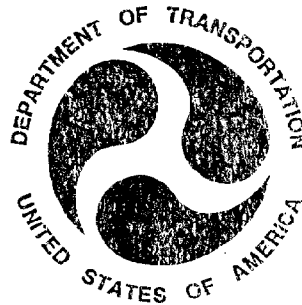


REPORT NO.: 214-MGA-2000-09
SAFETY COMPLIANCE TESTING FOR FMVSS NO. 214
"SIDE IMPACT PROTECTION"
INDICANT

3266

Volkswagen AG
2000 Volkswagen Jetta 4 Door
NHTSA NO: CY5800

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: January 20, 2000

Report Date: February 3, 2000

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
ROOM 6115 (NSA-30)
WASHINGTON, D.C. 20590

i

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Accepted By: _____
Contract Technical Manager

Acceptance Date: _____

4. Title and Subtitle Final Report of FMVSS No.214 Indicant Compliance Side Impact Protection Testing of a 2000 Volkswagen Jetta 4 Door NHTSA No. CY5800		5. Report Date January 27, 2000																			
		6. Performing Organization Code MGA																			
7. Author(s) David Winkelbauer		8. Performing Organization Report No. MGA-DOT-214-09																			
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No.																			
		11. Contract or Grant No. DTNH22-97-C-11033																			
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 January 20, 2000 - January 27, 2000																			
		14. Sponsoring Agency Code NSA-30																			
15. Supplementary Notes																					
16. Abstract A 56/28 kph 90° Impact (Moving Deformable Barrier) INDICANT Compliance Test was conducted on the subject 2000 Volkswagen Jetta 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 January 20, 2000. The impact velocity of the Moving Deformable Barrier (MDB) was 62.1 kph, and the ambient temperature at the struck side of the target vehicle at the time of impact was 24°C. The target vehicle post test maximum crush was 337 mm at level 2. The test vehicle's performance follows: <table border="0" style="width: 100%;"> <thead> <tr> <th></th><th style="text-align: center;"><u>DRIVER.</u></th><th style="text-align: center;"><u>LEFT REAR PASS.</u></th></tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td><td style="text-align: center;">43</td><td style="text-align: center;">54</td></tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td><td style="text-align: center;">50</td><td style="text-align: center;">73</td></tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td><td style="text-align: center;">68</td><td style="text-align: center;">68</td></tr> <tr> <td>Thoracic Trauma Index (TTI)</td><td style="text-align: center;">59</td><td style="text-align: center;">71</td></tr> <tr> <td>Pelvis (PEV) Accel., g</td><td style="text-align: center;">63</td><td style="text-align: center;">87</td></tr> </tbody> </table> 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.					<u>DRIVER.</u>	<u>LEFT REAR PASS.</u>	Left Upper Rib (LUR) Accel., g	43	54	Left Lower Rib (LLR) Accel., g	50	73	Lower Spine (T ₁₂) Accel., g	68	68	Thoracic Trauma Index (TTI)	59	71	Pelvis (PEV) Accel., g	63	87
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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 Volkswagen Jetta 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 Volkswagen Jetta 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 62.1 kph (38.6 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 January 20, 2000. 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 (T₁₂) 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)	59	71
Pelvis (g)	63	87

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 DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door
 Vehicle NHTSA No.: CY5800 VIN: 4VWRA29M1YM040860
 Vehicle Body Color: Blue Build Date: 9/99
 Engine Data: 4 Cylinders; CID; 2.0 Liter; cc
 Placement Longitudinal; X Lateral
 Transmission: 5 speed; X Manual; Automatic; X Overdrive
 Final Drive: Rear Wheel Drive; X Frt. Wheel Drive; Four Wheel Drive

 Odometer Reading 156 miles
 Options: X A/C; X Pwr. Steering; X Pwr. Brakes; Pwr. Windows;
 Cruise Control; X Tilt Wheel; X Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 30 Psi FRONT
 41 Psi REAR
 Recommended Tire Size: P195/65R15
 Tires on Test Vehicle: P195/65R15 Manufacturer: Michelin

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 3rd Seat 5 Total
 Type of Front Seats: X Bucket; Bench; Split Bench
 Type of Front Seat Back: Fixed; X Adjustable with Lever X Knob Power
 Vehicle Maximum Capacity Loading = 428.6 kg (A)
 No. of Occupants x 68.04 kg. = 340.2 kg (B)
 Cargo Capacity (A-B) = 88.4 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front =	<u>386.9</u>	kg	Right Rear =	<u>270.8</u>	kg
Left Front =	<u>384.7</u>	kg	Left Rear =	<u>270.8</u>	kg
TOTAL FRONT =	<u>771.6</u>	kg	TOTAL REAR =	<u>541.6</u>	kg
% of Total Weight =	<u>58.8</u>	%	% of Total Weight =	<u>41.2</u>	%
TOTAL WEIGHT =	<u>1313.2</u>	kg			

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	=	<u>1313.2</u>	kg
Cargo Carrying Capacity of Test Vehicle*	=	<u>88.4</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>1563.0</u>	kg

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

Right Front =	<u>398.3</u>	kg	Right Rear =	<u>346.6</u>	kg
Left Front =	<u>430.9</u>	kg	Left Rear =	<u>387.2</u>	kg
TOTAL FRONT =	<u>829.2</u>	kg	TOTAL REAR =	<u>733.8</u>	kg
% of Total Weight =	<u>53.1</u>	%	% of Total Weight =	<u>46.9</u>	%
TOTAL WEIGHT =	<u>1563.0</u>	kg			

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 677 mm Left Front 684 mm Right Rear 707 mm Left Rear 694 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 664 mm Left Front 660 mm Right Rear 671 mm Left Rear 653 mm

TEST ATTITUDE:

Right Front 663 mm Left Front 671 mm Right Rear 671 mm Left Rear 657 mm

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

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2512 mm

C.G. As Tested = 1160 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 3896 mm

Centerline = 4365 mm

Left Side = 3898 mm

FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 230 mm

Test Position: 8th detent rearward of 14 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 21° on H point machine torso

REAR POSITION SEAT:

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

Seat Back Adjustment Position: non-adjustable

ADJUSTABLE STEERING COLUMN POSITION: mid position

WINDOW POSITIONS: Left Front closed Left Rear closed
Right Front removed Right Rear removed

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 55 liters

Test Volume: 50.7 liters 92 % of capacity

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

Wheelbase: = 2512 mm

Impact Point is 316 mm rearward of front axle centerline

DATA SHEET NO. 2

TEST VEHICLE: SUMMARY OF RESULTSYear/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY 5800 Test Date: January 20, 2000Overall Length = 4365 mm; Overall Width = 1673 mmTEST WEIGHT:Right Front = 412.3 kg Right Rear = 346.6 kgLeft Front = 425.9 kg Left Rear = 372.4 kgTOTAL FRONT = 838.2 kg TOTAL REAR = 719.0 kg% of Total Weight = 53.8 % % of Total Weight = 46.2 %TOTAL WEIGHT = 1557.2 kgWheelbase = 2512 mmLongitudinal C.G. from Center of Front Axle = 1160 mmImpact Angle with Respect to Impactor = 90° degreesMAXIMUM EXTERIOR STATIC CRUSH:1. LEVEL 1 (245 mm above ground) = 176 mm2. LEVEL 2 (500 mm above ground) = 337 mm3. LEVEL 3 (577 mm above ground) = 313 mm4. LEVEL 4 (865 mm above ground) = 262 mm5. LEVEL 5 (1310 mm above ground) = 84 mmMaximum Post-Test Intrusion = 337 mmOCCUPANTS:DriverLeft Rear Passenger

Type of Dummy

SIDSID

Restraints Used

type II belttype II beltwith frontal and side airbag

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

Number of Vehicle Data Channels: = 20

Number of Cameras: Onboard Vehicle = 3

Offboard Vehicle = 4

Deformable Barrier = 2

TOTAL = 9

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTSYear/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY 5800 Test Date: January 20, 2000POSITION 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: 38.6 mph (62.1 kph) Secondary: 38.8 mph (62.4 kph)

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

- | | | | | |
|----|---------------------------------|---|------------|----|
| 1. | Row A Top of Stack (813 mm) | = | <u>169</u> | mm |
| 2. | Row B Mid Stack (686 mm) | = | <u>136</u> | mm |
| 3. | Row C Top of Bumper (533 mm) | = | <u>92</u> | mm |
| 4. | Row D Center of Bumper (432 mm) | = | <u>155</u> | mm |

INSTRUMENTATION:

Number of MDB Data Channels = 7

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door

Vehicle NHTSA No.: CY 5800 Test Date: January 20, 2000

VISIBLE DUMMY CONTACT POINTS:

	<u>DRIVER</u>	<u>LEFT REAR SIDE</u>
Head	<u>to window sill</u>	<u>to C post, header</u>
Arm	<u>to trim panel, side airbag</u>	<u>to trim panel above armrest</u>
Pelvis	<u>to side airbag</u>	<u>to armrest</u>
Left Knee	<u>to trim panel below armrest</u>	<u>to trim panel below armrest</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: 226 mm from bottom of window

Rear: 228 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)SEAT CRUSH:Front Seat Back: 80 mm Front Seat Cushion: 41 mmLeft Rear Seat Back: 109 mm Rear Seat Cushion: 164 mmGLAZING DAMAGE:Both left side windows broke, windshield crackedPILLAR PERFORMANCE:No failures notedSILL SEPARATION:None notedFRONTAL AIRBAGS:Driver Deployed: no Passenger Deployed: noSIDE AIRBAGS:Driver Deployed: yes Passenger Deployed: N/AOTHER NOTABLE IMPACT EFFECTS:None noted

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

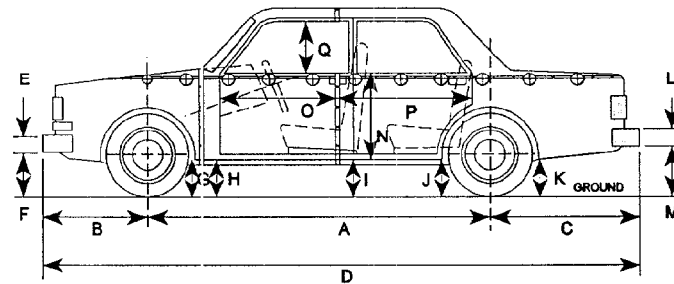
SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA
Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door

Vehicle NHTSA No.: CY 5800 Test Date: January 20, 2000

Driver SID ID #049				Left Rear Passenger 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)	
HEAD ACCELERATIONS								
Longitudinal	9.9	160	29.0	79	5.5	105	35.7	64
Lateral	29.9	77	10.7	158	50.0	38	8.2	75
Vertical	48.9	55	0.8	8	36.0	38	48.3	58
Resultant	52.1	54	---	---	61.6	38	---	---
HIC	341			356				
RIB ACCELERATIONS								
Left Upper Rib Y	42.8	24	15.6	68	54.0	48	11.0	81
Left Upper Rib Redundant Y(R)	42.9	39	15.7	68	51.6	33	11.1	81
Left Lower Rib Y	50.0	21	11.9	83	73.1	36	31.6	68
Left Lower Rib Redundant Y(R)	49.5	21	11.8	83	73.2	36	31.9	68
SPINE ACCELERATIONS								
Lower Lateral Y	67.7	26	13.3	62	68.2	38	46.5	62
Lower Lateral Redundant Y(R)	68.4	26	14.1	62	67.7	38	46.2	62
PELVIS ACCELERATIONS								
Lateral Y	63.5	26	16.3	61	86.7	31	12.4	54
Lateral Y(R)	63.0	27	17.1	61	87.7	31	11.9	61

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

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



LEFT SIDE VIEW

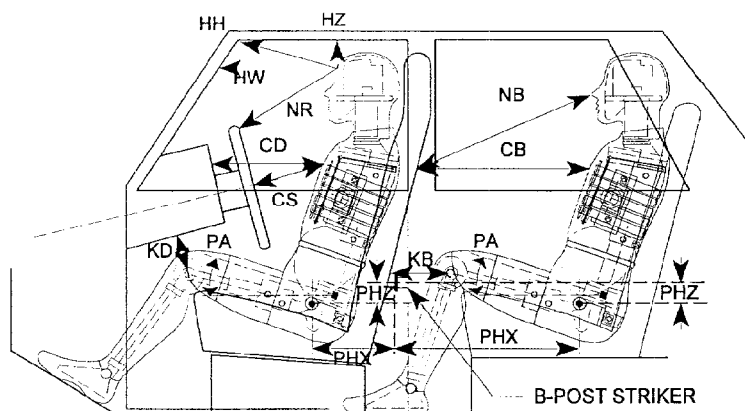
D = Length at Centerline
 R = Right Side Length
 S = Left Side Length
 T = Width at B Post
 J1 = To Pinch Weld
 J2 = To Sill

E & L = Bumper Thickness

ALL MEASUREMENTS IN (mm)

	PRE-TEST	POST-TEST	Δ CHANGE
A	2512	2508	4
B	862	865	-3
C	990	955	35
D	4365	4328	37
E	147	147	0
F	370	380	-10
G	161	216	-55
H	163	240	-77
I	163	226	-63
J1/J2	166/161	167/170	-1/-9
K	198	238	-40
L	110	110	0
M	495	517	-22
N	634	541	93
O	748	707	41
P	1033	918	115
Q	454	449	5
R	3896	3908	-12
S	3898	3842	56
T	1673	1378	295

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONSYear/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorNHTSA NO.: CY 5800 Test Date: January 20, 2000NOTE: All dimensions are in mm with tolerance of ± 3 mm

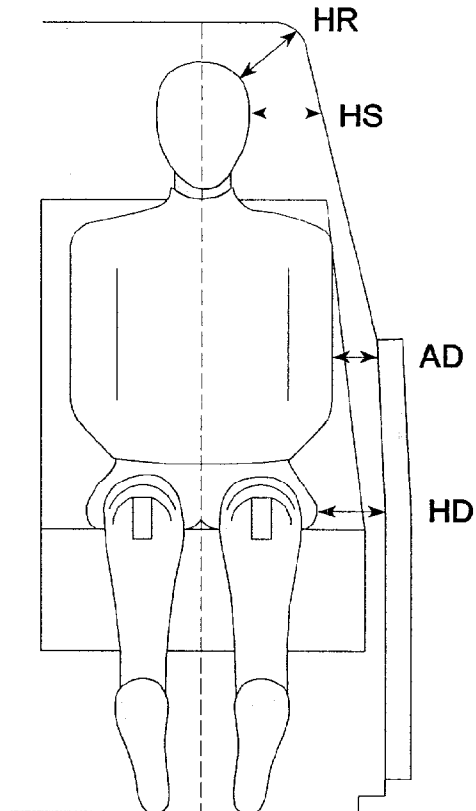
	DRIVER ID #049		LEFT REAR PASSENGER SID ID #048
HH	366	HZ	121
HW	560	NB	539
HZ	167	CB	452
NR	432	KBL (KBA)	150 (0.0°)
CD	507	KBR (KBA)	64 (0.0°)
CS	331	PA°	24.4°
KDL (KDA°)	193 (8.5°)	PHX	183
KDR (KDA°)	204 (0.0°)	PHZ	192
PA°	24.5°		
PHX	156		
PHZ	194		

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/Volkswagen/Jetta/4 Door

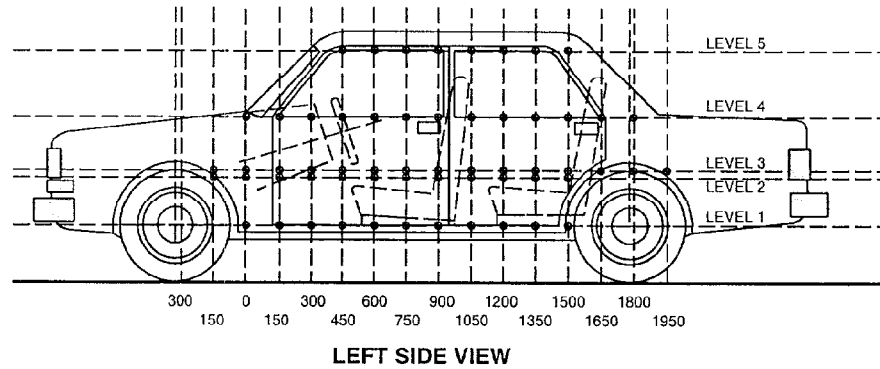
NHTSA NO.: CY 5800 Test Date: January 20, 2000



NOTE: All dimensions are in mm

	DRIVER ID #049	LEFT REAR PASSENGER ID #048
HR	200	190
HS	321	66
AD	110	76
HD	172	143

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTSYear/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorNHTSA NO.: CY 5800 Test Date: January 20, 2000

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 - SILL TOP HEIGHT

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

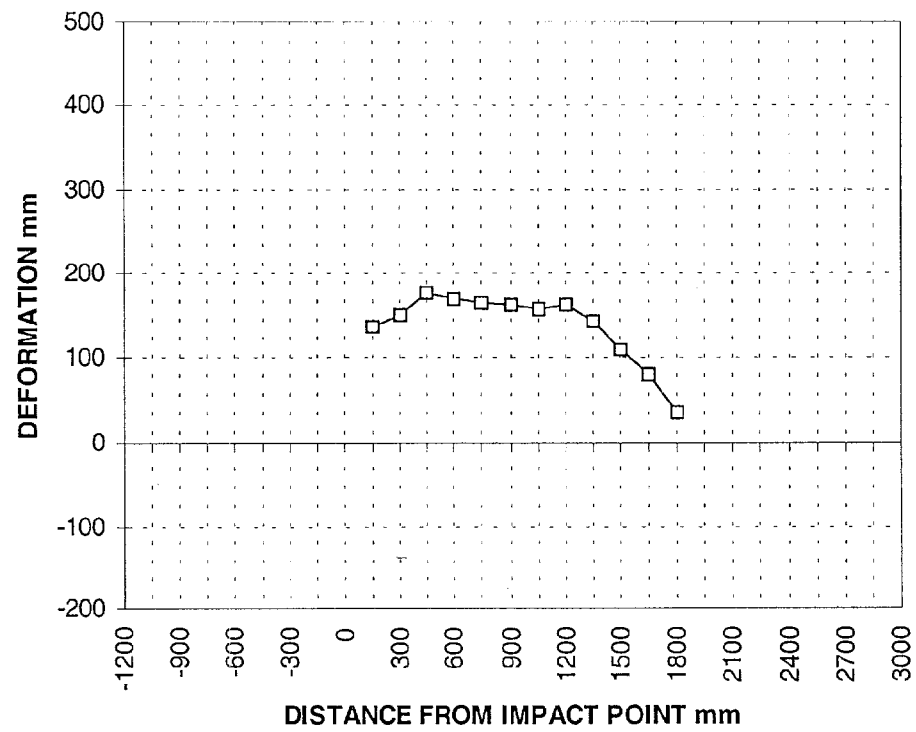
MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

Level 1 @ Sill Top Height	=	<u>245</u>	mm
Level 2 @ Occupant H-Point	=	<u>500</u>	mm
Level 3 @ Mid Door	=	<u>577</u>	mm
Level 4 @ Window Sill	=	<u>865</u>	mm
Level 5 @ Window Top	=	<u>1310</u>	mm

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Sill Top Height		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	749	886	137
300	747	898	151
450	745	921	176
600	744	913	169
750	743	908	165
900	742	905	163
1050	743	901	158
1200	744	906	162
1350	745	890	145
1500	750	859	109
1650	754	835	81
1800	758	793	35
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)

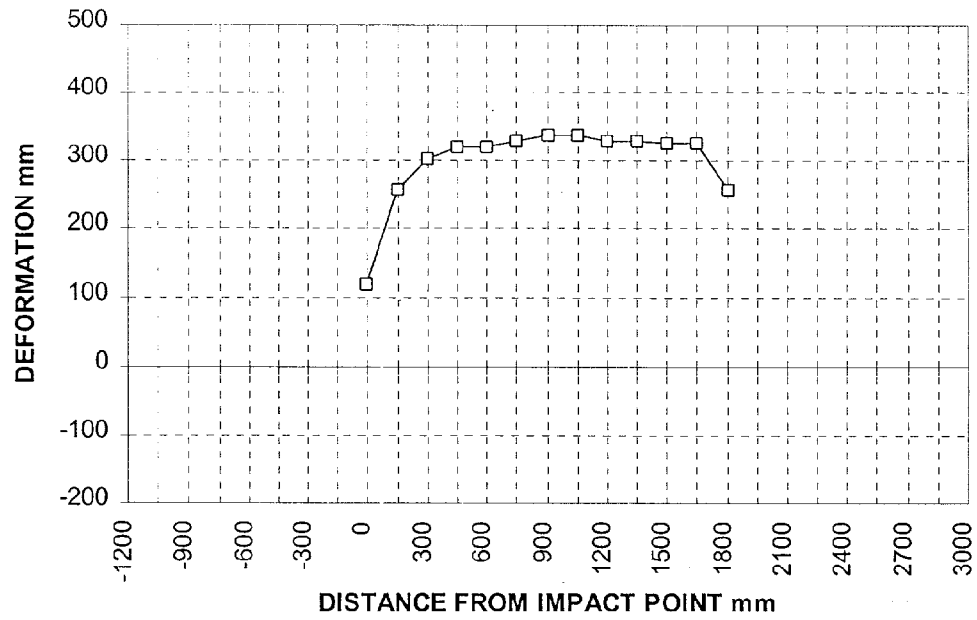
LEVEL 1 - SILL TOP HEIGHT

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

	Level 2 - Occupant H Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	713	832	119
150	728	986	258
300	726	1029	303
450	725	1045	320
600	725	1046	321
750	725	1055	330
900	723	1060	337
1050	724	1060	336
1200	727	1056	329
1350	728	1058	330
1500	730	1056	326
1650	733	1058	325
1800	737	995	258
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)



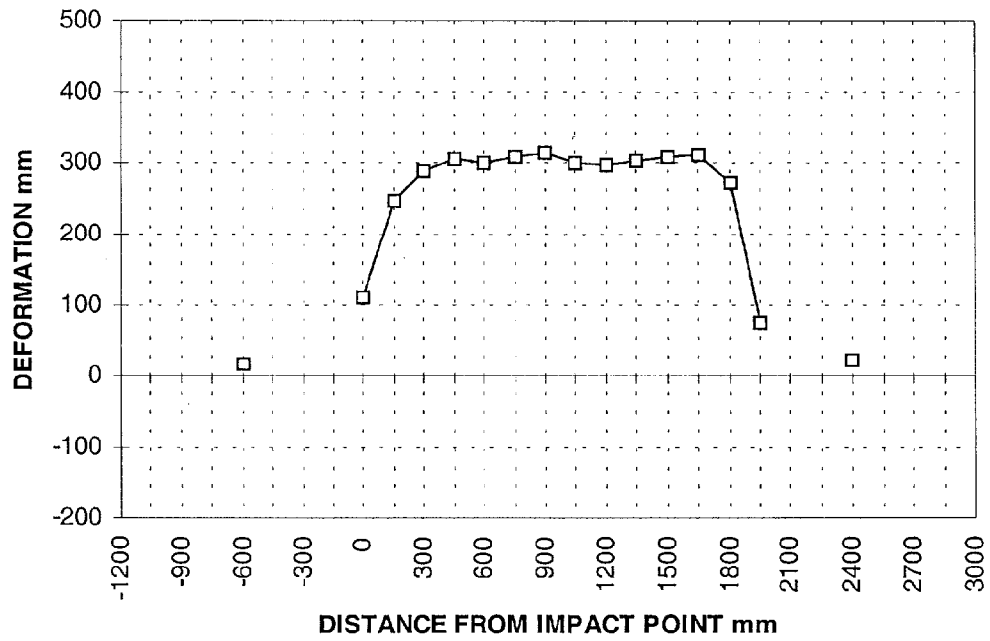
LEVEL 2 - OCCUPANT H-POINT

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	719	737	18
-450			
-300			
-150			
0 (impact point)	717	827	110
150	725	973	248
300	722	1010	288
450	720	1026	306
600	719	1020	301
750	719	1027	308
900	719	1032	313
1050	720	1021	301
1200	722	1018	296
1350	723	1027	304
1500	725	1033	308
1650	728	1040	312
1800	730	1003	273
1950	708	783	75
2100			
2250			
2400	724	745	21
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)

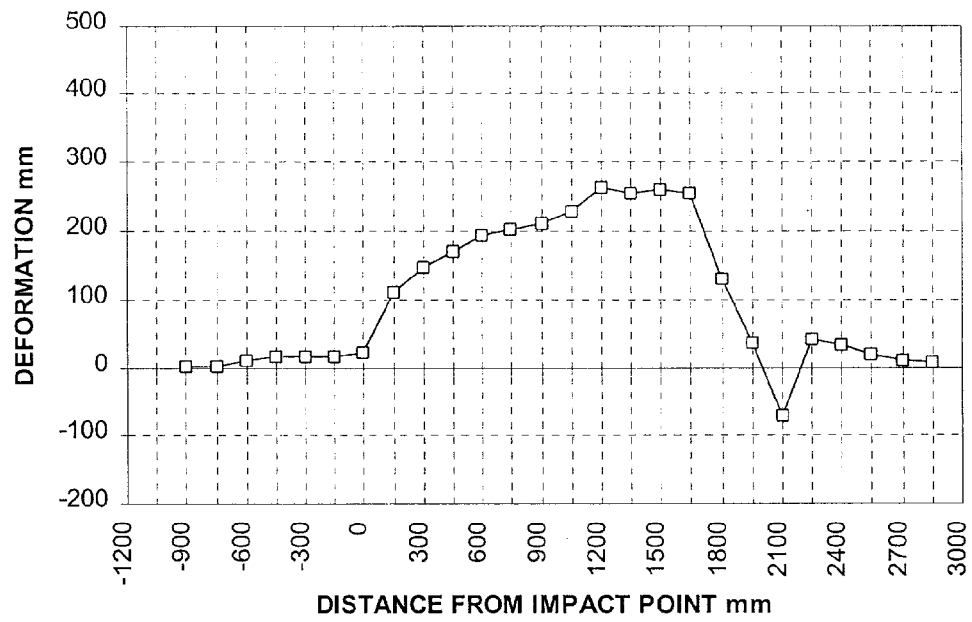


LEVEL 3 - MID DOOR

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

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900	867	869	2
-750	844	848	4
-600	819	830	11
-450	800	817	17
-300	788	805	17
-150	779	796	17
0 (impact point)	774	798	24
150	769	881	112
300	766	915	149
450	767	939	172
600	769	962	193
750	771	975	204
900	771	983	212
1050	774	1003	229
1200	776	1038	262
1350	778	1032	254
1500	780	1040	260
1650	783	1036	253
1800	789	921	132
1950	791	827	36
2100	793	722	-71
2250	806	850	44
2400	817	851	34
2550	830	851	21
2700	851	862	11
2850	877	885	8
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)

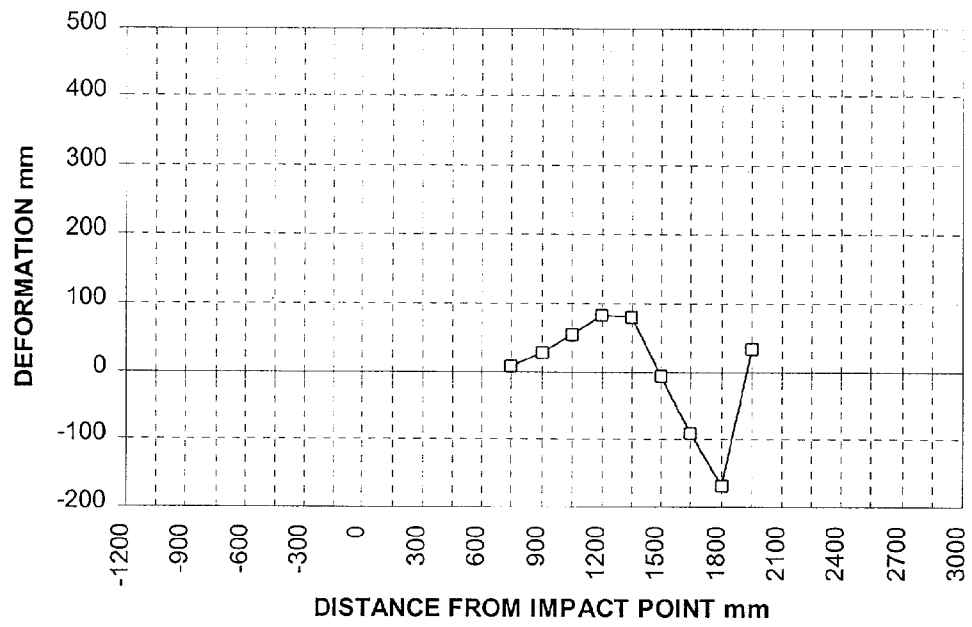
LEVEL 4 - WINDOW SILL

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

	Level 5 - Window Top		
Vertical Distance (mm)	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	993	1001	8
900	992	1021	29
1050	993	1048	55
1200	995	1079	84
1350	988	1067	79
1500	1000	994	-6
1650	1003	913	-90
1800	1006	838	-168
1950	1023	1058	35
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)



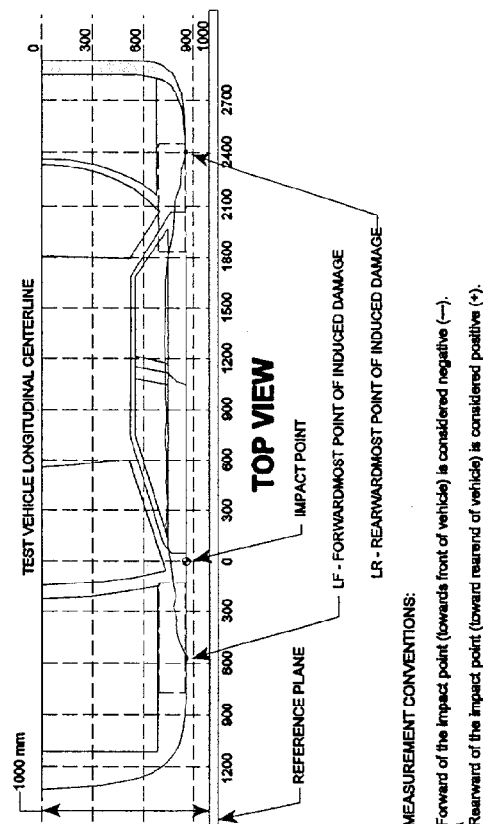
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door

NHTSA NO.: CY5800 Test Date: January 20, 2000



DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LR = <u>2850</u> mm)	885	877	8
2. 2136 mm	844	793	51
3. 1285 mm	1061	728	333
4. 540 mm	1032	725	307
5. -165 mm	795	780	15
6. (LF = <u>-900</u> mm)	869	867	2

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

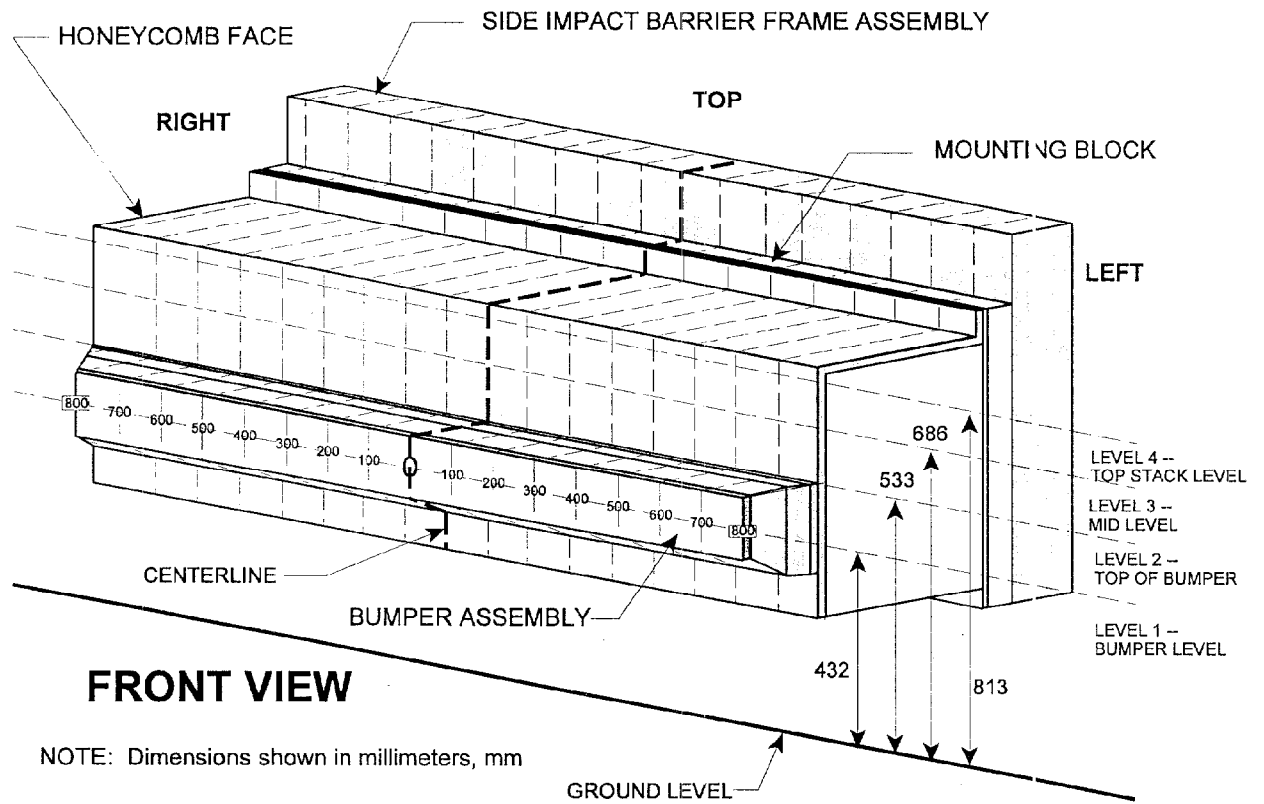
Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door

Vehicle NHTSA No.: CY 5800 Test Date: January 20, 2000

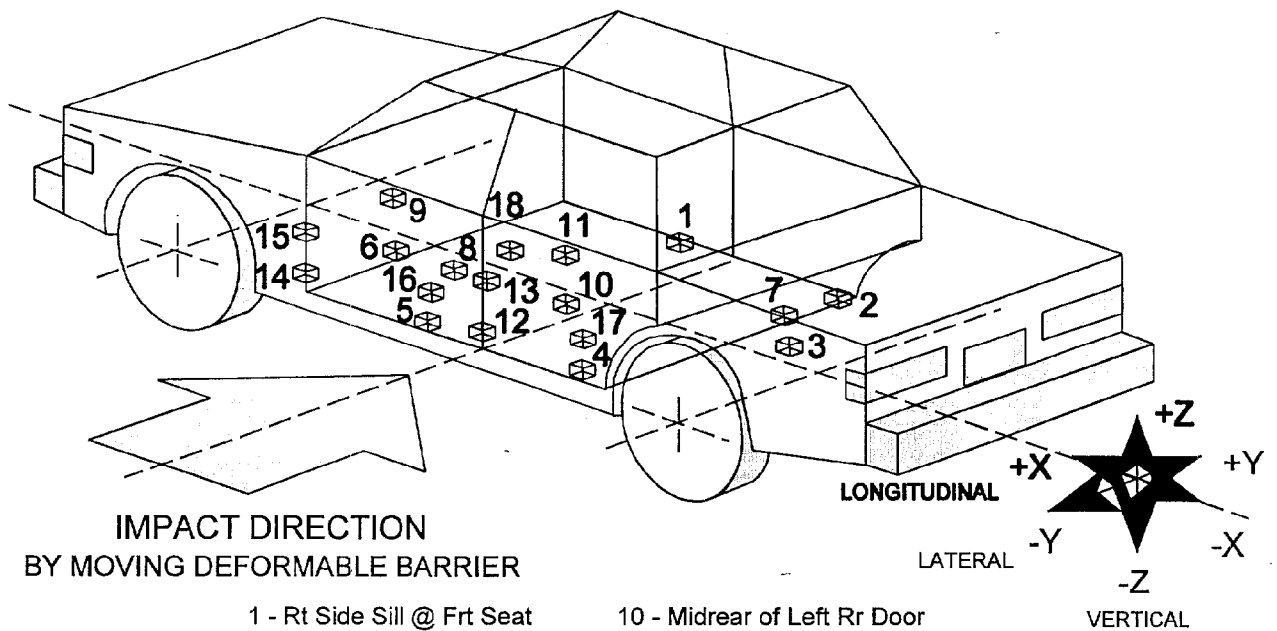
Location	Height at CL*	Distance Right of Center (mm)									Distance Left of Center (mm)							
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	77	20	11	6	2	12	18	16	16	22	24	35	53	64	86	119	169
Mid Level Level 3	686 mm	23	3	6	7	10	19	30	18	11	11	13	16	19	25	44	83	136
Top Bumper Level 2	533 mm	62	70	72	70	59	60	62	45	40	50	55	57	60	64	70	80	92
Mid Bumper Level 1	432 mm	122	112	104	101	102	110	102	92	84	84	86	89	91	93	107	139	155

* 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/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY 5800 Test Date: January 20, 2000

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

DATA SHEET NO. 13 (Cont'd)

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door

Vehicle NHTSA No.: CY 5800 Test Date: January 20, 2000

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	2426	706	210	3.8	4.7	23.9	2.0	**	**	---
2	Right Side Sill @ Rear Seat	1650	706	217	**	**	31.9	2.2	3.2	7.1	---
3	Rear Floorpan Above Axle	980	0	252	2.6	7.0	22.0	4.2	20.7	37.1	38.8
4	Left Side Sill @ Rear Seat	1663	-706	212	---	---	57.9	4.6	---	---	---
5	Left Side Sill @ Front Seat	2459	-706	206	---	---	44.5	13.0	---	---	---
7	Right Rear Occupant Compartment	1694	414	412	---	---	32.1	2.3	---	---	---
12	Left Lower B-Post	1871	-658	344	---	---	44.0	29.3	---	---	---
13	Left Mid B-Post	1933	-710	900			140.6	31.2			
14	Left Lower A-Post	2949	-743	337	---	---	39.1	24.7	---	---	---
15	Left Mid A-Post	3024	-768	876	---	---	54.0	24.2	---	---	---
16	Driver Seat Track (***)	2075	-565	340	---	---	83.3	19.7	---	---	---
18	Vehicle CG	2424	0	390	7.3	13.2	94.2	58.3	16.7	9.8	94.4

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

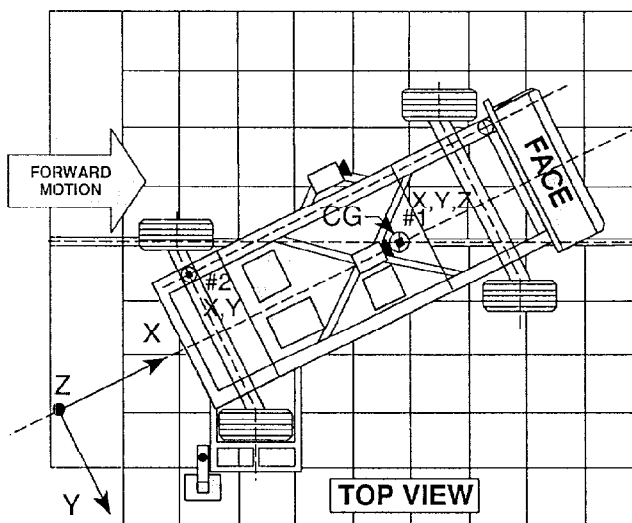
** No valid data collected

*** Data not valid after 48 msec

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

Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 Door

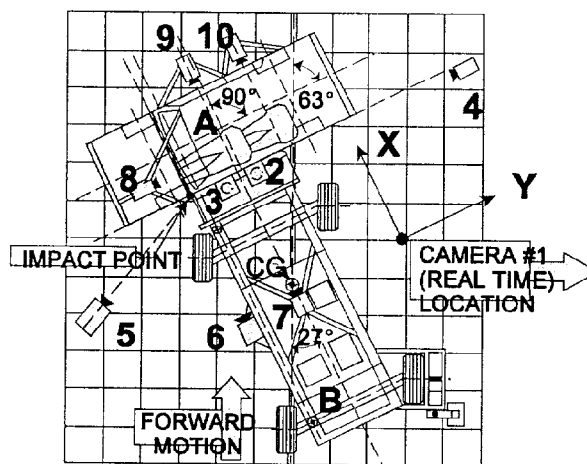
Vehicle NHTSA No.: CY 5800 Test Date: January 20, 2000



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)	---	---	---	13.0	162	19.1	33
	Lateral (Y)	---	---	---	17.1	163	19.3	134
	Vertical (Z)	---	---	---	24.4	35	23.0	42
	Resultant (R)	---	---	---	31.9	35	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	1.8	94	22.8	36
	Lateral (Y)	---	---	---	1.2	199	3.9	29

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

DATA SHEET NO. 15

HIGH SPEED CAMERA LOCATIONS AND DATAYear/Make/Model/Body Style: 2000\Volkswagen\Jetta\4-DoorVehicle NHTSA No.: CY5800 Test Date: January 20, 2000

Camera No.	View	Coordinates (mm)*			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Real Time				10	24
2	Top Overall	-210	1200	5000	8	1058
3	Top Impact	-550	36	5000	13	1053
4	Rear Impact	-320	10100	1840	25	1020
5	Left Impact	-1000	-2330	1750	13	1036
6	Cart Impact				35	1000
7	Cart Wide				13	1026
8	Hood				13	1005
9	Onboard Front Occupant				7.5	1053
10	Onboard Rear Occupant				8	1005

* Reference: (from impact point)

+X = Forward

+Y = To Right

+Z = Upward from floor level

DATA SHEET 16

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATAVehicle Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY5800 Test Date: January 20, 2000TEST REQUIREMENTS:

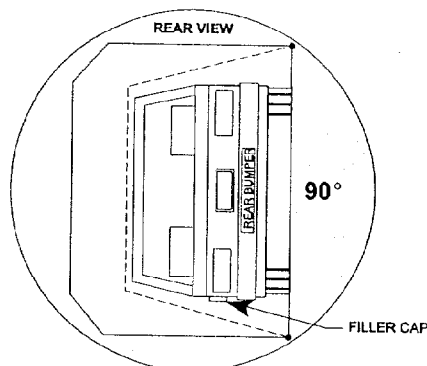
Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

TEST VEHICLE IMPACT TYPE: X Left Side Impact MDB 38.6 mph (62.1 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 DATAVehicle Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY5800 Test Date: January 20, 2000TEST PHASE: 0° - 90°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 39 seconds
 (Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 39 seconds

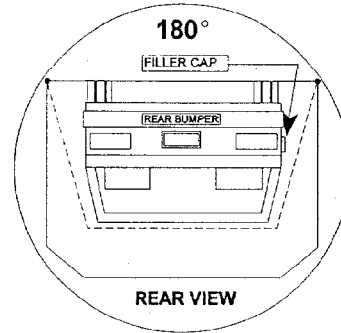
Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY5800 Test Date: January 20, 2000TEST PHASE: 90° - 180°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time = 2 minutes 21 seconds

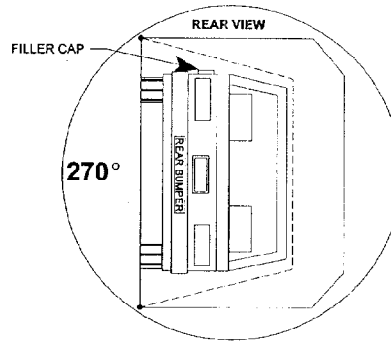
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 secondsTOTAL TIME = 7 minutes 21 secondsNext Whole Minute Interval = 8 minutesFUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)Vehicle Year/Make/Model/Body Style: 2000/Volkswagen/Jetta/4 DoorVehicle NHTSA No.: CY5800 Test Date: January 20, 2000Rotation Range: 180° - 270°TIME PERIOD OF SOLVENT COLLECTION TIME PERIOD:Time to 90° Rotation Time = 2 minutes 23 seconds

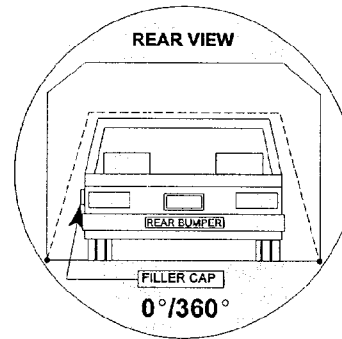
(Spec. Range = 1 to 3 minutes)

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 Volkswagen Jetta 4 DoorVehicle NHTSA No.: CY5800 Test Date: January 20, 2000TEST PHASE: 270° - 360°DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90° Rotation Time = 2 minutes 48 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 secondsTOTAL TIME = 7 minutes 48 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

TABLE OF PHOTOGRAPHS

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Photo No. A-30 - Pre-Test Rear Passenger Dummy Right Side View	A-29
Photo No. A-31 - Post-Test Rear Passenger Dummy Right Side View	A-30
Photo No. A-32 - Pre-Test Rear Passenger Dummy Left Side View	A-31
Photo No. A-33 - Post-Test Rear Passenger Dummy Left Side View	A-32
Photo No. A-34 - Pre-Test Rear Passenger Dummy Shoulder View	A-34
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Photo No. A-36 - Post-Test Rear Passenger Dummy Contact	A-36
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Photo No. A-43 - Rollover 90°	A-43
Photo No. A-44 - Rollover 180°	A-44
Photo No. A-45 - Rollover 270°	A-45
Photo No. A-46 - Rollover 360°	A-46
Photo No. A-47 - Left Front Attitude Point	A-47
Photo No. A-48 - Right Front Attitude Point	A-48
Photo No. A-49 - Left Rear Attitude Point	A-49
Photo No. A-50 - Right Rear Attitude Point	A-50

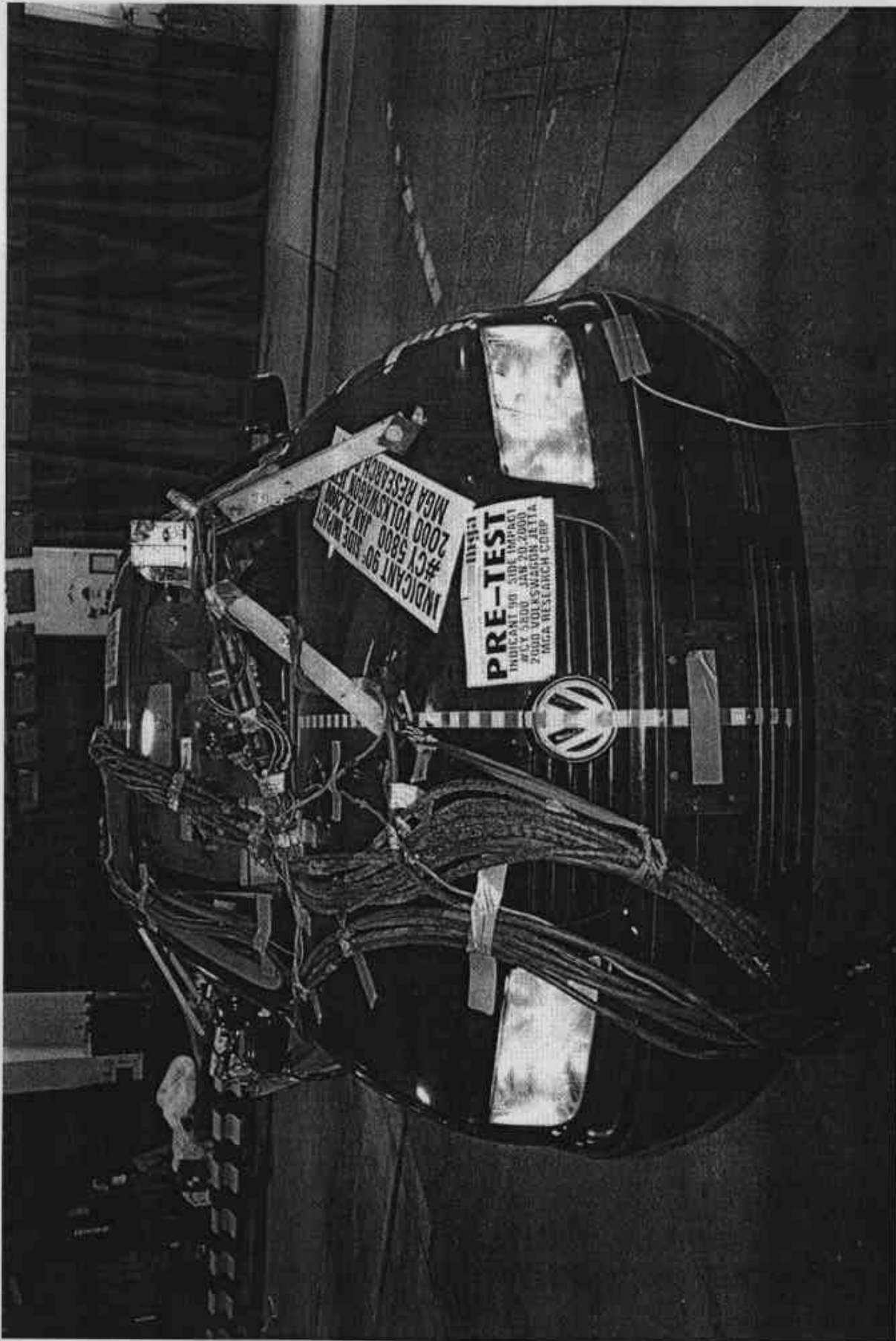


Photo No. A-1 - Pre-Test Front View of Test Vehicle



A-2

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

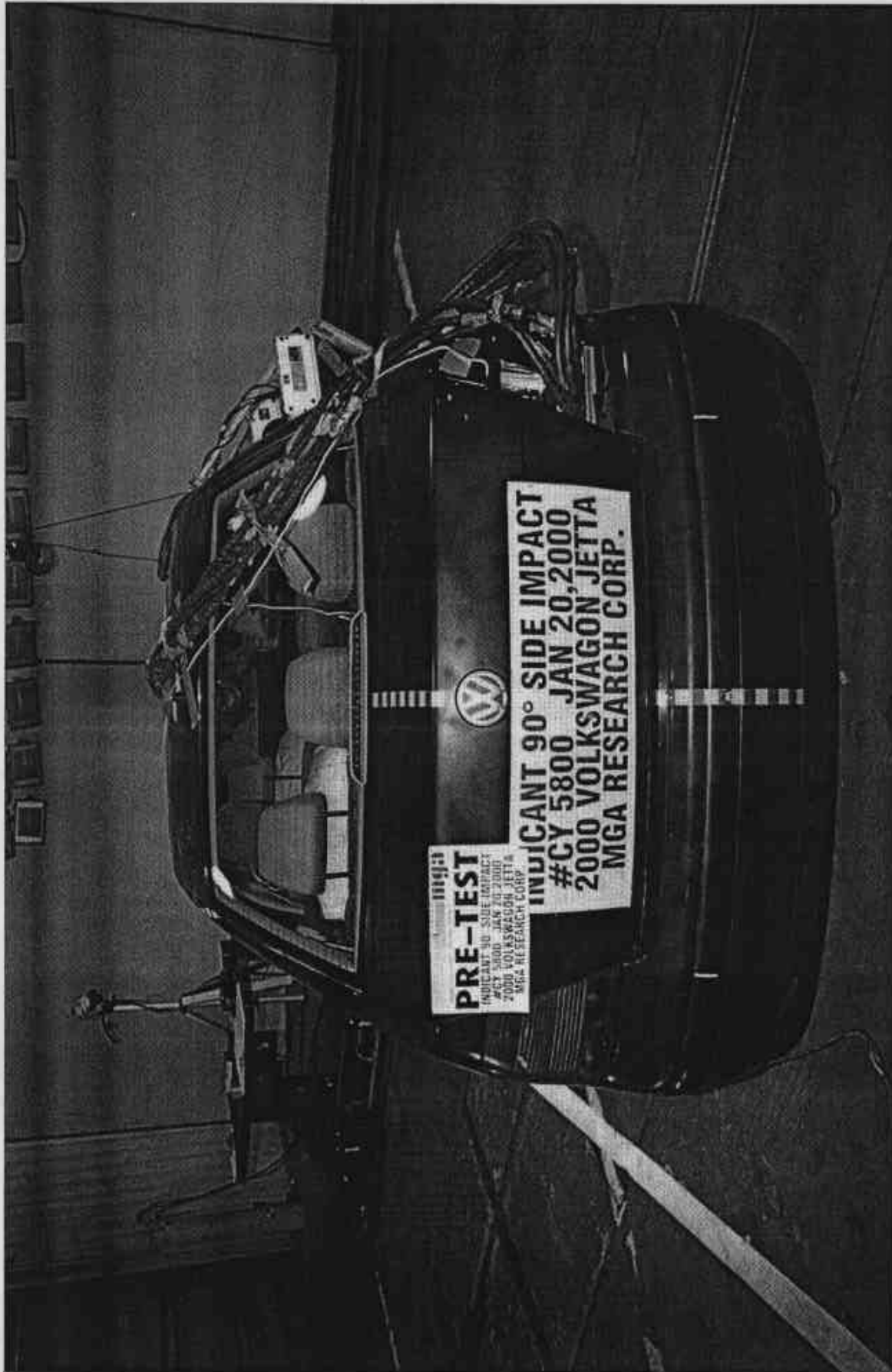


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

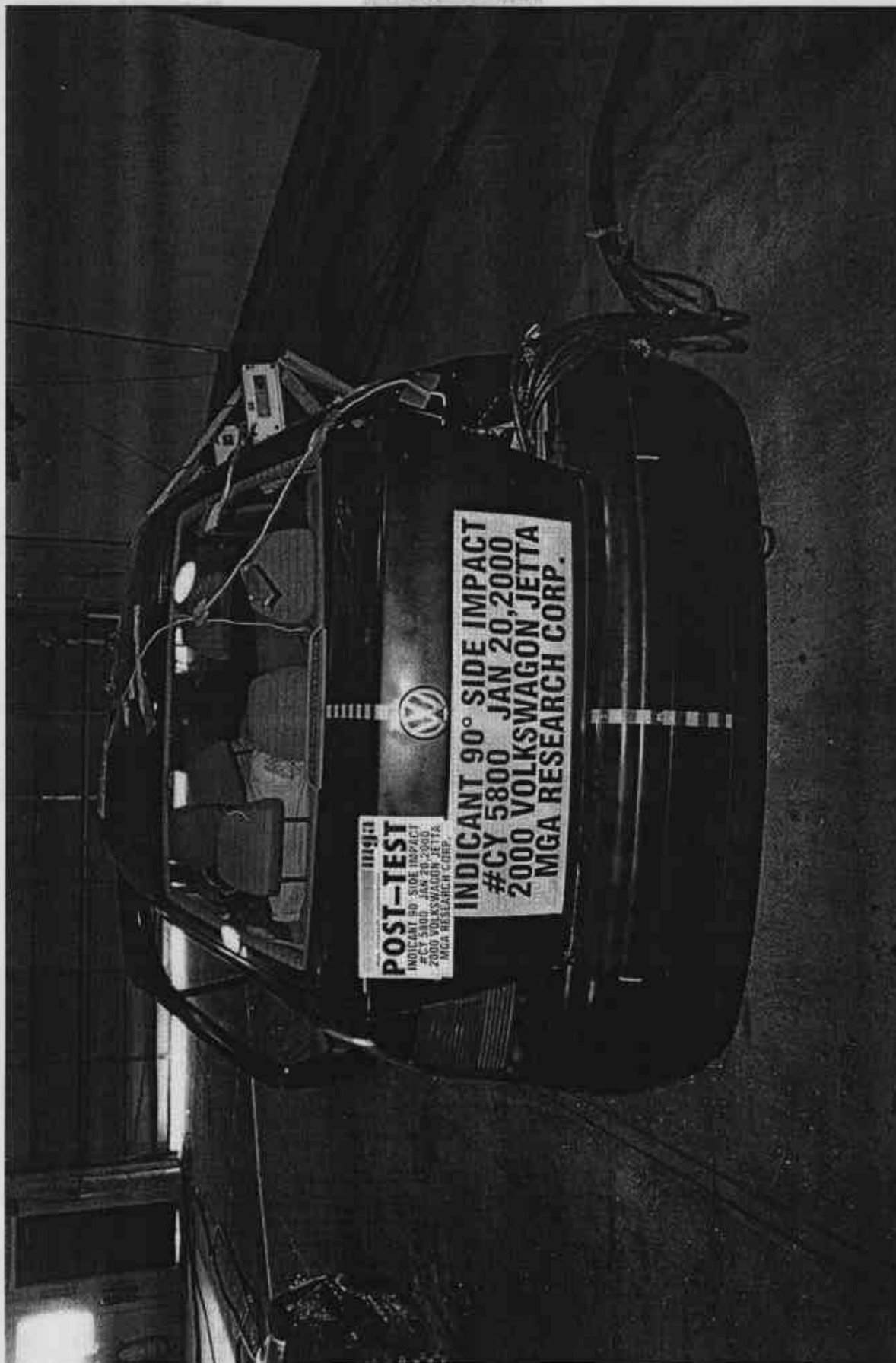


Photo No. A-4 - Post-Test Rear View of Test Vehicle

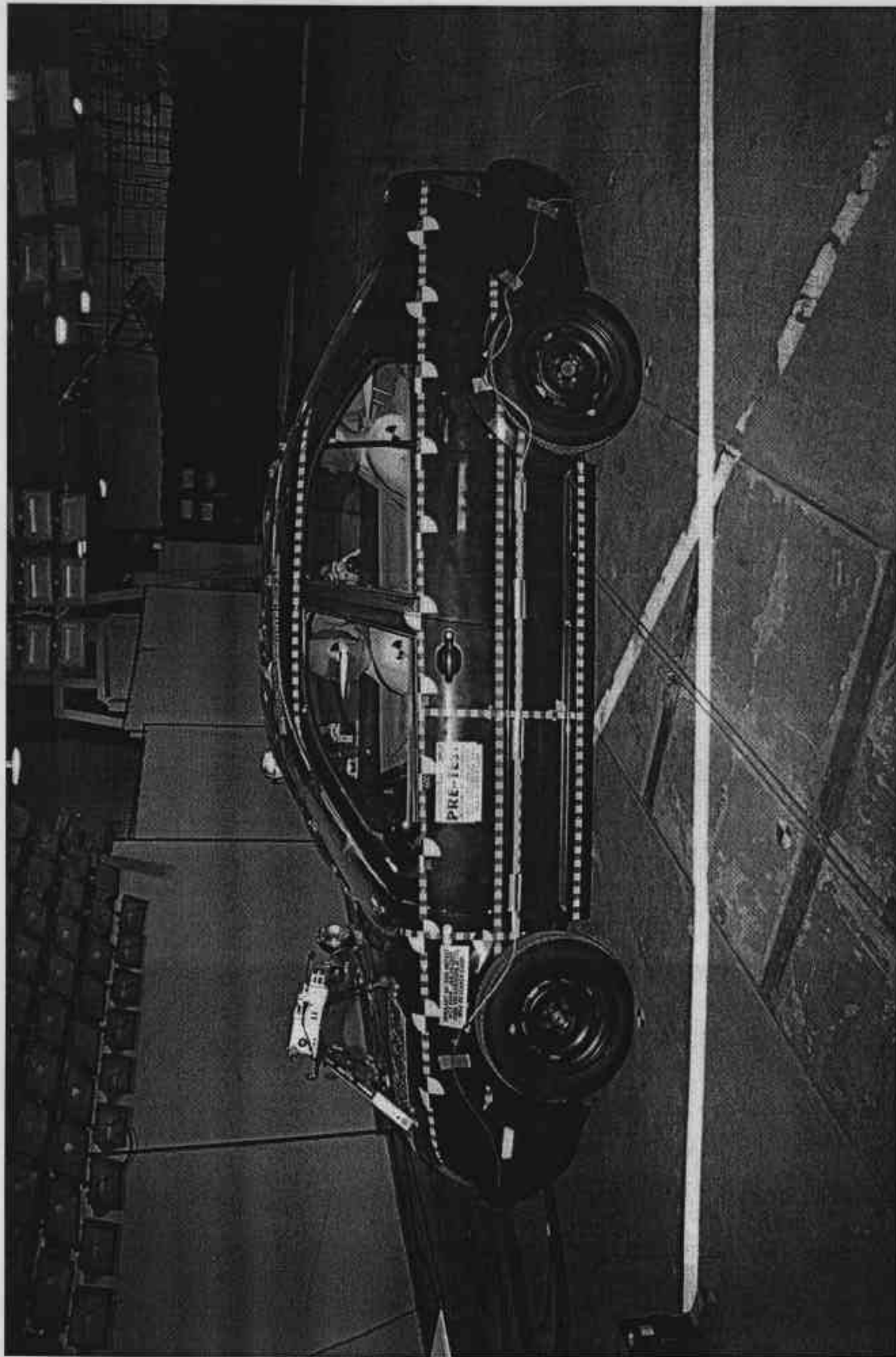


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

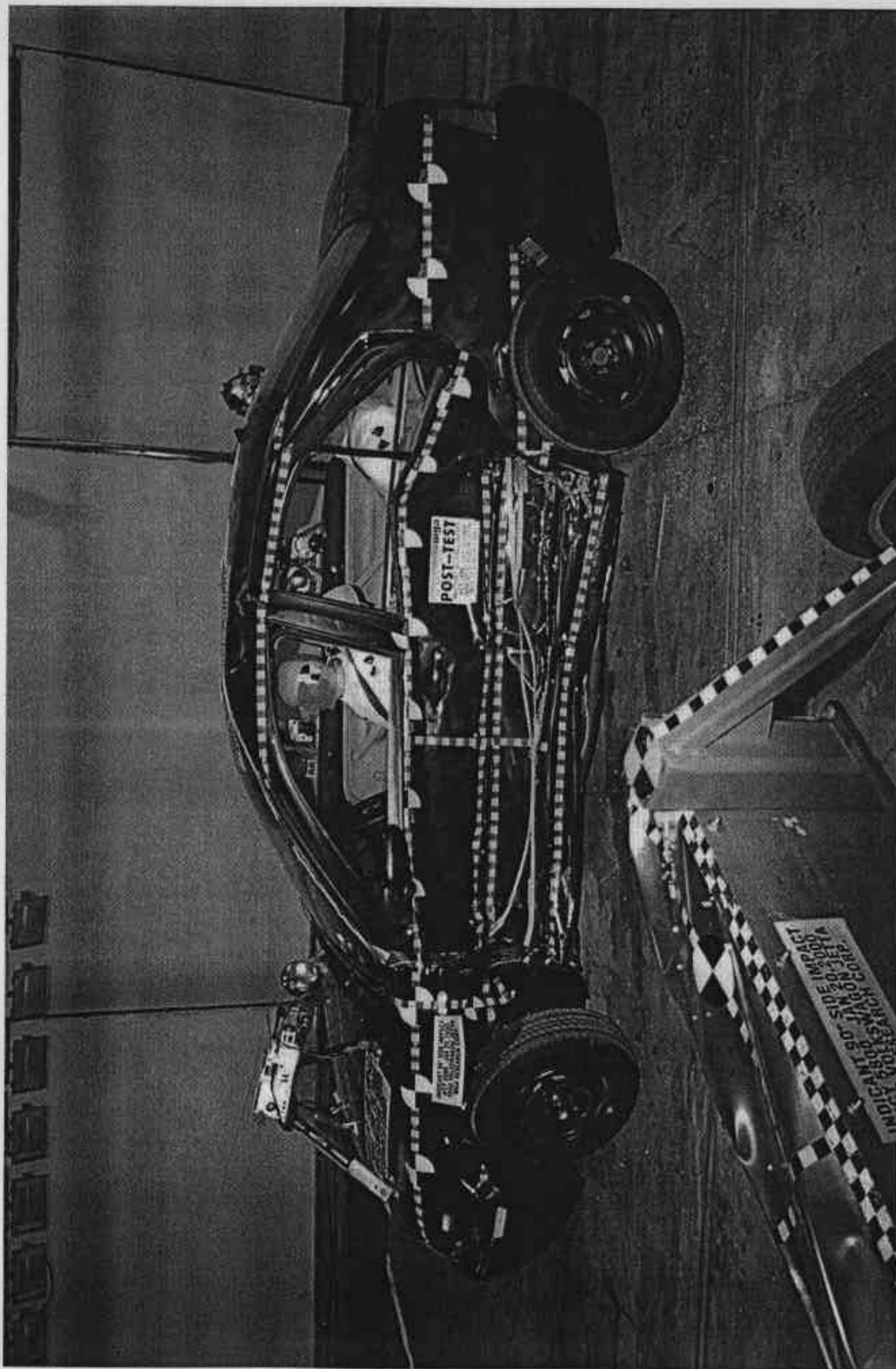


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

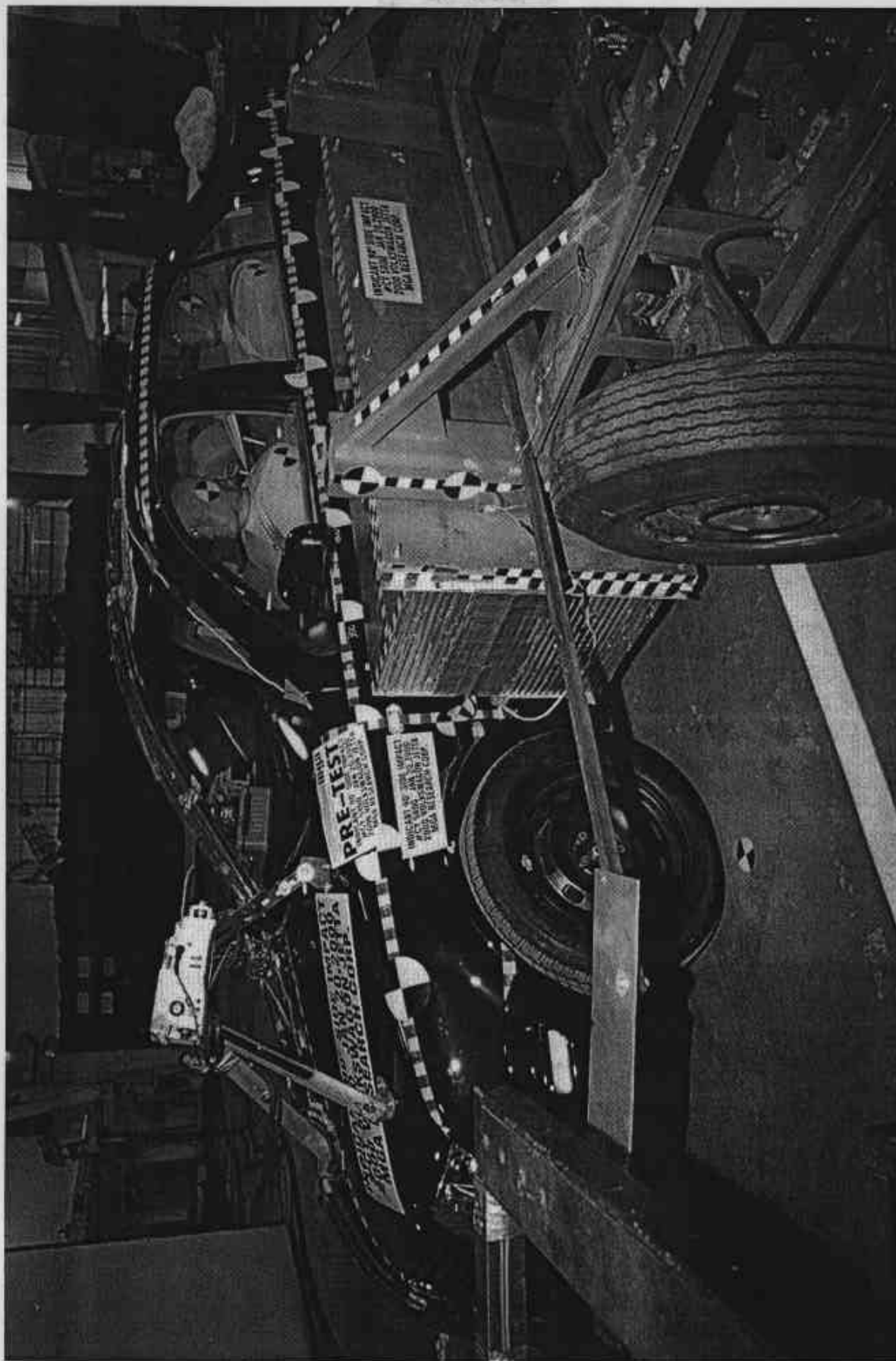


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

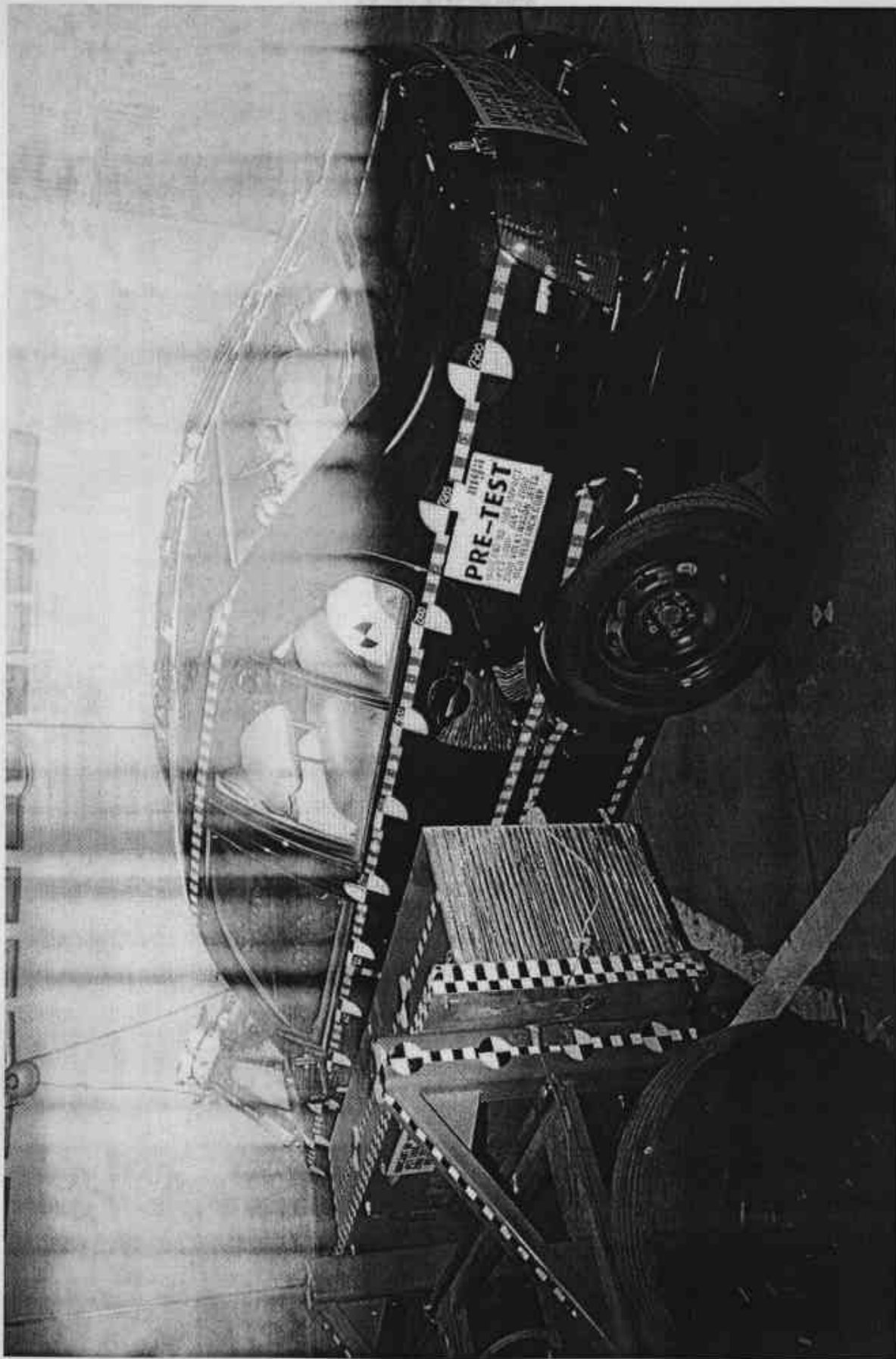


Photo No. A-8.- Pre-Test MDB Positioned Against Vehicle (right side)

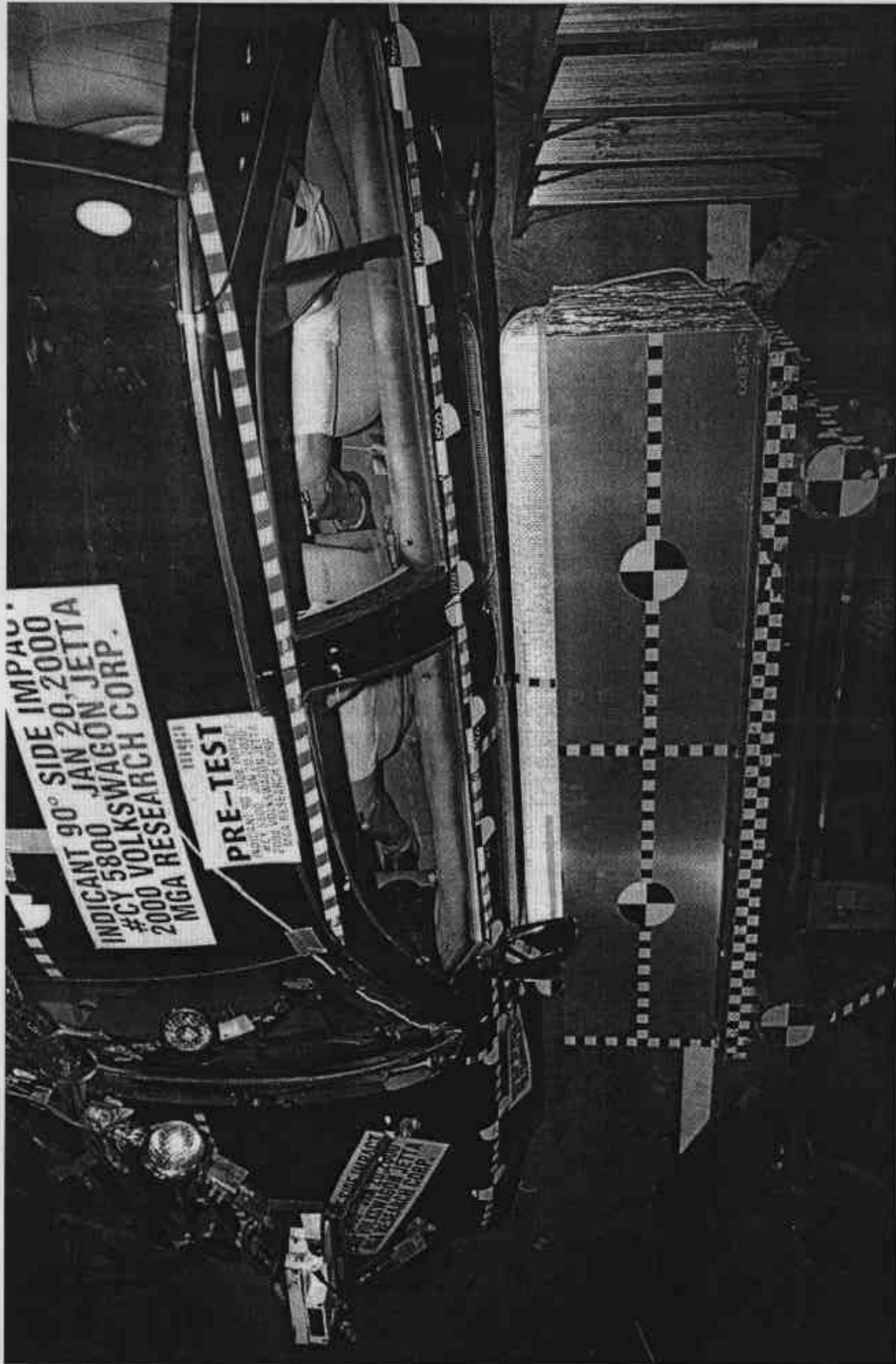


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

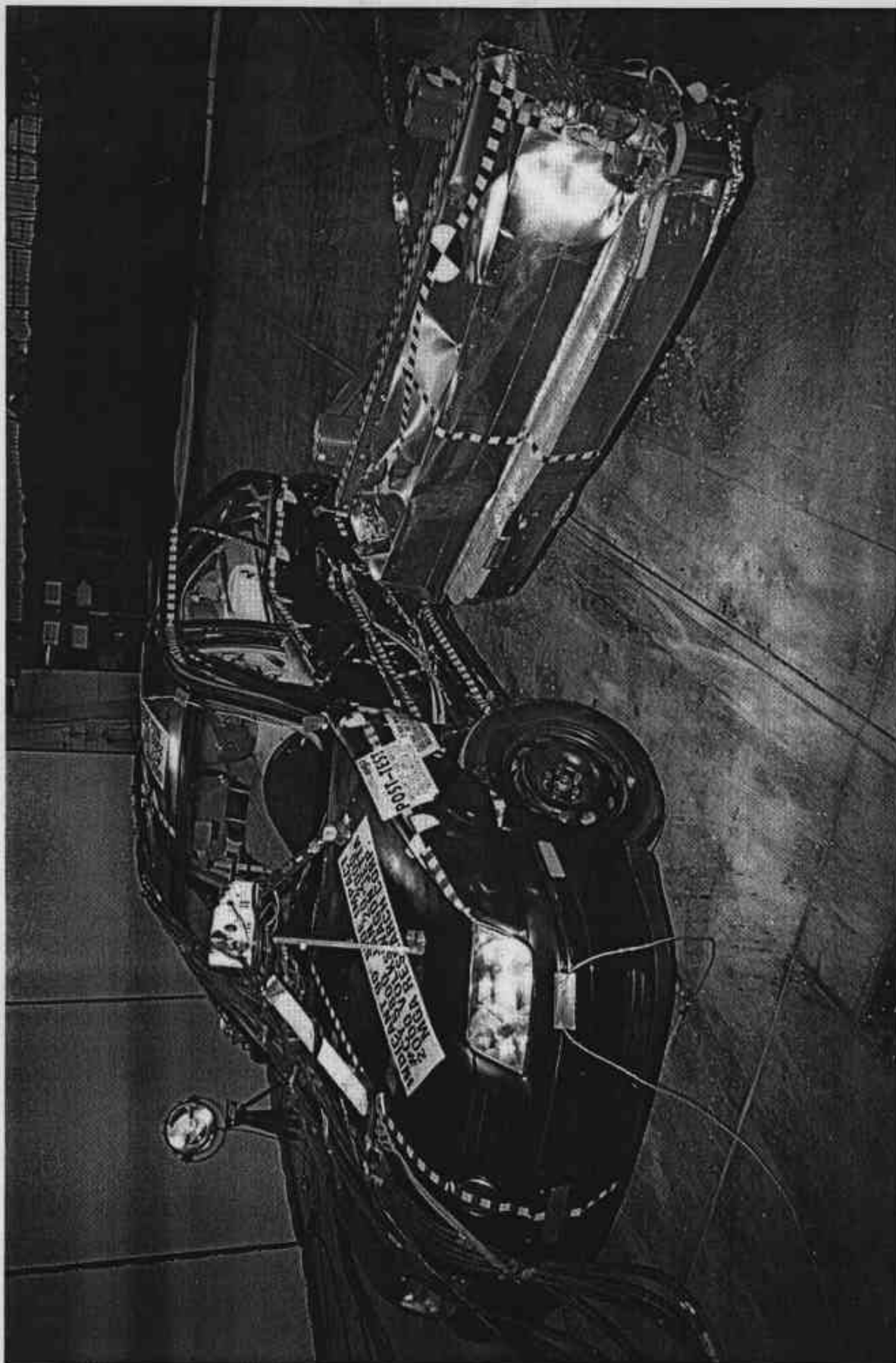


Photo No. A-10 - Post-Test MDB and Vehicle (left side)

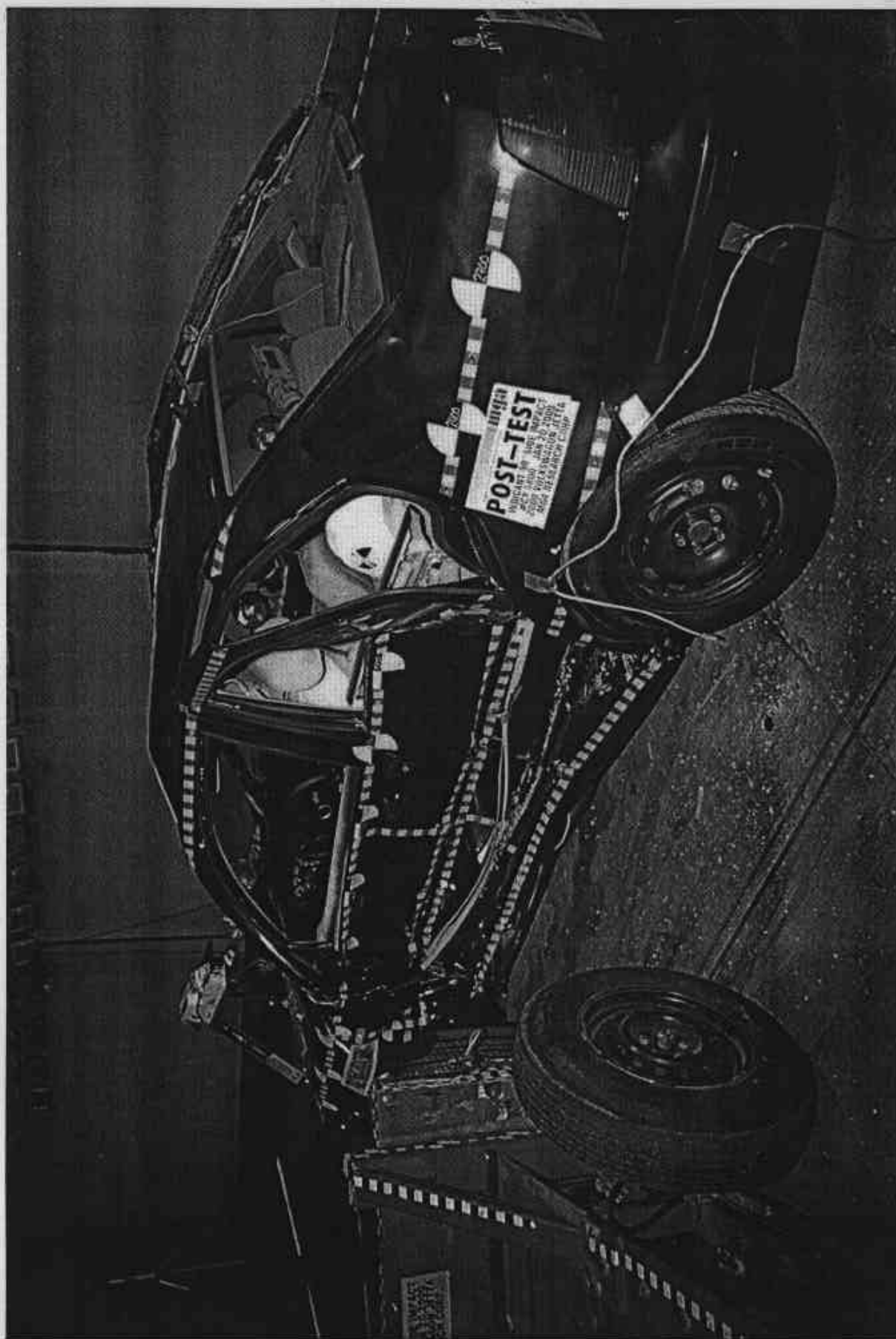
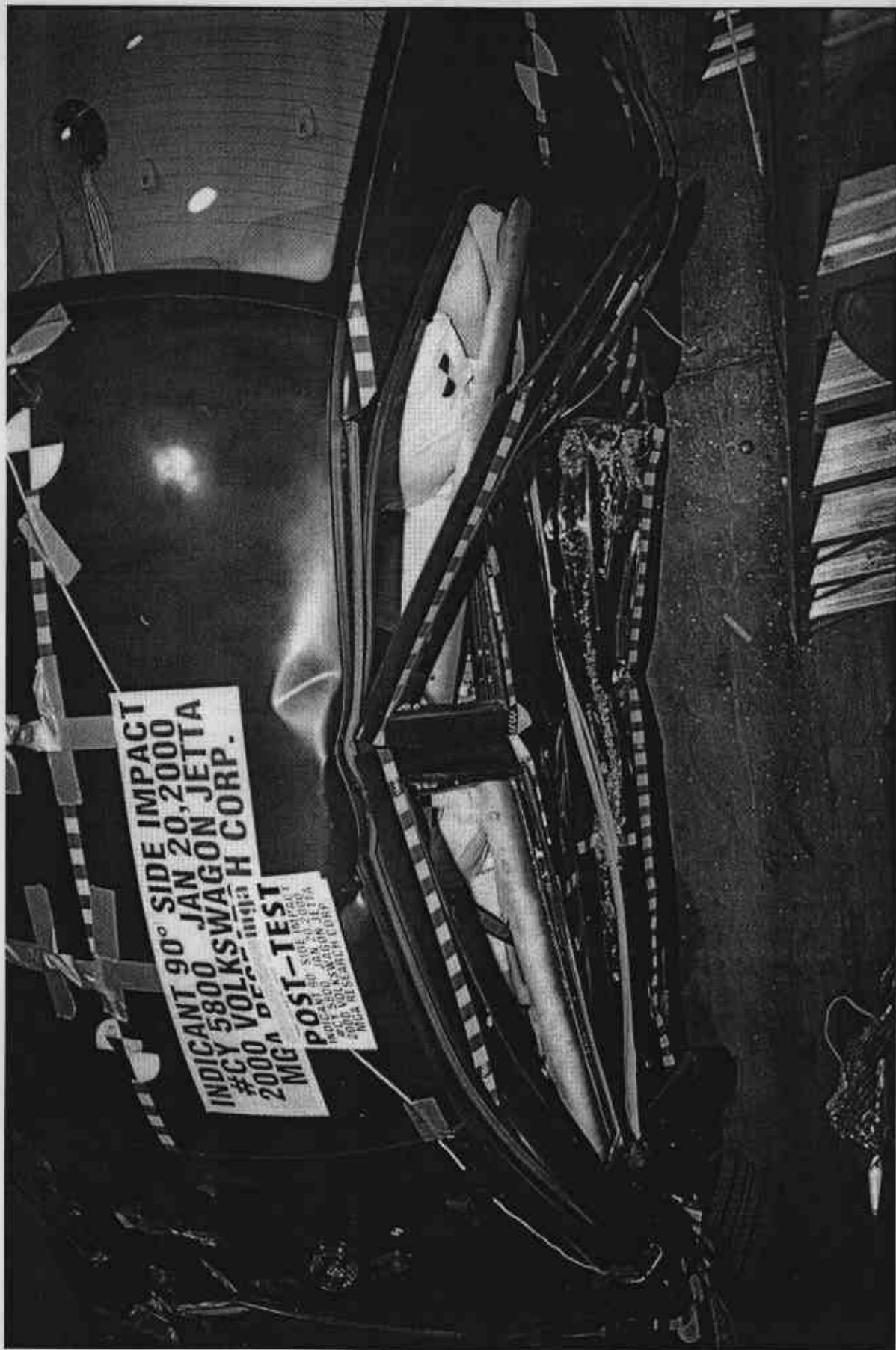


Photo No. A-11 - Post-Test MDB and Vehicle (right side)



A-12

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

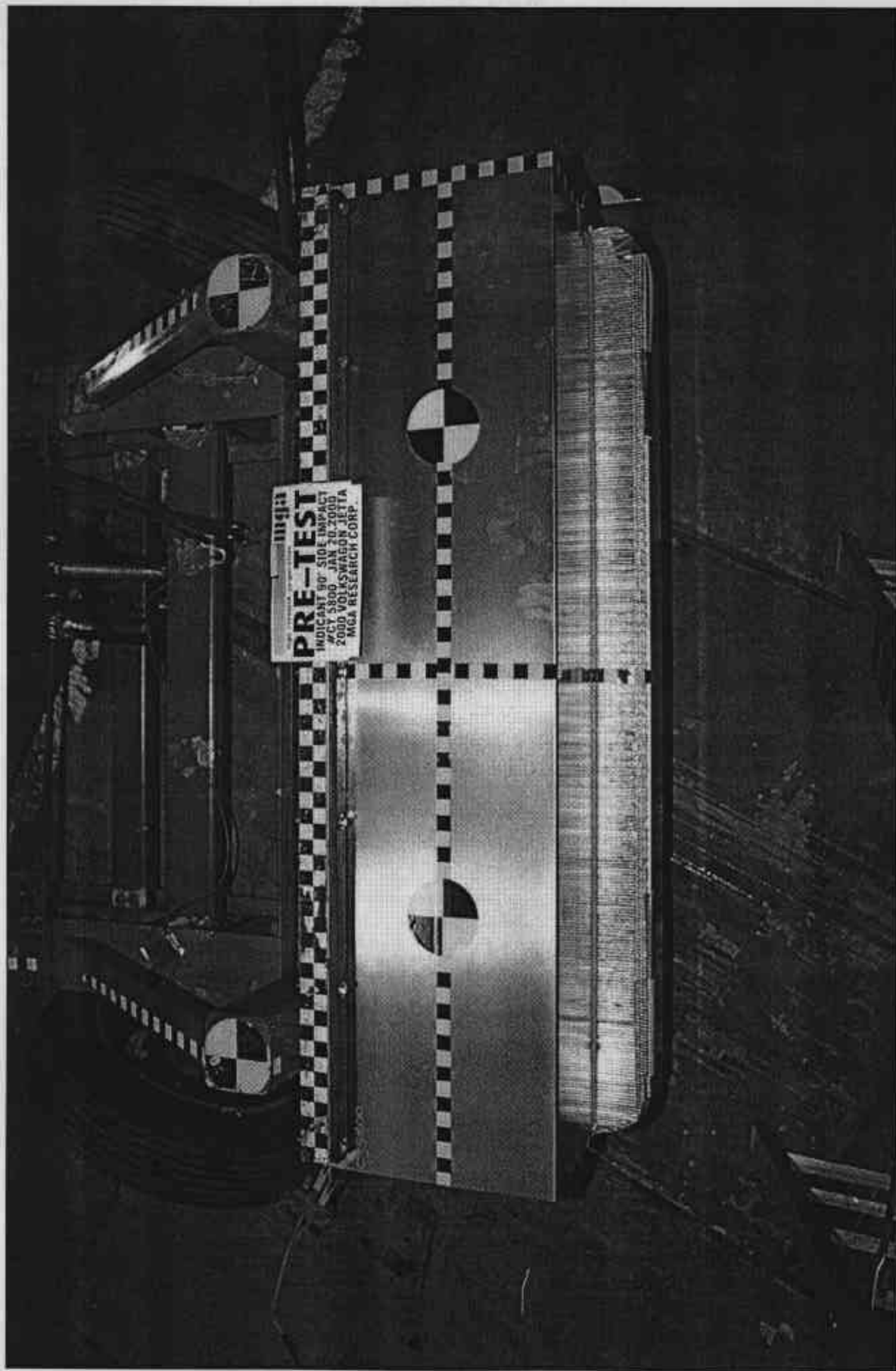
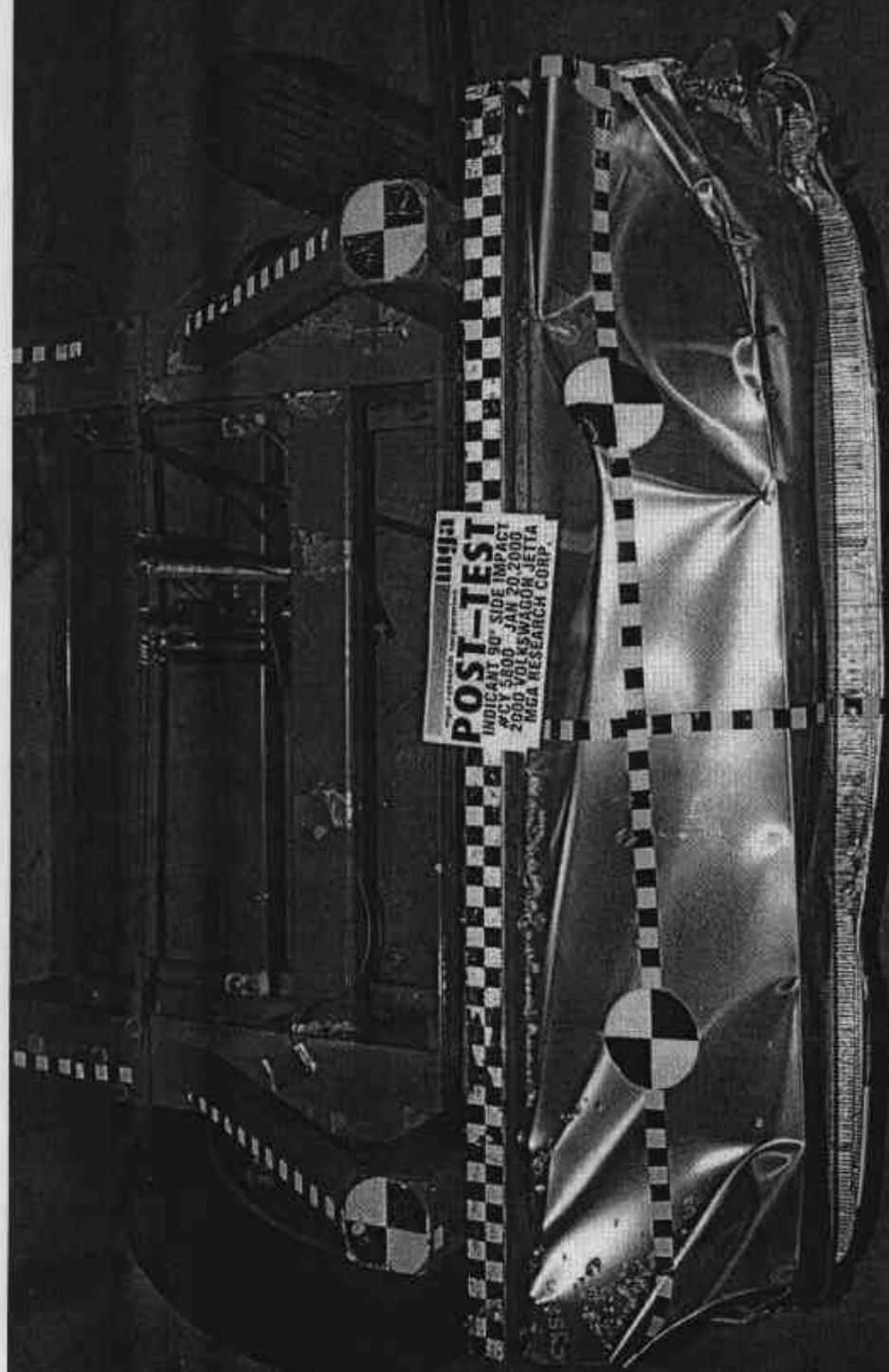


Photo No. A-13 - Pre-Test MDB Top View



A-14

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

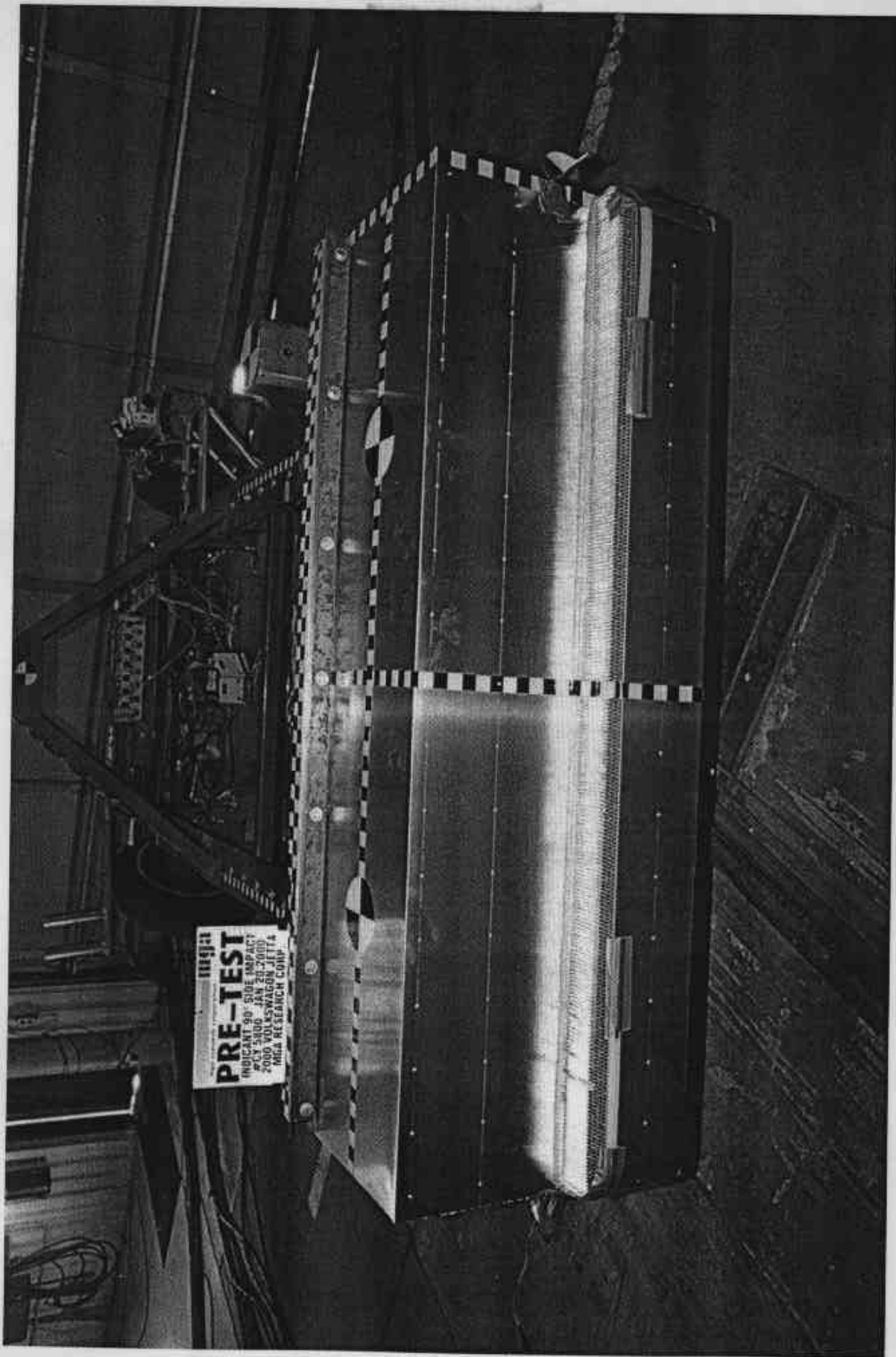


Photo No. A-15 - Pre-Test MDB Front View

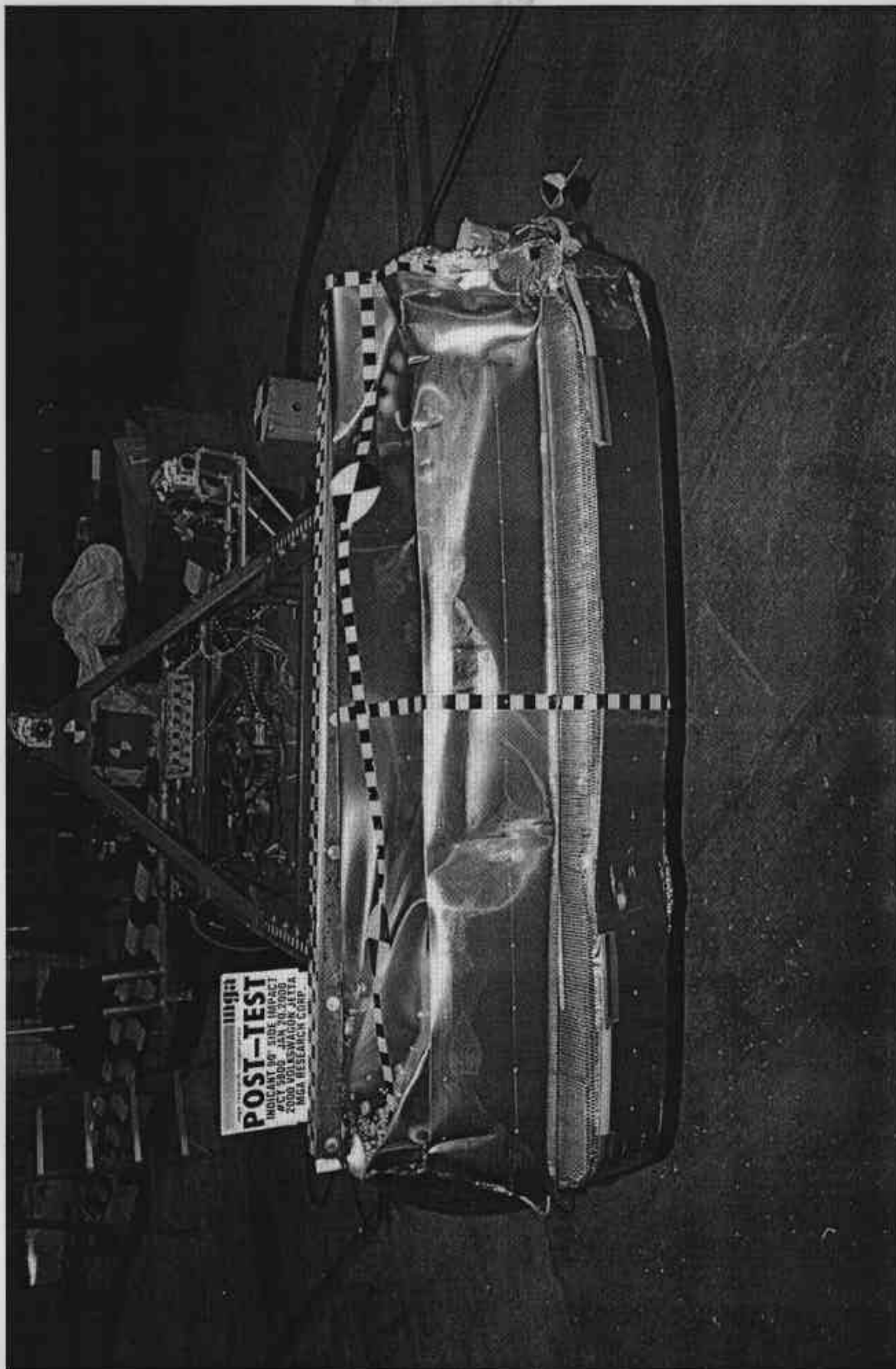
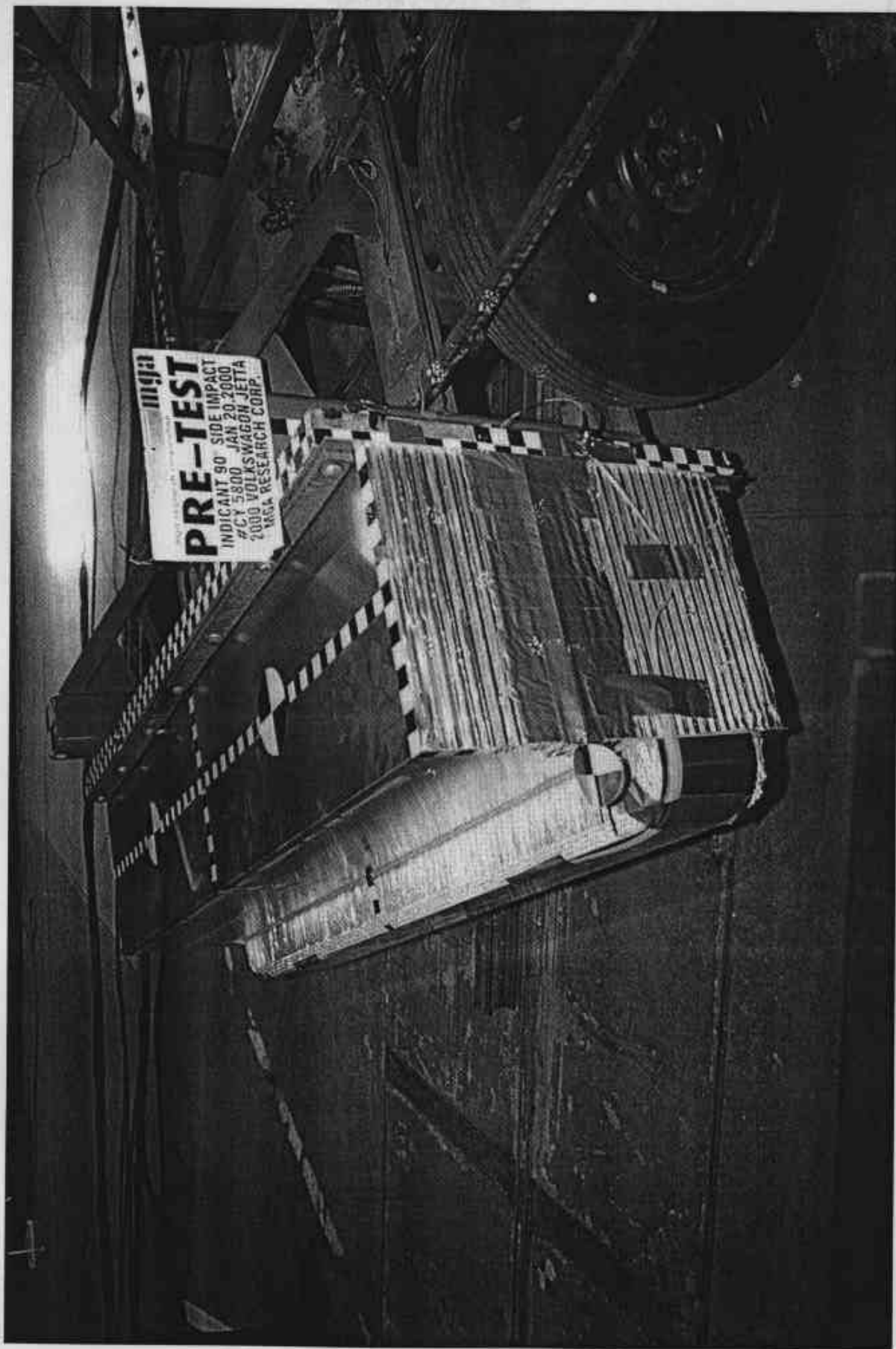
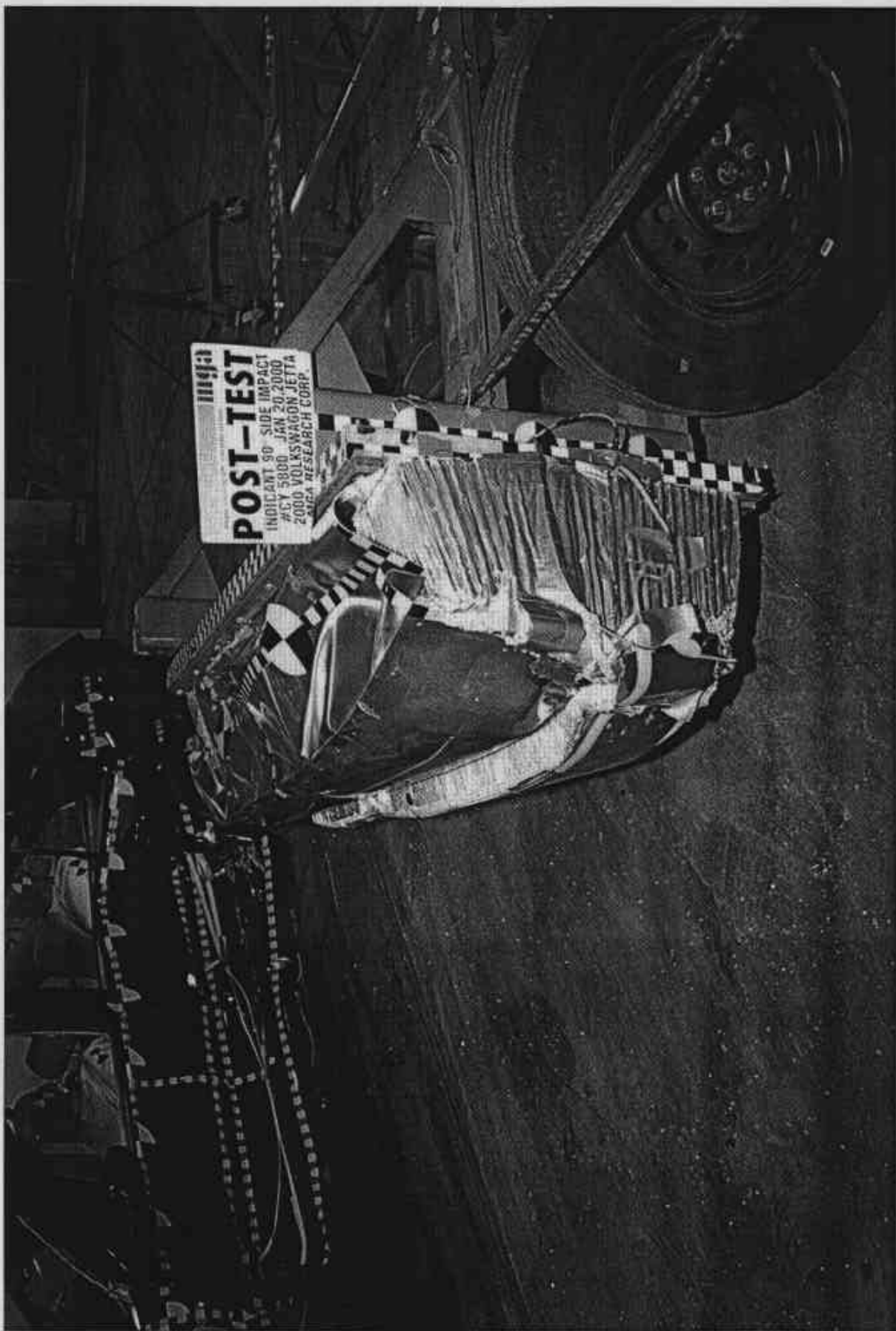


Photo No. A-16 - Post-Test MDB Front View



A-17

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



A-18

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



A-19

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



A-20

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



A-21

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



A-22

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

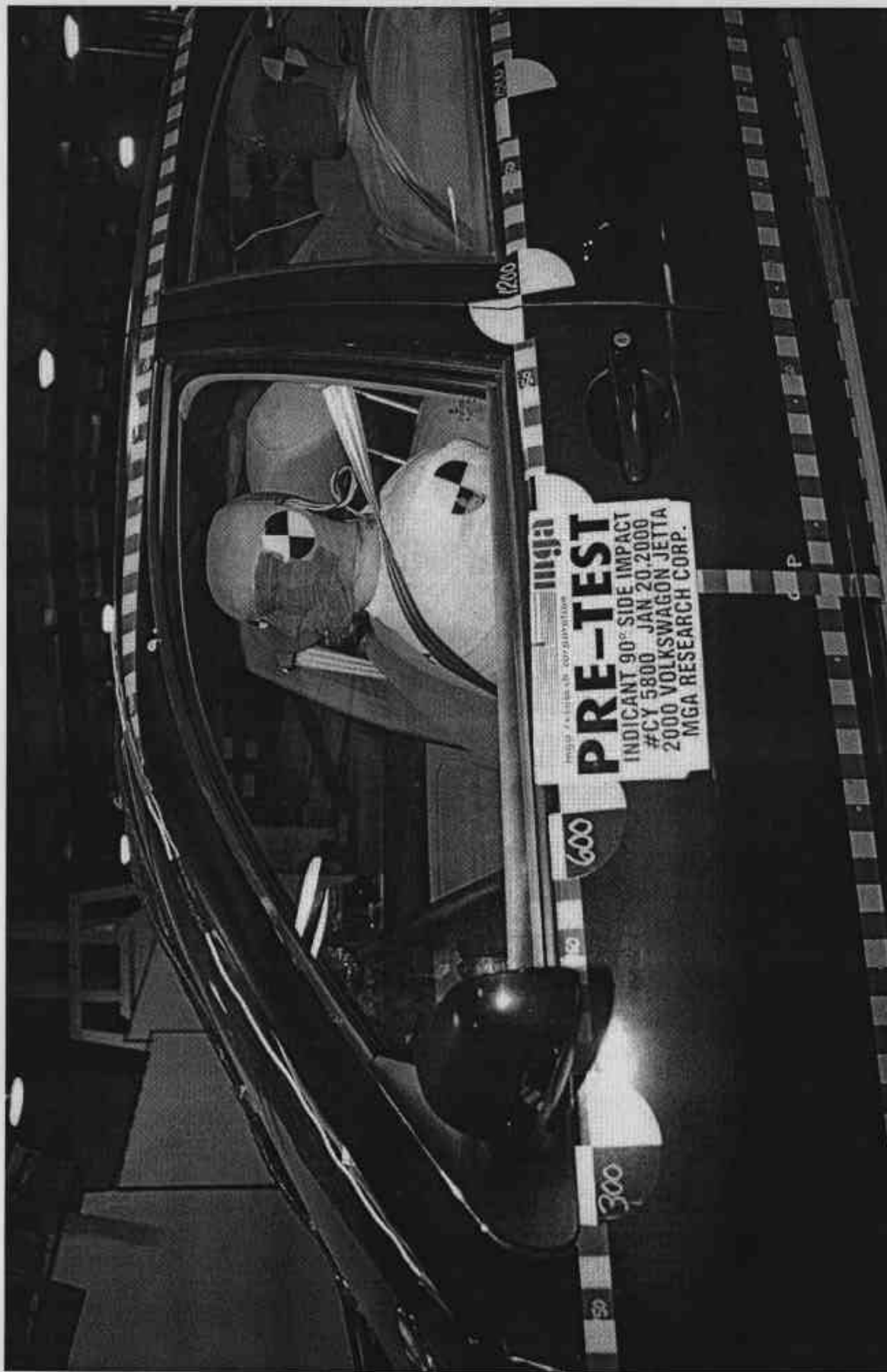
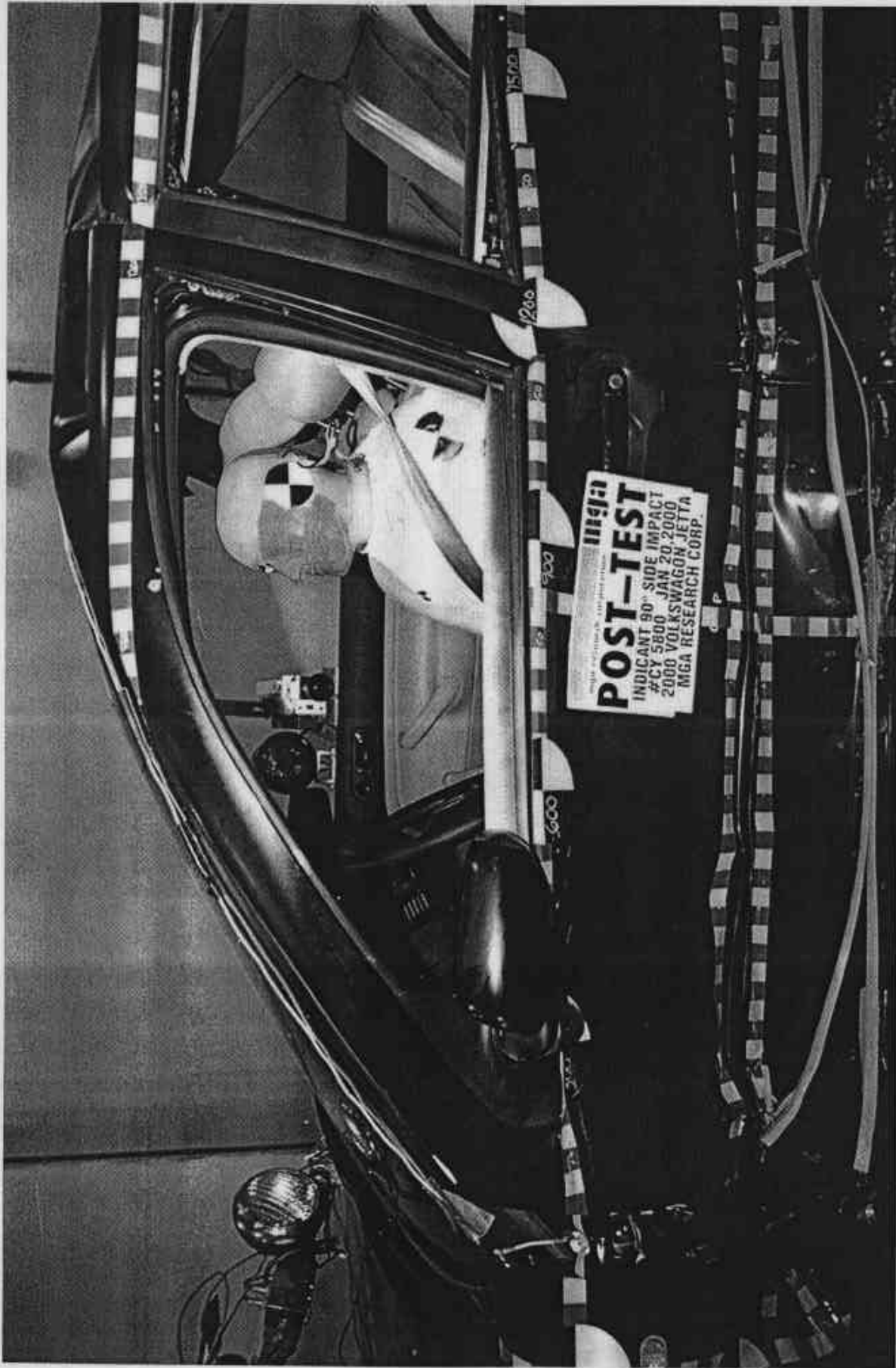


Photo No. A-23 - Pre-Test Driver Dummy Left Side View



A-24

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

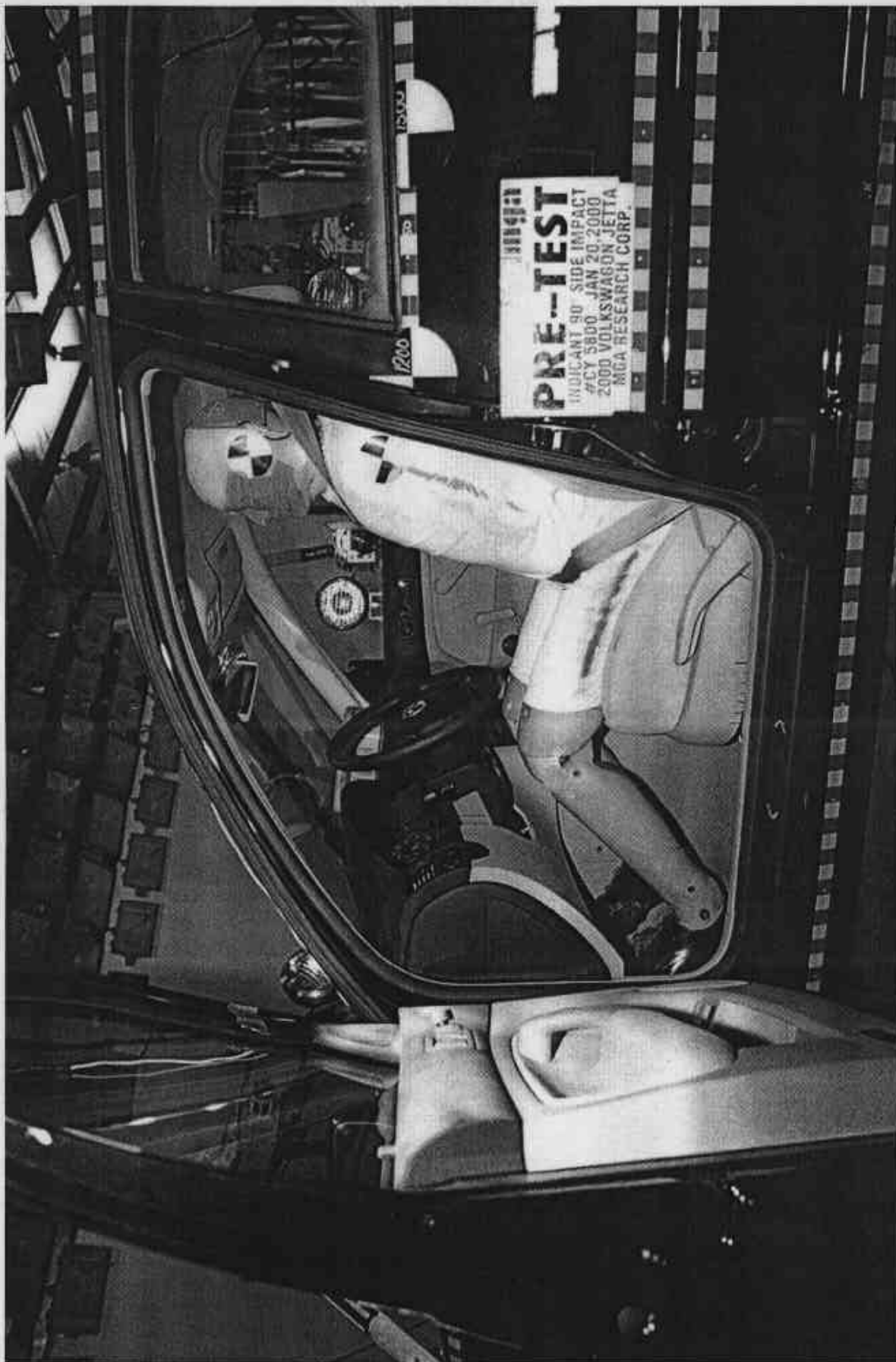
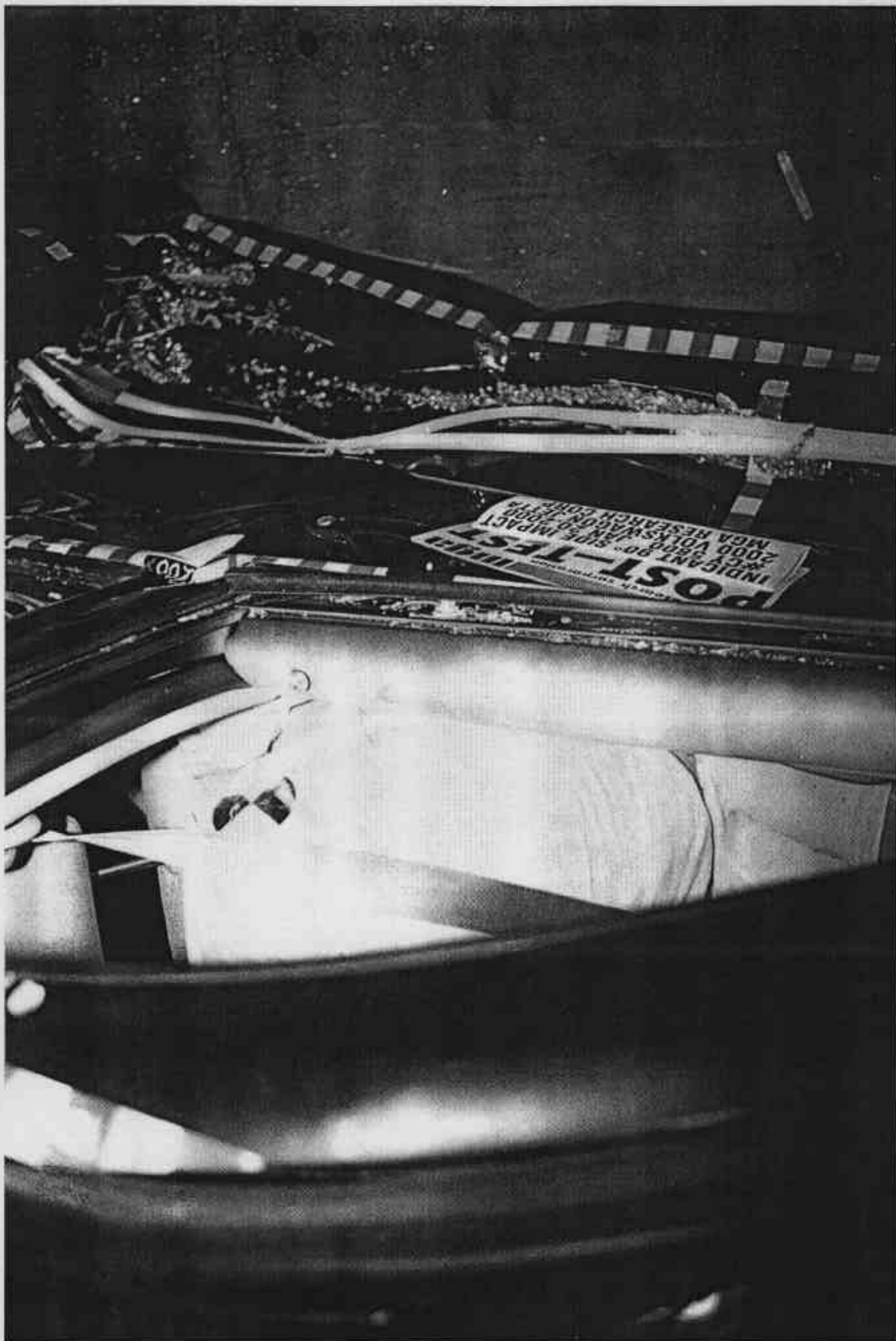


Photo No. A-25 - Pre-Test Driver Dummy Left Side View (Door Open)



A-26

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



A-27

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



A-29

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



A-30

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



A-31

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



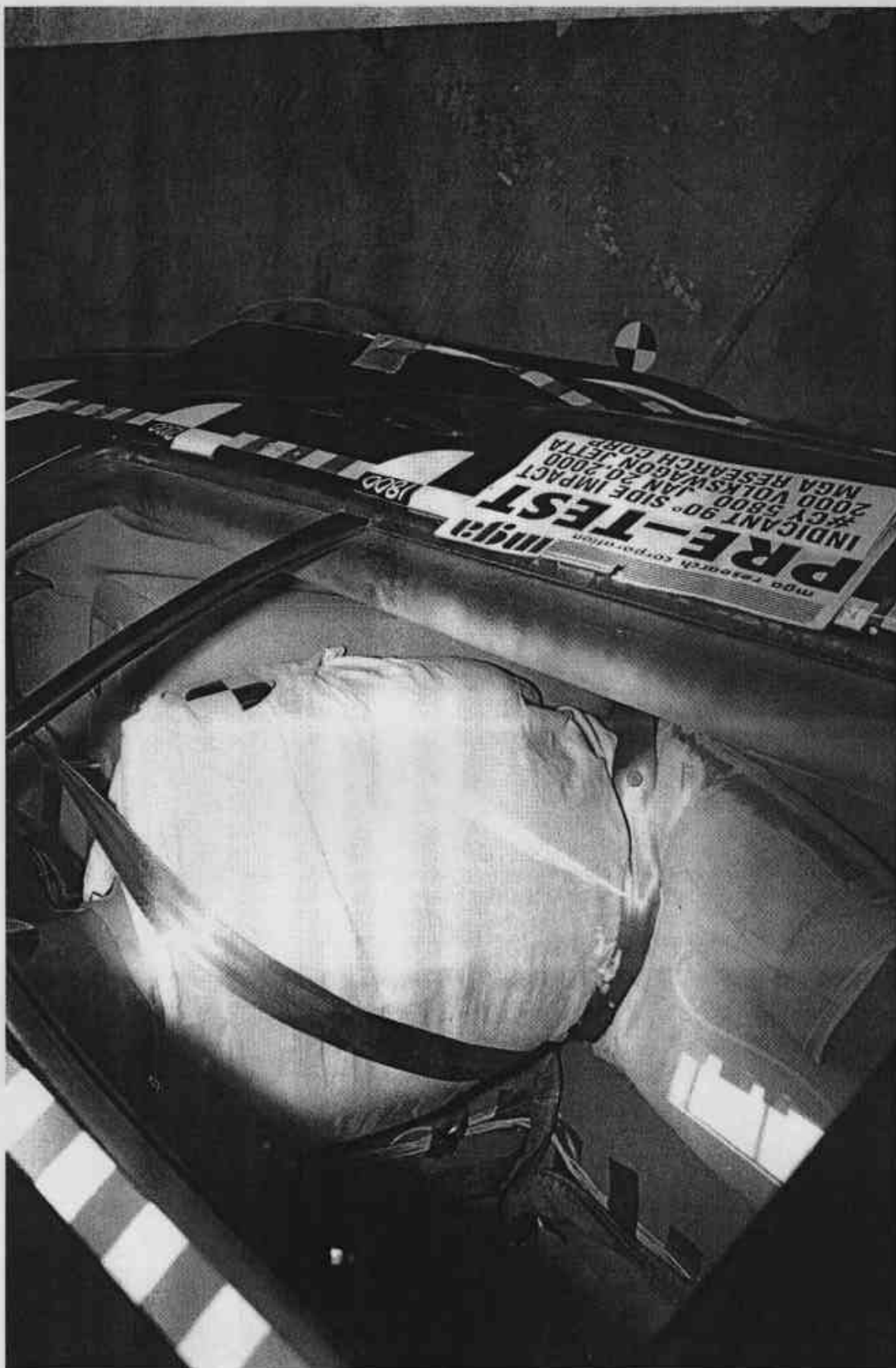
A-32

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



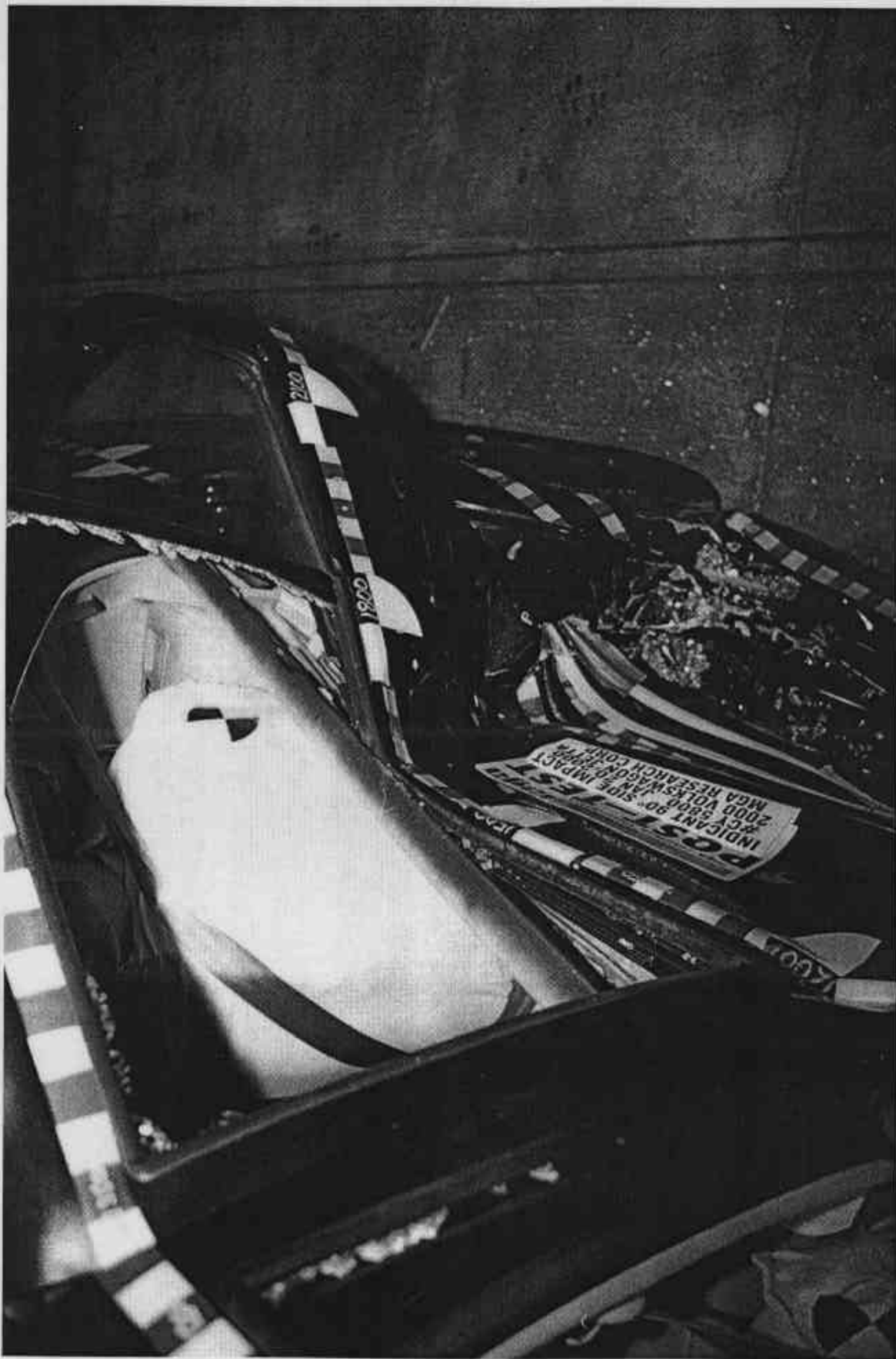
A-33

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



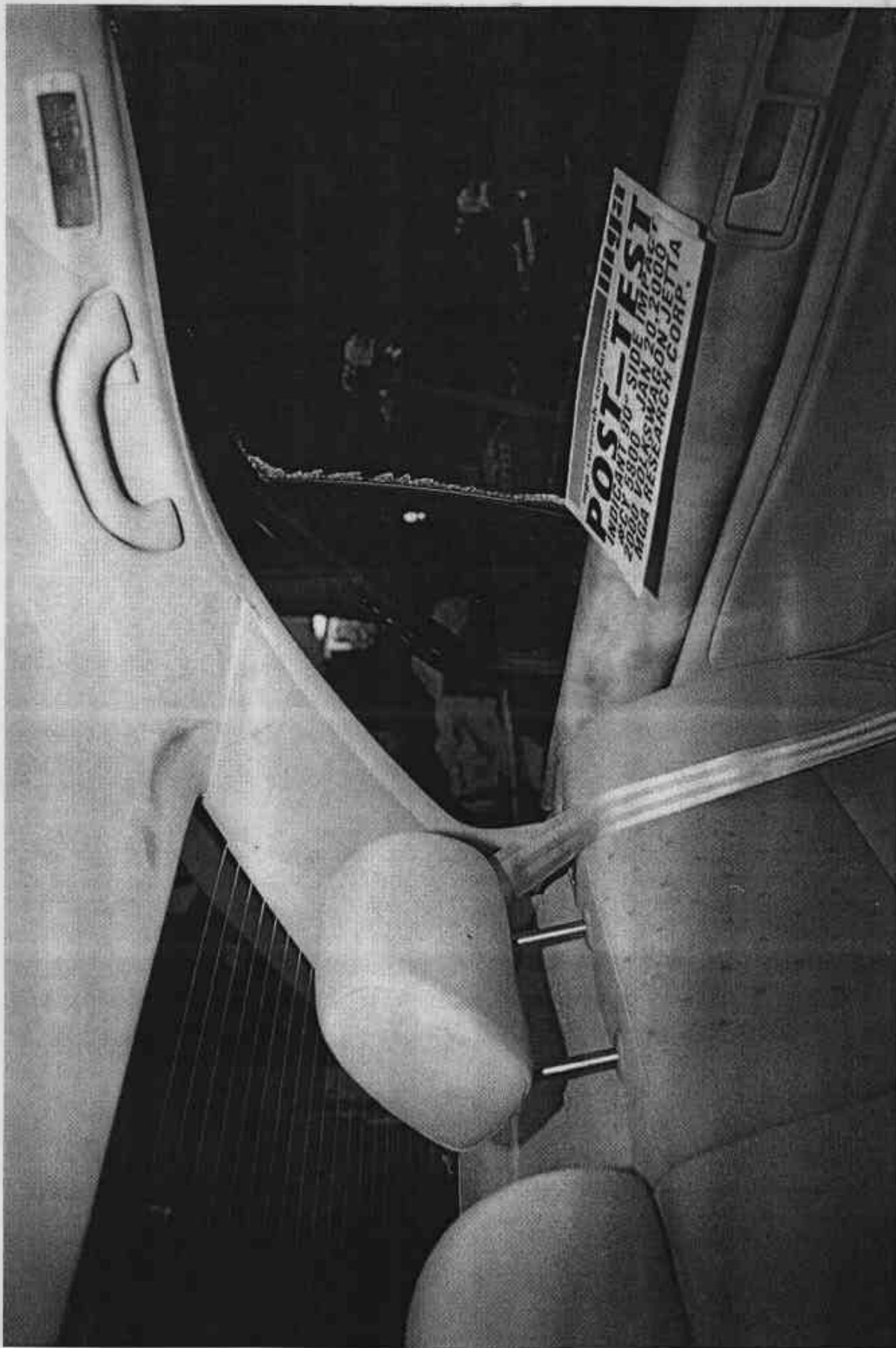
A-34

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



A-35

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



A-37

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

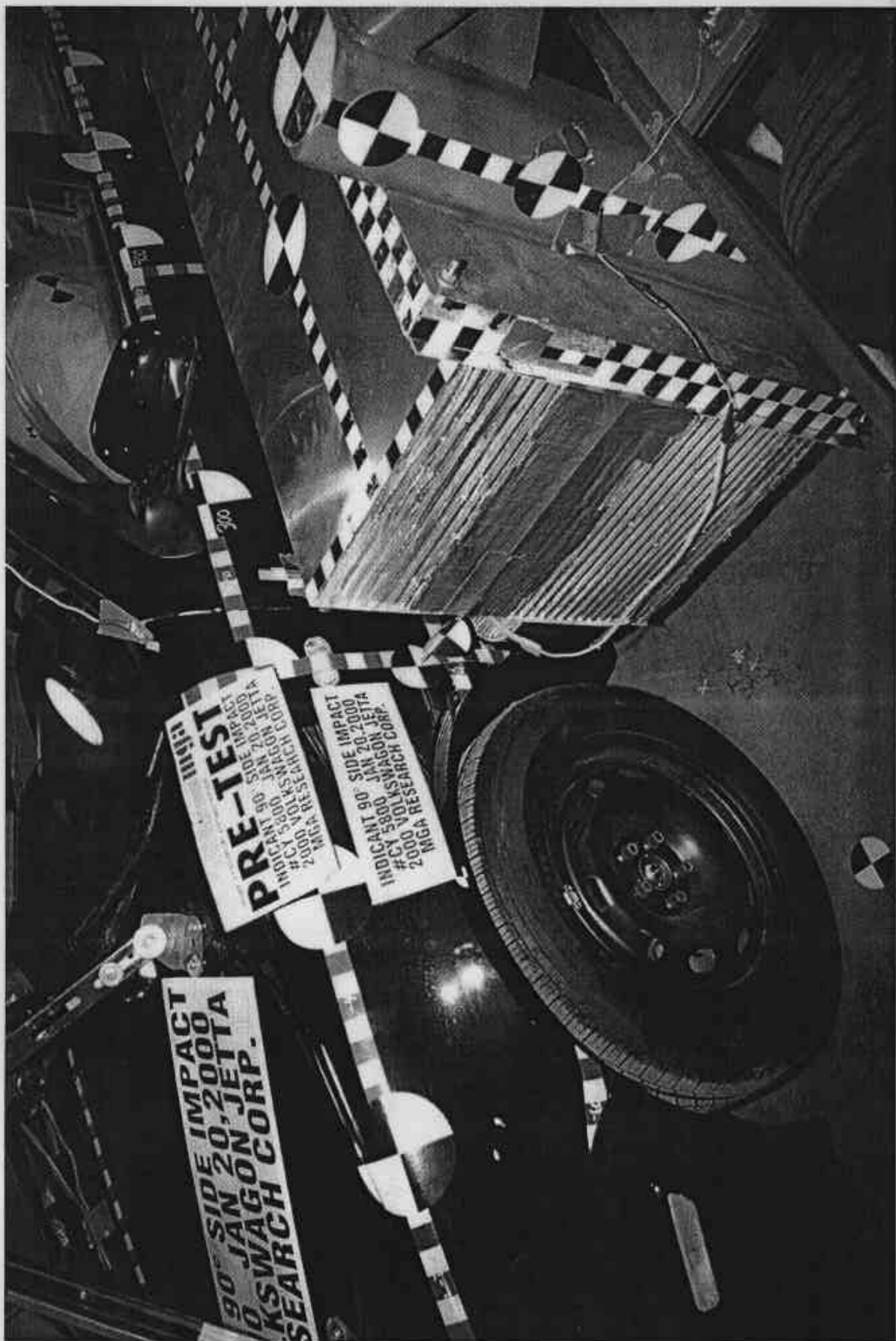


Photo No. A-38 - Pre-Test Left Front Impact Point on Vehicle

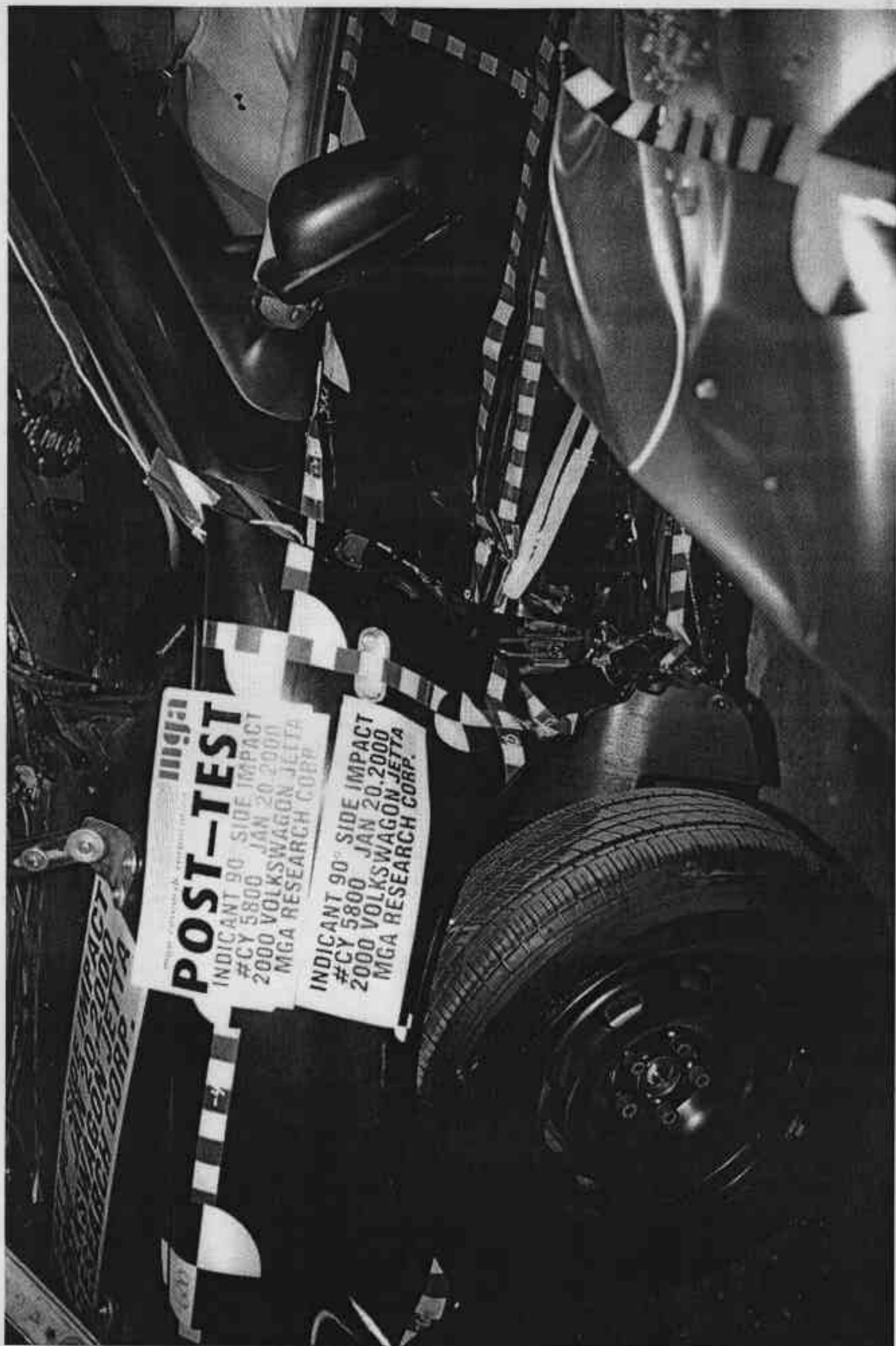
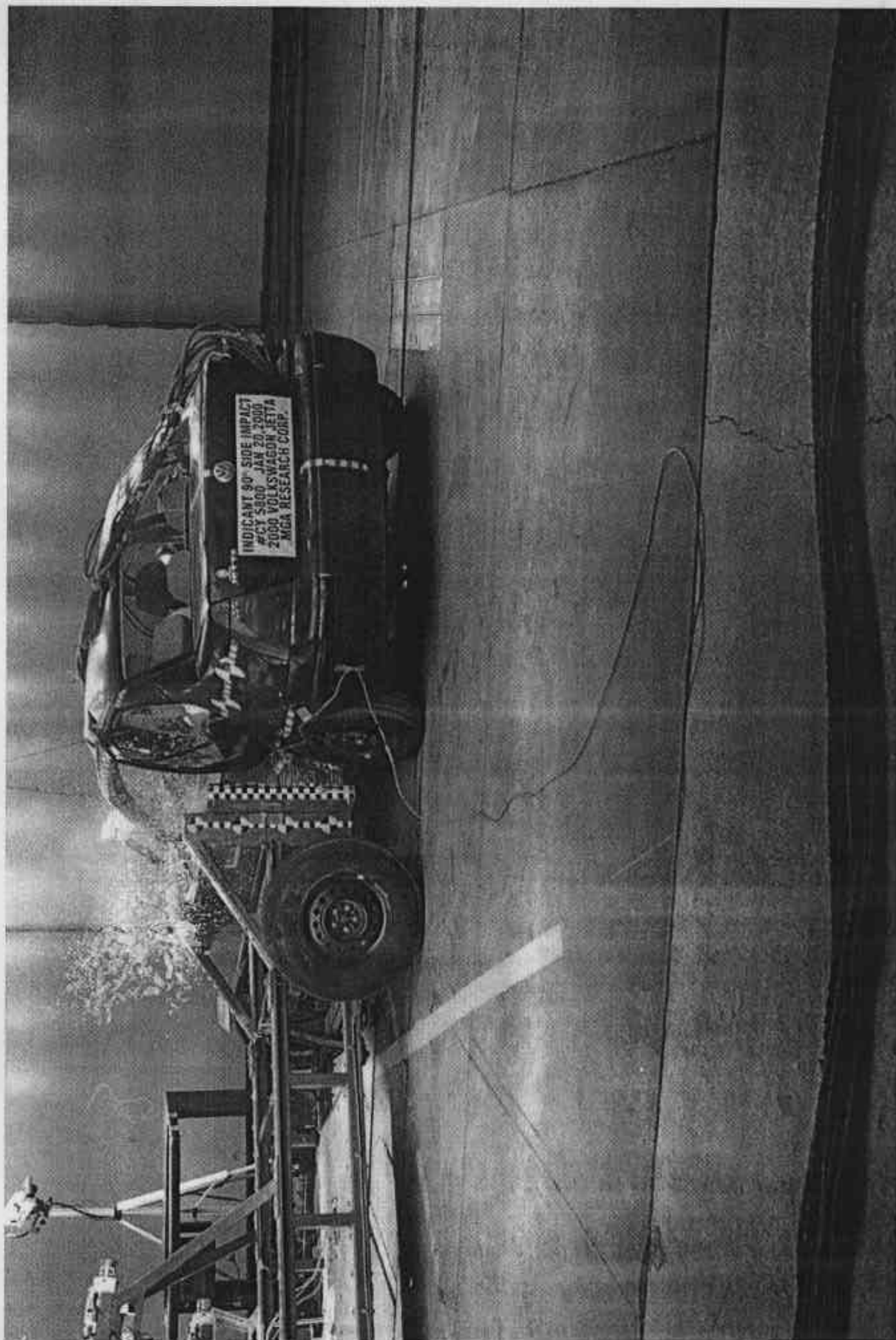


Photo No. A-39 - Post-Test Left Front Impact Point on Vehicle

A-39



A-40

Photo No. A-40 - Impact

MANUFACTURED BY VOLKSWAGEN DE MEXICO S.A. DE C.V. DATE 09 99
GVWR 3925 LBS GAWR FRONT 2051 LBS GAWR REAR 2095 LBS
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY
AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE
VEHICLE I.D. NO. 3VWRA29M1YM040860 TYPE 4 DOOR



MAX. LOAD (VEHICLE CAPACITY WEIGHTS)

IF PROVIDED SHIFT TR. AUT TR. 935

LBS 945

DESIGNATED SEATING CAPACITY : 5

2 FRONT / 3 REAR

COLD TIRE INFLATION PRESSURE PSI

TIRE SIZE

RIM

HALF LOAD

MAX. LOAD

195/65 R15 91H

6J

FRONT

REAR

FRONT

REAR

205/55 R16 91H

6 1/4 J

26

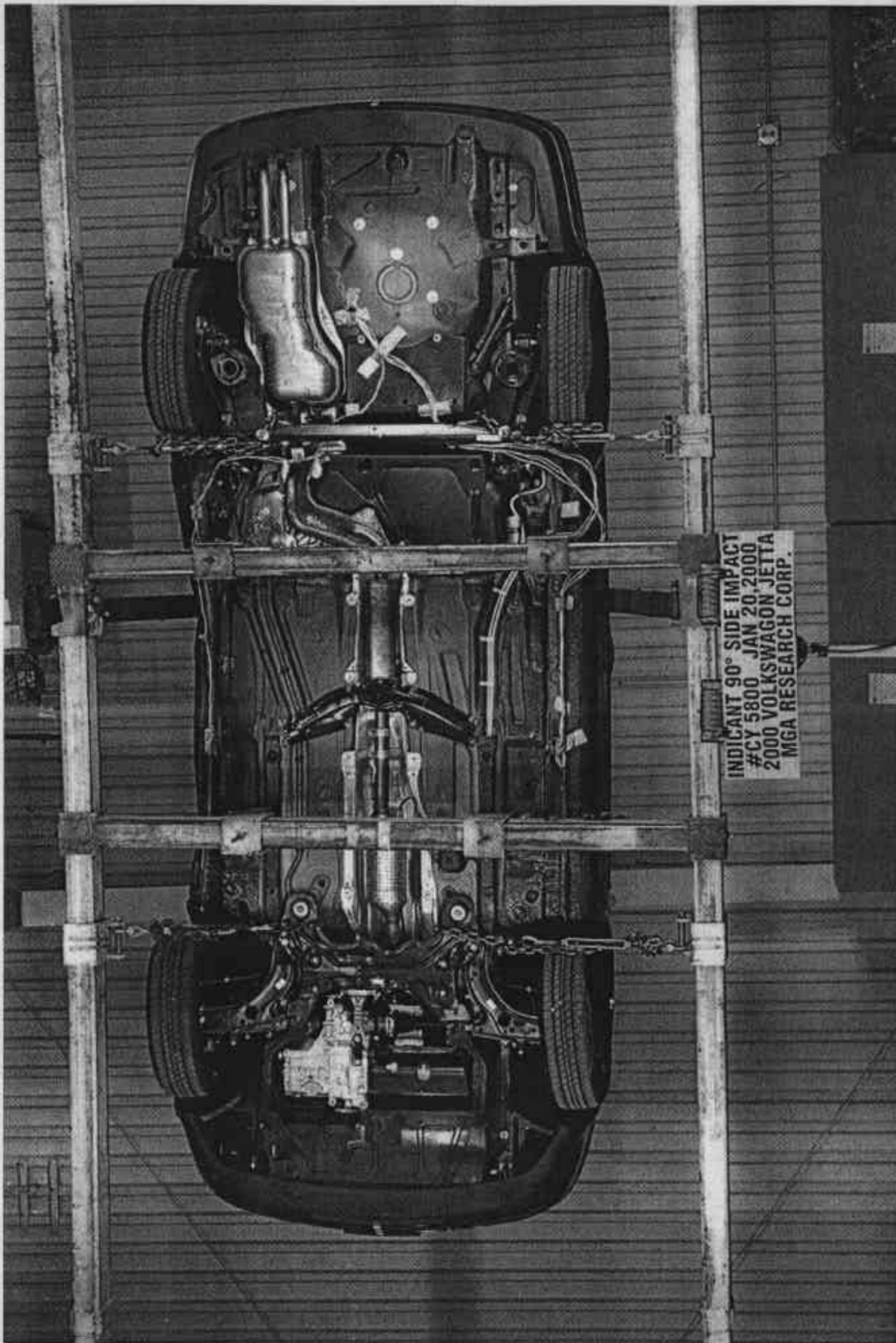
26

30

41

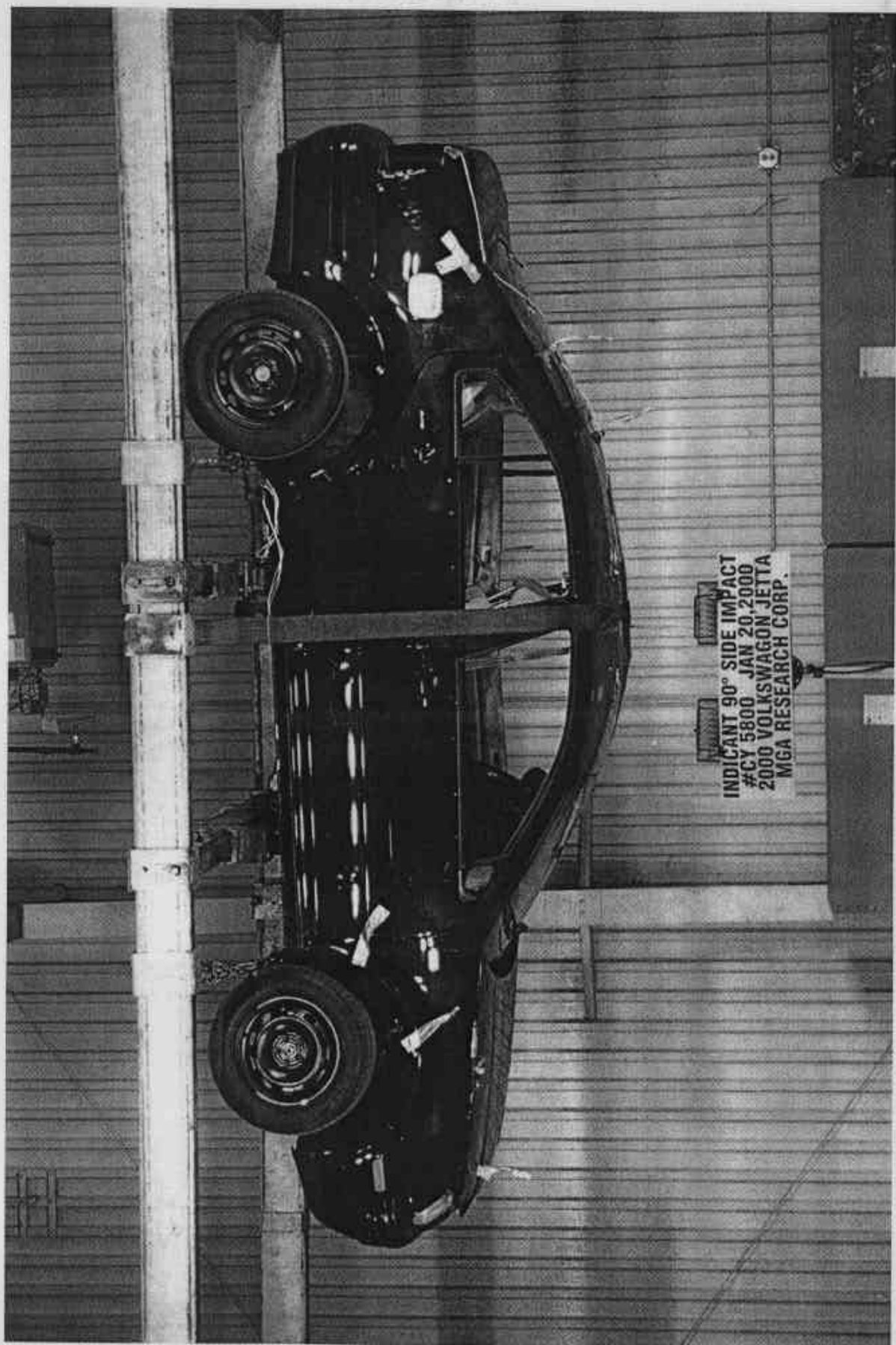
1J0 610 251 M

G 2 198



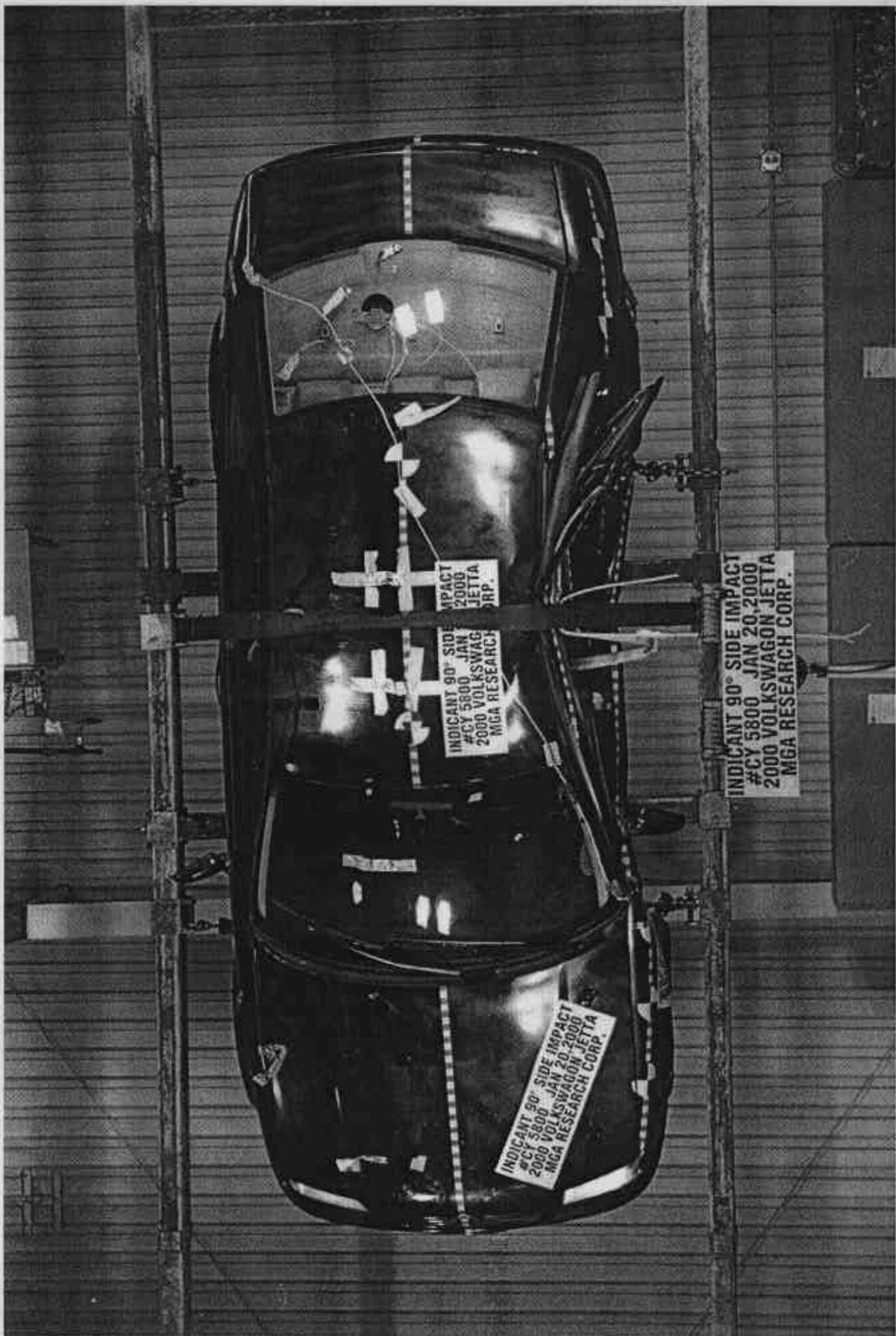
A-43

Photo No. A-43 - Rollover 90°



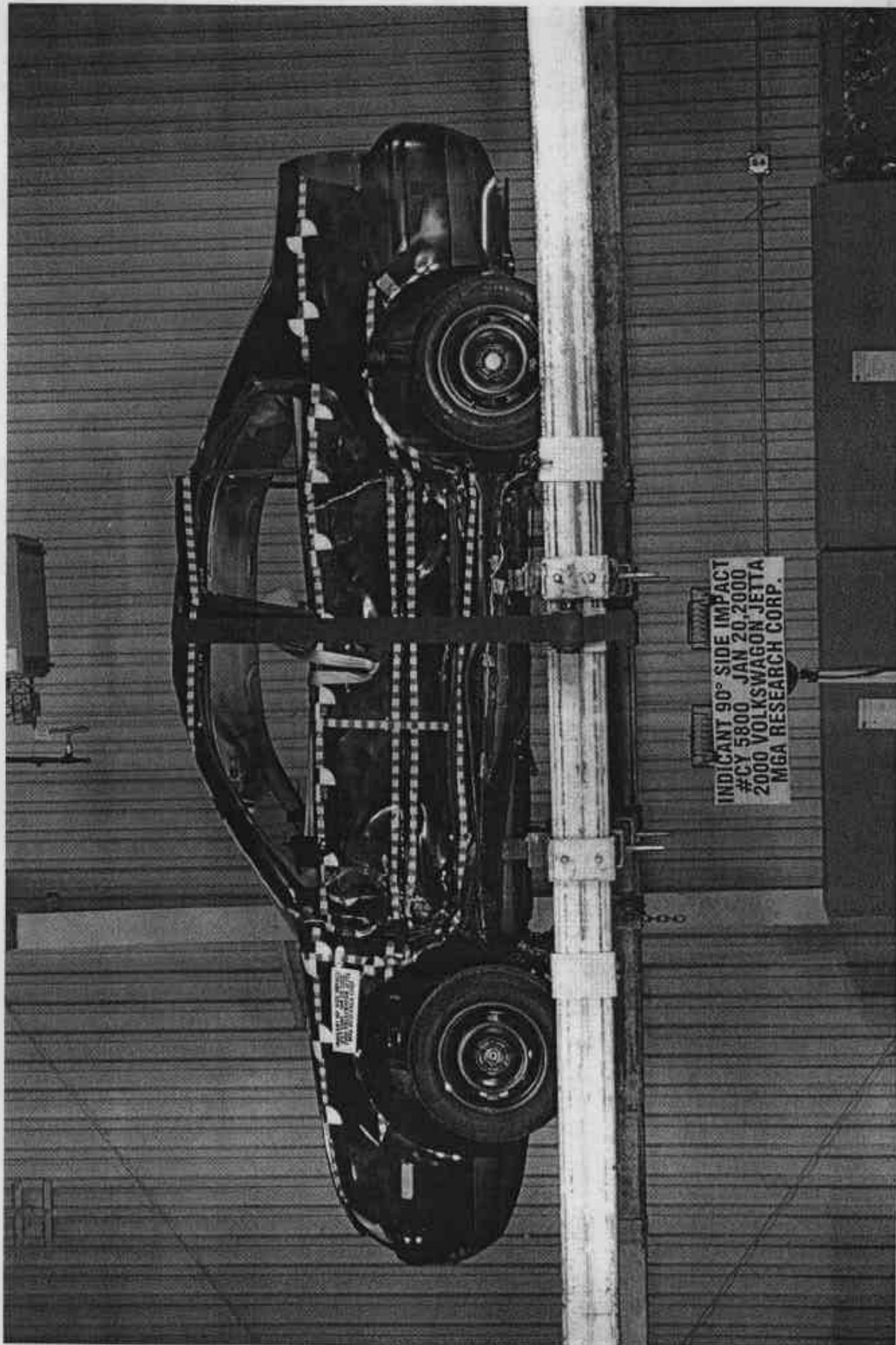
A-44

Photo No. A-44 - Rollover 180°



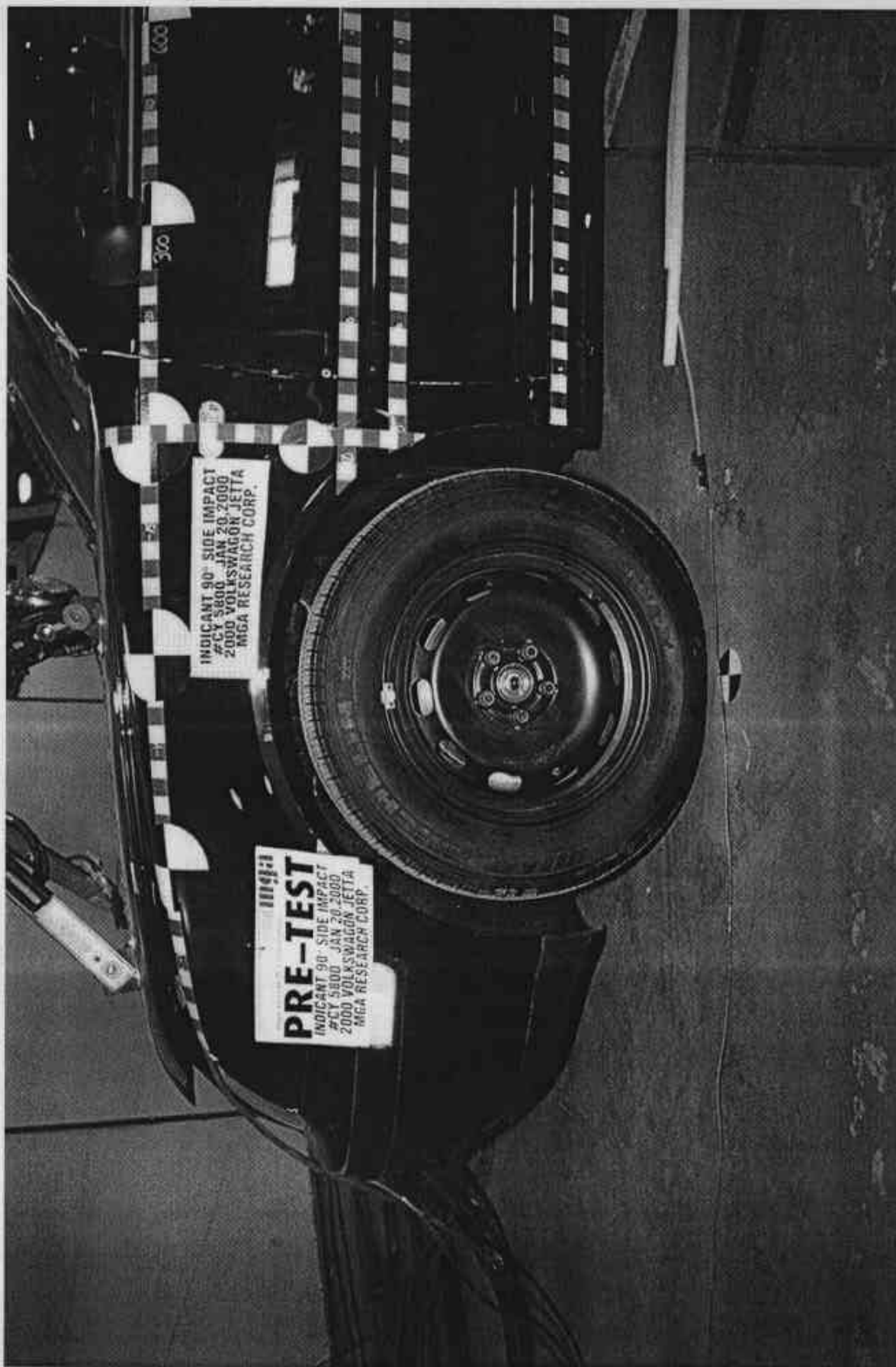
A-45

Photo No. A-45 - Rollover 270°



A-46

Photo No. A-46 - Rollover 360°



A-47

Photo No. A-47 - Left Front Attitude Point

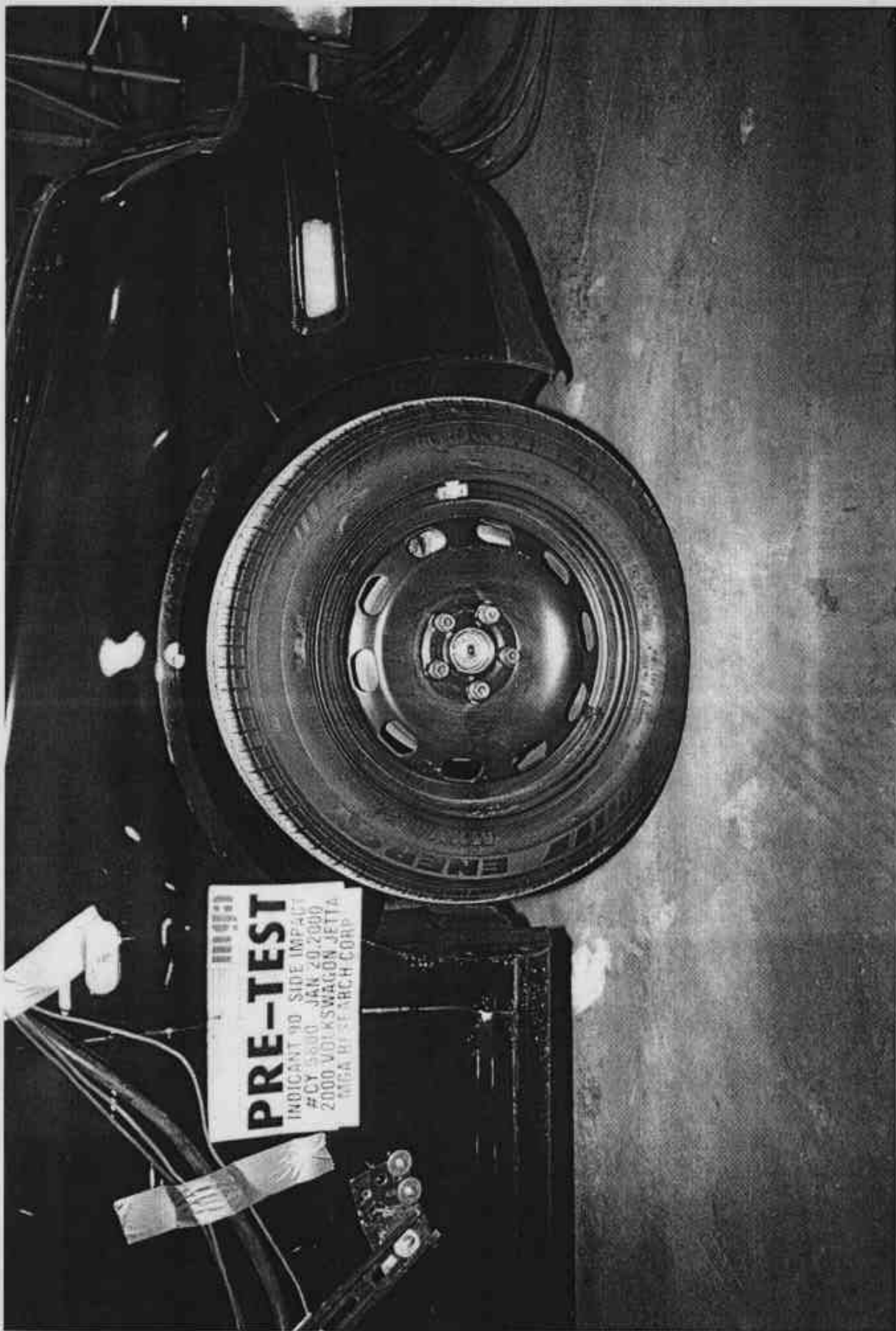
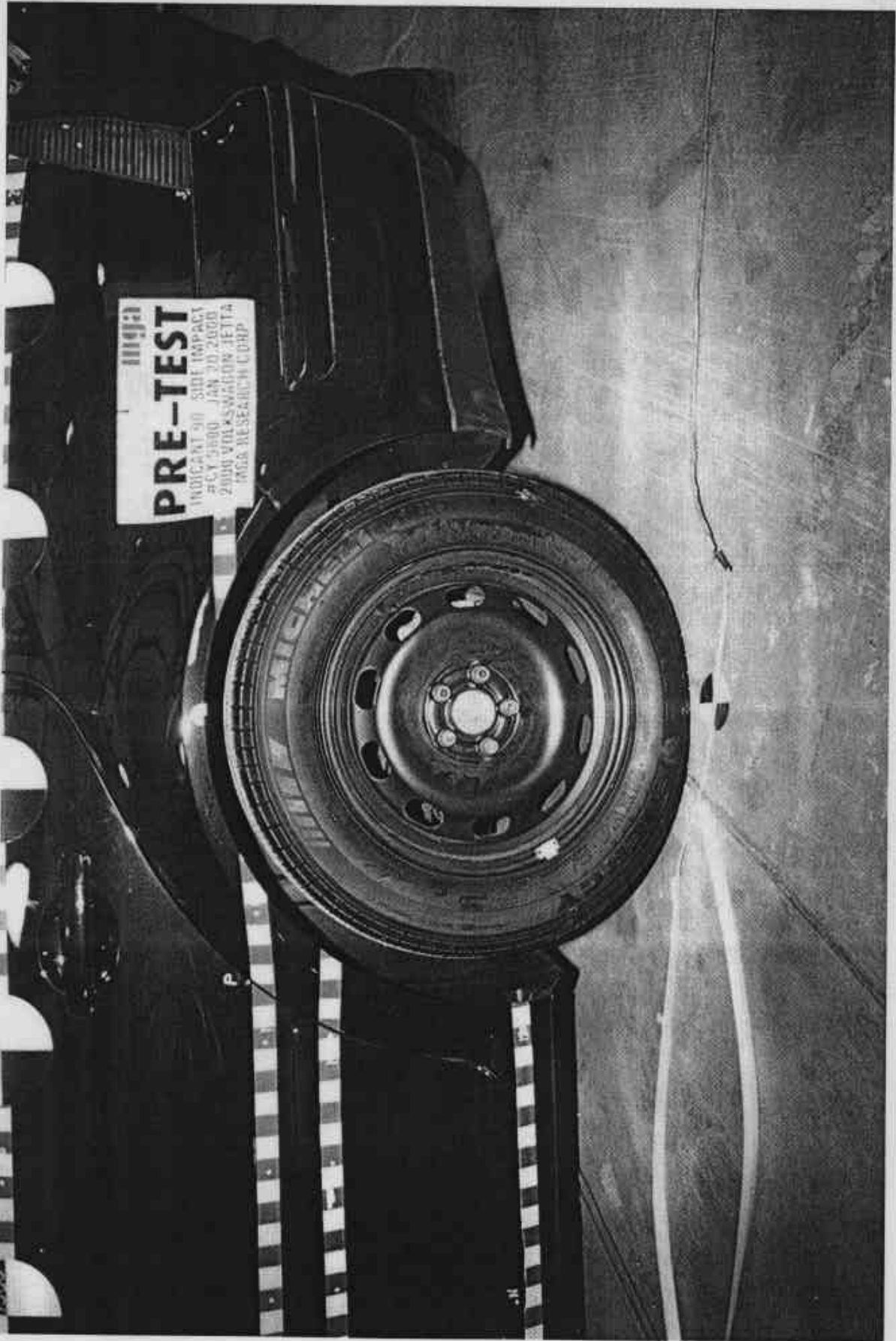


Photo No. A-48 - Right Front Attitude Point



A-49

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A-50

Photo No. A-50 - Right Rear Attitude Point



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* No valid data collected

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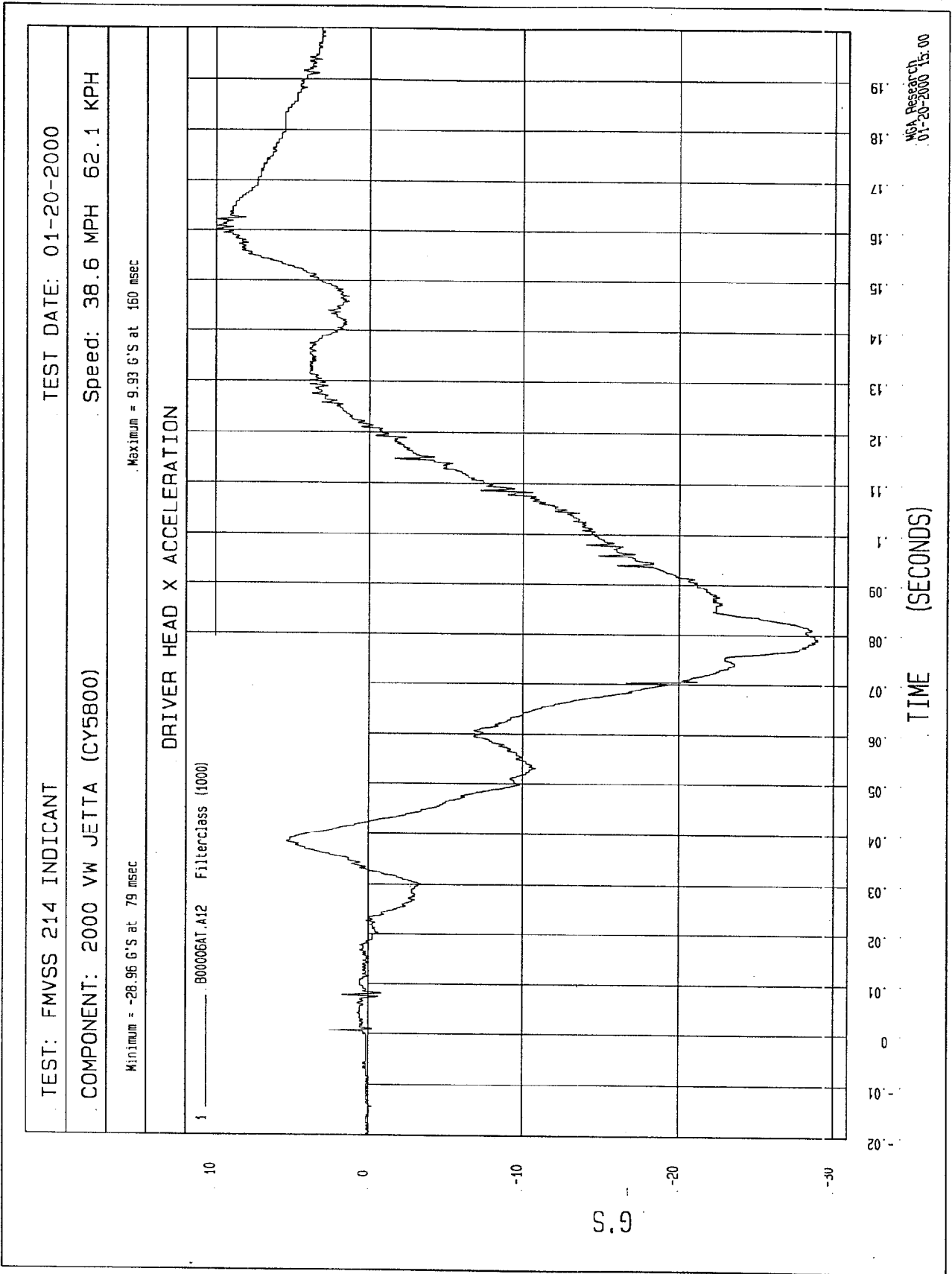
* Data not valid after approximately 48 msec.

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TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

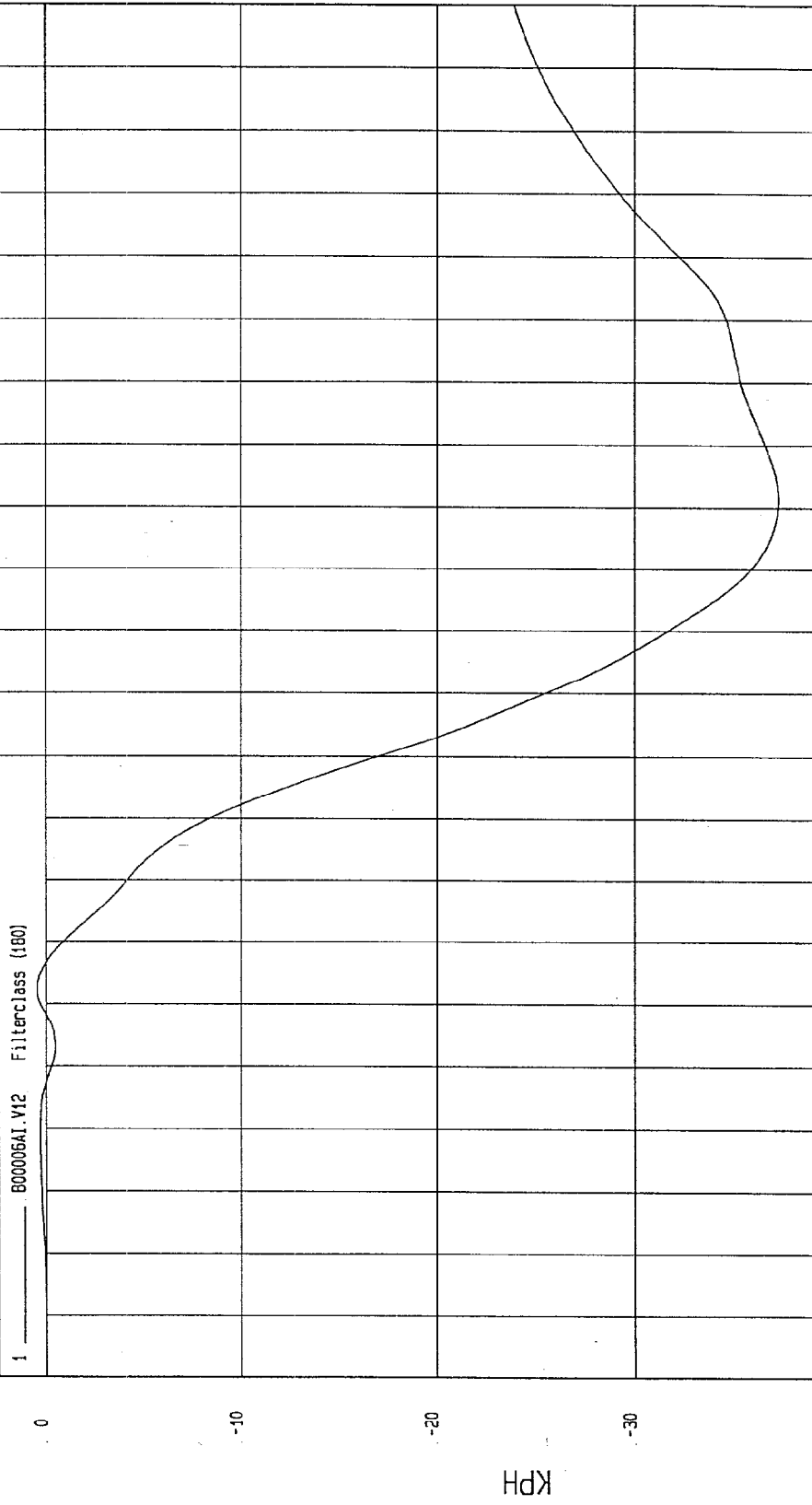
Speed: 38.6 MPH 62.1 KPH

Minimum = -37.27 KPH at 121 msec

Maximum = .46 KPH at 42 msec

DRIVER HEAD X VELOCITY

1 B00006A1.V12 Filterclass (180)



TIME Seconds
MGA Research
01-20-2000 15:00

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

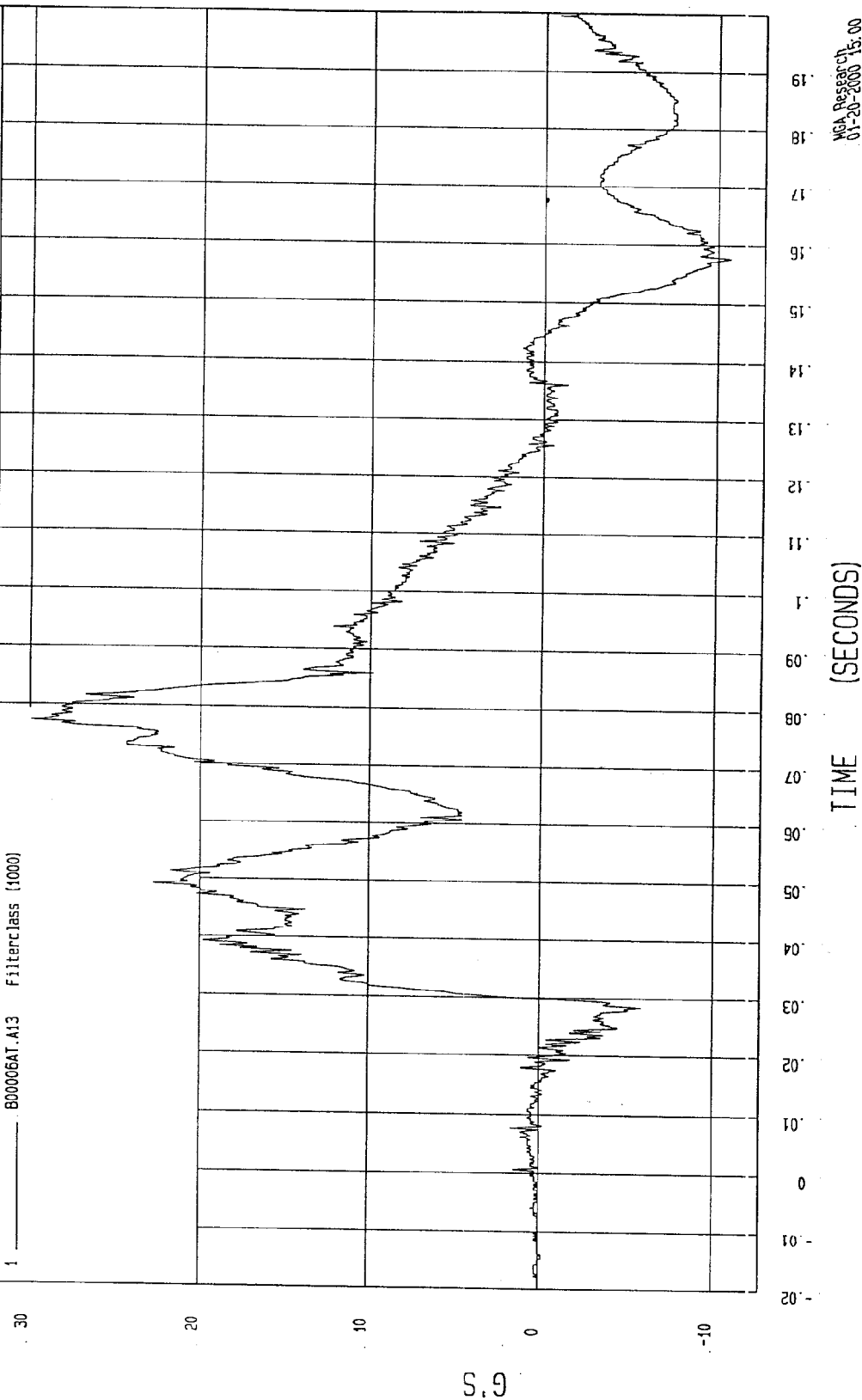
Speed: 38.6 MPH 62.1 KPH

Minimum = -10.72 G'S at 158 msec

Maximum = 29.93 G'S at 77 msec

DRIVER HEAD Y ACCELERATION

1 ——— BC0005AT.A13 Filterclass (1000)

MCA Research
01-20-2000 15:00

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

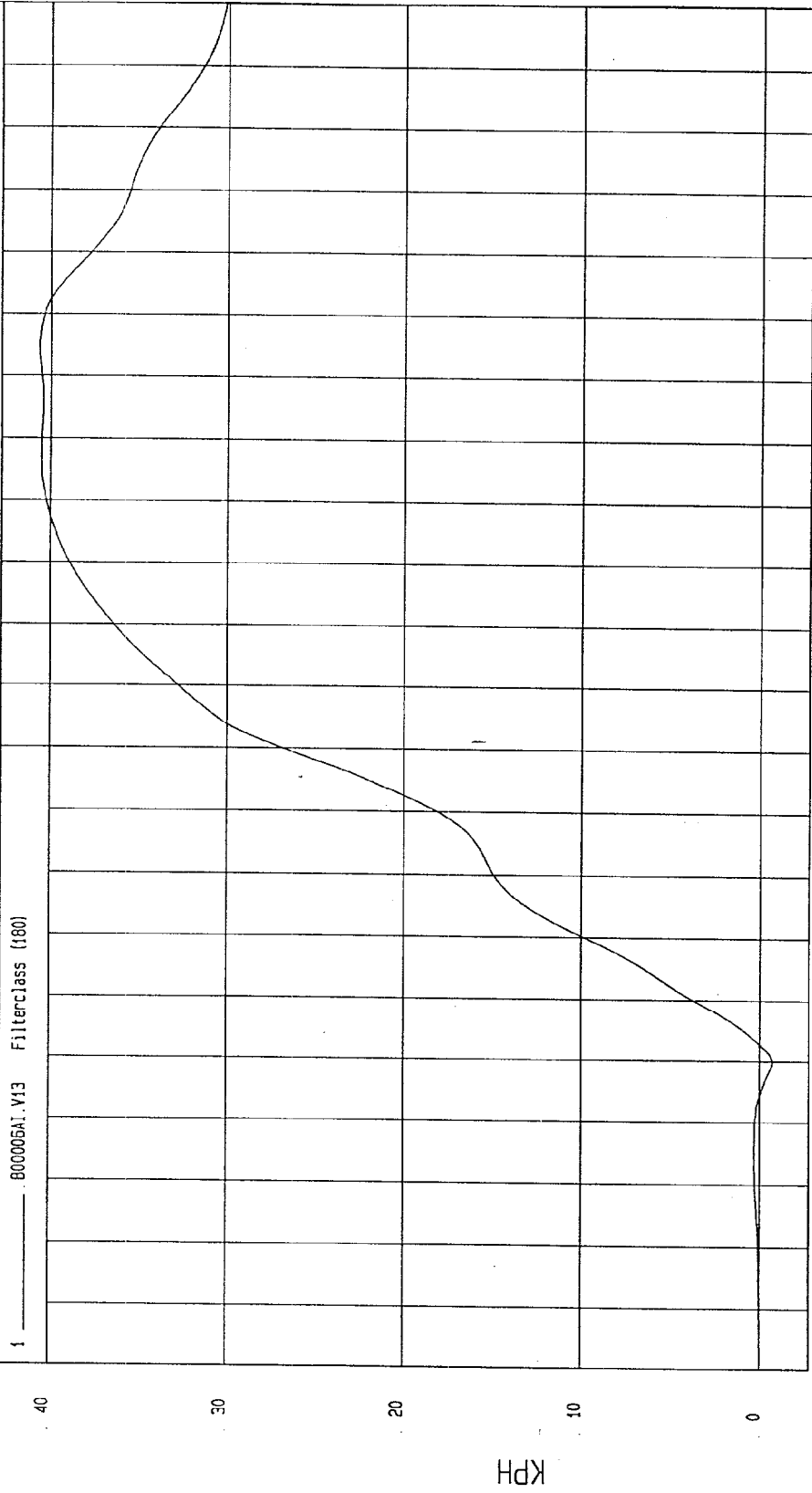
Speed: 38.6 MPH 62.1 KPH

Minimum = -7 KPH at 30 msec

Maximum = 40.61 KPH at 145 msec

DRIVER HEAD Y VELOCITY

1 80005A1.V13 Filterclass (180)



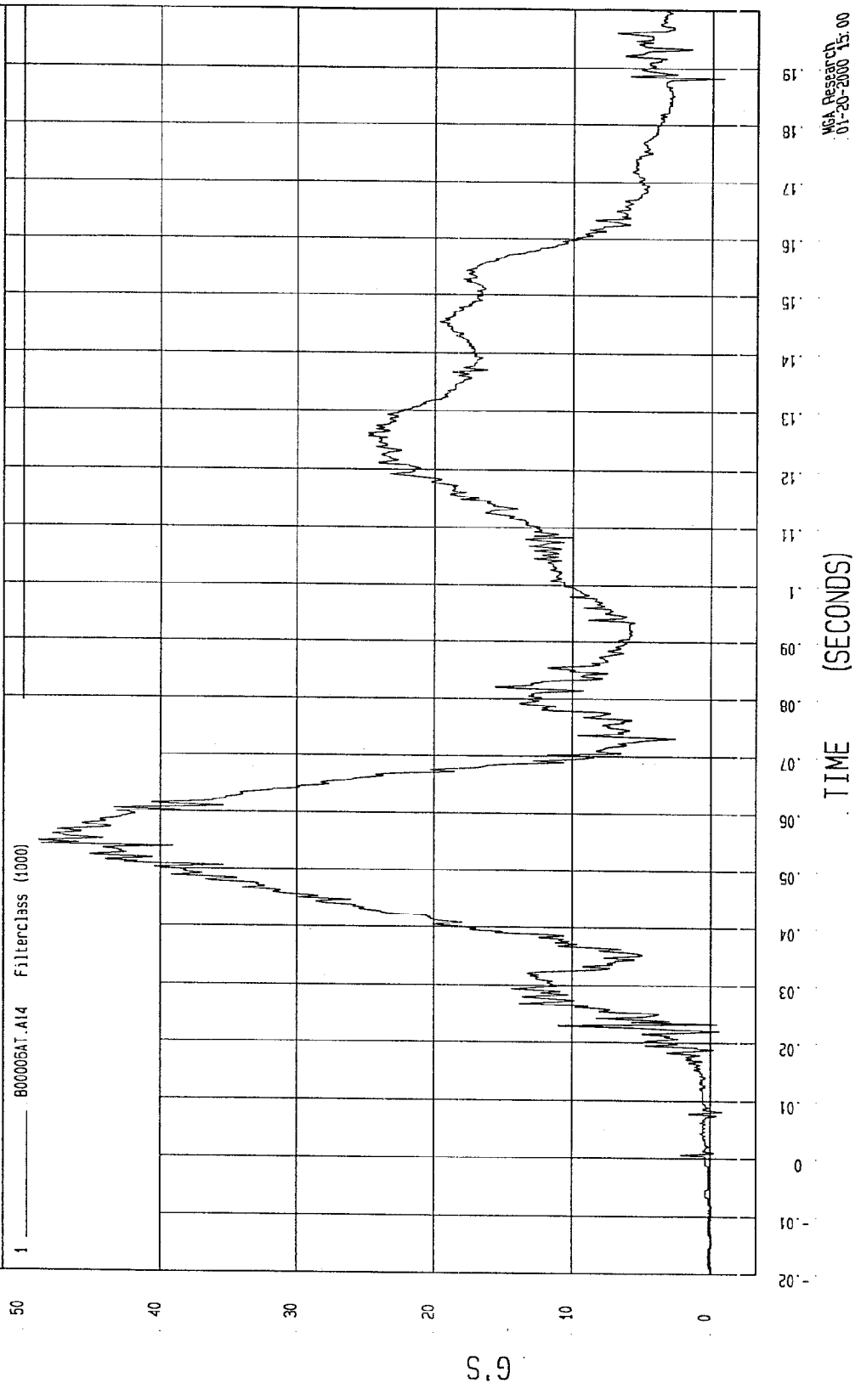
MGA Research
01-20-2000 15.00

TIME Seconds

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000
COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -.84 G'S at 8 msec Maximum = 48.91 G'S at 55 msec

DRIVER HEAD Z ACCELERATION



TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -1.04E-03 KPH at -19 msec Maximum = 94.02 KPH at 200 msec

DRIVER HEAD Z VELOCITY

1 _____ B00006A1.V14 Filterclass (180)

80

60

40

20

0

KPH

-0.02

-0.01

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

MCA Research
01-20-2000 15:00

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

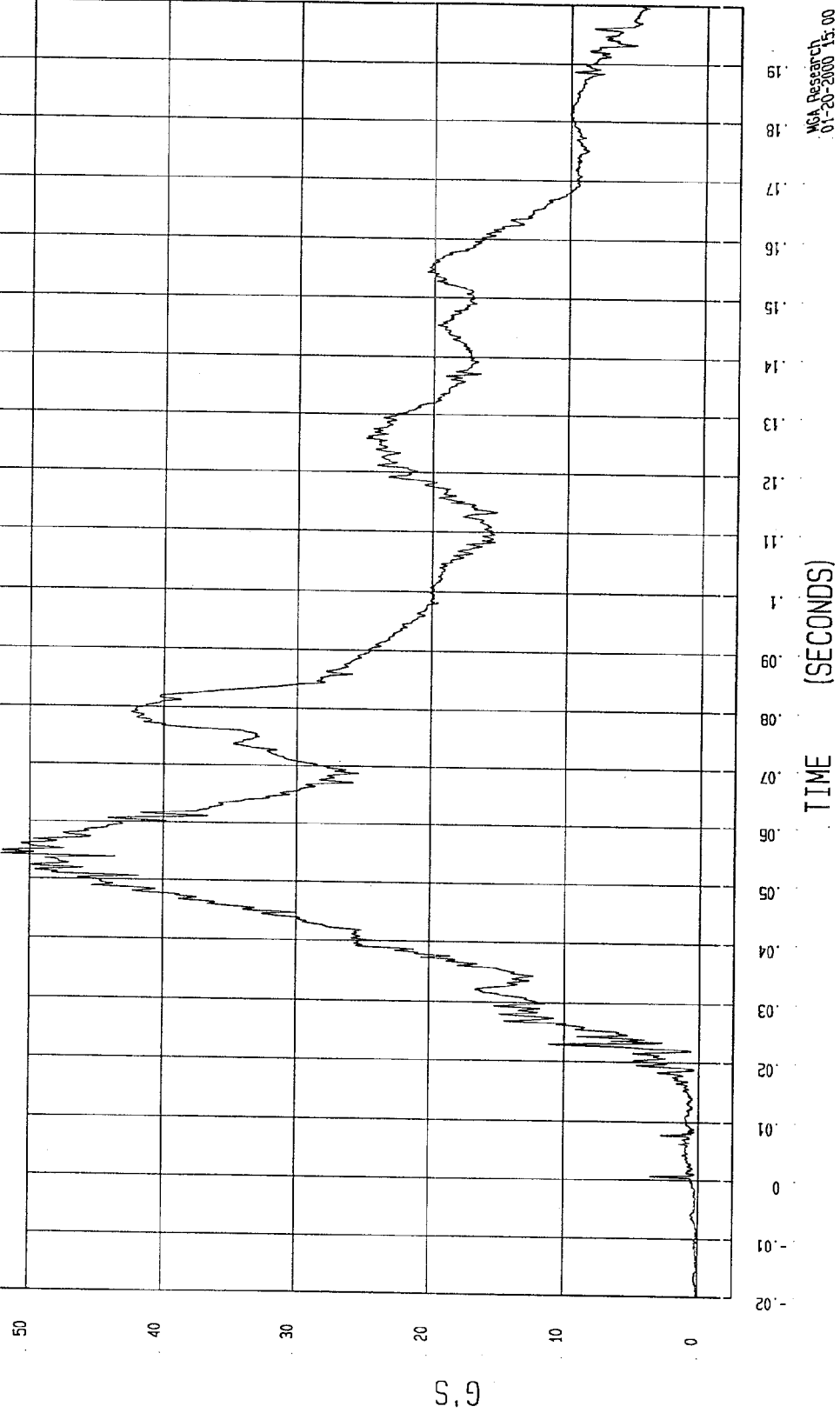
COMPONENT: 2000 VW JETTA (CV5800)

Maximum = 52.1 G'S at 54 msec

Minimum = 8.03E-02 G'S at -20 msec

DRIVER HEAD RESULTANT

1 ——— 800006AV.A12 Filterclass (1000)



MSA Research
01-20-2000 15:00

TEST: FMVSS 214 INDICANT
COMPONENT: 2000 VW JETTA (CY5800)

TEST DATE: 01-20-2000

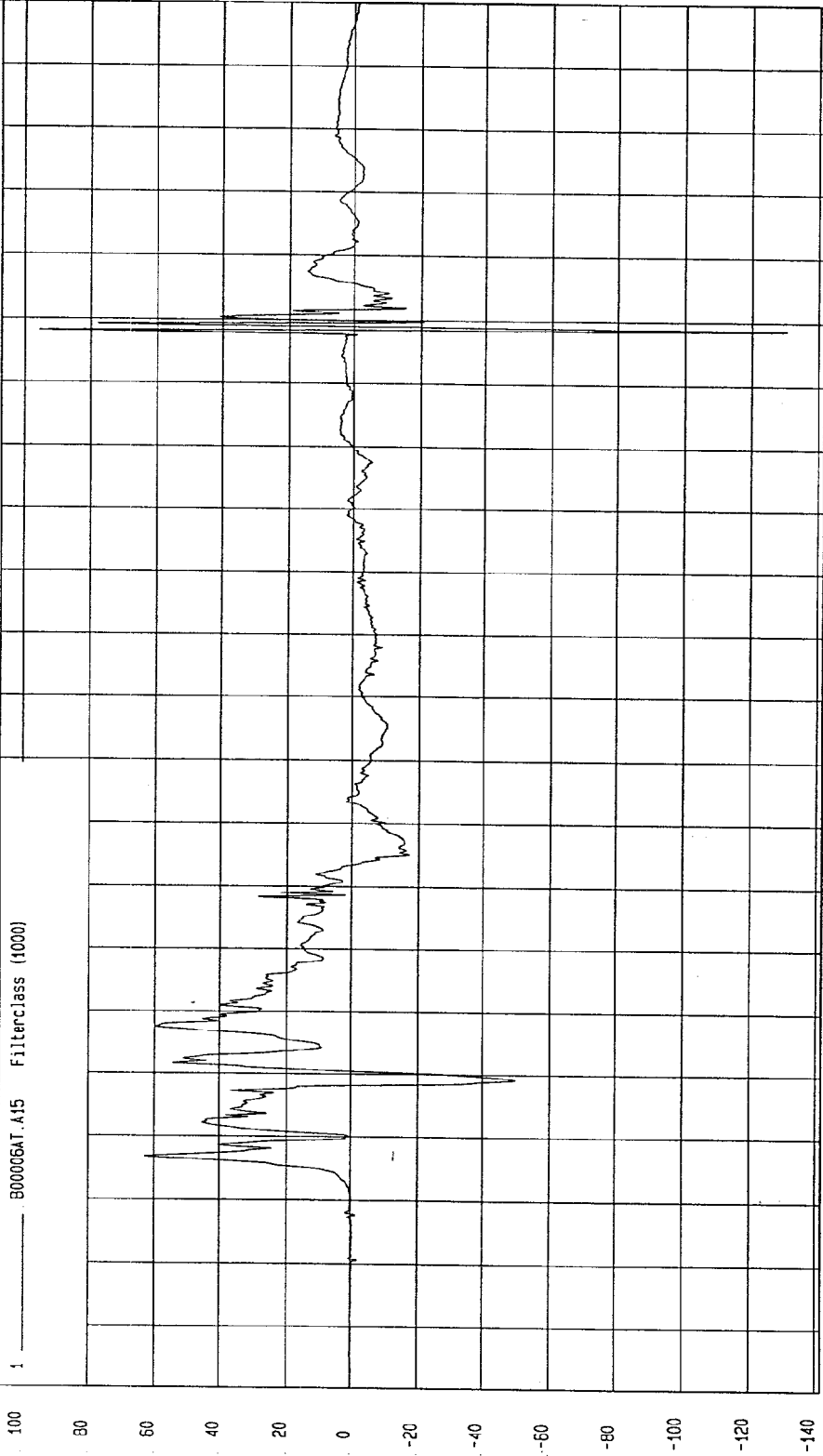
Speed: 38.6 MPH 62.1 KPH

Minimum = -130.4 G'S at 149 msec

Maximum = 95.72 G'S at 148 msec

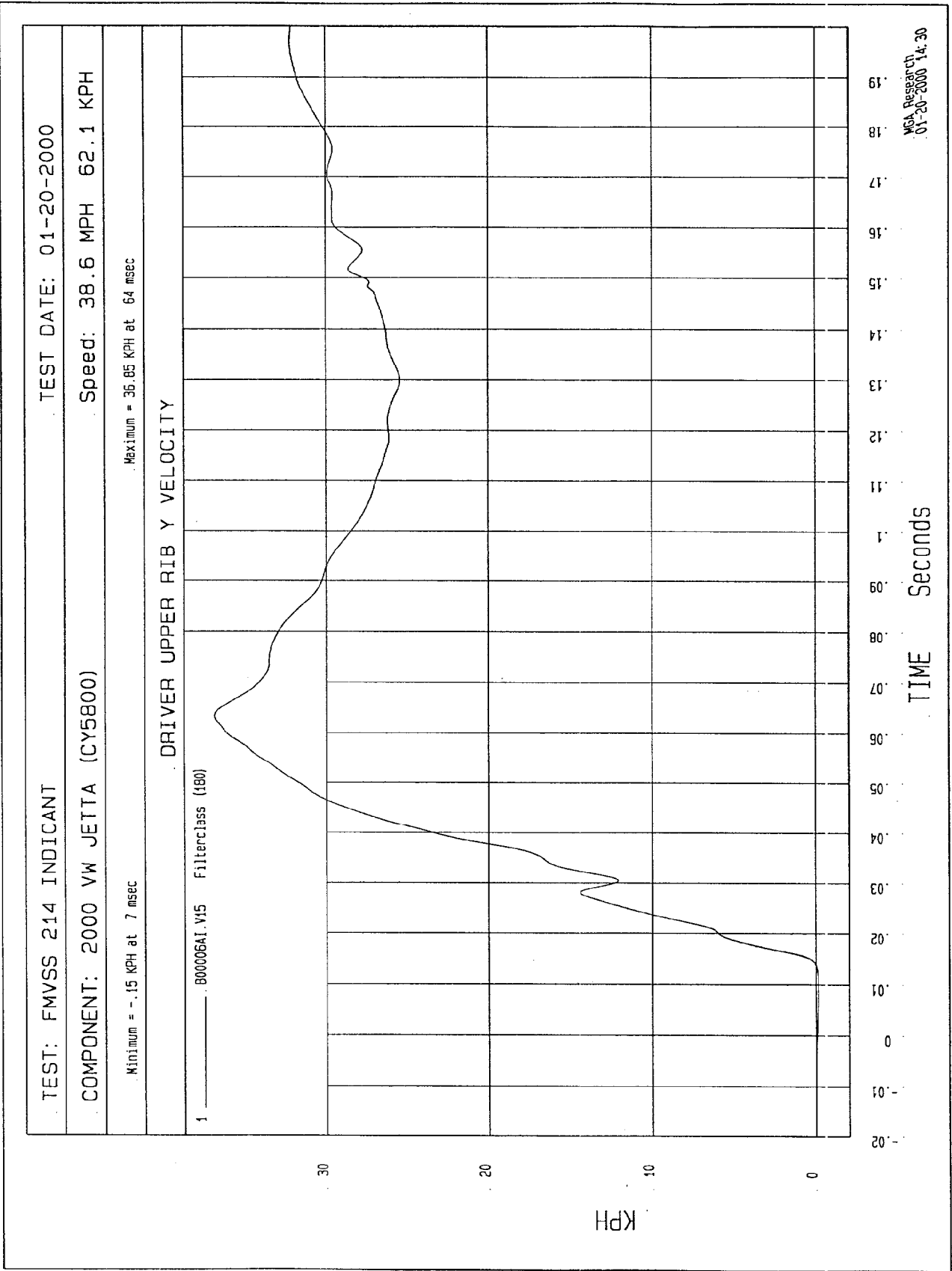
DRIVER UPPER RIB Y ACCELERATION

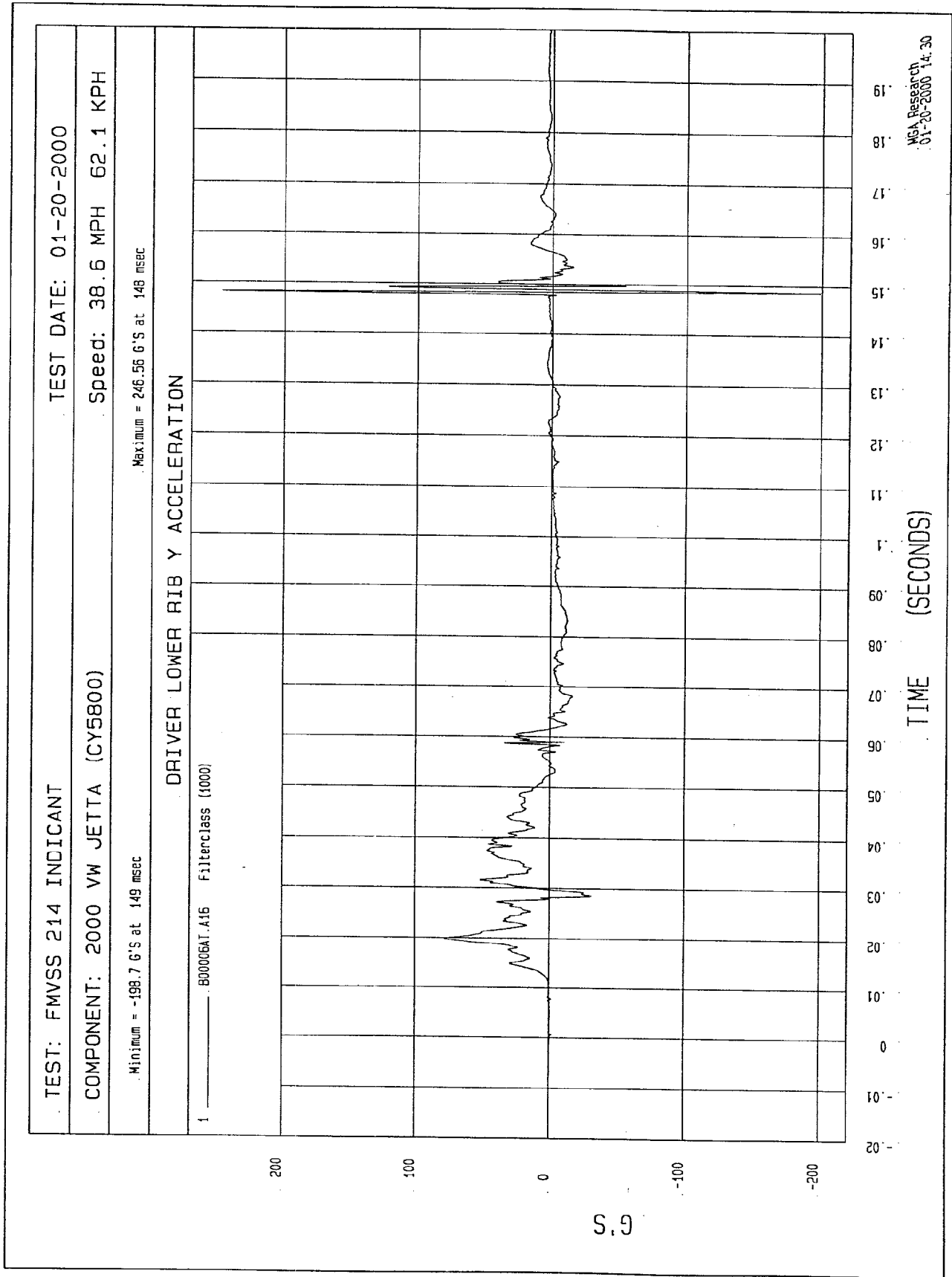
1 800006AT.415 Filterclass (1000)



MGA Research
01-20-2000 14:30

TIME (SECONDS)





TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 36.19 KPH at 62 msec

Minimum = -16 KPH at 8 msec

DRIVER LOWER RIB Y VELOCITY

1 ——— B00006A1.V16 Filterclass (180)

38

36

34

32

30

28

26

24

22

20

18

16

14

12

10

8

6

4

2

0

KPH

-0.02

-0.01

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

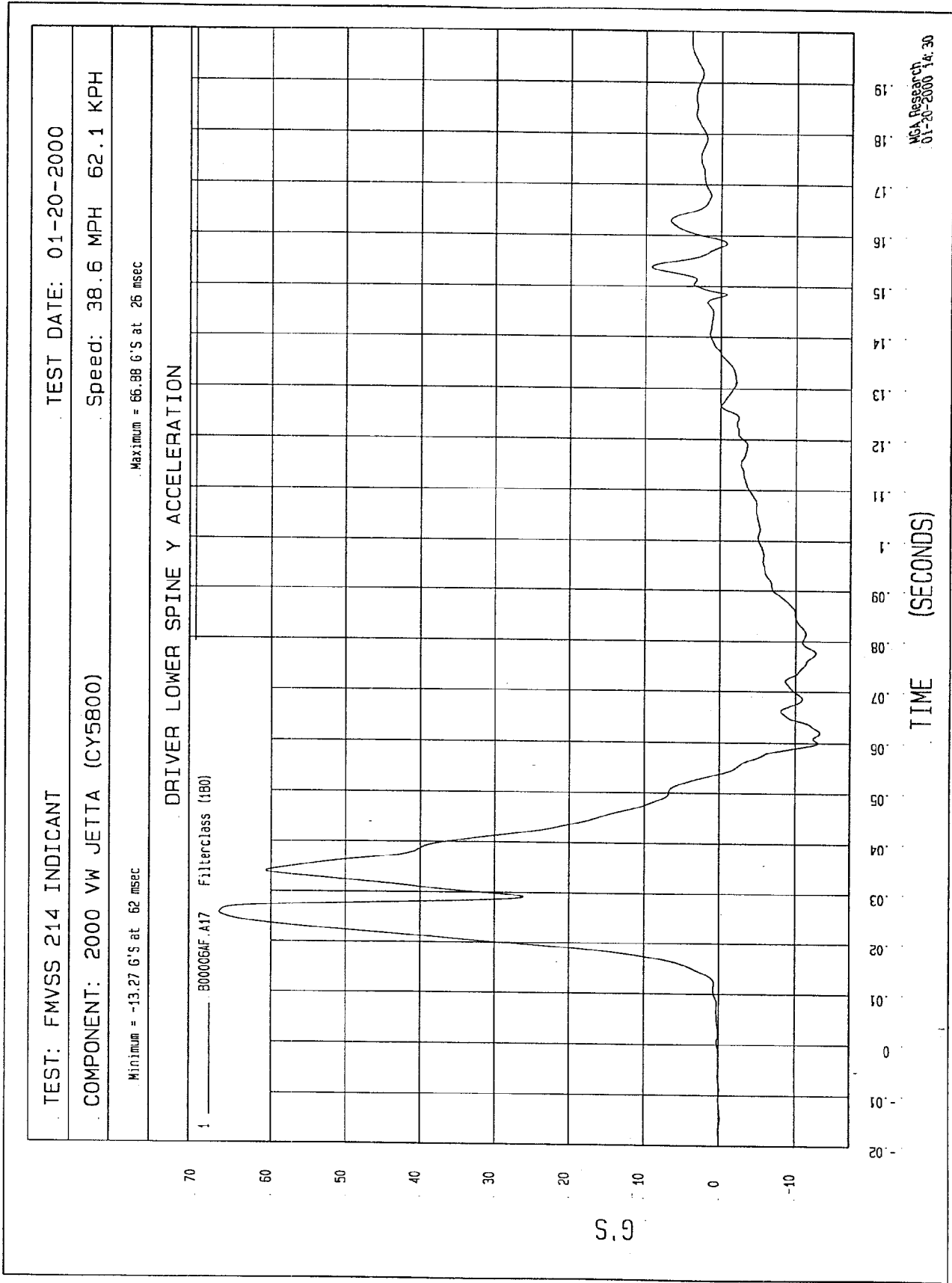
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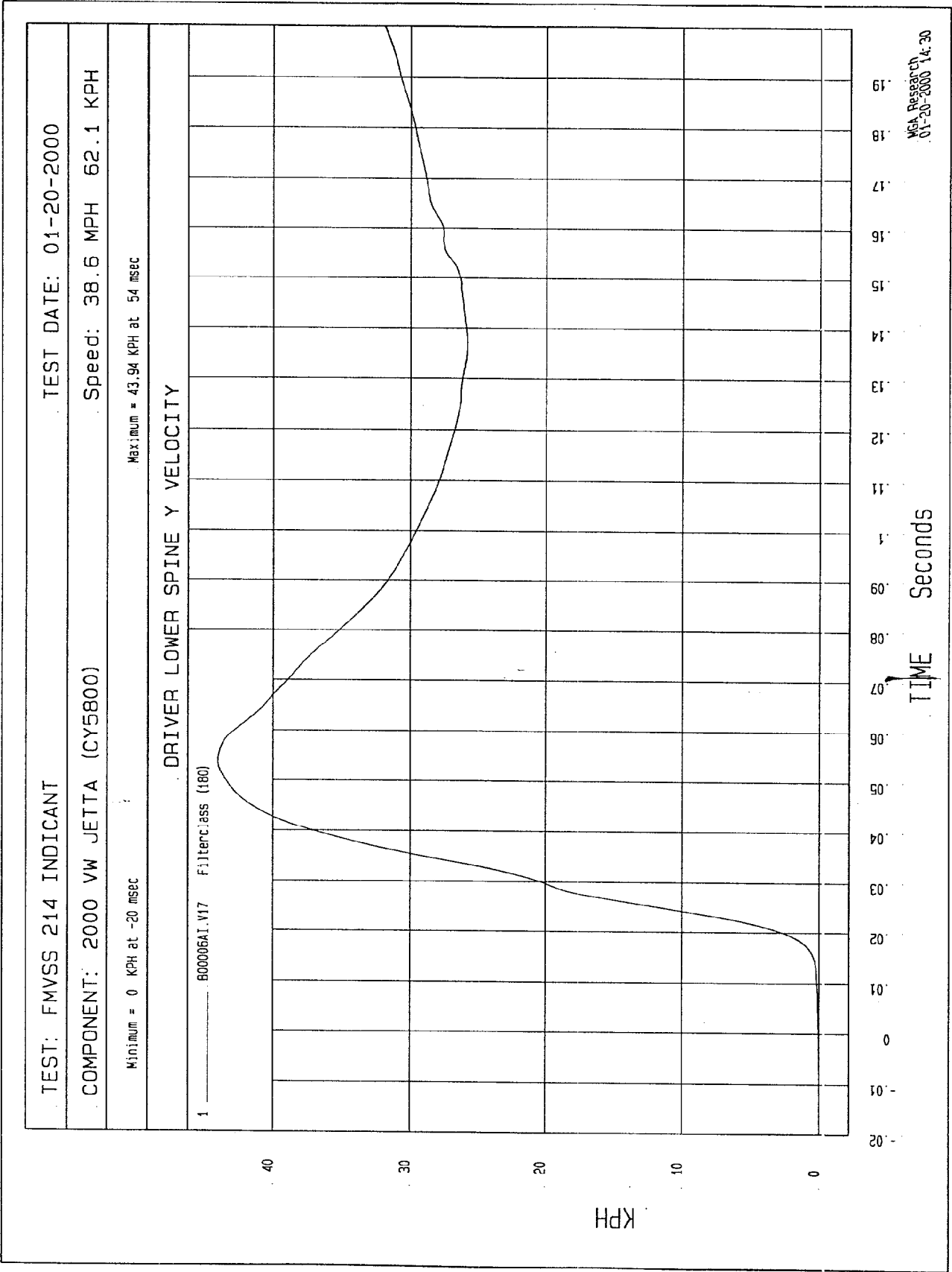
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0.19

TIME Seconds

SEA Research
01-20-2000 14:30





TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

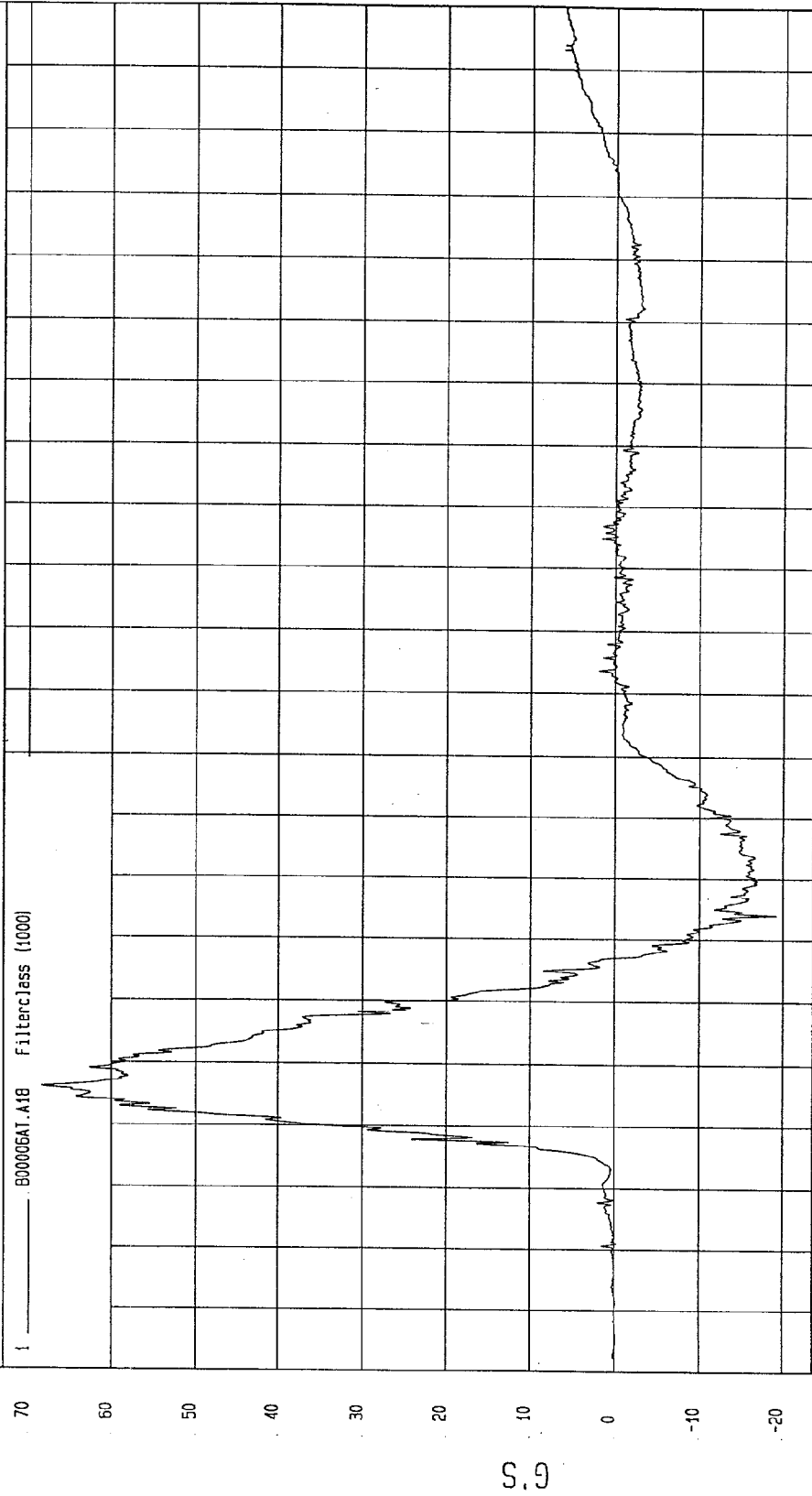
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -19.19 G's at 54 msec

Maximum = 66.54 G's at 26 msec

DRIVER PELVIS Y ACCELERATION

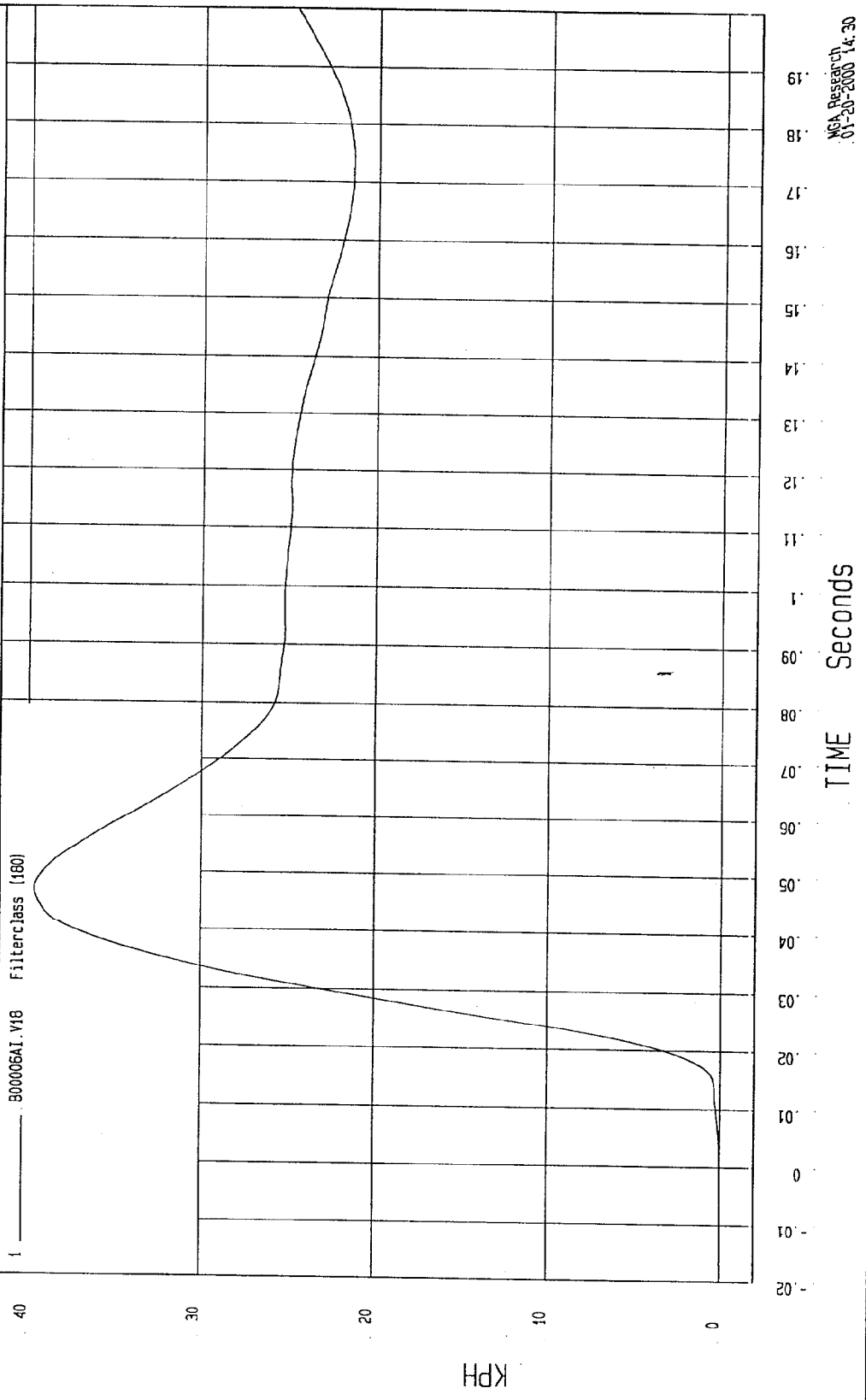


TIME (SECONDS)

WCA Research
01-20-2000 14:30

TEST: FMVSS 214 INDICANT
TEST DATE: 01-20-2000
COMPONENT: 2000 VW JETTA (CY5800)
Speed: 38.6 MPH 62.1 KPH
Minimum = -7.29E-03 KPH at -8 msec
Maximum = 39.66 KPH at 47 msec

DRIVER PELVIS Y VELOCITY



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

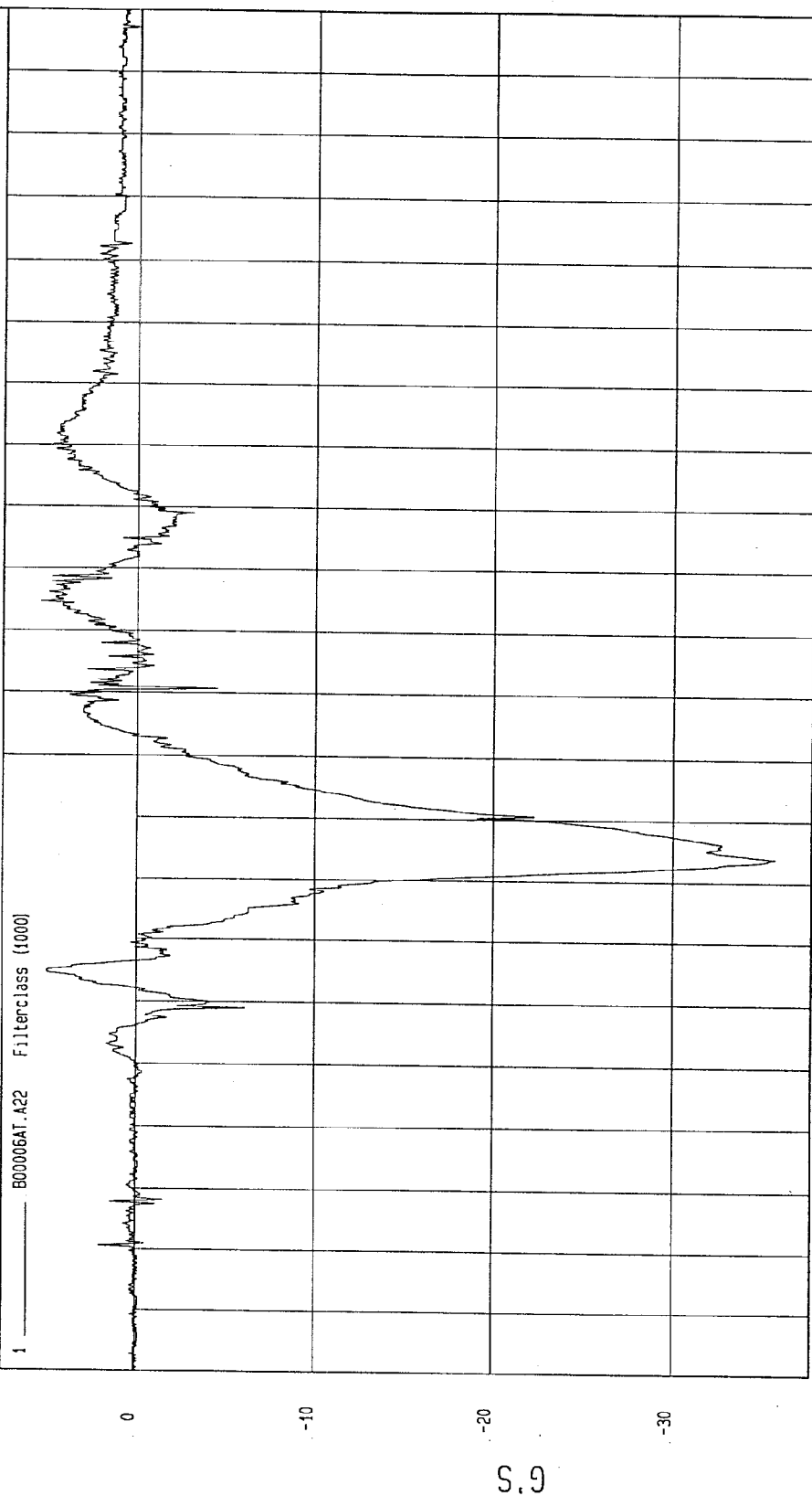
Speed: 38.6 MPH 62.1 KPH

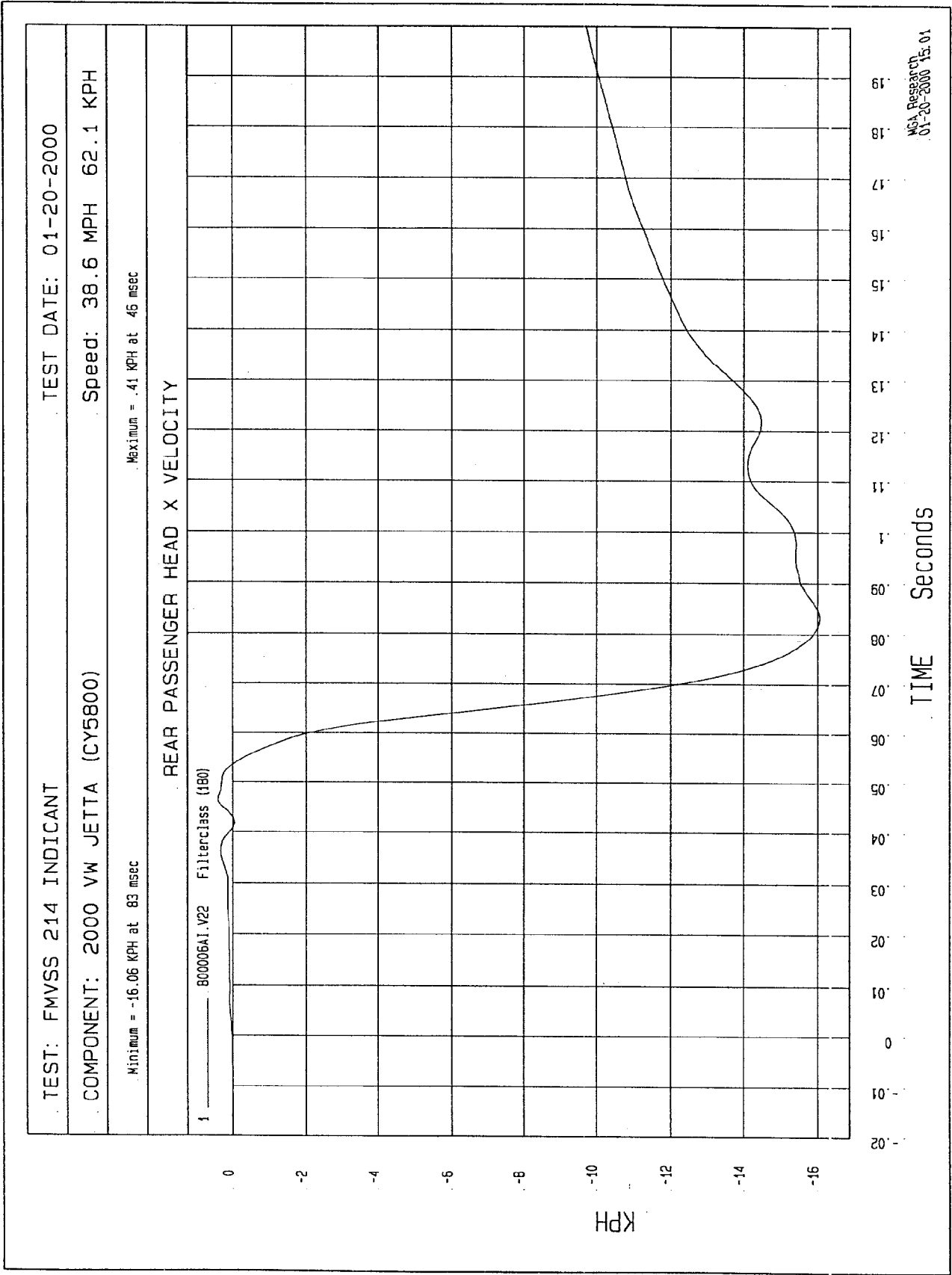
Minimum = -35.66 G'S at 64 msec

Maximum = 5.46 G'S at 105 msec

REAR PASSENGER HEAD X ACCELERATION

1 B00006A1.A22 Filterclass (1000)

NSA Research
01-20-2000 15:00



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

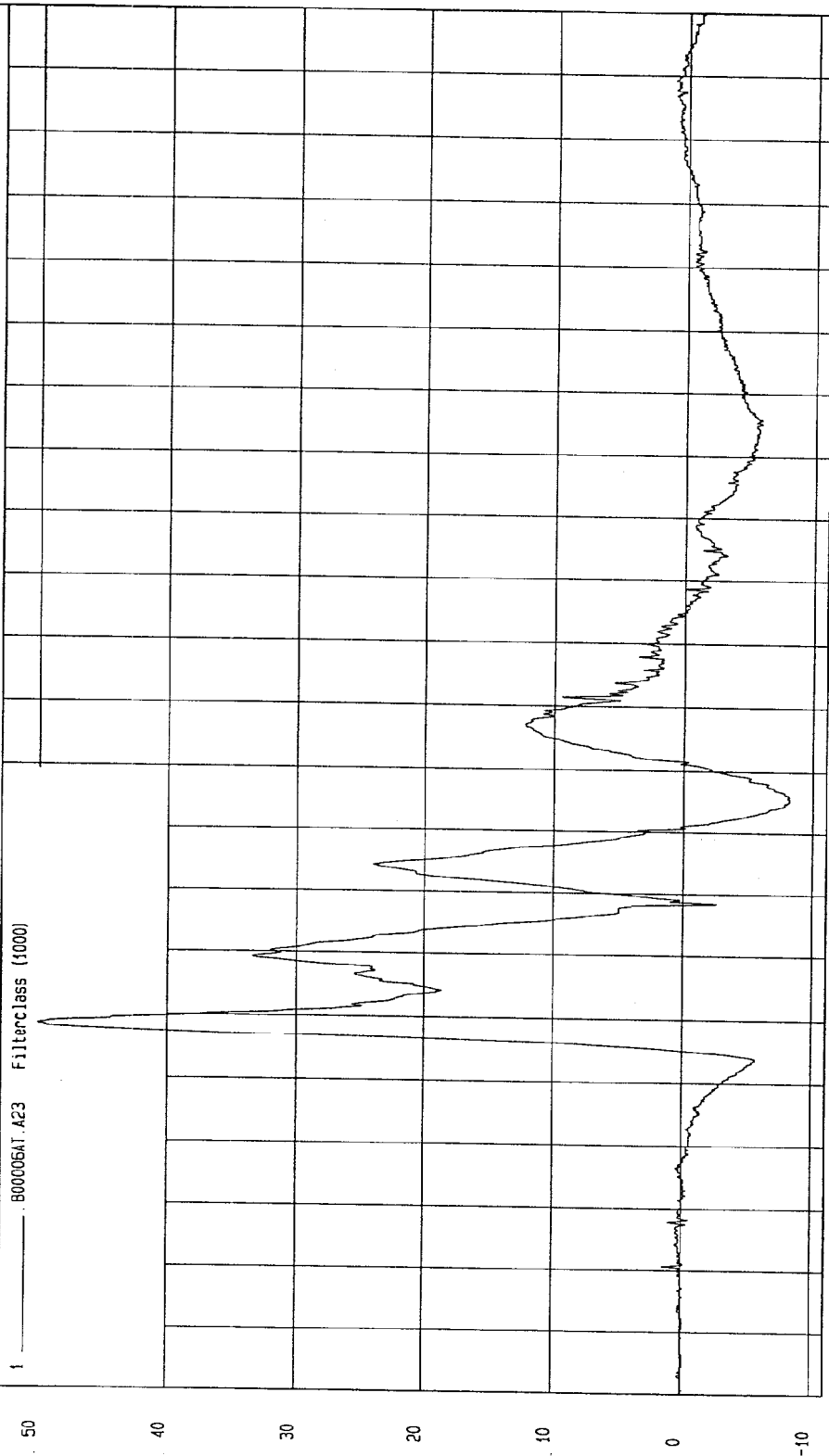
Speed: 38.6 MPH 62.1 KPH

Minimum = -8.16 G'S at 75 msec

Maximum = 50.02 G'S at 38 msec

REAR PASSENGER HEAD Y ACCELERATION

1 800005AT.A23 Filterclass (1000)



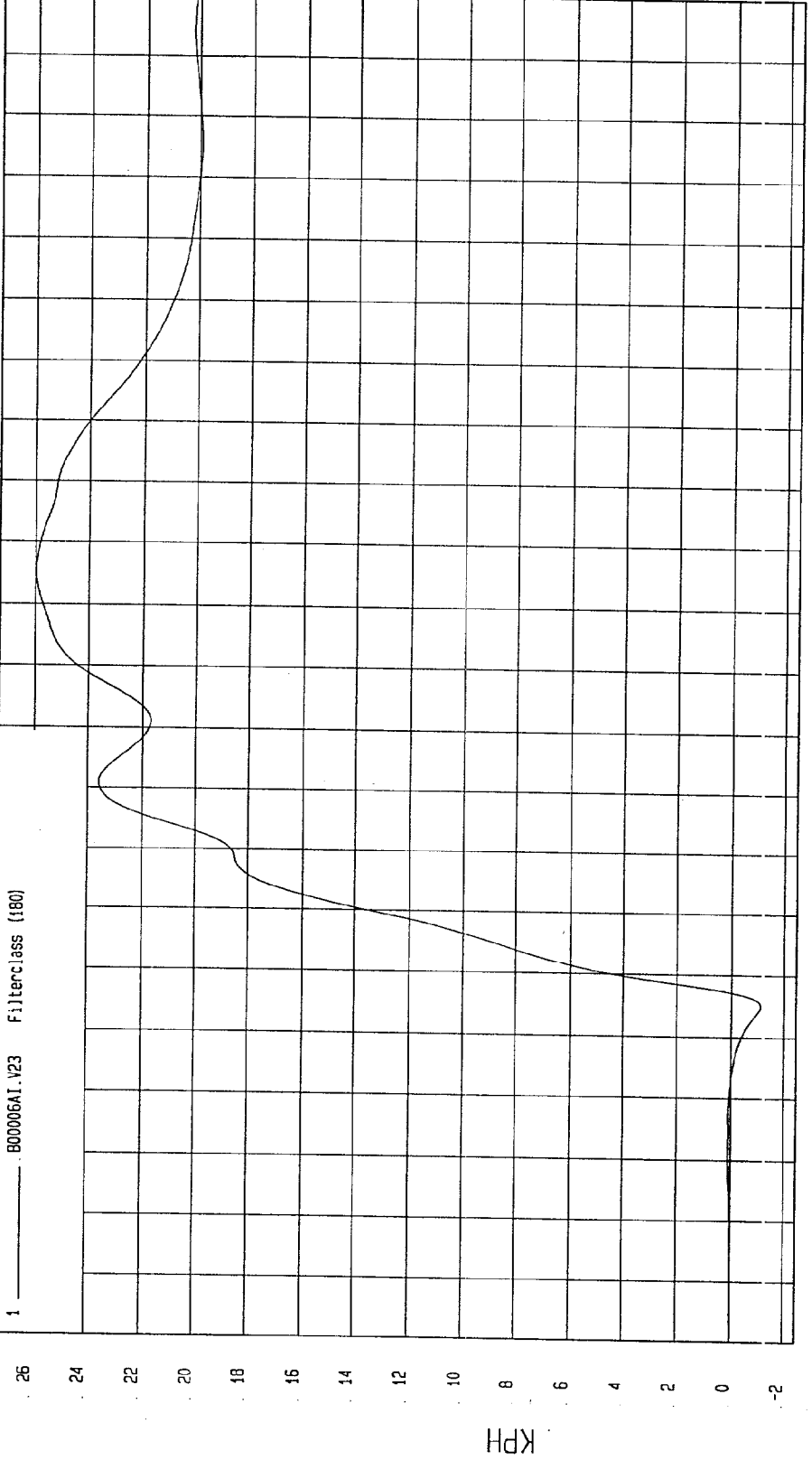
MSA Research
01-20-2000 15:01

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -1.1 KPH at 35 msec Maximum = 25.95 KPH at 105 msec

REAR PASSENGER HEAD Y VELOCITY



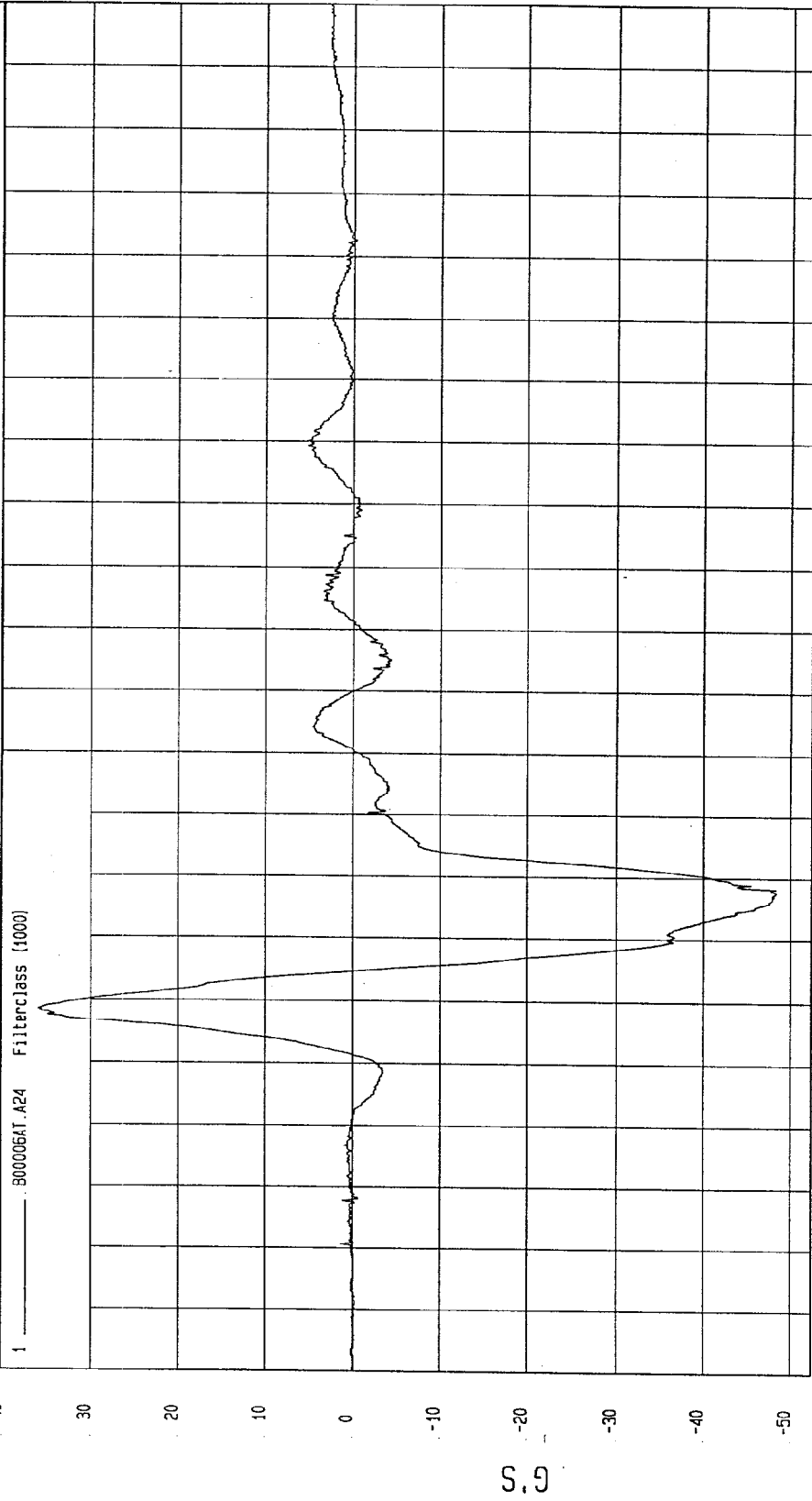
MCA Research
01-20-2000 15:01

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -48.31 G'S at 58 msec Maximum = 35.95 G'S at 38 msec

REAR PASSENGER HEAD Z ACCELERATION



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

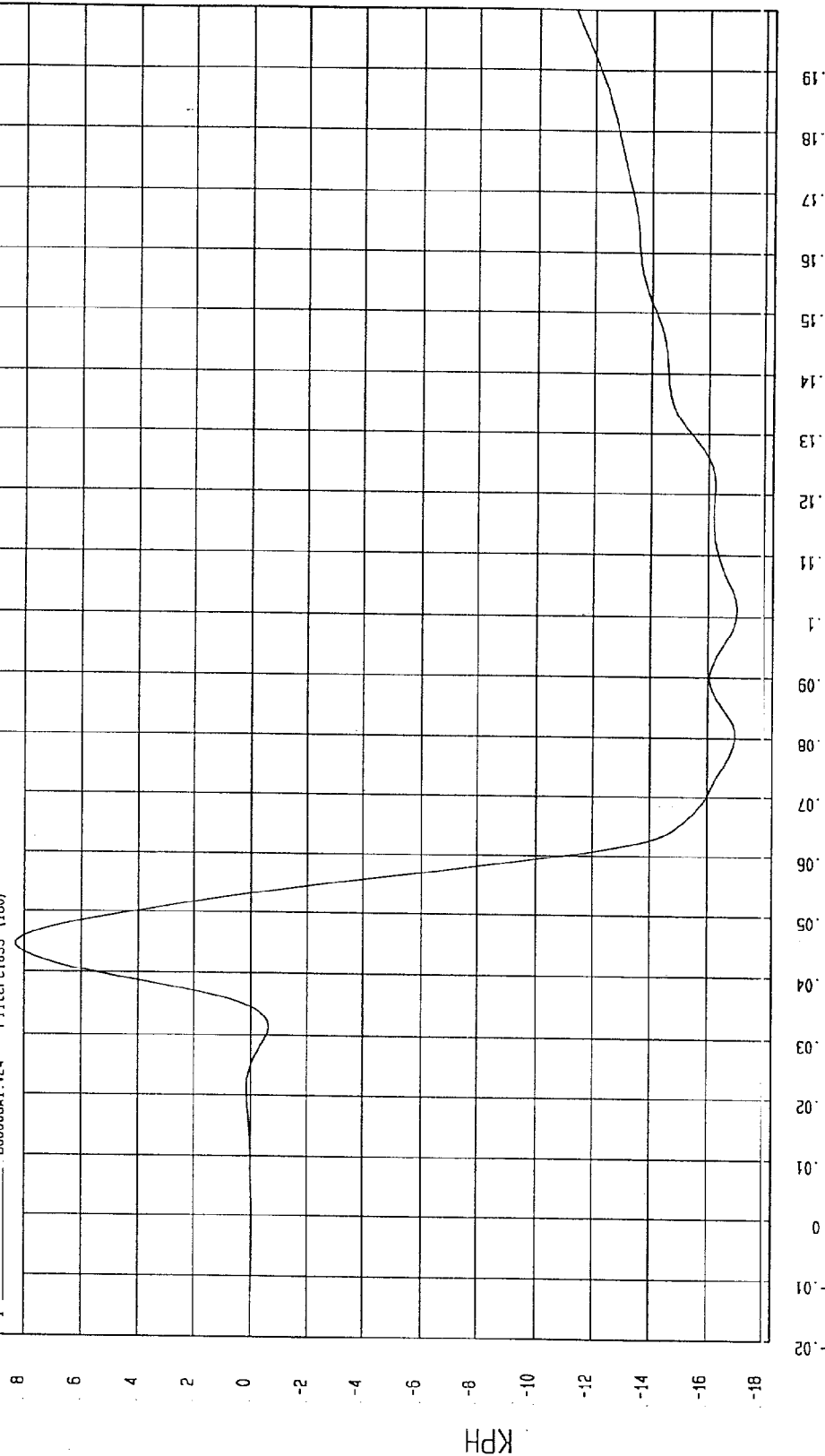
Speed: 38.6 MPH 62.1 KPH

Minimum = -17.05 KPH at 101 msec

Maximum = 8.31 KPH at 45 msec

REAR PASSENGER HEAD Z VELOCITY

1 B00006A1.V24 FilterClass (180)



NCA Research
01-20-2000 15.01

TIME Seconds

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

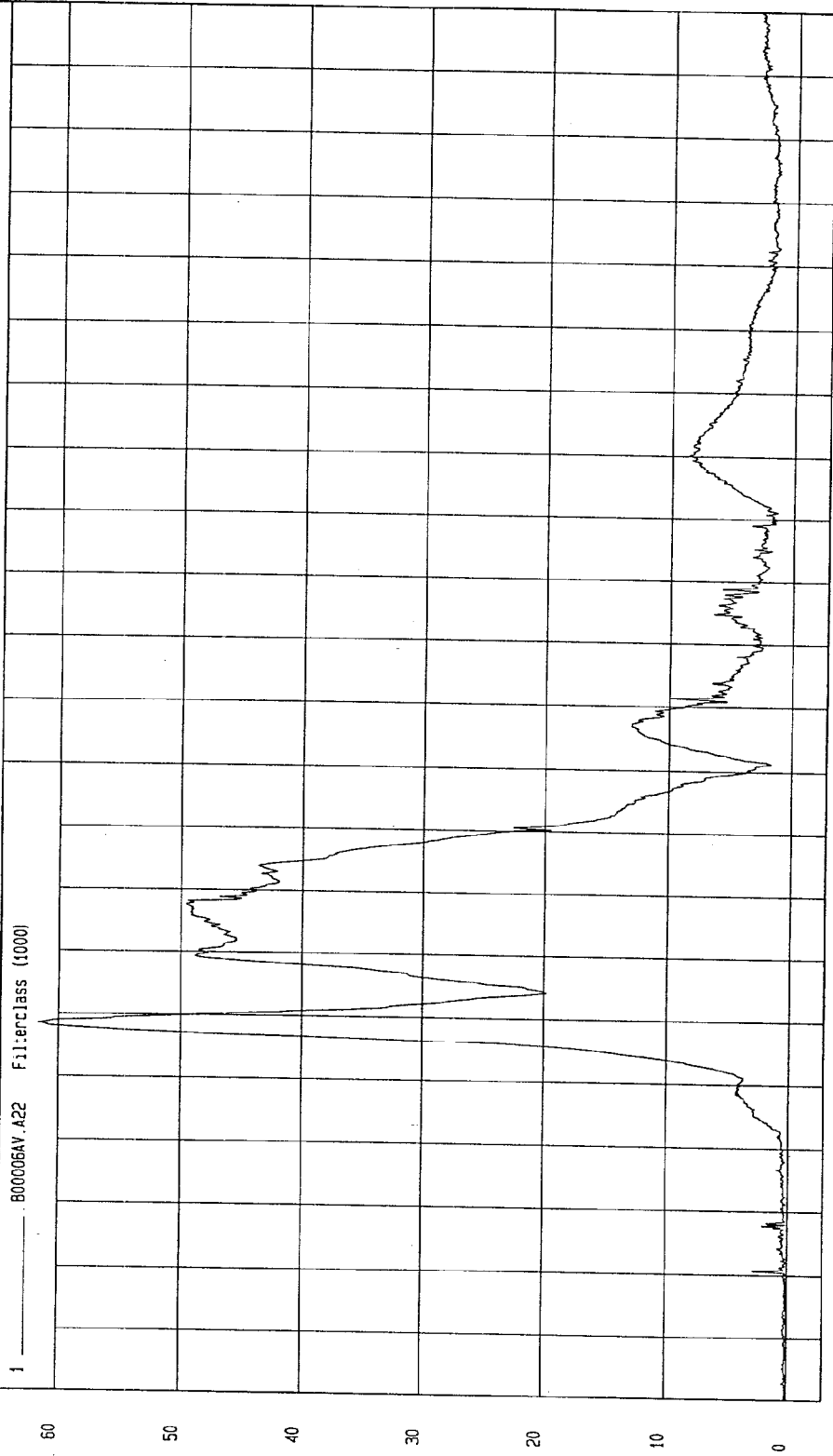
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = .13 G'S at .20 msec

Maximum = 61.62 G'S at 38 msec

REAR PASSENGER HEAD RESULTANT



TIME (SECONDS)

MOA Research
01-20-2000 15:01

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

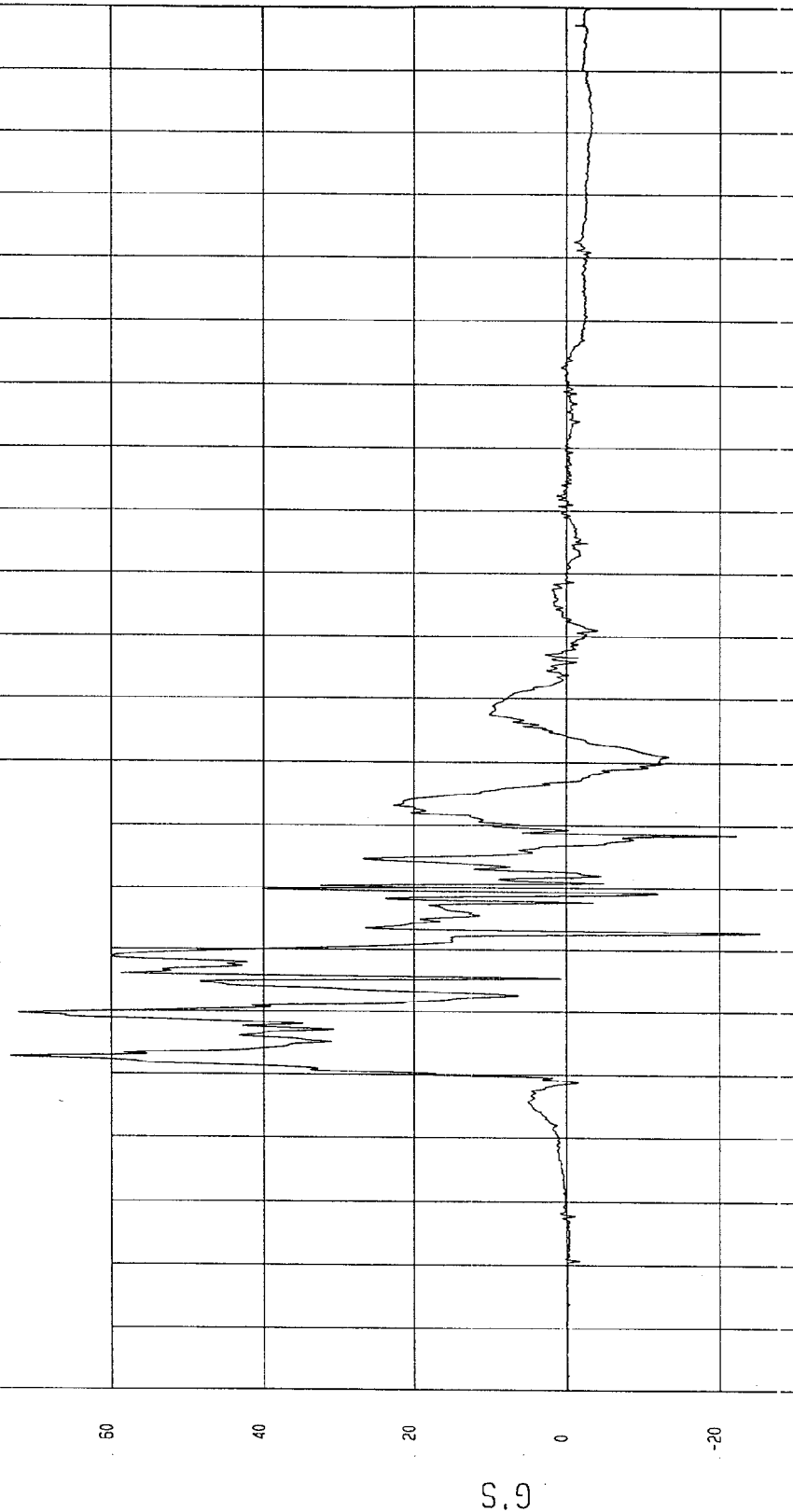
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 73.18 G'S at 33 msec

Minimum = -25.28 G'S at 53 msec

REAR PASSENGER UPPER RIB Y ACCELERATION

1 800006AT.A25 Filterclass (1000)



MGA Research
01-20-2000 14:30

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

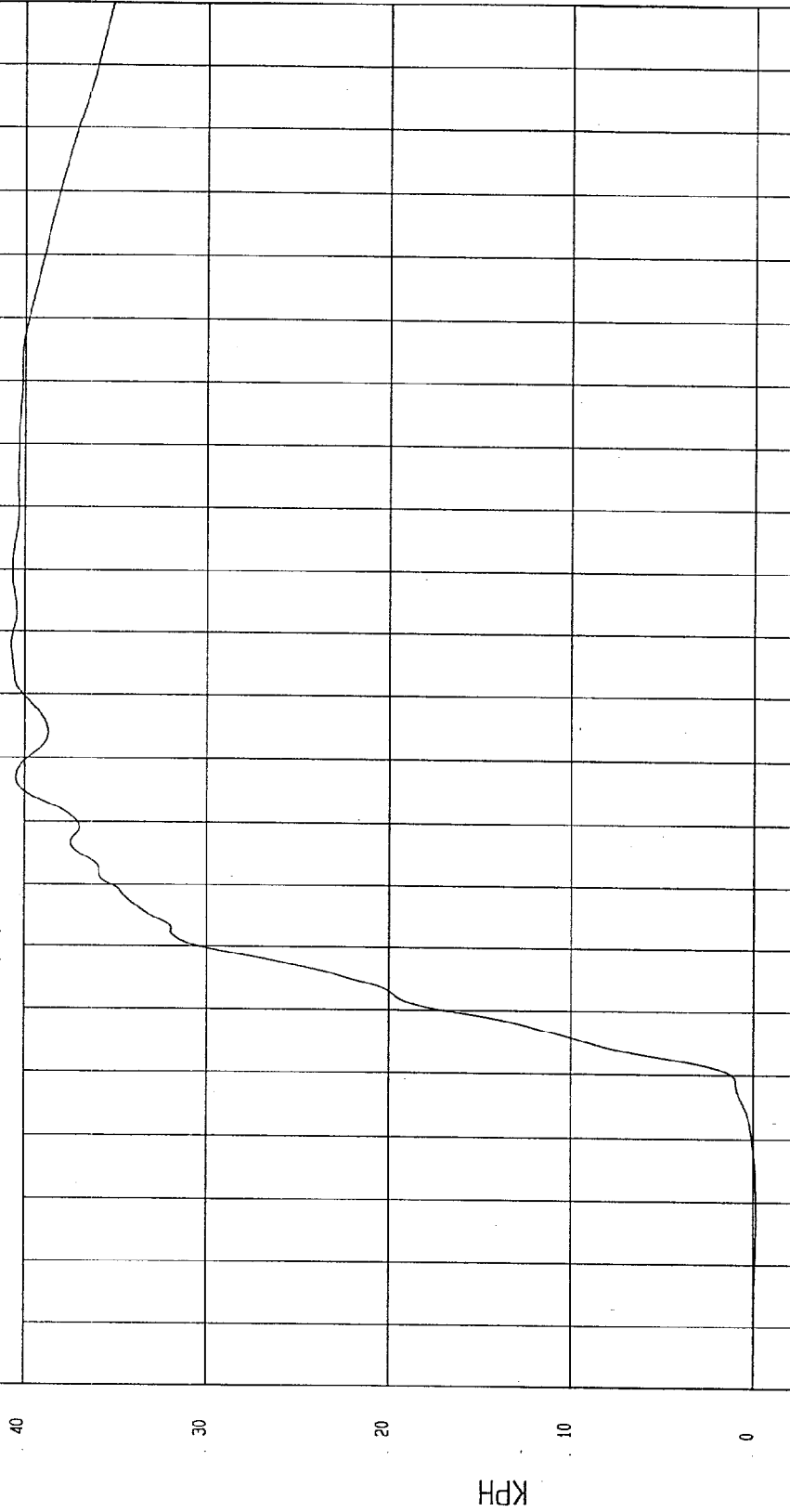
COMPONENT: 2000 VW JETTA (CY5800)

Minimum = -.16 KPH at 8 msec

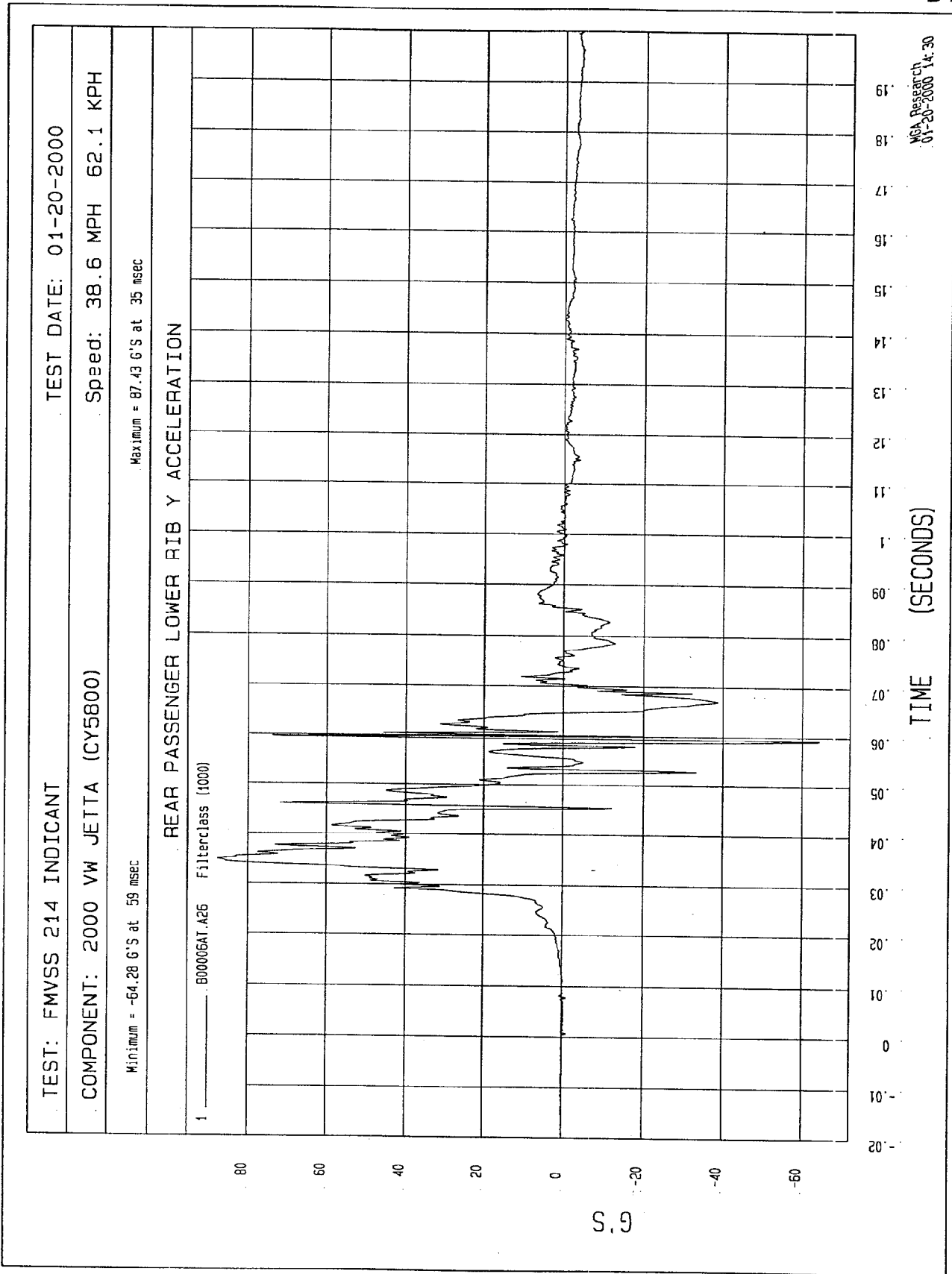
Maximum = 40.71 KPH at 98 msec

REAR PASSENGER UPPER RIB Y VELOCITY

1 800006A1.V25 FilterClass (180)



WCA Research
01-20-2000 1A:30



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

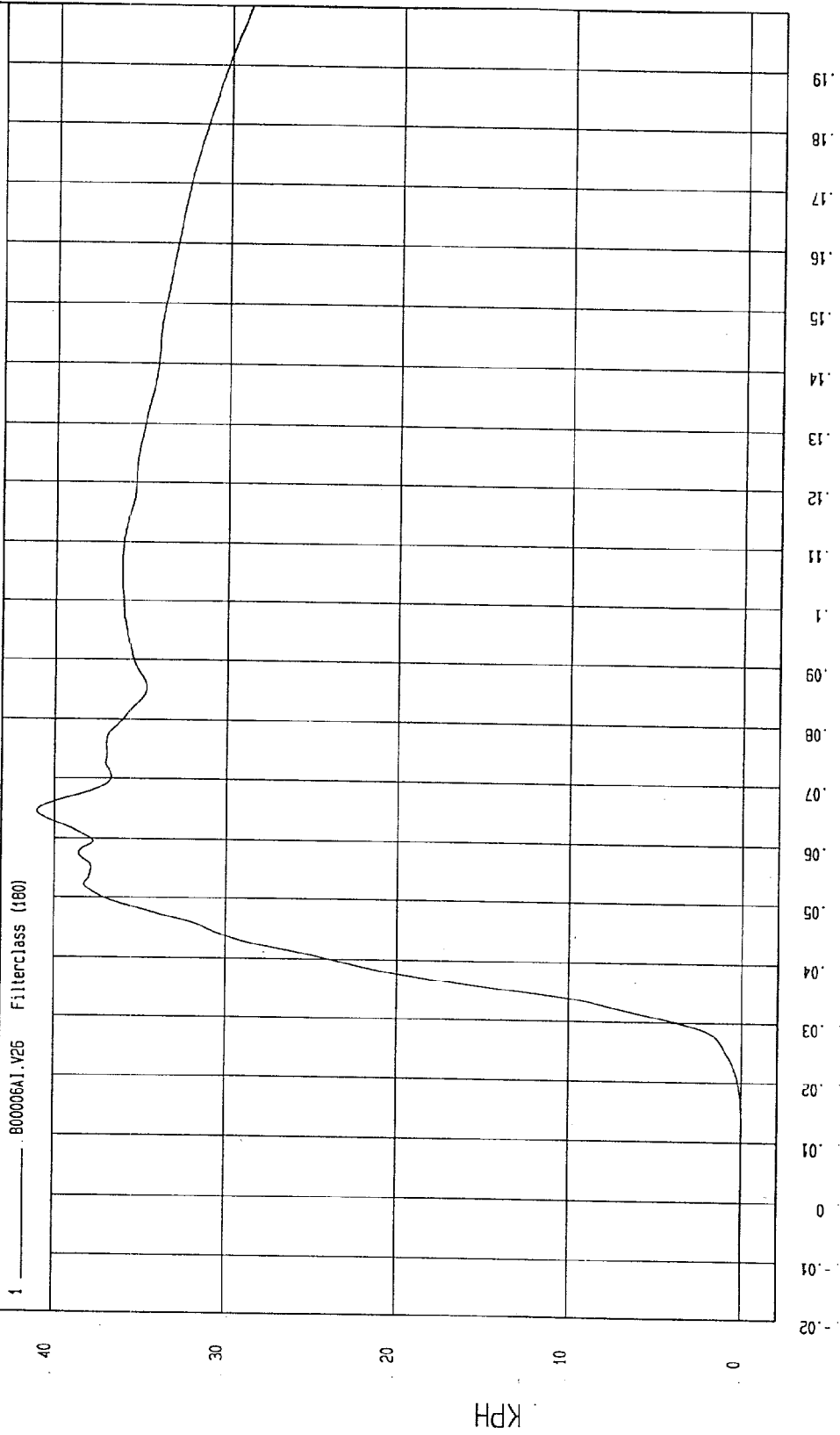
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -1.10E-02 KPH at 8 msec

Maximum = 41.01 KPH at 65 msec

REAR PASSENGER LOWER RIB Y VELOCITY



MECA Research
01-20-2000 14:30

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

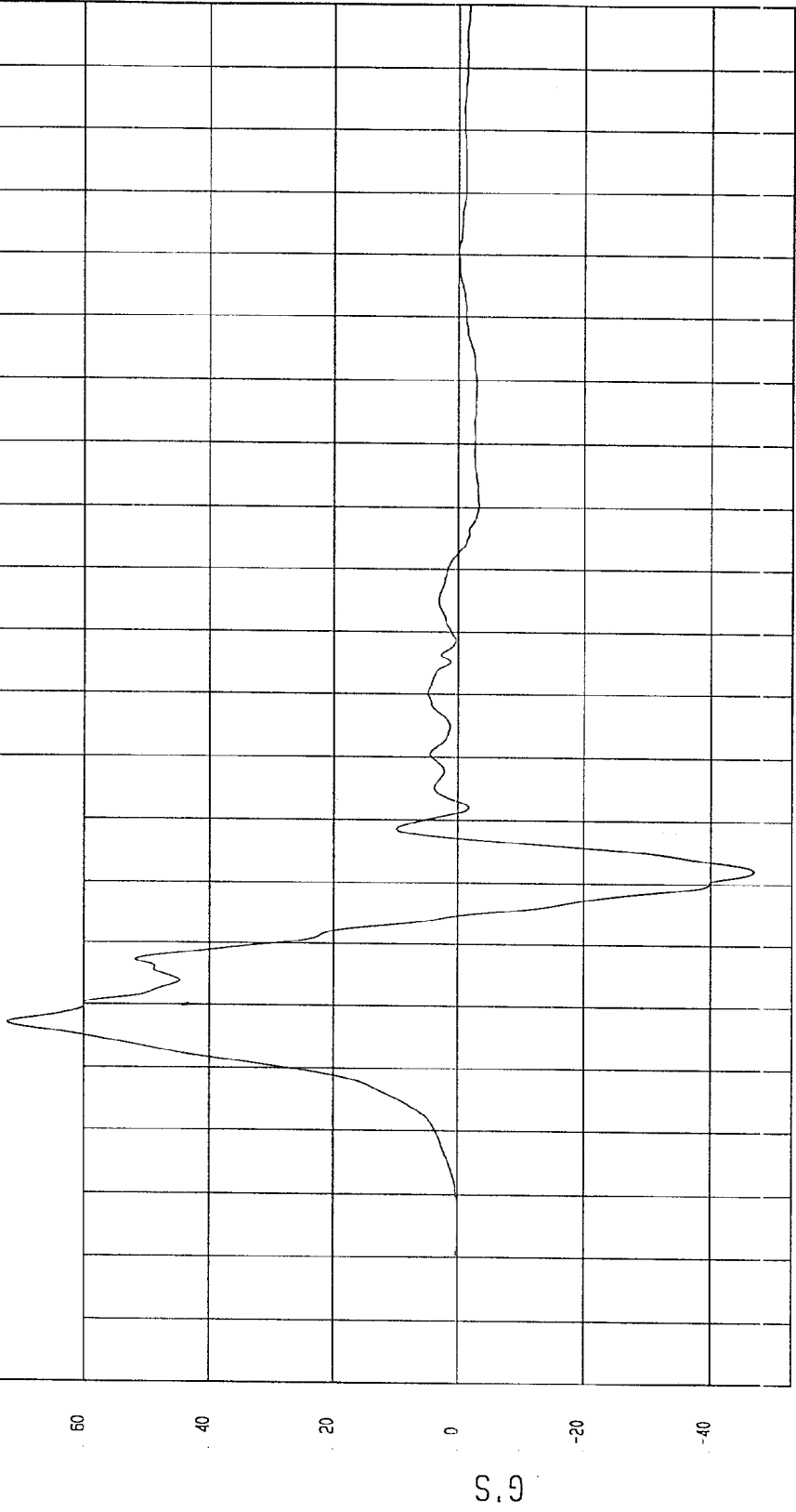
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 71.99 G'S at 37 msec

Minimum = -46.78 G'S at 62 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 800006AF.A27 Filterclass (180)



TIME (SECONDS)

NSA Research
01-20-2000 14:30

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

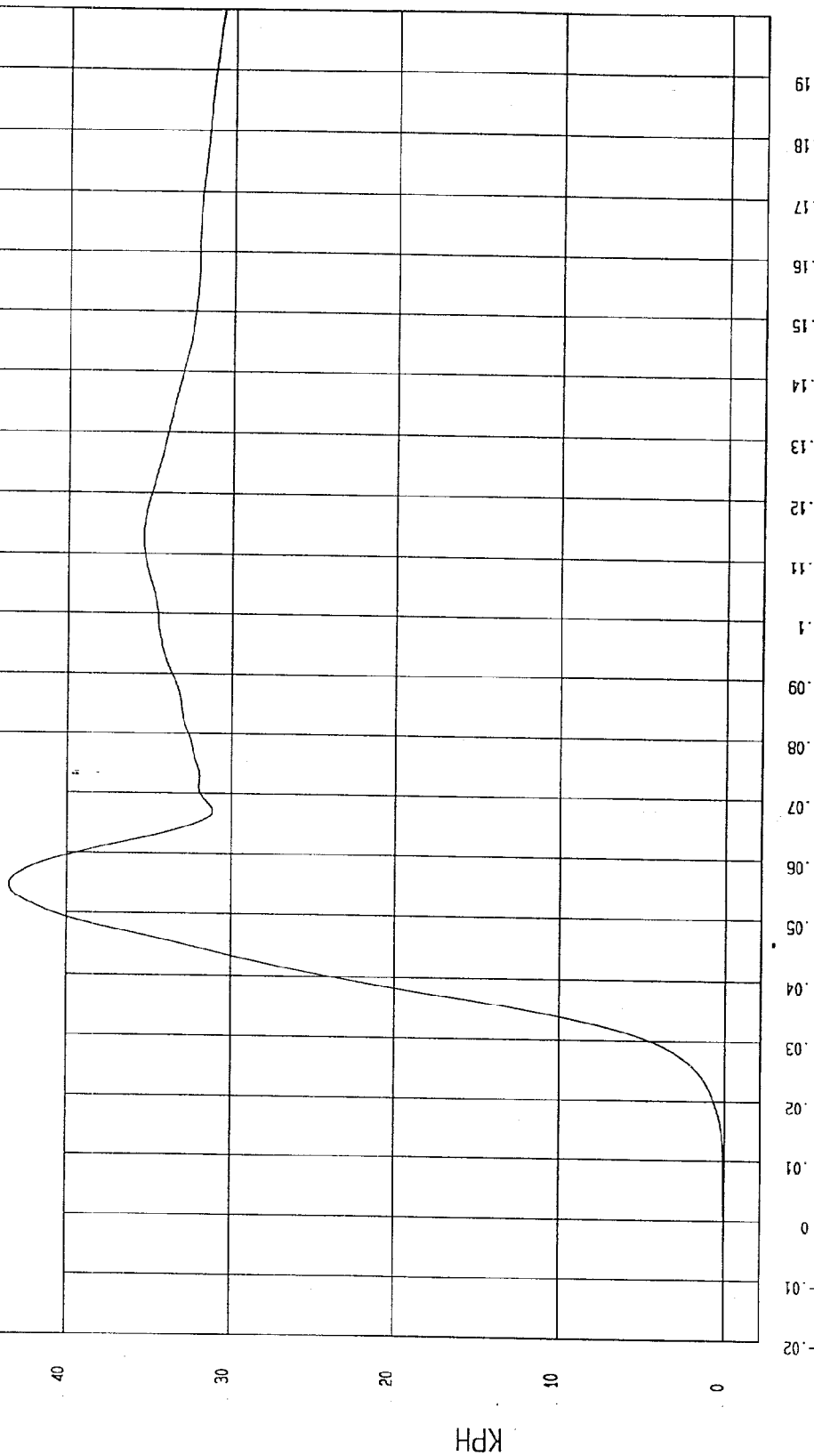
Speed: 38.6 MPH 62.1 KPH

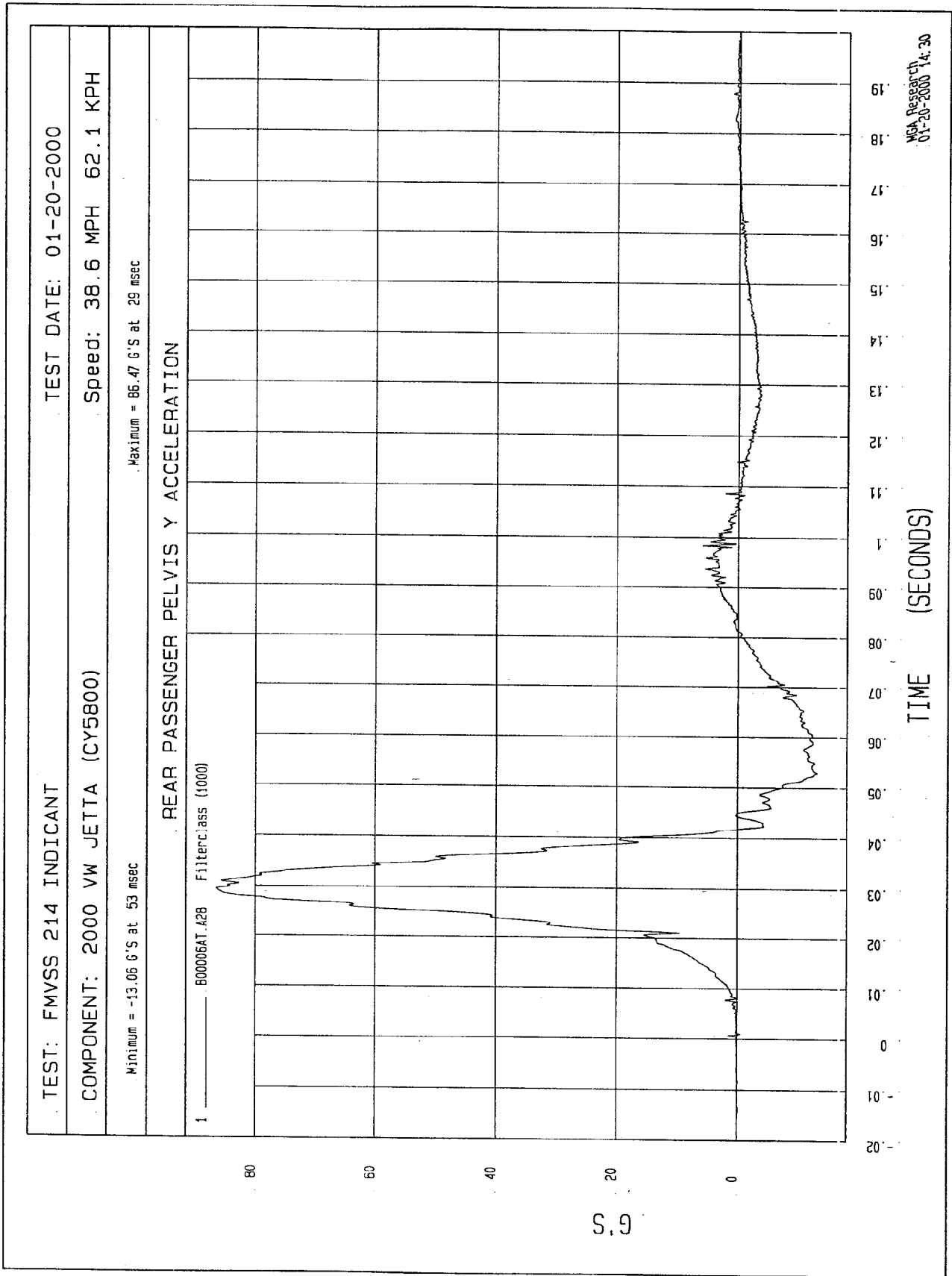
Minimum = 0 KPH at -20 msec

Maximum = 43.49 KPH at 55 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 ——— 800006A1.V27 Filterclass (180)

WCA Research
01-20-2000 14:30

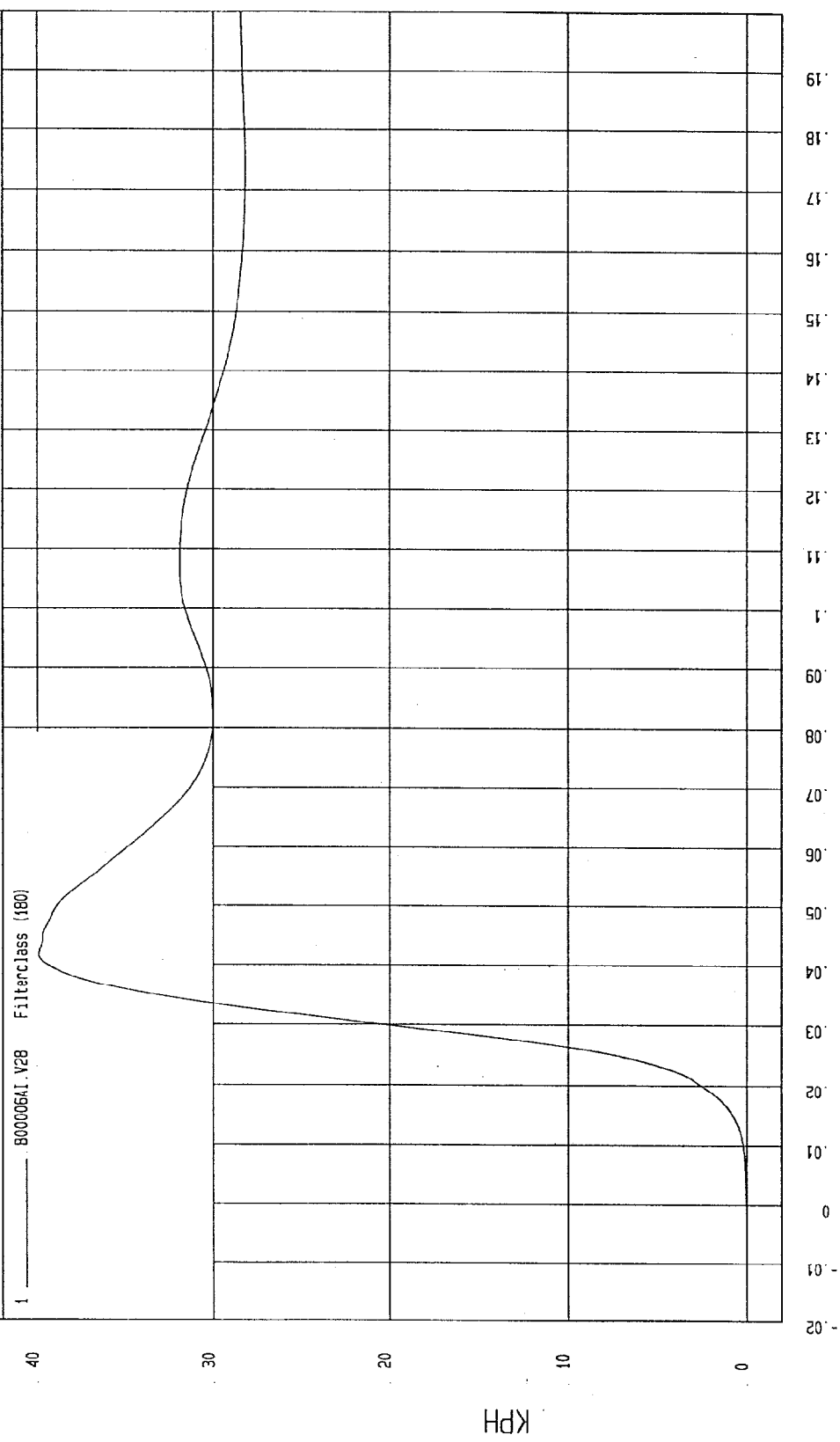


TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

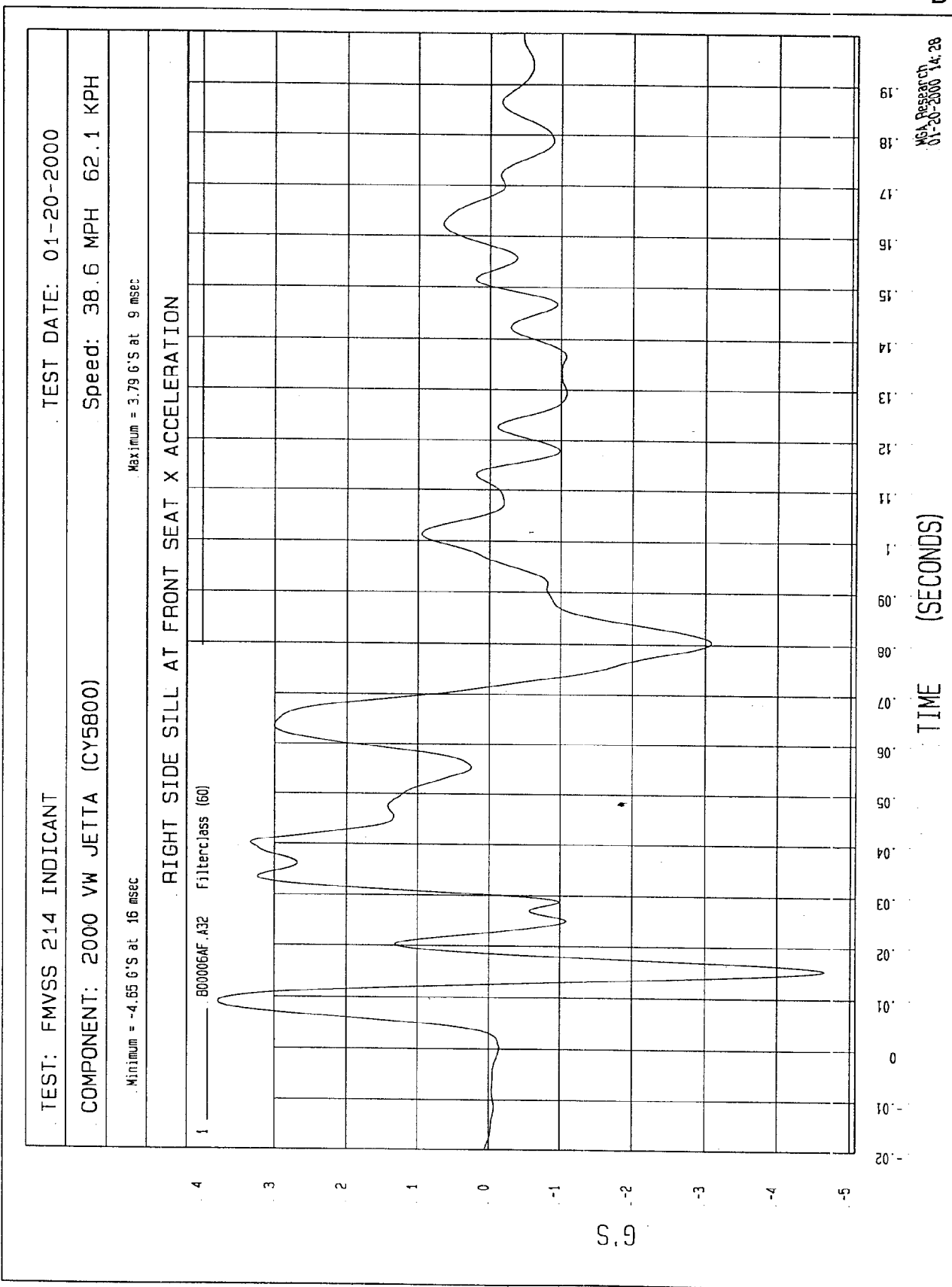
COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -4.41E-03 KPH at -8 msec Maximum = 39.94 KPH at 42 msec

REAR PASSENGER PELVIS Y VELOCITY



WGL Research
01-20-2000 14:30

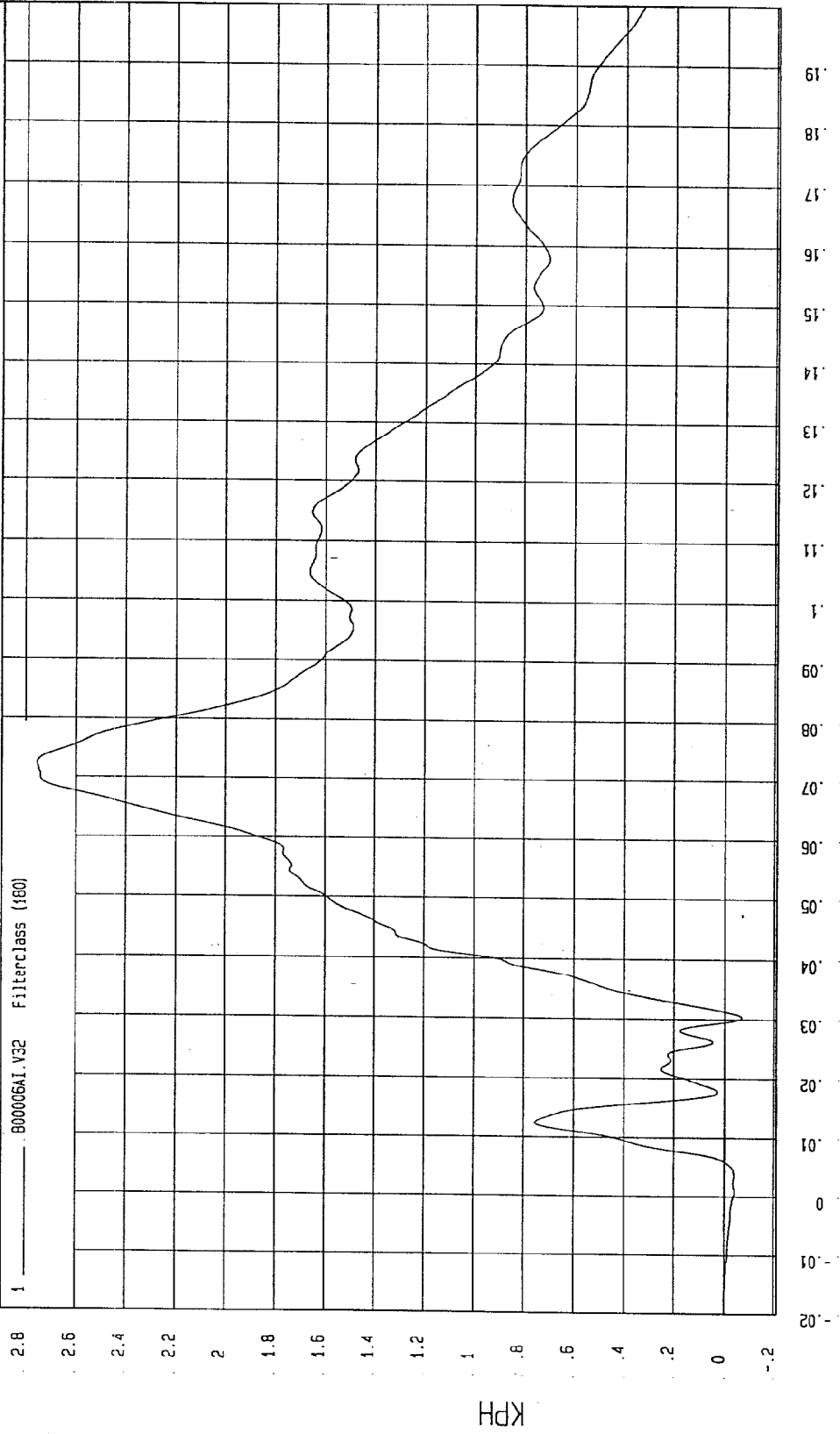


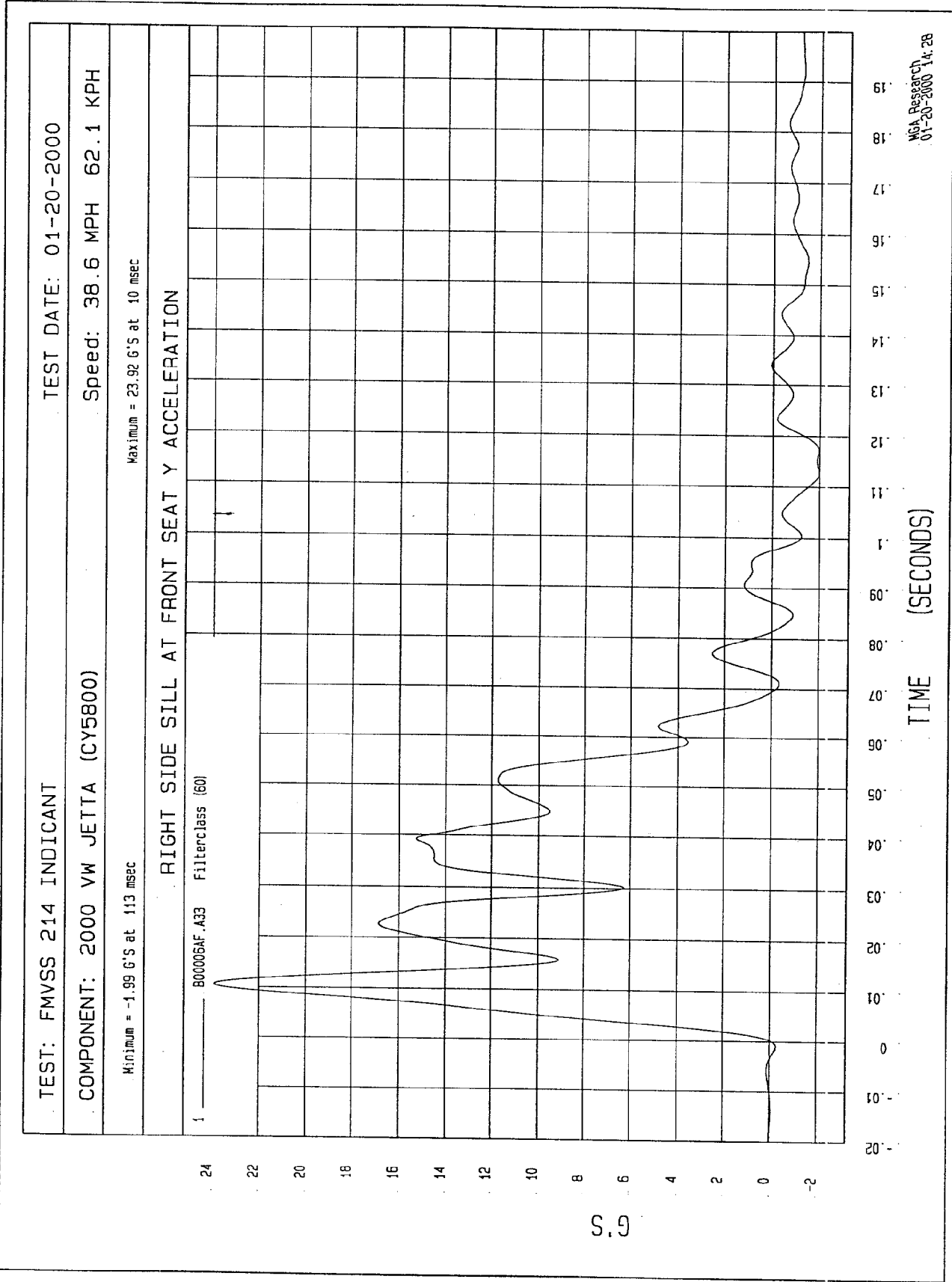
TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -6.93E-02 KPH at 30 msec Maximum = 2.75 KPH at 72 msec

RIGHT SIDE SILL AT FRONT SEAT X VELOCITY





TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -7.05E-03 KPH at -10 msec

Maximum = 26.74 KPH at 98 msec

RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY

1 800006A1.V33 Filterclass (180)

28

26

24

22

20

18

16

14

12

10

8

6

4

2

0

KPH

-0.02

-0.01

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

NGA Research
01-20-2000 14:28

RIGHT SIDE SILL @ FRONT SEAT Z ACCELERATION VS. TIME

NO VALID DATA COLLECTED

RIGHT SIDE SILL @ REAR SEAT X ACCELERATION VS. TIME
NO VALID DATA COLLECTED

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

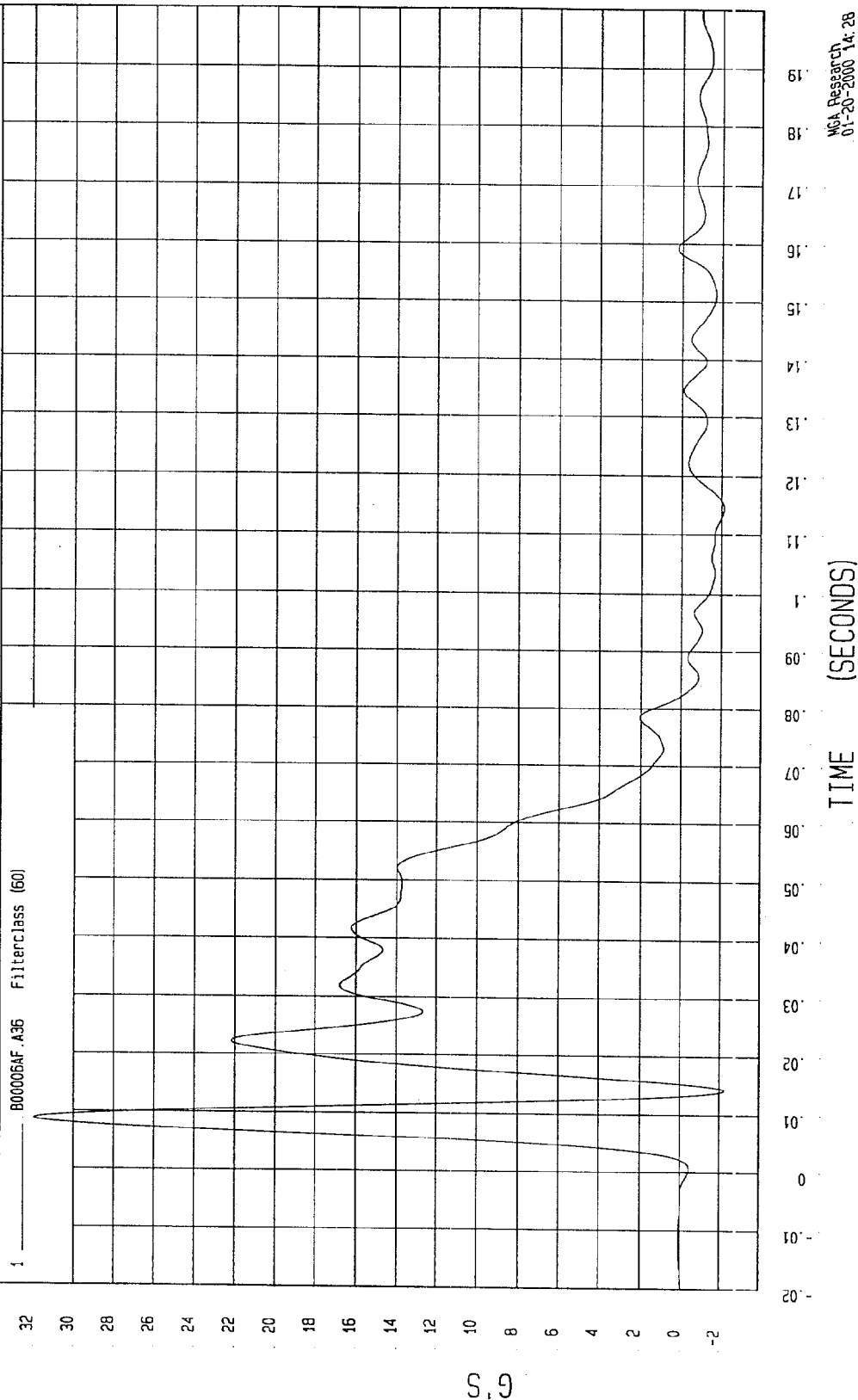
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -2.22 G'S at 14 msec

Maximum = 31.91 G'S at 9 msec

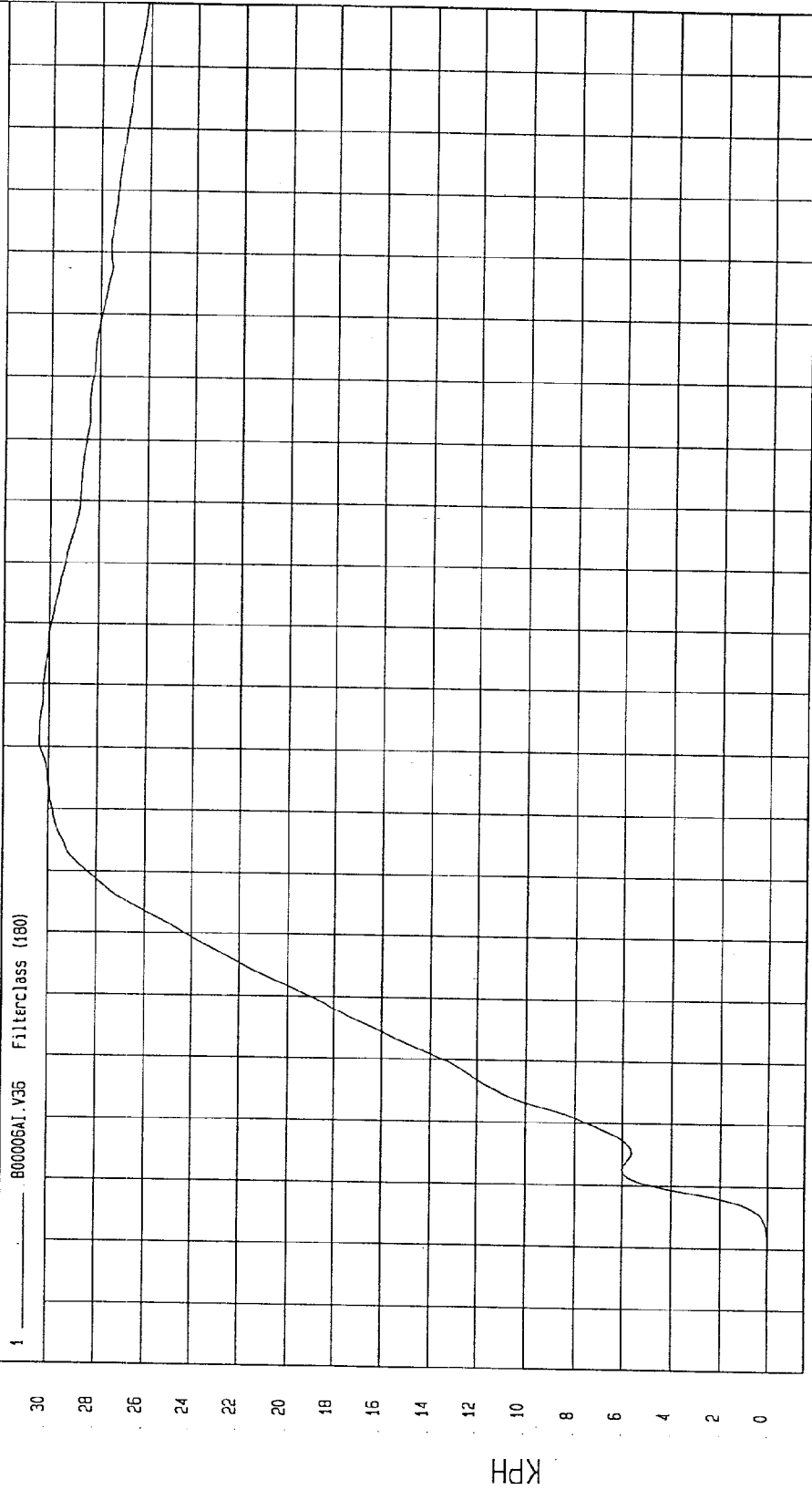
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION



WGL Research
01-20-2000 14:28

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000
 COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH
 Minimum = -2.11E-03 KPH at -16 msec Maximum = 30.39 KPH at 81 msec

RIGHT SIDE SILL AT REAR SEAT Y VELOCITY



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

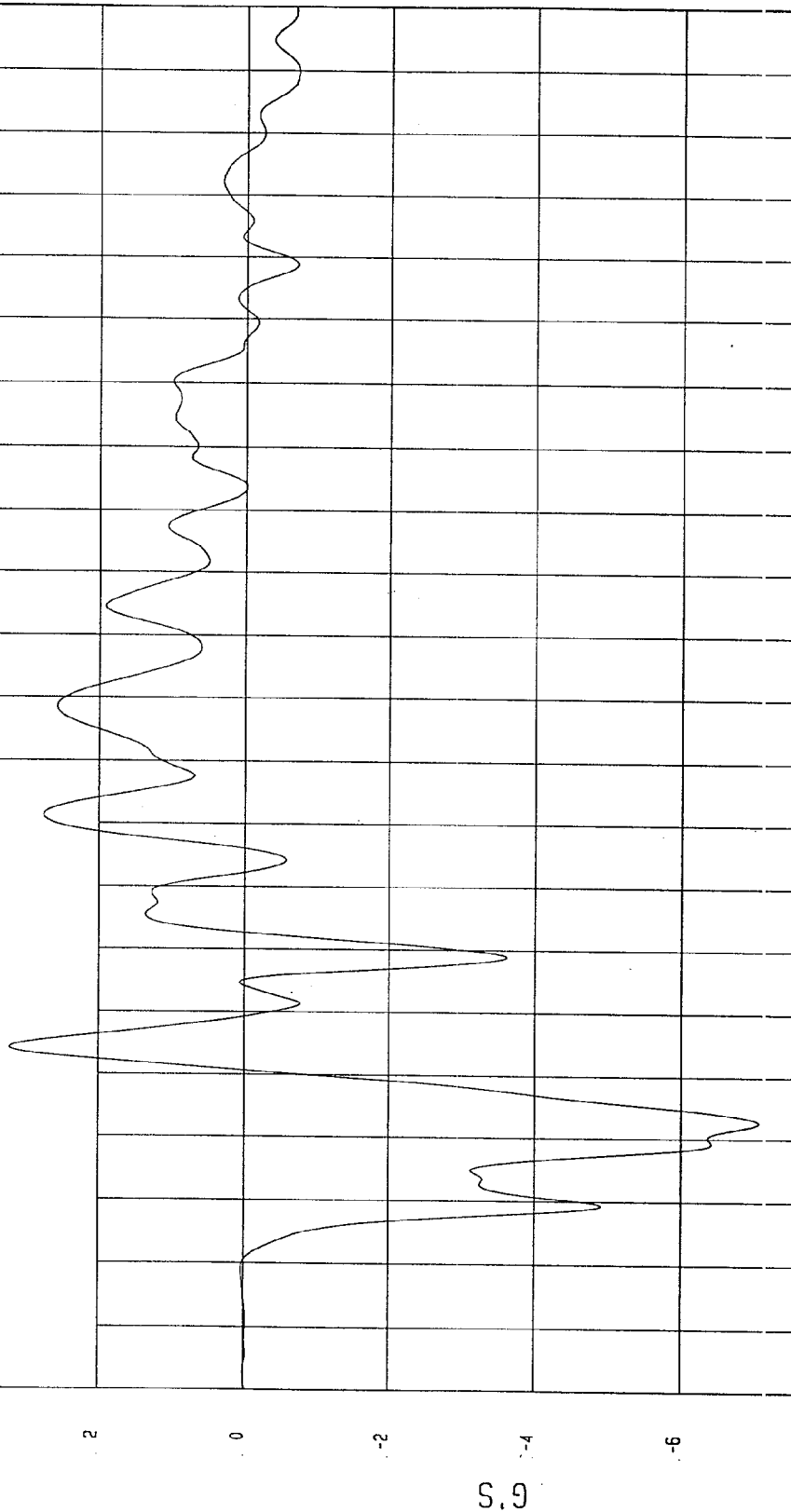
Speed: 38.6 MPH 62.1 KPH

Minimum = -7.06 G'S at 23 msec

Maximum = 3.19 G'S at 34 msec

RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

1 B00006AF.A37 Filterclass (50)



TIME (SECONDS)

MGA Research
01-20-2000 14:28

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

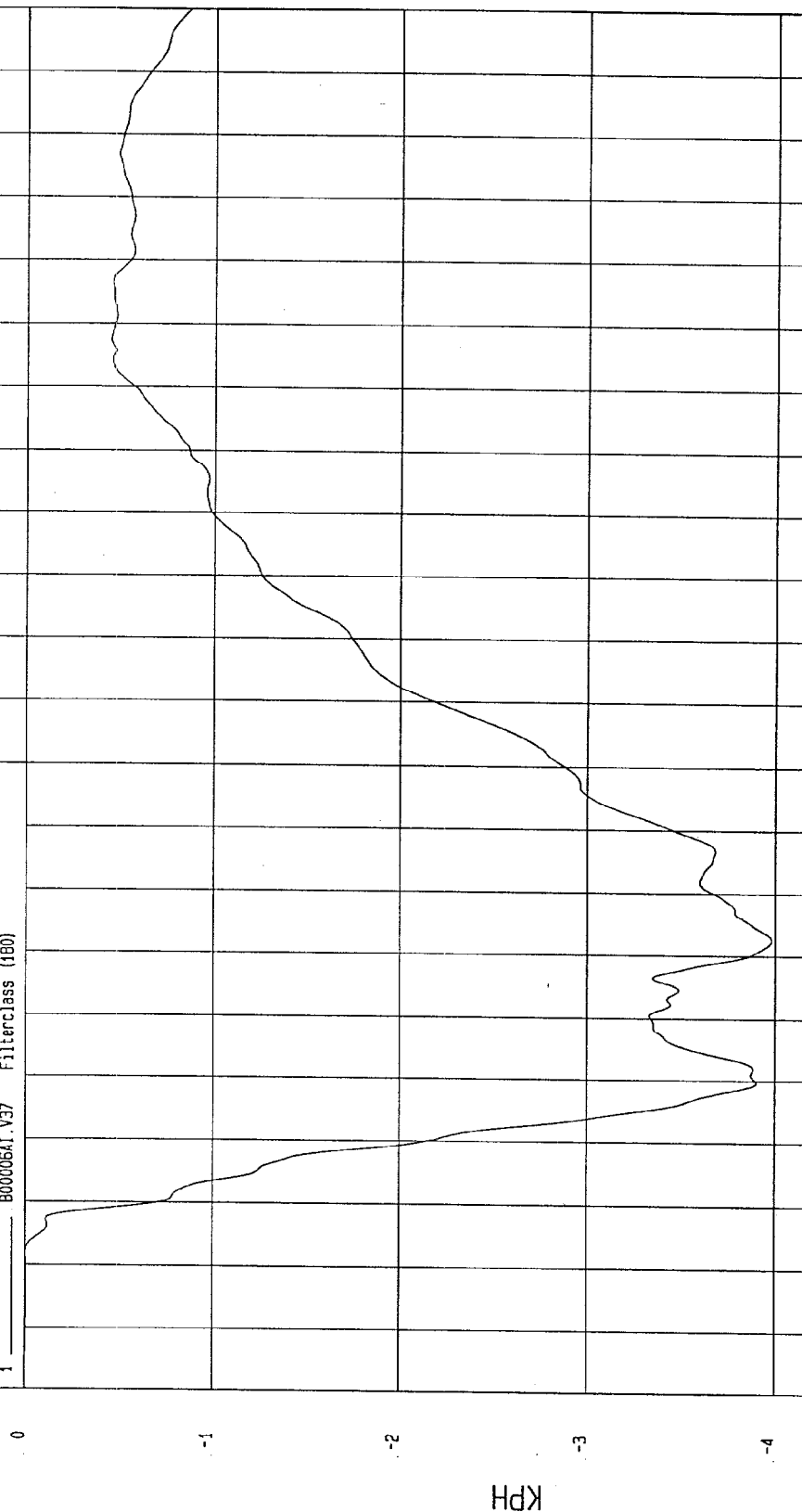
Speed: 38.6 MPH 62.1 KPH

Minimum = -3.98 KPH at 52 msec

Maximum = 2.28E-03 KPH at -16 msec

RIGHT SIDE SILL AT REAR SEAT Z VELOCITY

1 B00006A1.V37 Filterclass (100)



TIME Seconds

MGA Research
01-20-2000 14:28

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

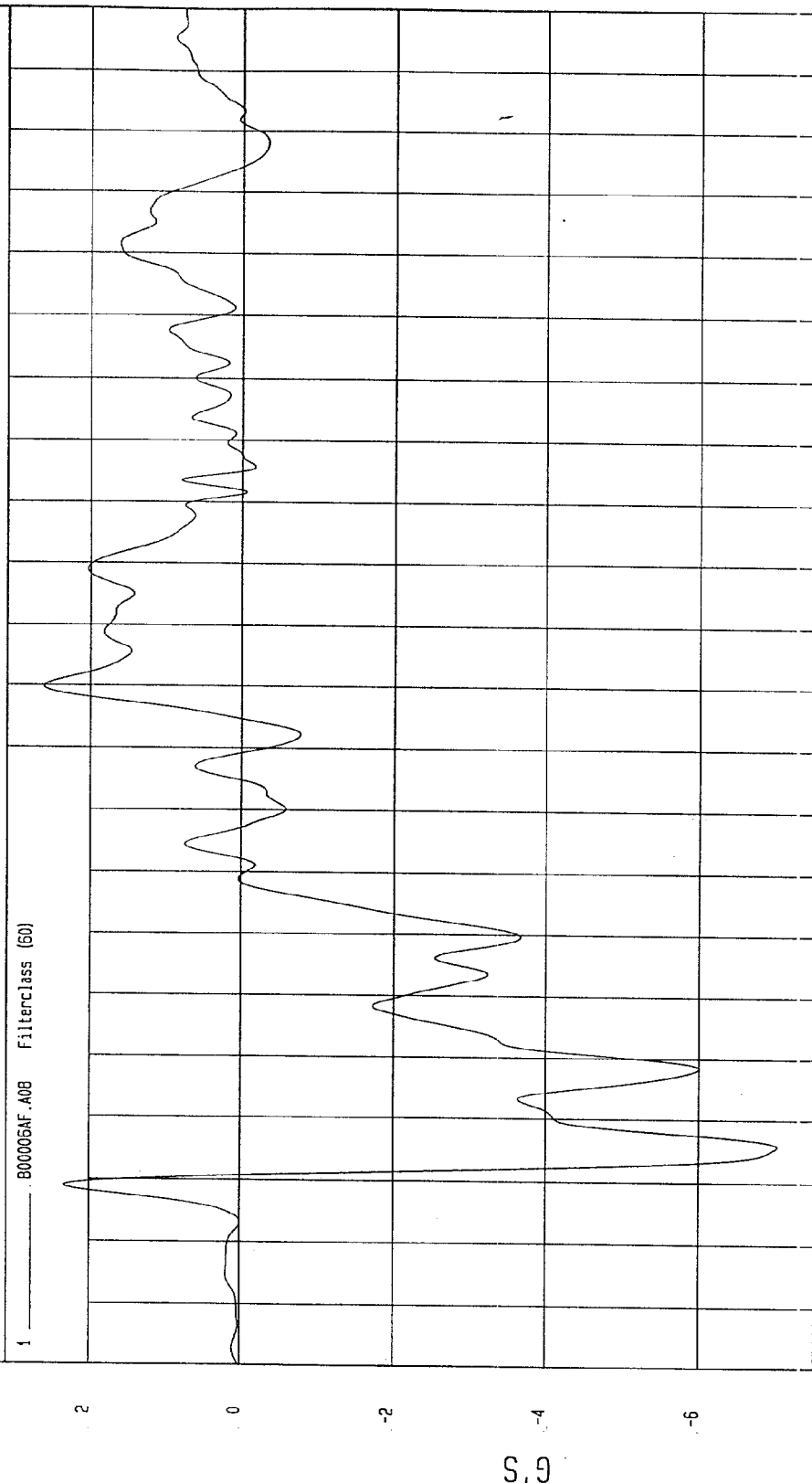
COMPONENT: 2000 VW JETTA (CY5800)

Minimum = -7.04 G'S at 16 msec

Maximum = 2.6 G'S at 90 msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION

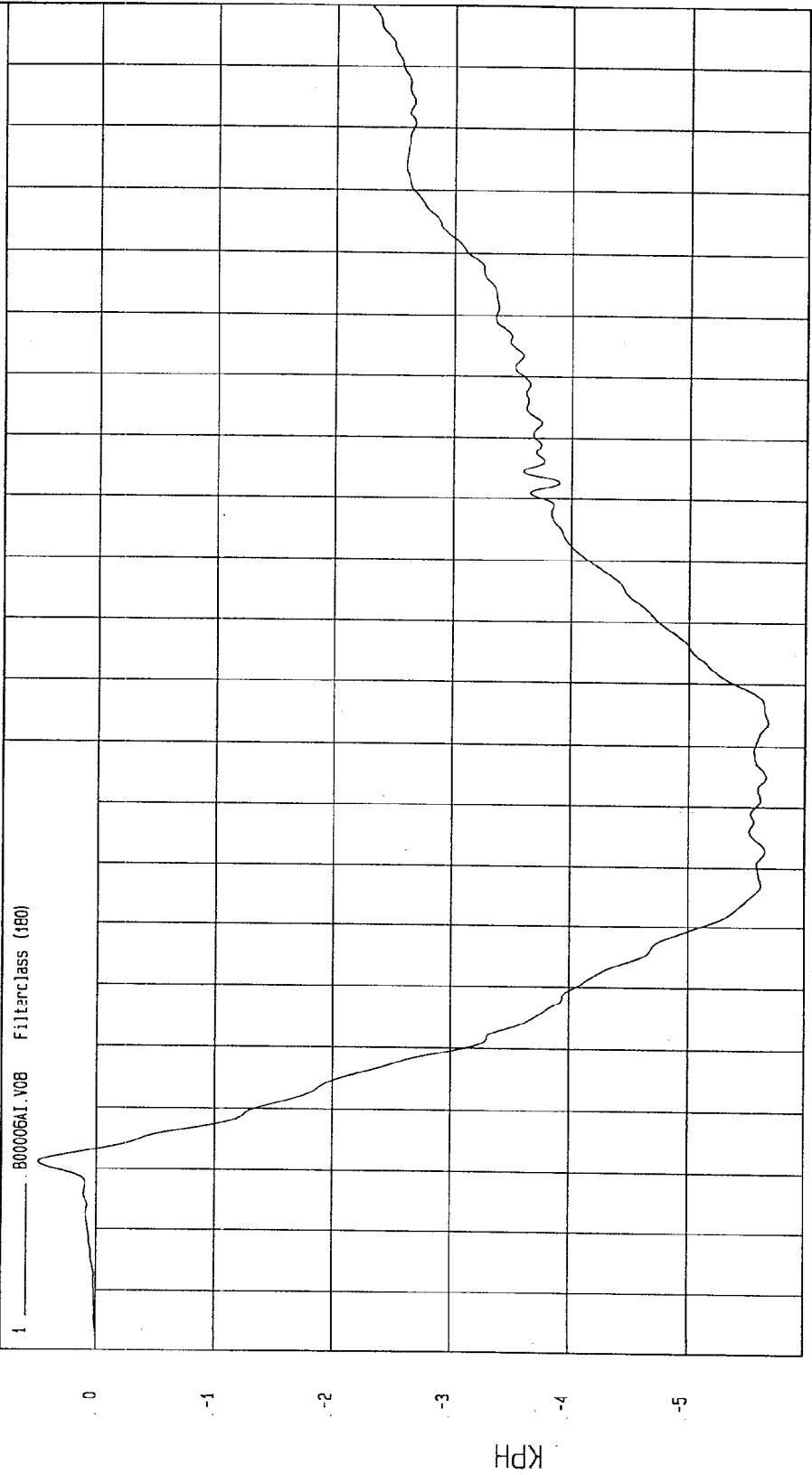
1 800005AF.A08 Filterclass (50)



MSA Research
01-20-2000 14:28

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000
COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH
Minimum = -5.68 KPH at 84 msec Maximum = .49 KPH at 11 msec

REAR FLOORPAN ABOVE AXLE X VELOCITY



TIME Seconds
NCA Research
01-20-2000 14:28

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

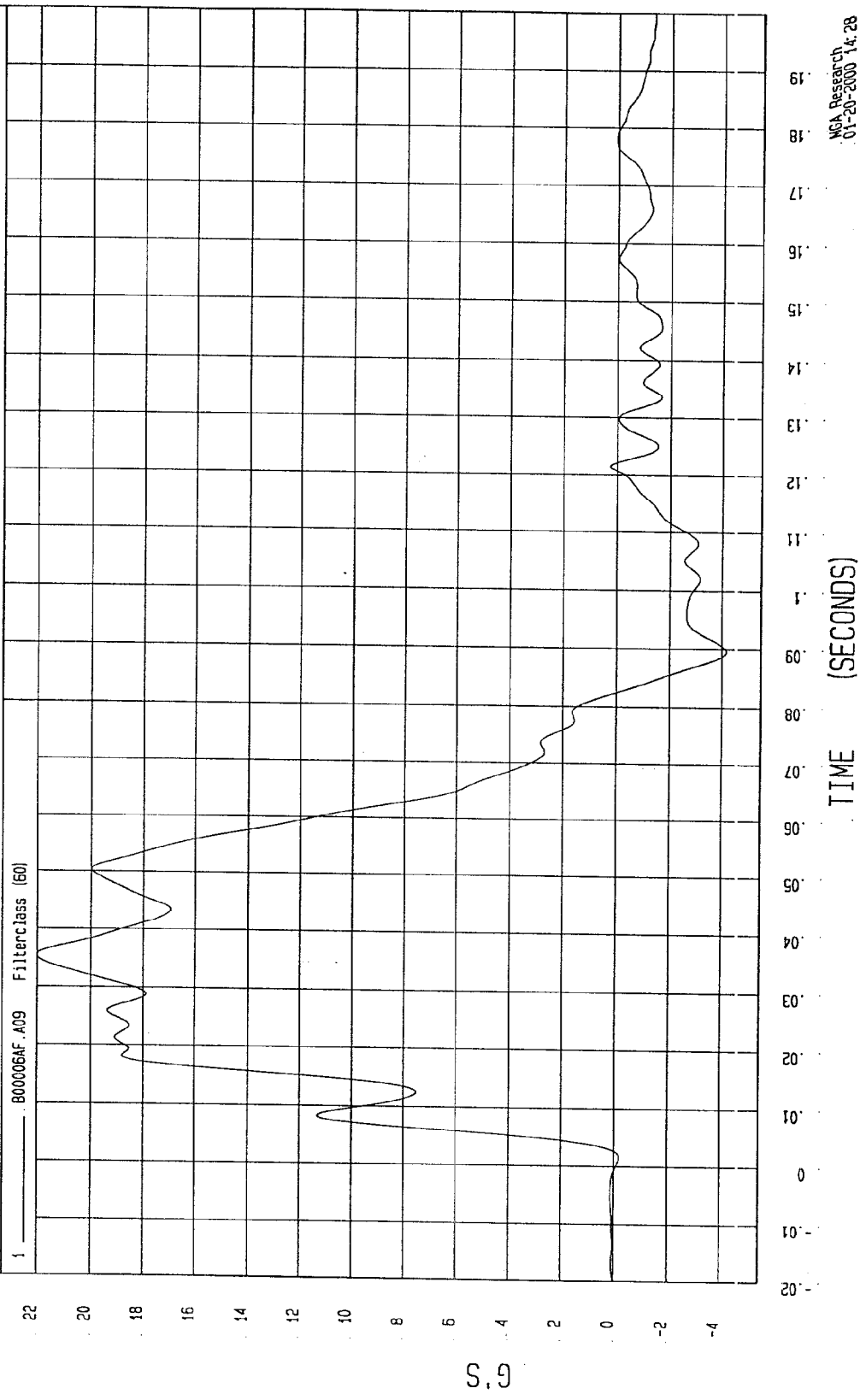
Speed: 38.6 MPH 62.1 KPH

COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 22.02 G'S at 35 msec

Minimum = -4.16 G'S at 90 msec

REAR FLOORPAN ABOVE AXLE Y ACCELERATION

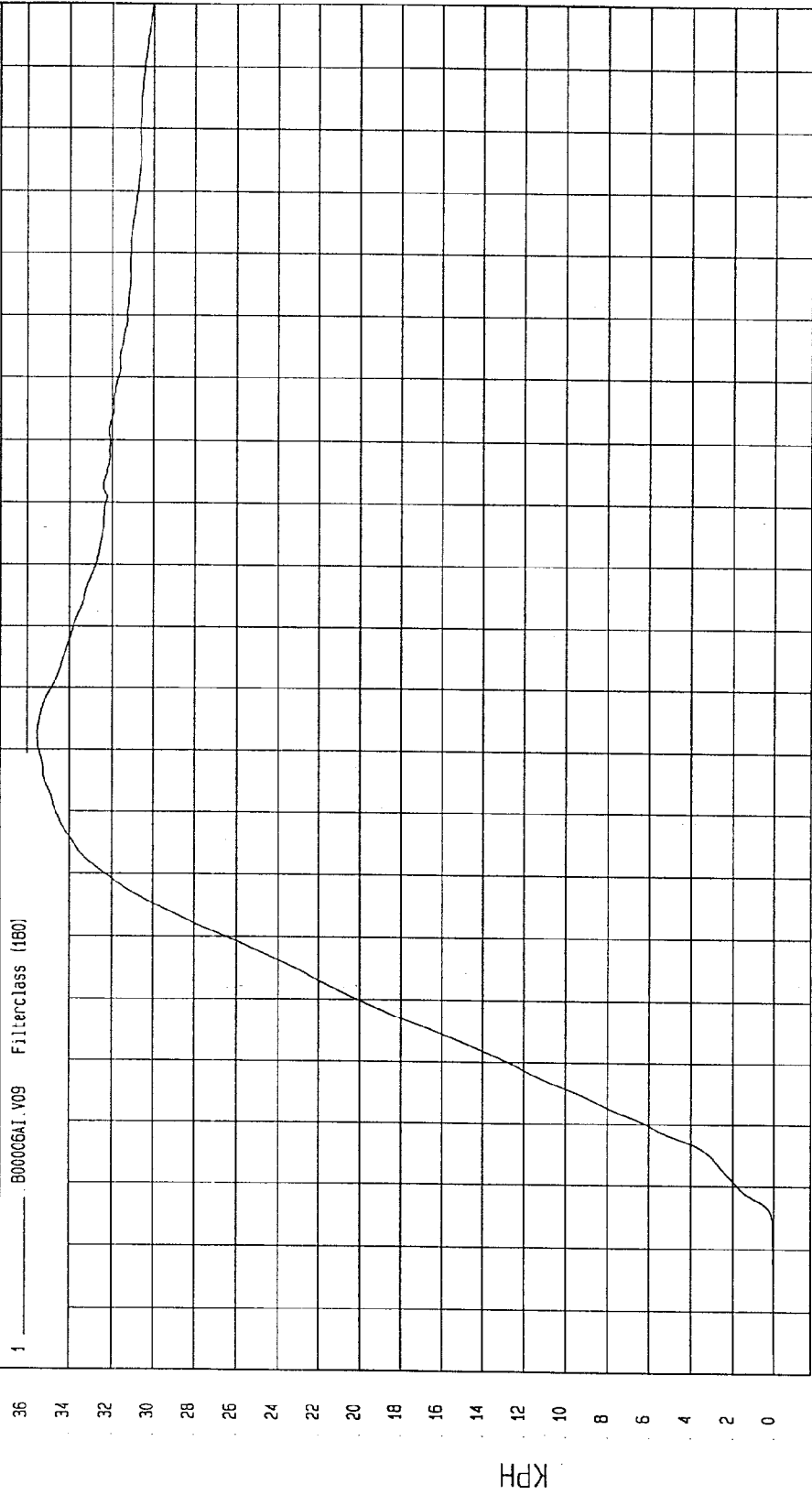


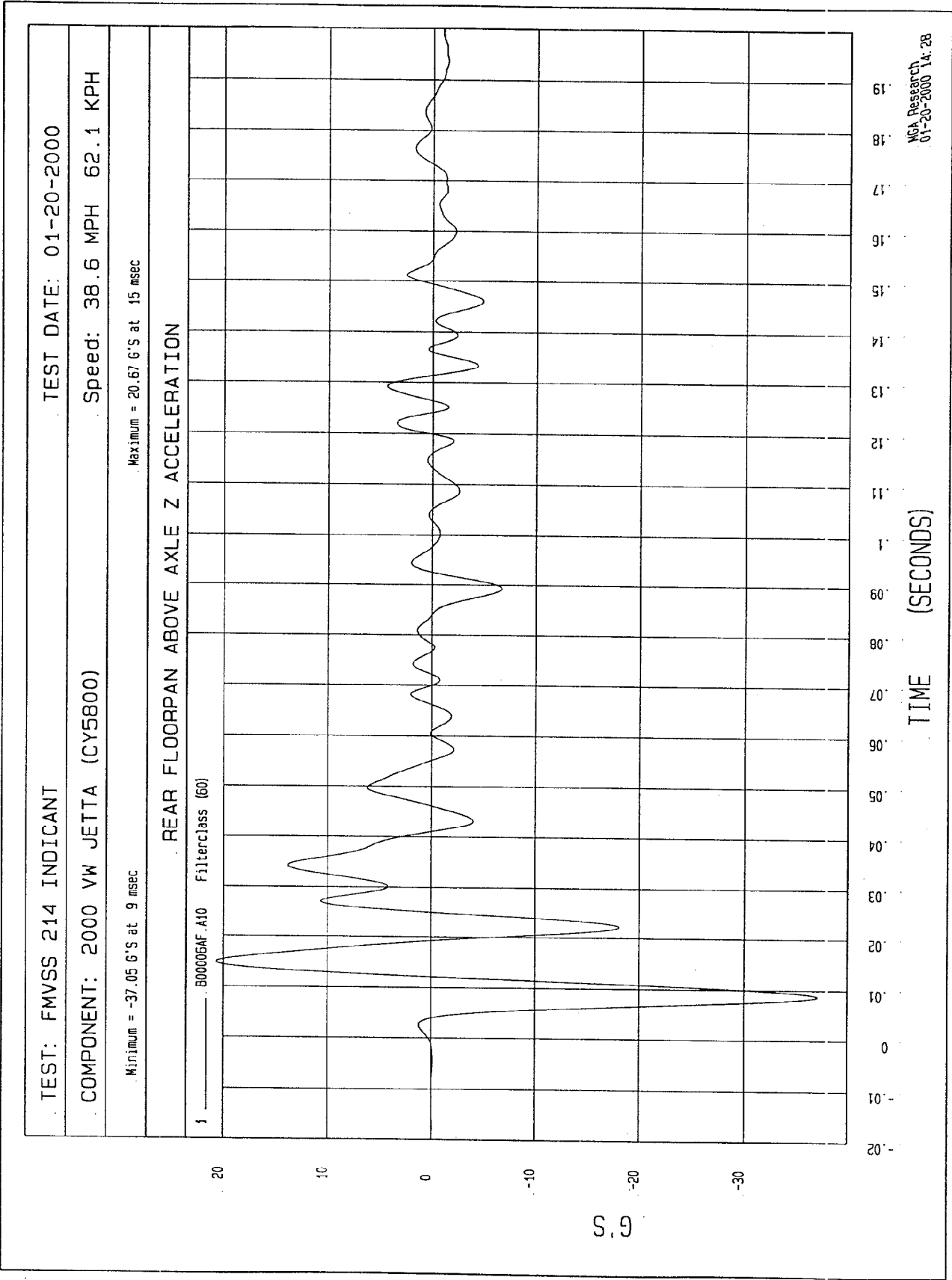
TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = 0 KPH at -20 msec Maximum = 35.52 KPH at 82 msec

REAR FLOORPAN ABOVE AXLE Y VELOCITY





TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

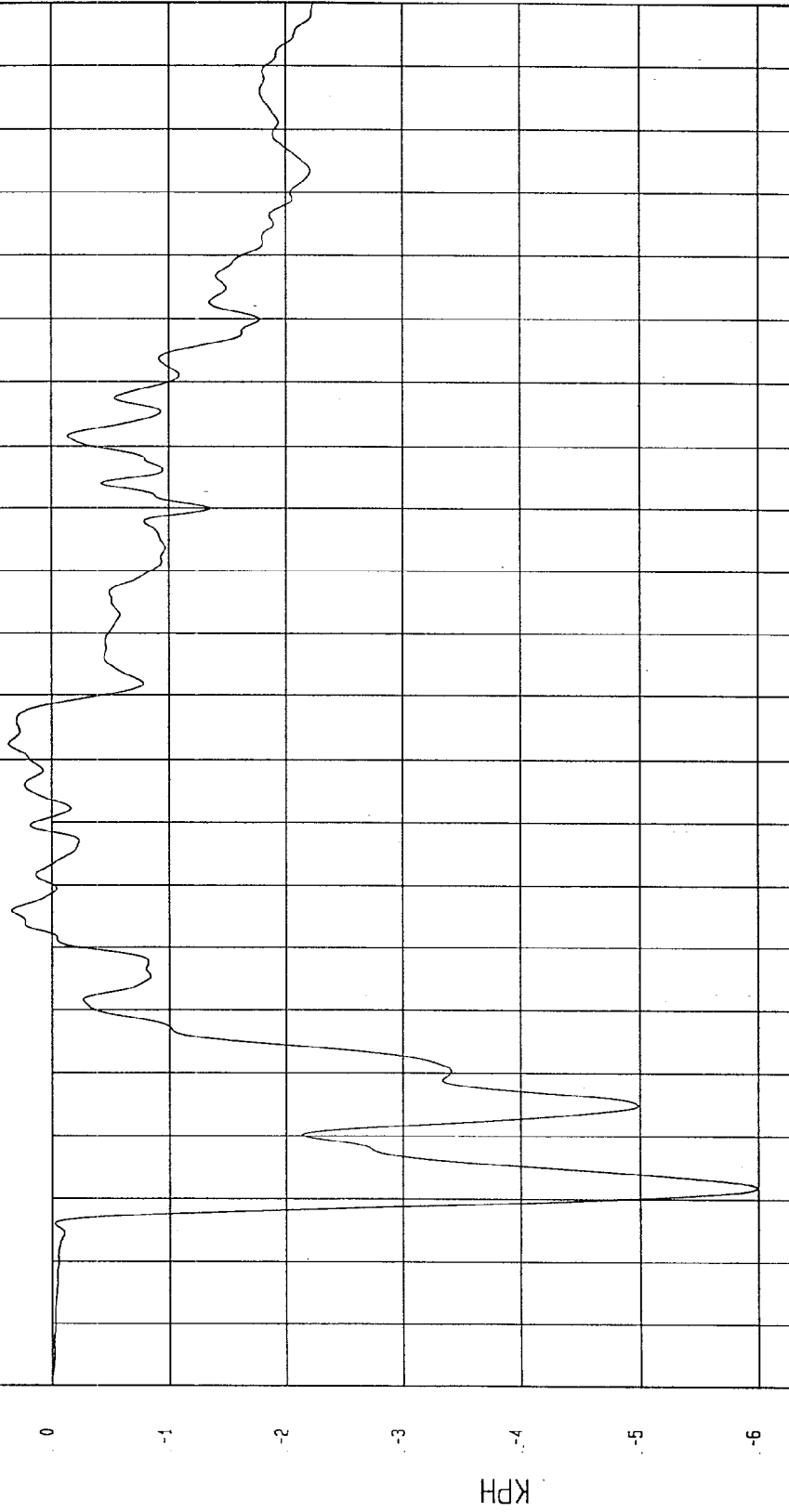
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = .36 KPH at 82 msec

Minimum = -5.99 KPH at 12 msec

REAR FLOORPAN ABOVE AXLE Z VELOCITY

1 800005A1.V10 FilterClass (180)



TIME Seconds
MCA Research
01-20-2000 14:28

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

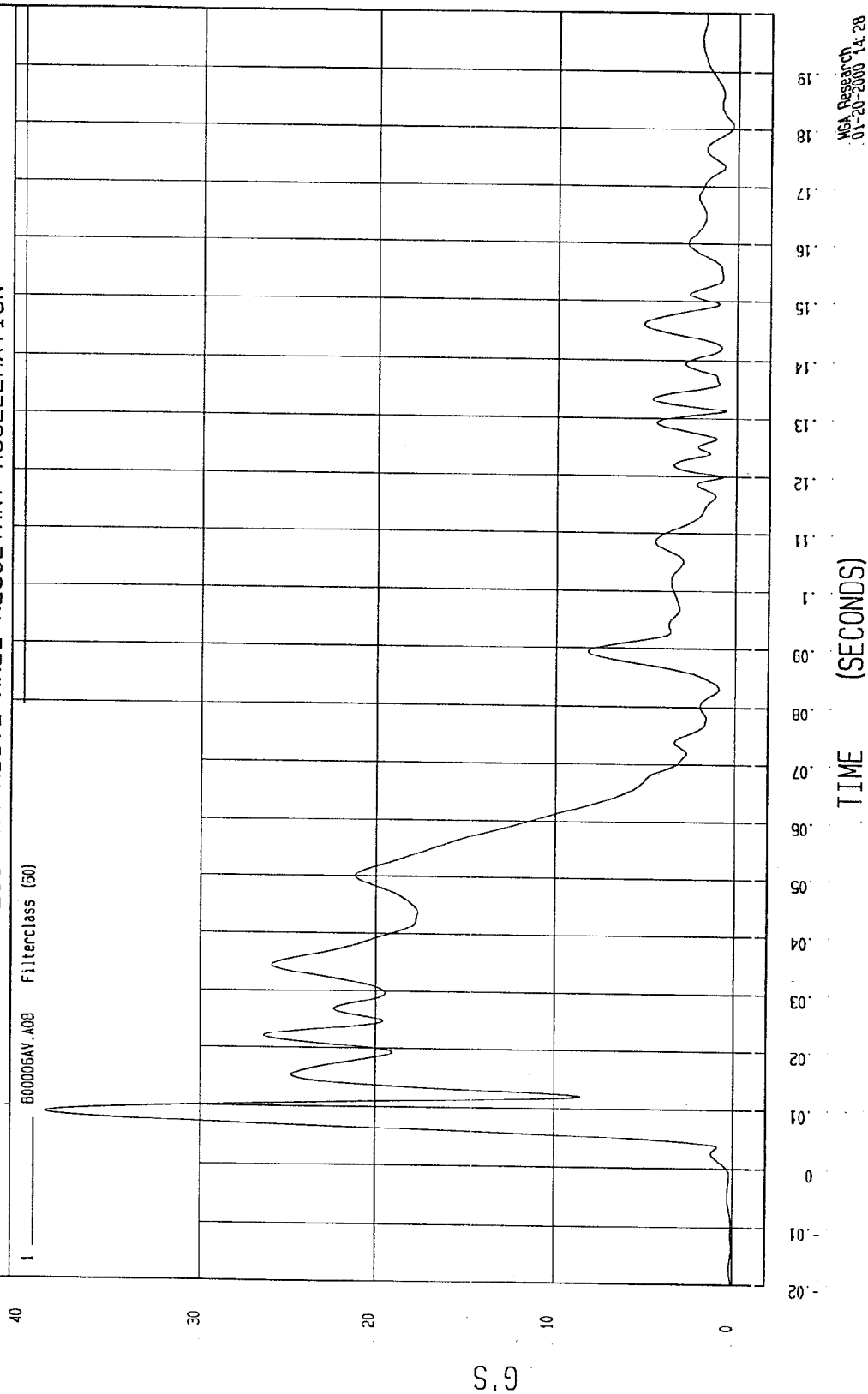
Speed: 38.6 MPH 62.1 KPH

Minimum = .07 G'S at -14 msec

Maximum = 38.76 G'S at 9 msec

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

1	800006AV.A08	Filterclass (50)



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

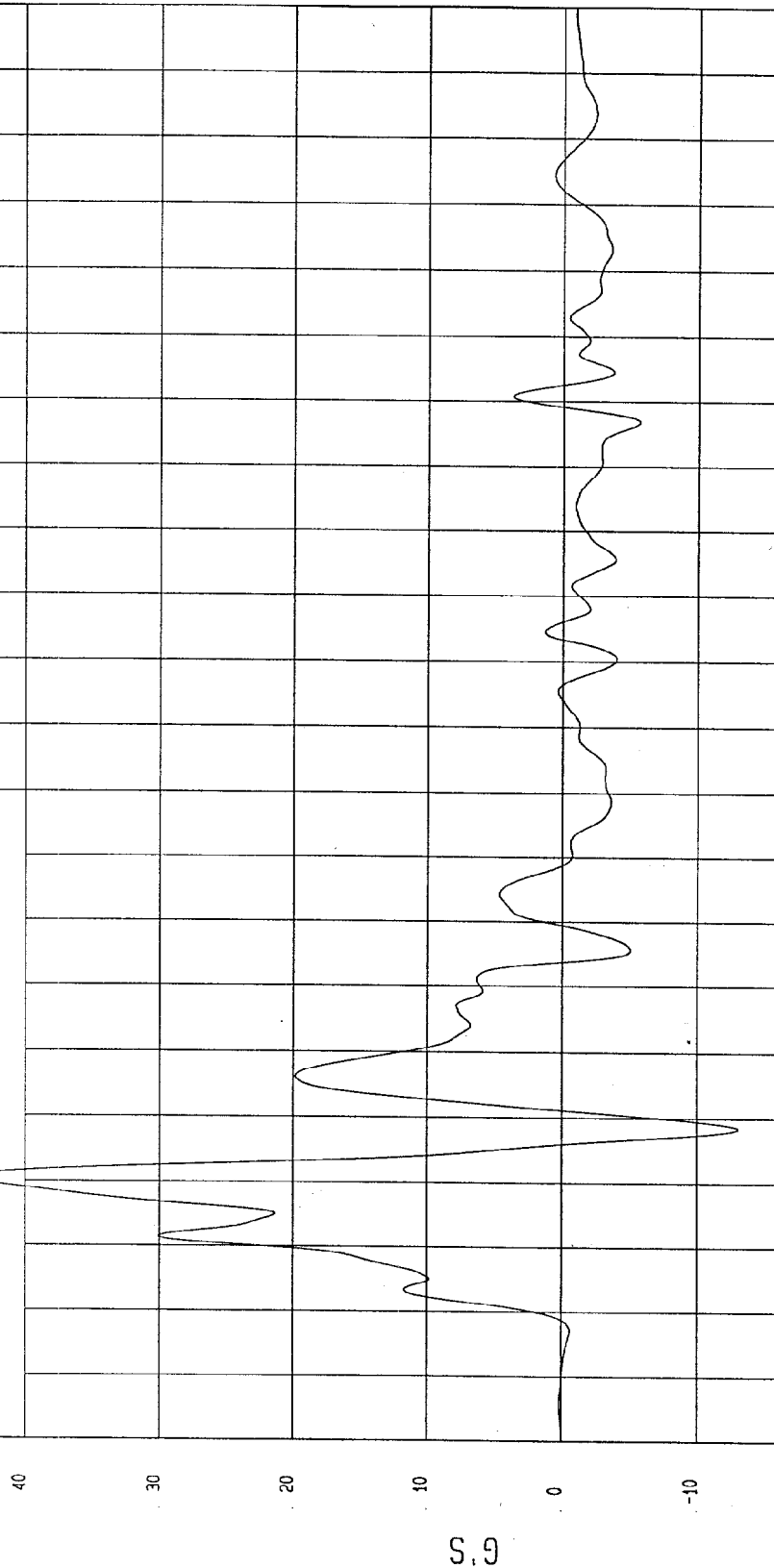
Speed: 38.6 MPH 62.1 KPH

Maximum = 44.46 G'S at 20 msec

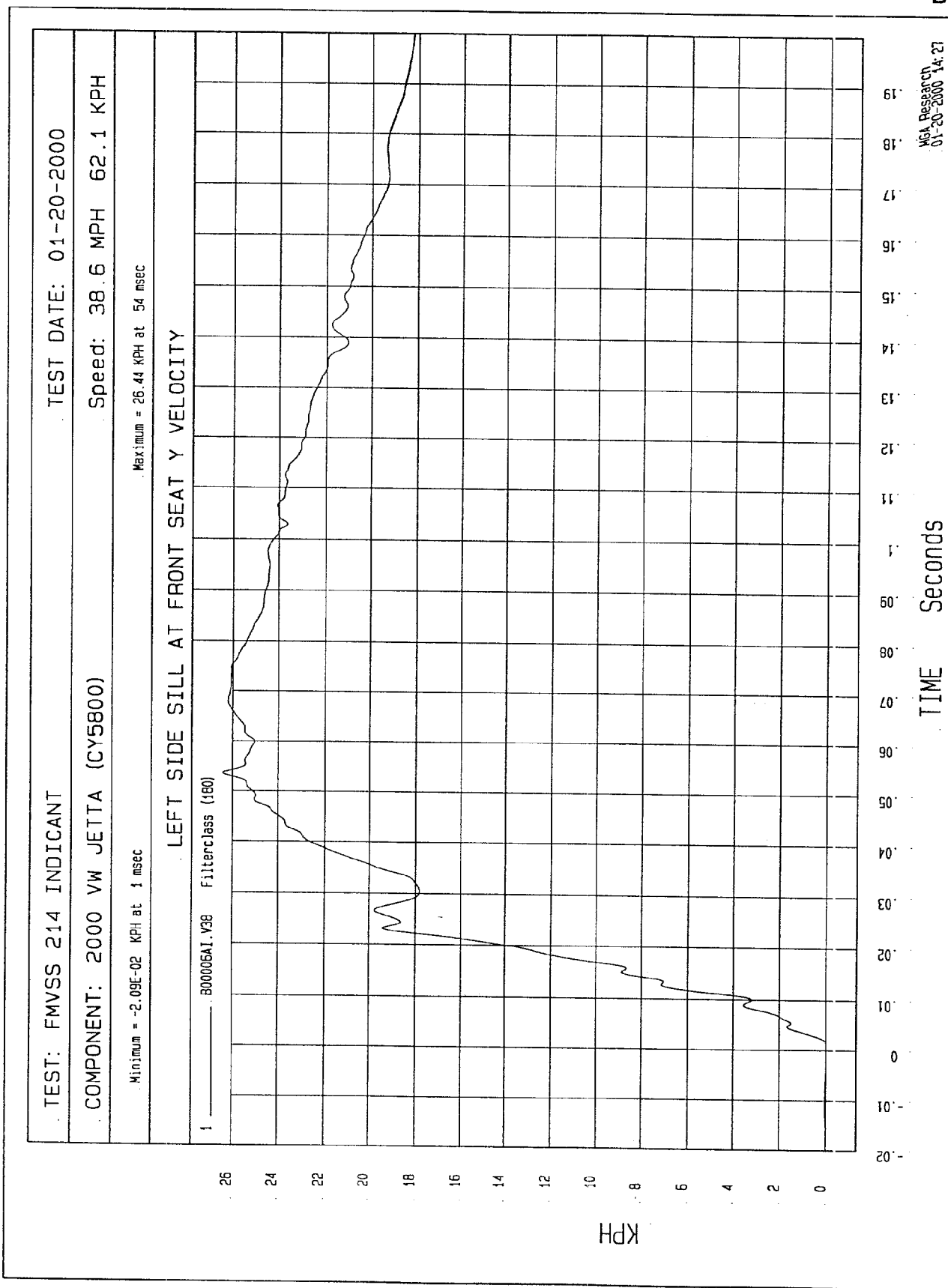
Minimum = -13.03 G'S at 28 msec

LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

1 ——— 80005AF.A38 Filterclass (60)



MCA Research
01-20-2000 14:21



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 57.94 G'S at 8 msec

Minimum = -4.56 G'S at 14 msec

LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

1 800006AF.A39 Filterclass (60)

60

50

40

30

20

10

0

G'S

NSA Research
01-20-2000 14:27

TIME (SECONDS)

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

-01

-02

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

COMPONENT: 2000 VW JETTA (CY5800)

Minimum = -.13 KPH at 3 msec

Maximum = 30.23 KPH at 82 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY



TIME Seconds

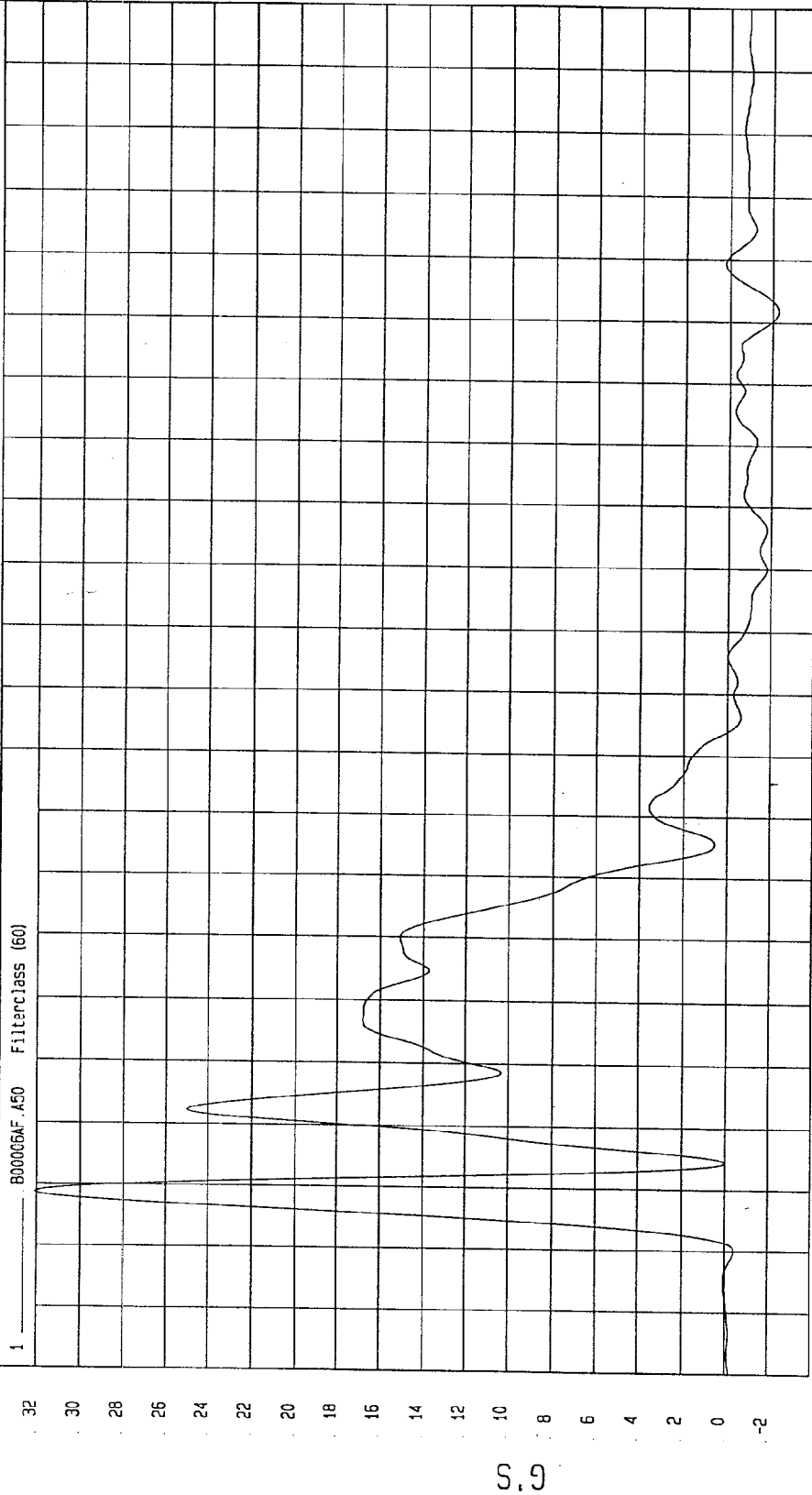
61
51
41
31
21
11
1
0
-1
-2

TEST: FMVSS 214 INDICANT
TEST DATE: 01-20-2000
Speed: 38.6 MPH 62.1 KPH

COMPONENT: 2000 VW JETTA (CY5800)

Minimum = -2.28 G'S at 152 msec
Maximum = 32.06 G'S at 9 msec

RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION



TEST: FMVSS 214 INDICANT
 COMPONENT: 2000 VW JETTA (CY5800)

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

Minimum = -4.83E-02 KPH at -7 msec
 Maximum = 30.89 KPH at 84 msec

RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY

1 B00006A1.V50 Filterclass (180)

32

30

28

26

24

22

20

18

16

14

12

10

8

6

4

2

0

KPH

-02

-01

0

01

02

03

04

05

06

07

08

09

1

11

12

13

14

15

16

17

18

19

TIME Seconds

NSA Research
 01-20-2000 14:49

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

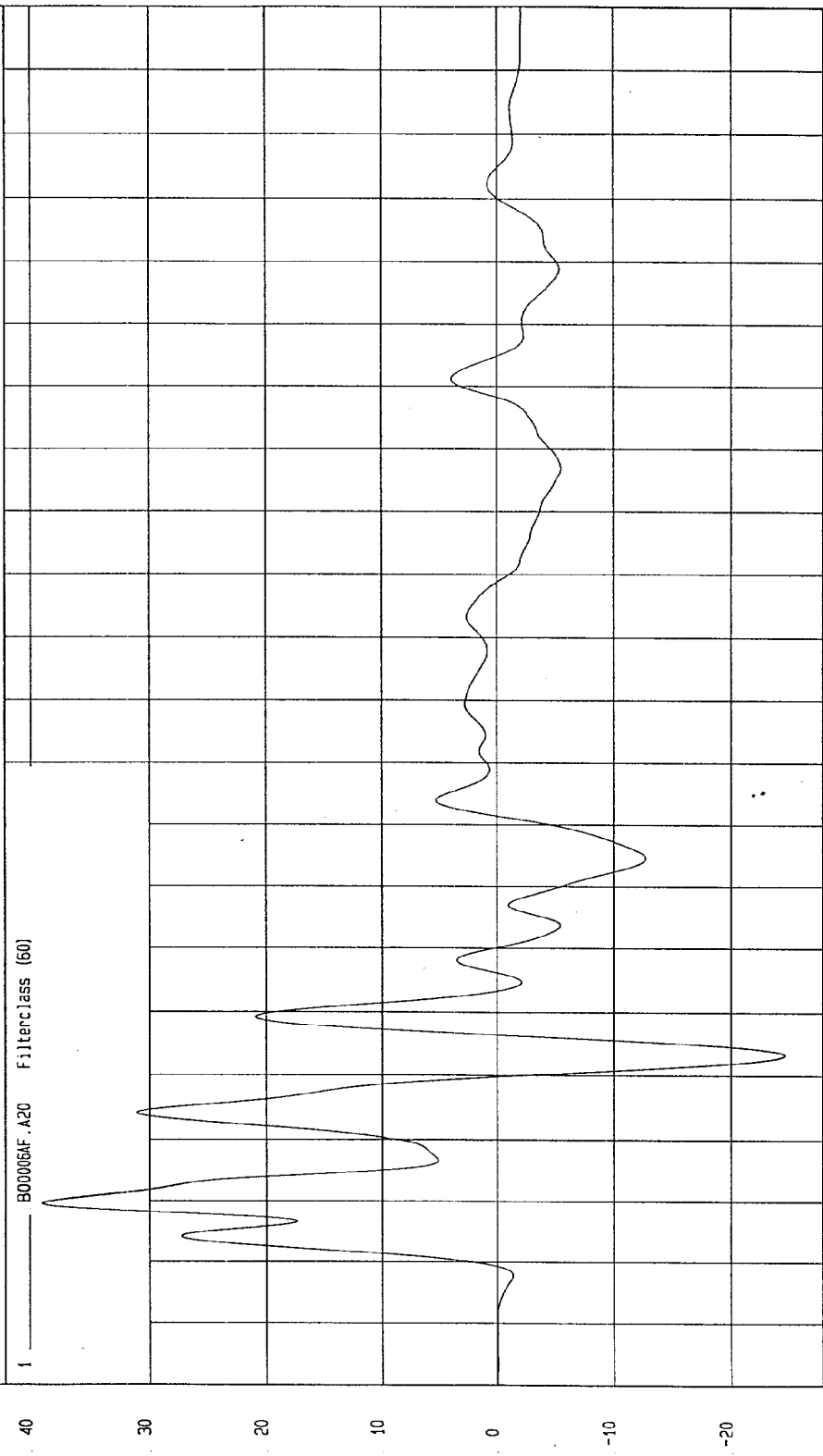
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -24.7 G's at 33 msec

Maximum = 39.07 G's at 10 msec

LEFT LOWER A-POST Y ACCELERATION



MGA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

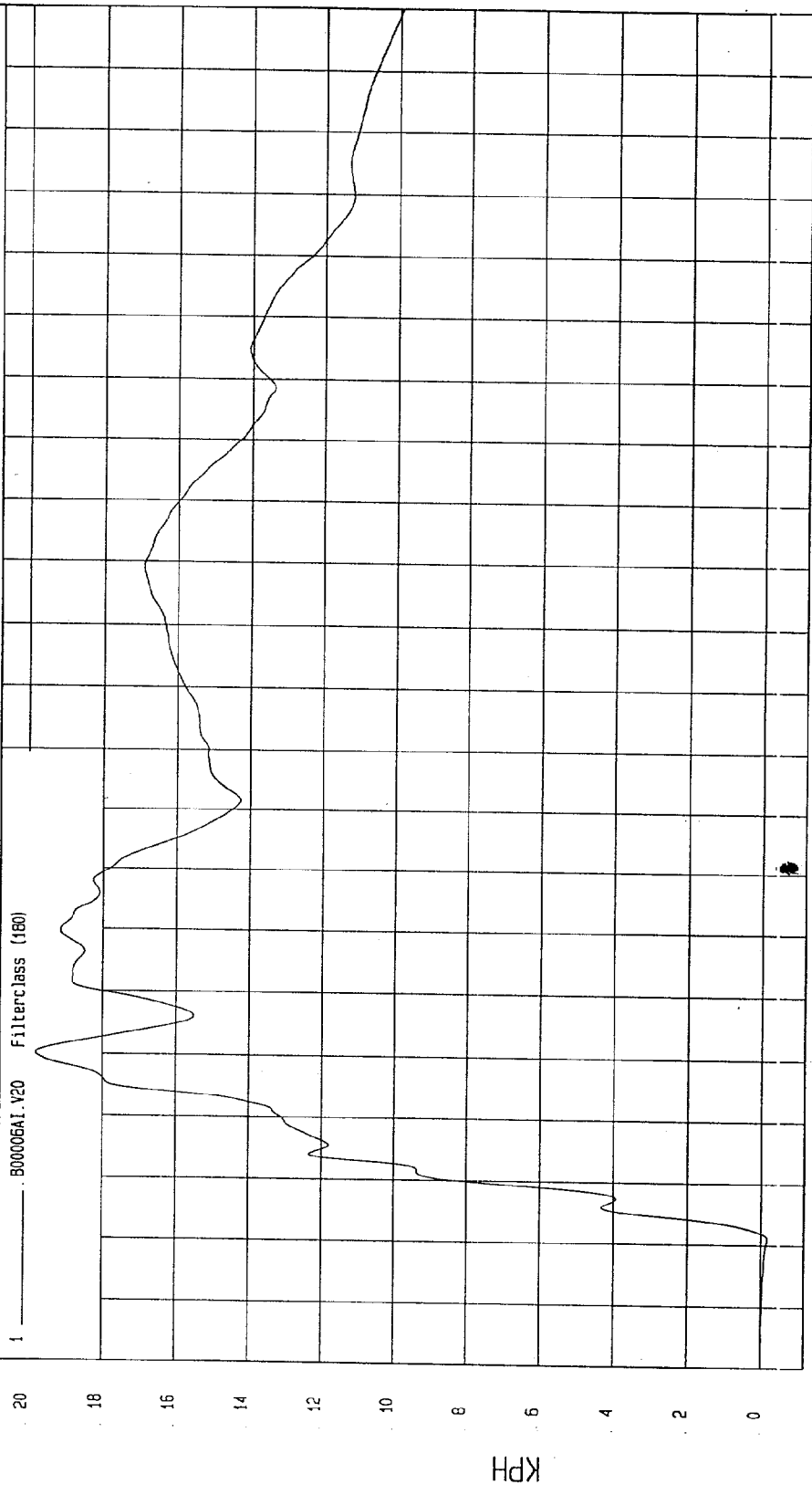
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = - 16 KPH at 1 msec

Maximum = 19.79 KPH at 30 msec

LEFT LOWER A-POST Y VELOCITY



TIME Seconds

NSA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

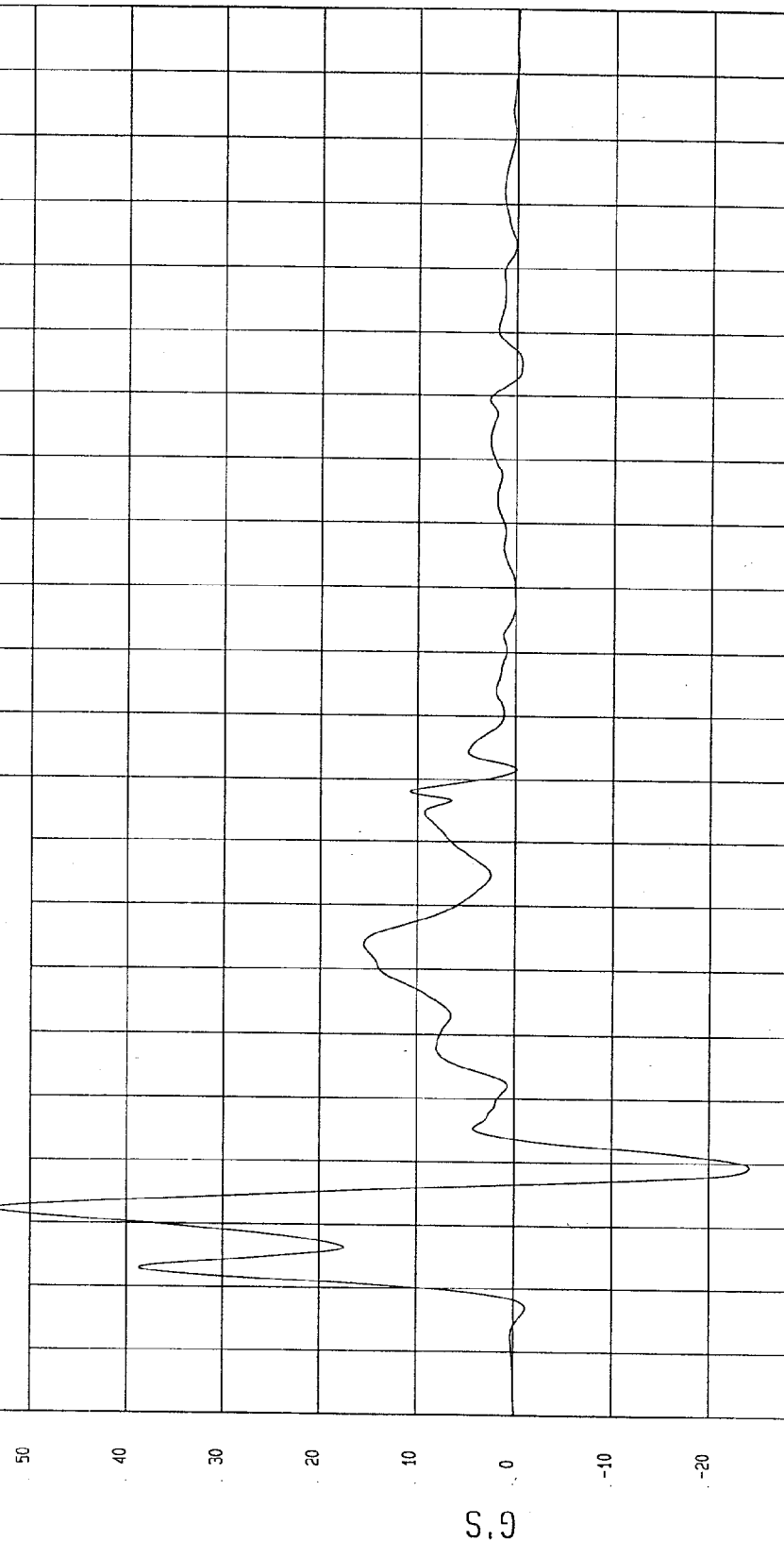
Speed: 38.6 MPH 62.1 KPH

Minimum = -24.15 G'S at 19 msec

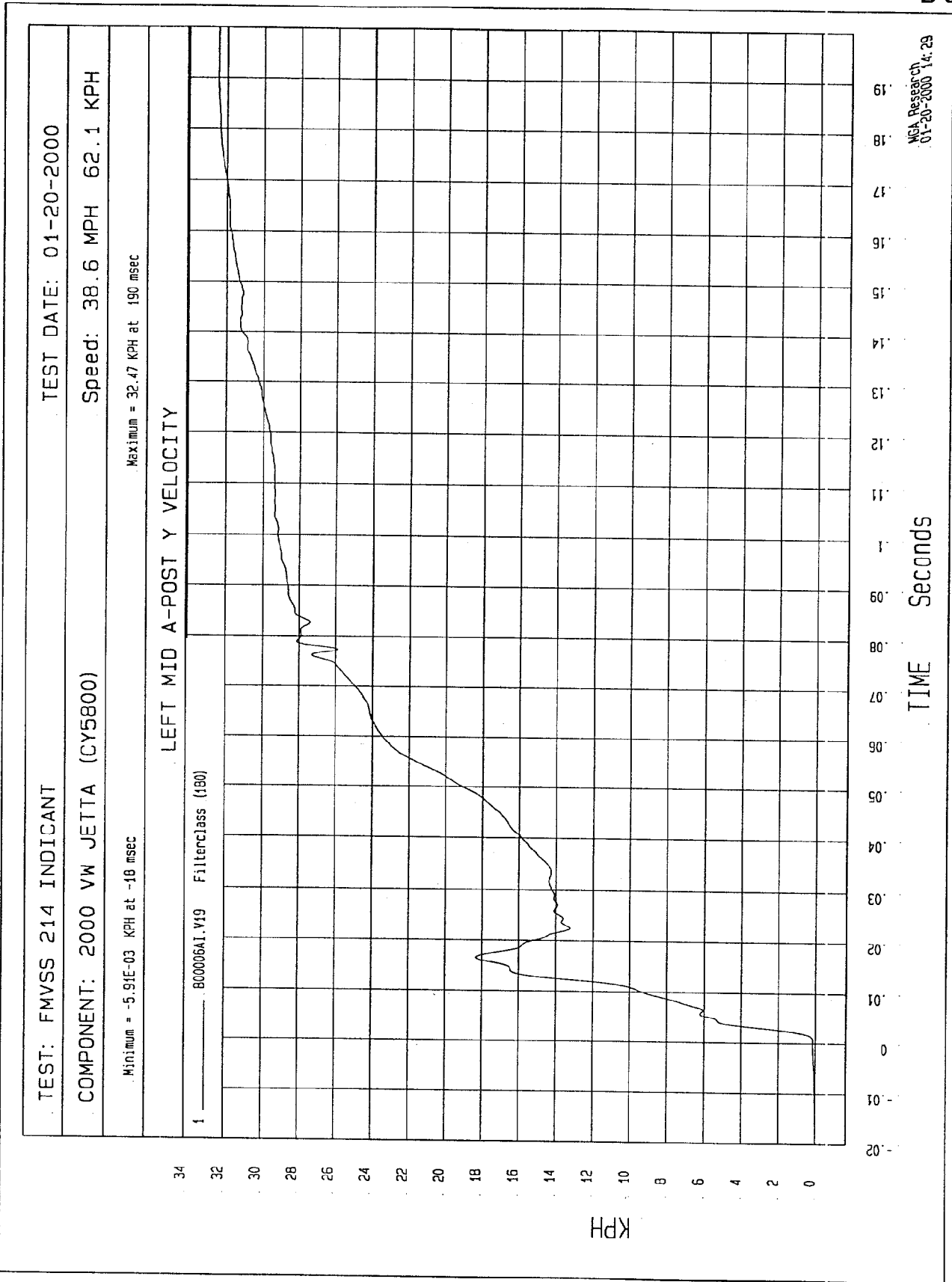
Maximum = 53.97 G'S at 12 msec

LEFT MID A-POST Y ACCELERATION

1 800005AF.A19 Filterclass (60)



WGA Research
01-20-2000 14:29



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

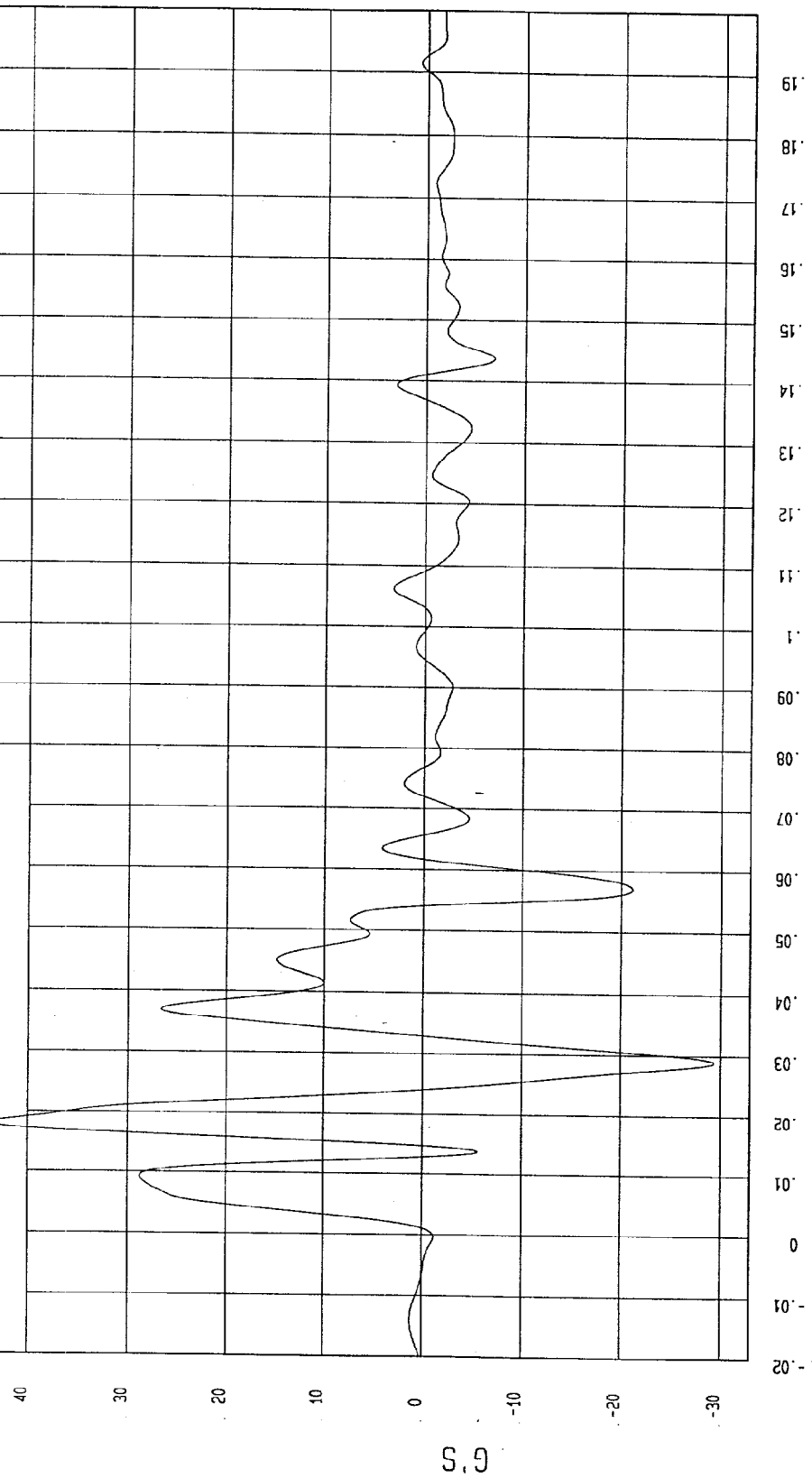
Speed: 38.6 MPH 62.1 KPH

Minimum = -29.34 G'S at 29 msec

Maximum = 44.04 G'S at 18 msec

LEFT LOWER B-POST Y ACCELERATION

1 _____ .800005AF.A30 Filterclass (60)

WCA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = 0 KPH at -20 msec

Maximum = 21.54 KPH at 54 msec

LEFT LOWER B-POST Y VELOCITY

1 ——— 800005A1.V30 FilterClass (180)

22

20

18

16

14

12

10

8

6

4

2

0

KPH

-02

0

.01

.02

.03

.04

.05

.06

.07

.08

.09

.1

.11

.12

.13

.14

.15

.16

.17

.18

.19

TIME Seconds

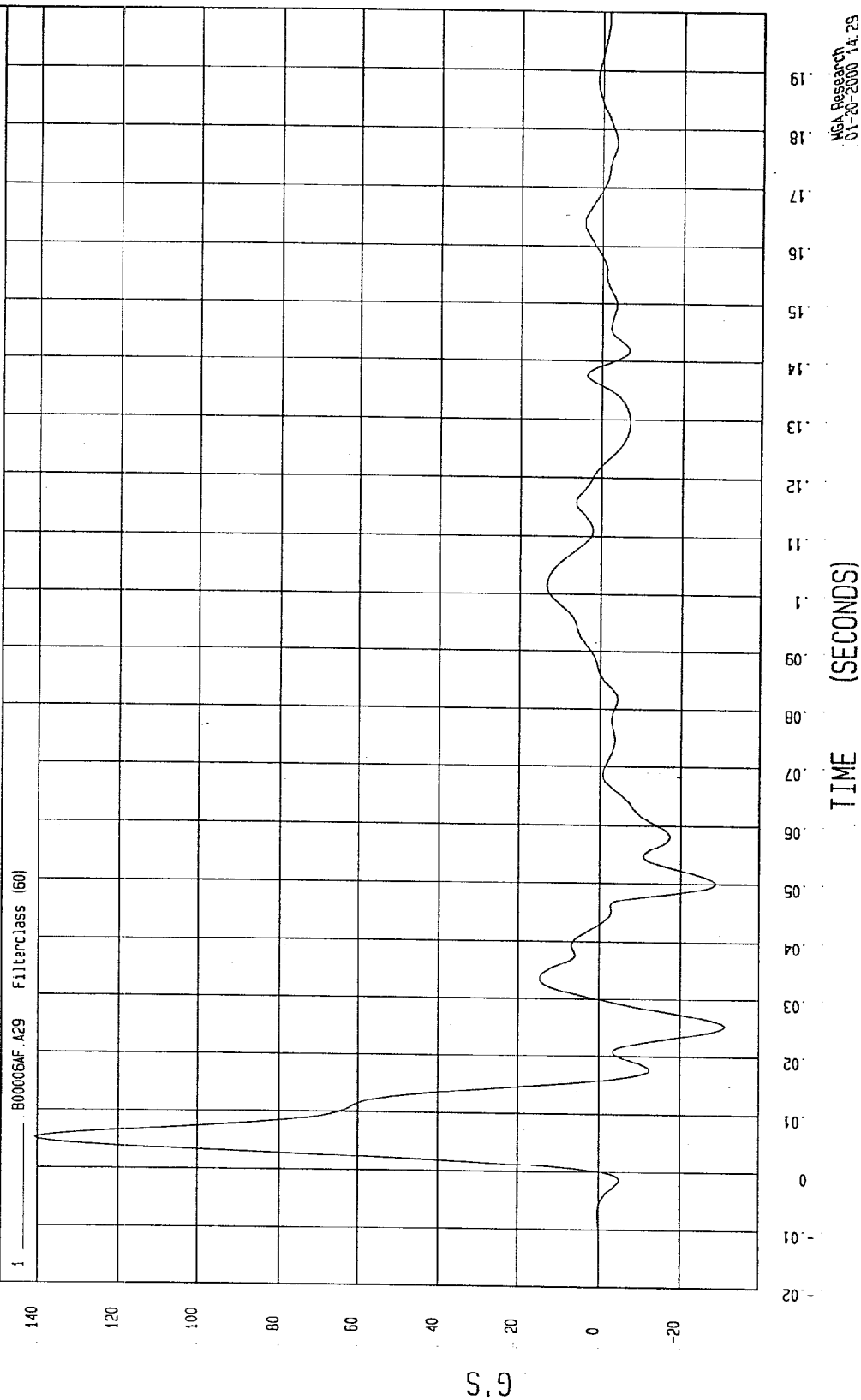
WGA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -31.19 G'S at 25 msec Maximum = 140.61 G'S at 5 msec

LEFT MID B-POST Y ACCELERATION



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

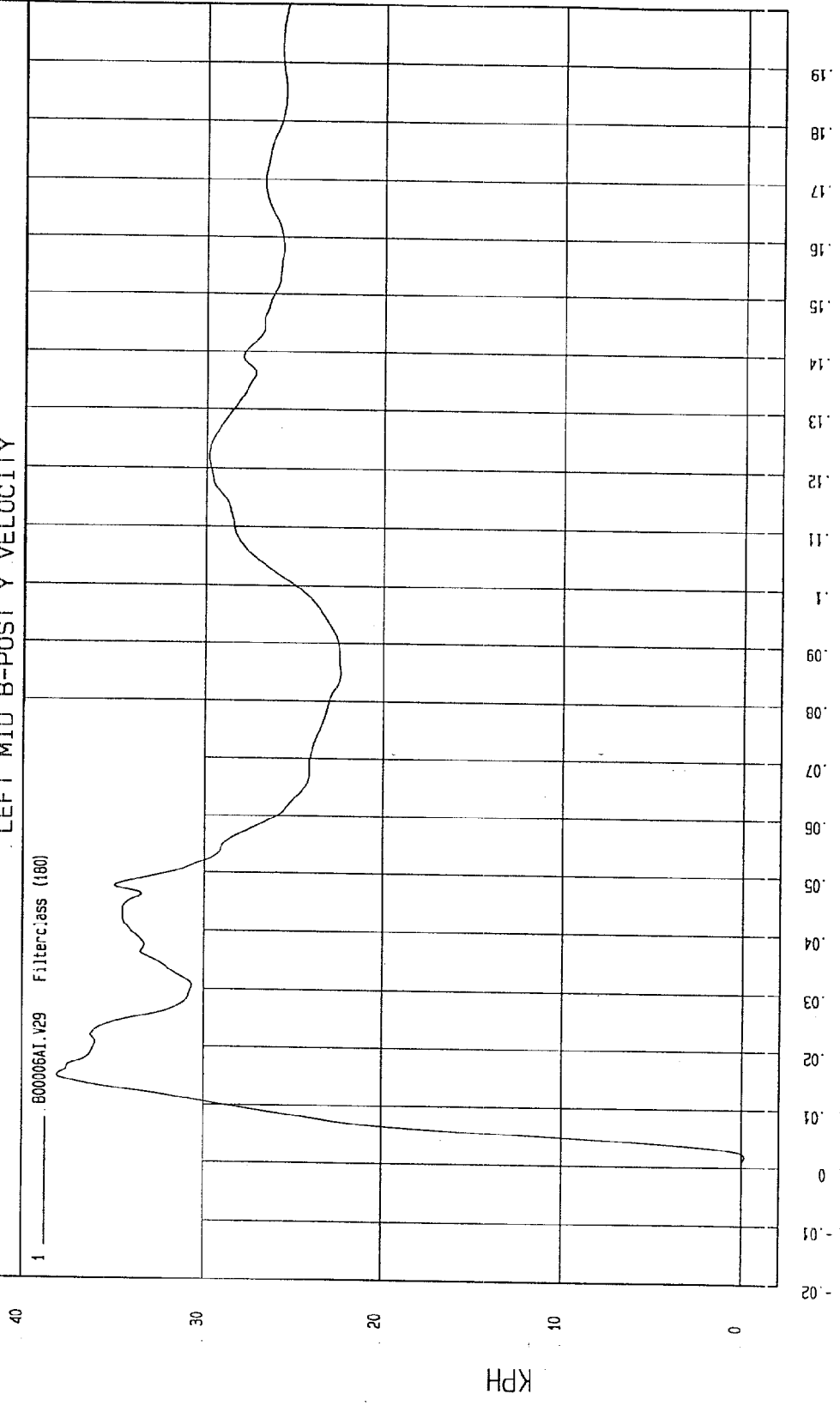
Speed: 38.6 MPH 62.1 KPH

Minimum = -.14 KPH at 2 msec

Maximum = 38.15 KPH at 15 msec

LEFT MID B-POST Y VELOCITY

1 B00006A1.V29 Filter: class (180)



MGA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

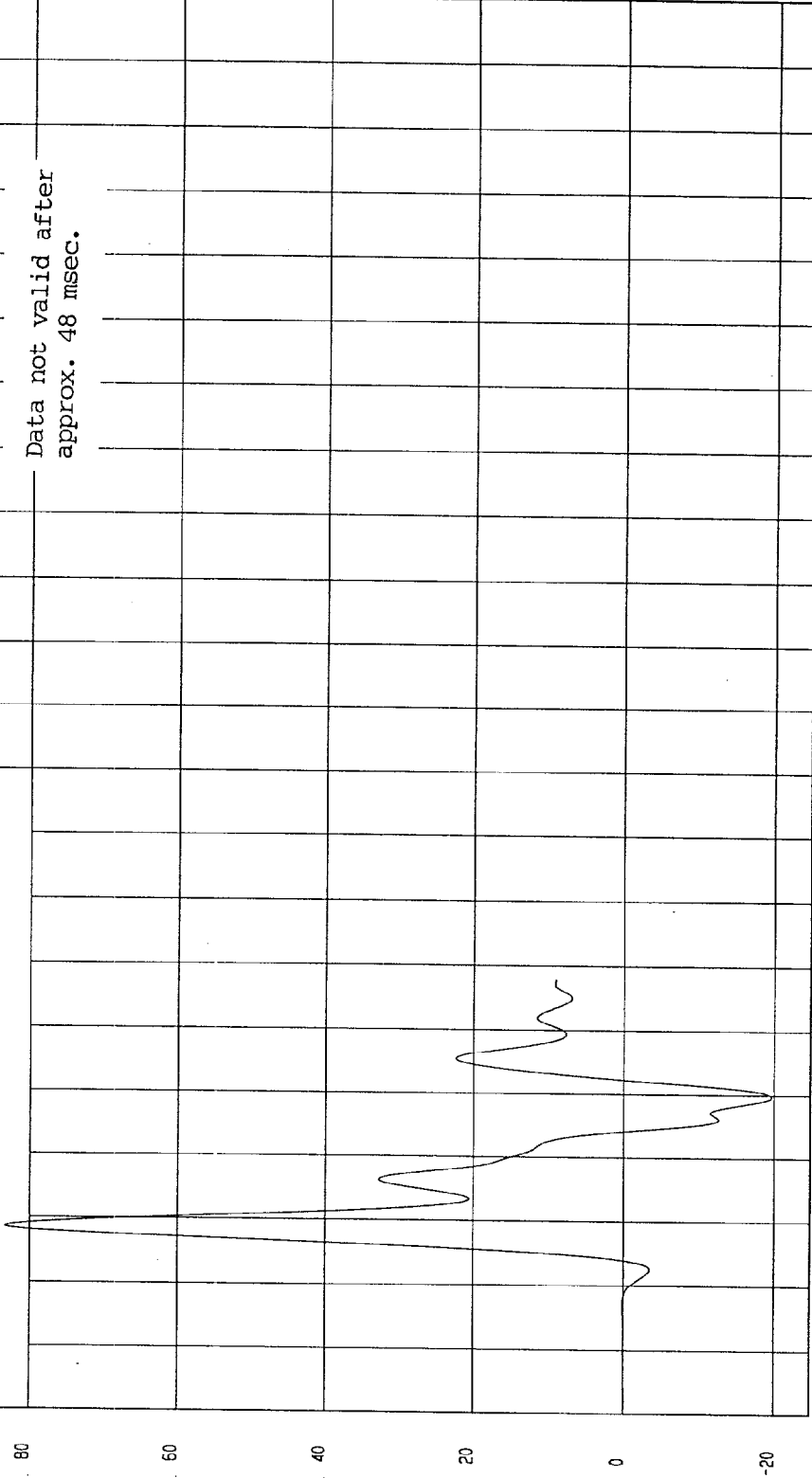
Minimum = -19.66 G'S at 30 msec

Maximum = 83.25 G'S at 9 msec

DRIVER SEAT TRACK Y ACCELERATION

1 B00005AF.A40 Filterclass (50)

Data not valid after
approx. 48 msec.



WCA Research
01-20-2000 15:01

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -.16 KPH at 5 msec

Maximum = 24.98 KPH at 48 msec

DRIVER SEAT TRACK Y VELOCITY

1 _____ B00006A1.V40 Filter: class (180)

26

24

22

20

18

16

14

12

10

8

6

4

2

0

KPH

Data not valid after
approx. 48 msec.

- .02

- .01

0

.01

.02

.03

.04

.05

.06

.07

.08

.09

.1

.11

.12

.13

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TIME Seconds

MSA Report
01-20-2000 15:01

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

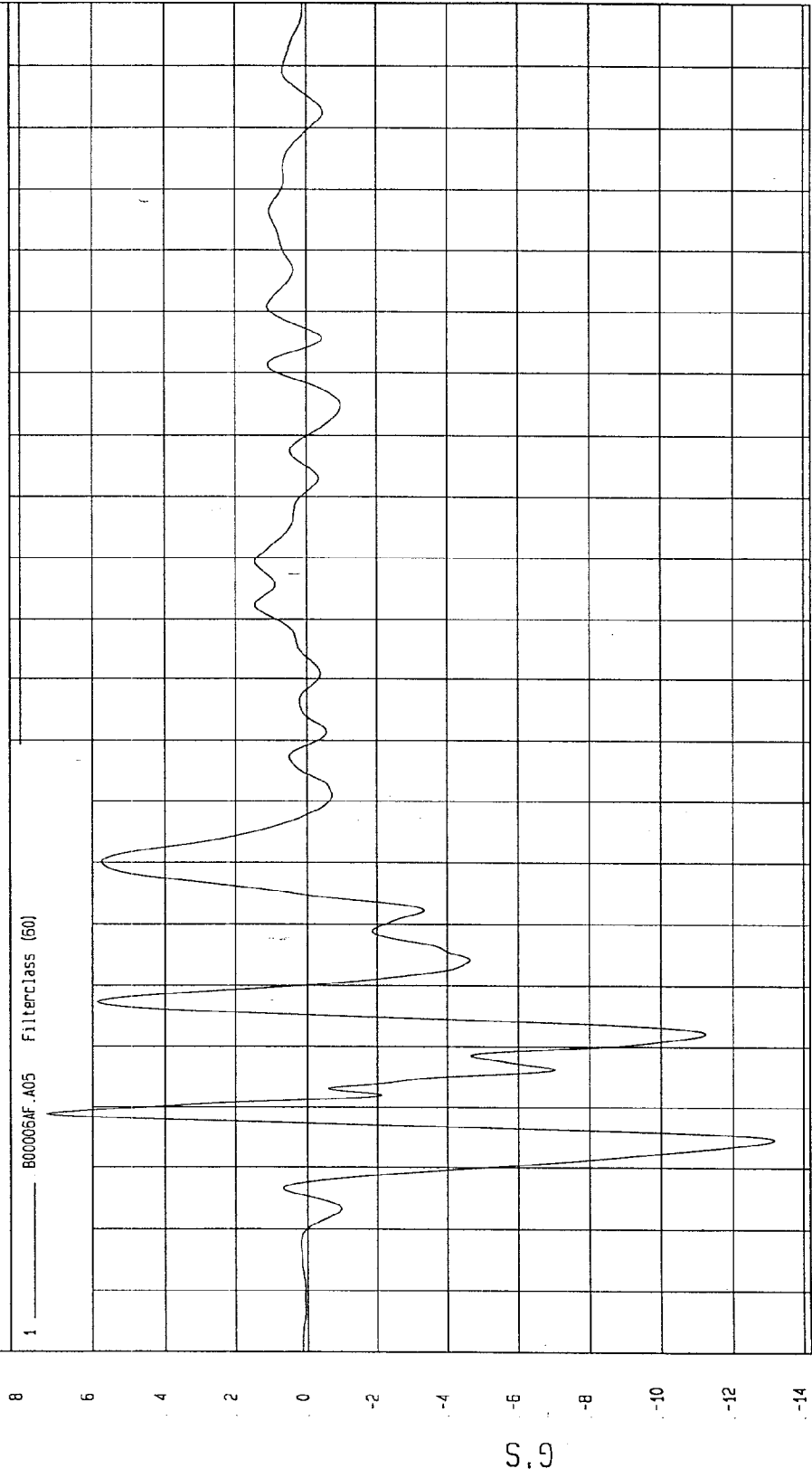
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 7.27 G's at 19 msec

Minimum = -13.17 G's at 15 msec

VEHICLE CG X ACCELERATION

1 B00006AF.A05 FilterClass (50)



MCA Research
01-20-2000 14:29

TIME (SECONDS)

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

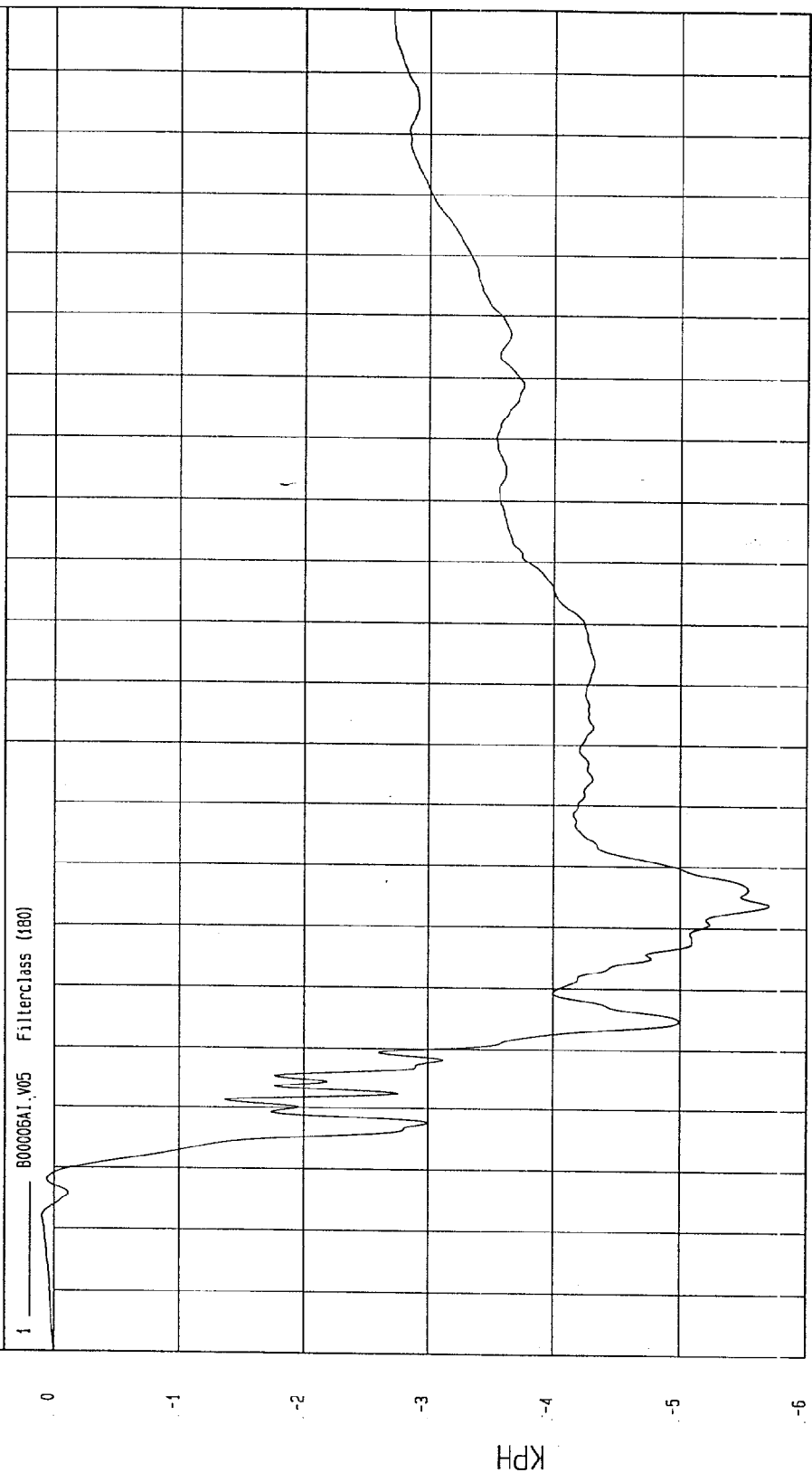
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -5.71 KPH at 54 msec

Maximum = 9.15E-02 KPH at 2 msec

VEHICLE CG X VELOCITY



TIME Seconds

NSA Resistor
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

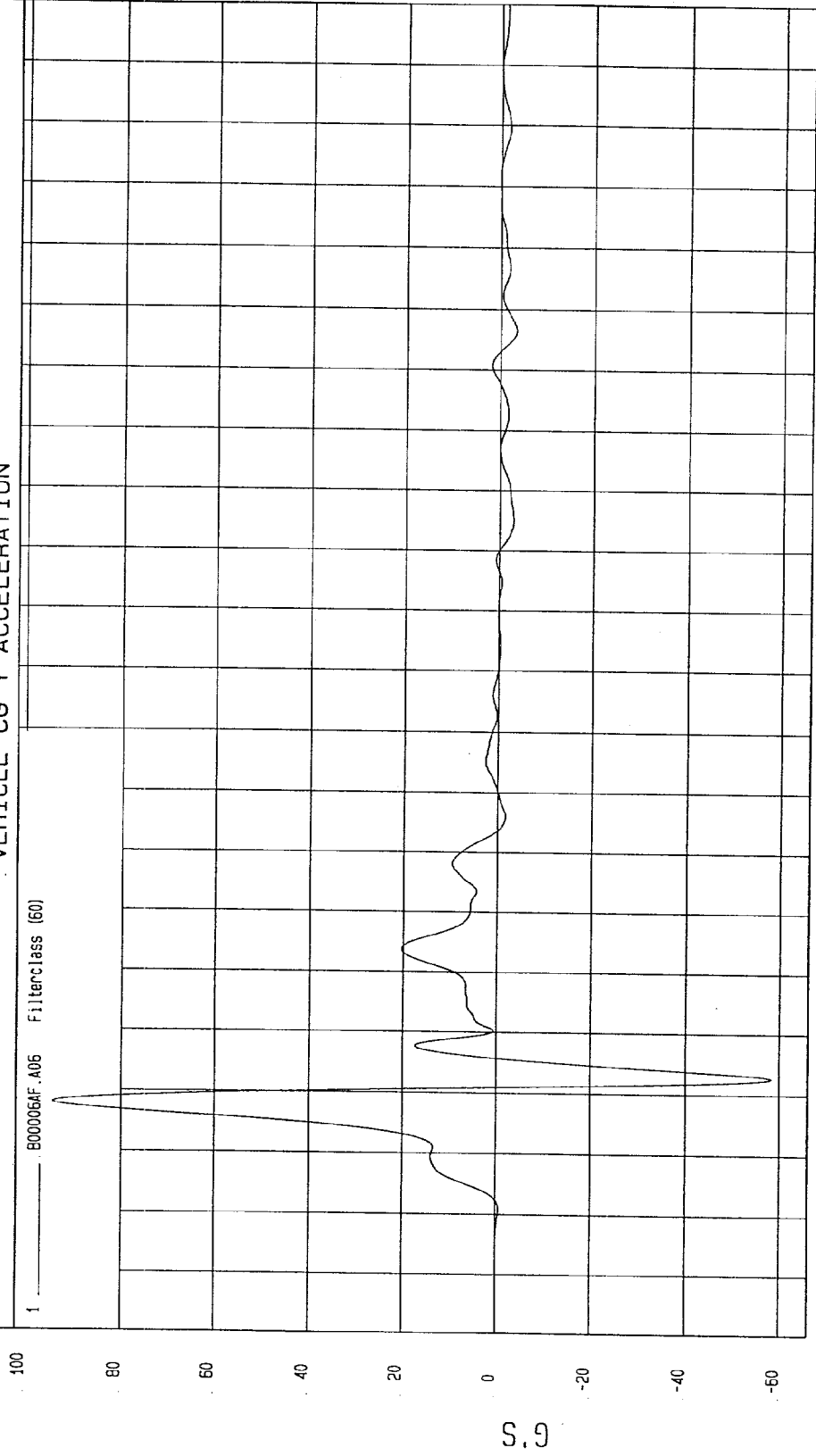
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 94.22 G'S at 16 msec

Minimum = -58.28 G'S at 23 msec

VEHICLE CG Y ACCELERATION

1 B00006AF.A05 FilterClass (60)



TIME (SECONDS)

MSA Research
01-20-2000 14:23

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000
COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -.1 KPH at 4 msec Maximum = 26.01 KPH at 93 msec

VEHICLE CG Y VELOCITY



TIME Seconds

WGA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

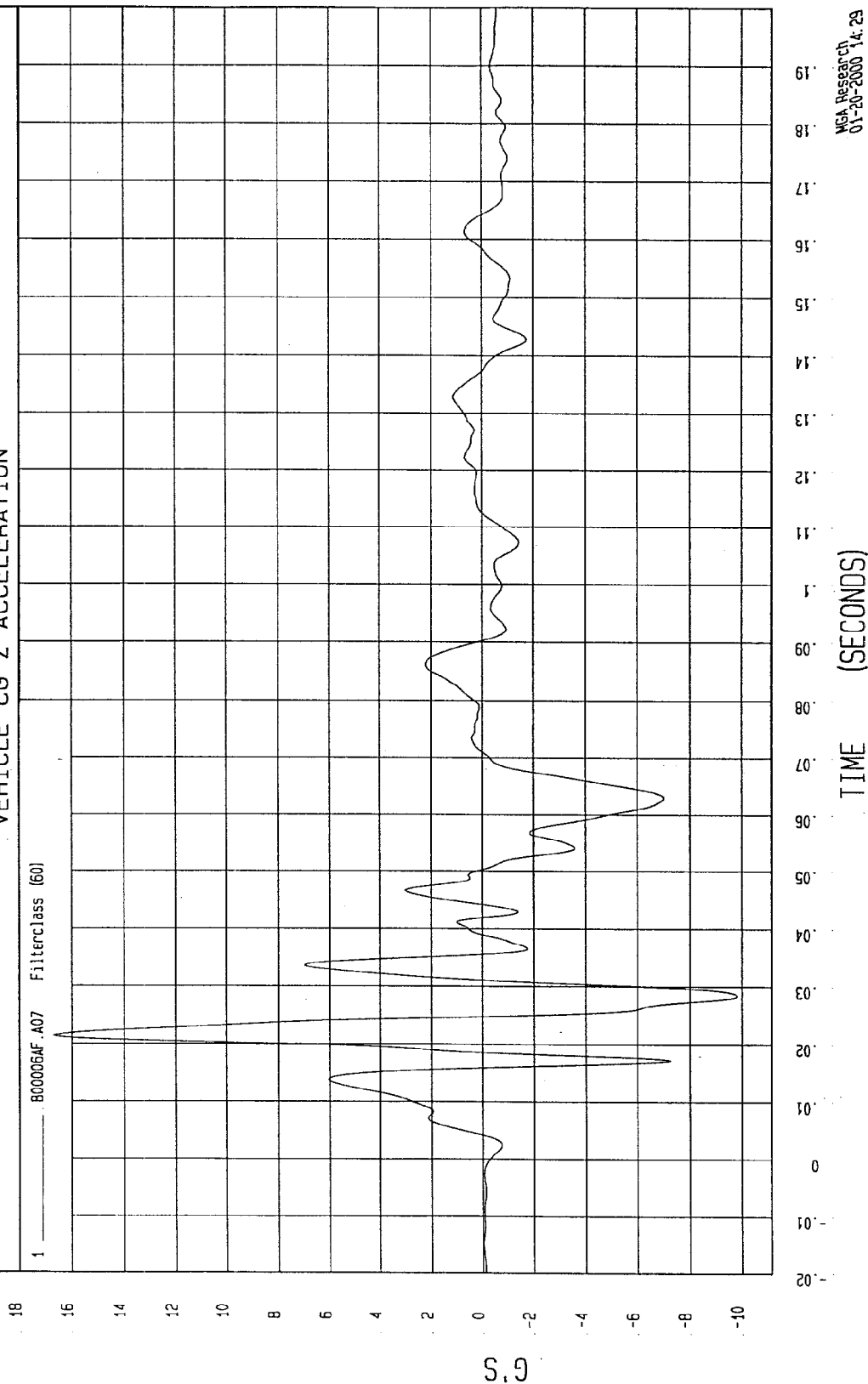
Speed: 38.6 MPH 62.1 KPH

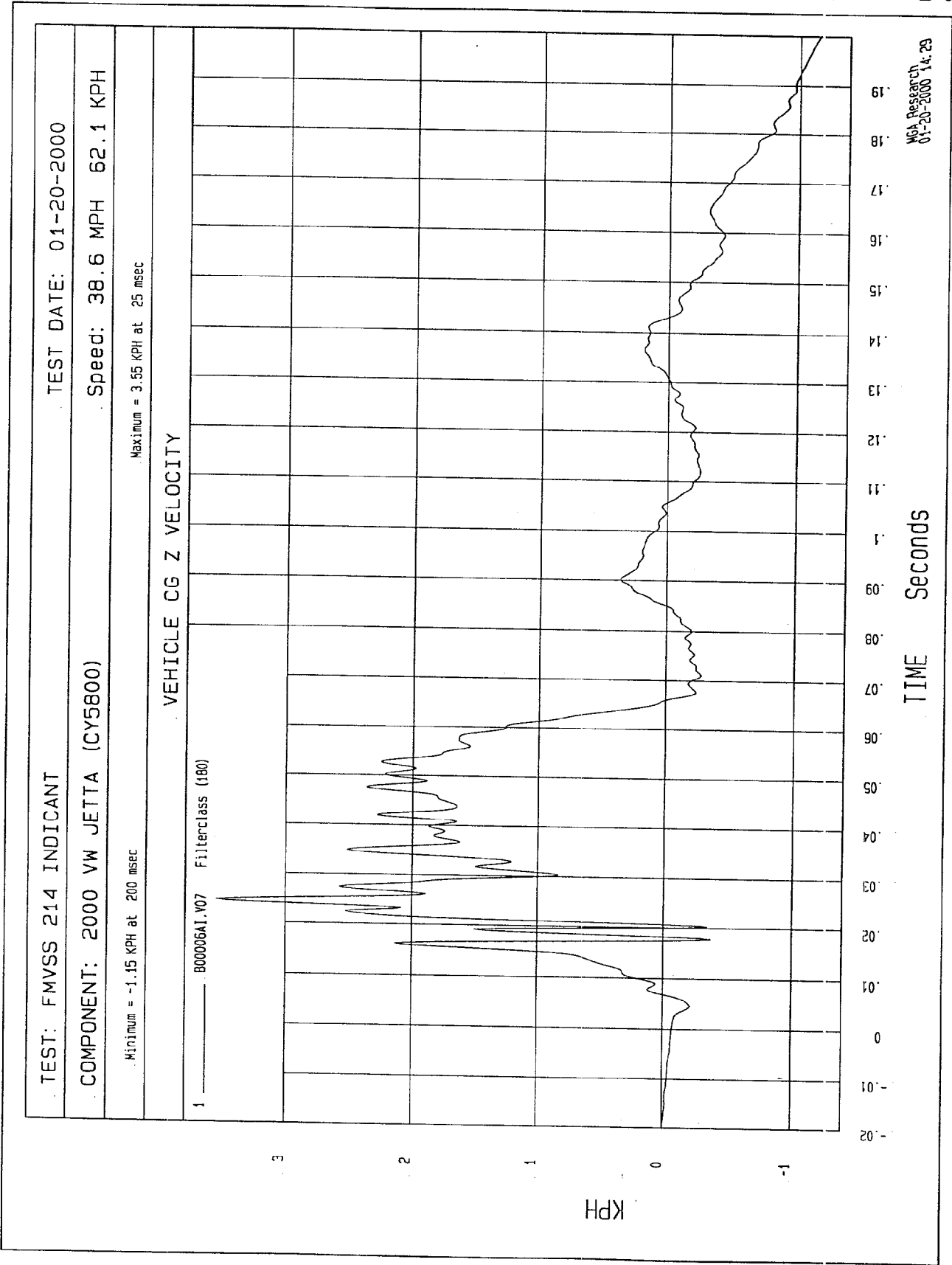
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 16.71 G'S at 21 msec

Minimum = -9.82 G'S at 28 msec

VEHICLE CG Z ACCELERATION





TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

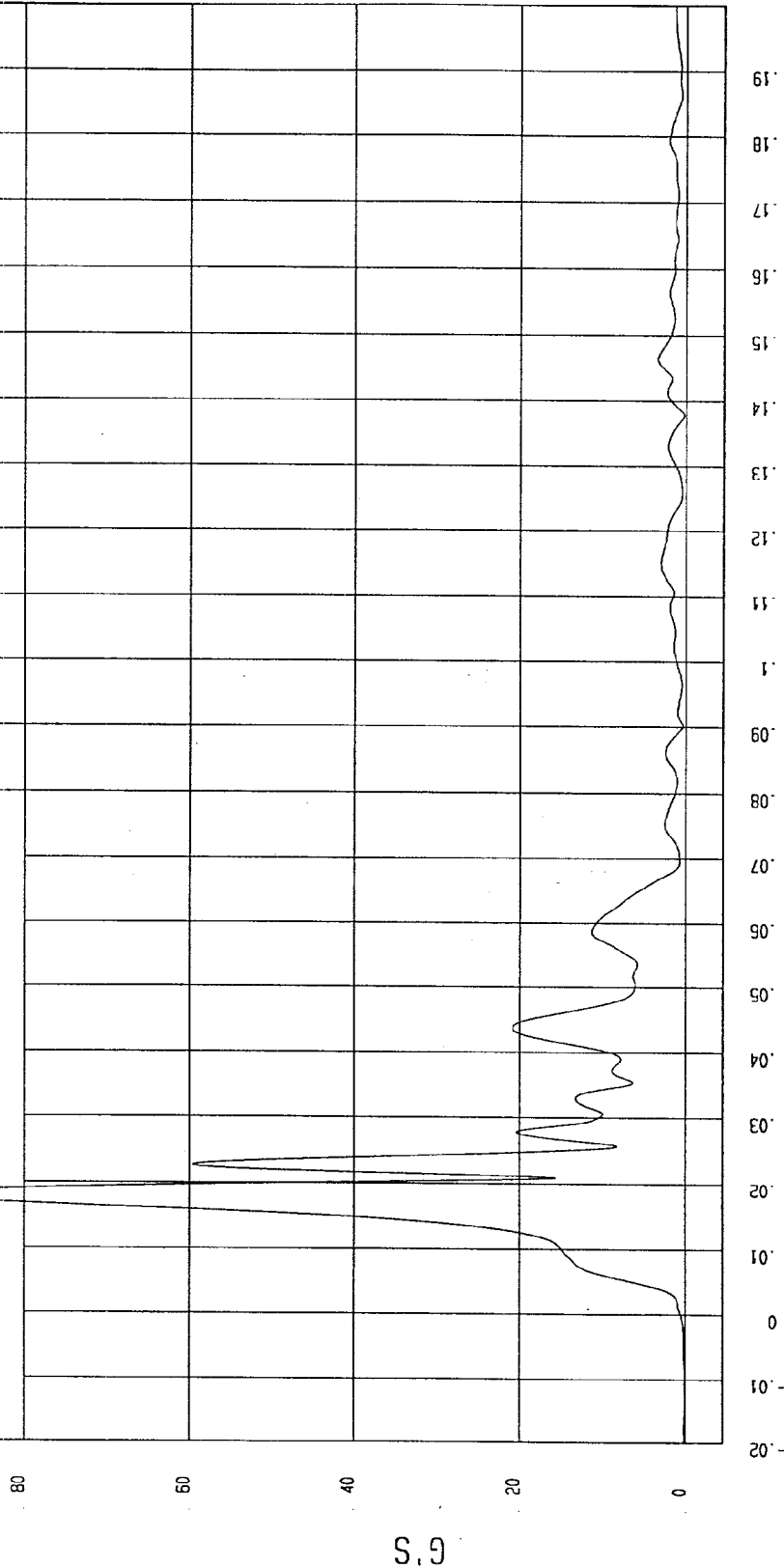
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 94.4 G'S at 18 msec

Minimum = .11 G'S at -14 msec

VEHICLE CG RESULTANT ACCELERATION

1 B00005AV.A05 Filterclass (60)



MCA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

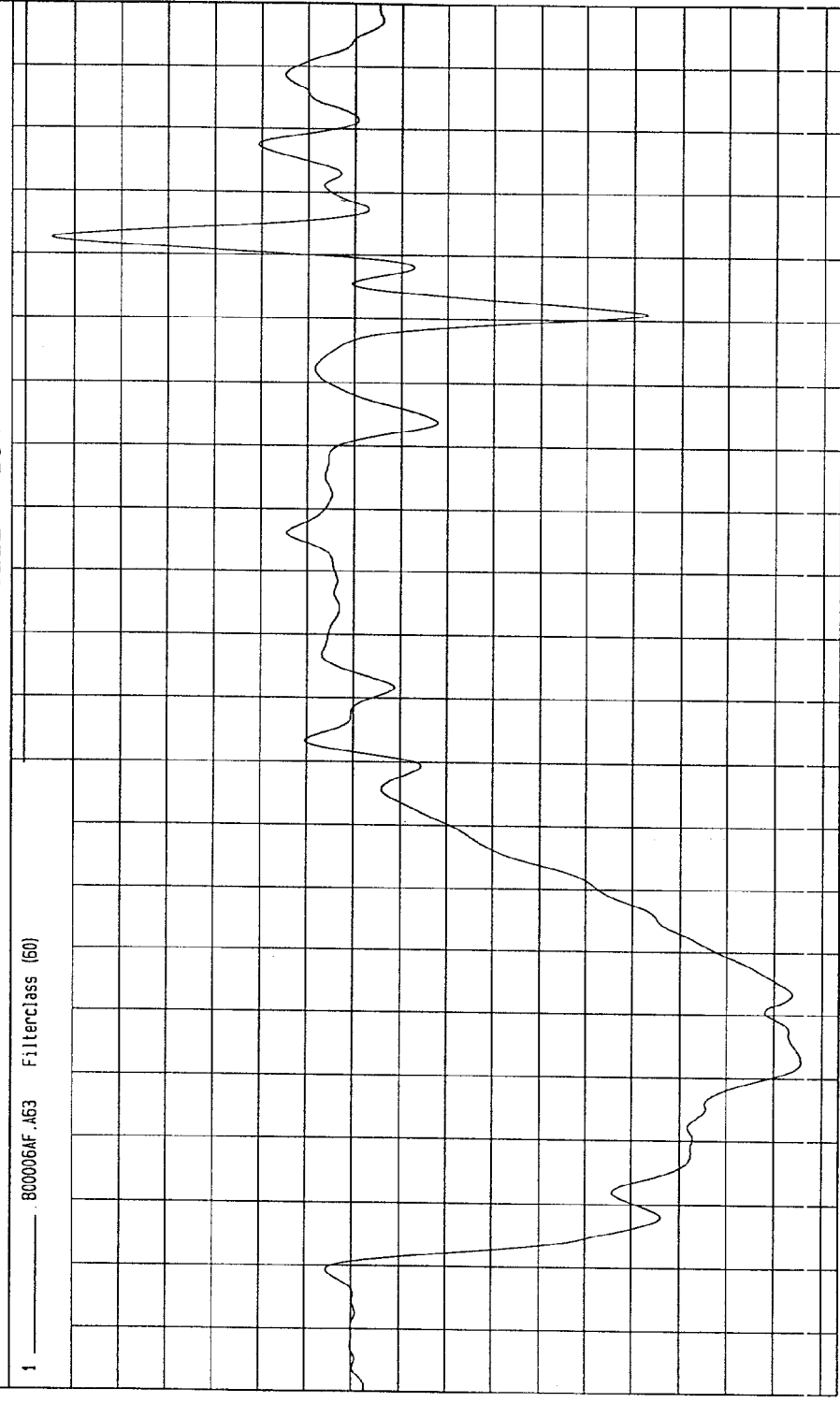
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 12.95 G's at 162 msec

Minimum = -19.13 G's at 33 msec

MOVING BARRIER CG X ACCELERATION

1 800006AF.A63 Filterclass (50)



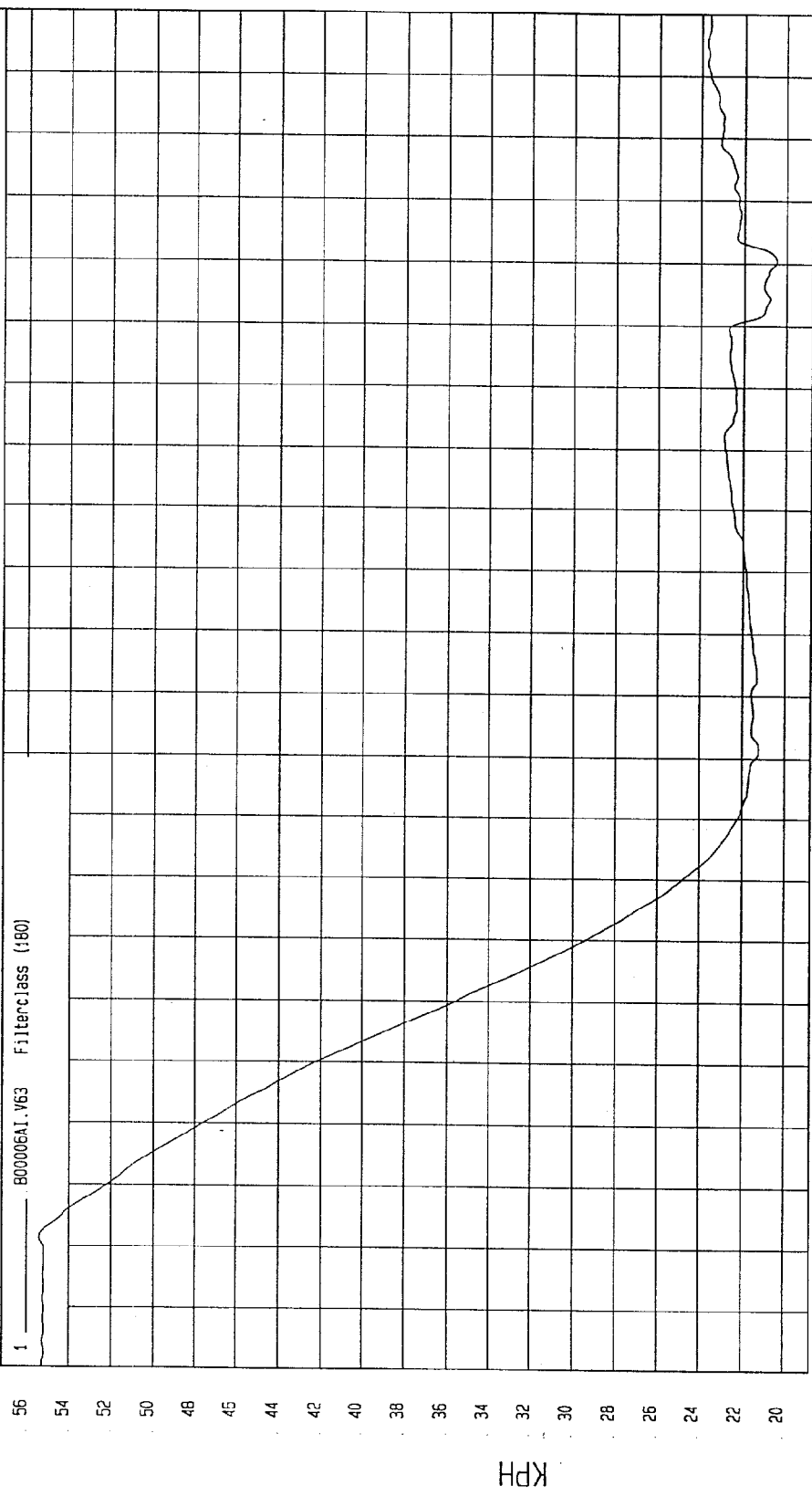
MCA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

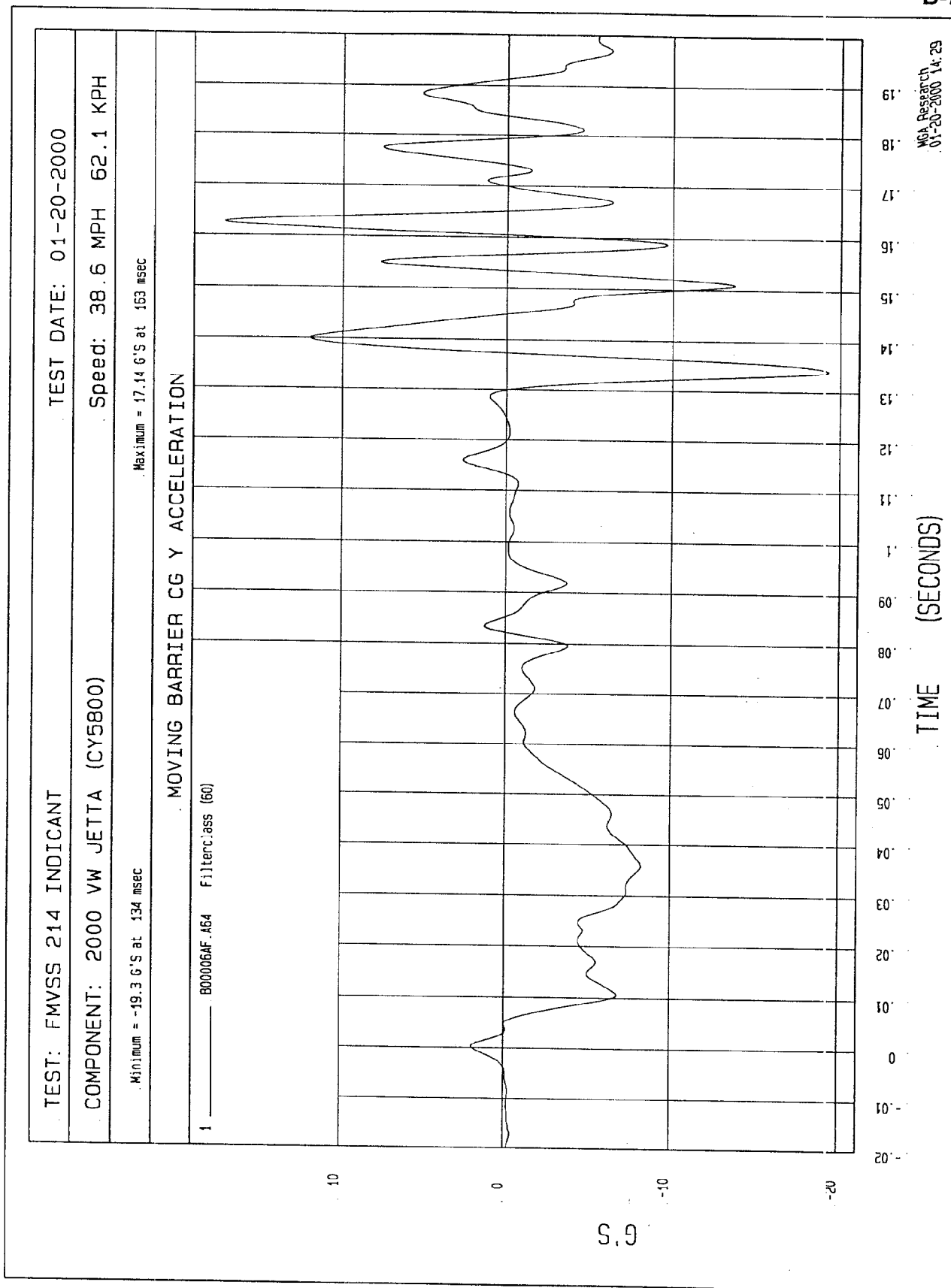
Minimum = 20.47 KPH at 150 msec Maximum = 55.43 KPH at 2 msec

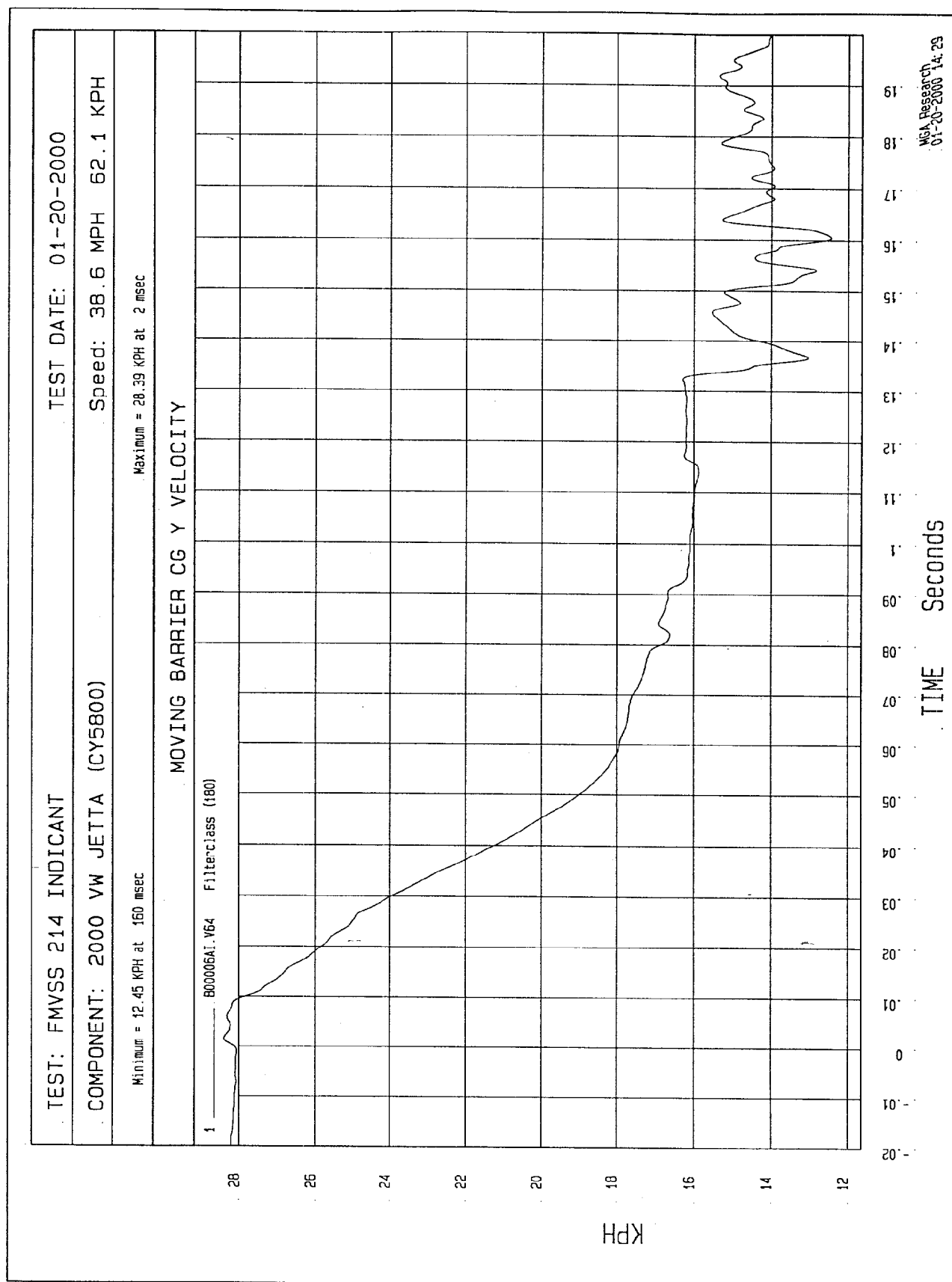
MOVING BARRIER CG X VELOCITY



TIME Seconds

MCA Research
01-20-2000 14:29



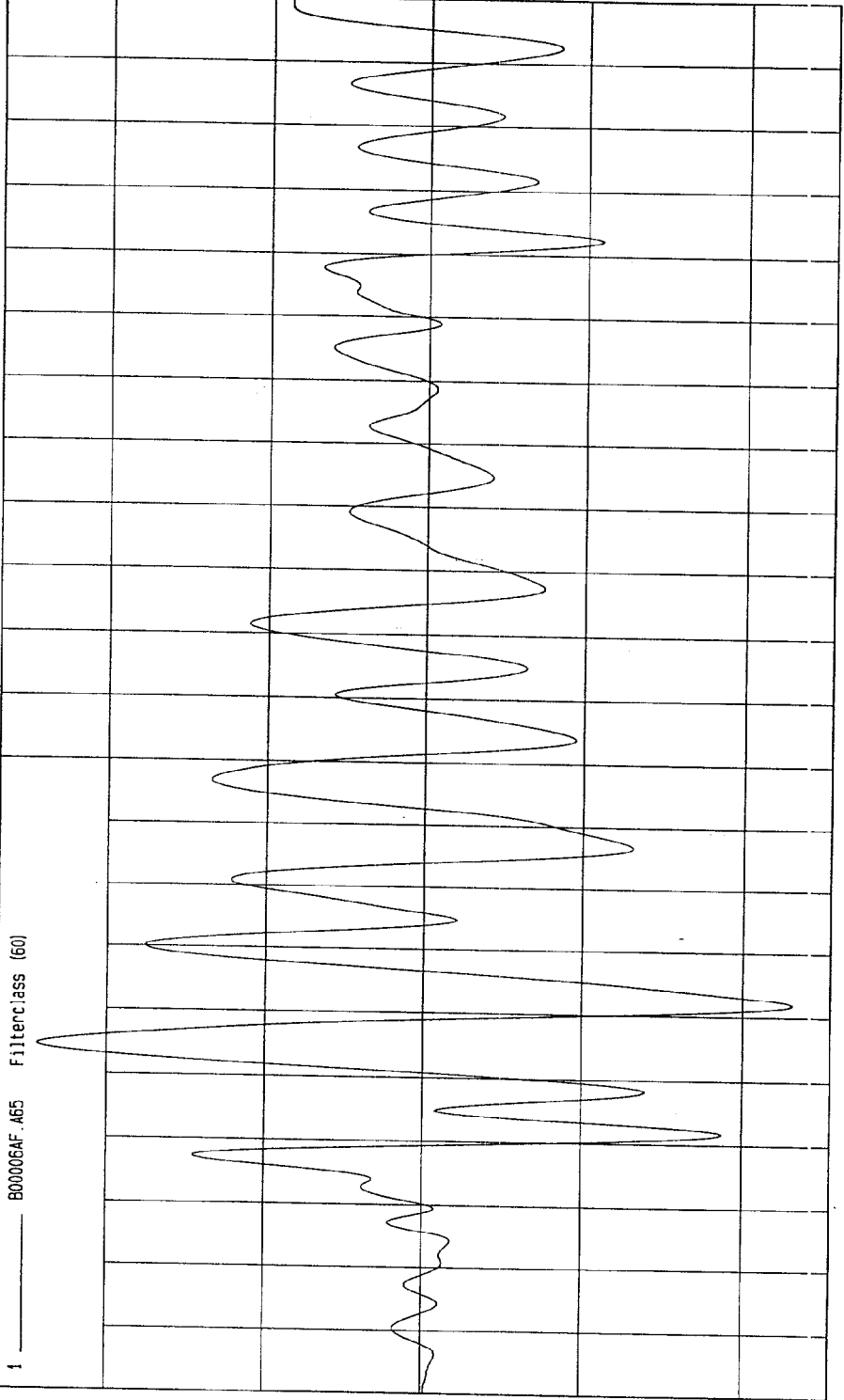


TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -23 G'S at 42 msec Maximum = 24.38 G'S at 35 msec

MOVING BARRIER CG Z ACCELERATION



NCA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

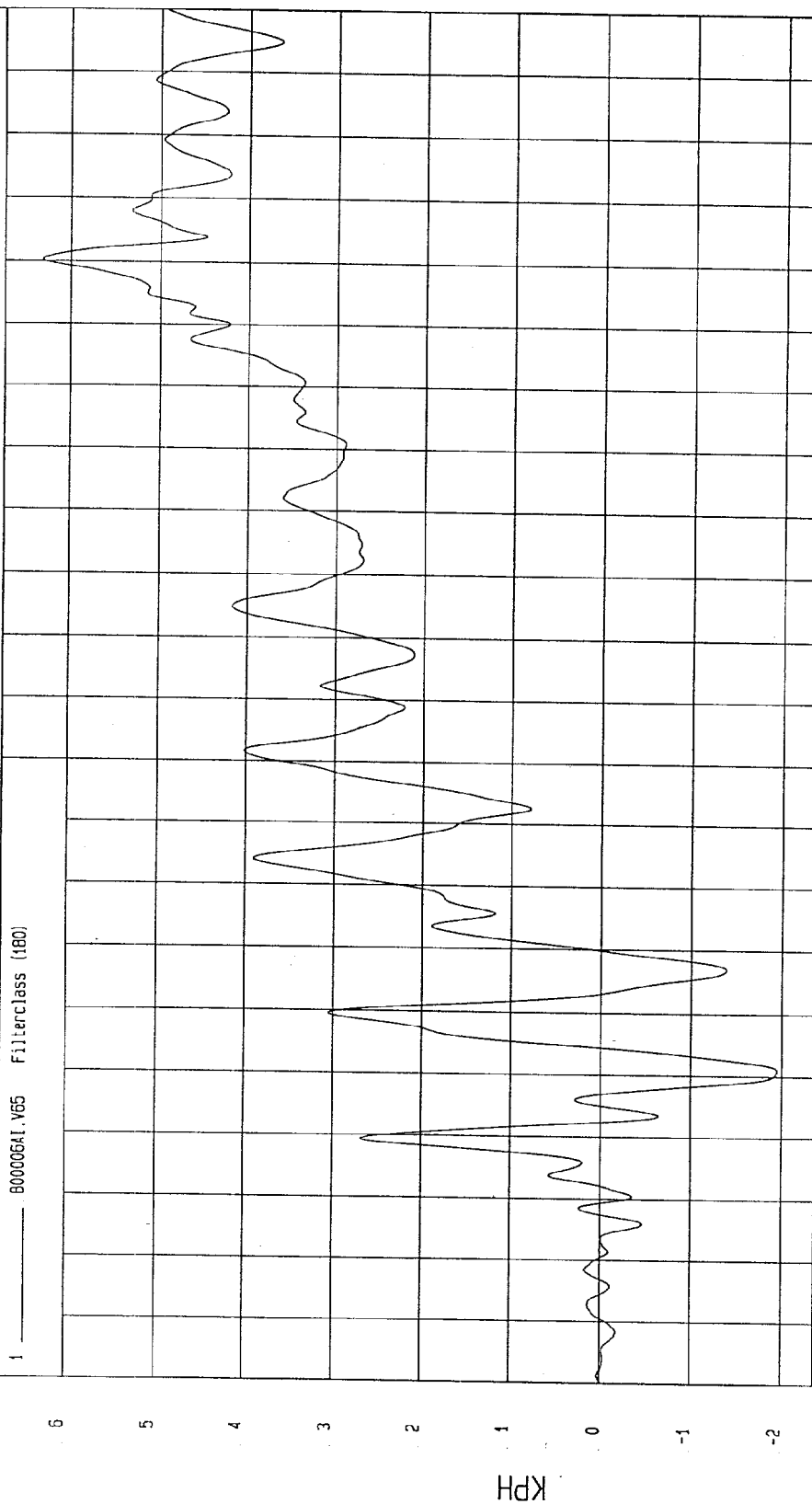
Speed: 38.6 MPH 62.1 KPH

Minimum = -1.95 KPH at 31 msec

Maximum = 6.31 KPH at 160 msec

MOVING BARRIER CG Z VELOCITY

1 ——— 8000GAL.V65 Filterclass (180)



TIME Seconds

MGA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

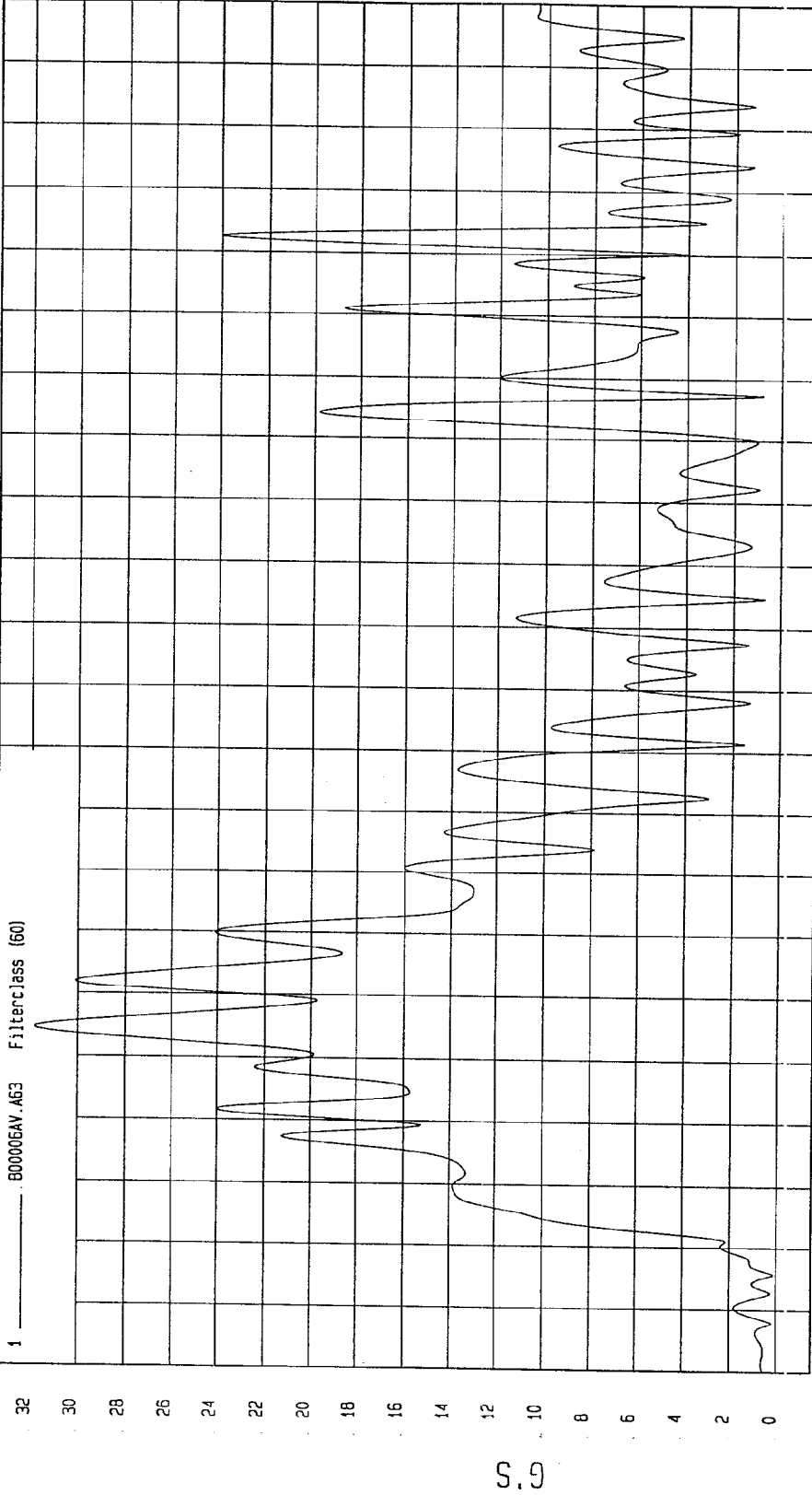
Speed: 38.6 MPH 62.1 KPH

Minimum = 9.80E-02 G's at -4 msec

Maximum = 31.86 G's at 35 msec

MOVING BARRIER CG RESULTANT ACCELERATION

1 ——— .8000GAV AG3 Filterclass (60)



MSA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

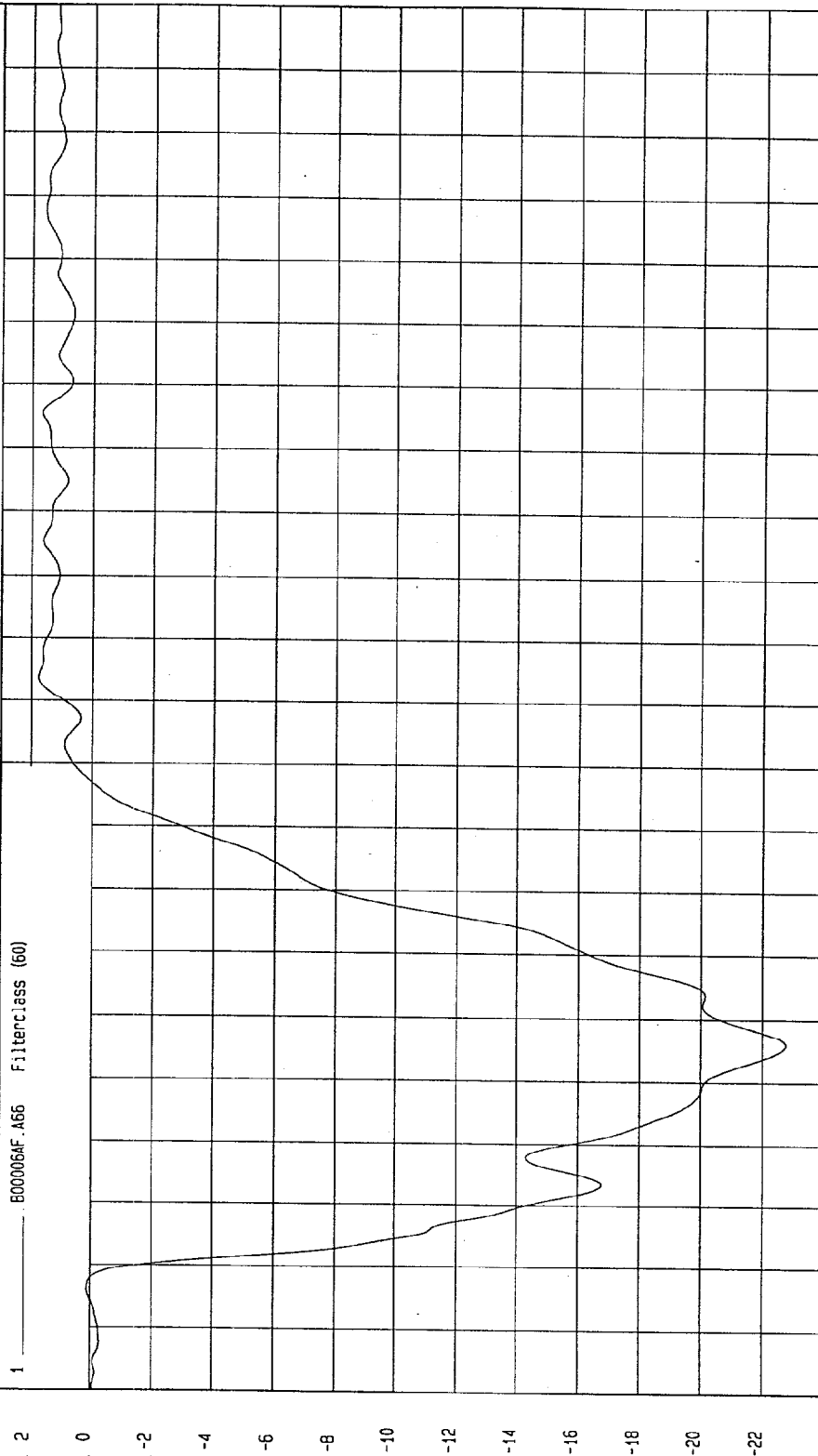
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 1.76 G'S at 94 msec

Minimum = -22.77 G'S at 36 msec

MOVING BARRIER REAR AXLE X ACCELERATION

1 B00006AF.A66 FilterClass (60)



MCA Research
01-20-2000 14:29

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

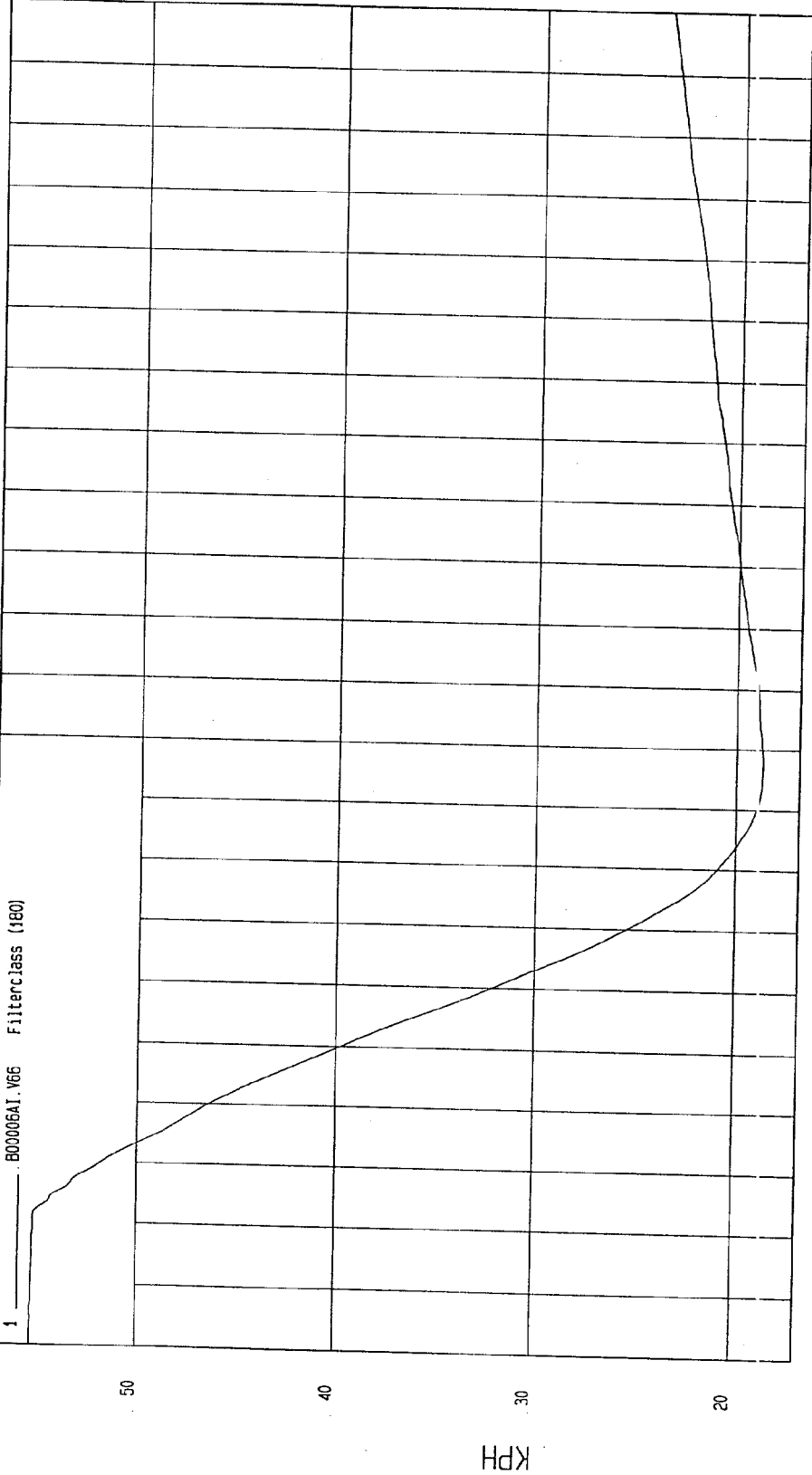
Speed: 38.6 MPH 62.1 KPH

Minimum = 18.67 KPH at 77 msec

Maximum = 55.31 KPH at -18 msec

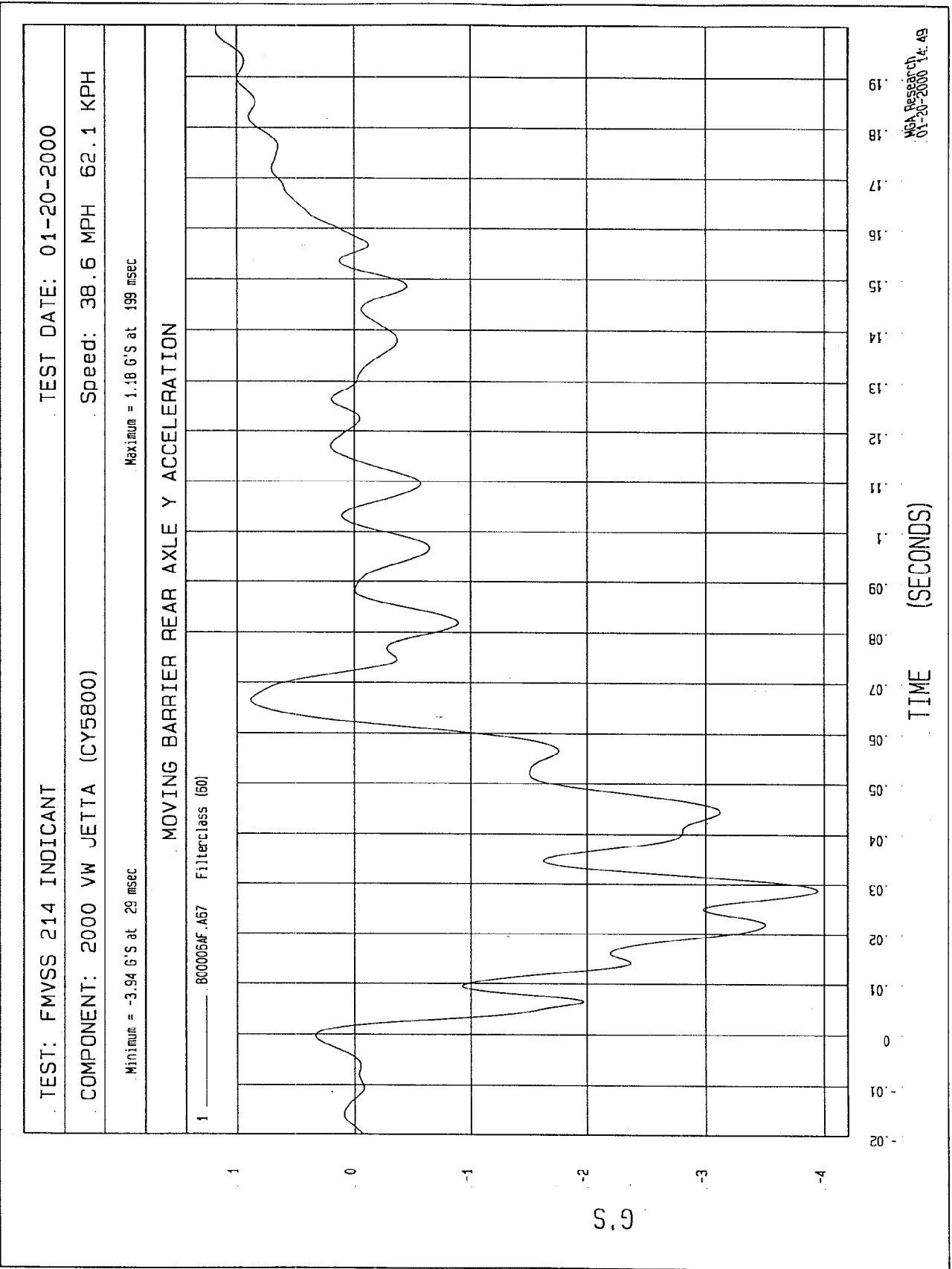
MOVING BARRIER REAR AXLE X VELOCITY

1 B00006A1.V66 Filterclass (180)



MCA Research
01-20-2000 14:30

TIME Seconds



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

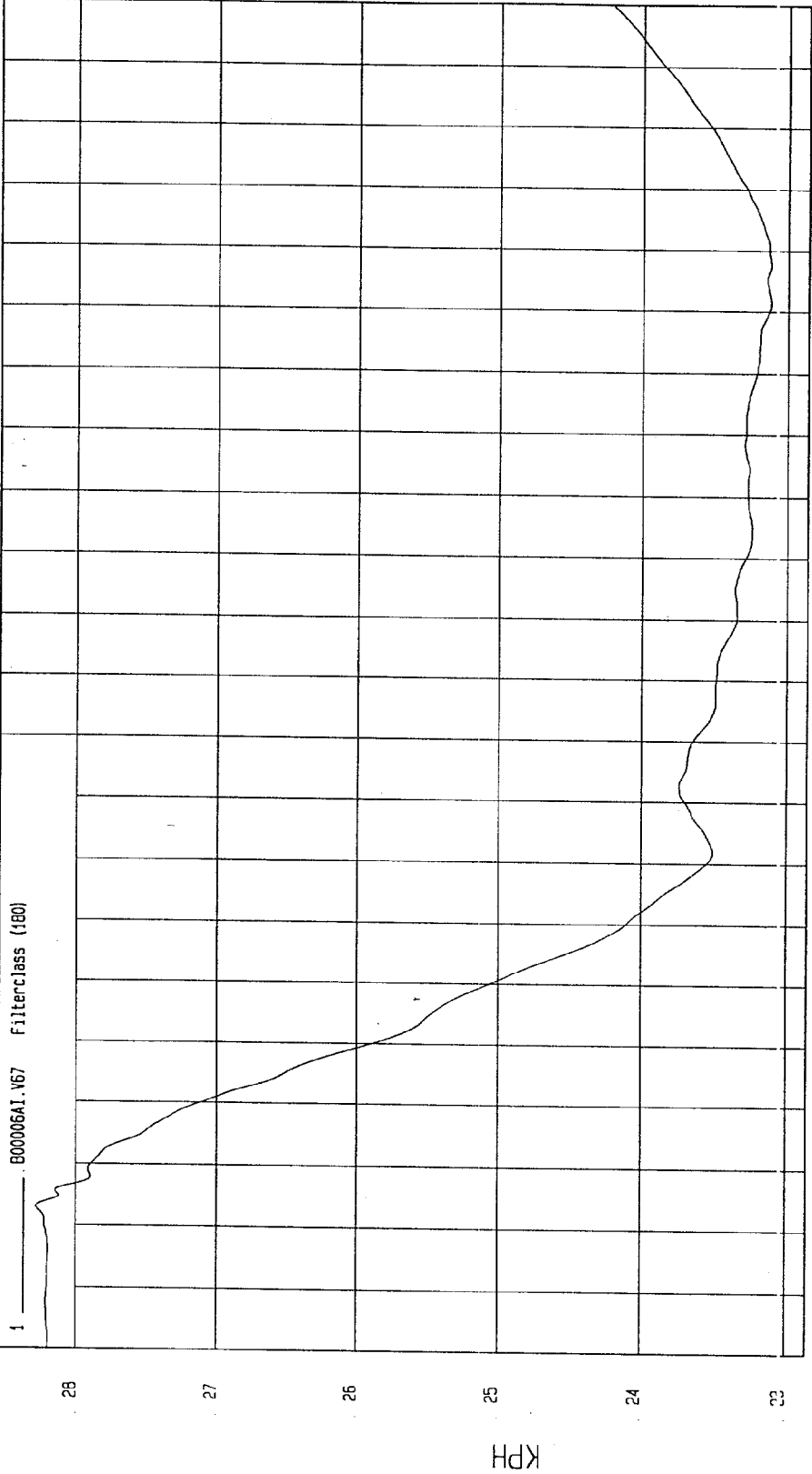
COMPONENT: 2000 VW JETTA (CY5800)

Minimum = 23.12 KPH at 151 msec

Maximum = 28.28 KPH at 3 msec

MOVING BARRIER REAR AXLE Y VELOCITY

1 B00006A1.V67 Filterclass (180)



TIME Seconds

MGA Research
01-20-2000 14:49

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

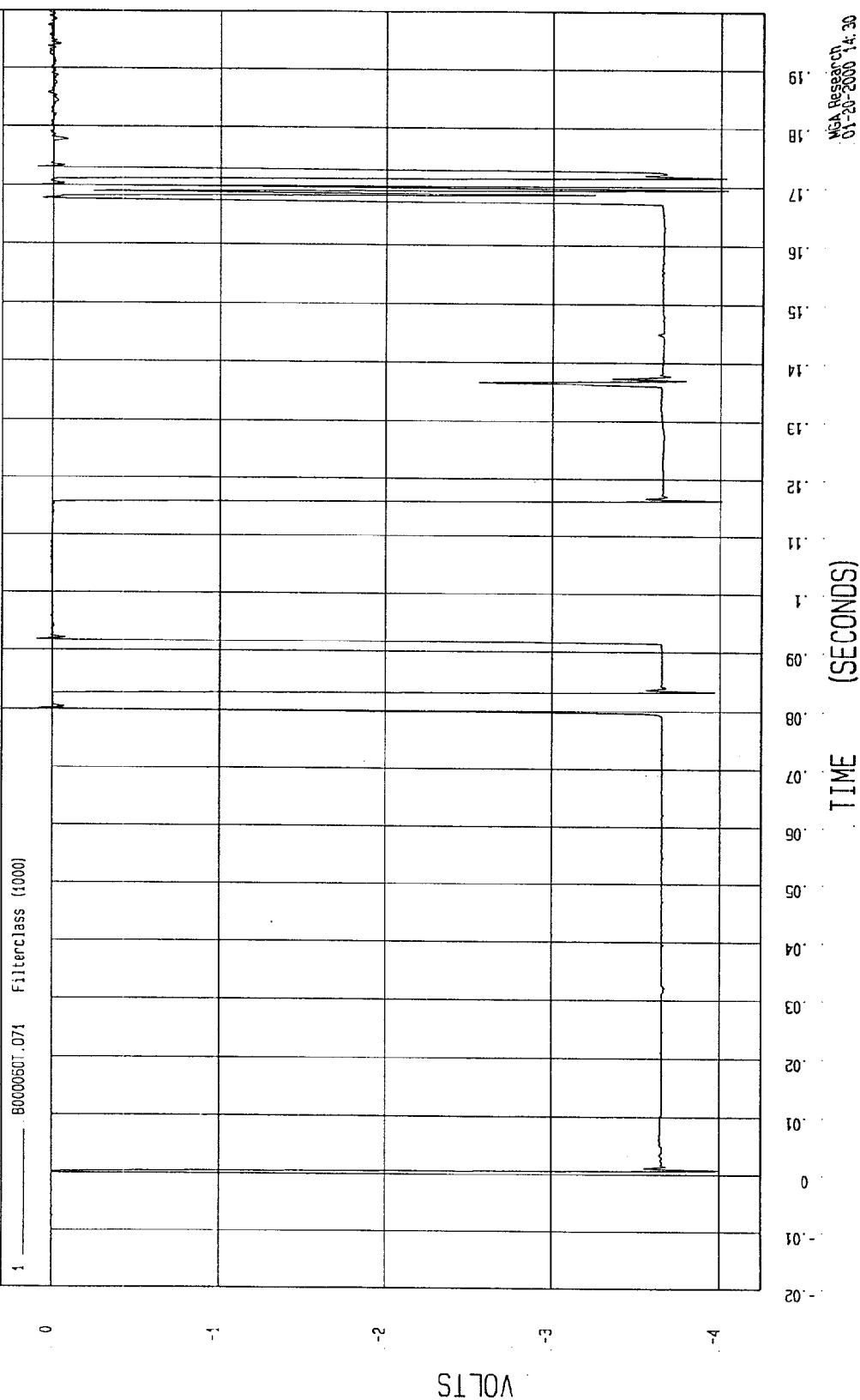
COMPONENT: 2000 VW JETTA (CY5800)

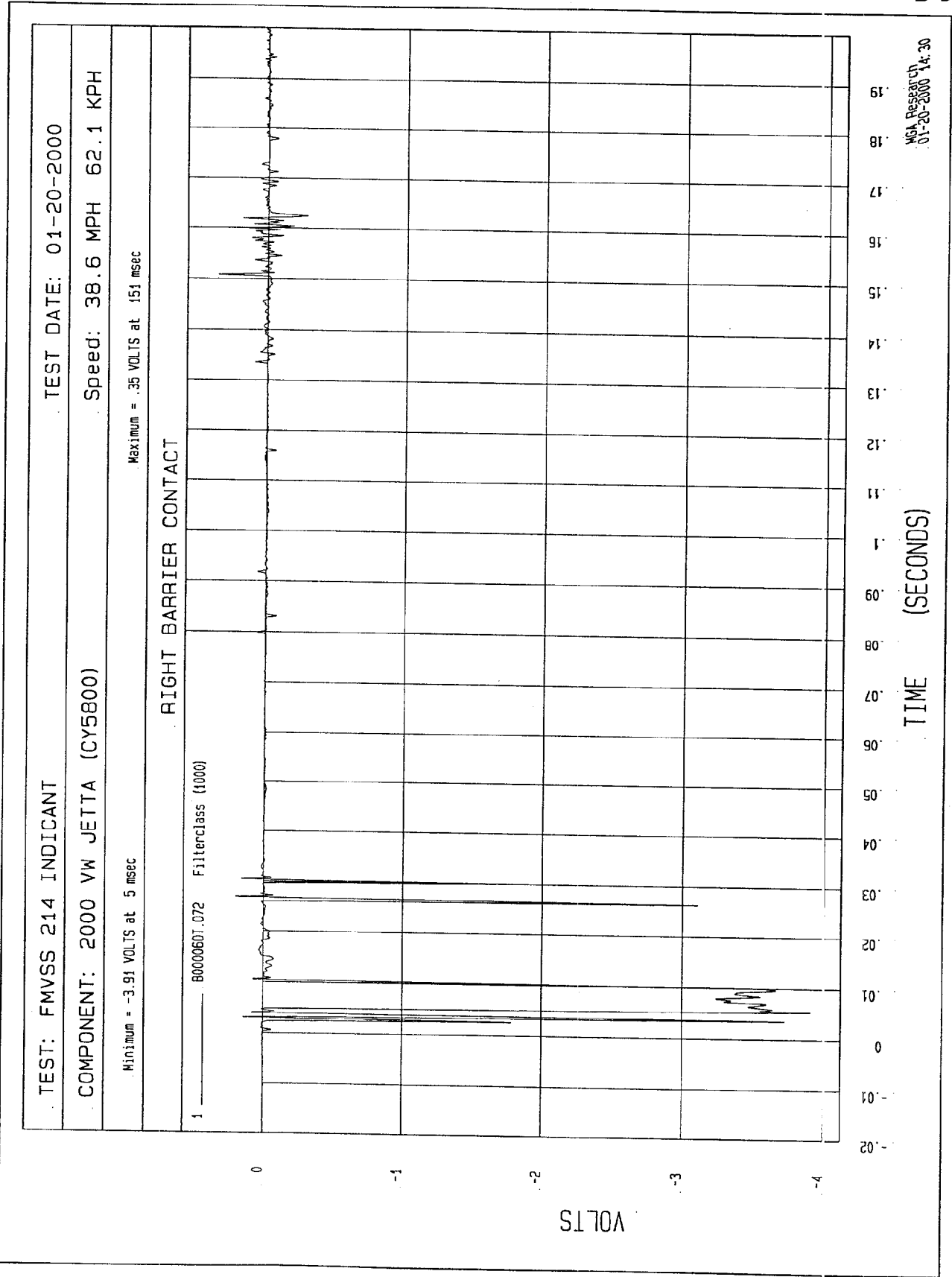
Speed: 38.6 MPH 62.1 KPH

Minimum = -4.04 VOLTS at 170 msec

Maximum = 9.50E-02 VOLTS at 173 msec

LEFT BARRIER CONTACT





TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

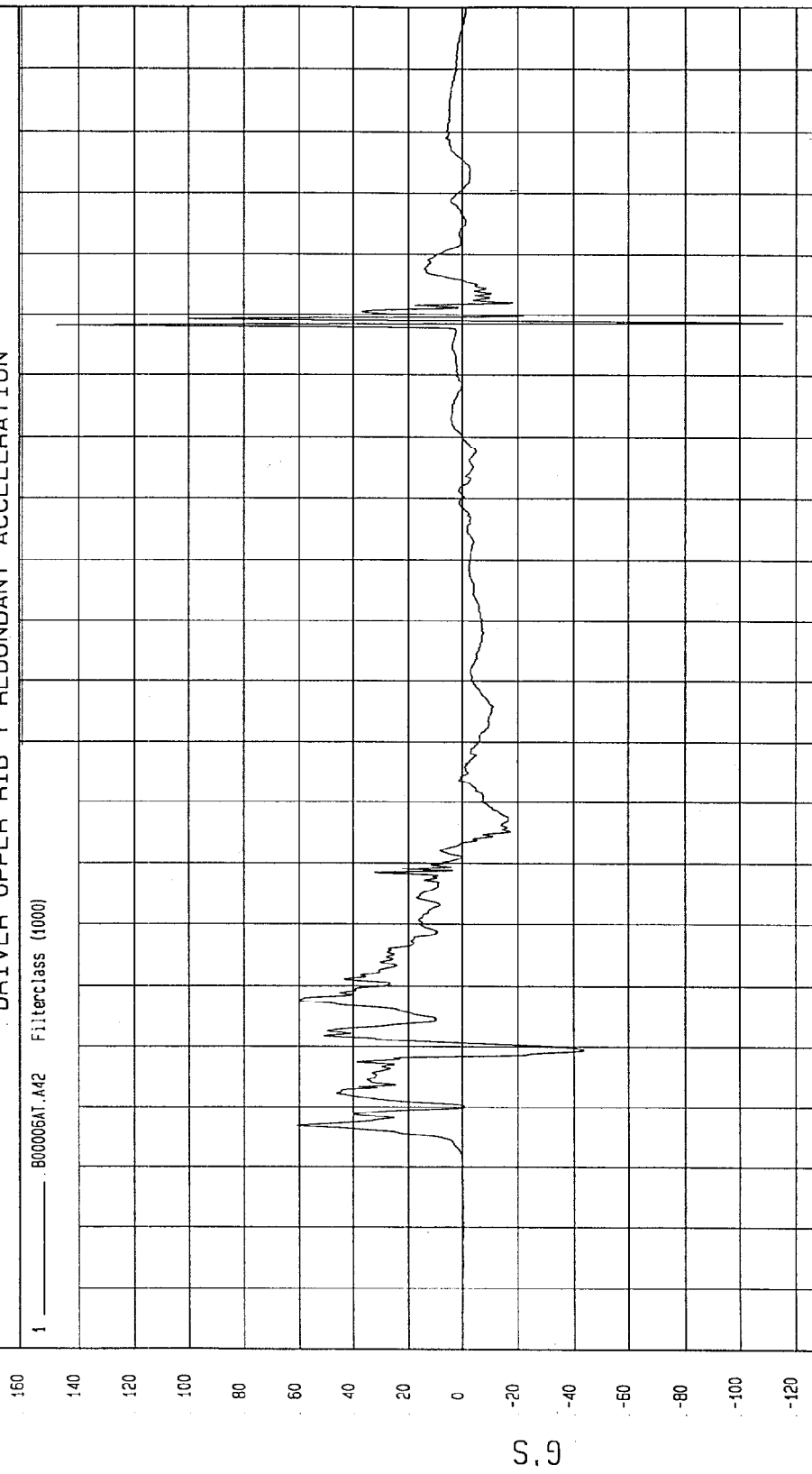
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 147.92 G'S at 148 msec

Minimum = -115.28 G'S at 149 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 ——— .800005AT.A42 Filterclass (1000)



TIME (SECONDS)

MOA Research
01-20-2000 14:30

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

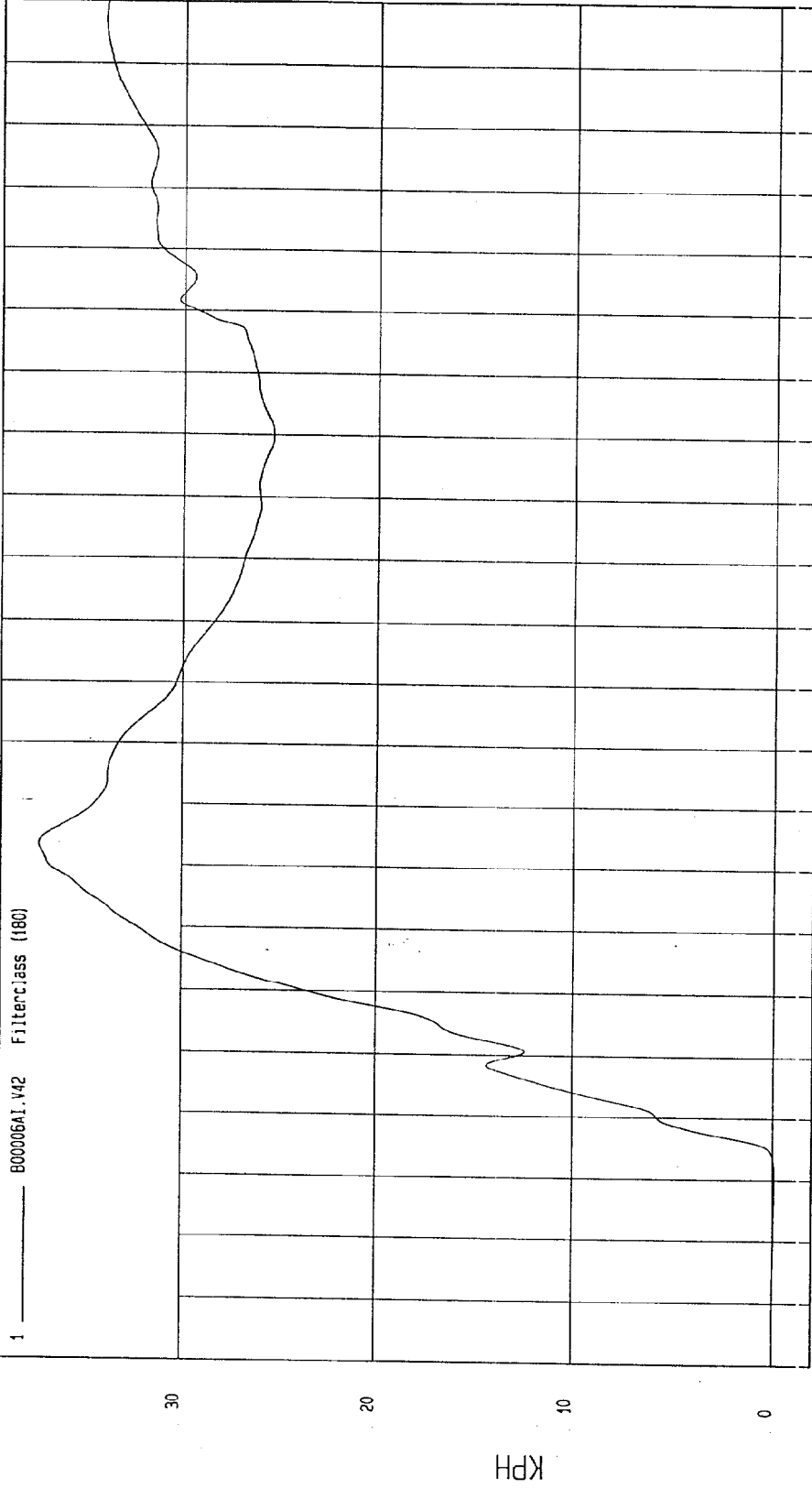
Speed: 38.6 MPH 62.1 KPH

Minimum = -7.97E-02 KPH at 8 msec

Maximum = 37.22 KPH at 63 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 ——— 800006A1.V42 Filterclass (180)



WCA Research
01-20-2000 14:30

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

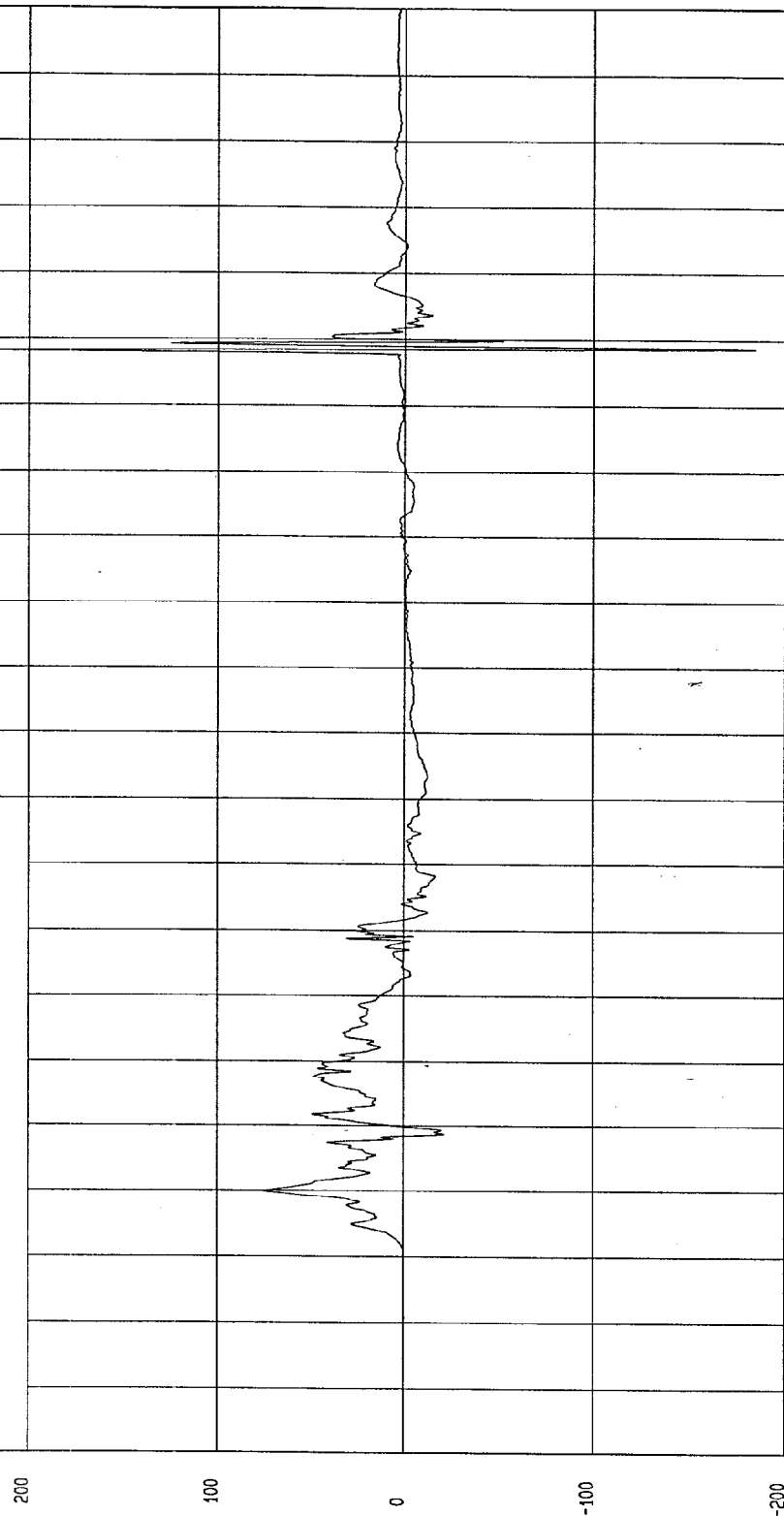
Speed: 38.6 MPH 62.1 KPH

Minimum = -184.34 G'S at 149 msec

Maximum = 229.07 G'S at 148 msec

DRIVER LOWER RIB Y REDUNDANT ACCELERATION

1 — 800006AT.A43 Filterclass (1000)



MCA Research
01-20-2000 14:30

TIME (SECONDS)

G's

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

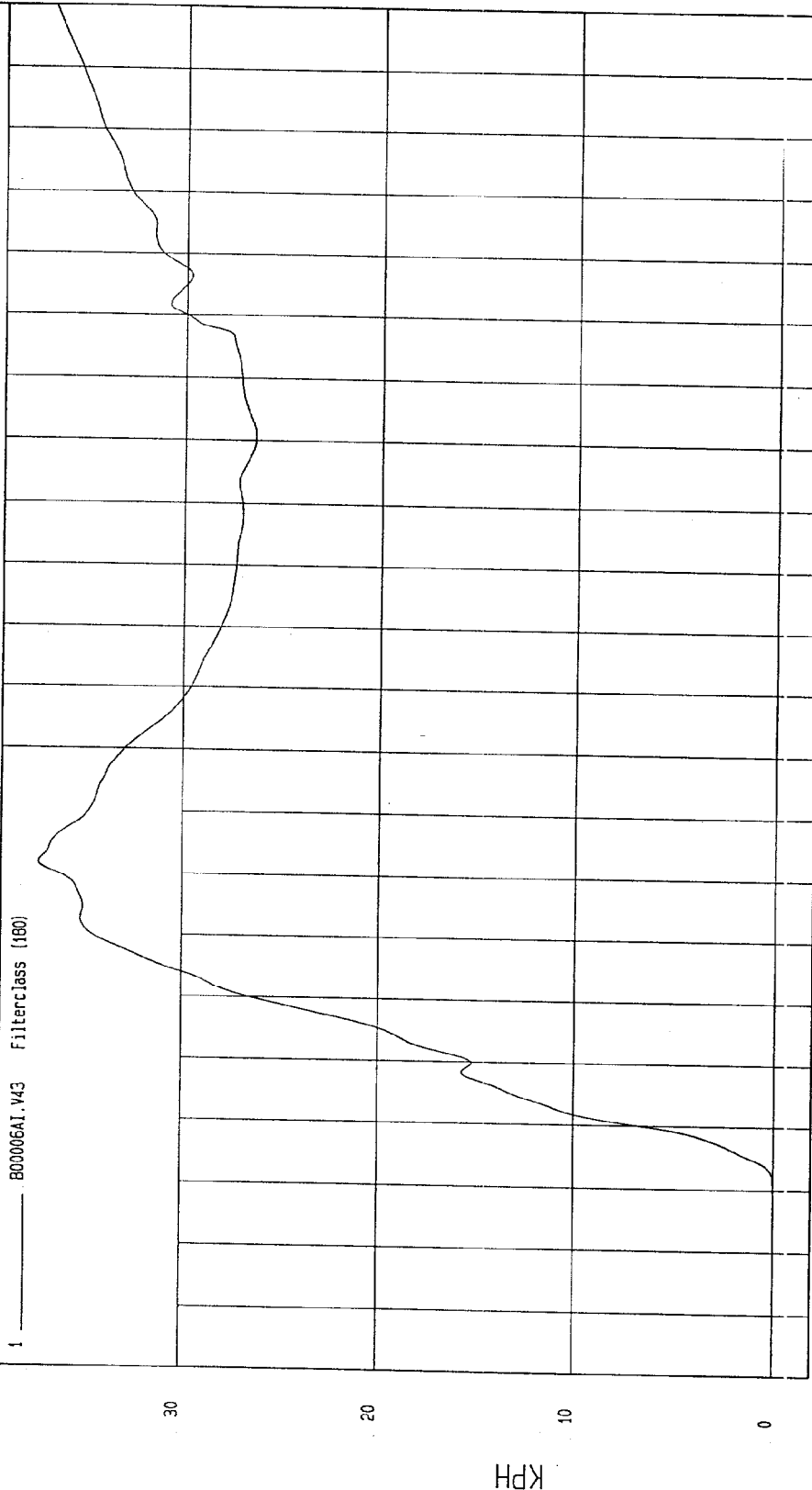
Speed: 38.6 MPH 62.1 KPH

Minimum = -1.38E-02 KPH at 6 msec

Maximum = 37.21 KPH at 62 msec

DRIVER LOWER RIB Y REDUNDANT VELOCITY

1. B00006A1.V43 Filterclass (160)



MSA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

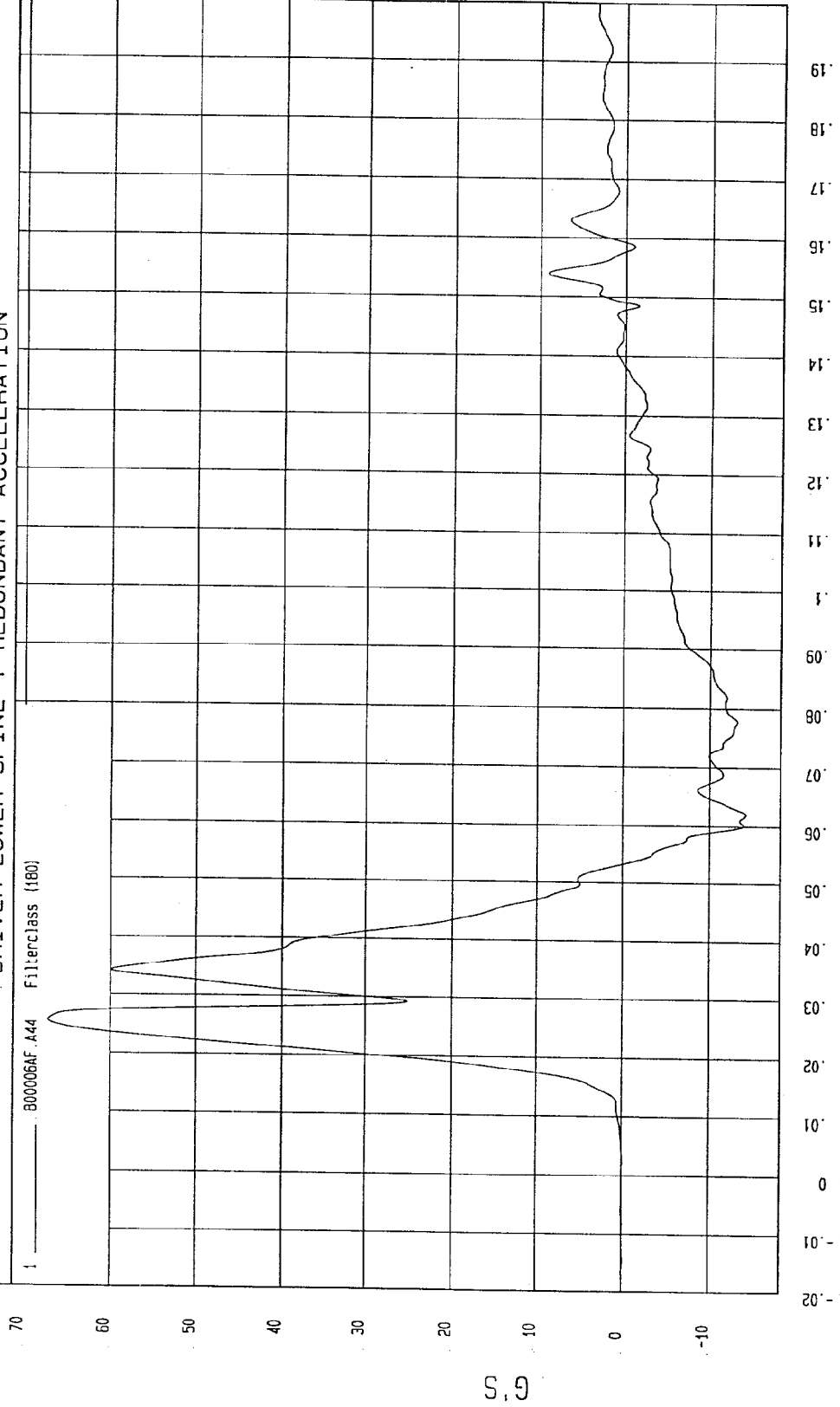
Speed: 38.6 MPH 62.1 KPH

Minimum = -14.32 G'S at 62 msec

Maximum = 67.19 G'S at 26 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 _____ B00006AF.A44 Filterclass (180)



WCA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

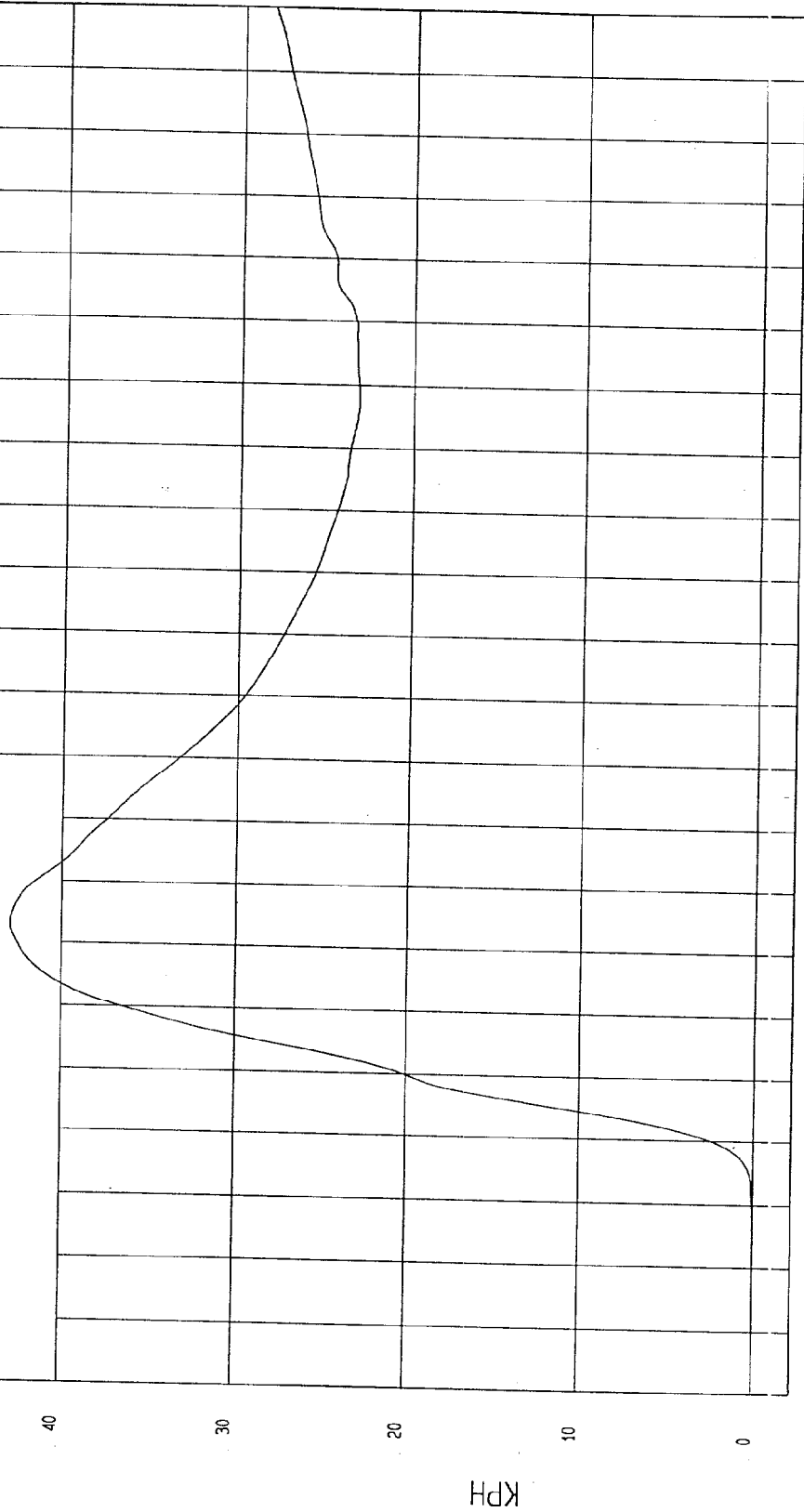
Speed: 38.6 MPH 62.1 KPH

Minimum = -8.32E-03 KPH at -7 msec

Maximum = 42.97 KPH at 53 msec

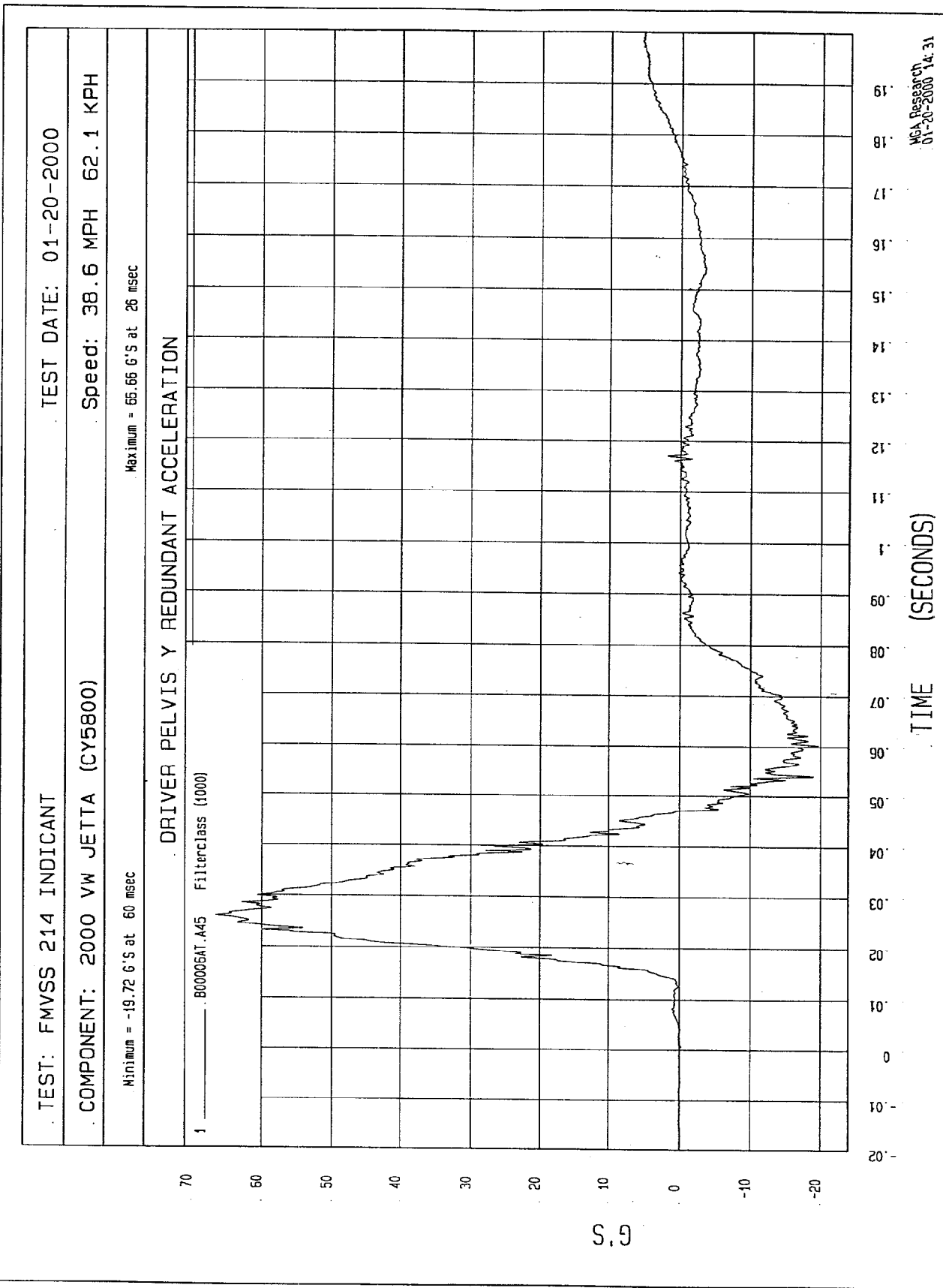
DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 ——— B00006A1.V44 Filterclass (180)



TIME Seconds

WSA Research
01-20-2000 14:31



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

SPEED: 38.6 MPH 62.1 KPH

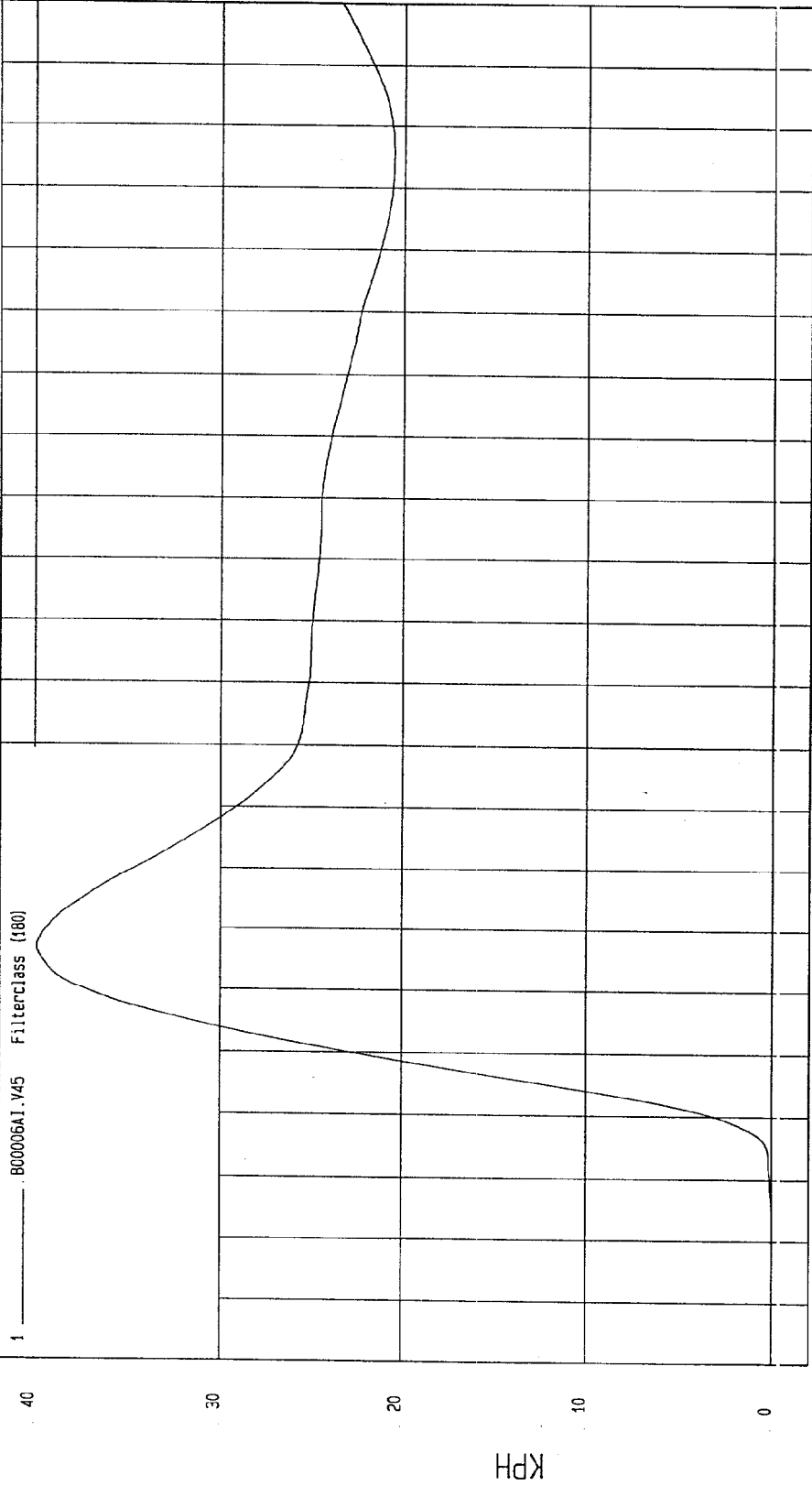
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 39.9 KPH at 47 msec

Minimum = -5.59E-03 KPH at -16 msec

DRIVER PELVIS Y REDUNDANT VELOCITY

1 ——— B00006A1.Y45 Filterclass (180)



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

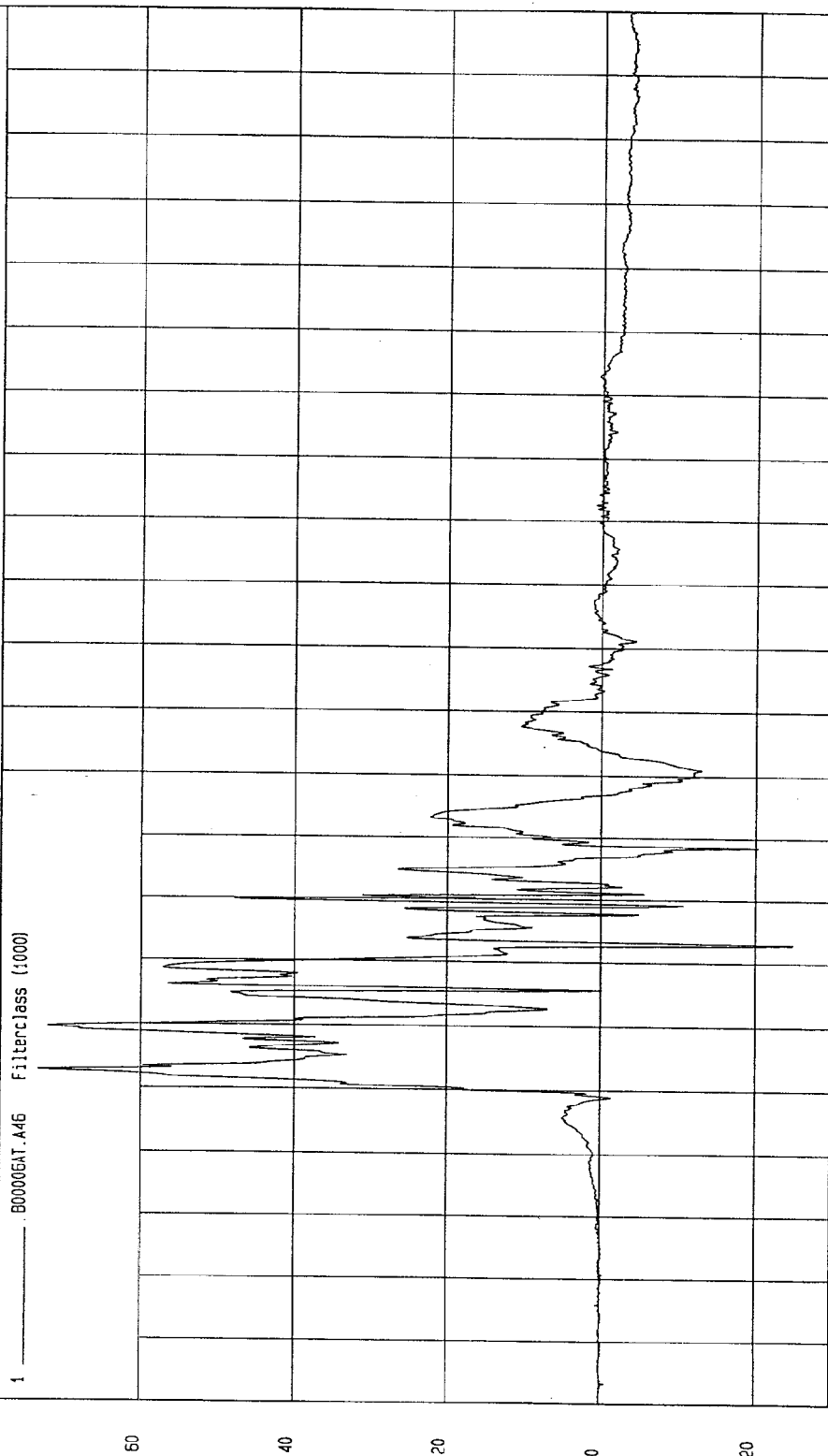
Speed: 38.6 MPH 62.1 KPH

Minimum = -24.87 G's at 53 msec

Maximum = 73.21 G's at 33 msec

REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION

1 _____ 8000GAT.A46 FilterClass (1000)



MGA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

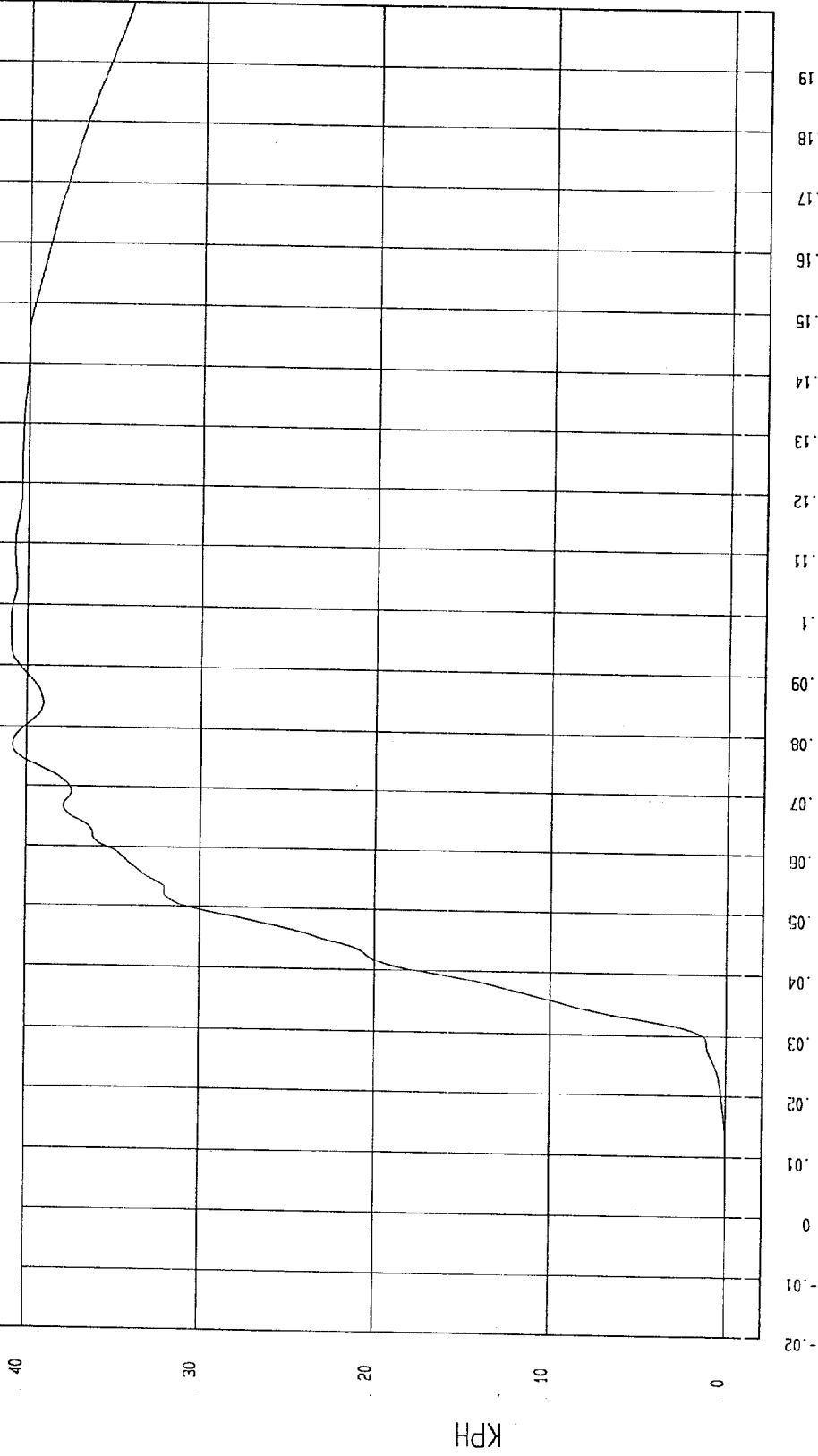
Speed: 38.6 MPH 62.1 KPH

Minimum = -3.91E-03 KPH at -16 msec

Maximum = 40.94 KPH at 98 msec

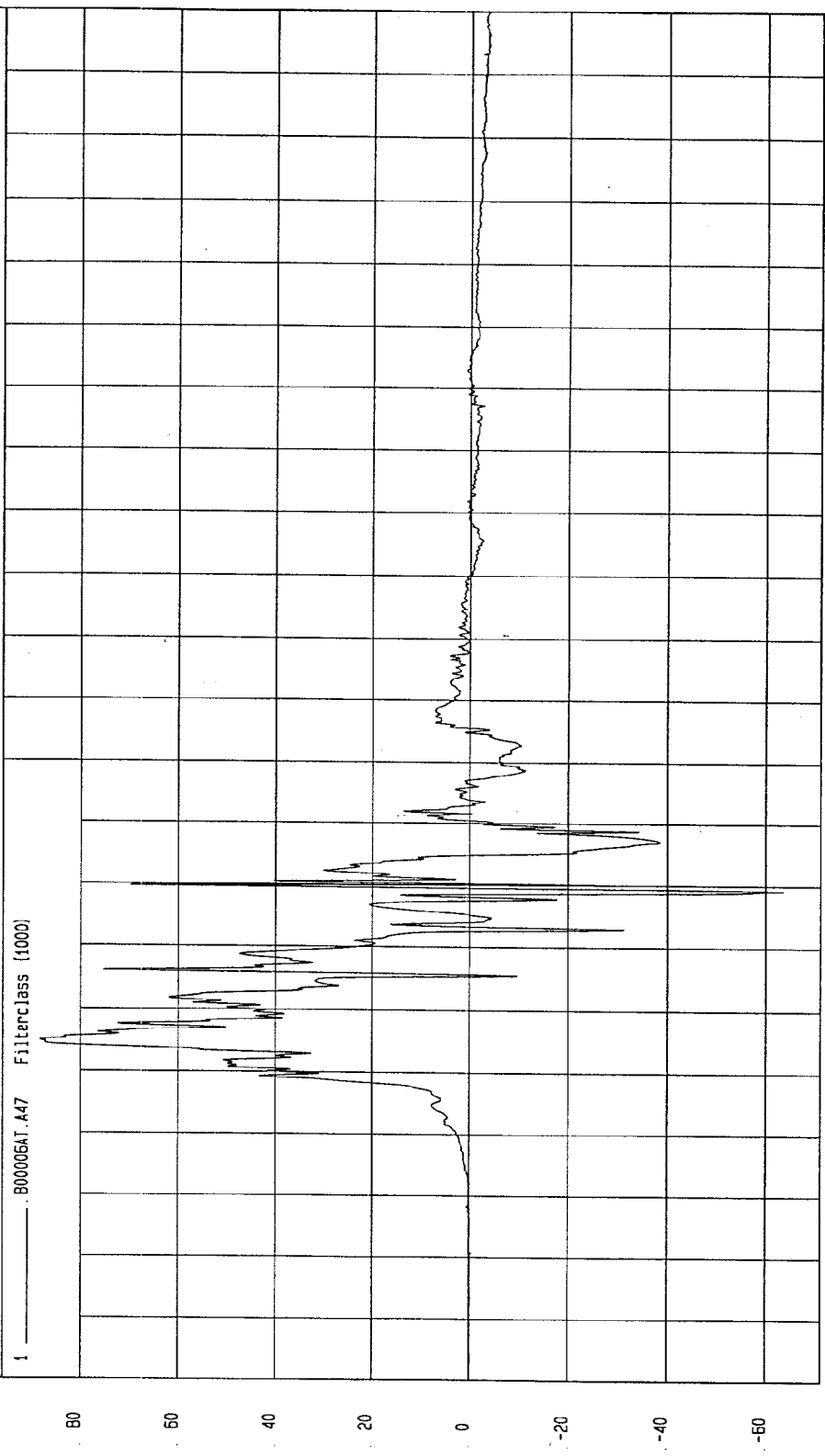
REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

1 B00006A1.V46 Filterclass (180)



MSA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT		TEST DATE: 01-20-2000	
COMPONENT: 2000 VW JETTA (CY5800)		Speed: 38.6 MPH 62.1 KPH	
Minimum = -63.54 G'S at 59 msec		Maximum = 88.17 G'S at 35 msec	
REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION			
1 _____ 800005AT.A47 Filterclass (1000)			



TIME (SECONDS)

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NCA Research
01-20-2000 14:31

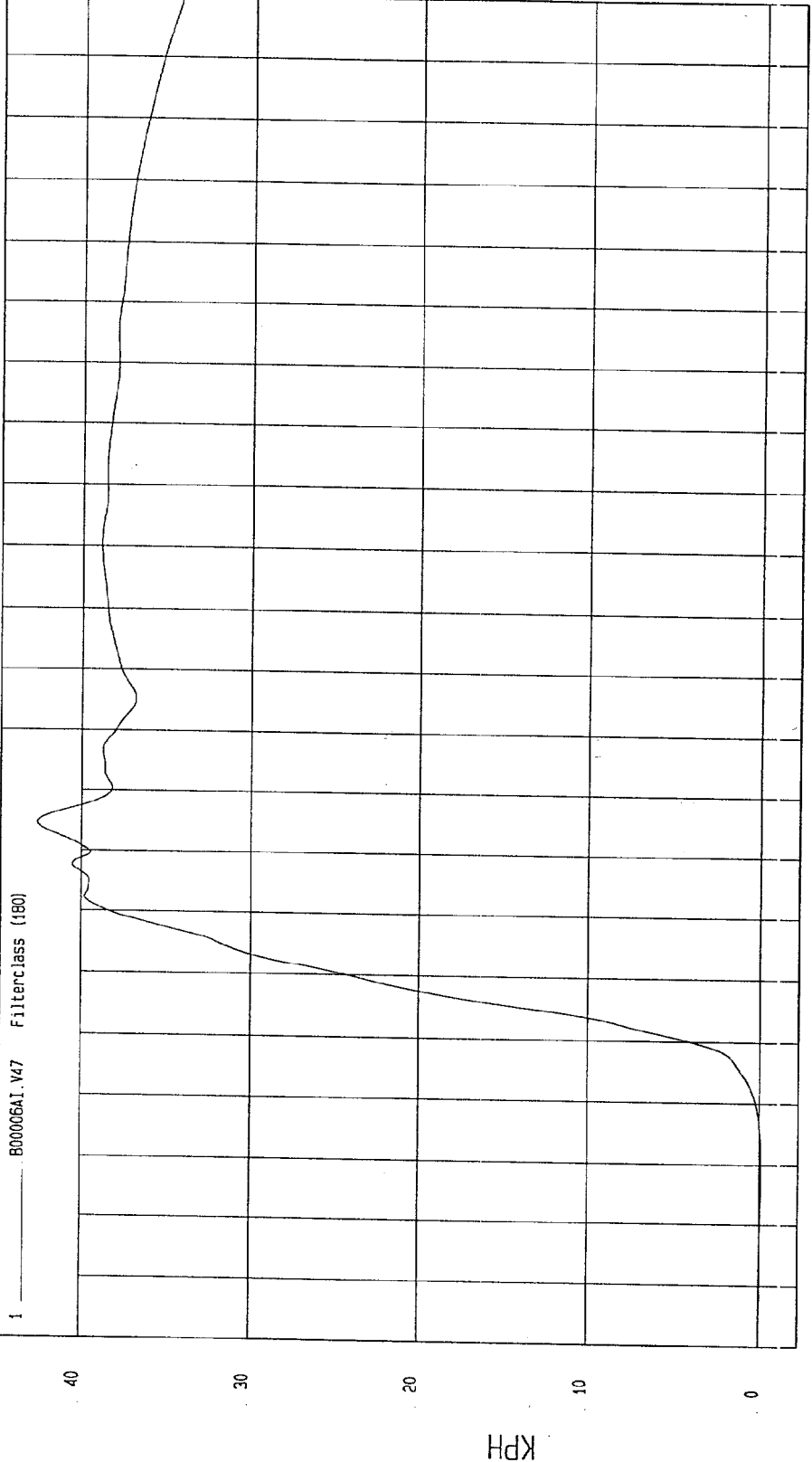
S.9

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -9.40E-02 KPH at 7 msec Maximum = 42.5 KPH at 65 msec

REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY



NSA Research
01-20-2000 14:31

TIME Seconds

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

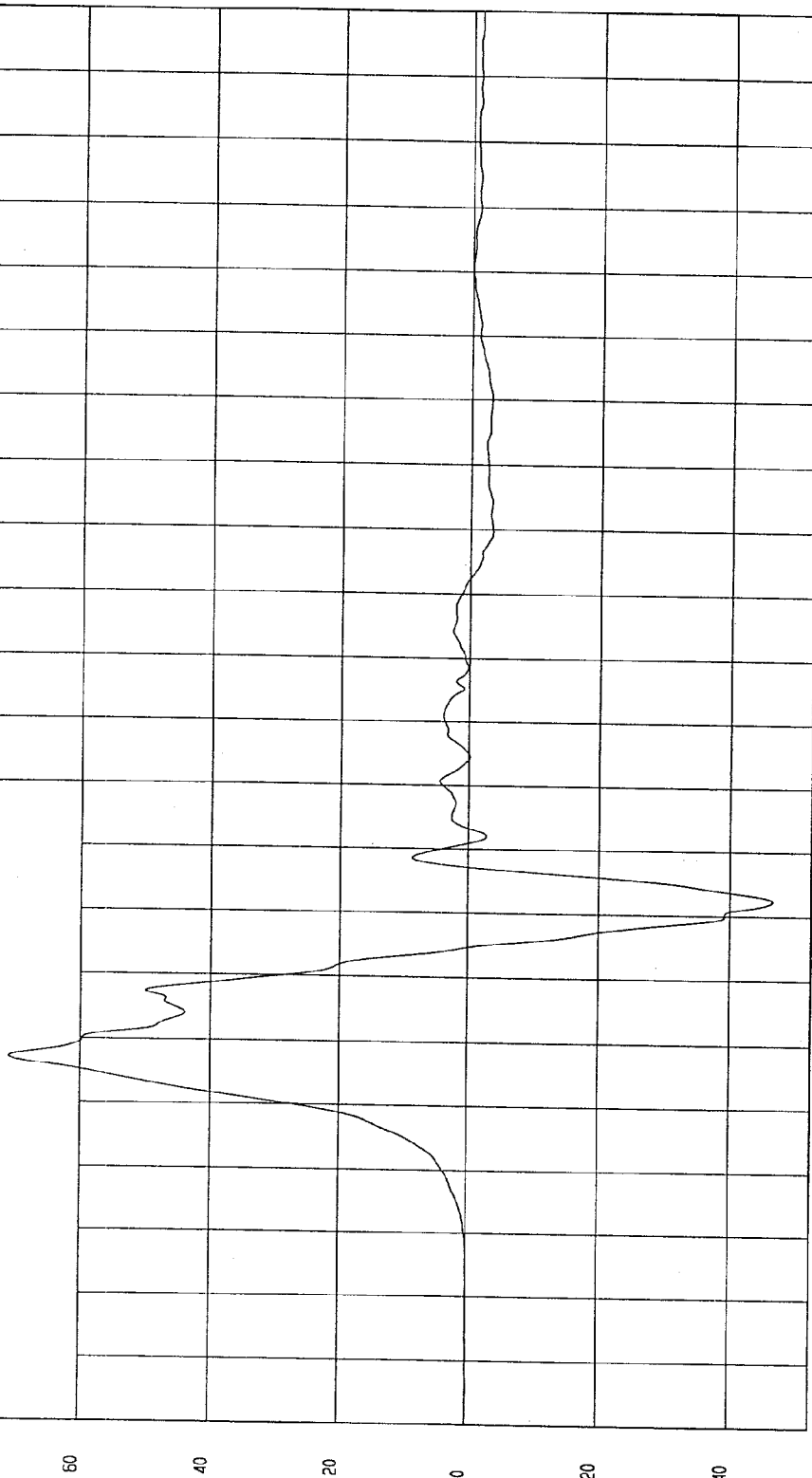
Speed: 38.6 MPH 62.1 KPH

Minimum = -46.58 G'S at 62 msec

Maximum = 70.86 G'S at 37 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 800006AF.A48 Filterclass (180)



NQA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

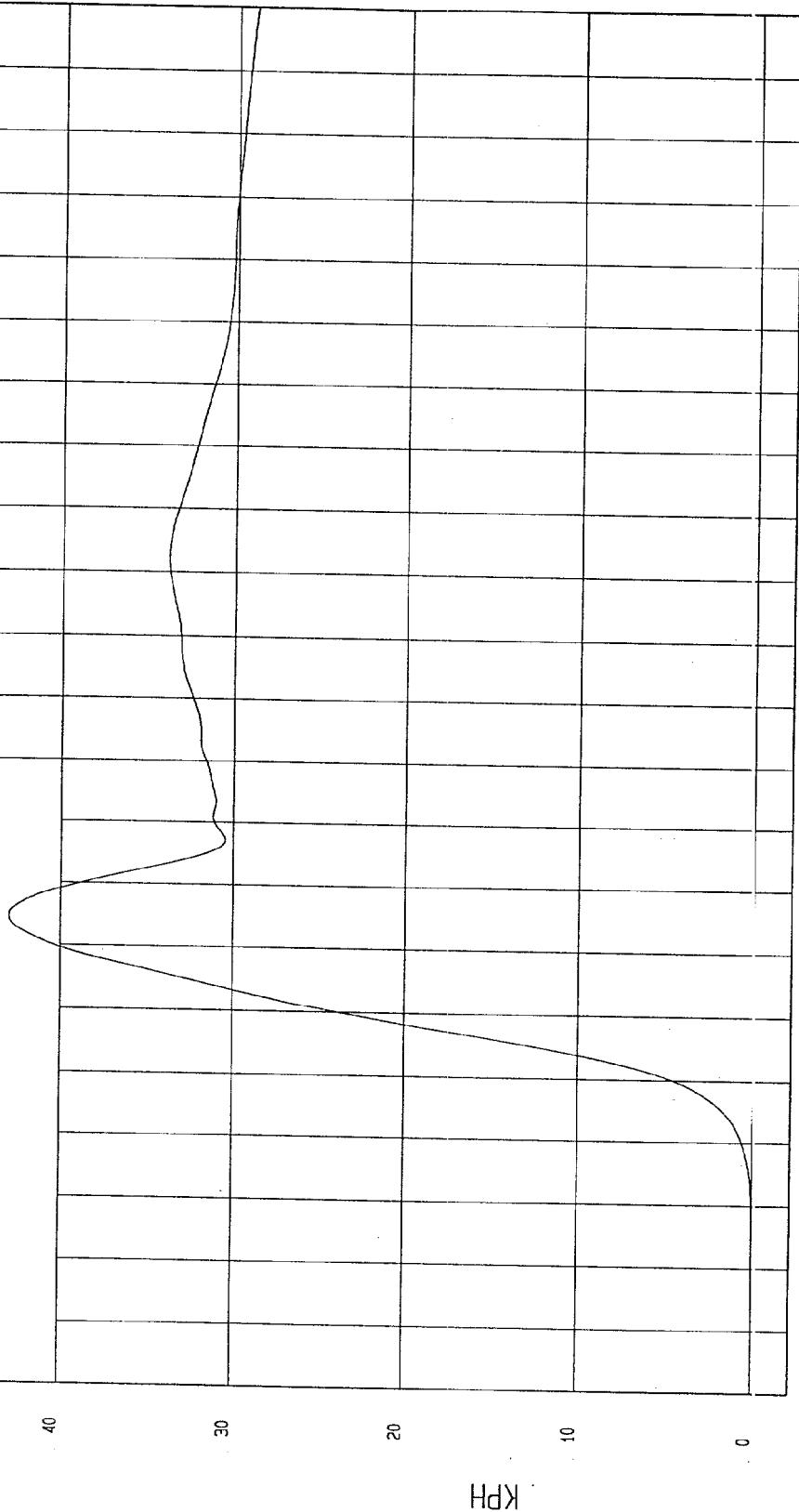
Speed: 38.6 MPH 62.1 KPH

Minimum = -7.98E-04 KPH at -8 msec

Maximum = 42.9 KPH at 55 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

1 ——— B00006A1.V4B FilterClass (180)



TIME Seconds

19
18
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1
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-1
-2

NGA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

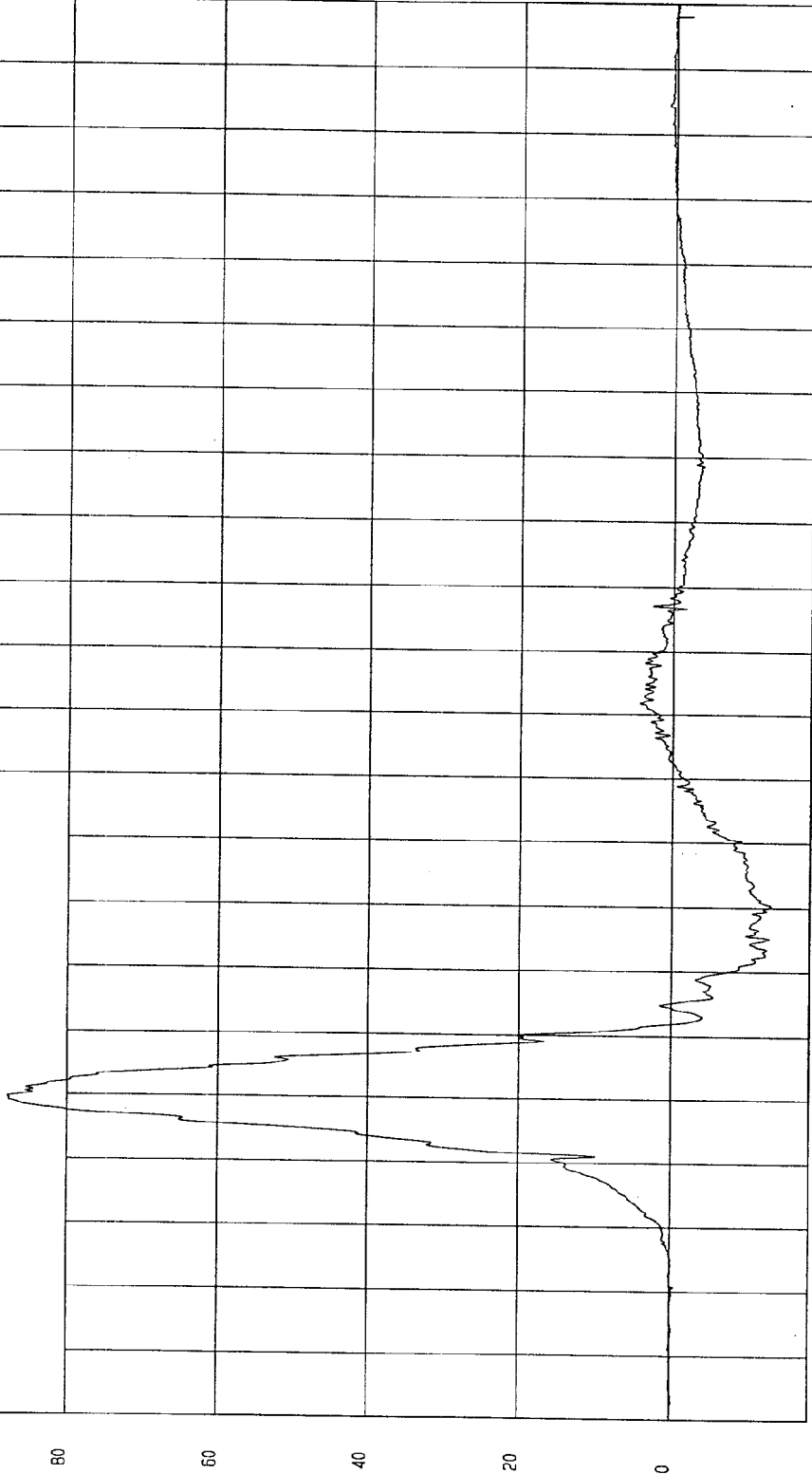
Speed: 38.6 MPH 62.1 KPH

Minimum = -13.19 G'S at 50 msec

Maximum = 87.84 G'S at 30 msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 800005AT.A49 Filterclass (1000)



MSA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -1.17E-02 KPH at 1 msec

Maximum = 40.62 KPH at 42 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 80006A1.V49 Filterclass (180)

40

30

20

10

0

KPH

-02

-01

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TIME Seconds

MEA Research
01-20-2000 14:31

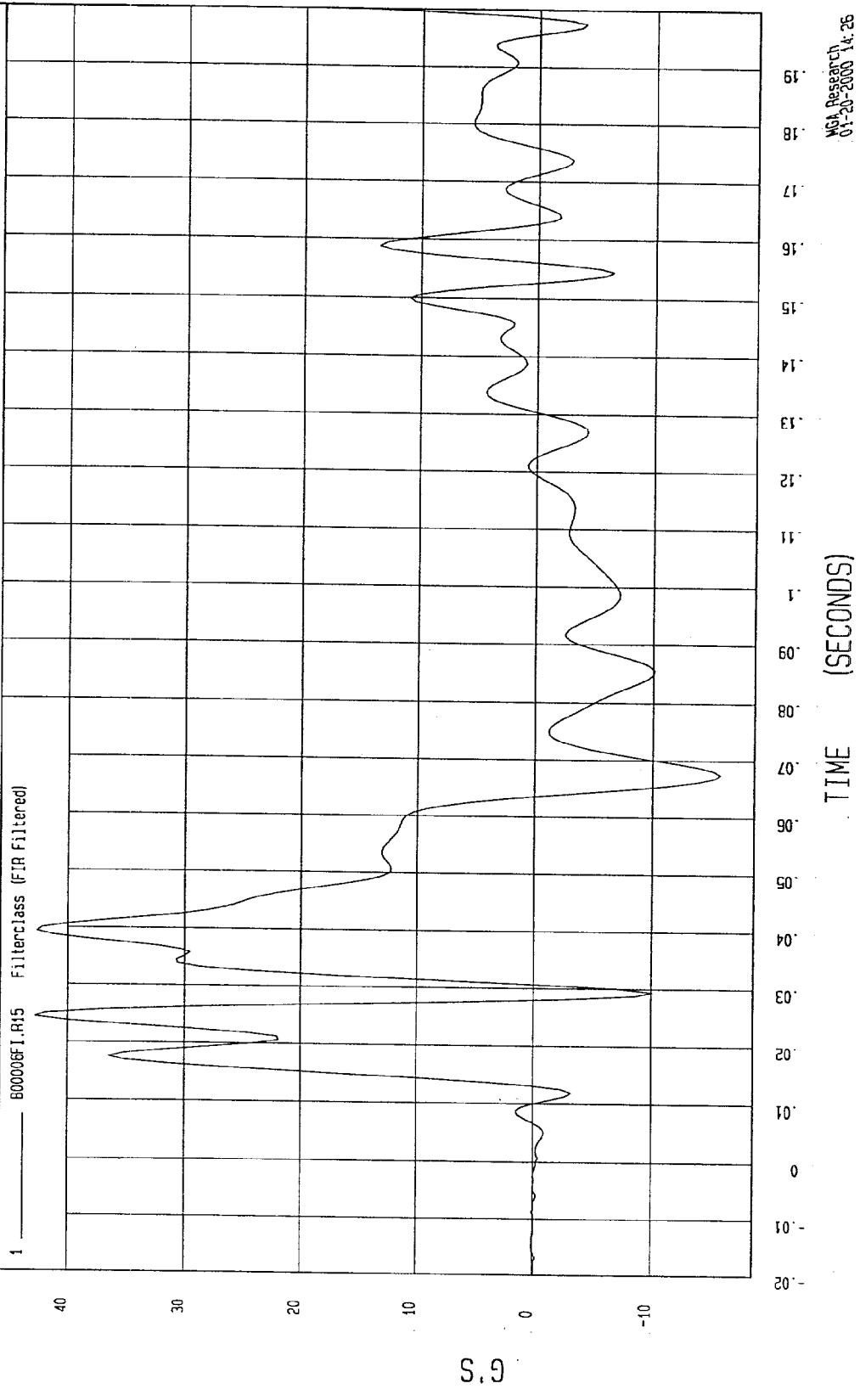
FINITE IMPULSE RESPONSE (FIR) FILTERED DATA

TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -15.62 G'S at 68 msec Maximum = 42.8 G'S at 24 msec

DRIVER UPPER RIB Y ACCELERATION



MCA Research
01-20-2000 14:26

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

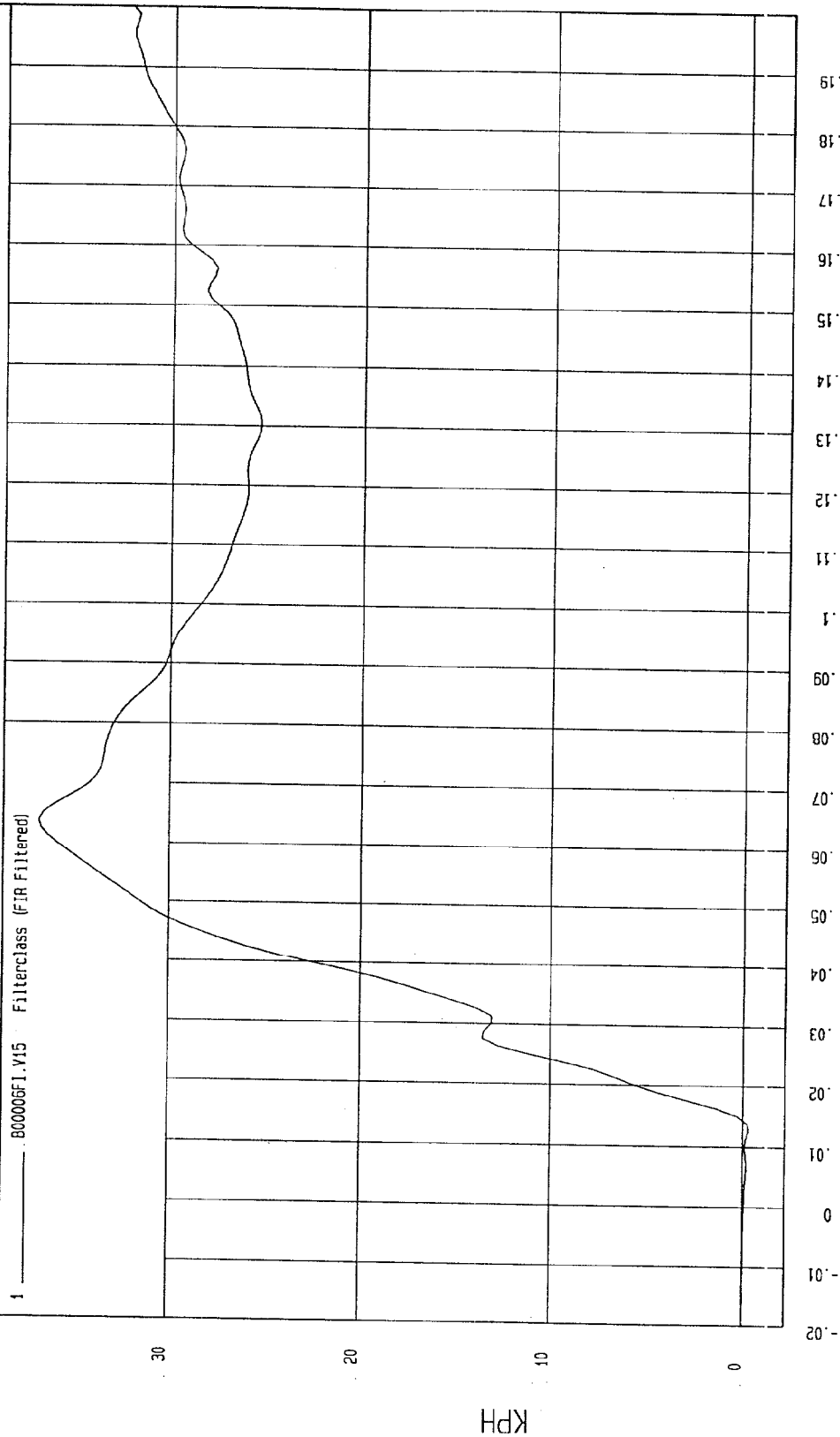
COMPONENT: 2000 VW JETTA (CY5800)

Minimum = -.29 KPH at 13 msec

Maximum = 36.7 KPH at 64 msec

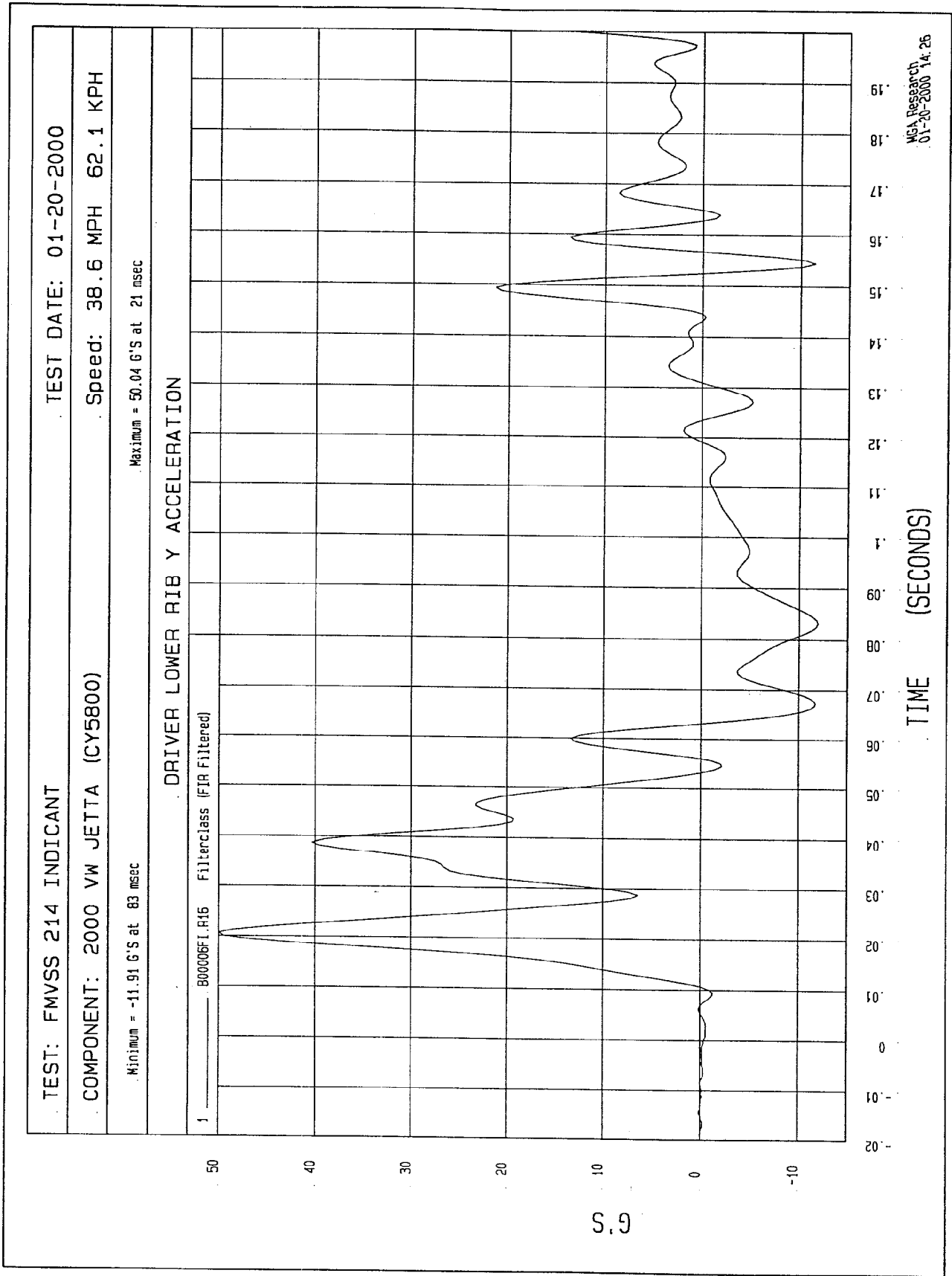
DRIVER UPPER RIB Y VELOCITY

1 ——— B00006F1.V15 Filterclass (FIR Filtered)



NSA Research
01-20-2000 14:31

TIME Seconds



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

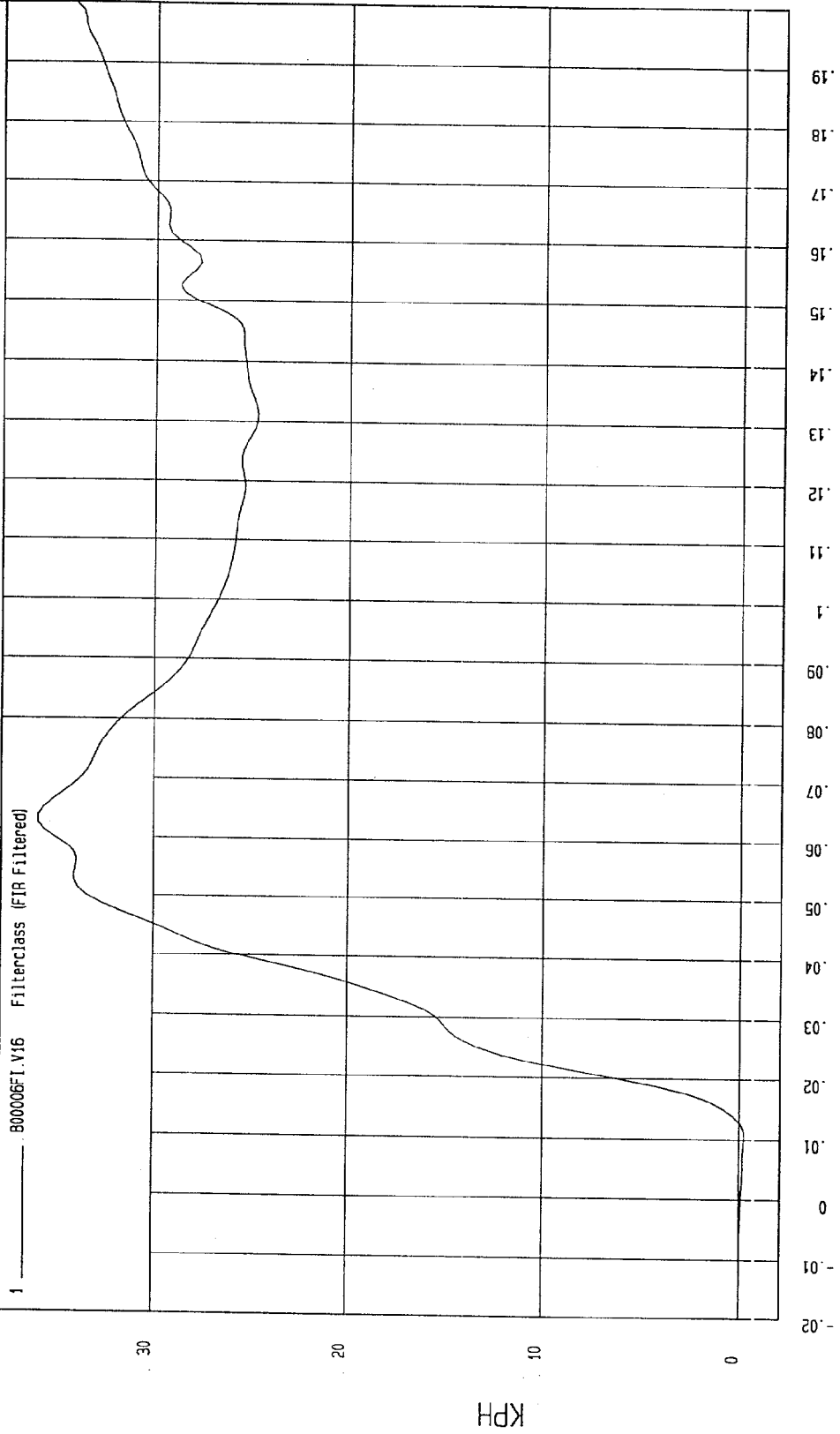
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -25 KPH at 11 msec

Maximum = 35.93 KPH at 63 msec

DRIVER LOWER RIB Y VELOCITY



MOA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

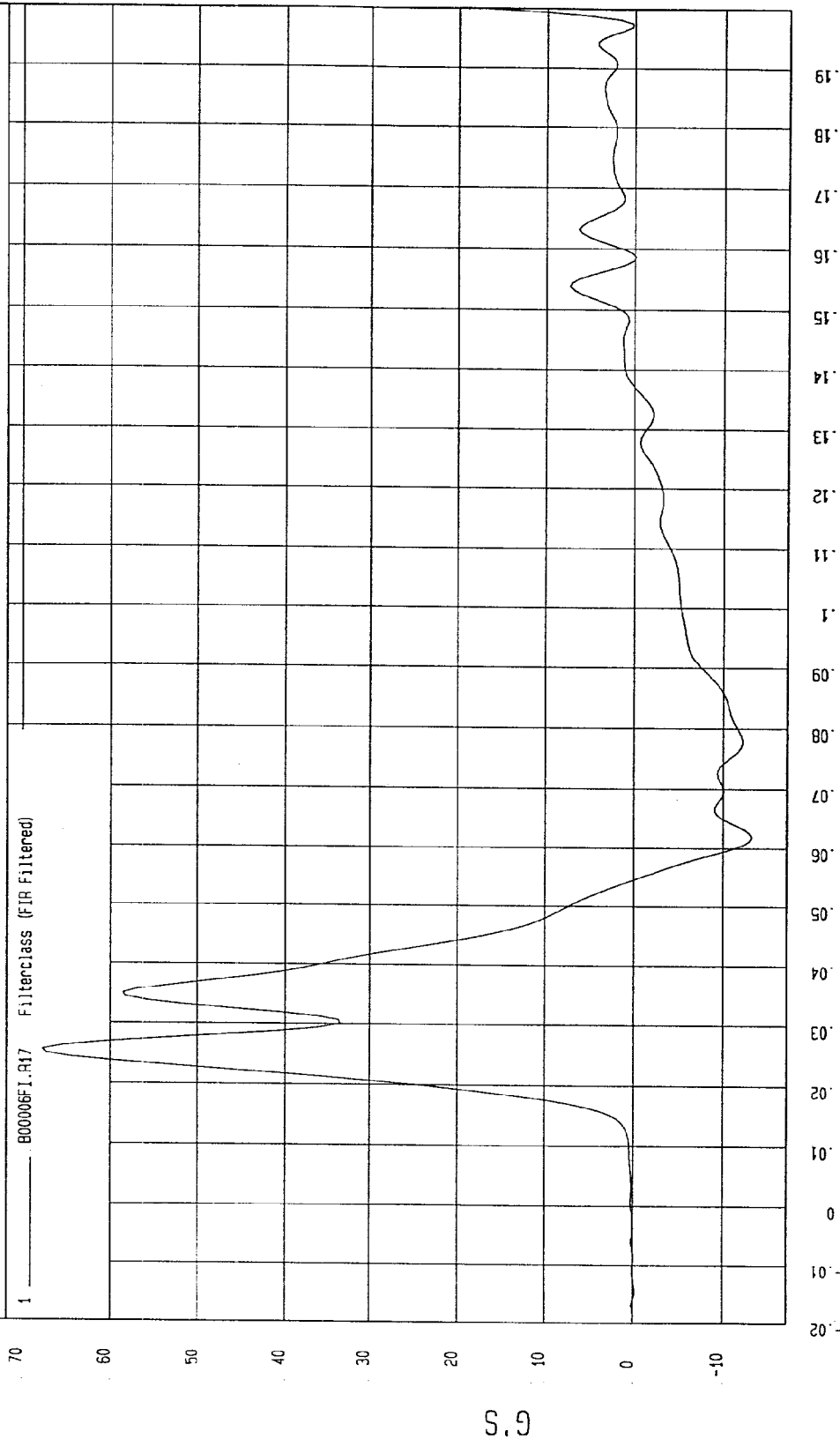
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

Minimum = -13.28 G'S at 62 msec

Maximum = 67.71 G'S at 26 msec

DRIVER LOWER SPINE Y ACCELERATION

MCA Research
01-20-2000 14:26

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

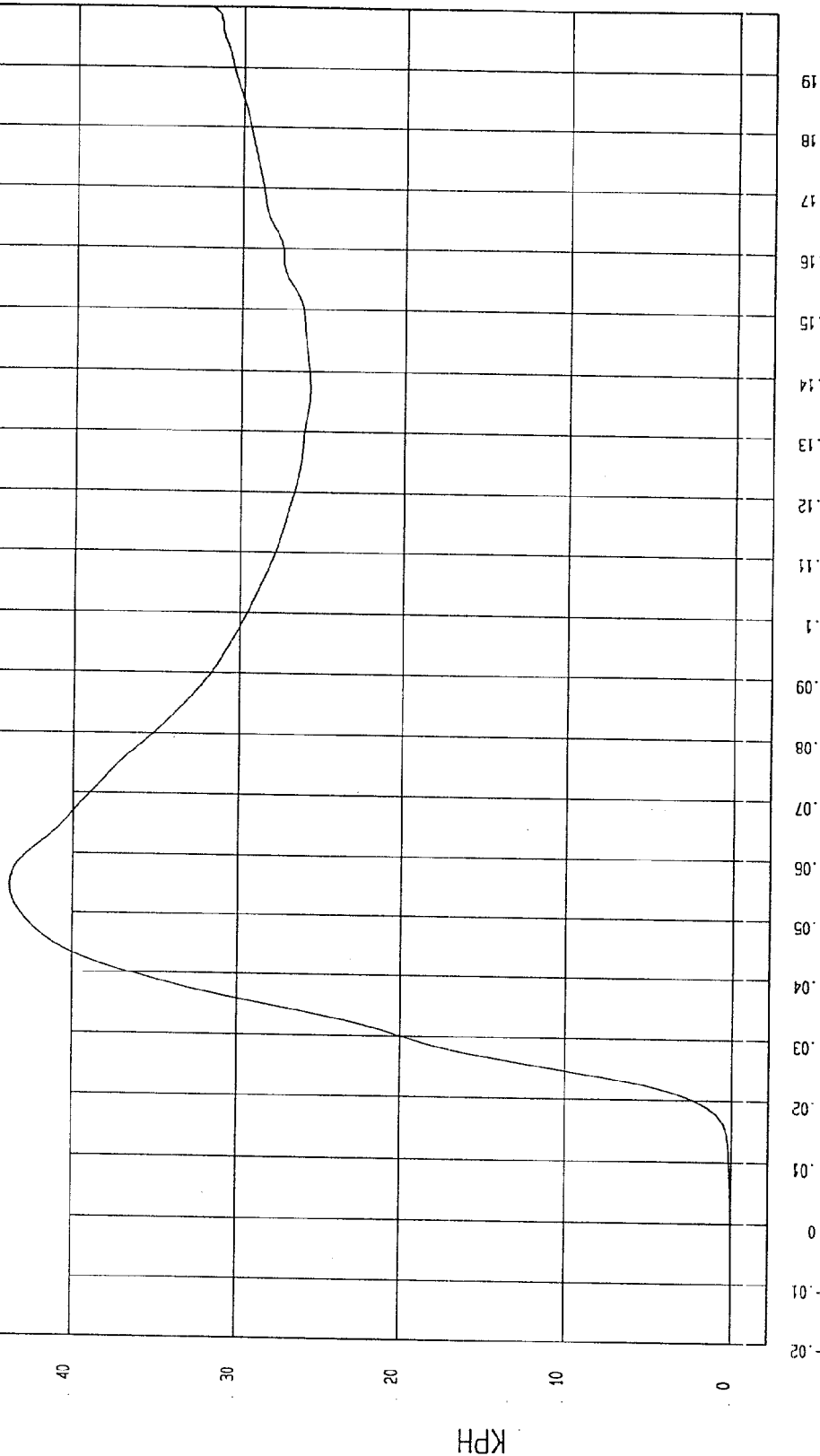
Speed: 38.6 MPH 62.1 KPH

Minimum = 0 KPH at -20 msec

Maximum = 43.82 KPH at 54 msec

DRIVER LOWER SPINE Y VELOCITY

1 — 800006F1.V17 Filterclass (FIR Filtered)



MOA Research
01-20-2000 14:31

TIME Seconds

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

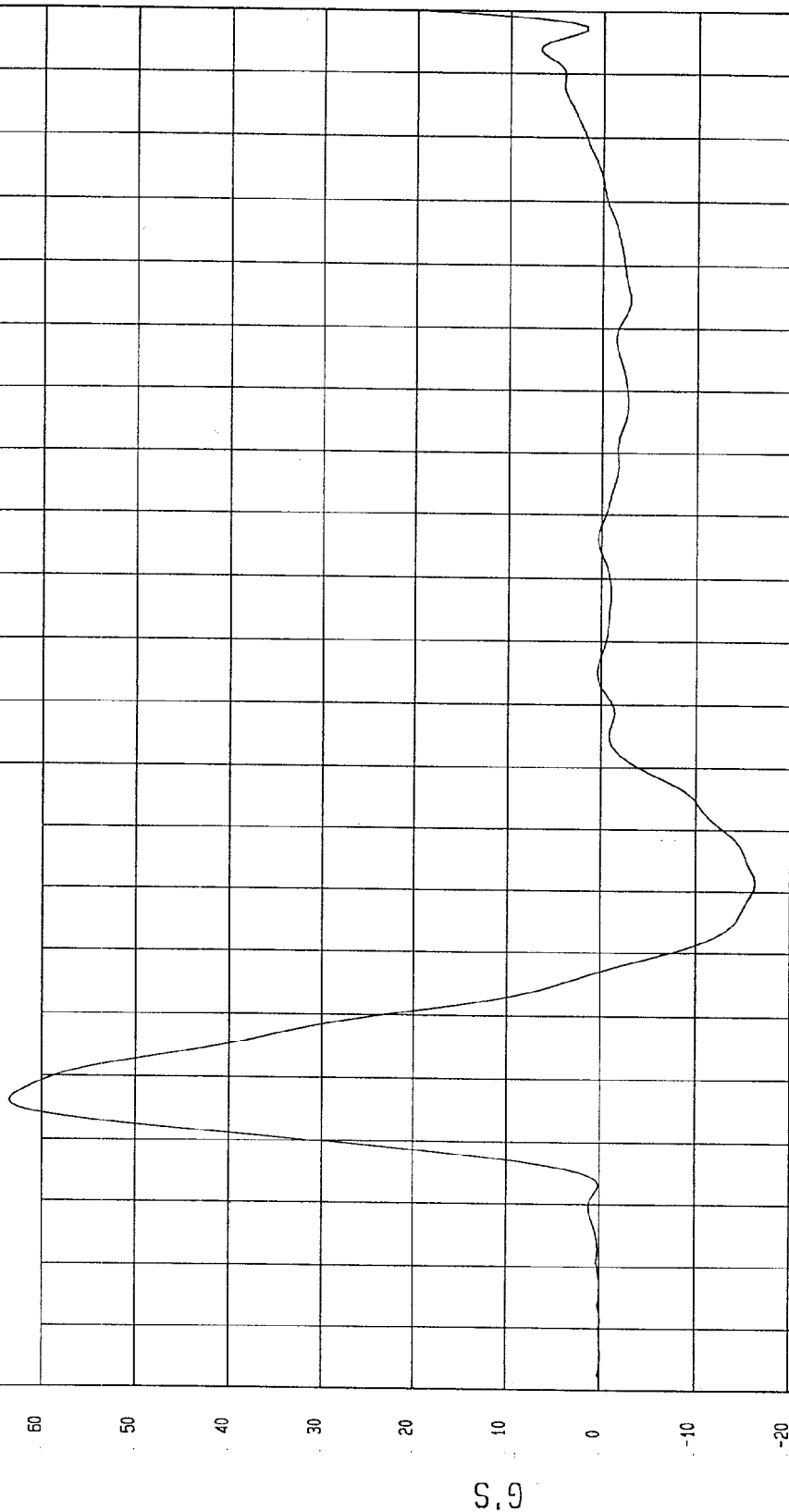
Speed: 38.6 MPH 62.1 KPH

Minimum = -16.33 G'S at 61 msec

Maximum = 63.49 G'S at 26 msec

DRIVER PELVIS Y ACCELERATION

1 — 800005F1.R18 Filterclass (FIR Filtered)

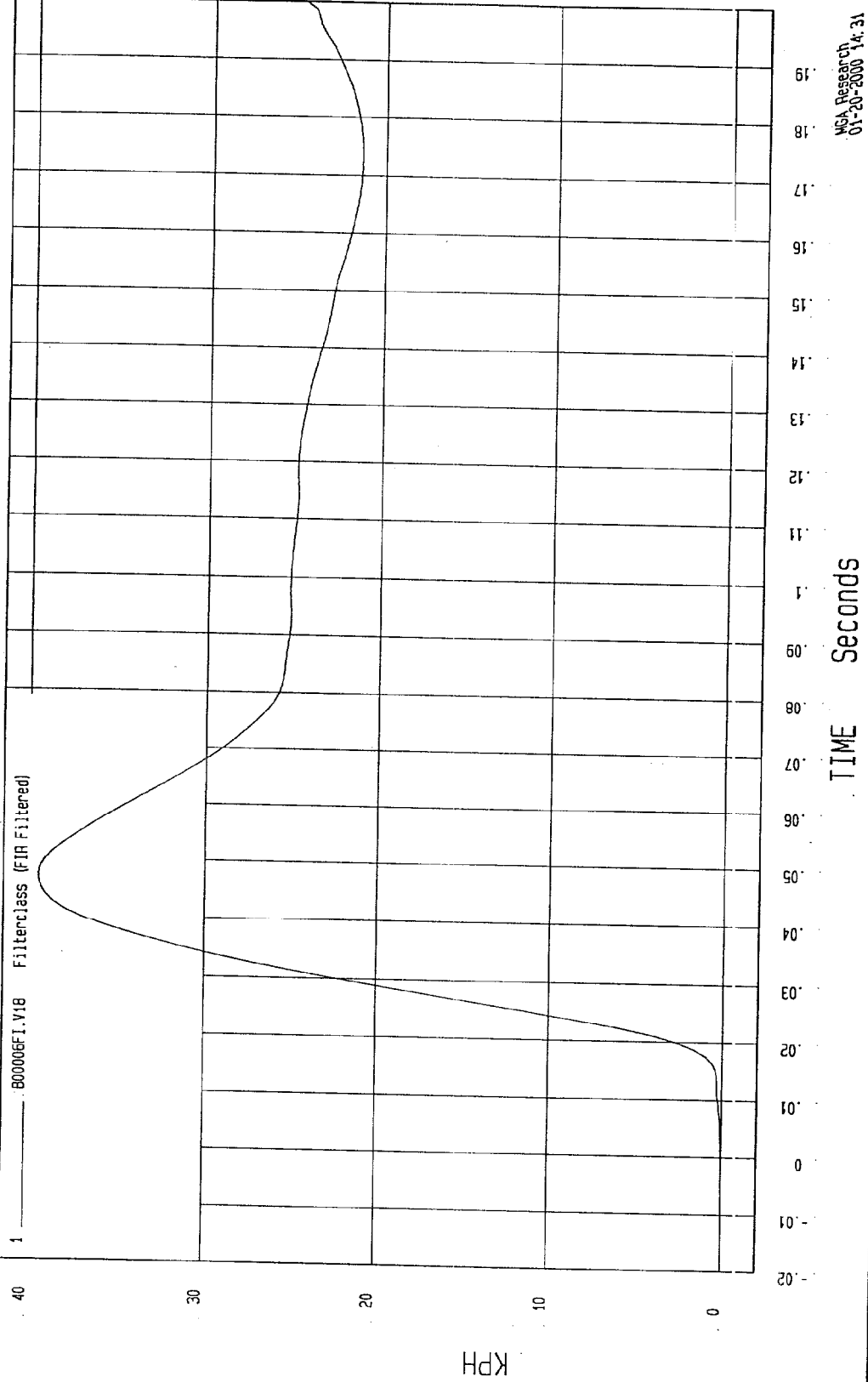
MCA Research
01-20-2000 14:25

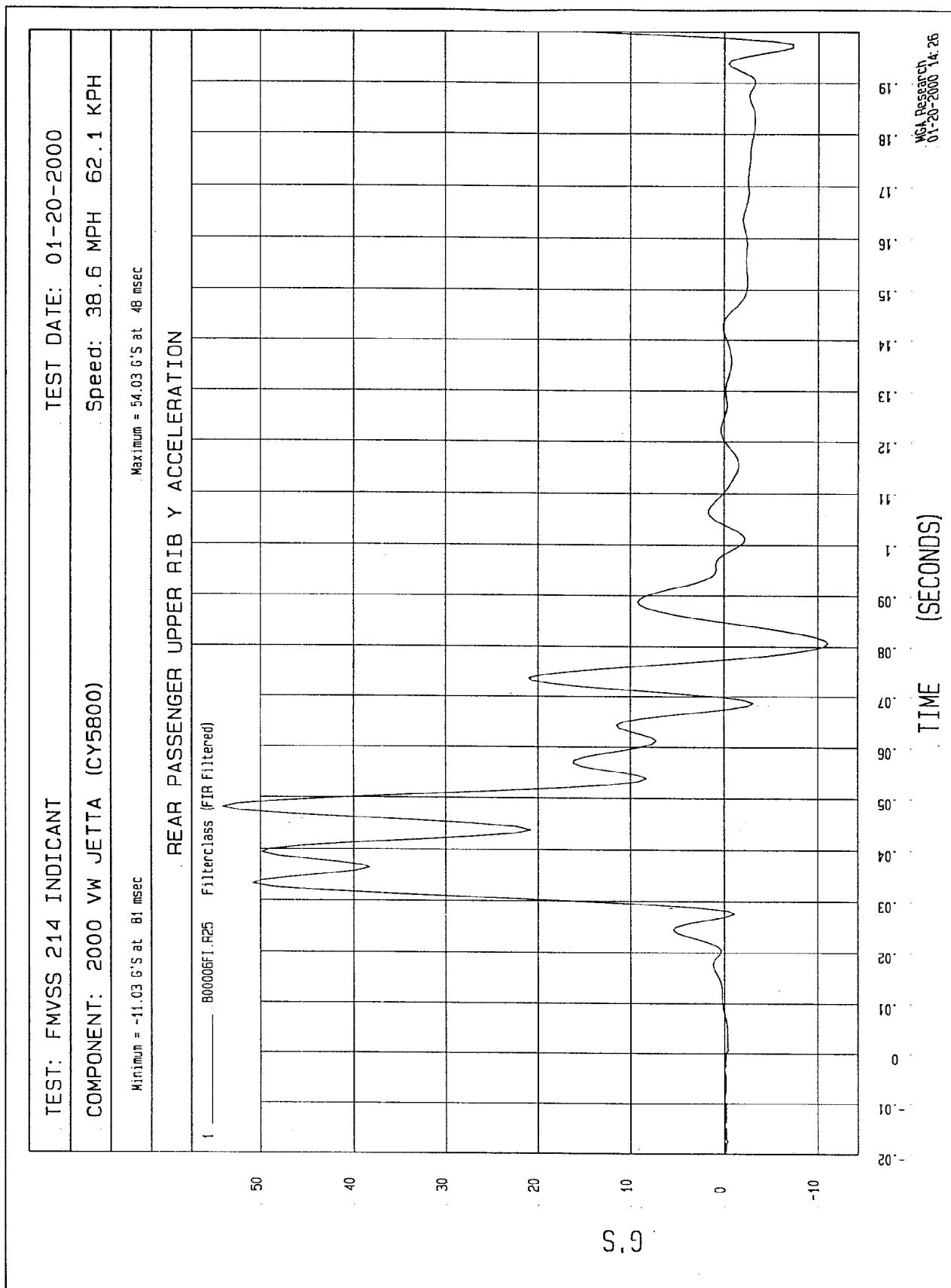
TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -2.16E-03 KPH at -8 msec Maximum = 39.52 KPH at 47 msec

DRIVER PELVIS Y VELOCITY



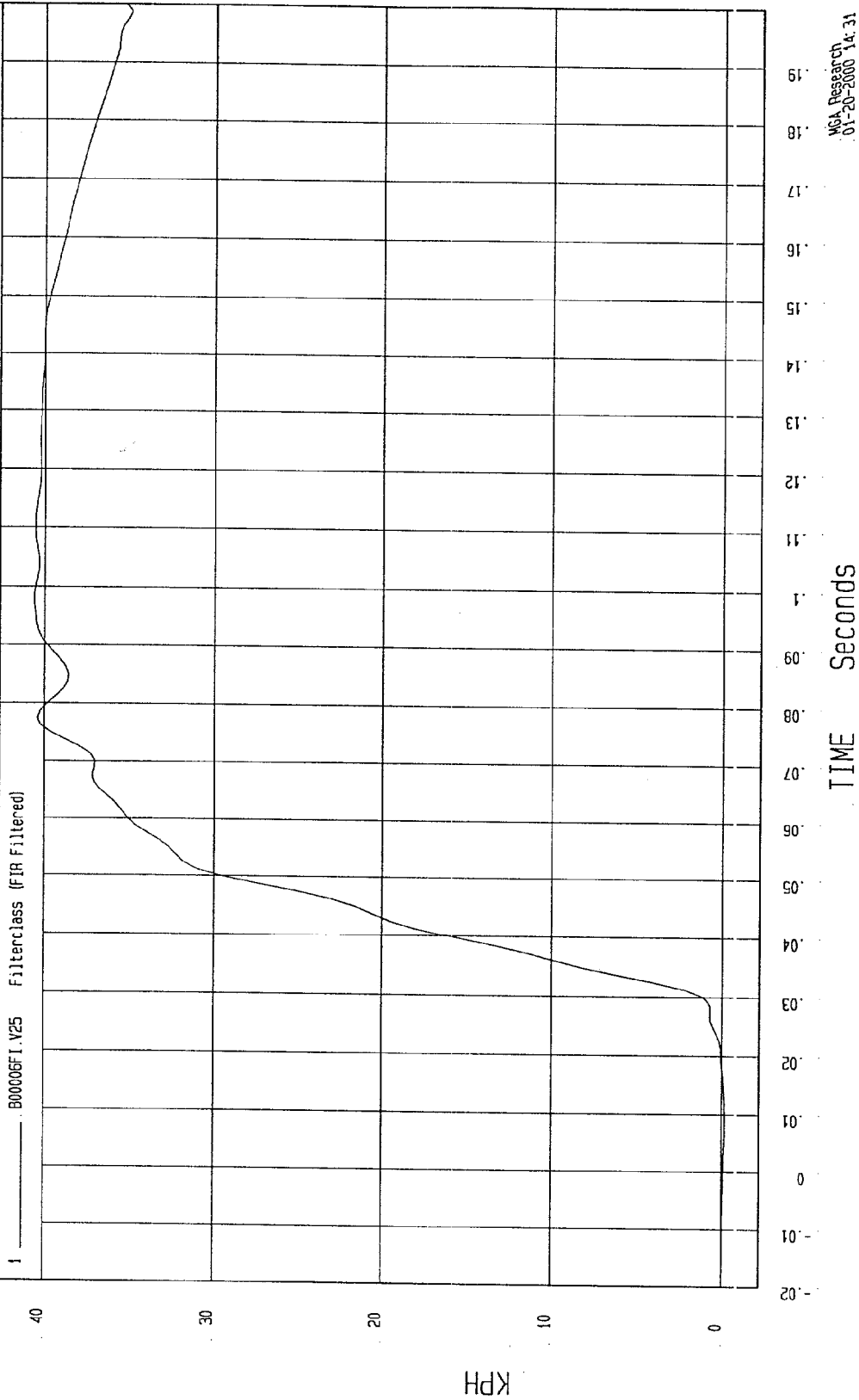


TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -.16 KPH at 8 msec Maximum = 40.59 KPH at 98 msec

REAR PASSENGER UPPER RIB Y VELOCITY



WCA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

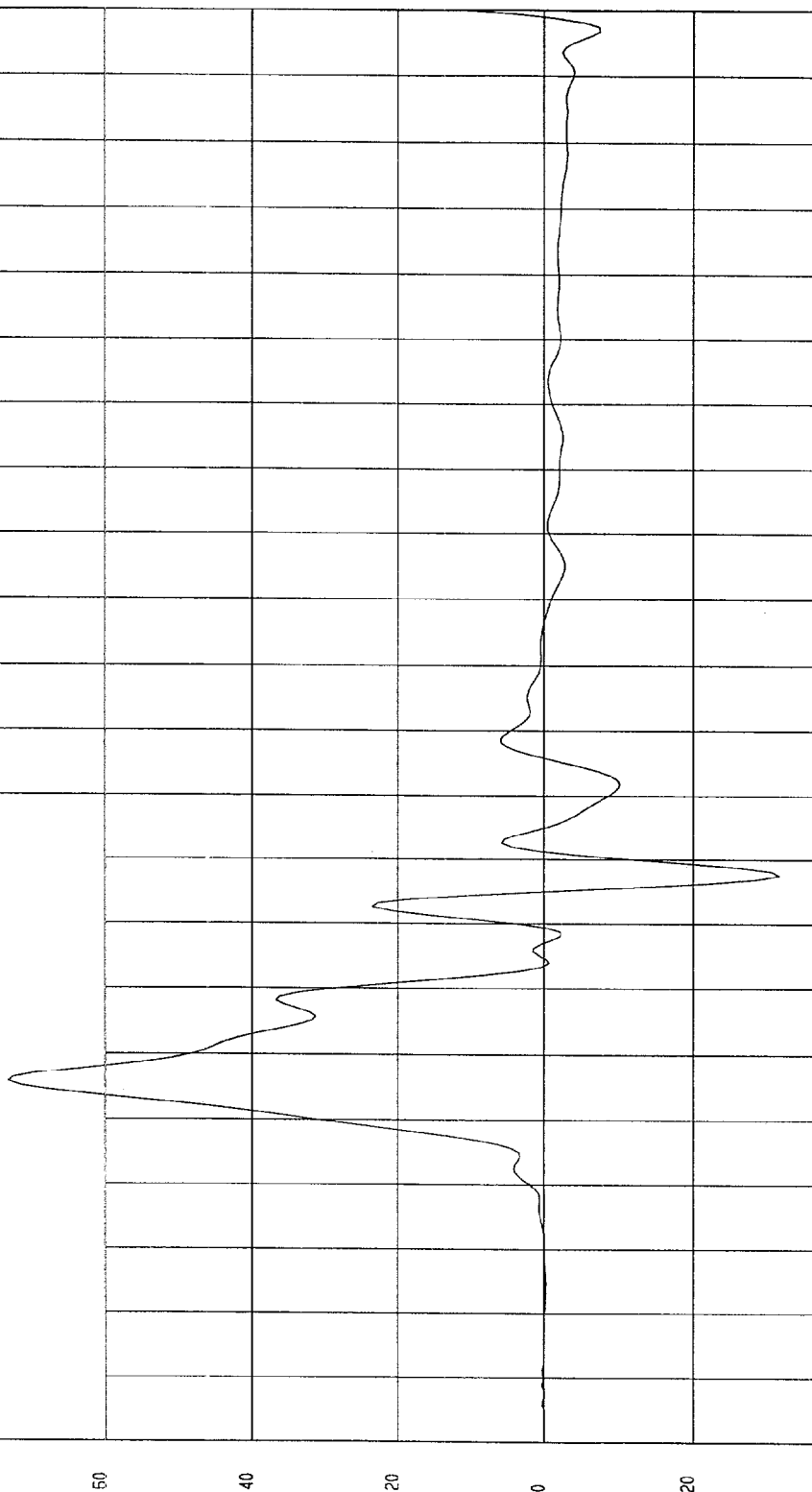
Speed: 38.6 MPH 62.1 KPH

Minimum = -31.61 G'S at 68 msec

Maximum = 73.14 G'S at 36 msec

REAR PASSENGER LOWER RIB Y ACCELERATION

1 ——— 800005F1.R26 Filterclass (FIR Filtered)



MOA Research
01-20-2000 14:25

TIME (SECONDS)

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

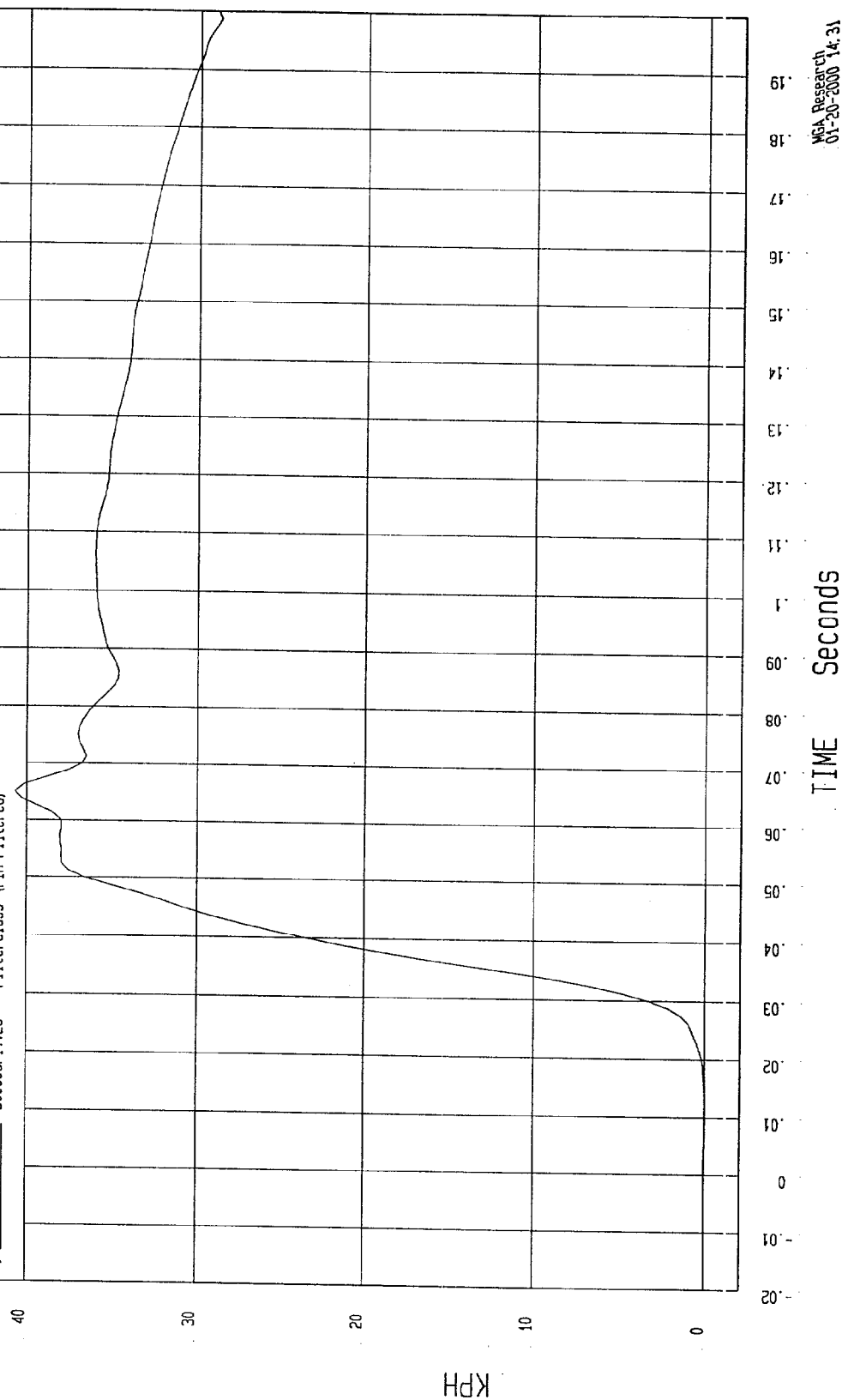
Speed: 38.6 MPH 62.1 KPH

Minimum = -1.51E-02 KPH at 12 msec

Maximum = 40.68 KPH at 65 msec

REAR PASSENGER LOWER RIB Y VELOCITY

1 800005F1.V25 Filterclass (FIR Filtered)

MCA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

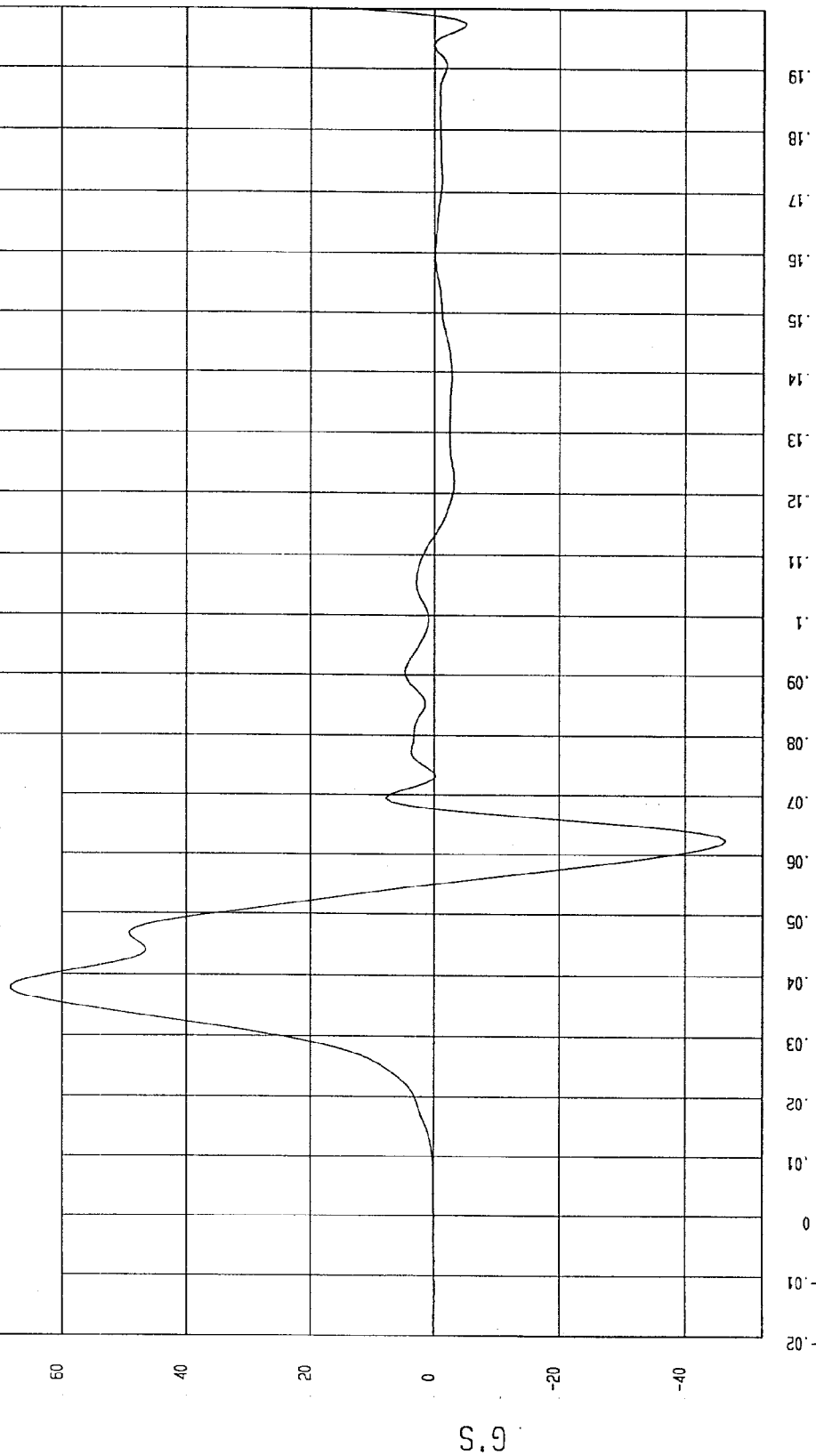
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 68.19 G'S at 38 msec

Minimum = -46.53 G'S at 62 msec

REAR PASSENGER LOWER SPINE Y ACCELERATION

1 800005F1.R27 Filterclass (FIR Filtered)

WGA Research
01-20-2000 14:26

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

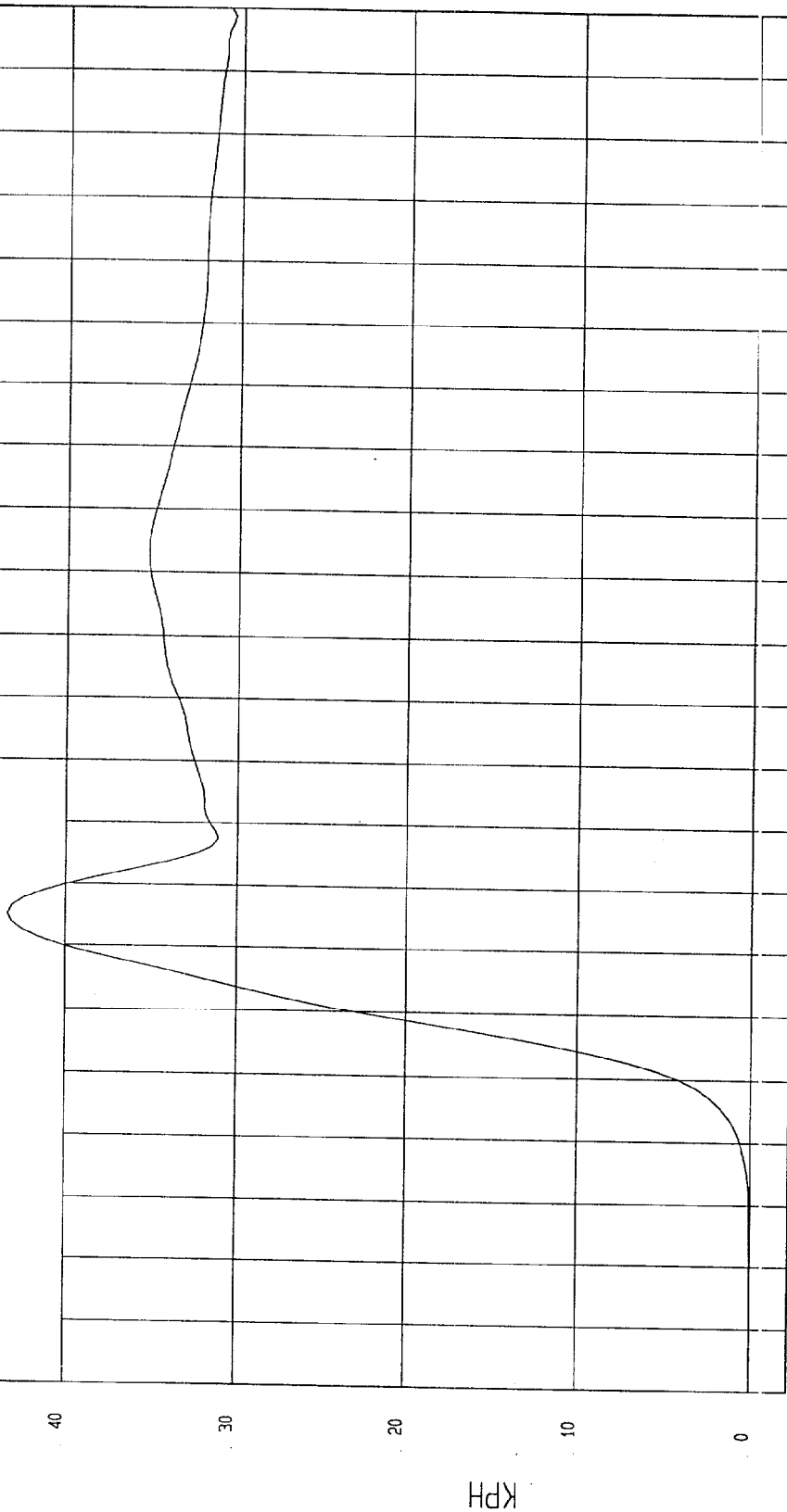
Speed: 38.6 MPH 62.1 KPH

Minimum = 0 KPH at -20 msec

Maximum = 43.36 KPH at 55 msec

REAR PASSENGER LOWER SPINE Y VELOCITY

1 B00005F1.V27 Filterclass (FIR Filtered)

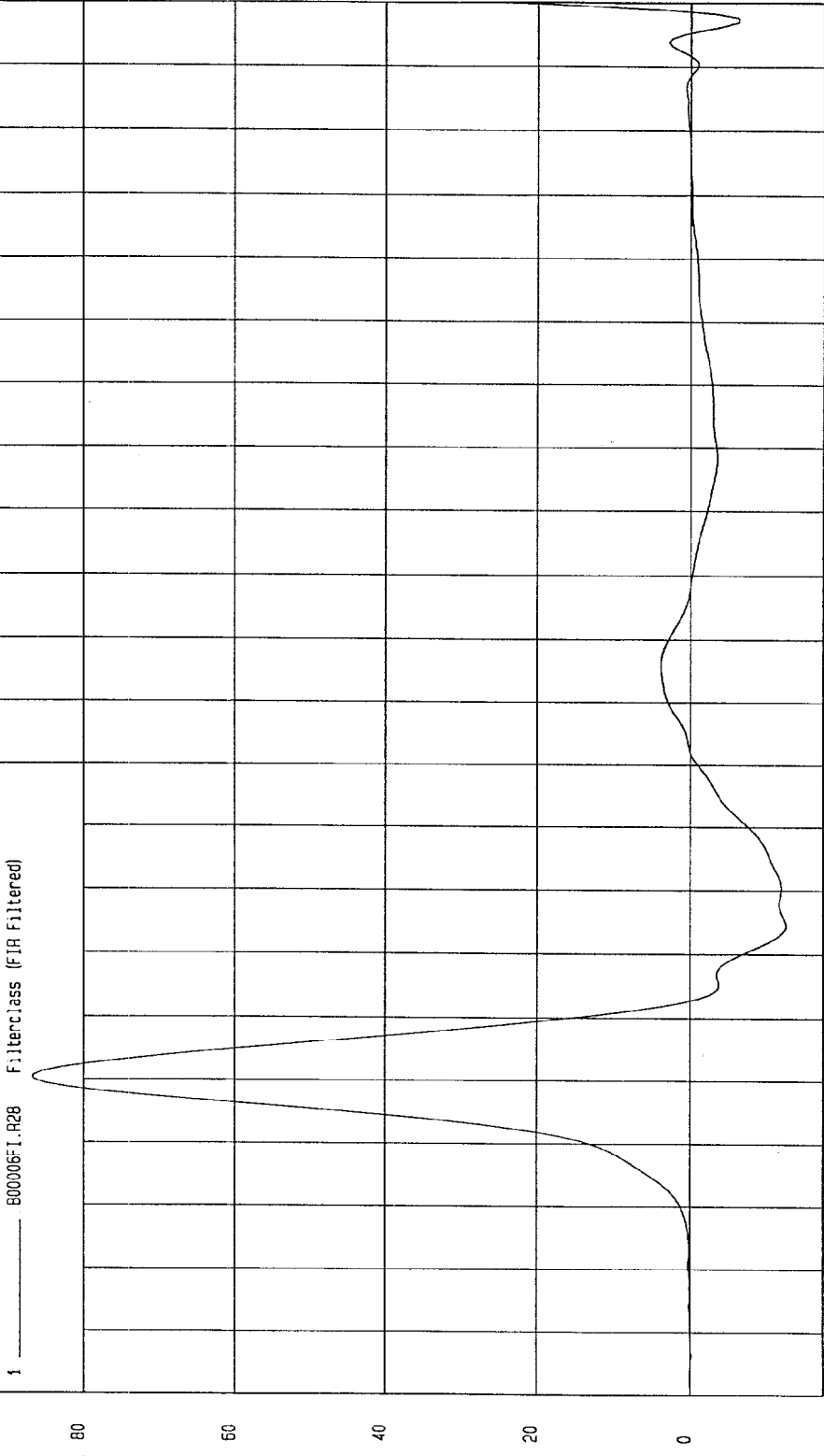


TEST: FMVSS 214 INDICANT TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800) Speed: 38.6 MPH 62.1 KPH

Minimum = -12.42 G'S at 54 msec Maximum = 36.7 G'S at 31 msec

REAR PASSENGER PELVIS Y ACCELERATION



TIME (SECONDS)

MGA Research
01-20-2000 14:27

G.S

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

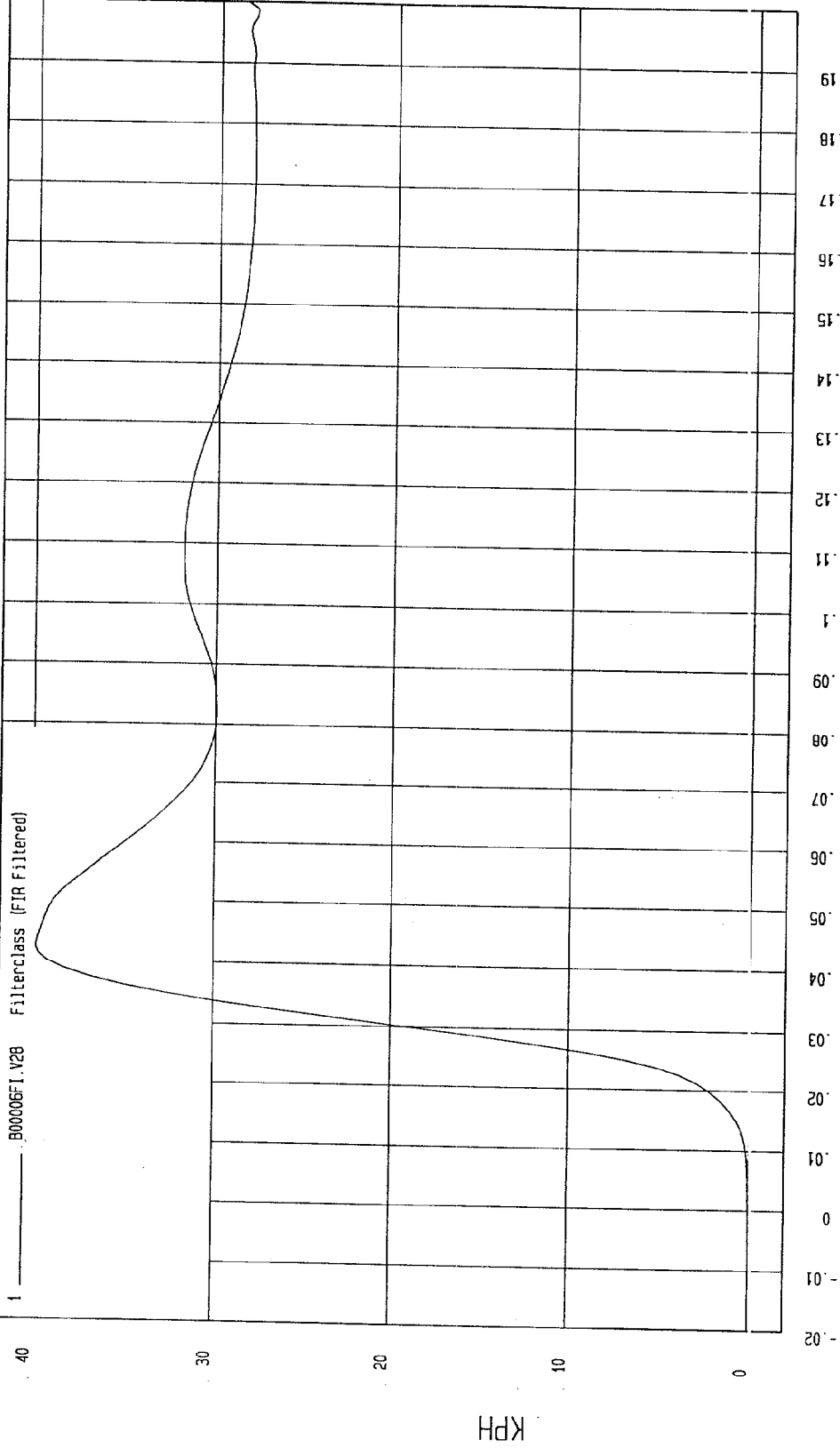
Speed: 38.6 MPH 62.1 KPH

COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 39.83 KPH at 42 msec

Minimum = -9.57E-03 KPH at -8 msec

REAR PASSENGER PELVIS Y VELOCITY



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

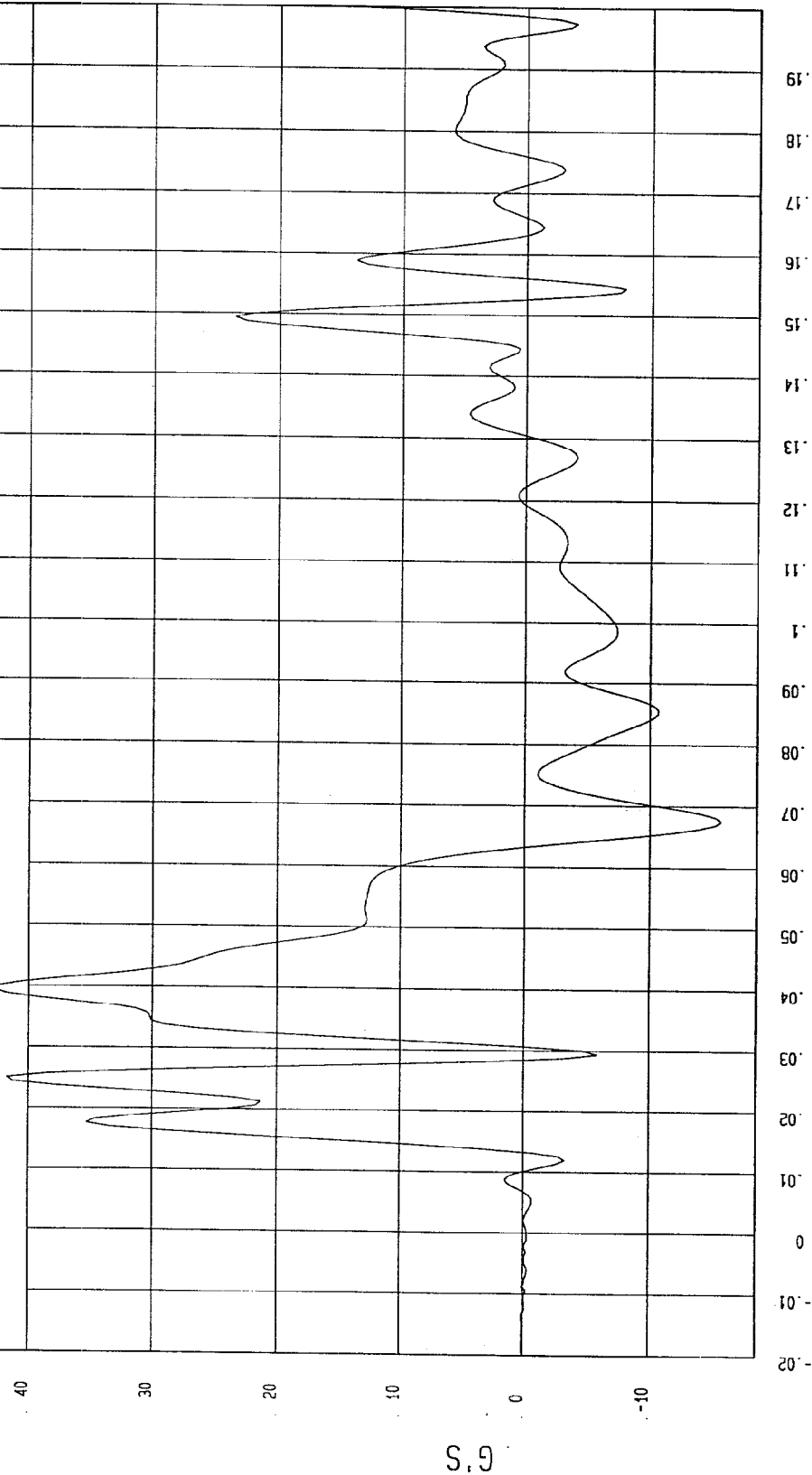
Speed: 38.6 MPH 62.1 KPH

Minimum = -15.67 G'S at 68 msec

Maximum = 42.91 G'S at 39 msec

DRIVER UPPER RIB Y REDUNDANT ACCELERATION

1 — 300006F1.R42 FilterClass (FIR Filtered)

MCA Research
01-20-2000 14:25

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

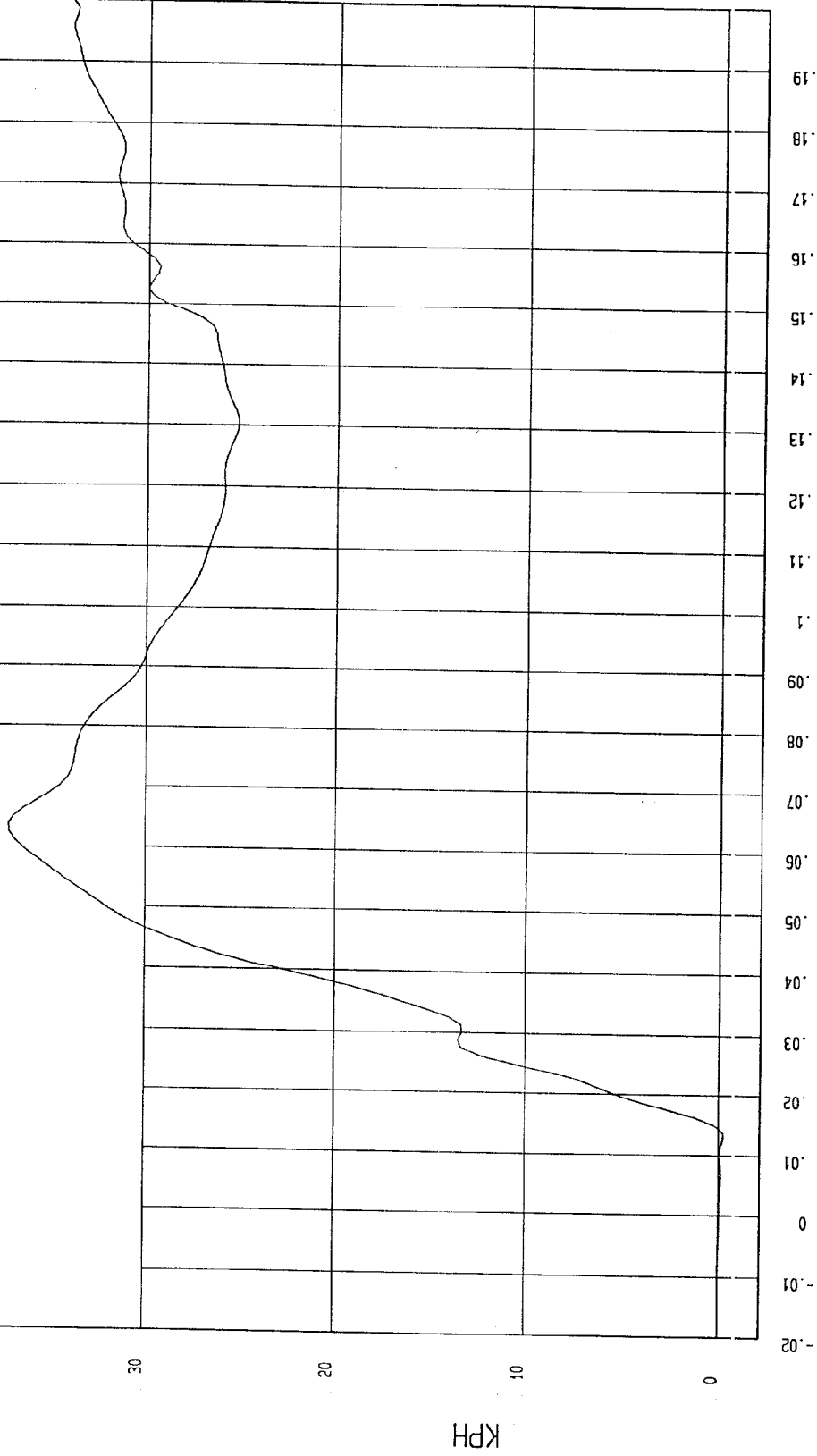
Speed: 38.6 MPH 62.1 KPH

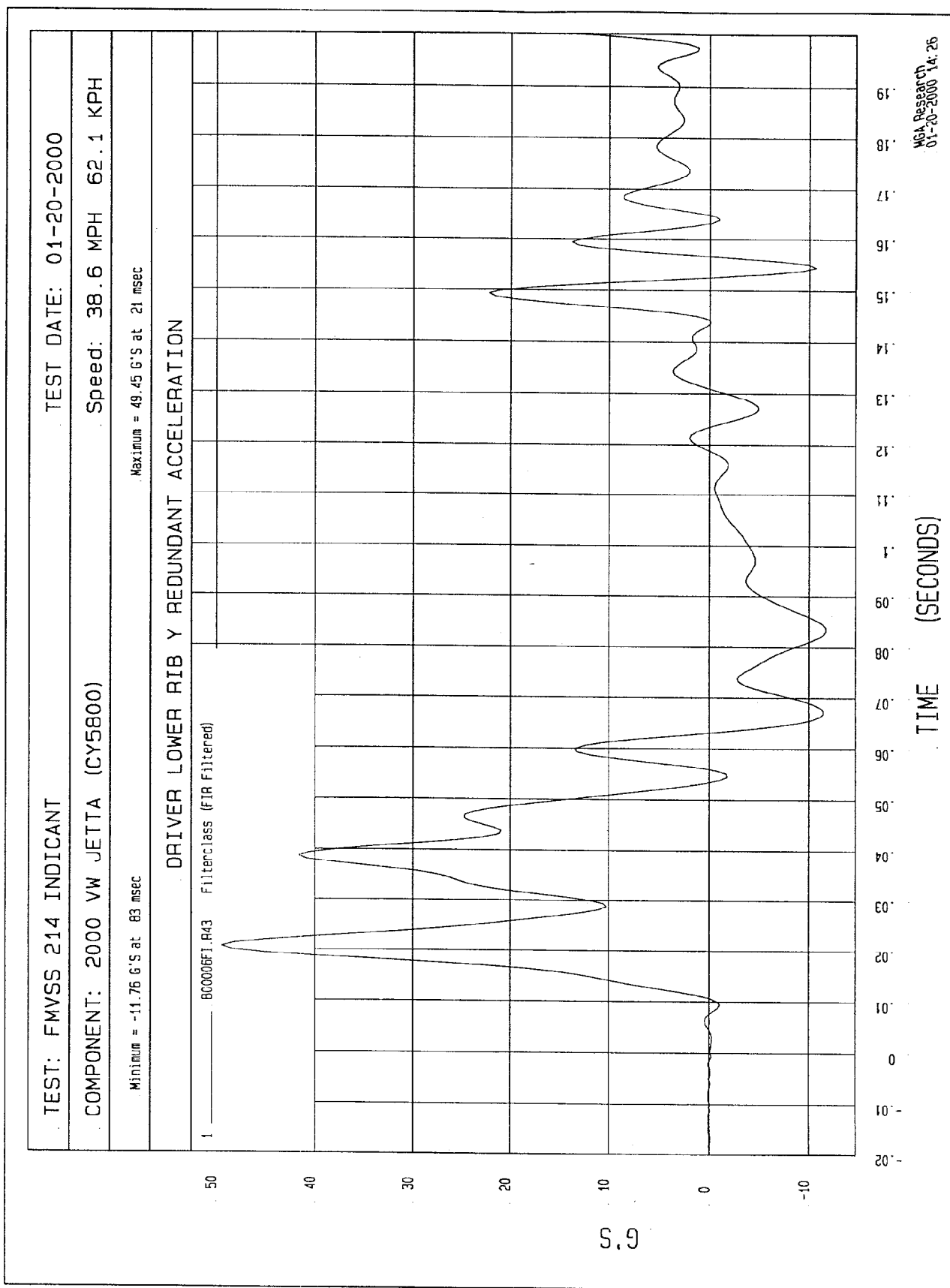
Minimum = -25 KPH at 13 msec

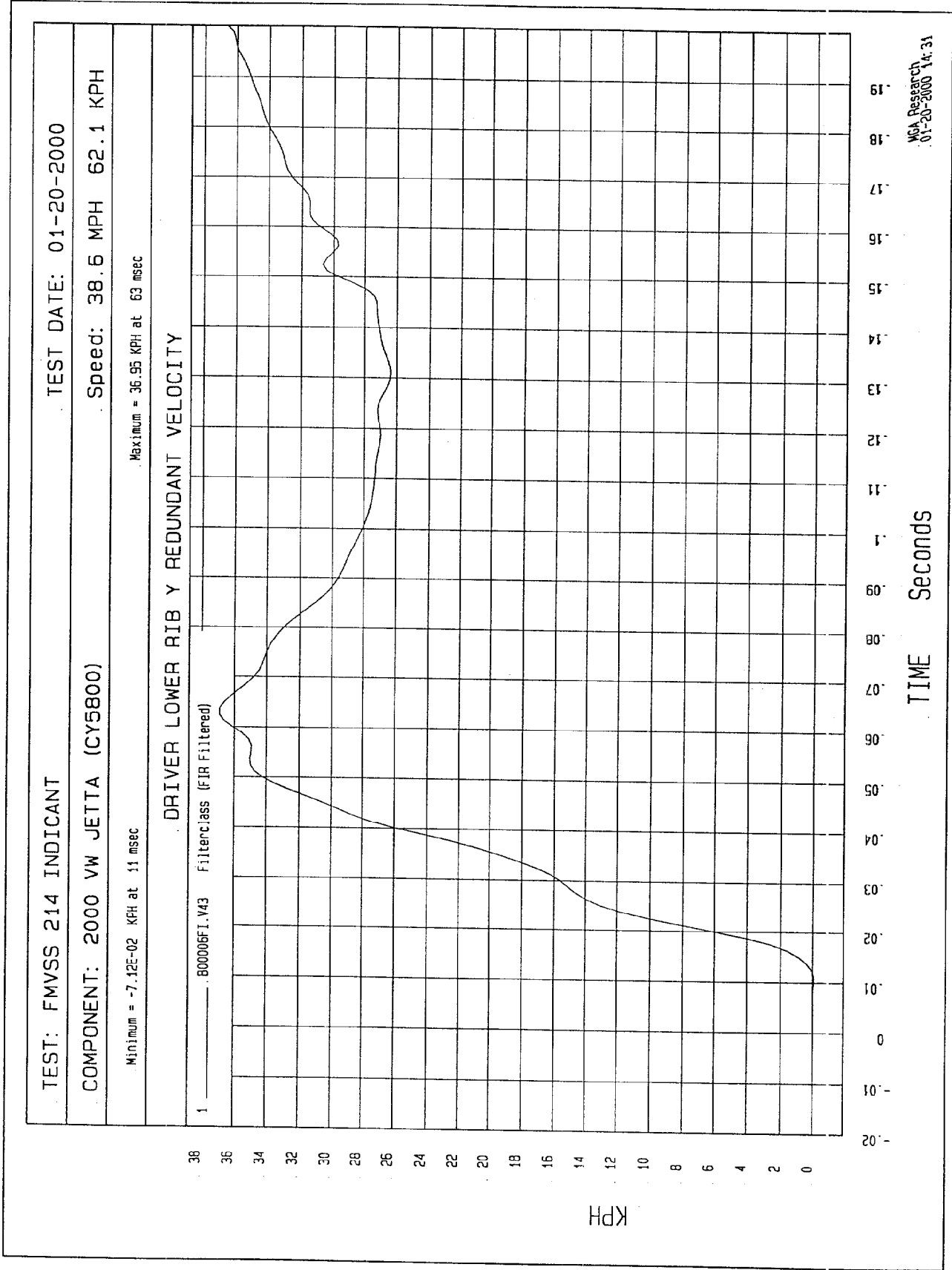
Maximum = 37.09 KPH at 63 msec

DRIVER UPPER RIB Y REDUNDANT VELOCITY

1 B00006F1.V42 Filterclass (FIR Filtered)







TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

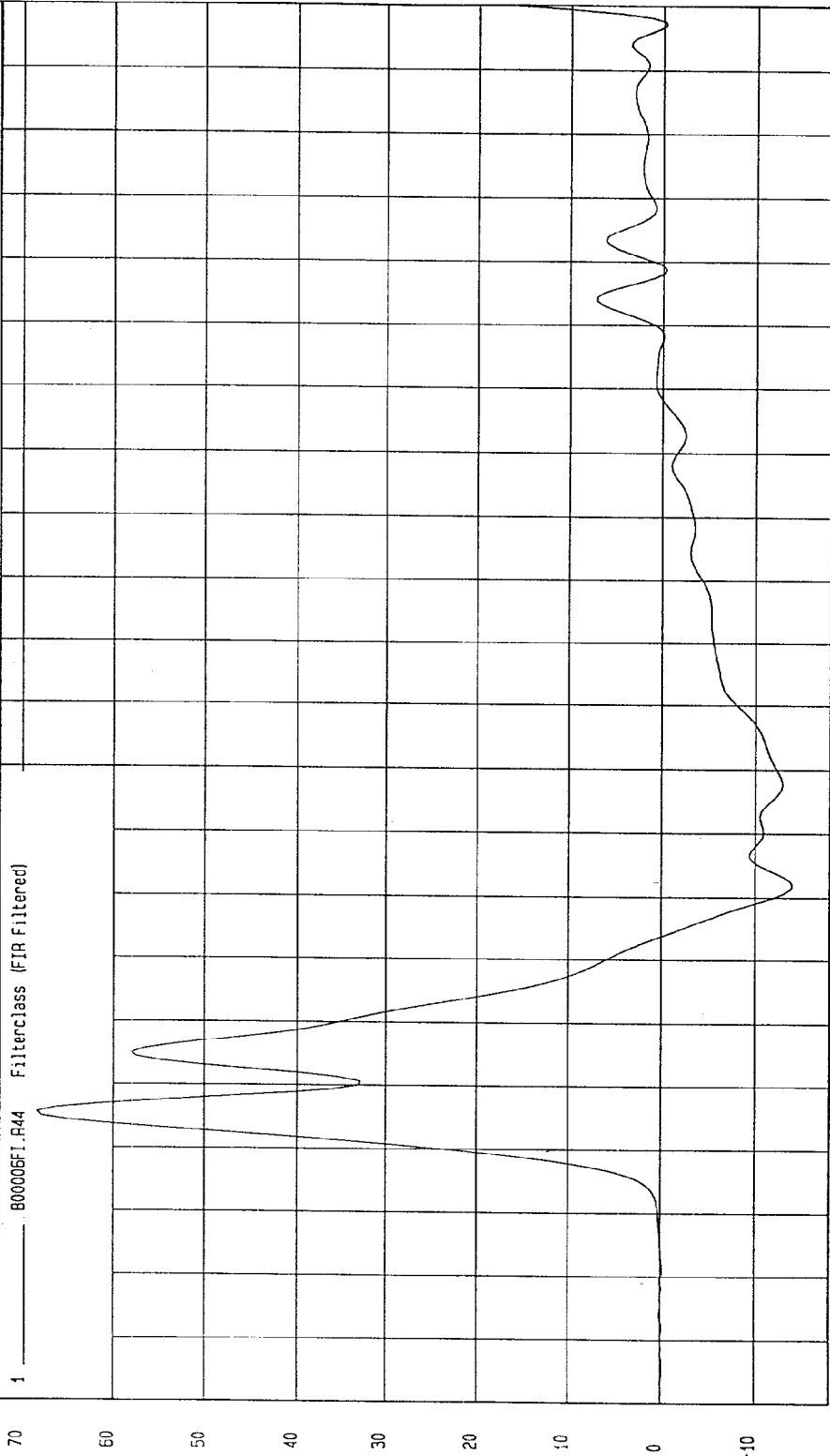
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 60.38 G'S at 26 msec

Minimum = -14.08 G'S at 62 msec

DRIVER LOWER SPINE Y REDUNDANT ACCELERATION

1 8000061.R44 Filterclass (FIR Filtered)



MCA Research
01-20-2000 14:26

TIME (SECONDS)

G's

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

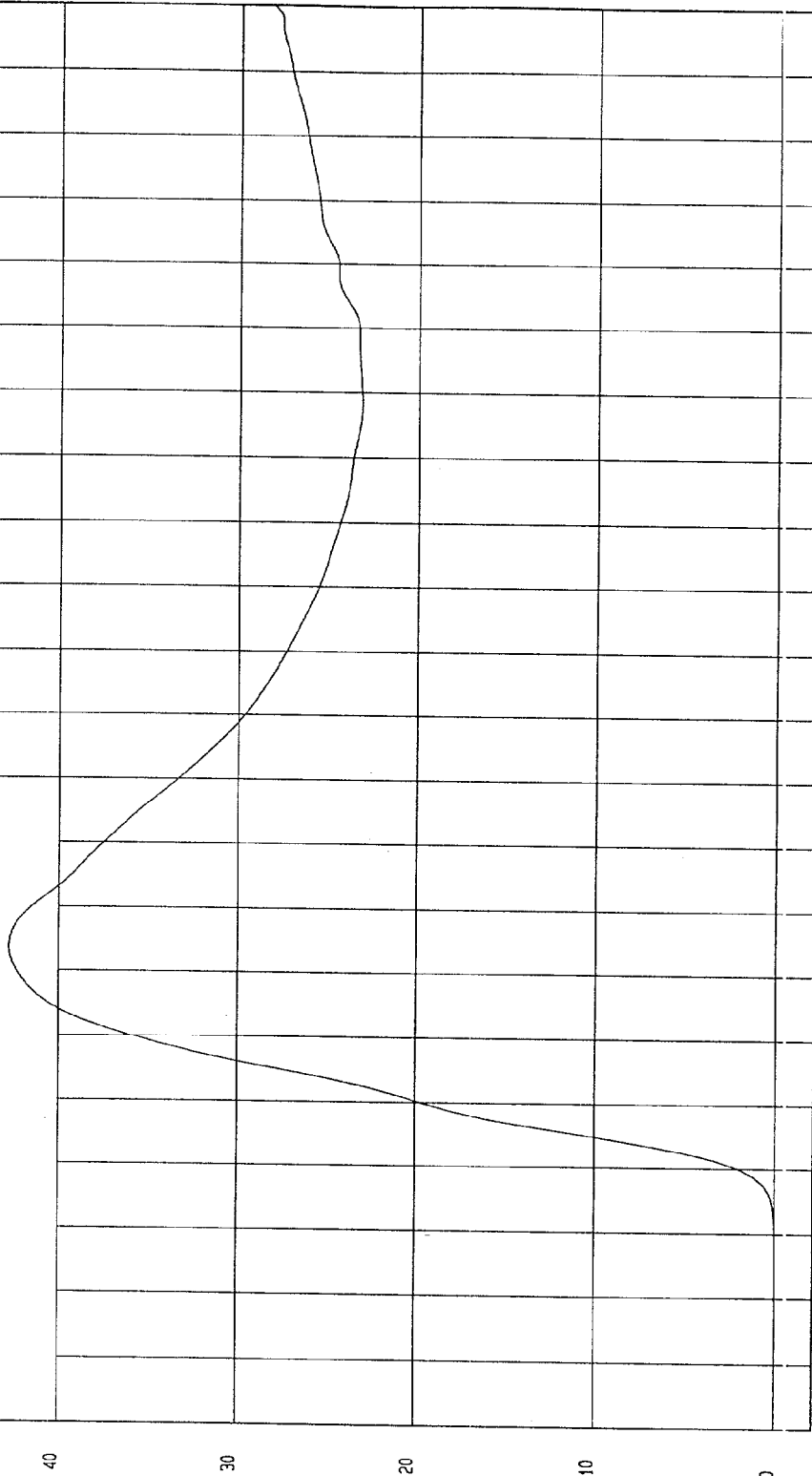
Speed: 38.6 MPH 62.1 KPH

Minimum = -7.55E-03 KPH at -7 msec

Maximum = 42.83 KPH at 54 msec

DRIVER LOWER SPINE Y REDUNDANT VELOCITY

1 _____ B00006F1.V44 Filterclass (FIR Filtered)



MCA Research
01-20-2000 14:31

TIME Seconds

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

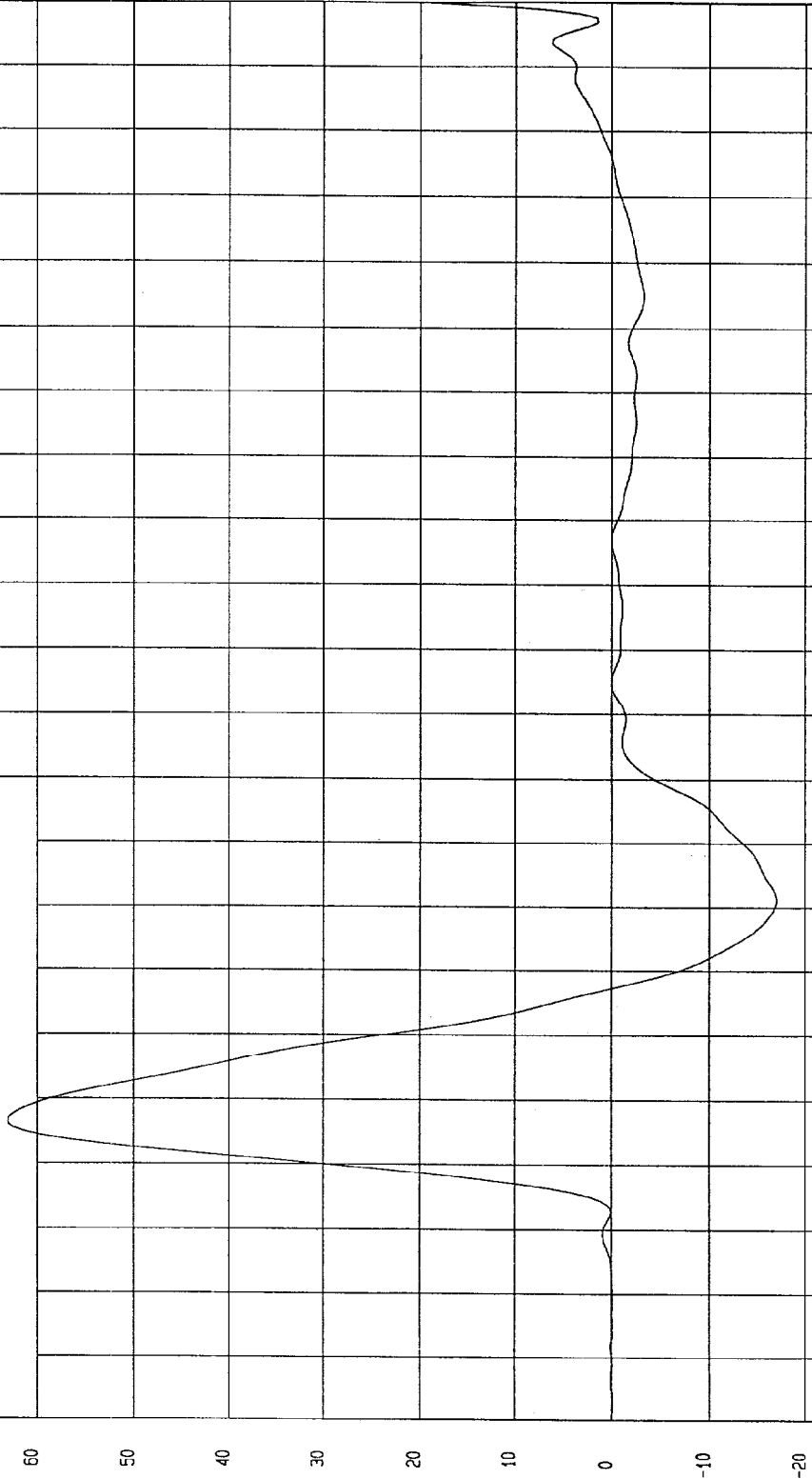
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 63.03 G'S at 27 msec

Minimum = -17.05 G'S at 61 msec

DRIVER PELVIS Y REDUNDANT ACCELERATION

1 300006FI.R45 FilterClass (FIR Filtered)



W&A Research
01-20-2000 14:26

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

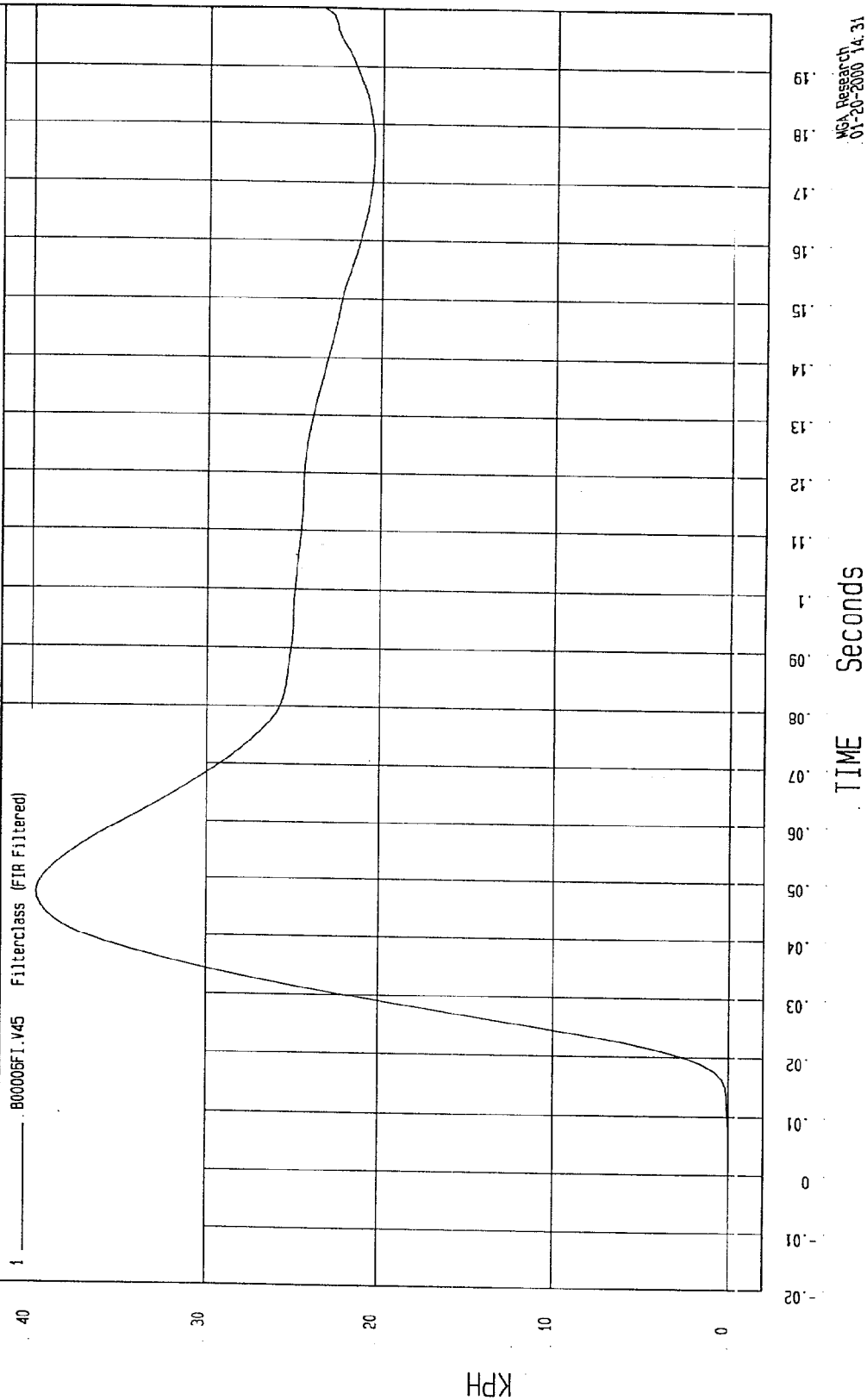
COMPONENT: 2000 VW JETTA (CY5800)

Speed: 38.6 MPH 62.1 KPH

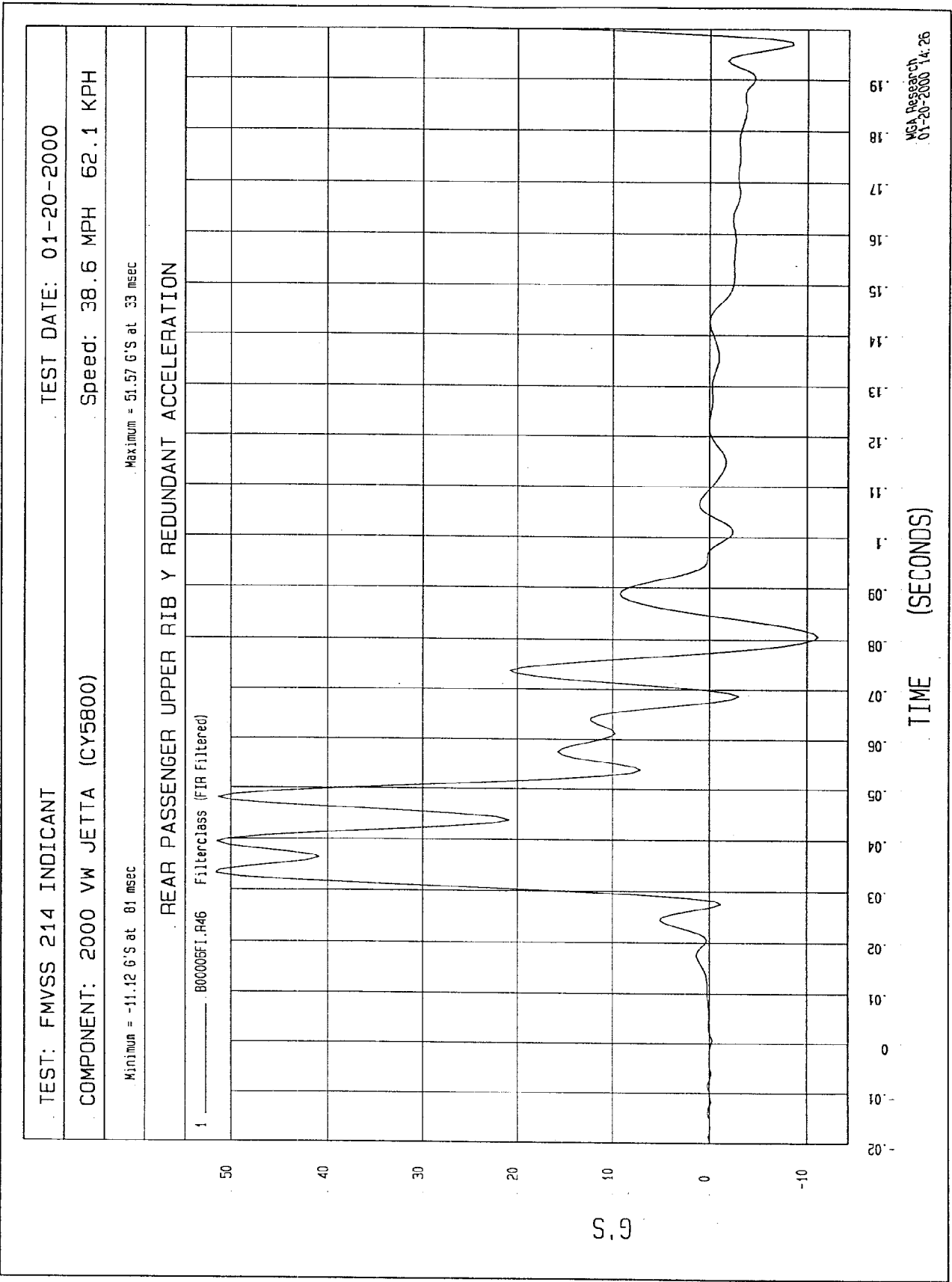
Minimum = -6.69E-03 KPH at 2 msec

Maximum = 39.74 KPH at 48 msec

DRIVER PELVIS Y REDUNDANT VELOCITY



NGA Research
01-20-2000 14:31



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

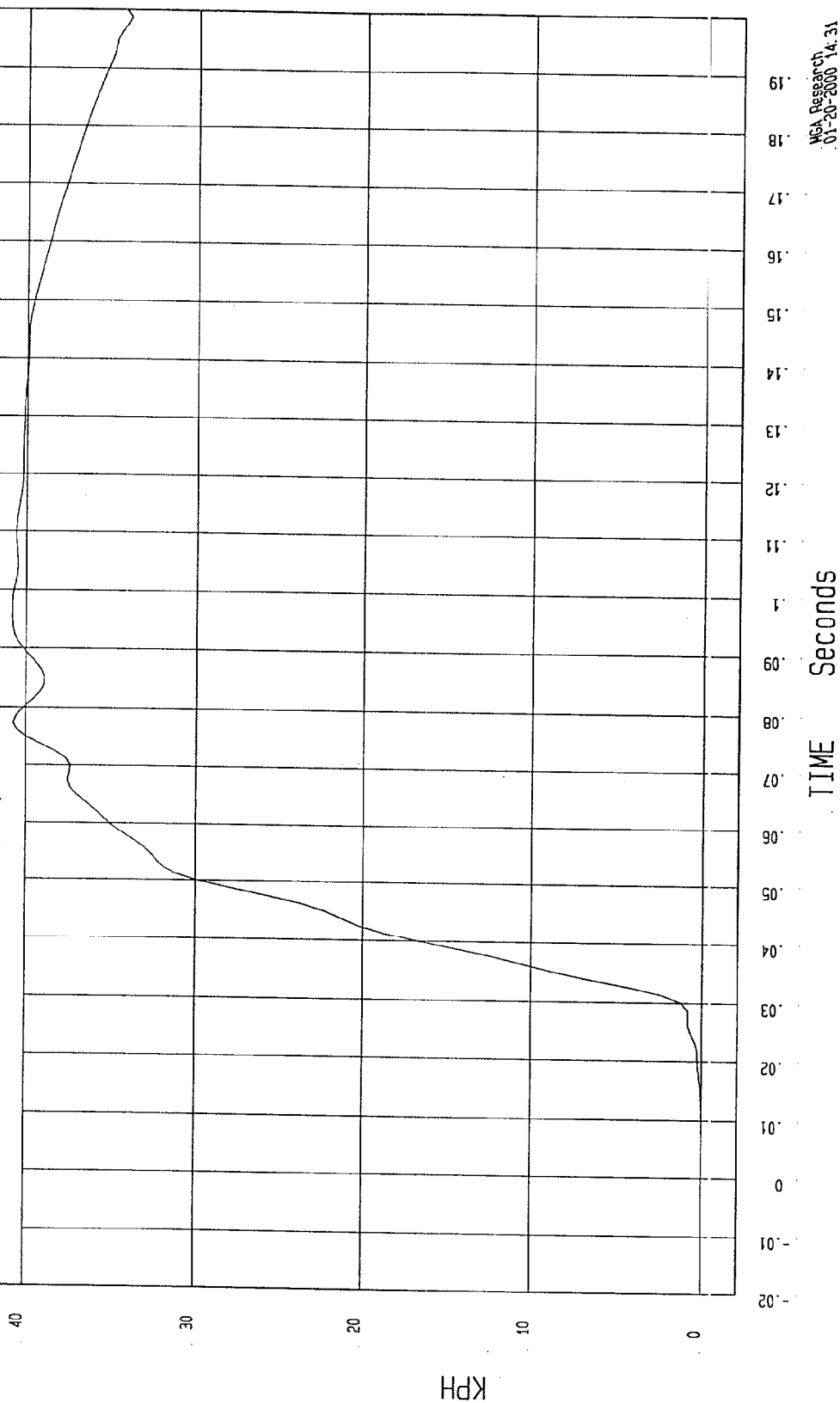
Speed: 38.6 MPH 62.1 KPH

Minimum = -9.56E-03 KPH at 2 msec

Maximum = 40.82 KPH at 98 msec

REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY

1 ——— 800006F1.V46 Filterclass (FIR Filtered)

MCA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

Speed: 38.6 MPH 62.1 KPH

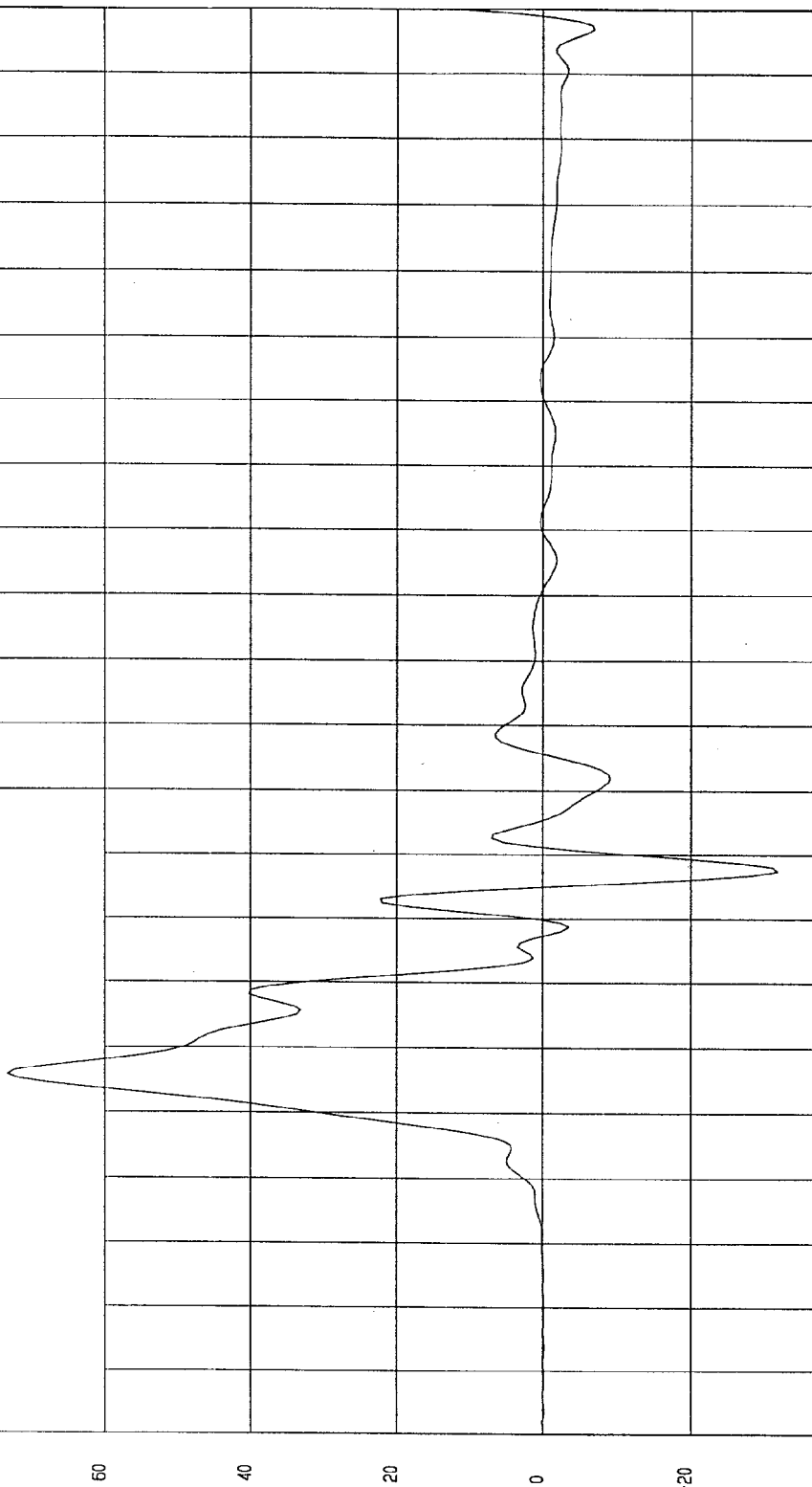
COMPONENT: 2000 VW JETTA (CY5800)

Maximum = 73.18 G'S at 35 msec

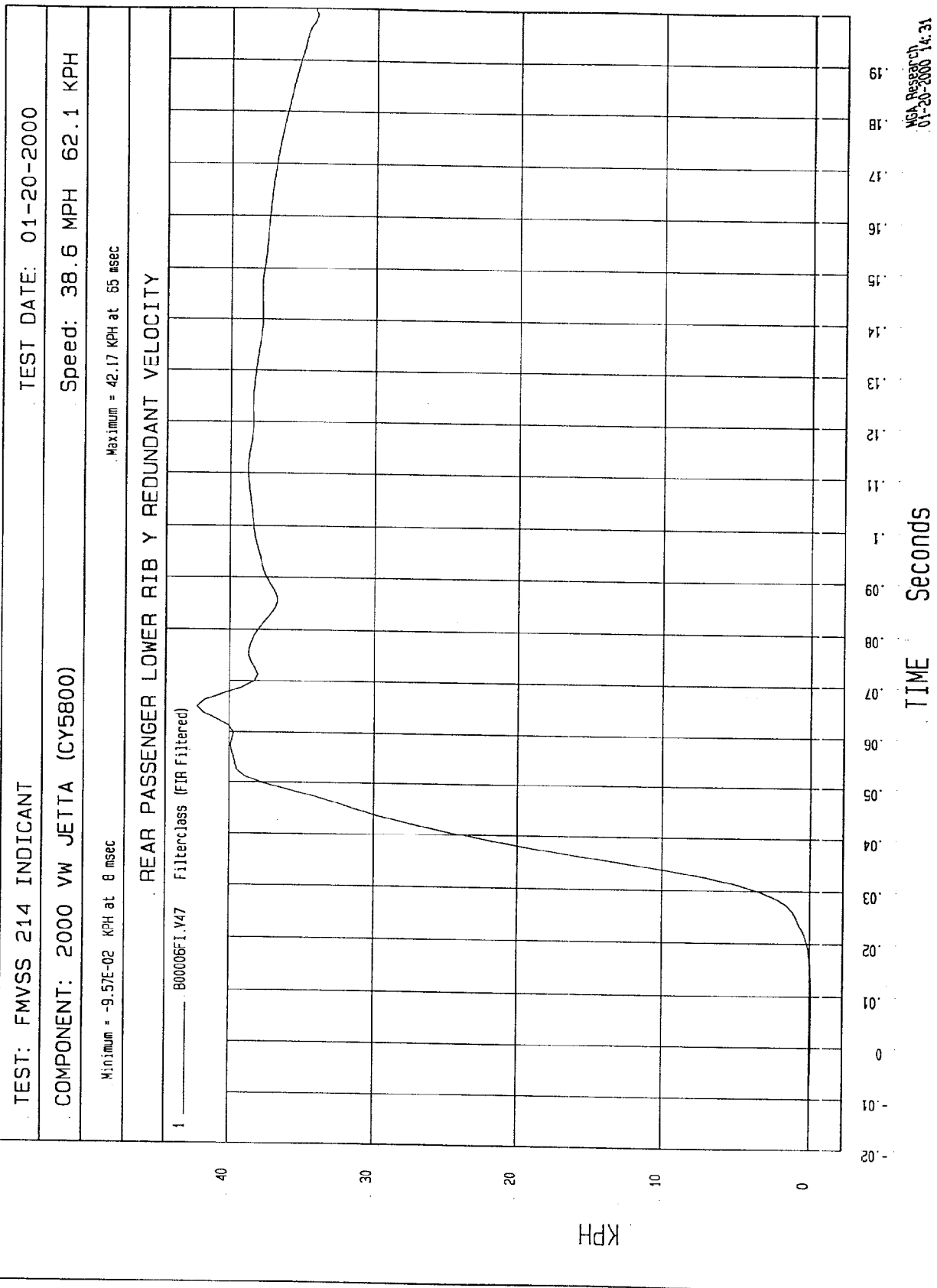
Minimum = -31.87 G'S at 68 msec

REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION

1 80000EFT.R47 FilterClass (FIR Filtered)

NSA Research
01-20-2000 14:26

TIME (SECONDS)



NOA Research
01-20-2000 14:31

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

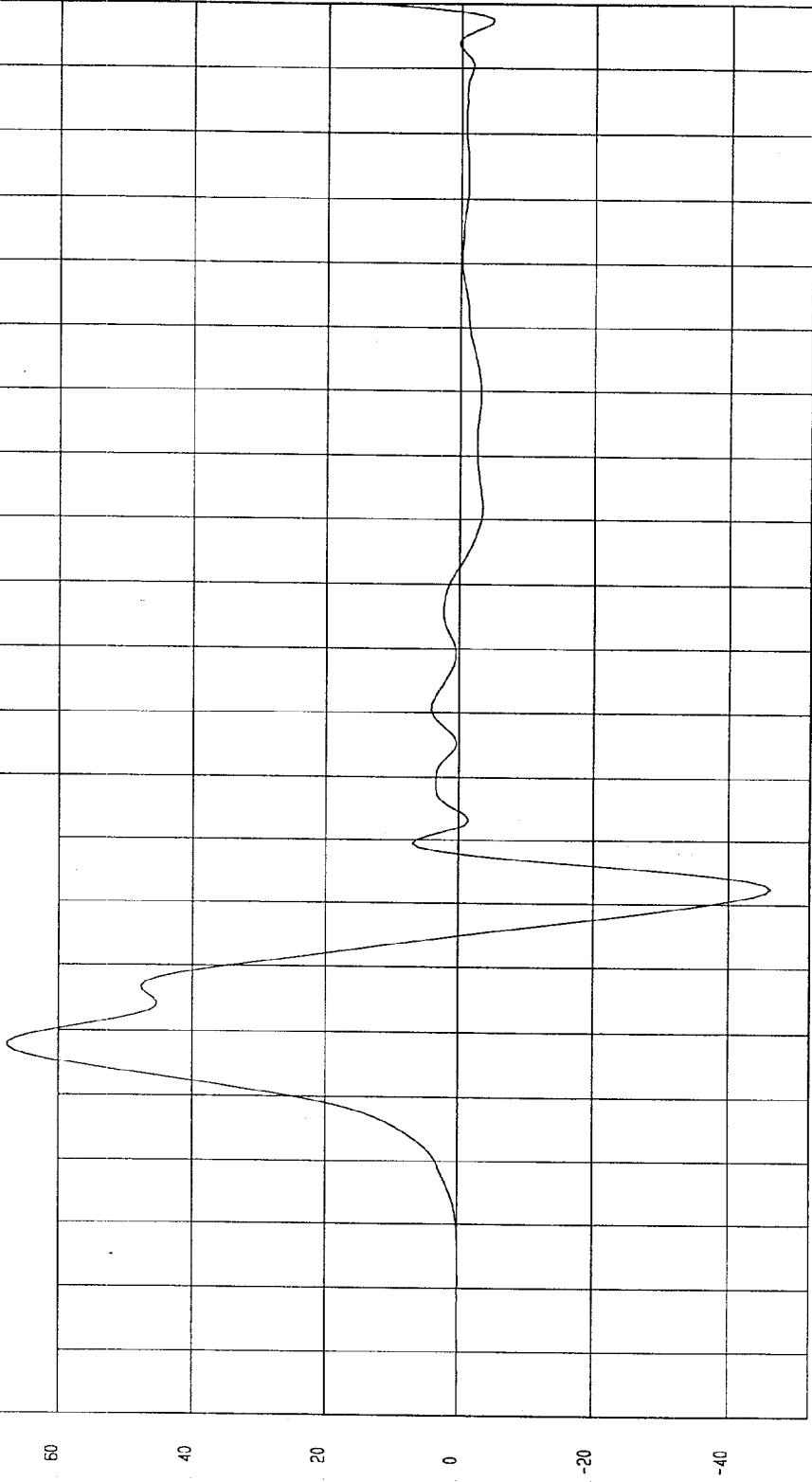
Speed: 38.6 MPH 62.1 KPH

Minimum = -46.17 G'S at 62 msec

Maximum = 67.68 G'S at 38 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION

1 80000651.R48 Filterclass (FIR Filtered)



TIME (SECONDS)

WCA Research
01-20-2000 14:26

TEST: FMVSS 214 INDICANT

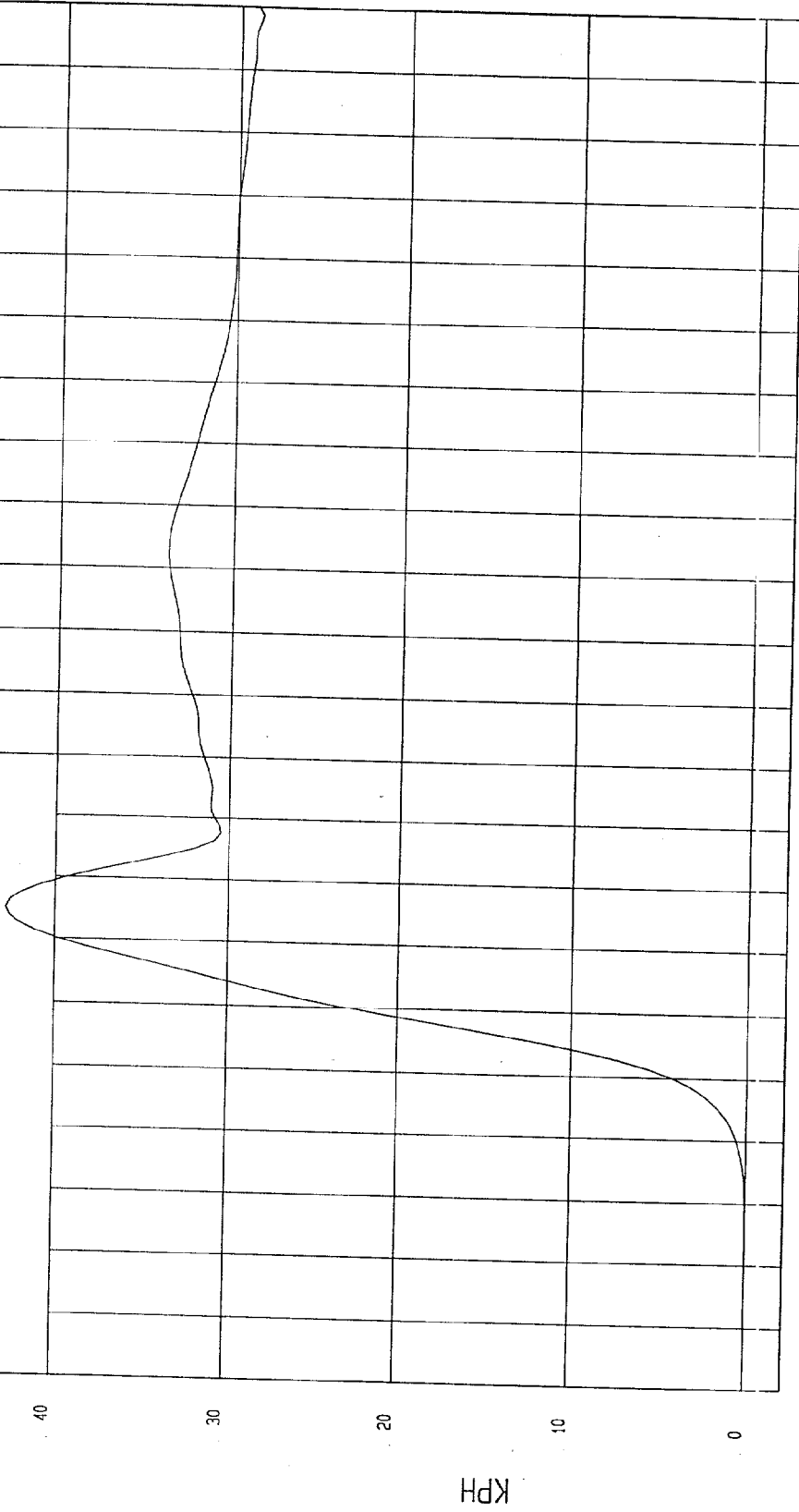
COMPONENT: 2000 VW JETTA (CY5800)

Minimum = 0 KPH at -20 msec

Maximum = 42.78 KPH at 55 msec

REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY

1 ——— B00005F1.V48 FilterClass (FIR Filtered)



TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

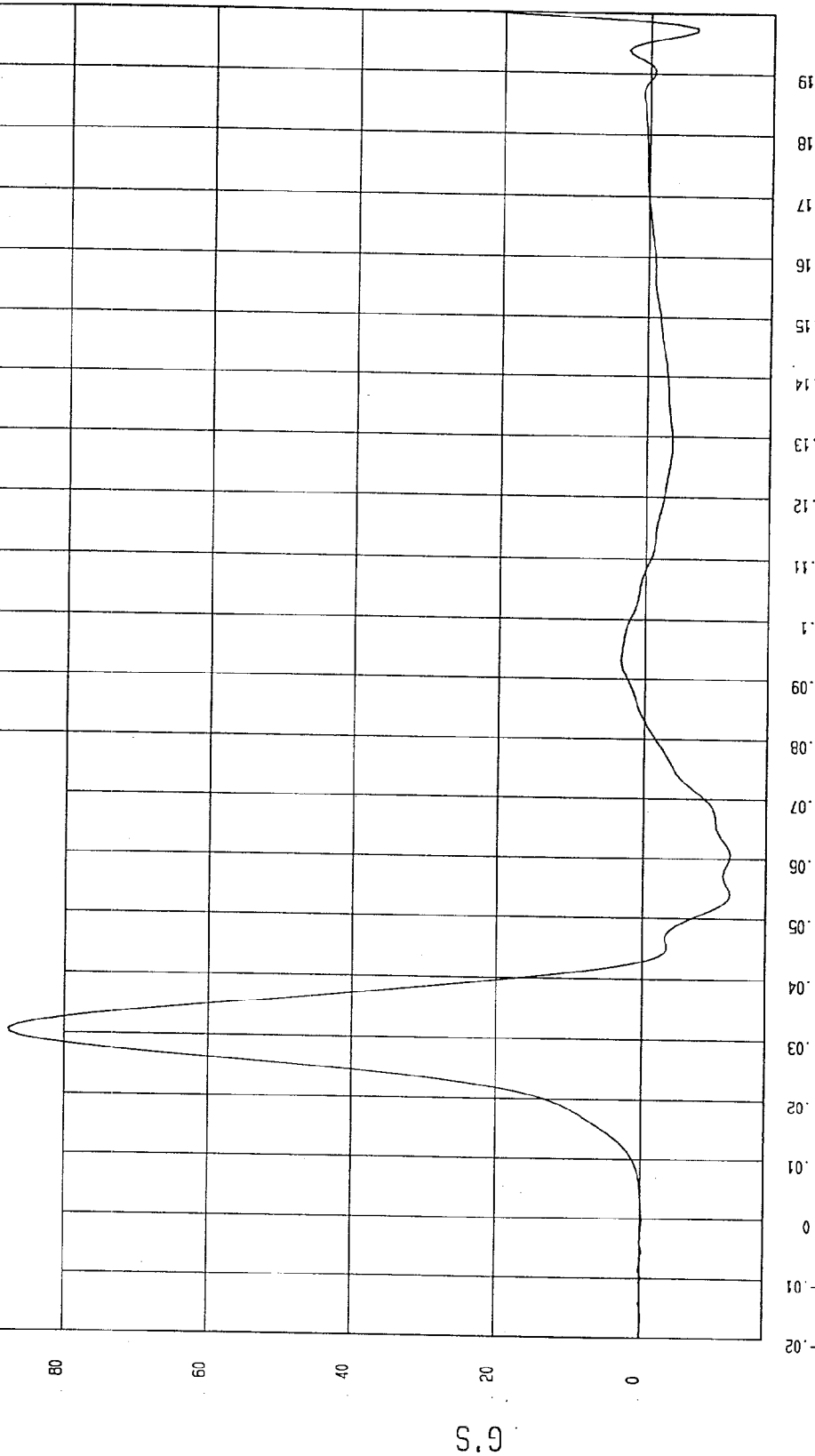
Speed: 38.6 MPH 62.1 KPH

Minimum = -11.89 G'S at 61 msec

Maximum = 87.7 G'S at 31 msec

REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION

1 — 80000651.R49 Filterclass (FIR Filtered)

MGA Research
01-20-2000 14:27

TEST: FMVSS 214 INDICANT

TEST DATE: 01-20-2000

COMPONENT: 2000 VW JETTA (CY5800)

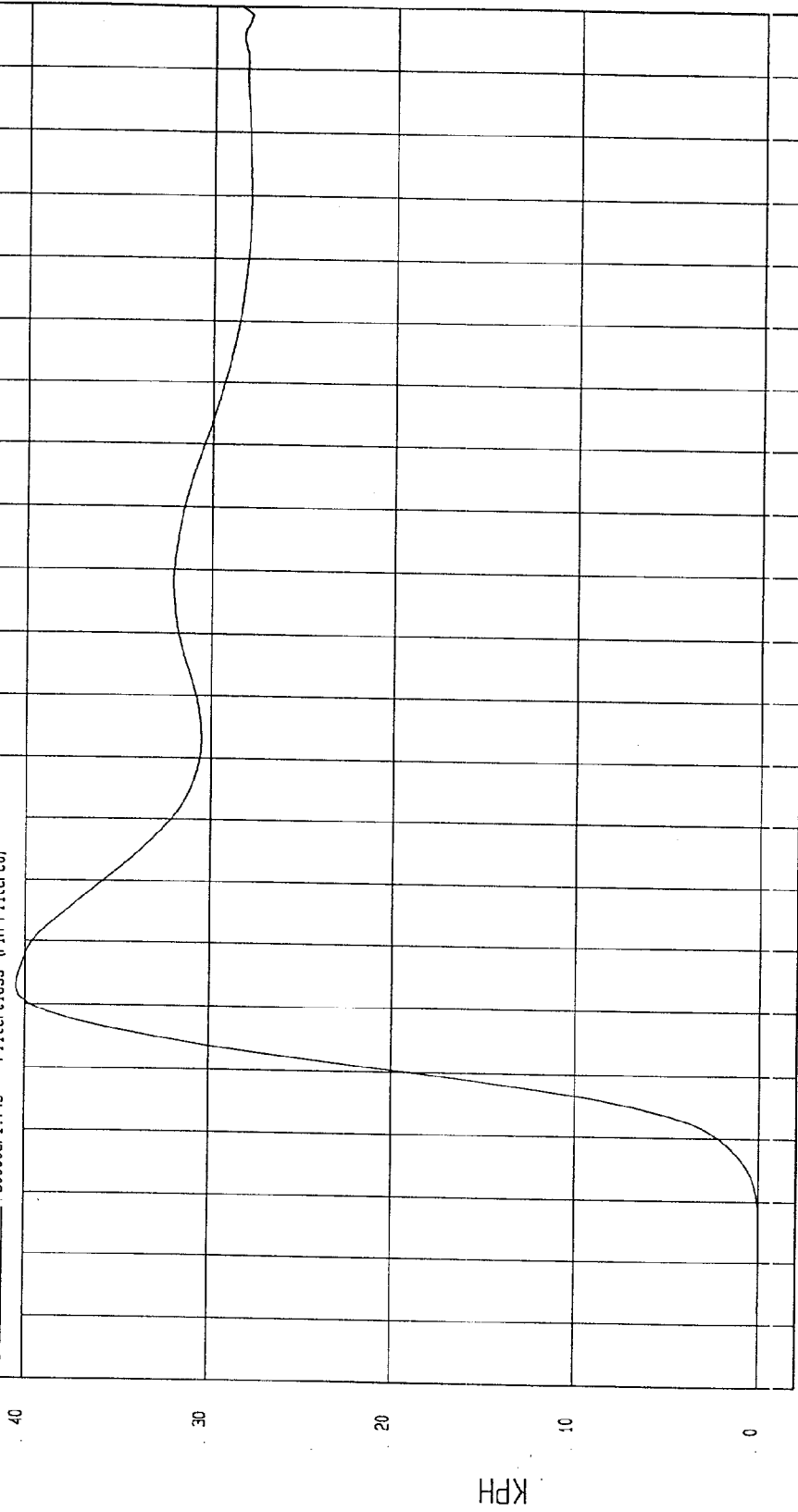
Speed: 38.6 MPH 62.1 KPH

Minimum = -2.15E-02 KPH at 3 msec

Maximum = 40.5 KPH at 43 msec

REAR PASSENGER PELVIS Y REDUNDANT VELOCITY

1 — 800006FLV49 Filterclass (FIR Filtered)



APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION

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

Report Date: January 27, 2000Technician: Tim MichnayTest Date: January 20, 2000

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
Thorax Impacts					
Temperature (°C)	18.9 - 25.5	21.0	21.0	21.0	21.0
Relative Humidity (%)	10 - 70	30	21	28	21
Probe Speed (m/s)	4.27 - 4.33	4.28	4.28	4.27	4.30
Upper Rib (g's)	37 - 46	39	37	37	37
Lower Rib (g's)	37 - 46	40	41	38	38
Lower Spine (g's)	15 - 22	22	21	22	22
Pelvis Impact					
Temperature (°C)	18.9 - 25.5	21.0	21.0	21.2	21.0
Relative Humidity (%)	10 - 70	30	21	28	21
Probe Speed (m/s)	4.27 - 4.33	4.28	4.30	4.29	4.29
Pelvis ('gs)	40 - 60	54	54	51	48

REMARKS:

PRE-TEST CERTIFICATION DATA

Dummy Serial Number: 049

Calibration Test Results Summary

Dummy Serial Number: 049

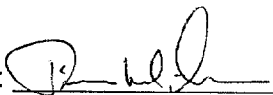
Pre-Test Calibration

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: January 14, 2000

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: David Winkelbauer

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THORAX IMPACT TEST
SIDE IMPACT DUMMY (SID)

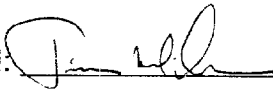
DATE: January 12, 2000

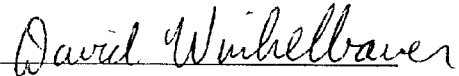
DUMMY SERIAL NUMBER: 049

TEST NUMBER: D00072

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46 g's	39
LOWER RIB (g's)	37 - 46 g's	40
LOWER SPINE (g's)	15 - 22 g's	22

TEST MEETS SPECIFICATIONS

TECHNICIAN: 

APPROVED BY: 

TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-12-2000 - 18:46:31

COMPONENT: Dummy # 049 Velocity: 14.03 FT/SEC 4.28 M/SEC

Minimum = -10.75 G'S at 65 msec Maximum = 38.95 G'S at 38.1 msec

UPPER RIB ACCELERATION

1 _____ D00072F1.R08

60
50
40
30
20
10
0
-10
-20

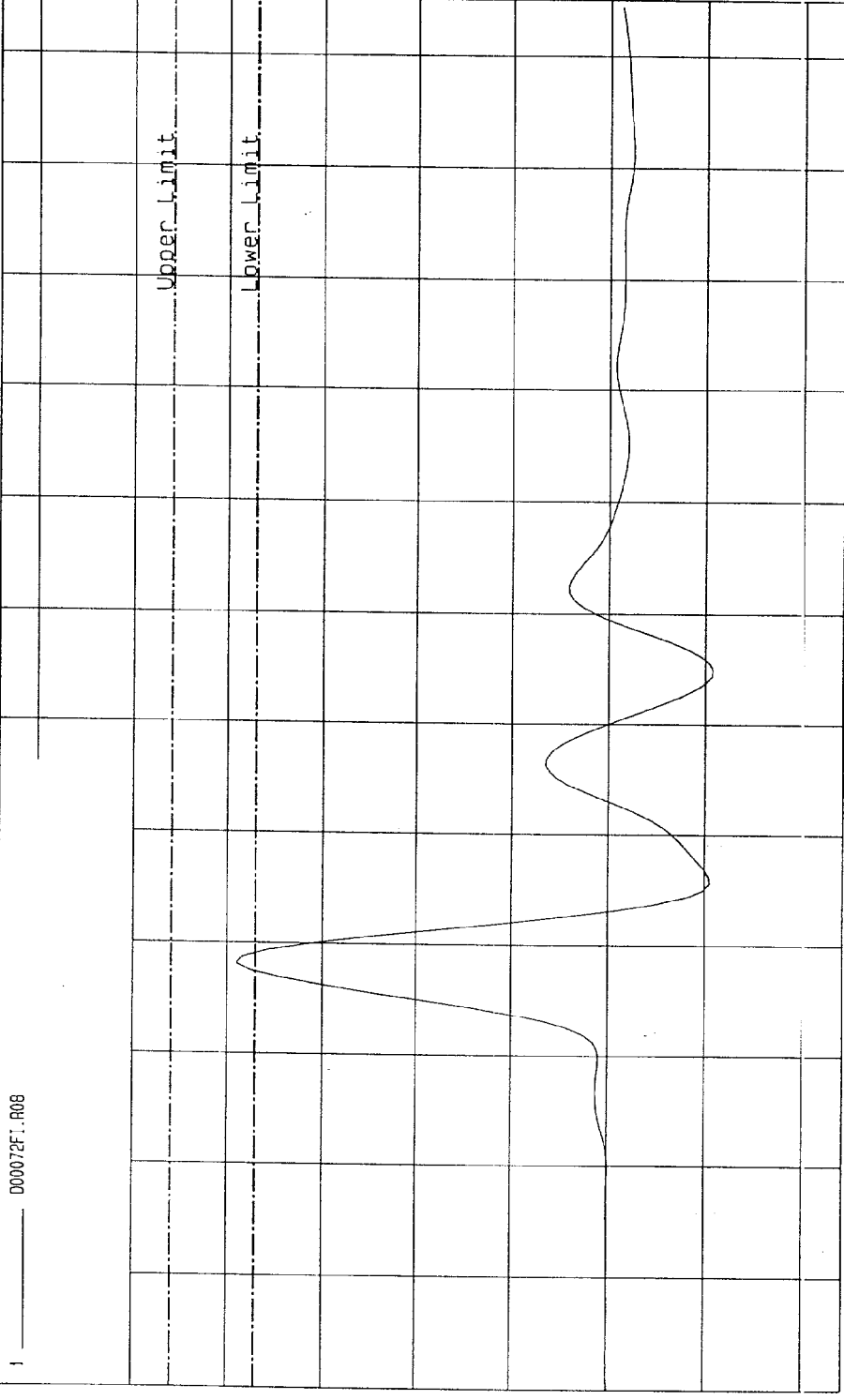
Upper Limit
Lower Limit

G.S

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

TIME (sec.)

WCA Research
01-25-2000 10:19

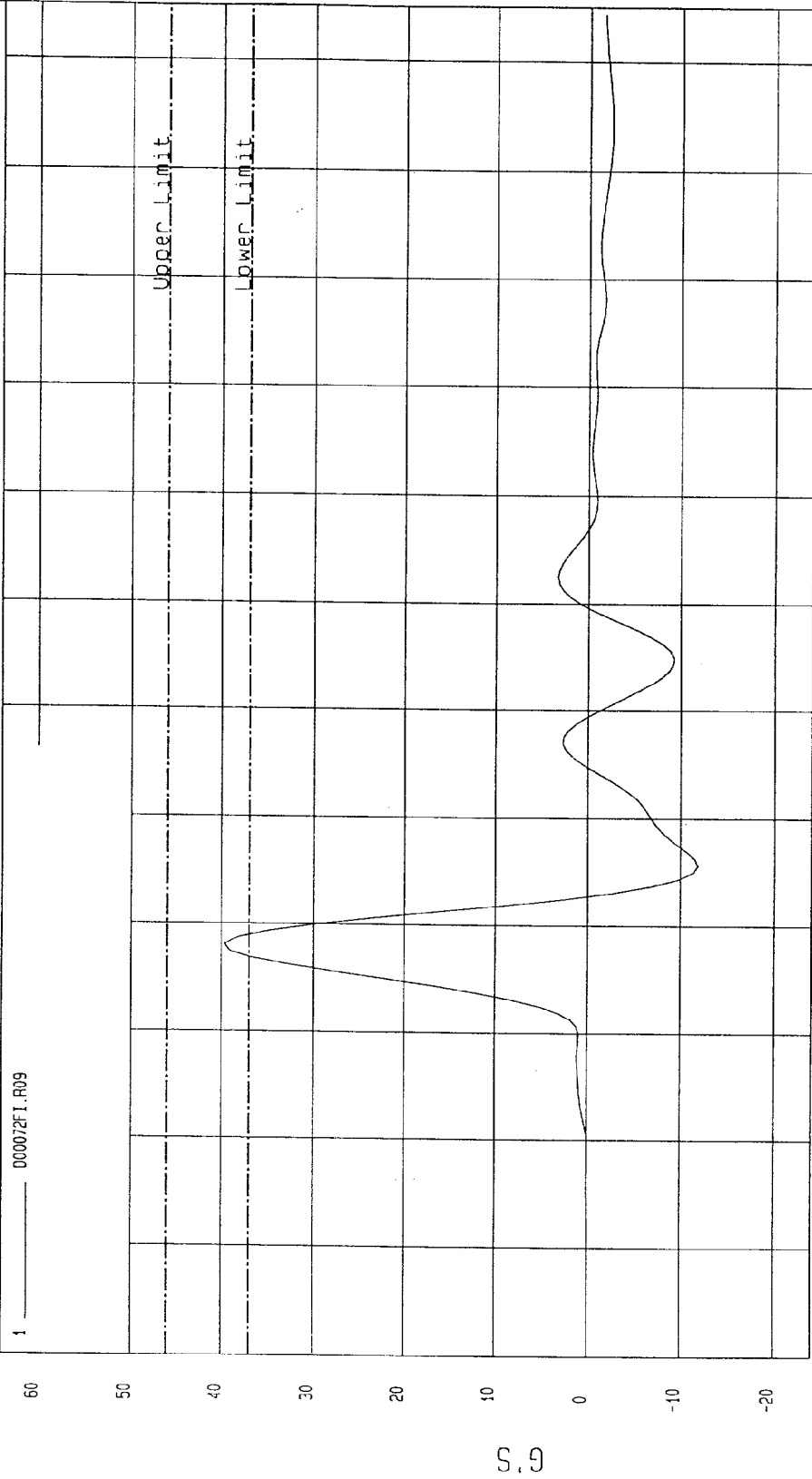


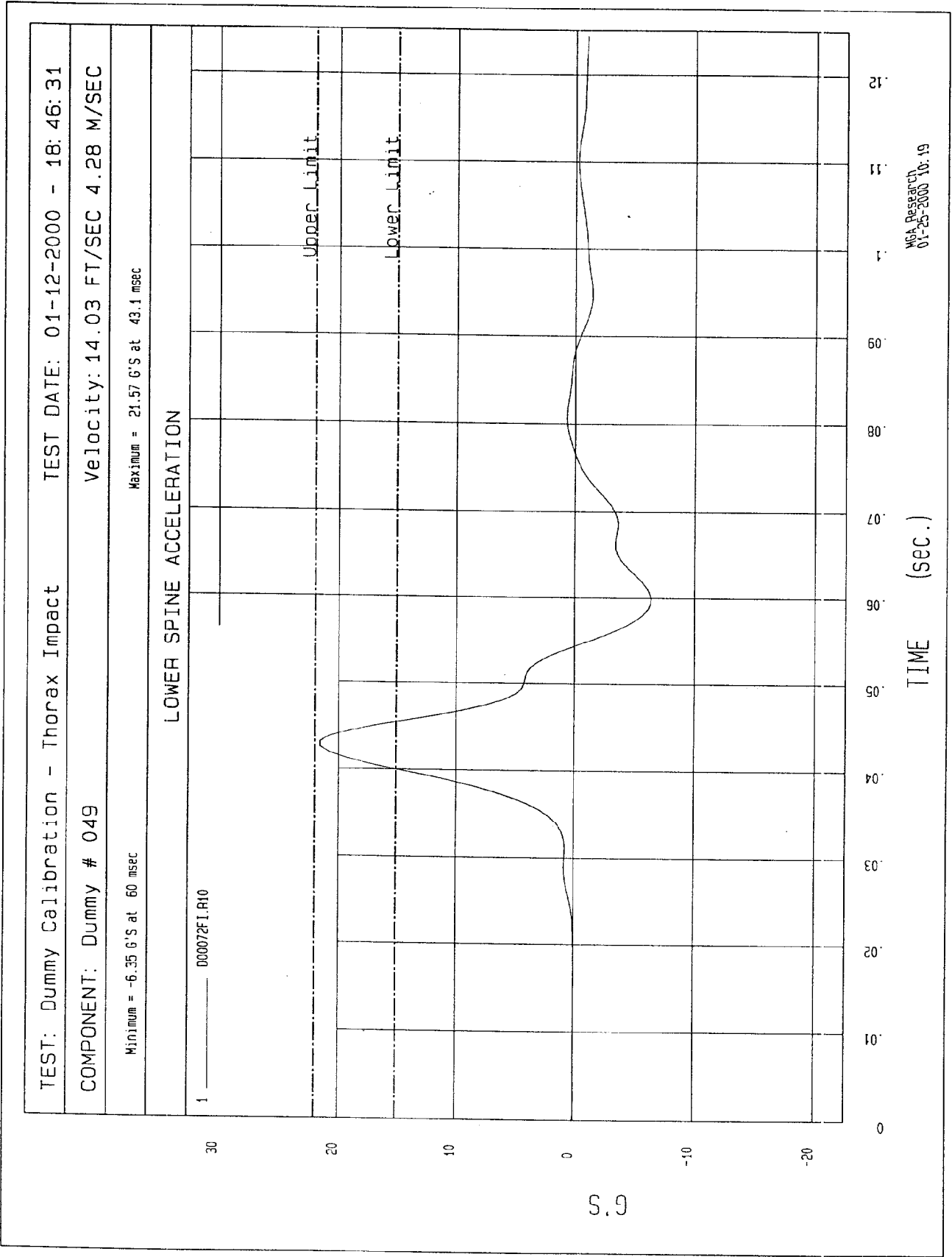
TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-12-2000 - 18:46:31

COMPONENT: Dummy # 049 Velocity: 14.03 FT/SEC 4.28 M/SEC

Minimum = -11.83 G'S at 45.6 msec Maximum = 39.59 G'S at 38.1 msec

LOWER RIB ACCELERATION





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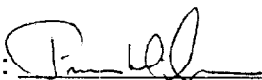
PELVIS IMPACT TEST

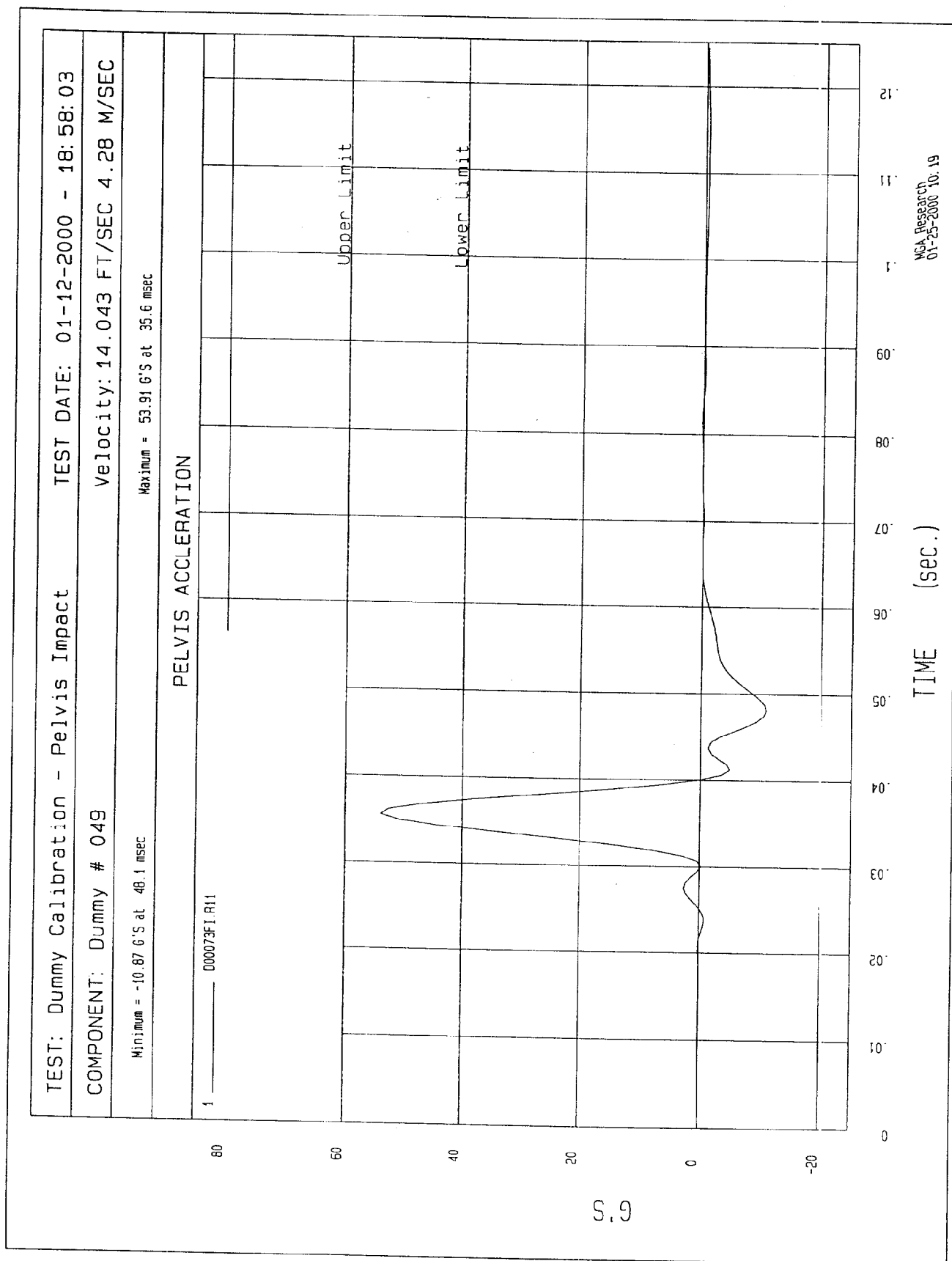
SIDE IMPACT DUMMY (SID)

DATE: January 12, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00073

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.28
PELVIS ACCELERATION (g's)	40 - 60	54

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 



MGA RESEARCH CORPORATION

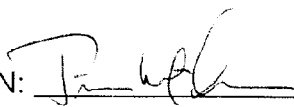
ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: January 14, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00074

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	23
FORCE @ 12.7 mm	104 - 162	150
FORCE @ 19.0 mm	163 - 222	204
FORCE @ 25.4 mm	222 - 280	264
FORCE @ 33 mm	325 - 391	366

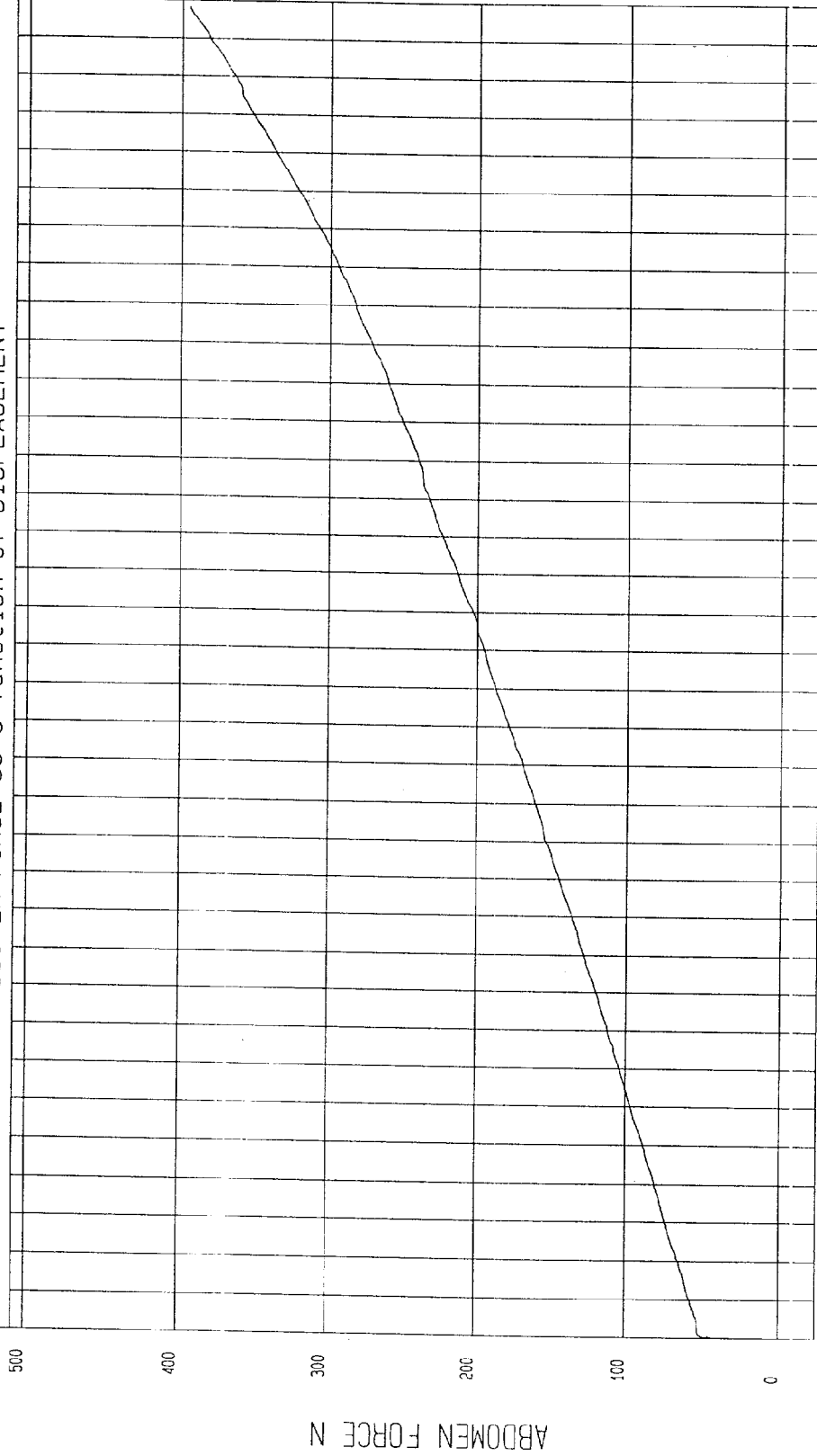
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-14-2000 - 08:19:17

COMPONENT: DUMMY # 049

ABDOMEN FORCE as a function of DISPLACEMENT



MGA Research
01-18-2000 11:12

DISPLACEMENT mm

MGA RESEARCH CORPORATION

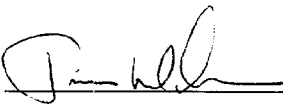
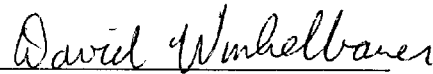
LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 14, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00075

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	28
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	104.3
FORCE @ 30°	151.2 - 204.6	165.0
FORCE @ 40°	204.6 - 258.0	221.7
RETURN ANGLE	12° maximum	4

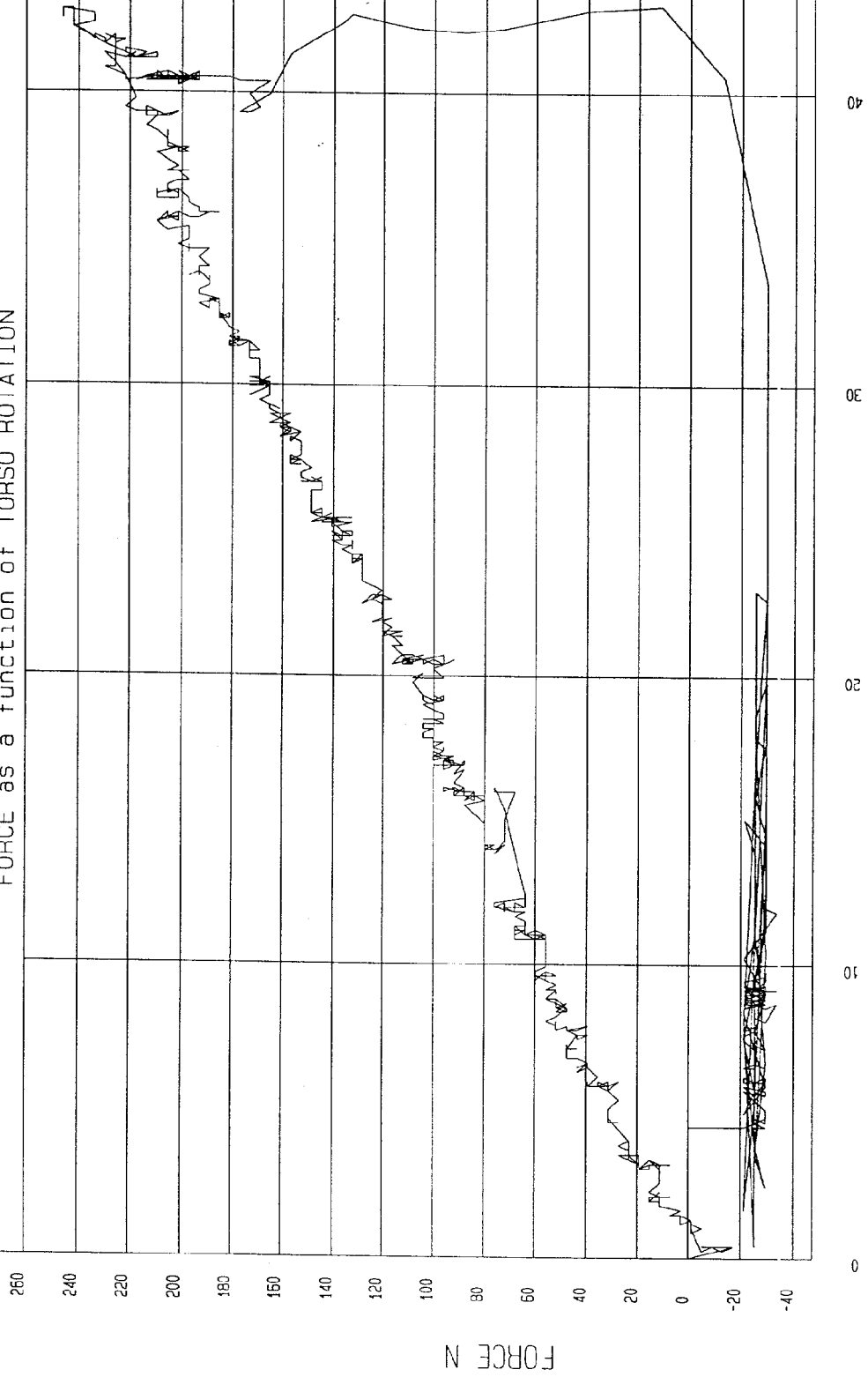
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-14-2000 - 10:54:03

COMPONENT: DUMMY # 049

FORCE as a function of TORSO ROTATION



MCA Research
01-18-2000 11:14

PRE-TEST CERTIFICATION DATA

Dummy Serial Number: 048

Calibration Test Results Summary

Dummy Serial Number: 048

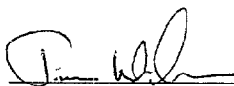
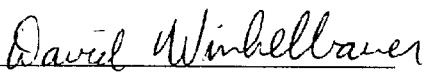
Pre-Test Calibration

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: January 14, 2000

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

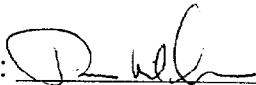
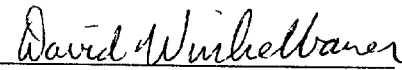
THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 12, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00062

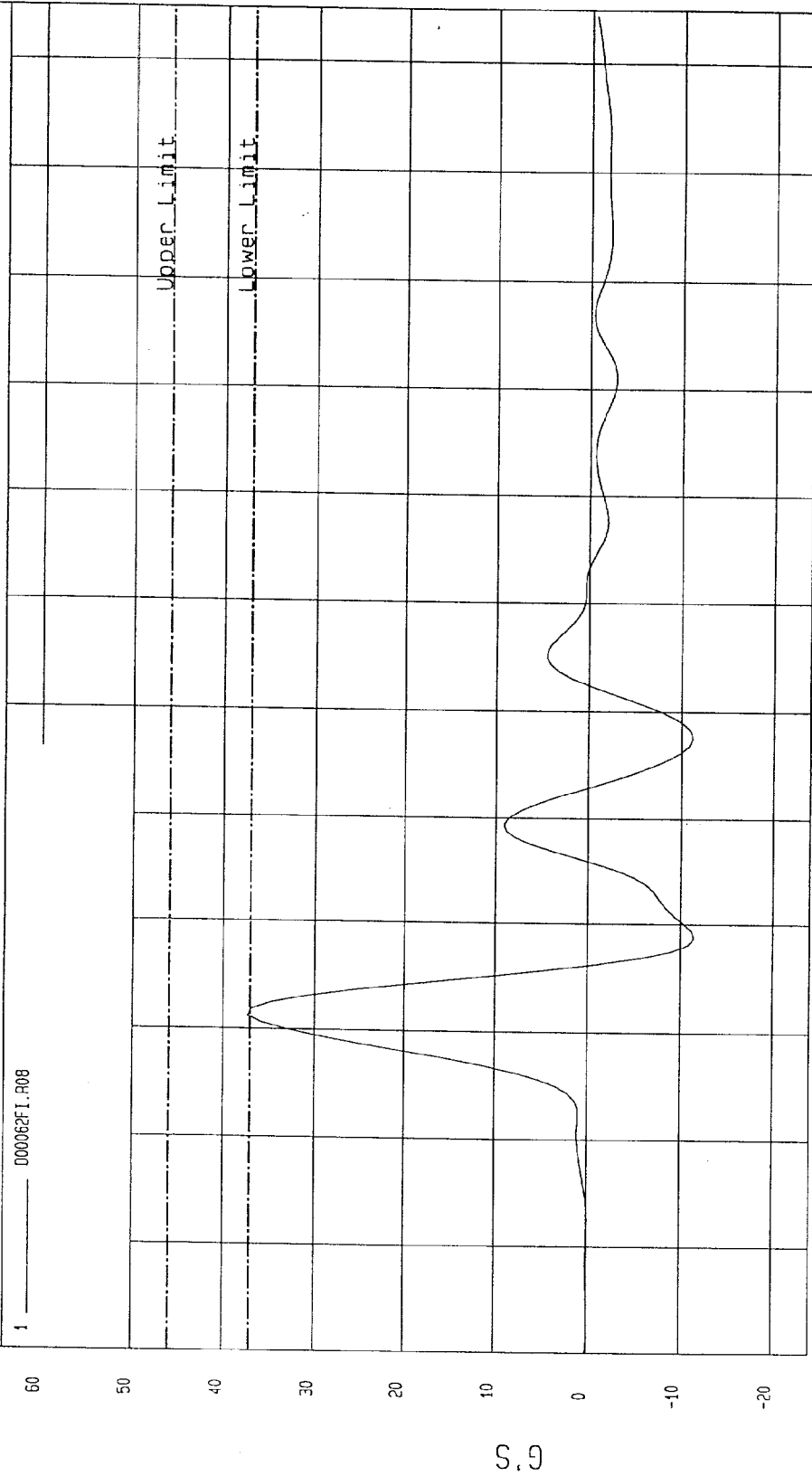
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	28
PROBE SPEED (m/s)	4.27 - 4.33	4.27
UPPER RIB (g's)	37 - 46	37
LOWER RIB (g's)	37 - 46	38
LOWER SPINE (g's)	15 - 22	22

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

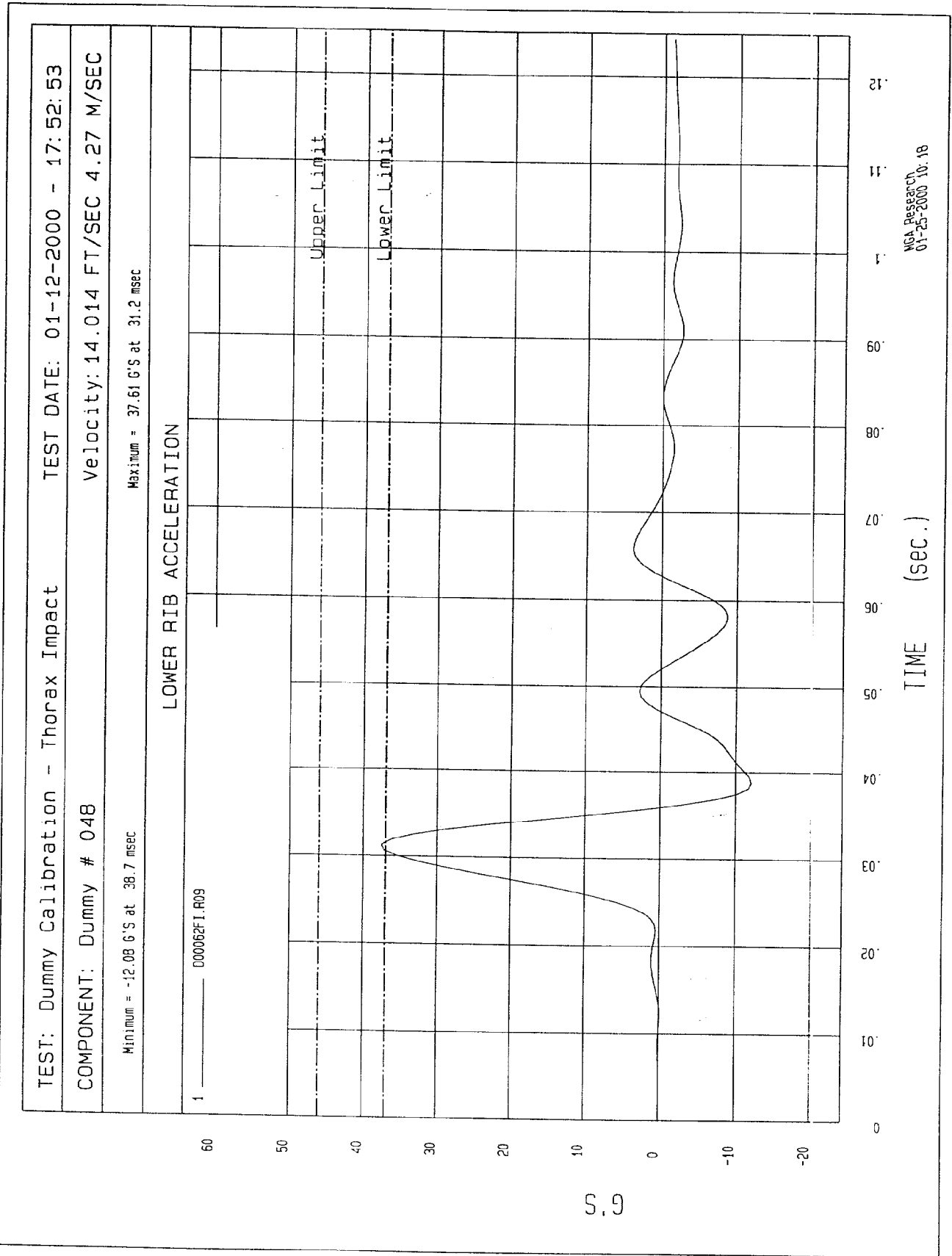
TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-12-2000 - 17:52:53
 COMPONENT: Dummy # 048 Velocity: 14.014 FT/SEC 4.27 M/SEC
 Minimum = -11.47 G'S at 38.7 msec Maximum = 37.24 G'S at 31.2 msec

UPPER RIB ACCELERATION



TIME (sec.)

MCA Research
 01-25-2000 10:16

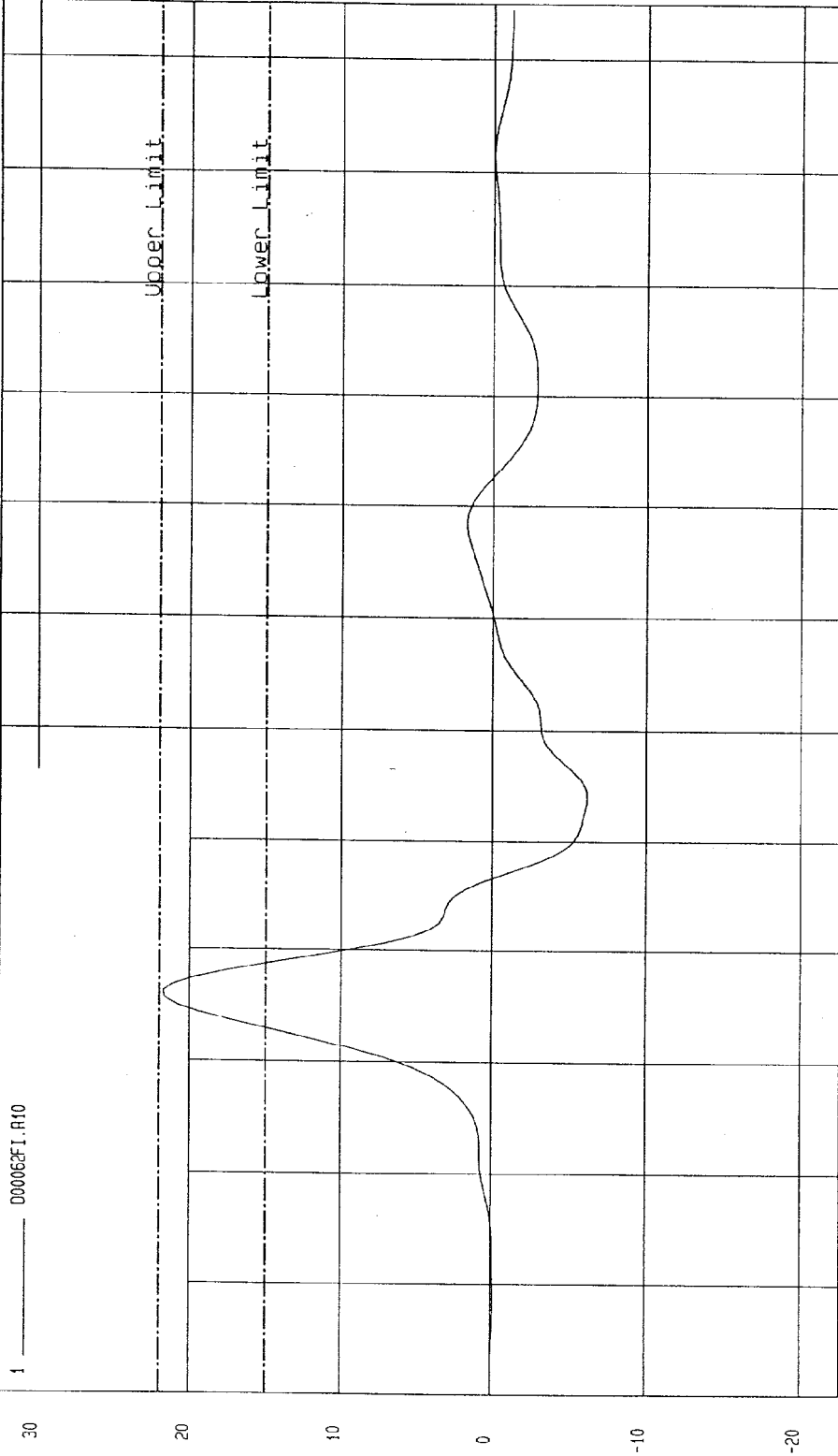


TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-12-2000 - 17:52:53

COMPONENT: Dummy # 048 Velocity: 14.014 FT/SEC 4.27 M/SEC

Minimum = -6.20 G'S at 54.3 msec Maximum = 21.77 G'S at 36.2 msec

LOWER SPINE ACCELERATION



NQA Research
01-25-2000 10:19

MGA RESEARCH CORPORATION

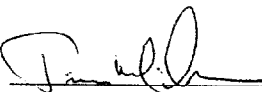
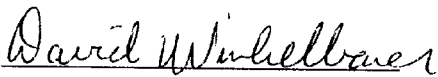
PELVIS IMPACT TEST

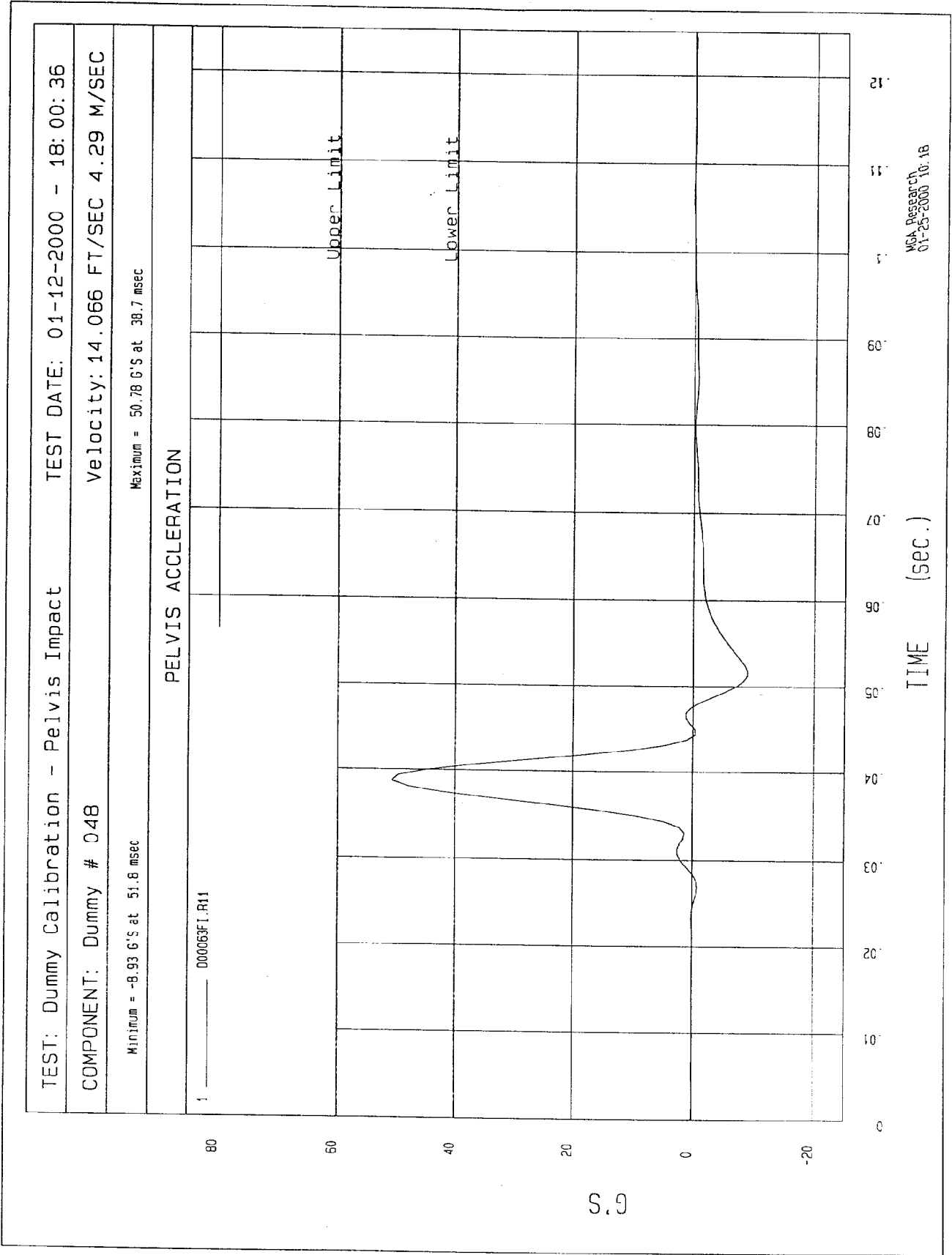
SIDE IMPACT DUMMY (SID)

DATE: January 12, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00063

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	28
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	51

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 



MGA RESEARCH CORPORATION

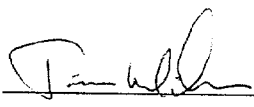
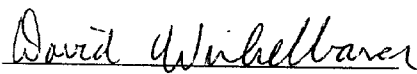
ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: January 14, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00064

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	23
FORCE @ 12.7 mm	104 - 162	143
FORCE @ 19.0 mm	163 - 222	193
FORCE @ 25.4 mm	222 - 280	254
FORCE @ 33 mm	325 - 391	344

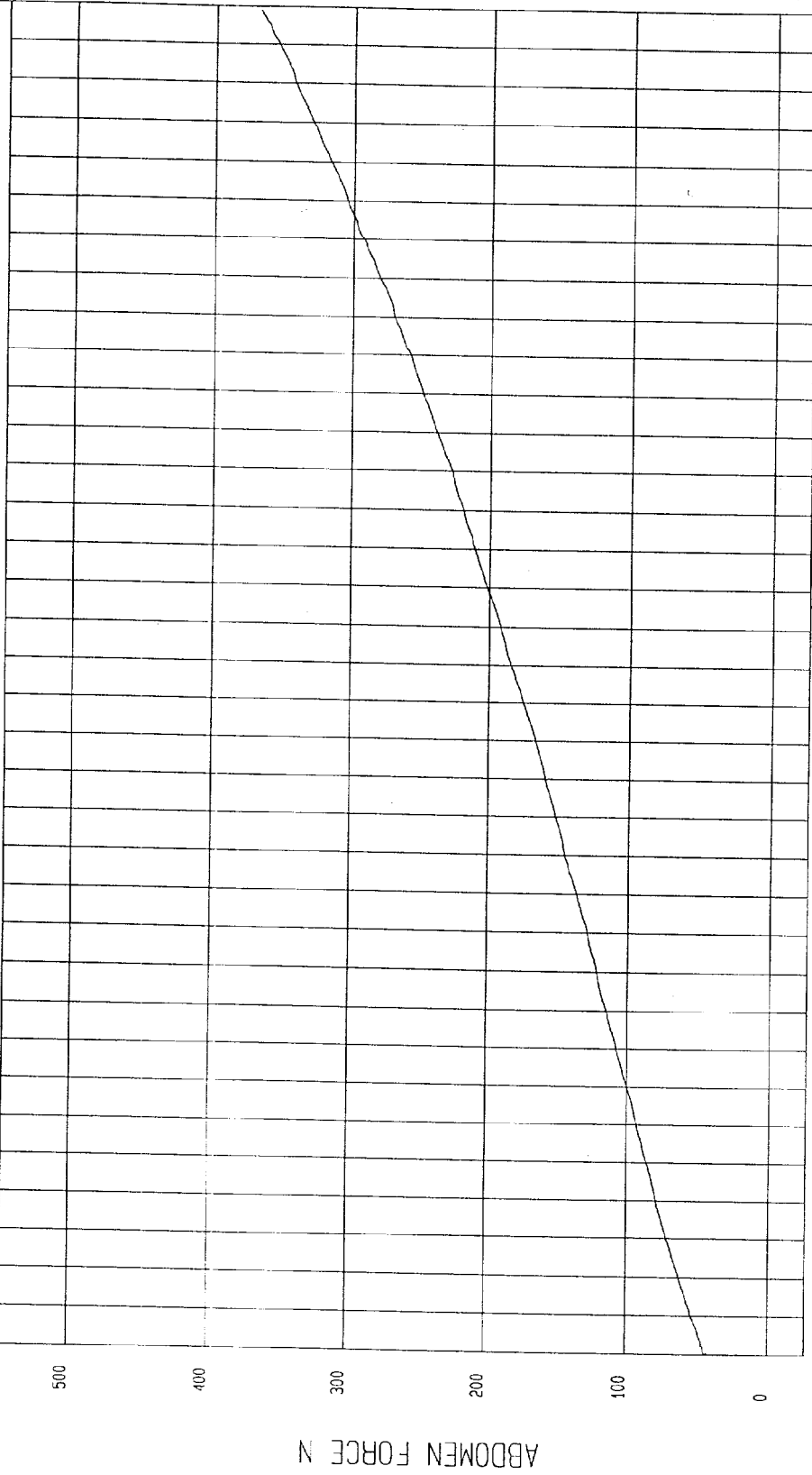
TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-14-2000 - 08:09:51

COMPONENT: DUMMY # 048

ABDOMEN FORCE as a function of DISPLACEMENT



MCA Research
01-18-2000 11:12

DISPLACEMENT mm

MGA RESEARCH CORPORATION

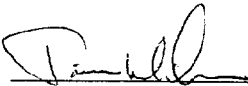
LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 14, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00065

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	28
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	124.5
FORCE @ 30°	151.2 - 204.6	177.1
FORCE @ 40°	204.6 - 258.0	233.8
RETURN ANGLE	12° maximum	6

TEST MEETS SPECIFICATIONS

TECHNICIAN: APPROVED BY: 

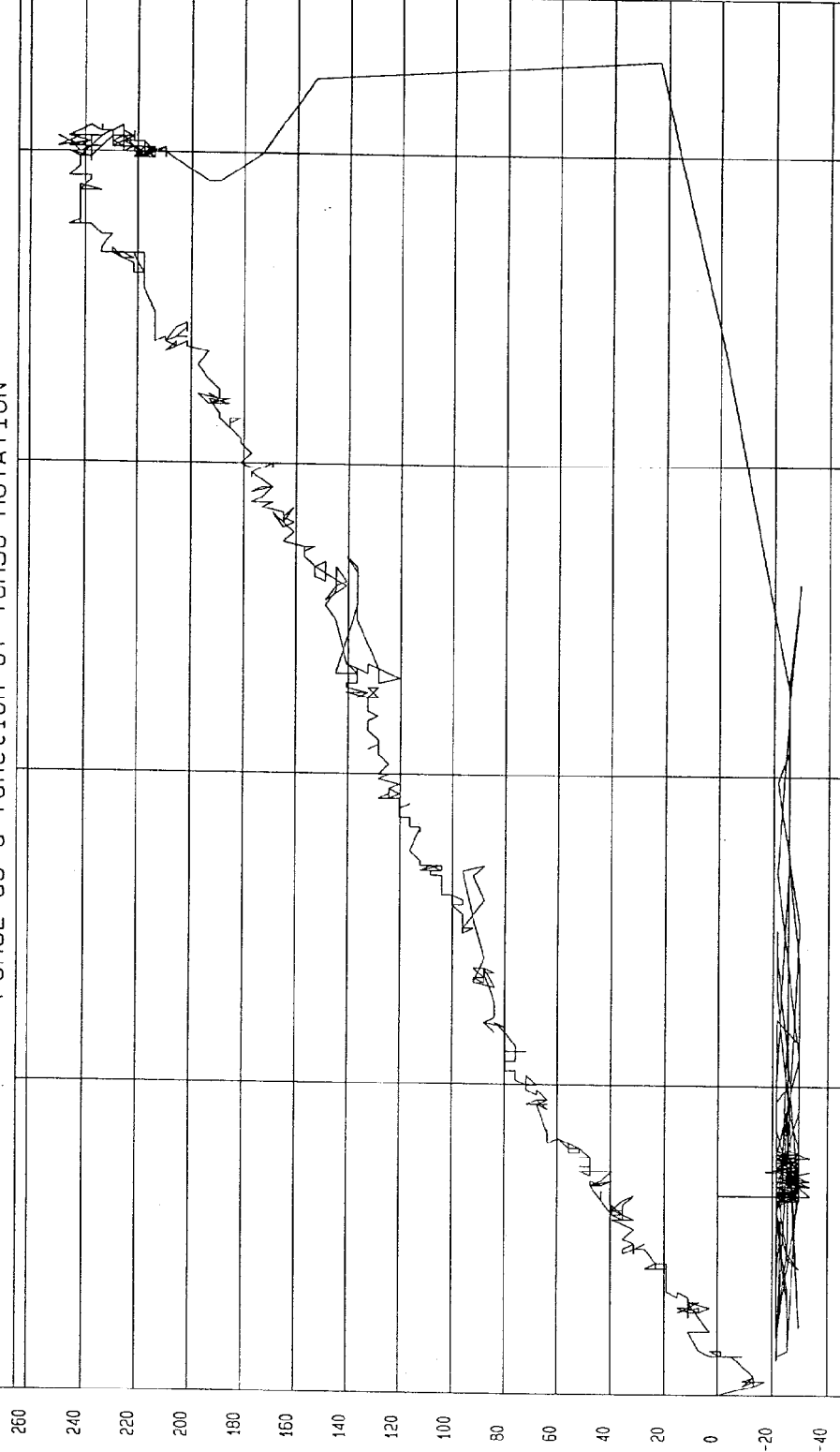
TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-14-2000 - 10:26:58

COMPONENT: DUMMY # 048

FORCE as a function of TORSO ROTATION

FORCE N

TORSO ROTATION DEGREES

MGA Research
01-18-2000 11:14

POST-TEST CERTIFICATION DATA

Dummy Serial Number: 049

Calibration Test Results Summary

Dummy Serial Number: 049

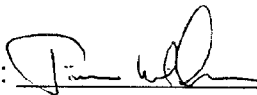
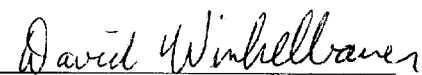
Post-Test Calibration

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: January 24, 2000

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

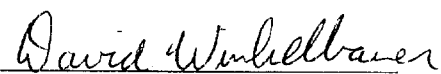
THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00182

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	21
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	37
LOWER RIB (g's)	37 - 46	41
LOWER SPINE (g's)	15 - 22	21

TEST MEETS SPECIFICATIONS

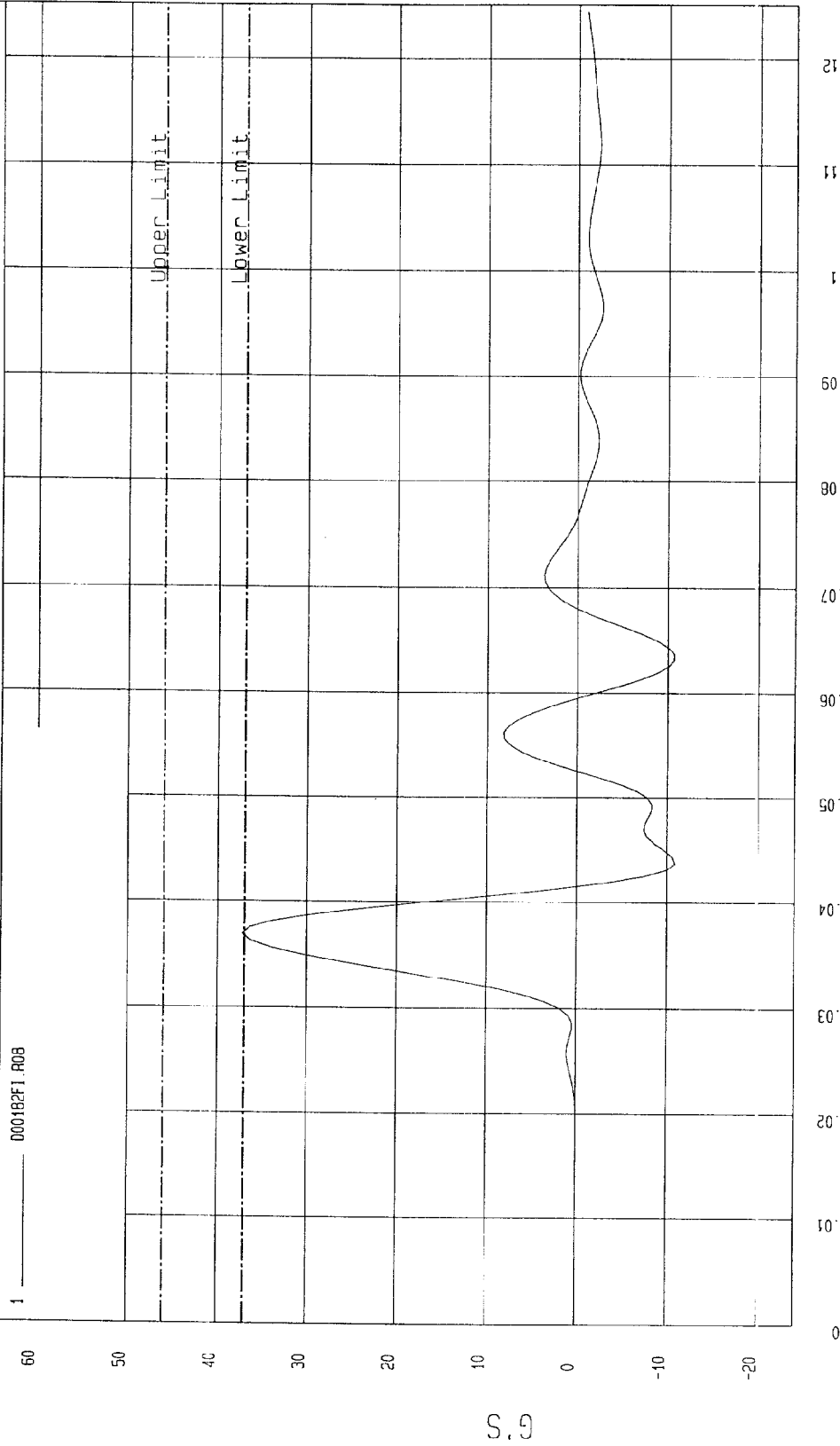
TECHNICIAN: APPROVED BY: 

TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-24-2000 - 13:51:23

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

Minimum = -10.87 G'S at 43.7 msec
Maximum = 37.25 G'S at 36.8 msec

UPPER RIB ACCELERATION



MCA Research
01-24-2000 14:03

TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-24-2000 - 13:51:23

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

Minimum = -10.20 G's at 44.3 msec

Maximum = 41.16 G's at 37.5 msec

LOWER RIB ACCELERATION

1 _____ D00182F1.R09

60

50

40

30

20

10

0

-10

-20

G's

Upper Limit

Lower Limit

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

TIME (sec.)

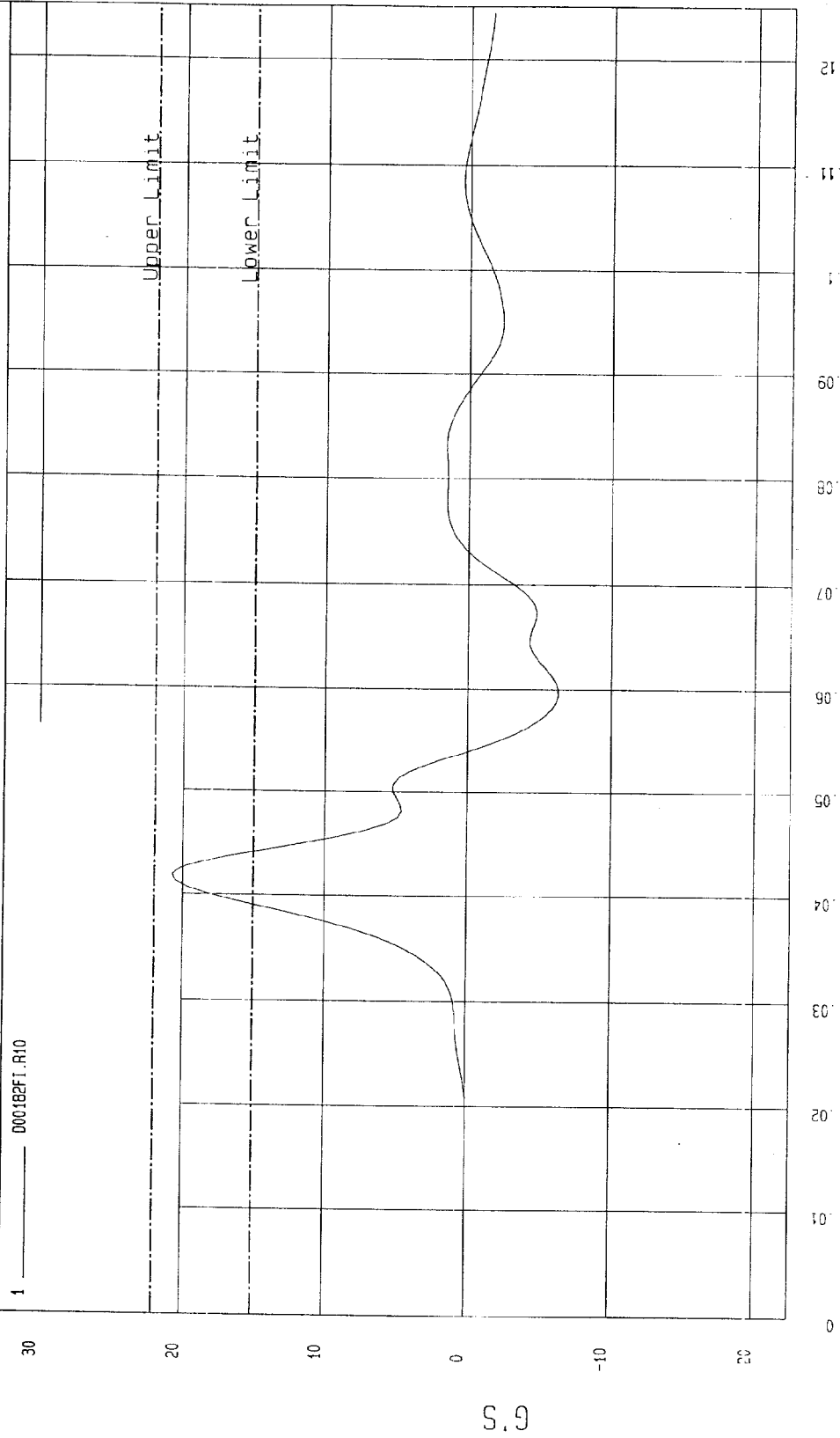
NCA Research
01-24-2000 14:03

TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-24-2000 - 13:51:23
COMPONENT: Dummy #049 Velocity: 14.05 FT/SEC 4.28 M/SEC

Minimum = -6.32 G'S at 59.3 msec

Maximum = 20.73 G'S at 41.8 msec

LOWER SPINE ACCELERATION



MGA RESEARCH CORPORATION

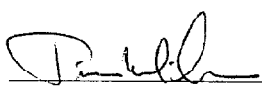
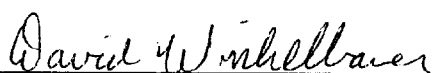
PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00183

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70%	21
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	54

TEST MEETS SPECIFICATIONS

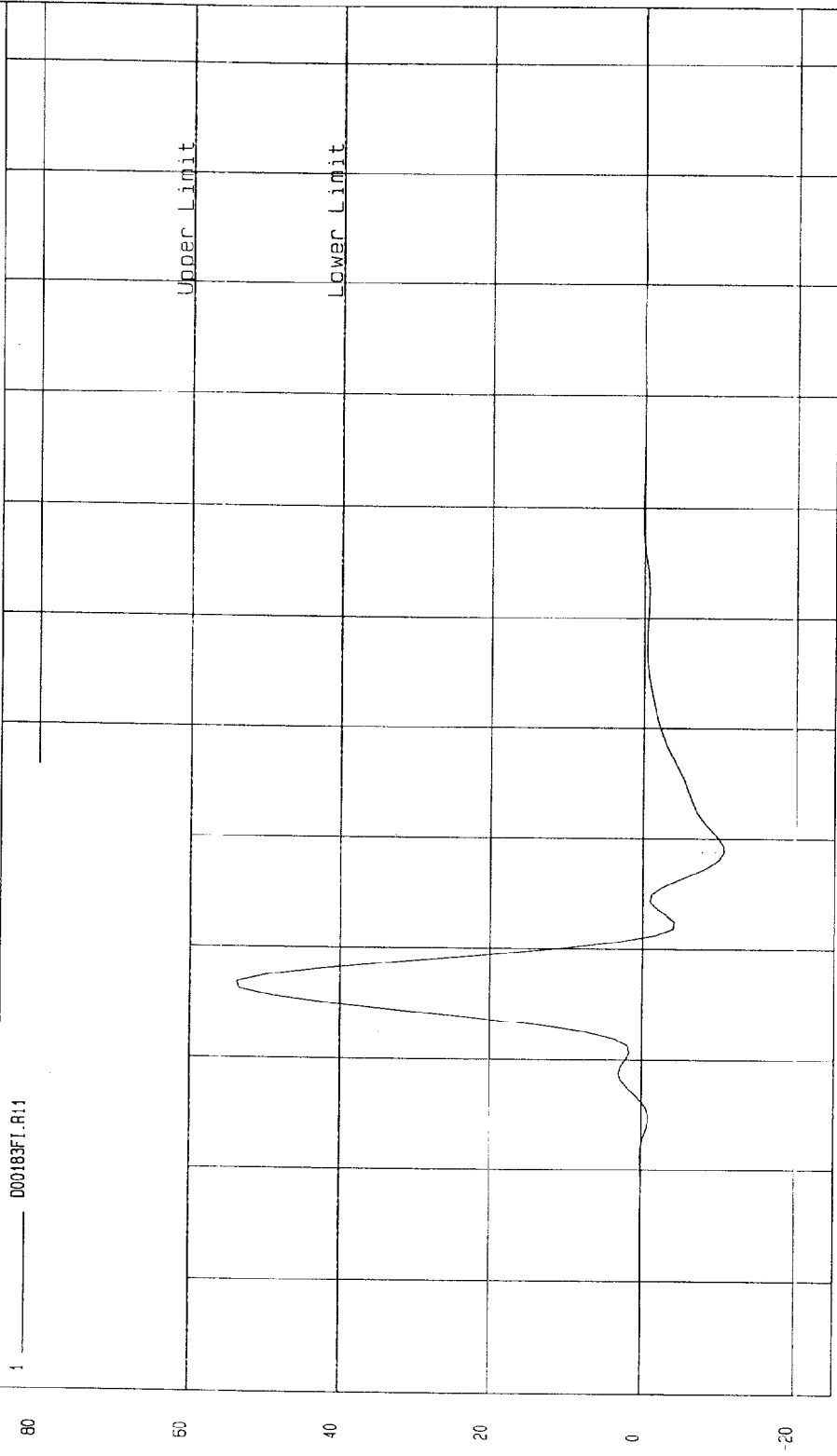
TECHNICIAN APPROVED BY 

TEST: Dummy Calibration - Pelvis Impact TEST DATE: 01-24-2000 - 14:02:50

COMPONENT: Dummy #049 Velocity: 14.108 FT/SEC 4.3 M/SEC

Minimum = -10.56 G'S at 48.7 msec
Maximum = 53.75 G'S at 36.8 msec

PELVIS ACCELERATION



NCA Research
01-24-2000 14.03

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

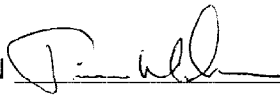
SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00184

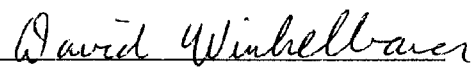
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	25
FORCE @ 12.7 mm	104 - 162	142
FORCE @ 19.0 mm	163 - 222	194
FORCE @ 25.4 mm	222 - 280	251
FORCE @ 33 mm	325 - 391	341

TEST MEETS SPECIFICATIONS

TECHNICIAN



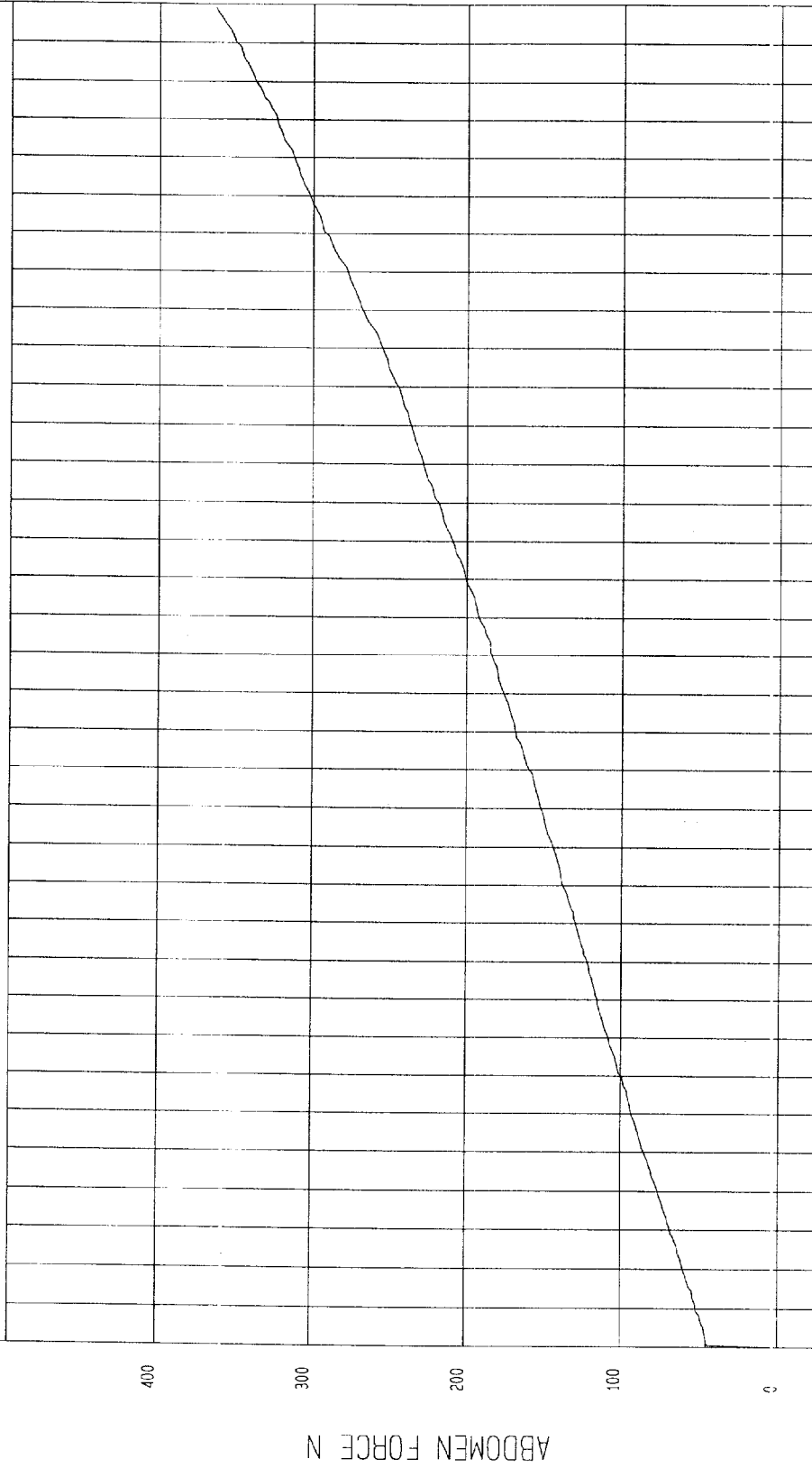
APPROVED BY



TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-24-2000 - 16:23:59

COMPONENT: DUMMY # 049

ABDOMEN FORCE as a function of DISPLACEMENT



NCA Research
01-25-2000 10:09

DISPLACEMENT mm

MGA RESEARCH CORPORATION

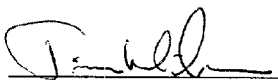
LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 049TEST NUMBER: D00185

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	24
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	99.7
FORCE @ 30°	151.2 - 204.6	184.7
FORCE @ 40°	204.6 - 258.0	245.5
RETURN ANGLE	12° maximum	1

TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-24-2000 - 15:50:52

COMPONENT: DUMMY # 049

FORCE as a function of TORSO ROTATION

FORCE N

280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40

40

30

20

10

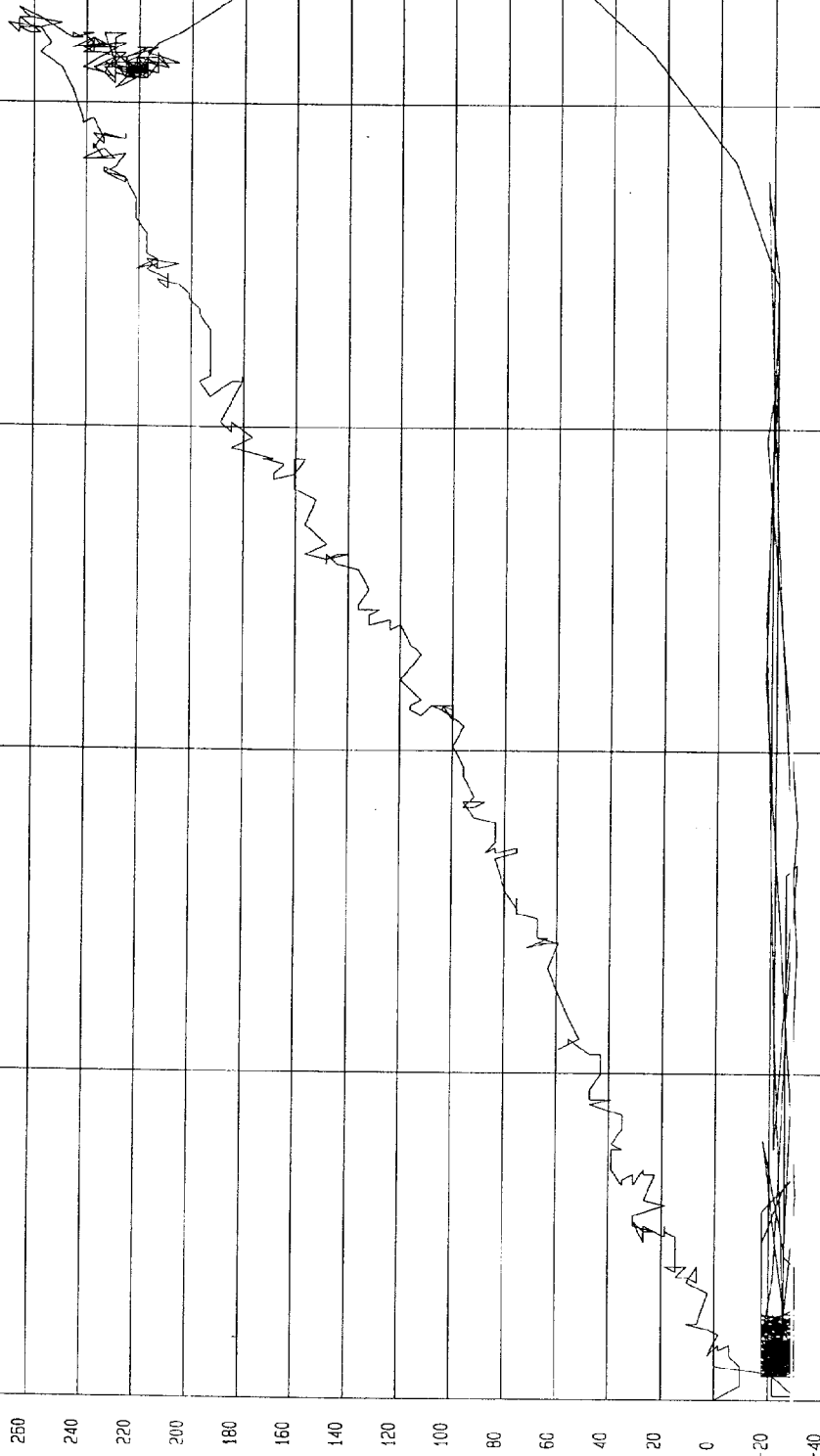
0

NCA Research
01-25-2000 10:10

TORSO ROTATION DEGREES

0

-20
-40



POST-TEST CERTIFICATION DATA

Dummy Serial Number: 048

Calibration Test Results Summary

Dummy Serial Number: 048

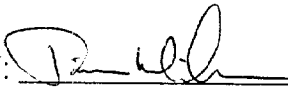
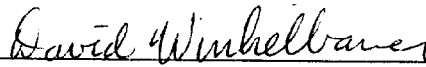
Post-Test Calibration

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: January 24, 2000

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

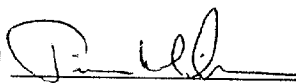
SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00172

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	21
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	37
LOWER RIB (g's)	37 - 46	38
LOWER SPINE (g's)	15 - 22	22

TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY



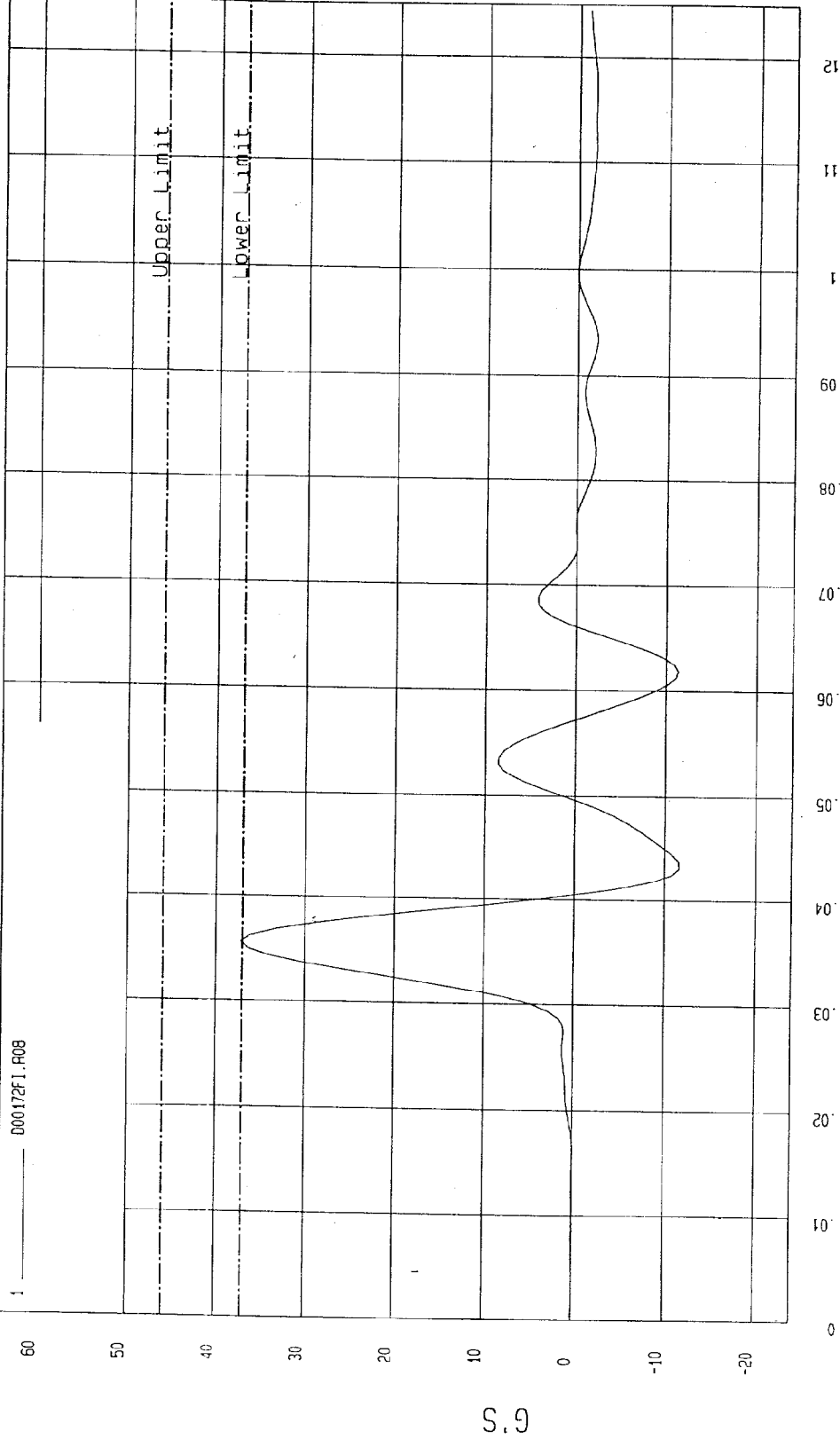
TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-24-2000 - 13:32:52

COMPONENT: Dummy #048 Velocity: 14.093 FT/SEC 4.3 M/SEC

Minimum = -11.57 G'S at 43.1 msec

Maximum = 37.16 G'S at 35.6 msec

UPPER RIB ACCELERATION



MCA Research
01-24-2000 13:38

TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-24-2000 - 13:32:52

COMPONENT: Dummy #04B

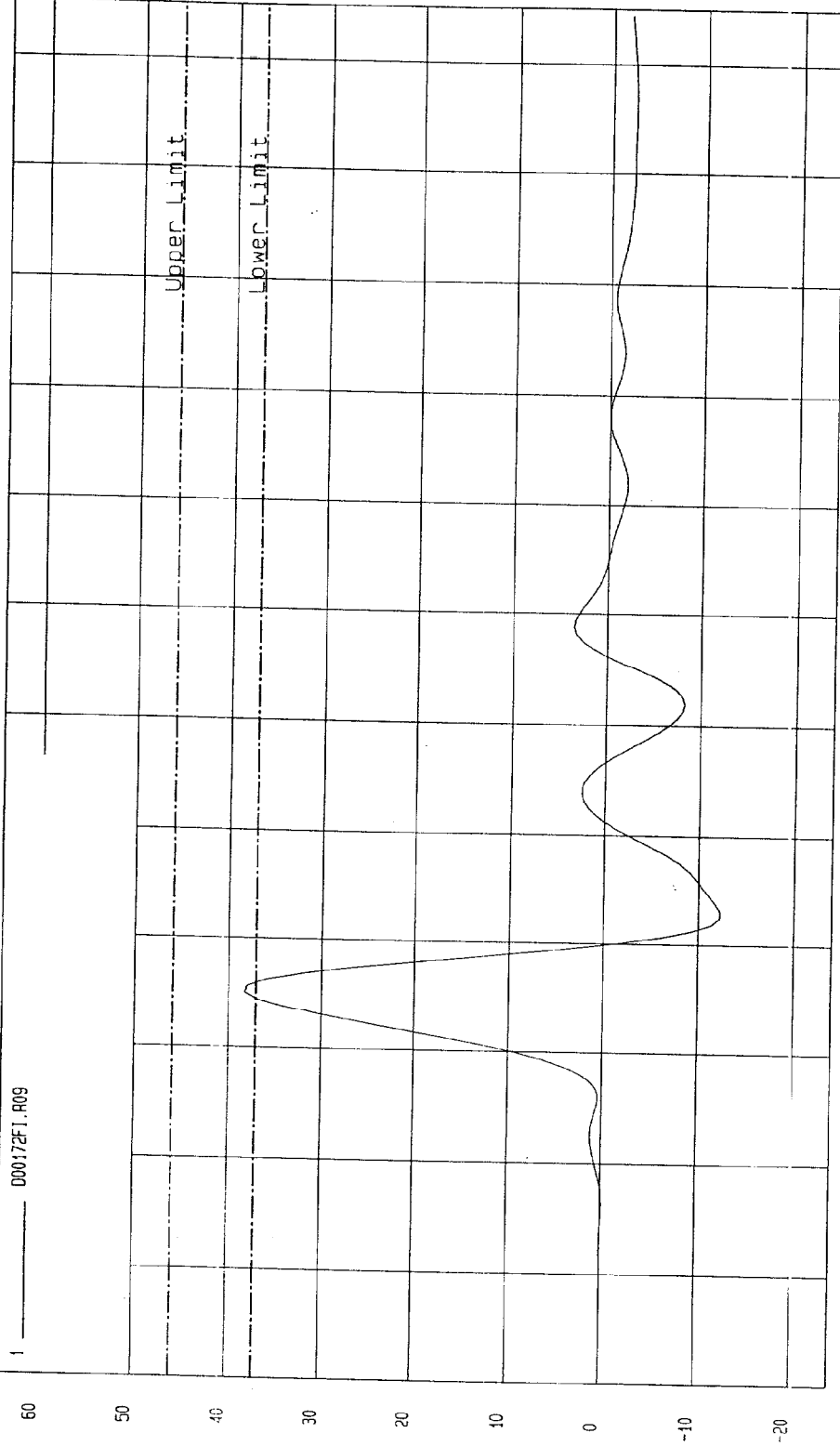
Velocity: 14.093 FT/SEC 4.3 M/SEC

Minimum = -12.26 G'S at 43.1 msec

Maximum = 38.21 G'S at 35 msec

LOWER RIB ACCELERATION

1 ——— 000172F1.R09



MCA Research
01-24-2000 13:38

TEST: Dummy Calibration - Thorax Impact TEST DATE: 01-24-2000 - 13:32:52

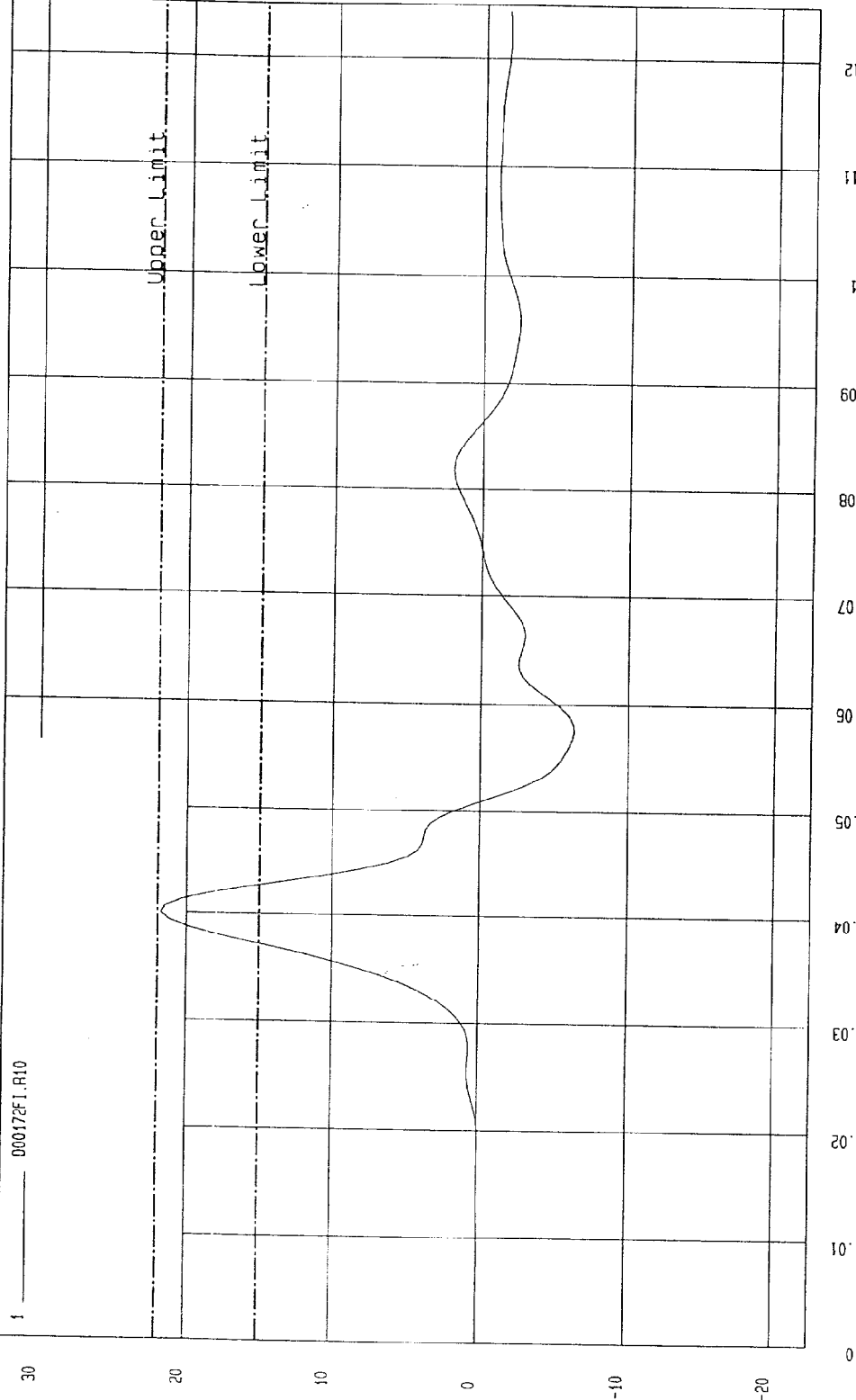
COMPONENT: Dummy #048 Velocity: 14.093 FT/SEC 4.3 M/SEC

Minimum = -6.34 G'S at 57.5 msec

Maximum = 21.77 G'S at 40 msec

LOWER SPINE ACCELERATION

1 000472FLR10



WCA Research
01-24-2000 13:38

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

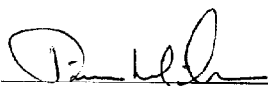
SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00173

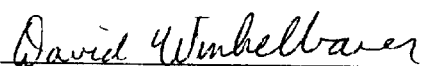
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	21
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	48

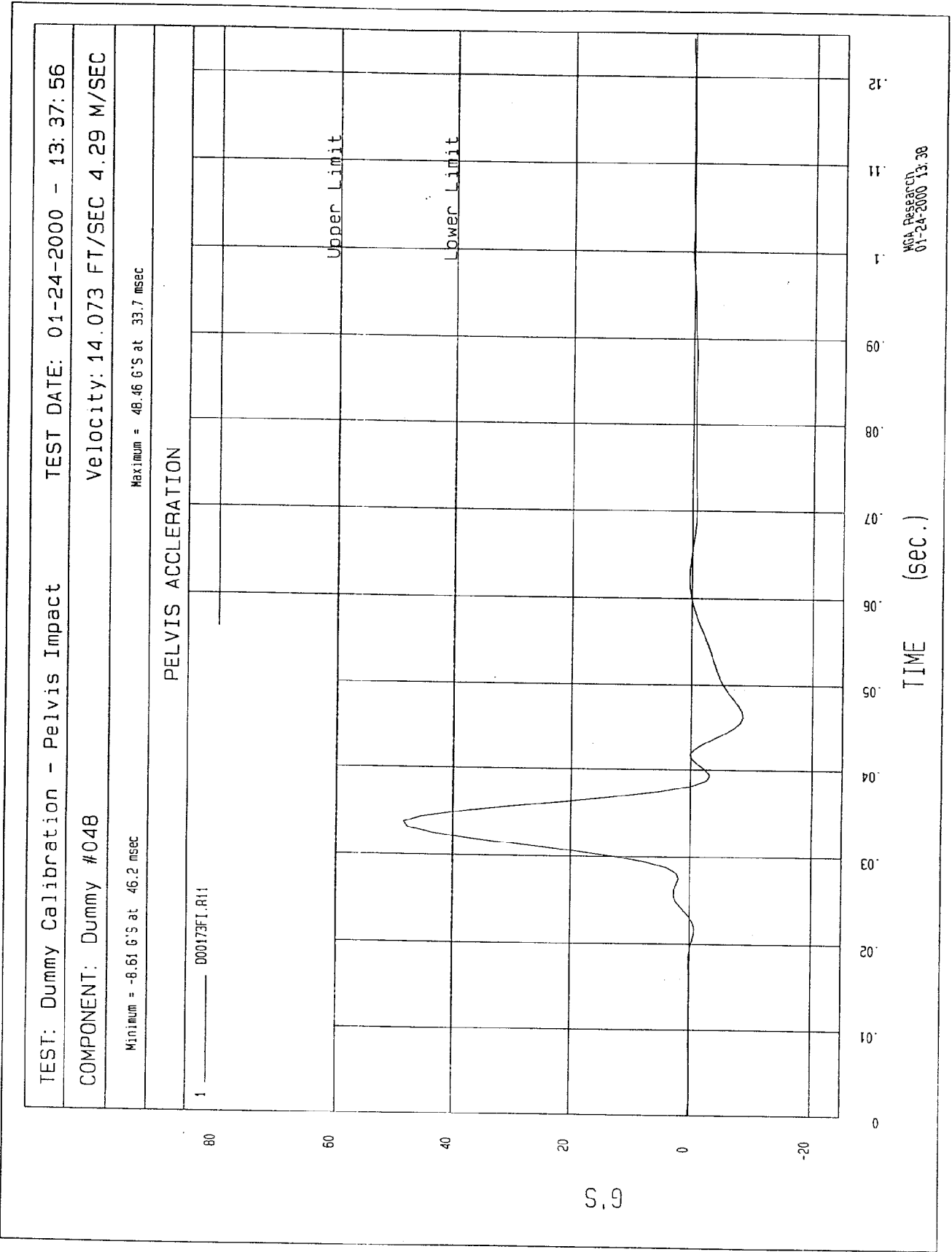
TEST MEETS SPECIFICATIONS

TECHNICIAN



APPROVED BY





MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

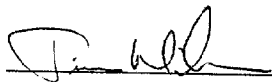
SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00174

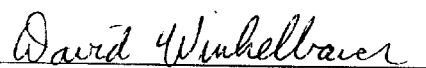
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	25
FORCE @ 12.7 mm	104 - 162	143
FORCE @ 19.0 mm	163 - 222	191
FORCE @ 25.4 mm	222 - 280	242
FORCE @ 33 mm	325 - 391	329

TEST MEETS SPECIFICATIONS

TECHNICIAN



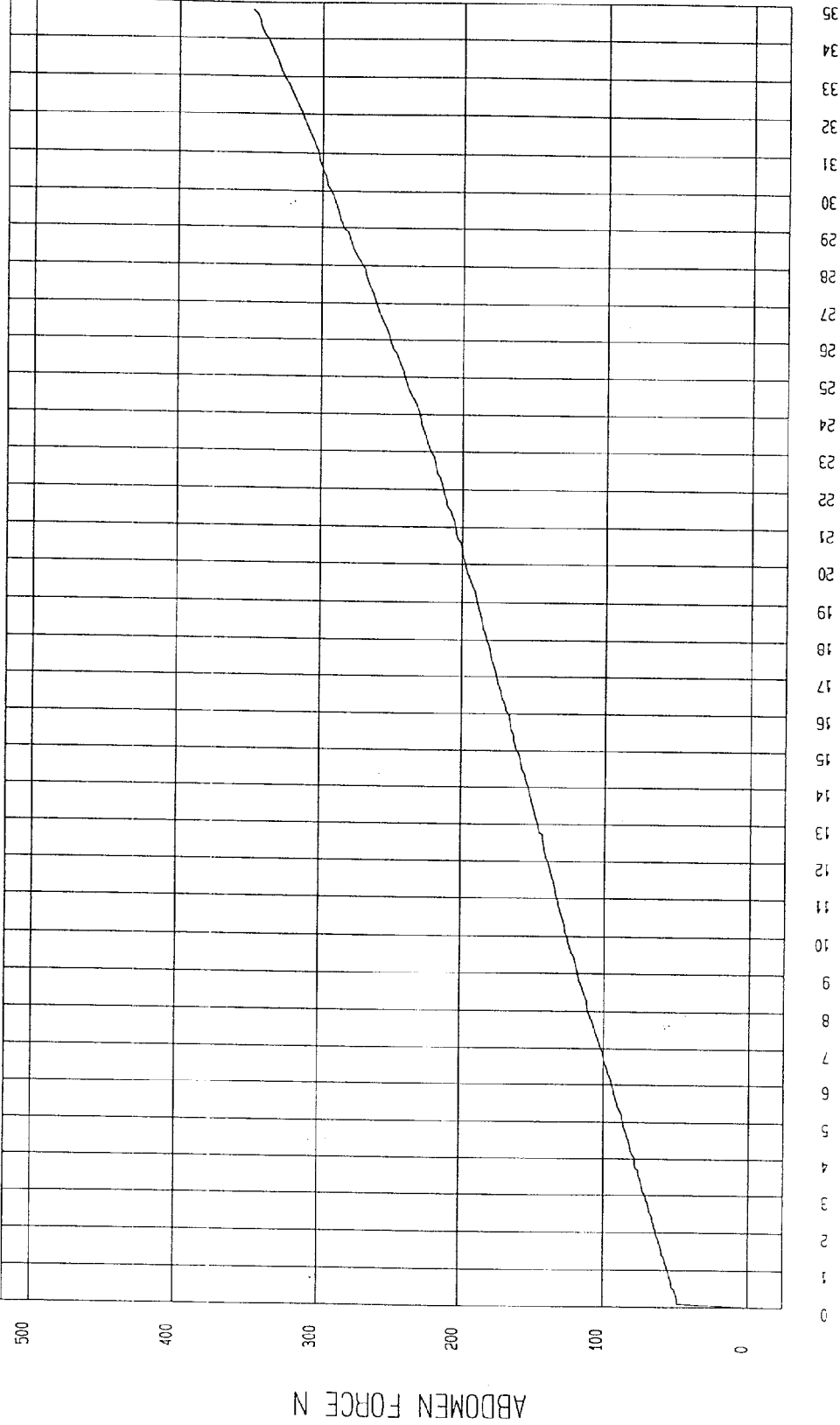
APPROVED BY



TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSION TEST DATE: 01-24-2000 - 16:19:43

COMPONENT: DUMMY # 048

ABDOMEN FORCE as a function of DISPLACEMENT



MCA Research
01-25-2000 10:09

MGA RESEARCH CORPORATION

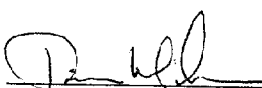
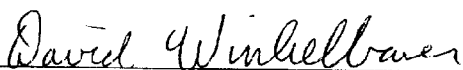
LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: January 24, 2000DUMMY SERIAL NUMBER: 048TEST NUMBER: D00175

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.0
RELATIVE HUMIDITY (%)	10 - 70	24
FORCE @ 0°	0 - 26.7	0
FORCE @ 20°	97.9 - 151.2	98.4
FORCE @ 30°	151.2 - 204.6	155.0
FORCE @ 40°	204.6 - 258.0	248.1
RETURN ANGLE	12° maximum	3

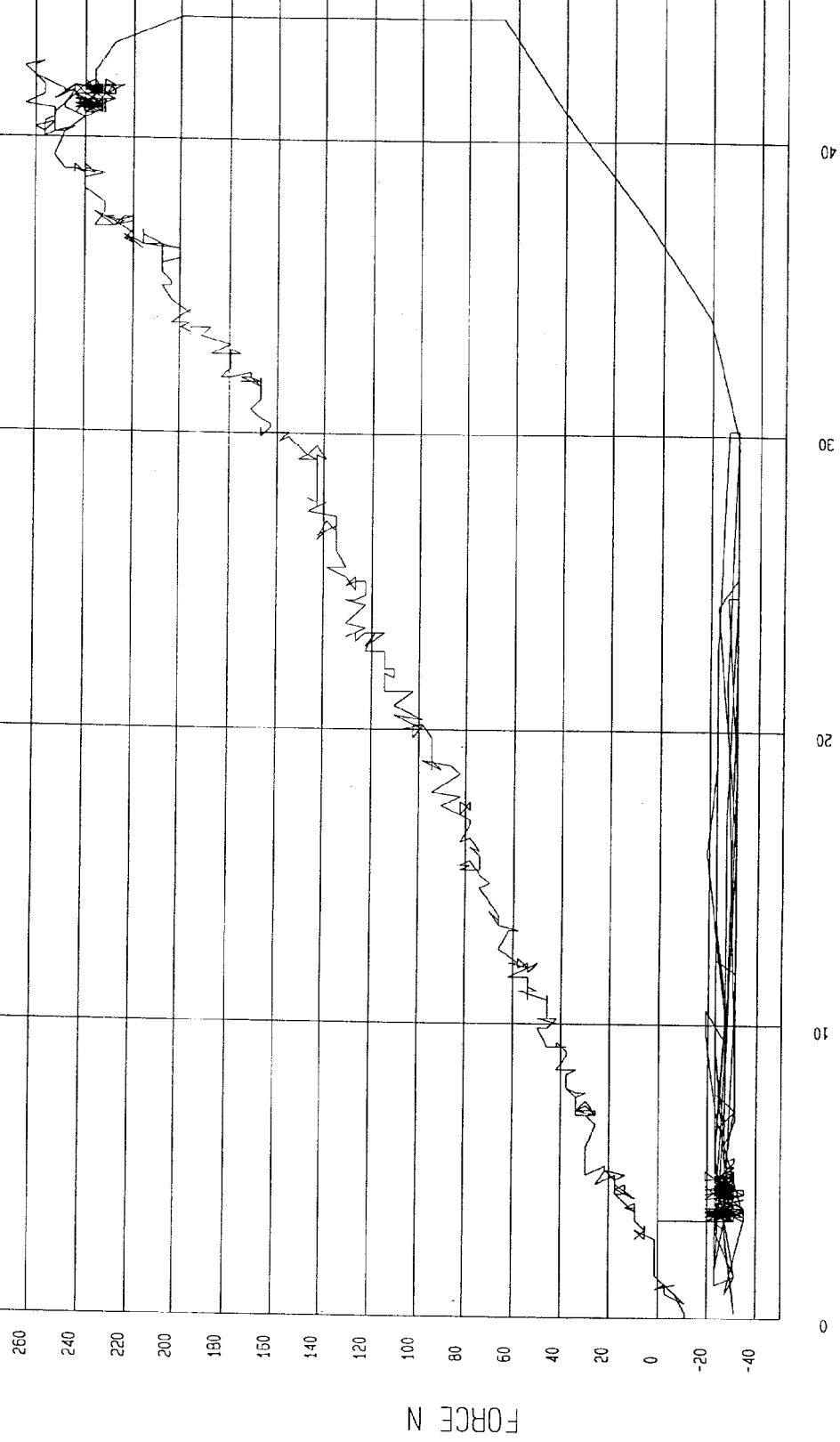
TEST MEETS SPECIFICATIONS

TECHNICIAN APPROVED BY 

TEST: DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 01-24-2000 - 15:38:08

COMPONENT: DUMMY # 048

FORCE as a function of TORSO ROTATION



POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Dummy Serial Number: 049

Inspected By: Tim Michnay

Date: January 24, 2000

<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

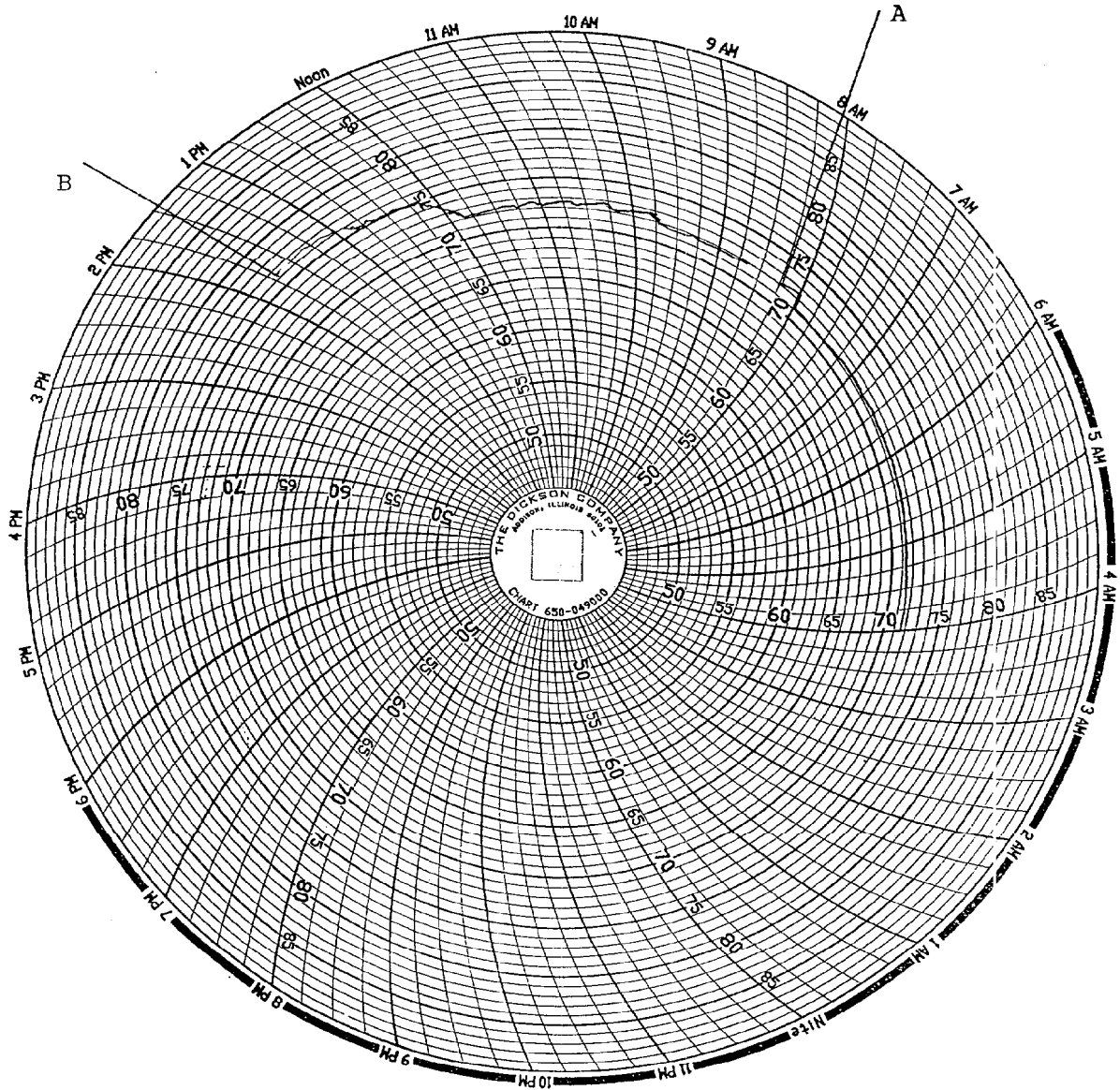
Dummy Serial Number: 048

Inspected By: Tim Michnay

Date: January 24, 2000

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
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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.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	ANBP7	Endevco	August 3, 1999
Lower Rib Y	J14120	Endevco	August 2, 1999
Lower Spine Y	J10431	Endevco	August 2, 1999
Pelvis Y	AJ417	Endevco	July 30, 1999
Upper Rib Redundant Y	AP1C6	Endevco	August 3, 1999
Lower Rib Redundant Y	APY16	Endevco	August 2, 1999
Lower Spine Redundant Y	AN9E3	Endevco	August 2, 1999
Pelvis Redundant Y	AGP20	Endevco	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-F10	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	I25-J08	Entran	August 16, 1999
Left Lower A-Post Y	E23-R06	Entran	August 17, 1999
Left Mid B-Post Y	H02-J04	Entran	November 22, 1999
Left Lower B-Post Y	K11-J17	Entran	December 8, 1999
Rear Floorpan Above Axle X	K11-J08	Entran	November 22, 1999
Rear Floorpan Above Axle Y	F07-A13	Entran	January 12, 2000
Rear Floorpan Above Axle Z	G01-J11	Entran	August 17, 1999
Driver Seat Track Y	J10-E14	Entran	August 6, 1999
Right Side Sill at Front Seat X	F11-G07	Entran	November 22, 1999
Right Side Sill at Front Seat Y	F11-G02	Entran	November 22, 1999
Right Side Sill at Front Seat Z	H02-J05	Entran	August 17, 1999
Right Side Sill at Rear Seat X	F12-G09	Entran	August 17, 1999
Right Side Sill at Rear Seat Y	J04-F12	Entran	August 17, 1999
Right Side Sill at Rear Seat Z	G13-B01	Entran	August 6, 1999

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Front Seat Y	G01-J09	Entran	December 8, 1999
Left Side Sill at Rear Seat Y	F12-G08	Entran	November 12, 1999
Rear Occupant Compartment Y	E10-F17	Entran	August 16, 1999
Vehicle CG X	F18-G03	Entran	August 16, 1999
Vehicle CG Y	G01-J04	Entran	December 8, 1999
Vehicle CG Z	K16-X04	Entran	October 22, 1999

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