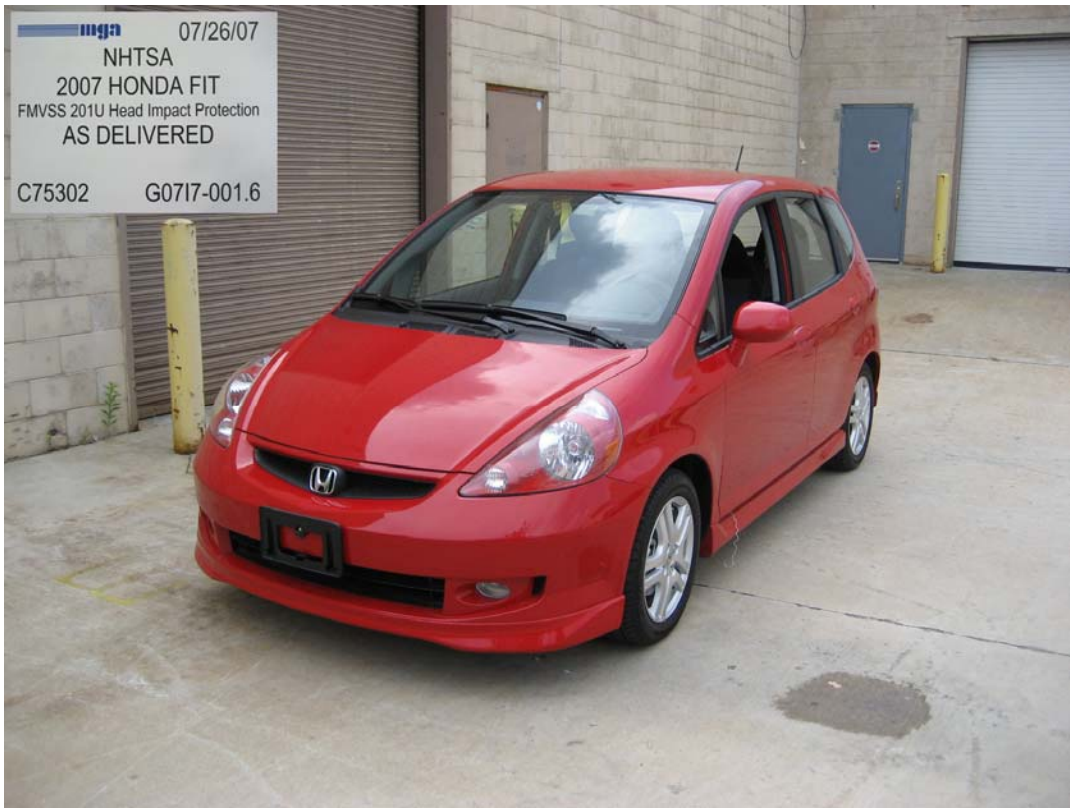


Head 038 (Post) Calibration #H38014

5.0 PHOTOGRAPHS

As Delivered – Left Side View

As Delivered – Right Side View



As Delivered – ¾ Front View From Left Side

As- Delivered – Rear View From Right Side

As Delivered – Vehicle's Certification Label

As Delivered – Vehicle's Tire Information Label

Pre-Test Component Photographs


mga
09/13/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
PRE-TEST COMPONENT
C75302
G07I7-001.6


mga
09/13/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
PRE-TEST COMPONENT
C75302
G07I7-001.6

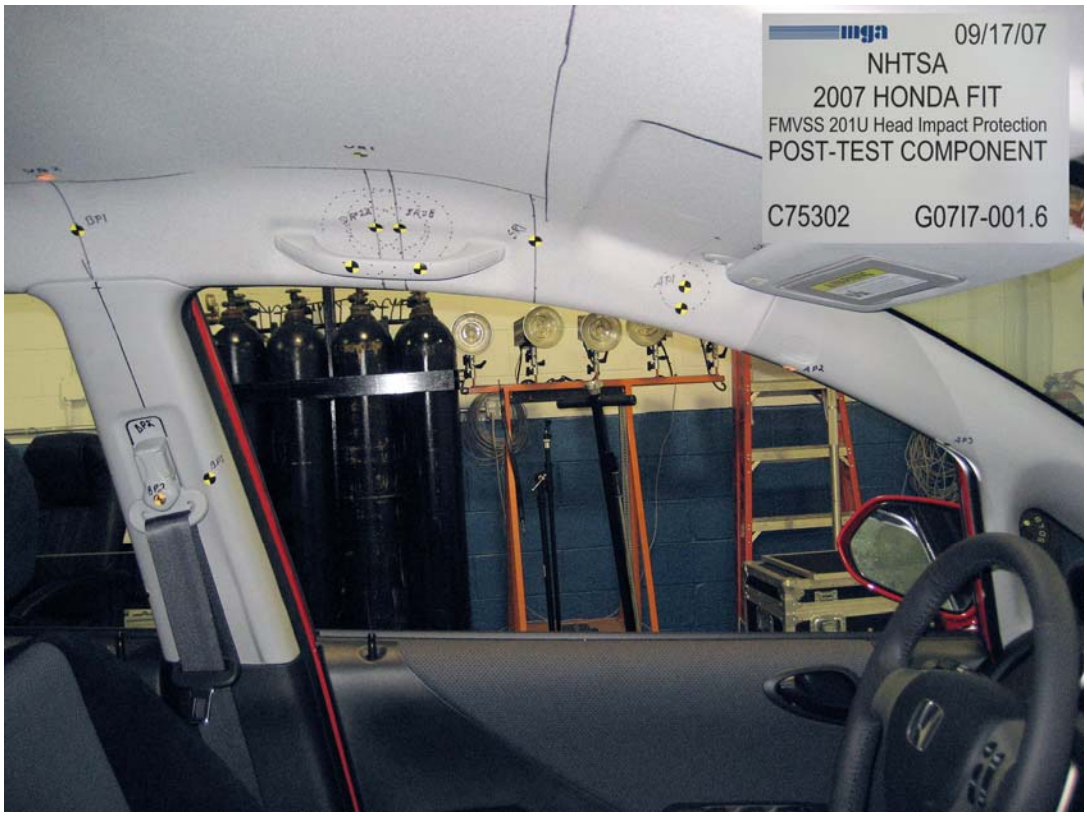

09/13/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
PRE-TEST COMPONENT
C75302 G07I7-001.6


09/13/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
PRE-TEST COMPONENT
C75302 G07I7-001.6

Post-Test Component Photographs

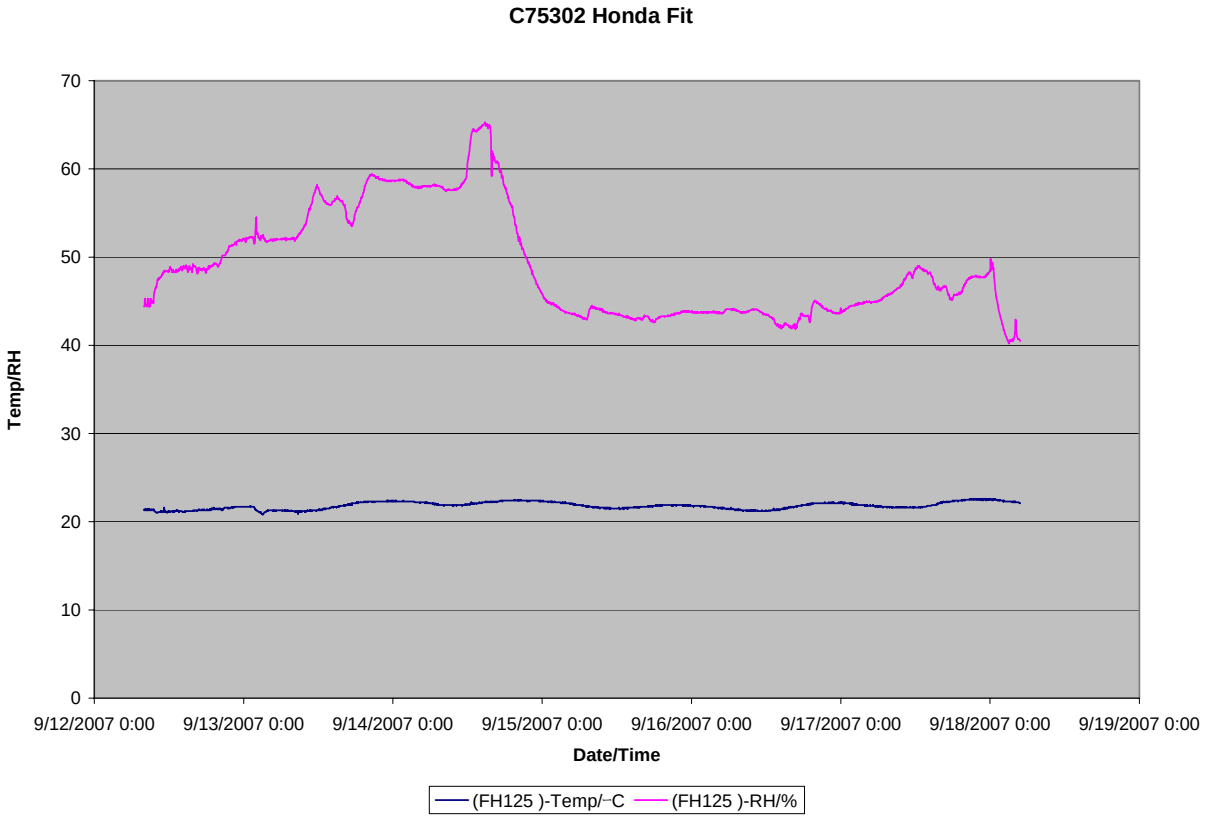

mga
09/17/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
POST-TEST COMPONENT
C75302
G07I7-001.6
BRAKE STOPS


mga
09/17/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
POST-TEST COMPONENT
C75302
G07I7-001.6


mga
09/17/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
POST-TEST COMPONENT
C75302
G07I7-001.6


mga
09/17/07
NHTSA
2007 HONDA FIT
FMVSS 201U Head Impact Protection
POST-TEST COMPONENT
C75302
G07I7-001.6

Appendix A - Temperature Trace



Appendix B - Calibration Certificates

Interim Certification Document

art Description: Silver **Certification Date:** 12/20/06 **Serial#:** S08-05-98-01273

Single Point 2 Sigma: S08-05 +/-.076mm (+/-.0030") **Certificate#:** S0127339071

Linear Displacement 2 Sigma: S08-05 +/-.108mm (+/-.0042") **Temperature:** See attached data

Measurement Standards Traceability

Ball Bar Kit	Asset Number: 606	Calibration Date: 11/30/06	*SI Traceability: NPL-LL0101/0501
10mm Step Gauge, Mitutoyo	Asset Number: 773	Calibration Date: 04/03/06	*SI Traceability: NIST-821/267216-02
Code No.: 515-744		Calibration Date: 04/03/06	*SI Traceability: UKAS-174978
Measuring range: 1.5m			

*The artifact above has been calibrated with a device traceable to the International System of Units (SI) through a National Metrological Institute (NMI) or through an ISO17025 Accredited Laboratory. Expanded measurement uncertainty is 3.9 + 5.9X micrometers, where X=measured value in meters. Uncertainty is expressed at approximately the 95% Level of Confidence using k=2.00.

Certification Results

A basic four quadrant certification included with all FARO Arms and comprised of: 2 vertical level single point repeatability test in 4 quadrants with 5 repeats from 4 directions **PASSED**

Step Gauge Test in 4 quadrants, 3 orientations per quadrant **PASSED**

3 Length, 3 position free ball bar test in 4 quadrants **PASSED**

Calibration and certification conforms to procedures developed in accordance with ASME B89.4.22-200X.

Instrument condition as received **Instrument condition outgoing**

Inoperative Within specifications

Technician: Henry Van Horn Date: 12/20/06

FARO Technologies, Inc.
PH1:1-800-736-2771
PH2:407-333-9911
FAX:407-333-8056
L-A-B Cert Number: L1147

125 Technology Park
Lake Mary, FL 32746
USA

LABORATORY ACCREDITATION BUREAU
ISO/IEC 17025 Accredited

f:\control\records\05manufa\partspec\XH08-0495.eps Rev1 RevDate: 12/08/04

MetroCal inc.
#0513.01
4700 Barden Court S.E. • Kentwood, MI 49512 • Telephone: 616.698.3124 • Fax: 616.698.2364

Certificate of Calibration

MGA Research
446 Executive Drive
Troy, MI 48083

Order Number: **51186**
Report Number: **060926810**
Page: **1 of 1**

Gauge Number: **MGA00048**
Gauge Desc: **Digital Protractor**
Manufacturer: **N/A**
Model Number: **Pro 360**
Serial Number: **N/A**

Customer PO: **07-06-0081**
Last Calibration: **8/29/05**
Calibration Date: **9/26/06**
Next Calibration: **9/26/07**

As Found Condition: **In Tolerance**

As Left Condition: **In Tolerance**

MetroCal Inc. maintains reference standards of measurement which are traceable to the National Institute of Standards and Technology, or other authorized National Standards. Calibration was performed in accordance with MetroCal Proc. No. CP045 and complies with the ANSI/NCSL Z540-1 and ISO/IEC 17025 Standards. Results shall not be reproduced except in full without the written approval of MetroCal, Inc. Results relate only to the item(s) calibrated. Any number of factors may cause the calibration Item to drift out of calibration before the recommended interval has expired. Statements of compliance made using simple acceptance rule.

Standard Used	Cal Date	Due Date	Traceable No.	Calibration Procedure Uncertainty Expressed at 95% confidence (K=2)
Gage Blk Set ID# 105	6/14/06	6/14/07	821/271641-05	0.0015 Decimal Deg.
DoAll Sine Bar ID#1879	12/6/05	12/6/06	821/270003-04 & 3600042619	

Results:

Units
Decimal Deg.

Tolerance
± 0.1°

As Found Readings

Nominal	Actual	Deviation
5.0	5.0	0.0
10.0	10.0	0.0
20.0	20.0	0.0
30.0	30.1	0.1
40.0	40.0	0.0

Reference Level Check: Within +/- 0.1 degrees

As Left Readings

Nominal	Actual	Deviation
5.0	5.0	0.0
10.0	10.0	0.0
20.0	20.0	0.0
30.0	30.1	0.1
40.0	40.0	0.0

Reference Level Check: Within +/- 0.1 degrees

Comments: Environmental conditions during calibraiton: 68 deg. F., 37 % RH.

issued: 9.26.06
Shannon Kubicek
Calibration Technician

☐ Checked box indicate this calibration was performed at the customers facility.

9/27/06

MICHIGAN OPERATIONS
DATE: 2/7/04
SUPERCEDES: MGATPTMC.5

DOC. NO.: MGATPTMC
REVISION NO.: 6
PAGE 3 OF 3

Tape Measure Calibration Certificate

Reference Steel Rule

Brand: JOHNSON LEVEL & TOOL
S/N: M6A 00122
Calibration Date: 9.21.06

Subject Tape Measure

Brand: STANLEY
S/N: TPM 719
Calibration Date: 1.2.07

Reference (in)(mm)	Subject Tape Measure	Difference	Reference in (mm)	Subject Tape Measure	Difference
0 (0)	0	0	18 (450)	18	0
1 (25)	1	0	19 (475)	19	0
2 (50)	2	0	20 (500)	20	0
3 (75)	3	0	21 (525)	21	0
4 (100)	4	0	22 (550)	22	0
5 (125)	5	0	23 (575)	23	0
6 (150)	6	0	24 (600)	24	0
7 (175)	7	0	25 (625)	25	0
8 (200)	8	0	26 (650)	26	0
9 (225)	9	0	27 (675)	27	0
10 (250)	10	0	28 (700)	28	0
11 (275)	11	0	29 (725)	29	0
12 (300)	12	0	30 (750)	30	0
13 (325)	13	0	31 (775)	31	0
14 (350)	14	0	32 (800)	32	0
15 (375)	15	0	33 (825)	33	0
16 (400)	16	0	34 (850)	34	0
17 (425)	17	0	35 (875)	35	0

If all differences are ± 1/32 of an inch (1 mm), then the tape measure is acceptable.
Pass ✓ Fail ____ Maximum Difference = 0

Date: 1.2.07 Performed By: [signature]

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ± 0.2%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

[signature] 1/3/07

Certificate of Instrument Calibration and Testing

Customer Instrument

Dickson Model Number: FH125

Serial Number: 06018122

Calibration Technician Dan Gawel

Calibration Date: 05/01/2007

Calibration Standards

ACCREDITED Cert # 1621.01

General Eastern: Model # M3
Ser. # 0850800 / 2360502
Accuracy: ± .4% FS RH and ± .4 °F
Certified April, 2006

Azonix Model # A1011 Ser. # T2513-9027
RTD Platinum Probe Ser. # 496013 Accuracy: ± .2 °F
Certified April, 2006

The calibration standards are traceable through the National Institute of Standards and Technology.

Calibration Procedure P1130

The customer instrument was compared to the calibration standard. Drifts and faults were determined, and any necessary mechanical or electronic adjustments were taken. The Dickson calibration system conforms to the requirements of MIL-STD-45662A, ANSI/NCSL Z540, and ISO 17025 as appropriate. Recalibration of the customer instrument is recommended within 6-12 months after the unit is placed into service. Any number of factors may cause the calibration item to drift before the recomended interval has expired.
This certificate only relates to this specific unit.

Environmental Conditions

72 °F 41 %RH

Calibration Standard Reading	Customer Instrument Reading	Unit Specification
Humidity (%RH)	Humidity (%RH)	Humidity
14.9	16.6	± 2% RH
67.8	68.5	± 2% RH
85.3	86.4	± 3% RH
Temperature °F (°C)	Temperature °F (°C)	Temperature
12.8 (-10.7)	13.1 (-10.5)	± 1.8 ° F (± 1.0 ° C)
73.3 (22.9)	73.2 (22.9)	
112.3 (44.6)	112.1 (44.5)	

The FH125 has an ISO/IEC 17025 required NIST Technical note 1297, Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results, estimated measurement uncertainty at 95% CL (K=2) of ±0.7°F and ±1 1 %RH

FOR YOUR NEXT CALIBRATION NO PHONE CALLS REQUIRED

Fill out and send this form along with your instrument to Dickson. Label the outside of the box with **"CCM"** - that is your RA#.

That's all there is to it!

1. Purchase Order #: _____
   Name: _____
   Phone: _____
   Model #: FH125
   Serial #: 06018122

A 3-pt Deluxe NIST will be performed unless otherwise requested

2. ☐ 1-Point Deluxe NIST Calibration $149.00
   ☐ 3-Point Deluxe NIST Calibration $199.00
   ☐ 3-Point Ultima Deluxe A2LA NIST $299.00 (with incoming reading)
   ☐ N995 - User selectable NIST Temperature points $50.00 each (to be selected in addition to one of the above calibration options)
   ☐ N997- Next Day Service $50.00 (Not available for ULTIMA service)

Charts/Pens
(Order now and receive them with your calibrated unit)

	Order No.	Qty.	Price Ea
☐ 6 Red Pens	P222	____	$36 pk
☐ 3 Red/3 Blue Pens	P246	____	$36 pk
☐ Charts* (60 per box)	C_ _ _	____	$24 box

*Please fill in the chart order number. For a listing of available charts got to www dicksonweb com, click on "product search" and select the product type, "Parts ,Accessories."

Prices are subject to change

3. Please return via:
   ☐ Ground Freight*
   ☐ 2nd Day Air*
   ☐ Next Day Air*
   ***Charges added at factory**

Returned UPS 2nd Day unless otherwise requested

4. Ship To: _____

Bill To: _____

Let Dickson remind you the next time your unit is due for calibration. Register for our FREE Calibration Club now at www.dicksonweb.com

Dickson Calibration Services
930 South Westwood Avenue Addison, Illinois 60101 630-543-3747 Fax 630-543-0498

5/5/07

ULTIMA (Data as Received)

Customer Instrument

Dickson Model Number: FH125
Serial Number: 06018122
Calibration Technician Dan Gawel
Calibration Date: 05/01/2007

Unit was received in working condition, or received repairs not related to it's calibration or accuracy.

Calibration Procedure P1130

The customer instrument was compared to the calibration standard. The Dickson calibration system conforms to the requirements of MIL-STD-45662A and ANSI/NCSL Z540, and ISO 17025 as appropriate. Recalibration of the customer instrument is recommended within 6-12 months after the unit is placed into service.

Environmental Conditions

72 °F 41 %RH

Calibration Standard Reading	Customer Instrument Reading	Unit Specification
Humidity (%RH)	Humidity (%RH)	Humidity
16.4	18.8	± 2% RH
62.4	58.3	± 2% RH
84	79	± 3% RH
Temperature °F	Temperature °F	Temperature
13.1	13.9	± 1.8 °F (± 1.0 °C)
71.3	71	
110.5	110.8	

FOR YOUR NEXT CALIBRATION NO PHONE CALLS REQUIRED

Fill out and send this form along with your instrument to Dickson. Label the outside of the box with **"CCM"** - that is your RA#

That's all there is to it!

1. Purchase Order #: _____
Name: _____
Phone: _____
Model #: FH125
Serial #: 06018122

A 3-pt Deluxe NIST will be performed unless otherwise requested

2. ☐ 1-Point Deluxe NIST Calibration $149.00
☐ 3-Point Deluxe NIST Calibration $199.00
☐ 3-Point Ultima Deluxe A2LA NIST $299.00 (with incoming reading)
☐ N995 - User selectable NIST Temperature points $50.00 each
(to be selected in addition to one of the above calibration options)
☐ N997- Next Day Service $50.00 (Not available for ULTIMA service)

Charts/Pens
(Order now and receive them with your calibrated unit)

	Order No	Qty	Price Ea
☐ 6 Red Pens	P222	____	$36 pk
☐ 3 Red/3 Blue Pens	P246	____	$36 pk
☐ Charts* (60 per box)	C_ _ _	____	$24 box

*Please fill in the chart order number. For a listing of available charts got to www dicksonweb com, click on "product search" and select the product type, "Parts .Accessories."

Prices are subject to change

3. Please return via:
☐ Ground Freight*
☐ 2nd Day Air*
☐ Next Day Air*
***Charges added at factory**
Returned UPS 2nd Day unless otherwise requested

4. Ship To: _____

Bill To: _____

Let Dickson remind you the next time your unit is due for calibration. Register for our FREE Calibration Club now at www.dicksonweb.com

Dickson Calibration Services
930 South Westwood Avenue Addison, Illinois 60101 630-543-3747 Fax 630-543-0498

MetroCal inc
#0512.01
4700 Barden Court S.E. • Kentwood, MI 49512 • Telephone: 616.698.3124 • Fax: 616.698.2364

Certificate of Calibration

MGA Research
446 Executive Drive
Troy, MI 48083

Order Number: 55304
Certificate Number: 070709906
Page: 1 of 1

Gauge Number: MGA00081
Gauge Desc: 0 to 20.00lb x 0.01lb Digital Scale
Manufacturer: Detecto
Model Number: AP-20
Serial Number: E33603-0213

Customer PO: N/A
Last Calibration: 7/7/06
Calibration Date: 7/9/07
Next Calibration: 7/9/08

As Found Condition: In Tolerance

As Left Condition: In Tolerance

MetroCal Inc. maintains reference standards of measurement which traceable to the National Institute of Standards and Technology, or other authorized National Standards. Calibration was performed in accordance with MetroCal's Procedure No CP-042 and the relevant sections of the manufacturers manual. This Calibration complies with the ISO/IEC 17025 and ANSI/NCSL Z540-1 Standards. Results shall not be reproduced except in full without the written approval of MetroCal Inc. Results relate only to the item(s) calibrated. Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired. Statements of compliance made using simple acceptance rule.

Standard Used	Cal. Date	Due Date	Traceable No.	Calibration Procedure Uncertainty Expressed at 95% confidence , (K=2)
Dead Weight Set ID#2463	8/10/06	8/10/08	MI-04-06-8325	+/-0.001% of Load

Results:
Tolerance used: ± 0.02

Units: lbs TI Division/Increment: 0.01

	As Found				As Left		
Weight Test	Nominal	Indication	Deviation		Nominal	Indication	Deviation
0-25% fs	5.00	5.00	0.00		5.00	5.00	0.00
26-50% fs	10.00	9.99	-0.01		10.00	9.99	-0.01
51-75% fs	15.00	14.99	-0.01		15.00	14.99	-0.01
76-100% fs	20.00	19.99	-0.01		20.00	19.99	-0.01
Beam 2							
0-25% fs							
26-50% fs							
51-75% fs							
76-100% fs							
Beam 3							
0-25% fs							
26-50% fs							
51-75% fs							
76-100% fs							
Shift Test:	Pass			Shift Test:	Pass		
Half Load Test:	Pass			Half Load Test:	Pass		

Comments: Environmental conditions during calibration: 87 deg F., 47 % RH

Chad Rosema issued: 7/9/07
Chad Rosema/bjk
Calibration Technician

☐ Checked box indicate this calibration was performed at the customers facility

7/24/07

Sterling Scale Co., Inc.
20950 Boening St.
Southfield, MI 48075

Certificate of Calibration

F410/12-3
Rev. Date 11/23/05

calibration cert. 1448.01

Customer: MGA Research ***Cert#*** O7-3173 ***Temp/Humidity:*** 78/40
Location of Calibration: 2839 Elliott Troy MI 48083
Calibration Date: 7/17/2007 ***Cal Due:*** Jul-08 ***Condition of Item:*** GOOD
Equipment Make: SW Scales ***Model:*** SW Deluxe ***Serial/ID:*** 26032389 ***Capacity:*** 8800x1lb

Applied Test Wt	*Before Adustment*	*Tolerance*	*In-Tolerance Y/N*	*After Adjustment*	*In-Tolerance Y/N*	*Unc*
LF 0lb	0lb	1lb	y	0lb	y	0.5
LF 50lb	50lb	1lb	y	50lb	y	0.5
LF 1000lb	1000lb	2lb	y	1000lb	y	0.5
LF 2200lb	2199lb	2lb	y	2199lb	y	0.5
LR 0lb	0lb	1lb	y	0lb	y	0.5
LR 50lb	50lb	1lb	y	50lb	y	0.5
LR 1000lb	1000lb	2lb	y	1000lb	y	0.5
LR 2200lb	2200lb	2lb	y	2200lb	y	0.5

shift test
N/A
PADS

	Platform #1	***Platform #2***	***Platform #3***
	☑ Pass	☐ Pass	☐ Pass
	☐ Fail	☐ Fail	☐ Fail

Tests performed: ☑ Repeatability ☑ Linearity ☐ Sensitivity ☑ Discrimination

Page 1 of 2

Technician COMMENTS/ weights used
The scale is accurate and working fine. The scale holds a good zero,also the system is in a storage trunk.
Sterling House Weights

☑ Scale Certified ☐ Scale Rejected

Sterling Scale Service Rep: Larry V. **Date:** **7/17/2007** **1 of 1**

The above item has been calibrated using the relevant EPO or OEM procedures utilizing test weights
Traceable to International Systems of Units (SI), through the Michigan Department of Agriculture.
Test numbers on file. Expanded uncertainty(k=2) confidence level of 95% as reported.
Results relate only to items listed.
The reported uncertainty is valid only for the environment in which it is determined.
Any number of factors may cause the item to drift out of calibration before recommended interval has expired
This report shall not be reproduced, except in full without approval of the laboratory
Tolerances followed are maintenance/acceptance per HB 44 or as detremined by the customer

mga research corporation

CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J22664	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number:	A0712
New DLR (100k **, Units:G):**	94.2
StdDeviation (%)	0.496
% Difference in DLR (New vs. Old):	-1.807
Temperature (°F):	74
Humidity (%):	36

Performed By:

Approved By:

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

446 executive drive • troy, mi 48083
248 / 577-5001 • fax 248 / 577-5025
www.mgaresearch.com

mga research corporation

CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J35919	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number: A0712

New DLR (100k **, Units:G):** 97.4

StdDeviation (%) 0.299

% Difference in DLR (New vs. Old): -1.589

Temperature (°F): 74

Humidity (%): 36

Performed By:

Approved By:

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

446 executive drive • troy, mi 48083
248 / 577-5001 • fax 248 / 577-5025
www.mgaresearch.com

mga research corporation

CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J35924	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number: A0712

New DLR (100k **, Units:G):** 93.9

StdDeviation (%) 0.188

% Difference in DLR (New vs. Old): 0.228

Temperature (°F): 74

Humidity (%): 36

Performed By:

Approved By:

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

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CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J22696	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number:	A0713
New DLR (100k **, Units:G):**	100.0
StdDeviation (%)	0.559
% Difference in DLR (New vs. Old):	-1.242
Temperature (°F):	74
Humidity (%):	36

Performed By: 

Approved By: 

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

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CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J35791	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number:	A0713
New DLR (100k **, Units:G):**	91.9
StdDeviation (%)	0.194
% Difference in DLR (New vs. Old):	1.127
Temperature (°F):	74
Humidity (%):	36

Performed By:

Approved By:

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

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CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J35800	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number: A0713

New DLR (100k **, Units:G):** 98.0

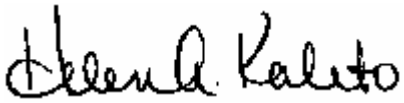
StdDeviation (%) 0.78

% Difference in DLR (New vs. Old): -1.192

Temperature (°F): 74

Humidity (%): 36

Performed By: 

Approved By: 

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

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CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J14103	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number: A0713

New DLR (100k **, Units:G):** 94.6

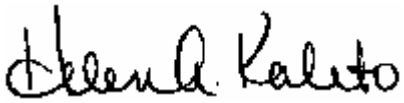
StdDeviation (%) 0.172

% Difference in DLR (New vs. Old): 1.175

Temperature (°F): 74

Humidity (%): 36

Performed By: 

Approved By: 

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

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CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J36197	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number:	A0713
New DLR (100k **, Units:G):**	110.7
StdDeviation (%)	0.159
% Difference in DLR (New vs. Old):	0.612
Temperature (°F):	74
Humidity (%):	36

Performed By:

Approved By:

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±3.7%. All certification data and equipment are on file for inspection at your request. Best uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor k=2.

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CALIBRATION CERTIFICATE

Sensor Information	Reference Sensor Information
Name: 2000 G Accelerometer	**Name:** *Reference Accelerometer*
Model: 7264-2000	**Model:** *301M09/484B*
S/N: J36353	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 4/30/2007	**Calibration Date:** *7/27/2006*
	Calibrated By: *Chuck DiMaggio*

Test Reference Number:	A0713
New DLR (100k **, Units:G):**	99.4
StdDeviation (%)	0.346
% Difference in DLR (New vs. Old):	1.014
Temperature (°F):	74
Humidity (%):	36

Performed By:

Approved By:

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~ Calibration Certificate ~

Per ISO 16063-21

Model Number: 301M09/484B (394M17 SYSTEM)

Serial Number: 862/2470

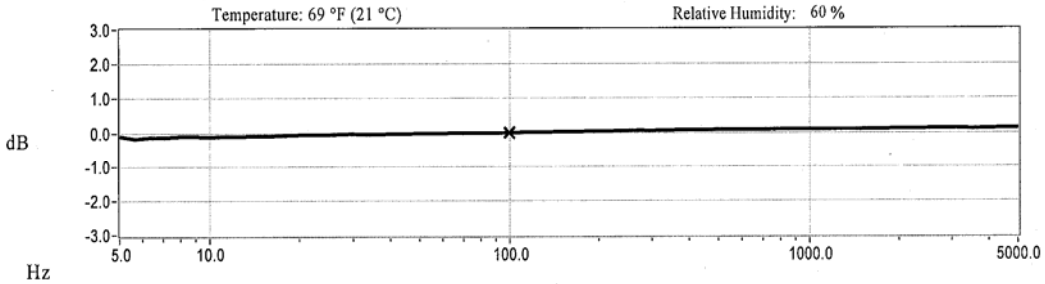
Description: ICP® Accelerometer Method: Back-to-Back Comparison Calibration

Manufacturer: PCB

Calibration Data

Sensitivity @ 100.0 Hz	**31.03**	**mV/g**	Output Bias	8.6	VDC
	(3.16	**mV/m/s²)**	Transverse Sensitivity	3.0	%

Sensitivity Plot



Data Points

Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)
5.0	-1.2	REF. FREQ.	0.0	5000.0	1.5
10.0	-1.4	300.0	0.6		
15.0	-1.0	500.0	0.9		
30.0	-0.4	1000.0	1.0		
50.0	-0.3	3000.0	1.4		

Mounting Surface: Stainless Steel w/Silicone Grease Coating Fastener: Stud Mount Fixture Orientation: Vertical
Acceleration Level (rms)[1]: 10.0 g (98.1 m/s²)[2]
[1]The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude; Acceleration Level (g) = 0.010 x (freq)².
[2]The gravitational constant used for calculations by the calibration system is; 1 g = 9.80665 m/s².

Condition of Unit

As Found: In Tolerance, No Adjustment Necessary

As Left: In Tolerance

Notes

1. Calibration is NIST Traceable thru Project 822/271196 and PTB Traceable thru Project 5399.
2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.
3. Calibration is performed in compliance with ISO 9001, ISO 10012-1, ANSI/NCSL Z540-1-1994 and ISO 17025.
4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications.
5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%.

Technician: Chuck DiMaggio CD 7/27/06 Date: 07/27/06

ACCREDITED
Cert No 1862.01

PCB PIEZOTRONICS inc.
VIBRATION DIVISION
3425 Walden Avenue · Depew, NY 14043
TEL: 888-684-0013 · FAX: 716-685-3886 · www.pcb.com

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~Certificate of Calibration~

Model Number: 484B
Serial Number: 2470
Description: Signal Conditioner
Test Procedure: AT-106-1
Temperature: 70° F

PCB Control #: QC214/QC184/QC198/CA514
Calibration Date: 07/22/2006
Recalibration Date:
Calibration Technician: James Higbee 2b 7/27/06
Relative Humidity: 58%

Volts	*Current (mA)*	*Gain**
24.0	3.9	1.000

As Received: In tolerance, no adjustment required.

As Left: In tolerance.

Special Notes:

This document certifies that the equipment referenced above meets published specifications. The calibration procedure is in compliance with ISO 10012-1, and former MIL-STD-45662A and is traceable to NIST. *Measurement uncertainty (95% confidence level w\coverage factor of 2) for scale factors is +/- 0.2%.

ACCREDITED
Cert. No. 1862.01

PCB PIEZOTRONICS

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For any questions concerning this certificate, please call PCB at (716) 684-0001 and ask for an application engineer.