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REPORT NO.: 214-MGA-2000-01  
SAFETY COMPLIANCE TESTING FOR FMVSS NO. 214  
"SIDE IMPACT PROTECTION"

Nissan Motor Corporation  
2000 Nissan Maxima 4 Door  
NHTSA NO: CY 5201

MGA RESEARCH CORPORATION  
5000 WARREN ROAD  
BURLINGTON, WI 53105



Test Date: September 20, 1999

Report Date: September 23, 1999

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
SAFETY ASSURANCE  
OFFICE OF VEHICLE SAFETY COMPLIANCE  
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7. Author(s) David Winkelbauer		8. Performing Organization Report No. MGA-DOT-214-01	
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15. Supplementary Notes			
16. Abstract A 48/24 kph 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject 2000 Nissan Maxima 4 Door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-05 for the determination of FMVSS No. 214 Side Impact Protection compliance. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on September 20, 1999.  The impact velocity of the Moving Deformable Barrier (MDB) was 52.9 kph, and the ambient temperature at the struck side of the target vehicle at the time of impact was 21°C. The target vehicle post test maximum crush was 373 mm at level 2. The test vehicle's performance follows:			
	<u>DRIVER.</u>	<u>LEFT REAR PASS.</u>	
Left Upper Rib (LUR) Accel., g	43	44	
Left Lower Rib (LLR) Accel., g	53	52	
Lower Spine (T <sub>12</sub> ) Accel., g	65	52	
Thoracic Trauma Index (TTI)	59	52	
Pelvis (PEV) Accel., g	77	64	
The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.			
17. Key Words  Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID)		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590 Telephone No. 202-366-4946	
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SECTION 1  
PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY 2000 FMVSS 214 Side Impact Protection Compliance Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-97-C-11033. The purpose of this test was to evaluate side impact protection of a 2000 Nissan Maxima 4 Door.

This side impact test was conducted in accordance with the Vehicle Safety Compliance's FMVSS 214 test procedure (TP-214D-05, dated August 2, 1999).

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes only.

## SECTION 2

### SUMMARY OF SIDE IMPACT TEST

A 2000 Nissan Maxima 4 Door was impacted on the left side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 52.9 kph (32.9 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on September 20, 1999. Pre- and post-test photographs of the test vehicle, the MDB and the side impact dummies (SIDs) are included in Appendix A.

Two Side Impact Dummies (SIDs) were placed in the left front and left rear designated seating positions according to instructions specified in the OVSC Side Impact Laboratory Test Procedure which is dated August 2, 1999. The side impact event was documented by nine high speed cameras. Camera locations and other pertinent camera information can be found in this report.

The SIDs were instrumented with the following accelerometers.

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3. Lower Thoracic Spine (T<sub>12</sub>) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

Appendix B contains the vehicle and dummy response data traces. A summary of the side impact dummy (SID) configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

TEST NOTES

1. The following accelerometers were not used for this test:

Left Front Door on Centerline

Midrear of Left Front Door

Left Front Door Upper Centerline

Midrear of Left Rear Door

Left Rear Door Upper Centerline

Rear Seat Track

SECTION 3  
SIDE IMPACT DUMMY (SID) AND  
VEHICLE TEST DATA

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DATA SHEET NO. 1  
GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door  
 Vehicle NHTSA No.: CY5201 VIN: JN1CA31DXYT706984  
 Vehicle Body Color: Green Build Date: 5/99  
 Engine Data: 6 Cylinders;    CID; 3.0 Liter;    cc  
 Placement    Longitudinal;   X Lateral  
 Transmission: 4 speed;    Manual;   X Automatic;   X Overdrive  
 Final Drive:    Rear Wheel Drive;   X Frt. Wheel Drive;    Four Wheel Drive  
  
 Odometer Reading 42 miles  
 Options:   X A/C;   X Pwr. Steering;   X Pwr. Brakes;   X Pwr. Windows;  
  X Cruise Control;   X Tilt Wheel;   X Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 29 Psi FRONT  
29 Psi REAR  
 Recommended Tire Size: P205/65R15  
 Tires on Test Vehicle: P205/65R15 Manufacturer: Dunlop

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear;    3rd Seat 5 Total  
 Type of Front Seats:   X Bucket;    Bench;    Split Bench  
 Type of Front Seat Back:    Fixed;   X Adjustable with   X Lever    Knob    Power  
 Vehicle Maximum Capacity Loading = 400.0 kg (A)  
 No. of Occupants x 68.04 kg. = 340.2 kg (B)  
 Cargo Capacity (A-B) = 59.8 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2750 mm

C.G. As Tested = 1131 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4545 mm

Centerline = 4791 mm

Left Side = 4545 mm

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 240 mm

Test Position: 11th detent rearward of 21 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 21 °

REAR POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: non-adjustable

Seat Back Adjustment Position: non-adjustable

ADJUSTABLE STEERING COLUMN POSITION: mid-position

WINDOW POSITIONS: Left Front closed Left Rear closed

Right Front open Right Rear removed

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 70 liters

Test Volume: 65.8 liters 94 % of capacity

LOCATIONS OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase: = 2750 mm

Impact Point is 435 mm rearward of front axle centerline

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)INSTRUMENTATION:

Number of Vehicle Data Channels: = 20

Number of Cameras: Onboard Vehicle = 3

Offboard Vehicle = 4

Deformable Barrier = 2

TOTAL = 9

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

- |    |                                 |   |            |    |
|----|---------------------------------|---|------------|----|
| 1. | Row A Top of Stack (813 mm)     | = | <u>106</u> | mm |
| 2. | Row B Mid Stack (686 mm)        | = | <u>78</u>  | mm |
| 3. | Row C Top of Bumper (533 mm)    | = | <u>49</u>  | mm |
| 4. | Row D Center of Bumper (432 mm) | = | <u>93</u>  | mm |

INSTRUMENTATION:

Number of MDB Data Channels = 5

POST-TEST OBSERVATIONS (Cont'd)SEAT CRUSH:

Front Seat Back: 87 mm Front Seat Cushion: 65 mm

Left Rear Seat Back: 190 mm Rear Seat Cushion: 252 mm

GLAZING DAMAGE:

Both left side windows cracked, windshield cracked

PILLAR PERFORMANCE:

No failures noted

SILL SEPARATION:

None noted

FRONTAL AIRBAGS:

Driver Deployed: No Passenger Deployed: No

OTHER NOTABLE IMPACT EFFECTS:

None noted

SECTION 4  
OCCUPANT AND VEHICLE INFORMATION

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DATA SHEET NO. 5  
SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door

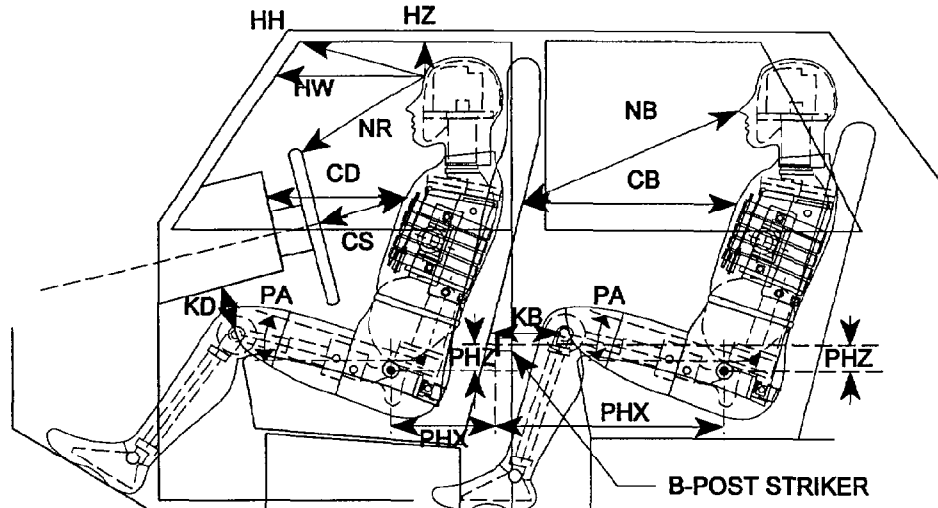
Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999

	Front SID ID #036				Rear SID ID #037			
	Pos. Direct.		Neg. Direct.		Pos. Direct.		Neg. Direct.	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
<b>RIB ACCELERATIONS</b>								
Left Upper Rib (LUR) Y	42.5	40	21.9	74	43.6	46	7.6	135
Left Lower Rib (LLR) Y	53.2	36	11.6	76	51.9	48	11.8	74
<b>SPINE ACCELERATIONS</b>								
Lower Lateral Y	65.0	36	10.8	101	51.5	49	17.1	79
<b>PELVIS ACCELERATIONS</b>								
Lateral Y	76.8	31	17.2	51	63.5	40	9.6	82

REFERENCE: Positive Direction- Longitudinal (X) = forward  
 Lateral (Y) = to right  
 Vertical (Z) = down

## DATA SHEET NO. 7

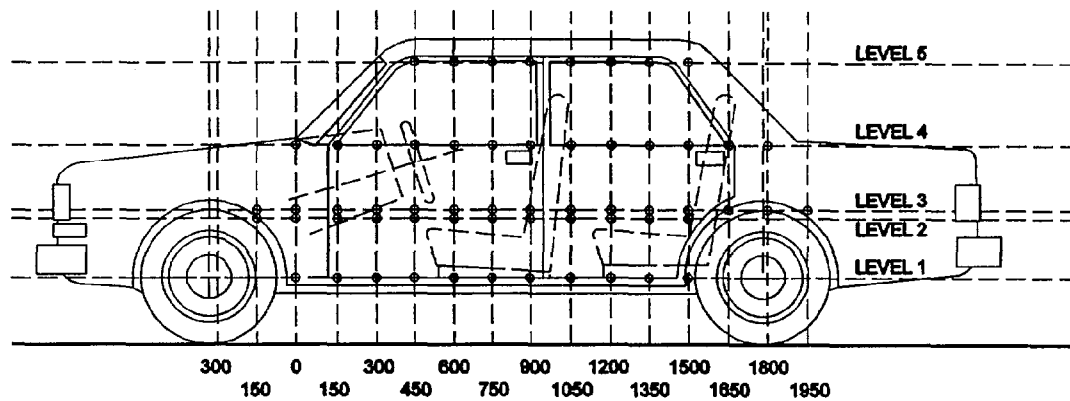
## SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorNHTSA NO.: CY5201 Test Date: September 20, 1999NOTE: All dimensions are in mm with tolerance of  $\pm 3$  mm

	DRIVER ID #036		REAR PASSENGER SID ID #037
HH	337	HZ	126
HW	566	NB	708
HZ	153	CB	625
NR	444	KBL (KBA)	282( 0.0°)
CD	553	KBR (KBA)	283( 0.0°)
CS	345	PA°	23.6°
KDL (KDA°)	182( 21.6°)	PHX	240
KDR (KDA°)	191( 15.1°)	PHZ	286
PA°	24.5°		
PHX	207		
PHZ	132		

NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point.

## DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTSYear/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorNHTSA NO.: CY5201 Test Date: September 20, 1999**LEFT SIDE VIEW**

NOTE: All measurements are in millimeters (mm)

LEVEL 5 - WINDOW TOP  
 LEVEL 4 - WINDOW SILL  
 LEVEL 3 - MID-DOOR  
 LEVEL 2 - OCCUPANT H-POINT  
 LEVEL 1 - AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED"  
 CONFIGURATION

MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>265</u>	mm
Level 2 @ Occupant H-Point	=	<u>495</u>	mm
Level 3 @ Mid Door	=	<u>611</u>	mm
Level 4 @ Window Sill	=	<u>875</u>	mm
Level 5 @ Window Top	=	<u>1340</u>	mm

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550			
2700			
2850			
3000			

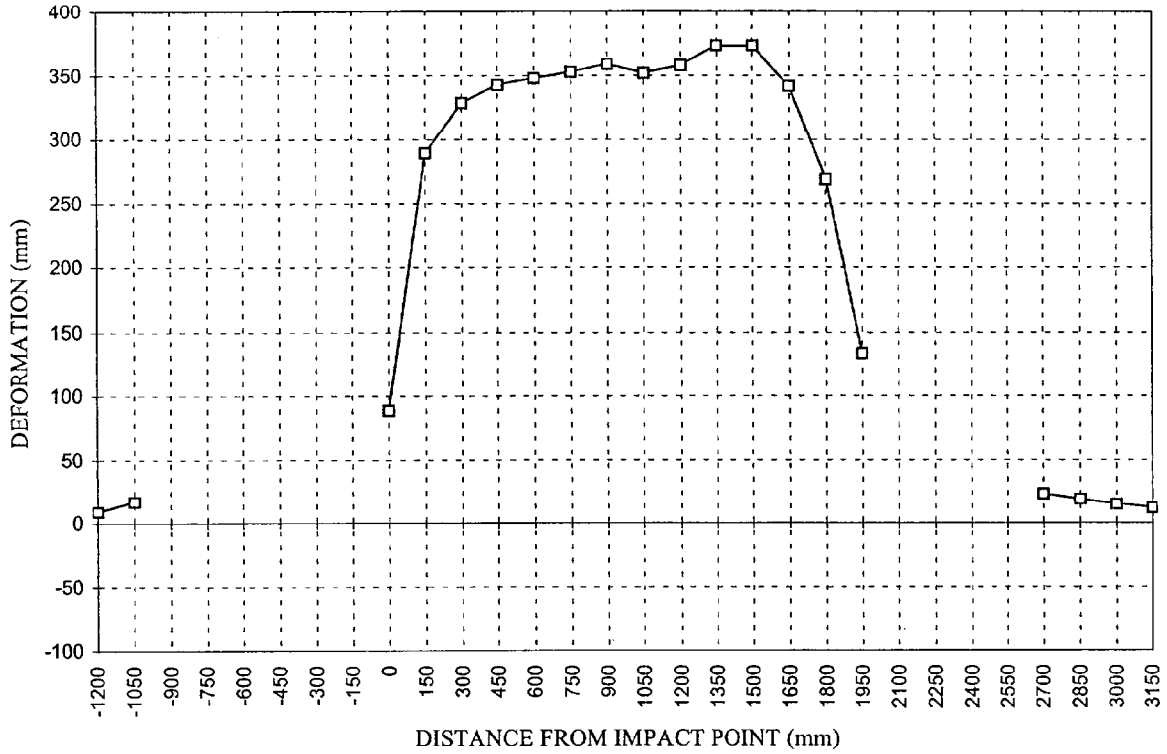
Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 2 - Occupant H Point		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200	891	900	9
-1050	850	867	17
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	774	863	89
150	773	1062	289
300	771	1100	329
450	771	1114	343
600	770	1118	348
750	770	1123	353
900	767	1126	359
1050	766	1118	352
1200	766	1124	358
1350	767	1140	373
1500	767	1140	373
1650	767	1109	342
1800	767	1036	269
1950	760	894	134
2100			
2250			
2400			

Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550	759	785	26
2700	787	810	23
2850	800	819	19
3000	818	831	13
3150			

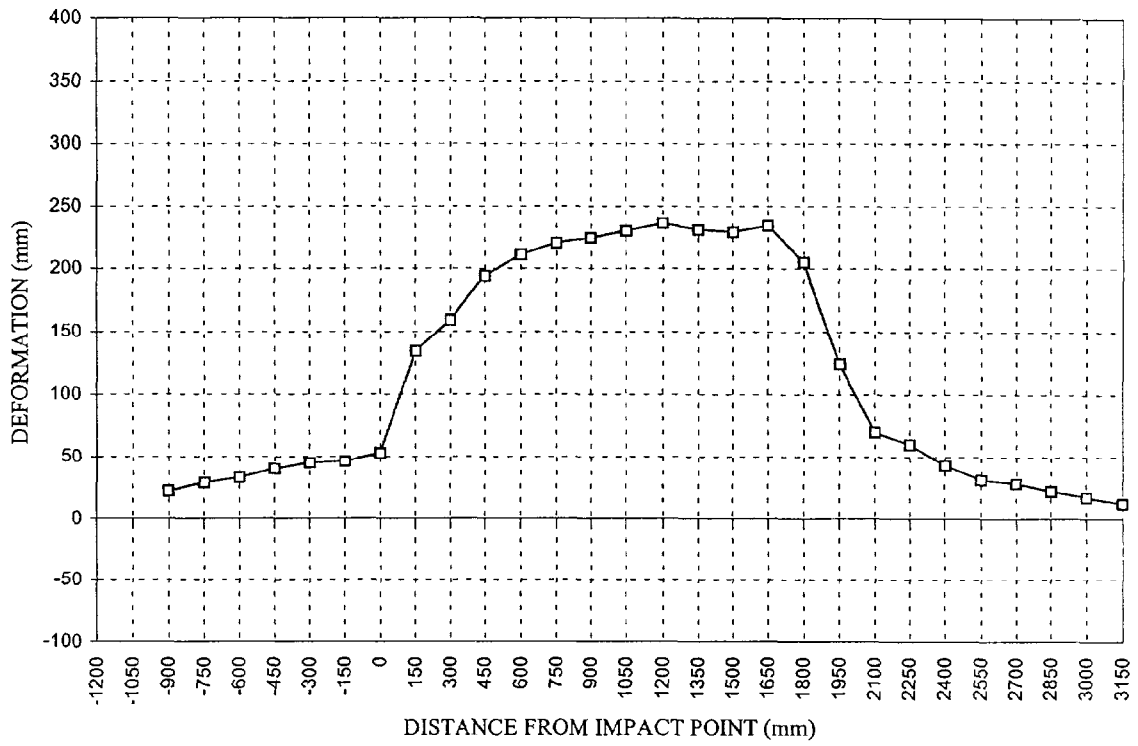
Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 4 - Window Sill		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900	868	890	22
-750	845	874	29
-600	828	861	33
-450	818	858	40
-300	813	858	45
-150	812	858	46
0 (impact point)	809	862	53
150	807	941	134
300	807	966	159
450	806	1000	194
600	804	1015	211
750	803	1023	220
900	803	1027	224
1050	802	1032	230
1200	803	1039	236
1350	803	1034	231
1500	805	1034	229
1650	806	1040	234
1800	806	1011	205
1950	807	931	124
2100	812	882	70
2250	817	877	60
2400	823	866	43

Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550			
2700			
2850			
3000			

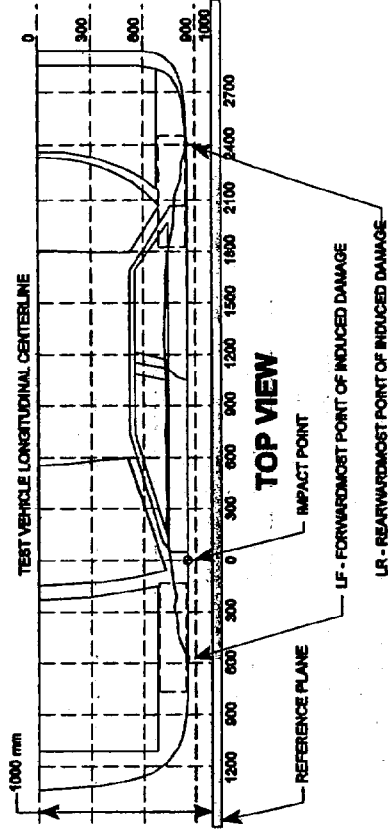
Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door

NHTSA NO.: CY5201 Test Date: September 20, 1999



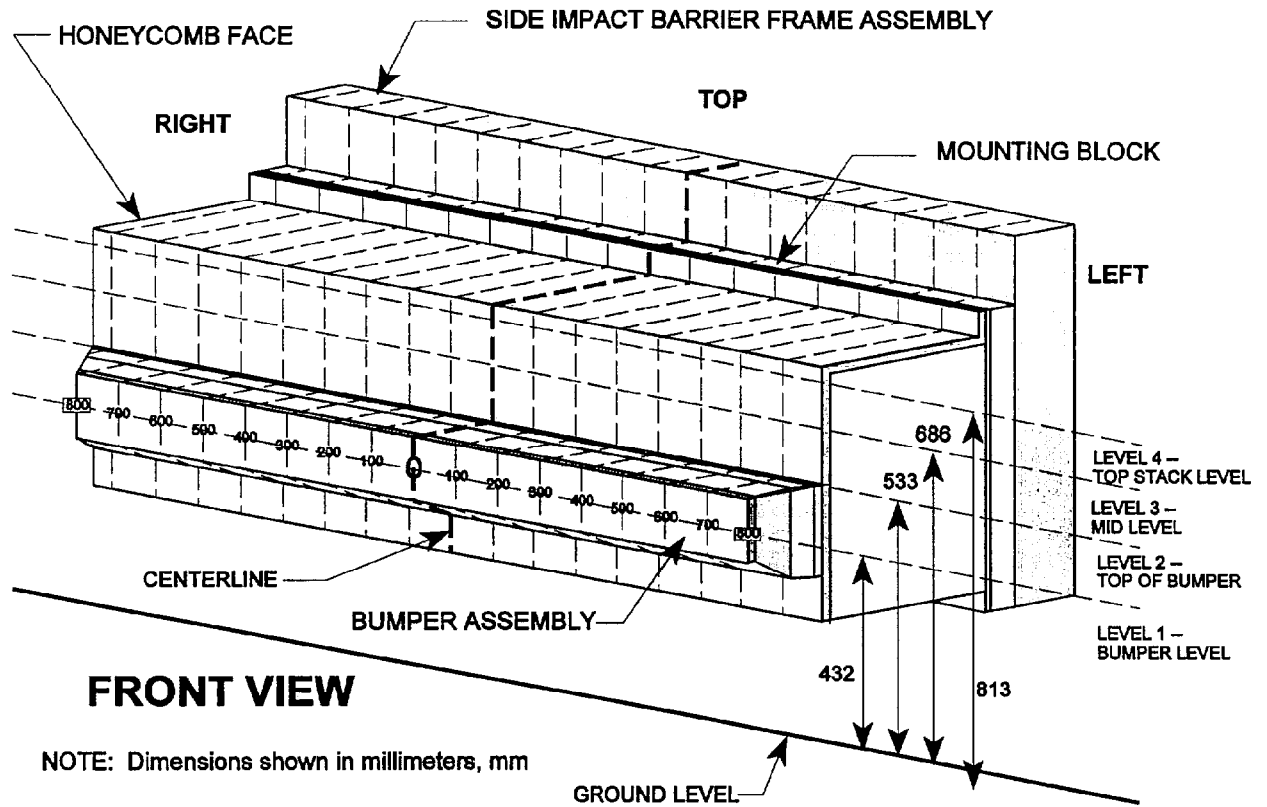
MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-).

Rearward of the impact point (toward rearward of vehicle) is considered positive (+).

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LR = <u>2100</u> mm)	815	747	68
2. 1605 mm	1095	767	329
3. 1200 mm	1128	766	362
4. 730 mm	1166	770	396
5. 280 mm	1094	771	323
6. (LF = <u>-150</u> mm)	803	756	47

DATA SHEET NO. 12 (Cont'd)



DATA SHEET NO. 13 (Cont'd)  
**TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY**

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door  
 Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999

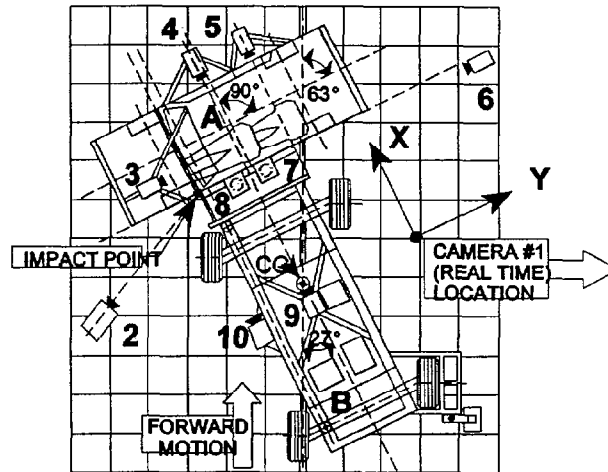
Accel. No.	Description	Coordinates (mm)*			Long. (X) Maximums (g's)		Lat. (Y) Maximums (g's)		Vert. (Z) Maximums (g's)		Resultant (g's)
		X	Y	Z	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
1	Right Side Sill @ Front Seat	2796	700	217	3.3	6.3	16.2	3.1	4.6	7.3	17.9
2	Right Side Sill @ Rear Seat	1874	685	217	1.8	7.2	21.2	2.7	4.0	8.7	23.2
3	Rear Floorpan Above Axle	1075	0	545	2.3	6.4	18.8	3.7	7.7	6.7	20.1
4	Left Side Sill @ Rear Seat	1885	-710	225	---	---	24.8	4.6	---	---	---
5	Left Side Sill @ Front Seat	2824	-710	224	---	---	39.6	5.7	---	---	---
7	Right Rear Occupant Compartment	1895	308	290	---	---	18.6	2.4	---	---	---
12	Left Lower B-Post	2192	-665	320	---	---	66.3	45.0	---	---	---
13	Left Mid B-Post	2186	-715	932	---	---	94.3	19.0	---	---	---
14	Left Lower A-Post	3256	-735	380	---	---	***	***	---	---	---
15	Left Mid A-Post	3319	-805	848	---	---	23.1	3.3	---	---	---
16	Driver Seat Track	2362	-583	332	---	---	67.2	34.0	---	---	---
18	Vehicle CG	2725	18	510	13.8	15.1	55.1	35.1	58.8	59.2	81.2

\*\*\*Reference: X - Rear Bumper (+ Forward)  
 Y - Vehicle Centerline (+ To right)  
 Z - Ground Level (+ Up)

\*\*\* No valid data collected

DATA SHEET NO. 15  
HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door  
Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999



Camera No.	View	Coordinates (mm)*			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Real Time				10	24
2	Left Impact	-1860	-2500	1850	13	1005
3	Onboard Hood				13	1000
4	Onboard Front Occupant				8	985
5	Onboard Rear Occupant				8	855
6	Right Impact	-380	10130	1695	25	1000
7	Top Overall	-340	1160	5000	8	NR
8	Top Impact	-220	80	5000	8	962
9	Cart Overall				13	1005
10	Cart Impact				35	971

\* Reference: (from impact point)

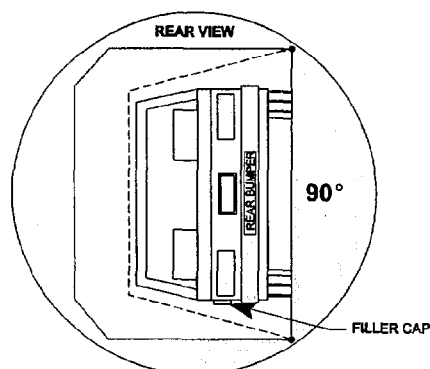
+X = Forward

+Y = To Right

+Z = Upward from floor level

NR = Did not run

## DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATAVehicle Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorVehicle NHTSA No.: CY5201 Test Date: September 20, 1999TEST PHASE: 0° - 90°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 43 seconds  
 (Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 43 seconds

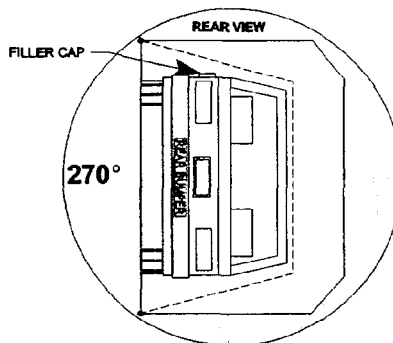
Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

0° TO 90° ROTATION (FILLER CAP DOWN)	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

## DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)Vehicle Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorVehicle NHTSA No.: CY5201 Test Date: September 20, 1999TEST PHASE: 180° - 270°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time = 2 minutes 14 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 secondsTOTAL TIME = 7 minutes 14 secondsNext Whole Minute Interval = 8 minutesFUEL SPILLAGE MEASUREMENT:

180° TO 270° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

APPENDIX A - PHOTOGRAPHS

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Photo No. A-28 - Post-Test Driver Dummy Contact	A-28
Photo No. A-29 - Post-Test Driver Dummy Head Contact	A-29

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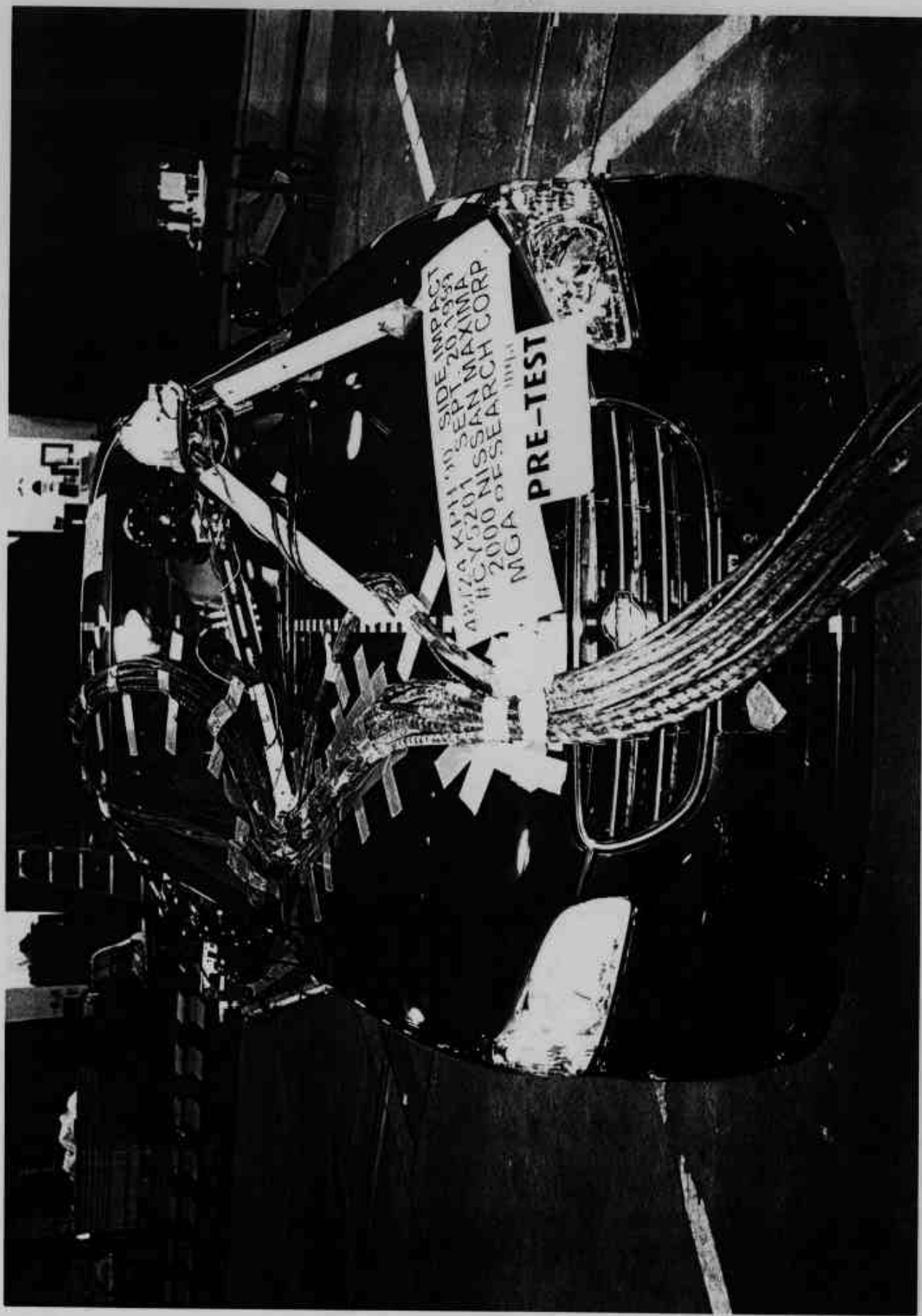


Photo No. A-1 - Pre-Test Front View of Test Vehicle

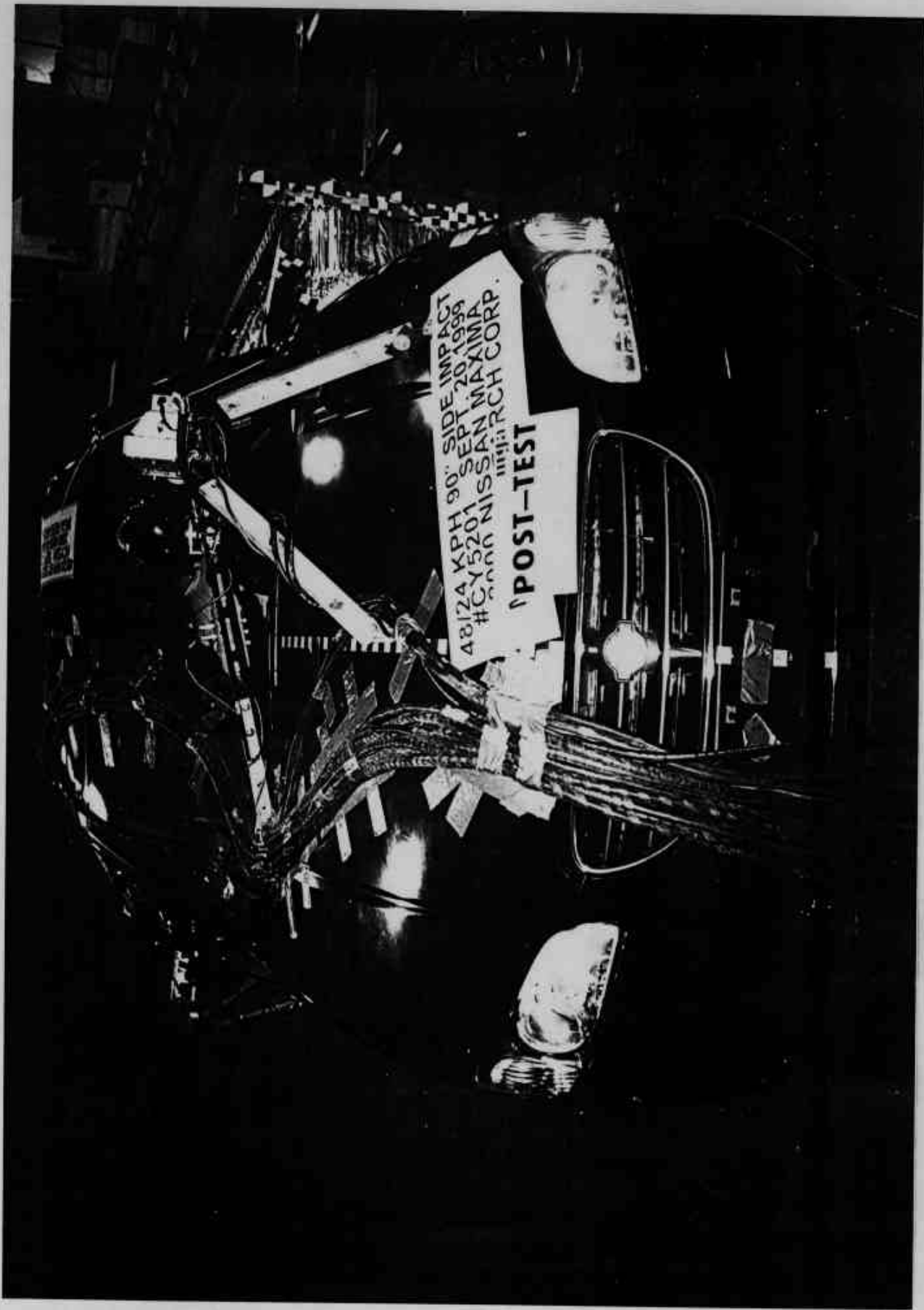


Photo No. A-2 - Post-Test Front View of Test Vehicle

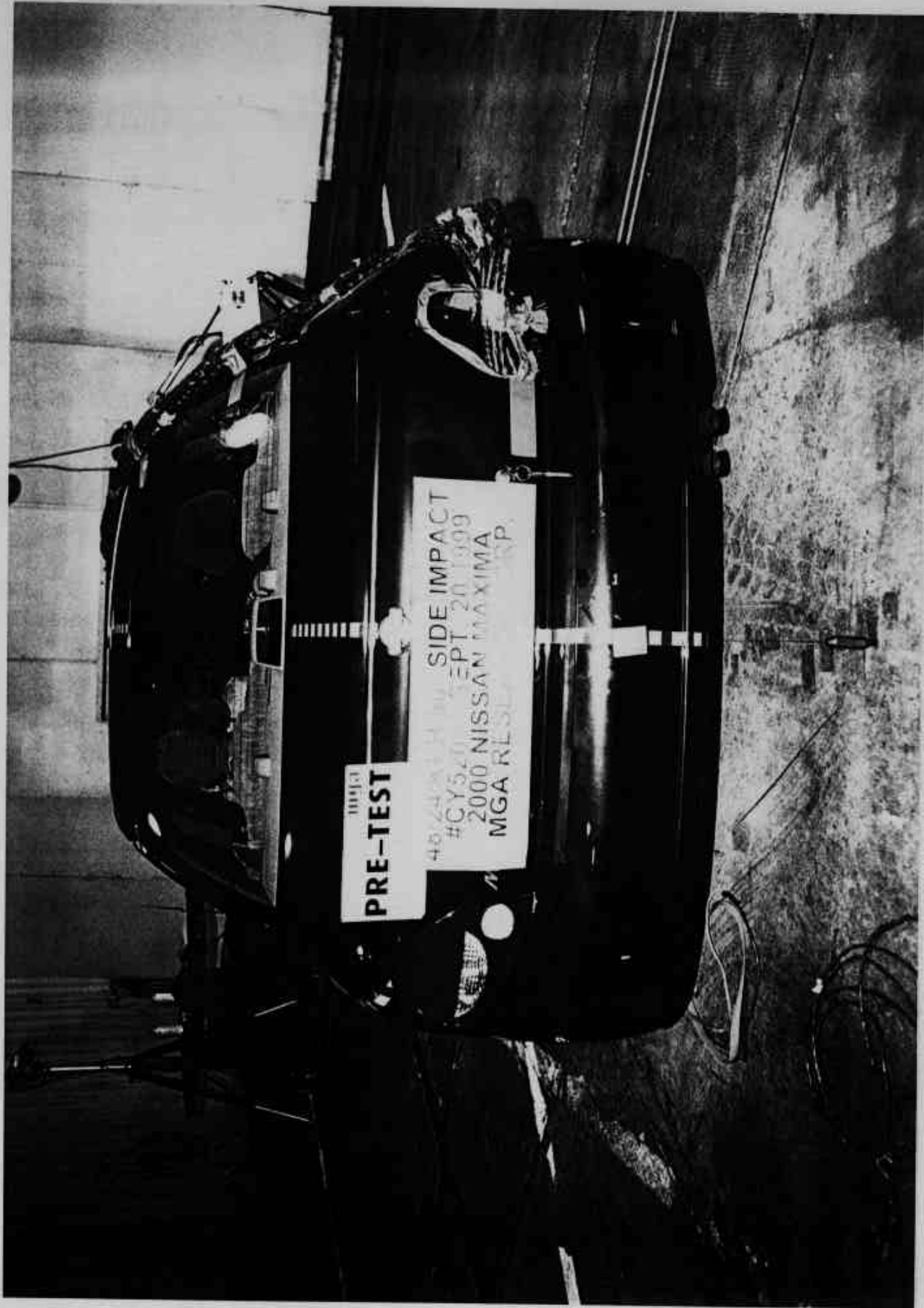


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

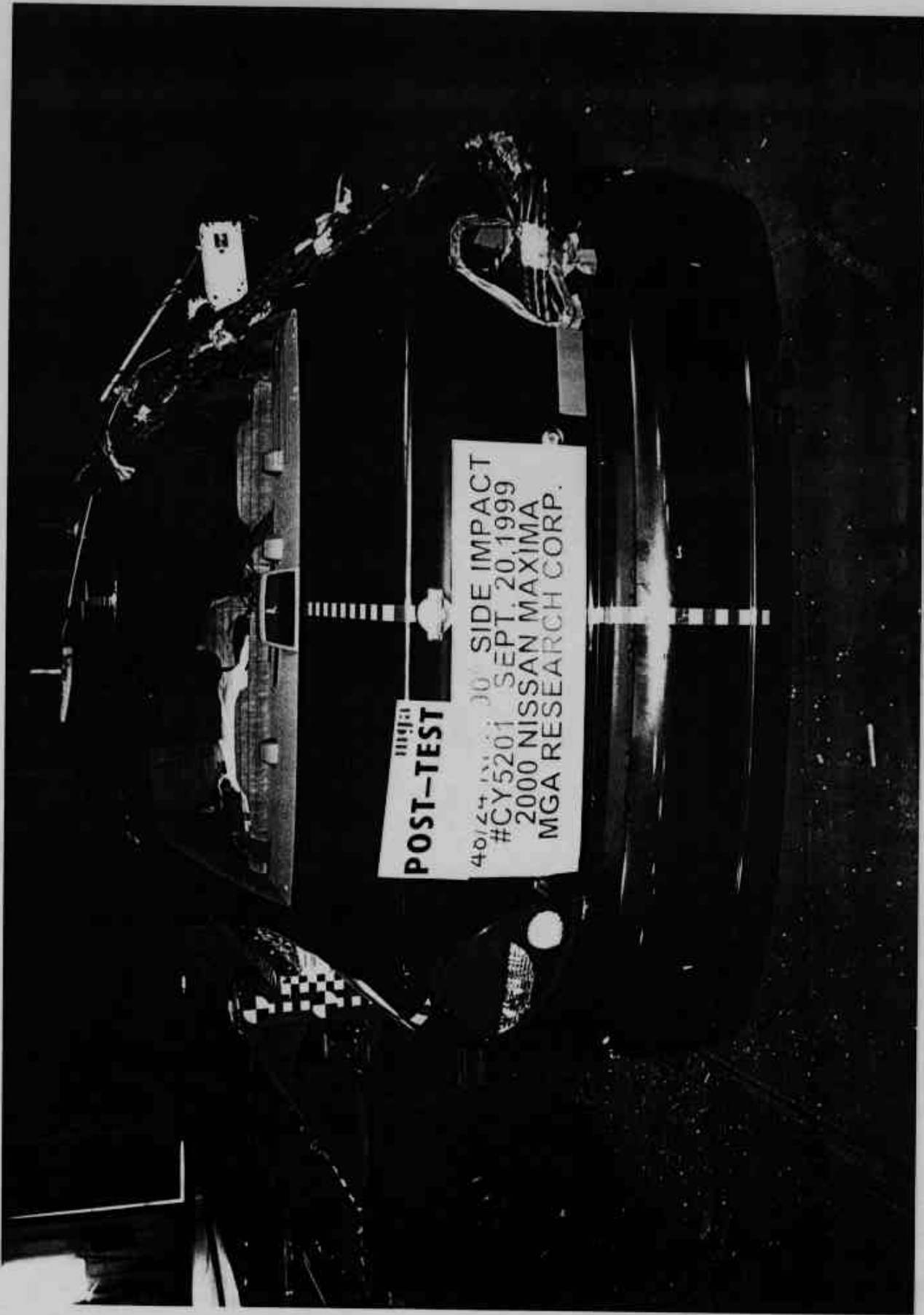


Photo No. A-4 - Post-Test Rear View of Test Vehicle

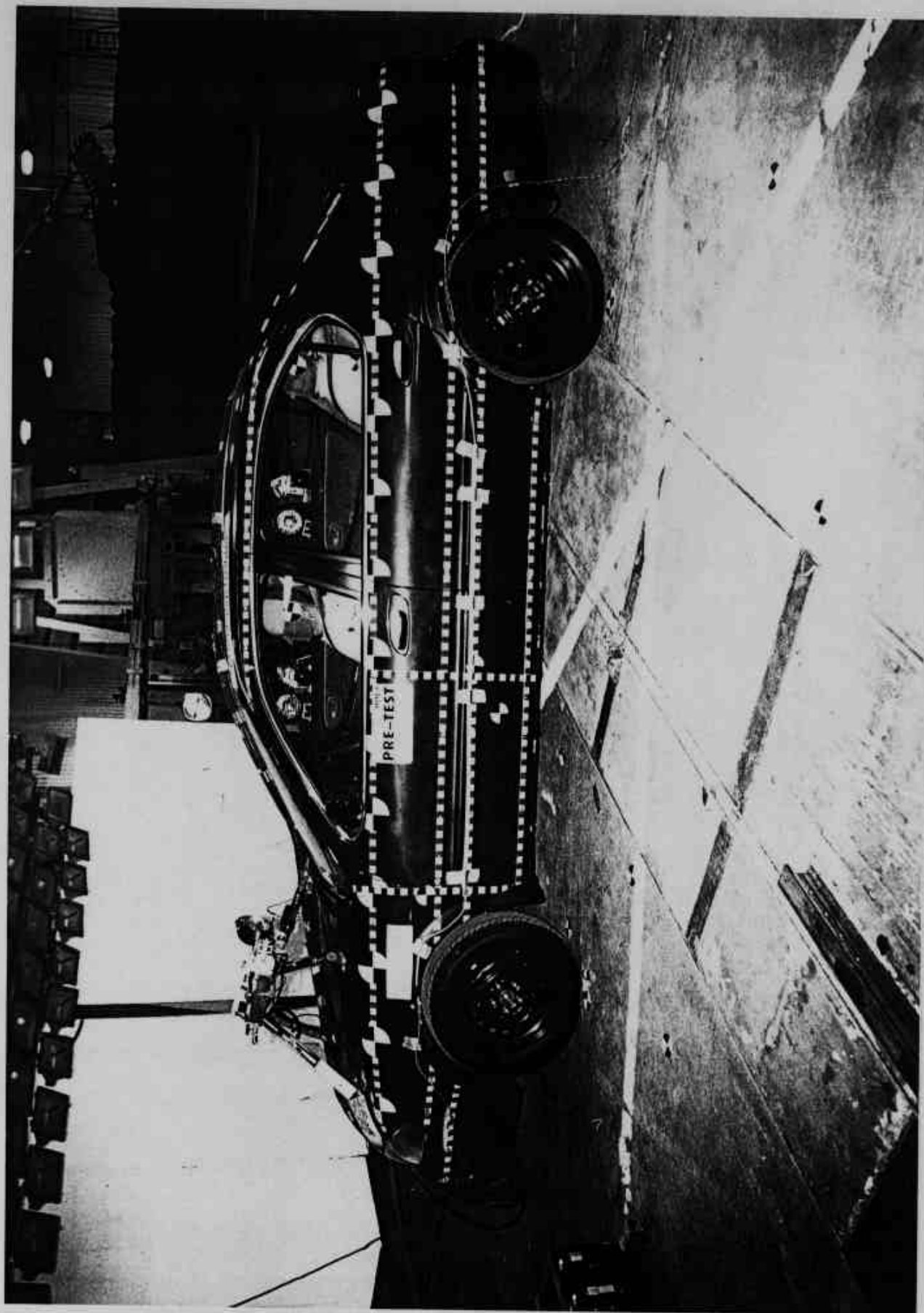


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

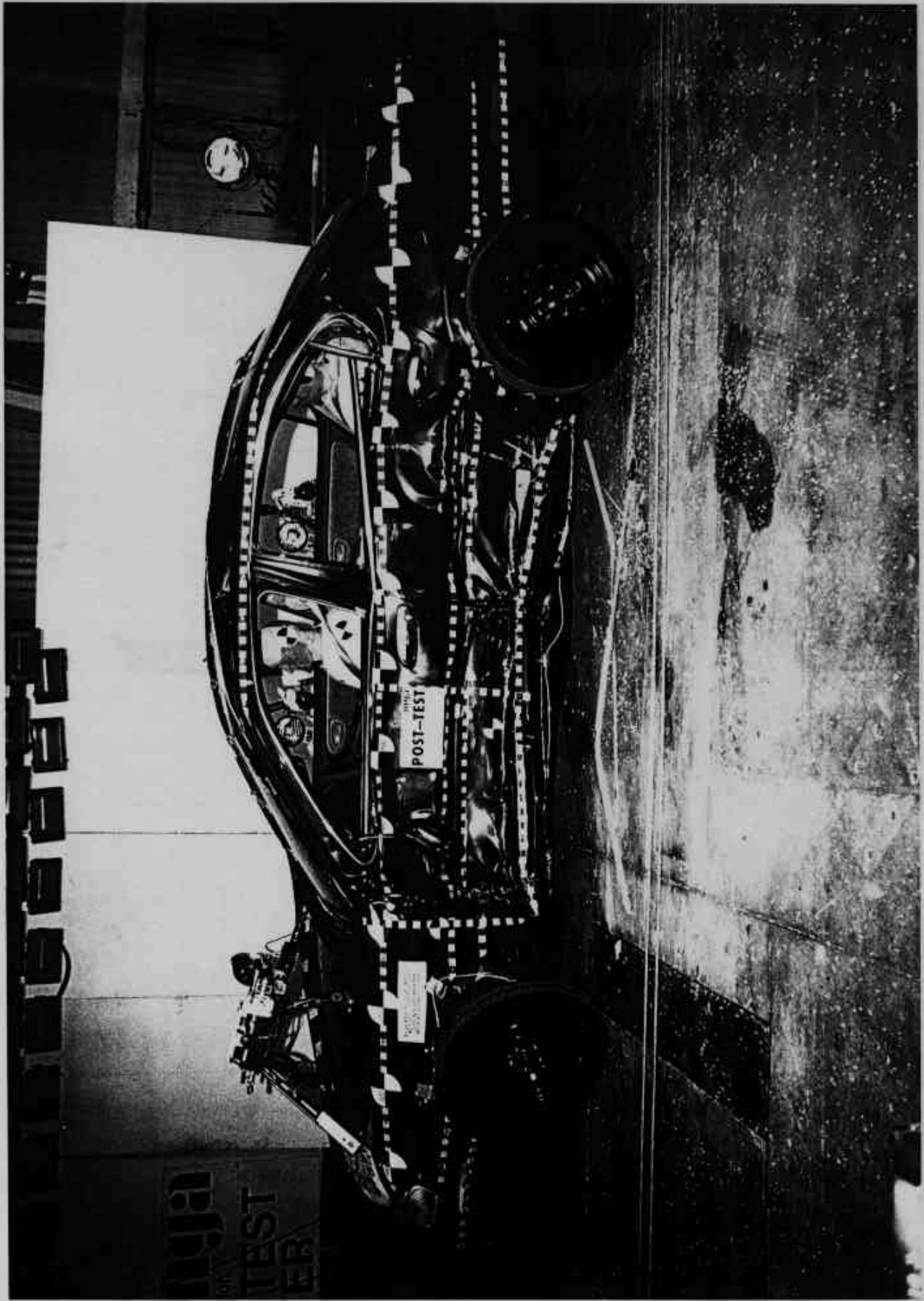


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

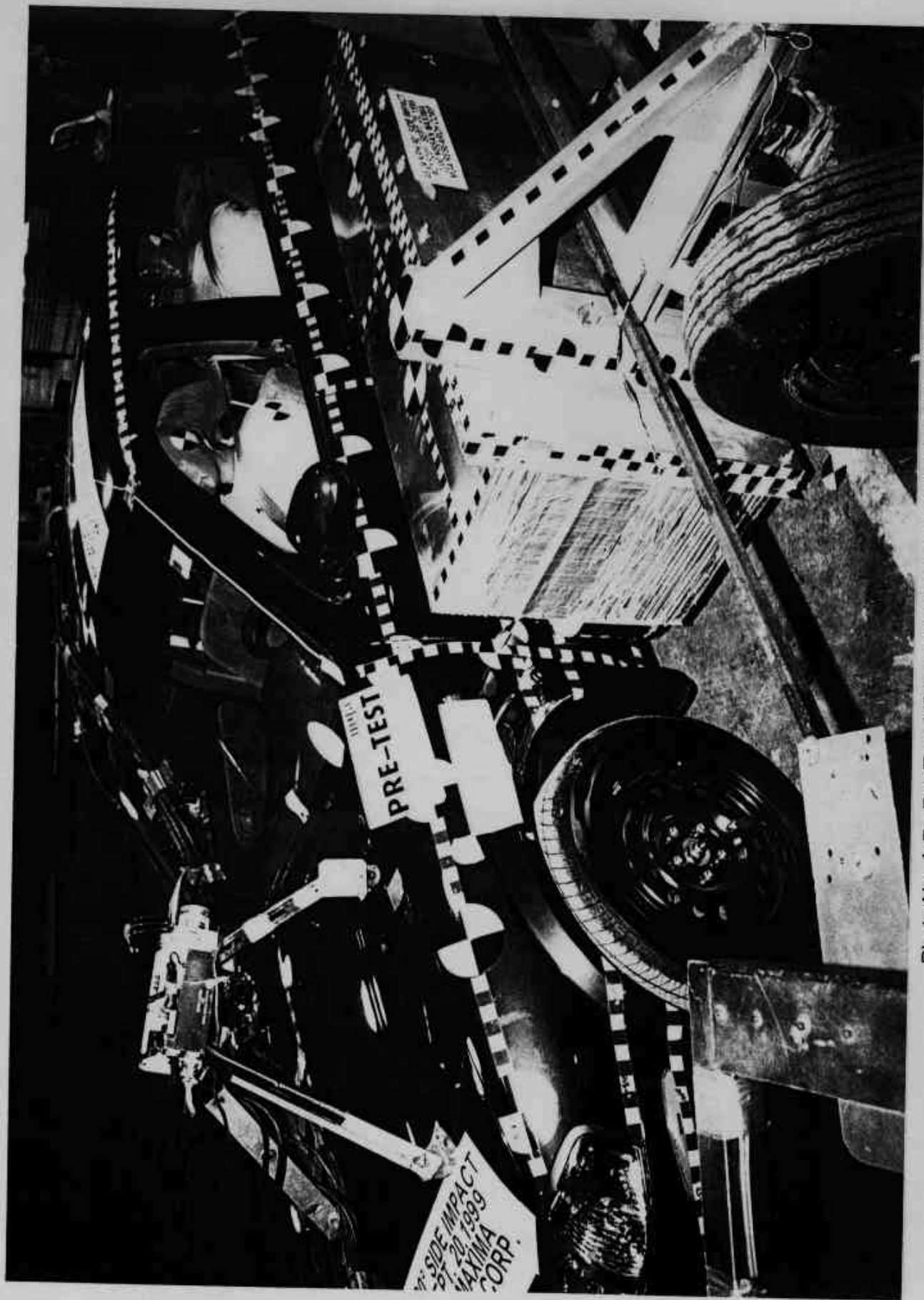


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

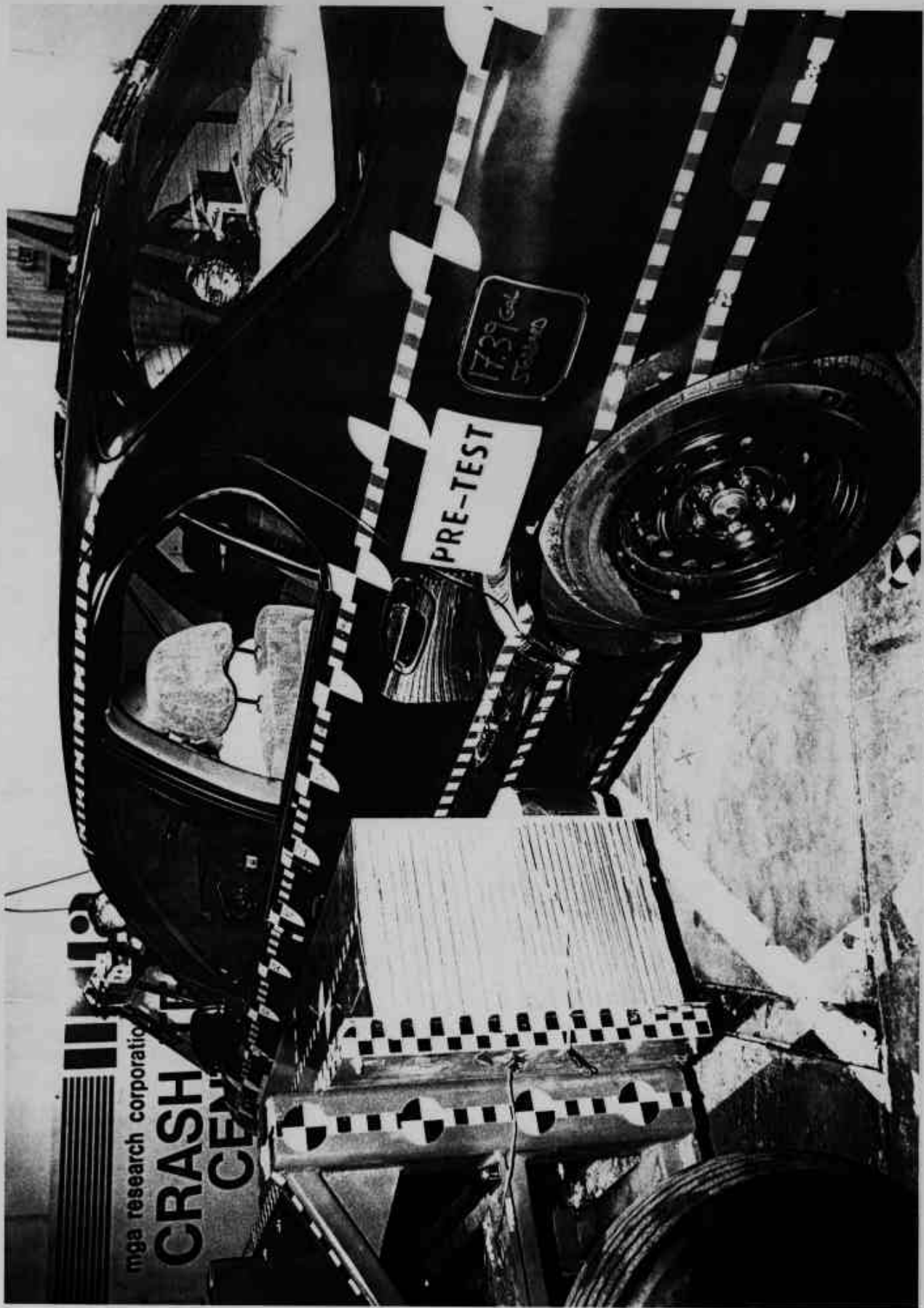


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

48/24 1201  
#CY5201 NISSAN PATHFINDER  
#2000 RESEARCH  
MGA

PRE-TEST

8212

Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

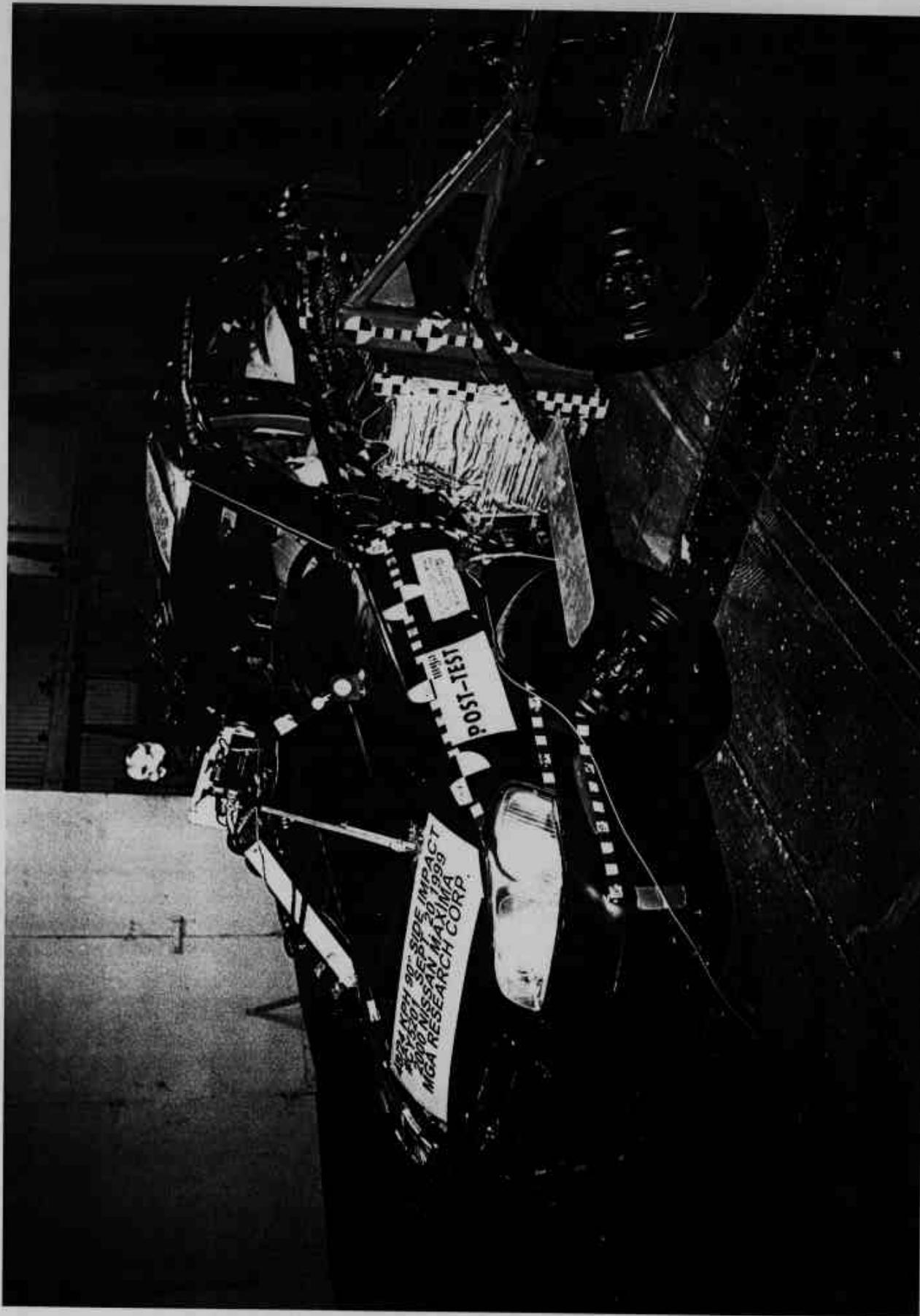


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

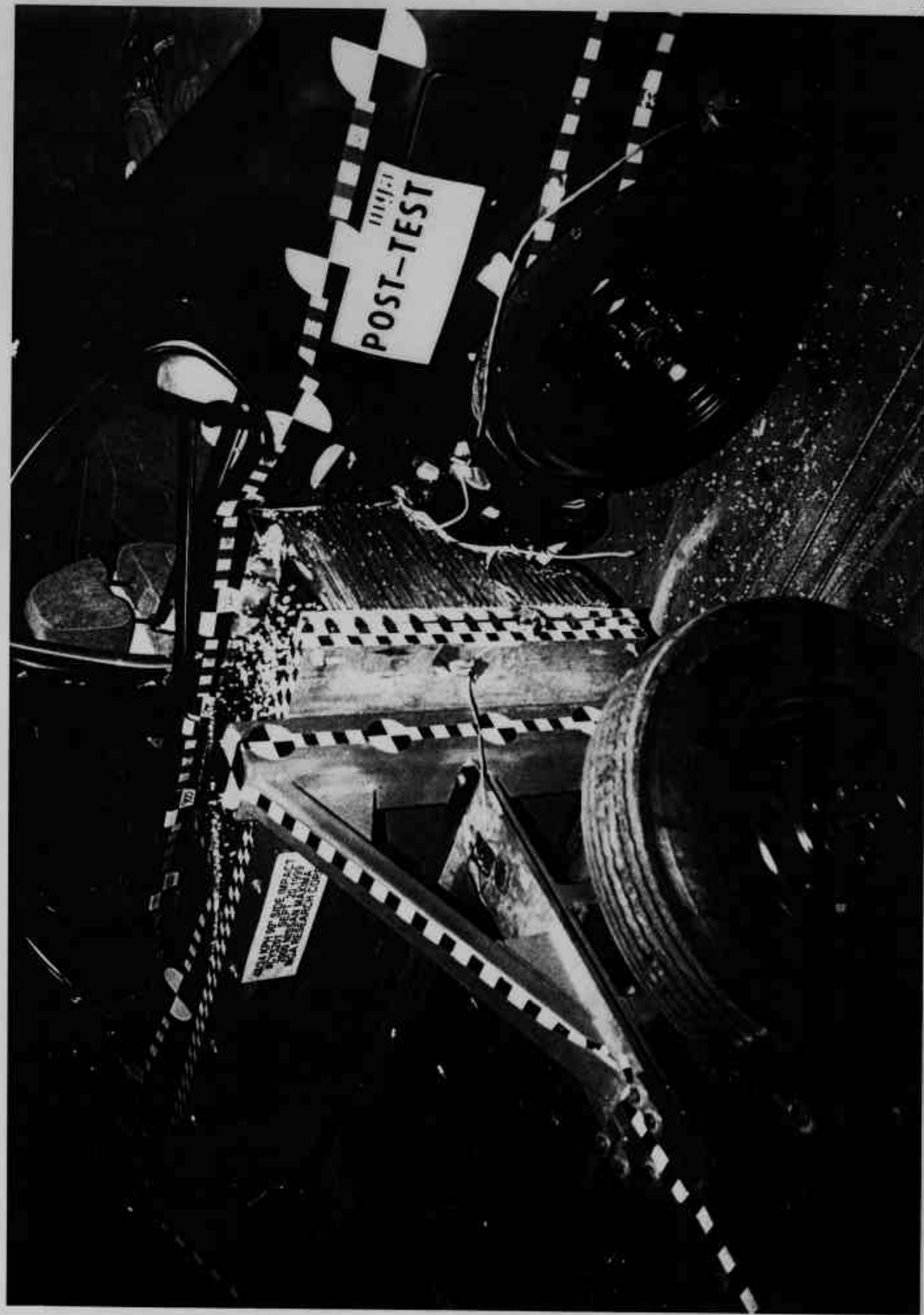


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

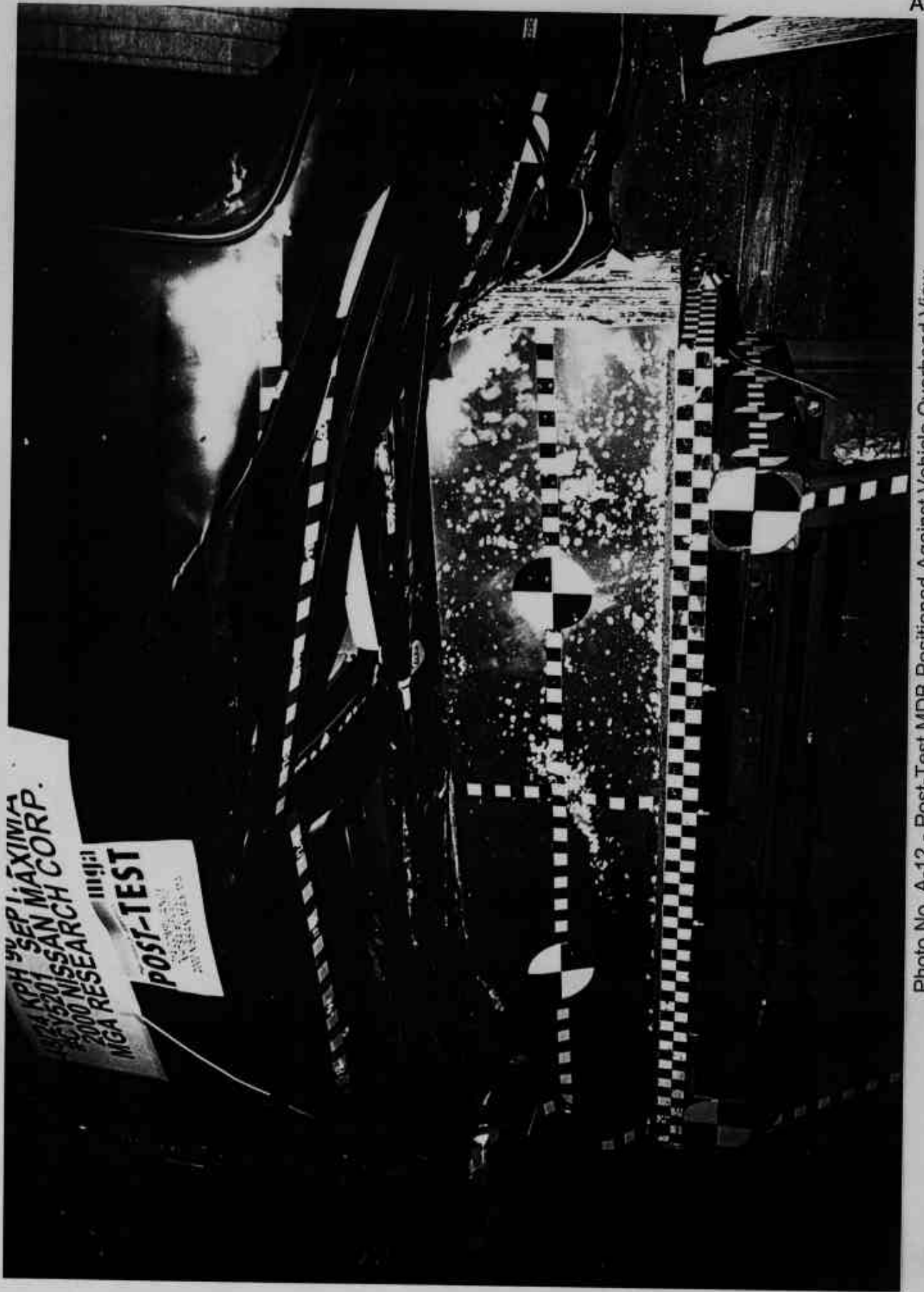


Photo No. A-12 - Post-Test MDB Positioned Against Vehicle Overhead View

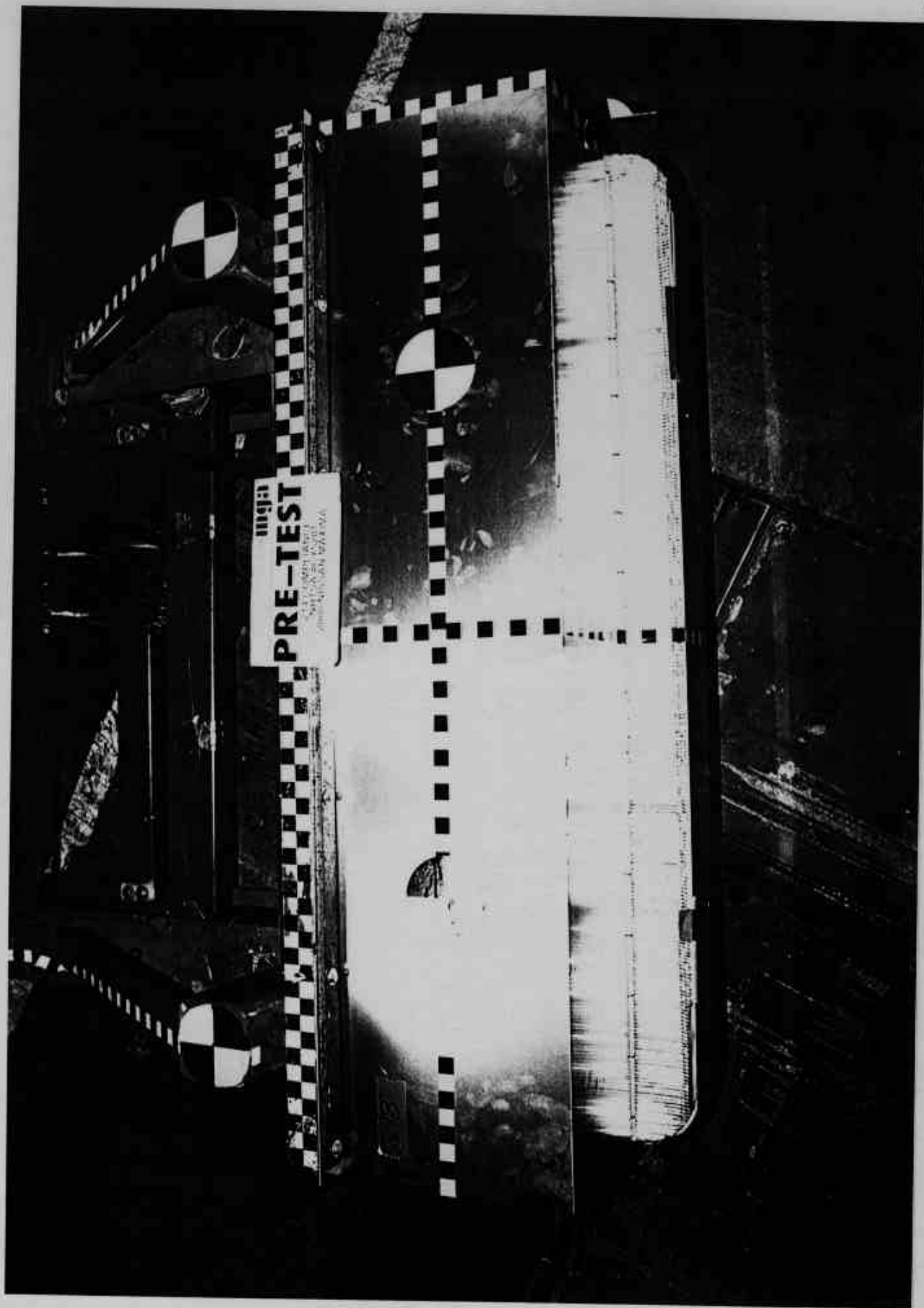


Photo No. A-13 - Pre-Test MDB Top View

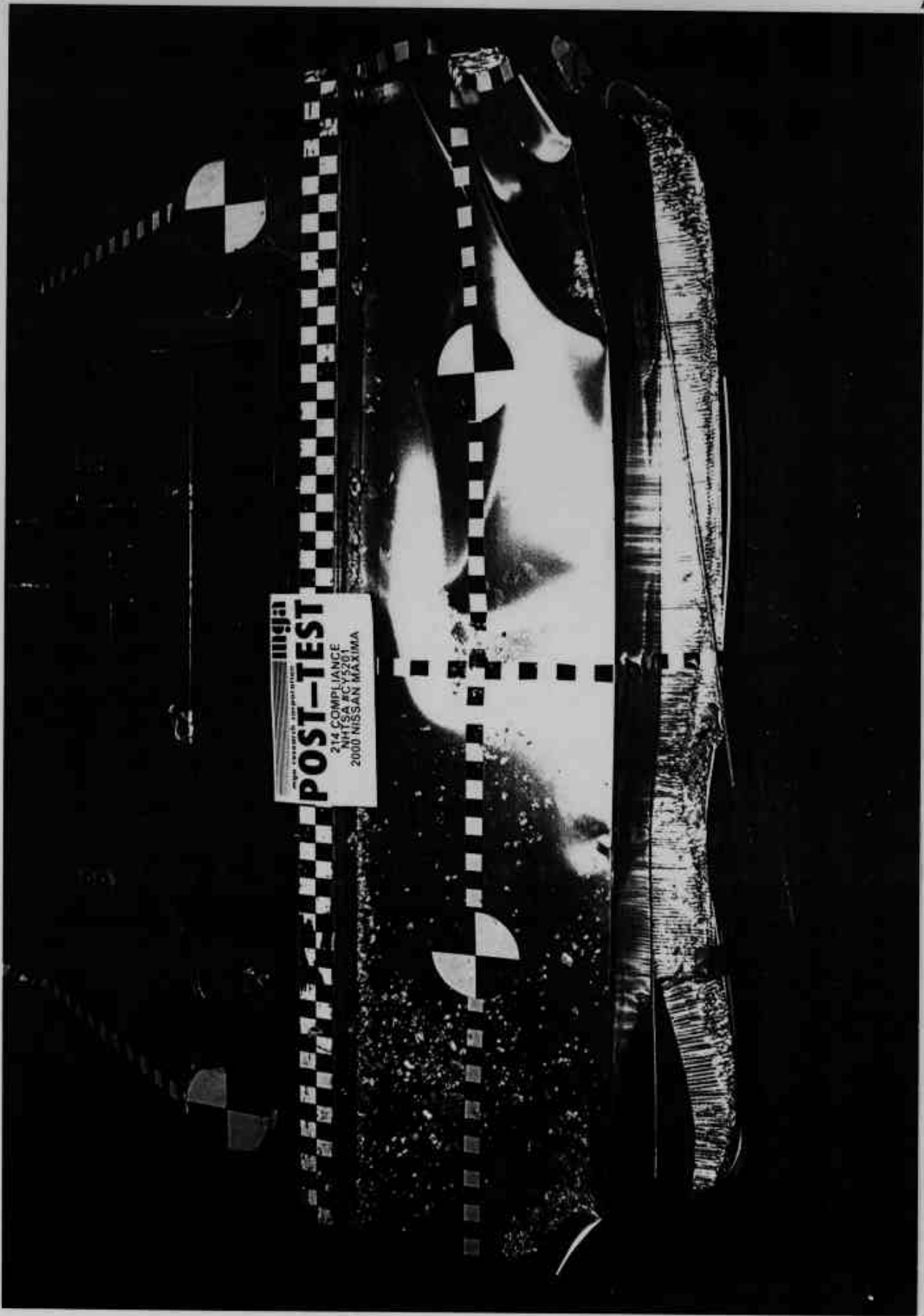


Photo No. A-14 - Post-Test MDB Top View

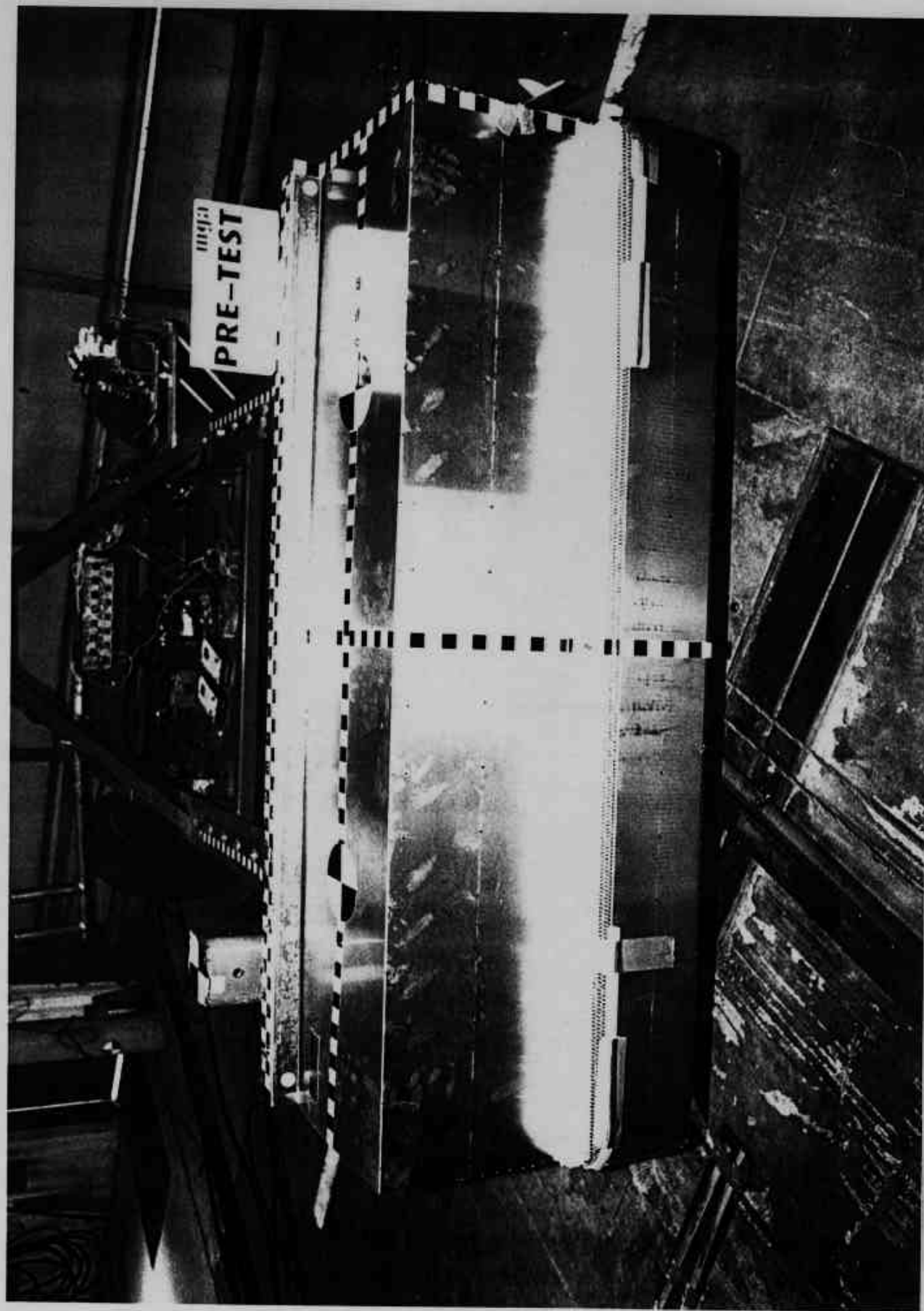


Photo No. A-15 - Pre-Test MDB Front View





Photo No. A-17 - Pre-Test MDB Left Side View

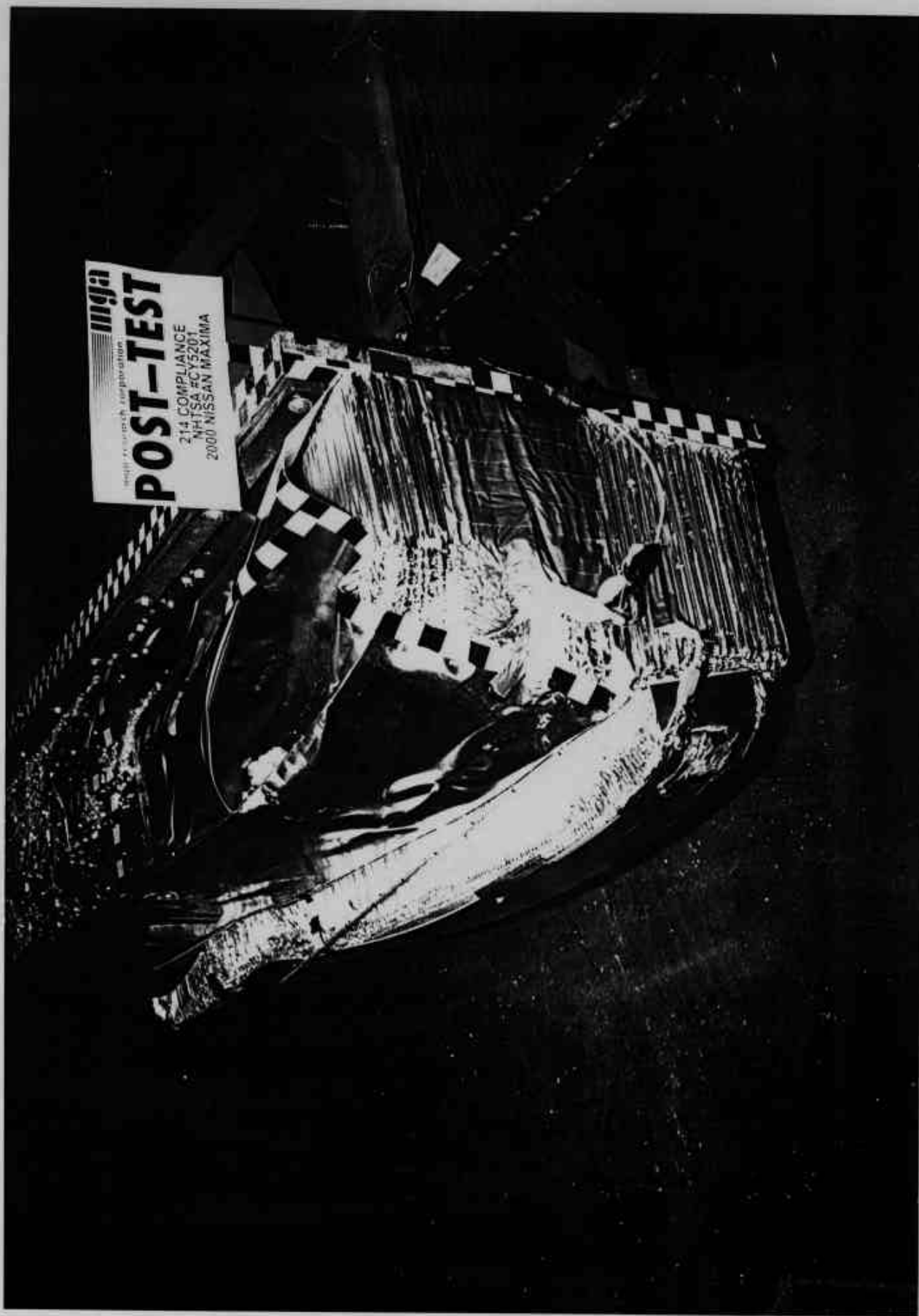


Photo No. A-18 - Post-Test MDB Left Side View

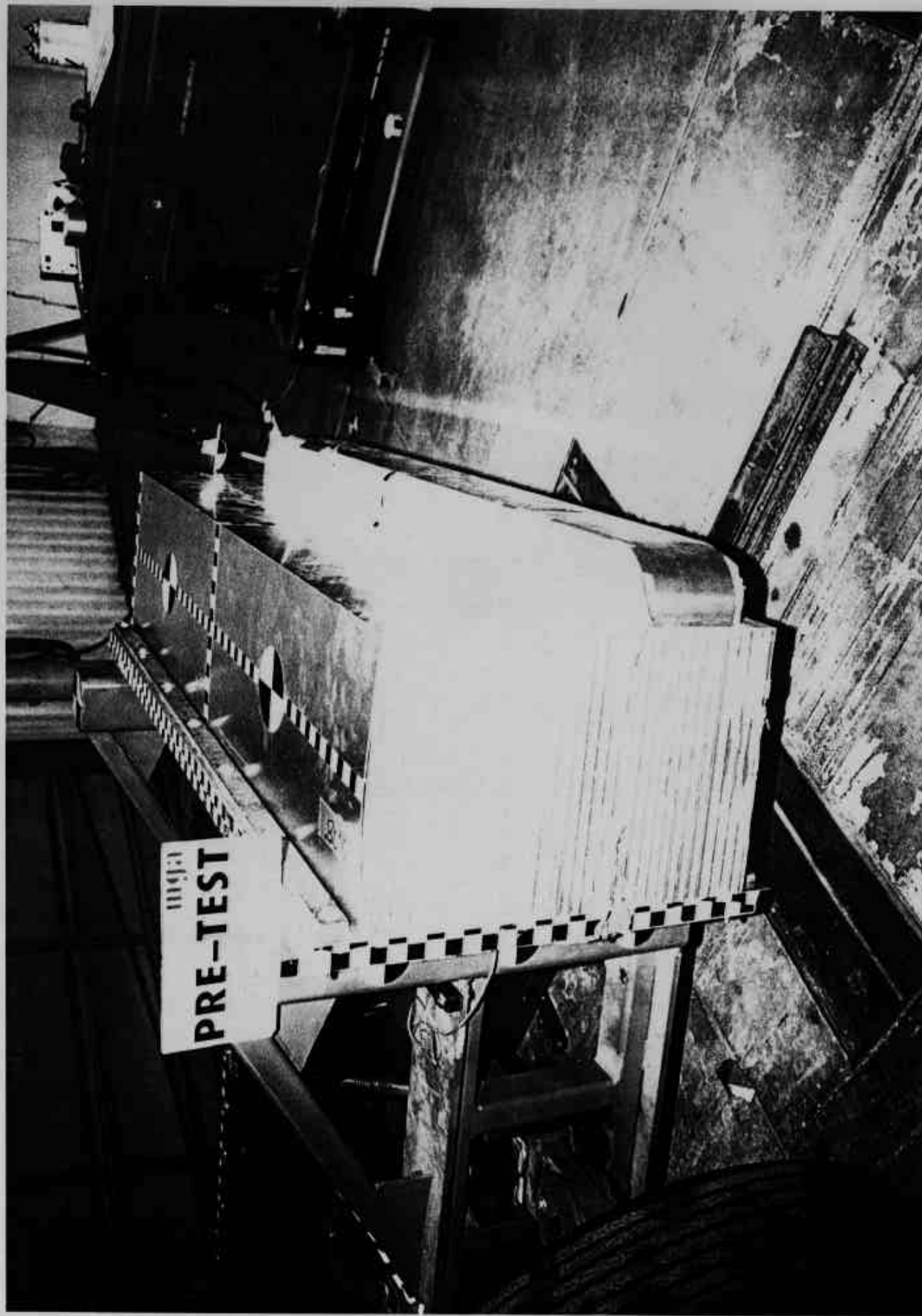


Photo No. A-19 - Pre-Test MDB Right Side View

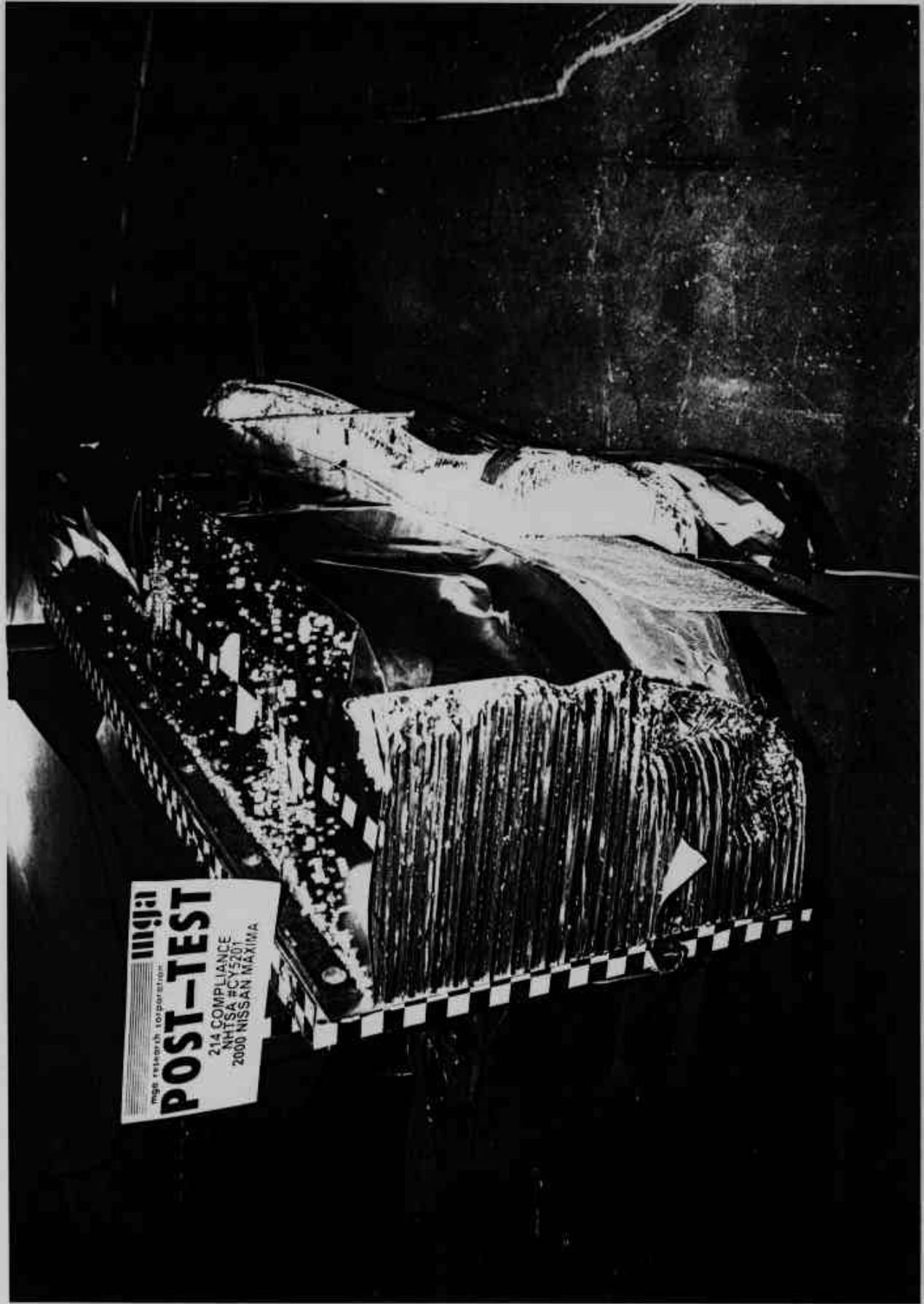


Photo No. A-20 - Post-Test MDB Right Side View

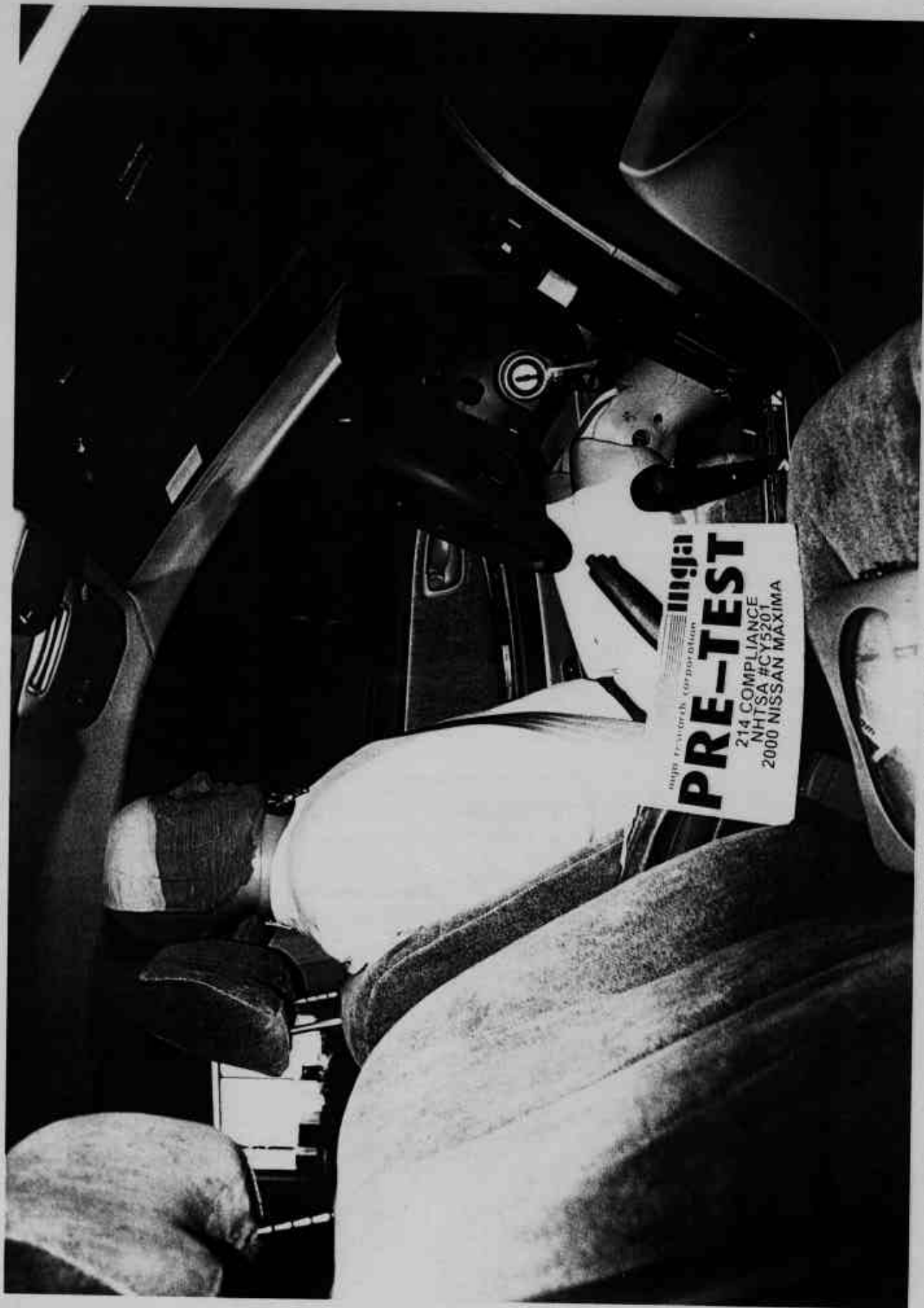


Photo No. A-21 - Pre-Test Driver Dummy Right Side View

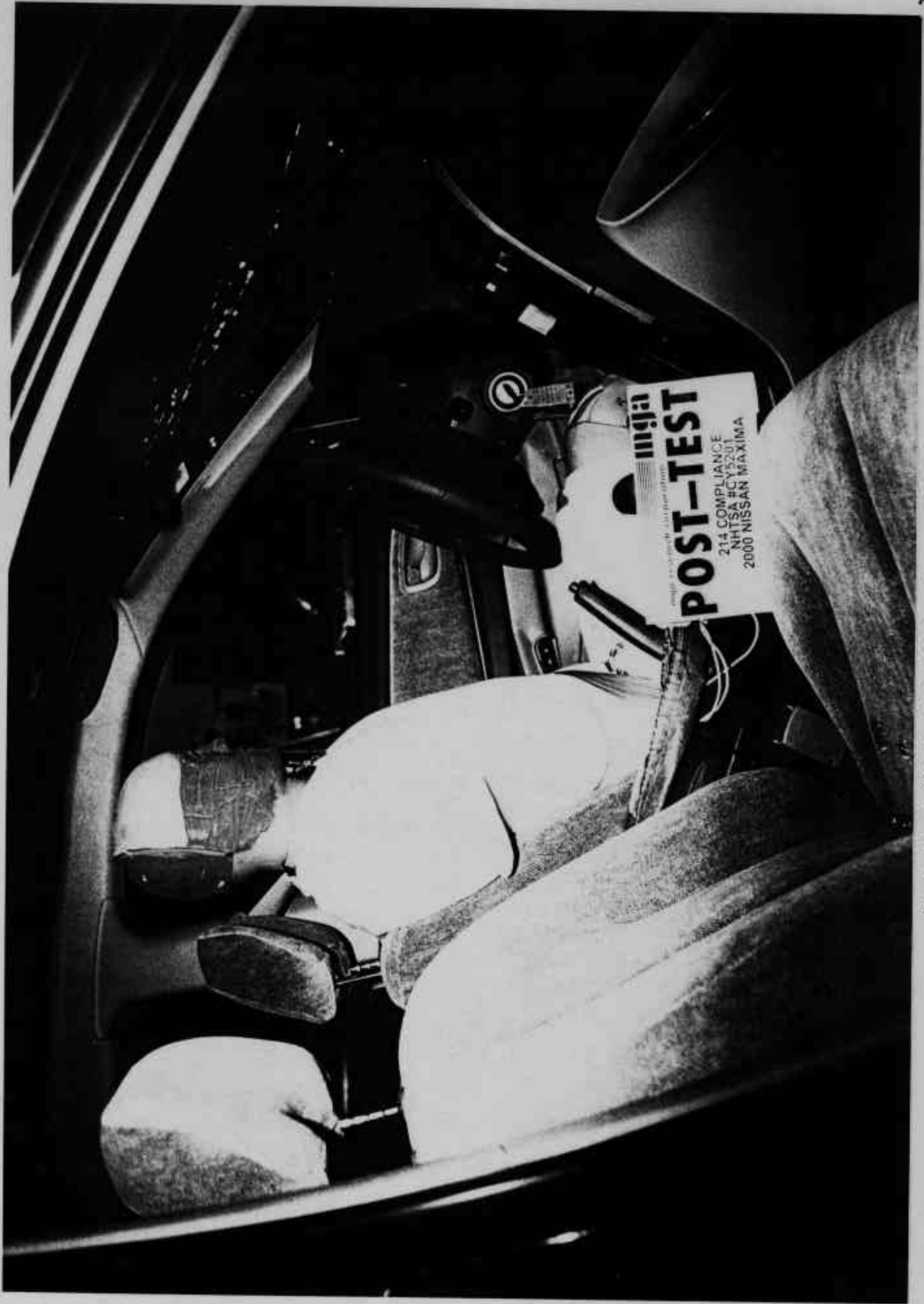


Photo No. A-22 - Post-Test Driver Dummy Right Side View

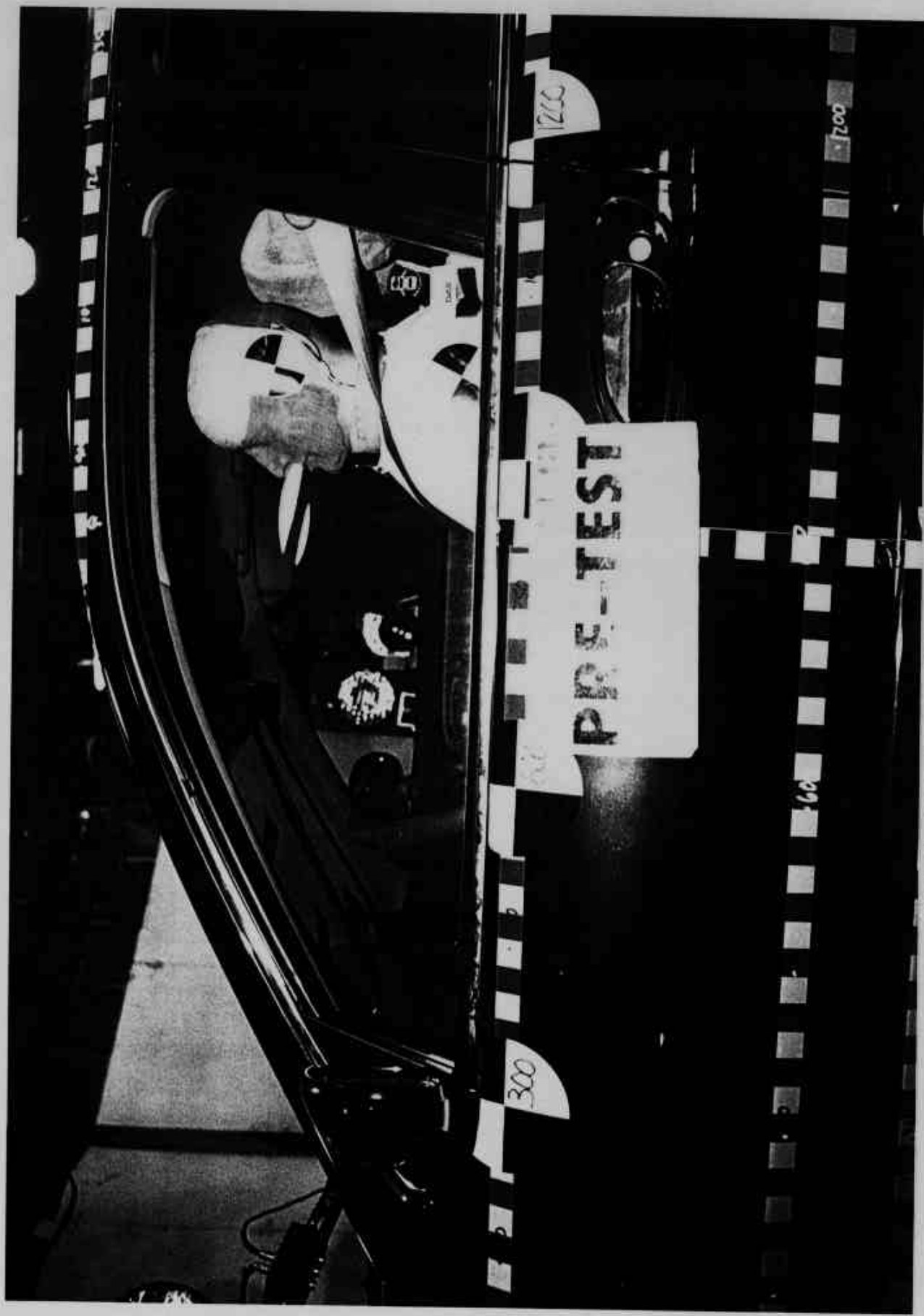


Photo No. A-23 - Pre-Test Driver Dummy Left Side View

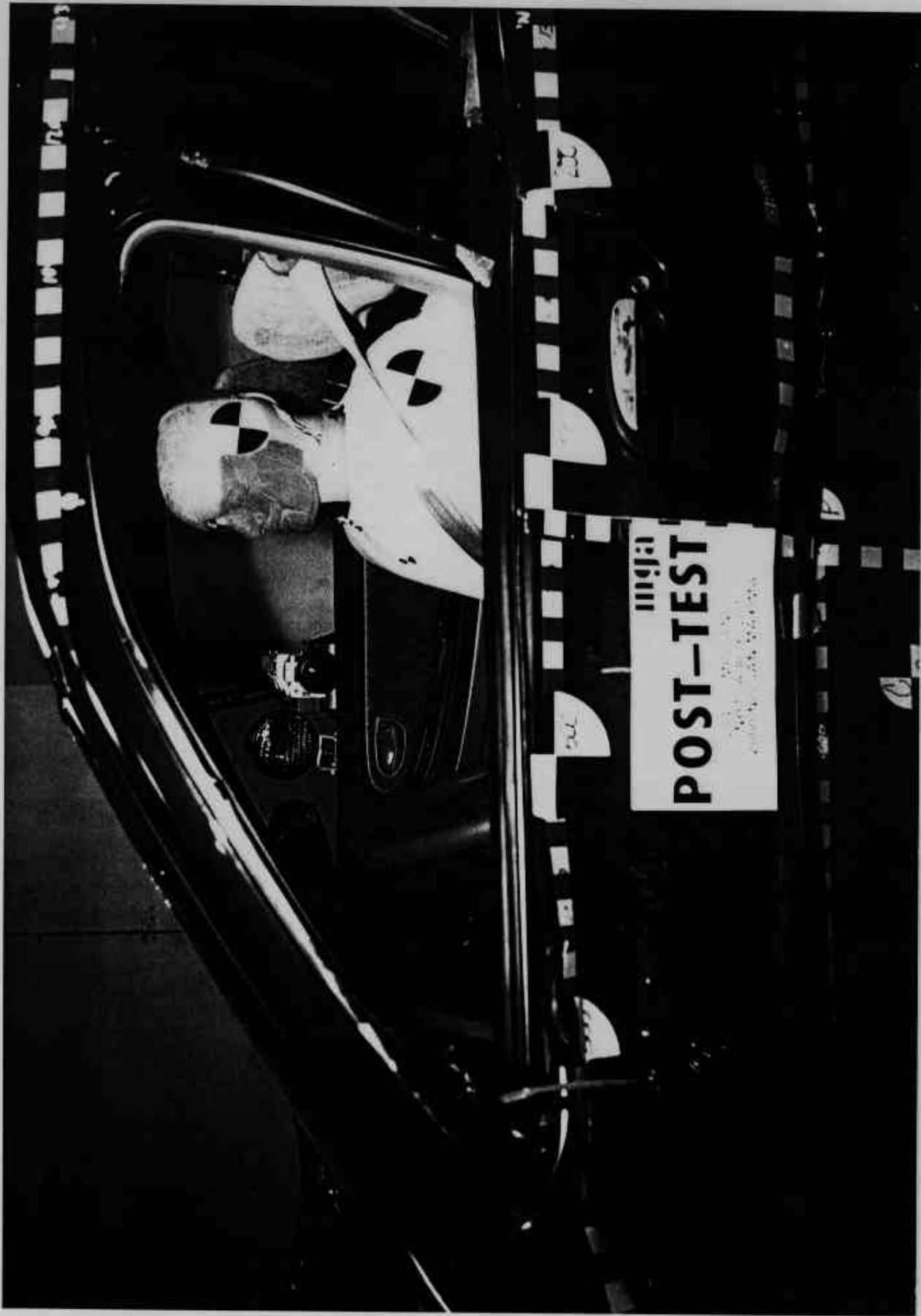


Photo No. A-24 - Post-Test Driver Dummy Left Side View

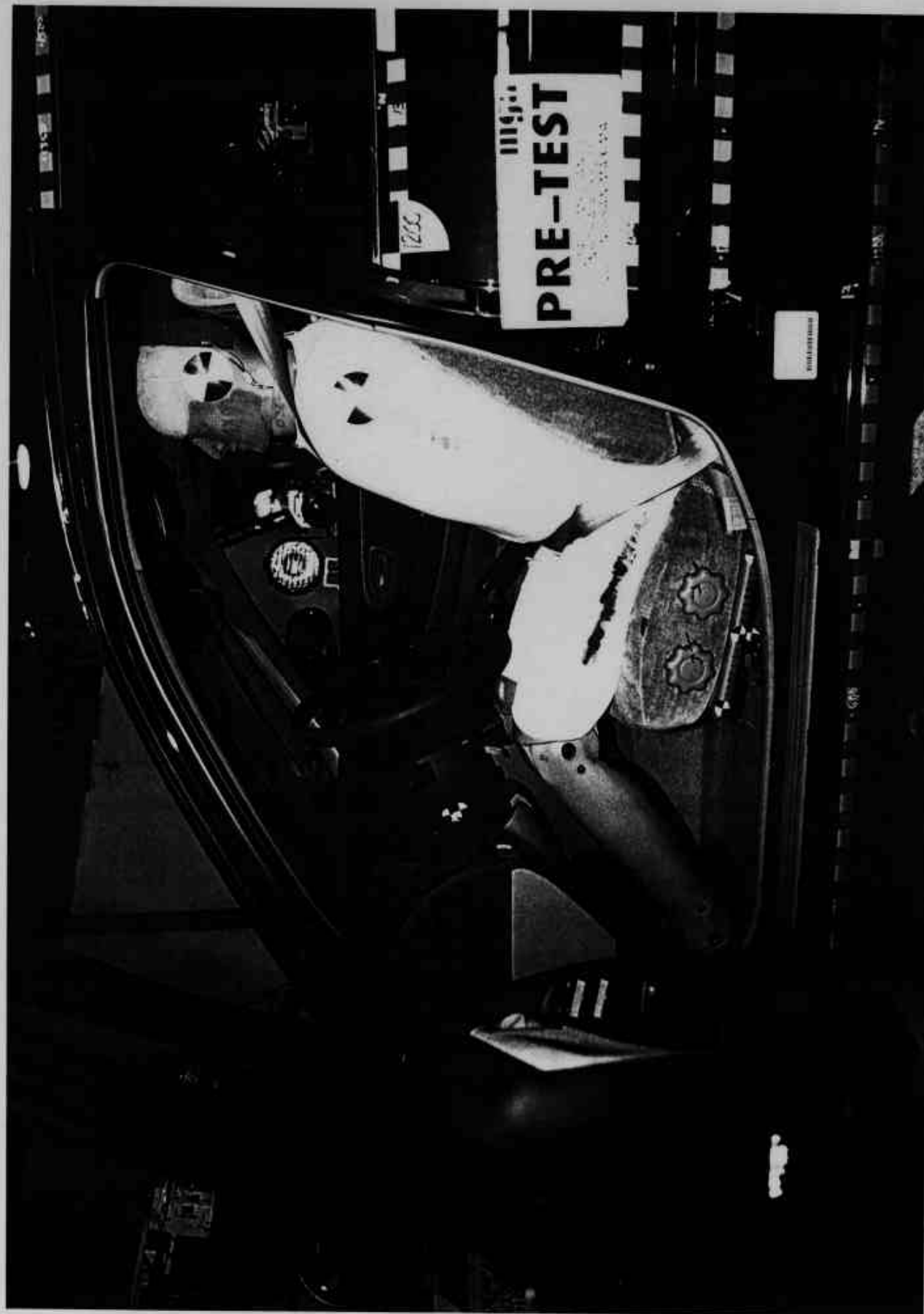


Photo No. A-25 - Pre-Test Driver Dummy Left Side View (Door Open)

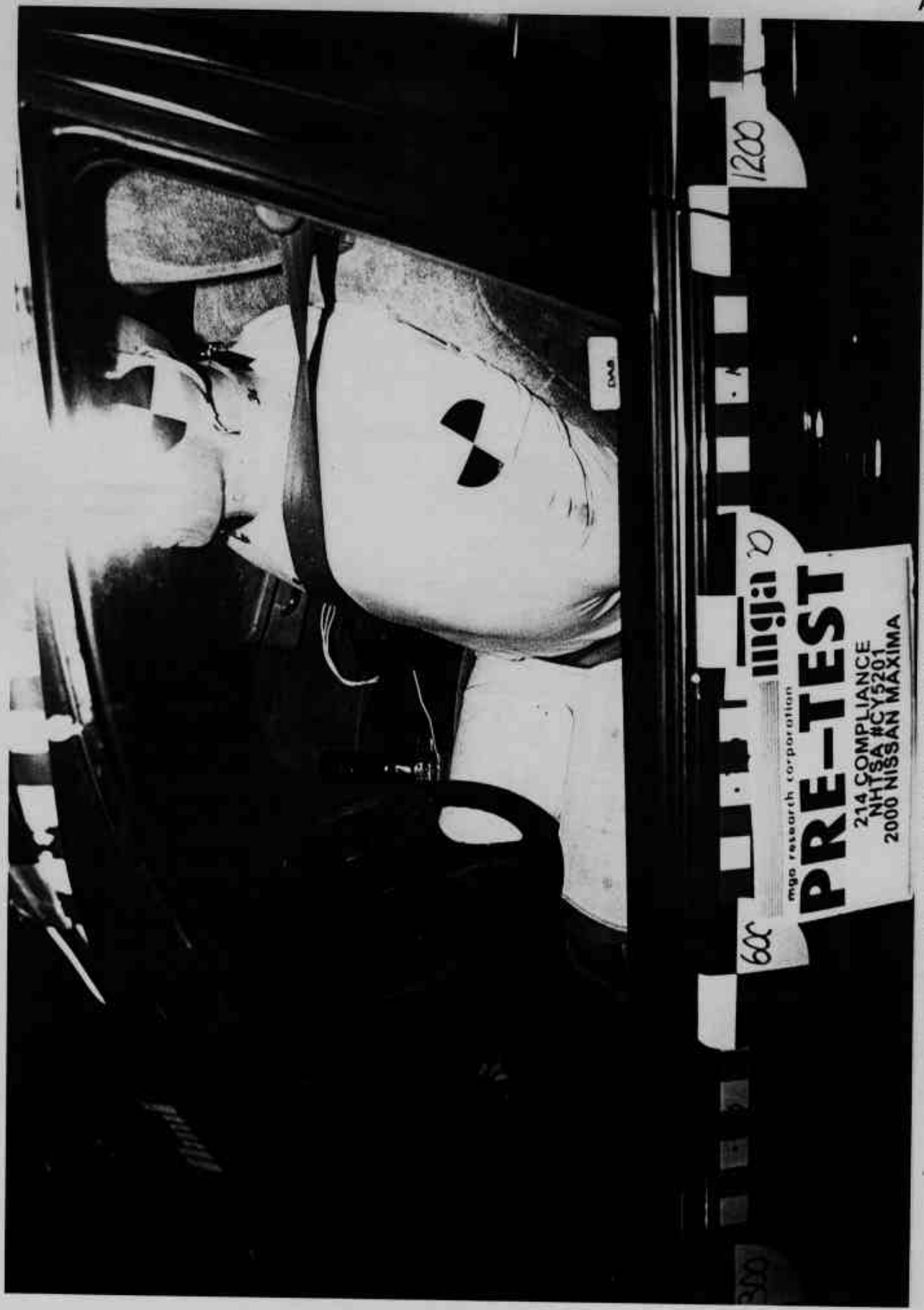


Photo No. A-26 - Pre-Test Driver Shoulder and Door Top View



Photo No. A-27 - Post-Test Driver Shoulder and Door Top View



Photo No. A-28 - Post-Test Driver Dummy Contact



Photo No. A-29 - Post-Test Driver Dummy Head Contact



Photo No. A-30 - Pre-Test Rear Passenger Dummy Right Side View



Photo No. A-31 - Post-Test Rear Passenger Dummy Right Side View

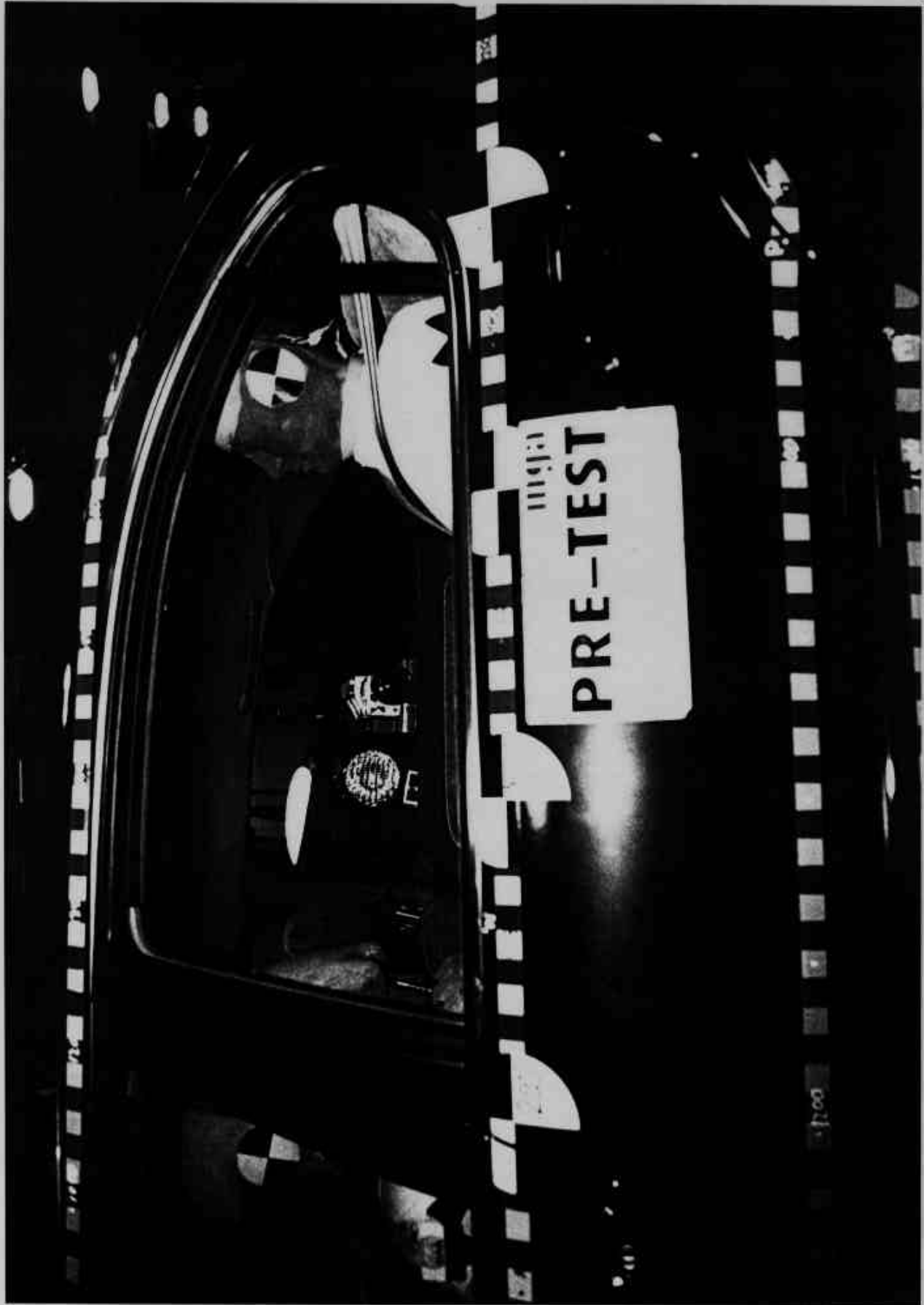


Photo No. A-32 - Pre-Test Rear Passenger Dummy Left Side View

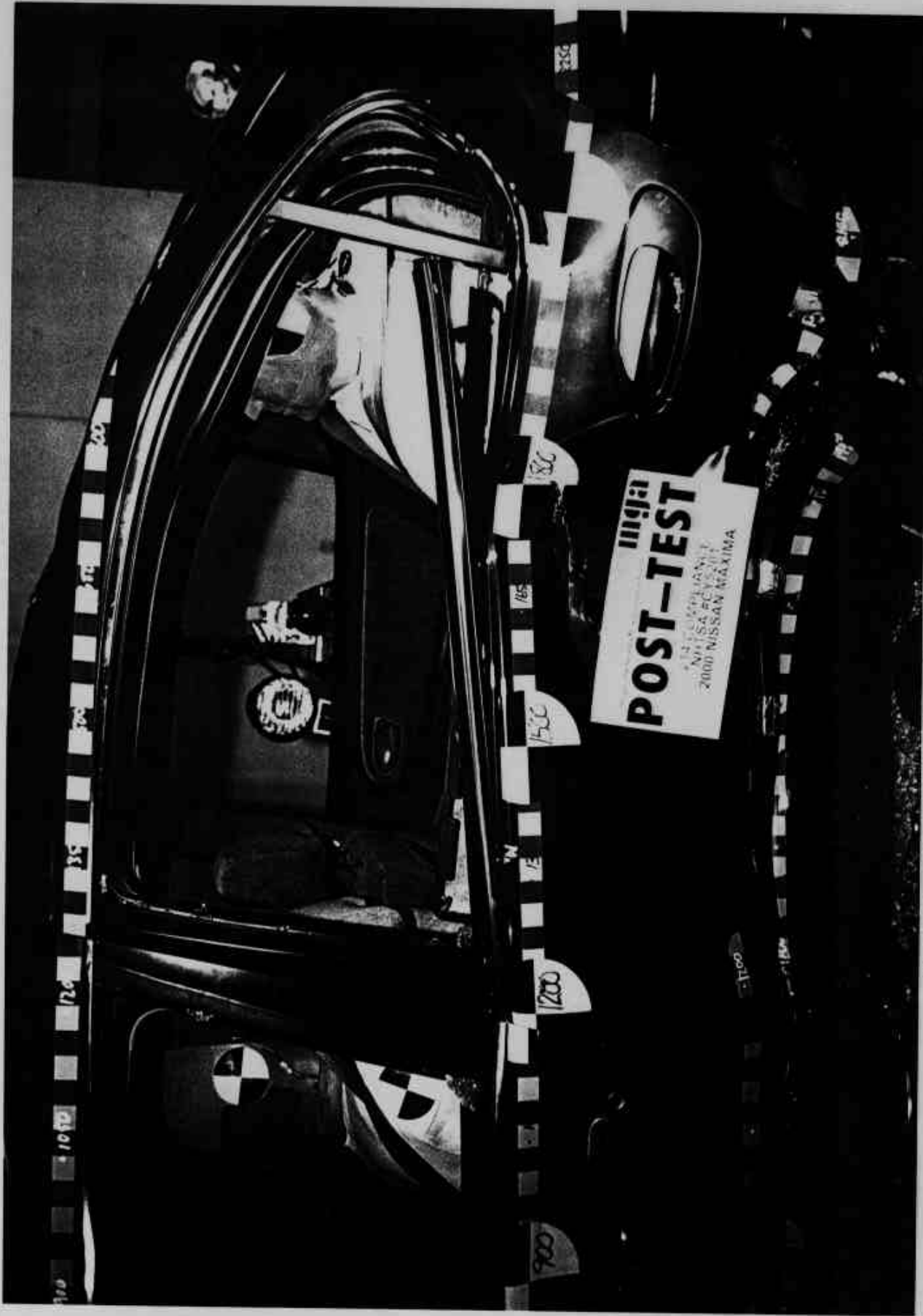


Photo No. A-33 - Post-Test Rear Passenger Dummy Left Side View

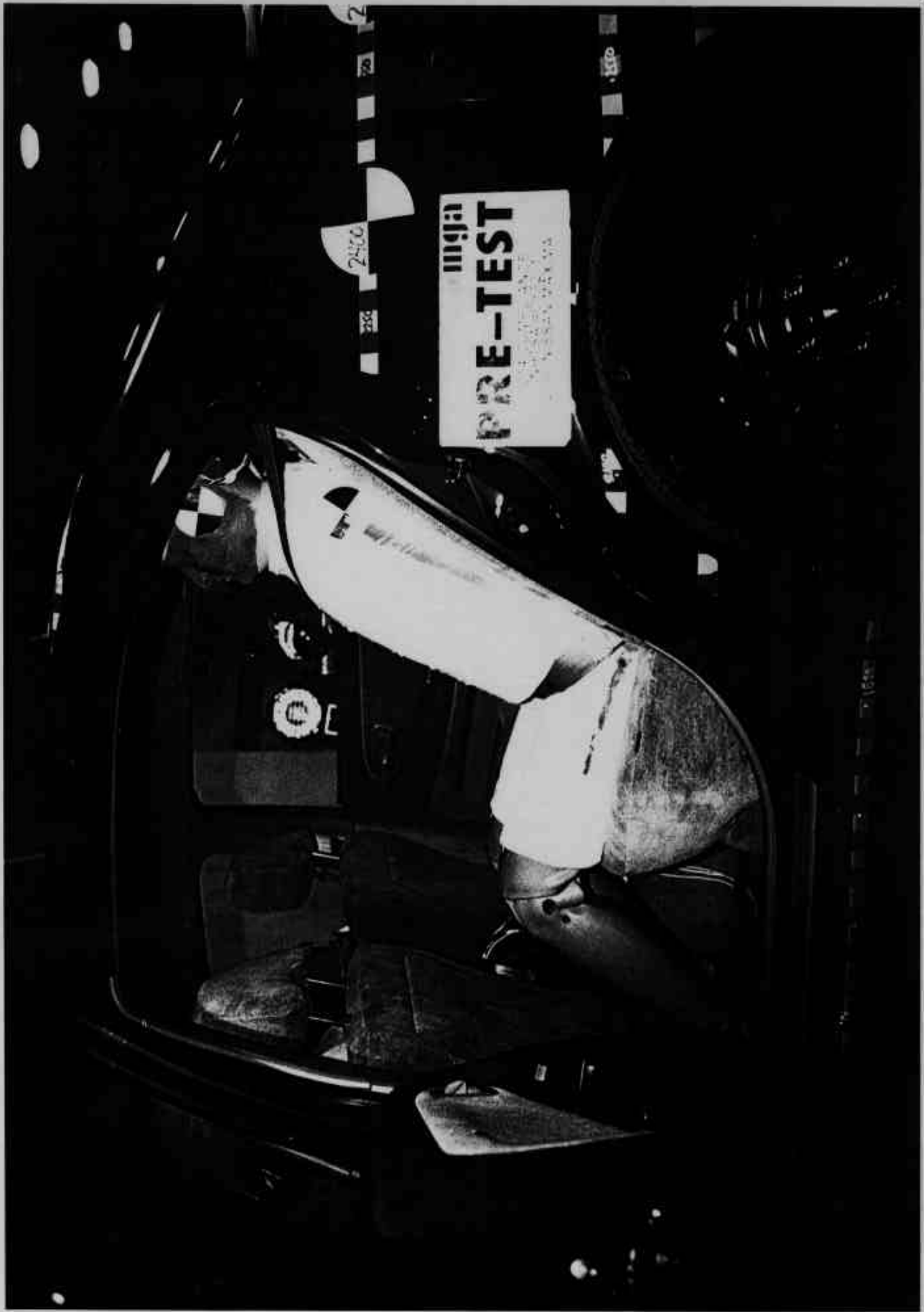


Photo No. A-34 - Pre-Test Rear Passenger Dummy Left Side View (Door Open)



Photo No. A-35 - Pre-Test Rear Passenger Dummy Shoulder View



Photo No. A-36 - Post-Test Rear Passenger Dummy Shoulder View

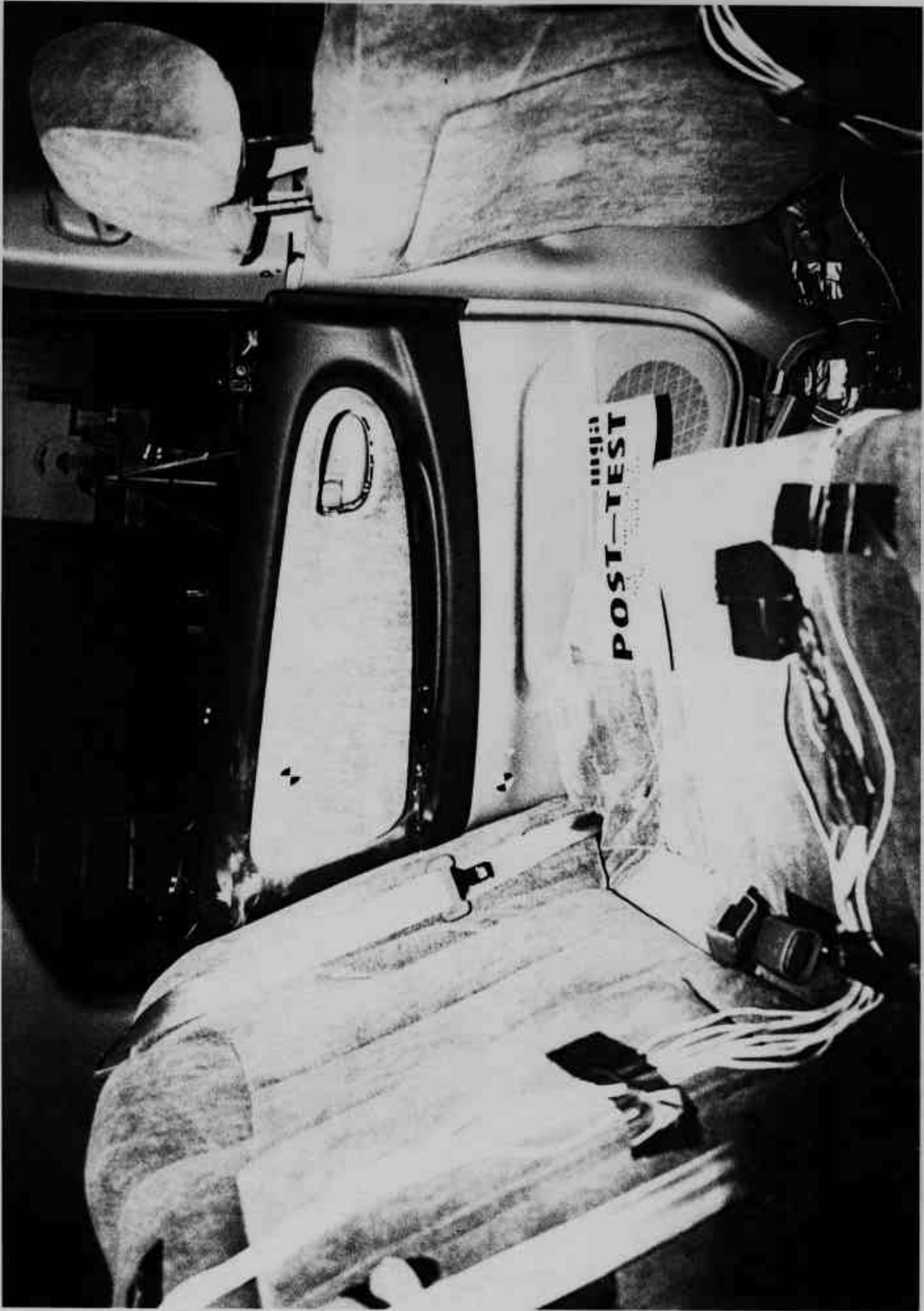


Photo No. A-37 - Post-Test Rear Passenger Dummy Contact



Photo No. A-38 - Post-Test Rear Passenger Dummy Head Contact

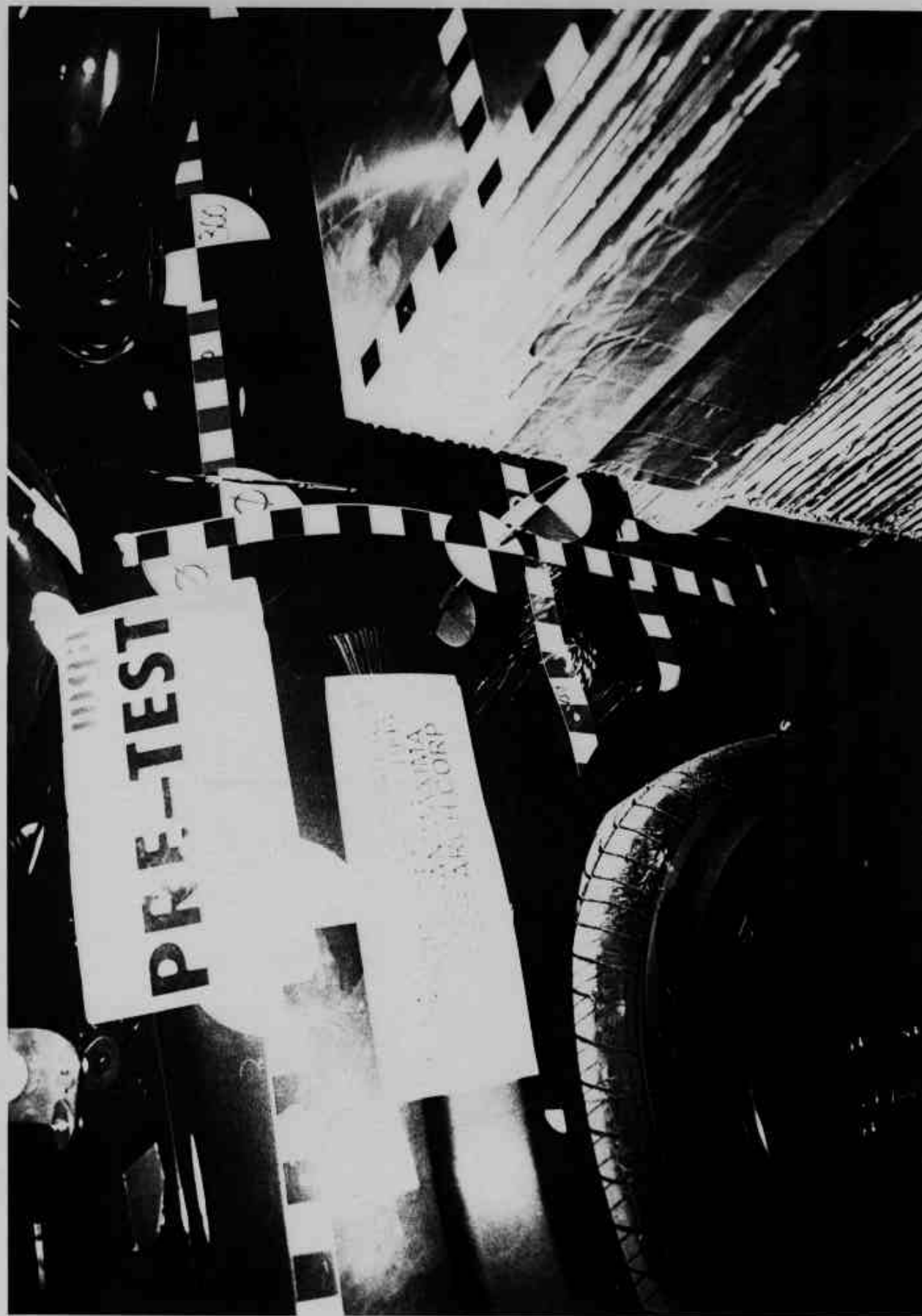


Photo No. A-39 - Pre-Test Right Front Impact Point on Vehicle



POST-TEST

48,24  
#CY5201 SEPT 20 1995  
2000 NISSAN MAXIMA  
MGA RESEARCH CORP.

450

Photo No. A-40 - Post-Test Right Front Impact Point on Vehicle

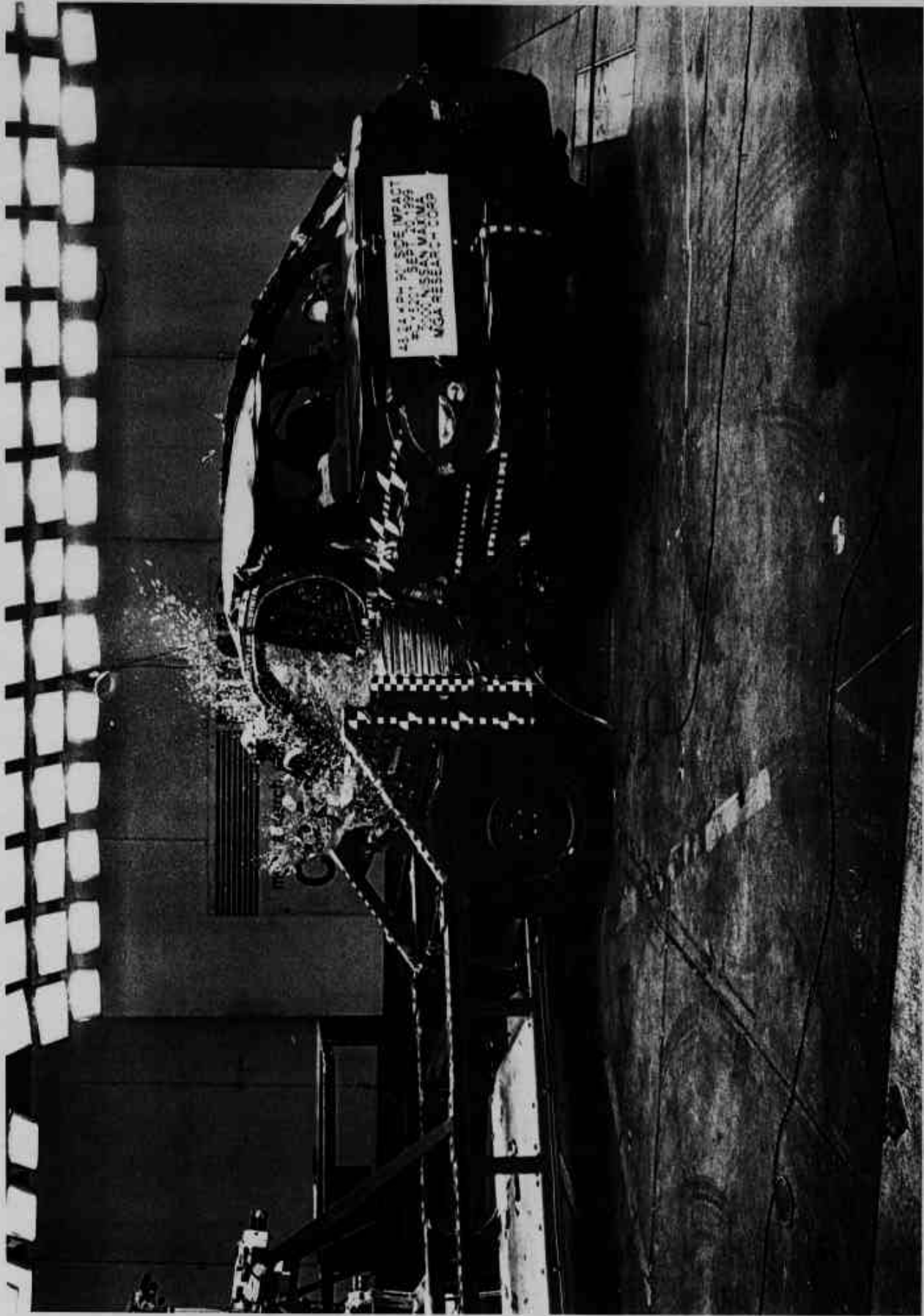


Photo No. A-41 - Impact

DATE 05/99  
 GYM/RFGY 4333 LBS.  
 GAW/RPBE FR. 2385 LBS. RR. 1988 LBS.  
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL  
 MOTOR VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION  
 STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE  
 SHOWN ABOVE.

**JN1CA31DXYT706984**

PASSENGER CAR/VOITURE DE TOURISME

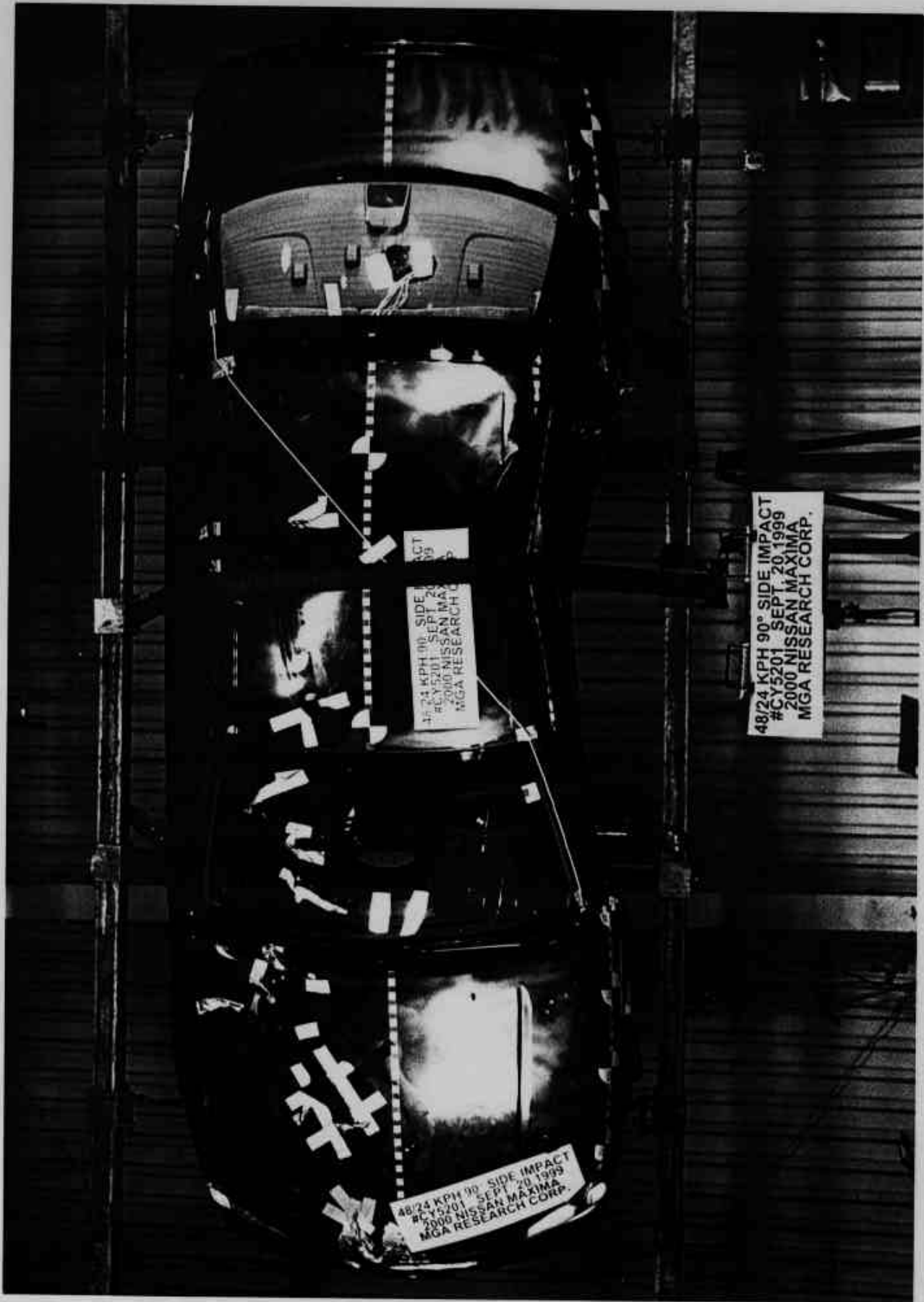


JN1CA31DXYT706984

Photo No. A-42 - Vehicle Certification Label

VEHICLE CAPACITY WEIGHT POUNDS STILL ON FEASIBLE	SEATING CAPACITY NUMBER OF PLACES	FRONT SEATING FRONT SEAT REAR SEAT OTHER SEAT	TOTAL SEATING TOTAL	SPARE TIRE TYPE OF TIRE 7.25-18018	NO. OF TIRE
RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSURE IN PSI (PSI) RECOMMENDED FOR THESE TIRES					
TIRE SIZE DIMENSIONS		FRONT (PSI) FRONT (PSI)	REAR (PSI) REAR (PSI)	DO NOT USE IN EXCESS OF SUMPY RISK IN SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION UTILIZATION A LOW PRESSURE WILL SHORTEN TIRE LIFE FROM ALL DETAILS OF REFER TO MANUAL OR CONSULTATION	
PSI/SEAT 328	28 (280)	28 (280)	28 (280)	58	
58					

Photo No. A-43 - Tire Placard



48/24 KPH 90° SIDE IMPACT  
#CY5201 SEPT 20 1999  
2000 NISSAN MAXIMA  
MGA RESEARCH CORP.

48/24 KPH 90° SIDE IMPACT  
#CY5201 SEPT 20 1999  
2000 NISSAN MAXIMA  
MGA RESEARCH CORP.

48/24 KPH 90° SIDE IMPACT  
#CY5201 SEPT 20 1999  
2000 NISSAN MAXIMA  
MGA RESEARCH CORP.

Photo No. A-44 - Rollover 90°

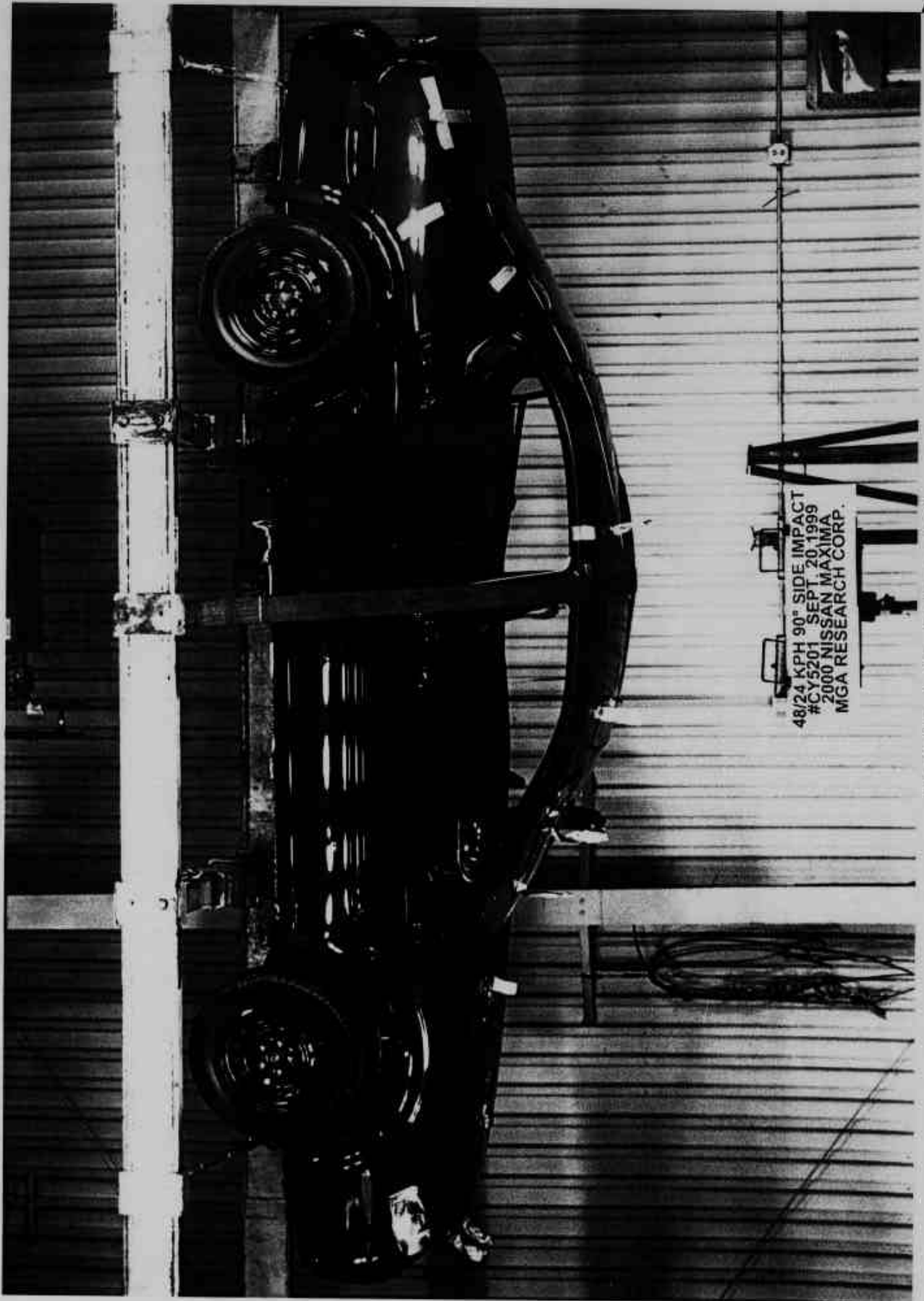
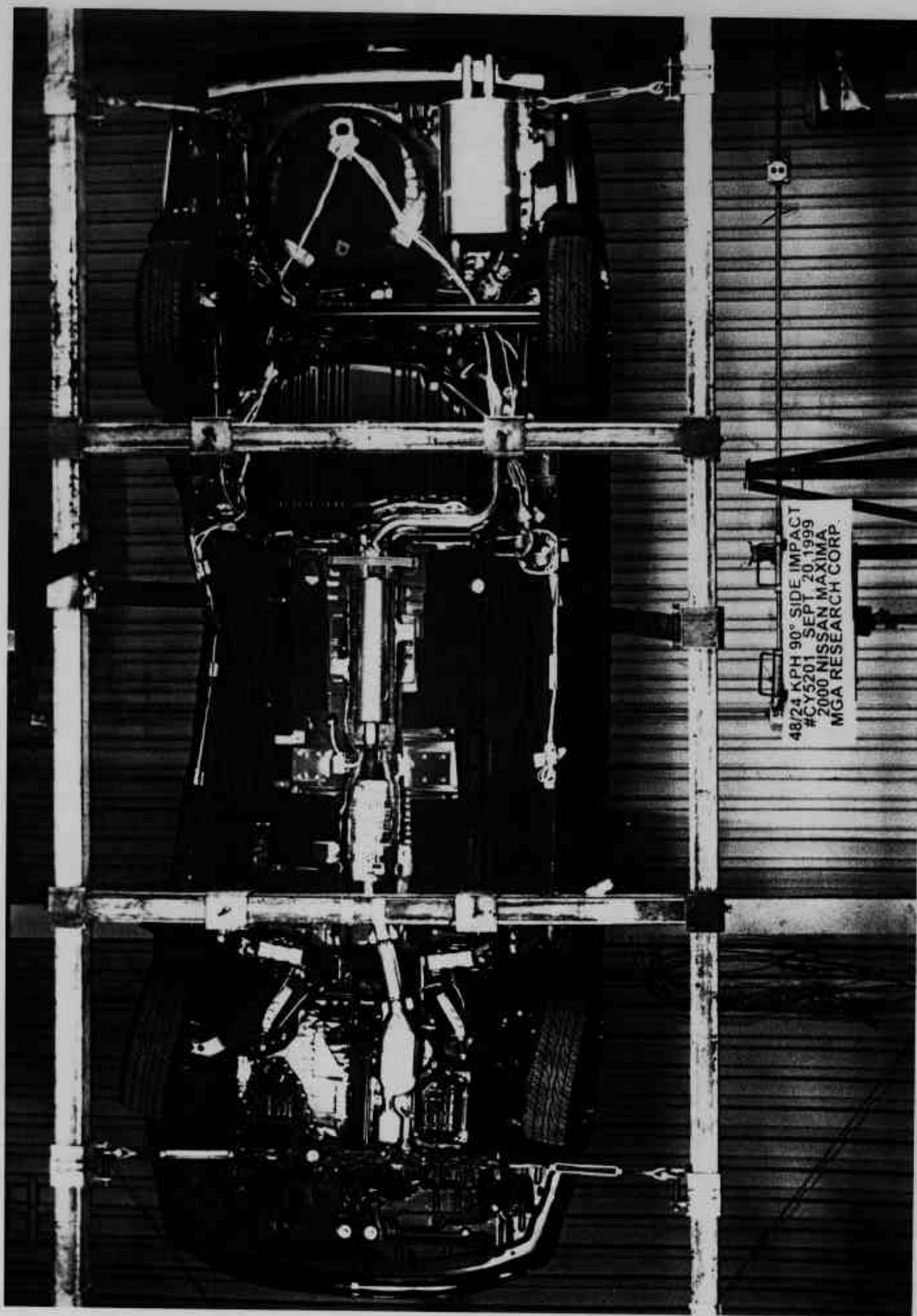


Photo No. A-45 - Rollover 180°



48/24 KPH 90° SIDE IMPACT  
#CY5201 SEPT 20, 1999  
2000 NISSAN MAXIMA  
MGA RESEARCH CORP.

Photo No. A-46 - Rollover 270°

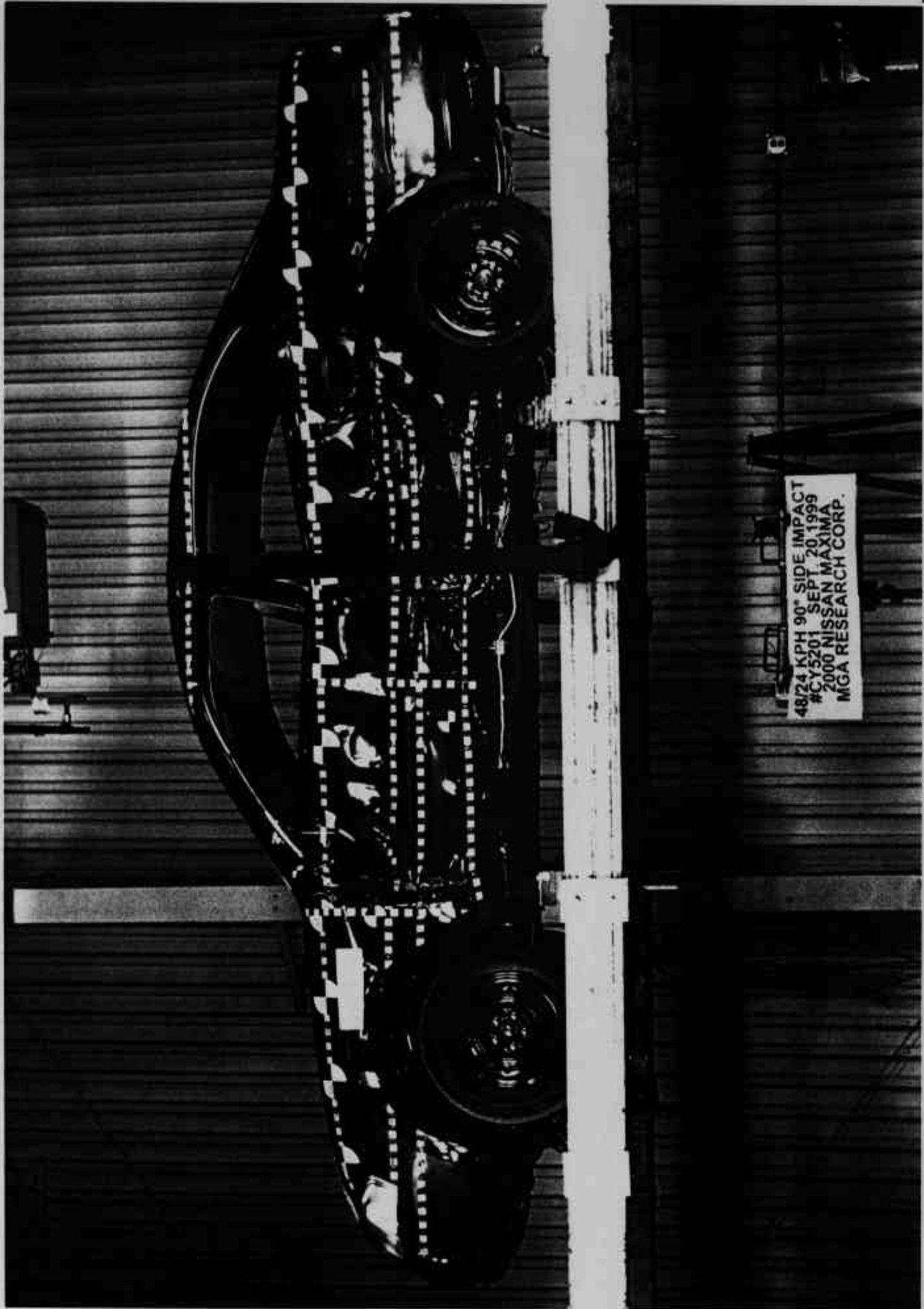


Photo No. A-47 - Rollover 360°

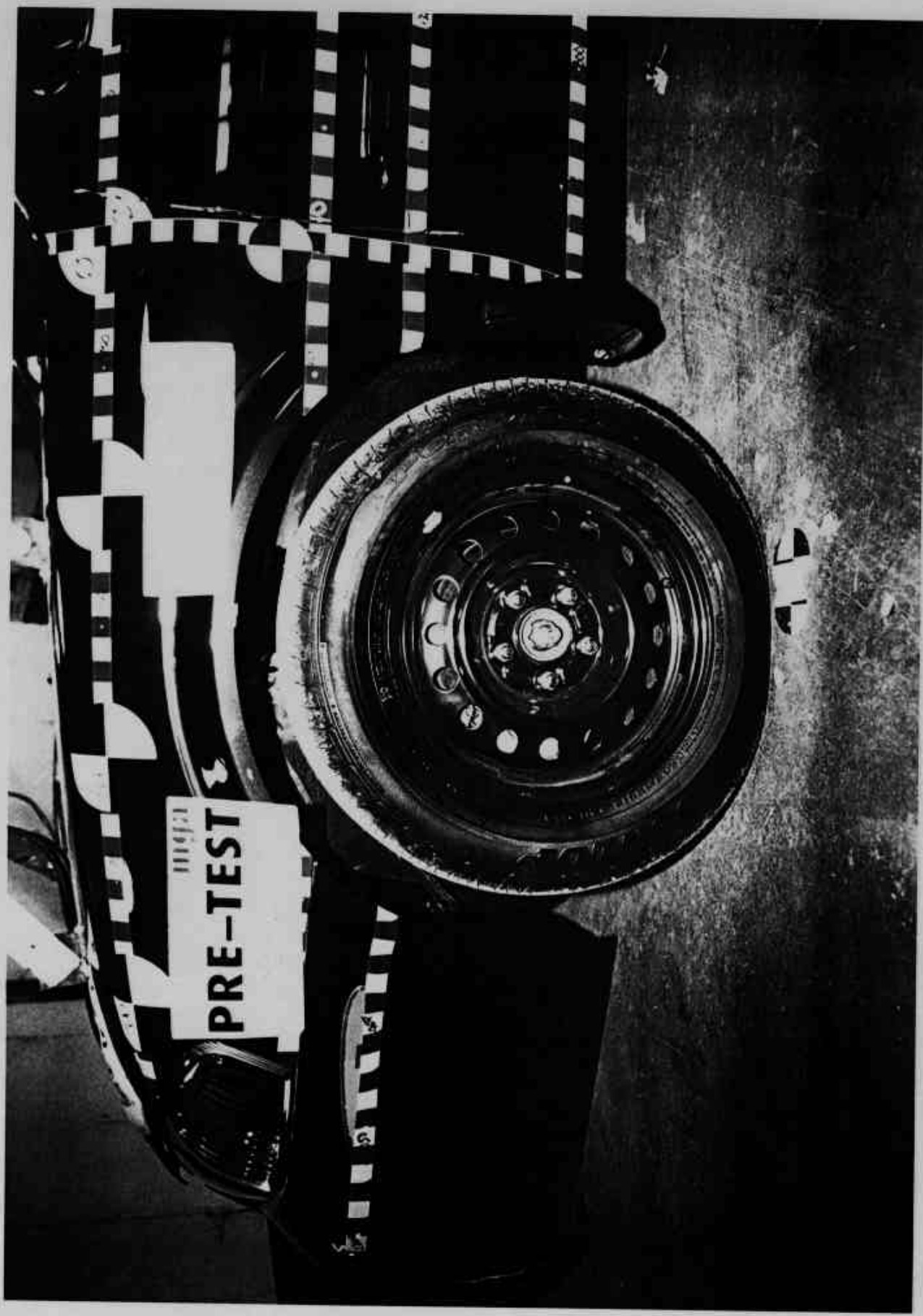


Photo No. A-48 - Left Front Attitude Point



Photo No. A-49 - Right Front Attitude Point

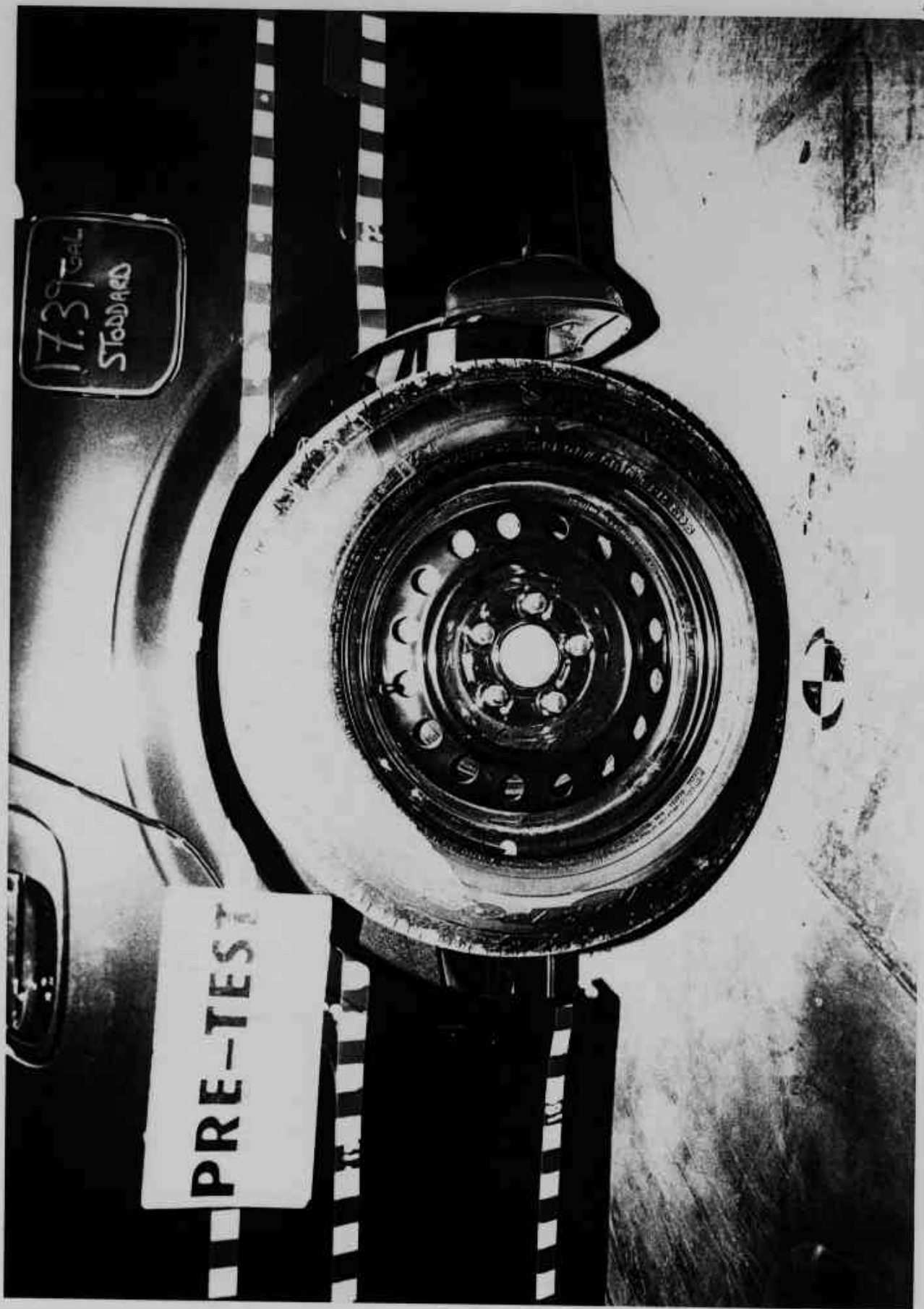


Photo No. A-50 - Left Rear Attitude Point

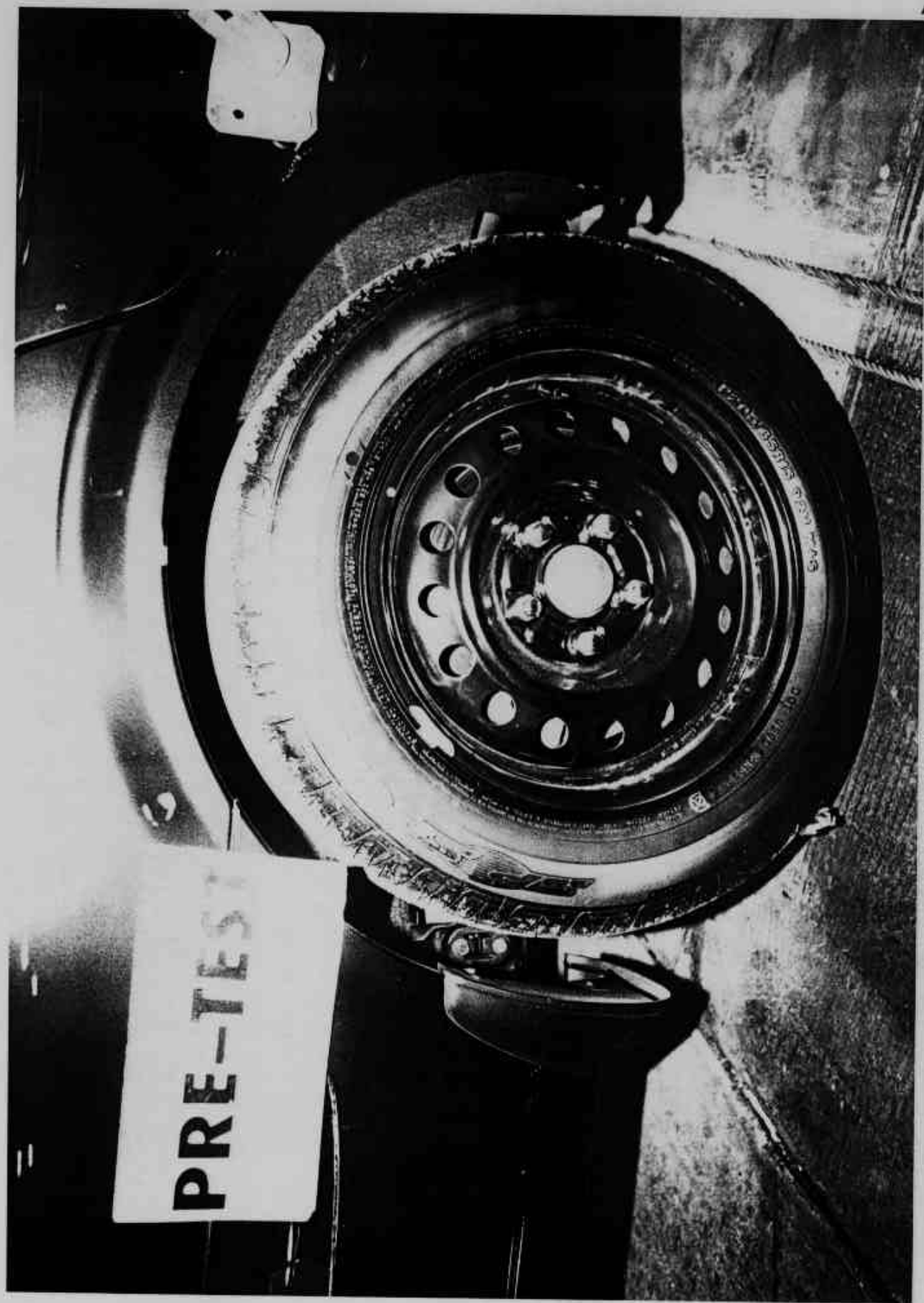


Photo No. A-51 - Right Rear Attitude Point

**PRE-TEST**

The following table summarizes the results of the FMVSS 214 Left Side Impact test:

Injury Criteria	Front SID	Rear SID
TTI (g)	59	52
Pelvis (g)	77	64

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front =	<u>459.0</u> kg	Right Rear =	<u>271.7</u> kg
Left Front =	<u>453.1</u> kg	Left Rear =	<u>289.4</u> kg
TOTAL FRONT =	<u>912.1</u> kg	TOTAL REAR =	<u>561.1</u> kg
% of Total Weight =	<u>61.9</u> %	% of Total Weight =	<u>38.1</u> %
TOTAL WEIGHT =	<u>1473.2</u> kg		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	=	<u>1473.2</u> kg
Cargo Carrying Capacity of Test Vehicle*	=	<u>59.8</u> kg
Weight of 2 Side Impact Dummies (2 x <u>80.7</u> kg.)	=	<u>161.4</u> kg
TEST VEHICLE TARGET WEIGHT	=	<u>1694.4</u> kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO: (FULLY LOADED)

Right Front =	<u>461.3</u> kg	Right Rear =	<u>337.5</u> kg
Left Front =	<u>503.0</u> kg	Left Rear =	<u>392.6</u> kg
TOTAL FRONT =	<u>964.3</u> kg	TOTAL REAR =	<u>730.1</u> kg
% of Total Weight =	<u>56.9</u> %	% of Total Weight =	<u>43.1</u> %
TOTAL WEIGHT =	<u>1694.4</u> kg		

TEST VEHICLE ATTITUDE:

## CURB WEIGHT ATTITUDE:

Right Front 704 mm Left Front 702 mm Right Rear 709 mm Left Rear 694 mm

## FULLY LOADED WEIGHT ATTITUDE:

Right Front 701 mm Left Front 685 mm Right Rear 686 mm Left Rear 655 mm

## TEST ATTITUDE:

Right Front 690 mm Left Front 687 mm Right Rear 686 mm Left Rear 663 mm

\* light trucks and MPVs RCW is 136.1 kgs or manufacturer's value, whichever is less

DATA SHEET NO. 2  
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door  
 Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999  
 Overall Length = 4791 mm; Overall Width = 1762 mm

TEST WEIGHT:

Right Front =	<u>489.0</u> kg	Right Rear =	<u>324.8</u> kg
Left Front =	<u>503.5</u> kg	Left Rear =	<u>368.3</u> kg
TOTAL FRONT =	<u>992.5</u> kg	TOTAL REAR =	<u>693.1</u> kg
% of Total Weight =	<u>58.9</u> %	% of Total Weight =	<u>41.1</u> %
TOTAL WEIGHT =	<u>1685.6</u> kg		

Wheelbase = 2750 mm

Longitudinal C.G. from Center of Front Axle = 1131 mm

Impact Angle with Respect to Impactor = 27° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

- LEVEL 1 ( 265 mm above ground) = 242 mm
  - LEVEL 2 ( 495 mm above ground) = 373 mm
  - LEVEL 3 ( 611 mm above ground) = 312 mm
  - LEVEL 4 ( 875 mm above ground) = 236 mm
  - LEVEL 5 ( 1340 mm above ground) = 74 mm
- Maximum Post-Test Intrusion = 373 mm

OCCUPANTS:

	<u>Driver</u>	<u>Left Rear Passenger</u>
Type of Dummy	<u>SID</u>	<u>SID</u>
Restraints Used	<u>type II belt</u> <u>with frontal airbag</u>	<u>type II belt</u>

## DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTSYear/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorVehicle NHTSA No.: CY5201 Test Date: September 20, 1999POSITION OF IMPACT (MDB) ON MONORAIL:Crabbed 27° to leftMDB DETAILS:

Overall Width of Framework Carriage	= <u>1252</u> mm
Overall Length of MDB (incl. honeycomb impact face)	= <u>4115</u> mm
Wheelbase of Framework Carriage	= <u>2591</u> mm
Tread of Framework Carriage (Front & Rear)	= <u>1880</u> mm
C.G. Location Rearward of Front Axle	= <u>1100</u> mm
C.G. Location From Center Line	= <u>-10</u> mm
C.G. Location Above Ground Level	= <u>477</u> mm

MDB WEIGHT:

Left Front	= <u>458.8</u> kg	Left Rear	= <u>230.3</u> kg
Right Front	= <u>324.4</u> kg	Right Rear	= <u>350.6</u> kg
TOTAL FRONT	= <u>783.2</u> kg	TOTAL REAR	= <u>580.9</u> kg
TOTAL MDB WEIGHT	= <u>1364.1</u> kg		

Impact Angle (MDB C/L to Target Vehicle C/L) = 90° degreesImpact Speed = Primary: 32.9 mph (52.9 kph) Secondary: 32.9 mph (52.9 kph)

DATA SHEET NO. 4  
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door

Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999

VISIBLE DUMMY CONTACT POINTS:

	<u>DRIVER</u>	<u>LEFT REAR SID</u>
Head	<u>to side window and head rest</u>	<u>to C Post</u>
Arm	<u>to door</u>	<u>to door</u>
Pelvis	<u>to door</u>	<u>to armrest</u>
Left Knee	<u>to door</u>	<u>to door</u>
Right Knee	<u>to left knee</u>	<u>to left knee</u>

DOOR OPENING:

	<u>LEFT SIDE</u>	<u>RIGHT SIDE</u>
Front	<u>remained closed</u>	<u>remained closed</u>
Rear	<u>remained closed</u>	<u>remained closed</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

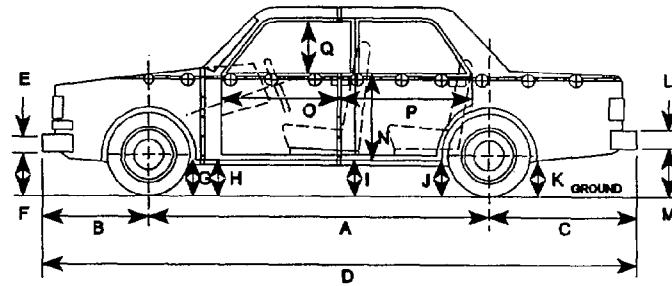
Horizontal: 7 mm forward      Vertical: 0 mm

ARM REST LOCATIONS:

Front: 203 mm from bottom of window

Rear: 230 mm from bottom of window

**DATA SHEET NO. 6**  
**VEHICLE PRE AND POST-TEST MEASUREMENTS**



D = Length at Centerline  
 R = Right Side Length  
 S = Left Side Length  
 T = Width at B Post  
 J1 = To Pinch Weld  
 J2 = To Sill

E & L = Bumper Thickness

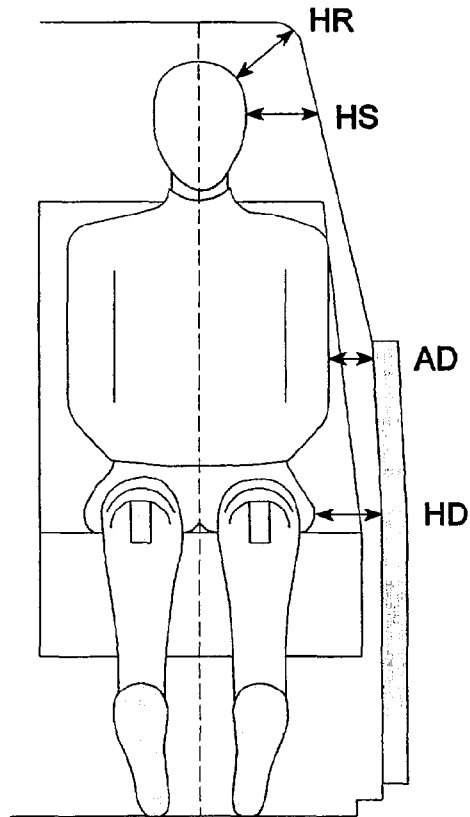
ALL MEASUREMENTS IN (mm)

	PRE-TEST	POST-TEST	Δ CHANGE
A	2750	2718	-32
B	963	940	-23
C	1078	1074	-4
D	4791	4732	-59
E	120	120	0
F	396	410	14
G	183	180	-3
H	191	203	12
I	183	242	59
J1/J2	178/175	184/177	6/2
K	240	249	9
L	215	215	0
M	380	405	25
N	654	565	-89
O	802	762	-40
P	1215	1153	-62
Q	449	422	-27
R	4545	4560	15
S	4545	4487	-58
T	1762	1445	-317

**DATA SHEET NO. 8**  
**SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS**

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door

NHTSA NO.: CY5201 Test Date: September 20, 1999



NOTE: All dimensions are in mm

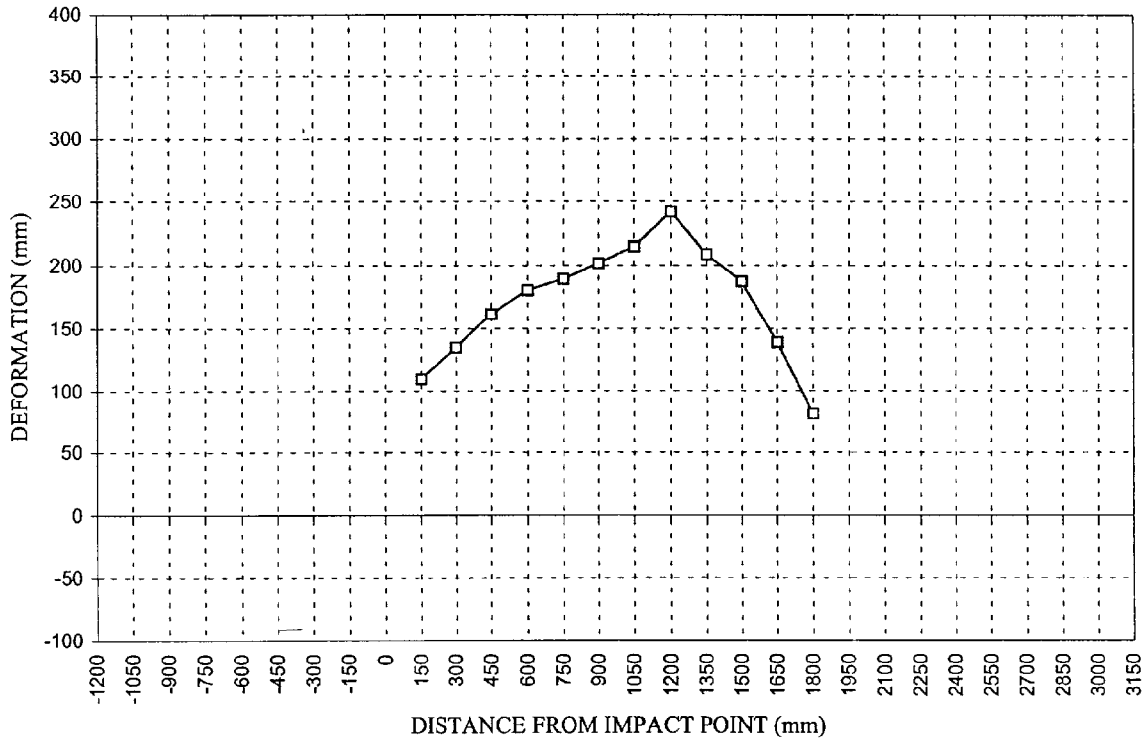
	DRIVER ID #036	REAR PASSENGER ID #037
HR	172	182
HS	298	218
AD	111	125
HD	143	185

DATA SHEET NO. 10  
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	828	938	110
300	827	962	135
450	826	988	162
600	826	1007	181
750	826	1016	190
900	826	1028	202
1050	825	1040	215
1200	823	1065	242
1350	823	1032	209
1500	822	1010	188
1650	823	962	139
1800	823	905	82
1950			
2100			
2250			
2400			

Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 2 - Occupant H Point		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550			
2700	791	814	23
2850	802	821	19
3000	817	832	15
3150	838	850	12

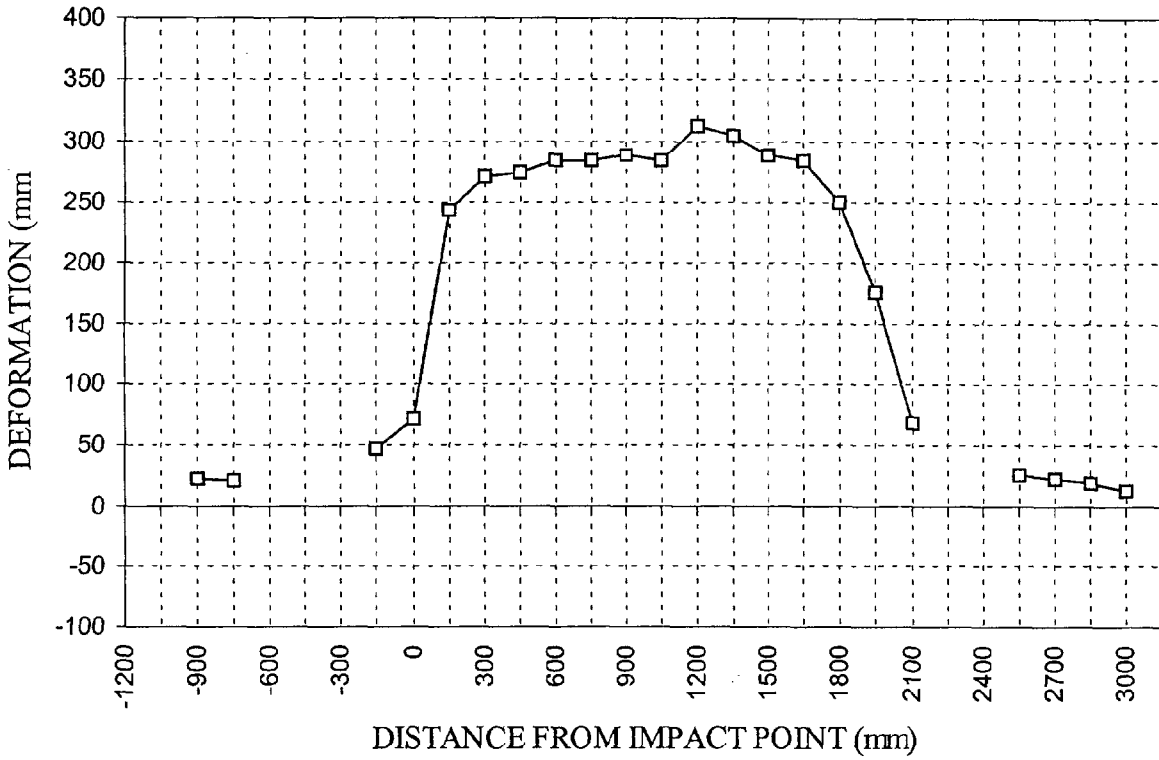
Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 3 - Mid Door		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900	821	844	23
-750	780	801	21
-600			
-450			
-300			
-150	756	803	47
0 (impact point)	767	839	72
150	766	1009	243
300	765	1036	271
450	763	1036	273
600	762	1045	283
750	760	1044	284
900	760	1049	289
1050	759	1042	283
1200	760	1072	312
1350	761	1065	304
1500	760	1048	288
1650	760	1044	284
1800	760	1010	250
1950	762	937	175
2100	747	815	68
2250			
2400			

Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



LEVEL 3 - MID DOOR

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 4 - Window Sill		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
2550	834	865	31
2700	846	874	28
2850	863	885	22
3000	881	898	17
3150	907	919	12

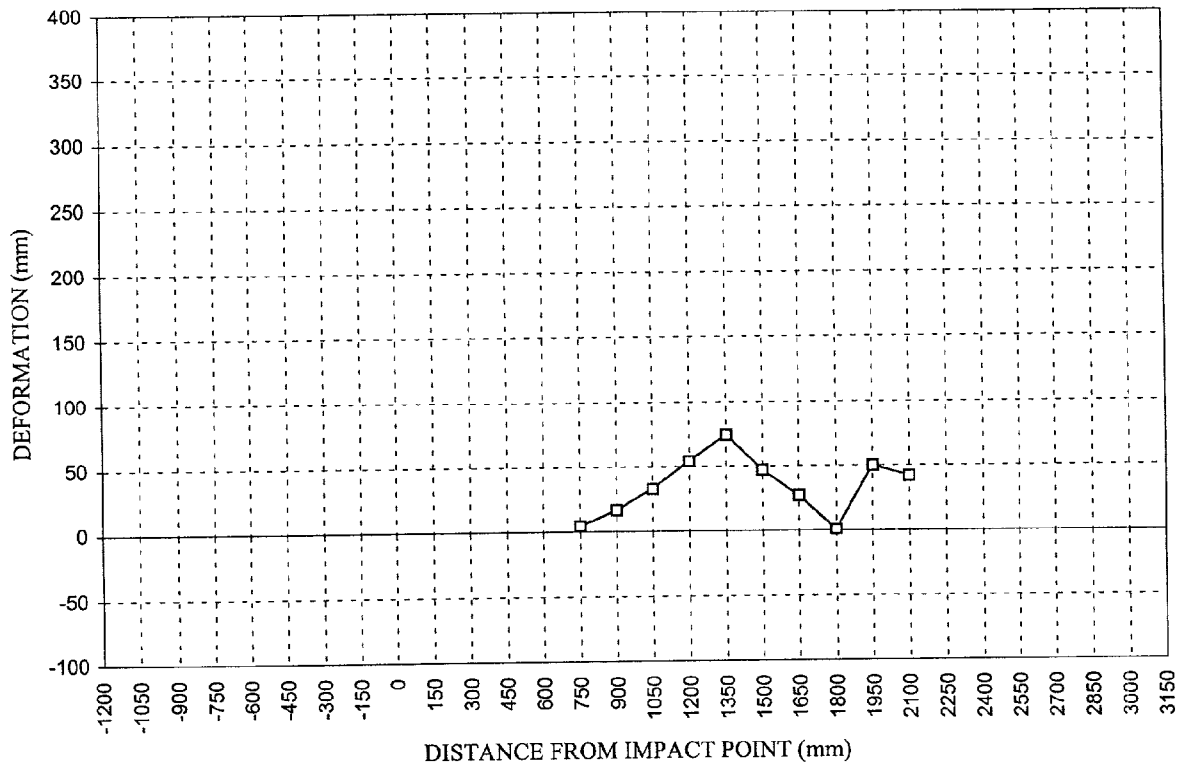
Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

DATA SHEET NO. 10 (Cont'd)  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 5 - Window Top		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	1025	1030	5
900	1023	1040	17
1050	1025	1058	33
1200	1024	1078	54
1350	1023	1097	74
1500	1021	1068	47
1650	1021	1048	27
1800	1024	1025	1
1950	1026	1076	50
2100	1043	1085	42
2250			
2400			

Reference plane is parallel to test vehicle longitudinal centerline.  
Given dimensions = Reference plane to car body

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



LEVEL 5 - WINDOW TOP

DATA SHEET NO. 12  
EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

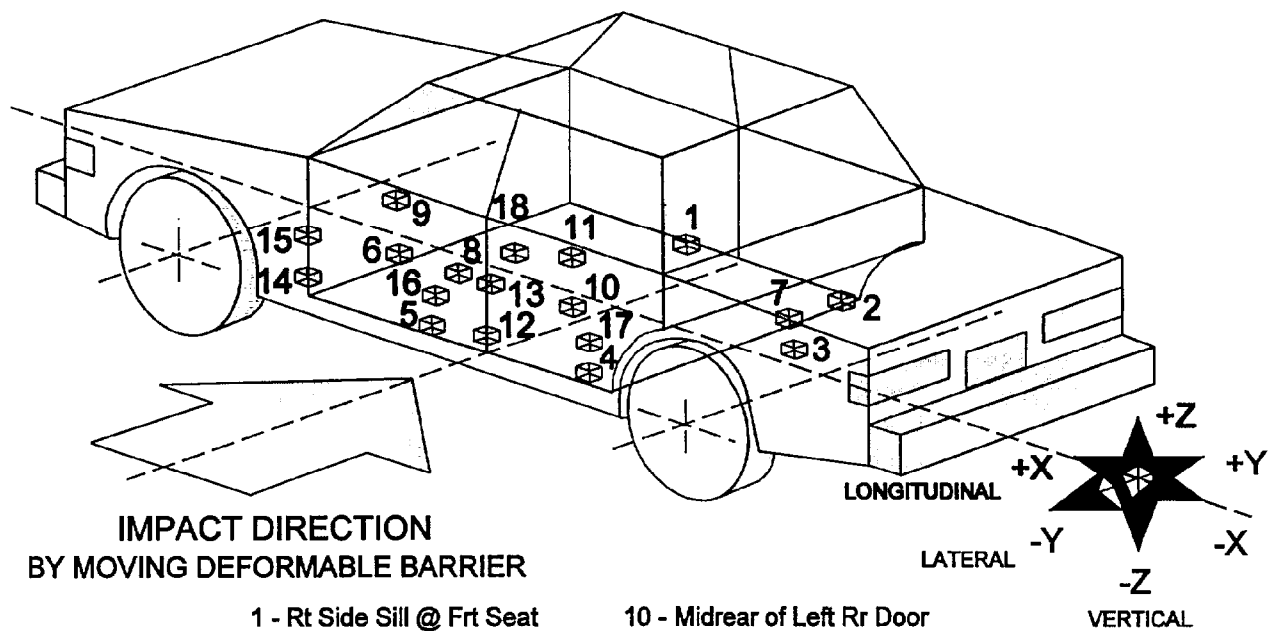
Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door  
Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999

Location	Height at CL*	Distance Right of Center (mm)										Distance Left of Center (mm)									
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800			
Top Stack Level 4	813 mm	28	4	0	1	3	5	10	7	4	4	5	6	7	11	20	38	65	106		
Mid Level Level 3	686 mm	35	15	4	-3	-3	0	8	3	-1	0	1	1	2	7	18	34	78			
Top Bumper Level 2	533 mm	47	12	3	4	8	8	7	4	2	2	3	7	12	15	19	34	49			
Mid Bumper Level 1	432 mm	-152	-105	-63	-20	9	25	20	14	12	9	7	9	15	25	41	56	93			

\* See next page for Barrier Face Graphic

Note: The bumper peeled away from the barrier

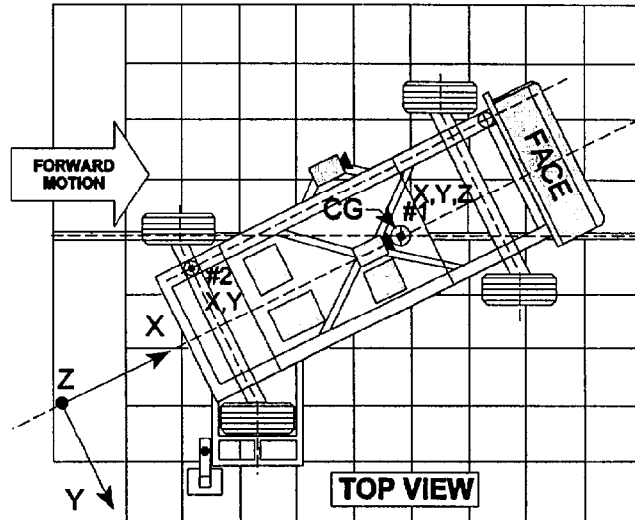
## DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARYYear/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorVehicle NHTSA No.: CY5201 Test Date: September 20, 1999

- |                                 |                              |
|---------------------------------|------------------------------|
| 1 - Rt Side Sill @ Frt Seat     | 10 - Midrear of Left Rr Door |
| 2 - Rt Side Sill @ Rr Seat      | 11 - Left Rr Door Upr C/Line |
| 3 - Rr Floorpan Above Axle      | 12 - Left Lwr B-Post         |
| 4 - Left Side Sill @ Rr Seat    | 13 - Left Middle B-Post      |
| 5 - Left Side Sill @ Frt Seat   | 14 - Left Lwr A-Post         |
| 6 - Left Frt Door on Centerline | 15 - Left Middle A-Post      |
| 7 - Rt Rr Occ Compartment       | 16 - Frt Seat Track          |
| 8 - Midrear of Left Frt Door    | 17 - Rr Seat Track           |
| 9 - Left Frt Door Upr C/Line    | 18 - Vehicle C.G.            |

DATA SHEET NO. 14  
MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 Door  
 Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999



Accel. No.	Description	Coordinates (mm)*			(+ ) Positive		(- ) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.5	118	16.6	38
	Lateral (Y)	---	---	---	0.7	67	7.5	41
	Vertical (Z)	---	---	---	15.0	32	11.2	24
	Resultant (R)	---	---	---	22.1	32	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	2.3	133	20.6	37
	Lateral (Y)	---	---	---	1.6	194	4.0	28

\*Reference: X - Front Axle (+ Forward)  
 Y - Vehicle Centerline (+ To right)  
 Z - Ground Level (+ Up)

## DATA SHEET 16

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATAVehicle Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorVehicle NHTSA No.: CY5201 Test Date: September 20, 1999TEST REQUIREMENTS:

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

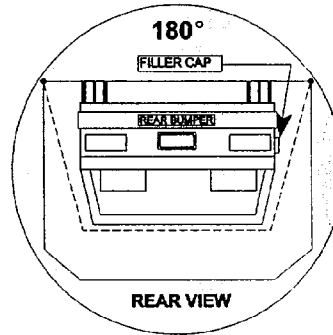
TEST VEHICLE IMPACT TYPE: X Left Side Impact MDB 32.9 mph (52.9 kph)

FUEL SPILLAGE MEASUREMENT:

POST IMPACT TEST	TEST RESULTS	MAXIMUM ALLOWABLE
1. From impact until vehicle motion ceases	0 oz	1 oz
2. For 5 minute period after vehicle motion ceases	0 oz	5 oz
3. For next 25 minutes	0 oz	1 oz./1 min

FUEL SPILLAGE LOCATION(S): None

## DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)Vehicle Year/Make/Model/Body Style: 2000/Nissan/Maxima/4 DoorVehicle NHTSA No.: CY5201 Test Date: September 20, 1999TEST PHASE: 90° - 180°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time = 2 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 secondsTOTAL TIME = 7 minutes 30 secondsNext Whole Minute Interval = 8 minutesFUEL SPILLAGE MEASUREMENT:

90° TO 180° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

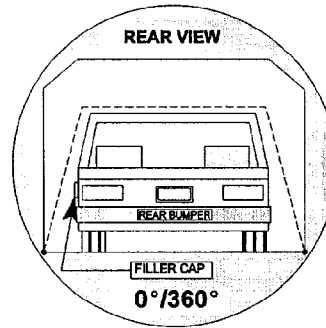
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 2000 Nissan Maxima 4 Door

Vehicle NHTSA No.: CY5201 Test Date: September 20, 1999

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 39 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 39 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

270° TO 360° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0 oz	5 oz
2. Sixth Minute From Onset of Rotation	0 oz	1 oz
3. Seventh Minute From Onset of Rotation	0 oz	1 oz
4. Eighth Minute if Required	0 oz	1 oz

FUEL SPILLAGE LOCATIONS(S): None

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\* No valid data collected

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---

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TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

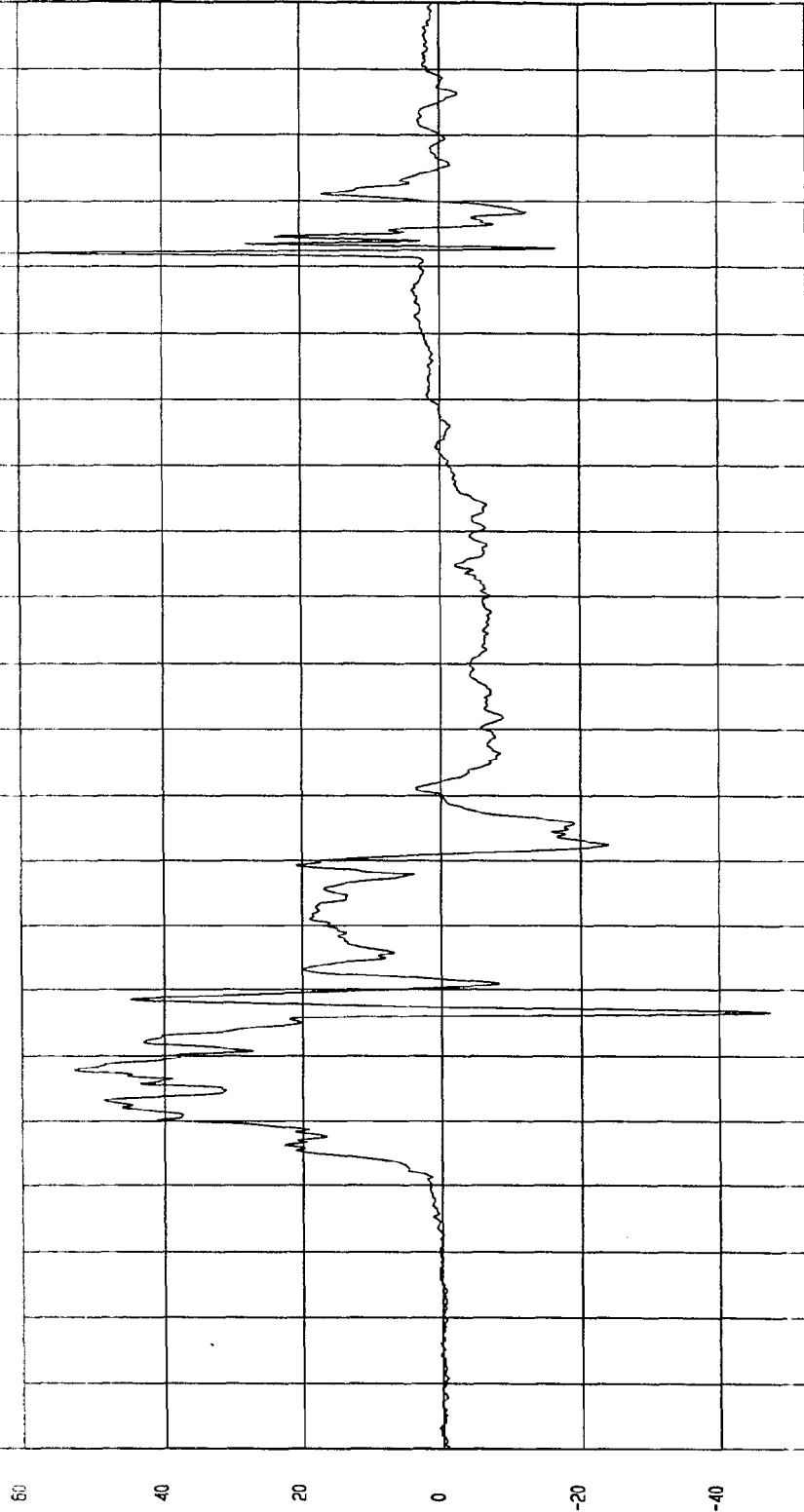
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -47.19 G'S at 47 msec

Maximum = 65.5 G'S at 162 msec

DRIVER UPPER RIB Y ACCELERATION

1 B99063AT.A15 FiltercJass (1000)



TIME (SECONDS)

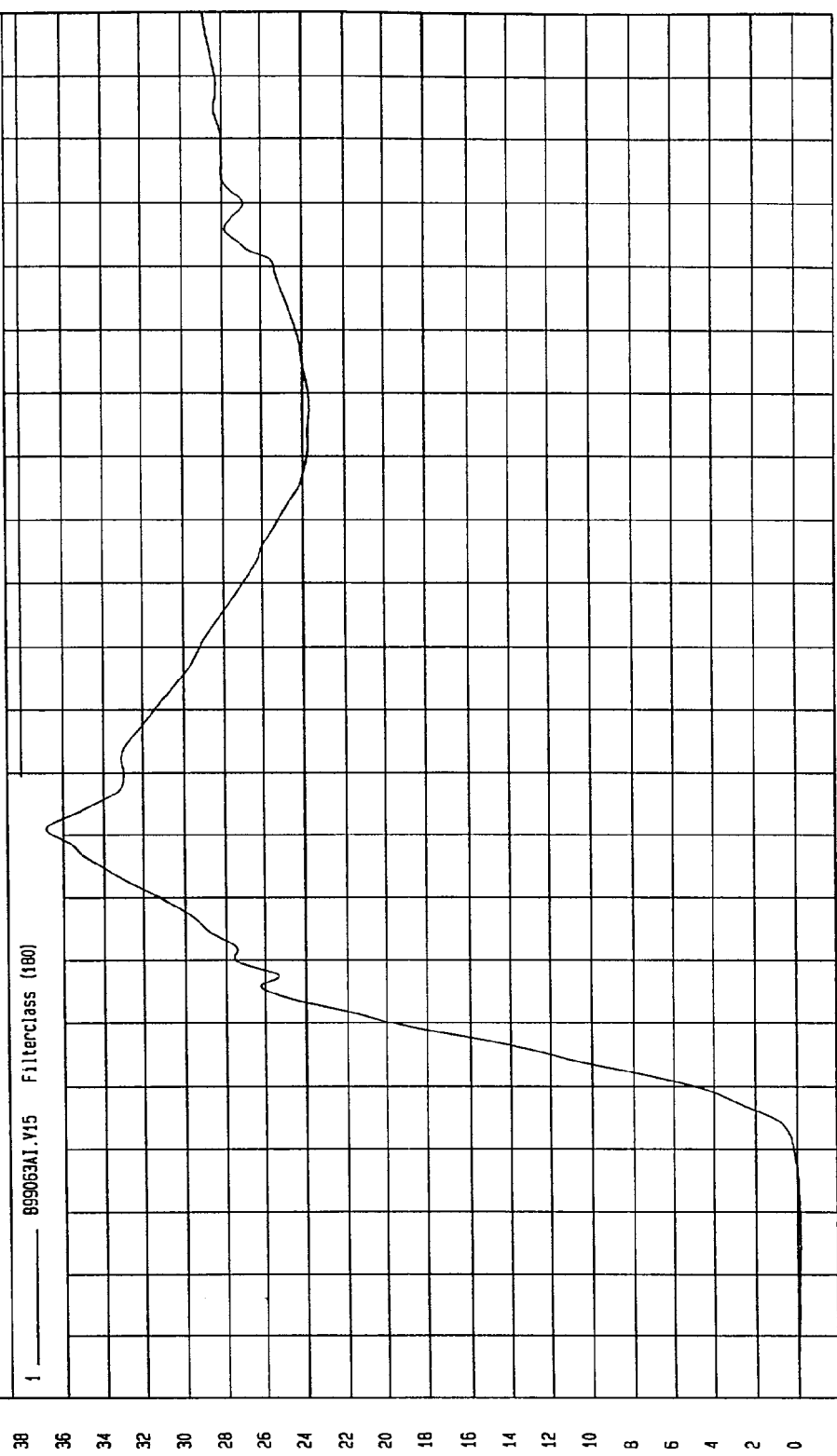
MGA Research  
09-20-1999 16:13

TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -.15 KPH at 5 msec  
Maximum = 36.82 KPH at 71 msec

DRIVER UPPER RIB Y VELOCITY



1 899063A1.V15 Filterclass (180)

TIME Seconds

MCA Research  
09-20-1999 16.13

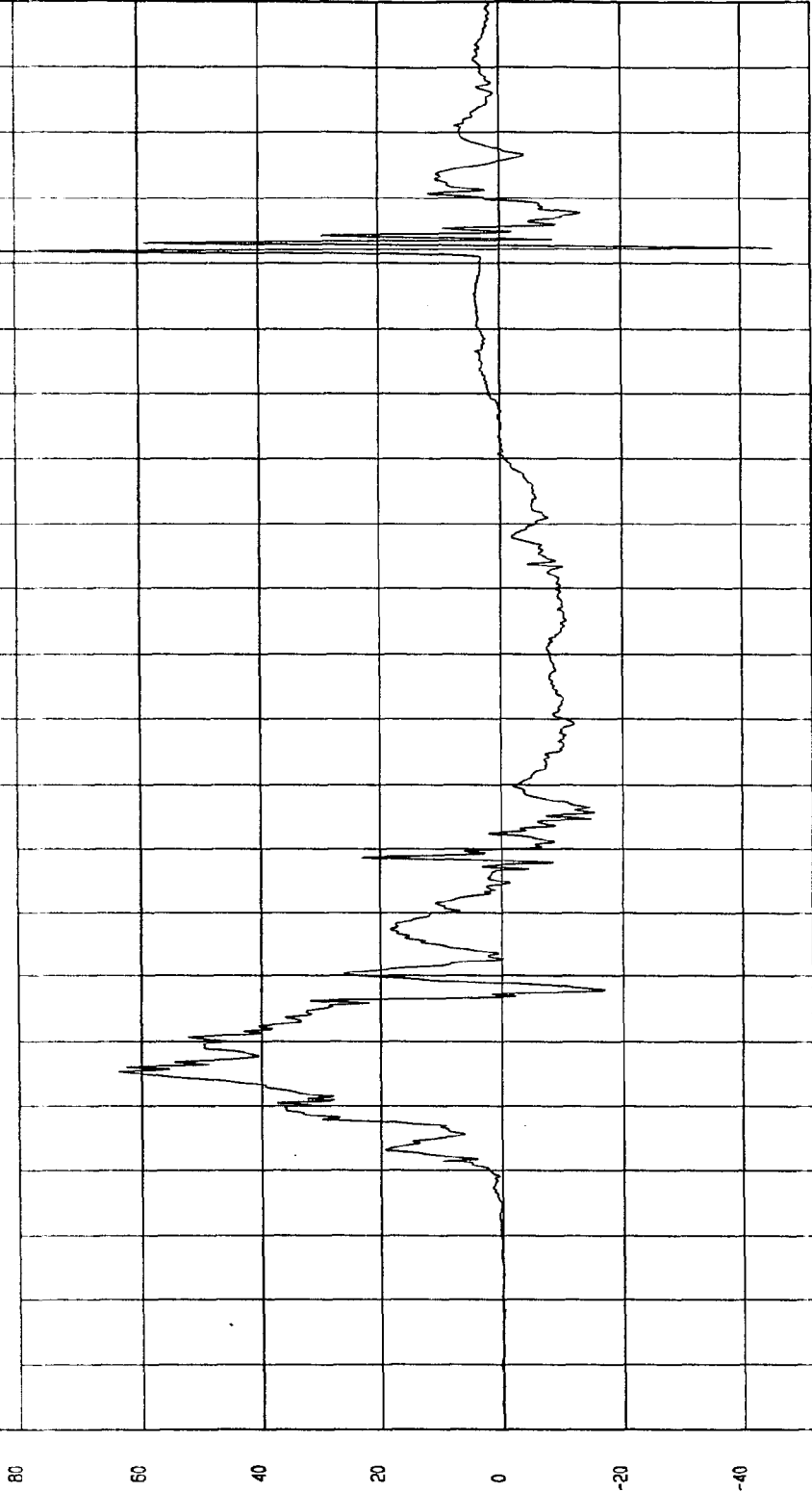
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -45.34 G'S at 162 msec Maximum = 83.29 G'S at 162 msec

DRIVER LOWER RIB Y ACCELERATION

1 899063AT.A16 Filterclass (1000)



TIME (SECONDS)

MCA Research  
09-20-1999 16:13

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

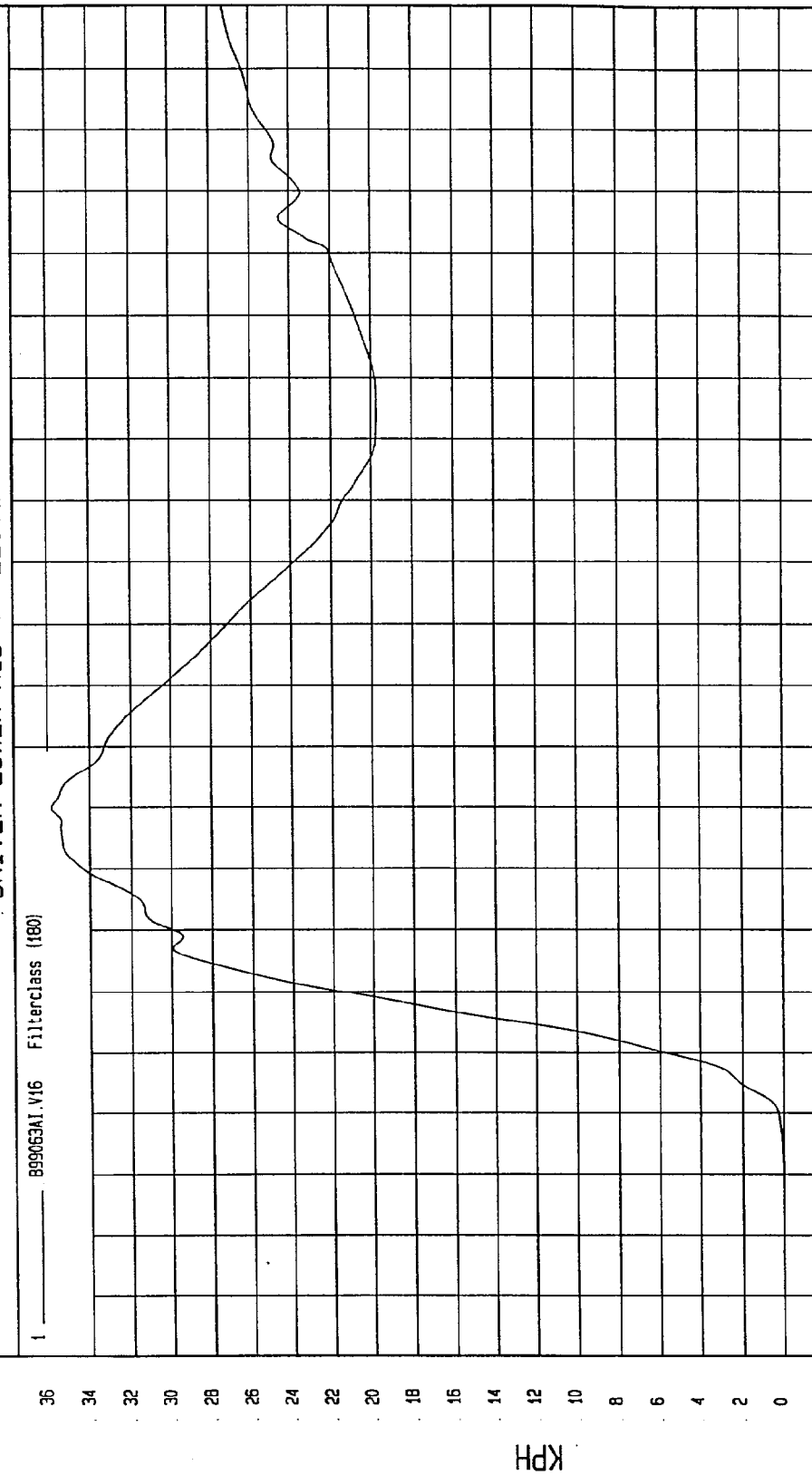
COMPONENT: 2000 NISSAN MAXIMA (CYS201)

Maximum = 35.82 KPH at 70 msec

Minimum = -1.73E-02 KPH at 6 msec

DRIVER LOWER RIB Y VELOCITY

1 899063A1.V16 Filterclass (180)



MSA Research  
09-20-1999 16:13

TIME Seconds

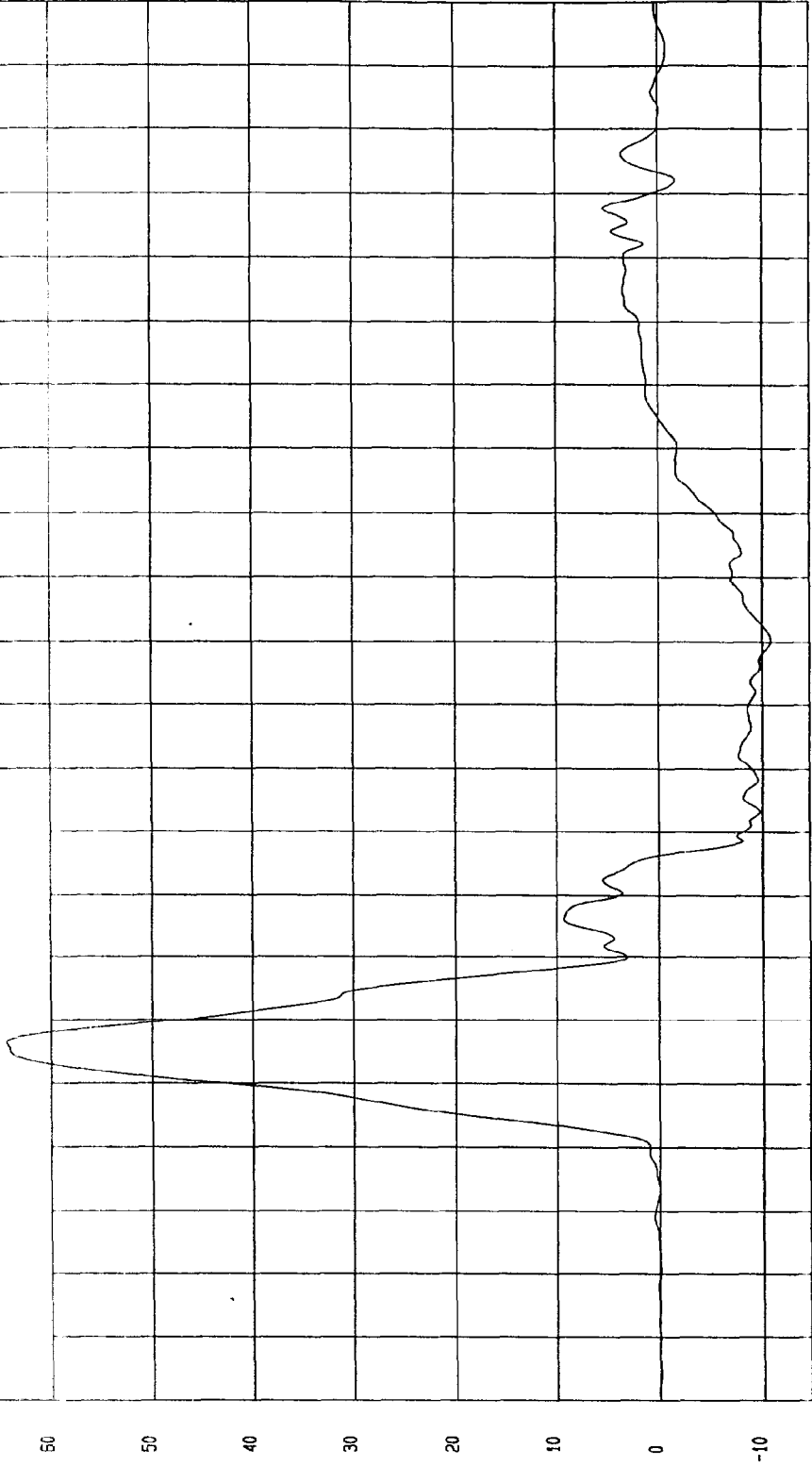
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -10.05 G'S at 100 msec Maximum = 64.3 G'S at 36 msec

DRIVER LOWER SPINE Y ACCELERATION

1 89903MF.A17 Filterclass (f80)



TIME (SECONDS)

MCA Research  
09-20-1999 16.13

G.S

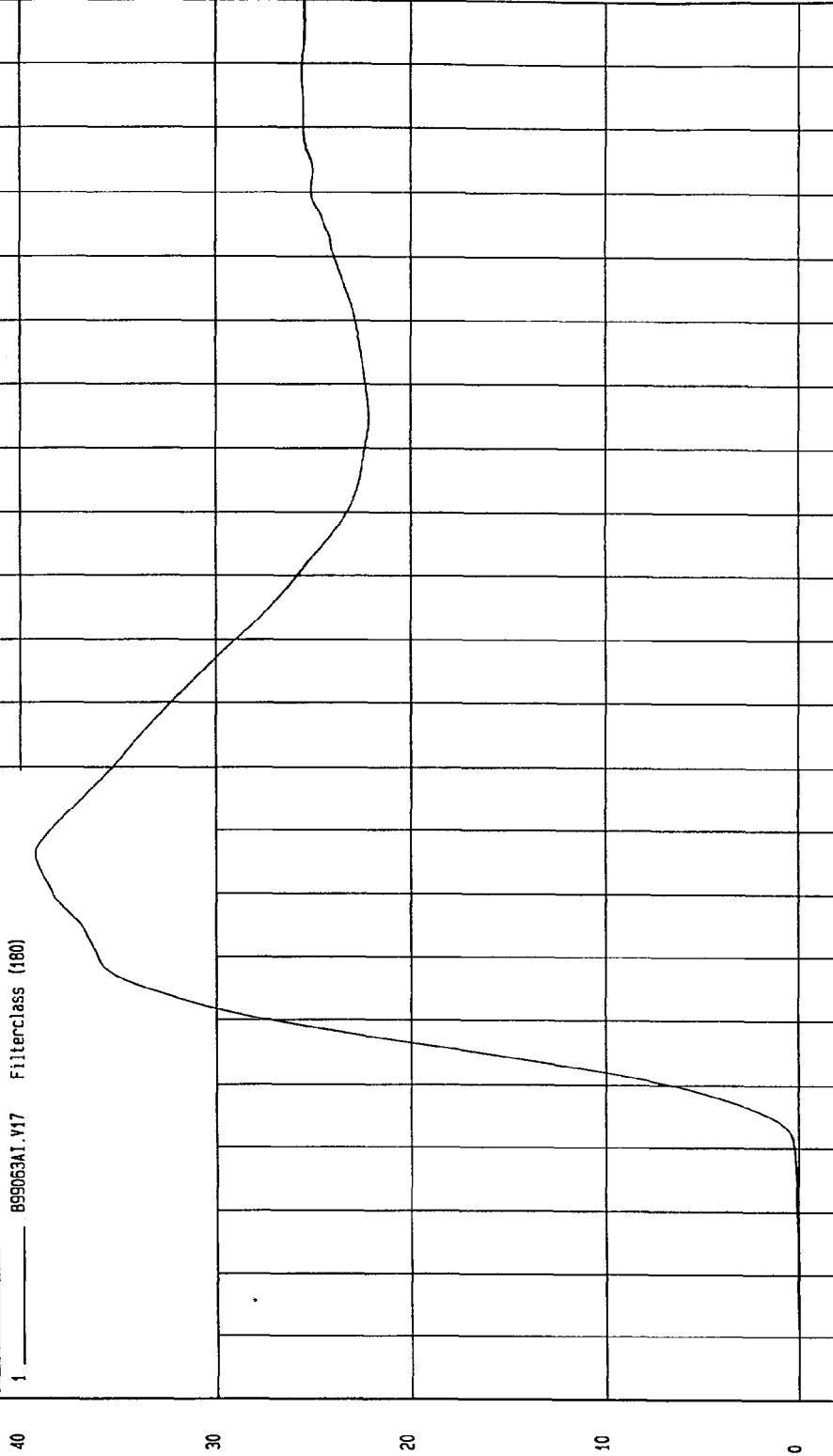
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = 0 KPH at -20 msec  
Maximum = 39.26 KPH at 66 msec

DRIVER LOWER SPINE Y VELOCITY

1 \_\_\_\_\_ 899063A1.V17 Filterclass (180)

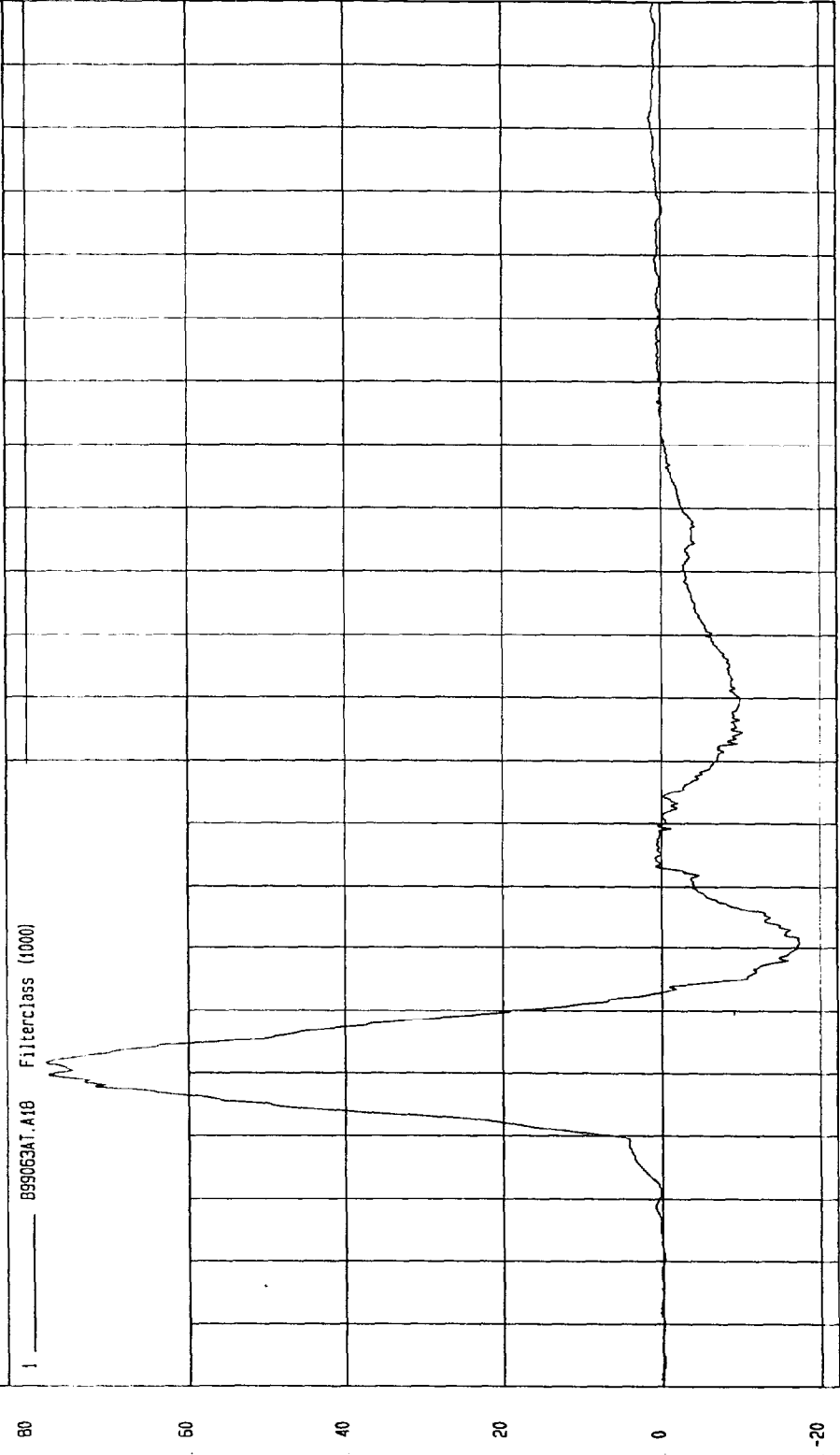


TIME Seconds  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1  
0  
-1  
-2

MEA REPORT  
09-20-1999 16:14

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH  
Minimum = -17.4 G'S at 51 msec Maximum = 77.83 G'S at 32 msec

DRIVER PELVIS Y ACCELERATION



NSA Research  
09-20-1999 16:14

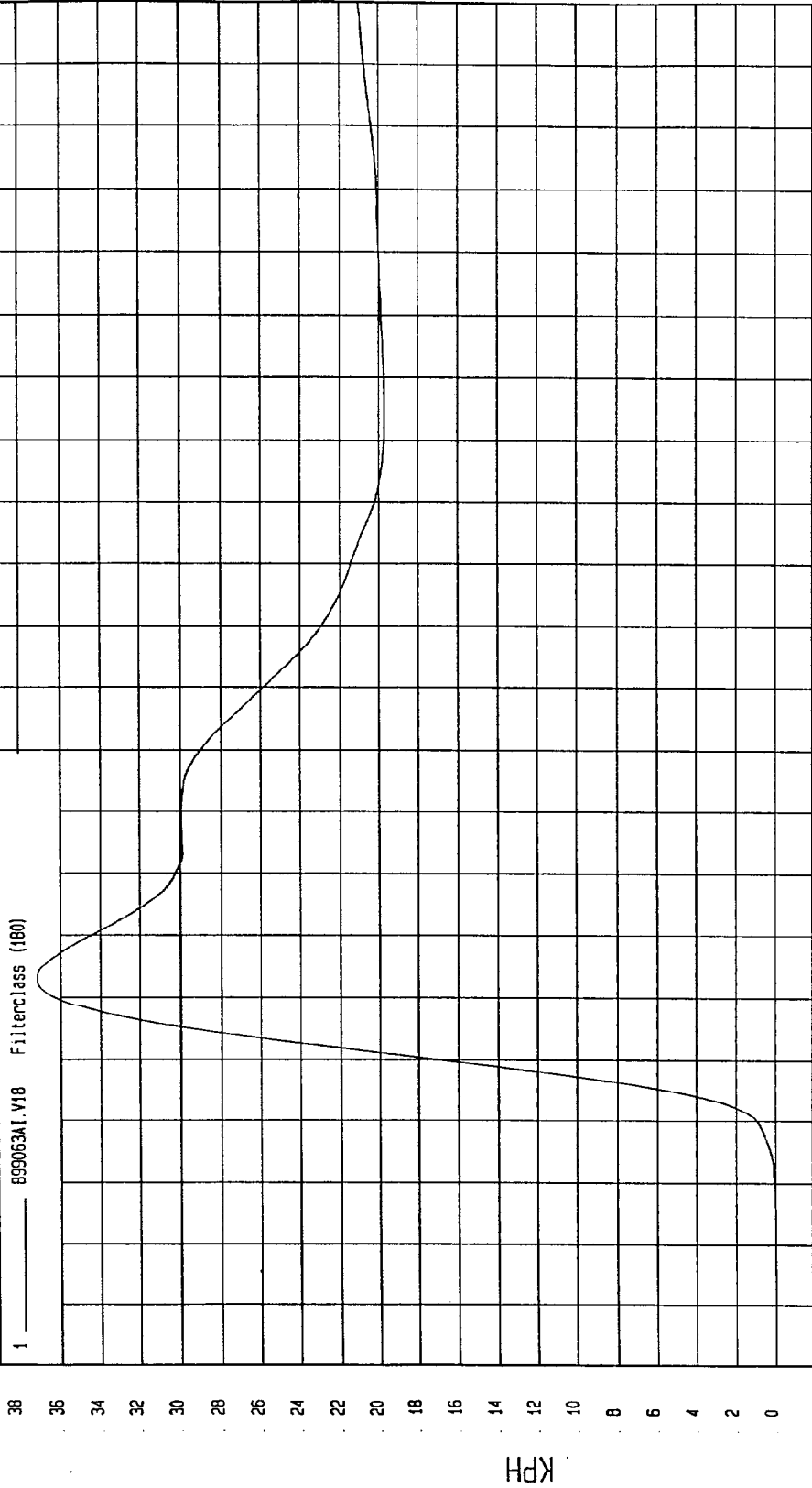
G.S

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -1.08E-02 KPH at -9 msec  
Maximum = 37.14 KPH at 43 msec

DRIVER PELVIS Y VELOCITY



MSA Research  
09-20-1999 16:14

TIME Seconds

KPH

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

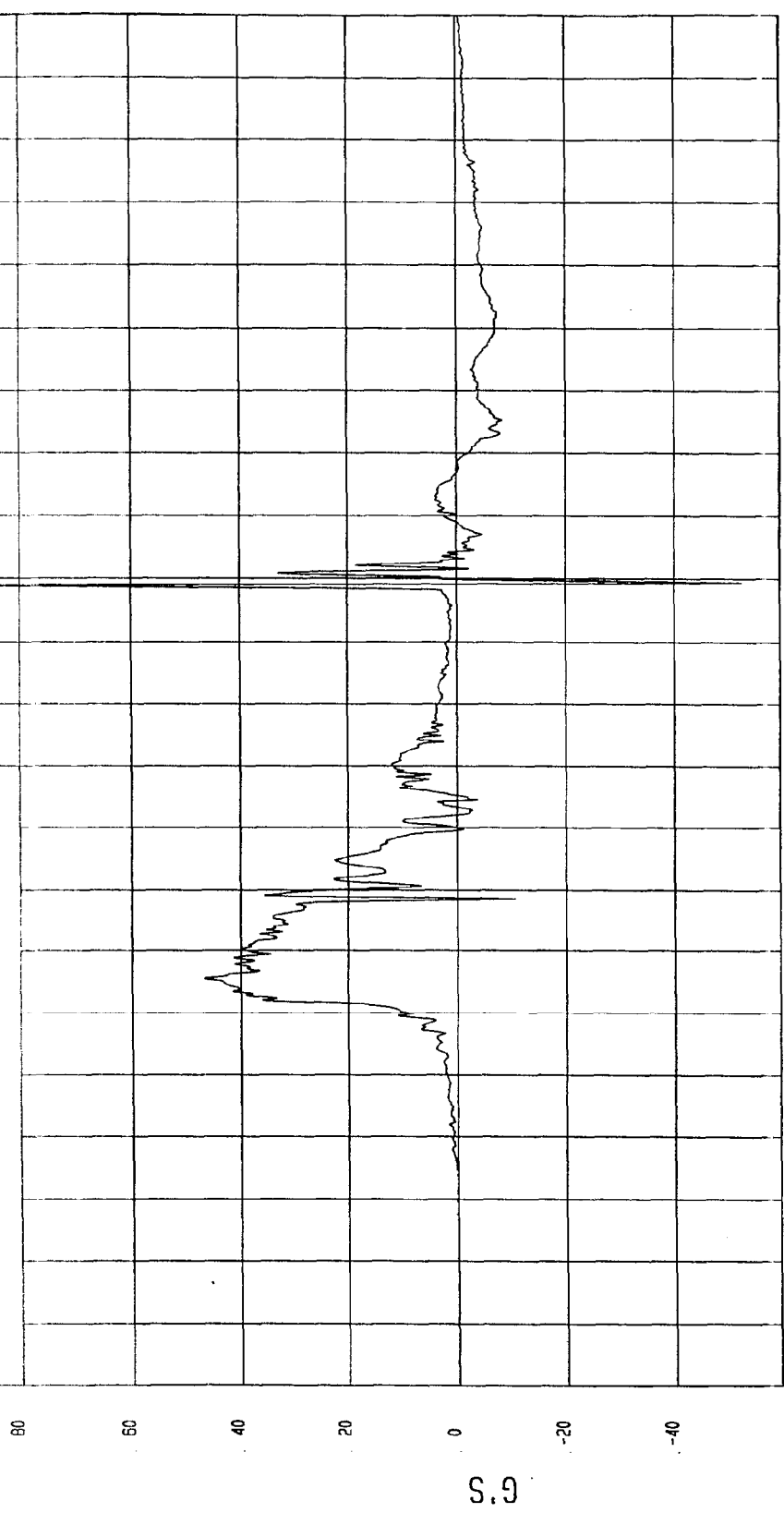
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 84.94 G'S at 109 msec

Minimum = -52.28 G'S at 109 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

099063AT.A25 Filterclass (1000)



MGA Research  
09-20-1999 16.14

TIME (SECONDS)

G'S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

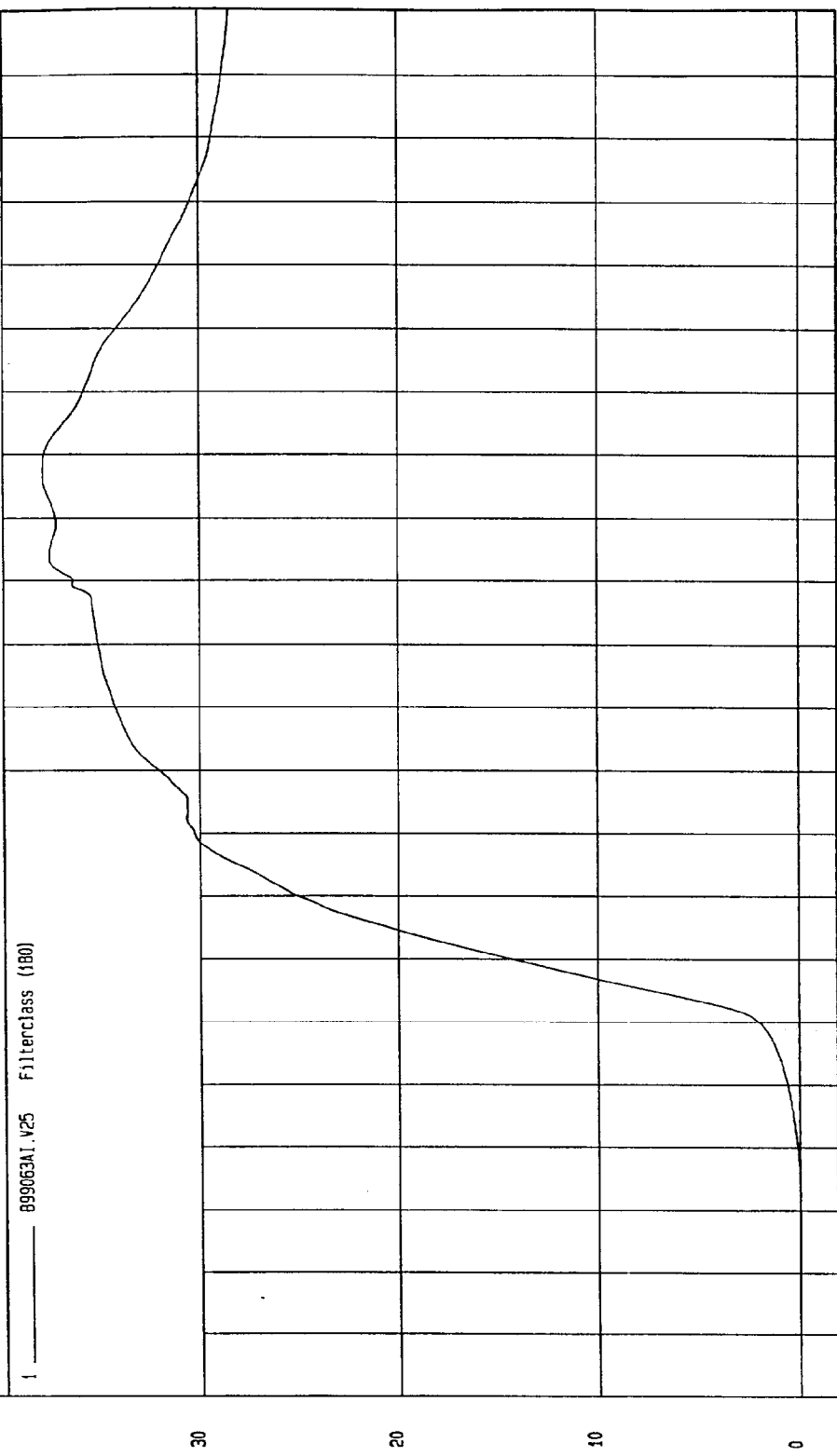
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Minimum = -5.20E-02 KPH at 5 msec

Maximum = 37.72 KPH at 127 msec

REAR PASSENGER UPPER RIB Y VELOCITY

1 899063A1.V25 Filterclass (180)



TIME Seconds

MOA Research  
09-20-1999 16:14

KPH

TEST: FMVSS 214 DYNAMIC

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

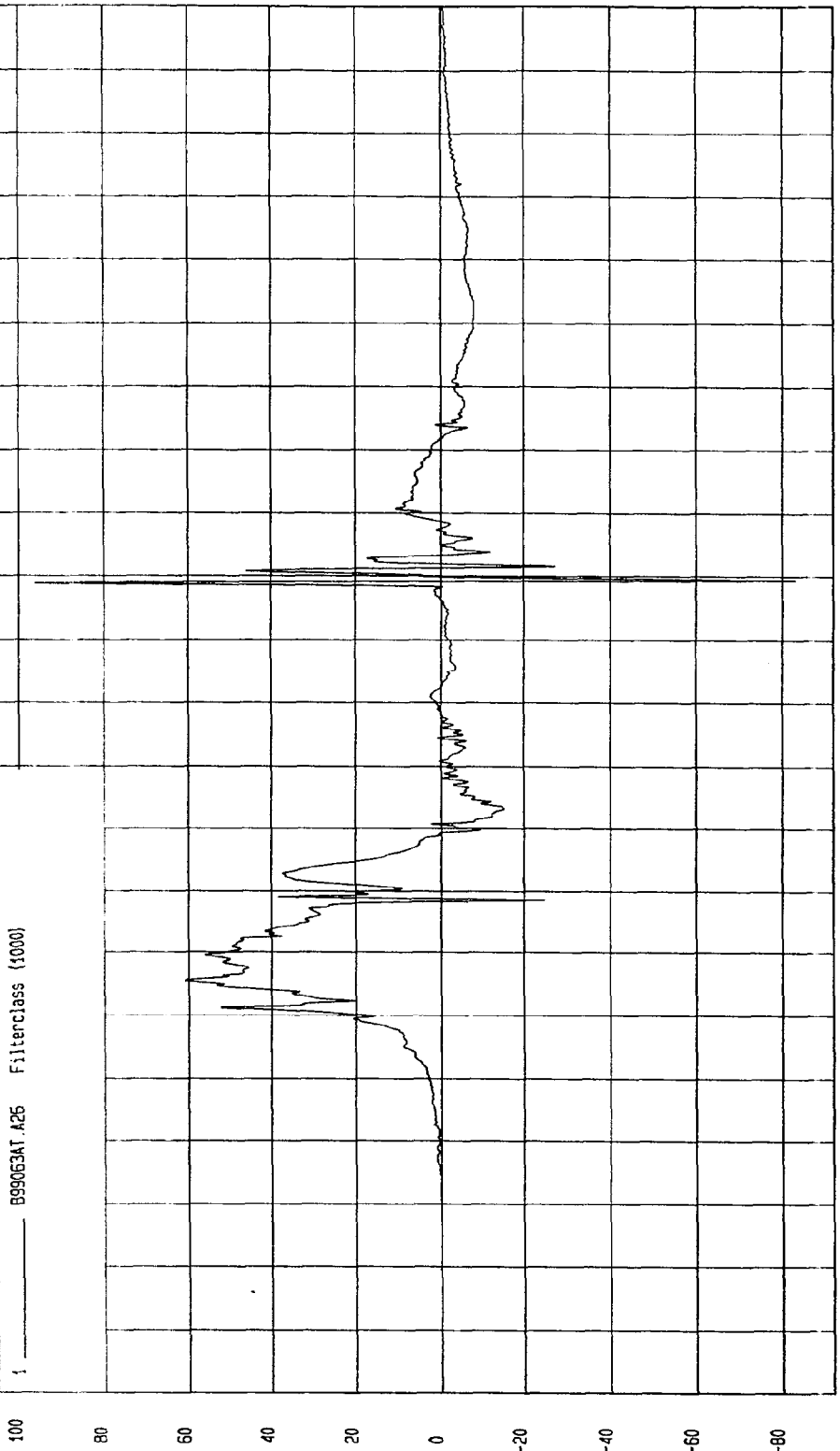
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 96.3 G'S at 109 msec

Minimum = -83.01 G'S at 109 msec

REAR PASSENGER LOWER RIB Y ACCELERATION

1 899053AT.A26 Filterclass (1000)



TIME (SECONDS)

0.19  
0.18  
0.17  
0.16  
0.15  
0.14  
0.13  
0.12  
0.11  
0.1  
0.09  
0.08  
0.07  
0.06  
0.05  
0.04  
0.03  
0.02  
0.01  
0  
-0.01  
-0.02

MCA Research  
09-20-1999 16:14

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

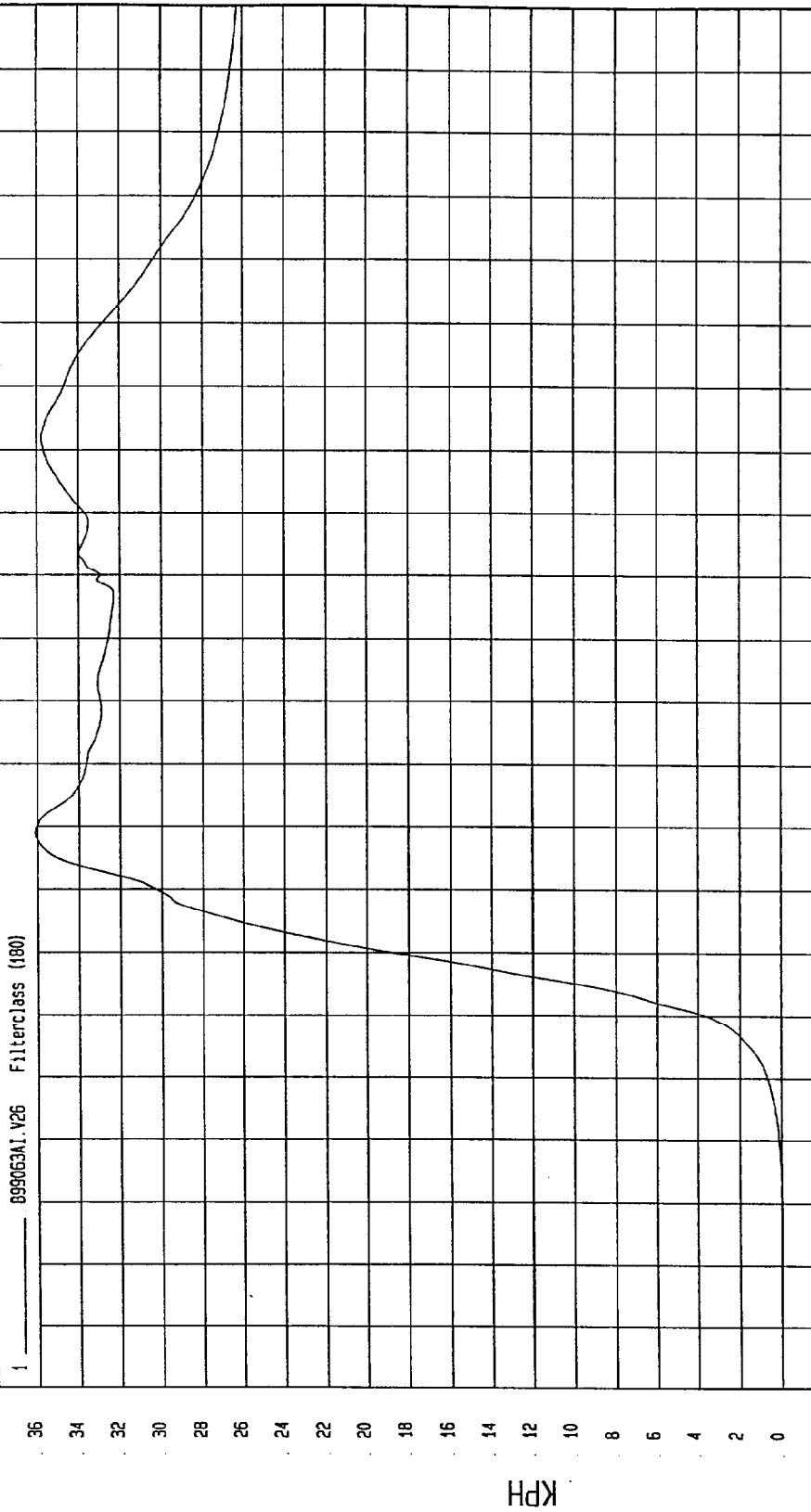
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 36.13 KPH at 69 msec

Minimum = -3.84E-02 KPH at 0 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 099063A1.V26 Filterclass (180)



MCA Research  
09-20-1999 16.14

TIME Seconds

TEST: FMVSS 214 DYNAMIC

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

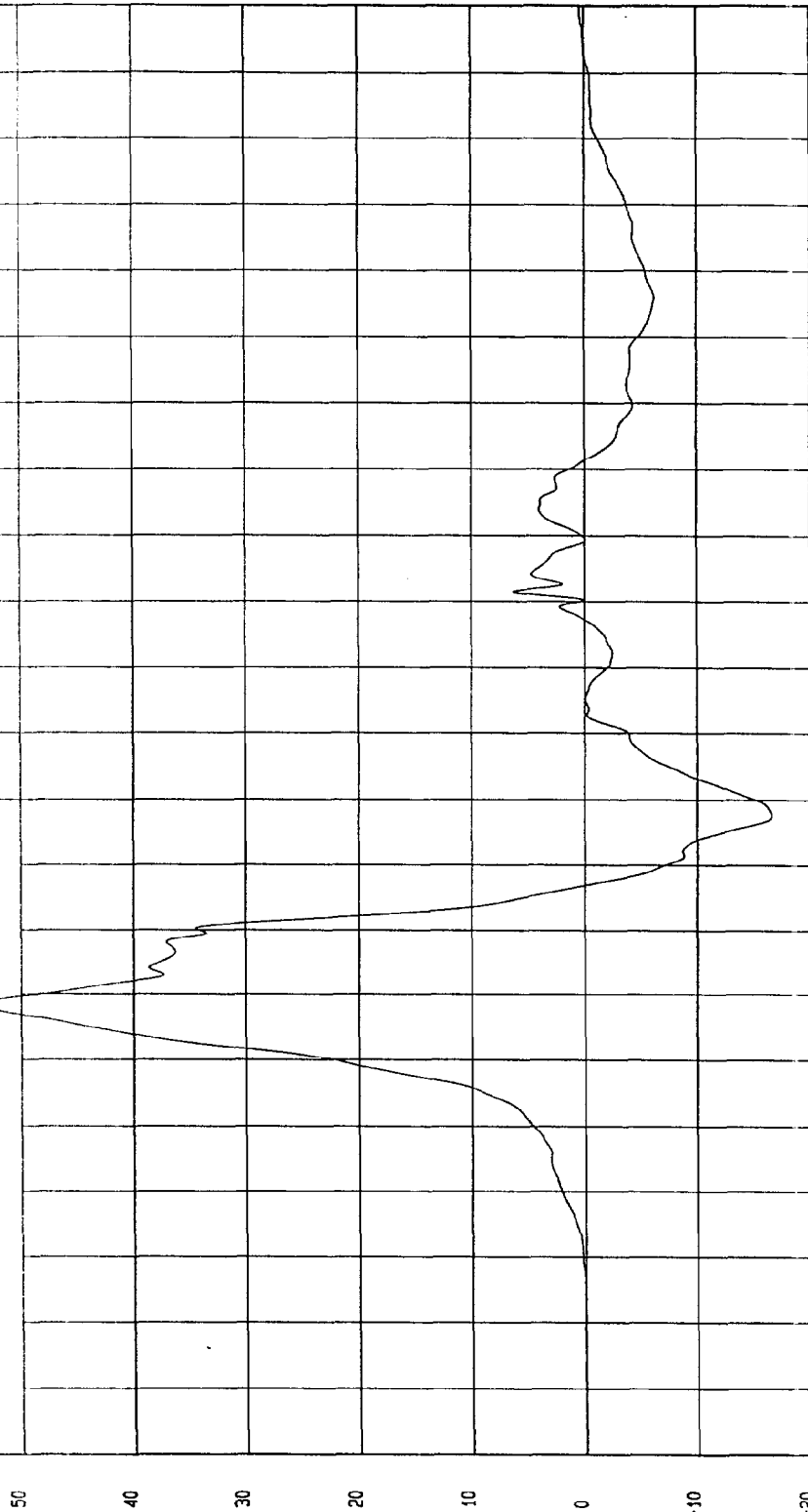
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 53.44 G'S at 48 msec

Minimum = -16.56 G'S at 78 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 ——— 899053AF.A27 Filterclass (180)



MGA Research  
09-20-1999 16:14

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

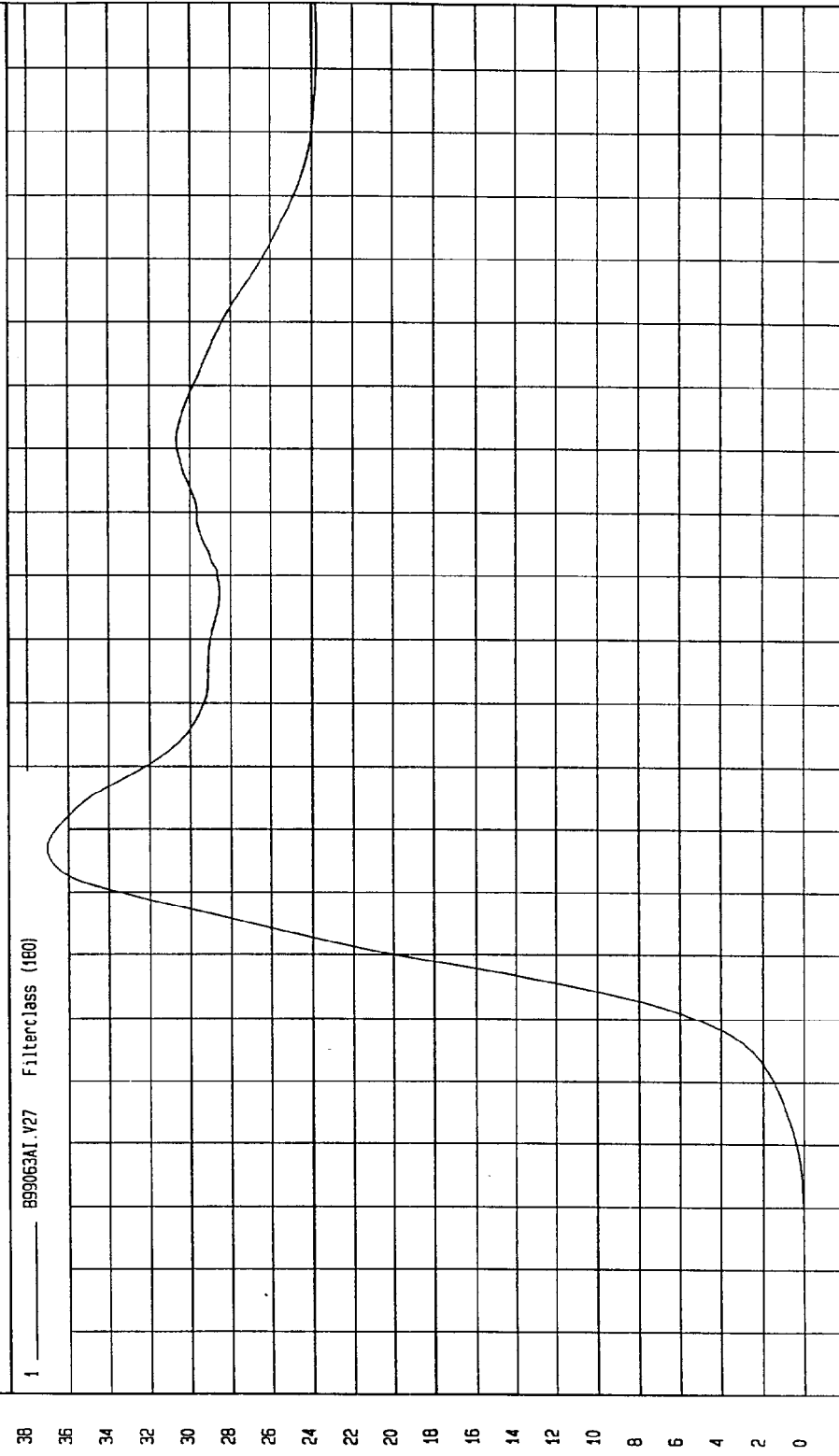
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 37.05 KPH at 67 msec

Minimum = 0 KPH at -20 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 ——— 899063A1.V27 Filterclass (180)



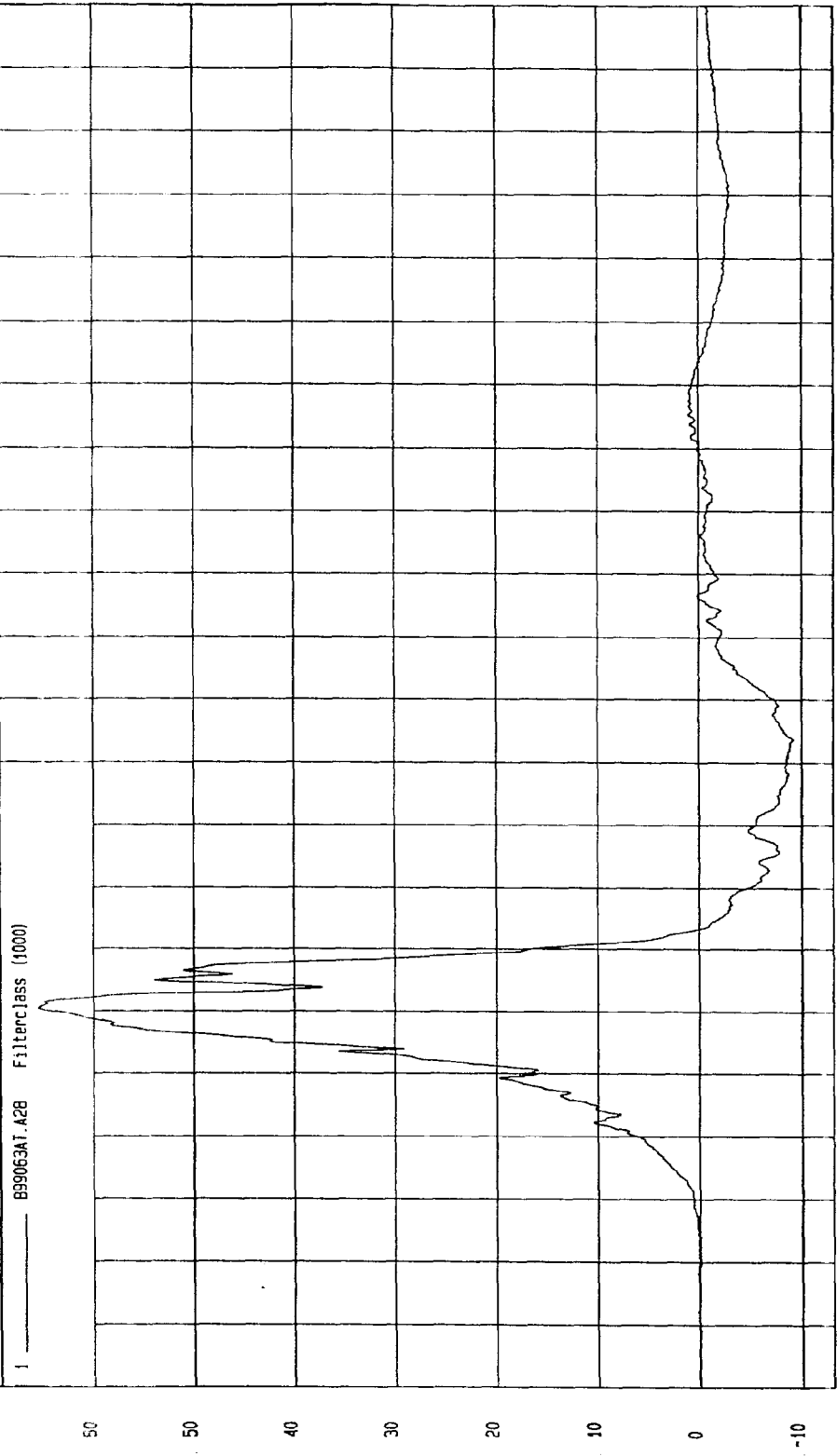
TIME Seconds

MGA Research  
09-20-1999 16:14

TEST: FMVSS 214 DYNAMIC      TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201)      Speed: 32.9 MPH 52.9 KPH

Minimum = -9.25 G'S at 84 msec      Maximum = 65.38 G'S at 40 msec

REAR PASSENGER PELVIS Y ACCELERATION



TIME (SECONDS)

MSA Research  
09-20-1999 16:14

G.S

TEST: FMVSS 214 DYNAMIC

TEST DATE: 09-20-1999

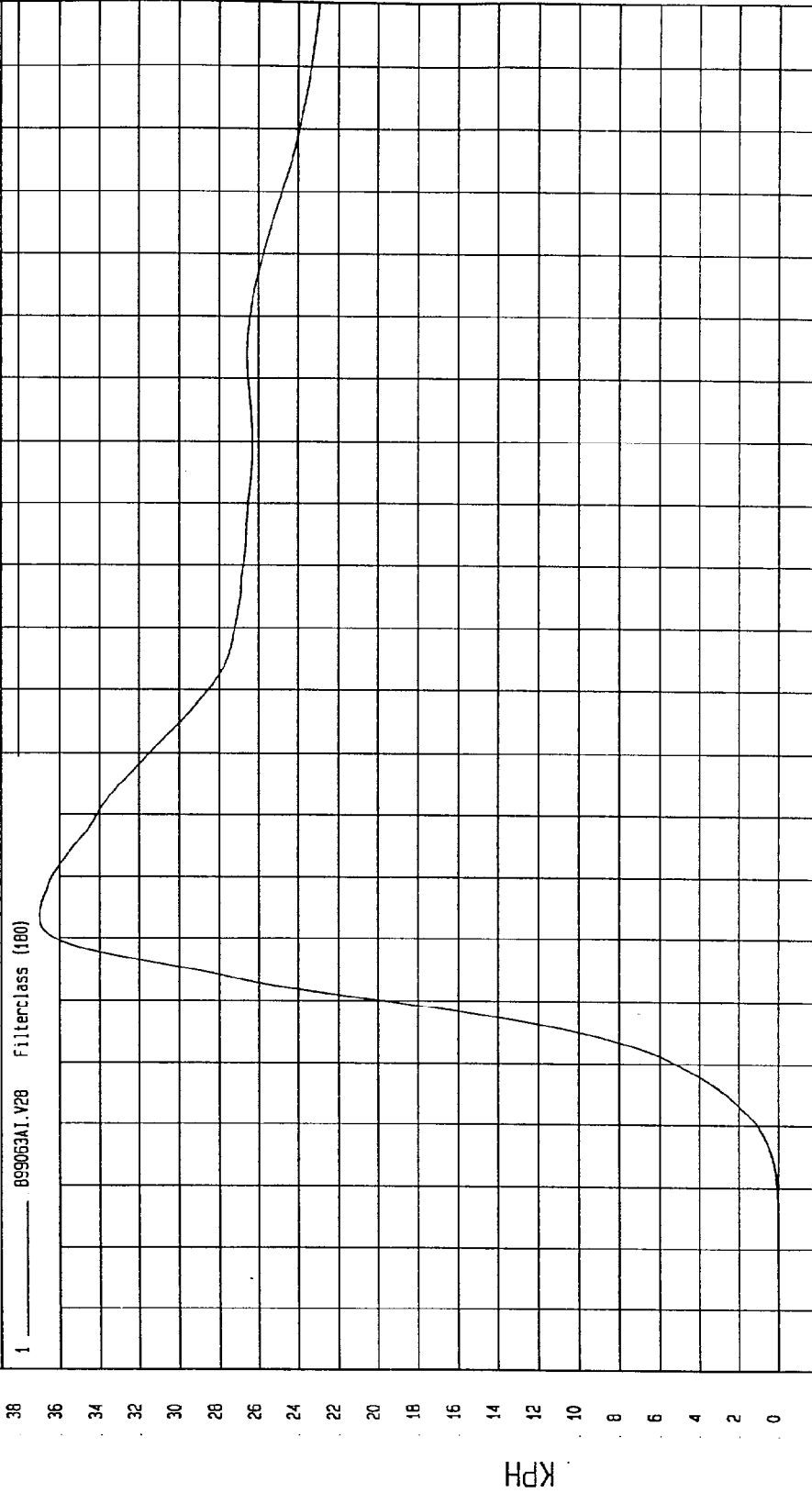
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Speed: 32.9 MPH 52.9 KPH

Minimum = 0 KPH at -20 msec

Maximum = 36.99 KPH at 53 msec

REAR PASSENGER PELVIS Y VELOCITY



MSA Research  
09-20-1999 16:14

TIME Seconds

KPH

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 3.28 G'S at 31 msec

Minimum = -6.33 G'S at 14 msec

RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

1 \_\_\_\_\_ B990634F.A32 Filterclass (60)

2

0

-2

-4

-6

G.S

19

18

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08

07

06

05

04

03

02

01

0

-01

-02

TIME (SECONDS)

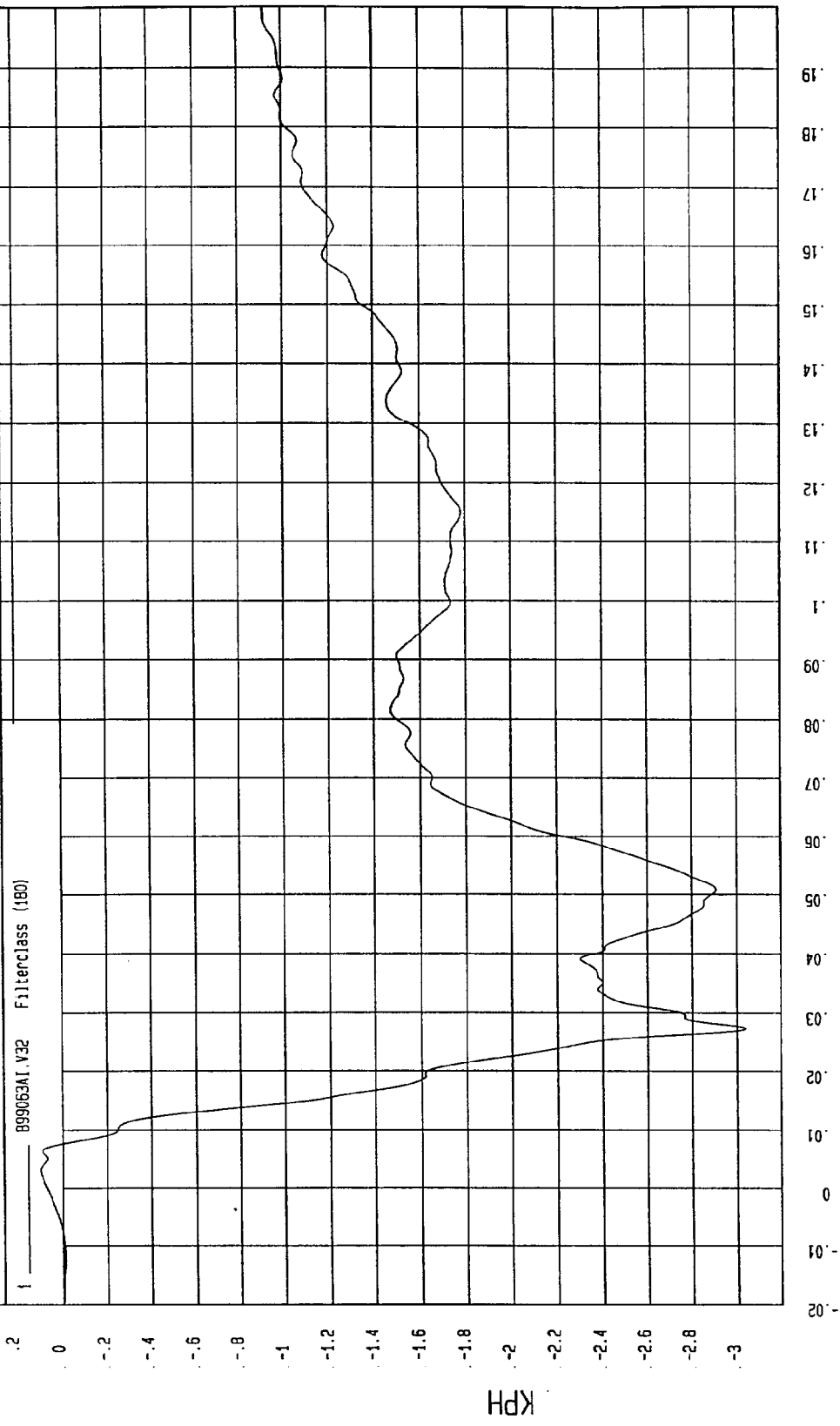
WPA Research  
09-20-1999 16:10

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -3.04 KPH at 27 msec Maximum = 9.69E-02 KPH at 3 msec

RIGHT SIDE SILL AT FRONT SEAT X VELOCITY



MCA Research  
09-20-1999 16:10

TIME Seconds

KPH

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

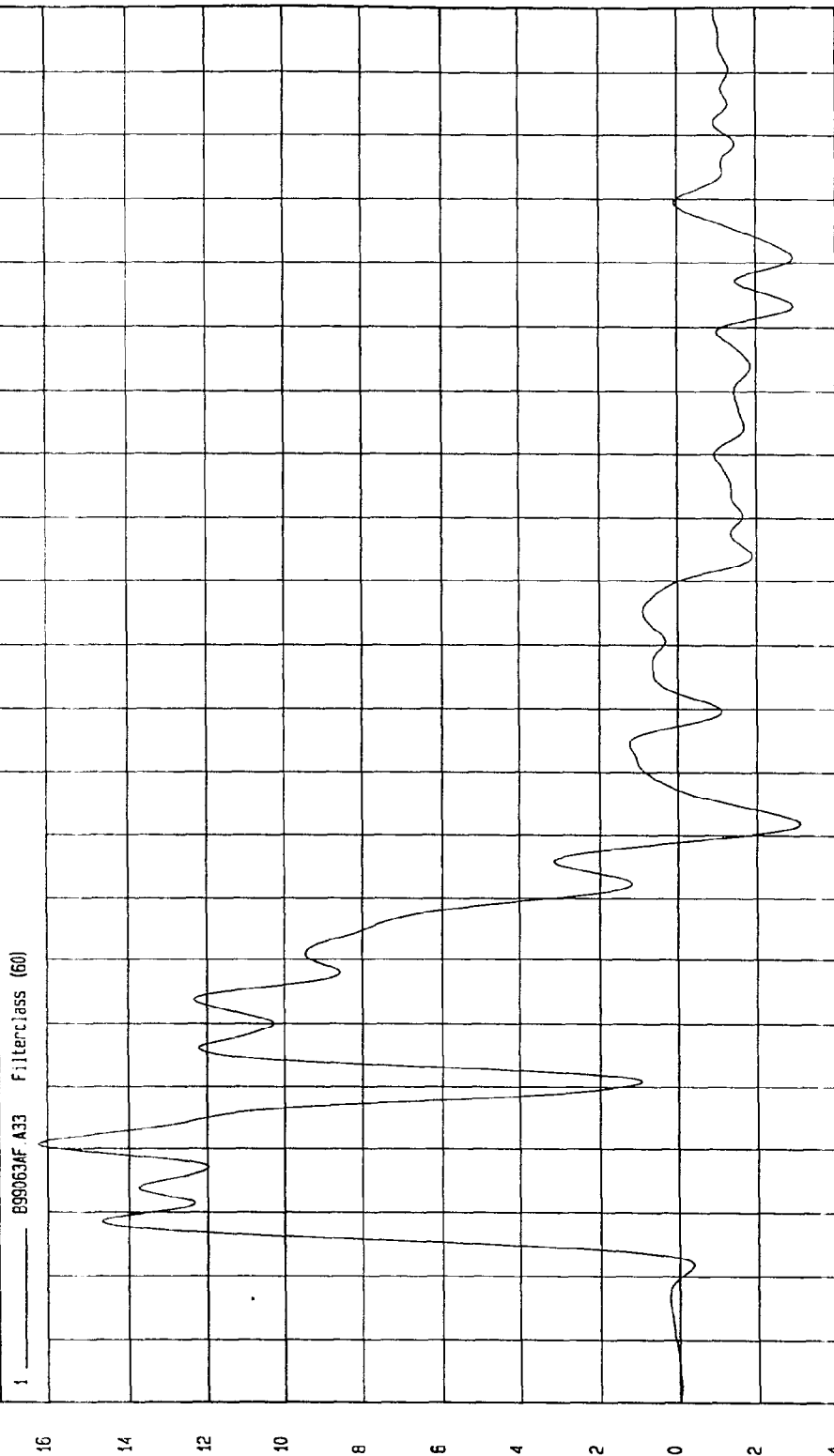
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 16.22 G'S at 21 msec

Minimum = -3.07 G'S at 72 msec

RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 \_\_\_\_\_ 899063AF A33 Filterclass (60)



MEA Research  
09-20-1999 16:10

TIME (SECONDS)

G.S

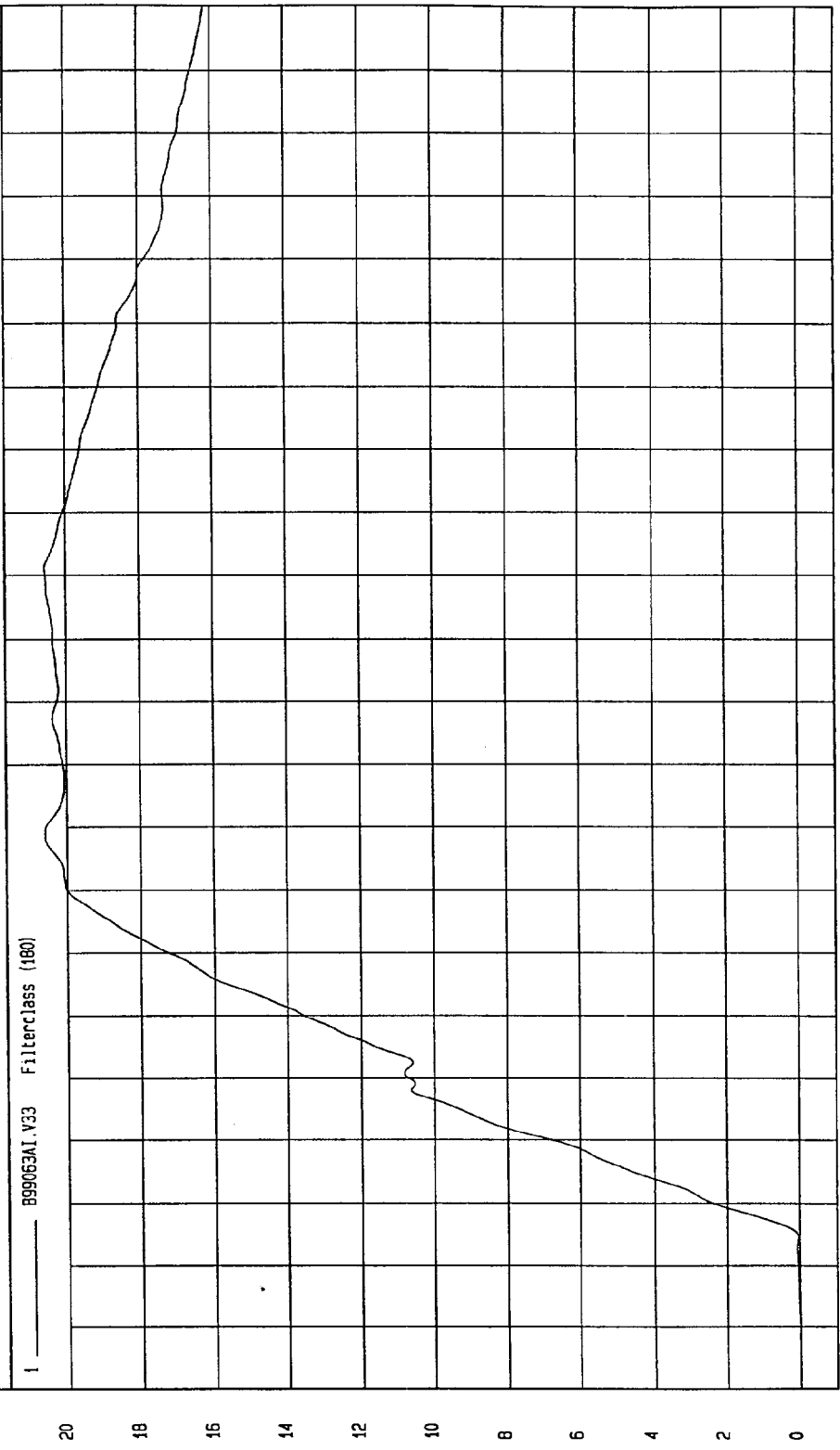
TEST DATE: 09-20-1999  
Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC  
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Minimum = -9.02E-03 KPH at -15 msec  
Maximum = 20.6 KPH at 69 msec

RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY

1 ——— 899063A1.V33 Filterclass (180)



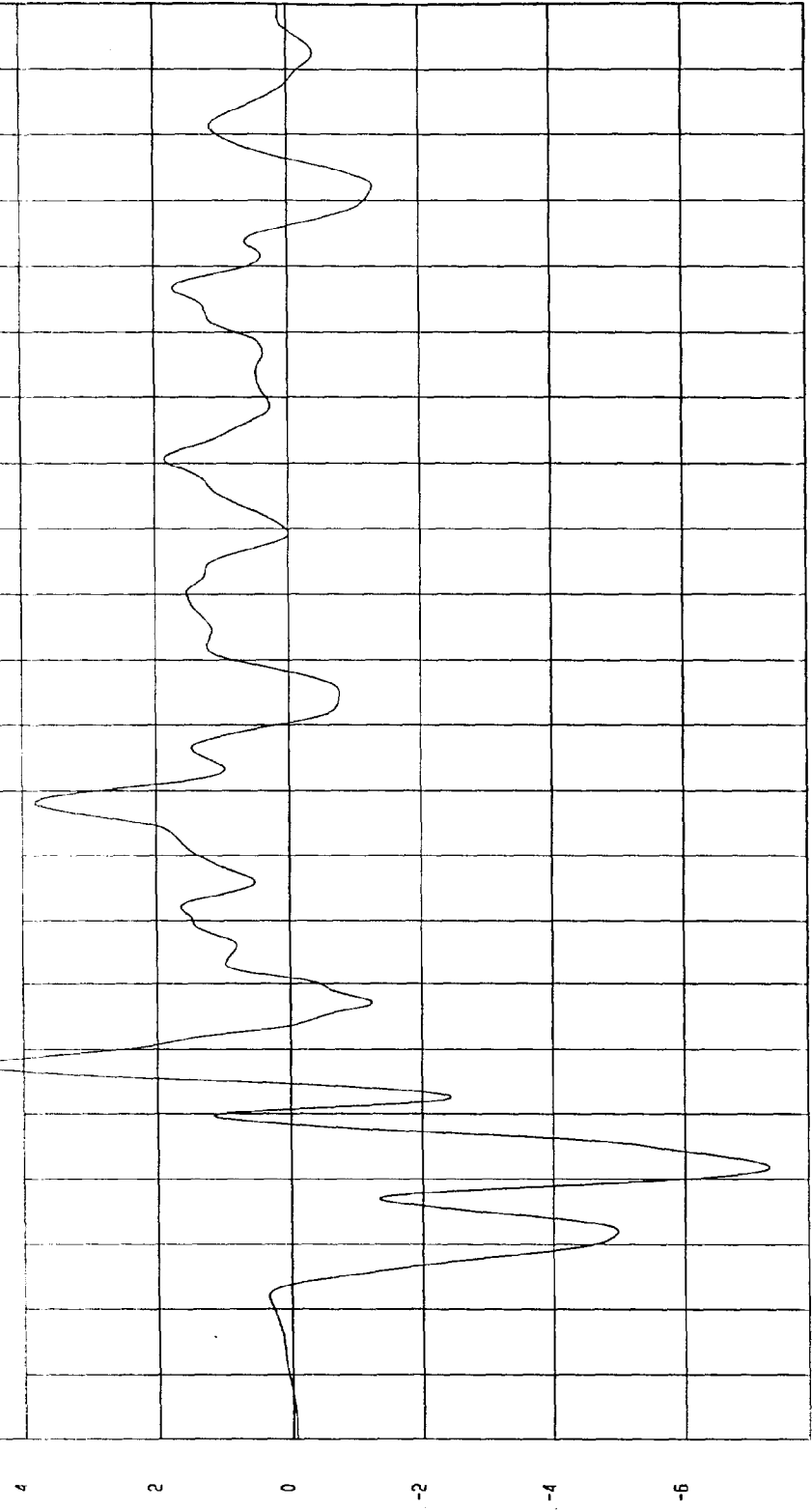
TIME Seconds  
MSA Research  
09-20-1999 16:10

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -7.28 G'S at 22 msec Maximum = 4.58 G'S at 38 msec

RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

1 899053AF.A34 FilterClass (60)



TIME (SECONDS) 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0 -0.01 -0.02

WDA Research CT  
09-20-1999 16:10

G.S

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

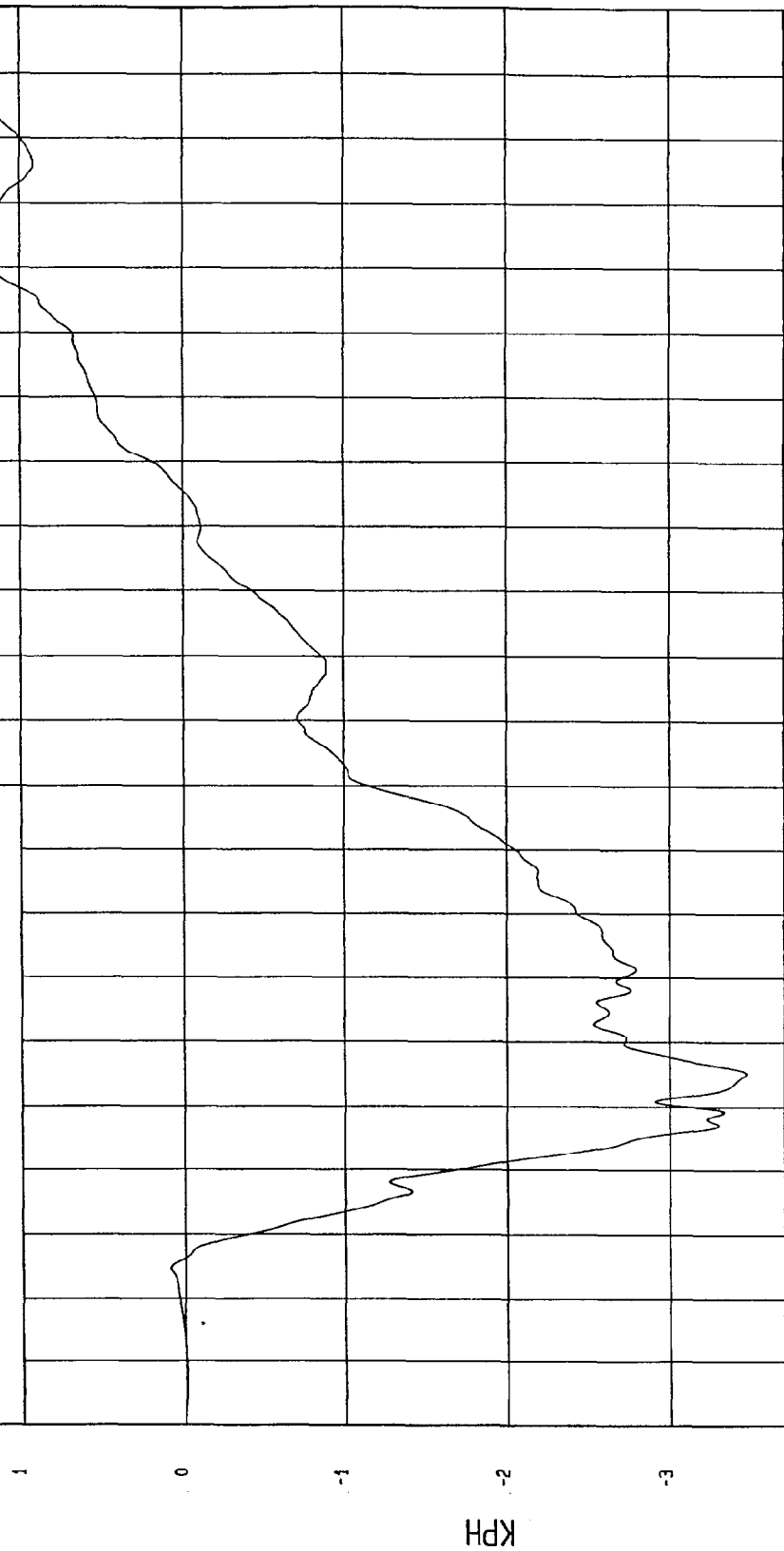
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -3.47 KPH at 35 msec

Maximum = 1.25 KPH at 166 msec

RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY

1 - 899063A1.V34 Filterclass (180)



MCA Research  
09-20-1999 16:10

TIME Seconds

KPH

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

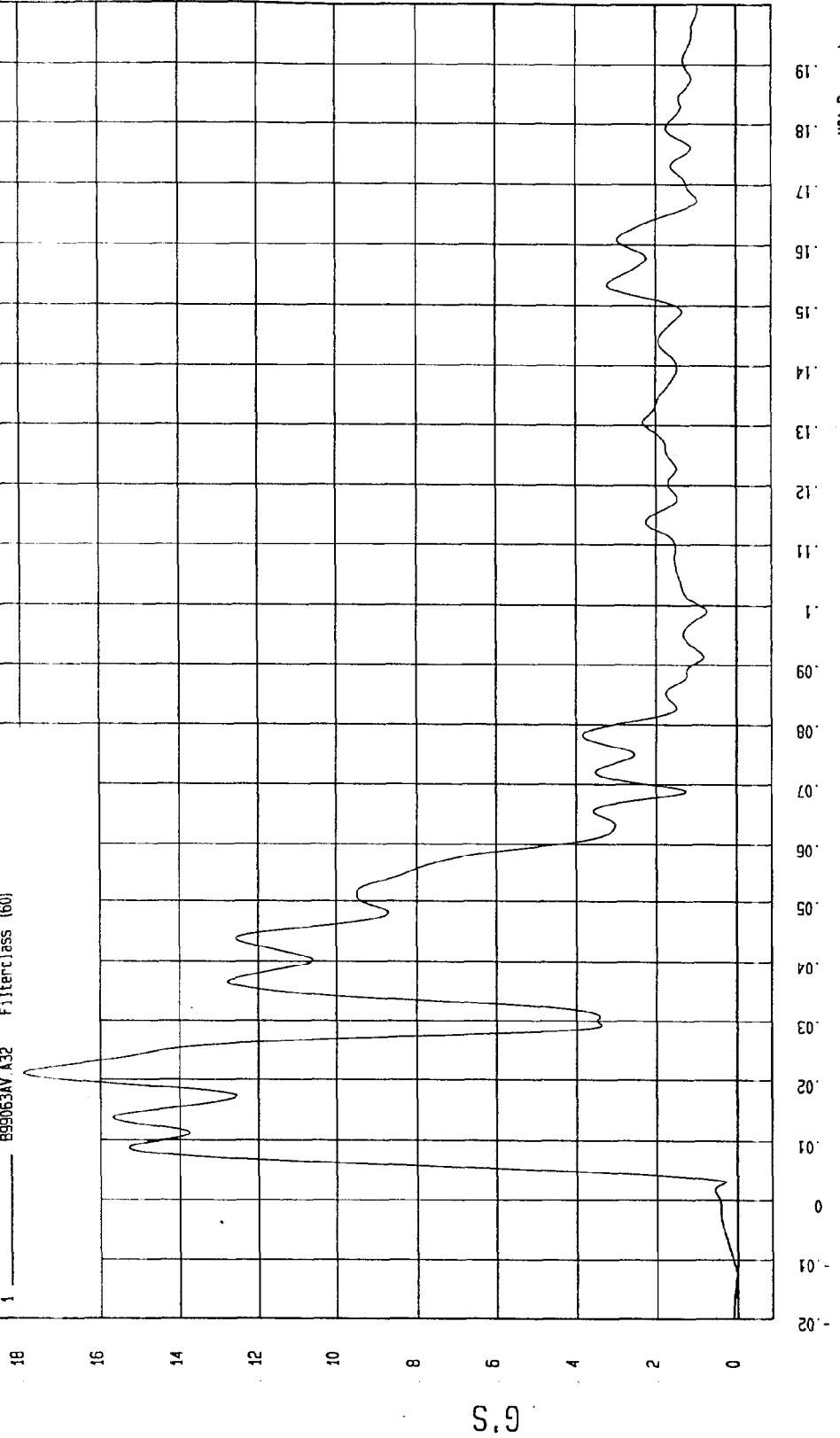
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 17.93 G'S at 21 msec

Minimum = 1.97E-02 G'S at -12 msec

RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

1 ——— B99063AV A32 Filterclass (60)



MCA Research  
09-20-1999 16:10

TIME (SECONDS)

G.S.

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

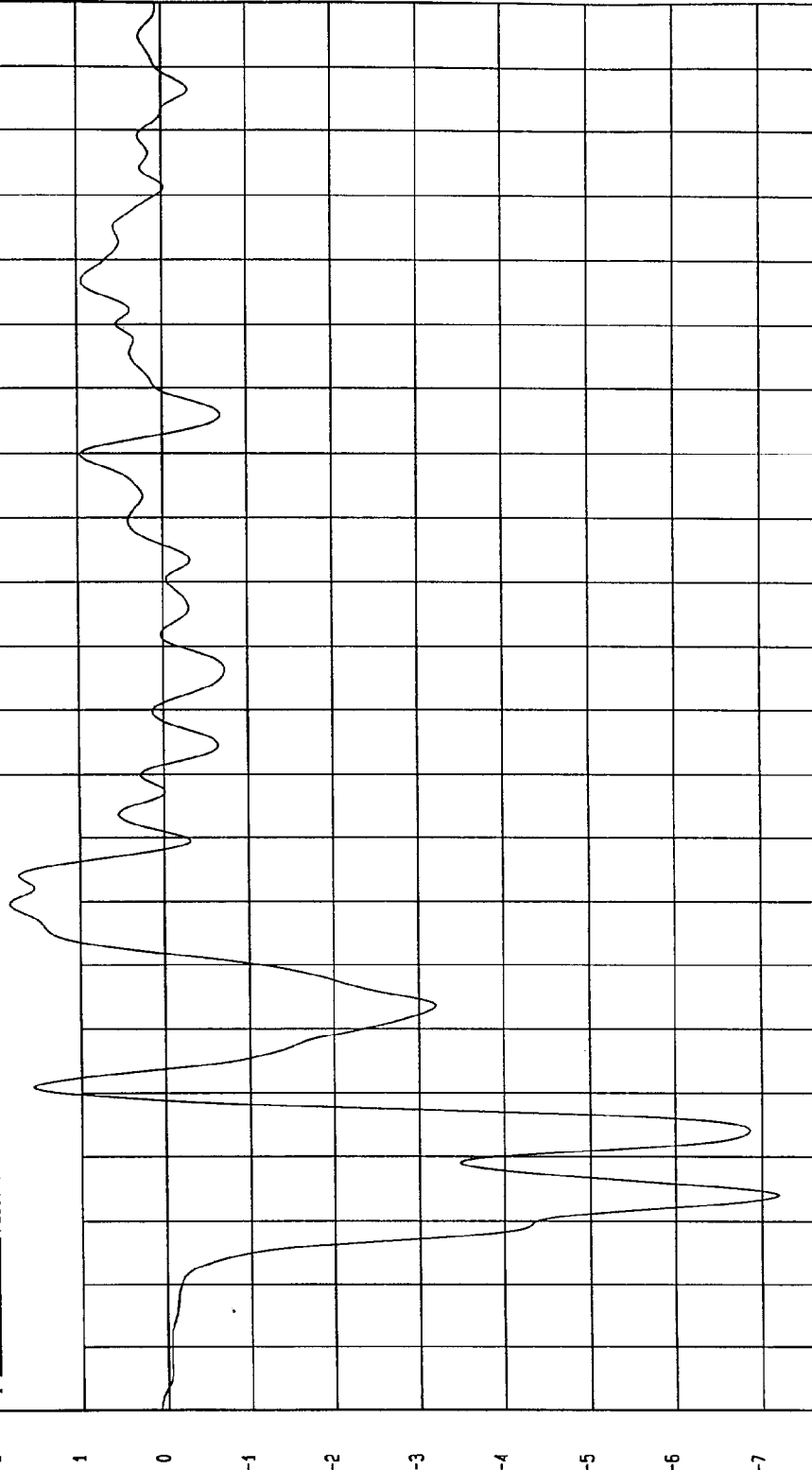
Maximum = 1.82 G'S at 60 msec

Minimum = -7.2 G'S at 14 msec

RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

1 \_\_\_\_\_ B99063AF A35 Filterclass (60)

2



TIME (SECONDS)

NSA Research  
09-20-1999 16:10

G.S

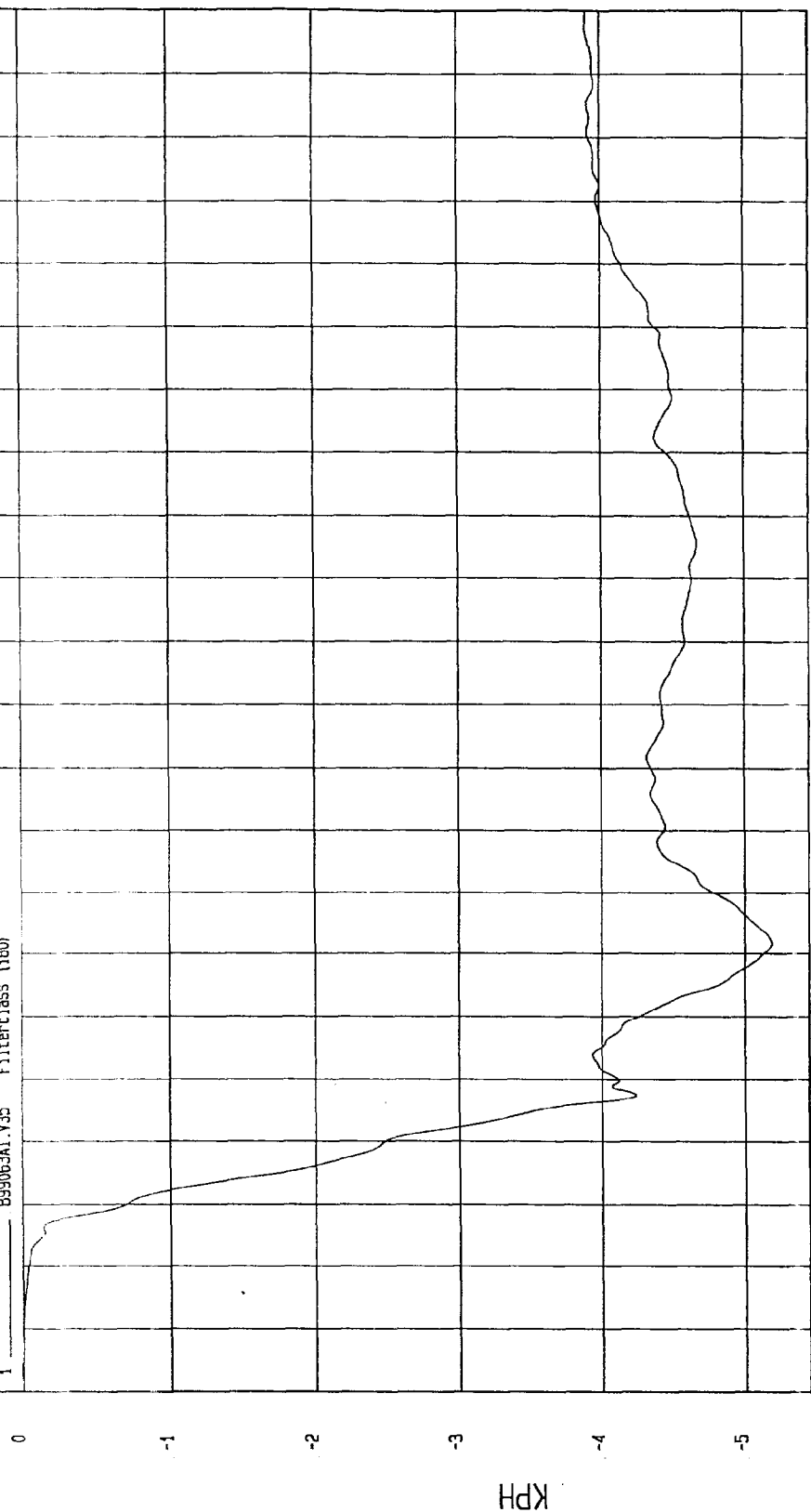
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -5.19 KPH at 52 msec  
Maximum = 8.60E-03 KPH at -17 msec

RIGHT SIDE SILL AT REAR SEAT X VELOCITY

1 B99063A1.V35 FilterClass (100)



TIME Seconds  
MGA Research  
09-20-1999 16.10

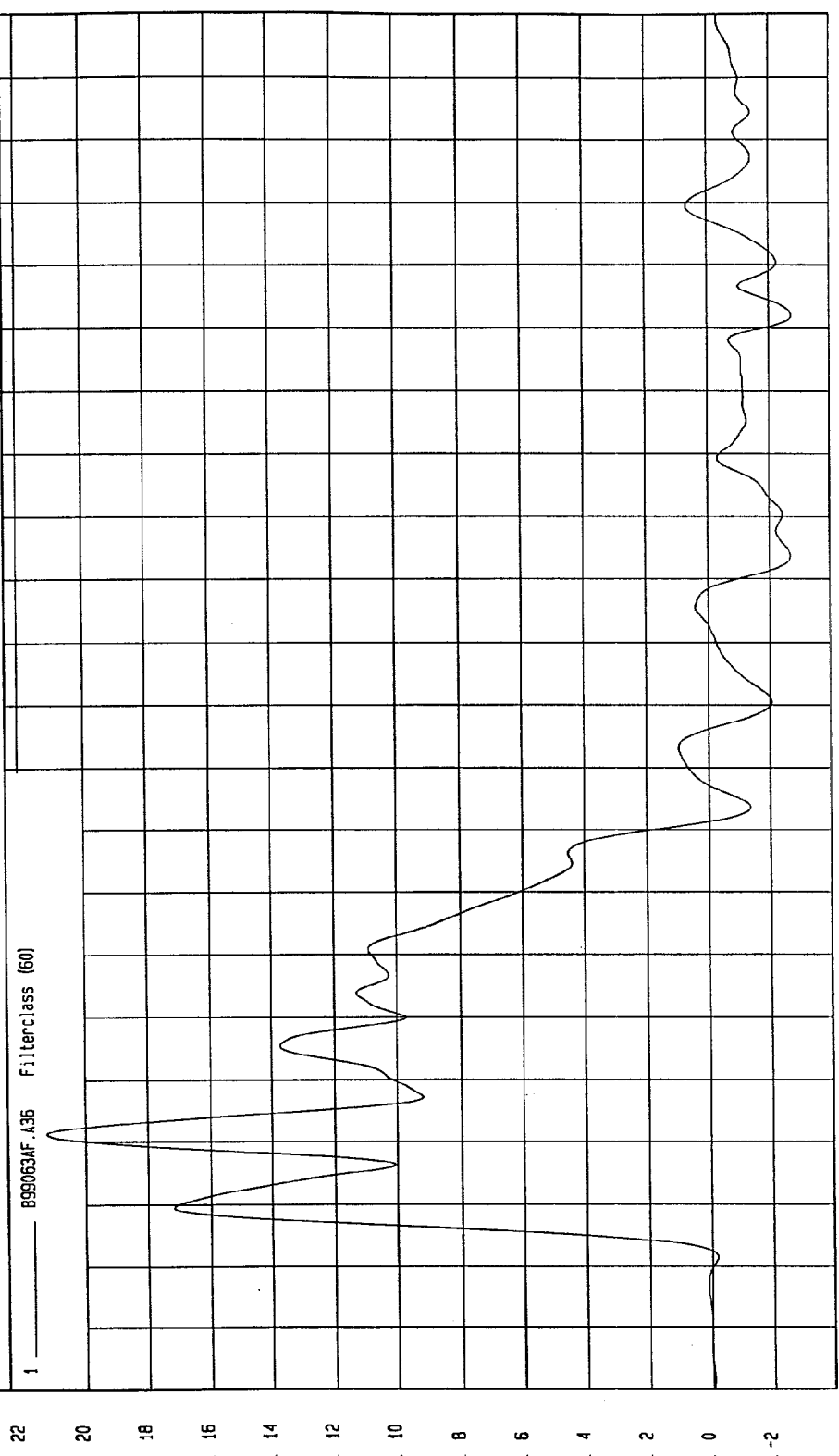
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -2.74 G'S at 152 msec Maximum = 21.49 G'S at 21 msec

RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

1 B990634F.A36 Filterclass (60)



TIME (SECONDS)

19  
18  
17  
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12  
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9  
8  
7  
6  
5  
4  
3  
2  
1  
0  
-1  
-2

0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

MGA Research  
09-20-1999 16.21

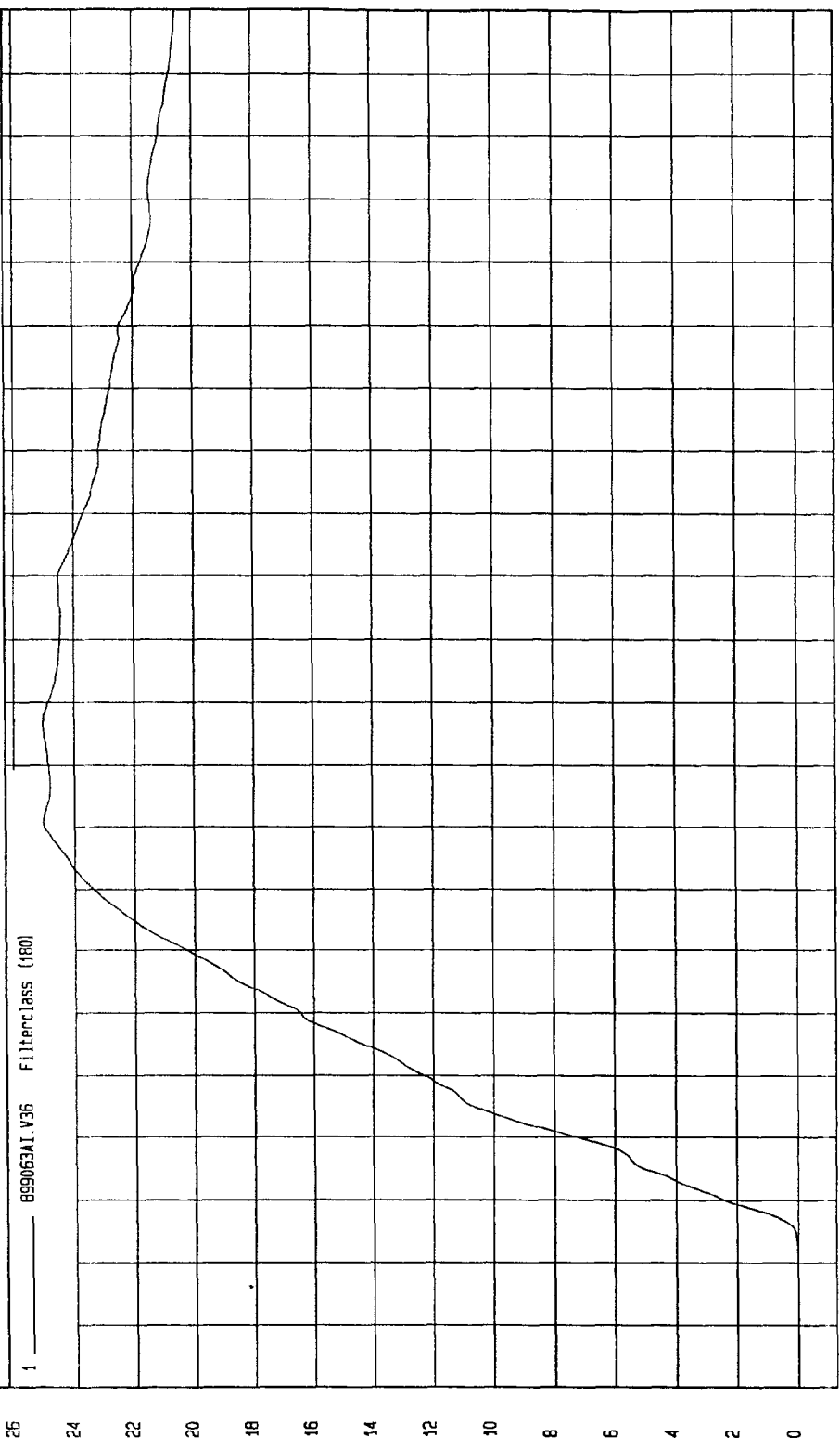
G.S

TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -9.22E-03 KPH at -17 msec  
Maximum = 25.04 KPH at 87 msec

RIGHT SIDE SILL AT REAR SEAT Y VELOCITY



TIME Seconds

MSA Research  
09-20-1999 16:11

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

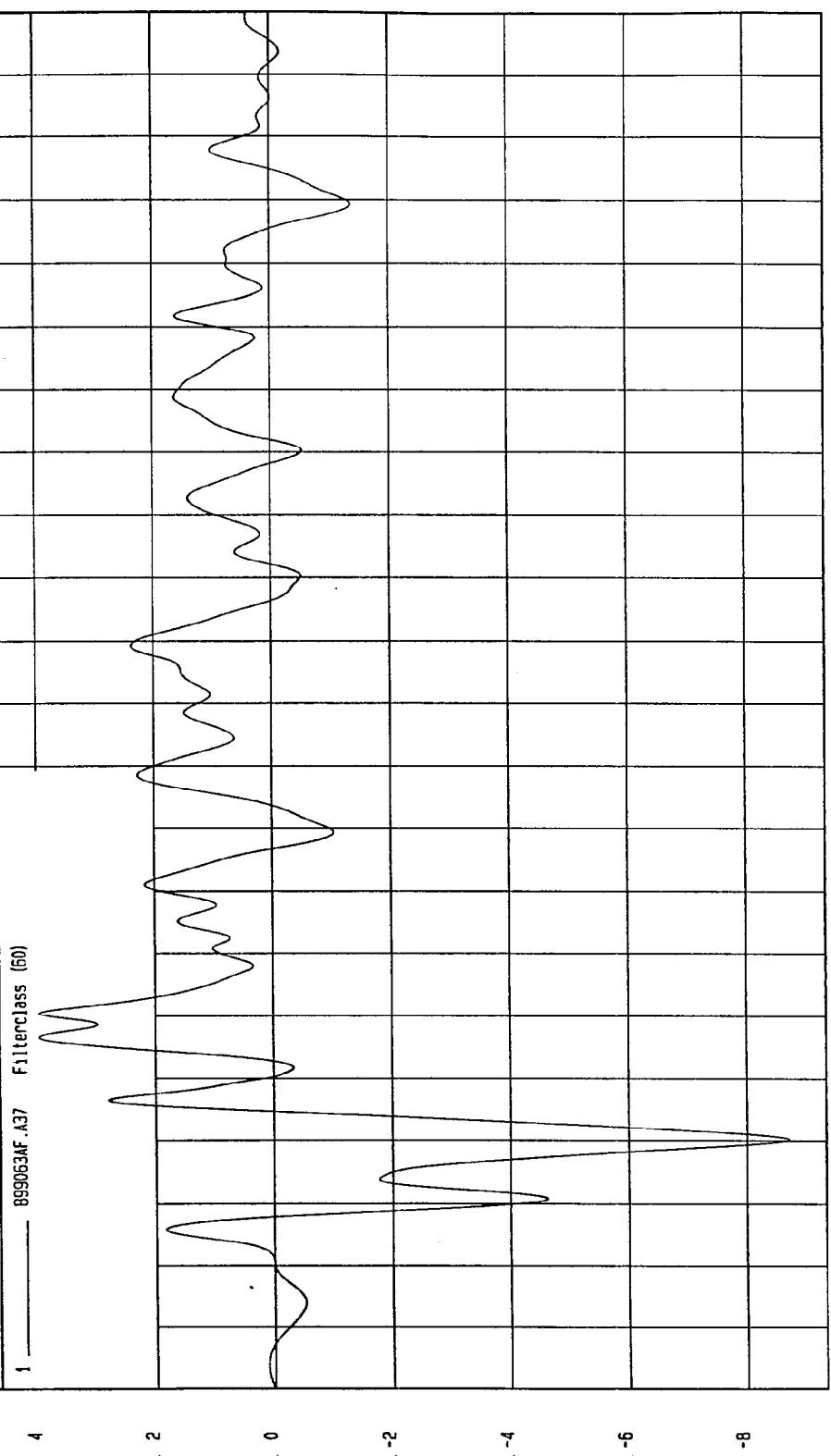
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 3.98 G'S at 40 msec

Minimum = -8.73 G'S at 20 msec

RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

1 899063AF.A37 Filterclass (50)



G'S

TIME (SECONDS)

MOA Research  
09-20-1999 16:11

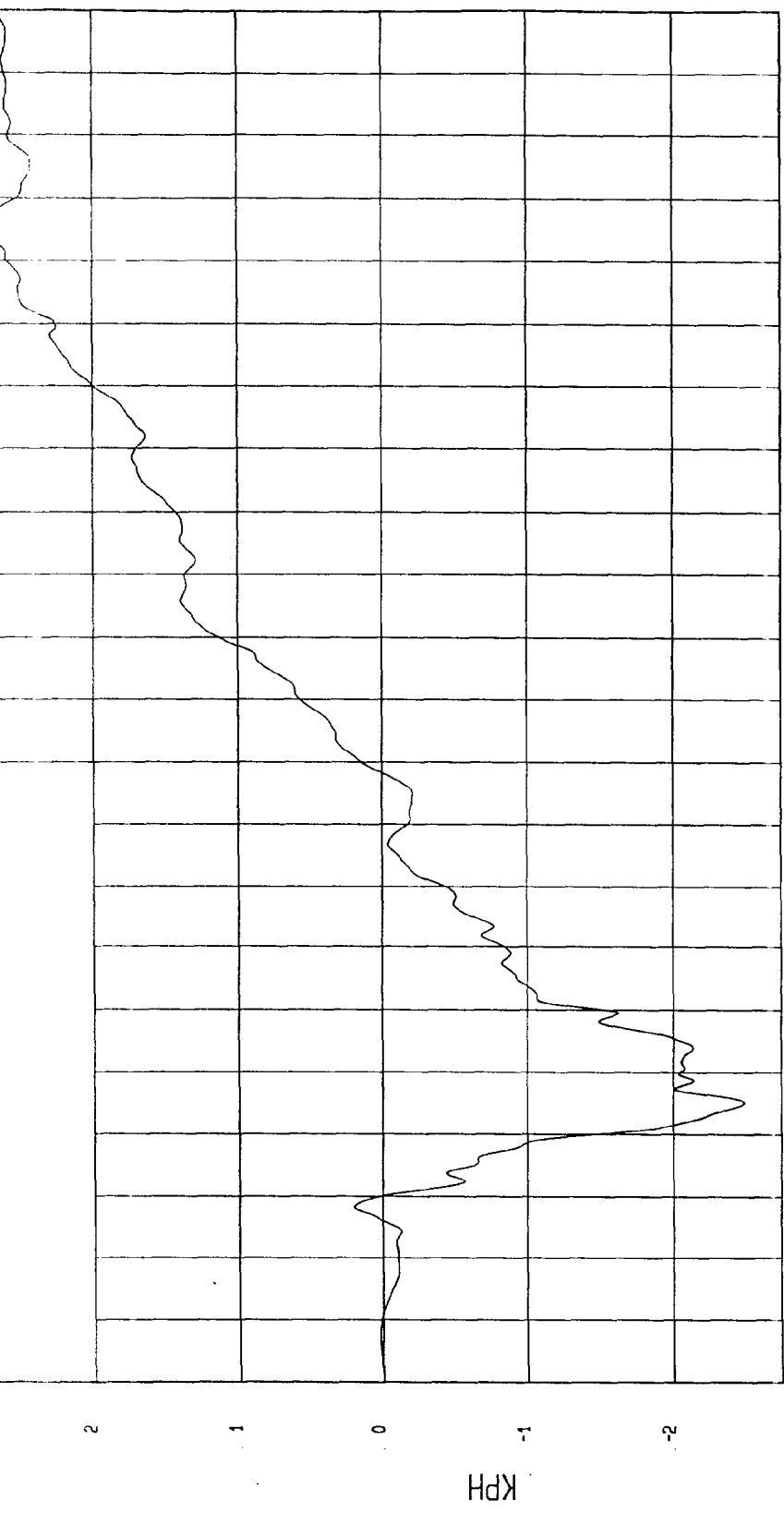
TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -2.48 KPH at 25 msec  
Maximum = 2.68 KPH at 164 msec

RIGHT SIDE SILL AT REAR SEAT Z VELOCITY

1 899063A1.V37 Filterclass (180)



TIME Seconds  
MEV Research  
09-20-1999 16: 11

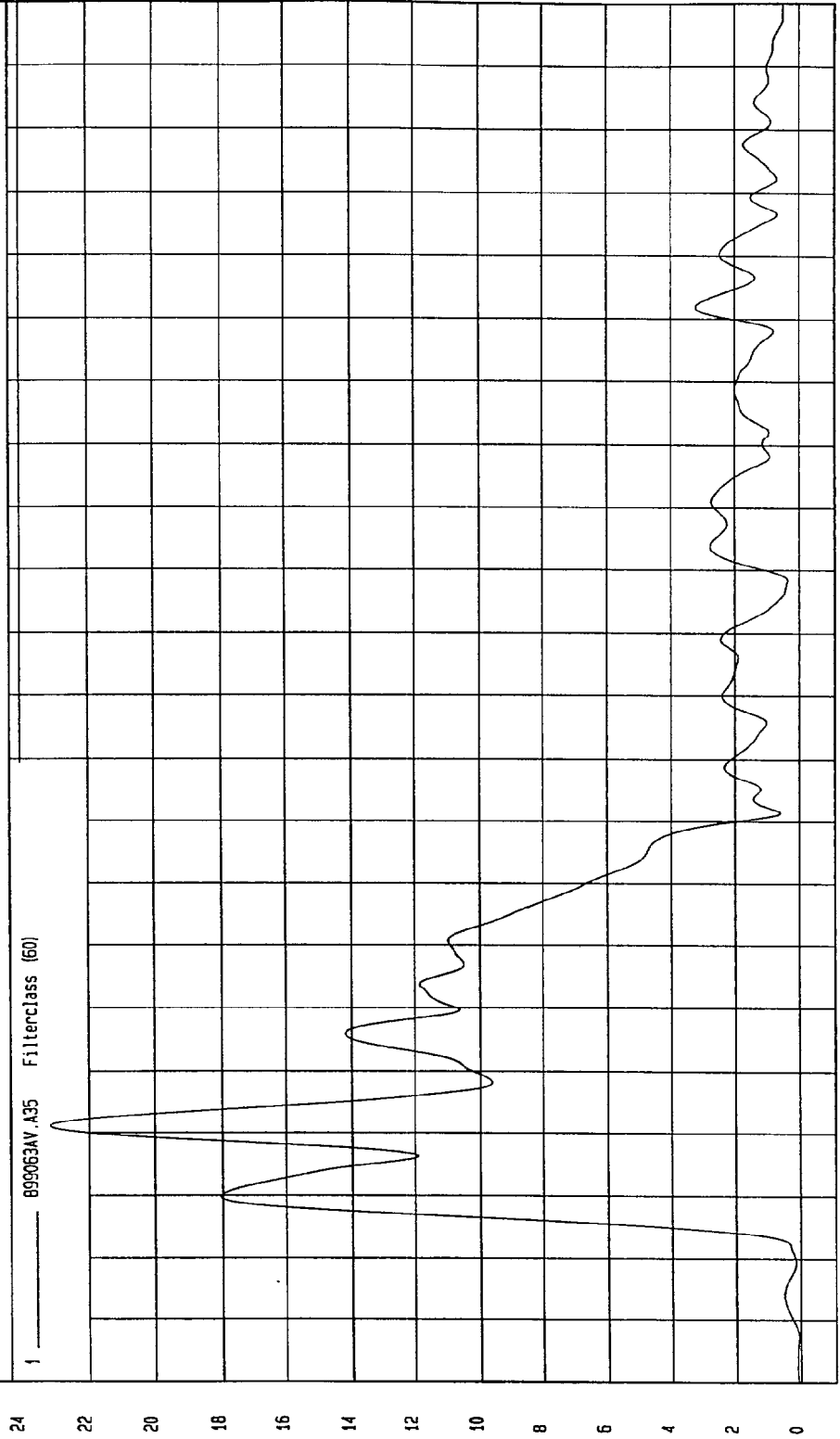
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = 5.37E-02 G'S at -13 msec Maximum = 23.16 G'S at 21 msec

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

1 899063AV.A35 Filterclass (60)



TIME (SECONDS)

MGA Research  
09-20-1999 16:11

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

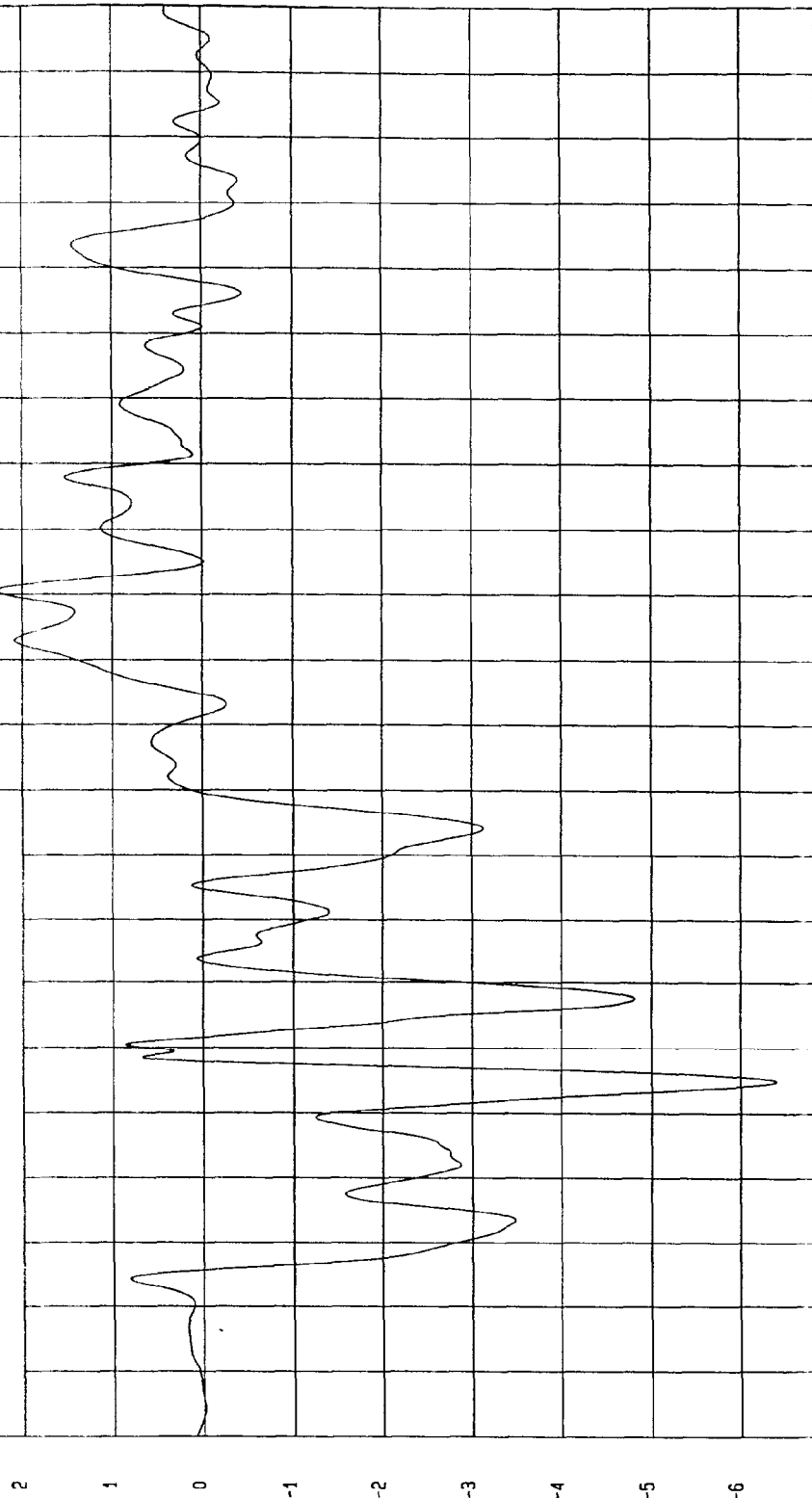
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 2.28 G'S at 111 msec

Minimum = -6.4 G'S at 35 msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION

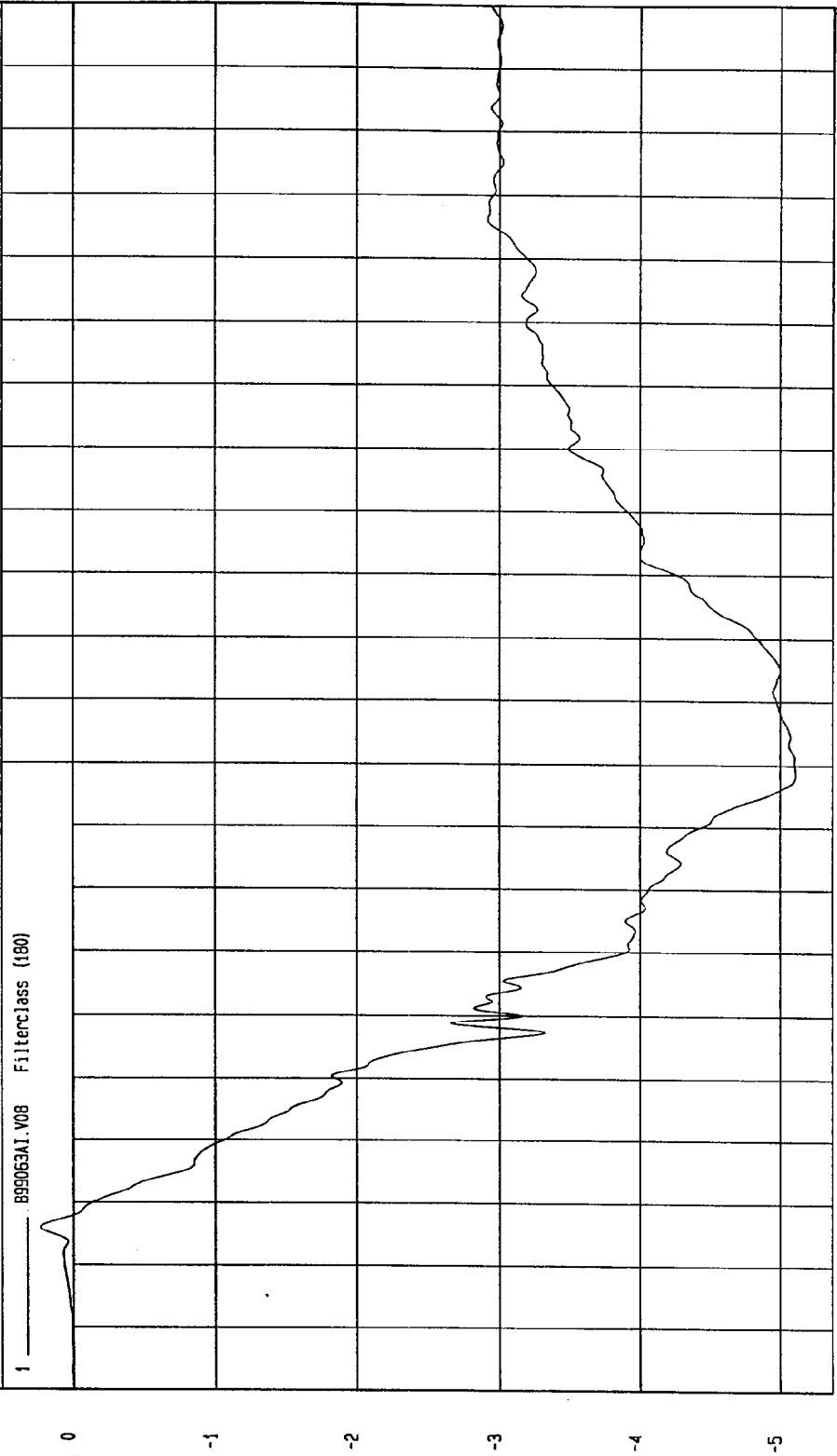
899063AF.A08 Filterclass (60)



G.S. TIME (SECONDS)

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH  
Minimum = -5.12 KPH at 78 msec Maximum = .22 KPH at 6 msec

REAR FLOORPAN ABOVE AXLE X VELOCITY



KPH  
TIME Seconds  
NSA Research  
09-20-1999 16: 11

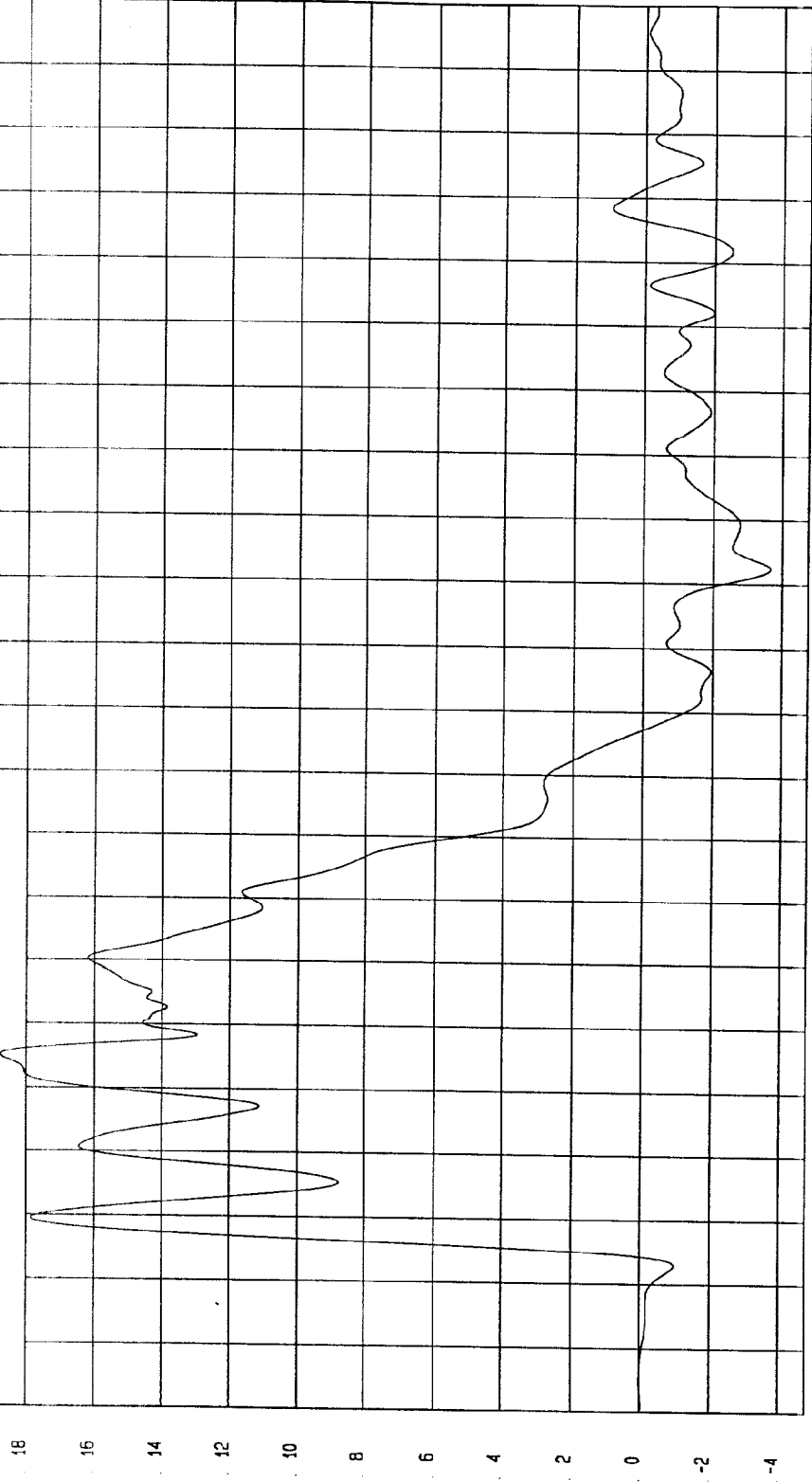
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -3.66 G'S at .112 msec Maximum = 18.77 G'S at .35 msec

REAR FLOORPAN ABOVE AXLE Y ACCELERATION

1 899053AF.A09 Filterclass (50)



MCA Research  
09-20-1999 16:11

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

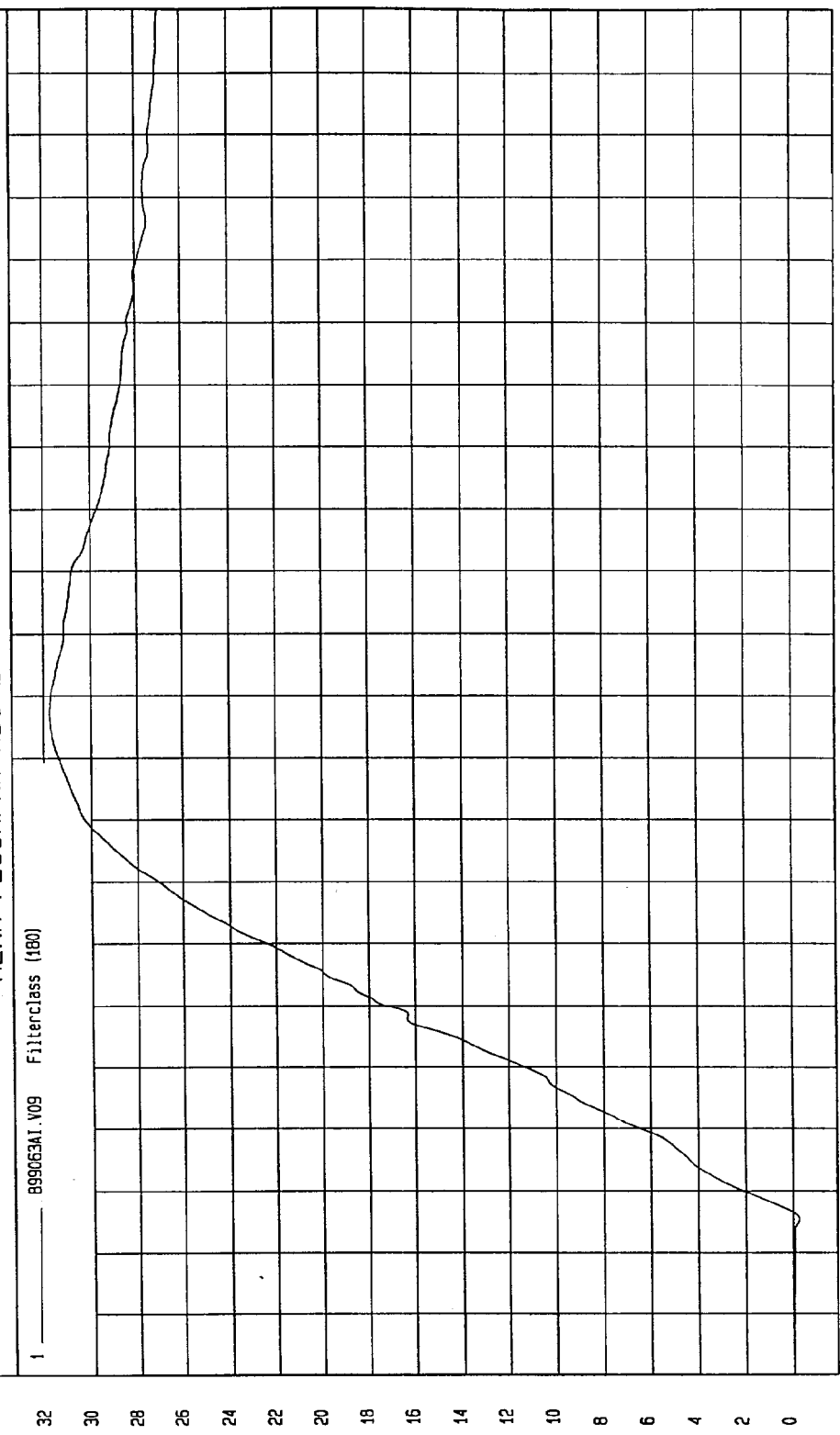
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 31.76 KPH at 87 msec

Minimum = -24 KPH at 6 msec

REAR FLOORPAN ABOVE AXLE Y VELOCITY

1 899063A1.V09 FilterClass (180)



MSA Research  
09-20-1999 16:11

TIME Seconds

KPH

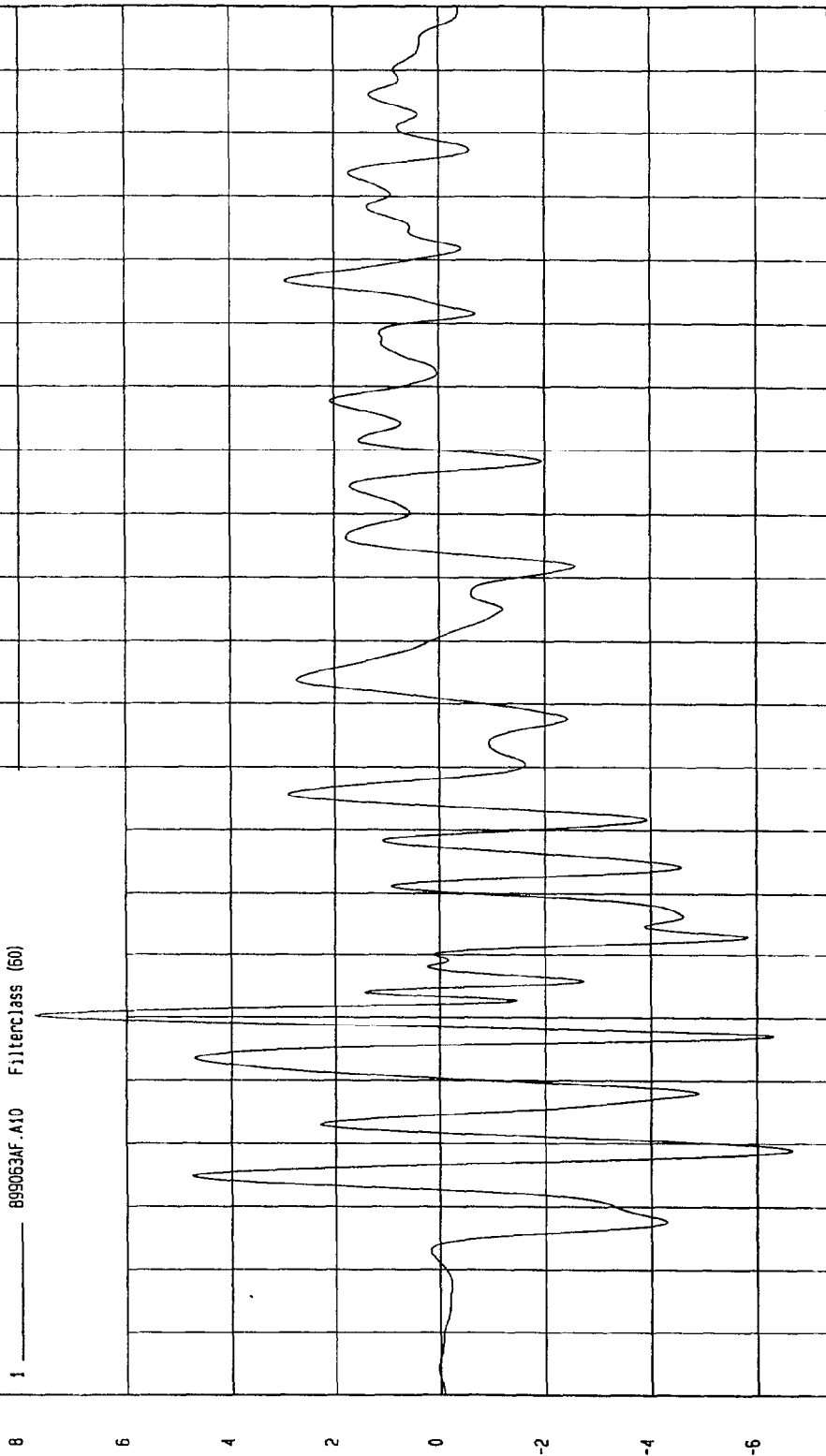
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -6.65 G'S at 19 msec Maximum = 7.73 G'S at 40 msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION

1 899063AF.A10 FilterClass (50)



MSA Research  
09-20-1999 16:11

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

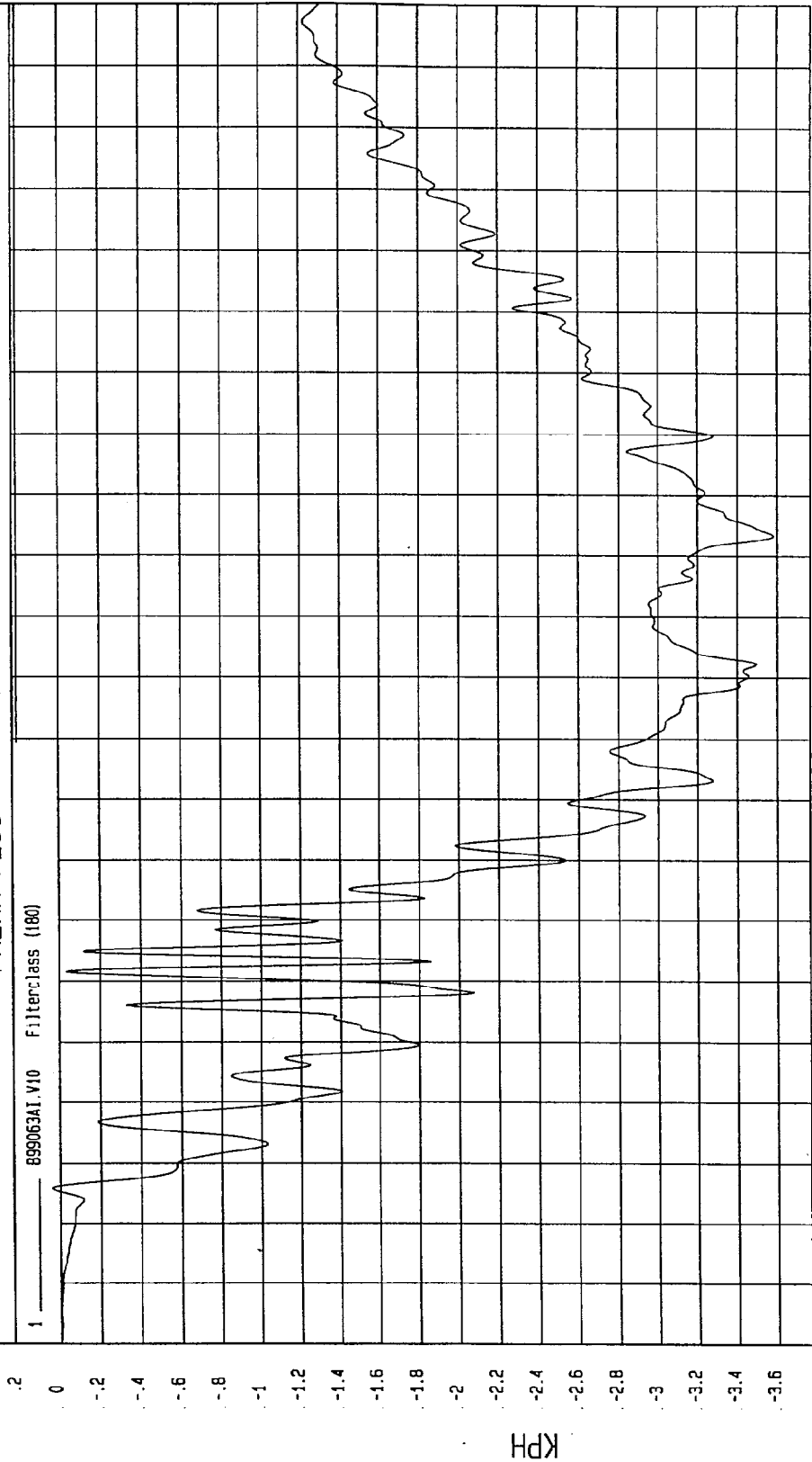
TEST: FMVSS 214 DYNAMIC

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 3.94E-02 KPH at 6 msec

Minimum = -3.58 KPH at 113 msec

REAR FLOORPAN ABOVE AXLE Z VELOCITY



MGA Research  
09-20-1999 16:11

TIME Seconds

KPH

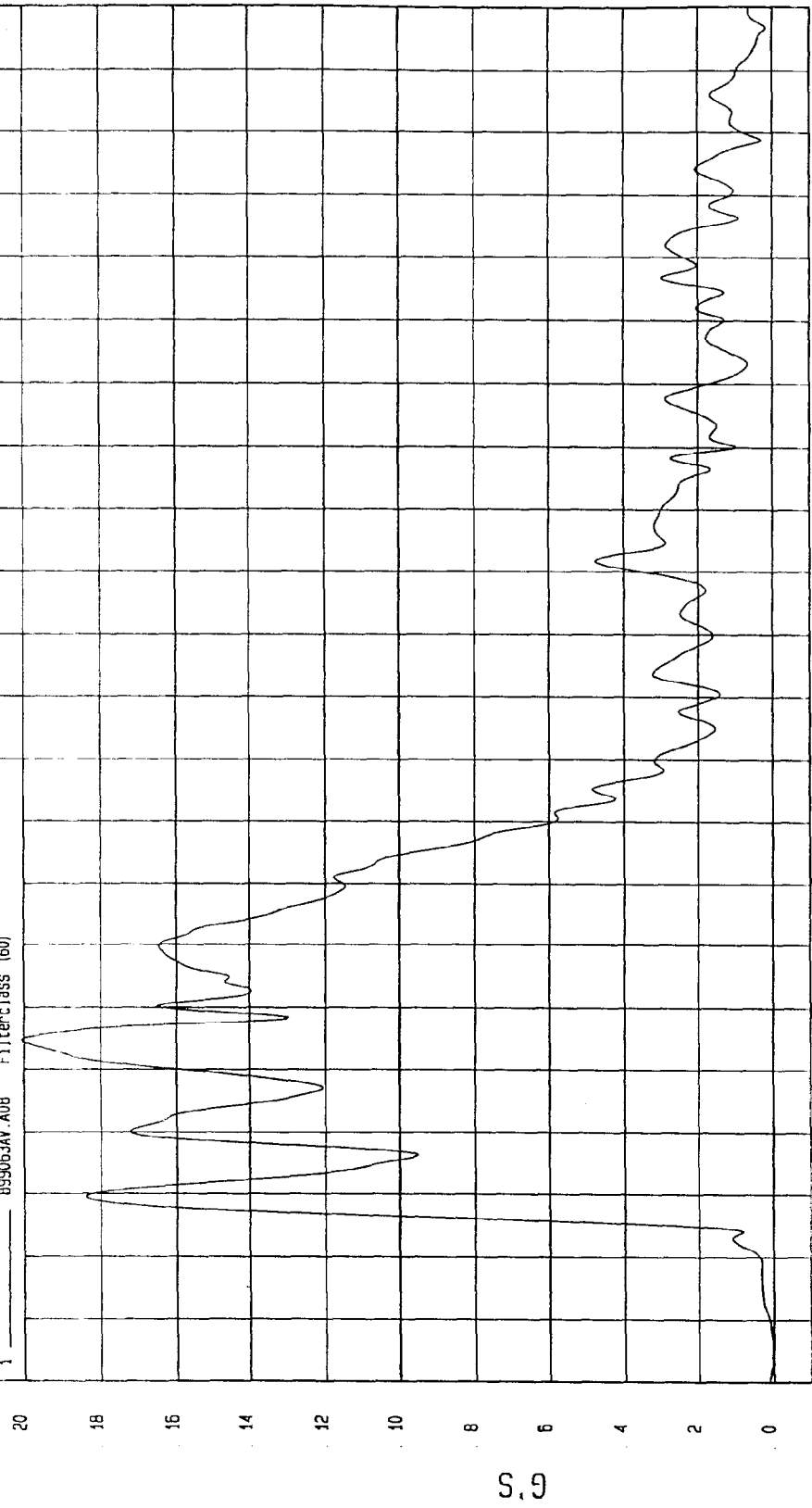
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = 5.56E-03 G'S at -17 msec Maximum = 20.06 G'S at 35 msec

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

1 899063AV.A08 Filterclass (60)

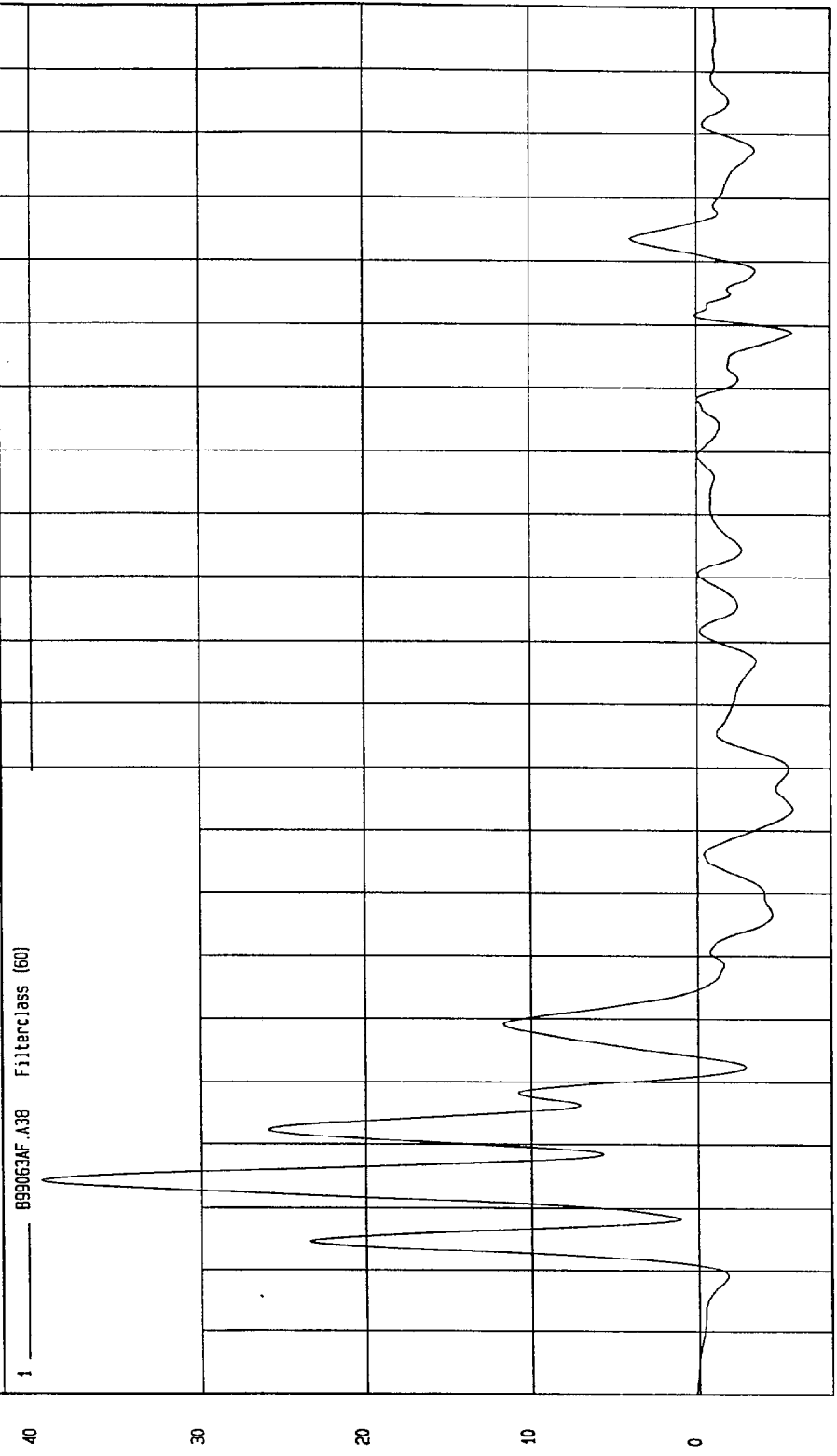


MCA Research  
09-20-1999 16.12

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -5.72 G'S at 149 msec Maximum = 39.55 G'S at 14 msec

LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION



TIME (SECONDS)

MSA Research  
09-20-1999 16:10

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

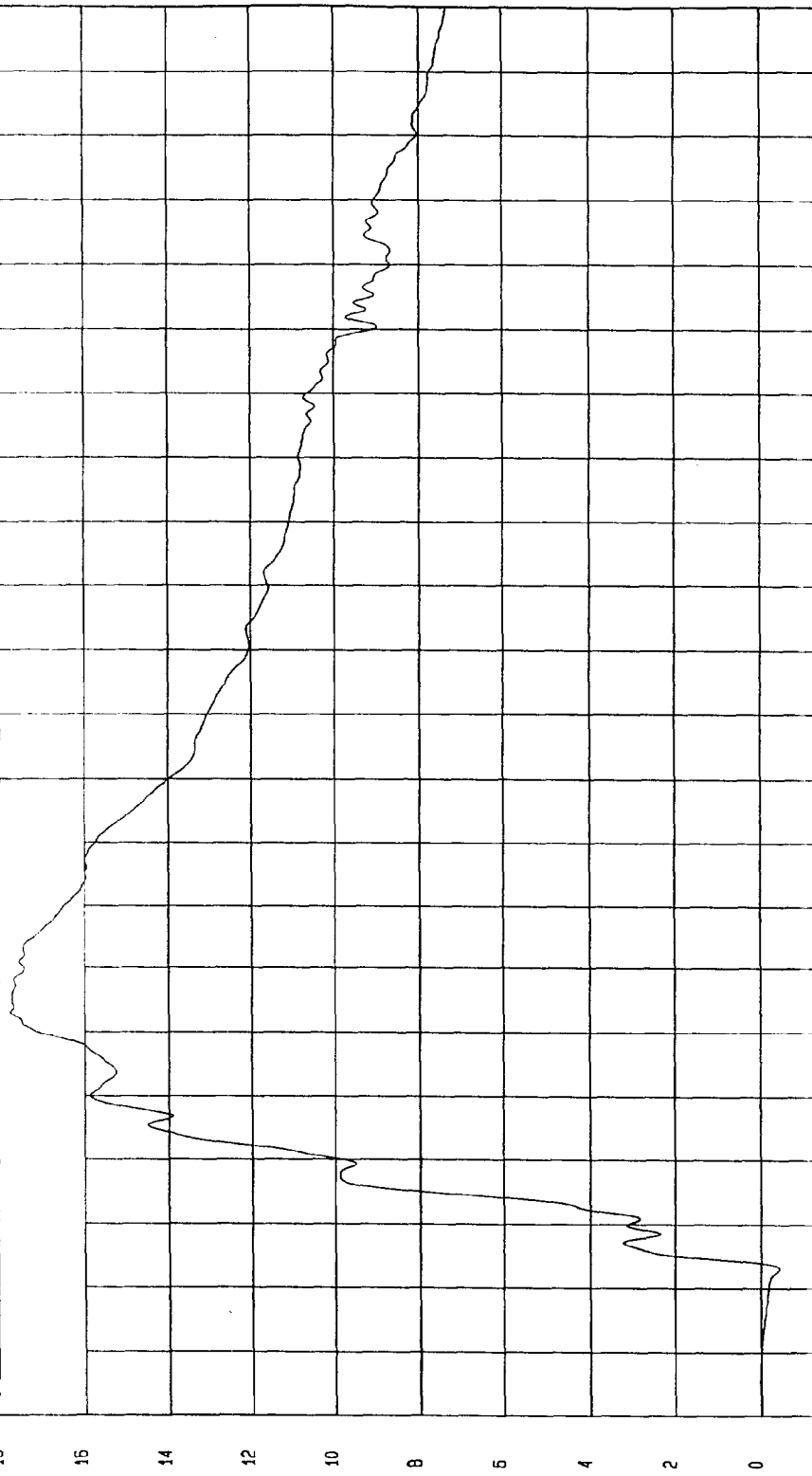
Maximum = 17.75 KPH at 43 msec

Minimum = -.43 KPH at 3 msec

LEFT SIDE SILL AT FRONT SEAT Y VELOCITY

899063A1.V38 Filterclass (180)

1



MGA Research  
09-20-1999 16:10

TIME Seconds

KPH

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

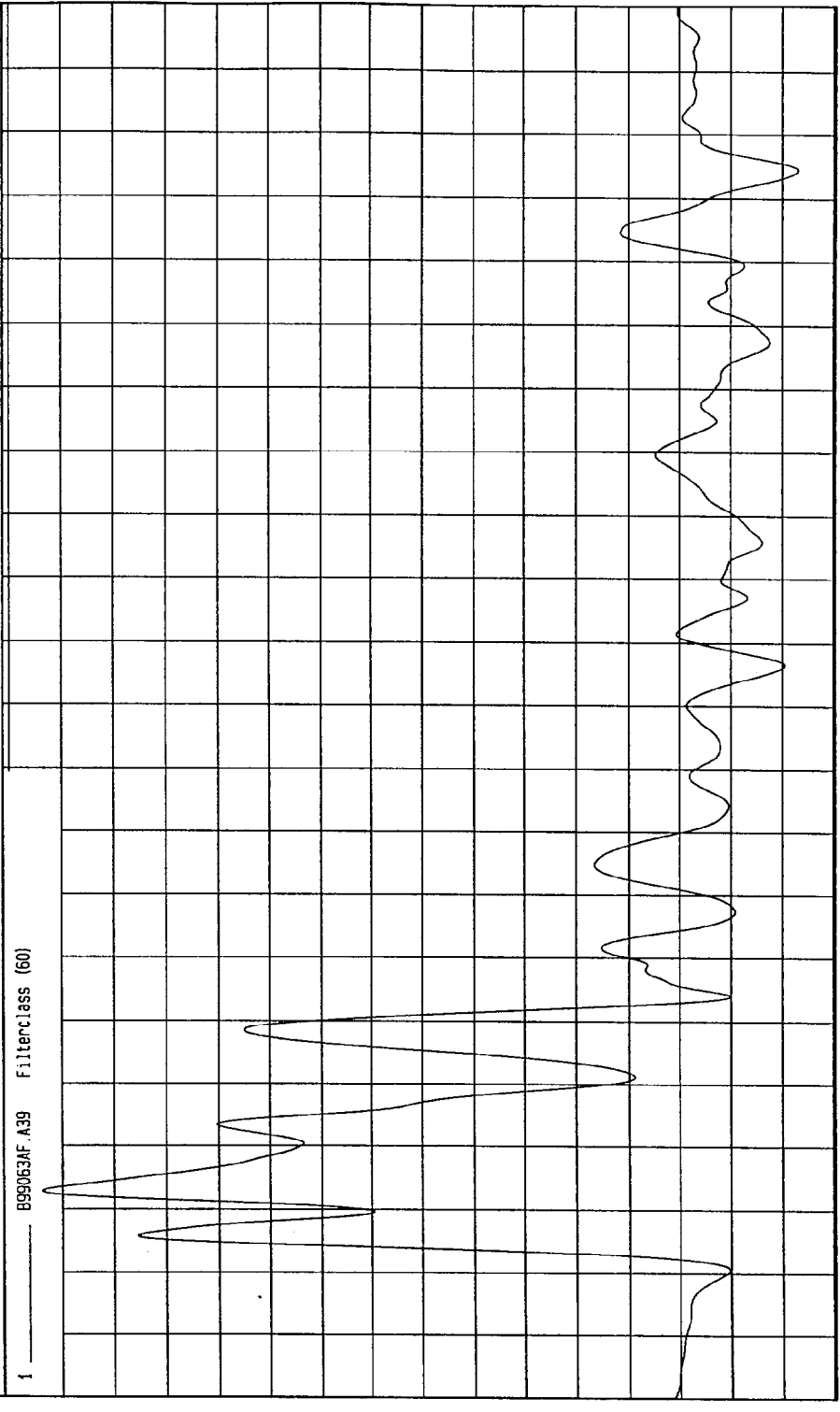
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -4.61 G'S at 174 msec  
Maximum = 24.78 G'S at 13 msec

LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

1 B99063AF.A39 Filterclass (60)

S.G  
26  
24  
22  
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18  
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12  
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4  
2  
0  
-2  
-4  
-6



TIME (SECONDS)  
0.19  
0.18  
0.17  
0.16  
0.15  
0.14  
0.13  
0.12  
0.11  
0.1  
0.09  
0.08  
0.07  
0.06  
0.05  
0.04  
0.03  
0.02  
0.01  
0  
-0.01  
-0.02

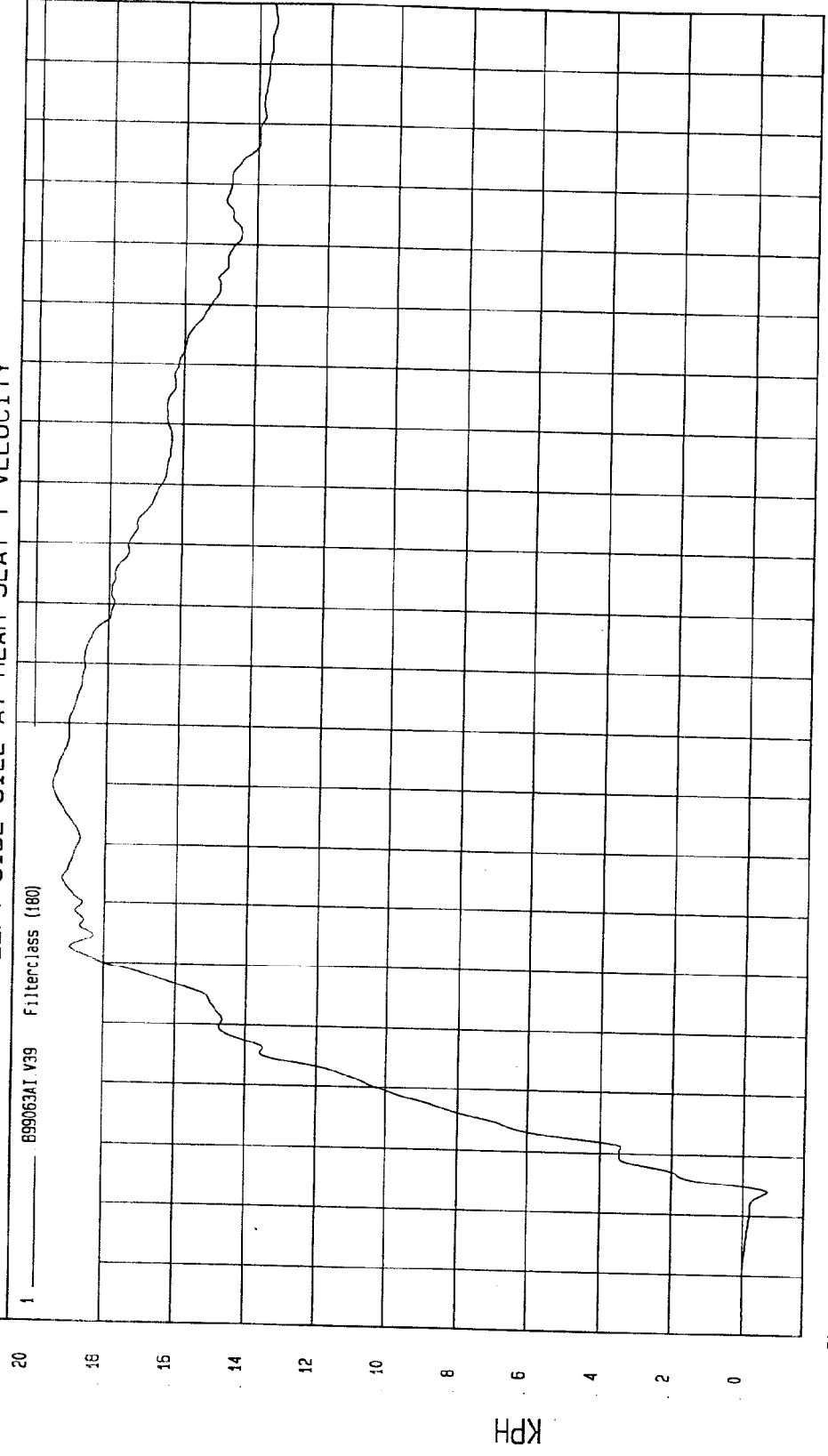
TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -0.65 KPH at 4 msec  
Maximum = 19.49 KPH at 70 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY

1 899063AI V39 Filterclass (180)



KPH  
TIME Seconds

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

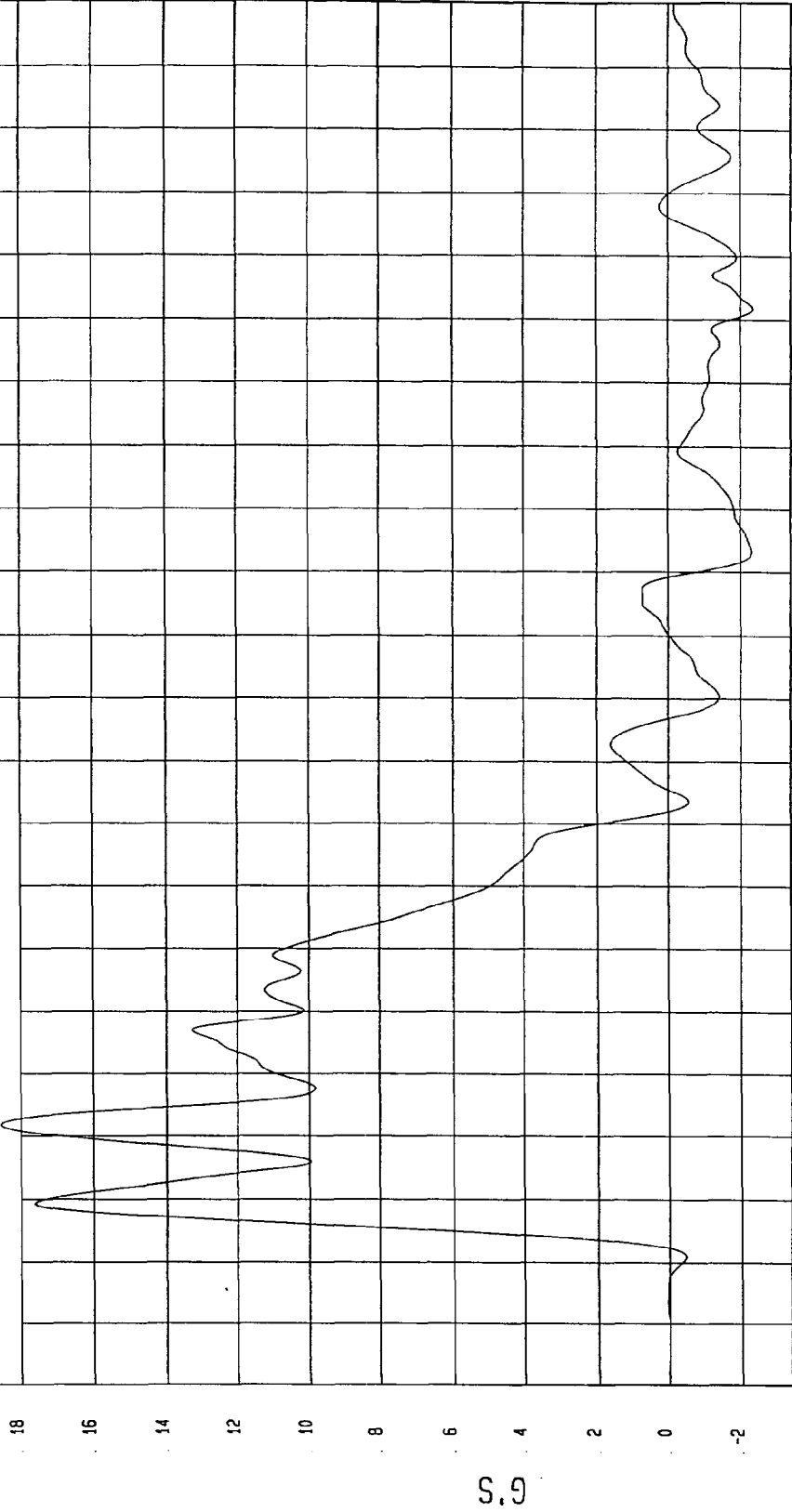
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 18.55 G'S at 22 msec

Minimum = -2.36 G'S at 152 msec

RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION

1 899063AF.A50 Filterclass (60)



MSA Research  
09-20-1999 16:12

TIME (SECONDS)

G'S

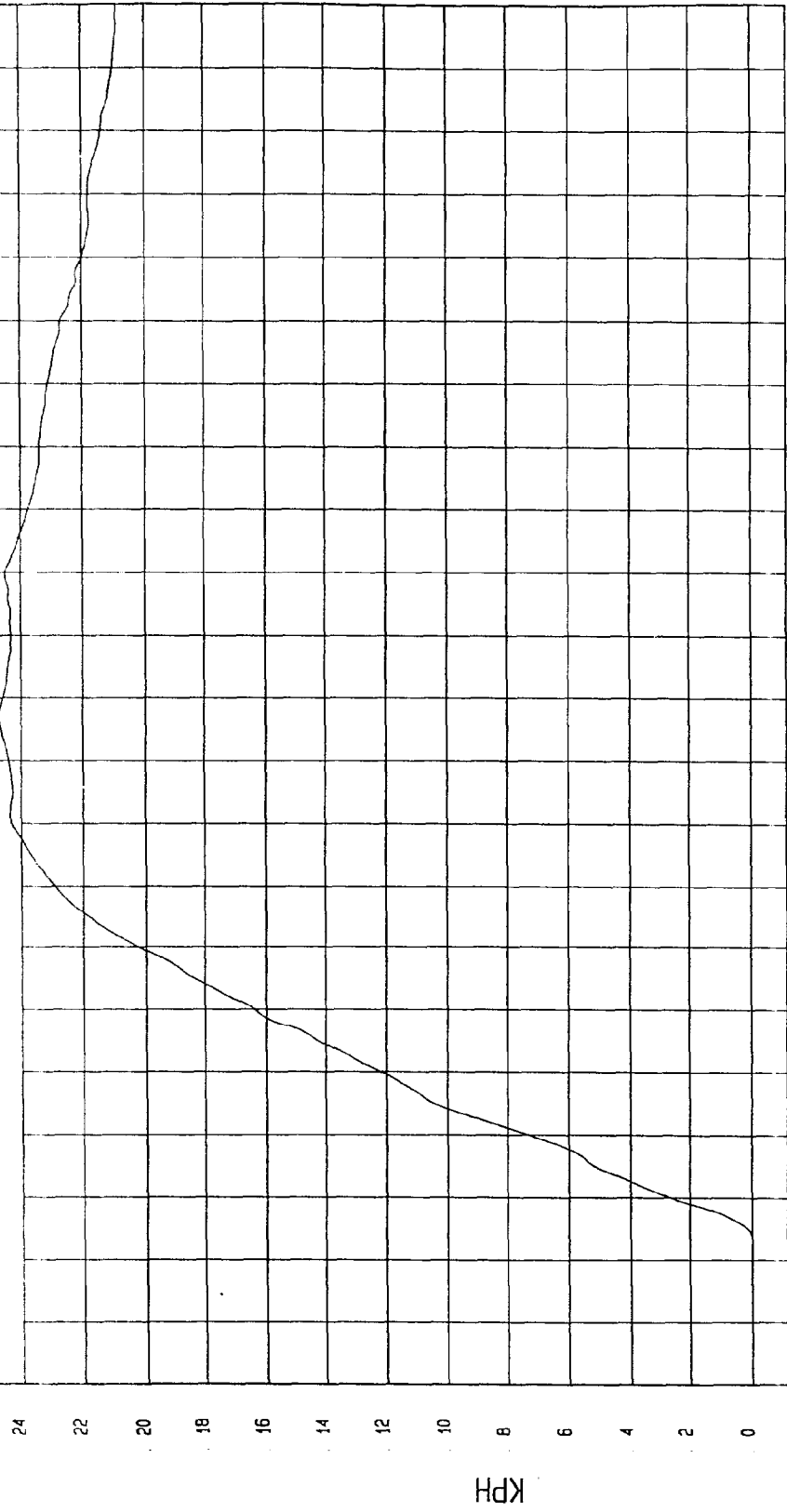
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -3.4E-03 KPH at 4 msec  
Maximum = 24.71 KPH at 87 msec

RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY

1 099063A1.V50 Filterclass (180)



LEFT LOWER A-POST Y ACCELERATION VS. TIME

NO VALID DATA COLLECTED

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

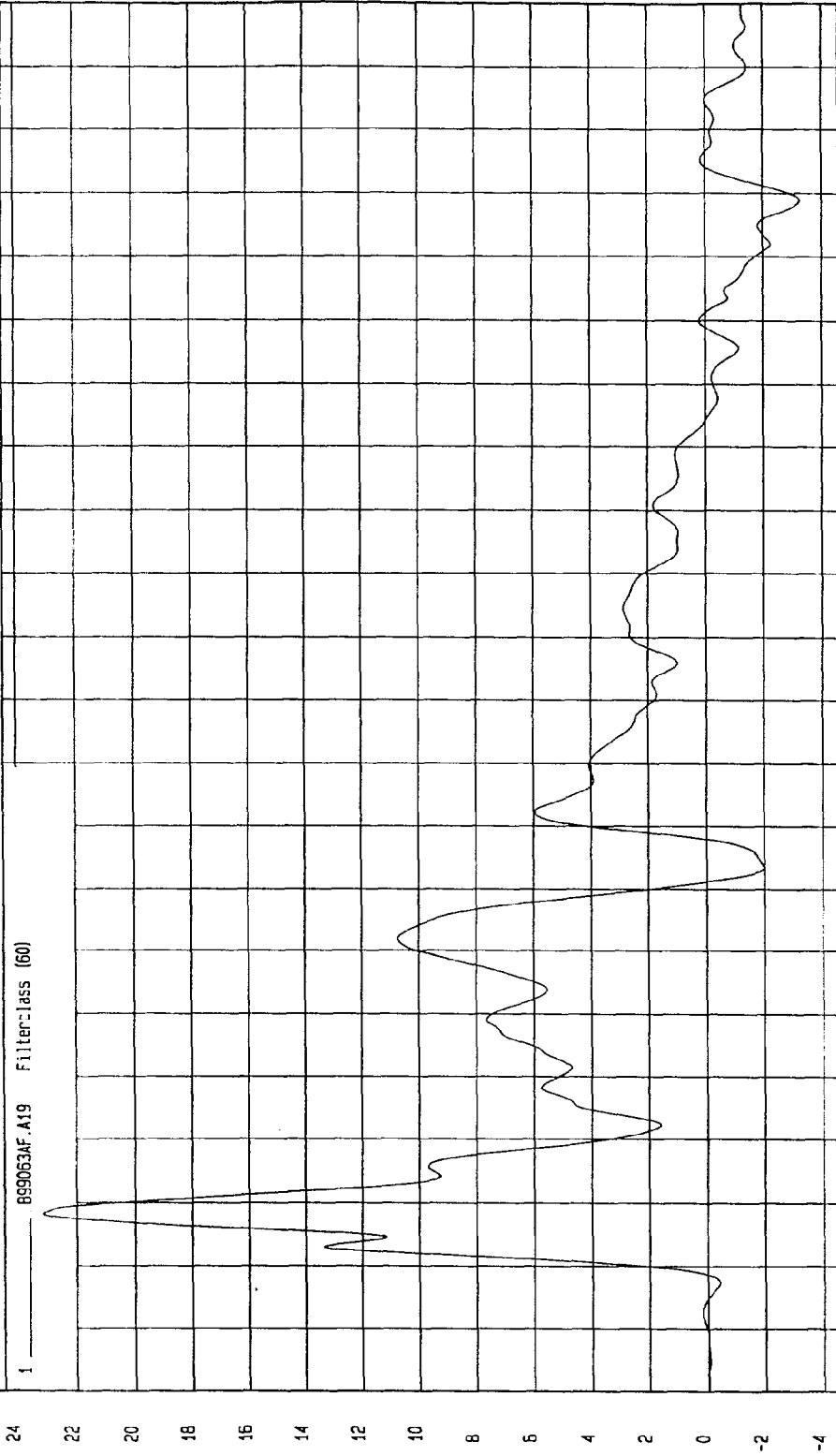
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -3.26 G'S at 169 msec

Maximum = 23.12 G'S at 8 msec

LEFT MID A-POST Y ACCELERATION

1 899063AF.A19 Filter: class (60)



MEA Research  
09-20-1999 16:12

TIME (SECONDS)

G.S

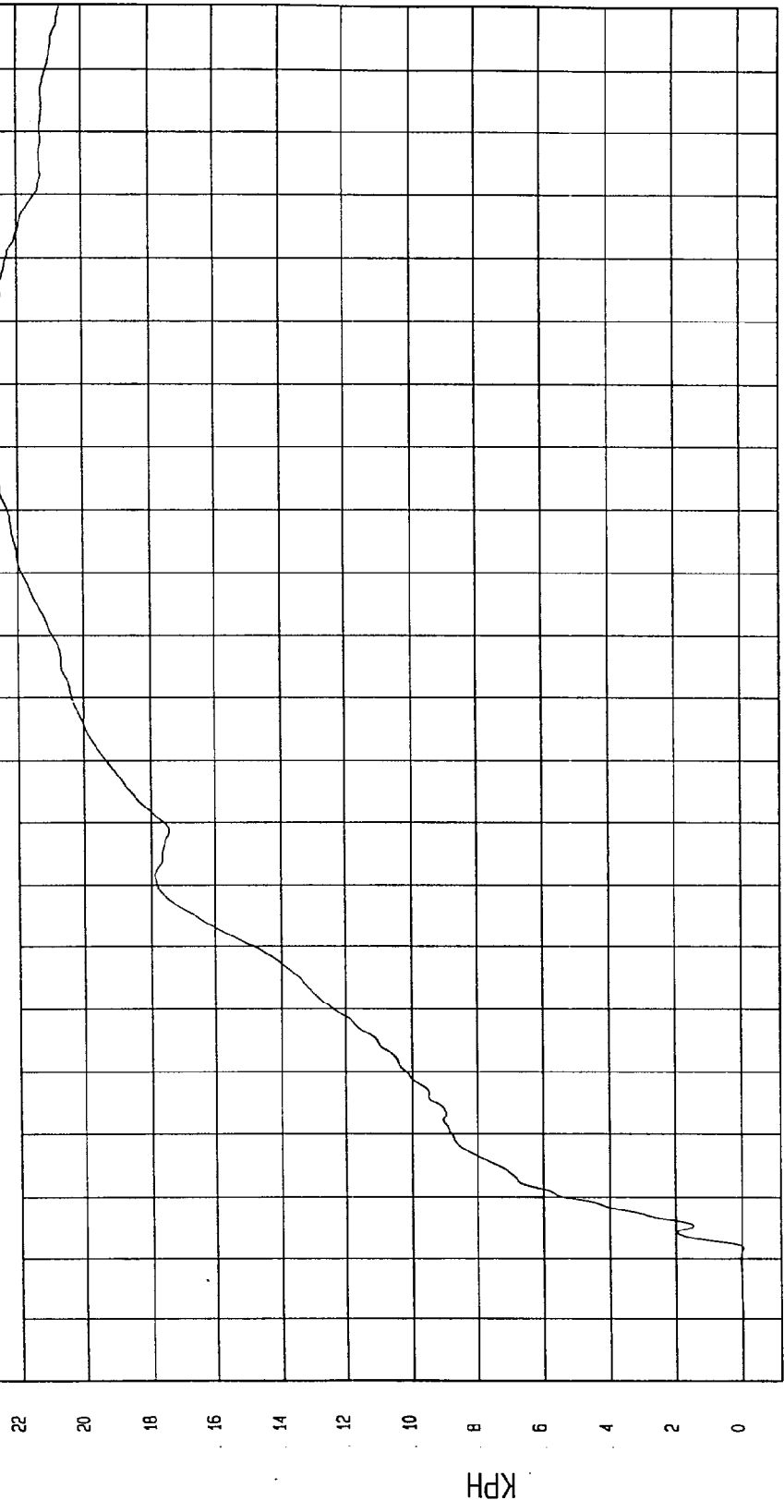
TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -4.43E-02 KPH at 2 msec  
Maximum = 22.83 KPH at 136 msec

LEFT MID A-POST Y VELOCITY

1 \_\_\_\_\_ B99063AI.V19 Filterclass (180)



TIME Seconds  
MGA Research  
09-20-1999 16:12

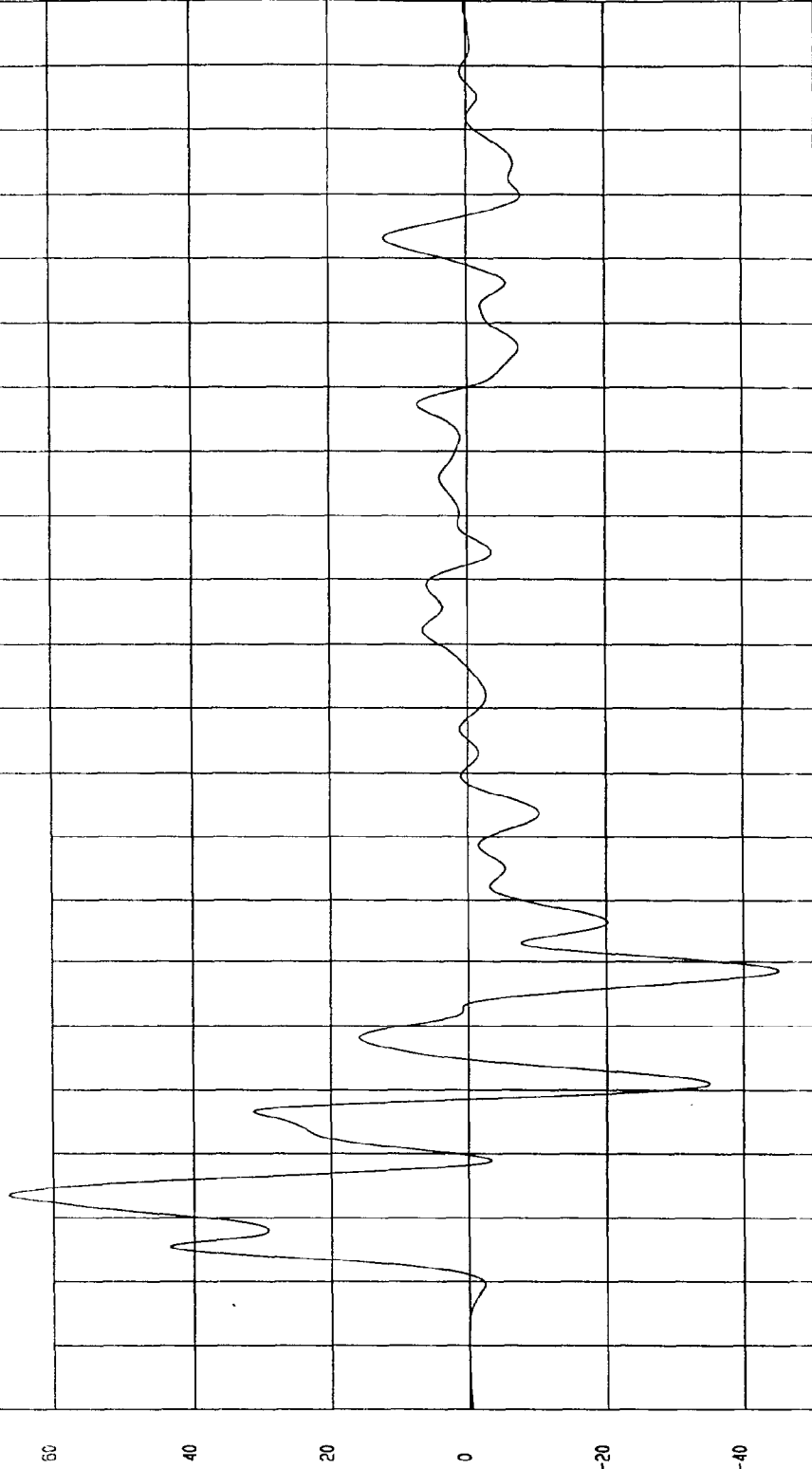
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -45.01 G'S at 49 msec  
Maximum = 66.26 G'S at 14 msec

LEFT LOWER B-POST Y ACCELERATION

1 899063AF.A30 Filterclass (60)



MGA Research  
09-20-1999 16:12

TIME (SECONDS)

G.S

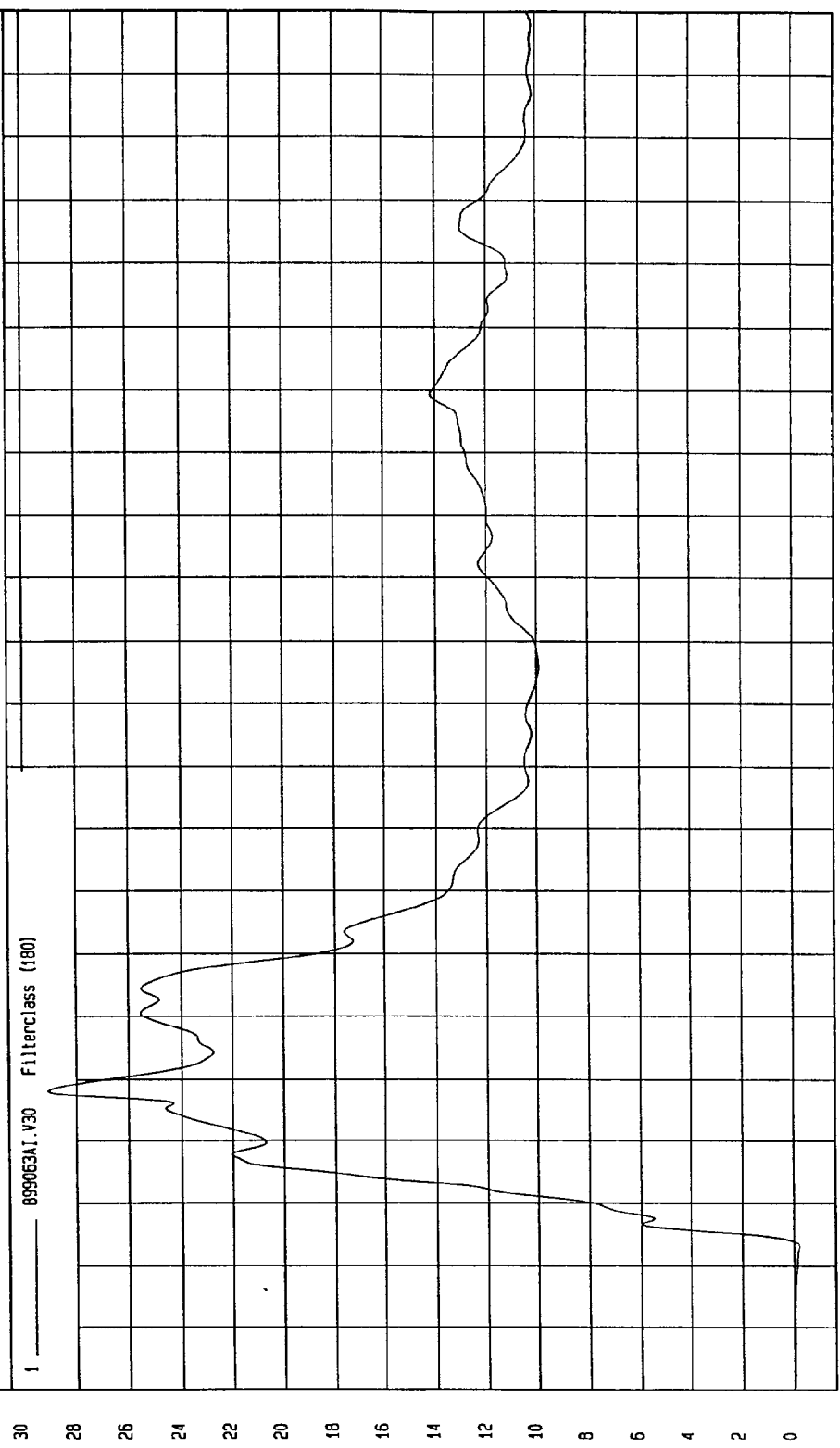
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -21 KPH at 3 msec Maximum = 29.1 KPH at 28 msec

LEFT LOWER B-POST Y VELOCITY

1 899063A1.V30 Filterclass (180)



TIME Seconds

MGA Research  
09-20-1999 16:12

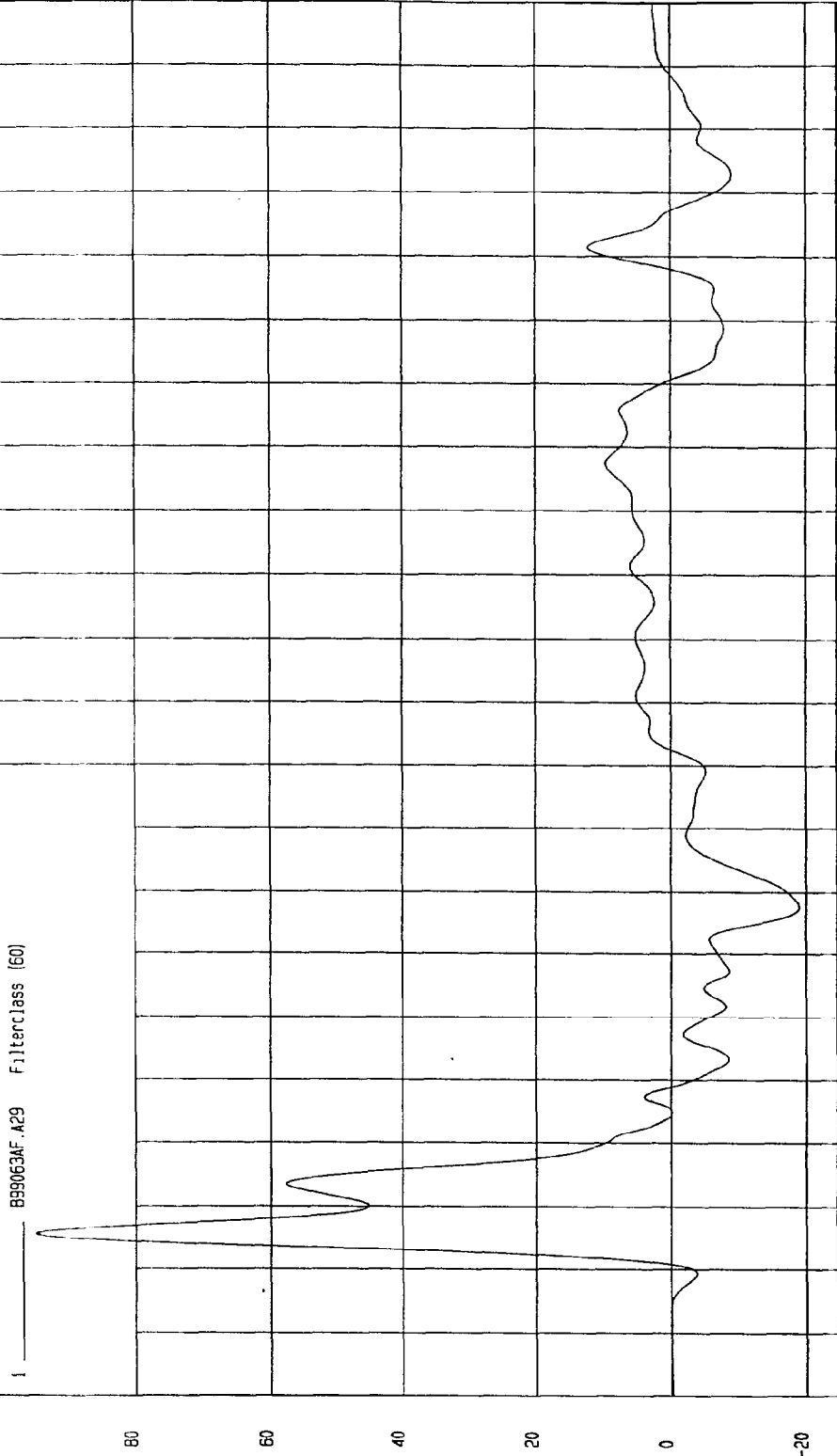
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CYS201) Speed: 32.9 MPH 52.9 KPH

Minimum = -19 G'S at 58 msec Maximum = 94.27 G'S at 6 msec

LEFT MID B-POST Y ACCELERATION

B99063AF.A29 FilterClass (60)



MCA Research  
09-20-1999 16.12

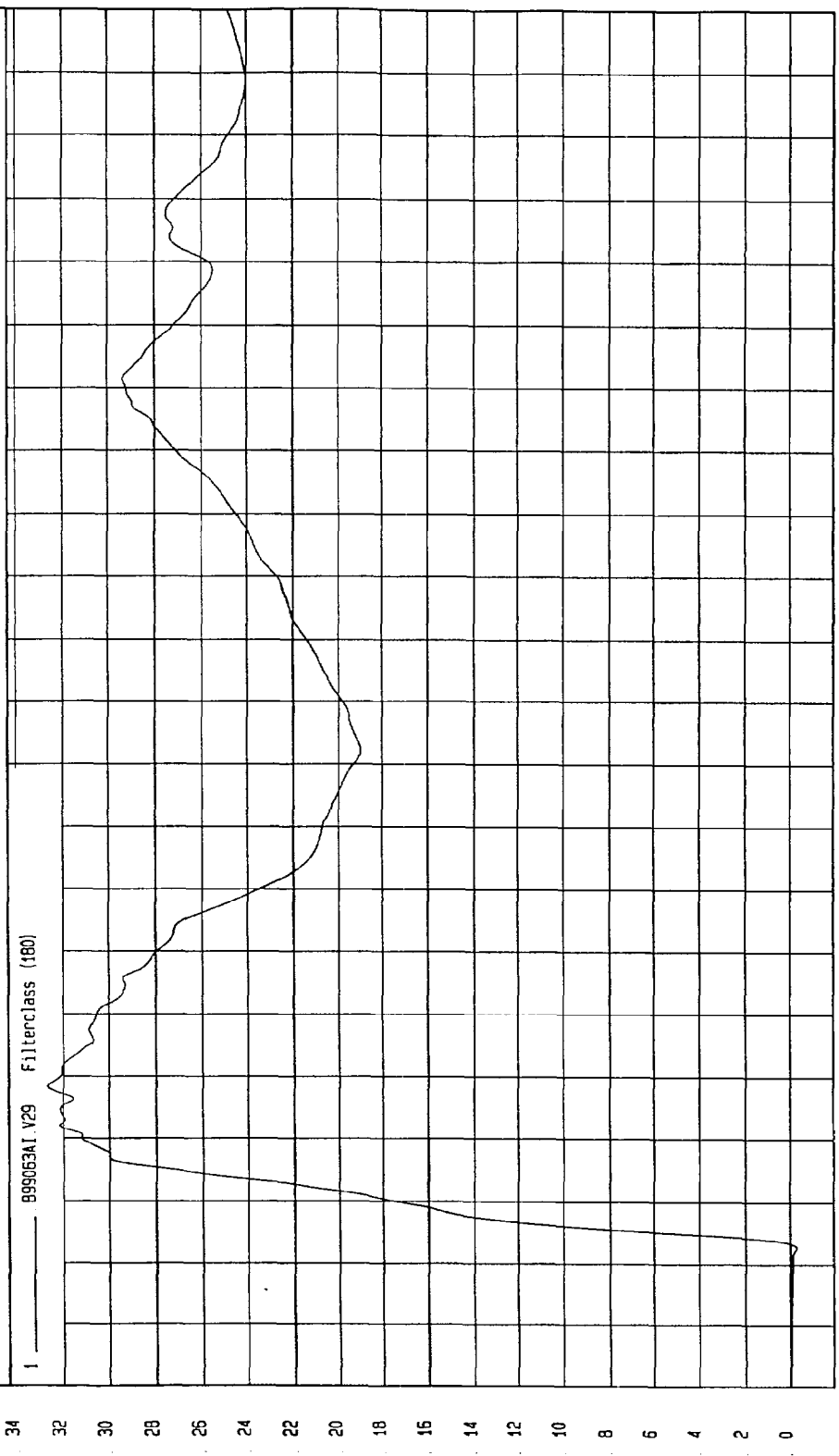
TIME (SECONDS)

G.S

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -.26 KPH at 3 msec Maximum = 32.69 KPH at 28 msec

LEFT MID B-POST Y VELOCITY



MSA Research  
09-20-1999 16.12

TIME Seconds

KPH

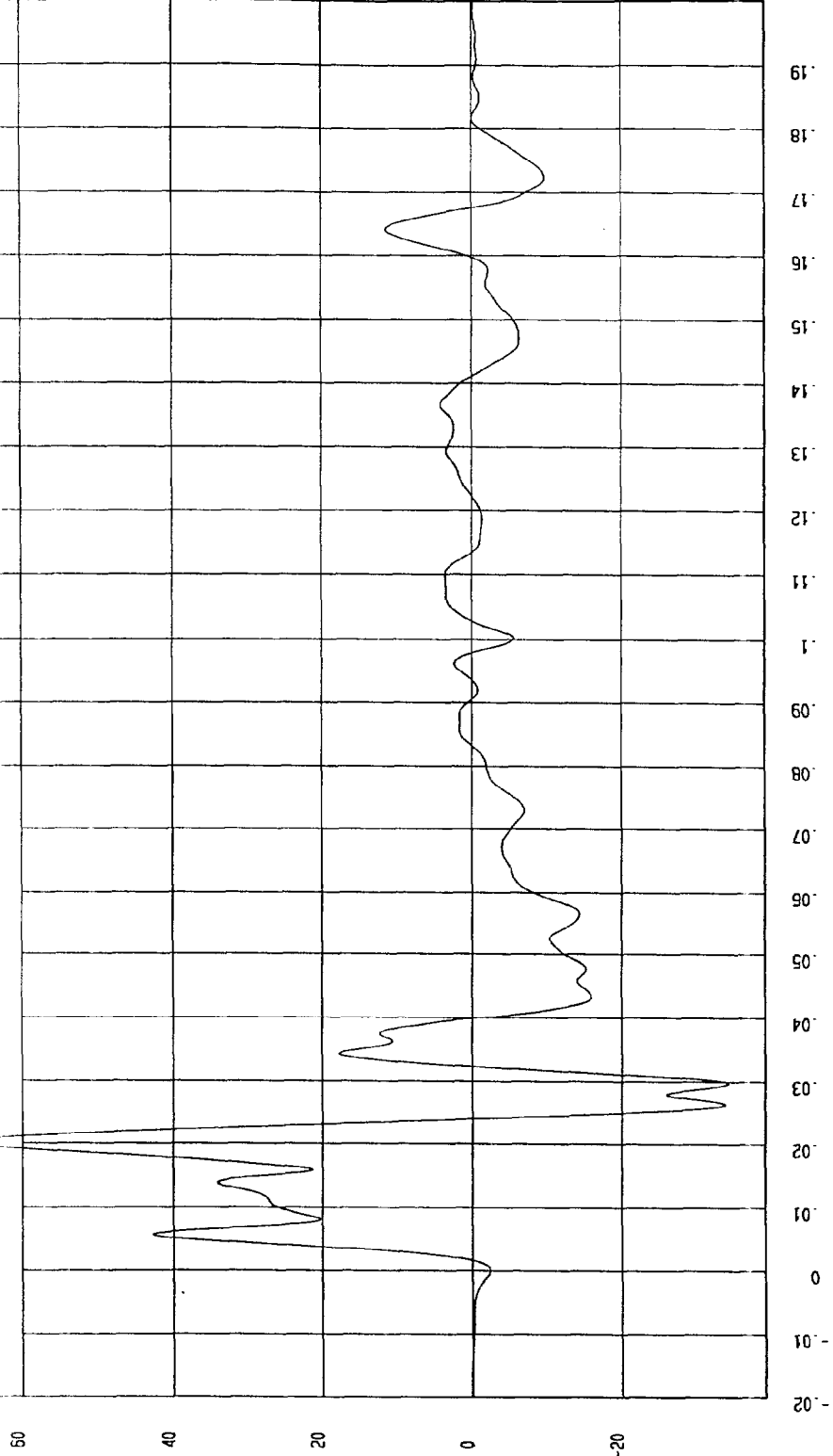
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -33.98 G'S at 30 msec Maximum = 67.23 G'S at 20 msec

DRIVER SEAT TRACK Y ACCELERATION

1 B99063AF.A40 FilterClass (60)



McA Research  
09-20-1999 16:11

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

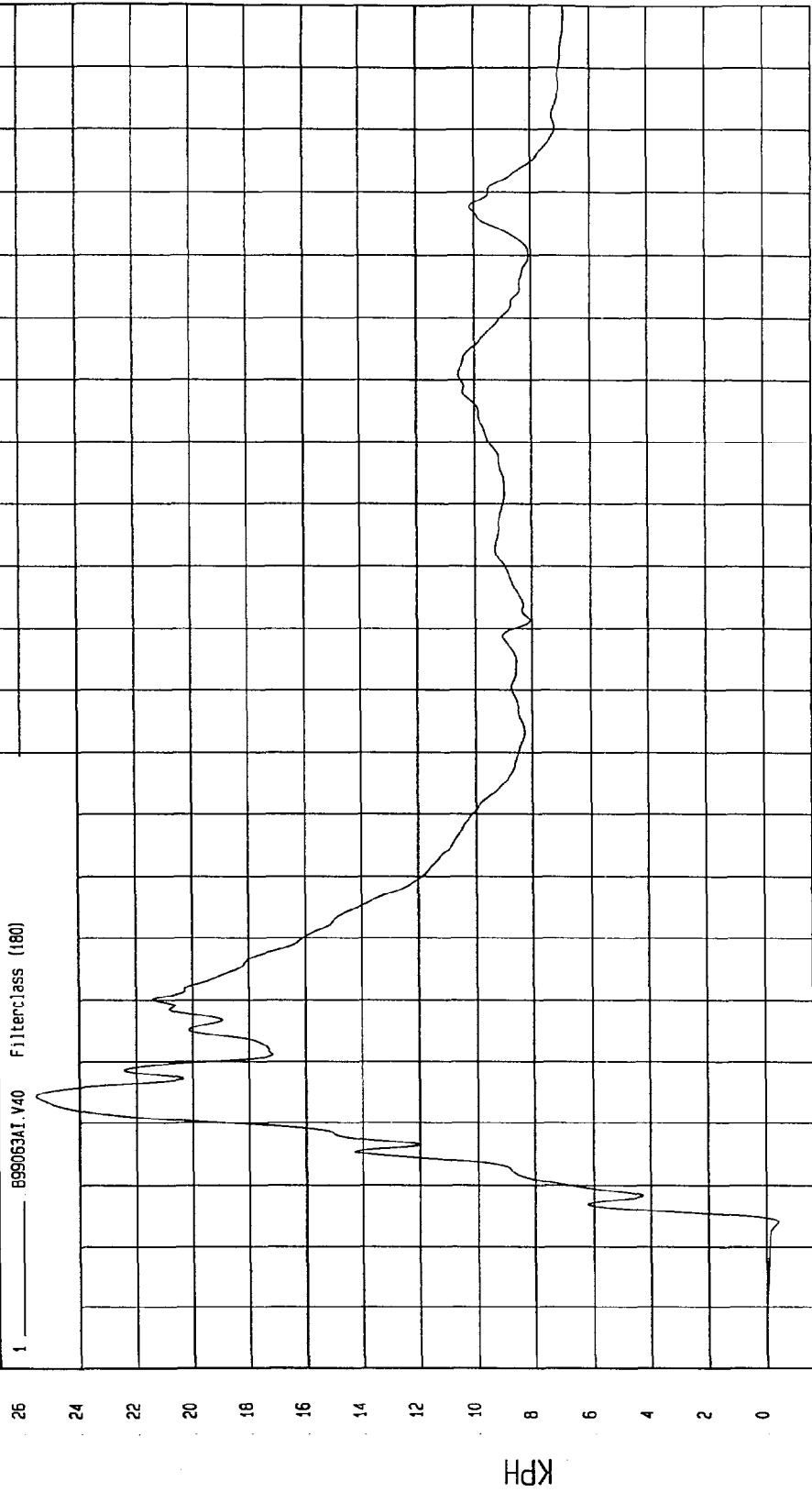
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 25.52 KPH at 24 msec

Minimum = -.41 KPH at 4 msec

DRIVER SEAT TRACK Y VELOCITY

1 899053A1.V40 Filterclass (180)



MCA Research  
09-20-1999 16:11

TIME Seconds

KPH

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 13.83 G'S at 29 msec

Minimum = -15.07 G'S at 37 msec

VEHICLE CG X ACCELERATION

1 \_\_\_\_\_ B99063AF A05 Filterclass (60)

G.S  
14  
12  
10  
8  
6  
4  
2  
0  
-2  
-4  
-6  
-8  
-10  
-12  
-14  
-16

0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

TIME (SECONDS)

MCA Research  
09-20-1999 16:12

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

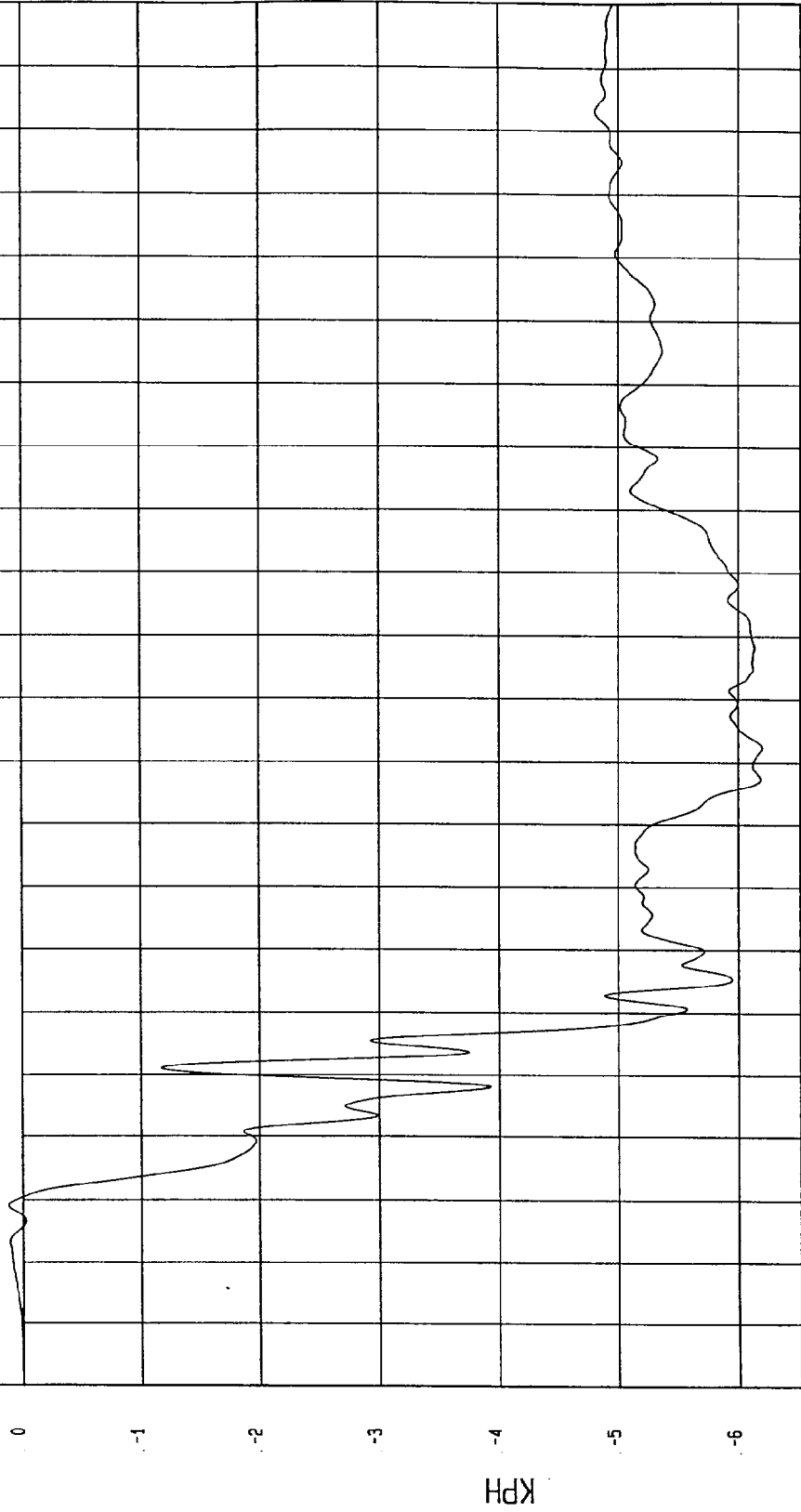
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = .12 KPH at 9 msec

Minimum = -6.2 KPH at 82 msec

VEHICLE CG X VELOCITY

1 B99063A1.V05 Filterclass (180)



TIME Seconds

MGA Research  
09-20-1999 16:12

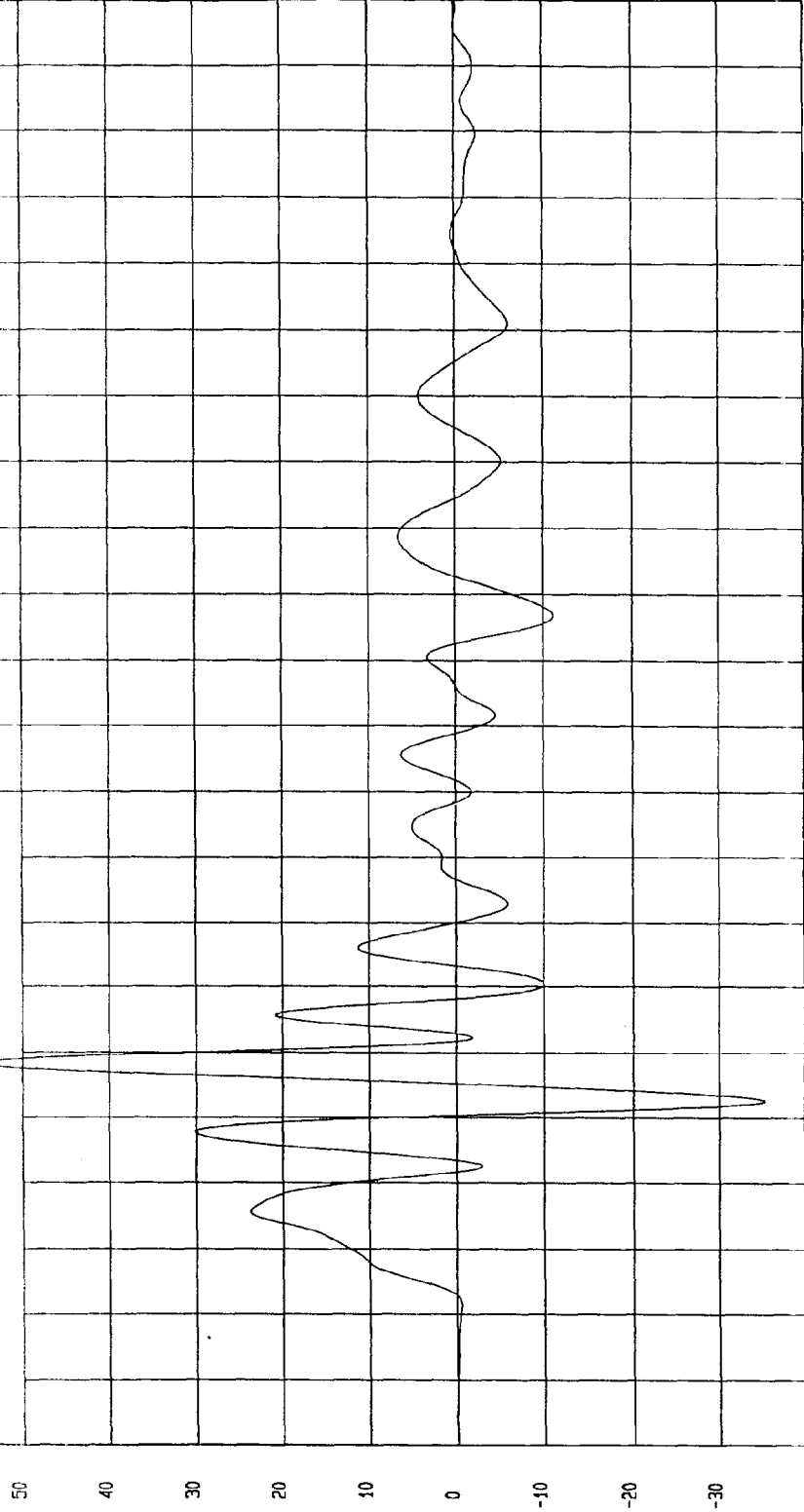
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -35.06 G'S at 32 msec  
Maximum = 55.06 G'S at 38 msec

VEHICLE CG Y ACCELERATION

1 ——— B99063AF.A06 Filterclass (60)



MGA Research  
09-20-1999 16:12

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

Maximum = 20.35 KPH at 89 msec

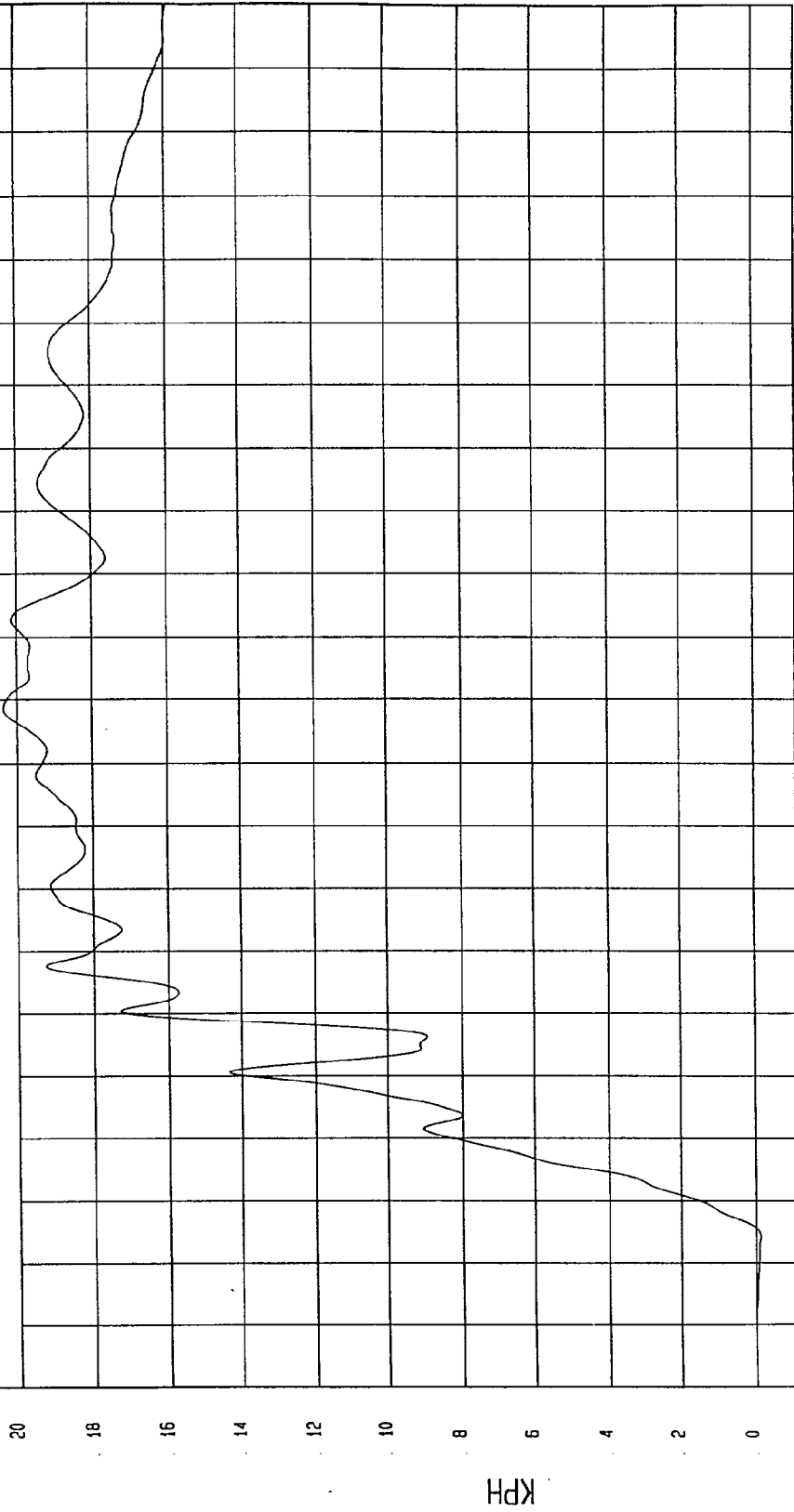
TEST: FMVSS 214 DYNAMIC

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Minimum = -.14 KPH at 4 msec

VEHICLE CG Y VELOCITY

1 ——— B99063A1.V06 Filterclass (180)



MCA Research  
09-20-1999 15:12

TIME Seconds

KPH

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -59.22 G's at .39 msec Maximum = 58.79 G's at .32 msec

VEHICLE CG Z ACCELERATION

1 899063AF.A07 Filterclass (50)

60  
40  
20  
0  
-20  
-40  
-60

G.S

-.02 0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

TIME (SECONDS)

NSA Research  
09-20-1999 16:12

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

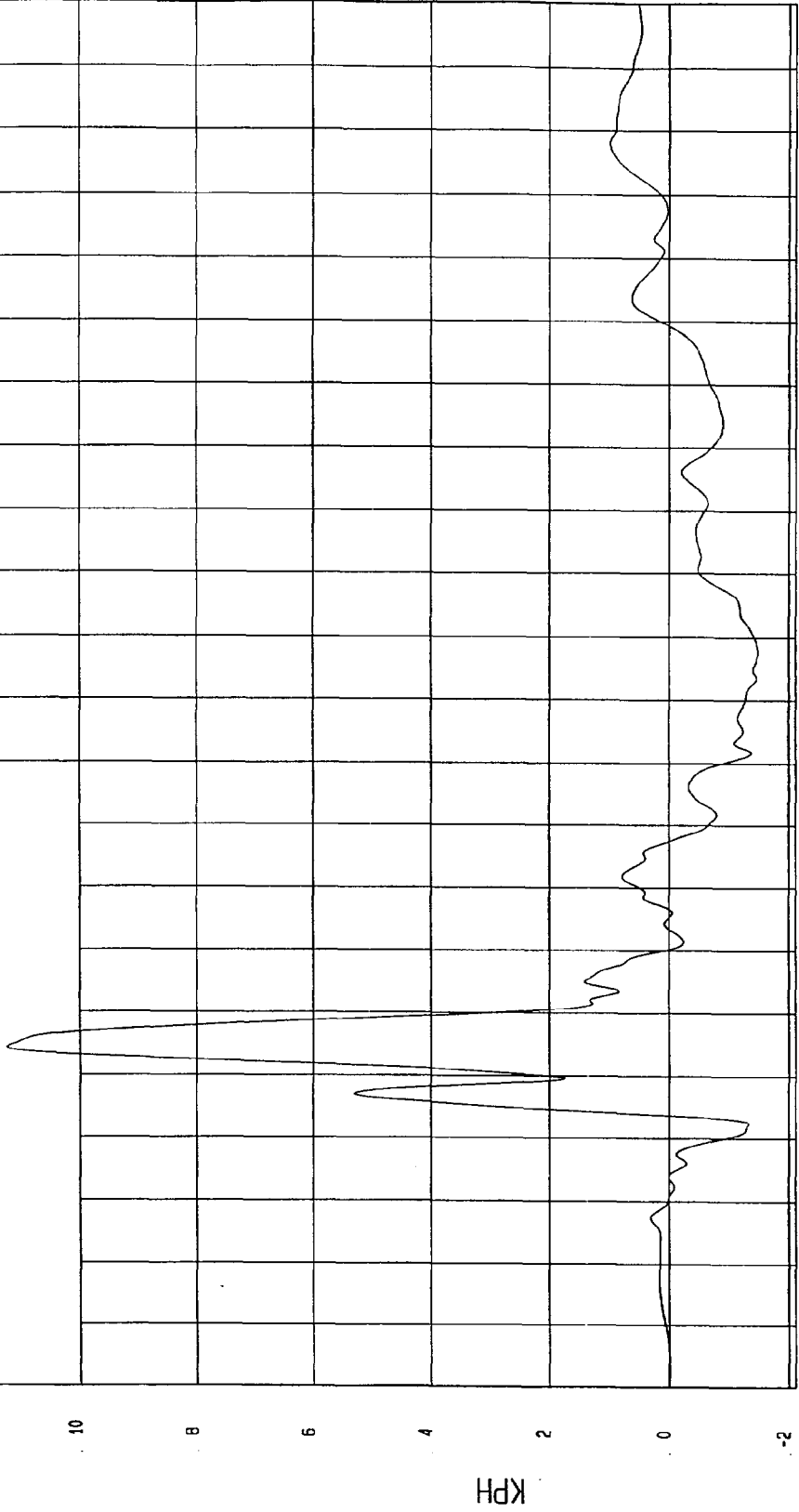
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 11.25 KPH at 34 msec

Minimum = -1.48 KPH at 98 msec

VEHICLE CG Z VELOCITY

1 899063AI.V07 Filterclass (180)



TIME Seconds

MCA Research  
09-20-1999 16.12

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

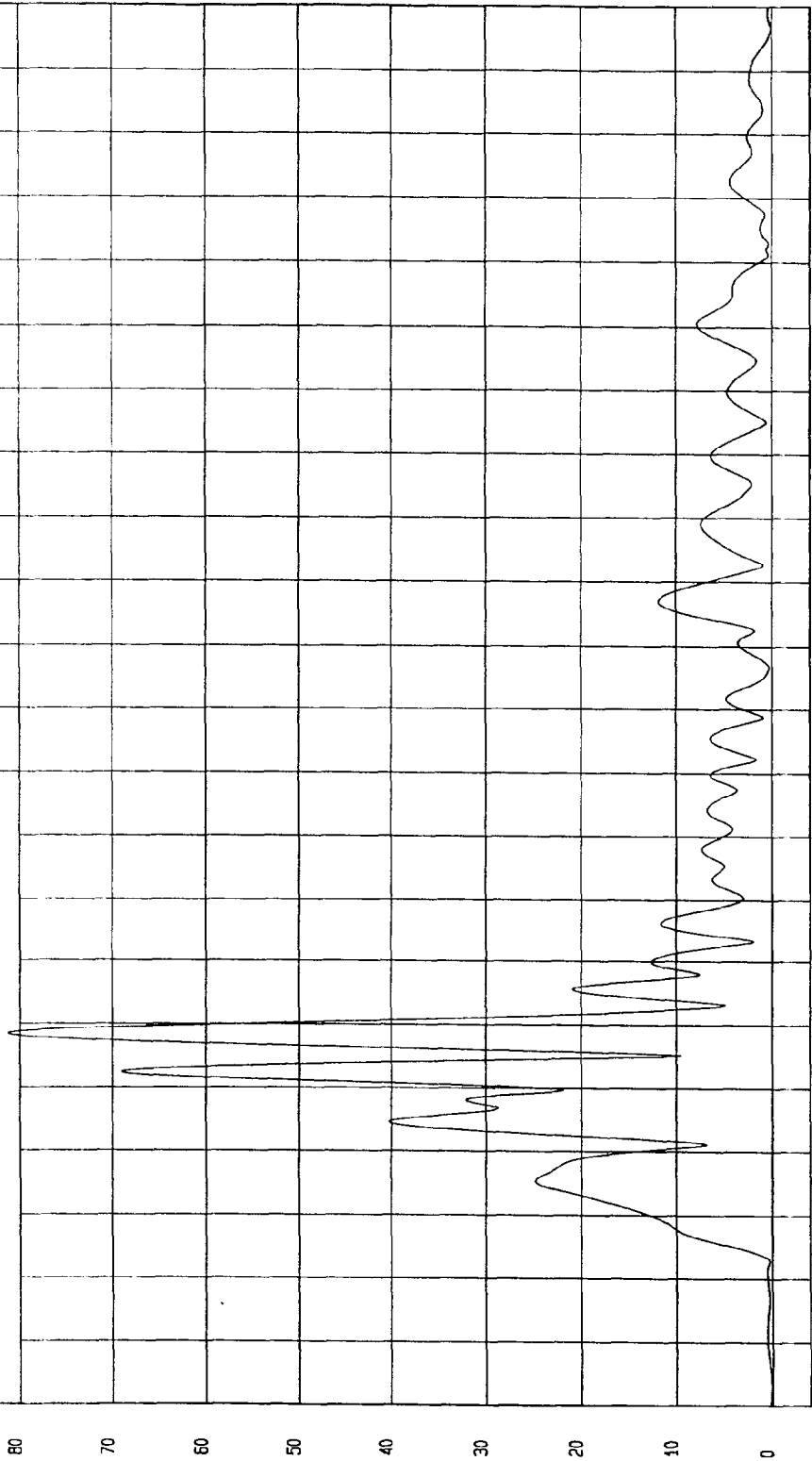
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 81.23 G'S at 38 msec

Minimum = 2.12E-02 G'S at -17 msec

VEHICLE CG RESULTANT ACCELERATION

1 B99063AV.A05 Filterclass (60)



MCA Research  
09-20-1999 16:12

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

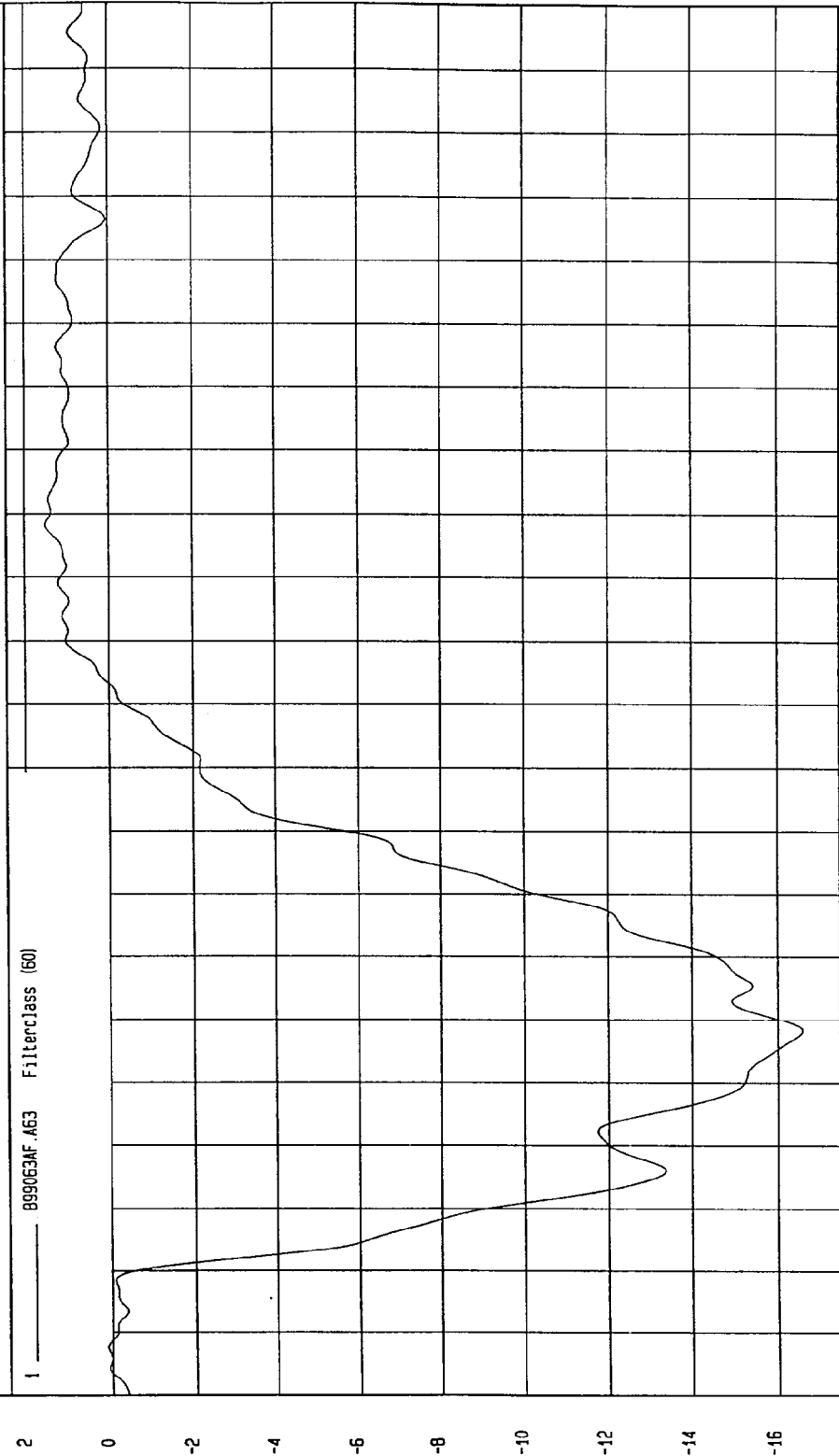
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 1.52 G'S at 118 msec

Minimum = -16.6 G'S at 38 msec

MOVING BARRIER CG X ACCELERATION

1 899063AF.A63 Filterclass (60)



TIME (SECONDS)

MGA Research  
09-20-1999 16:13

G.S

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = 16.26 KPH at 93 msec Maximum = 47.1 KPH at -11 msec

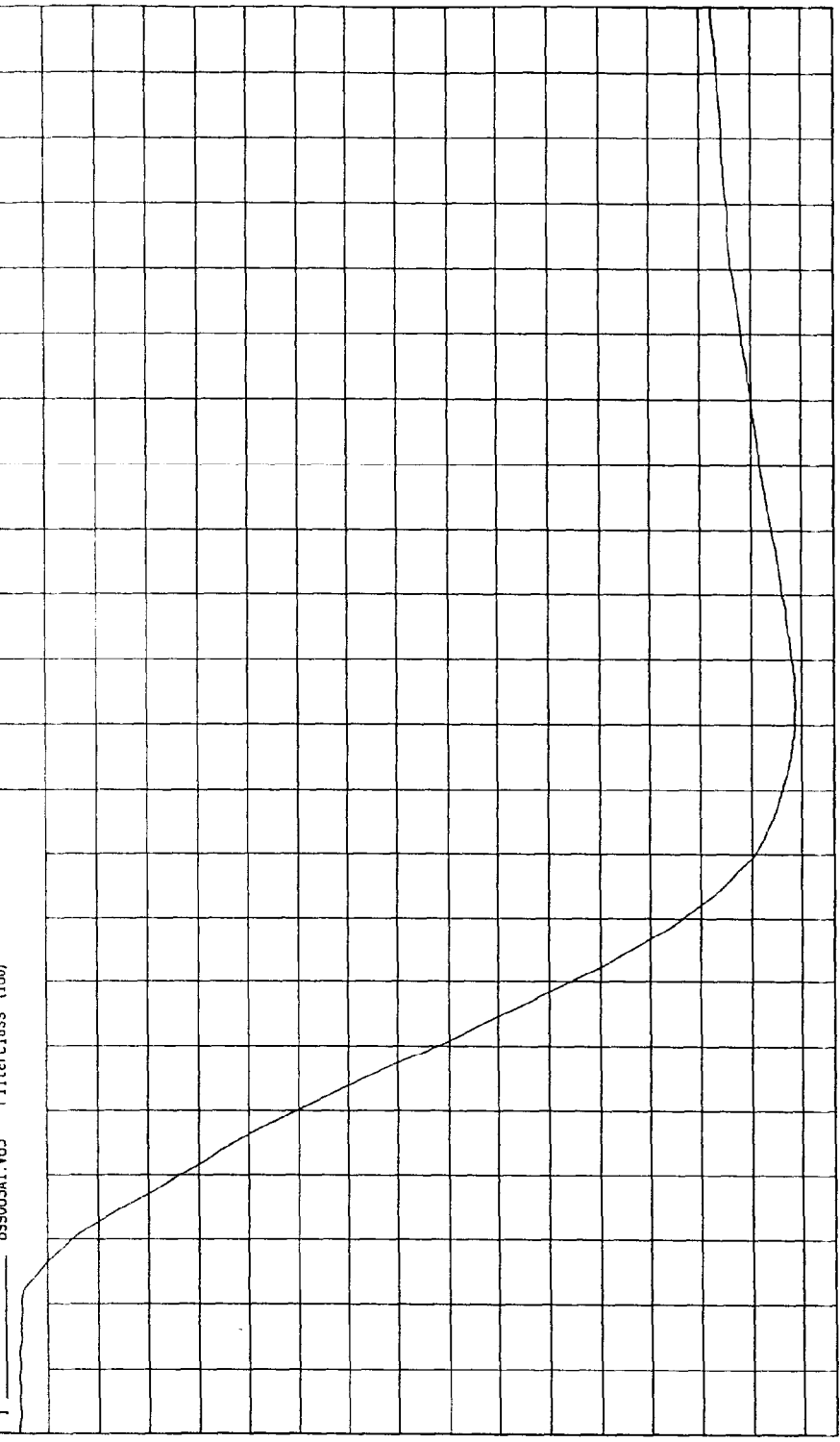
MOVING BARRIER CG X VELOCITY

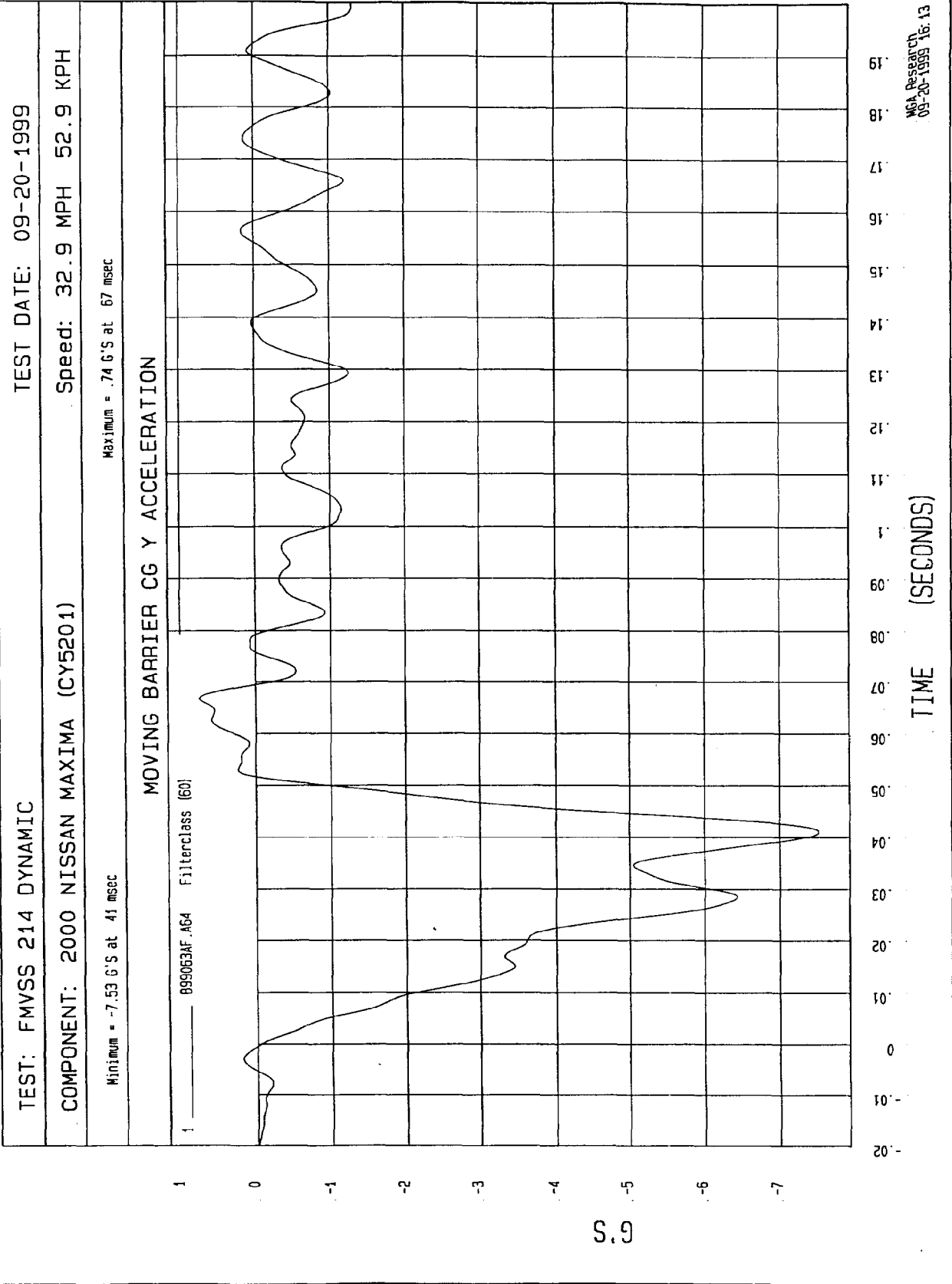
1 899063A1.V63 Filterclass (160)

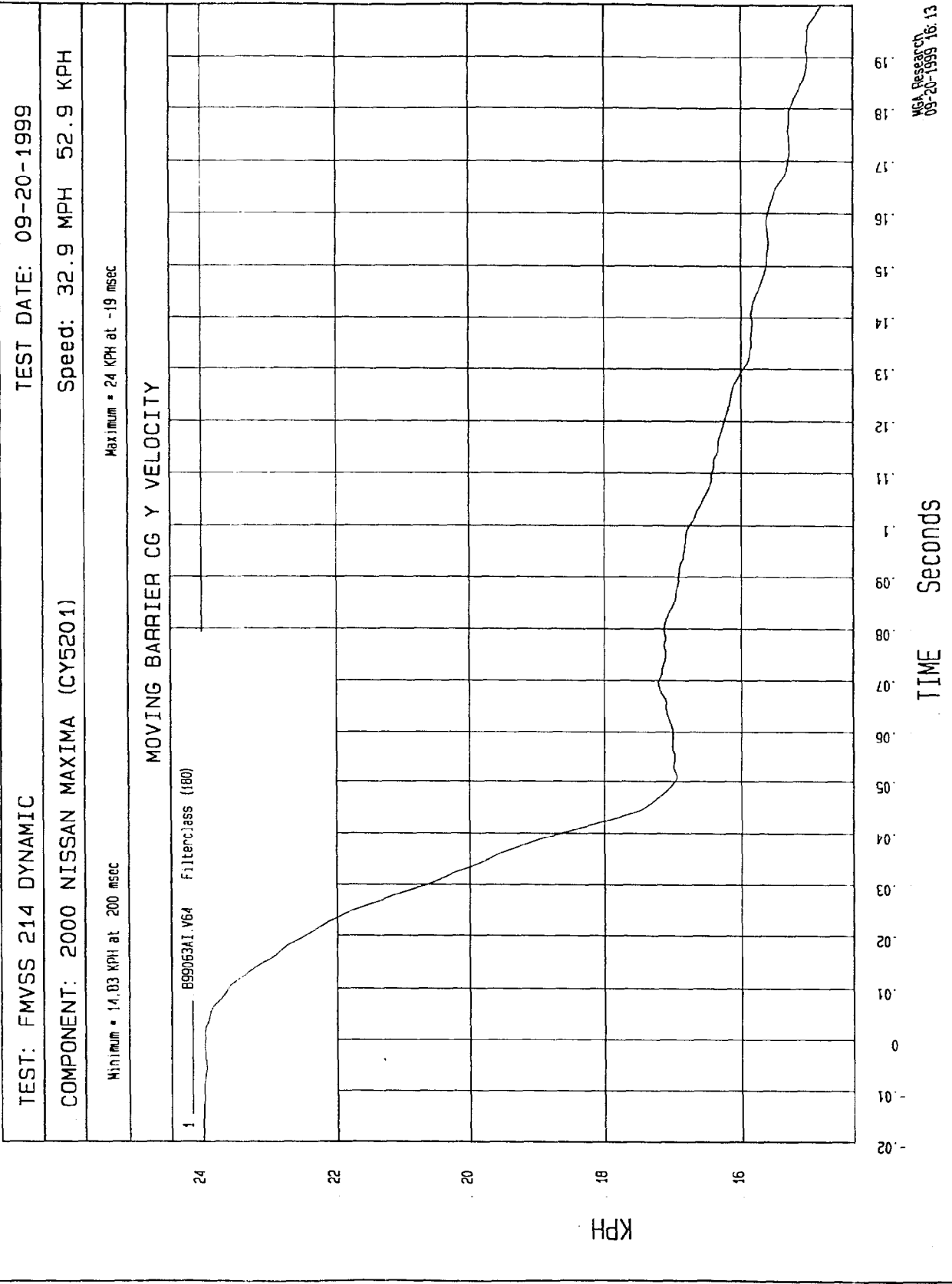
KPH  
48  
46  
44  
42  
40  
38  
36  
34  
32  
30  
28  
26  
24  
22  
20  
18  
16

TIME Seconds  
-0.02  
0  
0.01  
0.02  
0.03  
0.04  
0.05  
0.06  
0.07  
0.08  
0.09  
1  
1.1  
1.2  
1.3  
1.4  
1.5  
1.6  
1.7  
1.8  
1.9

NSA Research  
09-20-1999 16:13



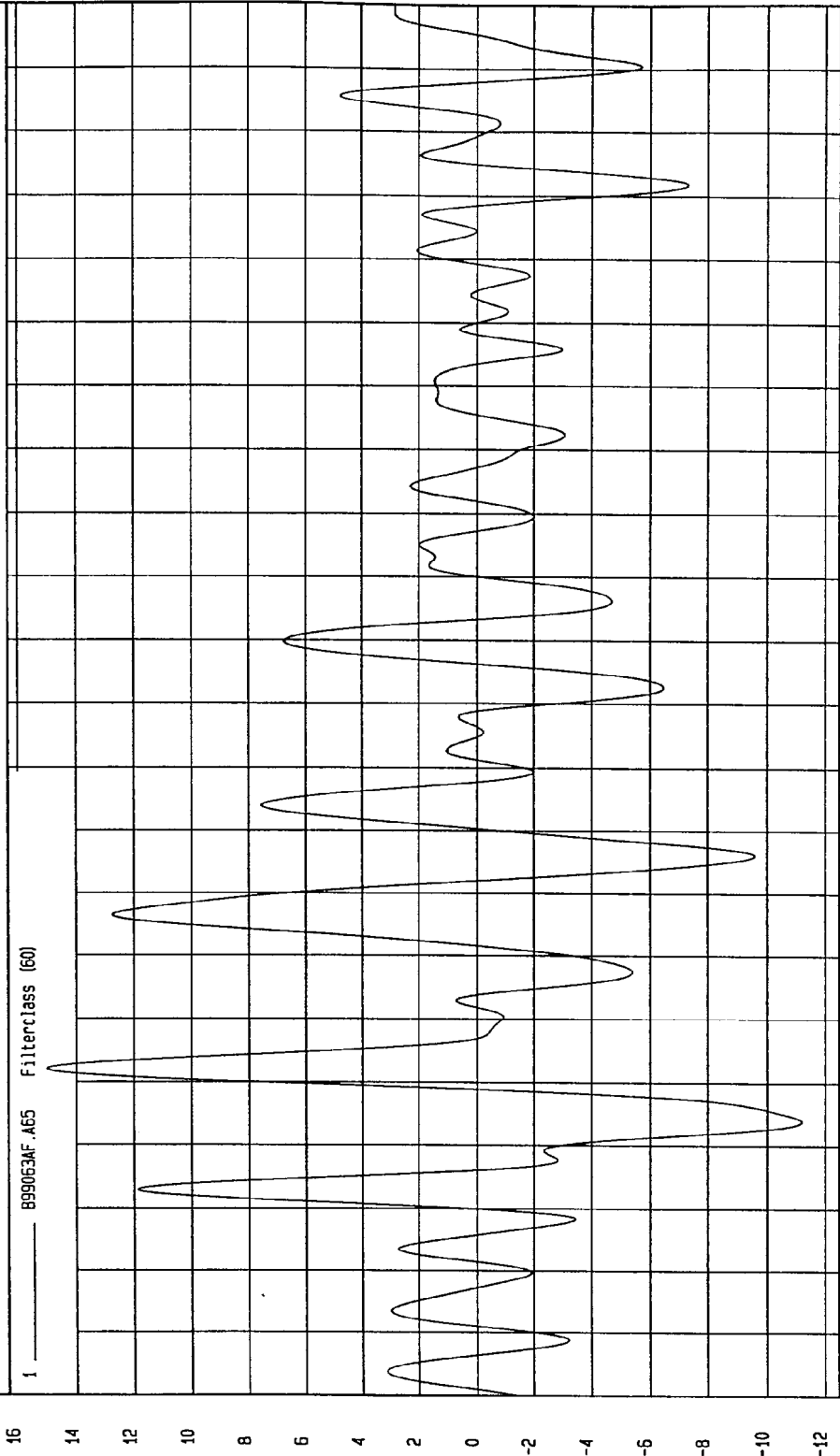




TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -11.18 G'S at 24 msec Maximum = 15.01 G'S at 32 msec

MOVING BARRIER CG Z ACCELERATION



TIME (SECONDS)

16  
14  
12  
10  
8  
6  
4  
2  
0  
-2  
-4  
-6  
-8  
-10  
-12

0.19  
0.18  
0.17  
0.16  
0.15  
0.14  
0.13  
0.12  
0.11  
0.10  
0.09  
0.08  
0.07  
0.06  
0.05  
0.04  
0.03  
0.02  
0.01  
0  
-0.01  
-0.02

MCA Research  
09-20-1999 16:13

G.S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

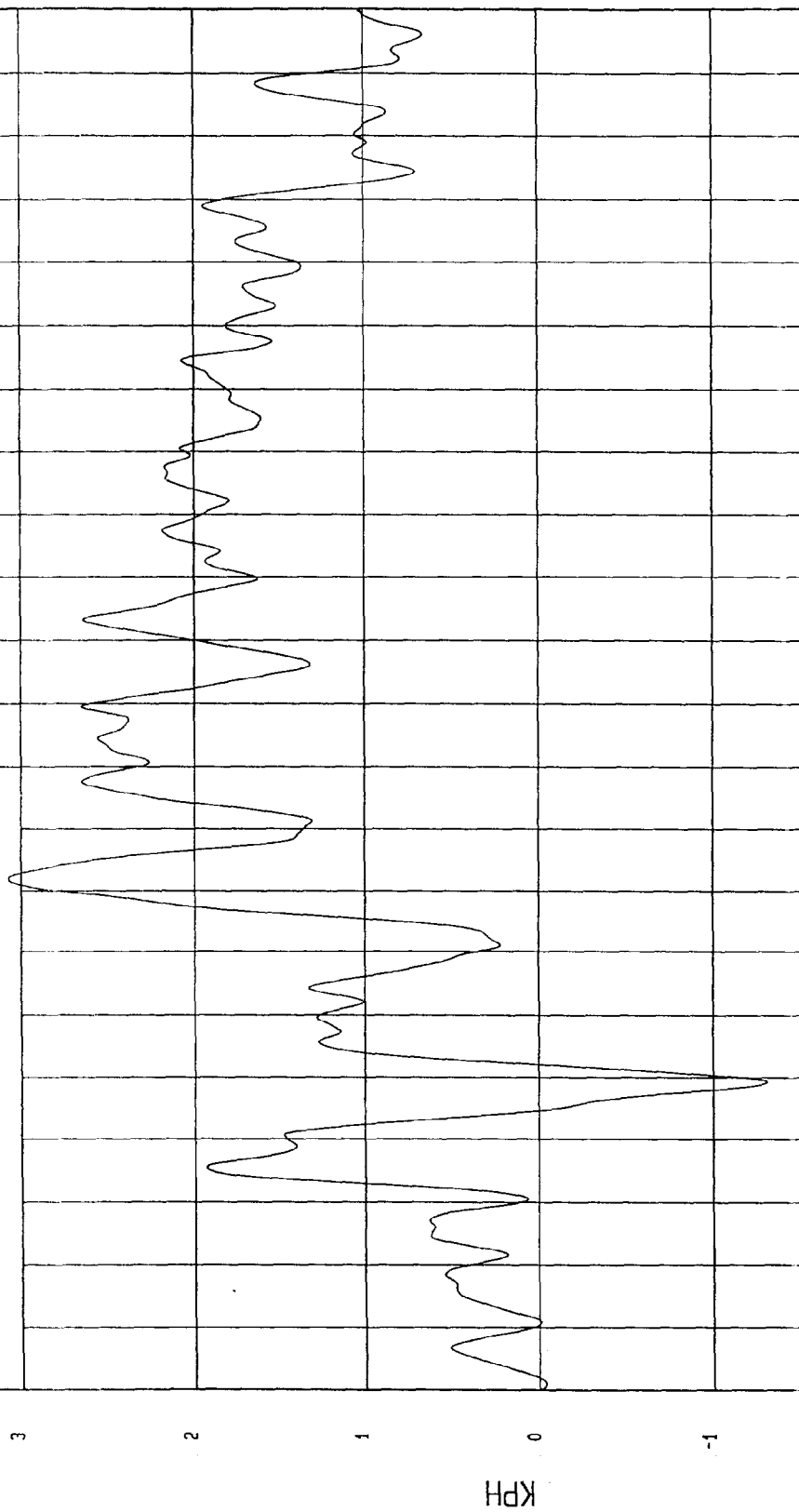
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 3.07 KPH at 62 msec

Minimum = -1.3 KPH at 29 msec

MOVING BARRIER CG Z VELOCITY

1 899063A1.V65 Filterclass (180)



NSA Research  
09-20-1999 16:13

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 22.12 G'S at 32 msec

Minimum = .1 G'S at -14 msec

MOVING BARRIER CG RESULTANT ACCELERATION

1 B99063AV.AG3 Filterclass (60)

22  
20  
18  
16  
14  
12  
10  
8  
6  
4  
2  
0

G.S

-.02 .01 0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12 .13 .14 .15 .16 .17 .18 .19

TIME (SECONDS)

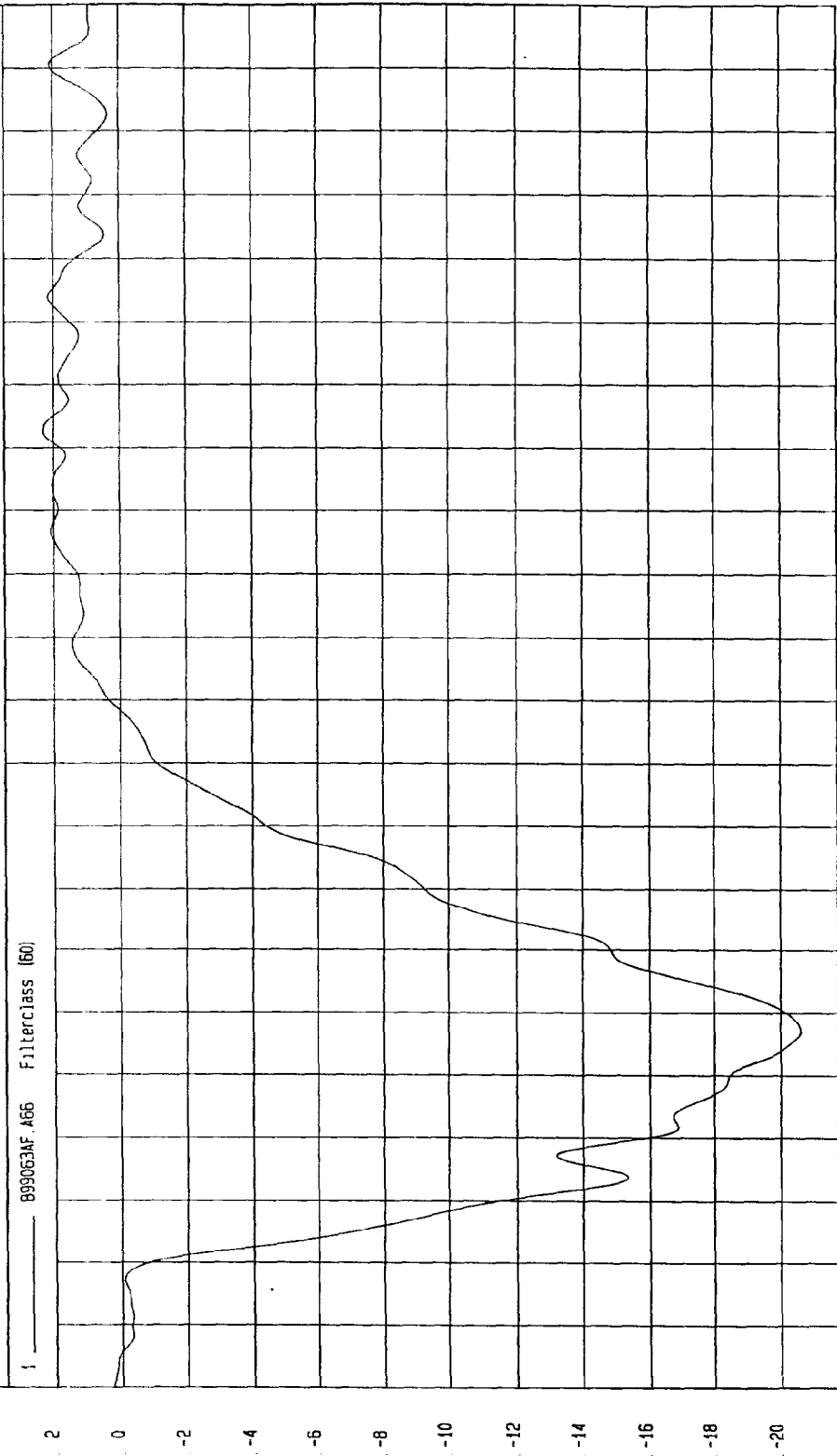
MGA Research  
09-20-1999 16:13

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -20.62 G'S at 37 msec Maximum = 2.31 G'S at 133 msec

MOVING BARRIER REAR AXLE X ACCELERATION

1 899063MF A66 Filterclass (60)



TIME (SECONDS)

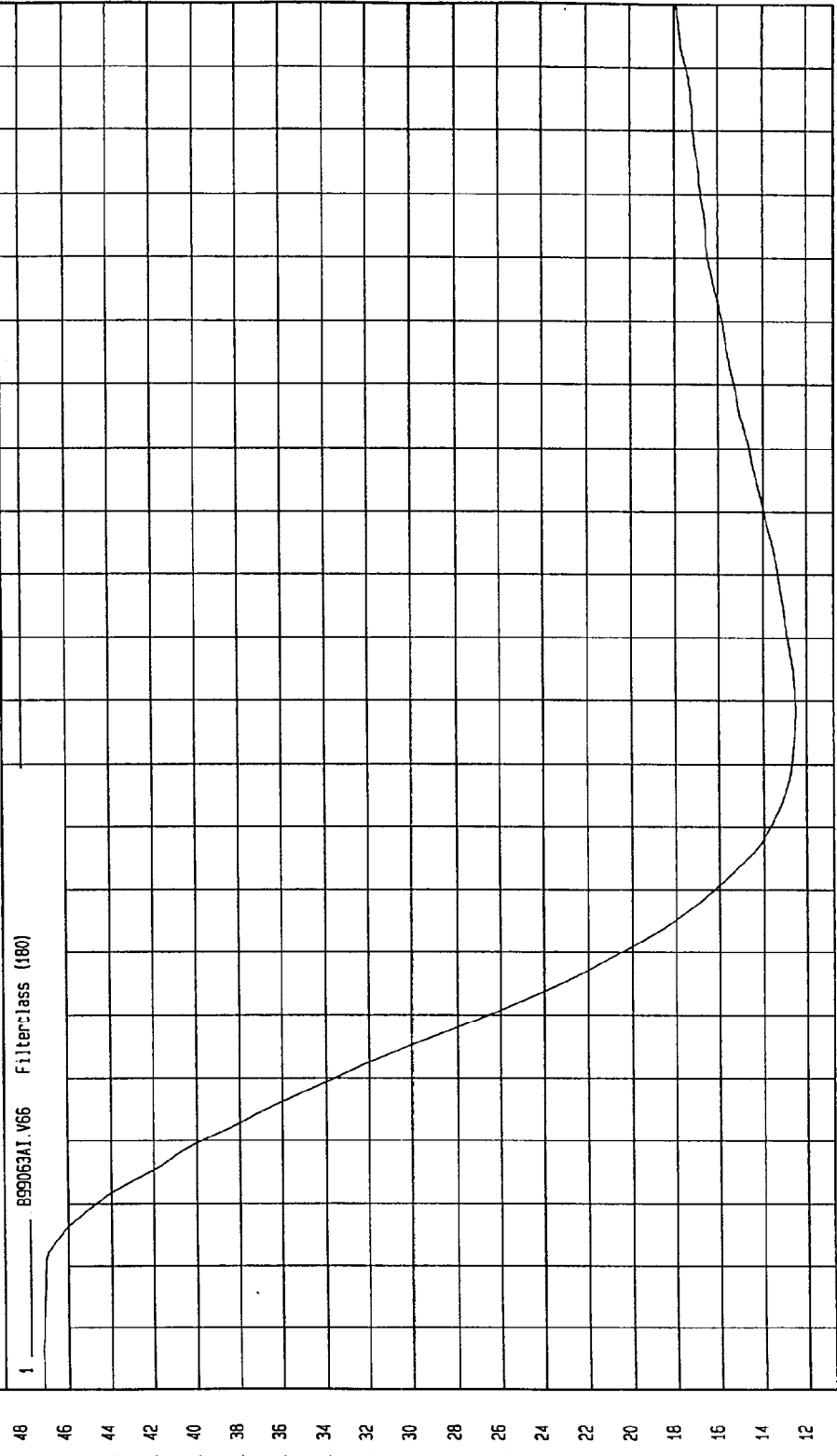
W&A Research Co.  
09-20-1999 16:13

G.S

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = 12.51 KPH at 89 msec Maximum = 47.15 KPH at -14 msec

MOVING BARRIER REAR AXLE X VELOCITY



TIME Seconds  
NSA Research  
09-20-1999 16:13

KPH

TEST: FMVSS 214 DYNAMIC

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

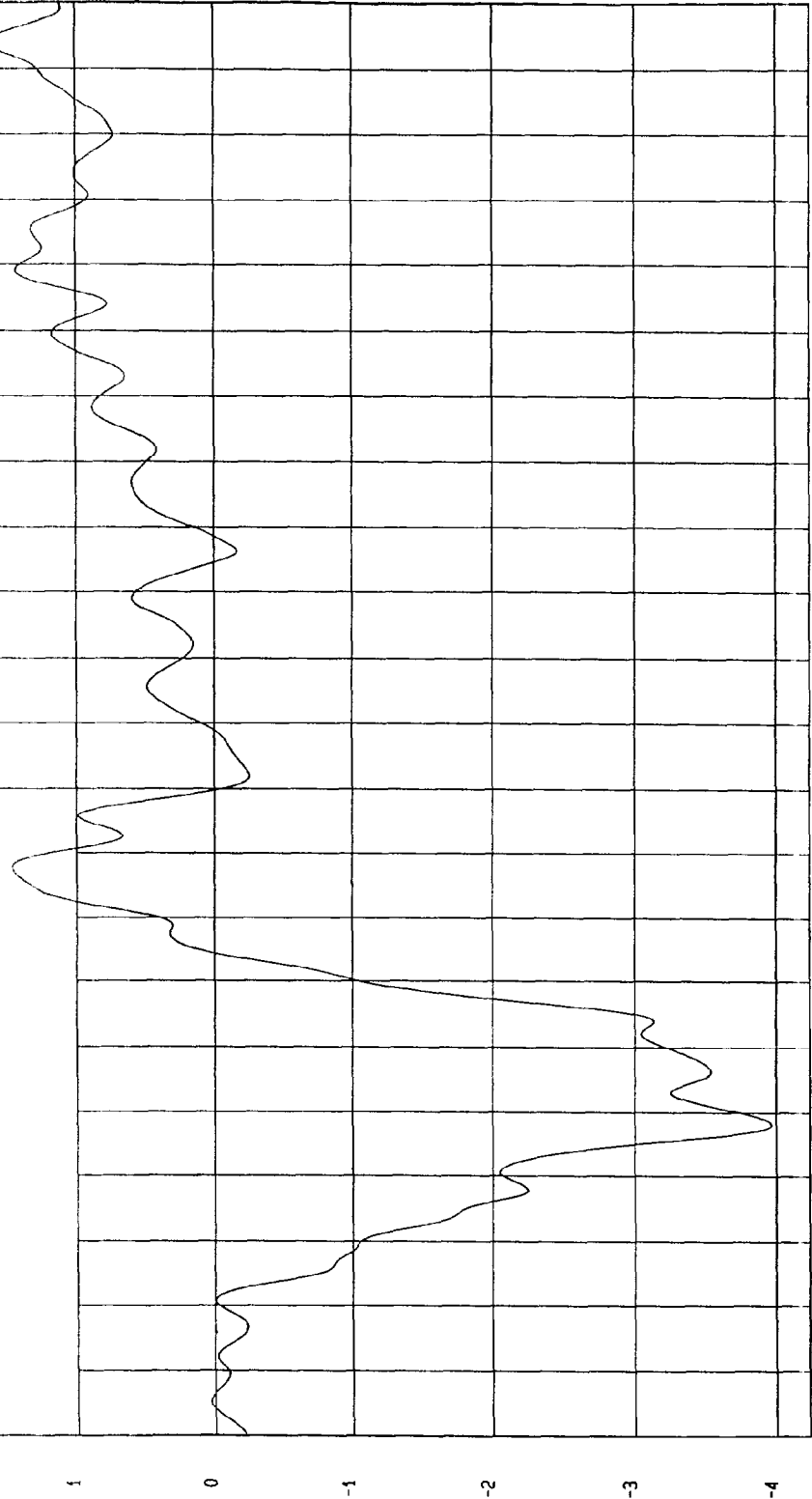
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Minimum = -3.97 G'S at 28 msec

Maximum = 1.64 G'S at 194 msec

MOVING BARRIER REAR AXLE Y ACCELERATION

1 ——— 899063AF.A67 Filterclass (60)



MCA Research  
09-20-1999 16:13

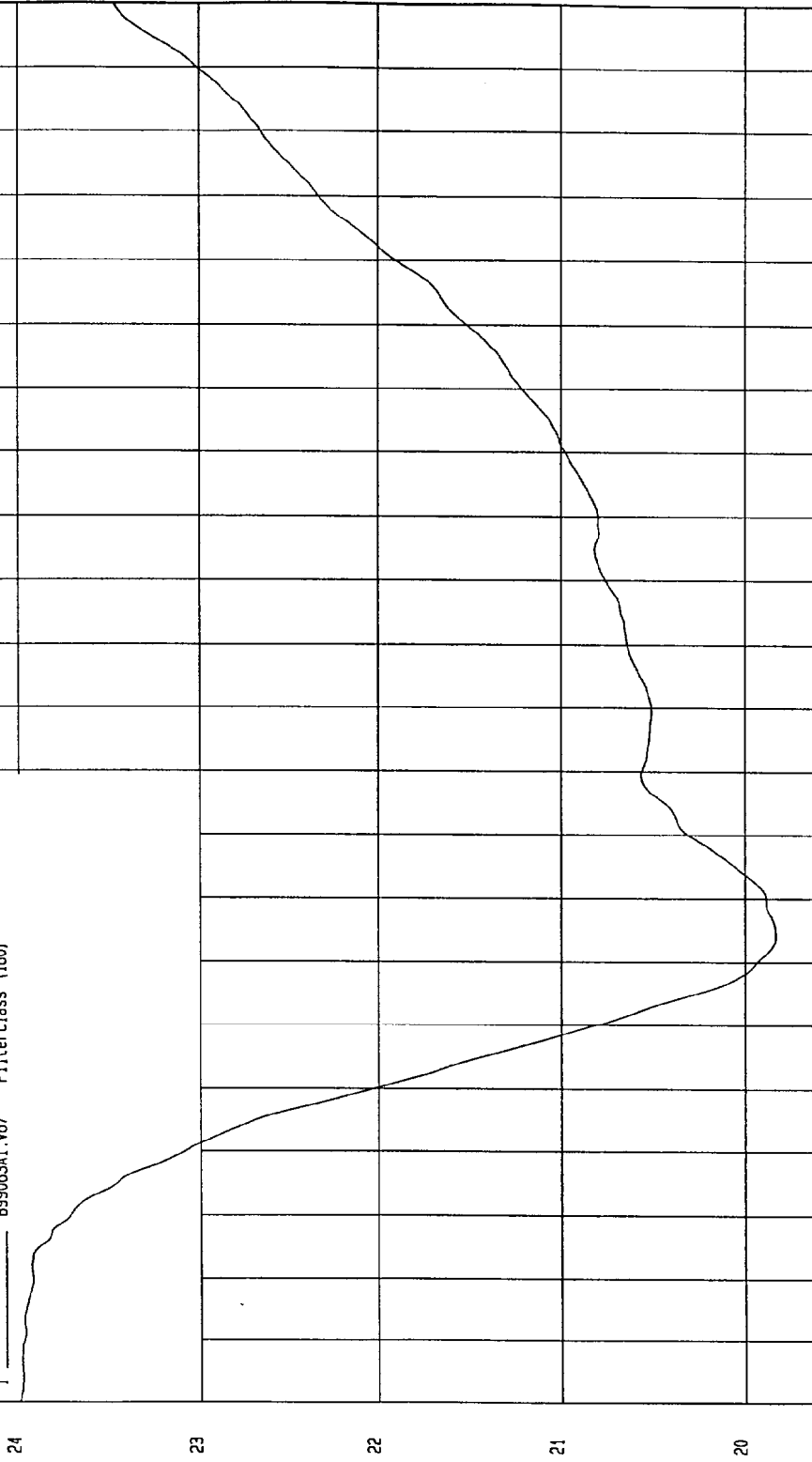
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = 19.83 KPH at 54 msec Maximum = 24 KPH at -20 msec

MOVING BARRIER REAR AXLE Y VELOCITY

1 899063A1.V67 Filterclass (180)



TIME Seconds  
MSA Research  
09-20-1999 16:13

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

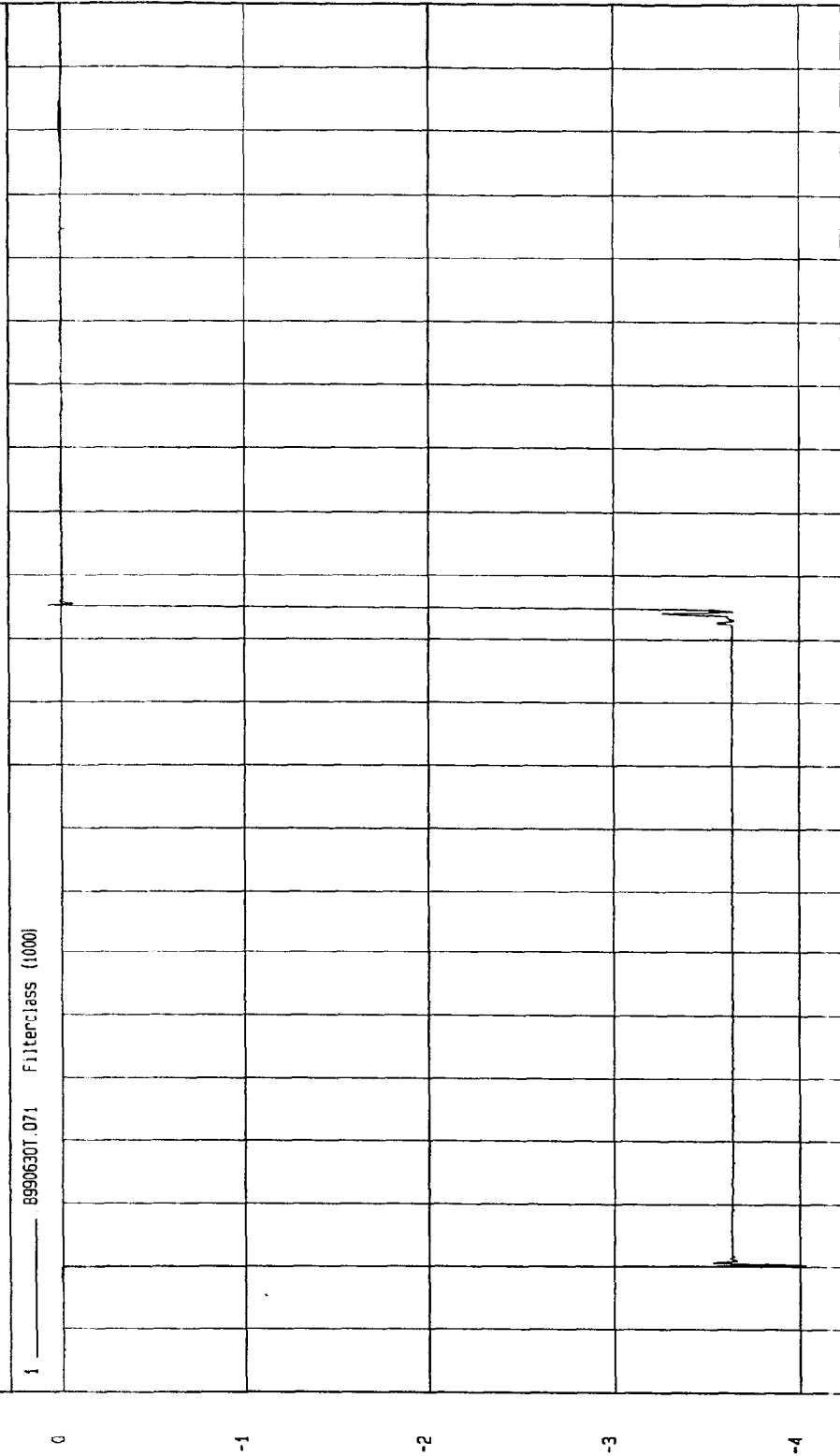
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 7.28E-02 VOLTS at 105 msec

Minimum = -4.03 VOLTS at 0 msec

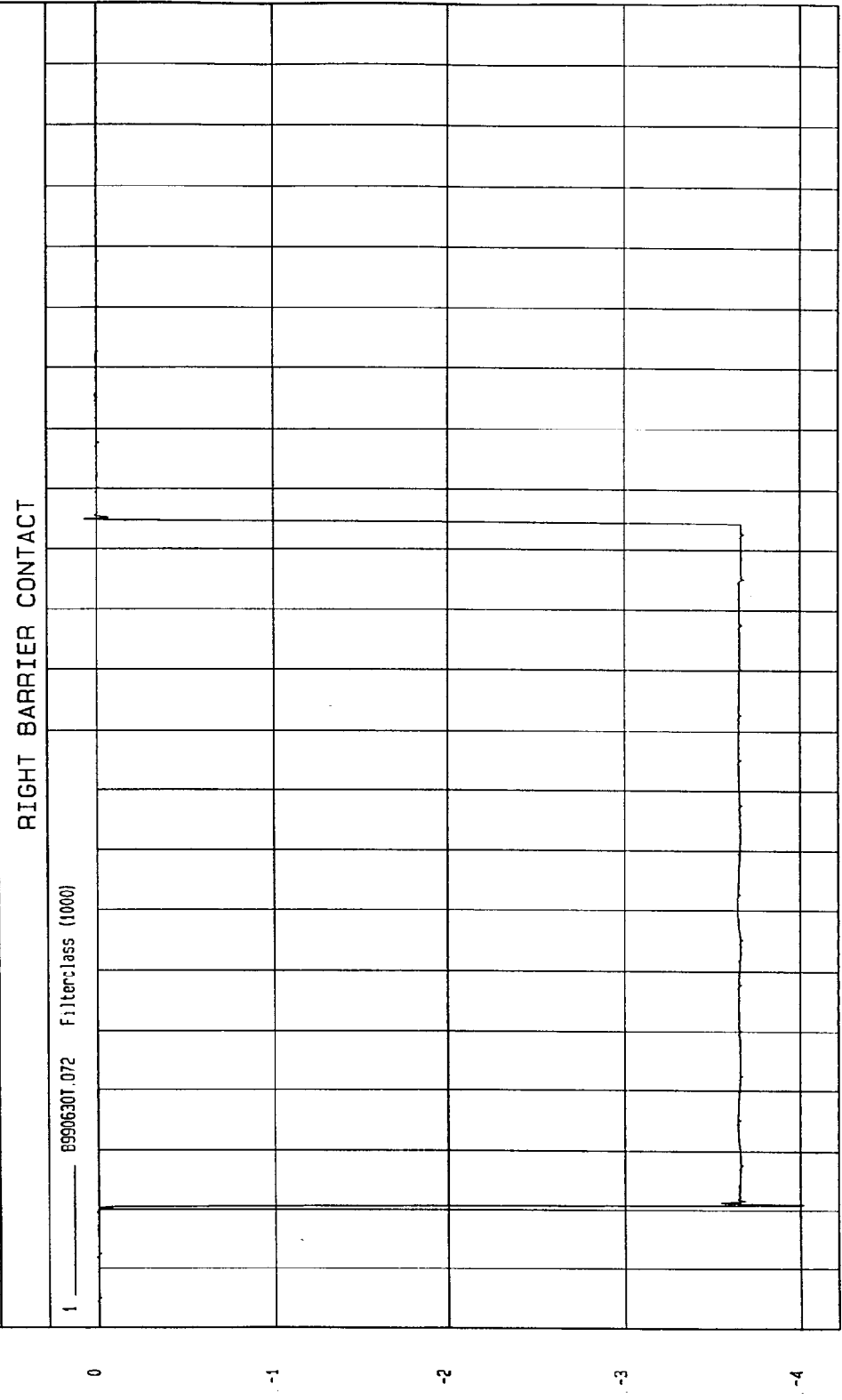
LEFT BARRIER CONTACT

1 8990630T.071 Filterclass (1000)



TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -4.02 VOLTS at 1 msec Maximum = .07 VOLTS at 115 msec



TIME (SECONDS)

NSA Research  
09-20-1999 16:13

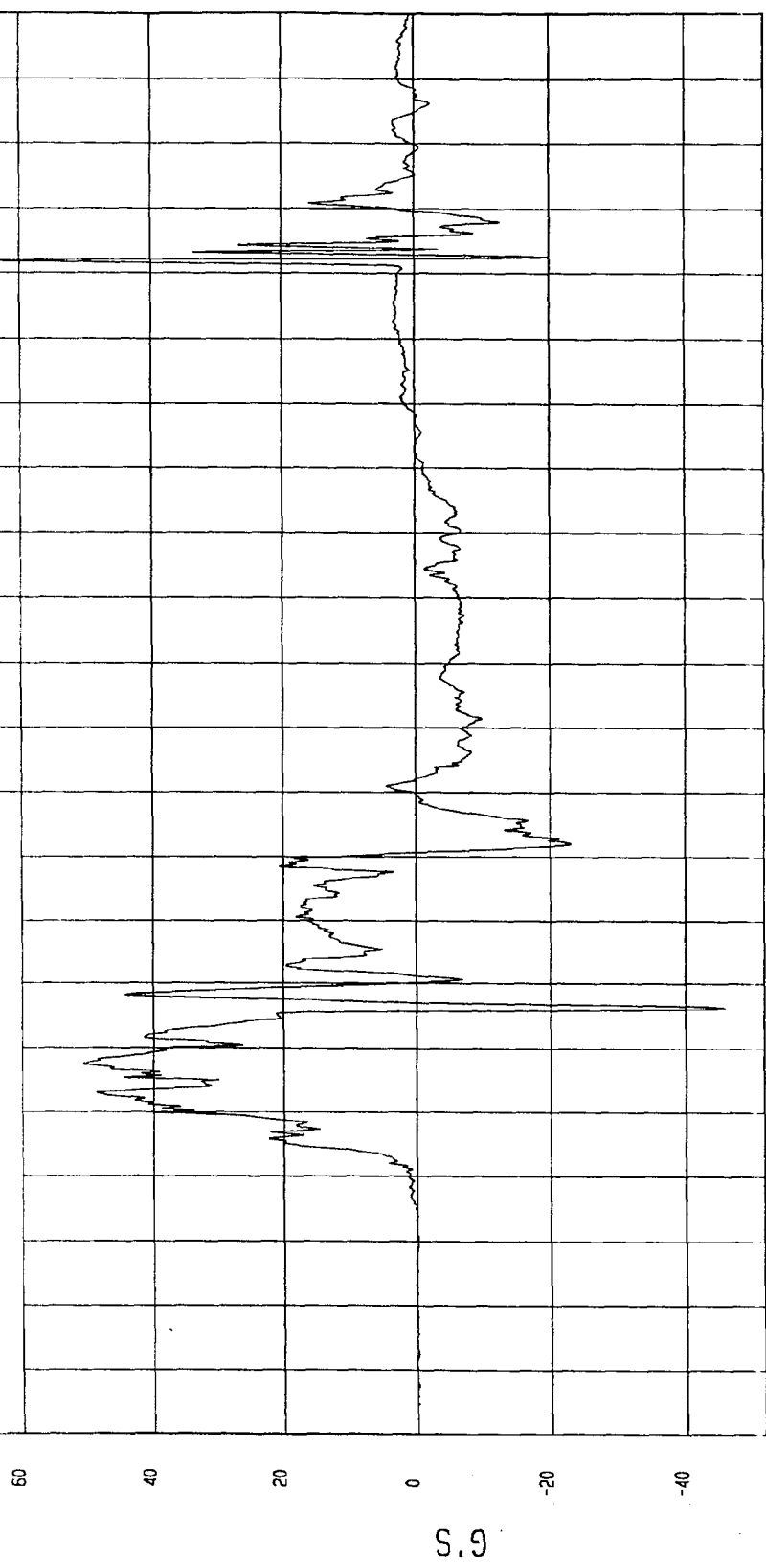
TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -45.62 G'S at 46 msec  
Maximum = 71.29 G'S at 162 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 899063AT.A42 Filterclass (1000)



MGA Research  
09-20-1999 16.14

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

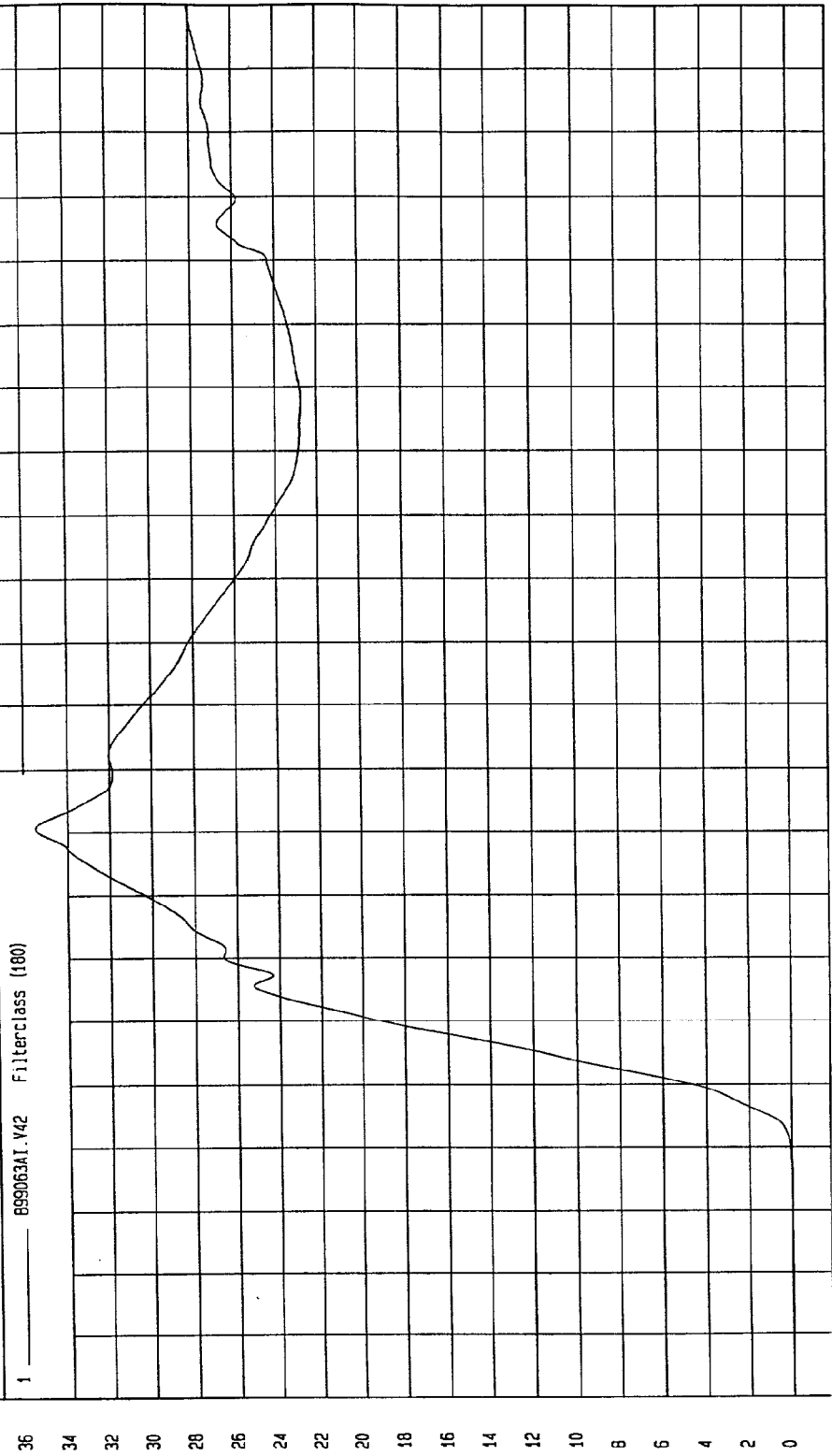
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 35.47 KPH at 71 msec

Minimum = -4.91E-02 KPH at 15 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 \_\_\_\_\_ B99063A1.V42 Filterclass (180)



TIME Seconds

MGA Research  
09-20-1999 16:14

KPH

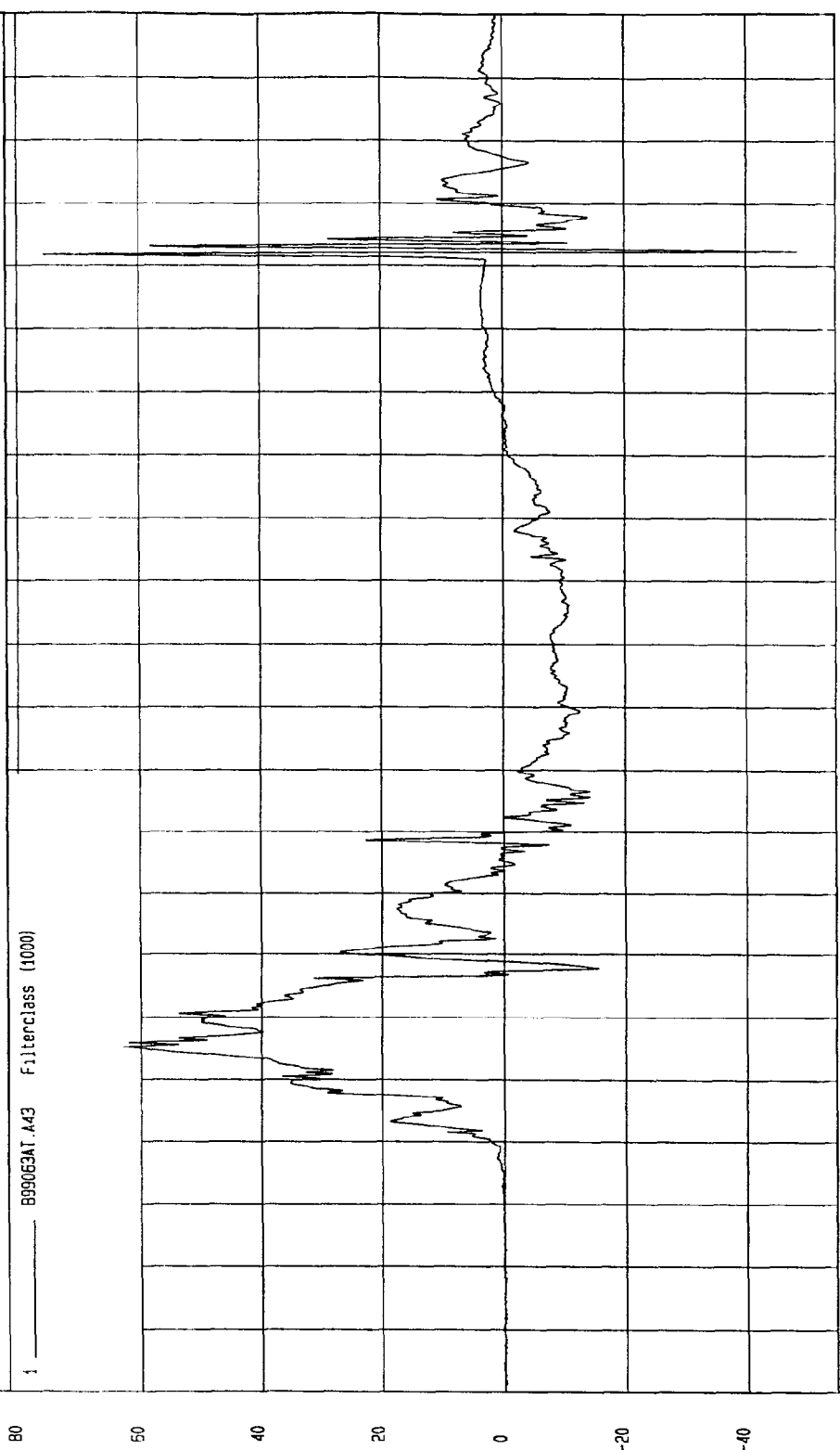
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -48.42 G'S at 162 msec  
Maximum = 75.61 G'S at 162 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 899063AT.A43 Filterclass (1000)



MCA Research  
09-20-1999 16.14

TIME (SECONDS)

G.S

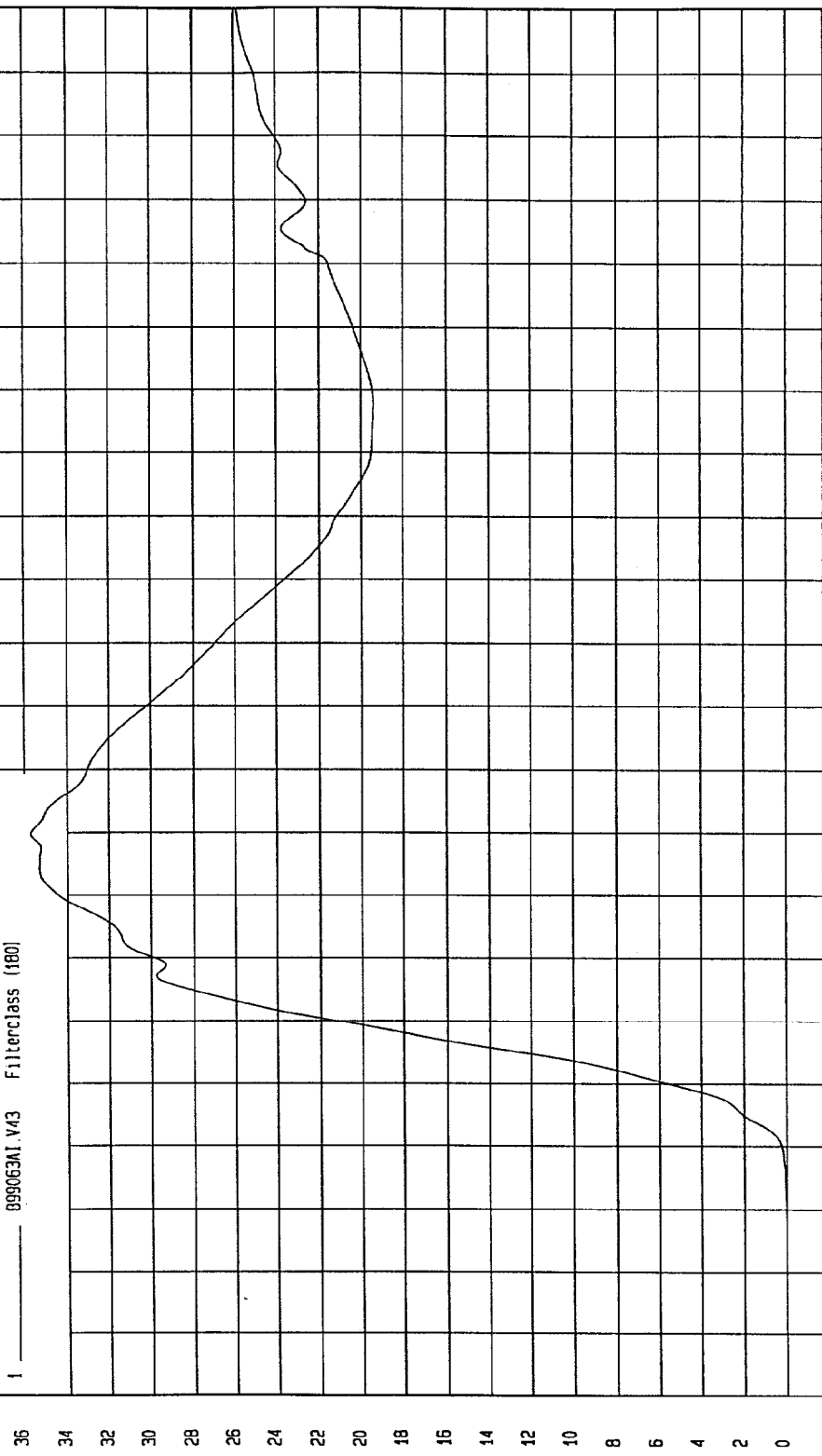
TEST DATE: 09-20-1999  
Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC  
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Minimum = -5.24E-03 KPH at -17 msec  
Maximum = 35.7 KPH at 70 msec

DRIVER LOWER RIB Y REDUNDANT VELOCITY

1 099063M1.V43 Filterclass (180)



TIME Seconds  
MGA Research  
09-20-1999 16:14

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

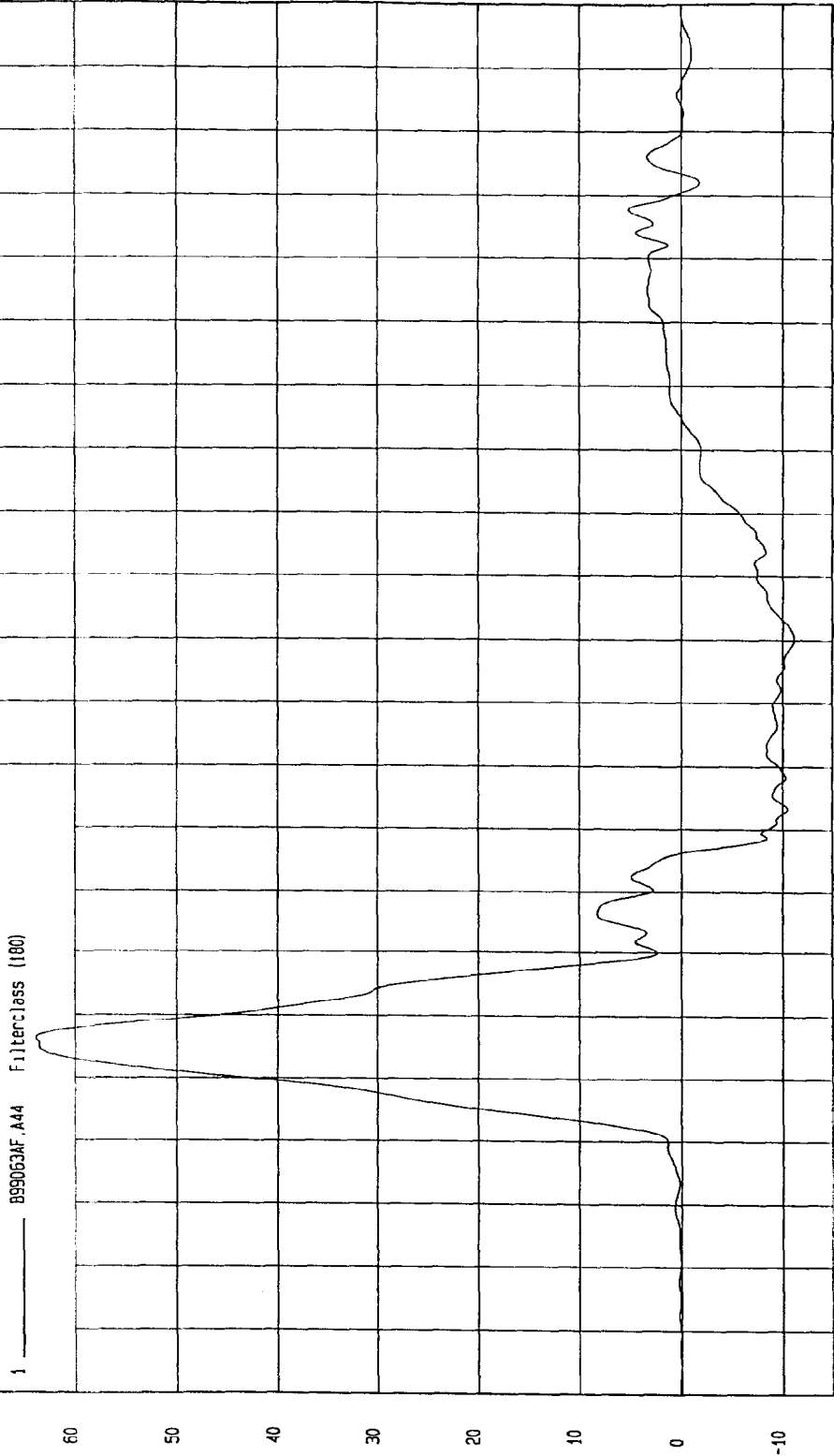
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 63.77 G'S at 36 msec

Minimum = -11.1 G'S at 100 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 B99053AF.A44 Filterclass (180)



MCA Research  
09-20-1999 16:15

G.S

TIME (SECONDS)

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

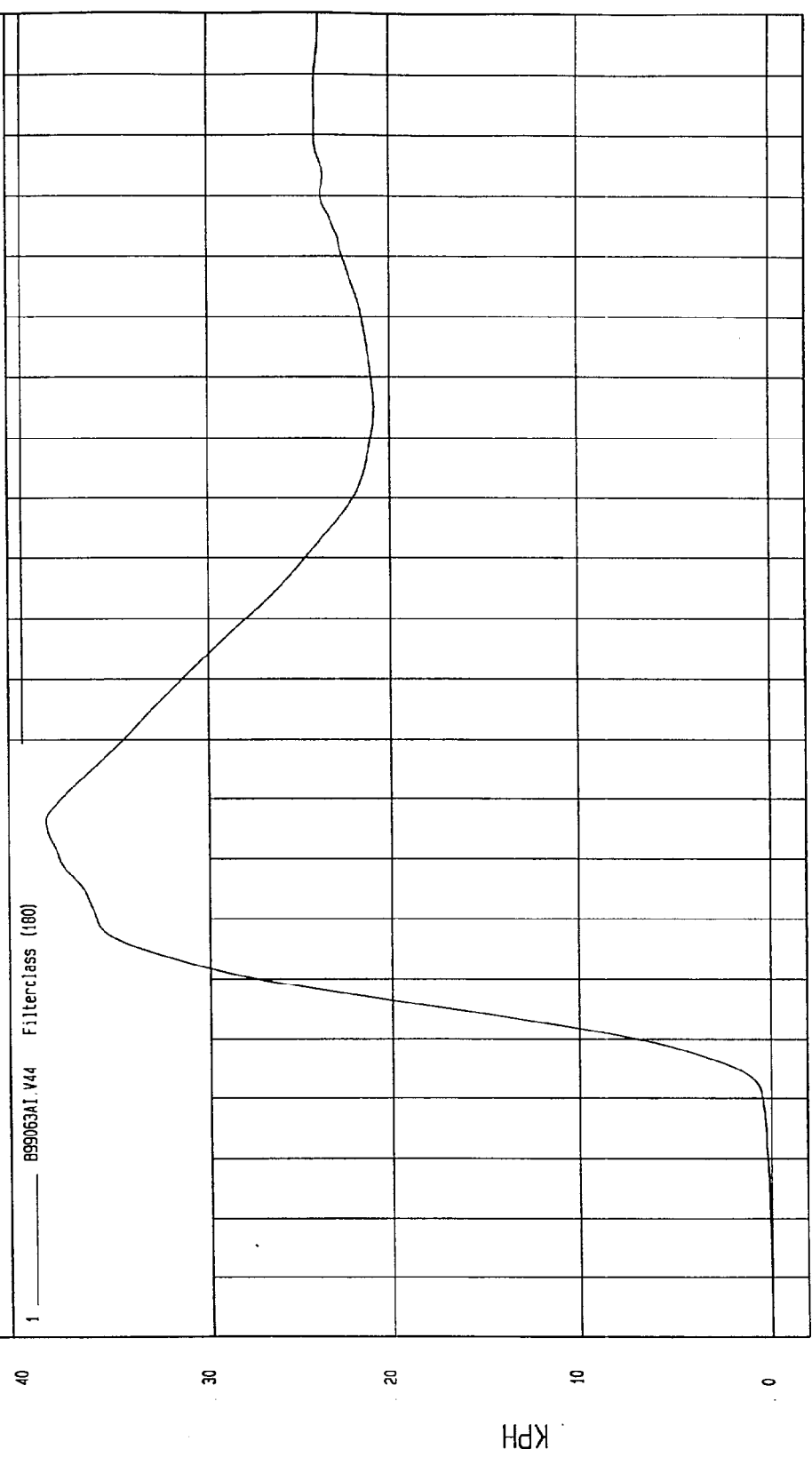
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 38.79 KPH at 66 msec

Minimum = 0 KPH at -20 msec

DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 \_\_\_\_\_ B99063A1 V44 Filterclass (180)



TIME Seconds

WCA Research  
09-20-1999 16:15

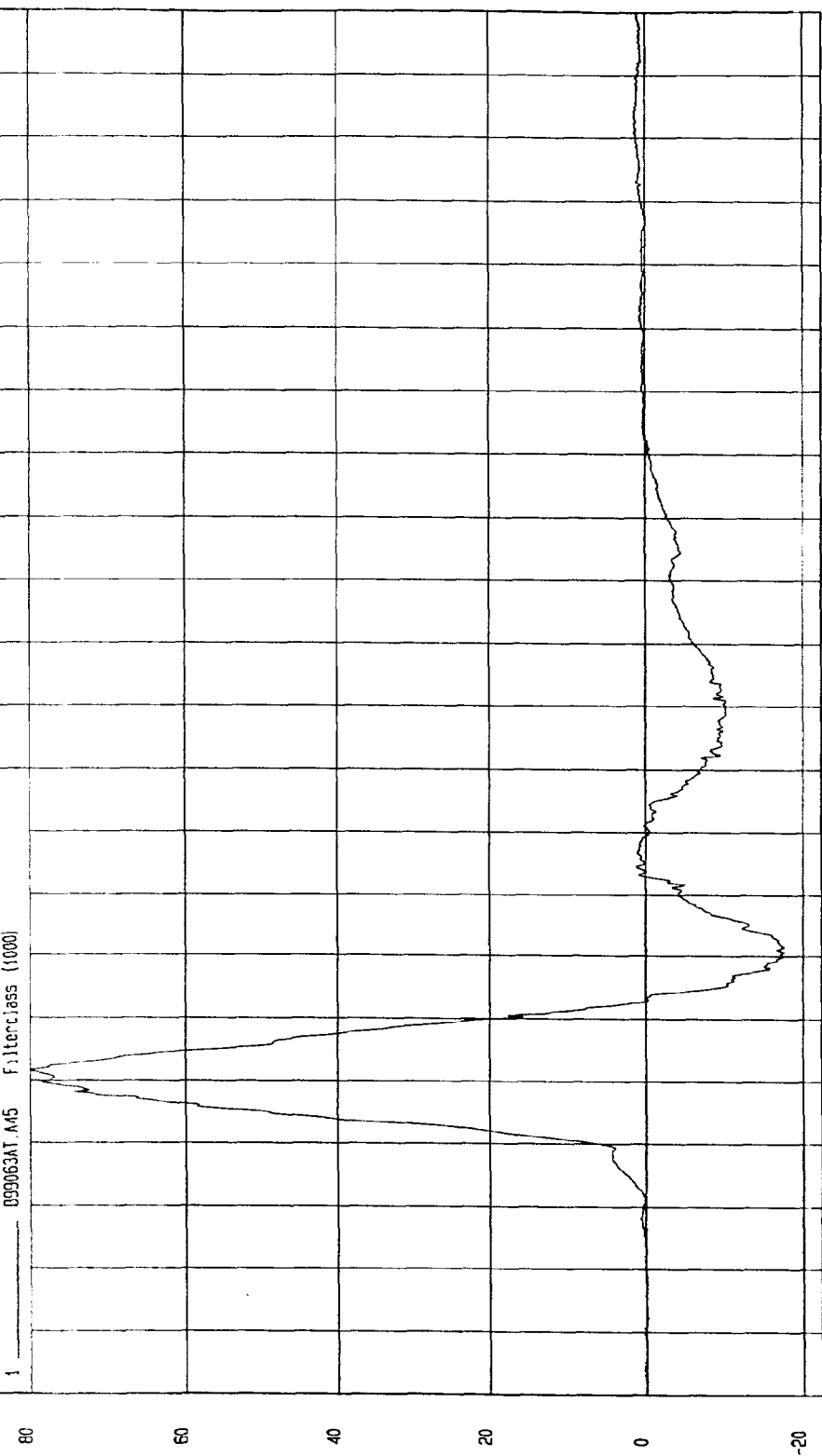
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -17.54 G'S at 51 msec Maximum = 80.1 G'S at 32 msec

DRIVER PELVIS Y REDUNDANT ACCELERATION

1 099063AT.M45 Filterclass (1000)



TIME (SECONDS)

MCA Research  
09-20-1999 16:15

G.S

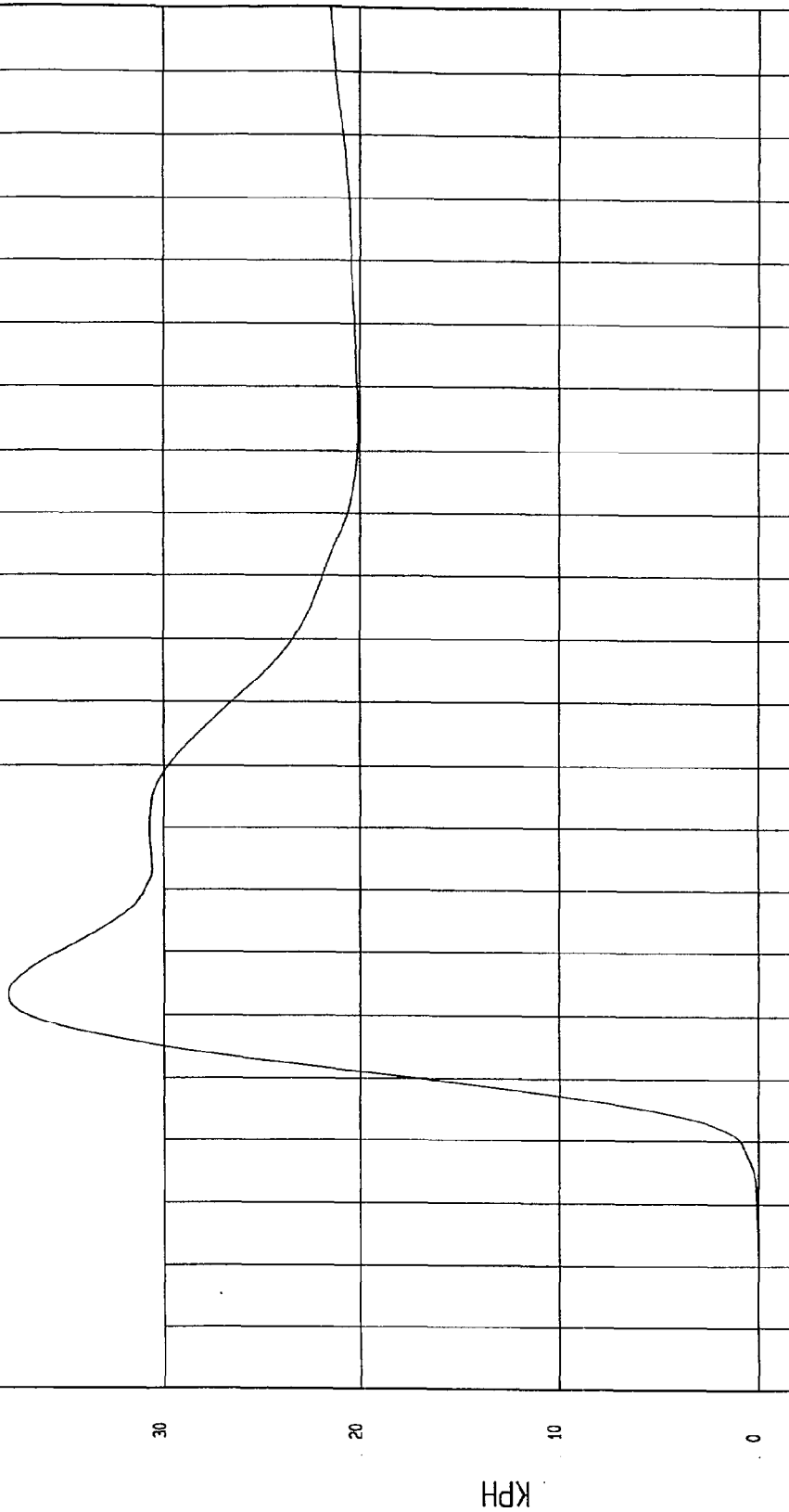
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -4.14E-03 KPH at -18 msec  
Maximum = 37.8 KPH at 43 msec

DRIVER PELVIS Y REDUNDANT VELOCITY

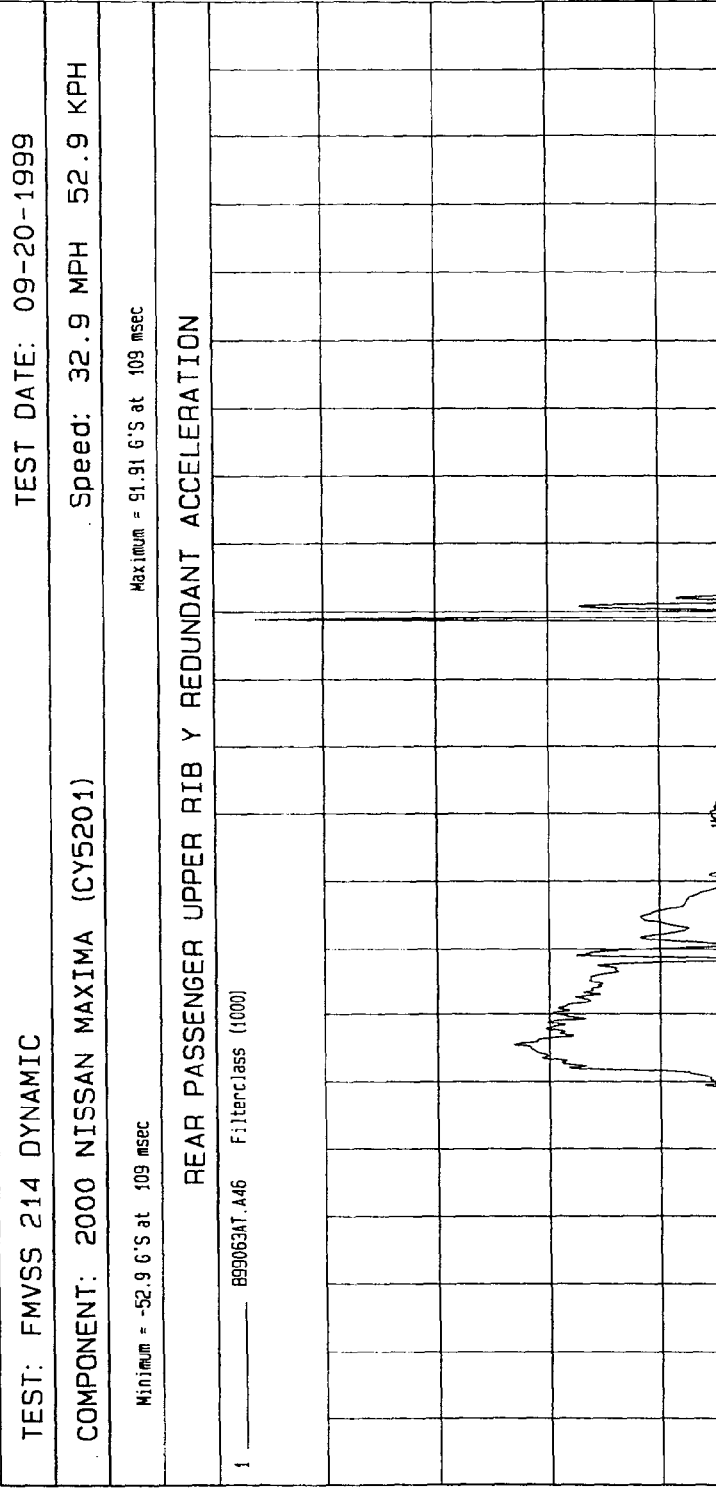
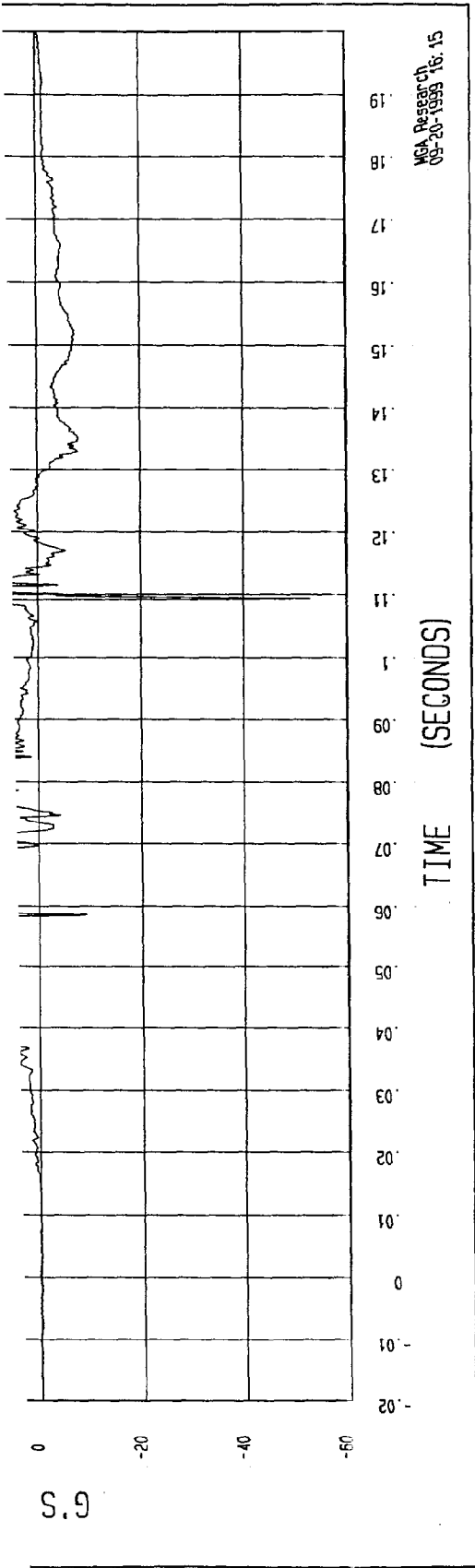
1 ——— 899063A1.V45 FilterClass (180)



Max Research  
09-20-1999 16:15

TIME Seconds

KPH



TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

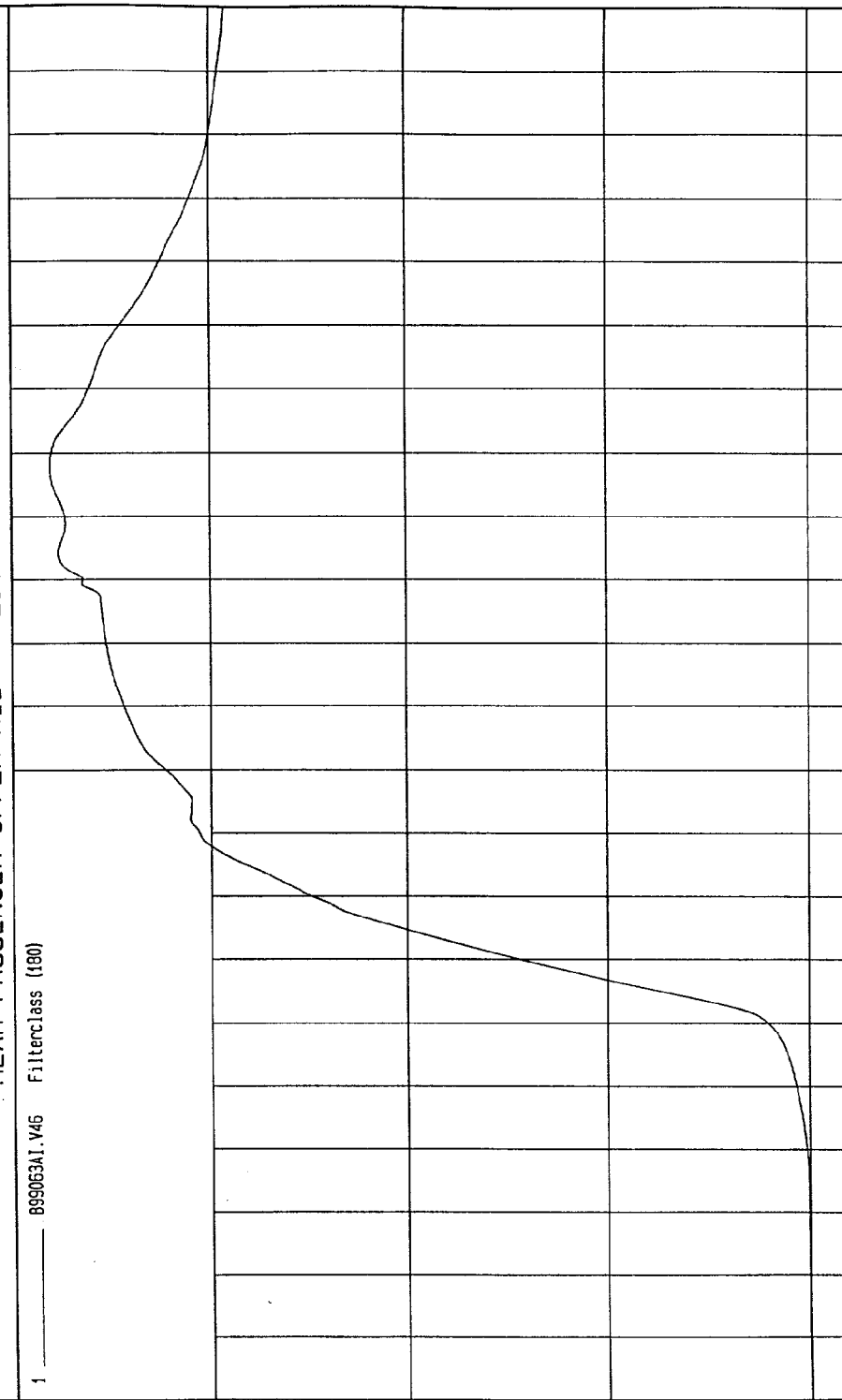
Maximum = 37.99 KPH at 128 msec

Minimum = -3.47E-03 KPH at -18 msec

REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

1 ——— 899063A1.V46 Filterclass (180)

KPH



TIME Seconds

MCA Research  
09-20-1999 16:15

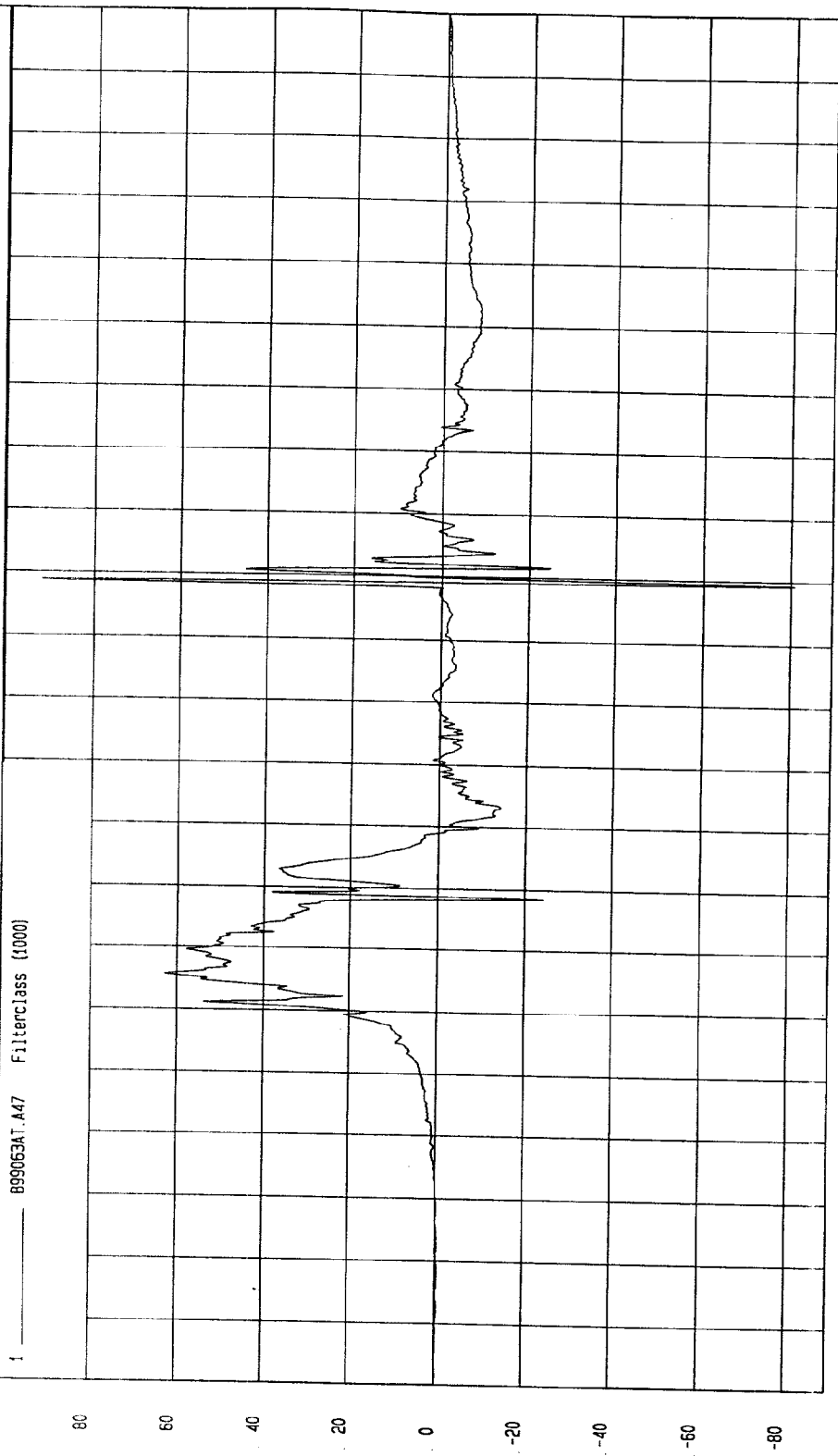
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -80.76 G'S at 109 msec  
Maximum = 91.78 G'S at 109 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 899063AT.A47 Filterclass (1000)



WEA Research  
09-20-1999 16:15

TIME (SECONDS)

G.S

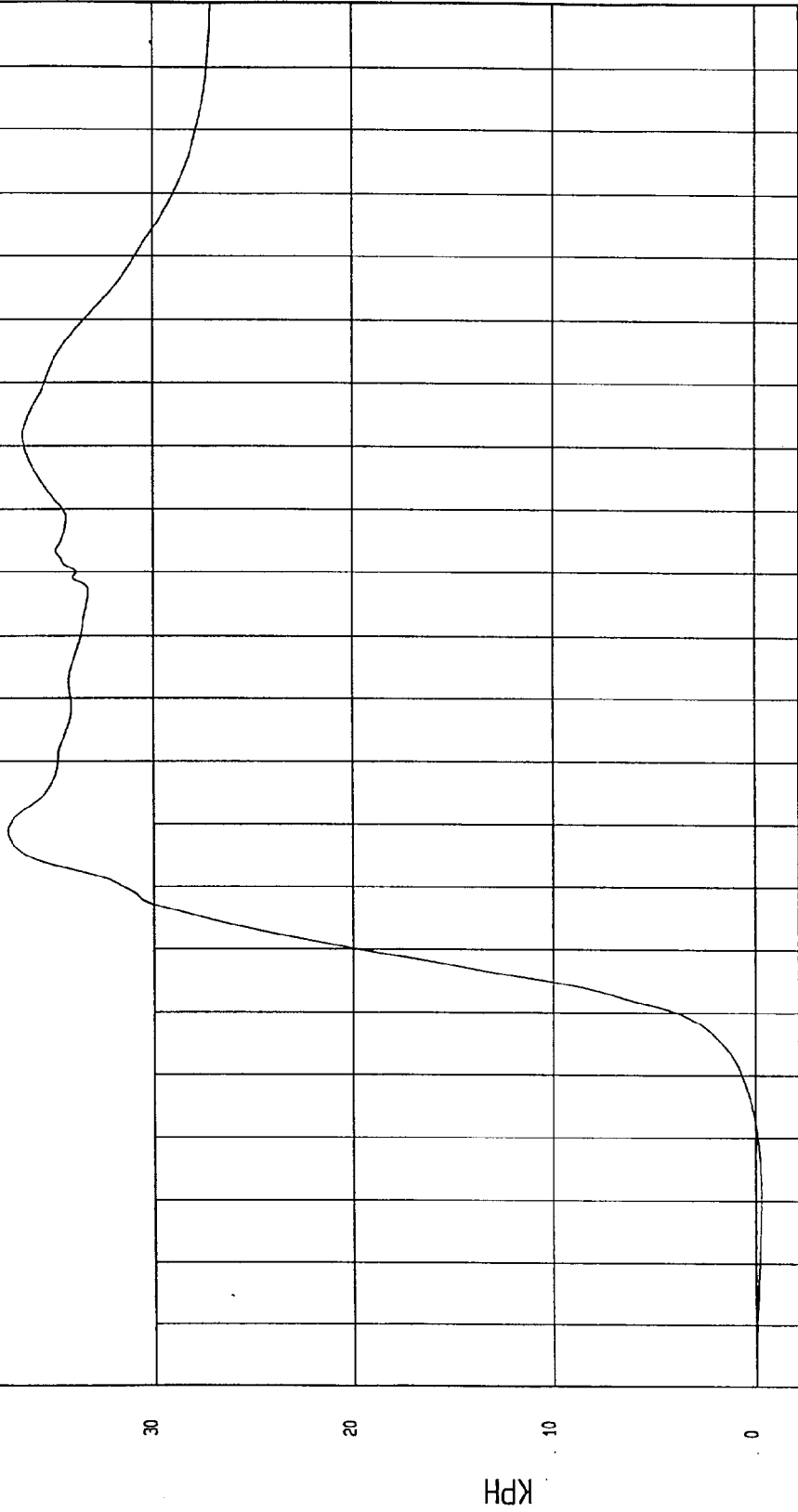
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -.27 KPH at 10 msec  
Maximum = 37.14 KPH at 69 msec

REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY

899063A1.V47 Filterclass (180)



MCA Research  
09-20-1999 16.15

TIME Seconds

KPH

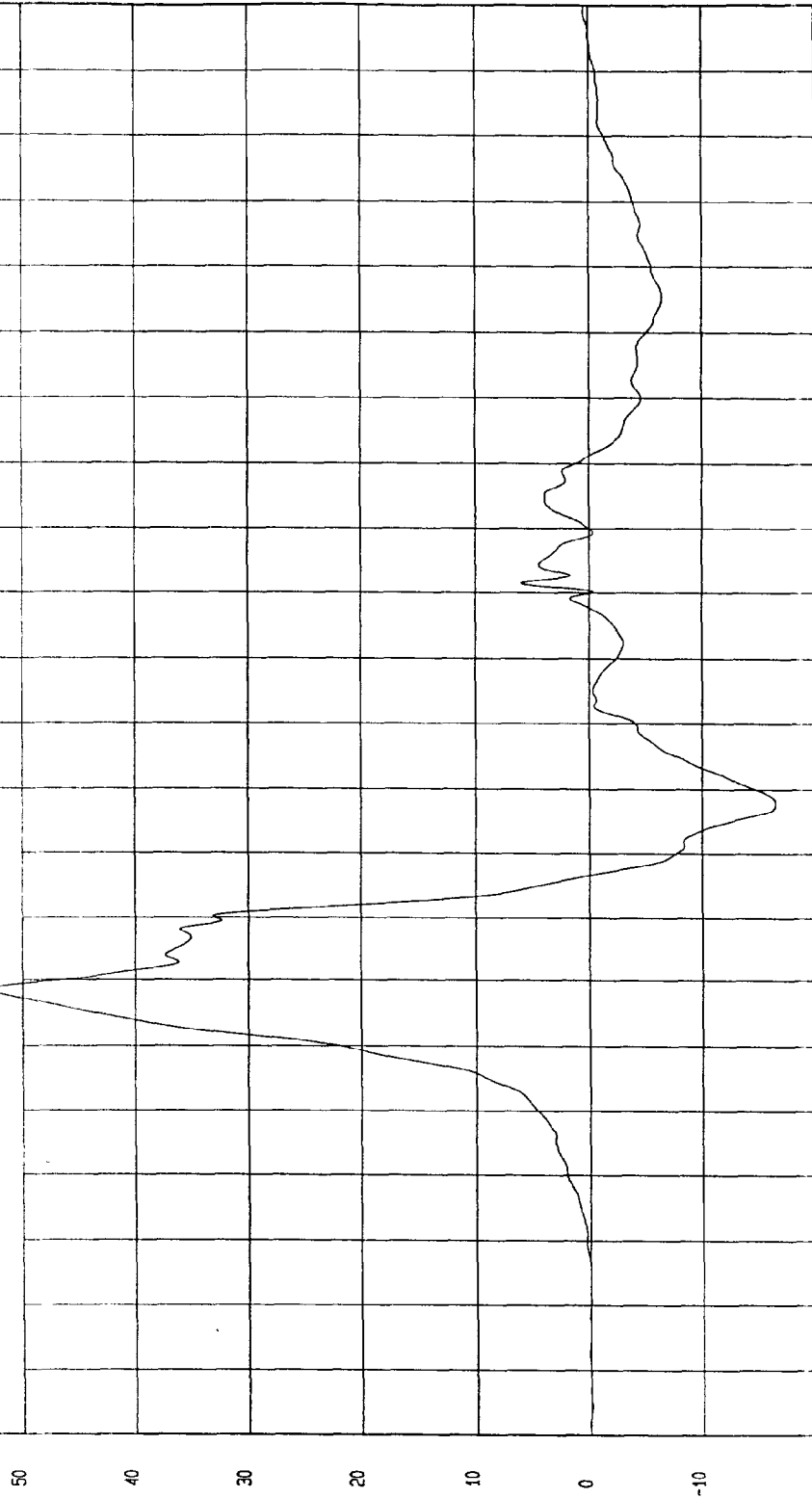
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -16.43 G'S at 78 msec Maximum = 52.75 G'S at 48 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 B99063AF.A4B FilterClass (160)



MGA Research  
09-20-1999 16:15

TIME (SECONDS)

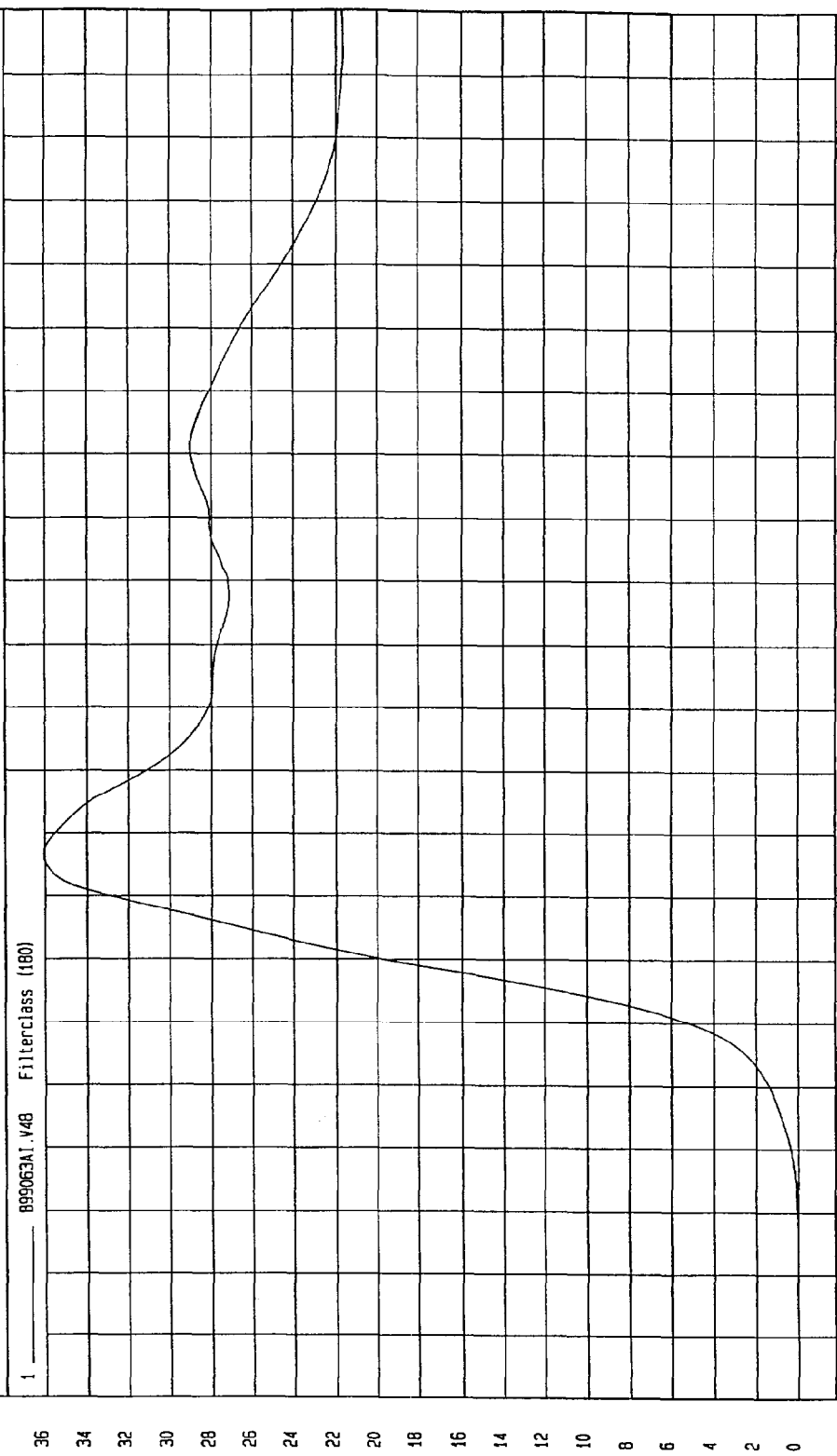
G.S

TEST: FMVSS 214 DYNAMIC  
TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)  
Speed: 32.9 MPH 52.9 KPH

Minimum = -6.82E-03 KPH at -9 msec  
Maximum = 36.06 KPH at 67 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY



TIME Seconds  
NCA Research  
09-20-1999 16:15

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

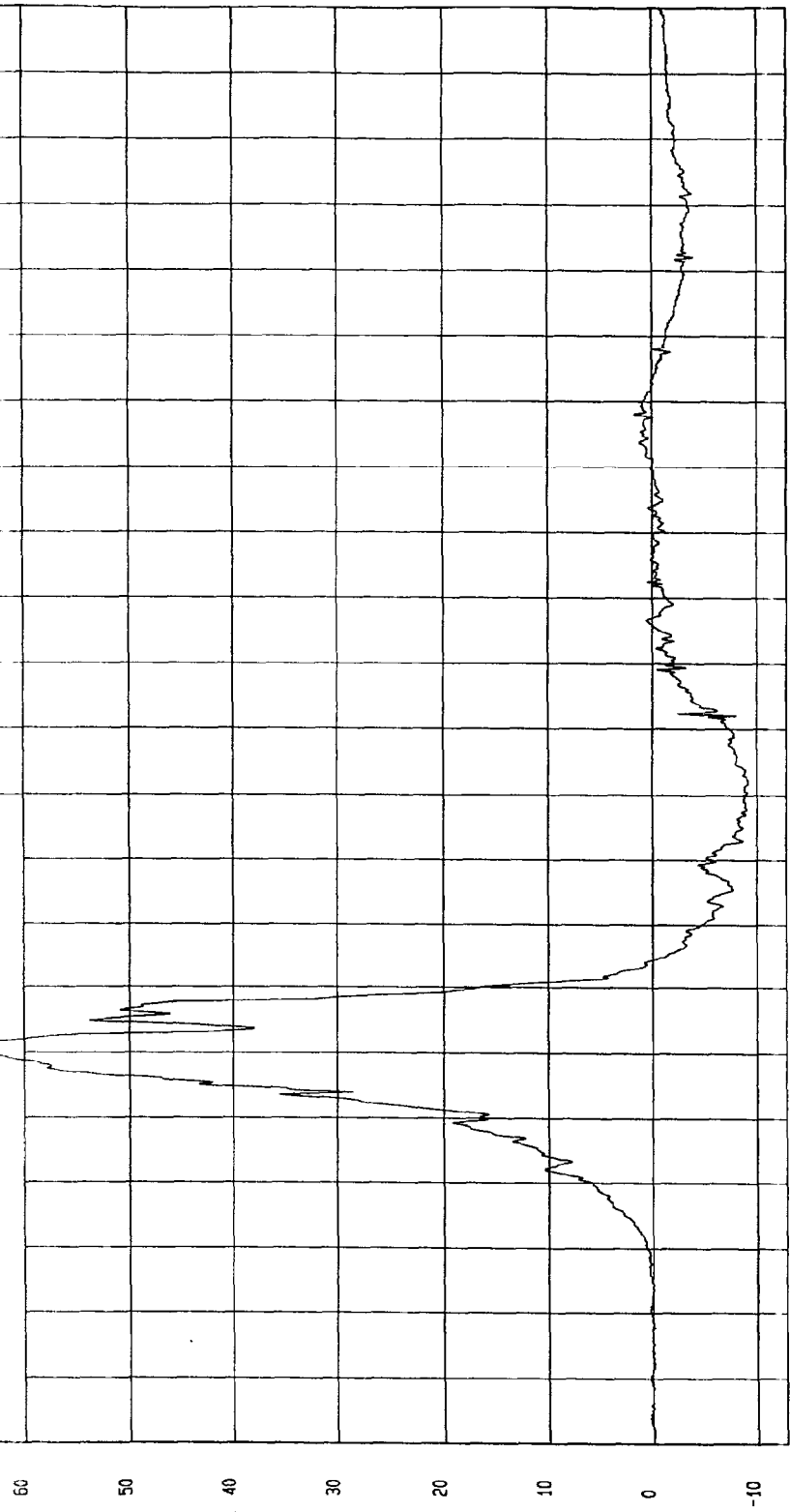
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -9.14 G'S at 80 msec

Maximum = 55.3 G'S at 40 msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 B99063AT.A49 Filterclass (1000)



MSA Research  
09-20-1999 16:15

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

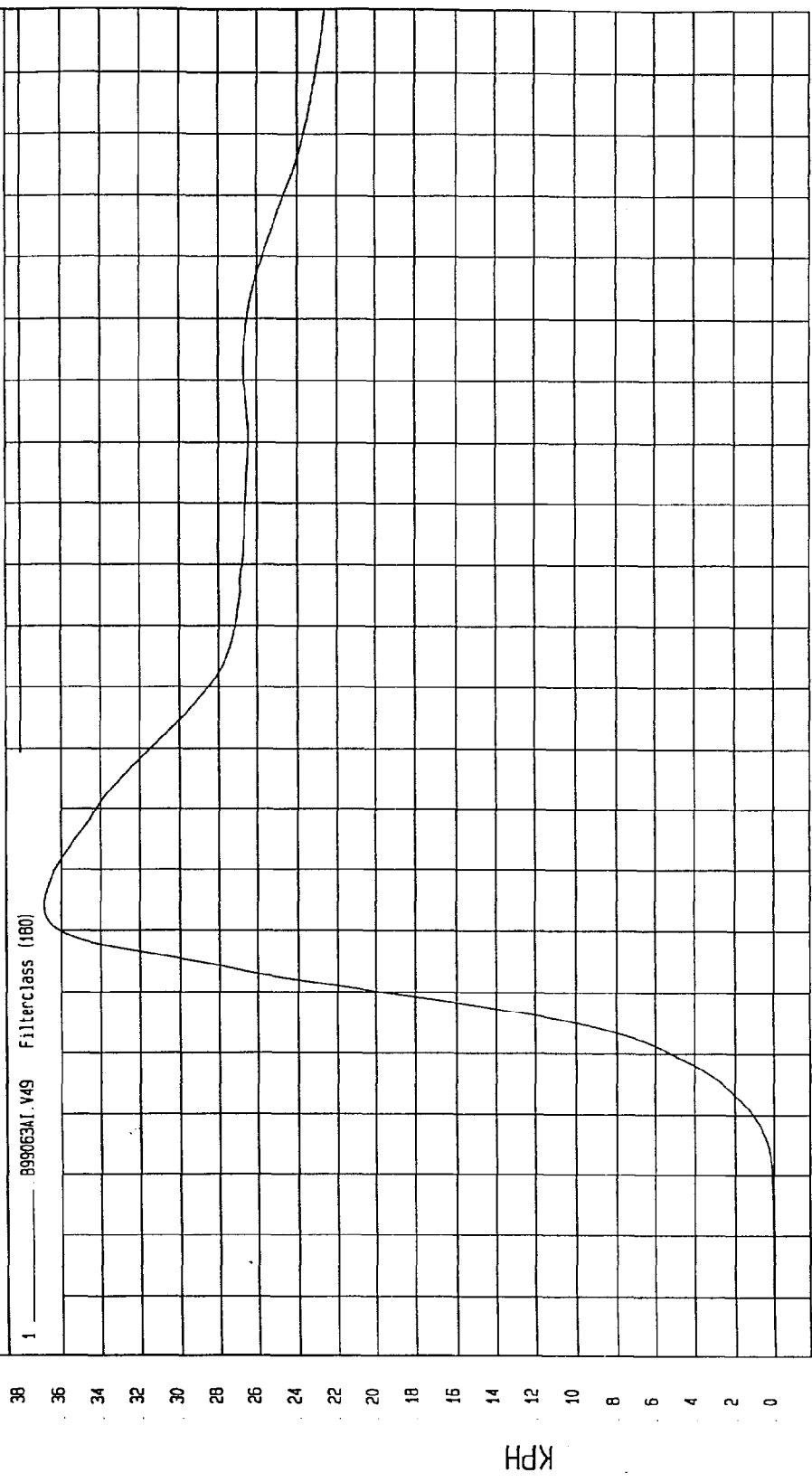
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 36.06 KPH at 54 msec

Minimum = -4.81E-03 KPH at -18 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 899063A1.V49 FilterClass (180)



TIME Seconds

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

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TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

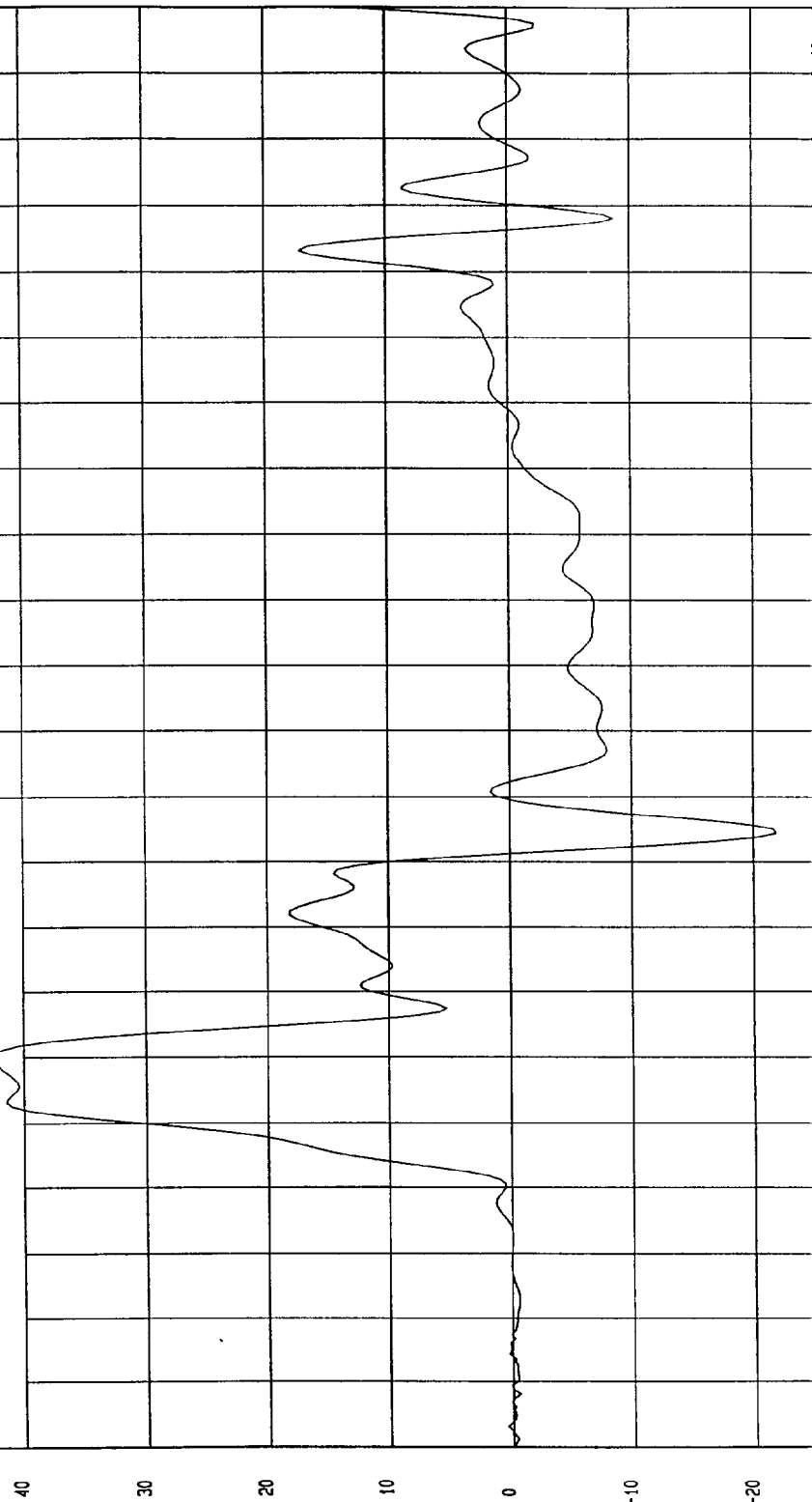
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -21.89 G'S at 74 msec

Maximum = 42.47 G'S at 40 msec

DRIVER UPPER RIB Y ACCELERATION

1 899063F1.R15 Filterclass (FIR Filtered)



TIME (SECONDS)

MCA Research  
09-20-1999 16:01

G.S

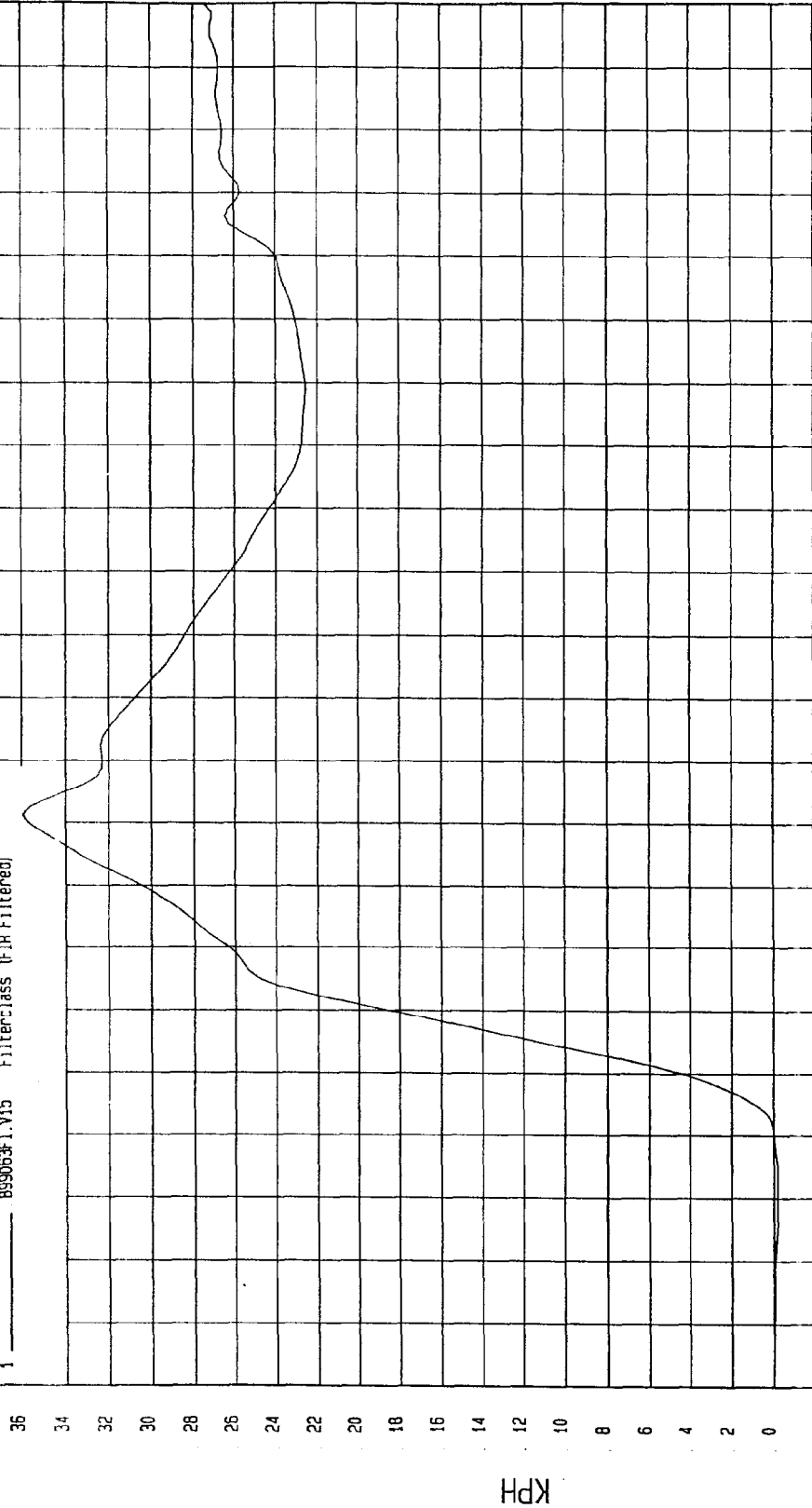
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -19 KPH at 14 msec Maximum = 35.94 KPH at 71 msec

DRIVER UPPER RIB Y VELOCITY

1 - - - - - 899063F.I.V15 Filterclass (FIR Filtered)



MSA Research  
09-20-1999 16:02

TIME Seconds

KPH

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

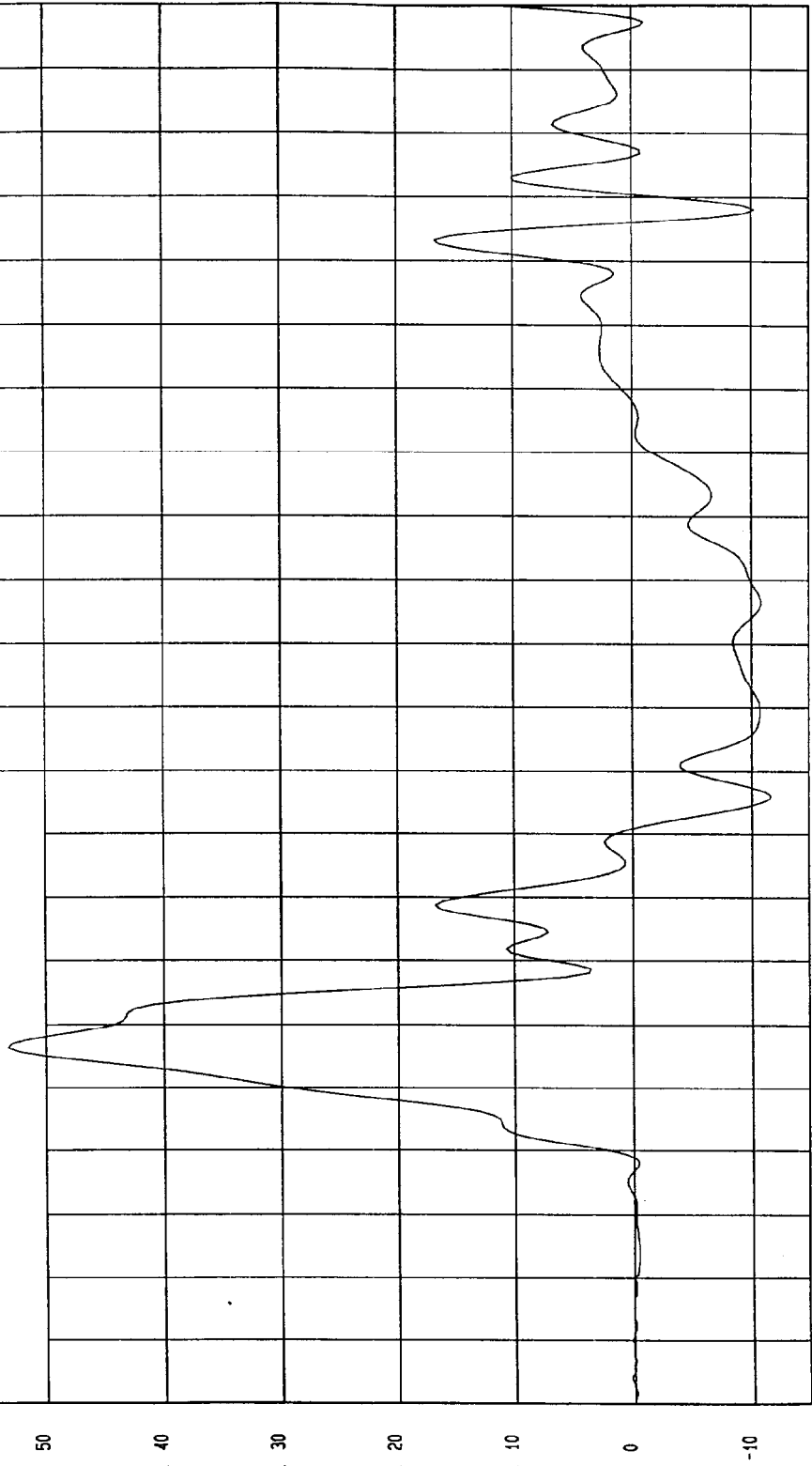
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 53.19 G'S at 36 msec

Minimum = -11.62 G'S at 76 msec

DRIVER LOWER RIB Y ACCELERATION

1 ——— 899063FI.R16 Filterclass (FIR Filtered)



TEST: FMVSS 214 DYNAMIC

TEST DATE: 09-20-1999

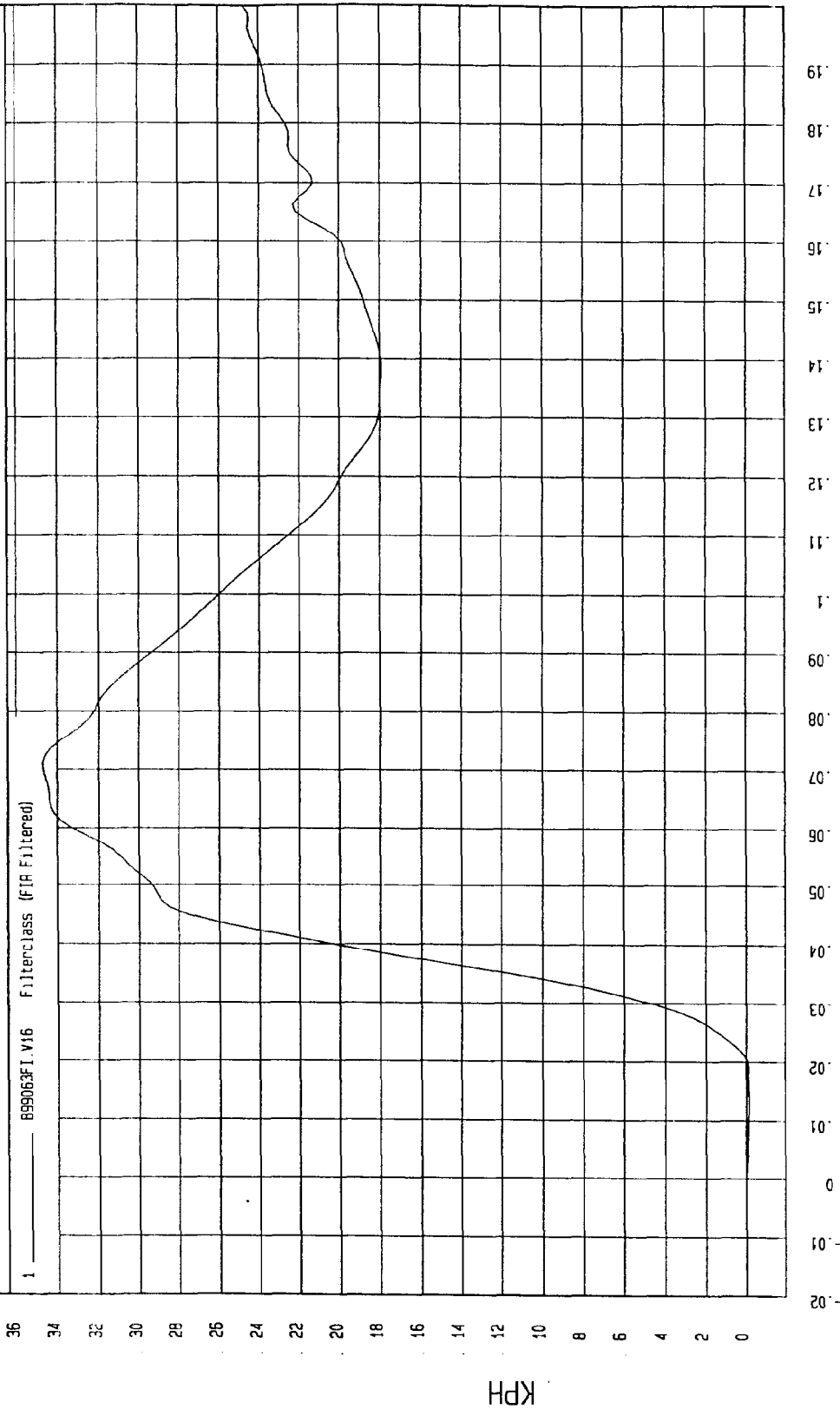
Speed: 32.9 MPH 52.9 KPH

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 34.69 KPH at 71 msec

Minimum = -14 KPH at 13 msec

DRIVER LOWER RIB Y VELOCITY



MEA Research  
09-20-1999 16:02

TIME Seconds

KPH

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Minimum = -10.84 G'S at 101 msec

Maximum = 64.97 G'S at 36 msec

DRIVER LOWER SPINE Y ACCELERATION

1 899063F1.R17 Filterclass (FIR Filtered)



MGA Research  
09-20-1999 16.01

TIME (SECONDS)

G.S

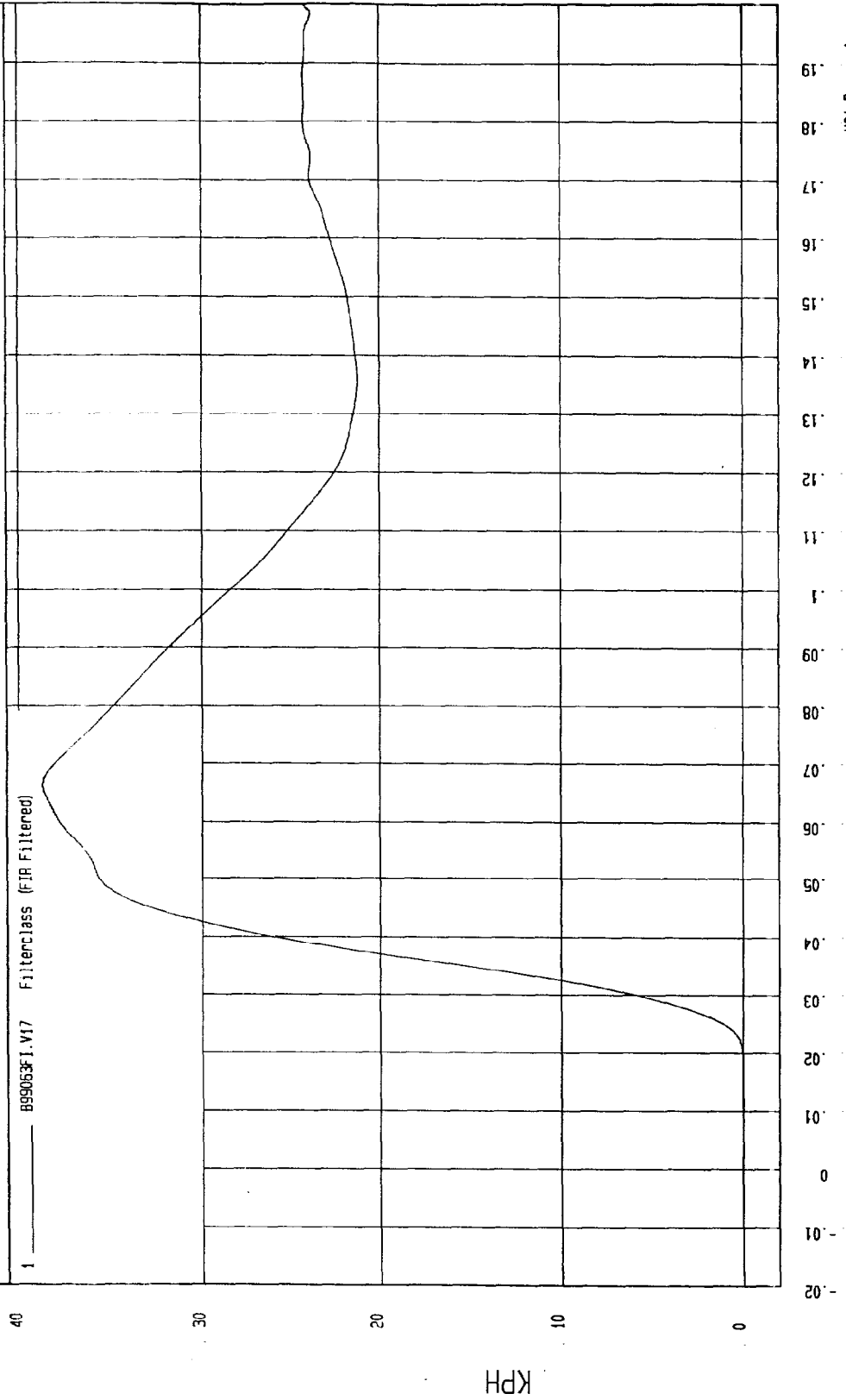
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -5.6AE-03 KPH at 7 msec  
Maximum = 38.71 KPH at 66 msec

DRIVER LOWER SPINE Y VELOCITY

1 \_\_\_\_\_ 899063FI.V17 Filterclass (FIR Filtered)



MEA Research  
09-20-1999 16:02

TIME Seconds

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

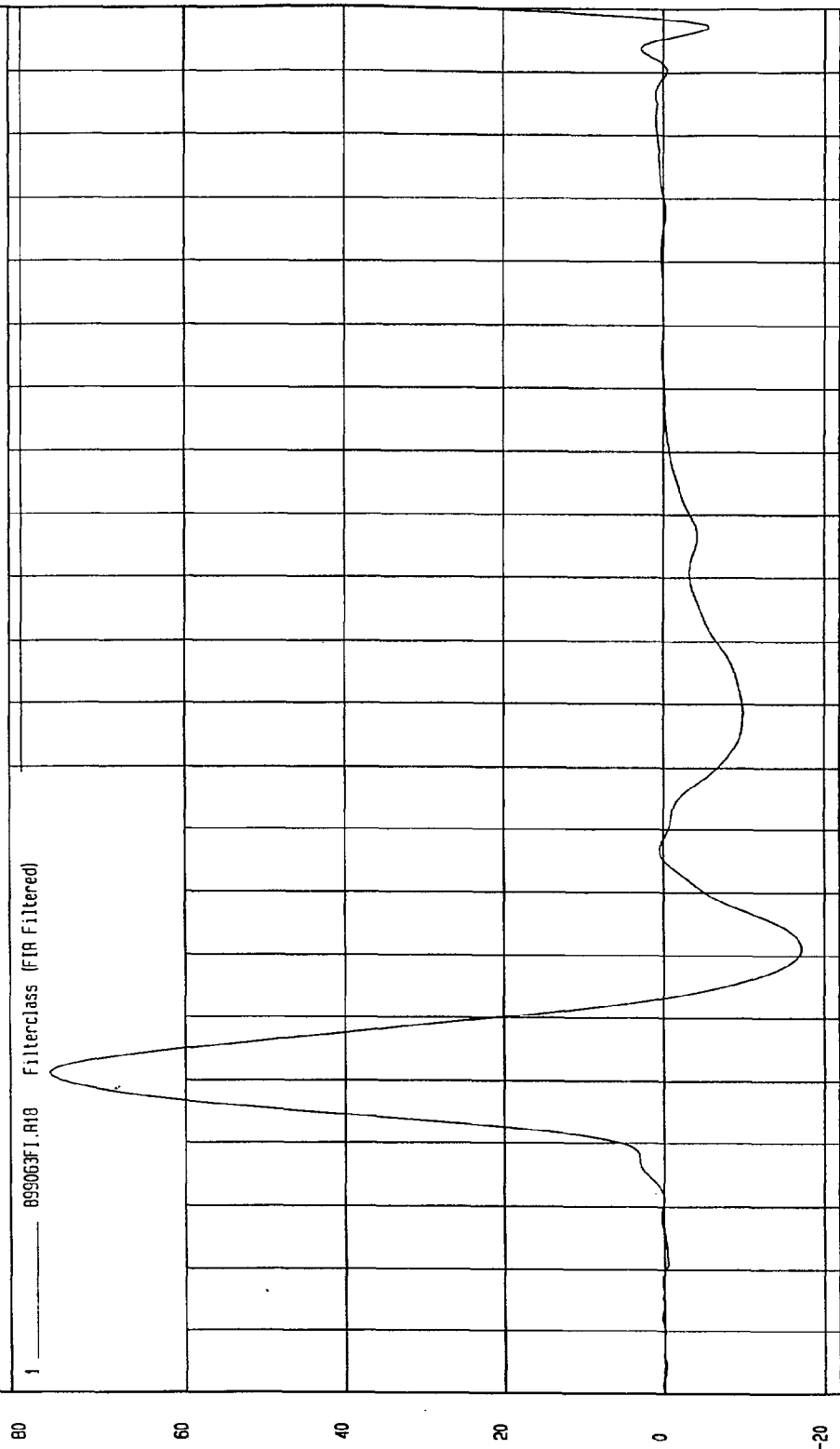
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 75.81 G'S at 31 msec

Minimum = -17.21 G'S at 51 msec

DRIVER PELVIS Y ACCELERATION

1 899063F1.R10 Filterclass (FIR Filtered)



TIME (SECONDS)

MCA Research  
09-20-1999 16:01

G.S

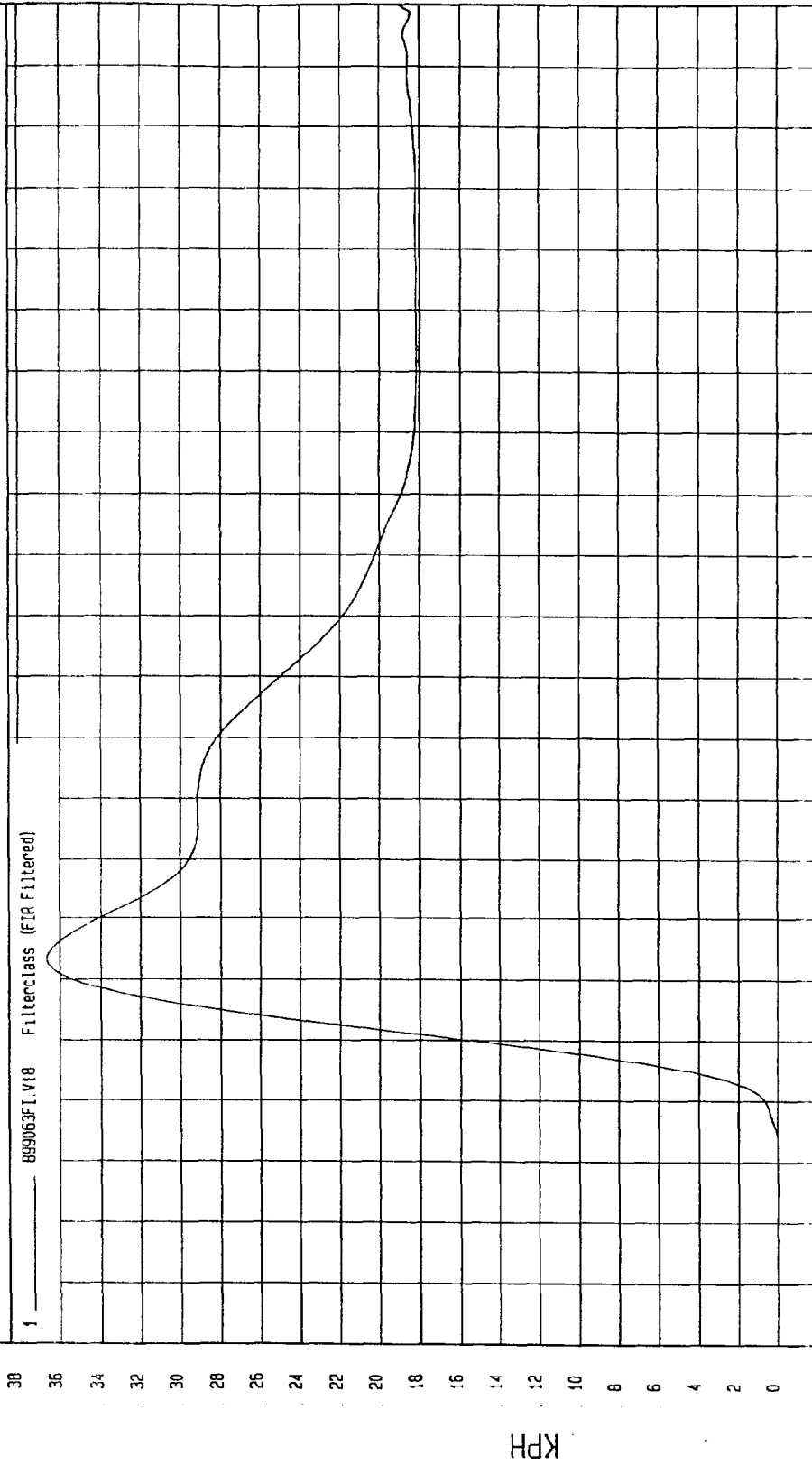
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -4.95E-02 KPH at 6 msec

Maximum = 36.63 KPH at 43 msec

DRIVER PELVIS Y VELOCITY



TIME Seconds

MGA Research  
09-20-1999 16:02

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -7.63 G'S at 135 msec  
Maximum = 43.59 G'S at 46 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 890063F1.R25 Filterclass (FIR Filtered)



TIME (SECONDS)

MGA Research  
09-20-1999 16.01

G.S

TEST: FMVSS 214 DYNAMIC

TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

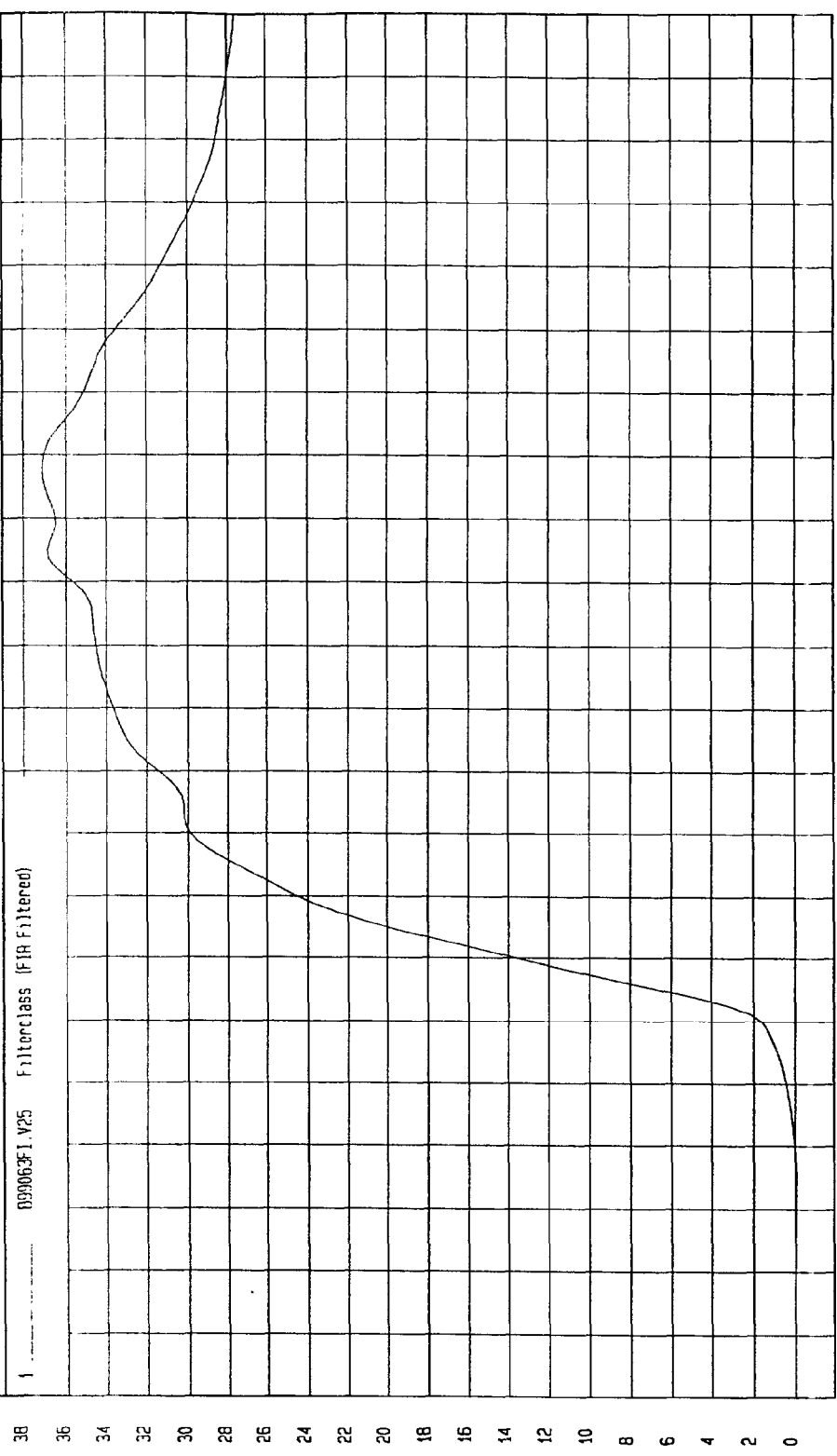
Speed: 32.9 MPH 52.9 KPH

Minimum = -7.7E-02 KPH at 14 msec

Maximum = 37.14 KPH at 128 msec

REAR PASSENGER UPPER RIB Y VELOCITY

099063F1.V25 Filter(class (FR Filtered))



MCA Research  
09-20-1999 16.02

TIME Seconds

KPH

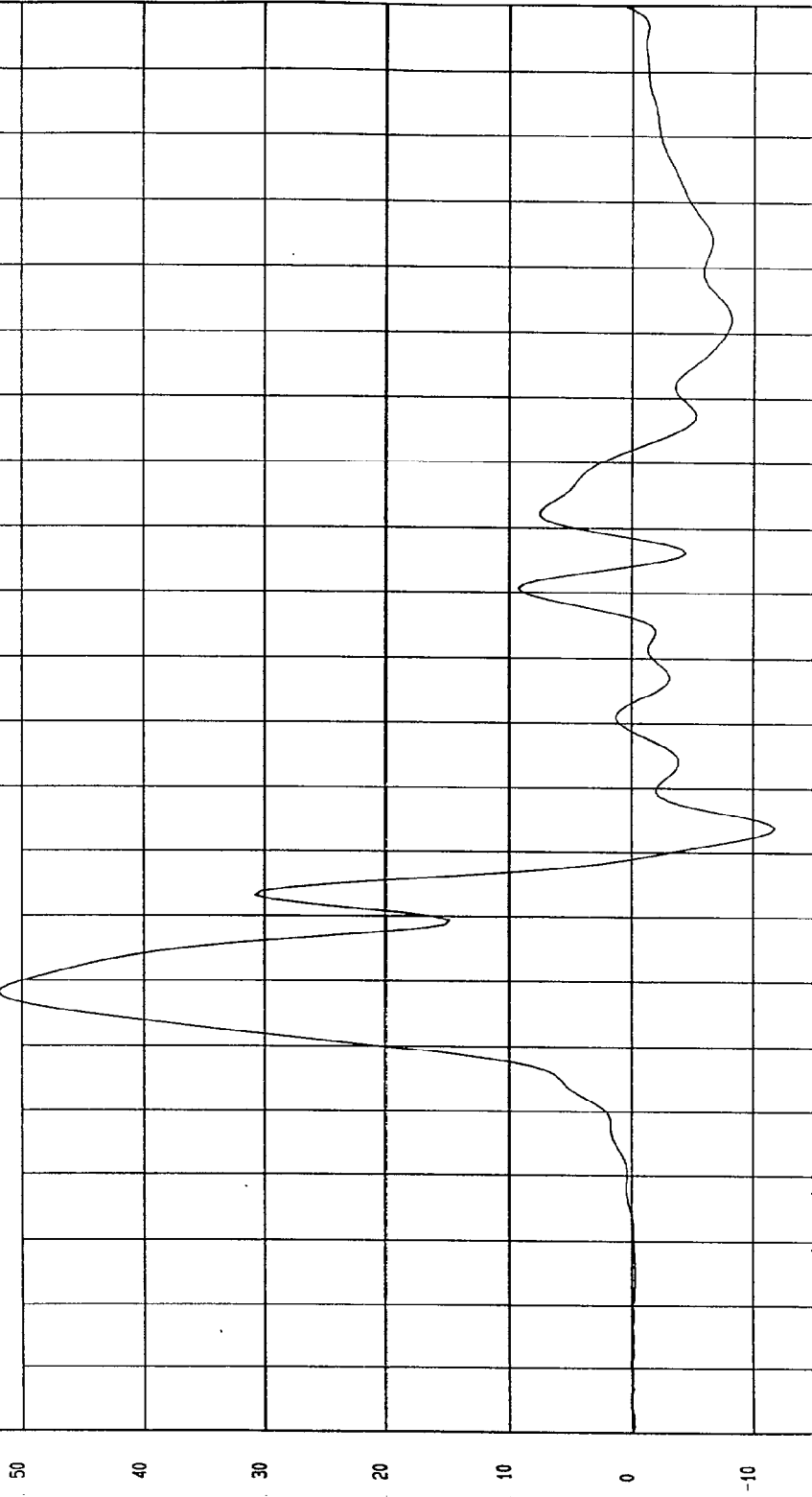
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -11.78 G'S at 74 msec  
Maximum = 51.89 G'S at 48 msec

REAR PASSENGER LOWER RIB Y ACCELERATION

1 ——— 899063F1.R26 Filterclass (FIR Filtered)



MSA Research  
09-20-1999 16:01

TIME (SECONDS)

G.S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

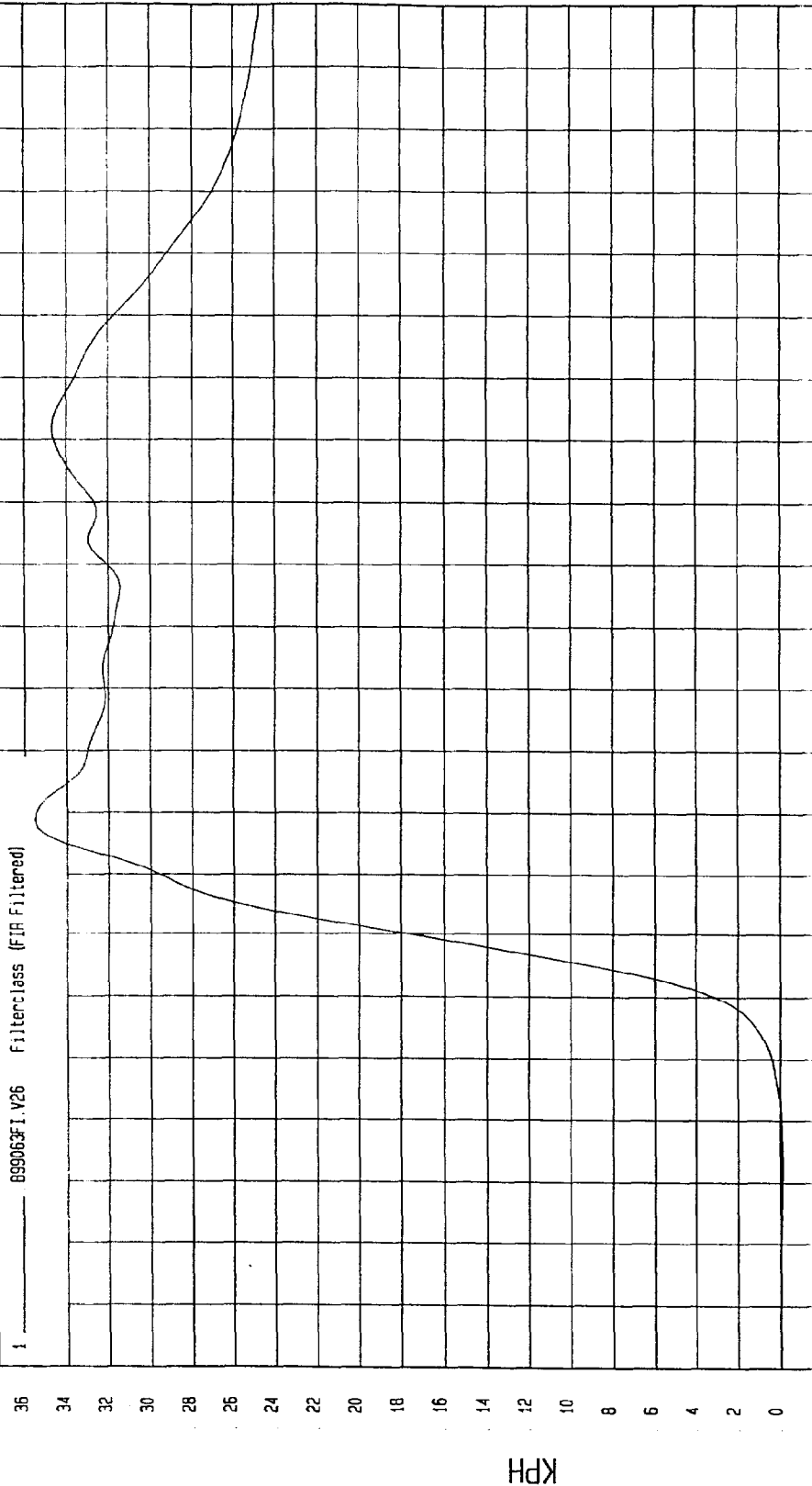
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 35.52 KPH at 69 msec

Minimum = -1.11 KPH at 14 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 699063F1.V26 Filterclass (FIR Filtered)



MCA Research  
09-20-1999 16:02

TIME Seconds

KPH

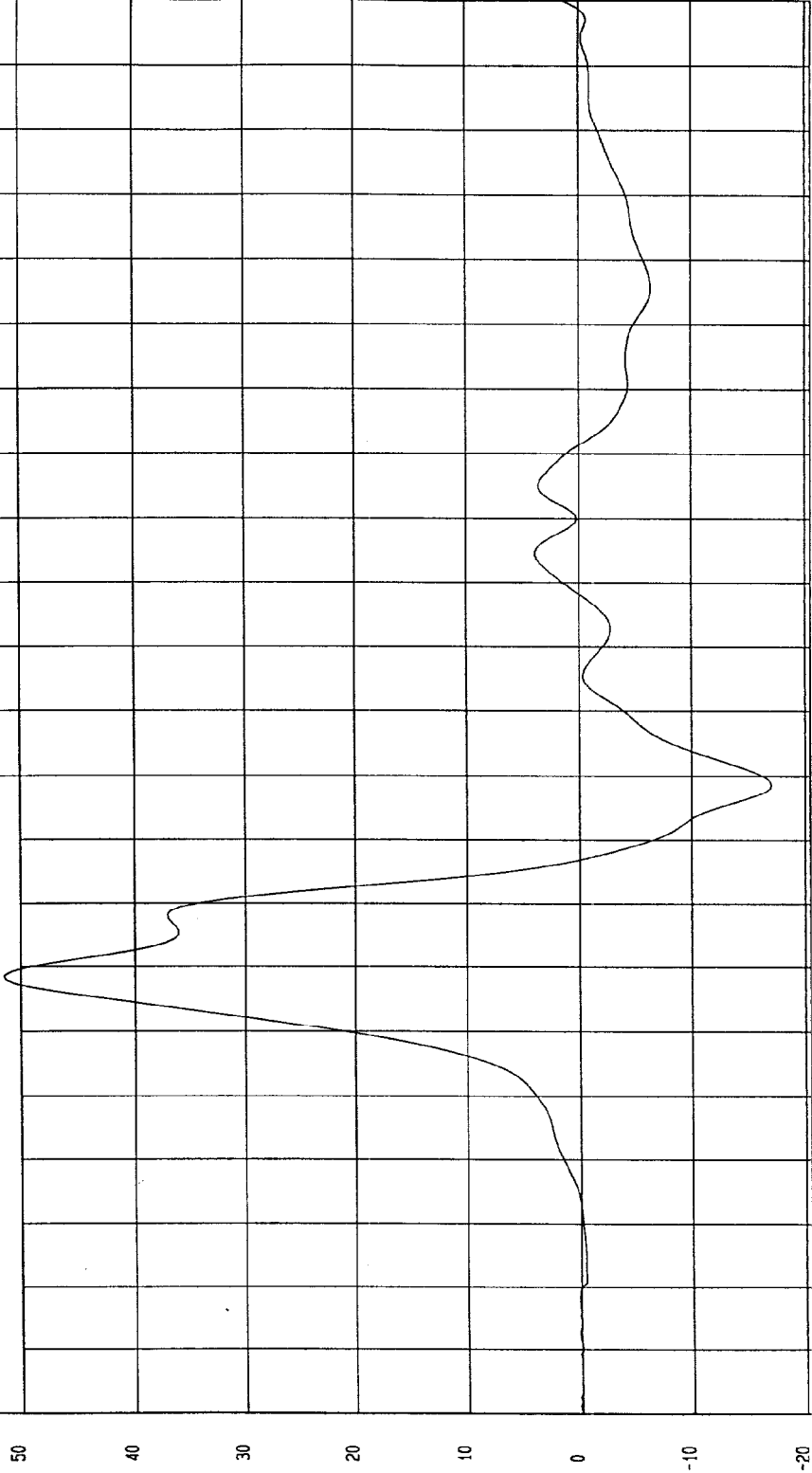
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -17.06 G'S at 79 msec Maximum = 51.46 G'S at 49 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 899063FI.R27 Filterclass (FIR Filtered)



TIME (SECONDS)

MCA Research  
09-20-1999 16:01

G'S

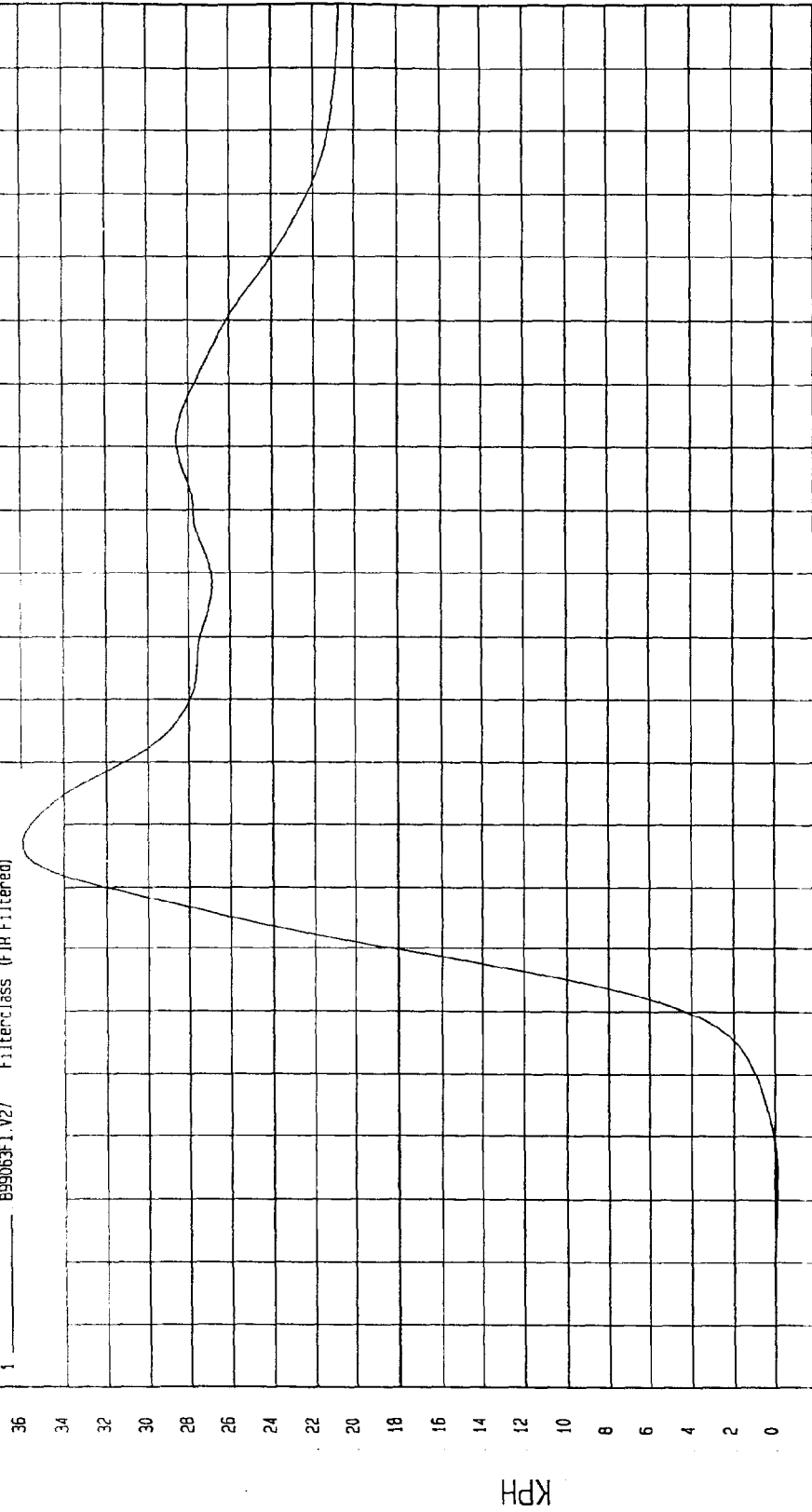
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -1.11 KPH at 13 msec Maximum = 35.94 KPH at 67 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 B99063F1.V27 Filterclass (FIR Filtered)



MSA Research  
09-20-1999 16:02

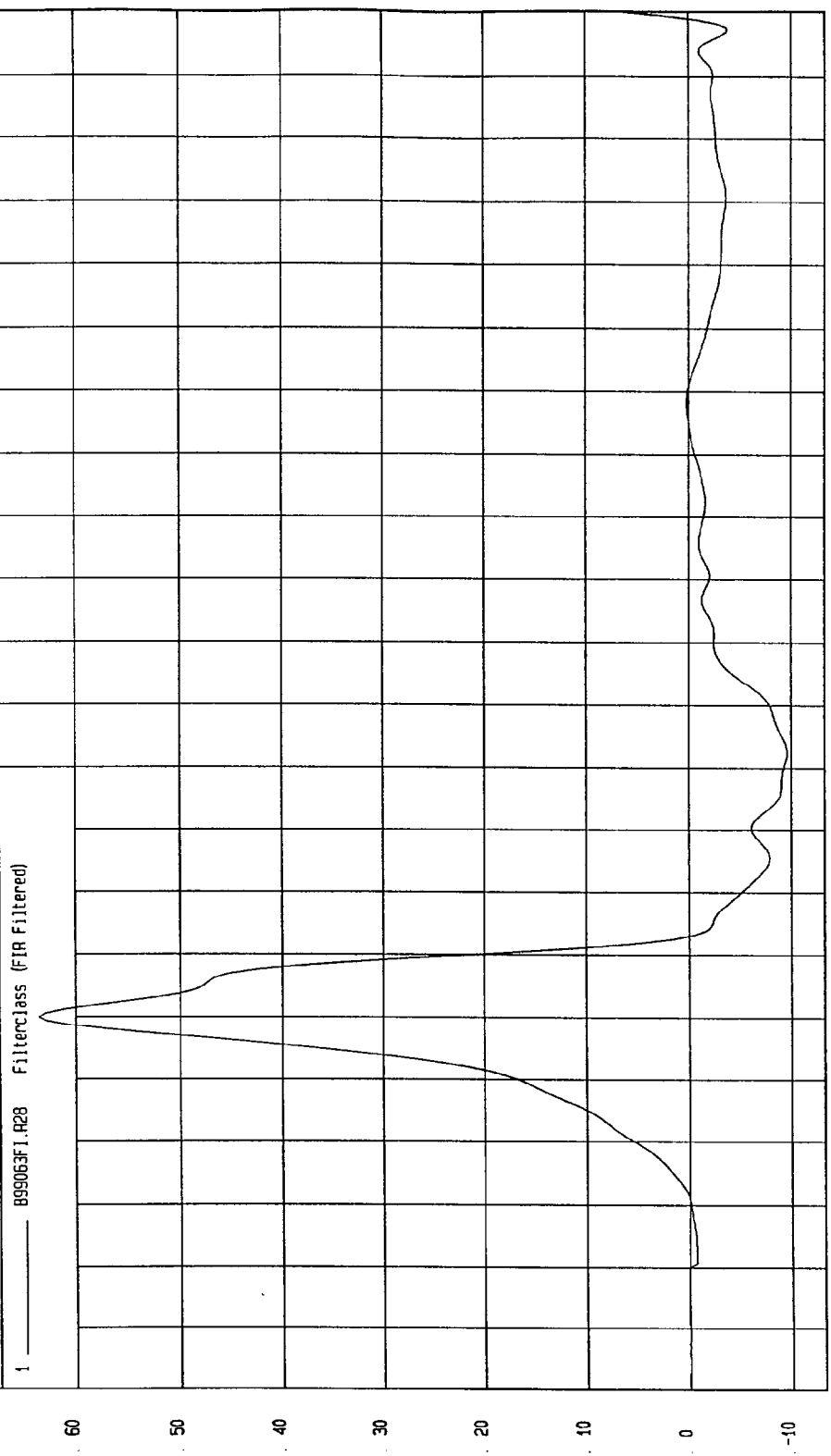
TIME Seconds

KPH

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999  
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -9.57 G'S at 82 msec Maximum = 63.49 G'S at 40 msec

REAR PASSENGER PELVIS Y ACCELERATION



TIME (SECONDS)

MCA Research  
09-20-1999 16:01

G.S

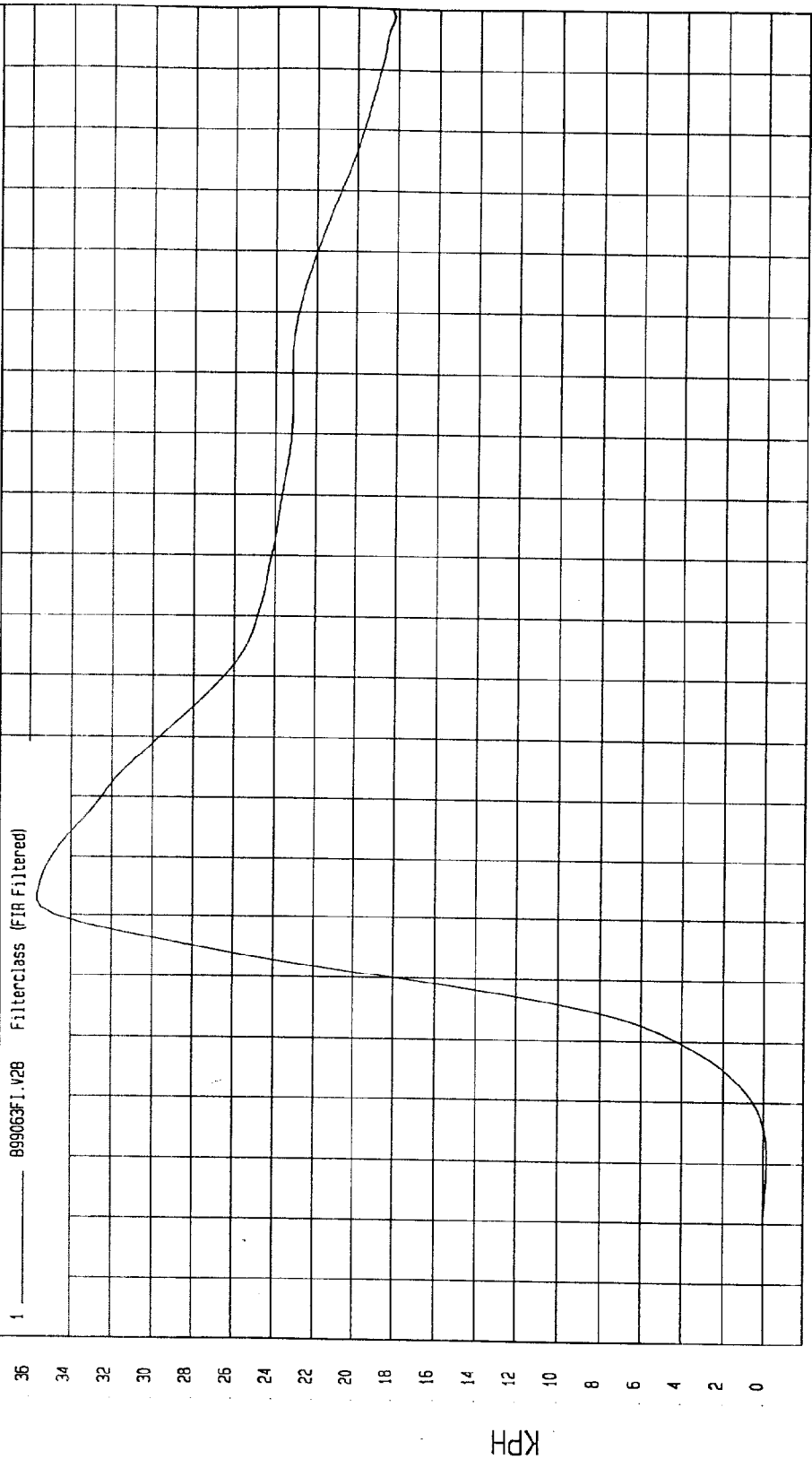
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -15 KPH at 11 msec Maximum = 35.67 KPH at 53 msec

REAR PASSENGER PELVIS Y VELOCITY

1 899063f1.v28 Filterclass (FIR Filtered)



TIME Seconds

MSA Research  
09-20-1999 16:02

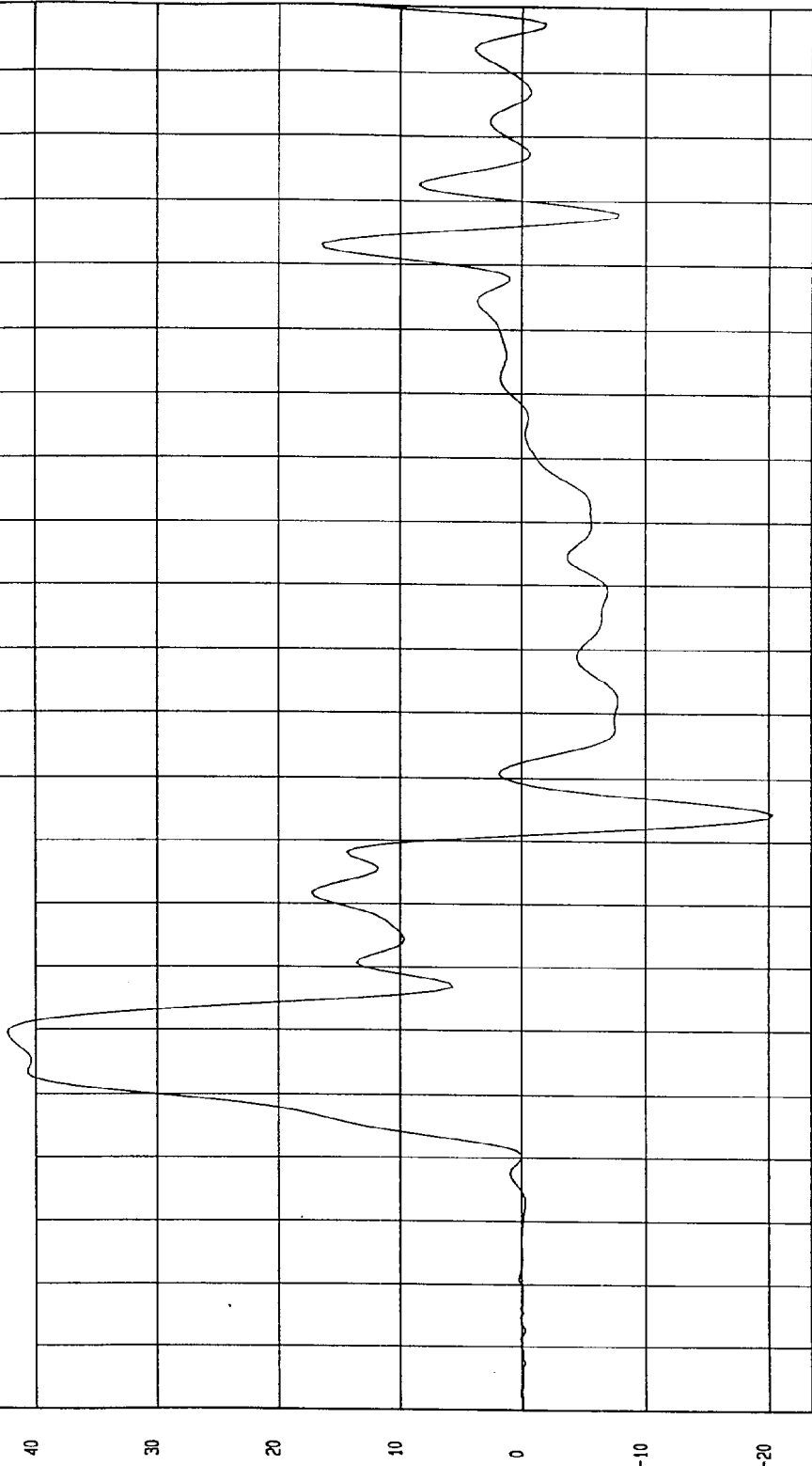
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -20.3 G'S at 74 msec  
Maximum = 42.28 G'S at 39 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 899063F1.R42 Filterclass (FIR Filtered)



TIME (SECONDS)

MGA Research  
09-20-1999 16.01

G.S

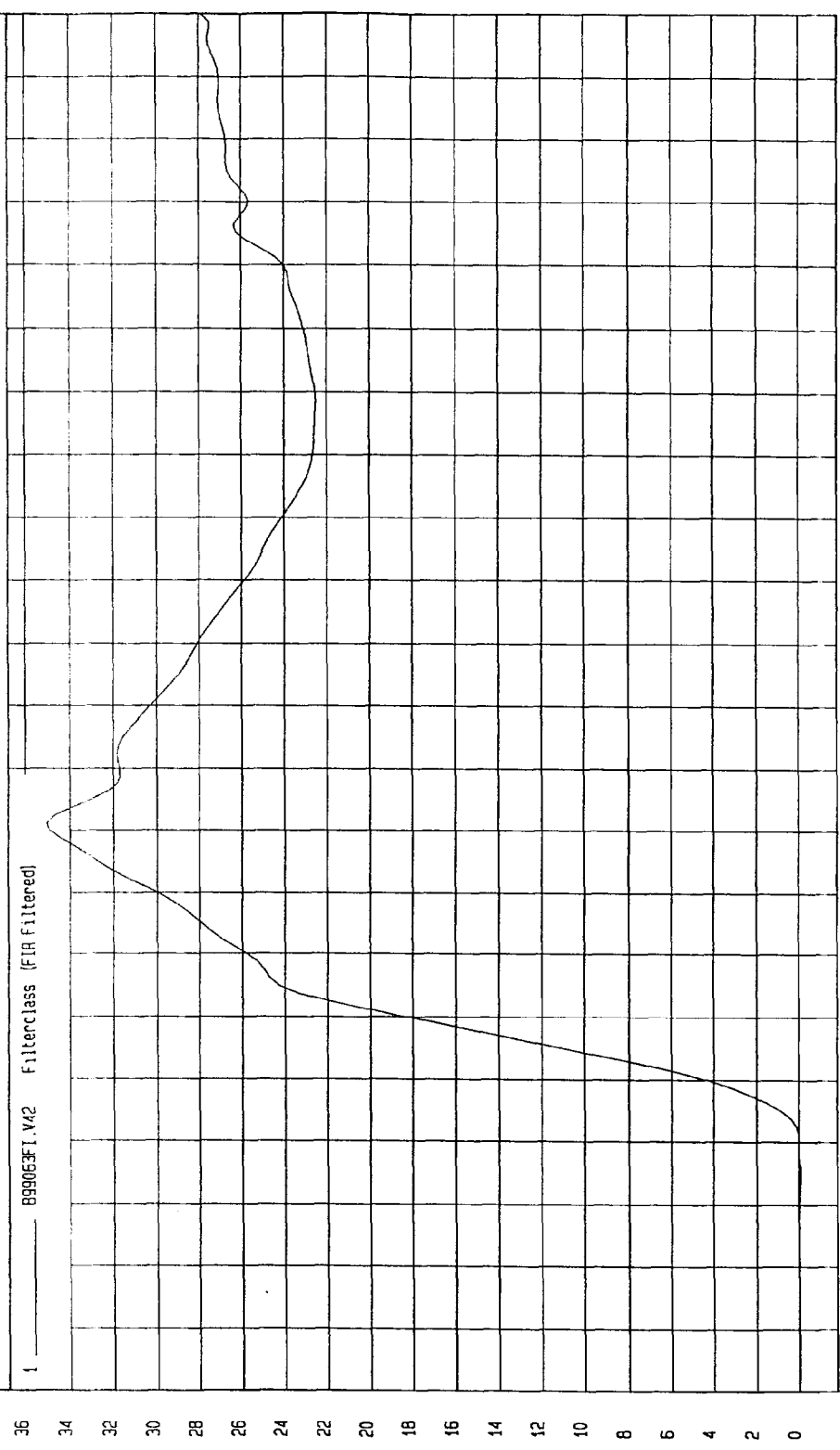
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -6.45E-02 KPH at 15 msec  
Maximum = 35.03 KPH at 71 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 899063F1.V42 Filterclass (FIR Filtered)



TIME Seconds  
MGA Research  
09-20-1999 16:02

KPH

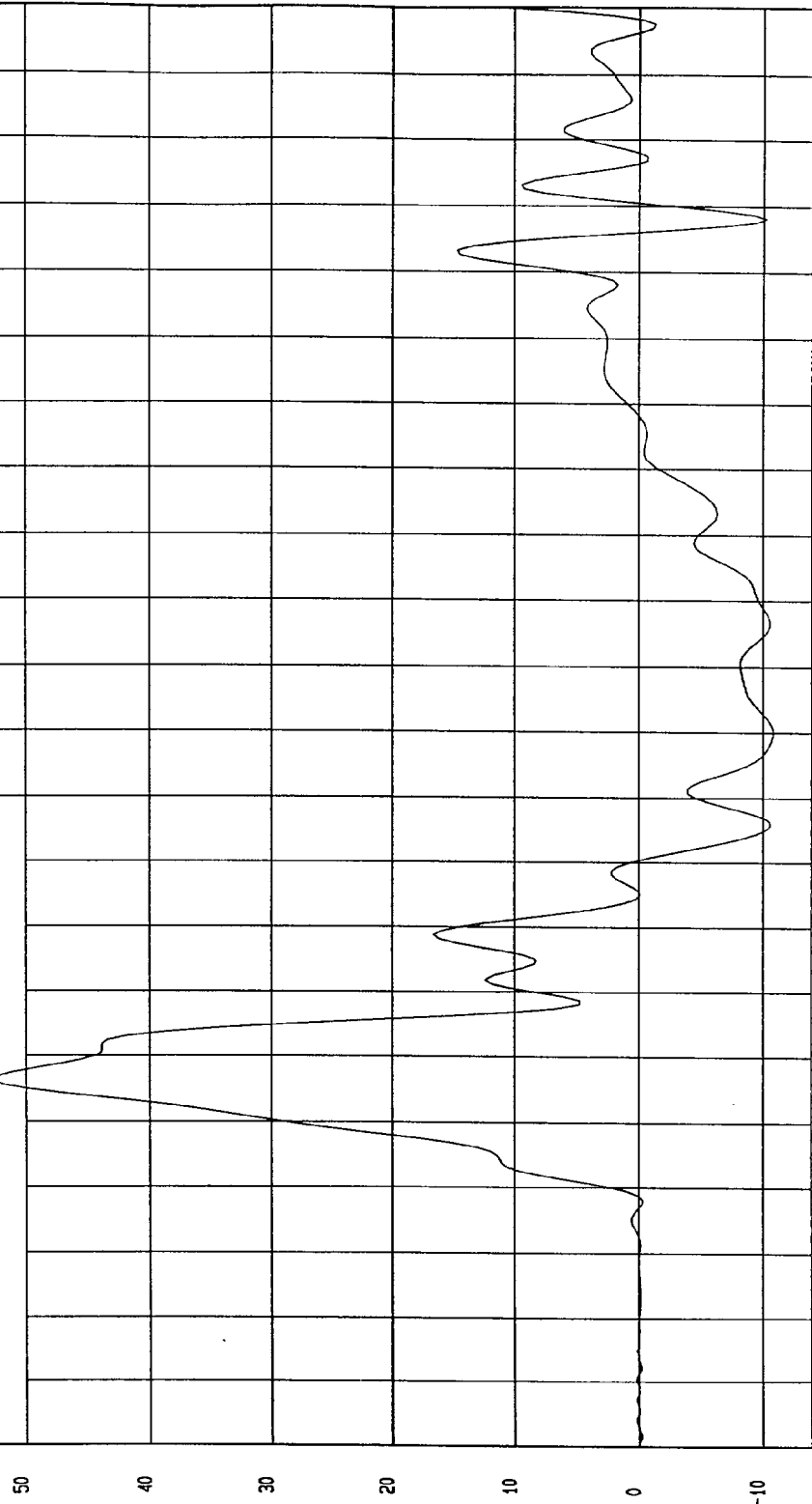
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -10.84 G'S at 90 msec  
Maximum = 52.61 G'S at 36 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 099063F1.R43 Filterclass (FIR Filtered)



MCA Research  
09-20-1999 16.01

TIME (SECONDS)

G.S

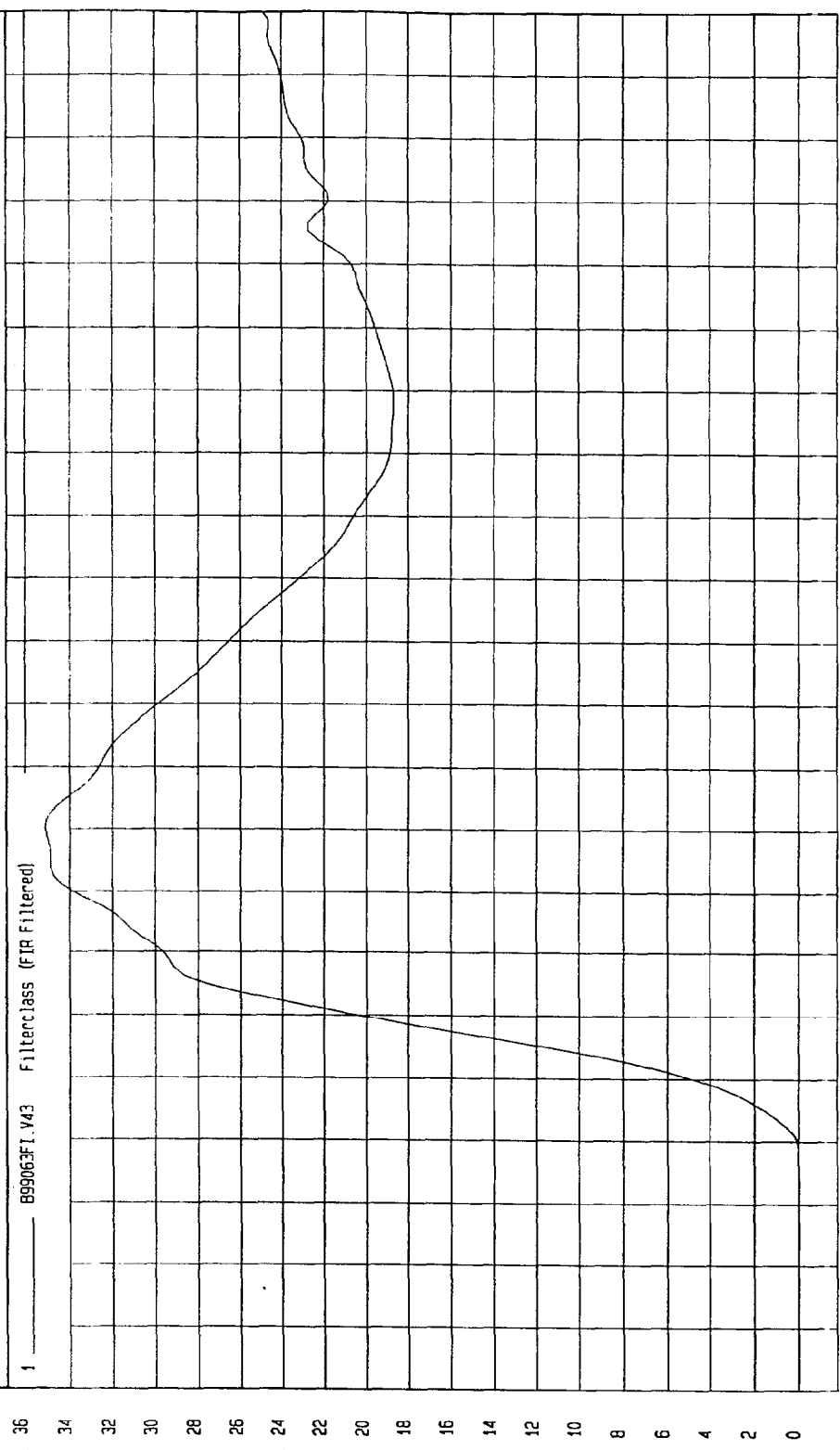
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -2.48E-02 KPH at 12 msec

Maximum = 35.09 KPH at 71 msec

DRIVER LOWER RIB Y REDUNDANT VELOCITY



MGA Research  
09-20-1999 16.02

TIME Seconds

KPH

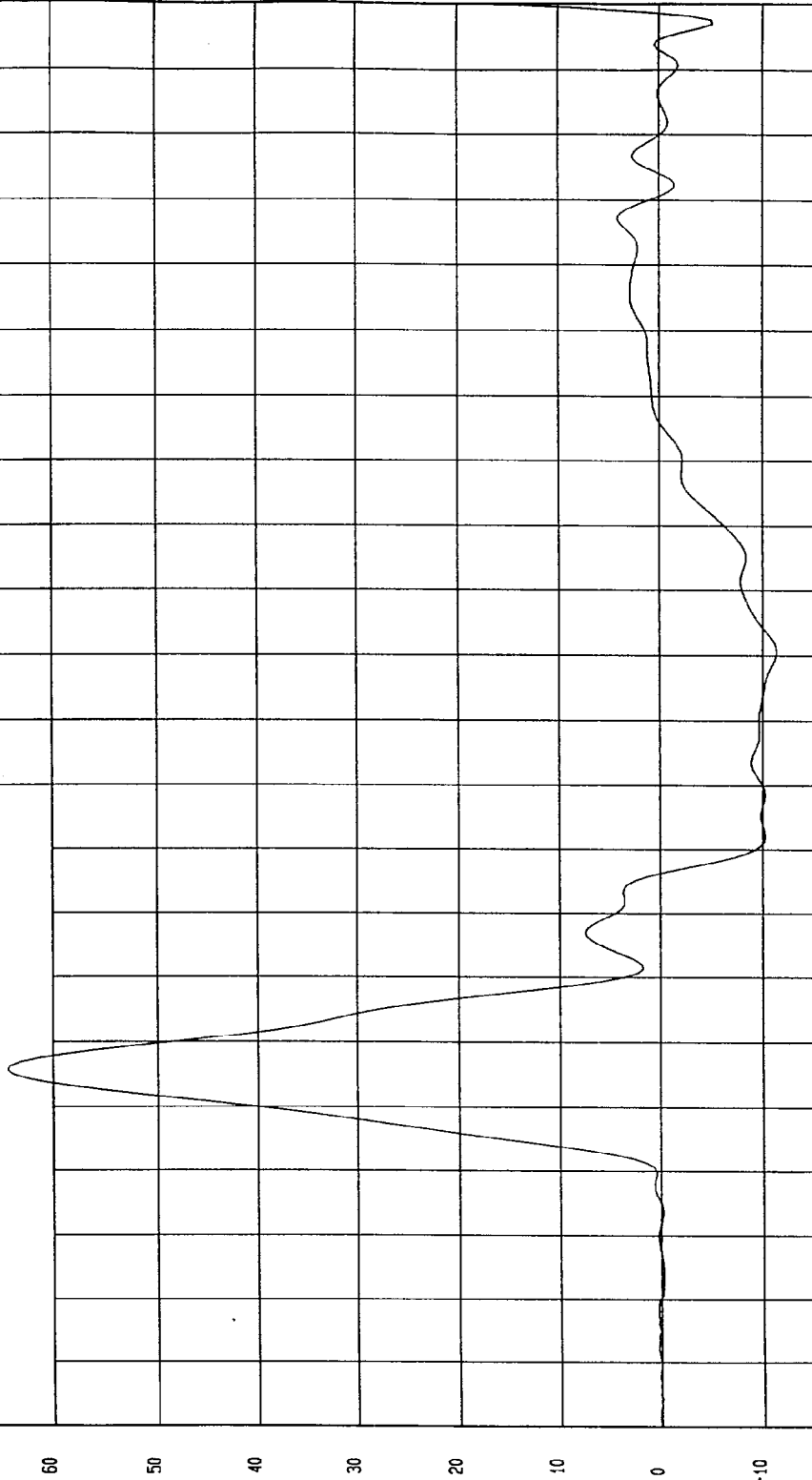
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -11.4 G'S at 101 msec  
Maximum = 64.35 G'S at 36 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 899063FI.R44 Filterclass (FIR Filtered)



MGA Research  
09-20-1999 16:01

TIME (SECONDS)

G'S

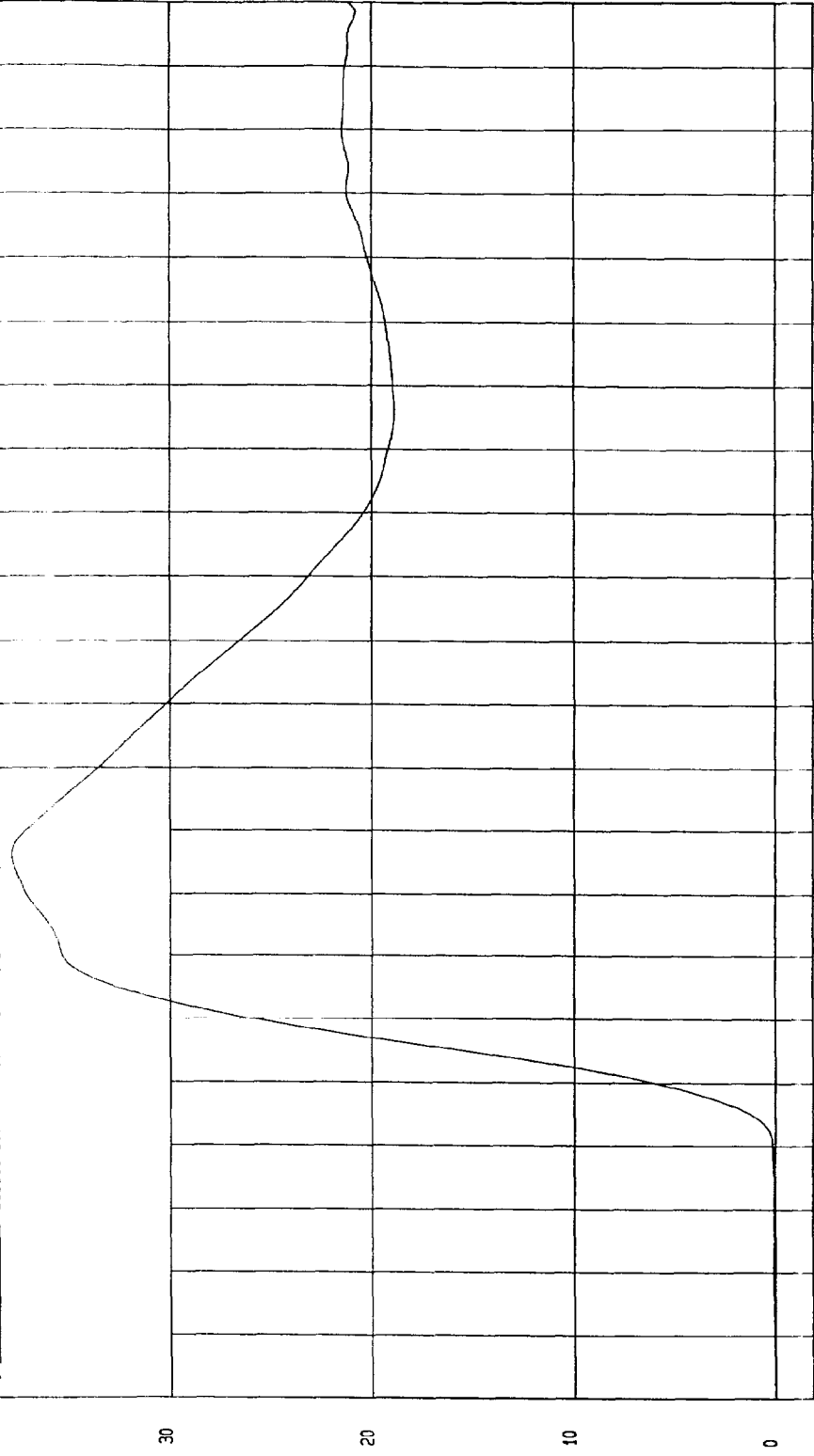
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

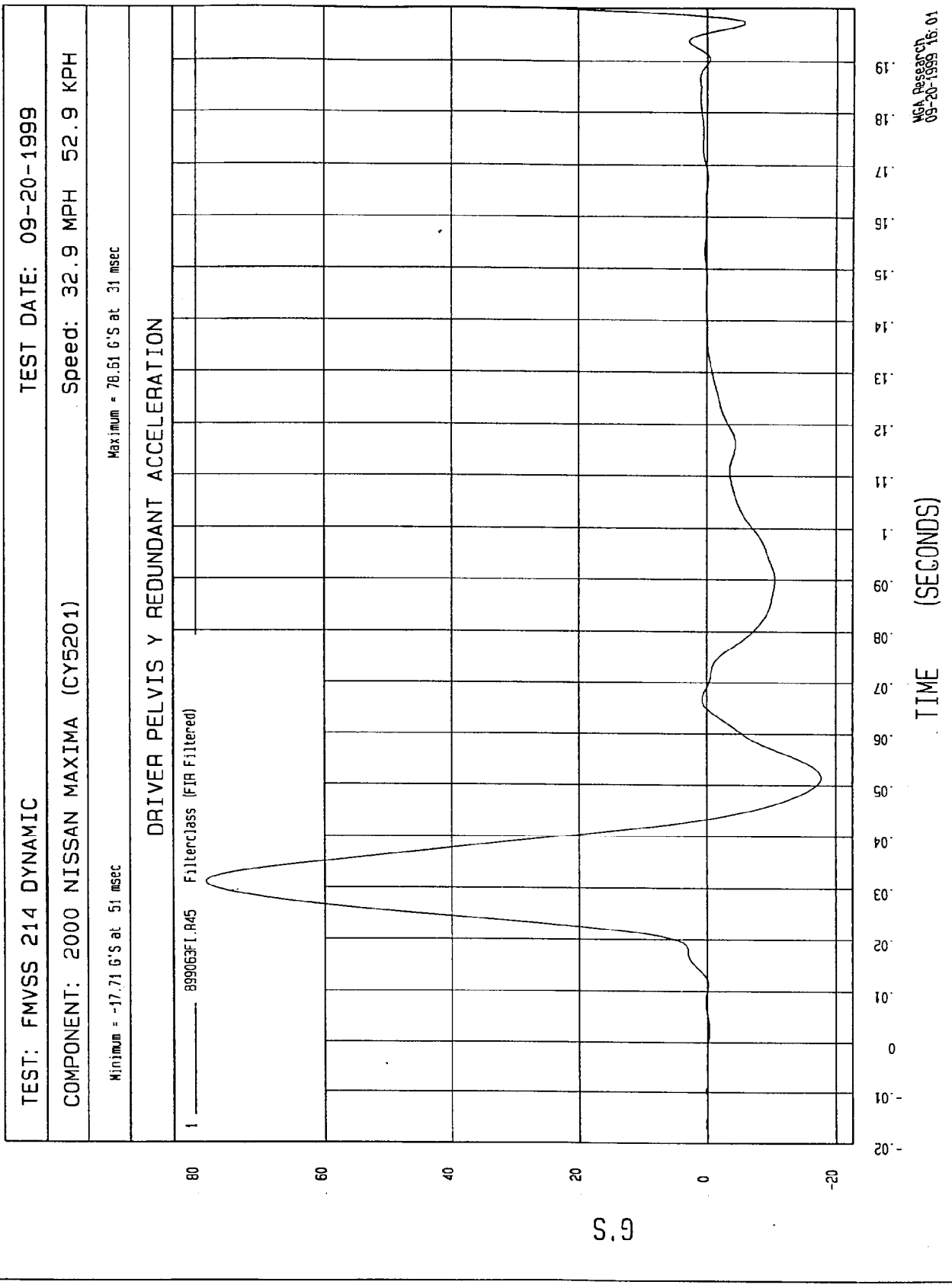
Minimum = 0 KPH at -20 msec Maximum = 37.73 KPH at 56 msec

DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 899063F1.V44 Filterclass (FIR Filtered)



TIME Seconds  
MCA Research  
09-20-1999 16:02



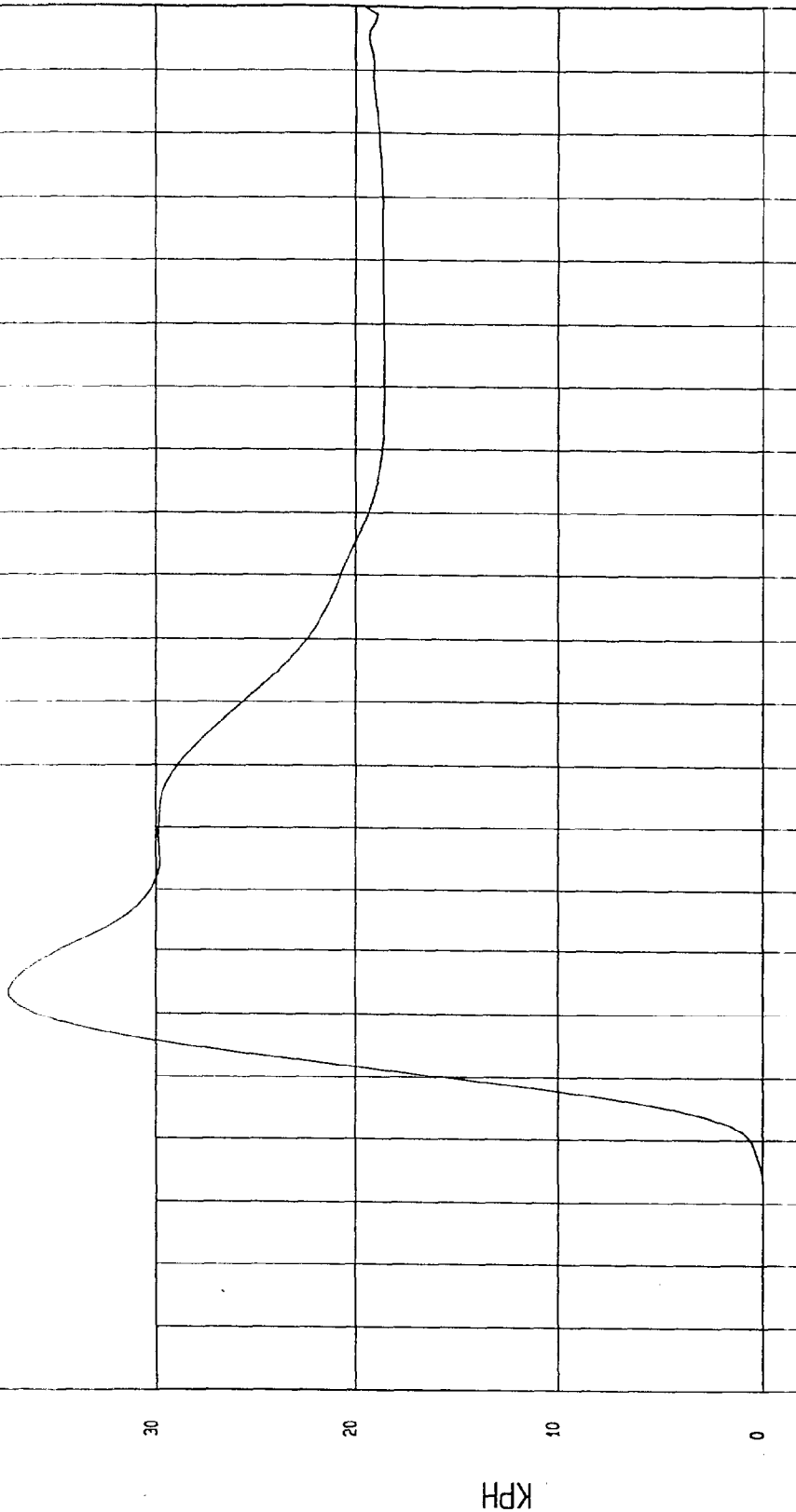
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -4.29E-02 KPH at 6 msec Maximum = 37.29 KPH at 43 msec

DRIVER PELVIS Y REDUNDANT VELOCITY

1 899063F1.V45 FilterClass (FIR Filtered)



MGA Research  
09-20-1999 16:02

TIME Seconds

KPH

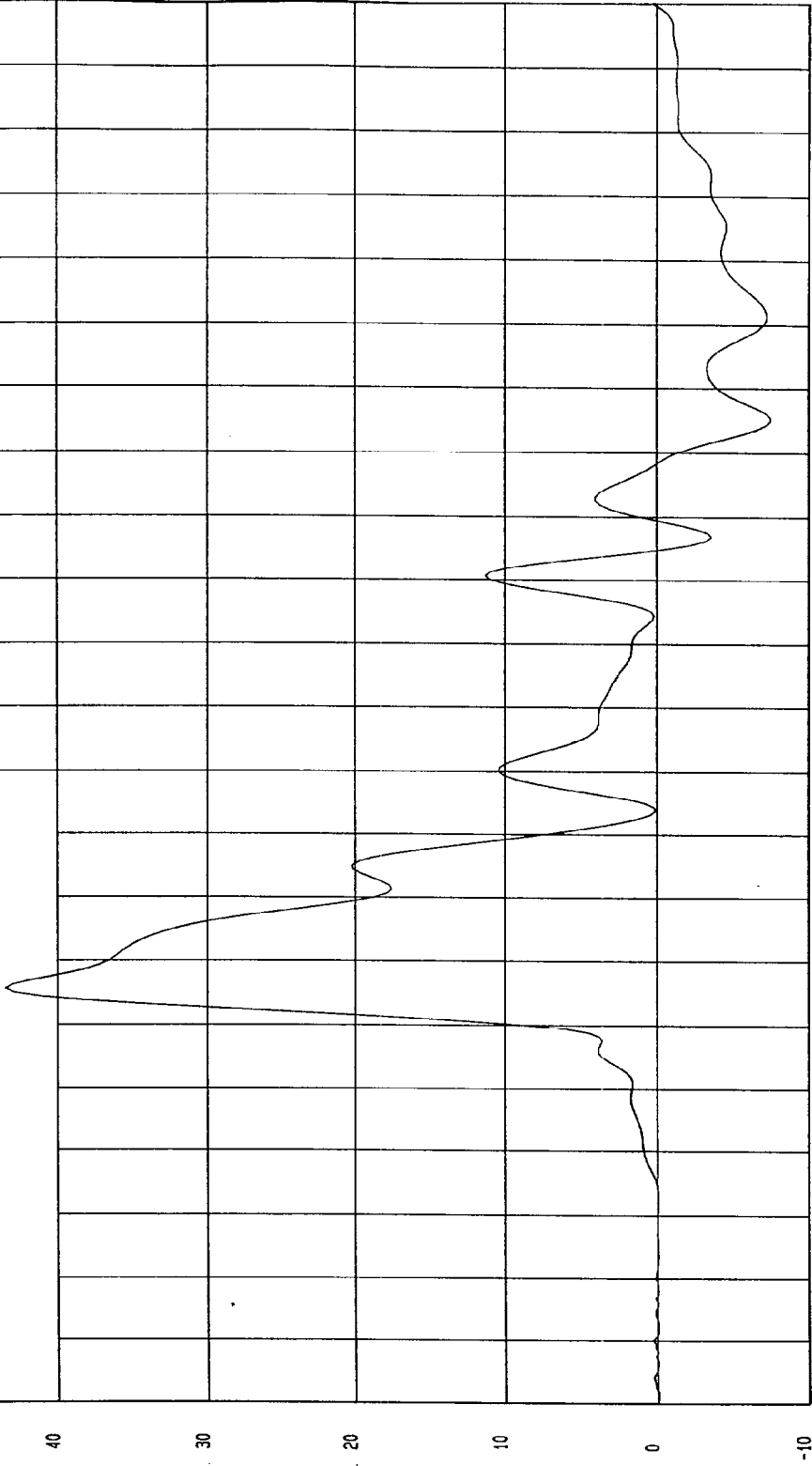
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -7.49 G'S at 135 msec Maximum = 43.34 G'S at 46 msec

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

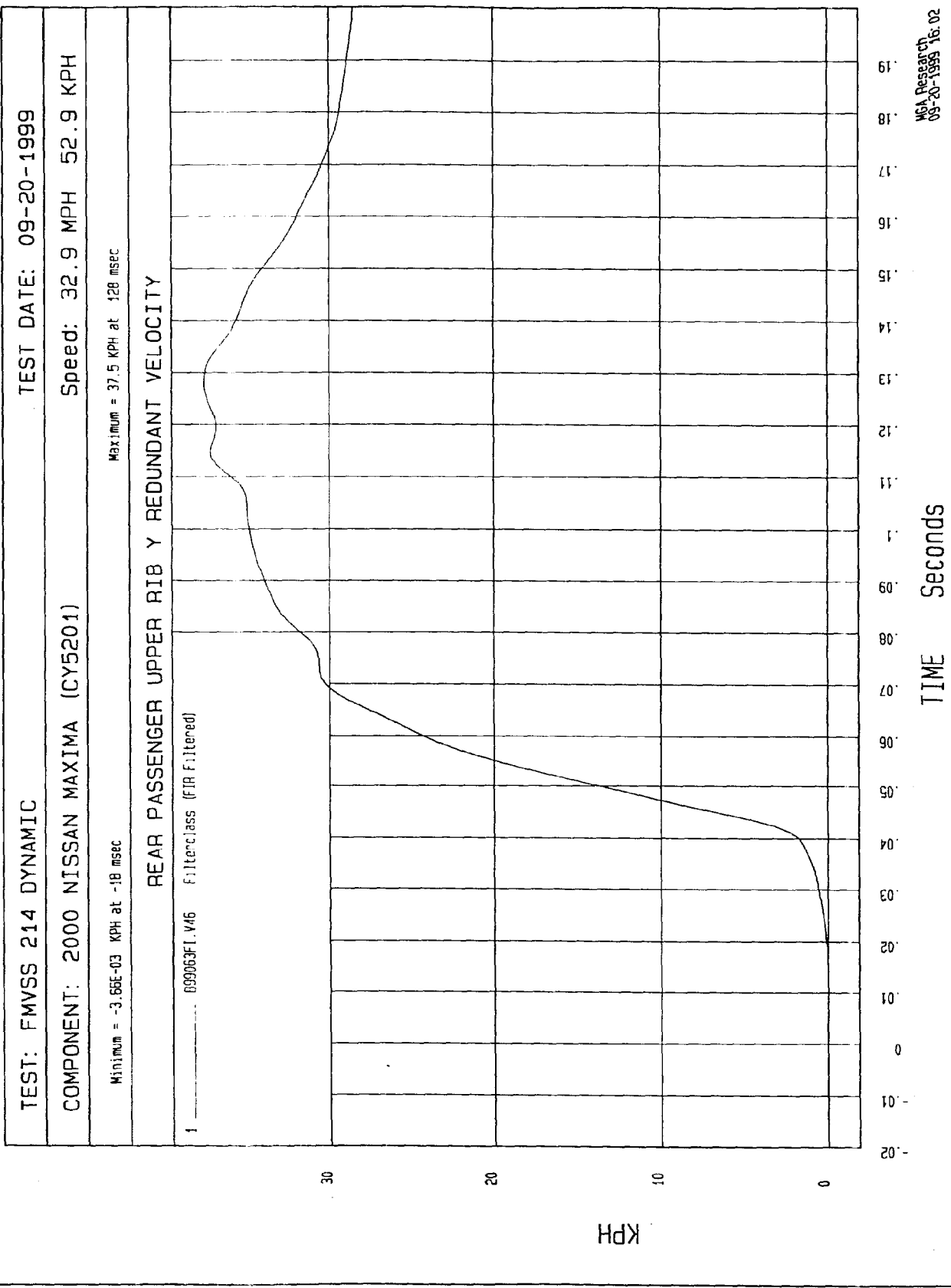
1 ——— 899063FI.R46 Filterclass (FIR Filtered)



NSA Research  
09-20-1999 16:01

G.S

TIME (SECONDS)



TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 53.95 G'S at 48 msec

Minimum = -11.05 G'S at 74 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 899063F1.R47 Filterclass (FIR Filtered)

50  
40  
30  
20  
10  
0  
-10

G.S

-.02  
0  
.01  
.02  
.03  
.04  
.05  
.06  
.07  
.08  
.09  
.1  
.11  
.12  
.13  
.14  
.15  
.16  
.17  
.18  
.19

TIME (SECONDS)

MSA Research  
09-20-1999 16:01

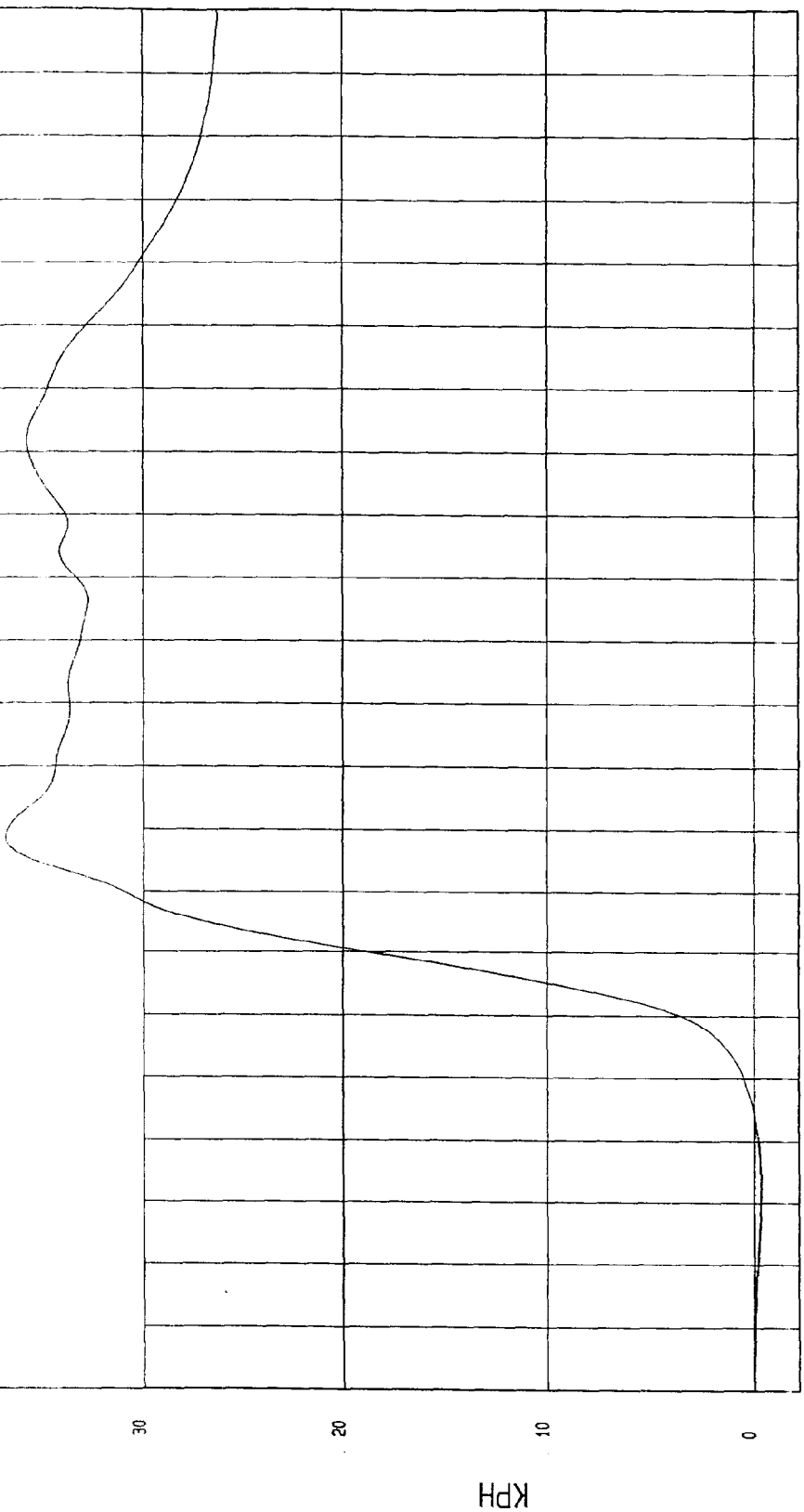
TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -31 KPH at 12 msec Maximum = 36.78 KPH at 69 msec

REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY

1 099063F1.V47 Filterclass (FIR Filtered)



MCA Research  
09-20-1999 16.02

TIME Seconds

KPH

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -17.03 G'S at 79 msec  
Maximum = 50.4 G'S at 48 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 095063F1.R40 FilterClass (FIR Filtered)

50  
40  
30  
20  
10  
0  
-10  
-20

G.S

0.02 0.04 0.06 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

TIME (SECONDS)

MGA Research  
09-20-1999 16:01

TEST: FMVSS 214 DYNAMIC TEST DATE: 09-20-1999

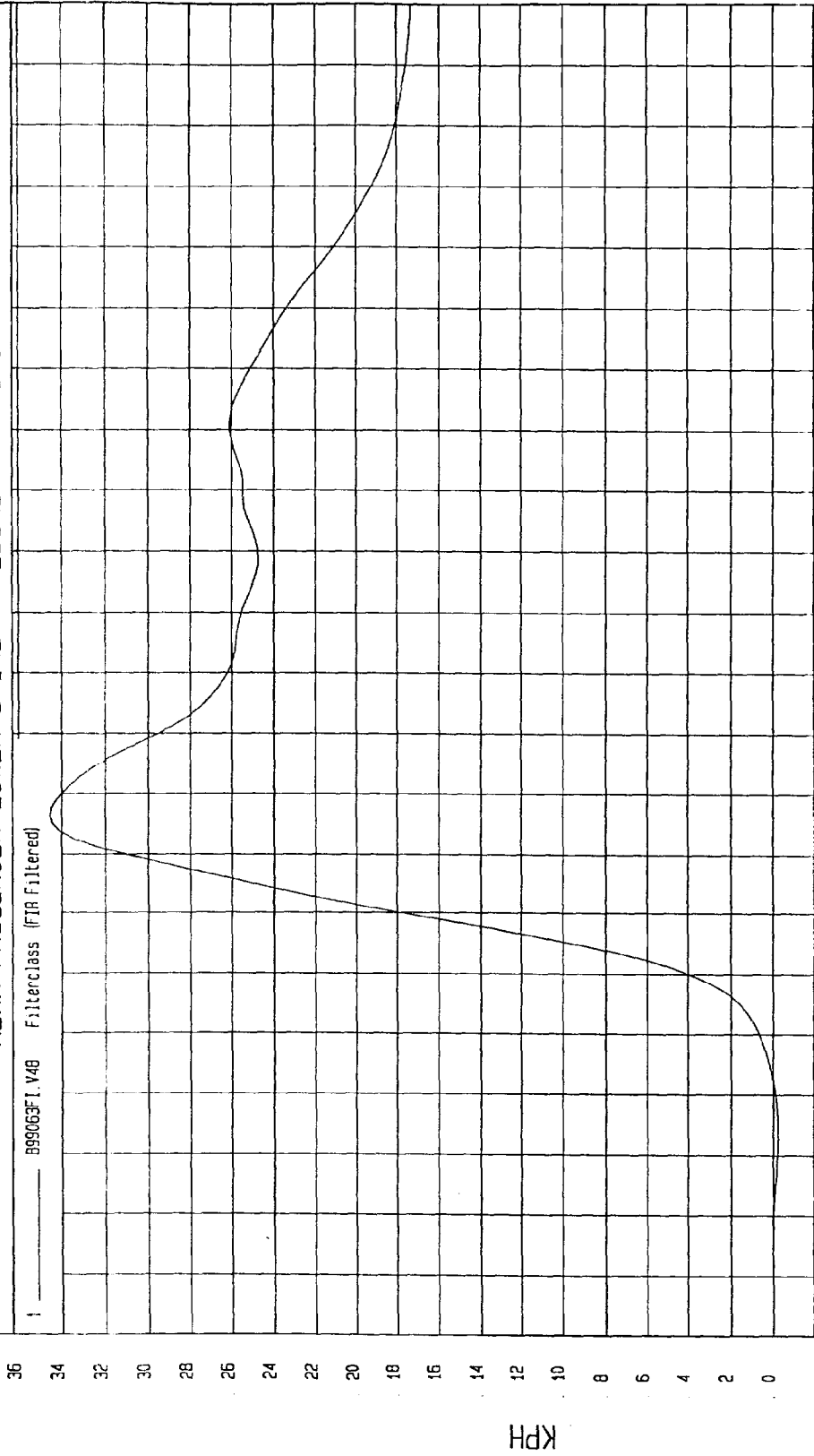
COMPONENT: 2000 NISSAN MAXIMA (CY5201) Speed: 32.9 MPH 52.9 KPH

Minimum = -0.22 KPH at 14 msec

Maximum = 34.54 KPH at 16 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

1 899063F1.V48 FilterClass (FIR Filtered)



MSA Research  
09-20-1999 16:02

TEST DATE: 09-20-1999

Speed: 32.9 MPH 52.9 KPH

TEST: FMVSS 214 DYNAMIC

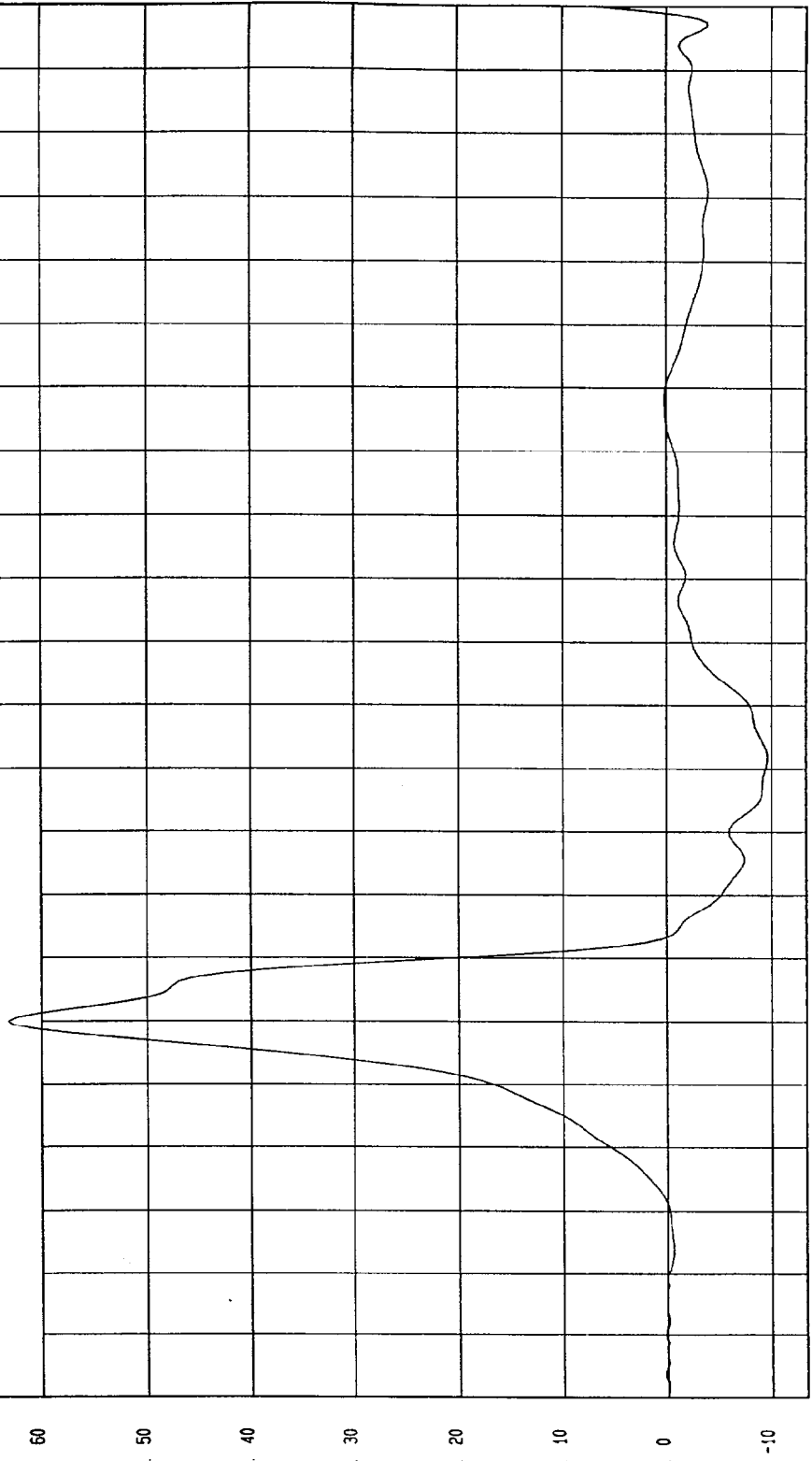
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 63.08 G'S at 40 msec

Minimum = -9.65 G'S at 82 msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 ——— B99063F1.R49 Filterclass (FIR Filtered)



MPA Research  
09-20-1999 16:02

TIME (SECONDS)

G'S

TEST DATE: 09-20-1999

TEST: FMVSS 214 DYNAMIC

Speed: 32.9 MPH 52.9 KPH

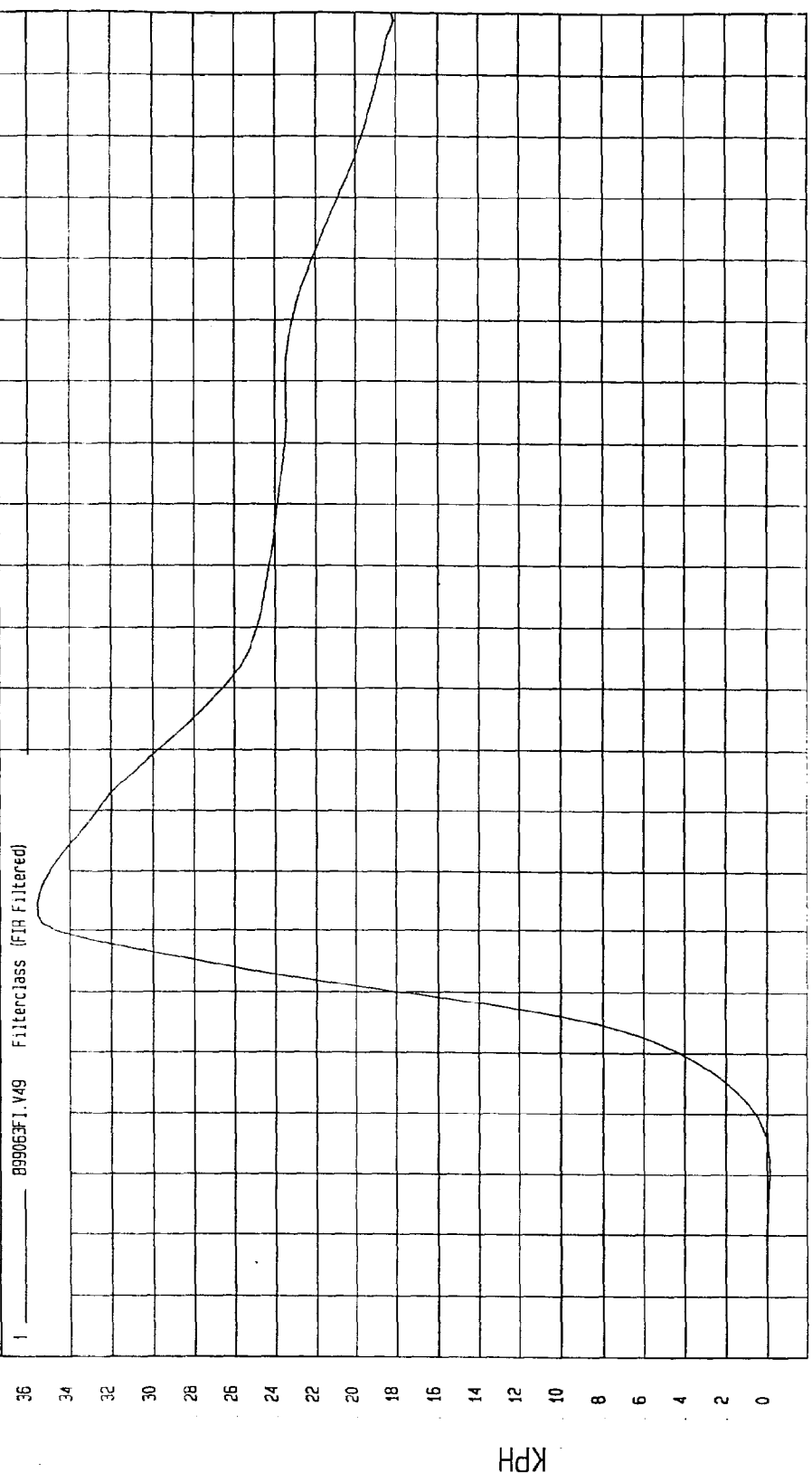
COMPONENT: 2000 NISSAN MAXIMA (CY5201)

Maximum = 35.57 KPH at 53 msec

Minimum = -1.13 KPH at 11 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 B9906F1.V49 FilterClass (FIR Filtered)



TIME Seconds

APPENDIX C  
SID CONFIGURATION AND PERFORMANCE VERIFICATION

**SUMMARY**  
**SIDE PRE & POST-TEST CALIBRATION**  
**CONFIGURED TO LEFT SIDE IMPACT**

Report Date: September 23, 1999Technician: Tim MichnayTest Date: September 20, 1999

Test Parameter	Specification	Dummy Serial No: 036		Dummy Serial No: 037	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH-Seated Height (mm)	889 - 909	902	902	903	903
RH-Rib Height (mm)	501 - 521	507	507	510	510
HP-Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD-Rib from Back Line (mm)	229 - 241	235	235	237	237
KV-Knee Pivot from Back Line (mm)	511 - 526	519	519	522	522
SW-Knee Pivot to Floor (mm)	490 - 505	494	494	493	493
HW-Hip Width (mm)	356 - 391	370	370	378	378
<b>Thorax Impacts</b>					
Temperature (°C)	18.9 - 25.5	21.0	21.0	21.0	21.0
Relative Humidity (%)	10 - 70	44	34	44	34
Probe Speed (m/s)	4.27 - 4.33	4.27	4.28	4.29	4.28
Upper Rib (g's)	37 - 46	45	46	40	38
Lower Rib (g's)	37 - 46	46	43	39	39
Lower Spine (g's)	15 - 22	20	20	20	21
<b>Pelvis Impact</b>					
Temperature (°C)	18.9 - 25.5	21.0	21.0	21.0	21.0
Relative Humidity (%)	10 - 70	43	34	44	34
Probe Speed (m/s)	4.27 - 4.33	4.28	4.27	4.28	4.30
Pelvis ('gs)	40 - 60	47	49	47	53

REMARKS:

PRE-TEST CERTIFICATION DATA

Dummy Serial Number: 036

Calibration Test Results Summary

Dummy Serial Number: 036

Pre-Test Calibration

External Dimensions: The dummy passed all external dimension requirements.

Thorax Impact Test: The thorax passed all impact test requirements.

Pelvic Impact Test: The pelvis passed all impact test requirements.

Abdominal Compression Test: The abdomen passed all compression test requirements.

Lumbar Flexion Test: The lumbar passed all flexion test requirements.

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SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY SERIAL NO.: 036

DATE OF VERIFICATION: September 17, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	902
RH - Rib Height (mm)	501 - 521	507
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	235
KV - Knee Pivot From Back Line (mm)	511 - 526	519
SW - Knee Pivot to Floor (mm)	490 - 505	494
HW - Hip Width (mm)	356 - 391	370

TECHNICIAN: 

APPROVED BY: 

MGA RESEARCH CORPORATION  
 THORACIC SHOCK ABSORBER TEST  
 SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999

DUMMY SERIAL NUMBER: 036

TEST NUMBER: P991026/7/8

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)		10 - 70	43
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	866
	DISPLACEMENT (mm)	30 - 35	34
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1868
	DISPLACEMENT (mm)	32 - 37	32
VELOCITY 6.1 m/s	FORCE (N)	3741 - 4448	4006
	DISPLACEMENT (mm)	33 - 40	33

TEST MEETS SPECIFICATIONS

TECHNICIAN: 

APPROVED BY: 

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 08:48:08

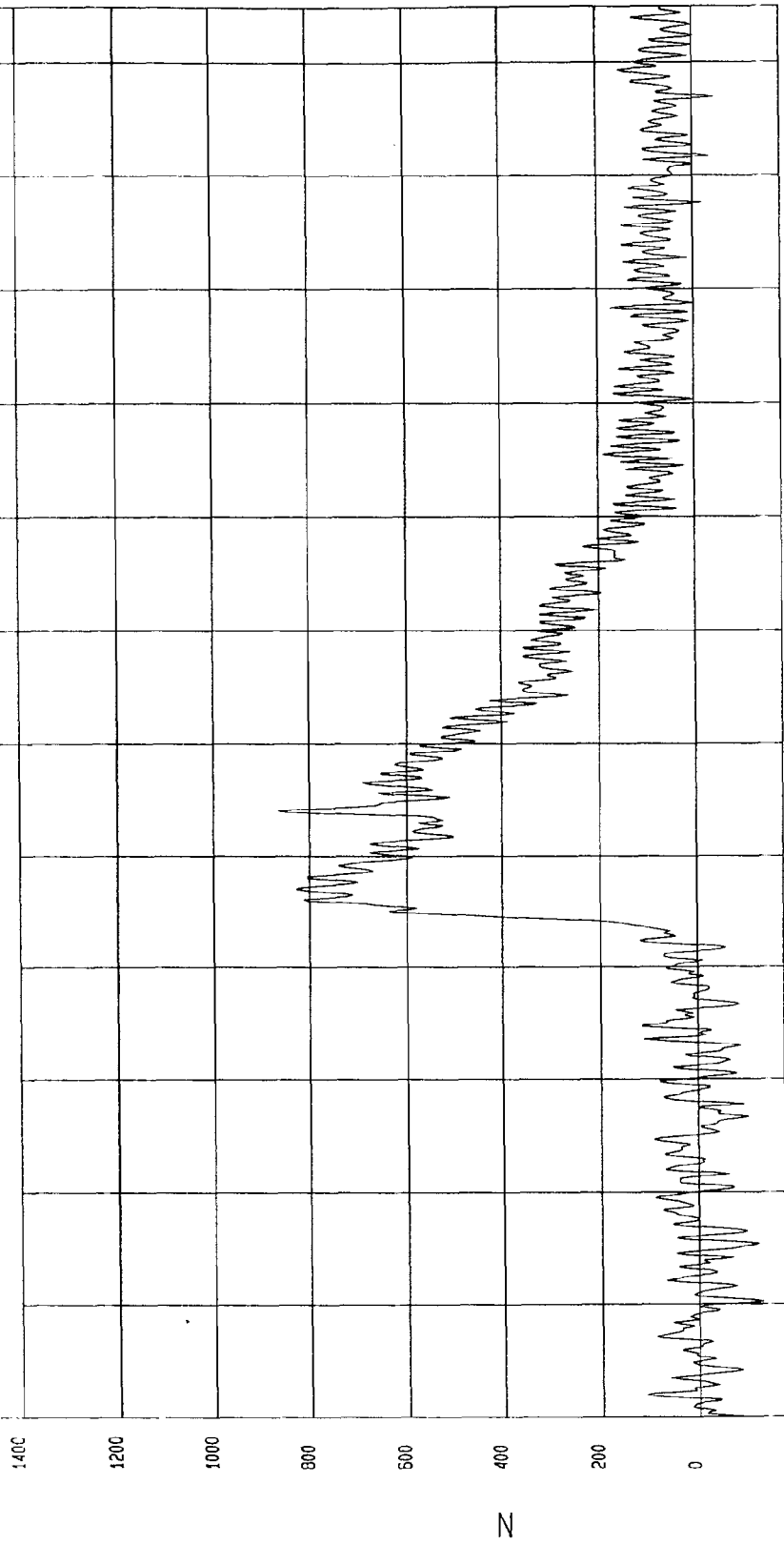
COMPONENT: DUMMY # 036 Velocity: 10 FT/SEC 3.05 M/SEC

Minimum = -133.28 N at 10.2 msec

Maximum = 865.65 N at 54.0 msec

PEAK FORCE

1 ——— D99026FF.F04 Filterclass (1000)



TIME (SECONDS)

MGA Research  
09-21-1999 07:41

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 08:46

COMPONENT: DUMMY # 036 Velocity: 10 FT/SEC 3.05 M/SEC

Minimum = -.15 mm at 26.8 msec Maximum = 34.42 mm at 78.2 msec

PEAK DISPLACEMENT

1 \_\_\_\_\_ 0990260F.D05 Filterclass (1000)

50

40

30

20

10

0

mm

0.12

0.11

0.1

0.09

0.08

0.07

0.06

0.05

0.04

0.03

0.02

0.01

0

TIME (SECONDS)

MGA, Research Co.  
09-21-1999 07:42

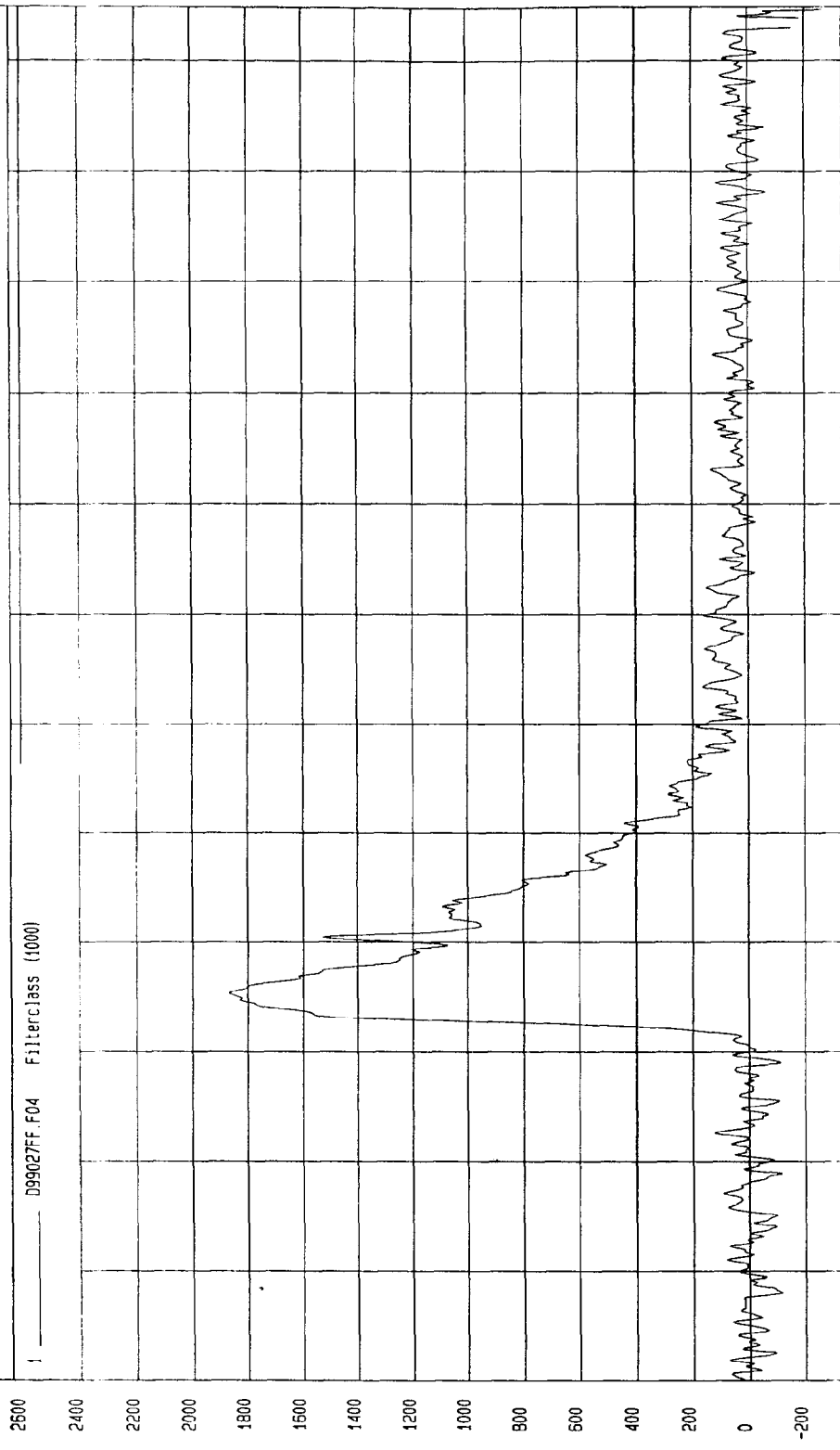
TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 09:15

COMPONENT: DUMMY # 036 Velocity: 14 FT/SEC 4.27 M/SEC

Minimum = -1100.43 N at 123. msec Maximum = 1868.11 N at 35.4 msec

PEAK FORCE

1 \_\_\_\_\_ D99027FF.F04 Filter:rc:ass (1000)



TIME (SECONDS)

MSA Research  
09-21-1999 07:42

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 09: 15

COMPONENT: DUMMY # 036 Velocity: 14 FT/SEC 4.27 M/SEC

Minimum = -.12 mm at 9.11 msec Maximum = 32.07 mm at 56.9 msec

PEAK DISPLACEMENT

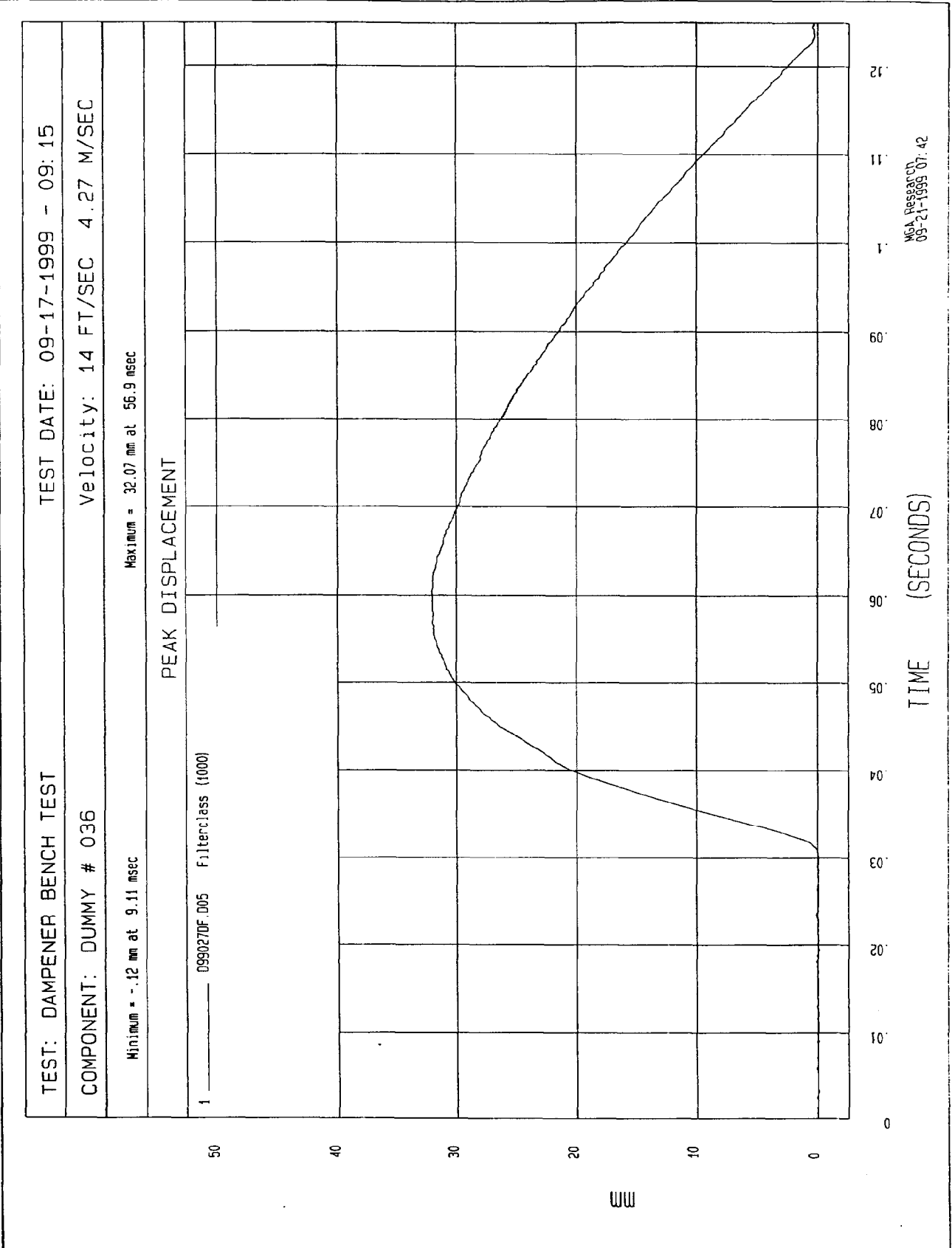
1 \_\_\_\_\_ 099027DF.D05 Filterclass (1000)

50  
40  
30  
20  
10  
0

MM

TIME (SECONDS)  
0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12

MGA Research  
09-21-1999 07: 42



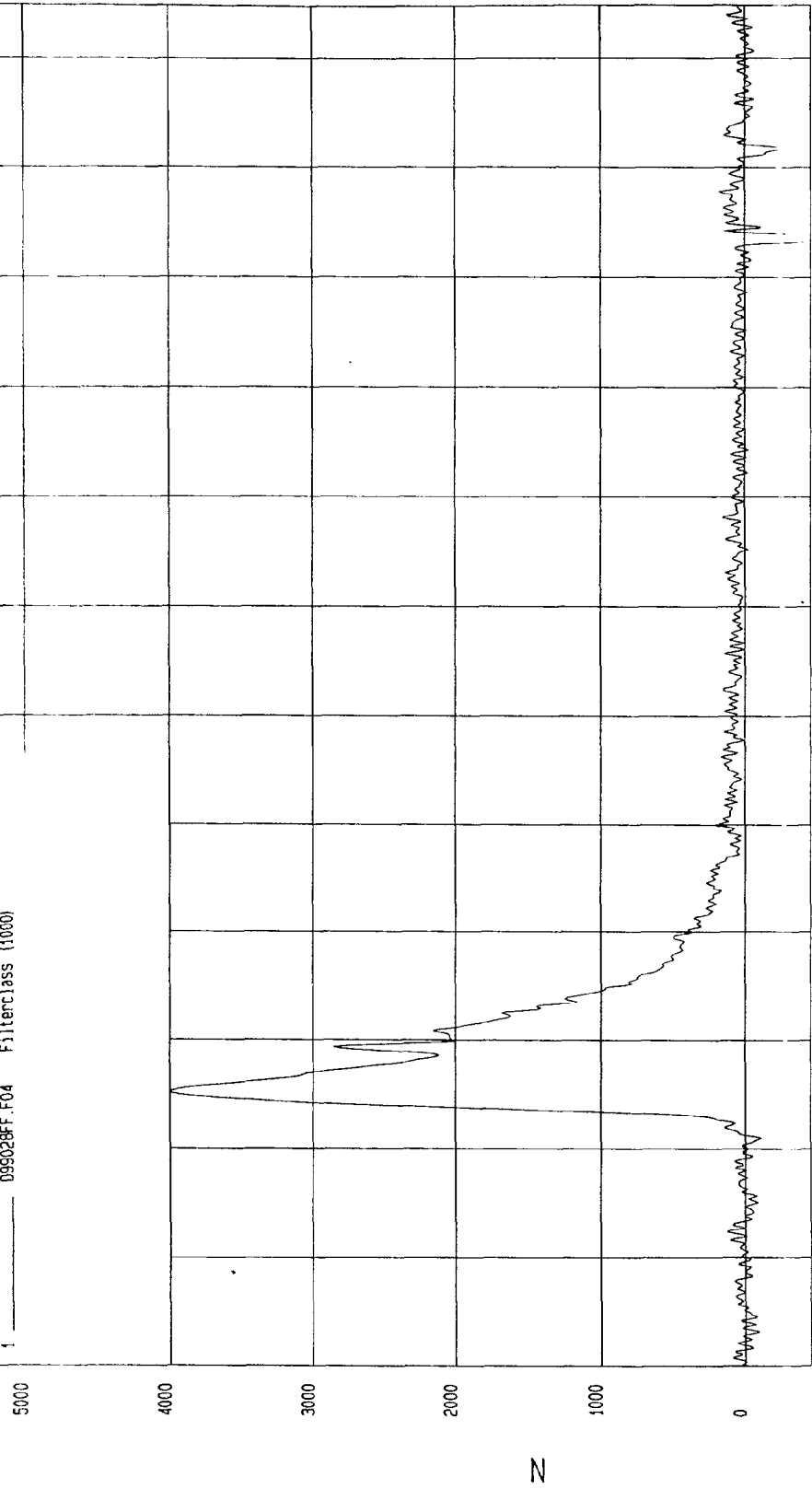
TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 09:10

COMPONENT: DUMMY # 036 Velocity: 20 FT/SEC 6.1 M/SEC

Minimum = -1192.81 N at 103. msec Maximum = 4005.96 N at 25.2 msec

PEAK FORCE

1 \_\_\_\_\_ 099029F.F04 Filterclass (1000)



MCA Research  
09-21-1999 07:42

TIME (SECONDS)

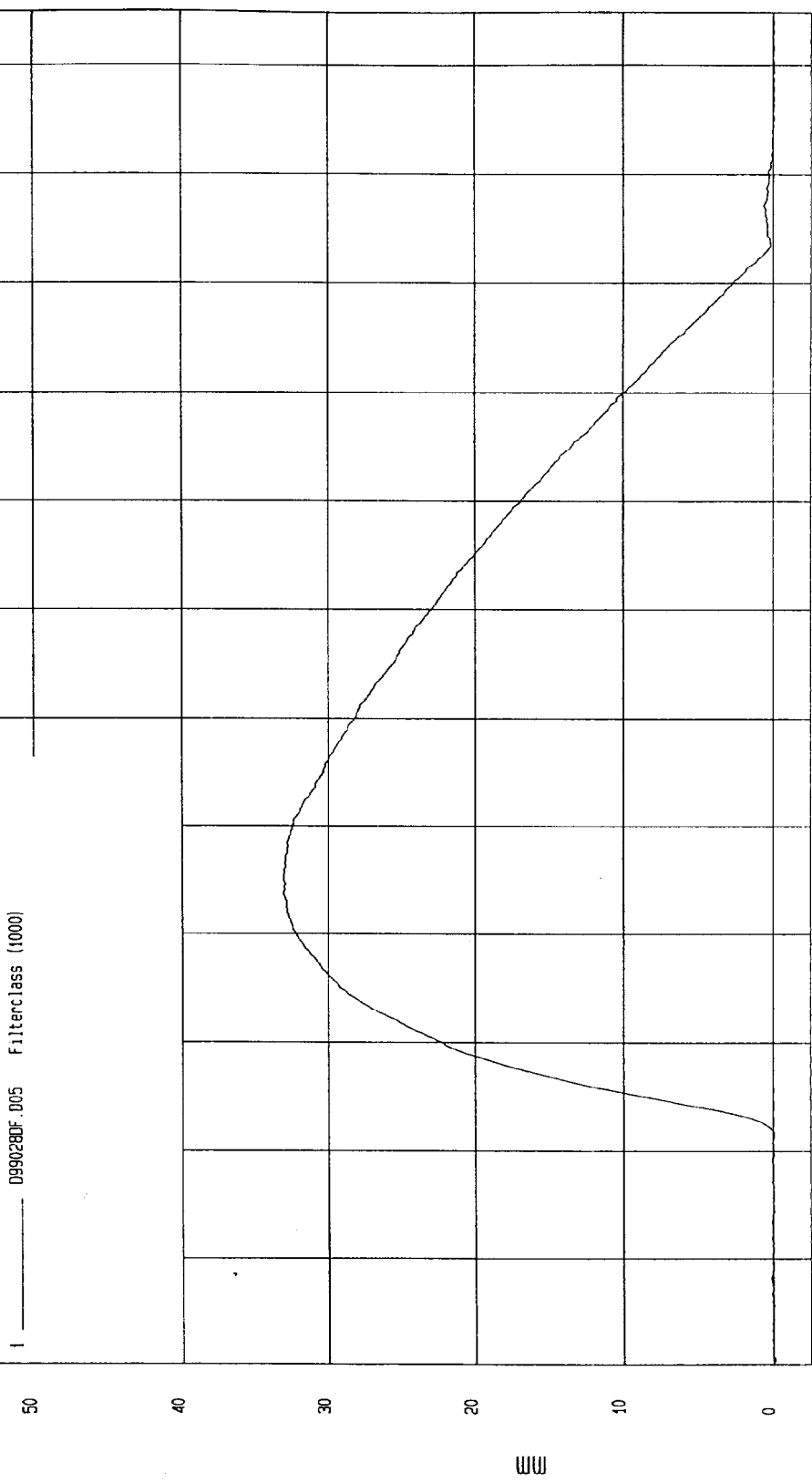
N

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 09:10  
COMPONENT: DUMMY # 036 Velocity: 20 FT/SEC 6.1 M/SEC

Minimum = -.11 mm at .37 msec Maximum = 33.06 mm at 43.8 msec

PEAK DISPLACEMENT

1 \_\_\_\_\_ D9902BDF.005 Filterclass (1000)



NSA Research  
09-21-1999 07:43

MGA RESEARCH CORPORATION  
THORAX IMPACT TEST  
SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999

DUMMY SERIAL NUMBER: 036

TEST NUMBER: D991022

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	44
PROBE SPEED (m/s)	4.27 - 4.33	4.27
UPPER RIB (g's)	37 - 46 g's	45
LOWER RIB (g's)	37 - 46 g's	46
LOWER SPINE (g's)	15 - 22 g's	20

TEST MEETS SPECIFICATIONS

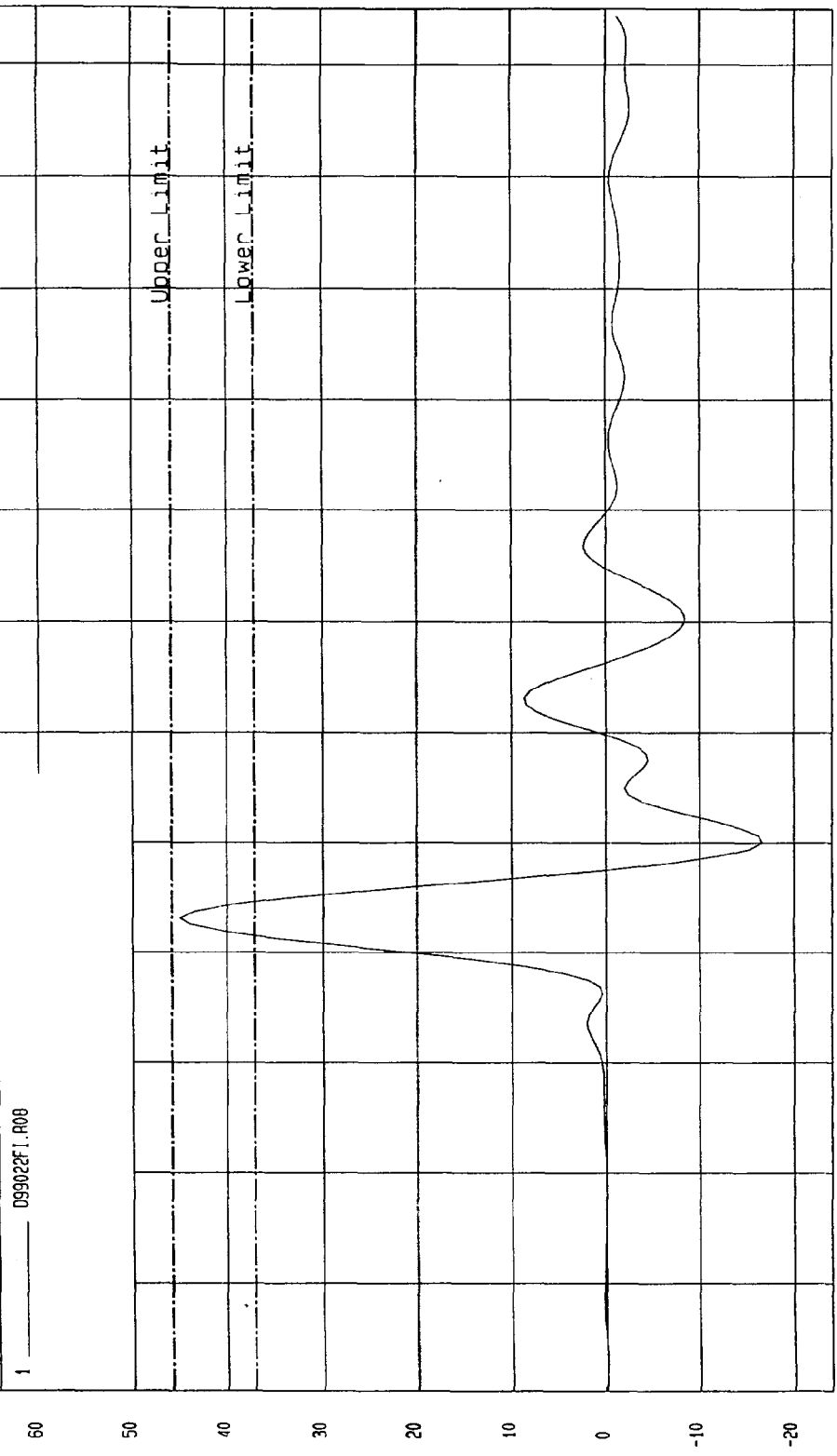
TECHNICIAN: 

APPROVED BY: 

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-17-1999 - 16:07  
COMPONENT: DUMMY # 036 Velocity: 14.015 FT/SEC 4.27 M/SEC

Minimum = -16.64 G'S at 50 msec Maximum = 45.14 G'S at 43.1 msec

UPPER RIB ACCELERATION



WGA Research  
09-17-1999 16:16

TIME (SECONDS)

G.S

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-17-1999 - 16:07

COMPONENT: DUMMY # 036 Velocity: 14.015 FT/SEC 4.27 M/SEC

Minimum = -18.00 G'S at 50 msec

Maximum = 45.66 G'S at 42.5 msec

LOWER RIB ACCELERATION

099022FT R09

G.S

Upper Limit

Lower Limit

MGA Research  
09-21-1999 07:46

TIME (SECONDS)

12

11

10

9

8

7

6

5

4

3

2

1

0

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-17-1999 - 16:07

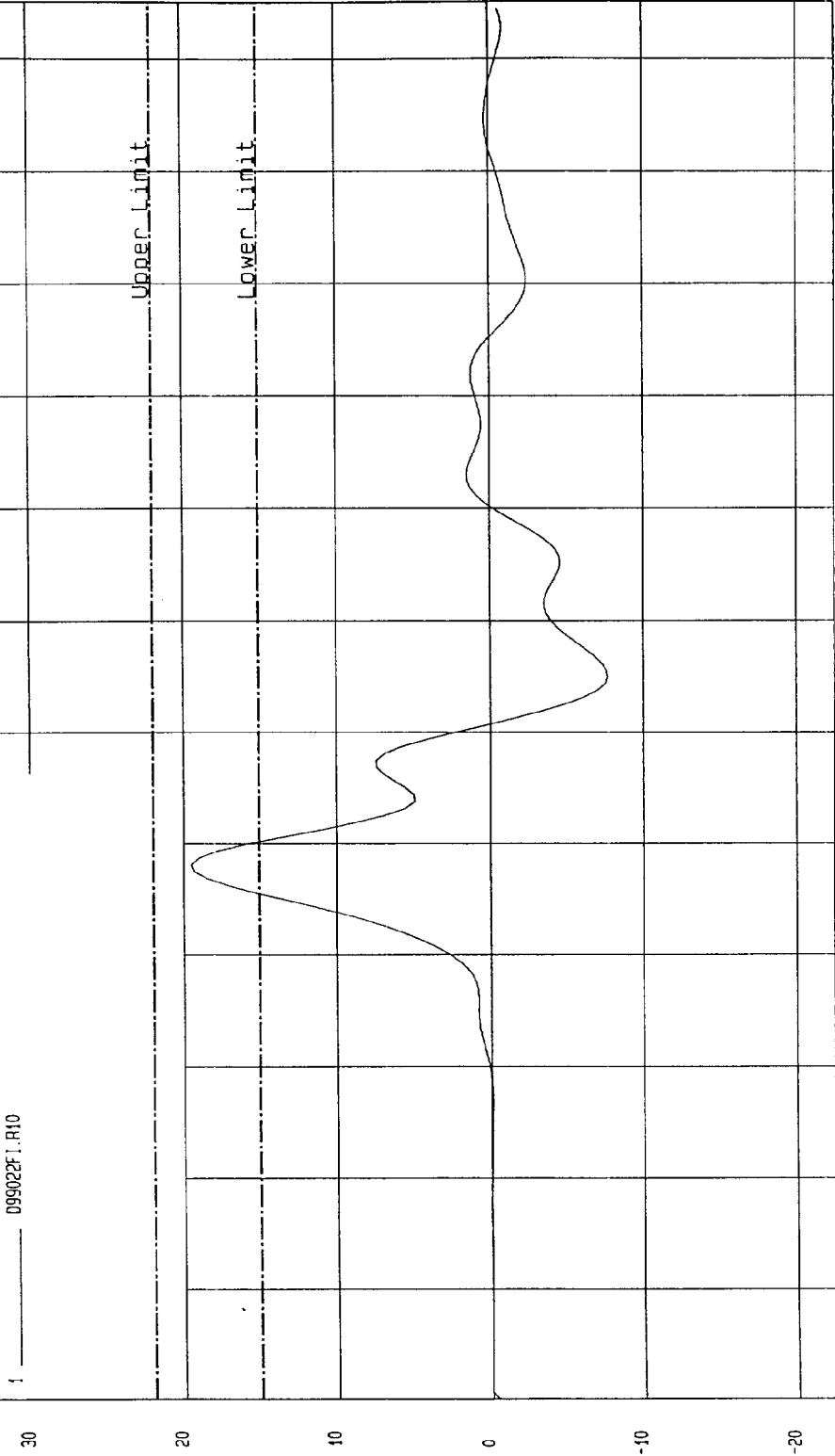
COMPONENT: DUMMY # 036 Velocity: 14.015 FT/SEC 4.27 M/SEC

Minimum = -7.72 G'S at 65 msec

Maximum = 19.50 G'S at 48.1 msec

LOWER SPINE ACCELERATION

1 \_\_\_\_\_ 099022T1.R10



MGA Research  
09-17-1999 16:16

TIME (SECONDS)

G.S

## MGA RESEARCH CORPORATION


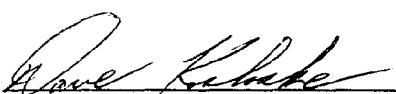
## PELVIS IMPACT TEST

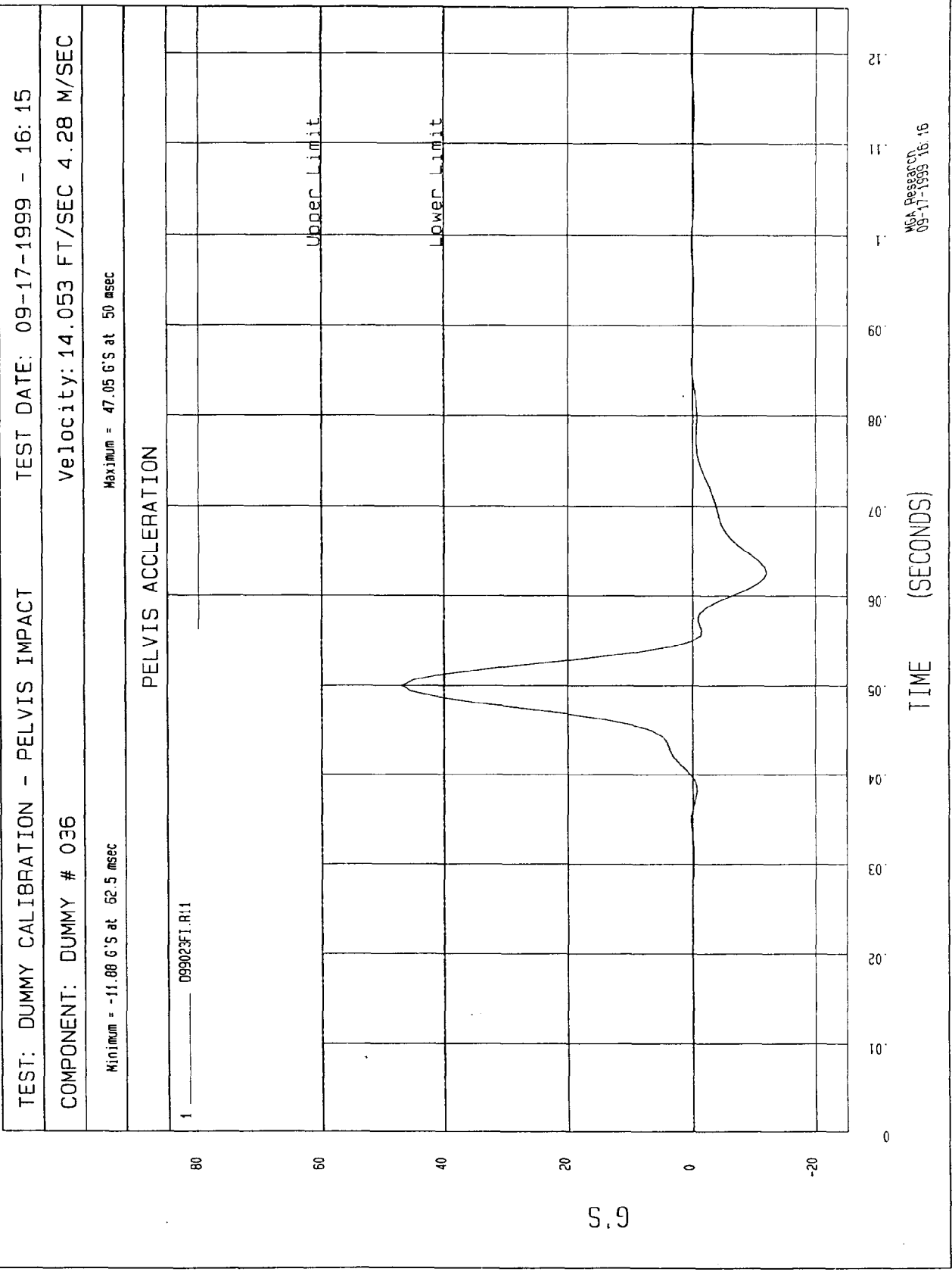
## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 036TEST NUMBER: D991023

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	43
PROBE SPEED (m/s)	4.27 - 4.33	4.28
PELVIS ACCELERATION (g's)	40 - 60	47

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 



## MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST  
(PRELOAD = 10 LBS)

## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 036TEST NUMBER: D991024

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	45
FORCE @ 12.7 mm	104 - 162	153
FORCE @ 19.0 mm	163 - 222	210
FORCE @ 25.4 mm	222 - 280	274
FORCE @ 33 mm	325 - 391	374

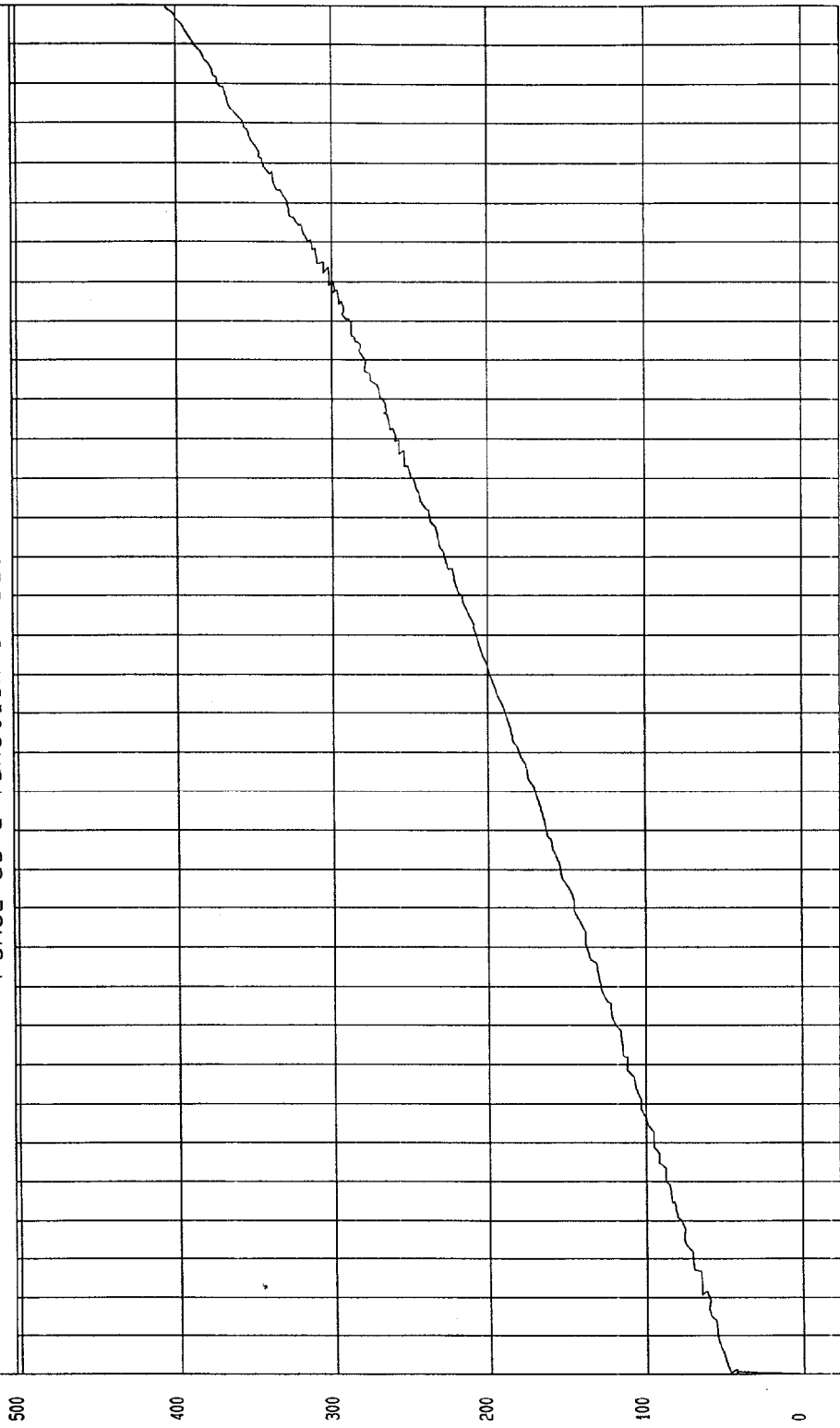
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 09-17-1999 - 11:59:01

COMPONENT: DUMMY # 036

FORCE as a function of DISPLACEMENT



M&A Research  
09-17-1999 12:04

DISPLACEMENT mm

FORCE N

## MGA RESEARCH CORPORATION

## LUMBAR FLEXION TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 036TEST NUMBER: D991025

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	45
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	131.6
FORCE @ 30°	151.2 - 204.6	168.0
FORCE @ 40°	204.6 - 258.0	246.0
RETURN ANGLE	12° maximum	1

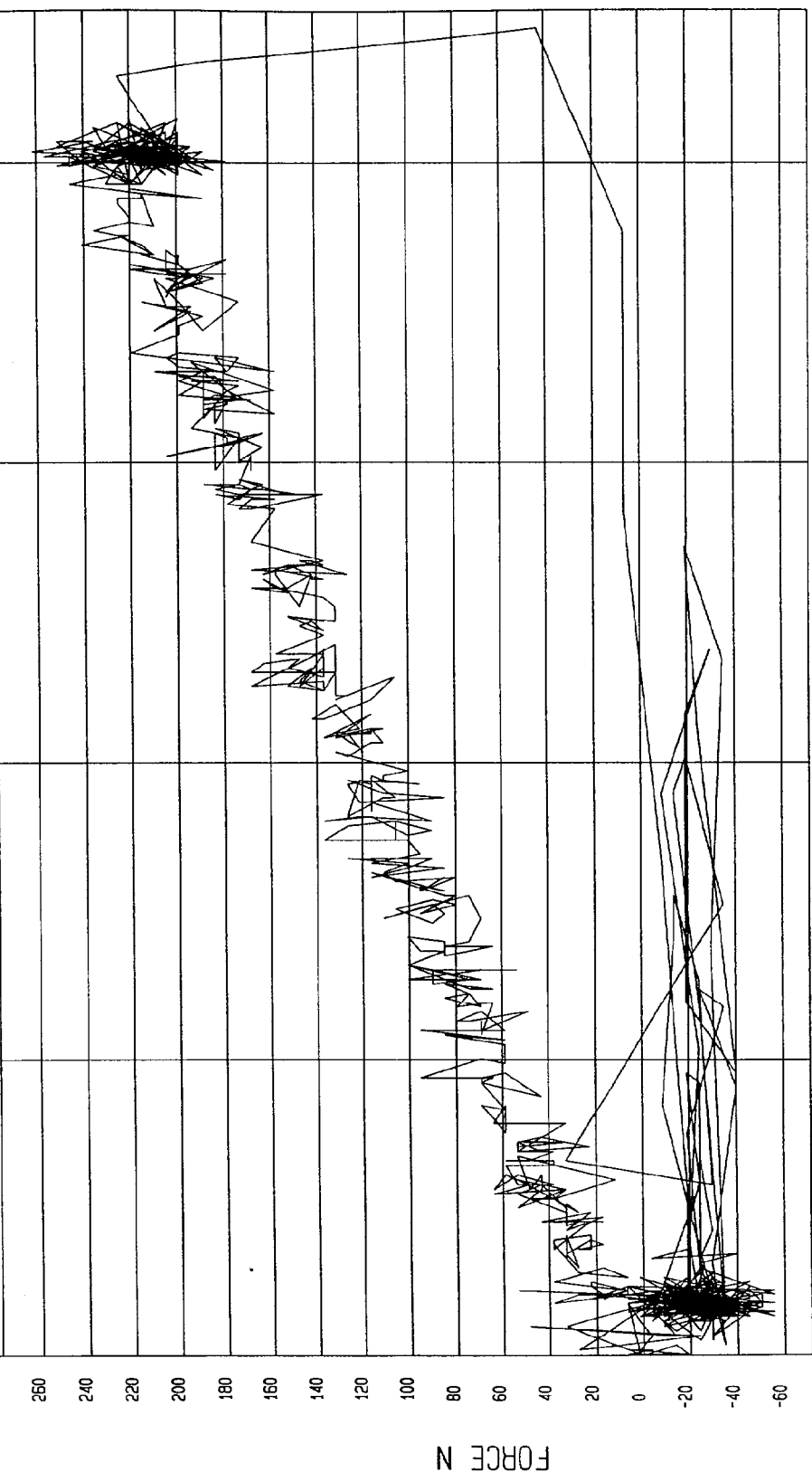
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 09-17-1999 - 11:27:34

COMPONENT: DUMMY # 036

FORCE as a function of TORSO ROTATION



NSA Research  
09-17-1999 12:05

PRE-TEST CERTIFICATION DATA

Dummy Serial Number: 037

Calibration Test Results Summary

Dummy Serial Number: 037

Pre-Test Calibration

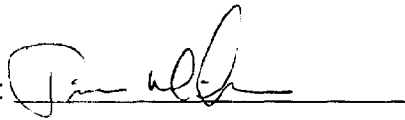
External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

## SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

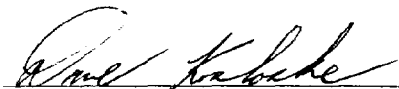
DUMMY SERIAL NO.: 037DATE OF VERIFICATION: September 17, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	903
RH - Rib Height (mm)	501 - 521	510
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	237
KV - Knee Pivot From Back Line (mm)	511 - 526	522
SW - Knee Pivot to Floor (mm)	490 - 505	493
HW - Hip Width (mm)	356 - 391	378

TECHNICIAN:



APPROVED BY:



MGA RESEARCH CORPORATION  
 THORACIC SHOCK ABSORBER TEST  
 SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999

DUMMY SERIAL NUMBER: 037

TEST NUMBER: D991036/7/8

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)		10 - 70	45
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	932
	DISPLACEMENT (mm)	30 - 35	34
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1753
	DISPLACEMENT (mm)	32 - 37	35
VELOCITY 6.1 m/s	FORCE (N)	3741 - 4448	3931
	DISPLACEMENT (mm)	33 - 40	37

TEST MEETS SPECIFICATIONS

TECHNICIAN: 

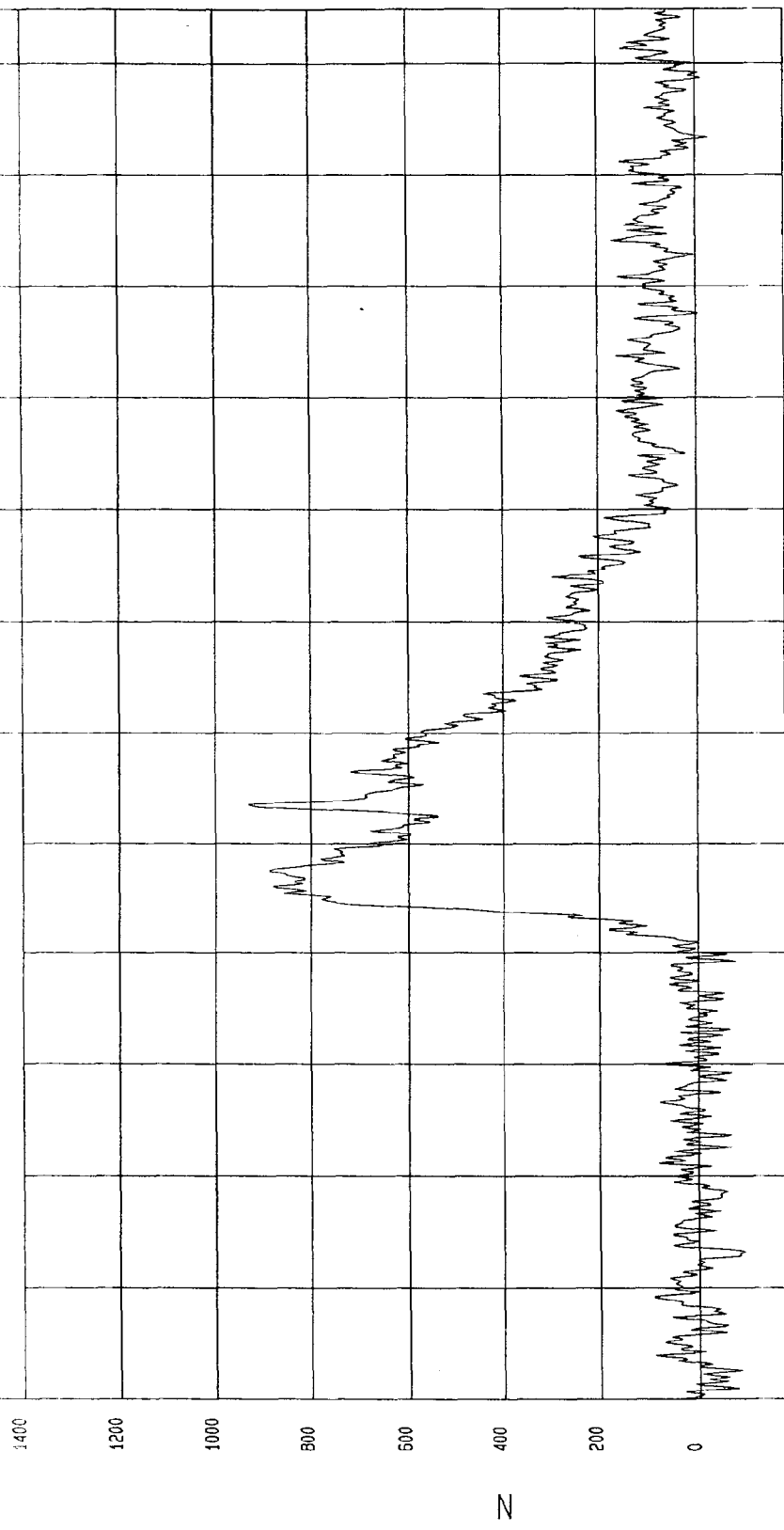
APPROVED BY: 

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 09: 55  
COMPONENT: DUMMY # 037 Velocity: 10 FT/SEC 3.05 M/SEC

Minimum = -92.99 N at 13.2 msec Maximum = 931.99 N at 53.5 msec

PEAK FORCE

099036FF.F04 Filterclass (1000)



MSA Research  
09-21-1999 07: 53

TIME (SECONDS)

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 ~ 09:55

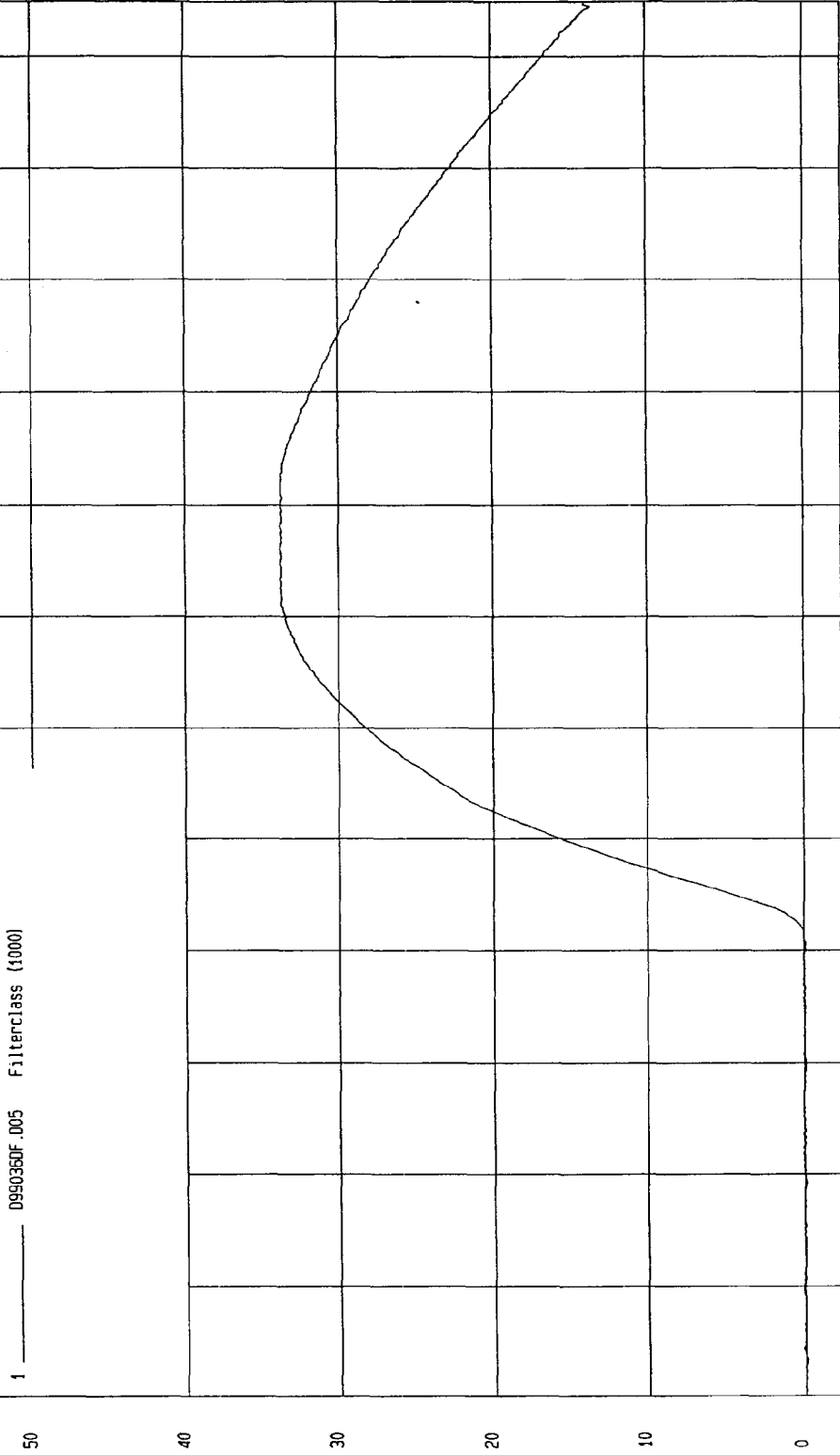
COMPONENT: DUMMY # 037 Velocity: 10 FT/SEC 3.05 M/SEC

Minimum = -.13 mm at 19.2 msec

Maximum = 33.82 mm at 73.2 msec

PEAK DISPLACEMENT

1 0990360F.005 Filterclass (1000)



MCA Research  
09-21-1999 07:53

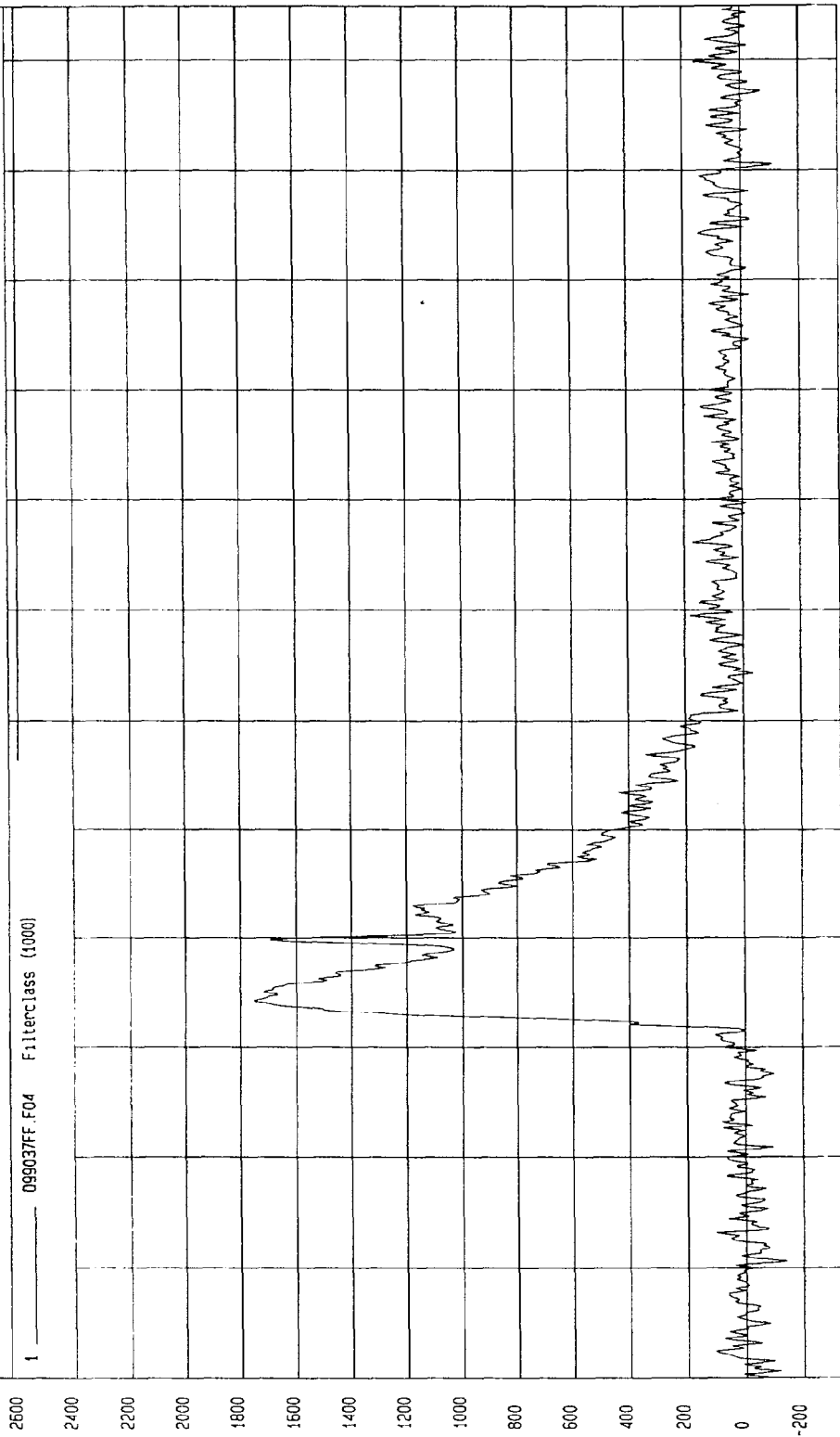
TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 10:02

COMPONENT: DUMMY # 037 Velocity: 14 FT/SEC 4.27 M/SEC

Minimum = -141.46 N at 10.6 msec Maximum = 1752.79 N at 34.3 msec

PEAK FORCE

1 099037FF.F04 FilterClass (1000)

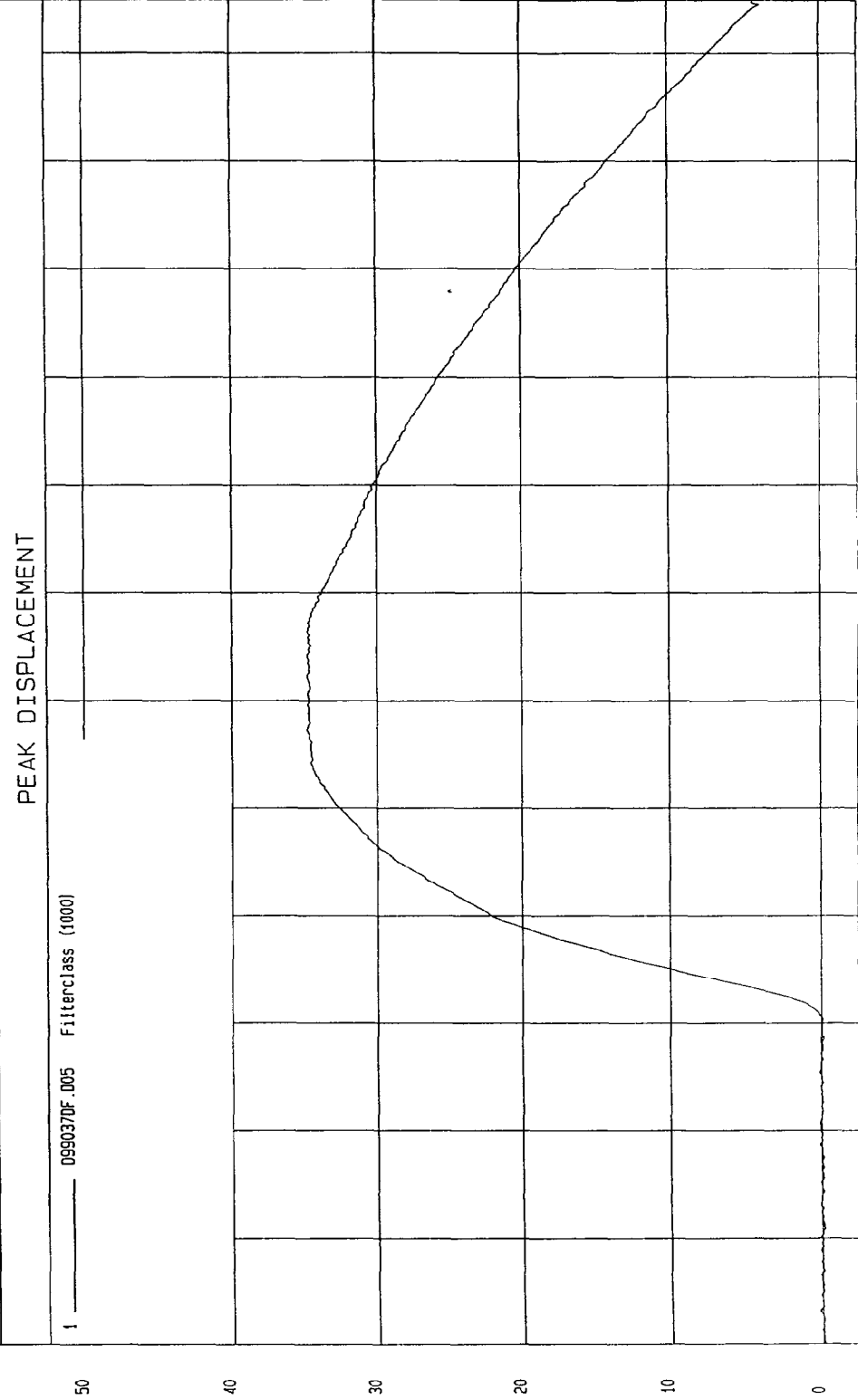


TIME (SECONDS)

MGA Research  
09-21-1999 07:54

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 10:02  
COMPONENT: DUMMY # 037 Velocity: 14 FT/SEC 4.27 M/SEC

Minimum = -.17 mm at 28.5 msec Maximum = 34.87 mm at 62.2 msec



1 099037DF.005 Filterclass (1000)

MSA Research Co.  
09-21-1999 07:54

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 - 10:15  
COMPONENT: DUMMY # 037 Velocity: 20 FT/SEC 6.1 M/SEC

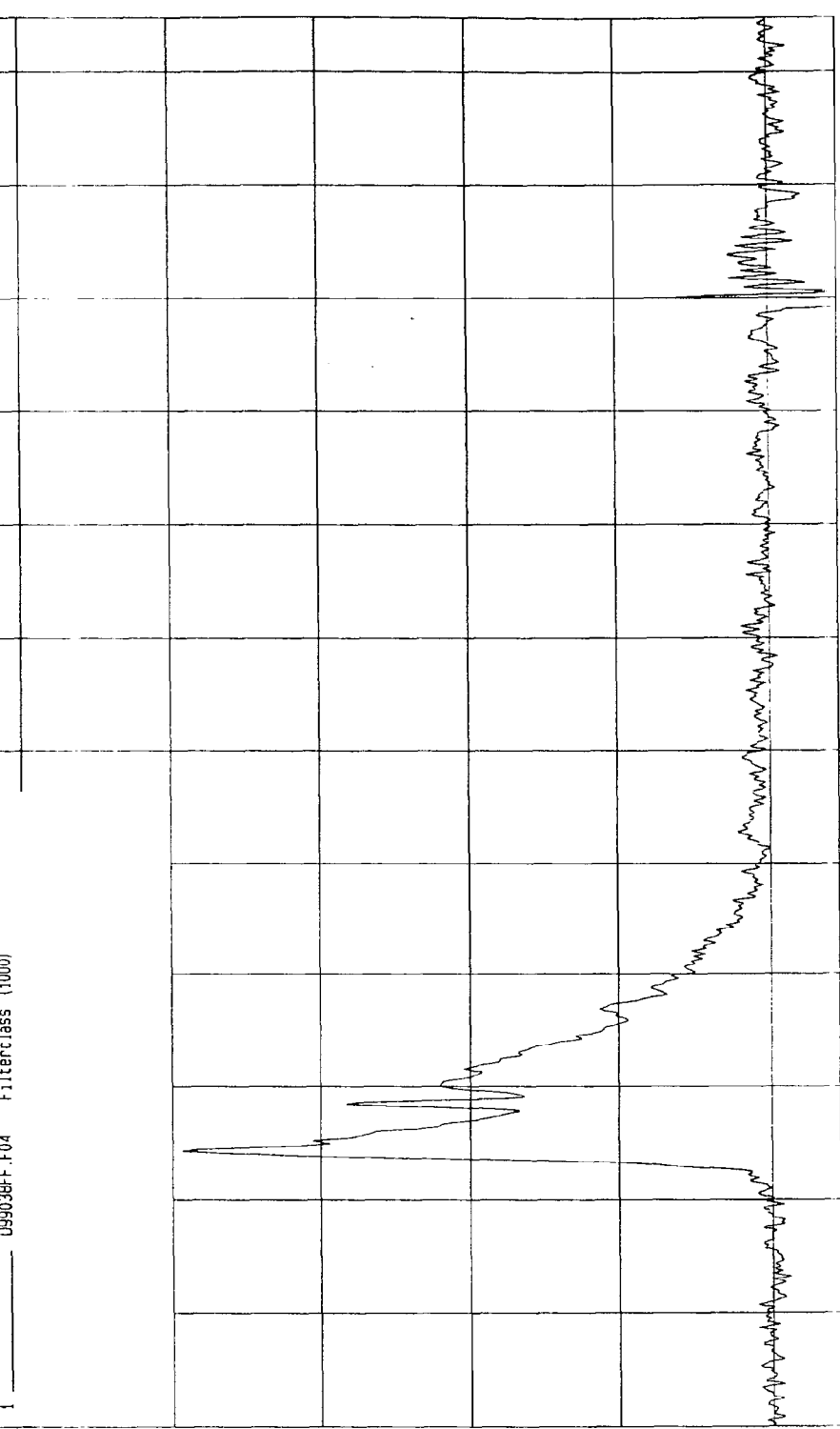
Minimum = -1904.12 N at 99.5 msec Maximum = 3930.98 N at 24.3 msec

PEAK FORCE

1 ——— 099038FF.F04 Filterclass (1000)

5000  
4000  
3000  
2000  
1000  
0

N



0 10 20 30 40 50 60 70 80 90 100 110 120

TIME (SECONDS)

MGA Research Corp.  
09-21-1999 07:54

TEST: DAMPENER BENCH TEST TEST DATE: 09-17-1999 ~ 10:15

COMPONENT: DUMMY # 037 Velocity: 20 FT/SEC 6.1 M/SEC

Minimum = -.13 mm at 13.9 msec

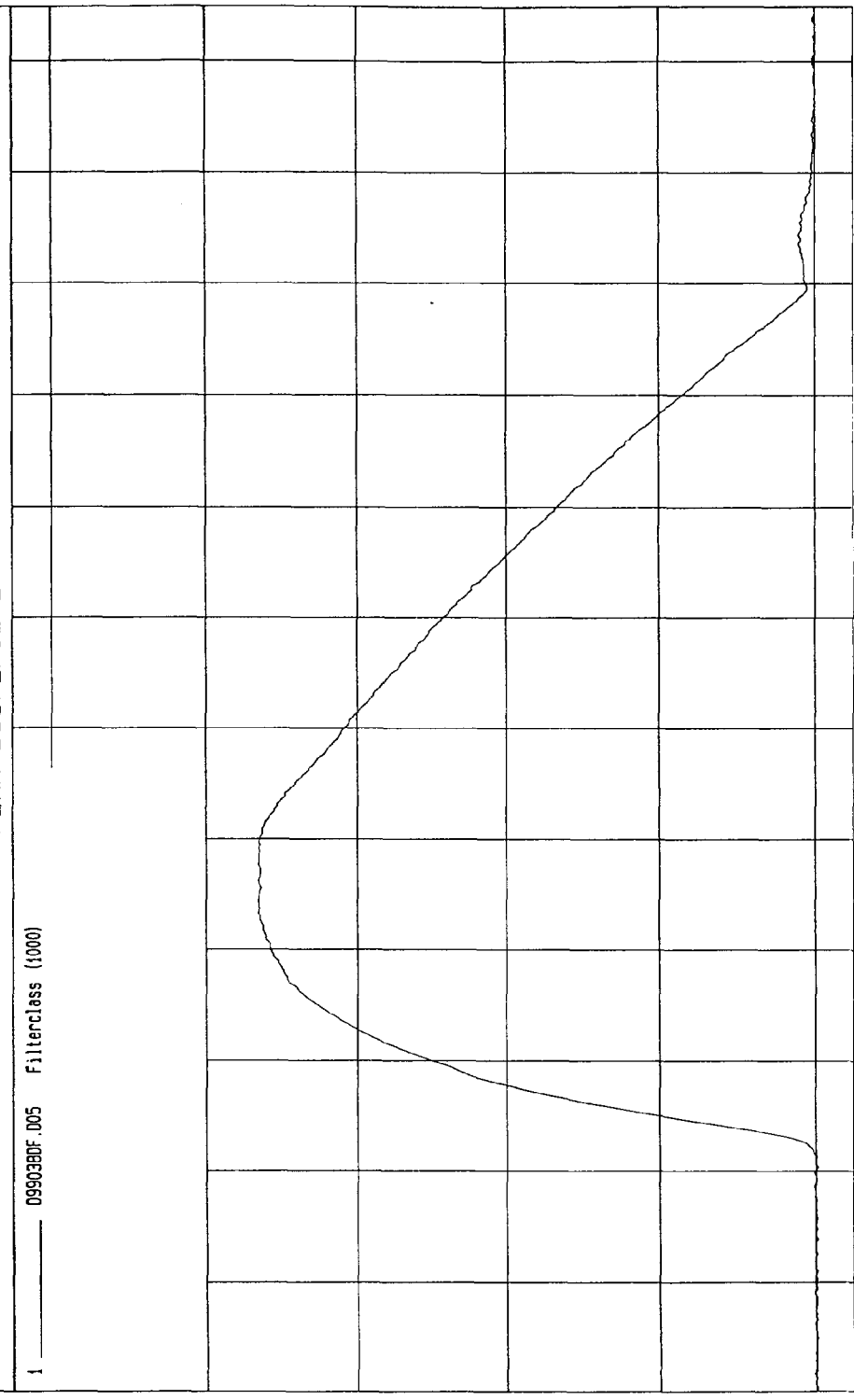
Maximum = 36.54 mm at 47.6 msec

PEAK DISPLACEMENT

1 \_\_\_\_\_ 099038DF.005 Filterclass (1000)

50  
40  
30  
20  
10  
0

mm



12

MGA Research  
09-21-1999 07:55

TIME (SECONDS)

## MGA RESEARCH CORPORATION

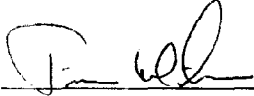
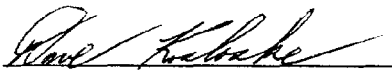
## THORAX IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991032

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	44
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	40
LOWER RIB (g's)	37 - 46	39
LOWER SPINE (g's)	15 - 22	20

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

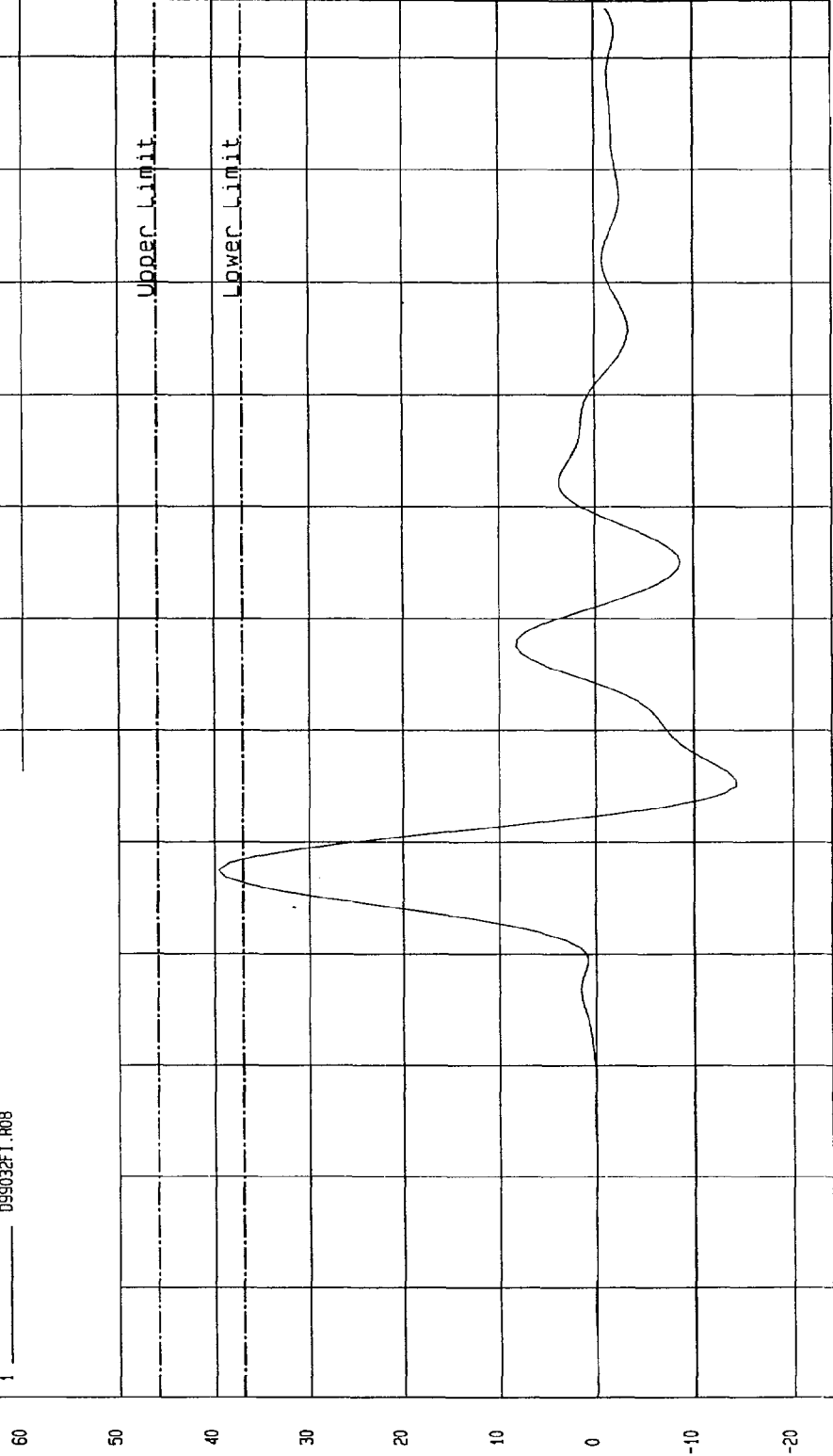
TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-17-1999 - 17:02

COMPONENT: DUMMY # 037 Velocity: 14.079 FT/SEC 4.29 M/SEC

Minimum = -14.16 G'S at 55 msec Maximum = 39.59 G'S at 47.5 msec

UPPER RIB ACCELERATION

1 ——— 099032F1.R08



MCA Research Co.  
09-17-1999 17:09

TIME (SECONDS)

G.S

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-17-1999 - 17:02

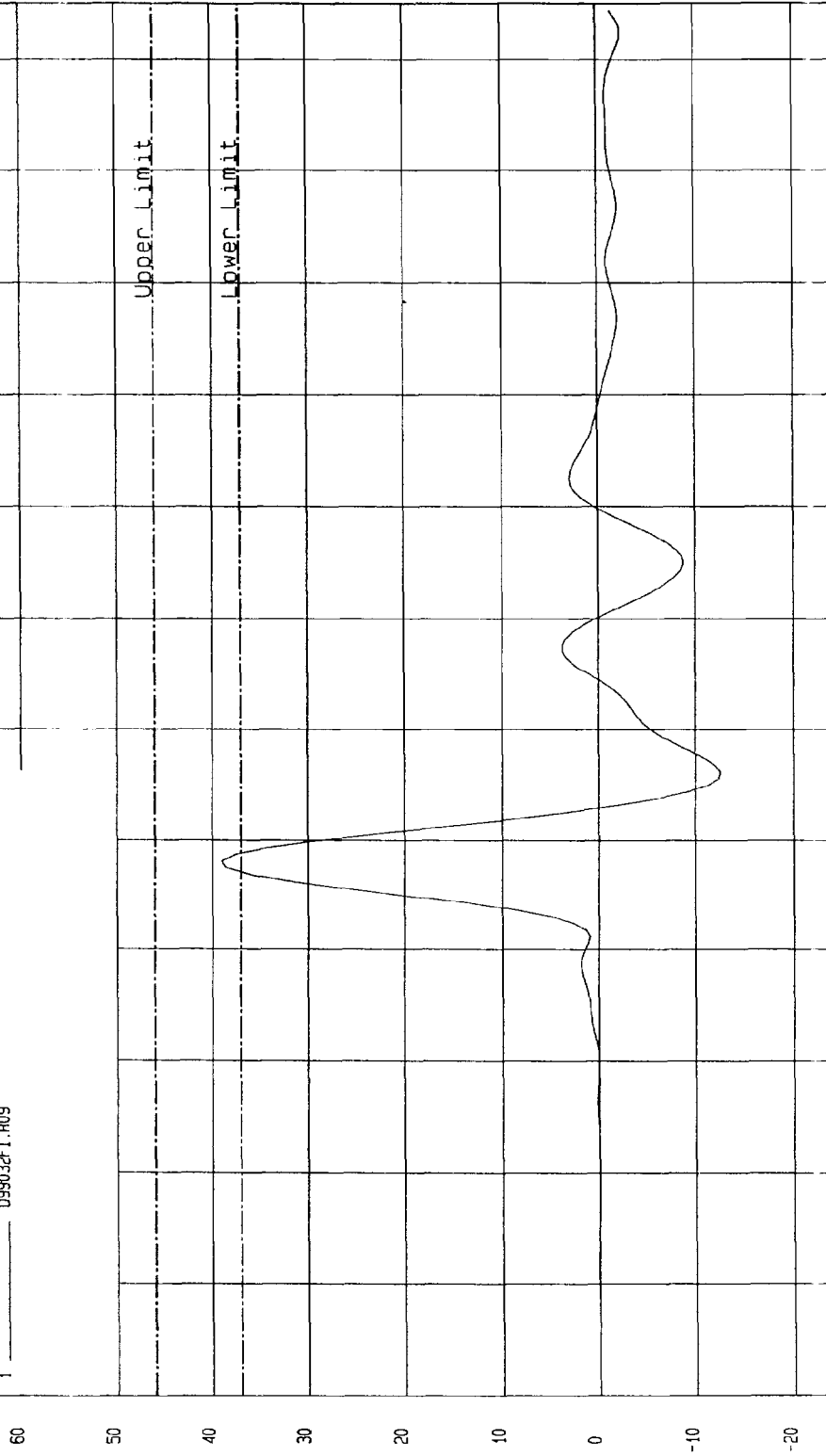
COMPONENT: DUMMY # 037 Velocity: 14.079 FT/SEC 4.29 M/SEC

Minimum = -12.54 G'S at 56.2 msec

Maximum = 39.07 G'S at 48.1 msec

LOWER RIB ACCELERATION

1 099032F1.R09



MCA Research  
09-21-1999 07:57

TIME (SECONDS)

G.S

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-17-1999 - 17:02  
COMPONENT: DUMMY # 037 Velocity: 14.079 FT/SEC 4.29 M/SEC

Minimum = -4.17 G'S at 68.7 msec Maximum = 20.48 G'S at 52.5 msec

LOWER SPINE ACCELERATION

099032F1.R10

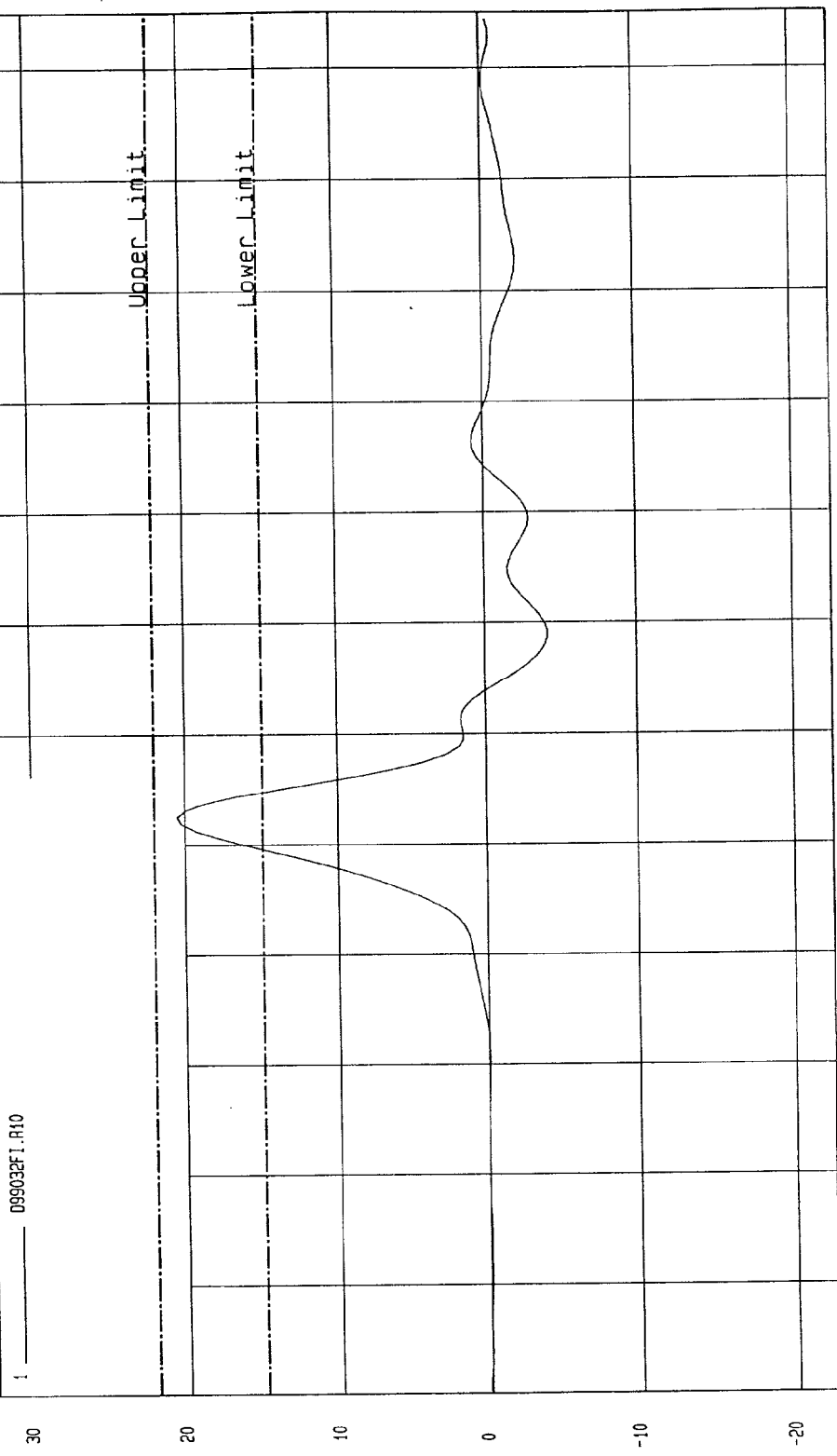
30  
20  
10  
0  
-10  
-20

Upper Limit  
Lower Limit

G.S

TIME (SECONDS)  
0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .10 .11 .12

NCA Research  
09-17-1999 17:09



## MGA RESEARCH CORPORATION

## PELVIS IMPACT TEST

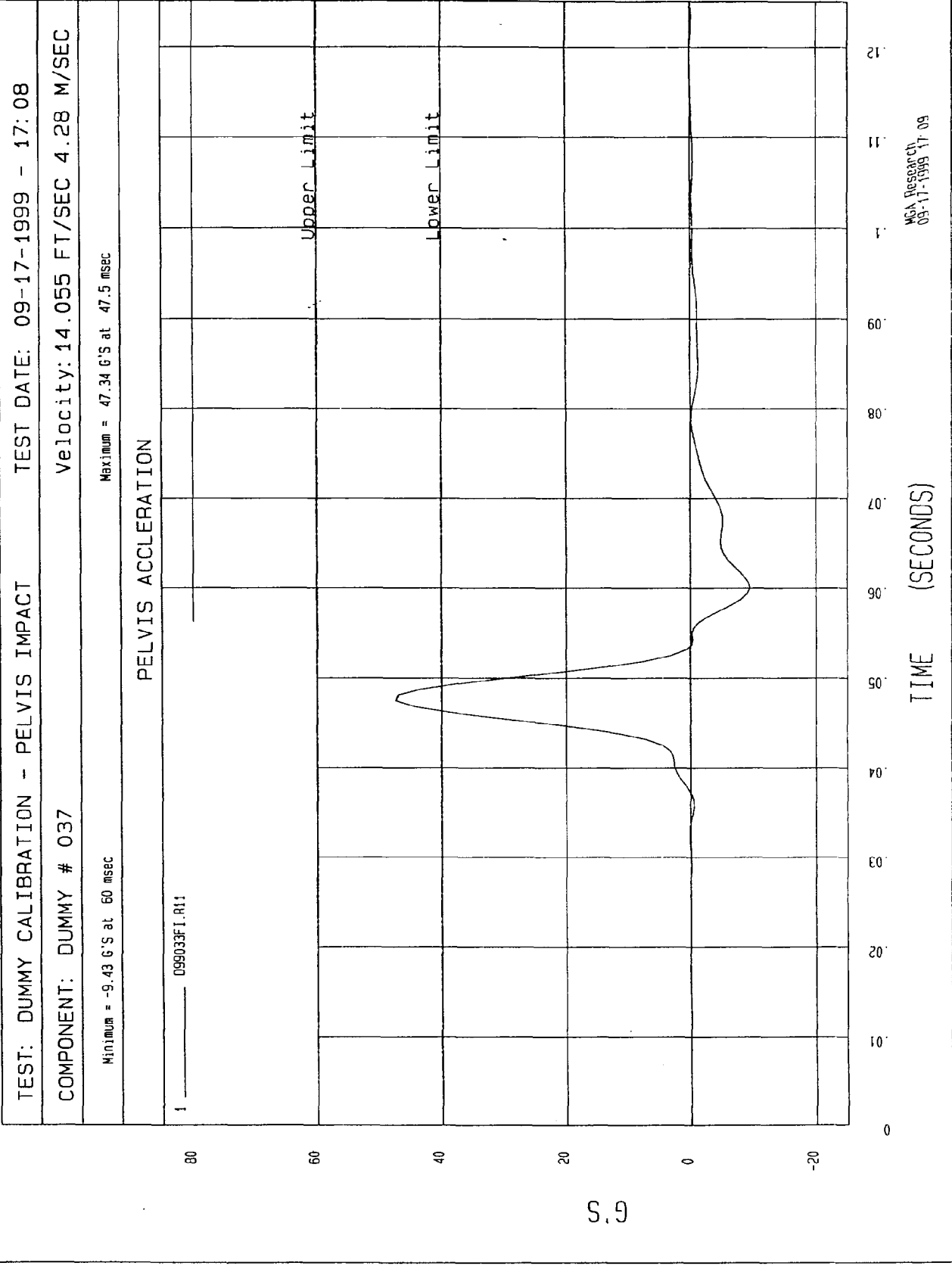
## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991033

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	44
PROBE SPEED (m/s)	4.27 - 4.33	4.28
PELVIS ACCELERATION (g's)	40 - 60	47

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 



## MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST  
(PRELOAD = 10 LBS)

## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991034

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	46
FORCE @ 12.7 mm	104 - 162	132
FORCE @ 19.0 mm	163 - 222	189
FORCE @ 25.4 mm	222 - 280	252
FORCE @ 33 mm	325 - 391	346

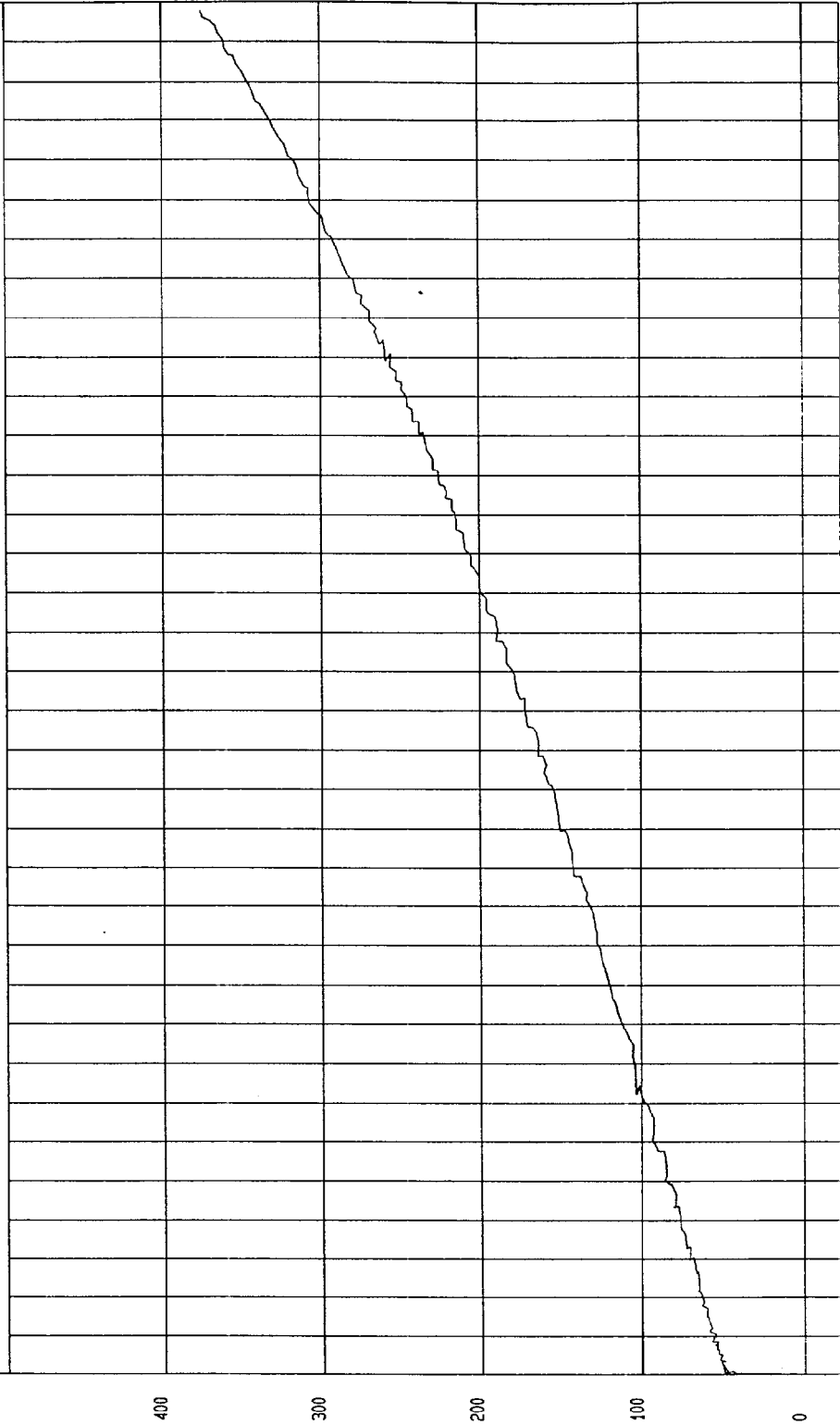
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 09-17-1999 - 12:03:31

COMPONENT: DUMMY # 037

FORCE as a function of DISPLACEMENT



M&A Research  
09-17-1999 12:04

DISPLACEMENT mm

FORCE N

## MGA RESEARCH CORPORATION

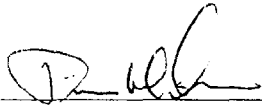
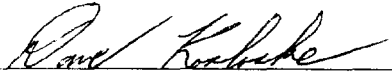
## LUMBAR FLEXION TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 17, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991035

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	45
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	102.4
FORCE @ 30°	151.2 - 204.6	170.9
FORCE @ 40°	204.6 - 258.0	217.7
RETURN ANGLE	12° maximum	4

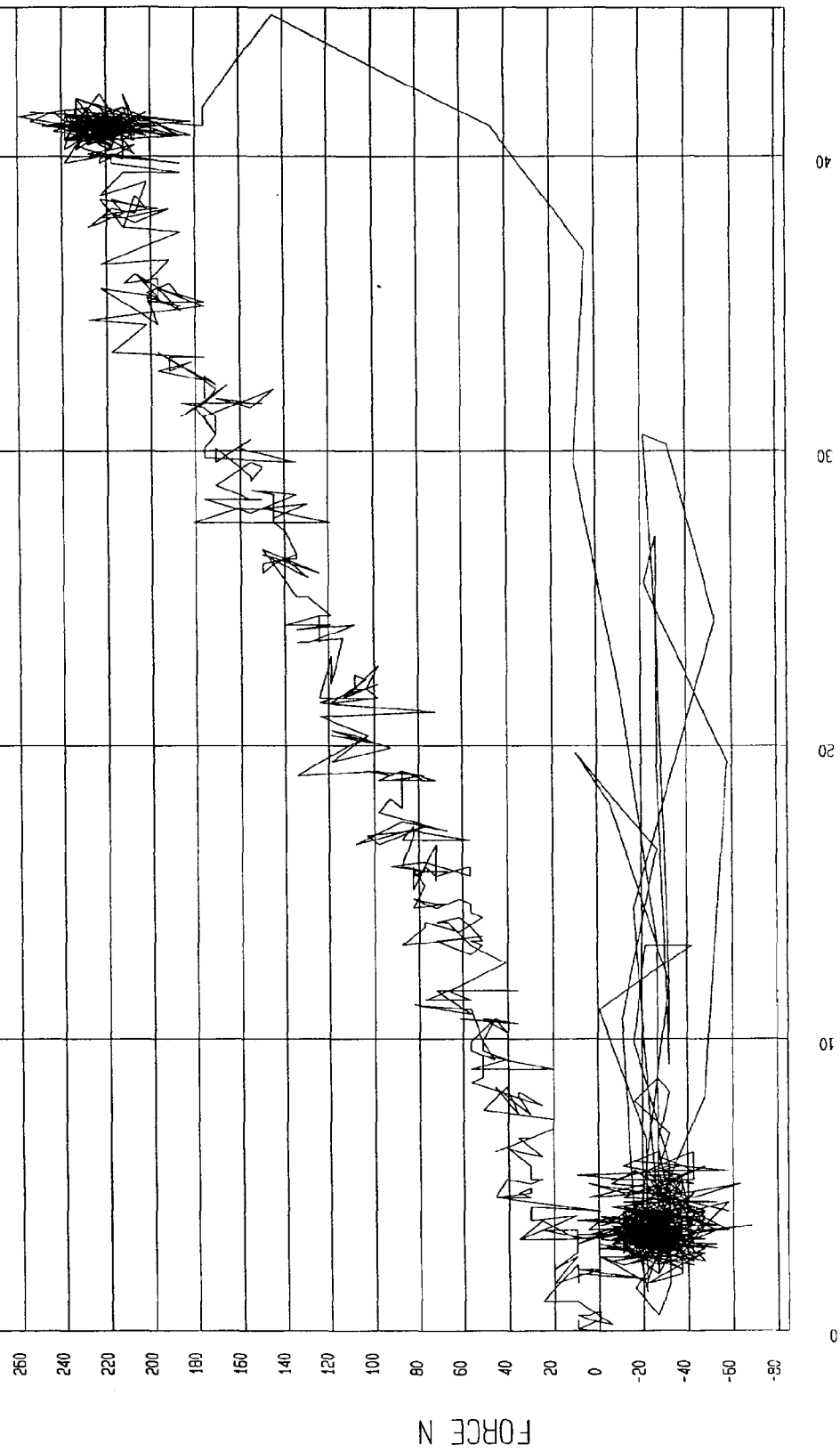
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 09-17-1999 - 11:39:57

COMPONENT: DUMMY # 037

FORCE as a function of TORSO ROTATION



MGA Research  
09-17-1999 12:05

TORSO ROTATION DEGREES

FORCE N

POST-TEST CERTIFICATION DATA

Dummy Serial Number: 036

Calibration Test Results Summary

Dummy Serial Number: 036

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

## SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY SERIAL NO.: 036DATE OF VERIFICATION: September 21, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	902
RH - Rib Height (mm)	501 - 521	507
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	235
KV - Knee Pivot From Back Line (mm)	511 - 526	519
SW - Knee Pivot to Floor (mm)	490 - 505	494
HW - Hip Width (mm)	356 - 391	370

TECHNICIAN: APPROVED BY: 

## MGA RESEARCH CORPORATION

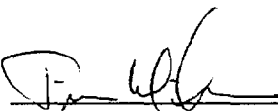
## THORAX IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 036TEST NUMBER: D991062

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	46
LOWER RIB (g's)	37 - 46	43
LOWER SPINE (g's)	15 - 22	20

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

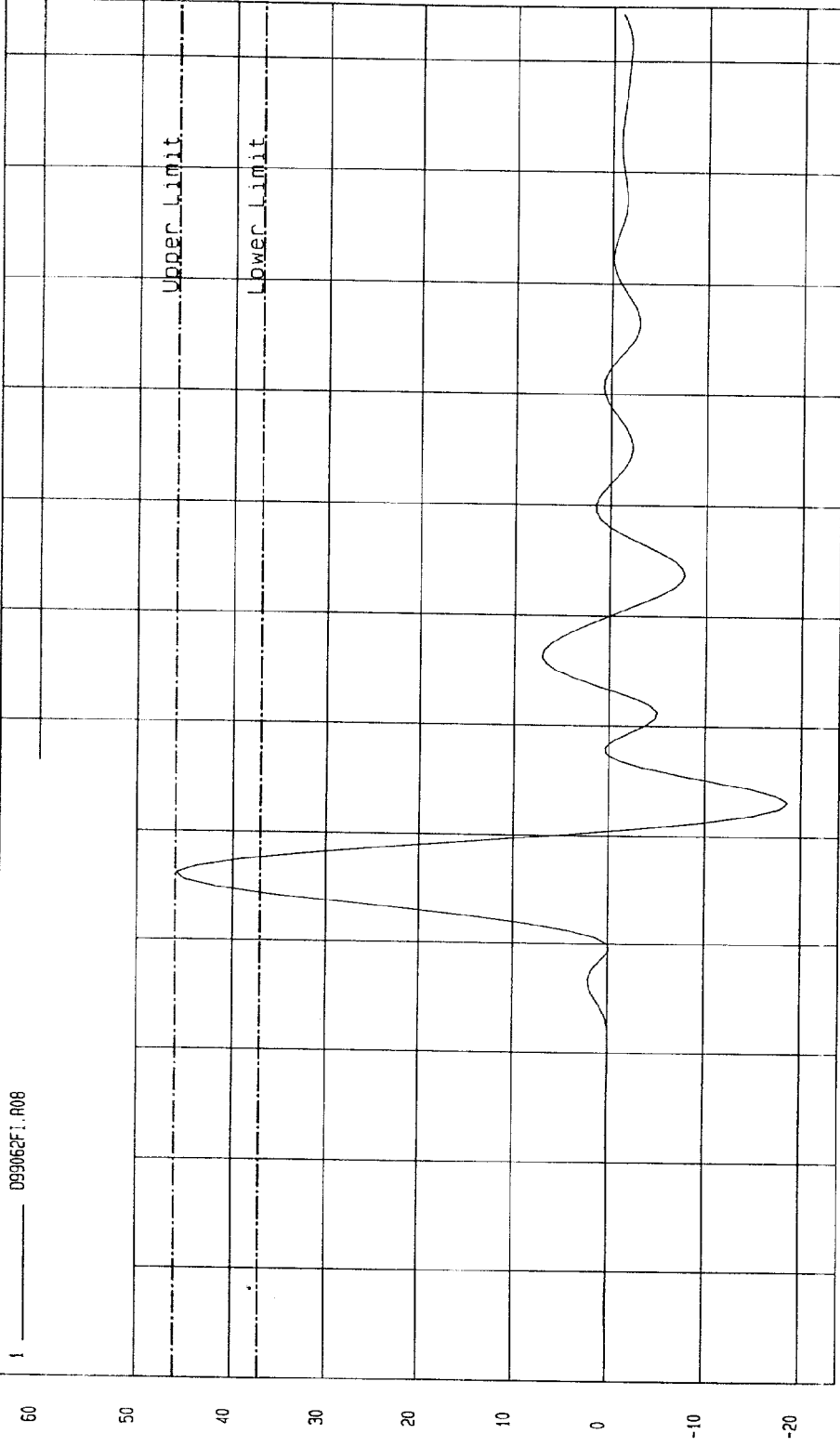
TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 10:42

COMPONENT: DUMMY # 036 Velocity: 14.034 FT/SEC 4.28 M/SEC

Minimum = -18.63 G'S at 53.1 msec  
Maximum = 45.88 G'S at 46.2 msec

UPPER RIB ACCELERATION

1 099062F1.R08



MCA Research  
09-21-1999 10:49

G.S

TIME (SECONDS)

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 10:42

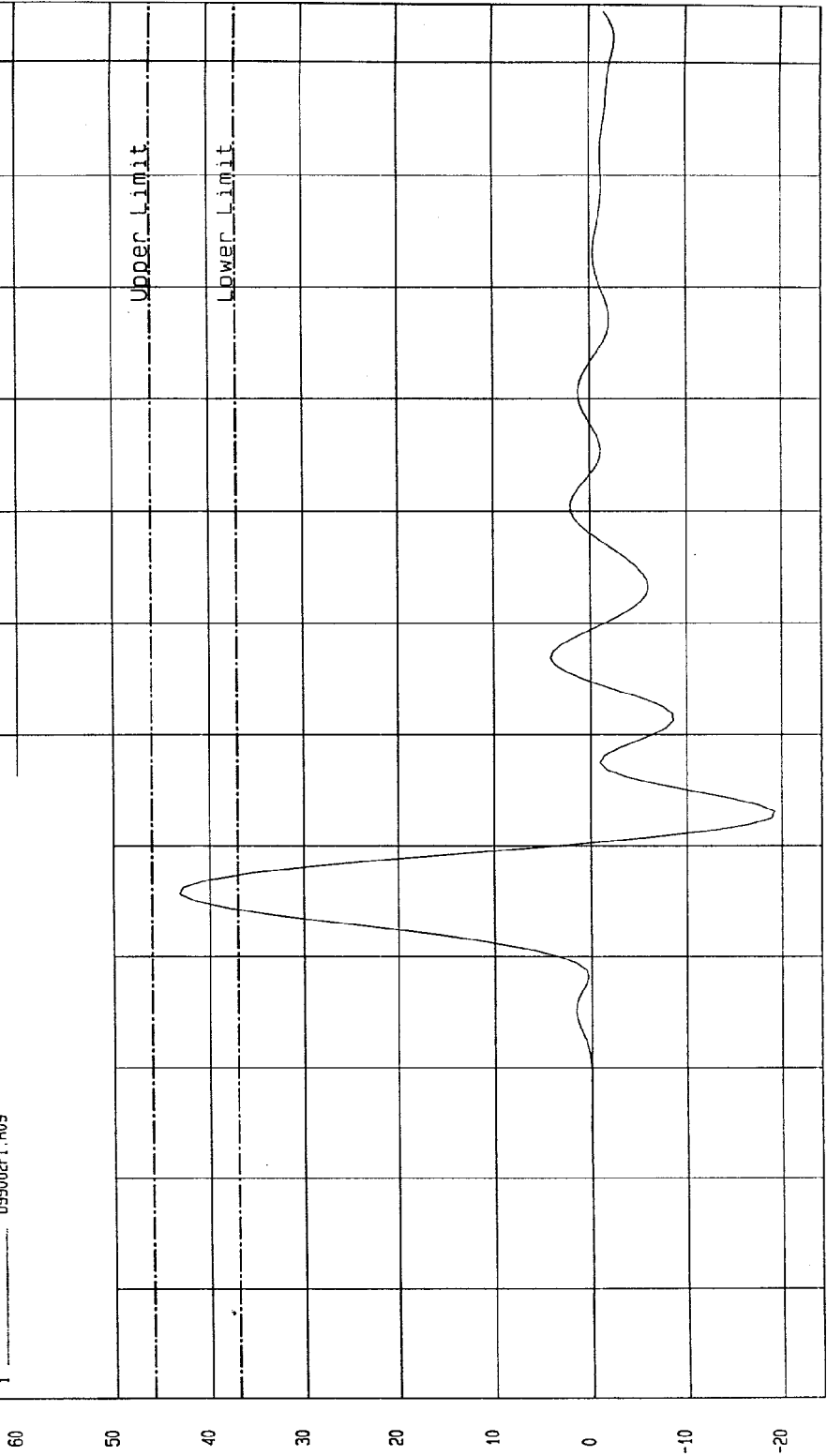
COMPONENT: DUMMY # 036 Velocity: 14.034 FT/SEC 4.28 M/SEC

Minimum = -19.21 G'S at 53.1 msec

Maximum = 43.16 G'S at 45.6 msec

LOWER RIB ACCELERATION

099062F1.R09



TIME (SECONDS)

MCA Research  
09-21-1999 10:49

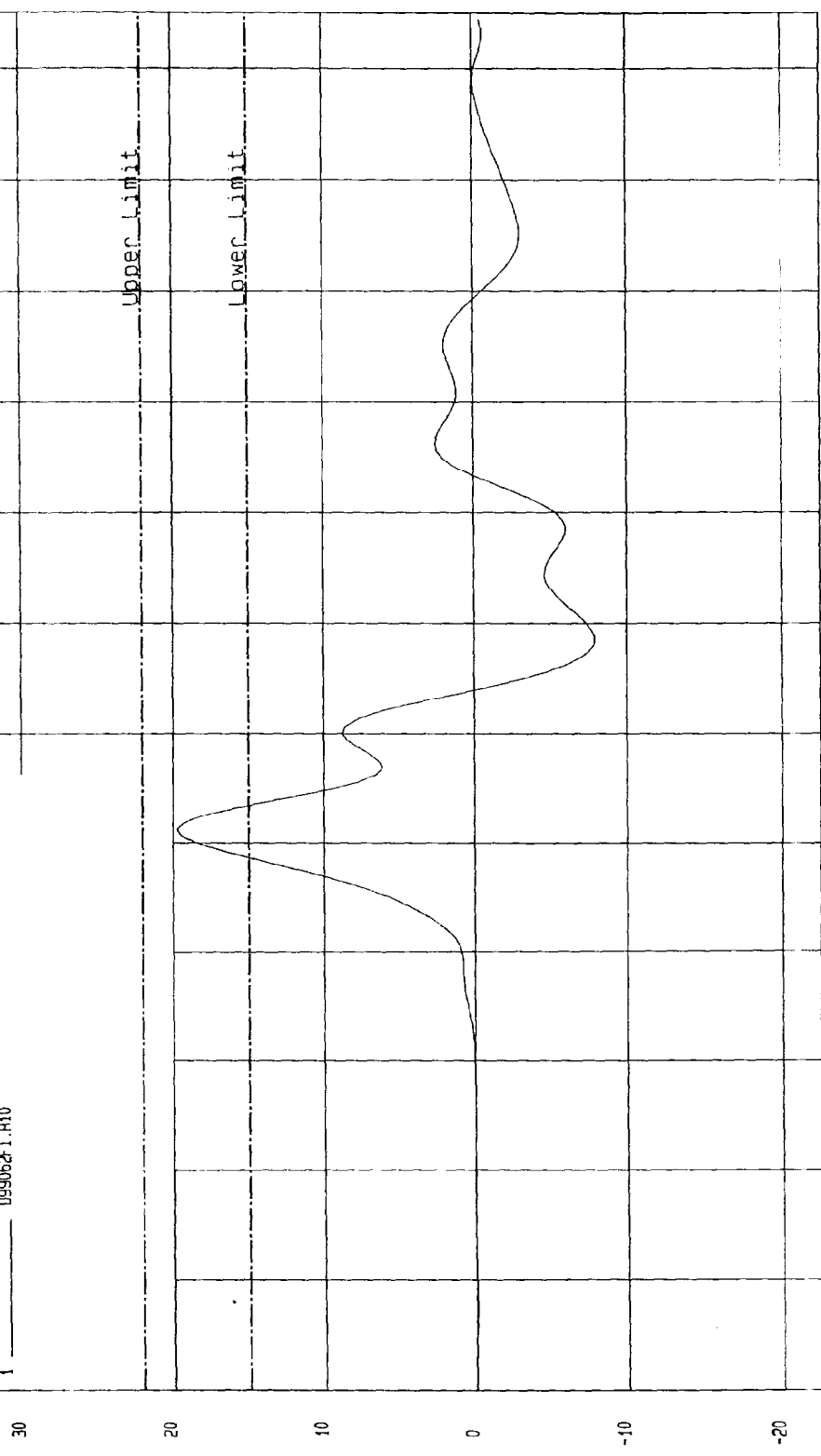
G.S

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 10:42  
COMPONENT: DUMMY # 036 Velocity: 14.034 FT/SEC 4.28 M/SEC

Minimum = -7.94 G'S at 68.7 msec Maximum = 19.77 G'S at 51.2 msec

LOWER SPINE ACCELERATION

1 \_\_\_\_\_ 099062F1.R10



MSA Research  
09-21-1999 10:51

TIME (SECONDS)

G.S

## MGA RESEARCH CORPORATION

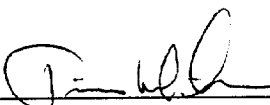
## PELVIS IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 036TEST NUMBER: D991063

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70%	34
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	49

TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 

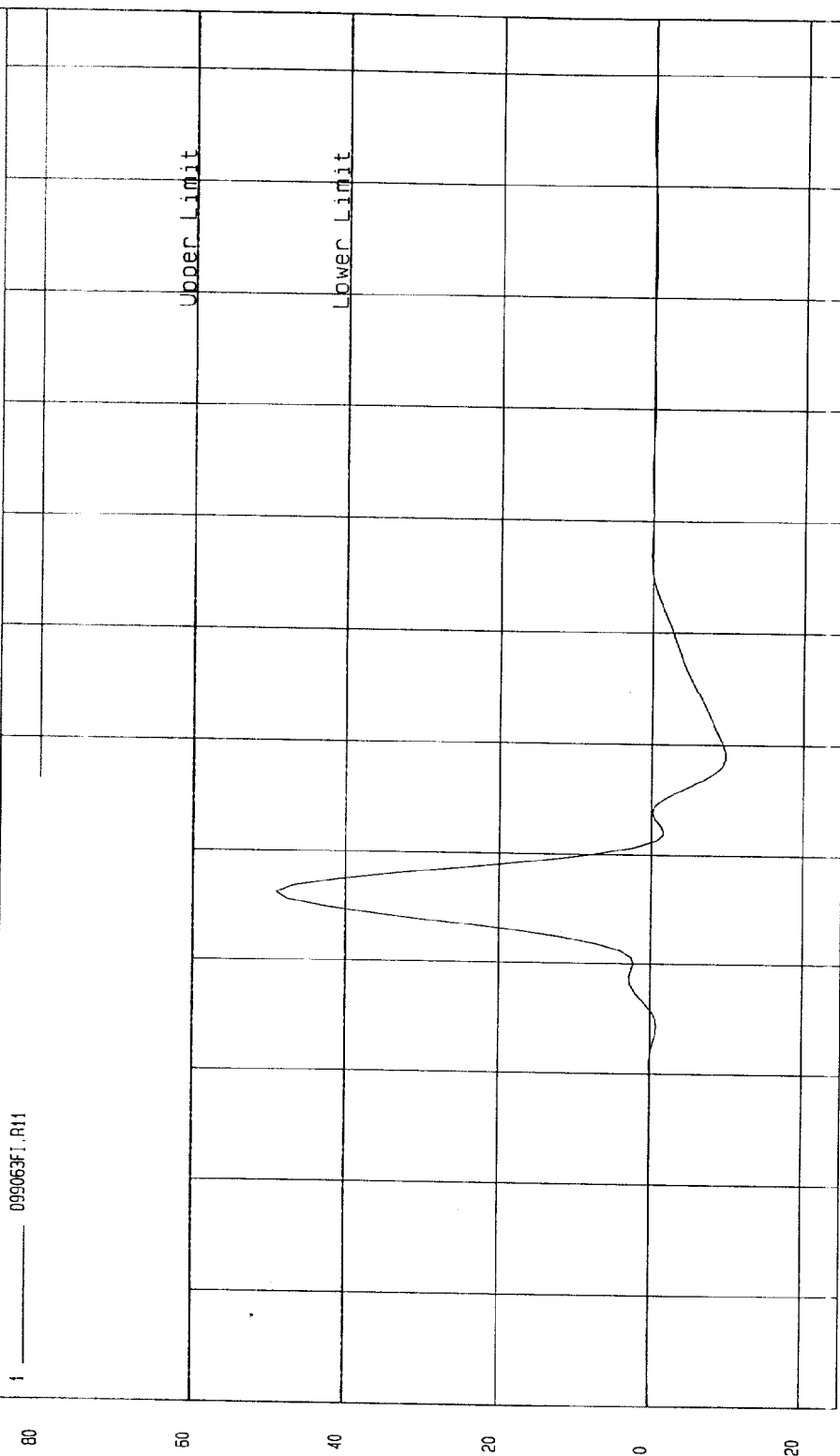
TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 09-21-1999 - 10:48

COMPONENT: DUMMY # 036 Velocity: 14.019 FT/SEC 4.27 M/SEC

Minimum = -9.85 G'S at 58.7 msec  
Maximum = 48.99 G'S at 46.2 msec

PELVIS ACCELERATION

1 095063FT.R11



MGA Research  
09-21-1999 10:49

G.S

MGA RESEARCH CORPORATION  
ABDOMINAL COMPRESSION TEST  
(PRELOAD = 10 LBS)  
SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999

DUMMY SERIAL NUMBER: 036

TEST NUMBER: D991064

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
FORCE @ 12.7 mm	104 - 162	139
FORCE @ 19.0 mm	163 - 222	192
FORCE @ 25.4 mm	222 - 280	250
FORCE @ 33 mm	325 - 391	347

TEST MEETS SPECIFICATIONS

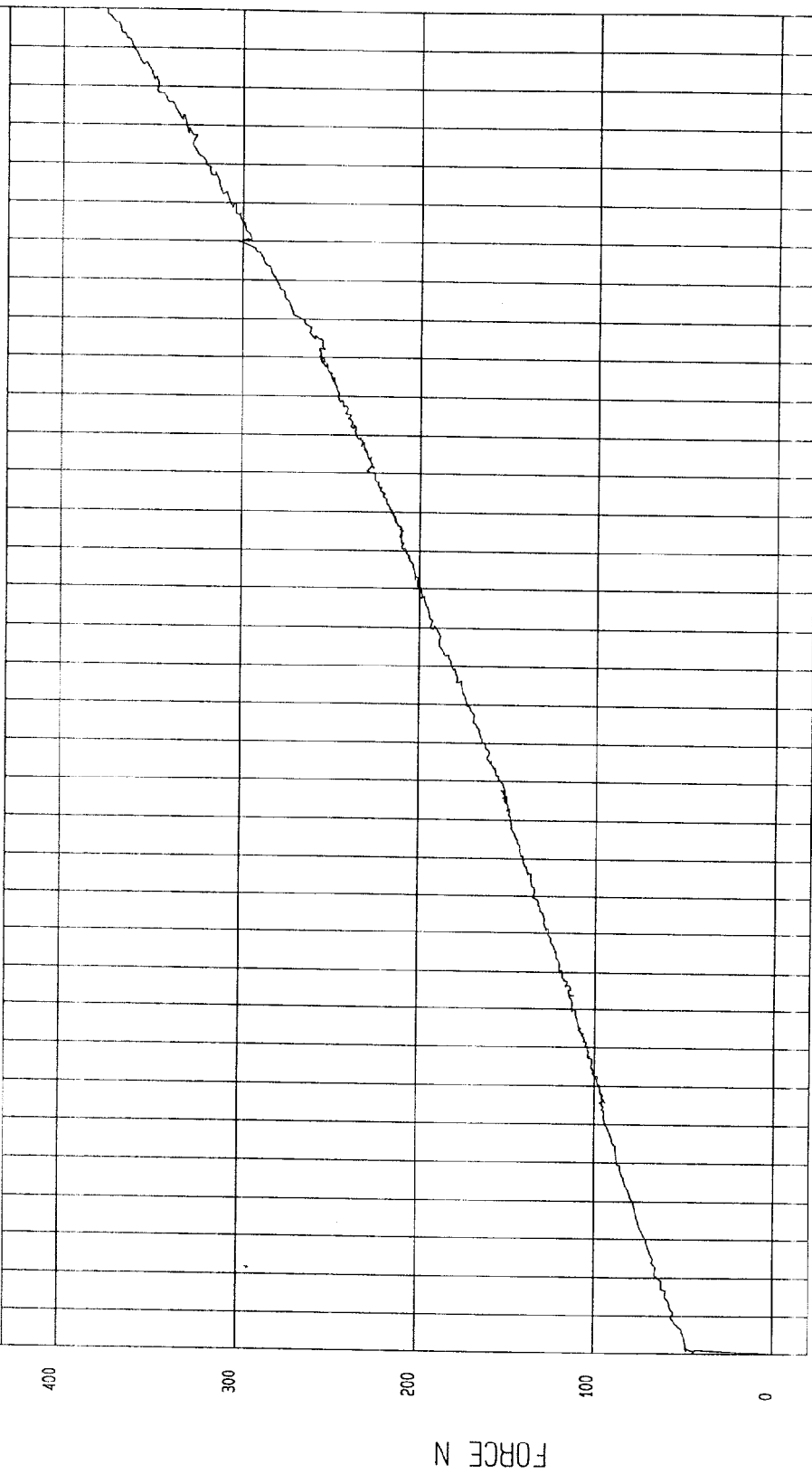
TECHNICIAN 

APPROVED BY 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 09-21-1999 - 16:04:20

COMPONENT: DUMMY # 036

FORCE as a function of DISPLACEMENT



MGA Research  
09-21-1999 16:25

DISPLACEMENT mm

## MGA RESEARCH CORPORATION

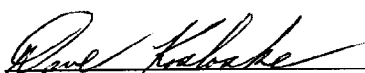
## LUMBAR FLEXION TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 036TEST NUMBER: D991065

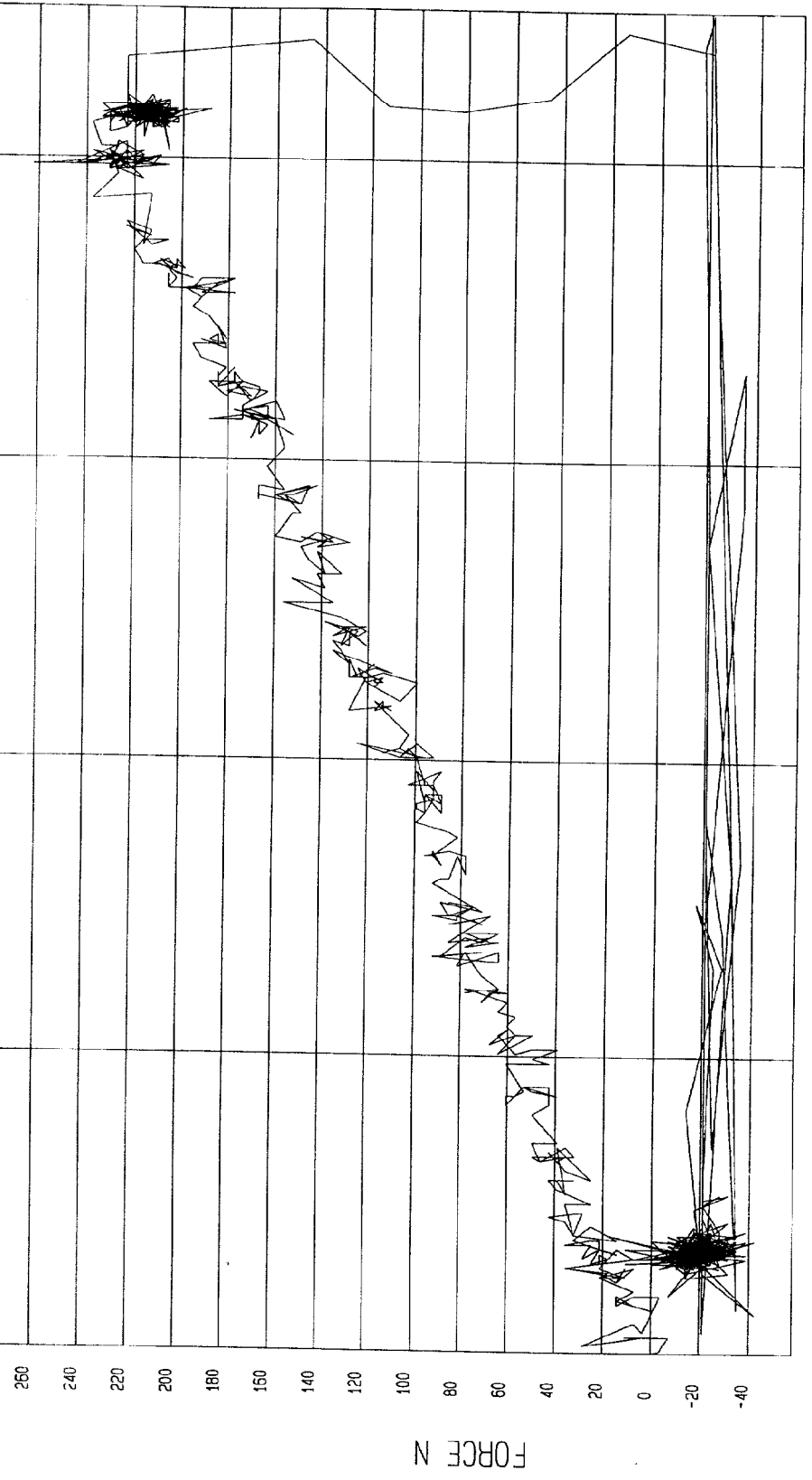
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	99.4
FORCE @ 30°	151.2 - 204.6	156.1
FORCE @ 40°	204.6 - 258.0	230.5
RETURN ANGLE	12° maximum	3

TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 09-21-1999 - 16:33:57  
COMPONENT: DUMMY # 036

FORCE as a function of TORSO ROTATION



MSA Research  
09-21-1999 17:50

POST-TEST CERTIFICATION DATA

Dummy Serial Number: 037

Calibration Test Results Summary

Dummy Serial Number: 037

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

## SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY SERIAL NO.: 037DATE OF VERIFICATION: September 21, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	903
RH - Rib Height (mm)	501 - 521	510
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	237
KV - Knee Pivot From Back Line (mm)	511 - 526	522
SW - Knee Pivot to Floor (mm)	490 - 505	493
HW - Hip Width (mm)	356 - 391	378

MEASUREMENTS BY: APPROVED BY: 

## MGA RESEARCH CORPORATION

## THORAX IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991073

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	38
LOWER RIB (g's)	37 - 46	39
LOWER SPINE (g's)	15 - 22	21

TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 11:26

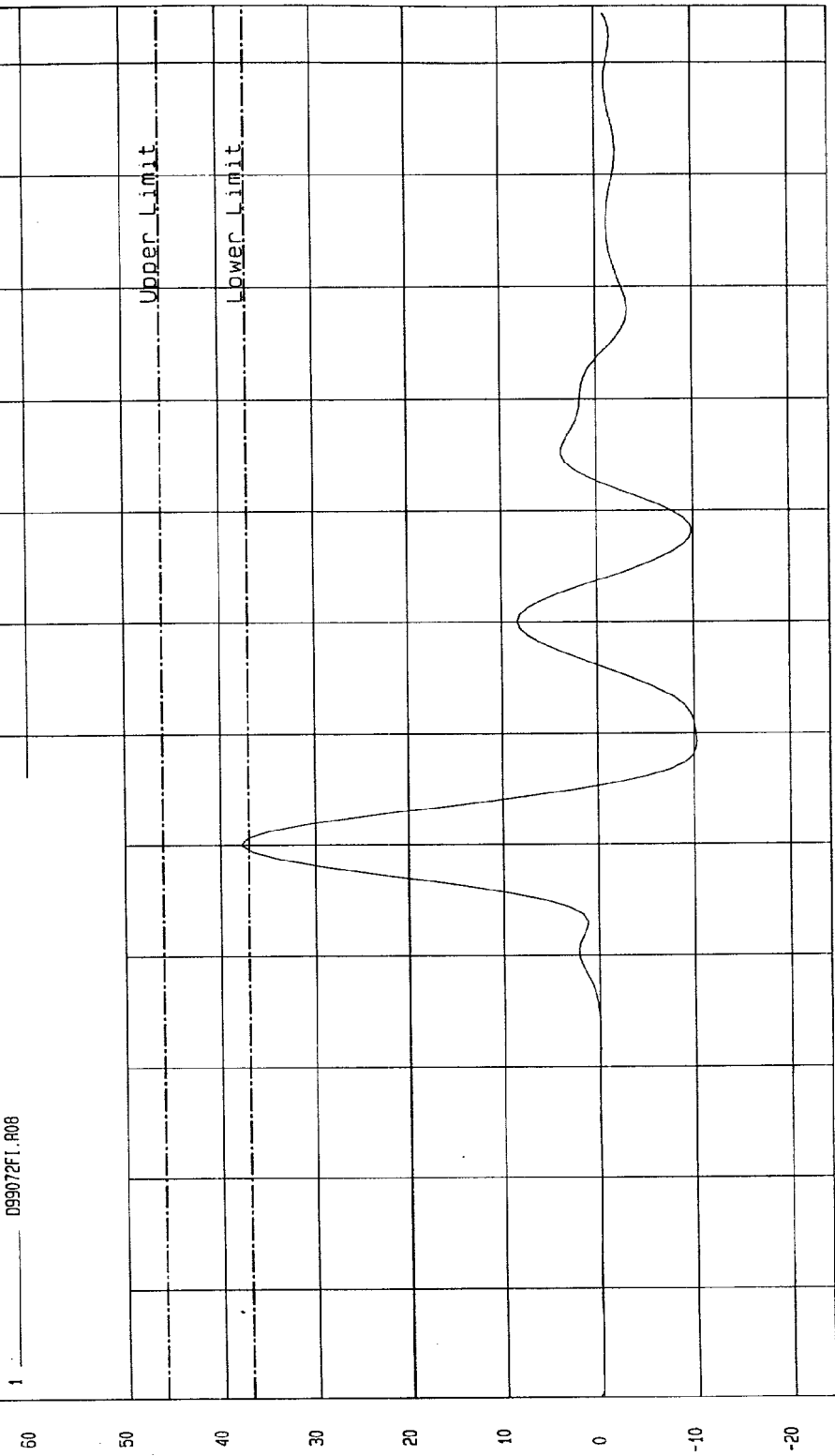
COMPONENT: DUMMY # 037 Velocity: 14.041 FT/SEC 4.28 M/SEC

Minimum = -10.29 G'S at 59.3 msec

Maximum = 37.77 G'S at 50 msec

UPPER RIB ACCELERATION

1 099072F1.R08



MCA Research  
09-21-1999 11:32

G.S

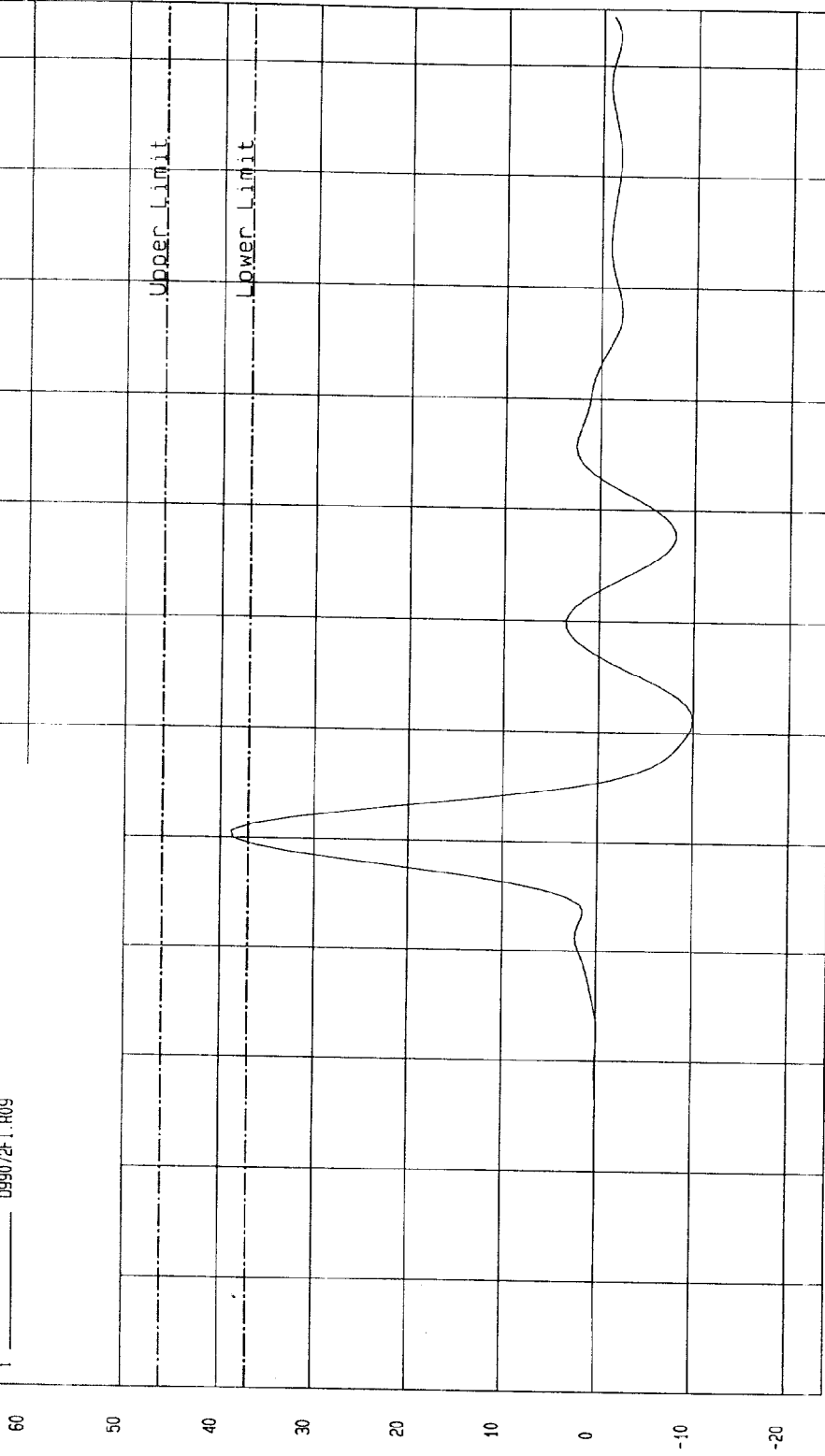
TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 11:26

COMPONENT: DUMMY # 037 Velocity: 14.041 FT/SEC 4.28 M/SEC

Minimum = -9.93 G'S at 61.2 msec  
Maximum = 38.84 G'S at 50.6 msec

LOWER RIB ACCELERATION

099072F1.R09



TIME (SECONDS)

MSA Research  
09-21-1999 11:32

S.9

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 11:26

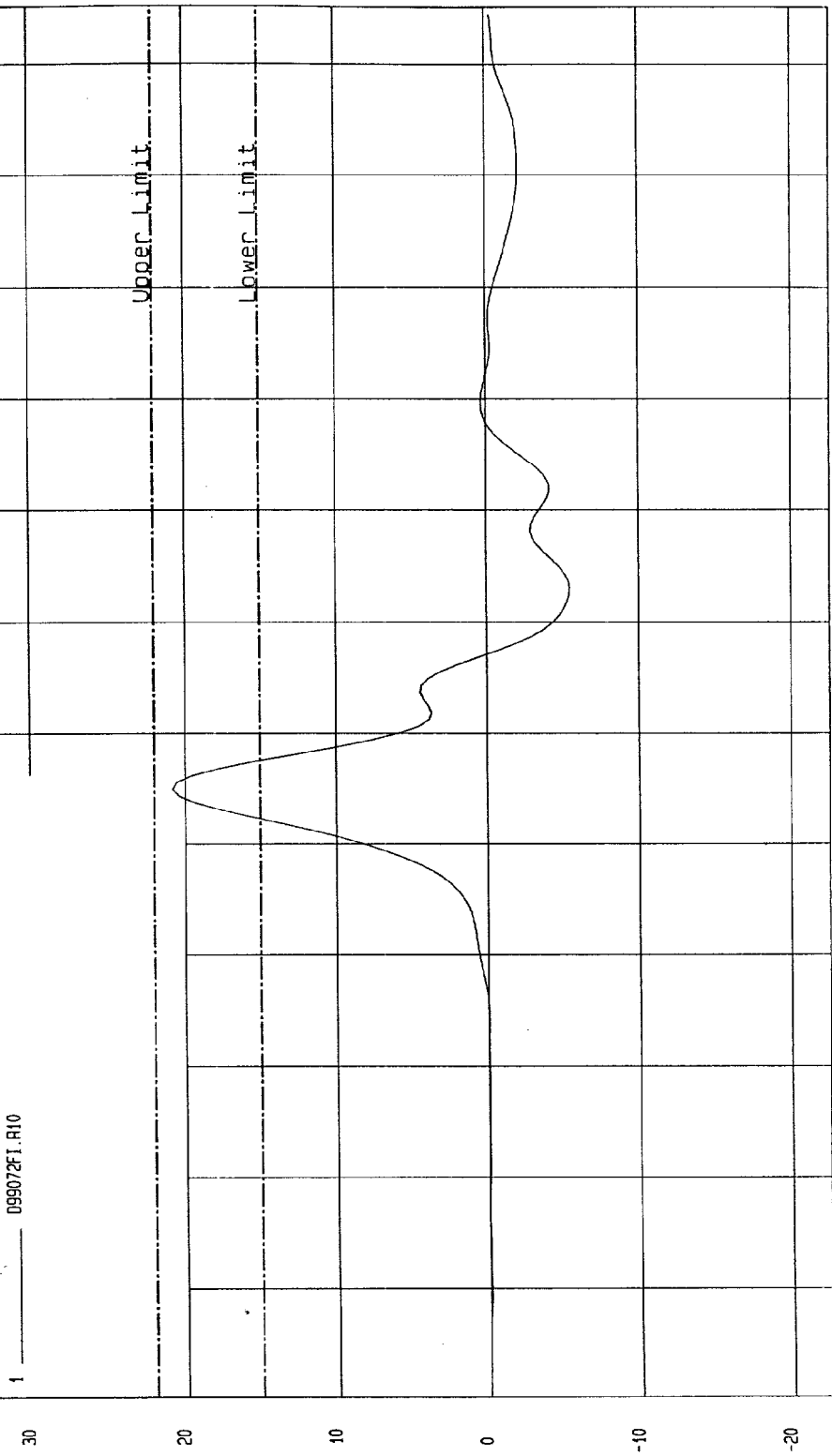
COMPONENT: DUMMY # 037 Velocity: 14.041 FT/SEC 4.28 M/SEC

Minimum = -5.47 G'S at 73.1 msec

Maximum = 20.82 G'S at 55 msec

LOWER SPINE ACCELERATION

1 099072F1.R10



NSA Research  
09-21-1999 11:32

S.G

## MGA RESEARCH CORPORATION

## PELVIS IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991073


TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	53

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY



TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 09-21-1999 - 11:31

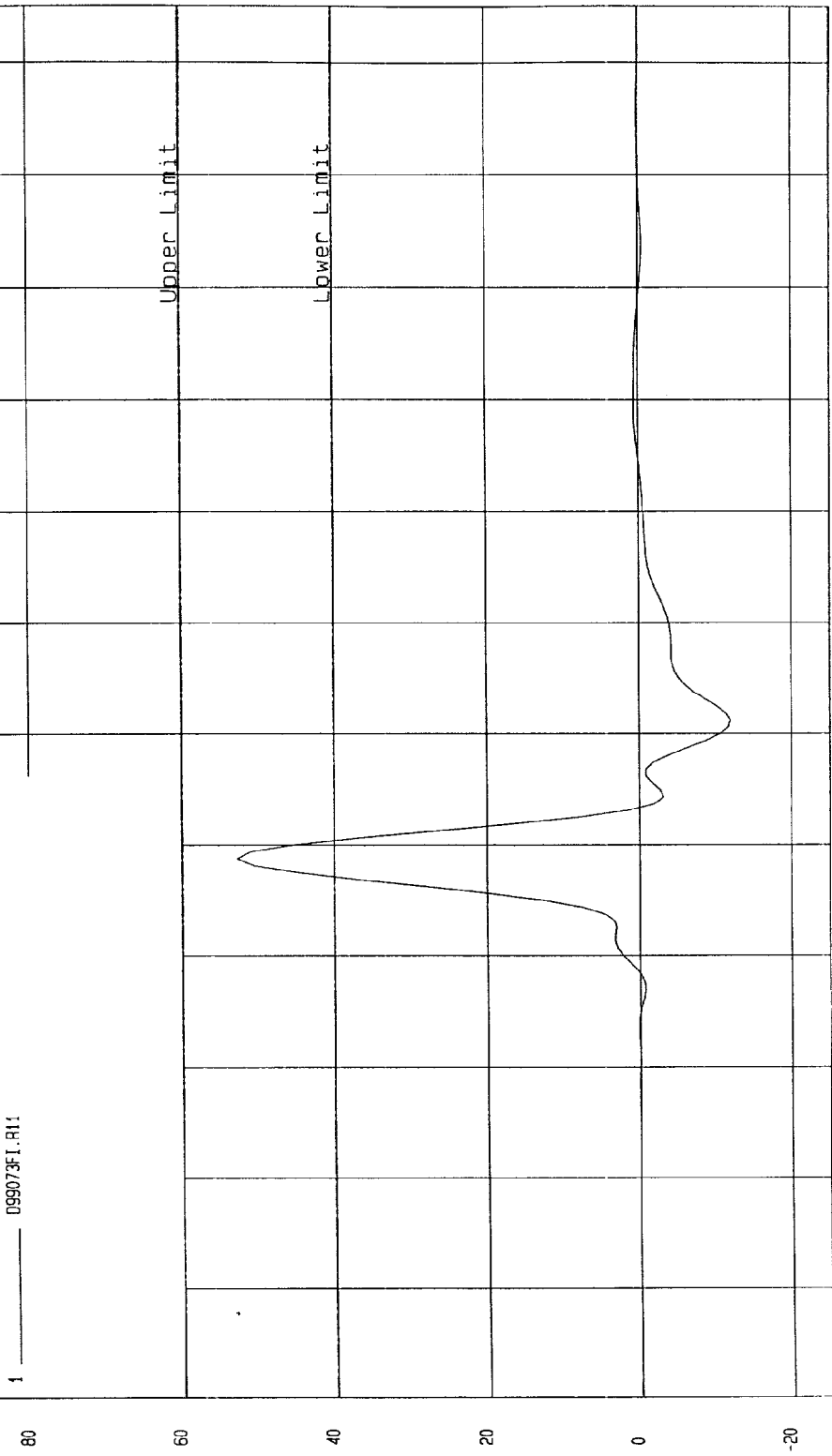
COMPONENT: DUMMY # 037 Velocity: 14.104 FT/SEC 4.3 M/SEC

Minimum = -11.92 G'S at 61.2 msec

Maximum = 52.70 G'S at 48.7 msec

PELVIS ACCELERATION

1 099073F1.R11



NGA Research  
09-21-1999 11:33

MGA RESEARCH CORPORATION  
ABDOMINAL COMPRESSION TEST  
(PRELOAD = 10 LBS)  
SIDE IMPACT DUMMY (SID)

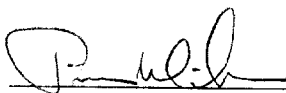
DATE: September 21, 1999

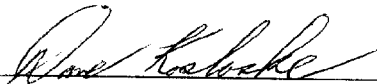
DUMMY SERIAL NUMBER: 037

TEST NUMBER: D991074

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
FORCE @ 12.7 mm	104 - 162	138
FORCE @ 19.0 mm	163 - 222	192
FORCE @ 25.4 mm	222 - 280	256
FORCE @ 33 mm	325 - 391	352

TEST MEETS SPECIFICATIONS

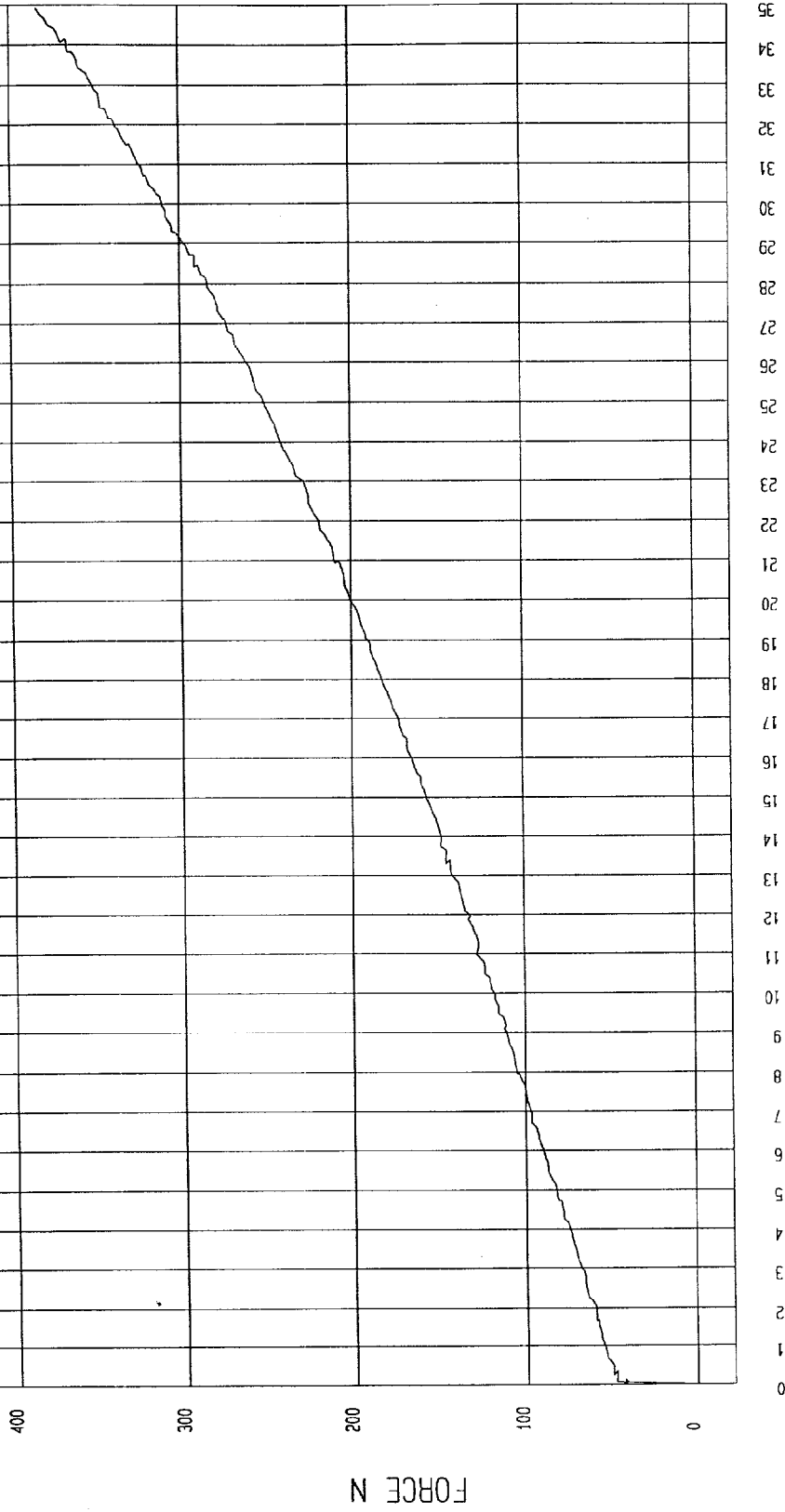
TECHNICIAN 

APPROVED BY 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 09-21-1999 - 16:02:24

COMPONENT: DUMMY # 037

FORCE as a function of DISPLACEMENT



MCA Research  
09-21-1999 16:25

DISPLACEMENT mm

## MGA RESEARCH CORPORATION

## LUMBAR FLEXION TEST

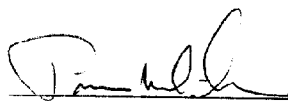
## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 037TEST NUMBER: D991075

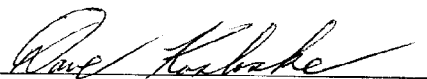
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	103.3
FORCE @ 30°	151.2 - 204.6	159.1
FORCE @ 40°	204.6 - 258.0	226.9
RETURN ANGLE	12° maximum	2

TEST MEETS SPECIFICATIONS

TECHNICIAN



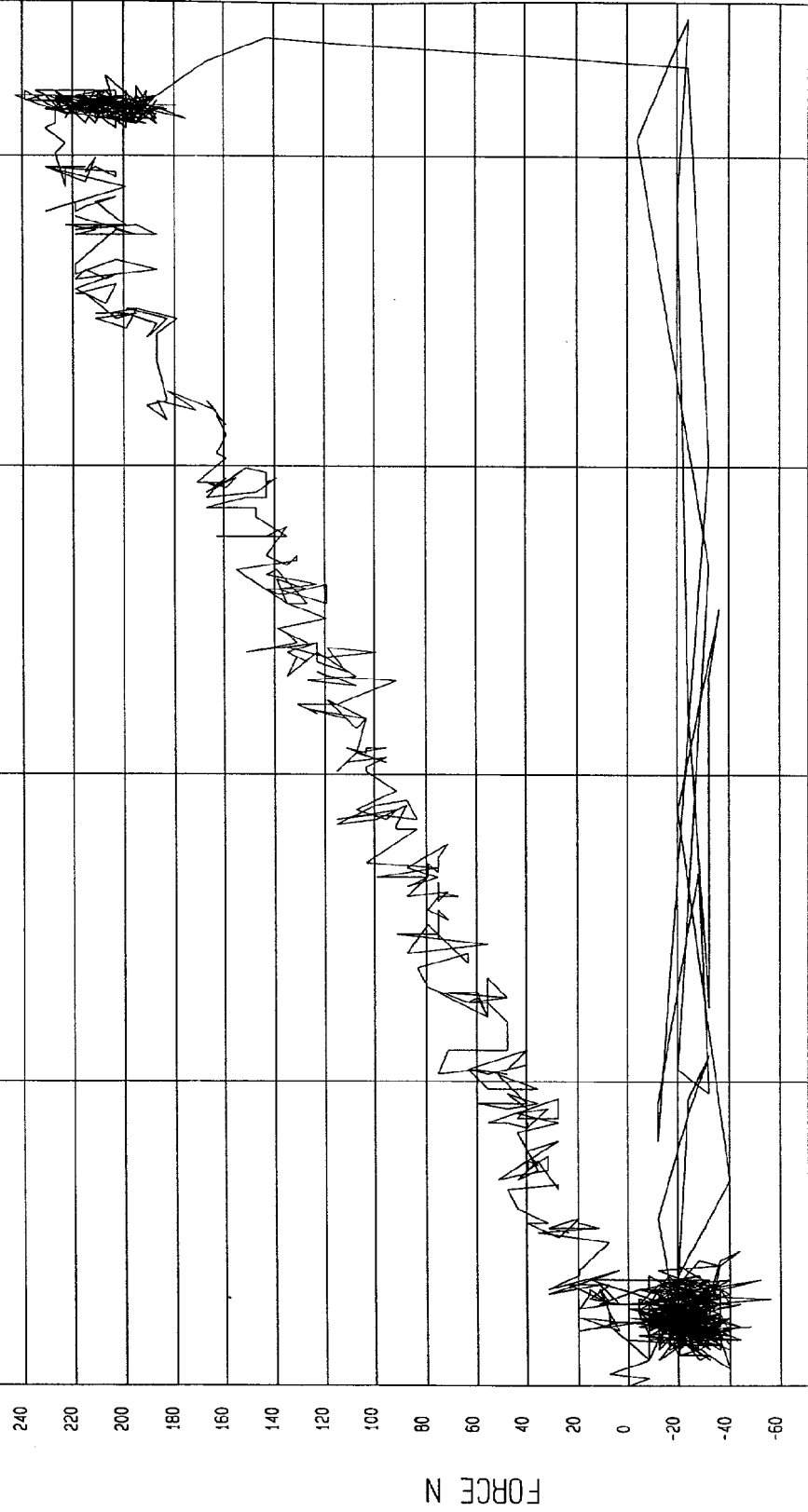
APPROVED BY



TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 09-21-1999 - 16:58:42

COMPONENT: DUMMY # 037

FORCE as a function of TORSO ROTATION



MSC Research  
09-21-1999 17:50

TORSO ROTATION DEGREES

POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 036

Inspected By: Tim Michnay

Date: September 21, 1999

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

NOTES: (include component/problem/action/reason):

POST-TEST PASSENGER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 037

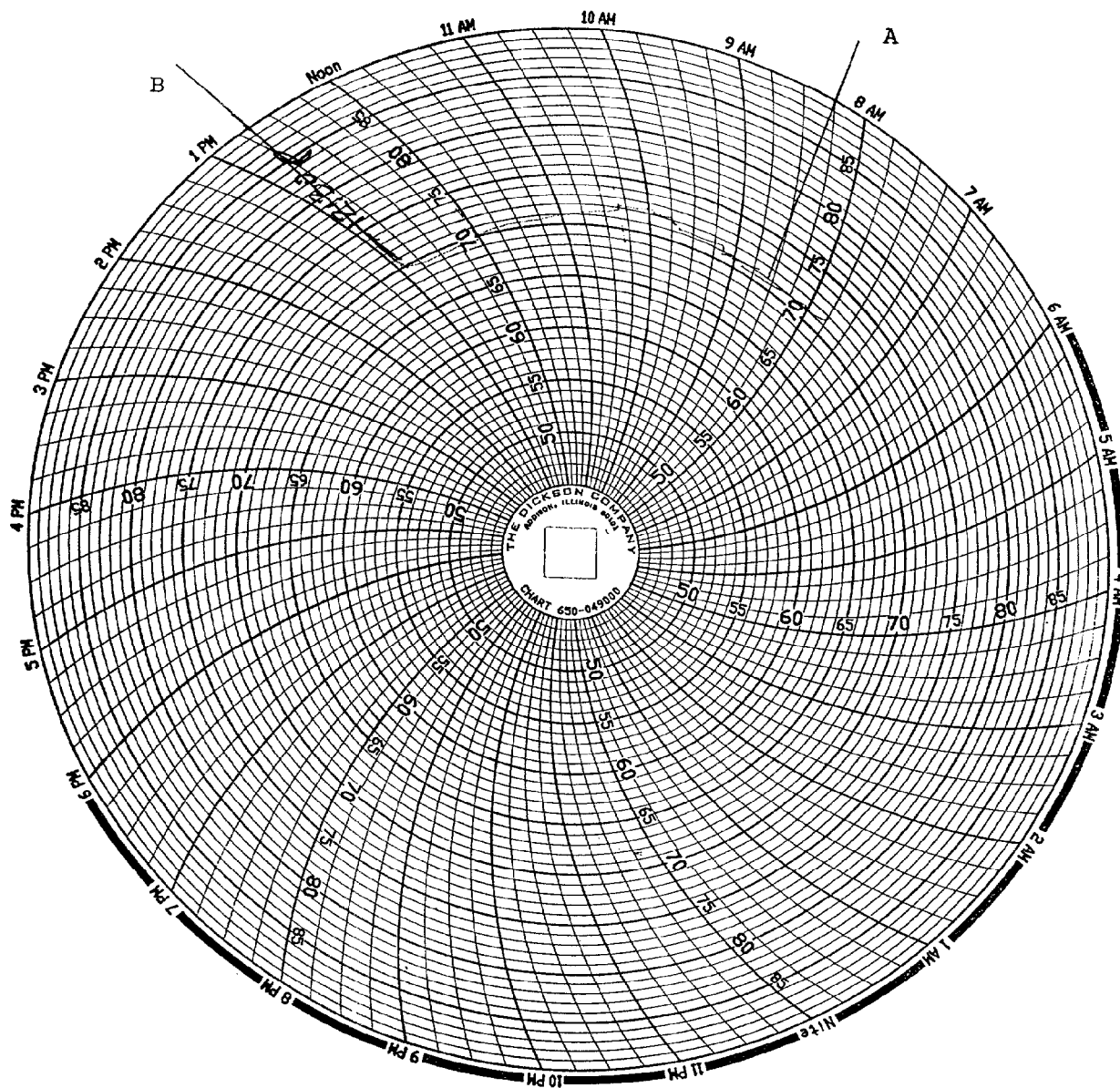
Inspected By: Tim Michnay

Date: September 21, 1999

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure	OK
Sternum	visual	OK
Lumbar spine	visual	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual	OK
Knees	visual	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

NOTES: (include component/problem/action/reason):

VEHICLE AND DUMMY TEMPERATURE



A = Dummies installed in vehicle  
B = Test conducted

APPENDIX D  
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA  
 INSTRUMENTS FOR DRIVER DUMMY NO. 036

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AKAF3	Endevco	8/2/99
Lower Rib Y	AGP53	Endevco	7/30/99
Lower Spine Y	J12450	Endevco	8/2/99
Pelvis Y	AP0G2	Endevco	8/2/99
Upper Rib Redundant Y	ALCN9	Endevco	8/2/99
Lower Rib Redundant Y	AHTC3	Endevco	7/30/99
Lower Spine Redundant Y	J12461	Endevco	8/2/99
Pelvis Redundant Y	AP138	Endevco	8/2/99

INSTRUMENTS FOR LEFT REAR PASSENGER DUMMY NO. 03Z

LEFT REAR PASSENGER			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AHRP6	Endevco	8/2/99
Lower Rib Y	AH0N9	Endevco	7/30/99
Lower Spine Y	AJ9P7	Endevco	7/30/99
Pelvis Y	J18260	Endevco	7/30/99
Upper Rib Redundant Y	AJ412	Endevco	8/2/99
Lower Rib Redundant Y	AHT20	Endevco	7/30/99
Lower Spine Redundant Y	AJ462	Endevco	7/30/99
Pelvis Redundant Y	AKAH1	Endevco	7/30/99

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS			
SERIAL NO.	MANUFACTURER	CALIBRATION DATE	
Moving Barrier CG X	J10-E05	Entran	8/17/99
Moving Barrier CG Y	J04-F10	Entran	8/16/99
Moving Barrier CG Z	I18-E18	Entran	8/17/99
Moving Barrier Rear Axle X	C25-A17	Entran	8/6/99
Moving Barrier Rear Axle Y	I25-J12	Entran	8/6/99
Left Mid A-Post Y	K16-X07	Entran	5/12/99
Left Lower A-Post Y	F20-G05	Entran	8/16/99
Left Mid B-Post Y	C06-G08	Entran	5/12/99
Left Lower B-Post Y	A10-G05	Entran	3/18/99
Rear Floorpan Above Axle X	I26-D11	Entran	8/6/99
Rear Floorpan Above Axle Y	J10-E14	Entran	8/6/99
Rear Floorpan Above Axle Z	G13-B01	Entran	8/6/99
Driver Seat Track Y	E23-R11	Entran	3/18/99
Right Side Sill at Front Seat X	F07-A13	Entran	5/6/99
Right Side Sill at Front Seat Y	J06-D19	Entran	8/6/99
Right Side Sill at Front Seat Z	A09-G02	Entran	8/16/99
Right Side Sill at Rear Seat X	I26-D15	Entran	8/17/99
Right Side Sill at Rear Seat Y	C25-A09	Entran	8/17/99
Right Side Sill at Rear Seat Z	E24-G07	Entran	8/17/99

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Front Seat Y	H02-J06	Entran	5/6/99
Left Side Sill at Rear Seat Y	I25-J19	Entran	5/12/99
Rear Occupant Compartment Y	G01-J19	Entran	3/22/99
Vehicle CG X	K19-A11	Entran	5/12/99
Vehicle CG Y	K11-J17	Entran	5/12/99
Vehicle CG Z	K19-A15	Entran	5/12/99

Note: All Endeeco accelerometers are Model No. 7264-2000. All Entran accelerometers are Model No. EGE-72