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REPORT NO.: 214-MGA-2000-04  
SAFETY COMPLIANCE TESTING FOR FMVSS NO. 214  
"SIDE IMPACT PROTECTION"  
INDICANT

DaimlerChrysler Corporation  
2000 Dodge Neon 4 door  
NHTSA NO: CY0301

MGA RESEARCH CORPORATION  
5000 WARREN ROAD  
BURLINGTON, WI 53105



Test Date: October 20, 1999

Report Date: October 28, 1999

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
SAFETY ASSURANCE  
OFFICE OF VEHICLE SAFETY COMPLIANCE  
400 SEVENTH STREET, SW  
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WASHINGTON, D.C. 20590

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		6. Performing Organization Code MGA	
7. Author(s) Chad Gadberry		8. Performing Organization Report No. MGA-DOT-214-04	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No.	
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12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance 400 Seventh St., S.W., Room 6115 Washington, D.C. 20590		13. Type of Report and Period Covered Final Test Report October 20, 1999 - October 28, 1999	
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15. Supplementary Notes			
16. Abstract A 56/28 kph 90° Impact (Moving Deformable Barrier) INDICANT Compliance Test was conducted on the subject 2000 Dodge Neon 4 door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP- 214D-05 Side Impact Protection (except the test was conducted 8 kph (5 mph) faster than the standard specified) for the determination of FMVSS' No. 214 Side Impact Protection. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on October 20, 1999.  The impact velocity of the Moving Deformable Barrier (MDB) was 61.2 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 345 mm at level 2. The test vehicle's performance follows:			
	<u>DRIVER.</u>	<u>LEFT REAR PASS.</u>	
Left Upper Rib (LUR) Accel., g	70	70	
Left Lower Rib (LLR) Accel., g	77	84	
Lower Spine (T <sub>12</sub> ) Accel., g	85	84	
Thoracic Trauma Index (TTI)	81	84	
Pelvis (PEV) Accel., g	102	114	
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) New Car Assessment Program (NCAP)		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 Dodge Neon 4 door.

This side impact test was conducted in accordance with the Office of Vehicle Safety Compliance's FMVSS 214 test procedure (TP-214D-05, dated August 2, 1999) with the exception of the test speed, which was at the NCAP High Speed Lateral Impact level (61.2 kph, approximately 8 kph faster than compliance speed).

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

SECTION 2  
SUMMARY OF SIDE IMPACT TEST

A 2000 Dodge Neon 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 61.2 kph (38.0 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 October 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.

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

Injury Criteria	Front SID	Rear SID
TTI (g)	81	84
Pelvis (g)	102	114

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

## DATA SHEET NO. 1

GENERAL VEHICLE TEST PARAMETER DATATEST VEHICLE INFORMATION:Year/Make/Model/Body Style: 2000/Dodge/Neon/4 doorVehicle NHTSA No.: CY0301 VIN: 1B3ES46C3YD546354Vehicle Body Color: Dk. Green Build Date: 3/99Engine Data: 4 Cylinders;    CID; 2.0 Liter;    ccPlacement    Longitudinal;   X LateralTransmission: 5 speed;   X Manual;    Automatic;    OverdriveFinal Drive:    Rear Wheel Drive;   X Frt. Wheel Drive;    Four Wheel DriveOdometer Reading: 124 milesOptions:    A/C;   X Pwr. Steering;   X Pwr. Brakes;    Pwr. Windows;   Cruise Control;    Tilt Wheel;    Power Door Locks;DATA FROM TIRE PLACARD:Tire Pressure (at capacity): 32 psi Front32 psi RearRecommended Tire Size: P185/65R14 or P185/60R15Tires on Test Vehicle: P185/65R14 Manufacturer: Goodyear

## Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear;    3rd Seat 5 TotalType of Front Seats:   X Bucket;    Bench;    Split BenchType of Front Seat Back:    Fixed;   X Adjustable with   X Lever    Knob    PowerVehicle Maximum Capacity Loading = 392.4 kg (A)No. of Occupants x 68.04 kg. = 340.2 kg (B)Cargo Capacity (A-B) = 52.2 kg

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

Right Front =	<u>370.1</u> kg	Right Rear =	<u>217.7</u> kg
Left Front =	<u>357.4</u> kg	Left Rear =	<u>226.3</u> kg
TOTAL FRONT =	<u>727.5</u> kg	TOTAL REAR =	<u>444.0</u> kg
% of Total Weight =	<u>62.1</u> %	% of Total Weight =	<u>37.9</u> %
TOTAL WEIGHT =	<u>1171.5</u> kg		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	=	<u>1171.5</u> kg
Cargo Carrying Capacity of Test Vehicle*	=	<u>52.2</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>1385.1</u> kg

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

Right Front =	<u>376.8</u> kg	Right Rear =	<u>277.5</u> kg
Left Front =	<u>411.0</u> kg	Left Rear =	<u>319.8</u> kg
TOTAL FRONT =	<u>787.8</u> kg	TOTAL REAR =	<u>597.3</u> kg
% of Total Weight =	<u>56.9</u> %	% of Total Weight =	<u>43.1</u> %
TOTAL WEIGHT =	<u>1385.1</u> kg		

TEST VEHICLE ATTITUDE:

## CURB WEIGHT ATTITUDE:

Right Front 667 mm Left Front 673 mm Right Rear 690 mm Left Rear 680 mm

## FULLY LOADED WEIGHT ATTITUDE:

Right Front 658 mm Left Front 653 mm Right Rear 659 mm Left Rear 637 mm

## TEST ATTITUDE:

Right Front 657 mm Left Front 655 mm Right Rear 671 mm Left Rear 650 mm

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

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2675 mm

C.G. As Tested = 1121 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 3770 mm

Centerline = 4432 mm

Left Side = 3770 mm

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 220 mm

Test Position: Mid-position (12th of 23 detents)

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 22.5°

REAR POSITION SEAT:

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

Seat Back Adjustment Position: Non-adjustable

ADJUSTABLE STEERING COLUMN POSITION: Non-adjustable

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 = 47.3 liters

Test Volume: 43.9 liters 92.8% of capacity

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

Wheelbase: = 2675 mm

Impact Point is 398 mm rearward of front axle centerline

DATA SHEET NO. 2  
TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

Overall Length = 4432 mm; Overall Width = 1720 mm

TEST WEIGHT:

Right Front = 392.4 kg      Right Rear = 278.5 kg

Left Front = 407.8 kg      Left Rear = 298.9 kg

TOTAL FRONT = 800.2 kg      TOTAL REAR = 577.4 kg

% of Total Weight = 58.1 %      % of Total Weight = 41.9 %

TOTAL WEIGHT = 1377.6 kg

Wheelbase = 2675 mm

Longitudinal C.G. from Center of Front Axle = 1121 mm

Impact Angle with Respect to Impactor = 90 degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 ( 223 mm above ground) = 211 mm

2. LEVEL 2 ( 497 mm above ground) = 345 mm

3. LEVEL 3 ( 584 mm above ground) = 334 mm

4. LEVEL 4 ( 828 mm above ground) = 282 mm

5. LEVEL 5 ( 1308 mm above ground) = 106 mm

Maximum Post-Test Intrusion = 345 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>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:		=	<u>20</u>
Number of Cameras:	Onboard Vehicle	=	<u>3</u>
	Offboard Vehicle	=	<u>4</u>
	Deformable Barrier	=	<u>2</u>
	TOTAL	=	<u>9</u>

## DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTSYear/Make/Model/Body Style: 2000/Dodge/Neon/4 doorVehicle NHTSA No.: CY0301 Test Date: October 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: 38.0 mph (61.2 kph) Secondary: Not measured

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

1. Row A Top of Stack (813 mm) = 121 mm
2. Row B Mid Stack (686 mm) = 97 mm
3. Row C Top of Bumper (533 mm) = 112 mm
4. Row D Center of Bumper (432 mm) = 146 mm

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET NO. 4  
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

VISIBLE DUMMY CONTACT POINTS:

	<u>DRIVER</u>	<u>LEFT REAR SID</u>
Head	<u>to left shoulder</u>	<u>to c-post</u>
Arm	<u>to upper rear of door panel</u>	<u>to rear of door panel</u>
Pelvis	<u>to lower door panel under armrest</u>	<u>to door panel under armrest</u>
Left Knee	<u>to front-mid of door panel</u>	<u>to front-mid of door panel</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: 6 mm forward      Vertical: 10 mm up

ARM REST LOCATIONS:

Front: 200 mm from bottom of window

Rear: 240 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 36 mm Front Seat Cushion: 70 mm

Left Rear Seat Back: 89 mm Rear Seat Cushion: 85 mm

GLAZING DAMAGE:

Both left side windows broke; windshield cracked

PILLAR PERFORMANCE:

No failure noted

SILL SEPARATION:

No separation noted

FRONTAL AIRBAGS:

Driver Deployed: No Passenger Deployed: No

OTHER NOTABLE IMPACT EFFECTS:

None noted

SECTION 4  
OCCUPANT AND VEHICLE INFORMATION

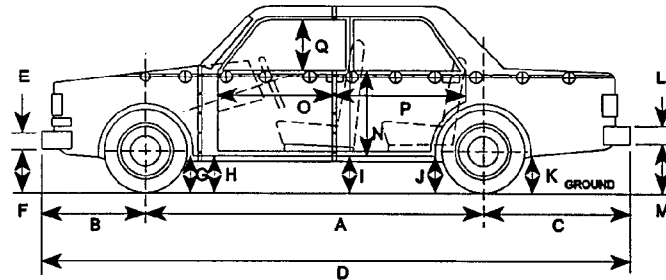
DATA SHEET NO. 5  
SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door  
Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

	Front SID ID #049				Rear SID ID #048			
	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>HEAD ACCELERATIONS</b>								
Longitudinal	8.0	35	-21.0	76	17.0	120	-21.9	53
Lateral	37.4	38	-8.2	26	120.7	53	-17.9	72
Vertical	52.4	51	-0.6	3	26.4	50	-62.9	59
Resultant	54.3	51	---	---	123.9	53	---	---
HIC	287				758			
<b>RIB ACCELERATIONS</b>								
Left Upper Rib (LUR) Y	70.1	23	-25.1	63	70.1	41	-10.4	121
Left Lower Rib (LLR) Y	76.5	24	-12.3	72	84.1	39	-25.1	74
<b>SPINE ACCELERATIONS</b>								
Lower Lateral Y	85.2	26	-15.9	82	84.5	47	-27.4	67
<b>PELVIS ACCELERATIONS</b>								
Lateral Y	101.7	29	-15.8	78	114.2	41	-11.5	85

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

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



LEFT SIDE VIEW

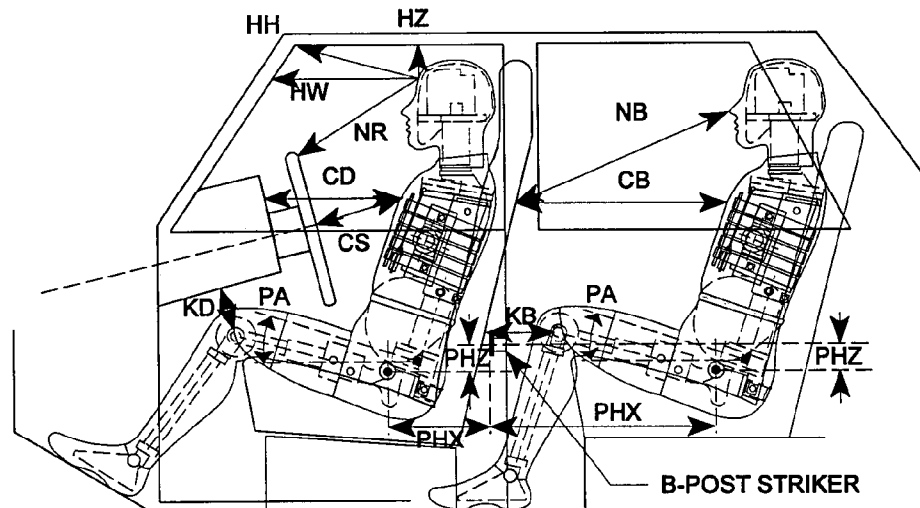
D = Length at Centerline  
R = Right Side Length  
S = Left Side Length  
T = Width at B Post  
J1 = To Pinch Weld  
J2 = To Sill

E &amp; L = Bumper Thickness

ALL MEASUREMENTS IN (mm)

	PRE-TEST	POST-TEST	Δ CHANGE
A	2675	2635	-40
B	882	886	4
C	875	872	-3
D	4432	4393	-39
E	125	125	0
F	368	378	10
G	146	150	4
H	147	148	1
I	156	183	27
J1/J2	165/161	152/147	-13/-14
K	258	261	3
L	205	205	0
M	423	409	-14
N	665	598	-67
O	825	723	-102
P	1189	1137	-52
Q	445	408	-37
R	3770	3784	14
S	3770	3706	-64
T	1720	1520	-200

## DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONSYear/Make/Model/Body Style: 2000/Dodge/Neon/4 doorNHTSA NO.: CY0301 Test Date: October 20, 1999NOTE: All dimensions are in mm with tolerance of  $\pm 3$  mm

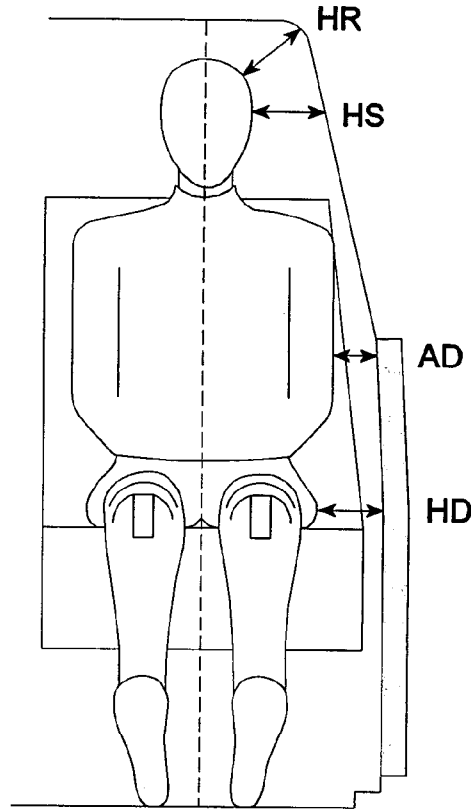
	DRIVER ID #049		REAR PASSENGER SID ID #048
HH	418	HZ	138
HW	643	NB	597
HZ	174	CB	516
NR	483	KBL (KBA)	212 (0.0°)
CD	544	KBR (KBA)	202 (0.0°)
CS	356	PA°	24.4°
KDL (KDA°)	158 (22.1°)	PHX	215
KDR (KDA°)	157 (29.1°)	PHZ	257
PA°	24.0°		
PHX	168		
PHZ	136		

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. 8  
SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

NHTSA NO.: CY0301 Test Date: October 20, 1999



NOTE: All dimensions are in mm

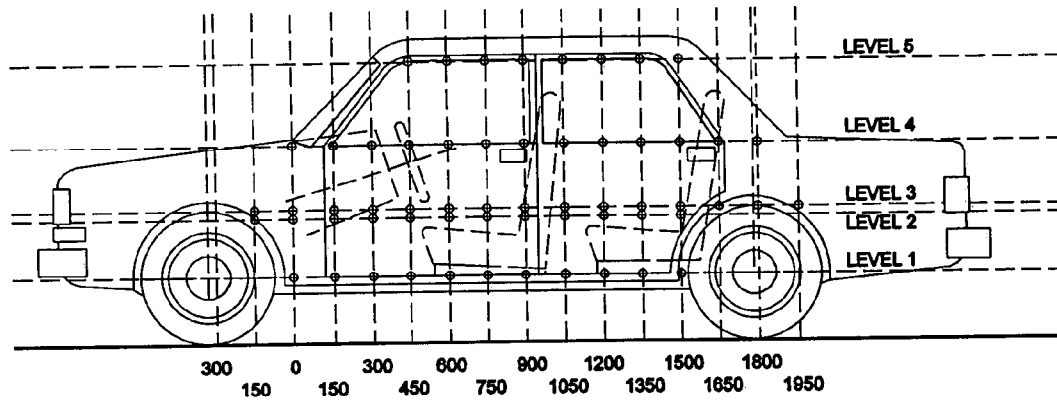
	DRIVER ID #049	REAR PASSENGER ID #048
HR	184	180
HS	294	232
AD	95	134
HD	187	198

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

NHTSA NO.: CY0301 Test Date: October 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

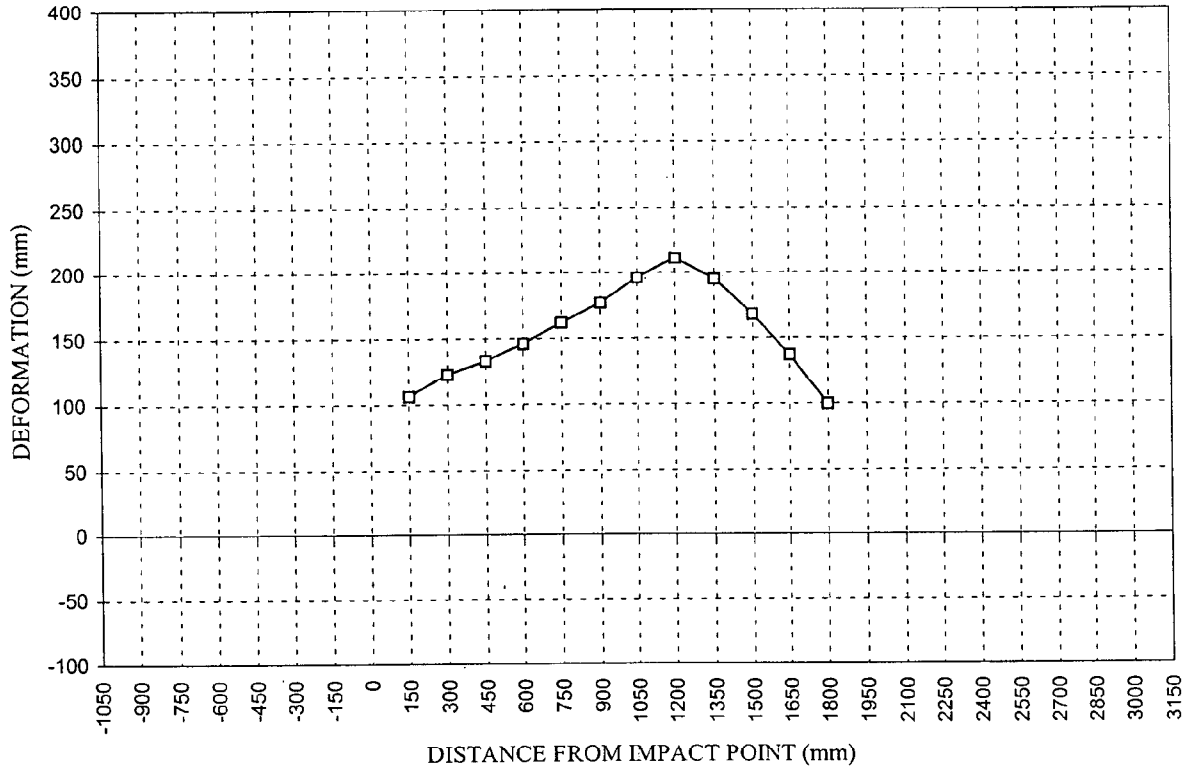
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>223</u>	mm
Level 2 @ Occupant H-Point	=	<u>497</u>	mm
Level 3 @ Mid Door	=	<u>584</u>	mm
Level 4 @ Window Sill	=	<u>828</u>	mm
Level 5 @ Window Top	=	<u>1308</u>	mm

DATA SHEET NO. 10  
VEHICLE EXTERIOR CRUSH PROFILES

Longitudinal Distance (mm)	Level 1 - Axle Centerline		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	728	834	106
300	723	846	123
450	723	856	133
600	723	869	146
750	723	885	162
900	723	900	177
1050	723	919	196
1200	723	934	211
1350	724	919	195
1500	724	892	168
1650	724	861	137
1800	725	825	100
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



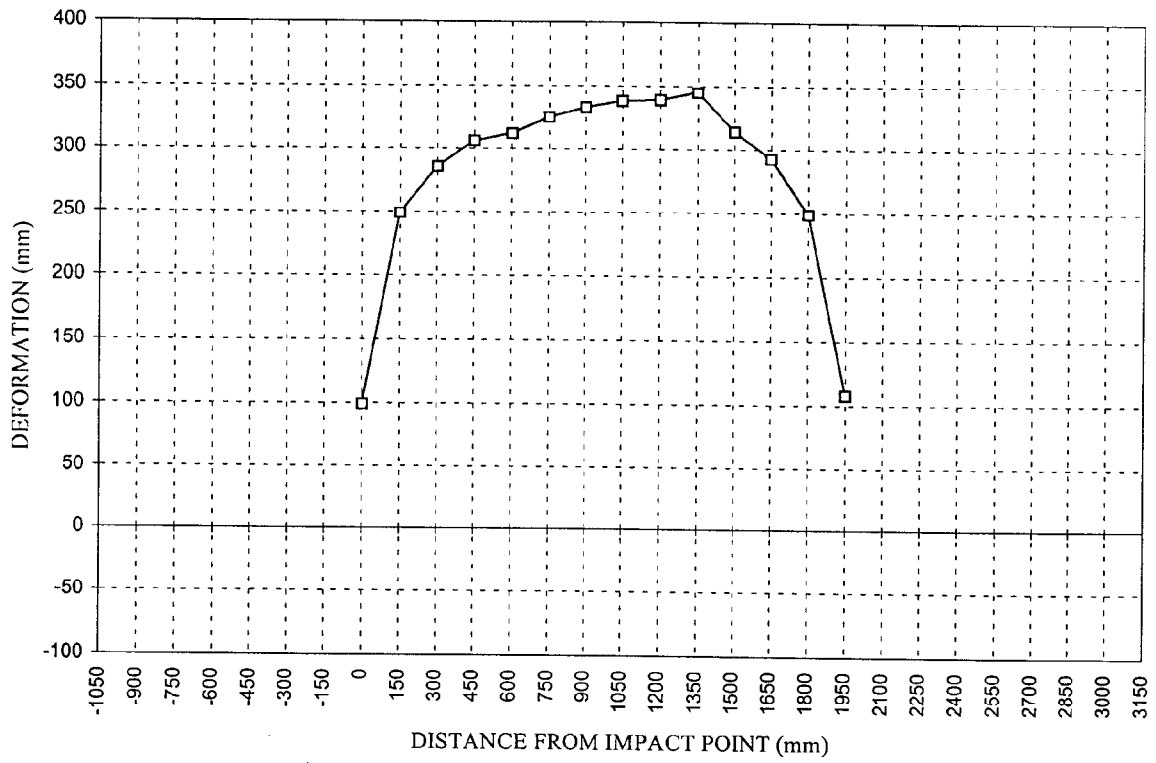
LEVEL 1 - AXLE CENTERLINE

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)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	660	759	99
150	665	914	249
300	665	951	286
450	665	971	306
600	661	973	312
750	661	986	325
900	659	992	333
1050	659	997	338
1200	659	998	339
1350	660	1005	345
1500	660	974	314
1650	662	955	293
1800	662	911	249
1950	650	758	108
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



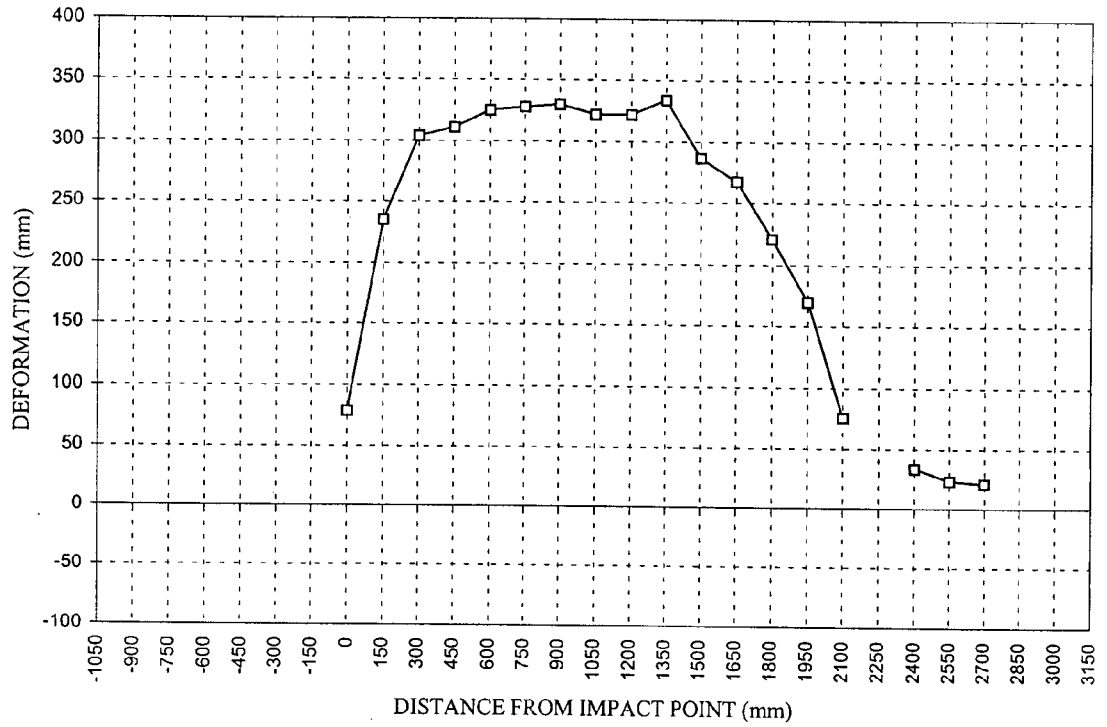
LEVEL 2 - OCCUPANT H-POINT

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

Longitudinal Distance (mm)	Level 3 - Mid Door		
	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	653	732	79
150	653	888	235
300	653	957	304
450	652	963	311
600	650	975	325
750	648	976	328
900	647	977	330
1050	647	969	322
1200	648	970	322
1350	648	982	334
1500	649	936	287
1650	650	918	268
1800	652	873	221
1950	651	821	170
2100	637	716	79
2250			
2400	639	672	33
2550	662	685	23
2700	683	704	21
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



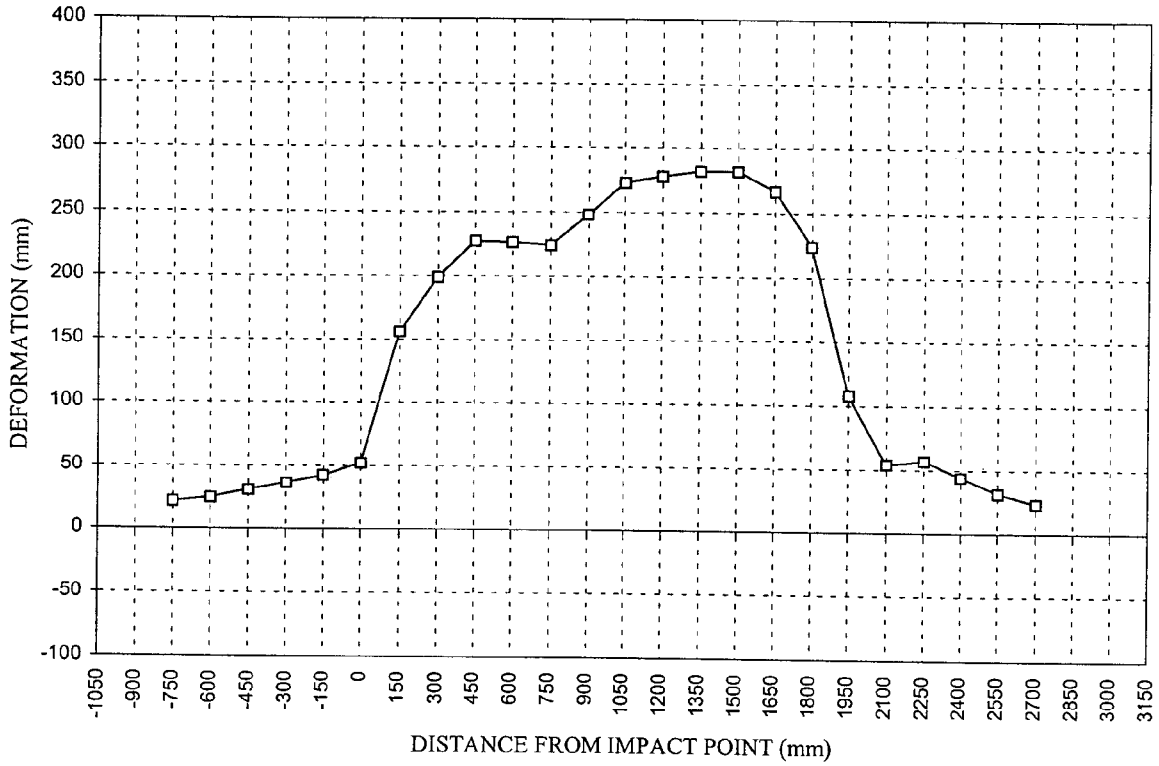
LEVEL 3 - MID DOOR

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)
-1200			
-1050			
-900			
-750	760	781	21
-600	737	761	24
-450	722	752	30
-300	714	750	36
-150	705	747	42
0 (impact point)	700	752	52
150	695	851	156
300	690	889	199
450	690	917	227
600	690	916	226
750	688	912	224
900	684	932	248
1050	682	955	273
1200	683	961	278
1350	681	963	282
1500	684	966	282
1650	682	949	267
1800	680	904	224
1950	679	787	108
2100	681	735	54
2250	685	742	57
2400	691	735	44
2550	697	728	31
2700	709	732	23
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



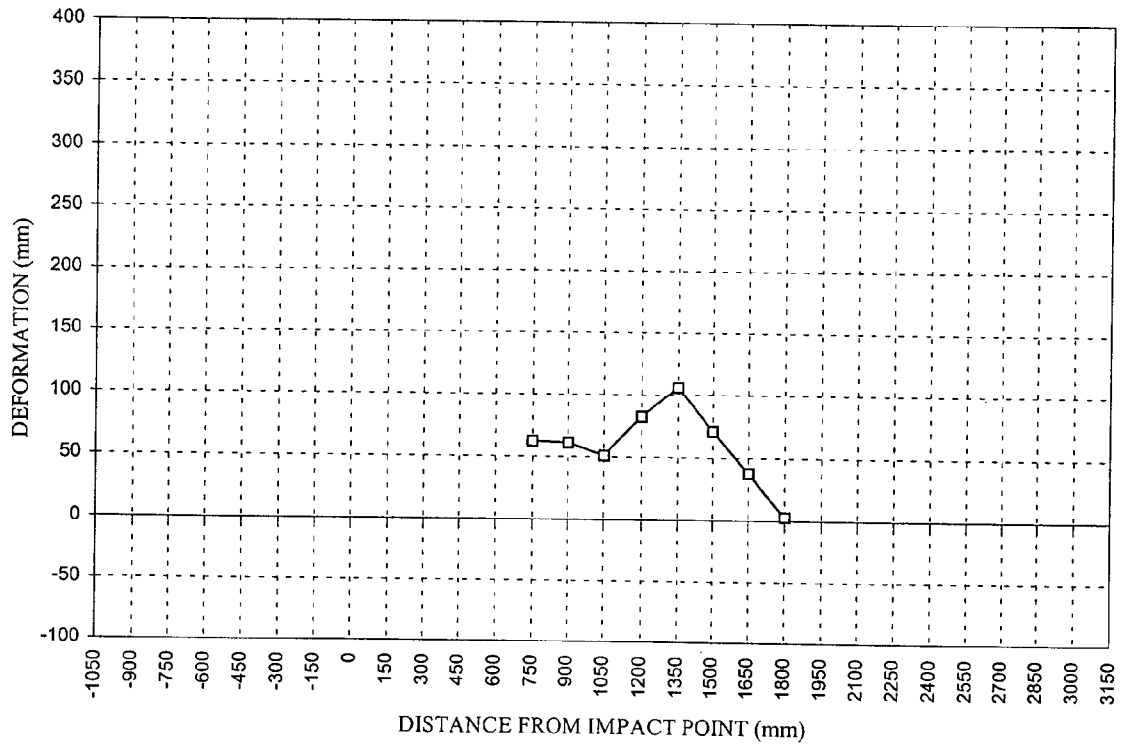
LEVEL 4 - WINDOW SILL

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

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	995	1057	62
900	981	1042	61
1050	964	1015	51
1200	958	1040	82
1350	955	1061	106
1500	954	1025	71
1650	954	992	38
1800	960	963	3
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



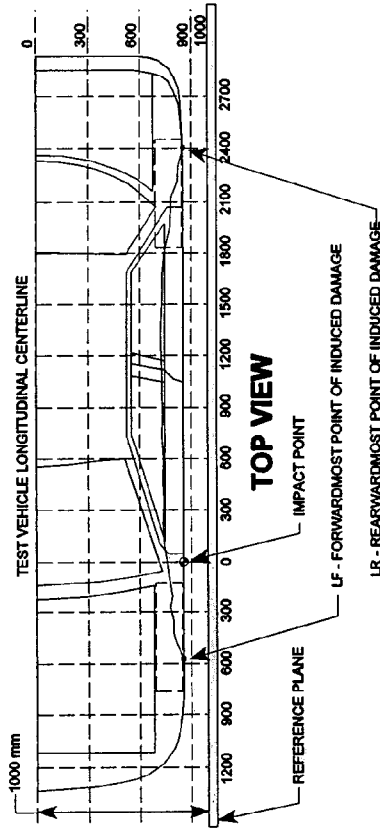
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

NHTSA NO.: CY0301 Test Date: October 20, 1999



MEASUREMENT CONVENTIONS:

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

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

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LR = 2700 mm)	732	709	23
2. 2025 mm	764	680	84
3. 1273 mm	1020	659	361
4. 600 mm	973	661	312
5. -74 mm	742	653	89
6. (LF = -750 mm)	781	760	21

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

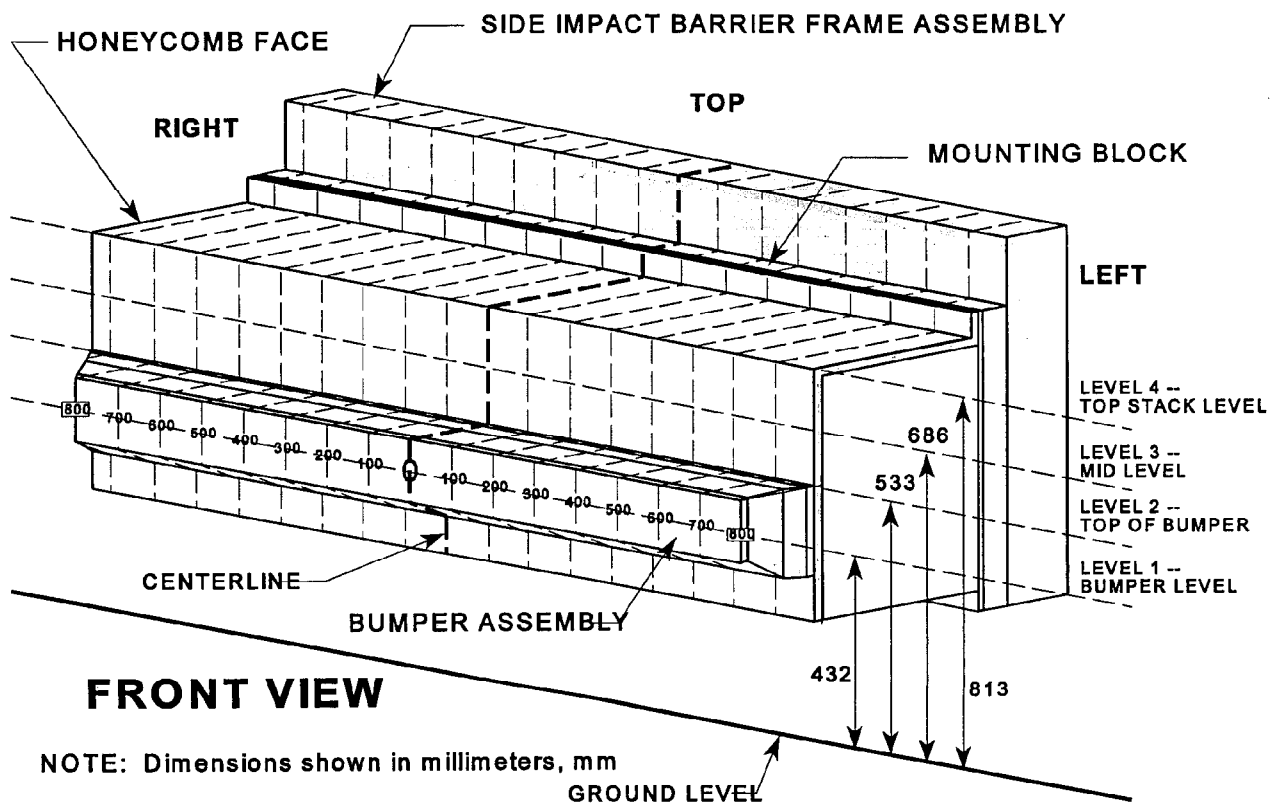
Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

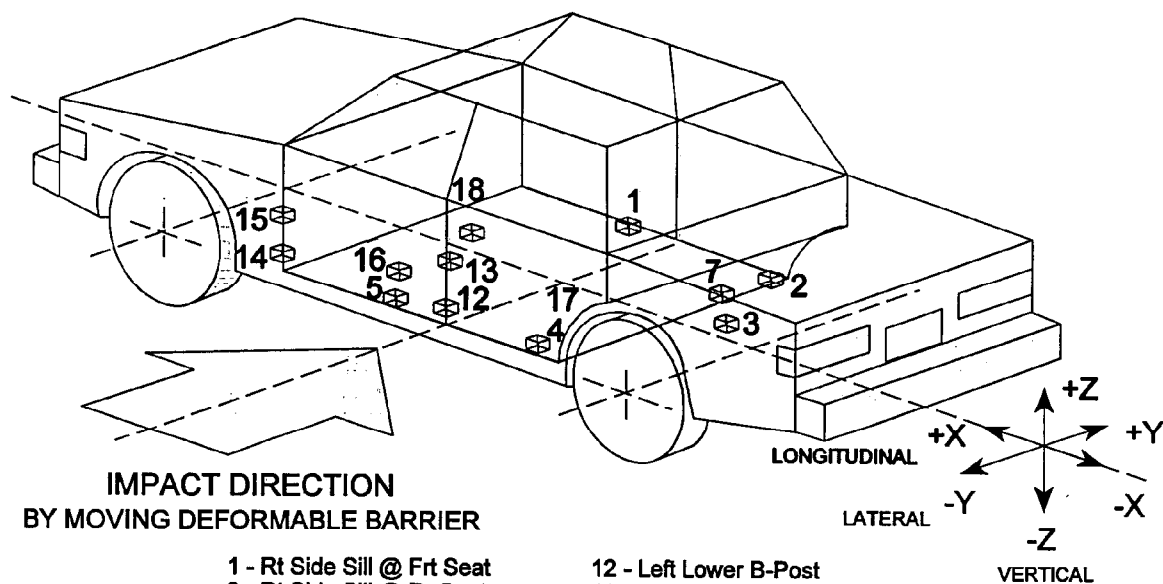
Location	Height at CL*	Distance Right of Center (mm)								Distance Left of Center (mm)							
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700
Top Stack Level 4	813 mm	56	14	-6	-8	-7	-4	4	0	1	3	6	8	15	27	72	121
Mid Level Level 3	686 mm	60	24	8	3	5	11	15	12	10	8	9	11	12	18	45	97
Top Bumper Level 2	533 mm	82	65	48	39	34	30	30	35	35	41	46	52	60	71	90	112
Mid Bumper Level 1	432 mm	122	100	80	62	52	60	57	55	57	62	66	70	77	95	122	146

\* See next page for Barrier Face Graphic

DATA SHEET NO. 12 (Cont'd)



## DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARYYear/Make/Model/Body Style: 2000/Dodge/Neon/4 doorVehicle NHTSA No.: CY0301 Test Date: October 20, 1999

**IMPACT DIRECTION  
BY MOVING DEFORMABLE BARRIER**

- |                                  |                         |
|----------------------------------|-------------------------|
| 1 - Rt Side Sill @ Frt Seat      | 12 - Left Lower B-Post  |
| 2 - Rt Side Sill @ Rr Seat       | 13 - Left Middle B-Post |
| 3 - Rr Floorpan Above Axle       | 14 - Left Lower A-Post  |
| 4 - Left Side Sill @ Rr Seat     | 15 - Left Middle A-Post |
| 5 - Left Side Sill @ Frt Seat    | 16 - Front Seat Track   |
| 7 - Rt Rear Occupant Compartment | 18 - Vehicle C.G.       |

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

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

Vehicle NHTSA No.: CY0301 Test Date: October 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	2463	638	197	2.9	-5.6	25.1	-2.9	7.5	-6.9	25.2
2	Right Side Sill @ Rear Seat	1405	634	216	4.7	-4.9	33.3	-3.4	5.8	-7.3	34.0
3	Rear Floorpan Above Axle	850	0	342	5.3	-14.5	26.3	-3.7	9.4	-12.1	30.0
4	Left Side Sill @ Rear Seat	1403	-634	212	---	---	58.2	-12.4	---	---	---
5	Left Side Sill @ Front Seat	2459	-638	190	---	---	57.5	-8.1	---	---	---
7	Right Rear Occupant Compartment	1692	324	293	---	---	24.6	-2.8	---	---	---
12	Left Lower B-Post	1974	-674	378	---	---	132.5	-54.6	---	---	---
13	Left Mid B-Post	1993	-648	927	---	---	174.3	-28.1	---	---	---
14	Left Lower A-Post	3024	-671	336	---	---	82.2**	-48.2**	---	---	---
15	Left Mid A-Post	3095	-683	884	---	---	22.5	-2.7	---	---	---
16	Driver Seat Track	2432	-495	253	---	---	107.2	-51.7	---	---	---
18	Vehicle CG	2392	0	389	76.8	-67.5	30.5***	-5.4***	23.9	-38.3	35.4***

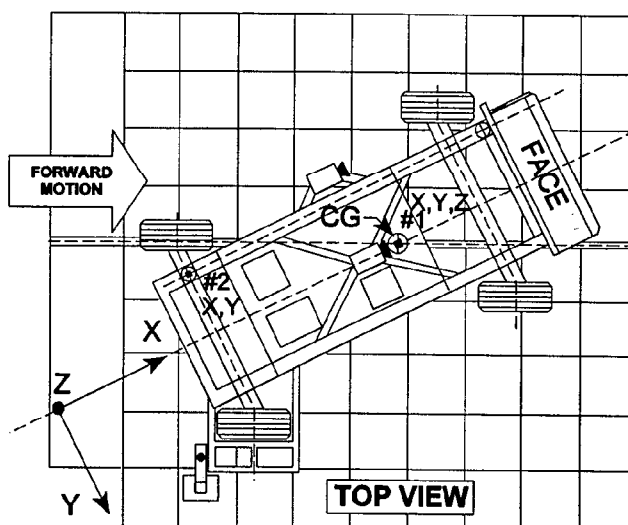
\*Reference: X - Rear Bumper (+ Forward)      \*\* - Data not valid after approximately 67 msec.

Y - Vehicle Centerline (+ To right)      \*\*\* - Data not valid after approximately 42 msec.

Z - Ground Level (+ Up)

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

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door  
 Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

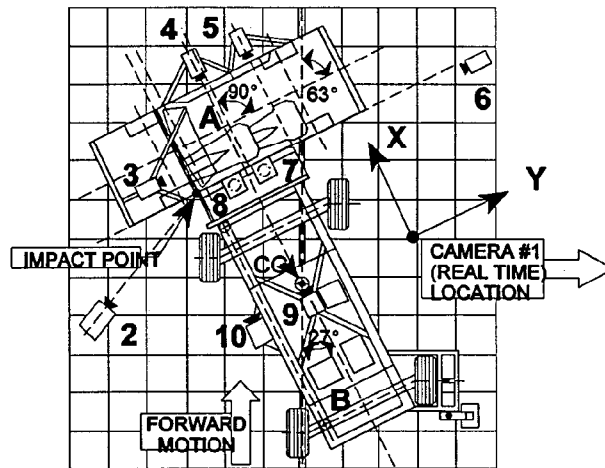


Accel. No.	Description	Coordinates (mm)*			(+ ) Positive		(- ) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	2.4	116	-17.9	38
	Lateral (Y)	---	---	---	3.0	56	-10.1	28
	Vertical (Z)	---	---	---	18.3	57	-23.2	63
	Resultant (R)	---	---	---	26.2	41	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	1.8	114	-22.7	32
	Lateral (Y)	---	---	---	1.1	71	-5.2	27

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

DATA SHEET NO. 15  
HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door  
 Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999



Camera No.	View	Coordinates (mm)*			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Real Time				10	24
2	Left Impact	-1710	-2530	1820	13	1000
3	Onboard Hood				13	1000
4	Onboard Front Occupant				8	719
5	Onboard Rear Occupant				8	1010
6	Right Impact	-360	10180	1780	25	1005
7	Top Overall	210	1220	5000	8	939
8	Top Impact	-110	110	5000	13	1005
9	Cart Overall				13	1010
10	Cart Impact				35	1005

\* Reference: (from impact point)  
 +X = Forward  
 +Y = To Right  
 +Z = Upward from floor level

## DATA SHEET 16

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door  
 Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

TEST 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 38.0 mph (61.2 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

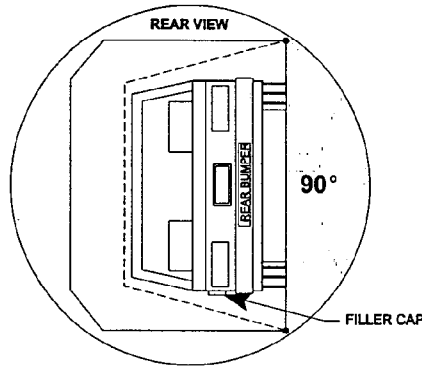
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 2000/Dodge/Neon/4 door

Vehicle NHTSA No.: CY0301 Test Date: October 20, 1999

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 42 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 42 seconds

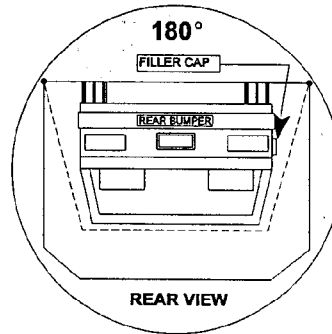
Next Whole Minute Interval = 8 minutes

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/Dodge/Neon/4 doorVehicle NHTSA No.: CY0301 Test Date: October 20, 1999TEST PHASE: 90° - 180°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 32 seconds  
 (Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 32 seconds

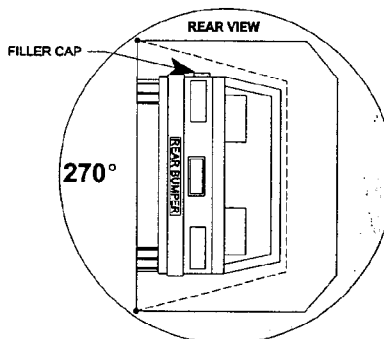
Next Whole Minute Interval = 8 minutes

FUEL 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 (Cont'd)Vehicle Year/Make/Model/Body Style: 2000/Dodge/Neon/4 doorVehicle NHTSA No.: CY0301 Test Date: October 20, 1999TEST PHASE: 180° - 270°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time = 2 minutes 23 seconds

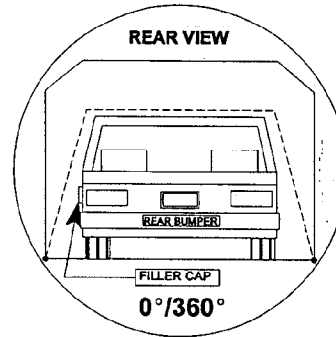
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 secondsTOTAL TIME = 7 minutes 23 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

## DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATAVehicle Year/Make/Model/Body Style: 2000/Dodge/Neon/4 doorVehicle NHTSA No.: CY0301 Test Date: October 20, 1999TEST PHASE: 270° - 360°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time = 2 minutes 47 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 secondsTOTAL TIME = 7 minutes 47 secondsNext Whole Minute Interval = 8 minutesFUEL 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

APPENDIX A - PHOTOGRAPHS

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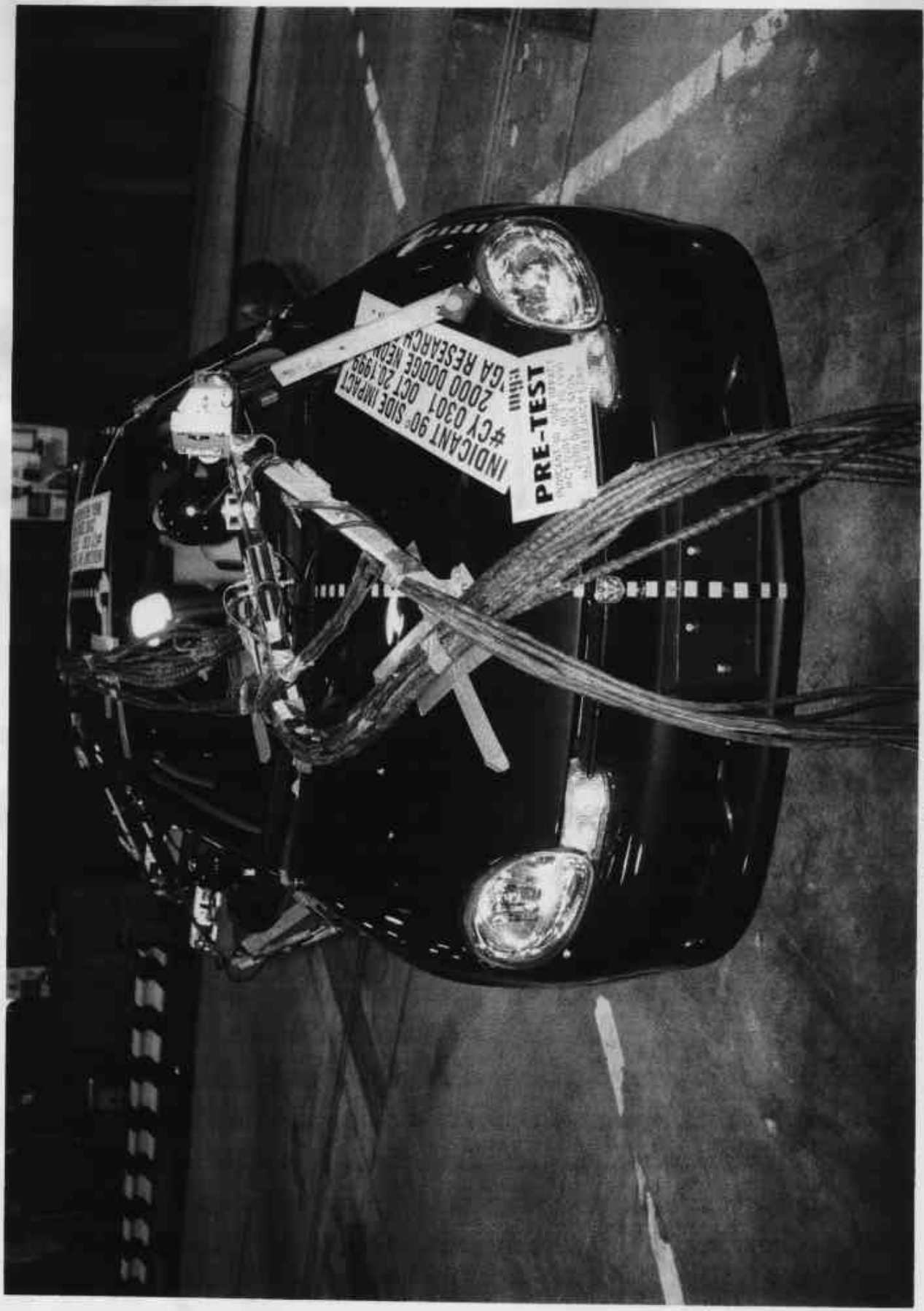


Photo No. A-1 - Pre-Test Front View of Test Vehicle

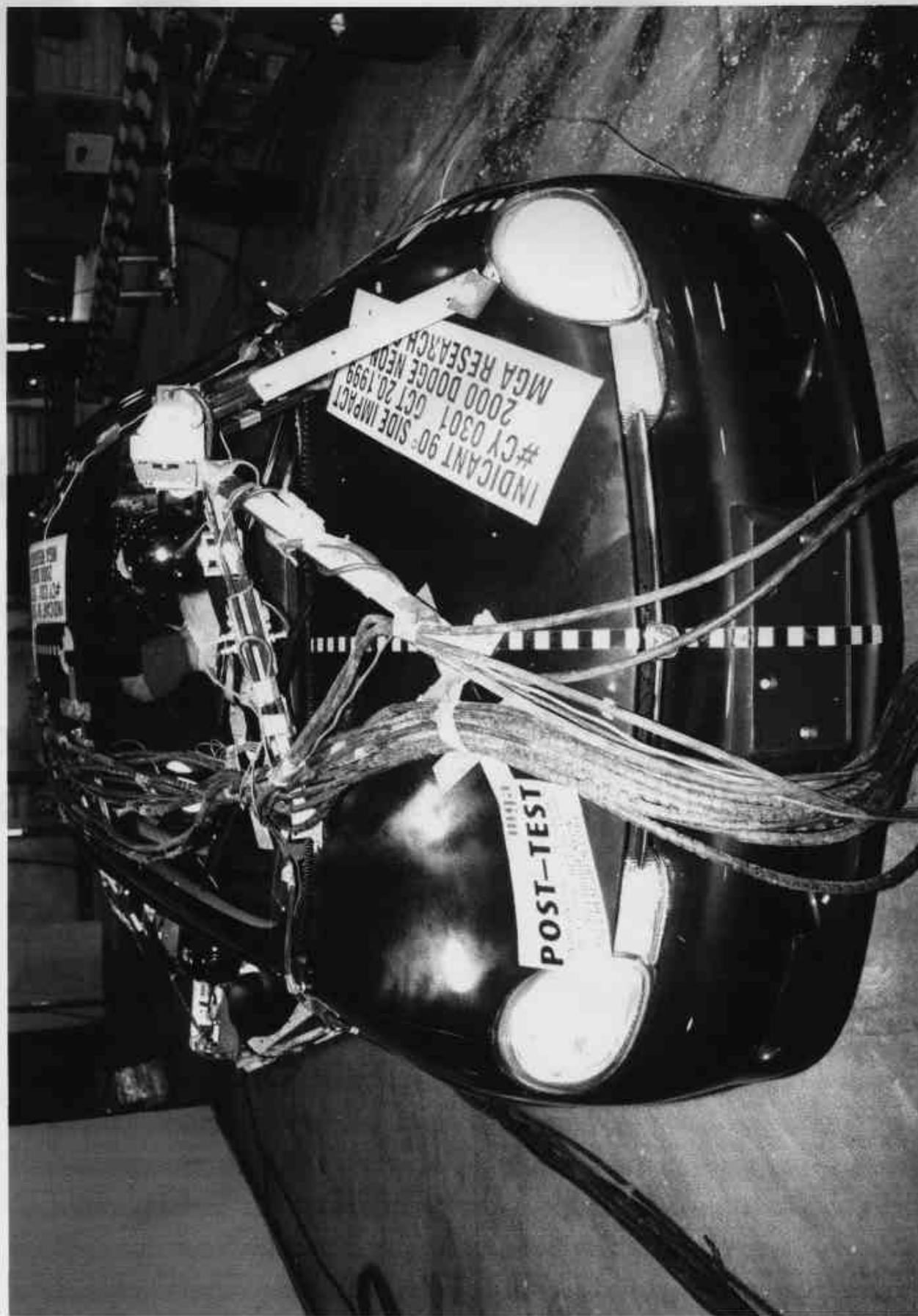


Photo No. A-2 - Post-Test Front View of Test Vehicle

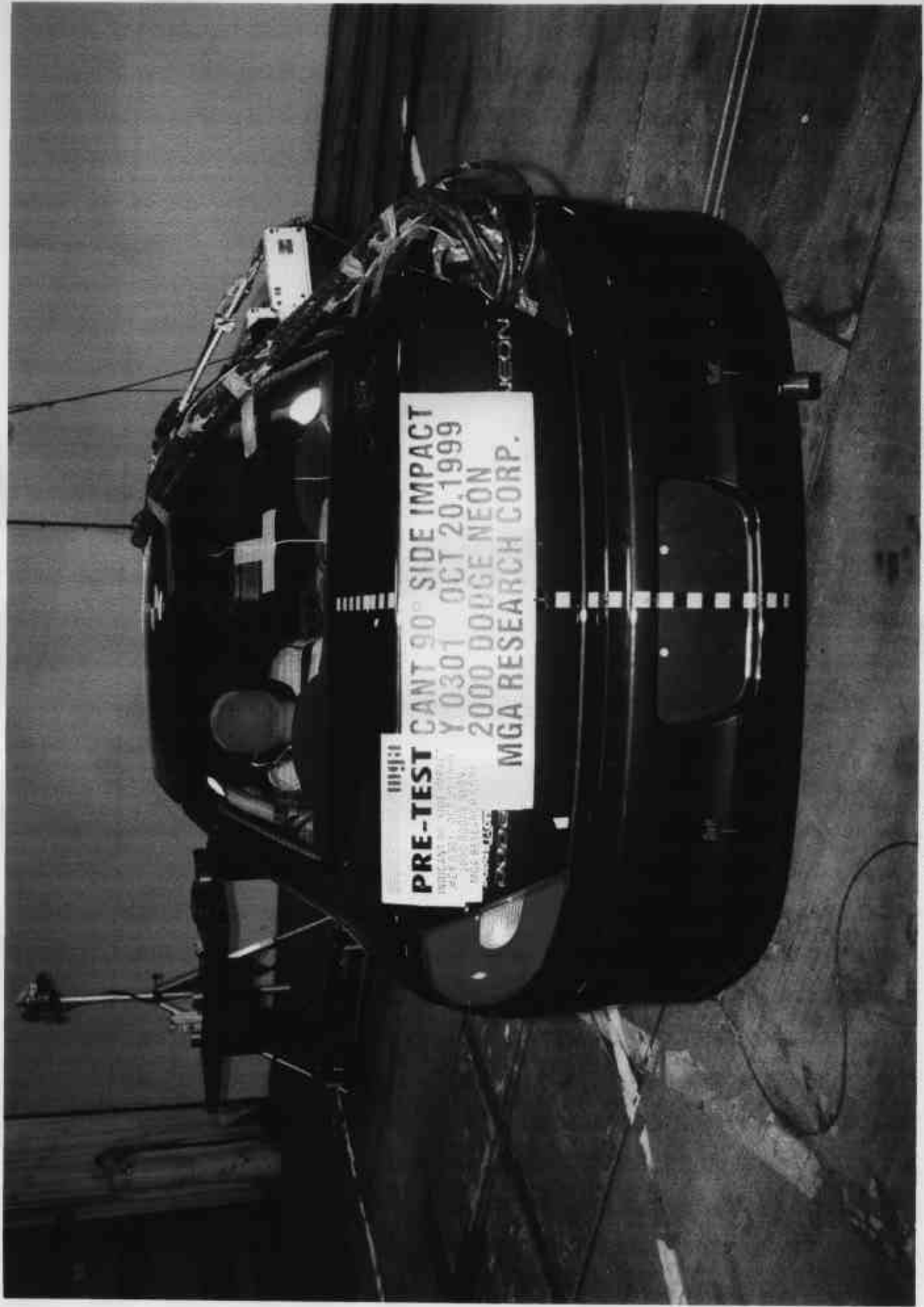


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

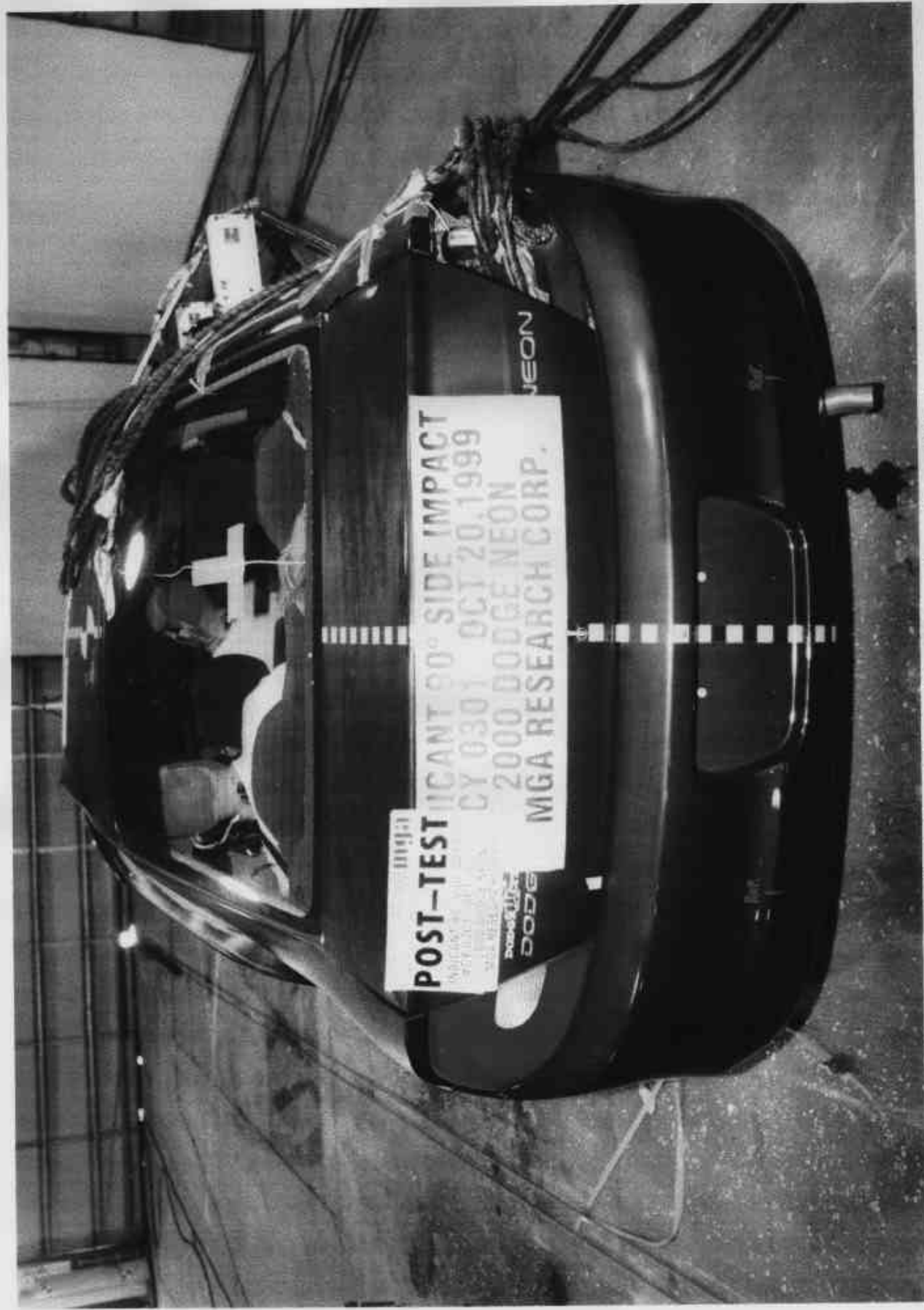


Photo No. A-4 - Post-Test Rear View of Test Vehicle

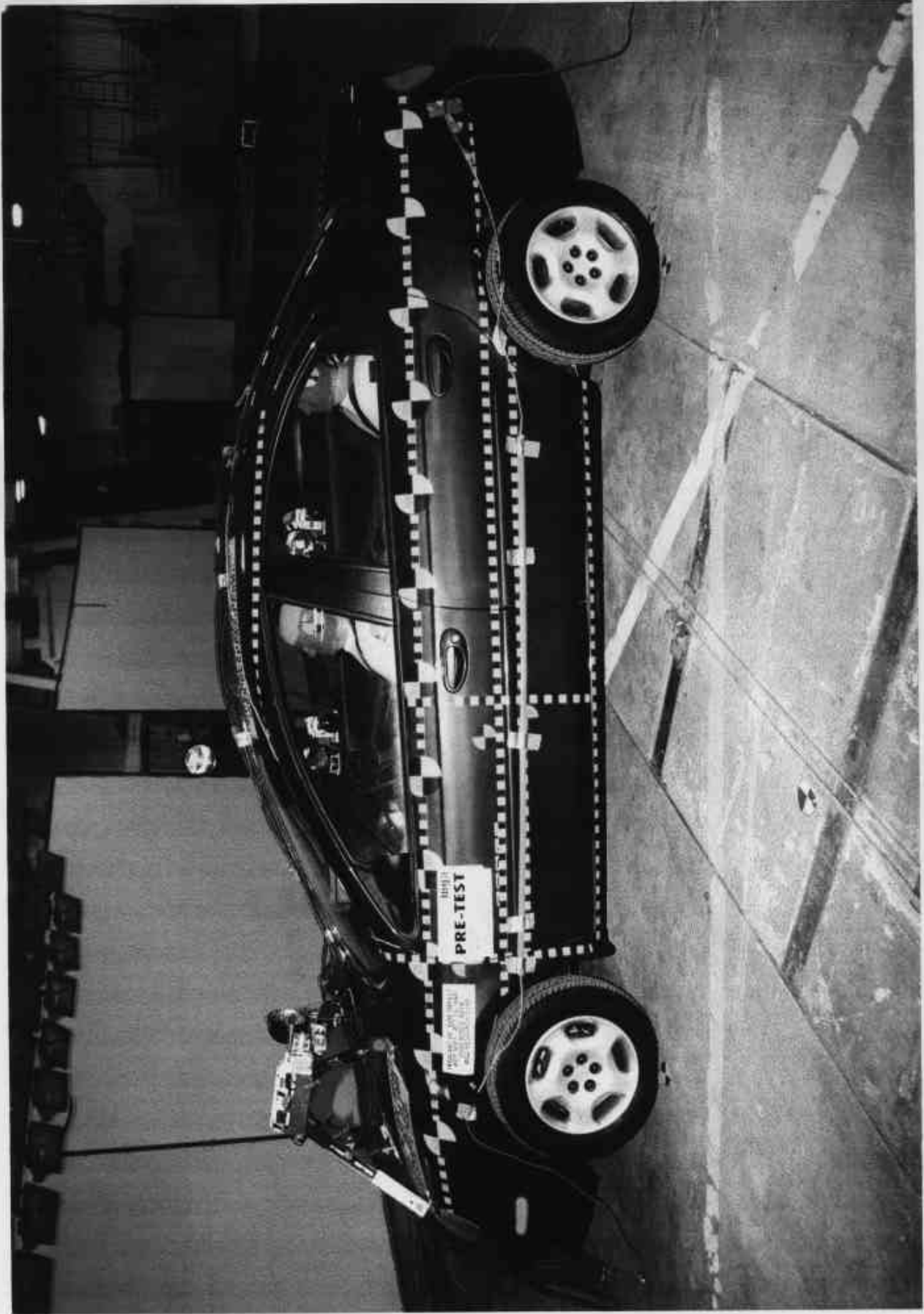


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

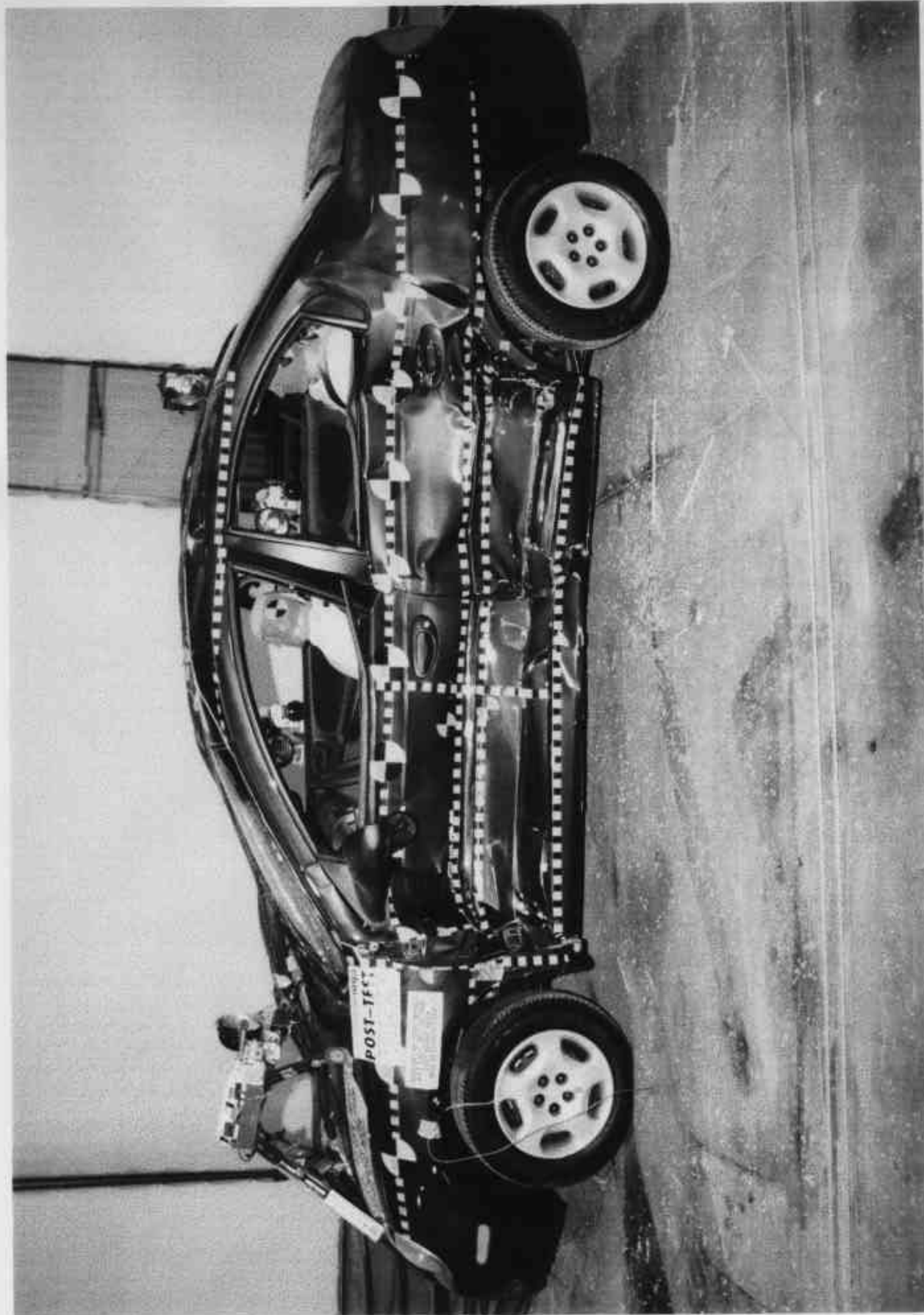


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

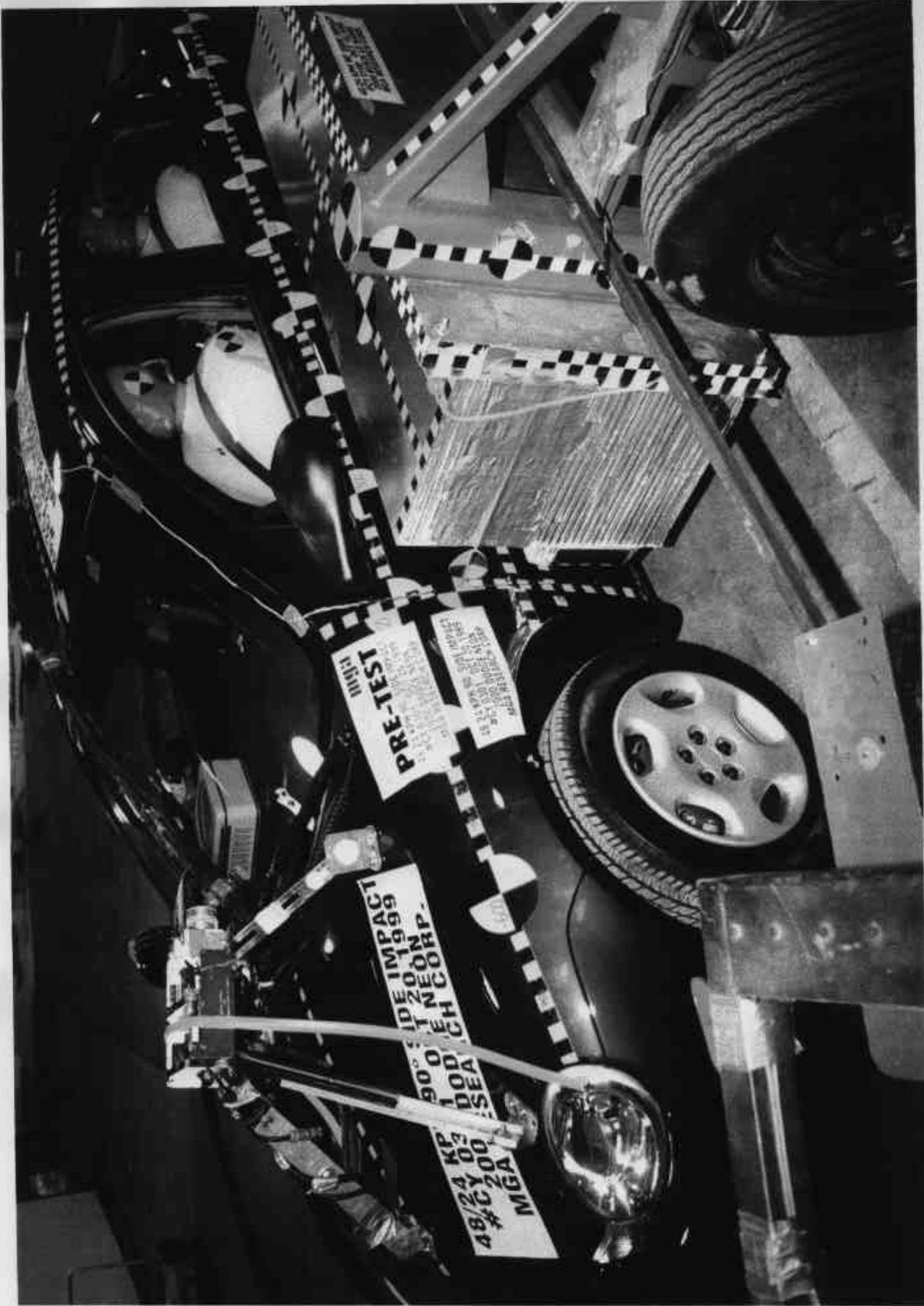


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

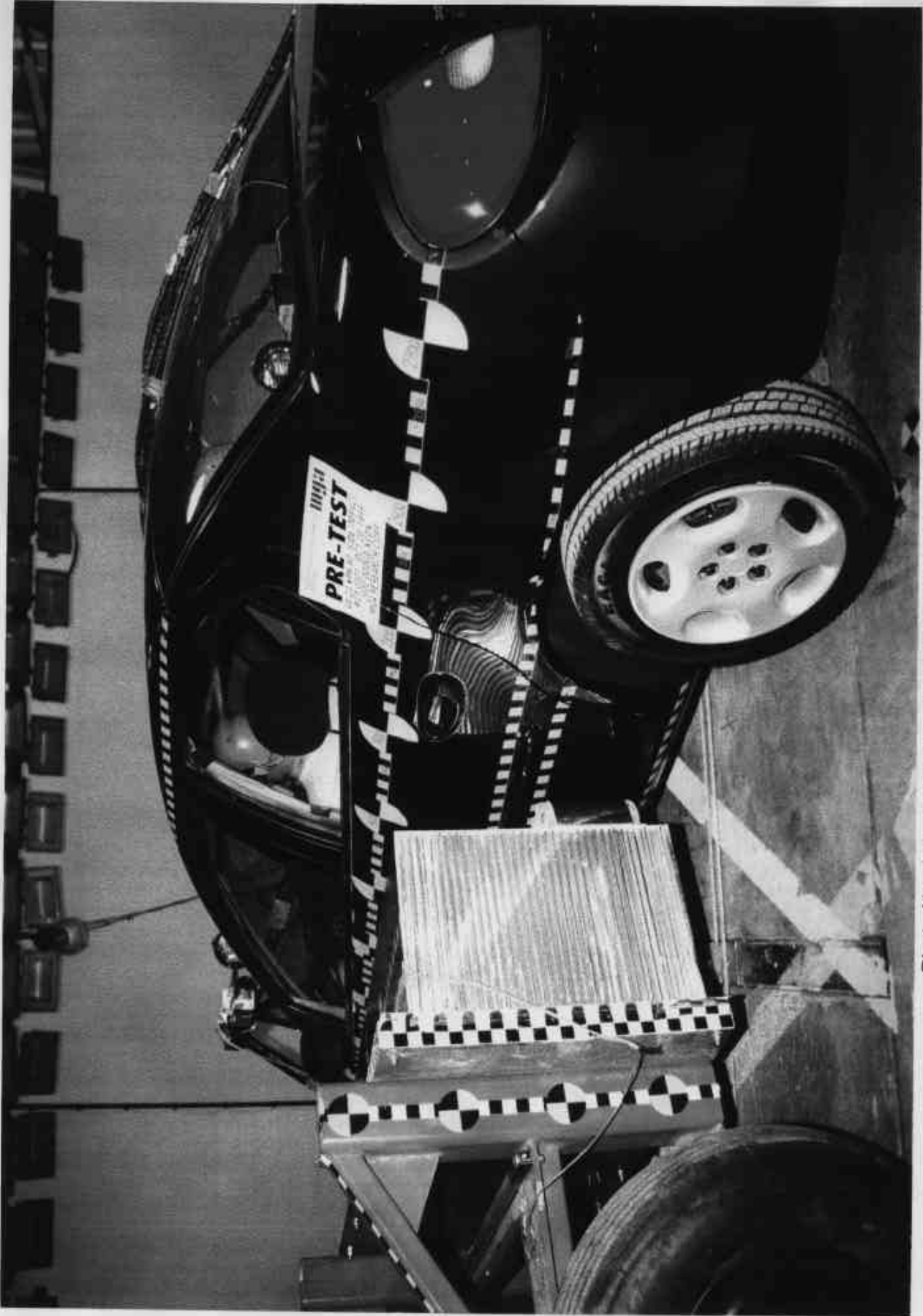
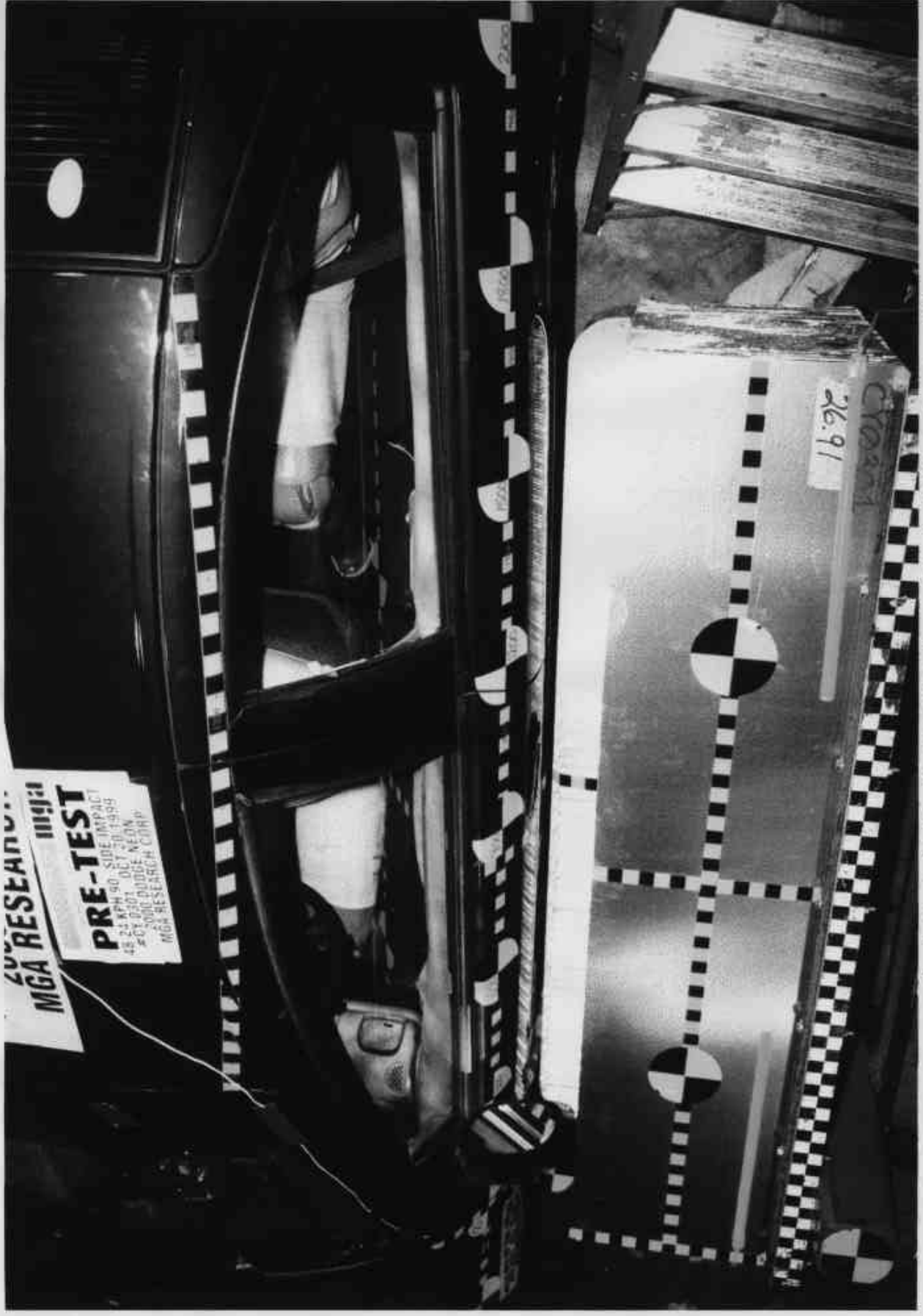


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)



MGA RESEARCH  
MGA RESEARCH CORP  
**PRE-TEST**  
48 MPH 50' SIDE IMPACT  
48 24 4001 DCL 30 1399  
#CT 000 DODGE NEON  
MGA RESEARCH CORP

16.91  
CROSS

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

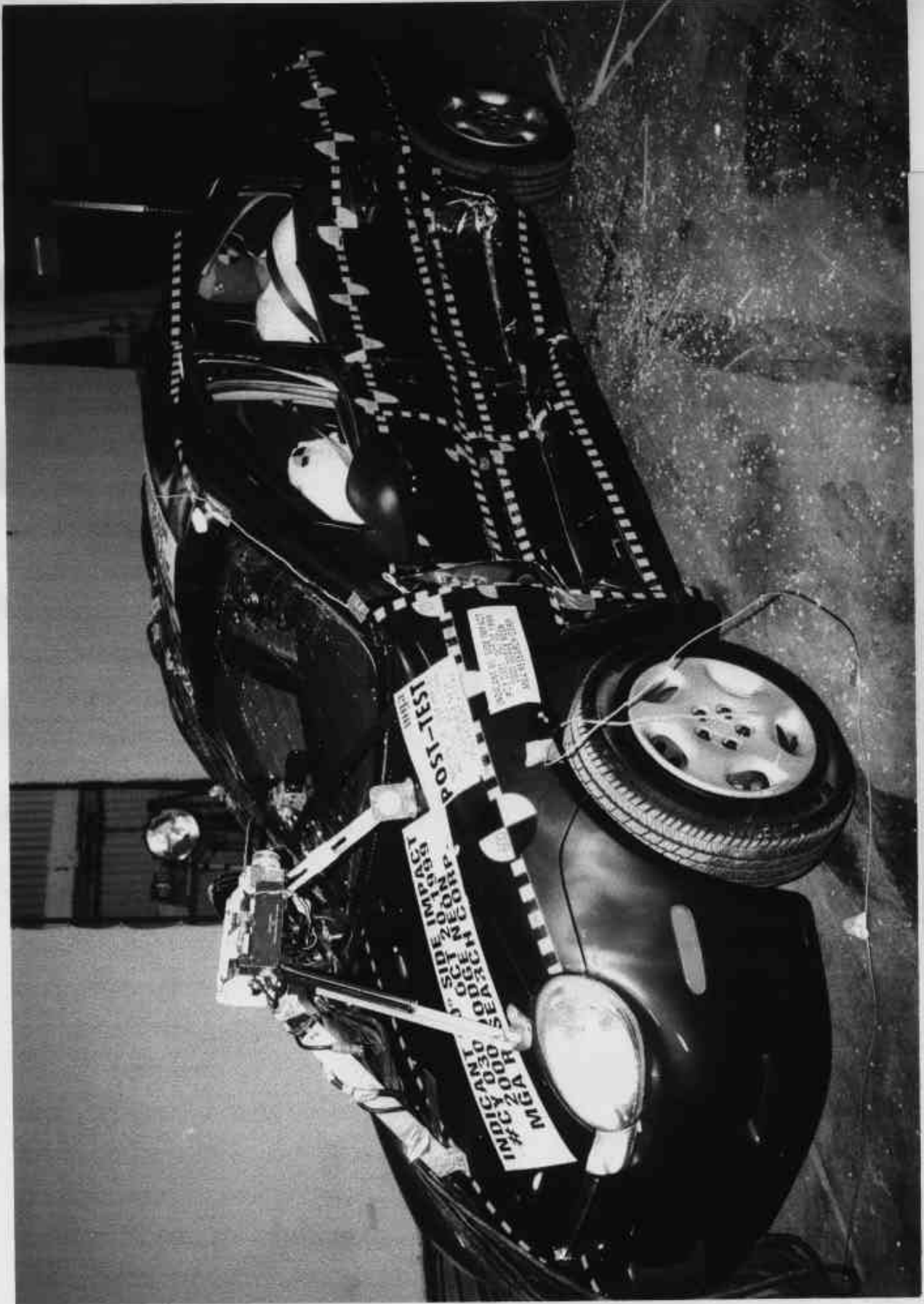


Photo No. A-10 - Post-Test 3/4 Vehicle Immediately After Test (Front)



Photo No. A-11 - Post-Test 3/4 Vehicle Immediately After Test (Rear)



Photo No. A-12 - Post-Test Vehicle Immediately After Test Overhead View

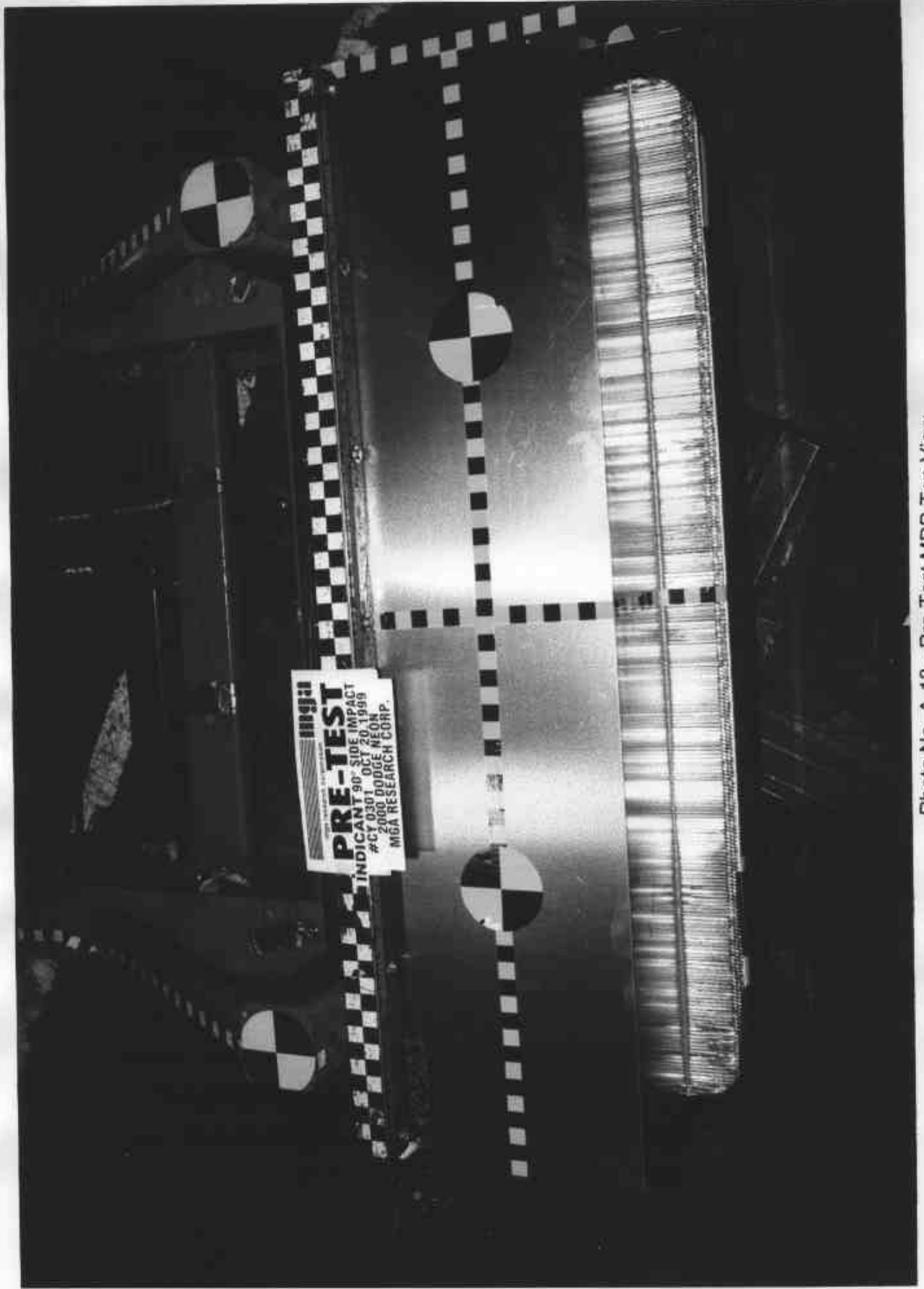


Photo No. A-13 - Pre-Test MDB Top View

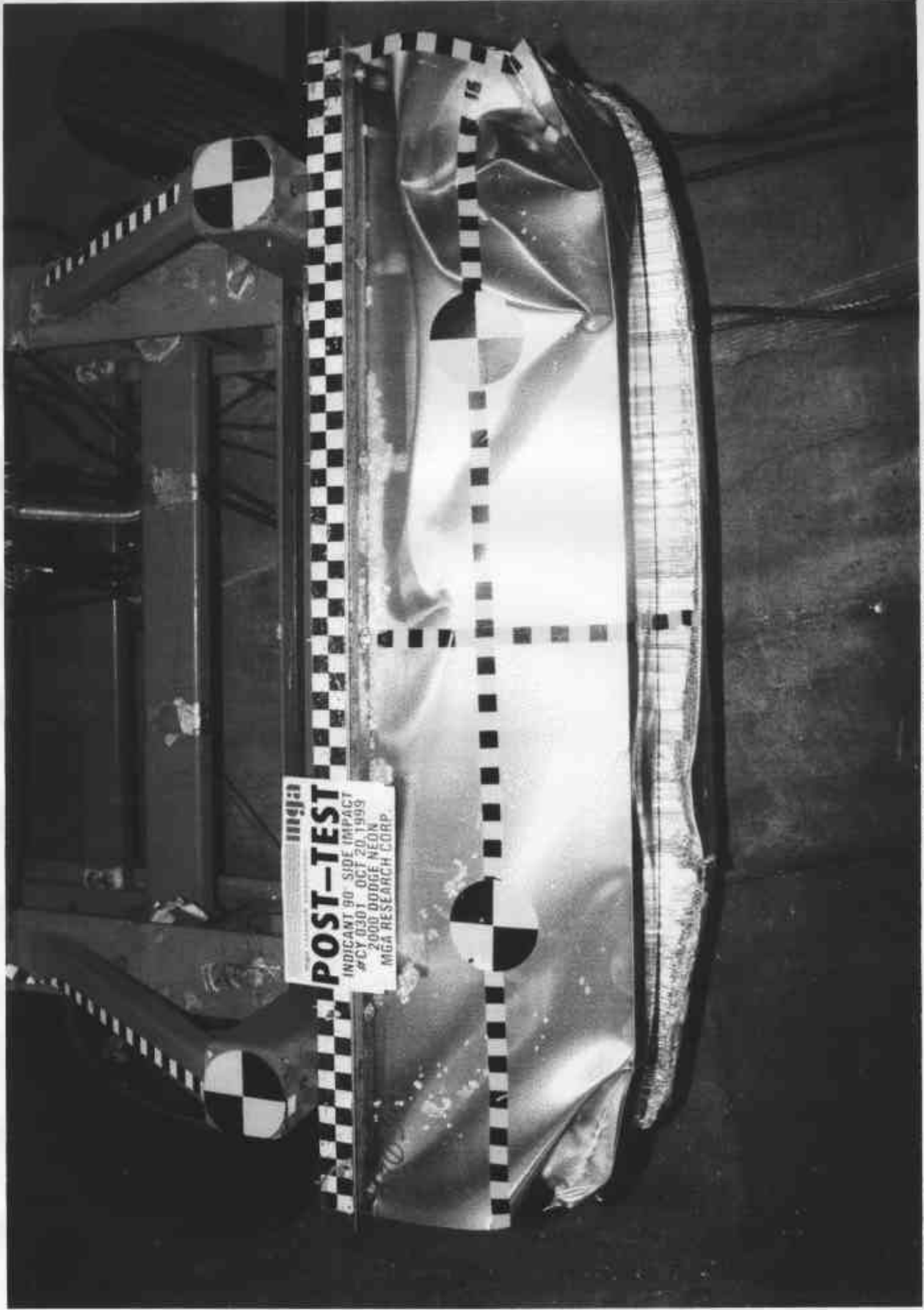
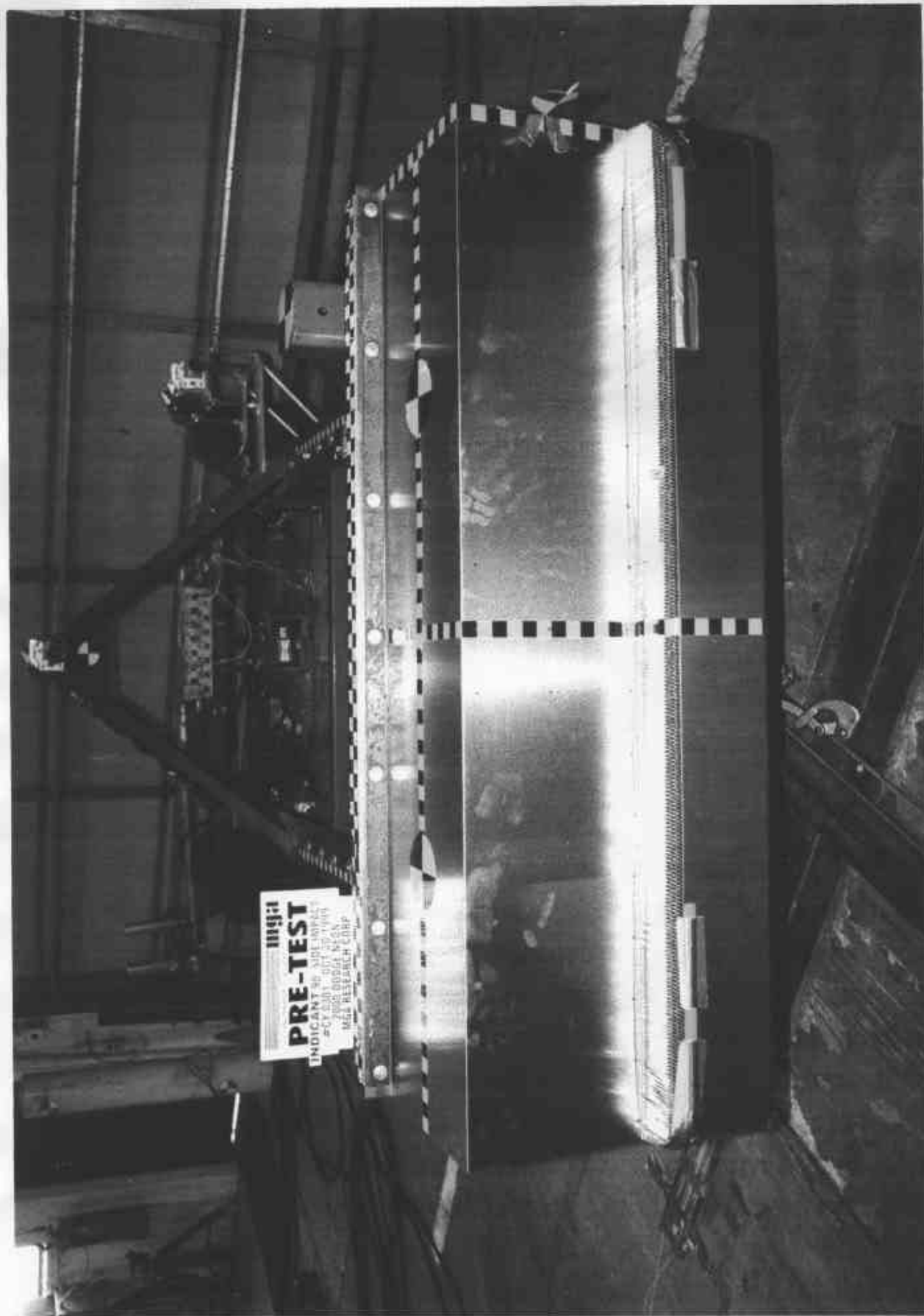


Photo No. A-14 - Post-Test MDB Top View



**PRE-TEST**  
INDICATES UP-DOWN DIRECTION  
3000 BOSTON ST  
M&A RESEARCH CORP

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

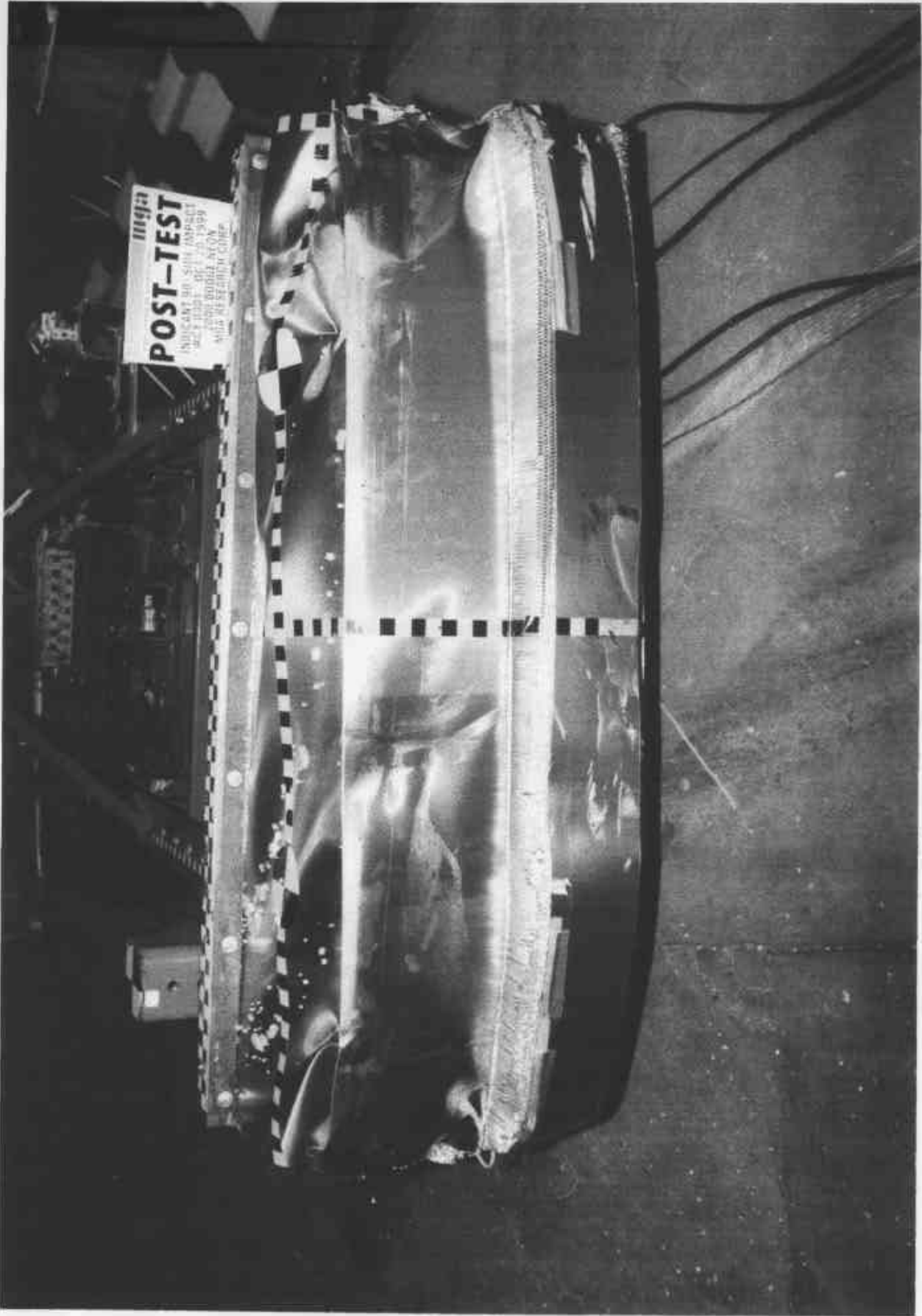


Photo No. A-16 - Post-Test MDB Front View



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



**POST-TEST**  
INDICANT 90 SIDE IMPACT  
#CY 0301 OCT 20, 1999  
2000 DODGE NEON  
MGA RESEARCH CORP.

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

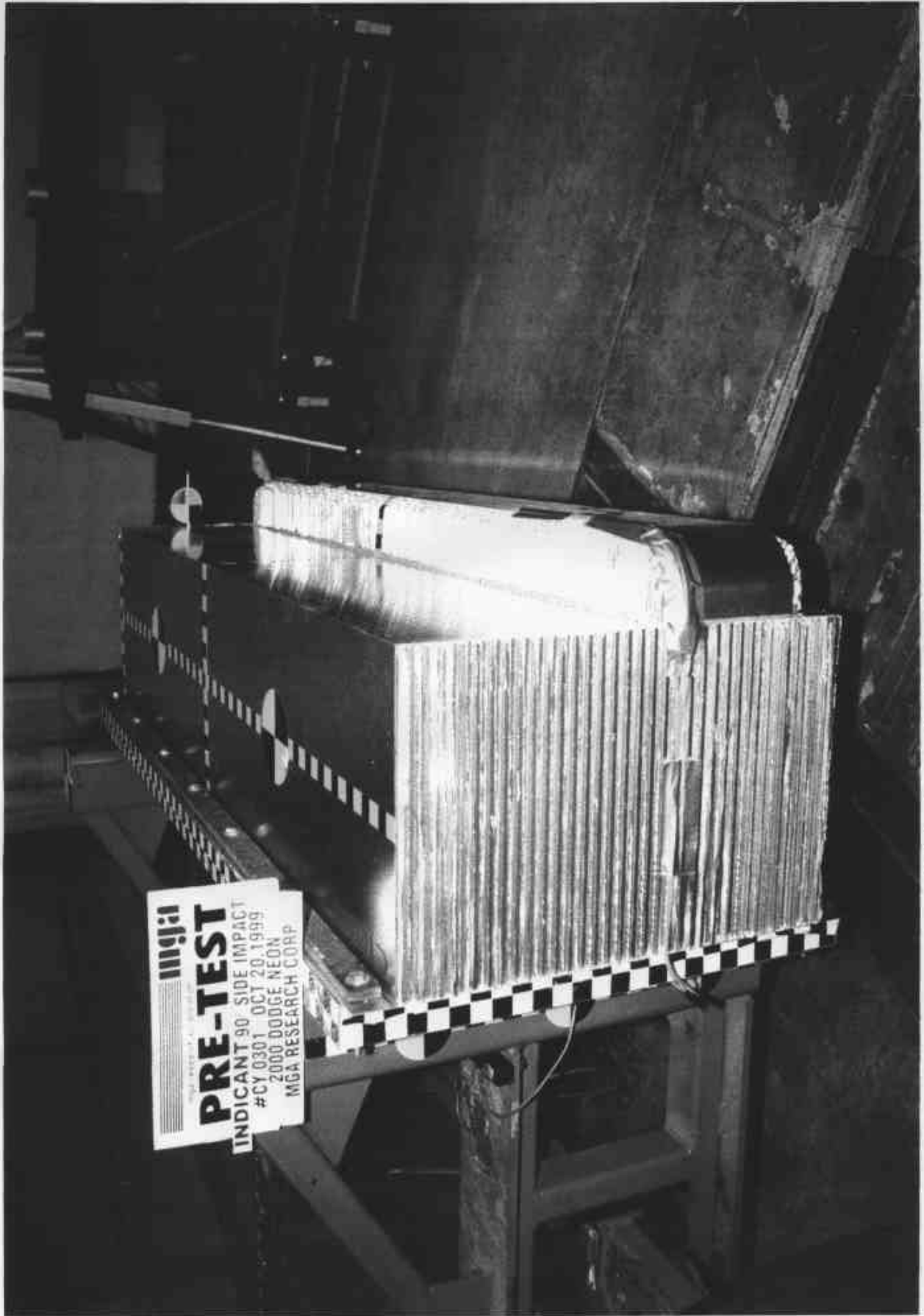


Photo No. A-19 - Pre-Test MDB Right Side View

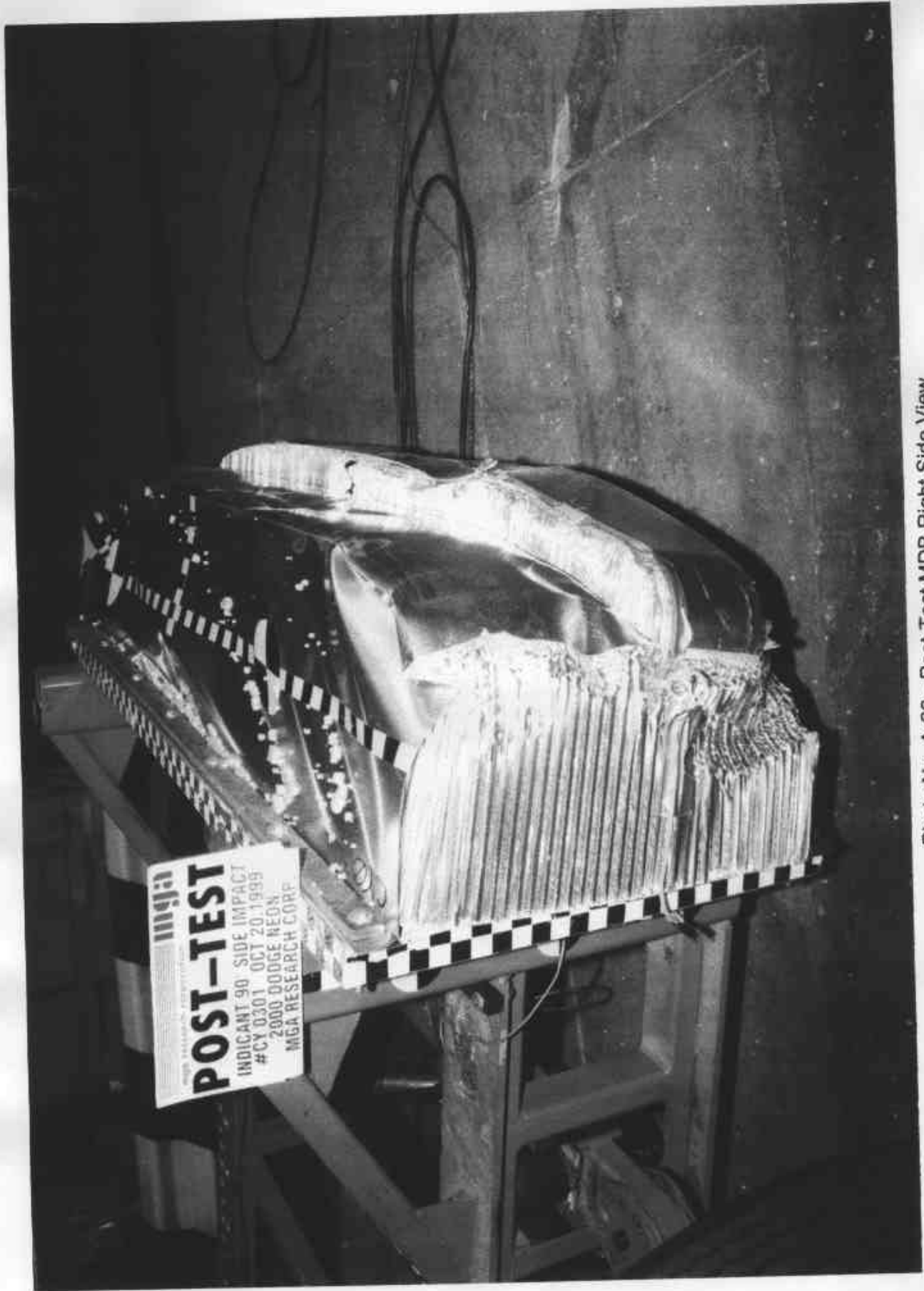


Photo No. A-20 - Post-Test MDB Right Side View

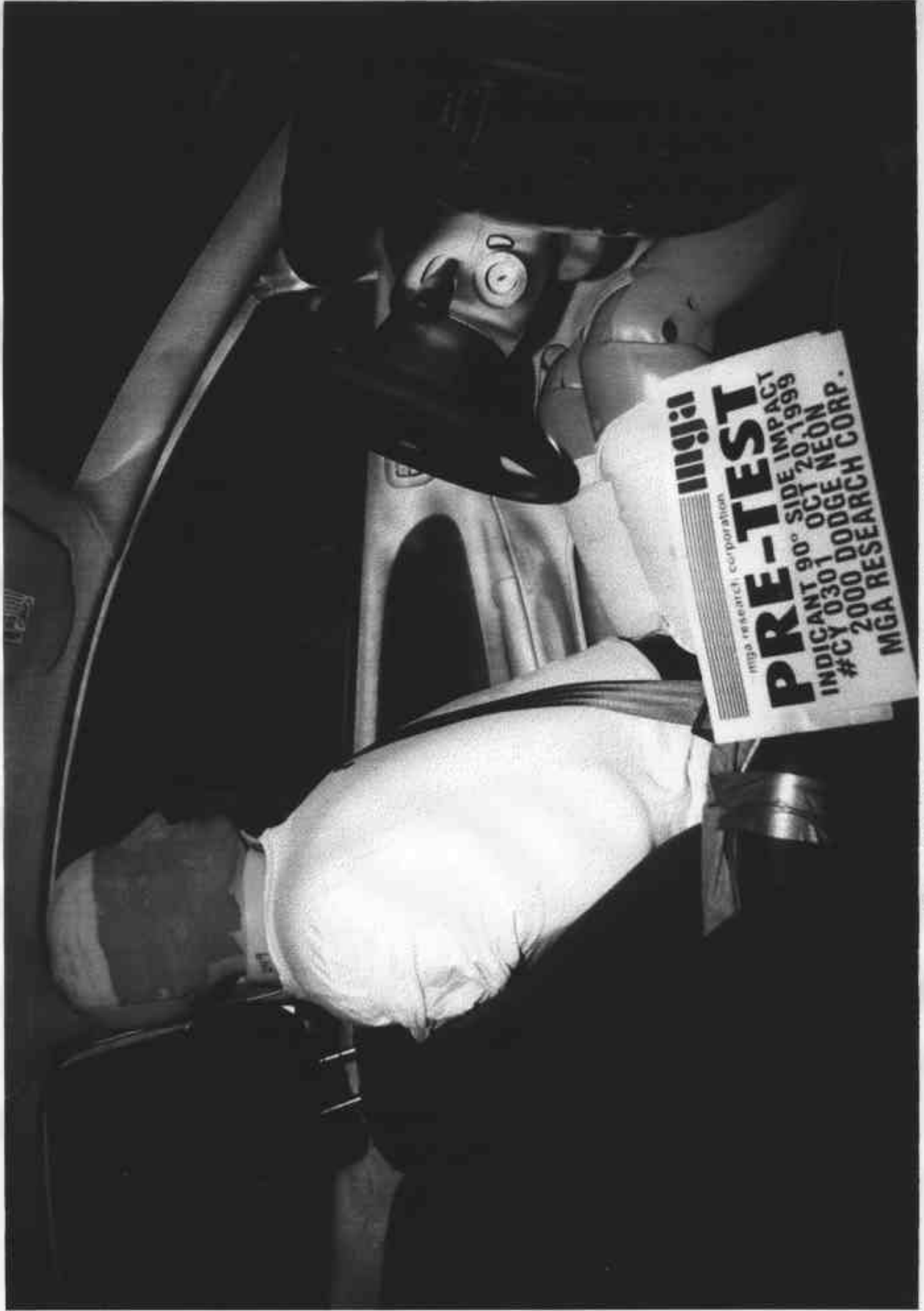


Photo No. A-21 - Pre-Test Driver Dummy Right Side View



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 - Pre-Test Rear Passenger Dummy Right Side View

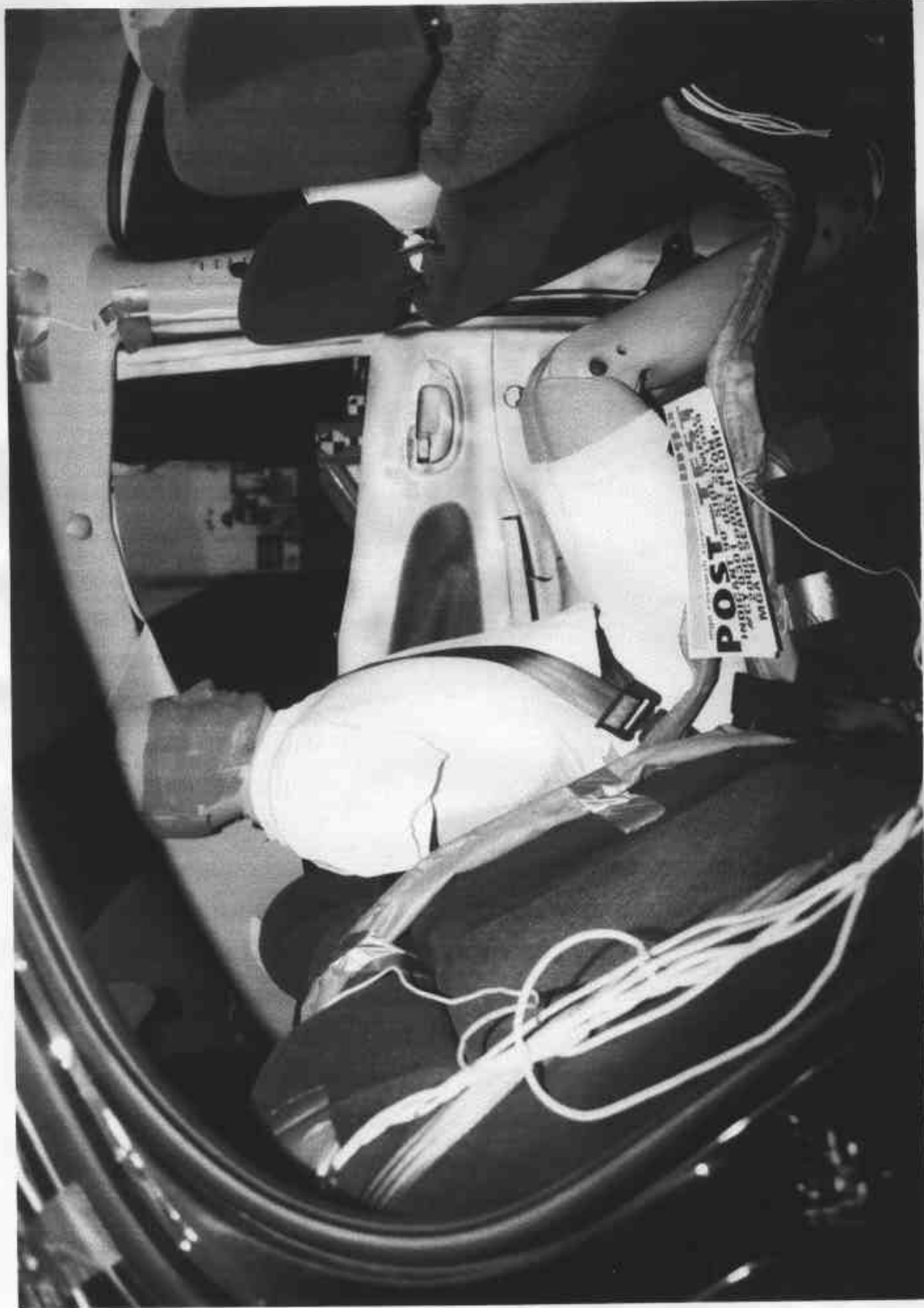


Photo No. A-30 - Post-Test Rear Passenger Dummy Right Side View



Photo No. A-31 - Pre-Test Rear Passenger Dummy Left Side View



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



Photo No. A-33 - Post-Test Rear Passenger Dummy Left Side View (Door Open)



Photo No. A-34 - Pre-Test Rear Passenger Dummy Shoulder View

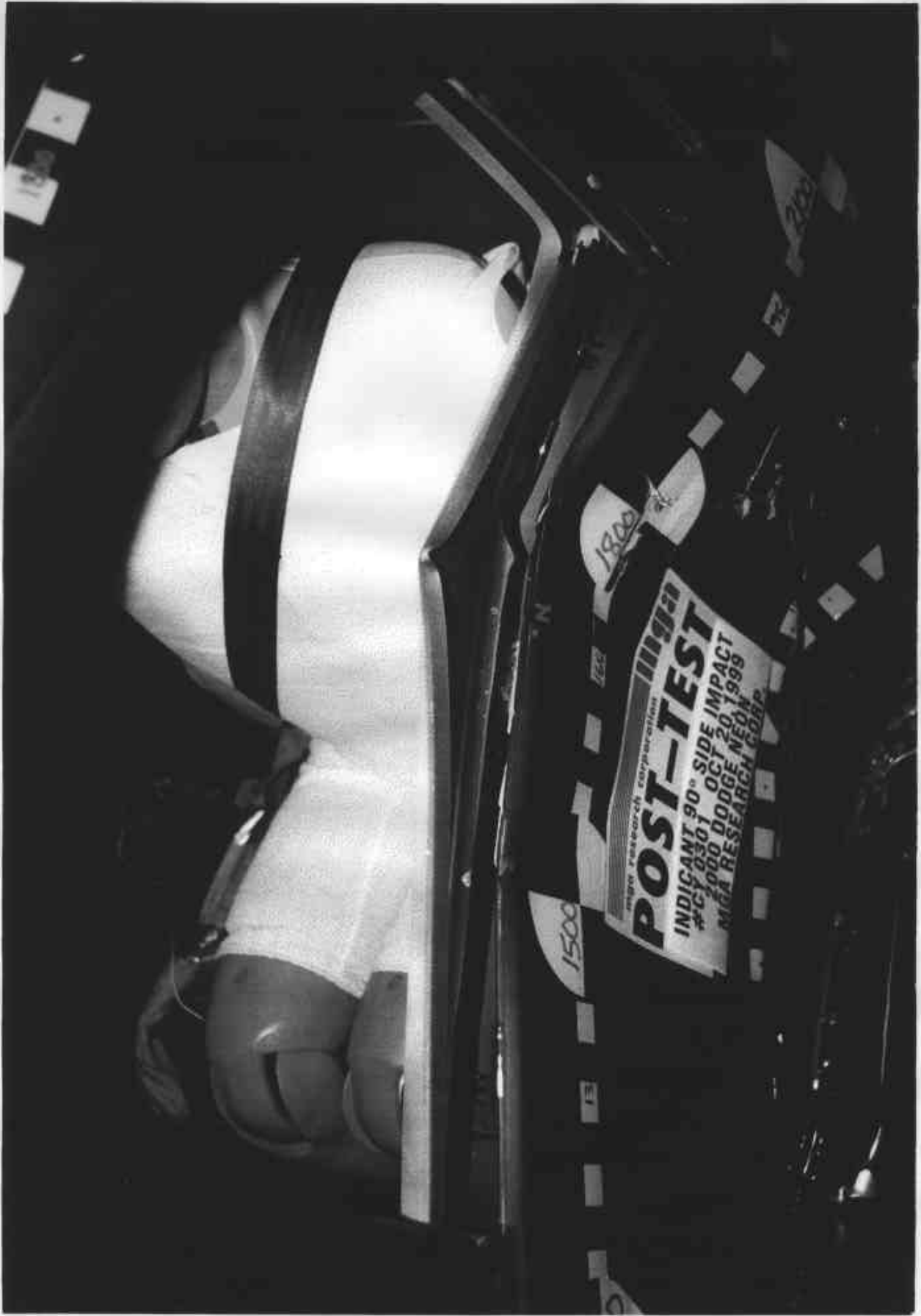


Photo No. A-35 - Post-Test Rear Passenger Dummy Shoulder View



Photo No. A-36 - Post-Test Rear Passenger Dummy Contact



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



Photo No. A-38 - Pre-Test Right Front Impact Point on Vehicle



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

A-40

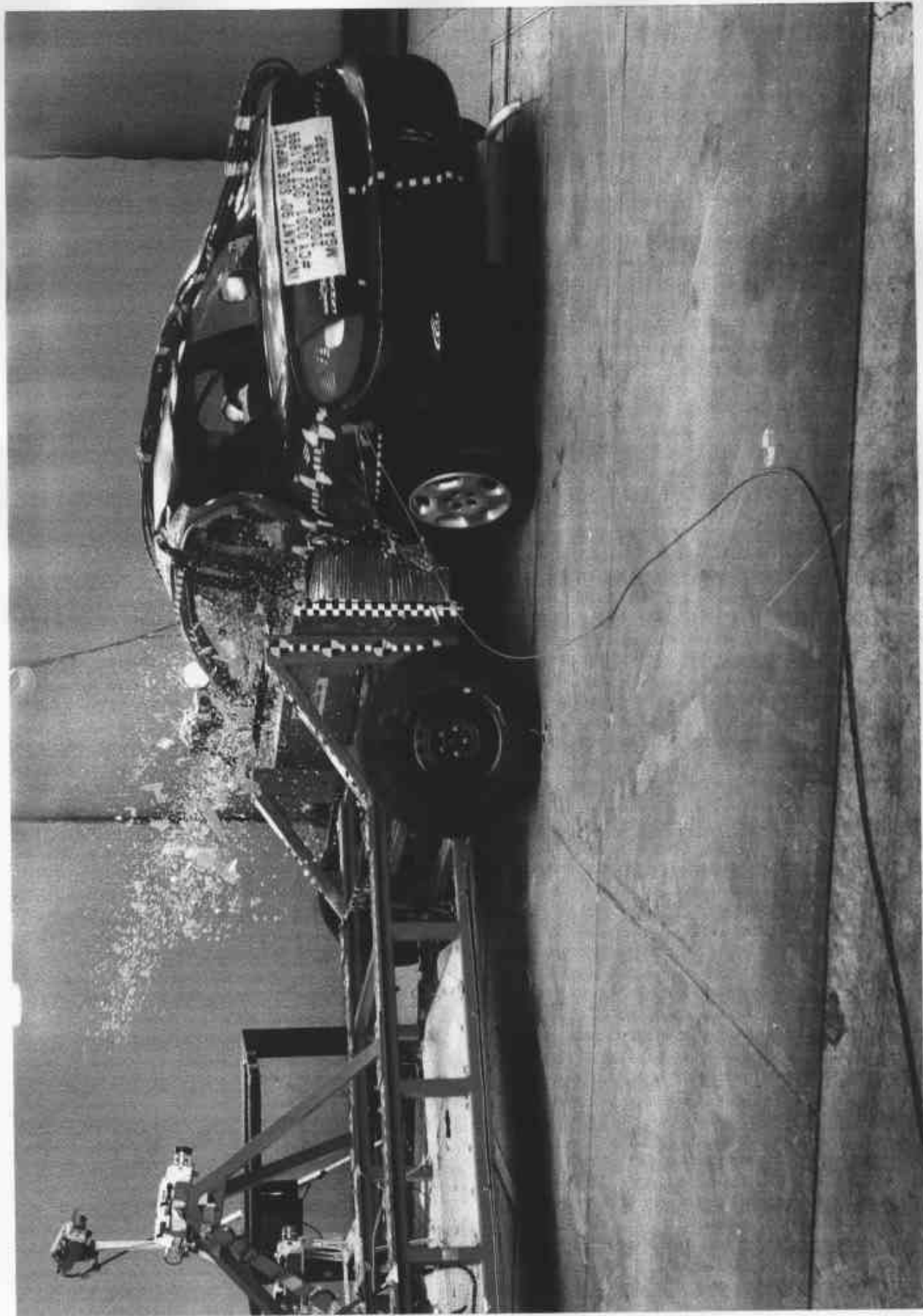
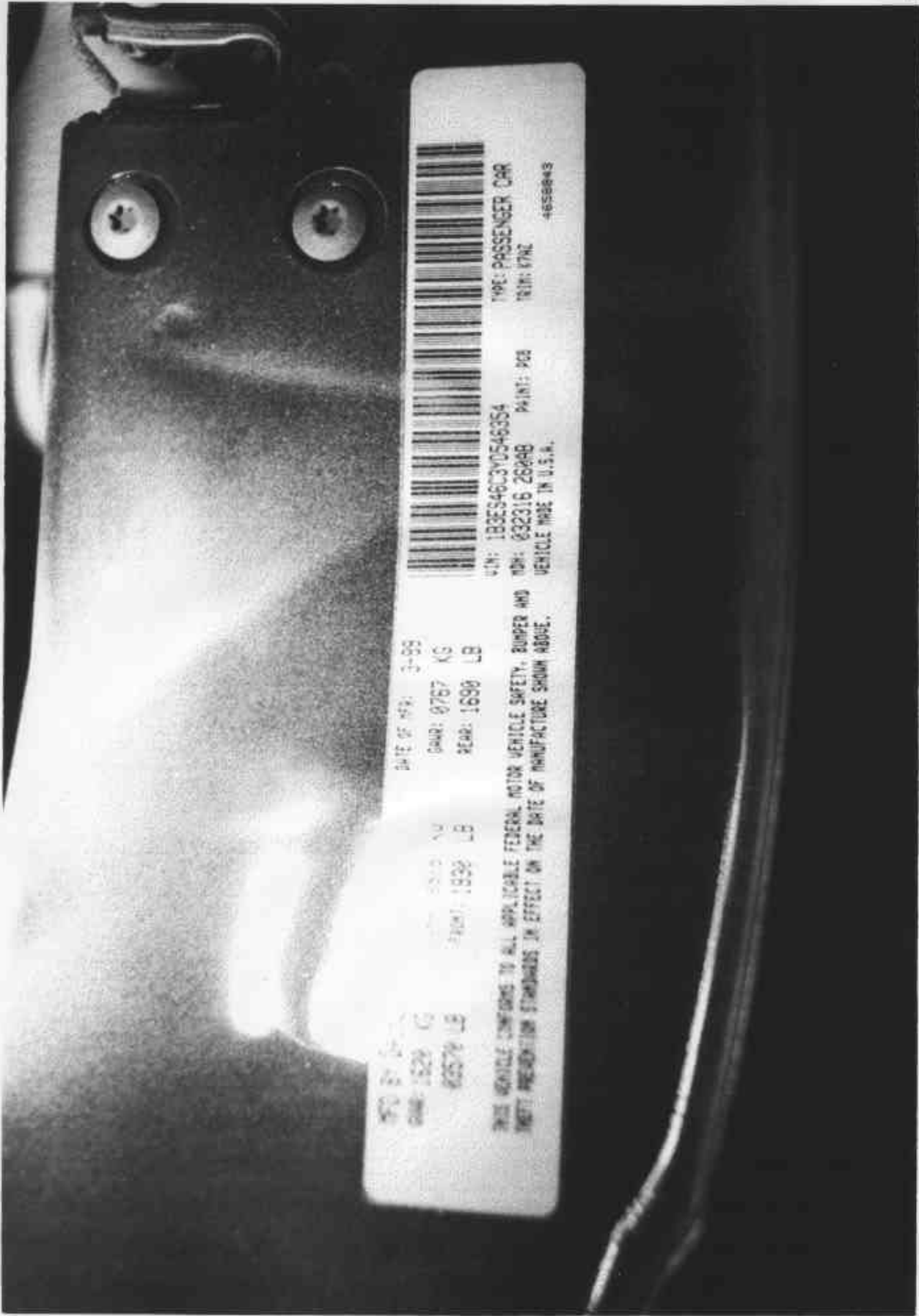


Photo No. A-40 - Impact



GROSS WT: 2529 LB  
CURB WT: 1829 LB  
FRONT: 1057 LB  
REAR: 1698 LB

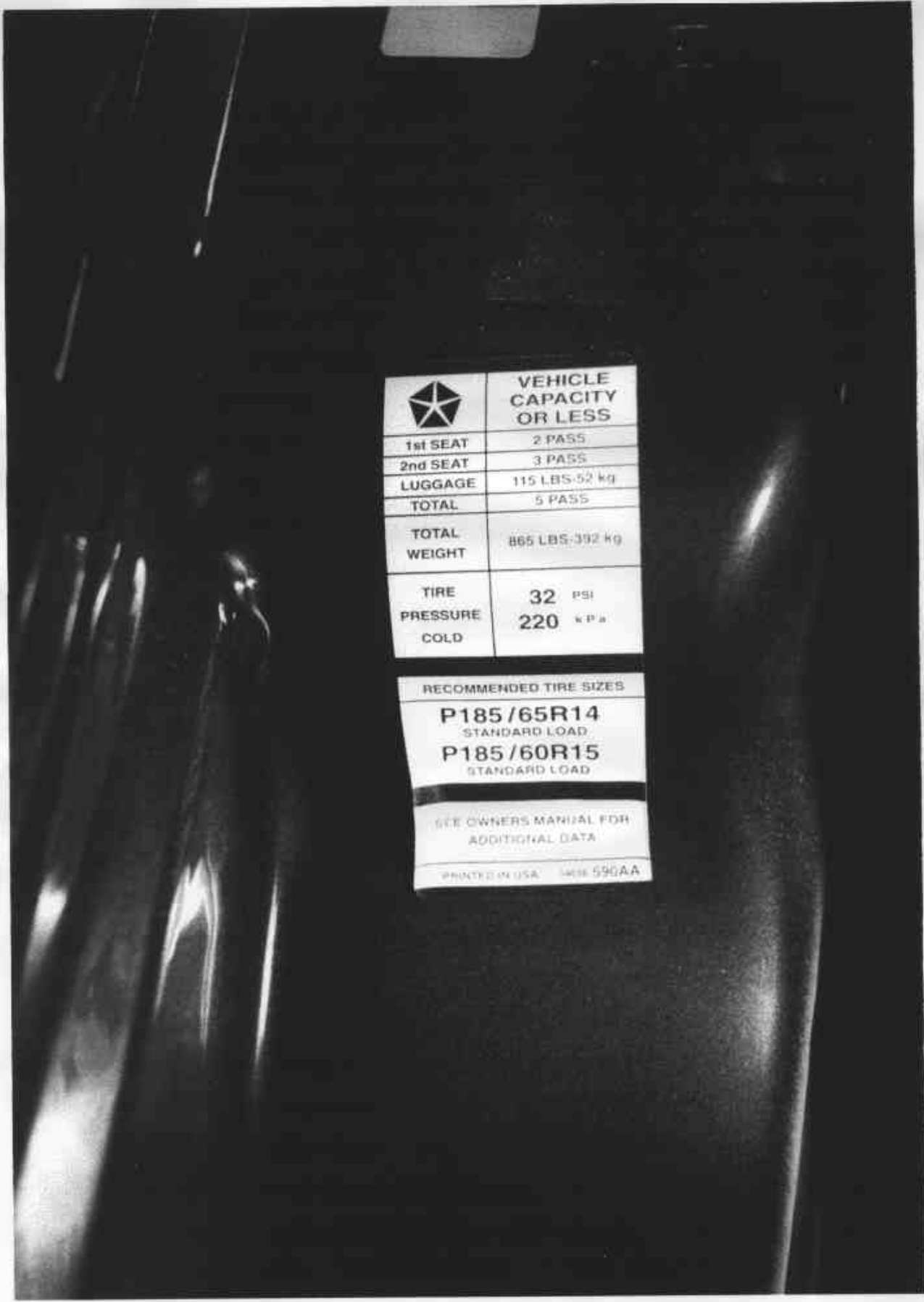
DATE OF MFG: 3-99  
GROSS WT: 2529 KG  
CURB WT: 834 KG  
FRONT: 478 KG  
REAR: 768 KG

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY, BUMPER AND  
NET WEIGHT STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.



VIN: 1B3ES46C3YD546354  
TYPE: PASSENGER CAR  
IDH: 632316 2529B  
PAINT: 908  
TRIM: 179Z  
VEHICLE MADE IN U.S.A.  
4658843

Photo No. A-41 - Vehicle Certification Label



	<b>VEHICLE CAPACITY OR LESS</b>
1st SEAT	2 PASS
2nd SEAT	3 PASS
LUGGAGE	115 LBS-52 kg
TOTAL	5 PASS
<b>TOTAL WEIGHT</b>	<b>865 LBS-392 kg</b>
TIRE PRESSURE COLD	<b>32</b> PSI <b>220</b> kPa

RECOMMENDED TIRE SIZES

**P185 /65R14**  
STANDARD LOAD

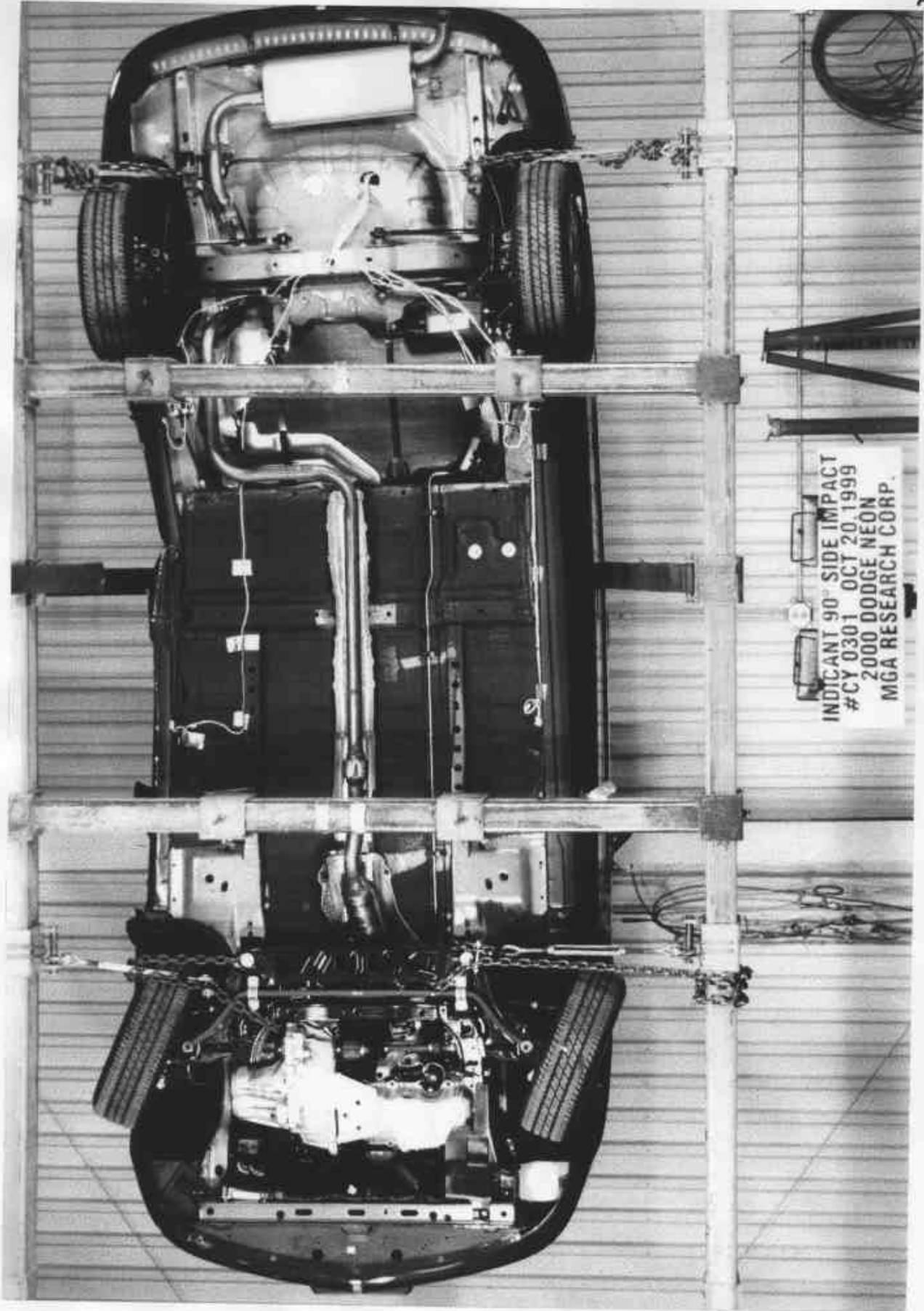
**P185 /60R15**  
STANDARD LOAD

SEE OWNERS MANUAL FOR  
ADDITIONAL DATA

PRINTED IN USA WISE 590AA

Photo No. A-42 - Tire Placard

A-43



INDICANT 90° SIDE IMPACT  
#CY 0301 OCT 20, 1999  
2000 DODGE NEON  
MGA RESEARCH CORP.

Photo No. A-43 - Rollover 90°

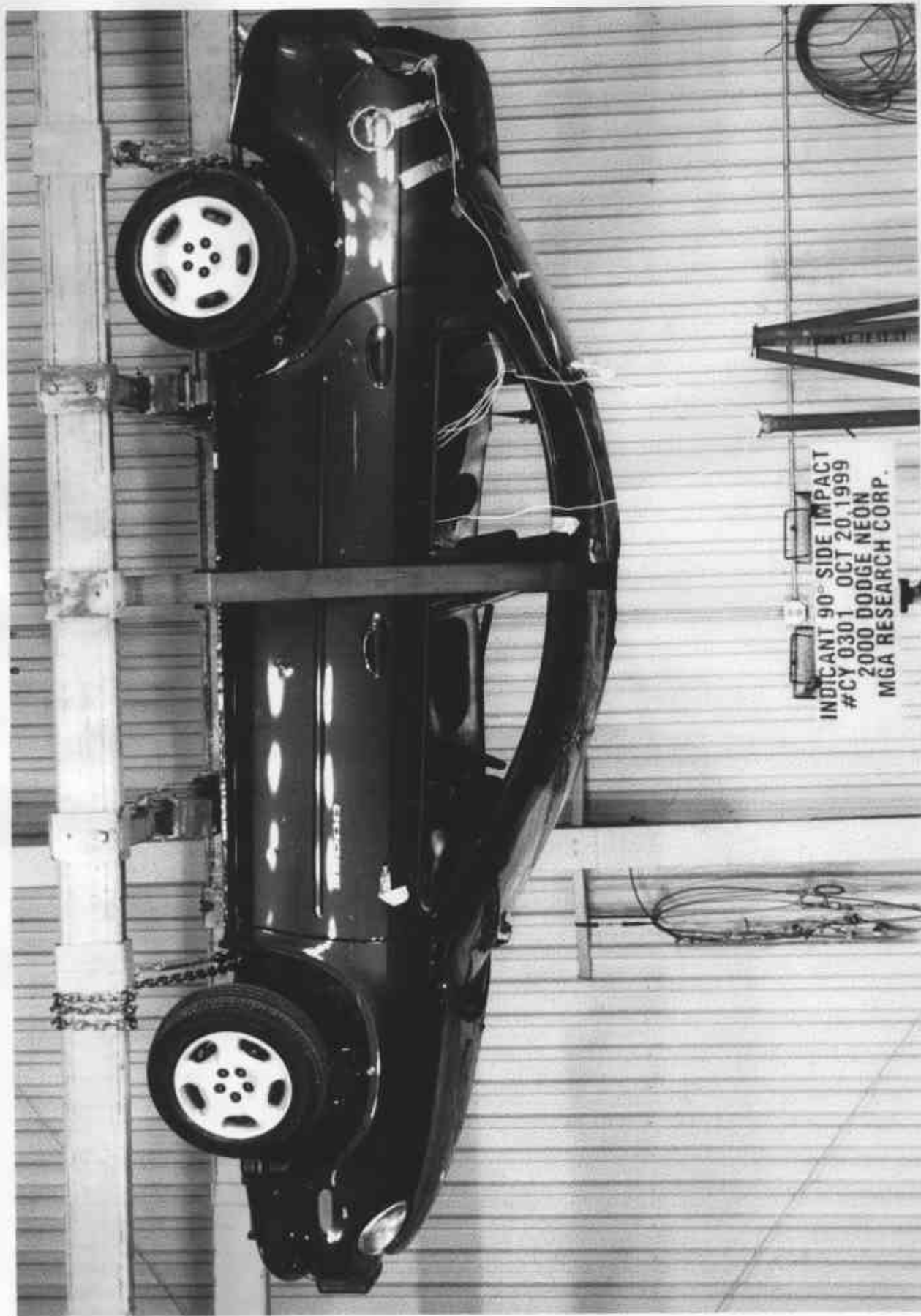


Photo No. A-44 - Rollover 180°

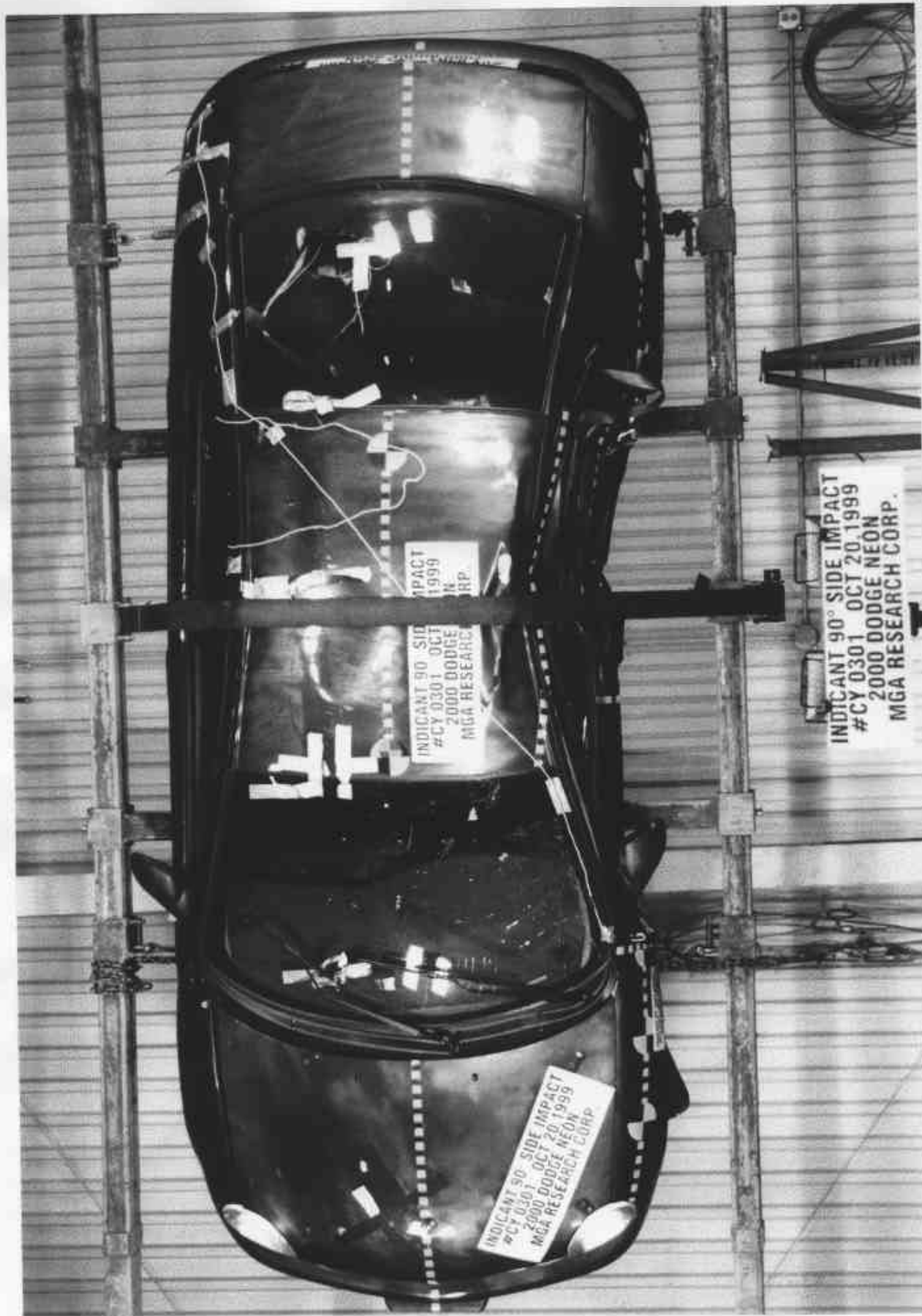


Photo No. A-45 - Rollover 270°

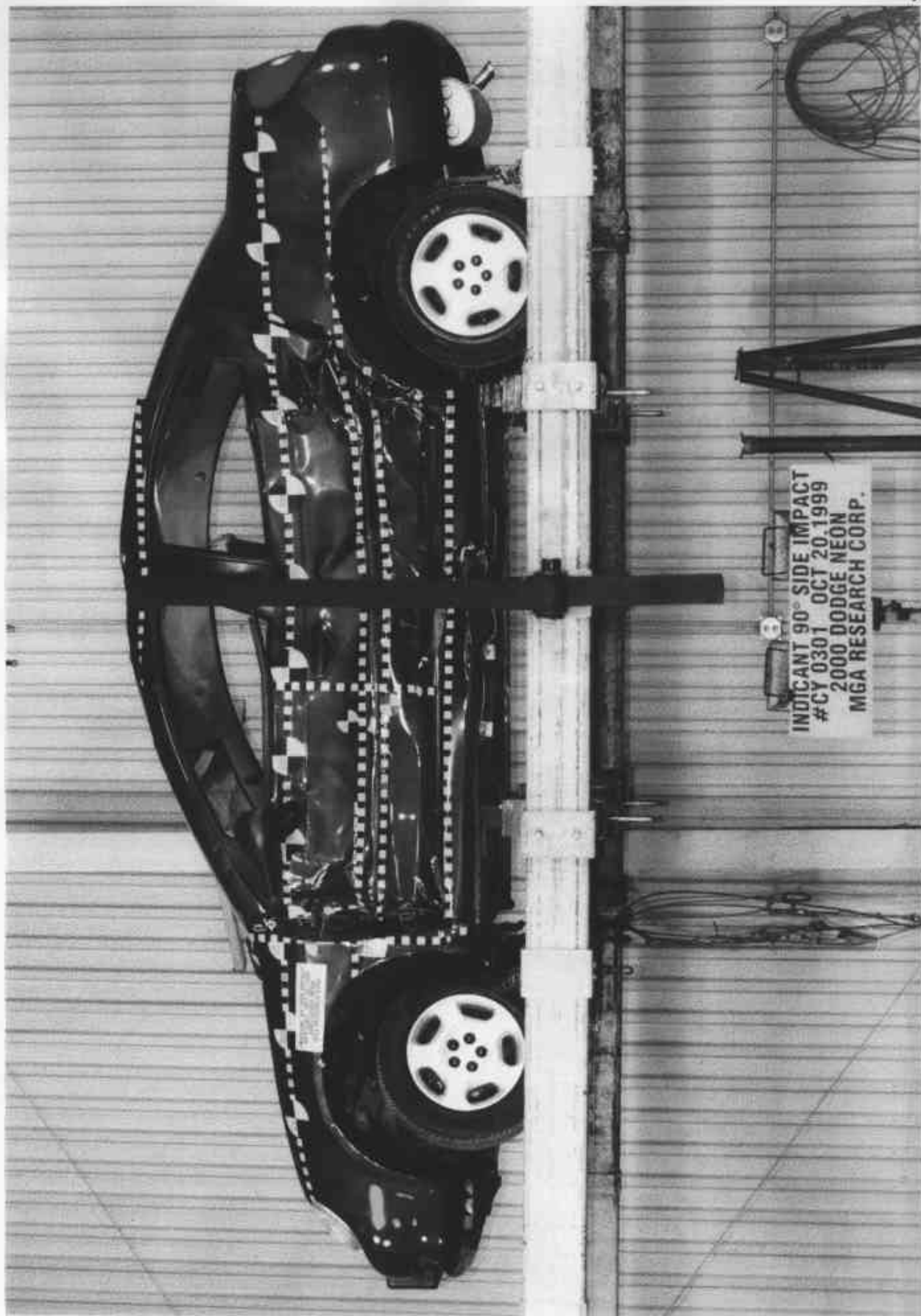


Photo No. A-46 - Rollover 360°

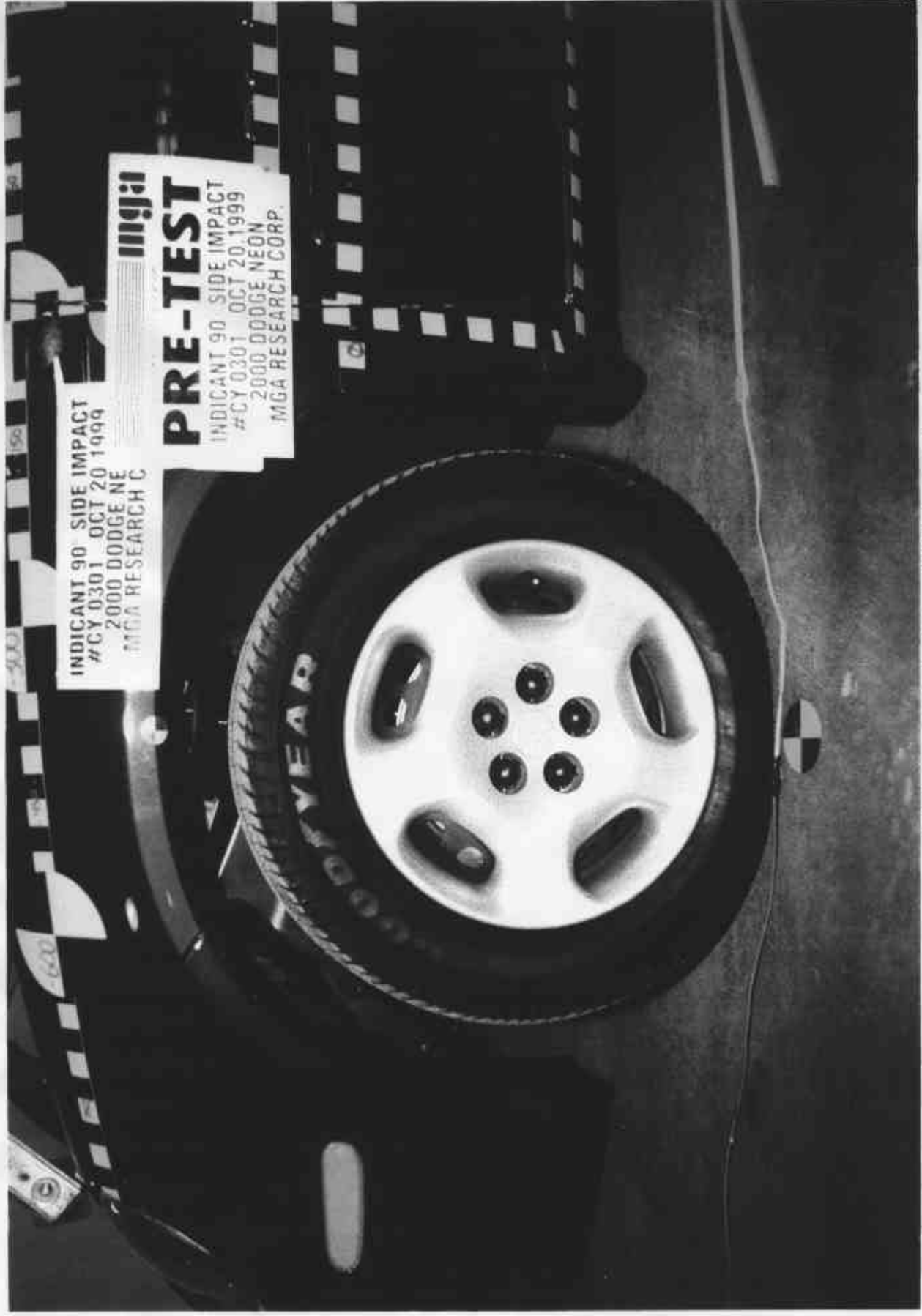


Photo No. A-47 - Left Front Attitude Point

**PRE-TEST**  
INDICANT 90° SIDE IMPACT  
#CY 0301 OCT 20, 1999  
2000 DODGE NEON  
MGA RESEARCH CORP.

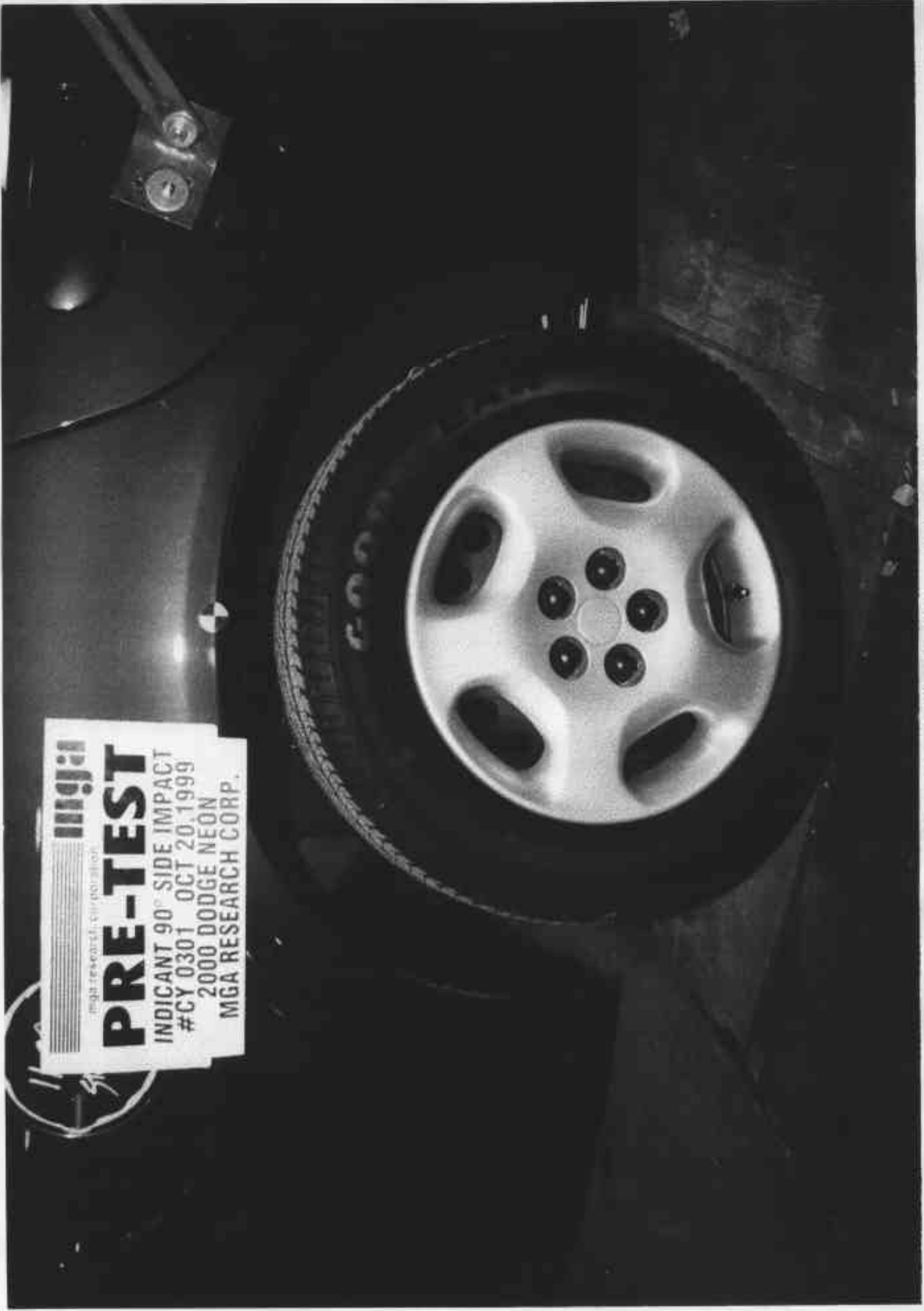


Photo No. A-48 - Right Front Attitude Point

**mga**  
MGA RESEARCH CORP.  
**PRE-TEST**  
INDICANT 90° SIDE IMPACT  
#CY 0301 OCT 20, 1999  
2000 DODGE NEON  
MGA RESEARCH CORP.



Photo No. A-49 - Left Rear Attitude Point



**MGA**  
mga research corp.  
**PRE-TEST**  
INDICANT 90° SIDE IMPACT  
#CY 0301 OCT 20, 1999  
2000 DODGE NEON  
MGA RESEARCH CORP.

Photo No. A-50 - Right Rear Attitude Point

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\* Data not valid after approximately 67 msec.

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\* Data not valid after approximately 42 msec.

\*\* Data not valid after approximately 42 msec.

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TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

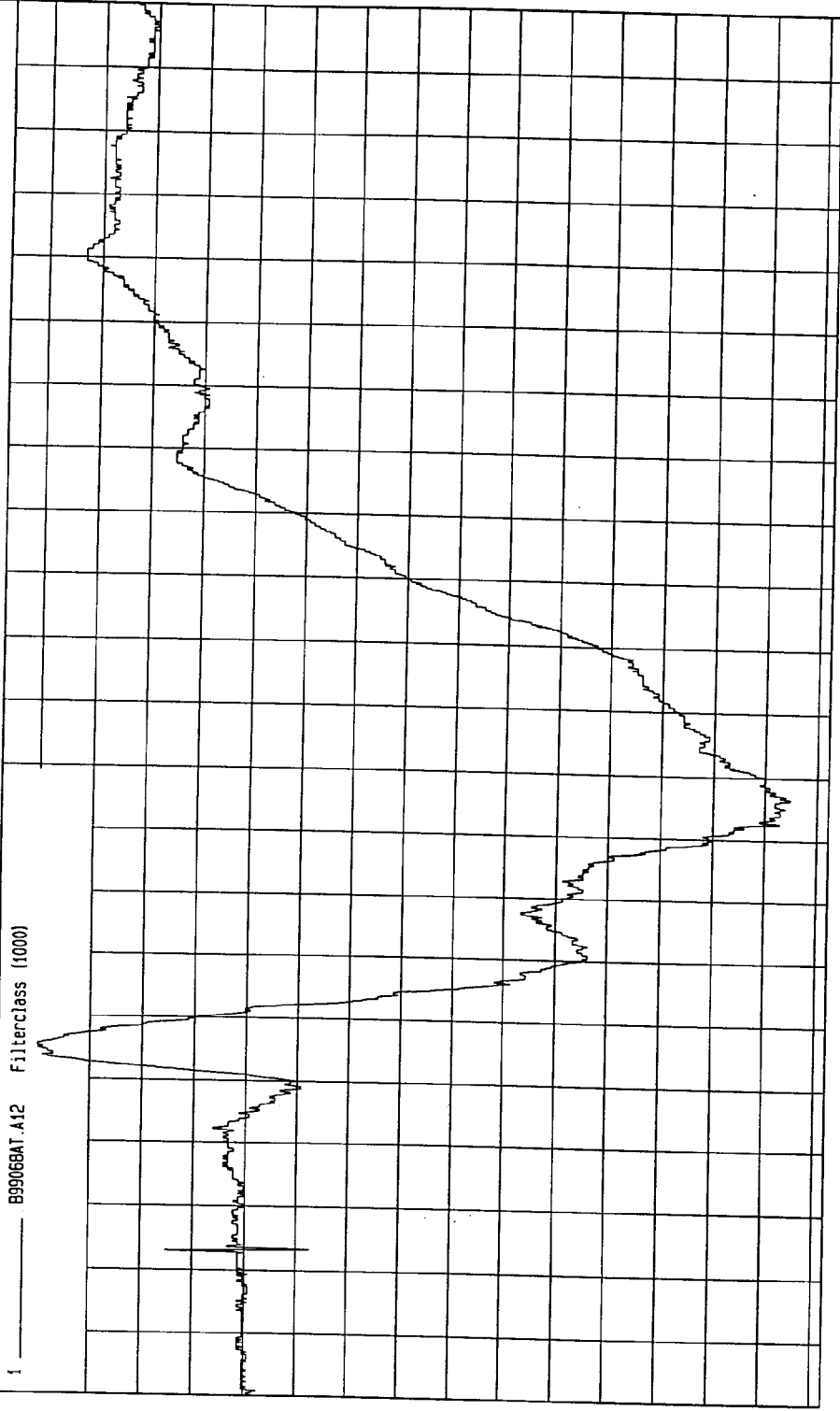
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -20.99 G'S at 76 msec

Maximum = 7.99 G'S at 35 msec

DRIVER HEAD X ACCELERATION

1 ——— B99066AT.A12 FilterClass (1000)



MGA Research  
08-09-2000 08.06

TIME (SECONDS)

G'S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

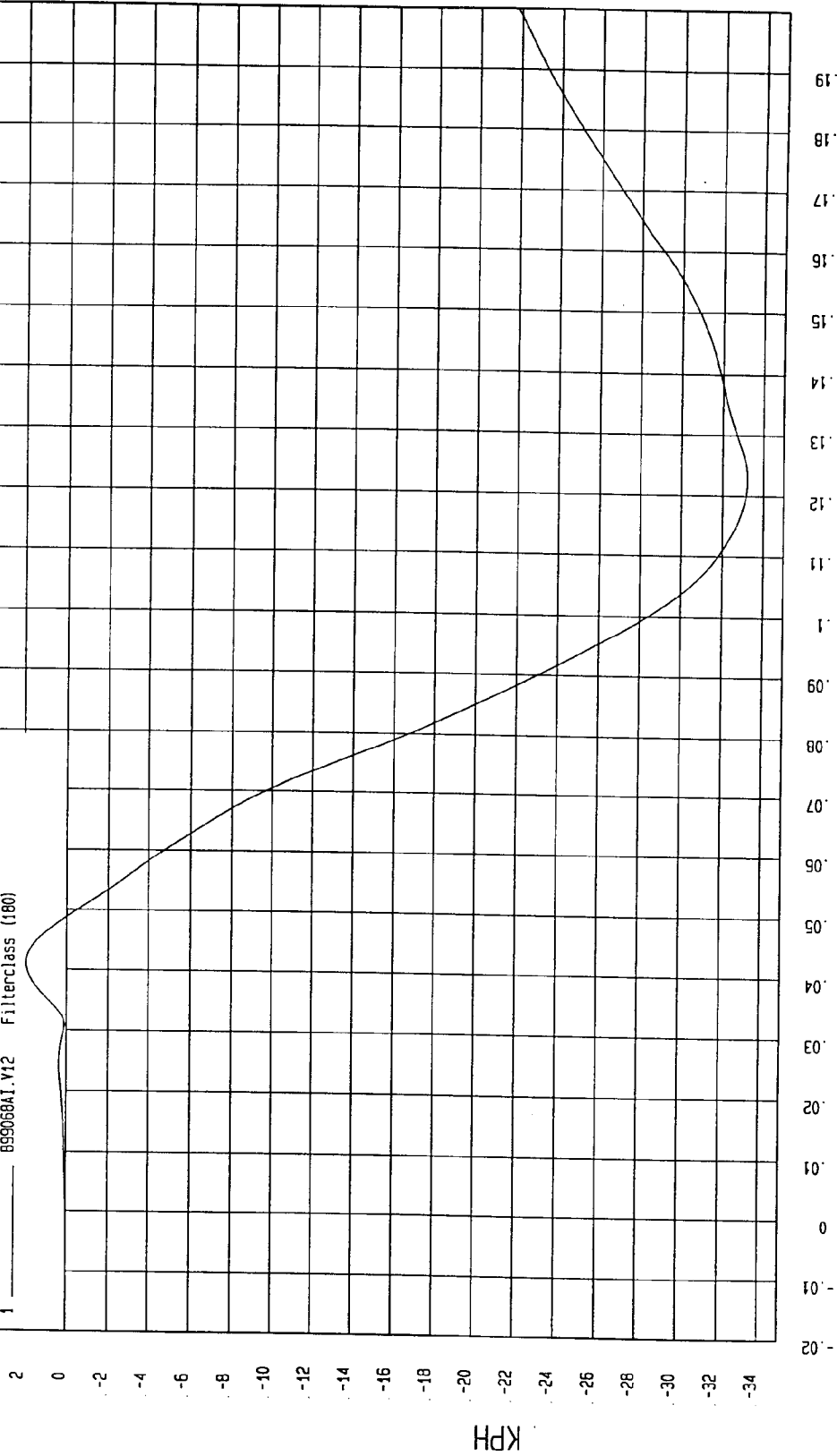
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -33.23 KPH at 123 msec

Maximum = 1.92 KPH at 41 msec

DRIVER HEAD X VELOCITY

1 ——— 899068A1.V12 Filterclass (180)



NCA Research  
08-09-2000 08:17

TEST: INDICANT SIDE IMPACT

TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)

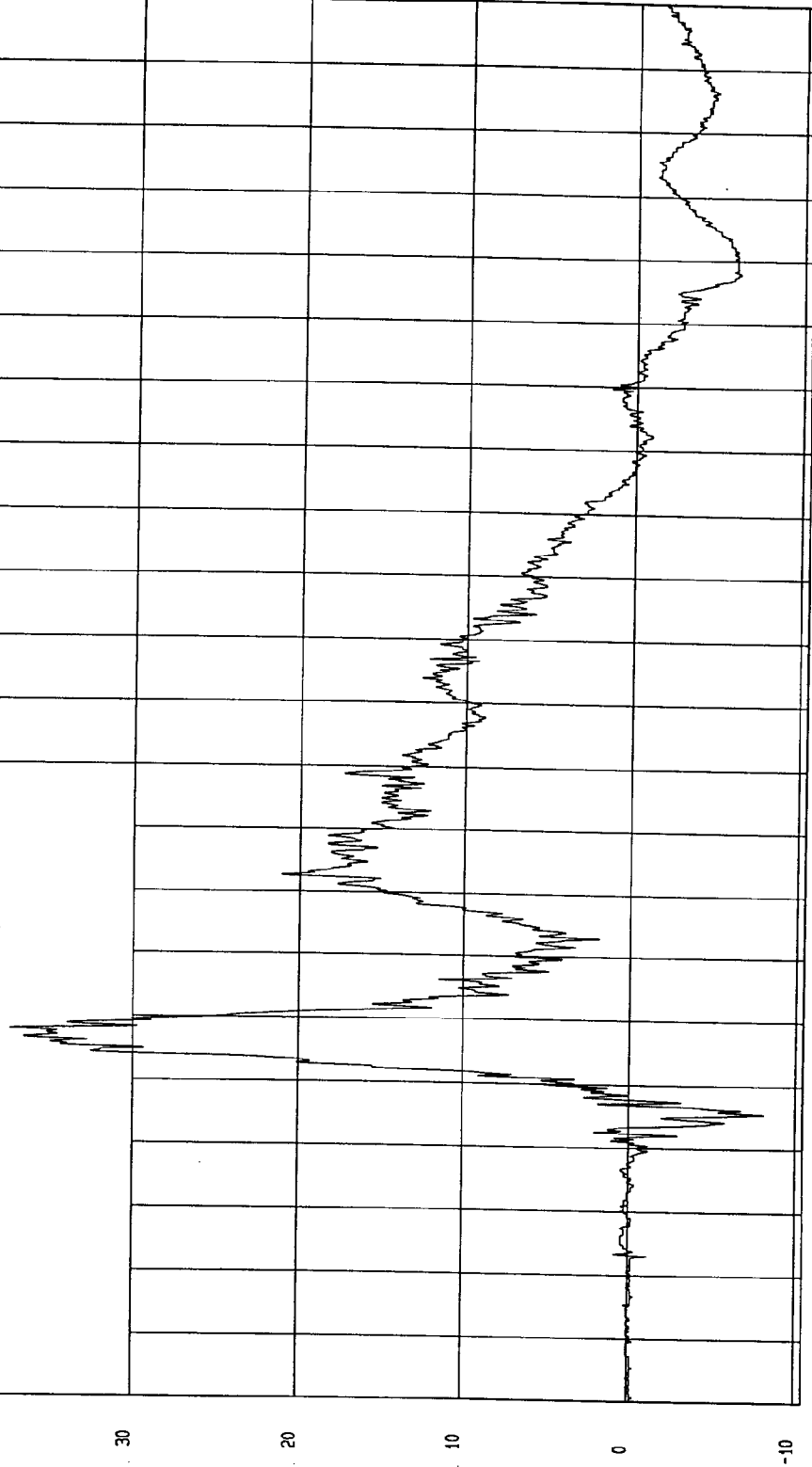
Speed: 38 MPH 61.2 KPH

Minimum = -8.17 G'S at 26 msec

Maximum = 37.36 G'S at 36 msec

DRIVER HEAD Y ACCELERATION

1 ——— 899068AT.A13 Filterclass (1000)



TIME (SECONDS)

MGA Research  
08-09-2000 08:06

TEST: INDICANT SIDE IMPACT

TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)

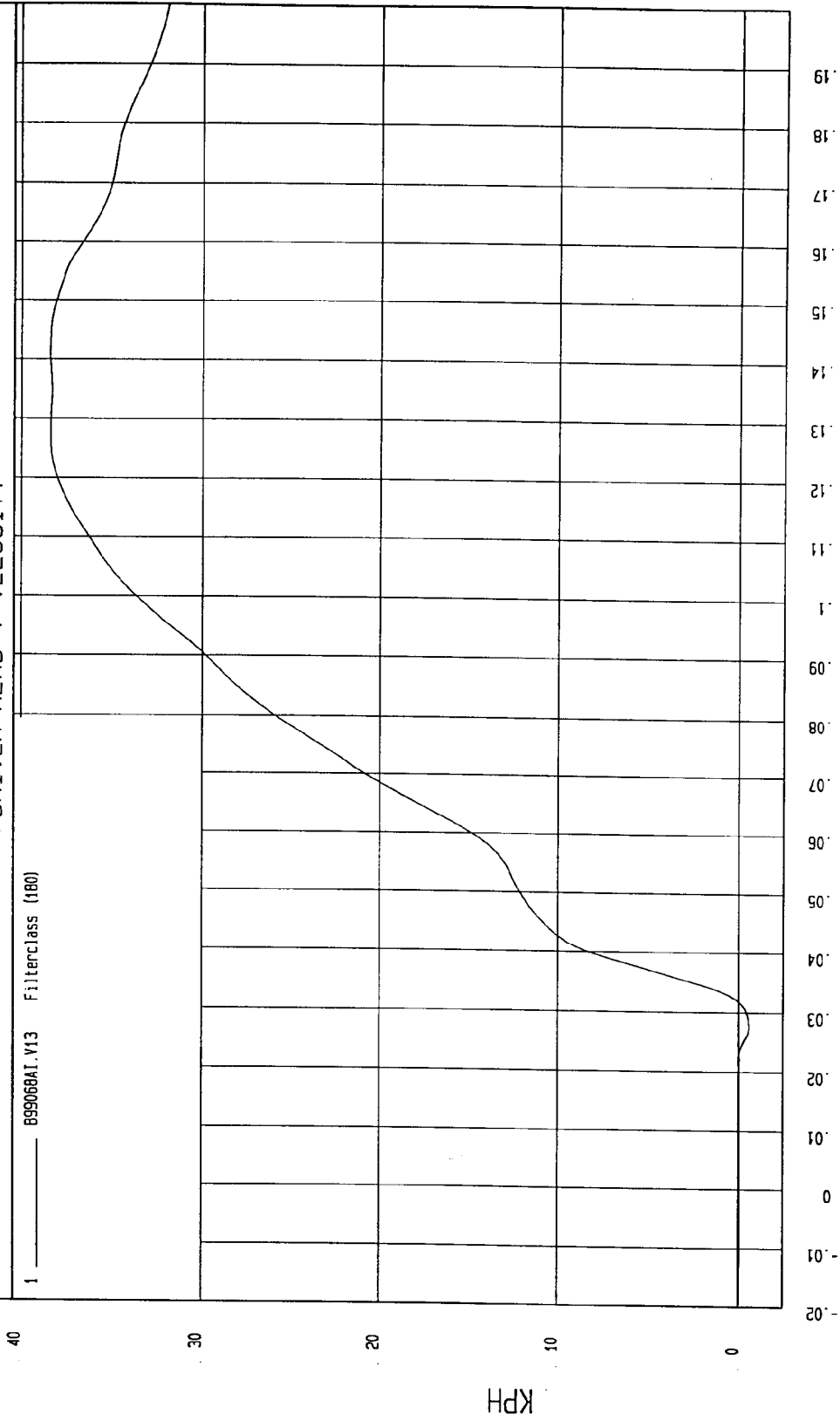
Speed: 38 MPH 61.2 KPH

Minimum = -6 KPH at 28 msec

Maximum = 38.44 KPH at 141 msec

DRIVER HEAD Y VELOCITY

1 \_\_\_\_\_ 899068A1.V13 Filterclass (180)



MSA Research  
08-09-2000 08: 17

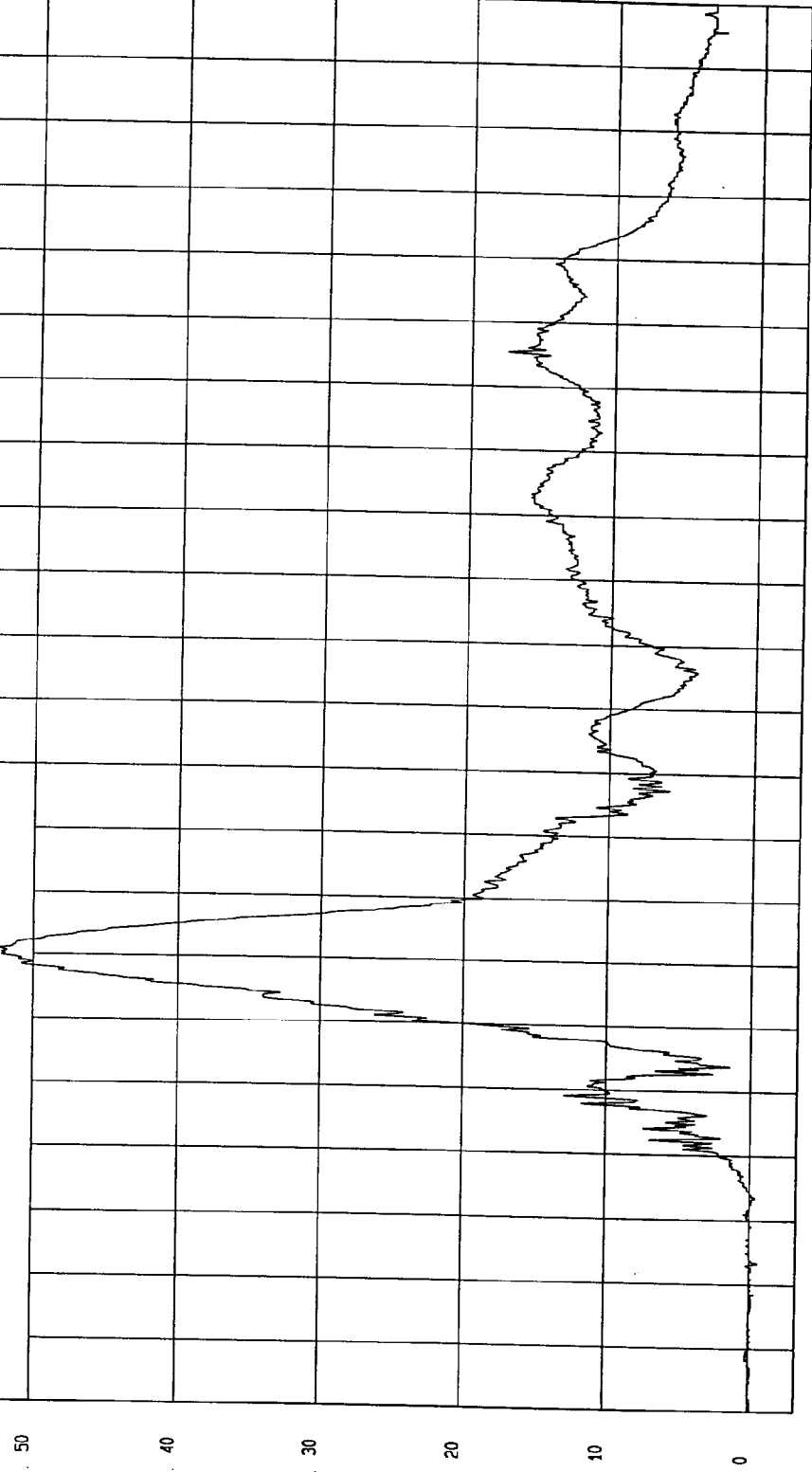
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -57 G'S at 3 msec  
Maximum = 52.38 G'S at 51 msec

DRIVER HEAD Z ACCELERATION

1 ——— B99066AT.A14 Filterclass (1000)



MECA Research  
08-09-2000 08:05

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

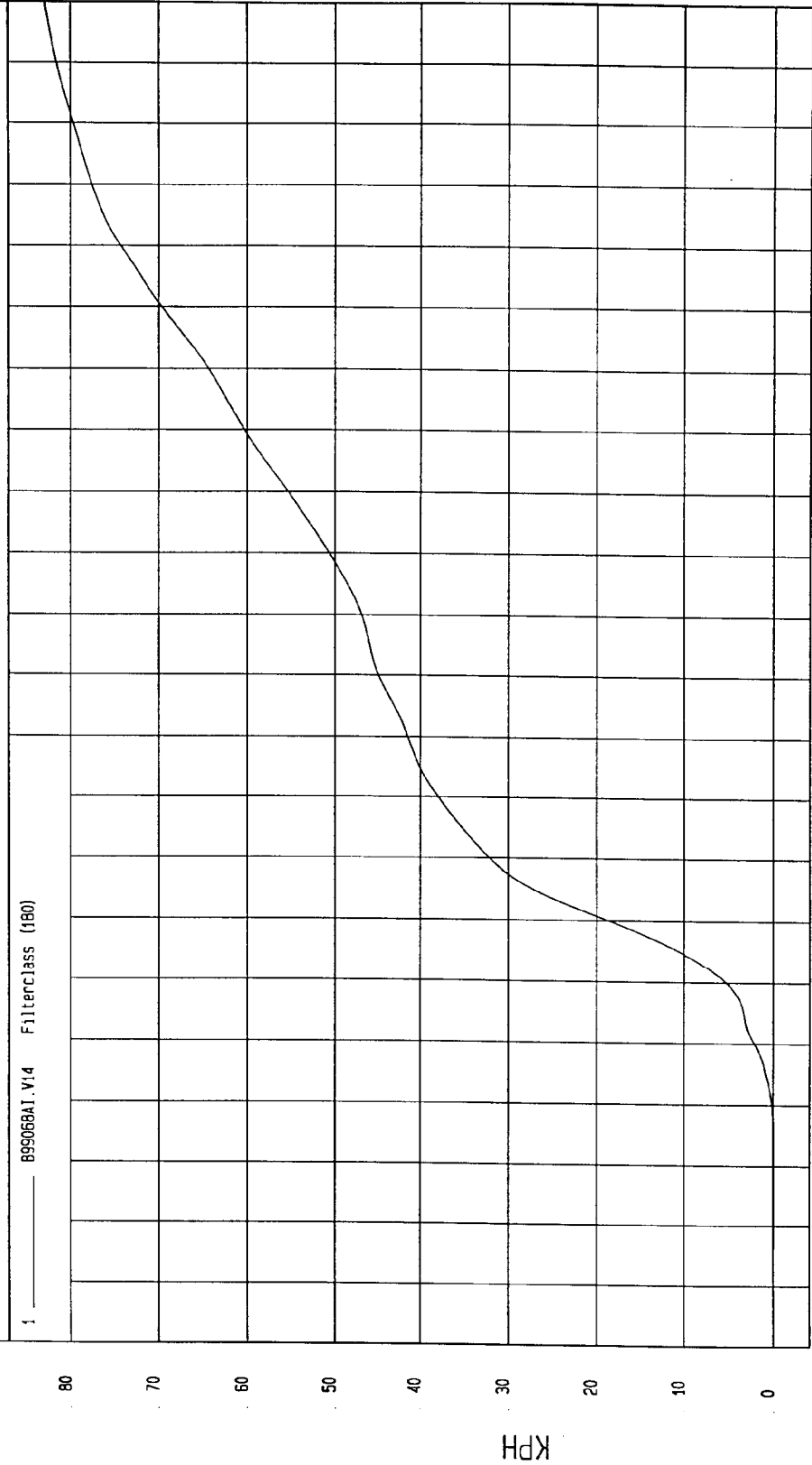
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -3.42E-02 KPH at 4 msec

Maximum = 82.92 KPH at 200 msec

DRIVER HEAD Z VELOCITY

1 895068A1.V14 FilterClass (180)



TIME Seconds

MGA Research  
08-09-2000 08.17

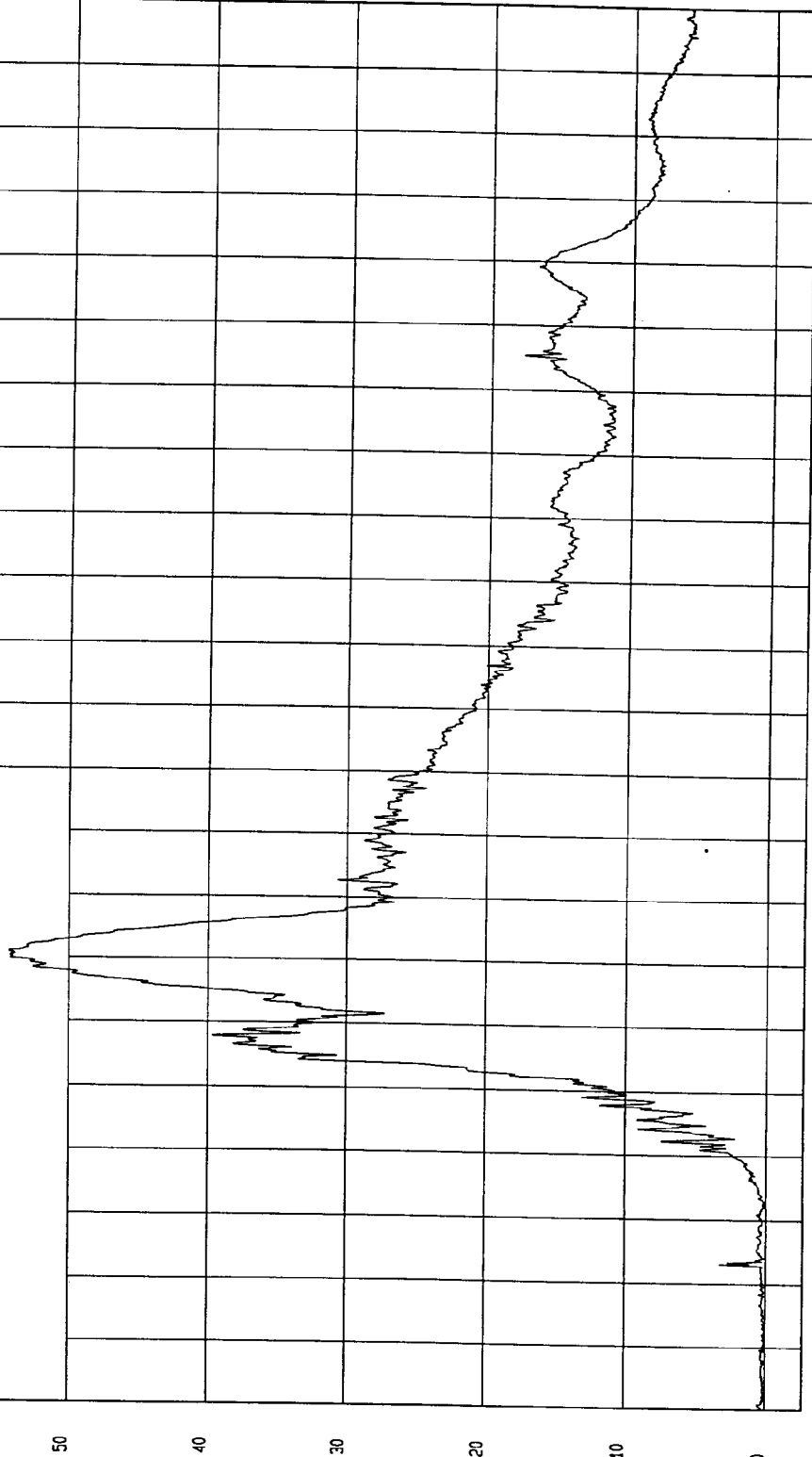
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 7.8E-02 G'S at -18 msec  
Maximum = 54.3 G'S at 51 msec

DRIVER HEAD RESULTANT ACCELERATION

1 \_\_\_\_\_ B99068AV.A12 Filterclass (1000)



TIME (SECONDS)

MCA Research  
08-09-2000 Oct 07

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

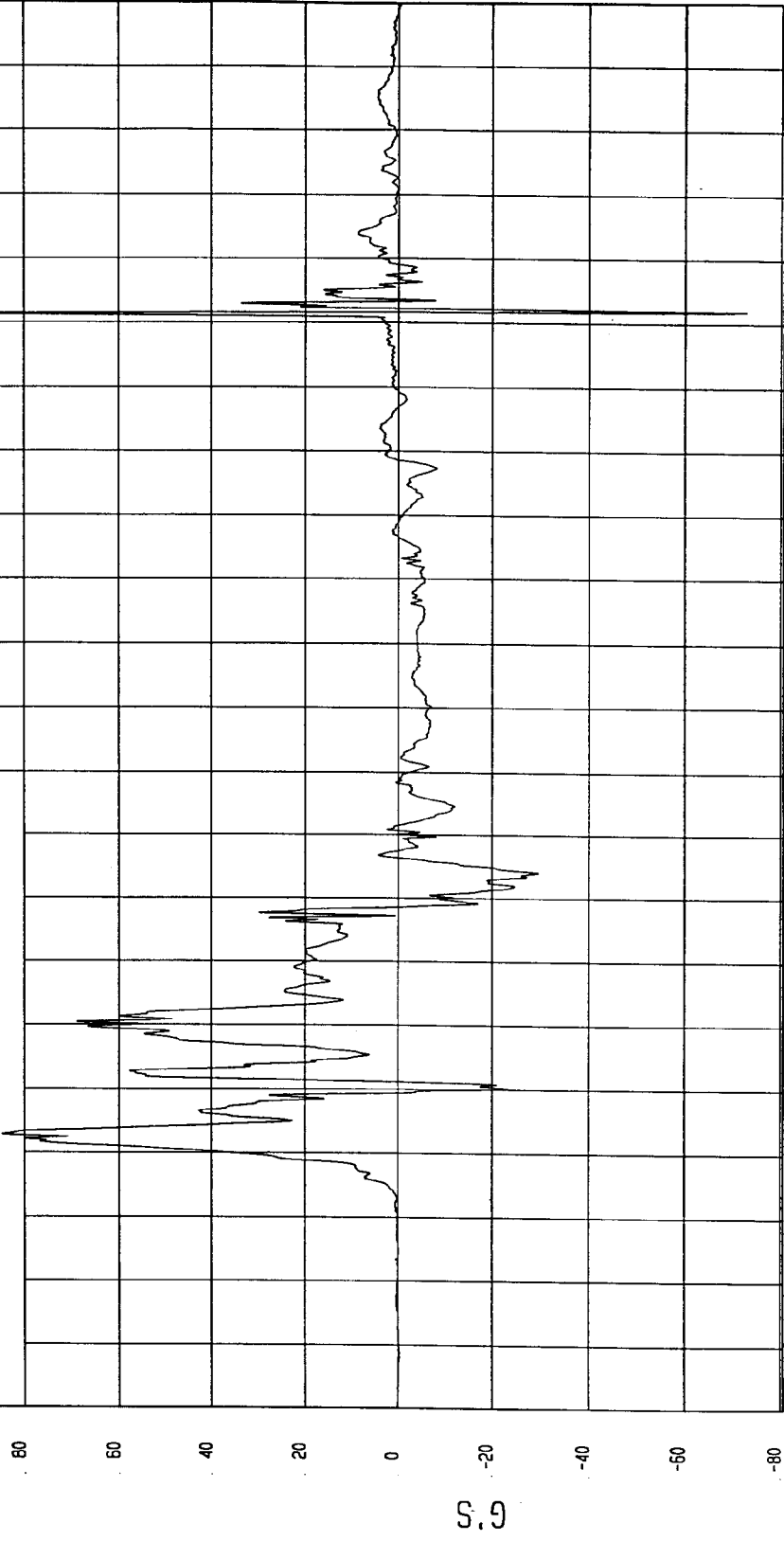
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -72.47 G'S at 152 msec

Maximum = 89.8 G'S at 151 msec

DRIVER UPPER RIB Y ACCELERATION

1 899068AT.A15 Filterc.ass (1000)



MGA Research  
10-21-1999 09:00

TIME (SECONDS)

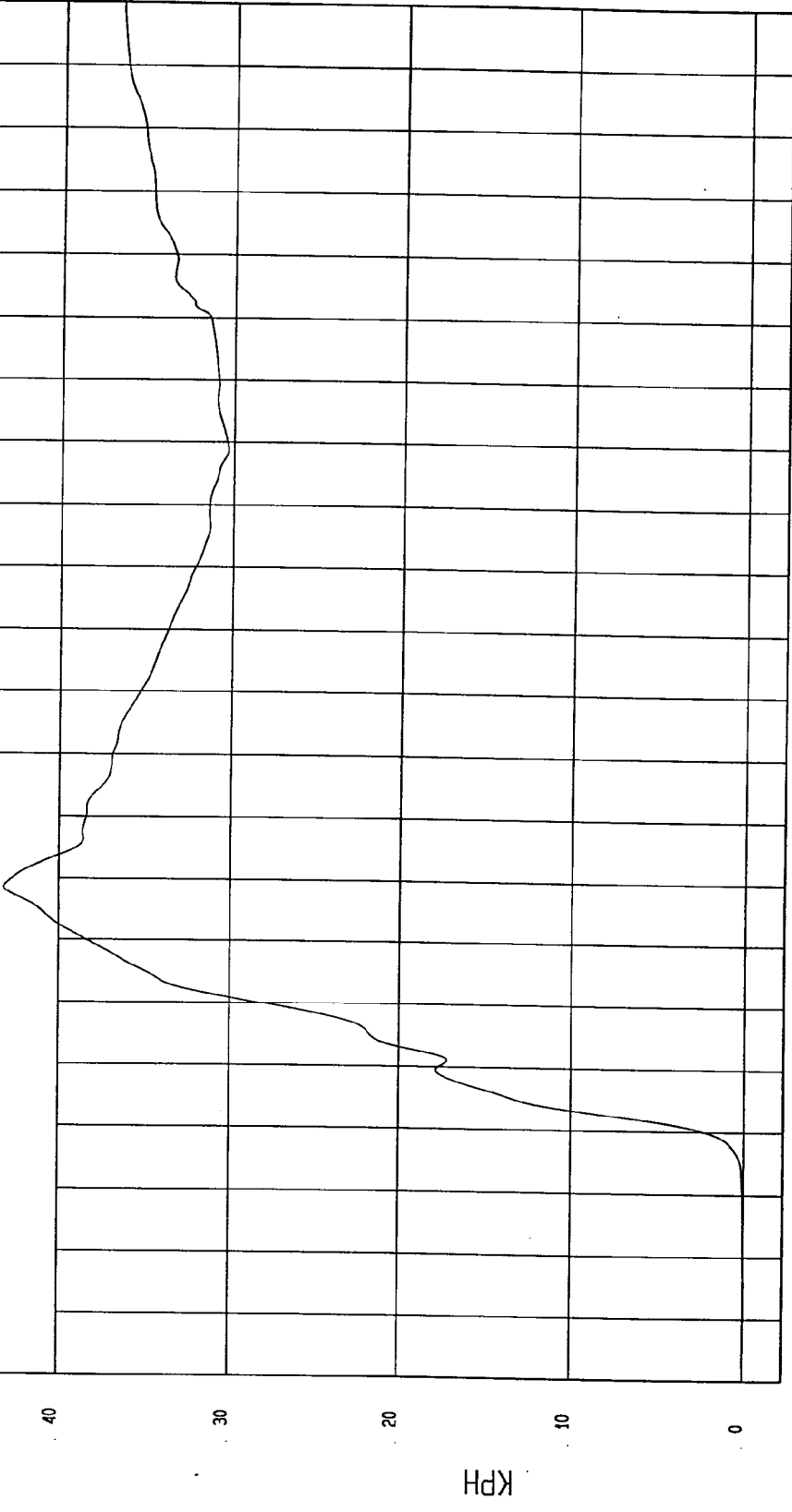
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -3.39E-02 KPH at -7 msec  
Maximum = 43.11 KPH at 59 msec

DRIVER UPPER RIB Y VELOCITY

1 ——— B99066A1.V15 FilterClass (180)



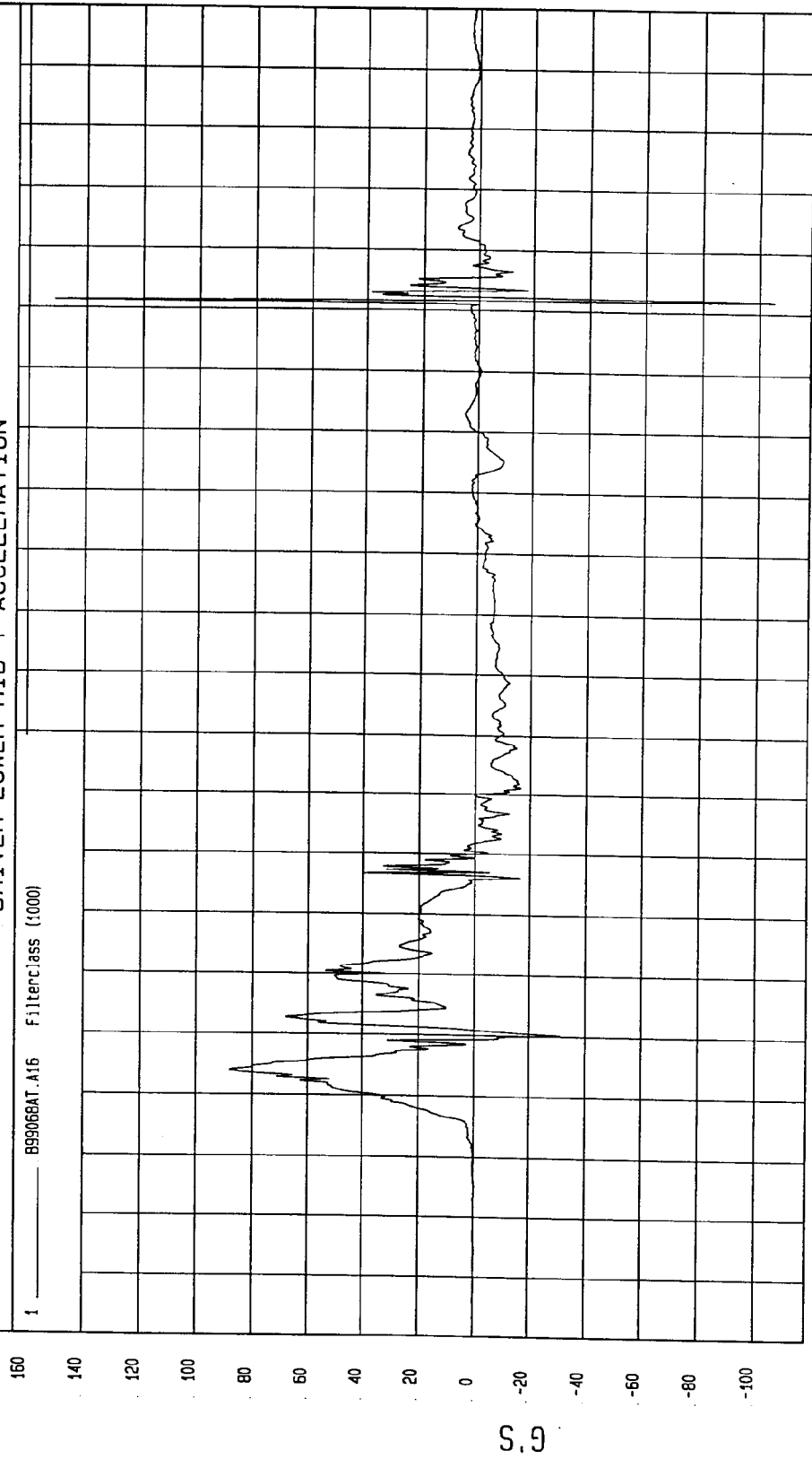
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -105.26 G'S at 152 msec

DRIVER LOWER RIB Y ACCELERATION

1 B99068AT.A16 Filterclass (1000)



TIME (SECONDS)

WCA Research  
10-21-1999 09:00

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

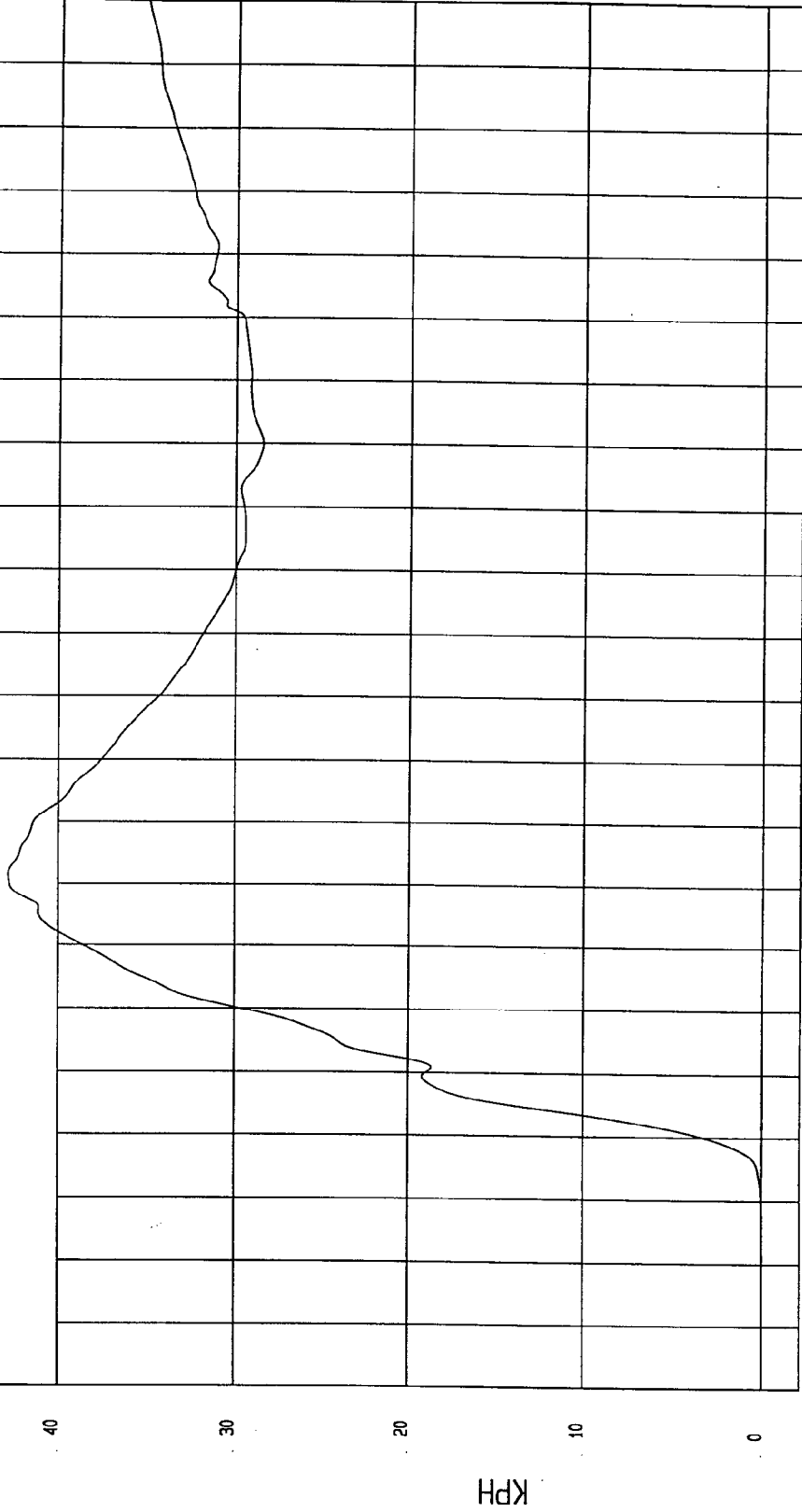
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -9.47E-03 KPH at -4 msec

Maximum = 42.77 KPH at 62 msec

DRIVER LOWER RIB Y VELOCITY

1 ——— .899066A1.V16 Filter:lass (180)



WCA Research Co  
10-21-1999 09:04

TIME Seconds

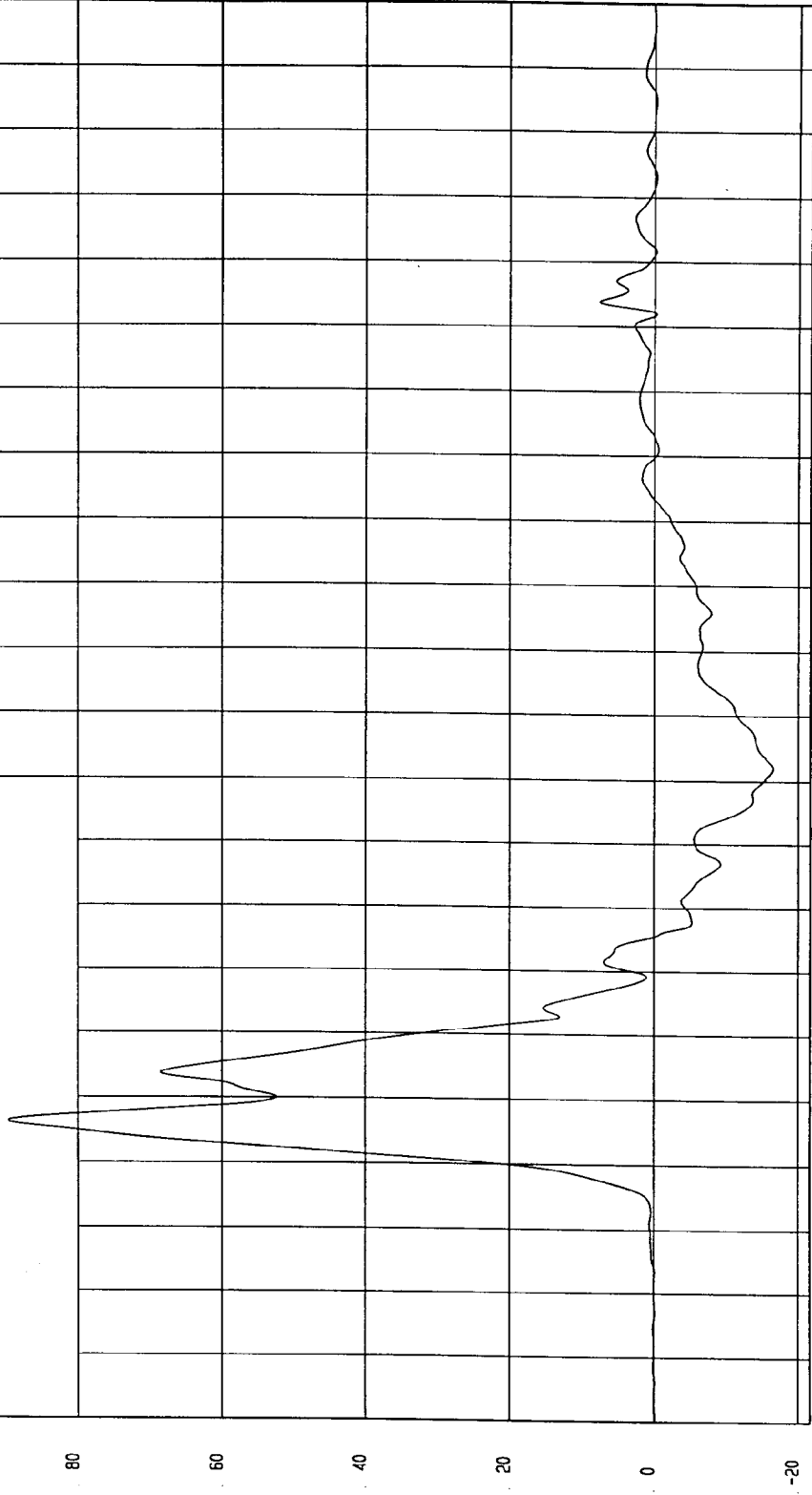
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -16.42 G'S at 82 msec Maximum = 89.63 G'S at 26 msec

DRIVER LOWER SPINE Y ACCELERATION

1 899068AF.A17 FilterClass (180)



TIME (SECONDS) MGA Research 10-21-1999 09:00

TEST DATE: 10-20-1999

TEST: INDICANT SIDE IMPACT

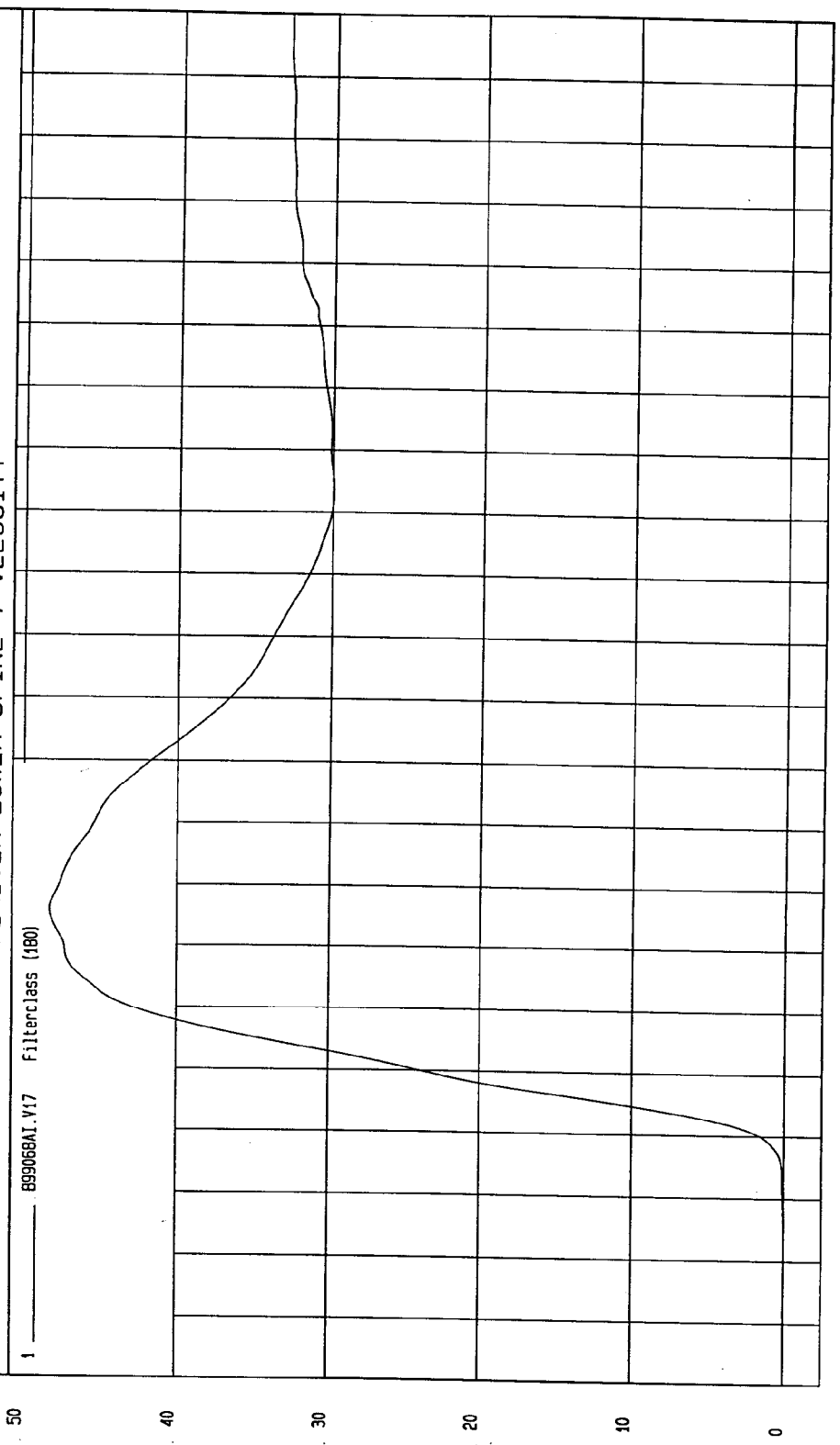
Speed: 38 MPH 61.2 KPH

Maximum = 46.34 KPH at 55 msec

Minimum = -1.35E-02 KPH at -13 msec

DRIVER LOWER SPINE Y VELOCITY

1 — 899068A1.V17 Filterclass (180)



KPH

TIME Seconds

MEA Research  
10-21-1999 08:04

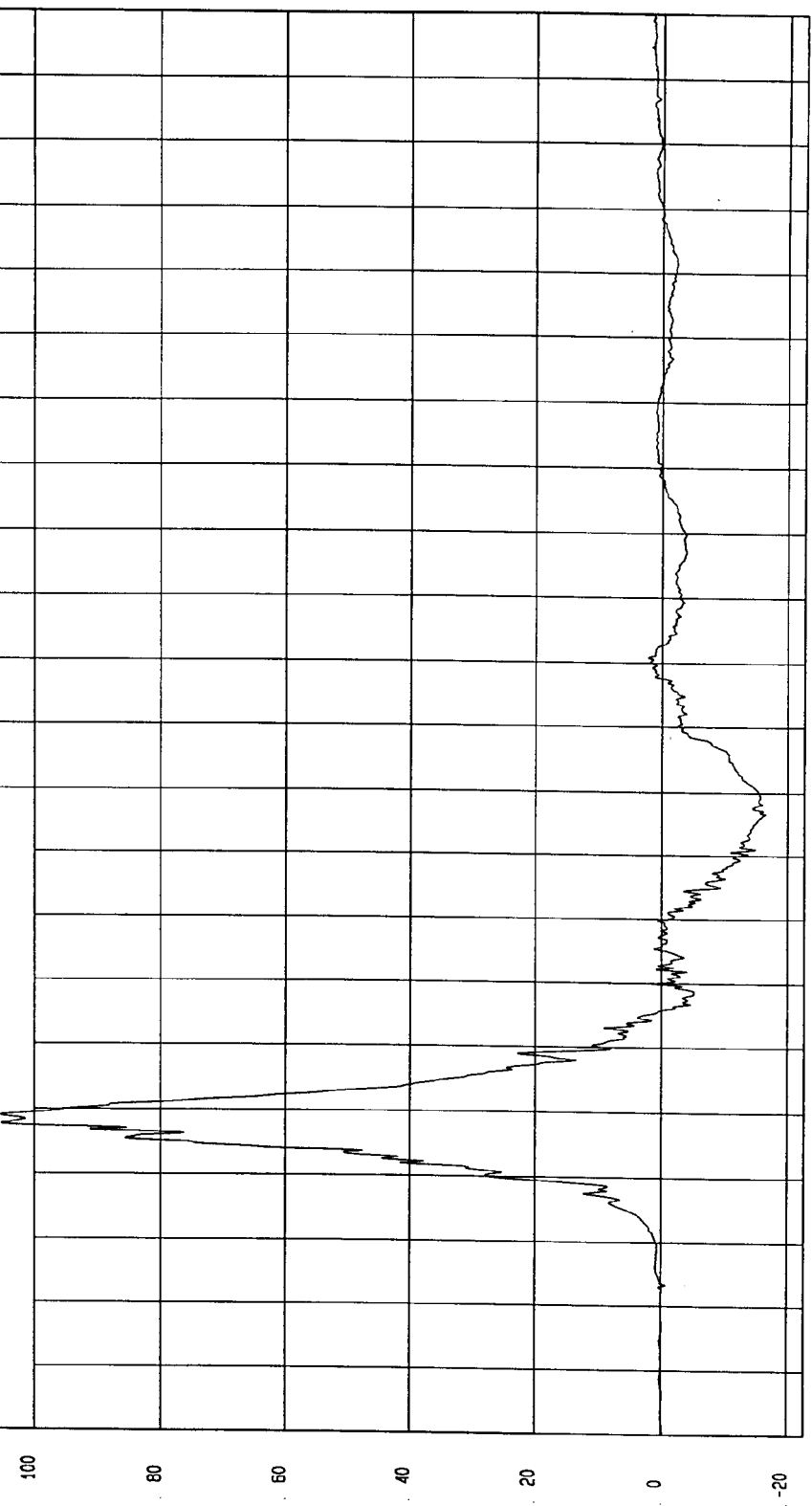
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -16.56 G'S at 77 msec  
Maximum = 105.28 G'S at 29 msec

DRIVER PELVIS Y ACCELERATION

1 89906BAT.A18 Filterclass (1000)



MCA Research  
10-21-1999 09:00

TIME (SECONDS)

G.S

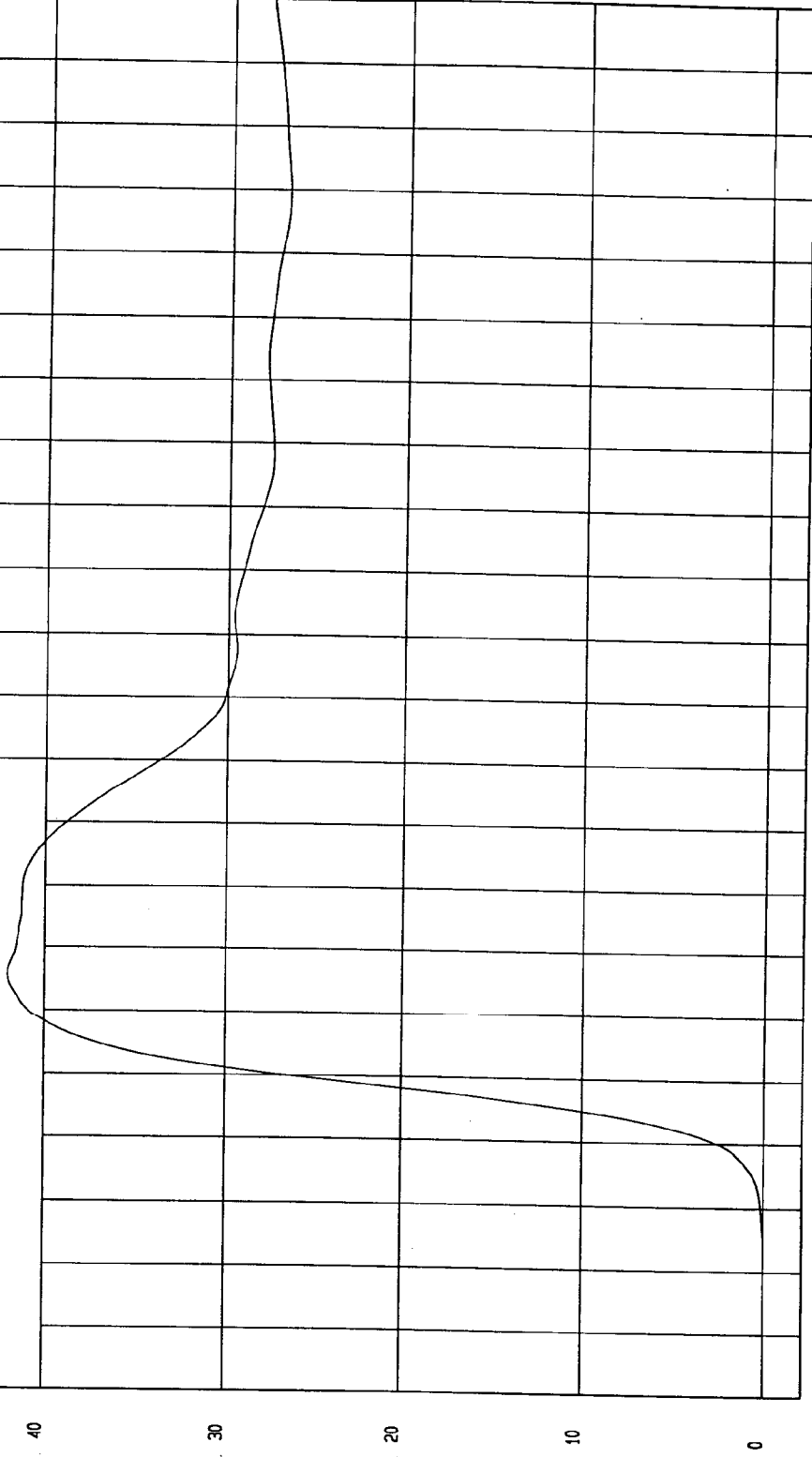
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.27E-02 KPH at -13 msec  
Maximum = 42.04 KPH at 46 msec

DRIVER PELVIS Y VELOCITY

1 ——— B99068A1.V18 Filterclass (180)



MECA Research  
10-21-1999 08:04

TIME Seconds

KPH

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

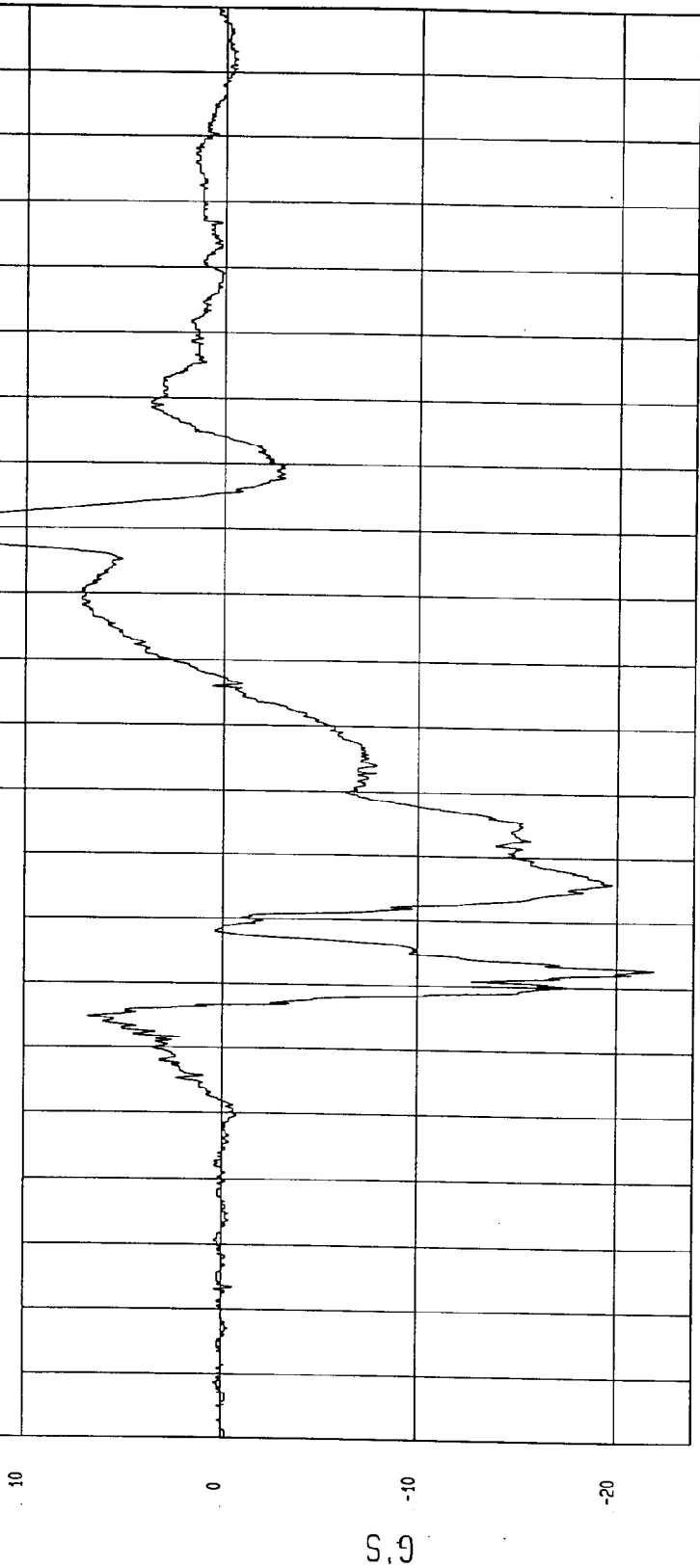
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -21.87 G'S at 53 msec

Maximum = 17.6'S at 120 msec

REAR PASSENGER HEAD X ACCELERATION

1 89906BAT.A22 Filterclass (1000)



MGA Research  
08-05-2000 08:07

TIME (SECONDS)

G'S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

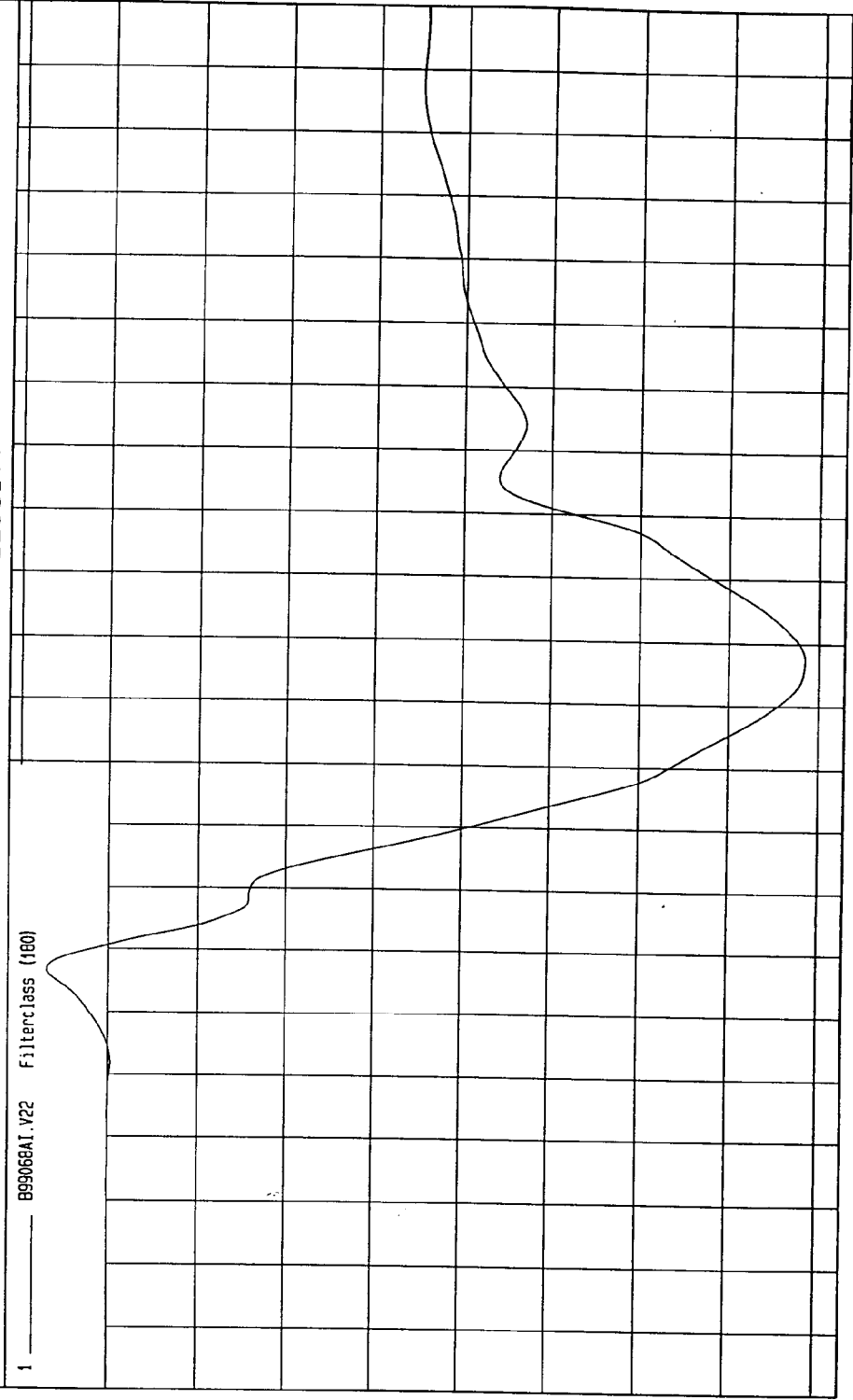
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -15.7 KPH at 97 msec

Maximum = 1.41 KPH at 47 msec

REAR PASSENGER HEAD X VELOCITY

1 \_\_\_\_\_ B99066A1.V22 Filterclass (160)



TIME Seconds

MSA Research  
08-09-2000 08:17

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

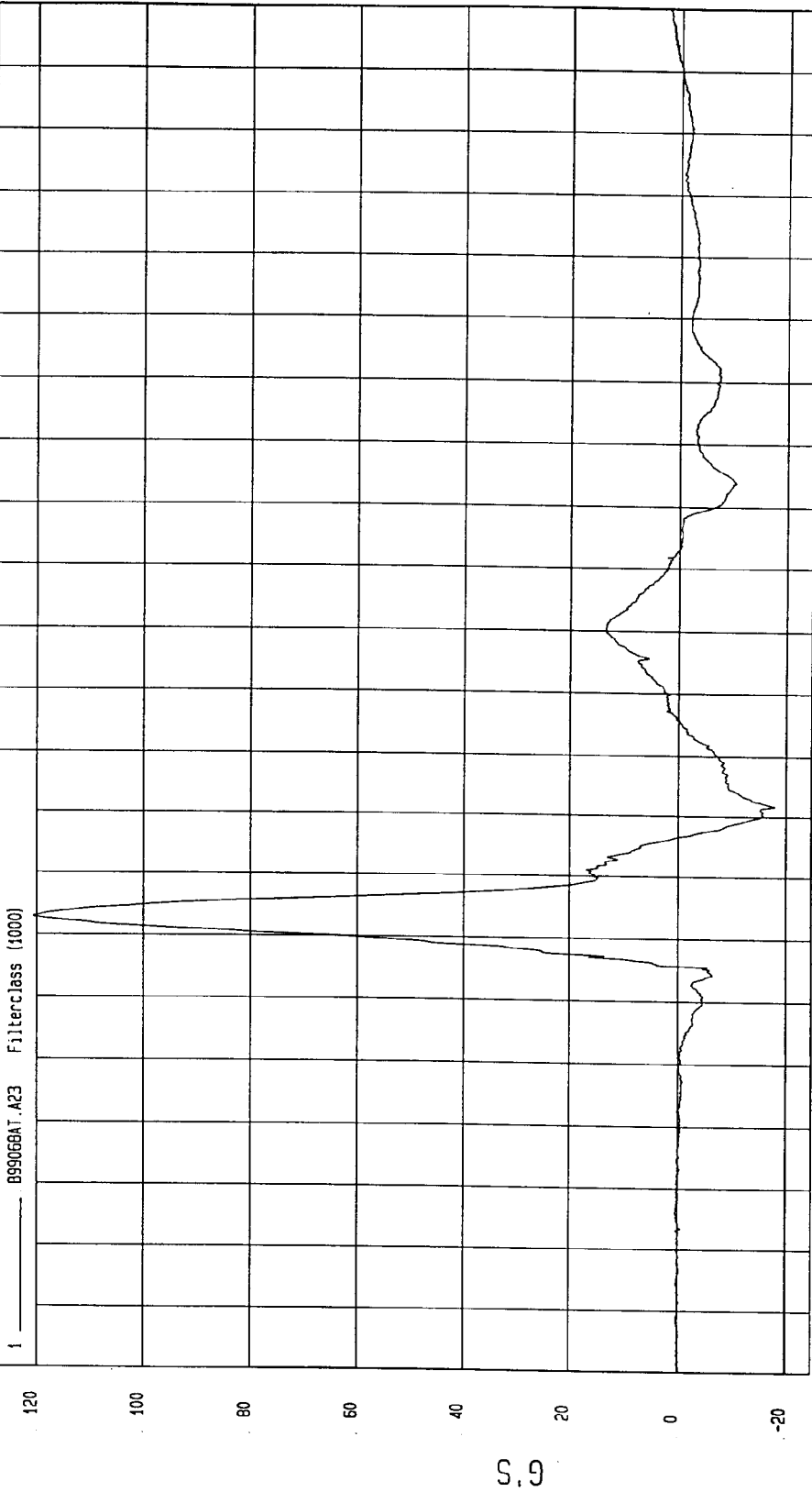
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -17.88 G'S at 72 msec

Maximum = 120.65 G'S at 53 msec

REAR PASSENGER HEAD Y ACCELERATION

1 B9906BAT.A23 Filterclass (1000)



MGA Research  
06-09-2000 08:07

TIME (SECONDS)

G.S

TEST: INDICANT SIDE IMPACT

TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)

Speed: 38 MPH 61.2 KPH

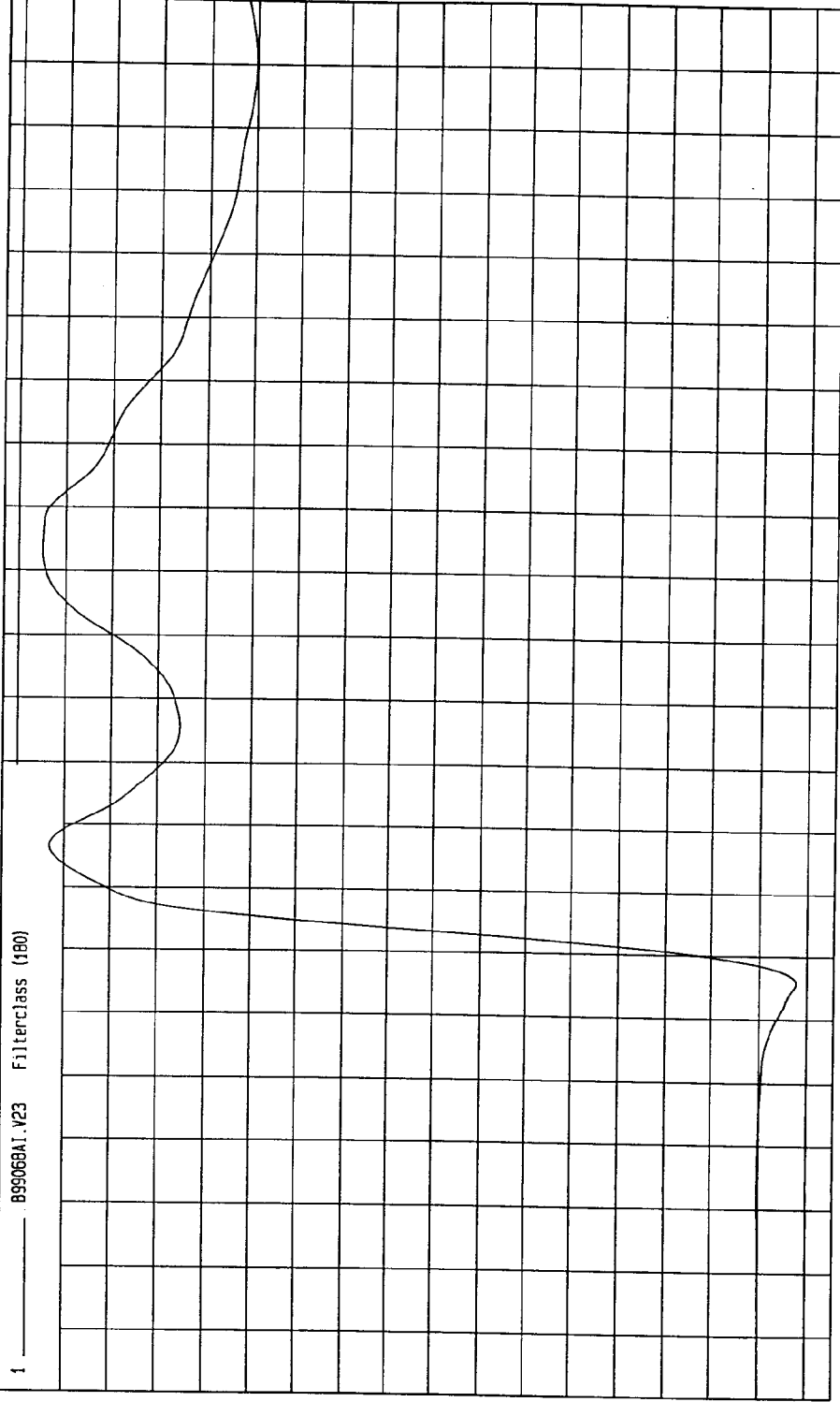
Minimum = -1.54 KPH at 46 msec

Maximum = 31.01 KPH at 113 msec

REAR PASSENGER HEAD Y VELOCITY

1 \_\_\_\_\_ 895068A1.V23 Filterclass (180)

32  
30  
28  
26  
24  
22  
20  
18  
16  
14  
12  
10  
8  
6  
4  
2  
0  
-2



TIME Seconds

MCA Research  
08-09-2000 08:17

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

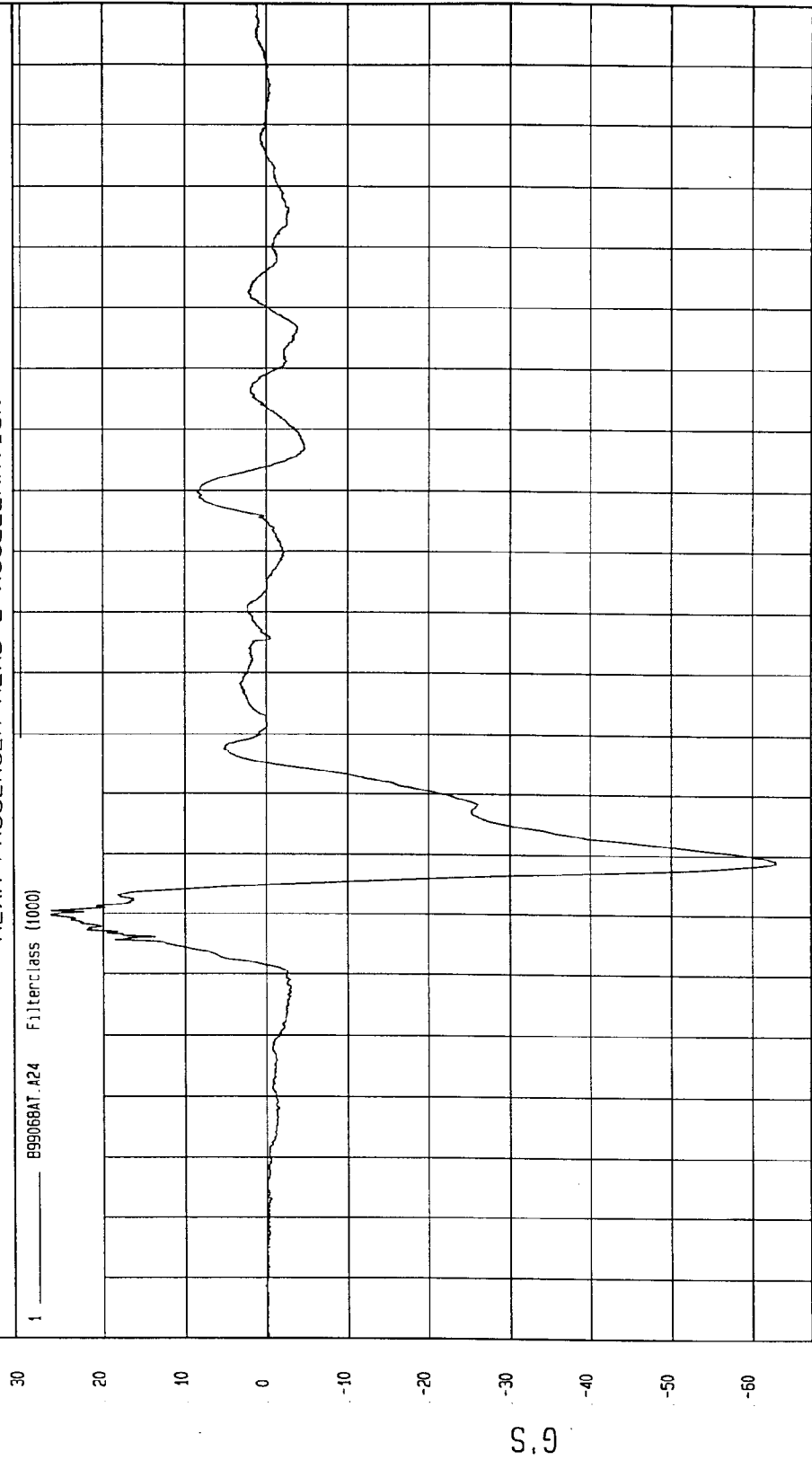
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -62.9 G'S at 59 msec

Maximum = 26.43 G'S at 50 msec

REAR PASSENGER HEAD Z ACCELERATION

1 B99068AT.A24 Filterclass (1000)



MCA Research  
08-09-2000 08:07

TIME (SECONDS)

G'S

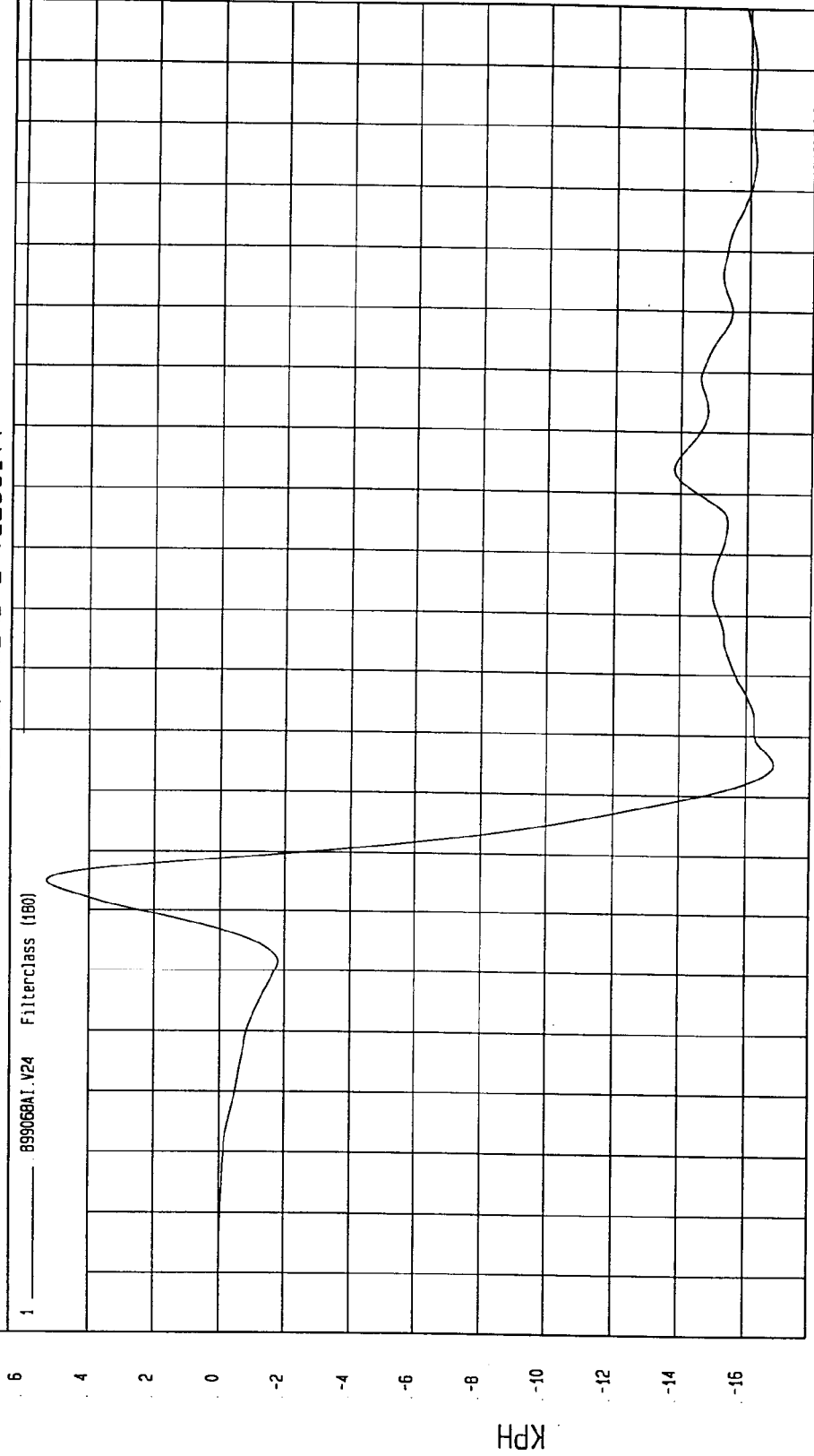
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -16.83 KPH at 75 msec  
Maximum = 5.29 KPH at 55 msec

REAR PASSENGER HEAD Z VELOCITY

1 899068A1.V24 Filterclass (180)



NSA Research  
08-05-2000 08:17

TIME Seconds

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

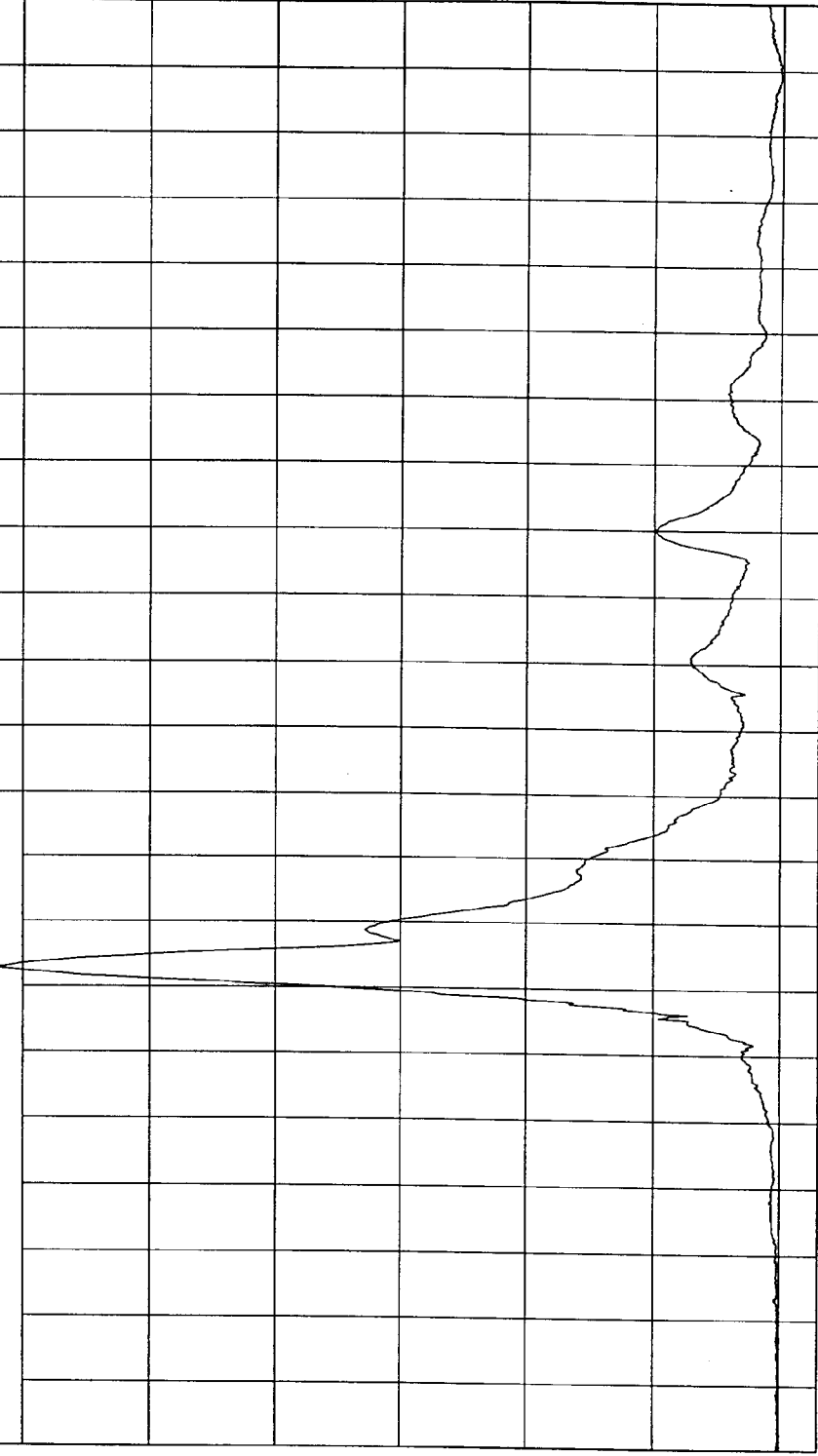
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 123.86 G'S at 53 msec

Minimum = 7.10E-02 G'S at -19 msec

REAR PASSENGER HEAD RESULTANT ACCELERATION

1 899068AV.A22 Filterclass (1000)



MGA Research  
08-09-2000 08:07

TIME (SECONDS)

G.S.

TEST DATE: 10-20-1999  
Speed: 38 MPH 61.2 KPH

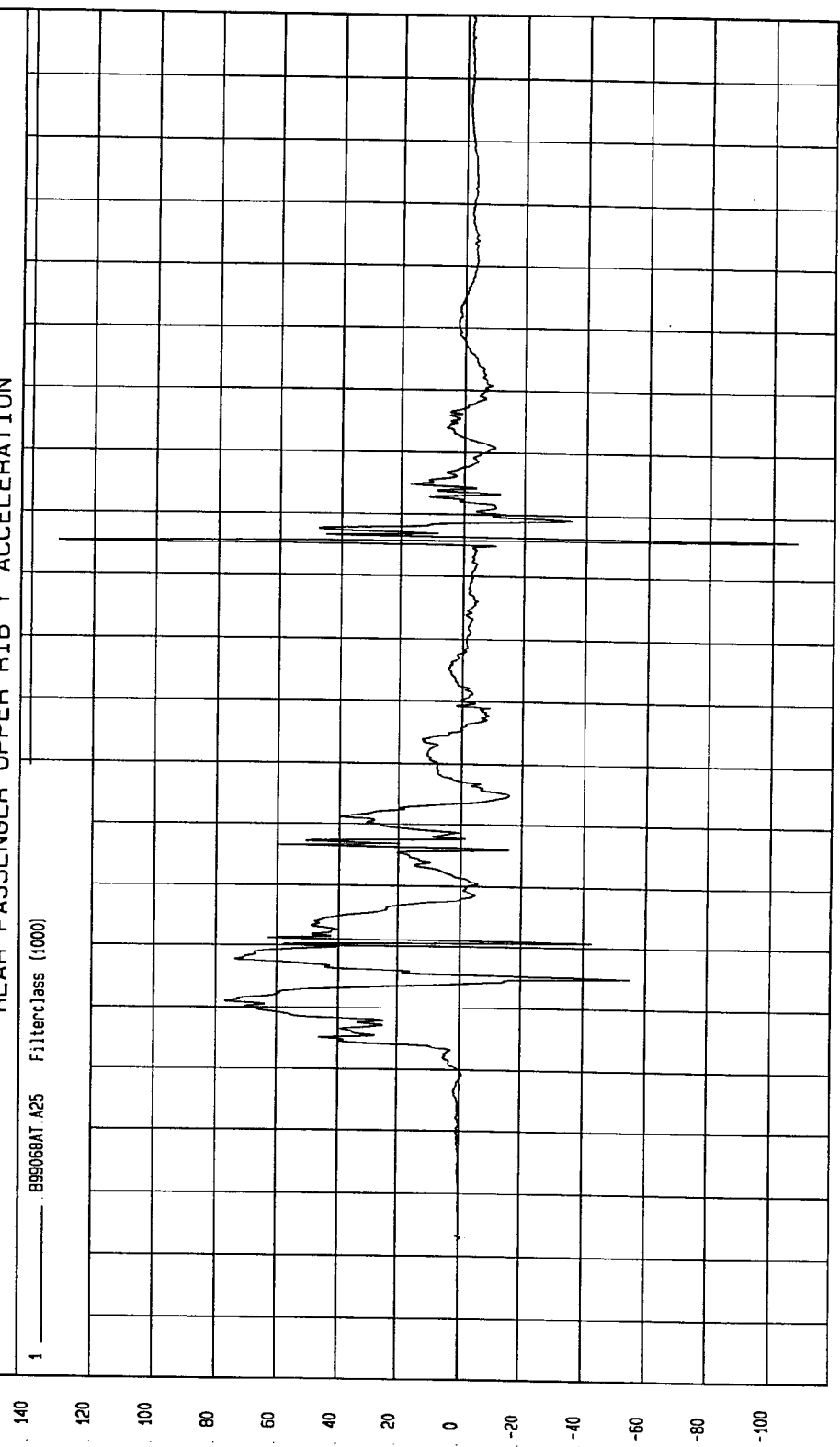
TEST: INDICANT SIDE IMPACT  
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -107.88 G'S at 116 msec

Maximum = 131.45 G'S at 116 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 . . . . . B99068AT.A25 FilterClass (1000)



G.S  
TIME (SECONDS)

NSA Research  
10-21-1999 09:00

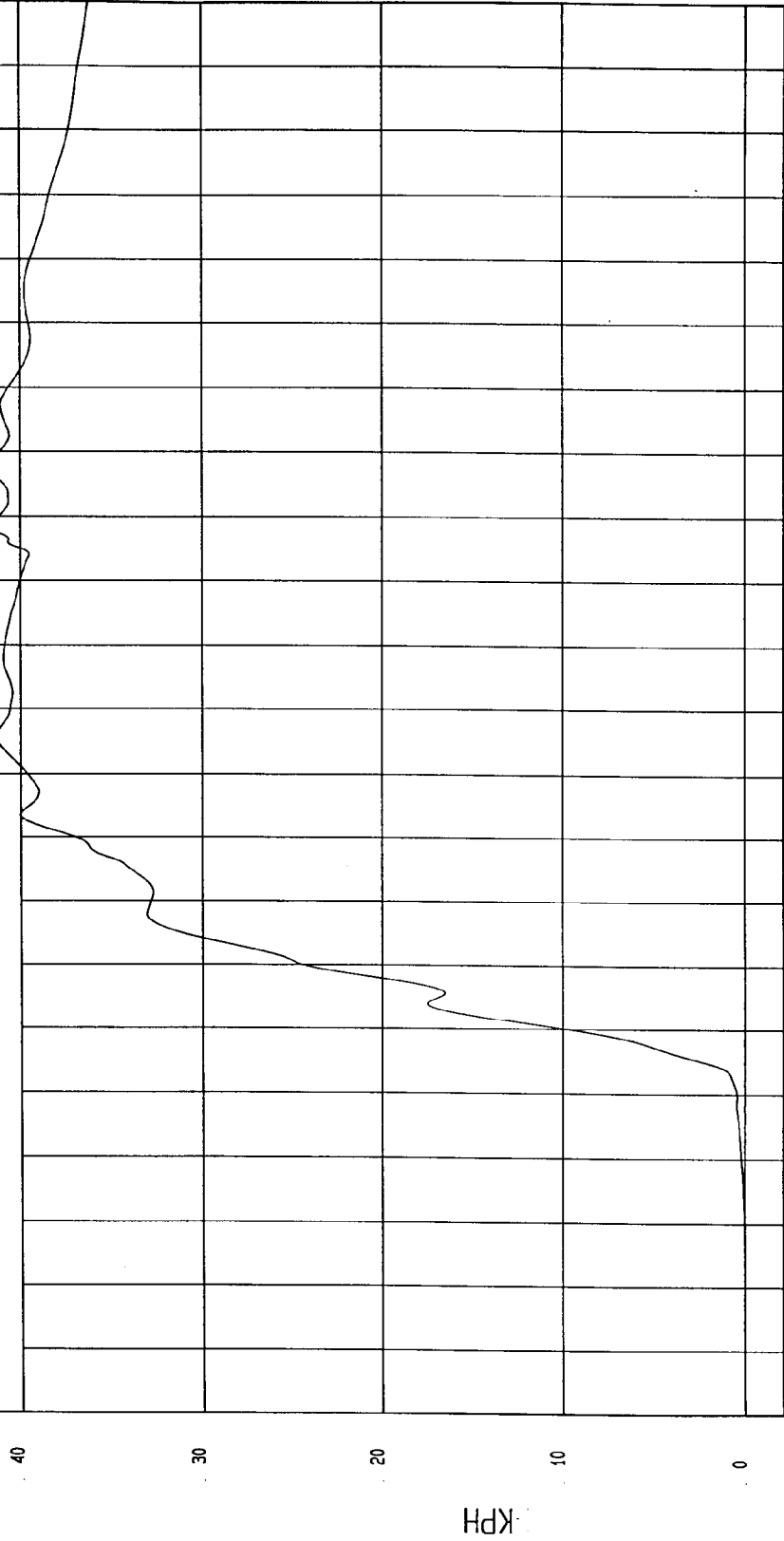
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

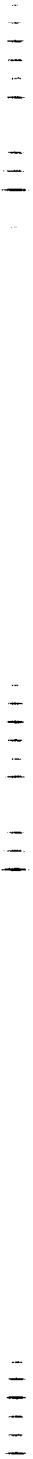
Minimum = -4.54E-03 KPH at -4 msec

REAR PASSENGER UPPER RIB Y VELOCITY

1 899068A1.V25 Filterclass (180)



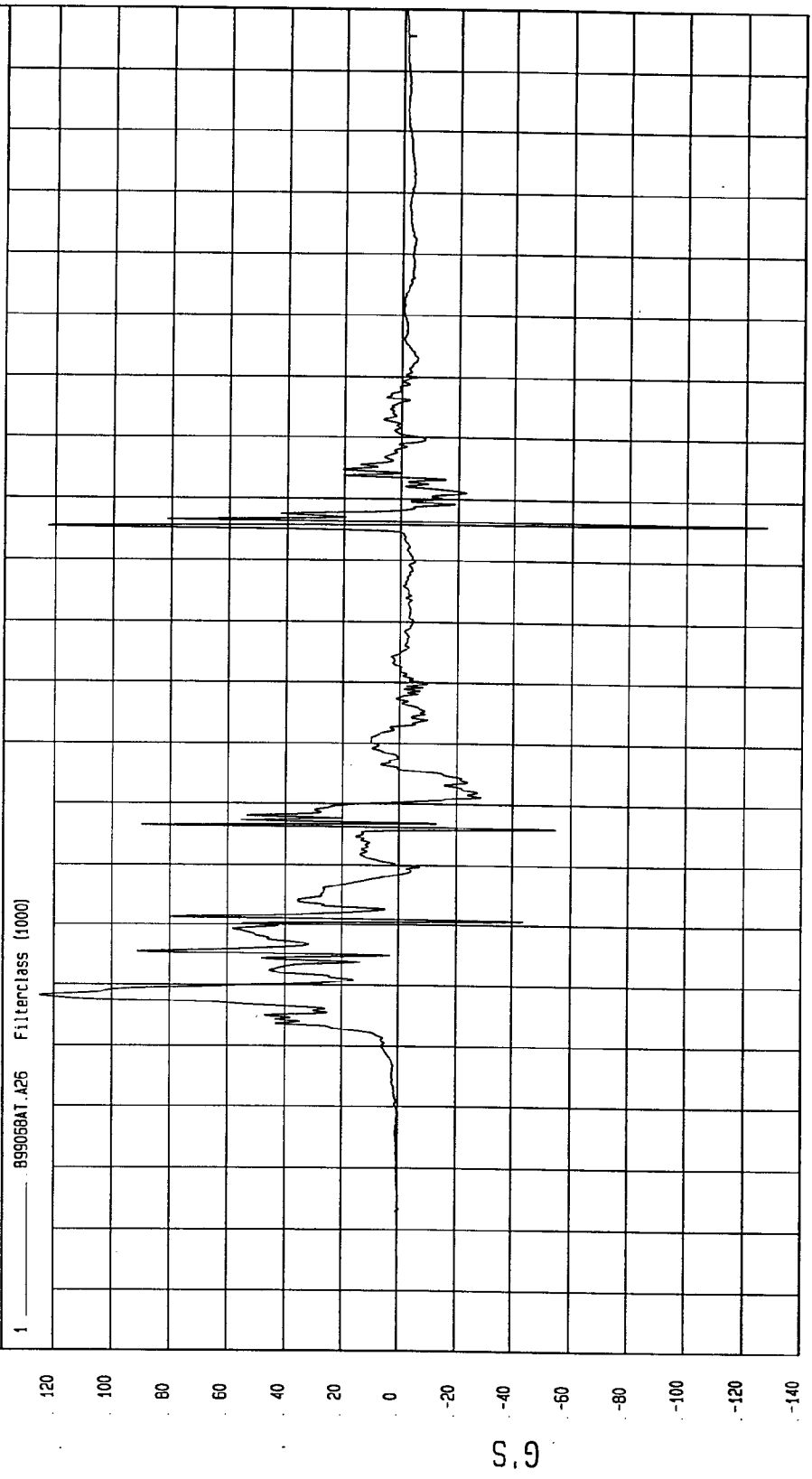
MSA Research  
10-21-1999 09:04



TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999  
 COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -127.53 G'S at 116 msec Maximum = 125.01 G'S at 38 msec

REAR PASSENGER LOWER RIB Y ACCELERATION



TIME (SECONDS)

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

MCA Research  
10-21-1999 09:00

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

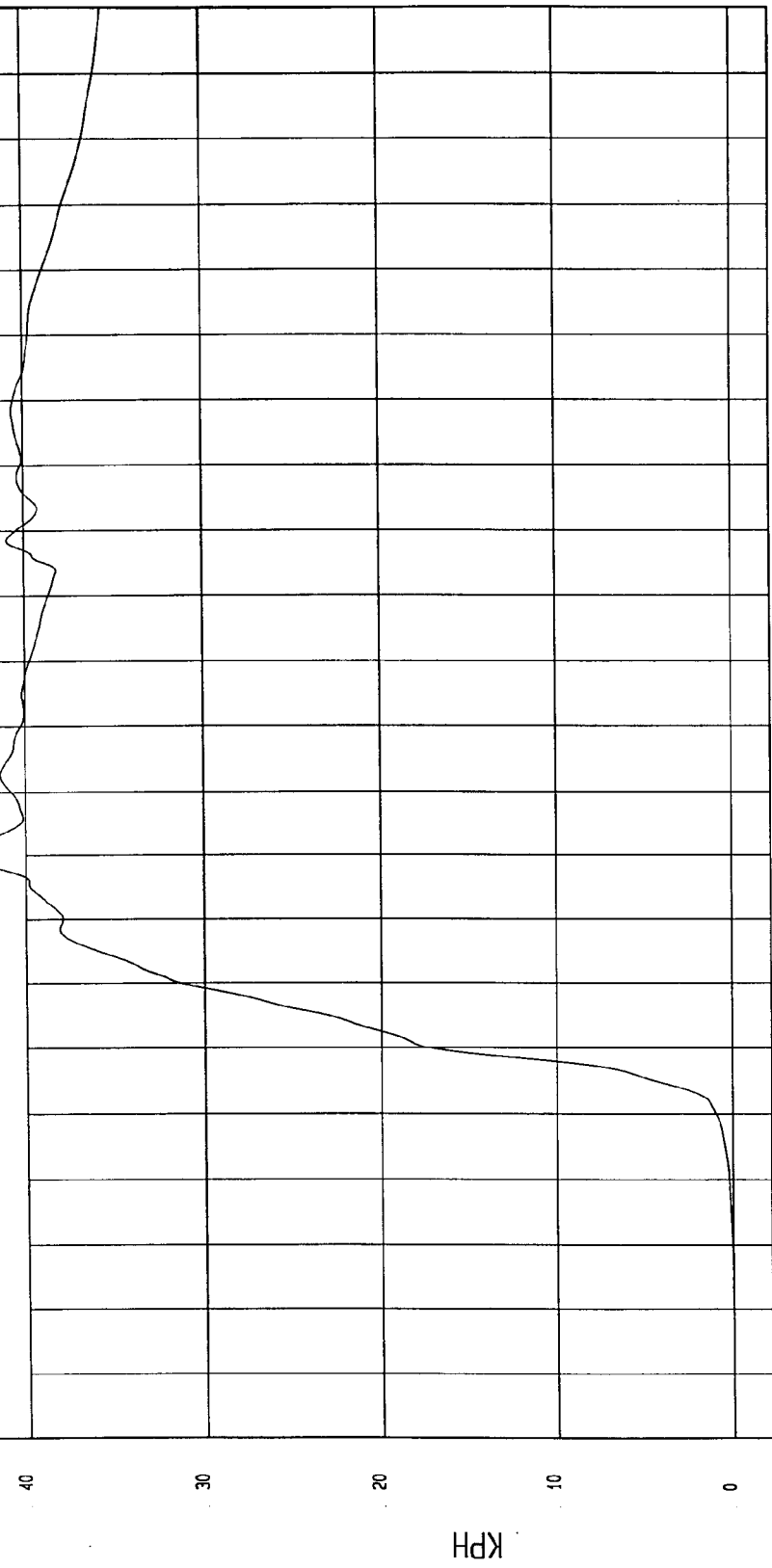
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 43.61 KPH at 70 msec

Minimum = 0 KPH at -20 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 899068A1.V26 Filterclass (180)



TIME Seconds

NCA Research  
10-21-1999 09:04

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

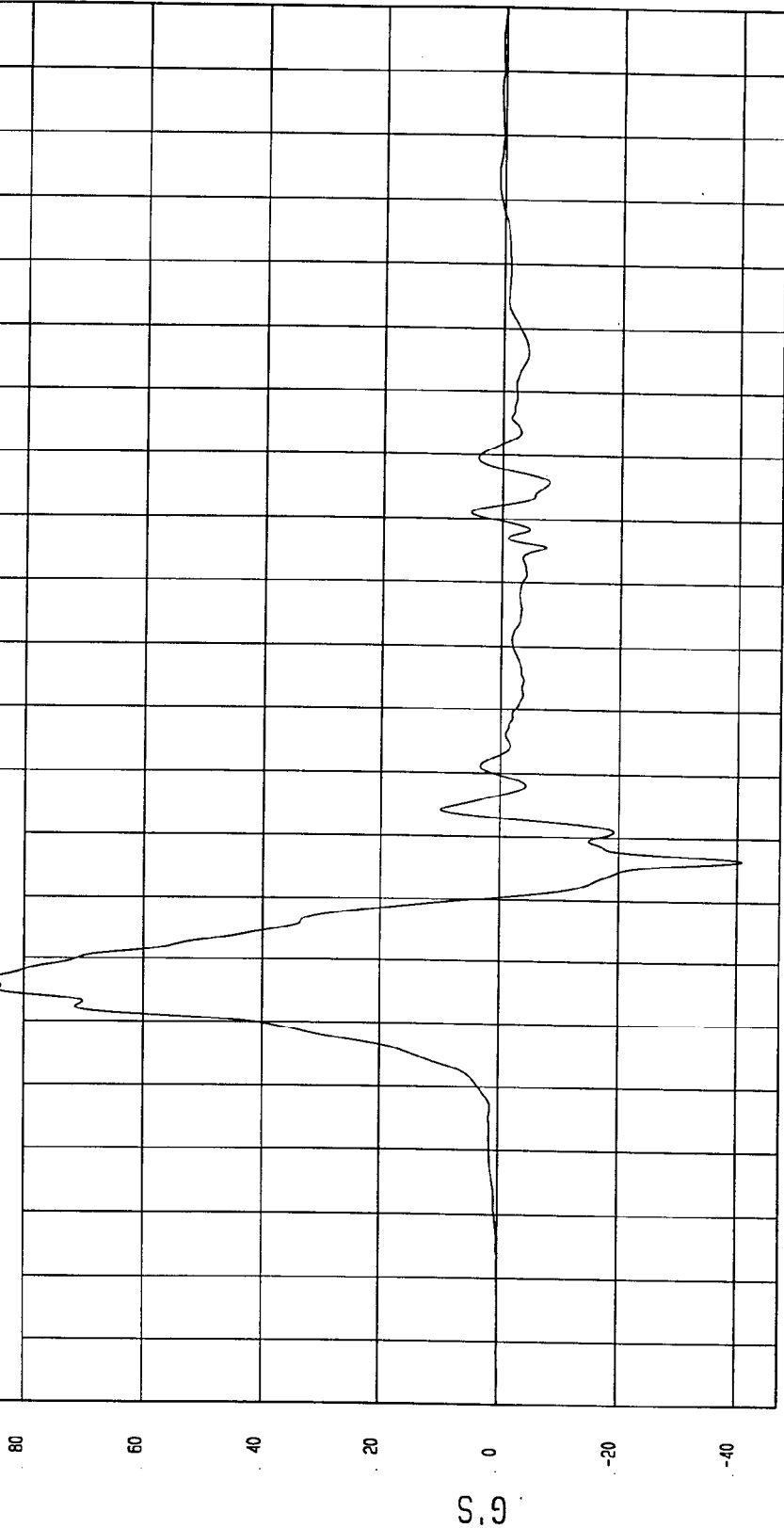
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -40.83 G'S at 66 msec

Maximum = 86.46 G'S at 47 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 B99058AF.A27 FilterClass (180)



TIME (SECONDS)

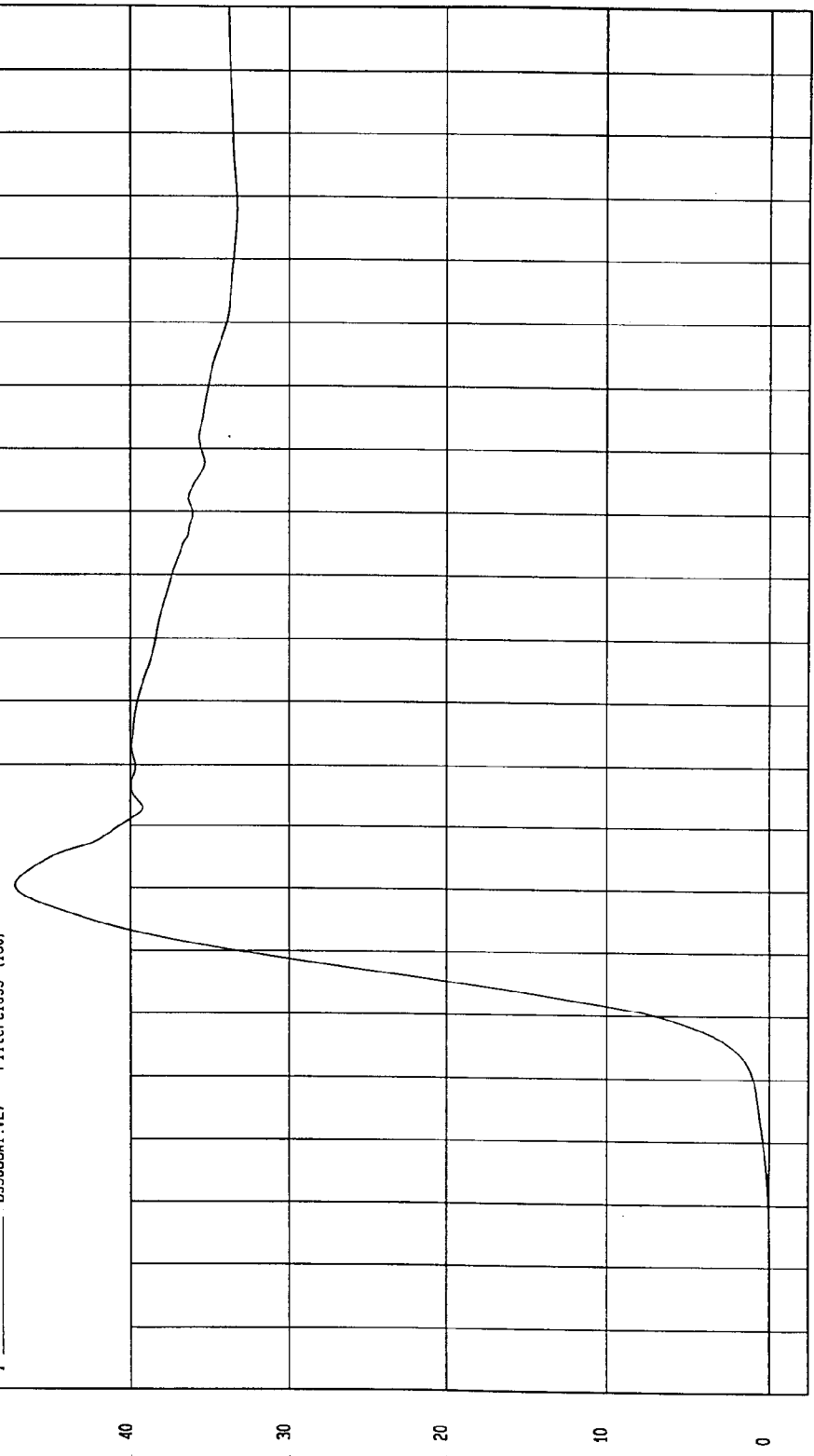
MCA Research  
10-21-1999 09:00

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999  
 COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.69E-02 KPH at -3 msec Maximum = 47.25 KPH at 60 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 899068A1.V27 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

MCA Research  
 10-21-1999 09:04

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

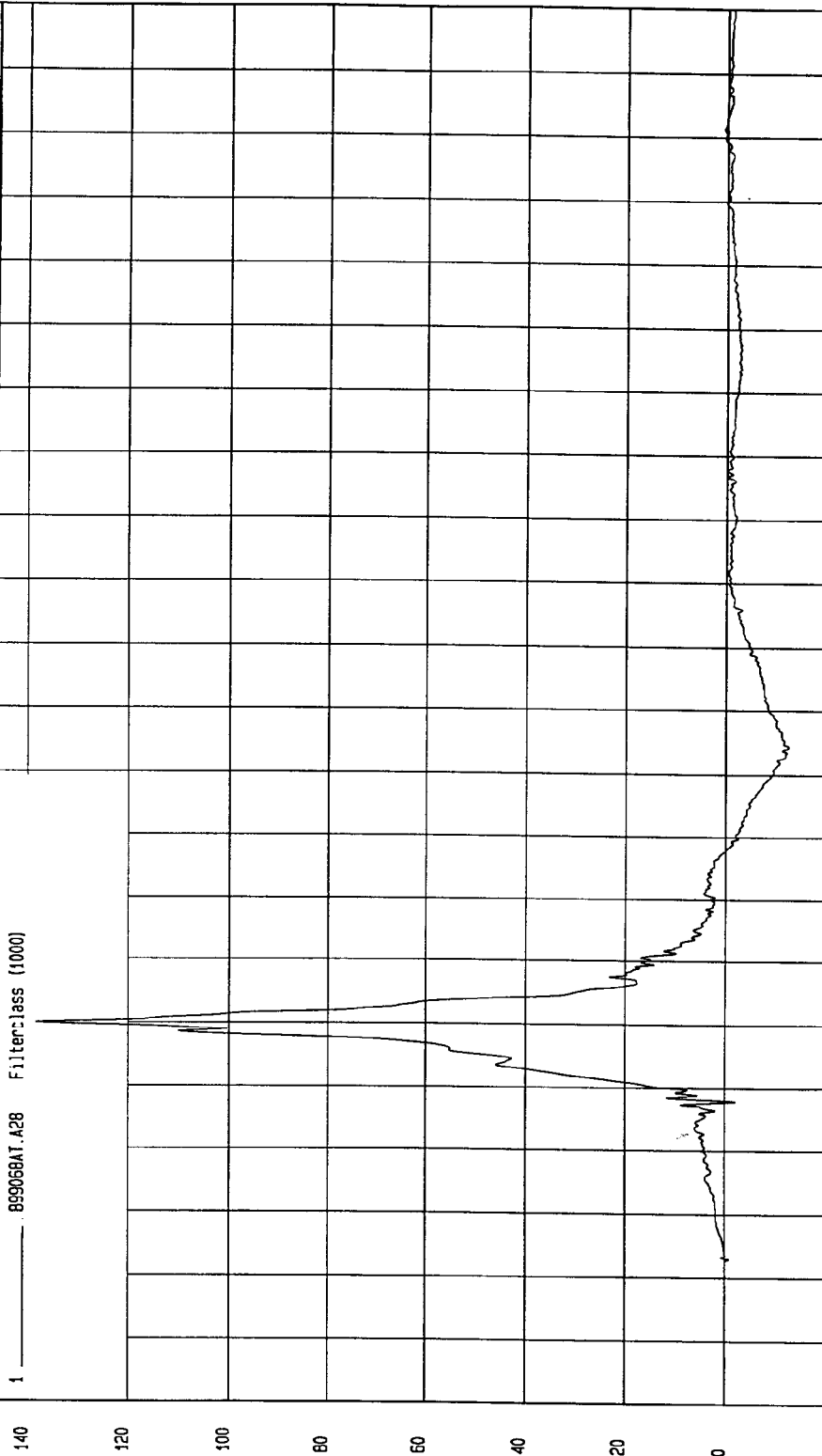
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -12.31 G'S at 84 msec

Maximum = 138.41 G'S at 40 msec

REAR PASSENGER PELVIS Y ACCELERATION

1 899068AT.A28 Filter: class (1000)



TIME (SECONDS)

NGA Research  
10-21-1999 09:00

G.S

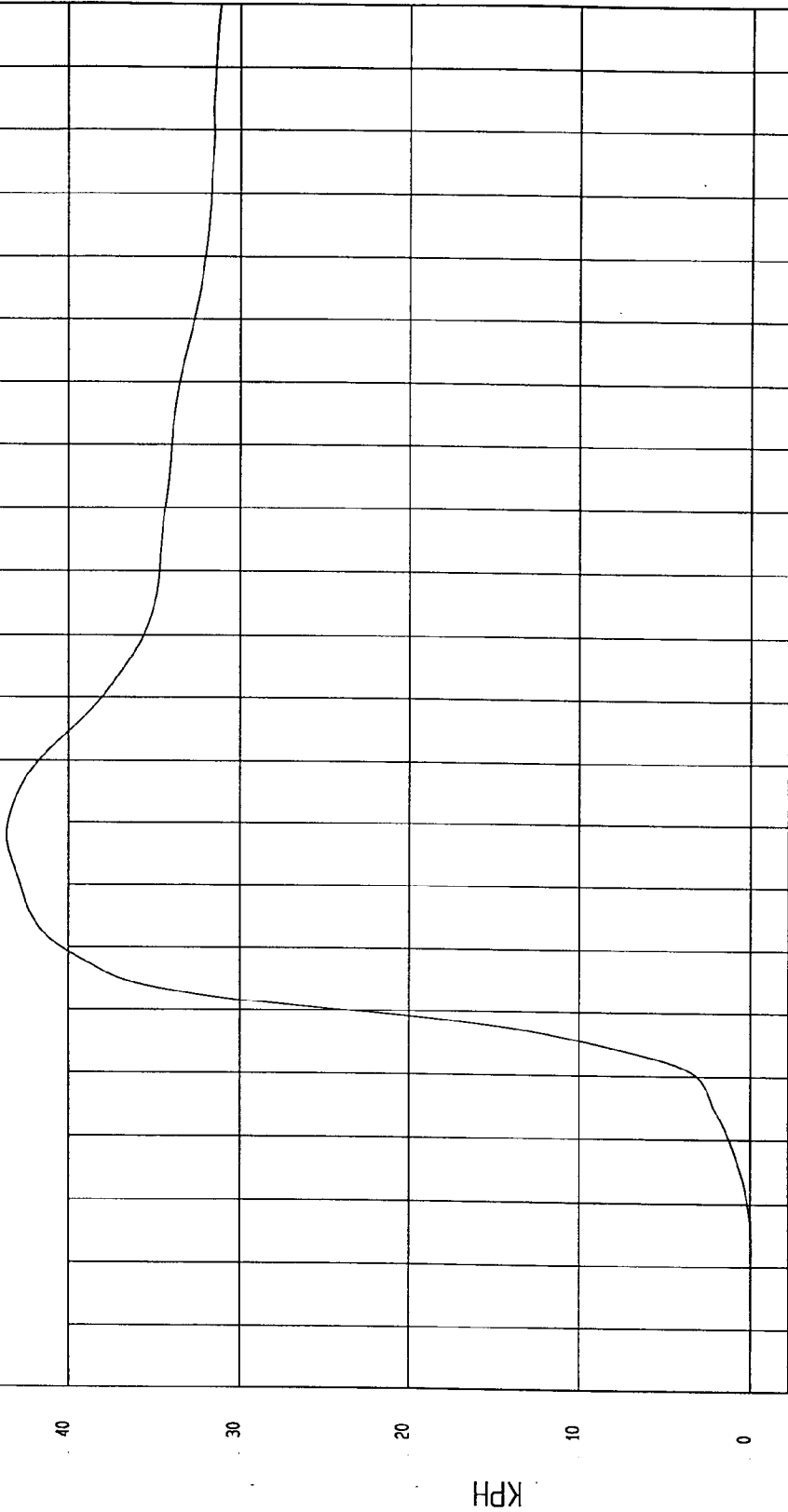
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -4.24E-02 KPH at 3 msec Maximum = 43.59 KPH at 66 msec

REAR PASSENGER PELVIS Y VELOCITY

1 \_\_\_\_\_ 89906BA1.128 Filterclass (180)



TIME Seconds  
VGA Research  
10-21-1999 09.04

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -5.55 G'S at 17 msec

Maximum = 2.85 G'S at 51 msec

RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

1 ——— B99066AF.A32 Filterclass (60)

3

2

1

0

-1

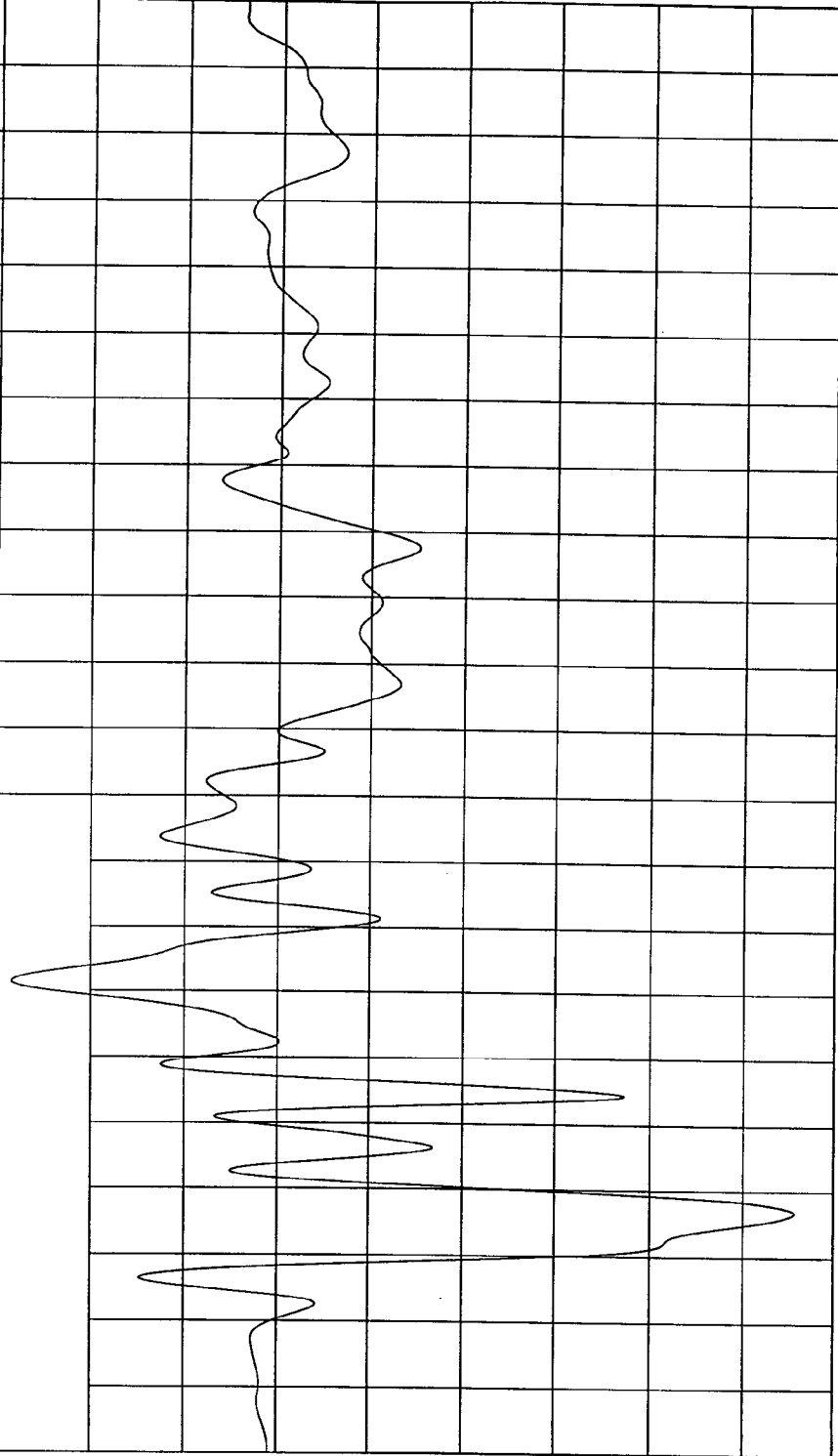
-2

-3

-4

-5

G.S



TIME (SECONDS)

MSA Research  
10-21-1999 09:33

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

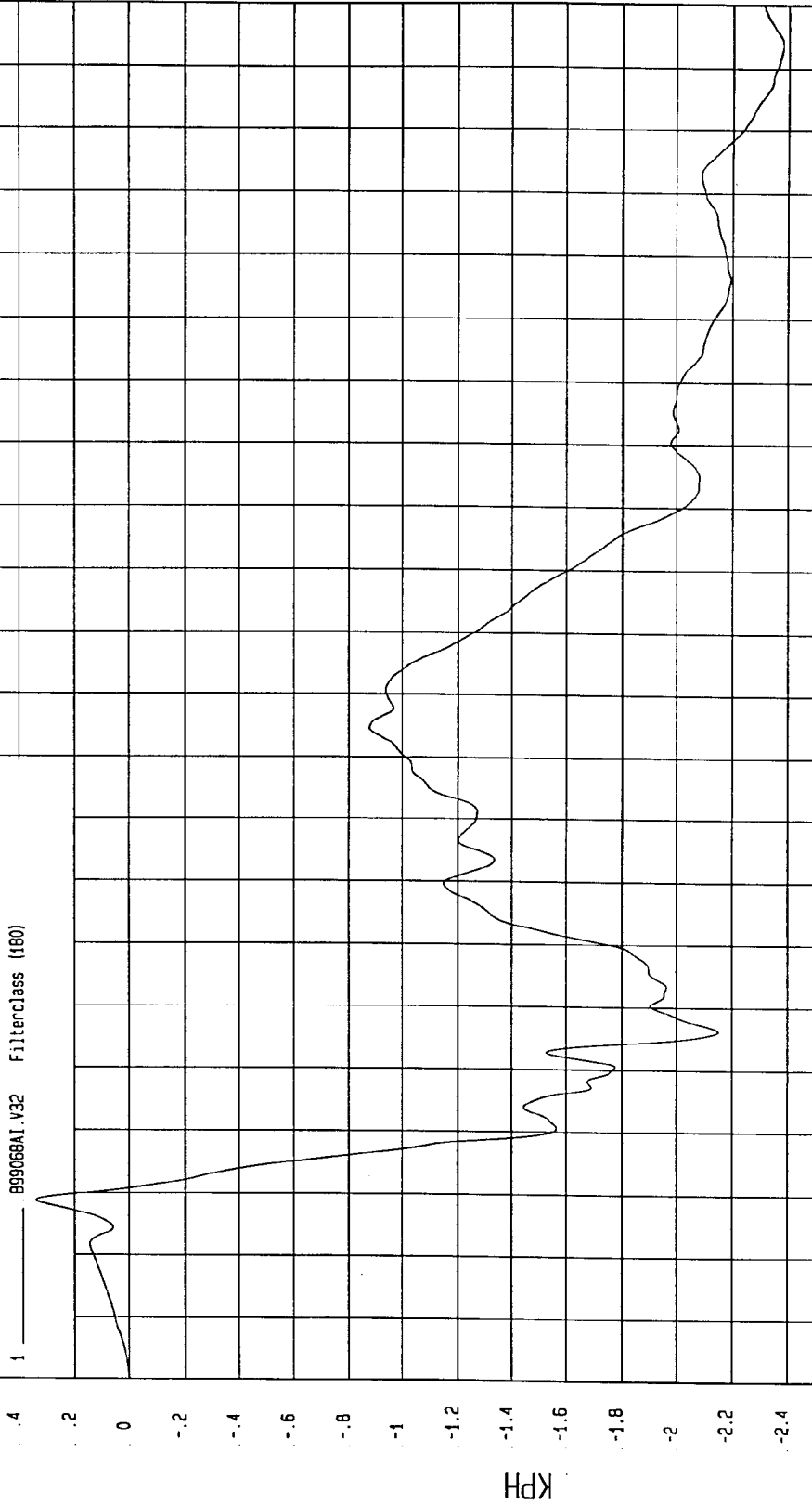
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -2.38 KPH at 194 msec

Maximum = .34 KPH at 9 msec

RIGHT SIDE SILL AT FRONT SEAT X VELOCITY

1 899066A1.V32 Filterclass (180)



TIME Seconds

MCA Research  
10-21-1999 08:57

TEST: INDICANT SIDE IMPACT

TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)

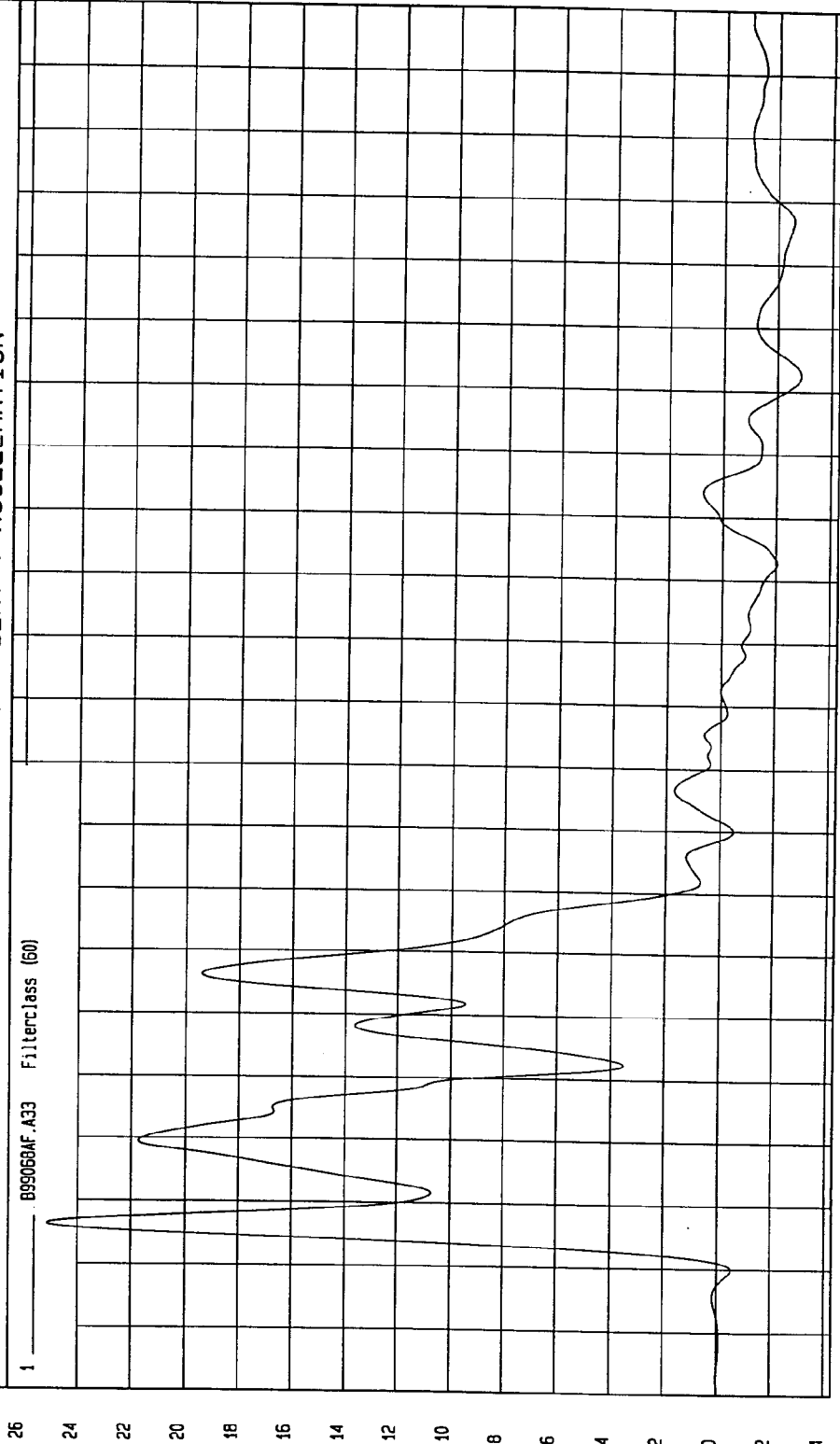
Speed: 38 MPH 61.2 KPH

Minimum = -2.88 G'S at 143 msec

Maximum = 25.14 G'S at 6 msec

RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 899068AF.A33 Filterclass (50)



TIME (SECONDS)

MSA Research  
10-21-1999 09:33

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

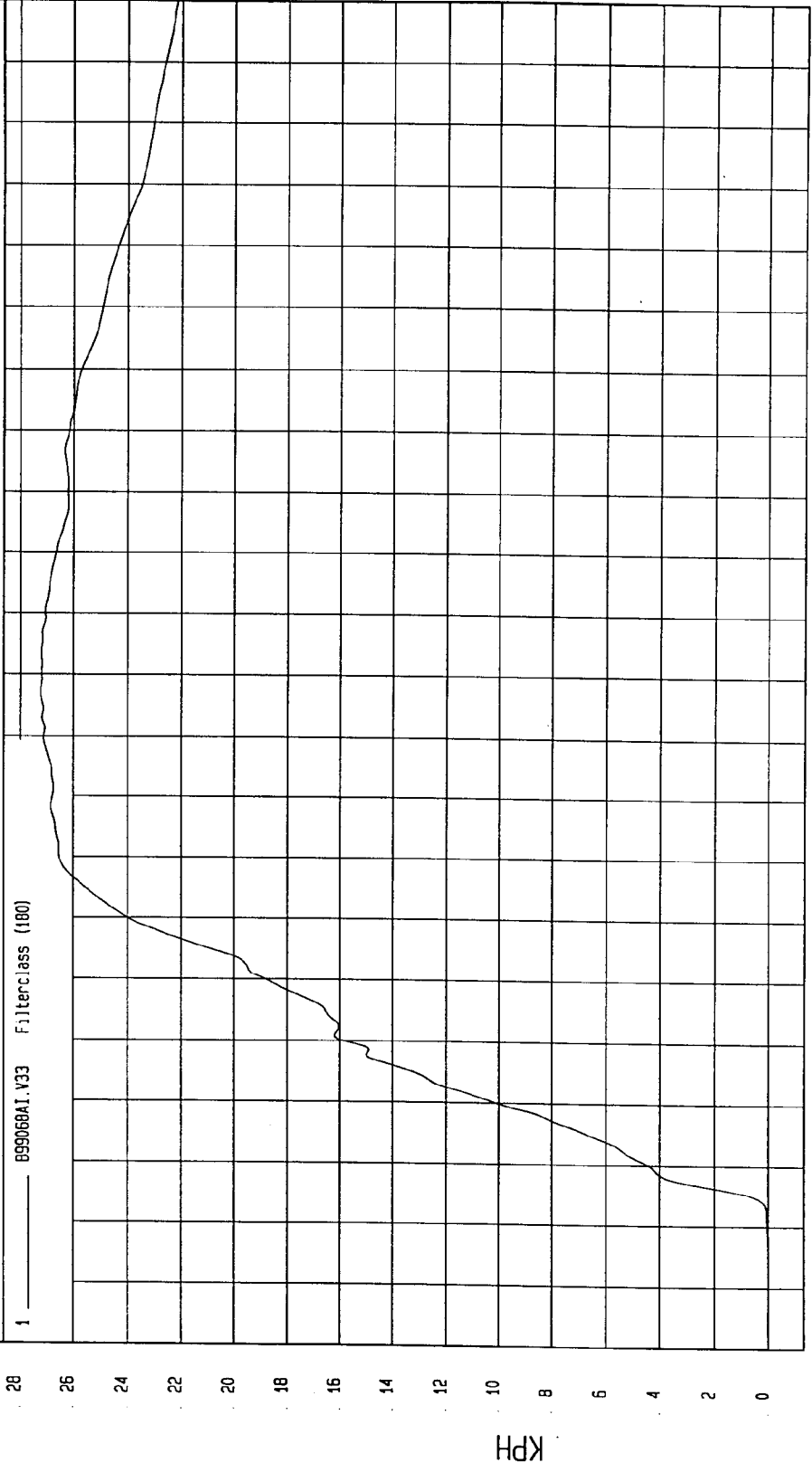
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.70E-02 KPH at -7 msec

Maximum = 27.24 KPH at 87 msec

RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY

1 899060A1.V33 Filterclass (180)



MSA Research  
10-21-1999 08:57

TIME Seconds

KPH

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

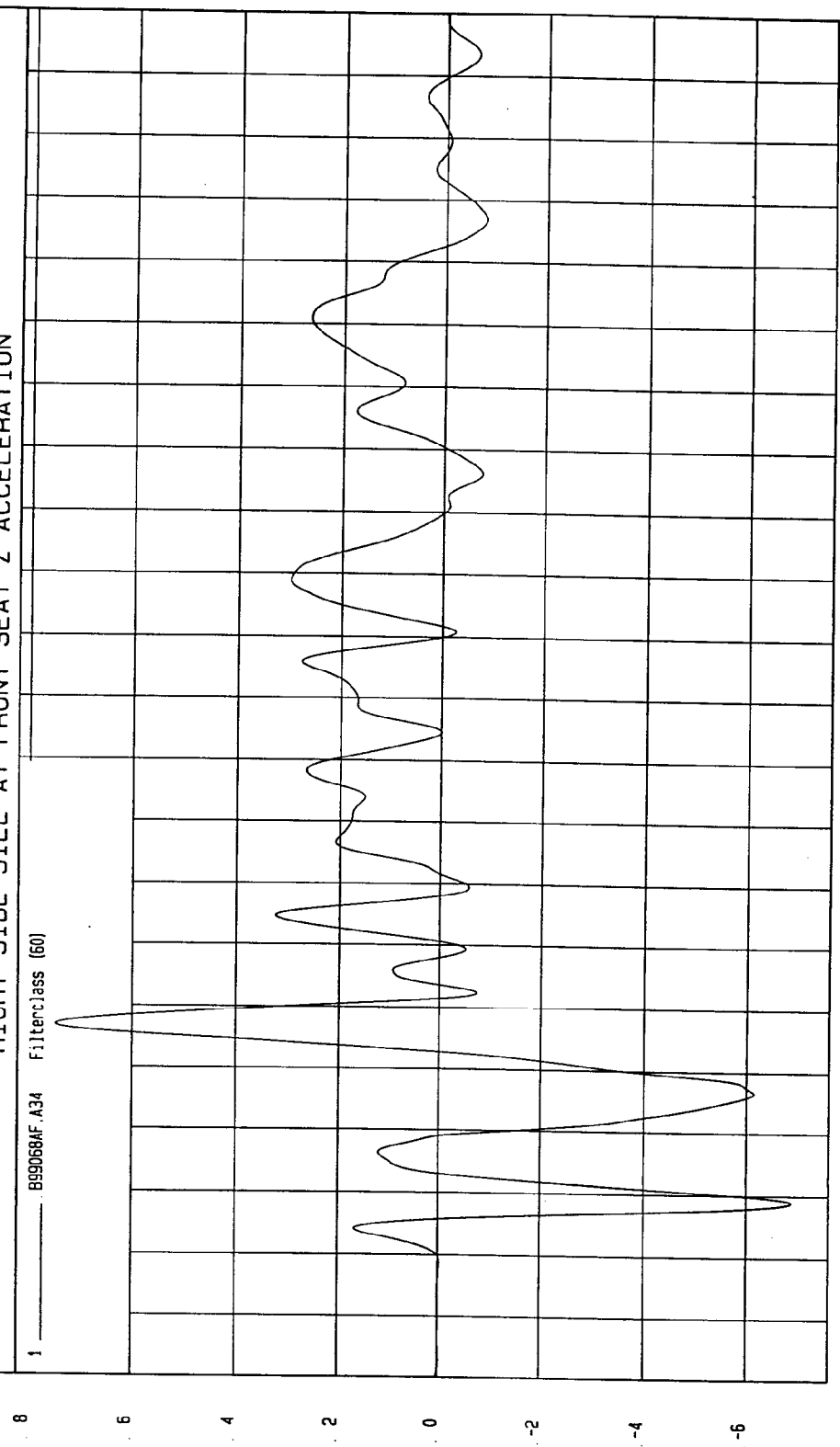
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 7.5 G'S at 37 msec

Minimum = -6.88 G'S at 9 msec

RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

1 899068AF.A34 Filterclass (60)



TIME (SECONDS)

MCA Research  
10-21-1999 09:33

G.S

TEST DATE: 10-20-1999

TEST: INDICANT SIDE IMPACT

Speed: 38 MPH 61.2 KPH

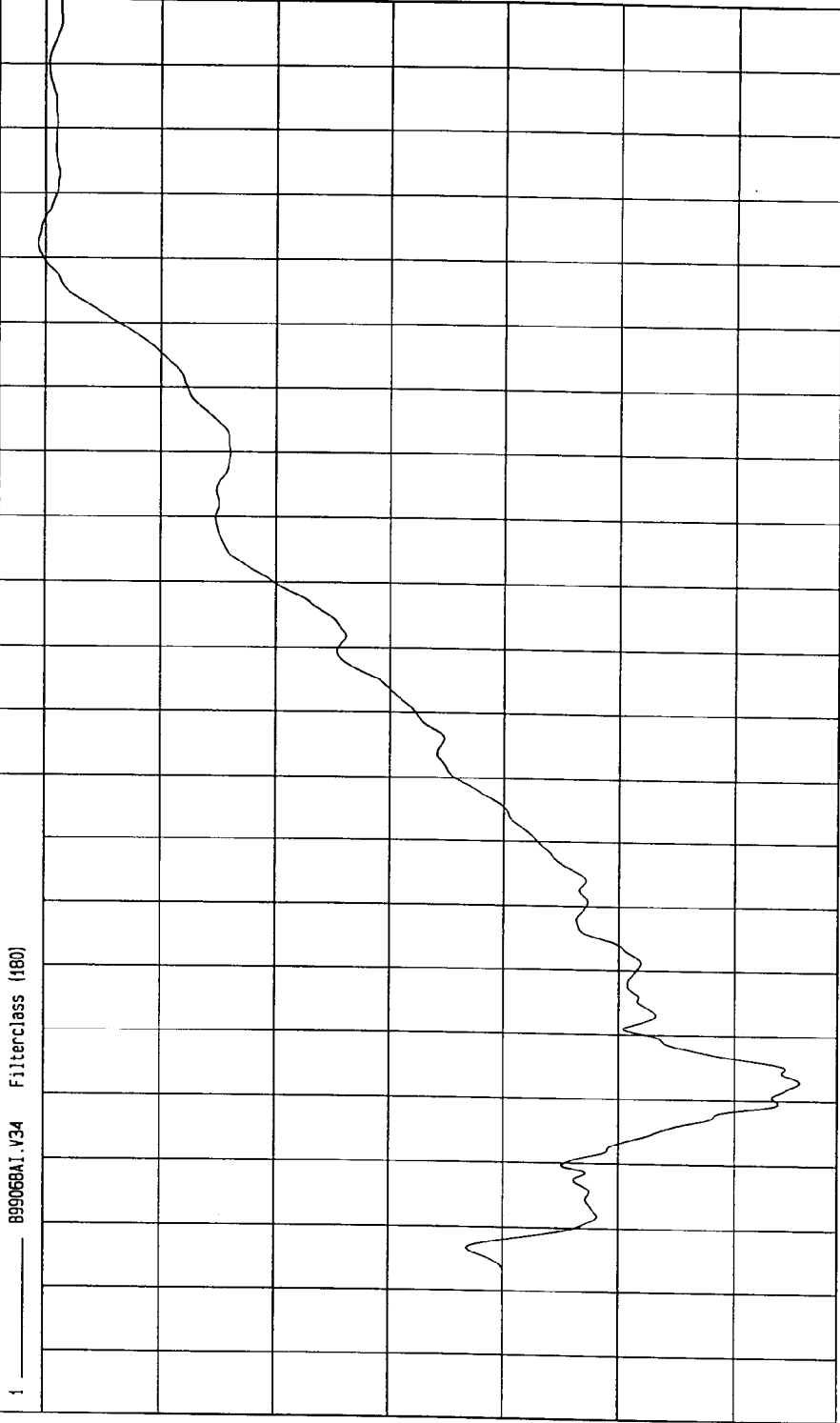
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 4.06 KPH at 162 msec

Minimum = -2.56 KPH at 33 msec

RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY

1 899068A1.V34 Filterclass (180)



MGA Research  
10-21-1999 08:57

TIME Seconds

KPH

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

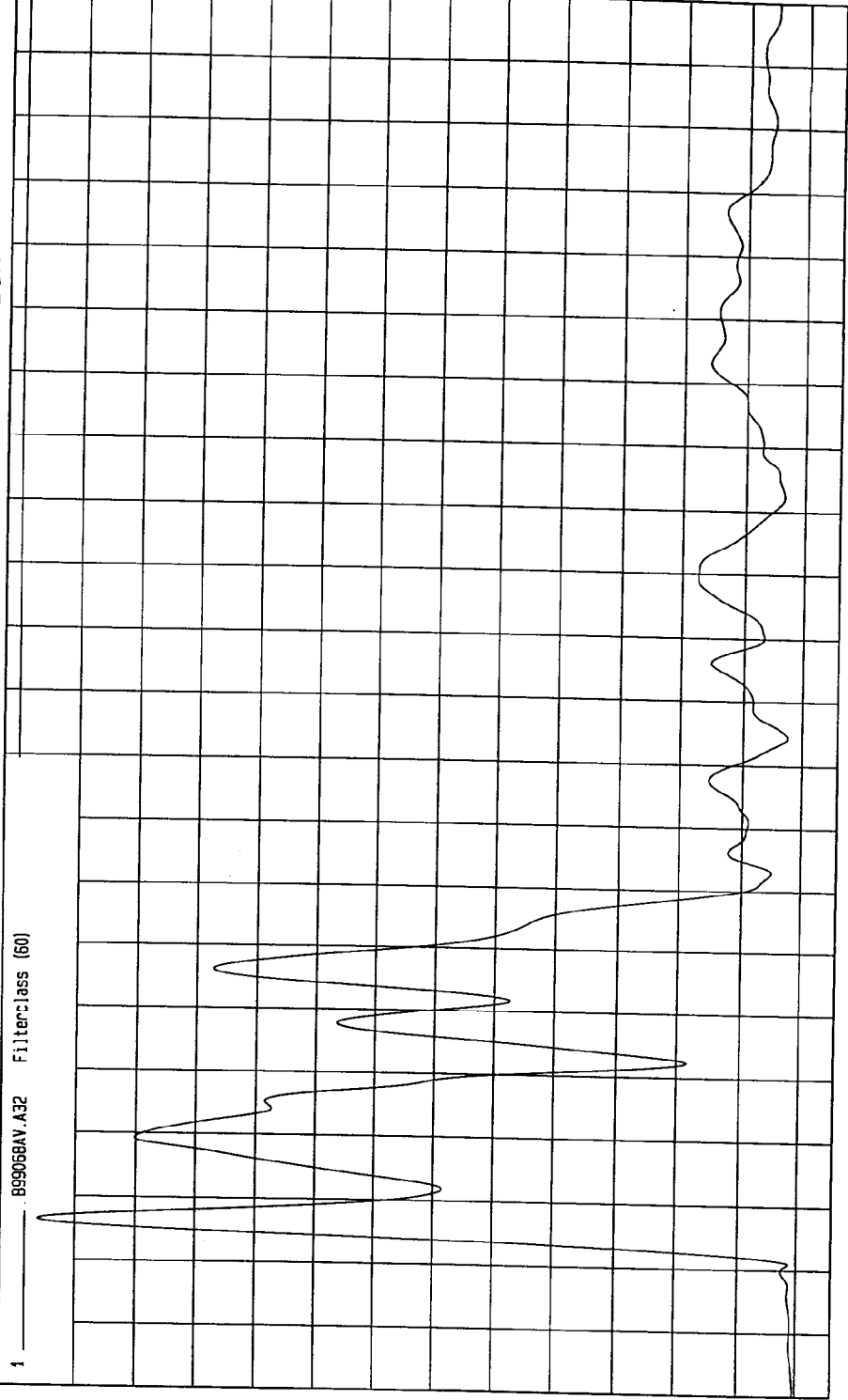
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 8.84E-02 G'S at -19 msec Maximum = 25.24 G'S at 6 msec

RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

1 899068AV.A32 Filterclass (60)

G.S



MSA Research  
10-21-1999 08:57

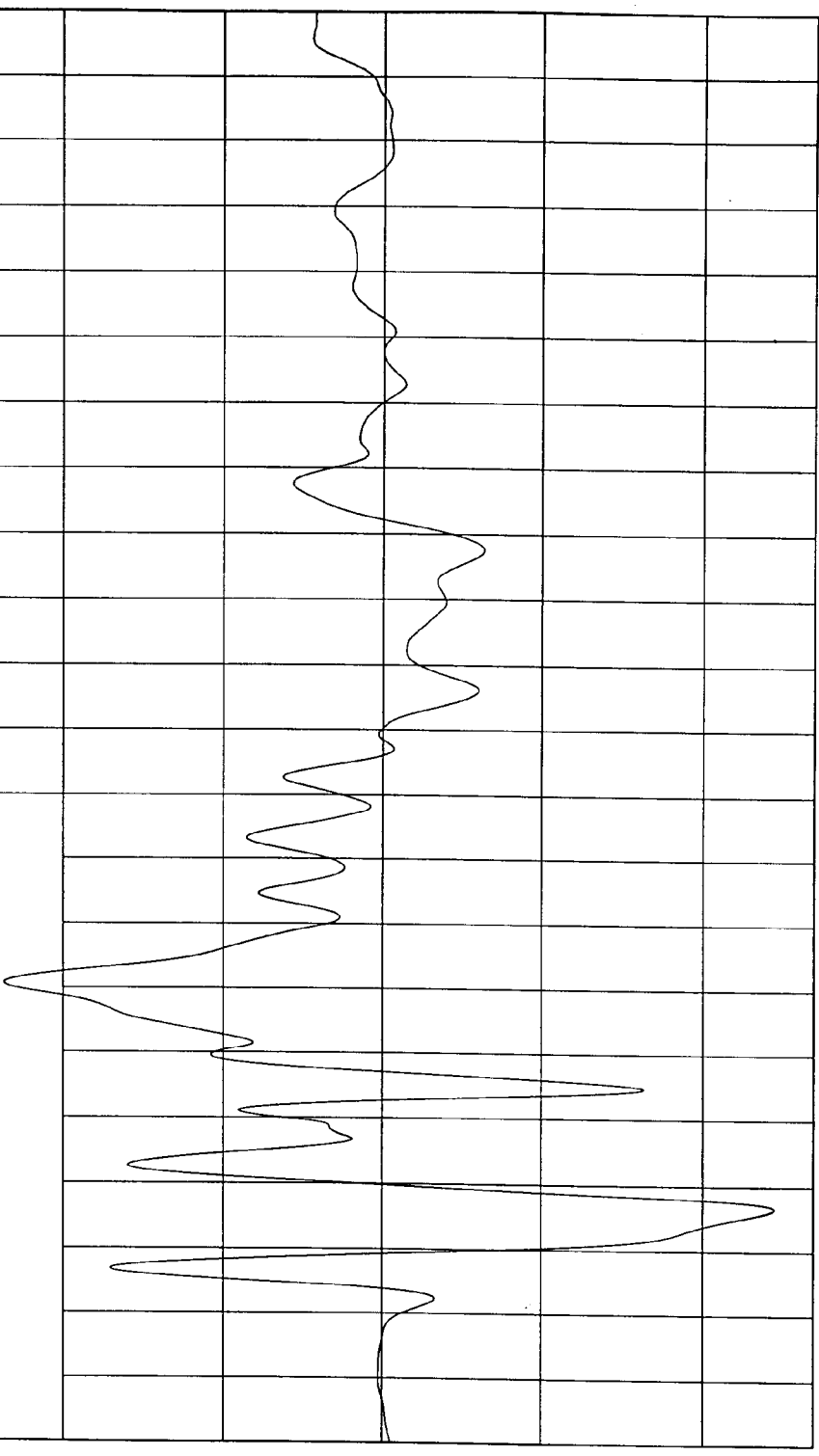
TIME (SECONDS)

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999  
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -4.9 G'S at 16 msec Maximum = 4.73 G'S at 51 msec

RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

1 899068AF.A35 Filterclass (60)



TIME (SECONDS)

MECA Research  
10-21-1999 09:33

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

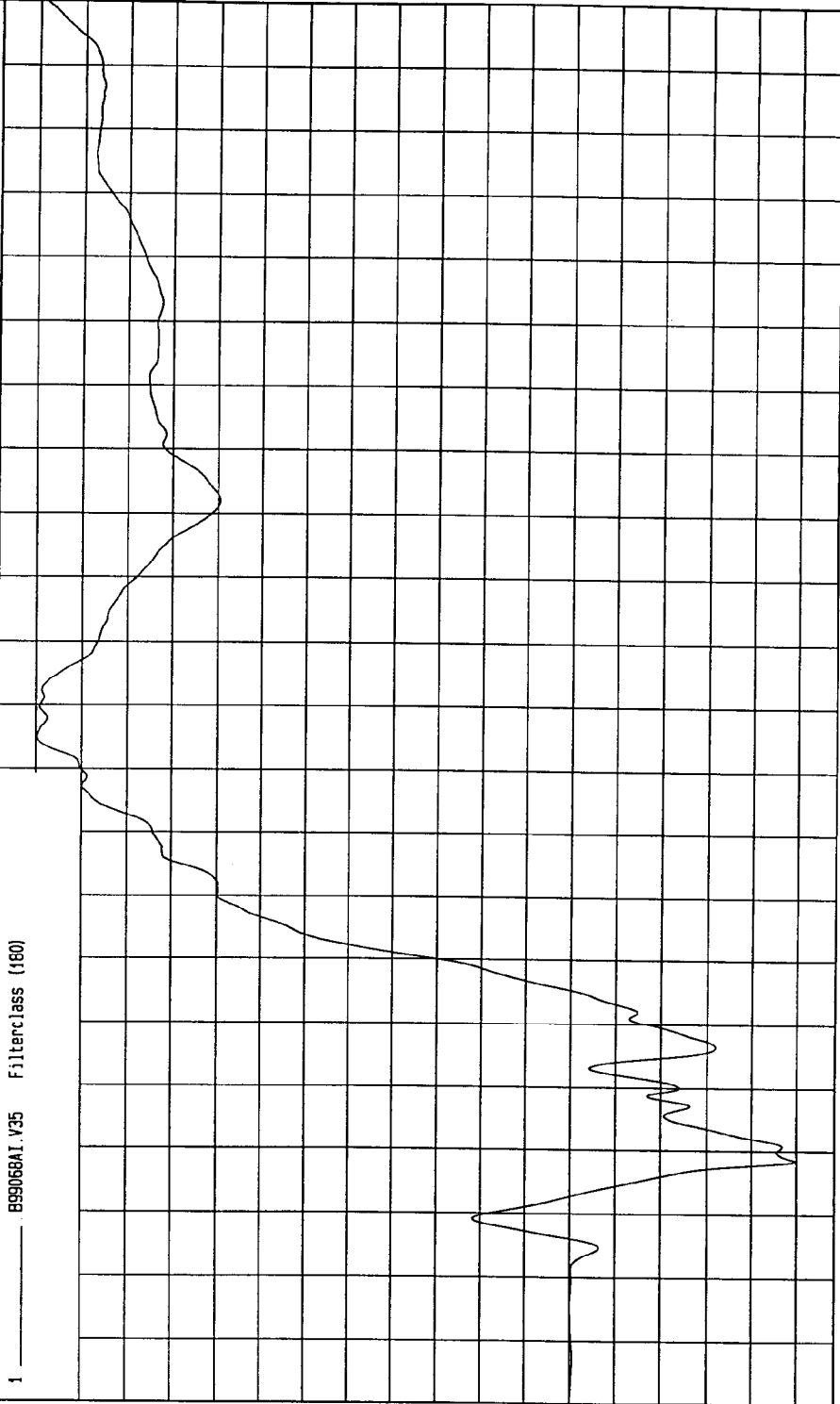
Minimum = -1 KPH at .18 msec

Maximum = 2.4 KPH at 85 msec

RIGHT SIDE SILL AT REAR SEAT X VELOCITY

1 ——— B99066A1.V35 Filterclass (180)

2.4  
2.2  
2  
1.8  
1.6  
1.4  
1.2  
1  
.8  
.6  
.4  
.2  
0  
-.2  
-.4  
-.6  
-.8  
-1



TIME Seconds

MCA Research  
10-21-1999 08:57

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 33.26 G'S at 20 msec

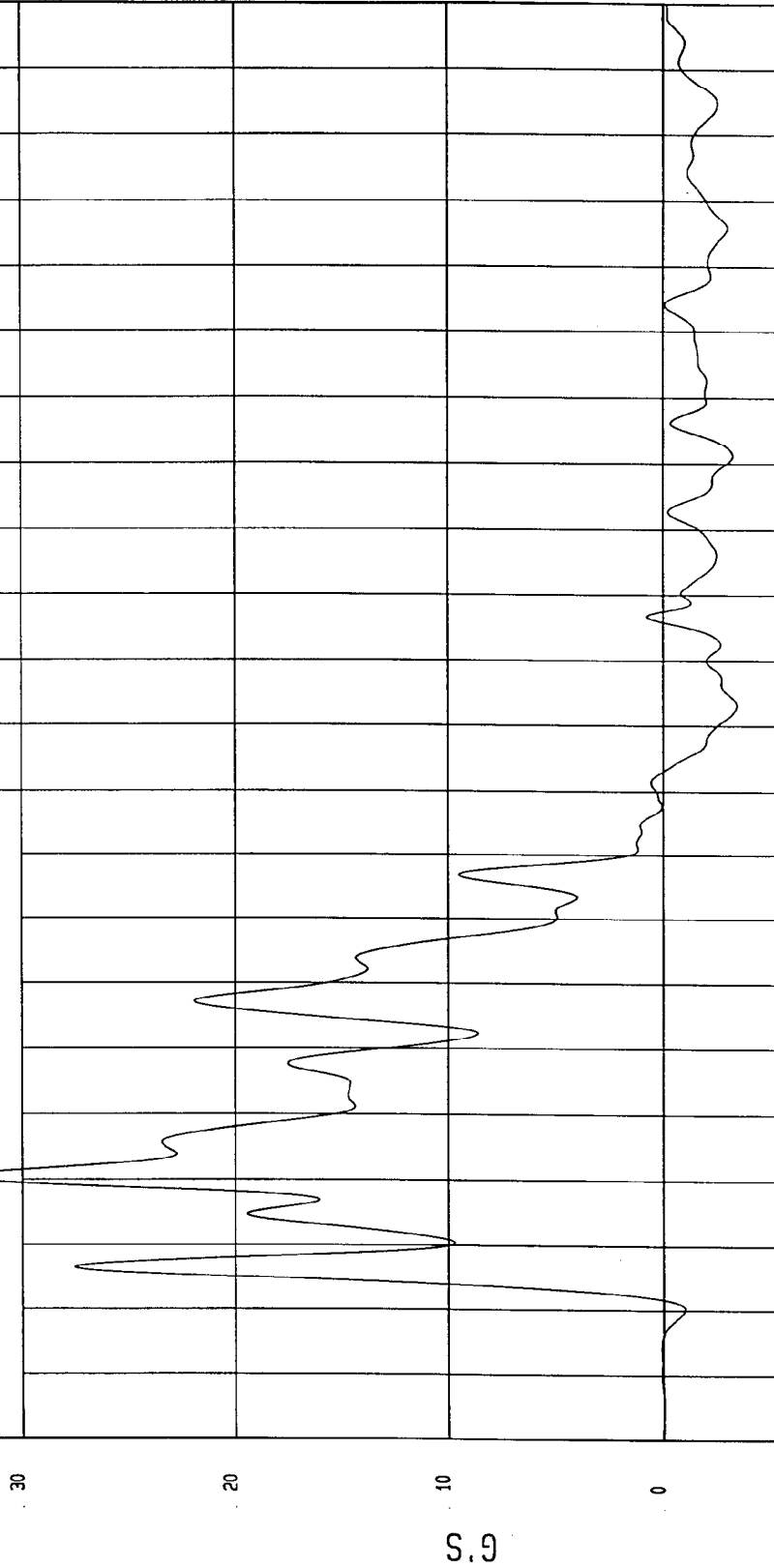
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -3.4 G'S at 93 msec

RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

1 899068AF.A35 Filterclass (60)



TIME (SECONDS)

MSA Research  
10-21-1999 09:33

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

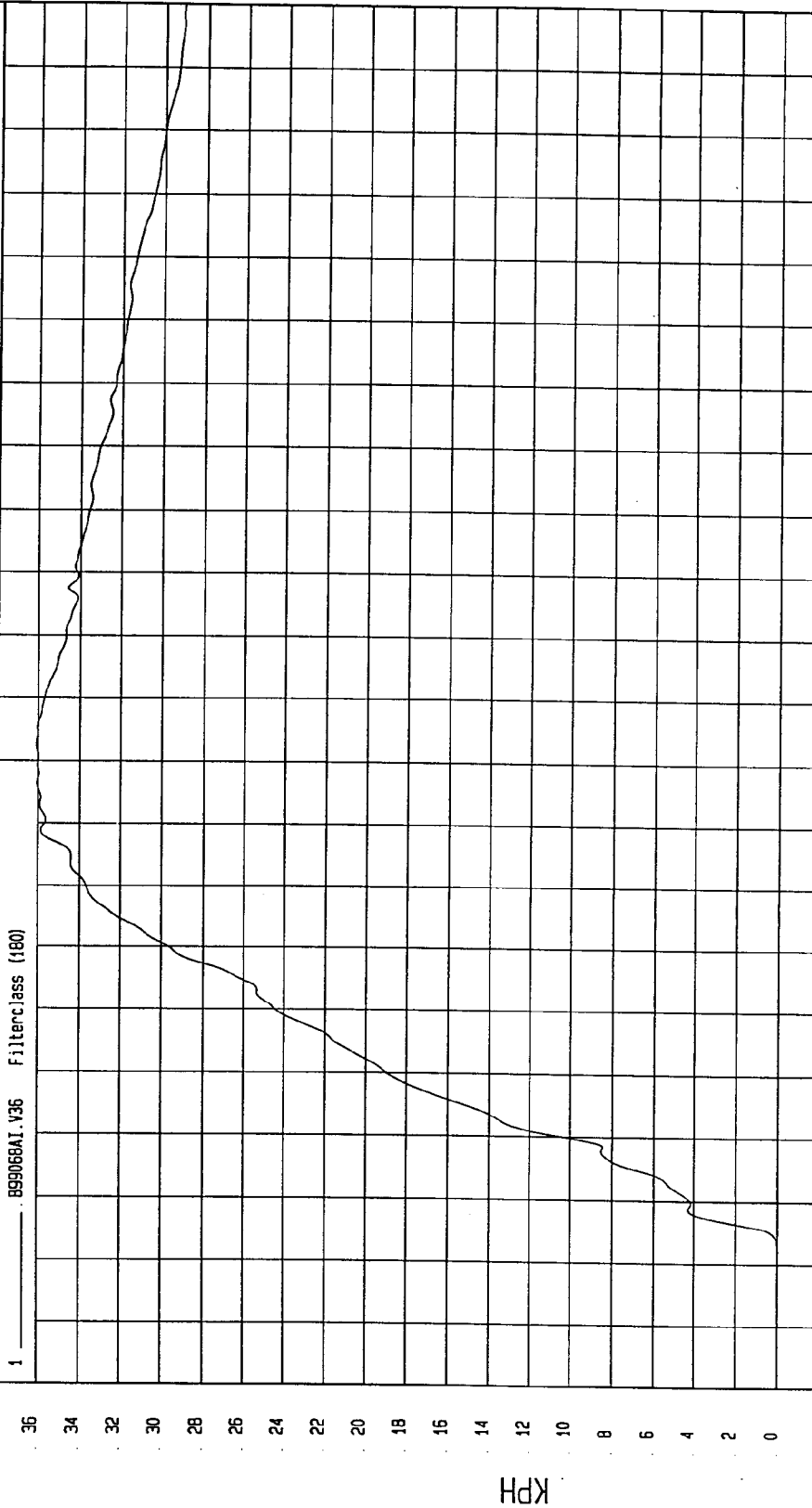
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -5.67E-03 KPH at -12 msec

Maximum = 36.08 KPH at 83 msec

RIGHT SIDE SILL AT REAR SEAT Y VELOCITY



MGA Research  
10-21-1999 08:57

TIME Seconds

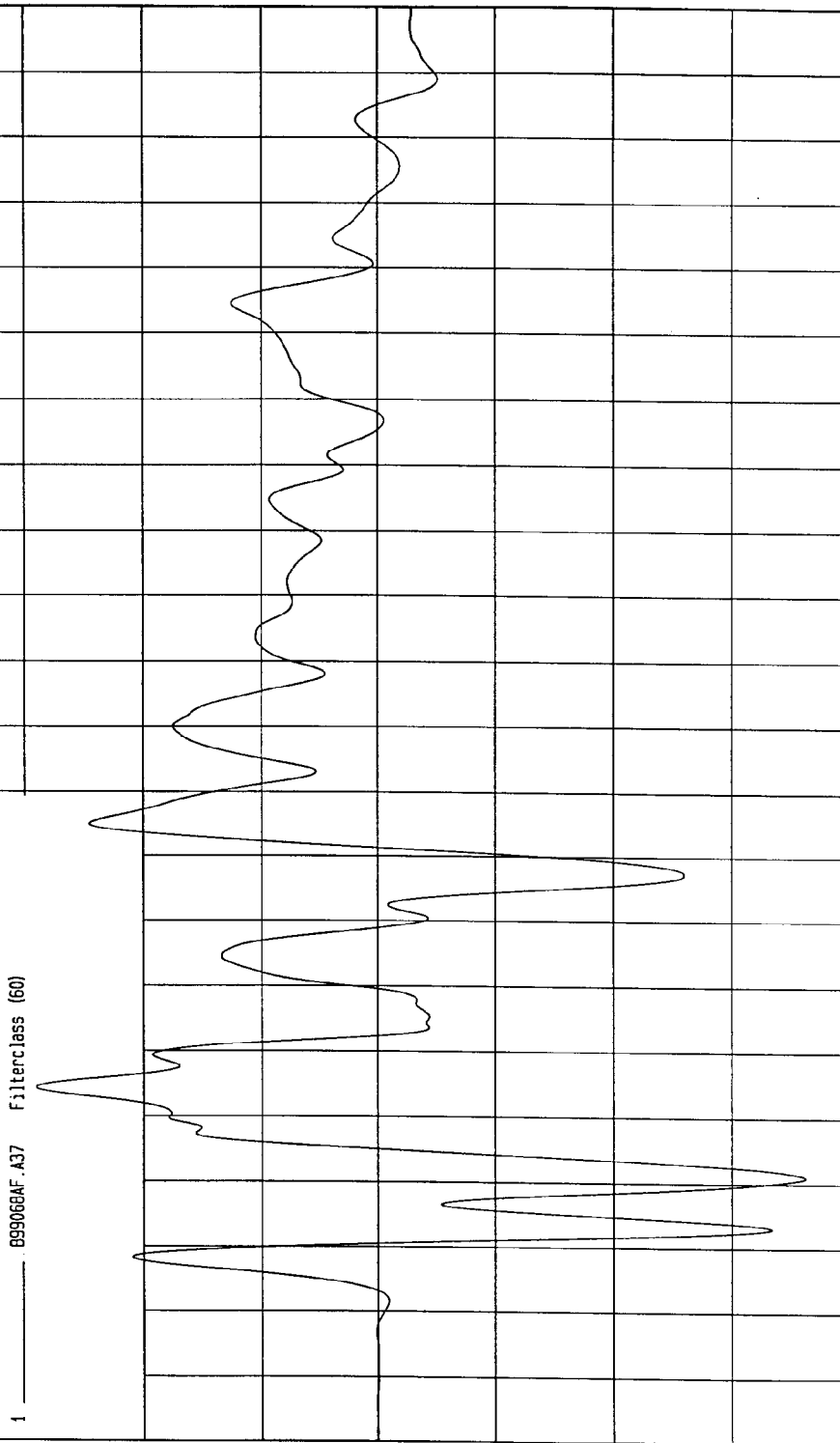
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -7.27 G'S at 21 msec Maximum = 5.82 G'S at 34 msec

RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

1 899068AF.A37 Filterclass (60)



MCA Research  
10-21-1999 09:33

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

TEST: INDICANT SIDE IMPACT

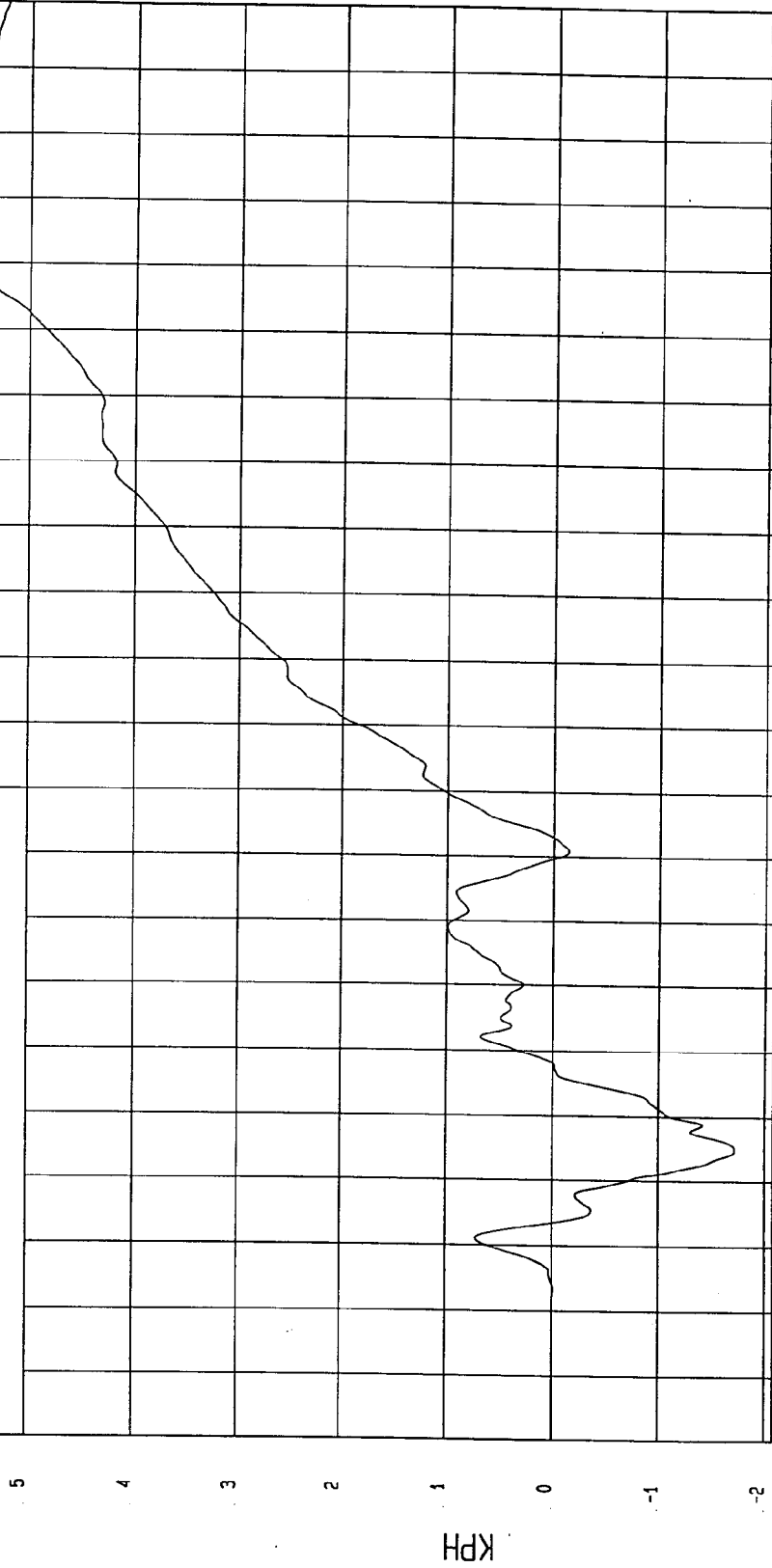
Speed: 38 MPH 61.2 KPH

Minimum = -1.71 KPH at 25 msec

Maximum = 5.61 KPH at 172 msec

RIGHT SIDE SILL AT REAR SEAT Z VELOCITY

1 ——— B99069A1.V37 Filterclass (160)



TIME Seconds

MCA Research  
10-21-1999 08:58

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

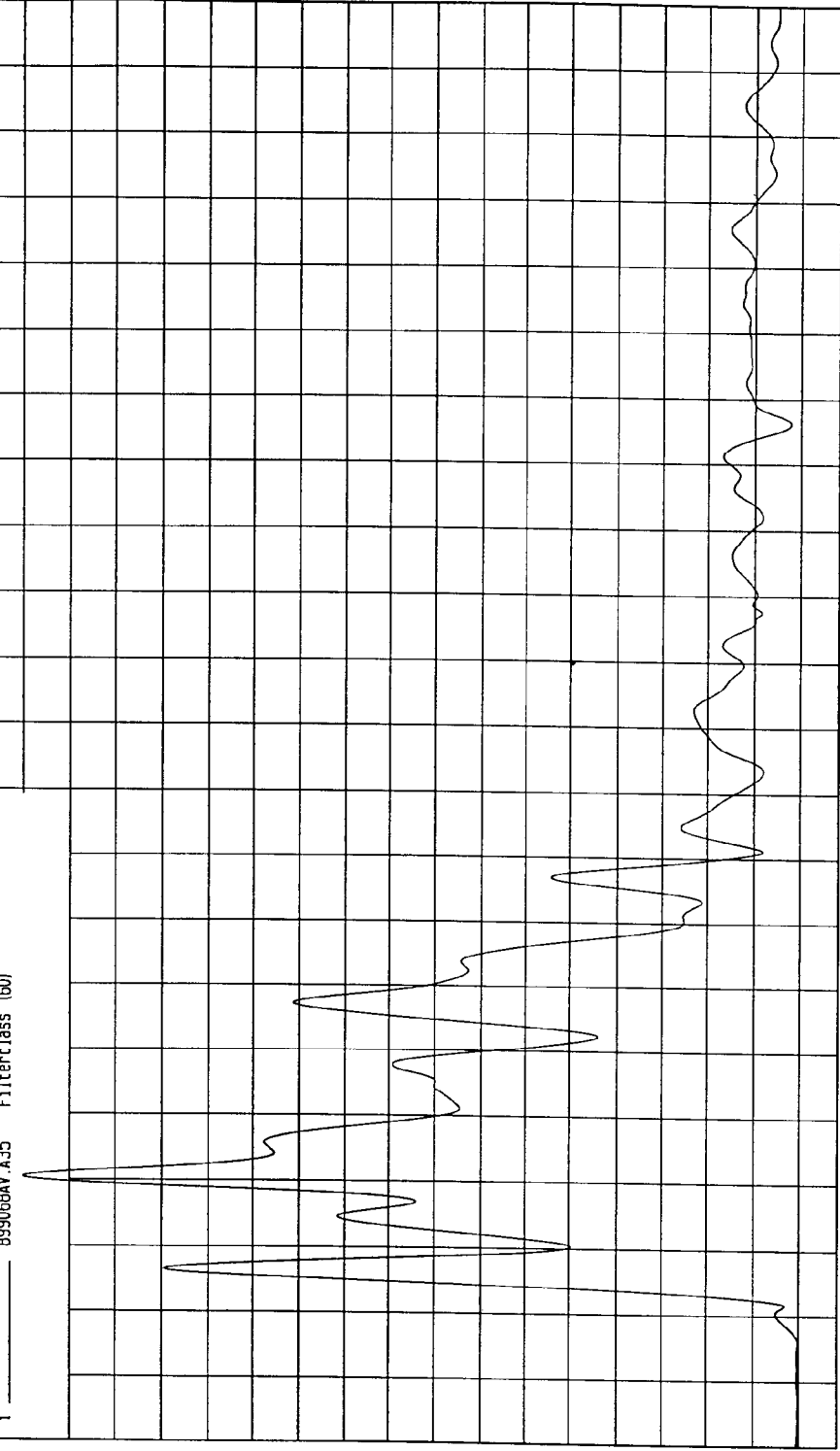
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 34.01 G'S at 20 msec

Minimum = 9.73E-03 G'S at -13 msec

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

1 899068AV.A35 Filterclass (60)



TIME (SECONDS)

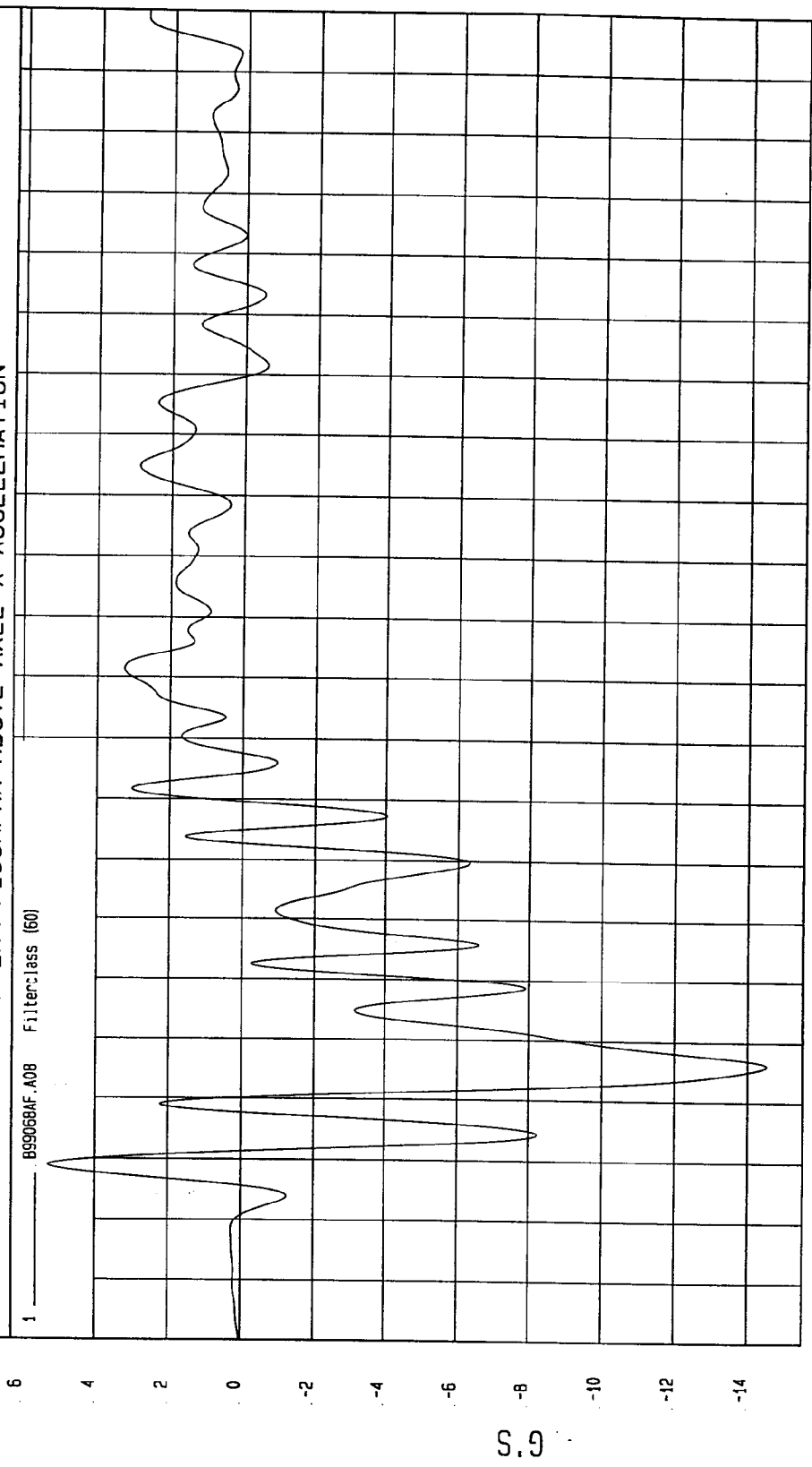
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -14.52 G'S at 26 msec Maximum = 5.28 G'S at 9 msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION

1 B99068AF.A08 Filterclass (60)



M&A Research  
10-21-1999 09:34

TIME (SECONDS)

G.S

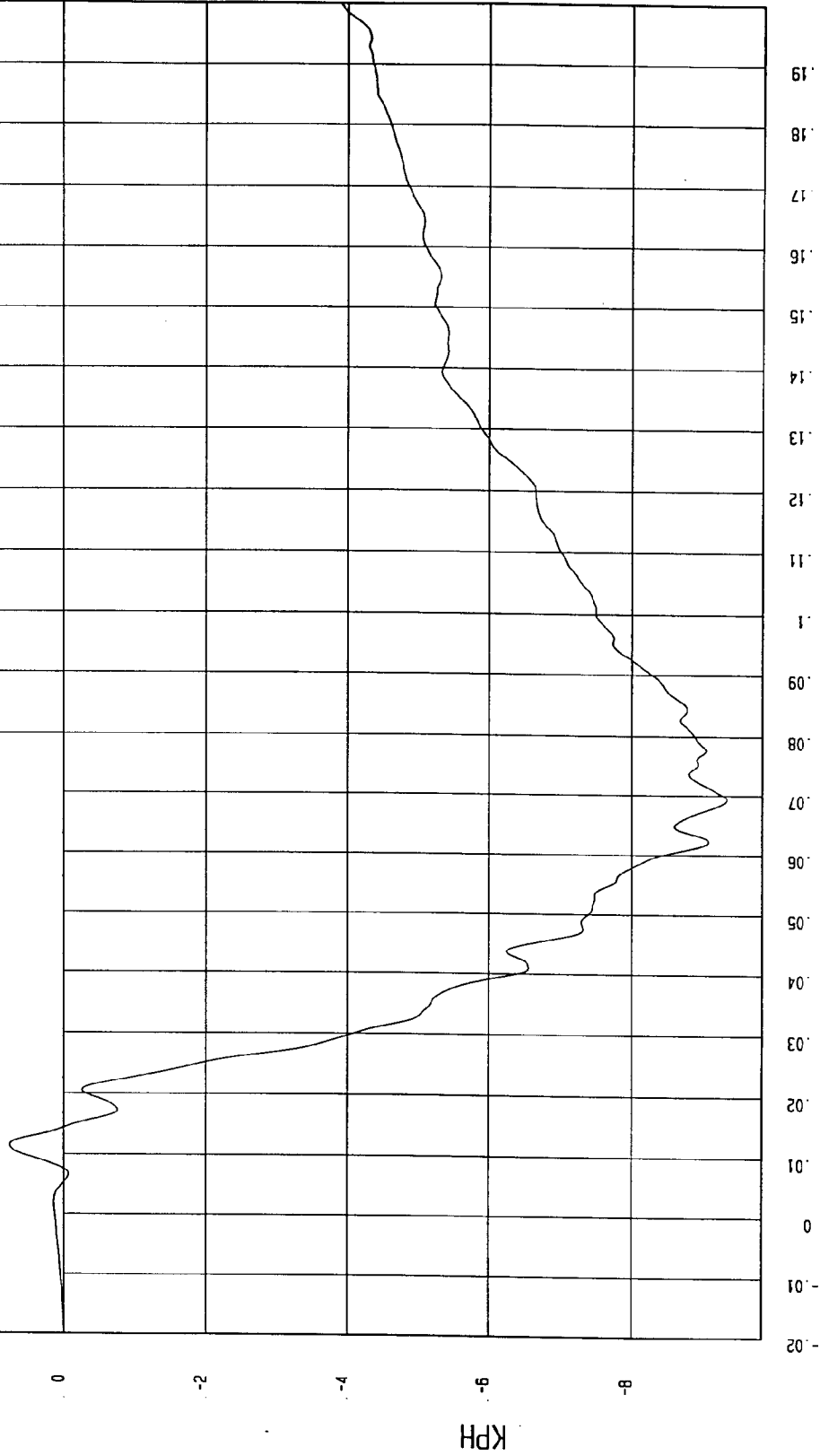
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -9.33 KPH at 69 msec  
Maximum = .76 KPH at 12 msec

REAR FLOORPAN ABOVE AXLE X VELOCITY

1 ——— B99058A1.V08 Filterclass (180)



NSA Research  
10-21-1999 08:58

TEST DATE: 10-20-1999  
Speed: 38 MPH 61.2 KPH

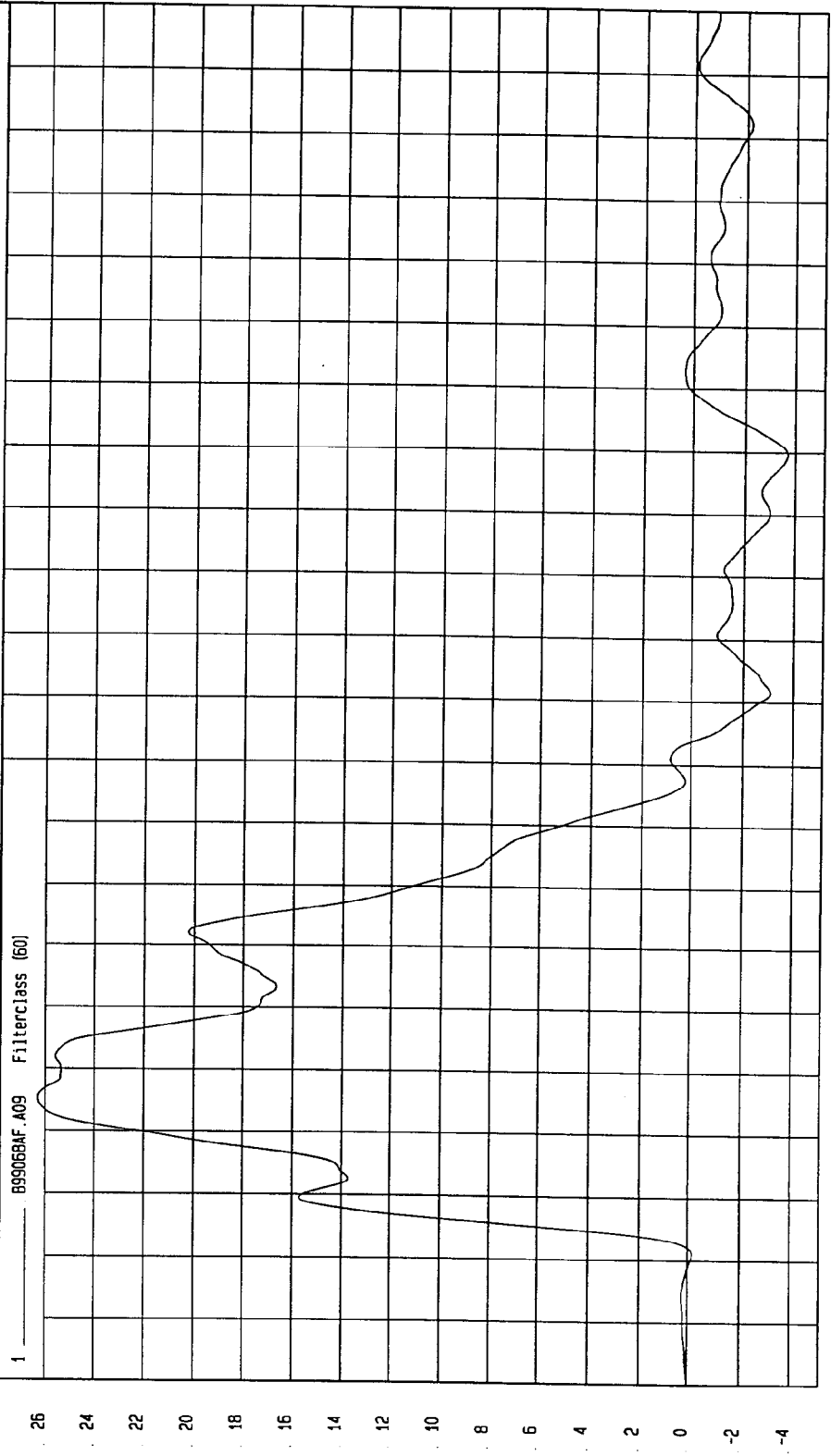
TEST: INDICANT SIDE IMPACT  
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 26.3 G'S at 25 msec

Minimum = -3.68 G'S at 130 msec

REAR FLOORPAN ABOVE AXLE Y ACCELERATION

1 B9906BAF.A09 FilterClass (60)



TIME (SECONDS)

TIME (SECONDS)

NGA Research  
10-21-1999 09:34

G.S

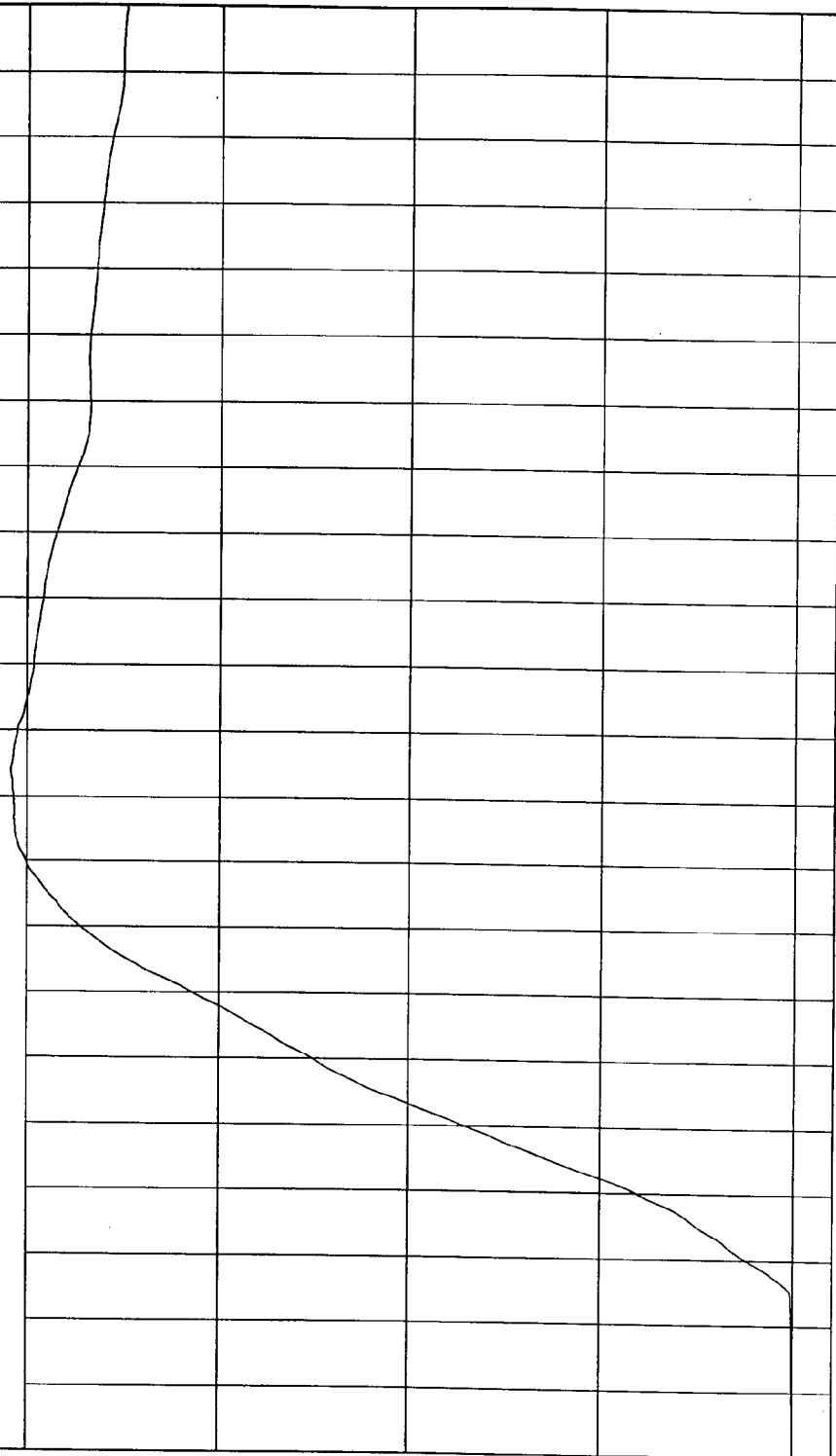
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -4.98E-04 KPH at -19 msec Maximum = 40.85 KPH at 84 msec

REAR FLOORPAN ABOVE AXLE Y VELOCITY

1 899058A1.V09 Filterclass (180)



TIME Seconds

MCA Research  
10-21-1999 08:58

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

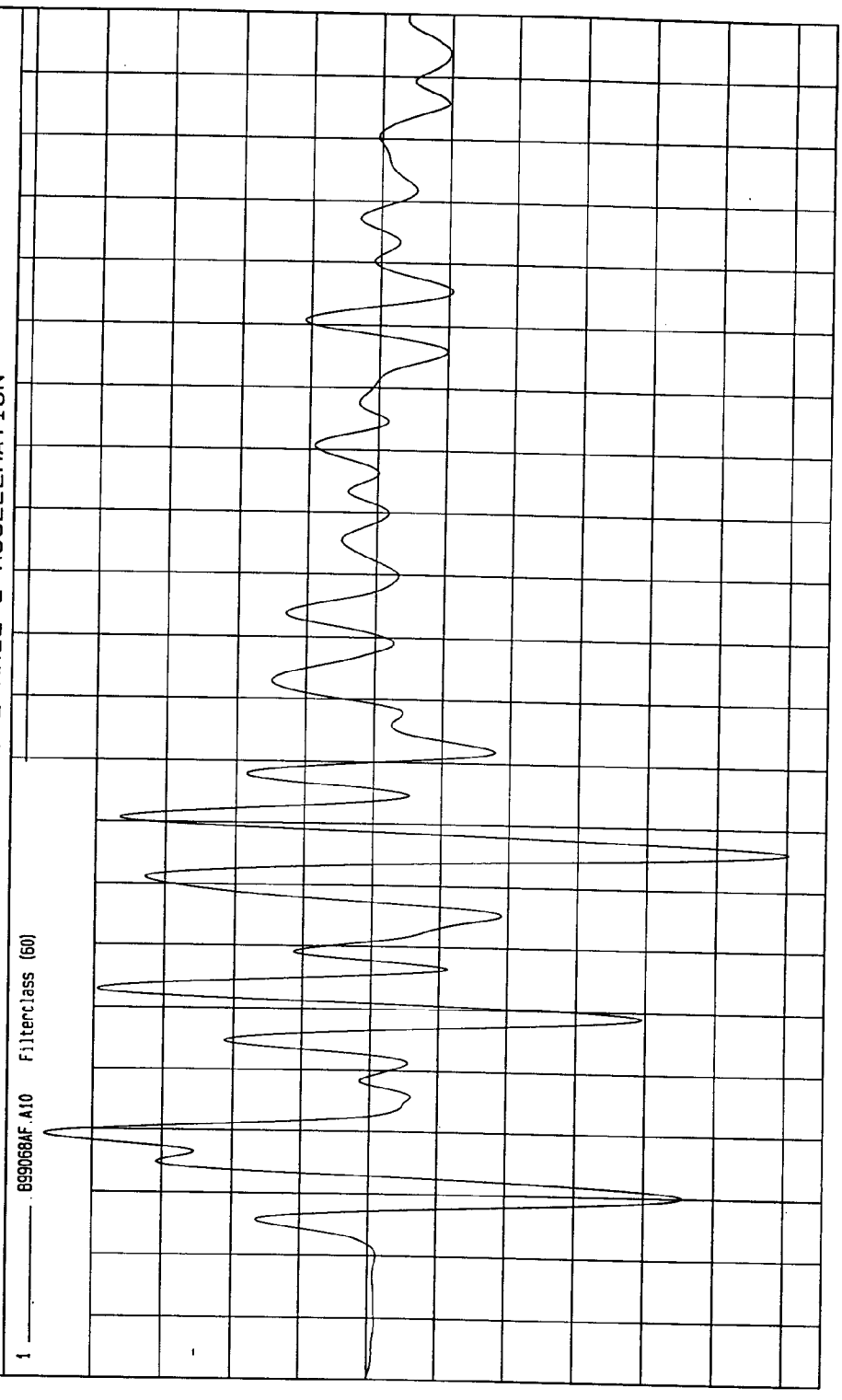
Minimum = -12.05 G'S at 66 msec

Maximum = 9.38 G'S at 19 msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION

899066AF.A10 Filterclass (60)

G.S



TIME (SECONDS)

MCA Research  
10-21-1999 09:34

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

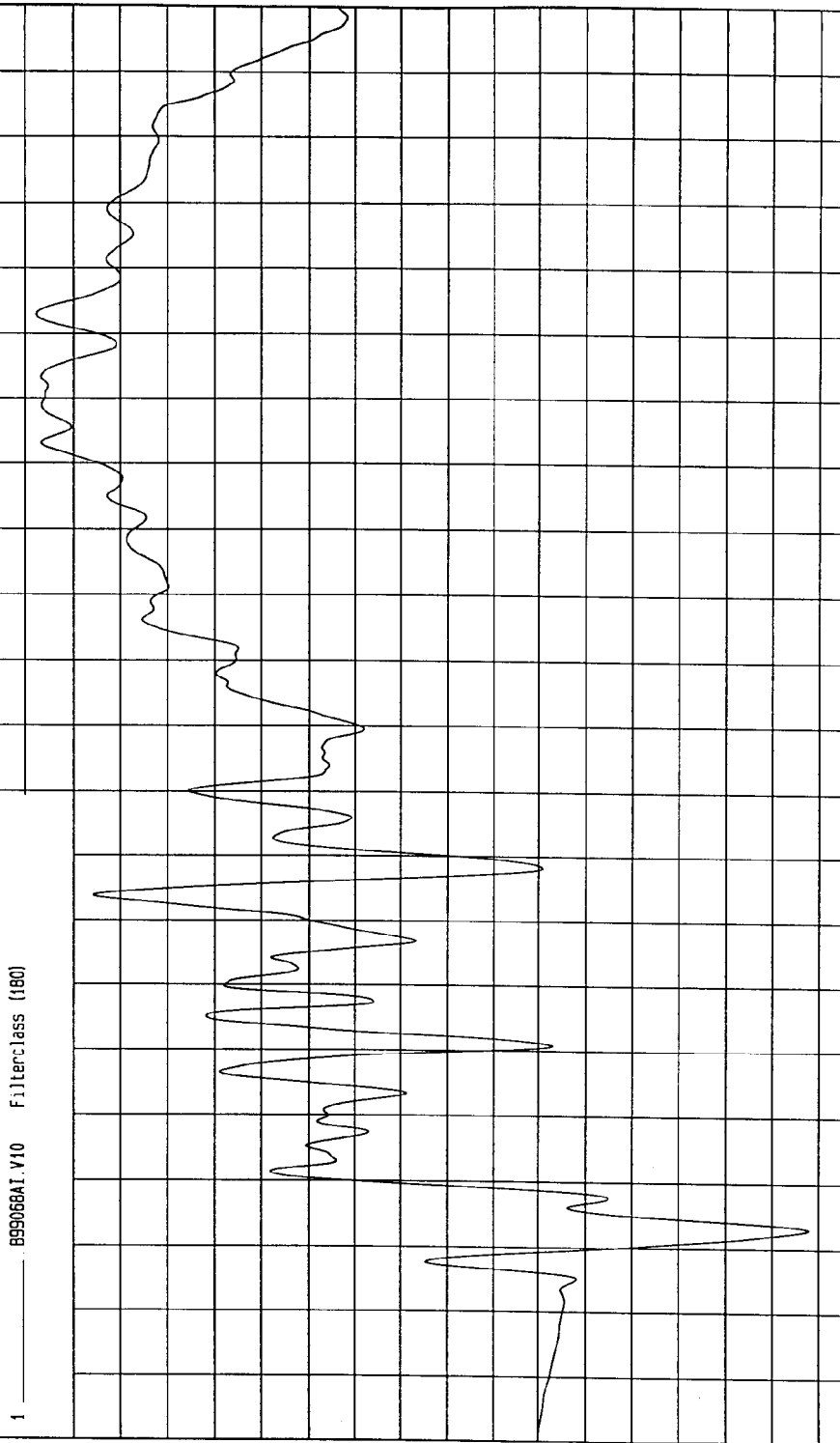
Minimum = -1.16 KPH at 13 msec

Maximum = 2.15 KPH at 153 msec

REAR FLOORPAN ABOVE AXLE Z VELOCITY

1 899066A1.V10 Filterclass (180)

2.2  
2  
1.8  
1.6  
1.4  
1.2  
1  
.8  
.6  
.4  
.2  
0  
-.2  
-.4  
-.6  
-.8  
-1  
-1.2



TIME Seconds

MGA Research  
10-21-1999 06:58

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

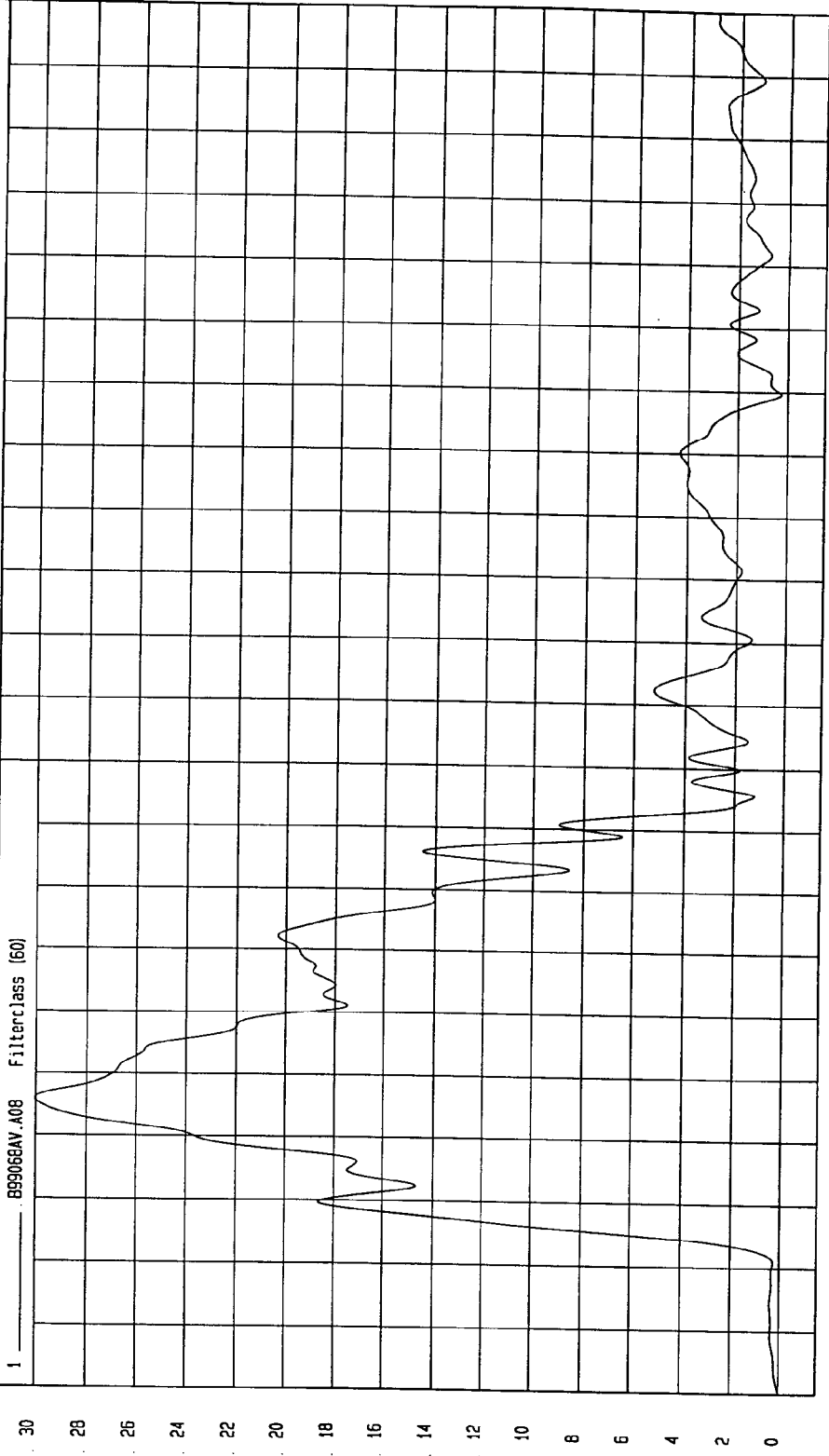
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = 4.48E-02 G'S at -20 msec

Maximum = 30.03 G'S at 26 msec

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

1 .899068AV.A08 Filterclass (60)



MECA Research  
10-21-1999 08:58

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

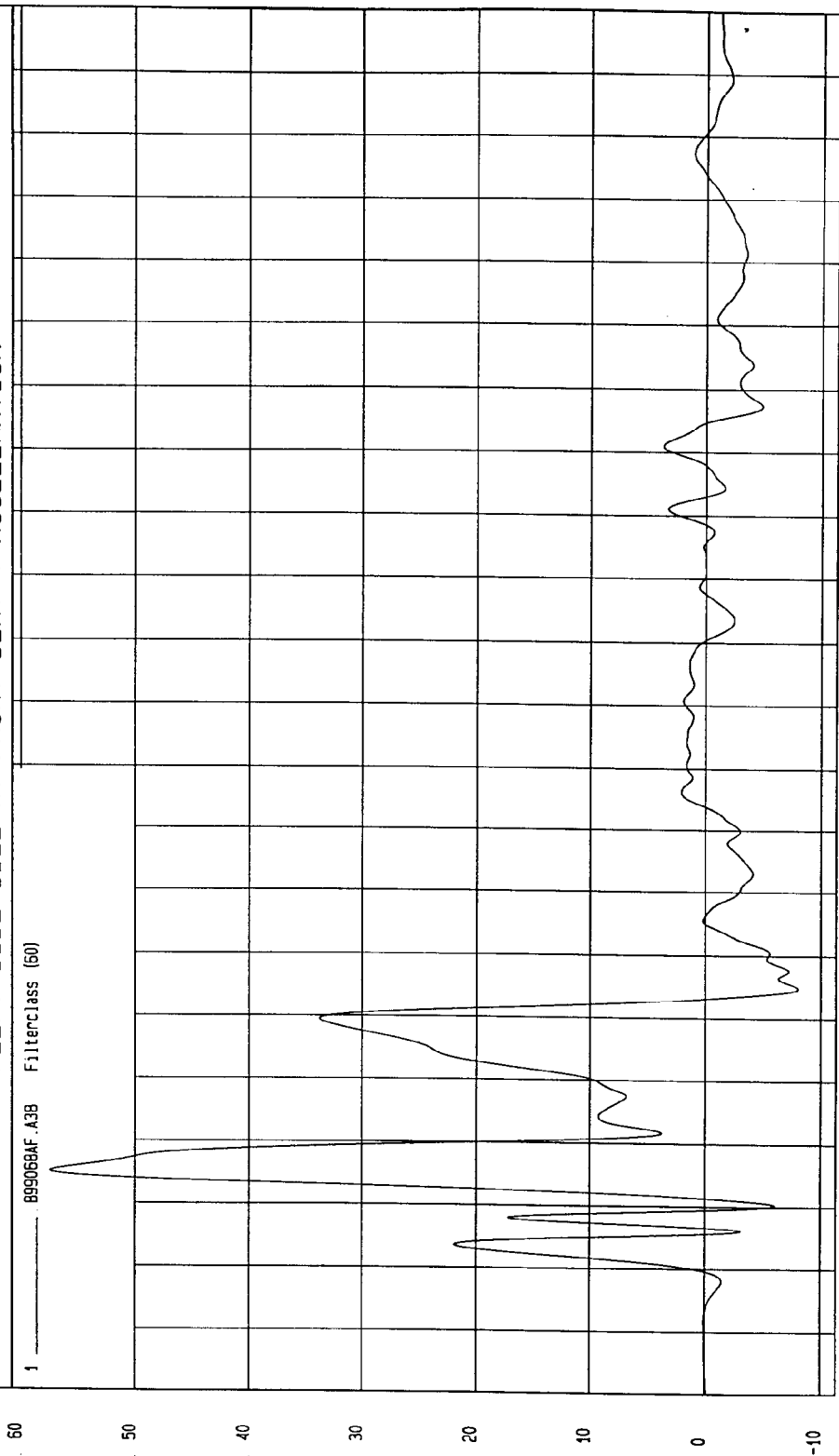
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -8.06 G'S at 45 msec

Maximum = 57.5 G'S at 15 msec

LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 89906BAF.A3B Filterclass (60)



MGA Research  
10-21-1999 09:33

TIME (SECONDS)

G.S

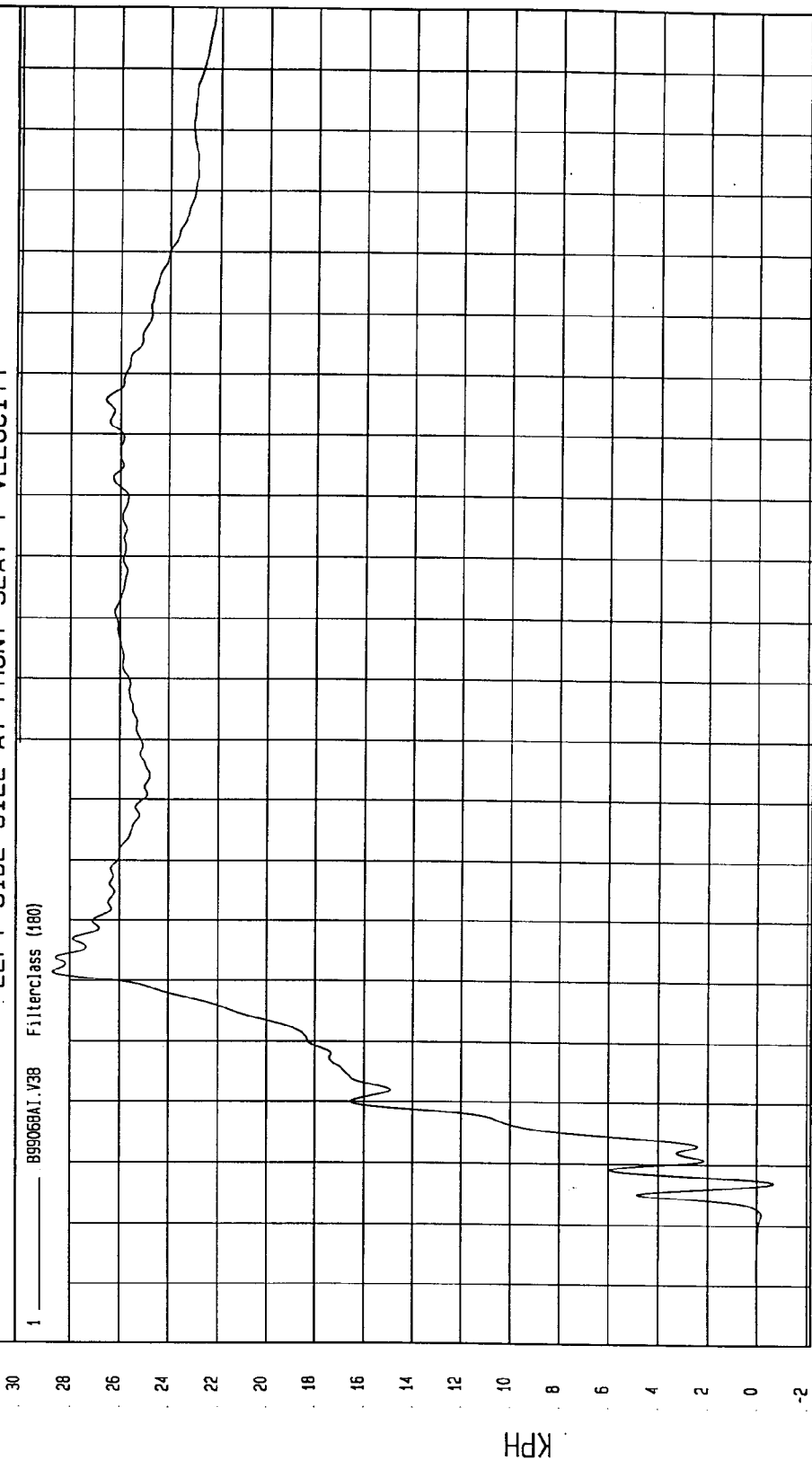
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -.69 KPH at 7 msec Maximum = 28.69 KPH at 42 msec

LEFT SIDE SILL AT FRONT SEAT Y VELOCITY

1 B99068AT.V38 Filterclass (180)



MGA Research  
10-21-1999 08:57

TIME Seconds

KPH

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

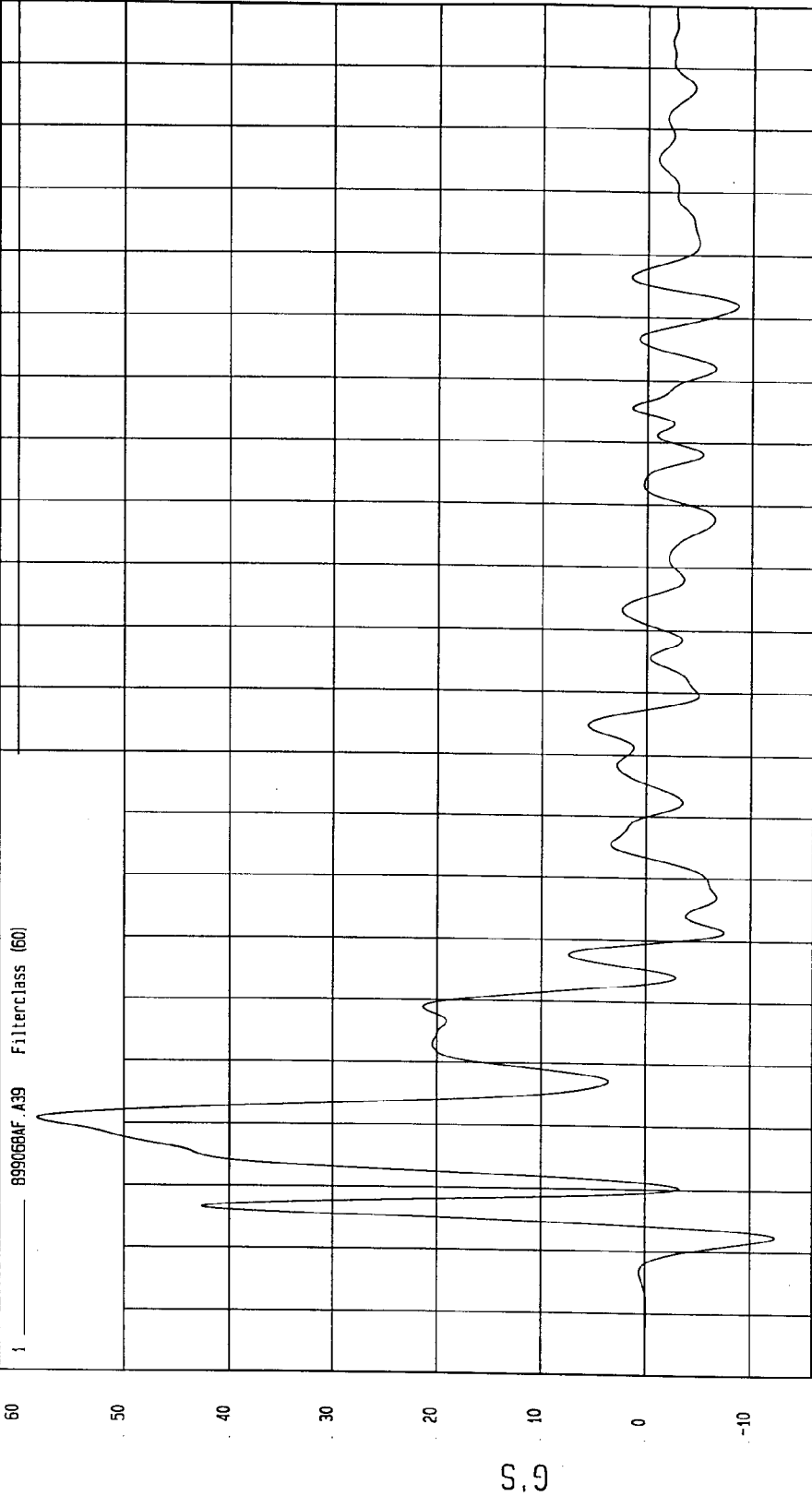
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -12.38 G'S at 2 msec

Maximum = 58.24 G'S at 21 msec

LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

1 899068AF.A39 Filterclass (60)



MGA Research  
10-21-1999 09:33

TIME (SECONDS)

G'S

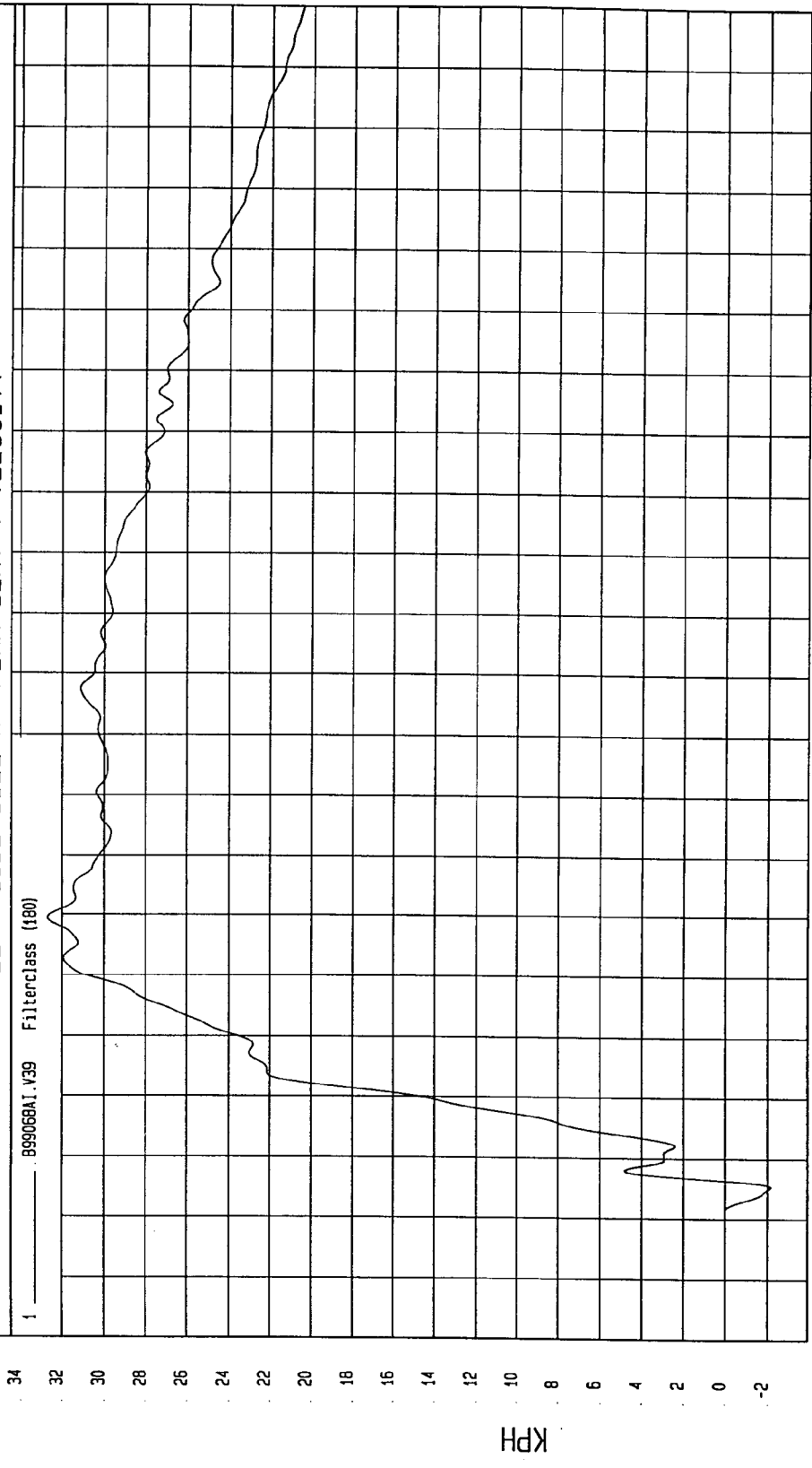
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -2.14 KPH at 6 msec Maximum = 32.71 KPH at 50 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY

1 899068A1.V39 Filterclass (180)



TIME Seconds

MSA Research  
10-21-1999 08:57

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

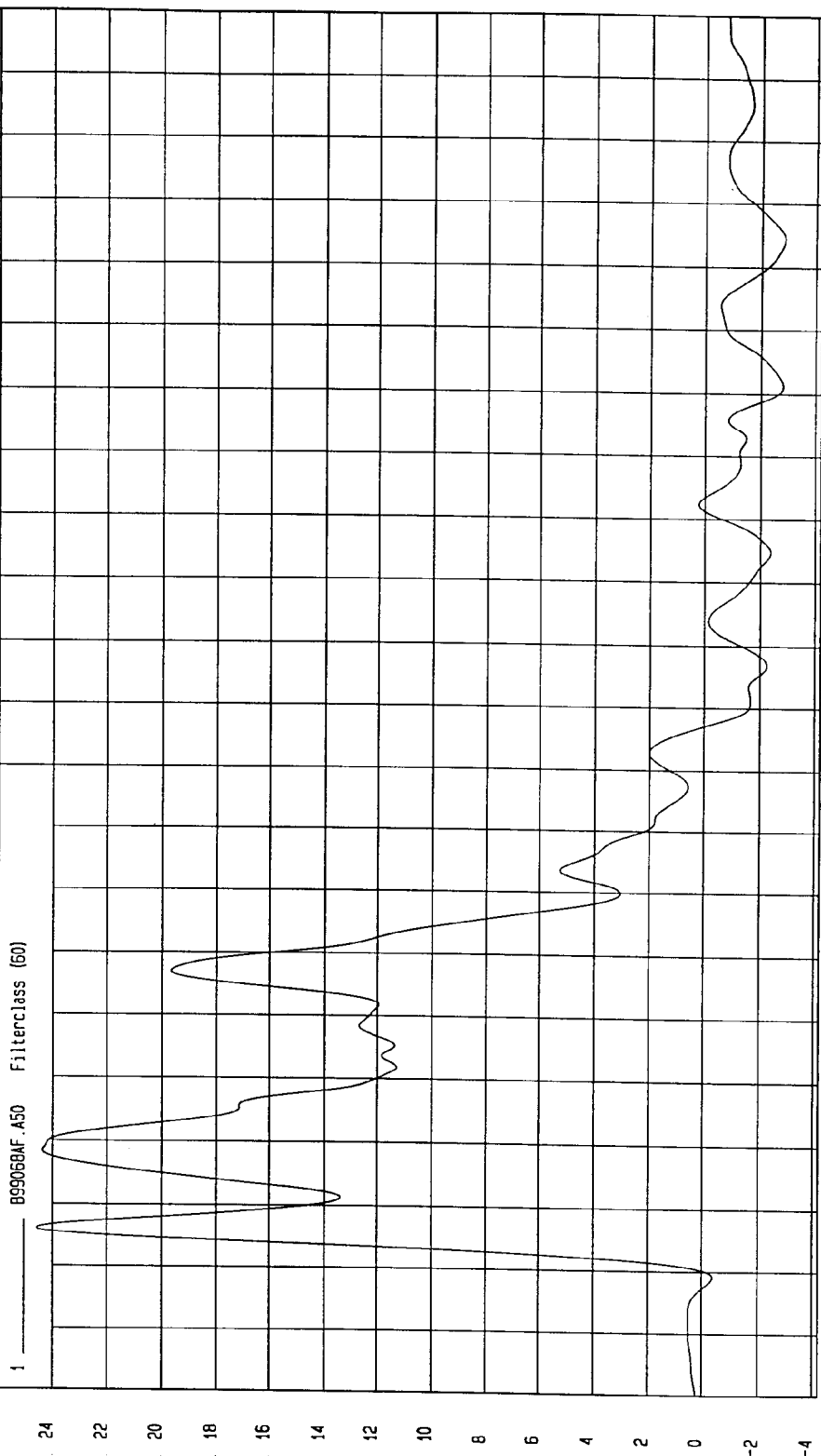
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 24.58 G'S at 6 msec

Minimum = -2.84 G'S at 164 msec

RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION

1 B99058AF.A50 Filterclass (50)



MGA Research  
10-21-1999 09:34

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

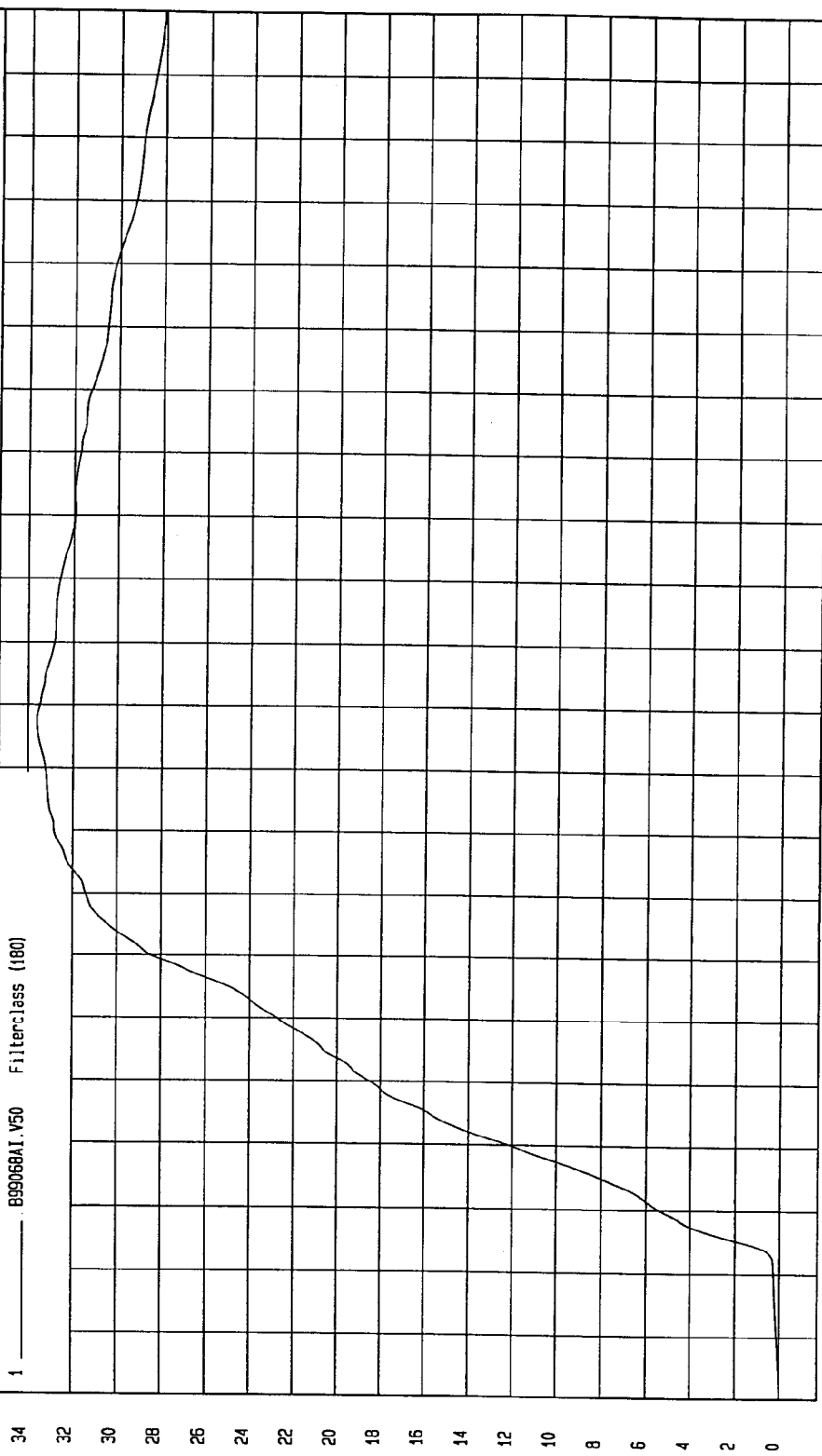
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = 0 KPH at -20 msec

Maximum = 33.61 KPH at 88 msec

RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY

Filter: class (180)



WCA Research  
10-21-1999 08:58

TIME Seconds

KPH

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 82.23 G'S at 9 msec

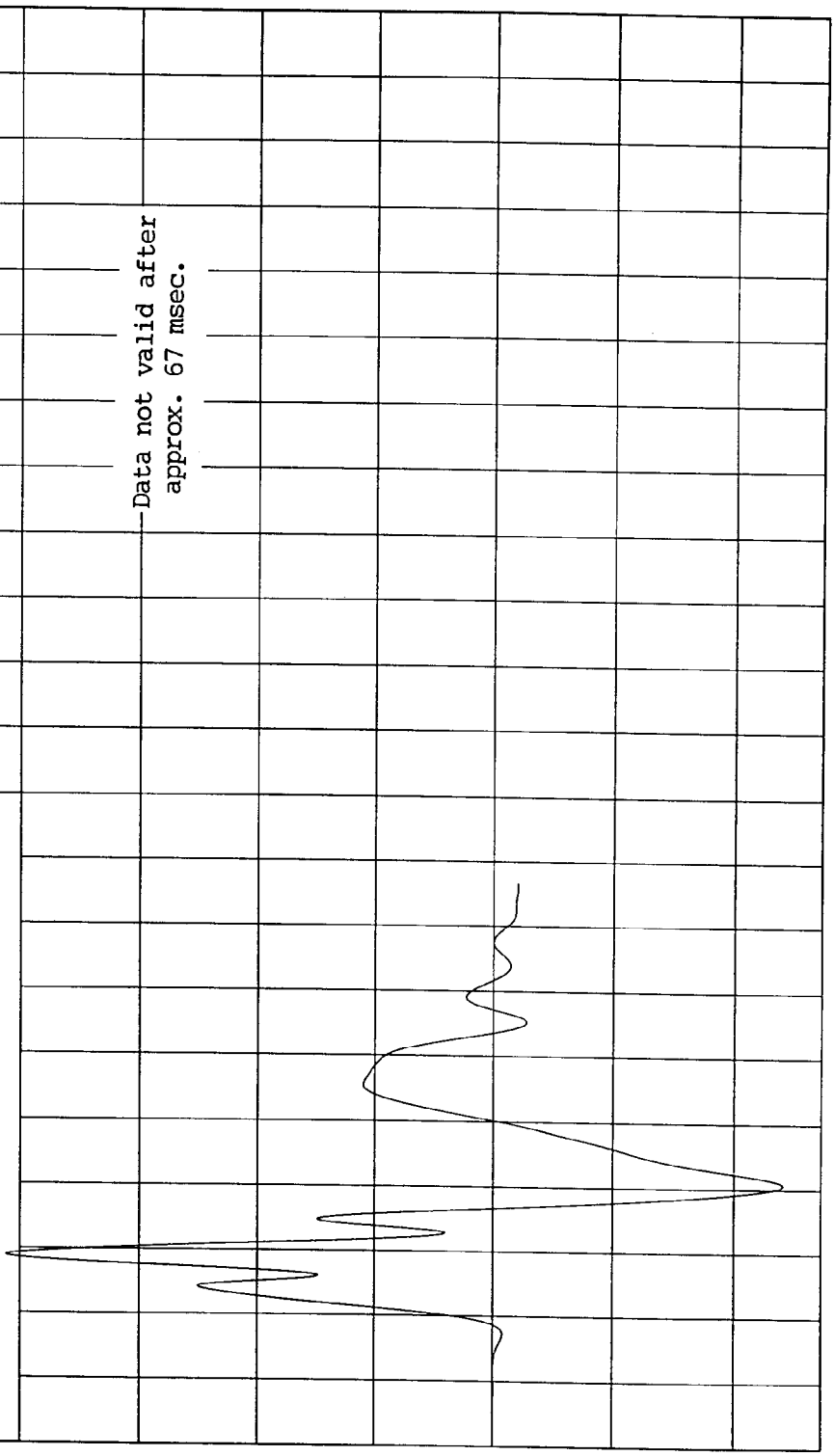
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -48.17 G'S at 21 msec

LEFT LOWER A-POST Y ACCELERATION

1 B99068AF.A20 FilterClass (60)



TIME (SECONDS)

MGA Research  
10-21-1999 09:53

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 23.38 KPH at 16 msec

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -7.32E-02 KPH at 1 msec

LEFT LOWER A-POST Y VELOCITY

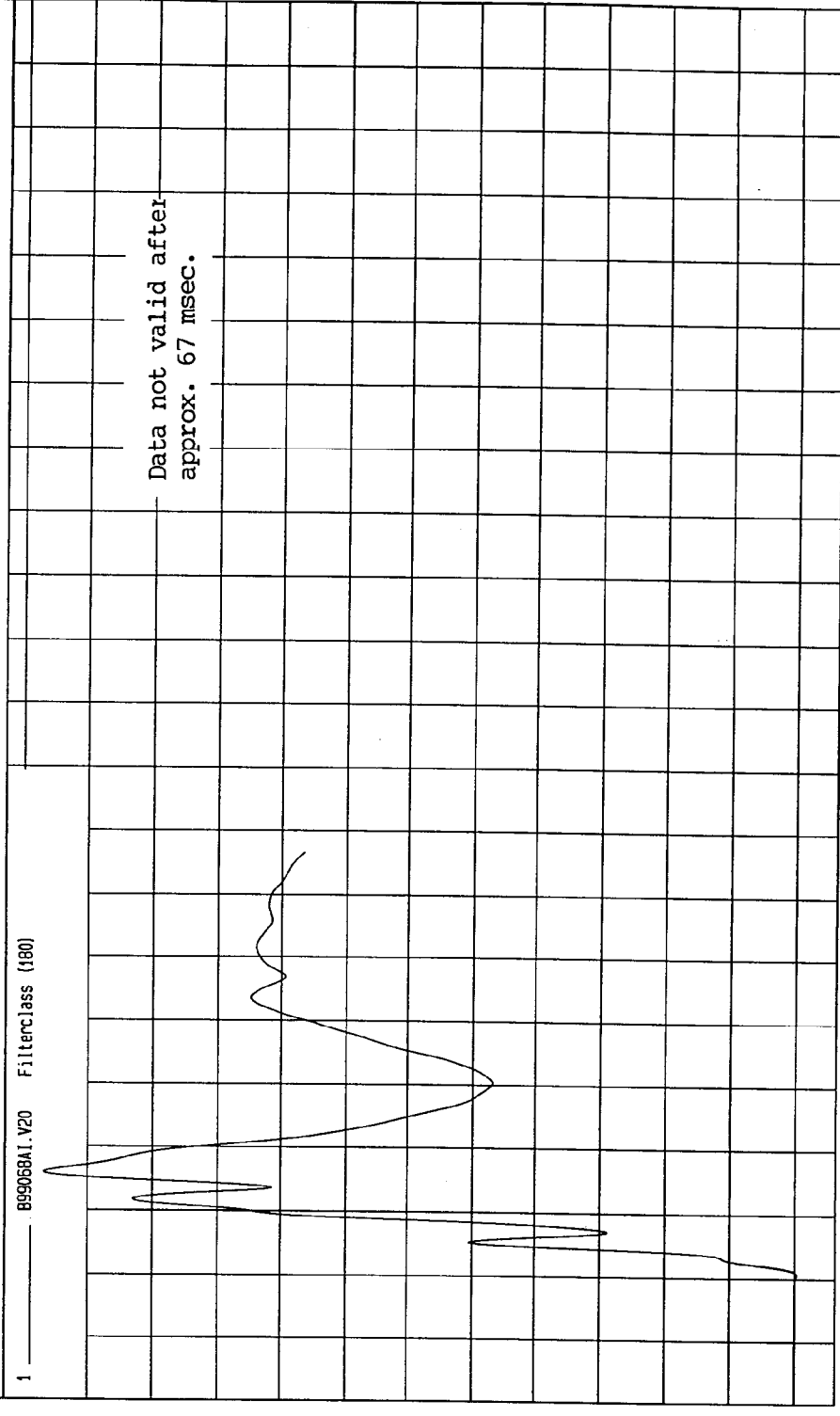
1 899068A1.V20 Filterclass (180)

KPH

Data not valid after approx. 67 msec.

TIME Seconds

NGA Research  
10-21-1999 09:56



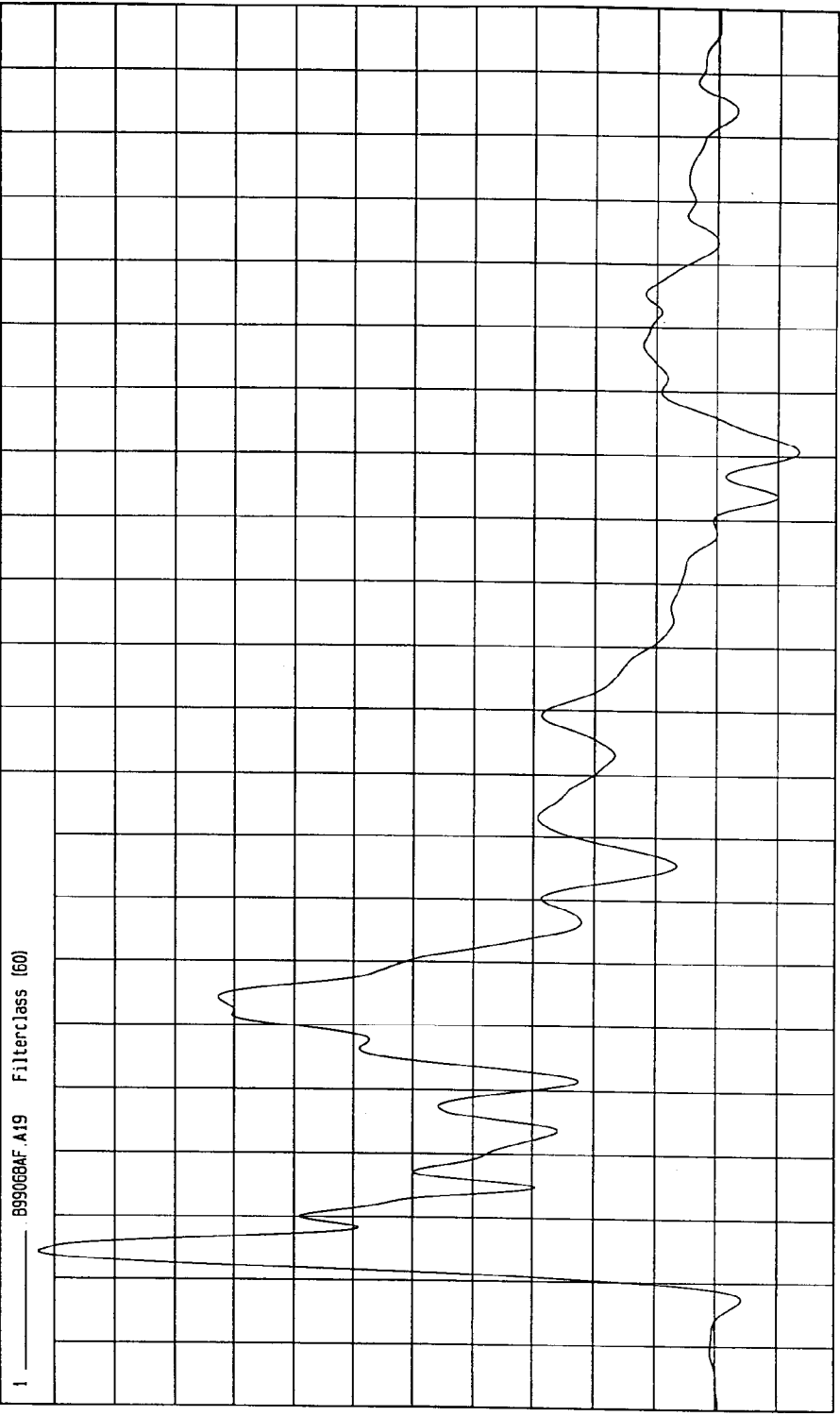
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -2.73 G'S at 131 msec Maximum = 22.54 G'S at 4 msec

LEFT MID A-POST Y ACCELERATION

1 B99088AF.A19 Filterclass (60)



TIME (SECONDS)

MSA Research  
10-21-1999 09:34

G.S

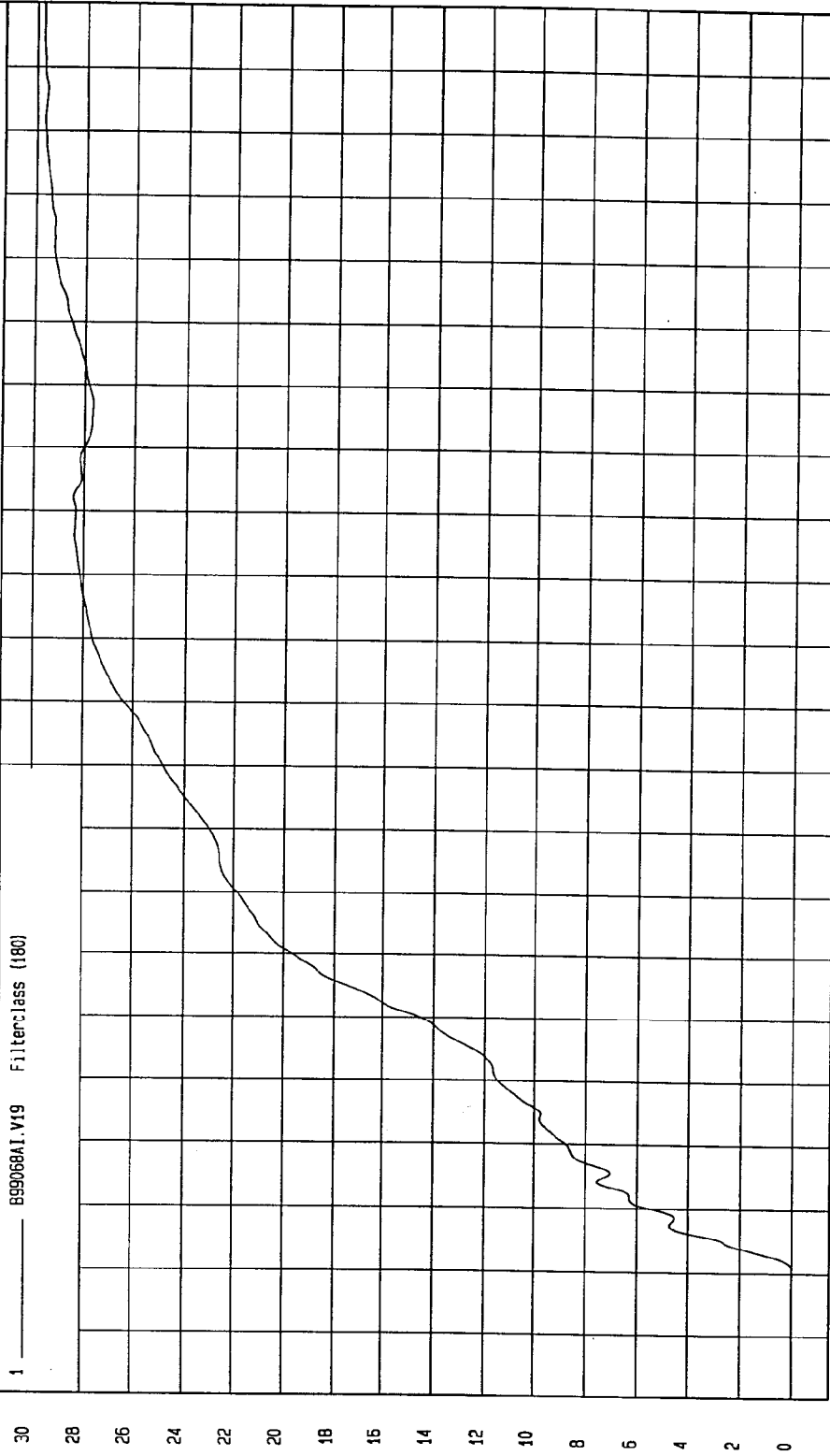
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.31E-02 KPH at -13 msec  
Maximum = 29.74 KPH at 195 msec

LEFT MID A-POST Y VELOCITY

1 ——— B99068A1.V19 Filterclass (180)



MSA Research  
10-21-1999 08:58

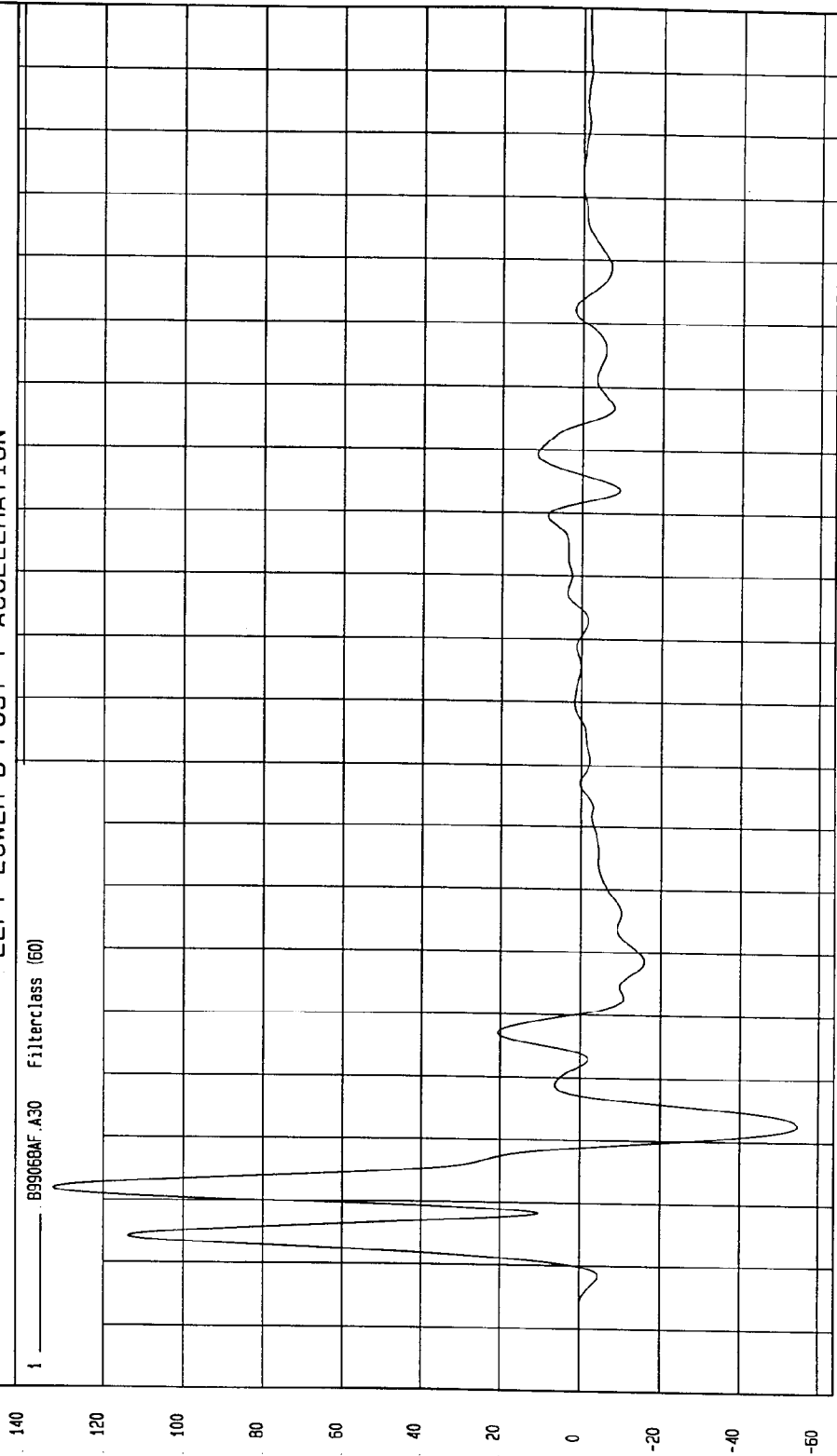
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -54.59 G'S at 23 msec Maximum = 132.49 G'S at 12 msec

LEFT LOWER B-POST Y ACCELERATION

1 899058AF.A30 Filterclass (60)



WPA Research  
10-21-1999 09:34

TIME (SECONDS)

G'S

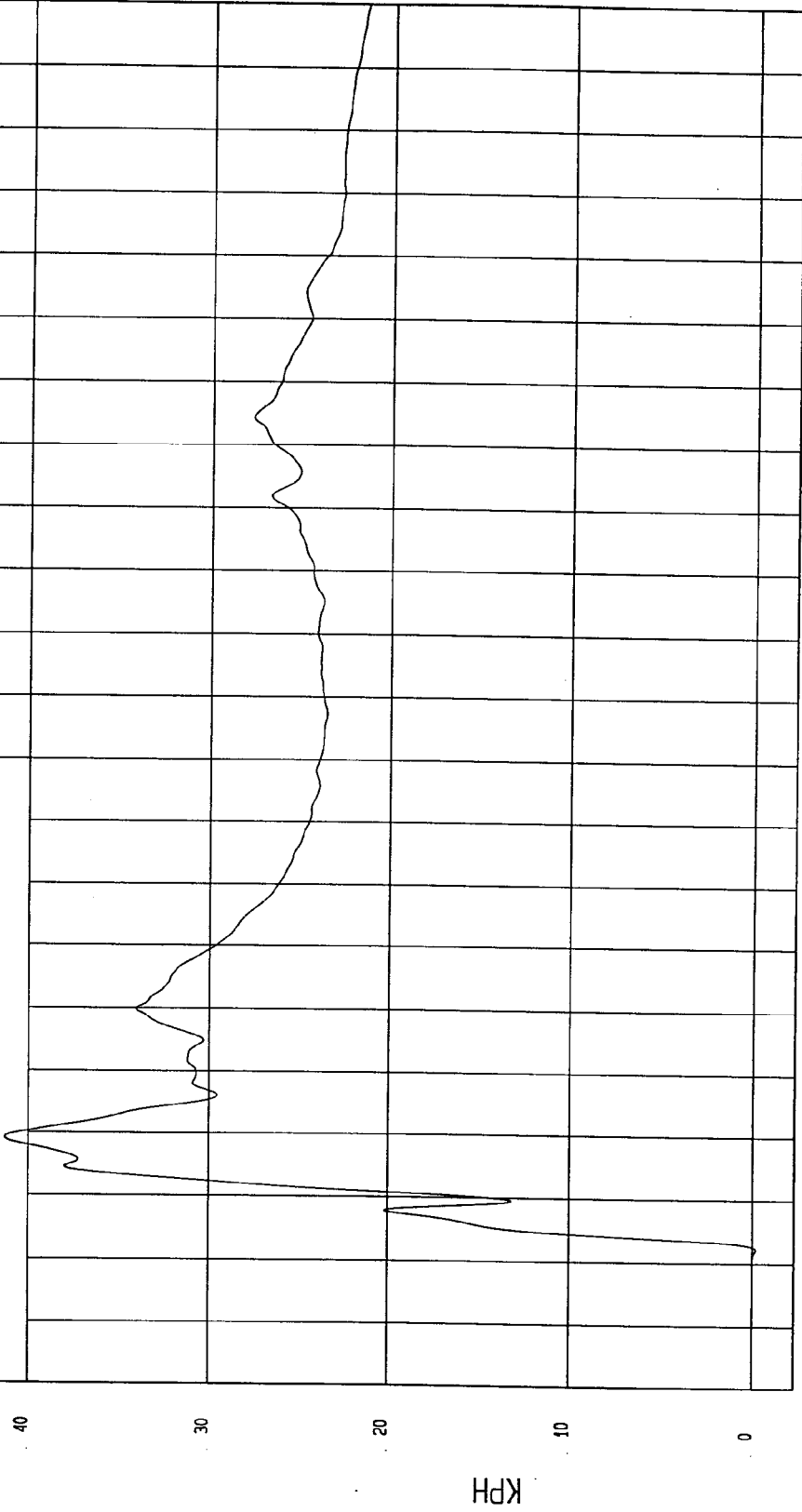
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -19 KPH at 2 msec Maximum = 41.28 KPH at 19 msec

LEFT LOWER B-POST Y VELOCITY

1 89906BA1.V30 Filterclass (180)



TIME Seconds

MSA Research  
10-21-1999 08:59

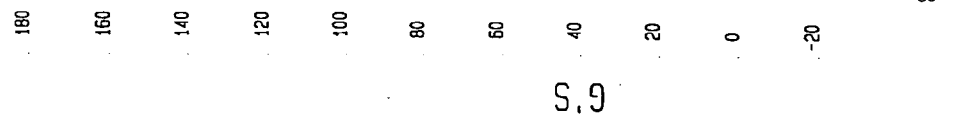
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -28.05 G'S at 25 msec Maximum = 174.34 G'S at 4 msec

LEFT MID B-POST Y ACCELERATION

1 899068AF.A29 Filterclass (60)



WGA Research  
10-21-1999 09:34

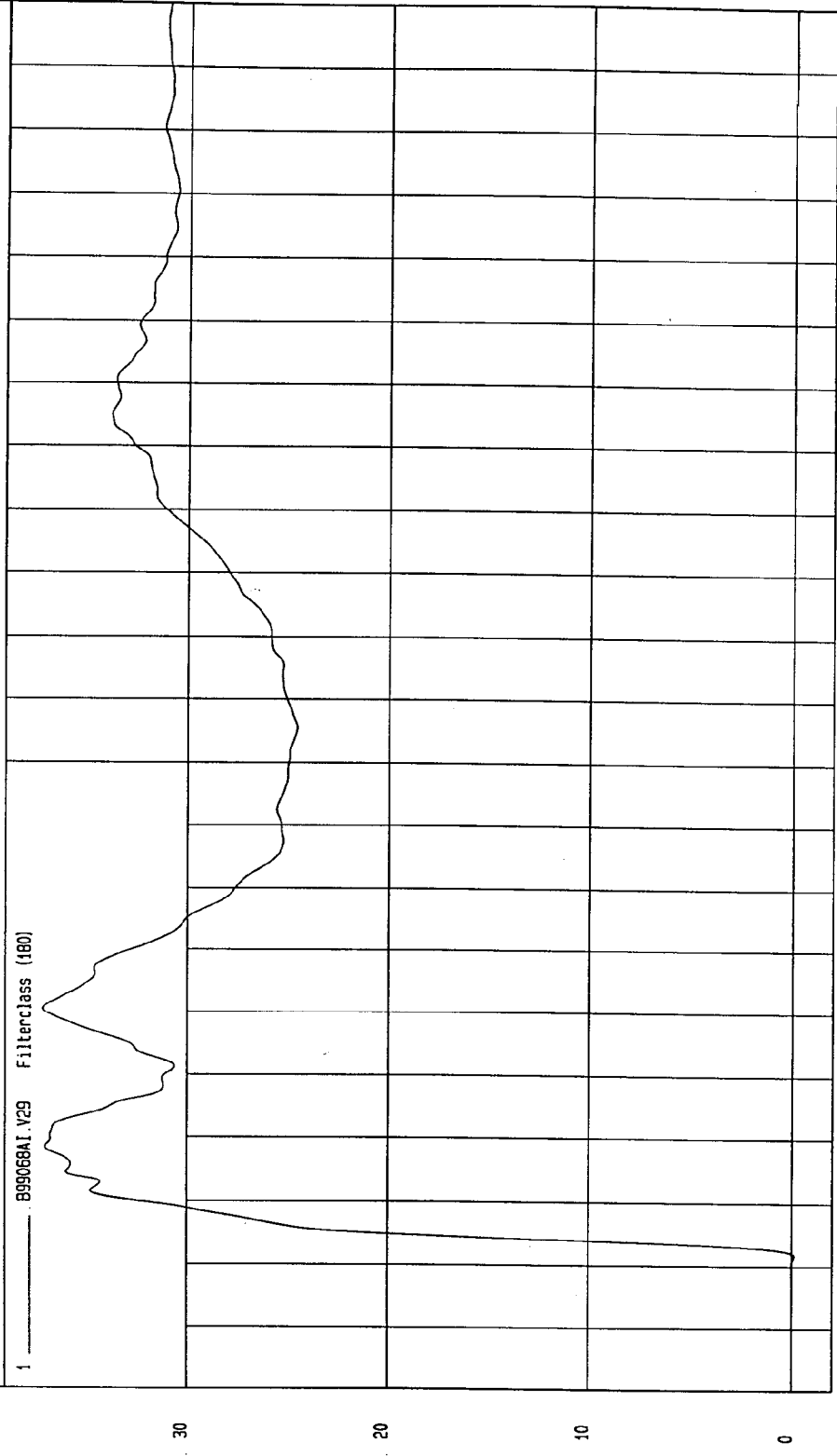
TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH

Minimum = .13 KPH at 2 msec  
Maximum = 37.16 KPH at 40 msec

LEFT MID B-POST Y VELOCITY

1 ——— 899068A1.V29 Filterclass (180)



TIME Seconds  
M&A Research  
10-21-1999 08:59

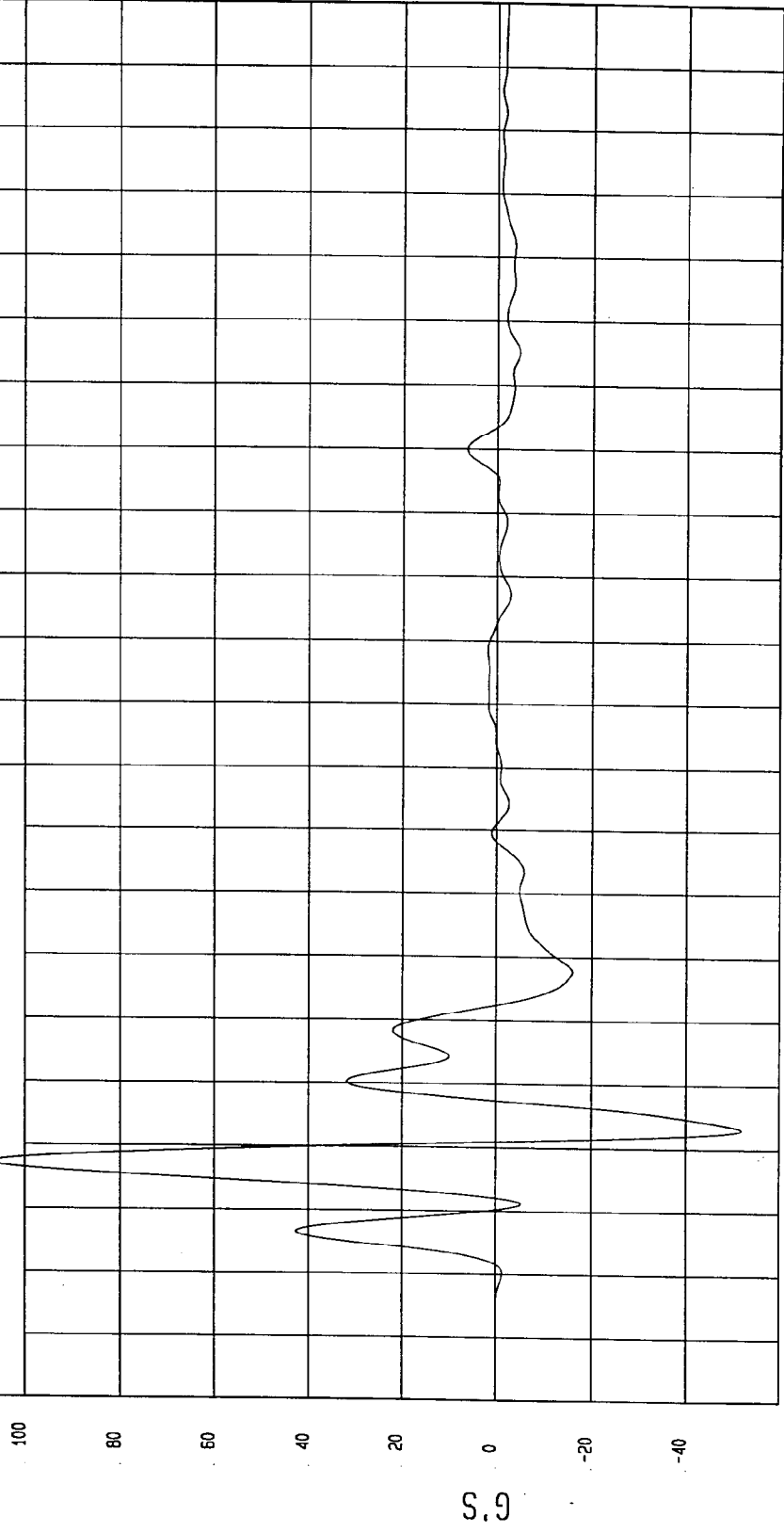
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -51.69 G'S at 23 msec Maximum = 107.16 G'S at 17 msec

DRIVER SEAT TRACK Y ACCELERATION

1 ——— 89906BAF.A40 Filterclass (60)



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

NSA Research  
10-21-1999 09:33

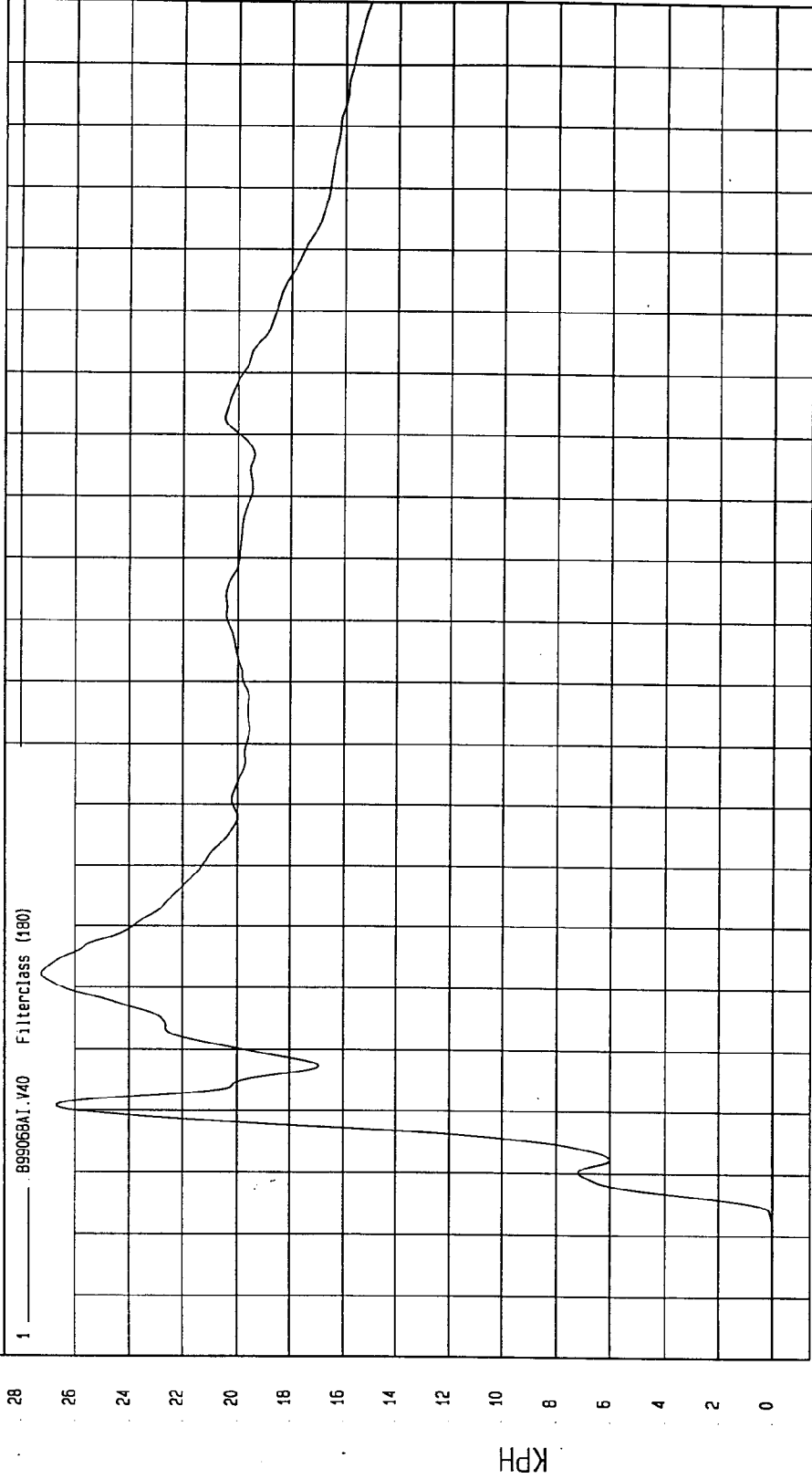
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 0 KPH at -20 msec Maximum = 27.24 KPH at 42 msec

DRIVER SEAT TRACK Y VELOCITY

1 899058A1.V40 Filterclass (180)



WCA Research  
10-21-1999 08:58

TIME Seconds

KPH

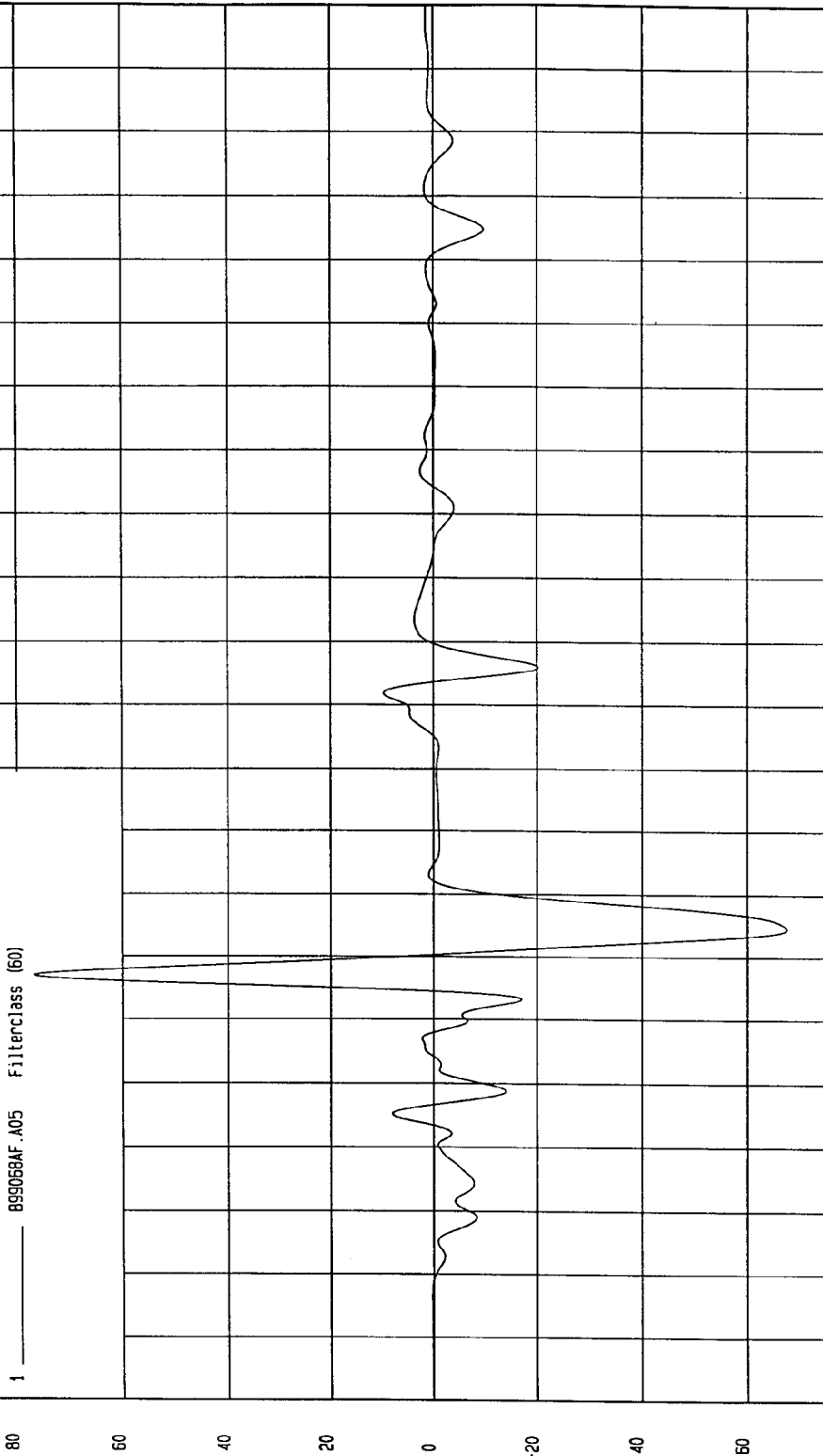
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -67.5 G'S at 54 msec Maximum = 76.82 G'S at 47 msec

VEHICLE CG X ACCELERATION

1 899058AF.A05 Filterclass (60)



MSC Research  
10-21-1999 09:34

TIME (SECONDS)

G.S

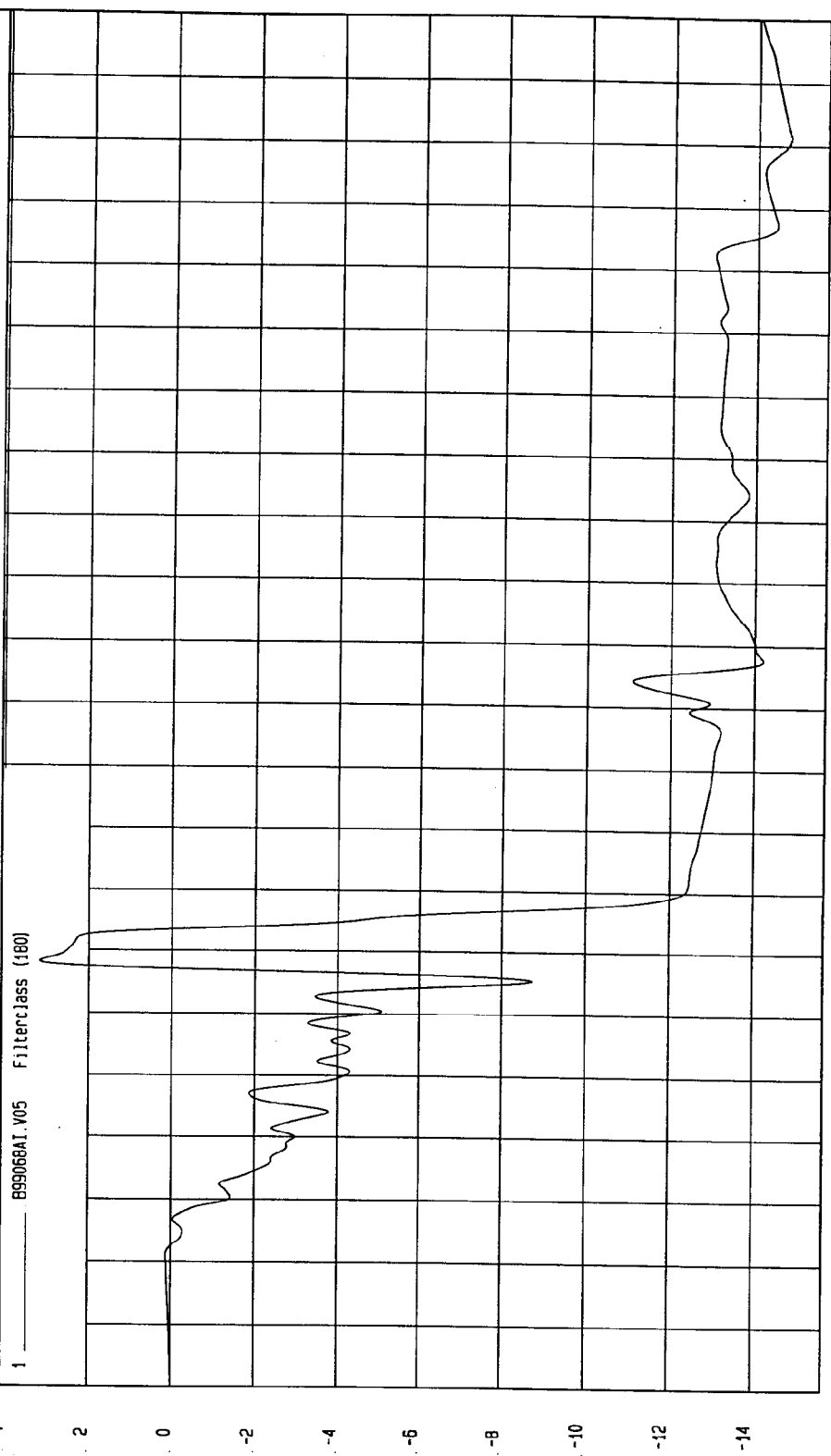
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -14.76 KPH at 181 msec  
Maximum = 3.13 KPH at 48 msec

VEHICLE CG X VELOCITY

1 899066A1.V05 FilterClass (180)



TIME Seconds

MSA Research  
10-21-1999 08:59

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

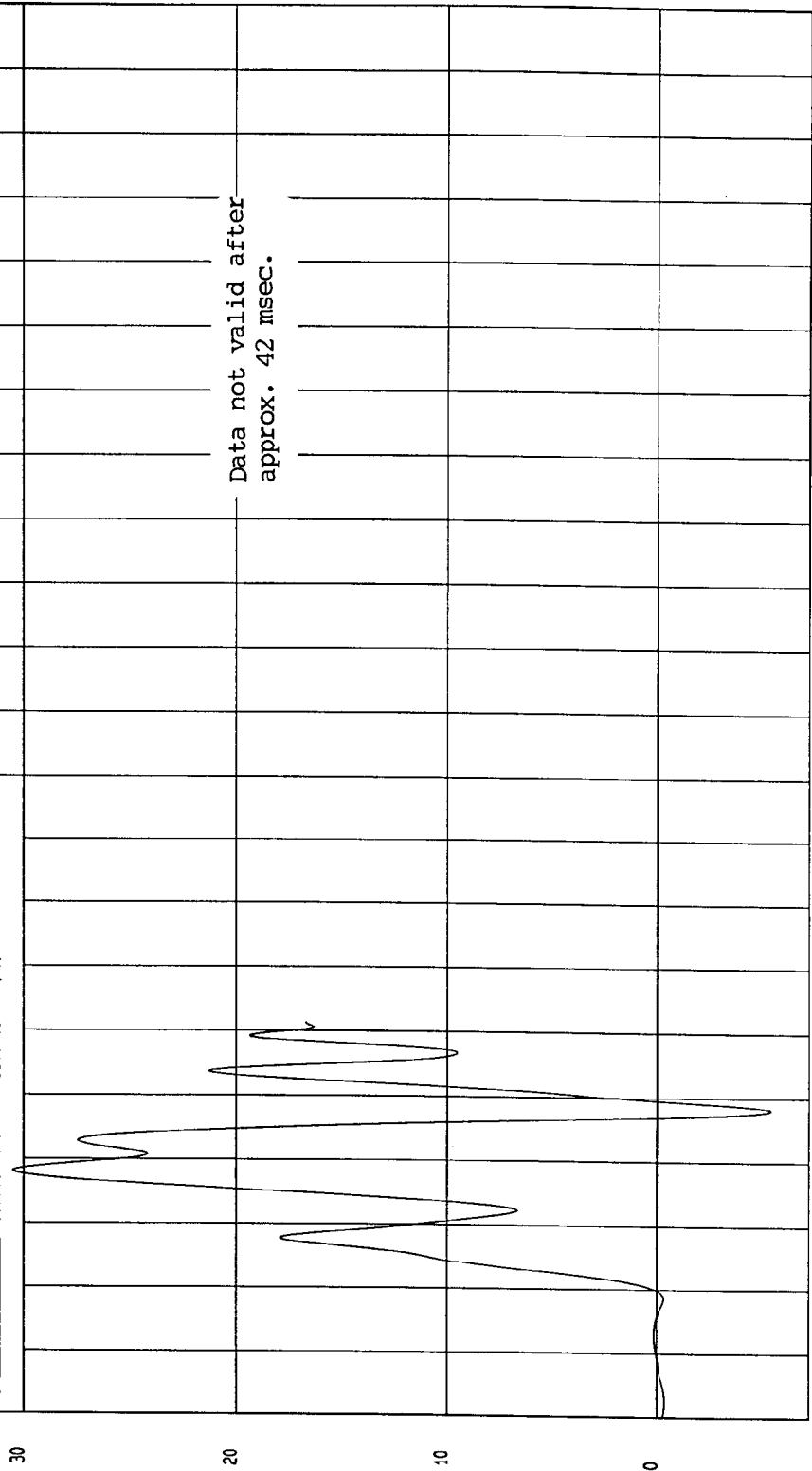
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -5.39 G'S at 28 msec

Maximum = 30.51 G'S at 18 msec

VEHICLE CG Y ACCELERATION

1 899068AF.A05 FilterClass (60)



TIME (SECONDS)

MCA Research  
10-21-1999 09:53

G'S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

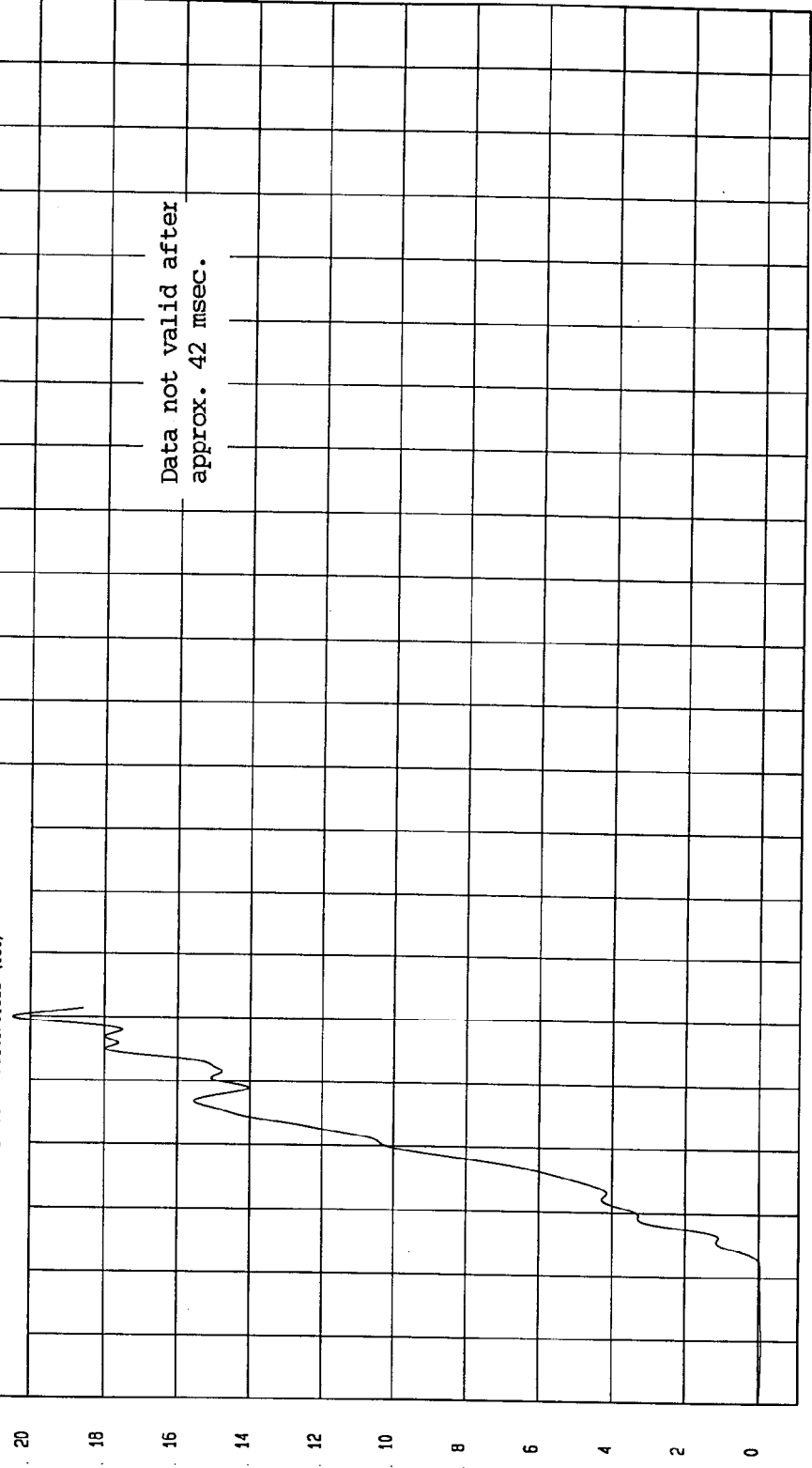
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -7.74E-02 KPH at -10 msec

Maximum = 20.49 KPH at 40 msec

VEHICLE CG Y VELOCITY

1 899068A1.V06 Filterclass (180)



Data not valid after approx. 42 msec.

TIME Seconds

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 23.85 G'S at 48 msec

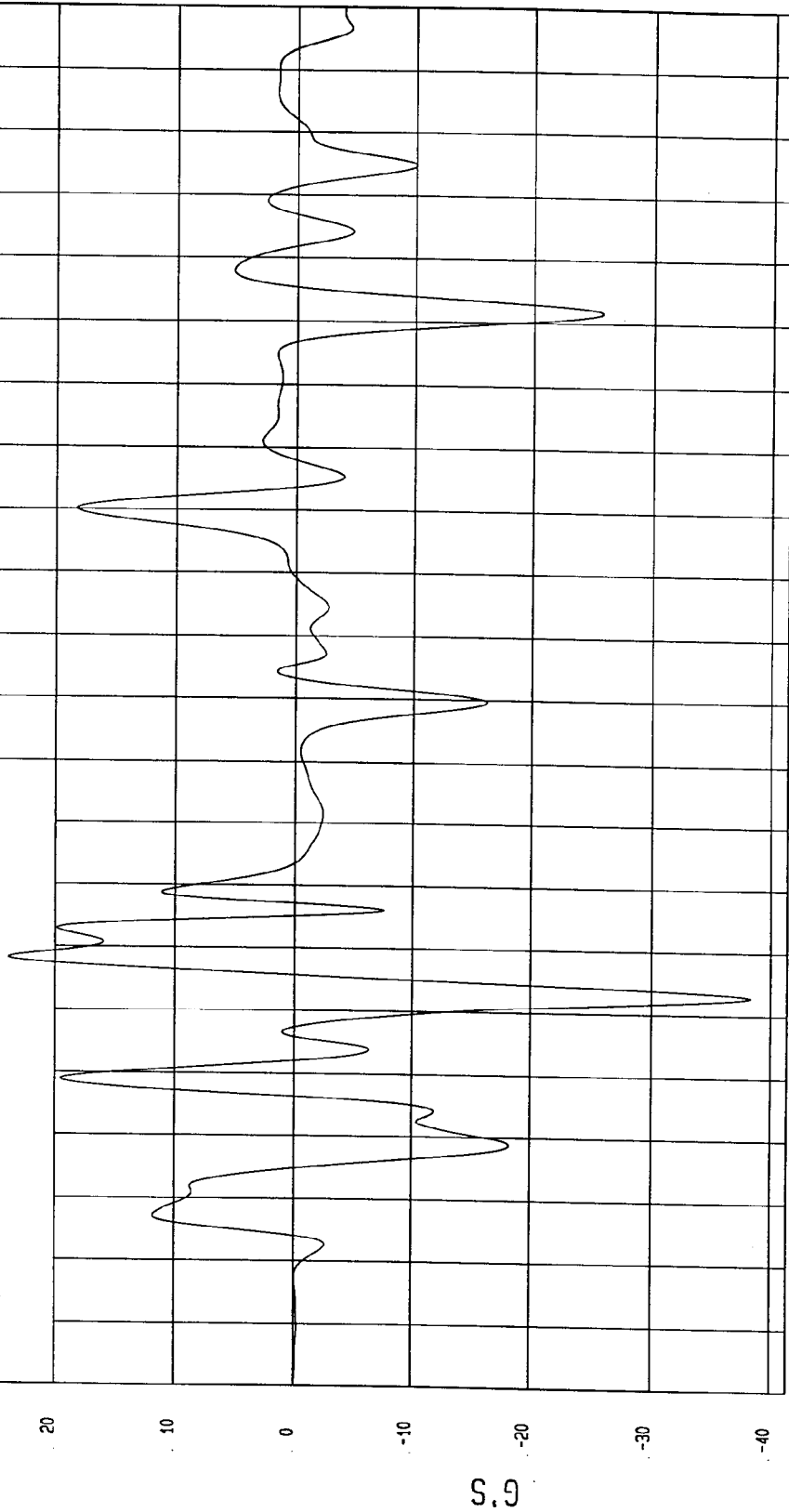
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -38.29 G'S at 43 msec

VEHICLE CG Z ACCELERATION

1 89906BAF.A07 Filterclass (60)



NSA Research  
10-21-1999 09:34

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 2.73 KPH at 15 msec

TEST: INDICANT SIDE IMPACT

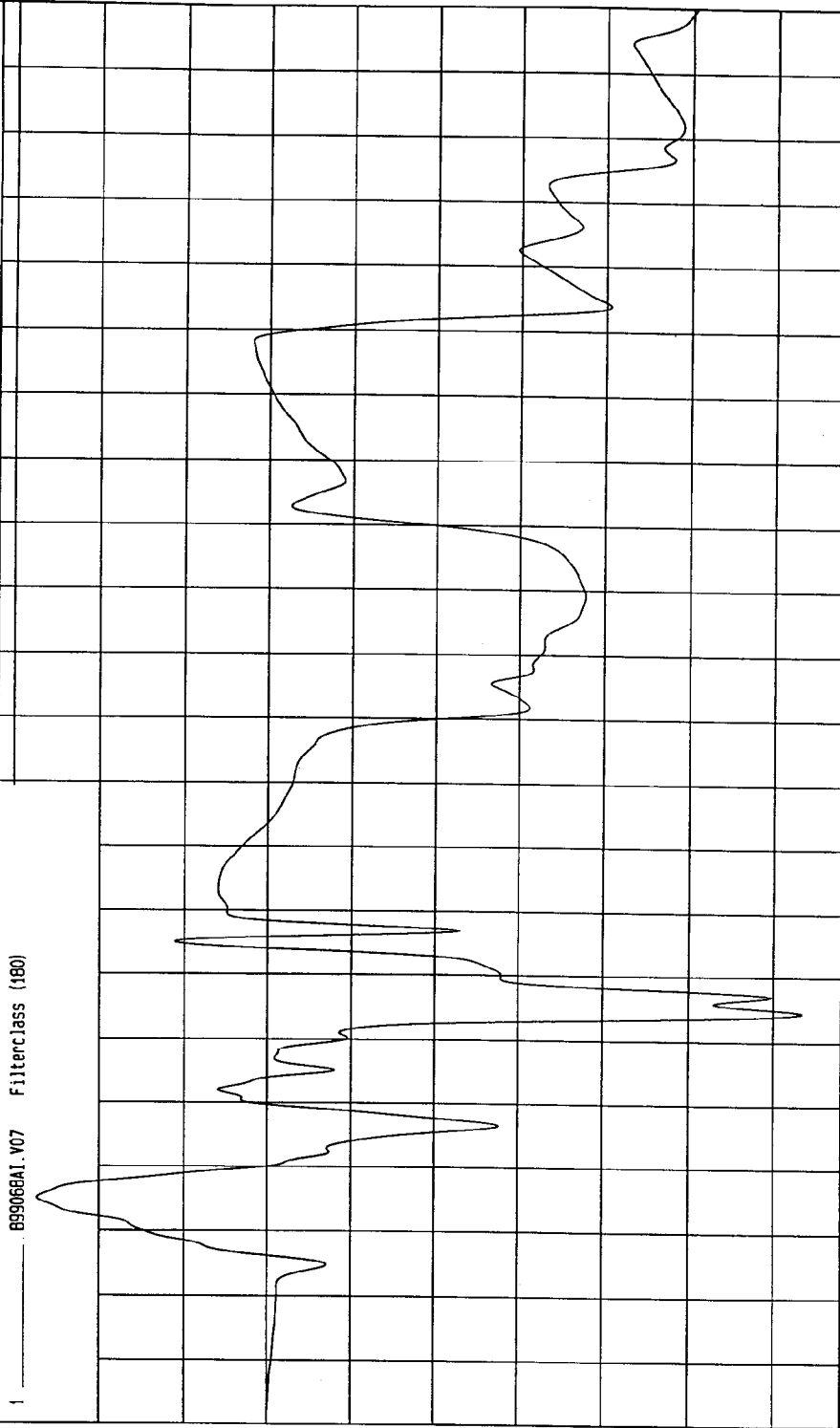
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -6.33 KPH at 44 msec

VEHICLE CG Z VELOCITY

1 89906BA1.V07 FilterClass (180)

3  
2  
1  
0  
-1  
-2  
-3  
-4  
-5  
-6  
KPH



TIME Seconds

MCA Research  
10-21-1999 08:59

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

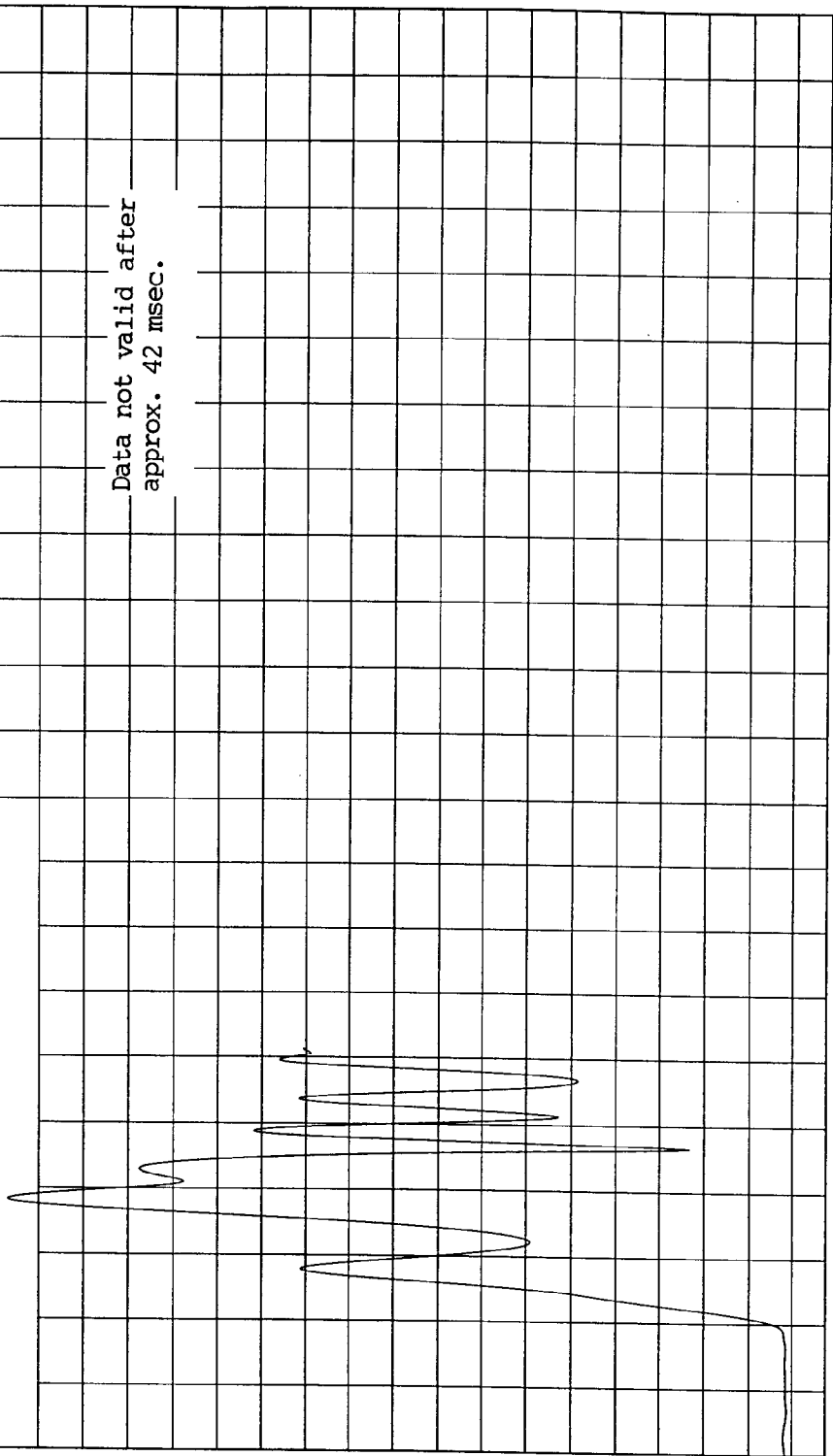
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = .25 G'S at -.13 msec Maximum = 35.39 G'S at 18 msec

VEHICLE CG RESULTANT ACCELERATION

1 899068AV.A05 Filterclass (60)

G.S  
36  
34  
32  
30  
28  
26  
24  
22  
20  
18  
16  
14  
12  
10  
8  
6  
4  
2  
0



TIME (SECONDS) 0.02 0.04 0.06 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19

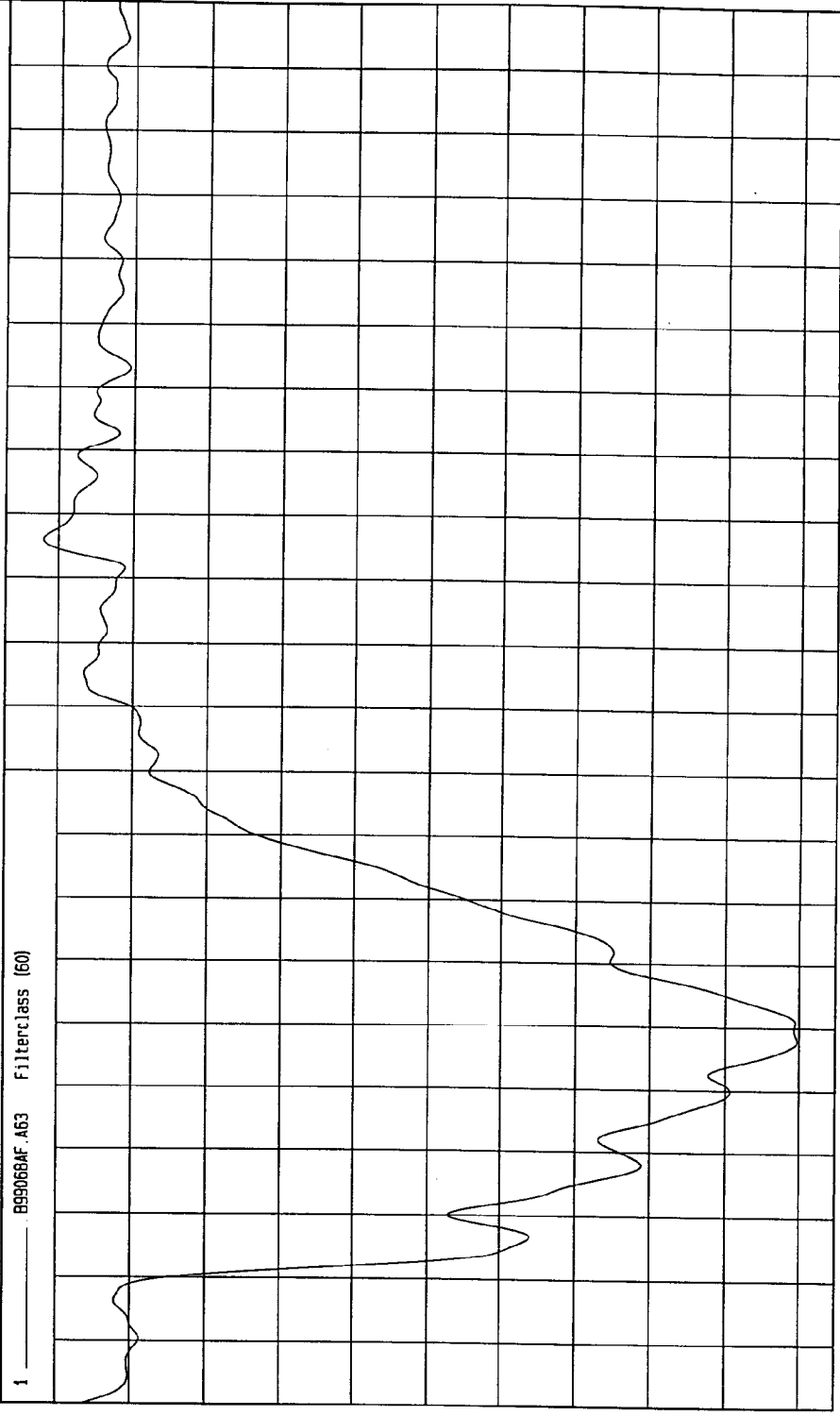
TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH

Minimum = -17.94 G'S at 38 msec  
Maximum = 2.4 G'S at 116 msec

MOVING BARRIER CG X ACCELERATION

1 ——— B99066AF.A63 FilterClass (60)



MSA Research  
10-21-1999 09:34

TIME (SECONDS)

G.S

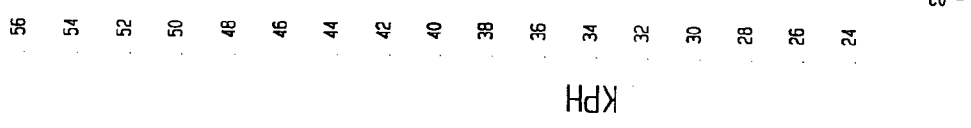
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 23.77 KPH at 91 msec Maximum = 54.59 KPH at 1 msec

MOVING BARRIER CG X VELOCITY

1 899068A1.V63 Filterclass (180)



MGA Research  
10-21-1999 06:59

TIME Seconds

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 2.98 G'S at 56 msec

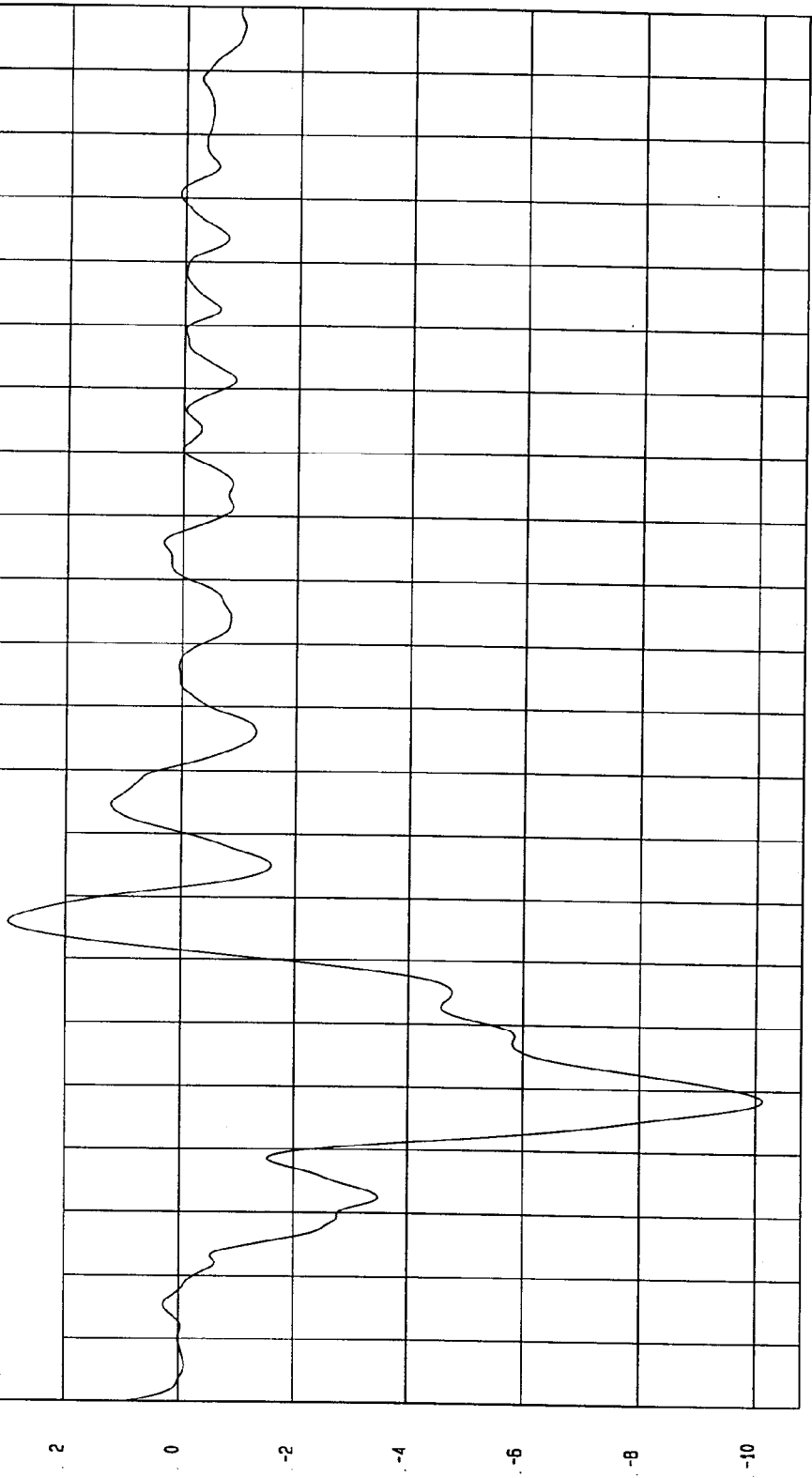
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -10.12 G'S at 28 msec

MOVING BARRIER CG Y ACCELERATION

1 89906BAF.A64 FilterClass (50)



TIME (SECONDS)

MGA Research  
10-21-1999 09:34

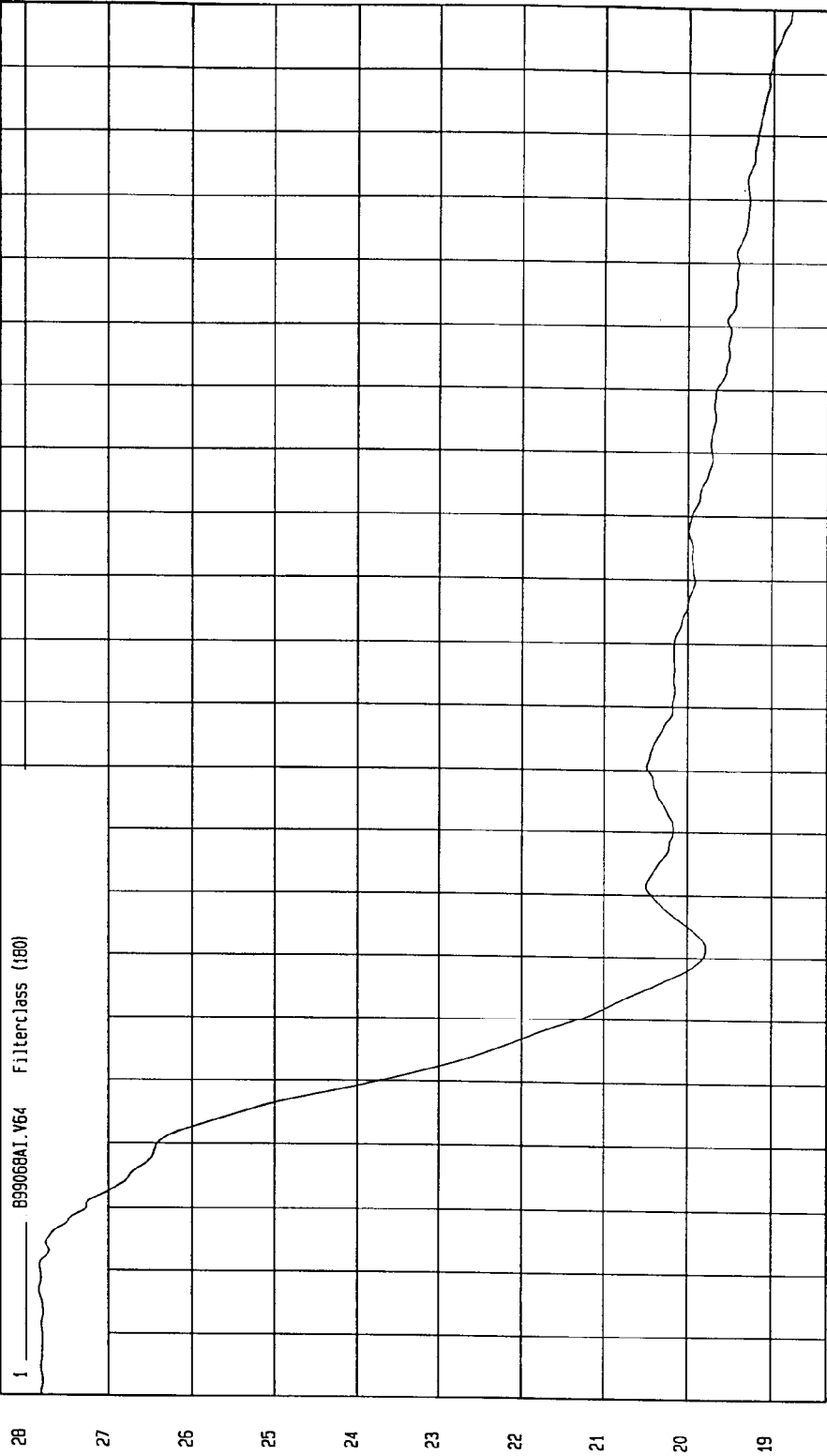
G.S

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999  
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 18.78 KPH at 200 msec Maximum = 27.84 KPH at -3 msec

MOVING BARRIER CG Y VELOCITY

1 — 899068A1.V64 FilterClass (180)



TIME Seconds

MGA Research  
10-21-1999 08:59

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

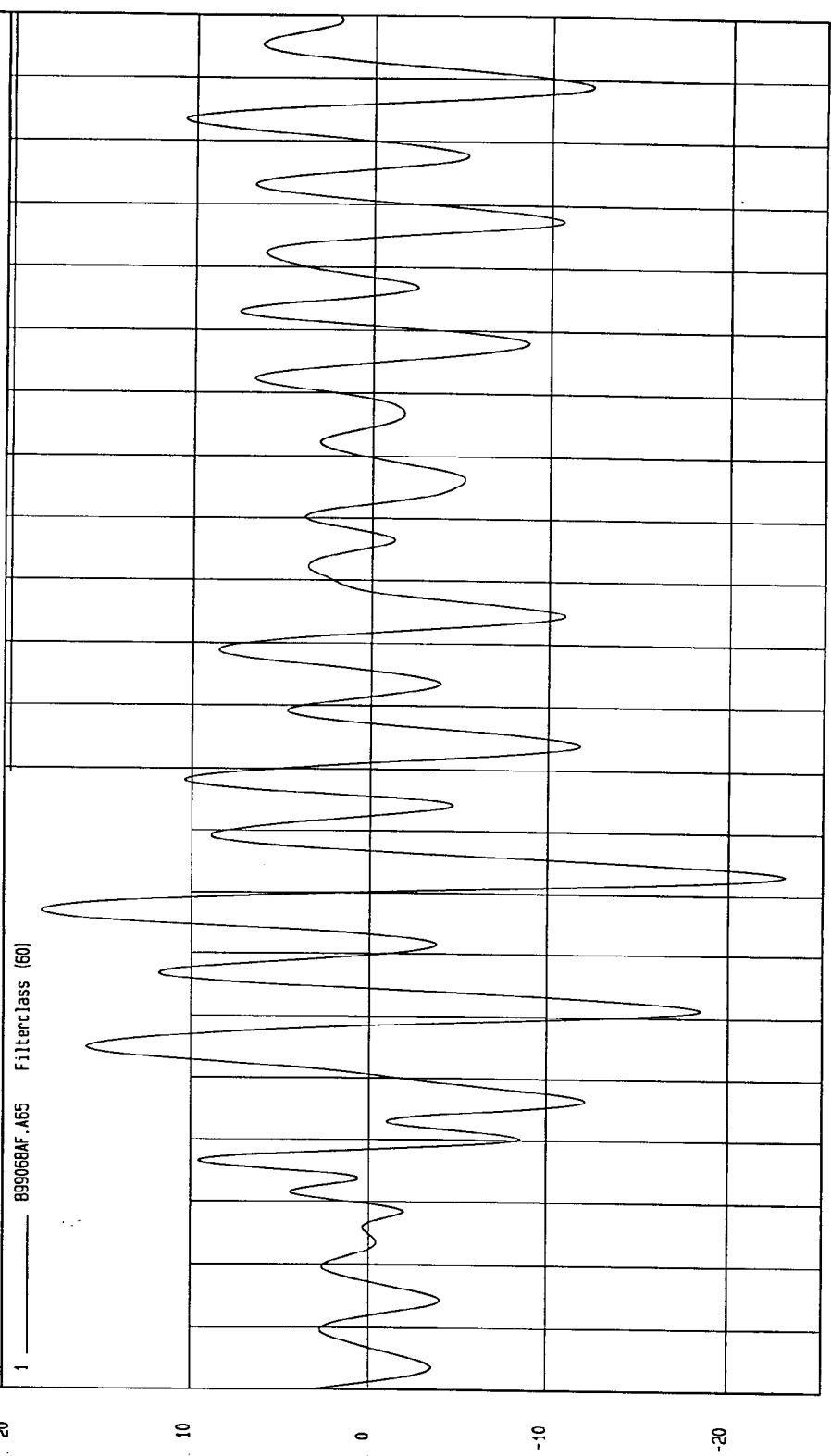
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -23.16 G'S at 63 msec

Maximum = 18.28 G'S at 57 msec

MOVING BARRIER CG Z ACCELERATION

1 89906BAF.A65 Filterclass (50)



TIME (SECONDS)

TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH

Minimum = -1.77 KPH at 44 msec  
Maximum = 2.95 KPH at 60 msec

MOVING BARRIER CG Z VELOCITY

1 ----- B99068AI.V65 Filterclass (180)

3

2

1

0

-1

-2

KPH

TIME Seconds

MCA Research  
10-21-1999 08:59

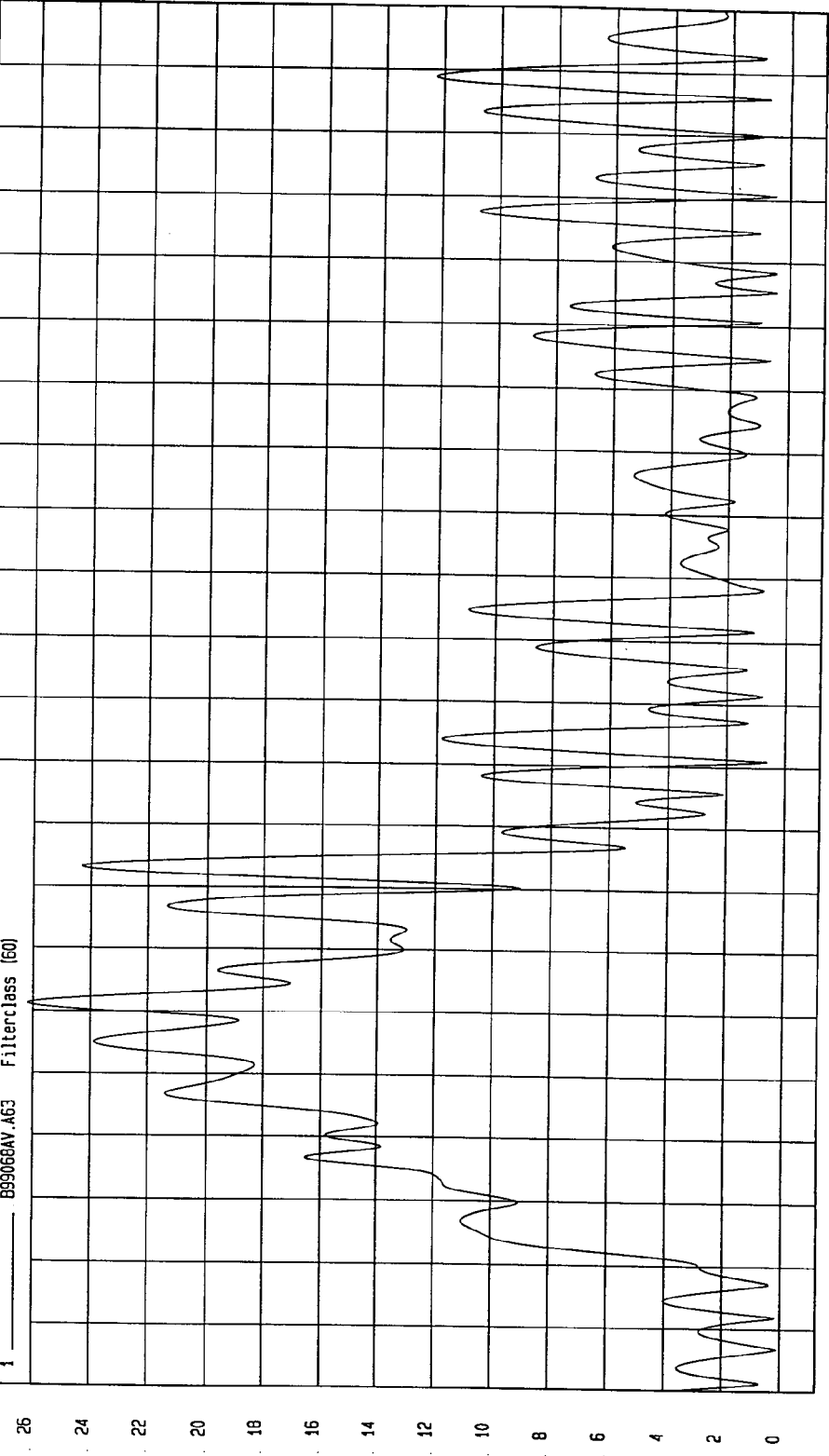


TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999  
COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH

Minimum = 9.09E-02 G'S at -8 msec  
Maximum = 26.19 G'S at 41 msec

MOVING BARRIER CG RESULTANT ACCELERATION

1 \_\_\_\_\_ B99068AV.A63 Filterclass (60)



NSA Research  
10-21-1999 08:59

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

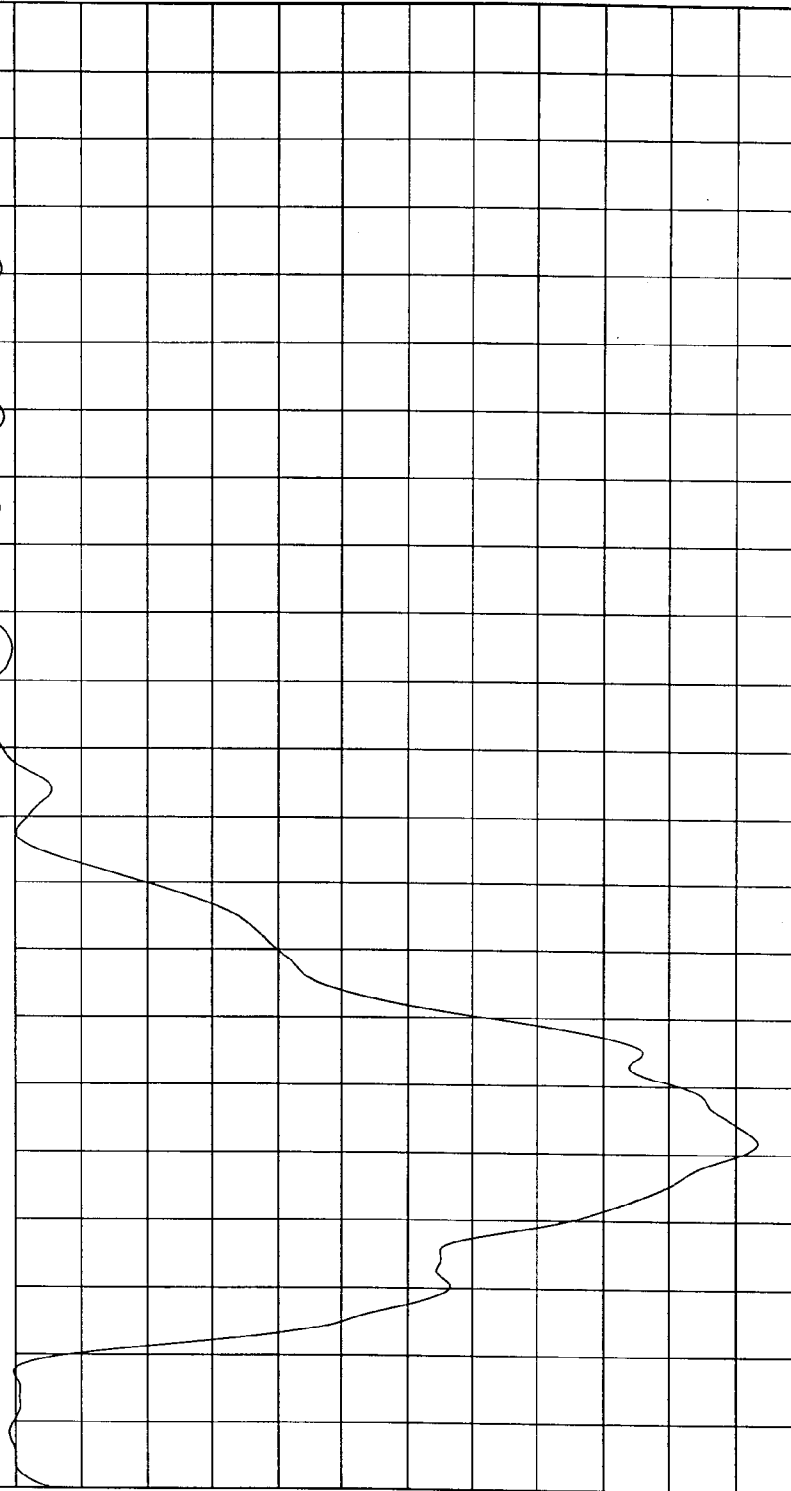
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -22.66 G'S at 32 msec  
Maximum = 1.8 G'S at 114 msec

MOVING BARRIER REAR AXLE X ACCELERATION

1 \_\_\_\_\_ 899068AF.A66 FilterClass (60)

2



TIME (SECONDS)

MCA Research  
10-21-1999 09:34

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

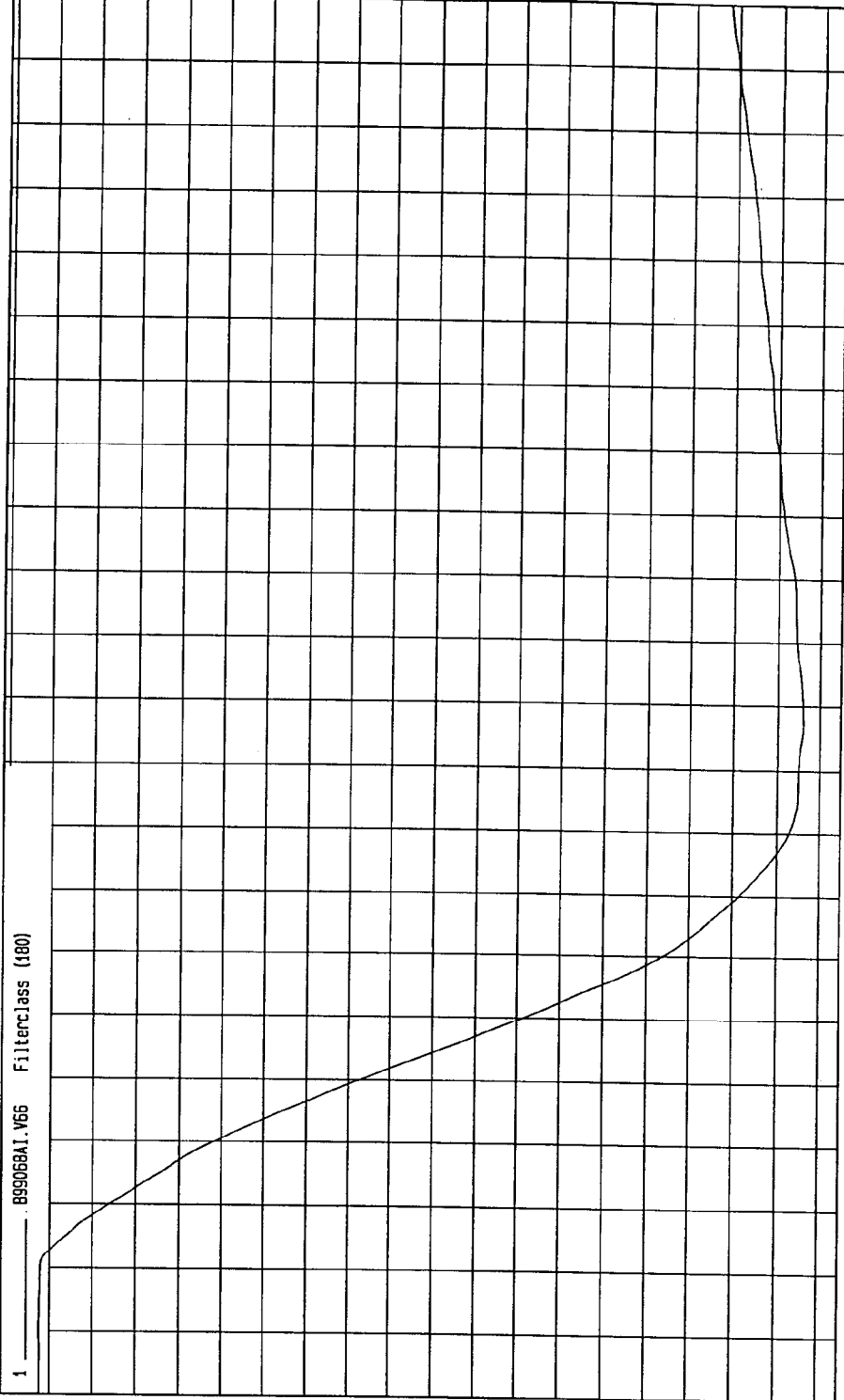
Minimum = 18.8 KPH at 87 msec

Maximum = 54.5 KPH at -9 msec

MOVING BARRIER REAR AXLE X VELOCITY

1 B99069A1.V66 Filterclass (180)

56  
54  
52  
50  
48  
46  
44  
42  
40  
38  
36  
34  
32  
30  
28  
26  
24  
22  
20  
18  
KPH



TIME Seconds

MCA Research  
10-21-1999 08:59

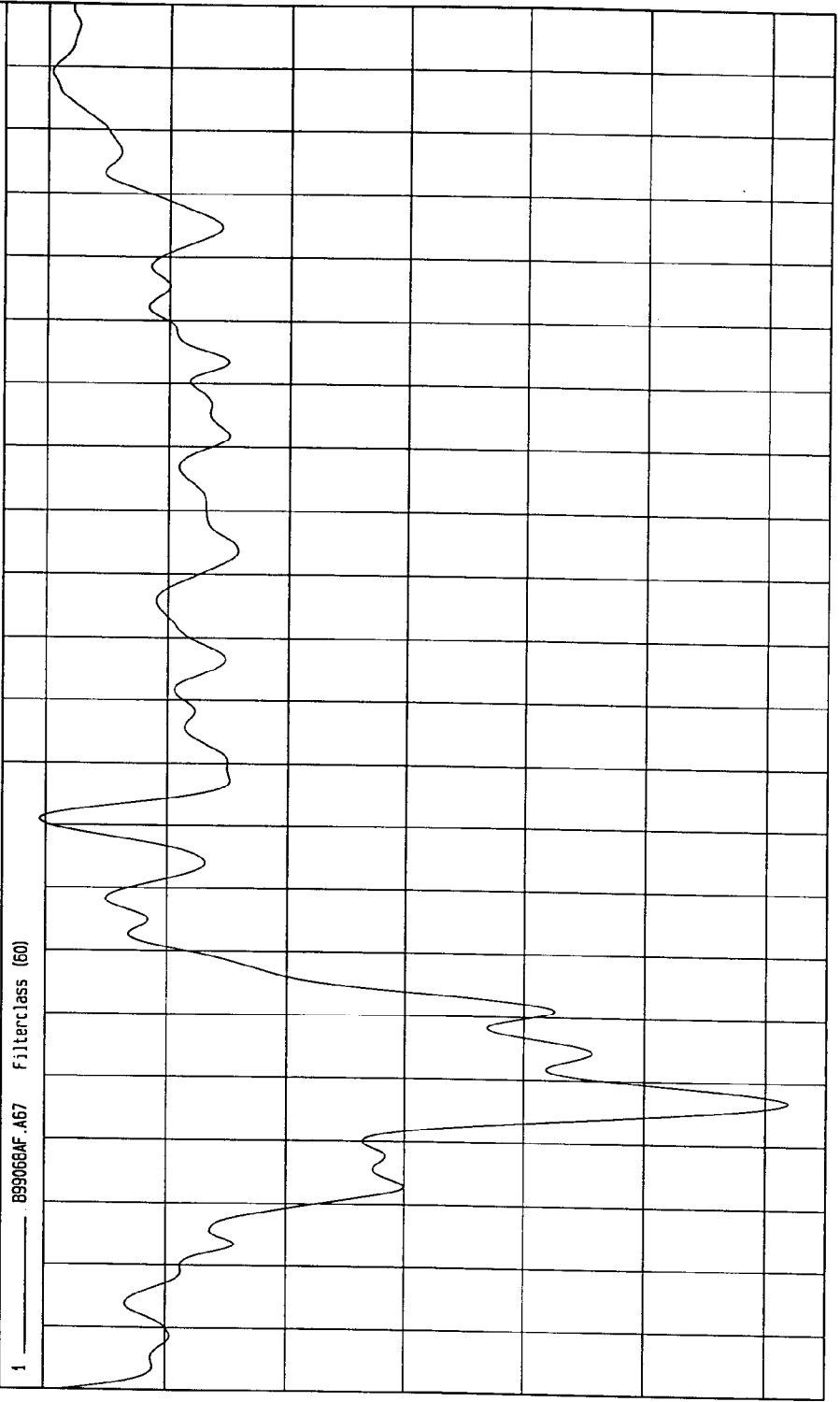
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -5.19 G'S at 27 msec Maximum = 1.05 G'S at 71 msec

MOVING BARRIER REAR AXLE Y ACCELERATION

1 ——— B99066AF.A67 Filterclass (60)



G.S. TIME (SECONDS)

MSA Research  
10-21-1999 09:34

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 23.55 KPH at 169 msec Maximum = 27.89 KPH at -3 msec

MOVING BARRIER REAR AXLE Y VELOCITY

1 899066A1.V67 Filterclass (180)

28

27

26

25

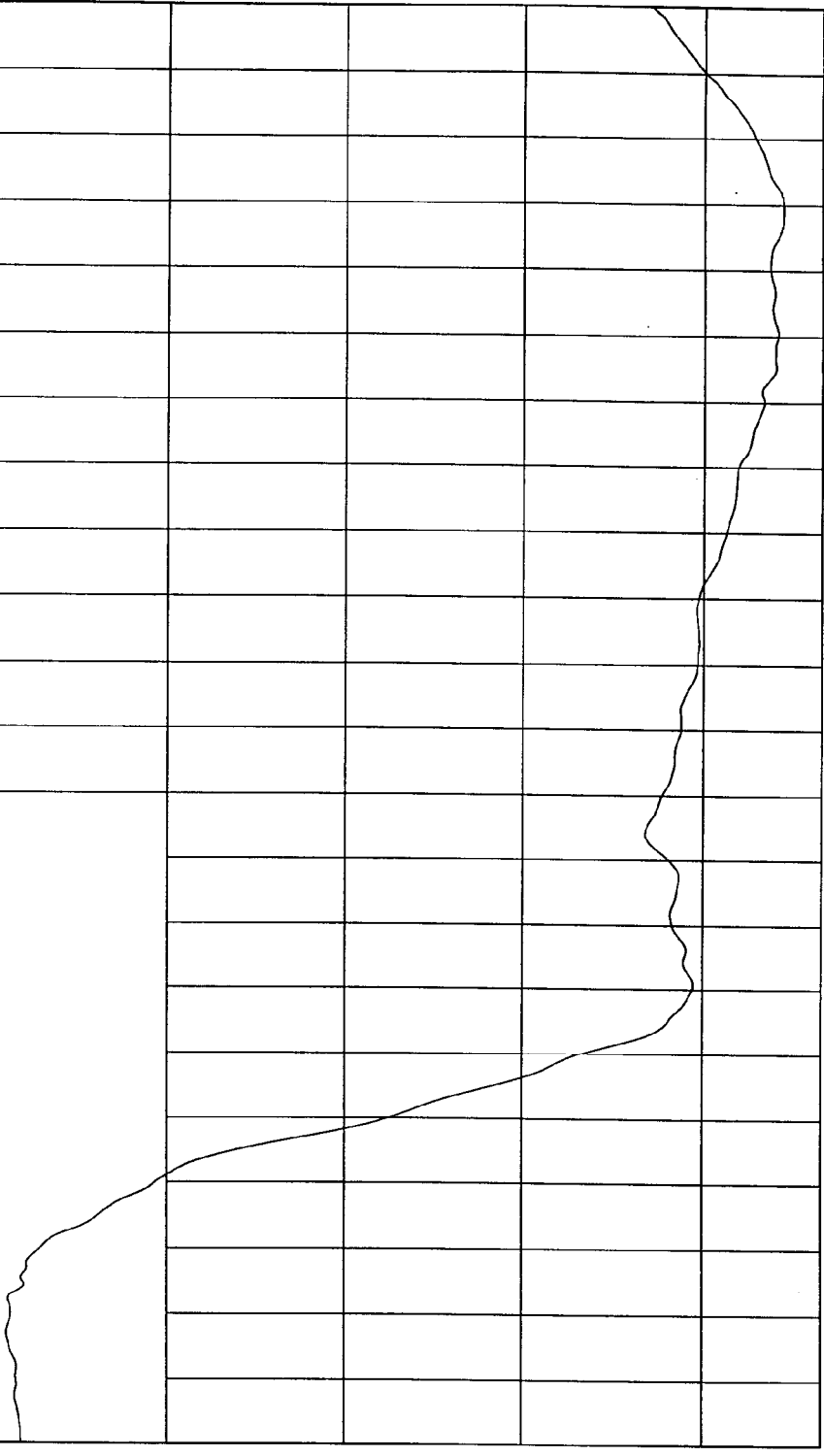
24

KPH

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

TIME Seconds

MCA Research  
10-21-1999 09:00

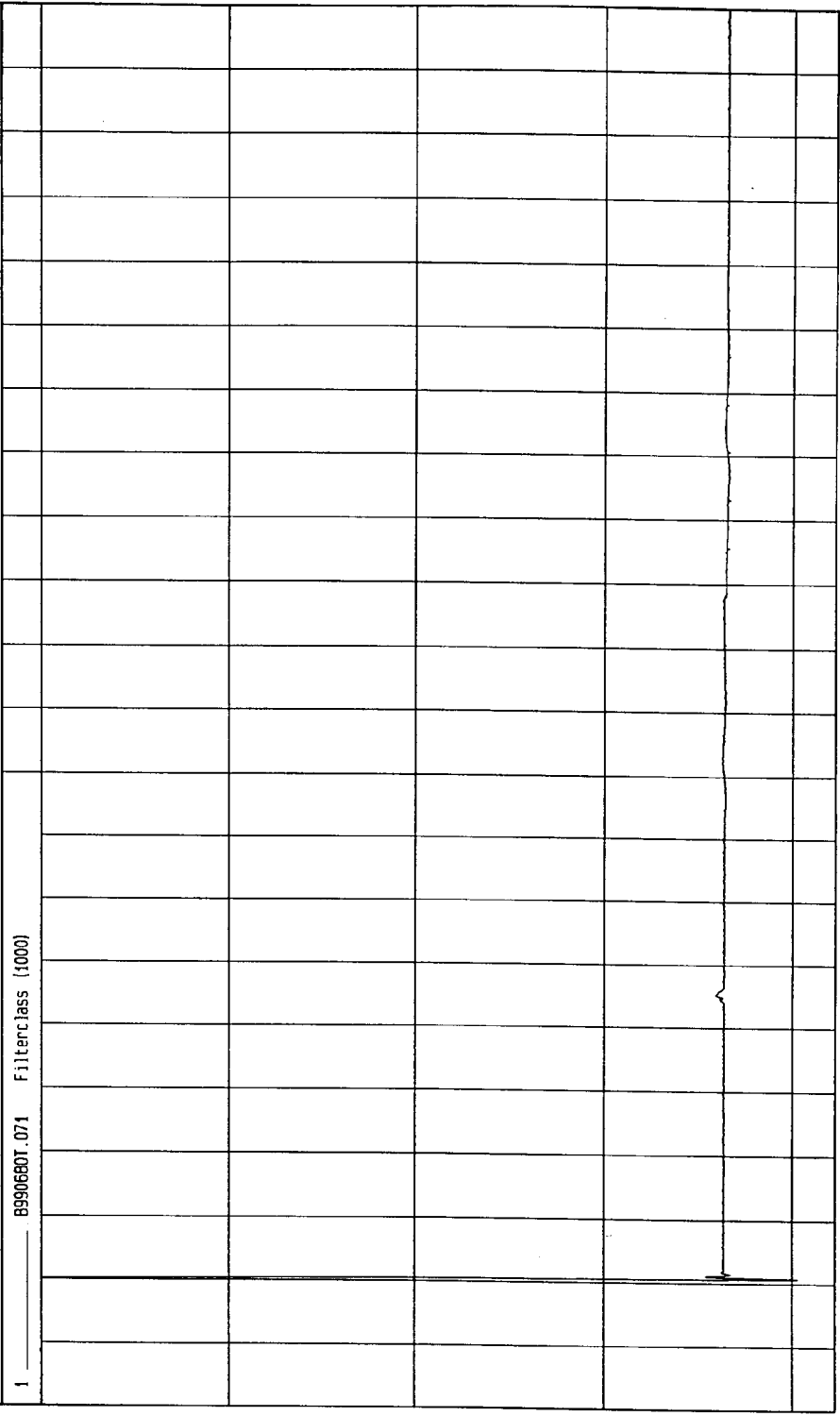


TEST: INDICANT SIDE IMPACT      TEST DATE: 10-20-1999  
 COMPONENT: 2000 DODGE NEON (CY0301)      Speed: 38 MPH 61.2 KPH

Minimum = -4.03 VOLTS at 1 msec      Maximum = 7.64E-03 VOLTS at -11 msec

LEFT BARRIER CONTACT

1 8990680T.071 Filterclass (1000)



TIME (SECONDS)      MGA Research 10-21-1999 09:00

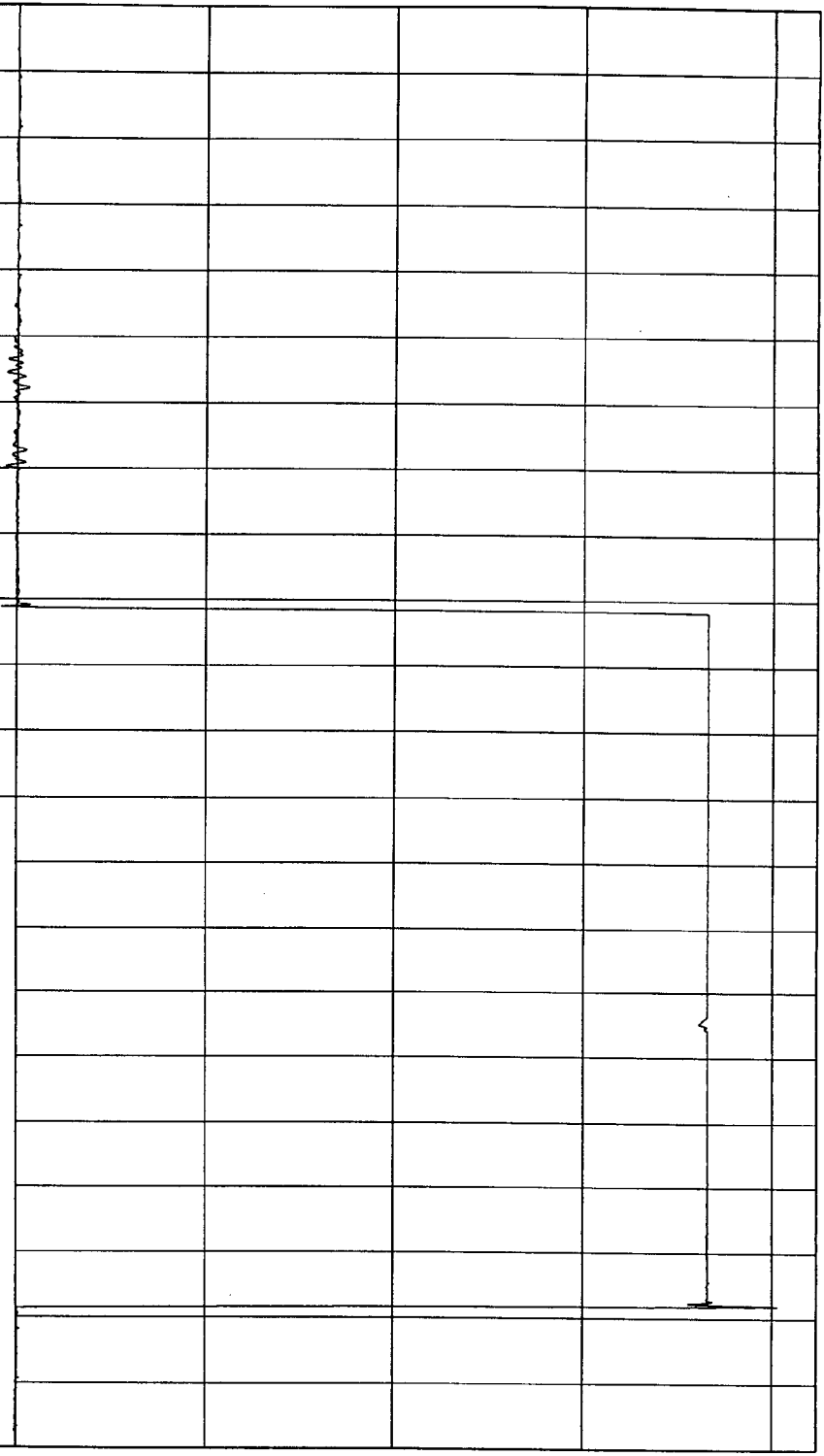
VOLTS

TEST: INDICANT SIDE IMPACT      TEST DATE: 10-20-1999  
COMPONENT: 2000 DODGE NEON (CY0301)      Speed: 38 MPH 61.2 KPH

Minimum = -4.03 VOLTS at 2 msec      Maximum = 7.76E-02 VOLTS at 109 msec

RIGHT BARRIER CONTACT

1 \_\_\_\_\_ 8990680T.072 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  
-0.1  
-0.2  
-0.3  
-0.4

0  
-1  
-2  
-3  
-4

Minimum = -4.03 VOLTS at 2 msec      Maximum = 7.76E-02 VOLTS at 109 msec

1 \_\_\_\_\_ 8990680T.072 Filterclass (1000)

WCA Research  
10-21-1999 09:00

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

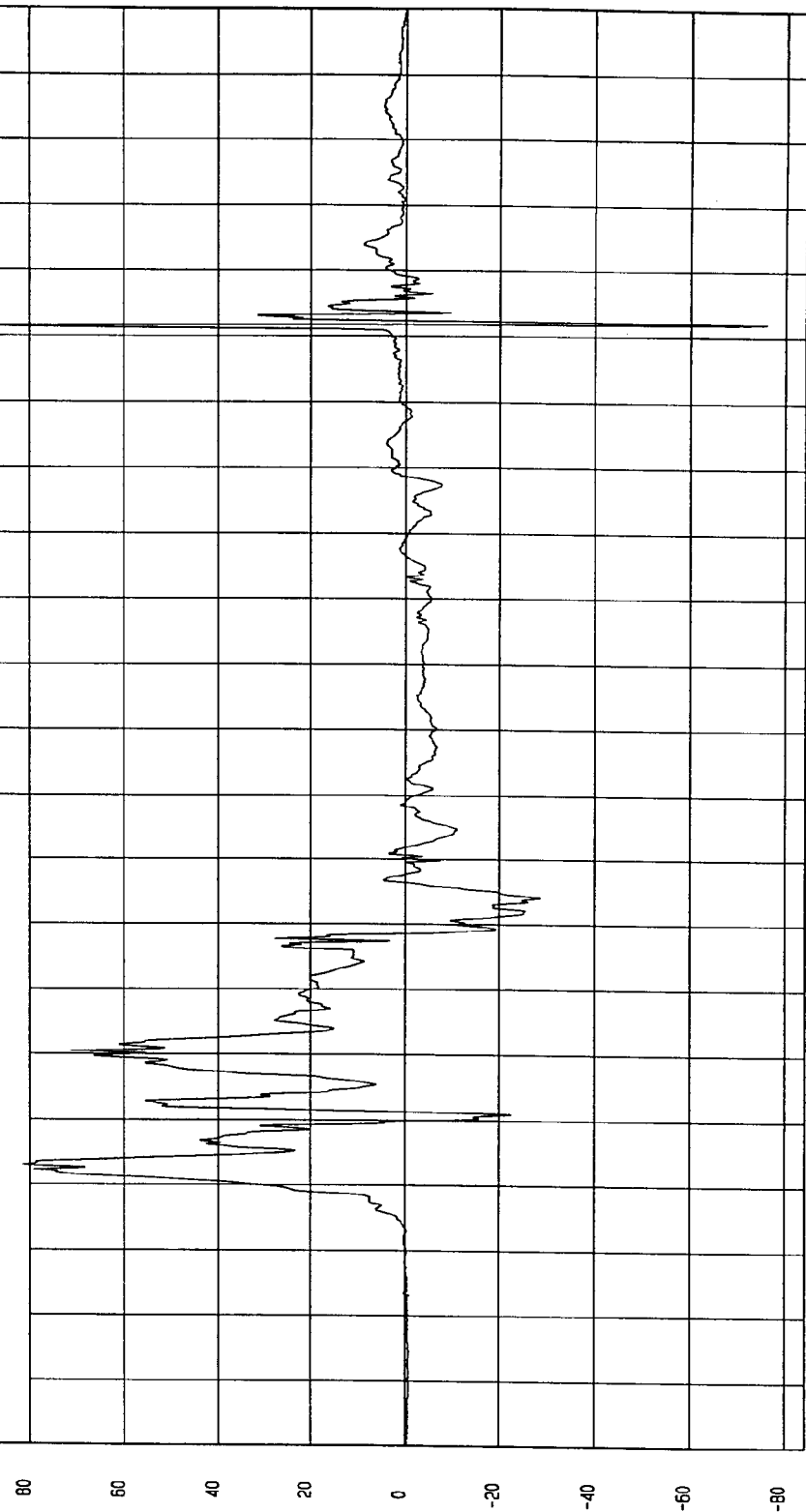
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 88.61 G'S at 152 msec

Minimum = -75.99 G'S at 152 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 899068AT.A42 Filterclass (1000)



MCA Research  
10-21-1999 09:00

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

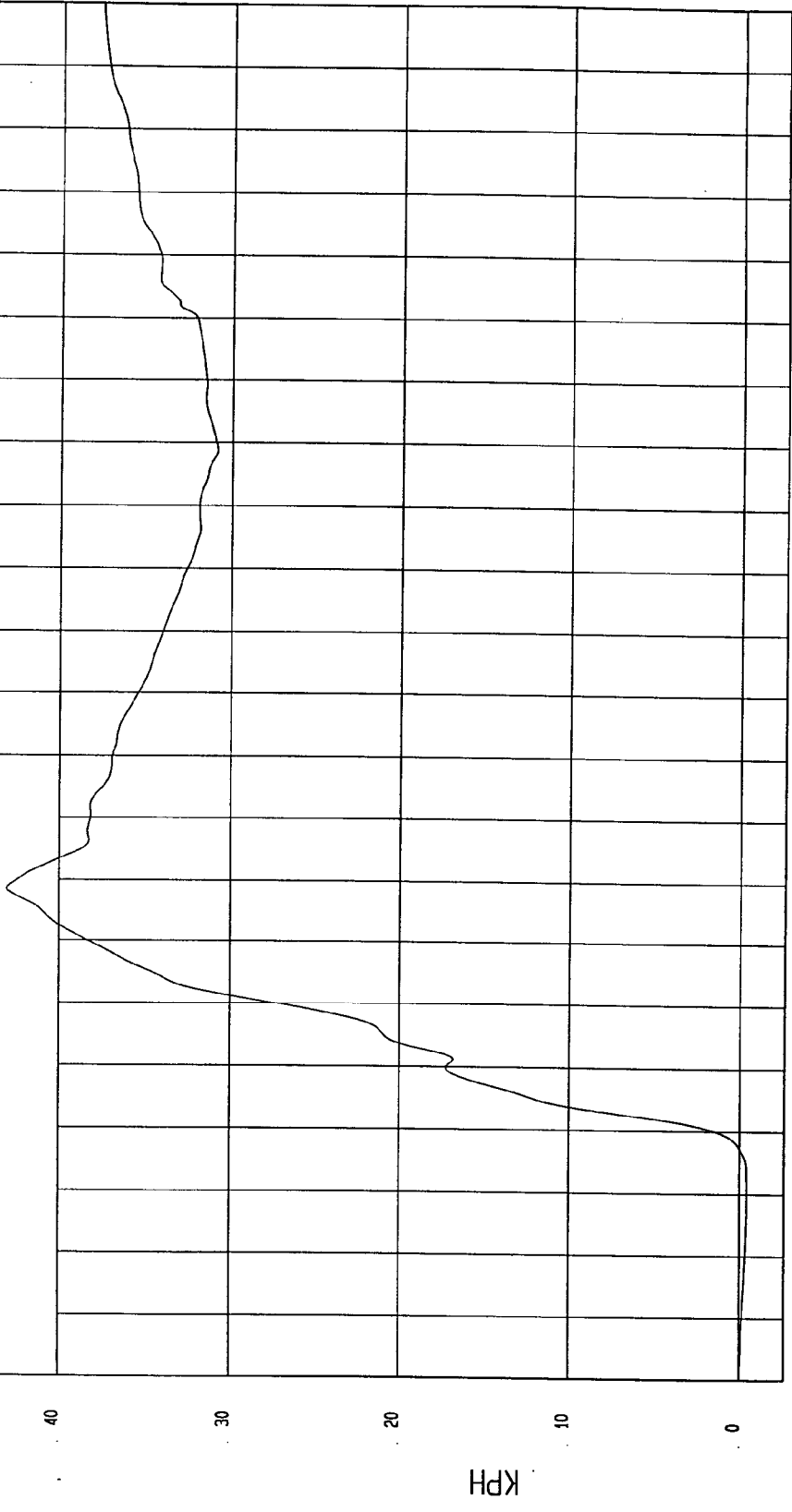
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = .43 KPH at 58 msec

Minimum = .43 KPH at 10 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 ——— .09068A1.V42 Filterclass (480)



TIME Seconds

MCA Research  
10-21-1999 09:04

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 144.4 G'S at 152 msec

Minimum = -103.41 G'S at 152 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 899068AT.A43 Filterclass (f0000)

140  
120  
100  
80  
60  
40  
20  
0  
-20  
-40  
-60  
-80  
-100

G.S

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

TIME (SECONDS)

MCA Research  
10-21-1999 09:00

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

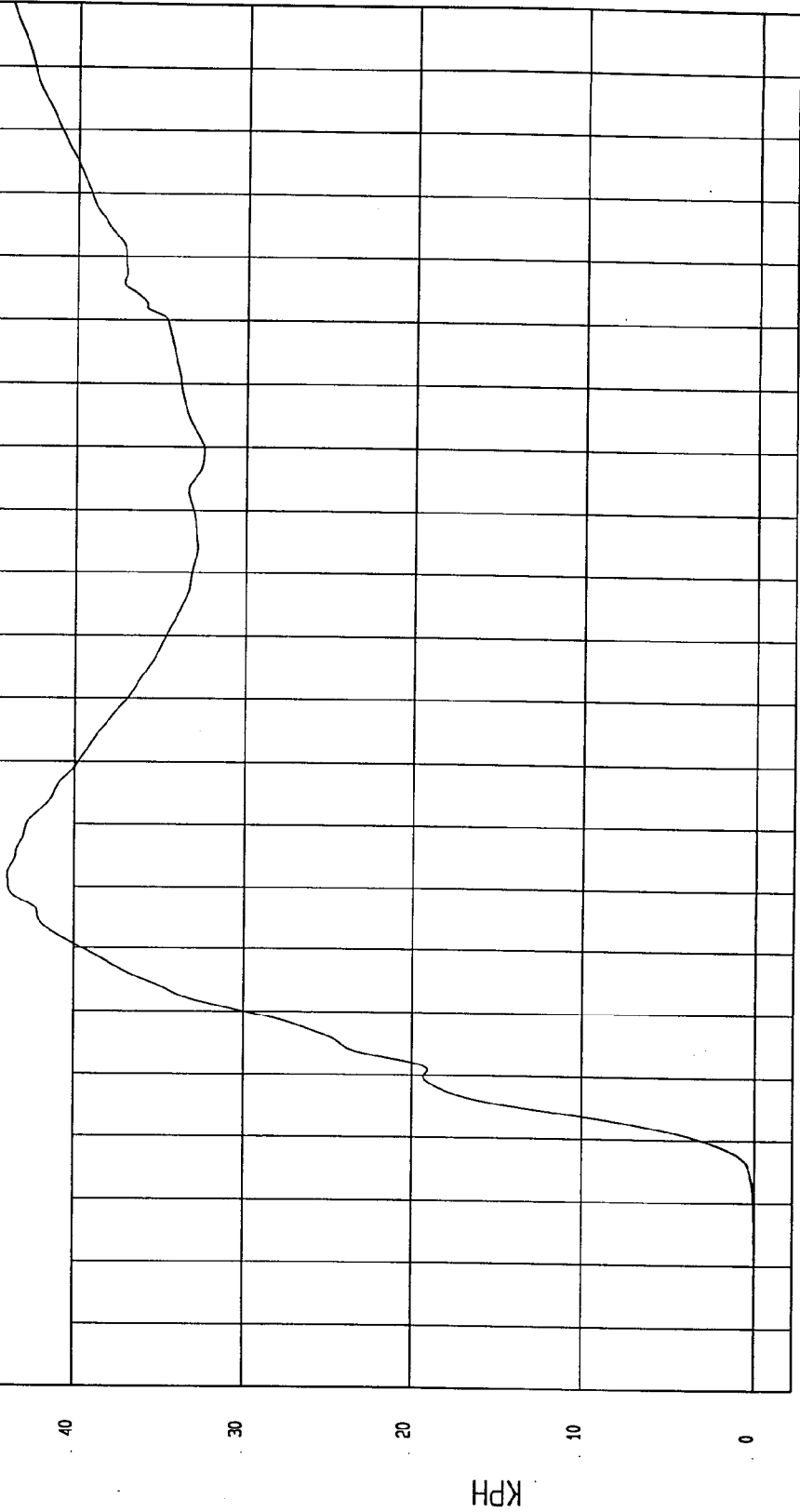
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = 0 KPH at -20 msec

Maximum = 43.91 KPH at 62 msec

DRIVER LOWER RIB Y REDUNDANT VELOCITY

1 \_\_\_\_\_ 899068A1.V43 Filterclass (180)



MCA Research  
10-21-1999 09:04

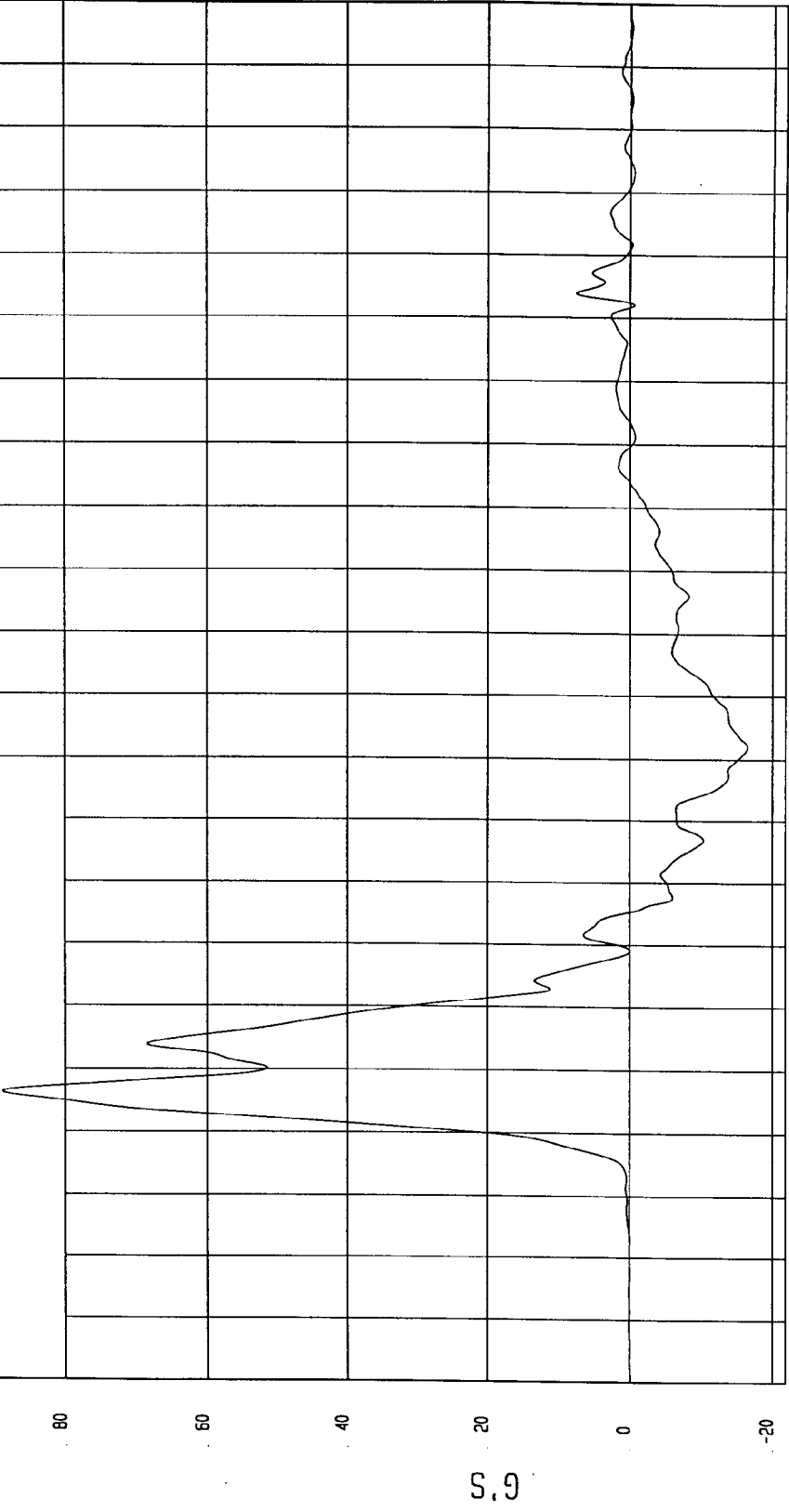
TIME Seconds

TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999  
COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH

Minimum = -16.56 G'S at 82 msec  
Maximum = 88.65 G'S at 26 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ B99068AF.A44 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

NSA Research  
10-21-1999 09:00

TEST DATE: 10-20-1999

TEST: INDICANT SIDE IMPACT

Speed: 38 MPH 61.2 KPH

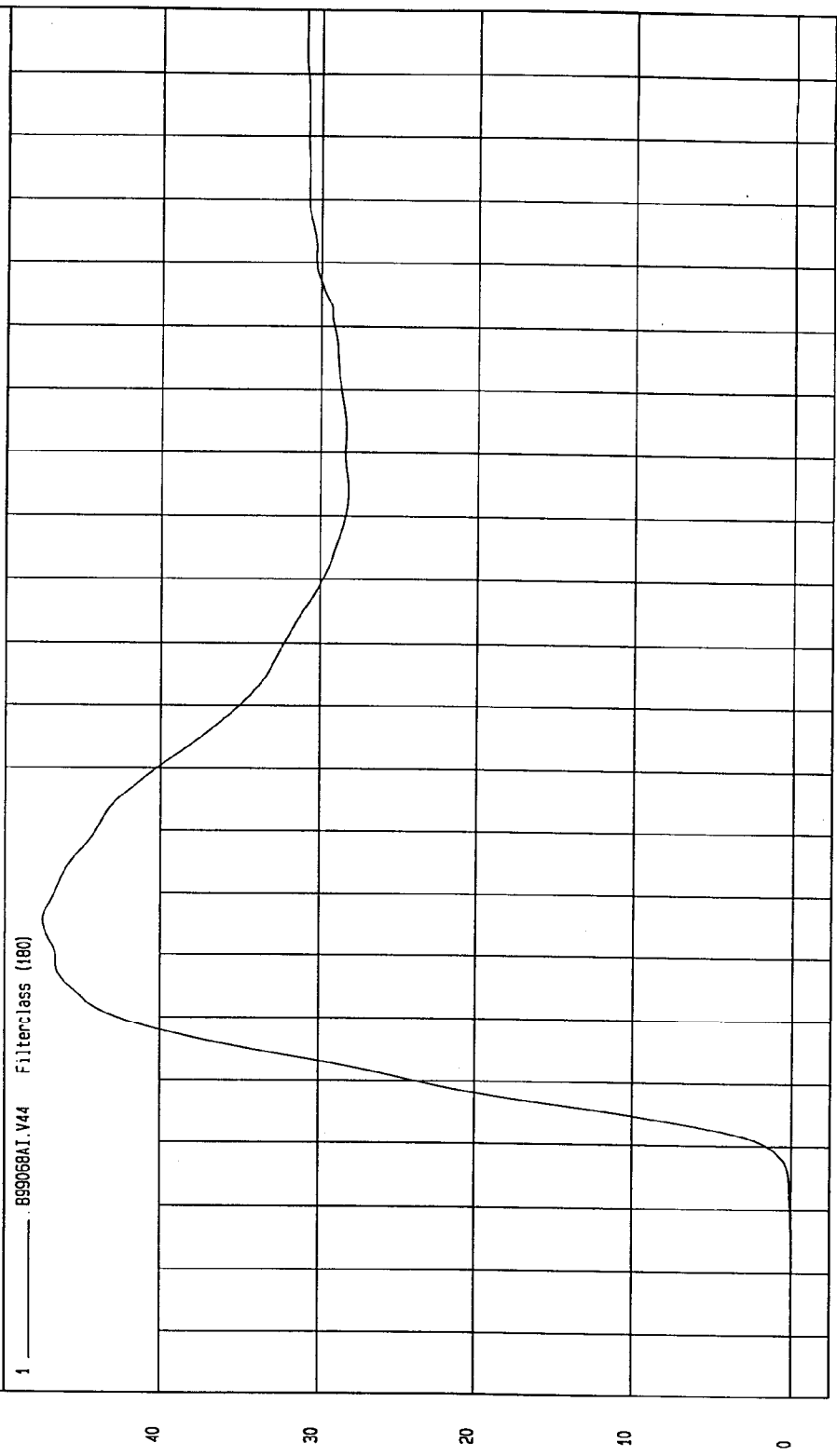
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 47.36 KPH at 55 msec

Minimum = -7.11E-03 KPH at -13 msec

DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 \_\_\_\_\_ 89068AI.V44 Filterclass (180)



TIME Seconds

MCA Research  
10-21-1999 09:04

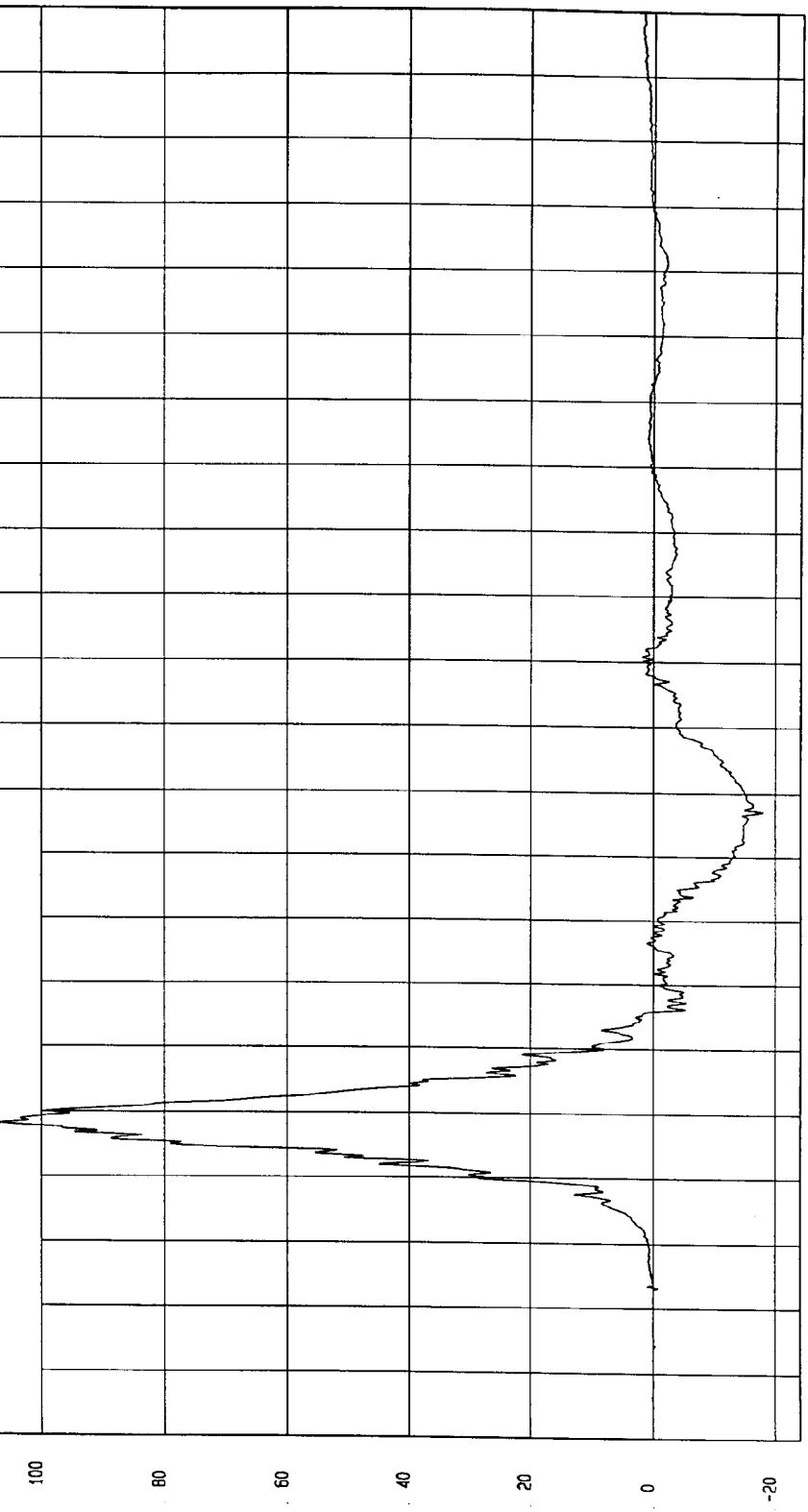
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -17.88 G'S at 77 msec  
Maximum = 105.81 G'S at 28 msec

DRIIVER PELVIS Y REDUNDANT ACCELERATION

1 899058AT.A45 Filterclass (1000)



MGA Research  
10-21-1999 09:00

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

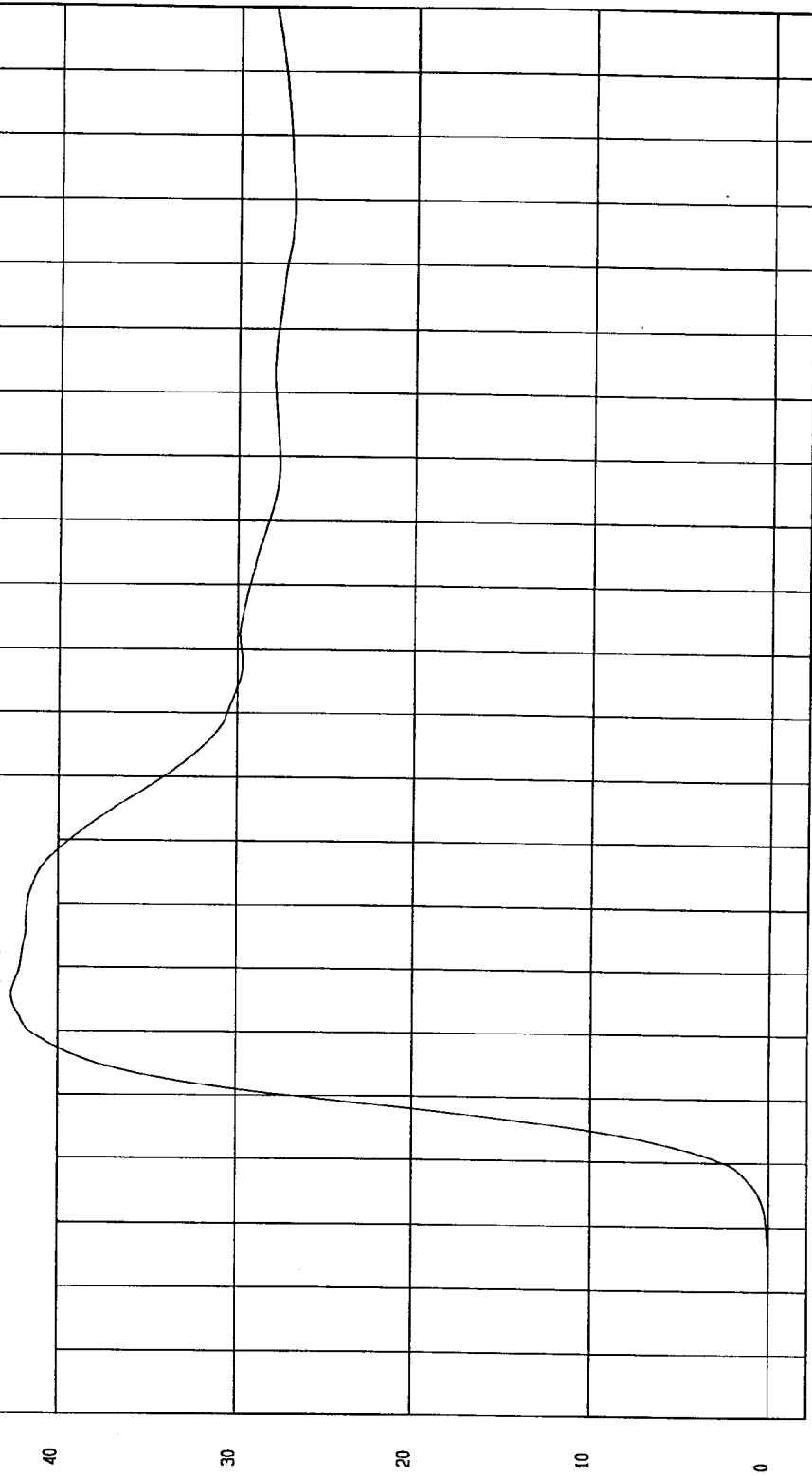
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = 0 KPH at -20 msec

Maximum = 42.63 KPH at 46 msec

DRIVER PELVIS Y REDUNDANT VELOCITY

1 ——— .899068AI.V45 Filterclass (180)



KPH

TIME Seconds

WCA Research  
10-21-1999 09.04

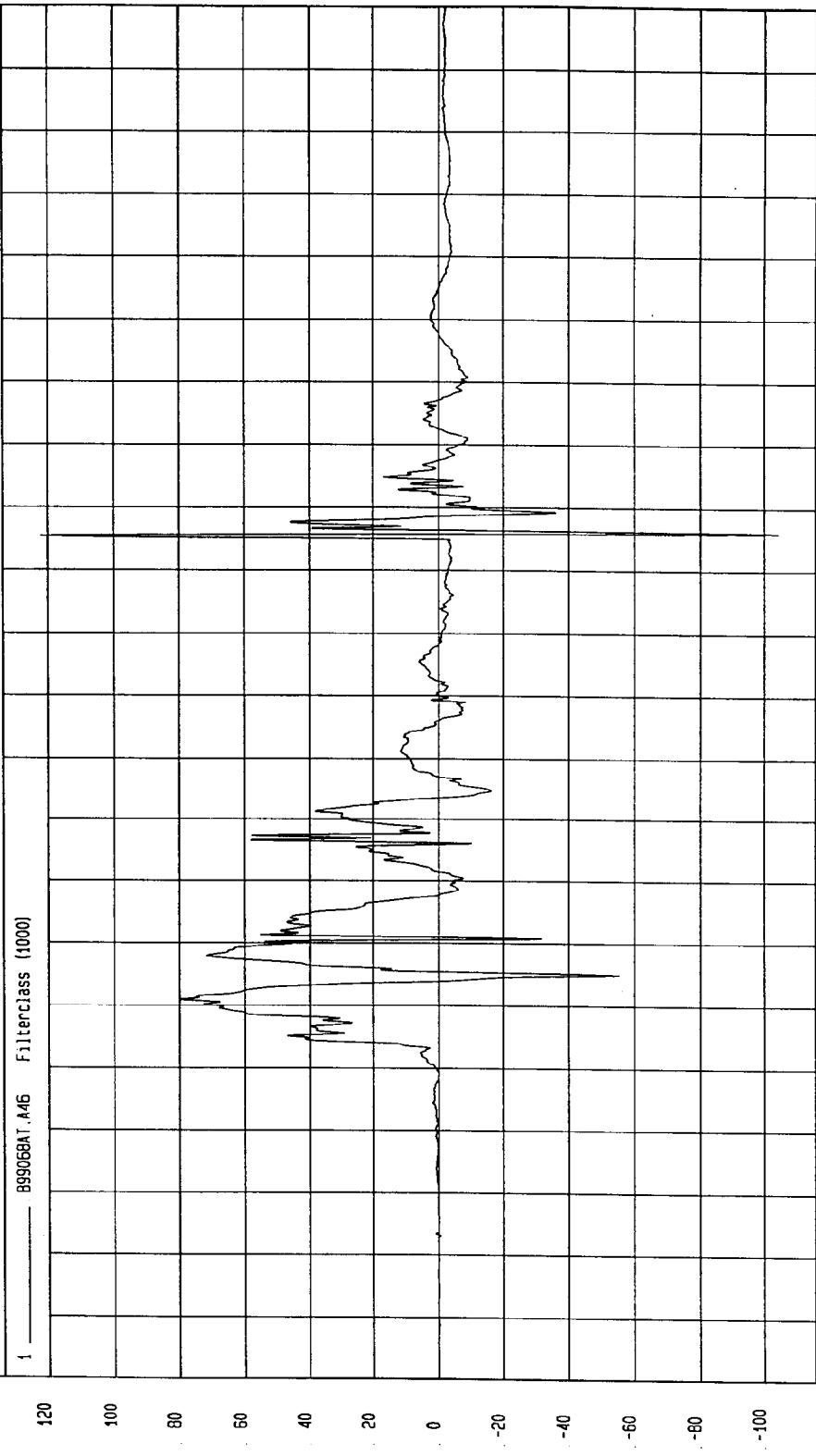
TEST: INDICANT SIDE IMPACT      TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)      Speed: 38 MPH 61.2 KPH

Minimum = -104.25 G'S at 1.16 msec      Maximum = 122.12 G'S at 1.16 msec

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ 899068AT.A46 Filterclass (f000)



TIME (SECONDS)

MSA Research Co.  
10-21-1999 09:01

G.S

TEST: INDICANT SIDE IMPACT

TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)

Speed: 38 MPH 61.2 KPH

Minimum = -2.76E-03 KPH at -4 msec

Maximum = 43.49 KPH at 119 msec

REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

89906BA1.V46 Filterclass (180)

40

30

20

10

0

KPH

-0.02 0 0.01 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

TIME Seconds

MOA Research  
10-21-1999 09:04

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

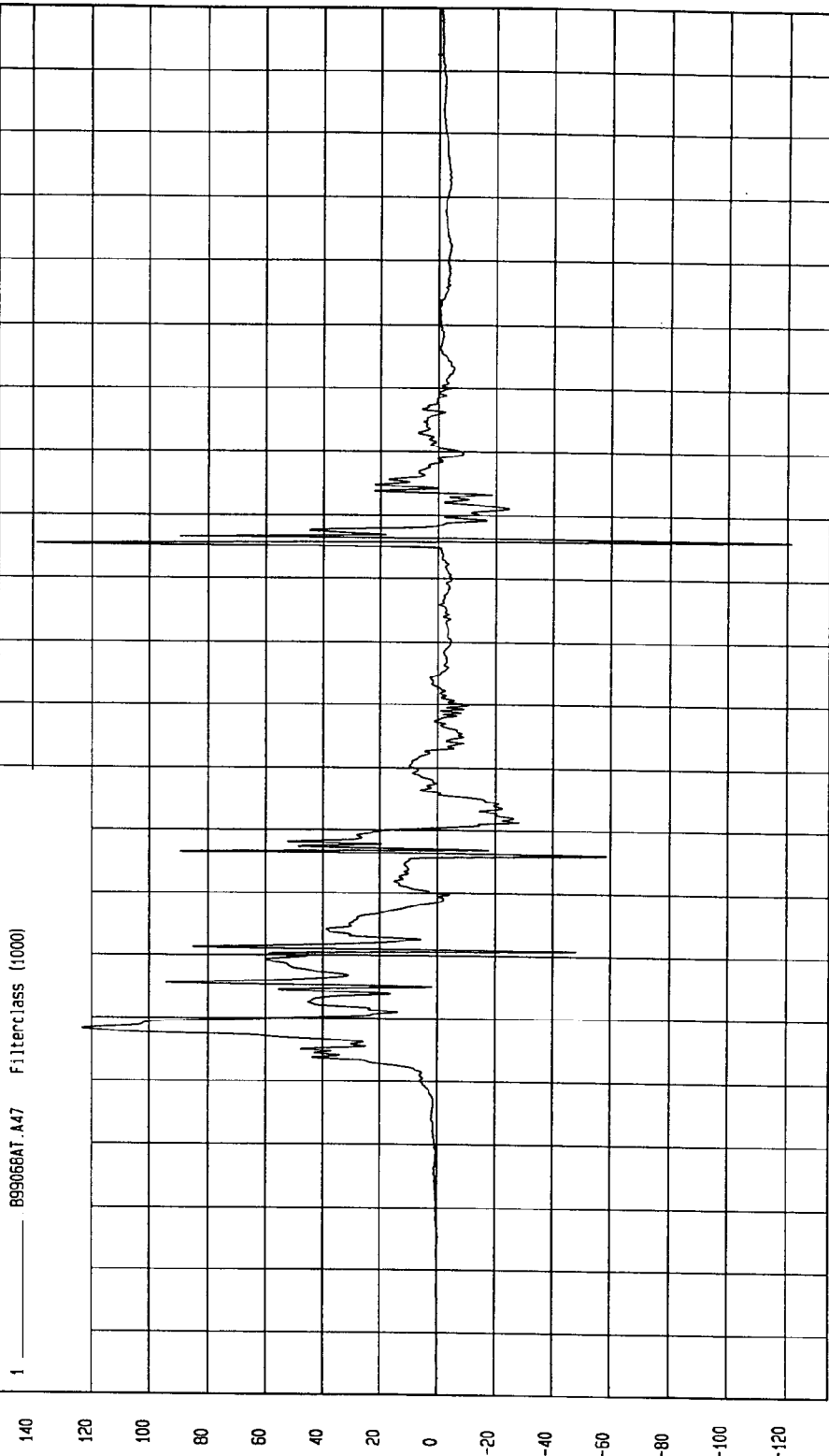
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -121.41 G'S at 116 msec

Maximum = 138.85 G'S at 116 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 89906EAT.A47 Filterclass (1000)



G.S

TIME (SECONDS)

MCA Research  
10-21-1999 09:01

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

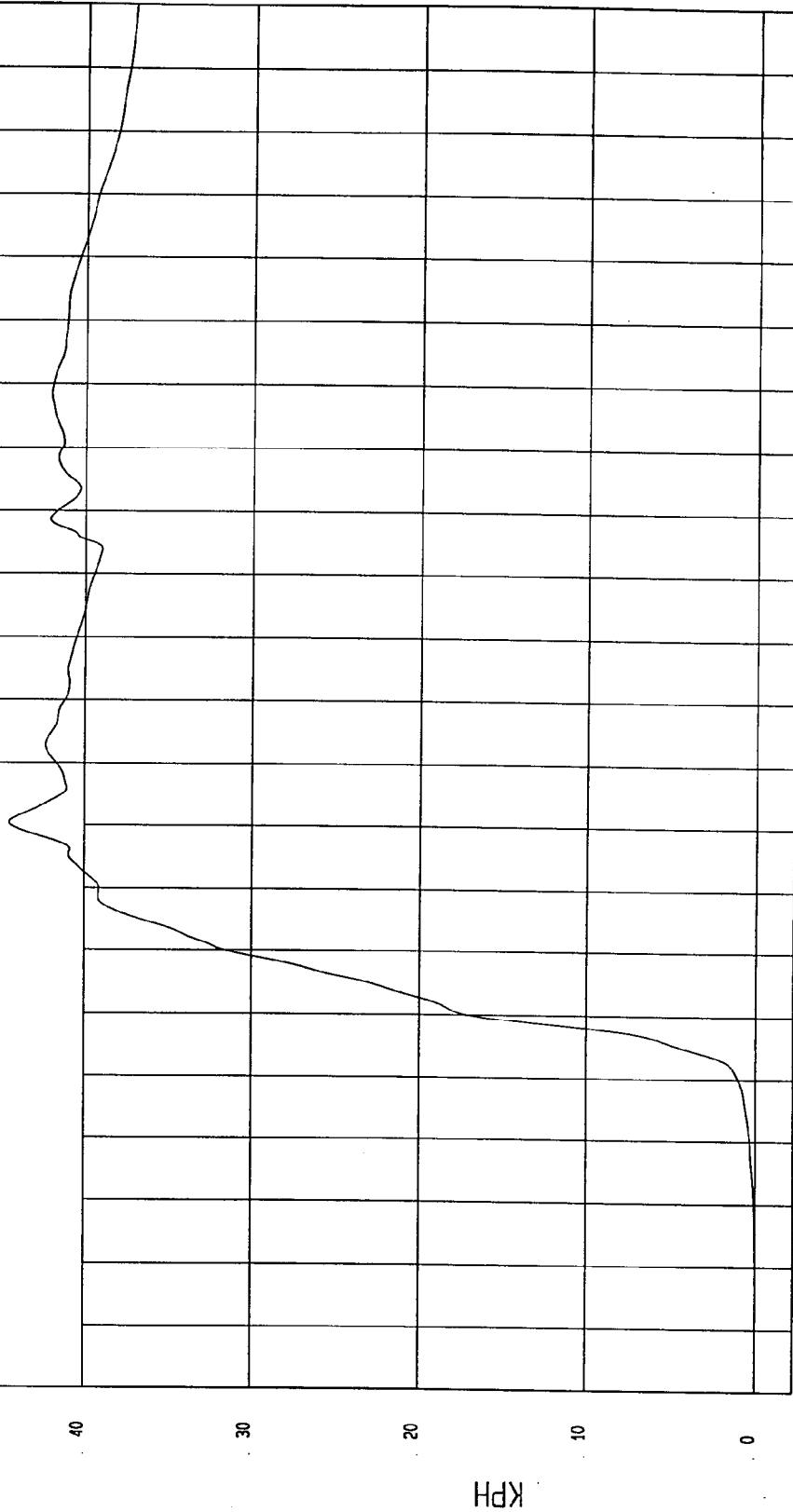
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = 0 KPH at -20 msec

Maximum = 44.44 KPH at 70 msec

REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY

1 ——— 89906BA1.V47 Filterclass (180)



TIME Seconds

NGA Research  
10-21-1999 09:04

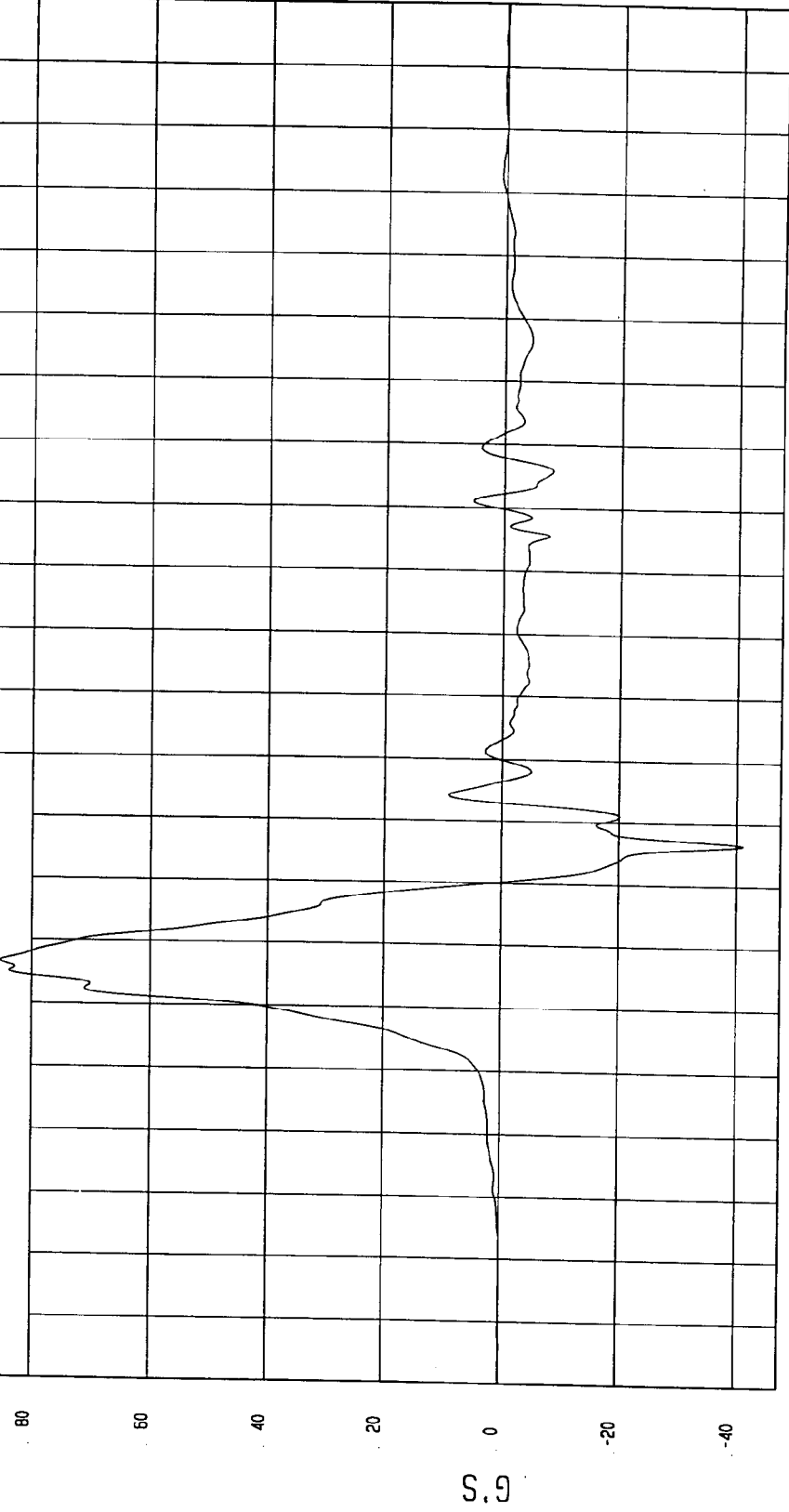
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -41.09 G'S at 66 msec  
Maximum = 85.39 G'S at 47 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ BS9068AF.A48 FilterClass (180)



MSA Research  
10-21-1999 09:01

TIME (SECONDS)

G.S

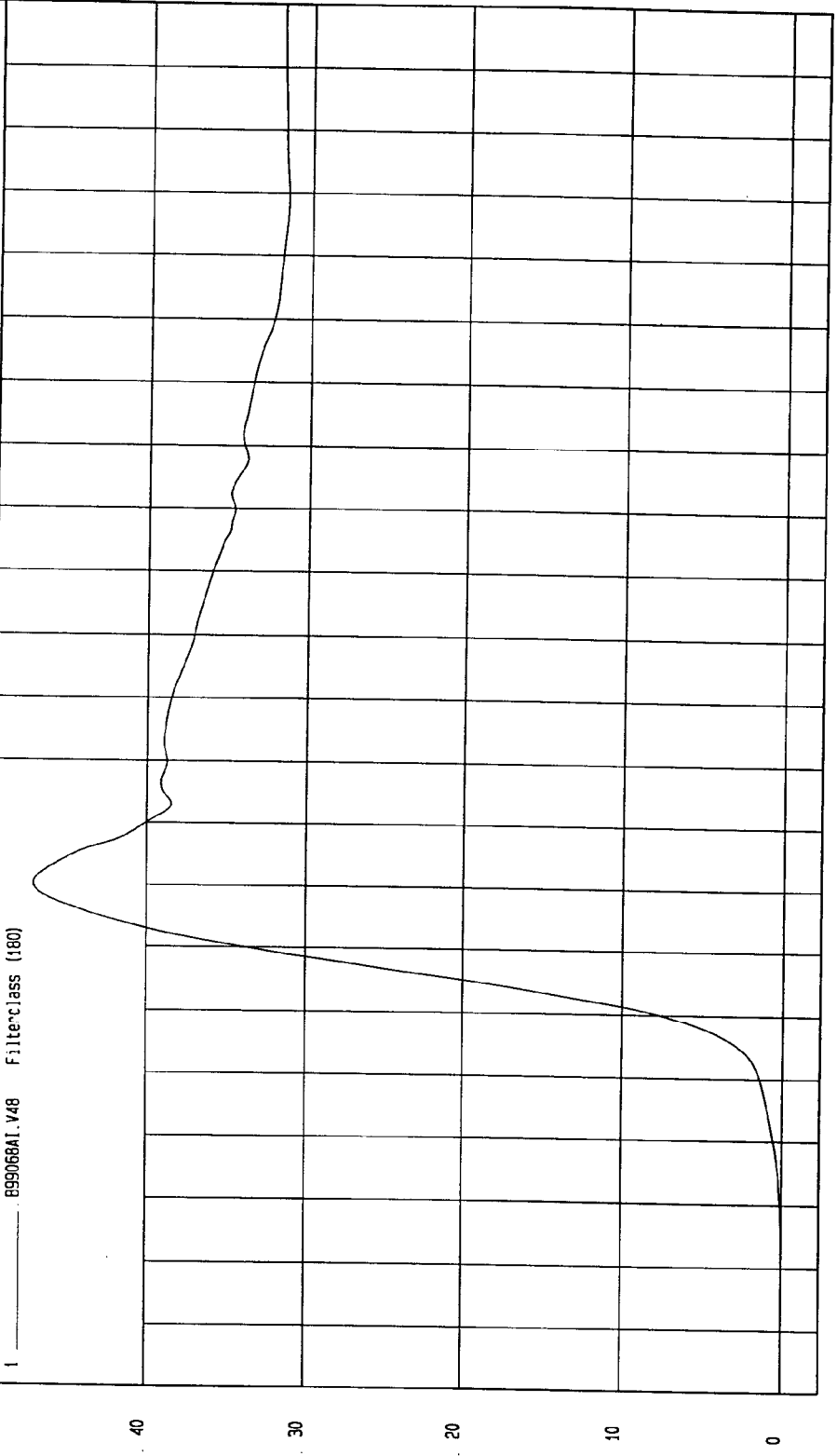
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.02E-02 KPH at -13 msec  
Maximum = 47.1 KPH at 60 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

899068A1.V48 Filterclass (180)



KPH TIME Seconds

MGA Research  
10-21-1999 08:04

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -11.55 G'S at 84 msec

Maximum = 137.95 G'S at 40 msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 899068AT.A49 Filterclass (1000)

140

120

100

80

60

40

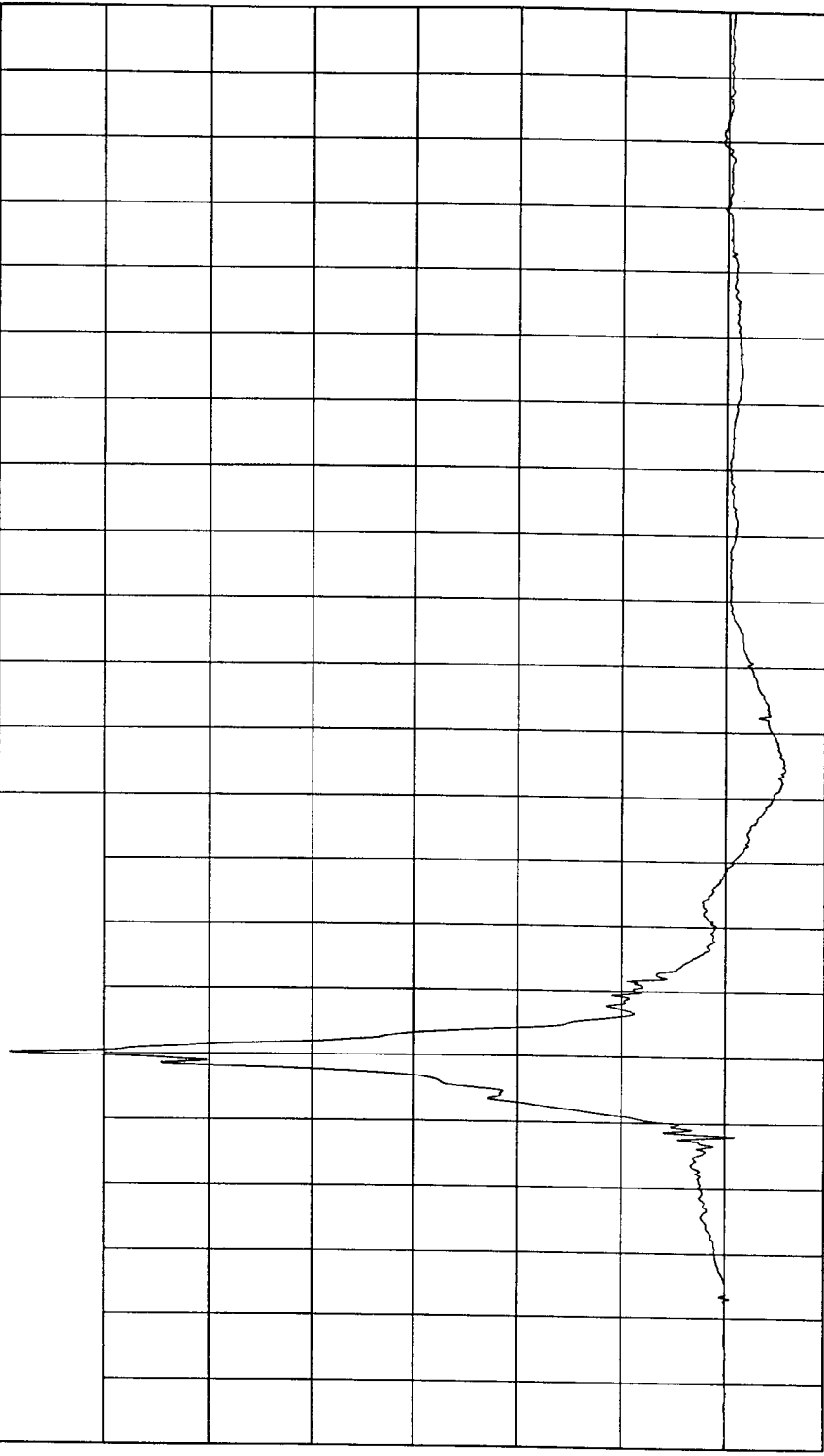
20

0

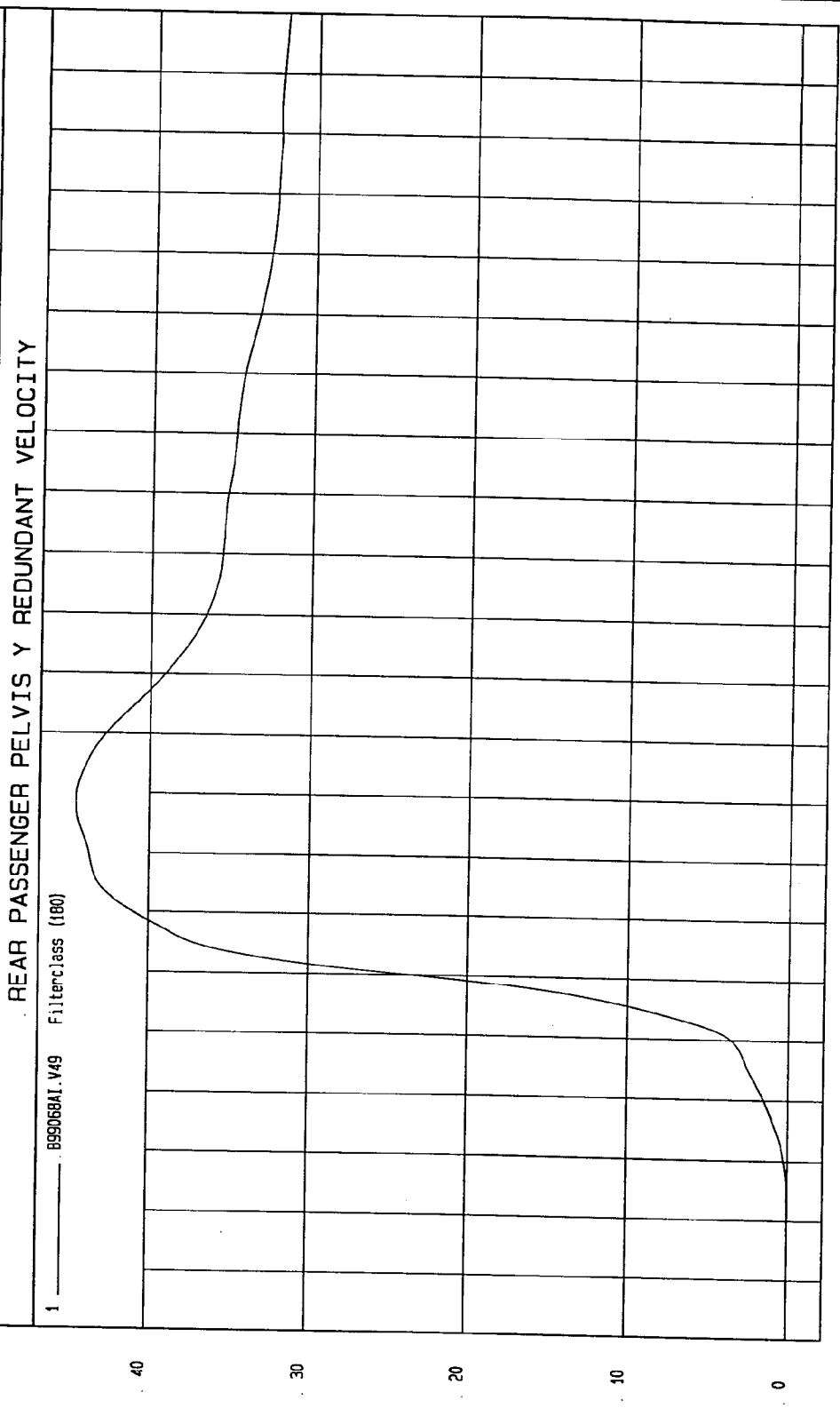
G.S

TIME (SECONDS)

NSA Research  
10-21-1999 09:01



TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999  
COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH  
Minimum = 0 KPH at -20 msec  
Maximum = 44.57 KPH at 69 msec



KPH

TIME Seconds

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

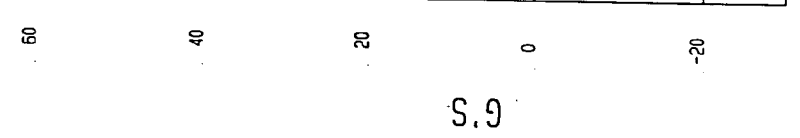
TEST: INDICANT SIDE IMPACT      TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)      Speed: 38 MPH 61.2 KPH

Minimum = -25.1 G'S at 63 msec      Maximum = 70.08 G'S at 23 msec

DRIVER UPPER RIB Y ACCELERATION

1 \_\_\_\_\_ B99068F1.R15 Filterclass (FIR Filtered)



TIME (SECONDS)

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

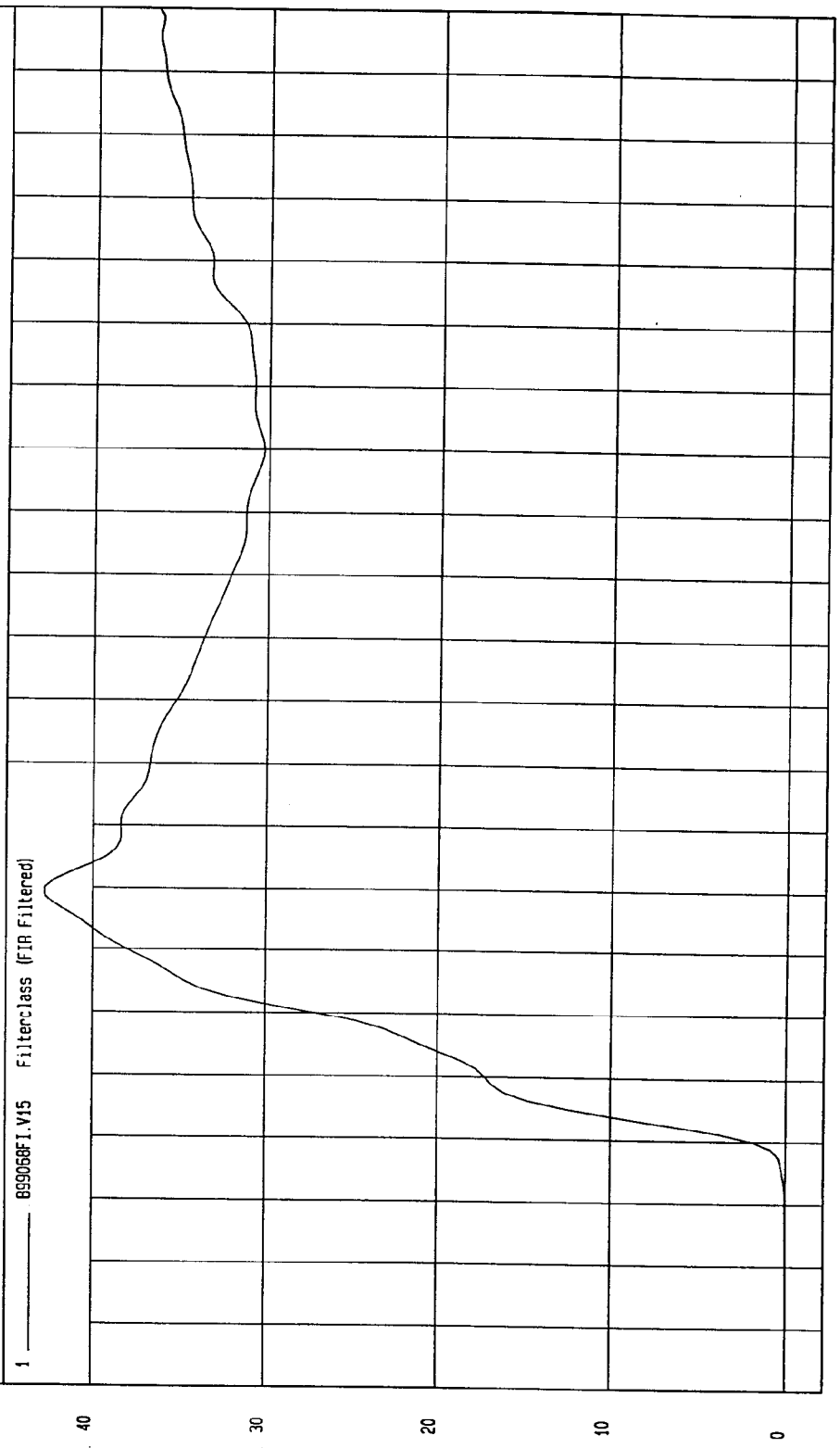
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -4.00E-02 KPH at -7 msec

Maximum = 42.81 KPH at 59 msec

DRIVER UPPER RIB Y VELOCITY

1 899068F1.V15 Filterclass (FIR Filtered)



KPH TIME Seconds

WCA Research  
10-27-1999 16:31

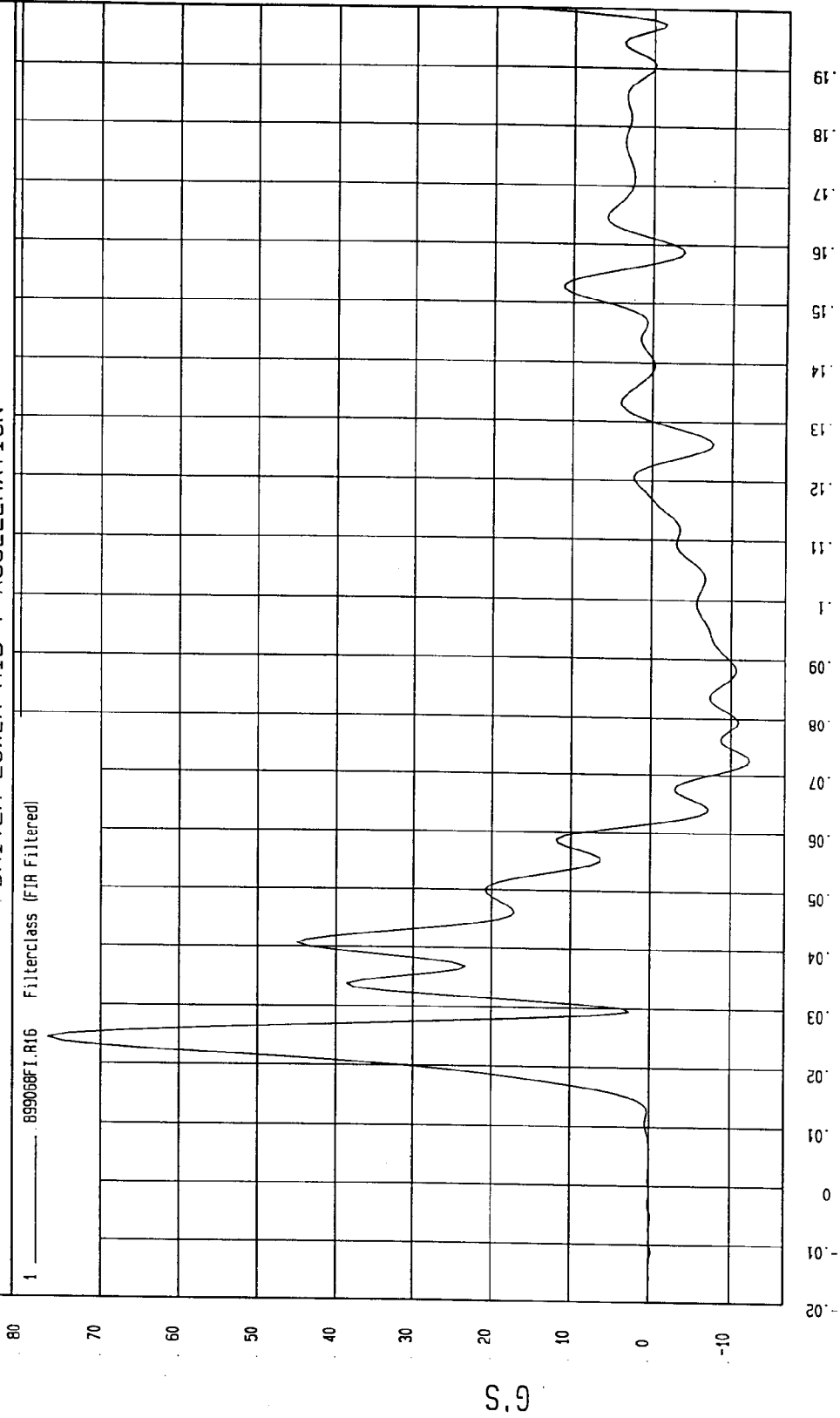
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -12.32 G'S at 72 msec  
Maximum = 76.53 G'S at 24 msec

DRIVER LOWER RIB Y ACCELERATION

1 89906FI.R16 Filterclass (FIR Filtered)



MCA Research  
10-21-1999 08:56

TIME (SECONDS)

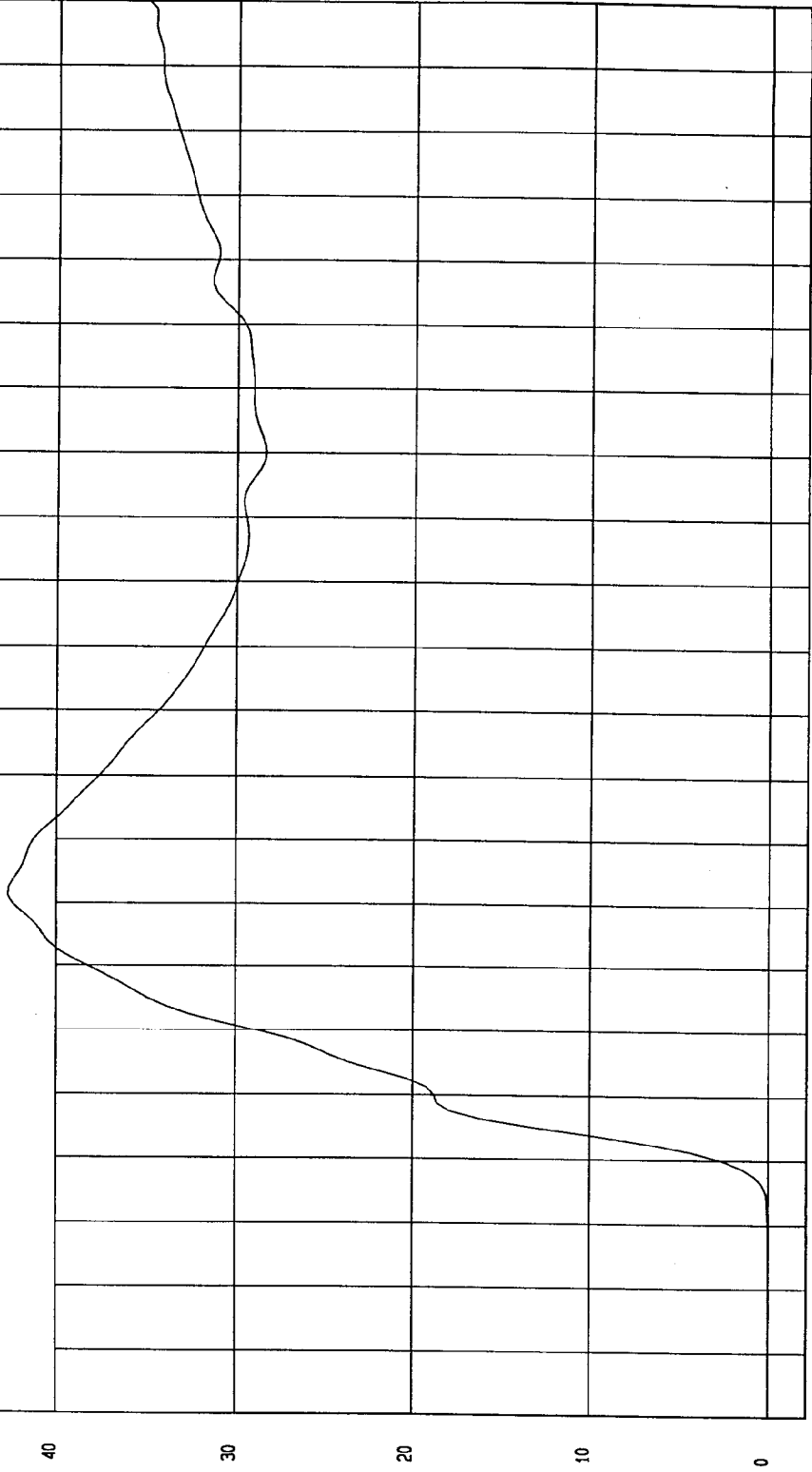
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.39E-02 KPH at -4 msec  
Maximum = 42.71 KPH at 62 msec

DRIVER LOWER RIB Y VELOCITY

1 ——— 899068F1.V16 FilterClass (FIR Filtered)



TIME Seconds

MCA Research  
10-27-1999 10:51

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

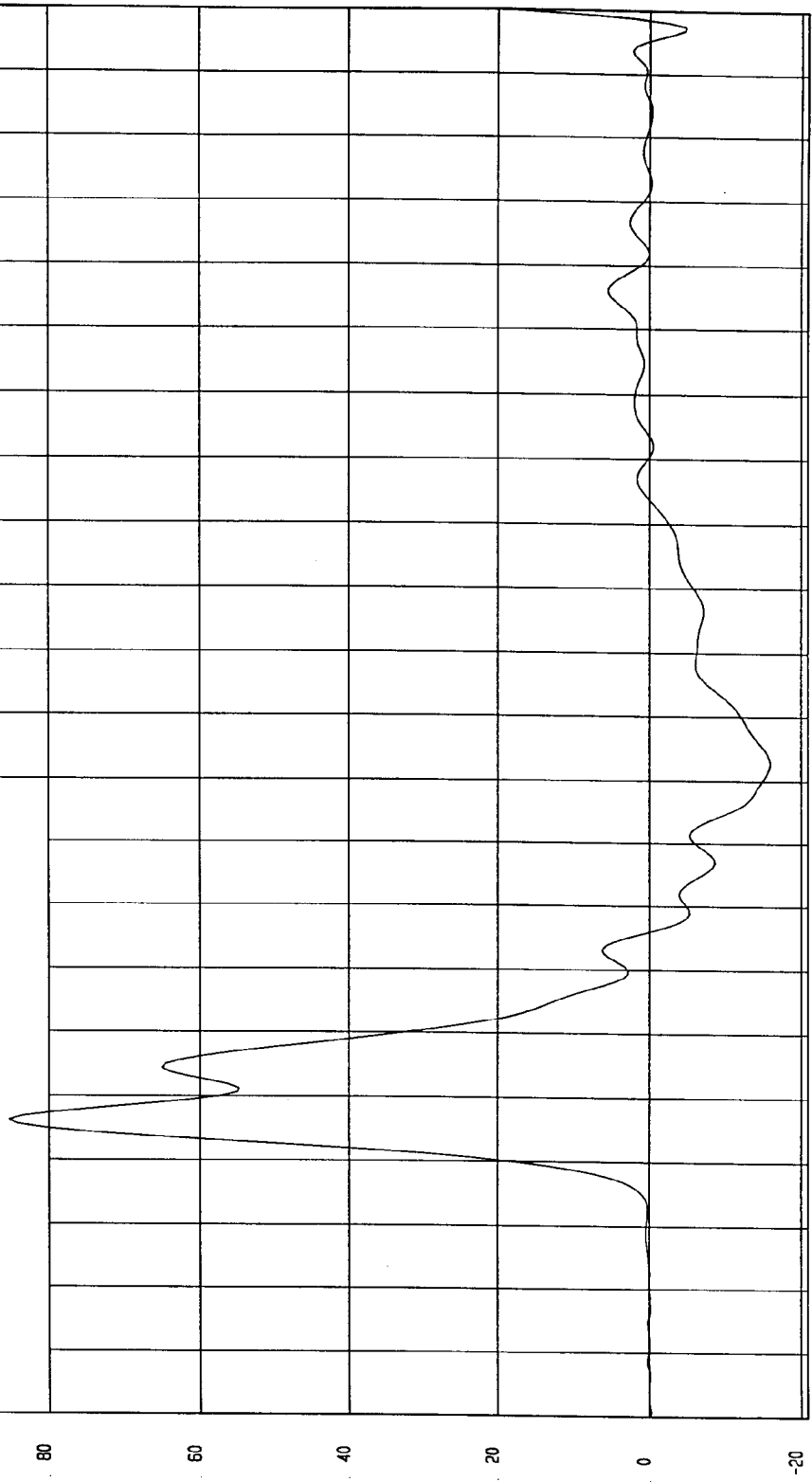
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 85.23 G'S at 26 msec

Minimum = -15.87 G'S at 82 msec

DRIVER LOWER SPINE Y ACCELERATION

1 ——— 899068F1.R17 FilterClass (FIR Filtered)



MOA Research  
10-21-1999 06:56

TIME (SECONDS)

G.S

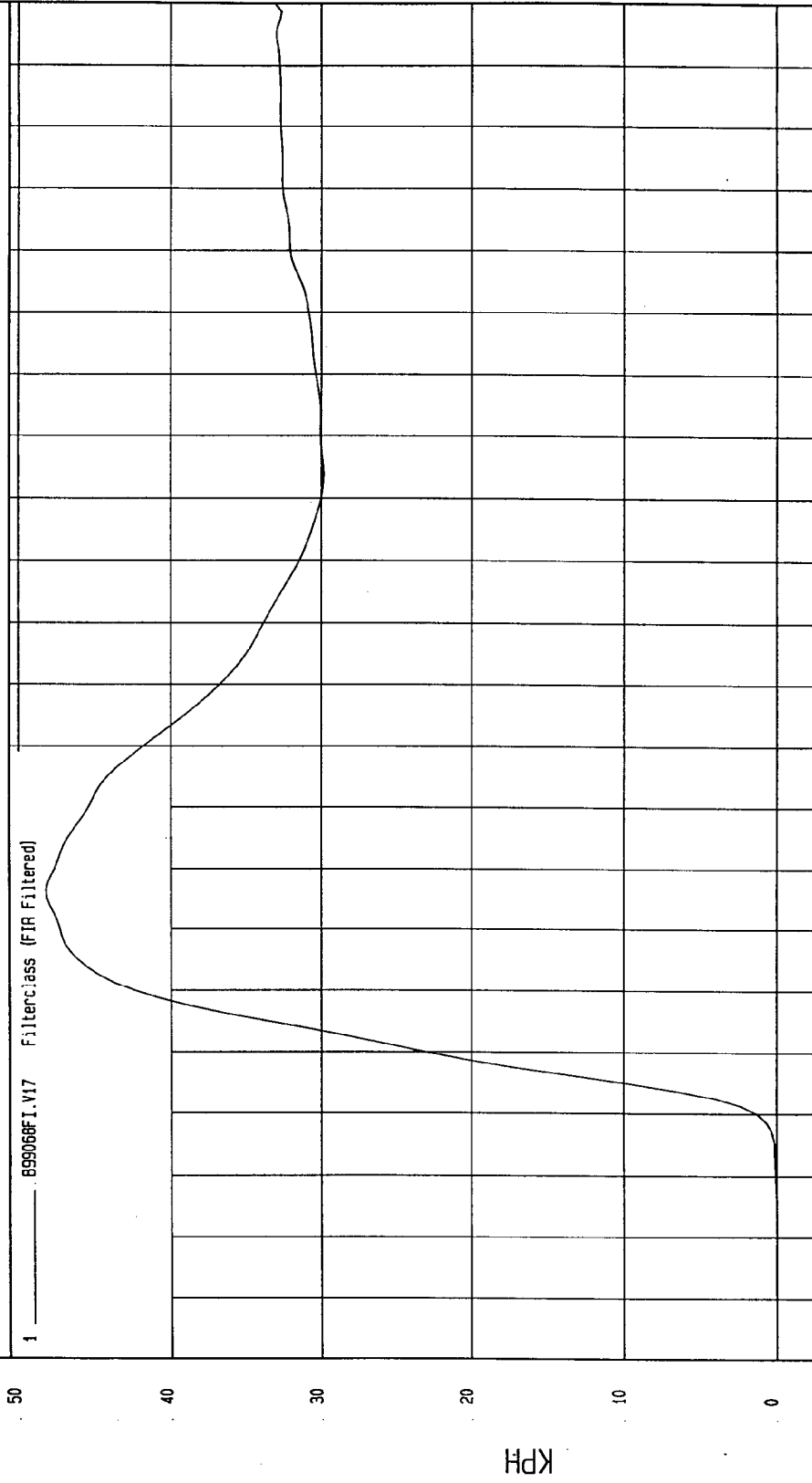
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.18E-02 KPH at -12 msec  
Maximum = 48.2 KPH at 56 msec

DRIVER LOWER SPINE Y VELOCITY

1 \_\_\_\_\_ 899068F1.V17 Filter: class (FIR Filtered)



WCA Research  
10-21-1999 10:51

TIME Seconds

KPH

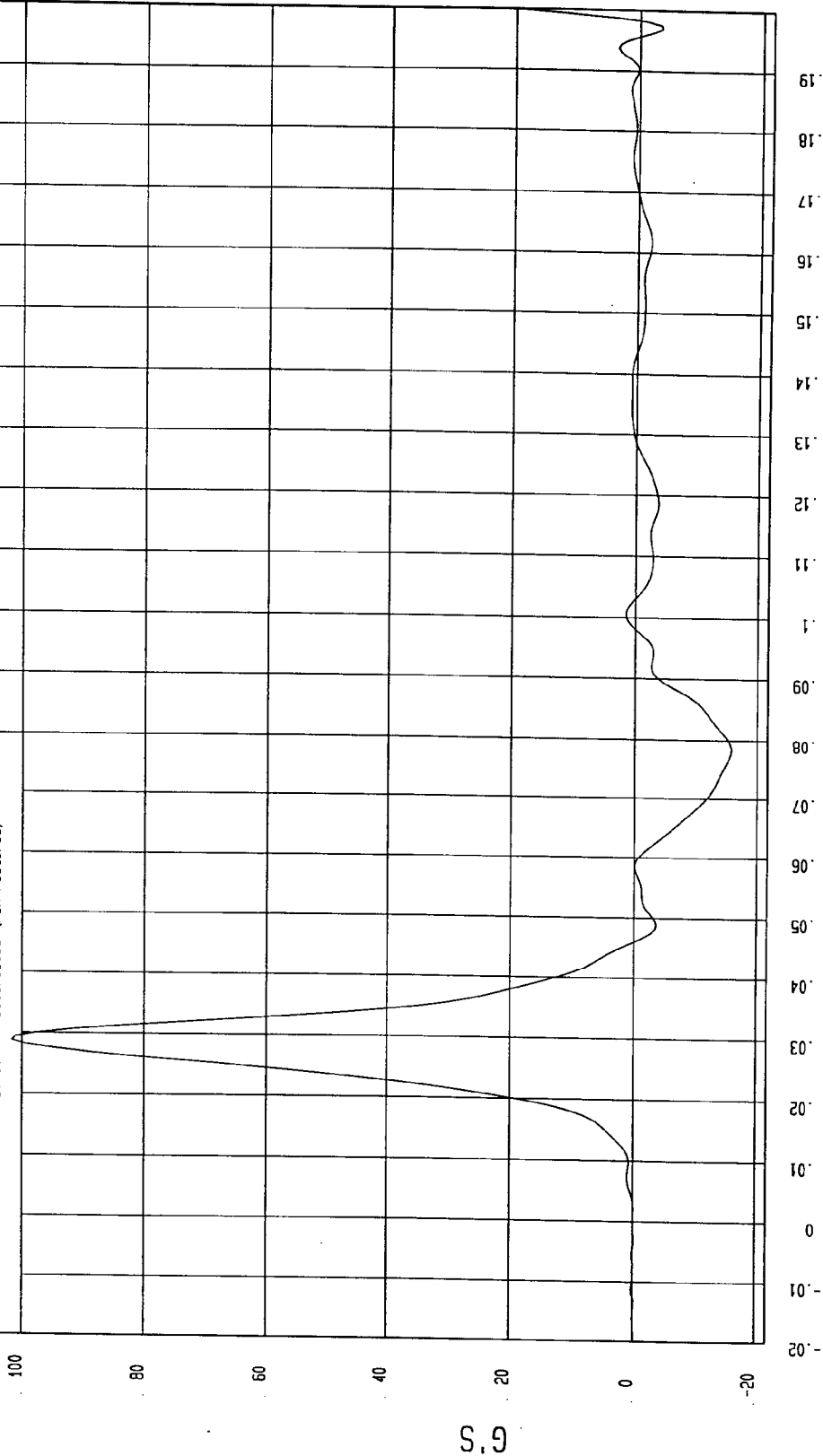
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -15.84 G'S at 78 msec  
Maximum = 101.65 G'S at 29 msec

DRIVER PELVIS Y ACCELERATION

1 B99068T.R18 Filterclass (FIR Filtered)



MCA Research  
10-21-1999 08:56

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

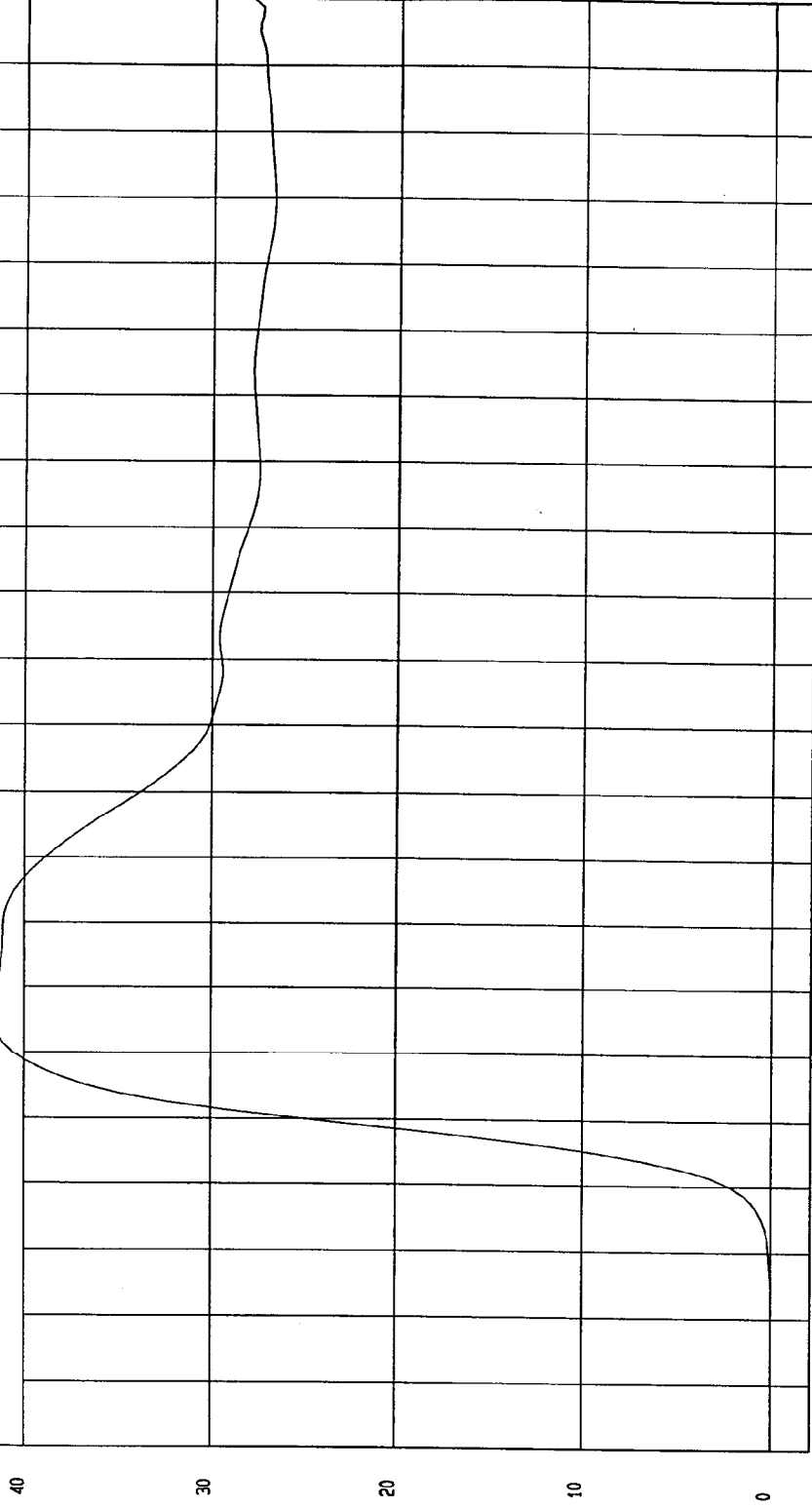
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -1.34E-02 KPH at -12 msec

Maximum = 41.89 KPH at 46 msec

DRIVER PELVIS Y VELOCITY

1 ——— 899068F1.V18 Filterclass (FIR Filtered)



TIME Seconds

MCA Research  
10-27-1999 10:51

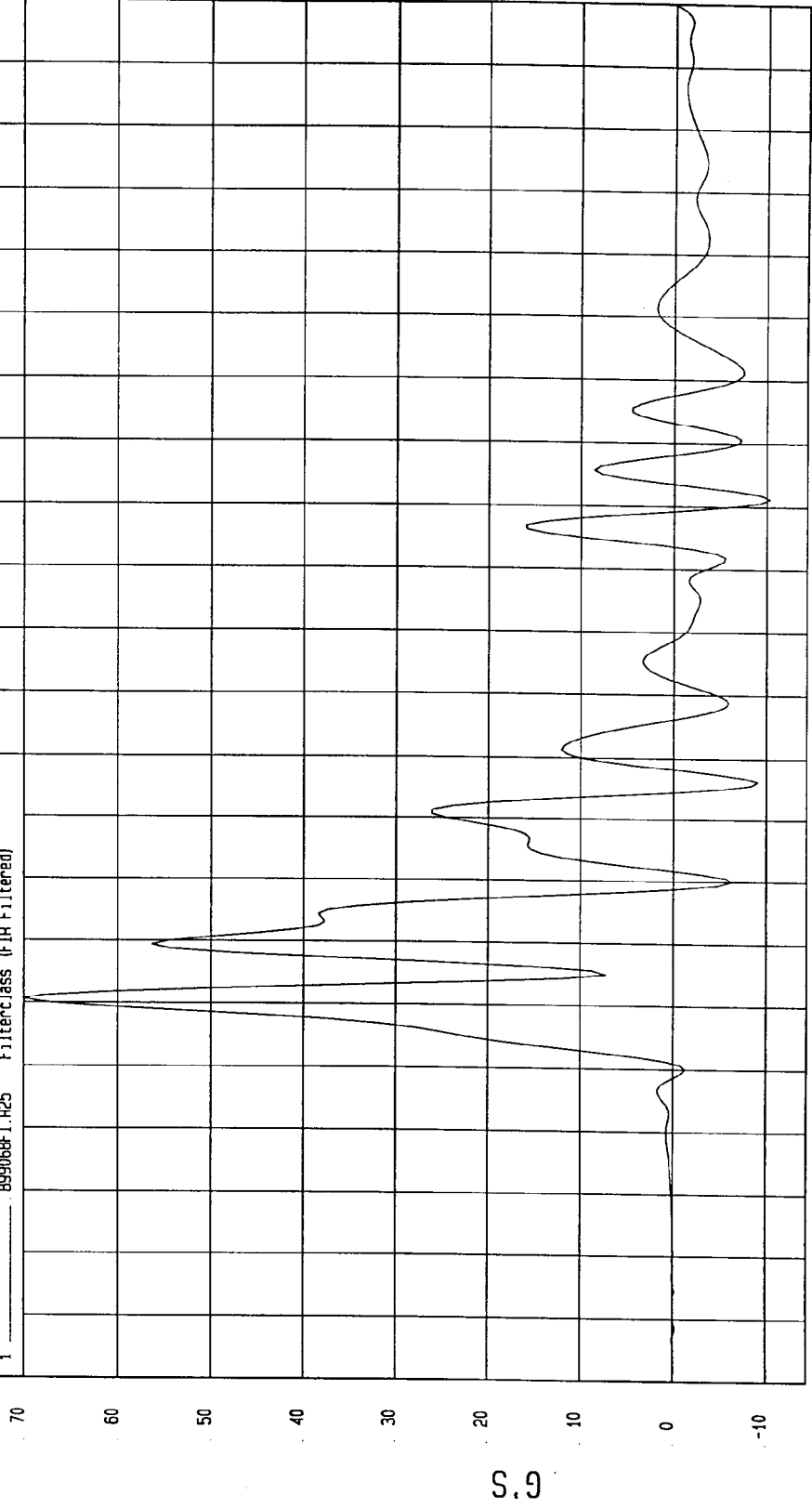
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -10.38 G'S at 121 msec  
Maximum = 70.03 G'S at 41 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 899068F1.R25 Filterclass (FIR Filtered)



MGA Research Co.  
10-21-1999 08:56

TIME (SECONDS)

G.S

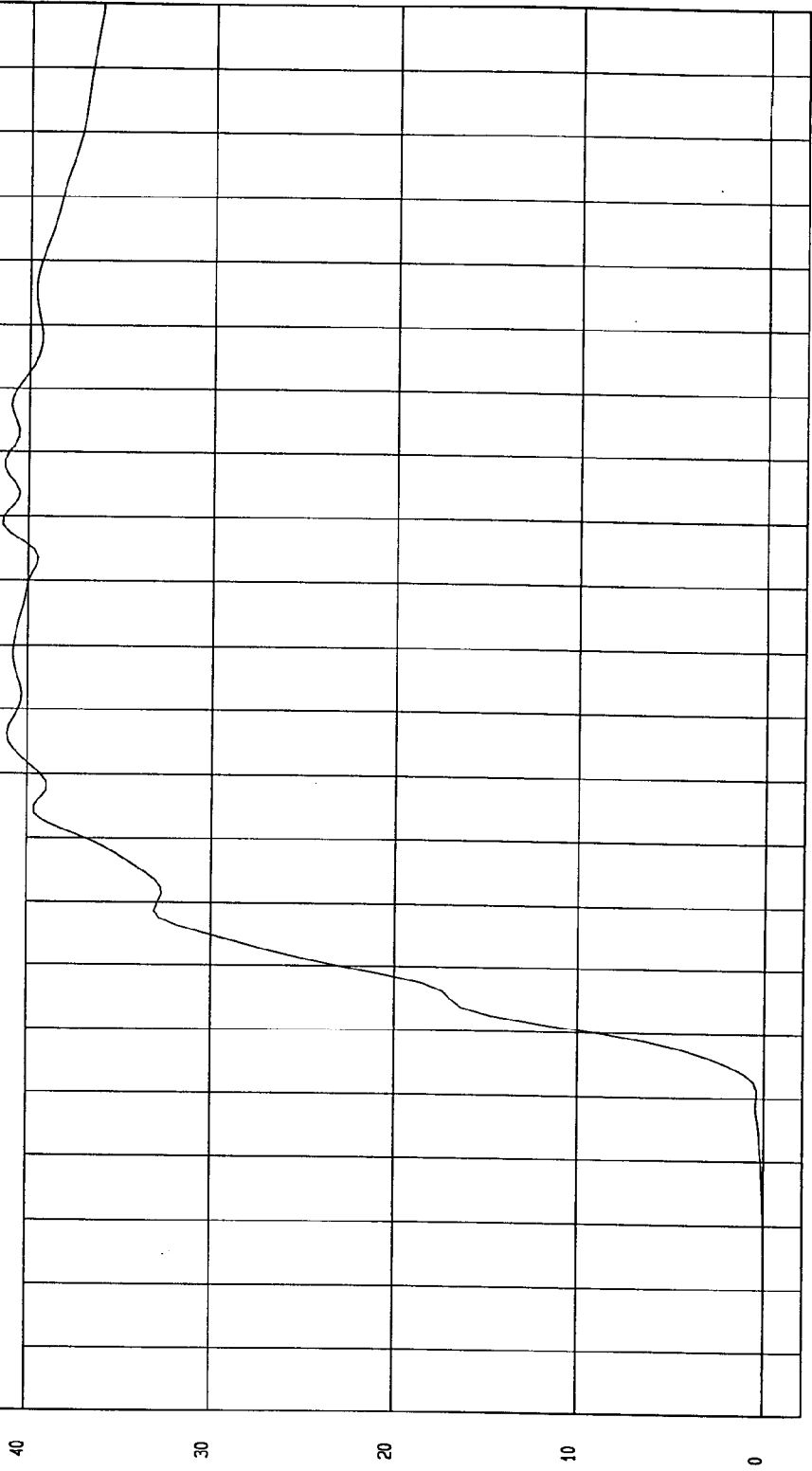
TEST DATE: 10-20-1999  
Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT  
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -1.02E-02 KPH at -4 msec  
Maximum = 41.44 KPH at 119 msec

REAR PASSENGER UPPER RIB Y VELOCITY

1 B99066F1.Y25 FilterClass (FIR Filtered)



TIME Seconds  
MGA Research  
10-27-1999 10:51

KPH

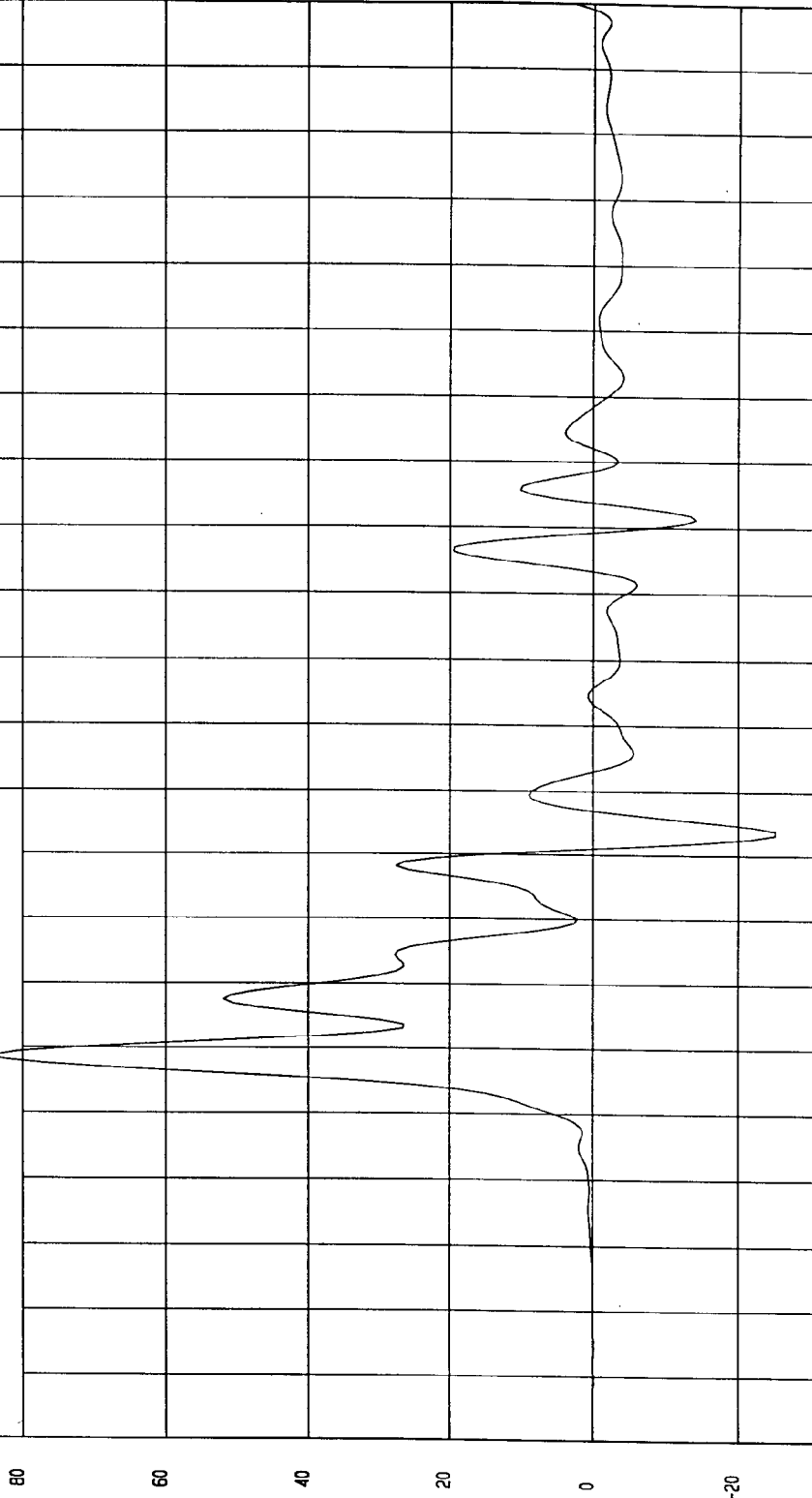
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -25.08 G'S at 74 msec  
Maximum = 84.08 G'S at 39 msec

REAR PASSENGER LOWER RIB Y ACCELERATION

1 899068F1.R26 Filterclass (FIR Filtered)



MGA Research  
10-21-1999 08:56

TIME (SECONDS)

G.S

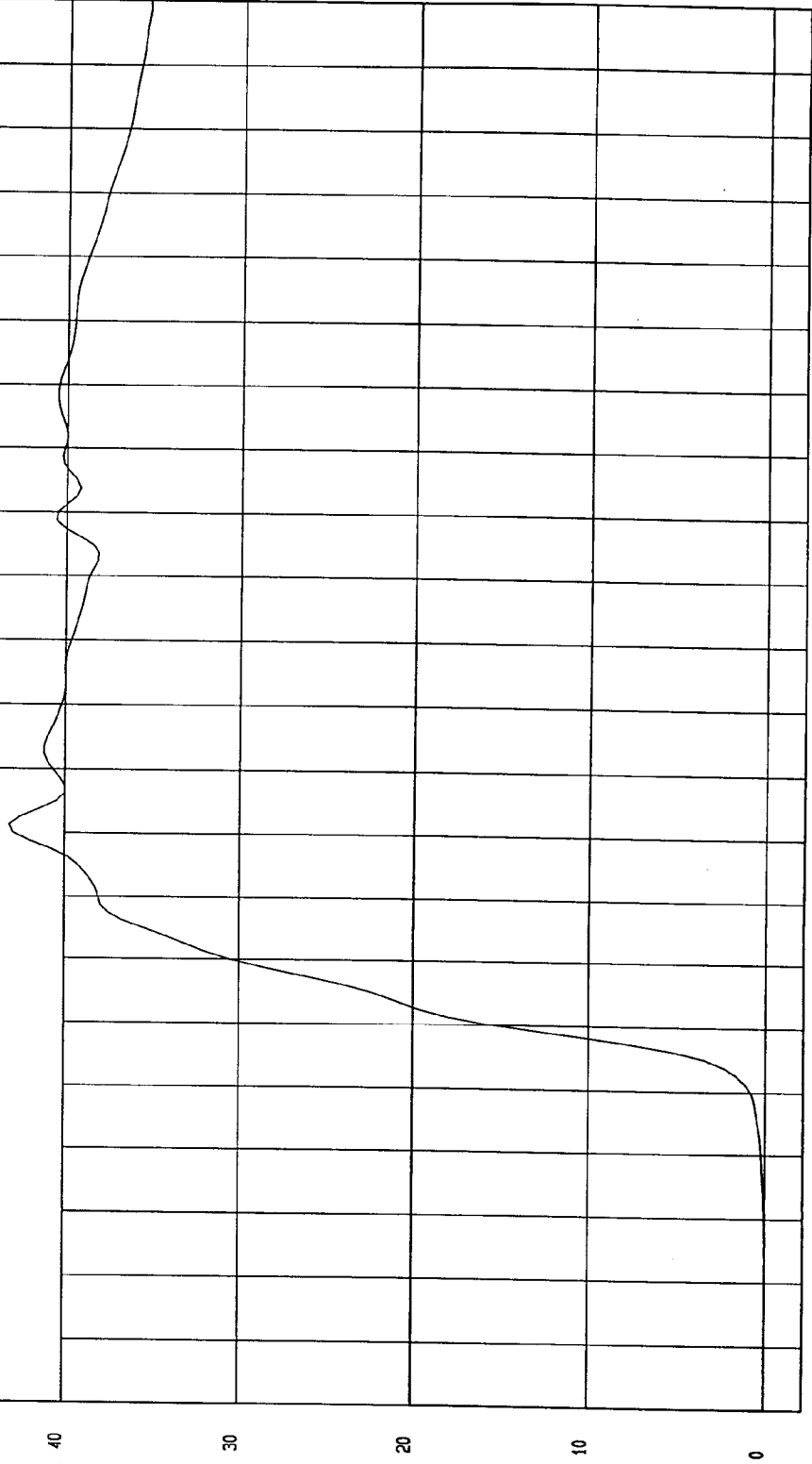
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -5.93E-04 KPH at -4 msec  
Maximum = 43.11 KPH at 71 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 ——— 899068F1.V26 Filterclass (FIR Filtered)



TIME Seconds  
M&A Research  
10-27-1999 10:51

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

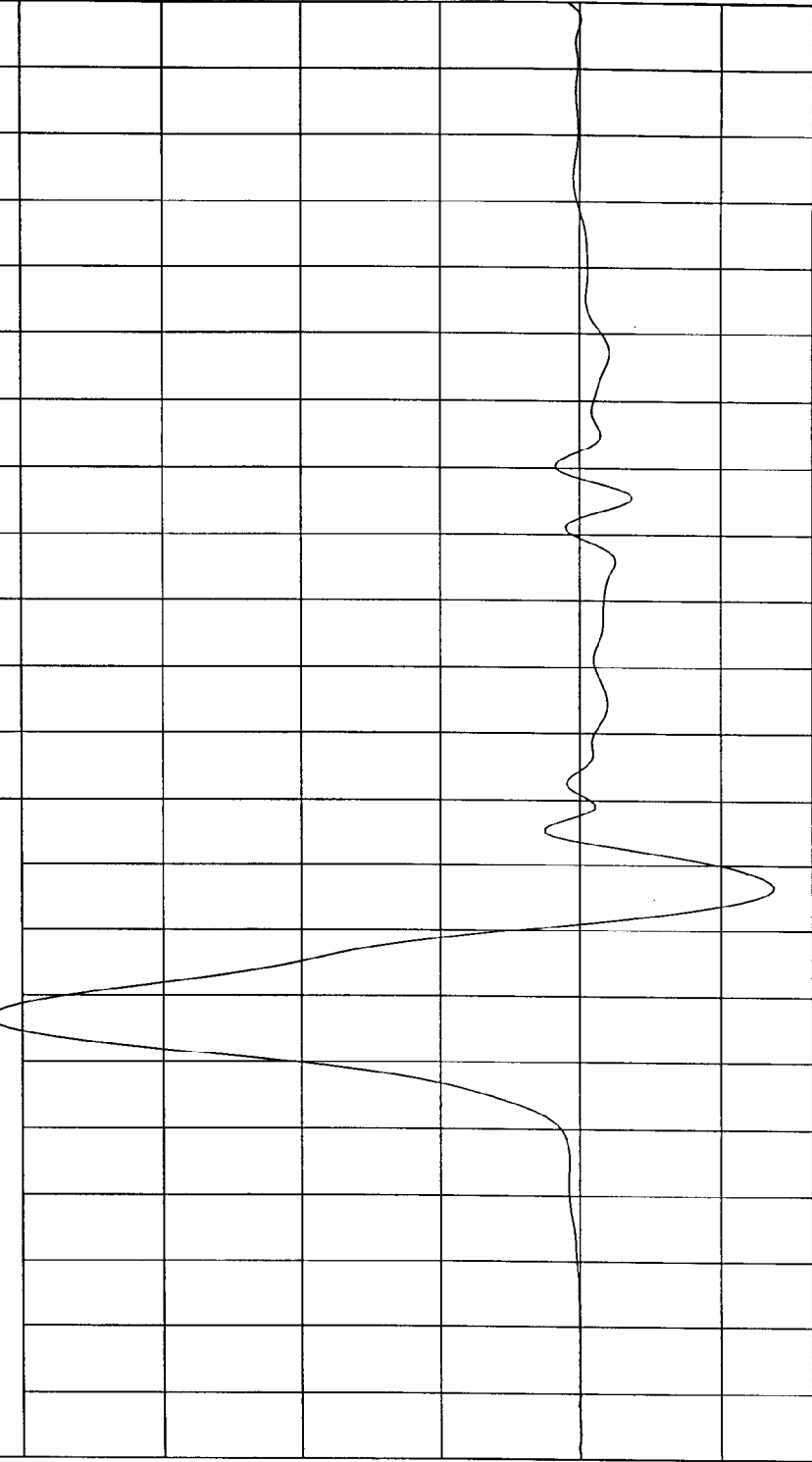
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 84.48 G'S at 47 msec

Minimum = -27.44 G'S at 67 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 899068F1.R27 FilterClass (FIR Filtered)



MCA Research  
10-21-1999 08:56

TIME (SECONDS)

S.G

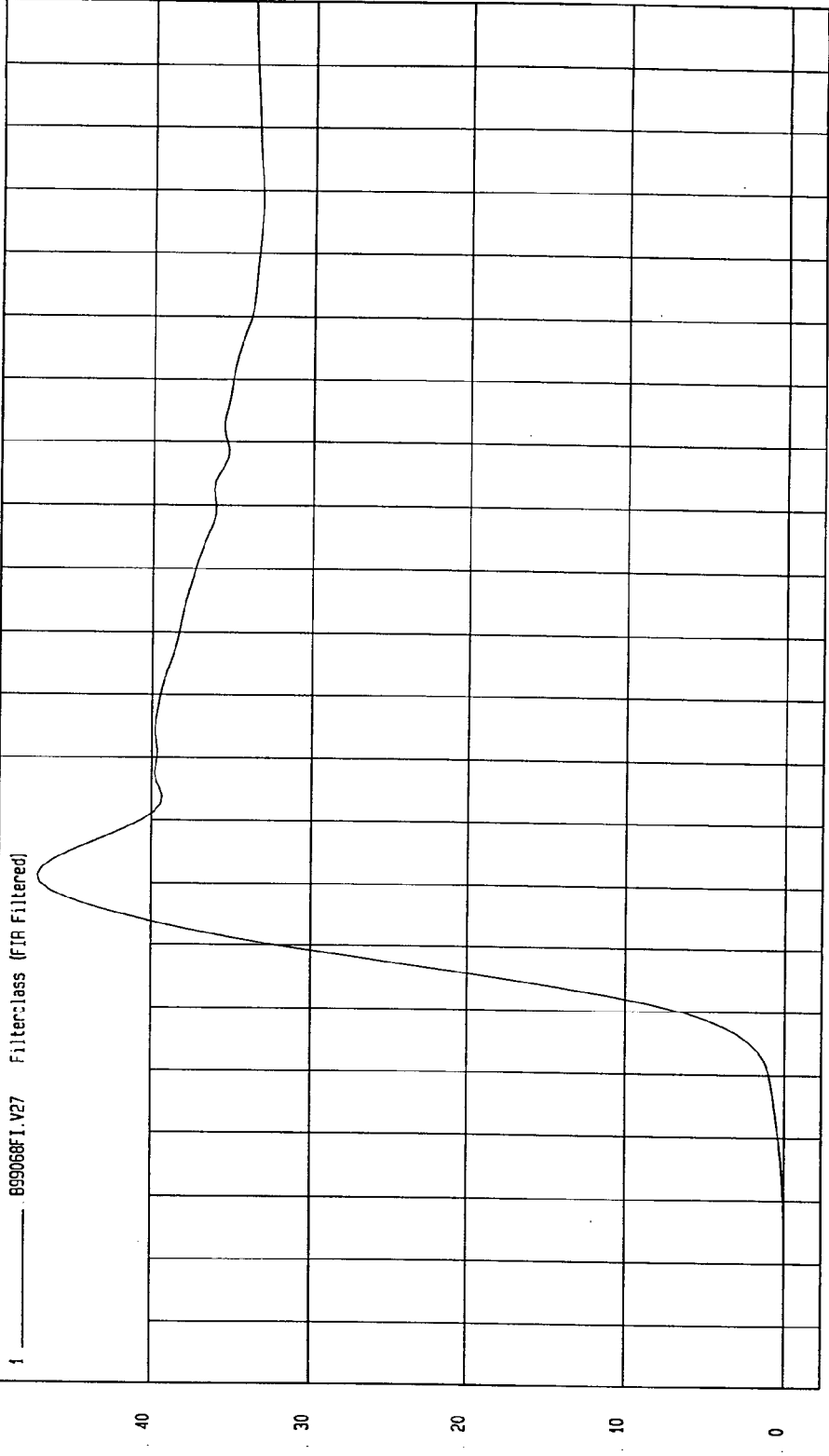
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -9.69E-03 KPH at -14 msec  
Maximum = 47.11 KPH at 61 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 ——— 899068F1.V27 Filter: class (FIR Filtered)



KPH TIME Seconds

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 114.22 G'S at 41 msec

Minimum = -11.54 G'S at 85 msec

REAR PASSENGER PELVIS Y ACCELERATION

FilterClass (FIR Filtered)

120

100

80

60

40

20

0

G.S

TIME (SECONDS)

MGA Research  
10-21-1999 08:56



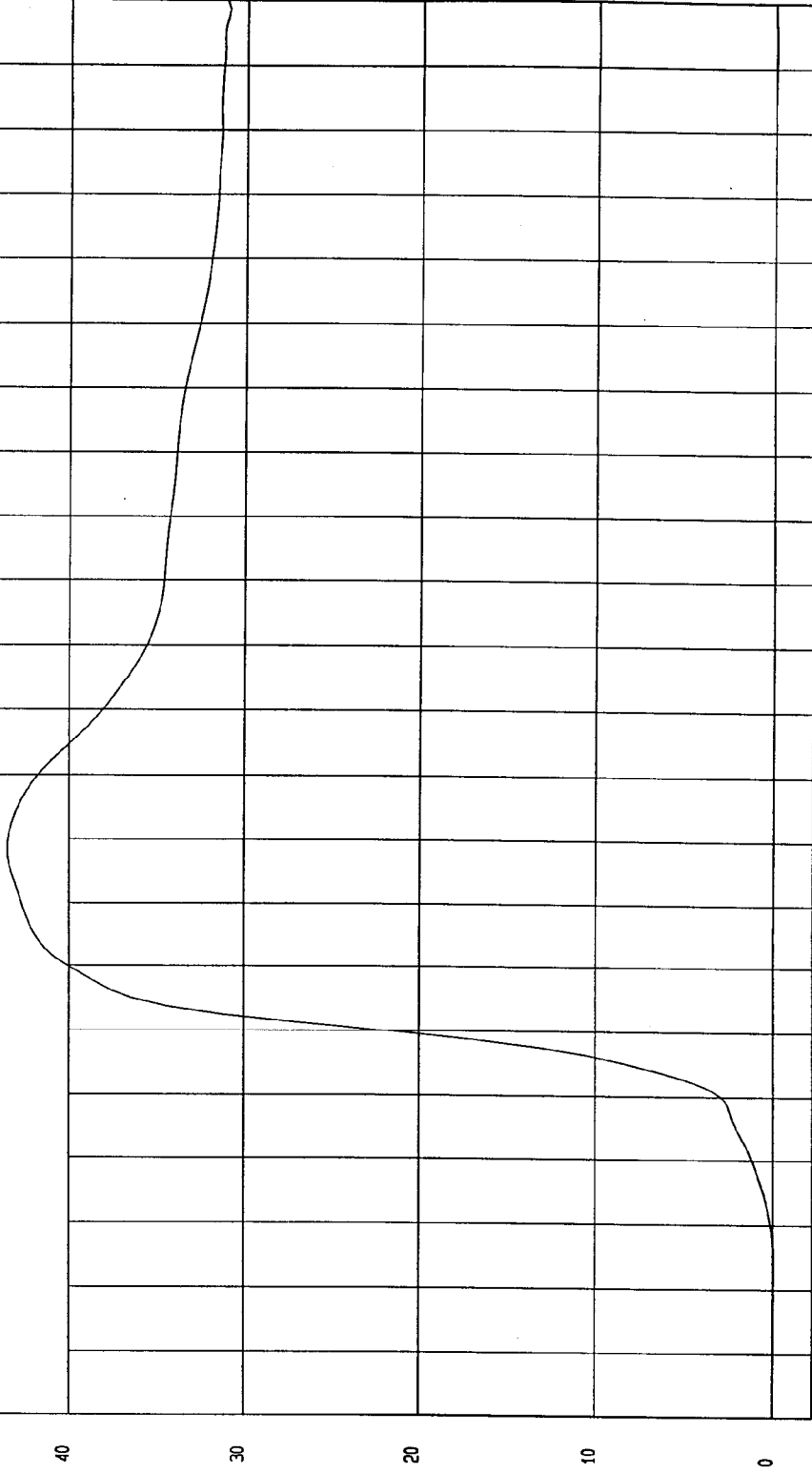
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -5.4E-02 KPH at 4 msec  
Maximum = 43.47 KPH at 68 msec

REAR PASSENGER PELVIS Y VELOCITY

1 ——— B99068F1.V28 Filterclass (FIR Filtered)



MCA Research  
10-27-1999 10:51

TIME Seconds

KPH

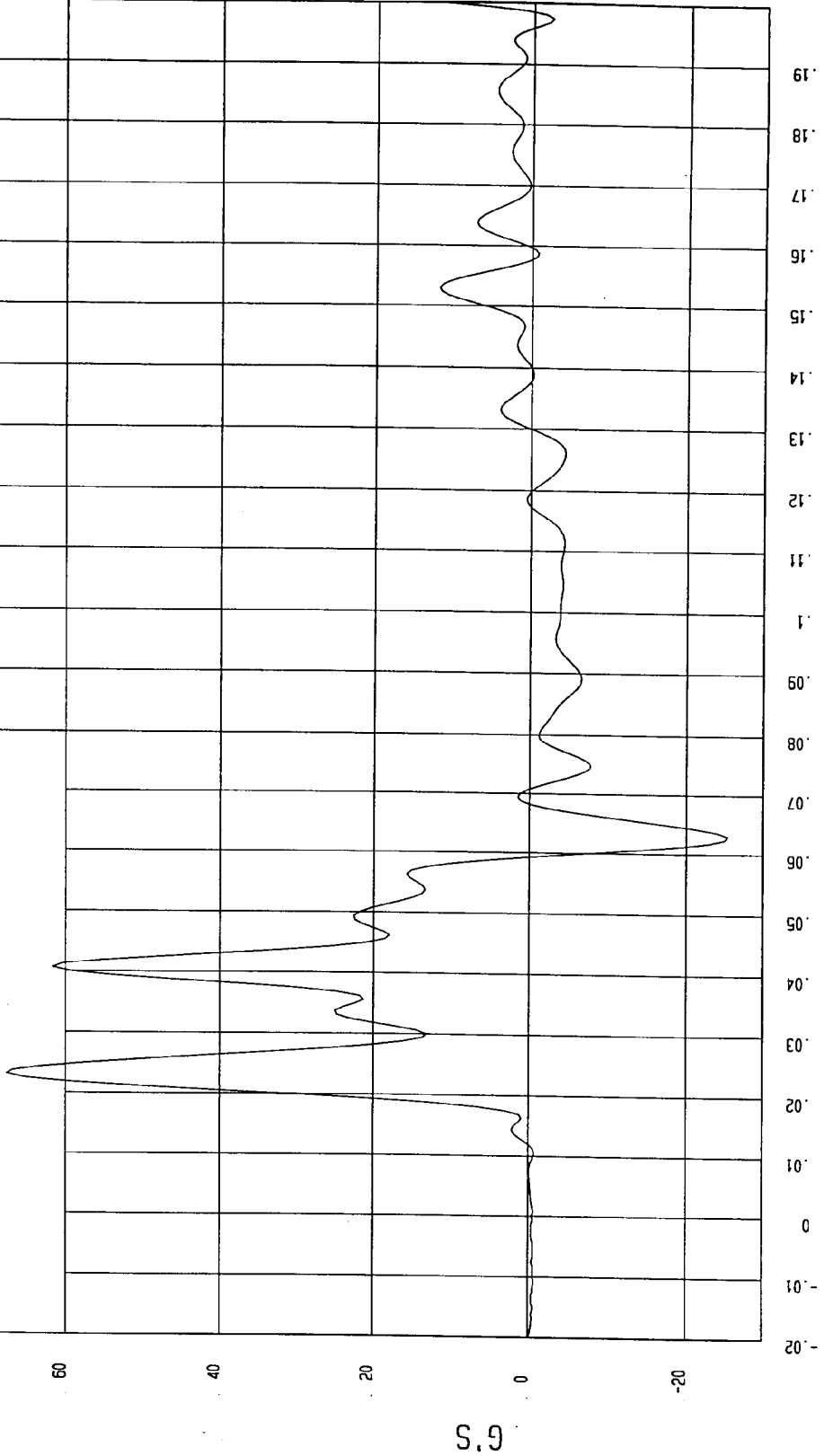
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -25.29 G'S at 63 msec  
Maximum = 67.59 G'S at 23 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 899068F1.R42 Filterclass (FIR Filtered)



MCA Research  
10-21-1999 08:56

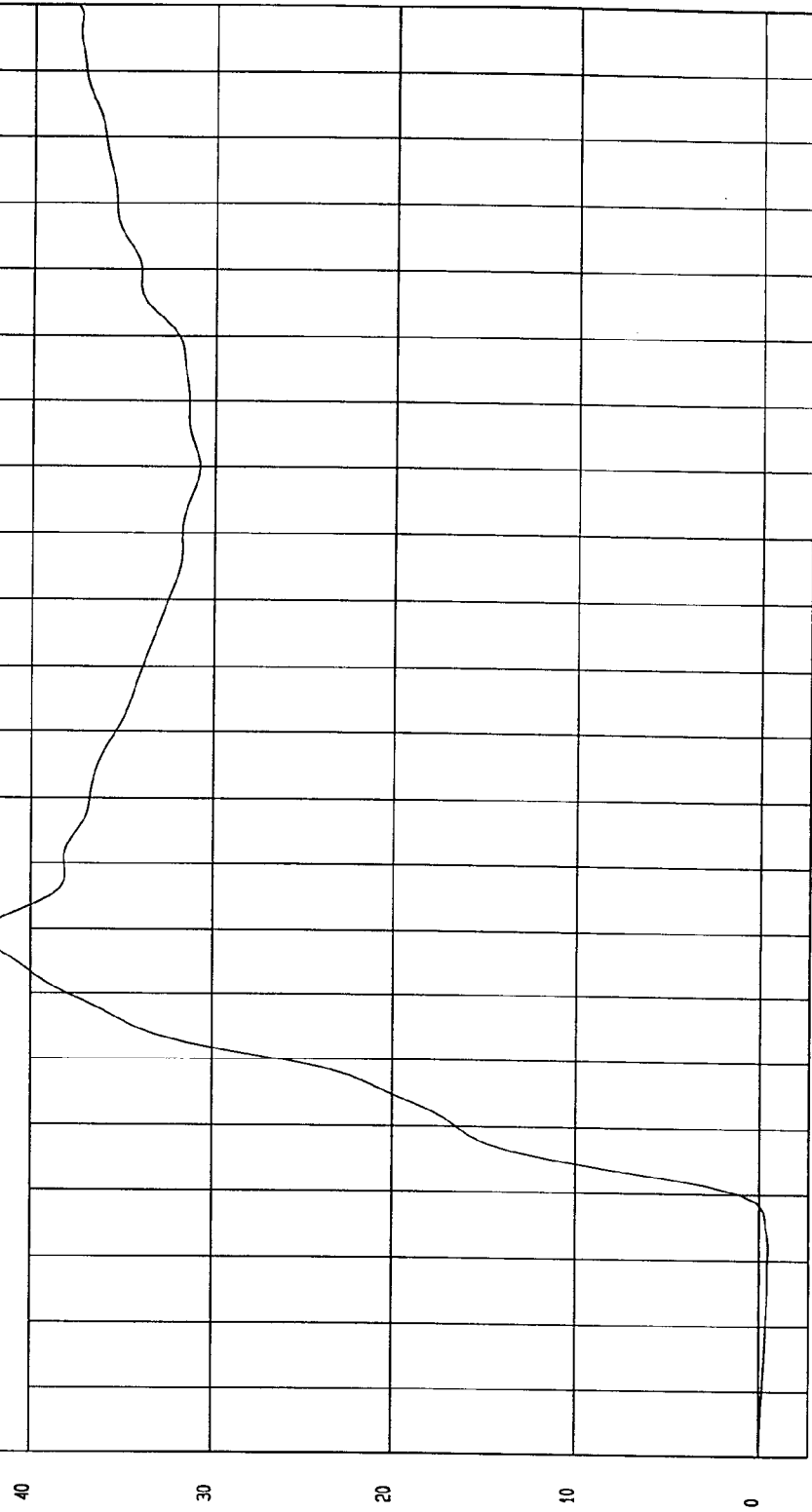
TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999  
Speed: 38 MPH 61.2 KPH

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -.49 KPH at 12 msec  
Maximum = 42.65 KPH at 59 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 \_\_\_\_\_ 899068F1.V42 Filterclass (FIR Filtered)



KPH  
TIME Seconds

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

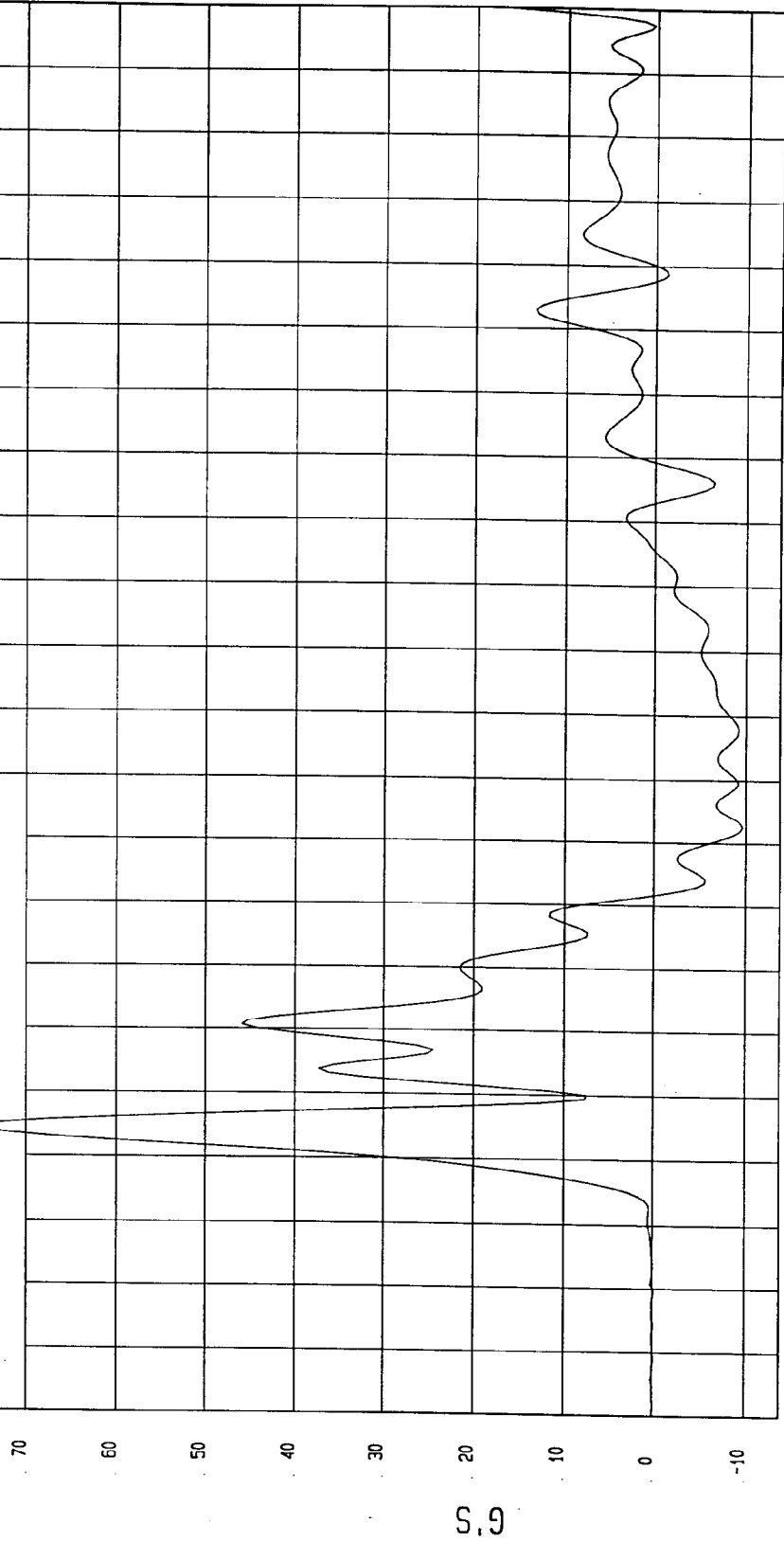
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 75.28 G'S at 24 msec

Minimum = -9.62 G'S at 72 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 899068FI.R43 FilterClass (FIR Filtered)



MGA Research  
10-21-1999 08:56

TIME (SECONDS)

G.S

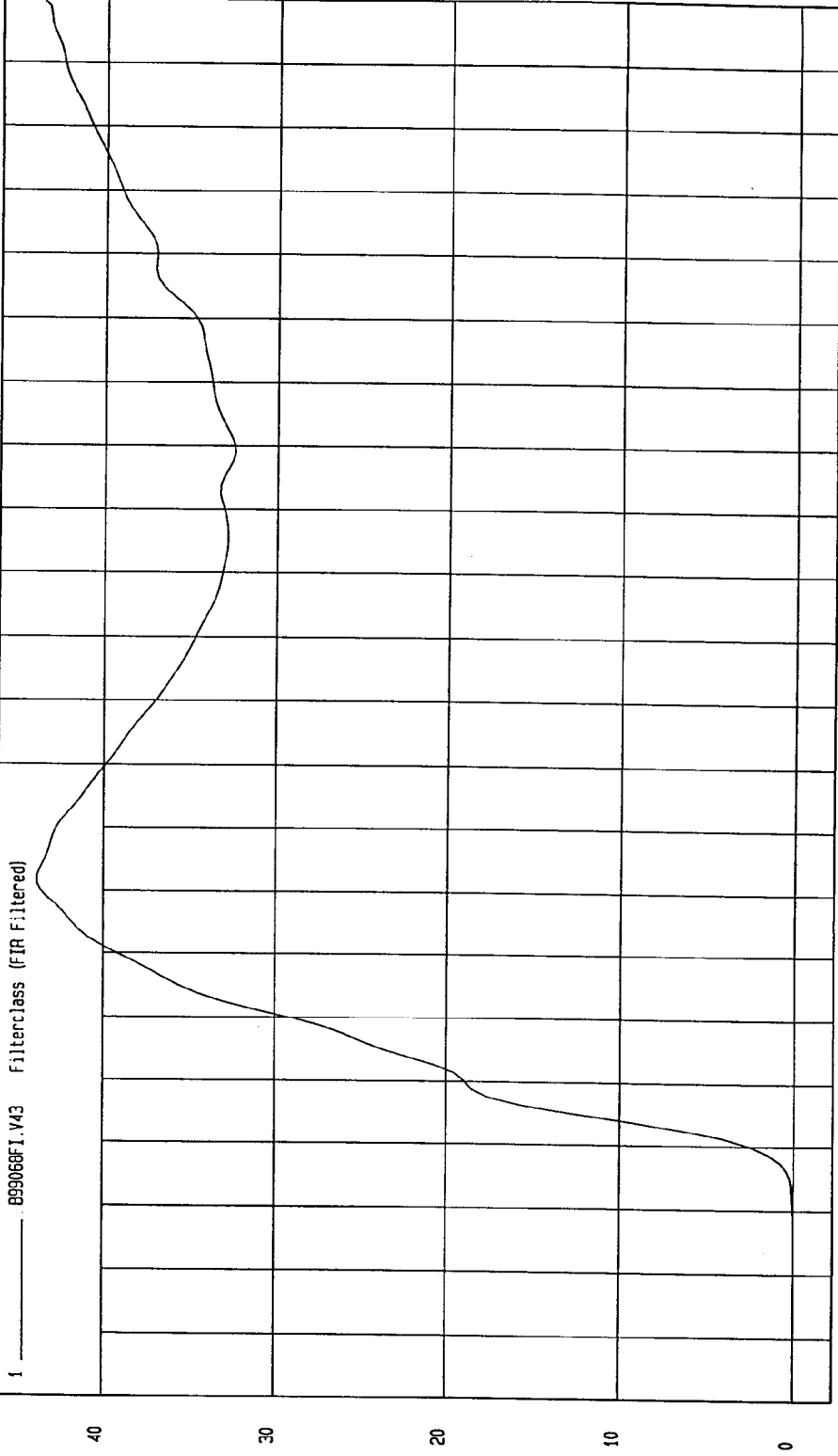
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.56E-04 KPH at -18 msec  
Maximum = 43.86 KPH at 62 msec

DRIVER LOWER RIB Y REDUNDANT VELOCITY

1 ——— B93068F1.V43 Filterclass (FIR Filtered)



TIME Seconds

KPH

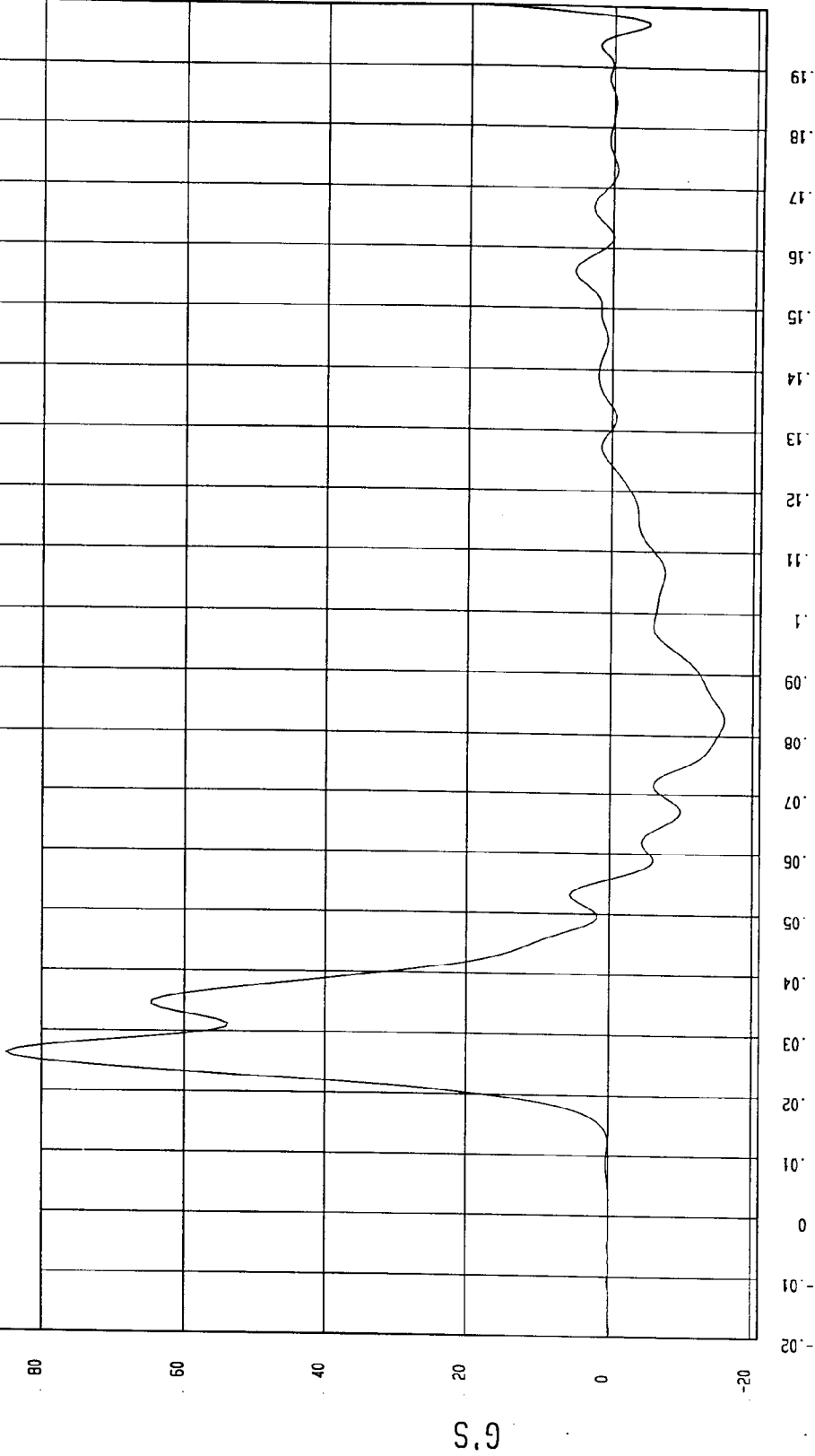
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -15.96 G'S at 82 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 899088F1.R44 Filterclass (FIR Filtered)



MCA Research  
10-21-1999 08:56

TIME (SECONDS)

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 47.22 KPH at 56 msec

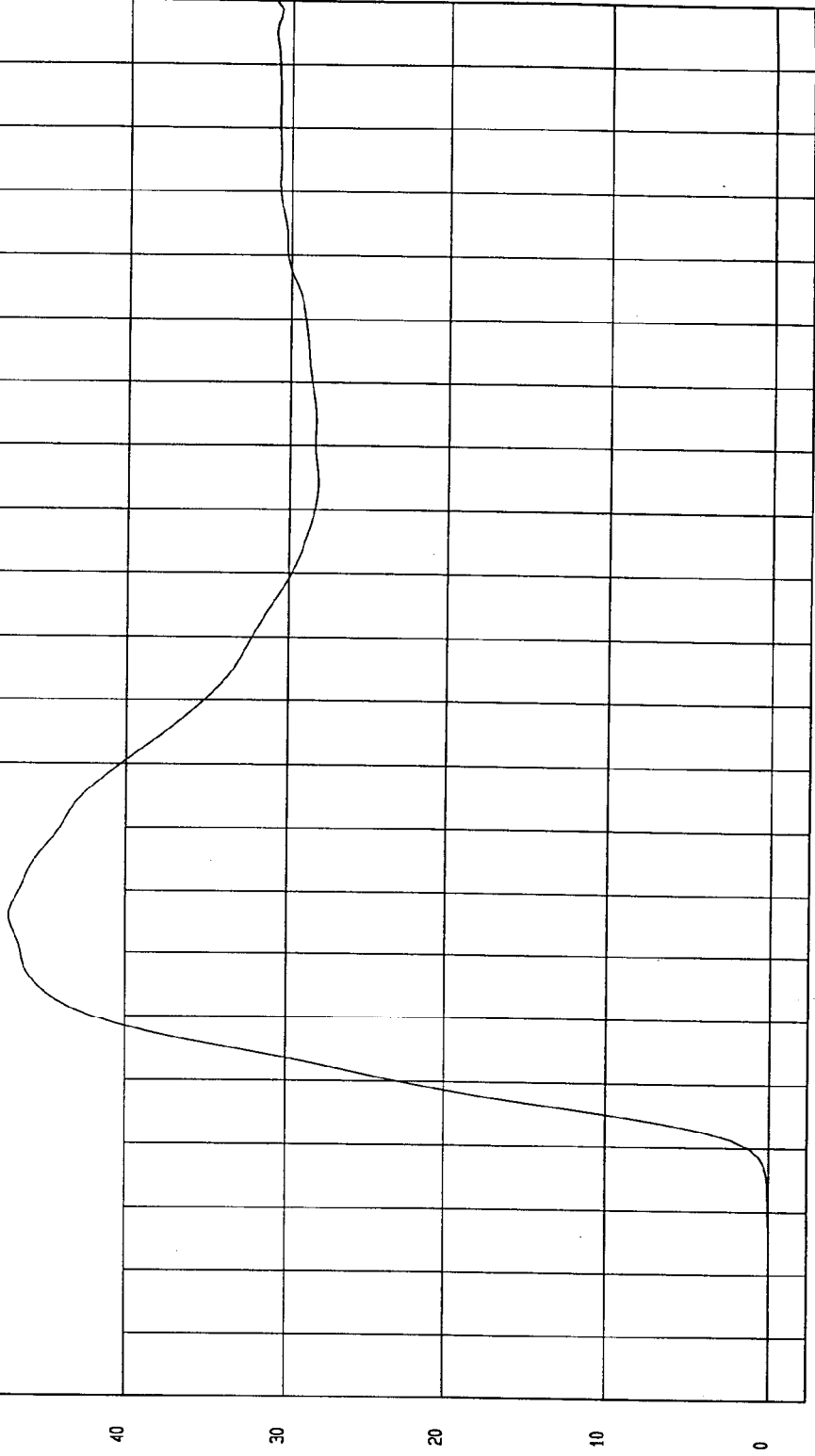
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -1.58E-02 KPH at -12 msec

DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 899068F1.V44 FilterClass (FIR Filtered)



KPH TIME Seconds

USA Research  
10-21-1999 10:52

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

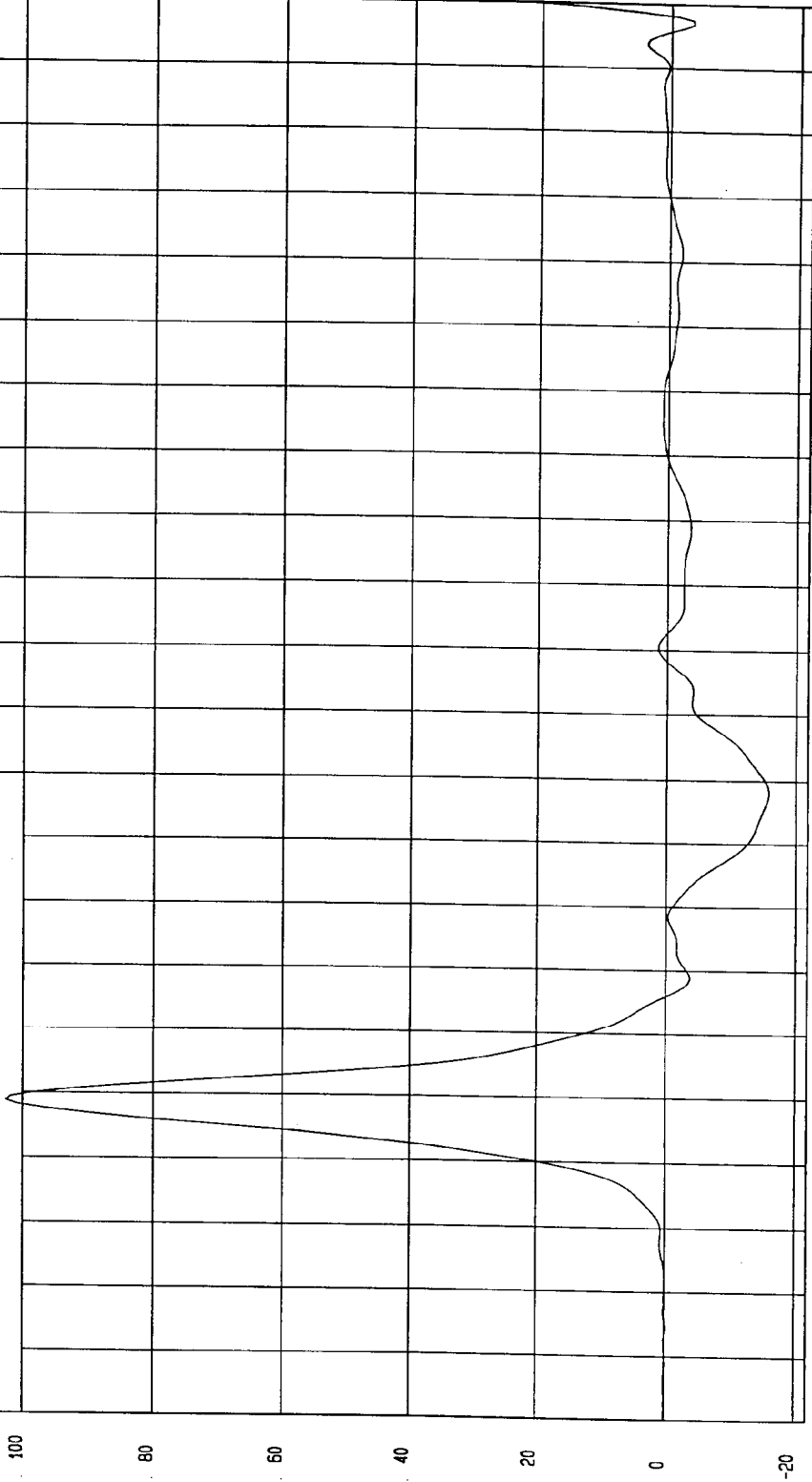
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -15.86 G'S at 78 msec

Maximum = 102.65 G'S at 29 msec

DRIVER PELVIS Y REDUNDANT ACCELERATION

1 899068F1.P45 Filterclass (FIR Filtered)



TIME (SECONDS)

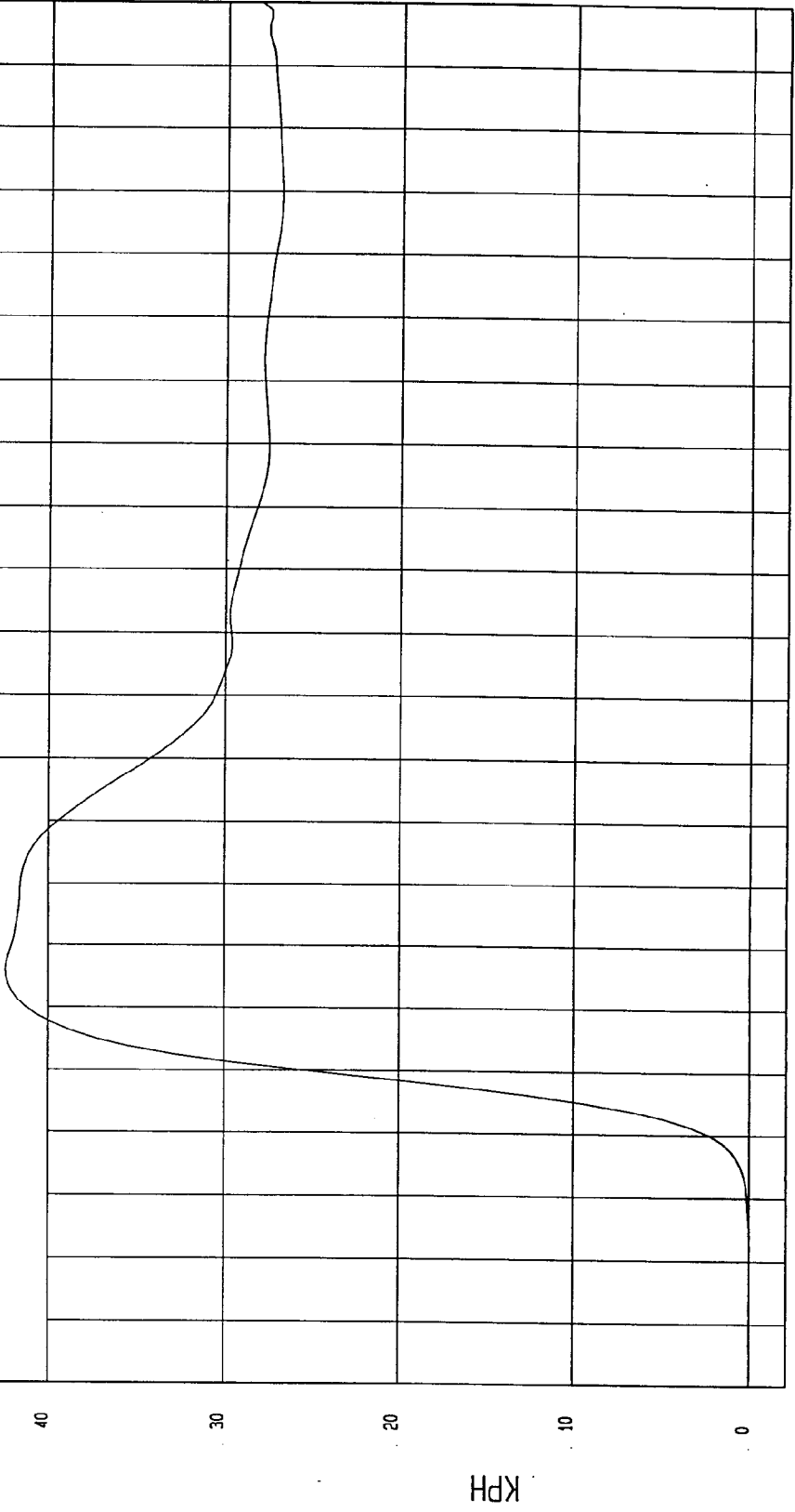
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 0 KPH at -20 msec Maximum = 42.47 KPH at 46 msec

D R I V E R P E L V I S Y R E D U N D A N T V E L O C I T Y

1 89906FI.V45 Filterclass (FIR Filtered)



TIME Seconds  
MGA Research  
10-21-1999 10:52

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

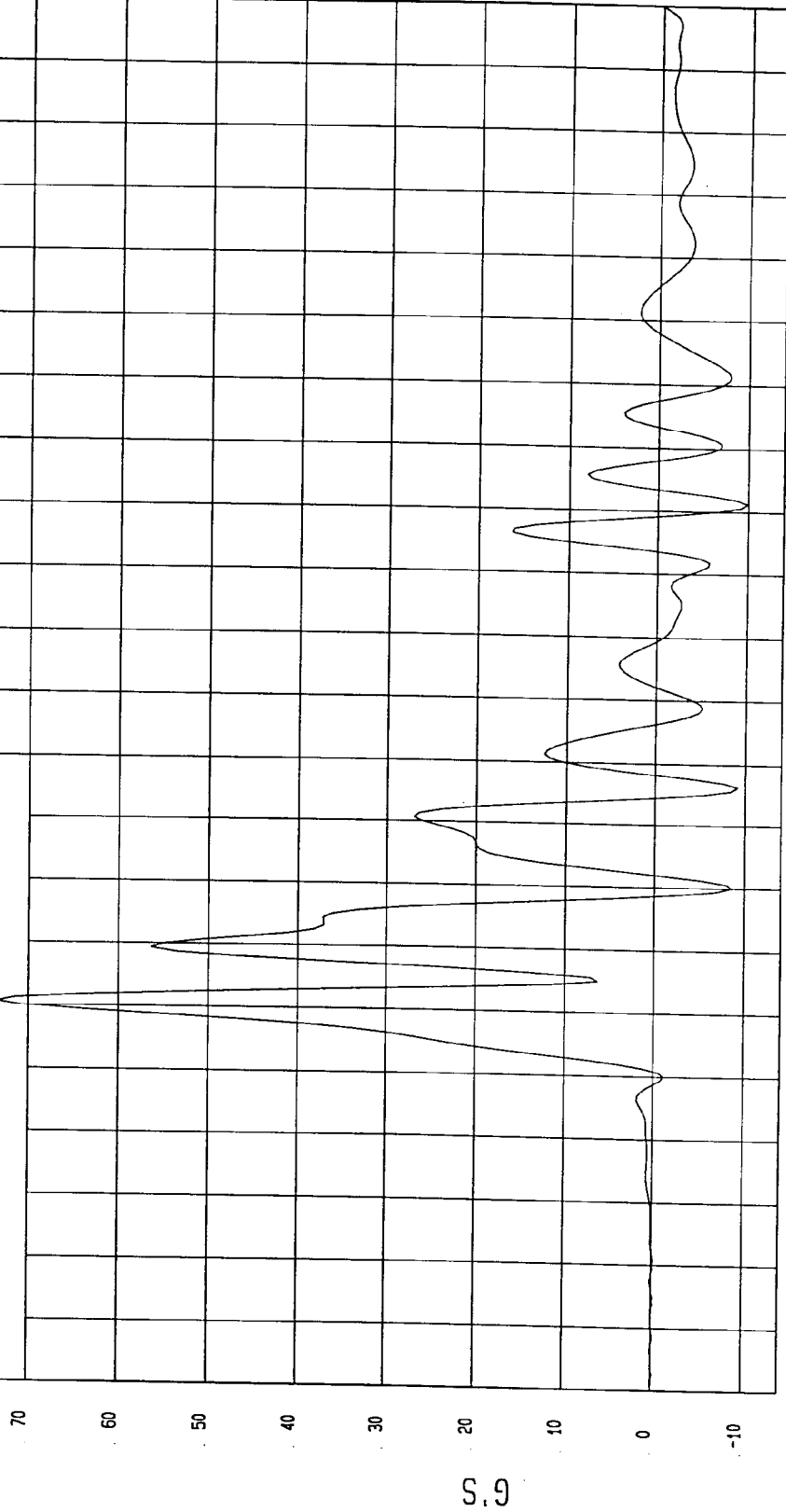
COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = -9.93 G'S at 121 msec

Maximum = 73.49 G'S at 41 msec

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

1 899068F1.R46 Filterclass (FIR Filtered)



MCA Research  
10-21-1999 08:56

TIME (SECONDS)

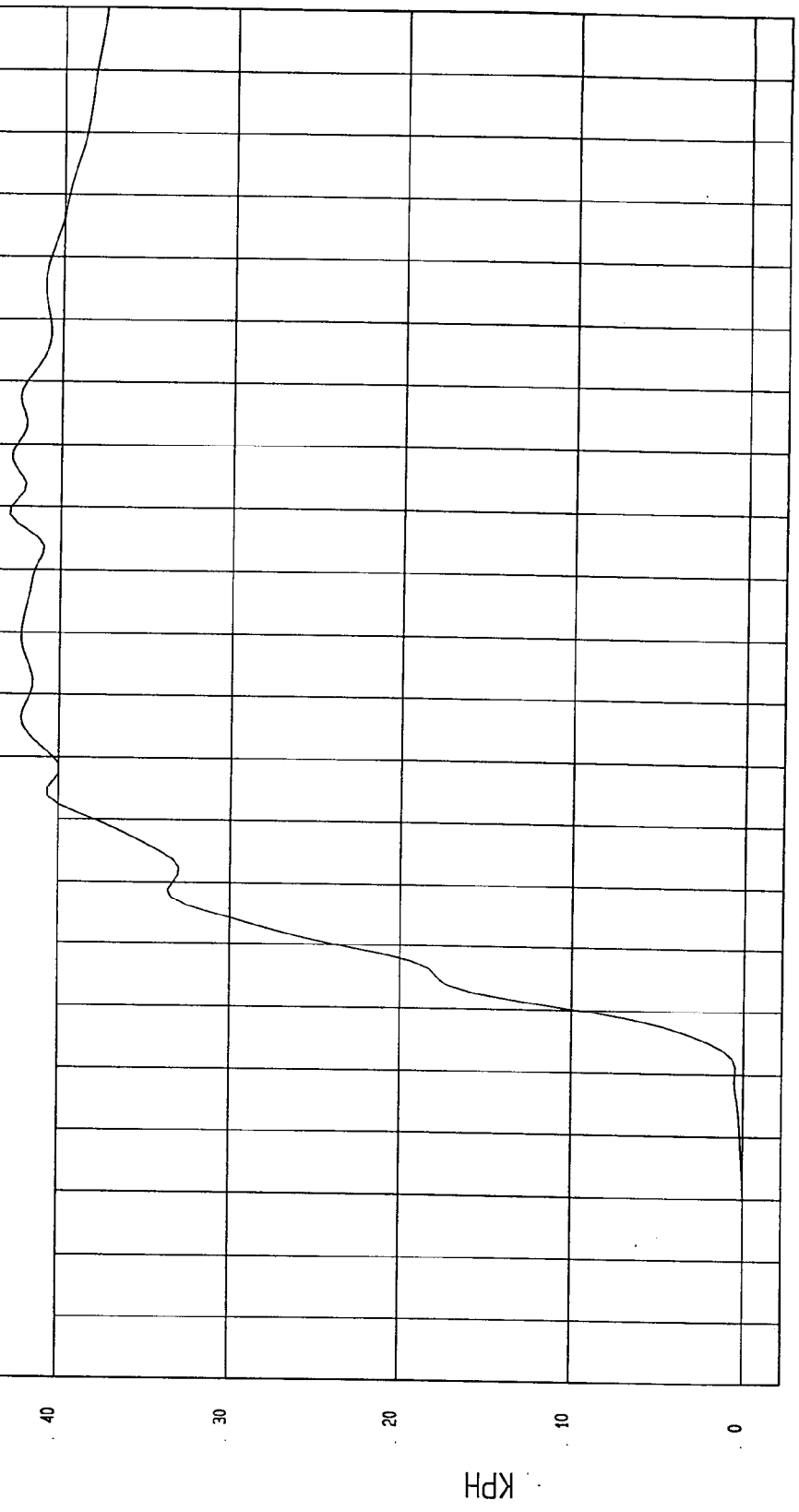
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -1.44E-02 KPH at 2 msec Maximum = 42.94 KPH at 119 msec

REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

1 \_\_\_\_\_ 899068F1.V46 FilterClass (FIR Filtered)



TIME Seconds

NSA Research  
10-21-1999 10:52

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

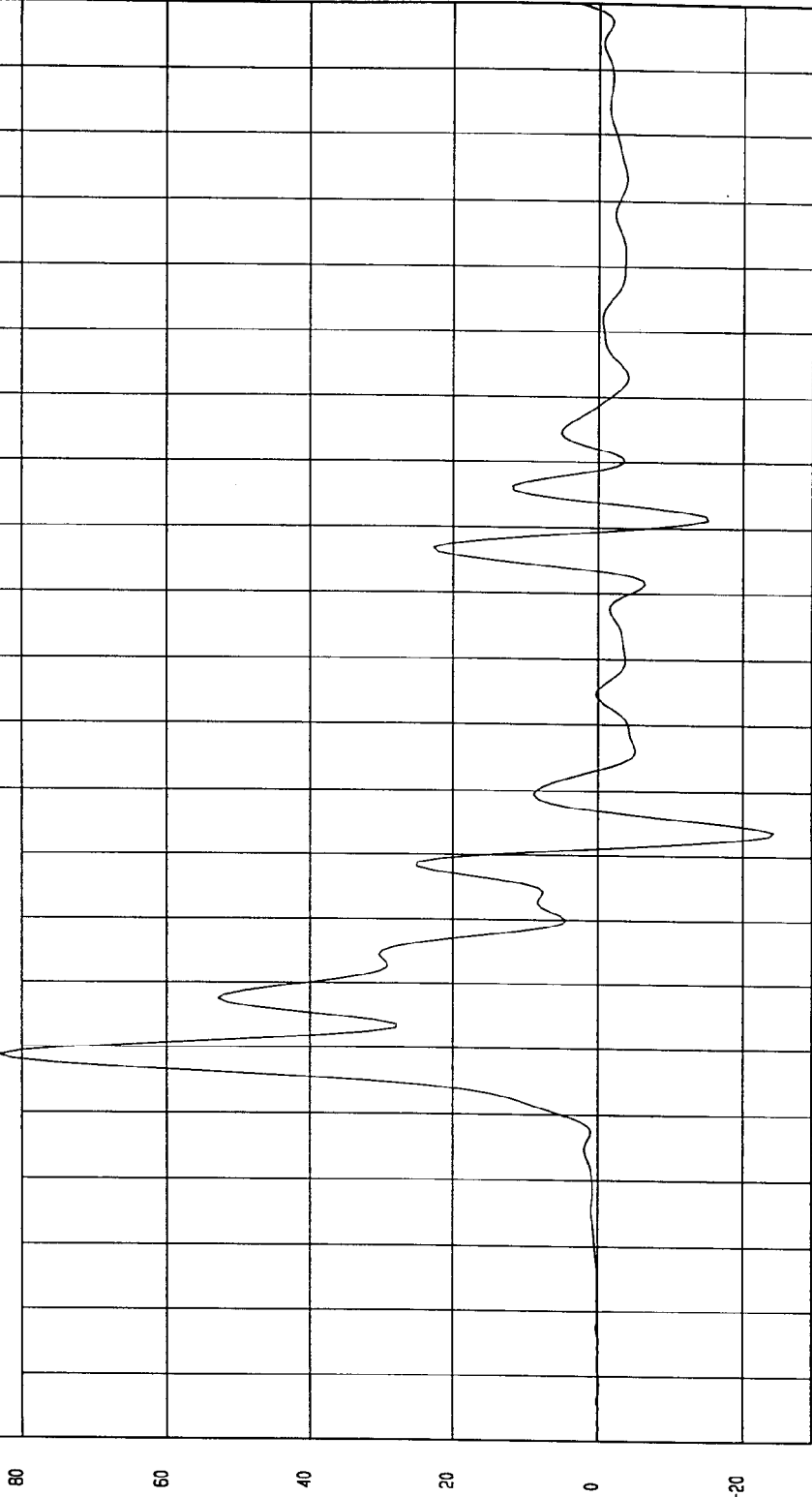
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 83.11 G'S at 39 msec

Minimum = -24.36 G'S at 74 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 899066F1.R47 Filterclass (FIR Filtered)



TIME (SECONDS)

TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

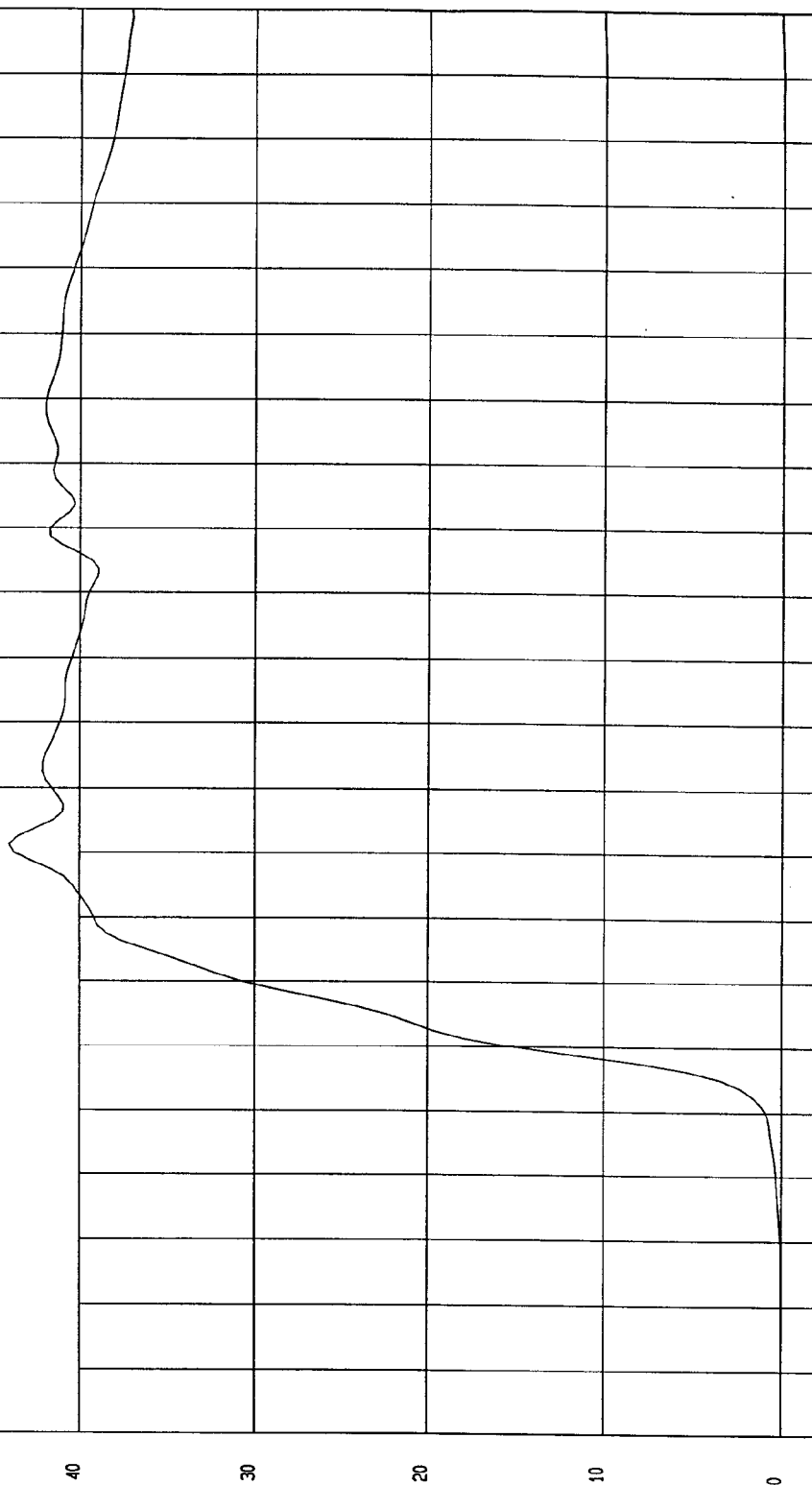
COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = 0 KPH at -20 nsec

Maximum = 43.97 KPH at 71 nsec

REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY

Filterclass (FIR Filtered)



WCA Research  
10-27-1999 10:52

TIME Seconds

KPH

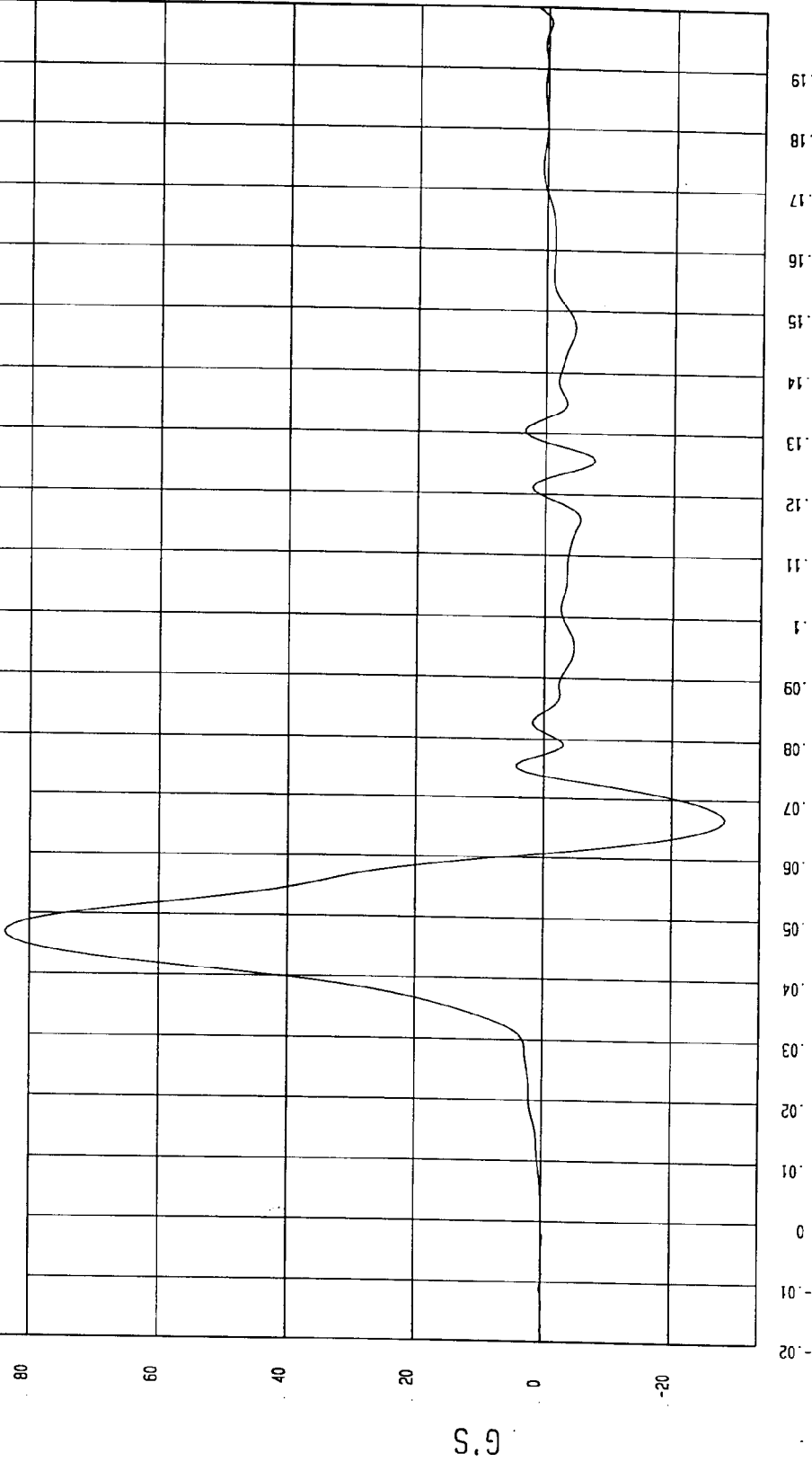
TEST: INDICANT SIDE IMPACT TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301) Speed: 38 MPH 61.2 KPH

Minimum = -28.12 G'S at 67 msec  
Maximum = 83.77 G'S at 47 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 \_\_\_\_\_ B99068F1.R48 Filterclass (FIR Filtered)



MSA Research  
10-21-1999 08:56

TIME (SECONDS)

G.S

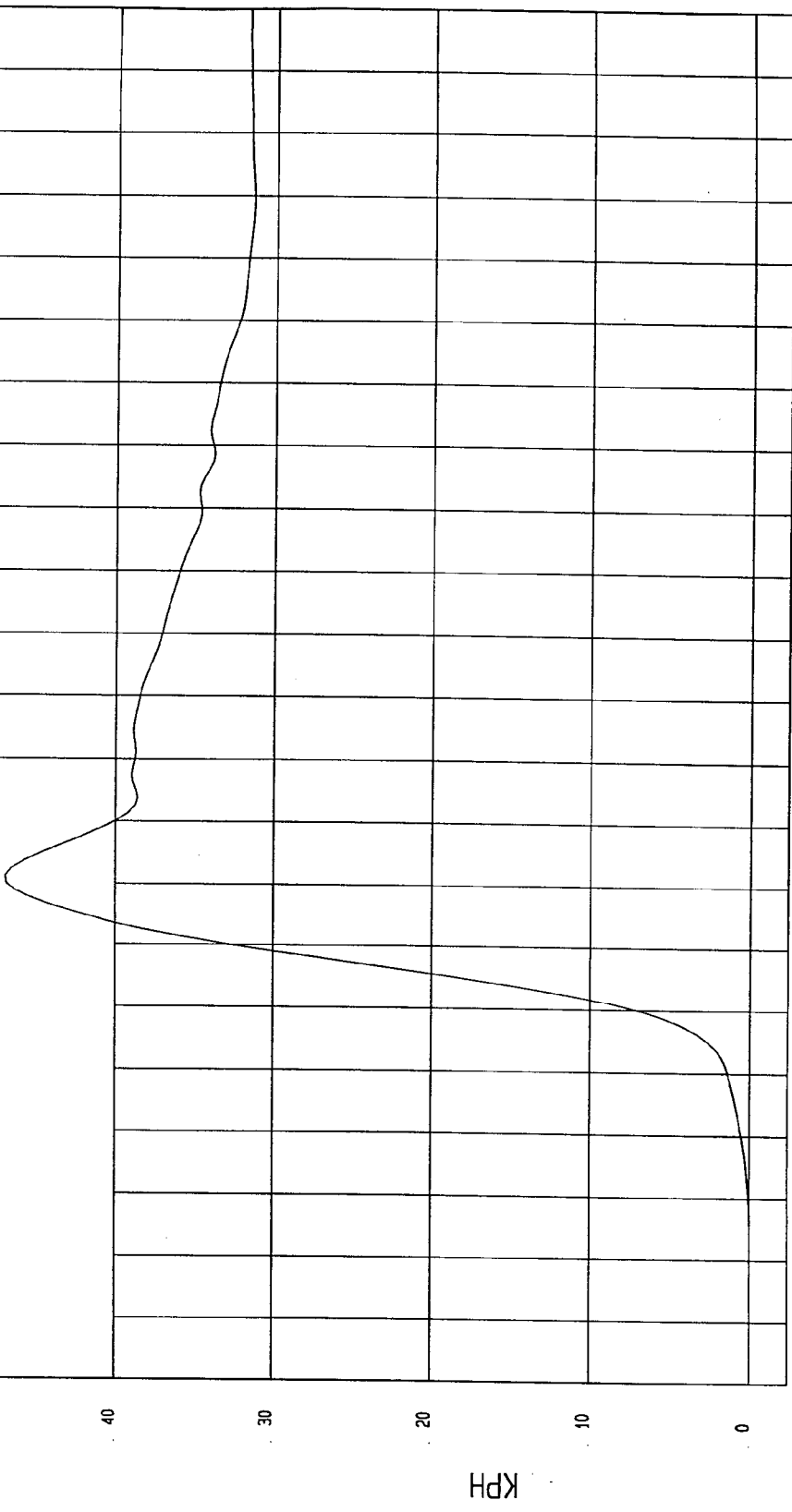
TEST: INDICANT SIDE IMPACT  
TEST DATE: 10-20-1999

COMPONENT: 2000 DODGE NEON (CY0301)  
Speed: 38 MPH 61.2 KPH

Minimum = -8.54E-04 KPH at -13 msec  
Maximum = 46.96 KPH at 61 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

1 \_\_\_\_\_ 899068F1.V48 Filterclass (FIR Filtered)



TIME Seconds  
MOA Research  
10-27-1999 10:52

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

TEST: INDICANT SIDE IMPACT

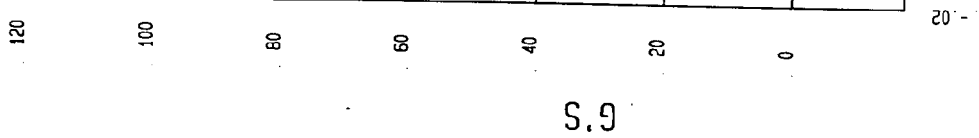
COMPONENT: 2000 DODGE NEON (CY0301)

Maximum = 114.28 G'S at 41 msec

Minimum = -11.06 G'S at 85 msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 B99068F1.R49 Filterclass (FIR Filtered)



MSA Research  
10-21-1999 06:56

TIME (SECONDS)

G.S

TEST DATE: 10-20-1999

Speed: 38 MPH 61.2 KPH

Maximum = 44.45 KPH at 59 msec

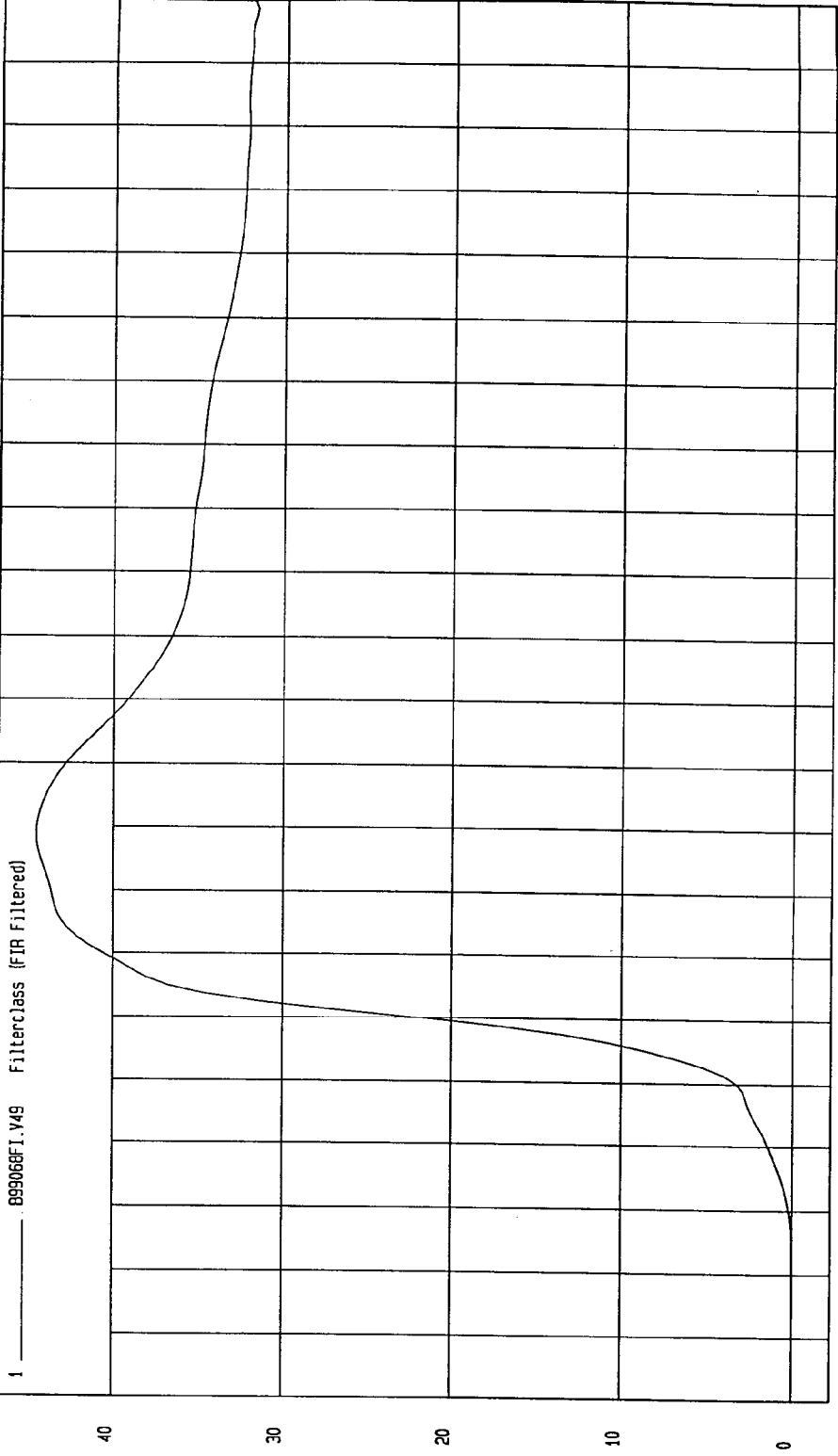
TEST: INDICANT SIDE IMPACT

COMPONENT: 2000 DODGE NEON (CY0301)

Minimum = 0 KPH at -20 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 899068F1.V49 FilterJass (FIR Filtered)



MOA Research  
10-21-1999 10:52

TIME Seconds

KPH

APPENDIX C  
SID CONFIGURATION AND PERFORMANCE VERIFICATION

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

Report Date: October 28, 1999Technician: Tim MichnayTest Date: October 20, 1999

Test Parameter	Specification	Dummy Serial No: 049		Dummy Serial No: 048	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH-Seated Height (mm)	889 - 909	902	902	905	905
RH-Rib Height (mm)	501 - 521	516	516	518	518
HP-Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD-Rib from Back Line (mm)	229 - 241	233	233	236	236
KV-Knee Pivot from Back Line (mm)	511 - 526	523	523	521	521
SW-Knee Pivot to Floor (mm)	490 - 505	493	493	493	493
HW-Hip Width (mm)	356 - 391	371	371	368	368
<b>Thorax Impacts</b>					
Temperature (°C)	18.9 - 25.5	21.0	21.0	21.0	21.0
Relative Humidity (%)	10 - 70	36	27	34	35
Probe Speed (m/s)	4.27 - 4.33	4.28	4.27	4.31	4.30
Upper Rib (g's)	37 - 46	37	38	43	38
Lower Rib (g's)	37 - 46	39	39	41	37
Lower Spine (g's)	15 - 22	21	21	22	22
<b>Pelvis Impact</b>					
Temperature (°C)	18.9 - 25.5	21.0	21.0	21.0	21.0
Relative Humidity (%)	10 - 70	35	27	34	34
Probe Speed (m/s)	4.27 - 4.33	4.29	4.27	4.29	4.30
Pelvis (g's)	40 - 60	53	49	51	57

REMARKS:

PRE-TEST CERTIFICATION DATA

Dummy Serial Number: 049

Calibration Test Results Summary

Dummy Serial Number: 049

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.: 049DATE OF VERIFICATION: October 19, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	902
RH - Rib Height (mm)	501 - 521	516
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	233
KV - Knee Pivot From Back Line (mm)	511 - 526	523
SW - Knee Pivot to Floor (mm)	490 - 505	493
HW - Hip Width (mm)	356 - 391	371

TECHNICIAN: APPROVED BY: 

## MGA RESEARCH CORPORATION

## THORAX IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: October 19, 1999DUMMY SERIAL NUMBER: 049TEST NUMBER: D991132

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	36
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46 g's	37
LOWER RIB (g's)	37 - 46 g's	39
LOWER SPINE (g's)	15 - 22 g's	21

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: Dummy Calibration - Thorax Impact TEST DATE: 10-19-1999 - 09:56:12

COMPONENT: Dummy # 049 Velocity: 14.05 FT/SEC 4.28 M/SEC

Minimum = -10.09 G'S at 63.7 msec Maximum = 37.16 G'S at 36.2 msec

UPPER RIB ACCELERATION

1 \_\_\_\_\_ 099132F1.R08

60  
50  
40  
30  
20  
10  
0  
-10  
-20

Upper Limit  
Lower Limit

G.S

0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12

TIME (SEC.)

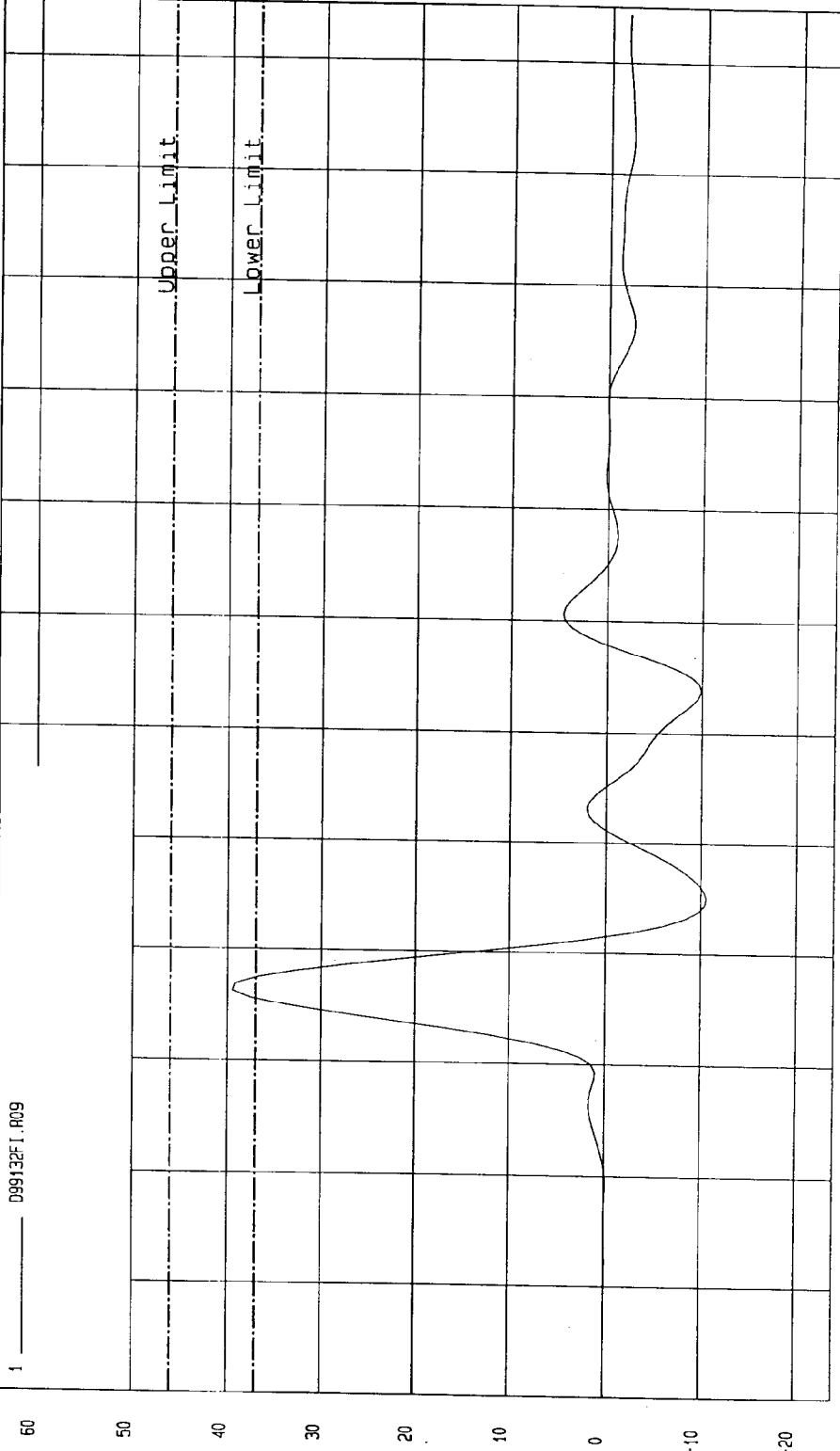
WCA Research  
10-26-1999 09:53

TEST: Dummy Calibration - Thorax Impact      TEST DATE: 10-19-1999 - 09:56:12  
COMPONENT: Dummy # 049      Velocity: 14.05 FT/SEC 4.28 M/SEC

Minimum • -10.53 G'S at 45 msec      Maximum • 39.43 G'S at 36.2 msec

LOWER RIB ACCELERATION

1 ——— 099132FI.R09



MCA Research  
10-26-1999 09:53

TEST: Dummy Calibration - Thorax Impact TEST DATE: 10-19-1999 - 09:56:12

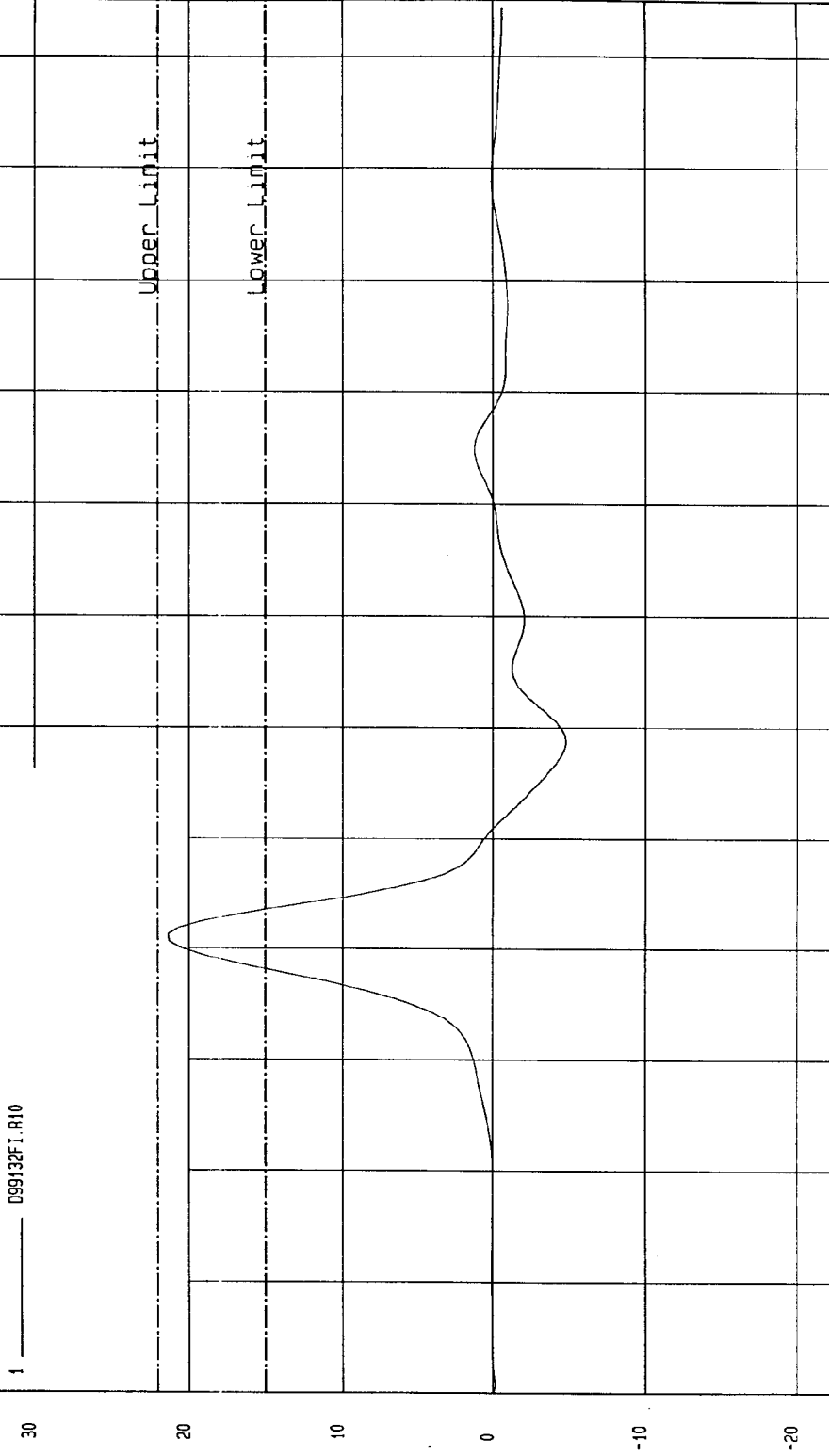
COMPONENT: Dummy # 049 Velocity: 14.05 FT/SEC 4.28 M/SEC

Minimum = -4.77 G'S at 58.7 msec

Maximum = 21.35 G'S at 41.2 msec

LOWER SPINE ACCELERATION

1 \_\_\_\_\_ 099132FI.R10



MCA Research  
10-26-1999 09:53

TIME (sec.)

G.S

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

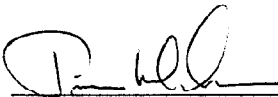
DATE: October 19, 1999

DUMMY SERIAL NUMBER: 049

TEST NUMBER: D991133

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	35
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	53

TEST MEETS SPECIFICATIONS

TECHNICIAN: 

APPROVED BY: 

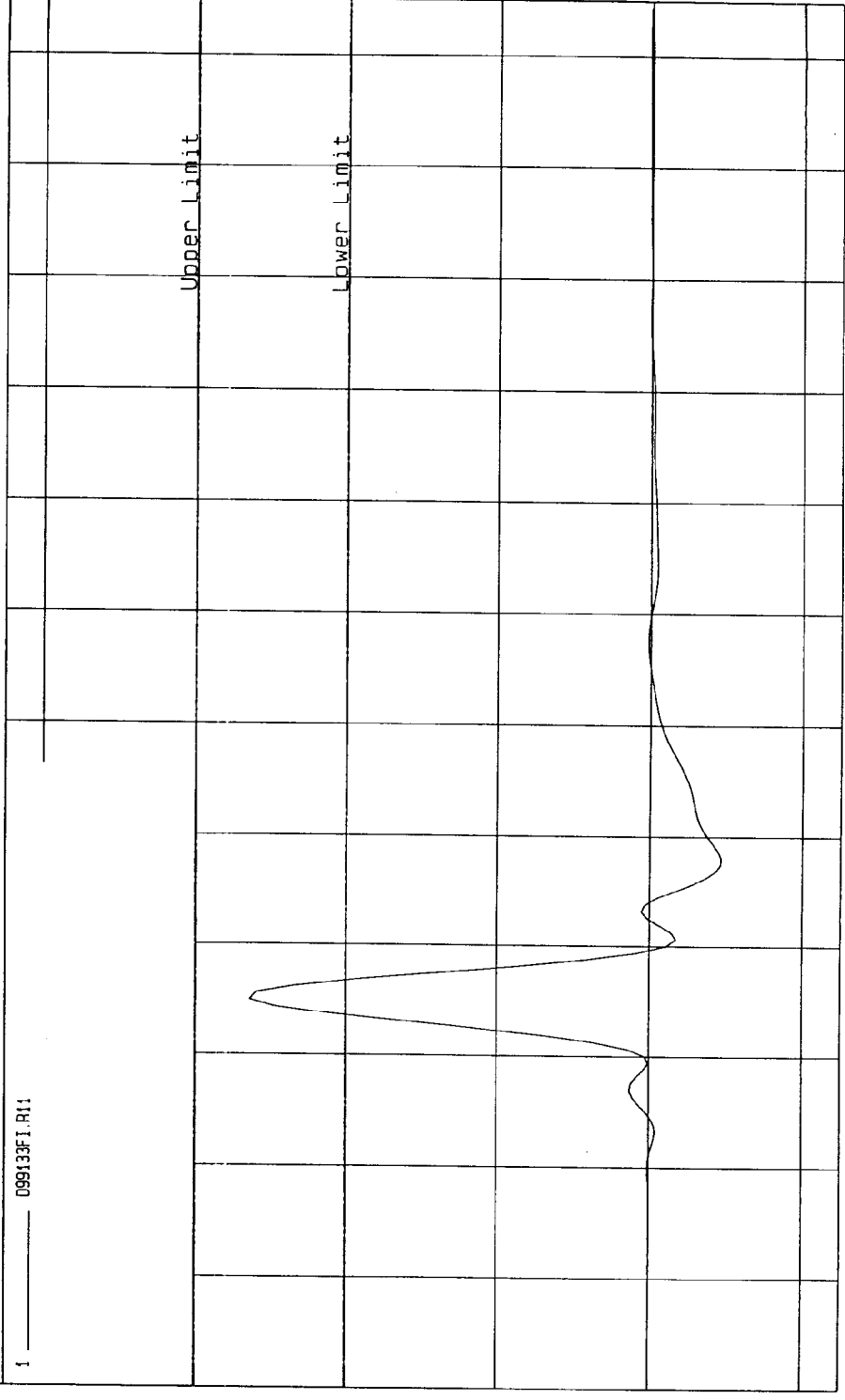
TEST: Dummy Calibration - Pelvis Impact TEST DATE: 10-19-1999 - 10:25:42  
COMPONENT: Dummy # 049 Velocity: 14.08 FT/SEC 4.29 M/SEC  
Minimum = -9.29 G'S at 48.1 msec Maximum = 52.77 G'S at 35 msec

PELVIS ACCELERATION

1 \_\_\_\_\_ 099133FI.R11

80  
60  
40  
20  
0  
-20

G.S



TIME (SEC.)  
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

MSA Research  
10-26-1999 09:53

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

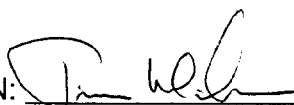
DATE: October 18, 1999

DUMMY SERIAL NUMBER: 049

TEST NUMBER: D991134

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	35
FORCE @ 12.7 mm	104 - 162	140
FORCE @ 19.0 mm	163 - 222	200
FORCE @ 25.4 mm	222 - 280	274
FORCE @ 33 mm	325 - 391	382

TEST MEETS SPECIFICATIONS

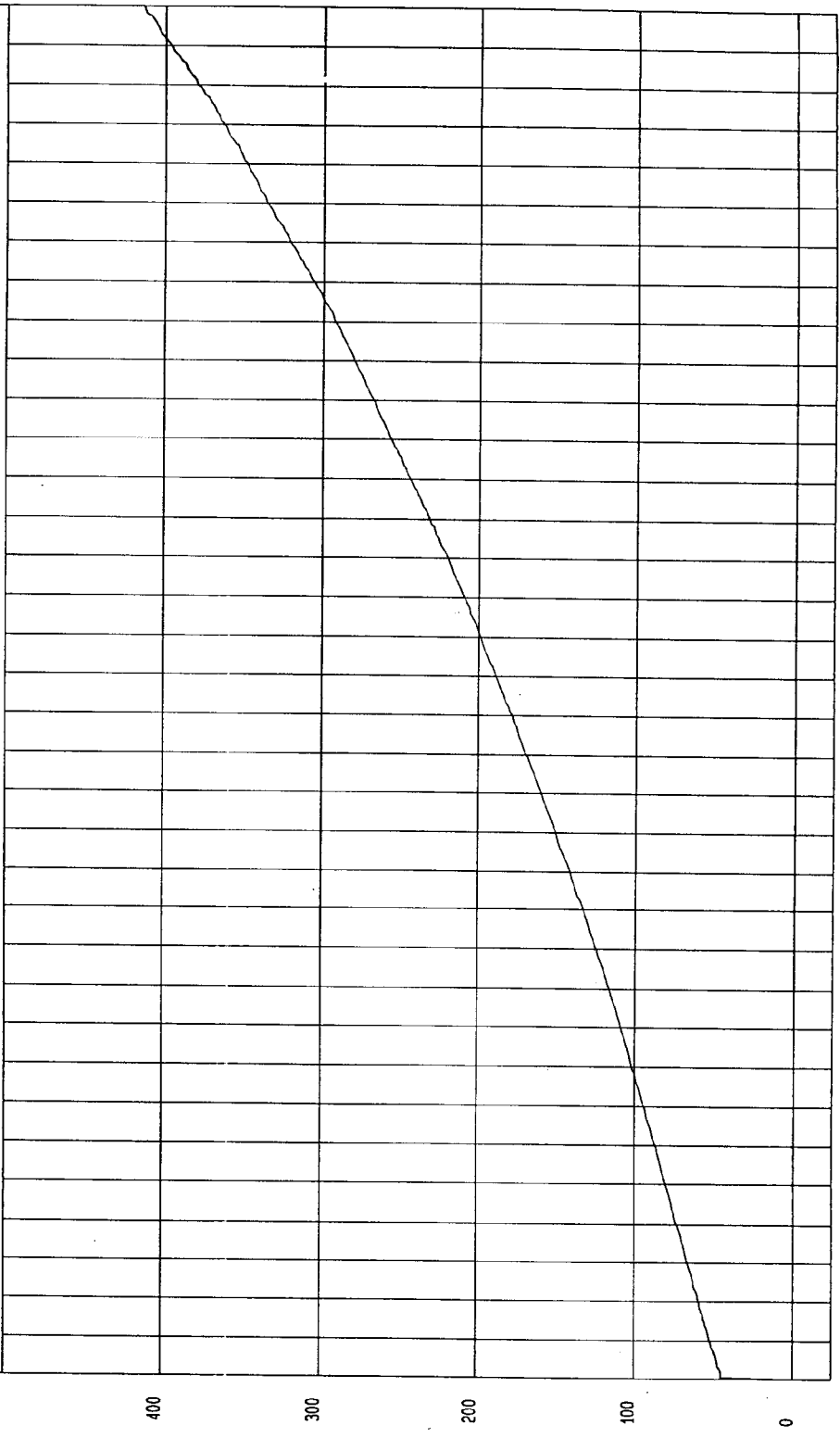
TECHNICIAN: 

APPROVED BY: 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 10-18-1999 - 10:17:55

COMPONENT: DUMMY # 49

FORCE as a function of DISPLACEMENT



W&A Research  
10-26-1999 11:03

DISPLACEMENT mm

FORCE N

## MGA RESEARCH CORPORATION

## LUMBAR FLEXION TEST

## SIDE IMPACT DUMMY (SID)

DATE: October 18, 1999DUMMY SERIAL NUMBER: 049TEST NUMBER: D991135

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	120.3
FORCE @ 30°	151.2 - 204.6	199.3
FORCE @ 40°	204.6 - 258.0	243.5
RETURN ANGLE	12° maximum	6

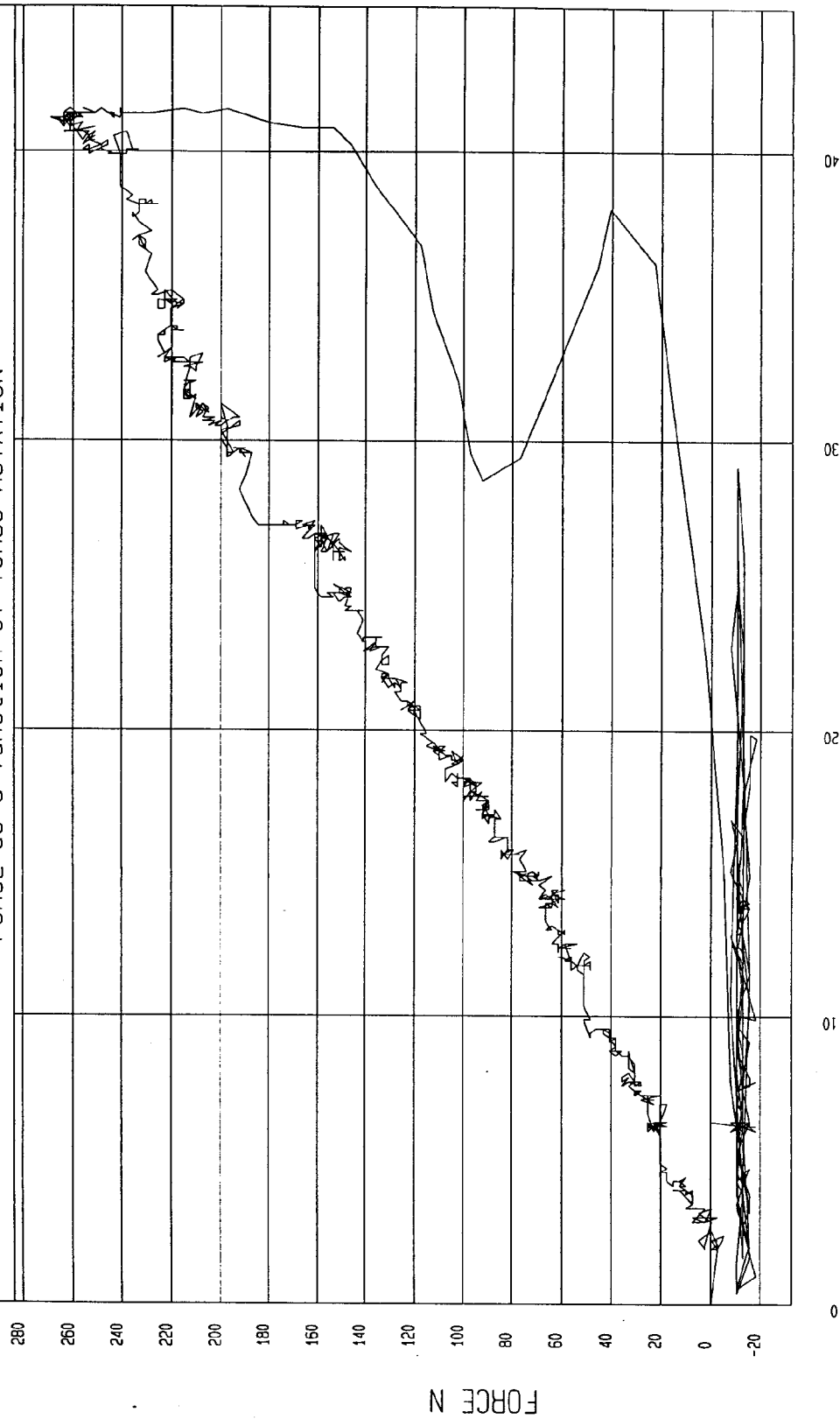
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 10-18-1999 - 10:20:06

COMPONENT: DUMMY # 49

FORCE as a function of TORSO ROTATION



McA Research  
10-26-1999 11:18

TORSO ROTATION DEGREES

PRE-TEST CERTIFICATION DATA

Dummy Serial Number: 048

Calibration Test Results Summary

Dummy Serial Number: 048

## 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.: 048DATE OF VERIFICATION: September 21, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	905
RH - Rib Height (mm)	501 - 521	518
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	236
KV - Knee Pivot From Back Line (mm)	511 - 526	521
SW - Knee Pivot to Floor (mm)	490 - 505	493
HW - Hip Width (mm)	356 - 391	368

TECHNICIAN: APPROVED BY: 

## MGA RESEARCH CORPORATION

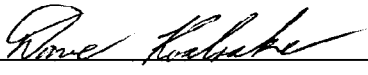
## THORAX IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 048TEST NUMBER: D991102

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	4.31
UPPER RIB (g's)	37 - 46	43
LOWER RIB (g's)	37 - 46	41
LOWER SPINE (g's)	15 - 22	22

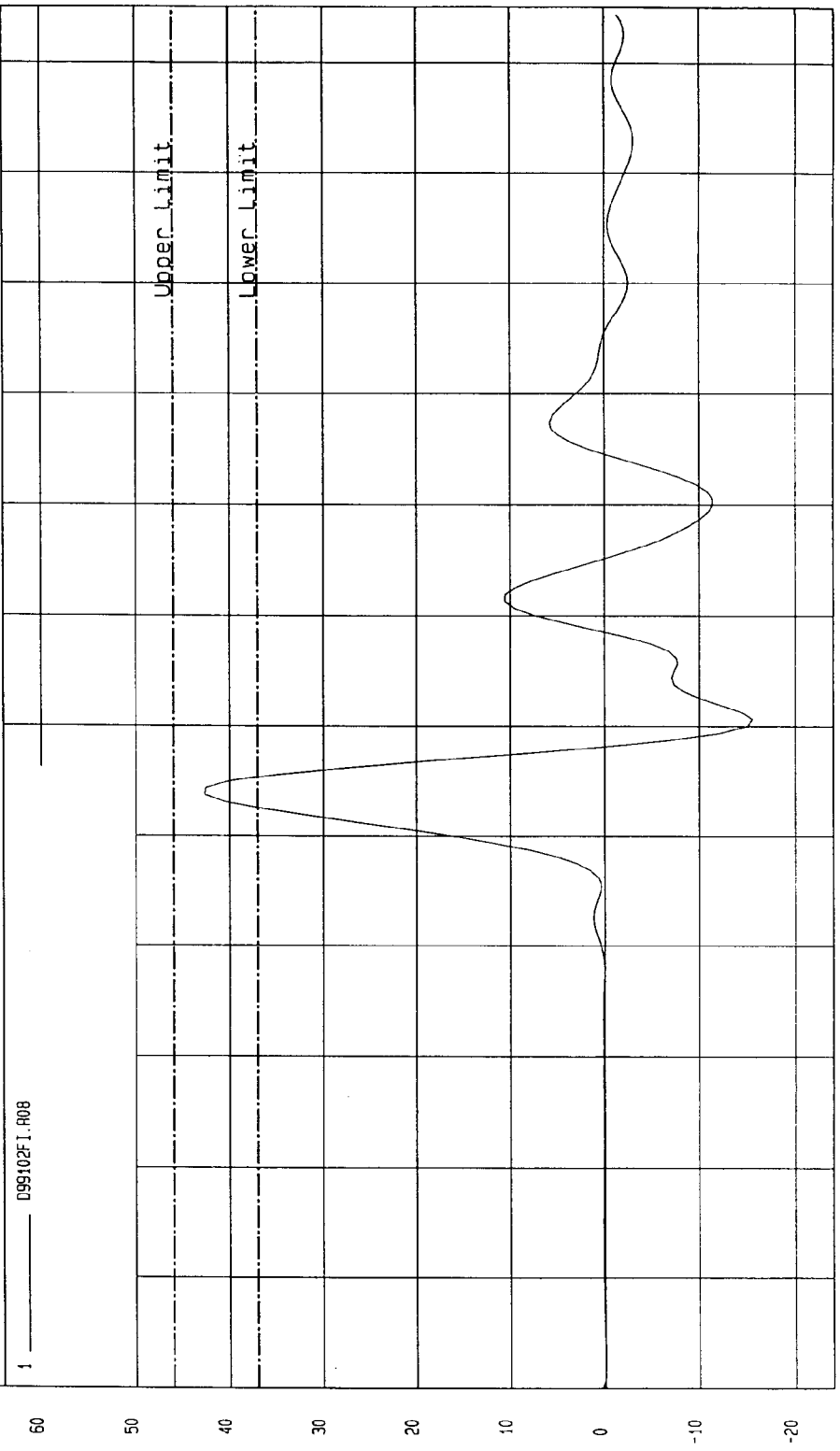
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 14:40  
COMPONENT: DUMMY # 048 Velocity: 14.141 FT/SEC 4.31 M/SEC

Minimum = -15.59 G'S at 60.6 msec Maximum = 42.64 G'S at 53.7 msec

UPPER RIB ACCELERATION



MCA Research  
09-21-1999 17.54

TIME (SECONDS)

G.S.

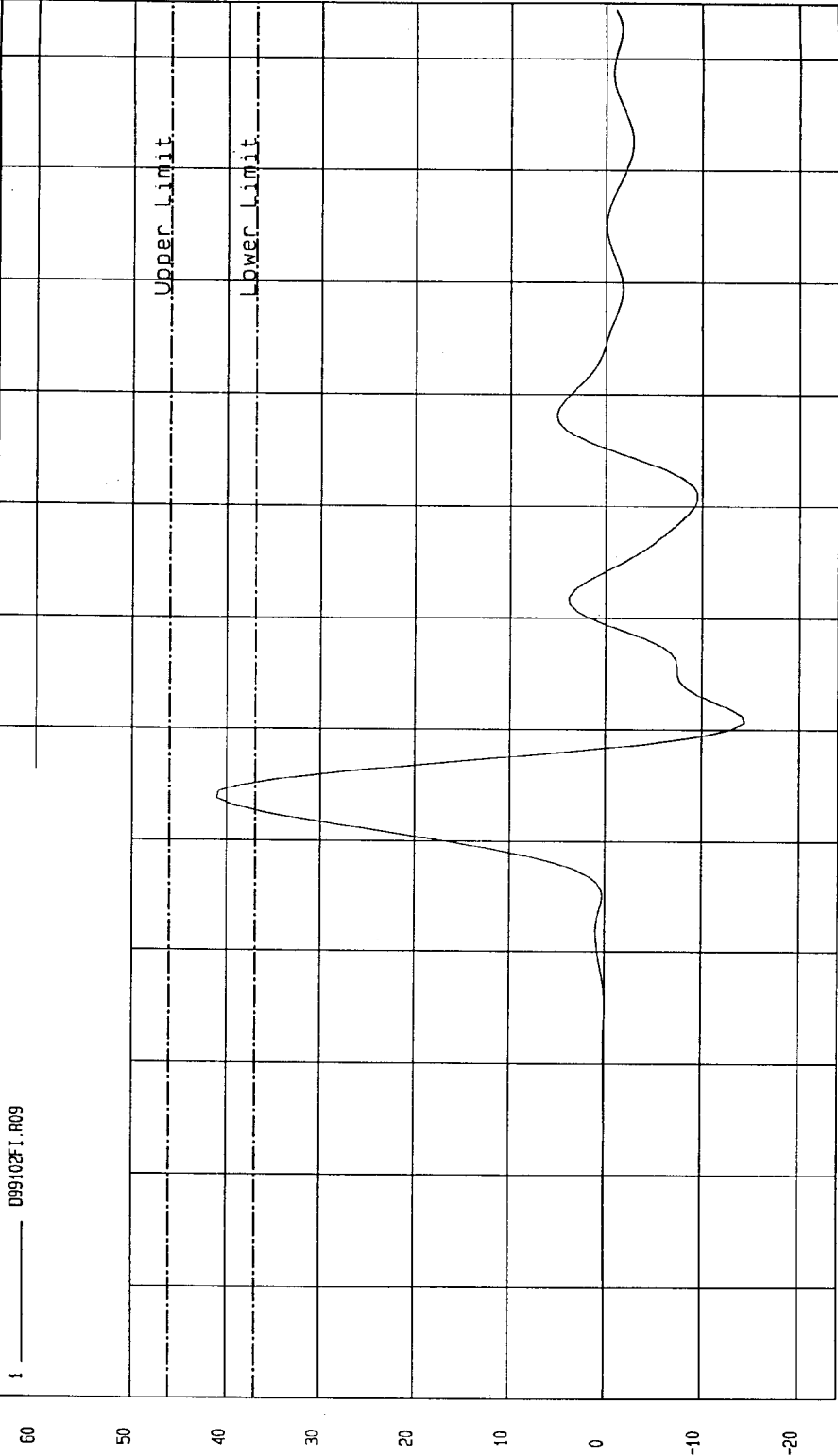
TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 14:40

COMPONENT: DUMMY # 048 Velocity: 14.141 FT/SEC 4.31 M/SEC

Minimum = -14.39 G'S at 60.6 msec Maximum = 41.05 G'S at 53.7 msec

LOWER RIB ACCELERATION

1 099103F1.R09



MOA Research  
09-21-1999 17:54

TIME (SECONDS)

G.S

TEST: DUMMY CALIBRATION - THORAX IMPACT TEST DATE: 09-21-1999 - 14:40

COMPONENT: DUMMY # 048 Velocity: 14.141 FT/SEC 4.31 M/SEC

Minimum = -4.63 G'S at 77.5 msec

Maximum = 21.67 G'S at 58.7 msec

LOWER SPINE ACCELERATION

1 \_\_\_\_\_ 099102FI.R10

30

20

10

0

-10

-20

G.S

Upper Limit

Lower Limit

0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12

TIME (SECONDS)

MGA Research  
09-21-1999 17:59

## MGA RESEARCH CORPORATION

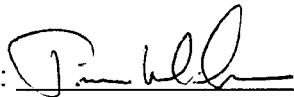
## PELVIS IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 048TEST NUMBER: D991103

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	4.29
PELVIS ACCELERATION (g's)	40 - 60	51

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 09-21-1999 - 14:46

COMPONENT: DUMMY # 048 Velocity: 14.073 FT/SEC 4.29 M/SEC

Minimum = -7.86 G'S at 62.5 msec

Maximum = 50.53 G'S at 50 msec

PELVIS ACCELERATION

1 099103F1.R11

80

60

40

20

0

-20

G.S

Upper Limit

Lower Limit

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

TIME (SECONDS)

MGA Research  
09-21-1999 18:00

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

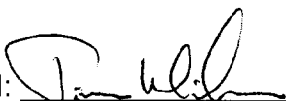
DATE: September 21, 1999

DUMMY SERIAL NUMBER: 048

TEST NUMBER: D991104

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	187
FORCE @ 25.4 mm	222 - 280	246
FORCE @ 33 mm	325 - 391	336

TEST MEETS SPECIFICATIONS

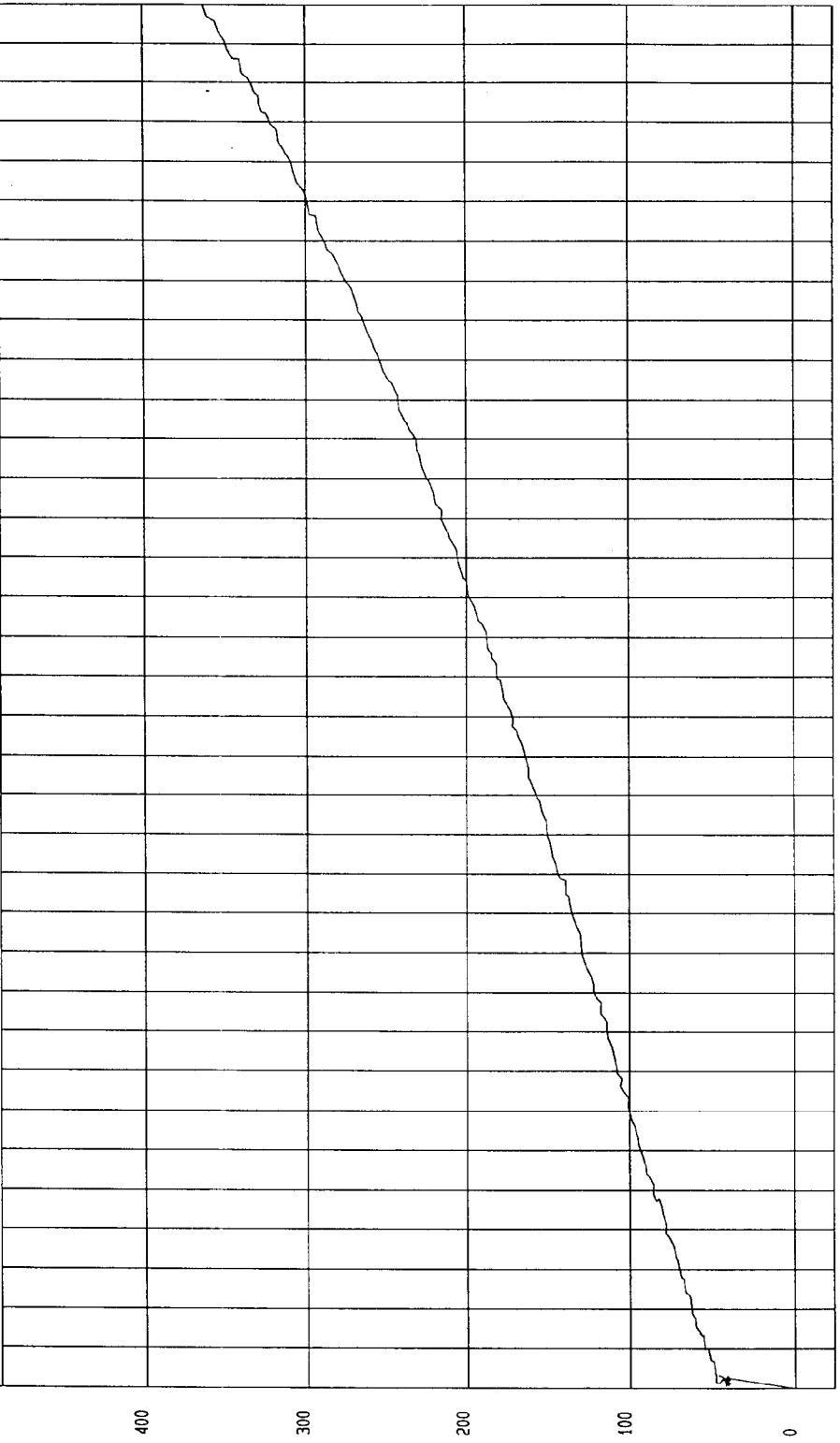
TECHNICIAN: 

APPROVED BY: 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 09-21-1999 - 16:24:07

COMPONENT: DUMMY # 048

FORCE as a function of DISPLACEMENT



MCA Research  
09-21-1999 16:28

DISPLACEMENT mm

FORCE N

## MGA RESEARCH CORPORATION

## LUMBAR FLEXION TEST

## SIDE IMPACT DUMMY (SID)

DATE: September 21, 1999DUMMY SERIAL NUMBER: 048TEST NUMBER: D991105

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	118.0
FORCE @ 30°	151.2 - 204.6	177.8
FORCE @ 40°	204.6 - 258.0	221.7
RETURN ANGLE	12° maximum	3

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 09-21-1999 - 15:37:26

COMPONENT: DUMMY # 048

FORCE as a function of TORSO ROTATION

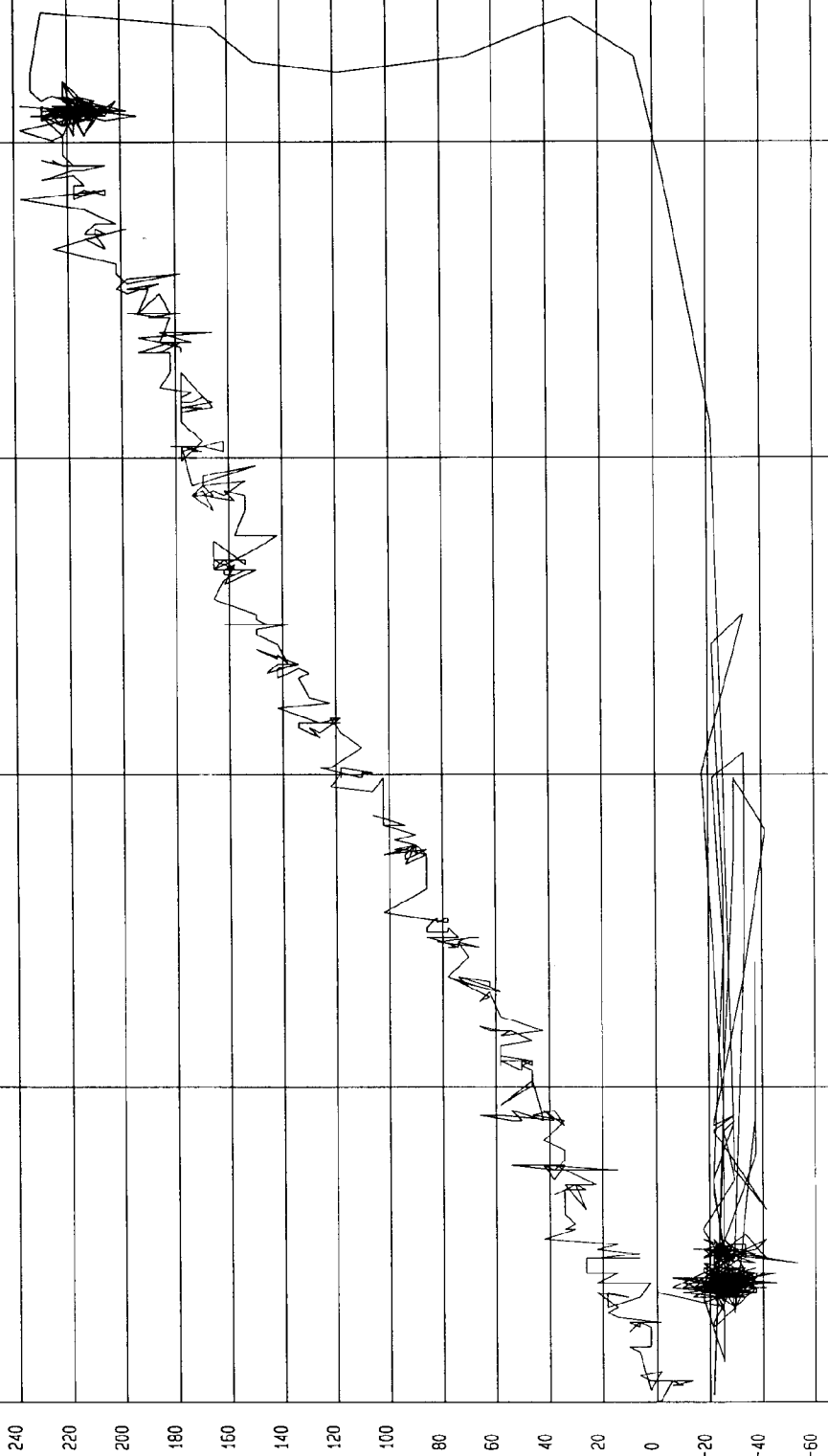
240  
220  
200  
180  
160  
140  
120  
100  
80  
60  
40  
20  
0  
-20  
-40  
-60

FORCE N

MCA Research  
11-04-1999 08.03

0 10 20 30 40

TORSO ROTATION DEGREES



POST-TEST CERTIFICATION DATA

Dummy Serial Number: 049

Calibration Test Results Summary

Dummy Serial Number: 049

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.: 049DATE OF VERIFICATION: October 25, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	902
RH - Rib Height (mm)	501 - 521	516
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	233
KV - Knee Pivot From Back Line (mm)	511 - 526	523
SW - Knee Pivot to Floor (mm)	490 - 505	493
HW - Hip Width (mm)	356 - 391	371

TECHNICIAN: APPROVED BY: 

## MGA RESEARCH CORPORATION

## THORAX IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: October 25, 1999DUMMY SERIAL NUMBER: 049TEST NUMBER: D991172

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	27
PROBE SPEED (m/s)	4.27 - 4.33	4.27
UPPER RIB (g's)	37 - 46	38
LOWER RIB (g's)	37 - 46	39
LOWER SPINE (g's)	15 - 22	21

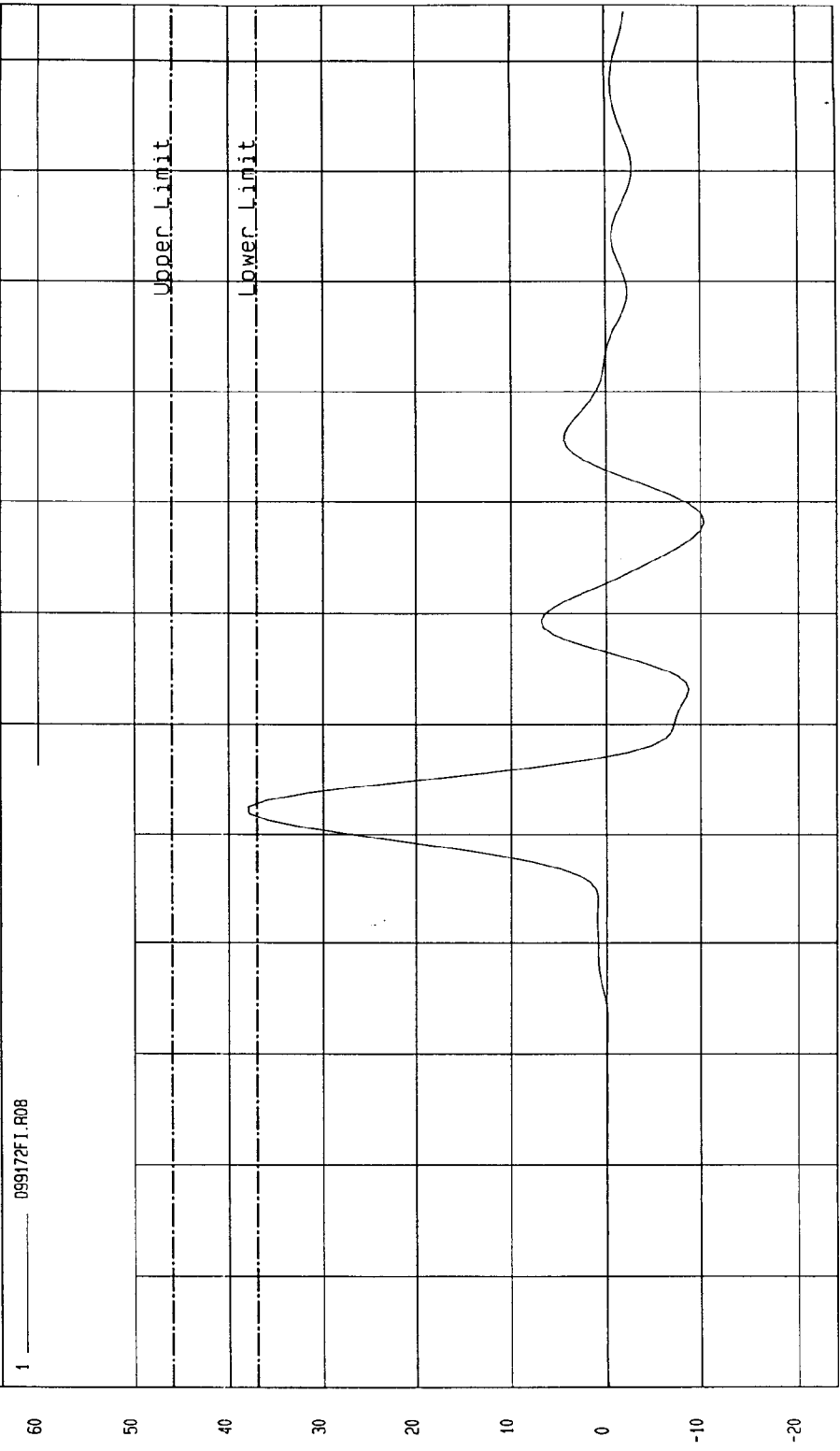
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: Dummy Calibration - Thorax Impact      TEST DATE: 10-25-1999 - 10:38:55  
COMPONENT: Dummy #049      Velocity: 14 FT/SEC 4.27 M/SEC

Minimum = -10.34 G'S at 78.1 msec      Maximum = 37.93 G'S at 52.5 msec

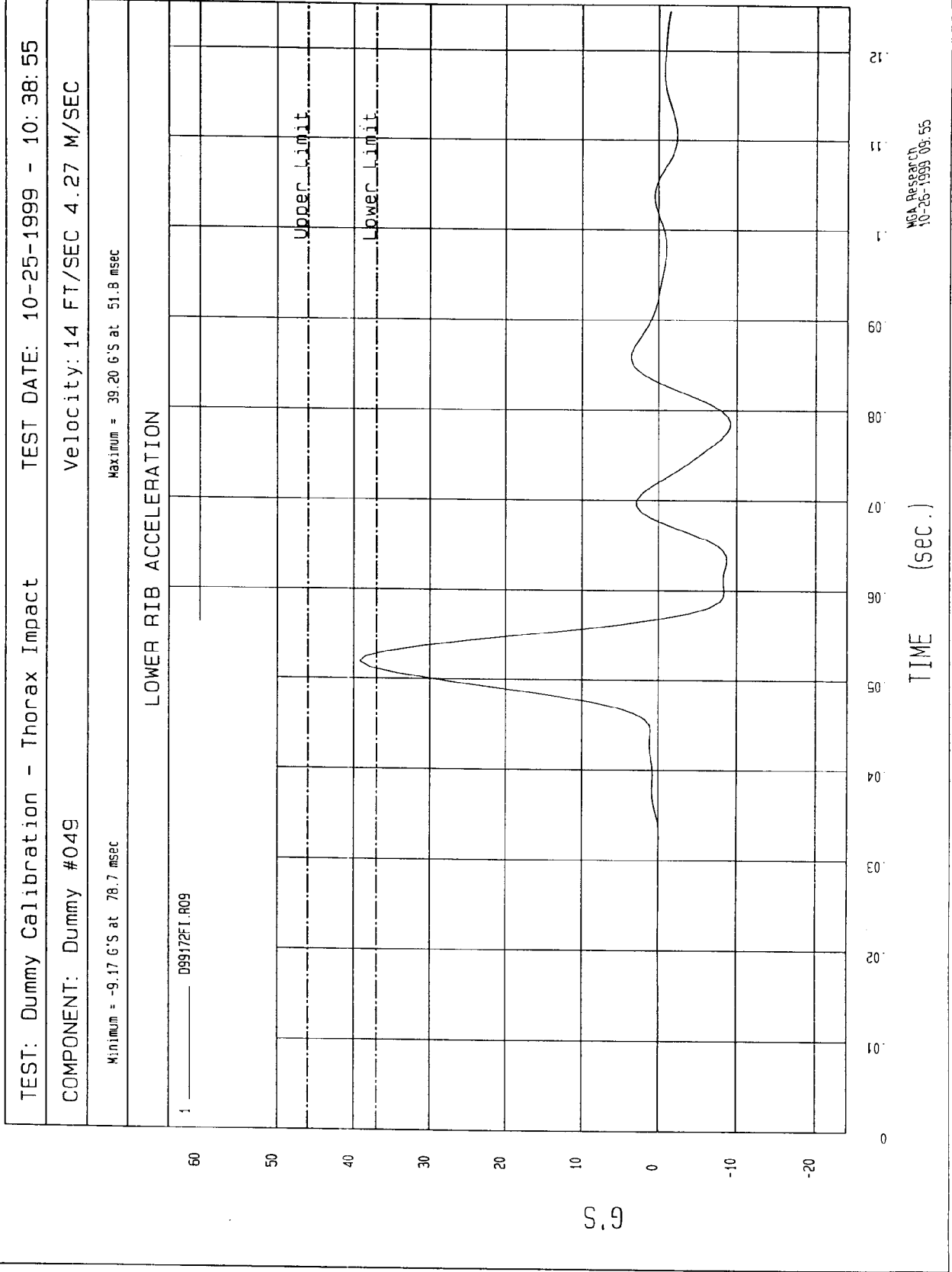
UPPER RIB ACCELERATION



TIME (sec.)

MSA Research  
10-26-1999 09:55

G.S



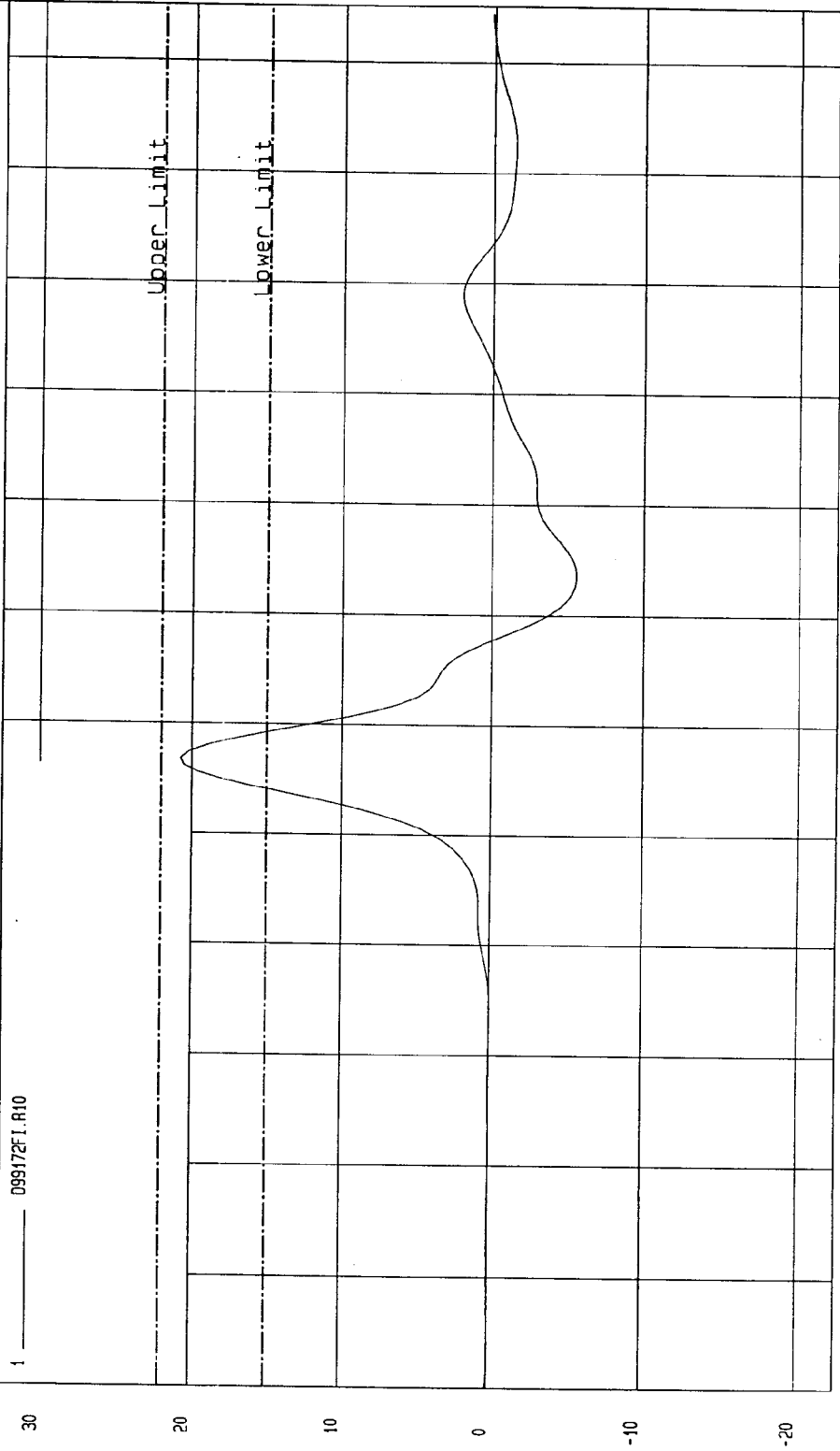
TEST: Dummy Calibration - Thorax Impact TEST DATE: 10-25-1999 - 10:38:55

COMPONENT: Dummy #049 Velocity: 14 FT/SEC 4.27 M/SEC

Minimum = -5.61 G'S at 73.7 msec  
Maximum = 20.73 G'S at 56.8 msec

LOWER SPINE ACCELERATION

1 ——— 099172FI.R10



MGA Research  
10-25-1999 09:56

TIME (sec.)

G.S

## MGA RESEARCH CORPORATION

## PELVIS IMPACT TEST

## SIDE IMPACT DUMMY (SID)

DATE: October 25, 1999DUMMY SERIAL NUMBER: 049TEST NUMBER: D991173

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70%	27
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	49

TEST MEETS SPECIFICATIONS

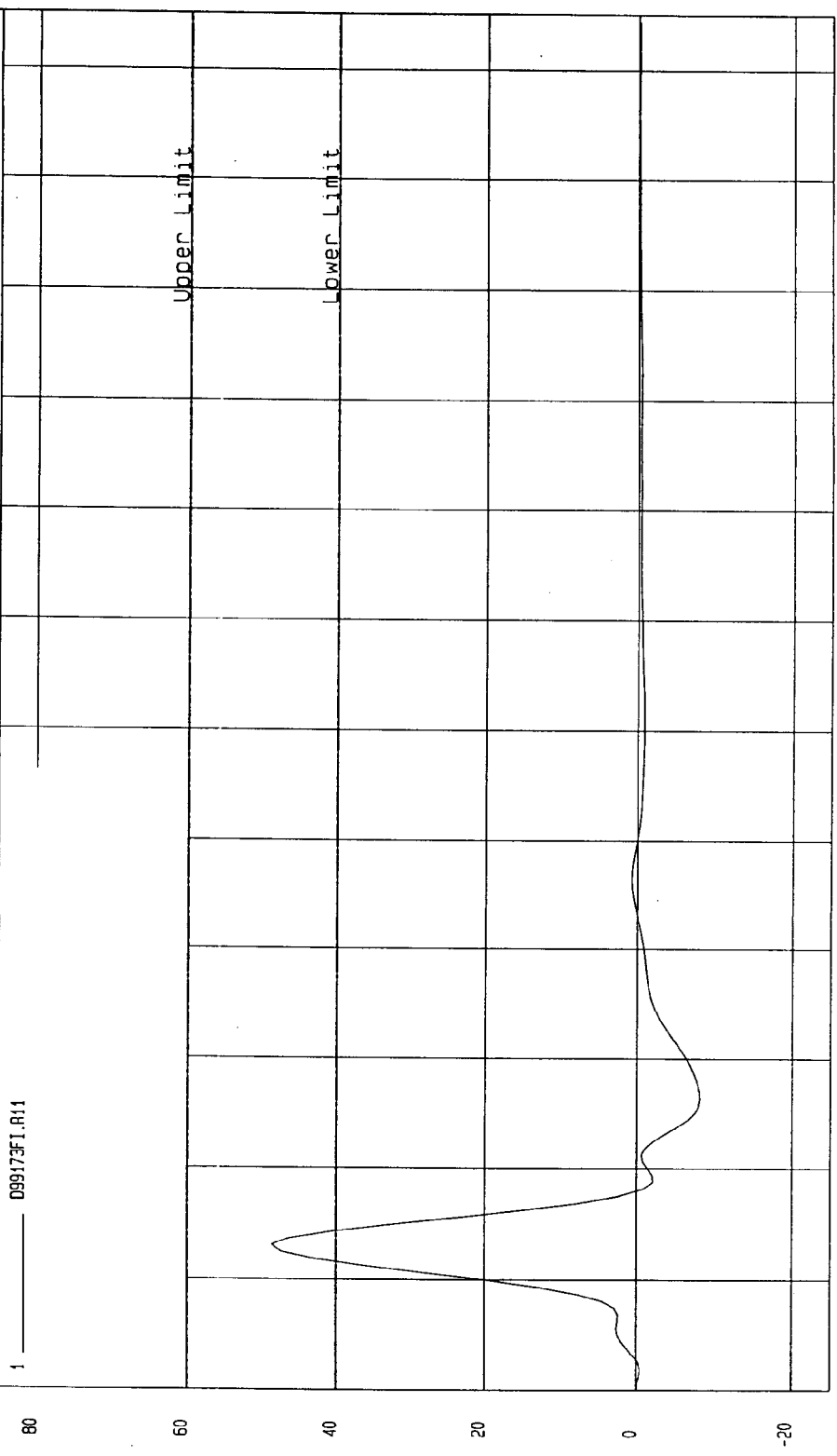
TECHNICIAN APPROVED BY 

TEST: Dummy Calibration - Pelvis Impact TEST DATE: 10-25-1999 - 09:59:02  
COMPONENT: Dummy #049 Velocity: 14.02 FT/SEC 4.27 M/SEC

Minimum = -8.29 G'S at 26.2 msec Maximum = 48.50 G'S at 13.1 msec

PELVIS ACCELERATION

1 ——— 099173F1.R11



MGA Research  
10-26-1999 09:56

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

DATE: October 21, 1999

DUMMY SERIAL NUMBER: 049

TEST NUMBER: D991174

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	34
FORCE @ 12.7 mm	104 - 162	142
FORCE @ 19.0 mm	163 - 222	199
FORCE @ 25.4 mm	222 - 280	264
FORCE @ 33 mm	325 - 391	362

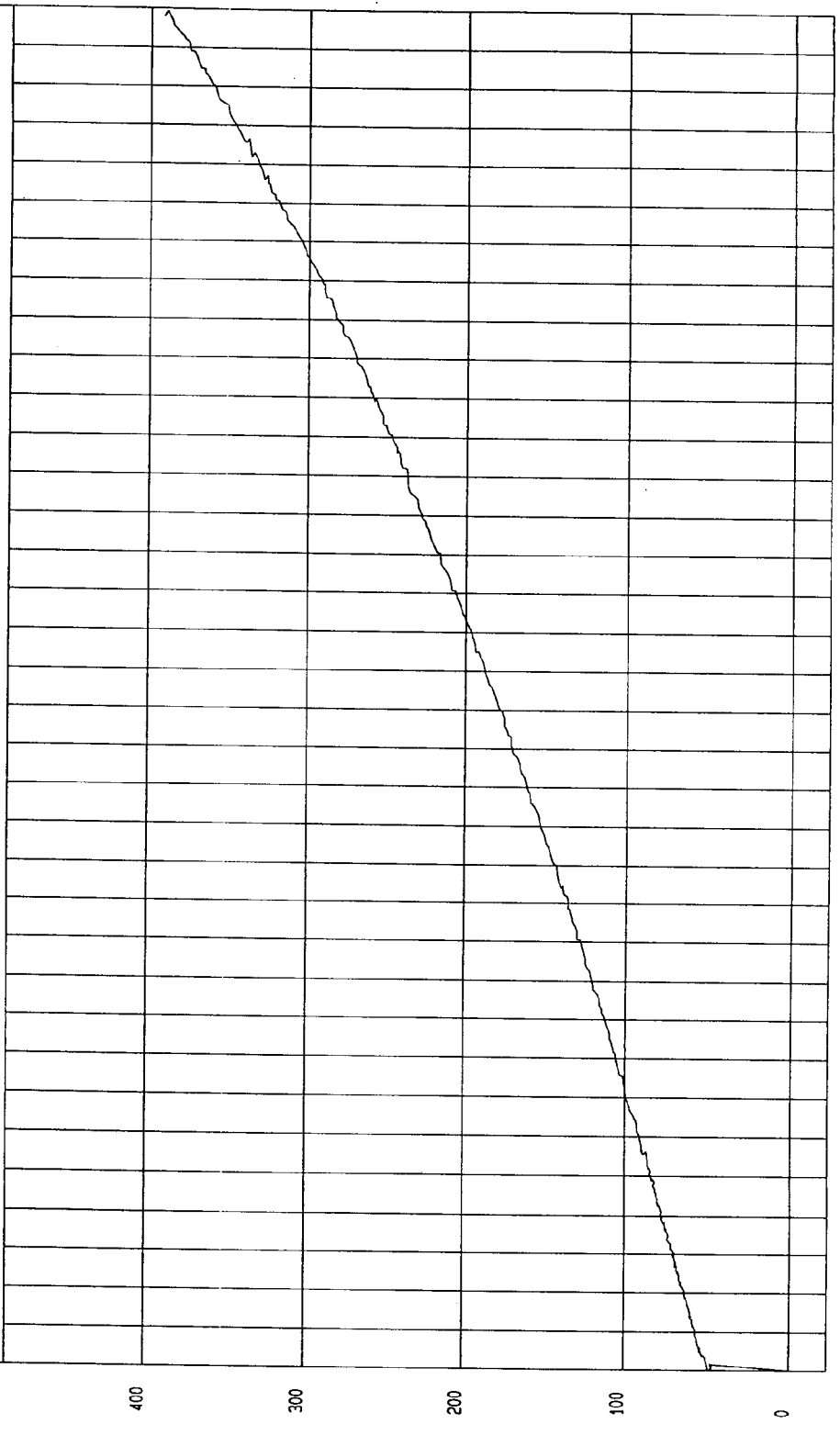
TEST MEETS SPECIFICATIONS

TECHNICIAN *Jim White*

APPROVED BY *Rene Kurbake*

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 10-21-1999 - 10:59:12  
COMPONENT: DUMMY # 49

FORCE as a function of DISPLACEMENT



MGA Research  
10-26-1999 11:17

DISPLACEMENT mm

FORCE N

## MGA RESEARCH CORPORATION

## LUMBAR FLEXION TEST

## SIDE IMPACT DUMMY (SID)

DATE: October 22, 1999DUMMY SERIAL NUMBER: 049TEST NUMBER: D991175

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	35
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	117.2
FORCE @ 30°	151.2 - 204.6	177.5
FORCE @ 40°	204.6 - 258.0	244.4
RETURN ANGLE	12° maximum	4

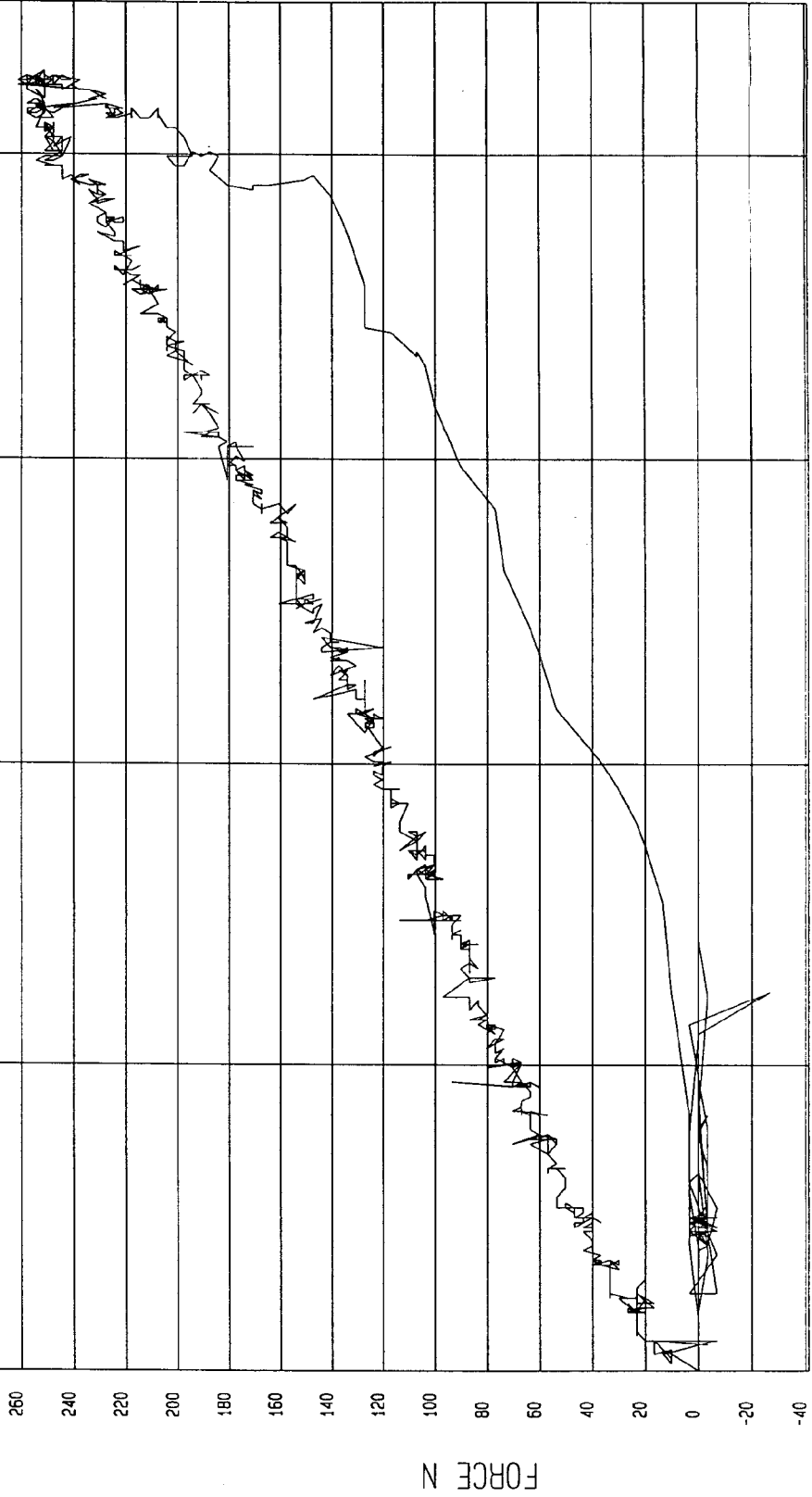
TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 10-22-1999 - 11:00:45

COMPONENT: DUMMY # 49

FORCE as a function of TORSO ROTATION



MGA Research  
10-26-1999 11:18

POST-TEST CERTIFICATION DATA

Dummy Serial Number: 048

Calibration Test Results Summary

Dummy Serial Number: 048

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.: 048DATE OF VERIFICATION: October 22, 1999

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height (mm)	889 - 909	905
RH - Rib Height (mm)	501 - 521	518
HP - Hip Pivot Height (mm)	99 ref.	99
RD - Rib From Back Line (mm)	229 - 241	236
KV - Knee Pivot From Back Line (mm)	511 - 526	521
SW - Knee Pivot to Floor (mm)	490 - 505	493
HW - Hip Width (mm)	356 - 391	368

MEASUREMENTS BY: APPROVED BY: 

## MGA RESEARCH CORPORATION

## THORAX IMPACT TEST

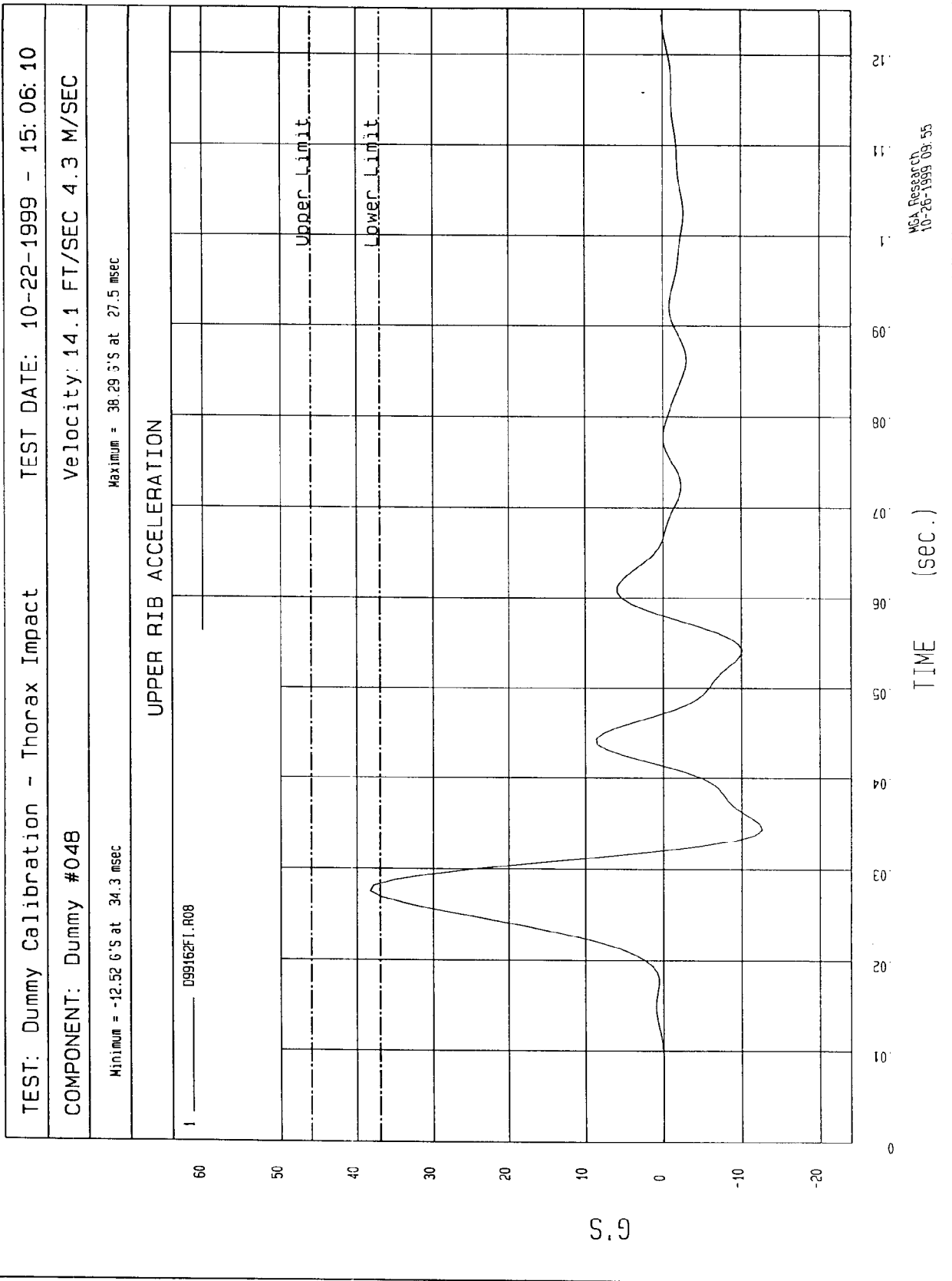
## SIDE IMPACT DUMMY (SID)

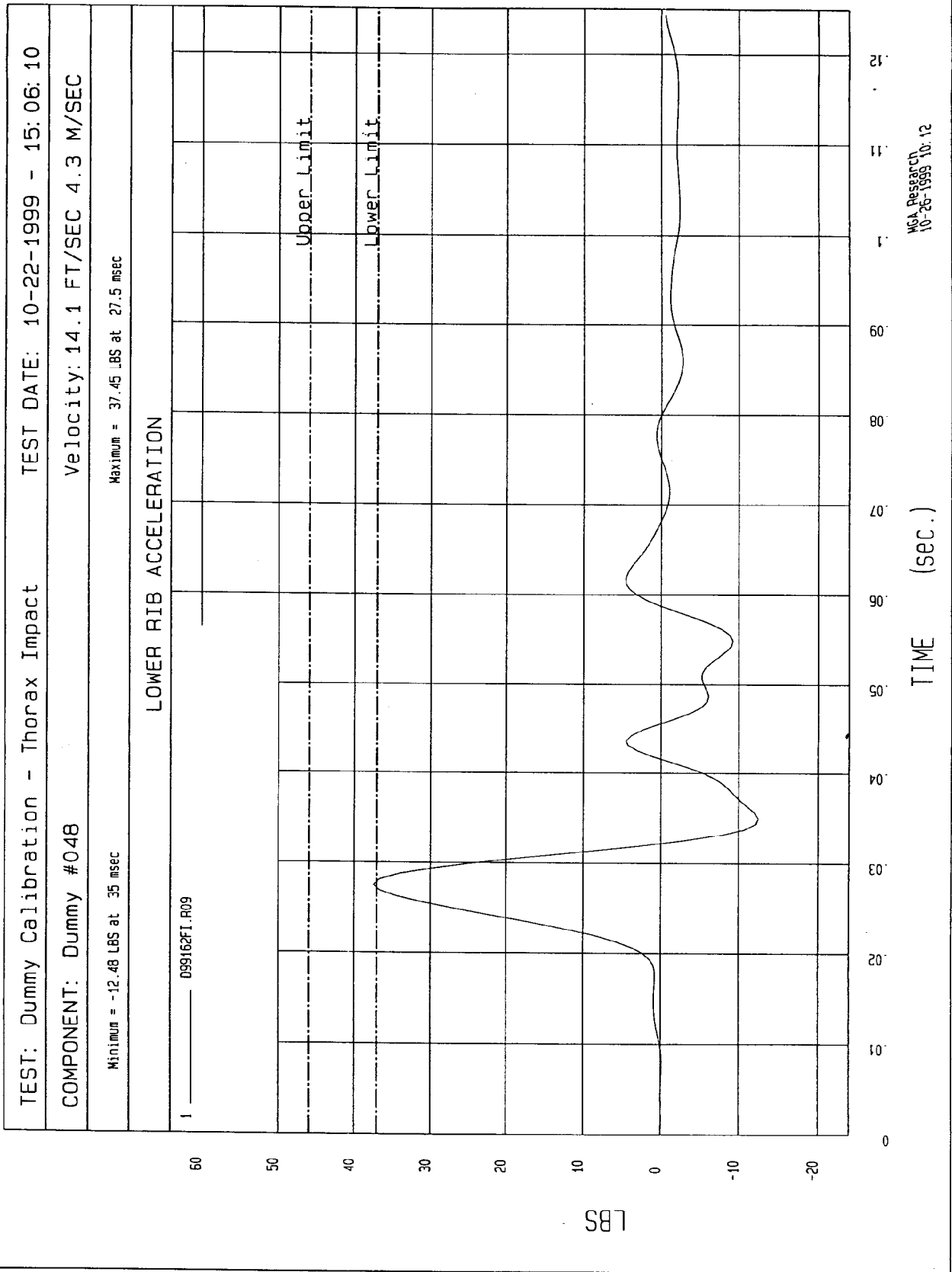
DATE: October 22, 1999DUMMY SERIAL NUMBER: 048TEST NUMBER: D991162

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	35
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	38
LOWER RIB (g's)	37 - 46	37
LOWER SPINE (g's)	15 - 22	22

TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 



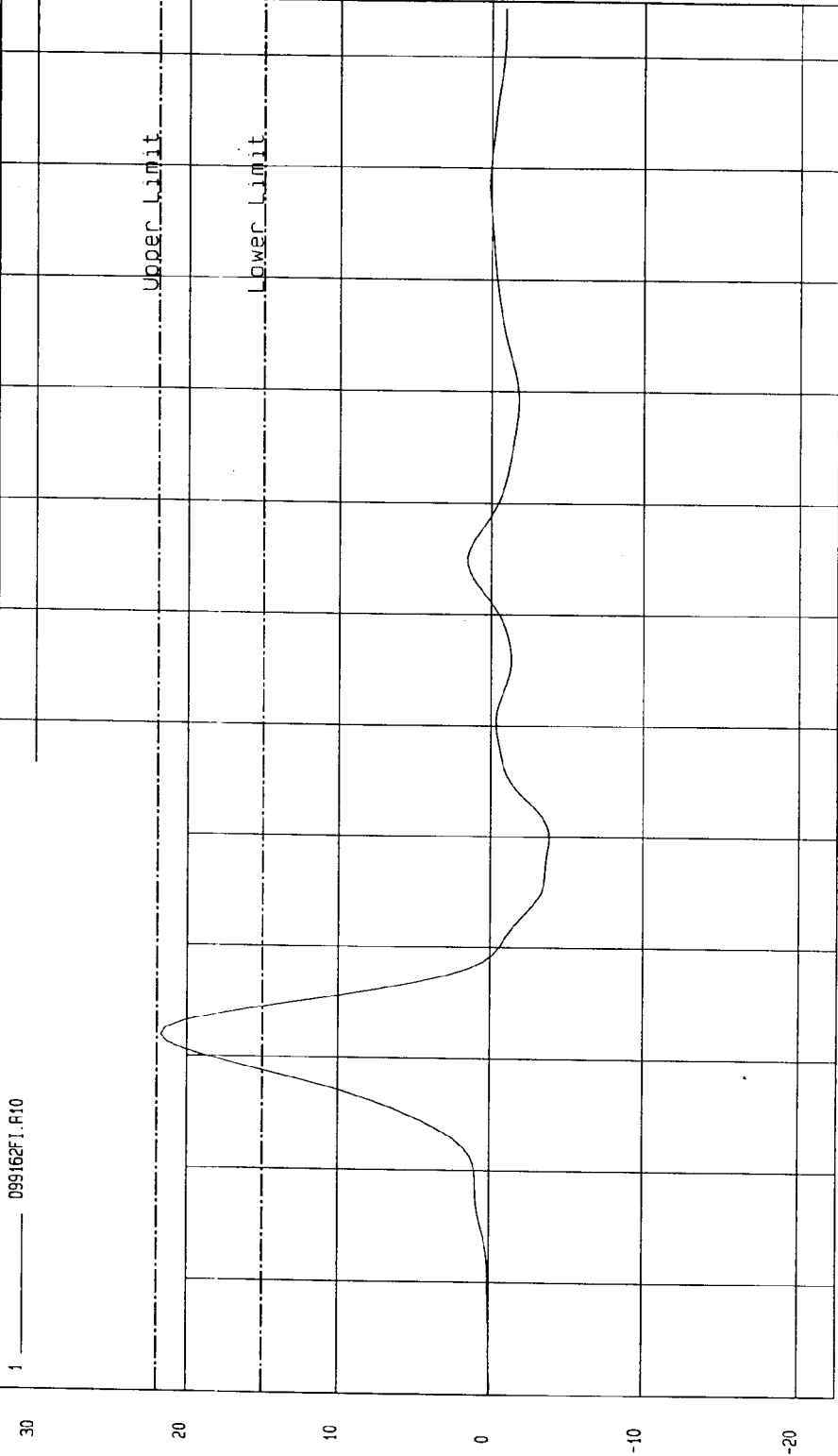


TEST: Dummy Calibration - Thorax Impact TEST DATE: 10-22-1999 - 15:06:10

COMPONENT: Dummy #048 Velocity: 14.1 FT/SEC 4.3 M/SEC

Minimum = -3.91 G'S at 50 msec Maximum = 21.77 G'S at 31.8 msec

LOWER SPINE ACCELERATION



MGA Research  
10-26-1999 09:55

G.S

## MGA RESEARCH CORPORATION

## PELVIS IMPACT TEST

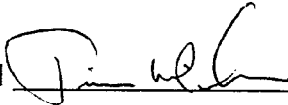
## SIDE IMPACT DUMMY (SID)

DATE: October 22, 1999DUMMY SERIAL NUMBER: 048TEST NUMBER: D991163

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	57

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY



TEST: Dummy Calibration - Pelvis Impact TEST DATE: 10-22-1999 - 15:49:52

COMPONENT: Dummy #048 Velocity: 14.1 FT/SEC 4.3 M/SEC

Minimum = -10.41 G'S at 28.7 msec Maximum = 56.72 G'S at 16.2 msec

PELVIS ACCELERATION

1 ——— 099163FI.R11

80  
60  
40  
20  
0  
-20

G.S

Upper Limit

Lower Limit

TIME (SEC.)  
0 .01 .02 .03 .04 .05 .06 .07 .08 .09 .1 .11 .12

M&A Research  
10-26-1999 09:55

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

DATE: October 21, 1999

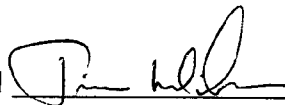
DUMMY SERIAL NUMBER: 048

TEST NUMBER: D991164

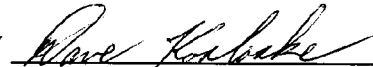
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	35
FORCE @ 12.7 mm	104 - 162	143
FORCE @ 19.0 mm	163 - 222	200
FORCE @ 25.4 mm	222 - 280	266
FORCE @ 33 mm	325 - 391	368

TEST MEETS SPECIFICATIONS

TECHNICIAN



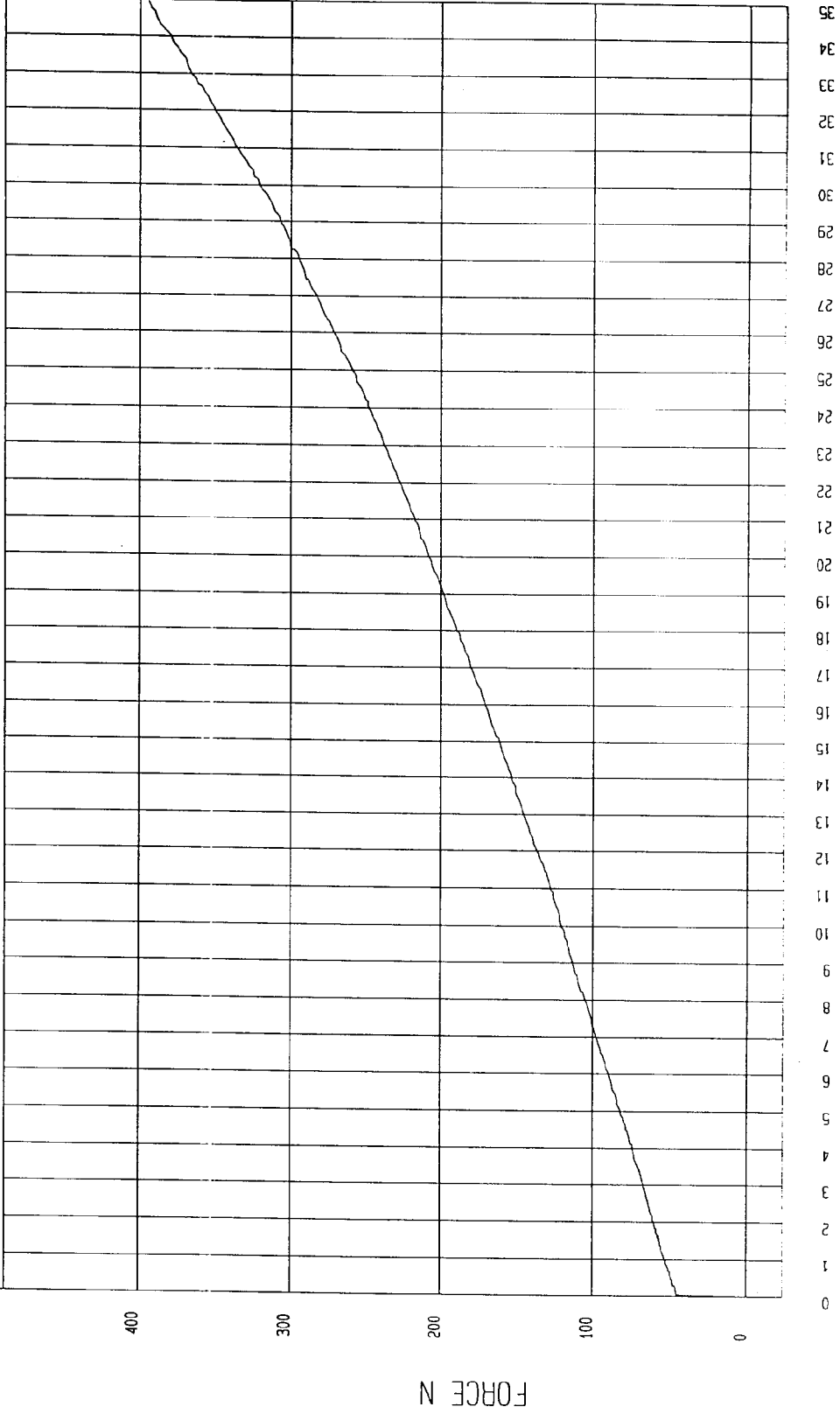
APPROVED BY



TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 10-21-1999 - 10:55:34

COMPONENT: DUMMY # 48

FORCE as a function of DISPLACEMENT



MCA Research  
10-26-1999 11:03

DISPLACEMENT mm

FORCE N

## MGA RESEARCH CORPORATION

## LUMBAR FLEXION TEST

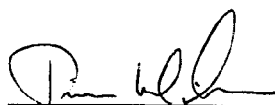
## SIDE IMPACT DUMMY (SID)

DATE: October 22, 1999DUMMY SERIAL NUMBER: 048TEST NUMBER: D991165

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	35
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	123.1
FORCE @ 30°	151.2 - 204.6	190.0
FORCE @ 40°	204.6 - 258.0	253.7
RETURN ANGLE	12° maximum	7

TEST MEETS SPECIFICATIONS

TECHNICIAN



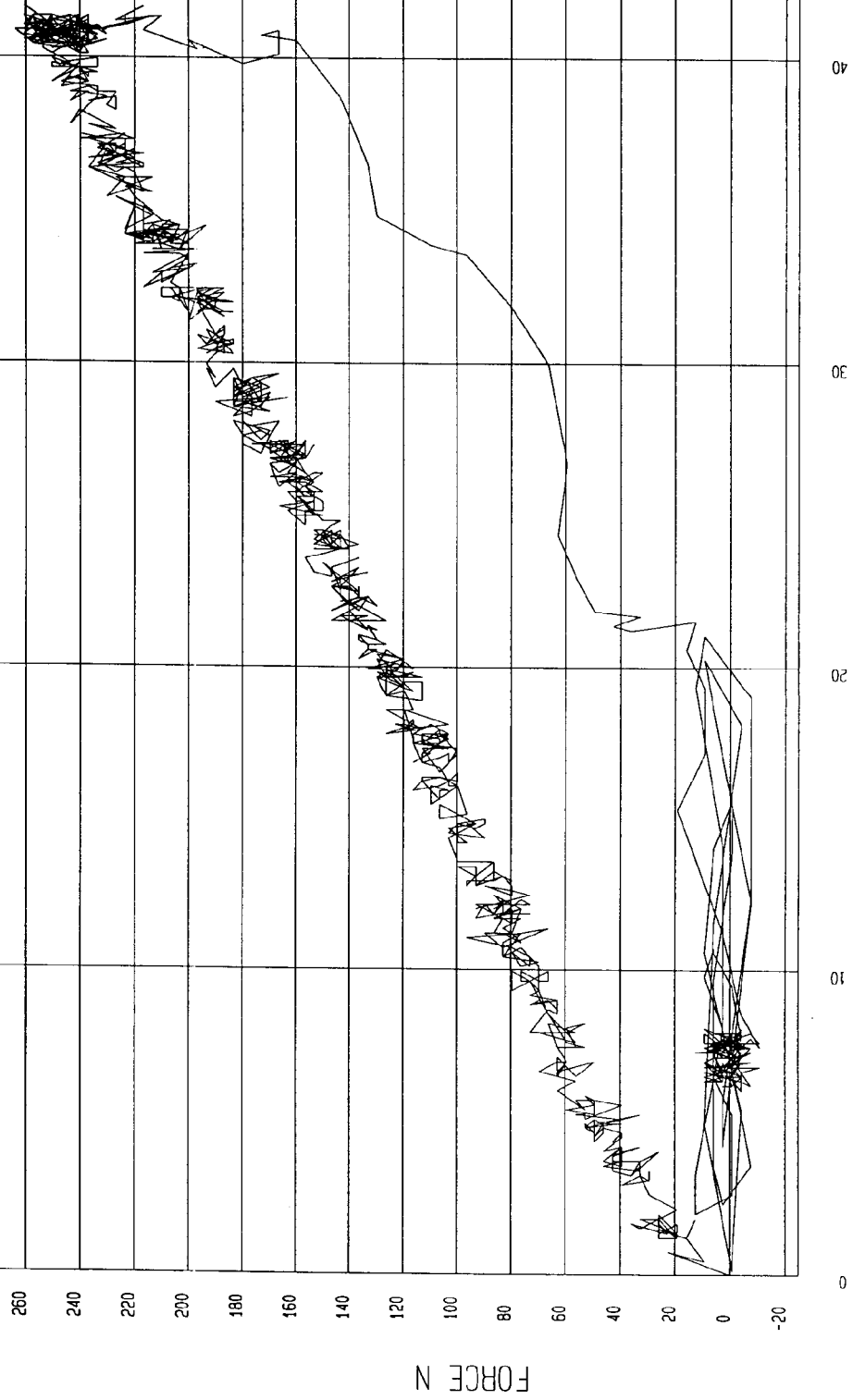
APPROVED BY



TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 10-22-1999 - 10:57:05

COMPONENT: DUMMY # 48

FORCE as a function of TORSO ROTATION



MCA Research  
10-26-1999 11:18

TORSO ROTATION DEGREES

POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 049

Inspected By: Tim Michnay

Date: October 25, 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: 048

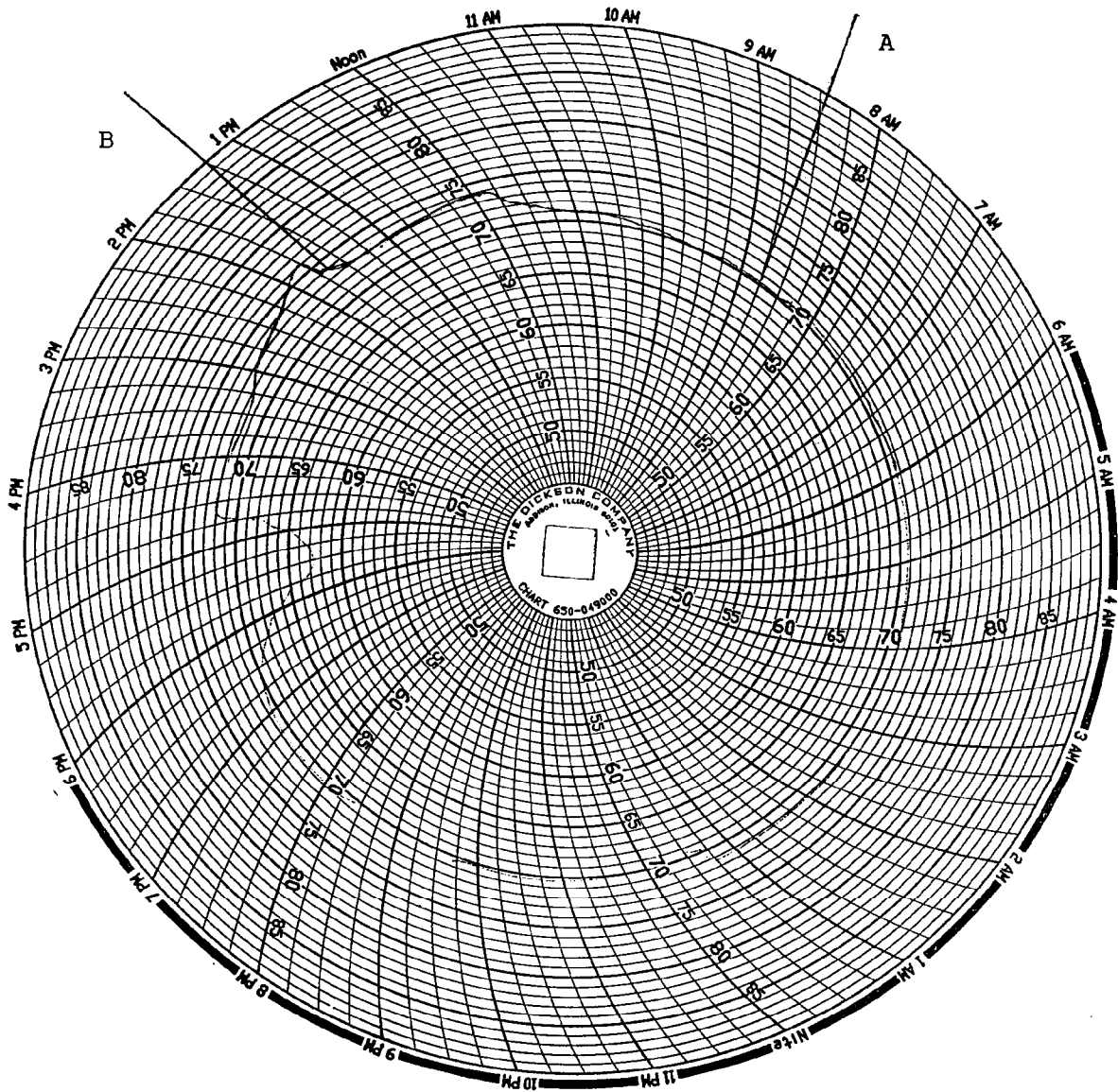
Inspected By: Tim Michnay

Date: October 22, 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. 049

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AN8L6	Endevco	August 2, 1999
Lower Rib Y	ALEC1	Endevco	August 2, 1999
Lower Spine Y	AJ9A7	Endevco	July 30, 1999
Pelvis Y	AGM32	Endevco	August 2, 1999
Upper Rib Redundant Y	APY13	Endevco	August 2, 1999
Lower Rib Redundant Y	J10411	Endevco	August 2, 1999
Lower Spine Redundant Y	AKAD6	Endevco	July 30, 1999
Pelvis Redundant Y	AKAH3	Endevco	August 2, 1999

INSTRUMENTS FOR LEFT REAR PASSENGER DUMMY NO. 048

LEFT REAR PASSENGER		
	SERIAL NO.	CALIBRATION DATE
Upper Rib Y	AMP12	August 3, 1999
Lower Rib Y	J14120	August 2, 1999
Lower Spine Y	J10431	August 2, 1999
Pelvis Y	AJ417	July 30, 1999
Upper Rib Redundant Y	AP1C6	August 3, 1999
Lower Rib Redundant Y	APY16	August 2, 1999
Lower Spine Redundant Y	AN9E3	August 2, 1999
Pelvis Redundant Y	AGP20	July 30, 1999

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS			
SERIAL NO.	MANUFACTURER	CALIBRATION DATE	
Moving Barrier CG X	J10-E05	Entran	August 17, 1999
Moving Barrier CG Y	J04-E10	Entran	August 16, 1999
Moving Barrier CG Z	I18-E18	Entran	August 17, 1999
Moving Barrier Rear Axle X	C25-A17	Entran	August 6, 1999
Moving Barrier Rear Axle Y	I25-J12	Entran	August 6, 1999
Left Mid A-Post Y	C25-A06	Entran	August 17, 1999
Left Lower A-Post Y	F07-A13	Entran	May 6, 1999
Left Mid B-Post Y	E23-R06	Entran	August 17, 1999
Rear Floorpan Above Axle X	I18-G01	Entran	August 16, 1999
Rear Floorpan Above Axle Y	B13-Z02	Entran	May 6, 1999
Rear Floorpan Above Axle Z	G01-J04	Entran	May 12, 1999
Driver Seat Track Y	F10-D02	Entran	August 17, 1999
Right Side Sill at Front Seat X	G13-D15	Entran	September 24, 1999
Right Side Sill at Front Seat Y	J10-E18	Entran	August 17, 1999
Right Side Sill at Front Seat Z	J06-D19	Entran	August 6, 1999
Right Side Sill at Rear Seat X	A09-G02	Entran	August 16, 1999
Right Side Sill at Rear Seat Y	K19-A11	Entran	May 12, 1999
Right Side Sill at Rear Seat Z	K19-A15	Entran	May 12, 1999
Left Side Sill at Front Seat Y	K11-J17	Entran	May 12, 1999
Left Side Sill at Front Seat Y	I25-J14	Entran	August 16, 1999

VEHICLE INSTRUMENT CALIBRATION

VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO.	CALIBRATION DATE
Left Side Sill at Rear Seat Y	J23-E07	August 16, 1999
Rear Occupant Compartment Y	L15-G21	May 5, 1999
Vehicle CG X	E10-F03	August 6, 1999
Vehicle CG Y	F12-G05	August 6, 1999
Vehicle CG Z	I25-J05	August 6, 1999

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