FINAL REPORT NUMBER 201UI-MGA-06-04

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

FORD MOTOR COMPANY
2006 Ford Fusion 4-Door Sedan
NHTSA No. C60204

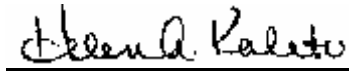
MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

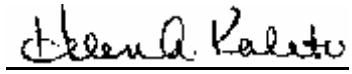
Test Dates: August 29-31, 2006
Report Date: December 12, 2006

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590

Prepared By: 
Helen A. Kaleto, Project Engineer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A compliance test series was conducted on the subject 2006 Ford Fusion, 4-Door Sedan, NHTSA No. C60204, 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 August 29-31, 2006. Test failures identified were as follows:

None

The data recorded indicates that the 2006 Ford Fusion, 4-door sedan, tested appears to comply with the upper interior requirements of FMVSS 201.</td></tr>
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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 2006 Ford Fusion, 4-Door Sedan, meets the performance requirements of FMVSS 201, Occupant Protection in Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted during August 29-31, 2006 on a 2006 Ford Fusion, 4-Door Sedan, manufactured by Ford Motor Company.

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#2.5 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 March 20, 2003.

2.0 COMPLIANCE TEST DATA SUMMARY

The 2006 Ford Fusion, 4-Door Sedan, was equipped with A, B, and rear-pillars, an adjustable seat belt anchorage on each B-pillar, a grab handle located on the side rail above each door (front and rear), and a light console located in the center of the front 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 Ford. The twelve (12) targets chosen were:

AP1	BP1	RP1	UR4
AP2	BP3	SR2-B	UR5
AP3	BP4	UR2	UR6

The 2006 Ford Fusion, 4-Door Sedan, 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: 2006 Ford Fusion, 4-Door Sedan

VEH. NHTSA NO.: C60204 VIN: 3FAFP07Z36R154369 COLOR: Black

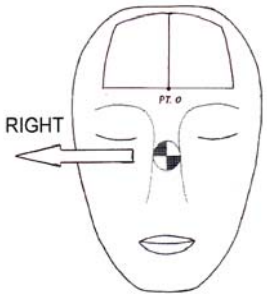
VEH. BUILD DATE: January, 2006 TEST DATES: August 29-31, 2006

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell, Bryan Hood

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	112	12	24.0	305	184	33	9 Right
AP2	Left	202	44	18.9	350	244	25	7 Left
AP3	Right	159	45	23.9	784	818	10	0
BP1	Left	270	20	24.3	890	959	50	0
BP3	Left	270	-8	23.6	608	586	29	12 Left
BP4	Right	130	-9	23.9	707	716	32	17 Left
RP1	Right	67	15	23.7	552	511	55	0
SR2-B	Left	270	48	24.2	727	743	15	0
UR2	Right	90	50	23.3	921	1000	22	6 Left
UR4	Left	270	42	23.6	788	824	27	5 Right
UR5	Left	270	41	23.9	781	815	20	5 Left
UR6	Left	315	46	24.2	595	568	6	2 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.

AP1 Right: Headliner displacement.

AP2 Left: Side airbag option was initially assumed. This test conducted at reduced velocity.

AP3 Right: Cracked A-pillar.

RP1 Right: Headliner displacement.

UR6 Left: Headliner deformation.

REMARKS:

The targets listed were impacted in the following order:

Left: AP2, SR2-B, UR4, BP3, BP1, UR5, UR6

Right: AP3, AP1, UR2, BP4, RP1

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: August 31, 2006

APPROVED BY: Helen A. Kaleto

TABLE 2-2

GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2006 Ford Fusion, 4-Door Sedan

VEH. NHTSA NO.: C60204 VIN: 3FAFP07Z36R154369 COLOR: Black

VEH. BUILD DATE: January, 2006 TEST DATES: August 29-31, 2006

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell, Bryan Hood

INTERIOR TRIM INFORMATION: A, B, and rear-pillars, an adjustable seat belt anchorage on each B-pillar, a grab handle located on the side rail above each door (front and rear), and a light console located in the center of the front upper roof.

SUNROOF INFORMATION:

Installed: _____Yes __X__ No

Operation: _____Electric ____ Manual

SIDE RAIL CURTAIN AIRBAG INFORMATION:

Installed: _____Yes __X__ No

ROLL-BAR INFORMATION:

Installed: _____Yes __X__ No

Padded: _____Yes __X__ No

Braces: _____Yes __X__ No

GENERAL INFORMATION:

Date Received: February 27, 2006; Odometer Reading 25.7 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Ford Motor Company

Date of Manufacture: January, 2006; VIN: 3FAFP07Z36R154369

GVWR: 1923 kg; GAWR FRONT: 1030 kg;

GAWR REAR: 916 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 235 kpa REAR: 235 kpa

Recommended Tire Size: P205/60R16

Recommended Cold Tire Pressure:

FRONT: 235 kpa REAR: 235 kpa

Size of Tire on Test Vehicle: P205/60R16

Type of Spare Tire: T145/80D16; 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) (99 lbs.)

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

Right Front =	428.0 kg	Right Rear =	303.5 kg
Left Front =	459.0 kg	Left Rear =	284.5 kg
TOTAL FRONT =	887.0 kg	TOTAL REAR =	588.0 kg
% Total Weight =	60.1 %	% Total Weight =	39.9 %

TOTAL DELIVERED WEIGHT = 1475.0 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 1475.0 kg

Max. Test Cargo/Luggage Weight = 45.0 kg

Target Test Weight = 1520.0 kg

WEIGHT OF TEST VEHICLE FULLY LOADED:

Right Front =	428.0 kg	Right Rear =	326.5 kg
Left Front =	457.5 kg	Left Rear =	307.5 kg
TOTAL FRONT =	885.5 kg	TOTAL REAR =	634.0 kg
% Total Weight =	58.3 %	% Total Weight =	41.7 %

TOTAL TEST WEIGHT = 1519.5 kg

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

TEST VEHICLE ATTITUDE:

AS DELIVERED: Right Front 714 mm; Left Front 708 mm;
Right Rear 721 mm; Left Rear 724 mm;
Pitch Angle at Right Door Sill = 1.0 Rear is higher
Pitch Angle at Left Door Sill = 0.8 Rear is higher
Roll Angle at Front Bumper = 0.4 Left is higher
Roll Angle at Rear Bumper = 0.0

FULLY LOADED: Right Front 715 mm; Left Front 708 mm;
Right Rear 716 mm; Left Rear 716 mm;
Pitch Angle at Right Door Sill = 0.9 Rear is higher
Pitch Angle at Left Door Sill = 0.6 Rear is higher
Roll Angle at Front Bumper = 0.4 Left is higher
Roll Angle at Rear Bumper = 0.0

AS TARGETED: Right Front 910 mm; Left Front 898 mm;
Right Rear 912 mm; Left Rear 912 mm;
Pitch Angle at Right Door Sill = 1.0 Rear is higher
Pitch Angle at Left Door Sill = 0.8 Rear is higher
Roll Angle at Front Bumper = 0.5 Left is higher
Roll Angle at Rear Bumper = 0.1 Right is higher

AS TESTED ON RIGHT SIDE:

Pitch Angle at Right Door Sill =	1.0 Rear is higher
Pitch Angle at Left Door Sill =	0.8 Rear is higher
Roll Angle at Front Bumper =	0.3 Left is higher
Roll Angle at Rear Bumper =	0.0

AS TESTED ON LEFT SIDE:

Pitch Angle at Right Door Sill =	1.0 Rear is higher
Pitch Angle at Left Door Sill =	0.8 Rear is higher
Roll Angle at Front Bumper =	0.5 Left is higher
Roll Angle at Rear Bumper =	0.1 Right is higher

VEHICLE WHEELBASE = 2730 mm

REMARKS: The seat travel distance was measured to be 240 mm for the driver front seat and 235 mm for the passenger front seat.

RECORDED BY: Louis Campbell DATE: August 24, 2006

APPROVED BY: Helen A. Kaleto

TABLE 2-3

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2006 Ford Fusion, 4-Door Sedan

VEH. NHTSA NO.: C60204 VIN: 3FAFP07Z36R154369 COLOR: Black

VEH. BUILD DATE: January, 2006 TEST DATES: August 29-31, 2006

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell, Bryan Hood

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 201.6º	L 248.6º
	R 105º-165º	R 111.9º	R 158.9º
B-PILLAR	L 195º-345º	L 200.7º	L 280.8º
	R 15º-165º	R 79.3º	R 163.9º

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: Louis Campbell DATE: August 24, 2006

APPROVED BY: Helen A. Kaleto

TABLE 2-4

VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2006 Ford Fusion, 4-Door Sedan

VEH. NHTSA NO.: C60204 VIN: 3FAFP07Z36R154369 COLOR: Black

VEH. BUILD DATE: January, 2006 TEST DATES: August 29-31, 2006

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell, Bryan Hood

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 48º
		R 0º-50º	R 0º	R 48º
	SR2A	L 0º-50º	L 0º	L 48º
		R 0º-50º	R 0º	R 48º
	SR2B	L 0º-50º	L 0º	L 48º
		R 0º-50º	R 0º	R 48º
	SR3-1	L 0º-50º	L 0º	L 47º
		R 0º-50º	R 0º	R 47º
	SR3-2	L 0º-50º	L 0º	L 44º
		R 0º-50º	R 0º	R 41º
REAR HEADER	RH	L 0º-50º	L 0º	L 50º
		R 0º-50º	R 0º	R 50º
A-PILLAR	AP1	L -5º-50º	L -5º	L 12º
		R -5º-50º	R -5º	R 12º

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
A-PILLAR	AP2	L -5º-50º	L -5º	L 44º
		R -5º-50º	R -5º	R 44º
	AP3	L -5º-50º	L -5º	L 44º
		R -5º-50º	R -5º	R 45º
B-PILLAR	BP1	L -10º-50º	L -10º	L 20º
		R -10º-50º	R -10º	R 20º
	BP2*	L 0º-50º	L 0º	L 0º
		R 0º-50º	R 0º	R 0º
	BP3	L -10º-50º	L -10º	L -8º
		R -10º-50º	R -10º	R -8º
	BP4	L -10º-50º	L -10º	L -9º
		R -10º-50º	R -10º	R -9º
REAR PILLAR	RP1	L -10º-50º	L -10º	L 15º
		R -10º-50º	R -10º	R 15º
	RP2	L 0º-50º	L -10º	L 10º
		R 0º-50º	R -10º	R 10º
UPPER ROOF 1		0º-50º	0º	48º
UPPER ROOF 2		0º-50º	0º	50º
UPPER ROOF 3		0º-50º	0º	42º
UPPER ROOF 4		0º-50º	0º	42º
UPPER ROOF 5		0º-50º	0º	41º
UPPER ROOF 6		0º-50º	0º	46º

As determined using the Procedures specified in S8.13.4.2. *Targets BP2 is a seat belt anchorage location.

RECORDED BY: Louis Campbell DATE: August 24, 2006

APPROVED BY: Helen A. Kaleto

TABLE 2-5

TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2006 Ford Fusion, 4-Door Sedan

VEH. NHTSA NO.: C60204 VIN: 3FAFP07Z36R154369 COLOR: Black

VEH. BUILD DATE: January, 2006 TEST DATES: August 29-31, 2006

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell, Bryan Hood

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	240 mm	235 mm
Tº	Horizontal < {CG-F1 (Left Seat) to (Right A-Pillar)}	111.4º	--
A1º	360º - Tº	248.6º	--
Wº	Horizontal < {CG-2 (Left Seat) to (Left A-Pillar)}	201.6º	--
A2º	A2º = Wº	201.6º	--
Uº	Horizontal < {CG-2 (Left Seat) to (Left B-Pillar)}	280.8º	--
B1º	B1º = Uº	280.8º	--
Vº	Horizontal < {CG-R (Left Seat) to (Left B-Pillar)}	200.7º	--
B2º	B2º = Vº	200.7º	--
Wº (right)	Horizontal < {CG-F2 (Right Seat) to (Right A-Pillar)}	--	158.9º
A1º (right)	A1º (right) = Wº (right)	--	158.9º
T º (right)	Horizontal < {CG-F1 (Right Seat) to (Left A-Pillar)}	--	248.1º
A2º (right)	360º-Tº (right)	--	111.9º
V º (right)	Horizontal < {CG-R (Right Seat) to (Right B-Pillar)}	--	163.9º
B1º (right)	B1º (right) = Vº (right)	--	163.9º
U º (right)	Horizontal < {CG-F2 (Right Seat) to (Right B-Pillar)}	--	79.3º
B2º (right)	B2º (right) = Uº (right)	--	79.3º
J	A-Pillar {(Plane 3) - (Plane 5)}	344.7 mm	348.5 mm
J/2	J ÷ 2	172.4 mm	174.3 mm
D1	Upper Roof {(Plane A) - (Plane B)}	1600.0 mm	
D1/2	D1 ÷ 2	800.0 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1200.0 mm	

Measurement	Description	Left Side	Right Side
D2/2	D2 ÷ 2	600.0 mm	
.35D1	.35 x D1	560.0 mm	
.35D2	.35 x D2	420.0 mm	
N	B-Pillar {(BPR) - (lowest point on daylight opening forward of B-Pillar)}	395.4 mm	399.6 mm
N/2	B-Pillar {(BP3) - (lowest point on daylight opening forward of B-Pillar)}	197.7 mm	199.8 mm
N/4	B-Pillar {(BP4) - (lowest point on daylight opening forward of B-Pillar)}	98.9 mm	99.9 mm
D	R-Pillar (Point 7 – Point M)	700.0 mm	700.0 mm
3D/7	3*D / 7	300.0 mm	300.0 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	2370.3	-361.7	661.2	2371.5	369.4	657.9
Rear Row	3382.5	-321.2	589.1	3383.5	405.8	587.9

SgRP Locations (vehicle coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2355.0	-365.0	670.0	2355.0	365.0	668.0
Rear Row	3217.0	-363.0	692.0	3217.0	363.0	692.0

CG Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	Z
CGF1	2290.3	-361.7	1321.2	2296.5	369.4	1317.9
CGF2	2530.3	-361.7	1321.2	2531.5	369.4	1317.9
CGR	3542.5	-321.2	1249.1	3543.5	405.8	1247.9

REFERENCE FOR VEHICLE COORDINATE SYSTEM (measured in millimeters):

Front LH door top striker bolt hole (x, y, z) = 2479.2, -786.2, 830.6

Front driver seat outboard seat bolt hole (x, y, z) = 2038.5, -582.0, 455.5

Front passenger seat outboard seat bolt hole (x, y, z) = 2038.5, 582.0, 451.5

REMARKS:

RECORDED BY: Louis Campbell DATE: August 24, 2006

APPROVED BY: Helen A. Kaleto

TABLE 2-6

SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2006 Ford Fusion, 4-Door Sedan

VEH. NHTSA NO.: C60204 VIN: 3FAFP07Z36R154369 COLOR: Black

VEH. BUILD DATE: January, 2006 TEST DATES: August 29-31, 2006

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Helen A. Kaleto, Louis Campbell, Bryan Hood

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	2747.1	-428.9	1083.5	--	--	Yes	--	--
REL	2776.2	-452.3	1038.4	248	12	--	2	No
AP2	2674.1	-484.7	999.3	202	44	No	--	Yes
AP3	2450.7	-527.7	934.3	202	44	No	--	No
A-Pillar Right Side								
AP1	2792.5	596.2	1053.6	--	--	Yes	--	--
REL	2837.1	609.6	1018.9	112	12	--	2	Yes
AP2	2731.5	656.4	964.3	159	44	No	--	No
AP3	2506.8	699.1	895.0	159	45	No	--	Yes
B-Pillar Left Side								
BP1	3334.0	-406.3	1042.7	270	20	No	--	Yes
BP2	3313.3	-524.7	791.9	270	0	No	--	No
BP3	3254.9	-538.5	844.3	270	-8	No	--	Yes
BP4	3376.5	-577.6	728.0	230	-9	No	--	No
B-Pillar Right Side								
BP1	3389.7	566.3	1012.0	90	20	No	--	No
BP2	3371.1	692.9	754.3	90	0	No	--	No
BP3	3312.5	706.0	802.6	90	-8	No	--	No
BP4	3437.9	749.2	680.9	130	-9	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**					
Rear Pillar Left Side								
RP1	4290.5	-416.2	892.9	293	15	No	--	No
RP2	4438.4	-499.9	719.7	--	--	Yes	--	--
REL	4328.4	-481.8	794.5	291	10	--	4	No
Rear Pillar Right Side								
RP1	4328.0	582.2	868.6	67	15	No	--	Yes
RP2	4481.3	670.3	689.8	--	--	Yes	--	No
REL	4369.0	656.8	752.1	65	10	--	4	No
Front Header Left Side								
FH1	2668.2	-304.2	1092.6	180	50	No	--	No
FH2	2655.0	-152.9	1091.4	--	--	Yes	--	--
REL	2648.4	-177.0	1086.7	180	50	--	1	No
Front Header Right Side								
FH1	2703.0	471.7	1072.2	180	50	No	--	No
FH2	2678.2	318.5	1081.3	--	--	Yes	--	No
REL	2672.0	343.2	1076.1	180	50	--	1	No
Side Rail Left Side								
SR1	2926.0	-406.8	1054.8	270	48	No	--	No
SR2A	3100.3	-397.3	1049.7	270	48	No	--	No
SR2B	2979.0	-418.9	1082.7	--	--	Yes	--	--
REL	2940.1	-403.0	1055.3	270	48	--	1	Yes
SR3-1	3763.3	-412.1	976.8	270	47	No	--	No
SR3-2	3941.6	-420.6	951.3	270	44	No	--	No
Side Rail Right Side								
SR1	2968.1	571.6	1024.1	90	48	No	--	No
SR2A	3143.7	560.2	1020.8	90	48	No	--	No
SR2B	3036.4	580.9	1053.8	--	--	Yes	--	--
REL	2985.5	569.1	1023.6	90	48	--	1	No
SR3-1	3814.4	580.9	941.8	90	47	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	3992.1	591.0	916.6	90	41	No	--	No
Rear Header Left Side								
RH	4257.1	-236.4	957.1	0	50	No	--	No
Rear Header Right Side								
RH	3431.6	363.4	1509.5	0	50	No	--	No
Upper Roof Left Side								
UR4	2923.5	496.7	1059.2	270	42	No	--	Yes
UR5	3374.2	495.6	1041.4	270	41	No	--	Yes
UR6	3975.1	497.3	984.2	315	46	No	--	Yes
Upper Roof Right Side								
UR1	3145.2	-326.9	1092.3	90	48	No	--	No
UR2	3749.3	-331.3	1027.1	90	50	No	--	Yes
UR3	4147.3	-327.3	983.7	90	42	No	--	No

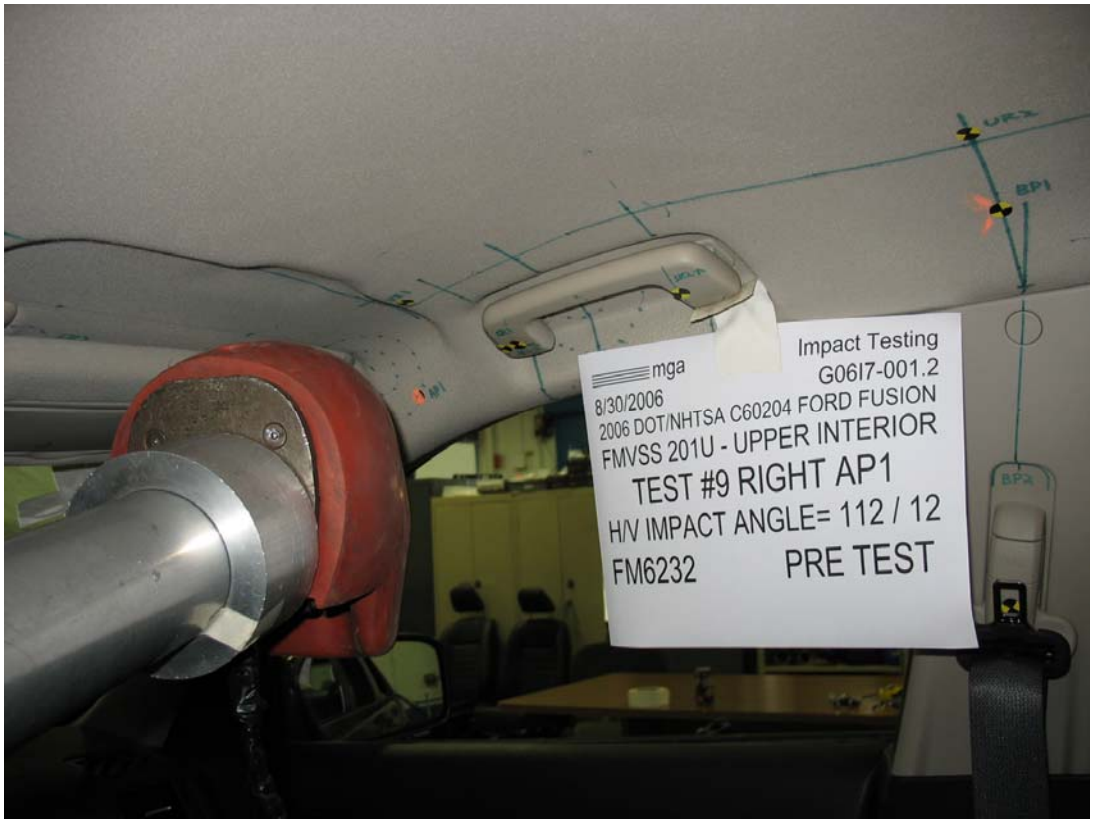
As determined using the Procedures specified in S10.1-10.13.

REMARKS:

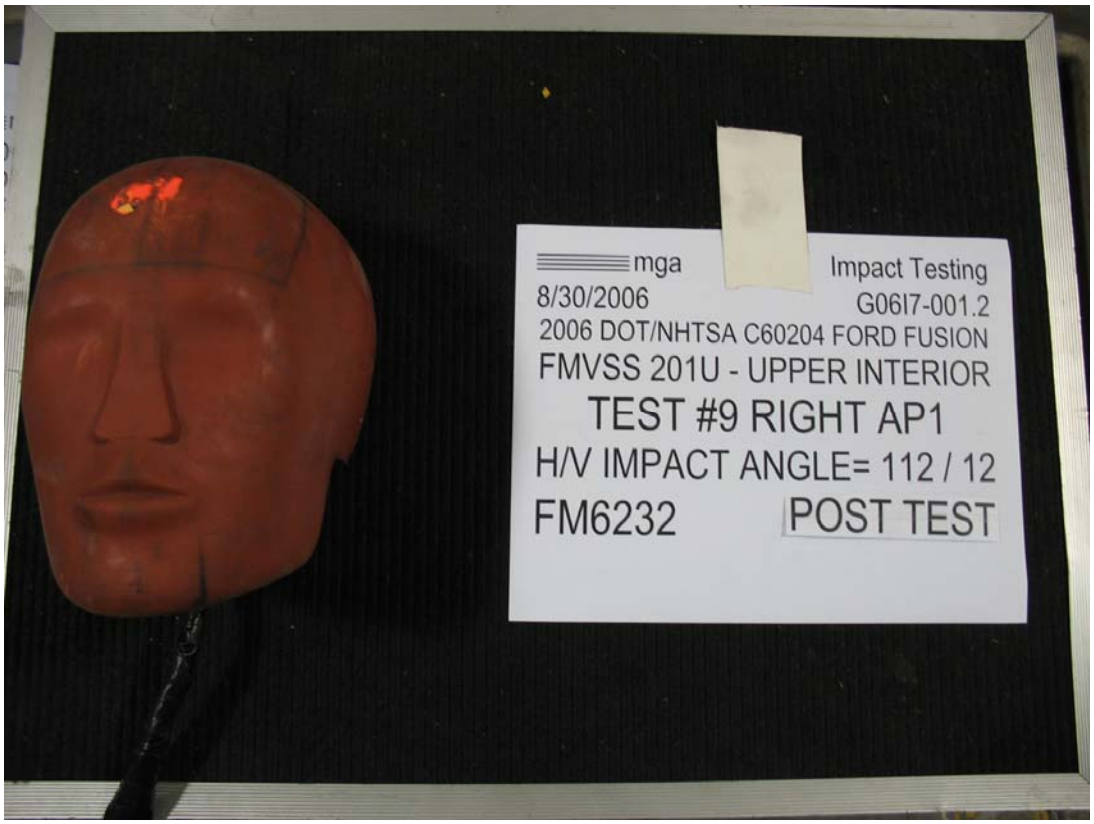
RECORDED BY: Louis Campbell DATE: August 24, 2006

APPROVED BY: Helen A. Kaleto

3.0 TEST DATA (Including Acceleration and Velocity Plots)




mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #9 RIGHT AP1
H/V IMPACT ANGLE= 112 / 12
FM6232
POST TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #9 RIGHT AP1
H/V IMPACT ANGLE= 112 / 12
FM6232
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#9

Target (Vehicle Side): AP1Right

Temperature:21C

MGA Test Reference No.:FM6232

Humidity:56%

Approach Horizontal Angles:112°

Time of Test:4:28 PM

Approach Vertical Angles:12°

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
305	184	11.8	24.0	33	9 Right

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.4	1.29	1.29
Y	6	J35919	94.4	1.79	1.79
Z	7	J22664	94.3	1.30	1.31

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

Headliner displacement

Recorded By: _____ Approved By*: _____ Date: 8/30/2006

*Only necessary for NHTSA (Government) Compliance testing.

Customer: DOT/NHTSA
Test # 9
FM6232
Additional Desc: N/A

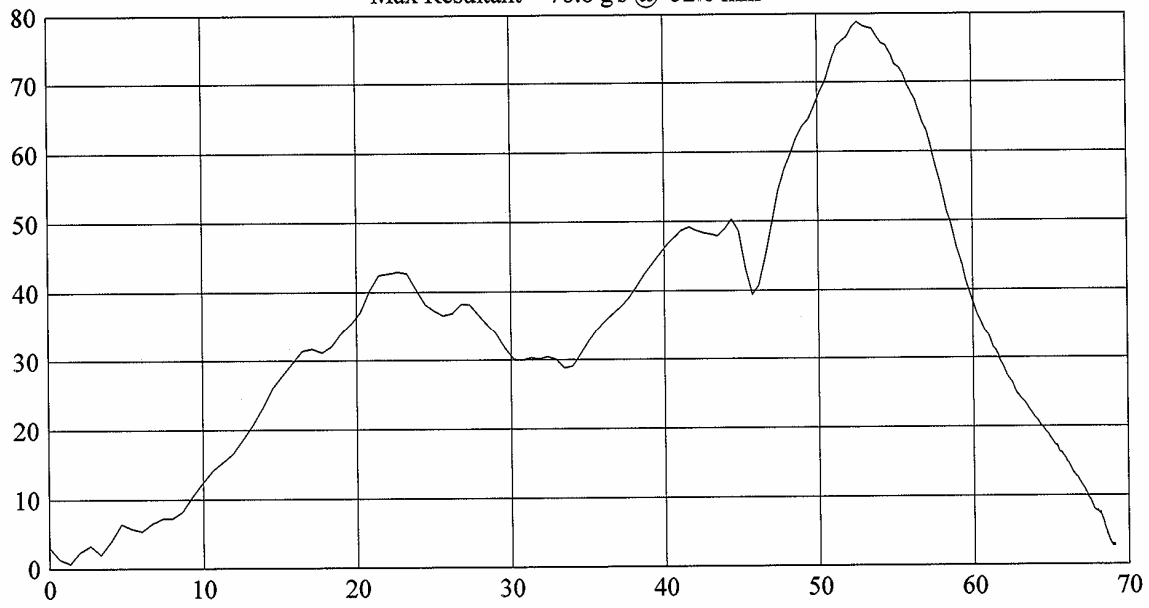
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 112/12

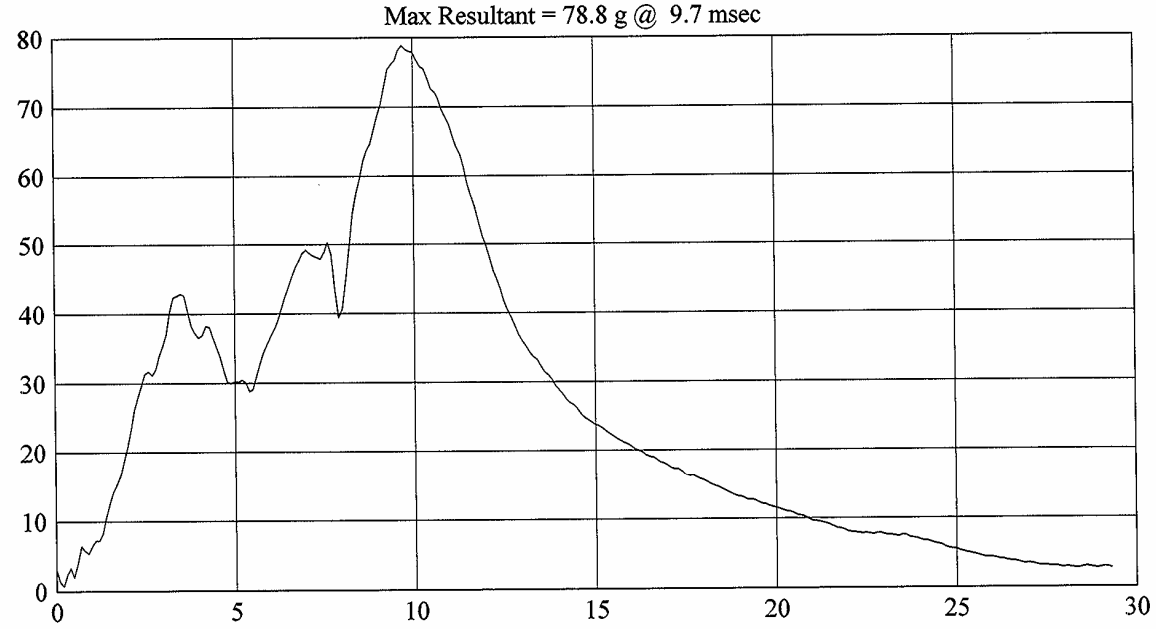
HIC(d) = 305, HIC = 184, Delta T = 11.8 msec

Max Resultant = 78.8 g's @ 52.6 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 78.8 g @ 9.7 msec



Resultant Accel (g's) vs. Time (msec)

Customer: DOT/NHTSA
Test # 9
FM6232
Additional Desc: N/A

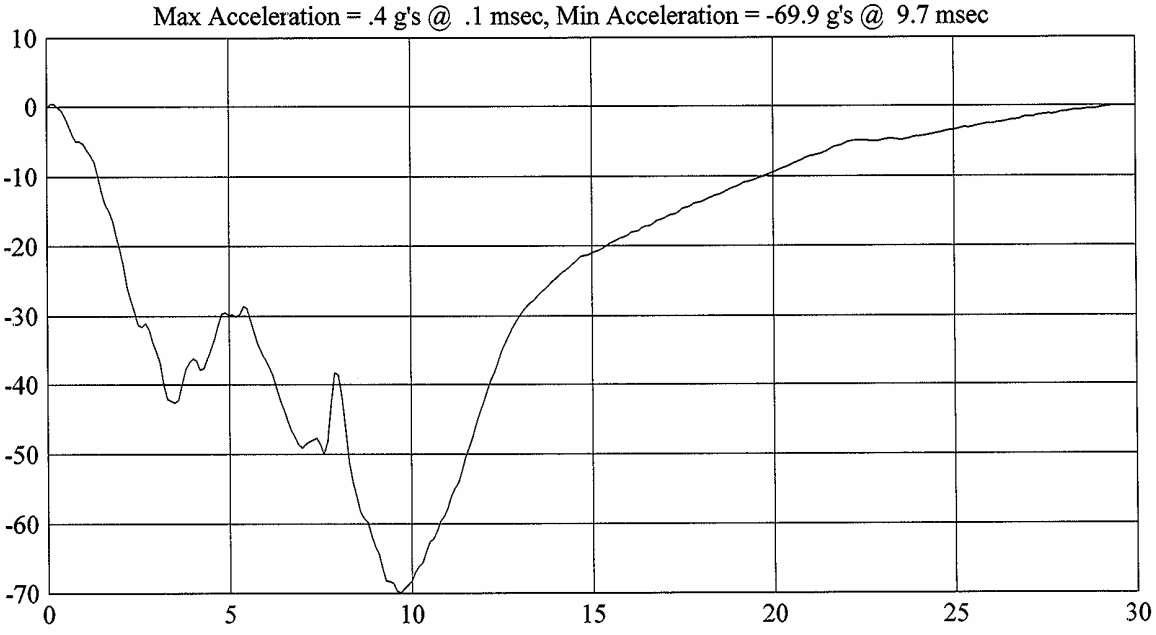
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 112/12

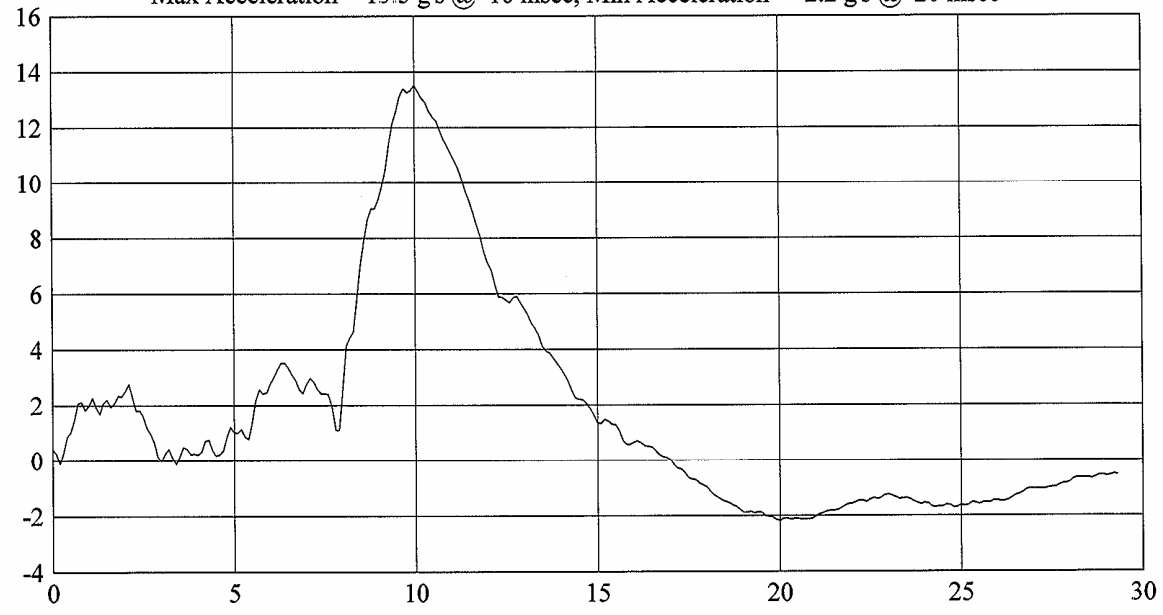
HIC(d) = 305, HIC = 184, Delta T = 11.8 msec

Max Acceleration = .4 g's @ .1 msec, Min Acceleration = -69.9 g's @ 9.7 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 13.5 g's @ 10 msec, Min Acceleration = -2.2 g's @ 20 msec



Accel Y (g's) vs. Time (msec)

Customer: DOT/NHTSA
Test # 9
FM6232
Additional Desc: N/A

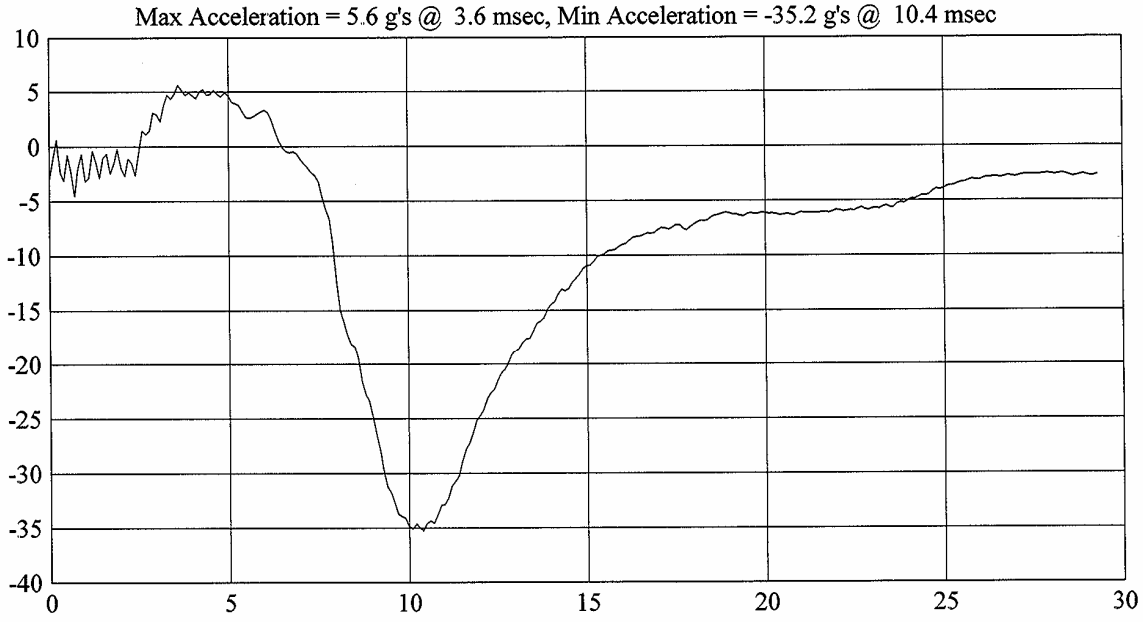
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 112/12

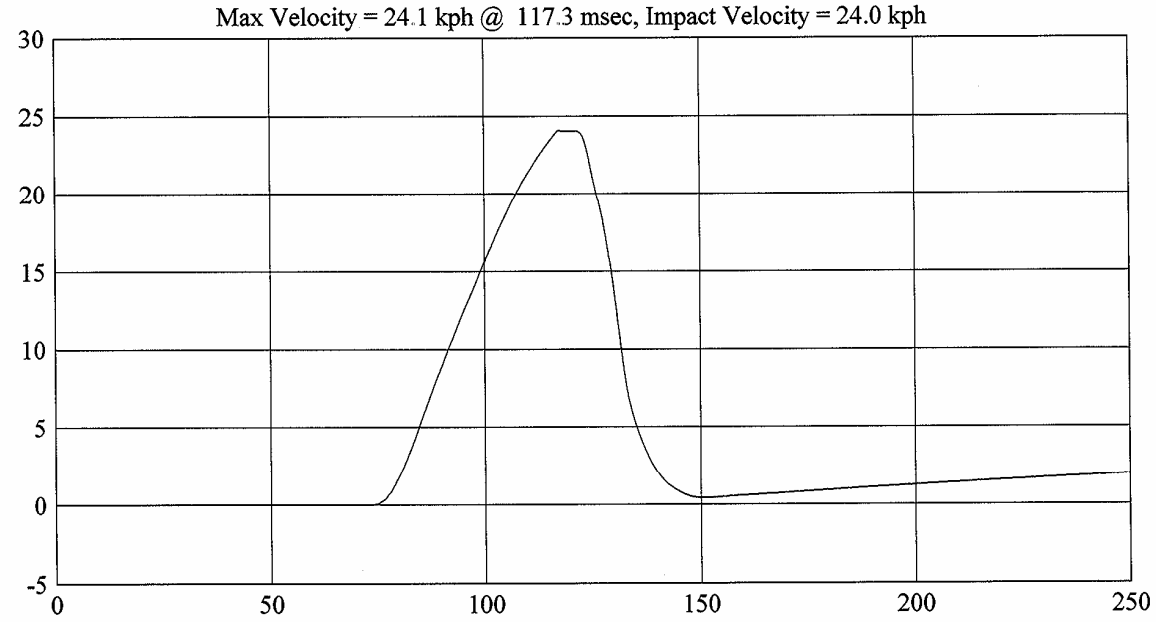
HIC(d) = 305, HIC = 184, Delta T = 11.8 msec

Max Acceleration = 5.6 g's @ 3.6 msec, Min Acceleration = -35.2 g's @ 10.4 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 24.1 kph @ 117.3 msec, Impact Velocity = 24.0 kph



Velocity (kph) vs. Time (msec)

Customer: DOT/NHTSA
Test # 9
FM6232
Additional Desc: N/A

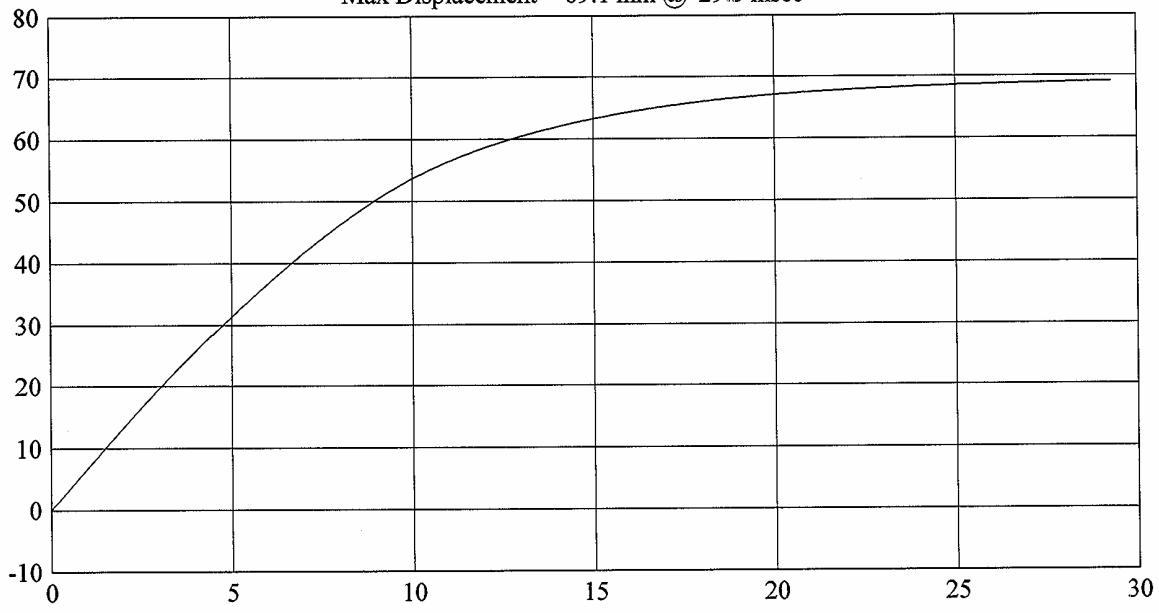
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

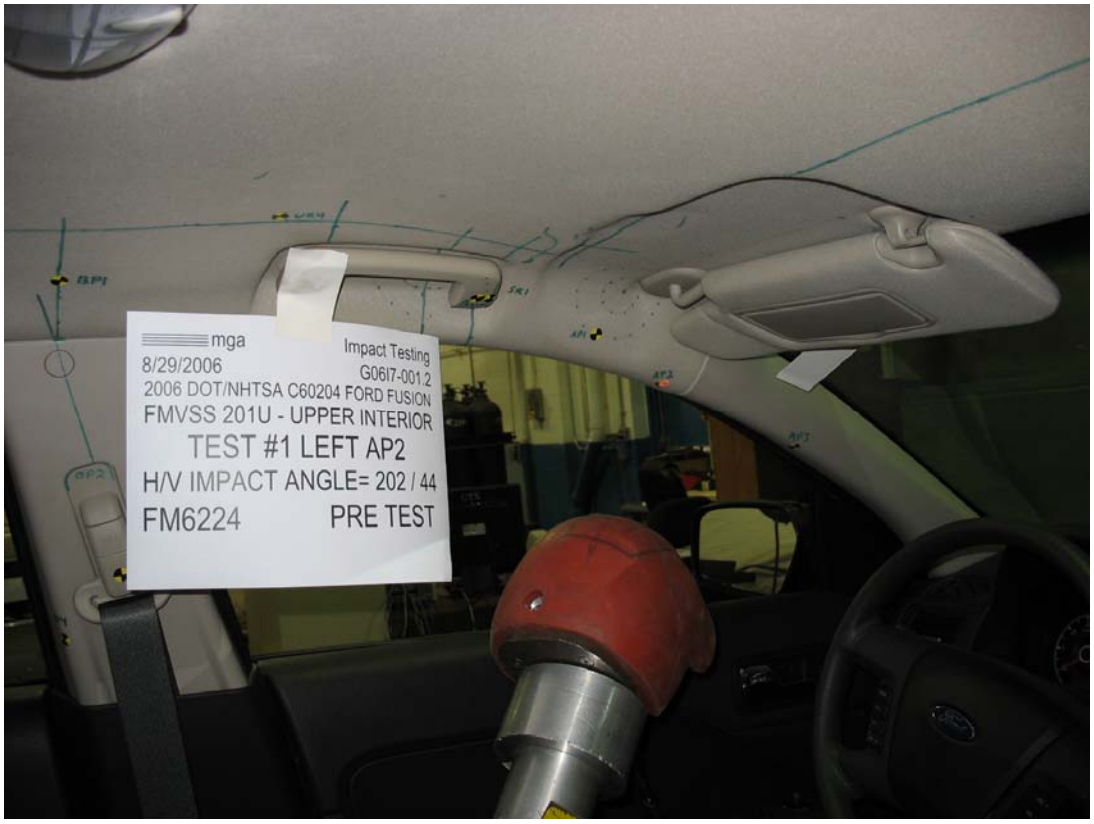
Model Year: 2006
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 112/12

HIC(d) = 305, HIC = 184, Delta T = 11.8 msec

Max Displacement = 69.1 mm @ 29.3 msec



Displacement (mm) vs. Time (msec)


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #1 LEFT AP2
H/V IMPACT ANGLE= 202 / 44
FM6224
PRE TEST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Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #1 LEFT AP2
H/V IMPACT ANGLE= 202 / 44
FM6224
POST-TEST
C60204
FM6224
LEFT AP2
H/V 202/44


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Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #1 LEFT AP2
H/V IMPACT ANGLE= 202 / 44
FM6224
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#1

Target (Vehicle Side): AP2Left

Temperature:20C

MGA Test Reference No.:FM6224

Humidity:56%

Approach Horizontal Angles:202°

Time of Test:1:01 PM

Approach Vertical Angles:44°

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
350	244	12.8	18.9	25	7 Left

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.4	1.29	1.29
Y	6	J35919	94.4	1.79	1.79
Z	7	J22664	94.3	1.31	1.30

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

No Visible Damage

Recorded By: _____ Approved By*: _____ Date: 8/29/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 1
FM6224
Additional Desc: N/A

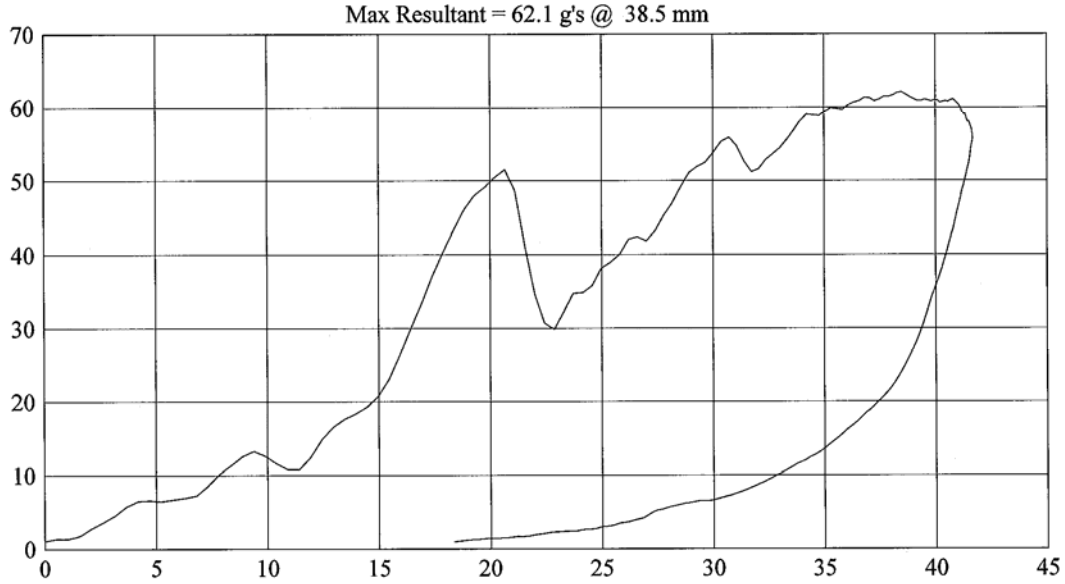
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/44

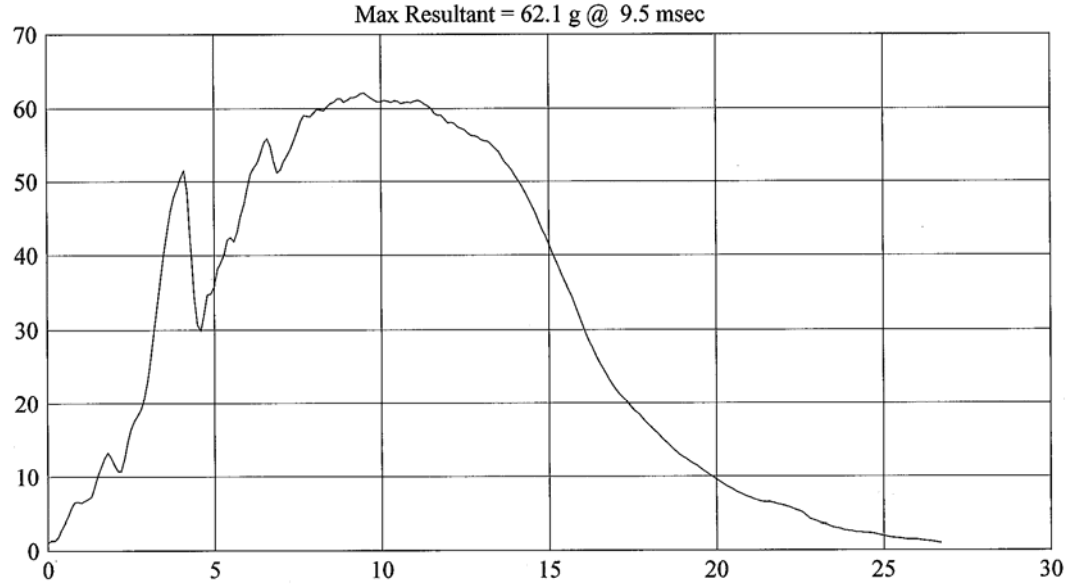
HIC(d) = 350, HIC = 244, Delta T = 12.8 msec

Max Resultant = 62.1 g's @ 38.5 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 62.1 g @ 9.5 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 1
FM6224
Additional Desc: N/A

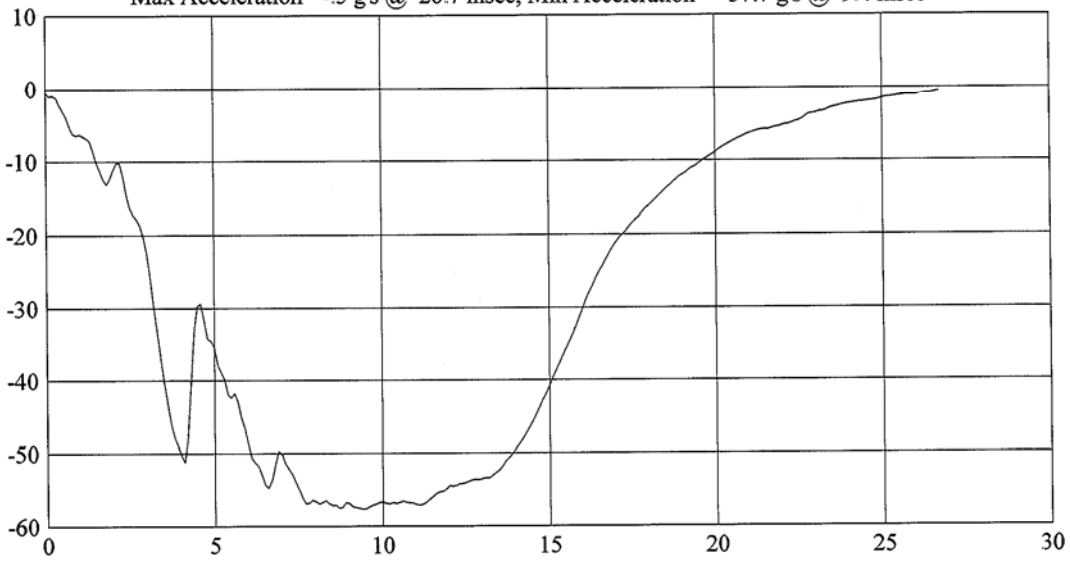
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/44

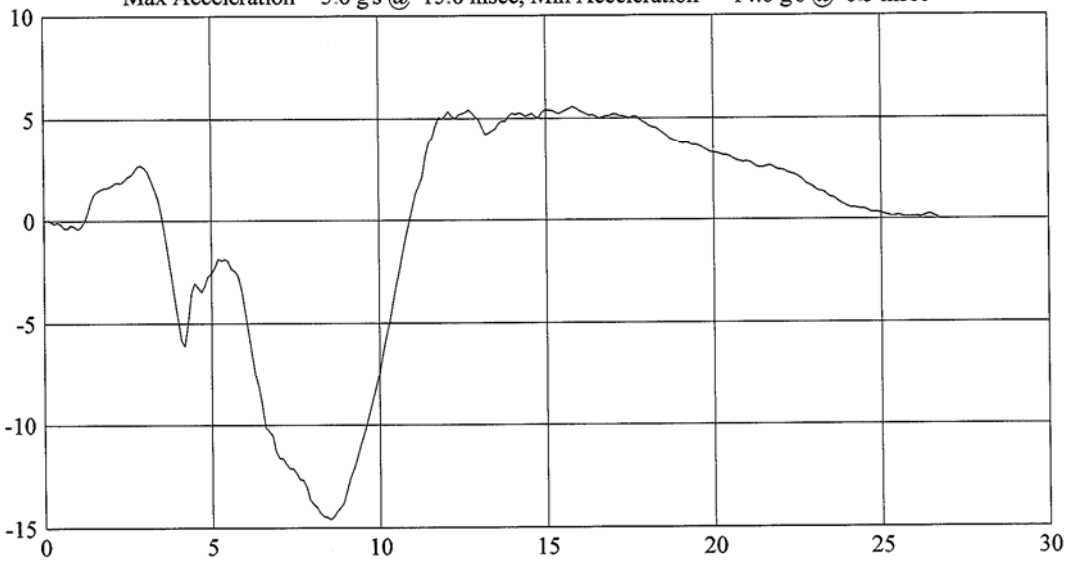
HIC(d) = 350, HIC = 244, Delta T = 12.8 msec

Max Acceleration =-.5 g's @ 26.7 msec, Min Acceleration = -57.7 g's @ 9.4 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 5.6 g's @ 15.8 msec, Min Acceleration = -14.6 g's @ 8.5 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 1
FM6224
Additional Desc: N/A

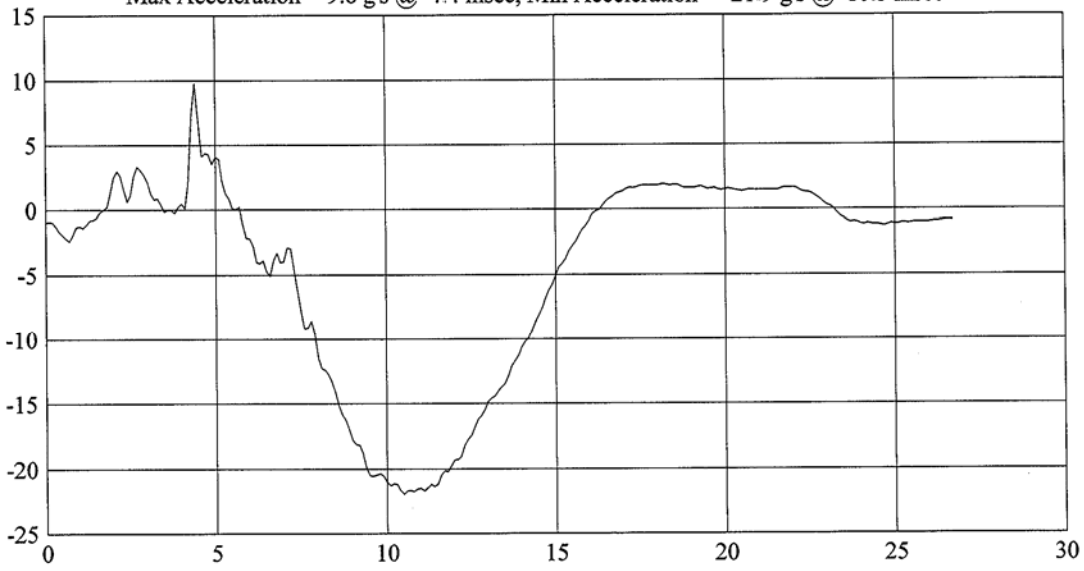
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/44

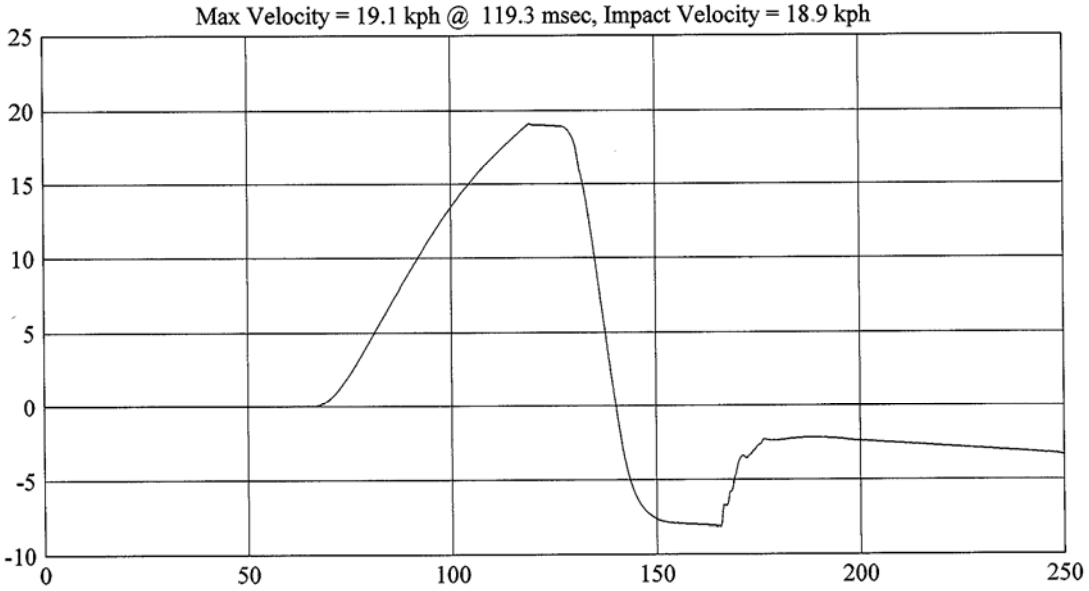
HIC(d) = 350, HIC = 244, Delta T = 12.8 msec

Max Acceleration = 9.8 g's @ 4.4 msec, Min Acceleration = -21.9 g's @ 10.5 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 19.1 kph @ 119.3 msec, Impact Velocity = 18.9 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 1
FM6224
Additional Desc: N/A

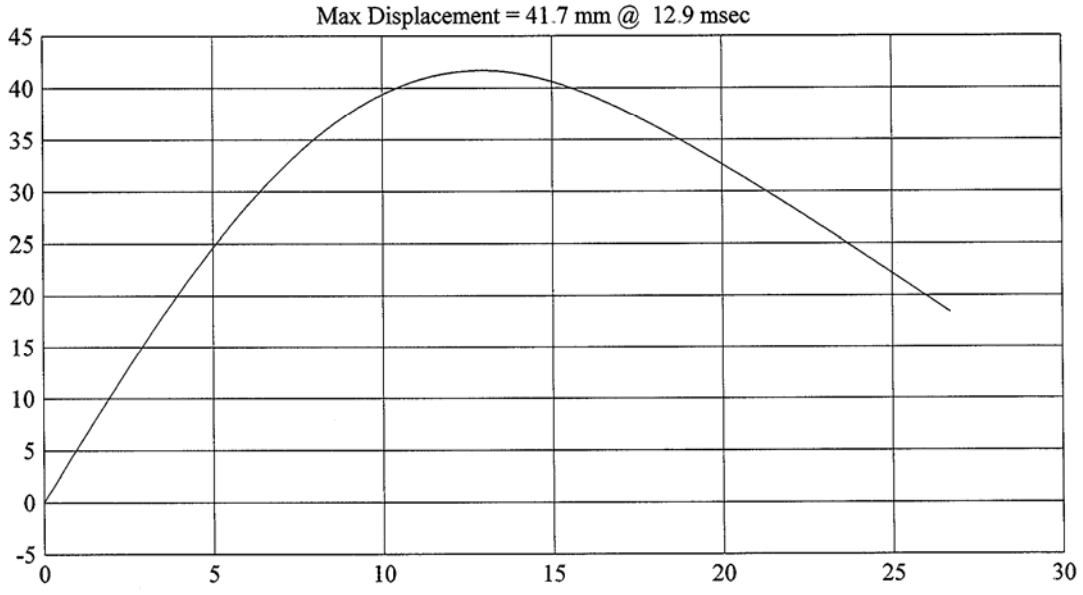
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

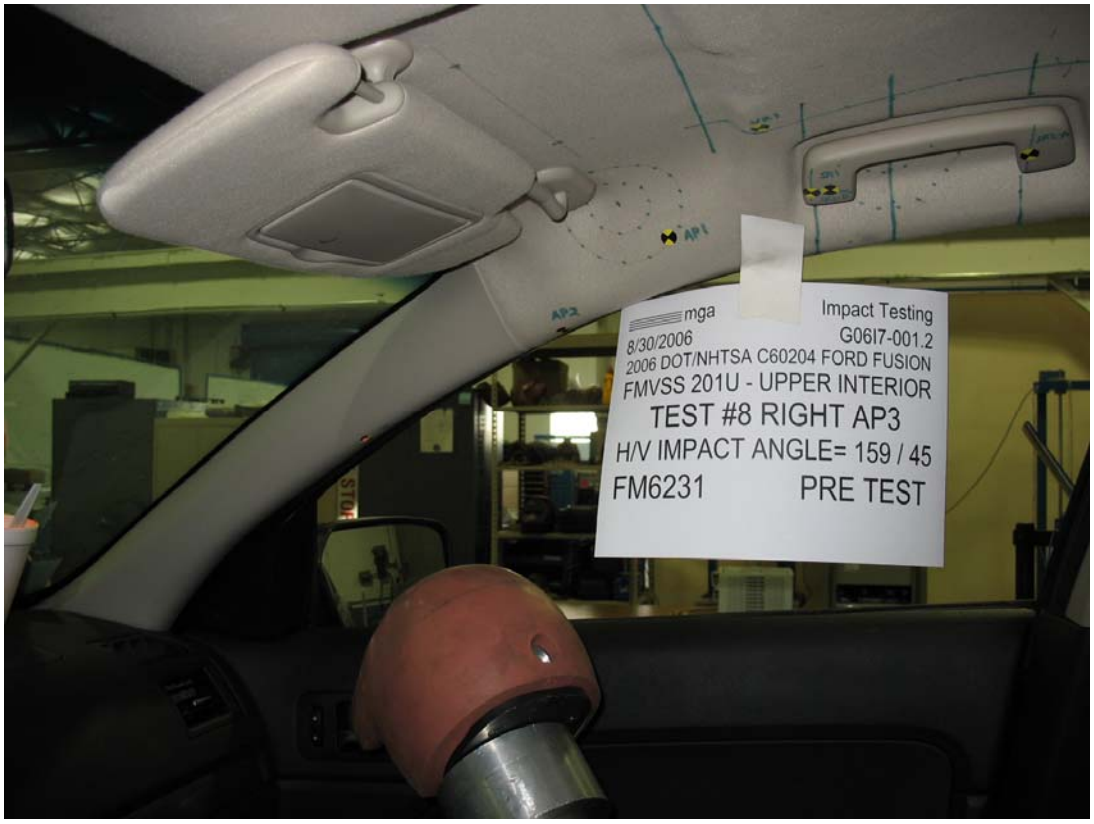
Model Year: 2006
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 202/44

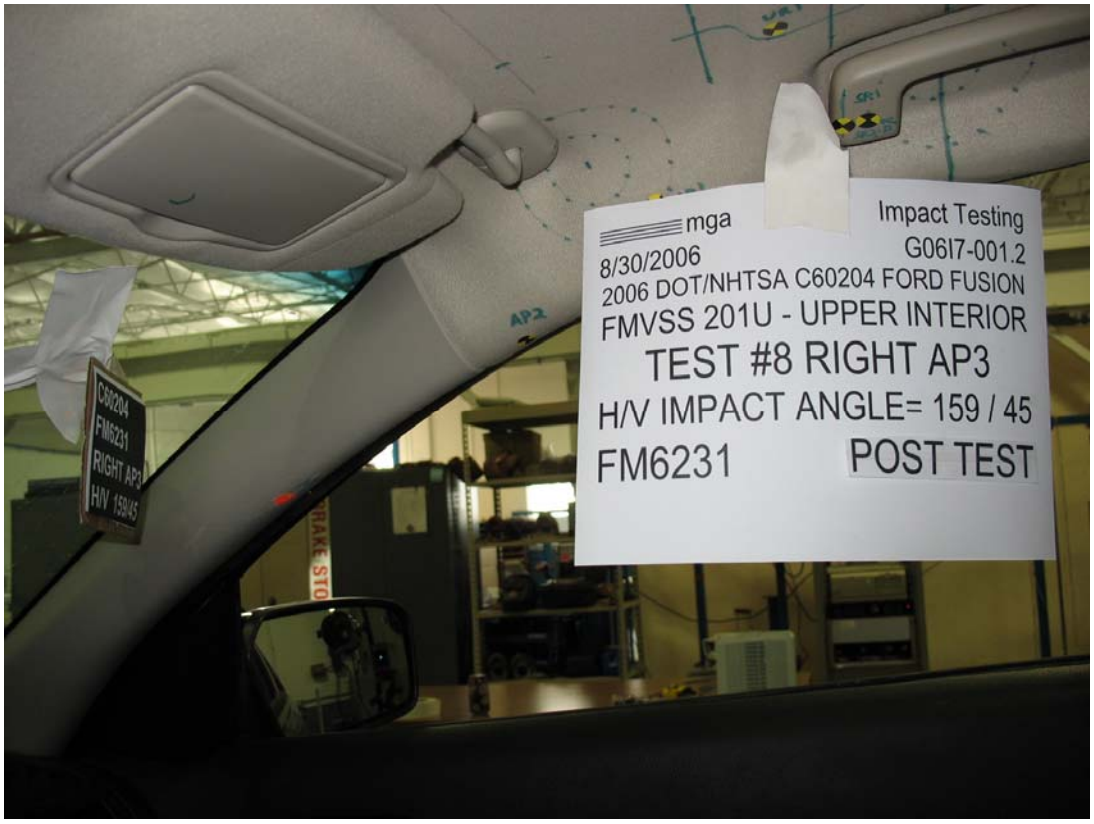
HIC(d) = 350, HIC = 244, Delta T = 12.8 msec

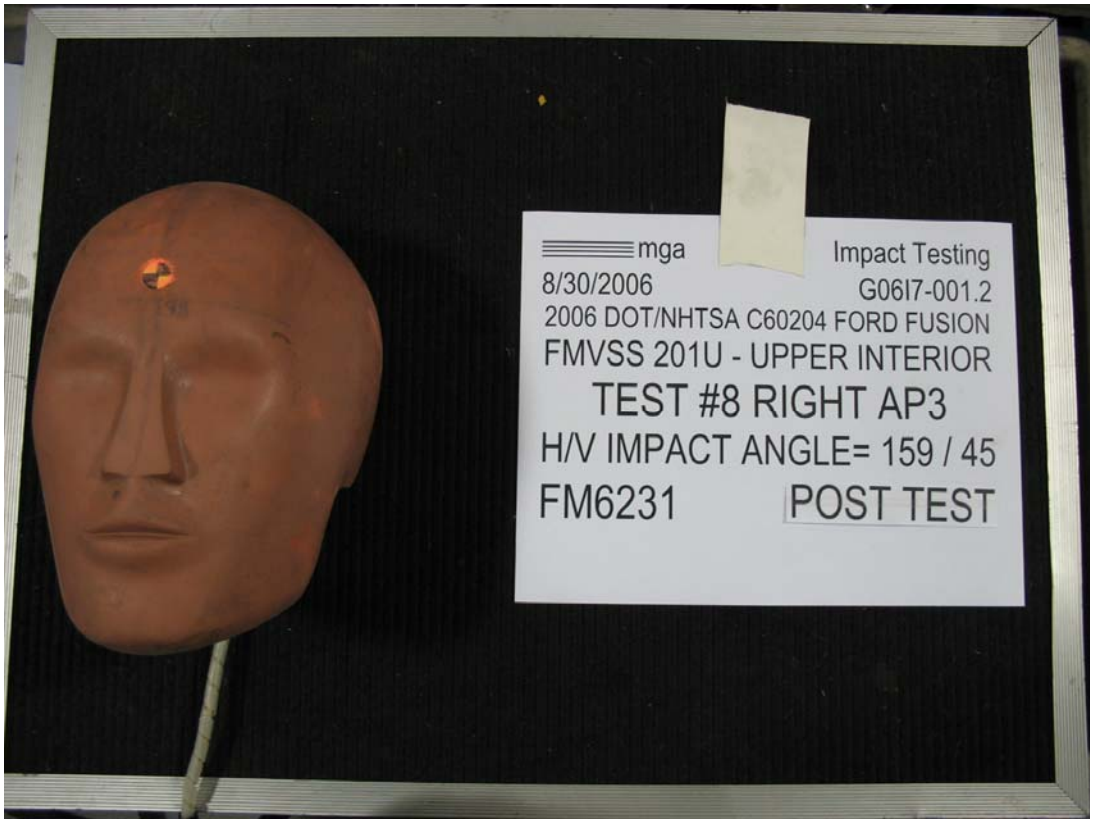
Max Displacement = 41.7 mm @ 12.9 msec



Displacement (mm) vs. Time (msec)


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #8 RIGHT AP3
H/V IMPACT ANGLE= 159 / 45
FM6231
PRE TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #8 RIGHT AP3
H/V IMPACT ANGLE= 159 / 45
FM6231
POST TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #8 RIGHT AP3
H/V IMPACT ANGLE= 159 / 45
FM6231
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#8

Target (Vehicle Side): AP3Right

Temperature:19C

MGA Test Reference No.:FM6231

Humidity:59%

Approach Horizontal Angles:159°

Time of Test:3:57 PM

Approach Vertical Angles:45°

FMH Serial No:[039]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
784	818	5.1	23.9	10	0

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J13753	-103.6	1.29	1.29
Y	6	J22700	94.4	1.79	1.79
Z	7	J32734	95.5	1.31	1.31

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

Cracked A-Pillar

Recorded By: Approved By*: Helen A. Kalish Date: 8/30/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 8
FM6231
Additional Desc: N/A

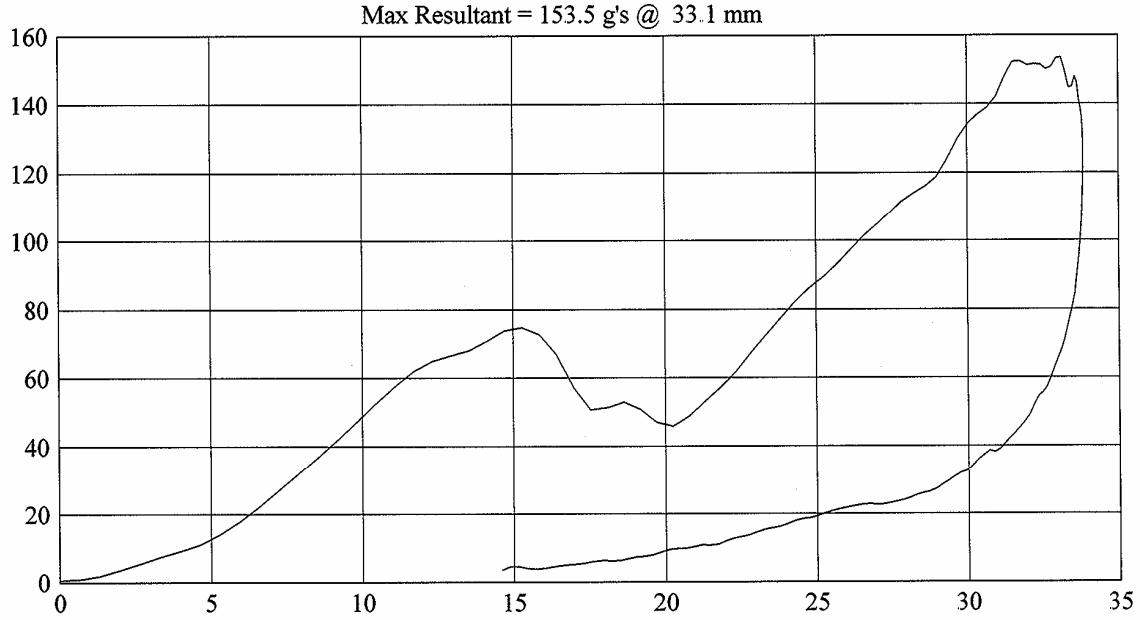
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/45

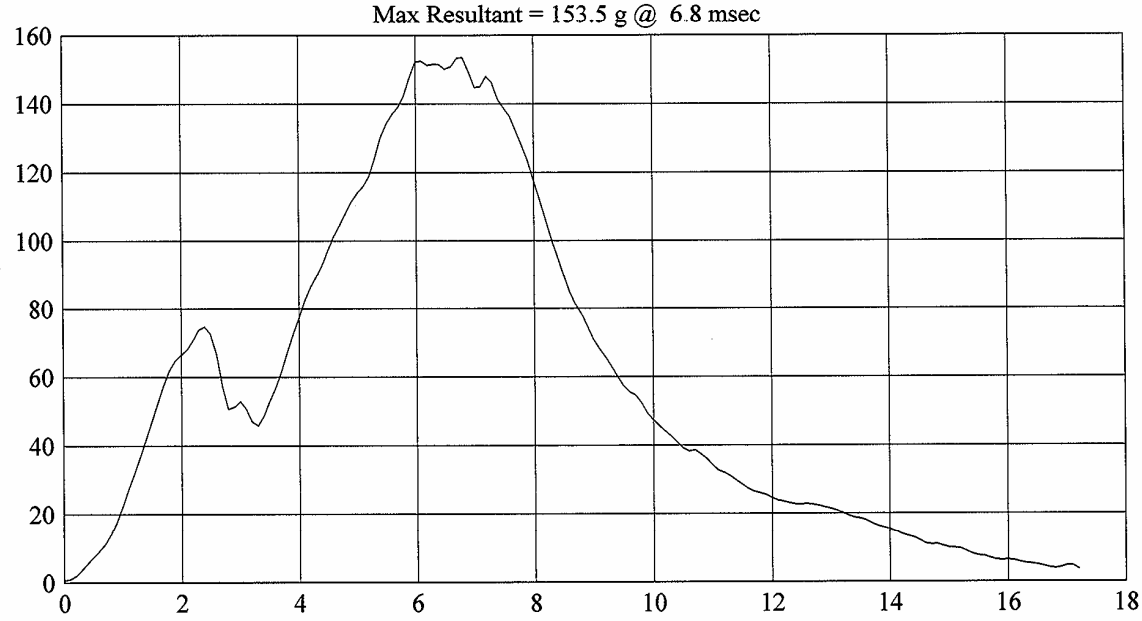
HIC(d) = 784, HIC = 818, Delta T = 5.1 msec

Max Resultant = 153.5 g's @ 33.1 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 153.5 g @ 6.8 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 8
FM6231
Additional Desc: N/A

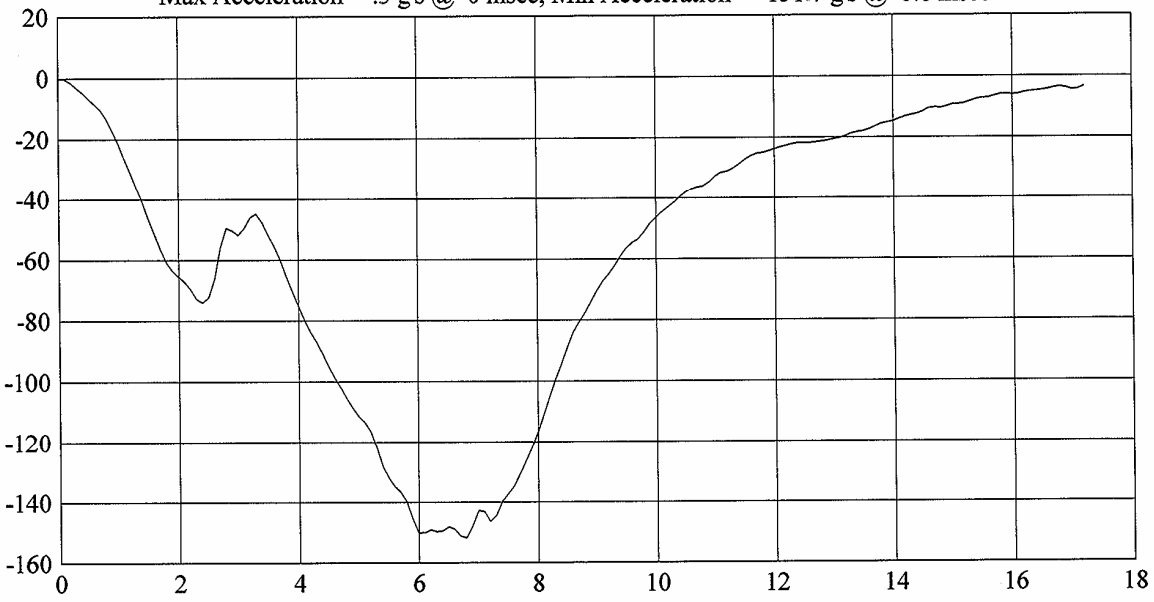
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/45

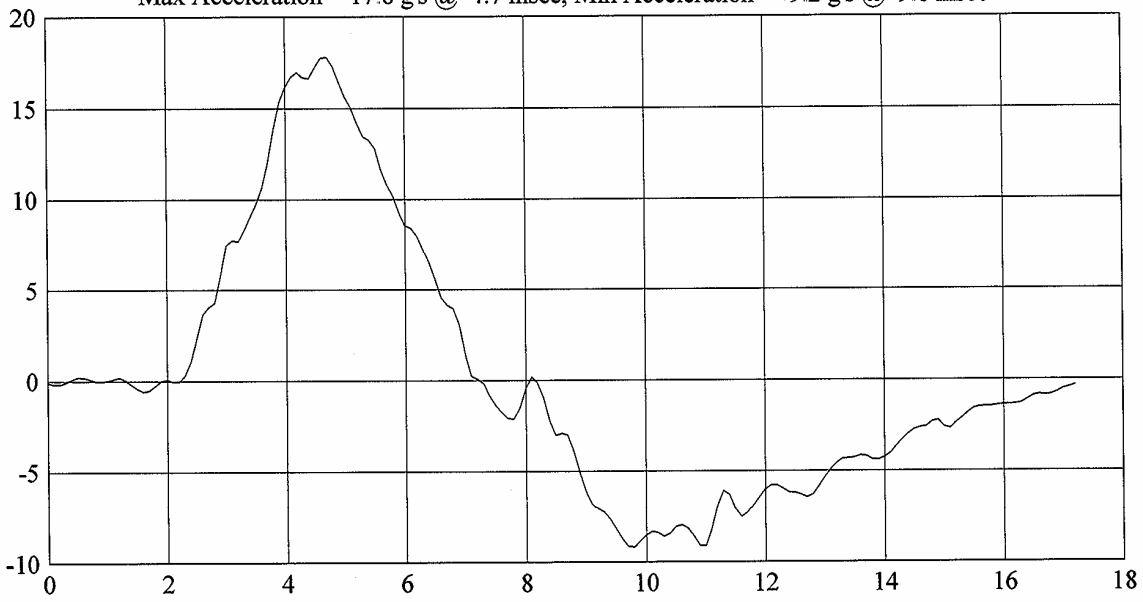
HIC(d) = 784, HIC = 818, Delta T = 5.1 msec

Max Acceleration =-.3 g's @ 0 msec, Min Acceleration = -151.7 g's @ 6.8 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 17.8 g's @ 4.7 msec, Min Acceleration = -9.2 g's @ 9.8 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 8
FM6231
Additional Desc: N/A

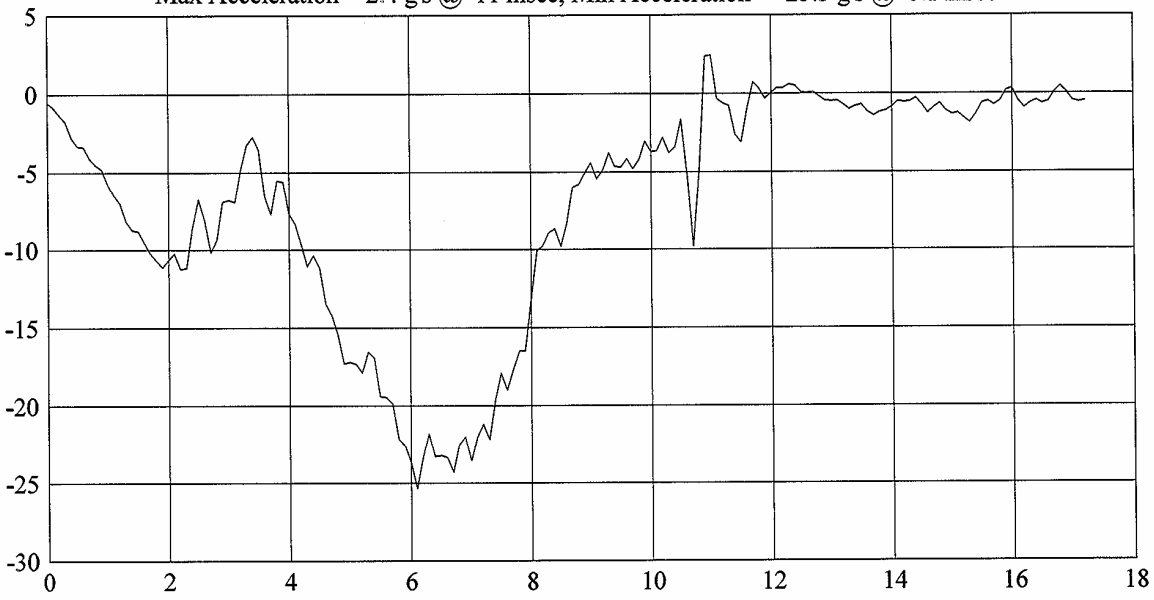
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/45

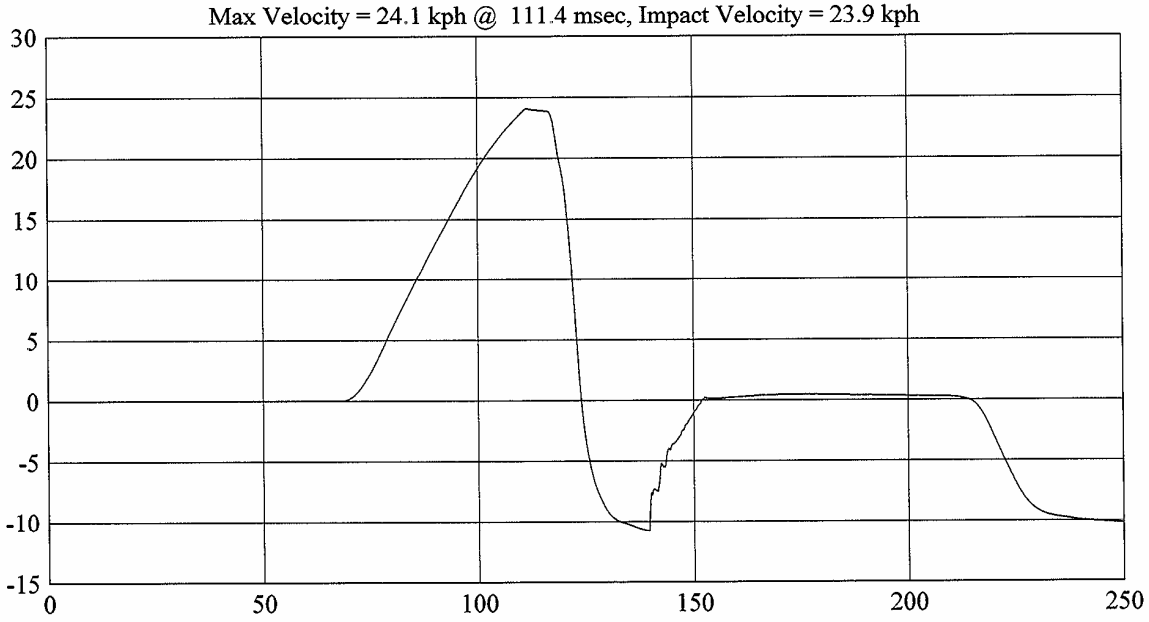
HIC(d) = 784, HIC = 818, Delta T = 5.1 msec

Max Acceleration = 2.4 g's @ 11 msec, Min Acceleration = -25.3 g's @ 6.1 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 24.1 kph @ 111.4 msec, Impact Velocity = 23.9 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

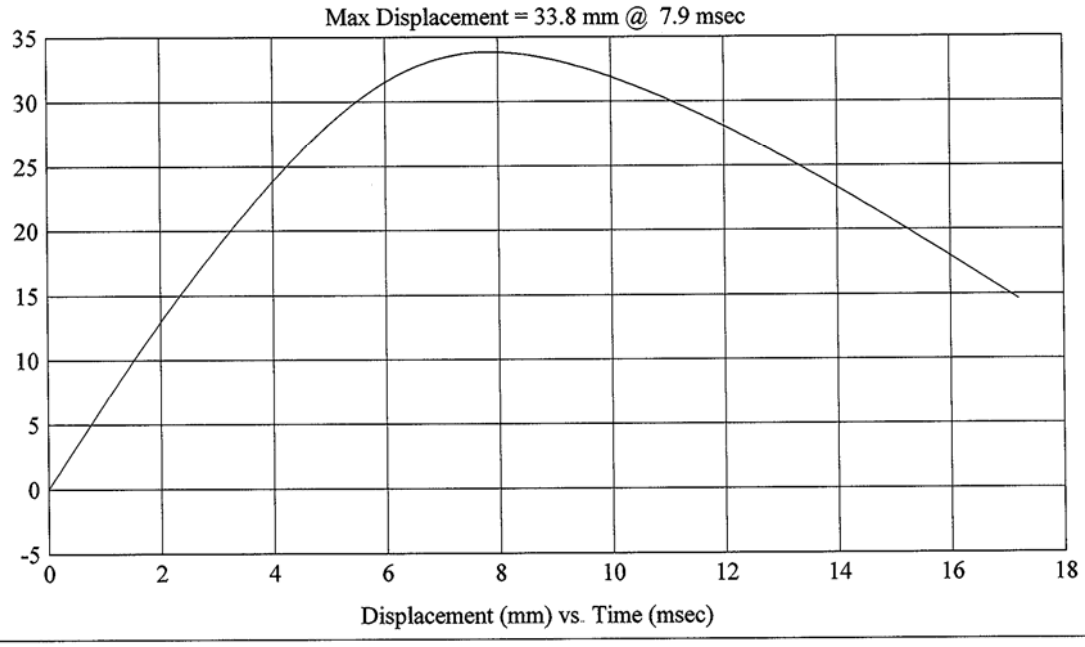
Customer: DOT/NHTSA
Test # 8
FM6231
Additional Desc: N/A

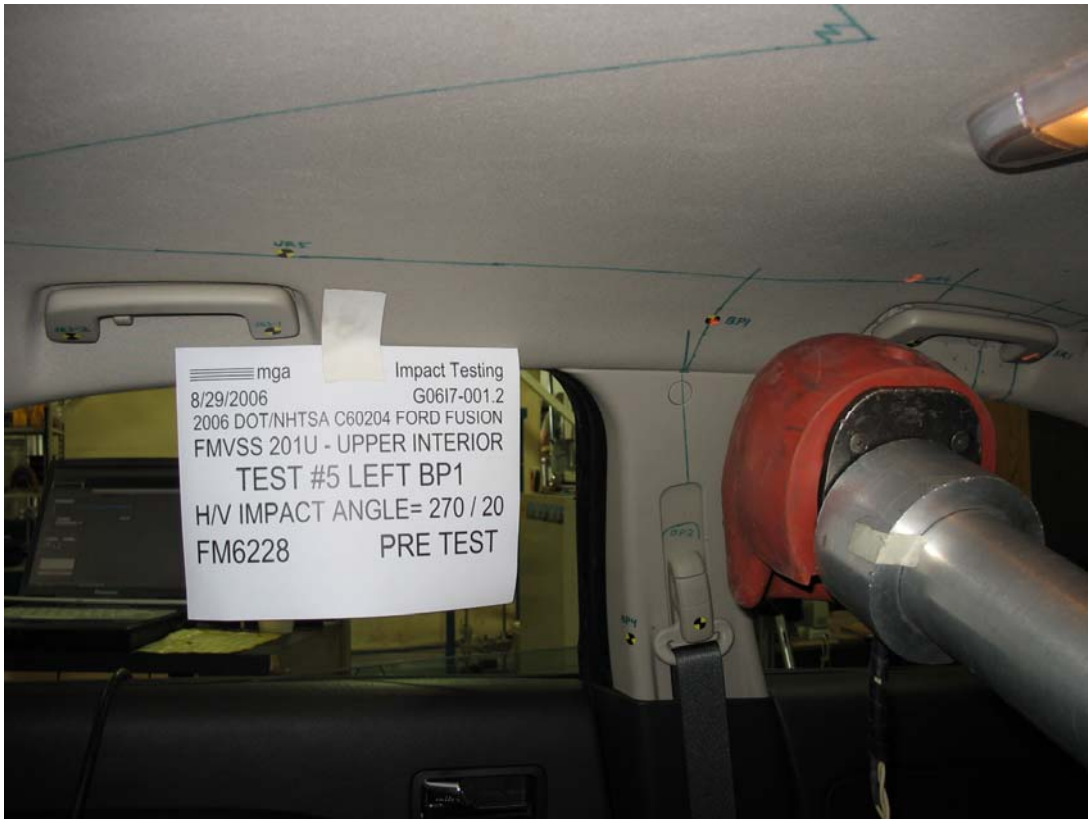
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 159/45

HIC(d) = 784, HIC = 818, Delta T = 5.1 msec




mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #5 LEFT BP1
H/V IMPACT ANGLE= 270 / 20
FM6228
PRE TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #5 LEFT BP1
H/V IMPACT ANGLE= 270 / 20
FM6228
POST-TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #5 LEFT BP1
H/V IMPACT ANGLE= 270 / 20
FM6228
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#5

Target (Vehicle Side): BP1Left

Temperature:20C

MGA Test Reference No.:FM6228

Humidity:54%

Approach Horizontal Angles:270°

Time of Test:4:45 PM

Approach Vertical Angles:20°

FMH Serial No:[038]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
890	959	6.6	24.3	50	0

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-108.8	1.29	1.29
Y	6	J36193	102.7	1.79	1.79
Z	7	J36353	97.2	1.31	1.30

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

No Visible Damage

Recorded By: _____ Approved By*: _____ Date: 8/29/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 5
FM6228
Additional Desc: N/A

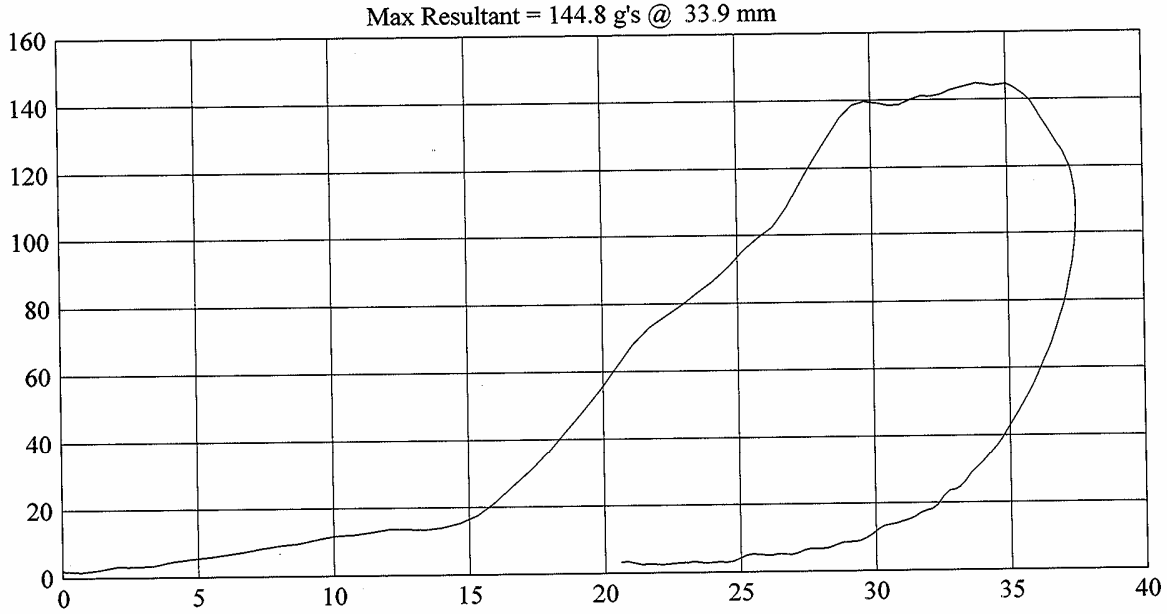
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/20

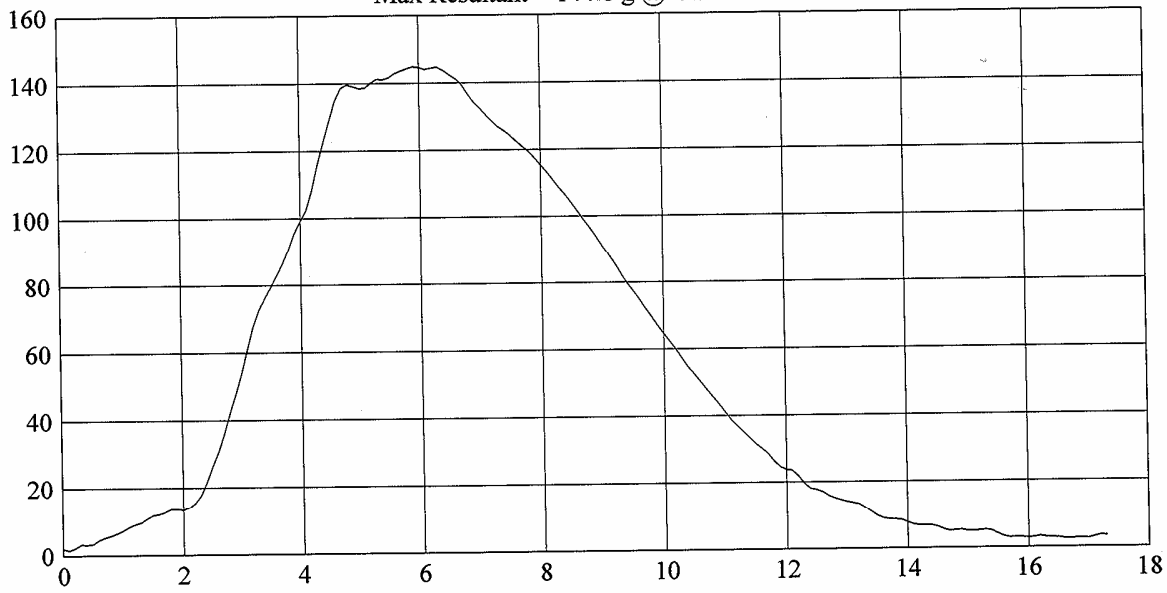
HIC(d) = 890, HIC = 959, Delta T = 6.6 msec

Max Resultant = 144.8 g's @ 33.9 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 144.8 g @ 5.9 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 5
FM6228
Additional Desc: N/A

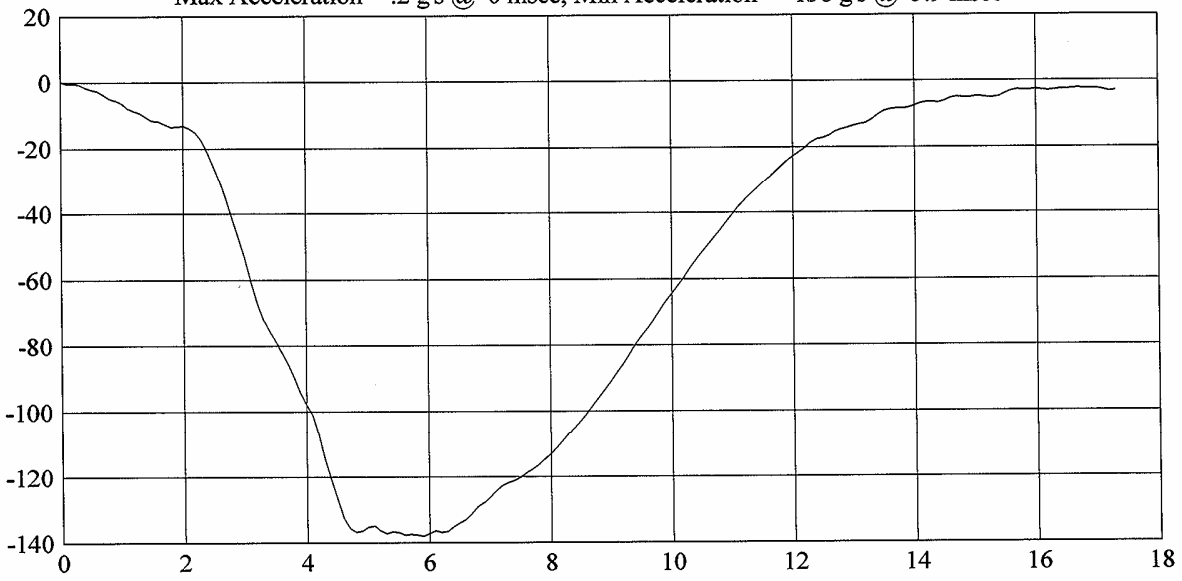
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/20

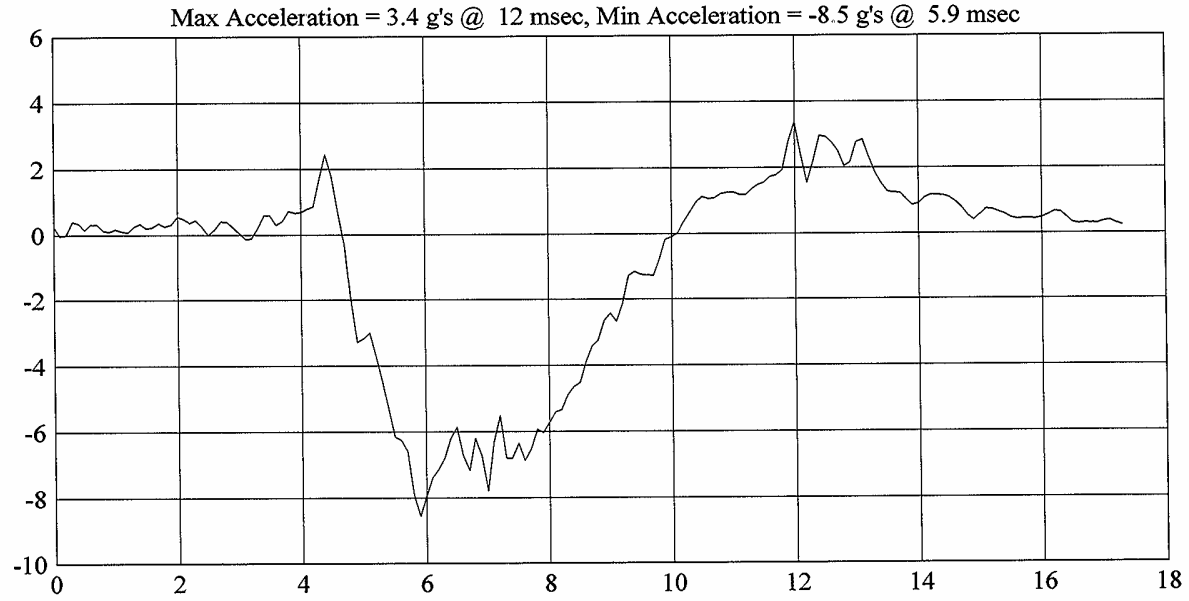
HIC(d) = 890, HIC = 959, Delta T = 6.6 msec

Max Acceleration = .2 g's @ 0 msec, Min Acceleration = -138 g's @ 5.9 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 3.4 g's @ 12 msec, Min Acceleration = -8.5 g's @ 5.9 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 5
FM6228
Additional Desc: N/A

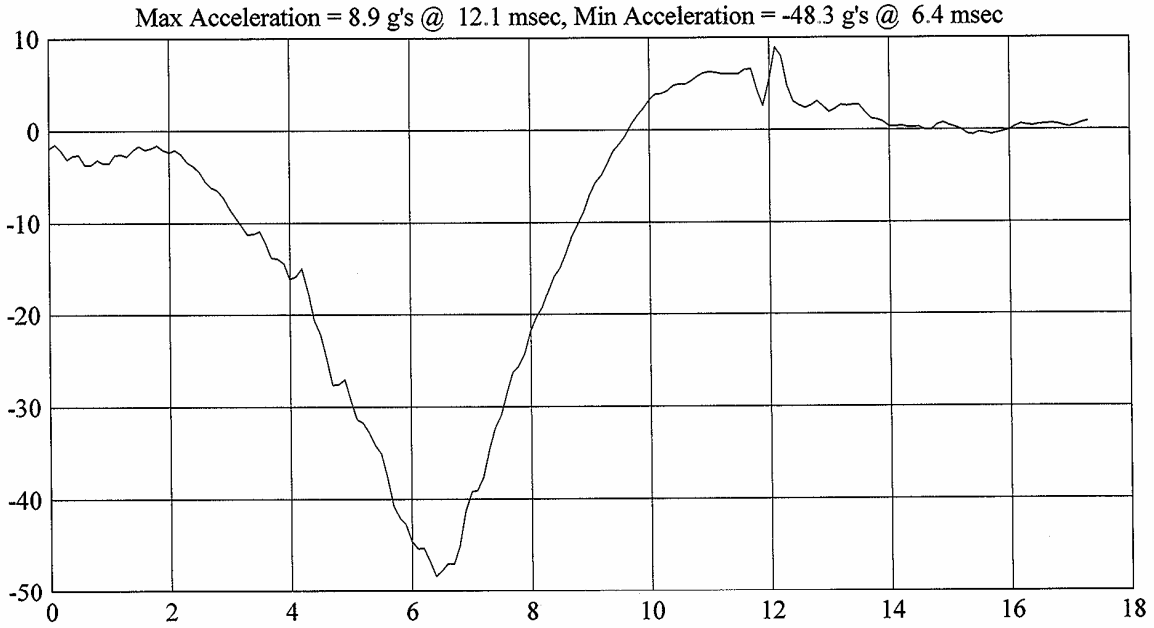
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/20

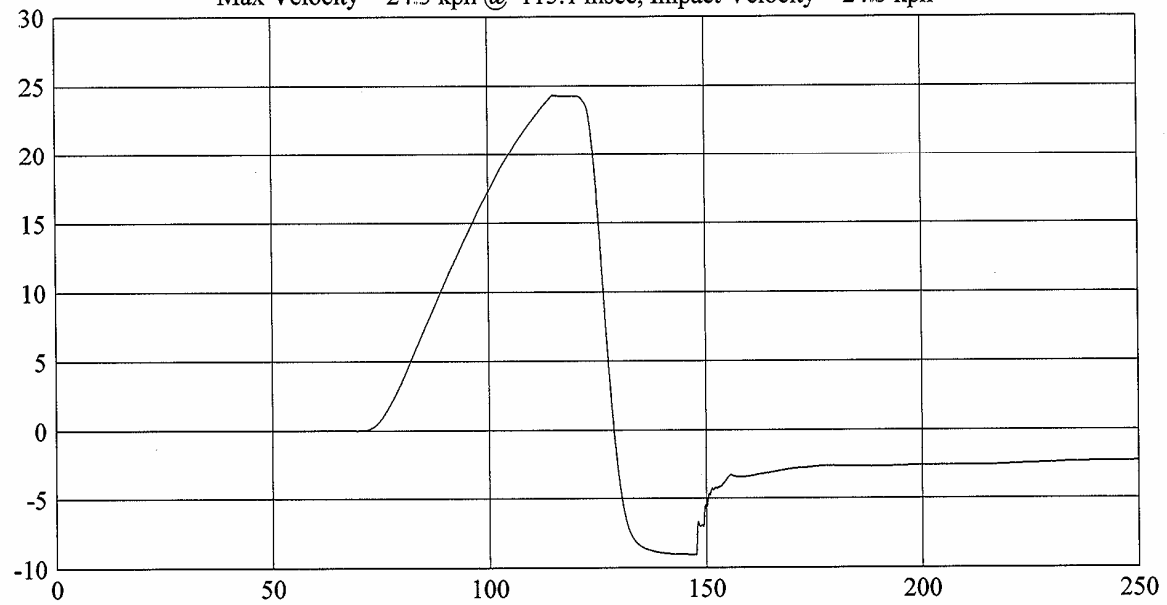
HIC(d) = 890, HIC = 959, Delta T = 6.6 msec

Max Acceleration = 8.9 g's @ 12.1 msec, Min Acceleration = -48.3 g's @ 6.4 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 24.3 kph @ 115.1 msec, Impact Velocity = 24.3 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

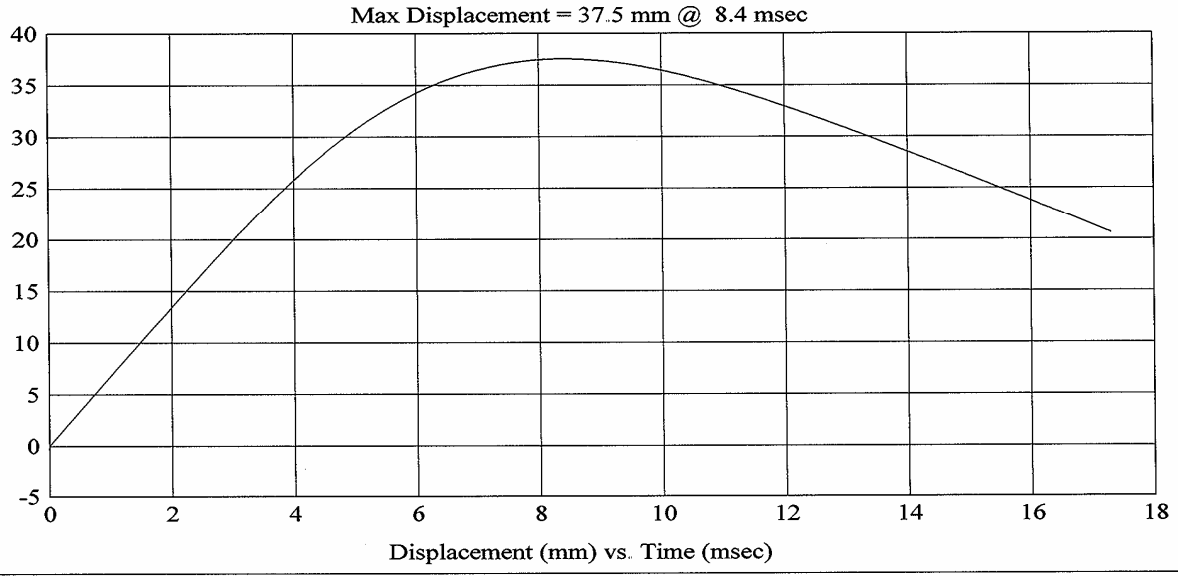
Customer: DOT/NHTSA
Test # 5
FM6228
Additional Desc: N/A

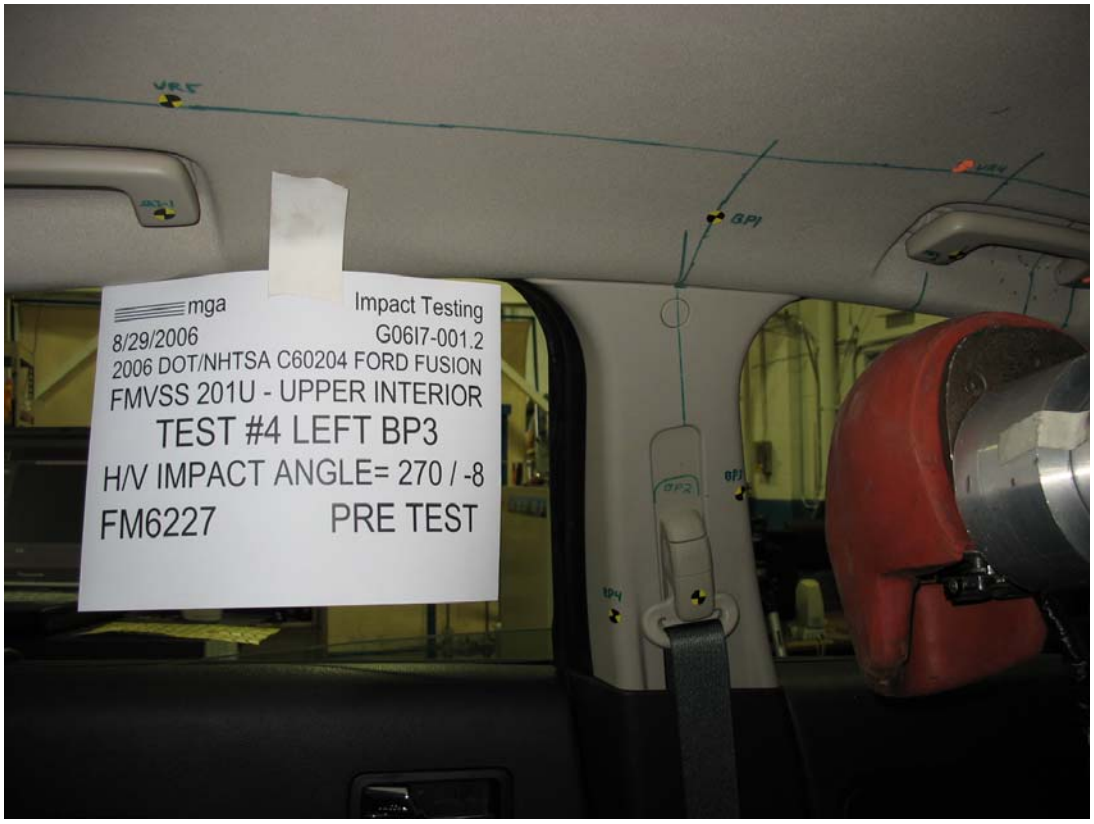
Vehicle Program : C60204 Ford Fusion

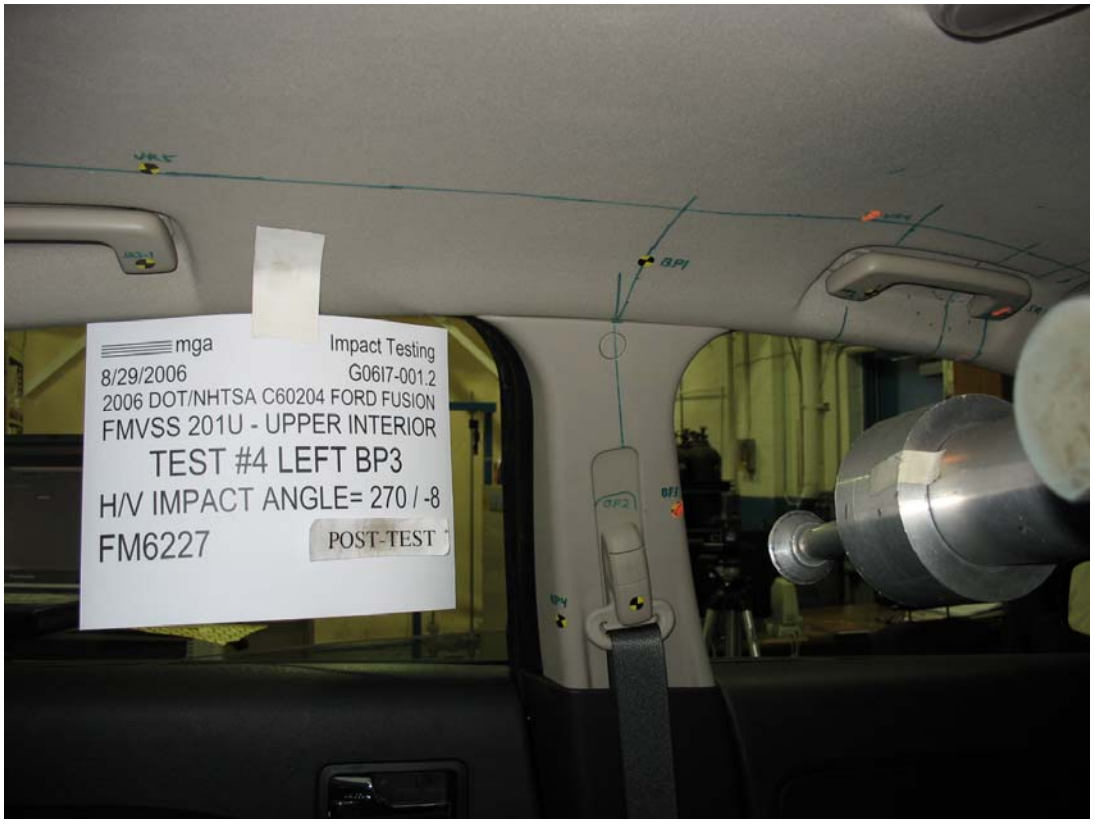
Test Date: 8/29/2006

Model Year: 2006
Target: BP1
Vehicle Side: Left
Horz/Vert Angle: 270/20

HIC(d) = 890, HIC = 959, Delta T = 6.6 msec




mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #4 LEFT BP3
H/V IMPACT ANGLE= 270 / -8
FM6227
PRE TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #4 LEFT BP3
H/V IMPACT ANGLE= 270 / -8
FM6227
POST-TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #4 LEFT BP3
H/V IMPACT ANGLE= 270 / -8
FM6227
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#4

Target (Vehicle Side): BP3Left

Temperature:20C

MGA Test Reference No.:FM6227

Humidity:56%

Approach Horizontal Angles:270°

Time of Test:4:04 PM

Approach Vertical Angles:-8°

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
608	586	8.7	23.6	29	12 Left

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.4	1.29	1.29
Y	6	J35919	94.4	1.79	1.79
Z	7	J22664	94.3	1.30	1.31

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

No Visible Damage

Recorded By: _____ Approved By*: Helen Q. Kale Date: 8/29/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

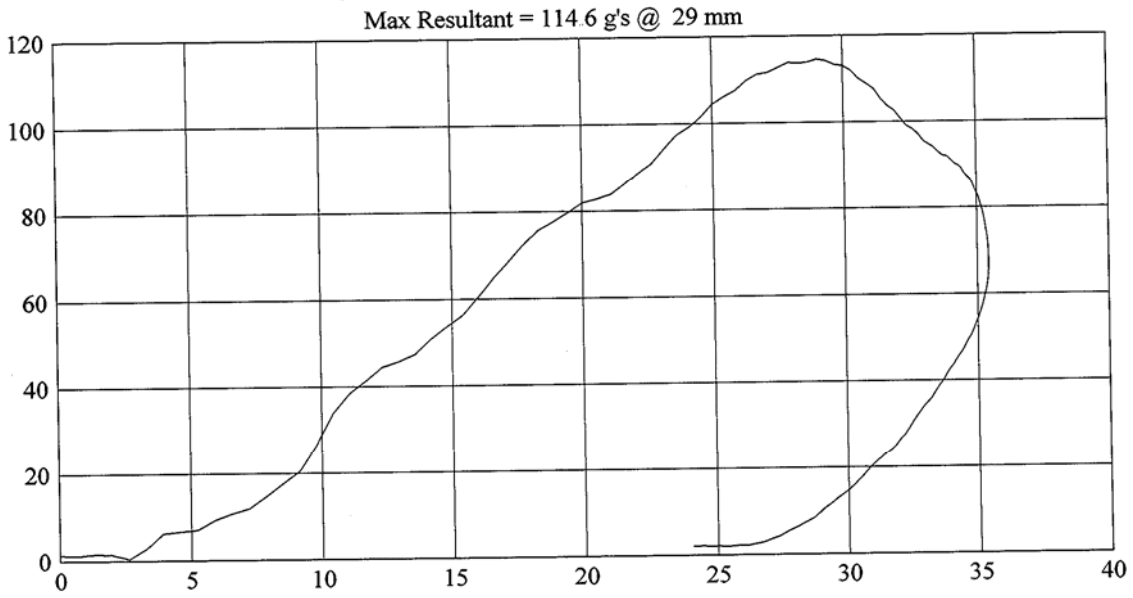
Customer: DOT/NHTSA
Test # 4
FM6227
Additional Desc: N/A

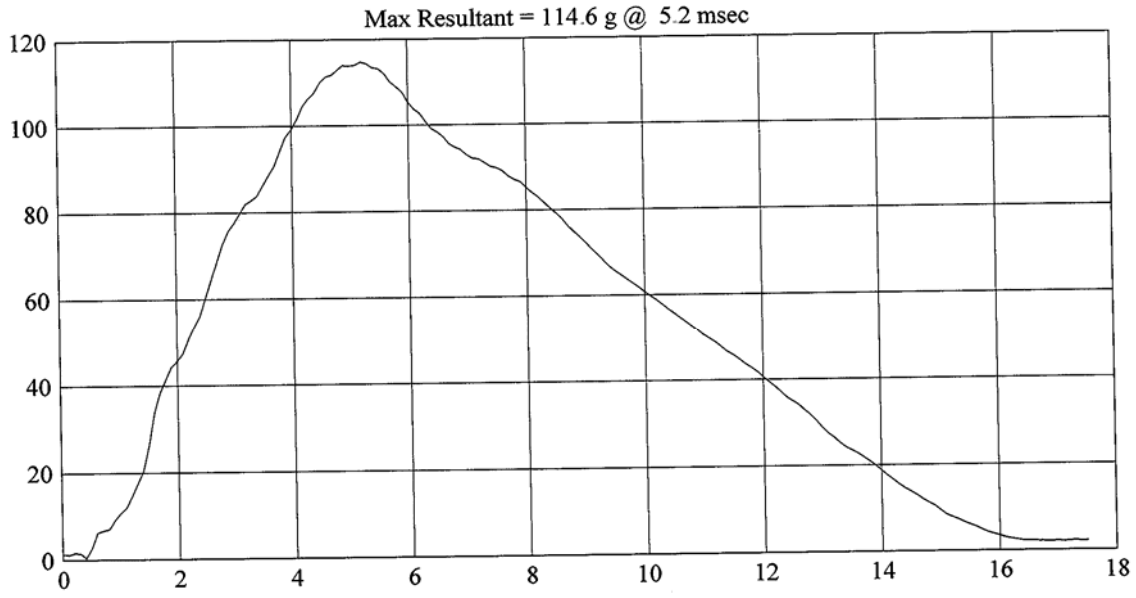
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP3
Vehicle Side: Left
Horz/Vert Angle: 270/-8

HIC(d) = 608, HIC = 586, Delta T = 8.7 msec





FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 4
FM6227
Additional Desc: N/A

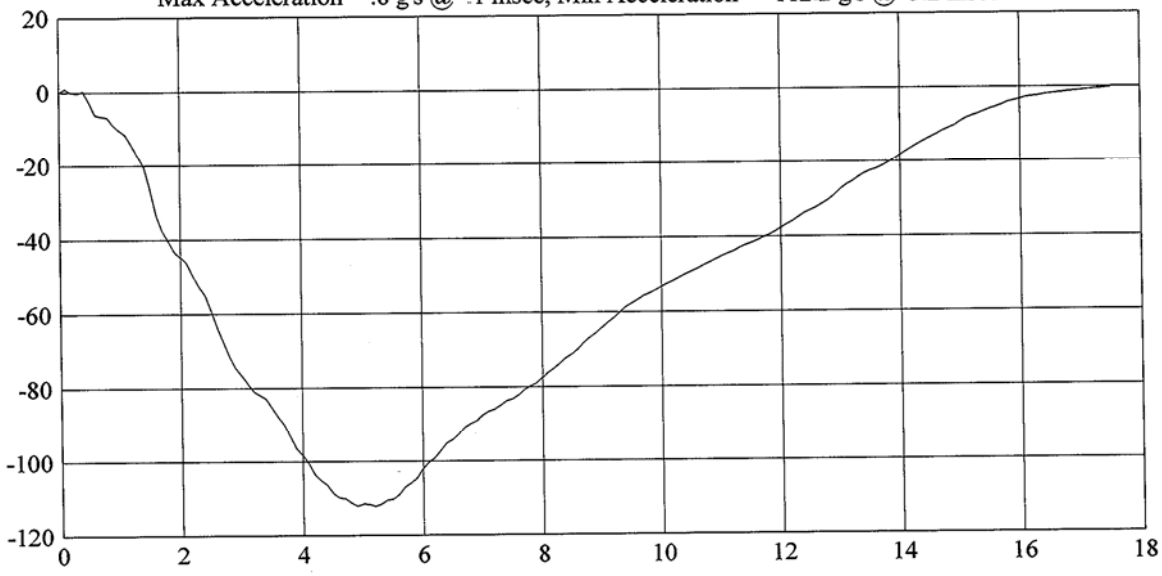
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP3
Vehicle Side: Left
Horz/Vert Angle: 270/-8

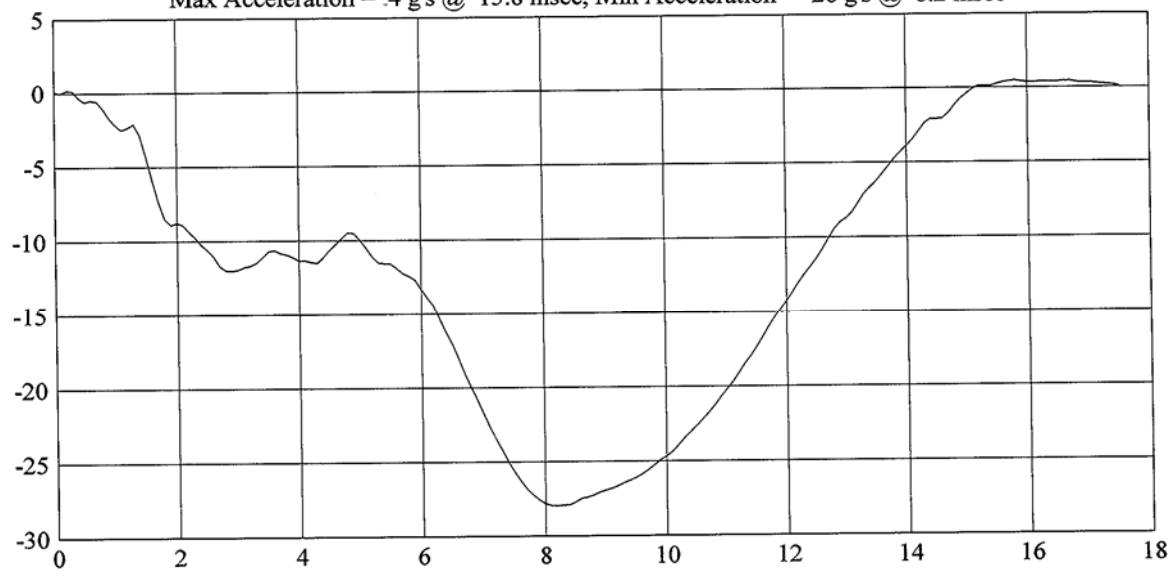
HIC(d) = 608, HIC = 586, Delta T = 8.7 msec

Max Acceleration = .8 g's @ .1 msec, Min Acceleration = -112.2 g's @ 5.2 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = .4 g's @ 15.8 msec, Min Acceleration = -28 g's @ 8.2 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

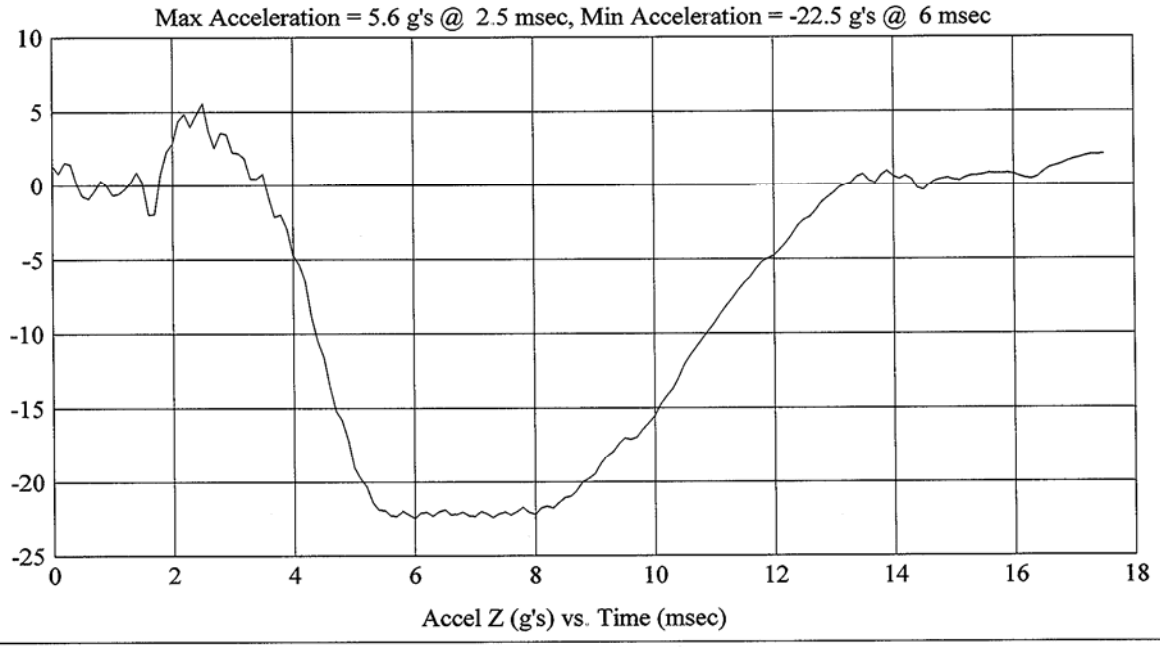
Customer: DOT/NHTSA
Test # 4
FM6227
Additional Desc: N/A

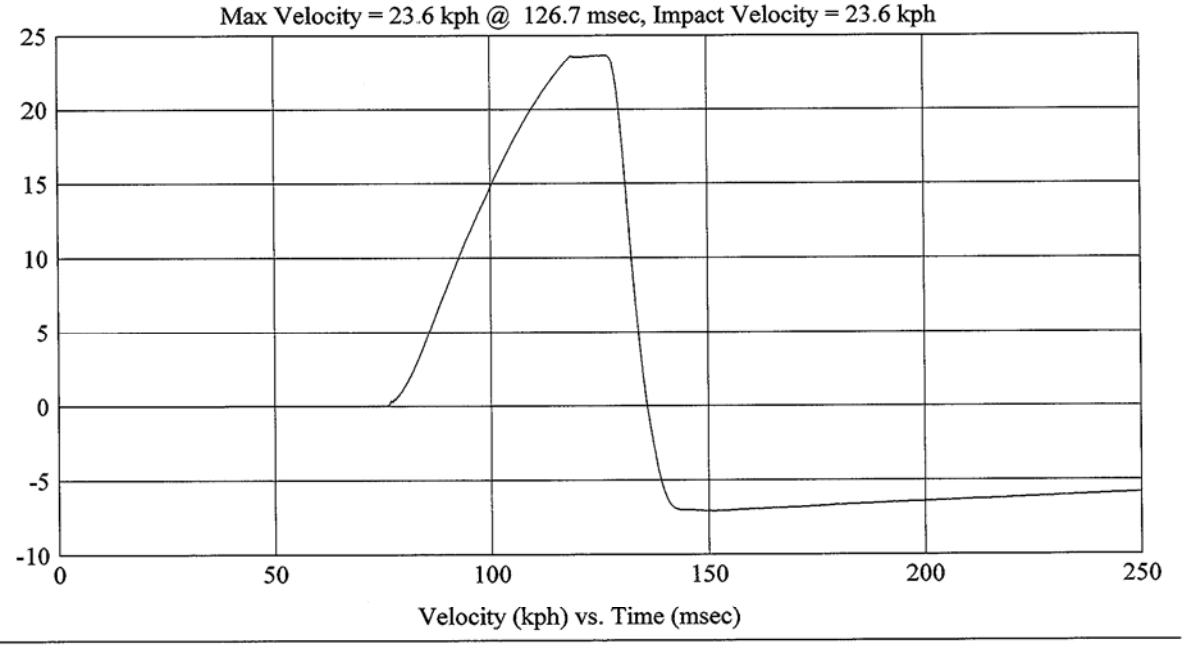
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP3
Vehicle Side: Left
Horz/Vert Angle: 270/-8

HIC(d) = 608, HIC = 586, Delta T = 8.7 msec





FMH
G06I7-001.2

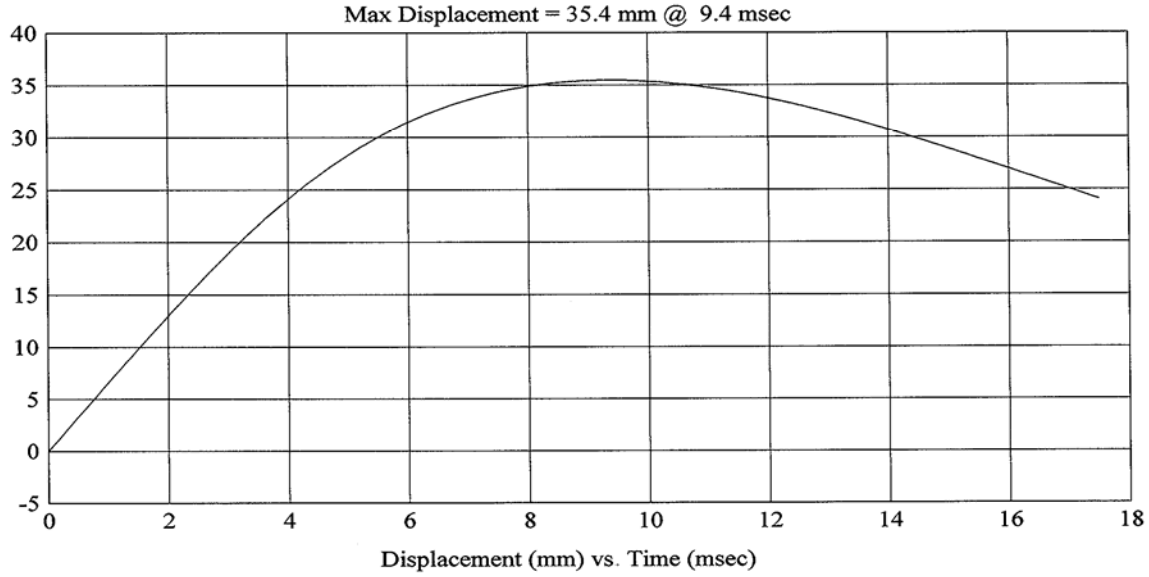
Customer: DOT/NHTSA
Test # 4
FM6227
Additional Desc: N/A

Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: BP3
Vehicle Side: Left
Horz/Vert Angle: 270/-8

HIC(d) = 608, HIC = 586, Delta T = 8.7 msec




mga
Impact Testing
G06I7-001.2
8/31/2006
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #11 RIGHT BP4
H/V IMPACT ANGLE= 130 / -9
FM6234
PRE TEST
BRAKE STOPS


mga
Impact Testing
8/31/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #11 RIGHT BP4
H/V IMPACT ANGLE= 130 / -9
FM6234
POST TEST


mga
Impact Testing
8/31/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #11 RIGHT BP4
H/V IMPACT ANGLE= 130 / -9
FM6234
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#11

Target (Vehicle Side): BP4Right

Temperature:21C

MGA Test Reference No.:FM6234

Humidity:49%

Approach Horizontal Angles:130°

Time of Test:9:32 AM

Approach Vertical Angles:-9°

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
707	716	8.3	23.9	32	17 Left

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.4	1.29	1.28
Y	6	J35919	94.4	1.79	1.78
Z	7	J22664	94.3	1.30	1.31

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

No Visible Damage

Recorded By: _____ Approved By*: Helen A. Kalata Date: 8/31/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

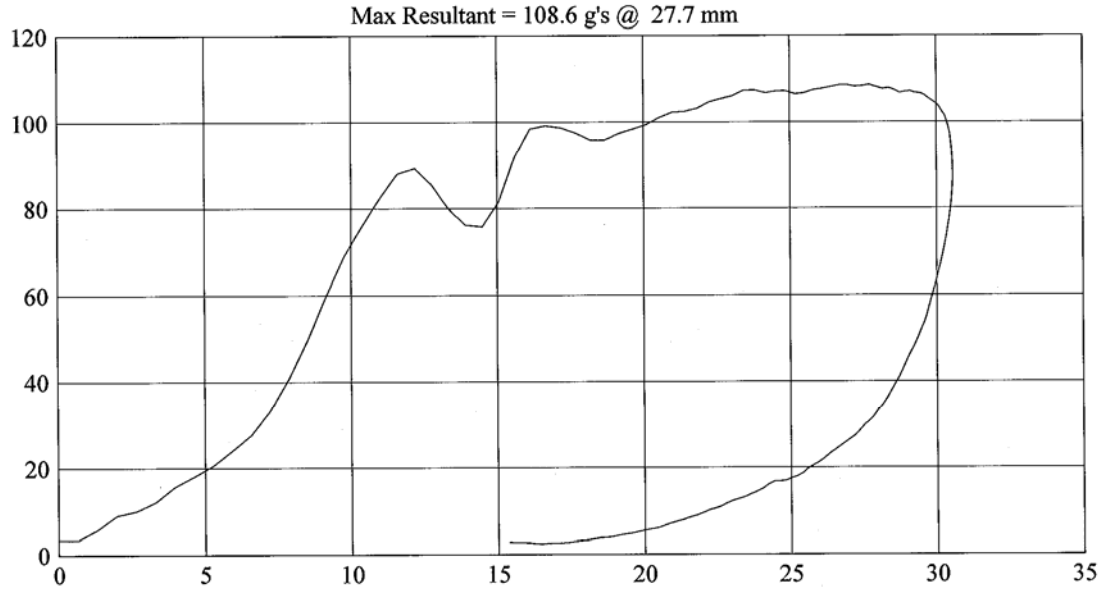
Customer: DOT/NHTSA
Test # 11
FM6234
Additional Desc: N/A

Vehicle Program : C60204 Ford Fusion

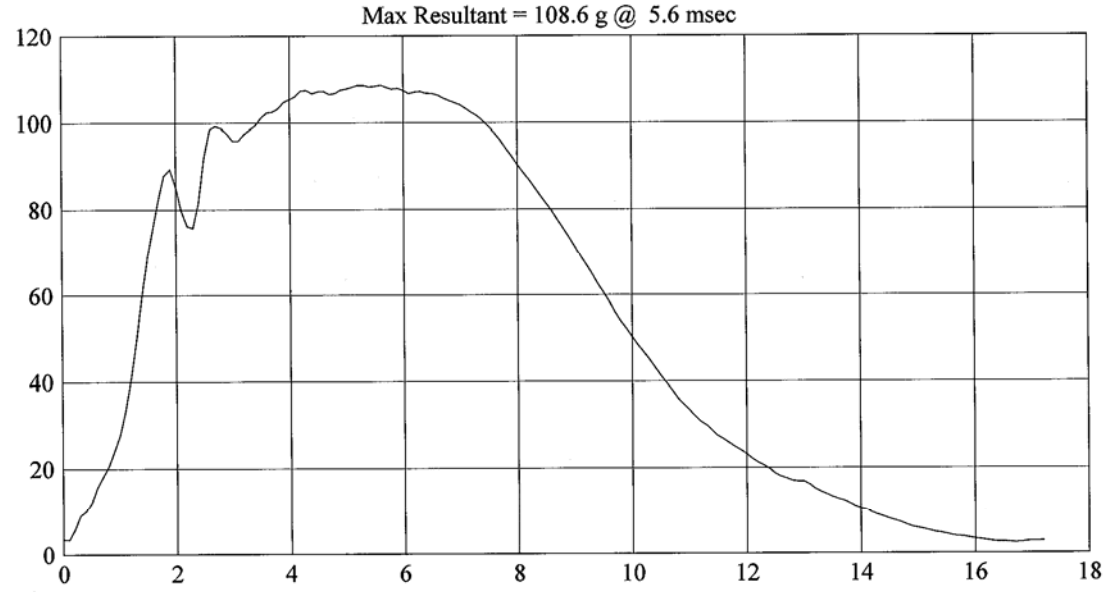
Test Date: 8/31/2006

Model Year: 2006
Target: BP4
Vehicle Side: Right
Horz/Vert Angle: 130/-9

HIC(d) = 707, HIC = 716, Delta T = 8.3 msec



Resultant (g's) vs. Displacement (mm)



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 11
FM6234
Additional Desc: N/A

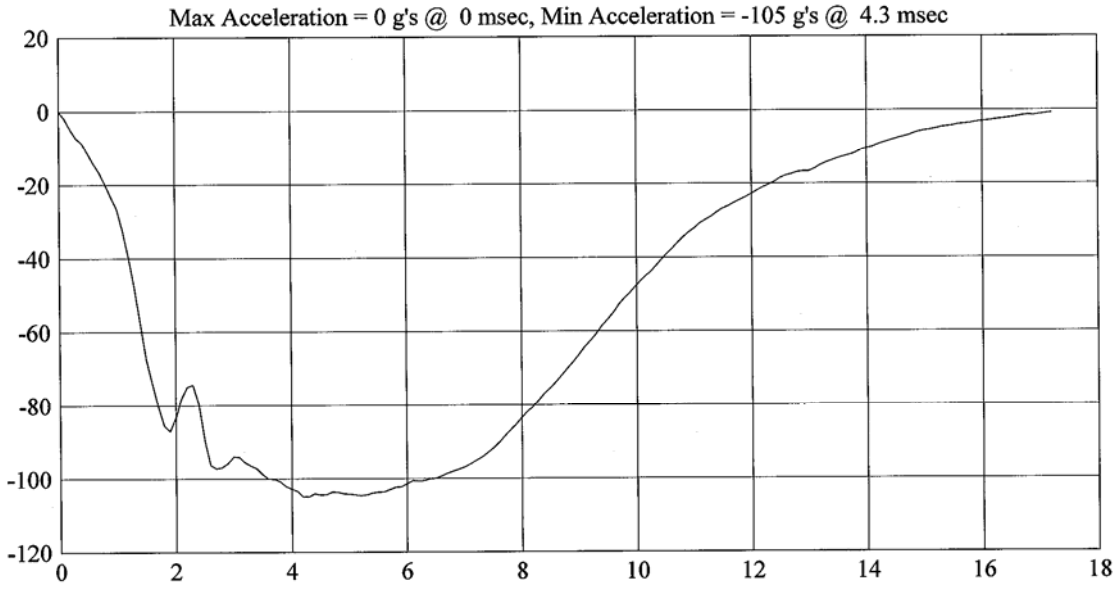
Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: BP4
Vehicle Side: Right
Horz/Vert Angle: 130/-9

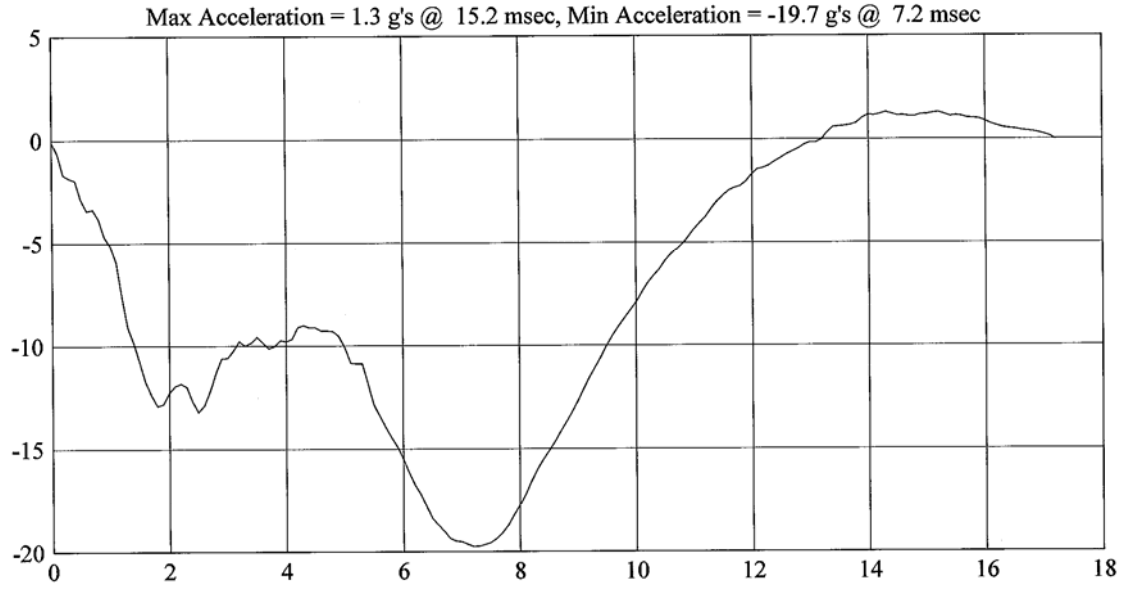
HIC(d) = 707, HIC = 716, Delta T = 8.3 msec

Max Acceleration = 0 g's @ 0 msec, Min Acceleration = -105 g's @ 4.3 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 1.3 g's @ 15.2 msec, Min Acceleration = -19.7 g's @ 7.2 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 11
FM6234
Additional Desc: N/A

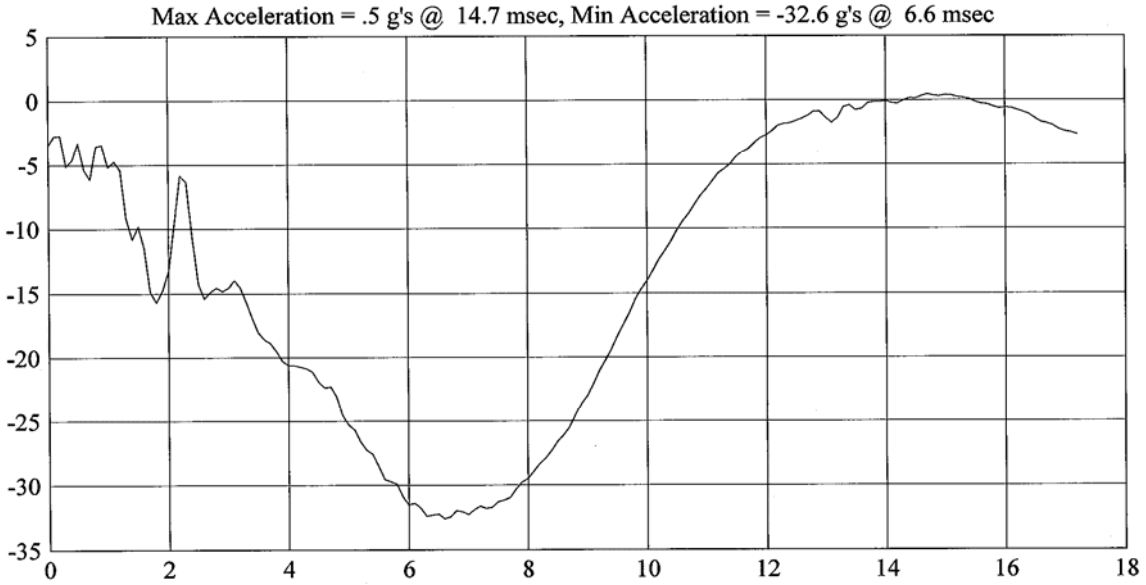
Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: BP4
Vehicle Side: Right
Horz/Vert Angle: 130/-9

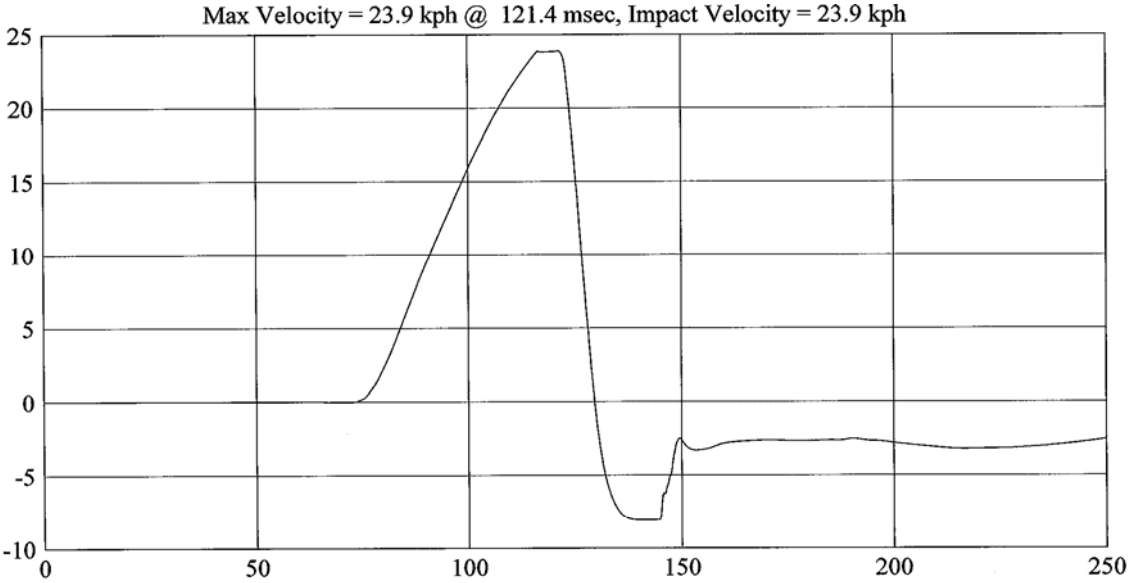
HIC(d) = 707, HIC = 716, Delta T = 8.3 msec

Max Acceleration = .5 g's @ 14.7 msec, Min Acceleration = -32.6 g's @ 6.6 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 23.9 kph @ 121.4 msec, Impact Velocity = 23.9 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 11
FM6234
Additional Desc: N/A

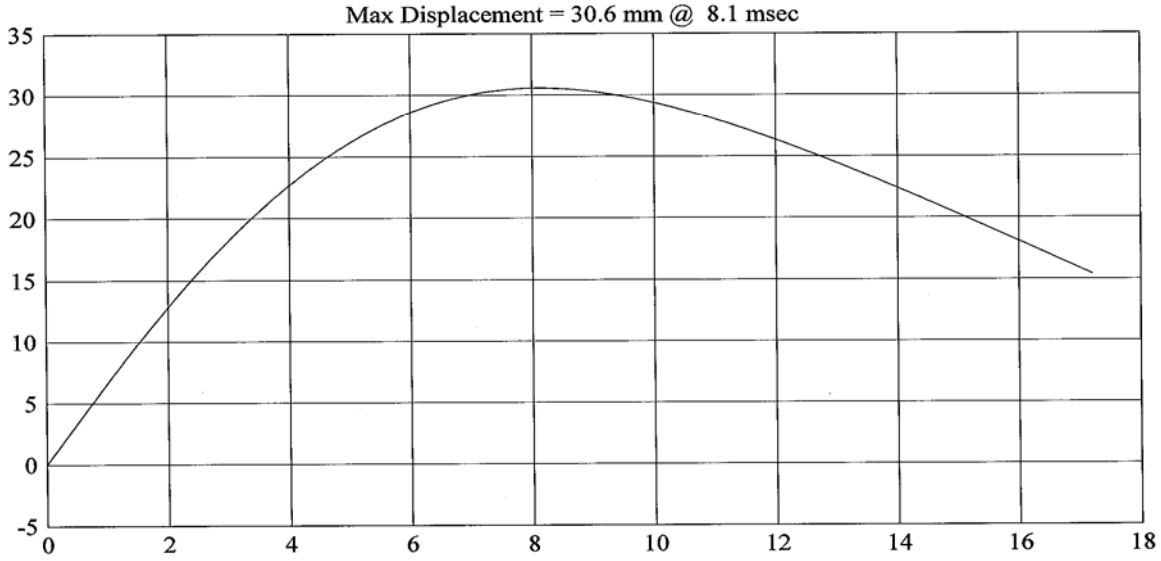
Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: BP4
Vehicle Side: Right
Horz/Vert Angle: 130/-9

HIC(d) = 707, HIC = 716, Delta T = 8.3 msec

Max Displacement = 30.6 mm @ 8.1 msec



Displacement (mm) vs. Time (msec)


mga
8/31/2006
Impact Testing
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #12 RIGHT RP1
H/V IMPACT ANGLE= 67 / 15
FM6235
PRE TEST


mga
Impact Testing
8/31/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #12 RIGHT RP1
H/V IMPACT ANGLE= 67 / 15
FM6235
POST TEST
C60204
FM6235
RIGHT RP1
H/V 67/15


mga
Impact Testing
8/31/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #12 RIGHT RP1
H/V IMPACT ANGLE= 67 / 15
FM6235
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#12

Target (Vehicle Side): RP1Right

Temperature:21C

MGA Test Reference No.:FM6235

Humidity:49%

Approach Horizontal Angles:67°

Time of Test:10:20 AM

Approach Vertical Angles:15°

FMH Serial No:[038]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
552	511	10.3	23.7	55	0

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-108.8	1.29	1.29
Y	6	J36193	102.7	1.79	1.79
Z	7	J36353	97.2	1.31	1.30

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

Headliner Displacement

Recorded By: _____ Approved By*: _____ Date: 8/31/2006

*Only necessary for NHTSA (Government) Compliance testing.

G06I7-001.2

Customer: DOT/NHTSA
Test # 12
FM6235
Additional Desc: N/A

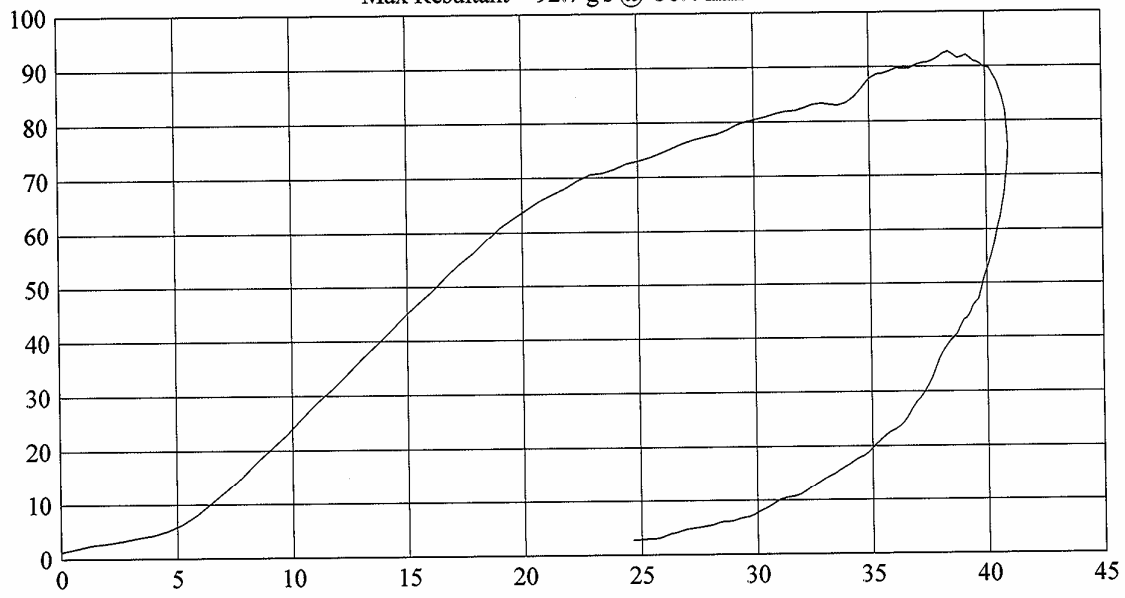
Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 67/15

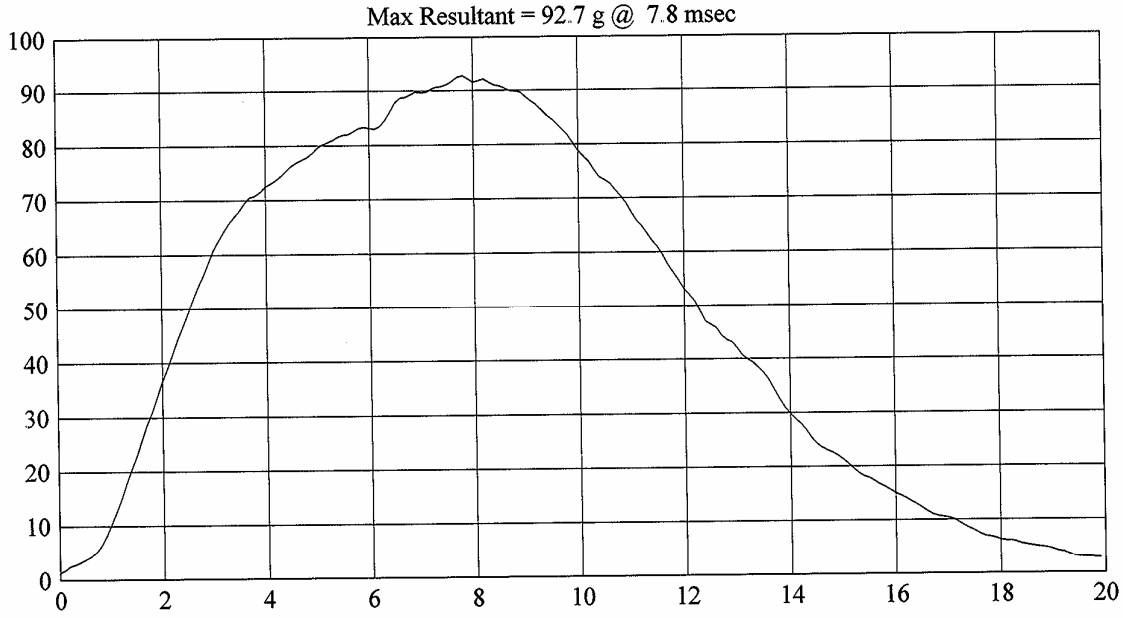
HIC(d) = 552, HIC = 511, Delta T = 10.3 msec

Max Resultant = 92.7 g's @ 38.4 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 92.7 g @ 7.8 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 12
FM6235
Additional Desc: N/A

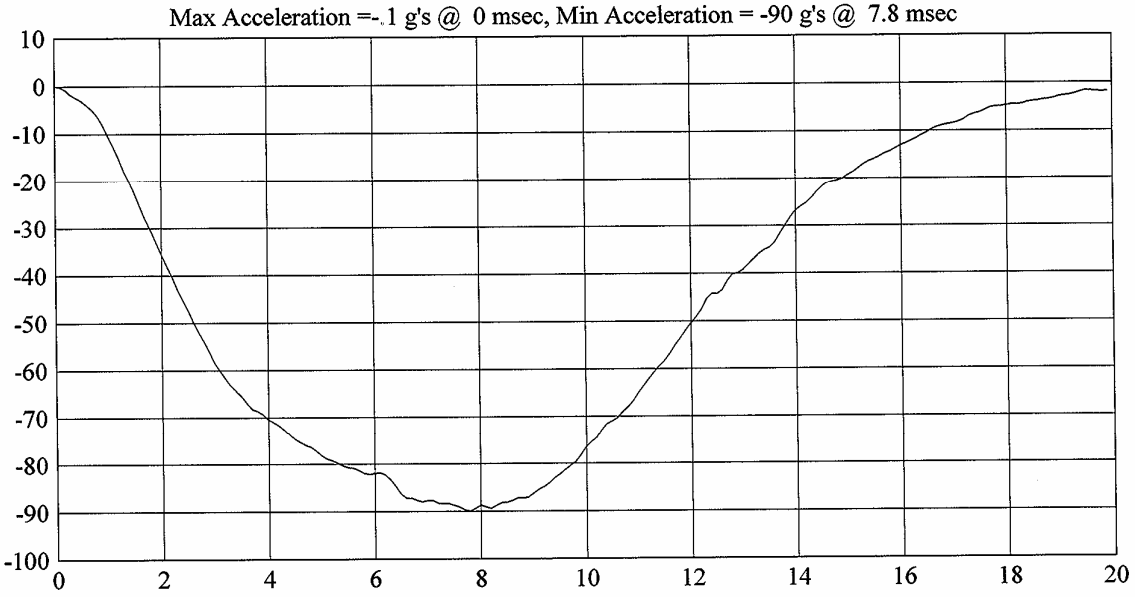
Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 67/15

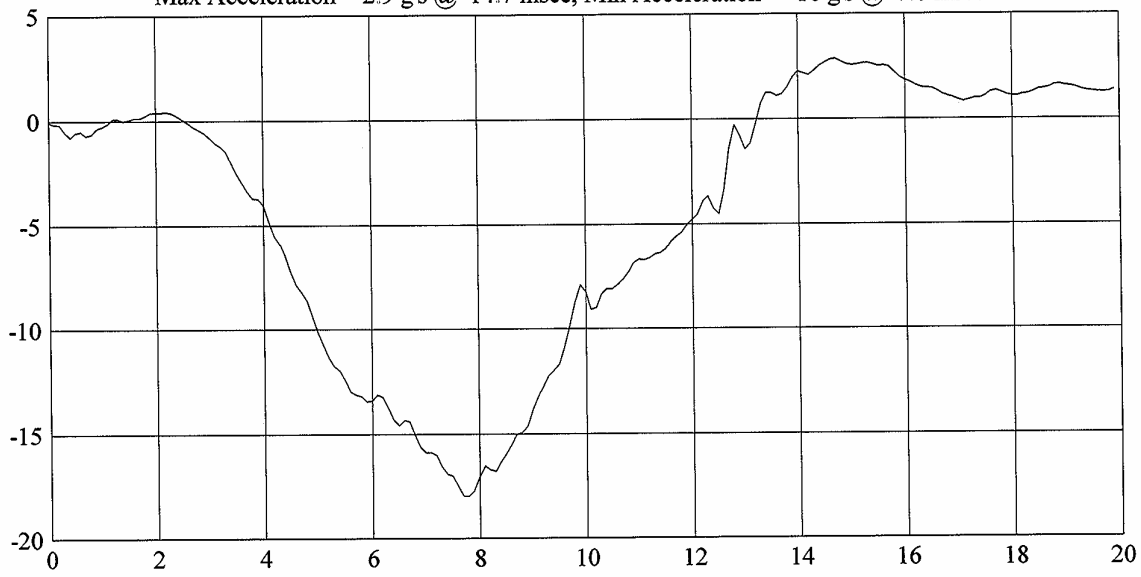
HIC(d) = 552, HIC = 511, Delta T = 10.3 msec

Max Acceleration =-.1 g's @ 0 msec, Min Acceleration = -90 g's @ 7.8 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 2.9 g's @ 14.7 msec, Min Acceleration = -18 g's @ 7.8 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 12
FM6235
Additional Desc: N/A

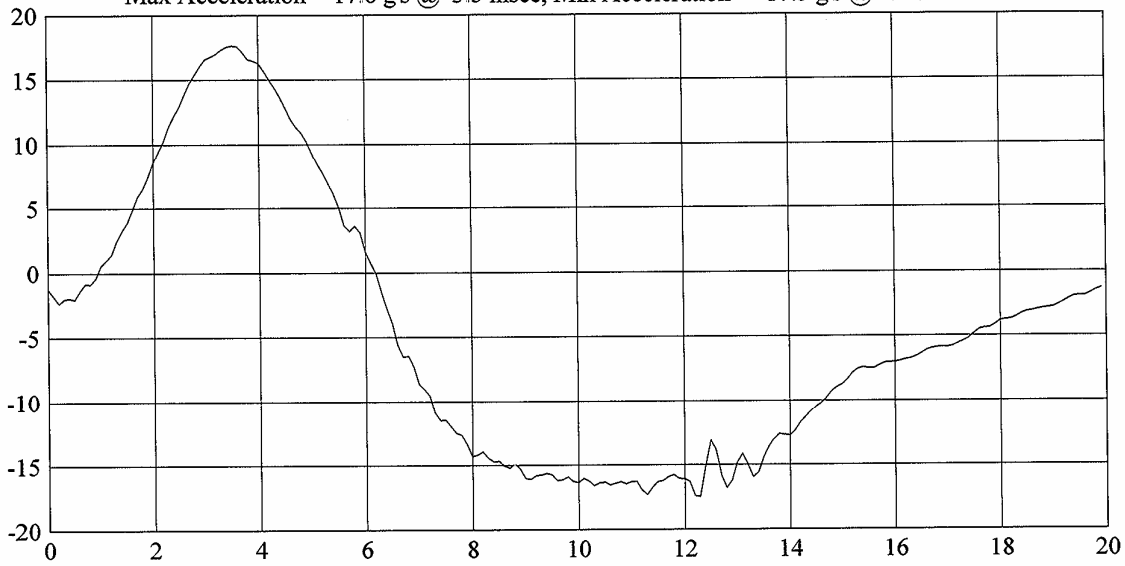
Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 67/15

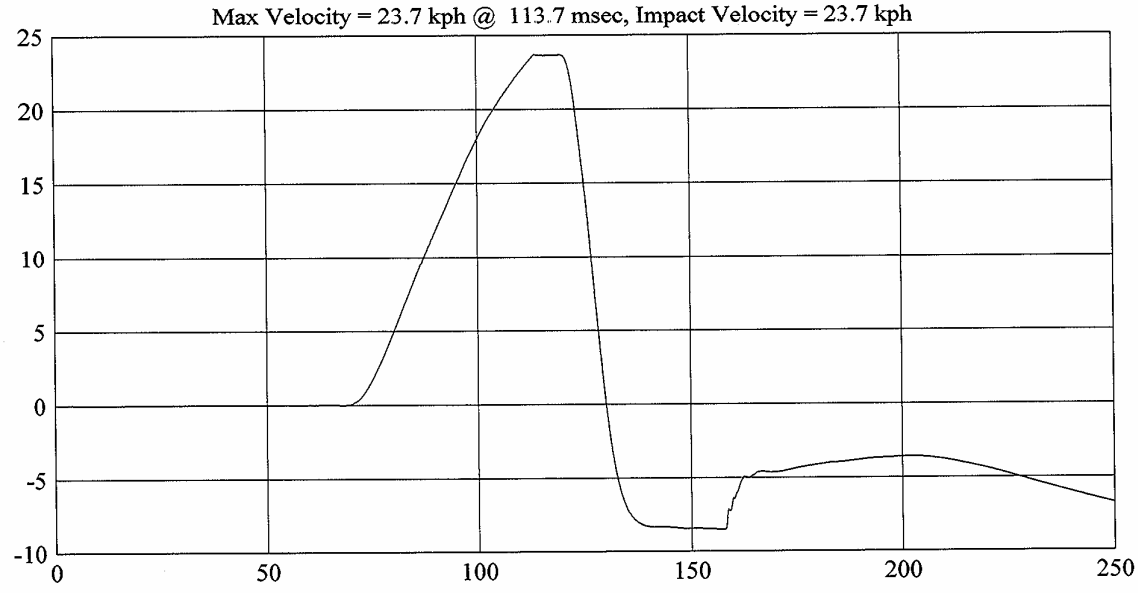
HIC(d) = 552, HIC = 511, Delta T = 10.3 msec

Max Acceleration = 17.6 g's @ 3.5 msec, Min Acceleration = -17.5 g's @ 12.3 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 23.7 kph @ 113.7 msec, Impact Velocity = 23.7 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

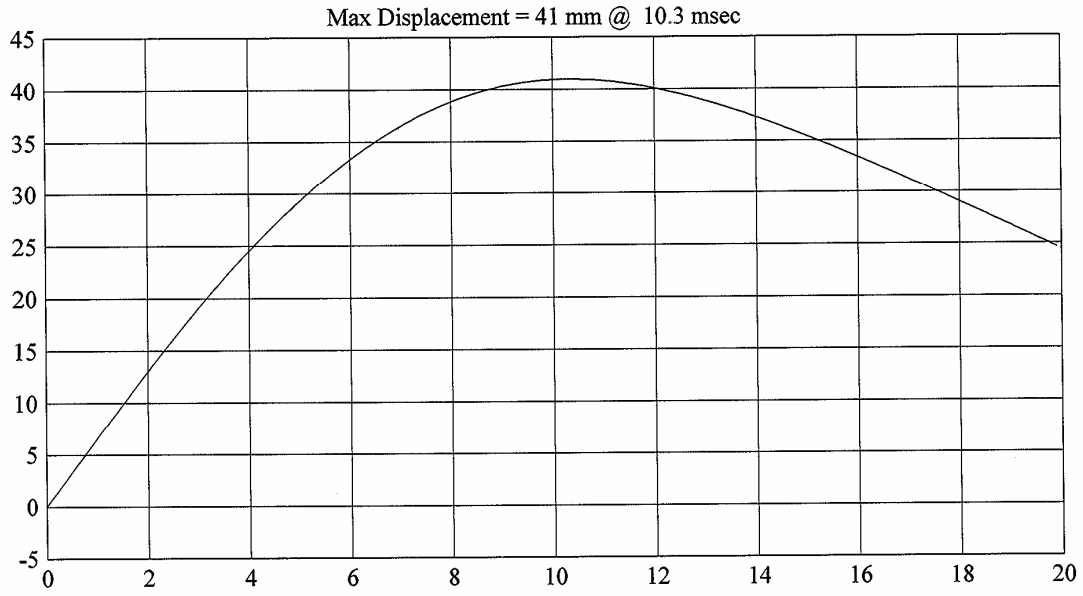
Customer: DOT/NHTSA
Test # 12
FM6235
Additional Desc: N/A

Vehicle Program : C60204 Ford Fusion

Test Date: 8/31/2006

Model Year: 2006
Target: RP1
Vehicle Side: Right
Horz/Vert Angle: 67/15

HIC(d) = 552, HIC = 511, Delta T = 10.3 msec




mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #2 LEFT SR2(B)
H/V IMPACT ANGLE= 270 / 48
FM6225
PRE TEST
C60204
FM6255
LEFT SR2-B


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #2 LEFT SR2(B)
H/V IMPACT ANGLE= 270 / 48
FM6225
POST-TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #2 LEFT SR2(B)
H/V IMPACT ANGLE= 270 / 48
FM6225
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#2

Target (Vehicle Side): SR2(b)Left

Temperature:21C

MGA Test Reference No.:FM6225

Humidity:56%

Approach Horizontal Angles:270°

Time of Test:1:41 PM

Approach Vertical Angles:48°

FMH Serial No:[038]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
727	743	7	24.2	15	0

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-108.8	1.29	1.29
Y	6	J36193	102.7	1.79	1.79
Z	7	J36353	97.2	1.30	1.31

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

No Visible Damage

Recorded By: _____ Approved By*: _____ Date: 8/29/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

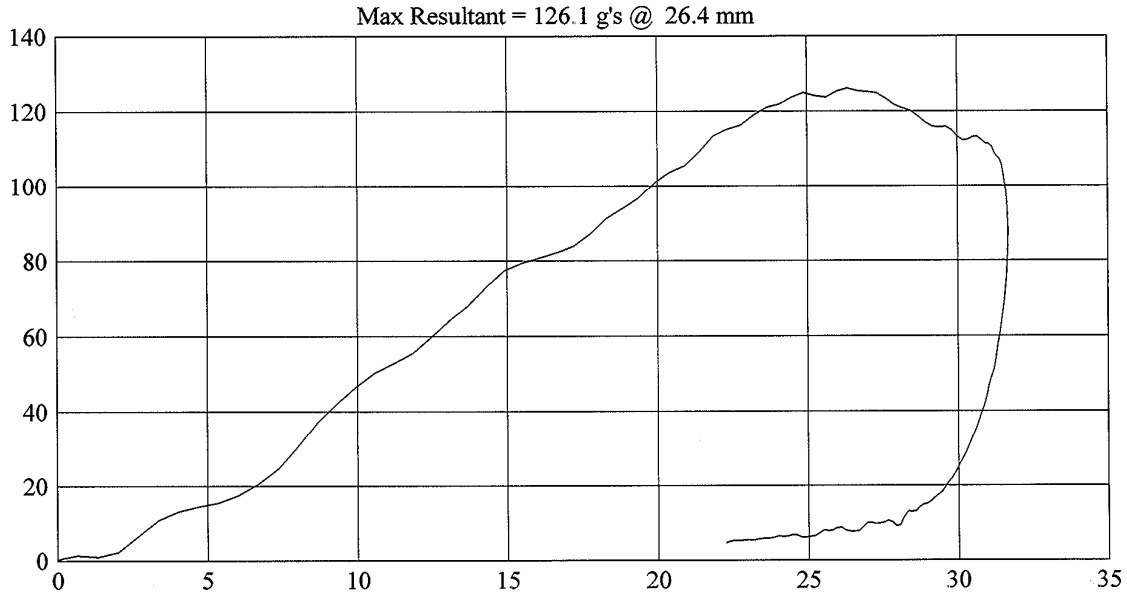
Customer: DOT/NHTSA
Test # 2
FM6225
Additional Desc: N/A

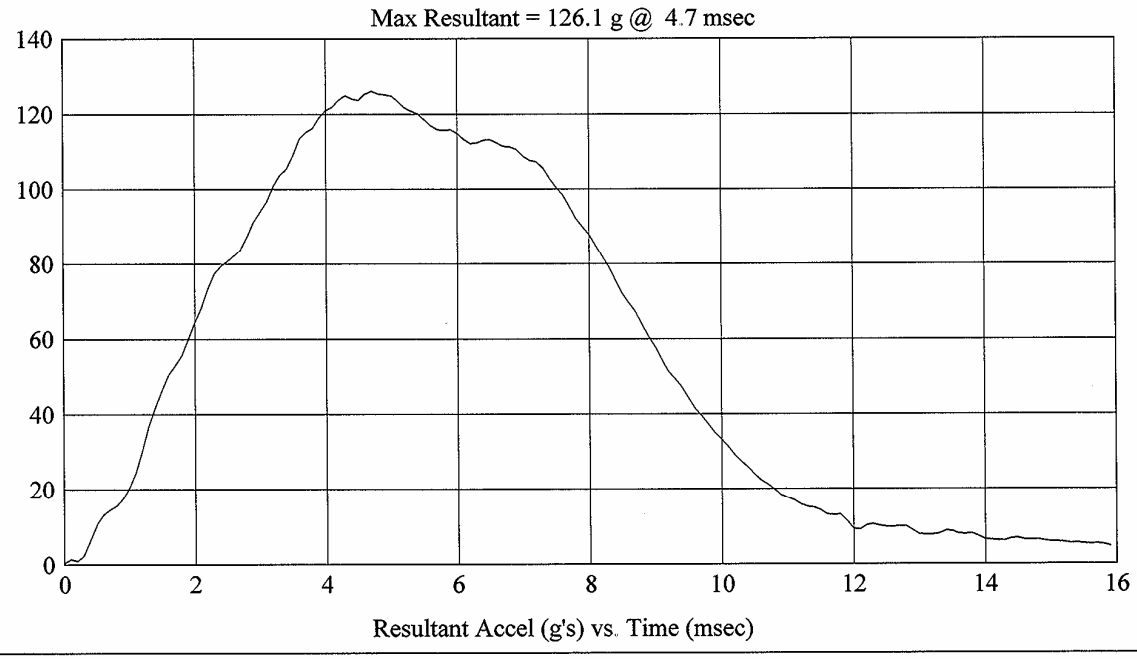
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/48

HIC(d) = 727, HIC = 743, Delta T = 7 msec





FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 2
FM6225
Additional Desc: N/A

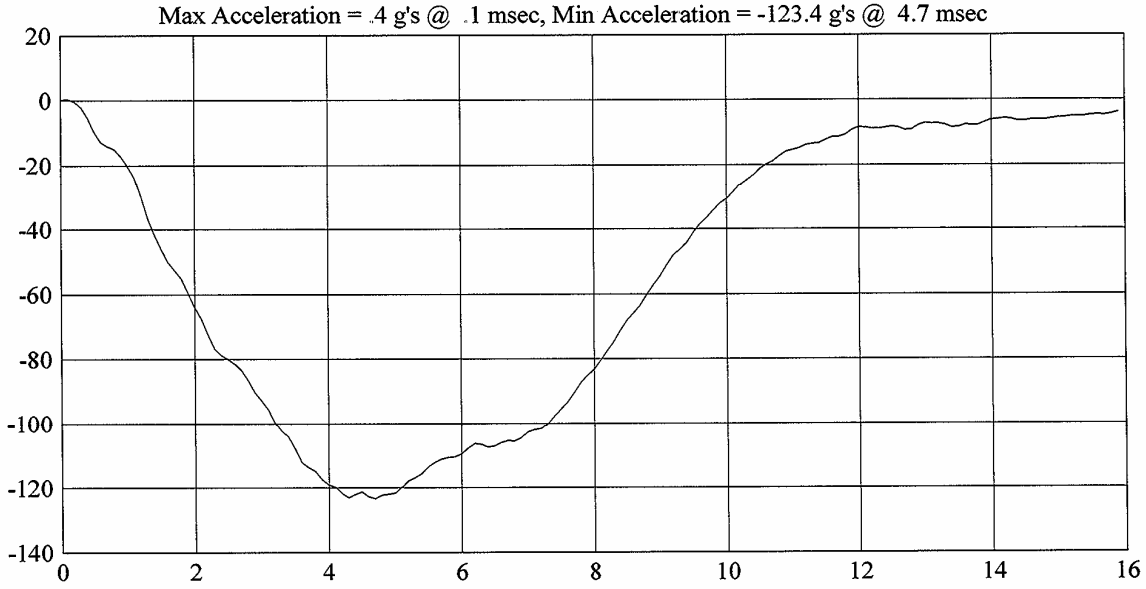
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/48

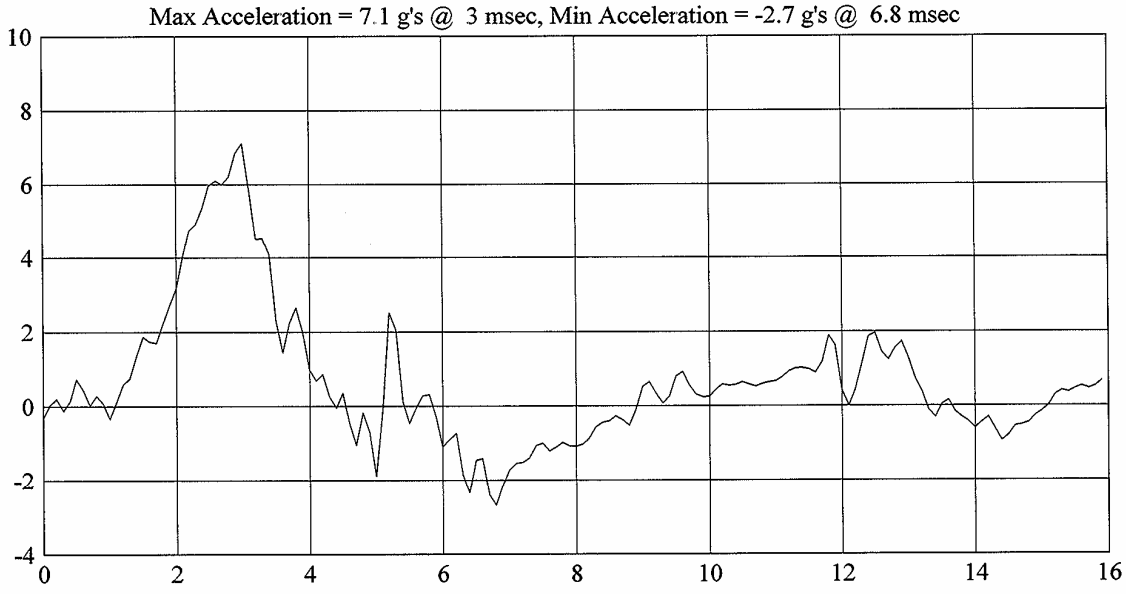
HIC(d) = 727, HIC = 743, Delta T = 7 msec

Max Acceleration = .4 g's @ .1 msec, Min Acceleration = -123.4 g's @ 4.7 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 7.1 g's @ 3 msec, Min Acceleration = -2.7 g's @ 6.8 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 2
FM6225
Additional Desc: N/A

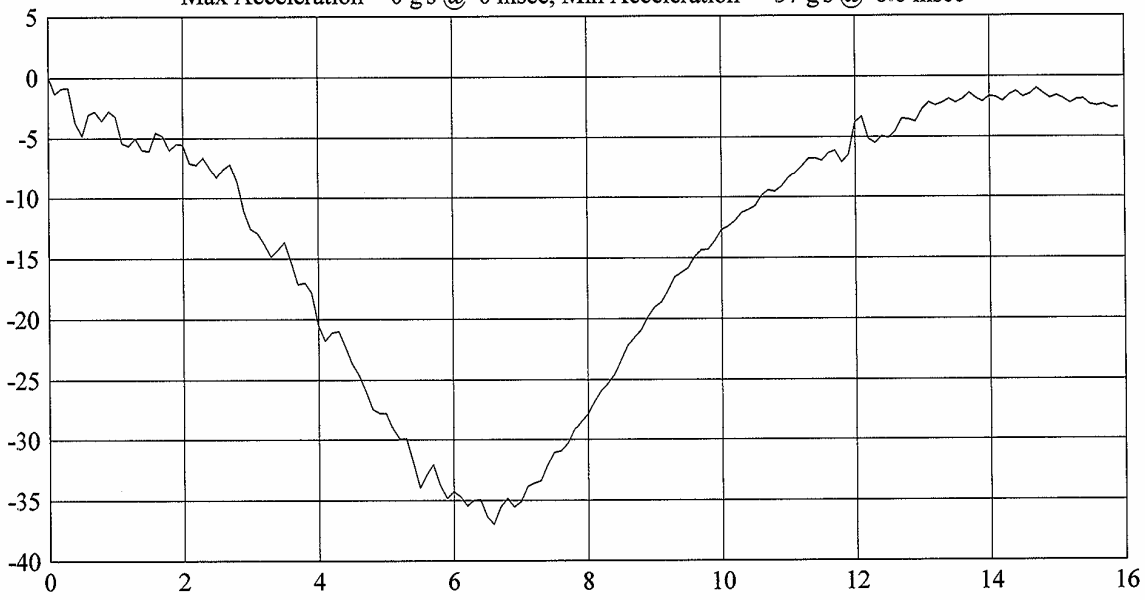
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: SR2(b)
Vehicle Side: Left
Horz/Vert Angle: 270/48

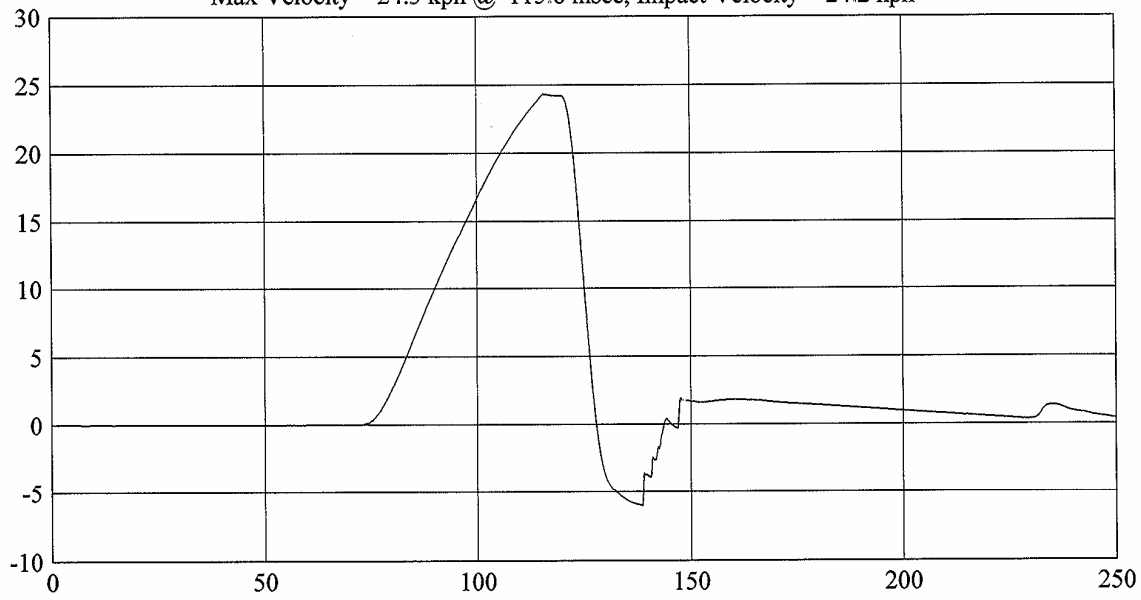
HIC(d) = 727, HIC = 743, Delta T = 7 msec

Max Acceleration = 0 g's @ 0 msec, Min Acceleration = -37 g's @ 6.6 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 24.3 kph @ 115.8 msec, Impact Velocity = 24.2 kph

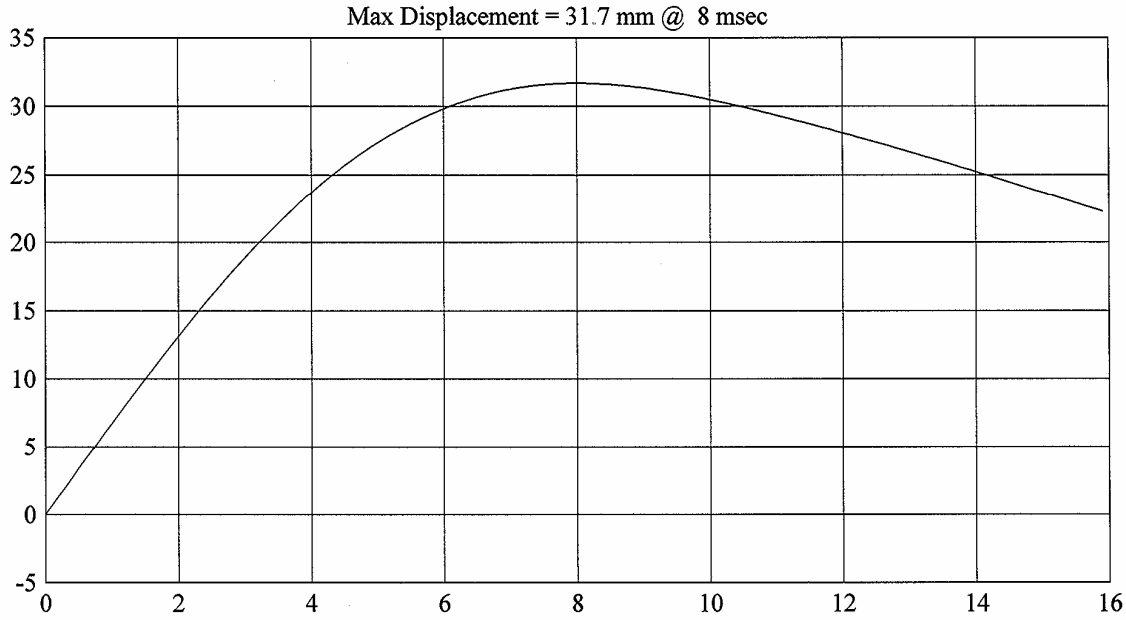


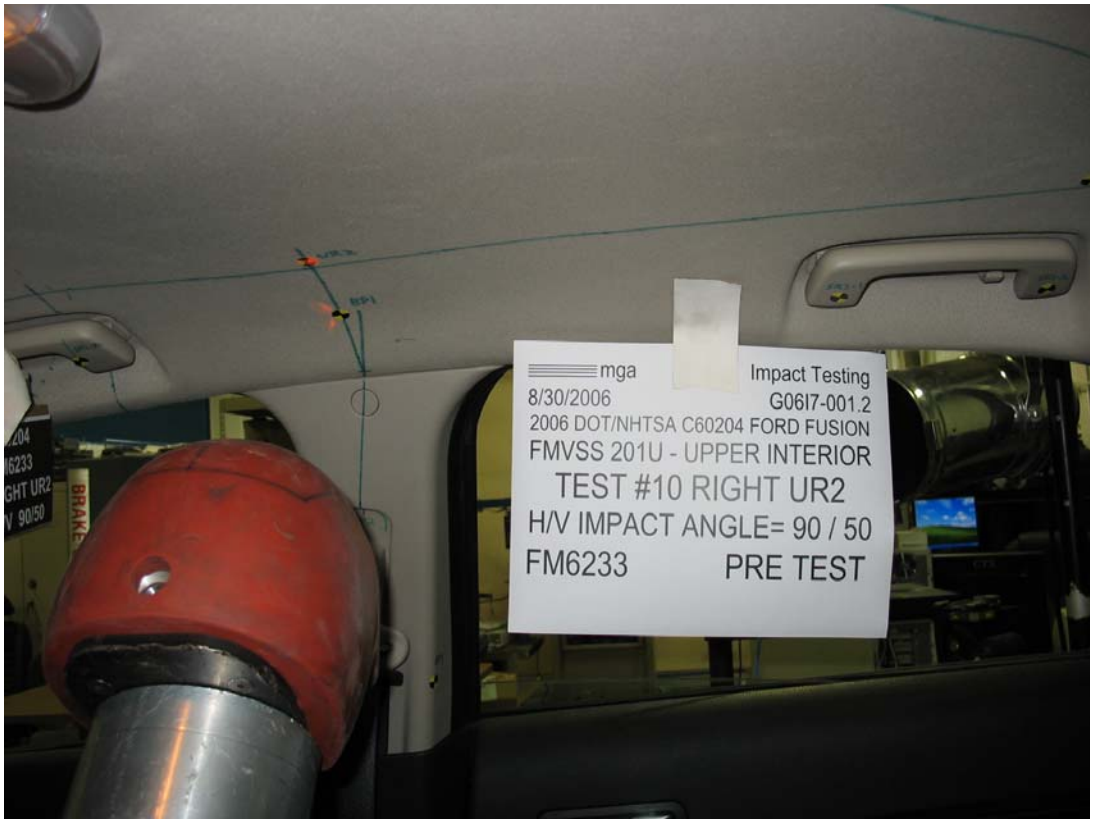
Velocity (kph) vs. Time (msec)

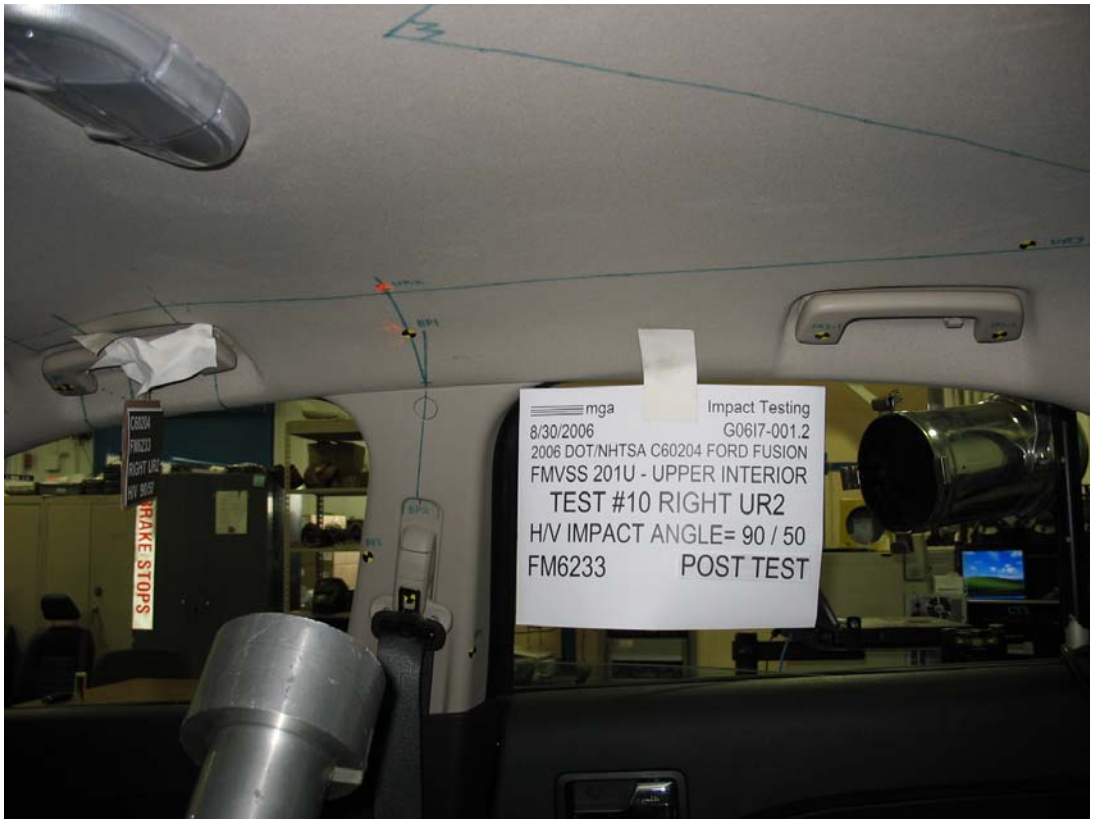
FMH
G06I7-001.2

Customer: DOT/NHTSA	Vehicle Program : C60204 Ford Fusion	Model Year: 2006
Test # 2		Target: SR2(b)
FM6225	Test Date: 8/29/2006	Vehicle Side: Left
Additional Desc: N/A		Horz/Vert Angle: 270/48

HIC(d) = 727, HIC = 743, Delta T = 7 msec




mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #10 RIGHT UR2
H/V IMPACT ANGLE= 90 / 50
FM6233
PRE TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #10 RIGHT UR2
H/V IMPACT ANGLE= 90 / 50
FM6233
POST TEST
BRAKE STOPS


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #10 RIGHT UR2
H/V IMPACT ANGLE= 90 / 50
FM6233
POST TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#10

Target (Vehicle Side): UR2Right

Temperature:21C

MGA Test Reference No.:FM6233

Humidity:56%

Approach Horizontal Angles:90°

Time of Test:4:56 PM

Approach Vertical Angles:50°

FMH Serial No:[038]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
921	1000	6.8	23.3	22	6 Left

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-108.8	1.29	1.29
Y	6	J36193	102.7	1.79	1.79
Z	7	J36353	97.2	1.31	1.31

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

No Visible Damage

Recorded By: _____ Approved By*: _____ Date: 8/30/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

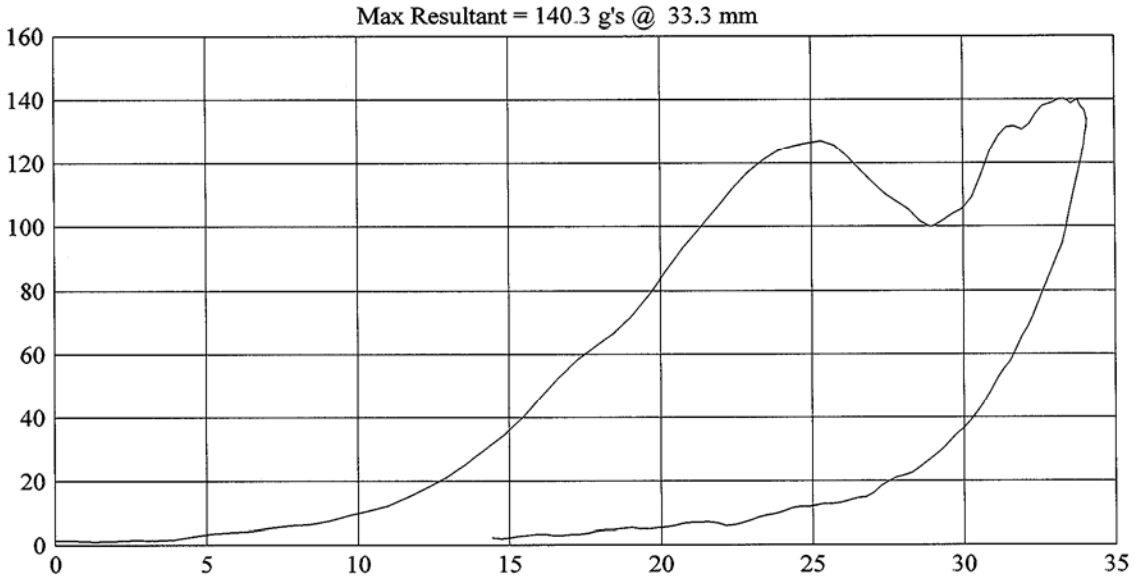
Customer: DOT/NHTSA
Test # 10
FM6233
Additional Desc: N/A

Vehicle Program : C60204 Ford Fusion

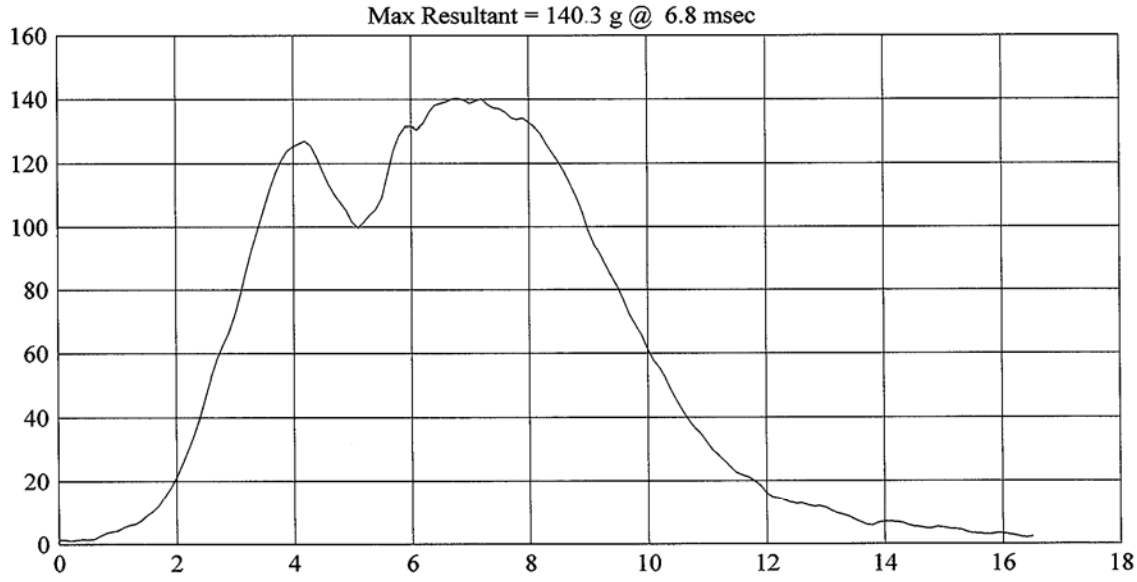
Test Date: 8/30/2006

Model Year: 2006
Target: UR2
Vehicle Side: Right
Horz/Vert Angle: 90/50

HIC(d) = 921, HIC = 1000, Delta T = 6.8 msec



Resultant (g's) vs. Displacement (mm)



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 10
FM6233
Additional Desc: N/A

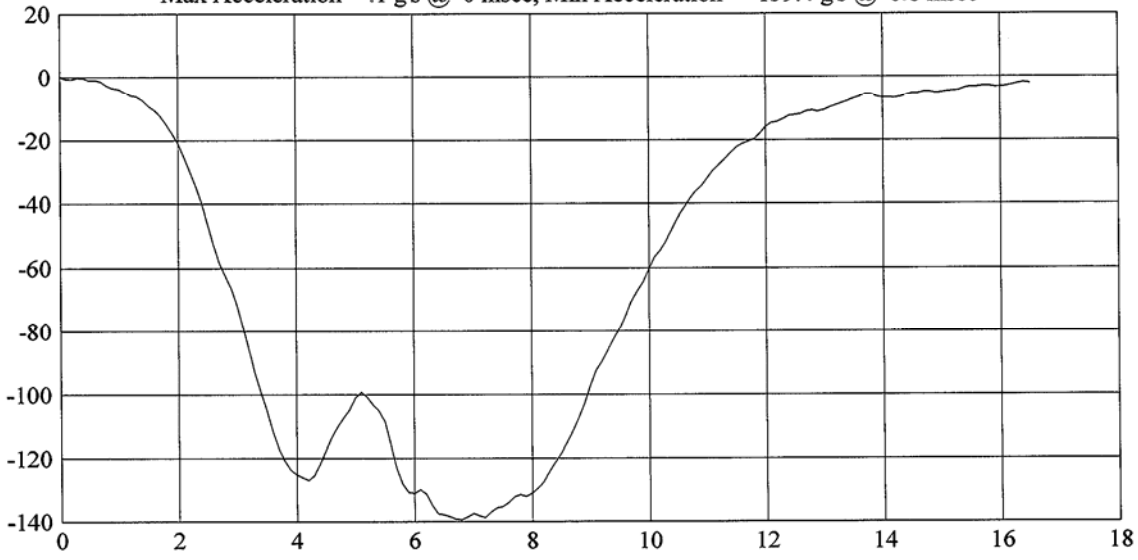
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR2
Vehicle Side: Right
Horz/Vert Angle: 90/50

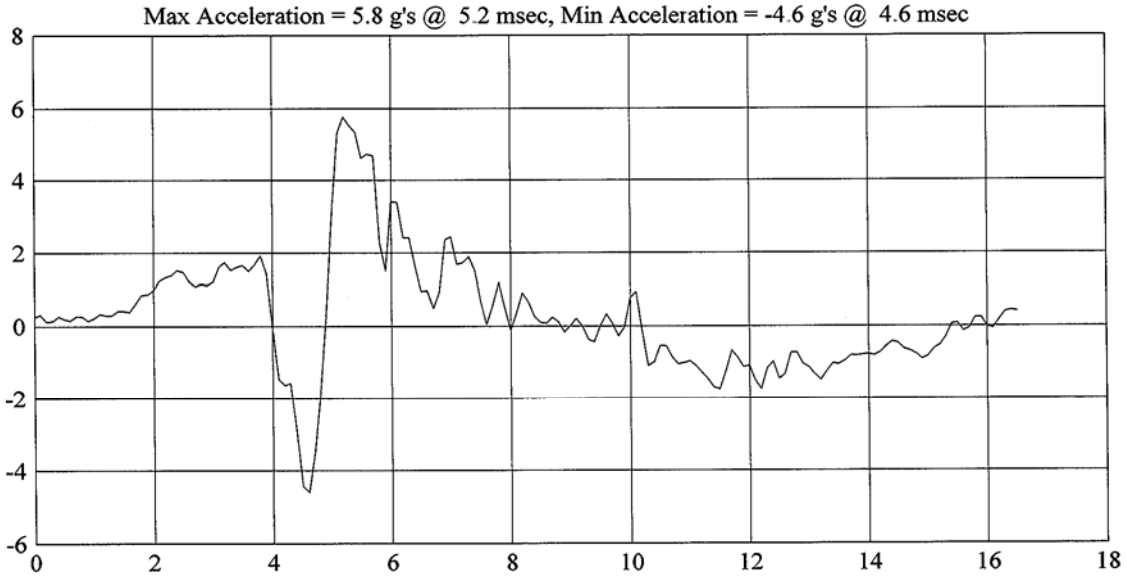
HIC(d) = 921, HIC = 1000, Delta T = 6.8 msec

Max Acceleration = .1 g's @ 0 msec, Min Acceleration = -139.4 g's @ 6.8 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 5.8 g's @ 5.2 msec, Min Acceleration = -4.6 g's @ 4.6 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 10
FM6233
Additional Desc: N/A

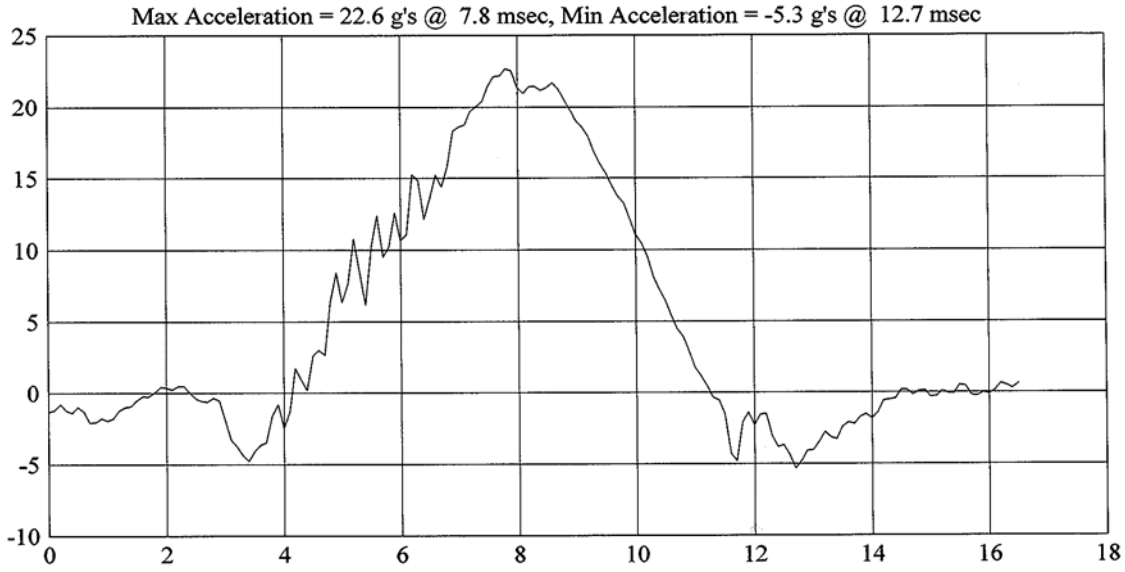
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR2
Vehicle Side: Right
Horz/Vert Angle: 90/50

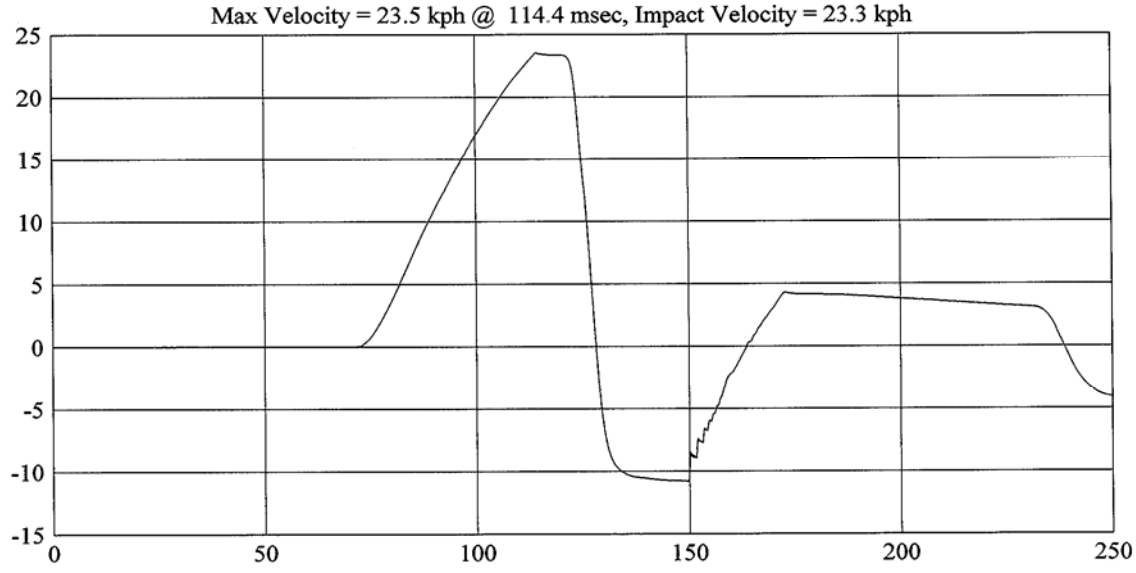
HIC(d) = 921, HIC = 1000, Delta T = 6.8 msec

Max Acceleration = 22.6 g's @ 7.8 msec, Min Acceleration = -5.3 g's @ 12.7 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 23.5 kph @ 114.4 msec, Impact Velocity = 23.3 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 10
FM6233
Additional Desc: N/A

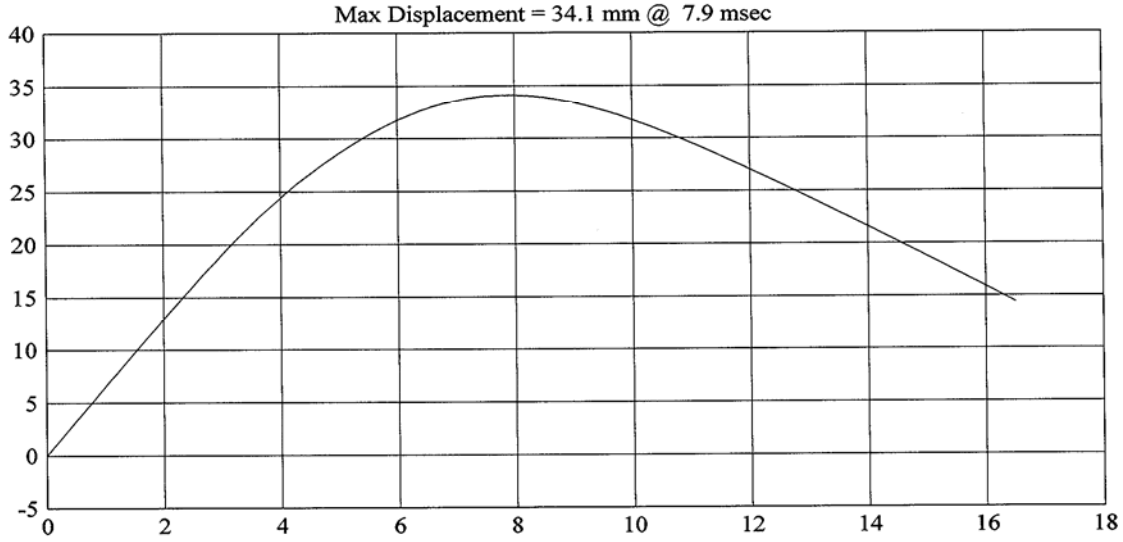
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR2
Vehicle Side: Right
Horz/Vert Angle: 90/50

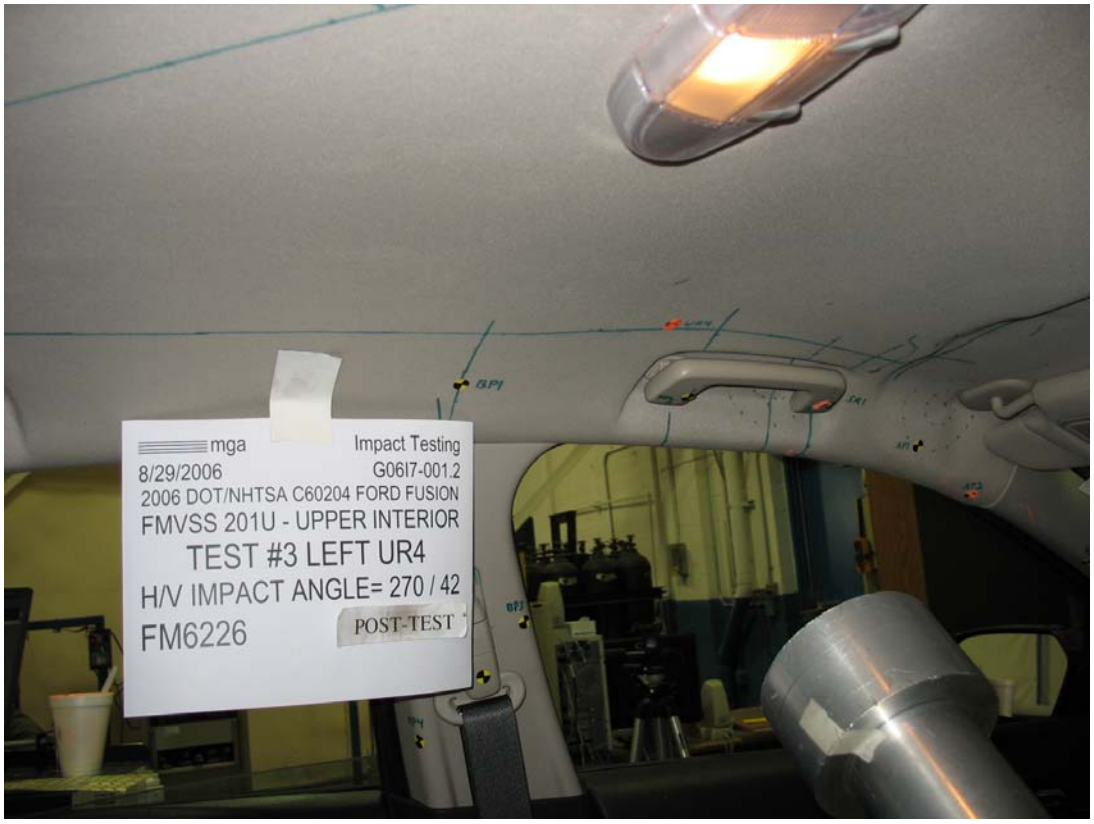
HIC(d) = 921, HIC = 1000, Delta T = 6.8 msec

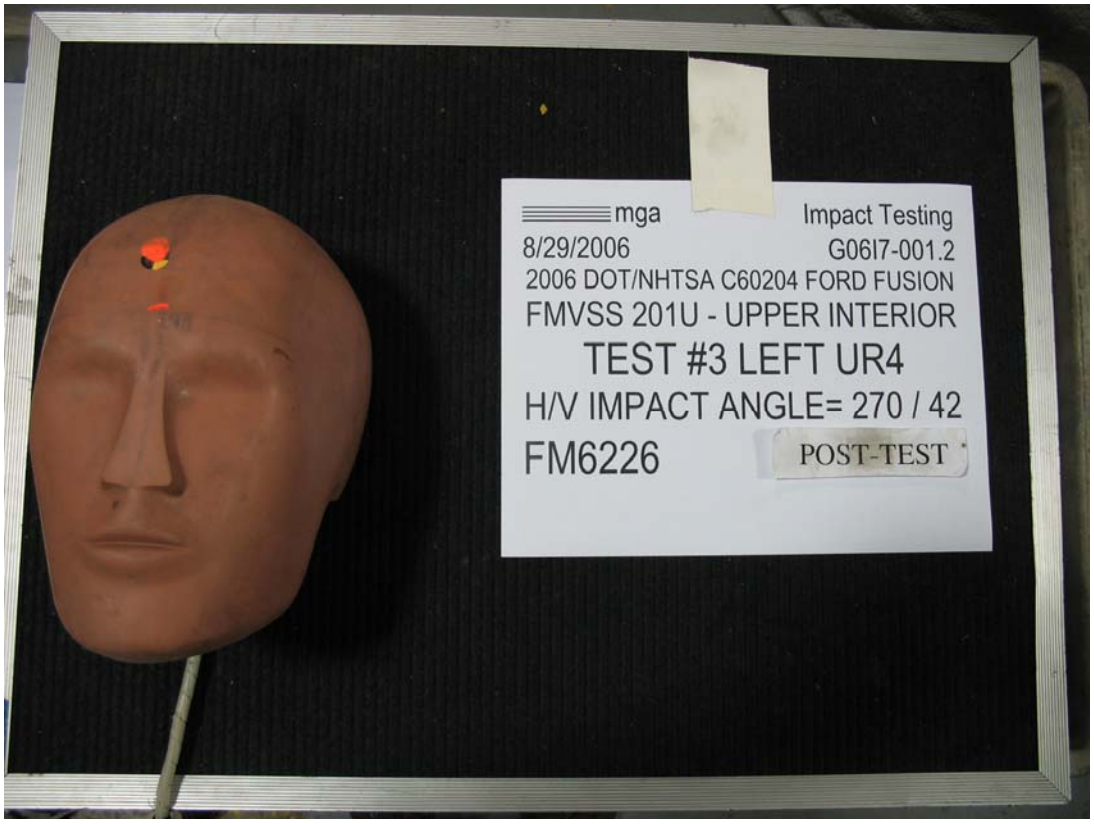
Max Displacement = 34.1 mm @ 7.9 msec



Displacement (mm) vs. Time (msec)


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #3 LEFT UR4
H/V IMPACT ANGLE= 270 / 42
FM6226
PRE TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #3 LEFT UR4
H/V IMPACT ANGLE= 270 / 42
FM6226
POST-TEST


mga
Impact Testing
8/29/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #3 LEFT UR4
H/V IMPACT ANGLE= 270 / 42
FM6226
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#3

Target (Vehicle Side): UR4Left

Temperature:21C

MGA Test Reference No.:FM6226

Humidity:55%

Approach Horizontal Angles:270°

Time of Test:2:16 PM

Approach Vertical Angles:42°

FMH Serial No:[039]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
788	824	6.7	23.6	27	5 Right

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J13753	-103.6	1.29	1.29
Y	6	J22700	94.4	1.79	1.79
Z	7	J32734	95.5	1.30	1.31

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

No Visible Damage

Recorded By: _____ Approved By*: _____ Date: 8/29/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 3
FM6226
Additional Desc: N/A

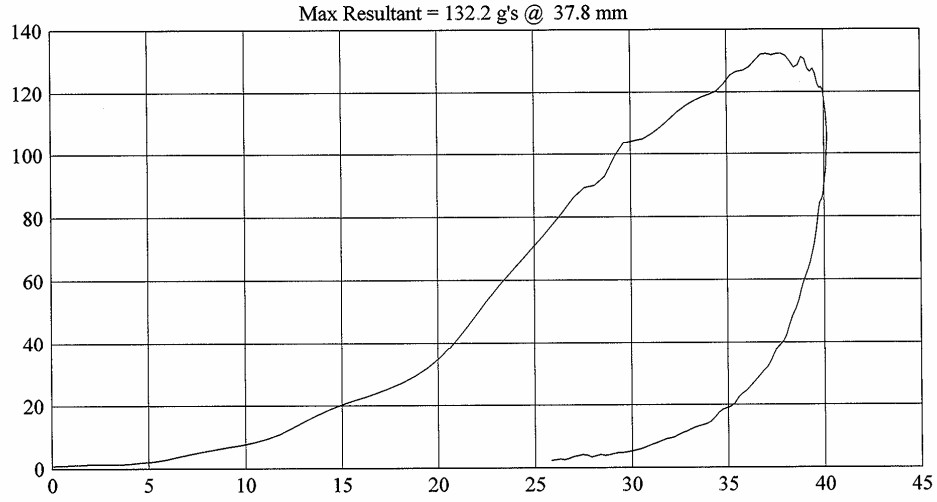
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: UR4
Vehicle Side: Left
Horz/Vert Angle: 270/42

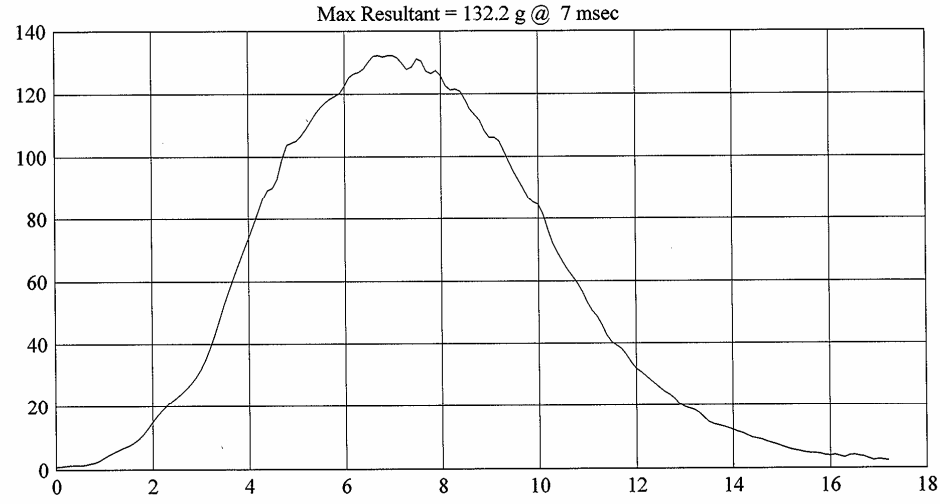
HIC(d) = 788, HIC = 824, Delta T = 6.7 msec

Max Resultant = 132.2 g's @ 37.8 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 132.2 g @ 7 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 3
FM6226
Additional Desc: N/A

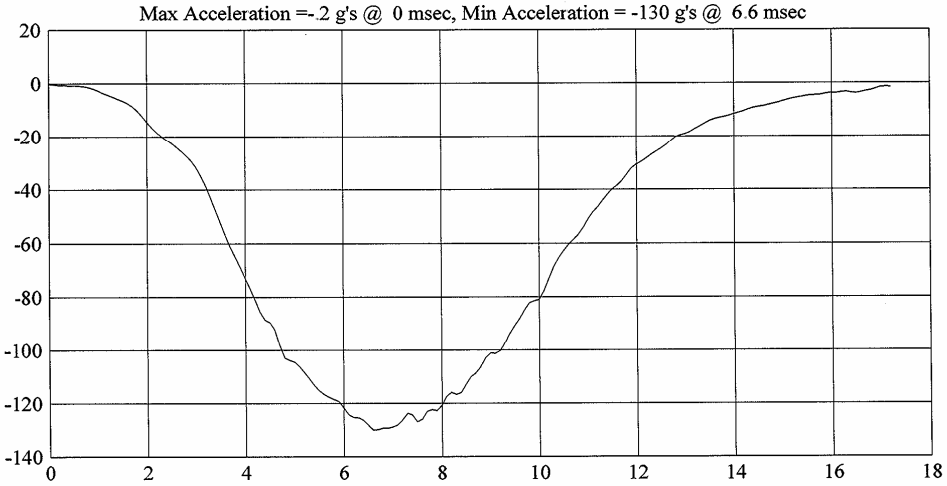
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: UR4
Vehicle Side: Left
Horz/Vert Angle: 270/42

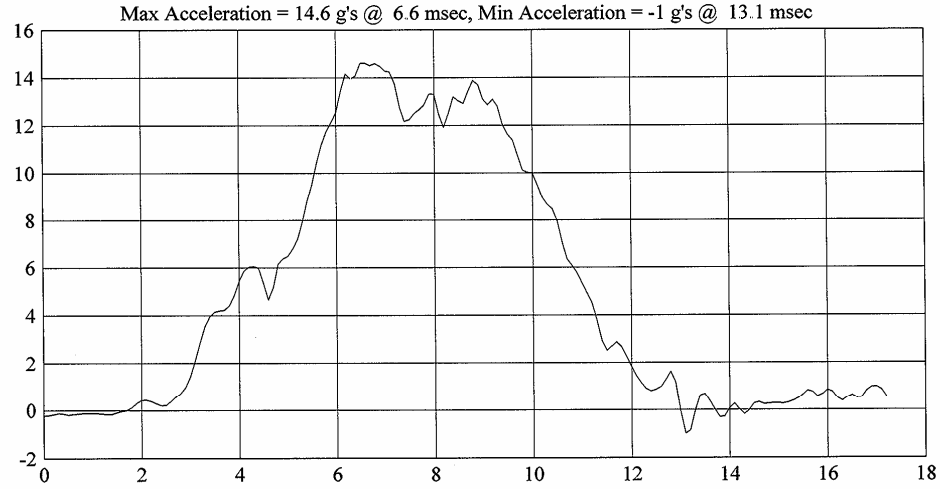
HIC(d) = 788, HIC = 824, Delta T = 6.7 msec

Max Acceleration =-.2 g's @ 0 msec, Min Acceleration = -130 g's @ 6.6 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 14.6 g's @ 6.6 msec, Min Acceleration = -1 g's @ 13.1 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 3
FM6226
Additional Desc: N/A

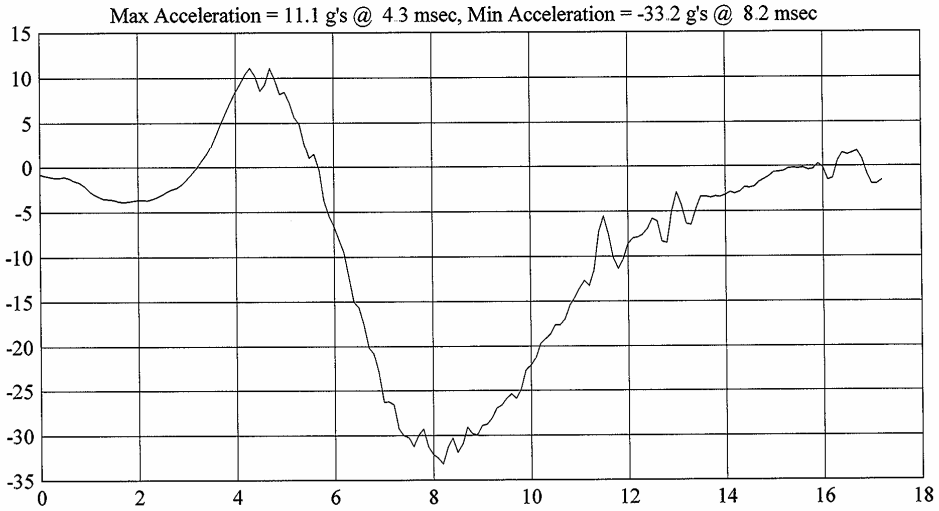
Vehicle Program : C60204 Ford Fusion

Test Date: 8/29/2006

Model Year: 2006
Target: UR4
Vehicle Side: Left
Horz/Vert Angle: 270/42

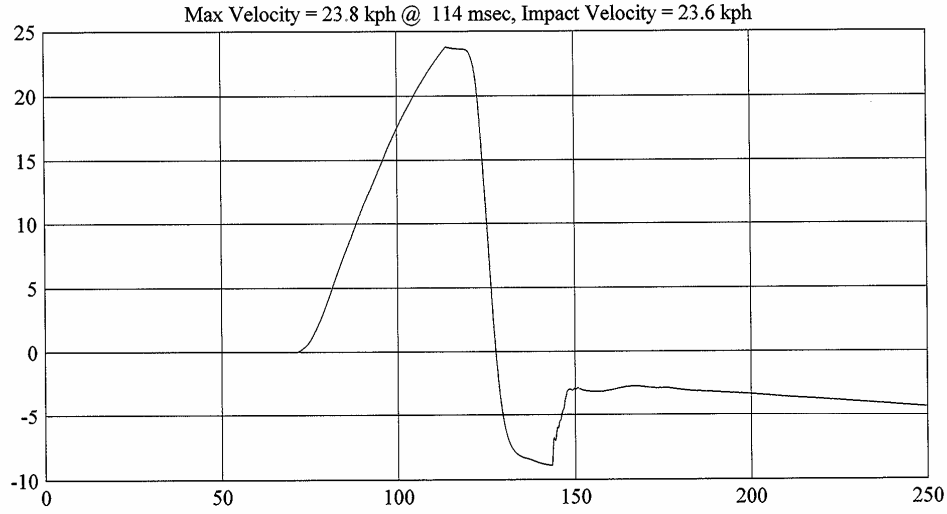
HIC(d) = 788, HIC = 824, Delta T = 6.7 msec

Max Acceleration = 11.1 g's @ 4.3 msec, Min Acceleration = -33.2 g's @ 8.2 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 23.8 kph @ 114 msec, Impact Velocity = 23.6 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

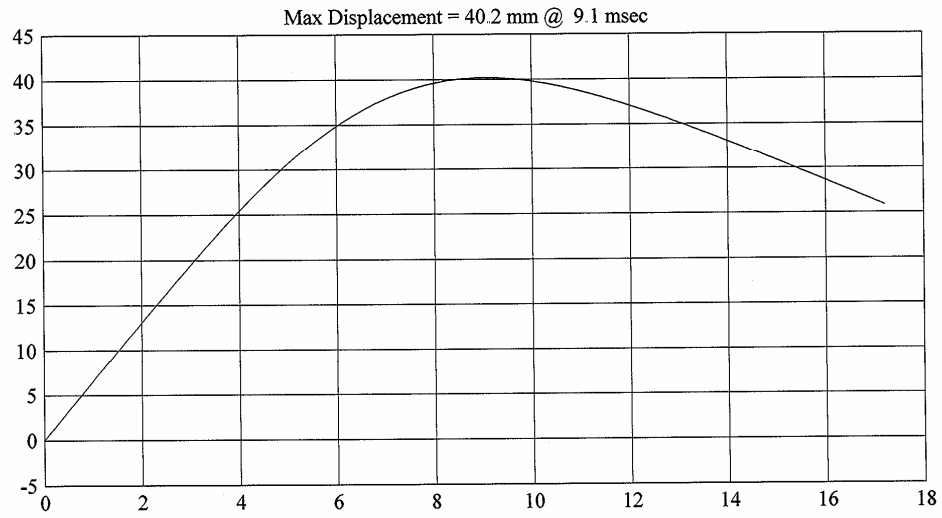
Customer: DOT/NHTSA
Test # 3
FM6226
Additional Desc: N/A

Vehicle Program : C60204 Ford Fusion

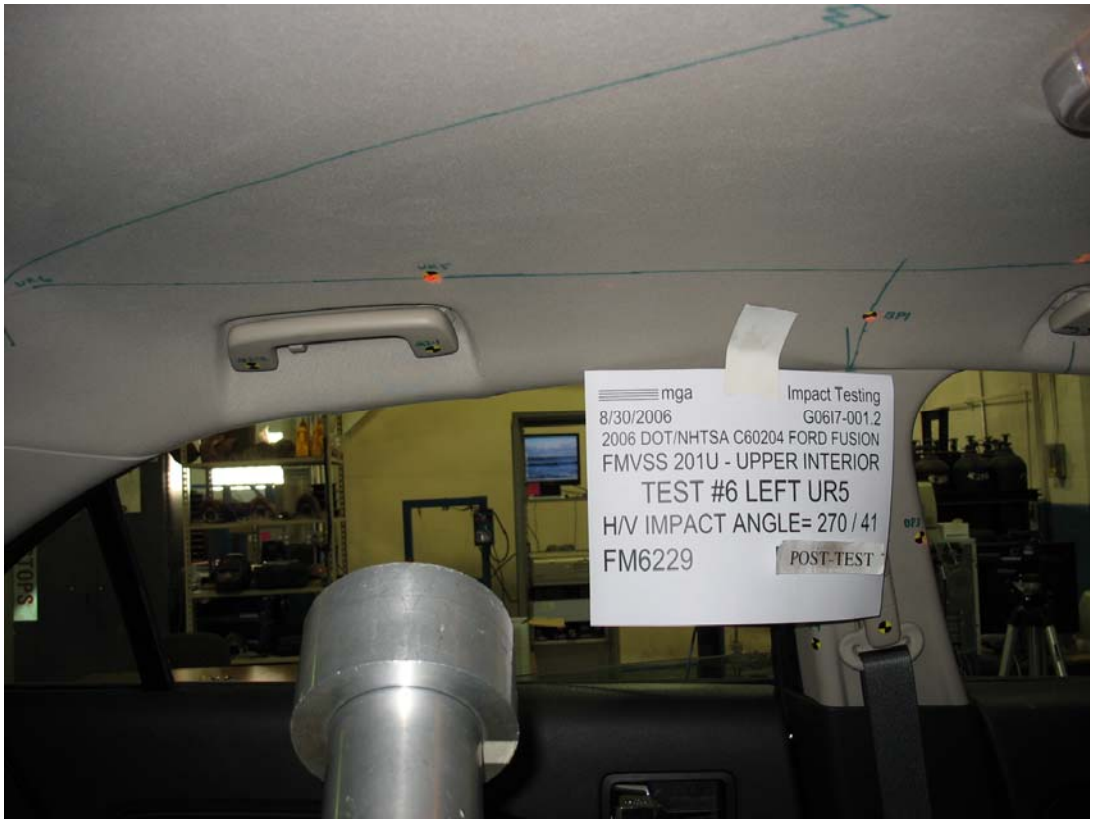
Test Date: 8/29/2006

Model Year: 2006
Target: UR4
Vehicle Side: Left
Horz/Vert Angle: 270/42

HIC(d) = 788, HIC = 824, Delta T = 6.7 msec




mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #6 LEFT UR5
H/V IMPACT ANGLE= 270 / 41
FM6229
PRE TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #6 LEFT UR5
H/V IMPACT ANGLE= 270 / 41
FM6229
POST-TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #6 LEFT UR5
H/V IMPACT ANGLE= 270 / 41
FM6229
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#6

Target (Vehicle Side): UR5Left

Temperature:20C

MGA Test Reference No.:FM6229

Humidity:56%

Approach Horizontal Angles:270°

Time of Test:9:05 AM

Approach Vertical Angles:41°

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
781	815	8.3	23.9	20	5 Left

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.4	1.29	1.28
Y	6	J35919	94.4	1.79	1.79
Z	7	J22664	94.3	1.30	1.31

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

No Visible Damage

Recorded By: _____ Approved By*: _____ Date: 8/30/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 6
FM6229
Additional Desc: N/A

Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

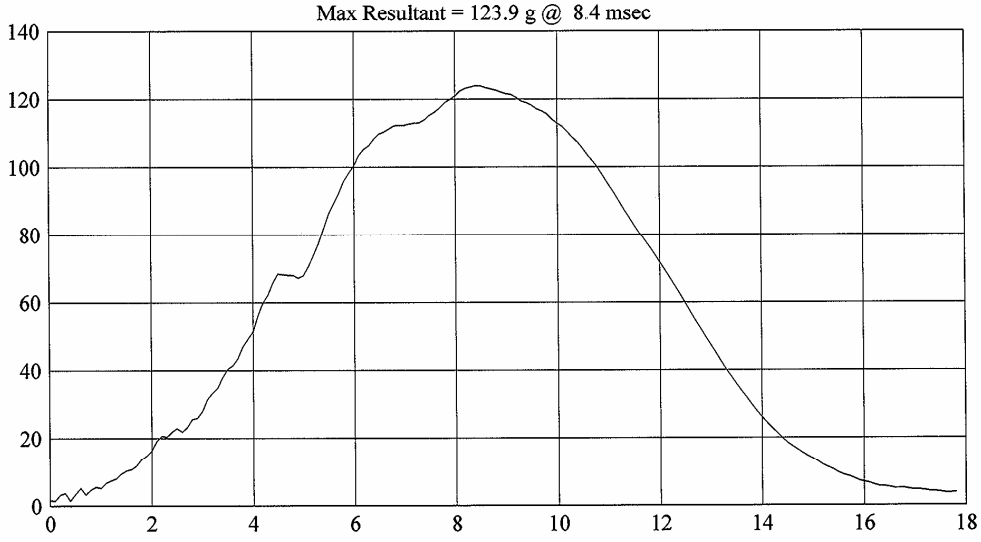
Model Year: 2006
Target: UR5
Vehicle Side: Left
Horz/Vert Angle: 270/41

HIC(d) = 781, HIC = 815, Delta T = 8.3 msec

Max Resultant = 123.9 g's @ 43.5 mm

Resultant (g's) vs. Displacement (mm)

Max Resultant = 123.9 g @ 8.4 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 6
FM6229
Additional Desc: N/A

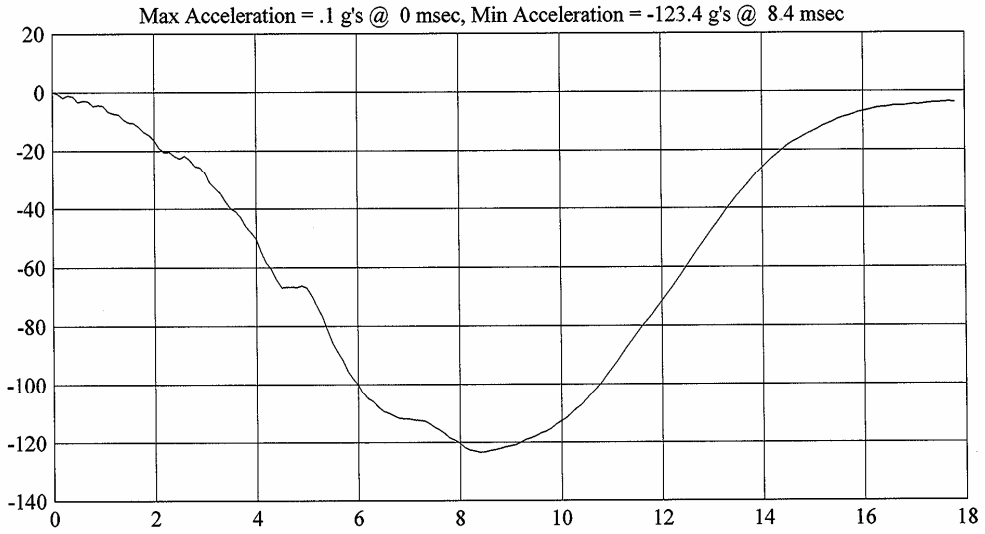
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR5
Vehicle Side: Left
Horz/Vert Angle: 270/41

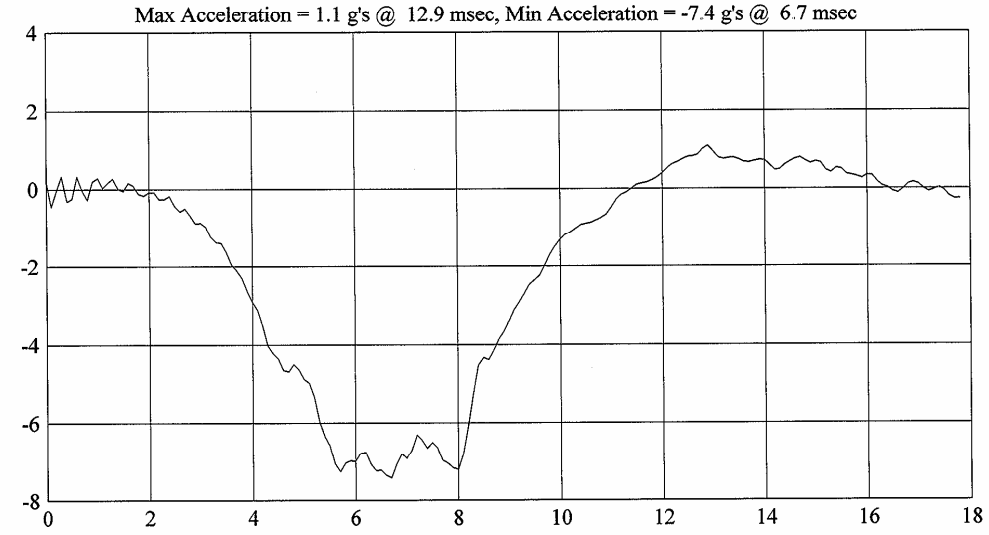
HIC(d) = 781, HIC = 815, Delta T = 8.3 msec

Max Acceleration = .1 g's @ 0 msec, Min Acceleration = -123.4 g's @ 8.4 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 1.1 g's @ 12.9 msec, Min Acceleration = -7.4 g's @ 6.7 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 6
FM6229
Additional Desc: N/A

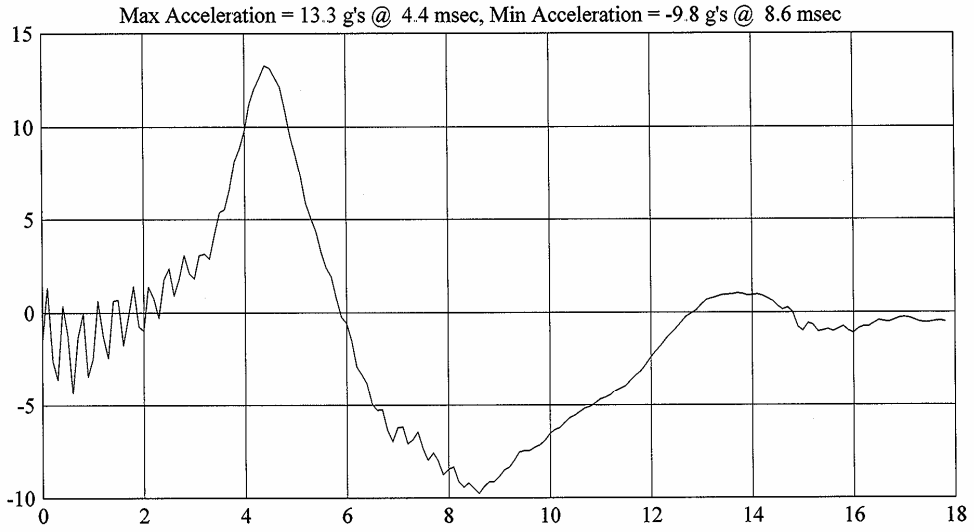
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR5
Vehicle Side: Left
Horz/Vert Angle: 270/41

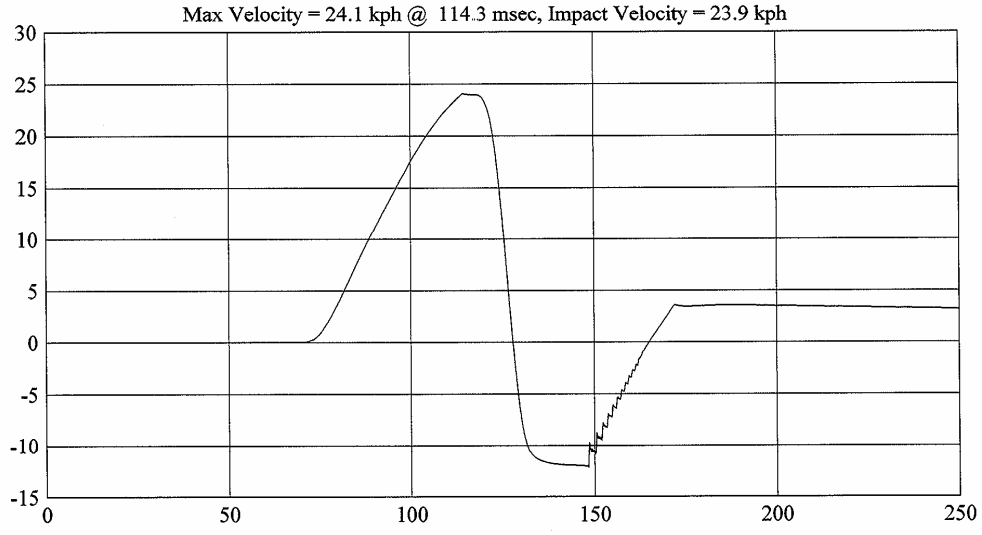
HIC(d) = 781, HIC = 815, Delta T = 8.3 msec

Max Acceleration = 13.3 g's @ 4.4 msec, Min Acceleration = -9.8 g's @ 8.6 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 24.1 kph @ 114.3 msec, Impact Velocity = 23.9 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 6
FM6229
Additional Desc: N/A

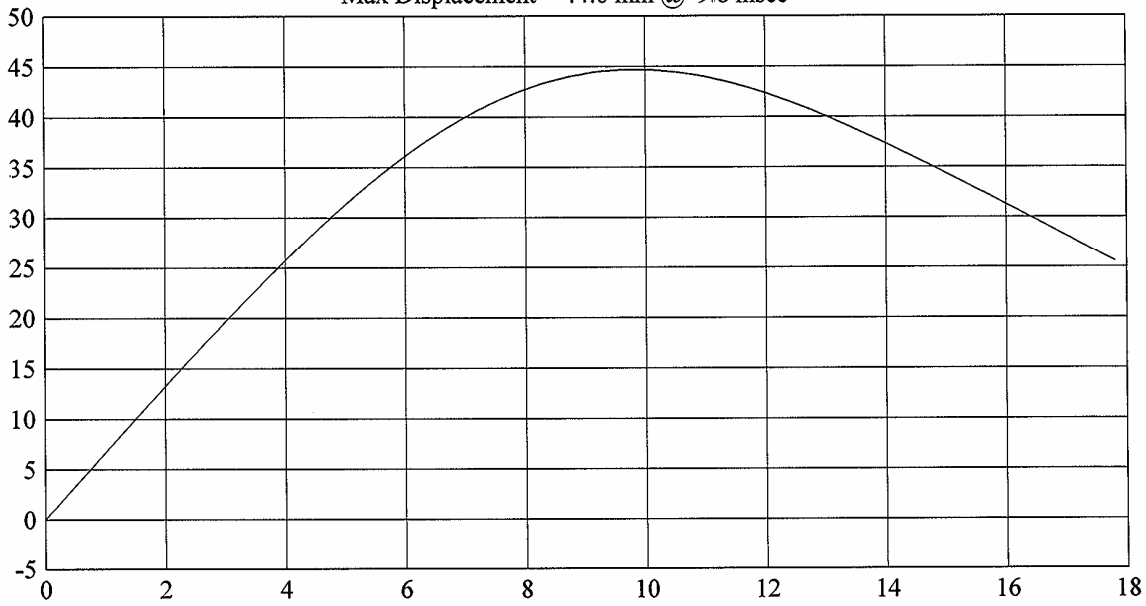
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR5
Vehicle Side: Left
Horz/Vert Angle: 270/41

HIC(d) = 781, HIC = 815, Delta T = 8.3 msec

Max Displacement = 44.6 mm @ 9.8 msec



Displacement (mm) vs. Time (msec)


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #7 LEFT UR6
H/V IMPACT ANGLE= 315 / 46
FM6230
PRE TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #7 LEFT UR6
H/V IMPACT ANGLE= 315 / 46
FM6230
POST-TEST


mga
Impact Testing
8/30/2006
G06I7-001.2
2006 DOT/NHTSA C60204 FORD FUSION
FMVSS 201U - UPPER INTERIOR
TEST #7 LEFT UR6
H/V IMPACT ANGLE= 315 / 46
FM6230
POST-TEST

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G06I7-001.2

VEHICLE YR/MAKE/MODEL:2006/DOT/NHTSA/C60204 Ford Fusion

GENERAL TEST PARAMETERS:

Test Number:#7

Target (Vehicle Side): UR6Left

Temperature:20C

MGA Test Reference No.:FM6230

Humidity:56%

Approach Horizontal Angles:315°

Time of Test:9:44 AM

Approach Vertical Angles:46°

FMH Serial No:[038]

Additional Description:

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
595	568	6.2	24.2	6	2 Right

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-108.8	1.29	1.29
Y	6	J36193	102.7	1.79	1.79
Z	7	J36353	97.2	1.31	1.31

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

Headliner deformation

Recorded By: _____ Approved By*: _____ Date: 8/30/2006

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 7
FM6230
Additional Desc: N/A

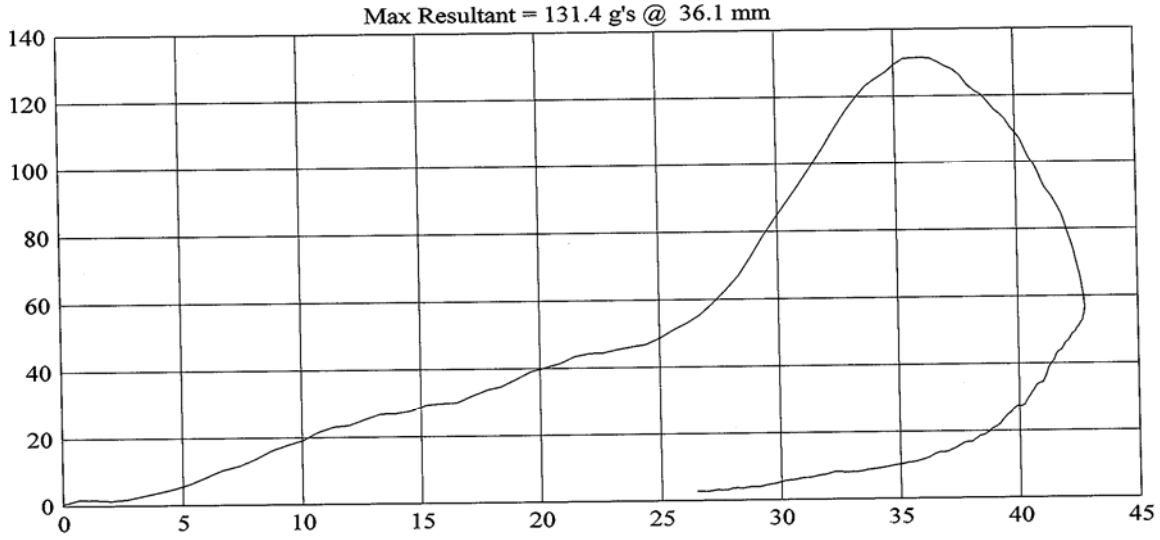
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR6
Vehicle Side: Left
Horz/Vert Angle: 315/46

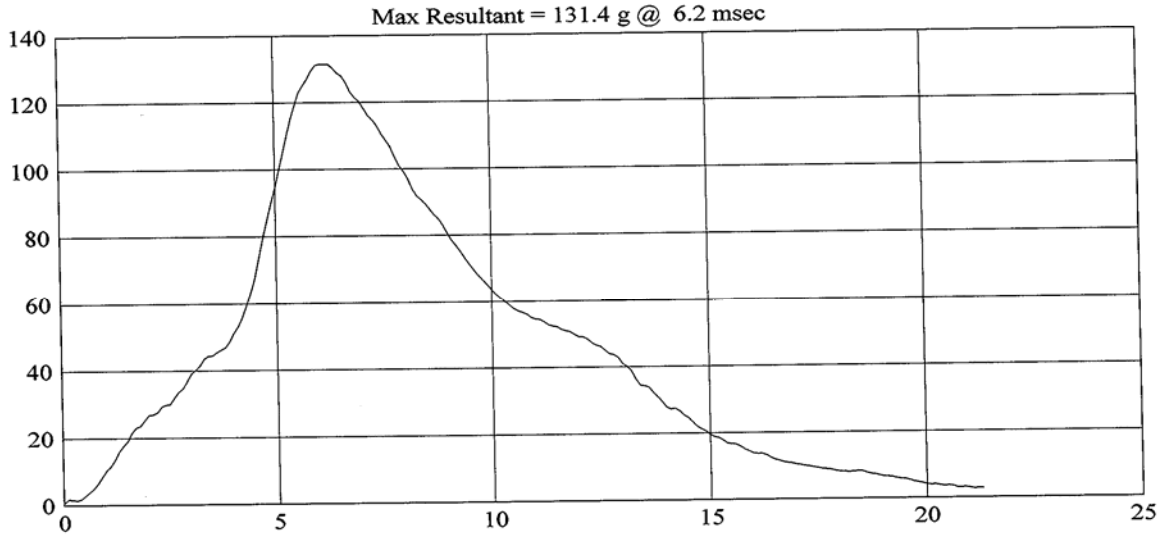
HIC(d) = 595, HIC = 568, Delta T = 6.2 msec

Max Resultant = 131.4 g's @ 36.1 mm



Resultant (g's) vs. Displacement (mm)

Max Resultant = 131.4 g @ 6.2 msec



Resultant Accel (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 7
FM6230
Additional Desc: N/A

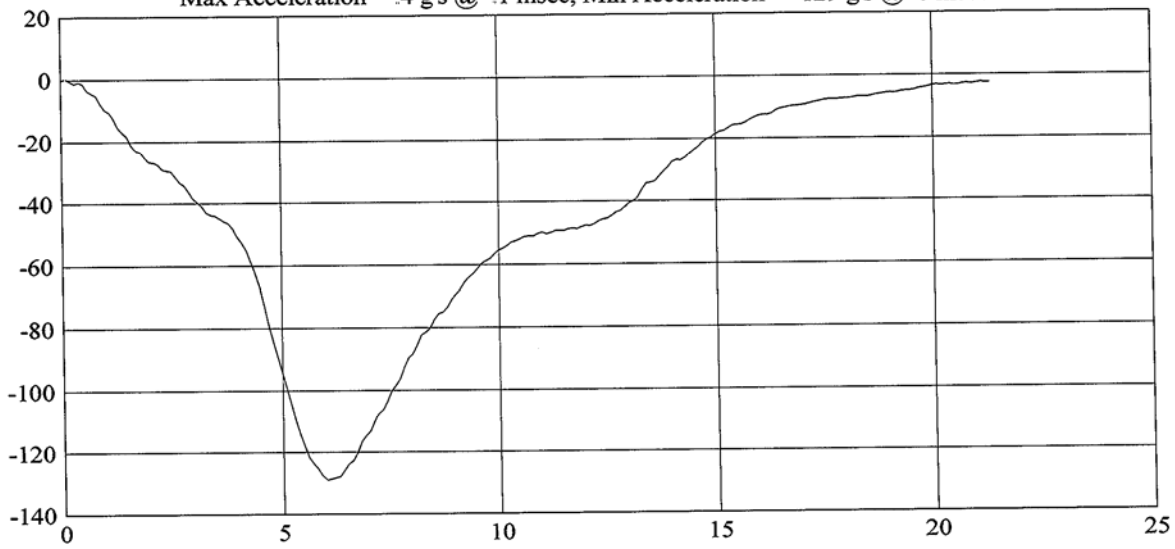
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR6
Vehicle Side: Left
Horz/Vert Angle: 315/46

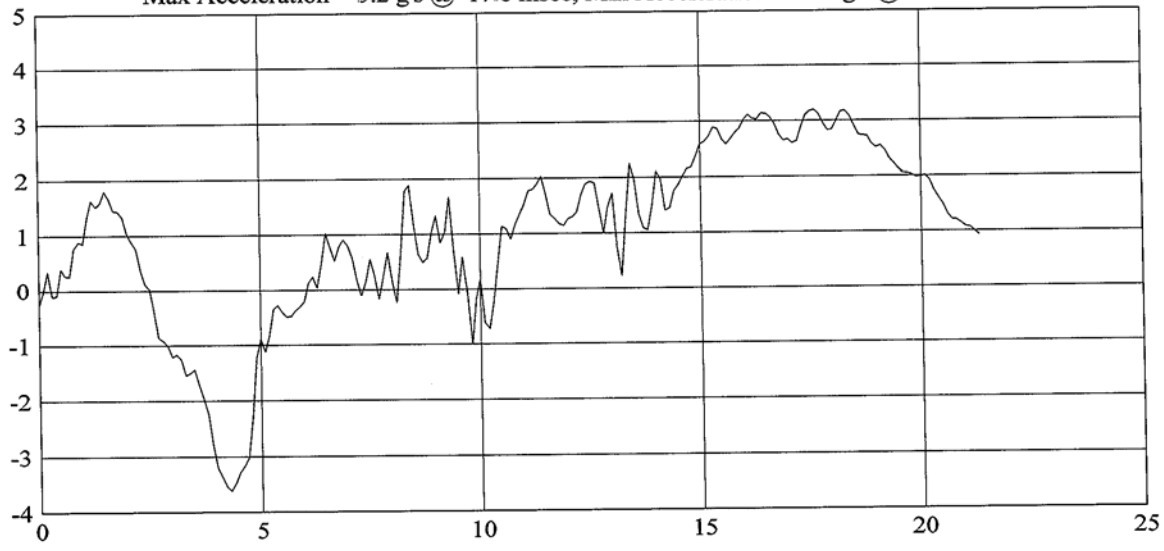
HIC(d) = 595, HIC = 568, Delta T = 6.2 msec

Max Acceleration = .4 g's @ .1 msec, Min Acceleration = -129 g's @ 6 msec



Accel X (g's) vs. Time (msec)

Max Acceleration = 3.2 g's @ 17.6 msec, Min Acceleration = -3.6 g's @ 4.3 msec



Accel Y (g's) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 7
FM6230
Additional Desc: N/A

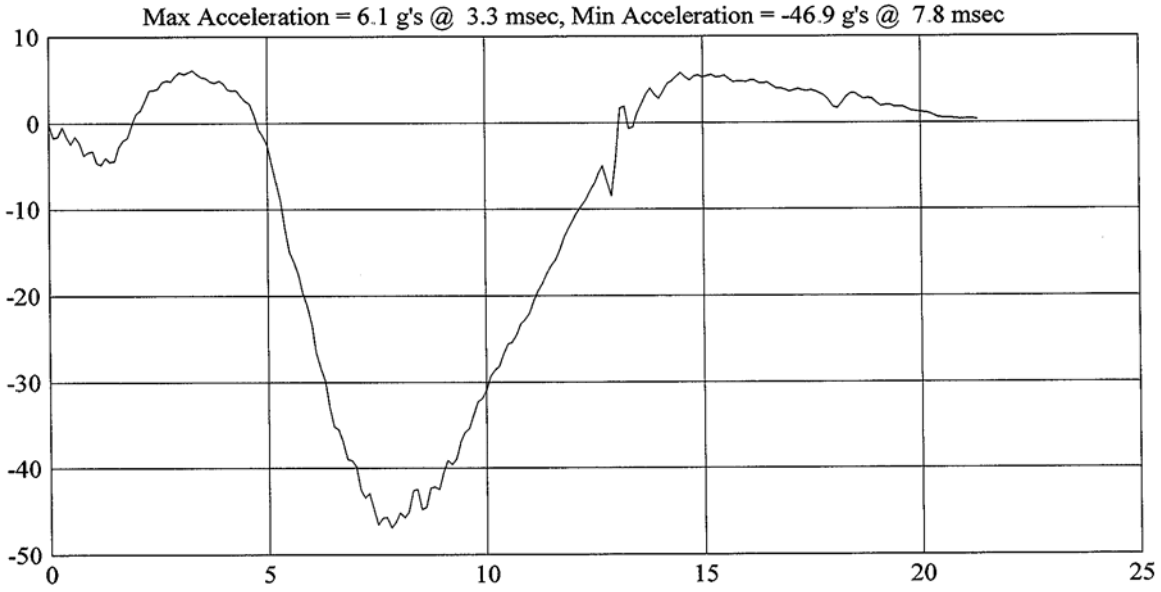
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR6
Vehicle Side: Left
Horz/Vert Angle: 315/46

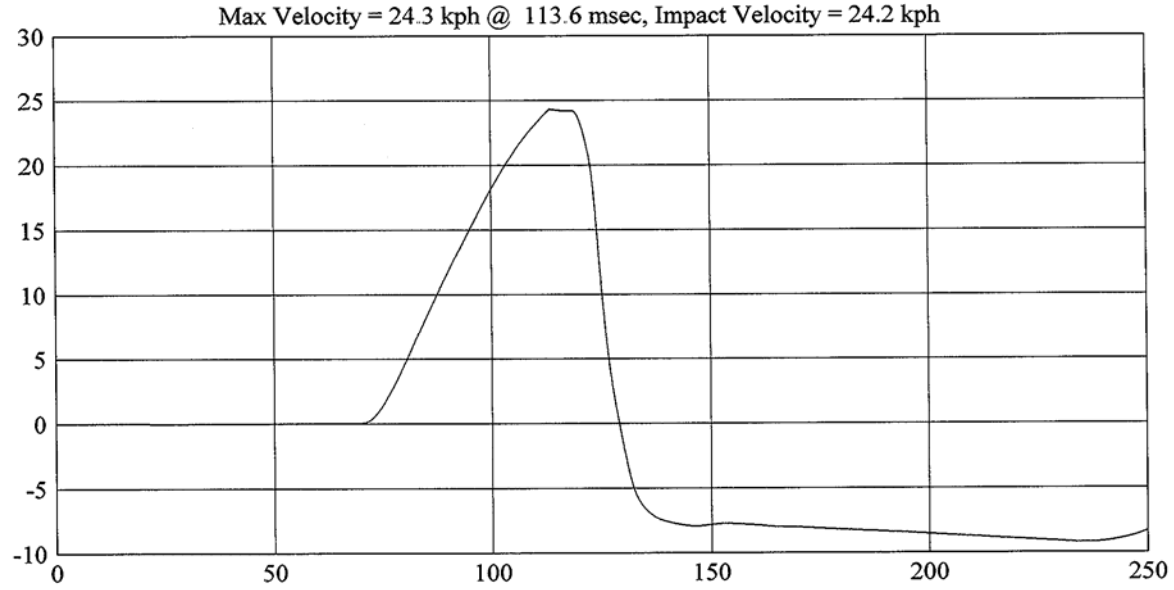
HIC(d) = 595, HIC = 568, Delta T = 6.2 msec

Max Acceleration = 6.1 g's @ 3.3 msec, Min Acceleration = -46.9 g's @ 7.8 msec



Accel Z (g's) vs. Time (msec)

Max Velocity = 24.3 kph @ 113.6 msec, Impact Velocity = 24.2 kph



Velocity (kph) vs. Time (msec)

FMH
G06I7-001.2

Customer: DOT/NHTSA
Test # 7
FM6230
Additional Desc: N/A

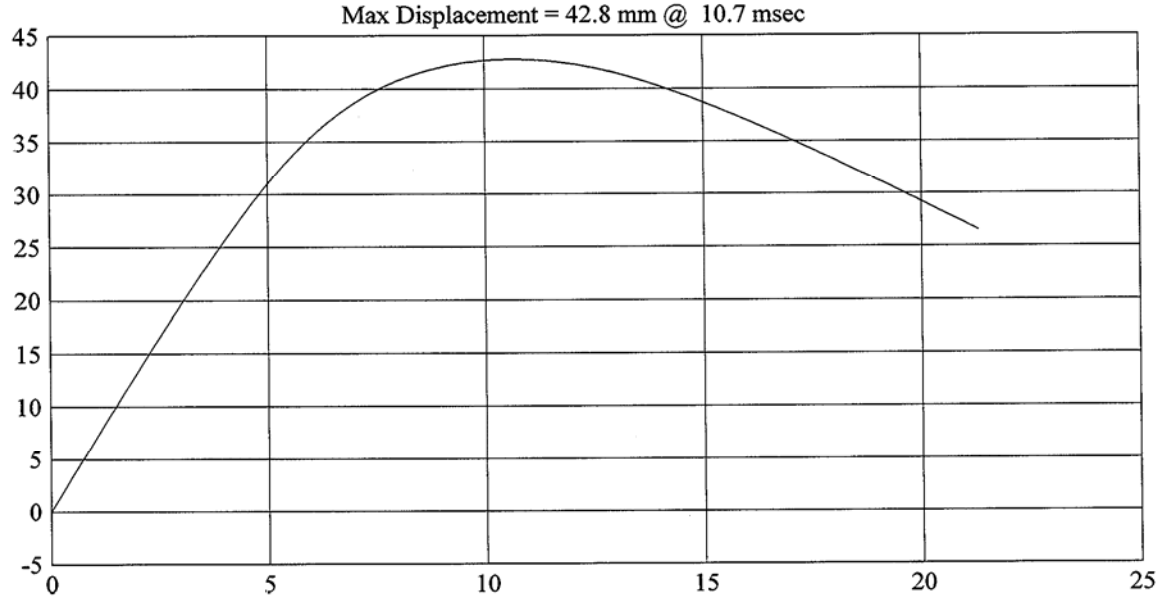
Vehicle Program : C60204 Ford Fusion

Test Date: 8/30/2006

Model Year: 2006
Target: UR6
Vehicle Side: Left
Horz/Vert Angle: 315/46

HIC(d) = 595, HIC = 568, Delta T = 6.2 msec

Max Displacement = 42.8 mm @ 10.7 msec



Displacement (mm) vs. Time (msec)

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	Macklenburg-Duncan	PRO 360 (MGA00060)	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	035 038 039	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Redlake	HGLE	Record Event	N/A	N/A
*FARO™	Faro Technologies	G08020203122	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Digital Protractor	 Stanley N/A Macklenburg-Duncan	 586 -- MGA00060	 Measurement Targeting FMH setup Horizontal Measurement	 1 mm N/A 0.5°	Annual
*Vehicle Scale	SW Scales	26032389	Weighing Vehicle	± .5 kg	Annual
* Scale	Detecto	MGA00081	Weigh FMH Head	± 0.01 lb	Annual
*Temperature Recorder	Dickson	FH125	Record Temperature and Humidity	± 1°C ± 1% RH	Annual

TABLE 4-2 FMH CALIBRATION SUMMARY DATA SUMMARY TABLE

FMH Serial #		Weight (lbs)	Temp (^{O}C)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#35	10.03	20.0	53.0	248.5	2.6	Yes
Post	#35	10.02	21.0	44.0	243.0	9.0	Yes
Pre	#38	9.92	21.0	56.0	245.8	4.1	Yes
Post	#38	9.92	21.0	44.0	263.9	7.2	Yes
Pre	#39	10.0	21.0	56.0	259.1	3.5	Yes
Post	#39	10.0	21.0	44.0	251.3	10.8	Yes

RECORDED BY: Louis Campbell DATE: August 31, 2006

APPROVED BY: Helen A. Kaleto

4.1 Pre-Test Calibration - 035

HEAD DROP TEST SUMMARY
PART 572L

HEADFORM SERIAL NUMBER: 035	CALIBRATION DATE: 08/29/2006 CALIBRATION TIME: 10:51:45 AM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	10.03
Temperature	19° C to 26° C	20
Relative Humidity	10% to 70%	53
Peak Resultant Acceleration	225 G's to 275 G's	248.5
Peak Lateral Acceleration	15 G's Maximum	2.6
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	J35924	04/06/06	10/06/06
2	ENDEVCO	7264-2000	J35919	04/06/06	10/06/06
3	ENDEVCO	7264-2000	J22664	04/06/06	10/06/06

REMARKS:

RECORDED BY: _____ DATE: 08/29/2006

APPROVED BY: _____

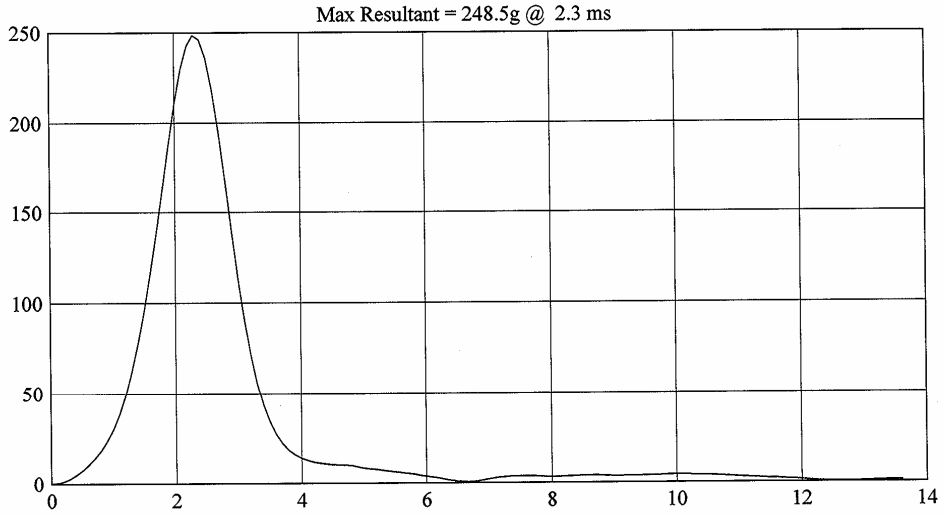
Head Drop
(Preliminary Test Report)

Test Number: H35327
Test Description: Pre

MGA Job Number: G06I7-001.2

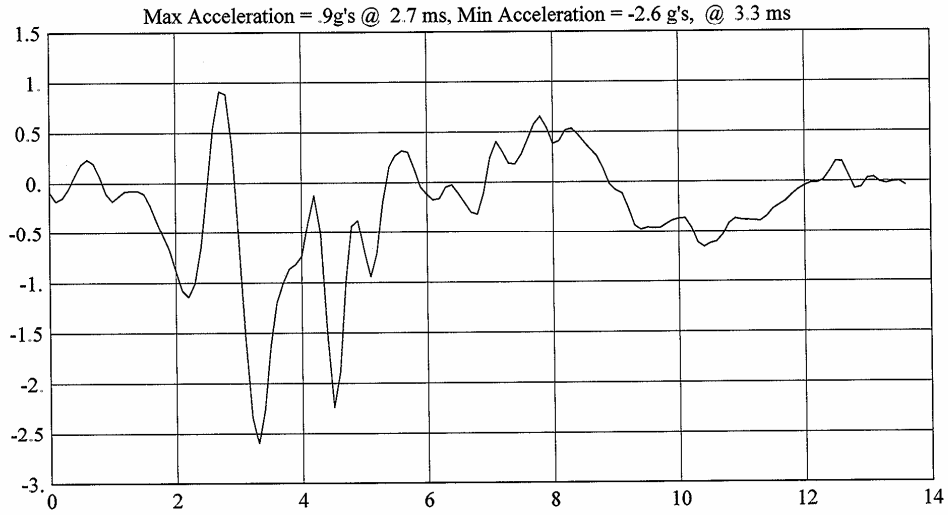
Test Date: 08/29/2006
Head # : 035

Max Resultant = 248.5g @ 2.3 ms



Resultant Accel (g's) vs. Time (msec)

Max Acceleration = .9g's @ 2.7 ms, Min Acceleration = -2.6 g's, @ 3.3 ms



Accel Y(g's) vs. Time (msec)

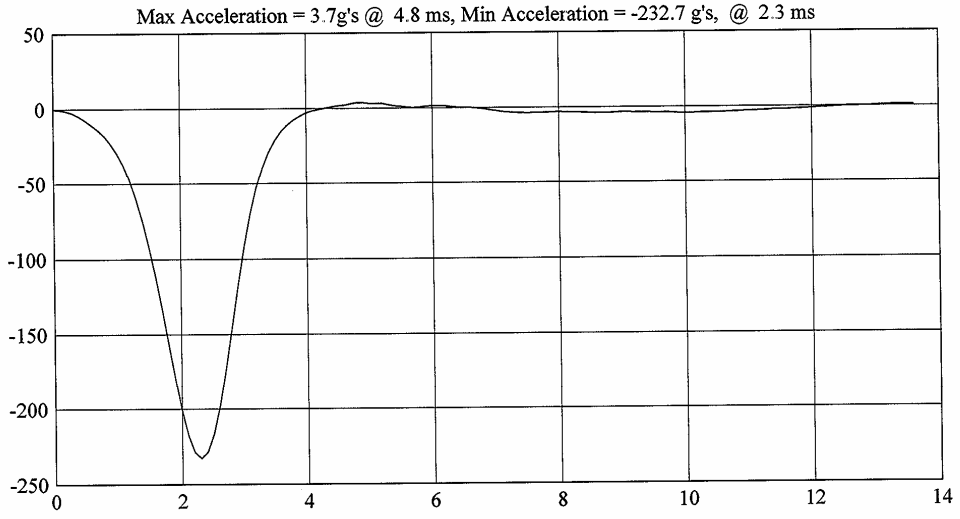
Head Drop
(Preliminary Test Report)

Test Number: H35327
Test Description: Pre

MGA Job Number: G06I7-001.2

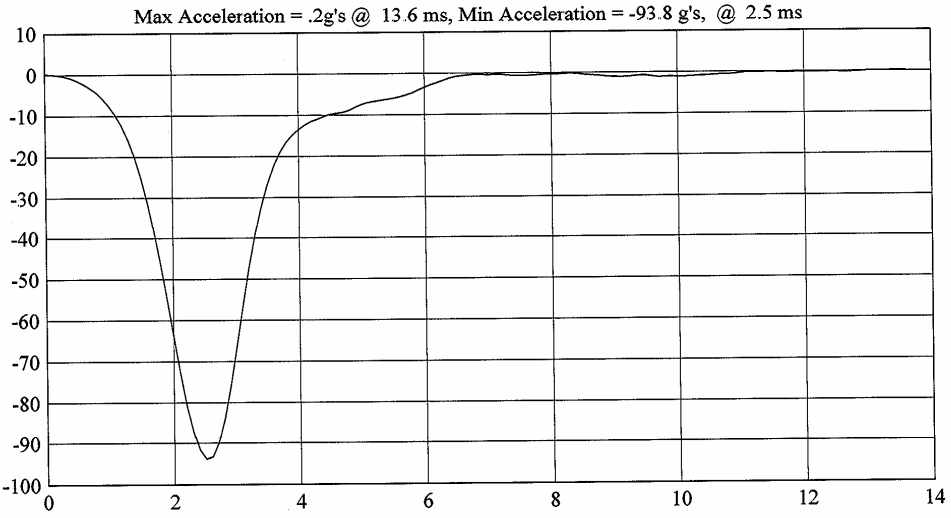
Test Date: 08/29/2006
Head # : 035

Max Acceleration = 3.7g's @ 4.8 ms, Min Acceleration = -232.7 g's, @ 2.3 ms



Accel X(g's) vs. Time (msec)

Max Acceleration = .2g's @ 13.6 ms, Min Acceleration = -93.8 g's, @ 2.5 ms



Accel Z(g's) vs. Time (msec)

4.2 Post-Test Calibration – 035

HEAD DROP TEST SUMMARY
PART 572L

HEADFORM SERIAL NUMBER: 035	CALIBRATION DATE: 08/31/2006 CALIBRATION TIME: 10:54:39 AM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	10.02
Temperature	19° C to 26° C	21
Relative Humidity	10% to 70%	44
Peak Resultant Acceleration	225 G's to 275 G's	243.0
Peak Lateral Acceleration	15 G's Maximum	9.0
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	J35924	04/06/06	10/06/06
2	ENDEVCO	7264-2000	J35919	04/06/06	10/06/06
3	ENDEVCO	7264-2000	J22664	04/06/06	10/06/06

REMARKS:

RECORDED BY: _____ DATE: 08/31/2006

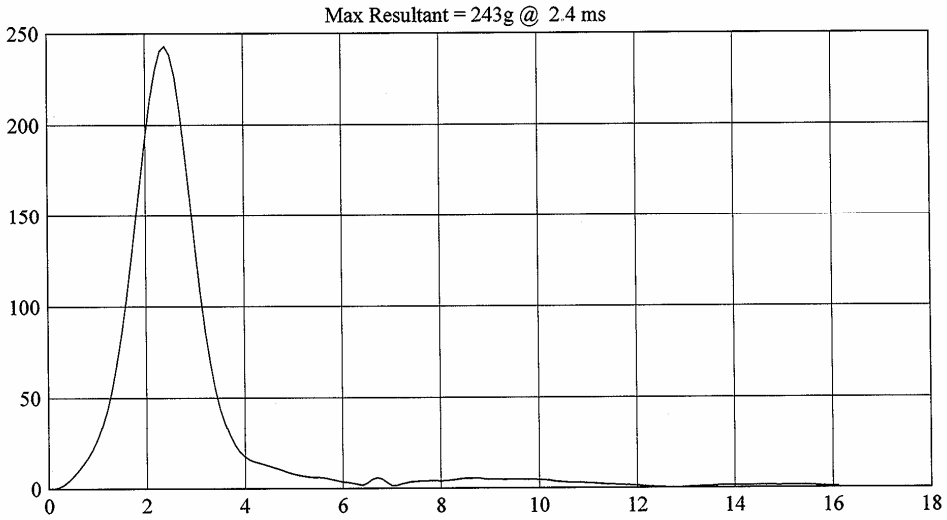
APPROVED BY: _____

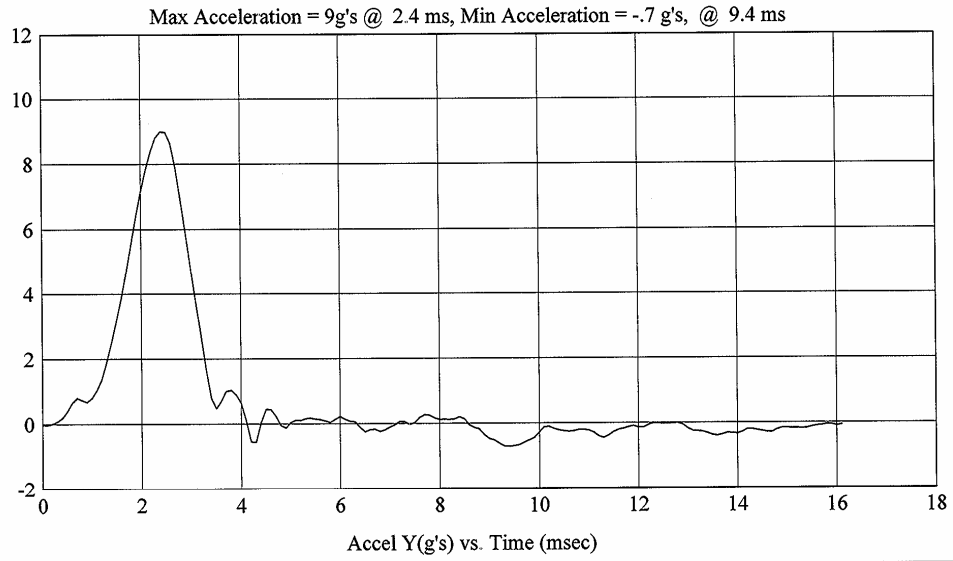
Head Drop
(Preliminary Test Report)

Test Number: H35328
Test Description: Post

MGA Job Number: G06I7-001.2

Test Date: 08/31/2006
Head # : 035





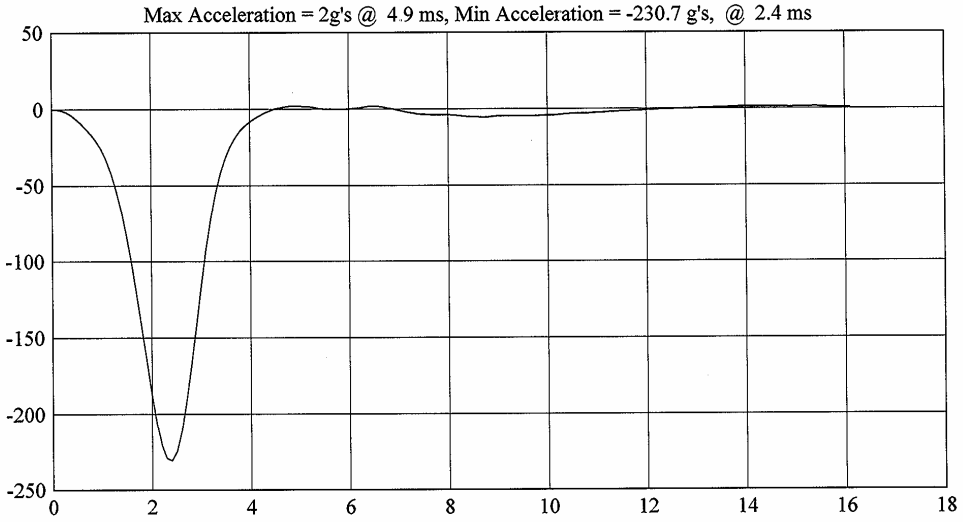
Head Drop
(Preliminary Test Report)

Test Number: H35328
Test Description: Post

MGA Job Number: G06I7-001.2

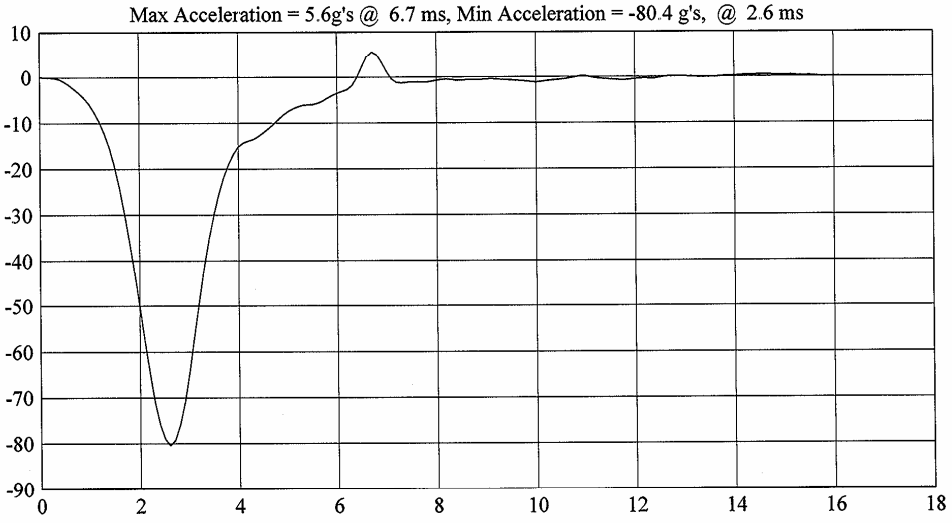
Test Date: 08/31/2006
Head # : 035

Max Acceleration = 2g's @ 4.9 ms, Min Acceleration = -230.7 g's, @ 2.4 ms



Accel X(g's) vs. Time (msec)

Max Acceleration = 5.6g's @ 6.7 ms, Min Acceleration = -80.4 g's, @ 2.6 ms



Accel Z(g's) vs. Time (msec)

4.3 Pre-Test Calibration – 038

HEAD DROP TEST SUMMARY
PART 572L

HEADFORM SERIAL NUMBER: 038	CALIBRATION DATE: 08/29/2006 CALIBRATION TIME: 10:55:42 AM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	9.92
Temperature	19° C to 26° C	21
Relative Humidity	10% to 70%	56
Peak Resultant Acceleration	225 G's to 275 G's	245.8
Peak Lateral Acceleration	15 G's Maximum	4.1
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	J36197	04/07/06	10/07/06
2	ENDEVCO	7264-2000	J36193	04/07/06	10/07/06
3	ENDEVCO	7264-2000	J36353	04/07/06	10/07/06

REMARKS:

RECORDED BY: _____ DATE: 08/29/2006

APPROVED BY: Helen A. Kaleto

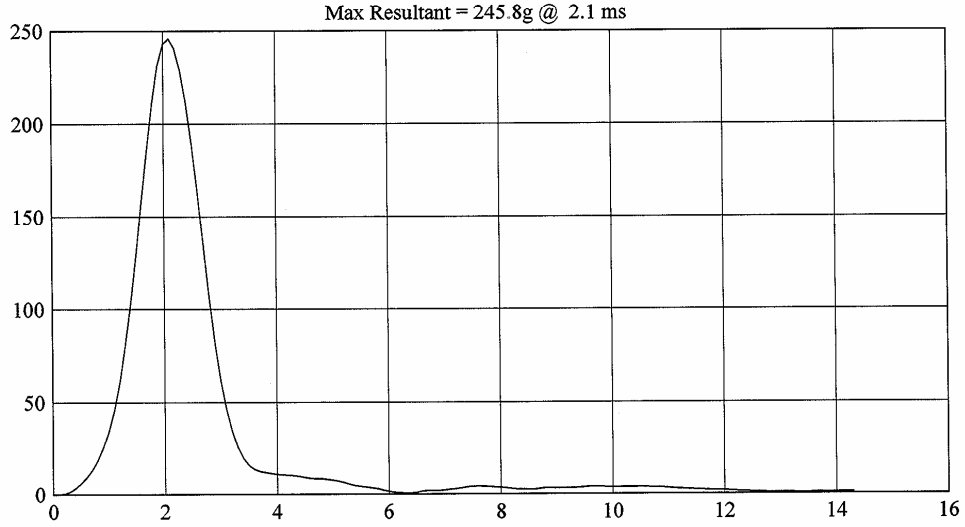
Head Drop
(Preliminary Test Report)

Test Number: H38303
Test Description: Pre

MGA Job Number: G06I7-001.2

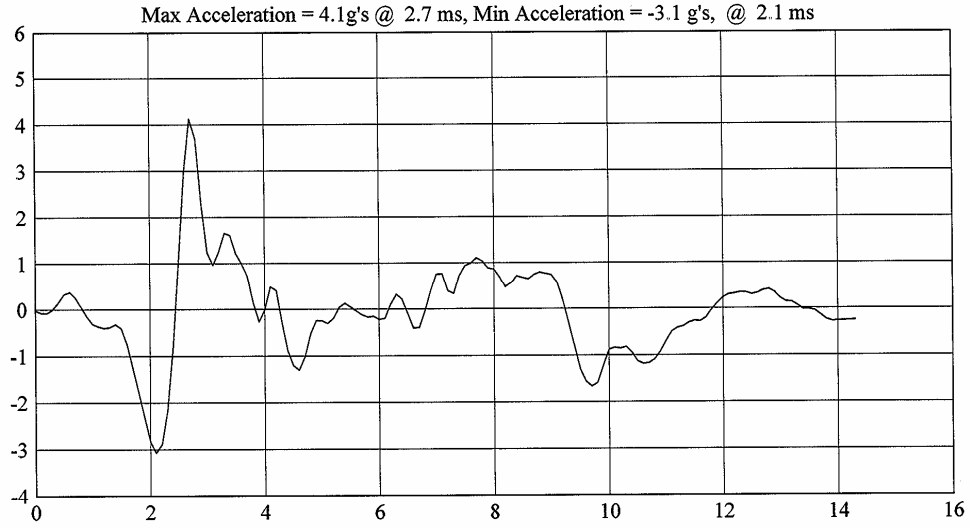
Test Date: 08/29/2006
Head # : 038

Max Resultant = 245.8g @ 2.1 ms



Resultant Accel (g's) vs. Time (msec)

Max Acceleration = 4.1g's @ 2.7 ms, Min Acceleration = -3.1 g's, @ 2.1 ms

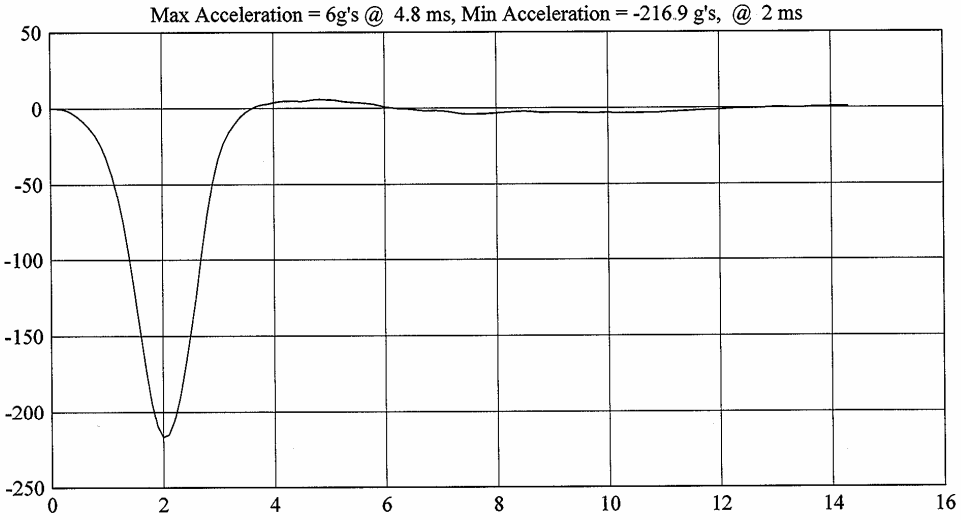


Accel Y(g's) vs. Time (msec)

Head Drop
(Preliminary Test Report)

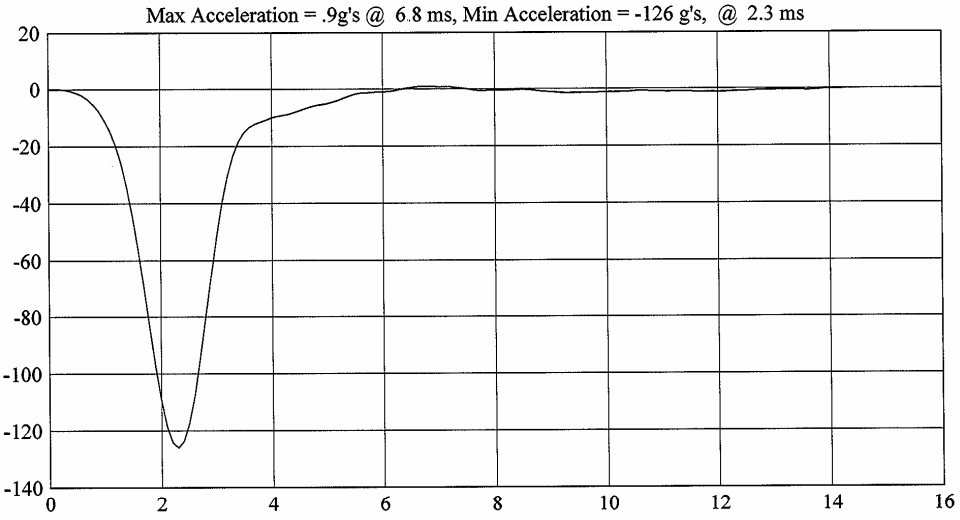
Test Number: H38303 MGA Job Number: G06I7-001.2 Test Date: 08/29/2006
Test Description: Pre Head # : 038

Max Acceleration = 6g's @ 4.8 ms, Min Acceleration = -216.9 g's, @ 2 ms



Accel X(g's) vs. Time (msec)

Max Acceleration = .9g's @ 6.8 ms, Min Acceleration = -126 g's, @ 2.3 ms



Accel Z(g's) vs. Time (msec)

4.4 Post-Test Calibration - 038

HEAD DROP TEST SUMMARY
PART 572L

HEADFORM SERIAL NUMBER: 038	CALIBRATION DATE: 08/31/2006 CALIBRATION TIME: 2:18:17 PM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	9.92
Temperature	19° C to 26° C	21
Relative Humidity	10% to 70%	44
Peak Resultant Acceleration	225 G's to 275 G's	263.9
Peak Lateral Acceleration	15 G's Maximum	7.2
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	J36197	04/07/06	10/07/06
2	ENDEVCO	7264-2000	J36193	04/07/06	10/07/06
3	ENDEVCO	7264-2000	J36353	04/07/06	10/07/06

REMARKS:

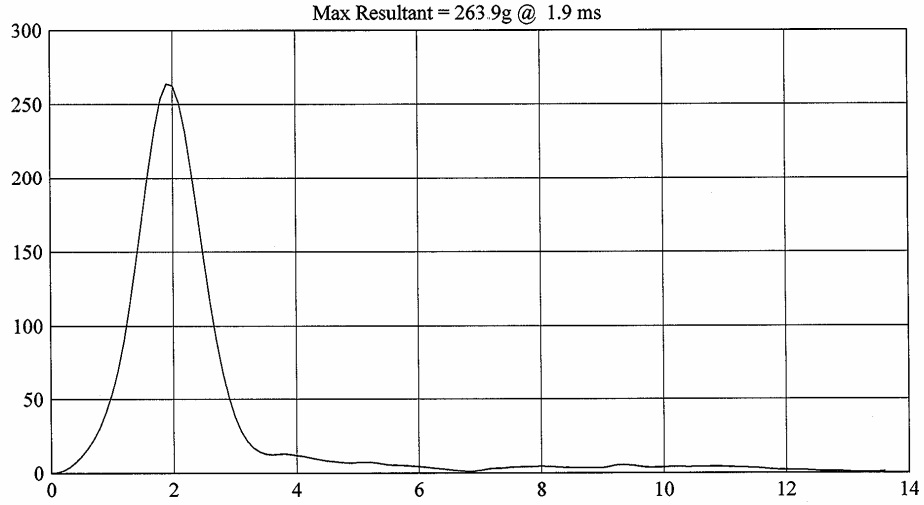
RECORDED BY: _____ DATE: 08/31/2006

APPROVED BY: Helen A. Kalet

Head Drop
(Preliminary Test Report)

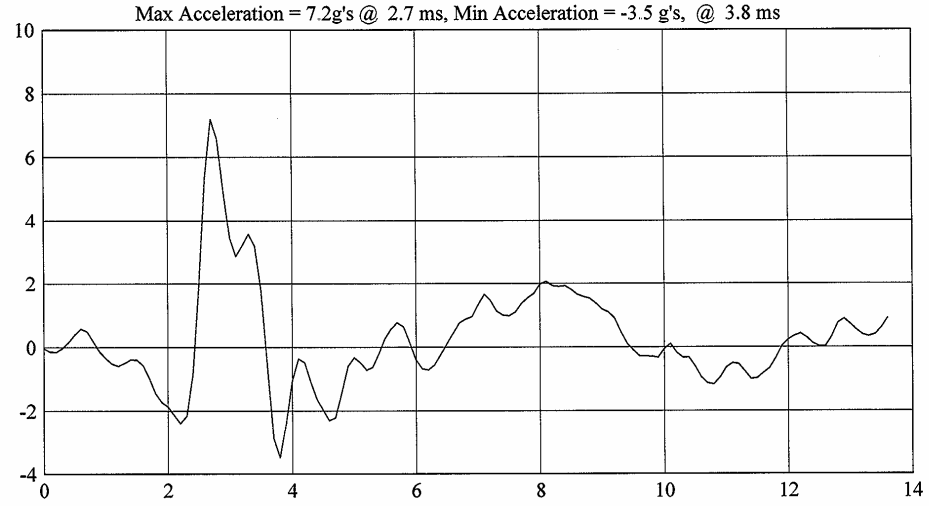
Test Number: H38304 MGA Job Number: G06I7-001.2 Test Date: 08/31/2006
Test Description: Post Head # : 038

Max Resultant = 263.9g @ 1.9 ms



Resultant Accel (g's) vs. Time (msec)

Max Acceleration = 7.2g's @ 2.7 ms, Min Acceleration = -3.5 g's, @ 3.8 ms

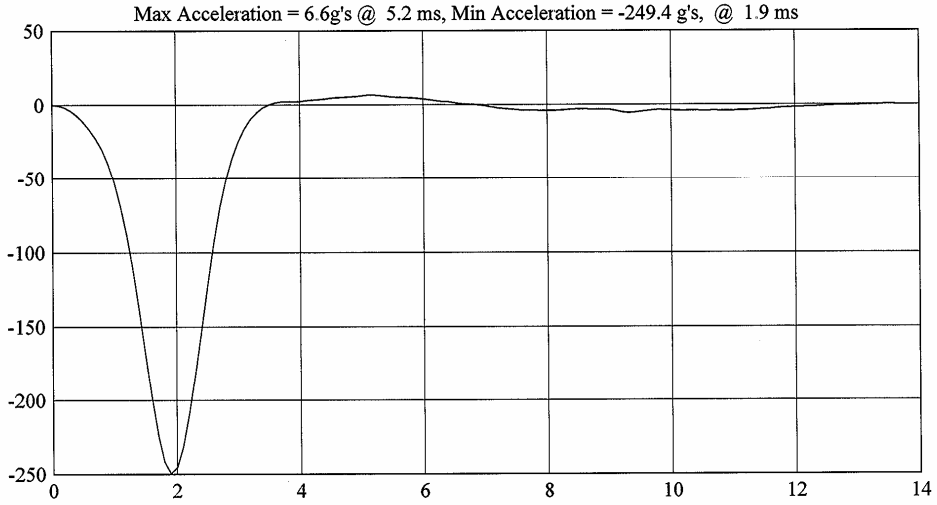


Accel Y(g's) vs. Time (msec)

Head Drop
(Preliminary Test Report)

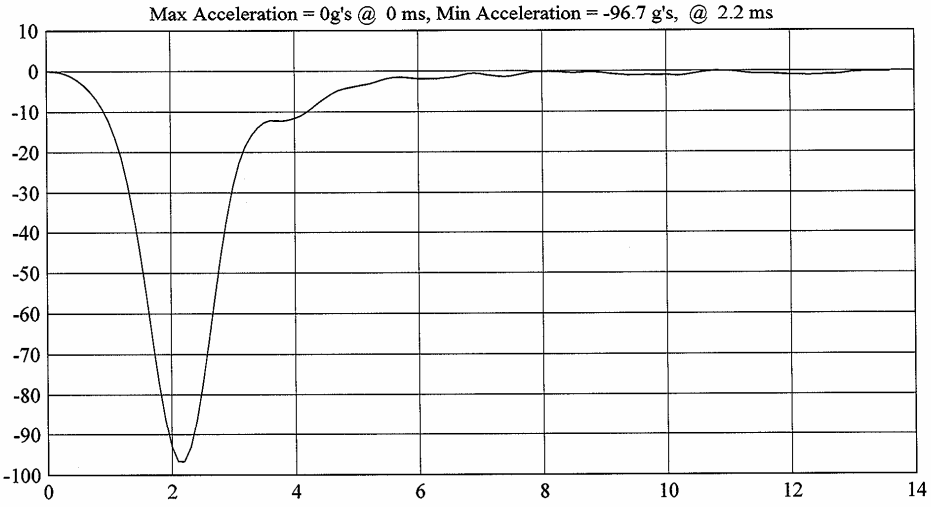
Test Number: H38304 MGA Job Number: G06I7-001.2 Test Date: 08/31/2006
Test Description: Post Head # : 038

Max Acceleration = 6.6g's @ 5.2 ms, Min Acceleration = -249.4 g's, @ 1.9 ms



Accel X(g's) vs. Time (msec)

Max Acceleration = 0g's @ 0 ms, Min Acceleration = -96.7 g's, @ 2.2 ms



Accel Z(g's) vs. Time (msec)

4.5 Pre-Test Calibration - 039

HEAD DROP TEST SUMMARY
PART 572L

HEADFORM SERIAL NUMBER: 039	CALIBRATION DATE: 08/29/2006 CALIBRATION TIME: 10:57:30 AM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	10.00
Temperature	19° C to 26° C	21
Relative Humidity	10% to 70%	56
Peak Resultant Acceleration	225 G's to 275 G's	259.1
Peak Lateral Acceleration	15 G's Maximum	3.5
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	J13753	04/07/06	10/07/06
2	ENDEVCO	7264-2000	J22700	04/07/06	10/07/06
3	ENDEVCO	7264-2000	J32734	04/07/06	10/07/06

REMARKS:

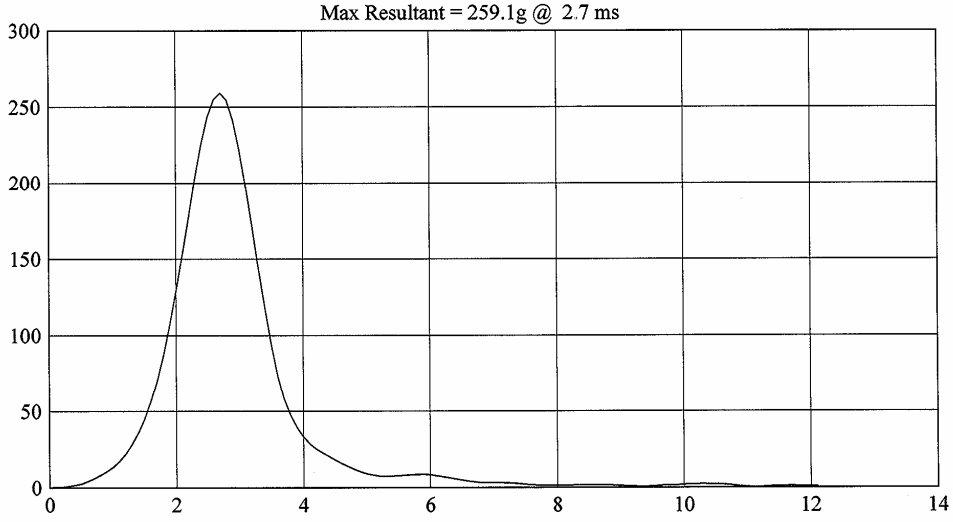
RECORDED BY: _____ DATE: 08/29/2006

APPROVED BY: _____

Head Drop
(Preliminary Test Report)

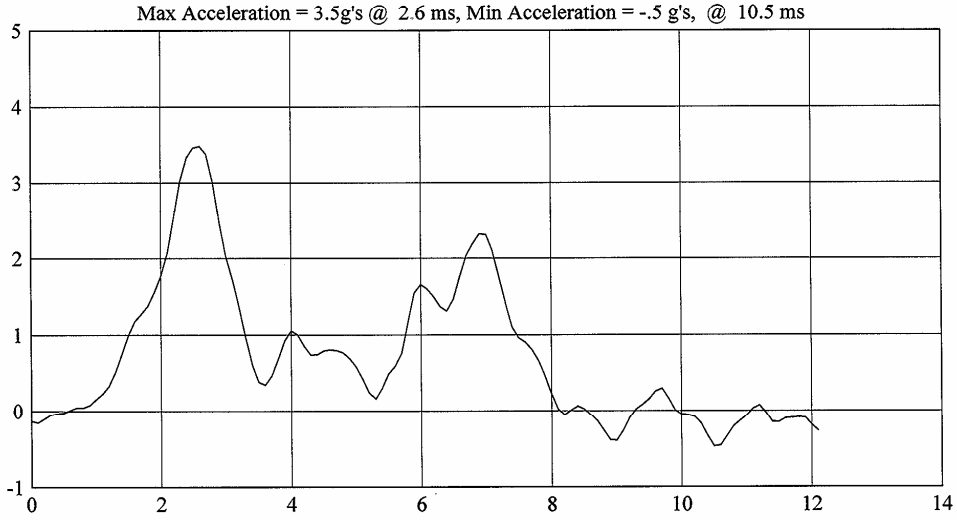
Test Number: H39014 MGA Job Number: G06I7-001.2 Test Date: 08/29/2006
Test Description: Pre Head # : 039

Max Resultant = 259.1g @ 2.7 ms



Resultant Accel (g's) vs. Time (msec)

Max Acceleration = 3.5g's @ 2.6 ms, Min Acceleration = -.5 g's, @ 10.5 ms



Accel Y(g's) vs. Time (msec)

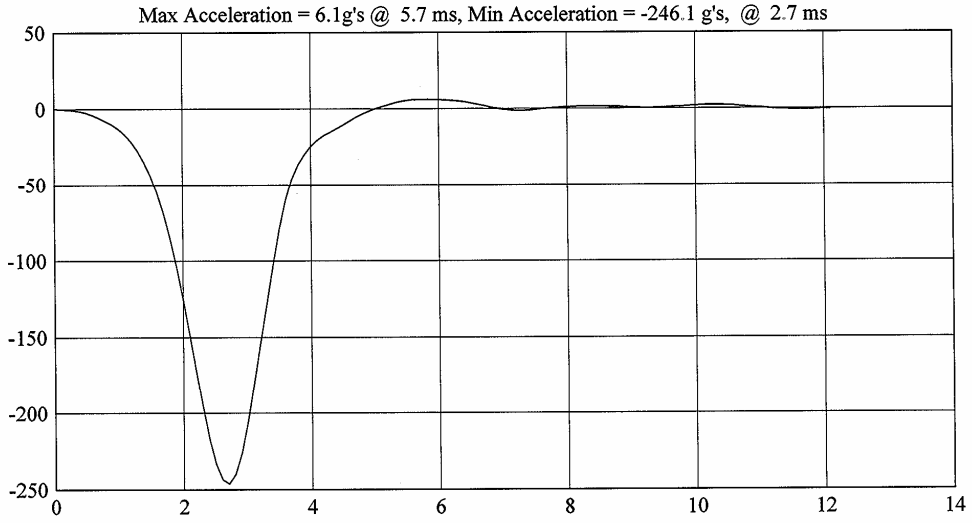
Head Drop
(Preliminary Test Report)

Test Number: H39014
Test Description: Pre

MGA Job Number: G06I7-001.2

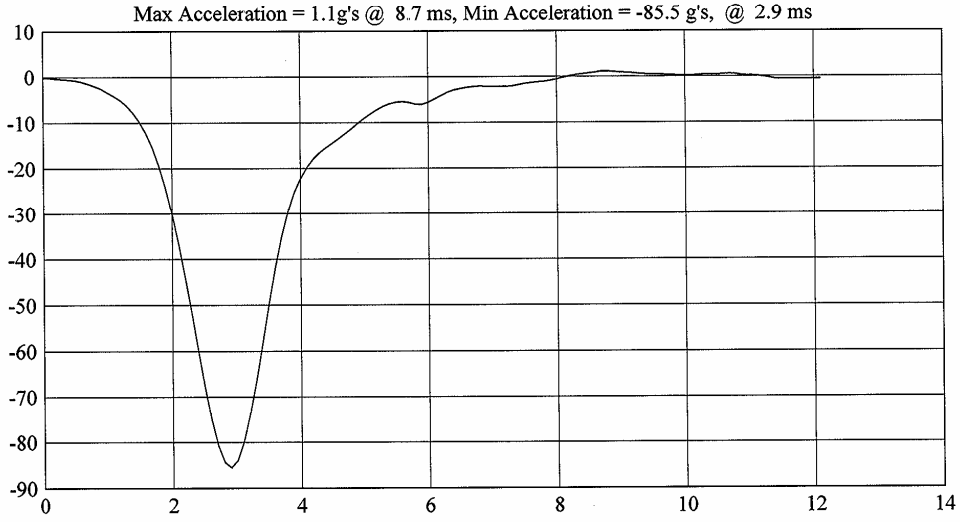
Test Date: 08/29/2006
Head # : 039

Max Acceleration = 6.1g's @ 5.7 ms, Min Acceleration = -246.1 g's, @ 2.7 ms



Accel X(g's) vs. Time (msec)

Max Acceleration = 1.1g's @ 8.7 ms, Min Acceleration = -85.5 g's, @ 2.9 ms



Accel Z(g's) vs. Time (msec)

4.6 Post-Test Calibration - 039

HEAD DROP TEST SUMMARY
PART 572L

HEADFORM SERIAL NUMBER: 039	CALIBRATION DATE: 08/31/2006 CALIBRATION TIME: 10:58:12 AM	
TEST PARAMETER	**SPECIFICATION**	**TEST RESULTS**
Weight	9.90 to 10.10 lbs.	10.00
Temperature	19° C to 26° C	21
Relative Humidity	10% to 70%	44
Peak Resultant Acceleration	225 G's to 275 G's	251.3
Peak Lateral Acceleration	15 G's Maximum	10.8
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	J13753	04/07/06	10/07/06
2	ENDEVCO	7264-2000	J22700	04/07/06	10/07/06
3	ENDEVCO	7264-2000	J32734	04/07/06	10/07/06

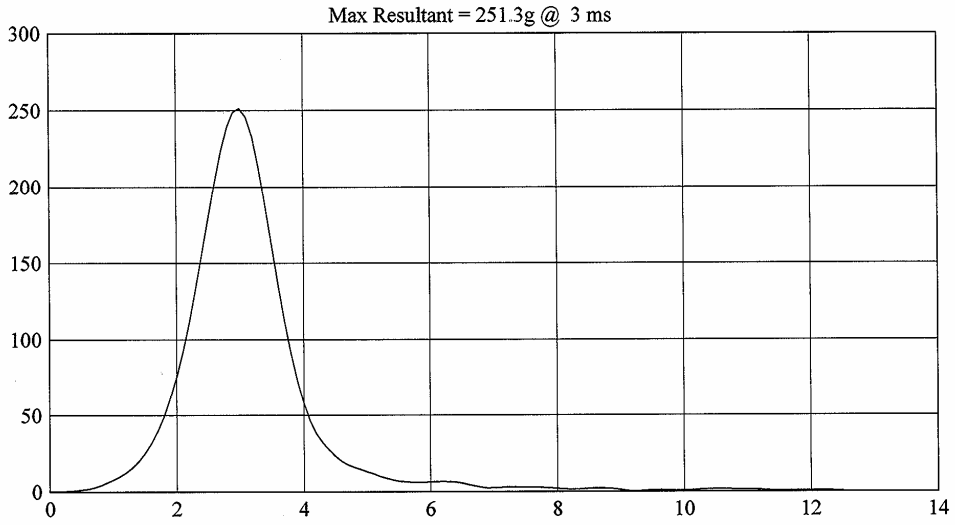
REMARKS:

RECORDED BY: _____ DATE: 08/31/2006

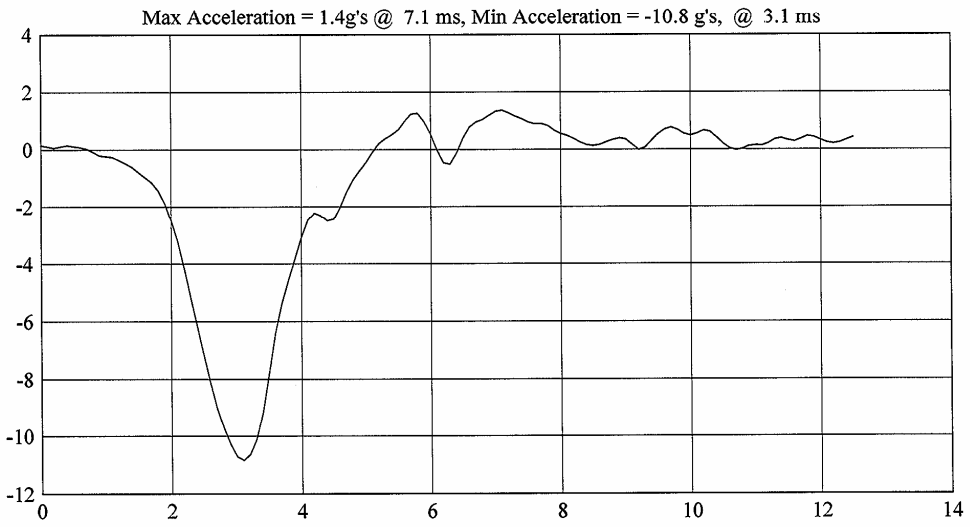
APPROVED BY: Helen A. Kaleto

Head Drop
(Preliminary Test Report)

Test Number: H39015 MGA Job Number: G06I7-001.2 Test Date: 08/31/2006
Test Description: Post Head # : 039



Resultant Accel (g's) vs. Time (msec)

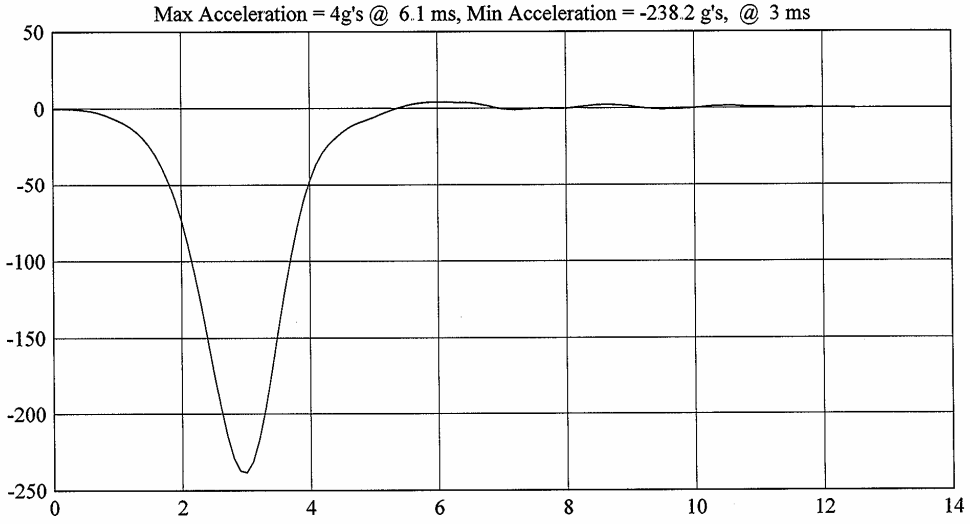


Accel Y(g's) vs. Time (msec)

Head Drop
(Preliminary Test Report)

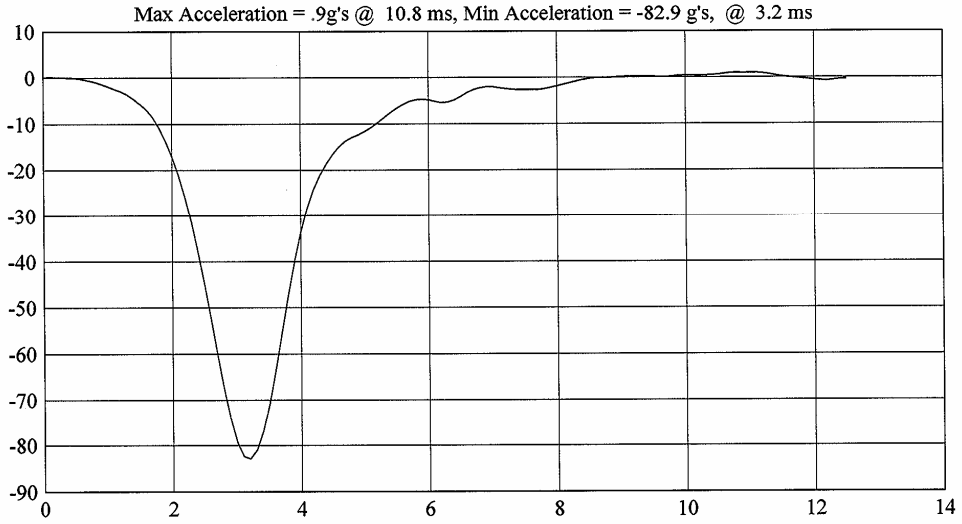
Test Number: H39015 MGA Job Number: G06I7-001.2 Test Date: 08/31/2006
Test Description: Post Head # : 039

Max Acceleration = 4g's @ 6.1 ms, Min Acceleration = -238.2 g's, @ 3 ms



Accel X(g's) vs. Time (msec)

Max Acceleration = .9g's @ 10.8 ms, Min Acceleration = -82.9 g's, @ 3.2 ms



Accel Z(g's) vs. Time (msec)

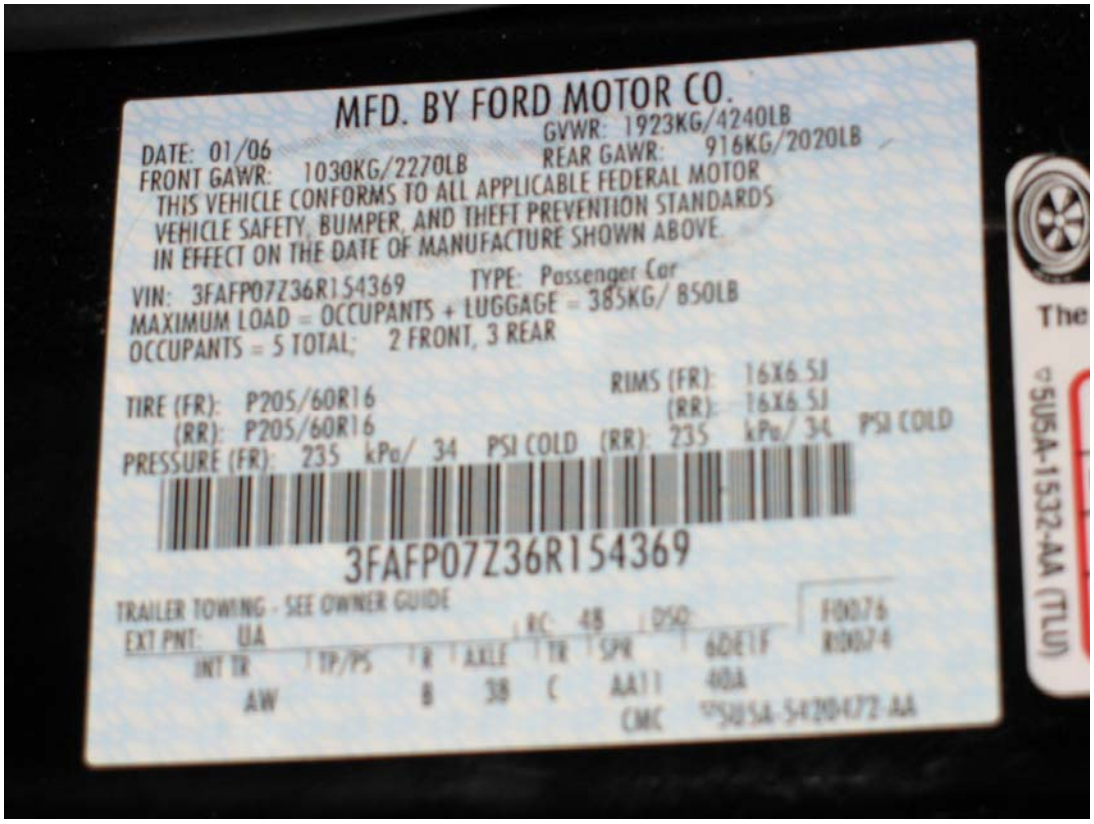
5.0 PHOTOGRAPHS – As Delivered

Left Side View

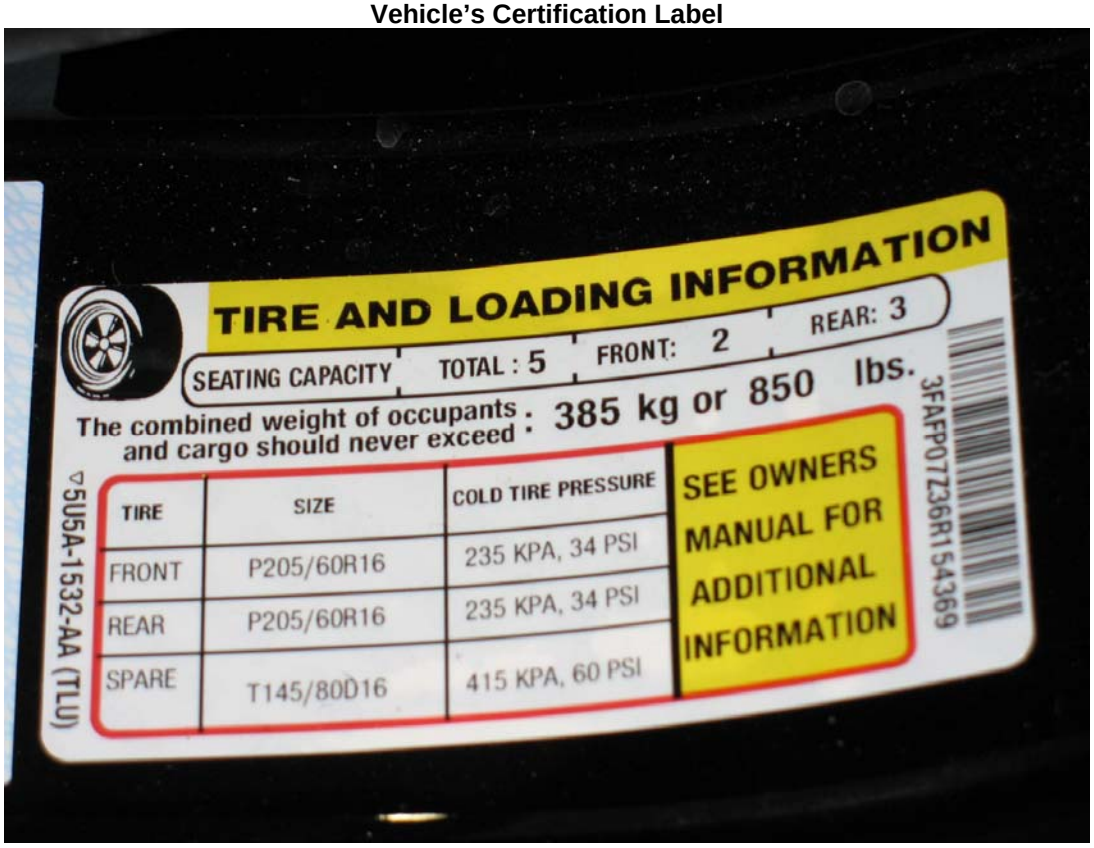
Right Side View

¾ Front View from Left Side

¾ Rear View from Right Side



Vehicle's Certification Label



Vehicle's Tire Information Label

Pre-Test Component Photographs


mga
08/29/06
NHTSA
2006 FORD FUSION
FMVSS 201U TESTING
PRE - TEST COMPONENT
C60204
G06I7-001.2


mga
08/29/06
NHTSA
2006 FORD FUSION
FMVSS 201U TESTING
PRE - TEST COMPONENT
C60204
G06I7-001.2


mga
08/29/06
NHTSA
2006 FORD FUSION
FMVSS 201U TESTING
PRE - TEST COMPONENT
C60204
G06I7-001.2

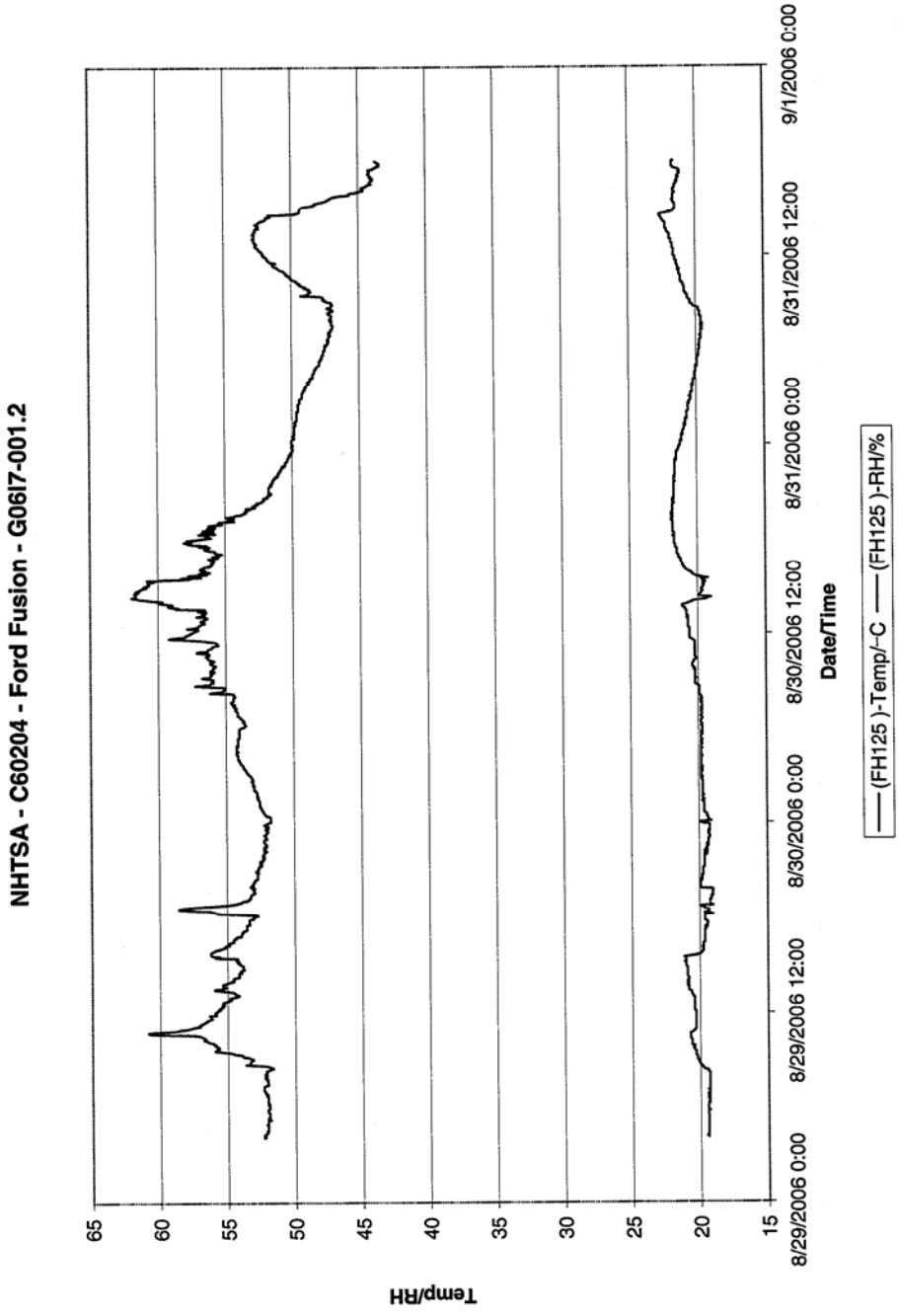
Post-Test Component Photographs


C60204
FM6235
RIGHT RP1
H/V 67/15
mga
08/31/06
NHTSA
2006 FORD FUSION
FMVSS 201U TESTING
POST - TEST COMPONENT
C60204
G06I7-001.2


mga
08/31/06
NHTSA
2006 FORD FUSION
FMVSS 201U TESTING
POST - TEST COMPONENT
C60204
G06I7-001.2


mga
08/31/06
NHTSA
2006 FORD FUSION
FMVSS 201U TESTING
POST - TEST COMPONENT
C60204
G06I7-001.2

Appendix A - Temperature Trace(s)



Appendix B - Calibration Certificates

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: 04/06/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0602
New DLR (100k **, Units:G):**	91.4
StdDeviation (%)	0.333
% Difference in DLR (New vs. Old):	-0.253
Temperature (°F):	74
Humidity (%):	34

Performed By: Matt Kerr

Approved By: Helen A. Kaleto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: J35919	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 04/06/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0602
New DLR (100k **, Units:G):**	94.4
StdDeviation (%)	0.447
% Difference in DLR (New vs. Old):	-0.659
Temperature (°F):	74
Humidity (%):	34

Performed By: Matt Kerr

Approved By: Helen A. Kaleto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: J22664	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 04/06/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0602
New DLR (100k **, Units:G):**	94.3
StdDeviation (%)	0.379
% Difference in DLR (New vs. Old):	1.167
Temperature (°F):	74
Humidity (%):	34

Performed By: Matt Kerr

Approved By: Helen A. Kaleto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: 04/07/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0604
New DLR (100k **, Units:G):**	108.8
StdDeviation (%)	0.008
% Difference in DLR (New vs. Old):	-1.418
Temperature (^{o}F):	72
Humidity (%):	38

Performed By: Matt Kerr

Approved By: Helen A. Kaleto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: J36193	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 04/07/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0604
New DLR (100k **, Units:G):**	102.7
StdDeviation (%)	0.015
% Difference in DLR (New vs. Old):	-1.848
Temperature (°F):	72
Humidity (%):	38

Performed By: Matt Kerr

Approved By: Helen R. Kaluto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: 04/07/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0604
New DLR (100k **, Units:G):**	97.2
StdDeviation (%)	0.003
% Difference in DLR (New vs. Old):	-0.381
Temperature (°F):	72
Humidity (%):	38

Performed By: Matt Kerr

Approved By: Helen R. Kaluto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: J13753	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 04/07/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number: A0603

New DLR (100k **, Units:G):** 103.6

StdDeviation (%) 0.411

% Difference in DLR (New vs. Old): .013

Temperature (^{o}F): 72

Humidity (%): 38

Performed By: Matt Kerr

Approved By: Helen A. Kaleto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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: J22700	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 04/07/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0603
New DLR (100k **, Units:G):**	94.4
StdDeviation (%)	0.342
% Difference in DLR (New vs. Old):	-1.008
Temperature (°F):	72
Humidity (%):	38

Performed By: Matt Kerr

Approved By: Helen R. Kaluto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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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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: J32734	**S/N:** *862/247*
Capacity: 2000 G	**Capacity:** *170 G*
Calibration Date: 04/07/2006	**Calibration Date:** *06/13/2005*
	Calibrated By: *Chuck DiMaggio/PCB Piezotronics, Inc.*

Test Reference Number:	A0603
New DLR (100k **, Units:G):**	95.5
StdDeviation (%)	0.25
% Difference in DLR (New vs. Old):	1.345
Temperature (°F):	72
Humidity (%):	38

Performed By: Matt Kerr

Approved By: Helen R. Kaluto

All calibrations are traceable to the National Institute of Standards and Technology. Estimated uncertainty of the measurement is ±4.1%. 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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248 / 577-5001 • fax 248 / 577-5025
www.mgaresearch.com

08/24/05 14:40 FAX 716 685 3886 PCB PIEZOTRONICS 002/00

~ Calibration Certificate ~

Per ISO 16063-21

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

Serial Number: 862/2470

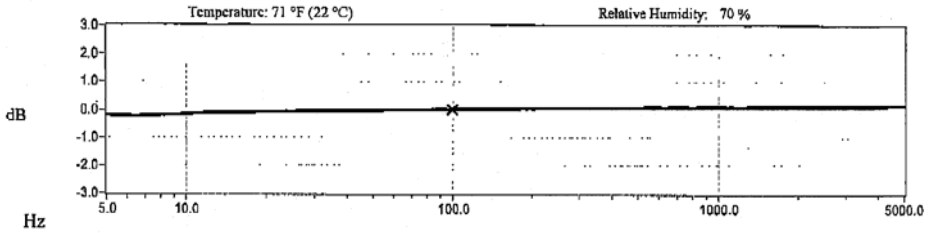
Description: ICP® Accelerometer Method: Back-to-Back Comparison Calibration

Manufacturer: PCB

Calibration Data

Sensitivity @ 100.0 Hz	**31.05**	**mV/g**	Output Bias	8.6	VDC
	(3.17	**mV/m/s²)**	Transverse Sensitivity	3.0	%

Sensitivity



Data Points

Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)	Frequency (Hz)	Dev. (%)
5.0	-2.3	REF. FREQ.	0.0	5000.0	1.8
10.0	-1.9	300.0	0.6		
15.0	-1.4	500.0	0.8		
30.0	-0.7	1000.0	1.0		
50.0	-0.4	3000.0	1.4		

Mounting Surface: Stainless Steel w/Silicone Grease Coating Fastener: Stud Mount Vertical
Acceleration Level (rms)*: 10.0 g (98.1 m/s²)
*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
**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. Due to state of the art limitations, the test accuracy ratio is 2:1. 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 Date: 06/13/05

ACCREDITED
Cert No 1862.01

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

PAGE 1 of 1

cal3 - 2201505619.38

~Certificate of Calibration~

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

N.I.S.T. Project #: F2565002/5UU2VF-2-1/81000539626720012
Calibration Date: 6/15/2005
Recalibration Date:
Calibration Technician: James Higbee 2b
Relative Humidity: 54%

Volts	*Current (mA)*	*Gain**
24.0	3.85	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

3425 Walden Avenue Depew, New York, USA 14043-2495

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

Interim Certification Document

rt Description: Gold **Certification Date:** 07/21/06 **Serial#:** G08-02-02-03122

ngle Point 2 Sigma: G08-02 +/-.051mm (+/-.0020") **Certificate#:** G0312238919

near Displacement 2 Sigma: G08-02 +/-.072mm (+/-.0028") **Ambient Temperature: 22°C +/- 3°C**

easurement Standards Traceability

Ball Bar Kit	Asset Number: 1041	Calibration Date: 06/07/06	*SI Traceability: NPL-LL0101/0501
10mm Step Gauge, Mitutoyo Code No.: 515-744 Measuring range: 1.5m	Asset Number: 682	Calibration Date: 10/03/05	*SI Traceability: NIST-821/270467-04

*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.

ertification 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
Not within specifications

Instrument condition outgoing
Within specifications

Technician: David Richards Date: 7/21/06

FARO Technologies, Inc.
Michigan Regional Office
PH1:248-669-8620

FAX:248-669-8656

46998 Magellan Drive
Wixom, MI 48393
USA

FARO®

LABORATORY ACCREDITATION BUREAU
ISO/IEC 17025 Accredited

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: GEI SYRACUSE
S/N: MGA60067 C/80337
Calibration Date: 8/30/05

Subject Tape Measure
Brand: STANLEY
S/N: 586
Calibration Date: 10/6/05

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 X Fail ____ Maximum Difference = 0

Date: 10/6/2005 Performed By: RJ Mill

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.

JA 10/7/05

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: **48016**
Report Number: **060209704**
Page: **1 of 1**

Gauge Number: **MGA00060**
Gauge Desc: **Digital Protractor**
Manufacturer: **Macklanburg-Duncan**
Model Number: **Pro 360**
Serial Number: **N/A**

Customer PO: **07-05-1517**
Last Calibration: **1/19/05**
Calibration Date: **2/9/06**
Next Calibration: **2/9/07**

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	6/6/05	6/6/06	821/270003-04	(0.6R + 2L)microinches
DoAll Sine Bar ID#1879	12/6/05	12/6/06	821/270003-04 & 3600042619	

Results:

As Found Readings

Units	Nominal	Actual	Deviation
Decimal Deg.	5.00	5.0	0.00
	10.00	10.0	0.00
	20.00	19.9	-0.10
Tolerance	30.00	29.9	-0.10
± 0.1°	40.00	40.0	0.00

Reference Level Check: Within +/- .1 degrees

As Left Readings

Nominal	Actual	Deviation
5.00	5.0	0.00
10.00	10.0	0.00
20.00	19.9	-0.10
30.00	29.9	-0.10
40.00	40.0	0.00

Reference Level Check: Within +/- .1 degrees

Comments: Environmental conditions during calibraiton: 68 deg. F., 41 % RH.
No adjustments required.

Bill Rinzema issued: 2-9-06
Bill Rinzema/bjk
Calibration Technician

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

JH 2/21/06

Form: F410/12-3 Revision Date 03-11-03
Revision Level: E
STANDARD FORM

20950 Boening St.
Southfield Mi.48075
Phone (248) 358-0590 Fax (248) 355-2529

Sterling Scale Company Inc.
Scale Certificate of Calibration

Customer: MGA RESEARCH

Location of Calibration: 446 EXECUTIVE DRIVE
TROY, MI 48083

Certification Number: 9436

Date of Calibration: 7-20-06

**Next Calibration Due: 7-07

Environmental Condition: (Good) Fair Poor

Make:	Model:	Serial/ID#:	Capacity:
SW SCALES	SW DELUXE	26032389	8800 x 1lb

This certifies that the above scale has been calibrated using the relevant EPO, original equipment manufacturer calibration procedures along with Handbook 44 tolerances using weights traceable to the National Institute of Standards and Technology as well as the International Systems of Units (SI).

Sterling Scale Weight/Weight kit serial #: 1216, 1218, 1220, 1221, 50967, 10002

Calibrated to class: III

Date Weight/Weight kit calibrated: 4/06 9/05

Date Weight/Weight kit due: 4/08 9/07

Expanded Uncertainty (k=2) confidence level of 95% is reported with the before and after readings on next page.

Temperature 78 Humidity 66

Pg 1 of 3

These items relate only to these results
Tolerances followed are maintenance/acceptance per HB-44
This report shall not be reproduced, except in full, without written approval of the laboratory.
**** Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired.**
The reported uncertainty is valid only for the environment in which it is determined.

7/20/06

ACCREDITED
1448.01

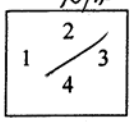
Form: F410/12-3 Revision Date 03-11-03
Revision Level: E
STANDARD FORM

20950 Boening St.
Southfield Mi.48075
Phone (248) 358-0590 Fax (248) 358-0590

Sterling Scale Company Inc.
Scale Certificate of Calibration

	Applied Test Weight	Before Adjustment	Tolerance +/-	in tolerance Y / N	After Adjustment	in tolerance Y / N	expanded uncertainty
RP1	50 LB	50 LB	1 LB	Y	50 LB	Y	.003 LB
	1000 LB	1000 LB	2 LB	Y	1000 LB	Y	.06 LB
	2200 LB	2200 LB	2 LB	Y	2200 LB	Y	.13 LB
RP2	50 LB	50 LB	1 LB	Y	50 LB	Y	.003 LB
	1000 LB	1000 LB	2 LB	Y	1000 LB	Y	.06 LB
	2200 LB	2200 LB	2 LB	Y	2200 LB	Y	.13 LB

Shift test. N/A



4 PAD SYSTEM

	1	2	3	4
Before Adj.				
After Adj.				

Scale condition as found: GOOD

Tests performed: ☒ Repeatability ☒ Linearity ☐ Sensitivity ☒ Discrimination

☒ **Scale Certified** ☐ **Scale Rejected**

If scale is rejected, why?

GARY
Sterling Scale Service Rep. **Date:** 7-20-06 pg 2 of 3

These items relate only to these results.
This report shall not be reproduced, except in full, without written approval of the laboratory.
Tolerances followed are maintenance/acceptance per HB-44
**** Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired.**

ACCREDITED
1448.01

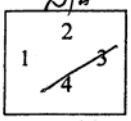
Form: F410/12-3 Revision Date 03-11-03
Revision Level: E
STANDARD FORM

20950 Boening St.
Southfield Mi.48075
Phone (248) 358-0590 Fax (248) 358-0590

Sterling Scale Company Inc.
Scale Certificate of Calibration

	Applied Test Weight	Before Adjustment	Tolerance +/-	in tolerance Y / N	After Adjustment	in tolerance Y / N	expanded uncertainty
LR3)	50 LB	50 LB	1 LB	Y	50 LB	Y	.003 LB
	1000 LB	1000 LB	2 LB	Y	1000 LB	Y	.06 LB
	2200 LB	2200 LB	2 LB	Y	2200 LB	Y	.13 LB
LF4)	50 LB	50 LB	1 LB	Y	50 LB	Y	.003 LB
	1000 LB	1000 LB	2 LB	Y	1000 LB	Y	.06 LB
	2200 LB	2200 LB	2 LB	Y	2200 LB	Y	.13 LB

Shift test. N/A



4 PAD System

	1	2	3	4
Before Adj.				
After Adj.				

Scale condition as found: GOOD

Tests performed: ☒ Repeatability ☒ Linearity ☐ Sensitivity ☒ Discrimination

☒ **Scale Certified** ☐ **Scale Rejected**

If scale is rejected, why? _____

GARY
Sterling Scale Service Rep. **Date:** 7-26-06 pg 3 of 3

These items relate only to these results.
This report shall not be reproduced, except in full, without written approval of the laboratory.
Tolerances followed are maintenance/acceptance per HB-44
**** Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired.**

ACCREDITED
1448.01

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: **50054**
Report Number: **060707606**
Page: **1 of 1**

Gauge Number: **MGA00081**
Gauge Desc: **0 to 20lb x .01lb Digital Scale**
Manufacturer: **Detecto**
Model Number: **AP-20**
Serial Number: **E33603-0213**

Customer PO: **07-05-1590**
Last Calibration: **4/8/05**
Calibration Date: **7/7/06**
Next Calibration: **7/7/07**

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	8/20/04	8/20/06	MI-04-04-7444	+/-0.001% of Load

Results:

Tolerance used: ± 1 Division

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	10.00	0.00		10.00	10.00	0.00
51-75% fs	15.00	15.00	0.00		15.00	15.00	0.00
76-100% fs	20.00	20.00	0.00		20.00	20.00	0.00
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: 68° F, 40% RH.

Karen Shipley issued: 7/7/06
Karen Shipley/bjk
Calibration Technician

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

7/12/06

Certificate of Instrument Calibration and Testing

Customer Instrument

Dickson Model Number: FH125
Serial Number: 06018122
Calibration Technician Dan Gawel
Calibration Date: 01/20/2006

Calibration Standards

ACCREDITED Cert # 1621.01

General Eastern: Model # M3
Ser. # 0850800 / 2360502
Accuracy: ± .4% FS RH and ± .4 °F
Certified Feb, 2005

Azonix Model # A1011 Ser. # T2513-9027
RTD Platinum Probe Ser. # 496013 Accuracy: ± .2 °F
Certified March, 2005

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 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
21.1	22.4	± 2% RH
30.7	30.6	± 2% RH
80.3	81.3	± 3% RH
Temperature °F	Temperature °F	Temperature
12.4	12.5	± 1.8 ° F (± 1.0 ° C)
72.7	73.1	
111.1	110.7	

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 REQUIRE

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