

FINAL REPORT NUMBER 201U-MGA-04-01

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

DAIMLERCHRYSLER CORPORATION
2004 DODGE DURANGO ST MPV
NHTSA No. C40304

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Dates: February 3-4, 2004
Report Date: February 5, 2004

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

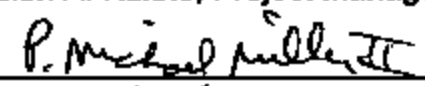
This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department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

Prepared By: 

David G. Gotwals, Project Engineer

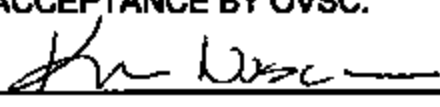


Helen A. Kaleto, Project Manager

Approved By: 

Approval Date: 8/5/04

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: 

Acceptance Date: 8.16.2004

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 201U-MGA-04-01	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 201U Compliance Testing of a 2004 Dodge Durango ST MPV, NHTSA No. C40304		5. Report Date February 5, 2004	
		6. Performing Organization Code MGA	
7. Author(s) Helen A. Kaleto, Project Manager David G. Gotwals, Project Engineer		8. Performing Organization Report No. 201U-MGA-04-01	
9. Performing Organization Name and Address MGA Research Corporation 446 Executive Drive Troy, Michigan 48063		10. Work Unit No.	
		11. Contract or Grant No. DTNH22-99-C-11005	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, SW Room 8111 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report	
		14. Sponsoring Agency Code NVS-220	
15. Supplementary Notes			
16. Abstract A compliance test was conducted on the subject 2004 Dodge Durango ST MPV, NHTSA No. C40304, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-201U-01 for the determination of FMVSS 201U compliance. The test was conducted at MGA Research Corporation in Troy, Michigan on February 3-4, 2004. Test failures identified were as follows: NONE The data recorded seems to indicate that the 2004 Dodge Durango ST MPV tested appears to comply with the requirements for FMVSS 201U which were set forth by the National Highway Traffic Safety Administration.			
17. Key Words Compliance Testing Safety Engineering FMVSS 201U 2004 Dodge Durango ST MPV		18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division, Mail Code: NPO-230 400 Seventh Street, SW Washington, D.C. 20590 Telephone No. (202) 366-4946	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 137	22. Price N/A

TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1.0	PURPOSE OF COMPLIANCE TEST	1-1
2.0	COMPLIANCE DATA SUMMARY	2-1
3.0	TEST DATA (Including Acceleration and Velocity Plots)	3-1
4.0	TEST EQUIPMENT LIST AND CALIBRATION INFORMATION	4-1
5.0	PHOTOGRAPHS	5-1
APPENDIX A	TEMPERATURE TRACE	A-1

LIST OF TABLES

<u>TABLE</u>	<u>DESCRIPTION</u>	<u>PAGE NO</u>
2-1	SUMMARY TABLE OF TEST RESULTS	2-2
2-2	GENERAL TEST AND VEHICLE PARAMETER DATA	2-4
2-3	HORIZONTAL IMPACT ANGLE RANGE FOR A- AND B-PILLARS	2-7
2-4	VERTICAL IMPACT ANGLE RANGES	2-8
2-5	TARGET MEASUREMENTS	2-10
2-6	SUMMARY OF TARGETING RESULTS	2-12
4-1	LIST OF ITEMS USED	4-1
4-2	FMH CALIBRATION SUMMARY	4-2

1.0 PURPOSE OF COMPLIANCE TEST

The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2004 Dodge Durango ST MPV, meets the performance requirements of FMVSS 201U, Occupant Protection In Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted on February 3-4, 2004 on a 2004 Dodge Durango ST MPV, manufactured by DaimlerChrysler Corporation.

All tests were conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-201U-01 dated April 3, 1998 and the corresponding MGA Research Corporation's FMVSS 201U procedure number MGATP201U_FRAME#2 dated March 20, 2003.

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 2004 Dodge Durango ST MPV was equipped A, B, C, and D-Pillars, an assist handle on the passenger A-Pillar, an adjustable seat belt anchor and assist handle on each B-Pillar, an adjustable seat belt anchor on each C-Pillar, a coat hook located on the side rail above each rear door, and two overhead light consoles.

Upon completion of targeting the test vehicle, ten (10) targets were chosen to be impacted based upon engineering judgment and certification test data provided by DaimlerChrysler Corporation. Targets were chosen which appeared most likely to give high HIC(d) values. The ten (10) targets chosen were:

AP1	BP1	SR2A	UR5
AP2	BP3	SR3-1	
AP3	OP1	UR1	

The 2004 Dodge Durango ST MPV tested appears to comply with the performance criteria for FMVSS 201U. 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: 2004 Dodge Durango

VEH. NHTSA NO.: C40304 VIN: 1D4HD38N24F123362 COLOR: Deep Molten Red

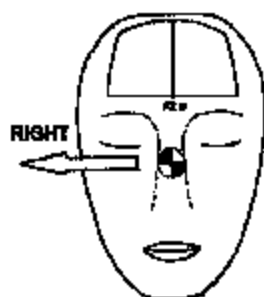
VEH. BUILD DATE: November, 2003 TEST DATES: February 3-4, 2004

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Nicholas Brzuch, Scott Kralger

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	118	26	23.9	313	195	18	13 Left
AP2	Left	200	46	23.4	372	273	11	2 Right
AP3	Right	162	44	23.3	521	471	5	3 Left
BP1	Right	90	29	23.8	456	384	20	5 Left
BP3	Right	85	-8	23.7	402	313	20	19 Right
OP1	Left	270	11	23.8	486	424	26	1 Right
SR2A	Right	90	38	24.0	485	422	13	5 Left
SR3-1	Left	270	43	23.6	508	453	9	8 Left
UR1	Left	270	35	23.9	372	272	25	5 Right
UR5	Right	90	36	23.8	290	184	18	4 Right

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



POST TEST COMMENTS:

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

AP2 Right: The A-Pillar trim popped off the pillar mount.

SR2A Right: Slight headliner deformation was noticed.

No damage was observed for any other targets.

REMARKS:

The targets listed were impacted in the following order:

Right: BP3, UR5, BP1, AP3, AP1, SR2A

Left: AP2, UR1, SR3-1, OP1

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

RECORDED BY: David G. Gotwals

DATE: February 4, 2004

APPROVED BY: Helen A. Kaleta

TABLE 2-2
GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Dodge Durango

VEH. NHTSA NO.: C40304 VIN: 1D4HD38N24F123362 COLOR: Deep Molten Red

VEH. BUILD DATE: November, 2003 TEST DATES: February 3-4, 2004

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Nicholas Brzuch, Scott Kreiger

INTERIOR TRIM INFORMATION: A, B, C, and D-Pillars, an assist handle on the passenger A-Pillar, an adjustable seat belt anchor and assist handle on each B-Pillar, an adjustable seat belt anchor on each C-Pillar, a coat hook located on the side rail above each rear door, and two overhead light consoles.

SUNROOF INFORMATION:

Installed: Yes X No
Operation: Electric Manual

ROLL-BAR INFORMATION: Installed: Yes X No

Padded: Yes X No
Braces: Yes X No

GENERAL INFORMATION:

Date Received: 12/16/03; Odometer Reading: 19 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: DaimlerChrysler Corporation

Date of Manufacture: November, 2003; VIN: 1D4HD38N24F123362

GVWR: 2994 kg;

GAWR FRONT: 1407 kg;

GAWR REAR: 1770 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 227 kpa REAR: 227 kpaRecommended Tire Size: P245/70R17 BSW

Recommended Cold Tire Pressure:

FRONT: 227 kpa REAR: 227 kpaSize of Tire on Test Vehicle: P245/70R17 BSWType of Spare Tire: P245/70R17 BSW; Space Saver: ____; Standard: X

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ____; Bucket X; Split Bench ____Number of Occupants: Front 2; Rear 3; TOTAL 5VEHICLE CAPACITY WEIGHT (VCW) = 476 kgNo. of Occupants x 68 kg = 340 kgRated Cargo/Luggage Weight (RCLW) = 136 kg (difference)

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

Right Front = 547.0 kg Right Rear = 477.5 kgLeft Front = 386.5 kg Left Rear = 523.0 kgTOTAL FRONT = 933.5 kg TOTAL REAR = 1000.5 kg% Total Weight = 48.0 % % Total Weight = 52.0 %TOTAL DELIVERED WEIGHT = 1934.0 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 1934.0 kgRated Cargo/Luggage Wt = 136.0 kgTARGET TEST WEIGHT: 2070.0 kg

WEIGHT OF TEST VEHICLE:

Right Front =	<u>544.0</u> kg	Right Rear =	<u>563.5</u> kg
Left Front =	<u>357.5</u> kg	Left Rear =	<u>615.5</u> kg
TOTAL FRONT =	<u>901.5</u> kg	TOTAL REAR =	<u>1179.0</u> kg
% Total Weight =	<u>43.0</u> %	% Total Weight =	<u>57.0</u> %
TOTAL TEST WEIGHT = <u>2080.5</u> kg			
Weight of ballast secured in vehicle's cargo area = <u>136.0</u> kg			

TEST VEHICLE ATTITUDE:

Pitch Angle at Right Door Sill = 0.8 rear higher
 Pitch Angle at Left Door Sill = 1.2 rear higher
 Roll Angle at Front Bumper = 2.5 left higher
 Roll Angle at Rear Bumper = 0.4 left higher

FULLY LOADED:

Pitch Angle at Right Door Sill = 0.4 rear higher
 Pitch Angle at Left Door Sill = 0.7 rear higher
 Roll Angle at Front Bumper = 2.5 left higher
 Roll Angle at Rear Bumper = 0.4 left higher

AS TARGETED:

Pitch Angle at Right Door Sill = 0.4 rear higher
 Pitch Angle at Left Door Sill = 1.0 rear higher
 Roll Angle at Front Bumper = 2.5 left higher
 Roll Angle at Rear Bumper = 0.4 left higher

VEHICLE WHEELBASE = 2636 mm

REMARKS: The seat travel distance was measured to be 220 mm for the driver front seat and 220 mm for the passenger front seat.

RECORDED BY: David G. GotwalsDATE: January 31, 2004APPROVED BY: Helen A. Kaleto

TABLE 2-3

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Dodge DurangoVEH. NHTSA NO.: C40304 VIN: 1D4HD38N24F123362 COLOR: Deep Molten RedVEH. BUILD DATE: November, 2003 TEST DATES: February 3-4, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, Scott Kreiger

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

	HORIZONTAL ANGLE SPECIFIED RANGE		MINIMUM HORIZONTAL ANGLE		MAXIMUM HORIZONTAL ANGLE	
A-PILLAR	L	195°-255°	L	198.8°	L	244.6°
	R	105°-165°	R	115.6°	R	162.9°
B-PILLAR	L	195°-345°	L	198.0°	L	276.1°
	R	15°-165°	R	84.4°	R	161.8°

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: David G. GotwalsDATE: January 31, 2004APPROVED BY: Helen A. Kalet

TABLE 2-4

VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Dodge DurangoVEH. NHTSA NO.: C40304 VIN: 1D4HD38N24F123362 COLOR: Deep Molten RedVEH. BUILD DATE: November, 2003 TEST DATES: February 3-4, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, Scott Kreiger

VERTICAL IMPACT ANGLE RANGES

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
FRONT HEADER	FH1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	FH2	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
SIDE RAIL	SR1	L 0°-50°	L 0°	L 34°
		R 0°-50°	R 0°	R 34°
	SR2A	L 0°-50°	L 0°	L 40°
		R 0°-50°	R 0°	R 38°
	SR2B	L 0°-50°	L 0°	L 42°
		R 0°-50°	R 0°	R 38°
	SR3-1	L 0°-50°	L 0°	L 43°
		R 0°-50°	R 0°	R 40°
	SR3-2	L 0°-50°	L 0°	L 40°
		R 0°-50°	R 0°	R 35°
A-PILLAR	AP1	L -5°-50°	L -5°	L 25°
		R -5°-50°	R -5°	R 28°
	AP2	L -5°-50°	L -5°	L 48°
		R -5°-50°	R -5°	R 35°
	AP3	L -5°-50°	L -5°	L 45°
		R -5°-50°	R -5°	R 44°

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
B-PILLAR	BP1	L -10°-50°	L -10°	L 26°
		R -10°-50°	R -10°	R 29°
	BP2*	L 0°-50°	L 0°	L 8°
		R 0°-50°	R 0°	R 7°
	BP3	L -10°-50°	L -10°	L -7°
		R -10°-50°	R -10°	R -6°
	BP4	L -10°-50°	L -10°	L 9°
		R -10°-50°	R -10°	R 9°
OTHER PILLAR	OP1*	L 0°-50°	L 0°	L 11°
		R 0°-50°	R 0°	R 12°
	OP2	L -10°-50°	L -10°	L 0°
		R -10°-50	R -10°	R -4°
UPPER ROOF 1		0°-50	0°	35°
UPPER ROOF 2		0°-50	0°	40°
UPPER ROOF 3		0°-50	0°	45°
UPPER ROOF 4		0°-50	0°	32°
UPPER ROOF 5		0°-50	0°	36°
UPPER ROOF 6		0°-50	0°	43°

As determined using the Procedures specified in S8.13.4.2. *Targets BP2 and OP1 are seat belt anchorage locations.

RECORDED BY: David G. Gotwals

DATE: January 31, 2004

APPROVED BY: Helen A. Kaleta

TABLE 2-5

TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Dodge DurangoVEH. NHTSA NO.: C40304 VIN: 1D4HD38N24F123362 COLOR: Deep Molten RedVEH. BUILD DATE: November, 2003 TEST DATES: February 3-4, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, Scott Kreiger

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	220 mm	220 mm
T°	Horizontal ∠ {CG-F1 (Left Seat) to (Right A-Pillar)}	115.4°	—
A1°	360° - T°	244.6°	—
W°	Horizontal ∠ {CG-2 (Left Seat) to (Left A-Pillar)}	198.8°	—
A2°	A2° = W°	198.8°	—
U°	Horizontal ∠ {CG-2 (Left Seat) to (Left B-Pillar)}	276.1°	—
B1°	B1° = U°	276.1°	—
V°	Horizontal ∠ {CG-R (Left Seat) to (Left B-Pillar)}	198.0°	—
B2°	B2° = V°	198.0°	—
W° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right A-Pillar)}	—	162.9°
A1° (right)	A1° (right) = W° (right)	—	162.9°
T° (right)	Horizontal ∠ {CG-F1 (Right Seat) to (Left A-Pillar)}	—	244.4°
A2° (right)	360° - T° (right)	—	115.6°
V° (right)	Horizontal ∠ {CG-R (Right Seat) to (Right B-Pillar)}	—	161.8°
B1° (right)	B1° (right) = V° (right)	—	161.8°
U° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right B-Pillar)}	—	84.4°
B2° (right)	B2° (right) = U° (right)	—	84.4°
J	A-Pillar {(Plane 3) - (Plane 5)}	324.6 mm	331.0 mm
J/2	J + 2	162.3 mm	165.5 mm
D1	Upper Roof {(Plane A) - (Plane B)}	2740.0 mm	
D1/2	D1 + 2	1370.0 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1306.9 mm	
D2/2	D2 + 2	653.5 mm	
.35D1	.35 x D1	959.0 mm	
.35D2	.35 x D2	457.4 mm	

Measurement	Description	Left Side	Right Side
N	B-Pillar {{BPR}} - (lowest point on daylight opening forward of B-Pillar))	455.8 mm	449.8 mm
N/2	B-Pillar {{BP3}} - (lowest point on daylight opening forward of B-Pillar))	227.8 mm	224.9 mm
N/4	B-Pillar {{BP4}} - (lowest point on daylight opening forward of B-Pillar))	113.9 mm	112.5 mm
Q	O-Pillar (Plant 13 - Plane 14)	422.1 mm	420.1 mm
Q/2	Q / 2	211.1 mm	210.1 mm
D	R-Pillar (Point 7 - Point M)	1115.0 mm	1115.0 mm
D/2	D / 2	557.5 mm	557.5 mm
3D/7	3 D / 7	477.9 mm	477.9 mm

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

SgRP Locations (vehicle coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2184.0	-395.4	733.6	2184.0	395.4	733.6
Rear Row	3025.5	-395.4	769.3	3025.5	395.4	769.3

SgRP Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2183.9	-393.6	734.8	2184.0	395.6	734.0
Rear Row	3024.9	-391.3	772.4	3025.0	398.3	771.5

CG Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
CGF1	2123.9	-393.6	1394.8	2124.0	395.6	1394.0
CGF2	2343.9	-393.6	1394.8	2344.0	395.6	1394.0
CGR	3184.9	-391.3	1432.4	3185.0	398.3	1431.5

REFERENCE FOR VEHICLE COORDINATE SYSTEM:

Driver Front Outboard Seat Anchor (x, y, z) = (1855.2, -604.3, 461.8)

REMARKS:

RECORDED BY: David G. Gotwals

DATE: January 31, 2004

APPROVED BY: Helen A. Kaleto

TABLE 2-6

SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Dodge DurangoVEH. NHTSA NO.: C40304 VIN: 1D4HD38N24F123362 COLOR: Deep Molten RedVEH. BUILD DATE: November, 2003 TEST DATES: February 3-4, 2004TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Nicholas Brzuch, Scott Kreiger

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of mm Spheres)	Impact (Yes/No)
	x	y	z					
A-Pillar Left Side								
AP1	1850.1	-566.5	1497.0	244	25	No	—	No
AP2	1682.7	-614.6	1409.9	200	46	No	—	Yes
AP3	1553.3	-642.0	1335.6	—	—	Yes	—	—
REL	1613.6	-629.3	1369.9	200	45	—	3	No
A-Pillar Right Side								
AP1	1851.5	563.1	1506.1	116	26	No	—	Yes
AP2	1704.9	603.5	1417.5	162	35	No	—	No
AP3	1591.0	609.1	1341.0	162	44	No	—	Yes
B-Pillar Left Side								
BP1	2399.8	-546.6	1566.1	270	26	No	—	No
BP2	2399.5	-604.1	1345.7	270	8	No	—	No
BP3	2363.7	-638.7	1359.1	—	—	Yes	—	—
REL	2345.6	-641.5	1361.2	276	-7	—	1	No
BP4	2498.3	-644.1	1246.4	220	9	No	—	No
B-Pillar Right Side								
BP1	2403.2	502.5	1592.1	90	29	No	—	Yes
BP2	2401.8	605.4	1353.4	90	7	No	—	No
BP3	2366.1	638.8	1367.4	—	—	Yes	—	—
REL	2345.9	642.3	1372.2	85	-6	—	1	Yes
BP4	2503.4	649.0	1254.6	140	9	No	—	No

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of mm Spheres)	Impact (Yes/No)
	x	y	z					
Other Pillar Left Side								
OPR	3399.8	-466.6	1598.9	—	—	No	—	No
OP1	3424.2	-622.3	1403.6	270	11	No	—	Yes
OP2	3450.5	-669.5	1388.4	—	—	Yes	—	—
REL	3503.6	-665.8	1396.0	270	0	—	2	No
Other Pillar Right Side								
OPR	3472.5	487.4	1605.1	—	—	No	—	No
OP1	3433.7	626.2	1413.4	90	12	No	—	No
OP2	3522.3	650.0	1395.1	—	—	Yes	—	—
REL	3538.9	636.6	1392.0	90	-4	—	1	No
Rear Pillar Left Side								
RP1	4161.4	-558.4	1544.2	Exempt from testing				
RP2	4273.6	-648.1	1395.1	Exempt from testing				
Rear Pillar Right Side								
RP1	4180.1	547.5	1549.2	Exempt from testing				
RP2	4287.9	643.1	1399.1	Exempt from testing				
Front Header Left Side								
FH1	1767.9	-469.1	1546.6	180	50	No	—	No
FH2	1741.9	-320.5	1554.3	180	50	No	—	No
Front Header Right Side								
FH1	1769.8	463.4	1553.6	180	50	No	—	No
FH2	1742.7	316.5	1557.1	180	50	No	—	No
Side Rail Left Side								
SR1	2000.8	-517.8	1560.4	270	34	No	—	No
SR2A	2149.2	-515.2	1566.6	270	40	No	—	No
SR2B	2099.0	-515.7	1562.0	270	42	No	—	No
SR3-1	2548.4	-514.6	1596.6	270	43	No	—	Yes
SR3-2	3550.6	-499.7	1588.9	270	40	No	—	No
Side Rail Right Side								
SR1	2001.3	516.3	1557.4	90	34	No	—	No
SR2A	2152.5	514.6	1573.9	90	38	No	—	Yes
SR2B	2105.6	514.0	1569.7	90	38	No	—	No

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of mm Spheres)	Impact (Yes/No)
	x	y	z					
SR3-1	2556.6	511.0	1603.0	90	40	No	—	No
SR3-2	3622.7	502.8	1589.8	90	35	No	—	No
Rear Header Left Side								
RH	4238.6	-393.0	1575.3	Exempt from testing				
Rear Header Right Side								
RH	4242.1	396.6	1576.0	Exempt from testing				
Upper Roof Left Side								
UR1	2399.3	-448.6	1627.9	270	35	No	—	Yes
UR2	2795.9	-451.1	1646.9	270	40	No	—	No
UR3	3399.3	-445.2	1620.4	270	45	No	—	No
Upper Roof Right Side								
UR4	2404.7	456.0	1627.3	90	32	No	—	No
UR5	2798.7	452.6	1650.8	90	36	No	—	Yes
UR6	3476.7	453.9	1624.0	90	43	No	—	No

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

REMARKS:

- Targets RP1, RP2, and RH on both sides were determined to be located greater than 600 mm behind the rearmost SgRP. Therefore, these targets are exempt from testing.

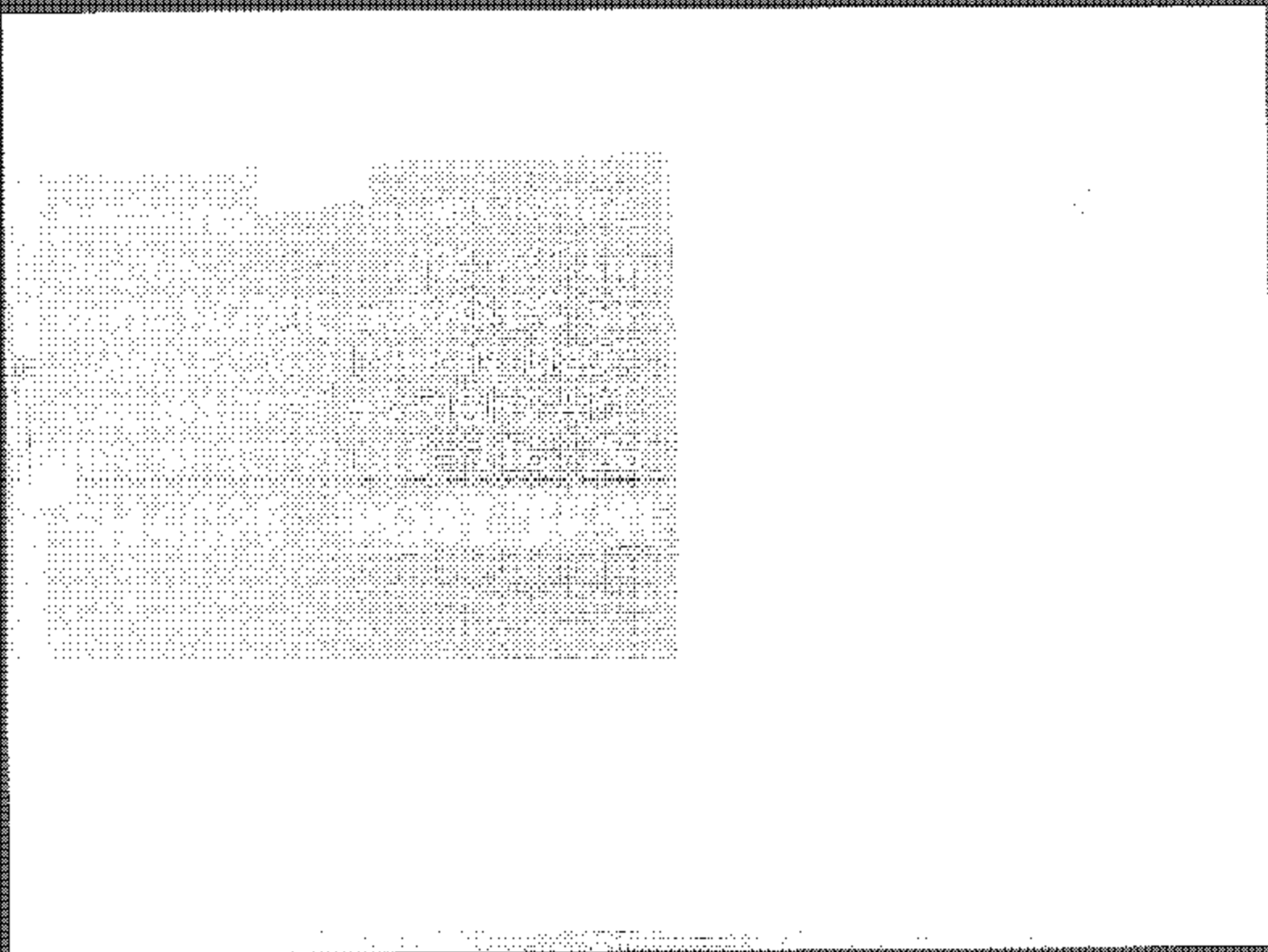
RECORDED BY: David G. Gotwals

DATE: January 31, 2004

APPROVED BY: Helen A. Kaleto



APR 1961
60417001
URANEO ST
FBI LABORATORY
FBI LABORATORY



MICHIGAN OPERATIONS
DATE: 3/28/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C-40304 VEHICLE YR/MAKE/MODEL: 2004 Dodge Durango ST

GENERAL TEST PARAMETERS:

Test Number: 5
Target (Vehicle Side): left/right API Temperature: 22 °F/C
MGA Test Reference No.: FM4025 Humidity: 26 %
Approach Angles: Horizontal 116 ° Time of Test: 4:20 am/pm
Vertical 26 ° FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
313	195	9.5	23.9	19	13

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35524	-91.8	1.20	1.20
Y	6	J35519	93.5	1.23	1.23
Z	7	J31061	93.5	1.51	1.51

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

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 2/3/04

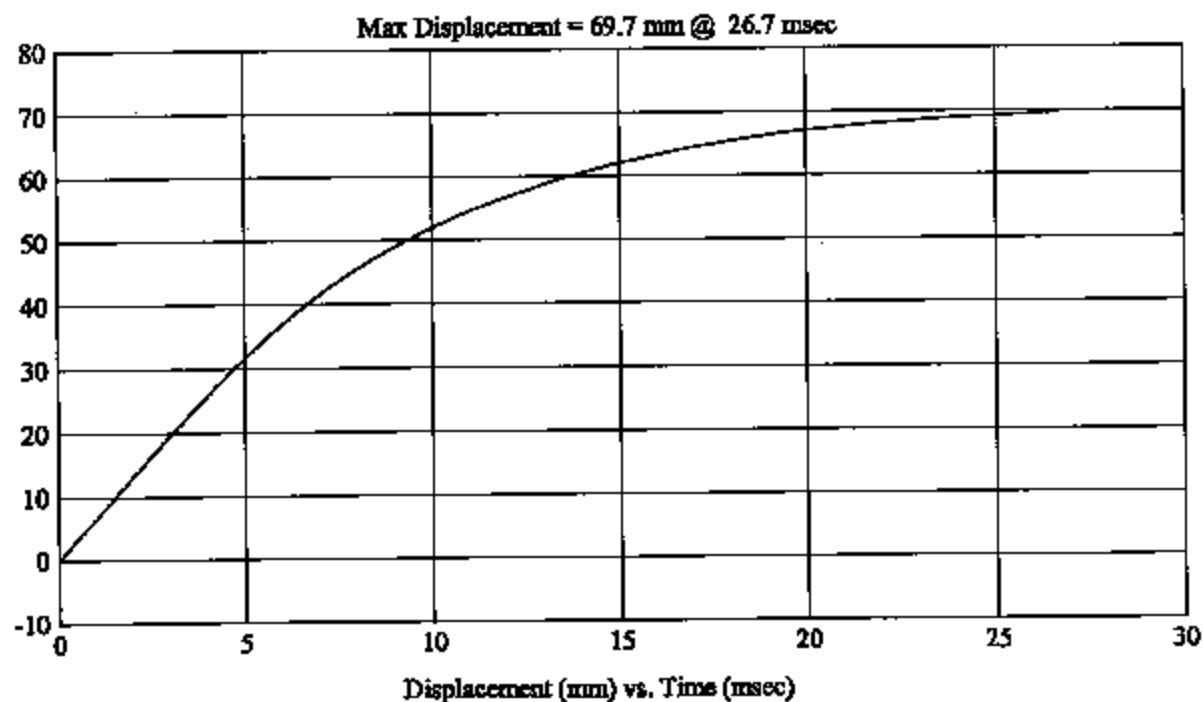
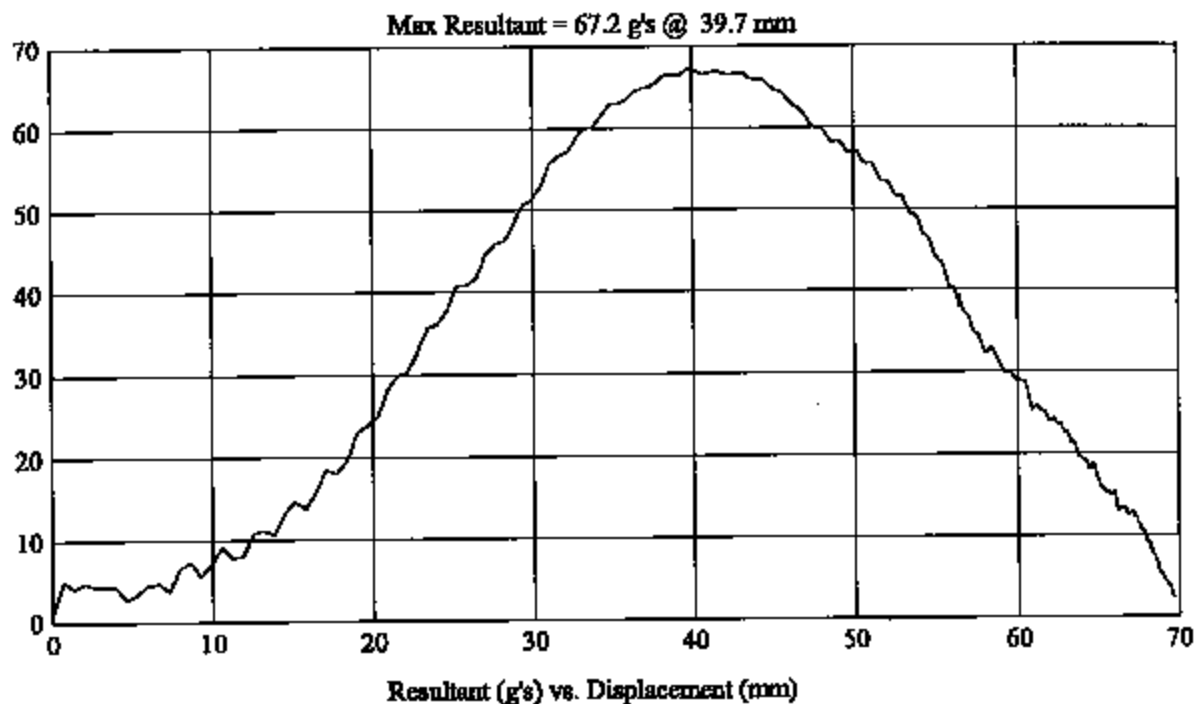
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.1Customer: DODGE
Test # 5
FM4025
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 116/26

HIC(d) = 313, HIC = 195, Delta T = 9.5 msec



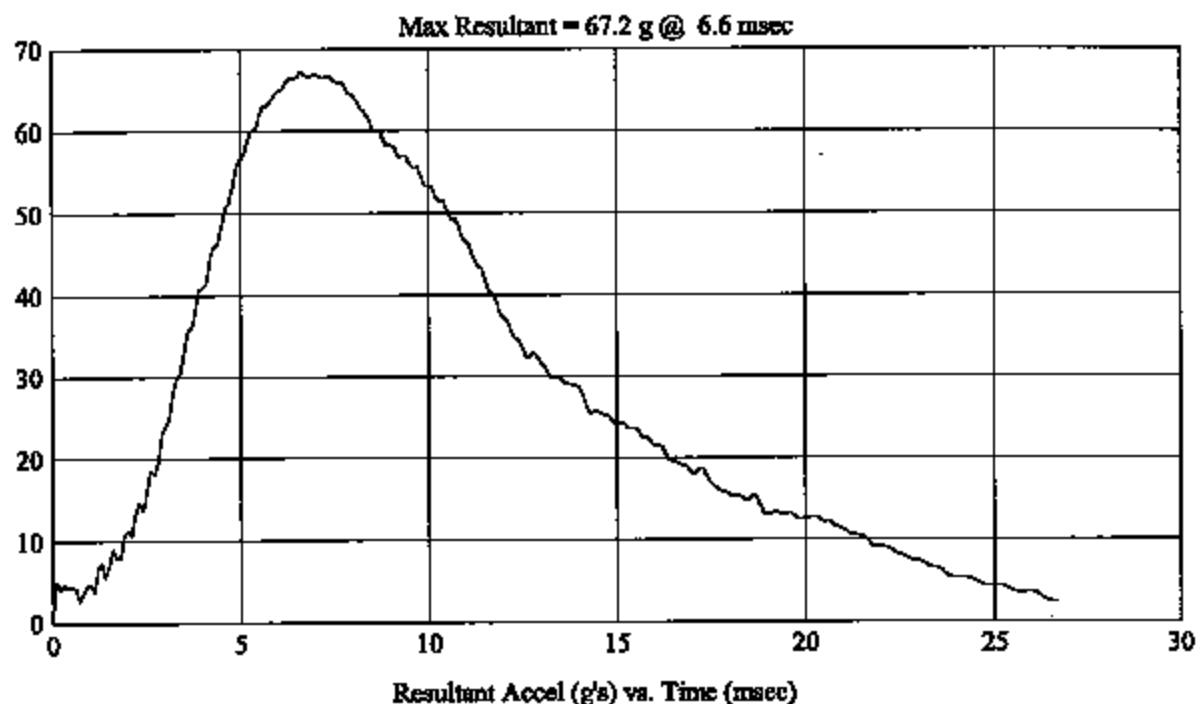
FMH
G04T7-001.1

Customer: DODGE
Test # 5
FM4025
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 116/26

HIC(d) = 313, HIC = 195, Delta T = 9.5 msec

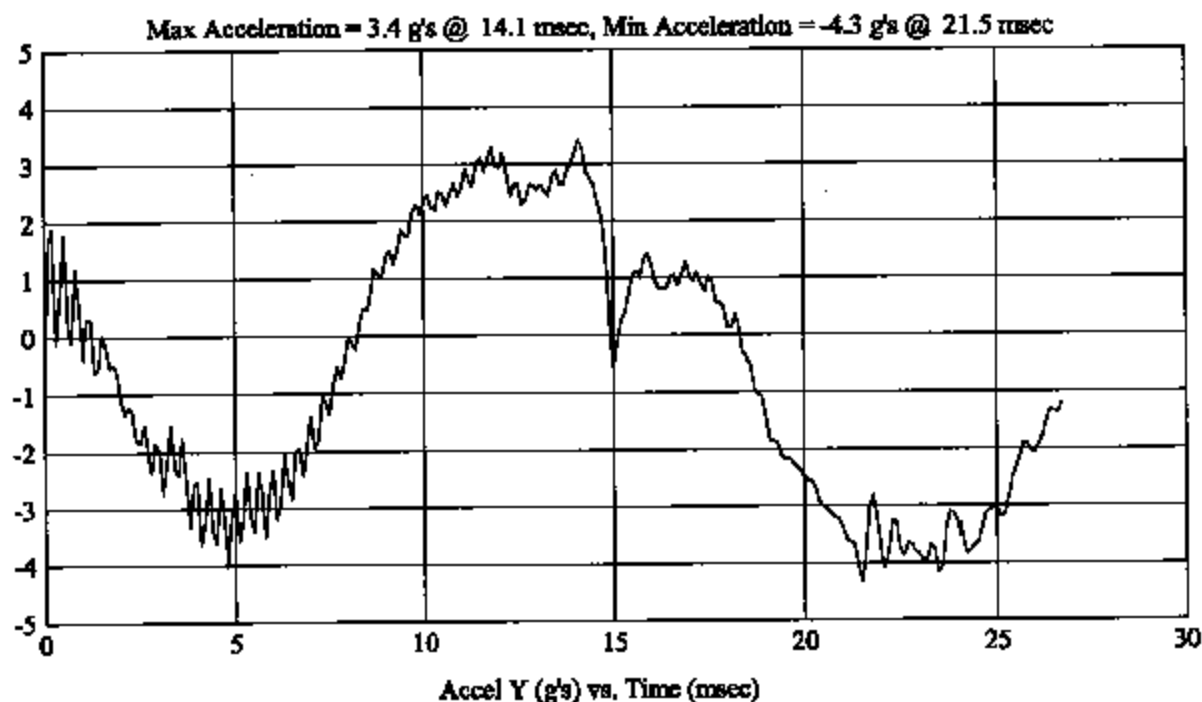
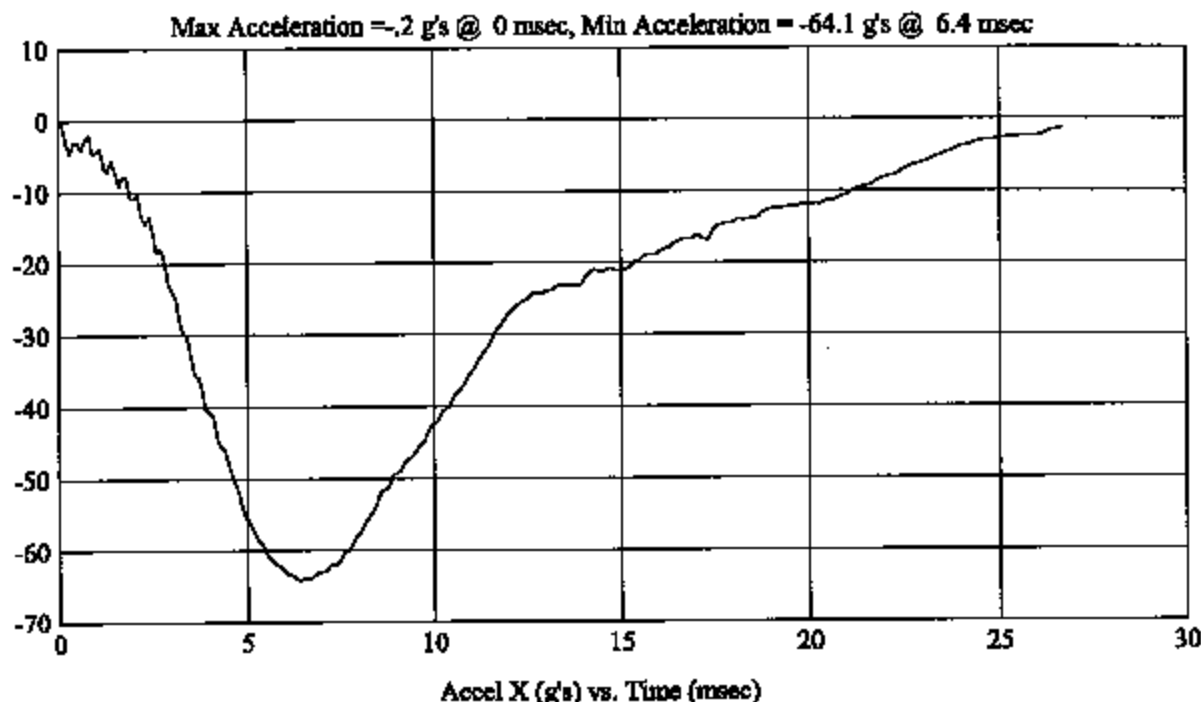


FMH
G04I7-001.1Customer: DODGE
Test # 5
FM4025
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 116/26

HIC(6) = 313, HIC = 195, Delta T = 9.5 msec



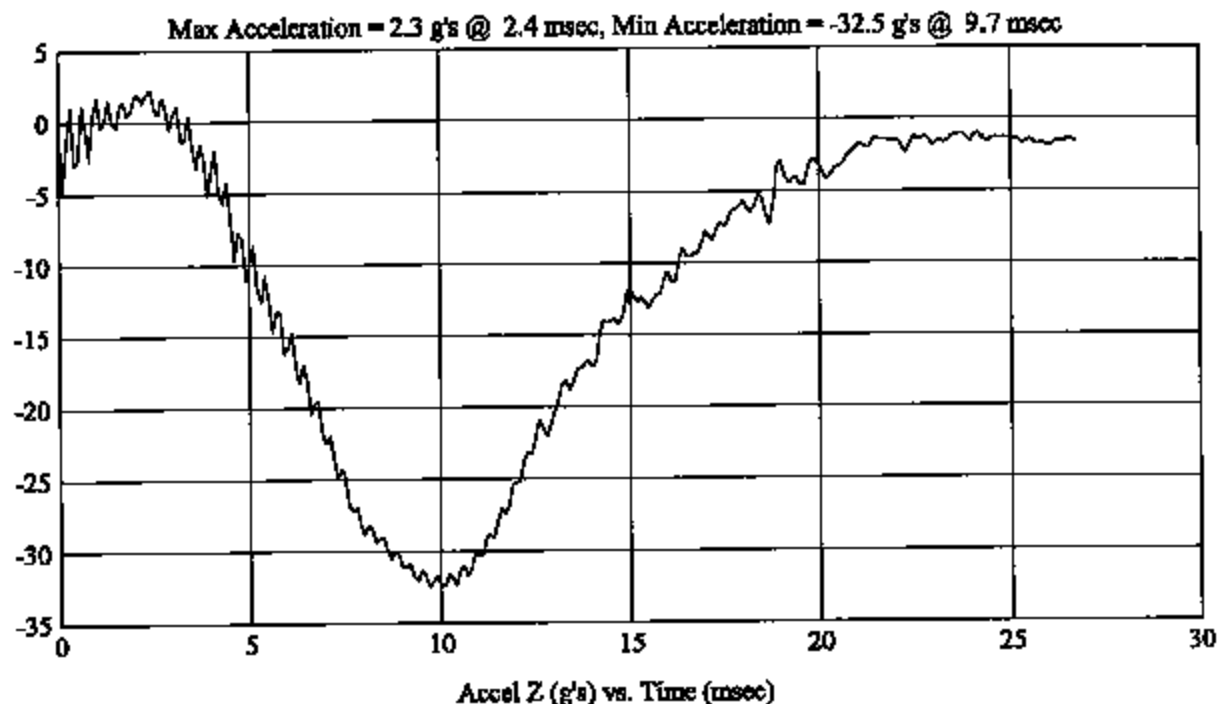
FMH
G0417-001.1

Customer: DODGE
Test # 5
FM4025
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 116/26

HIC(d) = 313, HIC = 195, Delta T = 9.5 msec

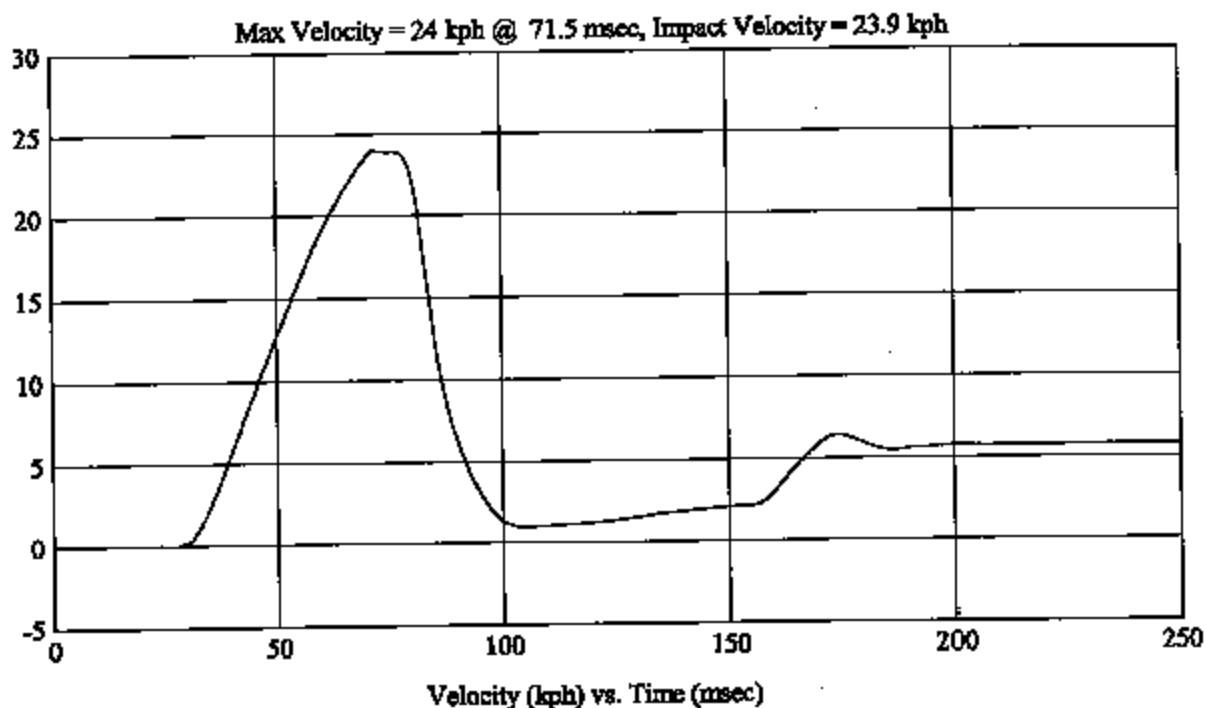


FMH
G04I7-001.1Customer: DODGE
Test # 5
FM4025
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP1
Vehicle Side: Right
Horz/Vert Angle: 116/26

HIC(d) = 313, HIC = 195, Delta T = 9.5 msec







MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGAT7201U_FRAME #2.4

DOC. NO.: MGAT7201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40304VEHICLE YR/MAKE/MODEL: 2001 Dodge Durango ST

GENERAL TEST PARAMETERS:

Test Number: 7Target (Vehicle Side): Left Right APZTemperature: 22 °F °CMGA Test Reference No.: FM4027Humidity: 32 %Approach Angles: Horizontal 200 °Time of Test: 10:30 AM PMVertical 46 °FMH Serial No: 37

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
372	273	12.7	23.4	11	2

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35800	-95.9	1.20	7.20
Y	6	J35841	92.0	1.23	1.23
Z	7	J35791	89.3	1.51	1.51

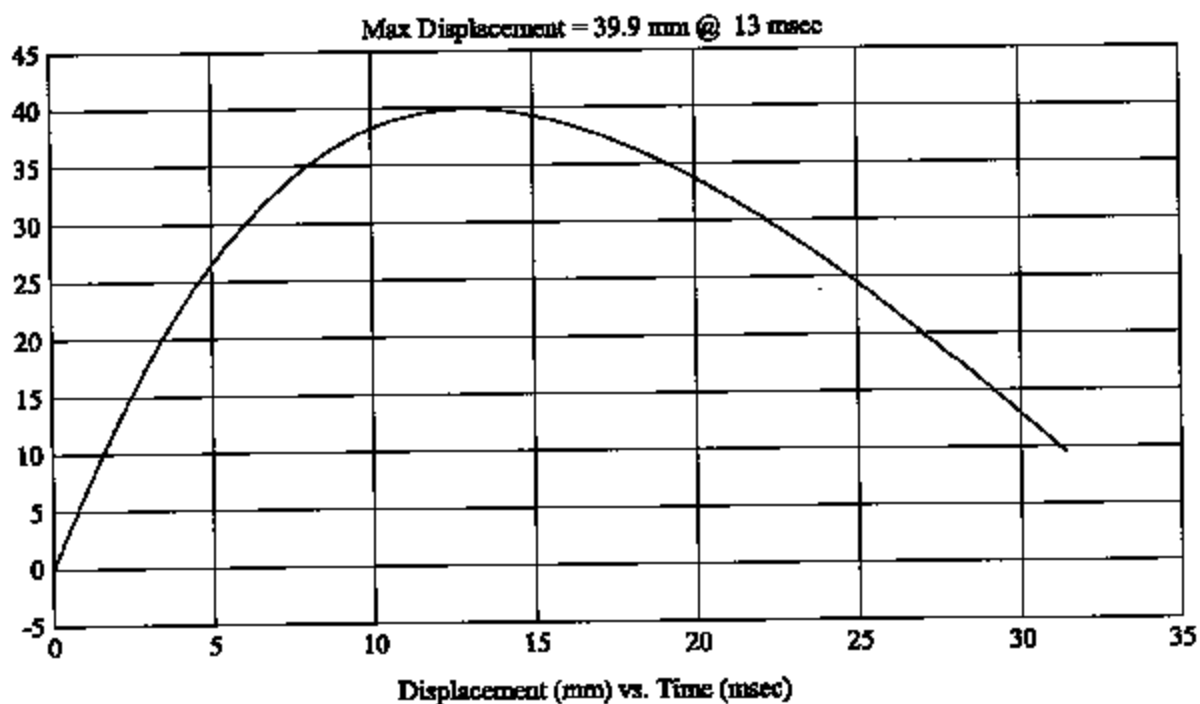
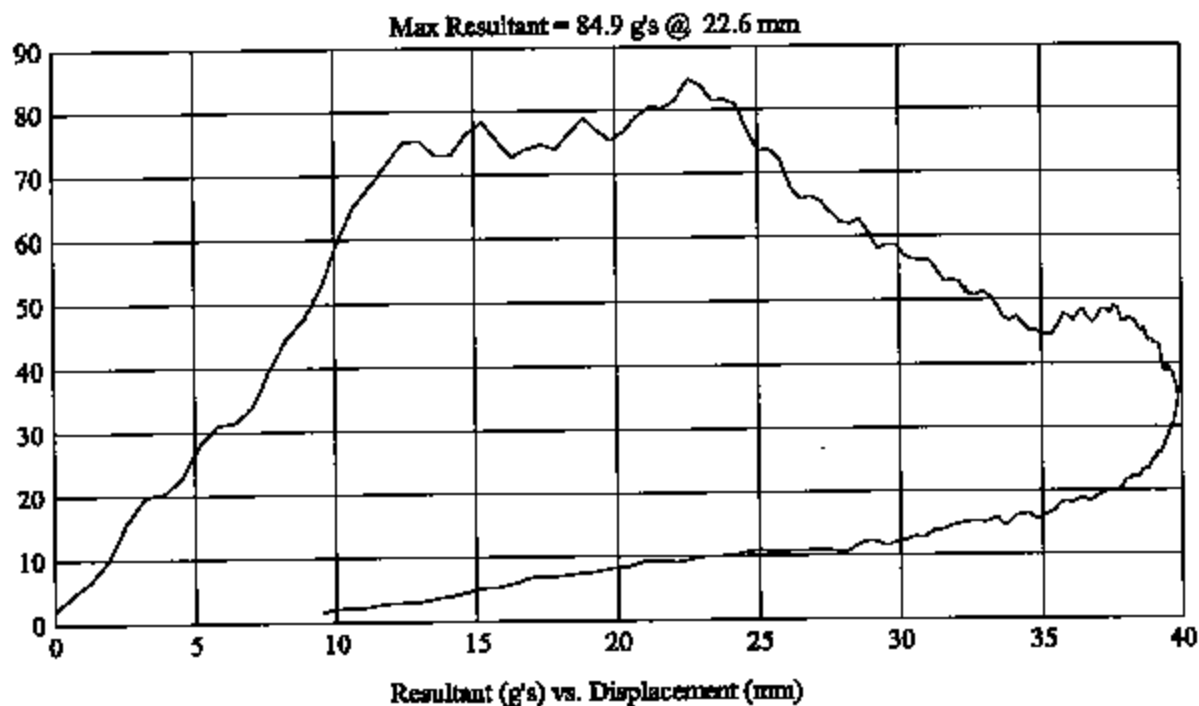
REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

A-Pillar Trim popped off pillar mount.Recorded By: [Signature]Approved By: [Signature]Date: 2/4/04

*Only necessary for NHTSA (Government) Compliance testing.

FMH
G0417-001.1Customer: DODGE
Test # 7
FM4027
Additional Desc: N/A

Vehicle Program : DURANGO ST

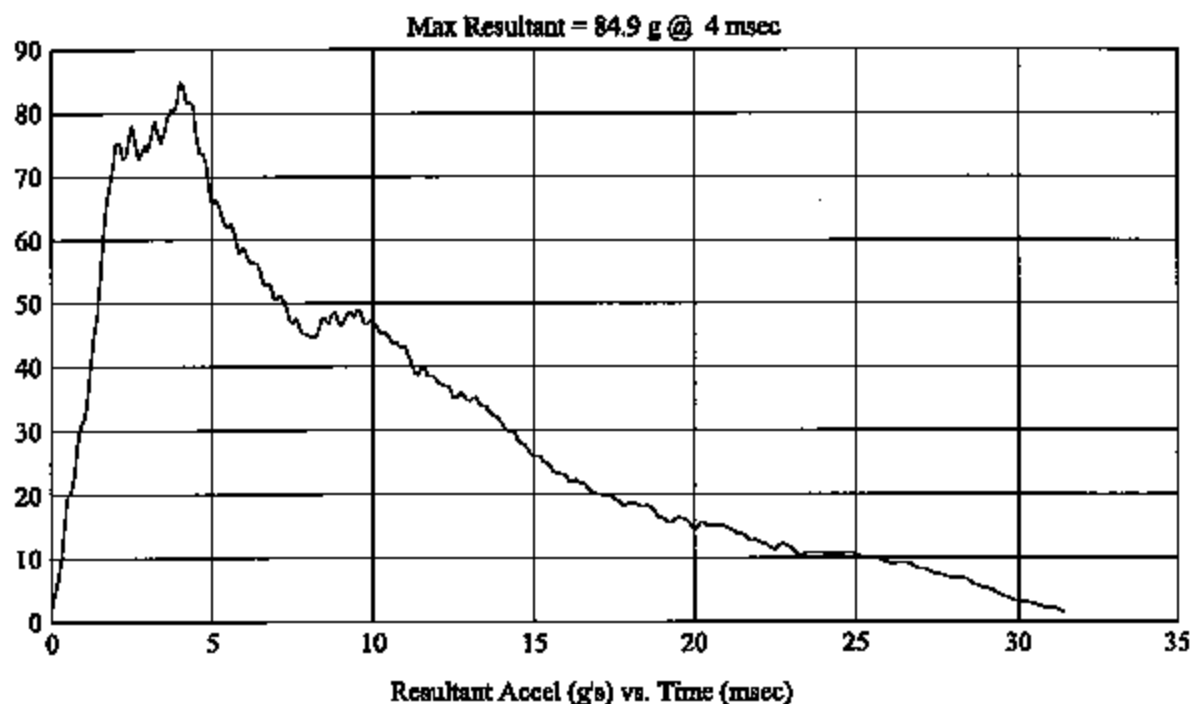
Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 200/46 $HIC(d) = 372$, $HIC = 273$, $\Delta T = 12.7 \text{ msec}$ 

FMH
G04I7-001.1Customer: DODGE
Test # 7
FM4027
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 200/46

HIC(d) = 372, HIC = 273, Delta T = 12.7 msec

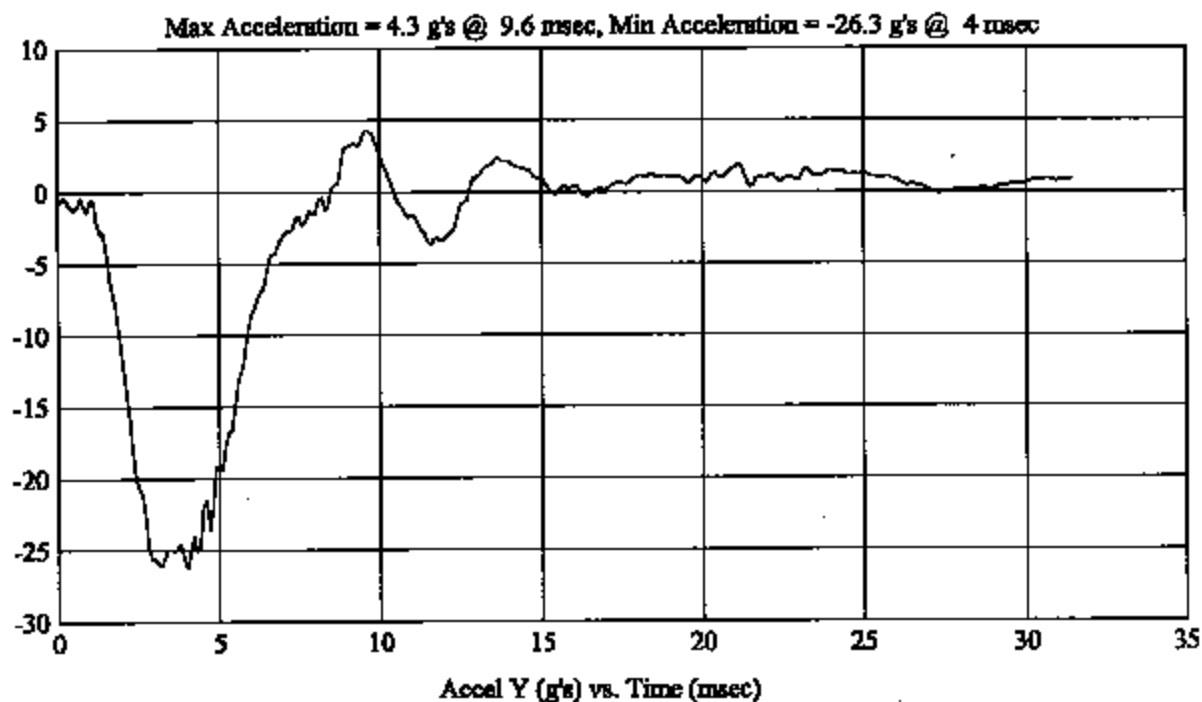
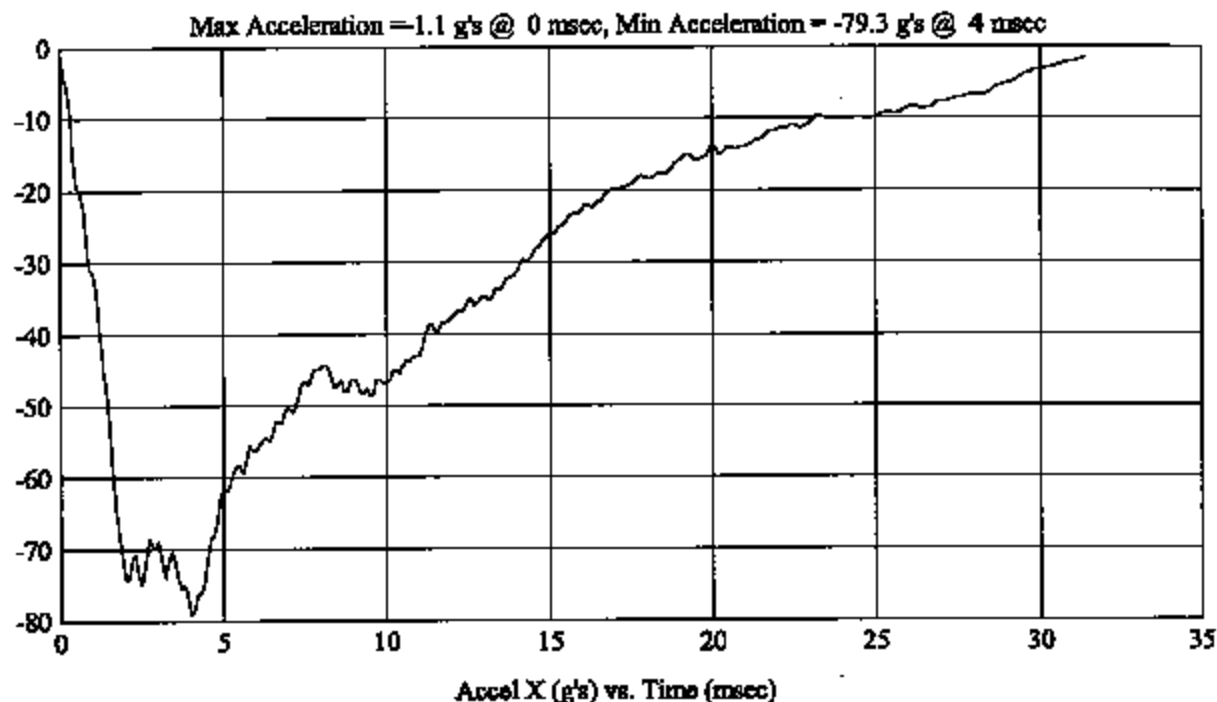


FMH
G04I7-001.1Customer: DODGE
Test # 7
FM4027
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 200/46

HIC(d) = 372, HIC = 273, Delta T = 12.7 msec

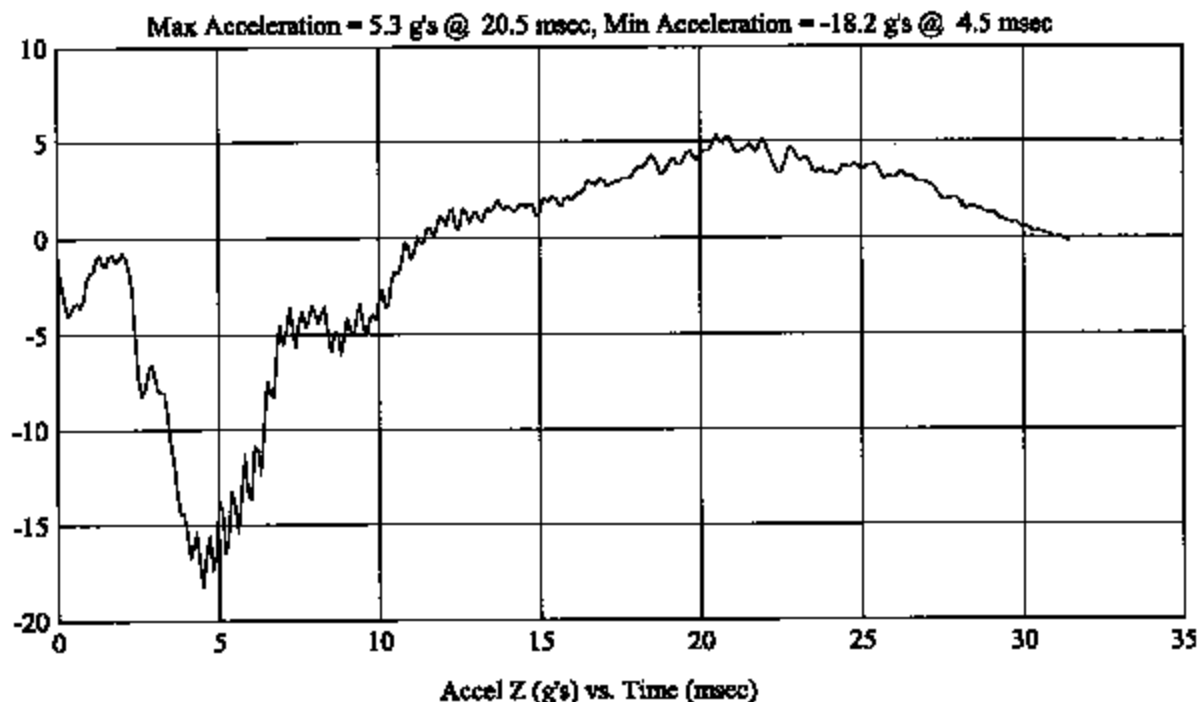


FMH
G0417-001.1Customer: DODGE
Test # 7
FM4027
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 200/46

HIC(d) = 372, HIC = 273, Delta T = 12.7 msec

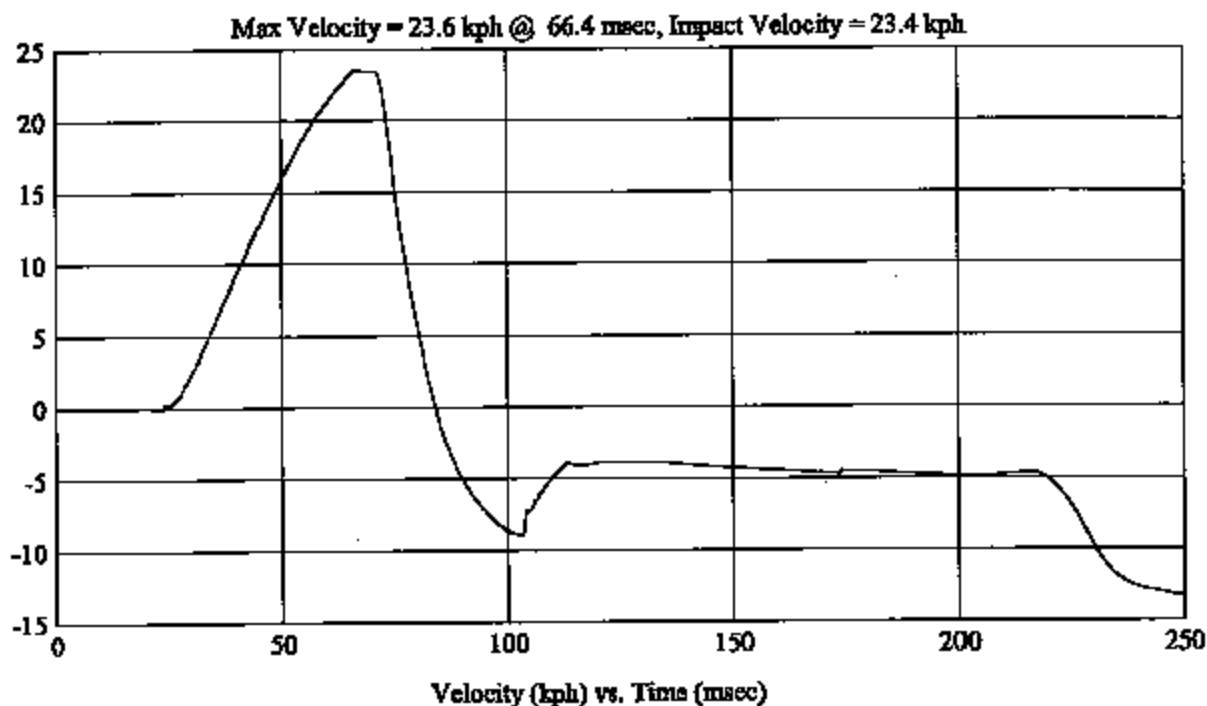


FMH
G04I7-001.1Customer: DODGE
Test # 7
FM4027
Additional Desc: N/A

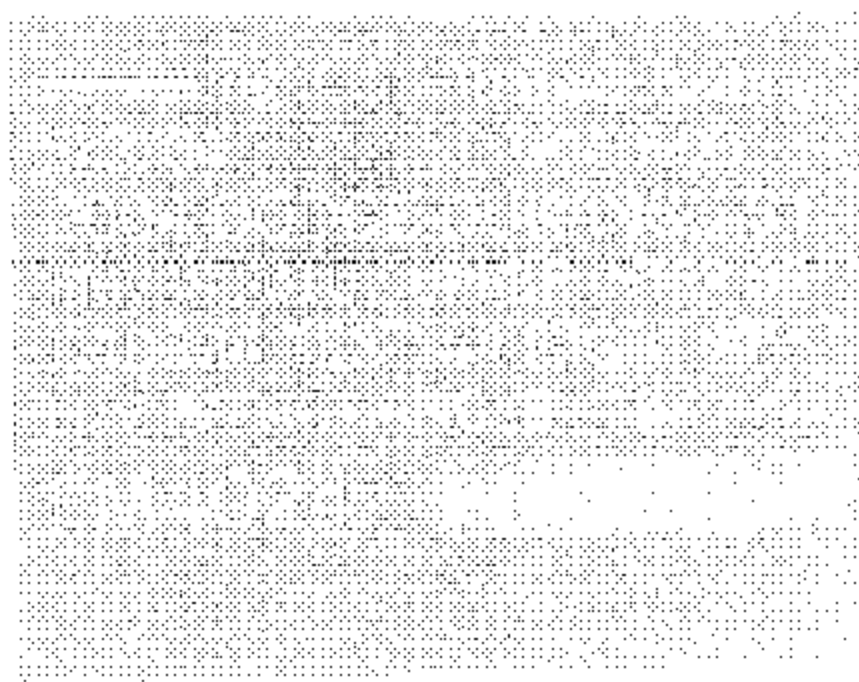
Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP2
Vehicle Side: Left
Horz/Vert Angle: 200/46

HIC(d) = 372, HIC = 273, Delta T = 12.7 msec



2/5/04 060700
2004 DODGE D5000
FMVSS 2011-1201
CAGEBOX 1131
H/V IMPACT 1201
FMAD24



MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME=2.1

DOC. NO.: MGATP201U_FRAME=2
REVISION NO.: 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40304 VEHICLE YR/MAKE/MODEL: 2001 DODGE DURANGO ST

GENERAL TEST PARAMETERS:

Test Number: 4

Target (Vehicle Side): left (R) AP3

Temperature: 22 °F (C)

MGA Test Reference No.: FM4024

Humidity: 26 %

Approach Angles: Horizontal 162 °

Time of Test: 3:20 am/pm (pm)

Vertical 44 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
521	471	12.6	23.3	5	3

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-101.5	1.20	1.20
Y	6	J36193	101.1	1.23	1.23
Z	7	J36353	97.1	1.51	1.51

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

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: Helen A. Kales Date: 2/2/04

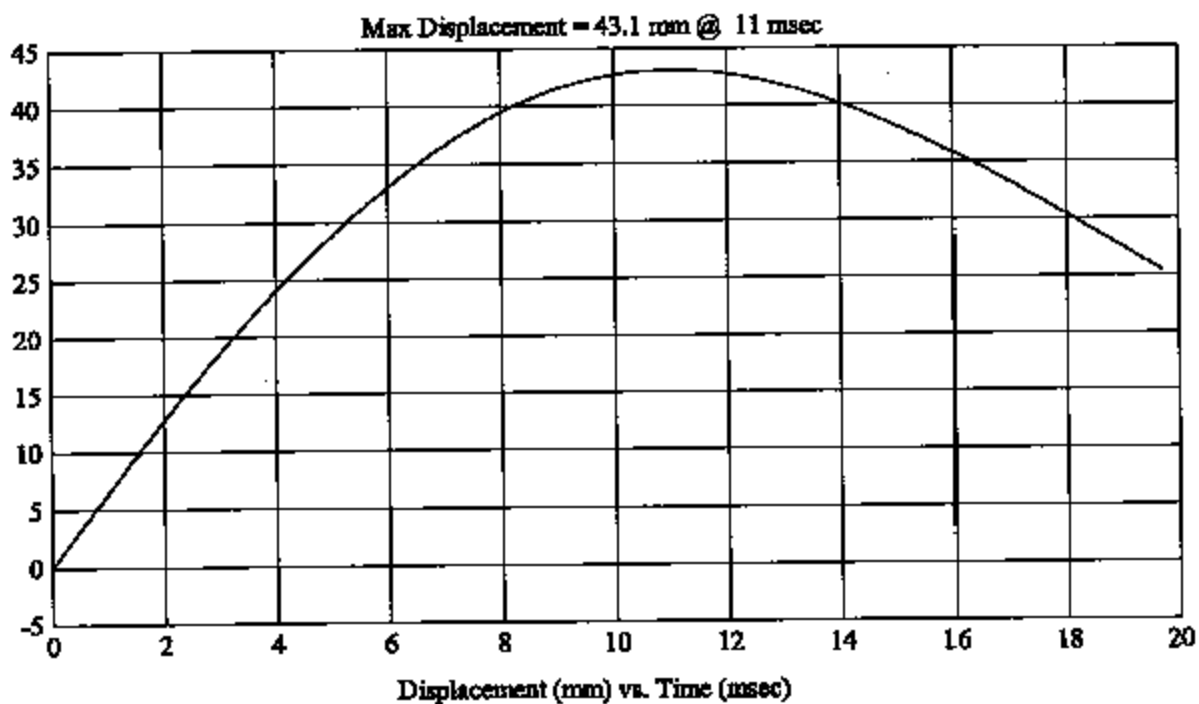
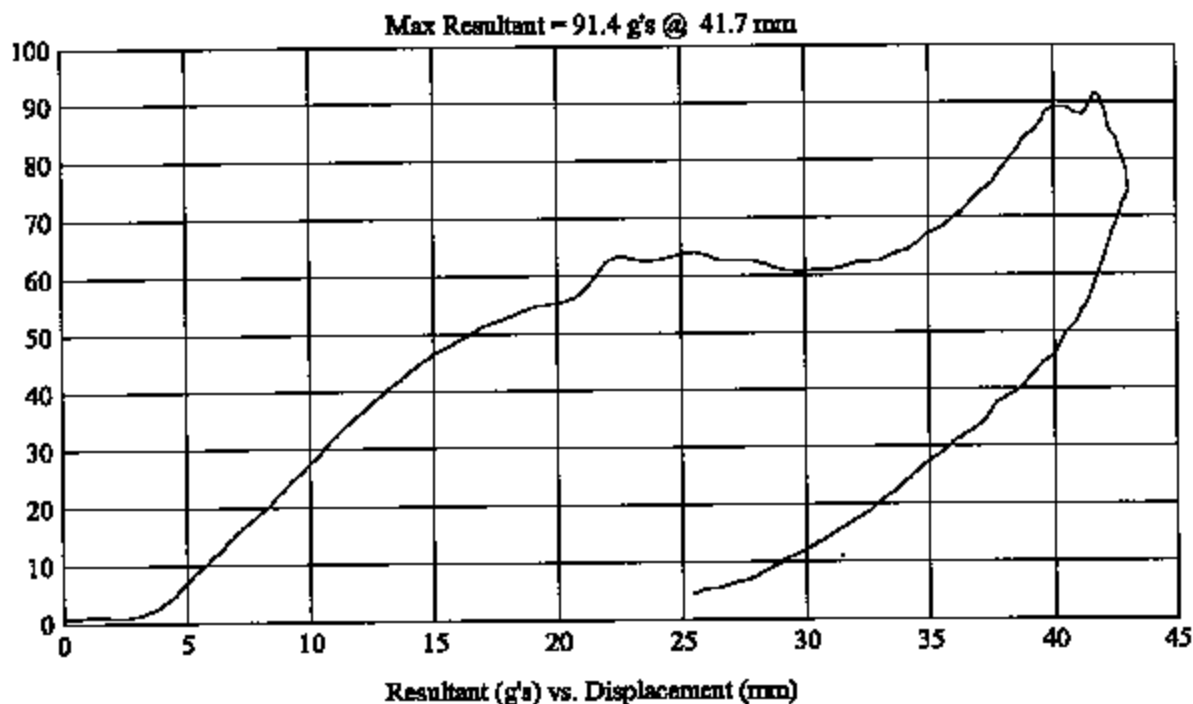
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.1Customer: DODGE
Test # 4
FM4024
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 162/44

HIC(d) = 521, HIC = 471, Delta T = 12.6 msec

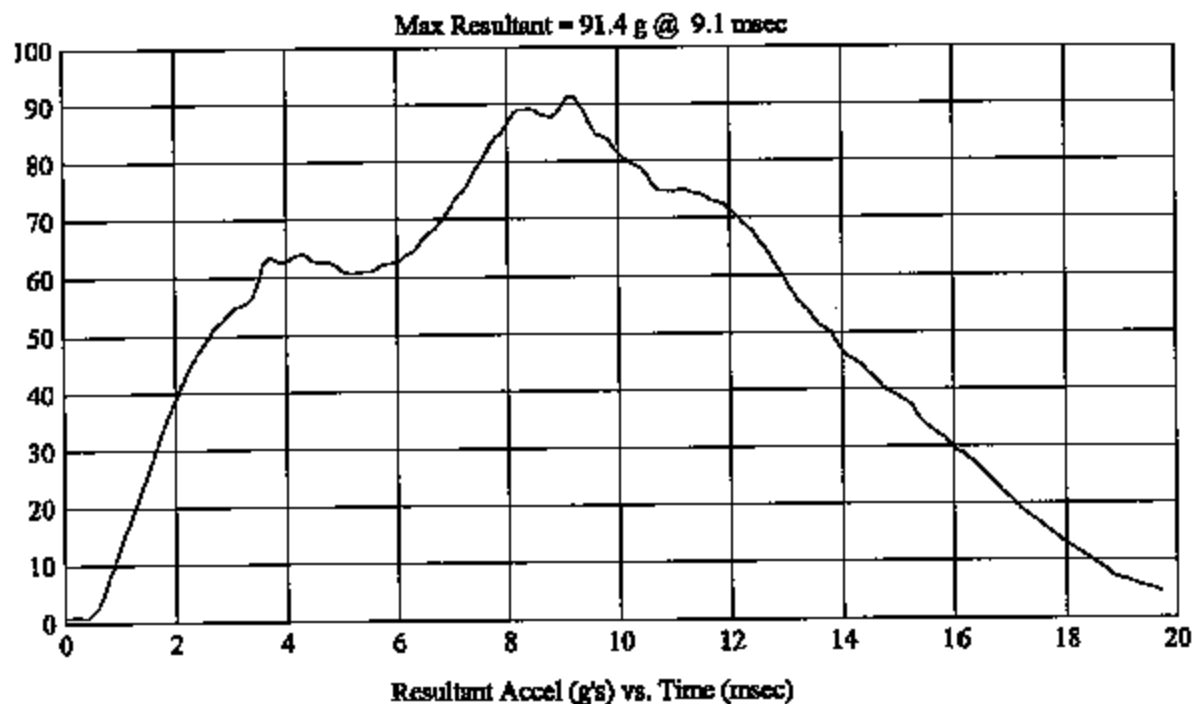


FMH
G0417-001.1Customer: DODGE
Test # 4
FM4024
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 162/44

HIC(d) = 521, HIC = 471, Delta T = 12.6 msec

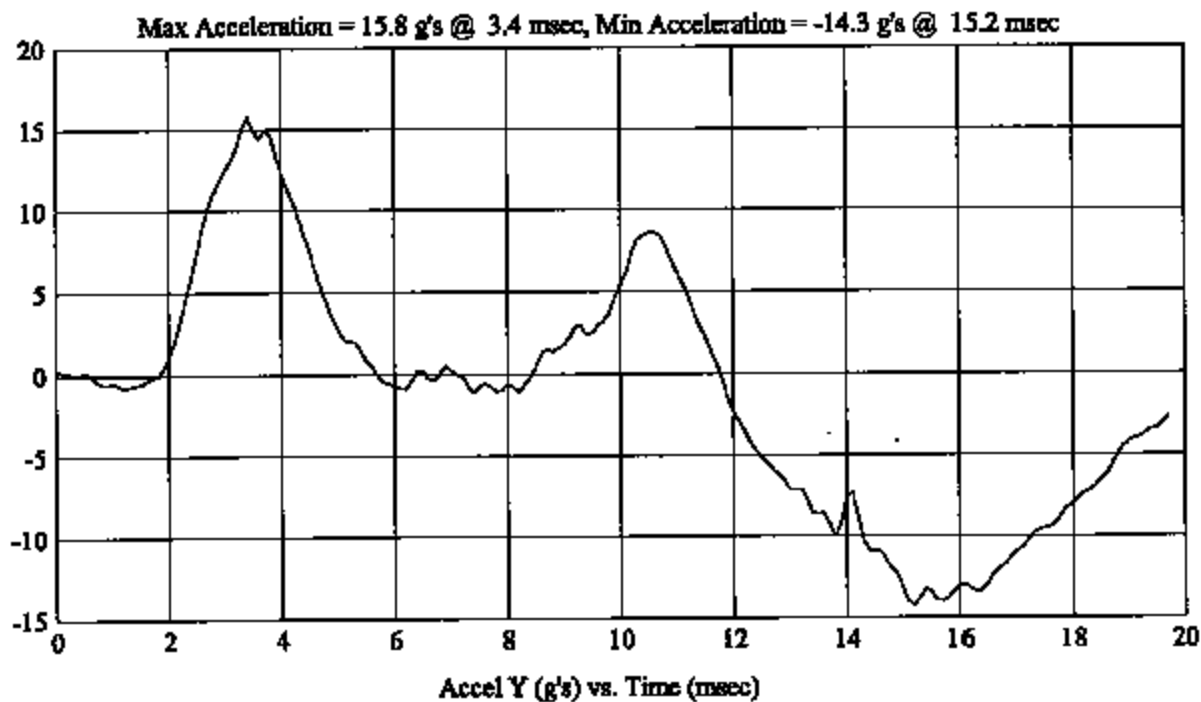
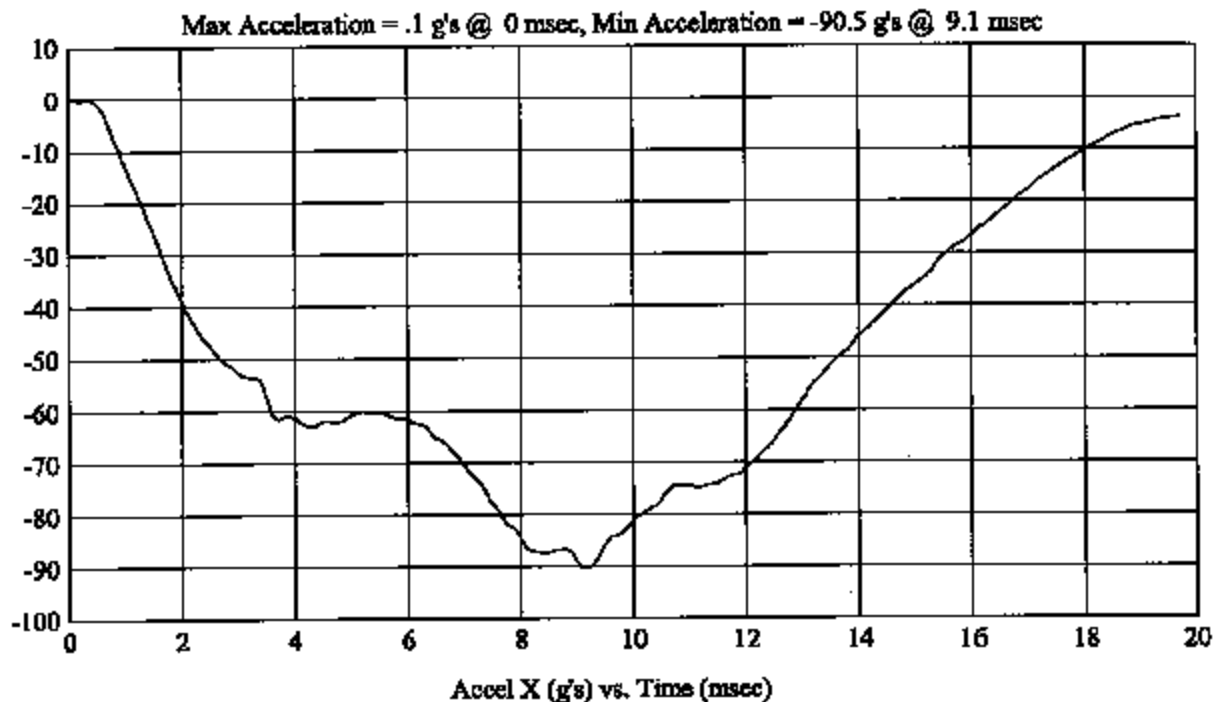


FMH
G04I7-001.1Customer: DODGE
Test # 4
FM4024
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 162/44

HIC(d) = 521, HIC = 471, Delta T = 12.6 msec

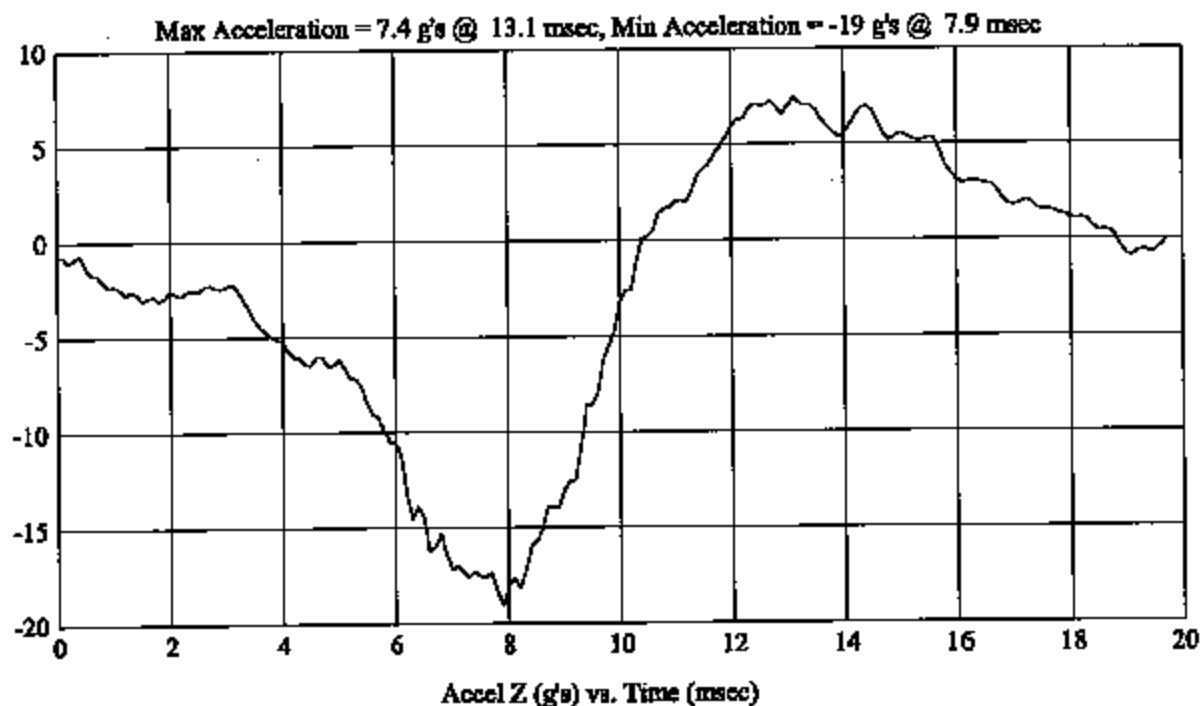


FMH
G0417-001.1Customer: DODGE
Test # 4
FM4024
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 162/44

HIC(d) = 521, HIC = 471, Delta T = 12.6 msec

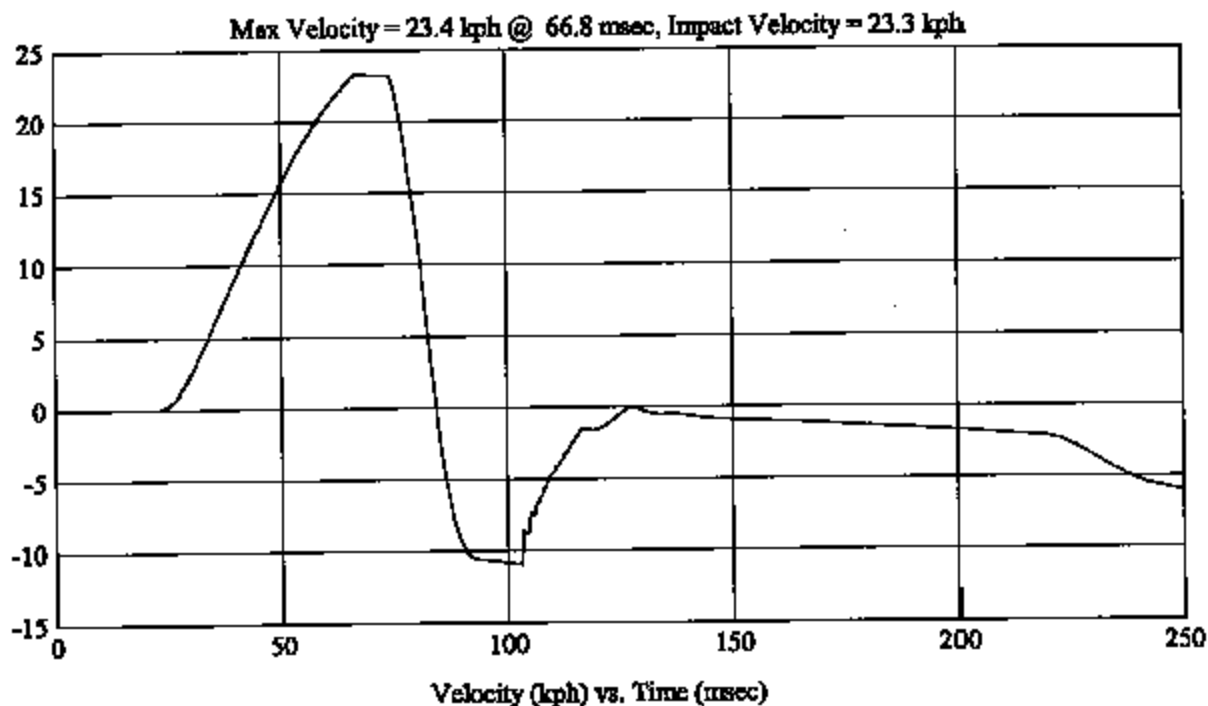


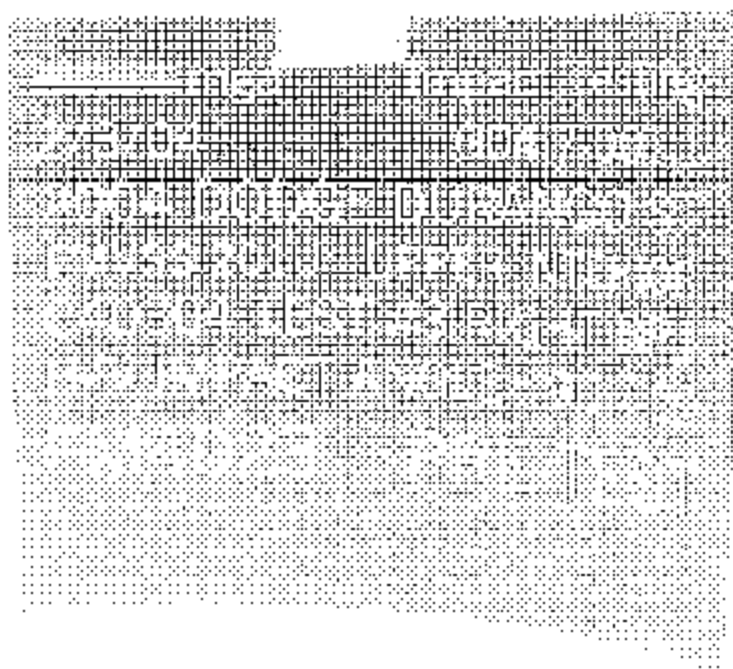
FMH
G0417-001.1Customer: DODGE
Test # 4
FM4024
Additional Desc: N/A

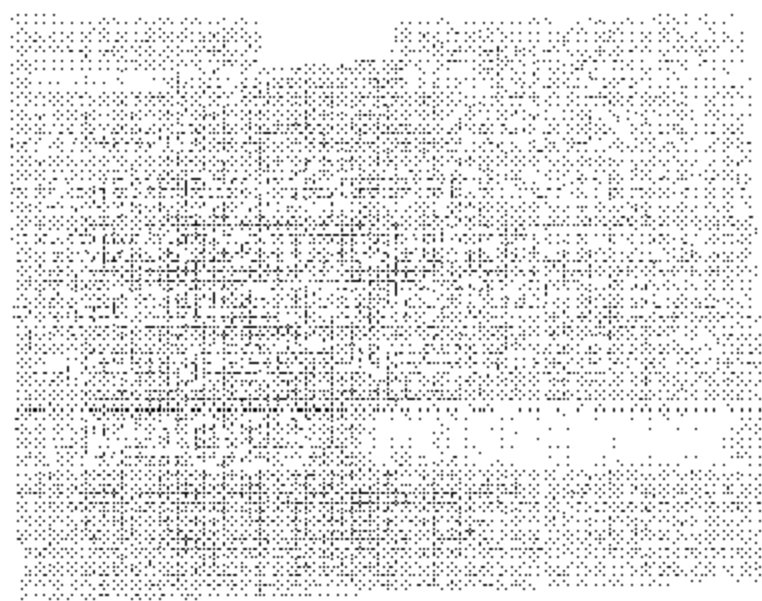
Vehicle Program : DURANGO ST

Model Year: 2004
Target: AP3
Vehicle Side: Right
Horz/Vert Angle: 162/44

HIC(d) = 521, HIC = 471, Delta T = 12.6 msec







1. The first section of the document is a title page, which includes the title, author, and date.

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 1
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40304VEHICLE YR/MAKE/MODEL: 2004 Dodge Durango ST

GENERAL TEST PARAMETERS:

Test Number: 3Target (Vehicle Side): left (right) BP1Temperature: 22 °F (C)MGA Test Reference No.: FM4023Humidity: 27 %Approach Angles: Horizontal 90 °Time of Test: 2:00 am (pm)Vertical 29 °FMH Serial No: 87

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>46</u>	<u>384</u>	<u>10.2</u>	<u>23.8</u>	<u>20</u>	<u>5</u>

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35800</u>	<u>-95.9</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J35841</u>	<u>92.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35791</u>	<u>89.3</u>	<u>1.51</u>	<u>1.51</u>

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

NO VISIBLE DAMAGERecorded By: [Signature]Approved By: [Signature]Date: 3/2/04

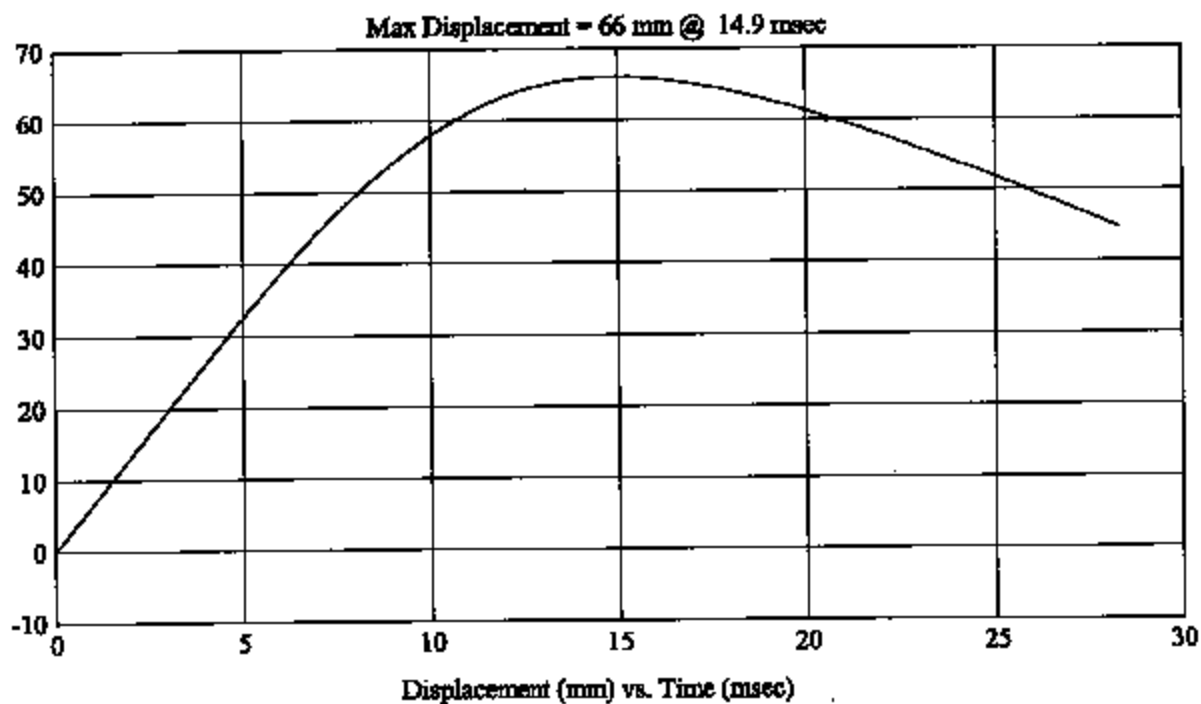
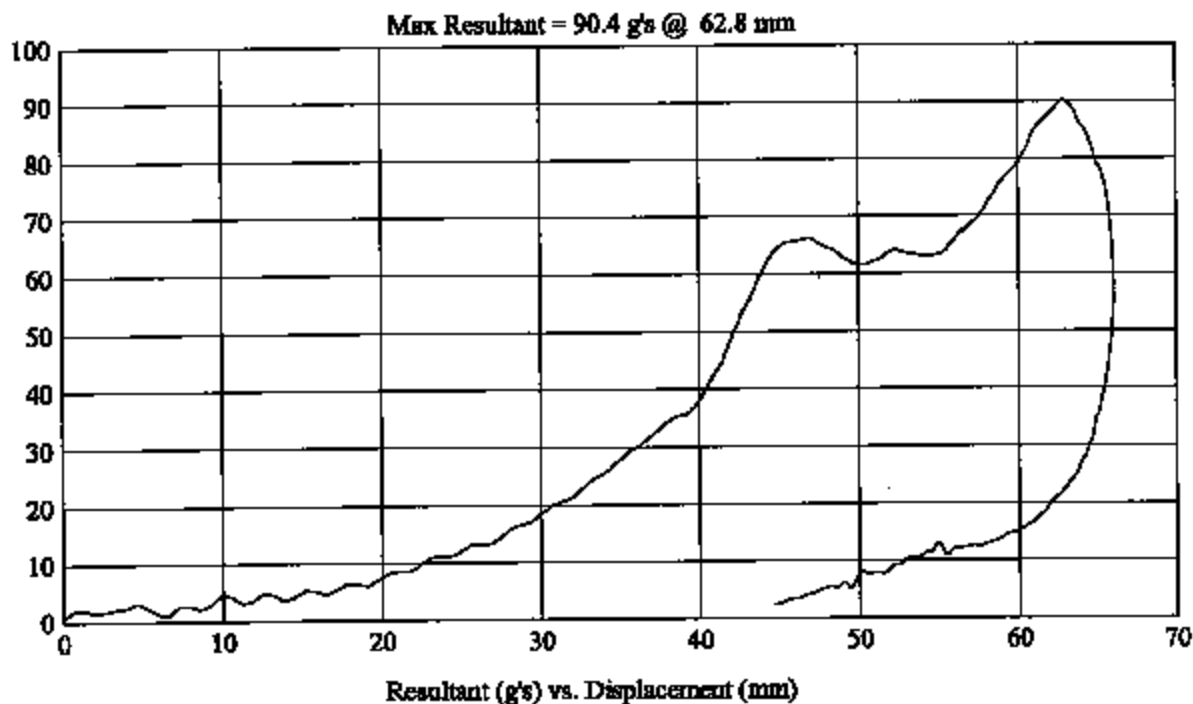
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.1Customer: DODGE
Test # 3
FM4023
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 90/29

HIC(d) = 456, HIC = 384, Delta T = 10.2 msec



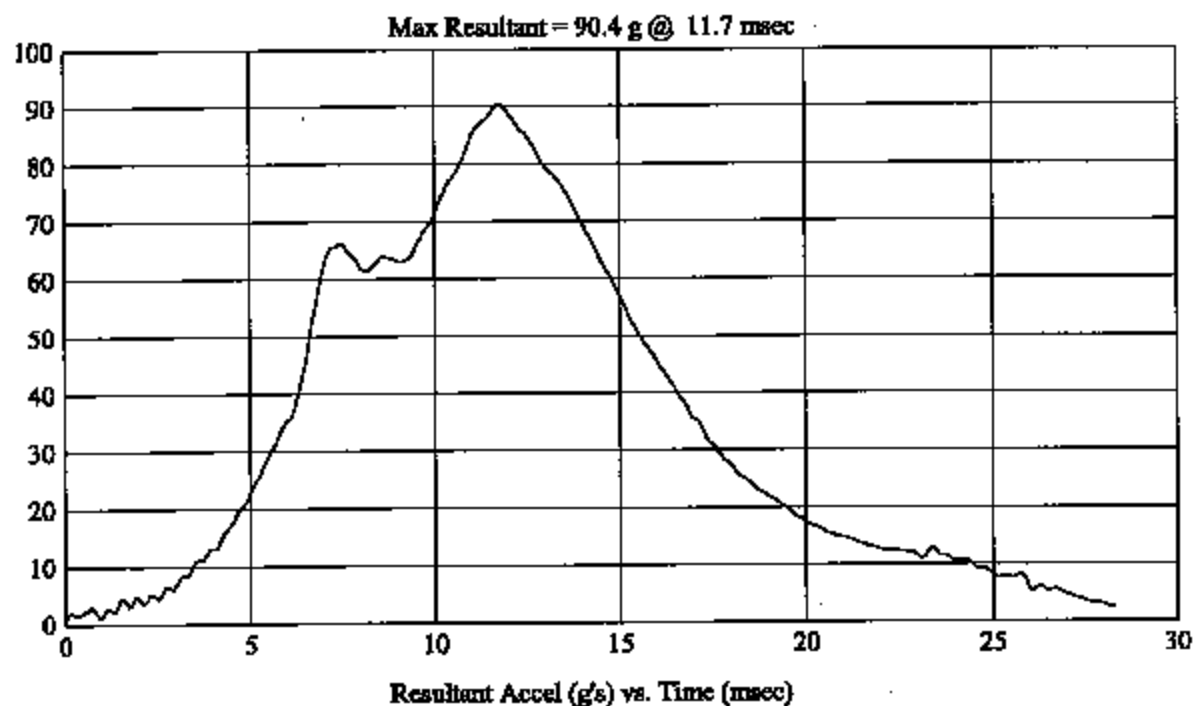
FMH
G04I7-001.1

Customer: DODGE
Test # 3
FM4023
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 90/29

HIC(d) = 456, HIC = 384, Delta T = 10.2 msec

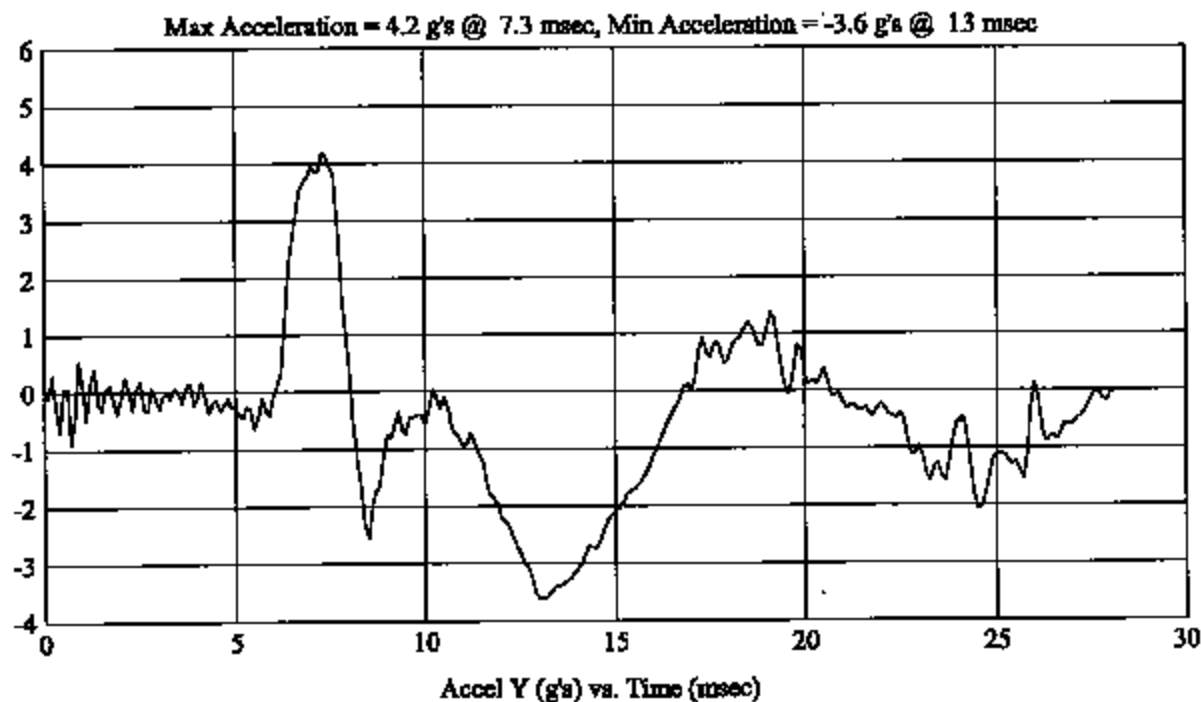
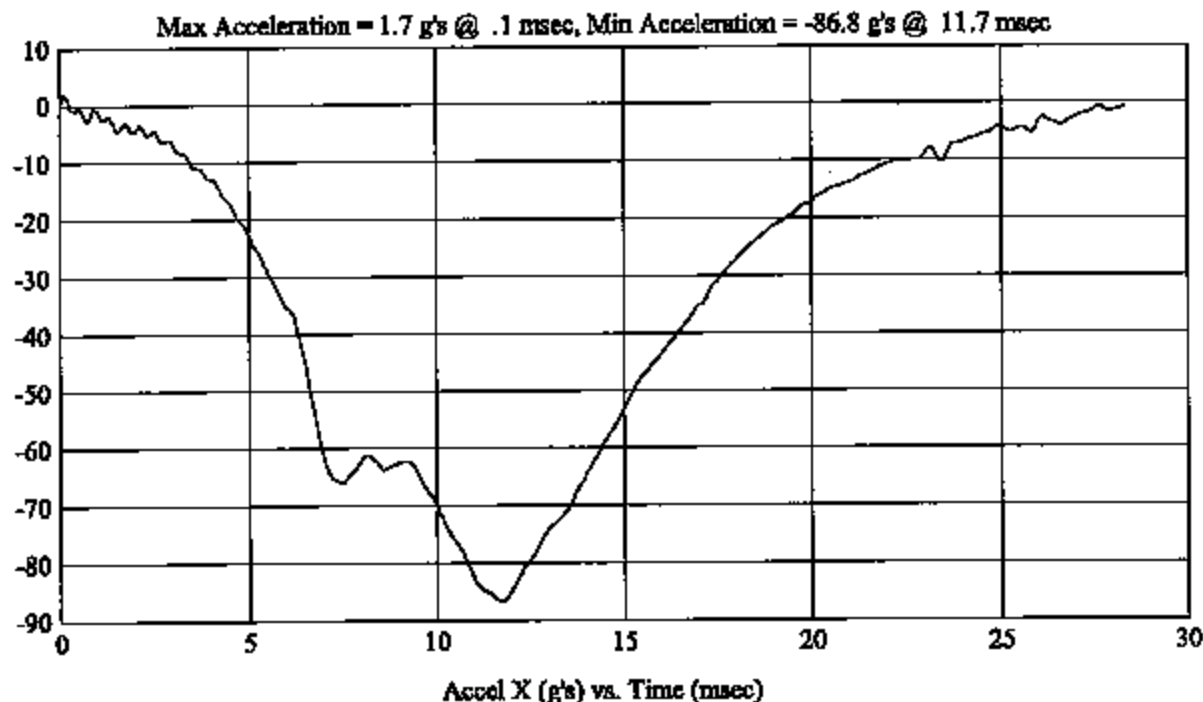


FMH
G04I7-001.1Customer: DODGE
Test # 3
FM4023
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 90/29

HIC(d) = 456, HIC = 384, Delta T = 10.2 msec



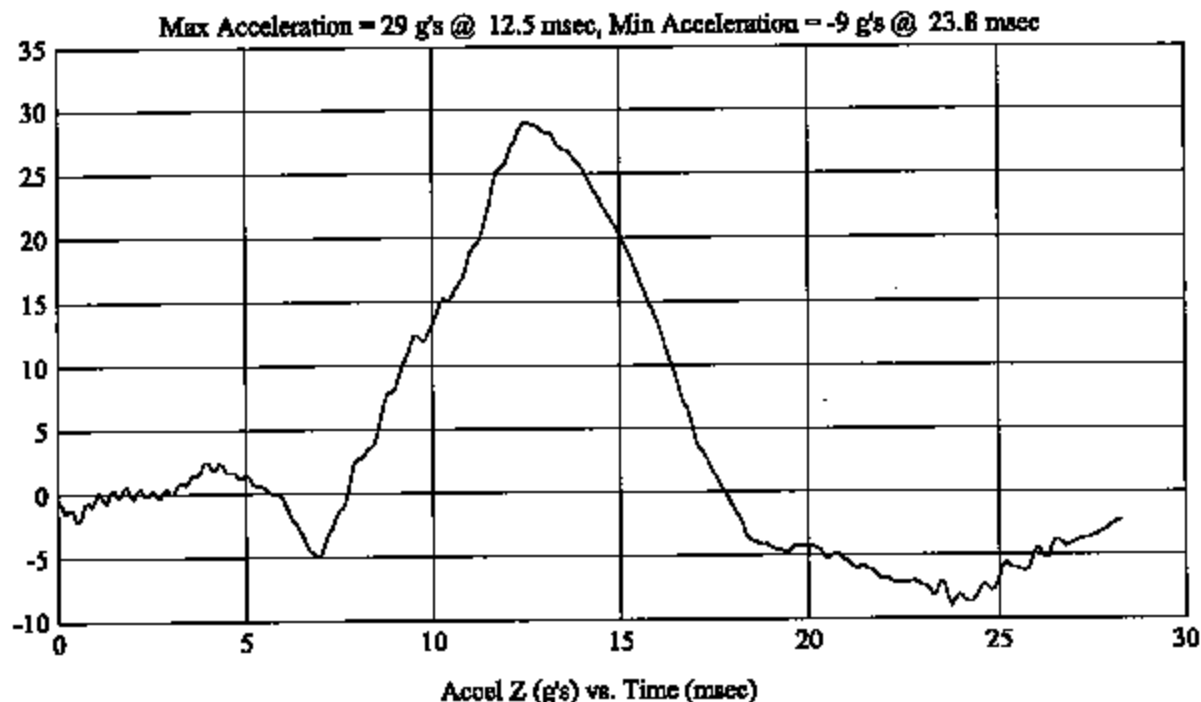
FMH
G04I7-001.1

Customer: DODGE
Test # 3
FM4023
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 90/29

HIC(d) = 456, HIC = 384, Delta T = 10.2 msec

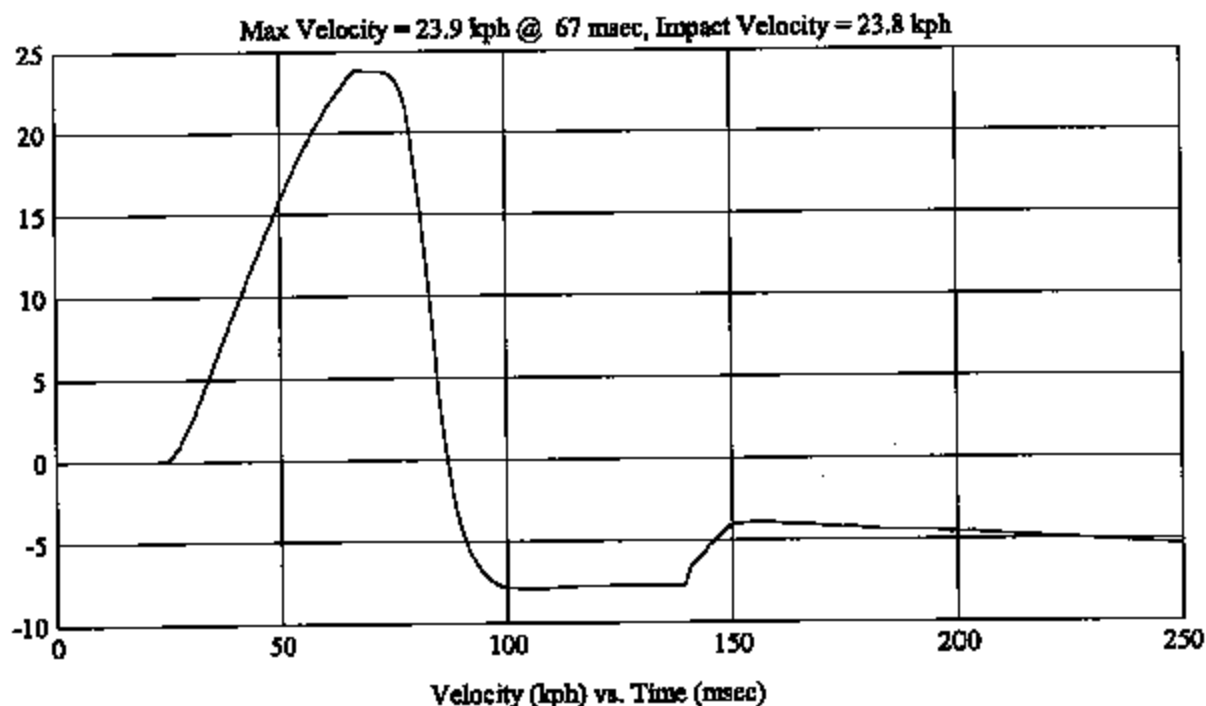


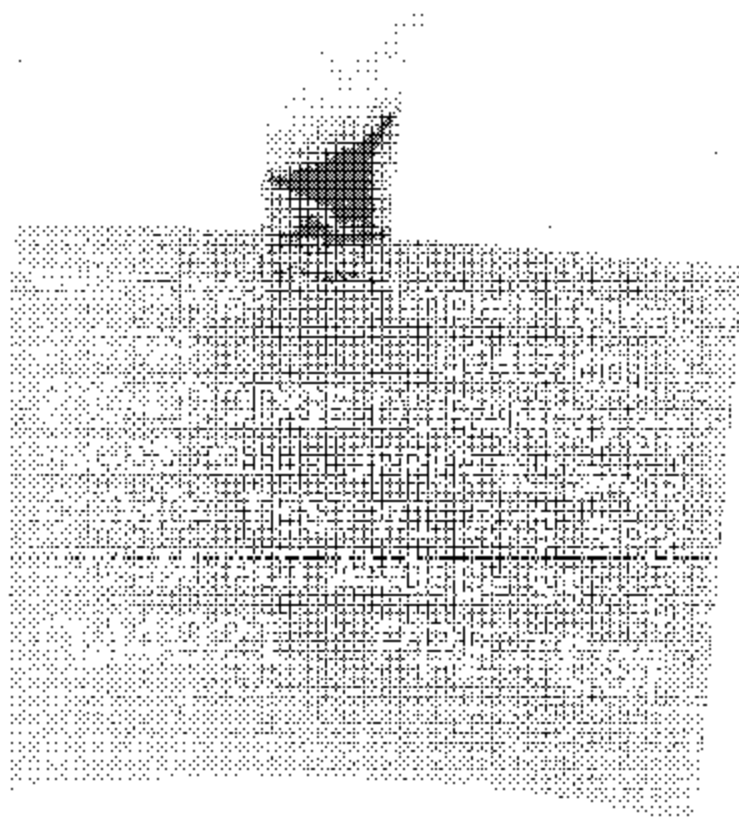
FMH
G04E7-001.1Customer: DODGE
Test # 3
FM4023
Additional Desc: N/A

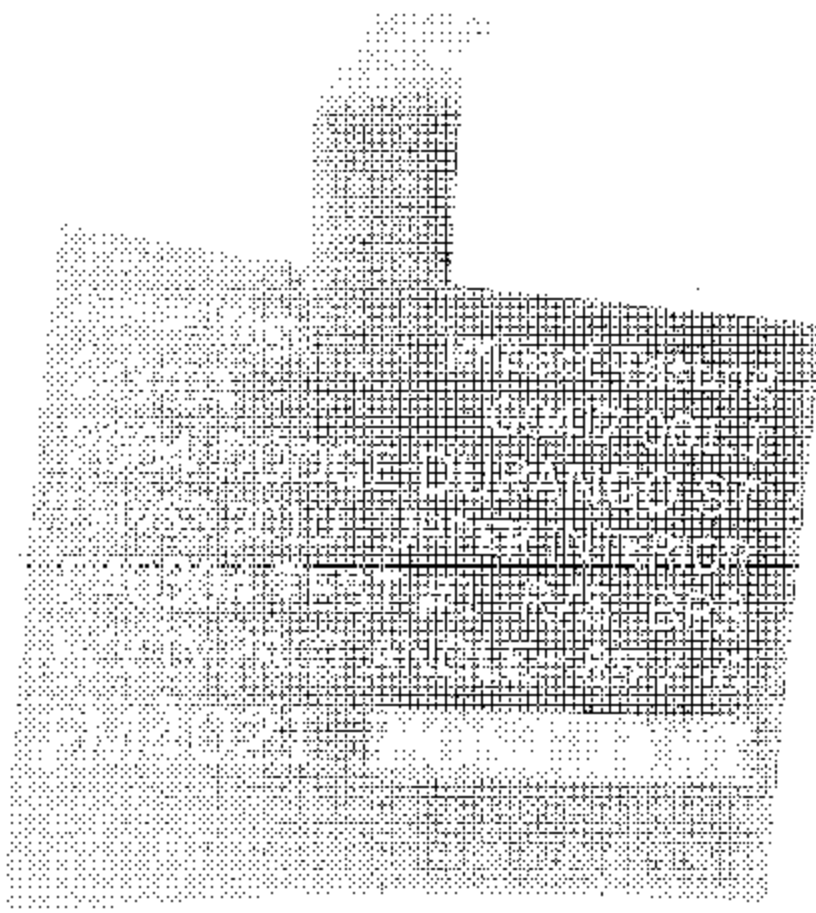
Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 90/29

HIC(d) = 456, HIC = 384, Delta T = 10.2 msec







Impact Testing
2/3/04 G0417-001.1
2004 DODGE DURANGO ST
FMVSS 201U - UPPER INTERIOR
G40304 TEST #1 R/S BP3
H/V IMPACT ANGLE= 85 / -6
FM4021 POST TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.1

DOC. NO.: MGATP201U_FRAME #2
REVISION NO. 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40304 VEHICLE YR/MAKE/MODEL: 2004 DODGE DUMBO ST

GENERAL TEST PARAMETERS:

Test Number: 1

Target (Vehicle Side): left/right BP3

Temperature: 22 °F(°C)

MGA Test Reference No.: FM4021

Humidity: 76 %

Approach Angles: Horizontal 85 °

Time of Test: 12:05 am/pm

Vertical -6 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right PL O
402	313	10.8	23.7	20	19

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-91.8	1.20	1.20
Y	6	J35919	93.5	1.23	1.23
Z	7	J31081	93.5	1.51	1.51

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

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 2/3/03

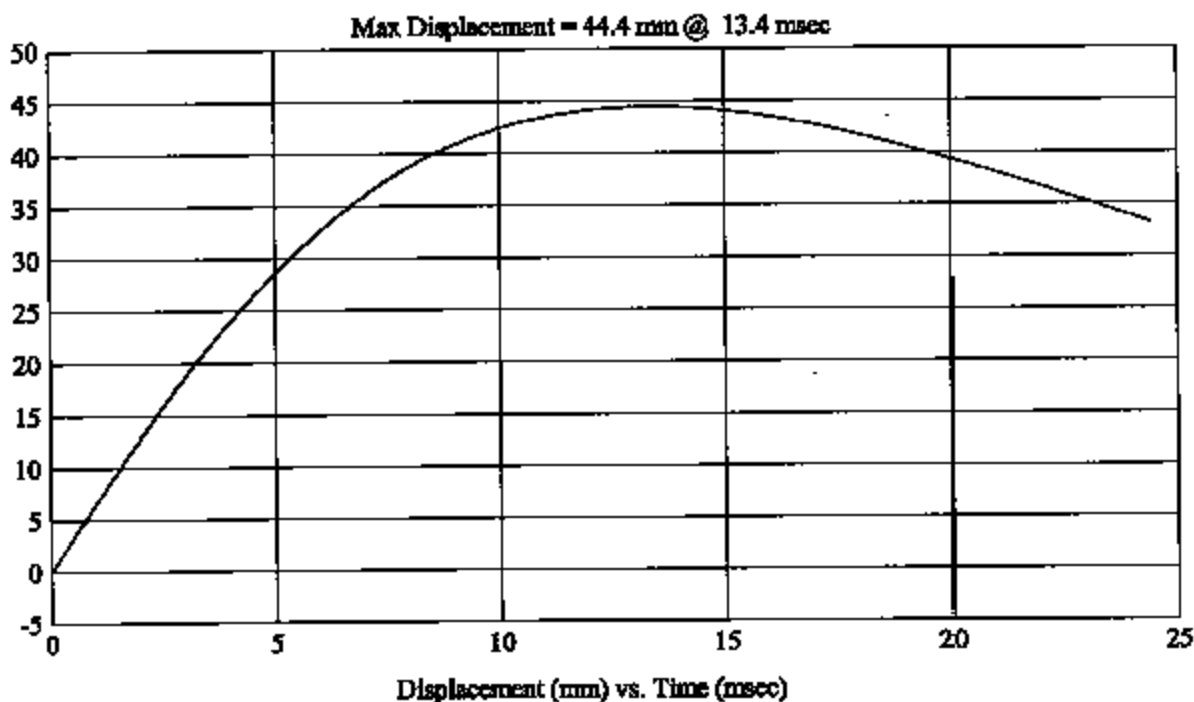
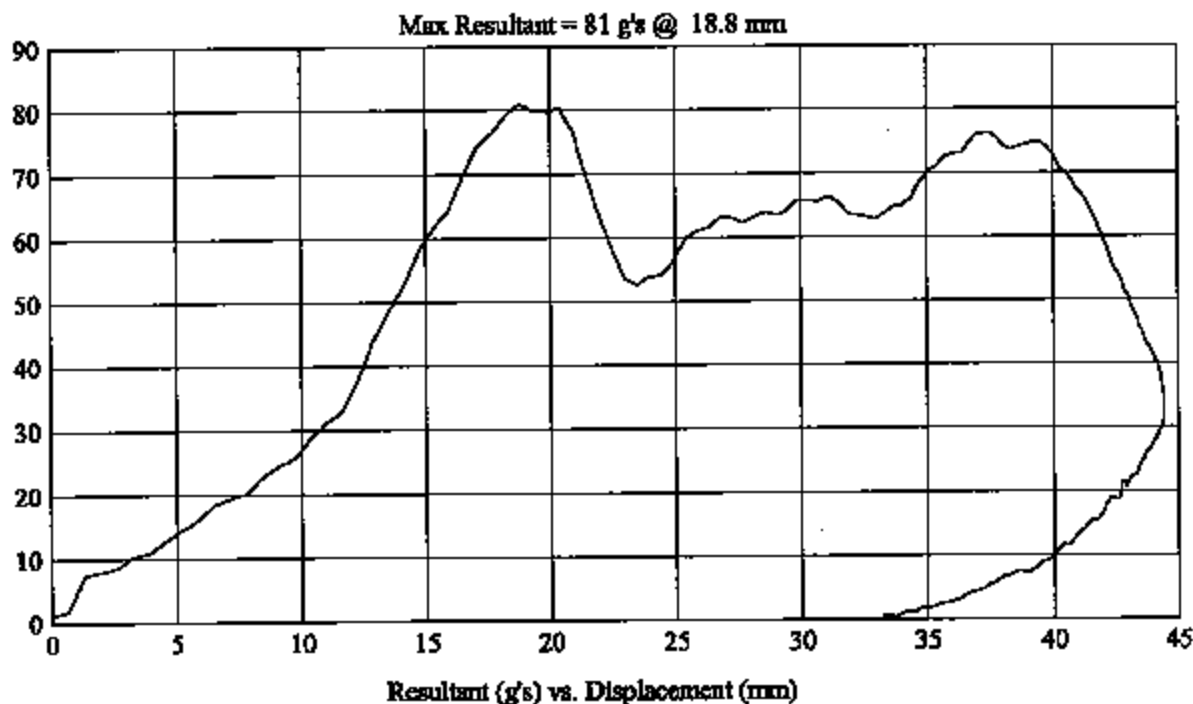
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G04I7-001.1Customer: DODGE
Test # 1
FM4021
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 85/-6

HIC(d) = 403, HIC = 313, Delta T = 10.8 msec

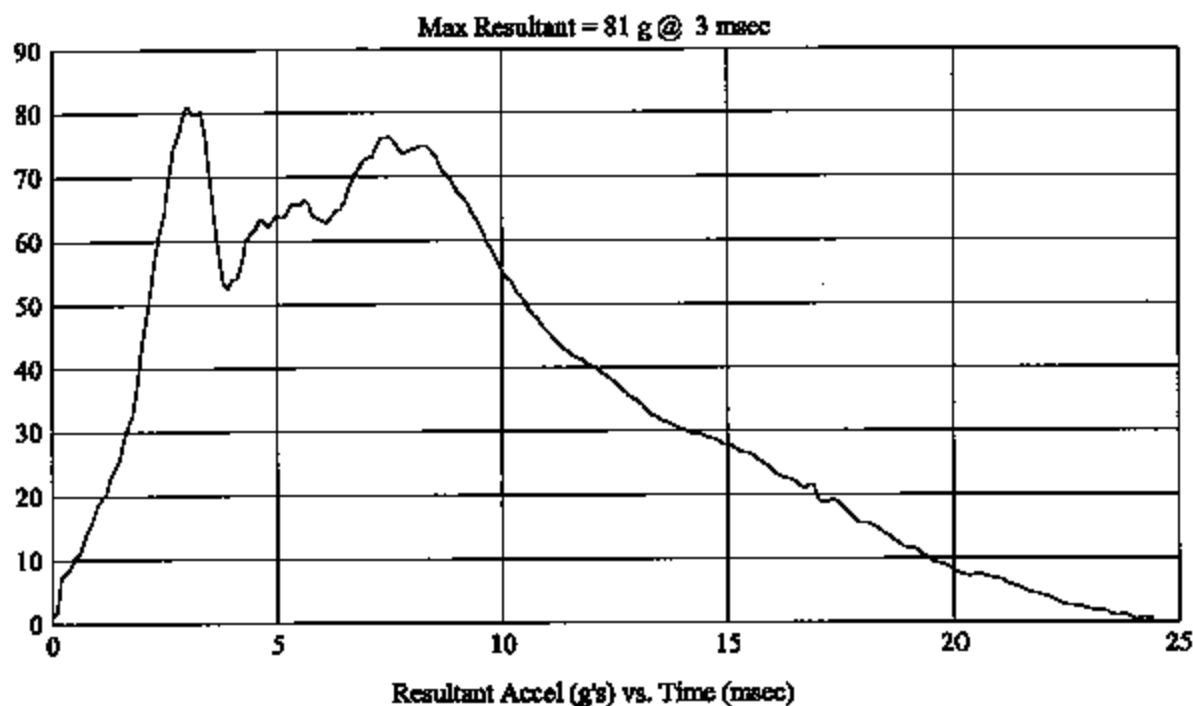


FMH
G04I7-001.1Customer: DODGE
Test # 1
FM4021
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 85/-6

HIC(d) = 403, HIC = 313, Delta T = 10.8 msec

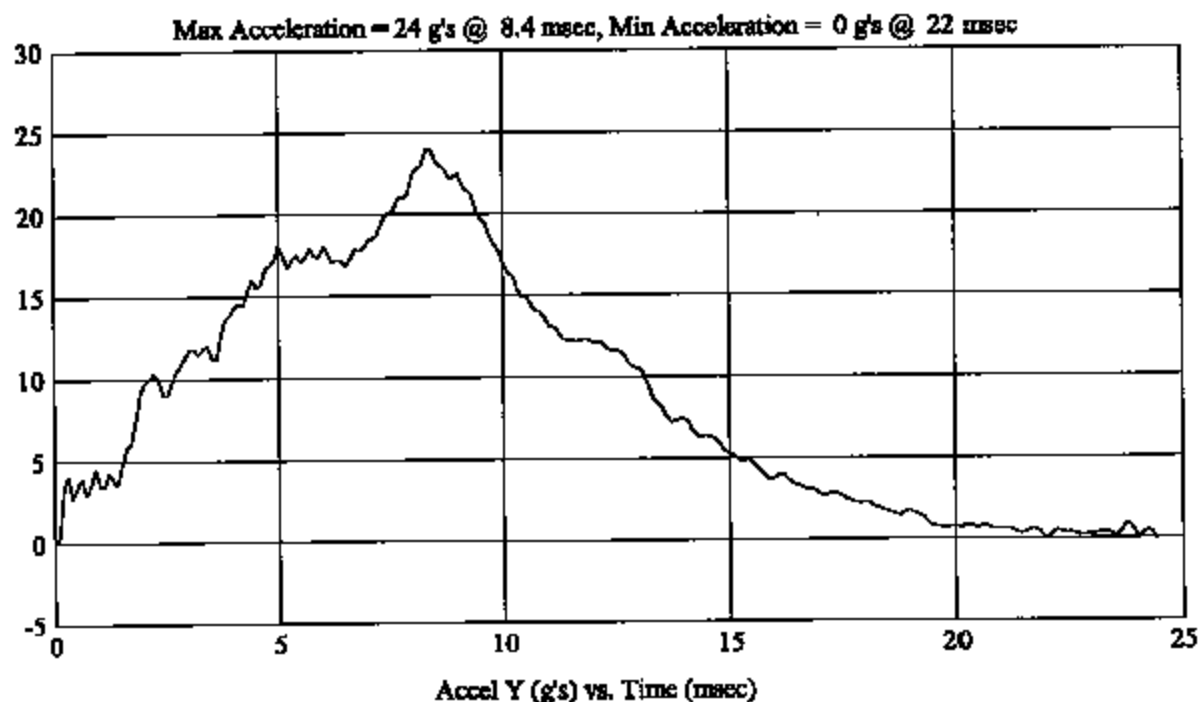
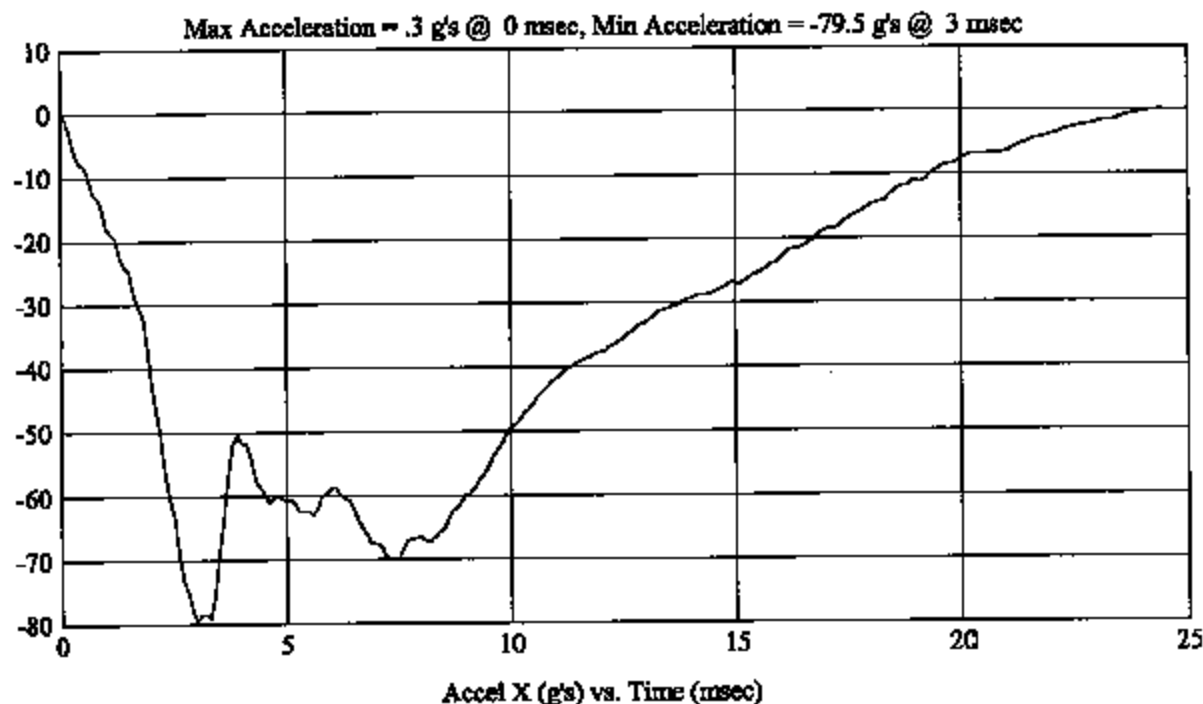


FMH
G04I7-001.1Customer: DODGE
Test # 1
FM4021
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 85/-6

HIC(d) = 403, HIC = 313, Delta T = 10.8 msec

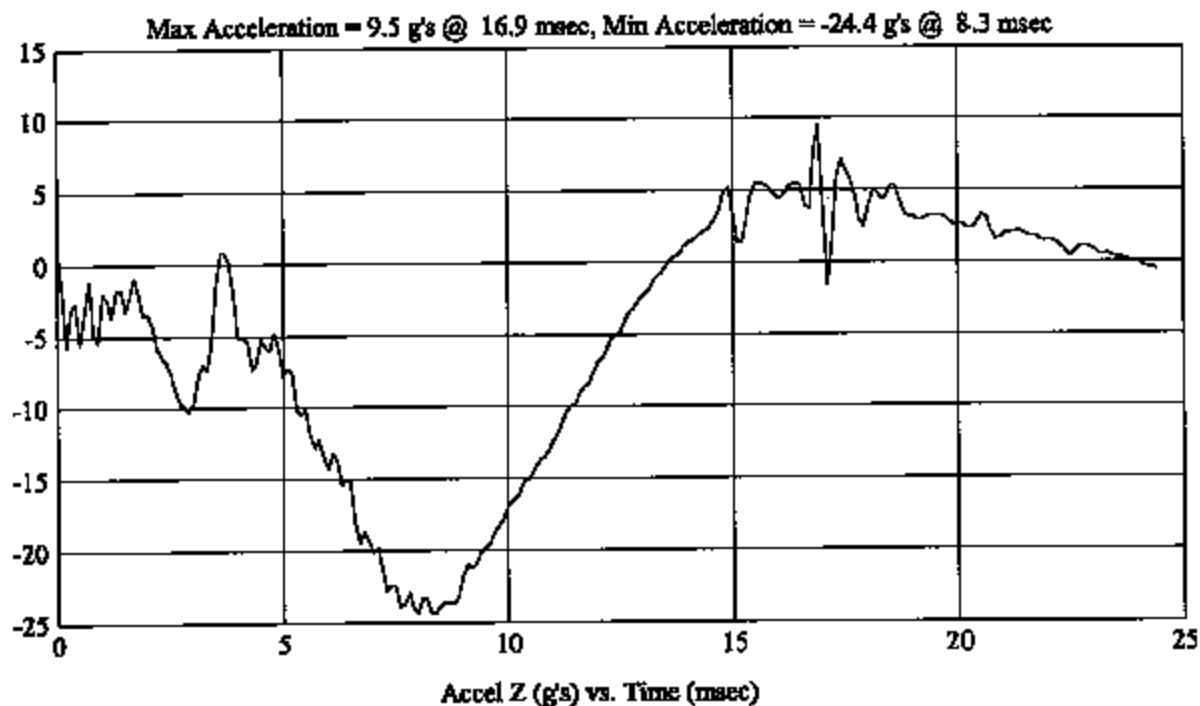


FMH
G04I7-001.1Customer: DODGE
Test # 1
FM4021
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 85/-6

HIC(d) = 403, HIC = 313, Delta T = 10.8 msec

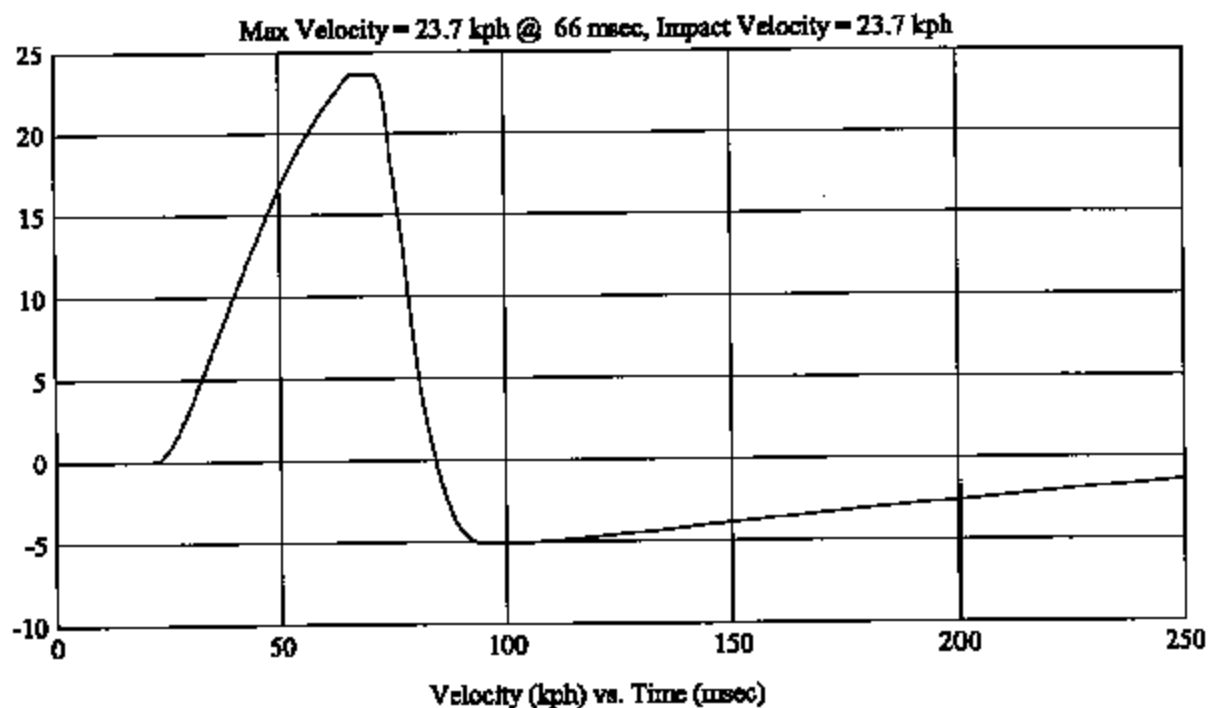


FMH
G04I7-001.1Customer: DODGE
Test # 1
FM4021
Additional Desc: N/A

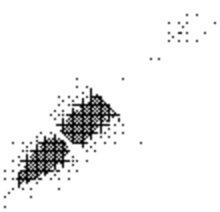
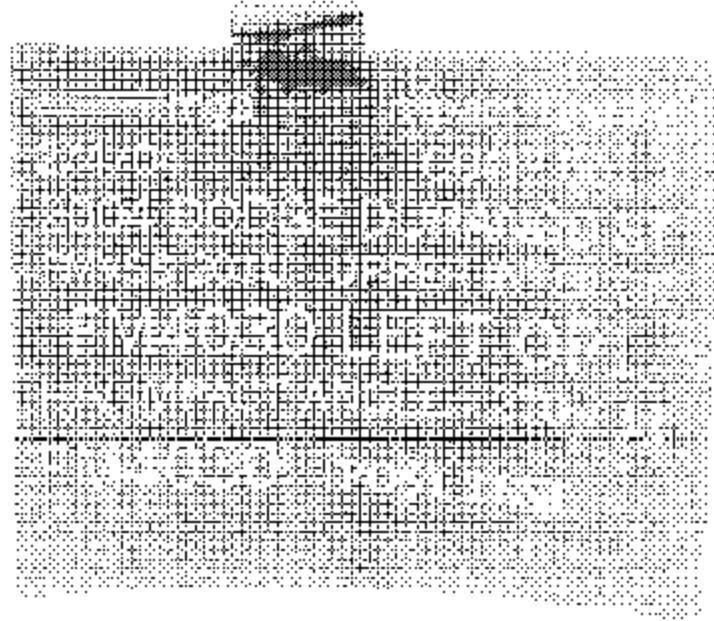
Vehicle Program : DURANGO ST

Model Year: 2004
Target: BP1
Vehicle Side: Right
Horz/Vert Angle: 85/-6

HIC(d) = 403, HIC = 313, Delta T = 10.8 msec



Impact Testing
2/4/04 00417-001.1
2004 DODGE DURANGO ST
5V3E261U - UPPER INTERIOR
FM4030 LEFT OP1
IMPACT ANGLE = 270 / 15
FM4030 PRE-TEST





... ..

... ..

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40304VEHICLE YR/MAKE/MODEL: 2004 DODGE DURANGO ST

GENERAL TEST PARAMETERS:

Test Number: 10Target (Vehicle Side) Left OPITemperature: 22 °F 60MGA Test Reference No.: FM4030Humidity: 32 %Approach Angles: Horizontal 270 °Time of Test: 2:20 am pmVertical 11 °FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
486	424	10.2	23.8	28	1

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35523	99.2	1.20	1.20
Y	6	J35516	99.6	1.23	1.23
Z	7	J35518	99.1	1.51	1.51

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

NO VISIBLE DAMAGERecorded By: [Signature] Approved By: Heleen Q. Kales Date: 2/4/04

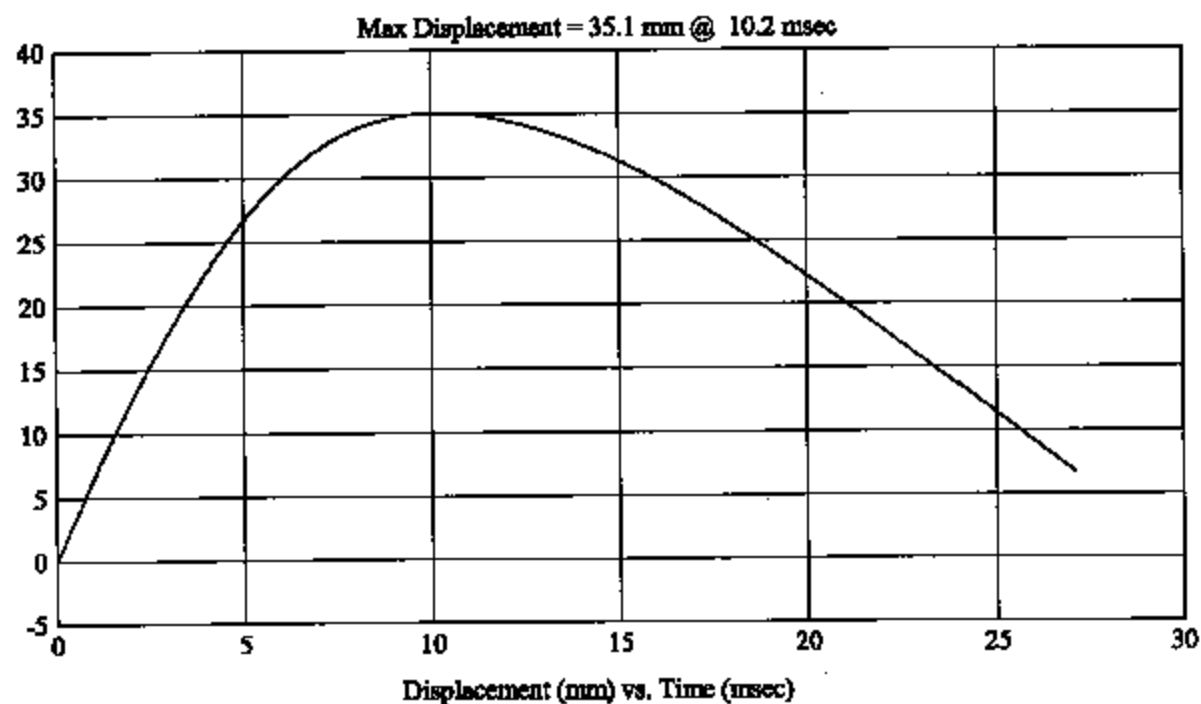
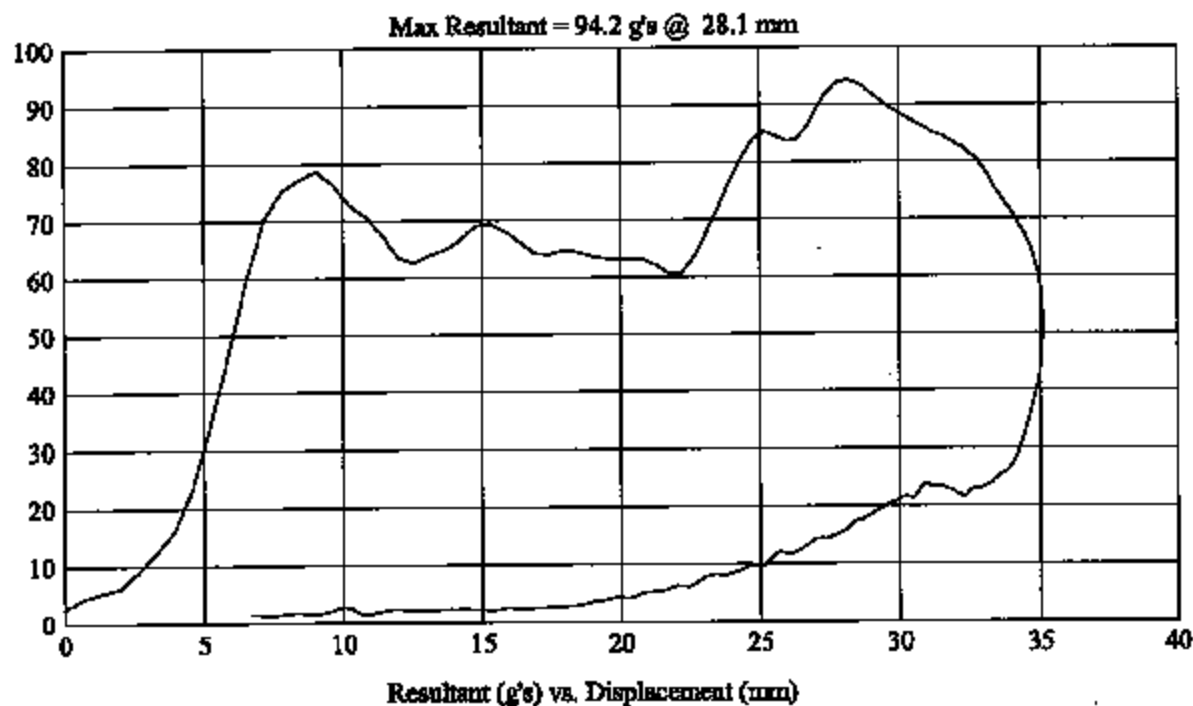
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G0417-001.1Customer: DODGE
Test # 10
FM4030
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: OP1
Vehicle Side: Left
Horz/Vert Angle: 270/11

HIC(d) = 486, HIC = 424, Delta T = 10.2 msec

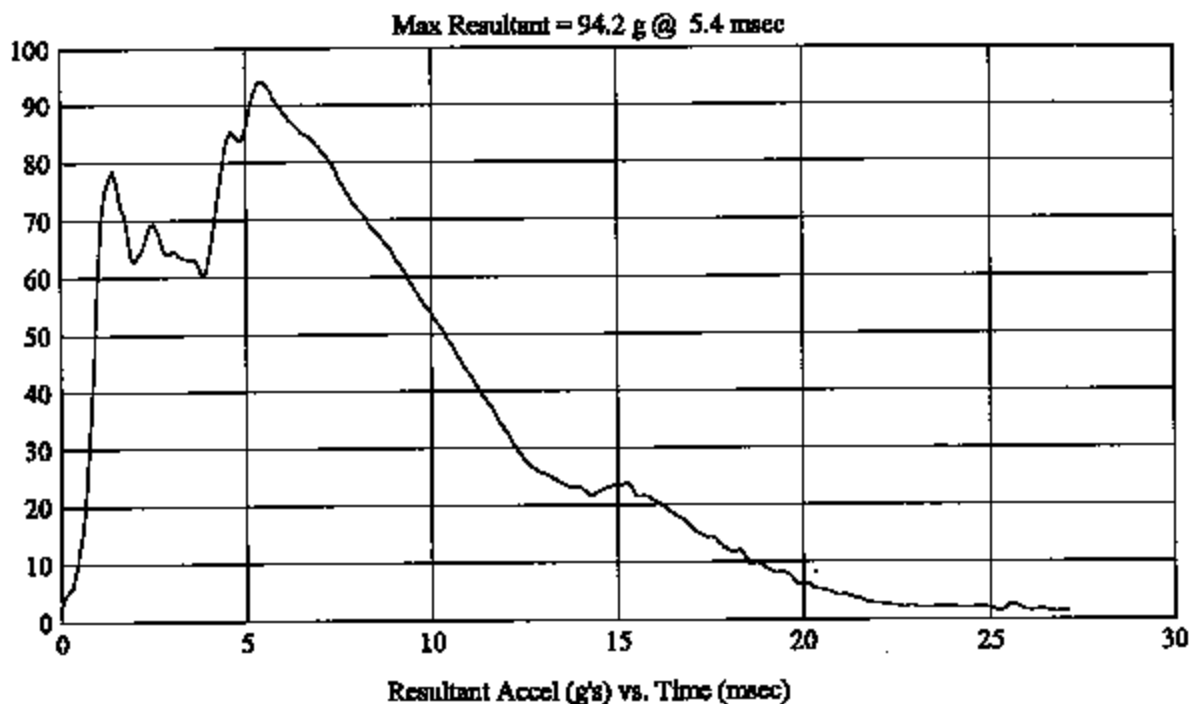


PMH
G04I7-001.1Customer: DODGE
Test # 10
FM4030
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: OP1
Vehicle Side: Left
Horz/Vert Angle: 270/11

HIC(d) = 486, HIC = 424, Delta T = 10.2 msec

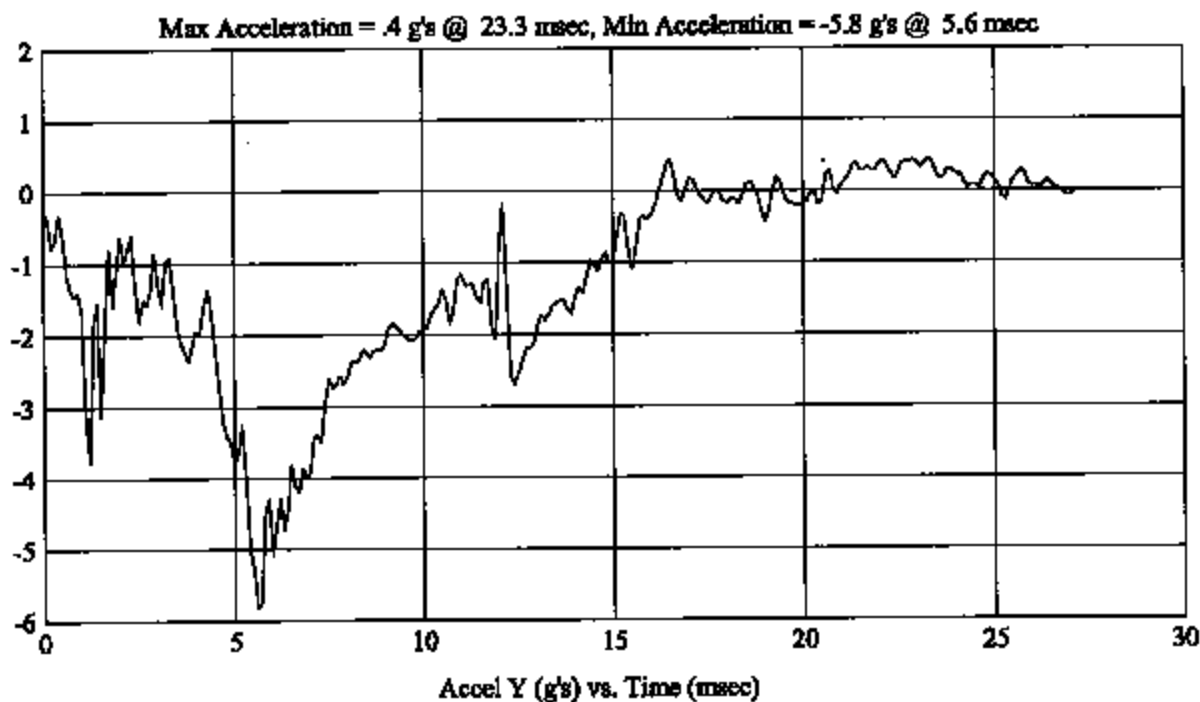
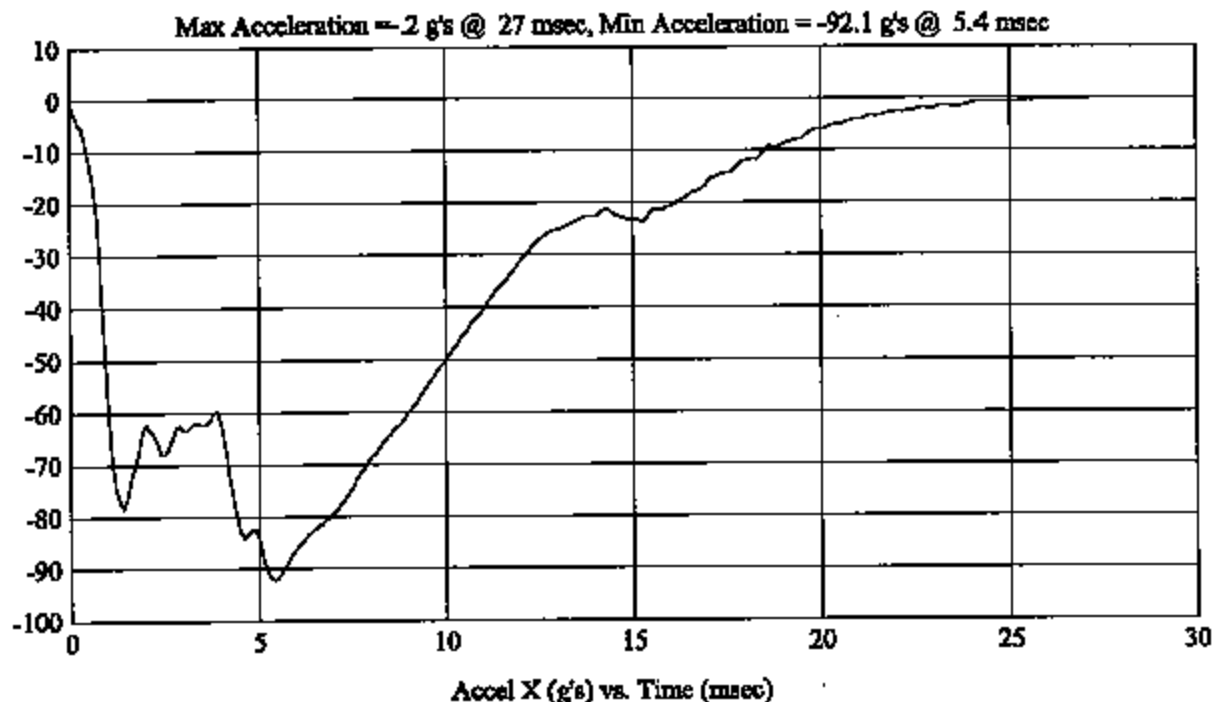


FMH
G04I7-001.1Customer: DODGE
Test # 10
FM4030
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: OP1
Vehicle Side: Left
Horz/Vert Angle: 270/11

HIC(d) = 486, HIC = 424, Delta T = 10.2 msec

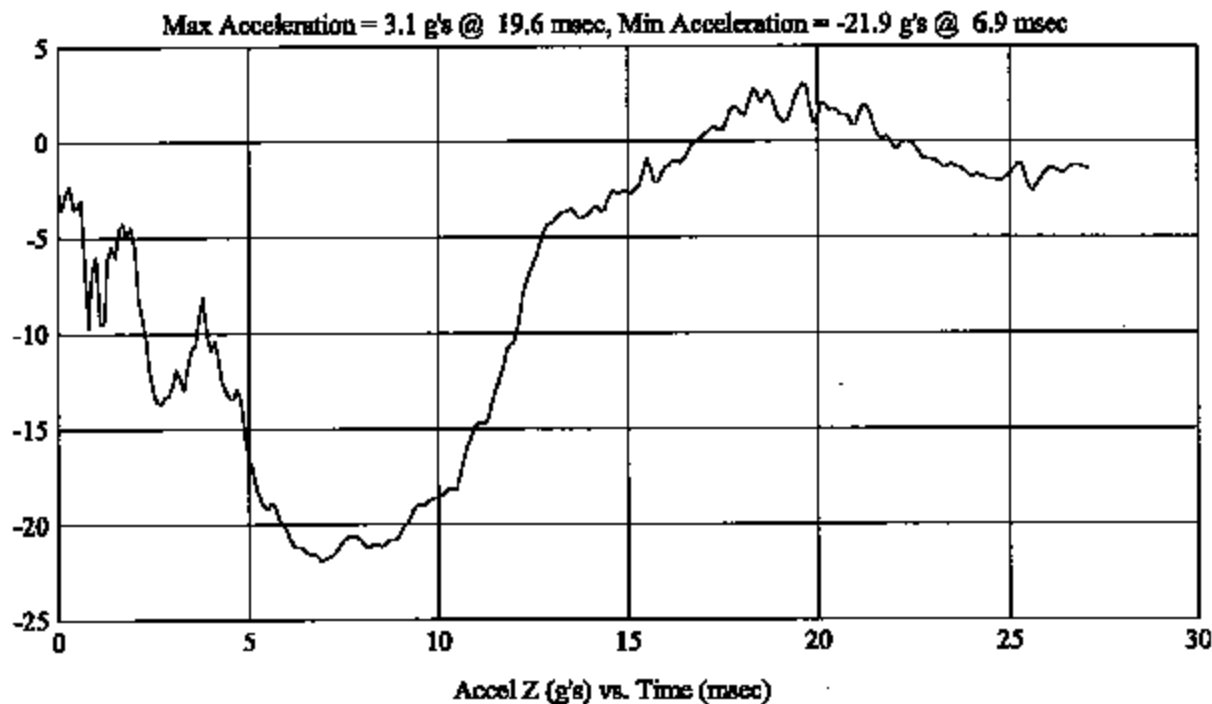


FMH
G04I7-001.1Customer: DODGE
Test # 10
FM4030
Additional Desc: N/A

Vehicle Program : DURANGO ST

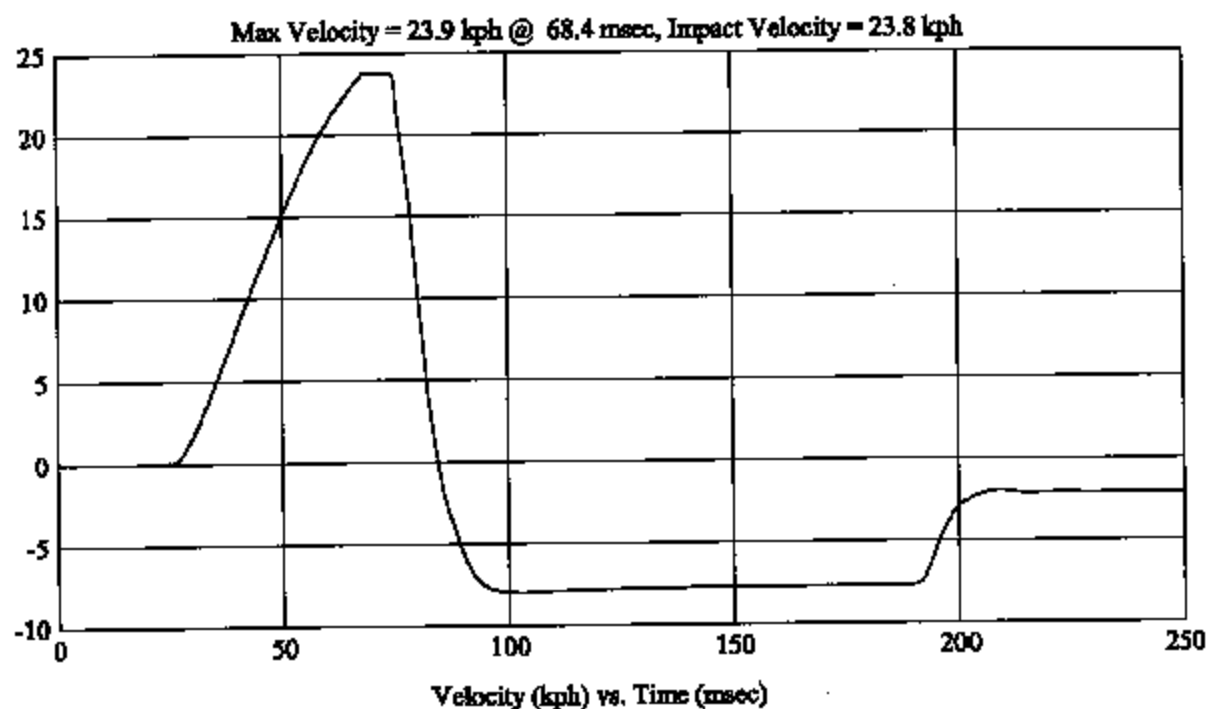
Model Year: 2004
Target: OP1
Vehicle Side: Left
Horz/Vert Angle: 270/11

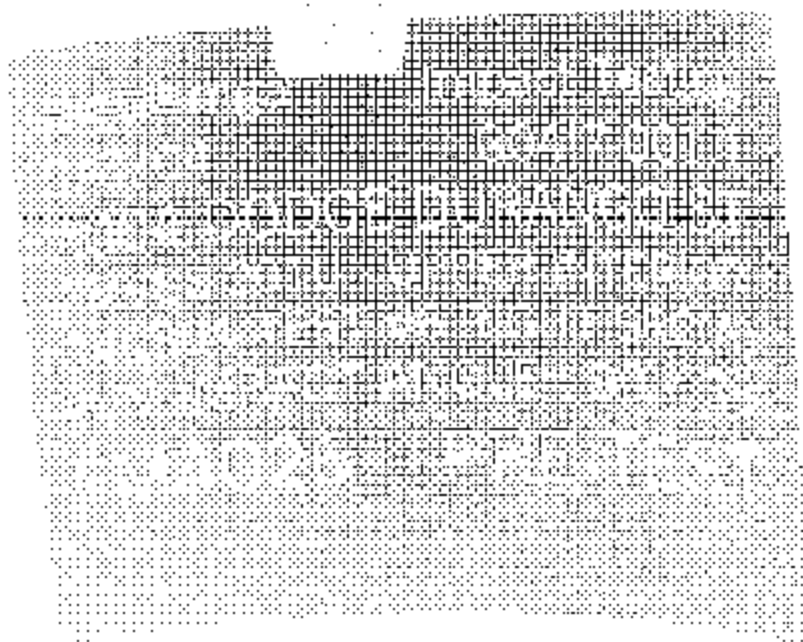
HIC(d) = 486, HIC = 424, Delta T = 10.2 msec



FMH
G04I7-001.1Customer: DODGE
Test # 10
FM4030
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: OP1
Vehicle Side: Left
Horz/Vert Angle: 270/11 $HIC(d) = 486$, $HIC = 424$, $\Delta T = 10.2 \text{ msec}$ 







MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C4030Y VEHICLE YR/MAKE/MODEL: 2001 DODGE DURANGO ST

GENERAL TEST PARAMETERS:

Test Number: 6

Target (Vehicle Side): left/right SR2A

Temperature: 22 °F/C

MGA Test Reference No.: FM4026

Humidity: 26 %

Approach Angles: Horizontal 90 °

Time of Test: 5:00 am/pm

Vertical 38 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
YBS	422	4.3	24.0	13	5

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35923	-99.2	1.20	1.20
Y	6	J35916	99.6	1.23	1.23
Z	7	J36918	99.1	1.51	1.51

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

SLIGHT HEMISPHERICAL DEFORMATION

Recorded By: [Signature] Approved By: [Signature] Date: 2/3/04

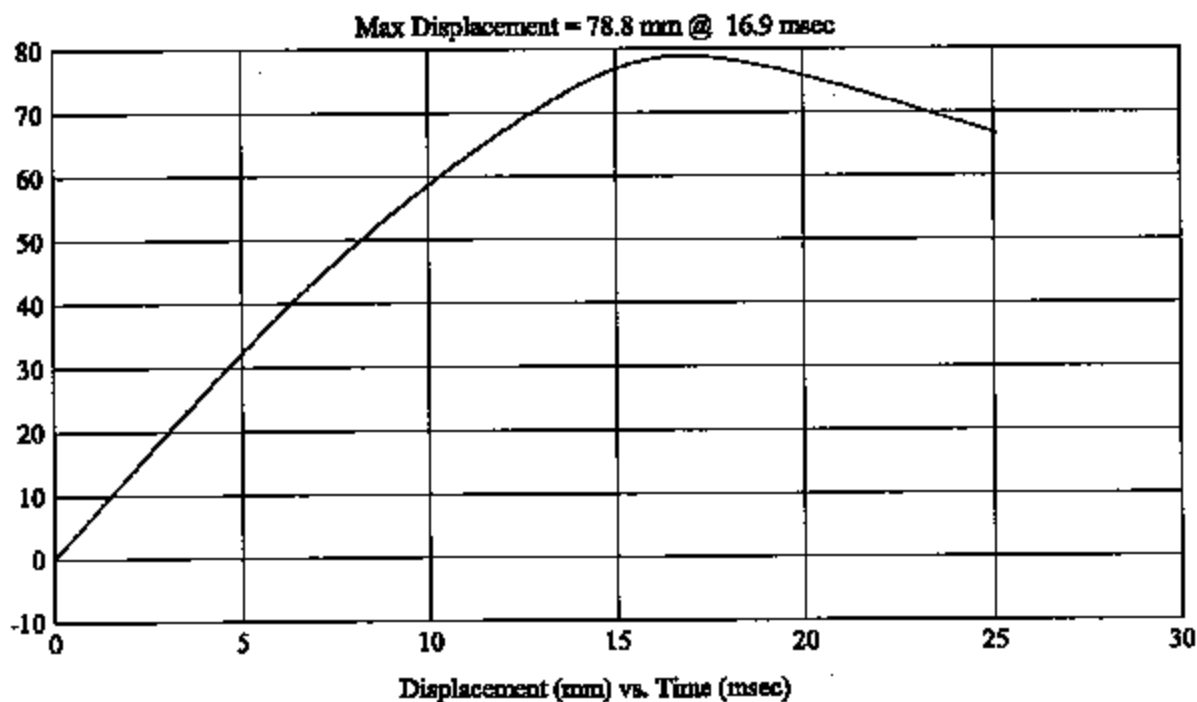
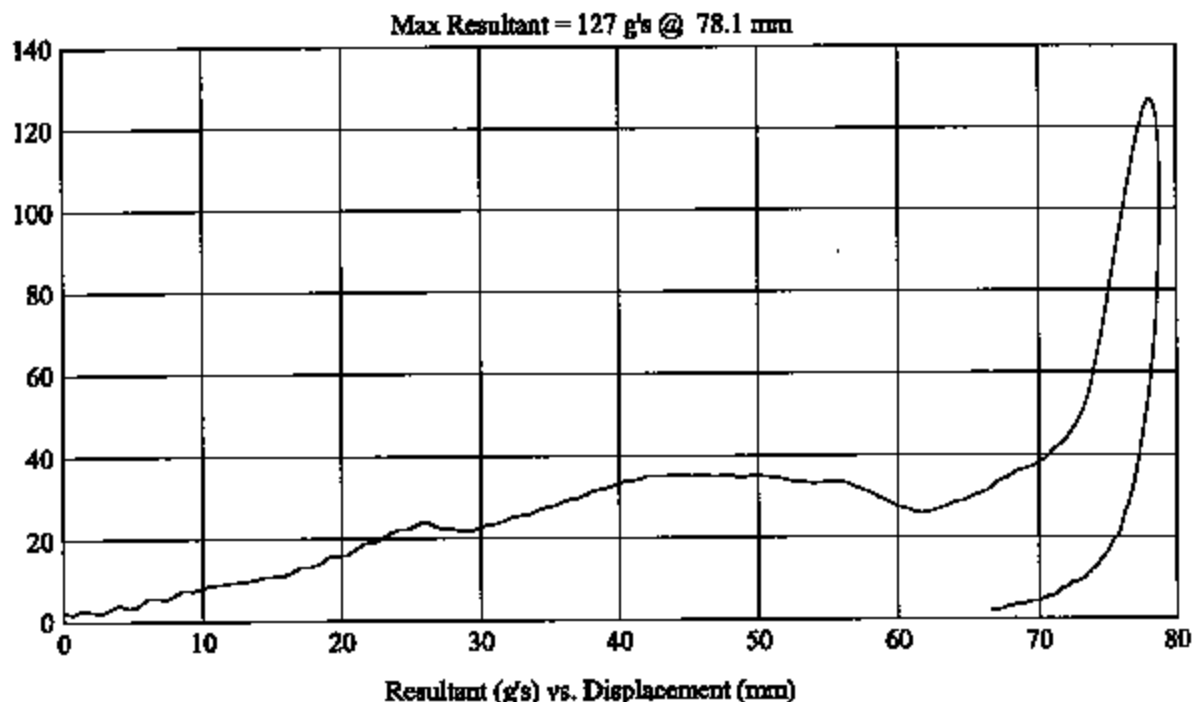
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G0417-001.1Customer: DODGE
Test # 6
FM4026
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR2(a)
Vehicle Side: Right
Horz/Vent Angle: 90/38

HIC(d) = 485, HIC = 422, Delta T = 4.3 msec

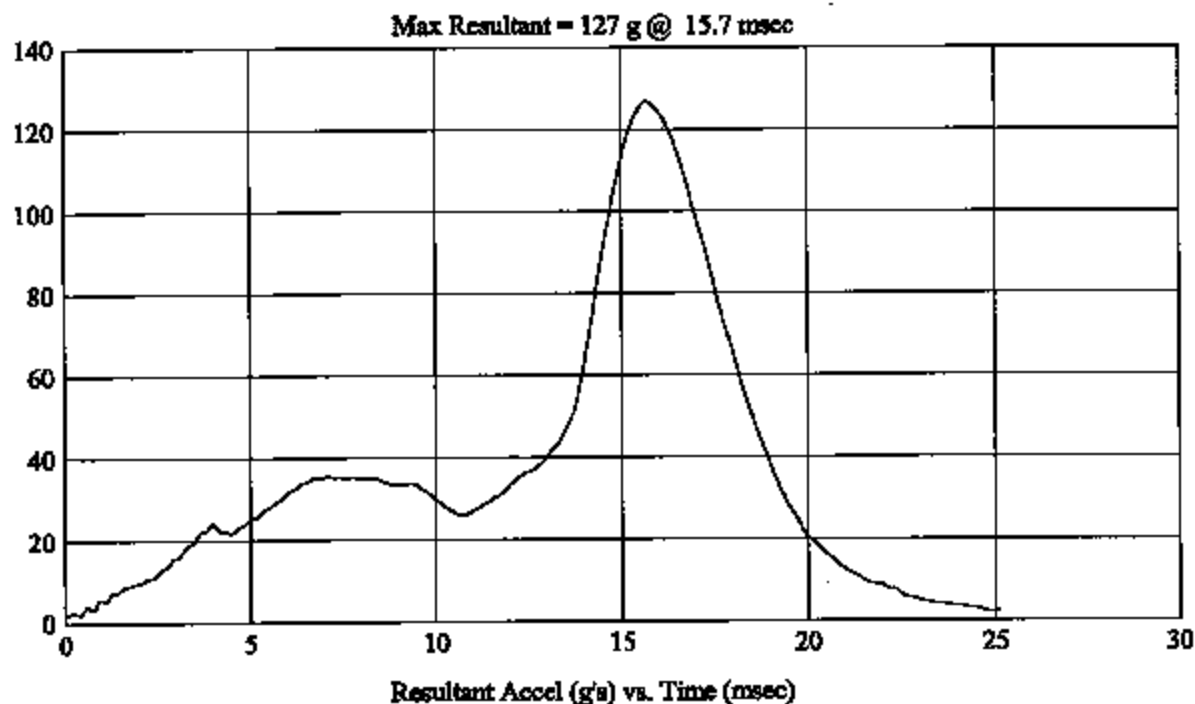


FMH
G04I7-001.1Customer: DODGE
Test # 6
FM4026
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR2(a)
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 485, HIC = 422, Delta T = 4.3 msec

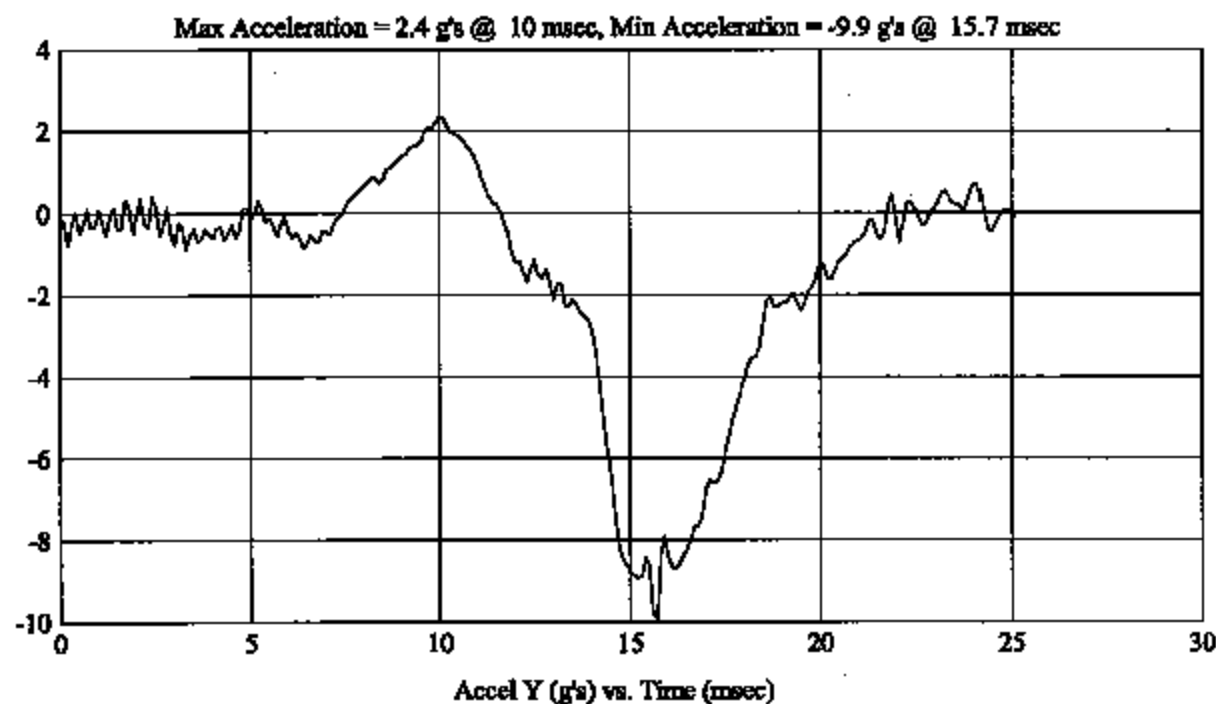
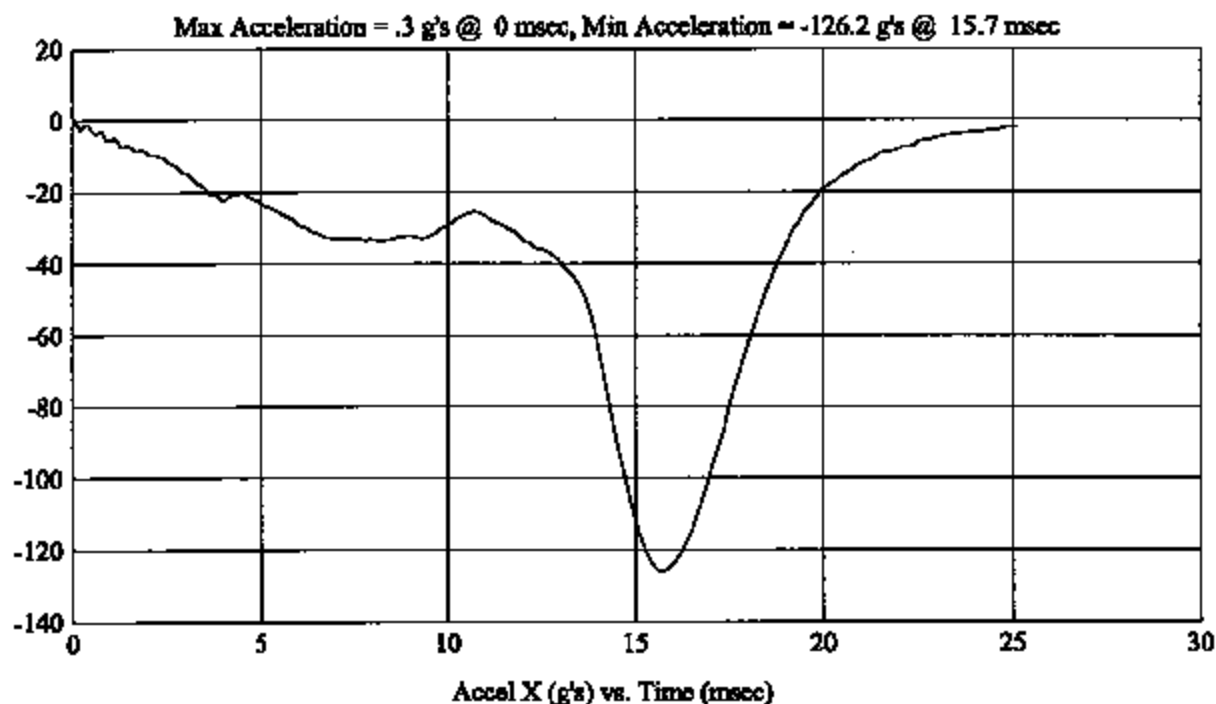


FMH
G0417-001.1Customer: DODGE
Test # 6
FM4026
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR2(a)
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 485, HIC = 422, Delta T = 4.3 msec



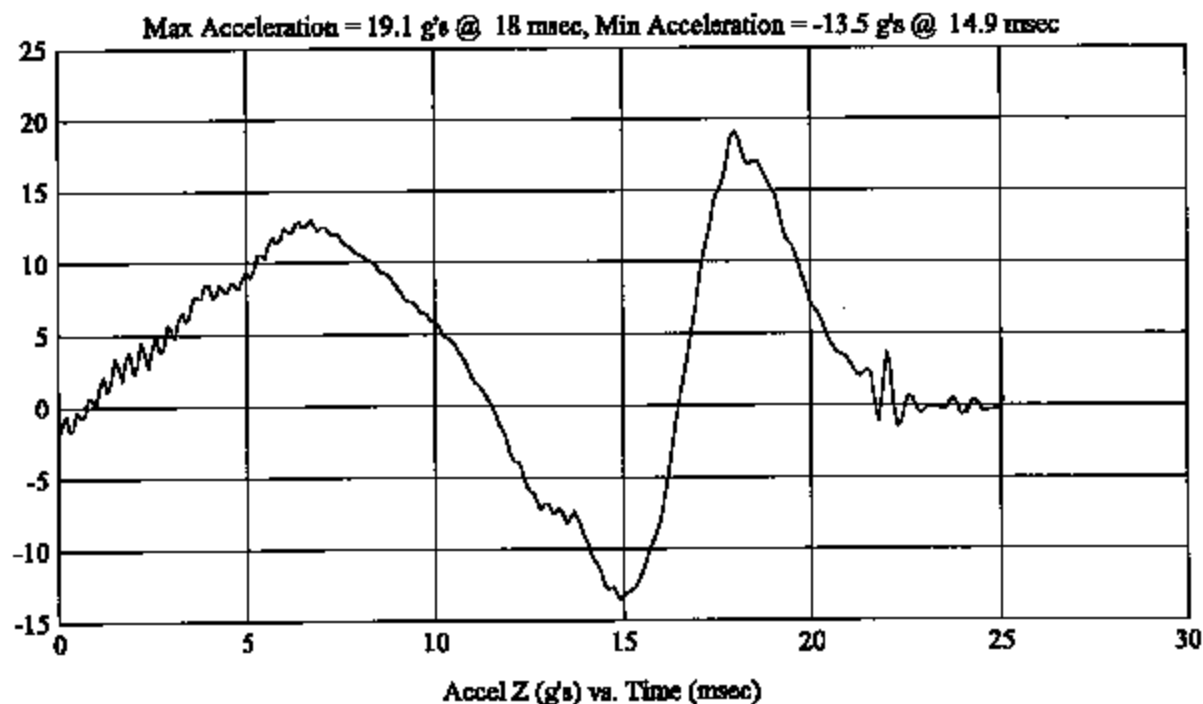
FMH
G04I7-001.1

Customer: DODGE
Test # 6
FM4026
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR2(a)
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 485, HIC = 422, Delta T = 4.3 msec

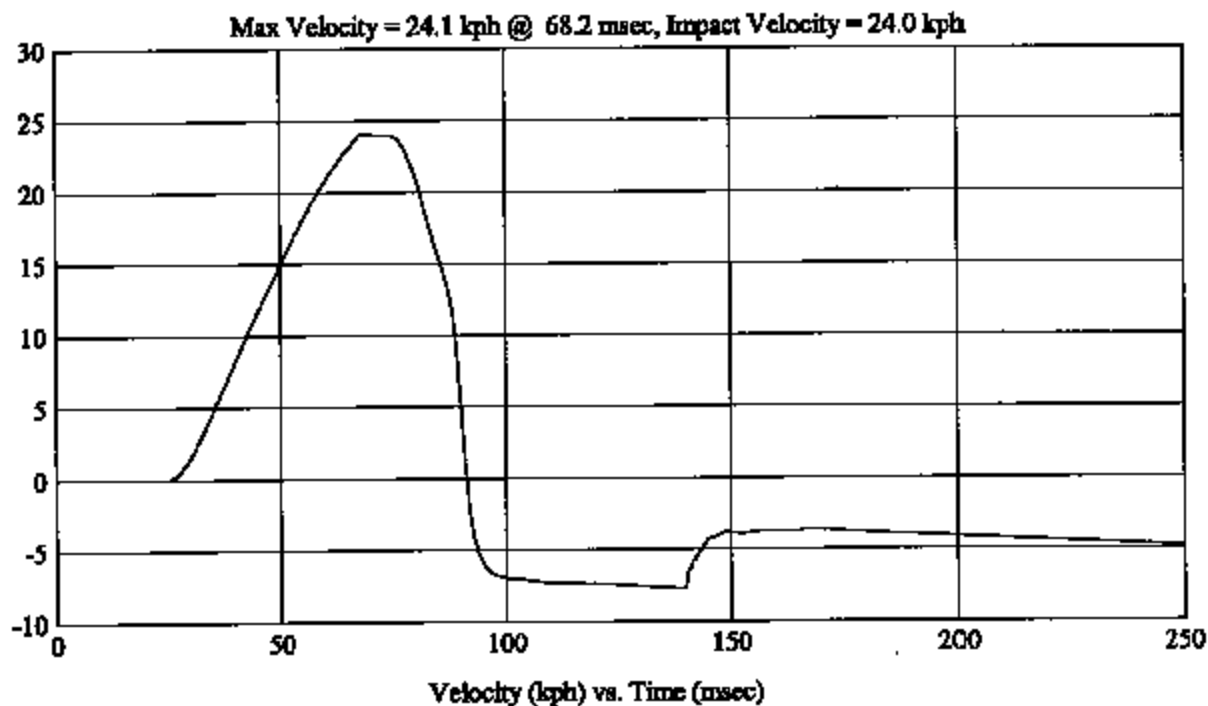


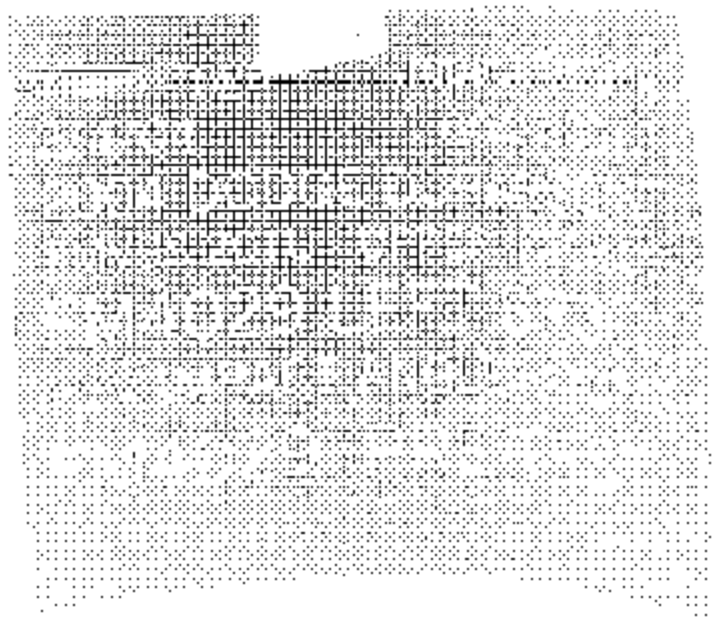
FMH
G04I7-001.1Customer: DODGE
Test # 6
FM4026
Additional Desc: N/A

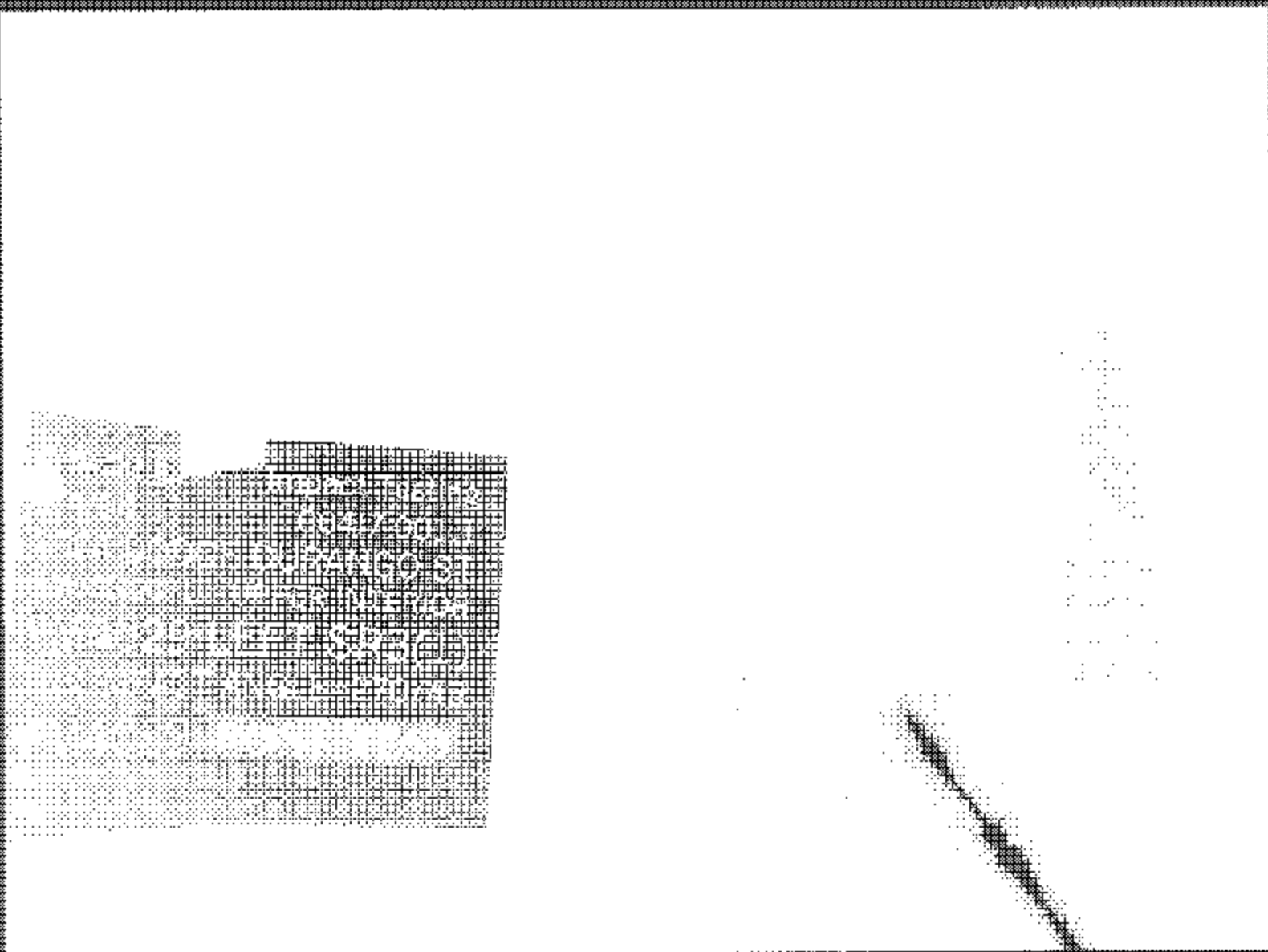
Vehicle Program : DURANGO ST

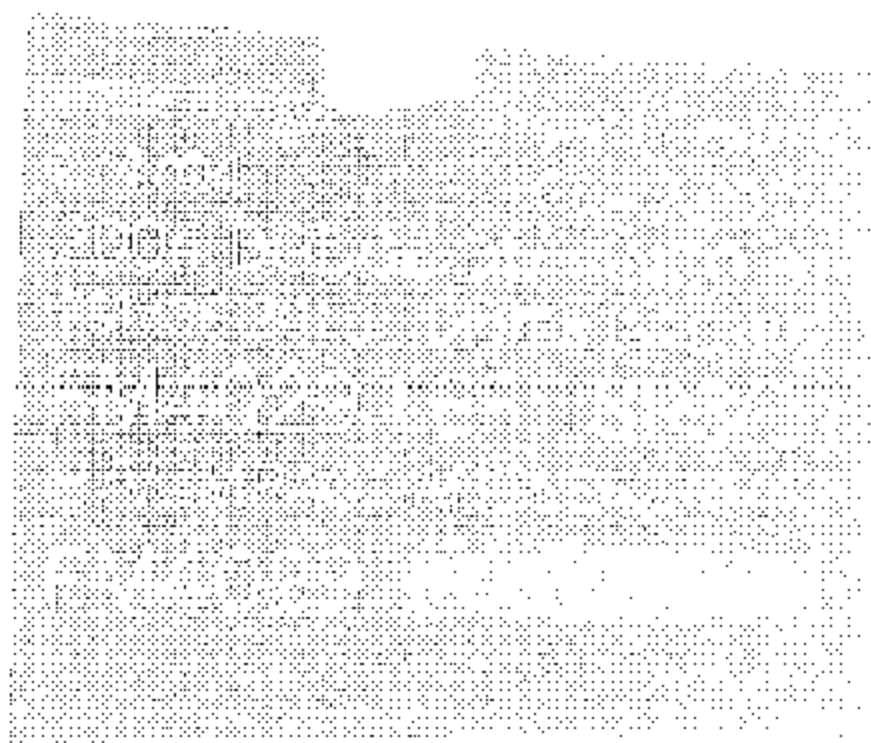
Model Year: 2004
Target: SR2(a)
Vehicle Side: Right
Horz/Vert Angle: 90/38

HIC(d) = 485, HIC = 422, Delta T = 4.3 msec









GAINESVILLE NISSAN

NIWS63343



3915 N. Main Street
GAINESVILLE, FLORIDA 32609
(352) 378-2311



NIWS63343

STATE OF FLORIDA REGISTRATION # MV-14166

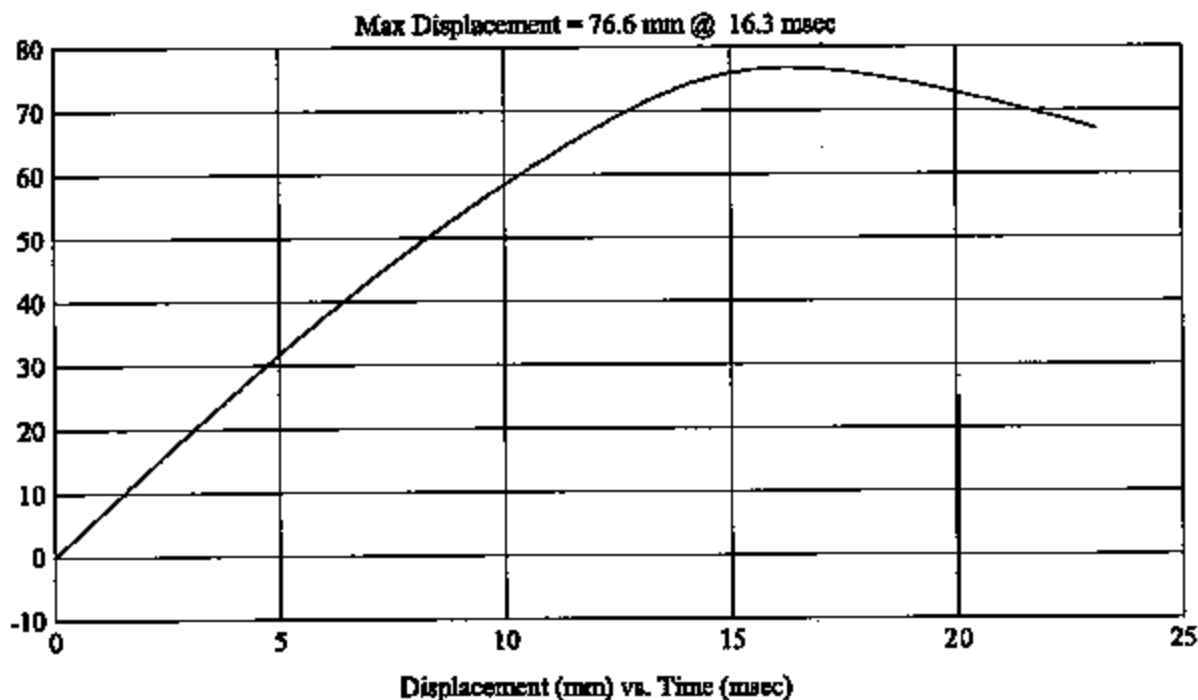
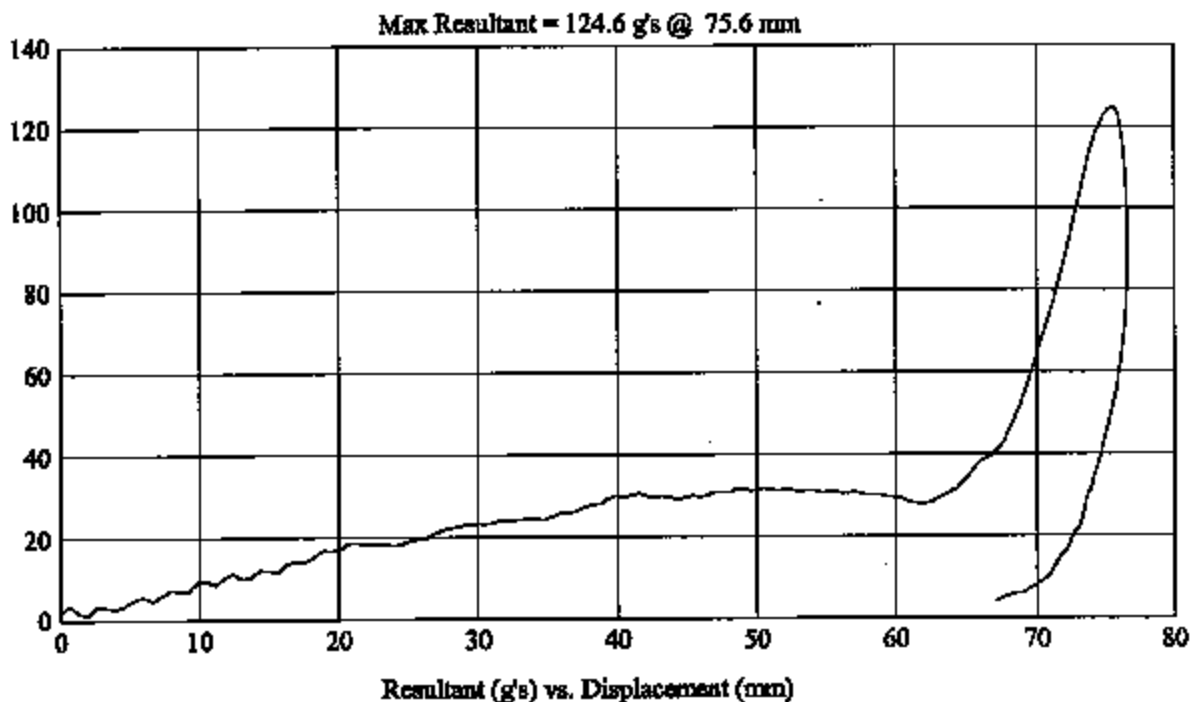
CUSTOMER NO. 31414		ADVISOR MARSHALL	TAB NO. 5203	INVOICE DATE 12/27/02	INVOICE NO. NIWS63343	
CHAD OR TRISHA SMITH 5428 SW 4TH PL GAINESVILLE, FL 32607		LABOR RATE	LICENSE NO.	RELEASE 3,762	COLOR SILVER/	
		YEAR / MAKE / MODEL 02 / NISSAN / SENTRA			OR INQUIRY DATE	DELIVERY DATE
		VIN/CU/LD. NO. 3 N 1 A B 5 1 A 9 2 L 7 2 7 7 6 3			DELLING DEALER NO.	PRODUCTION DATE
		F. T. E. NO.			P. O. NO.	B. T. DATE 12/20/02
REFERENCE PHONE 352-384-0354	BUSINESS PHONE	COMMENTS				
MO: 3763						
LABOR & PARTS J.P. FLORENZ 12/27/02 ENGINE MECHANICAL HOURS: TECH(S):6245 0.00 CUST STATES ENG. MAKES KNOCKING SOUND AND STALLS NO PROBLEM FOUND JOB # 1 TOTAL LABOR & PARTS 0.00						
J.P. FLORENZ 12/27/02 CLUTCH, MANUAL TRANS HOURS: TECH(S):5245 0.00 CUST STATES SHIFT IS NOT SMOOTH NO PROBLEM FOUND WITH SHIFTING JOB # 2 TOTAL LABOR & PARTS 0.00						
SHOP SUPPLIES AND HAZARDOUS WASTE DISPOSAL CHARGES This charge represents costs and profits to the motor vehicle repair facility for items such as miscellaneous shop supplies and/or waste disposal [s.403.004(4)]. The State of Florida requires a \$1.00 fee to be collected for each new tire sold in the state [s.403.718], and a \$1.50 fee to be collected for each new or remanufactured battery sold in the state [s.403.718d].						

FMH
G04I7-001.1Customer: DODGE
Test # 9
FM4029
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR3(1)
Vehicle Side: Left
Horz/Vert Angle: 270/43

HIC(d) = 508, HIC = 453, Delta T = 5.3 msec

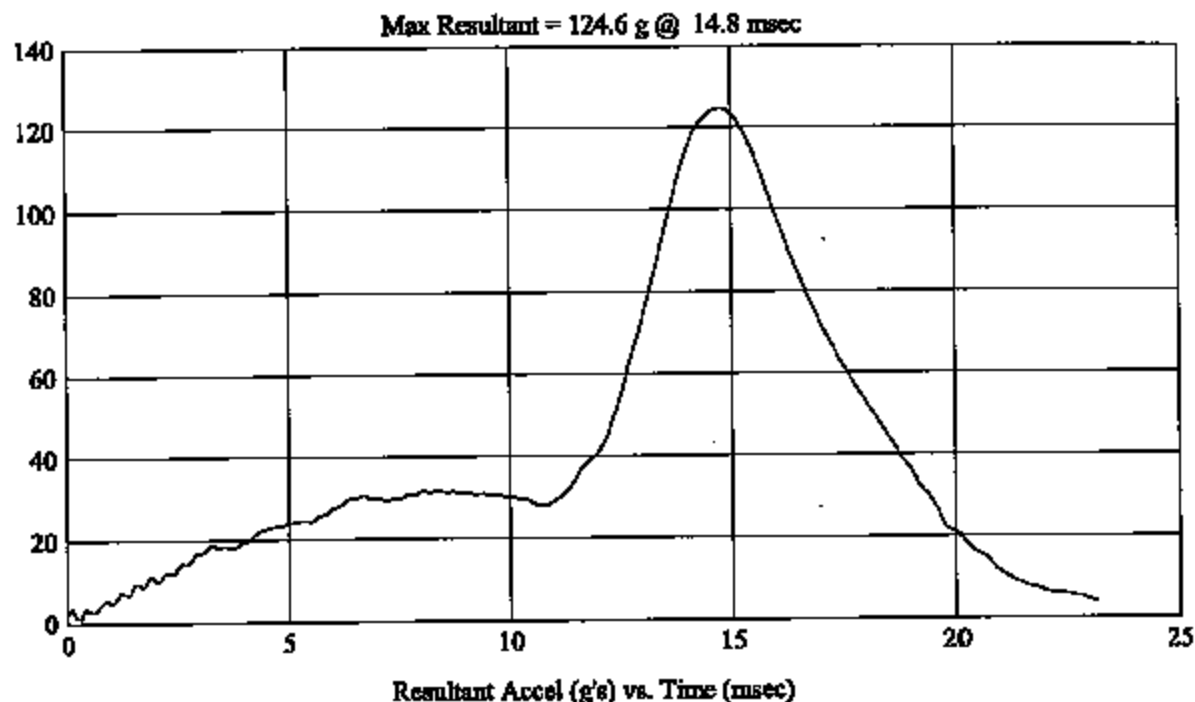


FMH
G04I7-001.1Customer: DODGE
Test # 9
FM4029
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR3(1)
Vehicle Side: Left
Horz/Vert Angle: 270/43

HIC(d) = 508, HIC = 453, Delta T = 5.3 msec

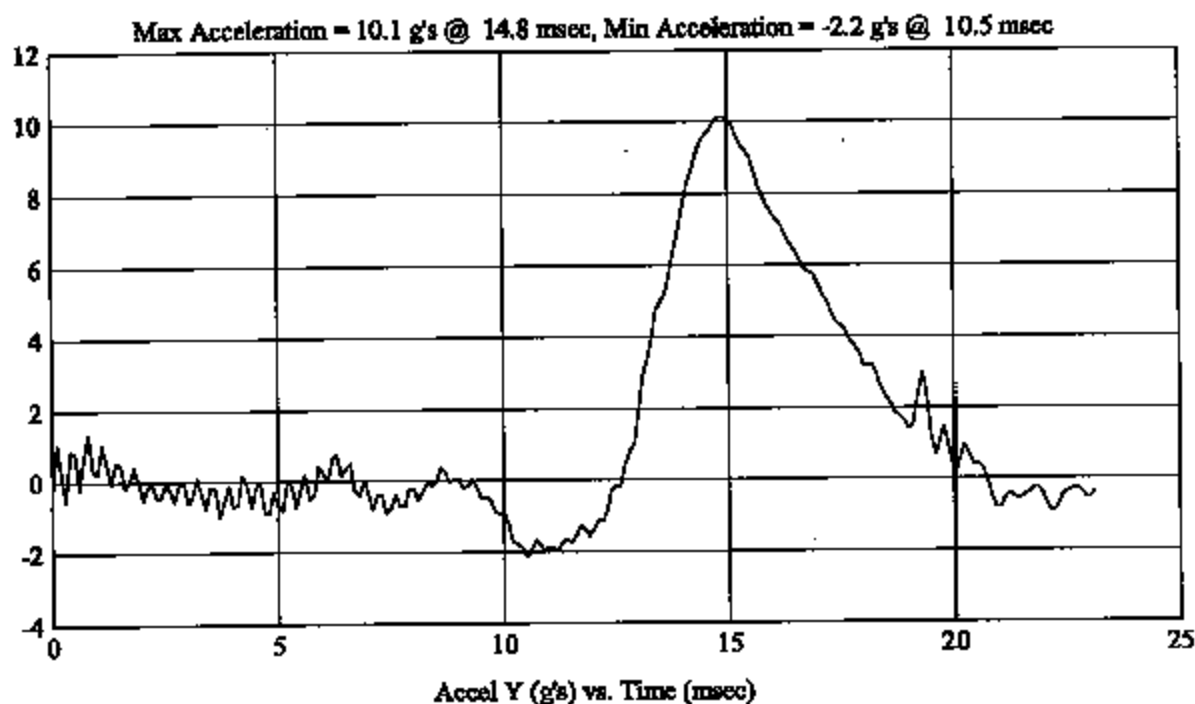
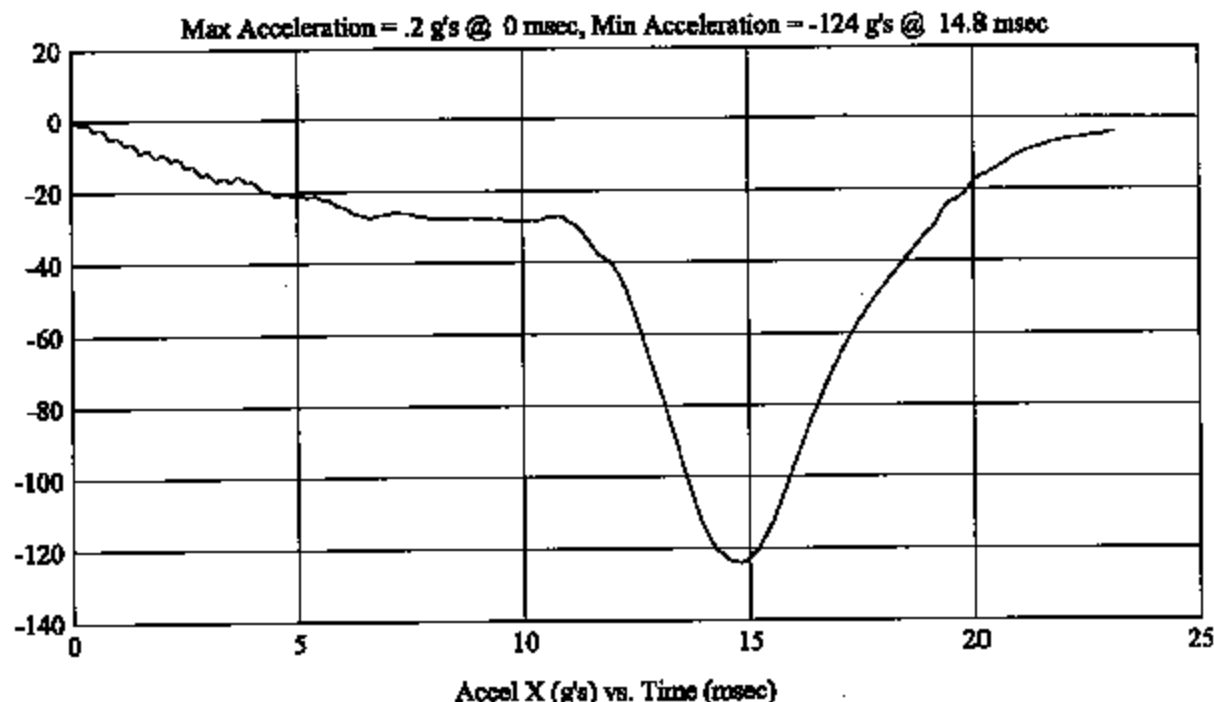


FMH
G04I7-001.1Customer: DODGE
Test # 9
FM4029
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR3(1)
Vehicle Side: Left
Horz/Vert Angle: 270/43

HIC(d) = 508, HIC = 453, Delta T = 5.3 msec

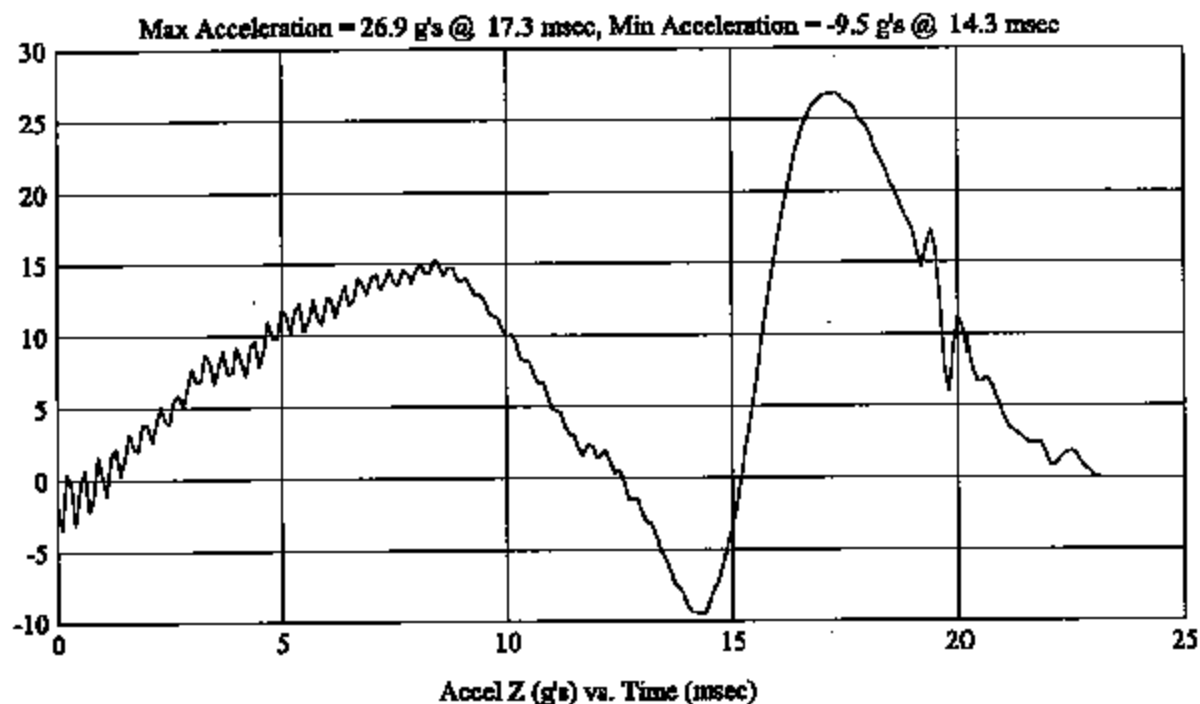


FMH
G04I7-001.1Customer: DODGE
Test # 9
FM4029
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR3(1)
Vehicle Side: Left
Horz/Vert Angle: 270/43

HIC(d) = 508, HIC = 453, Delta T = 5.3 msec



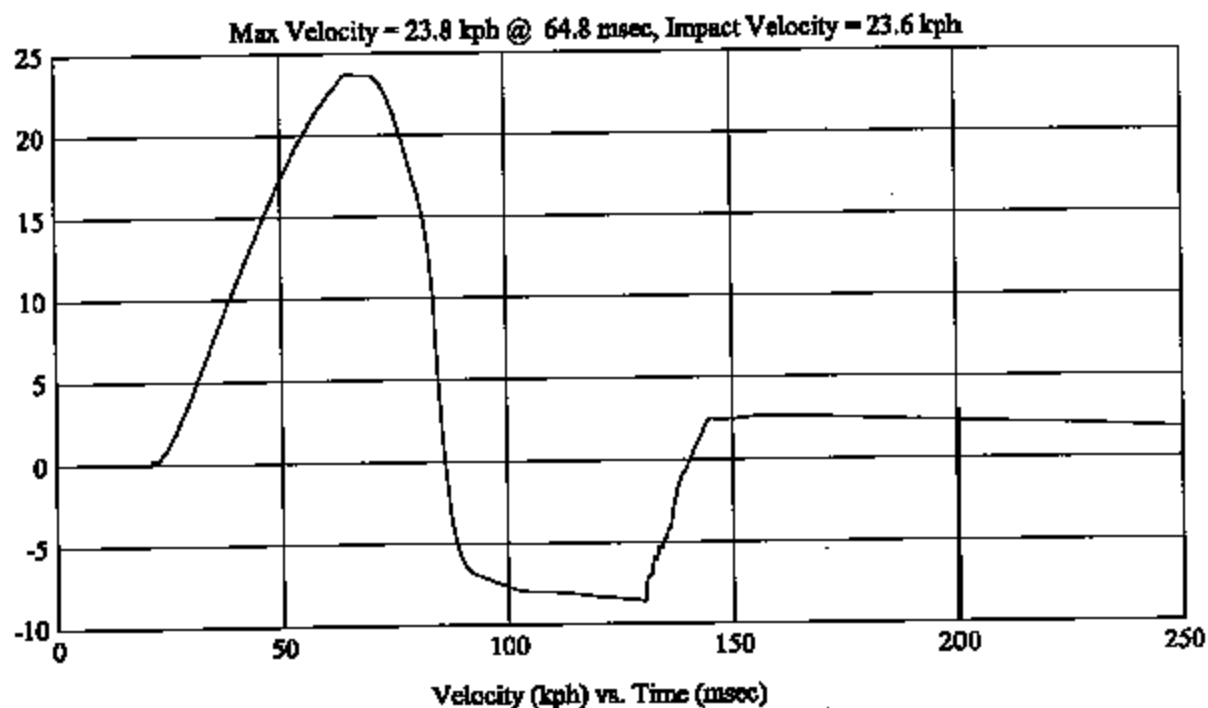
FMH
G04I7-001.1

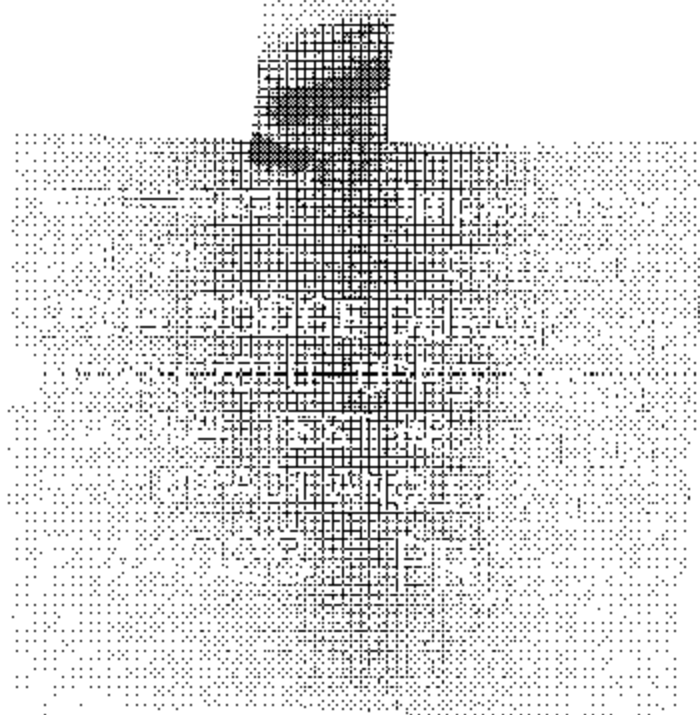
Customer: DODGE
Test # 9
FM4029
Additional Desc: N/A

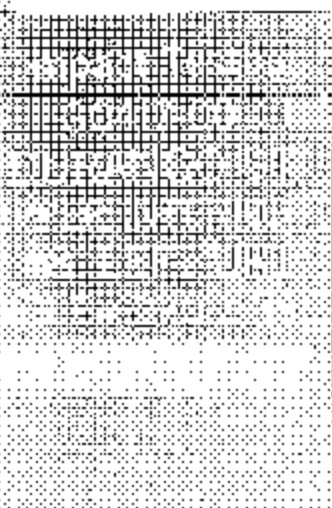
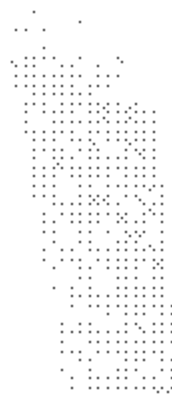
Vehicle Program : DURANGO ST

Model Year: 2004
Target: SR3(1)
Vehicle Side: Left
Horz/Vert Angle: 270/43

HIC(d) = 508, HIC = 453, Delta T = 5.3 msec









MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40304 VEHICLE YR/MAKE/MODEL: 2001 DODGE DURANGO ST

GENERAL TEST PARAMETERS:

Test Number: 8

Target (Vehicle Side) Left UR 1

Temperature: 22 °F 60

MGA Test Reference No.: FM4028

Humidity: 32 %

Approach Angles: Horizontal 270 °

Time of Test: 11:25 am pm

Vertical 35 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
372	272	13.2	23.89 26	25	5

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

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-107.3	1.20	1.20
Y	6	J36193	101.1	1.23	1.23
Z	7	J36353	97.1	1.51	1.51

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

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 2/4/03

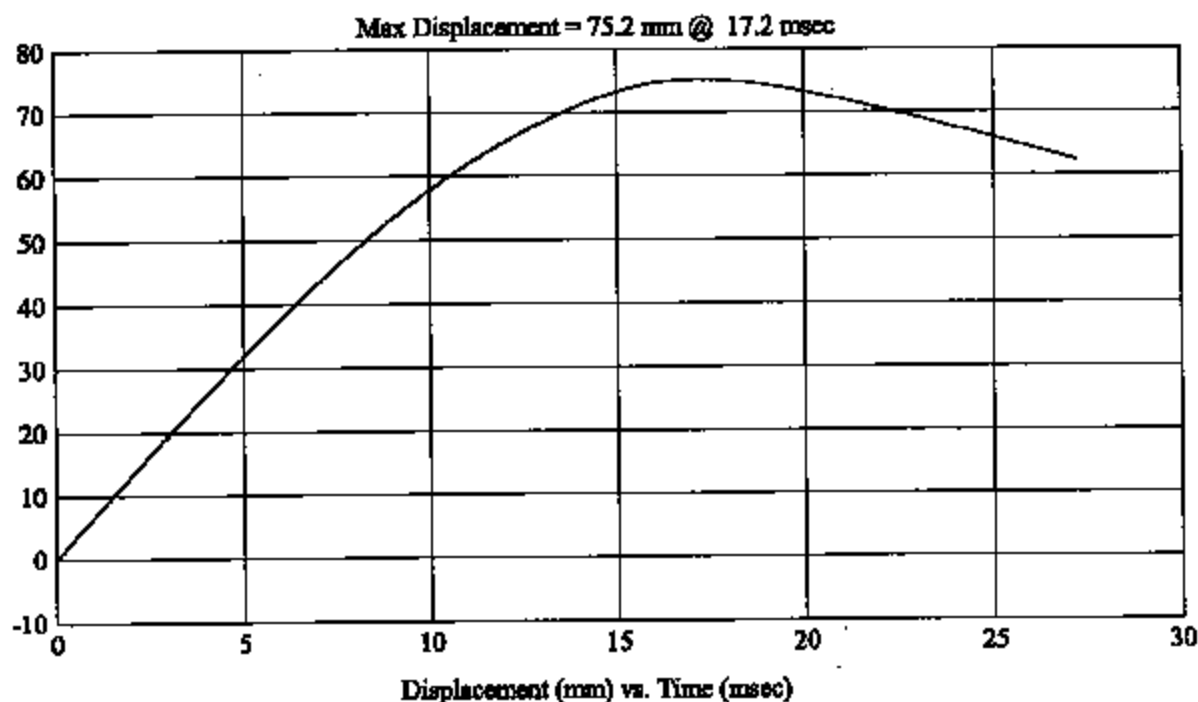
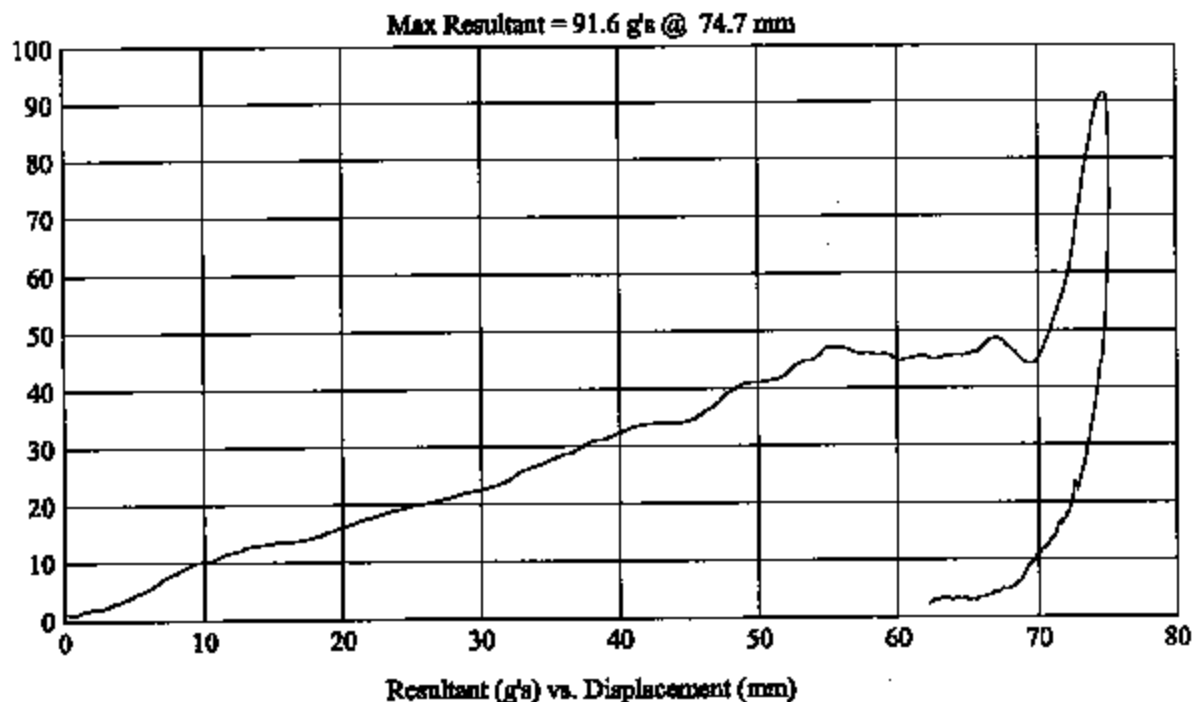
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G0417-001.1Customer: DODGE
Test # 8
FM4028
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR1
Vehicle Side: Left
Horz/Vert Angle: 270/35

HIC(d) = 372, HIC = 272, Delta T = 13.2 msec

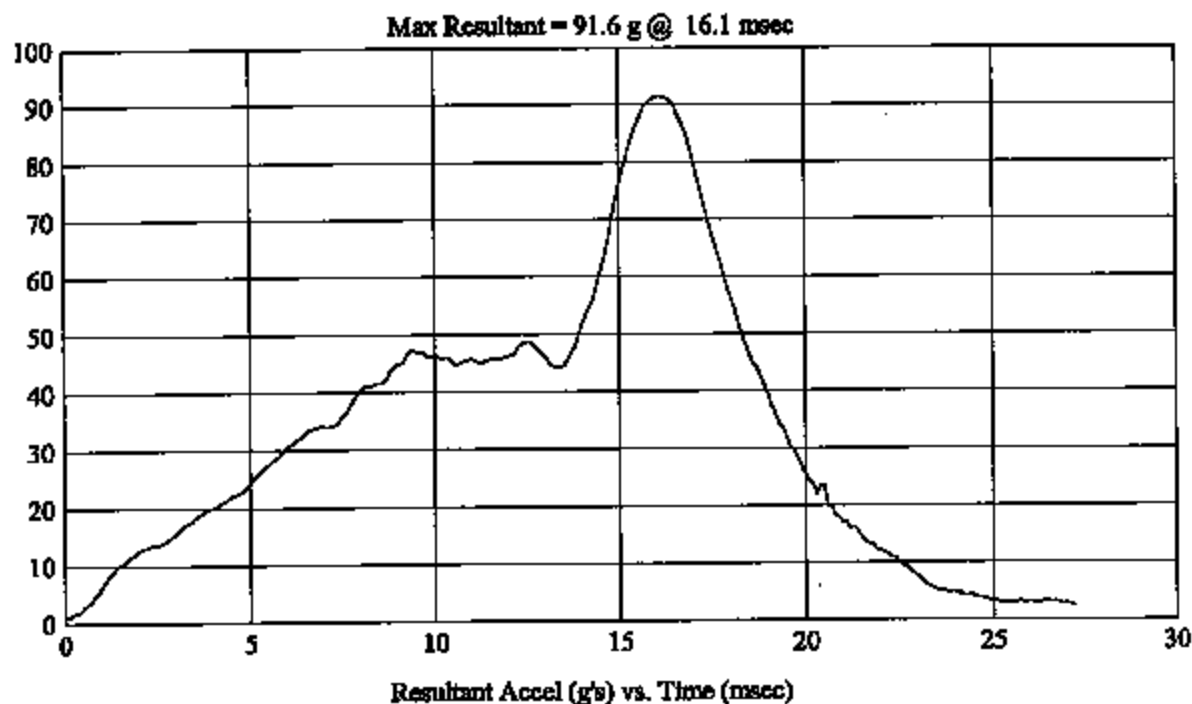


FMH
G04U7-001.1Customer: DODGE
Test # 8
FM4028
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR1
Vehicle Side: Left
Horz/Vert Angle: 270/35

HIC(d) = 372, HIC = 272, Delta T = 13.2 msec

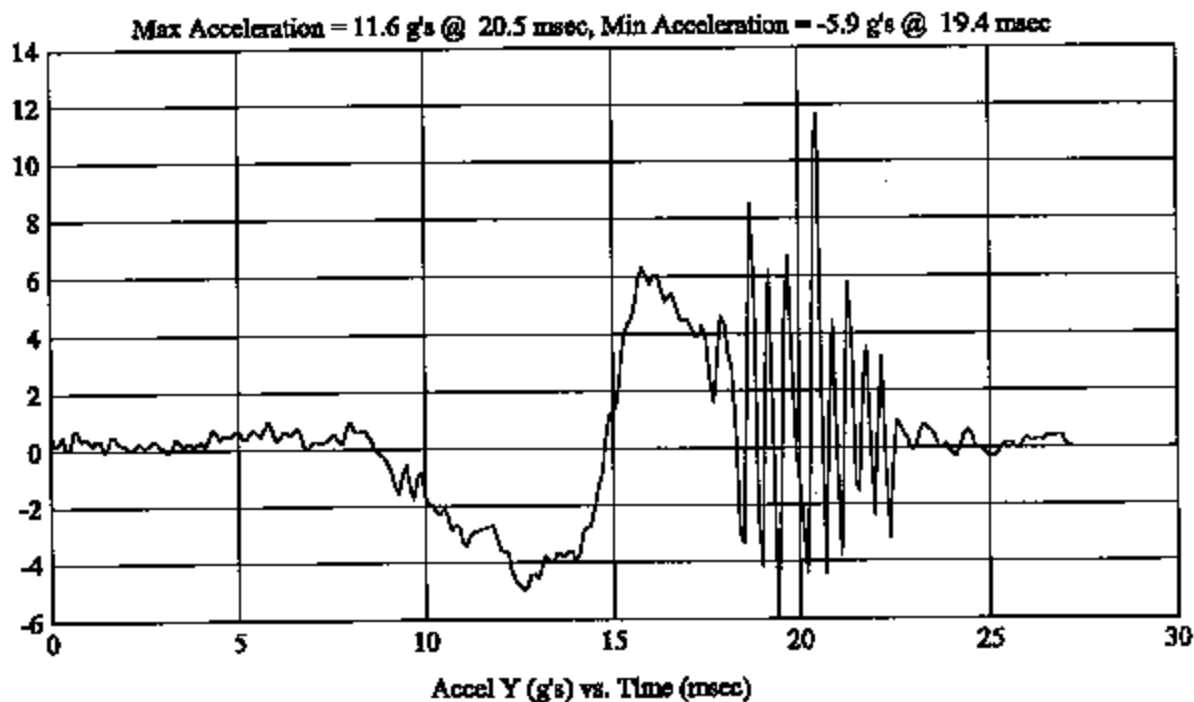
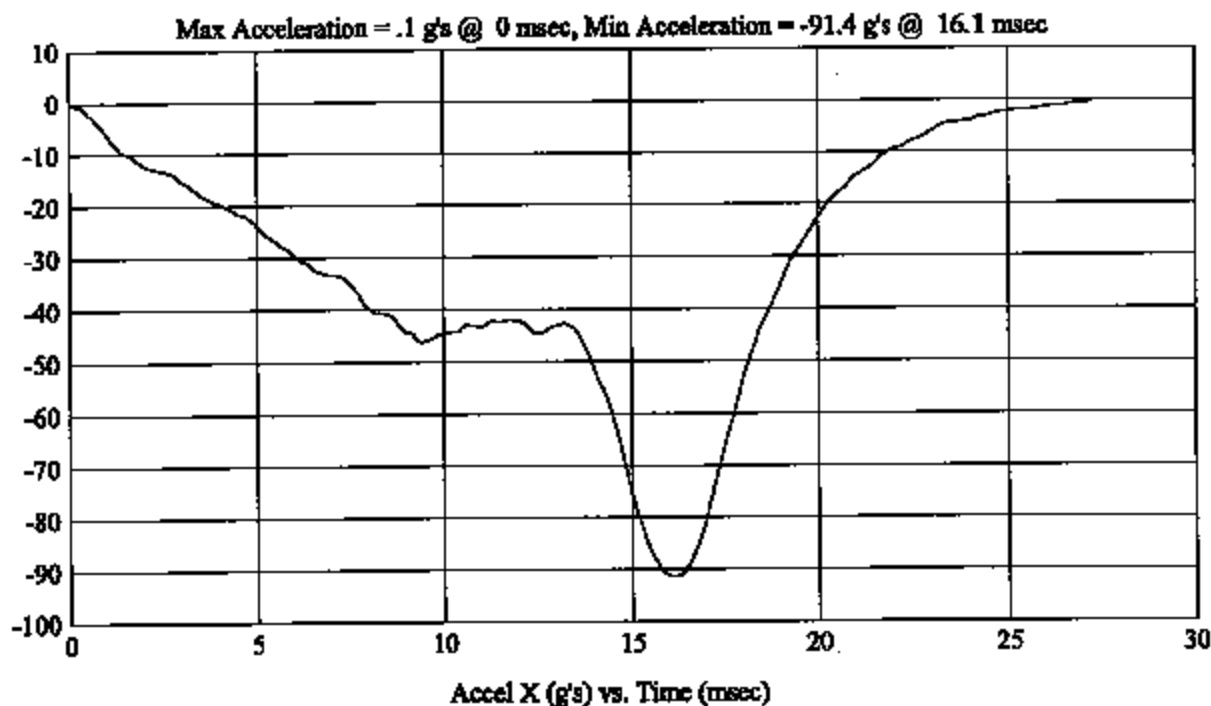


FMH
G0417-001.1Customer: DODGE
Test # 8
FM4028
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR1
Vehicle Side: Left
Horz/Vert Angle: 270/35

HIC(d) = 372, HIC = 272, Delta T = 13.2 msec

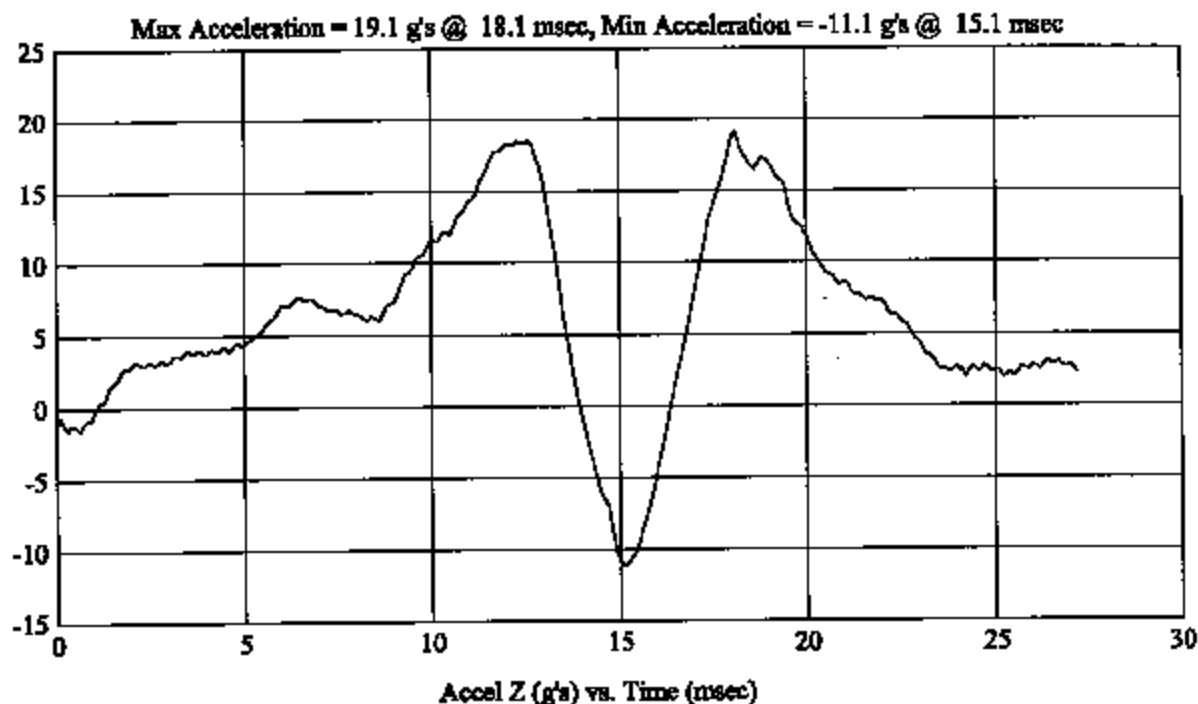


FMH
G04I7-001.1Customer: DODGE
Test # 8
FM4028
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR1
Vehicle Side: Left
Horz/Vert Angle: 270/35

HIC(d) = 372, HIC = 272, Delta T = 13.2 msec







MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C40309 VEHICLE YR/MAKE/MODEL: 2004 Dodge Durango ST

GENERAL TEST PARAMETERS:

Test Number: 2

Target (Vehicle Side): left/right UKS

Temperature: 22 °F (C)

MGA Test Reference No.: FM4022

Humidity: 26 %

Approach Angles: Horizontal 90 °

Time of Test: 1:40 am (pm)

Vertical 36 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>290</u>	<u>164</u>	<u>228</u>	<u>23.8</u>	<u>16</u>	<u>4</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7284-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35923</u>	<u>-99.2</u>	<u>1.20</u>	<u>1.20</u>
<u>Y</u>	<u>6</u>	<u>J35916</u>	<u>99.6</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35918</u>	<u>99.1</u>	<u>1.51</u>	<u>1.51</u>

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

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 3/26/04

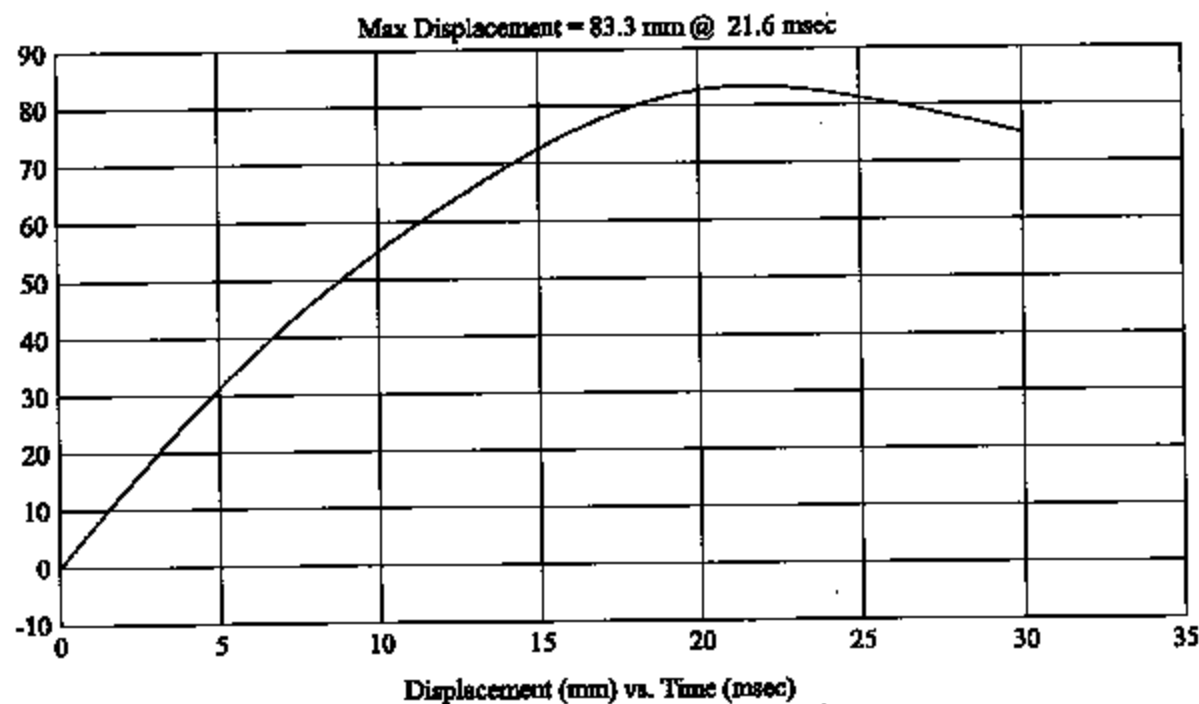
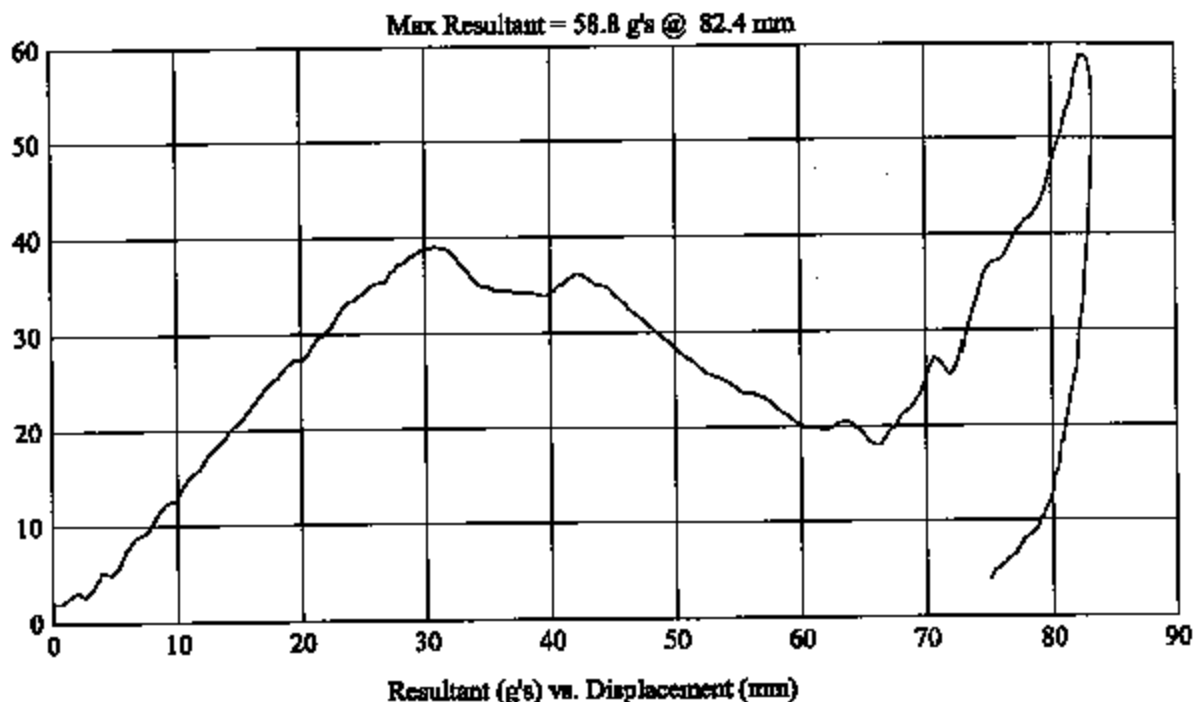
*Only necessary for NHTSA (Government) Compliance testing.

FMH
G0417-001.1Customer: DODGE
Test # 2
FM4022
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/36

HIC(d) = 290, HIC = 164, Delta T = 22.8 msec

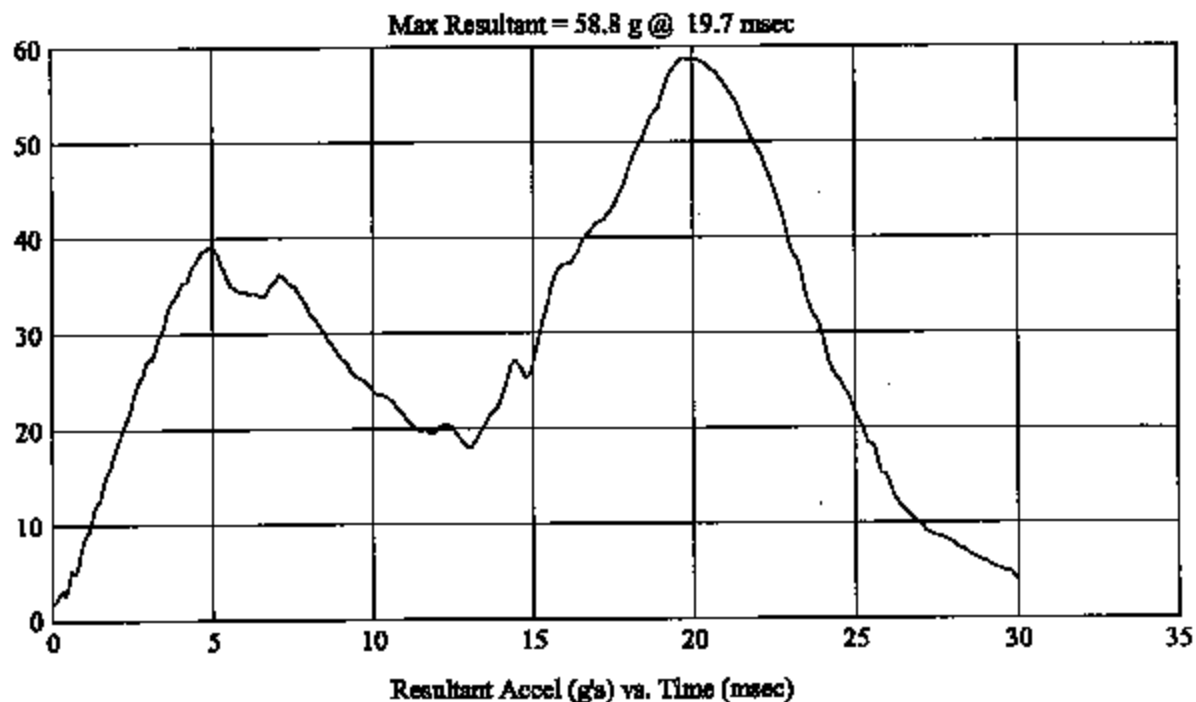


FMH
G04I7-001.1Customer: DODGE
Test # 2
FM4022
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/36

HIC(d) = 290, HIC = 164, Delta T = 22.8 msec

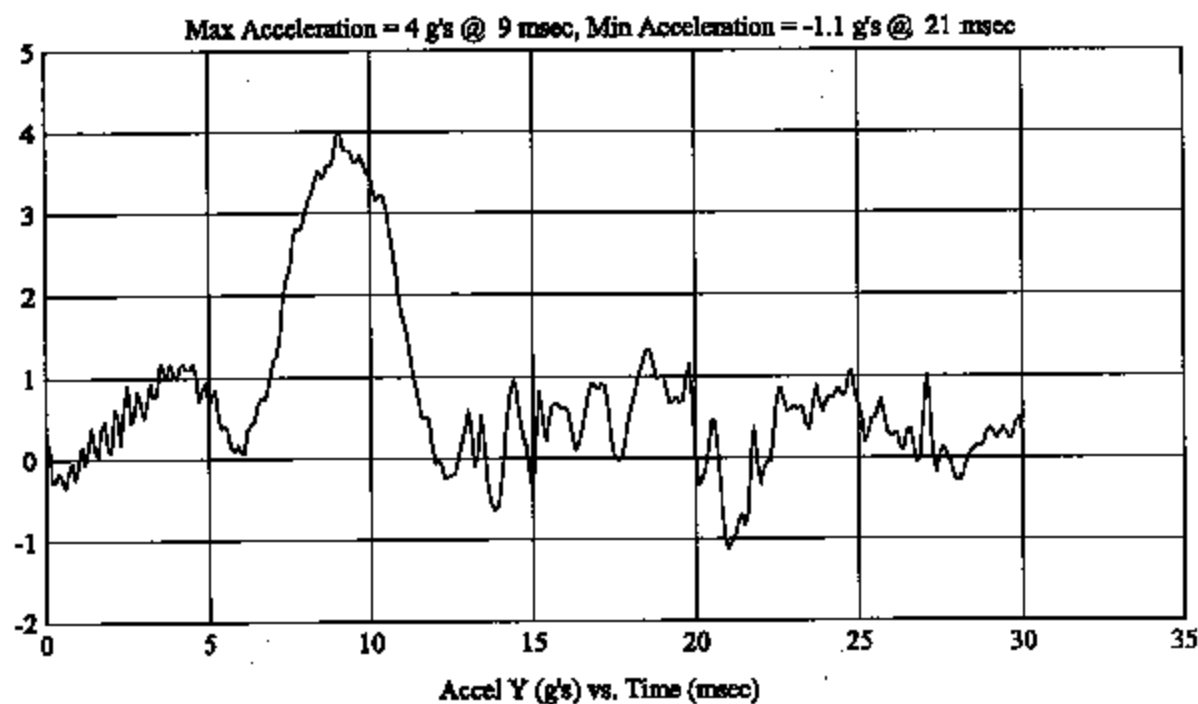
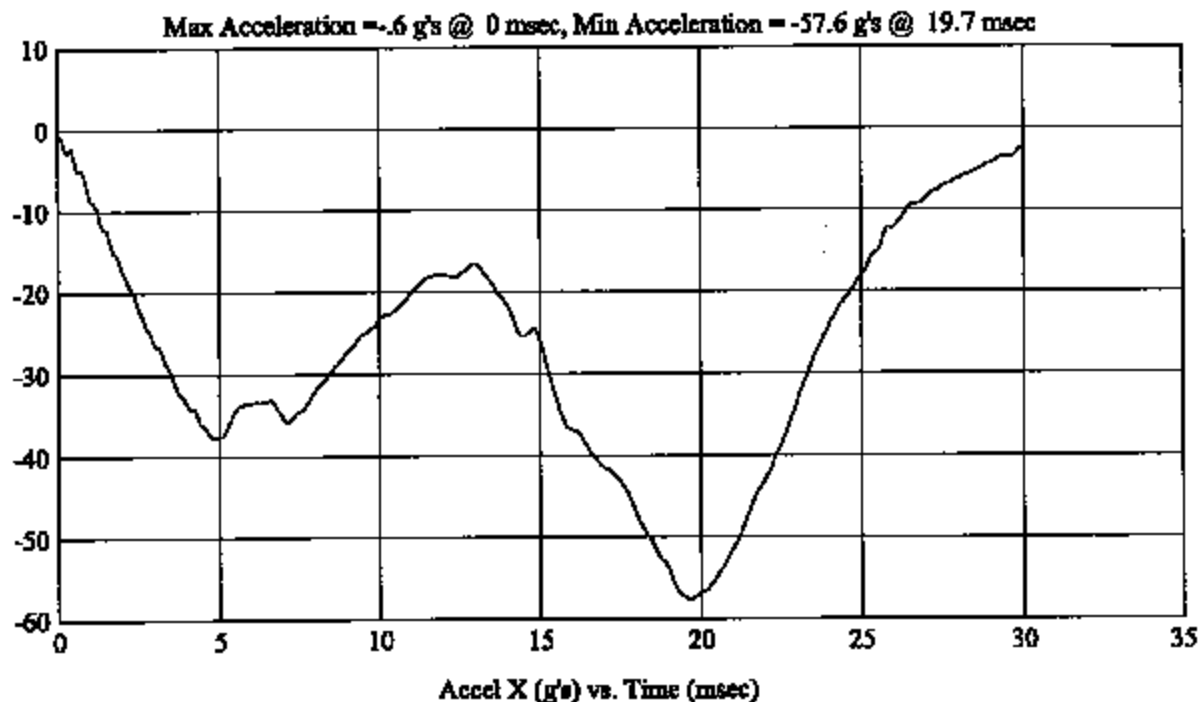


FMH
G04I7-001.1Customer: DODGE
Test # 2
FM4022
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/36

HIC(d) = 290, HIC = 164, Delta T = 22.8 msec

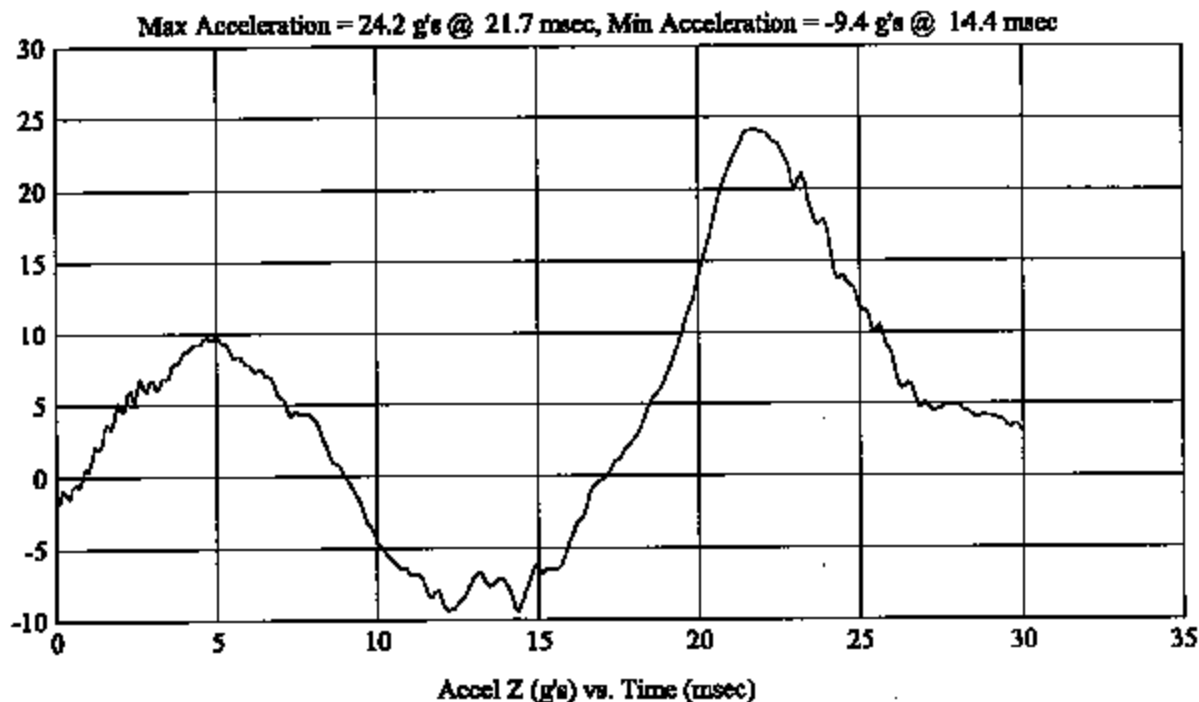


FMH
G04I7-001.1Customer: DODGE
Test # 2
FM4022
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/36

HIC(d) = 290, HIC = 164, Delta T = 22.8 msec

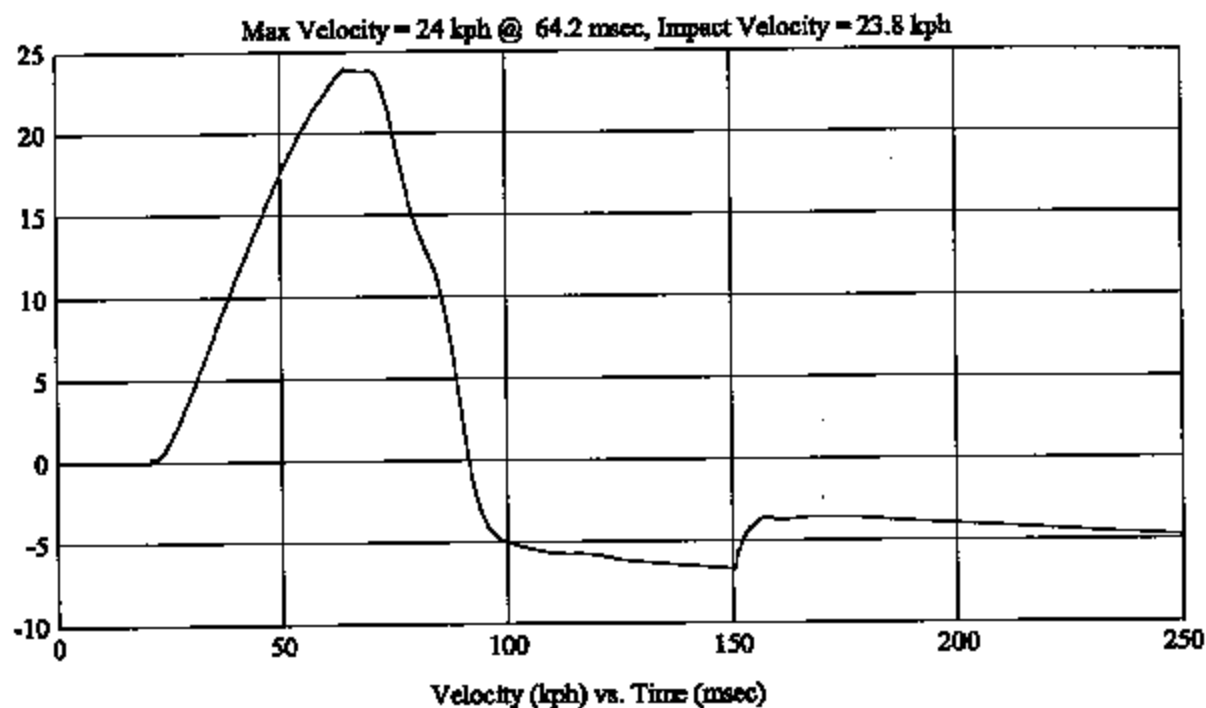


FMH
G04I7-001.1Customer: DODGE
Test # 2
FM4022
Additional Desc: N/A

Vehicle Program : DURANGO ST

Model Year: 2004
Target: UR5
Vehicle Side: Right
Horz/Vert Angle: 90/36

HIC(d) = 290, HIC = 164, Delta T = 22.8 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 66°F and 78°F (19°C - 26°C) is included in Appendix A.

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 Inclinator	Mitutoyo	PRO 360	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 UTAMA	035 036 037 038	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Kodak	RO1000	Record Event	N/A	N/A
*FARO™	Faro Technologies	S06059801273	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Protractor	Stanley N/A Craftsman	33-215 — —	Measurement Targeting FMH setup Horizontal Measurement	1 mm N/A 0.5°	Annual
*Vehicle Scale 9804-022/9805-175	Cardinal	8950F	Weighing Vehicle	± .5 kg	Annual
* Scale	Detecto	AP-20	Weigh FMH Head	± 0.01 lb	Annual
*Temperature Recorder	Dickson	TH6-24C	Record Temperature and Humidity	± 1°C ± 1% RH	Annual

TABLE 4-2 FMH CALIBRATION SUMMARY DATA SUMMARY TABLE

FMH Serial #		Weight (lbs)	Temp (°C)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#35	10.02	22.4	23.0	233.6	3.1	Yes
Post	#35	10.02	22.3	21.0	250.8	10.3	Yes
Pre	#36	10.03	22.3	23.0	238.1	1.9	Yes
Post	#36	10.03	22.2	21.0	258.3	7.7	Yes
Pre	#37	9.98	22.3	23.0	242.6	9.6	Yes
Post	#37	9.98	22.1	21.0	248.7	14.8	Yes
Pre	#38	9.99	22.0	23.0	241.0	4.5	Yes
Post	#38	9.99	21.9	22.0	249.5	1.7	Yes

Calibration certificates and headform calibration information can be found in the P572L Performance Calibration report which accompanies this report.

RECORDED BY: David G. Gotwals

DATE: February 2, 2004

APPROVED BY: Helen A. Kaleto

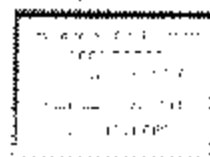
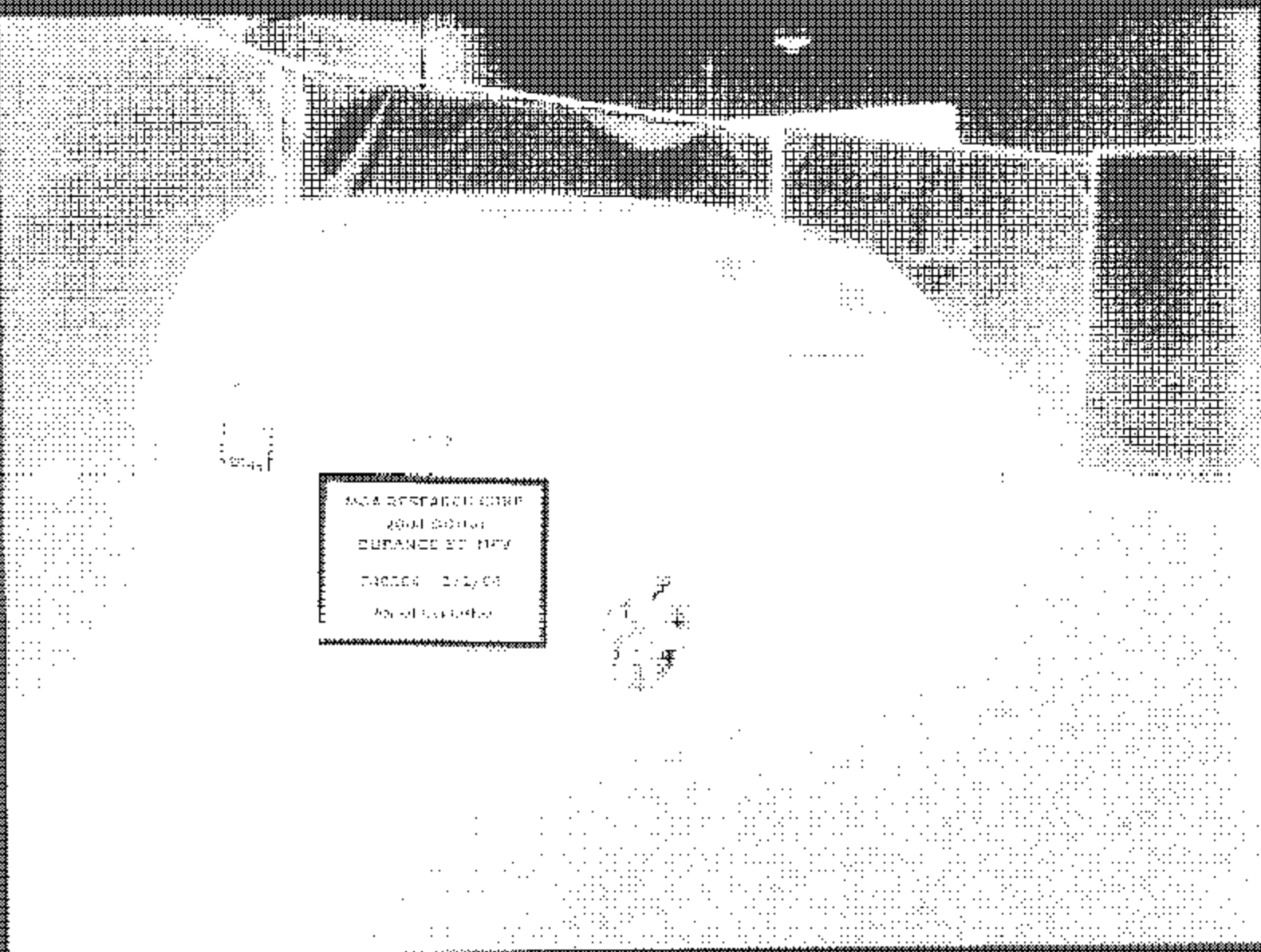
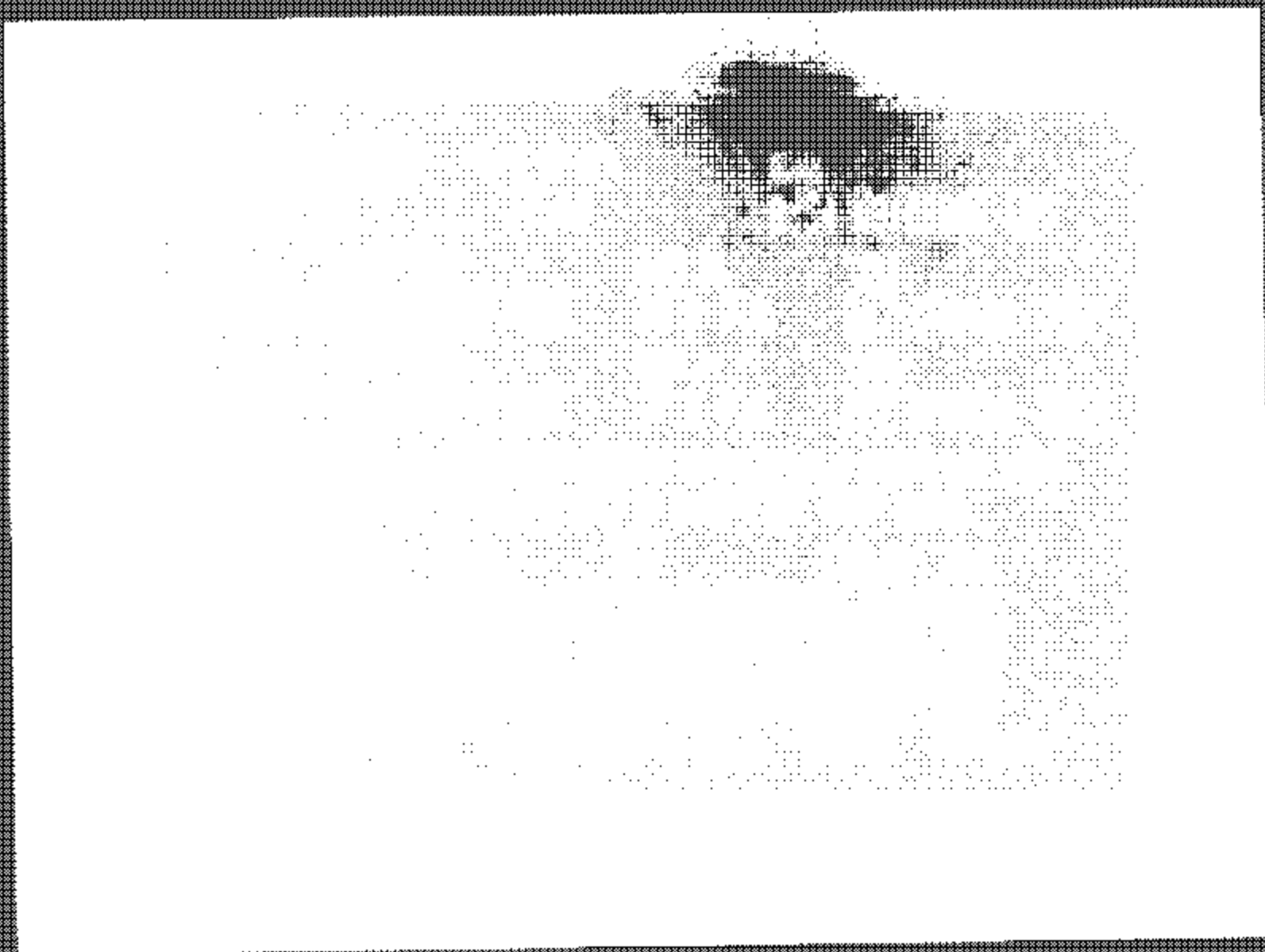


PLATE 10000000
No. 10000000
DATE NOV 1979
1146 1146
A-10000000

MOA RESEARCH CORP
2004 DODGE
DURANGO ST MPV
C40304 2/1/04
AS DELIVERED





02/02/04
MGA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING
Fire-Test Component
C40004: G0417-001.1

02/02/04
MGA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING
Pre-Test Component
C40304 G0417-001.1

02/02/04
RESEARCH CORPORATION
100 DODGE DURANGO ST
FMVSS 201U TESTING
Pre-Test Component
G0417-001.1

RESEARCH CORPORATION
2004 BODGE DURANGO ST
HMVSS-201U TESTING
Pre-Test Component
C40304 G0417-001.1

02/02/04
MCA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING

Pre-Test Component
G40304 G0417-001.1



MCA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FINVSS 201U TESTING

Pre-Test Component
C40304 G0417-001.1

02/02/04
MSA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING
Pre-Test Component
C40304 G0417-001.1

02/02/04
MGA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING

Pre-Test Component
C40304 G0417-001.1

02/02/04
MGA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING
Pre-Test Component
G40304 G0417-001.1

RESEARCH CENTER FOR
2001 DODGE CHALLENGER
FIVE-STAR CRASH TESTING
Post Test Conclusion
CAUTION: ECU-500 E

02/04/04
MGA RESEARCH CORPORATION
200A DODGE DURANGO ST
FMVSS 201U TESTING

Post-Test Component
C40304 G04/7-001.1

02/04/04
JASA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING
Post Test Component
C40304 60417-001-1

02/04/04
MBA RESEARCH CORPORATION
2404 DODGE DURANGO ST
FMVSS 201U TESTING
Post-Test Component
04904 0047-0011

02/14/04
MGA RESEARCH CORPORATION
2004 DODGE DURANGO ST
FMVSS 201U TESTING
Post-Test Component
C40304 00417-001.1



Post-Test Component
C4090c 0017-001

