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REPORT NO.: 214-MGA-98-06
SAFETY COMPLIANCE TESTING FOR FMVSS NO. 214
"SIDE IMPACT PROTECTION -
PASSENGER CARS"

NISSAN MOTOR CO., LTD.
1998 NISSAN MAXIMA 4 DOOR
NHTSA NO: CW5201

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: November 14, 1997

Report Date: November 25, 1997

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6115 (NSA-30)
WASHINGTON, D.C. 20590

TECHNICAL REPORT STANDARD TITLE PAGE

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4 Title and Subtitle Final Report of FMVSS No 214 Compliance Side Impact Protection Testing of a 1998 Nissan Maxima 4 Door NHTSA No CW5201		5 Report Date November 25, 1997 6 Performing Organization Code MGA
7 Author(s) John Fleck, Facility Director		8 Performing Organization Report No MGA-DOT-214-06
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 14 Sponsoring Agency Code NSA-30
15 Supplementary Notes		

16 Abstract

A 48/24 kph 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject 1998 Nissan Maxima 4 Door in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No TP- 214D-04 for the determination of FMVSS No 214 Side Impact Protection compliance The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on November 14, 1997

The impact velocity of the Moving Deformable Barrier (MDB) was 53 1 kph, and the ambient temperature at the struck side of the target vehicle at the time of impact was 21°C The target vehicle post test maximum crush was 397 mm at level 2 The test vehicle's performance follows

	DRIVER	LEFT REAR PASS
Left Upper Rib (LUR) Accel , g	45	48
Left Lower Rib (LLR) Accel g	45	62
Lower Spine (T_{12}) Accel , g	59	58
Thoracic Trauma Index (TTI)	52	60
Pelvis (PEV) Accel , g	80	71

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event

17 Key Words	18 Distribution Statement
Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID)	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 Attn Robert Hornickle

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Prepared By David Winkelbauer
David Winkelbauer, Project Engineer

Approved By John Fleck
John Fleck, Facility Director

Approval Date 12/23/97

FINAL REPORT ACCEPTED BY (OVSC)

Accepted By
Contract Technical Manager

Acceptance Date 1/14/98

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY 98 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 1998 Nissan Maxima 4 Door

This side impact test was conducted in accordance with the Vehicle Safety Compliance's FMVSS 214 test procedure (TP-214D-04, dated September 1, 1995)

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

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 1998 Nissan Maxima 4 Door was impacted on the left side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 33 mph (53 1 kph). 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 November 14, 1997 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 September 1. 1995 The side impact event was documented by nine high speed cameras Camera locations and other pertinent camera information can be found in this report

The SIDs were instrumented with the following accelerometers

1 Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2 Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3 Lower Thoracic Spine (T_{12}) 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
ITI (g)	52	60
Pelvis (g)	80	71

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
Left Mid B-Pillar

2 During impact, the aluminum honeycomb separated from the backing plate Since pre and post-test deformation measurements are taken from the backing plate, the deformation measurements do not compensate for this separation

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 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No.: CW5201 VIN JN1CA21A6WM803011

Vehicle Body Color: Green Build Date: 8-97

Engine Data 6 Cylinders, __ CID, 3 0 Liter, ___cc

Placement __ Longitudinal, X Lateral

Transmission 4 speed, __ Manual, X Automatic, X Overdrive

Final Drive _ Rear Wheel Drive, X Frt Wheel Drive, _ Four Wheel Drive

Odometer Reading 54 miles

Options X A/C, X Pwr Steering, X Pwr. Brakes, X Pwr Windows,

X Cruise Control, X Tilt Wheel, X Power Door Locks,

DATA FROM TIRE PLACARD

Tire Pressure (at capacity) 29 Psi FRONT

29 Psi REAR

Recommended Tire Size P205/65R15

Tires on Test Vehicle. P205/65R15 Manufacturer Yokahama

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 _Knob X Power

Vehicle Maximum Capacity Loading = 408 2 kg (A)

No of Occupants x 68 04 kg = 340 2 kg (B)

Cargo Capacity (A-B) = 68 0 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS

Right Front	= 445.0 kg	Right Rear	= 265.8 kg
Left Front	= 455.9 kg	Left Rear	= 265.8 kg
TOTAL FRONT	= 900.9 kg	TOTAL REAR	= 531.6 kg
% of Total Vehicle Weight	= 63 %,	% of Total Weight	= 37 %
TOTAL WEIGHT	= 1432.5 kg		

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style. 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT

Total Test Vehicle Delivered Weight with Maximum Fluids	= 1432 5 kg
Cargo Carrying Capacity of Test Vehicle	= 68.0 kg
Weight of 2 Side Impact Dummies (2 x 80 7 kg)	= 161 4 kg
TEST VEHICLE TARGET WEIGHT	= 1661 9 kg

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

Right Front	= 452 7 kg	Right Rear	= 331.6 kg
Left Front	= 506.2 kg	Left Rear	= 369.7 kg
TOTAL FRONT	= 958 9 kg	TOTAL REAR	= 701 3 kg
% of Total Weight	= 58 %	% of Total Weight	= 42 %

TOTAL TEST WEIGHT = 1660 2 kg

TEST VEHICLE ATTITUDE

CURB WEIGHT ATTITUDE

Right Front 711 mm Left Front 711 mm Right Rear 728 mm Left Rear 715 mm

FULLY LOADED WEIGHT ATTITUDE

Right Front 704 mm Left Front 691 mm Right Rear 695 mm Left Rear 667 mm

TEST ATTITUDE

Right Front 701 mm Left Front 692 mm Right Rear 695 mm Left Rear 671 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase 2700 mm

C G As Tested = 1117 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH

Right Side = 4579 mm

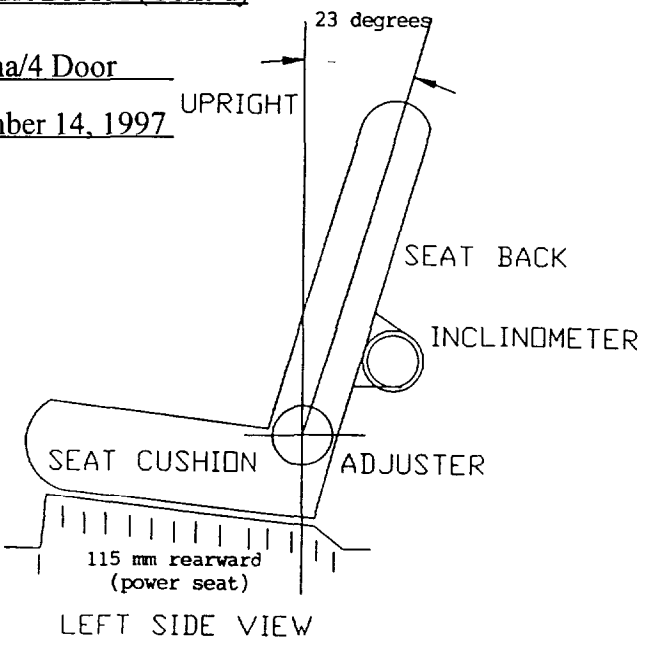
Centerline = 4821 mm

Left Side = 4579 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997



FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel 230 mm

Test Position 115 mm rearward (power seat)

FRONT SEAT BACK ADJUSTMENT POSITION

Seat Back Angle = 23°

REAR POSITION SEAT.

Total Length of Fore/Aft Adjustment Travel Non-Adjustable

Seat Back Adjustment Position Non-Adjustable

ADJUSTABLE STEERING COLUMN POSITION Mid

WINDOW POSITIONS Left Front Closed Left Rear Closed

Right Front Open Right Rear Open

AMOUNT OF STODDARD SOLVENT IN FUEL TANK

Fuel system usable capacity = 70 liters

Test Volume 64.4 liters 92 % of capacity

LOCATIONS OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED

Wheelbase = 2700 mm

Impact Point is 410 mm rearward of front axle centerline

DATA SHEET NO 2

TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

Overall Length = 4821 mm, Overall Width = 1768 mm

TEST WEIGHT

Right Front = 466 3 kg Right Rear = 325 2 kg

Left Front = 503 0 kg Left Rear = 359 7 kg

TOTAL FRONT = 969 3 kg TOTAL REAR = 684 9 kg

% of Total Weight = 59 % % of Total Weight = 41 %

TOTAL VEHICLE WEIGHT = 1654 2 kg

Wheelbase = 2700 mm

Longitudinal C G from Center of Front Axle = 1117 mm

Impact Angle with Respect to Impactor = 90° degrees

MAXIMUM EXTERIOR STATIC CRUSH

1 LEVEL 1 (265 mm above ground) = 232 mm

2 LEVEL 2 (475 mm above ground) = 397 mm

3 LEVEL 3 (602 mm above ground) = 384 mm

4 LEVEL 4 (867 mm above ground) = 280 mm

5 LEVEL 5 (1294 mm above ground) = 71 mm

Maximum Post-Test Intrusion = 397 mm

OCCUPANTS	Left Front Passenger	Left Rear Passenger
Type of Dummy	SID	SID
Restraints Used	type II belt with frontal and side airbag	type II belt

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION

Number of Vehicle Data Channels:		= 19
Number of Cameras:	Onboard Vehicle	= 3
	Offboard Vehicle	= 4
	Deformable Barrier	= 2
	TOTAL	= 9

DATA SHEET NO 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

POSITION OF IMPACT (MDB) ON MONORAIL

Crabbed 27° to left

MDB DETAILS

Overall Width of Framework Carriage	= 1252 mm
Overall Length of MDB (incl honeycomb impact face)	= 4115 mm
Wheelbase of Framework Carriage	= 2591 mm
Tread of Framework Carriage (Front & Rear)	= 1880 mm
C G Location Rearward of Front Axle	= 1105 mm
C G Location From Center Line	= -12 mm
C G Location Above Ground Level	= 484 mm

MDB WEIGHT

Left Front	= 440 1 kg	Left Rear	= 246 6 kg
Right Front	= 338 2 kg	Right Rear	= 331 9 kg
TOTAL FRONT = 778 3 kg		TOTAL REAR = 578 5 kg	

TOTAL MDB WEIGHT = 1356 8 kg

Impact Angle (MDB C/L to Target Vehicle C/L) = 90° degrees

Impact Speed = Primary 32 99 mph (53 1 kph) Secondary 33 06 mph (53 2 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE *

1.	Row A Top of Stack (813 mm)	=	151 mm
2	Row B Mid Stack (686 mm)	=	56 mm
3	Row C Top of Bumper (533 mm)	=	11 mm
4	Row D Center of Bumper (432 mm)	=	52 mm

INSTRUMENTATION

Number of MDB Data Channels = 5

* See test notes

DATA SHEET NO 4

POST-TEST OBSERVATIONS

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

VISIBLE DUMMY CONTACT POINTS

	LEFT FRONT SID	LEFT REAR SID
Head	to D-ring & headrest	to C-Post
Arm	to inflated airbag	to door
Pelvis	to armrest	to armrest
Left Knee	to mid door	to door
Right Knee	to left knee	to left knee

DOOR OPENING

	LEFT SIDE	RIGHT SIDE
Front	remained closed	remained closed
Rear	N/A	N/A

MDB DISTANCE FROM TARGET IMPACT POINT

Horizontal 12 mm rearward Vertical 2 mm high

ARM REST LOCATIONS

Front 249 mm from bottom of window

Rear 241 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH

Front Seat Back 27 mm Front Seat Cushion 103 mm

Left Rear Seat Back 94 mm Rear Seat Cushion 226 mm

GLAZING DAMAGE

Windshield cracked and impact side door glass broken

PILLAR PERFORMANCE

None noted

SILL SEPARATION

Seam ripped 82 mm, 700 mm forward of rear axle

FRONTAL AIRBAGS

Driver Deployed No Passenger Deployed No

OTHER NOTABLE IMPACT EFFECTS

Side airbag (driver) deployed properly

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO 5

SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1998/Nissan/Maxima/4 Door

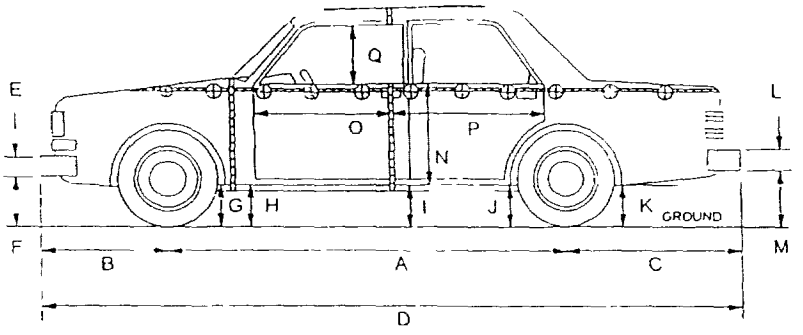
Vehicle NHTSA No CW5201 Test Date November 14, 1997

	Front SID ID #048				Rear SID ID #049			
	Pos. Direct		Neg. Direct		Pos Direct		Neg Direct	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y	45 4	34	18 3	76	47 7	49	4 3	151
Left Lower Rib (LLR) Y	45 4	32	14.5	76	61 9	48	11.2	84
SPINE ACCELERATIONS								
Lower Lateral Y	59 2	37	12 1	91	57.9	47	26.4	79
PELVIS ACCELERATIONS								
Lateral Y	79 8	28	23 2	52	70.6	34	15 5	63

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
E & L = Bumper Thickness

J1 = To Pinch Weld
J2 = To Sill

ALL MEASUREMENTS IN (mm)

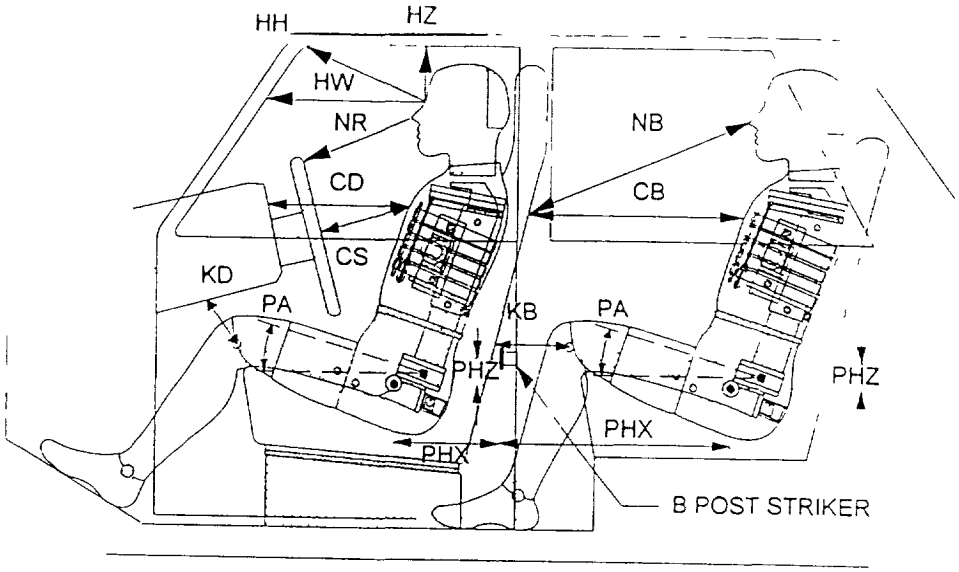
	PRE-TEST	POST-TEST	Δ CHANGE
A	2700	2659	41
B	1032	983	49
C	1089	1090	1
D	4821	4732	89
E	210	210	0
F	362	272	90
G	192	192	0
H	197	214	17
I	184	236	52
J1/J2	180/178	185/220	5/42
K	224	225	1
L	281	281	0
M	300	303	3
N	653	528	125
O	777	728	49
P	1143	1345	202
Q	421	398	23
R	4579	4573	6
S	4579	4516	63
T	1768	1574	194

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1998/Nissan/Maxima/4 Door

NHTSA NO.: CW5201 Test Date: November 14, 1997



NOTE: All dimensions are in mm with tolerance of ± 3 mm

	FRONT PASSENGER ID #048
HH	402
HW	678
HZ	145
NR	538
CD	610
CS	404
KDL (KDA°)	198 (23 6°)
KDR (KDA°)	182 (25 4°)
PA°	23.4°
PHX	228
PHZ	162

	REAR PASSENGER SID ID #049
HZ	124
NB	625
CB	520
KBL (KBA)	193 (0°)
KBR (KBA)	192 (0°)
PA°	24 0°
PHX	318
PHZ	332

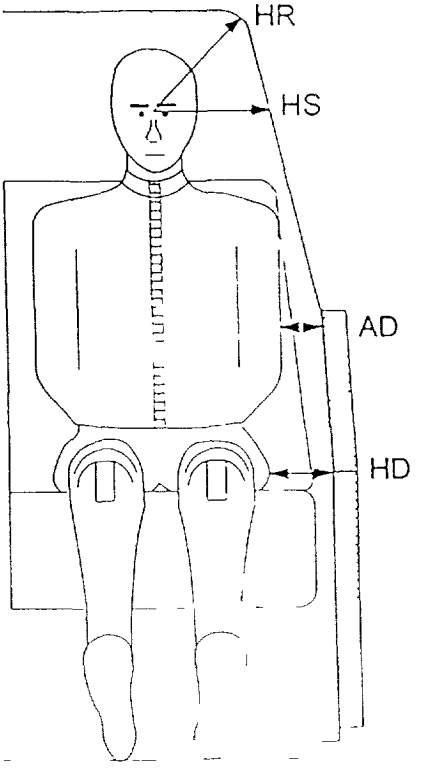
NOTE 2-door vehicle shown Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point

DATA SHEET NO 8

SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

NHTSA NO CW5201 Test Date November 14, 1998



NOTE All dimensions are in mm

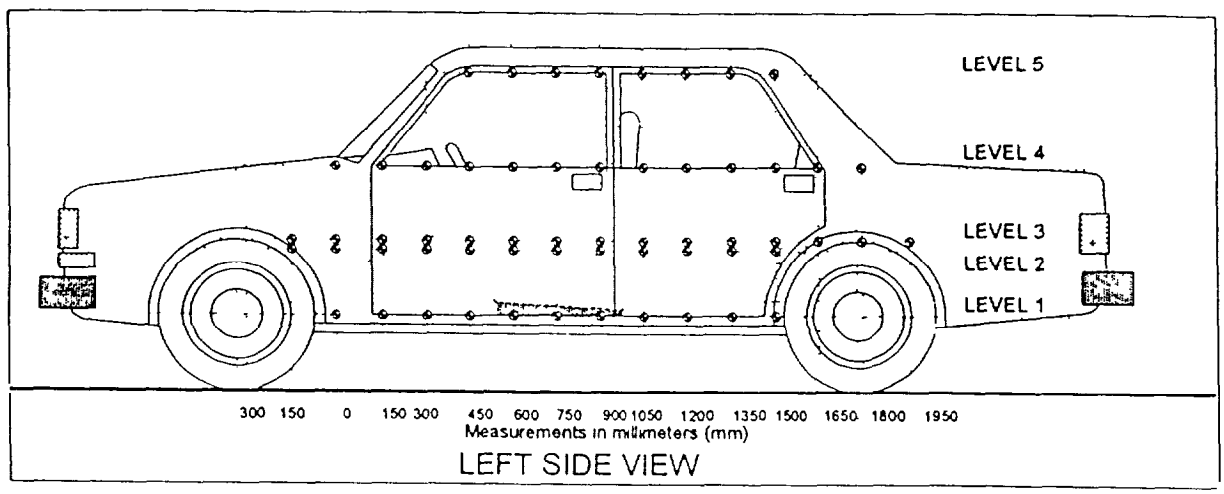
	FRONT PASSENGER ID #048	REAR PASSENGER ID #049
HR	210	218
HS	330	238
AD	112	141
HD	148	180

DATA SHEET NO 9

VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style. 1998/Nissan/Maxima/4 Door

NHTSA NO. CW5201 Test Date November 14, 1997



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

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

MEASUREMENTS ALONG THE VERTICAL 750 mm LINE SHOWN ABOVE

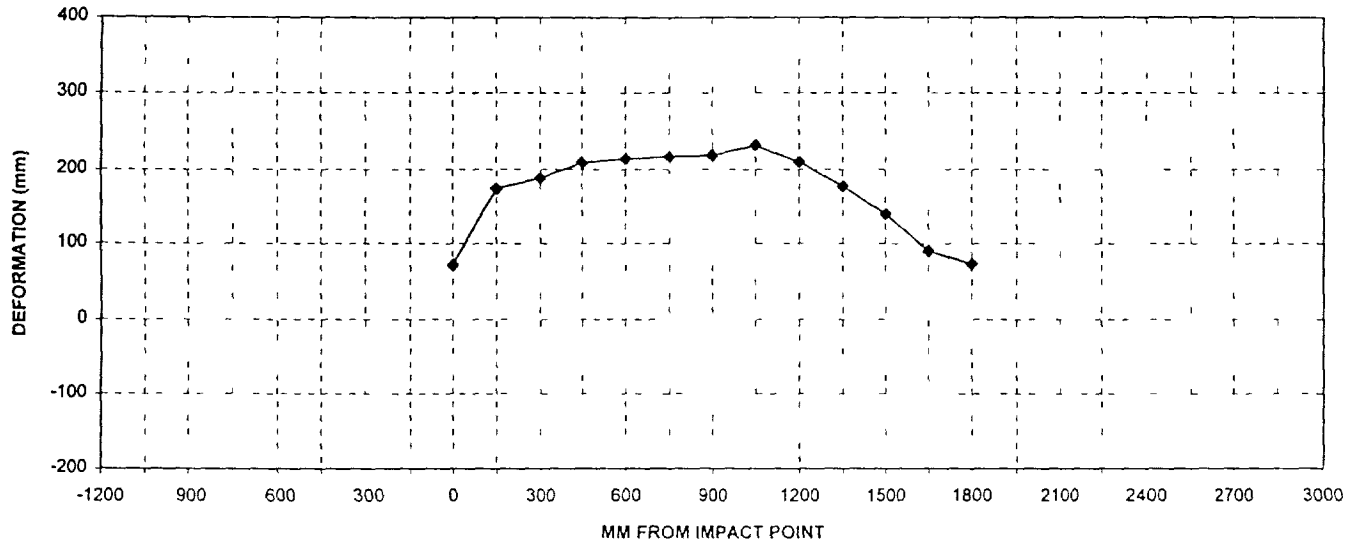
Level 1 @ Axle Centerline Height (or Sill Top Height)	= 265	mm
Level 2 @ Occupant H-Point	= 475	mm
Level 3 @ Mid Door	= 602	mm
Level 4 @ Window Sill	= 867	mm
Level 5 @ Window Top	= 1294	mm

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	779	850	71
150	779	953	174
300	779	967	188
450	779	988	209
600	779	993	214
750	779	996	217
900	779	998	219
1050	779	1011	232
1200	779	989	210
1350	779	956	177
1500	779	918	139
1650	779	869	90
1800	779	852	73
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



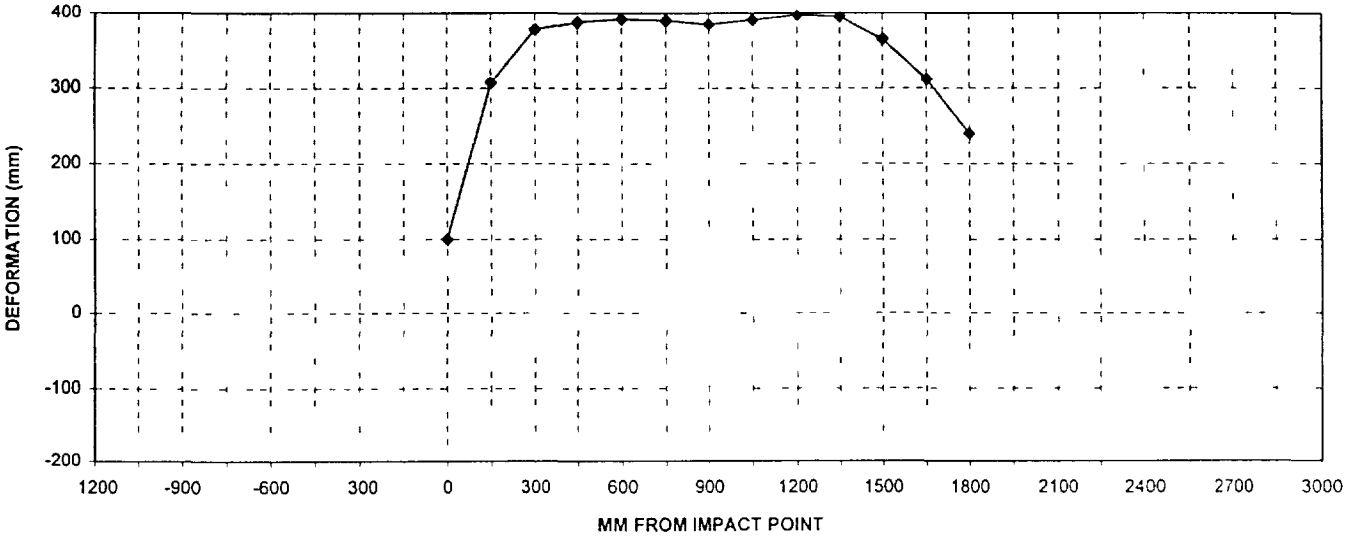
LEVEL 1 - AXLE CENTERLINE

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

	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)	726	826	100
150	726	1033	307
300	726	1104	378
450	726	1114	388
600	726	1118	392
750	726	1116	390
900	726	1111	385
1050	726	1117	391
1200	725	1122	397
1350	725	1120	395
1500	725	1090	365
1650	725	1037	312
1800	725	966	241
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)



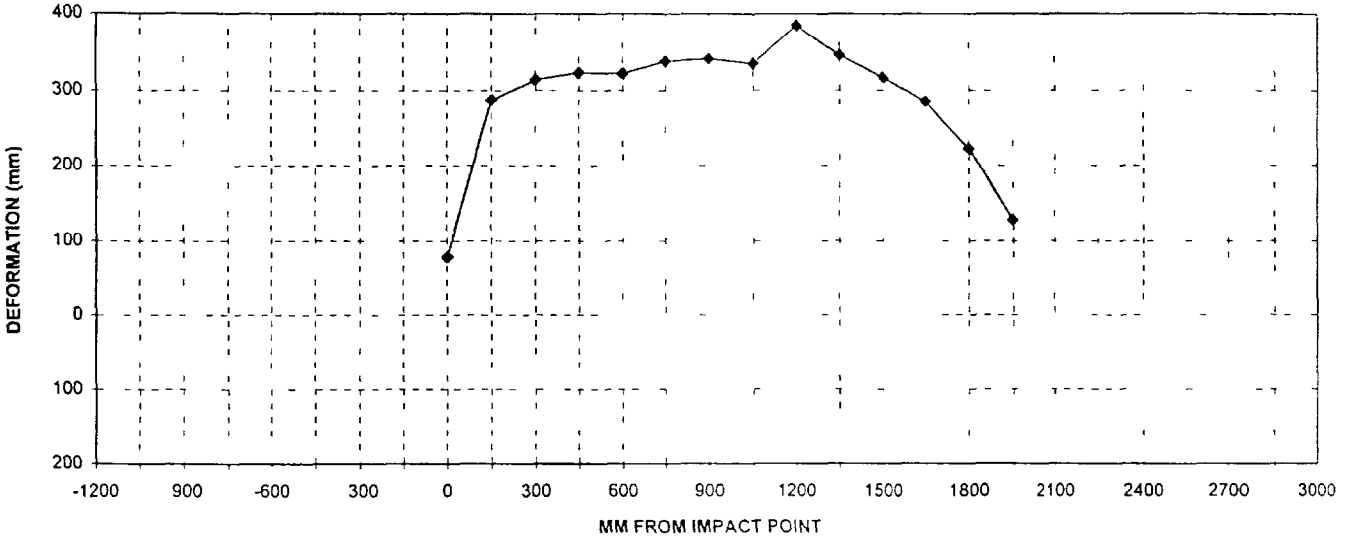
LEVEL 2 - OCCUPANT H-POINT

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

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)	720	798	78
150	720	1007	287
300	720	1034	314
450	720	1043	323
600	719	1041	322
750	719	1057	338
900	719	1060	341
1050	719	1054	335
1200	720	1104	384
1350	720	1066	346
1500	720	1037	317
1650	720	1005	285
1800	719	941	222
1950	718	846	128
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)



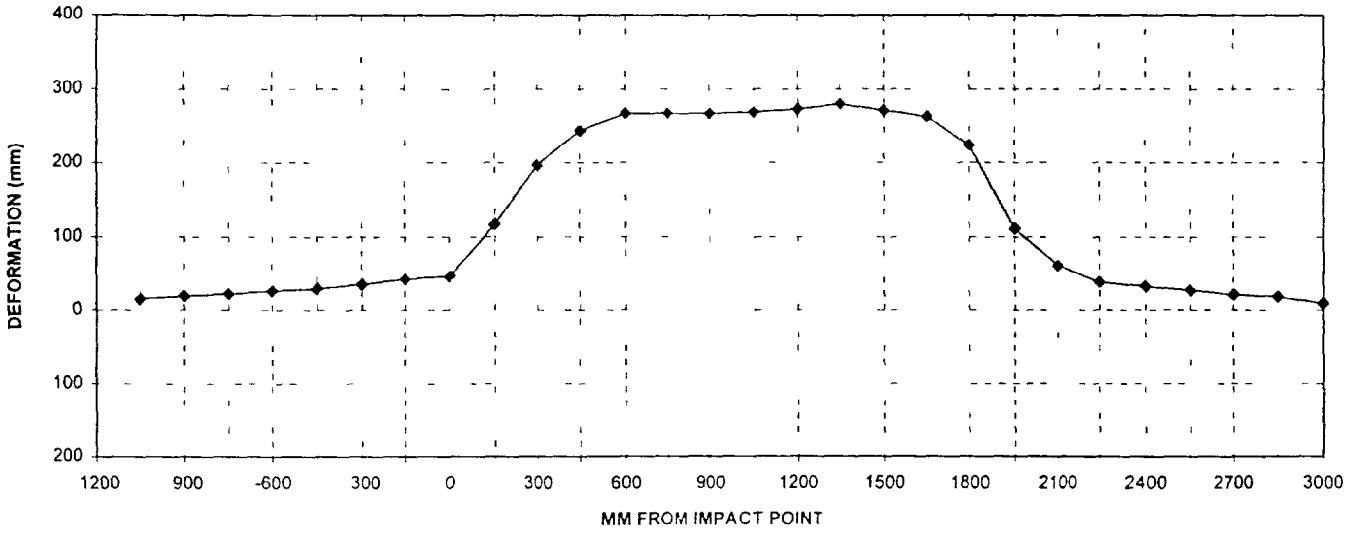
LEVEL 3 - MID DOOR

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	856	871	15
-900	819	838	19
-750	797	819	22
-600	777	803	26
-450	770	799	29
-300	762	797	35
-150	760	802	42
0 (impact point)	756	802	46
150	757	874	117
300	755	951	196
450	756	1000	244
600	754	1021	267
750	754	1021	267
900	757	1024	267
1050	760	1029	269
1200	760	1033	273
1350	760	1040	280
1500	760	1031	271
1650	761	1024	263
1800	760	984	224
1950	760	871	111
2100	761	822	61
2250	770	808	38
2400	774	806	32
2550	786	813	27
2700	795	816	21
2850	813	831	18
3000	832	841	9

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



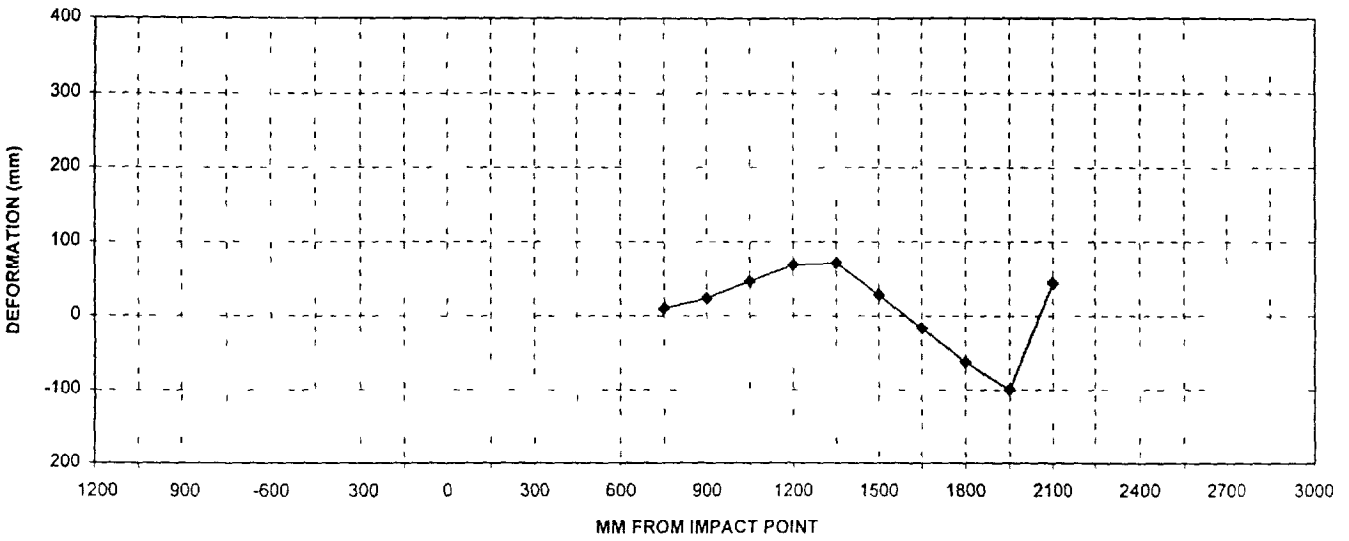
LEVEL 4 - WINDOW SILL

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

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	976	986	10
900	980	1003	23
1050	983	1029	46
1200	983	1051	68
1350	983	1054	71
1500	983	1011	28
1650	983	966	-17
1800	982	919	-63
1950	990	890	-100
2100	990	1034	44
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)



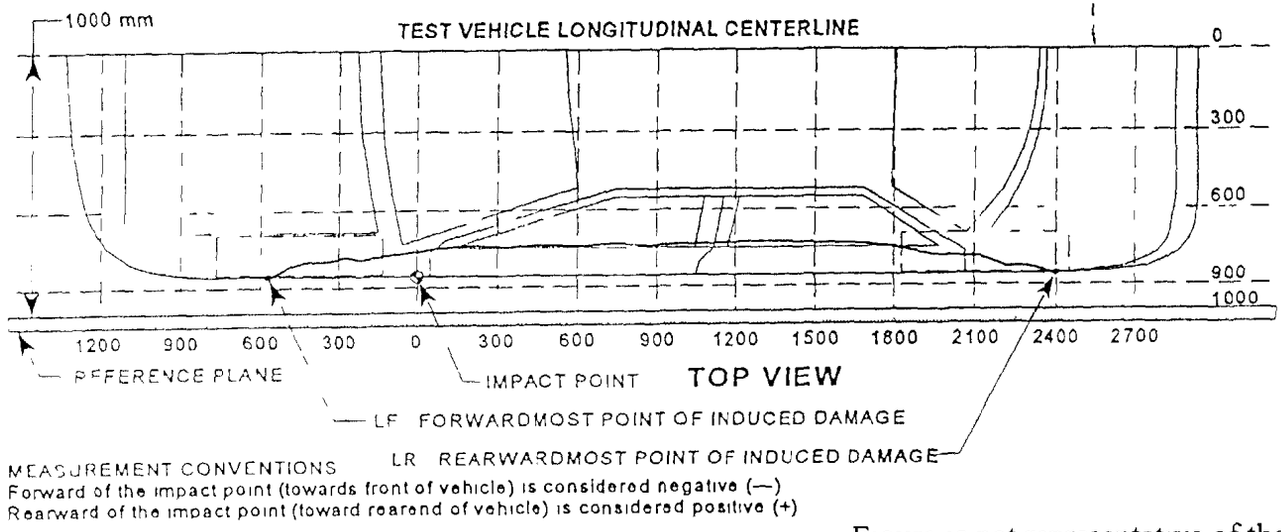
LEVEL 5 - WINDOW TOP

DATA SHEET NO 11
VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

NHTSA NO CW5201 Test Date November 14, 1997

NOTE All measurements are in millimeters (mm) and should be accurate to ± 3mm



MEASUREMENT CONVENTIONS
Forward of the impact point (towards front of vehicle) is considered negative (—)
Rearward of the impact point (toward rearend of vehicle) is considered positive (+)

Figure is not representative of the actual test configuration

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1 (LF = -1050 mm)	856	856	0
2 -260 mm	762	794	32
3 500 mm	726	1021	295
4 1300 mm	725	1126	401
5 2220 mm	770	778	8
6 (LR = 3000 mm)	832	832	0

DATA SHEET NO 12

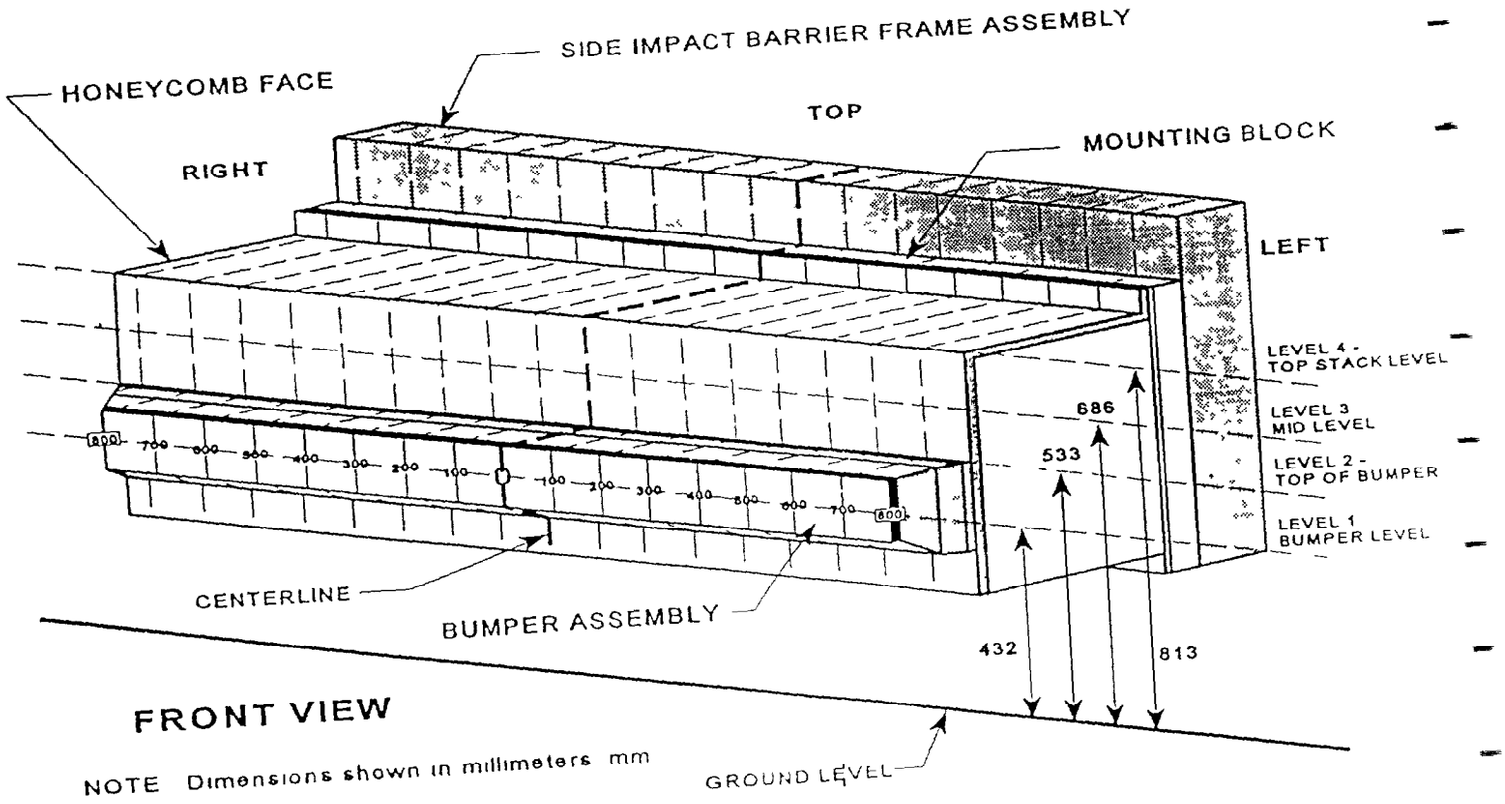
EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

Year/Make/Model/Body Style. 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No. CW5201 Test Date: November 14, 1997

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height at CL*	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	39	1	-4	-5	-6	-6	-4	-4	-3	-1	1	1	2	26	62	96	150
Mid Level Level 3	686 mm	4	-7	-6	-7	-7	-6	-6	-6	-6	-5	-5	-5	-4	-4	-1	19	56
Top Bumper Level 2	533 mm	9	-10	-14	-13	-13	-12	-11	-13	-11	-11	-11	-11	-11	-10	-6	1	11
Mid Bumper Level 1	432 mm	52	28	10	12	22	11	8	6	5	6	5	5	4	4	4	15	11

See next page for Barrier Face Graphic

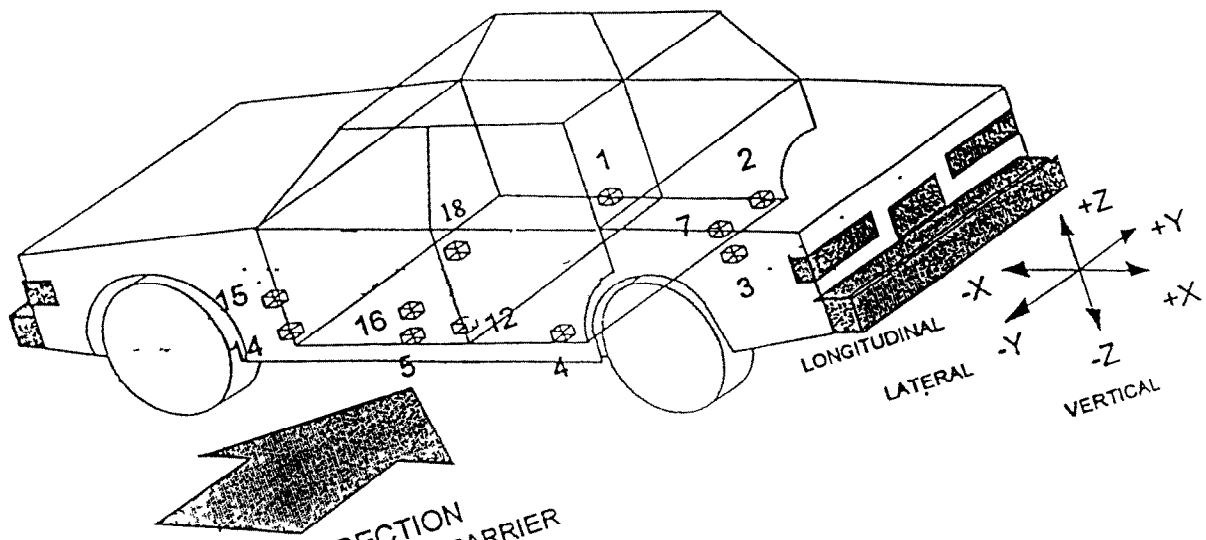

SIDE IMPACT BARRIER FRAME ASSEMBLY
HONEYCOMB FACE
TOP
MOUNTING BLOCK
RIGHT
LEFT
LEVEL 4 -
TOP STACK LEVEL
686
LEVEL 3
MID LEVEL
533
LEVEL 2 -
TOP OF BUMPER
LEVEL 1
BUMPER LEVEL
CENTERLINE
BUMPER ASSEMBLY
432
813
FRONT VIEW
NOTE Dimensions shown in millimeters mm
GROUND LEVEL

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No.: CW5201 Test Date: November 14, 1997



1 - Right Side Sill @ Front Seat
2 - Right Side Sill @ Rear Seat
3 - Rear Floorpan Above Axle
4 - Left Side Sill @ Rear Seat
5 - Left Side Sill @ Front Seat

7 - Right Rear Occupant Compartment
12 - Left Lower B-Post
14 - Left Lower A-Post
15 - Left Middle A-Post
16 - Front Seat Track
18 - Vehicle C G

DATA SHEET NO 13 (Cont'd)

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

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	Max
1	Right Side Sill @ Front Seat	2616	710	221	3 9	2 2	16 2	2 6	3 7	7 5	16 7
2	Right Side Sill @ Rear Seat	1641	712	225	2 8	3.3	20 1	3 3	4 3	7 1	21 2
3	Rear Floorpan Above Axle	156	0	427	4 2	5 0	16 4	3 0	6 2	10 1	17 4
4	Left Side Sill @ Rear Seat	1647	-712	288	---	---	27 0	3 0	---	---	---
5	Left Side Sill @ Front Seat	2654	-710	224	---	---	33 2	5 2	---	---	---
7	Right Rear Occupant Compartment	1802	382	313	---	---	19 3	2 0	---	---	---
12	Left Lower B-Post	2113	-724	308	---	---	60 0	30 2	---	---	---
14	Left Lower A-Post	3152	-706	319	---	---	112 8	66 4	---	---	---
15	Left Mid A-Post	3242	-814	800	---	---	20 9	1 5	---	---	---
16	Driver Seat Track	1282	-580	194	---	---	132 4	53 9	---	---	---
18	Vehicle CG	2582	-10	370	5 0	10 0	35 2	8 9	27 3	14 2	44 8

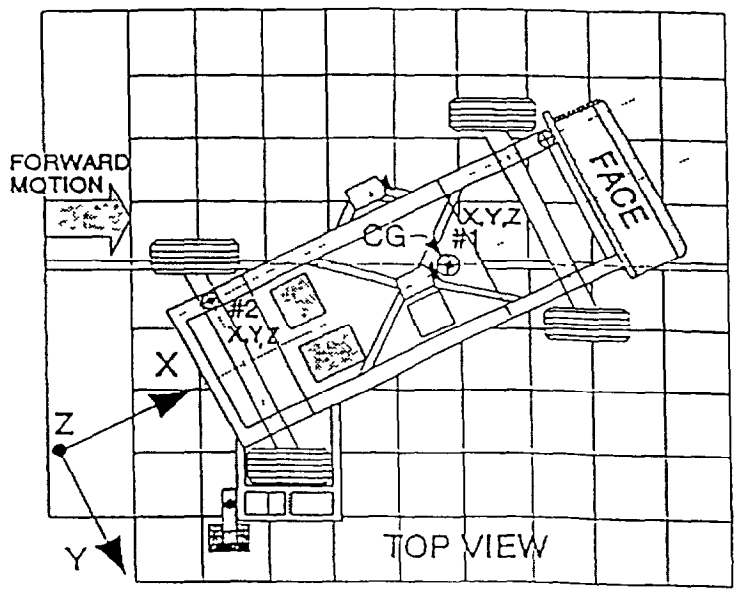
*Reference X - Rear Bumper (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No . CW5201 Test Date: November 14, 1997



Accel No	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1 4	138	15 6	31
	Lateral (Y)	---	---	---	2 2	72	4 7	44
	Vertical (Z)	---	---	---	26 0	48	26 3	42
	Resultant (R)	---	---	---	30 1	42		
2	Rear Frame Member	-2591	625	622				
	Longitudinal (X)	---	---	---	1 6	183	19 3	37
	Lateral (Y)	---	---	---	3 6	33	1 4	72

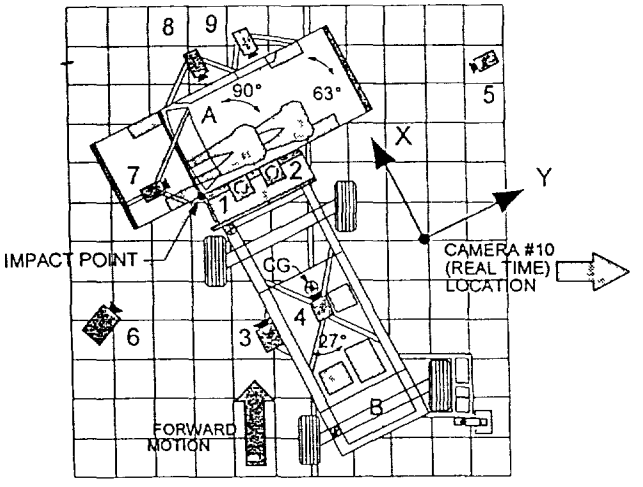
*Reference X - Front Axle (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO 15

HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997



Camera No	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time					13	24
6	Left Impact	-570	-2380	1635		13	1005
7	Onboard Hood					13	985
8	Onboard Front Occupant					8	930
9	Onboard Rear Occupant					8	1212
5	Right Impact	-730	10250	1640		25	1005
2	Top Overall	0	1320	5000		8	1061
1	Top Impact	-330	0	5000		13	926
4	Cart Overall					13	1010
3	Cart Impact					35	913

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

DATA SHEET 16

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

TEST REQUIREMENTS

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

TEST VEHICLE IMPACT TYPE: X Left Side Impact MDB 32 0 mph (53 1 kph)

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATION(S) None

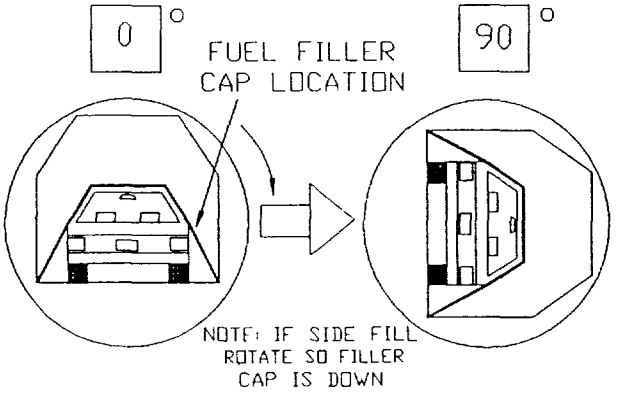
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

TEST PHASE 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD.

Rollover Fixture 90° Rotation Time = 2 minutes 37 seconds

(Spec Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 37 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

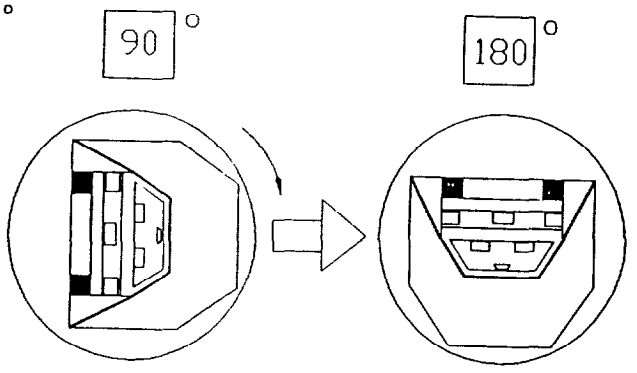
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No · CW5201 Test Date: November 14, 1997

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 29 seconds

(Spec Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 29 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT

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

FUEL SPILLAGE LOCATIONS(S) None

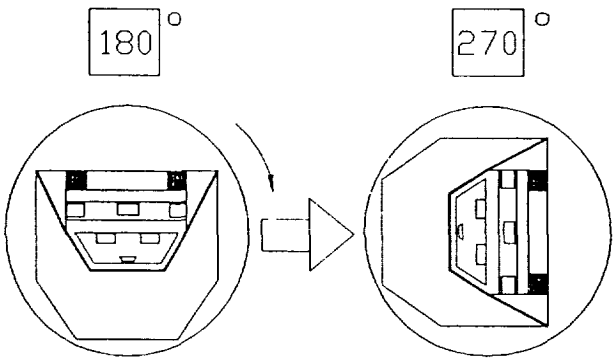
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No CW5201 Test Date November 14, 1997

TEST PHASE 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD

Rollover Fixture 90° Rotation Time = 2 minutes 15 seconds

(Spec Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 15 seconds

Next Whole Minute Interval = 8 minutes

FUEL 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

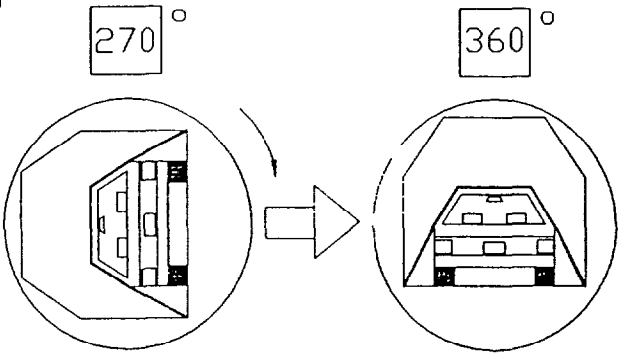
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style 1998/Nissan/Maxima/4 Door

Vehicle NHTSA No. CW5201 Test Date November 14, 1997

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD

Rollover Fixture 90° Rotation Time = 2 minutes 40 seconds

(Spec Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 40 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT

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

FUEL SPILLAGE LOCATIONS(S) None

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

A-1

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

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

Photo No. A-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

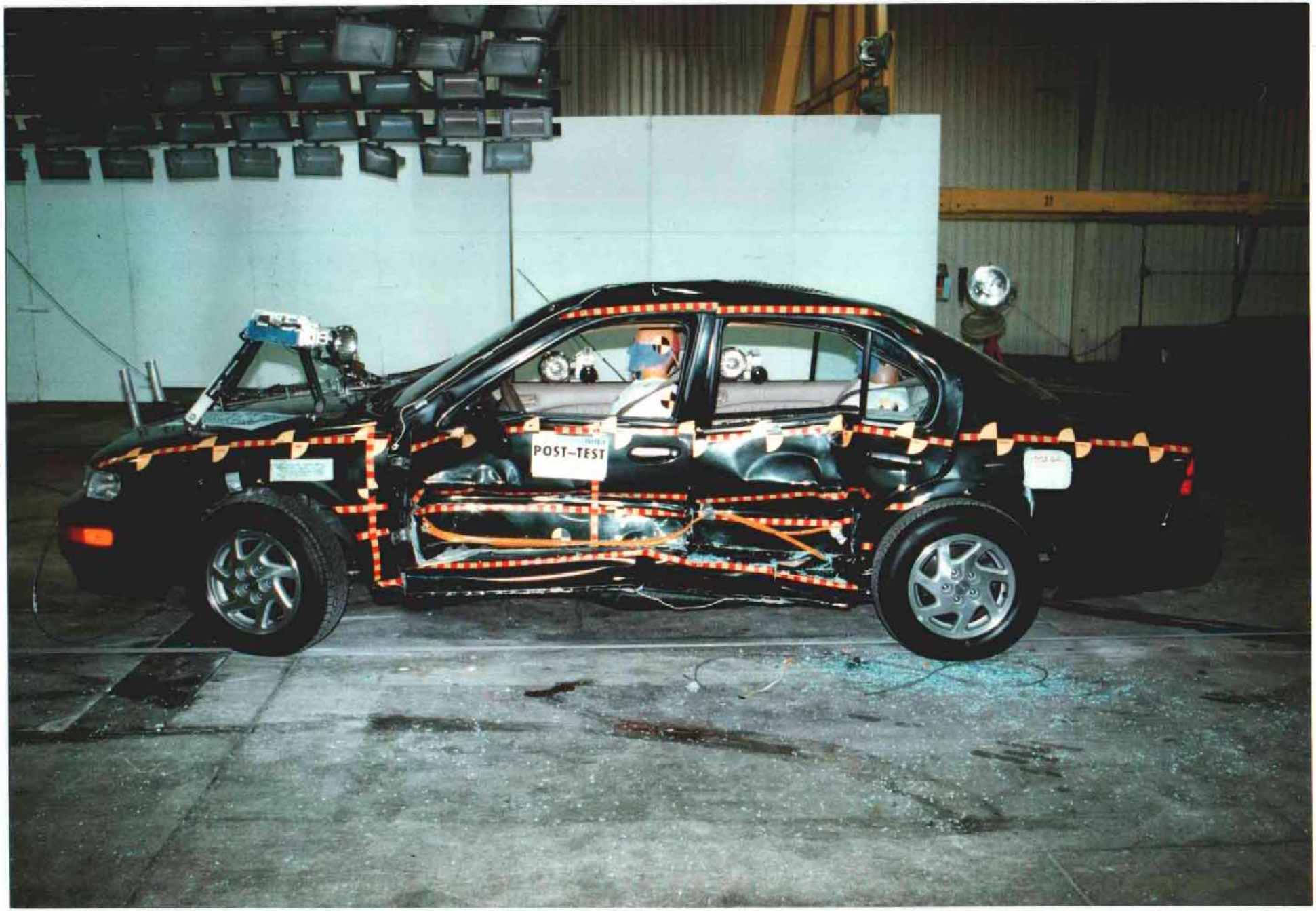


Photo No. A-5 - Post-Test Left Side View of Test Vehicle

Photo No. A-6 - Pre-Test MDB Positioned Against Vehicle (left side)

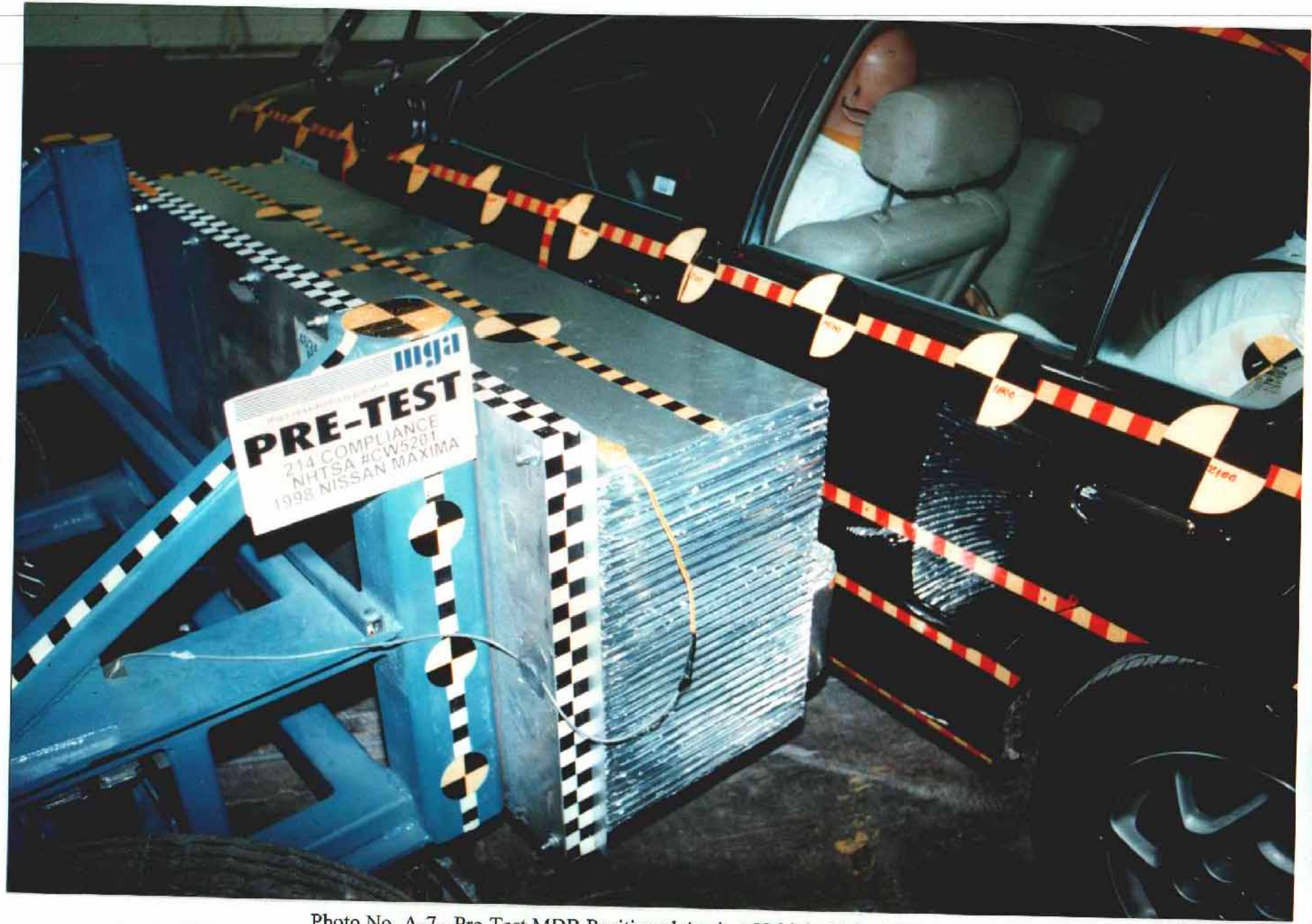


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (right side)

Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle Overhead View

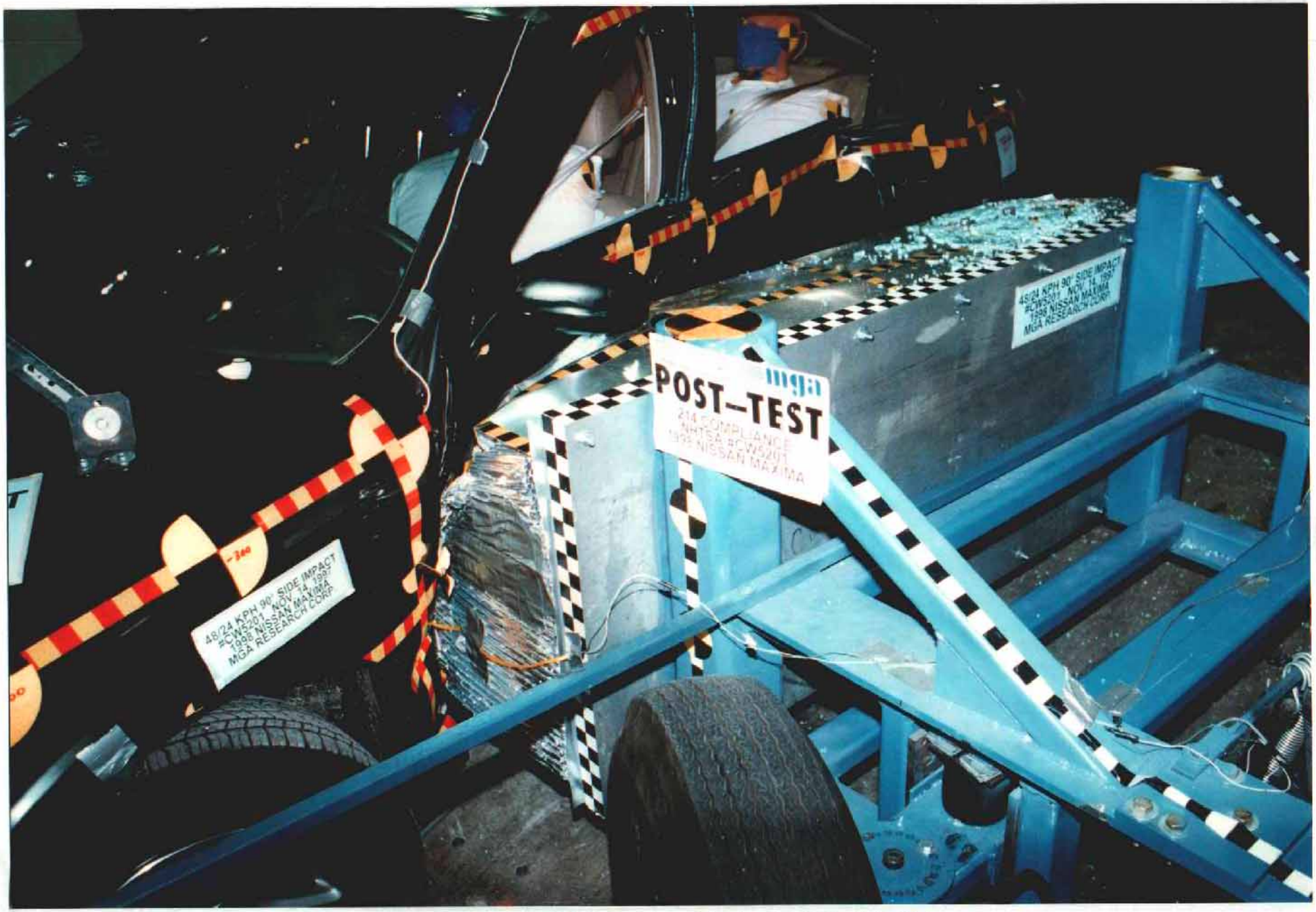


Photo No. A-9 - Post-Test MDB Positioned Against Vehicle (left side)

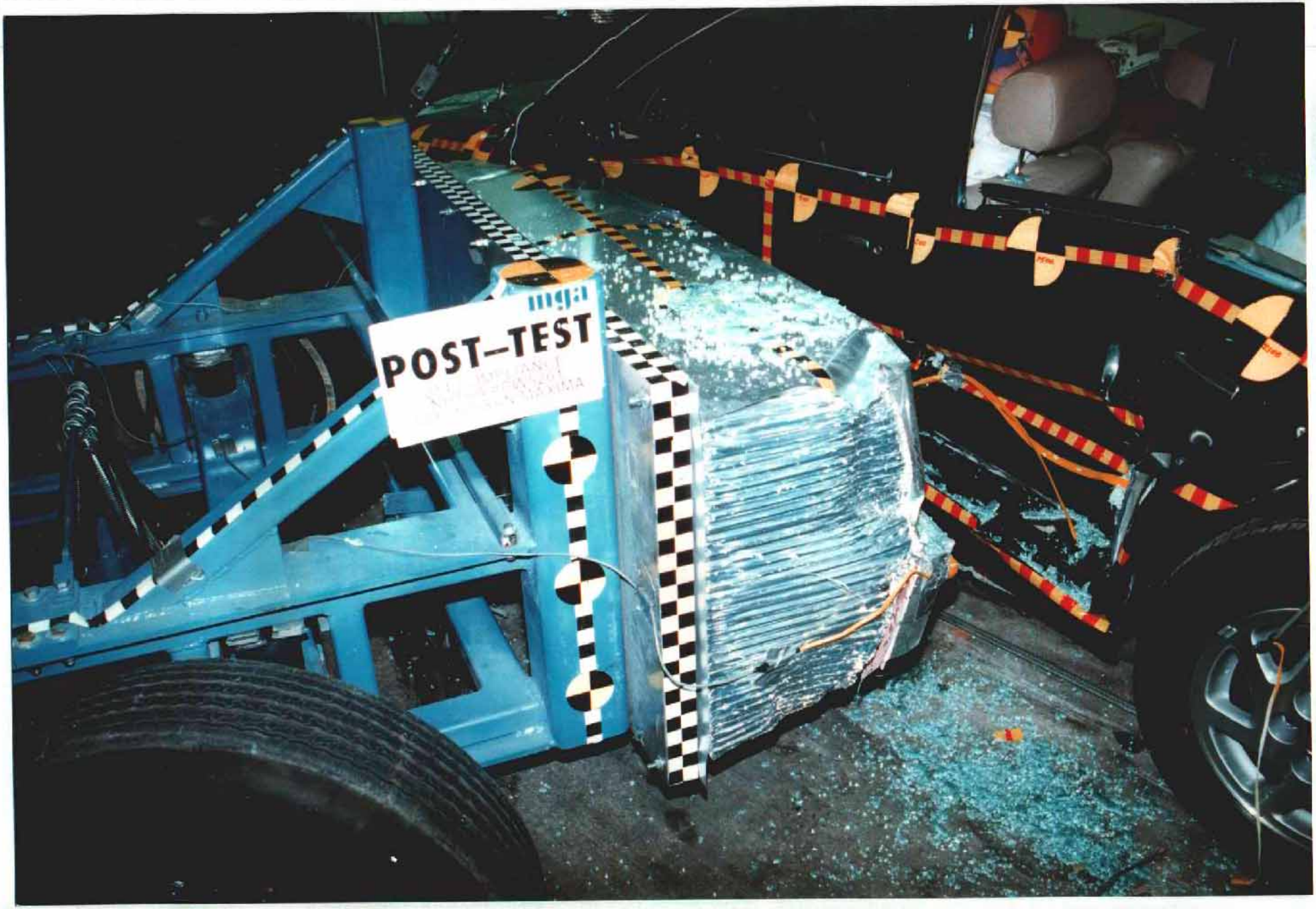


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (right side)

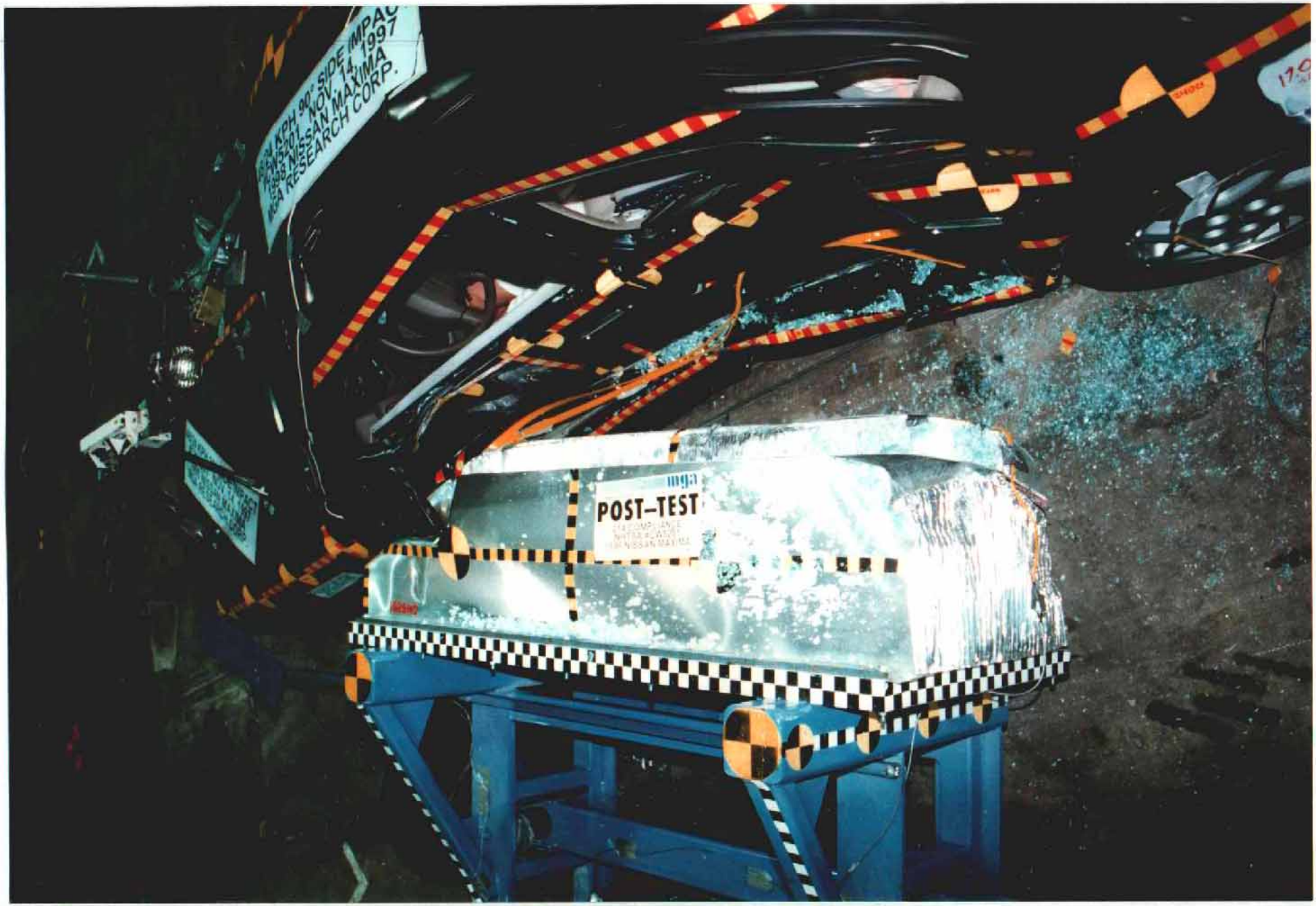


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle Overhead View

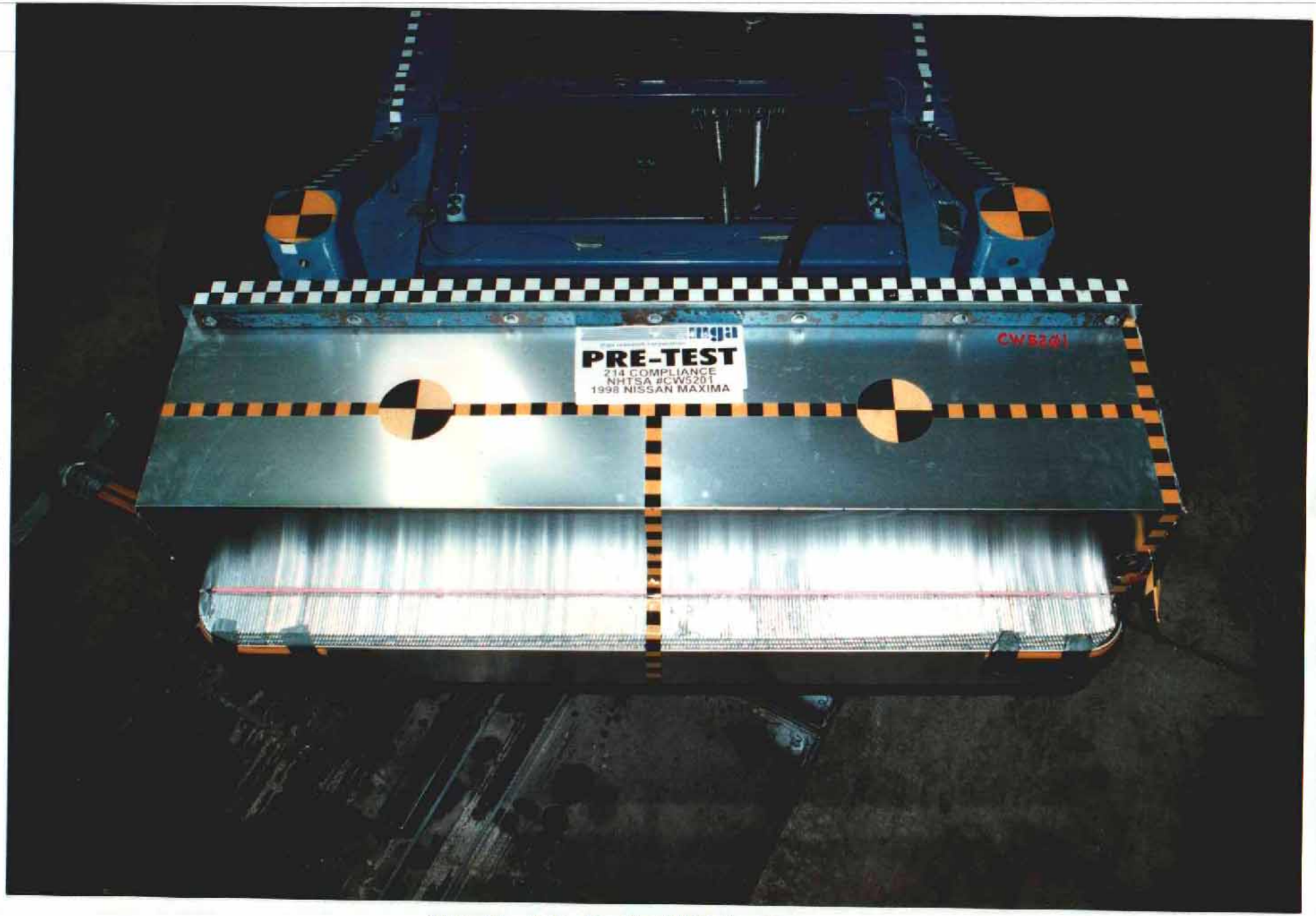


Photo No. A-12 - Pre-Test MDB Top View

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

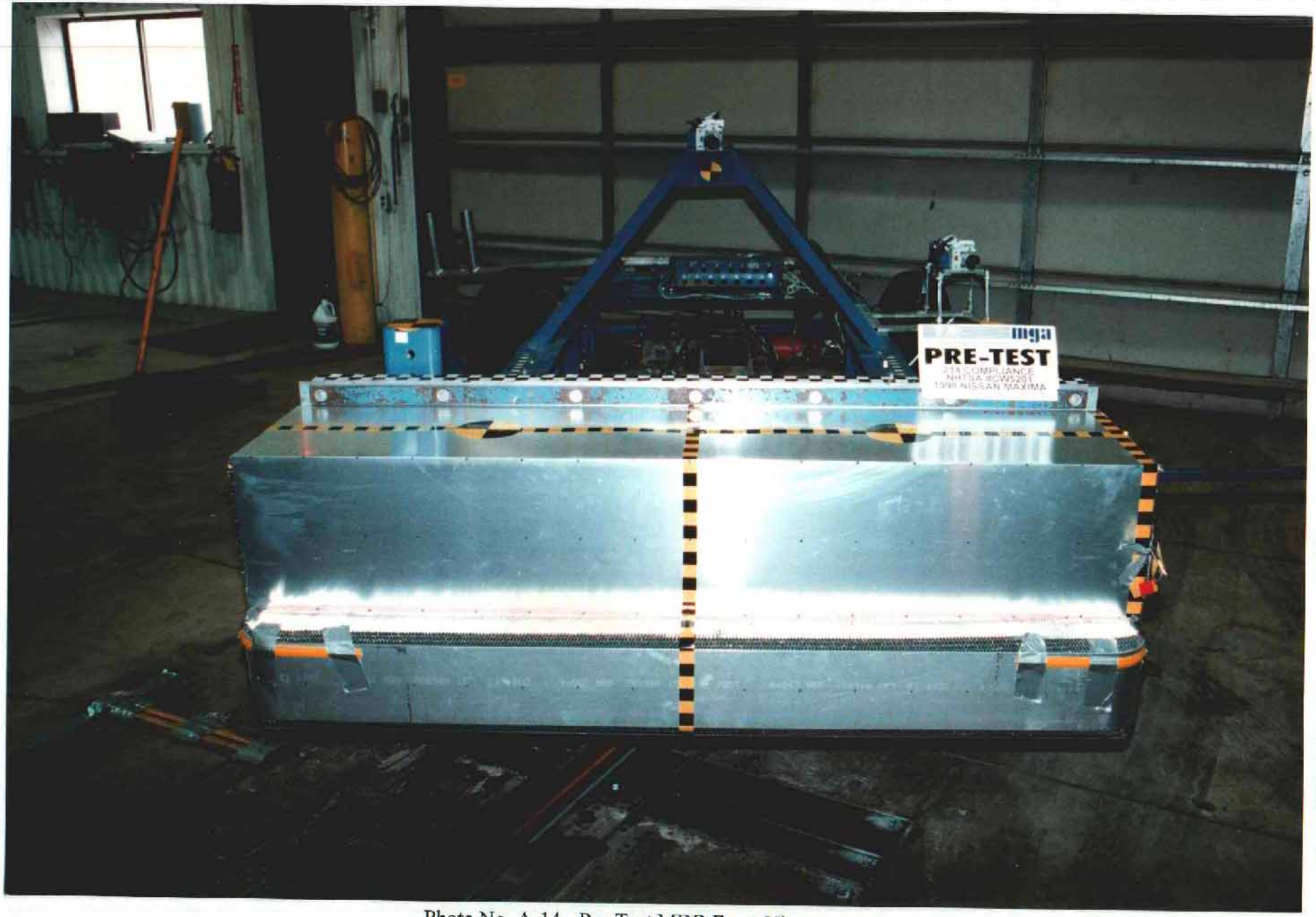


Photo No. A-14 - Pre-Test MDB Front View

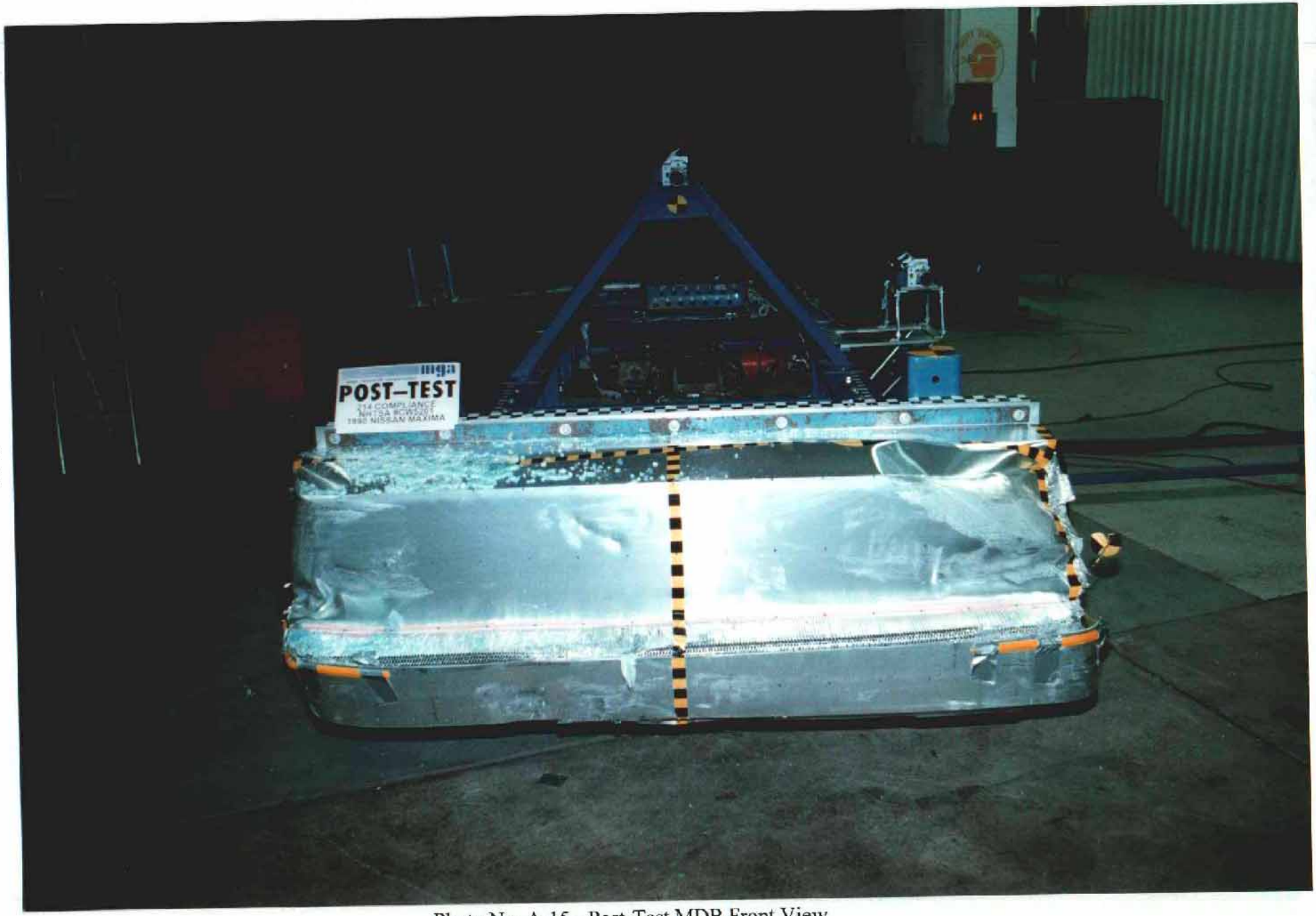


Photo No. A-15 - Post-Test MDB Front View

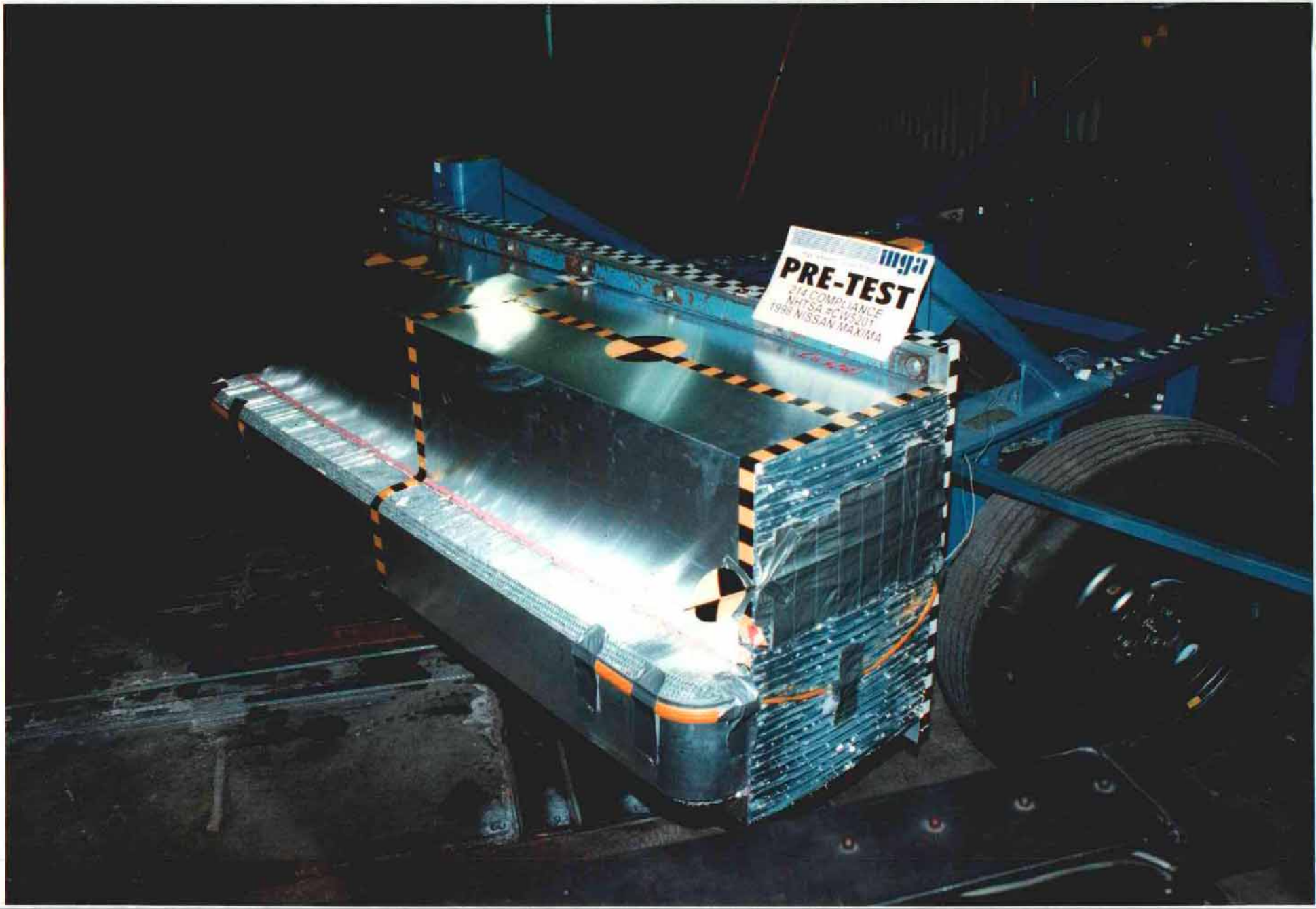


Photo No. A-16 - Pre-Test MDB Left Side View

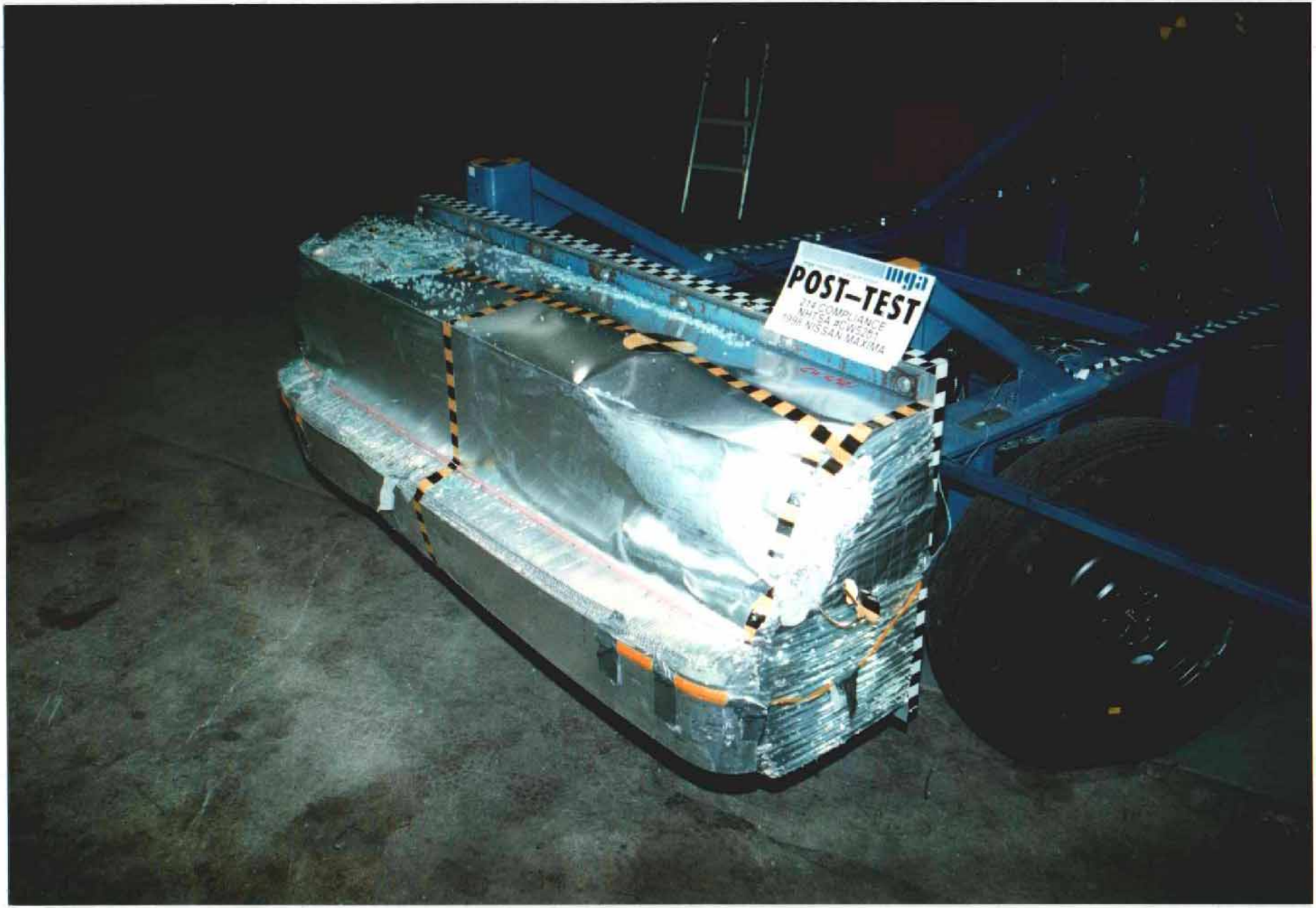


Photo No. A-17 - Post-Test MDB Left Side View

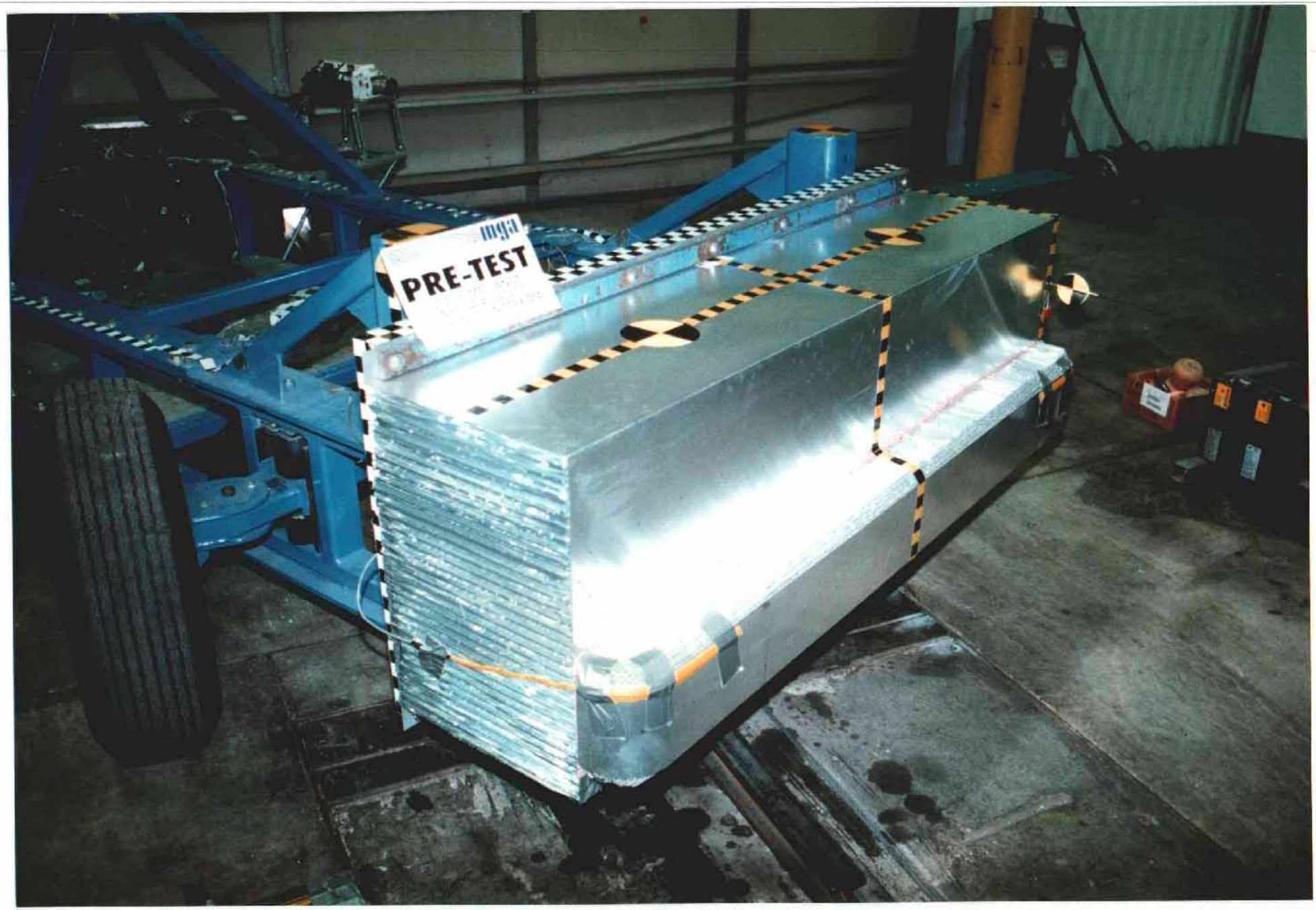


Photo No. A-18 - Pre-Test MDB Right Side View

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

Photo No. A-20 - Pre-Test Driver Dummy Right Side View

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

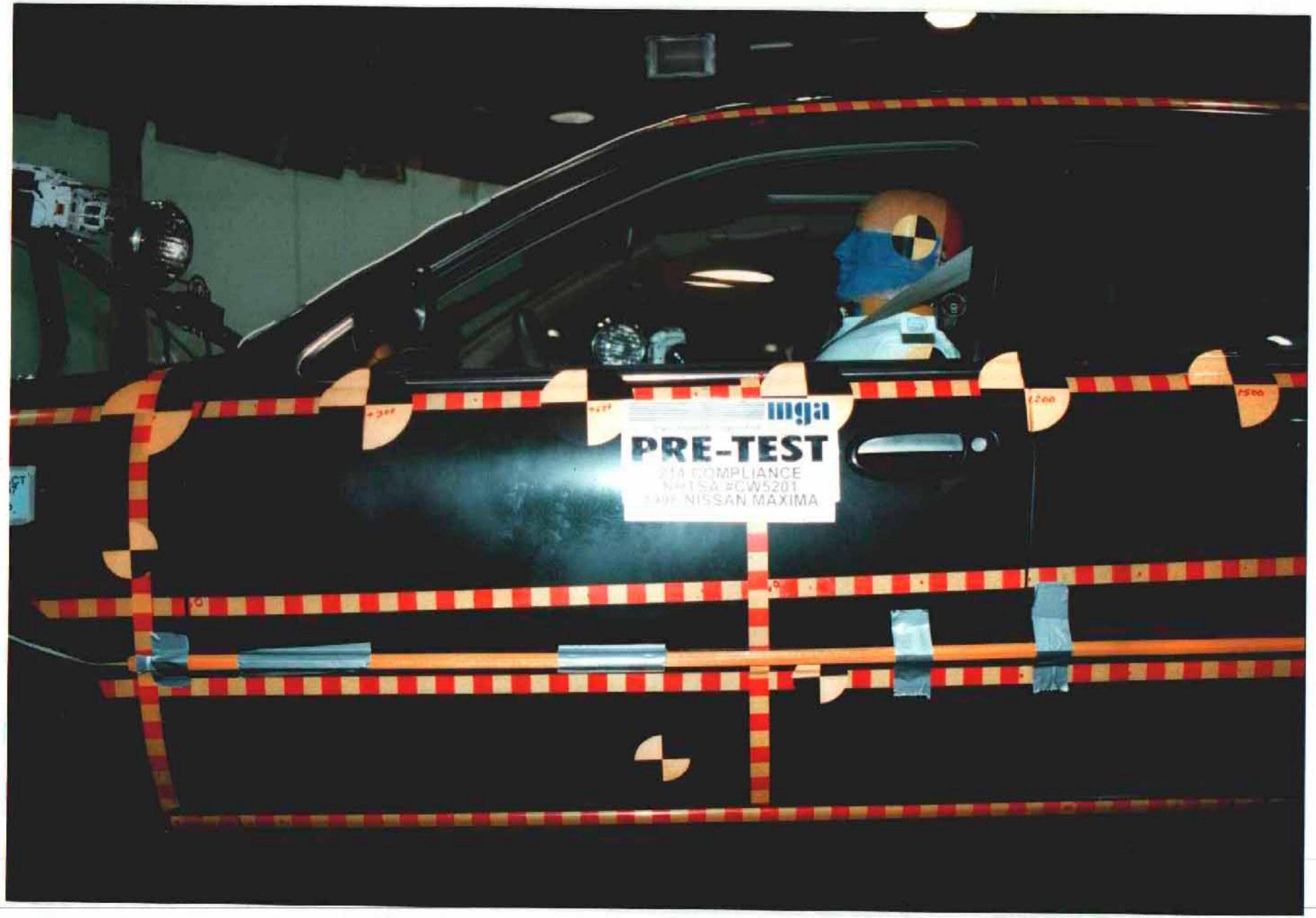


Photo No. A-22 - Pre-Test Driver Dummy Left Side View

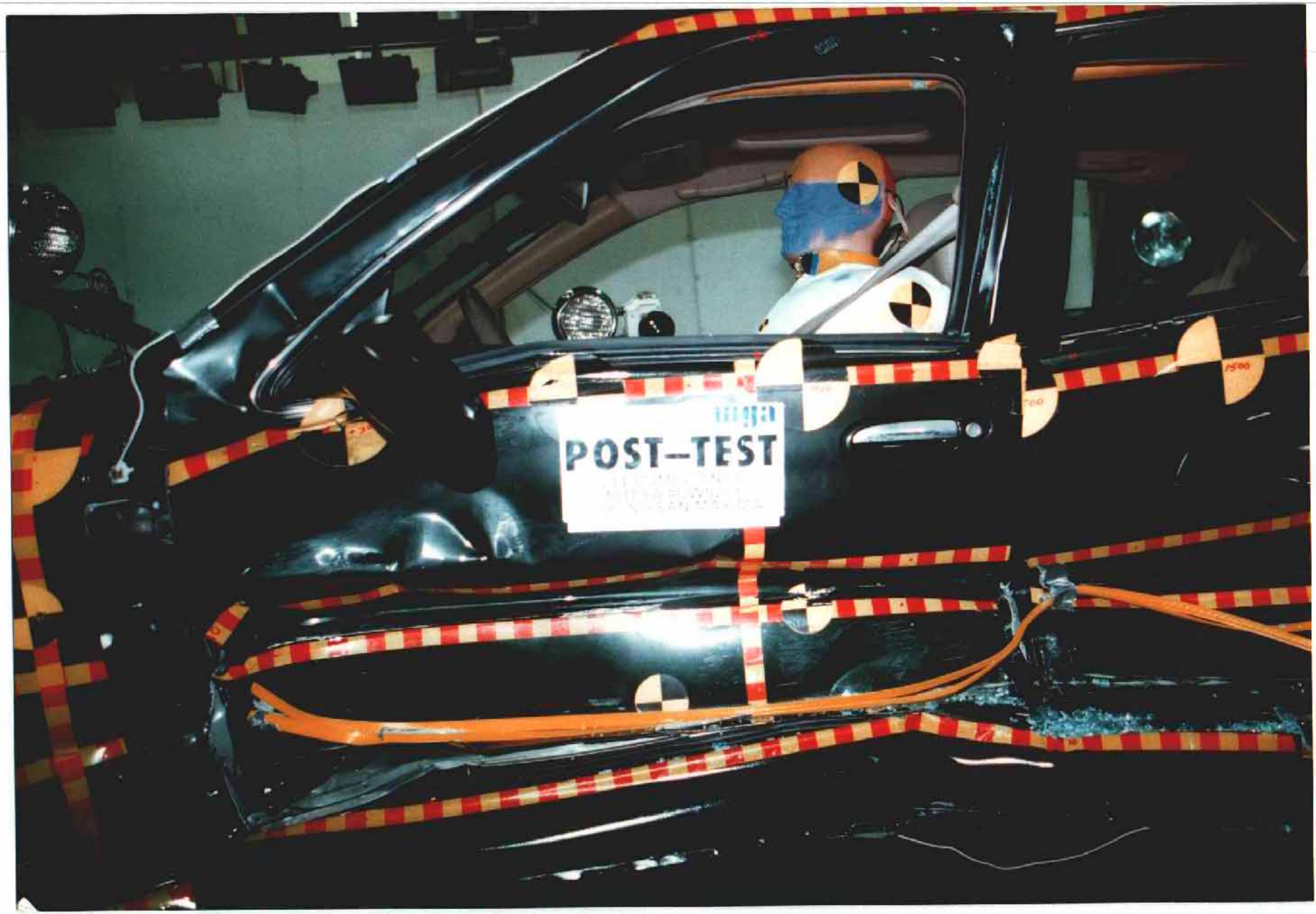


Photo No. A-23 - Post-Test Driver Dummy Left Side View

Photo No. A-24 - Pre-Test Driver Dummy Left Side View (Door Open)

Photo No. A-25 - Pre-Test Driver Shoulder and Door Top View

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

Photo No. A-27 - Post-Test Driver Dummy Contact

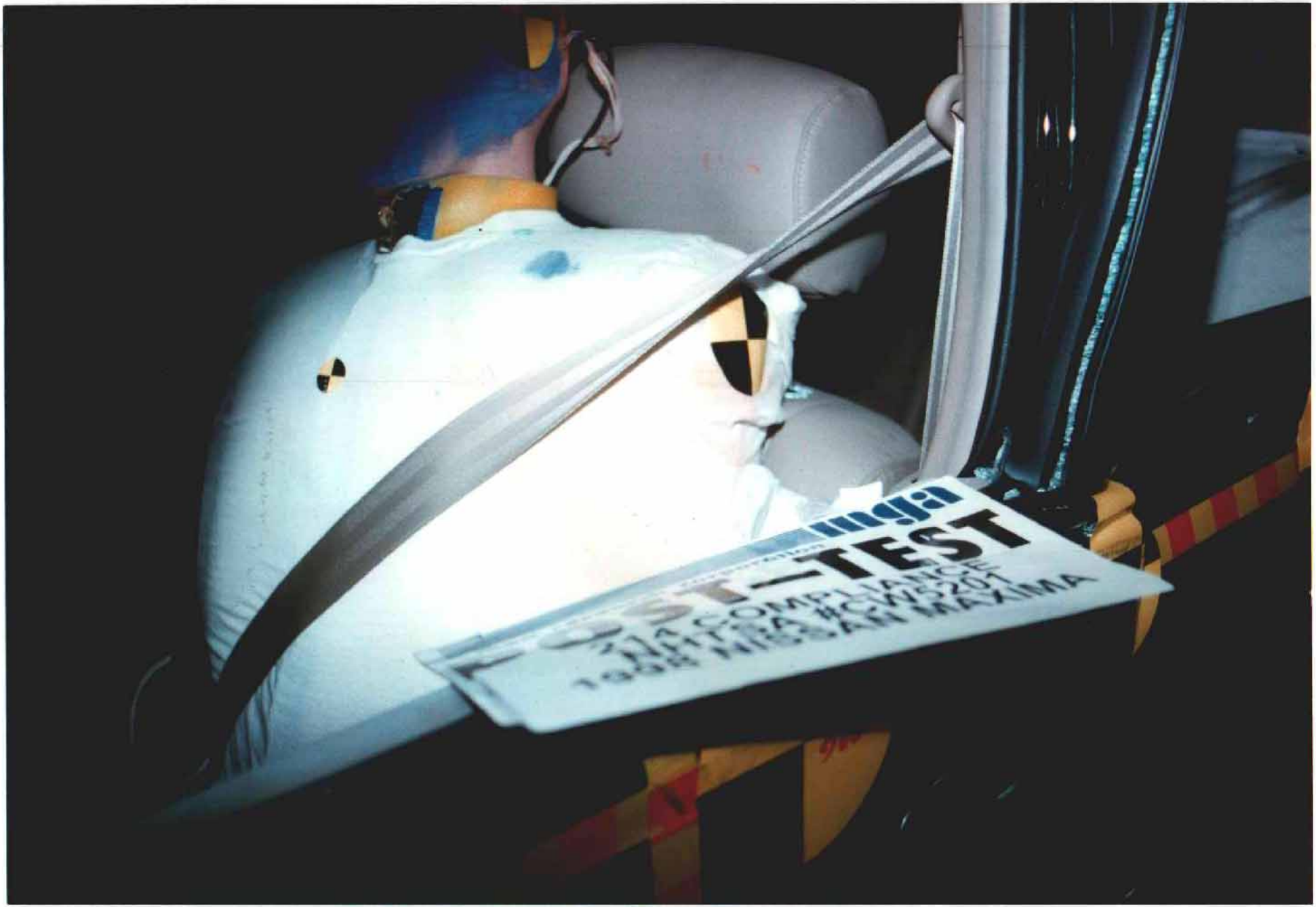
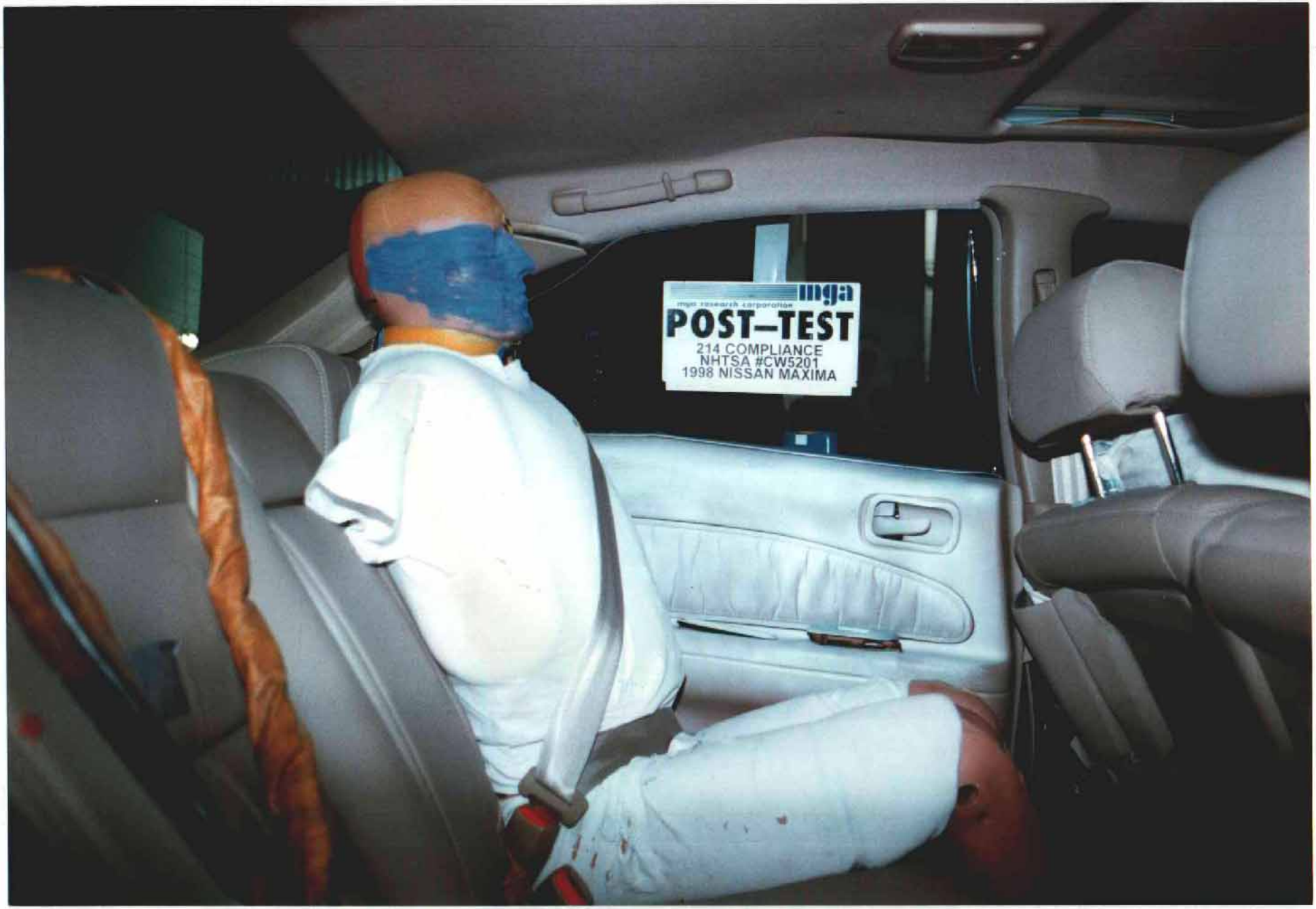


Photo No. A-28 - Post-Test Driver Dummy Head Contact

Photo No. A-29 - Pre-Test Rear Passenger Dummy Right Side View



A-30

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

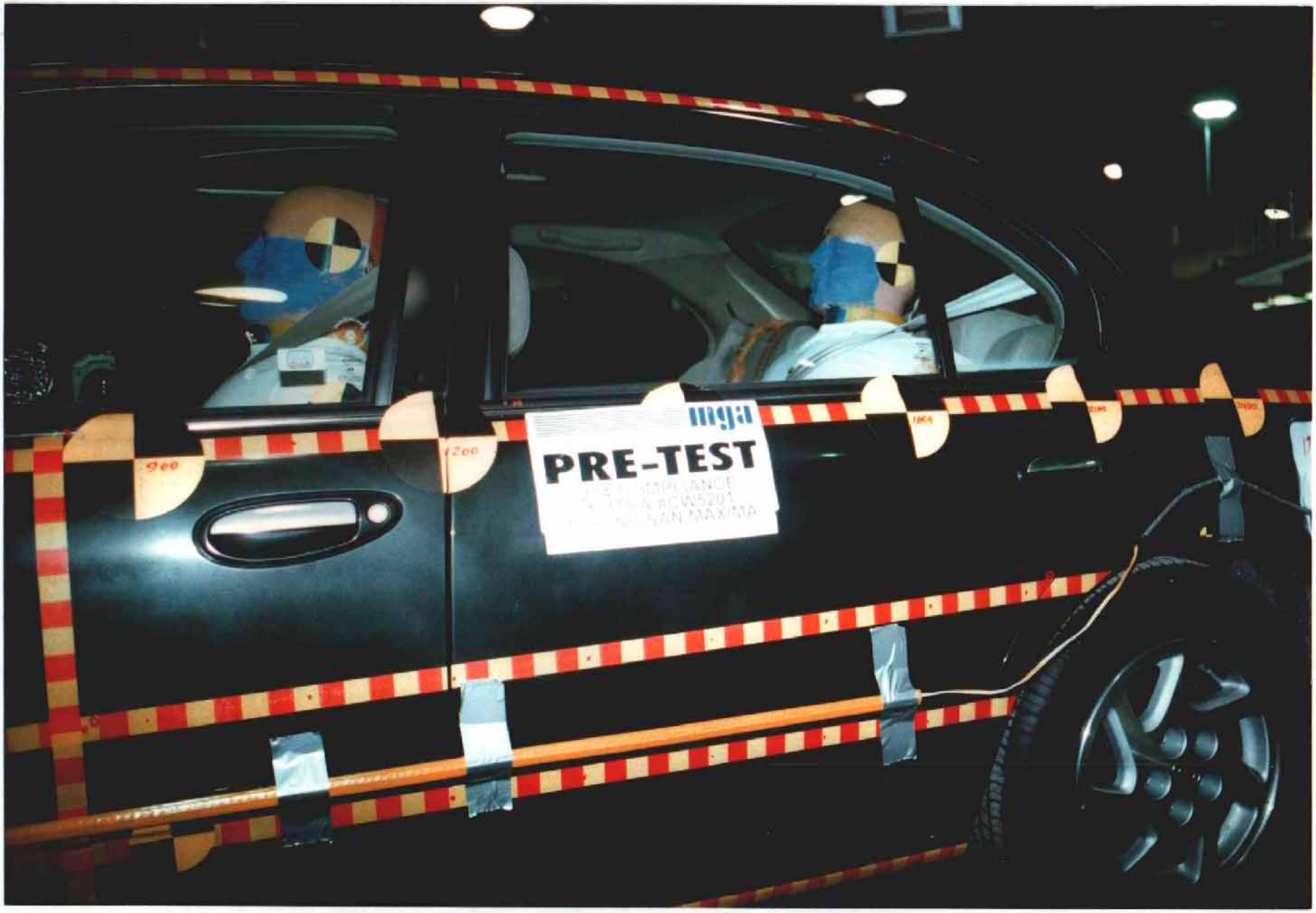


Photo No. A-31 - Pre-Test Rear Passenger Dummy Left Side View

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

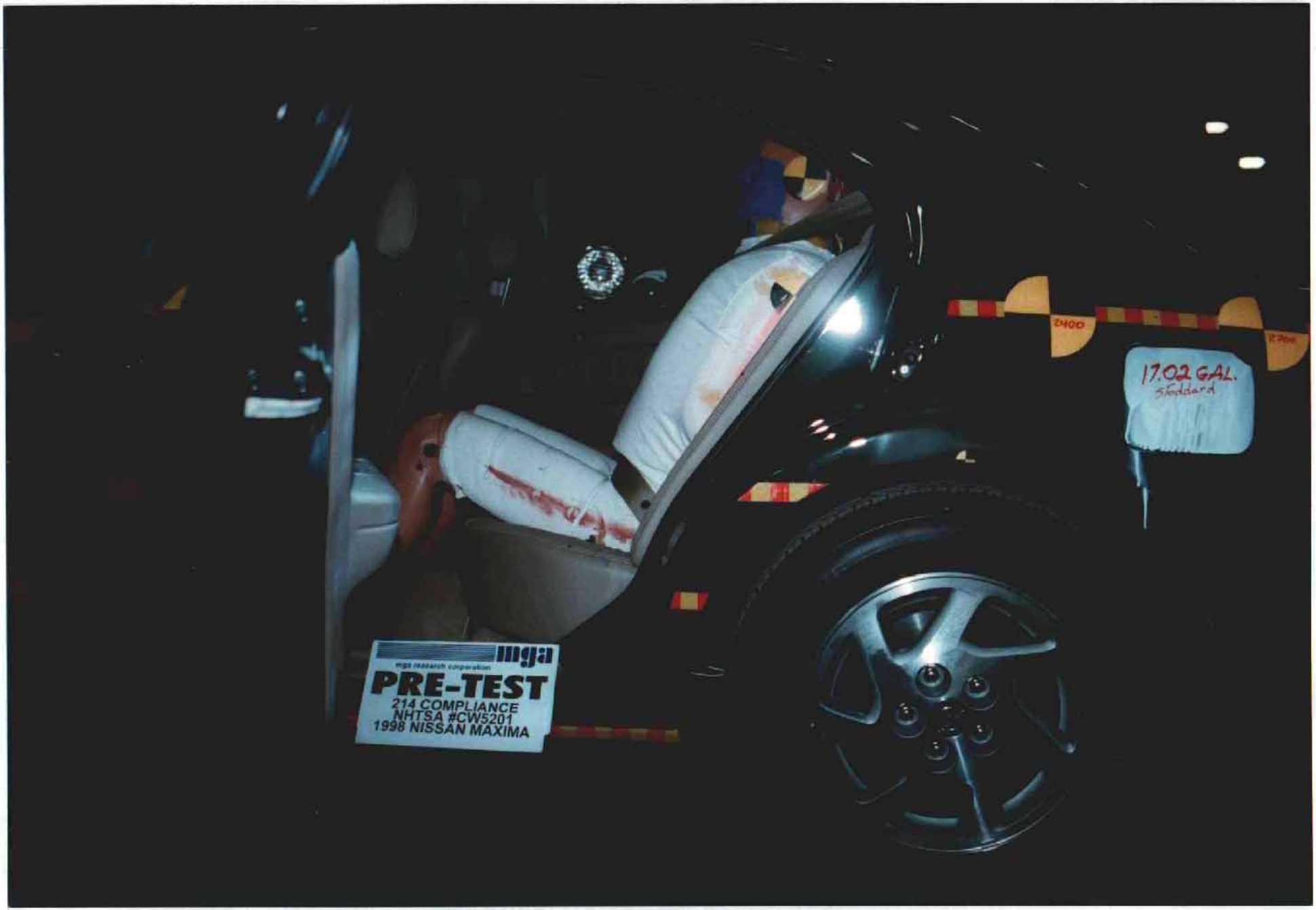


Photo No. A-33 - Post-Test Rear Passenger Dummy Left Side View (Door Open)

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

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

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

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

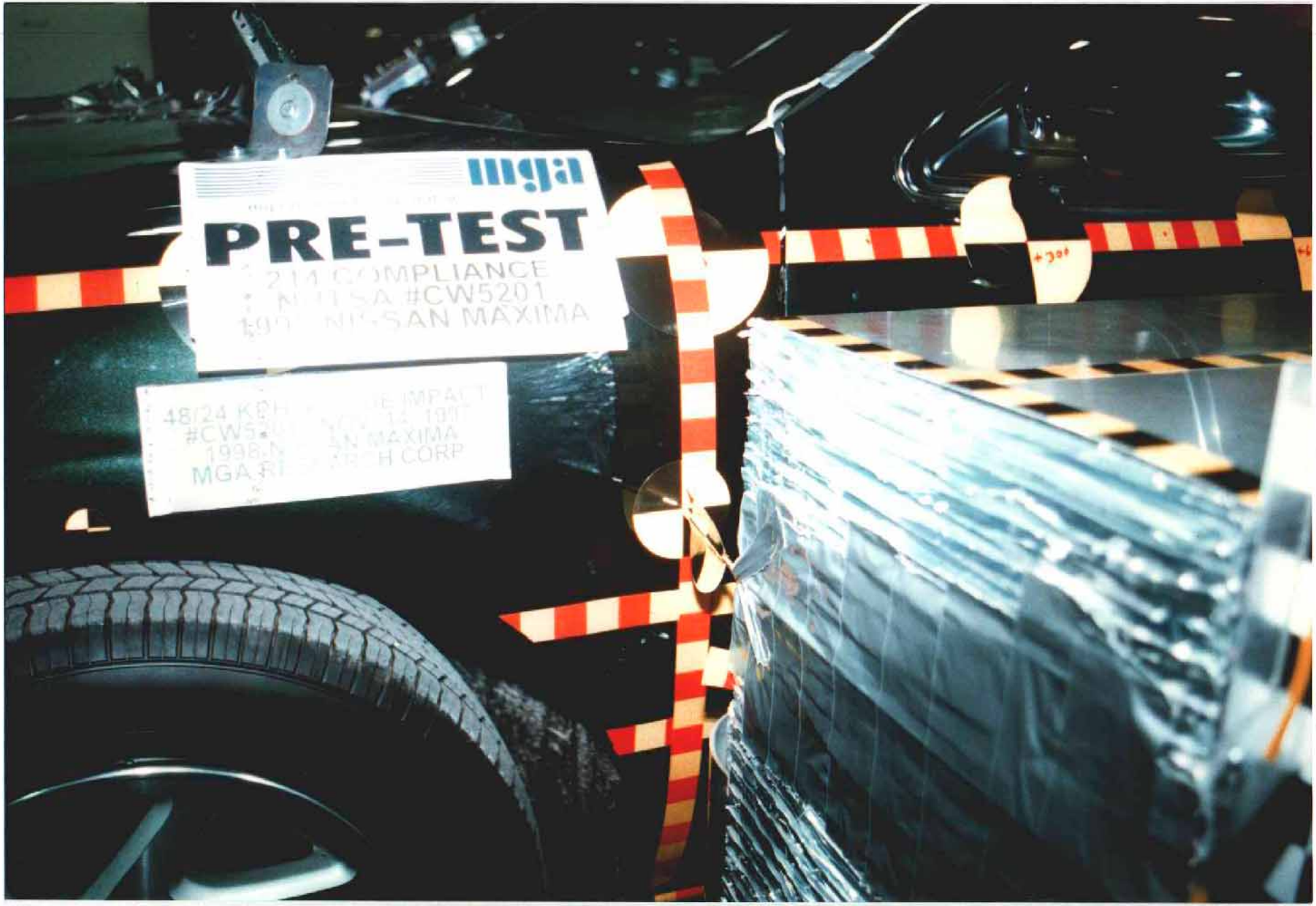


Photo No. A-38 - Pre-Test Right Front Impact Point on Vehicle

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

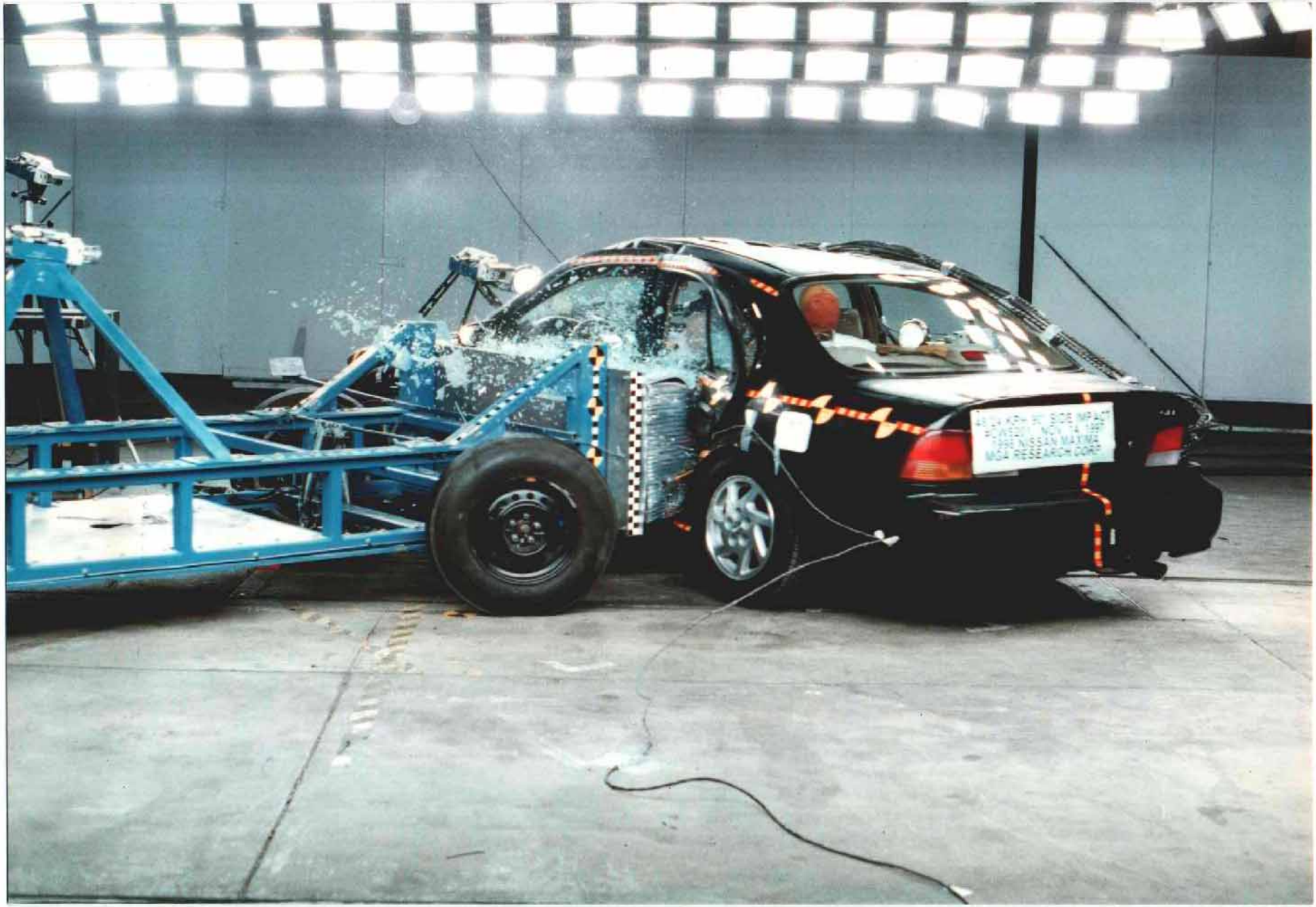


Photo No. A-40 - Impact

Photo No. A-41 - Vehicle Certification Label

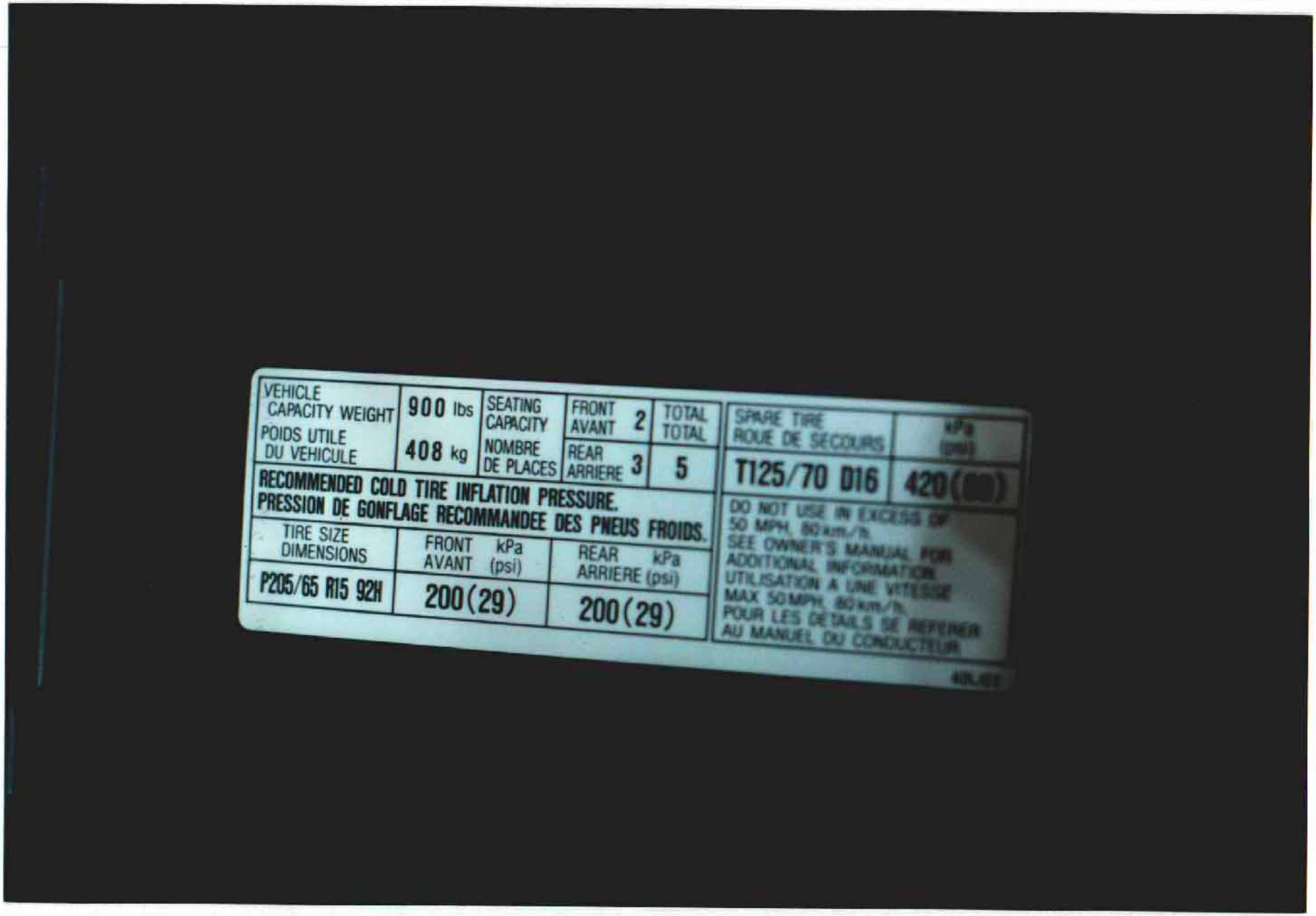


Photo No. A-42 - Tire Placard

Photo No. A-43 - Rollover 90°

Photo No. A-44 - Rollover 180°

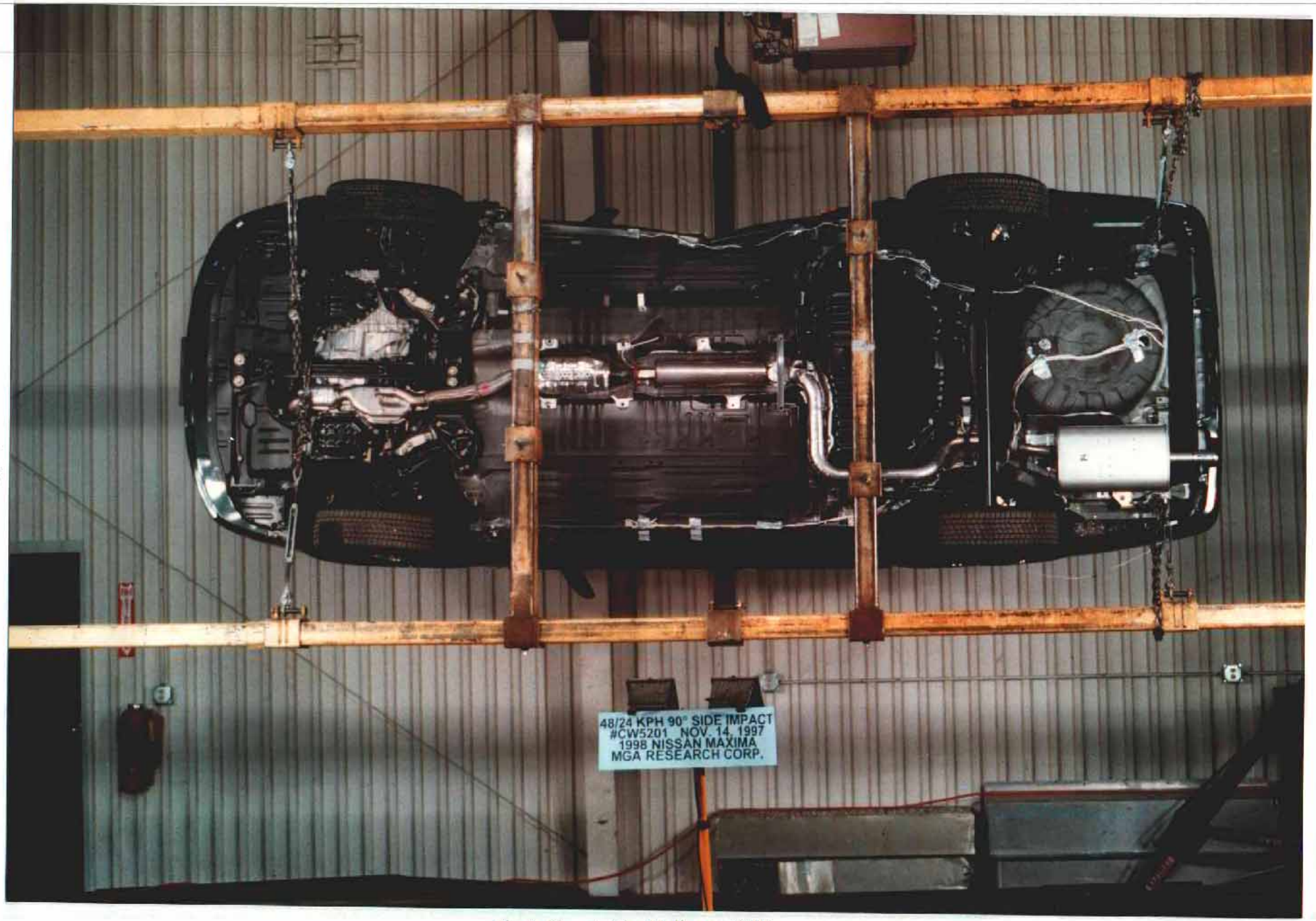


Photo No. A-45 - Rollover 270°

Photo No. A-46 - Rollover 360°

Photo No. A-47 - Left Front Attitude Point

A-48

Photo No. A-48 - Right Front Attitude Point

Photo No. A-49 - Left Rear Attitude Point

Photo No. A-50 - Right Rear Attitude Point

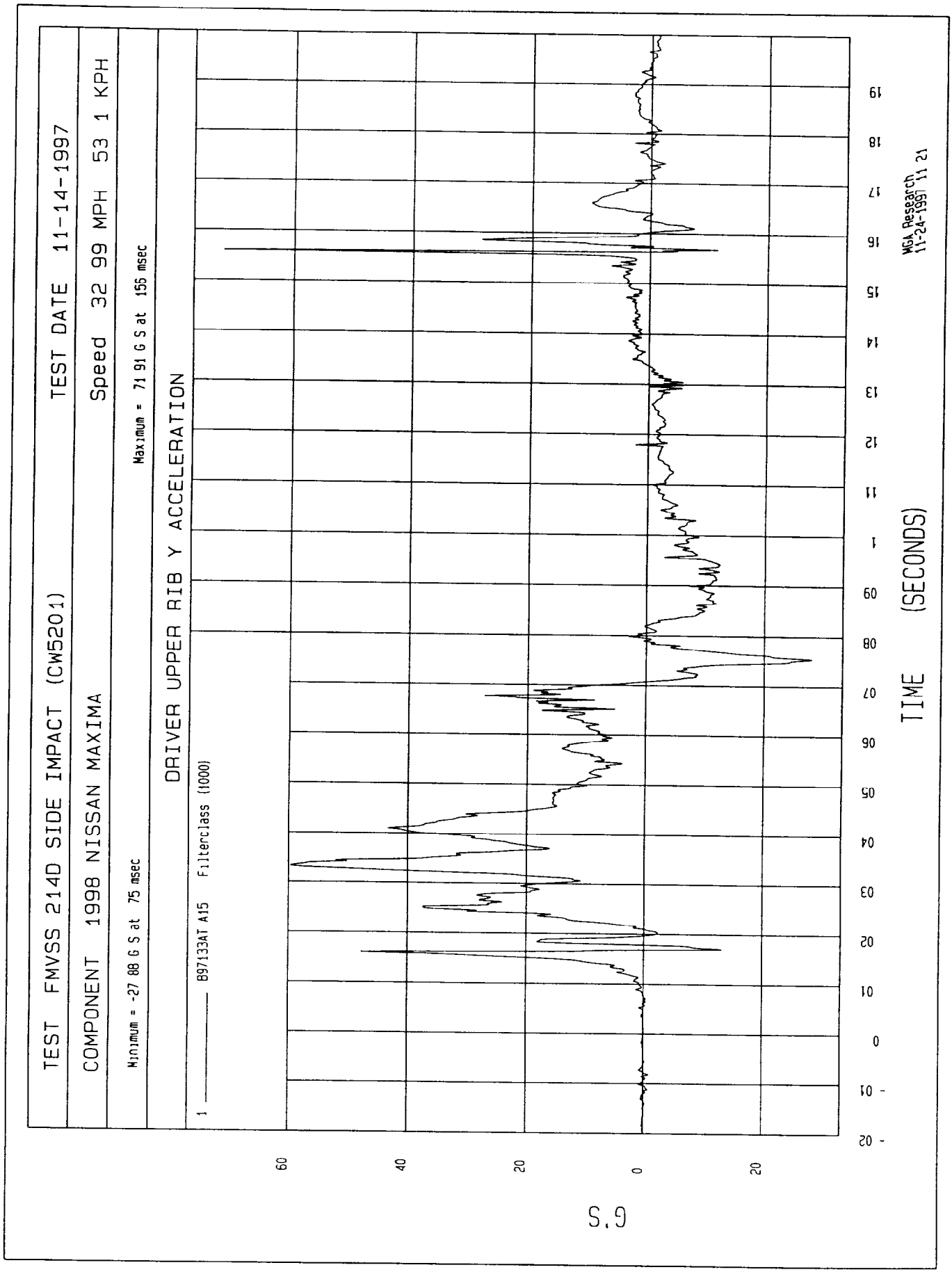
Photo No. A-51 - Post-Test Sill Separation

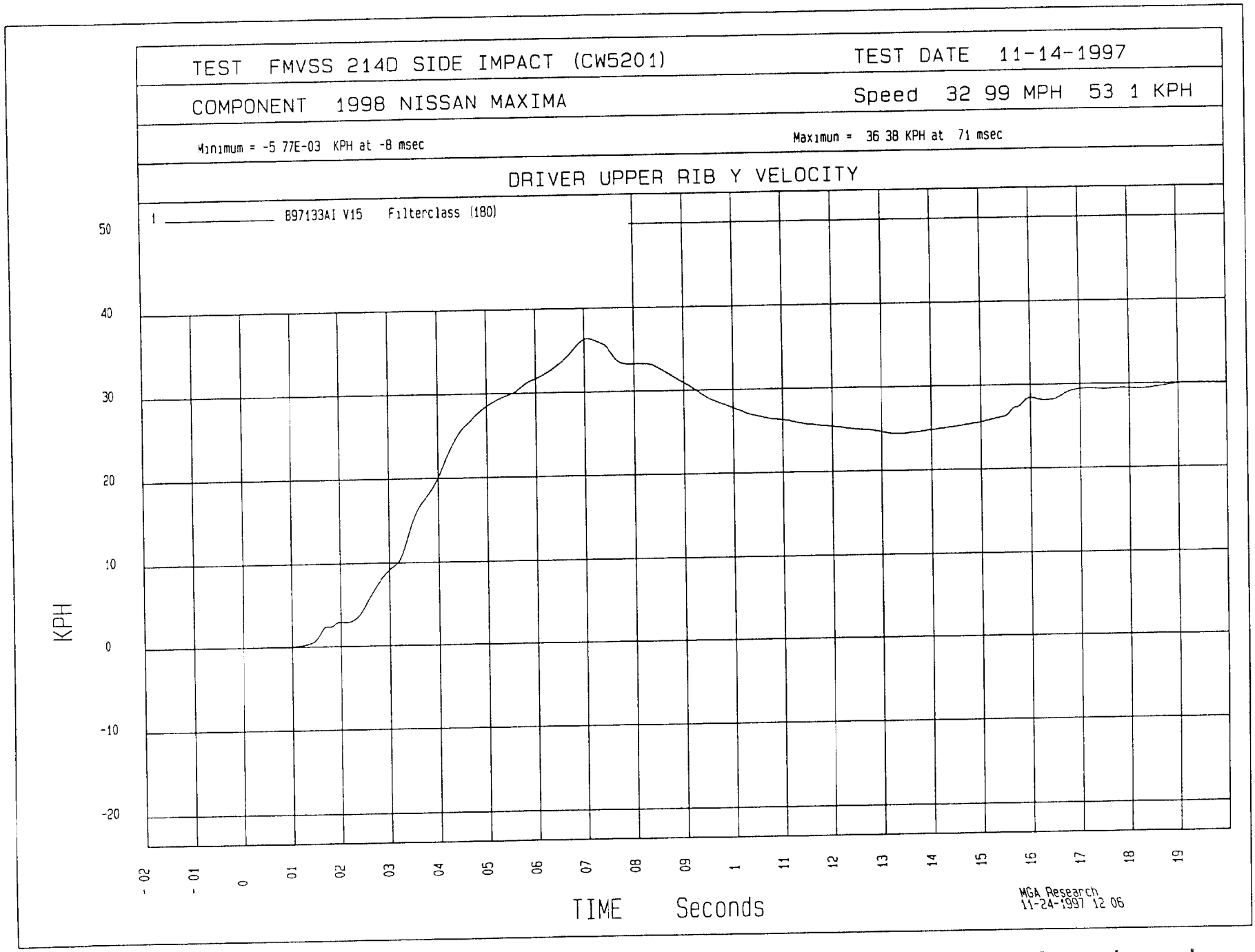
Table of Data Plots

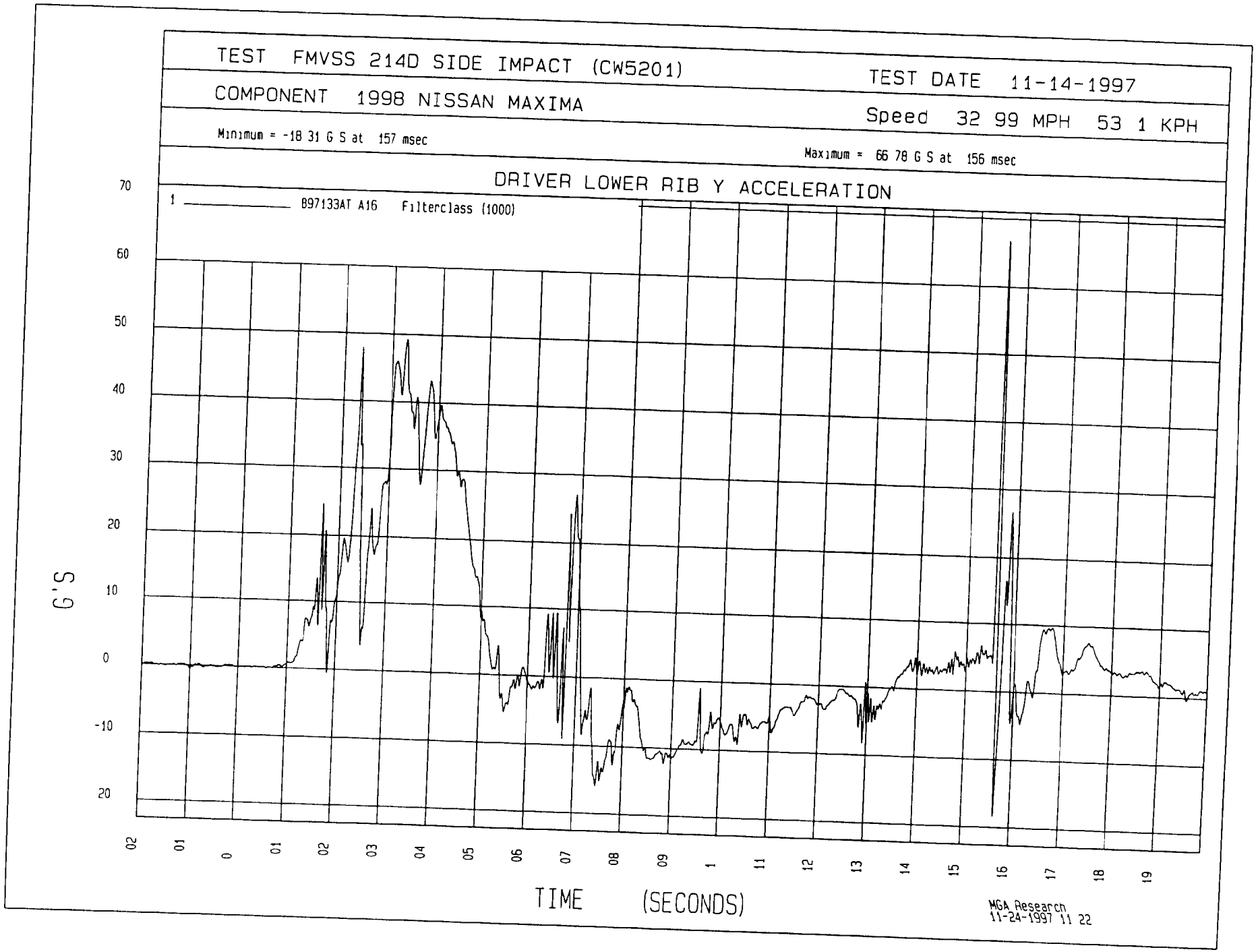
Table of Data Plots

Table of Data Plots

Table of Data Plots


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -27 88 G S at 75 msec
Maximum = 71 91 G S at 155 msec
DRIVER UPPER RIB Y ACCELERATION
1 B97133AT A15 Filterclass (1000)
60
40
20
0
20
G's
20
10
0
10
20
TIME (SECONDS)
MGA Research
11-24-1997 11 21


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -5 77E-03 KPH at -8 msec
Maximum = 36 38 KPH at 71 msec
DRIVER UPPER RIB Y VELOCITY
1 B97133AI V15 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-20
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 12 06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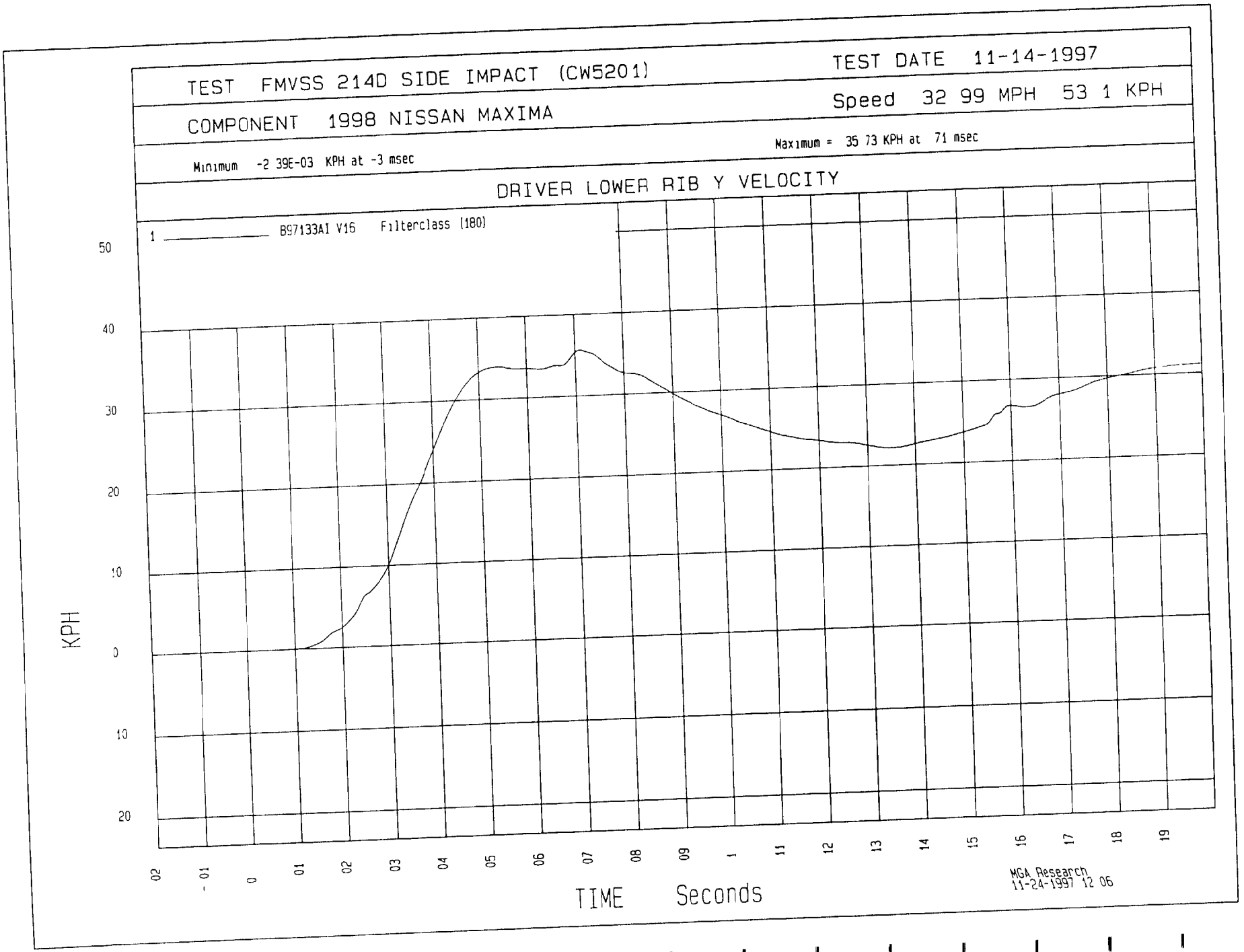
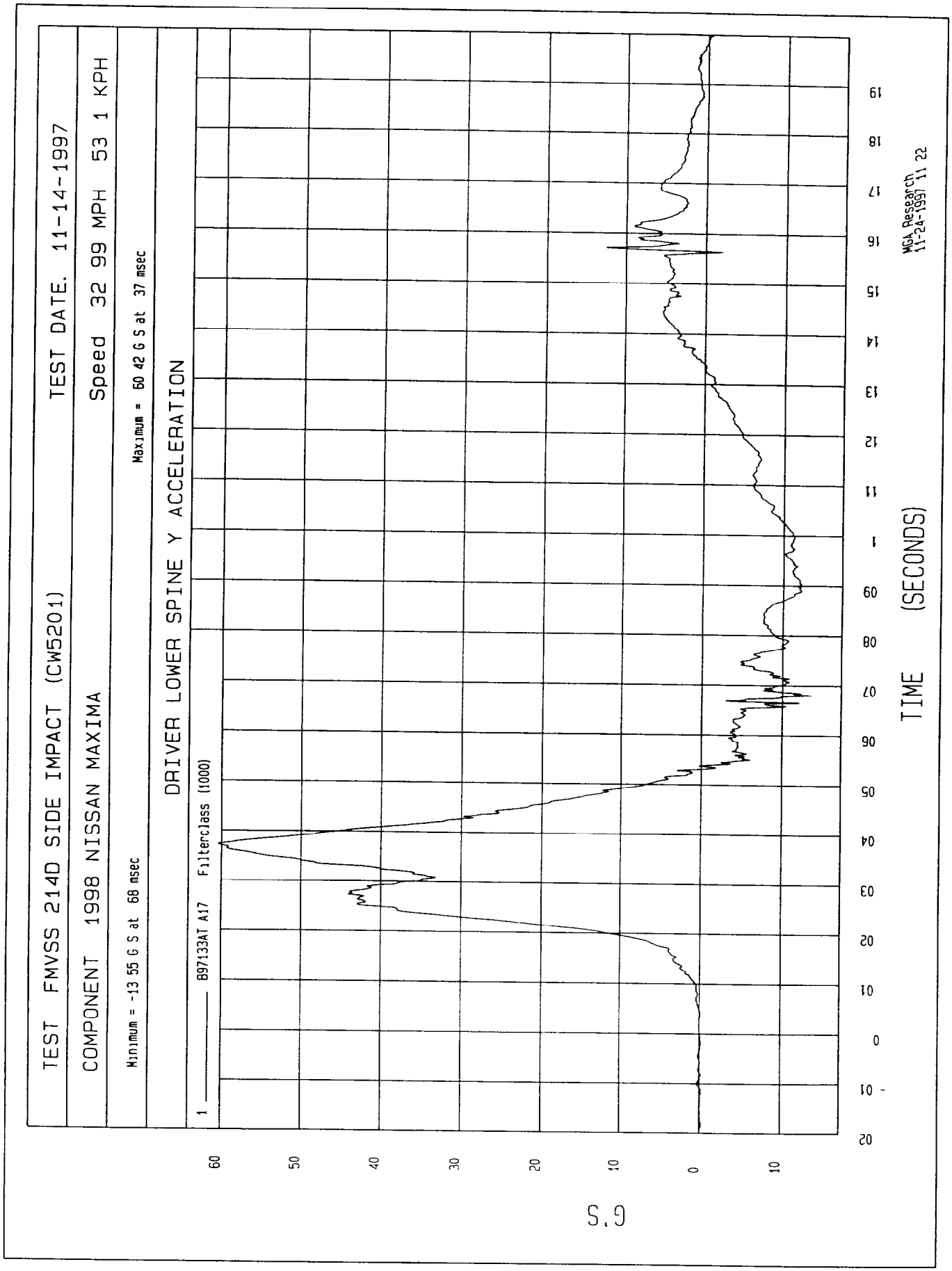
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -18 31 G S at 157 msec
Maximum = 66 78 G S at 156 msec
DRIVER LOWER RIB Y ACCELERATION
1 B97133AT A16 Filterclass (1000)
G'S
70
60
50
40
30
20
10
0
-10
-20
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 11 22


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum -2 39E-03 KPH at -3 msec
Maximum = 35 73 KPH at 71 msec
DRIVER LOWER RIB Y VELOCITY
1 B97133AI V16 Filterclass (180)
KPH
50
40
30
20
10
0
10
20
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 12 06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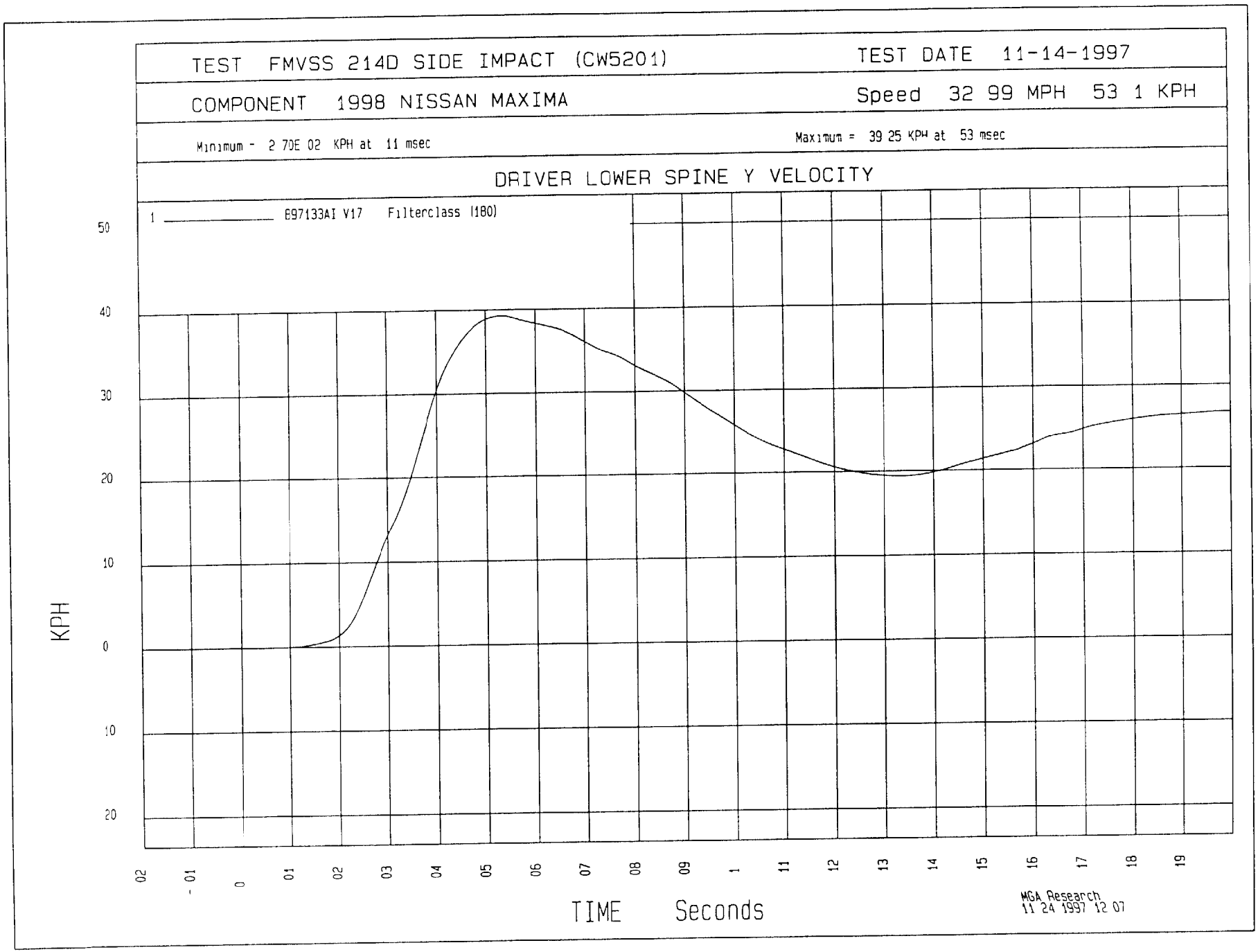
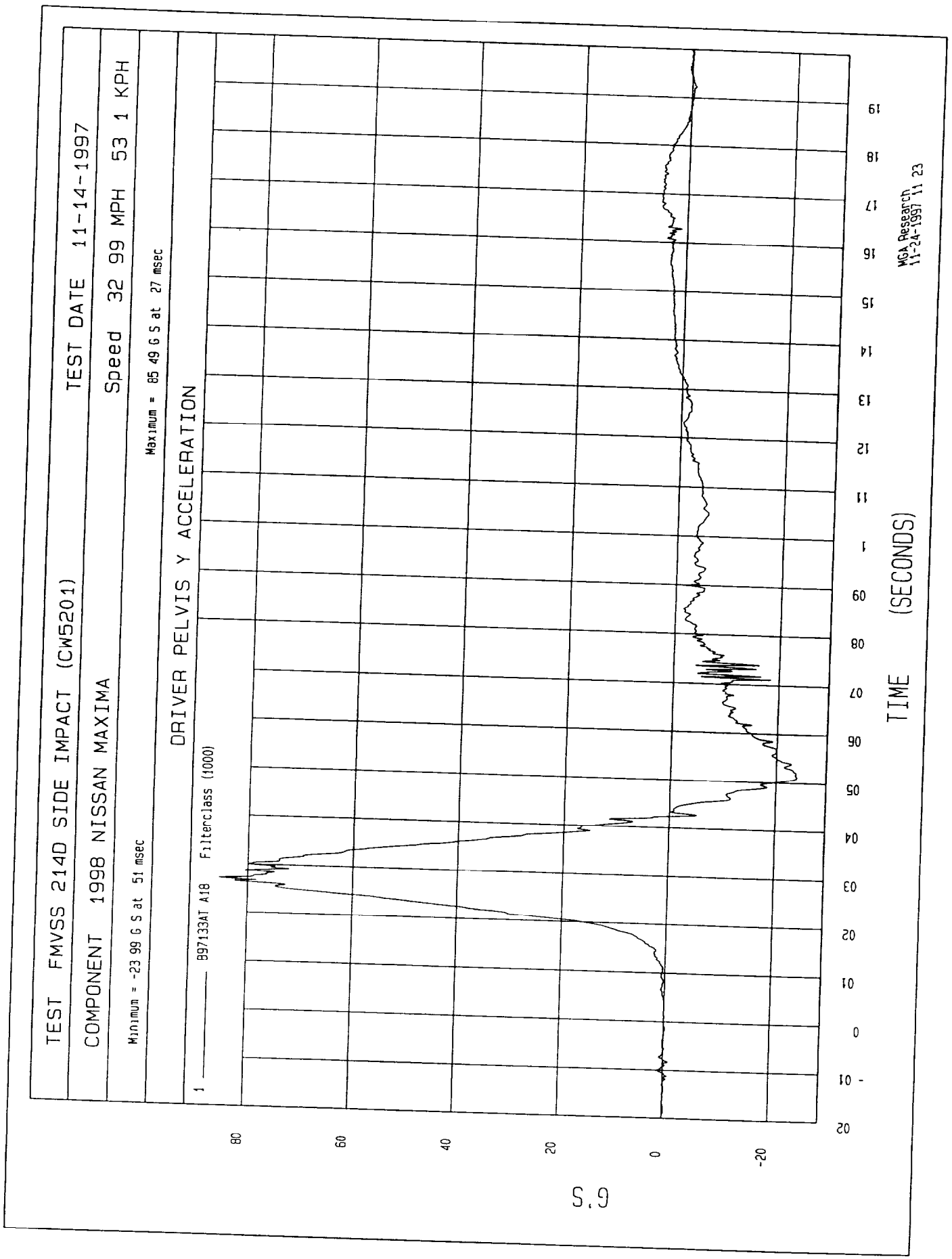
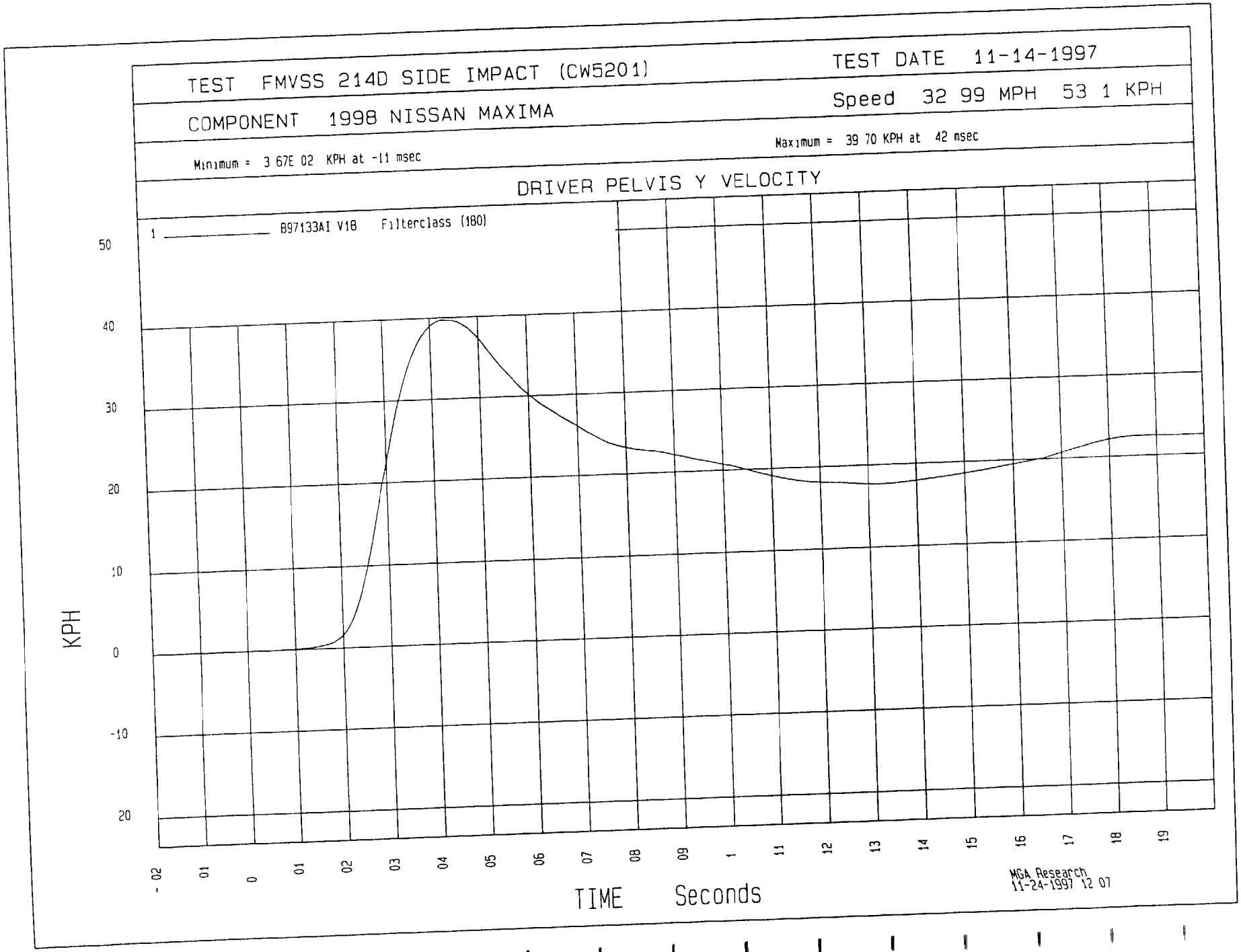
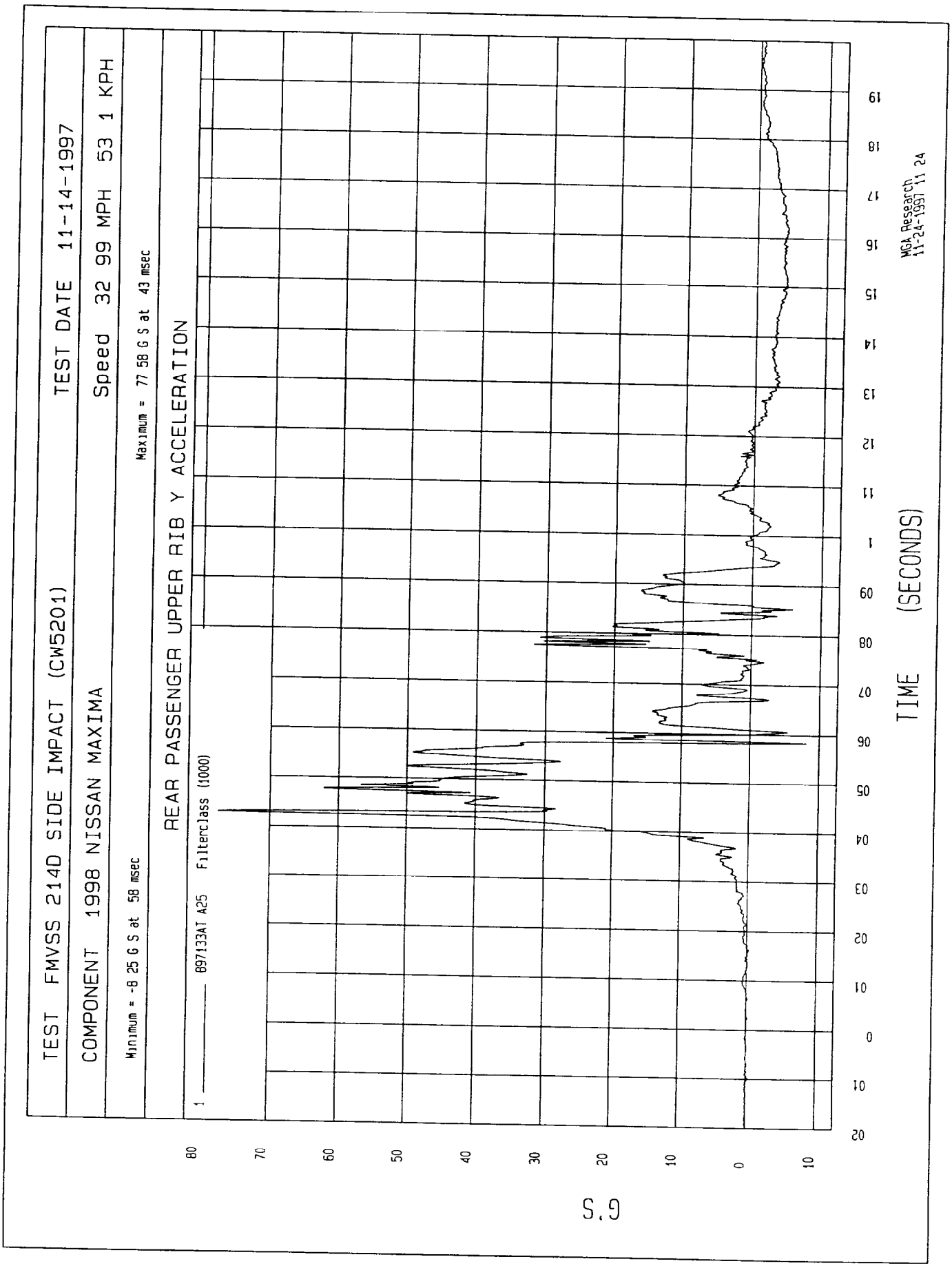
TEST DATE. 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -13 55 G S at 68 msec
Maximum = 60 42 G S at 37 msec
DRIVER LOWER SPINE Y ACCELERATION
1 B97133AT A17 Filterclass (1000)
60
50
40
30
20
10
0
10
20
TIME (SECONDS)
MGA Research
11-24-1997 11 22
G's


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 2 70E 02 KPH at 11 msec
Maximum = 39 25 KPH at 53 msec
DRIVER LOWER SPINE Y VELOCITY
1 B97133AI V17 Filterclass (180)
KPH
50
40
30
20
10
0
10
20
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11 24 1997 12 07


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -23 99 G S at 51 msec
Maximum = 85 49 G S at 27 msec
DRIVER PELVIS Y ACCELERATION
1 B97133AT A18 Filterclass (1000)
80
60
40
20
0
-20
G'S
TIME (SECONDS)
MGA Research
11-24-1997 11 23


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 3 67E 02 KPH at -11 msec
Maximum = 39 70 KPH at 42 msec
DRIVER PELVIS Y VELOCITY
1 B97133AI V18 Filterclass (180)
KPH
50
40
30
20
10
0
-10
20
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 12 07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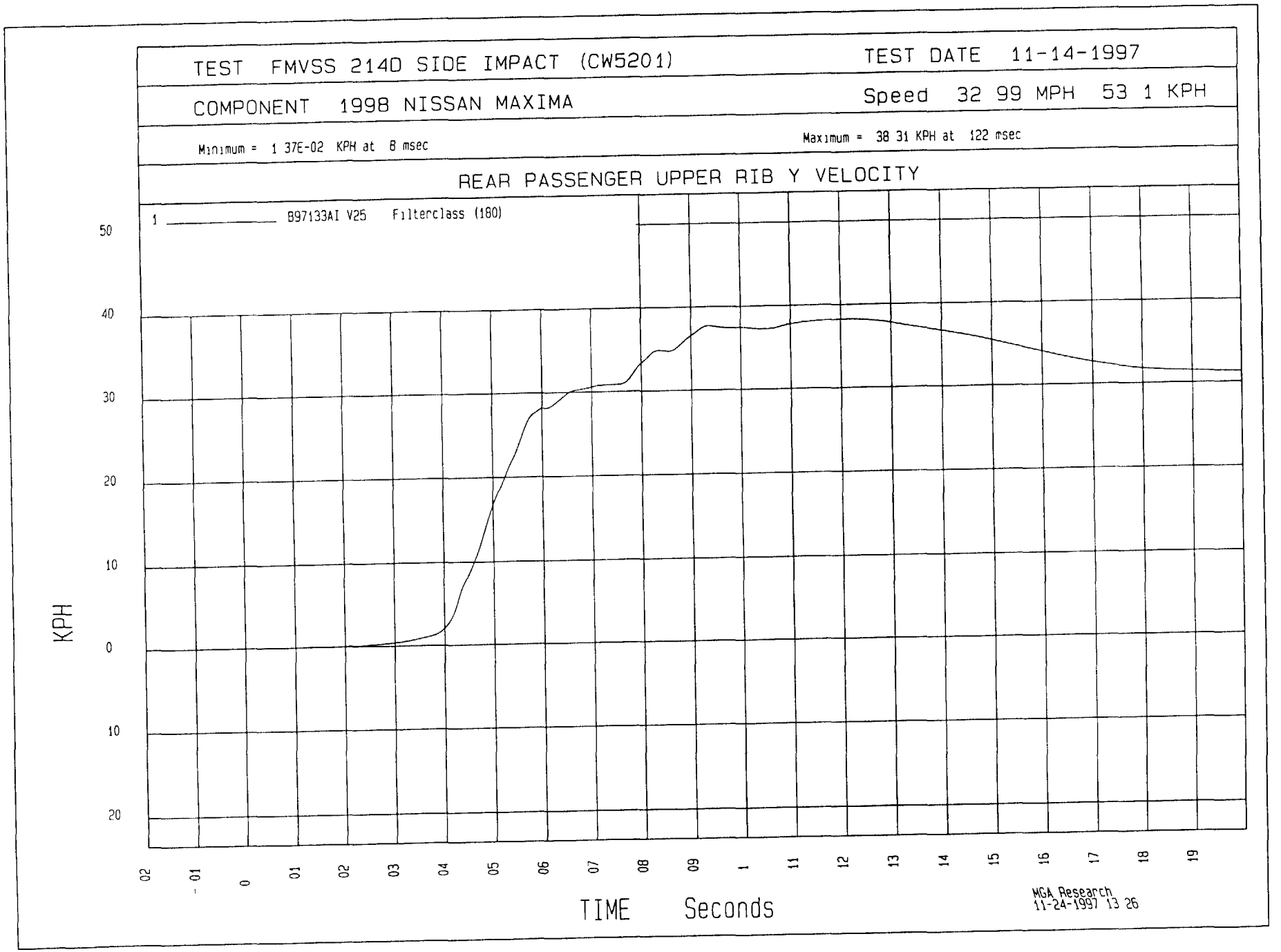
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -8 25 G S at 58 msec
Maximum = 77 58 G S at 43 msec
REAR PASSENGER UPPER RIB Y ACCELERATION
1 897133AT A25 Filterclass (1000)
80
70
60
50
40
30
20
10
0
10
20
TIME (SECONDS)
MGA Research
11-24-1997 11 24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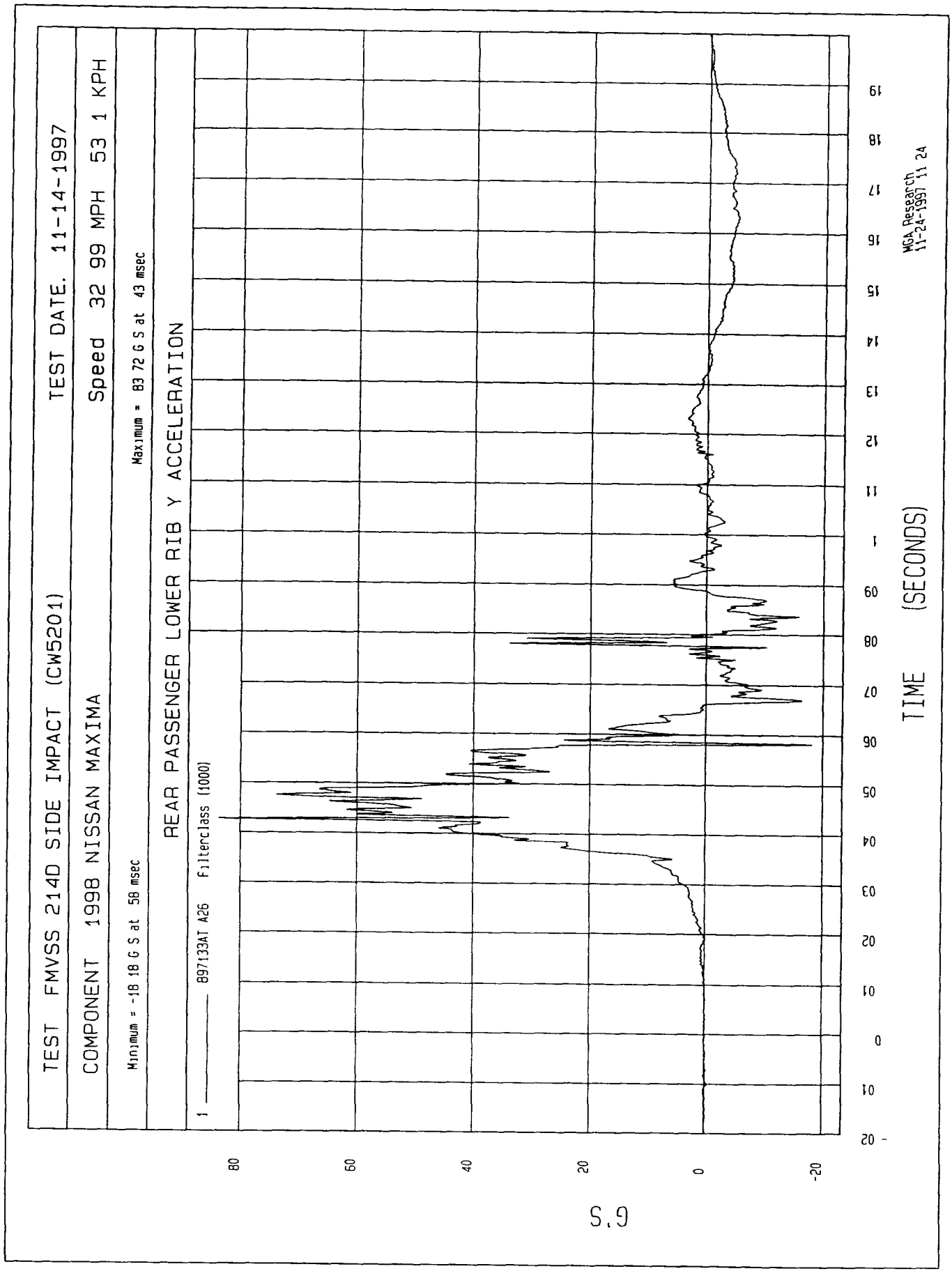
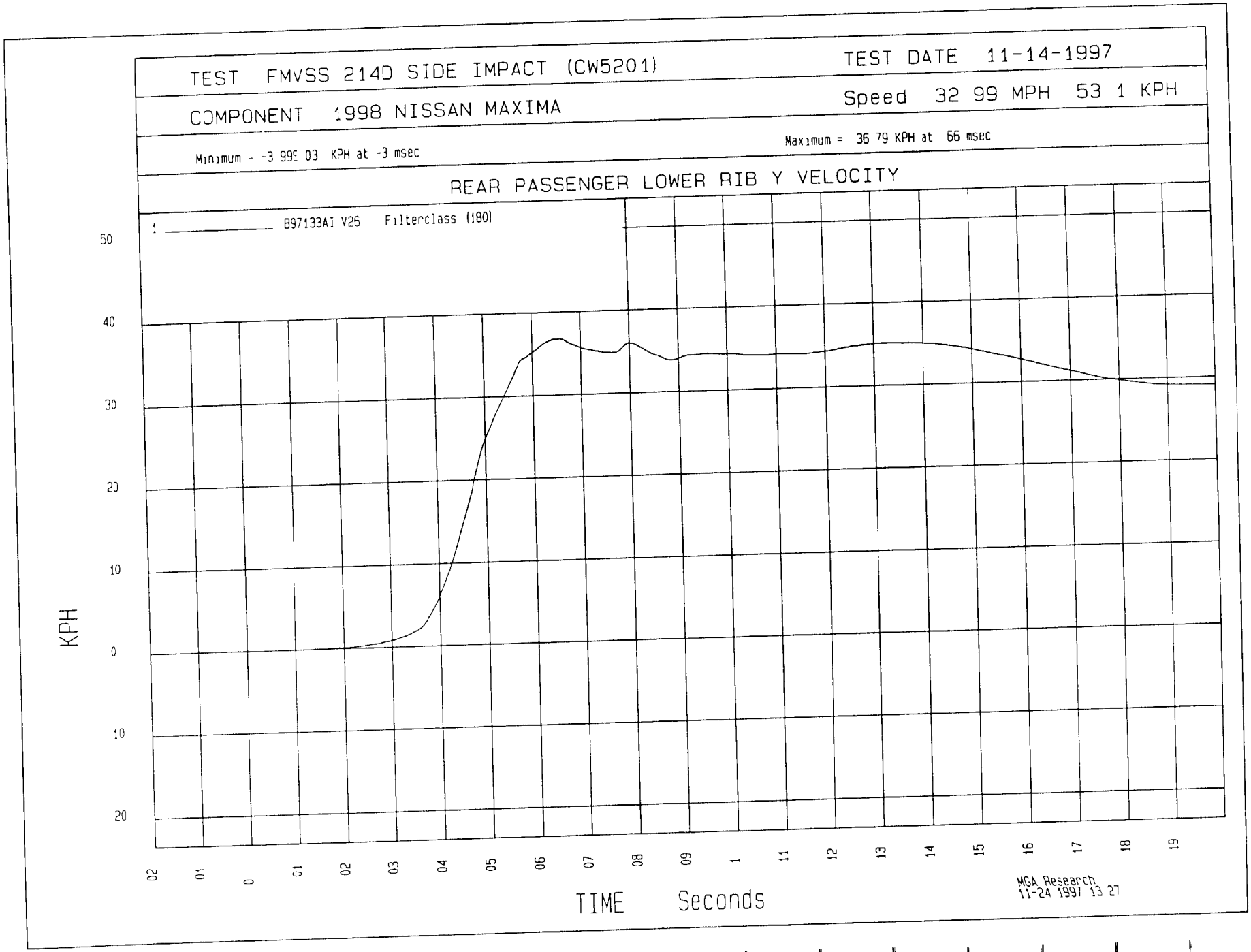
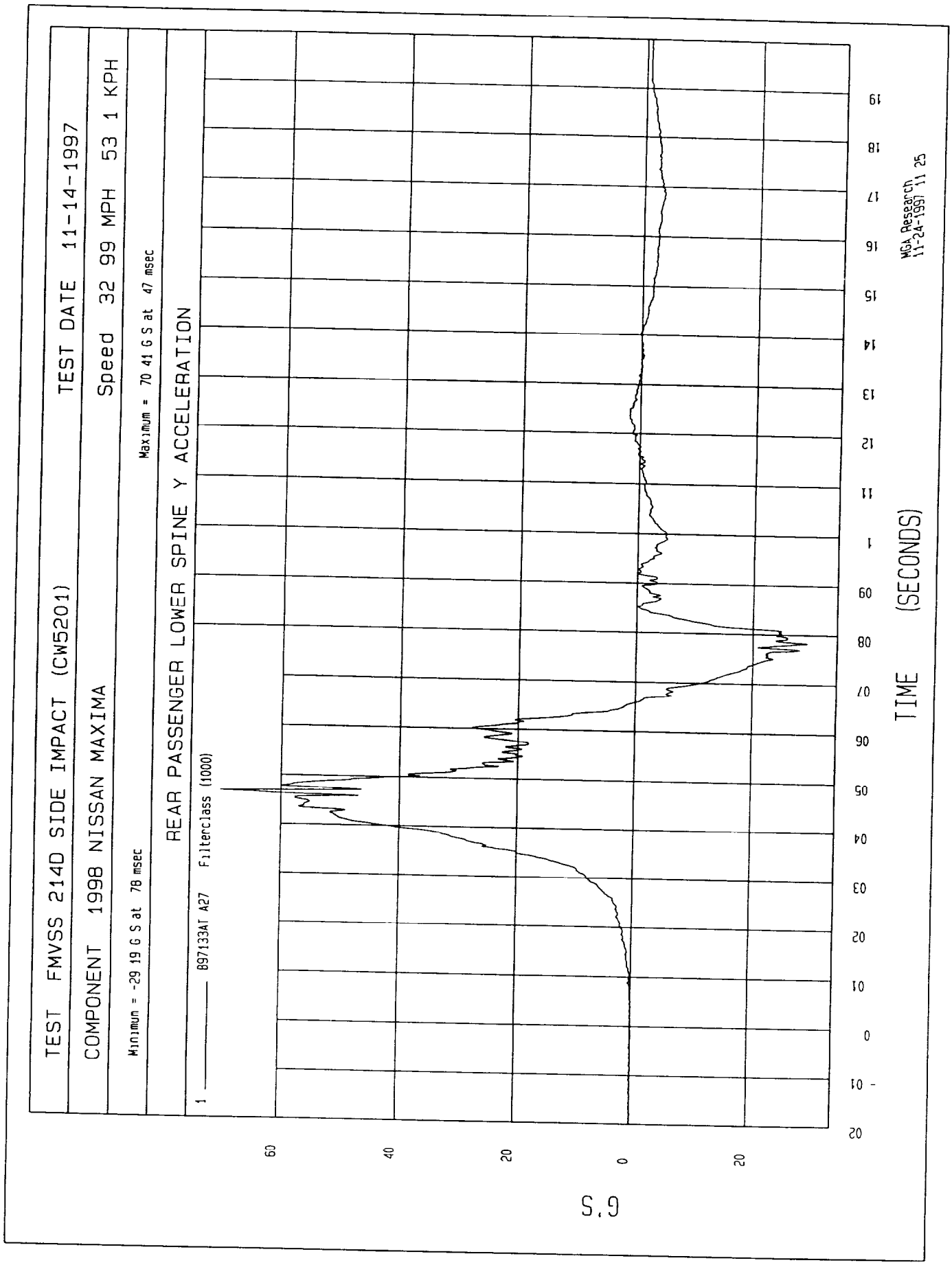
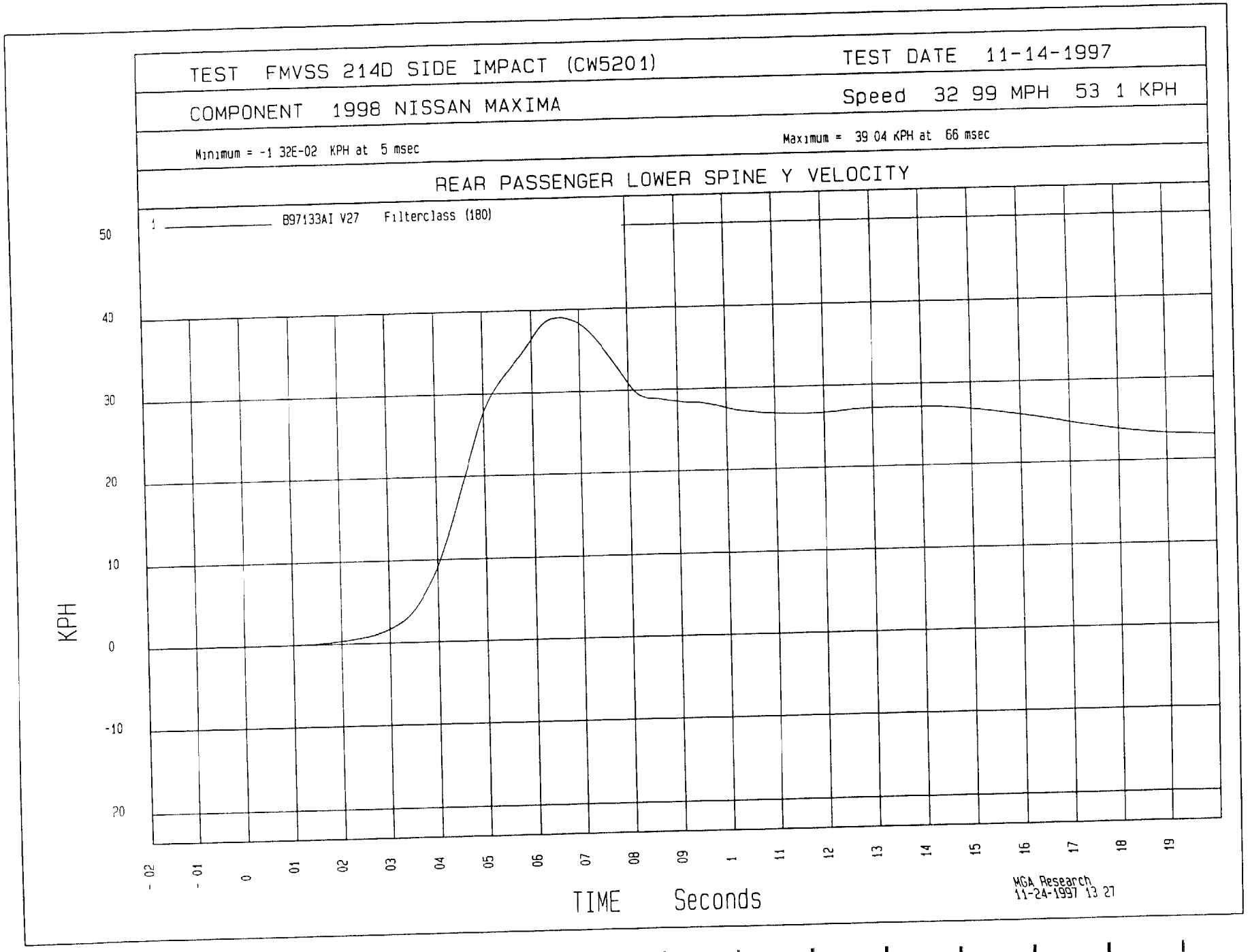
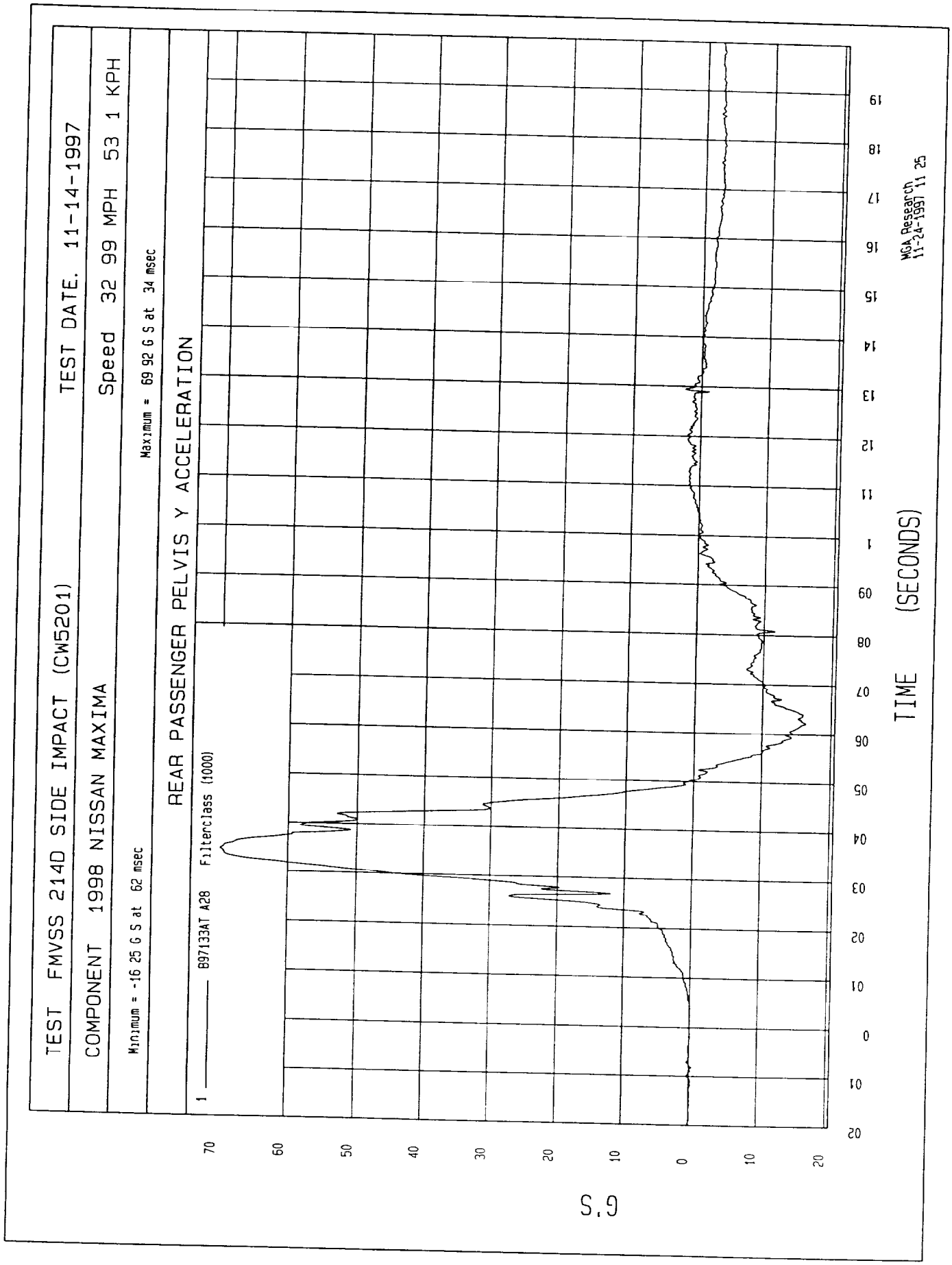
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 1 37E-02 KPH at 8 msec
Maximum = 38 31 KPH at 122 msec
REAR PASSENGER UPPER RIB Y VELOCITY
1 B97133AI V25 Filterclass (180)
KPH
50
40
30
20
10
0
10
20
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 13 26

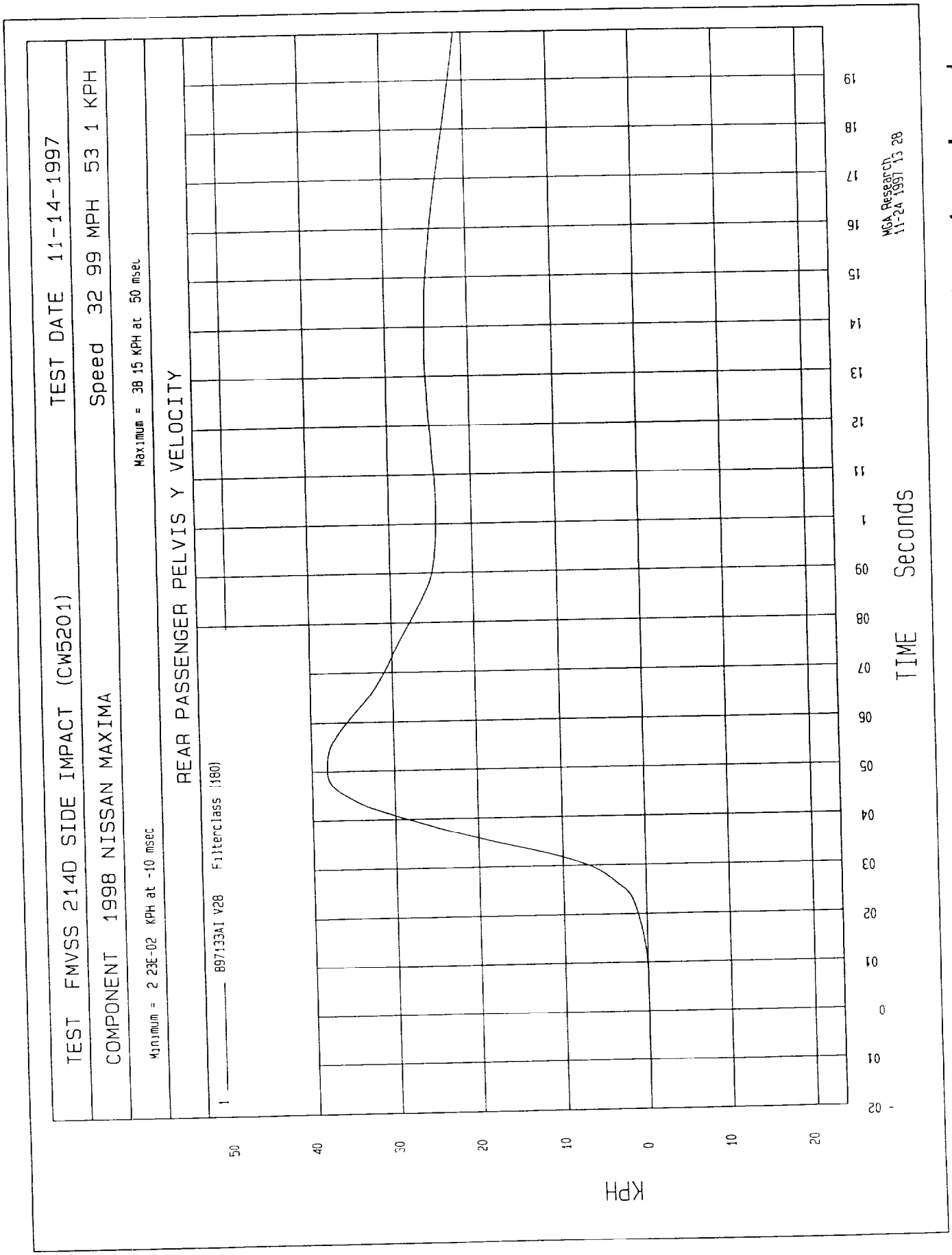

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE. 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -18 18 G S at 58 msec
Maximum = 83 72 G S at 43 msec
REAR PASSENGER LOWER RIB Y ACCELERATION
1 ——— 897133AT A26 Filterclass (1000)
80
60
40
20
0
-20
G'S
TIME (SECONDS)
MGA Research
11-24-1997 11 24


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - -3 99E 03 KPH at -3 msec
Maximum = 36 79 KPH at 66 msec
REAR PASSENGER LOWER RIB Y VELOCITY
1 B97133AI V26 Filterclass (180)
KPH
50
40
30
20
10
0
10
20
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24 1997 13 27


TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = -29 19 G S at 78 msec Maximum = 70 41 G S at 47 msec
REAR PASSENGER LOWER SPINE Y ACCELERATION
1 B97133AT A27 Filterclass (1000)
60
40
20
0
20
TIME (SECONDS)
MGA Research 11-24-1997 11 25
6.5


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -1 32E-02 KPH at 5 msec
Maximum = 39 04 KPH at 66 msec
REAR PASSENGER LOWER SPINE Y VELOCITY
1 B97133AI V27 Filterclass (180)
KPH
50
40
30
20
10
0
-10
-20
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 13 27


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE. 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -16 25 G S at 62 msec
Maximum = 69 92 G S at 34 msec
REAR PASSENGER PELVIS Y ACCELERATION
1 B97133AT A28 Filterclass (1000)
70
60
50
40
30
20
10
0
10
20
G's
TIME (SECONDS)
MGA Research
11-24-1997 11 25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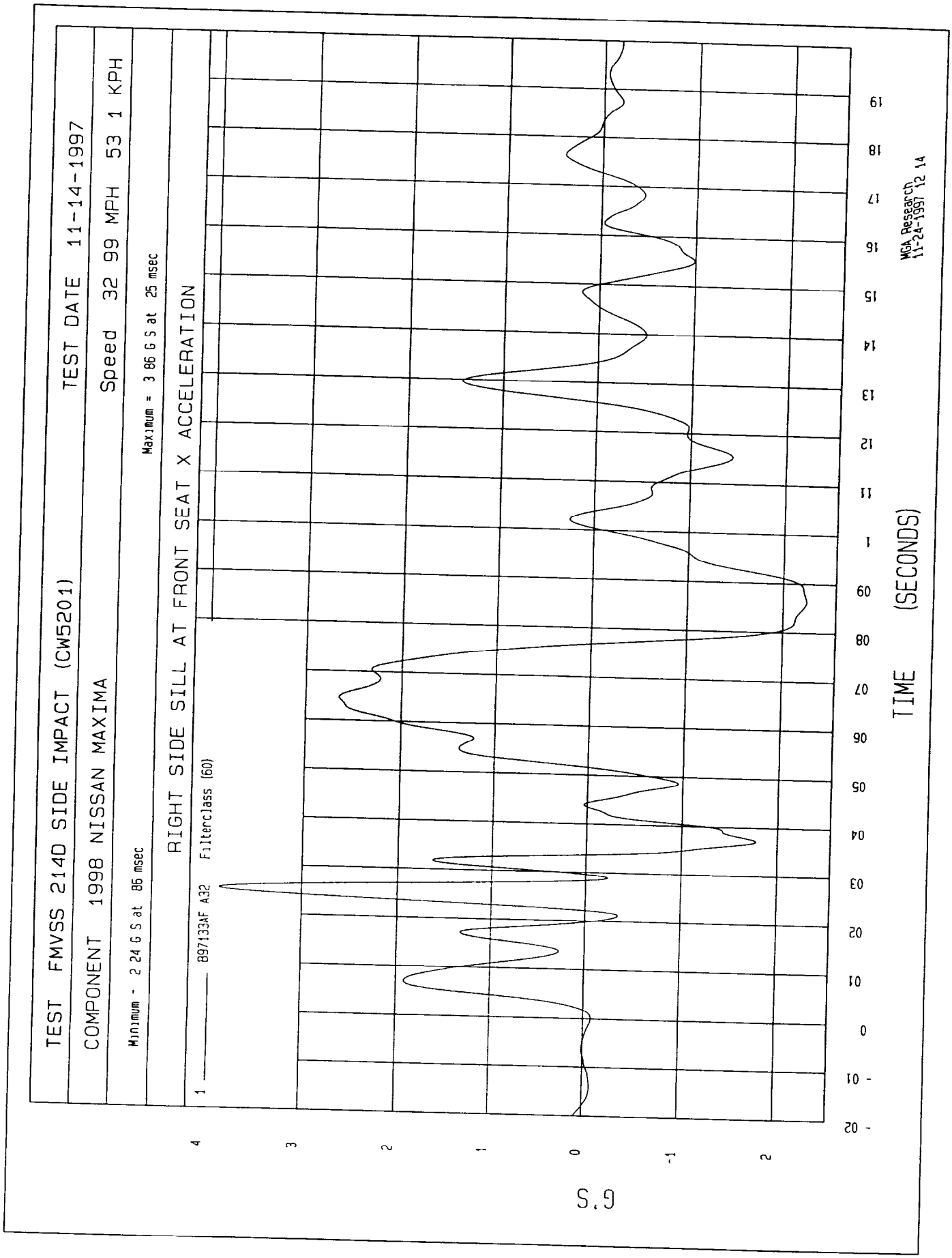
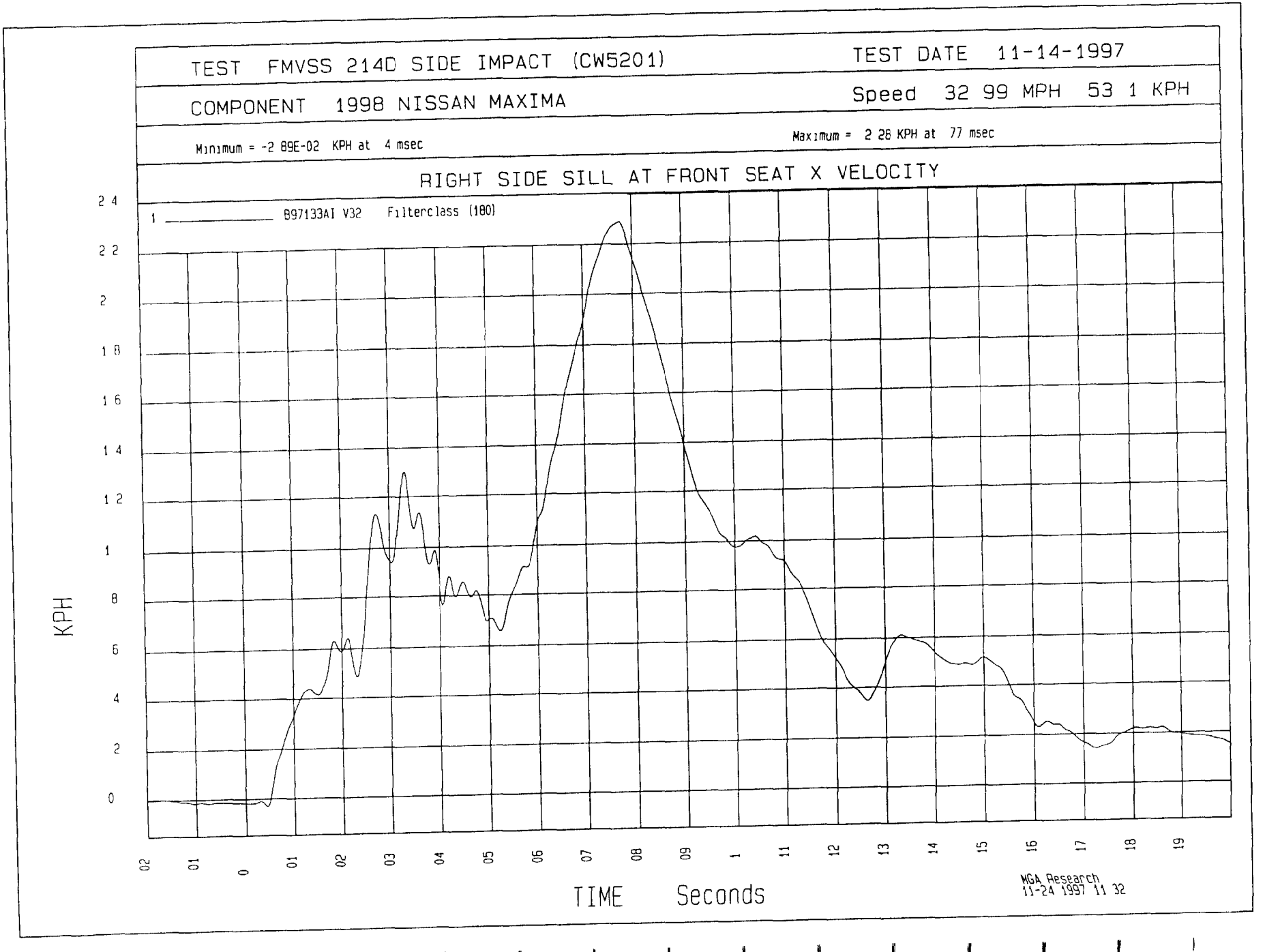
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 2 23E-02 KPH at -10 msec
Maximum = 38 15 KPH at 50 msec
REAR PASSENGER PELVIS Y VELOCITY
1 B97133AI V2B Filterclass (180)
KPH
TIME Seconds
MGA Research
11-24 1997 13 28


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 2 24 G S at 86 msec
Maximum = 3 86 G S at 25 msec
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION
1 897133AF A32 Filterclass (60)
MGA Research
11-24-1997 12 14
TIME (SECONDS)
S.9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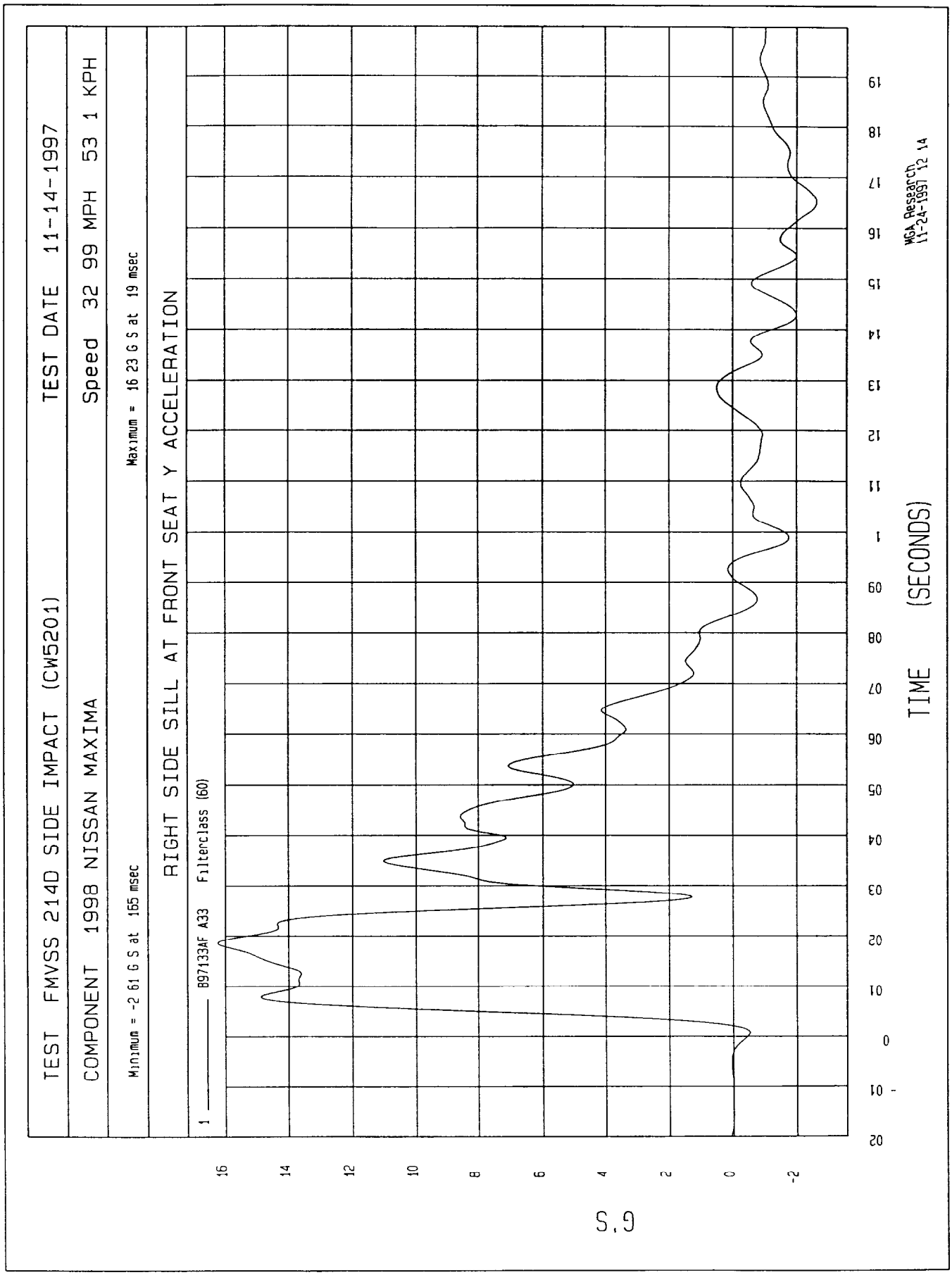
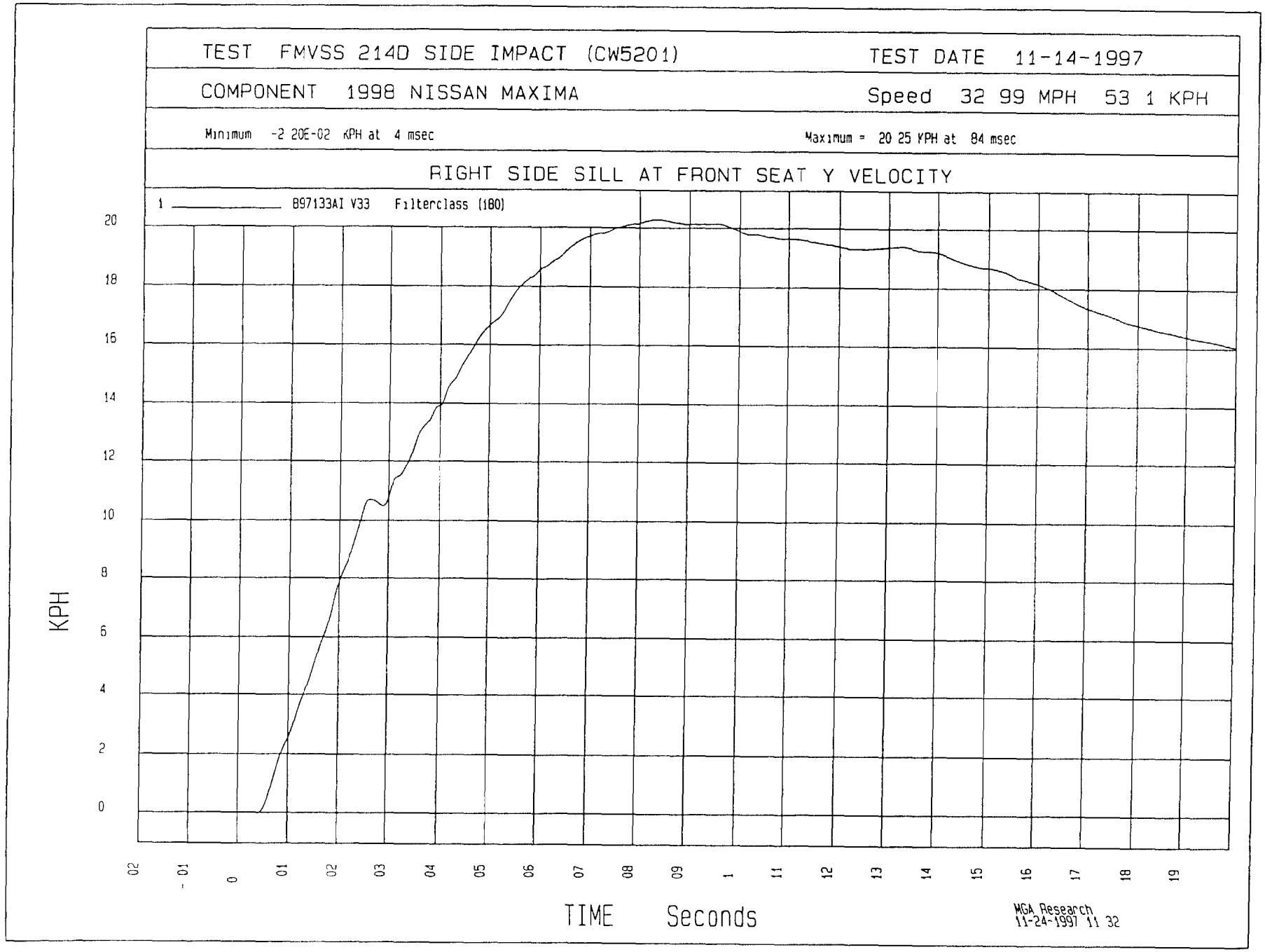
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -2 89E-02 KPH at 4 msec
Maximum = 2 28 KPH at 77 msec
RIGHT SIDE SILL AT FRONT SEAT X VELOCITY
1 B97133AI V32 Filterclass (180)
KPH
2 4
2 2
2
1 8
1 6
1 4
1 2
1
8
6
4
2
0
02 01 0 01 02 03 04 05 06 07 08 09 1 11 12 13 14 15 16 17 18 19
TIME Seconds
MGA Research
11-24 1997 11 32


TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = -2 61 G S at 165 msec Maximum = 16 23 G S at 19 msec
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B97133AF A33 Filterclass (60)
16 14 12 10 8 6 4 2 0 -2
G's
TIME (SECONDS)
MGA Research 11-24-1997 12 14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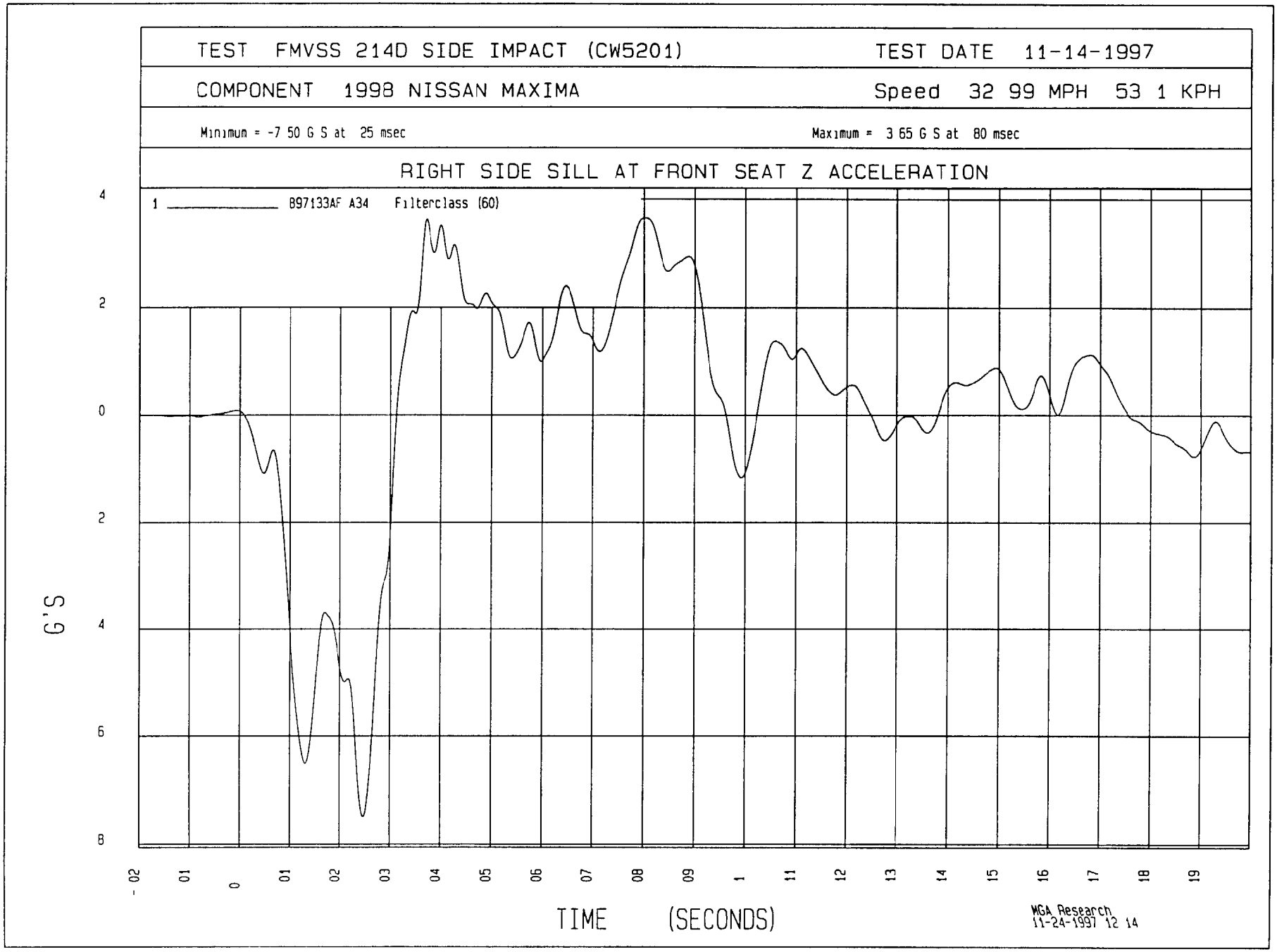
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum -2 20E-02 KPH at 4 msec
Maximum = 20 25 KPH at 84 msec
RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY
1 B97133AI V33 Filterclass (180)
KPH
20
18
16
14
12
10
8
6
4
2
0
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 32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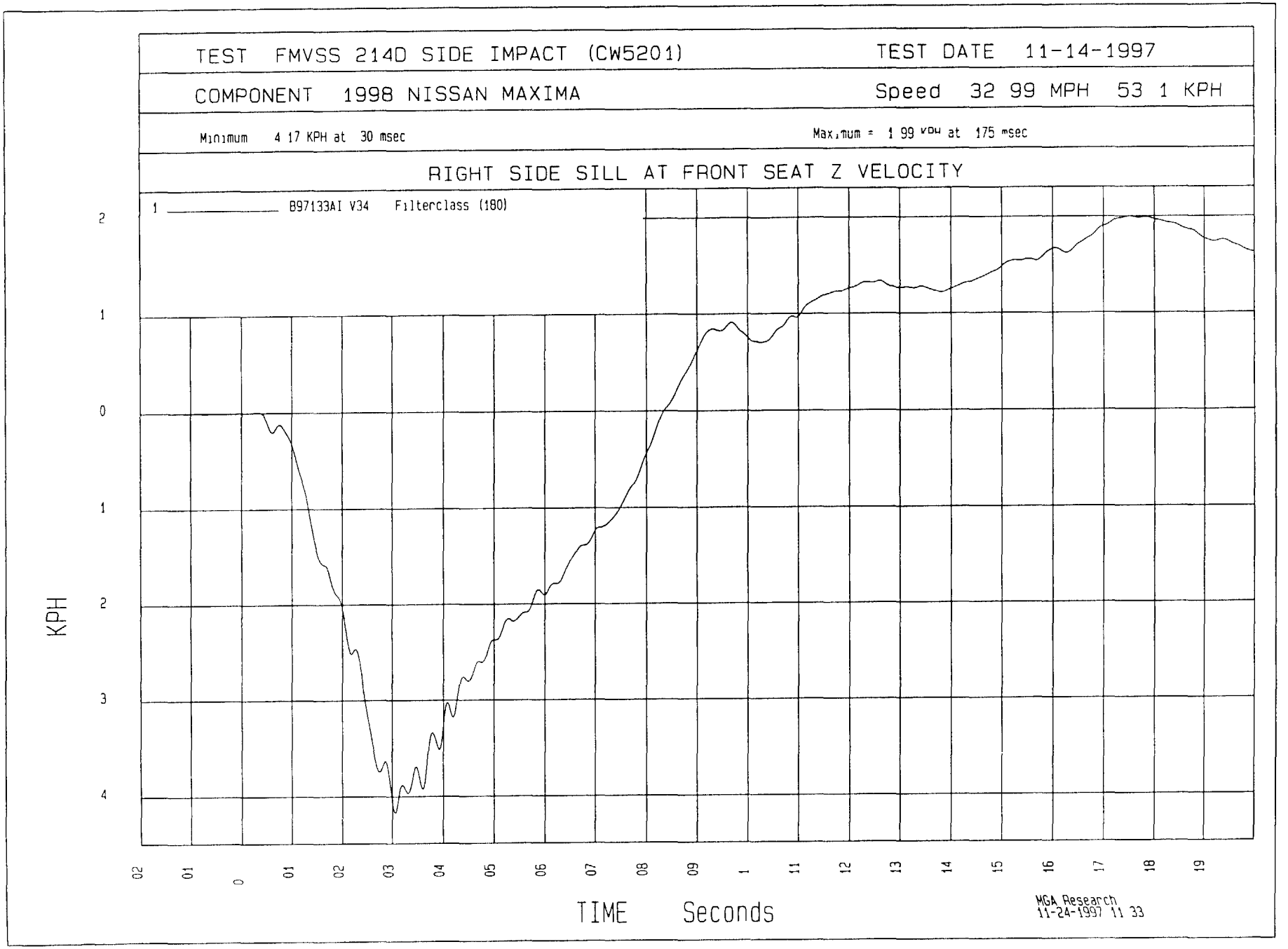
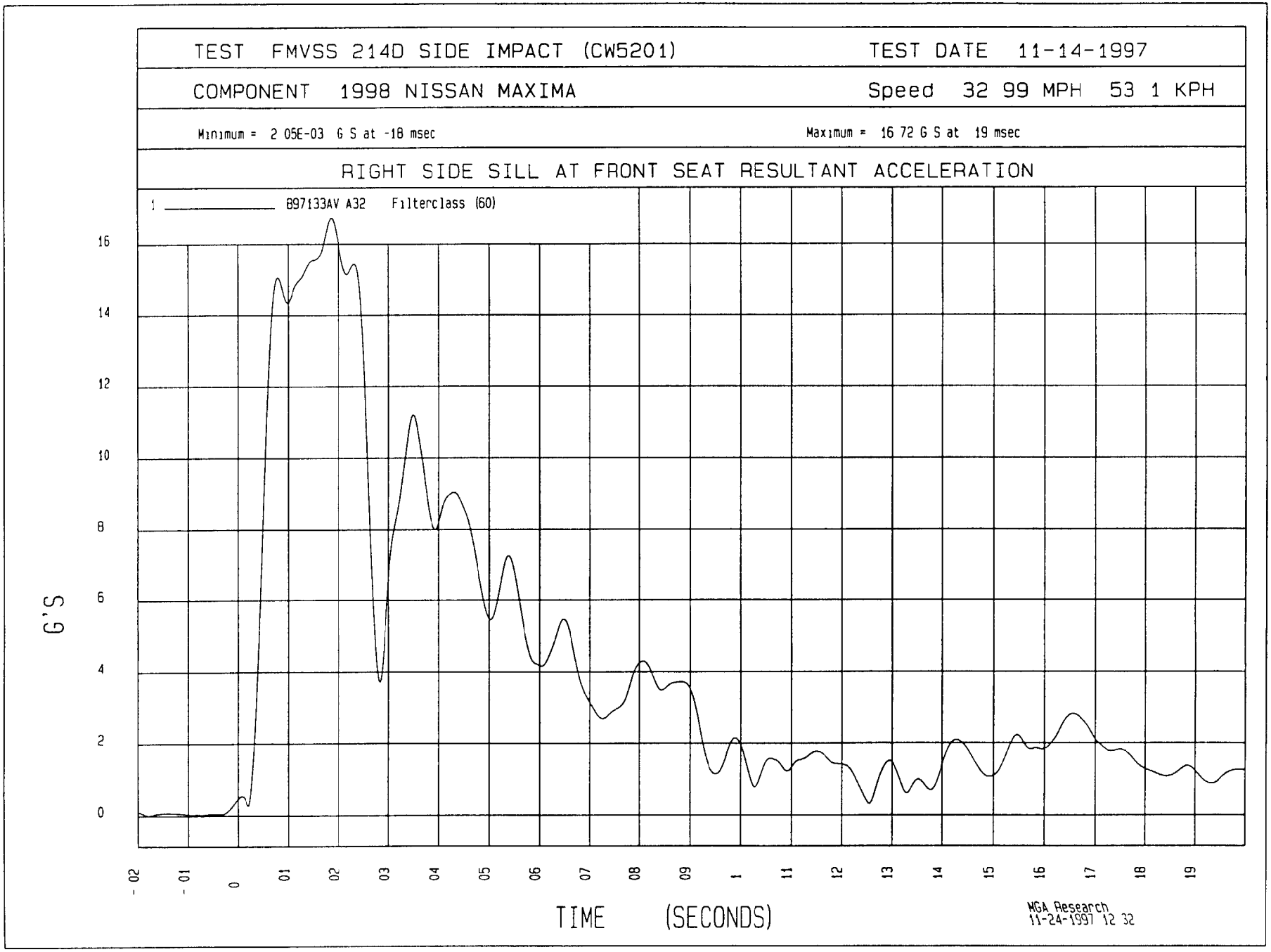
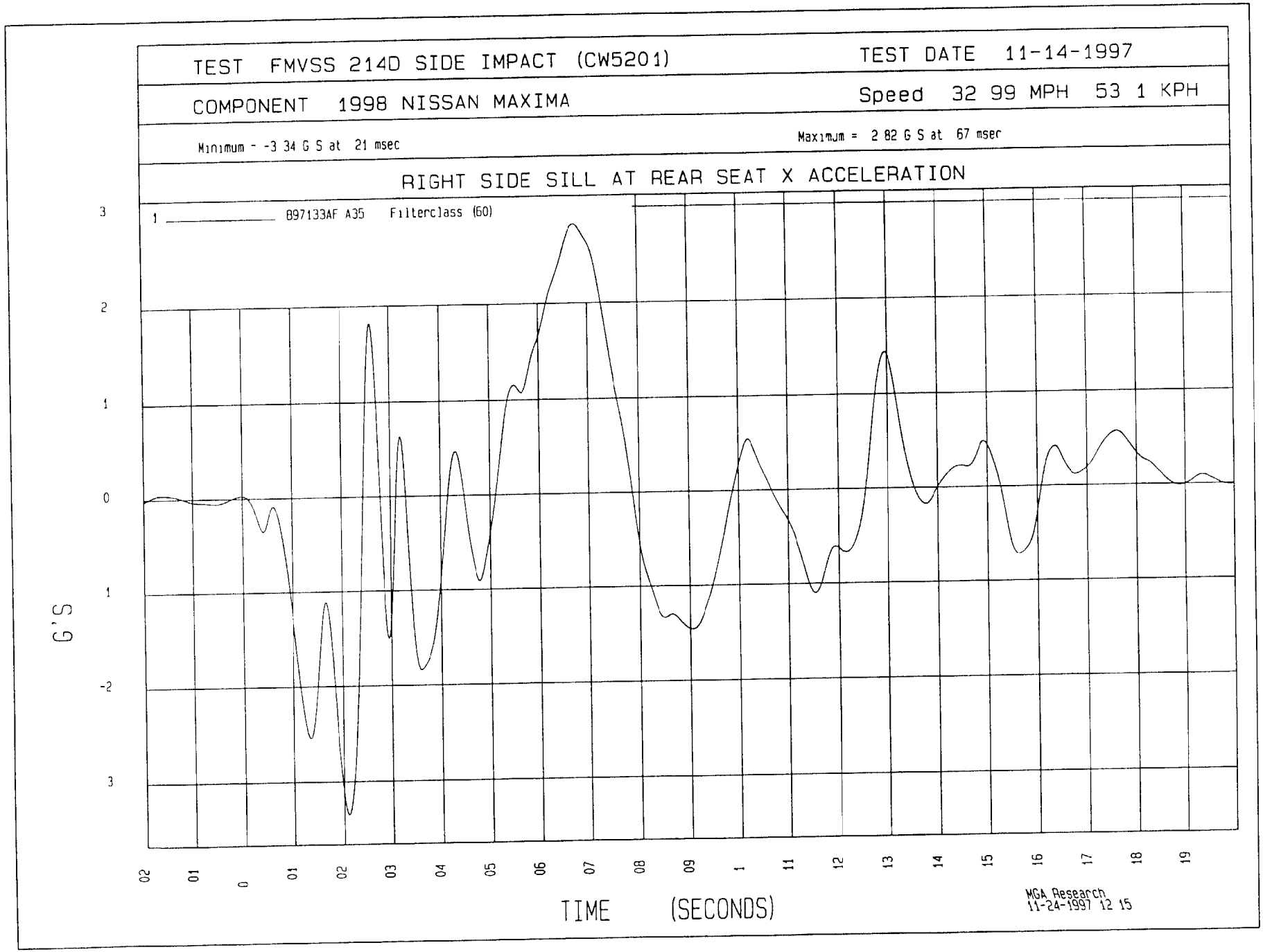
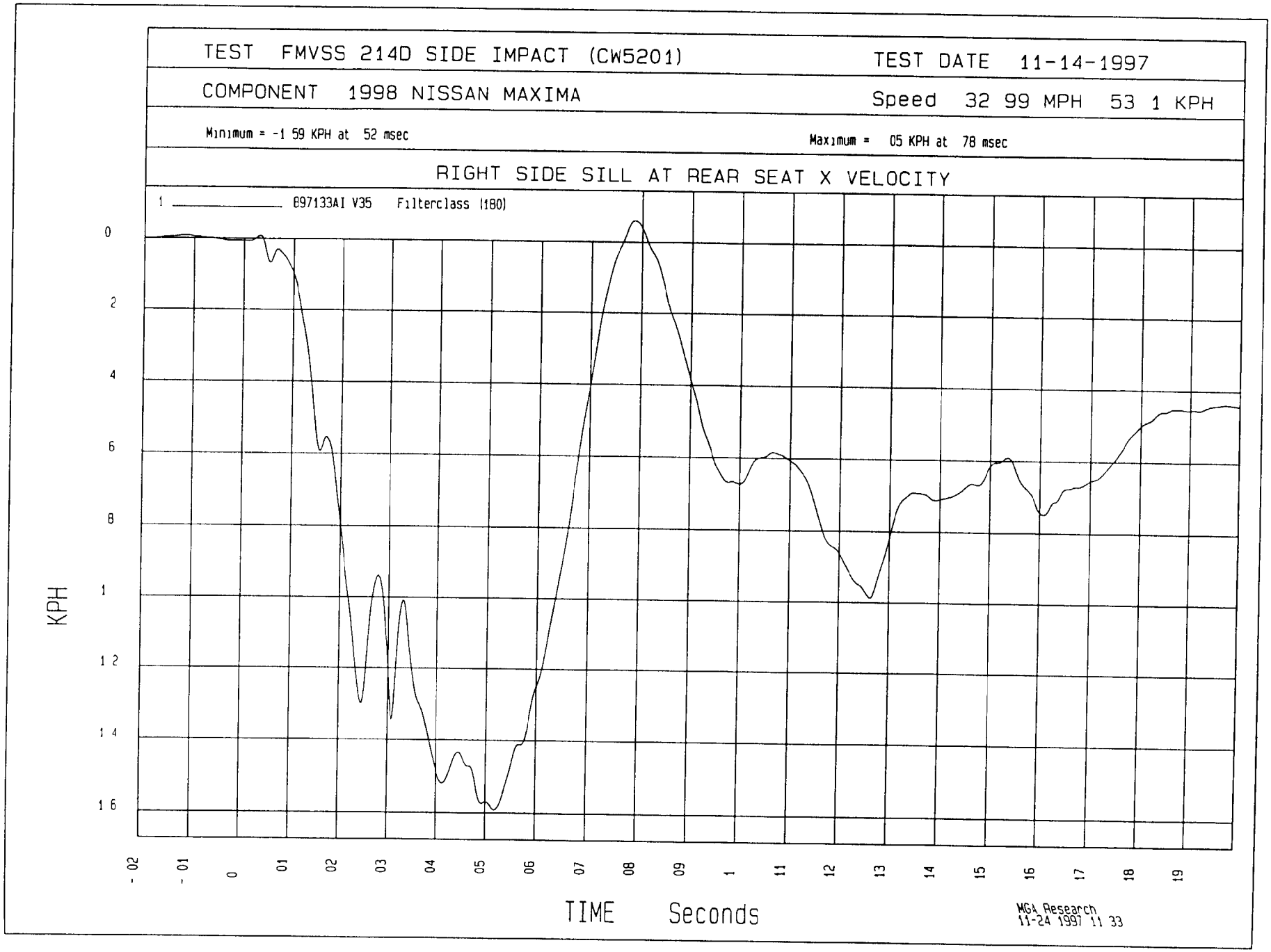
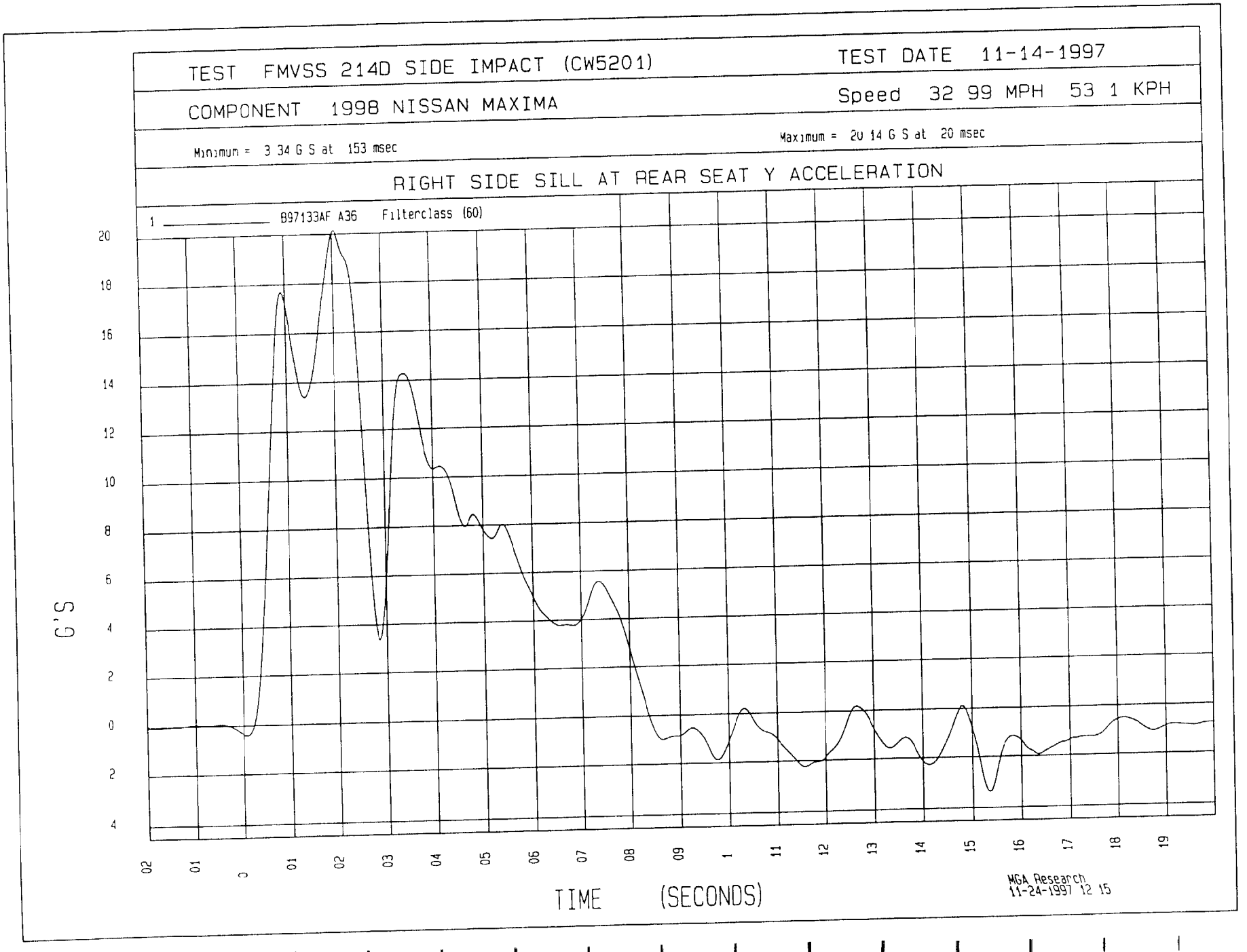
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -7 50 G S at 25 msec
Maximum = 3 65 G S at 80 msec
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION
1 B97133AF A34 Filterclass (60)
4
2
0
2
4
6
8
G'S
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 14

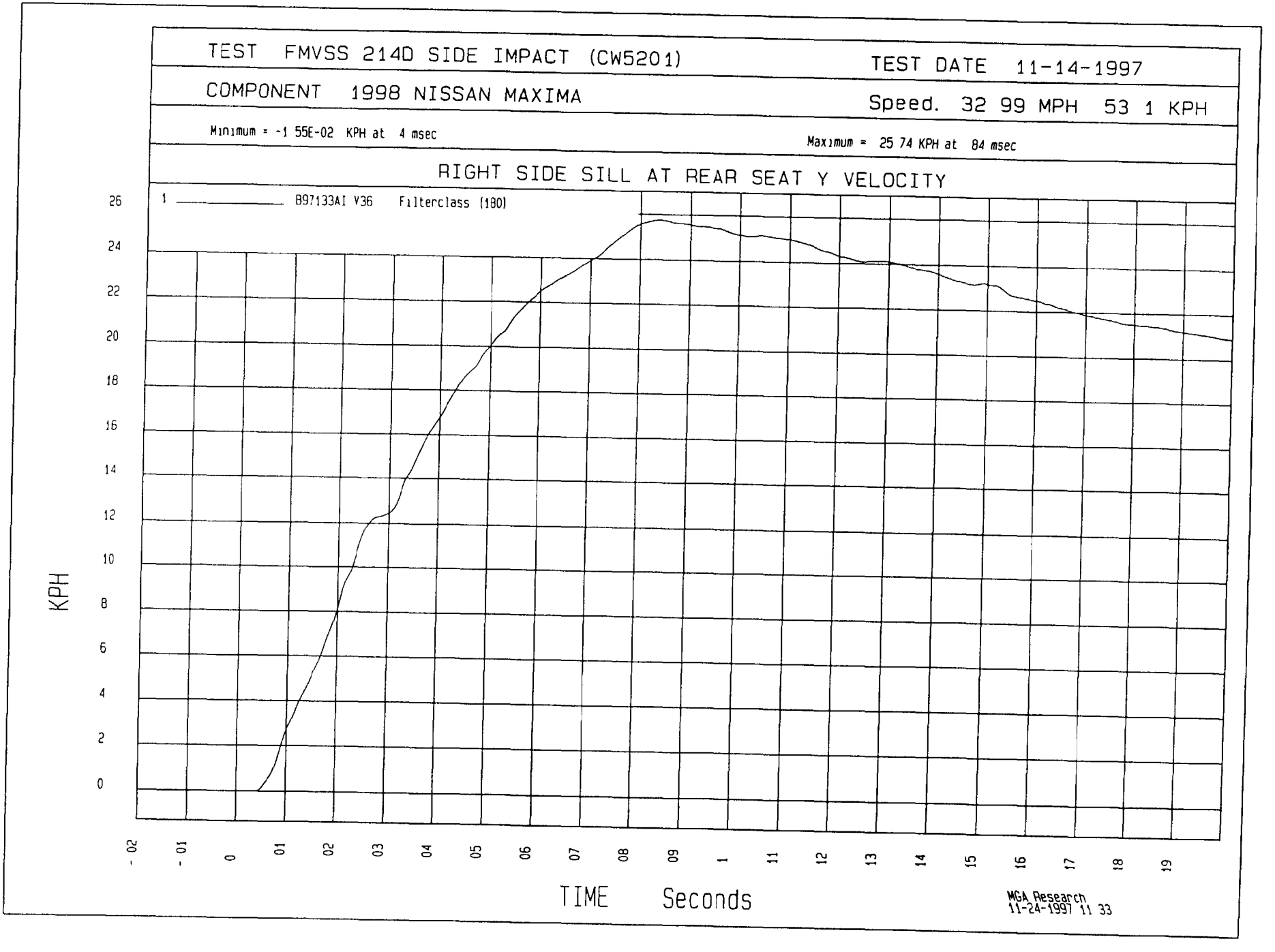

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 4 17 KPH at 30 msec
Maximum = 1 99 KPH at 175 msec
RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY
1 B97133AI V34 Filterclass (180)
KPH
TIME Seconds
MGA Research
11-24-1997 11 33

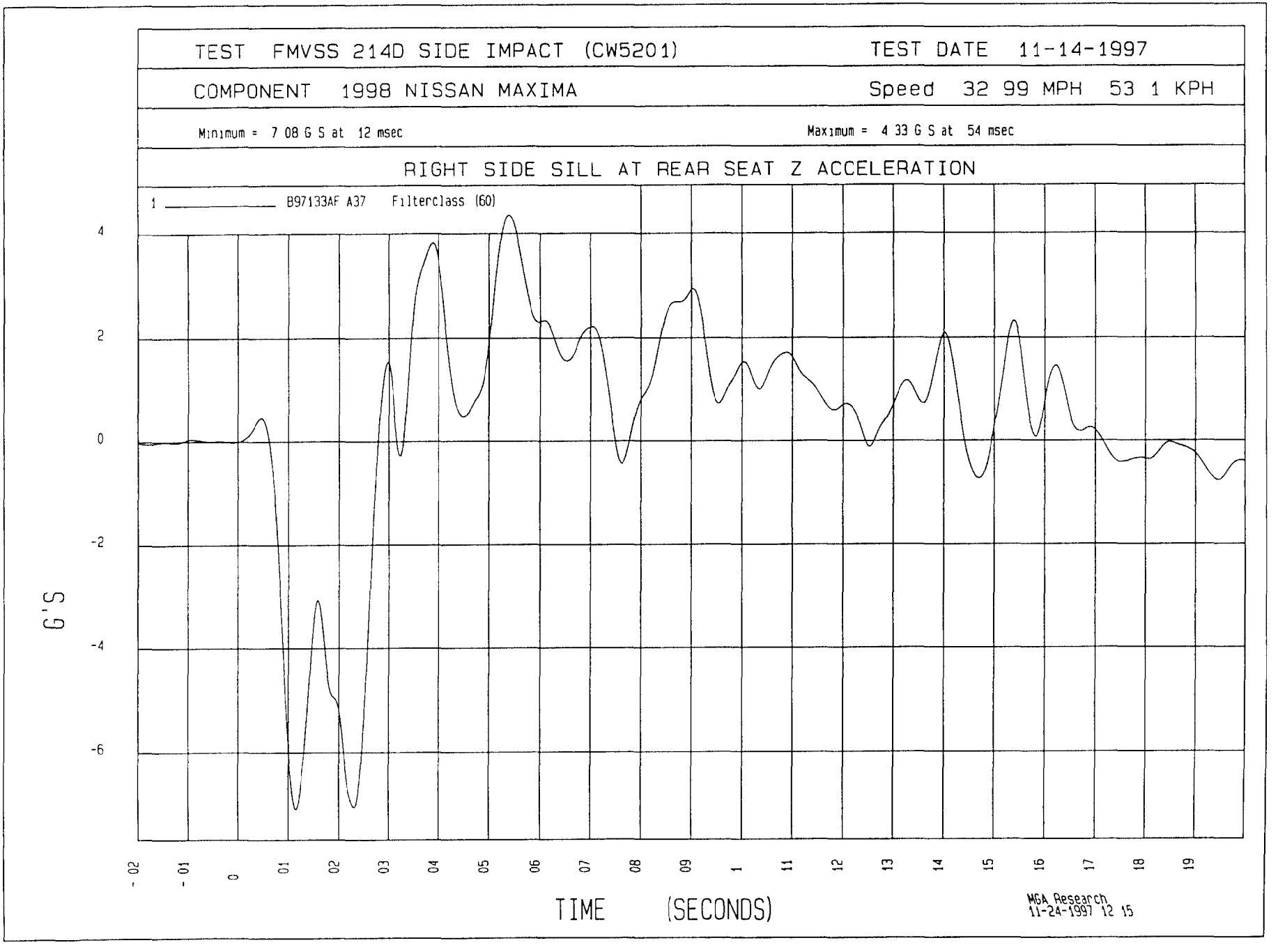

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 2 05E-03 G S at -18 msec
Maximum = 16 72 G S at 19 msec
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION
1 B97133AV A32 Filterclass (60)
G'S
16
14
12
10
8
6
4
2
0
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 32

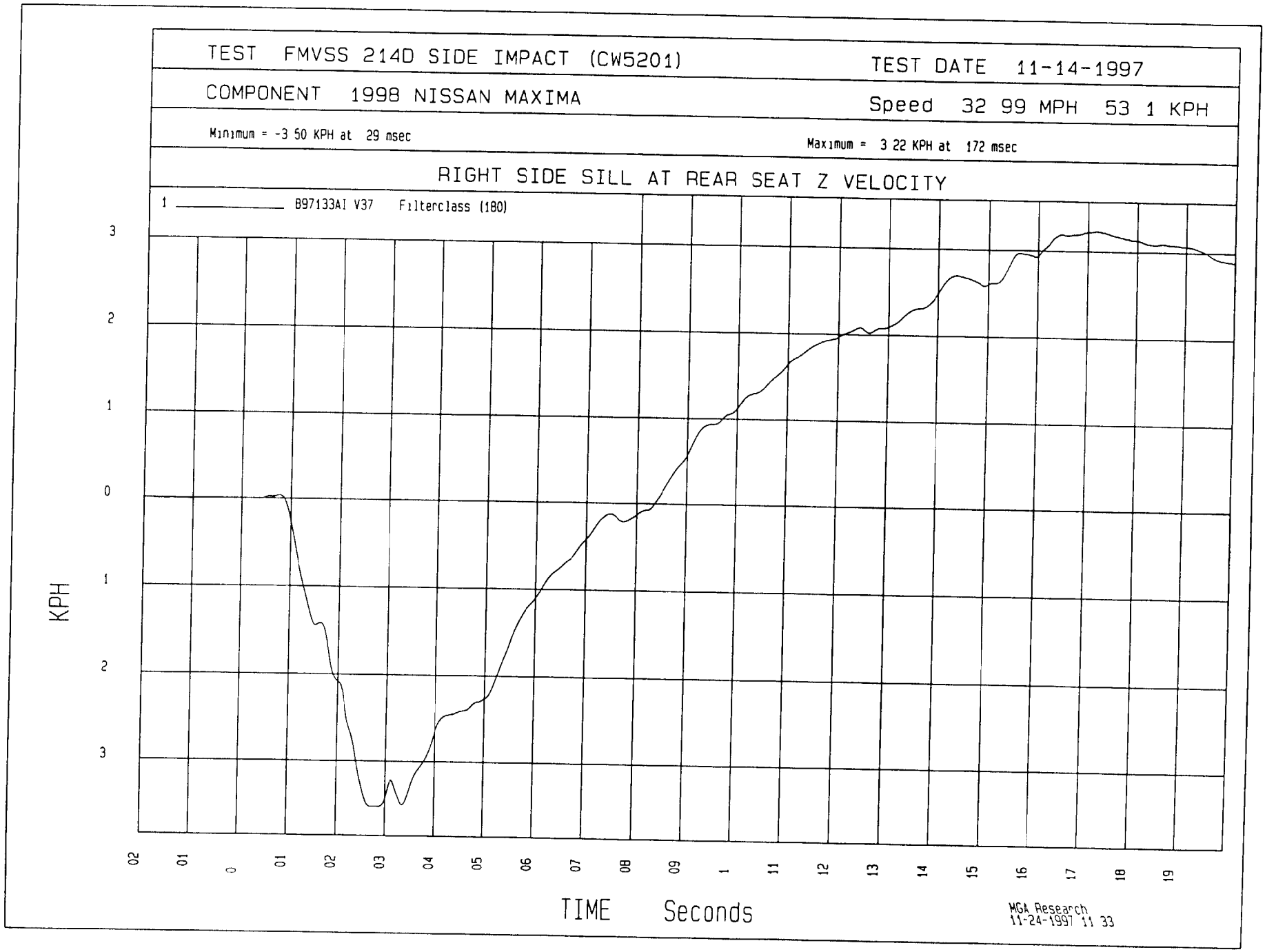

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -3 34 G S at 21 msec
Maximum = 2 82 G S at 67 msec
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION
1 B97133AF A35 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
11-24-1997 12 15

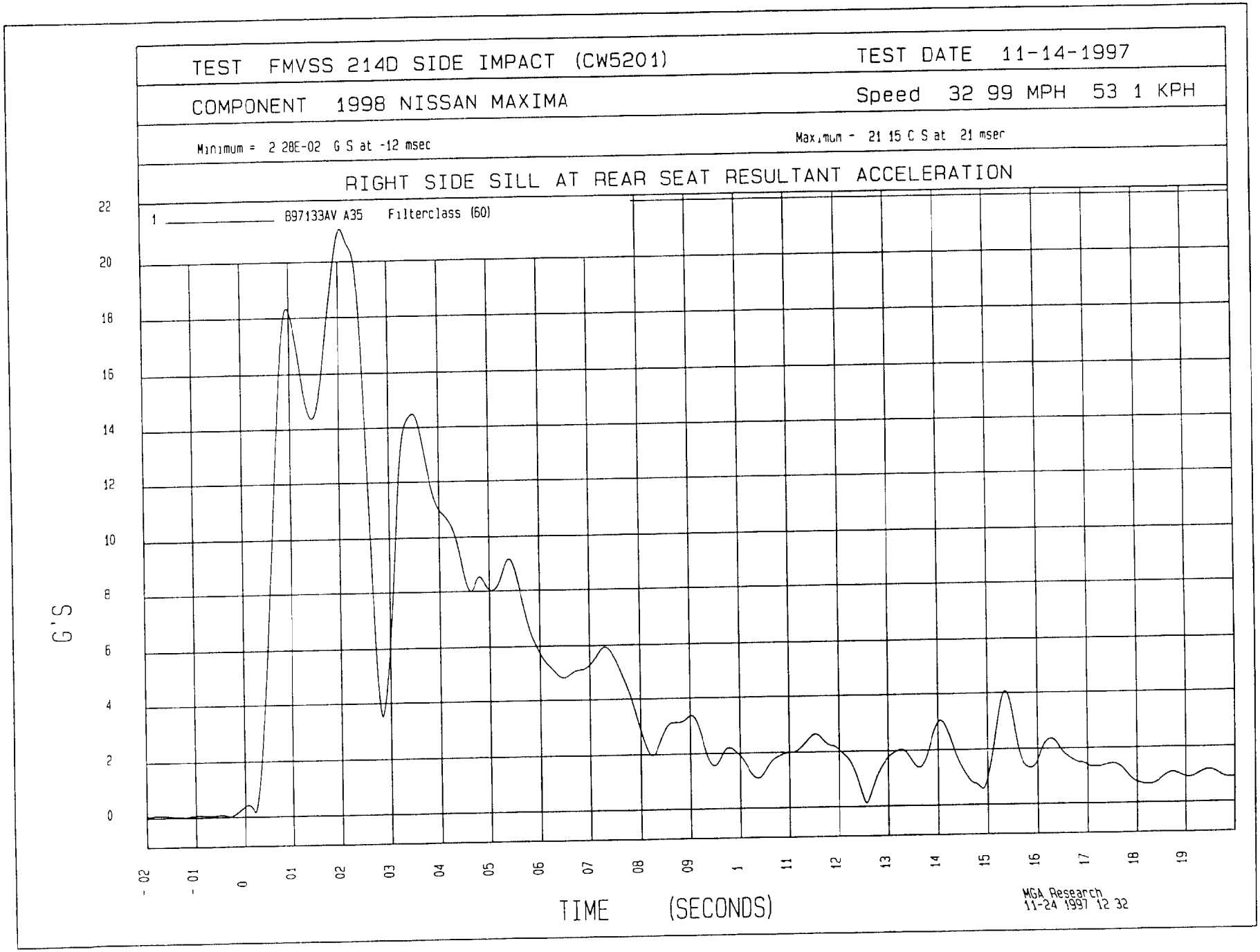

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -1 59 KPH at 52 msec
Maximum = 05 KPH at 78 msec
RIGHT SIDE SILL AT REAR SEAT X VELOCITY
1 B97133AI V35 Filterclass (180)
KPH
0
2
4
6
8
1
1 2
1 4
1 6
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24 1997 11 33

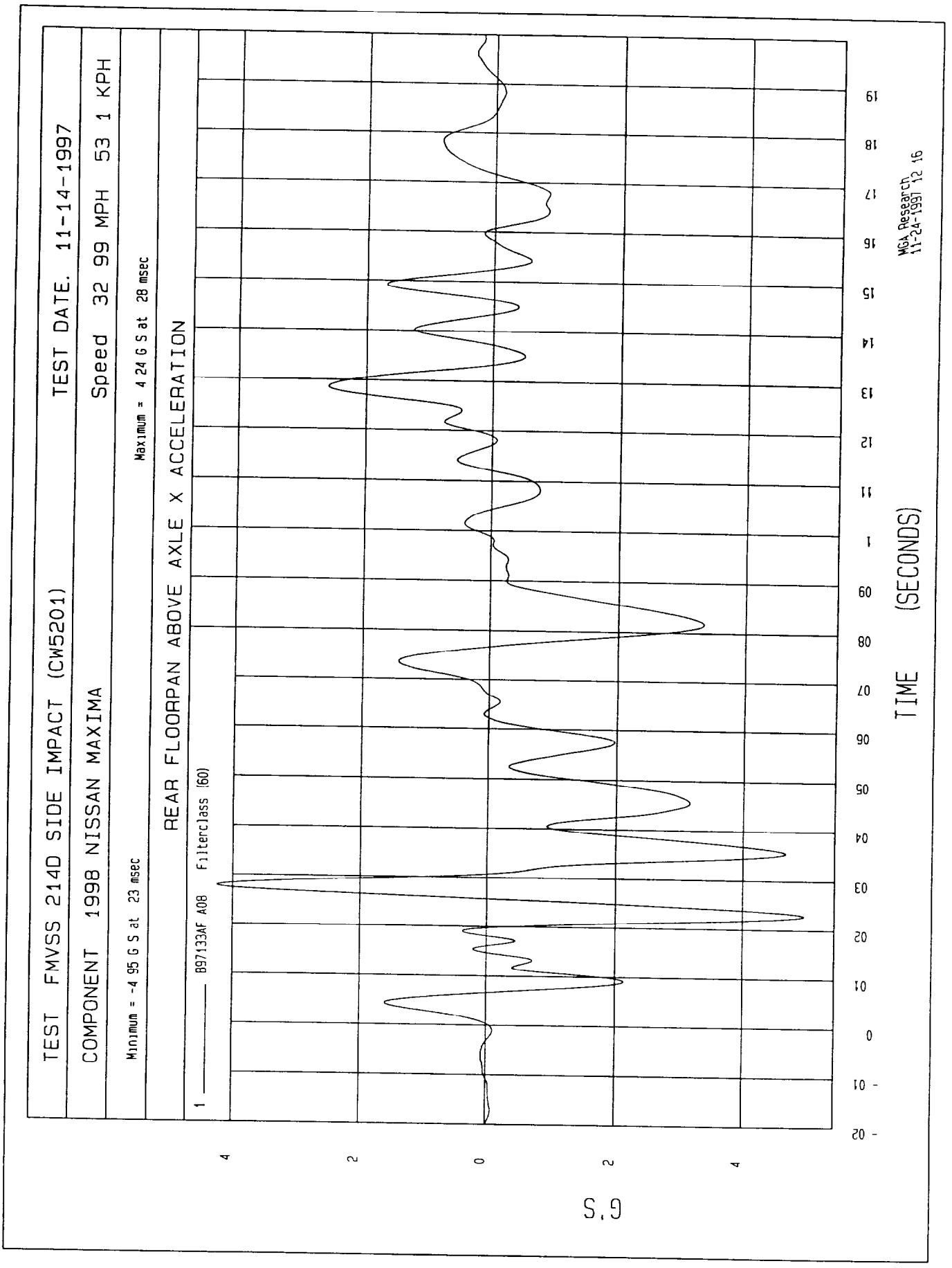

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 3 34 G S at 153 msec
Maximum = 20 14 G S at 20 msec
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B97133AF A36 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
11-24-1997 12 15

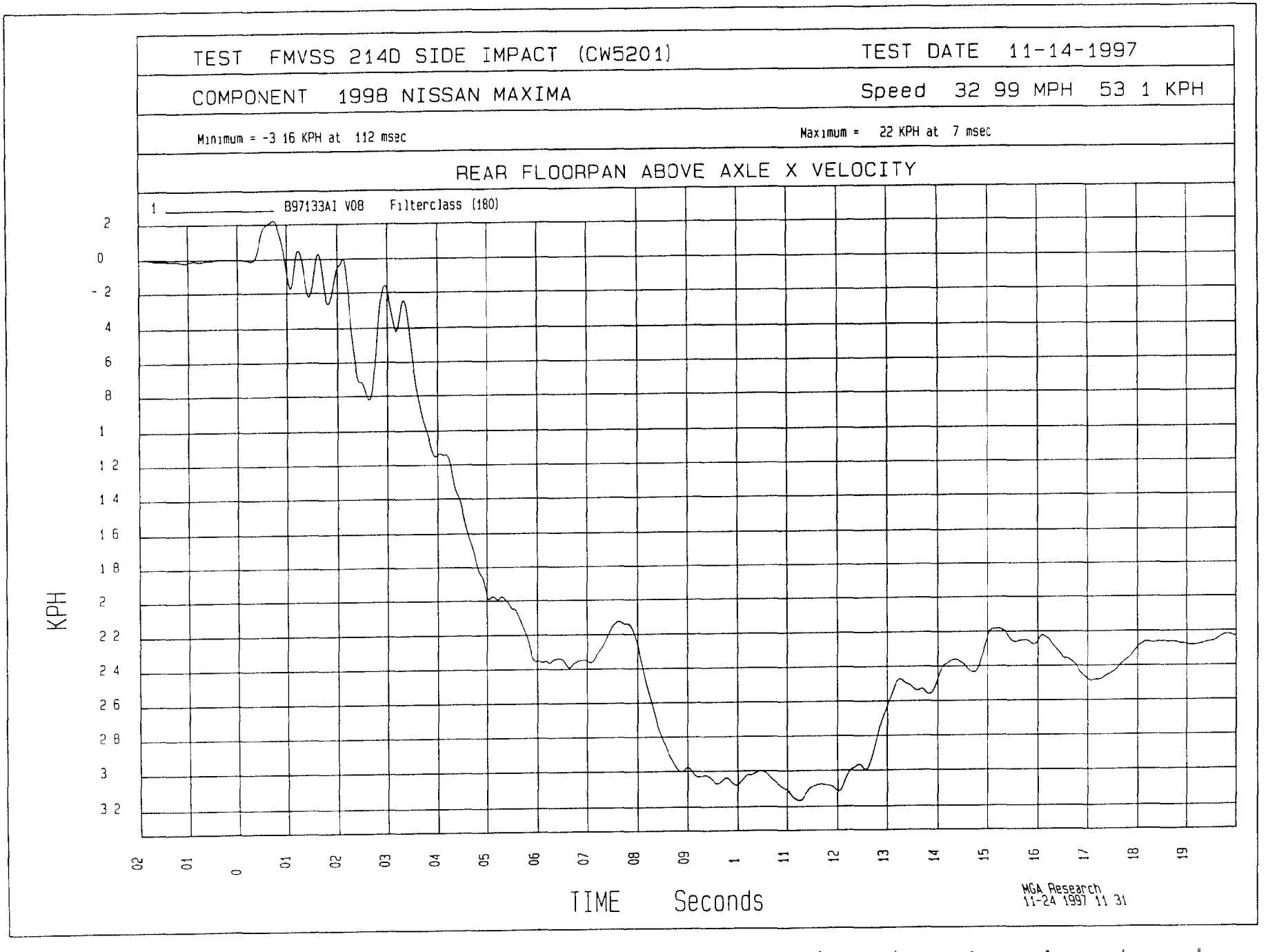

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed. 32 99 MPH 53 1 KPH
Minimum = -1 55E-02 KPH at 4 msec
Maximum = 25 74 KPH at 84 msec
RIGHT SIDE SILL AT REAR SEAT Y VELOCITY
1 B97133AI V36 Filterclass (180)
KPH
26
24
22
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 33

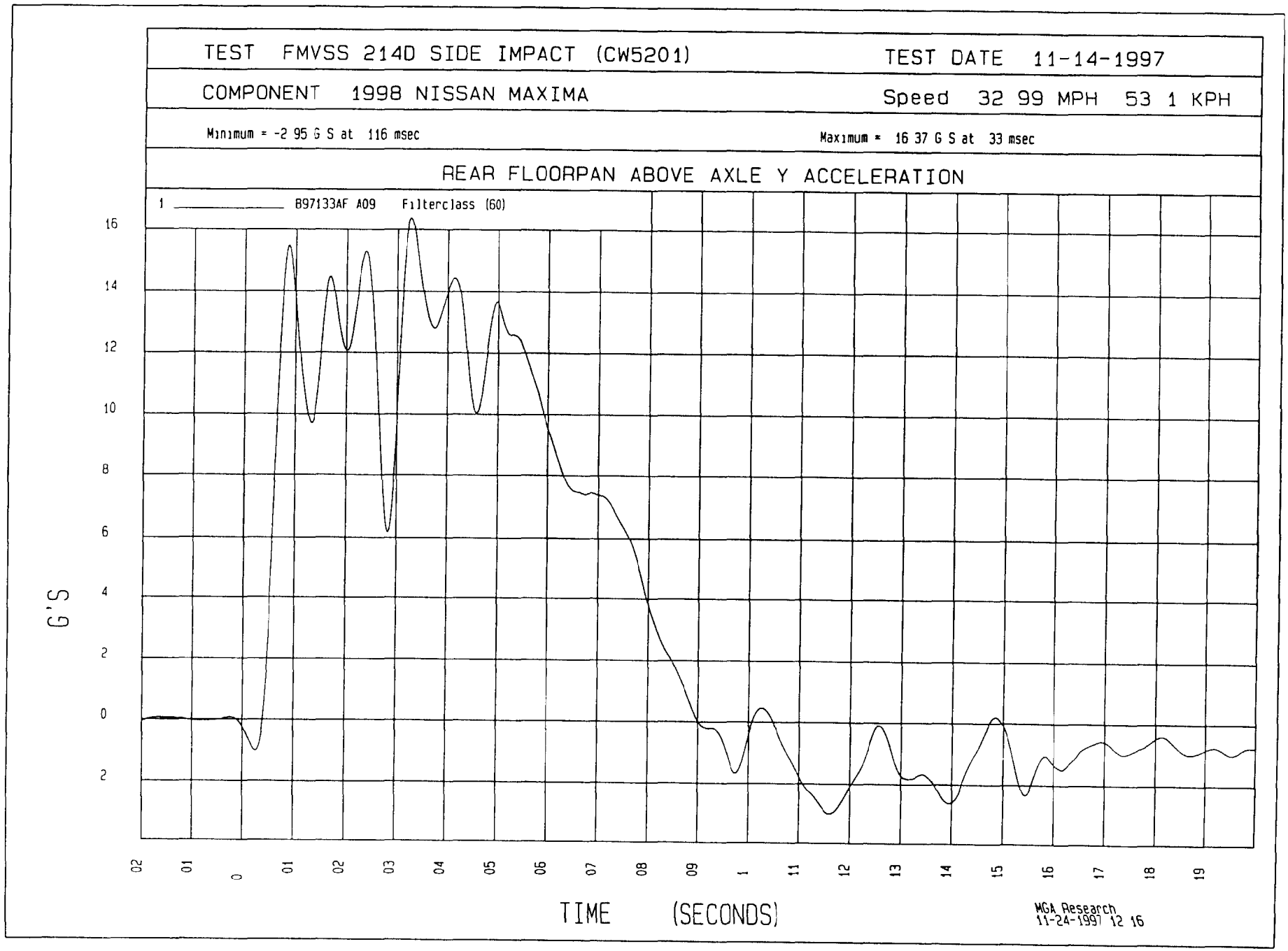

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 7 08 G S at 12 msec
Maximum = 4 33 G S at 54 msec
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION
1 B97133AF A37 Filterclass (60)
4
2
0
-2
-4
-6
G'S
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 15

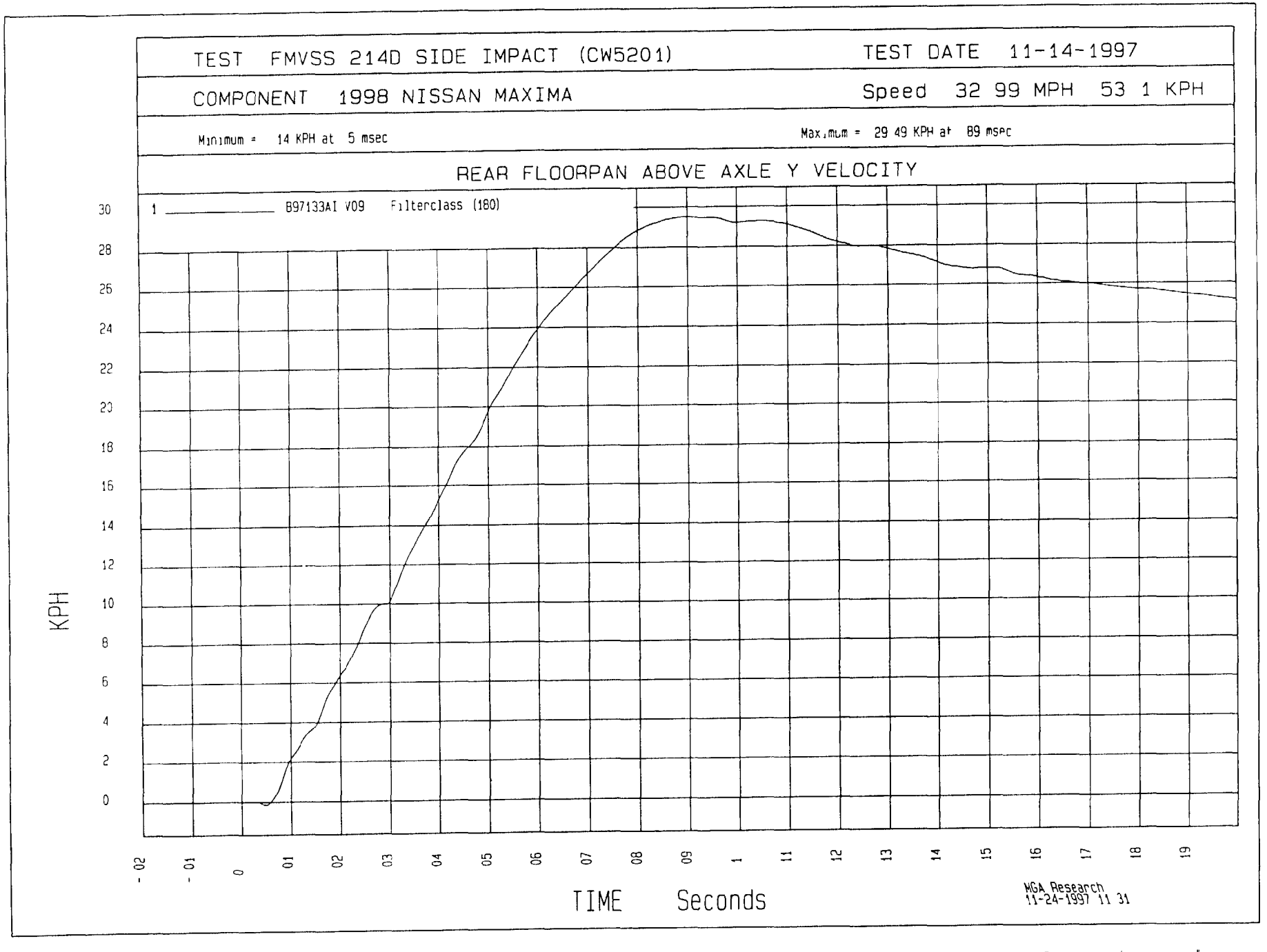

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -3 50 KPH at 29 msec
Maximum = 3 22 KPH at 172 msec
RIGHT SIDE SILL AT REAR SEAT Z VELOCITY
1 B97133AI V37 Filterclass (180)
KPH
TIME Seconds
MGA Research
11-24-1997 11 33

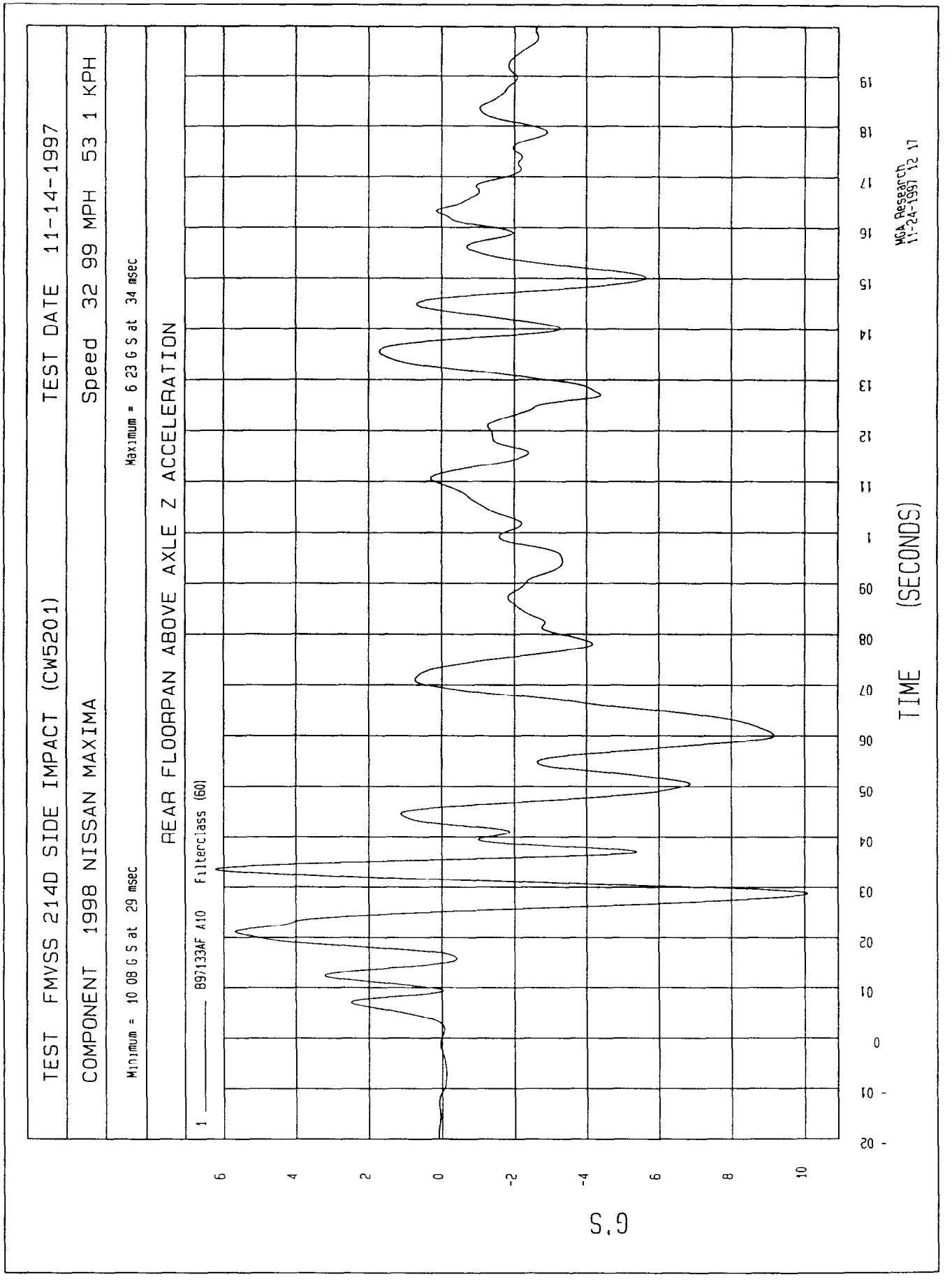

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 2 28E-02 G S at -12 msec
Maximum = 21 15 G S at 21 msec
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION
1 B97133AV A35 Filterclass (60)
G'S
22
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24 1997 12 32

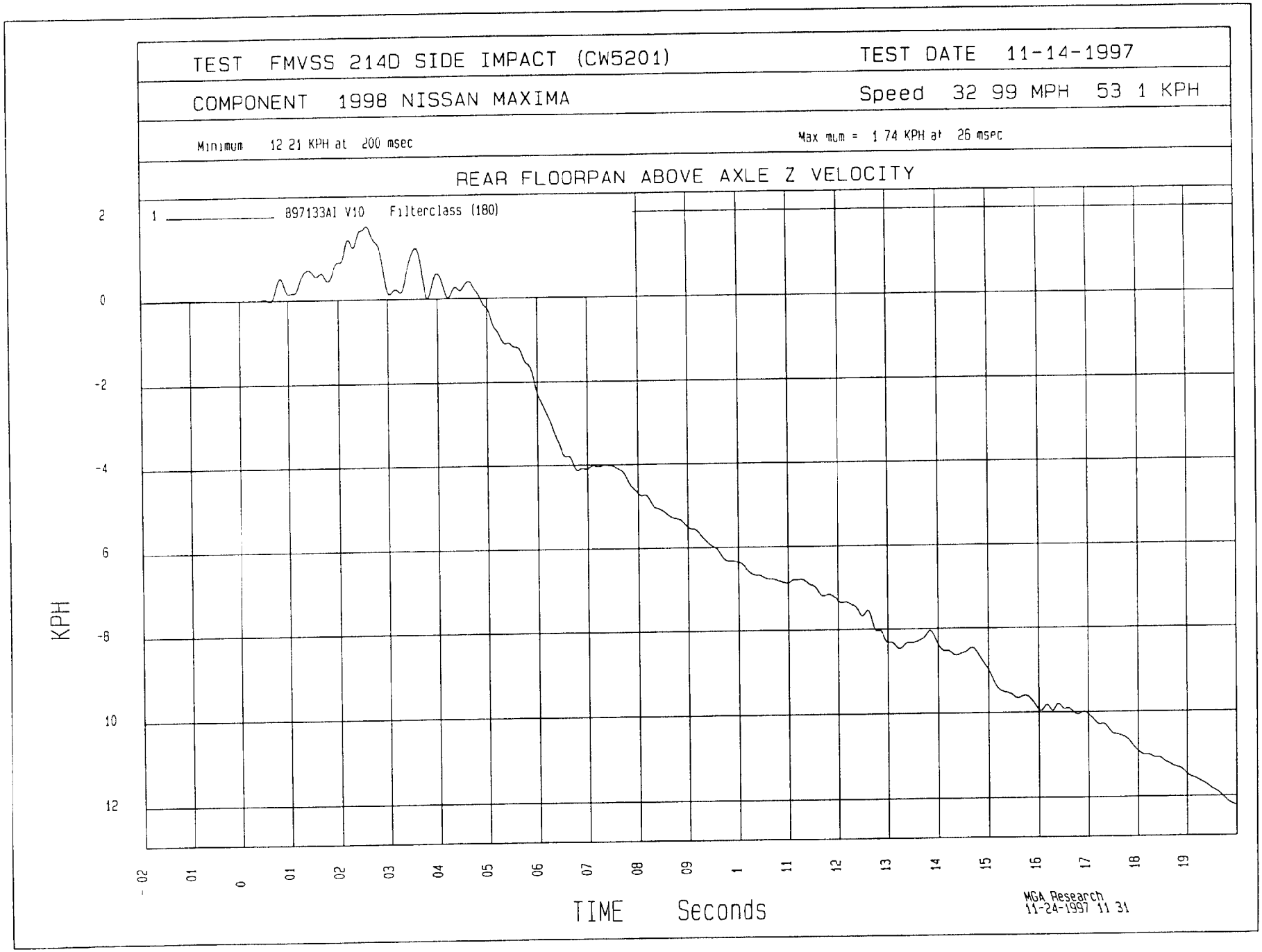

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE. 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = -4 95 G S at 23 msec Maximum = 4 24 G S at 28 msec
REAR FLOORPAN ABOVE AXLE X ACCELERATION
1 B97133Af A08 Filterclass (60)
4
2
0
2
4
G's
20 -
10 -
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research 11-24-1997 12 16

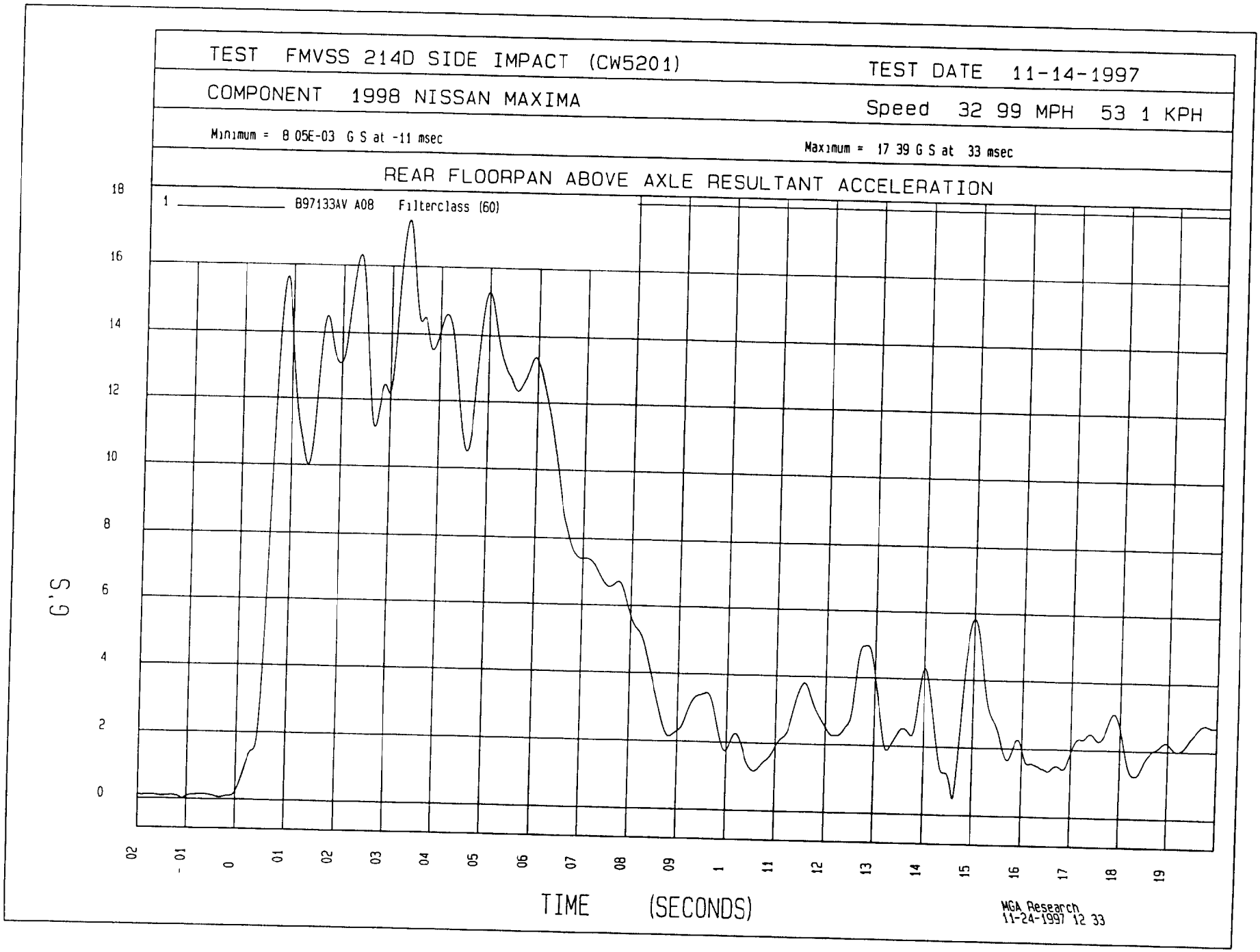

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -3 16 KPH at 112 msec
Maximum = 22 KPH at 7 msec
REAR FLOORPAN ABOVE AXLE X VELOCITY
1 B97133AI V08 Filterclass (180)
KPH
TIME Seconds
MGA Research
11-24 1997 11 31

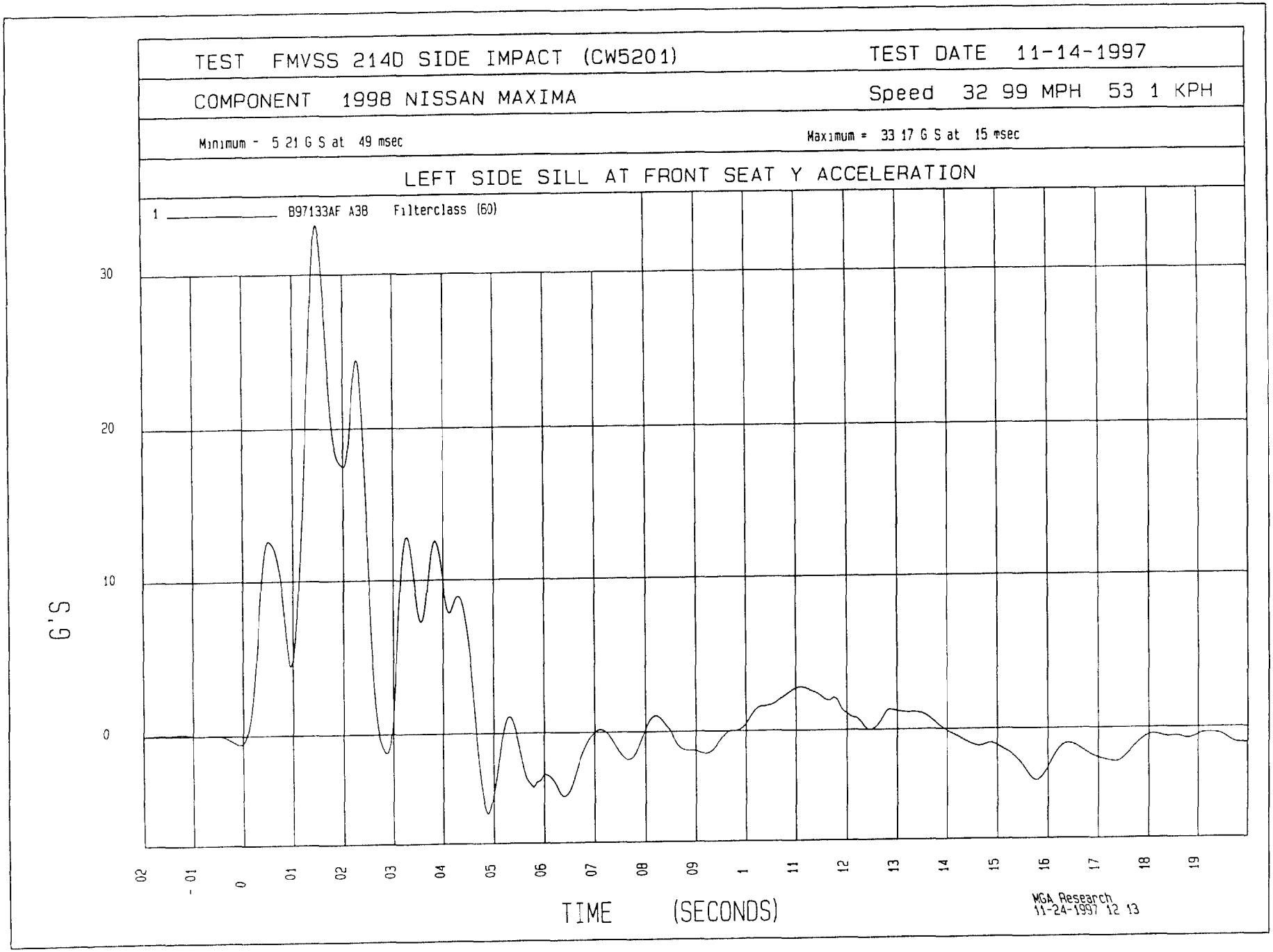

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -2 95 G S at 116 msec
Maximum = 16 37 G S at 33 msec
REAR FLOORPAN ABOVE AXLE Y ACCELERATION
1 B97133AF A09 Filterclass (60)
G'S
16
14
12
10
8
6
4
2
0
2
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 16

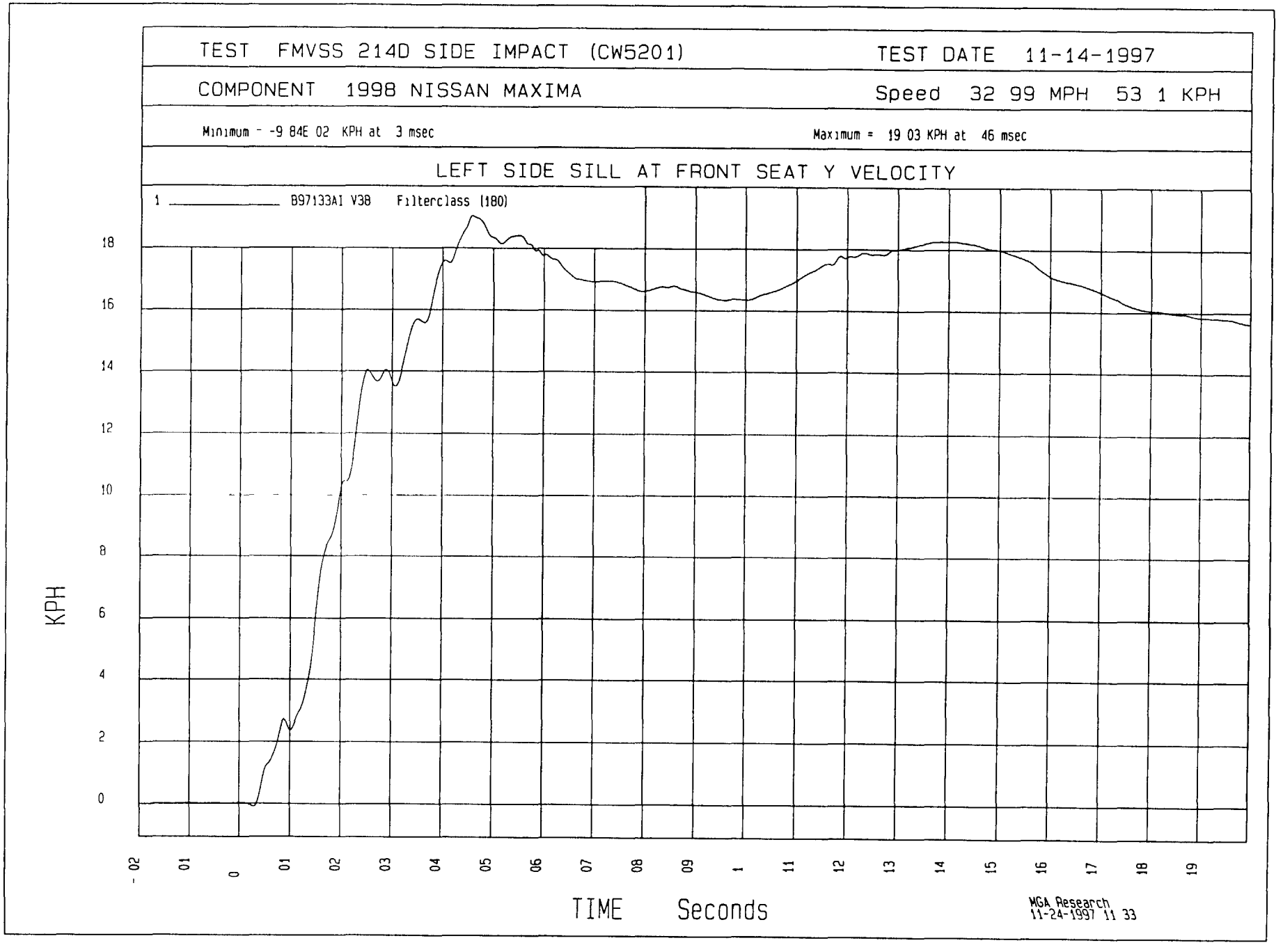

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 14 KPH at 5 msec
Maximum = 29 49 KPH at 89 msec
REAR FLOORPAN ABOVE AXLE Y VELOCITY
1 B97133AI V09 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 31

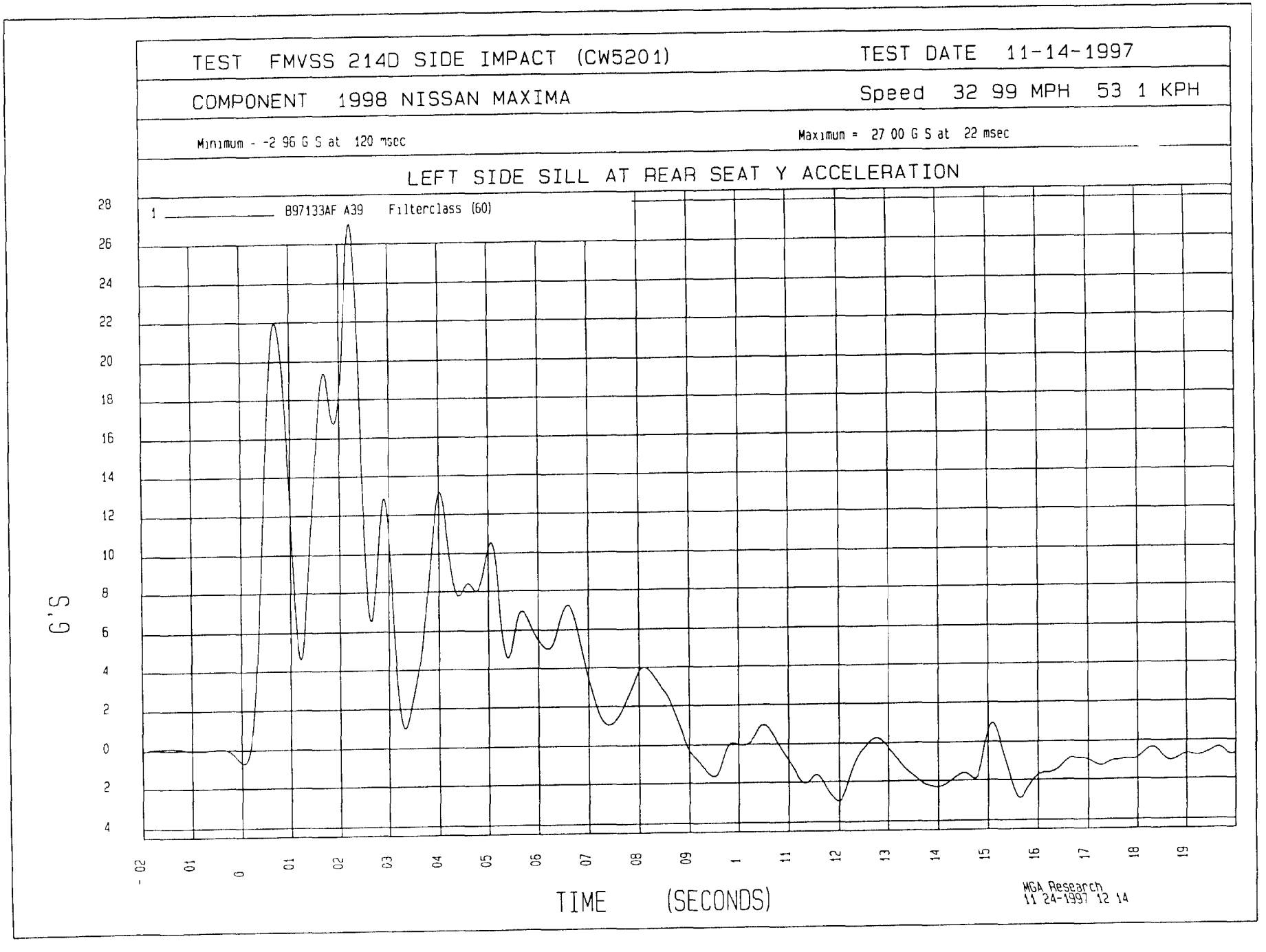

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = 10 08 G S at 29 msec Maximum = 6 23 G S at 34 msec
REAR FLOORPAN ABOVE AXLE Z ACCELERATION
1 B97133AF A10 Filterclass (60)
6 4 2 0 -2 -4 6 8 10
20 - 10 - 0 01 02 03 04 05 06 07 08 09 1 11 12 13 14 15 16 17 18 19
TIME (SECONDS)
MGA Research 11-24-1997 12 17
G's

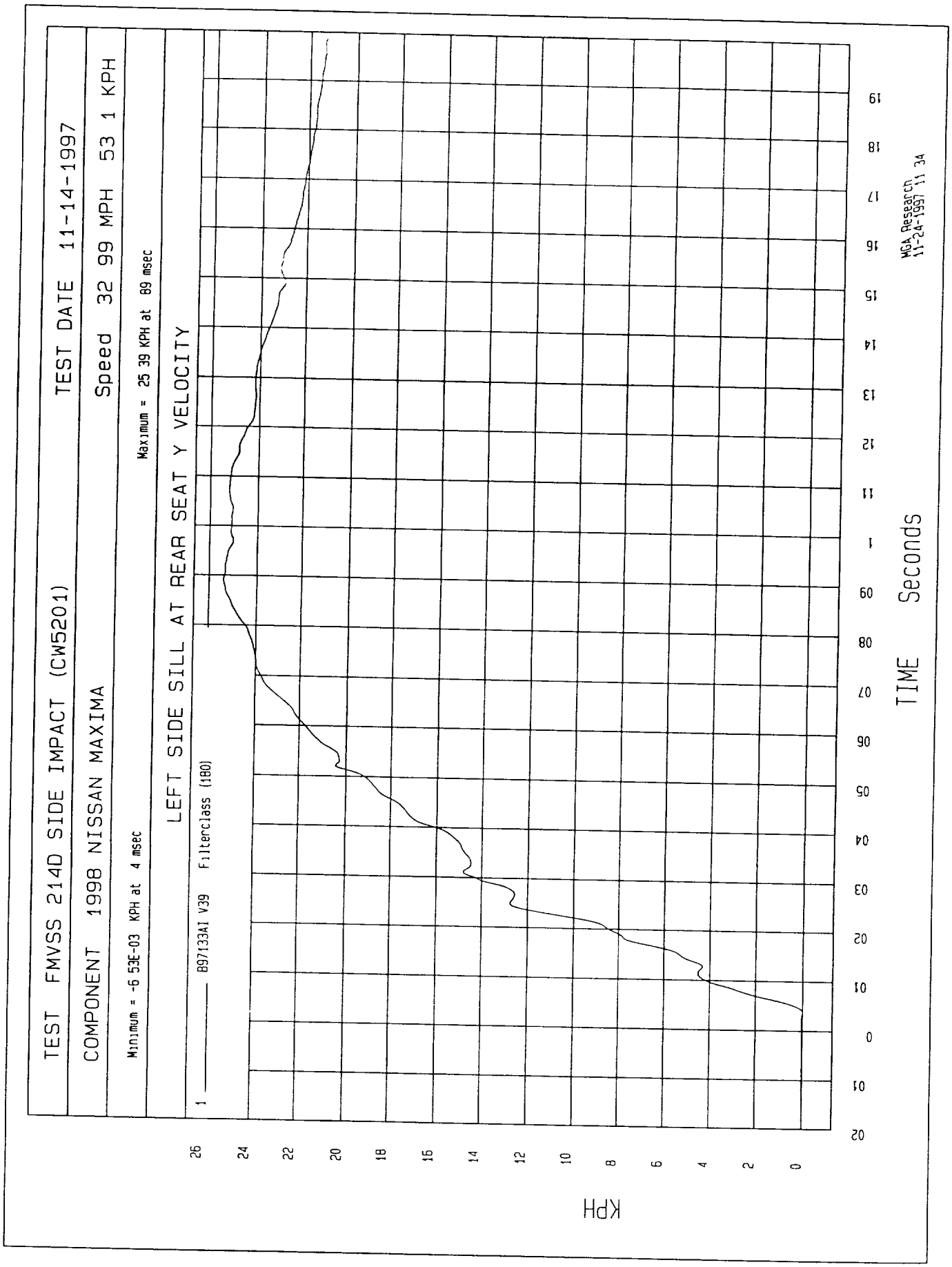

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 12 21 KPH at 200 msec
Max mum = 1 74 KPH at 26 msec
REAR FLOORPAN ABOVE AXLE Z VELOCITY
1 897133AI V10 Filterclass (180)
KPH
2
0
-2
-4
6
-8
10
12
-02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 31

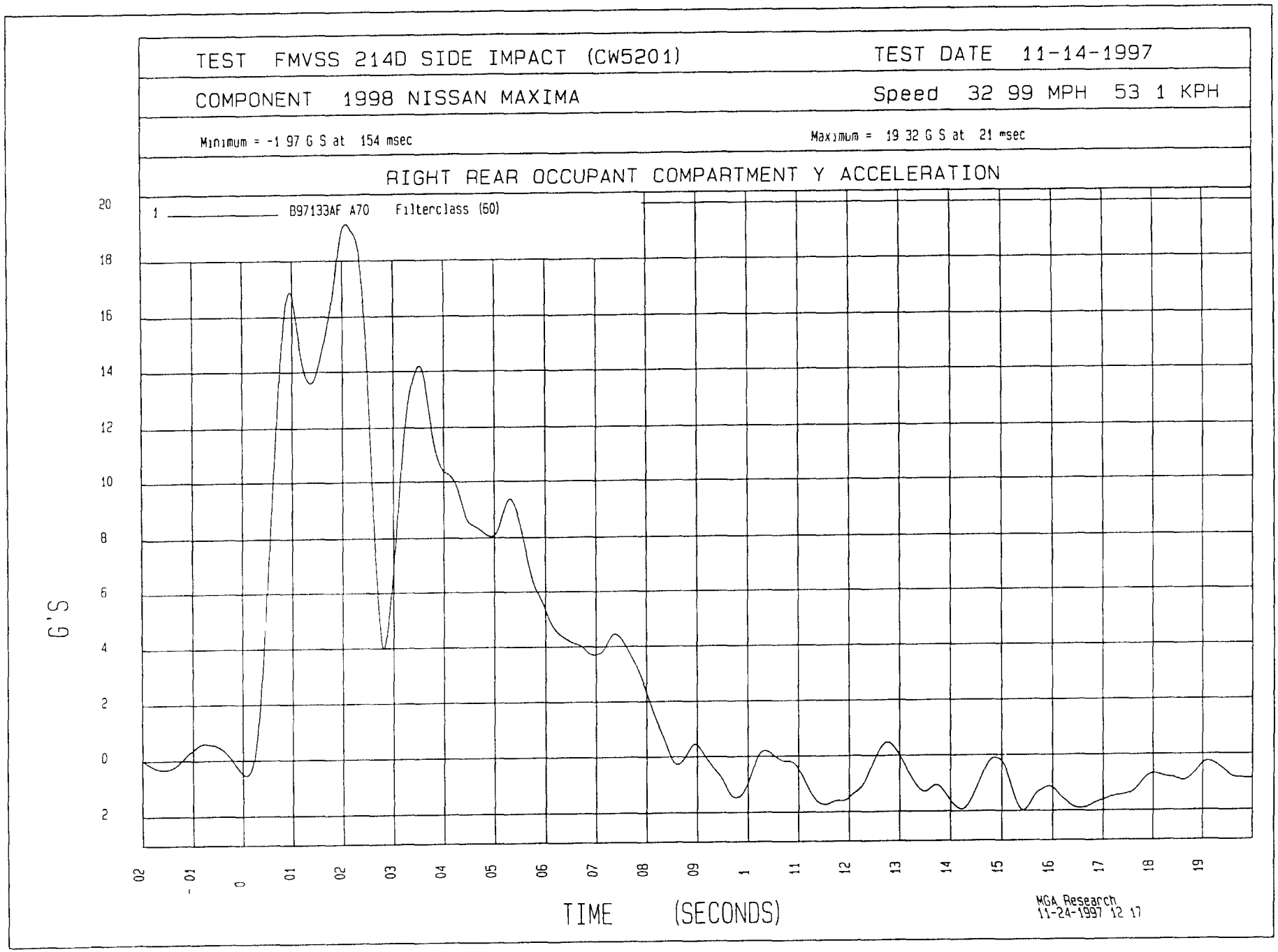

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 8 05E-03 G S at -11 msec
Maximum = 17 39 G S at 33 msec
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION
1 B97133AV A08 Filterclass (60)
G's
TIME (SECONDS)
MGA Research
11-24-1997 12 33

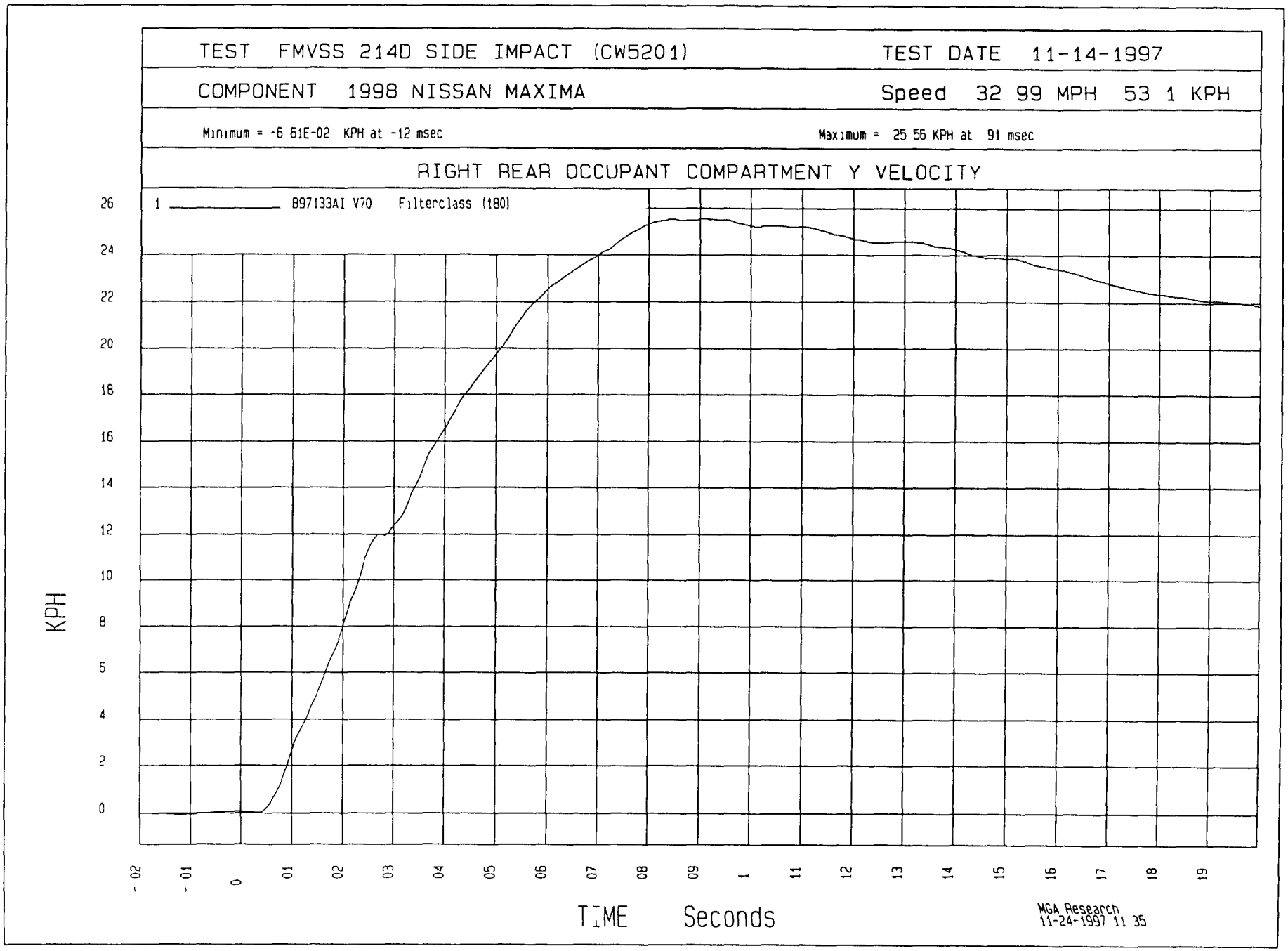

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 5 21 G S at 49 msec
Maximum = 33 17 G S at 15 msec
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B97133AF A3B Filterclass (60)
G'S
30
20
10
0
02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 13

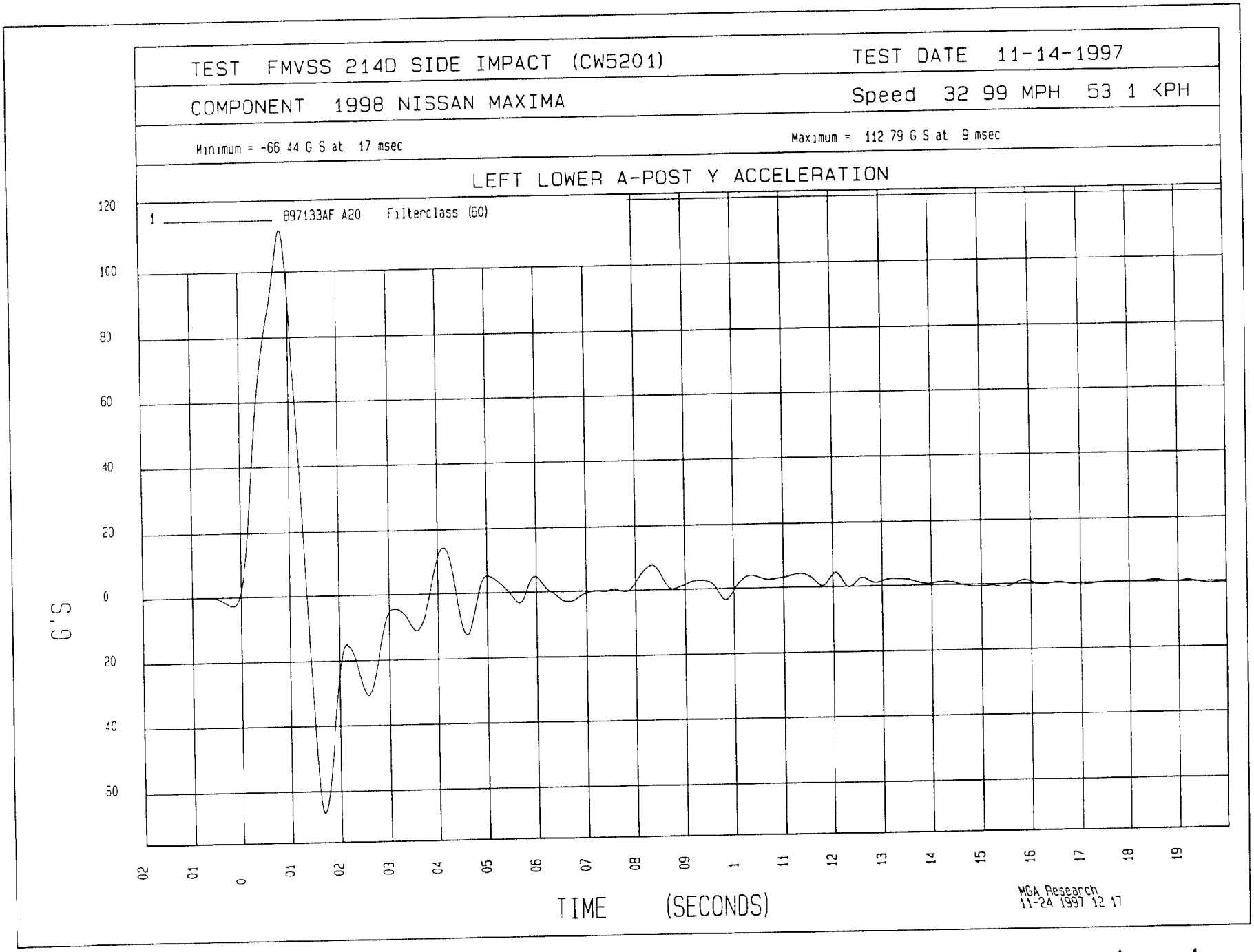

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -9 84E 02 KPH at 3 msec
Maximum = 19 03 KPH at 46 msec
LEFT SIDE SILL AT FRONT SEAT Y VELOCITY
1 B97133AI V38 Filterclass (180)
KPH
18
16
14
12
10
8
6
4
2
0
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 33

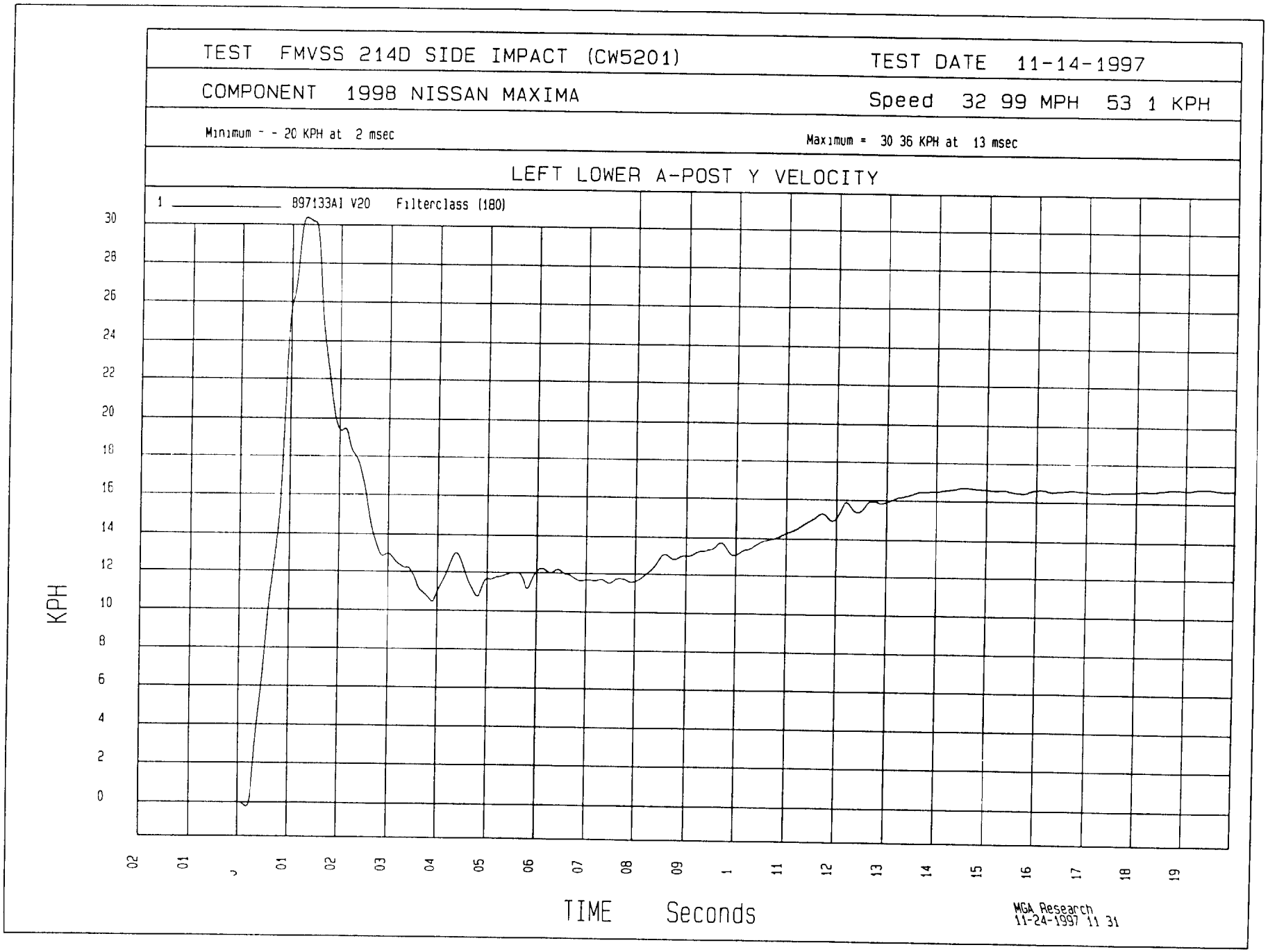

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - -2 96 G S at 120 msec
Maximum = 27 00 G S at 22 msec
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B97133AF A39 Filterclass (60)
G'S
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
2
4
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11 24-1997 12 14

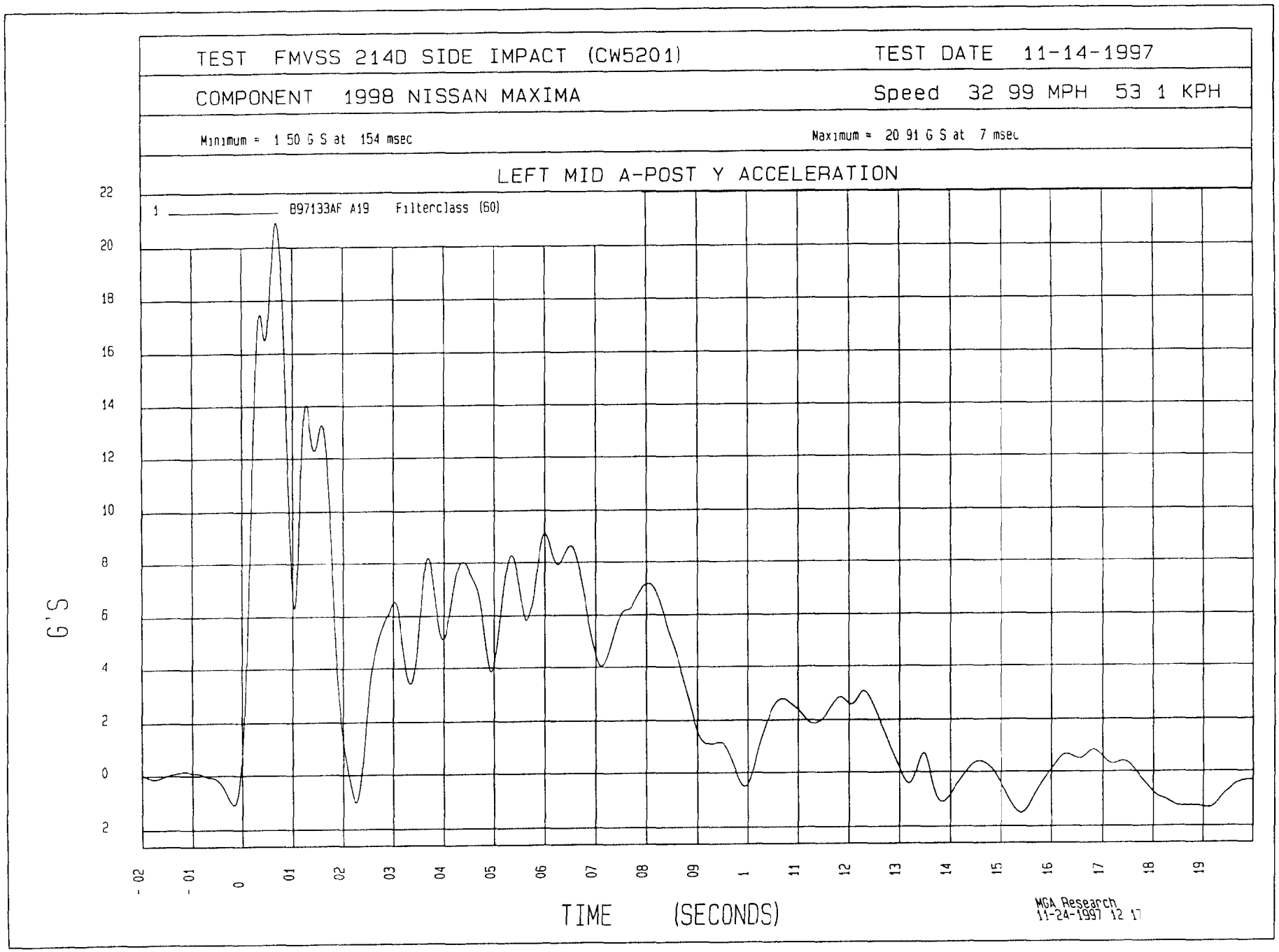

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = -6 53E-03 KPH at 4 msec Maximum = 25 39 KPH at 89 msec
LEFT SIDE SILL AT REAR SEAT Y VELOCITY
1 B97133AI V39 Filterclass (180)
KPH
TIME Seconds
MGA Research 11-24-1997 11 34

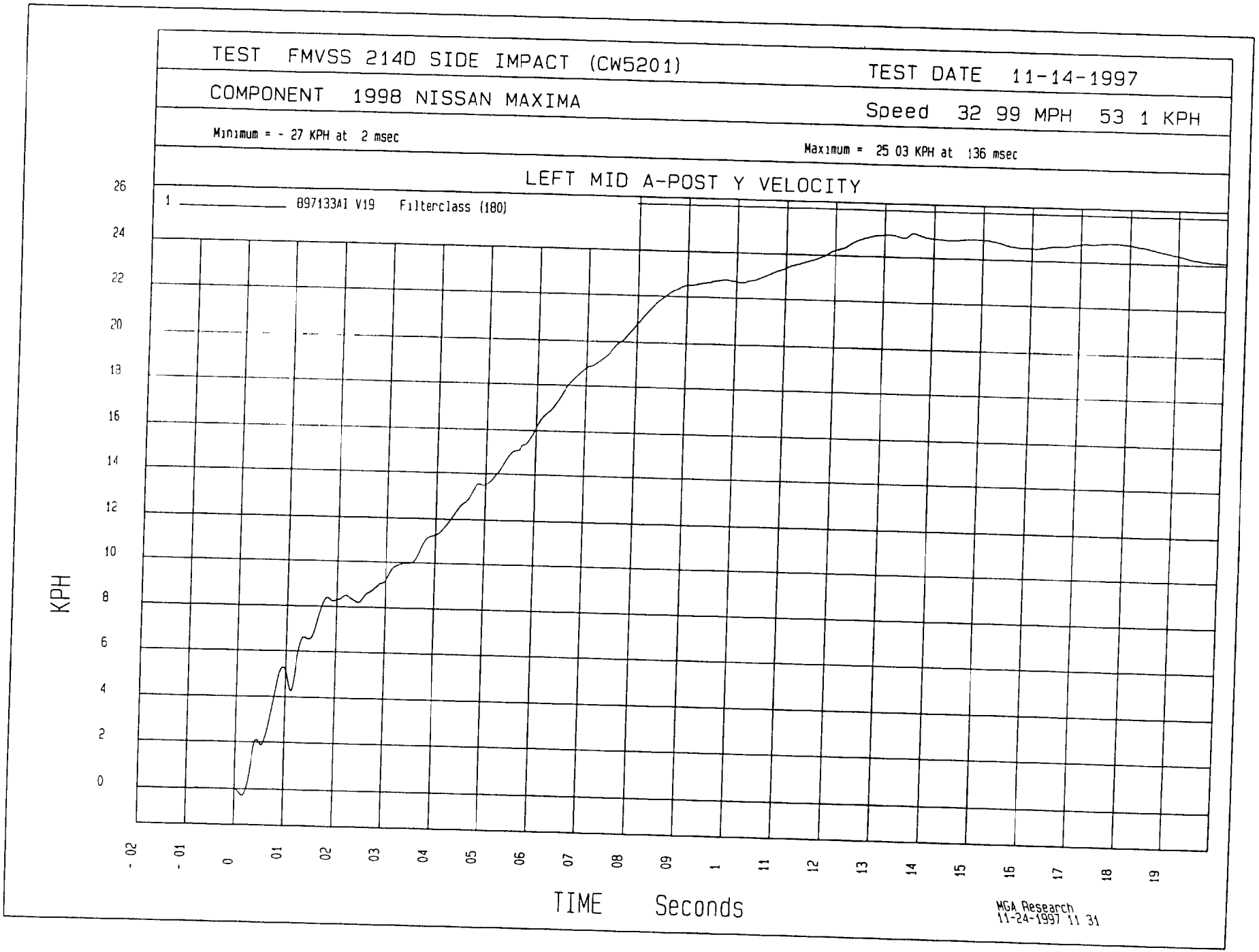

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -1 97 G S at 154 msec
Maximum = 19 32 G S at 21 msec
RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION
1 B97133AF A70 Filterclass (60)
G'S
20
18
16
14
12
10
8
6
4
2
0
2
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 17

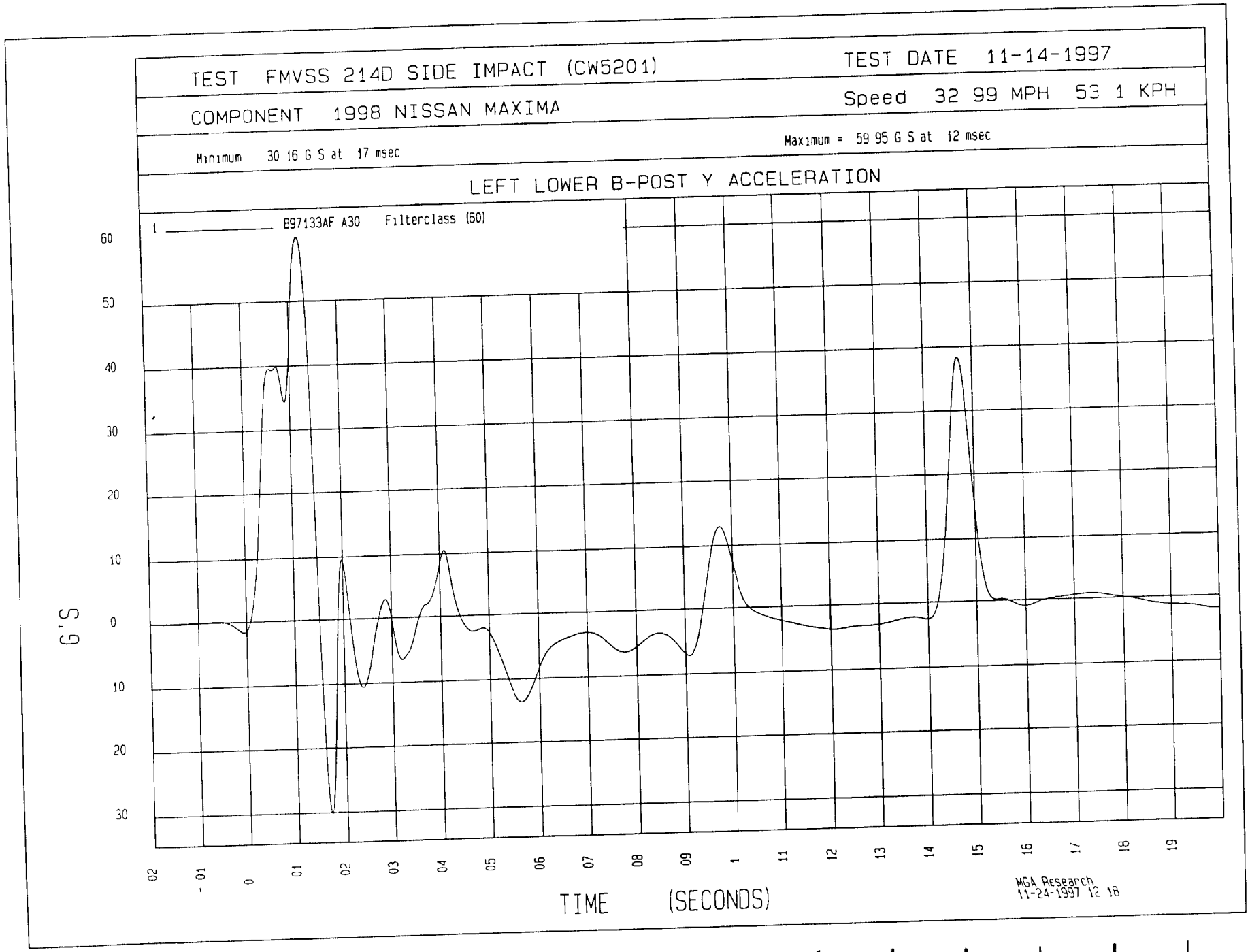

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -6 61E-02 KPH at -12 msec
Maximum = 25 56 KPH at 91 msec
RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY
1 B97133AI V70 Filterclass (180)
KPH
26
24
22
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 35

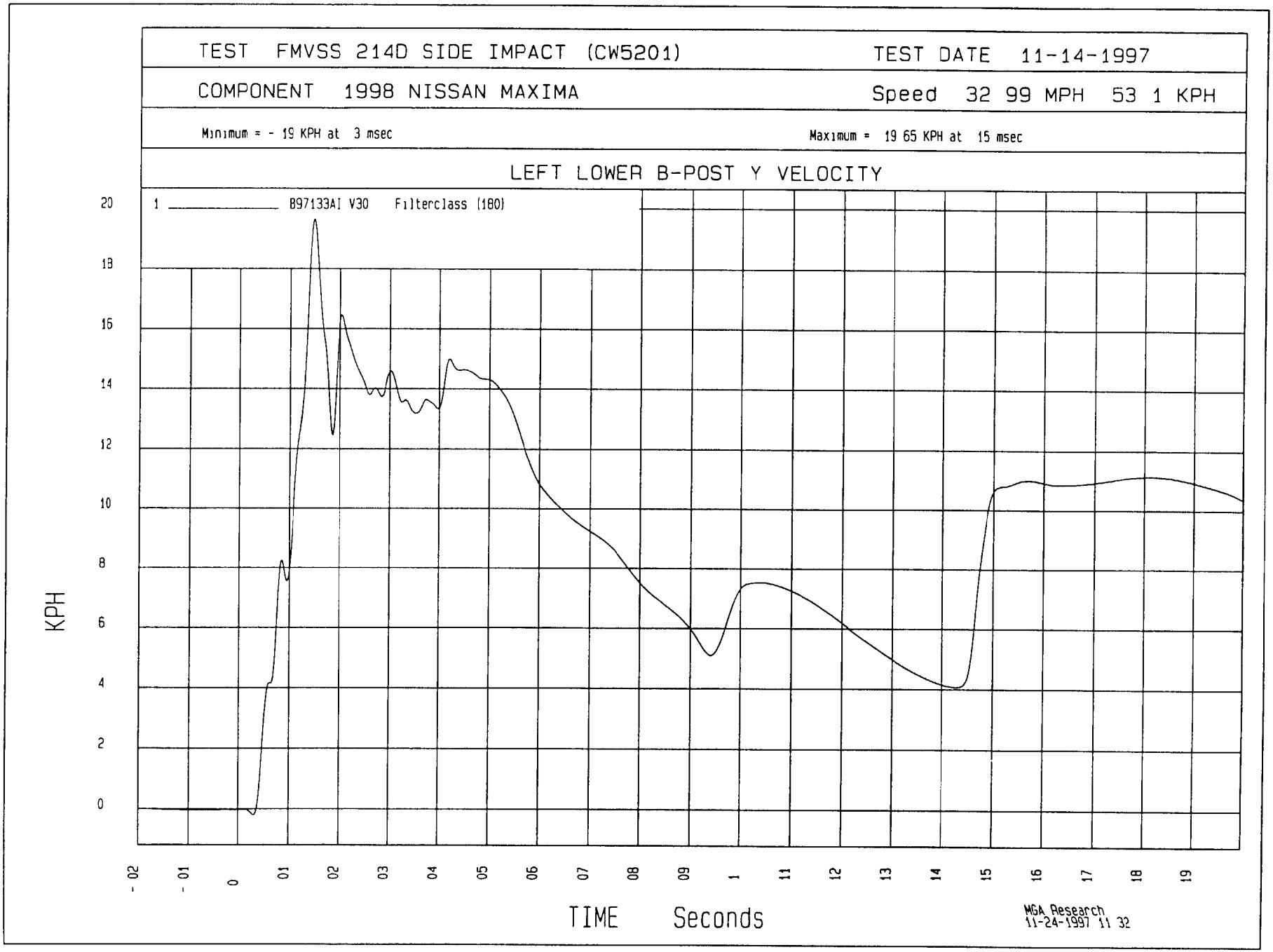

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -66 44 G S at 17 msec
Maximum = 112 79 G S at 9 msec
LEFT LOWER A-POST Y ACCELERATION
1 B97133AF A20 Filterclass (60)
120
100
80
60
40
20
0
20
40
60
G'S
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24 1997 12 17

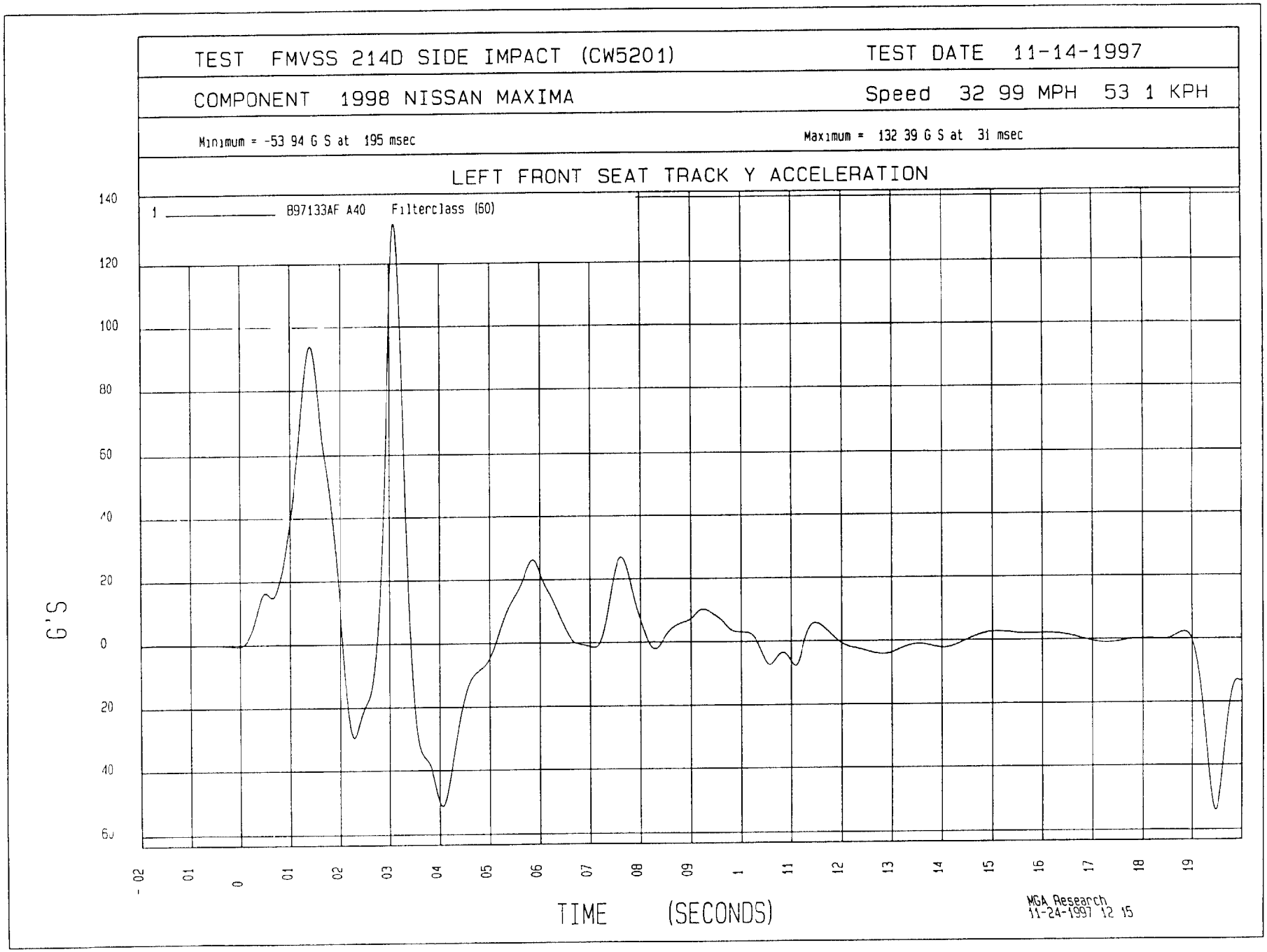

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - - 20 KPH at 2 msec
Maximum = 30 36 KPH at 13 msec
LEFT LOWER A-POST Y VELOCITY
1 B97133A1 V20 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
02
01
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 31

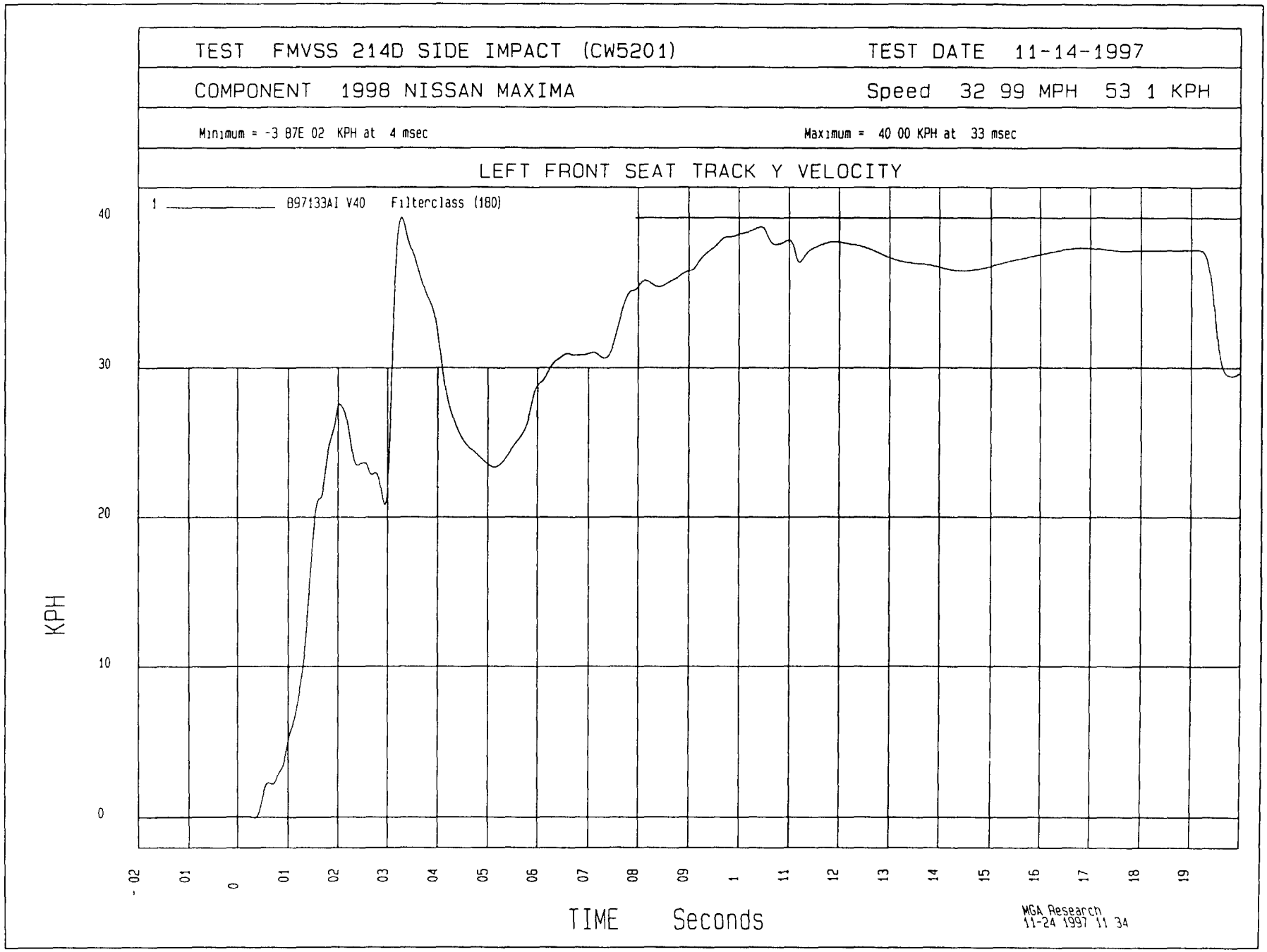

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 1 50 G S at 154 msec
Maximum = 20 91 G S at 7 msec
LEFT MID A-POST Y ACCELERATION
1 B97133AF A19 Filterclass (60)
G'S
22
20
18
16
14
12
10
8
6
4
2
0
2
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 17

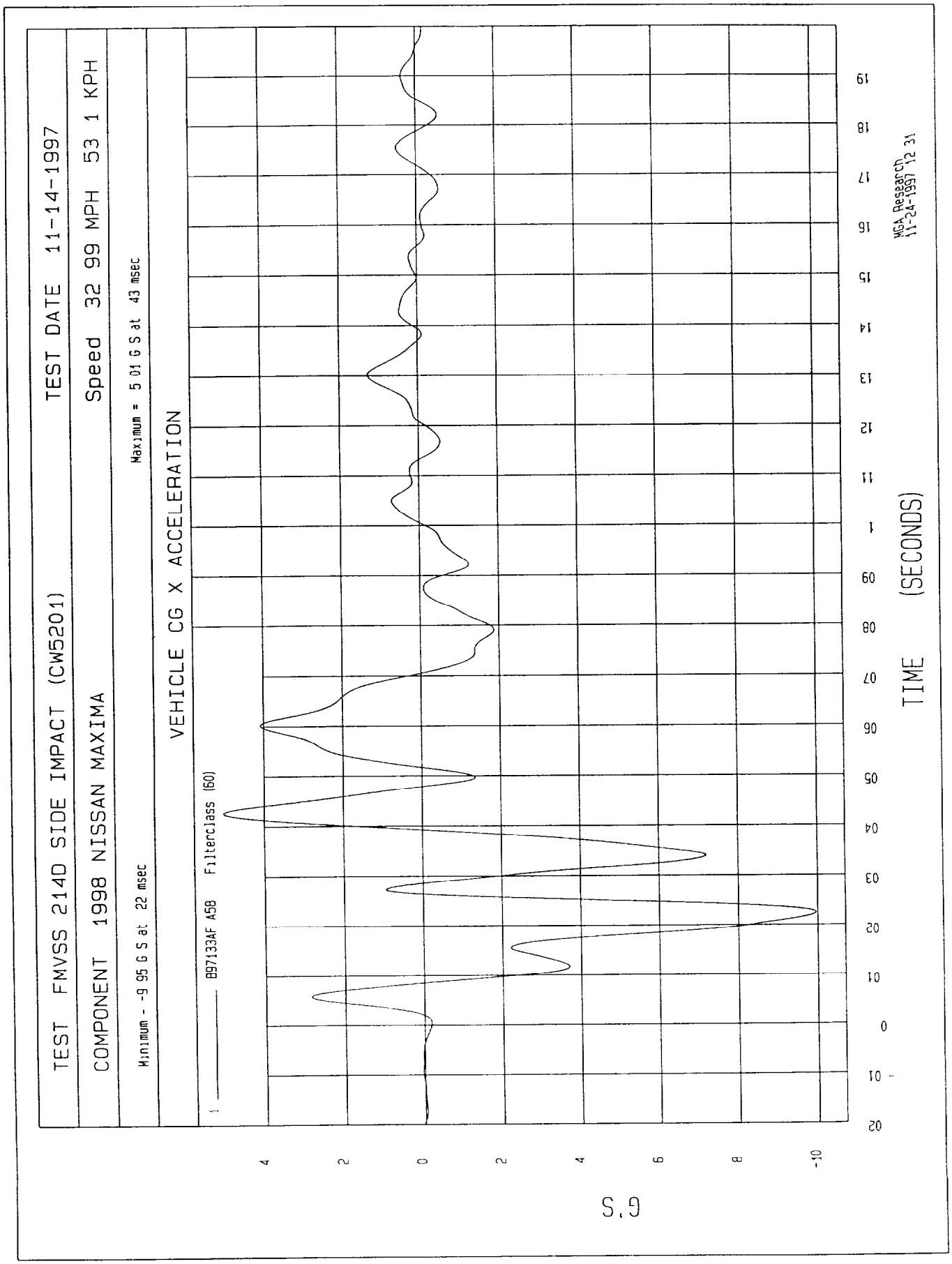

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = - 27 KPH at 2 msec
Maximum = 25 03 KPH at 136 msec
LEFT MID A-POST Y VELOCITY
1 B97133AI V19 Filterclass (180)
KPH
26
24
22
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 31

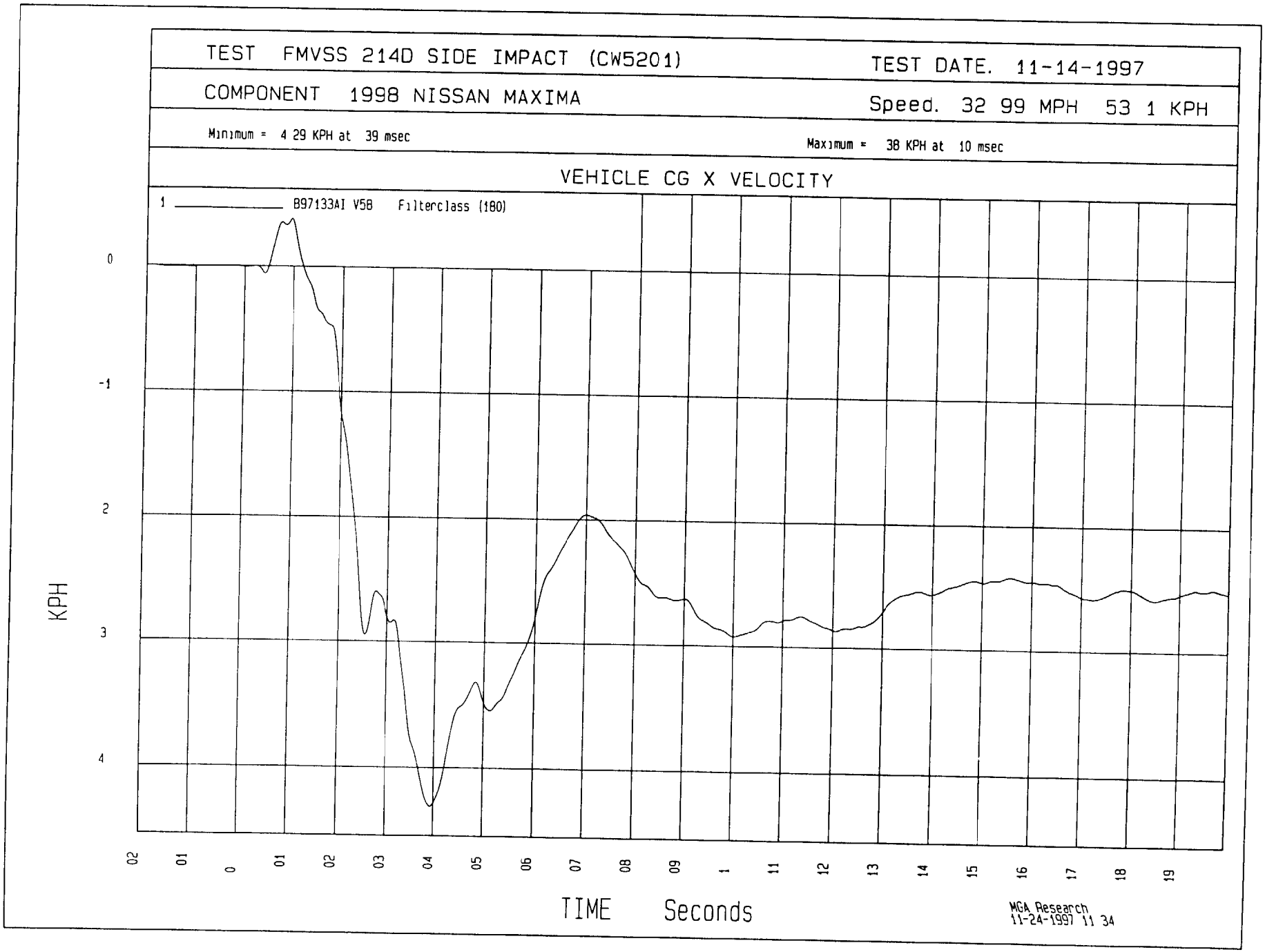

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 30 16 G S at 17 msec
Maximum = 59 95 G S at 12 msec
LEFT LOWER B-POST Y ACCELERATION
1 B97133AF A30 Filterclass (60)
60
50
40
30
20
10
0
10
20
30
G'S
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 18

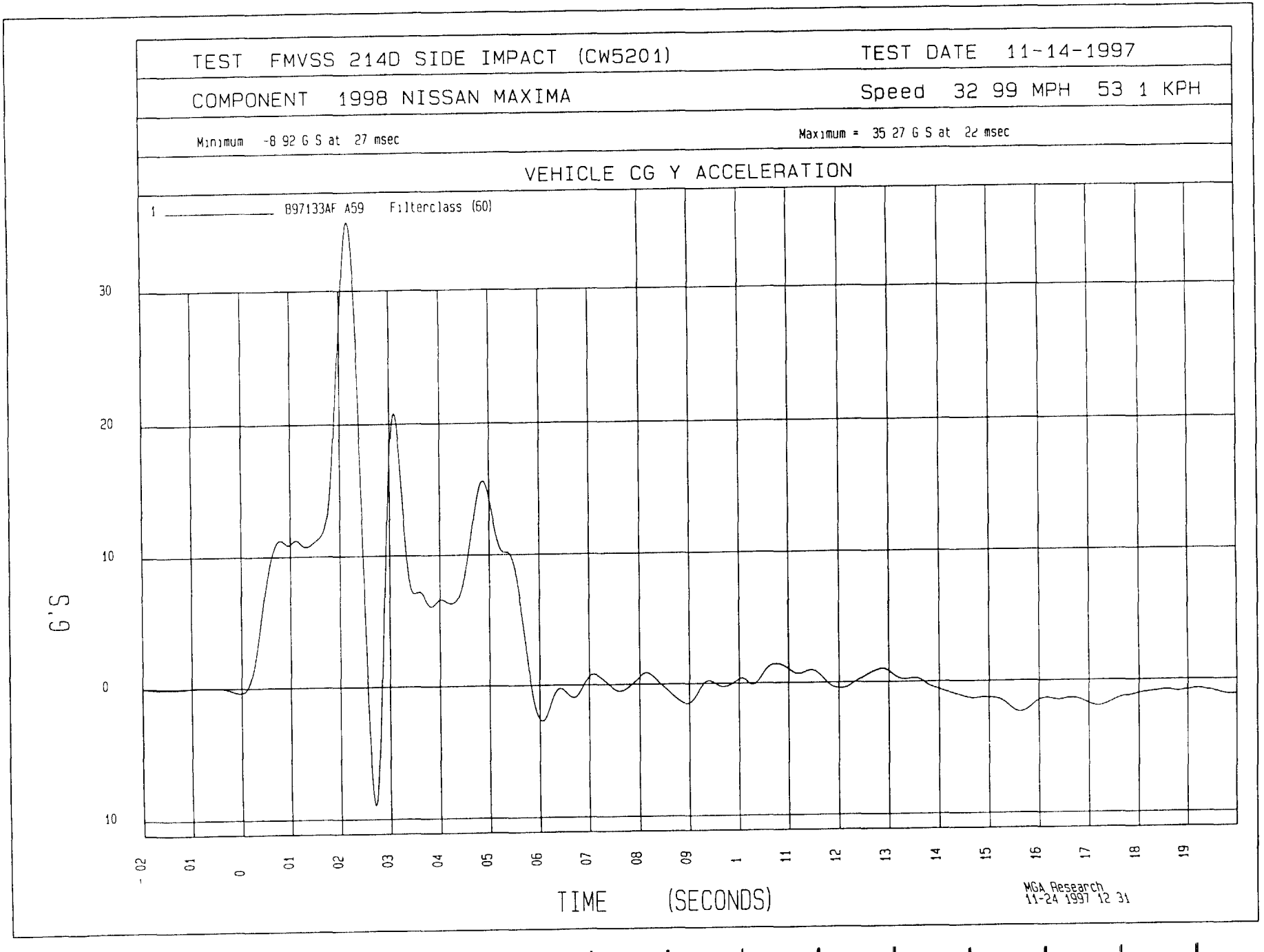

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = - 19 KPH at 3 msec
Maximum = 19 65 KPH at 15 msec
LEFT LOWER B-POST Y VELOCITY
1 B97133AI V30 Filterclass (180)
KPH
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 32

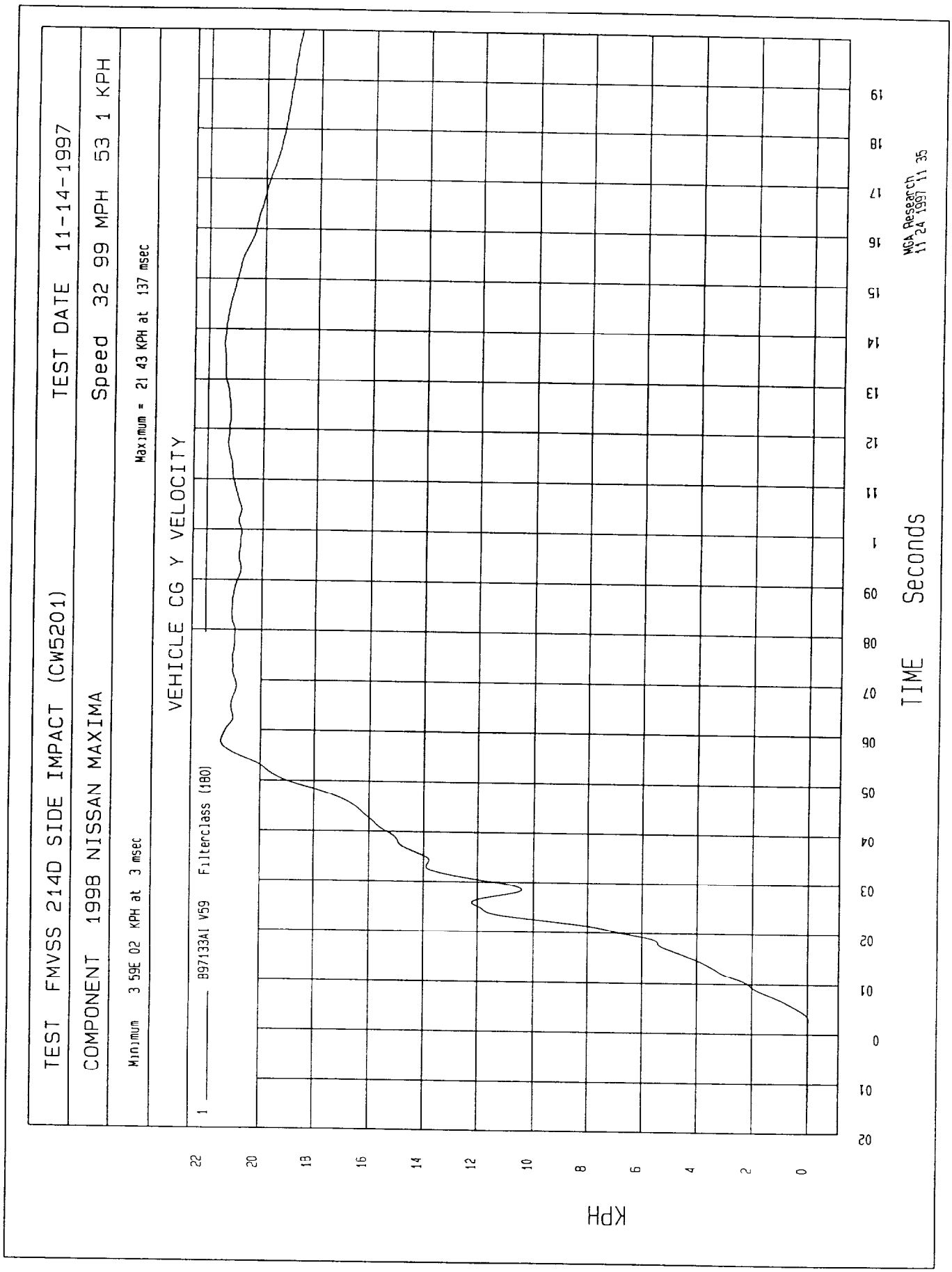

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -53 94 G S at 195 msec
Maximum = 132 39 G S at 31 msec
LEFT FRONT SEAT TRACK Y ACCELERATION
1 B97133AF A40 Filterclass (60)
140
120
100
80
60
40
20
0
20
40
60
G'S
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 15

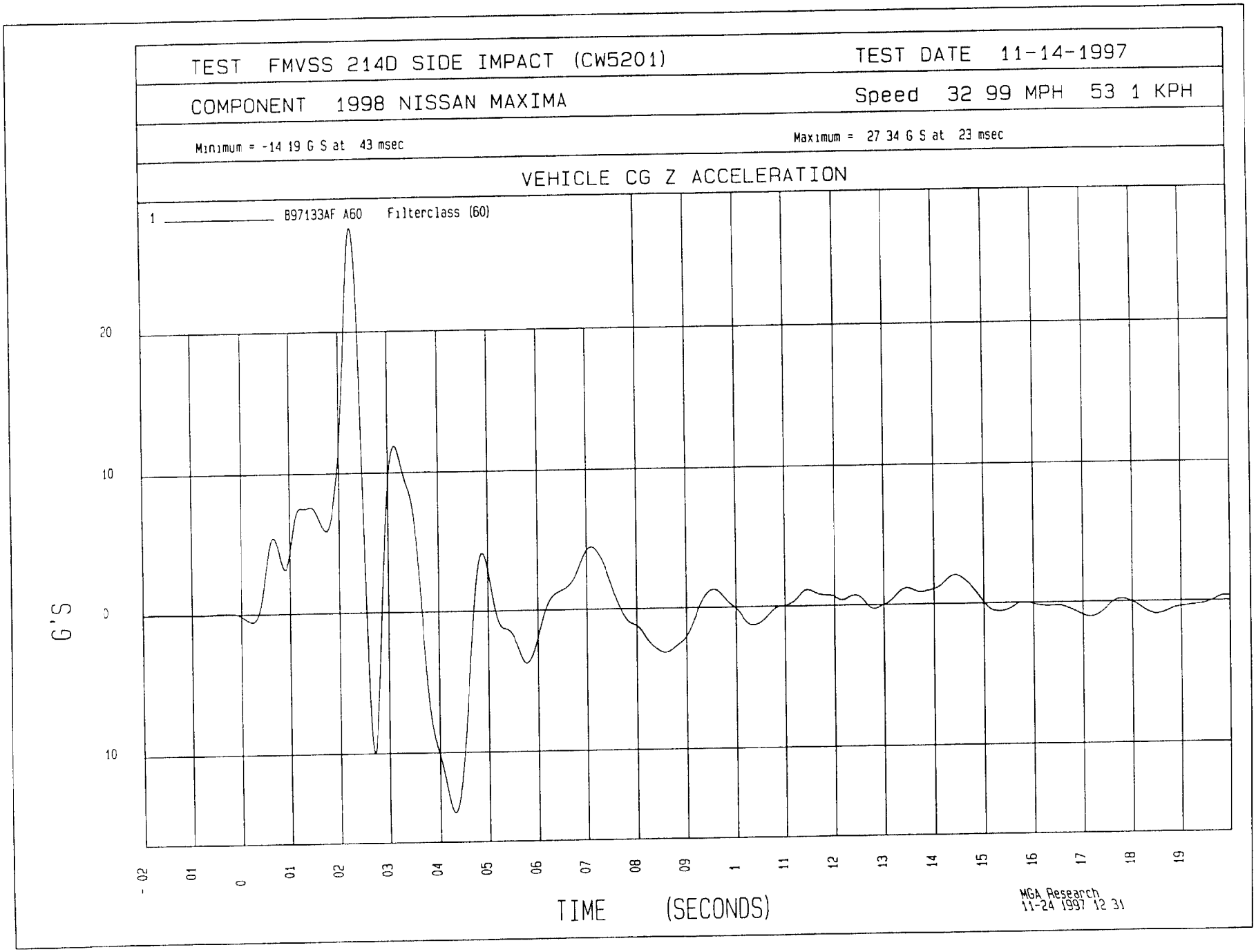

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -3 87E 02 KPH at 4 msec
Maximum = 40 00 KPH at 33 msec
LEFT FRONT SEAT TRACK Y VELOCITY
1 B97133AI V40 Filterclass (180)
KPH
40
30
20
10
0
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24 1997 11 34

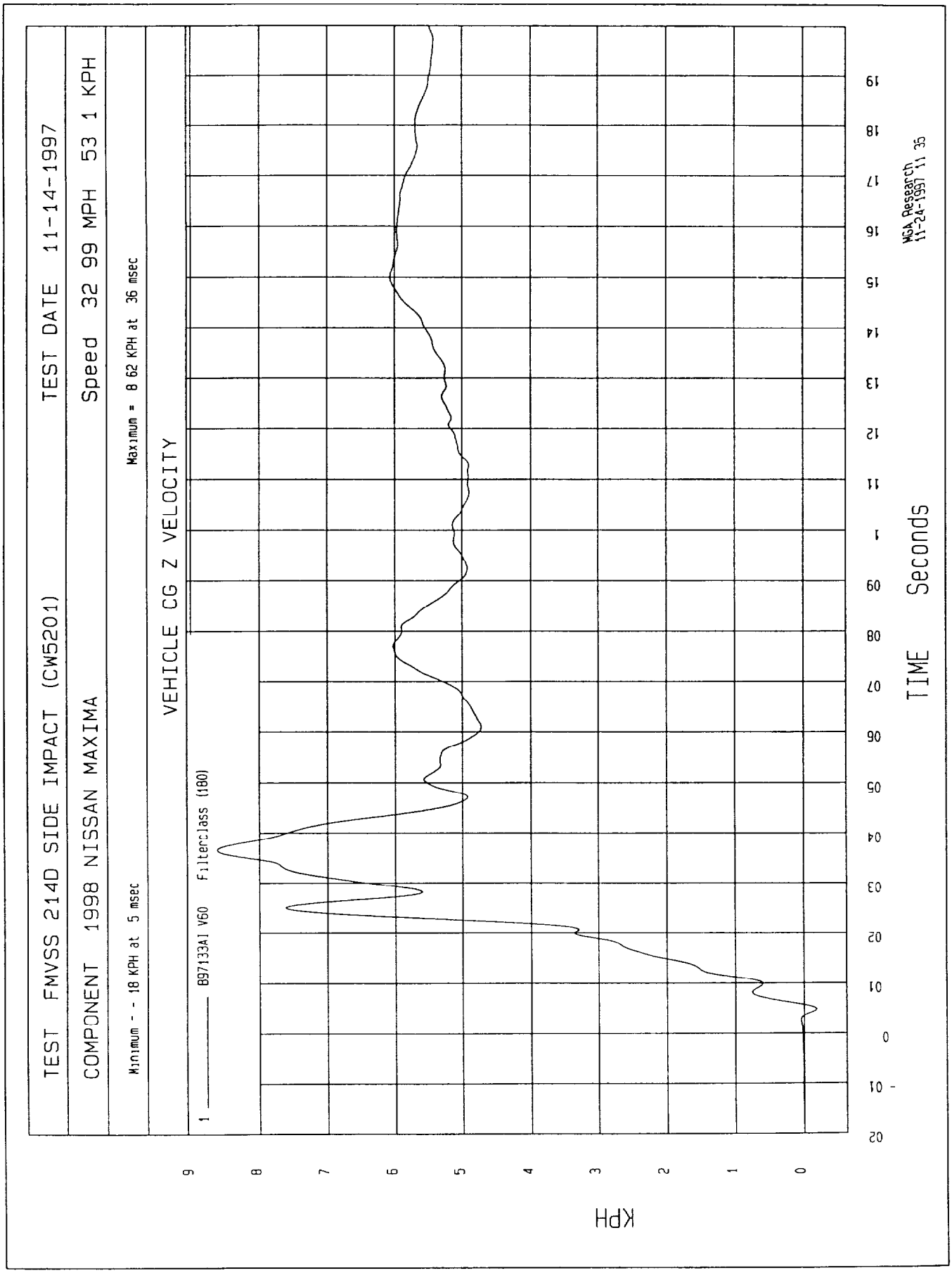

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -9 95 G S at 22 msec
Maximum = 5 01 G S at 43 msec
VEHICLE CG X ACCELERATION
1 B97133AF A58 Filterclass (60)
4
2
0
2
4
6
8
-10
G's
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 31

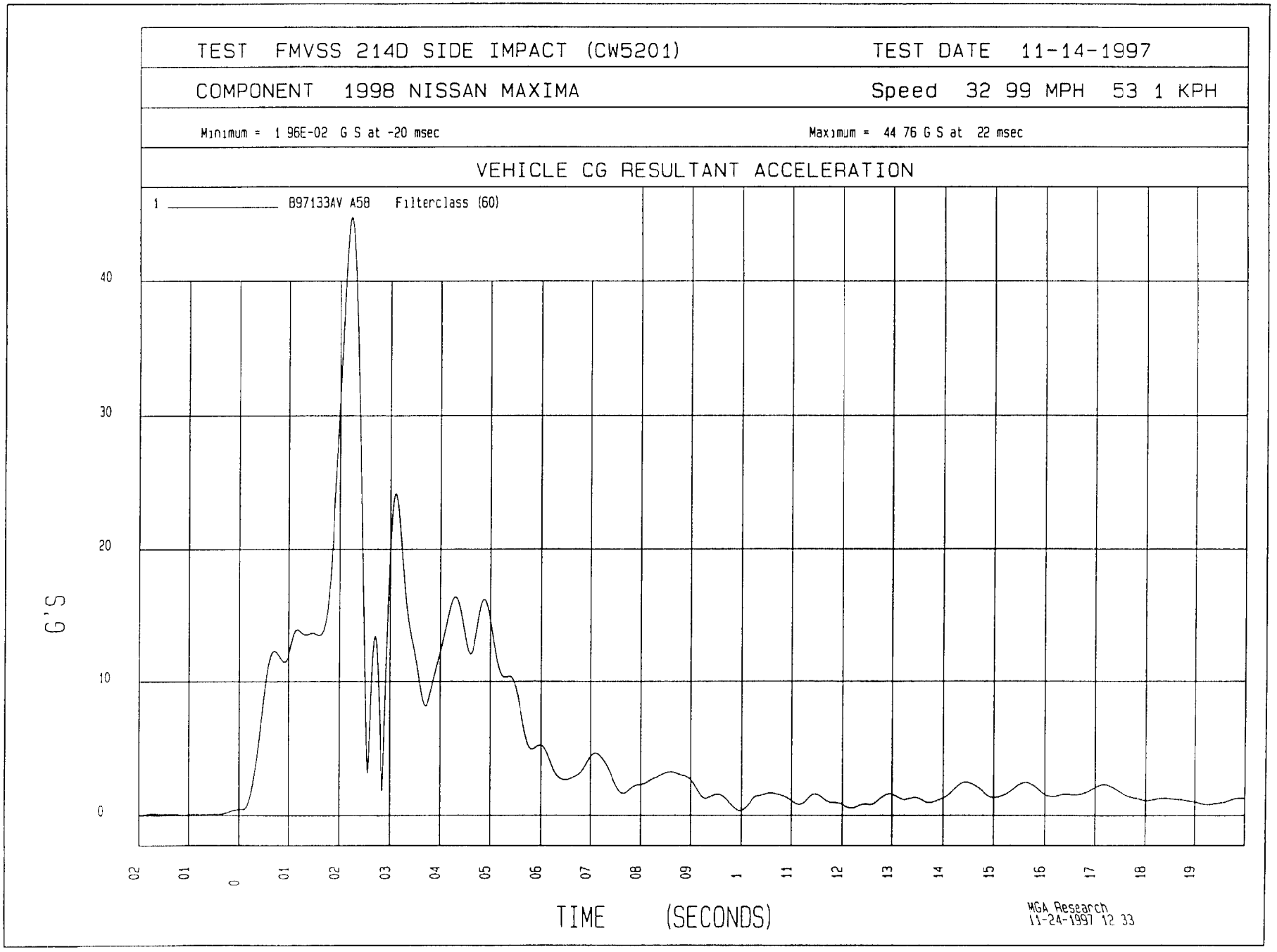

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE. 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed. 32 99 MPH 53 1 KPH
Minimum = 4 29 KPH at 39 msec
Maximum = 38 KPH at 10 msec
VEHICLE CG X VELOCITY
1 B97133AI V58 Filterclass (180)
KPH
0
-1
2
3
4
02 01 0 01 02 03 04 05 06 07 08 09 1 11 12 13 14 15 16 17 18 19
TIME Seconds
MGA Research
11-24-1997 11 34

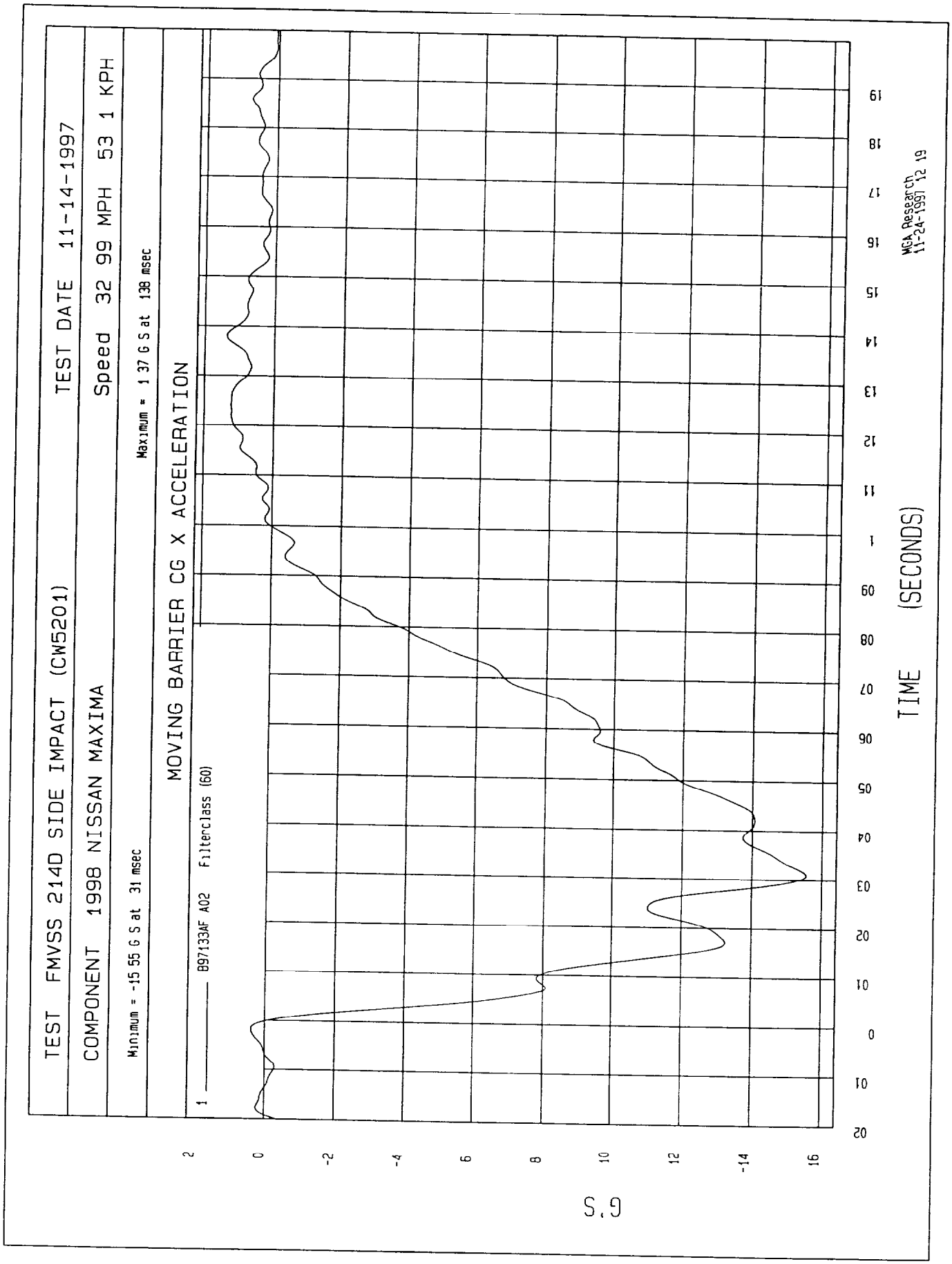

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum -8 92 G S at 27 msec
Maximum = 35 27 G S at 22 msec
VEHICLE CG Y ACCELERATION
1 B97133AF A59 Filterclass (60)
30
20
10
0
10
G'S
-02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24 1997 12 31

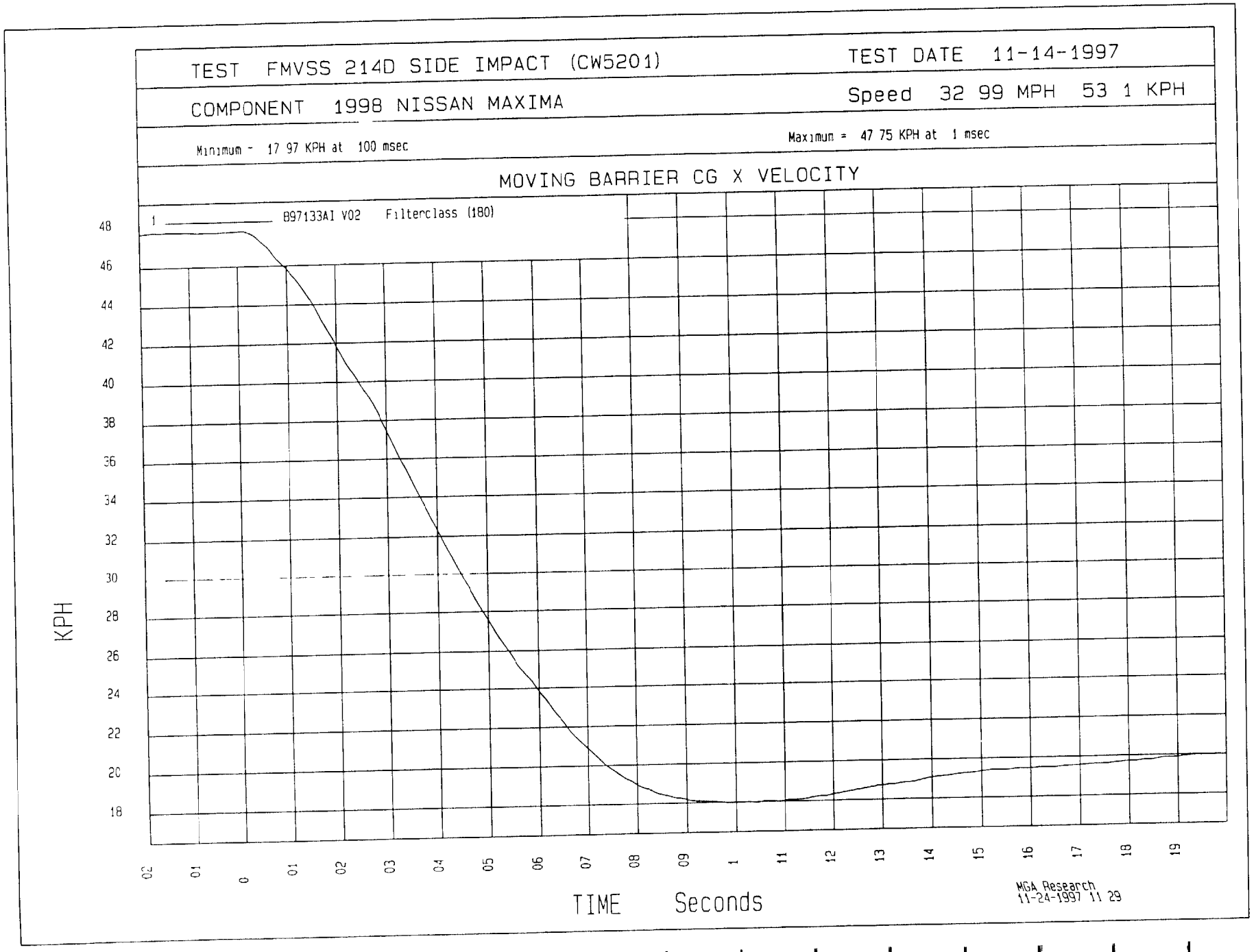

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 3 59E 02 KPH at 3 msec
Maximum = 21 43 KPH at 137 msec
VEHICLE CG Y VELOCITY
1 B97133AI V59 Filterclass (180)
KPH
TIME Seconds
MGA Research
11 24 1997 11 35

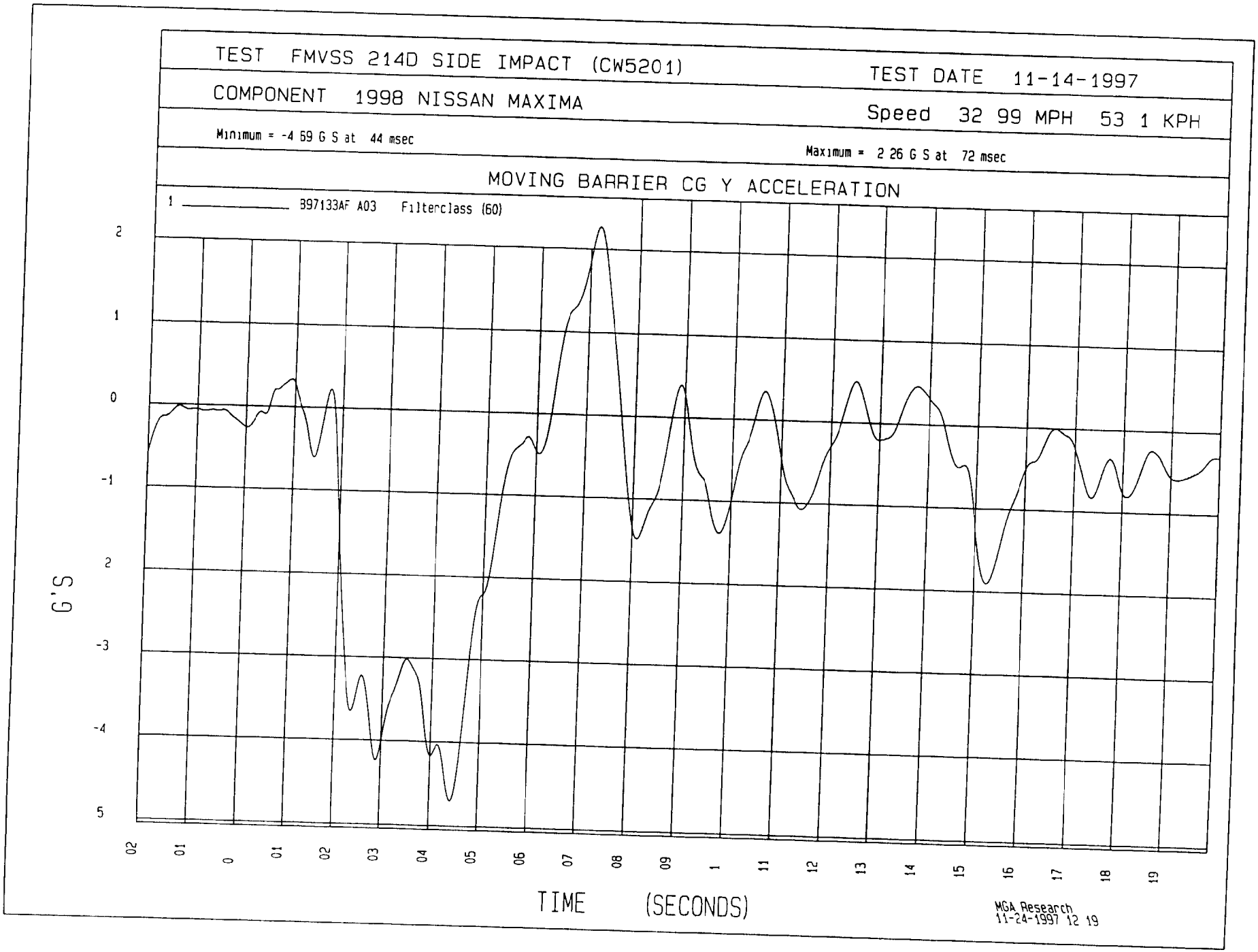

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -14 19 G S at 43 msec
Maximum = 27 34 G S at 23 msec
VEHICLE CG Z ACCELERATION
1 B97133AF A60 Filterclass (60)
20
10
0
10
G'S
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24 1997 12 31

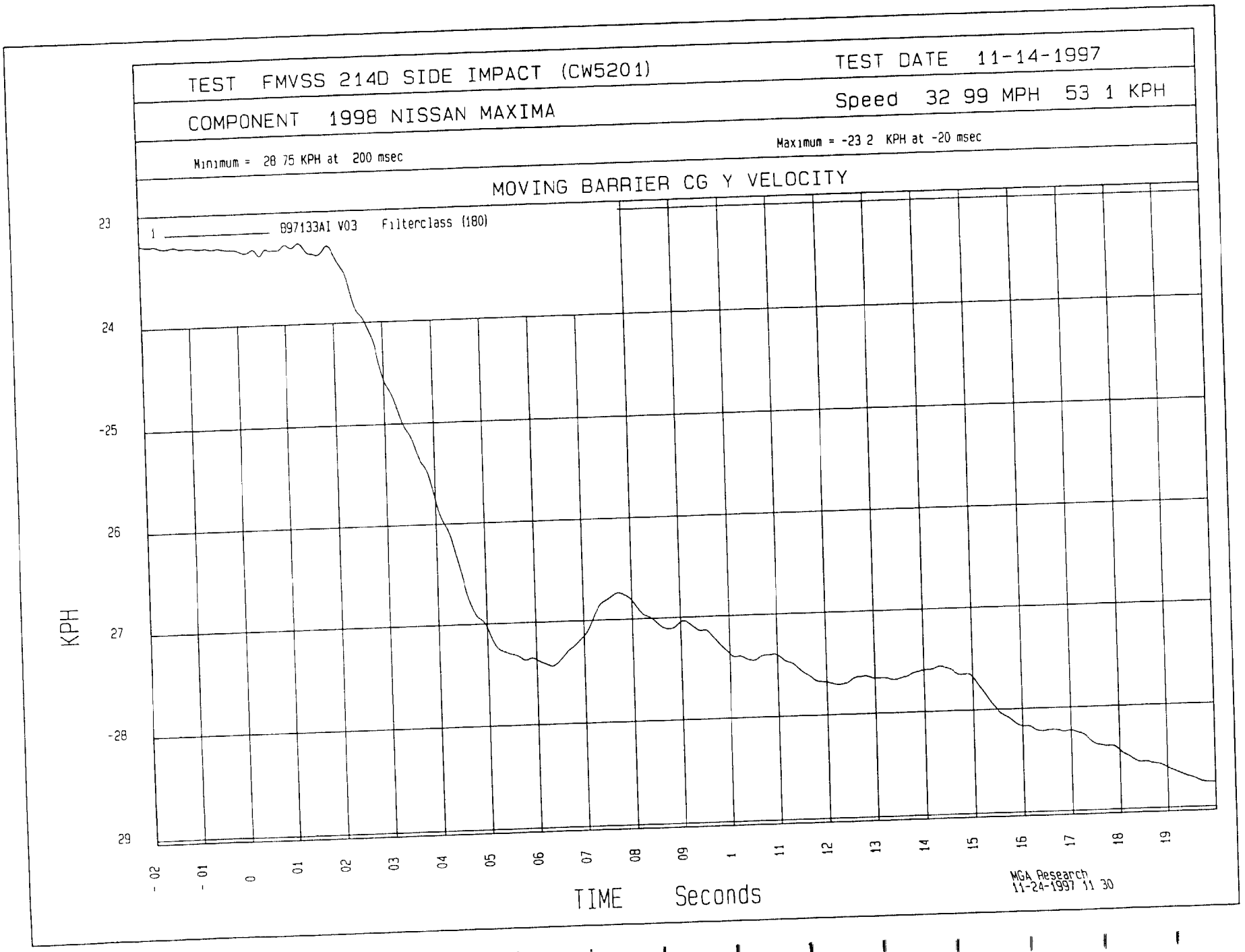

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = - 18 KPH at 5 msec
Maximum = 8 62 KPH at 36 msec
VEHICLE CG Z VELOCITY
1 B97133A1 V60 Filterclass (180)
KPH
TIME Seconds
MGA Research
11-24-1997 11 35

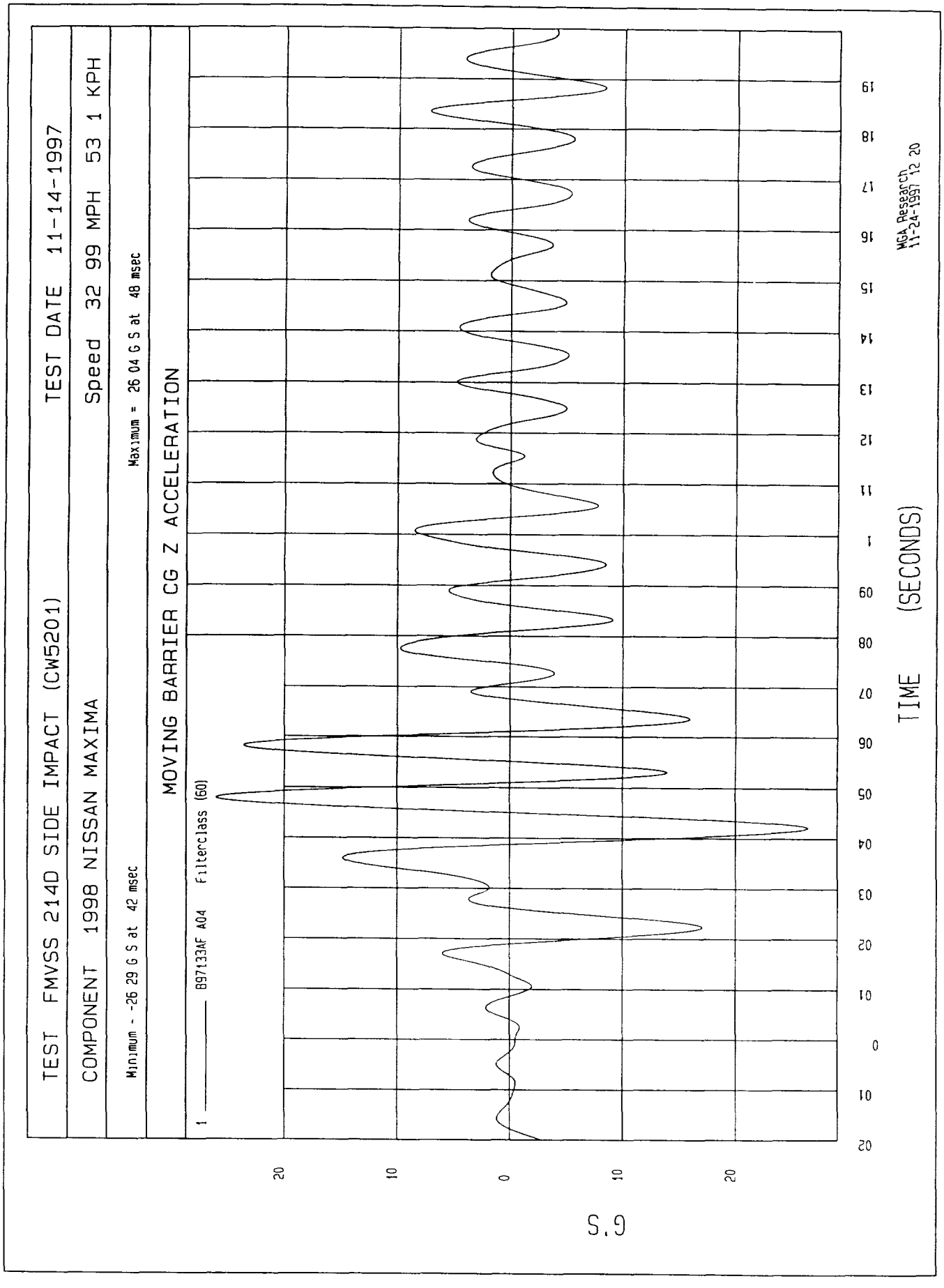

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 1 96E-02 G S at -20 msec
Maximum = 44 76 G S at 22 msec
VEHICLE CG RESULTANT ACCELERATION
1 B97133AV A58 Filterclass (60)
40
30
20
10
0
G'S
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 33

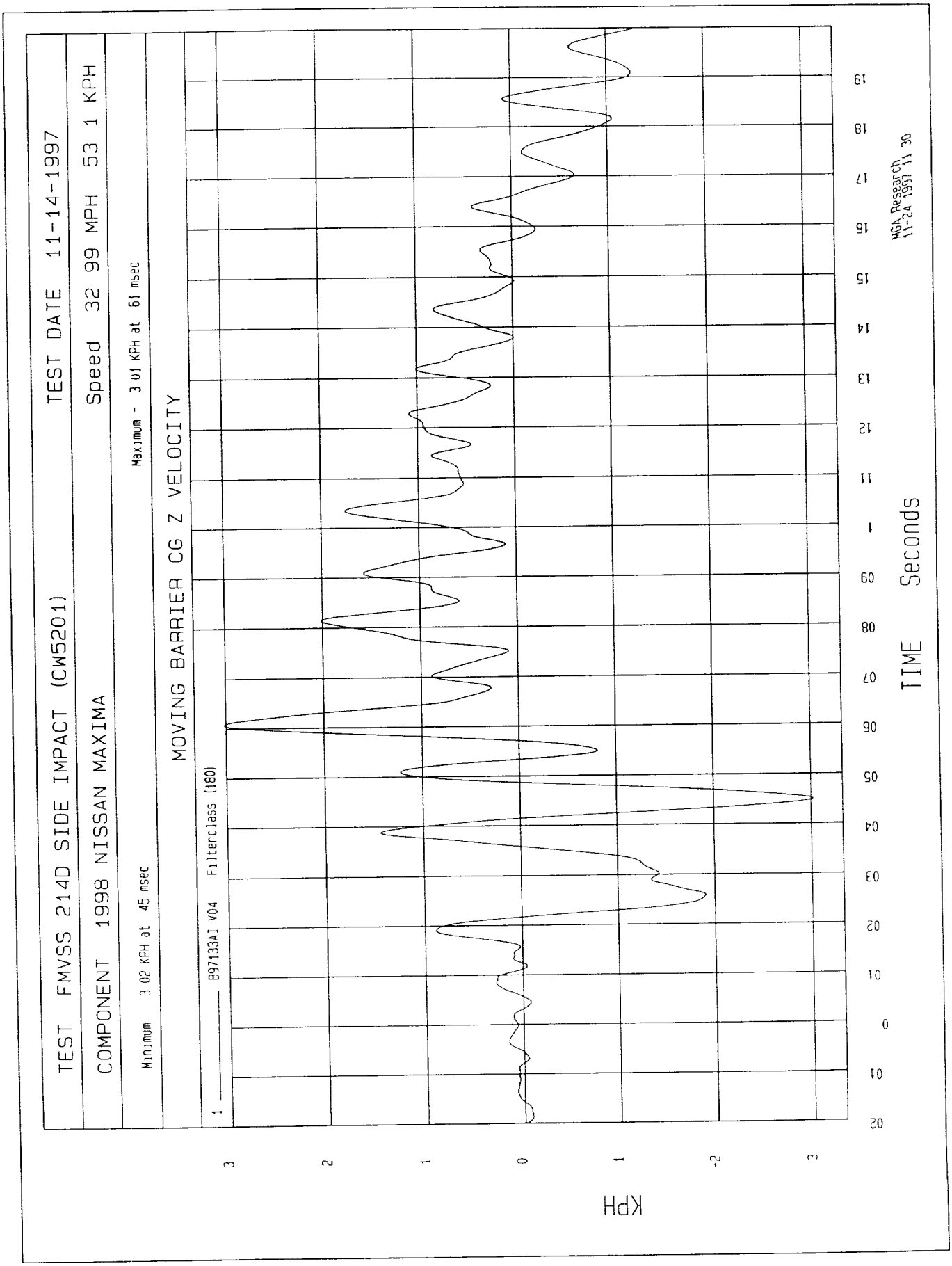

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -15 55 G S at 31 msec
Maximum = 1 37 G S at 138 msec
MOVING BARRIER CG X ACCELERATION
1 B97133AF A02 Filterclass (60)
MGA Research
11-24-1997 12 19
TIME (SECONDS)
G's

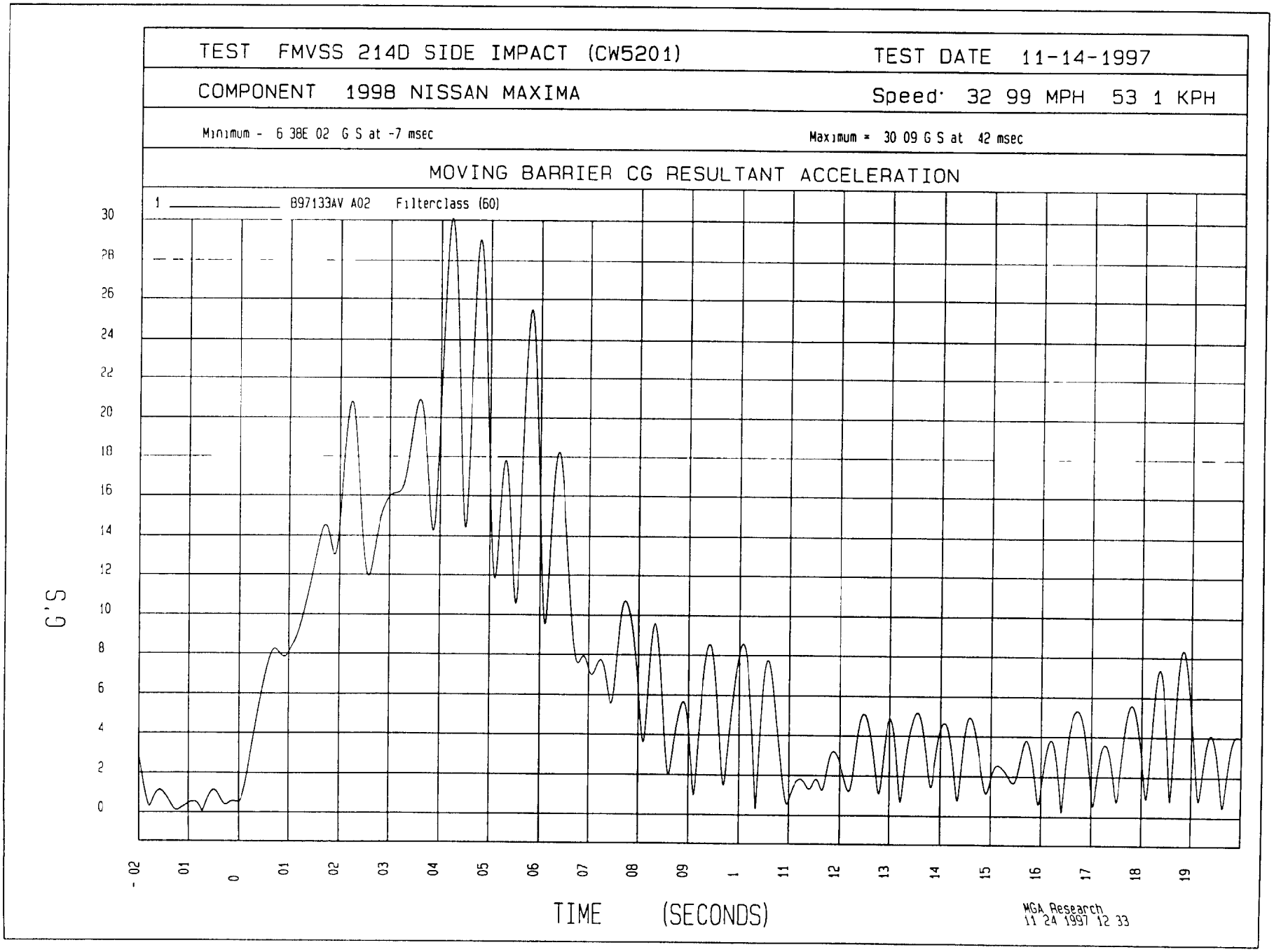

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 17 97 KPH at 100 msec
Maximum = 47 75 KPH at 1 msec
MOVING BARRIER CG X VELOCITY
1 B97133AI V02 Filterclass (180)
KPH
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 29


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -4 69 G S at 44 msec
Maximum = 2 26 G S at 72 msec
MOVING BARRIER CG Y ACCELERATION
1 B97133AF A03 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
11-24-1997 12 19


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 28 75 KPH at 200 msec
Maximum = -23 2 KPH at -20 msec
MOVING BARRIER CG Y VELOCITY
1 B97133AI V03 Filterclass (180)
23
24
-25
26
27
-28
29
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
MGA Research
11-24-1997 11 30


TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = -26 29 G S at 42 msec Maximum = 26 04 G S at 48 msec
MOVING BARRIER CG Z ACCELERATION
1 ——— 897133AF A04 Filterclass (60)
20 10 0 10 20
19 18 17 16 15 14 13 12 11 1 60 80 70 60 50 40 30 20 10 0 10 20
TIME (SECONDS)
MGA Research 11-24-1997 12 20
G's


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Maximum - 3 01 KPH at 61 msec
Minimum 3 02 KPH at 45 msec
MOVING BARRIER CG Z VELOCITY
1 B97133AI V04 Filterclass (180)
KPH
TIME Seconds
MGA Research
11-24 1997 11 30


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed: 32 99 MPH 53 1 KPH
Minimum - 6 38E 02 G S at -7 msec
Maximum = 30 09 G S at 42 msec
MOVING BARRIER CG RESULTANT ACCELERATION
1 B97133AV A02 Filterclass (60)
G S
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
- 02
01
0
01
02
03
04
05
06
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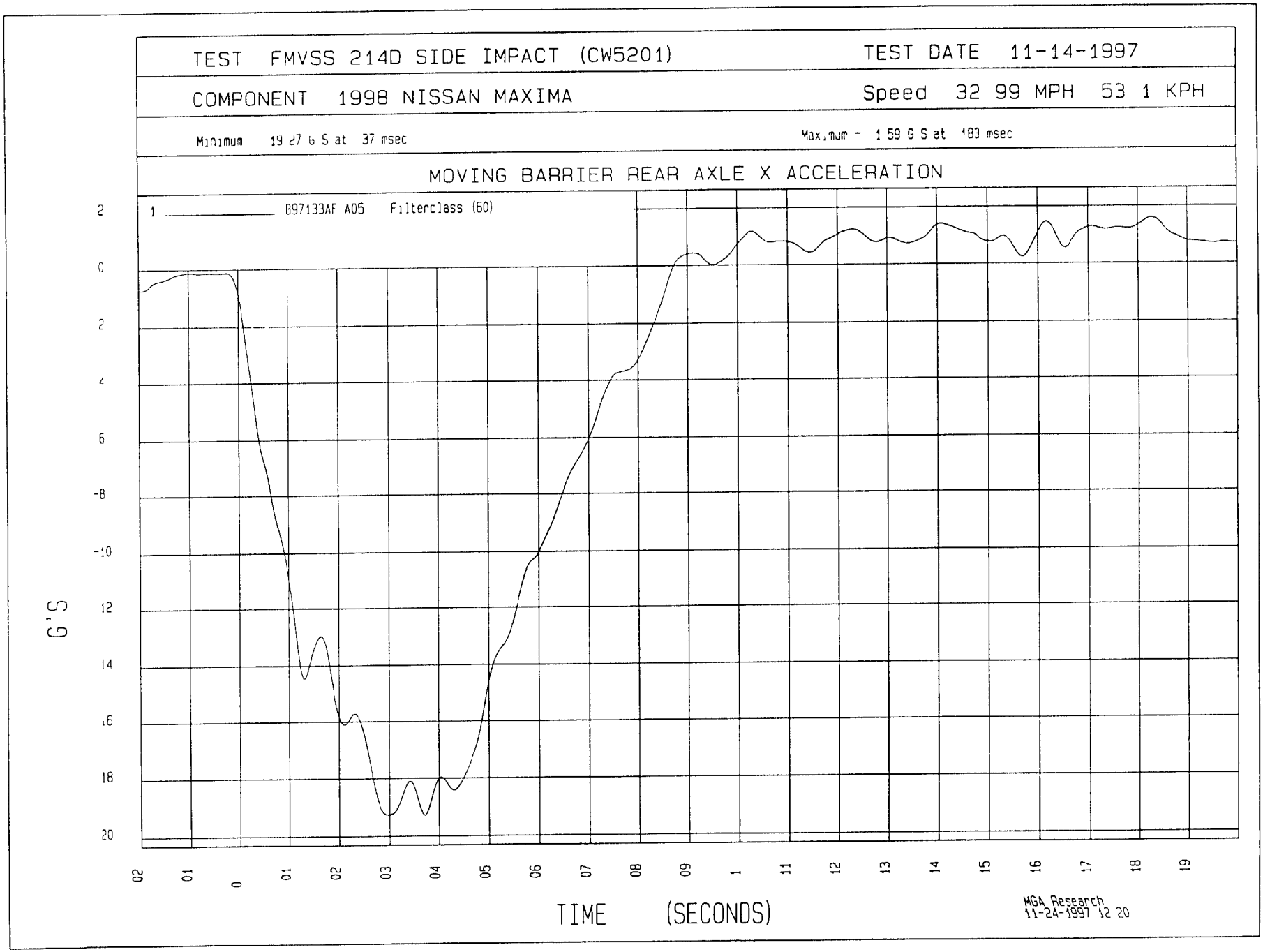
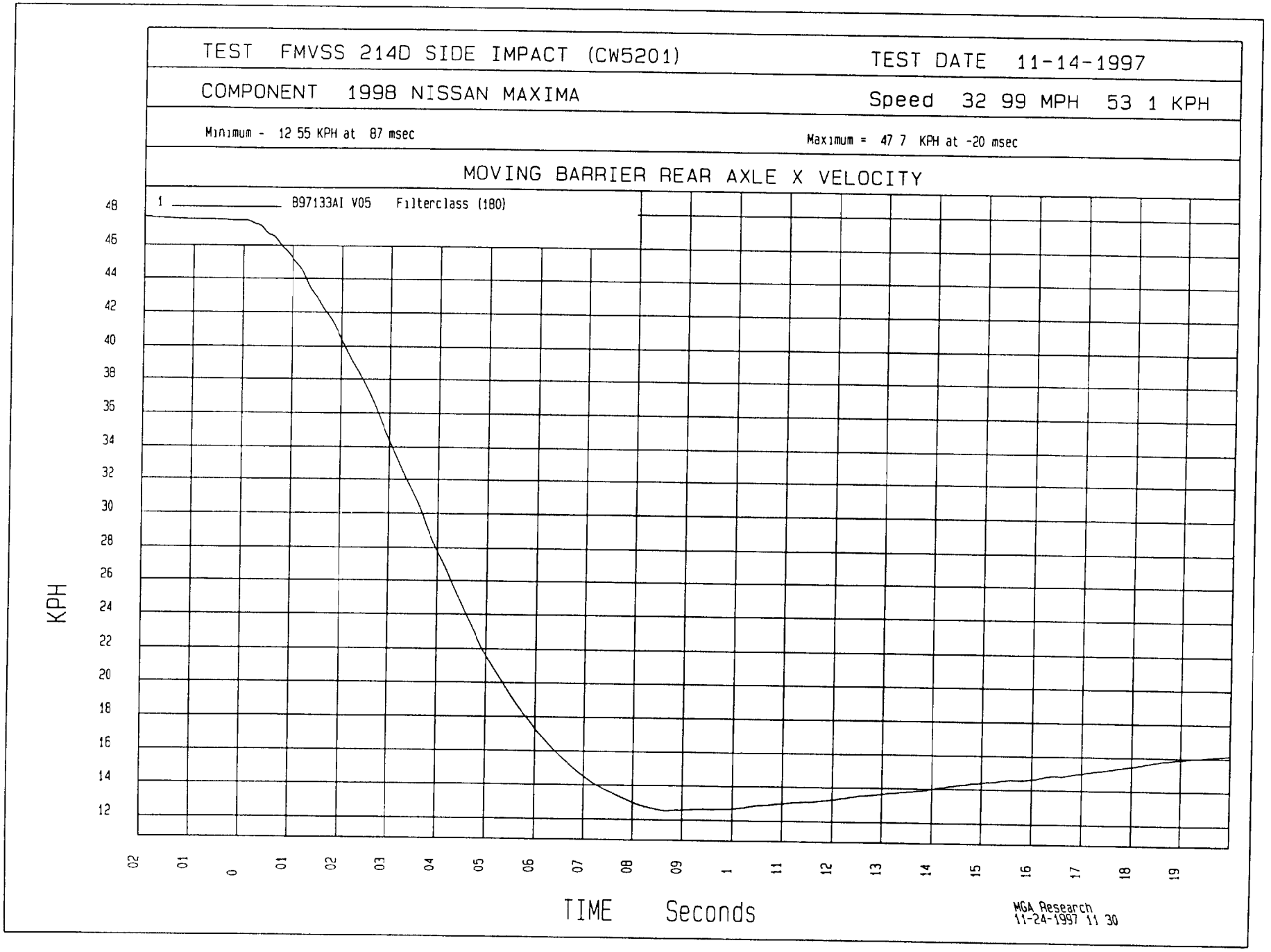
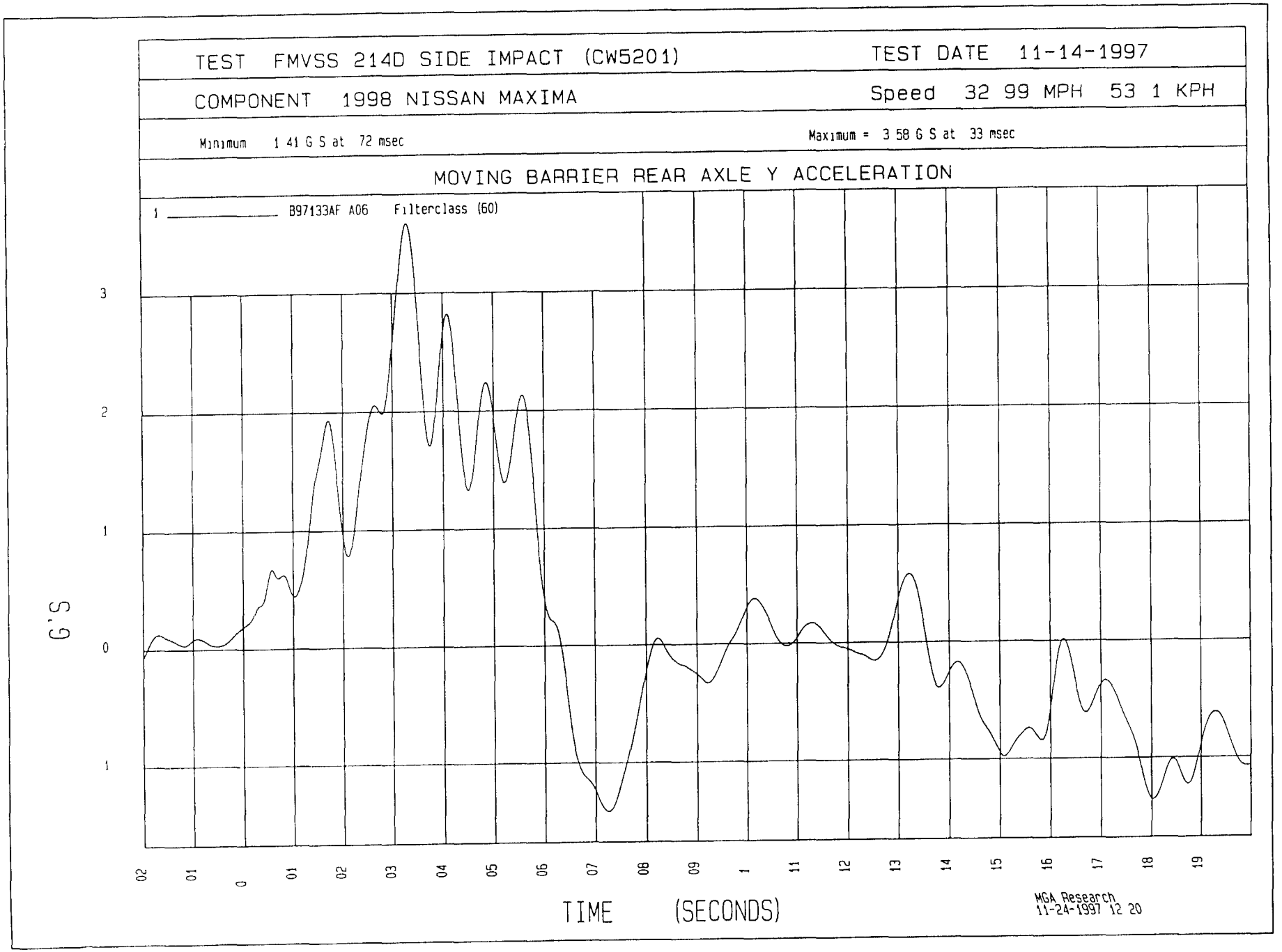
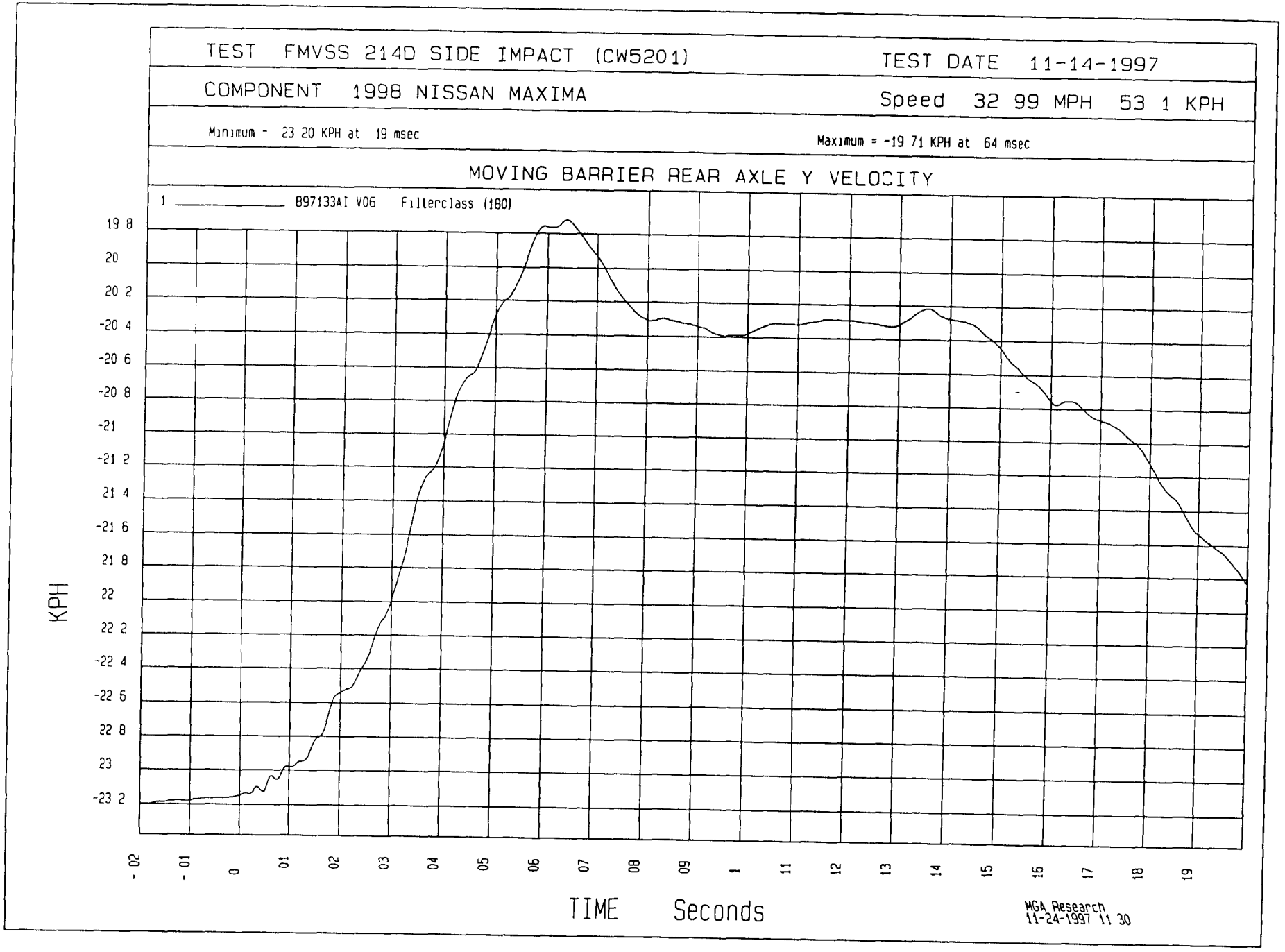
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11 24 1997 12 33


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 19 27 G S at 37 msec
Maximum - 1 59 G S at 183 msec
MOVING BARRIER REAR AXLE X ACCELERATION
1 B97133AF A05 Filterclass (60)
G'S
2
0
2
4
6
-8
-10
12
14
16
18
20
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 12 20


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 12 55 KPH at 87 msec
Maximum = 47 7 KPH at -20 msec
MOVING BARRIER REAR AXLE X VELOCITY
1 B97133AI V05 Filterclass (180)
KPH
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 30


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 1 41 G S at 72 msec
Maximum = 3 58 G S at 33 msec
MOVING BARRIER REAR AXLE Y ACCELERATION
1 B97133AF A06 Filterclass (60)
G'S
3
2
1
0
1
02 01 0 01 02 03 04 05 06 07 08 09 1 11 12 13 14 15 16 17 18 19
TIME (SECONDS)
MGA Research
11-24-1997 12 20


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 23 20 KPH at 19 msec
Maximum = -19 71 KPH at 64 msec
MOVING BARRIER REAR AXLE Y VELOCITY
1 B97133AI V06 Filterclass (180)
19 8
20
20 2
-20 4
-20 6
-20 8
-21
-21 2
21 4
-21 6
21 8
22
22 2
-22 4
-22 6
22 8
23
-23 2
KPH
- 02
- 01
0
01
02
03
04
05
06
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1
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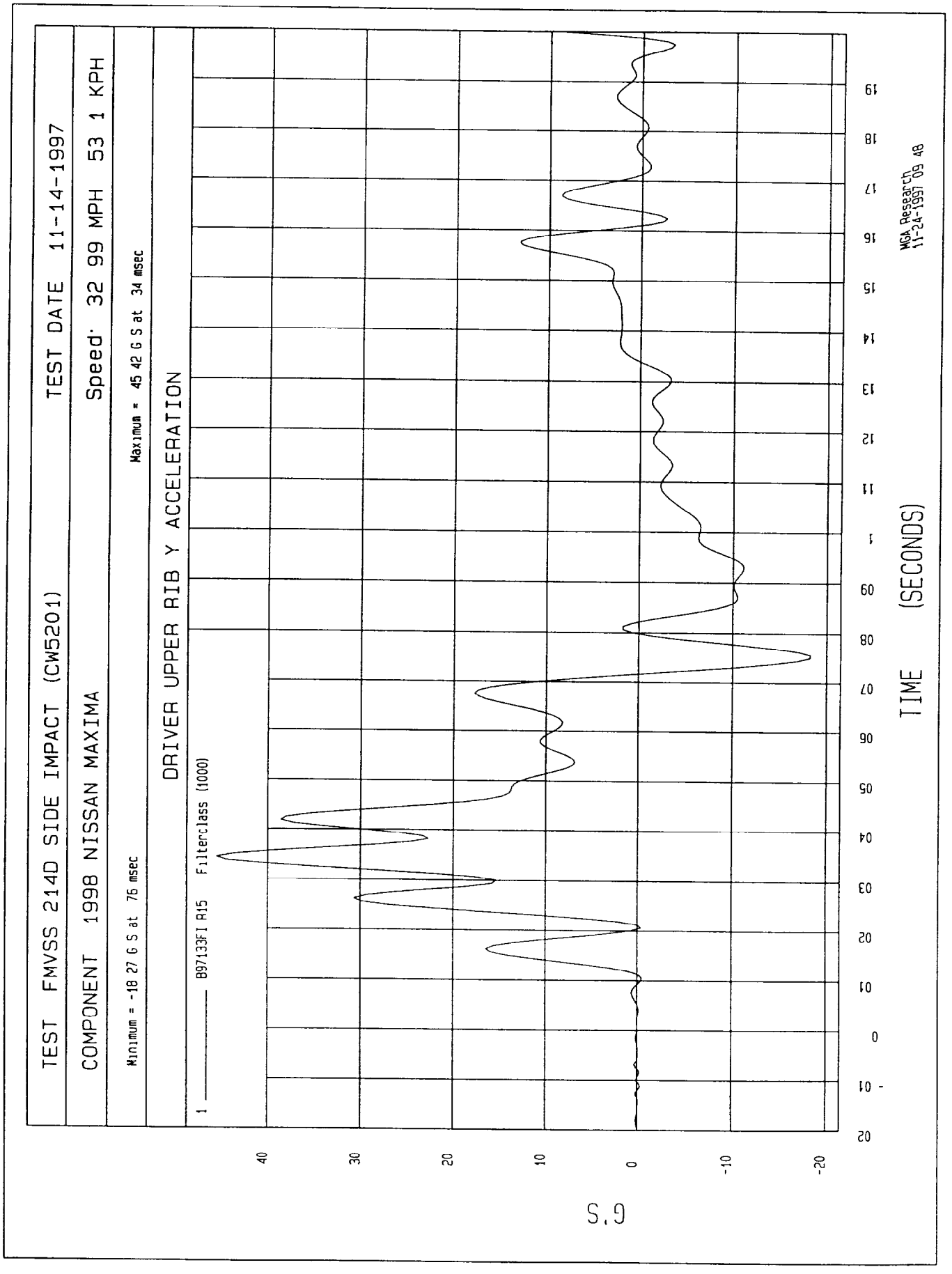
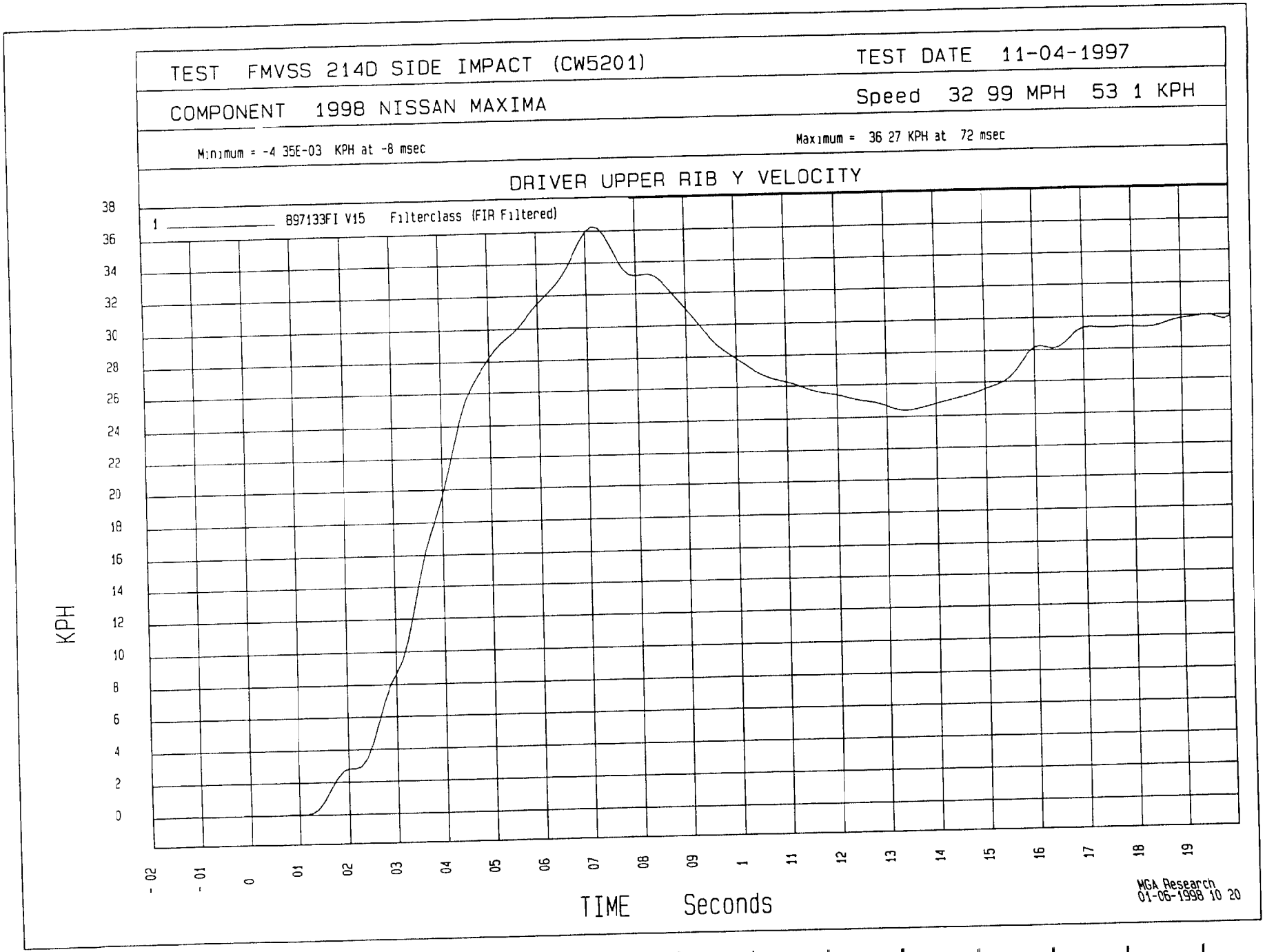
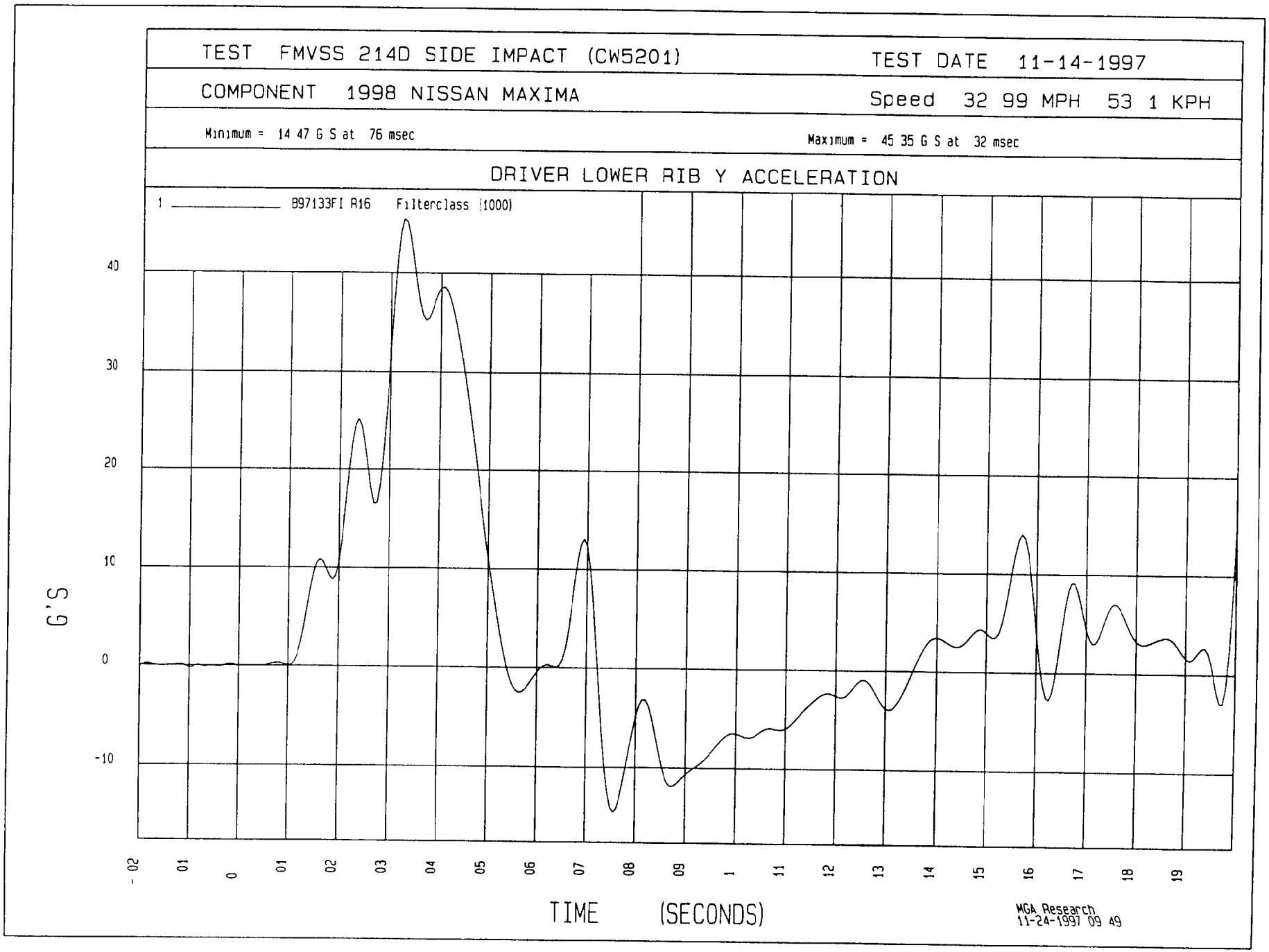
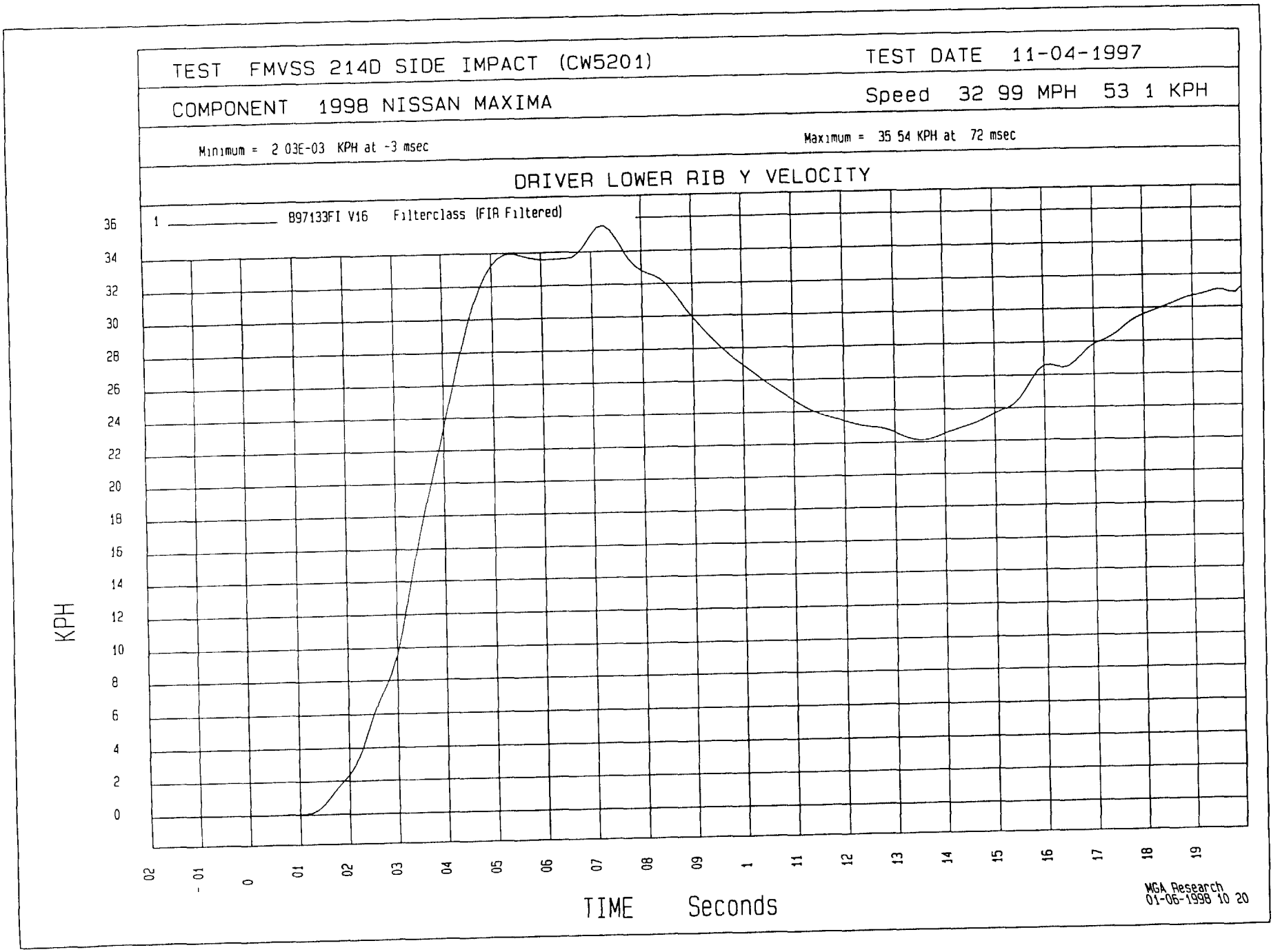
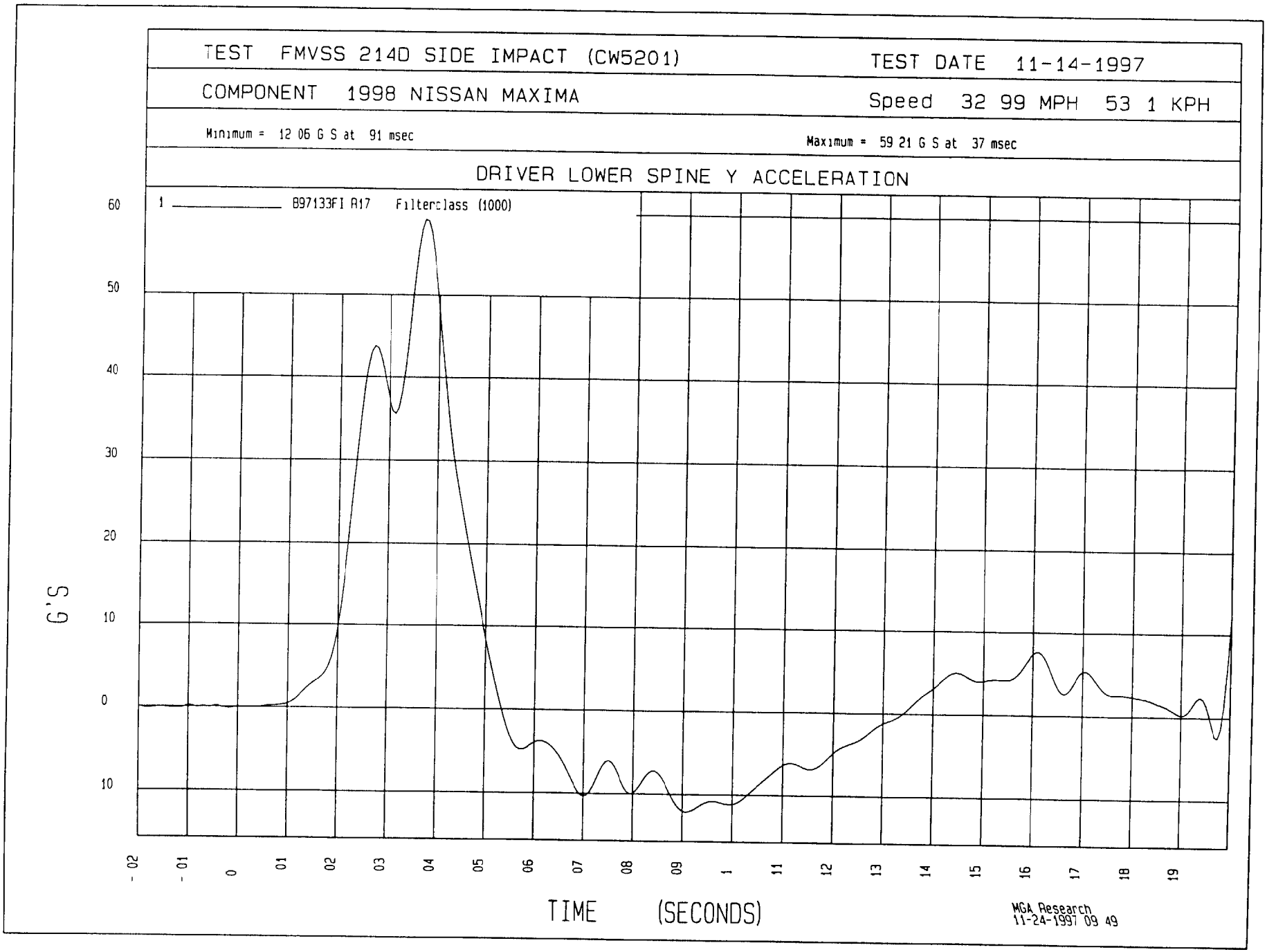
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
11-24-1997 11 30

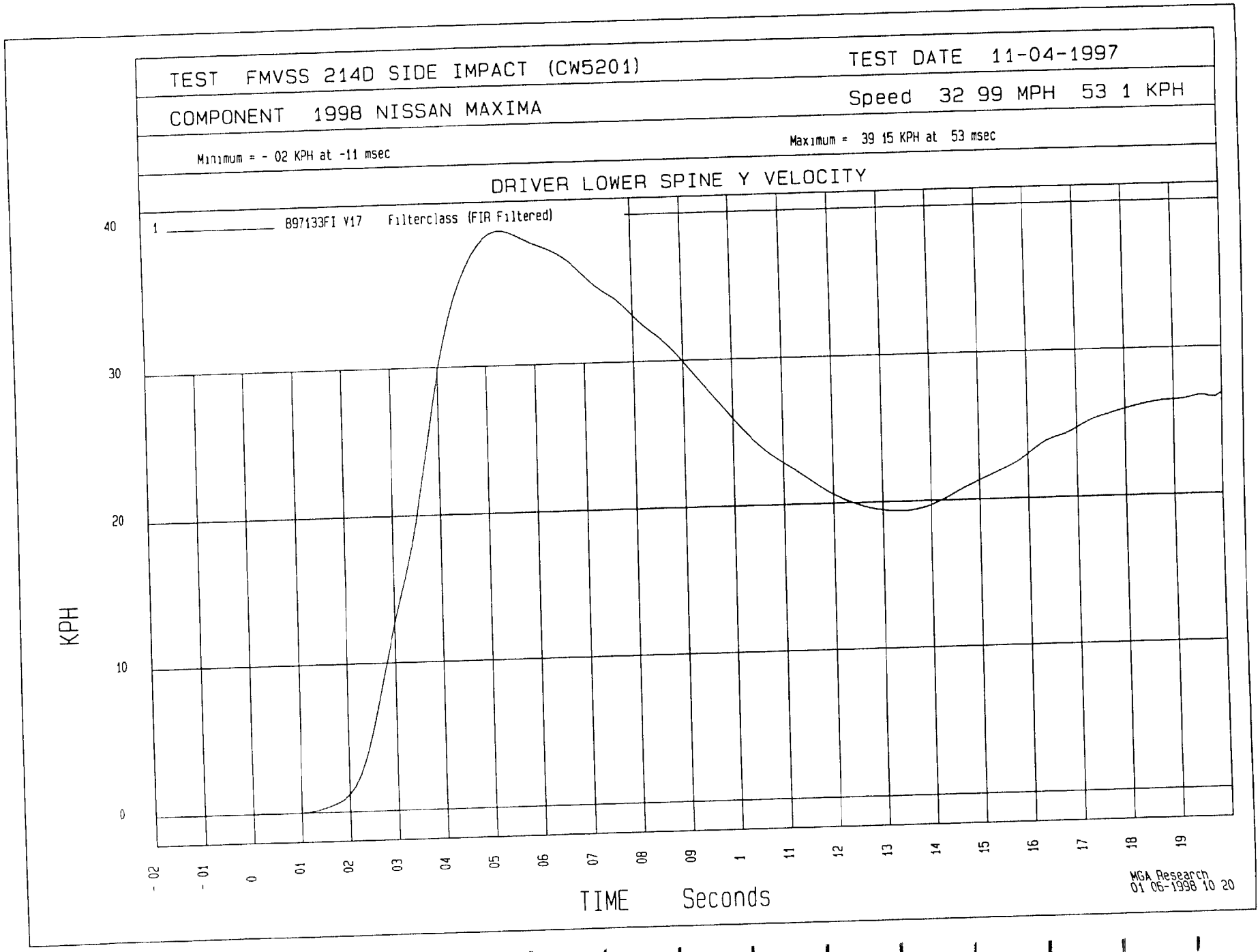

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed: 32 99 MPH 53 1 KPH
Minimum = -18 27 G S at 76 msec
Maximum = 45 42 G S at 34 msec
DRIVER UPPER RIB Y ACCELERATION
1 B97133FI R15 Filterclass (1000)
40
30
20
10
0
-10
-20
G's
TIME (SECONDS)
MGA Research
11-24-1997 09 48

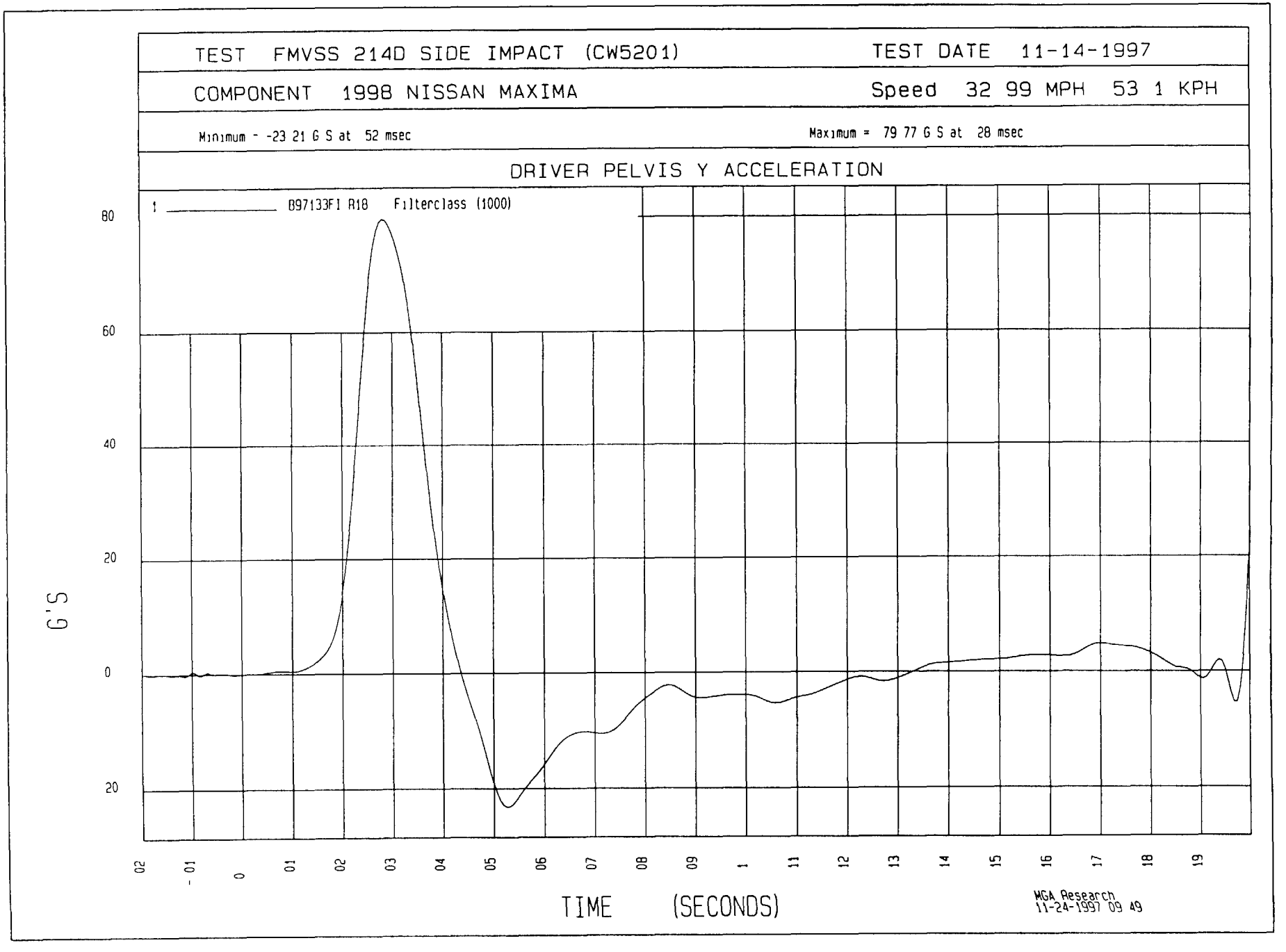

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -4 35E-03 KPH at -8 msec
Maximum = 36 27 KPH at 72 msec
DRIVER UPPER RIB Y VELOCITY
1 B97133FI V15 Filterclass (FIR Filtered)
KPH
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 20

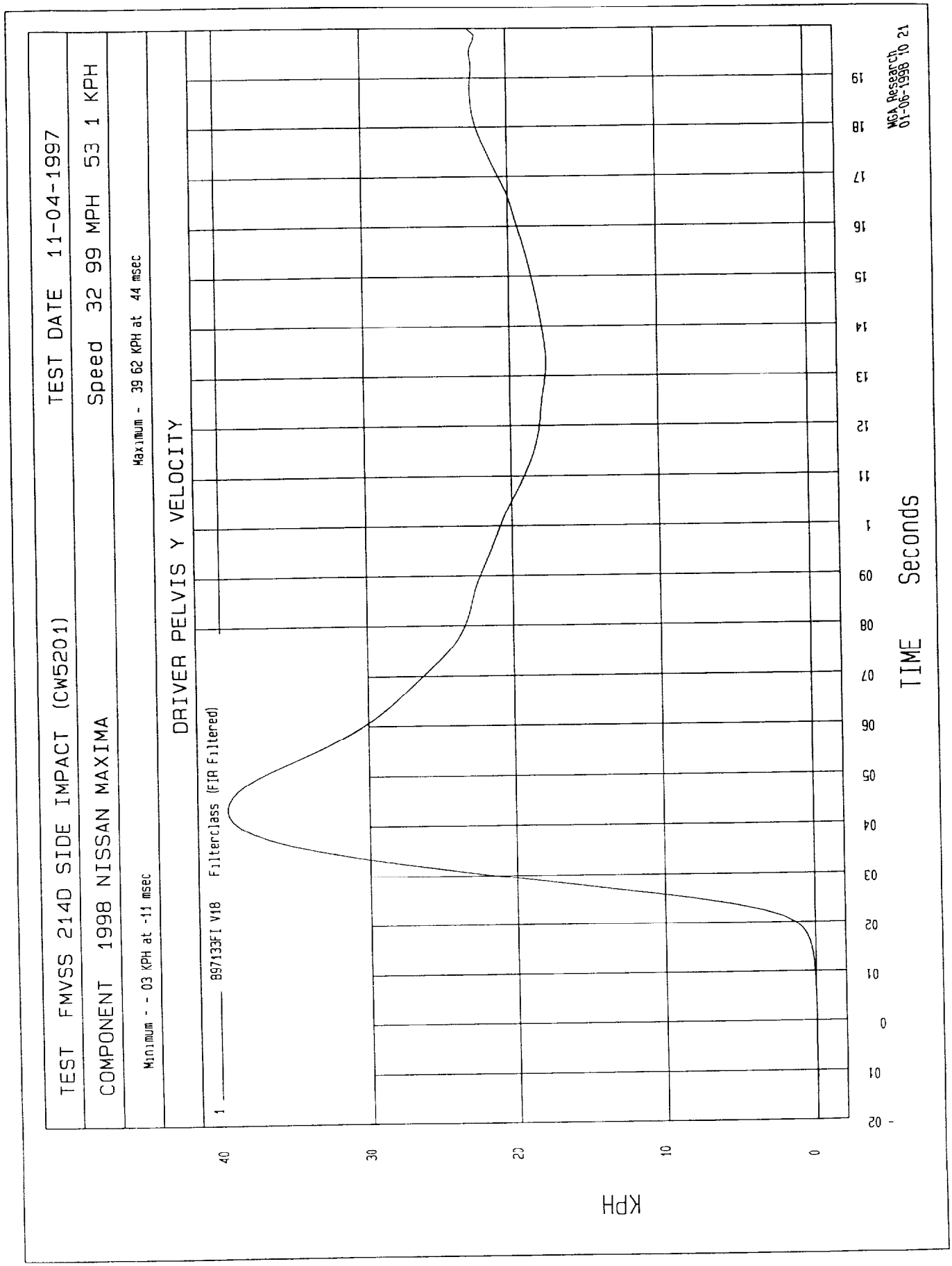

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 14 47 G S at 76 msec
Maximum = 45 35 G S at 32 msec
DRIVER LOWER RIB Y ACCELERATION
1 B97133FI R16 Filterclass (1000)
40
30
20
10
0
-10
G'S
-02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 49

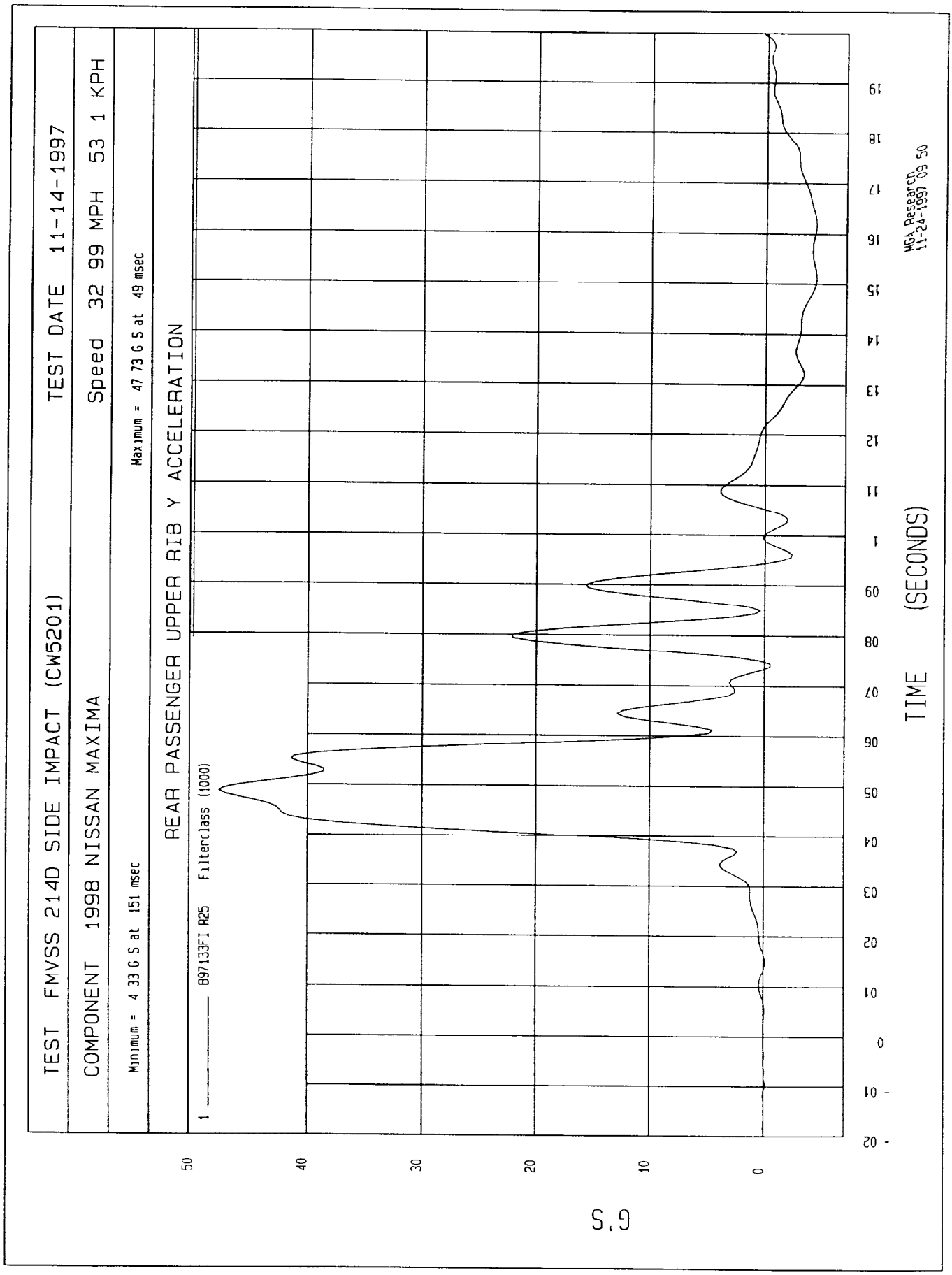

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 2 03E-03 KPH at -3 msec
Maximum = 35 54 KPH at 72 msec
DRIVER LOWER RIB Y VELOCITY
1 B97133FI V16 Filterclass (FIR Filtered)
KPH
TIME Seconds
MGA Research
01-06-1998 10 20

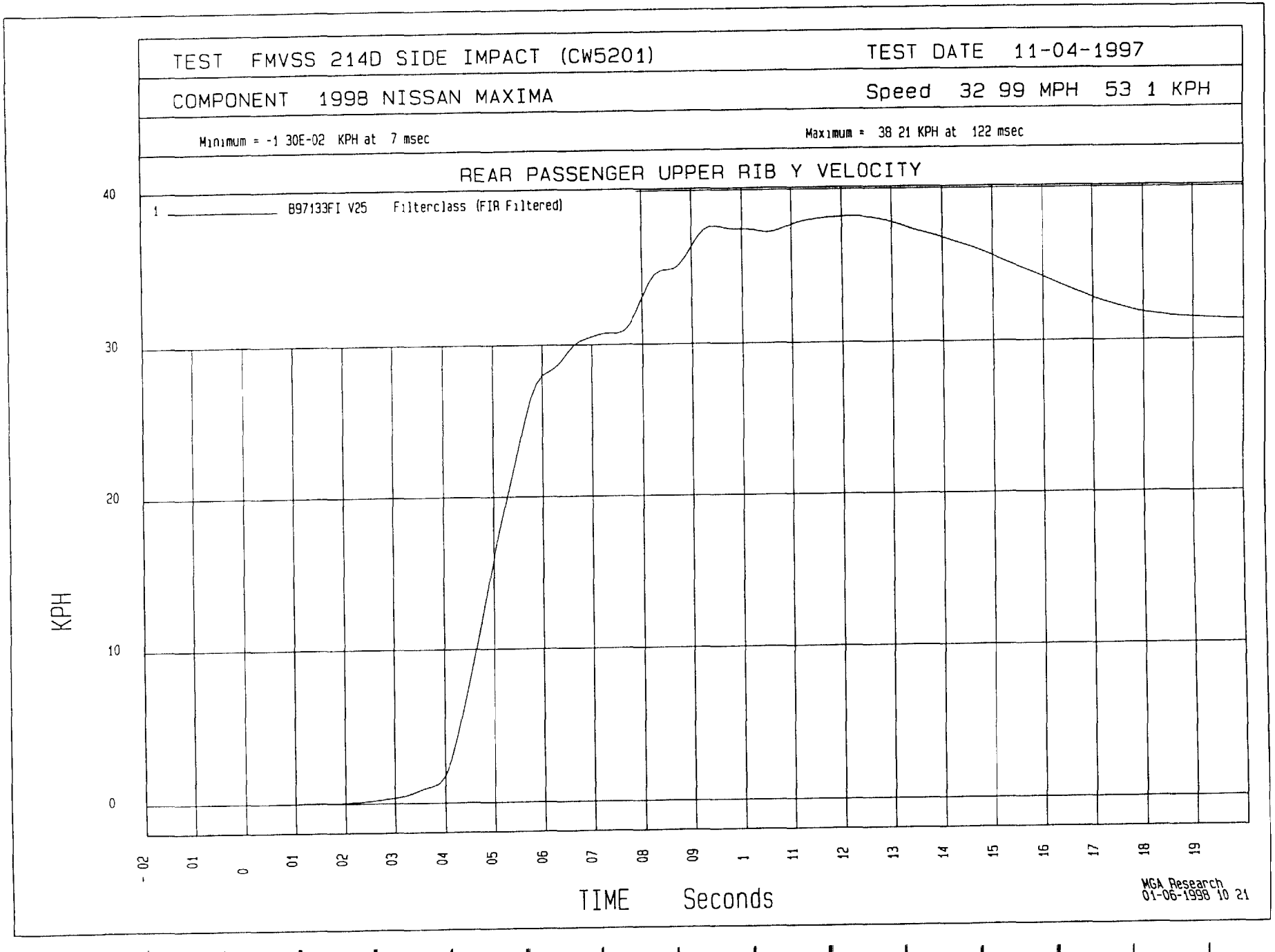

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 12 06 G S at 91 msec
Maximum = 59 21 G S at 37 msec
DRIVER LOWER SPINE Y ACCELERATION
1 B97133FI R17 FilterClass (1000)
60
50
40
30
20
10
0
10
G'S
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 49

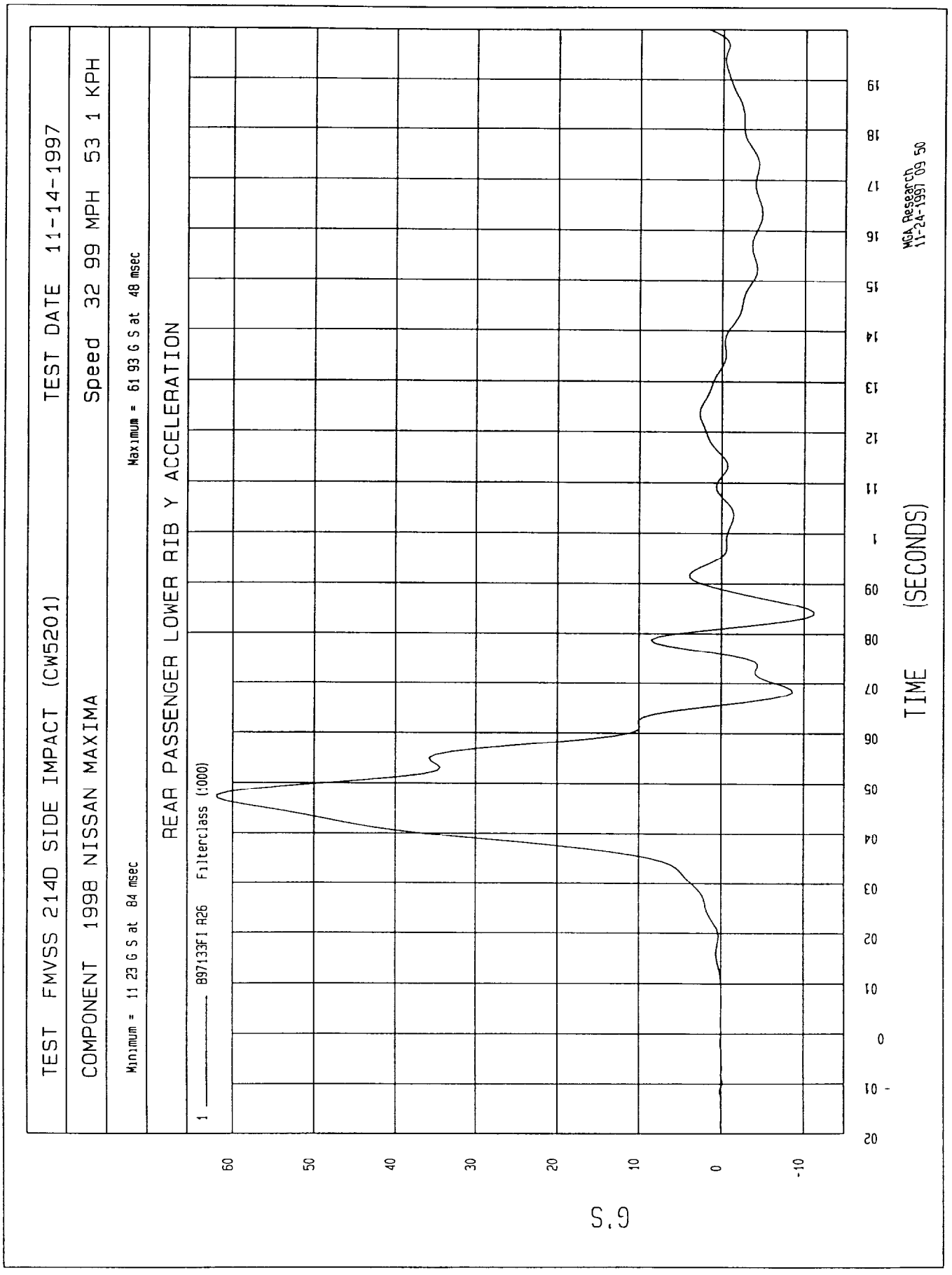

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = - 02 KPH at -11 msec
Maximum = 39 15 KPH at 53 msec
DRIVER LOWER SPINE Y VELOCITY
1 897133FI V17 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01 06-1998 10 20


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -23 21 G S at 52 msec
Maximum = 79 77 G S at 28 msec
DRIVER PELVIS Y ACCELERATION
1 B97133FI R18 Filterclass (1000)
80
60
40
20
0
20
G'S
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 49

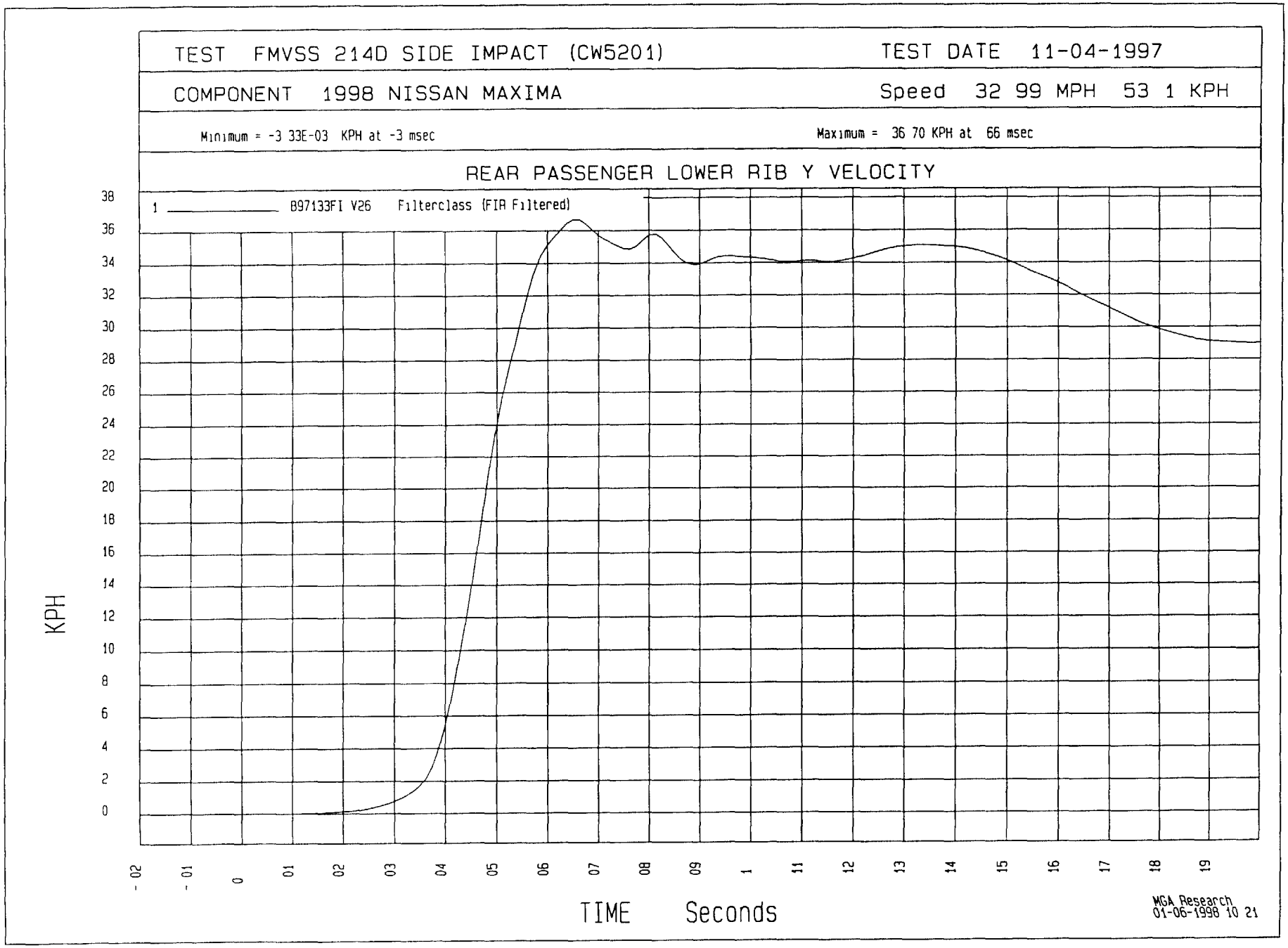

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - - 03 KPH at -11 msec
Maximum - 39 62 KPH at 44 msec
DRIVER PELVIS Y VELOCITY
1 897133FI V18 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
-02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

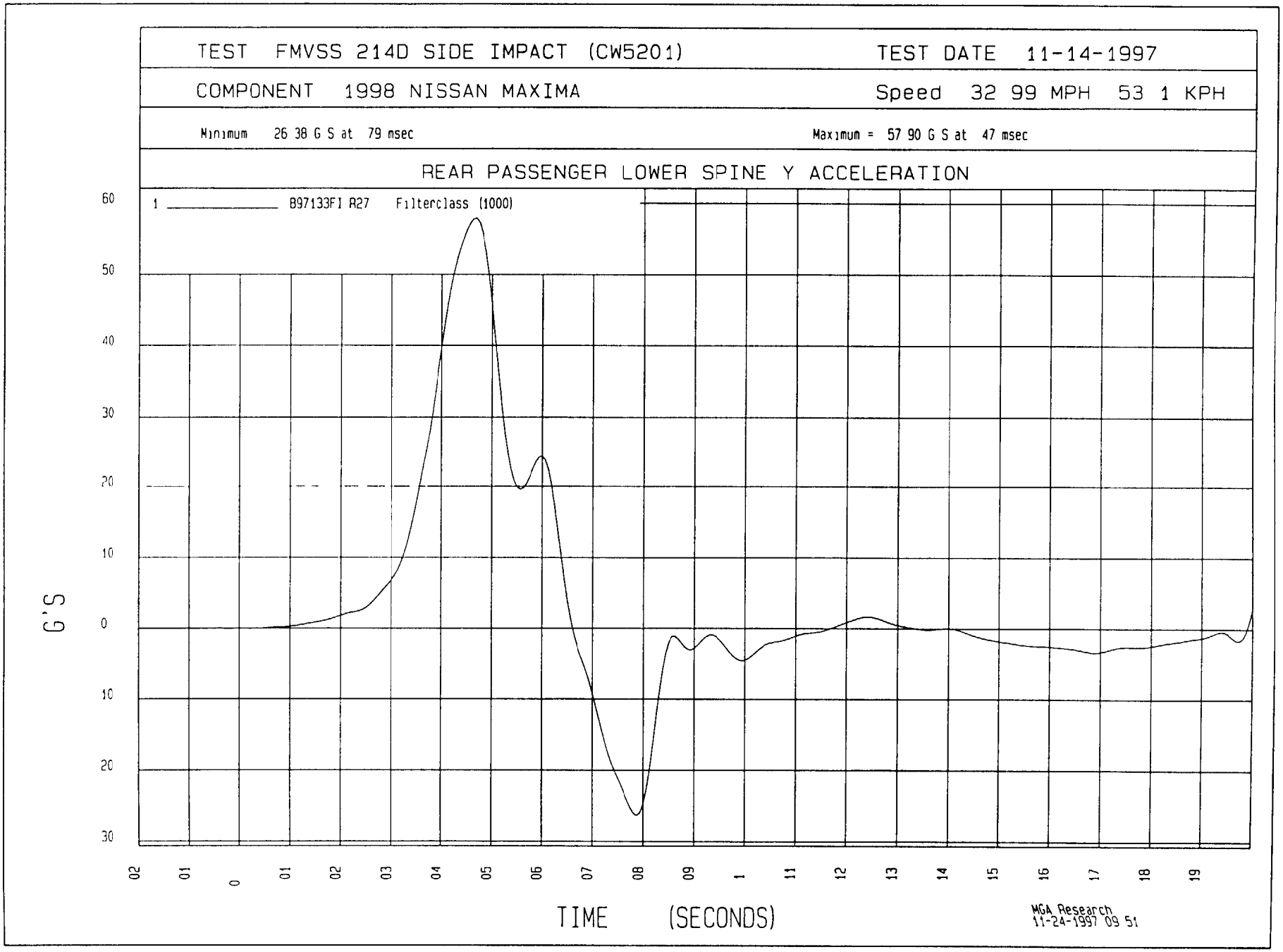

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = 4 33 G S at 151 msec Maximum = 47 73 G S at 49 msec
REAR PASSENGER UPPER RIB Y ACCELERATION
1 B97133F1 R25 Filterclass (1000)
50
40
30
20
10
0
-10
-20
19
18
17
16
15
14
13
12
11
1
09
08
07
06
05
04
03
02
01
0
-01
-02
TIME (SECONDS)
MGA Research
11-24-1997 09 50
6.5

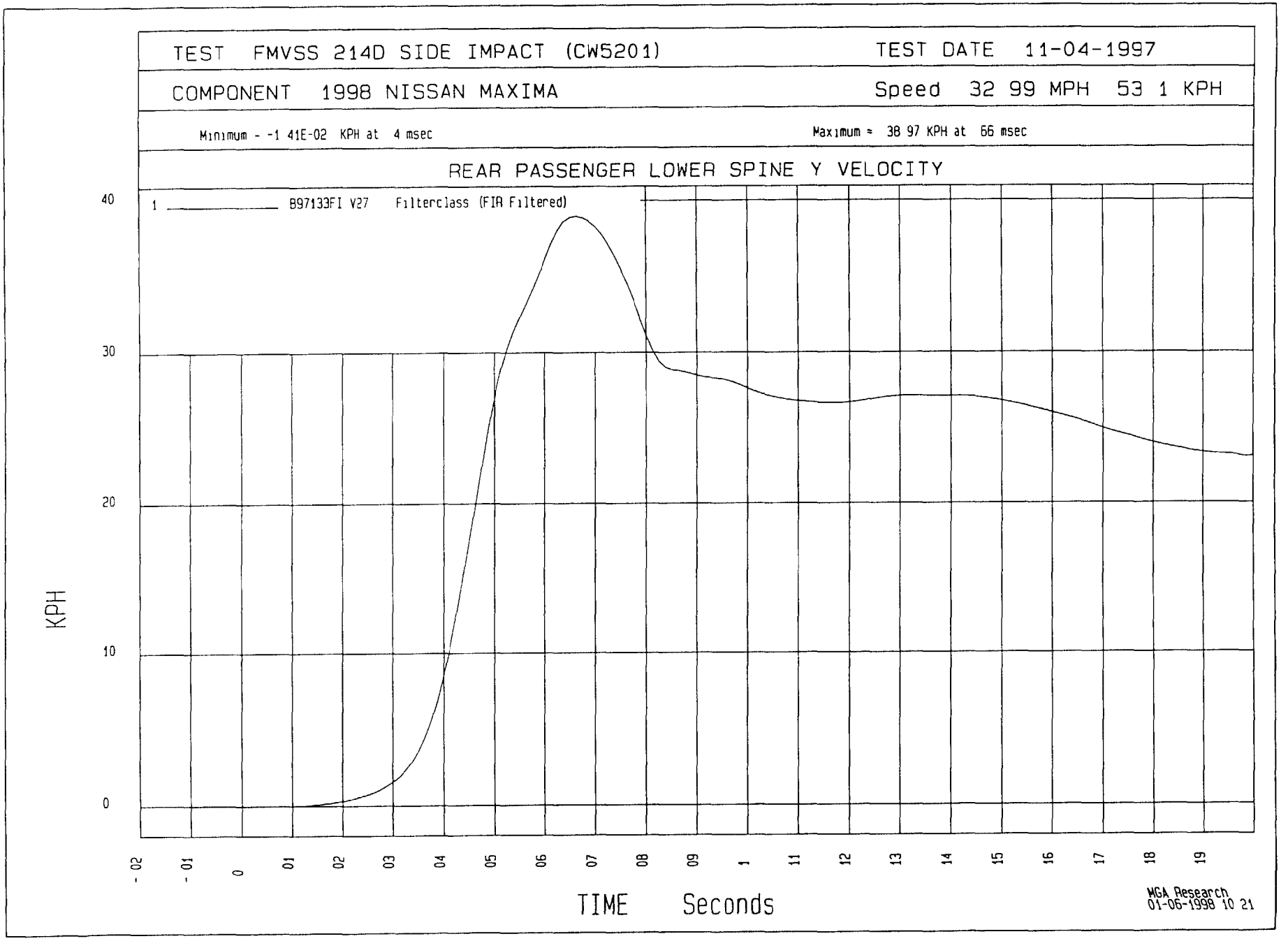

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -1 30E-02 KPH at 7 msec
Maximum = 38 21 KPH at 122 msec
REAR PASSENGER UPPER RIB Y VELOCITY
1 B97133FI V25 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

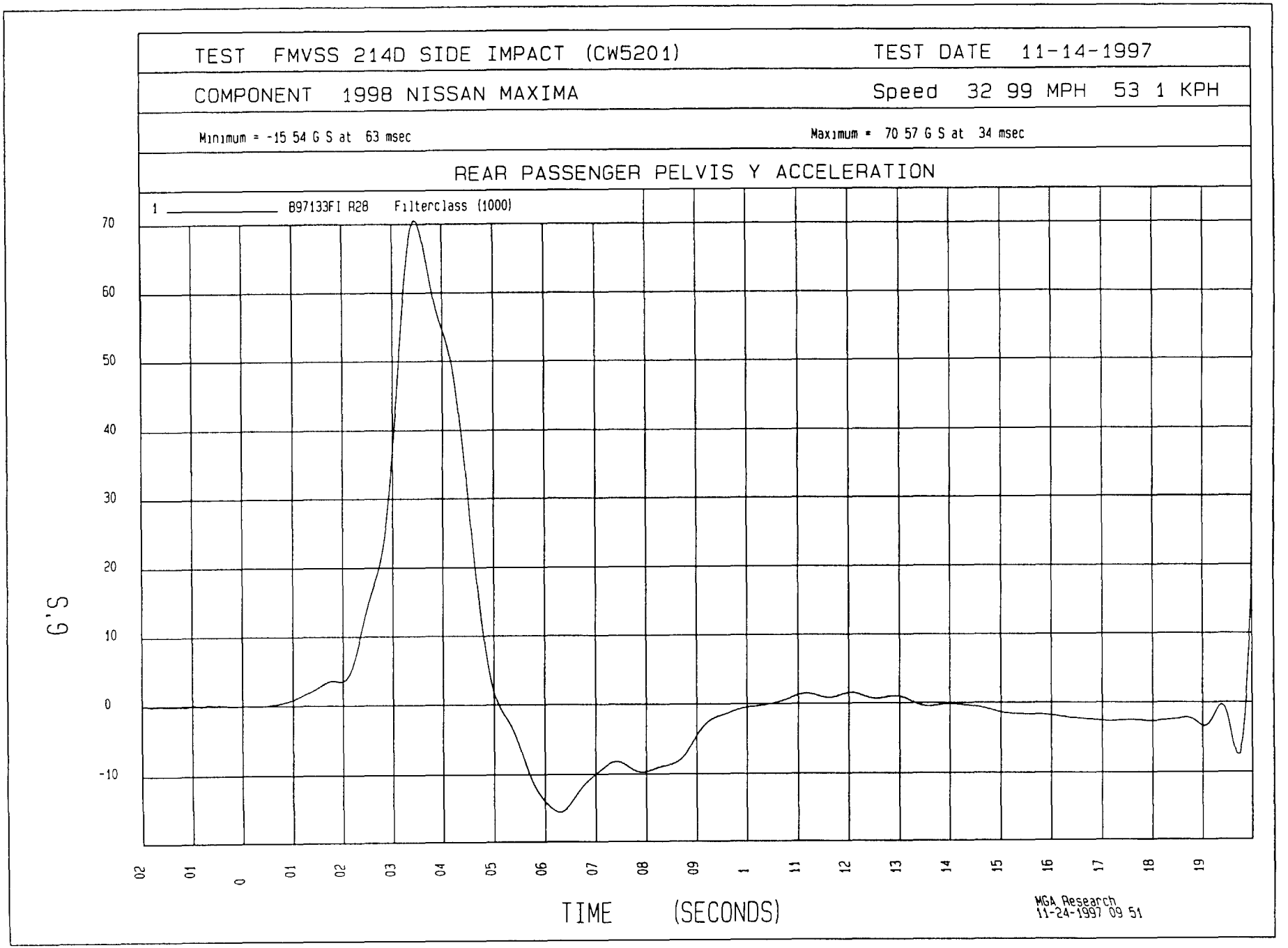

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 11 23 G S at 84 msec
Maximum = 61 93 G S at 48 msec
REAR PASSENGER LOWER RIB Y ACCELERATION
1 ——— 897133F1 A26 Filterclass (1000)
60
50
40
30
20
10
0
-10
02
01
0
01 -
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 50

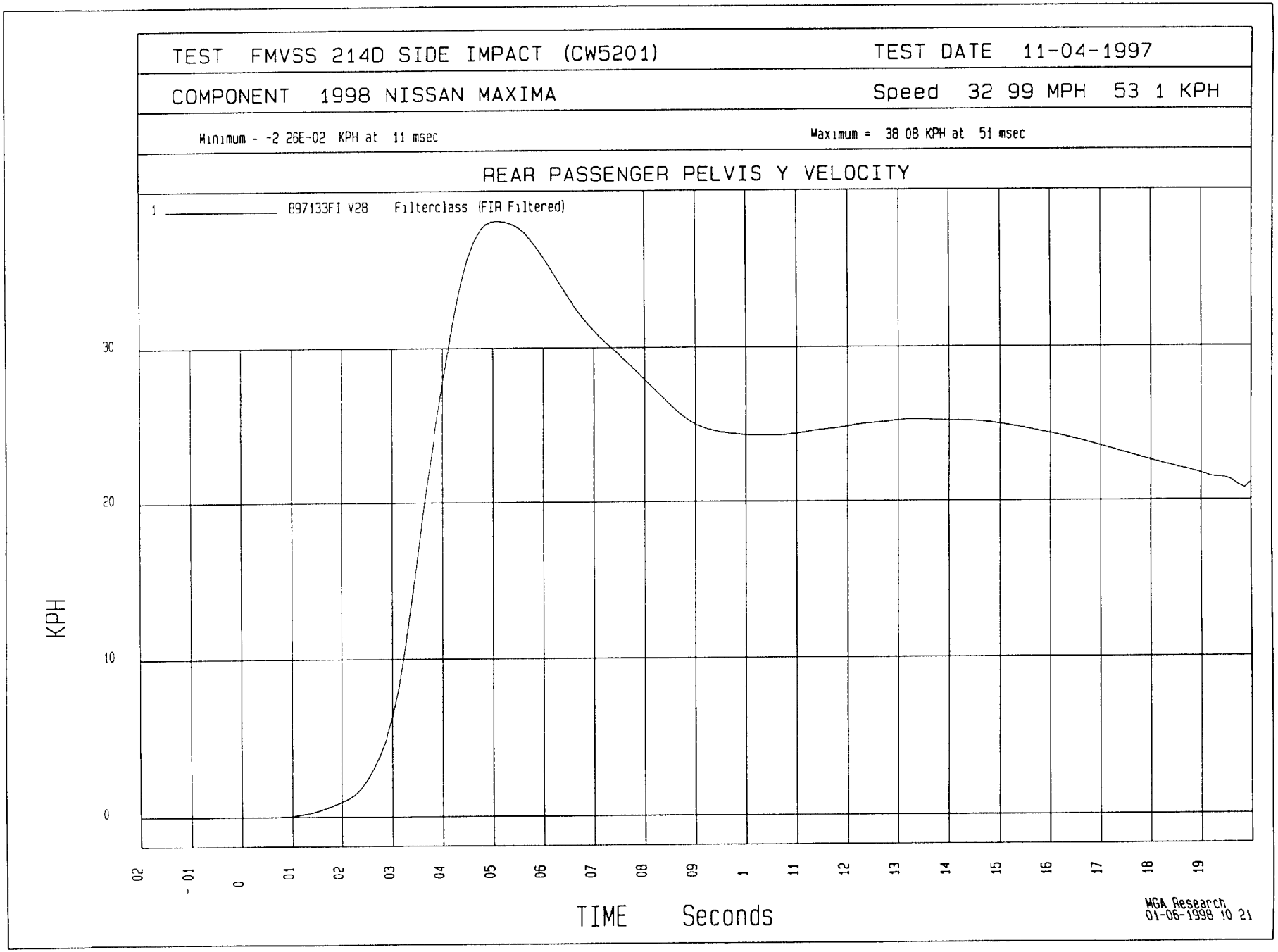
S.9

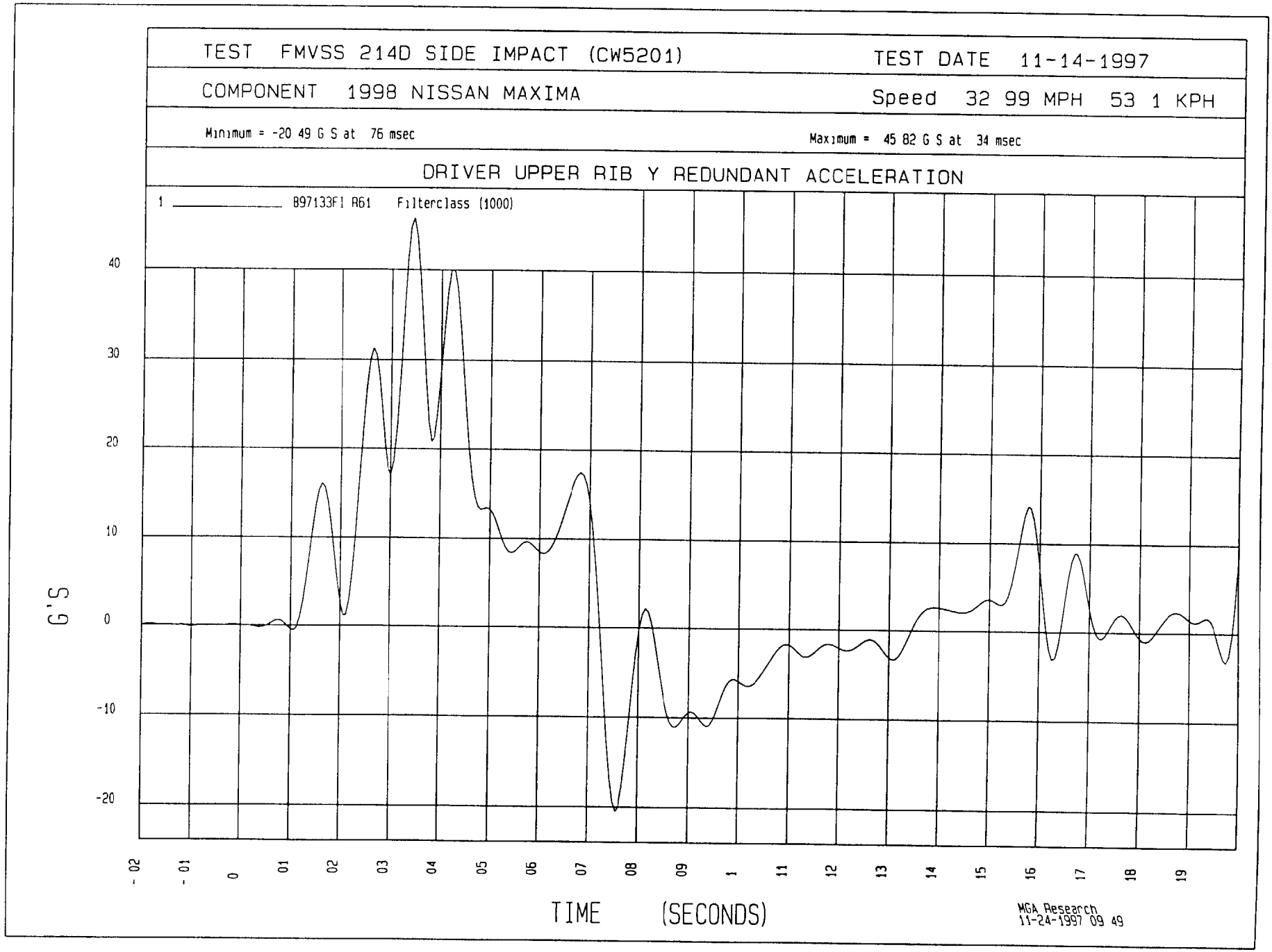

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -3 33E-03 KPH at -3 msec
Maximum = 36 70 KPH at 66 msec
REAR PASSENGER LOWER RIB Y VELOCITY
1 B97133FI V26 Filterclass (FIR Filtered)
KPH
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

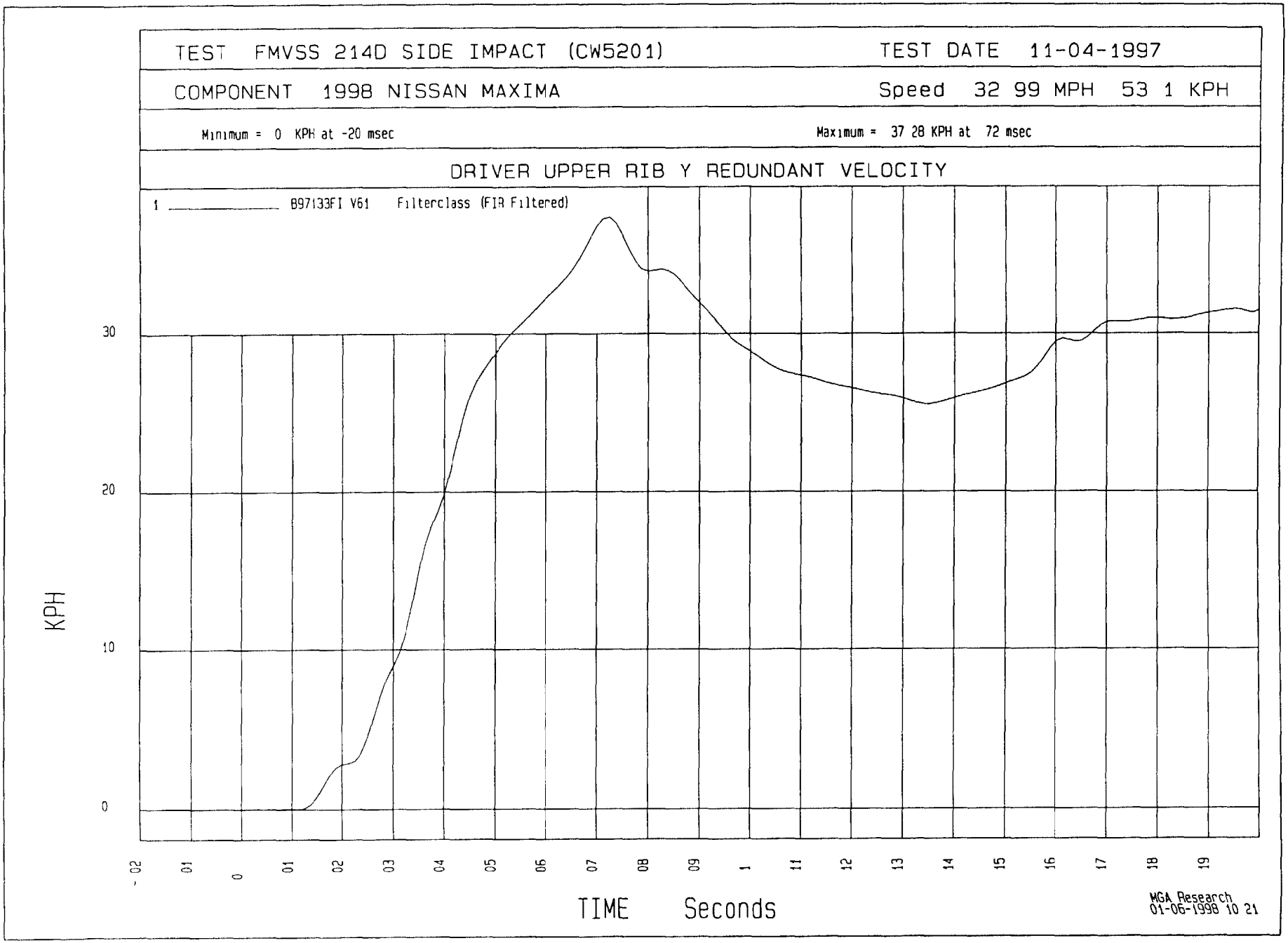

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 26 38 G S at 79 msec
Maximum = 57 90 G S at 47 msec
REAR PASSENGER LOWER SPINE Y ACCELERATION
1 B97133FI R27 Filterclass (1000)
60
50
40
30
20
10
0
10
20
30
G'S
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 51

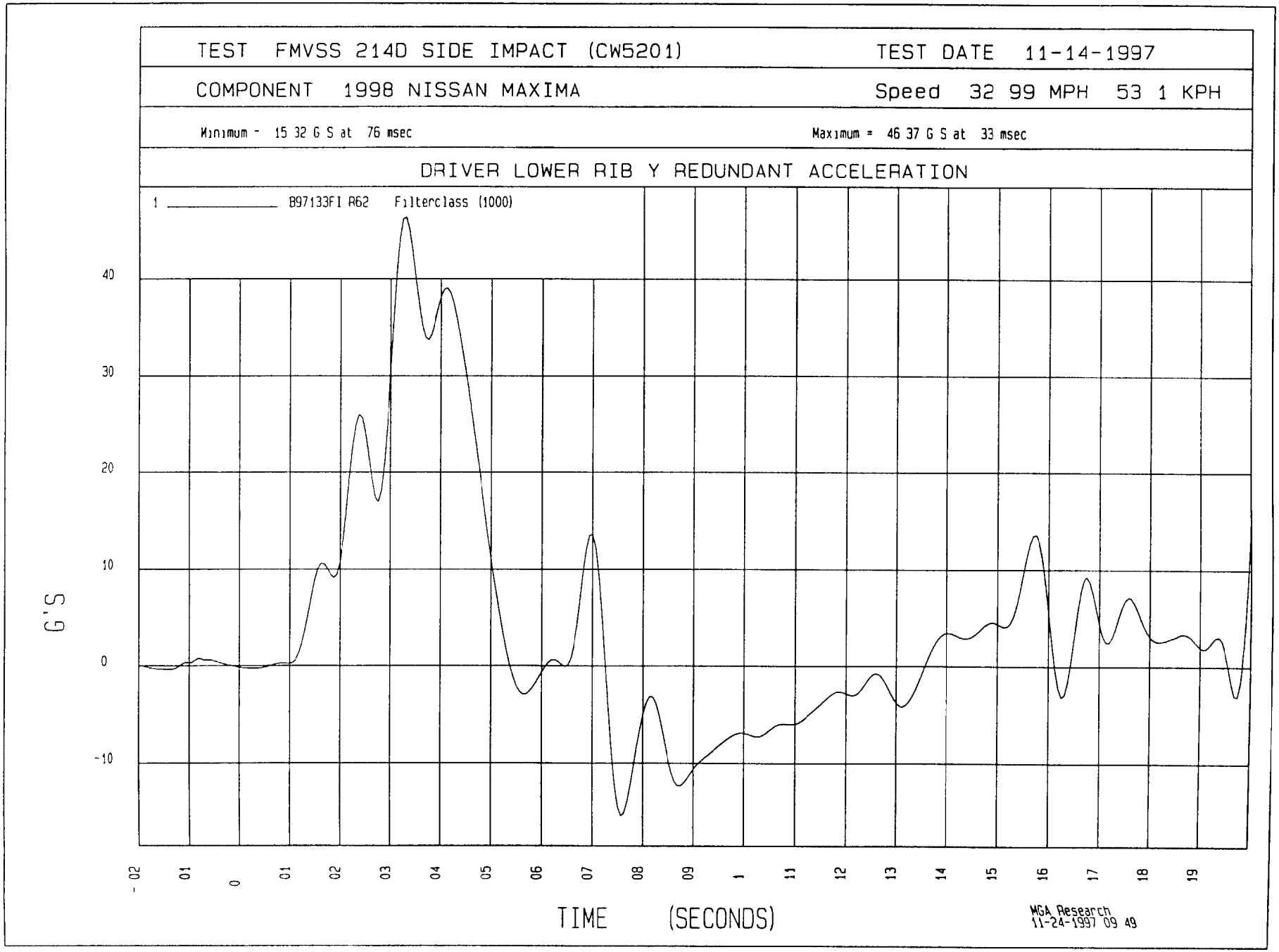

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - -1 41E-02 KPH at 4 msec
Maximum = 38 97 KPH at 66 msec
REAR PASSENGER LOWER SPINE Y VELOCITY
1 B97133FI V27 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

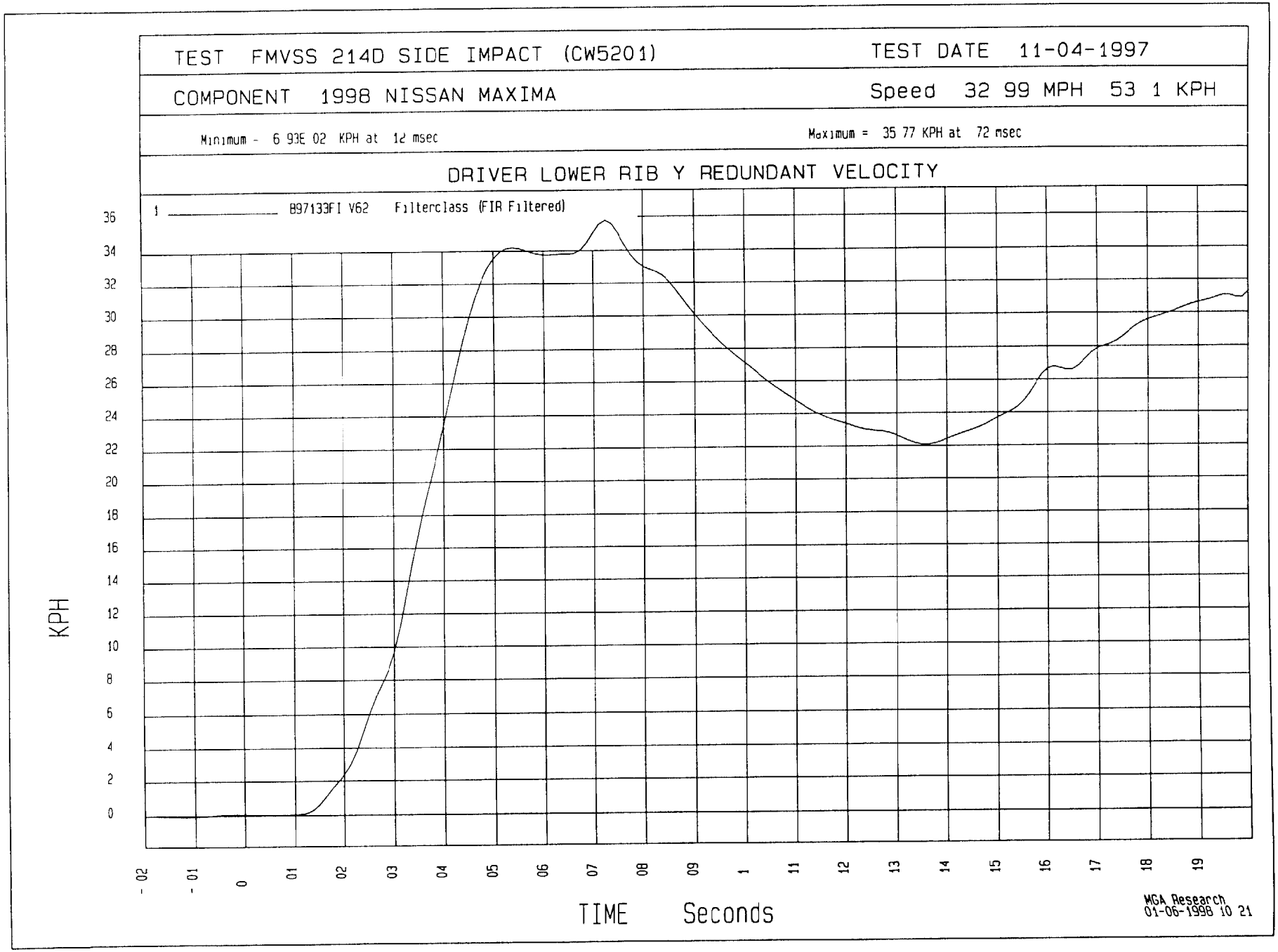

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -15 54 G S at 63 msec
Maximum = 70 57 G S at 34 msec
REAR PASSENGER PELVIS Y ACCELERATION
1 B97133FI R28 Filterclass (1000)
70
60
50
40
30
20
10
0
-10
G'S
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 51

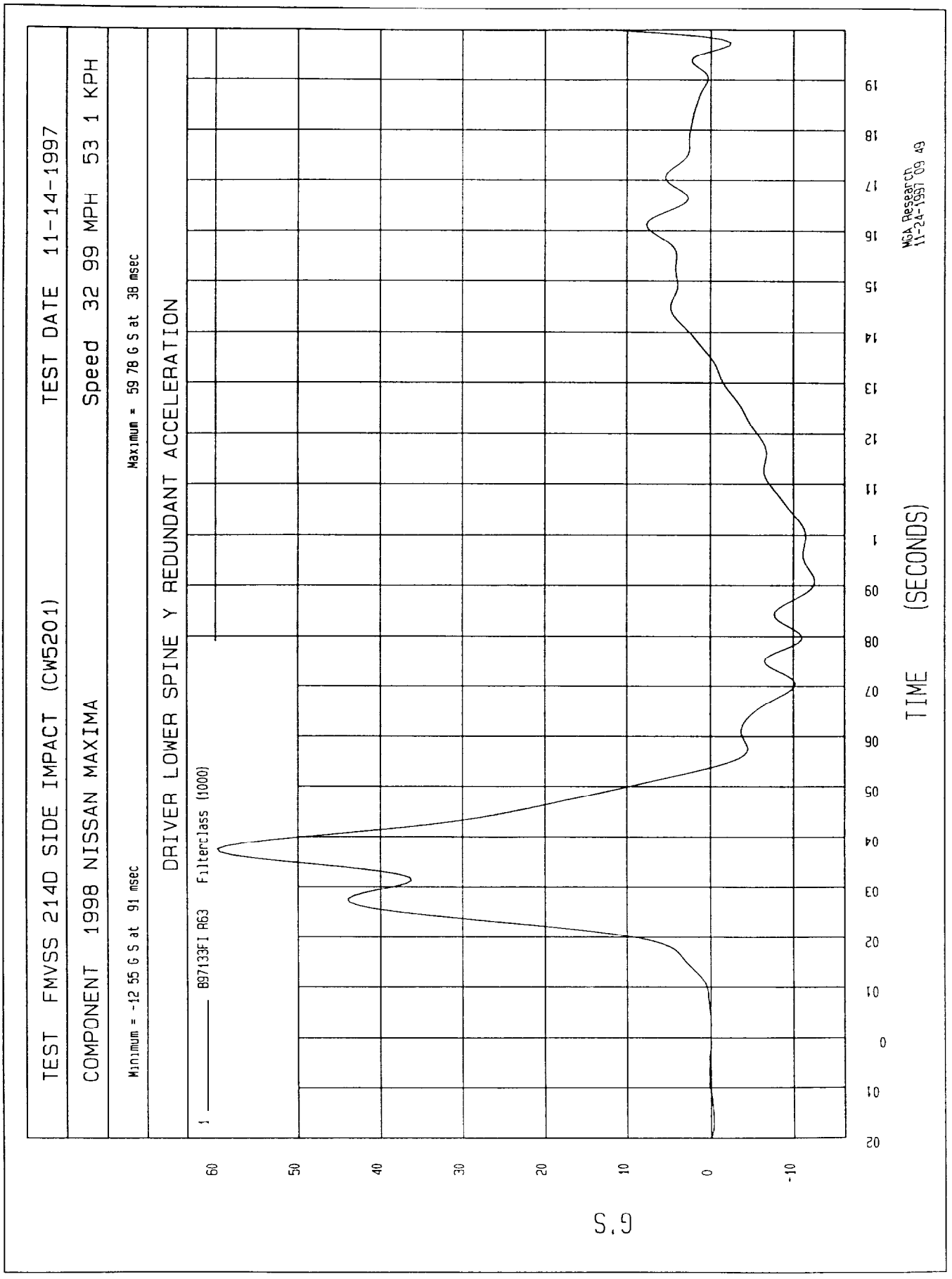

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - -2 26E-02 KPH at 11 msec
Maximum = 38 08 KPH at 51 msec
REAR PASSENGER PELVIS Y VELOCITY
1 _____ 897133FI V28 Filterclass (FIR Filtered)
KPH
30
20
10
0
02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

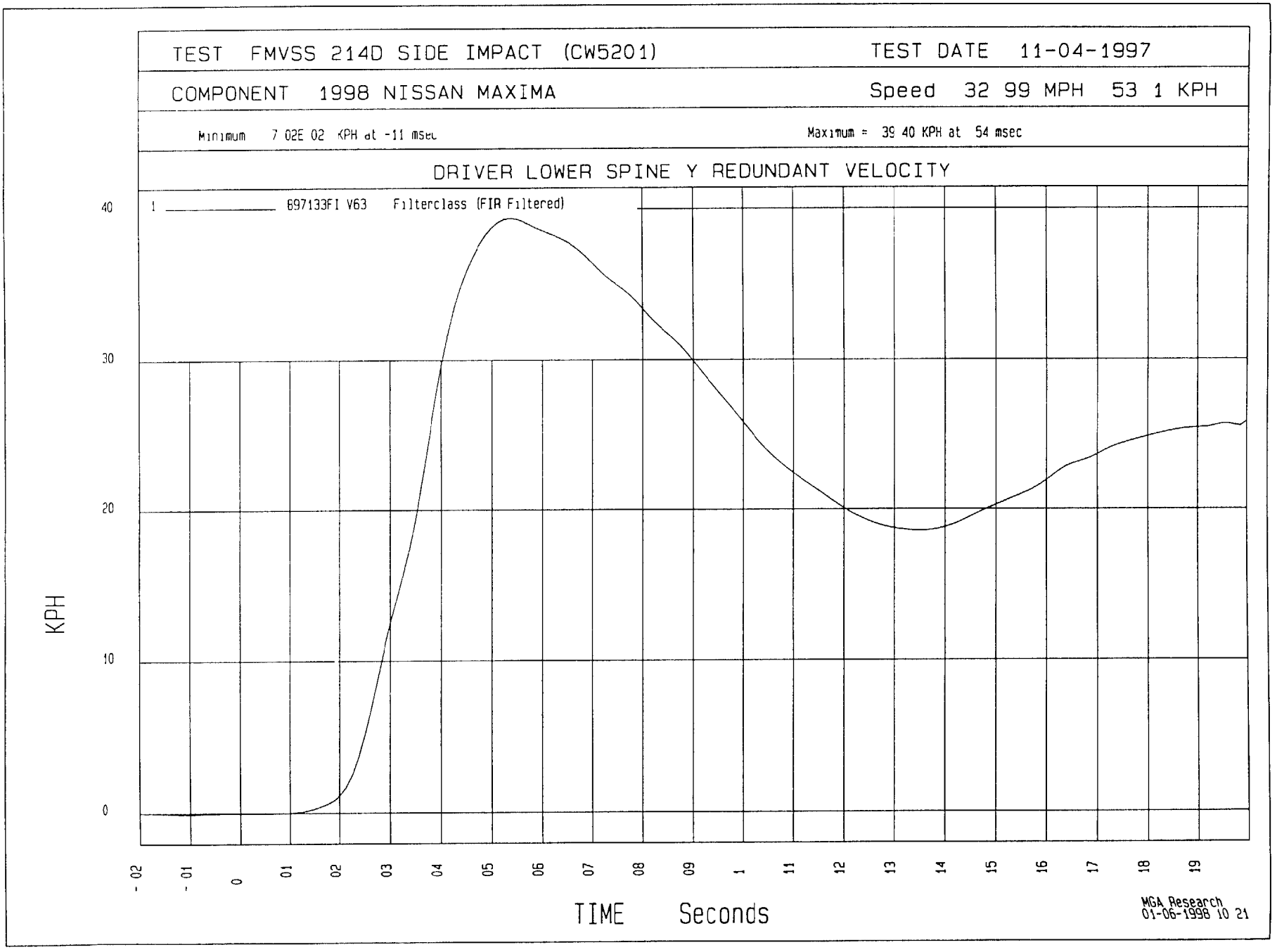

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -20 49 G S at 76 msec
Maximum = 45 82 G S at 34 msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B97133F1 A61 Filterclass (1000)
40
30
20
10
0
-10
-20
G'S
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 49

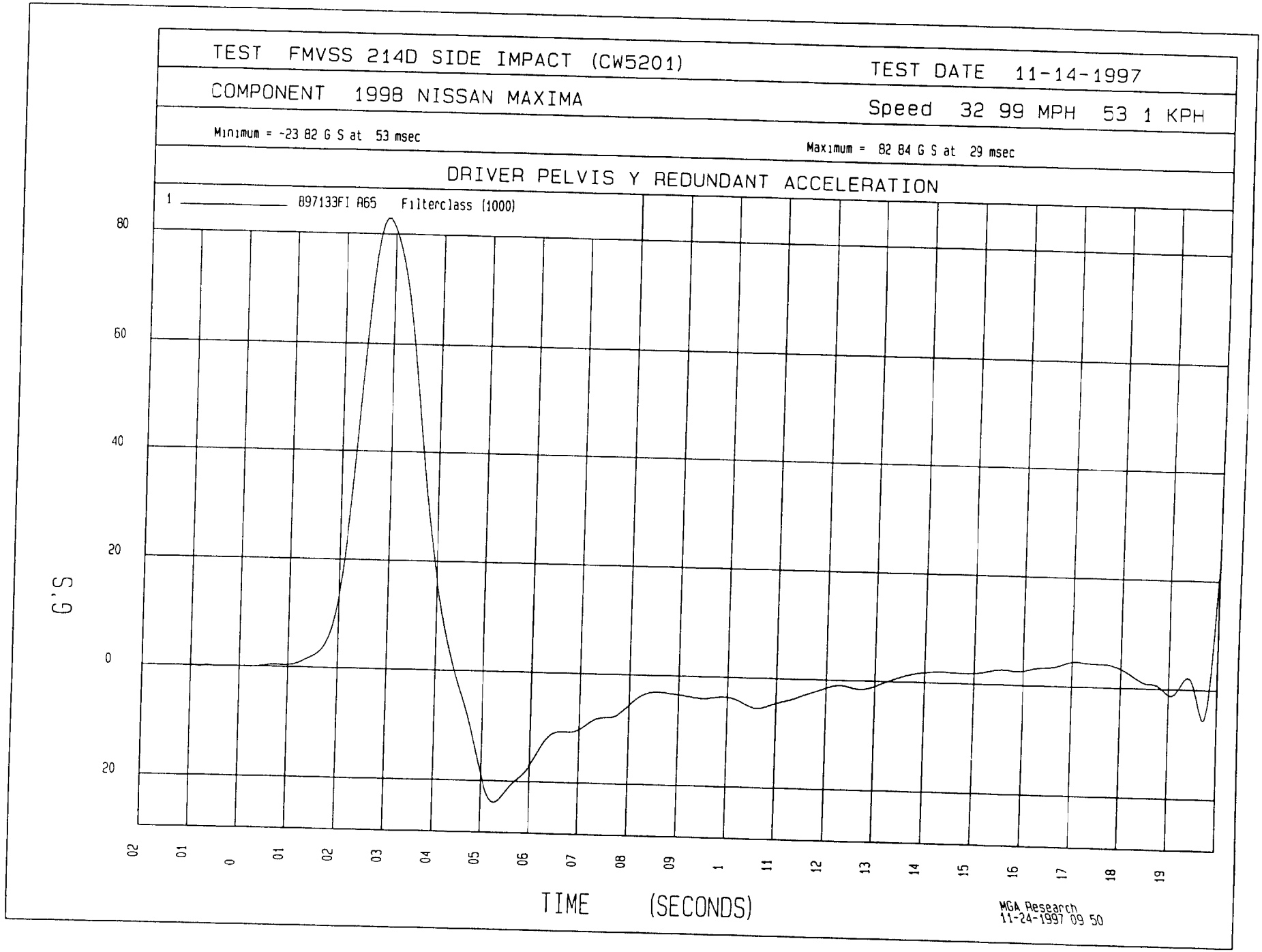

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 0 KPH at -20 msec
Maximum = 37 28 KPH at 72 msec
DRIVER UPPER RIB Y REDUNDANT VELOCITY
1 B97133FI V61 Filterclass (FIR Filtered)
KPH
30
20
10
0
- 02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

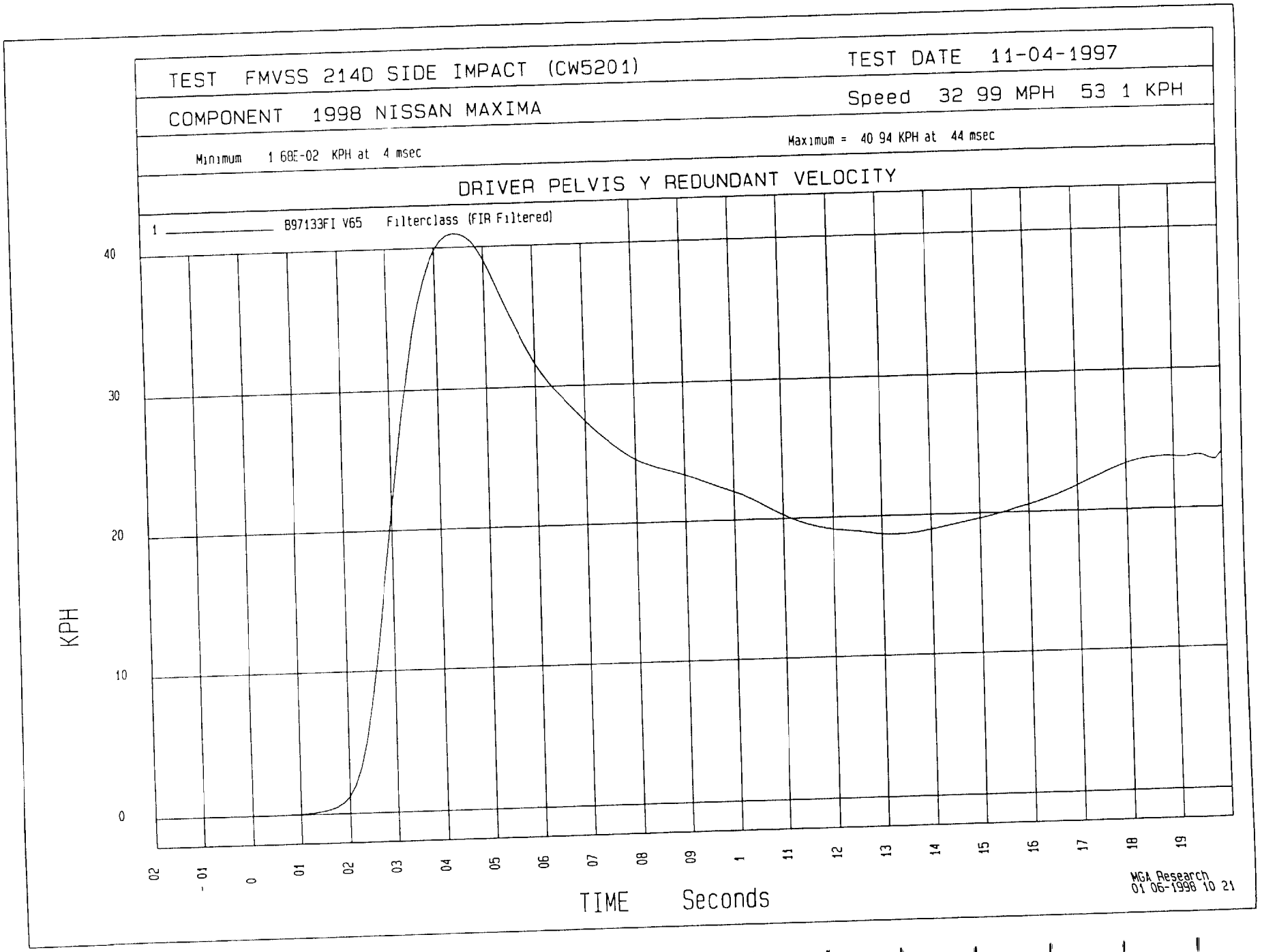

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 15 32 G S at 76 msec
Maximum = 46 37 G S at 33 msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B97133FI R62 Filterclass (1000)
40
30
20
10
0
-10
G'S
-02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 49

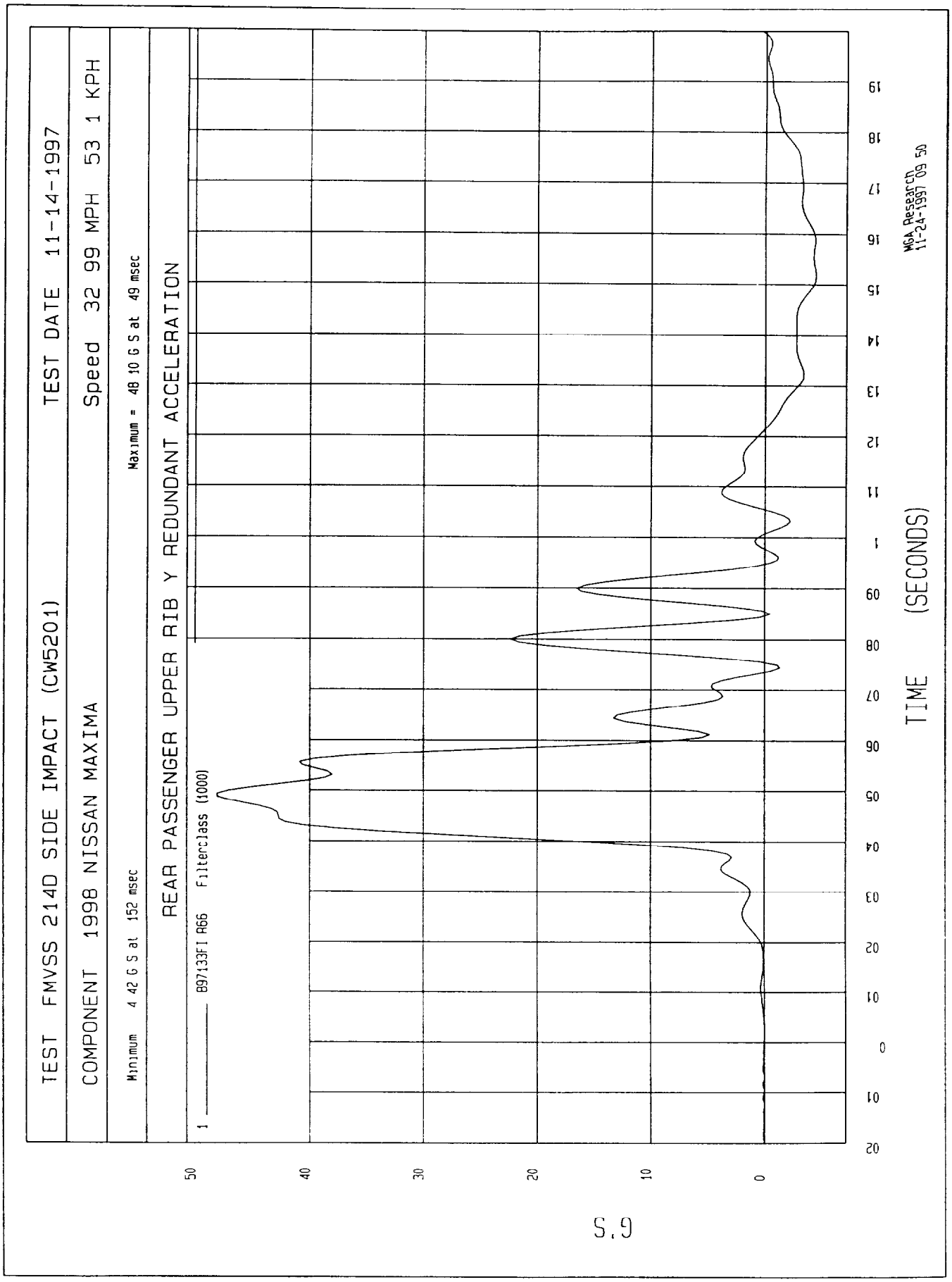

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 6 93E 02 KPH at 12 msec
Maximum = 35 77 KPH at 72 msec
DRIVER LOWER RIB Y REDUNDANT VELOCITY
1 B97133FI V62 Filterclass (FIR Filtered)
KPH
TIME Seconds
MGA Research
01-06-1998 10 21

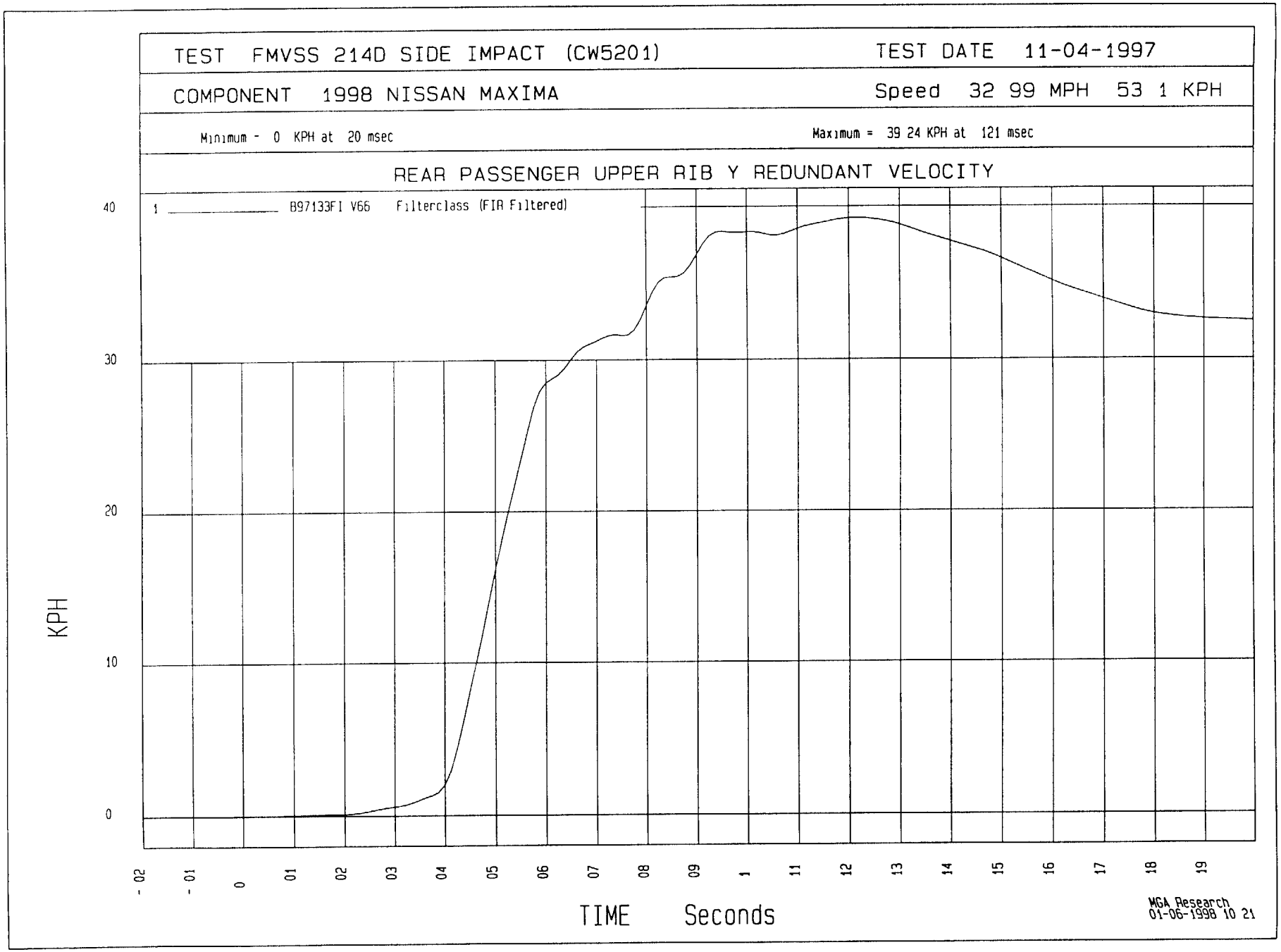

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -12 55 G S at 91 msec
Maximum = 59 78 G S at 38 msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 B97133FI A63 Filterclass (1000)
60
50
40
30
20
10
0
-10
G's
TIME (SECONDS)
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
MGA Research
11-24-1997 09 49

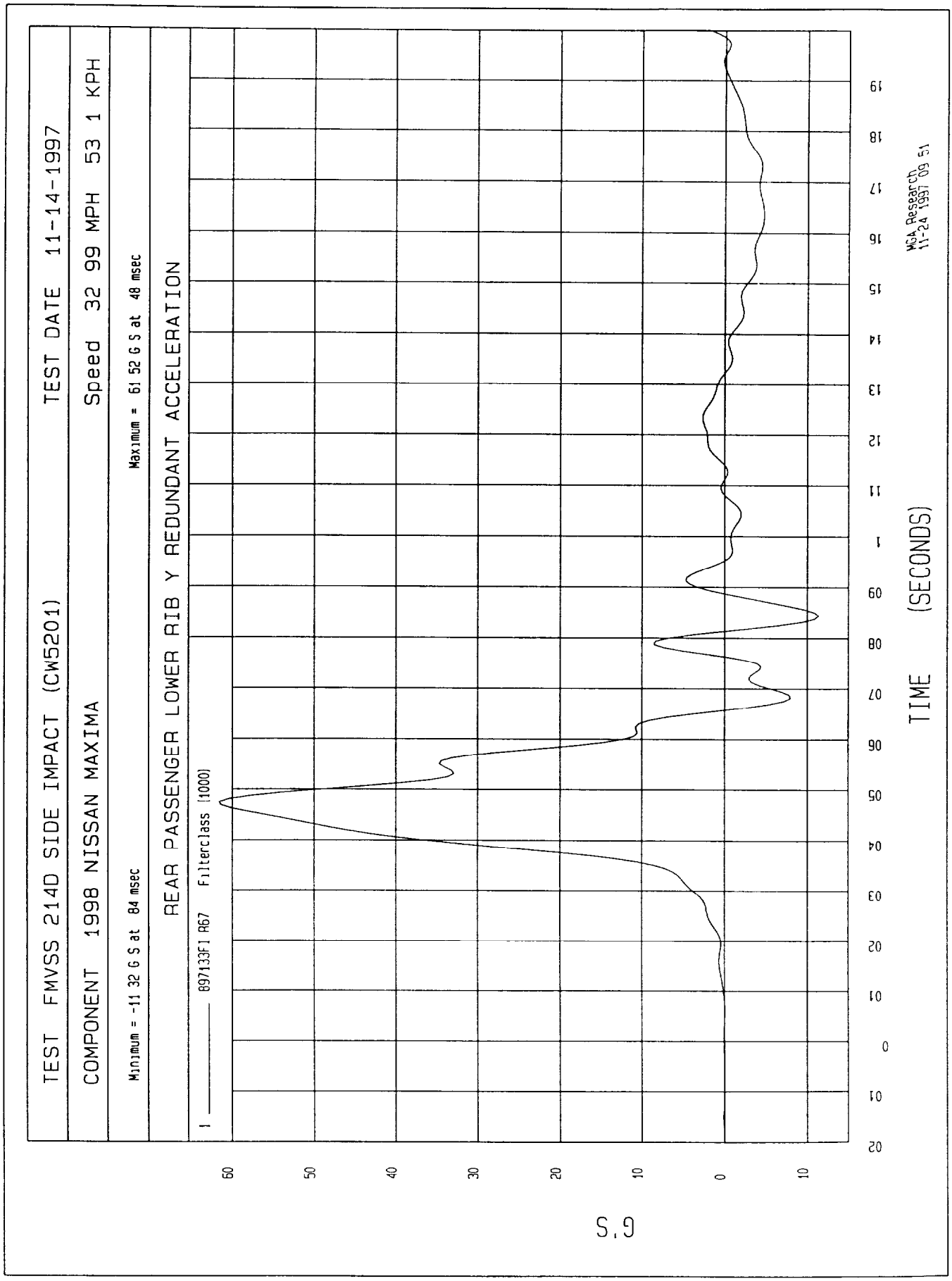

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 7 02E 02 KPH at -11 msec
Maximum = 39 40 KPH at 54 msec
DRIVER LOWER SPINE Y REDUNDANT VELOCITY
1 697133FI V63 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

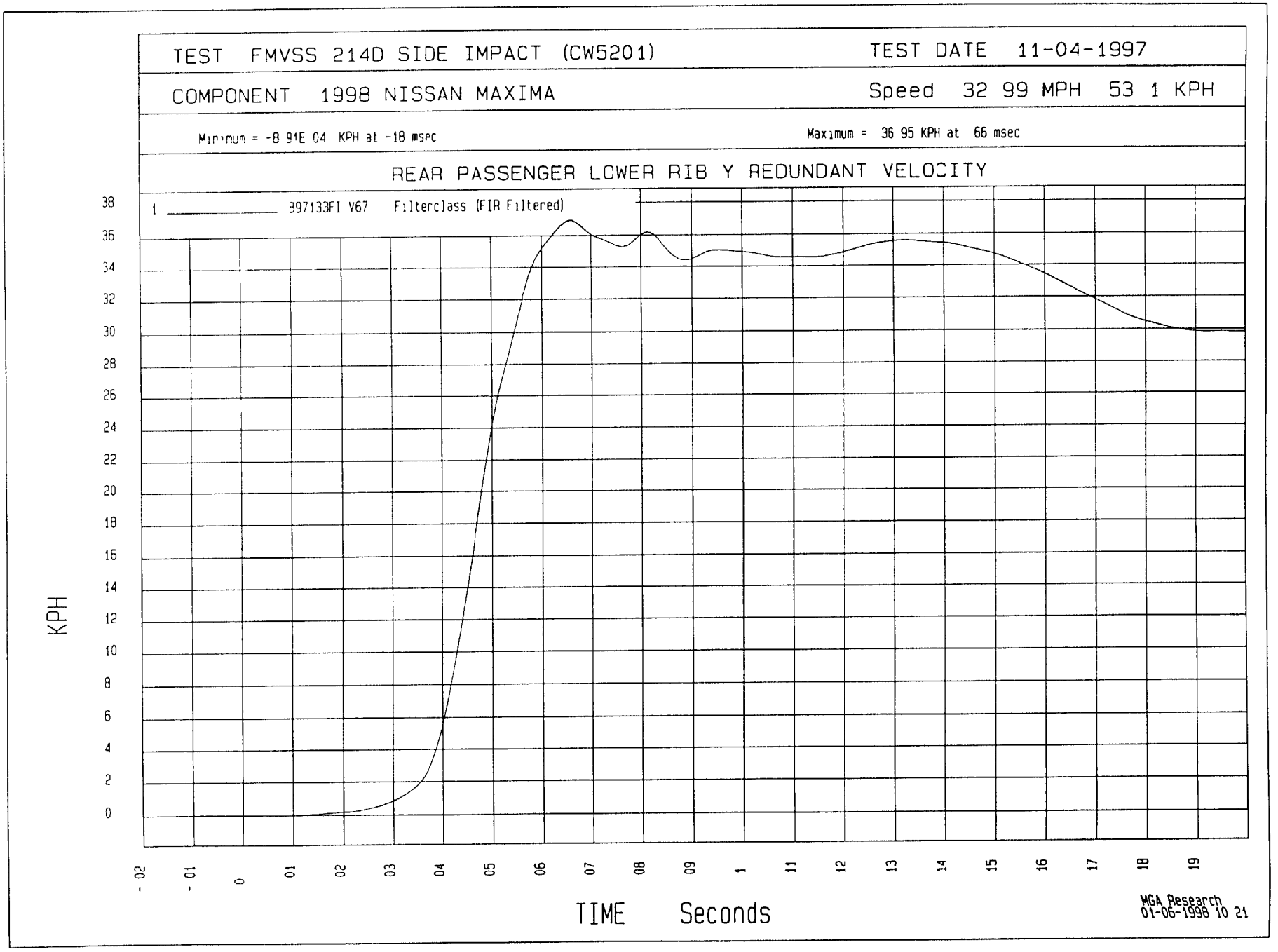

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -23 82 G S at 53 msec
Maximum = 82 84 G S at 29 msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 897133FI A65 Filterclass (1000)
80
60
40
20
0
20
G'S
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 50

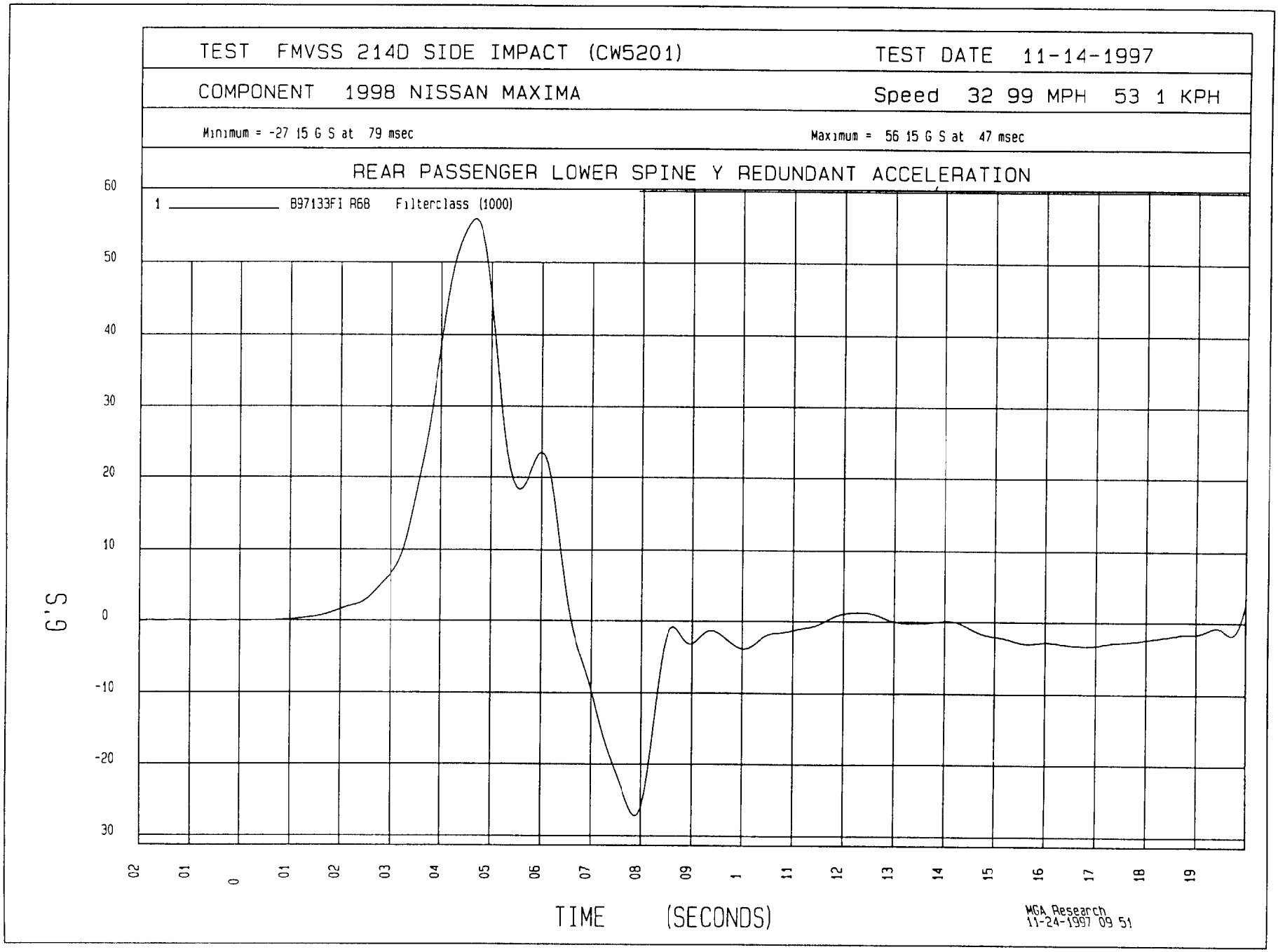

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum 1 68E-02 KPH at 4 msec
Maximum = 40 94 KPH at 44 msec
DRIVER PELVIS Y REDUNDANT VELOCITY
1 B97133FI V65 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01 06-1998 10 21

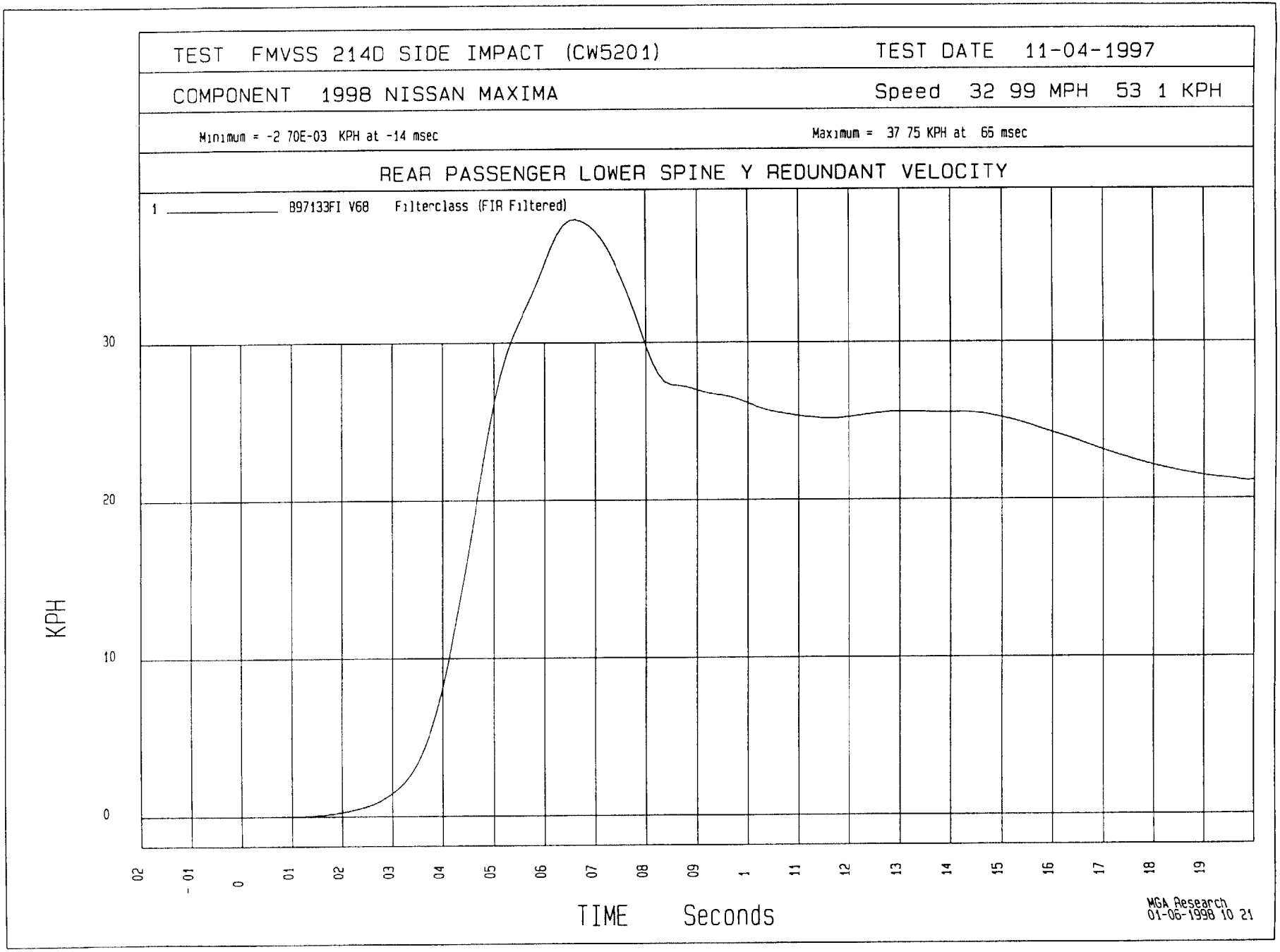

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum 4 42 G S at 152 msec Maximum = 48 10 G S at 49 msec
REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B97133FI A66 Filterclass (1000)
MGA Research 11-24-1997 09 50
TIME (SECONDS)
G's

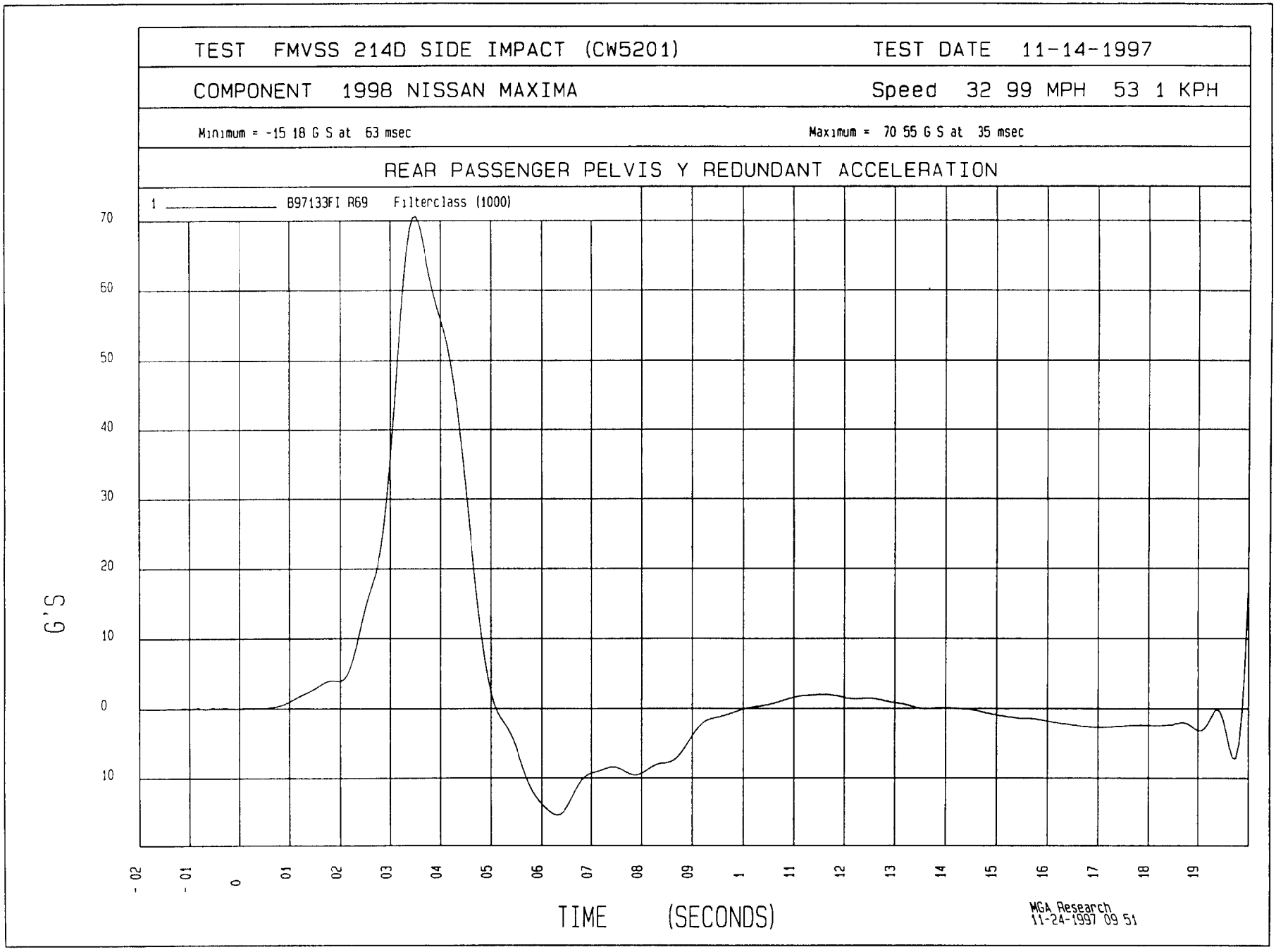

TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum - 0 KPH at 20 msec
Maximum = 39 24 KPH at 121 msec
REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY
1 B97133FI V66 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

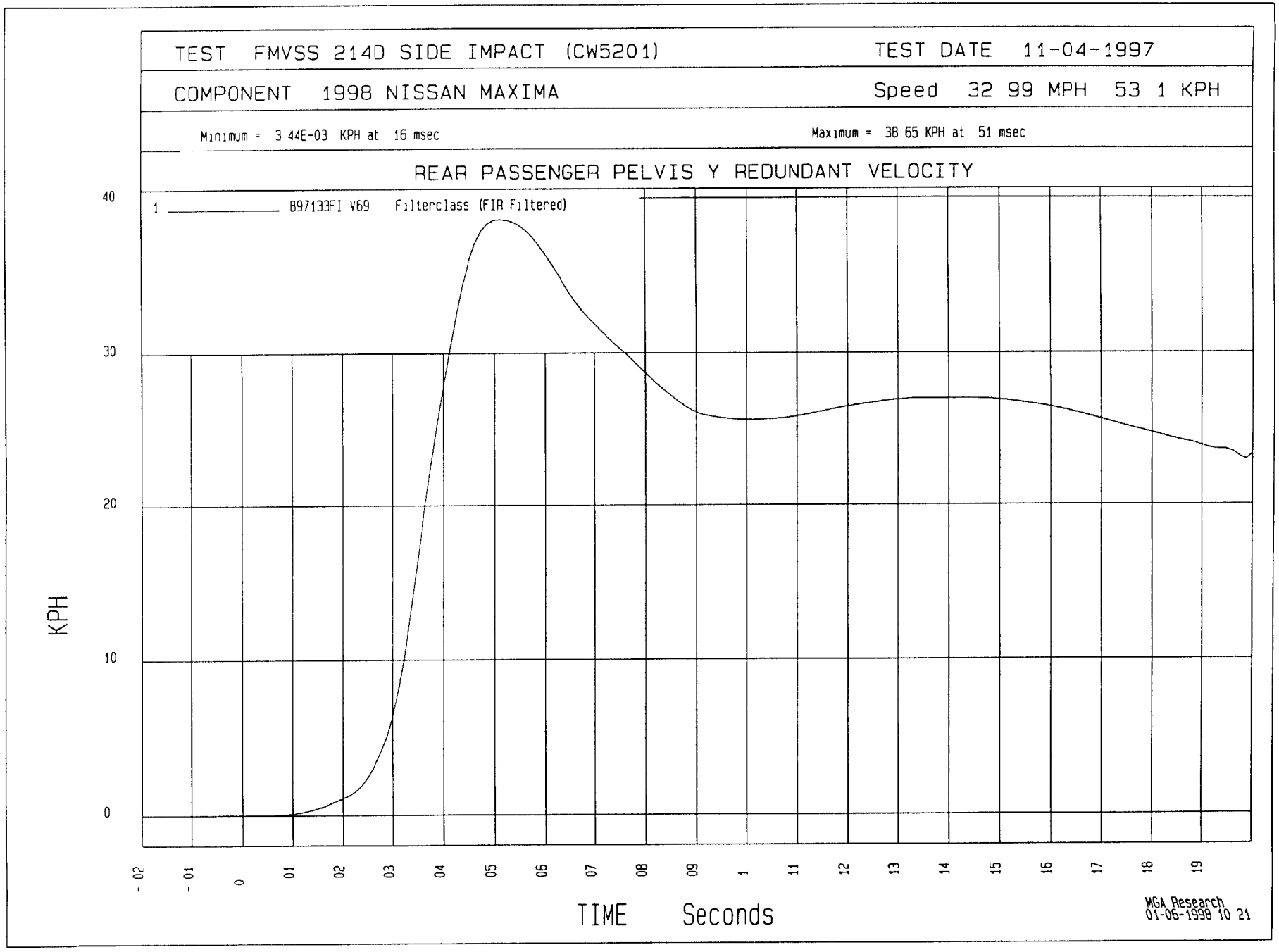

TEST FMVSS 214D SIDE IMPACT (CW5201) TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA Speed 32 99 MPH 53 1 KPH
Minimum = -11 32 G S at 84 msec Maximum = 61 52 G S at 48 msec
REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 897133FI R67 Filterclass (1000)
G's
TIME (SECONDS)
MGA Research 11-24 1997 09 51


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -8 91E 04 KPH at -18 msec
Maximum = 36 95 KPH at 66 msec
REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY
1 897133FI V67 Filterclass (FIR Filtered)
KPH
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -27 15 G S at 79 msec
Maximum = 56 15 G S at 47 msec
REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 B97133FI R6B Filterclass (1000)
60
50
40
30
20
10
0
-10
-20
30
G'S
02
01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 51


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -2 70E-03 KPH at -14 msec
Maximum = 37 75 KPH at 65 msec
REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY
1 B97133FI V68 Filterclass (FIR Filtered)
KPH
30
20
10
0
-02
-01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-14-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = -15 18 G S at 63 msec
Maximum = 70 55 G S at 35 msec
REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 B97133FI R69 Filterclass (1000)
70
60
50
40
30
20
10
0
10
G'S
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME (SECONDS)
MGA Research
11-24-1997 09 51


TEST FMVSS 214D SIDE IMPACT (CW5201)
TEST DATE 11-04-1997
COMPONENT 1998 NISSAN MAXIMA
Speed 32 99 MPH 53 1 KPH
Minimum = 3 44E-03 KPH at 16 msec
Maximum = 38 65 KPH at 51 msec
REAR PASSENGER PELVIS Y REDUNDANT VELOCITY
1 B97133FI V69 Filterclass (FIR Filtered)
KPH
40
30
20
10
0
- 02
- 01
0
01
02
03
04
05
06
07
08
09
1
11
12
13
14
15
16
17
18
19
TIME Seconds
MGA Research
01-06-1998 10 21

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-98-DC06

DUMMY PERFORMANCE CALIBRATIONS

FMVSS 214 - SIDE IMPACT TEST

NISSAN MOTOR CO , LTD
1998 NISSAN MAXIMA 4 DOOR
NHTSA NO. MW5201

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date November 14, 1997

Report Date December 16, 1997

FINAL REPORT

Prepared For

U S DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE NEF-30
400 SEVENTH STREET, S W , ROOM 6115
Washington, D C 20590

TABLE OF CONTENTS

PRE-TEST CERTIFICATION DATA

Front 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 NO. 048 DATE OF VERIFICATION November 13, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35 0" - 35.8"	35.3
RH - Rib Height	19 75" - 20.50"	19.90
HP - Hip Pivot Height	3.9" ref	3 9
RD - Rib From Back Line	9 0" to 9.5"	9 2
KV - Knee Pivot From Back Line	20.1" - 20.7"	20 4
SW - Knee Pivot to Floor	19.3" - 19 9"	19 4
HW - Hip Width	14.0" - 15.4"	14 8

MEASUREMENTS BY

APPROVED BY David Winkelbauer

MGA RESEARCH CORPORATION

THORACIC SHOCK ABSORBER TEST

SIDE IMPACT DUMMY (SID)

DATE November 13, 1997

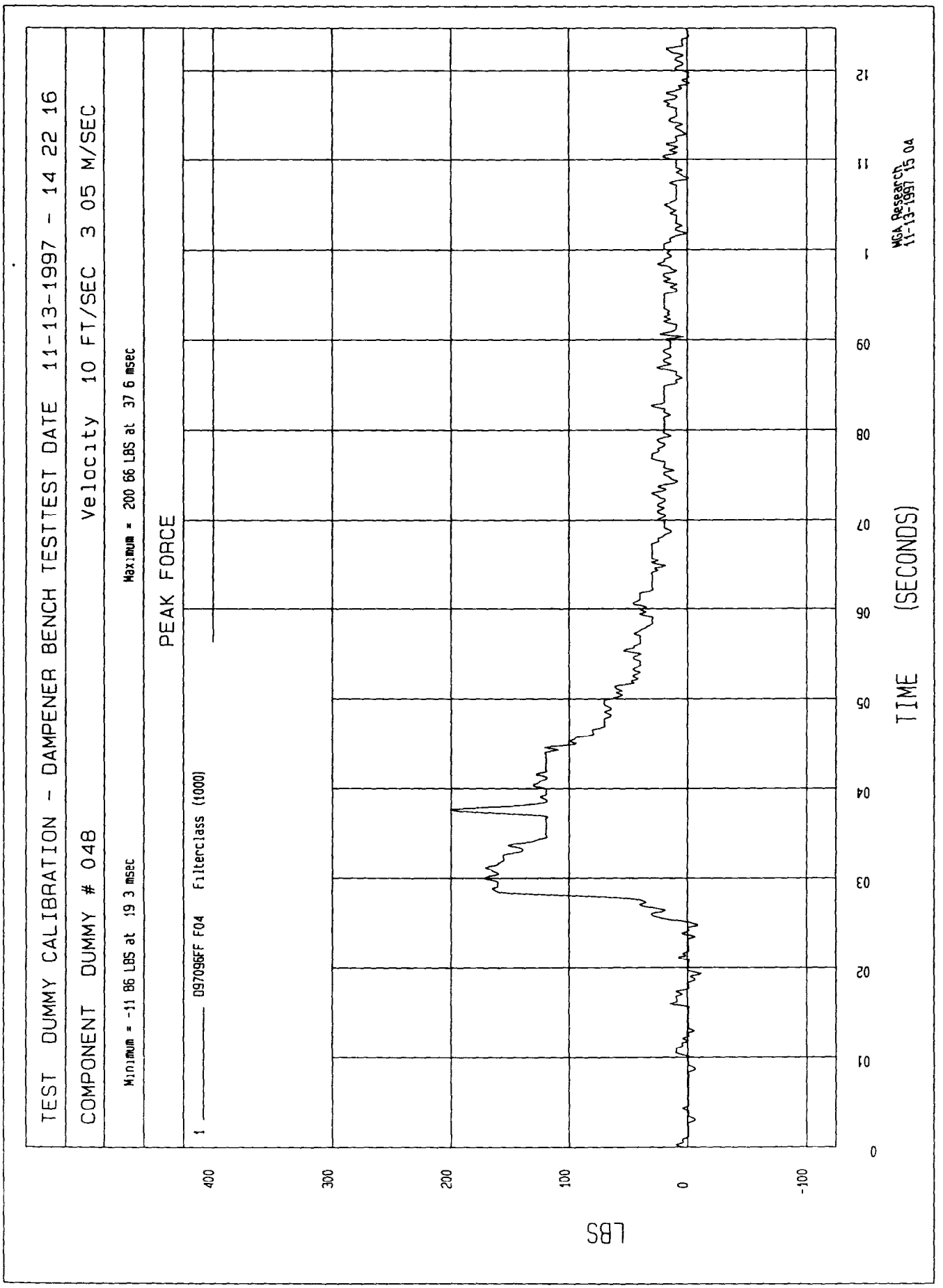
DUMMY NUMBER 048 TEST NUMBER D97209678

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		66° - 78° F	70°
RELATIVE HUMIDITY		10 - 70%	26%
VELOCITY 10 ft/s	FORCE (lb)	188 - 253	201
	DISPLACEMENT (in)	1 18 - 1 38	1 37
VELOCITY 14 ft/s	FORCE (lb)	389 - 472	400
	DISPLACEMENT (in)	1 26 - 1.47	1 47
VELOCITY 20 ft/s	FORCE (lb)	841 - 1000	850
	DISPLACEMENT (in)	1 30 - 1 57	1 56

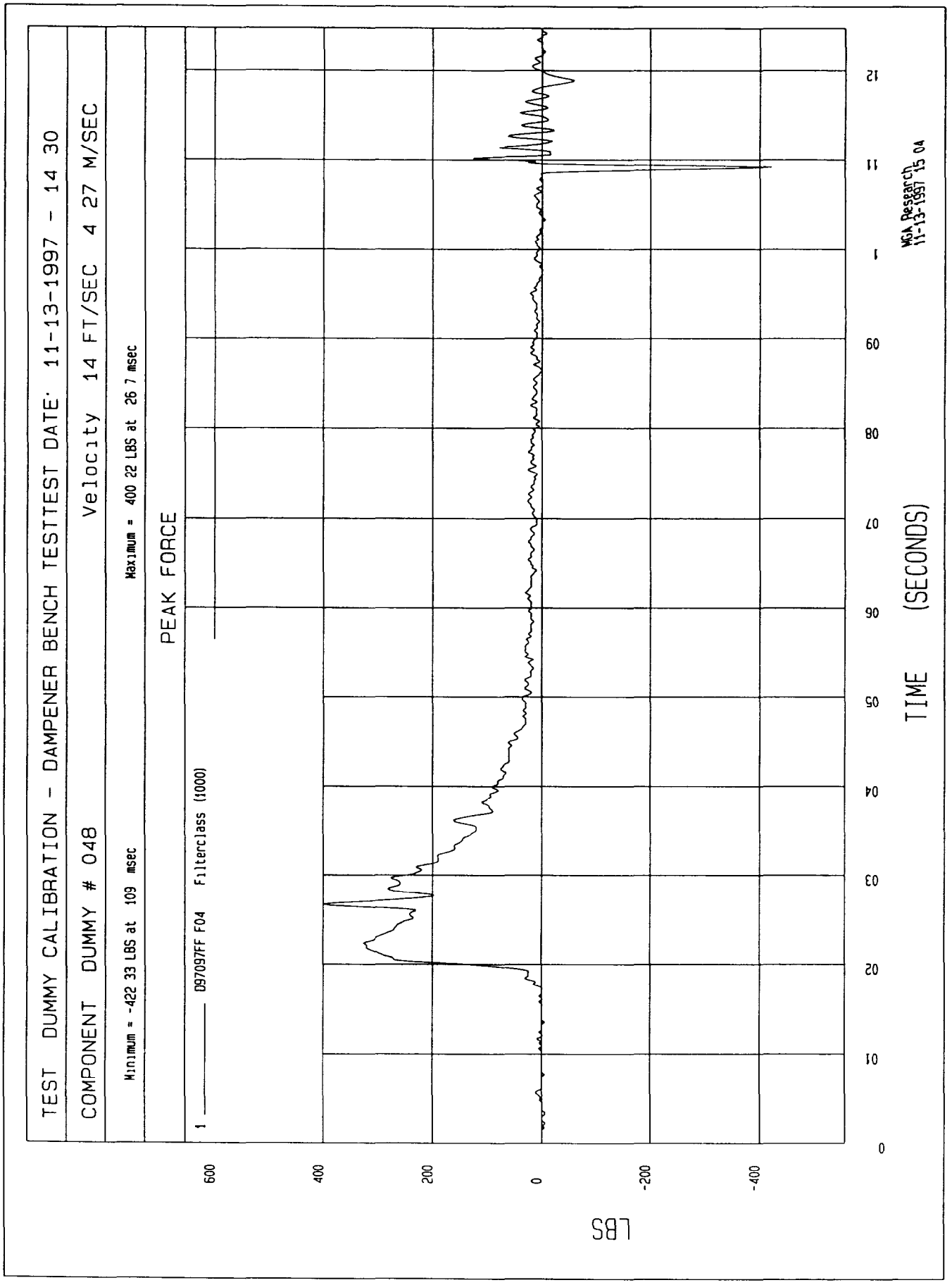
TEST MEETS SPECIFICATIONS

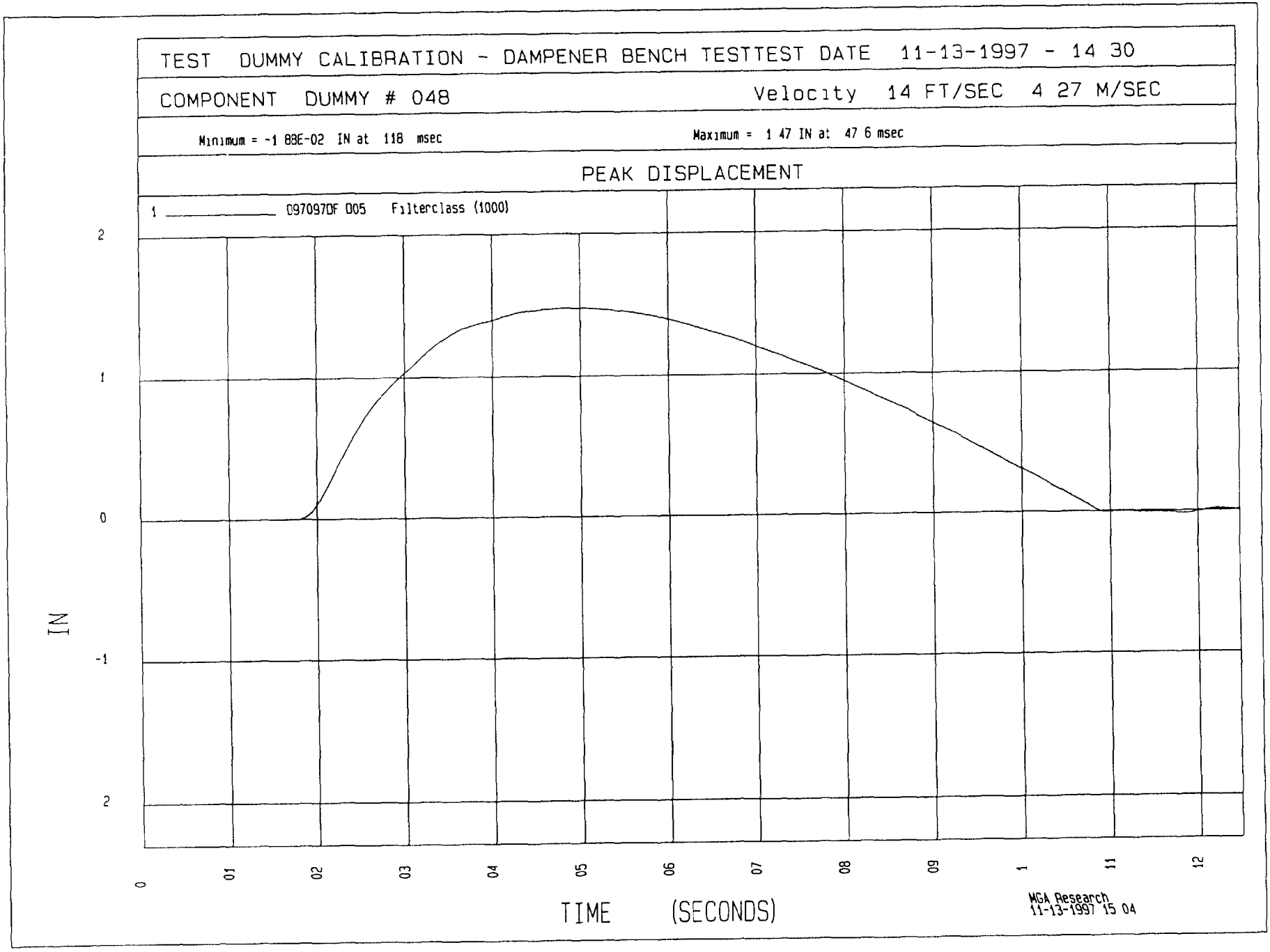
TECHNICIAN _____

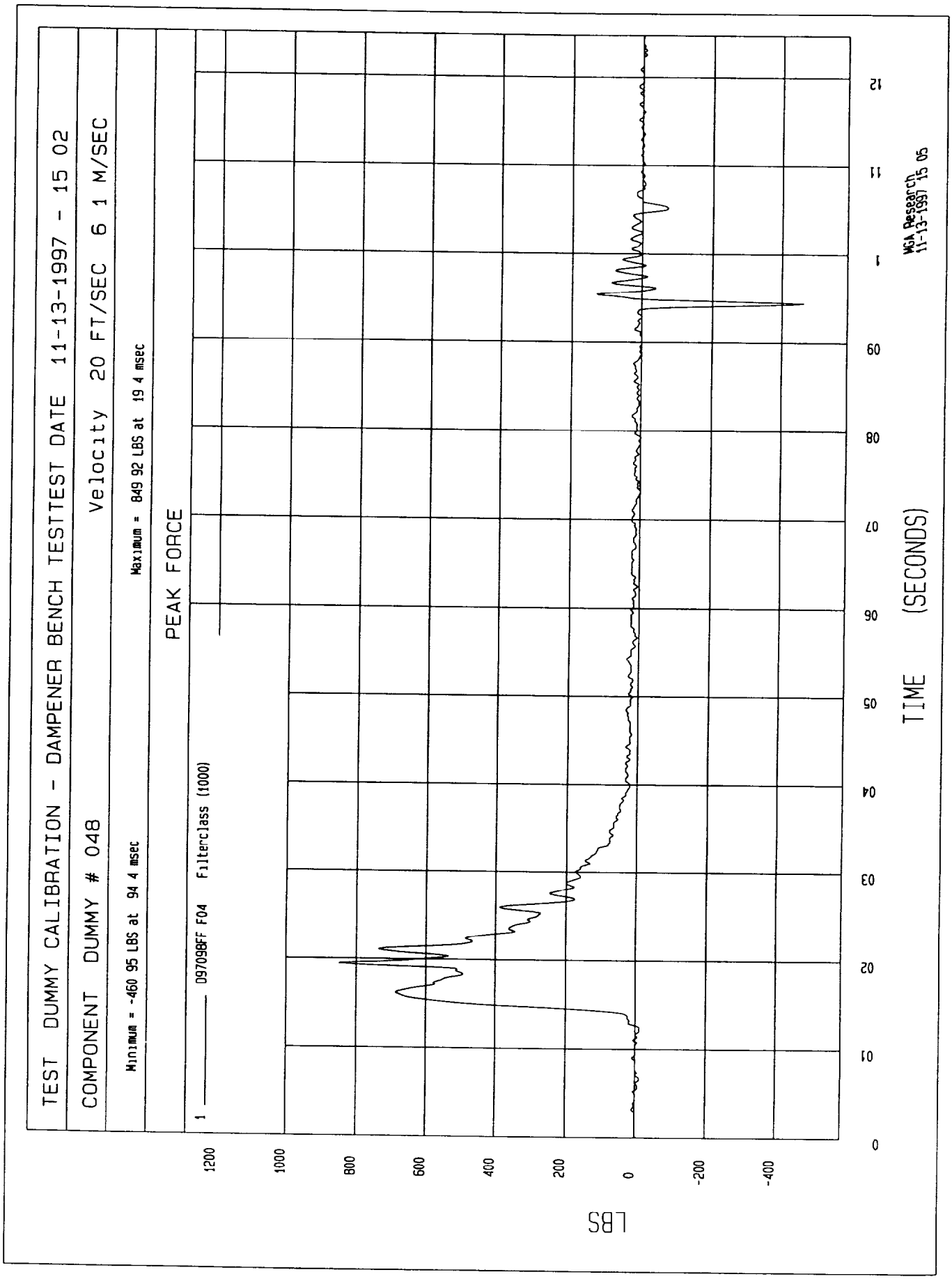
APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 14 22 16
COMPONENT DUMMY # 048
Velocity 10 FT/SEC 3 05 M/SEC
Minimum = -11 86 LBS at 19 3 msec
Maximum = 200 66 LBS at 37 6 msec
PEAK FORCE
1 097096FF F04 Filterclass (1000)
LBS
400
300
200
100
0
-100
0
10
20
30
40
50
60
70
80
90
1
11
21
TIME (SECONDS)
MGA Research
11-13-1997 15 04


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 14 22 46
COMPONENT DUMMY # 048
Velocity 10 FT/SEC 3 05 M/SEC
Minimum = -6 87E-04 IN at 8 99 msec
Maximum = 1 37 IN at 61 9 msec
PEAK DISPLACEMENT
1 0970960F D05 Filterclass (1000)
IN
2
1
0
-1
2
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
WGA Research
11-13-1997 15 04


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE: 11-13-1997 - 14 30
COMPONENT DUMMY # 048
Velocity 14 FT/SEC 4 27 M/SEC
Minimum = -422 33 LBS at 109 msec
Maximum = 400 22 LBS at 26 7 msec
PEAK FORCE
1 097097FF F04 Filterclass (1000)
LBS
600
400
200
0
-200
-400
0
10
20
30
40
50
60
70
80
90
1
11
21
TIME (SECONDS)
MGA Research
11-13-1997 15 04


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 14 30
COMPONENT DUMMY # 048
Velocity 14 FT/SEC 4 27 M/SEC
Minimum = -1 88E-02 IN at 118 msec
Maximum = 1 47 IN at 47 6 msec
PEAK DISPLACEMENT
1 _____ 097097DF 005 Filterclass (1000)
IN
2
1
0
-1
2
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 15 04


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 15 02
COMPONENT DUMMY # 048
Velocity 20 FT/SEC 6 1 M/SEC
Minimum = -460 95 LBS at 94 4 msec
Maximum = 849 92 LBS at 19 4 msec
PEAK FORCE
1 D97098FF F04 Filterclass (1000)
LBS
1200
1000
800
600
400
200
0
-200
-400
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 15 05


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 15 03
COMPONENT DUMMY # 048
Velocity 20 FT/SEC 6 1 M/SEC
Minimum = - 01 IN at 105 msec
Maximum = 1 56 IN at 38 6 msec
PEAK DISPLACEMENT
1 D97098DF D05 Filterclass (1000)
2
1
0
-1
-2
IN
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 15 05

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

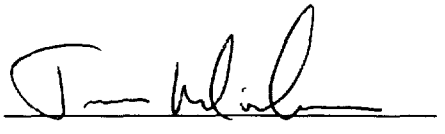
SIDE IMPACT DUMMY (SID)

DATE: November 13, 1997

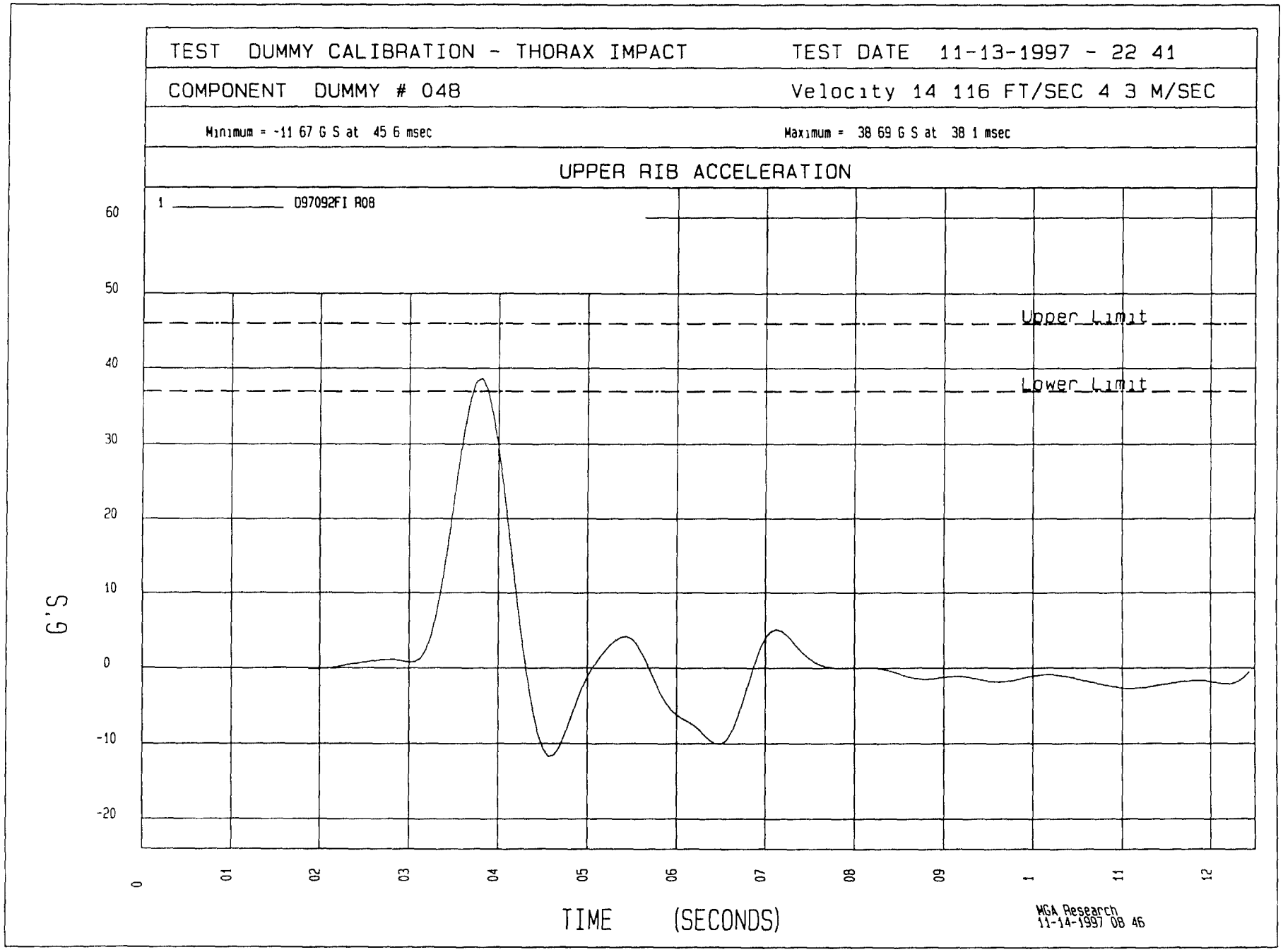
DUMMY NUMBER 048 TEST NUMBER. D972092

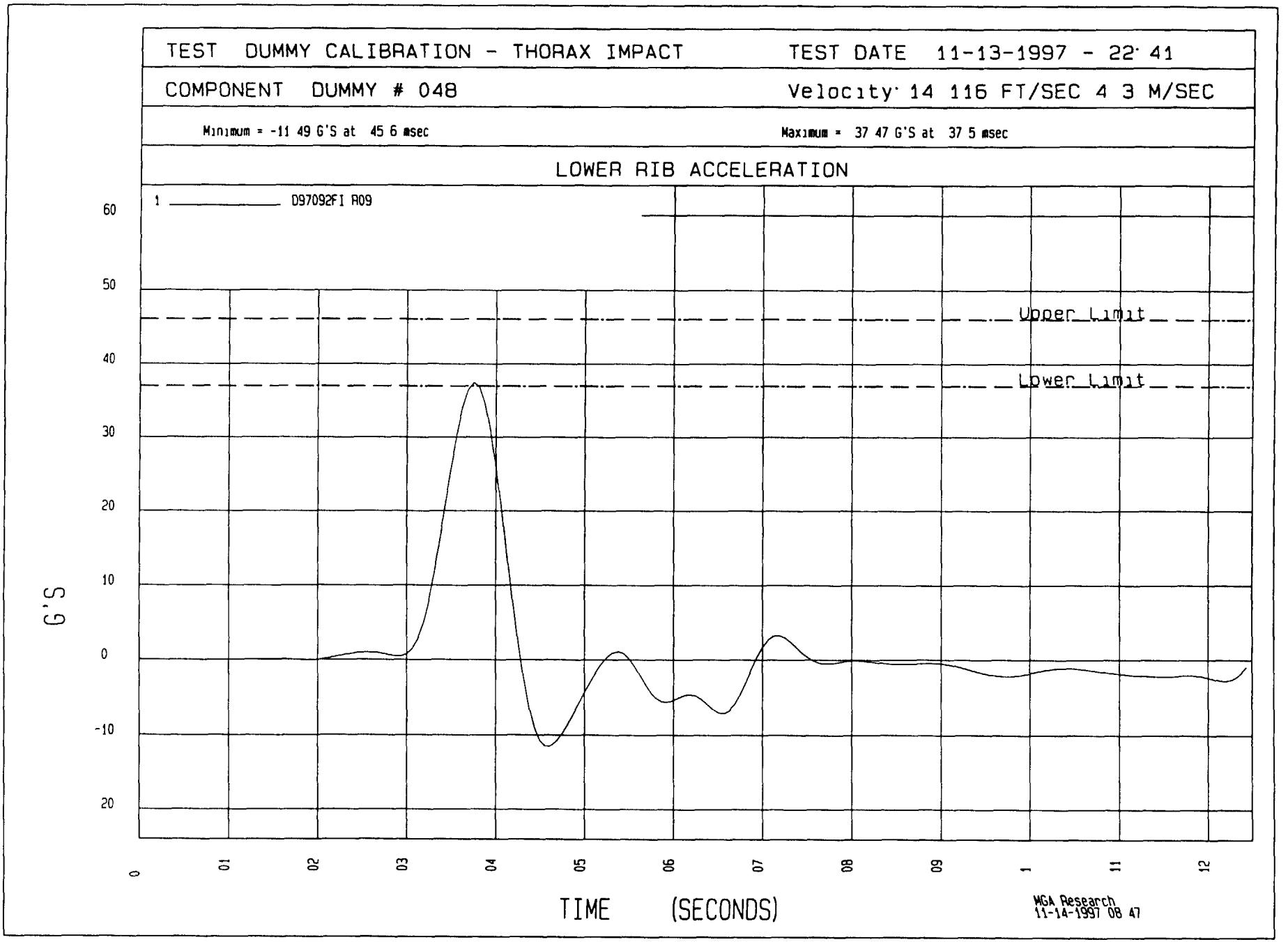
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
PROBE SPEED	14.0 - 14.2 fps	14 1
UPPER RIB	37 - 46 g's	39
LOWER RIB	37 - 46 g's	37
LOWER SPINE	15 - 22 g's	20

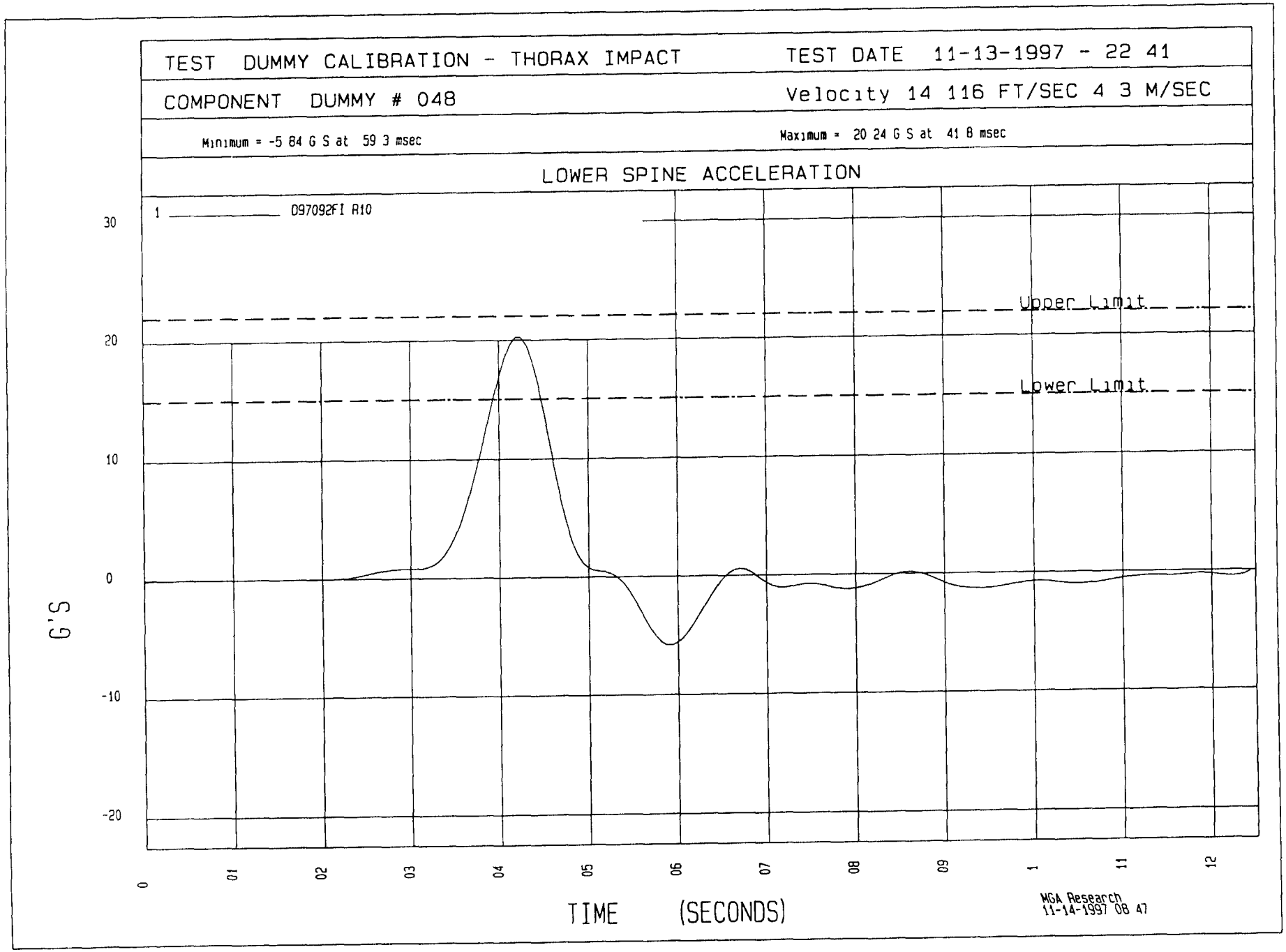
TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 11-13-1997 - 22 41
COMPONENT DUMMY # 048
Velocity 14 116 FT/SEC 4 3 M/SEC
Minimum = -11 67 G S at 45 6 msec
Maximum = 38 69 G S at 38 1 msec
UPPER RIB ACCELERATION
1 D97092FI R08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-14-1997 08 46


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 11-13-1997 - 22:41
COMPONENT DUMMY # 048
Velocity: 14.116 FT/SEC 4.3 M/SEC
Minimum = -11.49 G'S at 45.6 msec
Maximum = 37.47 G'S at 37.5 msec
LOWER RIB ACCELERATION
1 D97092FI R09
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
20
S.G.
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-14-1997 08:47


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 11-13-1997 - 22 41
COMPONENT DUMMY # 048
Velocity 14 116 FT/SEC 4 3 M/SEC
Minimum = -5 84 G S at 59 3 msec
Maximum = 20 24 G S at 41 8 msec
LOWER SPINE ACCELERATION
1 097092FI R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G's
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-14-1997 08 47

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

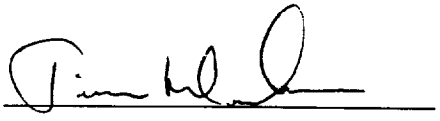
SIDE IMPACT DUMMY (SID)

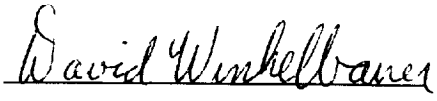
DATE October 16, 1997

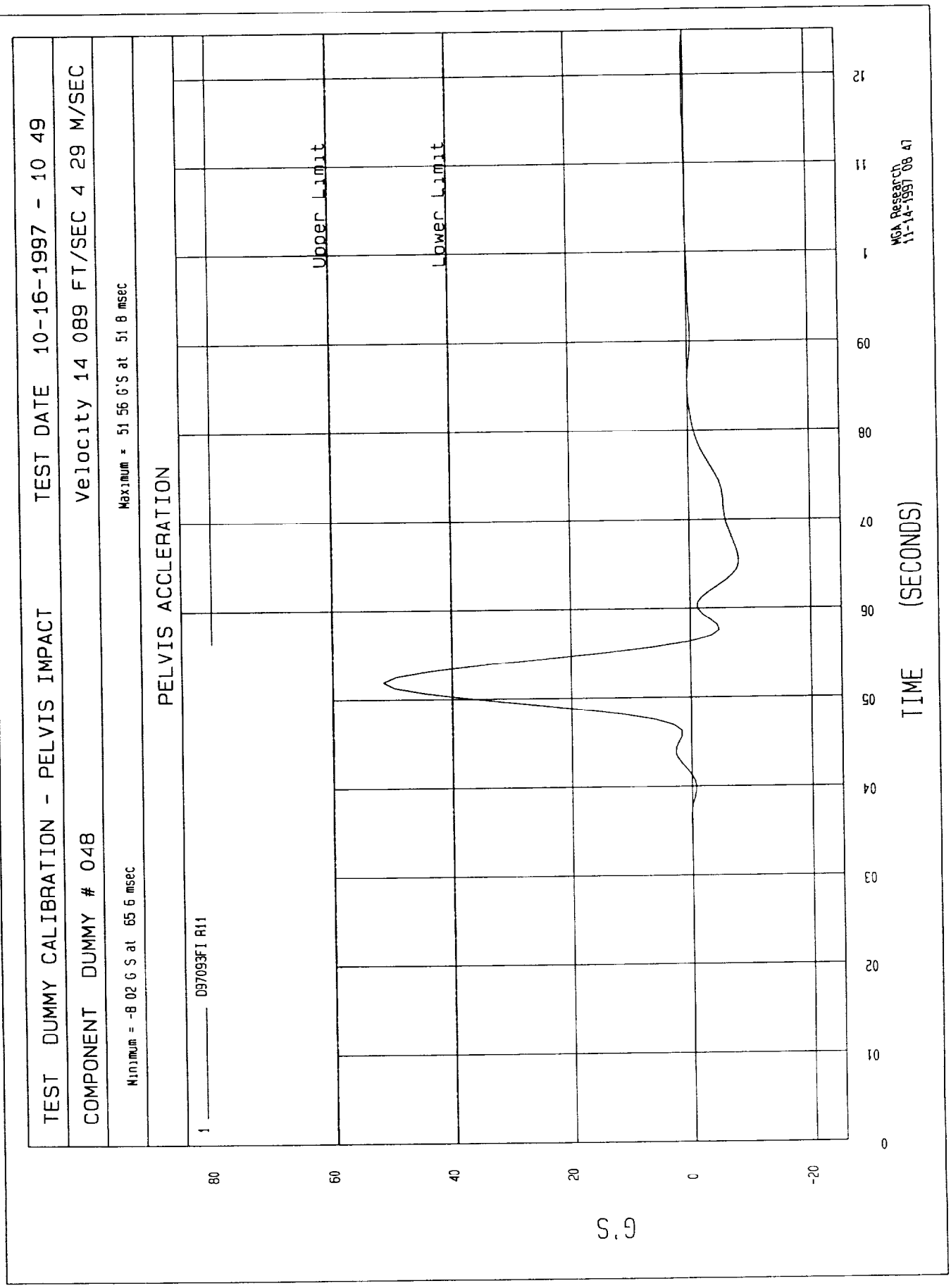
DUMMY NUMBER: 048 TEST NUMBER: D972093

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	30%
PROBE SPEED	14 0 - 14.2 f/s	14 1
PELVIS ACCELERATION	40 - 60 g's	52

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 


TEST DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE 10-16-1997 - 10 49
COMPONENT DUMMY # 048
Velocity 14 089 FT/SEC 4 29 M/SEC
Minimum = -8 02 G S at 65 6 msec
Maximum = 51 56 G'S at 51 8 msec
PELVIS ACCLERATION
1 D97093FI A11
Upper Limit
Lower Limit
G'S
TIME (SECONDS)
MGA Research
11-14-1997 08 47

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE October 15, 1997

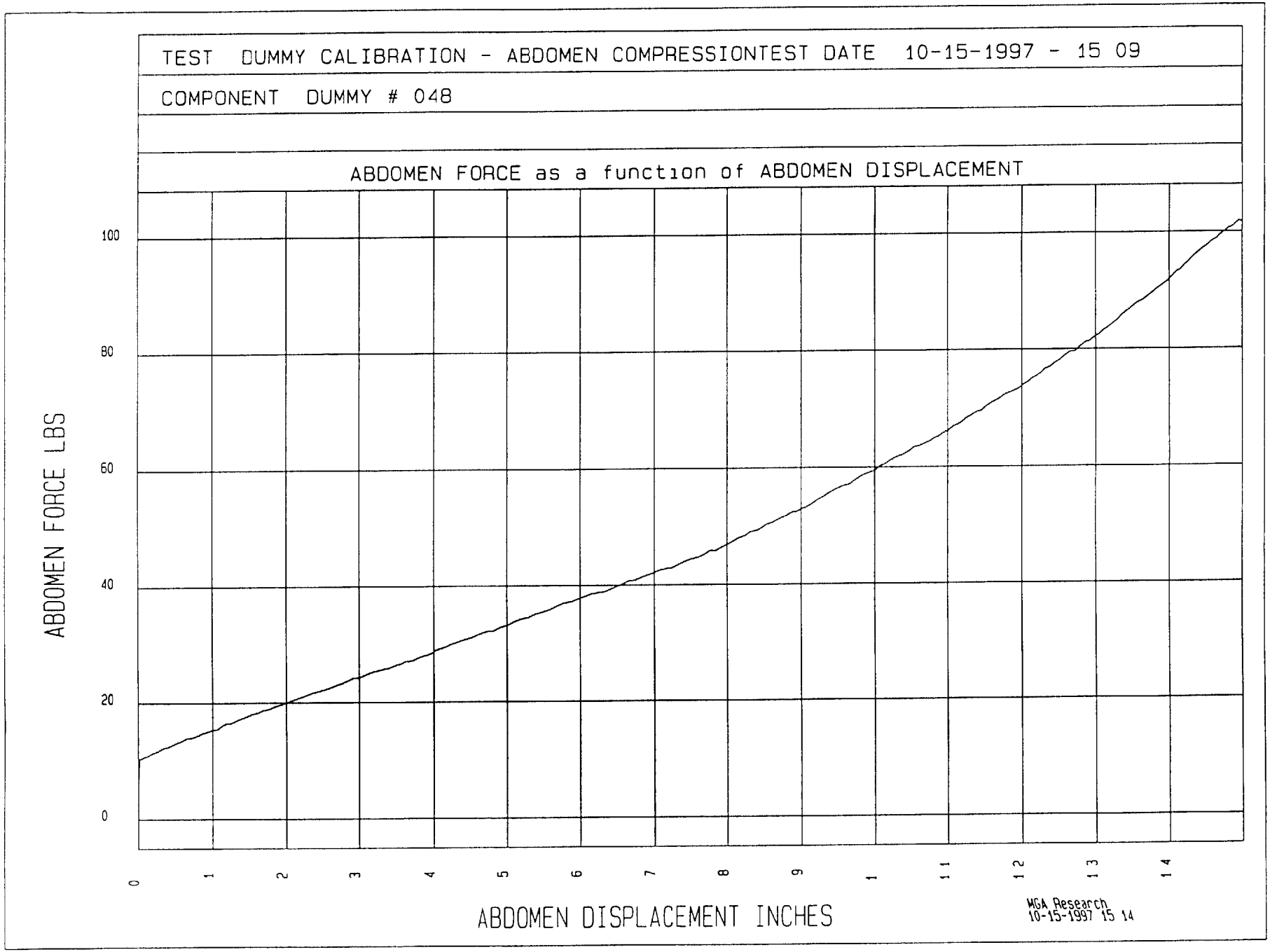
DUMMY NUMBER: 048 TEST NUMBER D972094

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	26%
FORCE @ 0.5 in	23 3 - 36 5 lbs	33 1
FORCE @ 0.75 in	36 7 - 49 8 lbs	44 5
FORCE @ 1.0 in	50 - 63 lbs	60
FORCE @ 1 3 in	73 - 88 lbs	83

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE 10-15-1997 - 15 09
COMPONENT DUMMY # 048
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
1
11
12
13
14
ABDOMEN DISPLACEMENT INCHES
MGA Research
10-15-1997 15 14

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 15, 1997

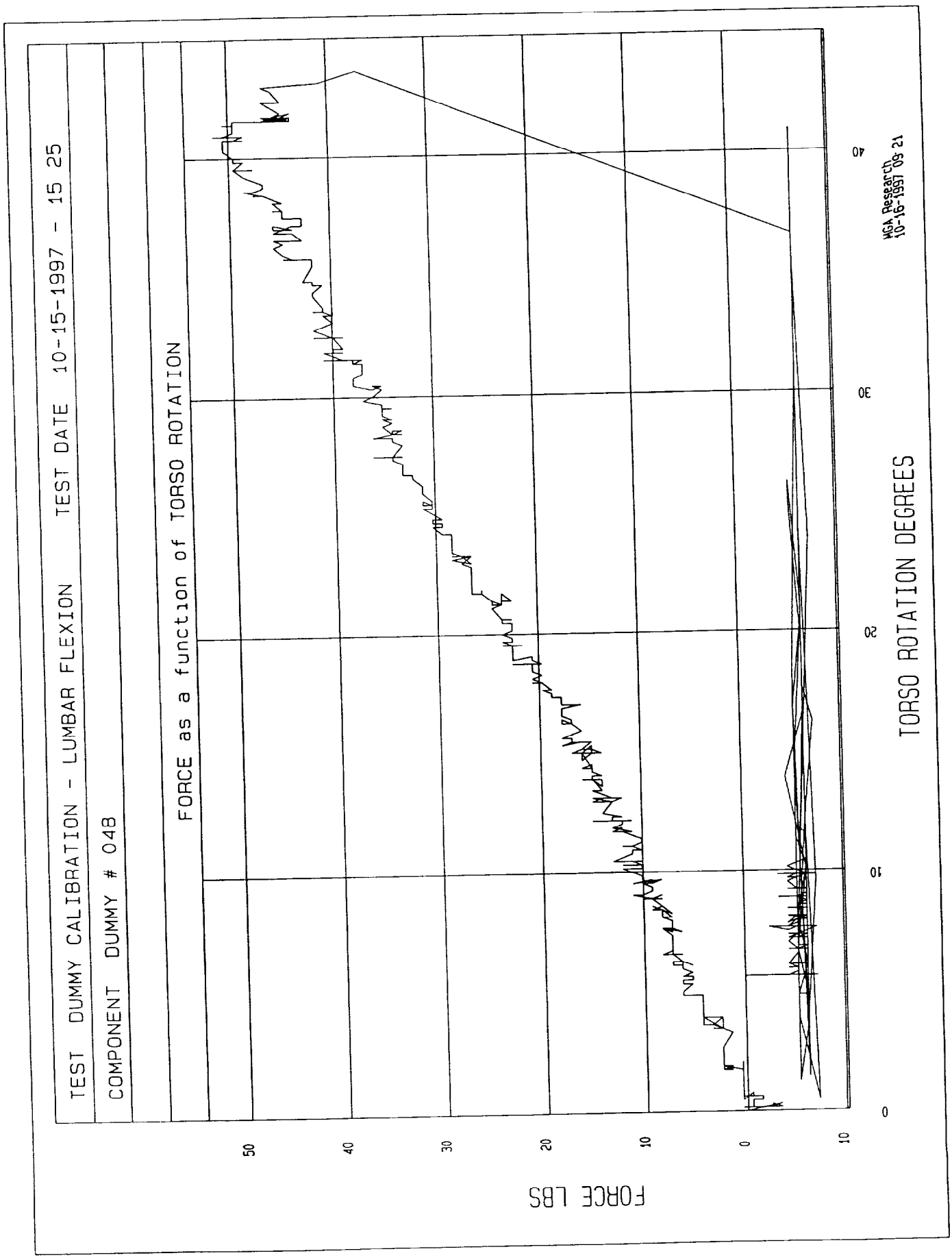
DUMMY NUMBER: 048 TEST NUMBER D972095

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	26%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	23
FORCE @ 30°	34 - 46 lbs	35
FORCE @ 40°	46 - 58 lbs	51
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE 10-15-1997 - 15 25
COMPONENT DUMMY # 048
FORCE as a function of TORSO ROTATION
FORCE LBS
50
40
30
20
10
0
10
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
10-16-1997 09 21

PRE-TEST CERTIFICATION DATA

Rear Dummy Serial Number 049

Calibration Test Results Summary

Passenger 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 NO.: 049 DATE OF VERIFICATION November 13, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35 0" - 35 8"	35 2
RH - Rib Height	19 75" - 20 50"	20.00
HP - Hip Pivot Height	3 9" ref	3.9
RD - Rib From Back Line	9 0" to 9 5"	9 3
KV - Knee Pivot From Back Line	20 1" - 20 7"	20.5
SW - Knee Pivot to Floor	19 3" - 19 9"	19 5
HW - Hip Width	14 0" - 15 4"	14 7

MEASUREMENTS BY

APPROVED BY David Winkelbauer

MGA RESEARCH CORPORATION

THORACIC SHOCK ABSORBER TEST

SIDE IMPACT DUMMY (SID)

DATE November 13, 1997

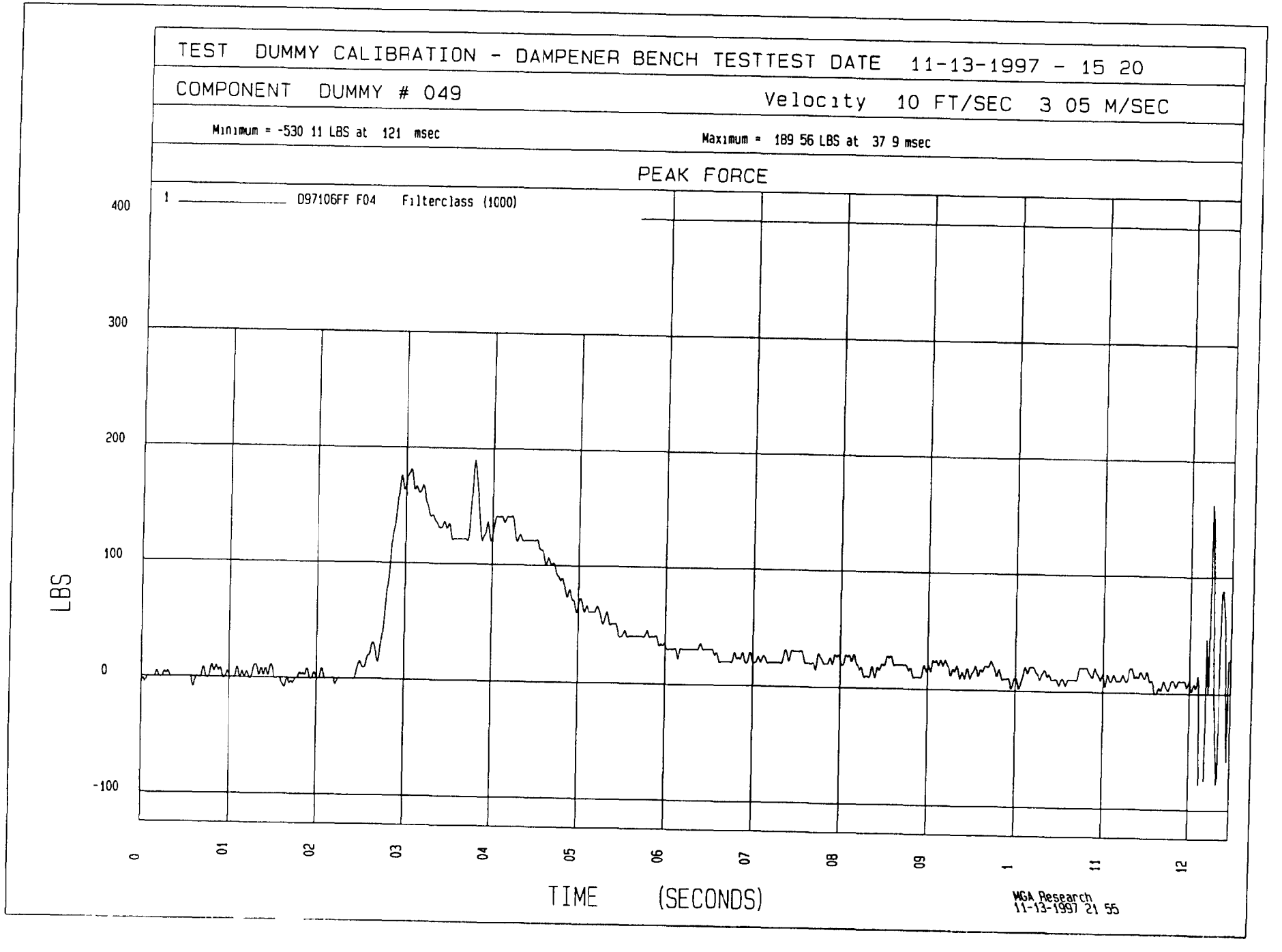
DUMMY NUMBER. 049 TEST NUMBER D97210678

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		66° - 78° F	70°
RELATIVE HUMIDITY		10 - 70%	22%
VELOCITY 10 ft/s	FORCE (lb)	188 - 253	190
	DISPLACEMENT (in)	1 18 - 1 38	1 35
VELOCITY 14 ft/s	FORCE (lb)	389 - 472	420
	DISPLACEMENT (in)	1 26 - 1.47	1 41
VELOCITY 20 ft/s	FORCE (lb)	841 - 1000	903
	DISPLACEMENT (in)	1 30 - 1 57	1 54

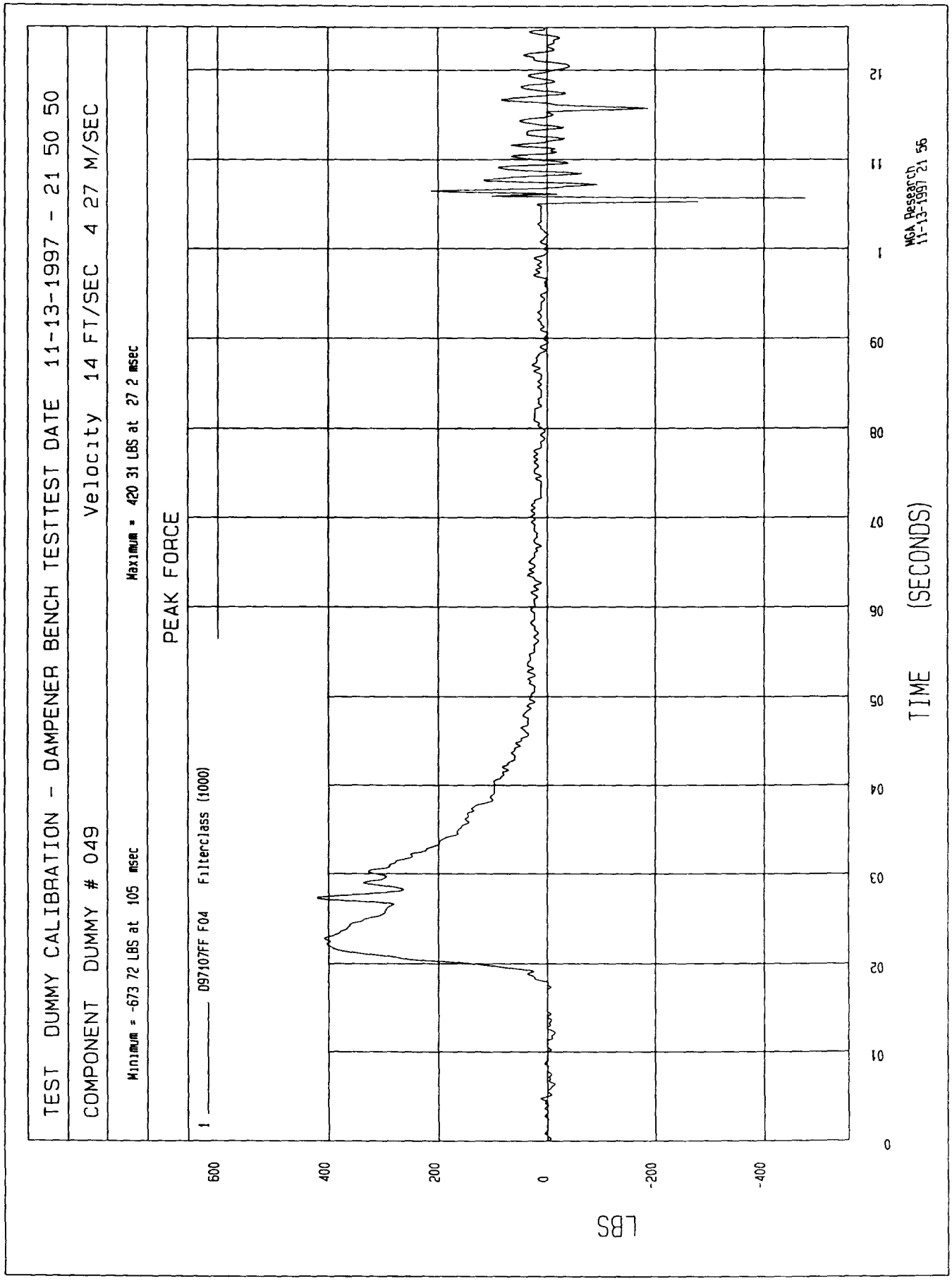
TEST MEETS SPECIFICATIONS

TECHNICIAN

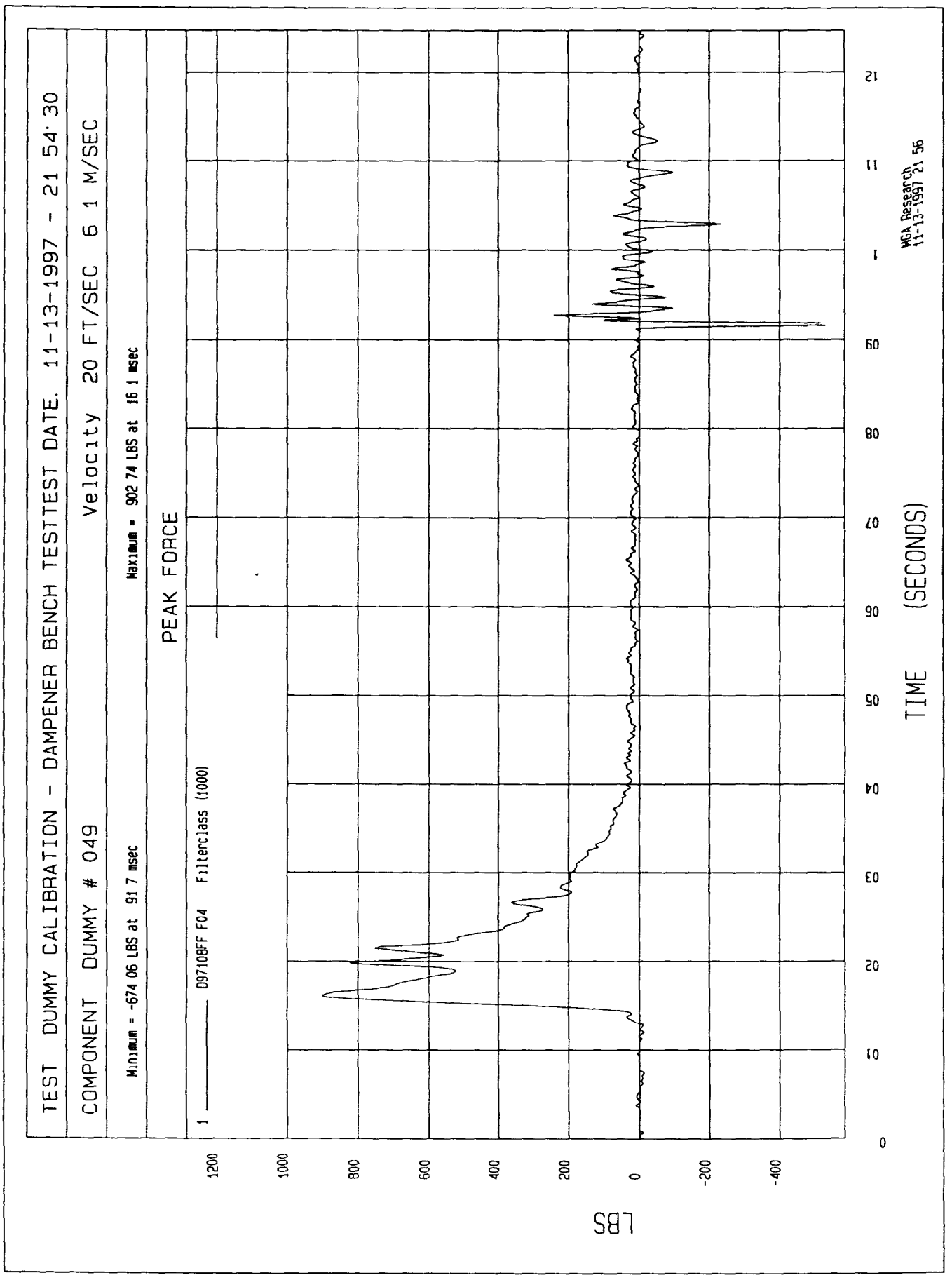
APPROVED BY David Winkelbauer

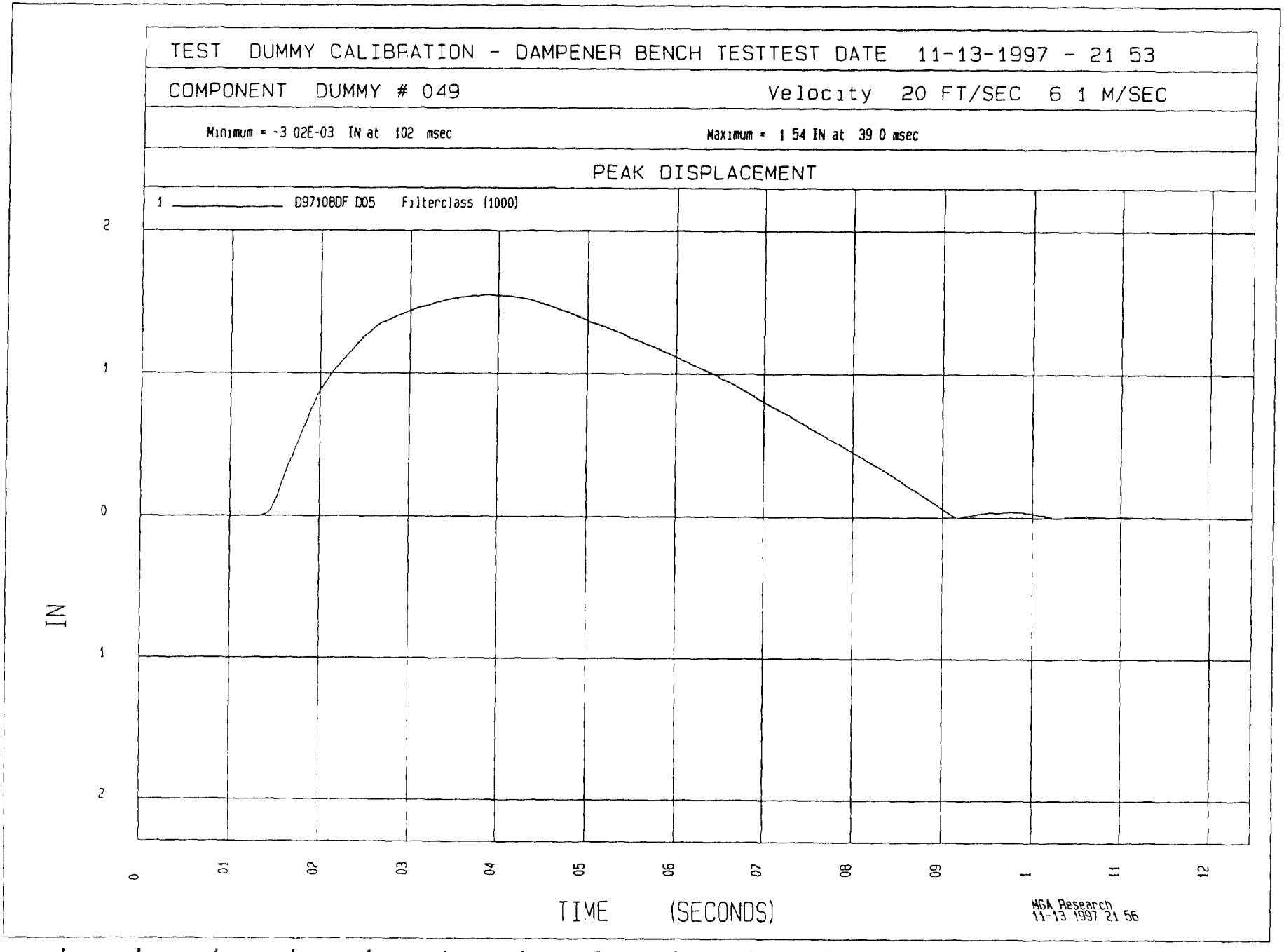

TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 15 20
COMPONENT DUMMY # 049
Velocity 10 FT/SEC 3 05 M/SEC
Minimum = -530 11 LBS at 121 msec
Maximum = 189 56 LBS at 37 9 msec
PEAK FORCE
1 D97106FF F04 Filterclass (1000)
400
300
200
100
0
-100
LBS
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 21 55


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 15 20
COMPONENT DUMMY # 049
Velocity 10 FT/SEC 3 05 M/SEC
Minimum = -4 13E-03 IN at 121 msec
Maximum = 1 35 IN at 60 5 msec
PEAK DISPLACEMENT
1 D971060F D05 Filterclass (1000)
IN
2
1
0
-1
-2
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 21 55


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 21 50 50
COMPONENT DUMMY # 049
Velocity 14 FT/SEC 4 27 M/SEC
Minimum = -673 72 LBS at 105 msec
Maximum = 420 31 LBS at 27 2 msec
PEAK FORCE
1 _____ 097107FF F04 Filterclass (1000)
LBS
600
400
200
0
-200
-400
0
10
20
30
40
50
60
70
80
90
1
11
21
TIME (SECONDS)
MGA Research
11-13-1997 21 56


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 21 49
COMPONENT DUMMY # 049
Velocity 14 FT/SEC 4 27 M/SEC
Minimum = -7 06E-03 IN at 105 msec
Maximum = 1 41 IN at 47 5 msec
PEAK DISPLACEMENT
1 D97107DF D05 Filterclass (1000)
IN
TIME (SECONDS)
MGA Research
11-13-1997 21 56


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE. 11-13-1997 - 21 54 30
COMPONENT DUMMY # 049
Velocity 20 FT/SEC 6 1 M/SEC
Minimum = -674 06 LBS at 91 7 msec
Maximum = 902 74 LBS at 16 1 msec
PEAK FORCE
1 _____ 09710BFF F04 Filterclass (1000)
LBS
1200
1000
800
600
400
200
0
-200
-400
0
10
20
30
40
50
60
70
80
90
1
11
21
TIME (SECONDS)
MGA Research
11-13-1997 21 56


TEST DUMMY CALIBRATION - DAMPENER BENCH TESTTEST DATE 11-13-1997 - 21 53
COMPONENT DUMMY # 049
Velocity 20 FT/SEC 6 1 M/SEC
Minimum = -3 02E-03 IN at 102 msec
Maximum = 1 54 IN at 39 0 msec
PEAK DISPLACEMENT
1 D9710BDF D05 Filterclass (1000)
IN
2
1
0
1
2
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13 1997 21 56

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE November 13, 1997

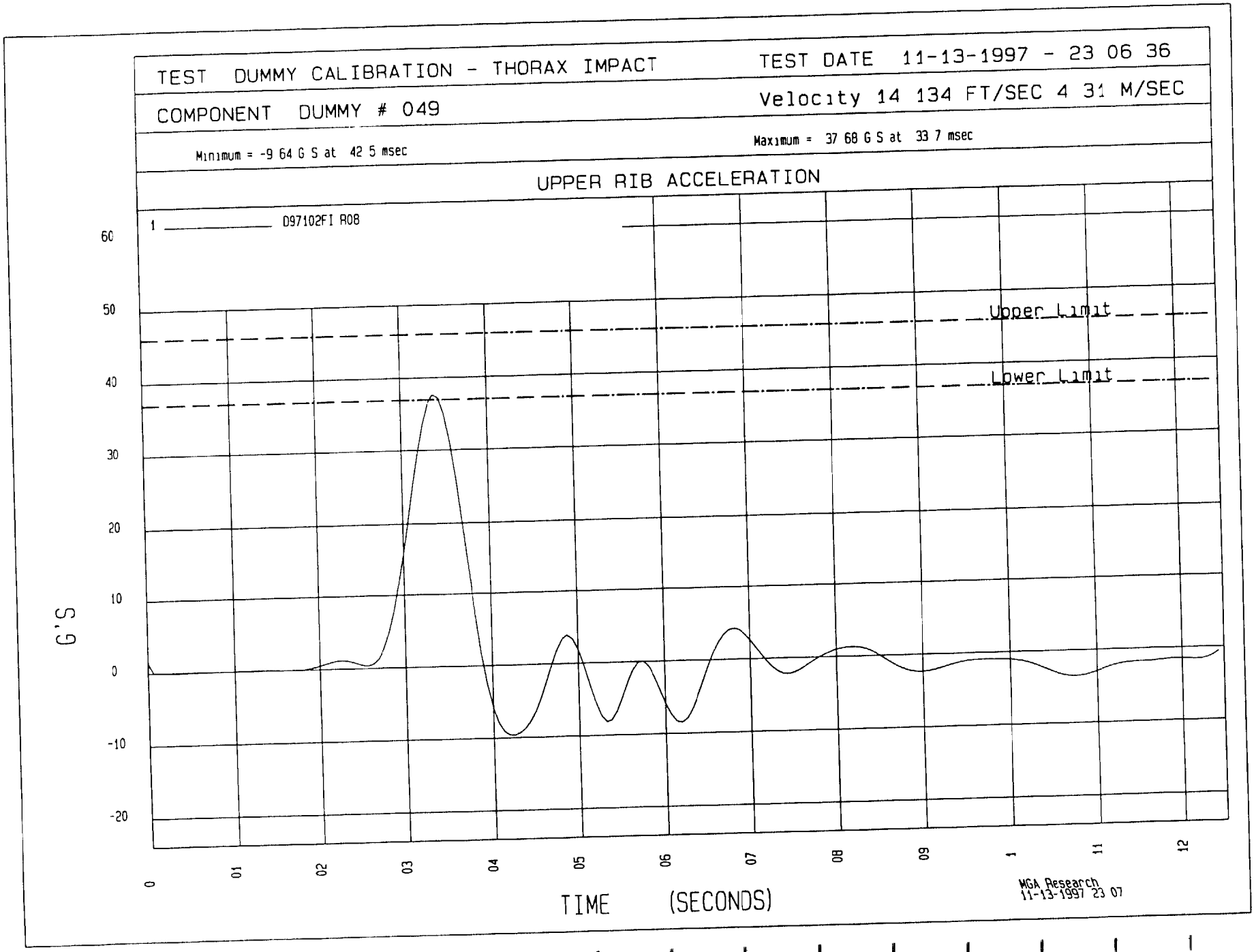
DUMMY NUMBER 049 TEST NUMBER· D972102

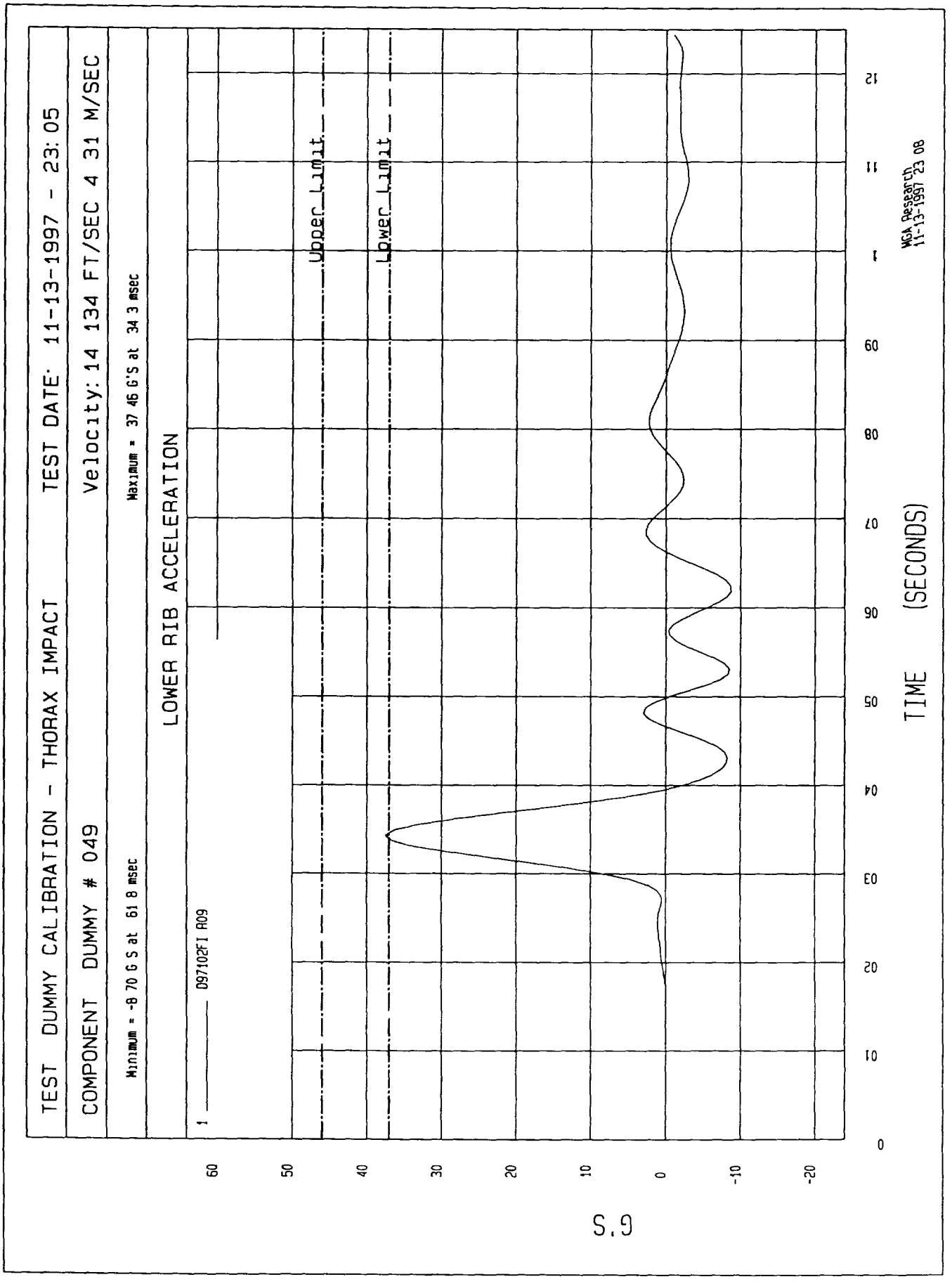
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
PROBE SPEED	14 0 - 14 2 fps	14 1
UPPER RIB	37 - 46 g's	38
LOWER RIB	37 - 46 g's	37
LOWER SPINE	15 - 22 g's	21

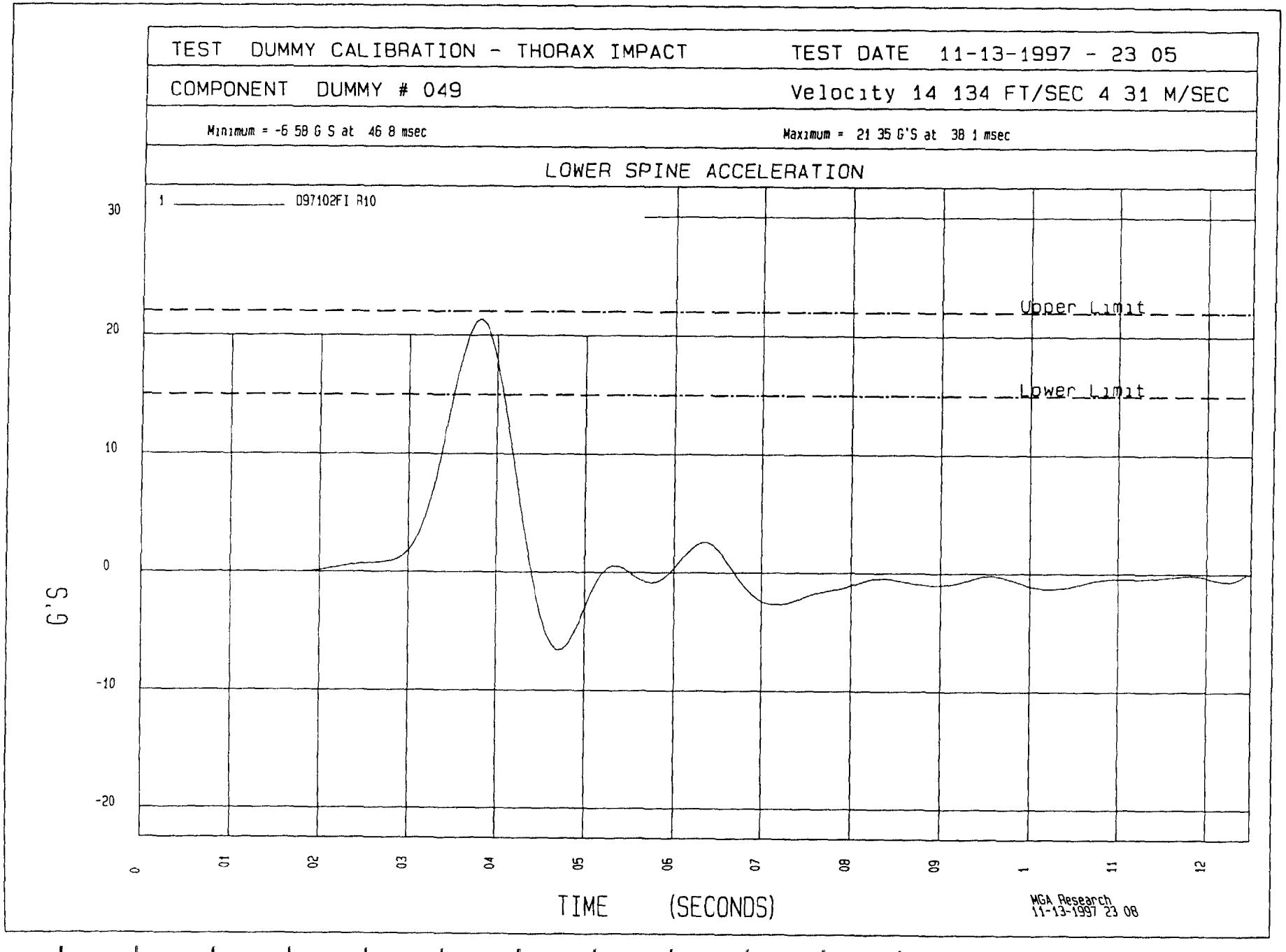
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY Edward Winkelbauer


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 11-13-1997 - 23 06 36
COMPONENT DUMMY # 049
Velocity 14 134 FT/SEC 4 31 M/SEC
Minimum = -9 64 G S at 42 5 msec
Maximum = 37 68 G S at 33 7 msec
UPPER RIB ACCELERATION
1 D97102FI R08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G's
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 23 07


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 11-13-1997 - 23:05
COMPONENT DUMMY # 049
Velocity: 14 134 FT/SEC 4 31 M/SEC
Minimum = -8 70 G S at 61 8 msec
Maximum = 37 46 G'S at 34 3 msec
LOWER RIB ACCELERATION
1 _____ 09702FI R09
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
01
02
03
04
05
06
07
08
09
10
11
12
TIME (SECONDS)
MGA Research
11-13-1997 23 08


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 11-13-1997 - 23 05
COMPONENT DUMMY # 049
Velocity 14 134 FT/SEC 4 31 M/SEC
Minimum = -6 58 G S at 46 8 msec
Maximum = 21 35 G'S at 38 1 msec
LOWER SPINE ACCELERATION
1 D97102FI R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
11-13-1997 23 08

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE. October 16, 1997

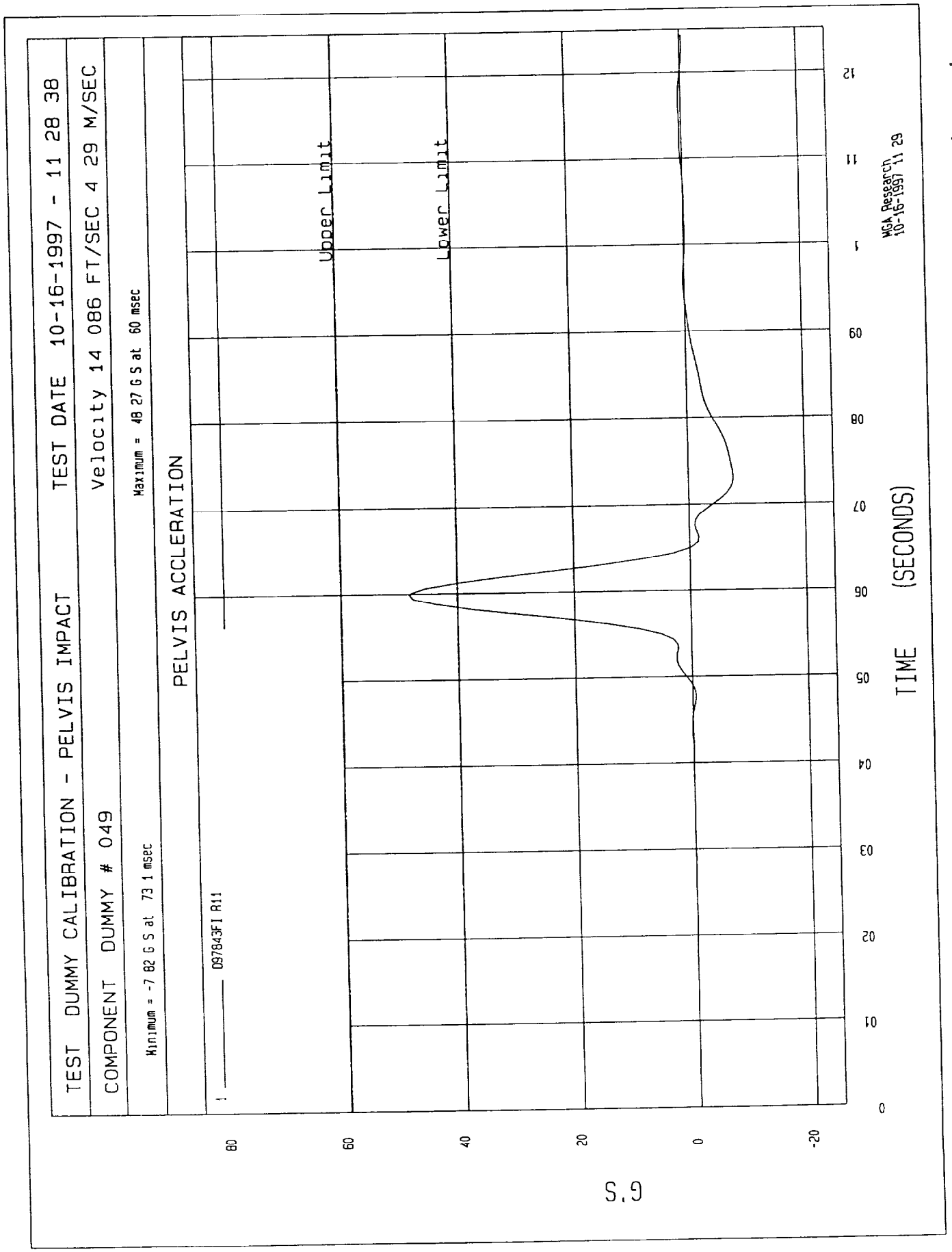
DUMMY NUMBER 049 TEST NUMBER: D972103

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	30%
PROBE SPEED	14.0 - 14 2 f/s	14 1
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE 10-16-1997 - 11 28 38
COMPONENT DUMMY # 049
Velocity 14 086 FT/SEC 4 29 M/SEC
Minimum = -7 82 G S at 73 1 msec
Maximum = 48 27 G S at 60 msec
PELVIS ACCLERATION
1 097843FI R11
Upper Limit
Lower Limit
MGA Research
10-16-1997 11 29
G'S
TIME (SECONDS)

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE October 15, 1997

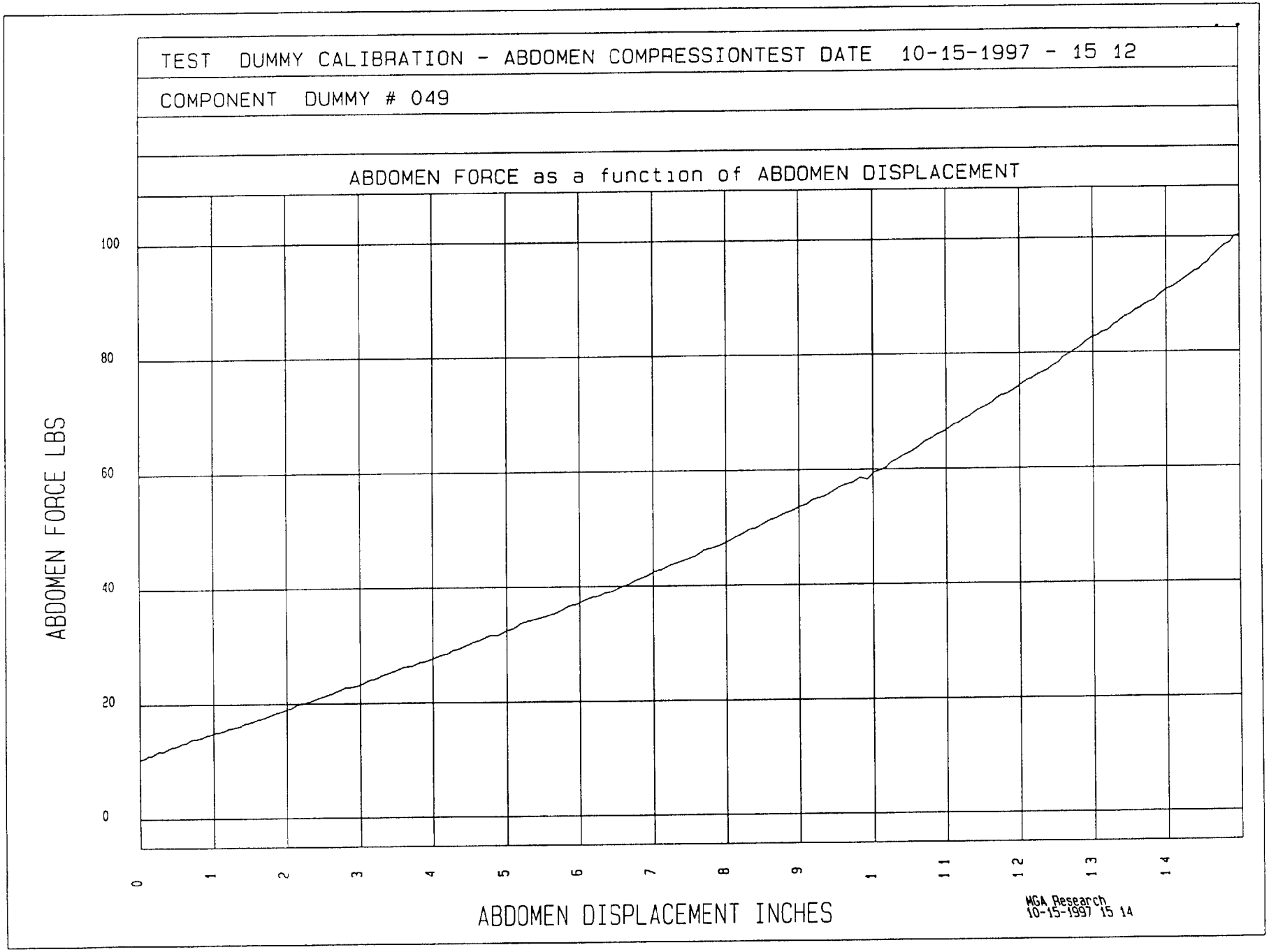
DUMMY NUMBER. 049 TEST NUMBER. D972104

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	26%
FORCE @ 0 5 in	23.3 - 36 5 lbs	32 8
FORCE @ 0 75 in	36 7 - 49.8 lbs	45.4
FORCE @ 1 0 in	50 - 63 lbs	60
FORCE @ 1 3 in	73 - 88 lbs	83

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE 10-15-1997 - 15 12
COMPONENT DUMMY # 049
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
1
11
12
13
14
ABDOMEN DISPLACEMENT INCHES
MGA Research
10-15-1997 15 14

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE. October 16, 1997

DUMMY NUMBER: 049 TEST NUMBER D972105

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	30%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	23
FORCE @ 30°	34 - 46 lbs	35
FORCE @ 40°	46 - 58 lbs	53
RETURN ANGLE	12° maximum	7°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer

TEST DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE 10-16-1997 - 09 19
COMPONENT DUMMY # 049
FORCE as a function of TORSO ROTATION
FORCE LBS
50
40
30
20
10
0
10
TORSO ROTATION DEGREES
0
10
20
30
40
MGA Research
12-19-1997 10 41

POST-TEST CERTIFICATION DATA

Front 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 NO · 048 DATE OF VERIFICATION December 8, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35 0" - 35 8"	35 3
RH - Rib Height	19 75" - 20 50"	19.90
HP - Hip Pivot Height	3 9" ref	3 9
RD - Rib From Back Line	9 0" to 9 5"	9 2
KV - Knee Pivot From Back Line	20 1" - 20.7"	20 4
SW - Knee Pivot to Floor	19 3" - 19.9"	19 4
HW - Hip Width	14.0" - 15 4"	14 8

MEASUREMENTS BY

APPROVED BY David Winkelbauer

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE December 5, 1997

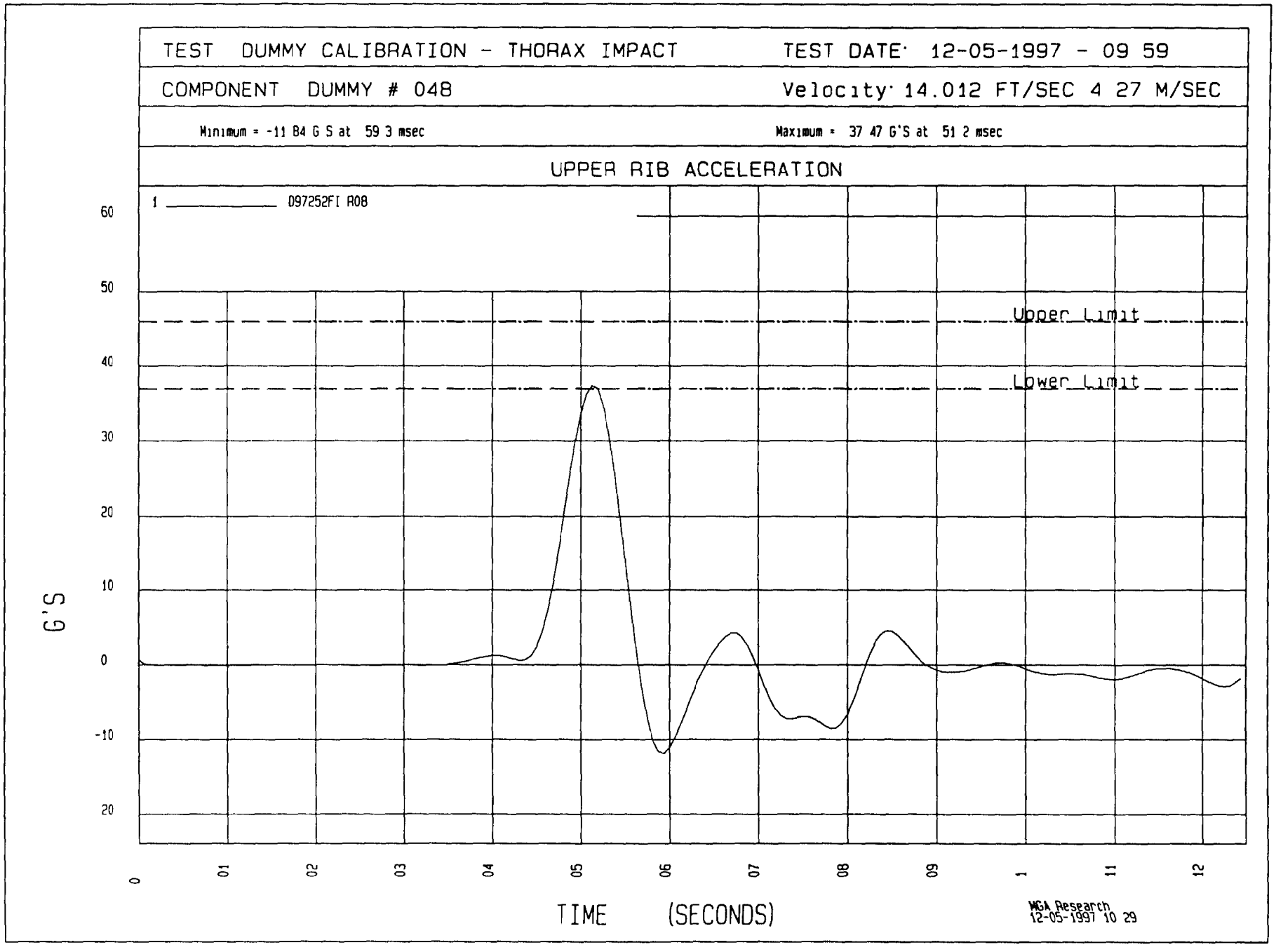
DUMMY NUMBER 048 TEST NUMBER D972252

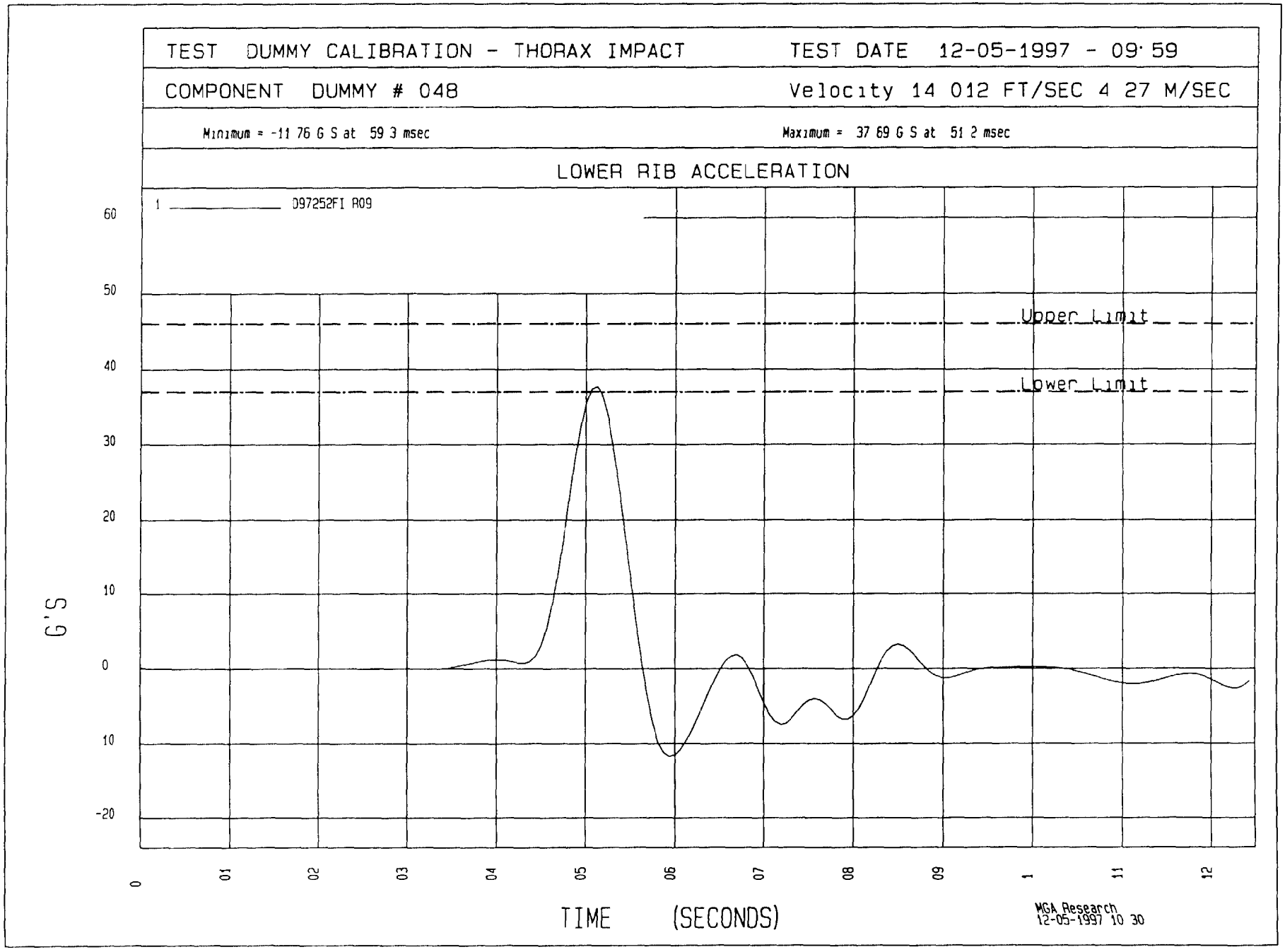
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	14.0 - 14 2 fps	14 0
UPPER RIB	37 - 46 g's	37
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	20

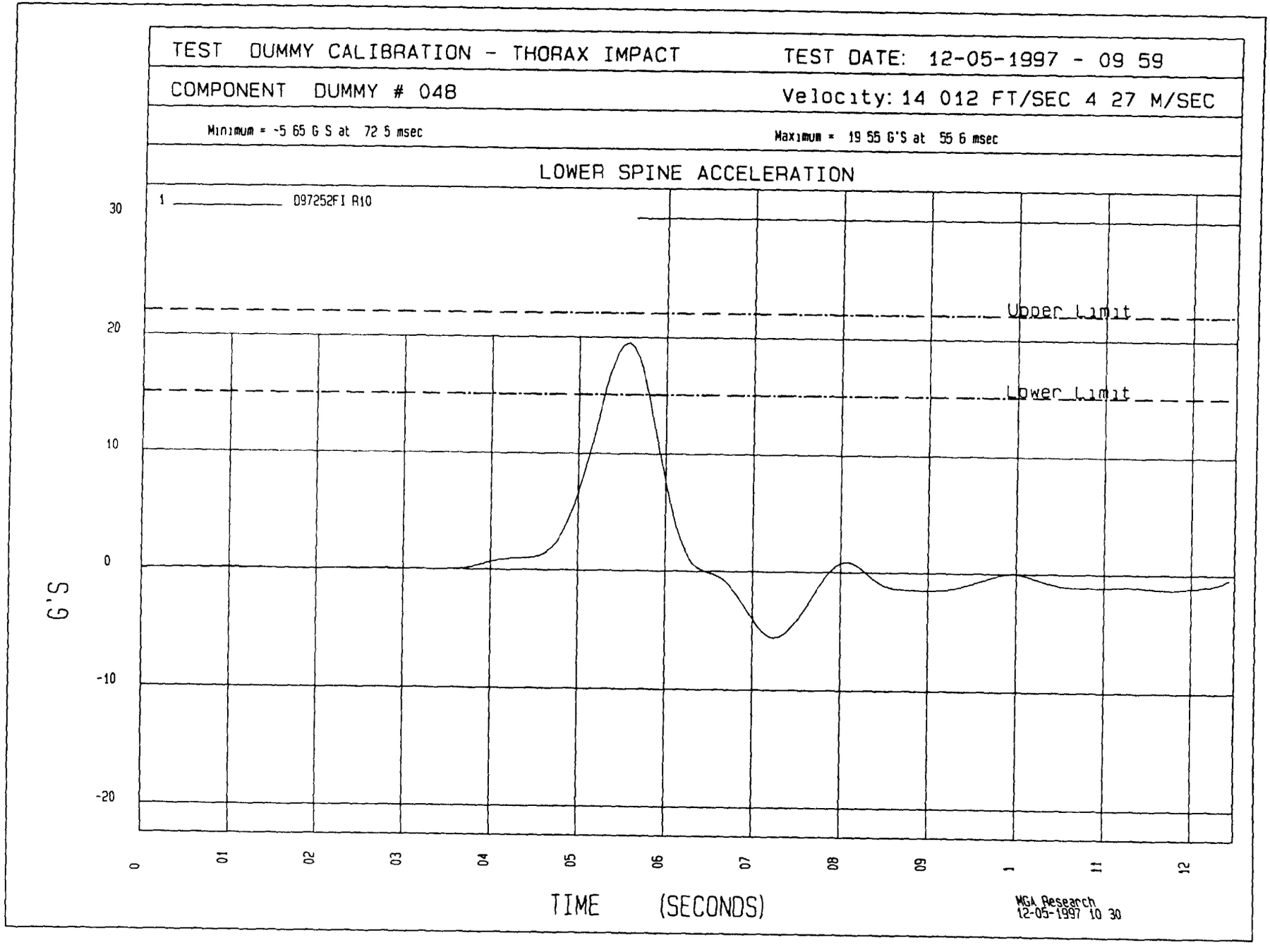
TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 12-05-1997 - 09 59
COMPONENT DUMMY # 048
Velocity: 14.012 FT/SEC 4 27 M/SEC
Minimum = -11 84 G S at 59 3 msec
Maximum = 37 47 G'S at 51 2 msec
UPPER RIB ACCELERATION
1 D97252FI R08
Upper Limit
Lower Limit
G'S
60
50
40
30
20
10
0
-10
20
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
WGA Research
12-05-1997 10 29


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 12-05-1997 - 09:59
COMPONENT DUMMY # 048
Velocity 14 012 FT/SEC 4 27 M/SEC
Minimum = -11 76 G S at 59 3 msec
Maximum = 37 69 G S at 51 2 msec
LOWER RIB ACCELERATION
1 D97252FI R09
Upper Limit
Lower Limit
60
50
40
30
20
10
0
10
-20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
12-05-1997 10 30


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 12-05-1997 - 09 59
COMPONENT DUMMY # 048
Velocity: 14 012 FT/SEC 4 27 M/SEC
Minimum = -5 65 G S at 72 5 msec
Maximum = 19 55 G'S at 55 6 msec
LOWER SPINE ACCELERATION
1 D97252FI R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
12-05-1997 10 30

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

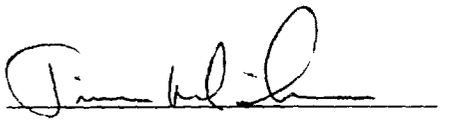
SIDE IMPACT DUMMY (SID)

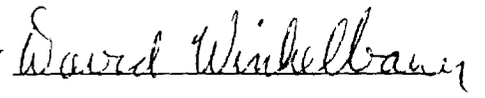
DATE December 5, 1997

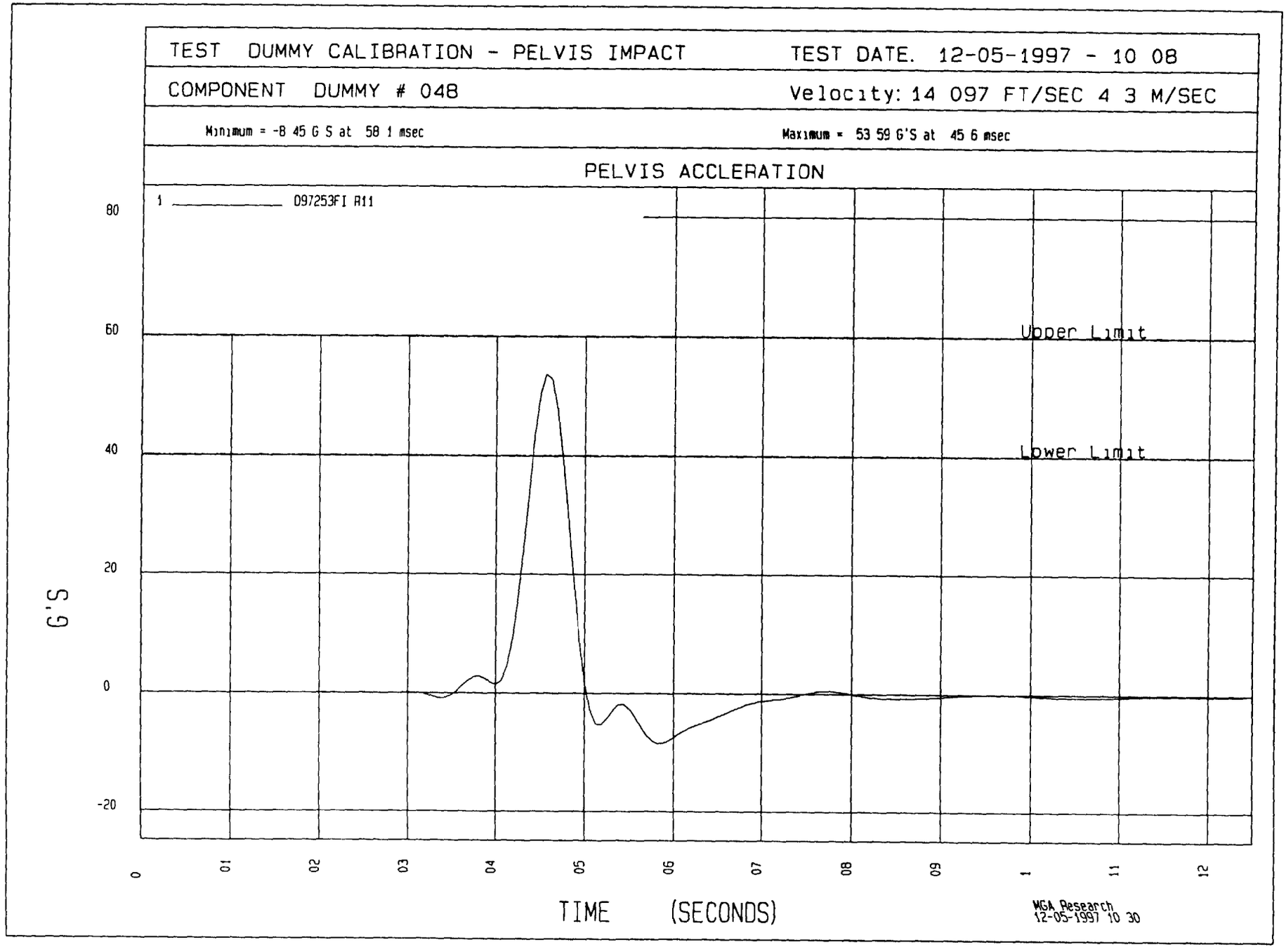
DUMMY NUMBER 048 TEST NUMBER: D972253

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	14 0 - 14 2 f/s	14 1
PELVIS ACCELERATION	40 - 60 g's	54

TEST MEETS SPECIFICATIONS

TECHNICIAN 

APPROVED BY 


TEST DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE. 12-05-1997 - 10 08
COMPONENT DUMMY # 048
Velocity: 14 097 FT/SEC 4 3 M/SEC
Minimum = -8 45 G S at 58 1 msec
Maximum = 53 59 G'S at 45 6 msec
PELVIS ACCLERATION
1 097253FI R11
Upper Limit
Lower Limit
80
60
40
20
0
-20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
12-05-1997 10 30

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE December 18, 1997

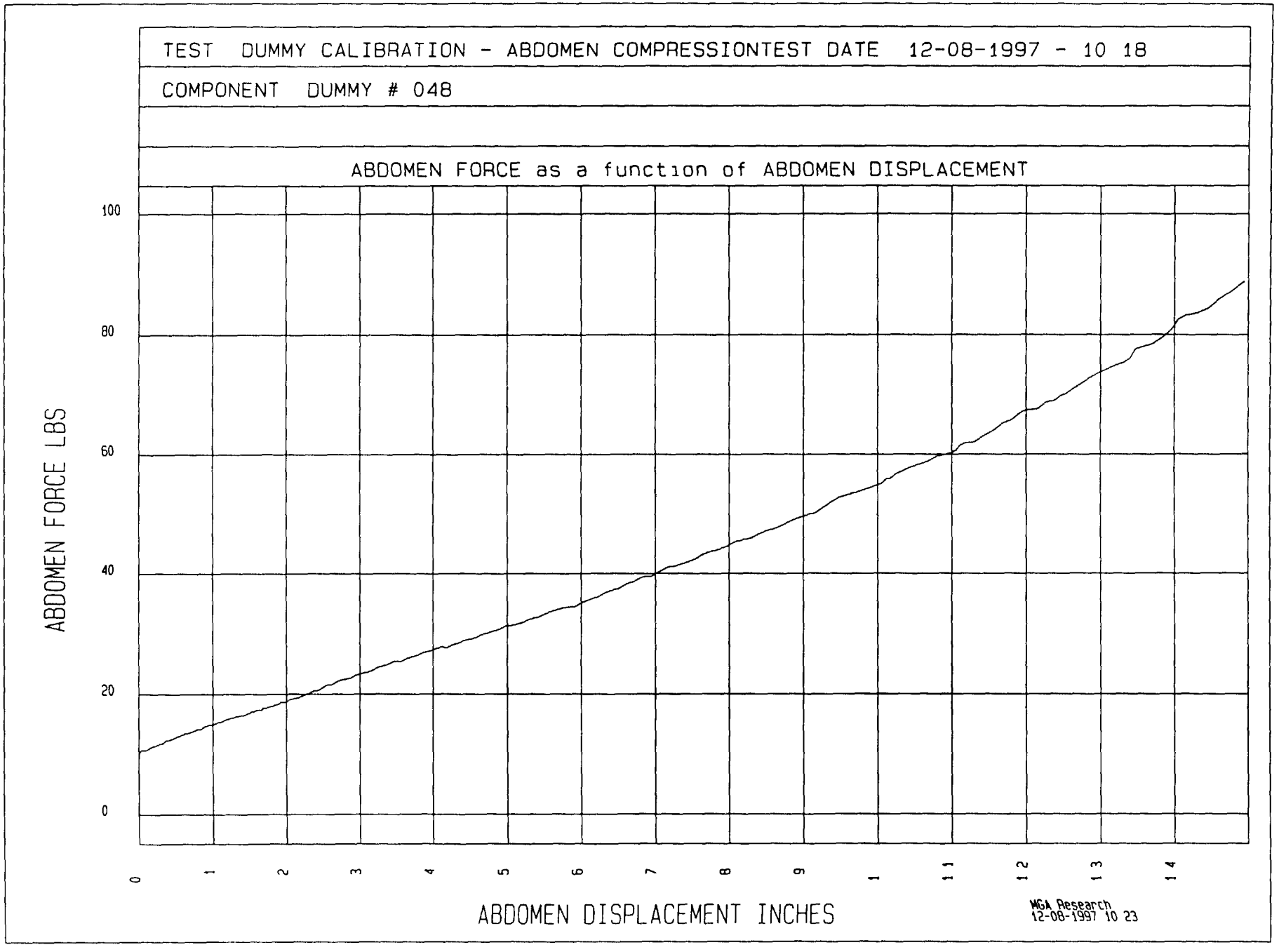
DUMMY NUMBER 048 TEST NUMBER D972254

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	22%
FORCE @ 0 5 in	23 3 - 36 5 lbs	31 4
FORCE @ 0 75 in	36 7 - 49 8 lbs	42 3
FORCE @ 1 0 in	50 - 63 lbs	55
FORCE @ 1 3 in	73 - 88 lbs	74

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE 12-08-1997 - 10 18
COMPONENT DUMMY # 048
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
1
11
12
13
14
ABDOMEN DISPLACEMENT INCHES
MGA Research
12-08-1997 10 23

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE December 8, 1997

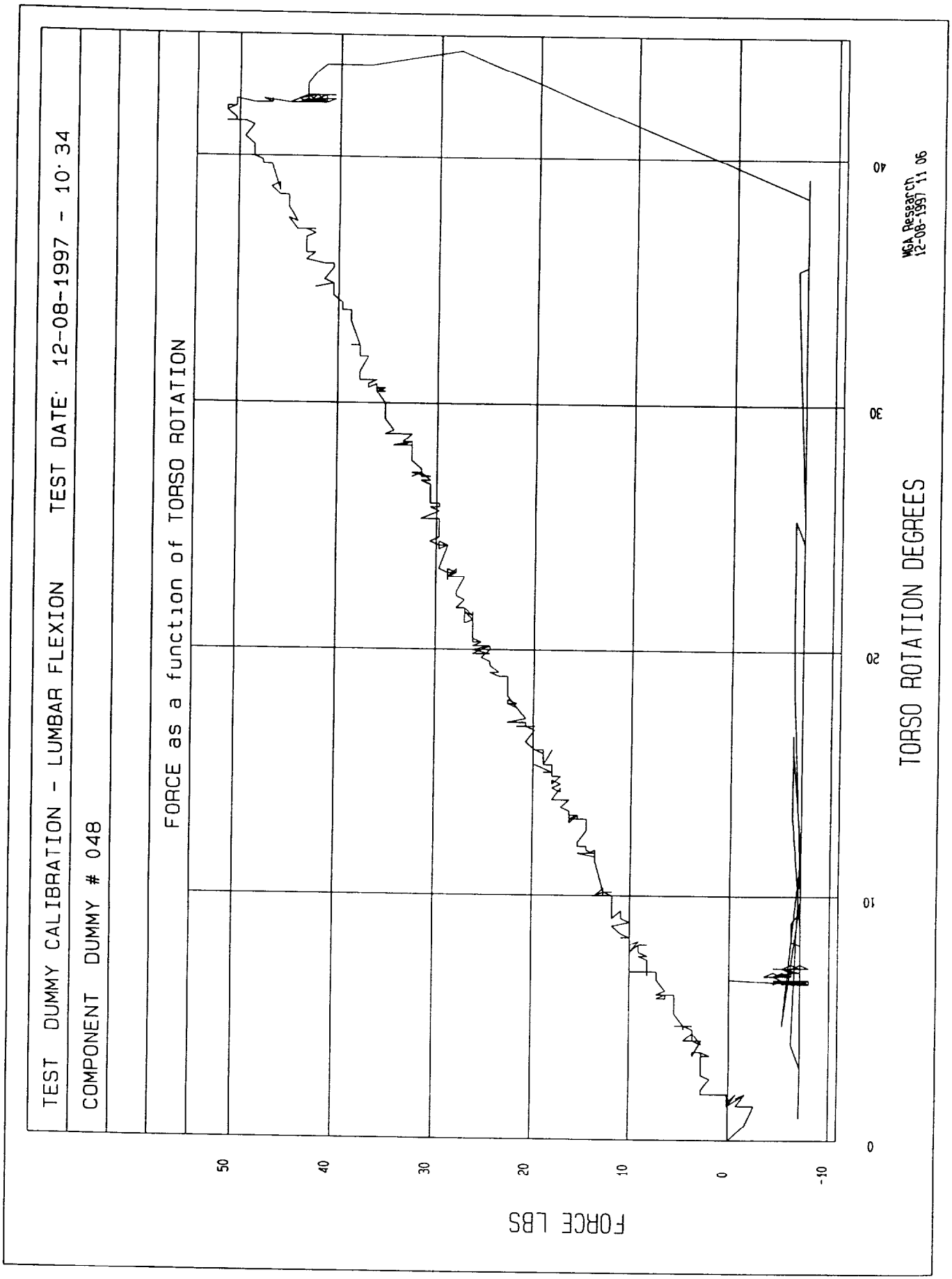
DUMMY NUMBER 048 TEST NUMBER: D972255

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	24
FORCE @ 30°	34 - 46 lbs	36
FORCE @ 40°	46 - 58 lbs	49
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE: 12-08-1997 - 10:34
COMPONENT DUMMY # 048
FORCE as a function of TORSO ROTATION
FORCE LBS
50
40
30
20
10
0
-10
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
12-08-1997 11:06

POST-TEST CERTIFICATION DATA

Rear 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 NO. 049 DATE OF VERIFICATION December 8, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35 0" - 35 8"	35 2
RH - Rib Height	19 75" - 20 50"	20 00
HP - Hip Pivot Height	3 9" ref	3 9
RD - Rib From Back Line	9 0" to 9.5"	9 3
KV - Knee Pivot From Back Line	20 1" - 20 7"	20 5
SW - Knee Pivot to Floor	19.3" - 19 9"	19 5
HW - Hip Width	14 0" - 15 4"	14 7

MEASUREMENTS BY

APPROVED BY David Winkelbauer

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE December 5, 1997

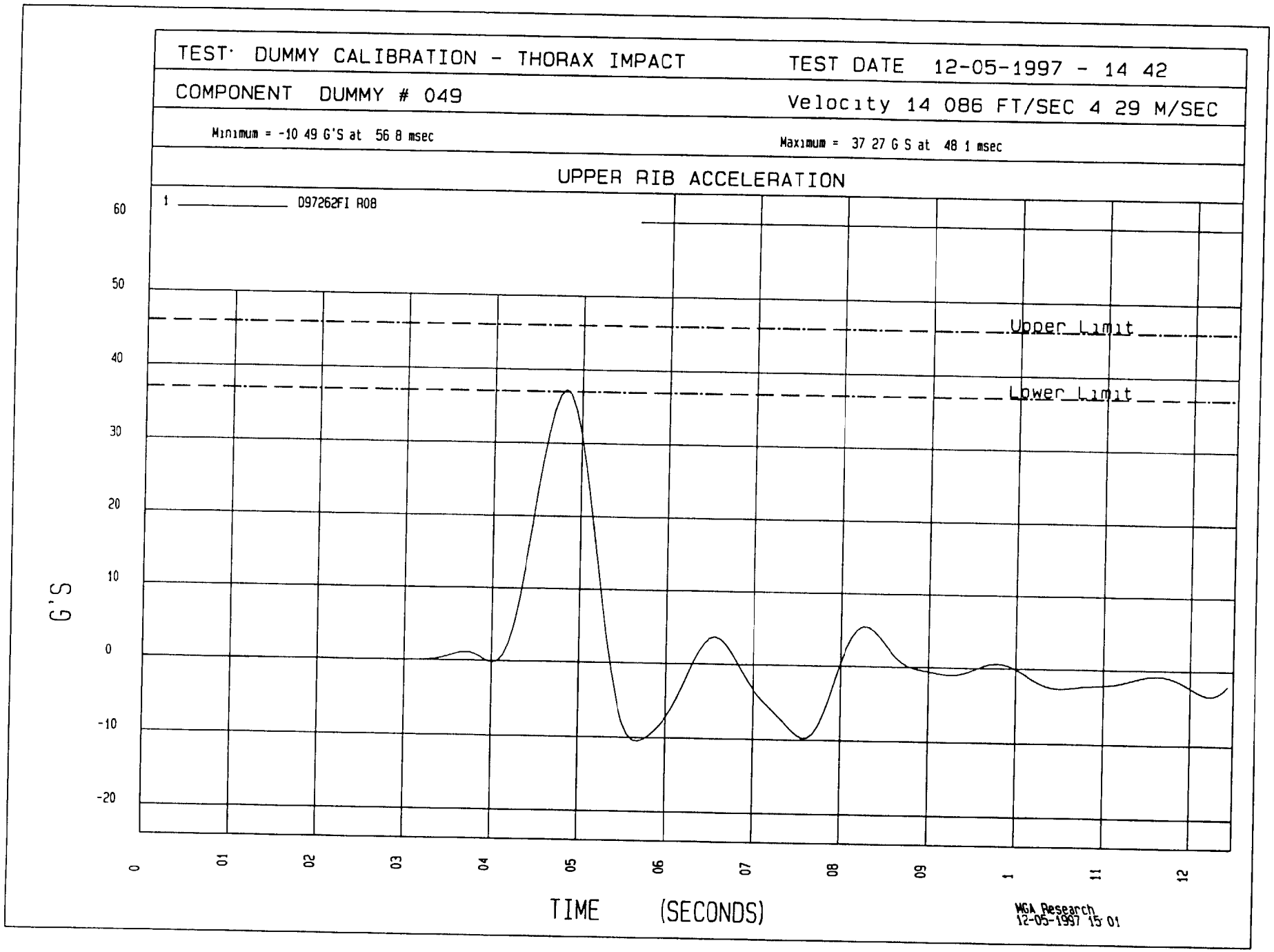
DUMMY NUMBER 049 TEST NUMBER D972262

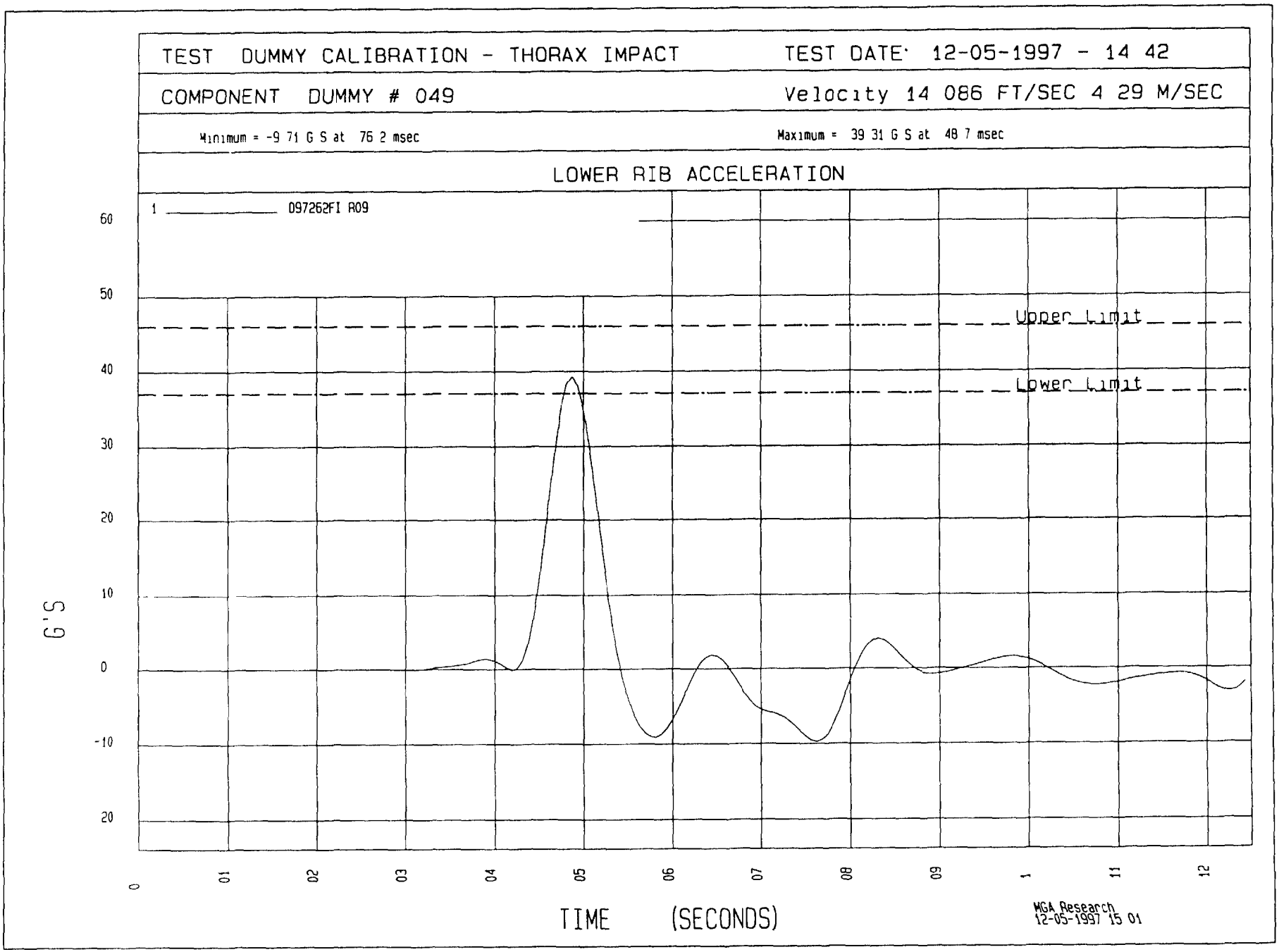
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	14 0 - 14 2 fps	14 1
UPPER RIB	37 - 46 g's	37
LOWER RIB	37 - 46 g's	39
LOWER SPINE	15 - 22 g's	20

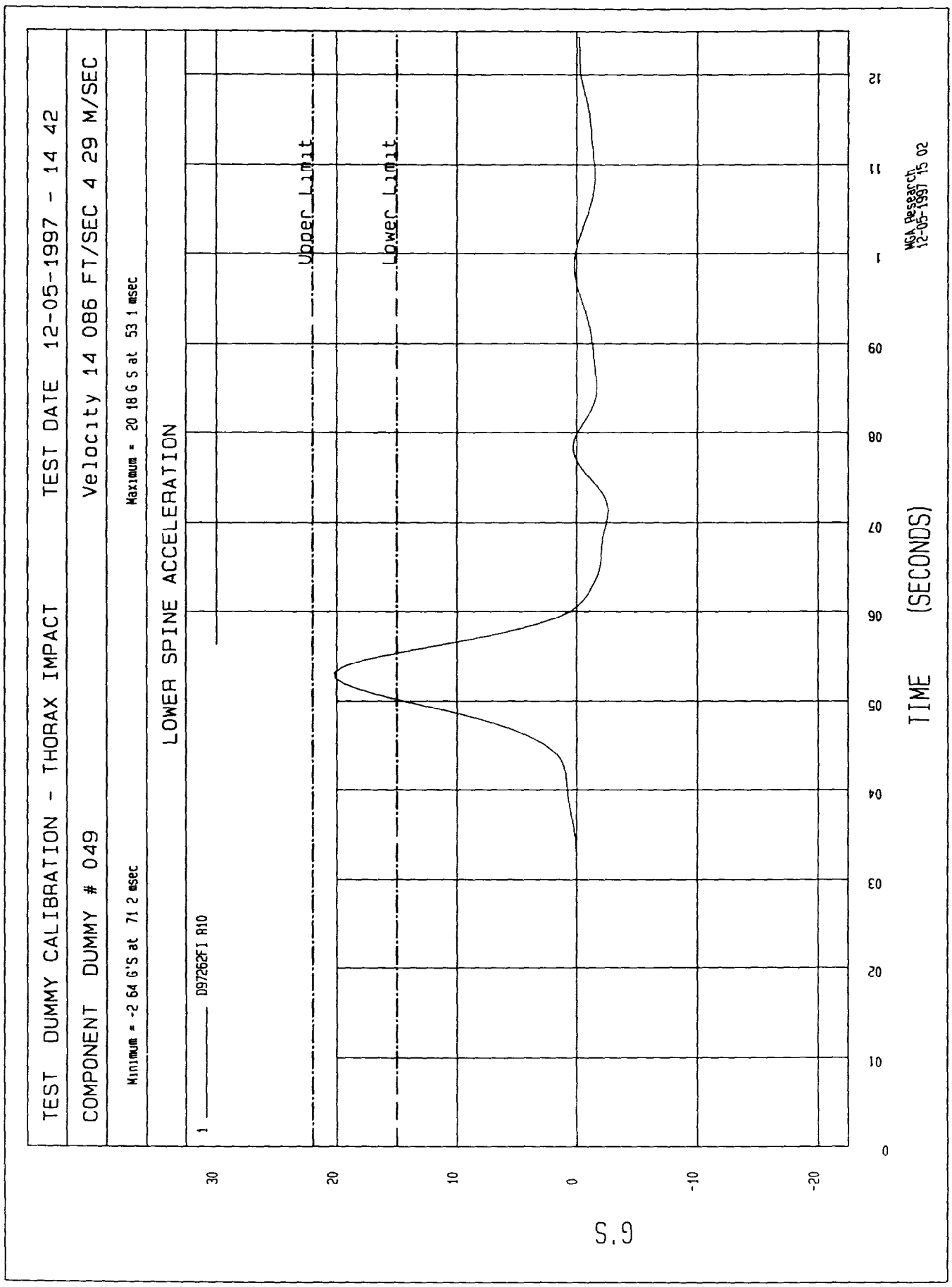
TEST MEETS SPECIFICATIONS

TECHNICIAN

APPROVED BY David Winkelbauer


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE 12-05-1997 - 14 42
COMPONENT DUMMY # 049
Velocity 14 086 FT/SEC 4 29 M/SEC
Minimum = -10 49 G'S at 56 8 msec
Maximum = 37 27 G S at 48 1 msec
UPPER RIB ACCELERATION
1 D97262FI R08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
12-05-1997 15 01


TEST DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 12-05-1997 - 14 42
COMPONENT DUMMY # 049
Velocity 14 086 FT/SEC 4 29 M/SEC
Minimum = -9 71 G S at 76 2 msec
Maximum = 39 31 G S at 48 7 msec
LOWER RIB ACCELERATION
1 ——— 097262FI R09
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
20
G'S
0
01
02
03
04
05
06
07
08
09
1
11
12
TIME (SECONDS)
MGA Research
12-05-1997 15 01


TEST DUMMY CALIBRATION - THORAX IMPACT TEST DATE 12-05-1997 - 14 42
COMPONENT DUMMY # 049 Velocity 14 086 FT/SEC 4 29 M/SEC
Minimum = -2 64 G'S at 71 2 msec Maximum = 20 18 G S at 53 1 msec
LOWER SPINE ACCELERATION
1 D9726ZFI R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
0
10
20
30
40
50
60
70
80
90
1
11
12
TIME (SECONDS)
MGA Research 12-05-1997 15 02

S.9

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE December 5, 1997

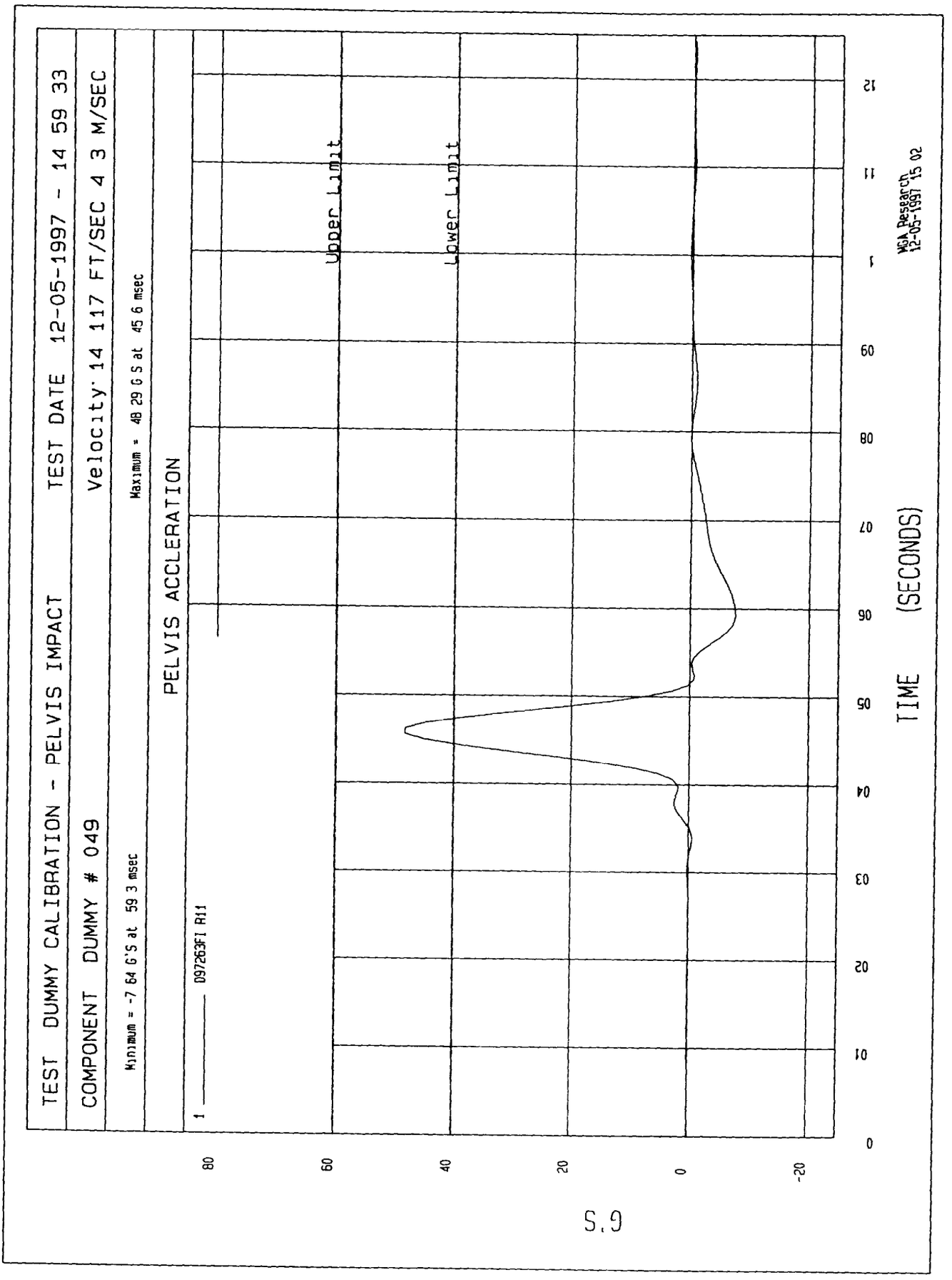
DUMMY NUMBER 049 TEST NUMBER D972263

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	24%
PROBE SPEED	14 0 - 14 2 f/s	14 1
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE 12-05-1997 - 14 59 33
COMPONENT DUMMY # 049
Velocity 14 117 FT/SEC 4 3 M/SEC
Minimum = -7 64 G'S at 59 3 msec
Maximum = 48 29 G S at 45 6 msec
PELVIS ACCLERATION
1 D97263FI R11
Upper Limit
Lower Limit
80
60
40
20
0
-20
0
01
02
03
04
05
06
07
08
09
10
11
12
TIME (SECONDS)
MGA Research
12-05-1997 15 02

S.9

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE December 8, 1997

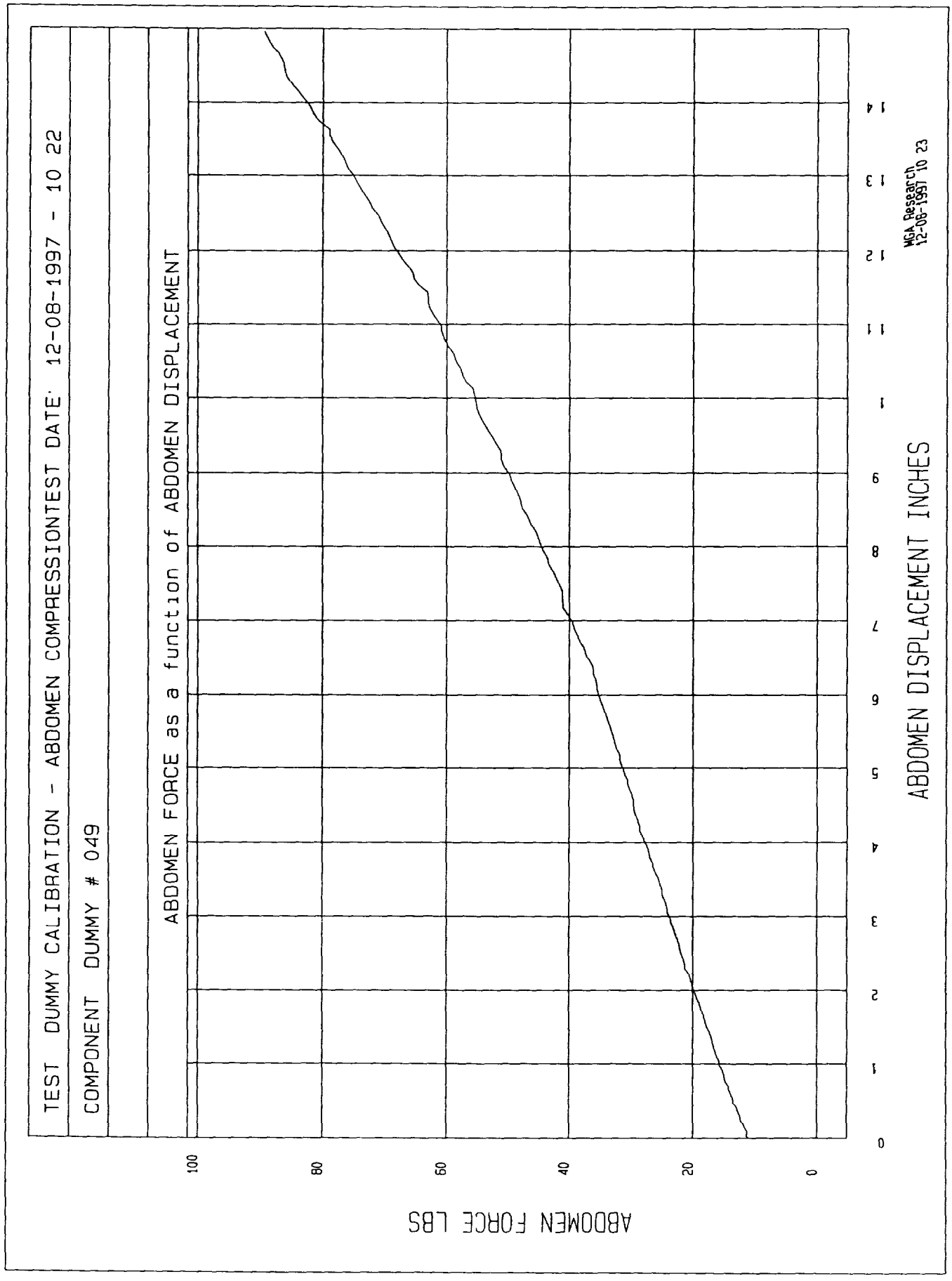
DUMMY NUMBER. 049 TEST NUMBER D972264

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0 5 in	23 3 - 36 5 lbs	31 3
FORCE @ 0 75 in	36 7 - 49 8 lbs	41 9
FORCE @ 1 0 in	50 - 63 lbs	55
FORCE @ 1 3 in	73 - 88 lbs	76

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE: 12-08-1997 - 10 22
COMPONENT DUMMY # 049
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
ABDOMEN DISPLACEMENT INCHES
WGA Research
12-08-1997 10 23

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE. December 8, 1997

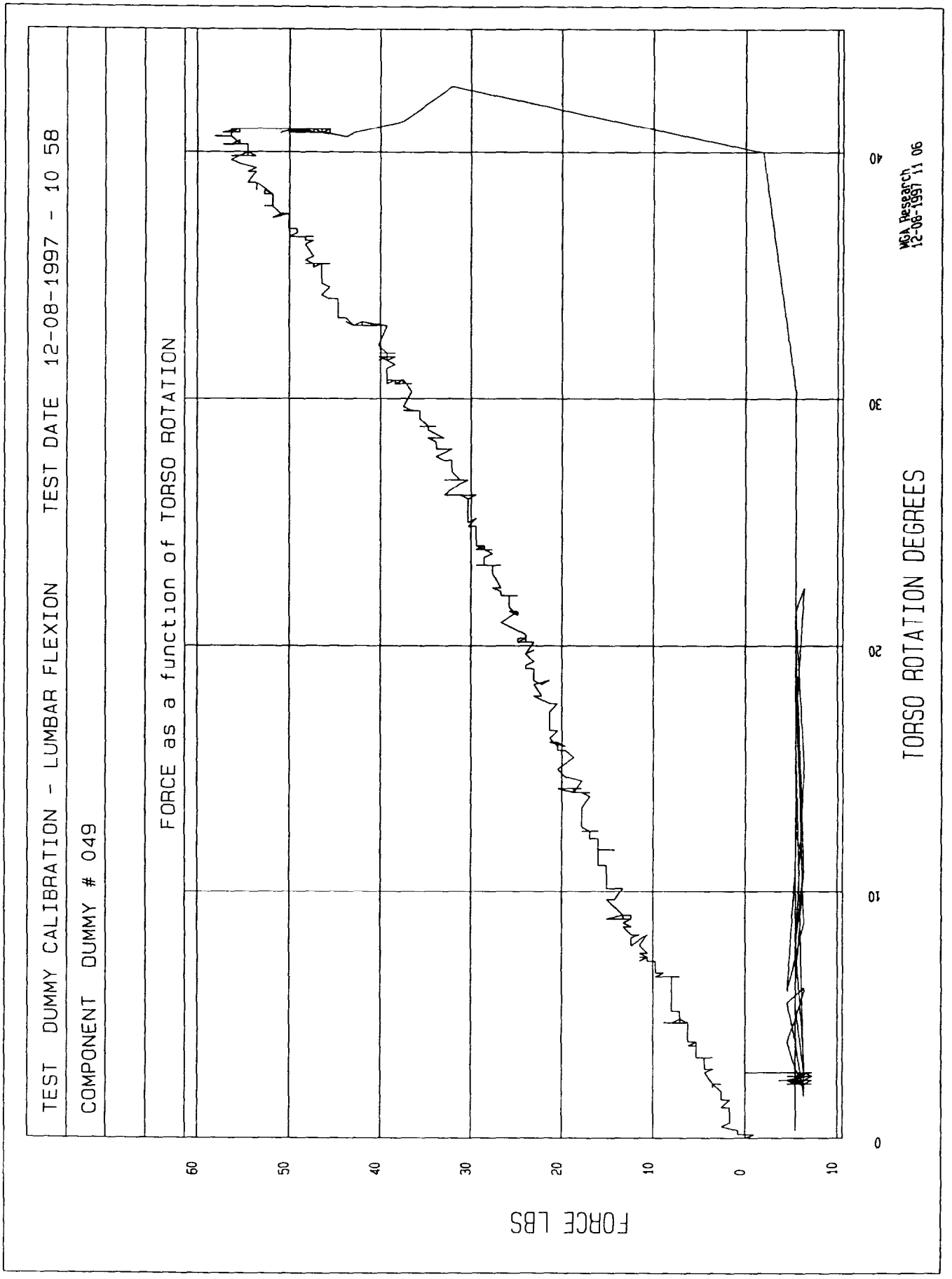
DUMMY NUMBER 049 TEST NUMBER D972265

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	20%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	23
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	54
RETURN ANGLE	12° maximum	3°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY David Winkelbauer


TEST DUMMY CALIBRATION - LUMBAR FLEXION TEST DATE 12-08-1997 - 10 58
COMPONENT DUMMY # 049
FORCE as a function of TORSO ROTATION
FORCE LBS
60
50
40
30
20
10
0
10
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
12-08-1997 11 06

POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type Side Impact Dummy

Serial Number: 048

Inspected By Tim Michnay

Date: December 8, 1997

Part	Items Checked	Comments
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

Serial Number 049

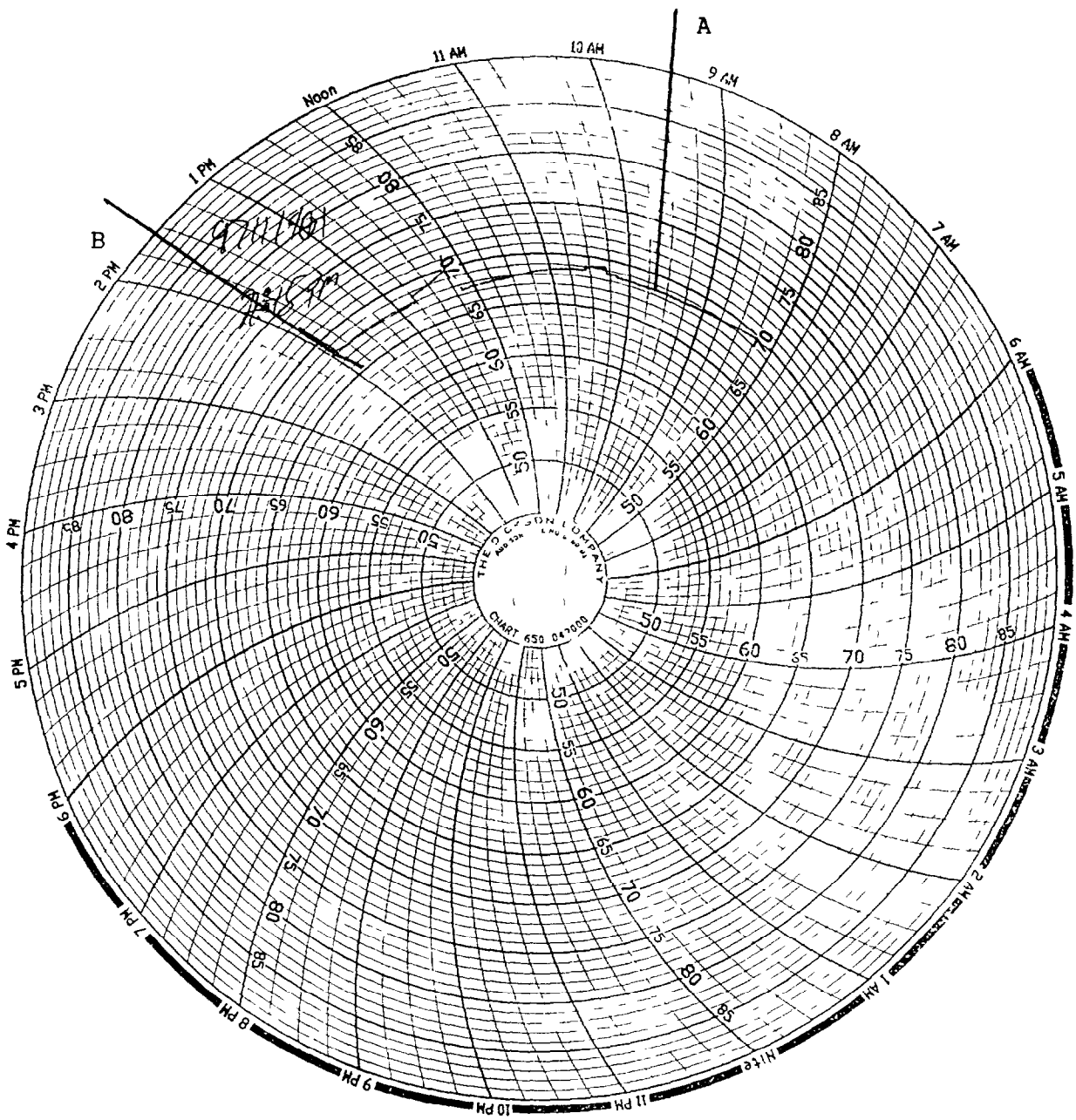
Inspected By. Tim Michnay

Date. December 8, 1997

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

NOTES (include component/problem/action/reason)

VEHICLE AND DUMMY TEMPERATURE



A = Dummies installed in vehicle
B = Test conducted

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

INSTRUMENTS FOR DRIVER DUMMY NO 048

	LEFT FRONT PASSENGER		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AN8L6	Endevco	August 18, 1997
Lower Rib Y	J12465	Endevco	August 18, 1997
Lower Spine Y	J12450	Endevco	August 18, 1997
Pelvis Y	AGTP7	Endevco	August 18, 1997
Upper Rib Redundant Y	APY13	Endevco	August 18, 1997
Lower Rib Redundant Y	J11361	Endevco	August 18, 1997
Lower Spine Redundant Y	J12461	Endevco	August 18, 1997
Pelvis Redundant Y	AGT04	Endevco	August 18, 1997

INSTRUMENTS FOR LEFT REAR PASSENGER DUMMY NO 049

	LEFT REAR PASSENGER		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AHRP6	Endevco	August 18, 1997
Lower Rib Y	J11630	Endevco	August 18, 1997
Lower Spine Y	AHT20	Endevco	August 18, 1997
Pelvis Y	AJ417	Endevco	August 18, 1997
Upper Rib Redundant Y	AJ412	Endevco	August 18, 1997
Lower Rib Redundant Y	J11166	Endevco	August 18, 1997
Lower Spine Redundant Y	AH0N9	Endevco	August 18, 1997
Pelvis Redundant Y	AGP20	Endevco	August 18, 1997

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	J04-F10	Entran	August 7, 1997
Moving Barrier CG Y	F11-G04	Entran	August 7, 1997
Moving Barrier CG Z	J04-F12	Entran	August 7, 1997
Moving Barrier Rear Axle X	G13-B07	Entran	August 6, 1997
Moving Barrier Rear Axle Y	L14-D04	Entran	August 4, 1997
Left Mid A-Post Y	E10-F10	Entran	August 7, 1997
Left Lower A-Post Y	G13-B14	Entran	July 16, 1997
Left Lower B-Post Y	H02-J02	Entran	August 6, 1997
Rear Floorpan Above Axle X	G13-B09	Entran	August 5, 1997
Rear Floorpan Above Axle Y	F11-G05	Entran	August 7, 1997
Rear Floorpan Above Axle Z	I26-D19	Entran	July 16, 1997
Driver Seat Track Y	C20-J10	Entran	August 6, 1997
Right Side Sill at Front Seat X	I25-J09	Entran	August 7, 1997
Right Side Sill at Front Seat Y	F20-G05	Entran	August 7, 1997
Right Side Sill at Front Seat Z	F10-D04	Entran	August 4, 1997
Right Side Sill at Rear Seat X	F12-G03	Entran	July 11, 1997
Right Side Sill at Rear Seat Y	D05-R20	Entran	July 7, 1997
Right Side Sill at Rear Seat Z	D05-R16	Entran	July 7, 1997
Left Side Sill at Front Seat Y	I26-D06	Entran	August 5, 1997

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	H02-J01	Entran	August 6, 1997
Rear Occupant Compartment Y	E13-D06	Entran	November 5, 1997
Vehicle CG X	E10-F06	Entran	August 6, 1997
Vehicle CG Y	F11-G07	Entran	July 16, 1997
Vehicle CG Z	F12-G05	Entran	August 7, 1997

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