

V2752

2098

1997 MITSUBISHI ECLIPSE RS
"EU 96/27/EC SIDE IMPACT TEST"

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: October 16, 1997

Report Date: January 5, 1997

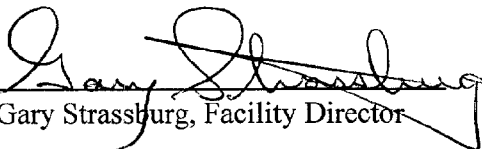
FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
VOLPE NATIONAL TRANSPORTATION SYSTEM CENTER
55 BROADWAY, KENDALL SQUARE
CAMBRIDGE, MA 02142

This Final Report was prepared for the U.S. Department of Transportation, Volpe National Transportation System Center, under Contract No. DTRS-57-95-C-00010.

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Approved By: 
Gary Strassburg, Facility Director

Approval Date: 4-21-98

FINAL REPORT ACCEPTED BY (OVSC):

Accepted By: _____
Contract Technical Manager

Acceptance Date: _____

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SECTION 1
PURPOSE AND TEST PROCEDURE

This lateral impact test is part of Contract No. DTRS-57-97-C-00010, sponsored by the National Highway Traffic Safety Administration (NHTSA). The purpose of this test was to evaluate a 1997 Mitsubishi Eclipse RS when subjected to a 50 kph lateral impact conducted in accordance with Directive 96/27/EC of the European Parliament and of the council of May 20, 1996.

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

SECTION 2

SUMMARY OF LATERAL IMPACT TEST

A 1997 Mitsubishi Eclipse RS was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward at a velocity of 31.05 mph (50.0 kph). The target vehicle was stationary and was positioned perpendicular to the line of forward motion of the moving deformable barrier. The lateral impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on October 16, 1997. Pre- and post-test photographs of the test vehicle, the MDB and the European Side Impact Dummy (EuroSID-1) are included in Appendix A.

One European Side Impact Dummy (EuroSID-1) was placed in the driver designated seating position according to instructions specified in the Lateral Impact Directive which is dated May 20, 1996. The lateral impact event was documented by 10 high speed cameras and one real-time camera. Camera locations and other pertinent camera information can be found in this report.

Appendix B contains the vehicle and dummy response data traces. A summary of the lateral impact dummy (EuroSID-1) configuration and performance verification test data is shown in Appendix D. Dummy and vehicle calibration data can be found in Appendix E of this report.

The following tables summarize the results of the Lateral Side Impact test:

		DRIVER
(1) Head Performance Criteria		
≤ 1000	T ₁	No Contact
	T ₂	
	HPC	
(2) Thorax Performance Criteria		
(2.1) Chest Deflection ≤ 42 mm	Upper Rib Deflection	48.6 @ 48 msec.
	Mid Rib Deflection	40.1 @ 42 msec.
	Lower Rib Deflection	17.0 @ 41 msec.
(2.2) Viscous Criteria ≤ 1.0	Upper Rib	1.04 @ 34 msec.
	Middle Rib	.79 @ 35 msec.
	Lower Rib	.28 @ 38 msec.
(3) Abdominal Protection Criterion		
Sum ≤ 2500 N	Front Abdominal Force	173 @ 58 msec.
	Mid Abdominal Force	470 @ 36 msec.
	Rear Abdominal Force	941 @ 36 msec.
	Sum of Abdominal Force	1429 @ 36 msec.
(4) Pelvis Performance Criterion		
≤ 6000 N	Pubic Symphysis Force	4097 @ 35 msec.

HIC		DRIVER
	T_1	47.8
	T_2	83.8
	$T_2 - T_1$	36
	HIC	95

FIR FILTERED	DRIVER
UPPER RIB (g's)	131.5 @ 31 msec.
MIDDLE RIBE (g's)	170.1 @ 31 msec.
LOWER RIB (g's)	181.6 @ 35 msec.
LOWER SPINE (g's)	67.9 @ 41 msec.
PELVIS (g's)	66.3 @ 35 msec.
TTI (g's)	124.8
FILTERED AT SAE CLASS 180	
UPPER RIB (g's)	163.5 @ 76 msec.
MID RIB (g's)	211.6 @ 31 msec.
LOWER RIB (g's)	198.0 @ 35 msec.
LOWER SPINE (g's)	70.2 @ 41 msec.
PELVIS (g's)	73.1 @ 34 msec.

CONTACTS	DRIVER
HEAD (ms)	No Contact
SHOULDER (ms)	16.5
UPPER RIB (ms)	26.7
MIDDLE RIB (ms)	28.2
LOWER RIB (ms)	32.2
ABDOMEN (ms)	26.2
PELVIS (ms)	21.4

TEST NOTES

Due to the limited space in the rear occupant seating position, the EuroSID-1 Dummy could not be placed in this seating position. Ballast weights were secured in the rear seat to account for the test mass of a EuroSID-1 Dummy in this seating position.

The measured "R" point location (impact of barrier centerline) using the "H" point machine does not match the "R" point location supplied by the manufacturer.

Measured = 383 mm forward of front door striker

Supplied = 390 mm forward of front door striker

The test was conducted using the manufacturer supplied "R" point location.

SECTION 3
LATERAL IMPACT DUMMY (EUROSID-1)
AND VEHICLE TEST DATA

DATA SHEET NO. 1
GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

VIN: 4A3AK34Y2VE005157

Vehicle Body Color: White Build Date: 7-97

Engine Data: 4 Cylinders; CID; 2.0 Liter; cc

Placement Longitudinal; X Lateral

Transmission: 5 speed; X Manual; Automatic; Overdrive

Final Drive: Rear Wheel Drive; X Frt. Wheel Drive; Four Wheel Drive

Odometer Reading 135 miles

Options: X A/C; X Pwr. Steering; X Pwr. Brakes; Pwr. Windows;

 Cruise Control; X Tilt Wheel; Power Door Locks;

DATA FROM TIRE PLACARD:

Tire Pressure (at capacity): 32 Psi FRONT

29 Psi REAR

Recommended Tire Size: P195/70R14

Tires on Test Vehicle: P195/70R14 Manufacturer: Bridgestone

Vehicle Capacity Data:

Number of Occupants: 2 Front; 2 Rear; 3rd Seat 4 Total

Type of Front Seats: X Bucket; Bench; Split Bench

Type of Front Seat Back: Fixed; X Adjustable with X Lever

Vehicle Maximum Capacity Loading = 300.0 kg (A)

No. of Occupants x 68.04 kg. = 272.2 kg (B)

Cargo Capacity (A-B) = 27.8 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS AND FUEL:

Right Front	=	<u>396.9</u>	kg	Right Rear	=	<u>233.6</u>	kg
Left Front	=	<u>389.2</u>	kg	Left Rear	=	<u>235.4</u>	kg
TOTAL FRONT	=	<u>786.1</u>	kg	TOTAL REAR	=	<u>469.0</u>	kg
% of Total Vehicle Weight	=	<u>62.6</u>	%;	% of Total Weight	=	<u>37.4</u>	%
TOTAL WEIGHT	=	<u>1255.1</u>	kg				

WEIGHT OF TEST VEHICLE WITHOUT FUEL:

TOTAL WEIGHT = 1205.2 kg

WEIGHT OF FUEL:

TOTAL WEIGHT = 49.9 kg

WEIGHT OF TEST VEHICLE WITH 90% OF FUEL MASS (UNLADEN WEIGHT):

TOTAL WEIGHT = 1250.0 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Weight of Test Vehicle with 90% Fuel Mass (mass unladen) = 1250.0 kg

Weight of 2 EuroSID-1 Dummies and Instrumentation* = 200 kg

(100 kg allotted for each EuroSID-1 plus instrumentation per EU Directive 96/27/EC)

TEST VEHICLE TARGET WEIGHT ($\pm 1\%$) = 1450.0 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 1 DUMMY

Right Front = 415.0 kg Right Rear = 282.5 kg

Left Front = 447.7 kg Left Rear = 313.4 kg

TOTAL FRONT = 862.7 kg TOTAL REAR = 595.9 kg

% of Total Weight = 59.1 % % of Total Weight = 40.9 %

TOTAL TEST WEIGHT = 1458.6 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 695 mm Left Front 696 mm Right Rear 700 mm Left Rear 702 mm

TEST ATTITUDE:

Right Front 690 mm Left Front 678 mm Right Rear 682 mm Left Rear 674 mm

Test Vehicle Wheelbase: 2515 mm

C.G. As Tested = 1027 mm rearward of front wheel centerline

*Although only one EuroSID-1 Dummy was used for testing, ballast was added to the rear seat to compensate for a rear seat occupant.

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

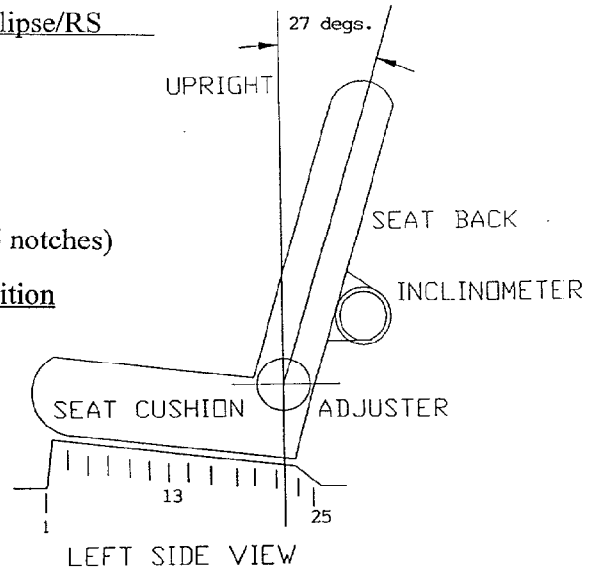
FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 242 mm (25 notches)

Test Position: 13th notch from foremost locking position

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 27° (6th position from first)



REAR SEAT: Bench

Total Length of Fore/Aft Adjustment Travel: Non Adjustable

Seat Back Adjustment Position: Non Adjustable

ADJUSTABLE STEERING COLUMN POSITION: Mid Position

WINDOW POSITIONS: Left Front Closed Left Rear Non-Opening

Right Front Open Right Rear Non-Opening

AMOUNT OF WATER IN FUEL TANK:

Weight of full fuel = 49.9 kg

90% of fuel mass = 44.9 kg

Test mass added = 44.9 kg

LOCATIONS OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED: (R Point)

Impact Point is 306 mm forward of striker

Impact Point is 1420 mm rearward of front axle centerline

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

Overall Length of Vehicle = 4367 mm

Overall Width at B-Post = 1710 mm

WEIGHT AS TESTED:

Right Front = 415.0 kg

Right Rear = 282.5 kg

Left Front = 447.7 kg

Left Rear = 313.4 kg

TOTAL FRONT = 862.7 kg

TOTAL REAR = 595.9 kg

% of Total Weight = 59.1 %

% of Total Weight = 40.9 %

TOTAL VEHICLE WEIGHT = 1458.6 kg

Wheelbase = 2515 mm

Longitudinal C.G. from Center of Front Axle = 1027 mm

Impact Angle with Respect to Impactor = 90 degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (220 mm above ground) = 196 mm

2. LEVEL 2 (388 mm above ground) = 333 mm

3. LEVEL 3 (559 mm above ground) = 331 mm

4. LEVEL 4 (832 mm above ground) = 250 mm

5. LEVEL 5 (1216 mm above ground) = 30 mm

Maximum Post-Test Intrusion = 333 mm @ Level 2

OCCUPANTS:

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Type of Dummy	<u>EuroSID-1</u>	<u>N/A</u>
Restraints Used	<u>type II belt with airbag</u>	<u>N/A</u>

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

CAMERAS:

Number of Cameras: Onboard Vehicle	=	<u>3</u>
Offboard Vehicle	=	<u>6</u>
Deformable Barrier	=	<u>1</u>
TOTAL	=	<u>10</u>

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 0°

MDB DETAILS:

Wheelbase of Framework Carriage	= <u>2998 mm</u>
Track width (Front & Rear)	= <u>1500 mm</u>
C.G. Location Rearward of Front Axle	= <u>1015 mm</u>
C.G. Location From Center Line	= <u>.3 mm</u>
C.G. Location Above Ground Level	= <u>500 mm</u>

MDB WEIGHT:

Left Front	= <u>312.1 kg</u>	Left Rear	= <u>170.1 kg</u>
Right Front	= <u>326.1 kg</u>	Right Rear	= <u>156.5 kg</u>
TOTAL FRONT	= <u>638.2 kg</u>	TOTAL REAR	= <u>326.6 kg</u>
TOTAL MDB WEIGHT = <u>964.8 kg</u>			

Impact Angle (MDB C/L to Target Vehicle C/L) = 0° degrees

Impact Speed = Primary: 50.0 kph Secondary: 50.0 kph

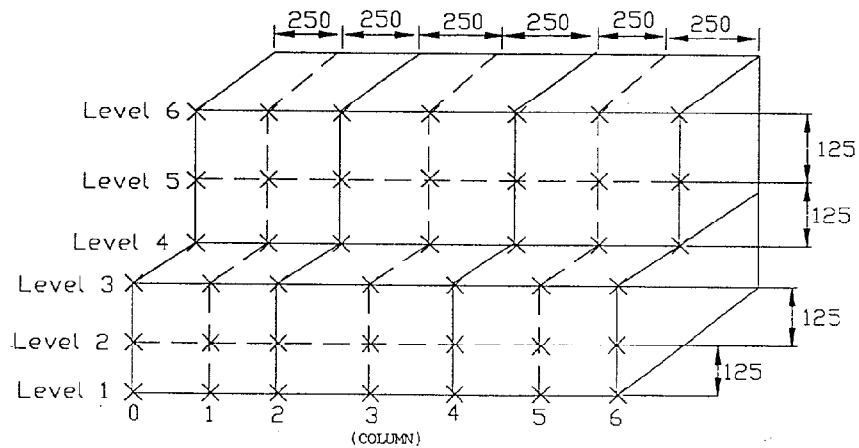
CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

Level 1	Column 6	= <u>335</u> mm
Level 2	Column 6	= <u>318</u> mm
Level 3	Column 6	= <u>281</u> mm
Level 4	Column 6	= <u>318</u> mm
Level 5	Column 6	= <u>316</u> mm
Level 6	Column 6 and 0	= <u>338</u> mm

INSTRUMENTATION:

Number of MDB Data Channels = 11

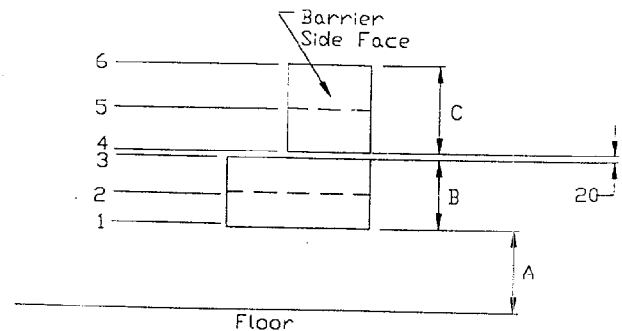


BARRIER FACE MEASUREMENTS POSITIONED AGAINST VEHICLE

Dimensions in mm

Right Side/Left Side

	Right	Left
(A)	297	300
(B)	240	242
(C)	241	242



DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT EUROSID-1</u>	<u>LEFT REAR EUROSID-1</u>
Head	<u>to none</u>	<u>N/A</u>
Arm	<u>to mid door & rear window</u>	<u>N/A</u>
Upper Rib	<u>to rear of door panel</u>	<u>N/A</u>
Mid Rib	<u>to rear of door panel</u>	<u>N/A</u>
Lower Rib	<u>to rear of door panel</u>	<u>N/A</u>
Abdomen	<u>to armrest</u>	<u>N/A</u>
Pelvis	<u>to below armrest</u>	<u>N/A</u>

DOOR OPENING:

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

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 2 mm forward Vertical: 7 mm high

ARM REST LOCATIONS:

Front: 250 mm from bottom of window

Rear: N/A

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 140 mm Front Seat Cushion: 152 mm

Left Rear Seat Back: 15 mm Rear Seat Cushion: 141 mm

GLAZING DAMAGE:

Struck side door glass and windshield cracked

PILLAR PERFORMANCE:

No separation

SILL SEPARATION:

No separation noted

OTHER NOTABLE IMPACT EFFECTS:

Frontal airbags did not deploy

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5
LATERAL IMPACT DUMMY (EUROSID-1) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

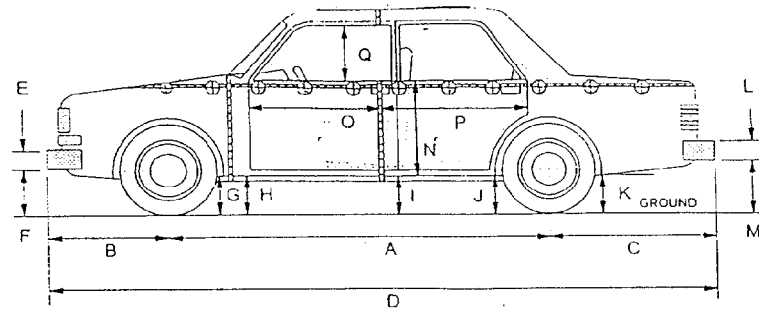
FIR FILTERED

Front EuroSID-1 ID #E1-213					
		Pos. Direct.		Neg. Direct	
		Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS					
Left Upper Rib (LUR) Y		131.5	31	39.6	36
Left Middle Rib (LMR) Y		170.1	31	-37.0	36
Left Lower Rib (LLR) Y		181.6	35	35.6	62
SPINE ACCELERATIONS					
Lower Lateral Y		67.9	41	18.8	78
PELVIS ACCELERATIONS					
Lateral Y		66.3	35	28.9	64

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)

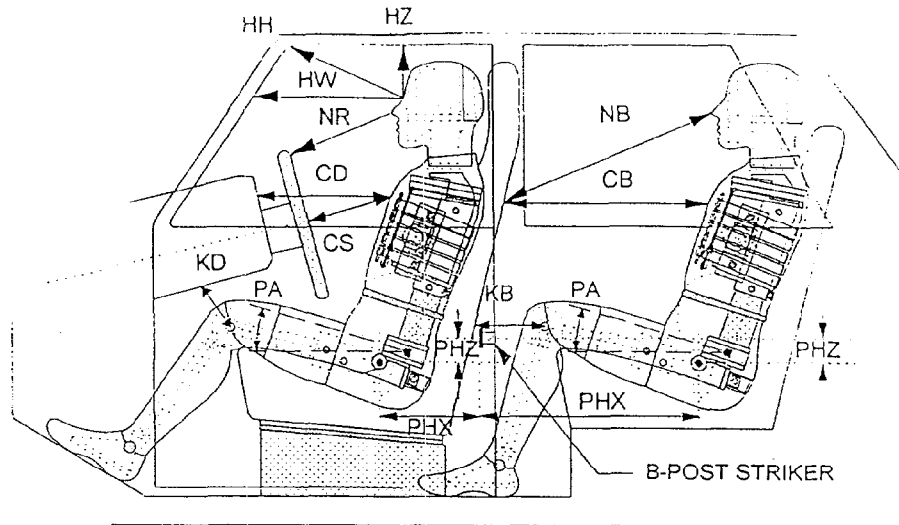
	PRE-TEST	POST-TEST	Δ CHANGE
A	2515	2491	24
B	940	934	6
C	912	909	3
D	4367	4334	33
E	145	145	0
F	336	344	8
G	140	131	9
H	140	130	10
I	138	128	10
J1/J2	144/138	167/152	23/14
K	204	212	8
L	285	285	0
M	478	497	19
N	670	584	86
O	659	610	49
P	627	603	24
Q	600	315	285
R	4065	4060	5
S	4065	4010	55
T	1710	1529	181

DATA SHEET NO. 7

EUROSID IMPACT DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997



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

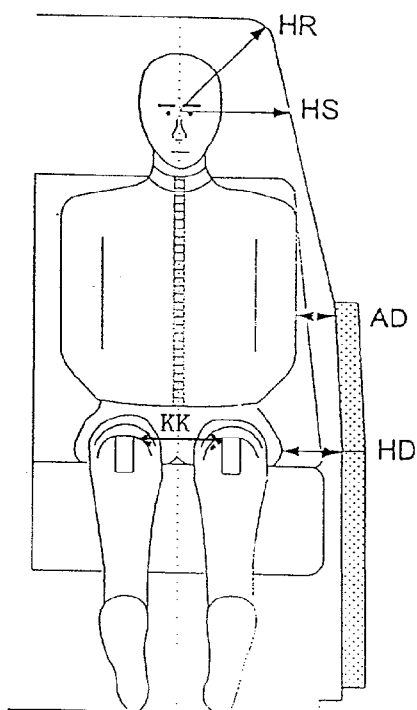
	FRONT EUROSID-1 ID #E1-213
HH	410
HW	568
HZ	121
NR	438
CD	572
CS	366
KDL (KDA°)	148 (21.9°)
KDR (KDA°)	150 (27.6°)
PA°	N/A
PHX	436
PHZ	210

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

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

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997



NOTE: All dimensions are in mm

FRONT EUROSID-1 ID #E1-213	
HR	148
HS	258
AD	74
HD	142
KK	288

DATA SHEET NO. 9
DUMMY POSITIONING - DRIVER

Driver H-Point

HP to Striker X = 415

HP to Striker Z = 222

Driver Dummy Position

HP to Striker X = 436

HP to Striker Z = 210

H-Point Machine

Left Knee = 125°

Right Knee = 123°

Left Foot = 90°

Right Foot = 91°

Left Leg = 184°

Right Leg = 191°

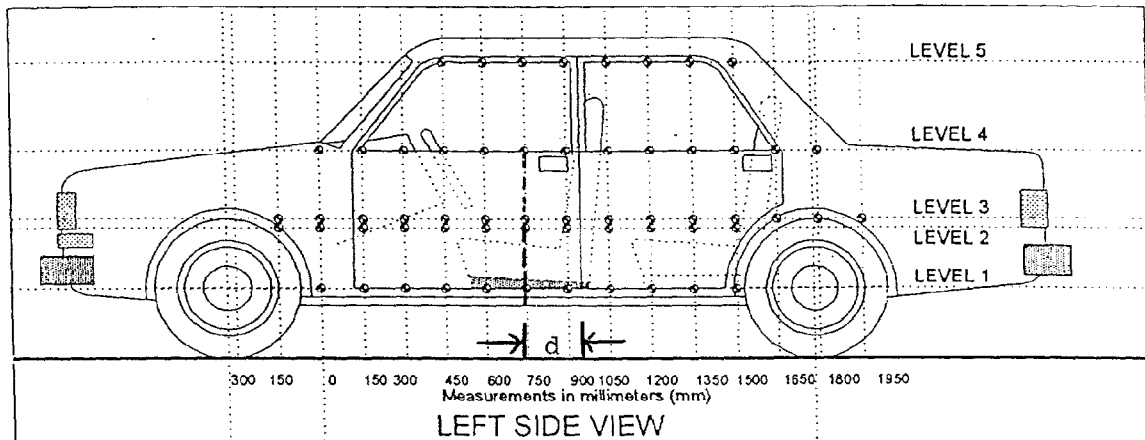
Hip Angle = 93°

Back Angle = 25°

DATA SHEET NO. 10
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 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

Lateral Impact Line

$d = 306$ mm rearward of front seat anchorage point

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

MEASUREMENTS ALONG THE VERTICAL IMPACT LINE

Level 1 @ Axle Centerline Height

(or Sill Top Height) = 220 mm

Level 2 @ Occupant H-Point = 388 mm

Level 3 @ Mid Door = 559 mm

Level 4 @ Window Sill = 832 mm

Level 5 @ Window Top = 1216 mm

Vehicle Pitch Angle: .2° nose down (measured at the right side sill)

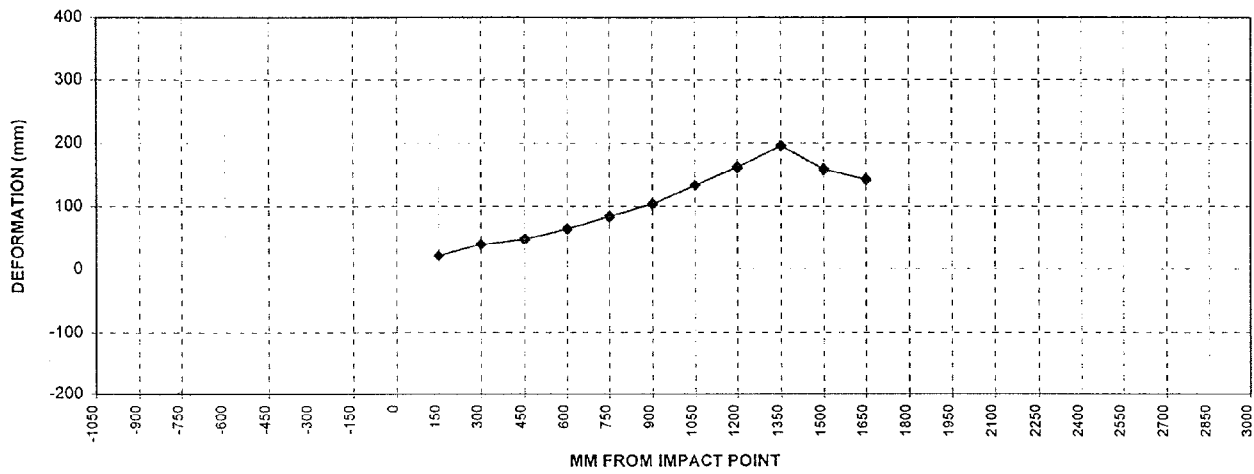
Vehicle Roll Angle: .2° right side down (measured at the center of truck)

DATA SHEET NO. 11
VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	615	636	21
300	617	656	39
450	625	673	48
600	627	691	64
750	628	712	84
900	632	736	104
1050	630	764	134
1200	627	789	162
1350	618	814	196
1500	610	769	159
1650	605	748	143
1800			
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)



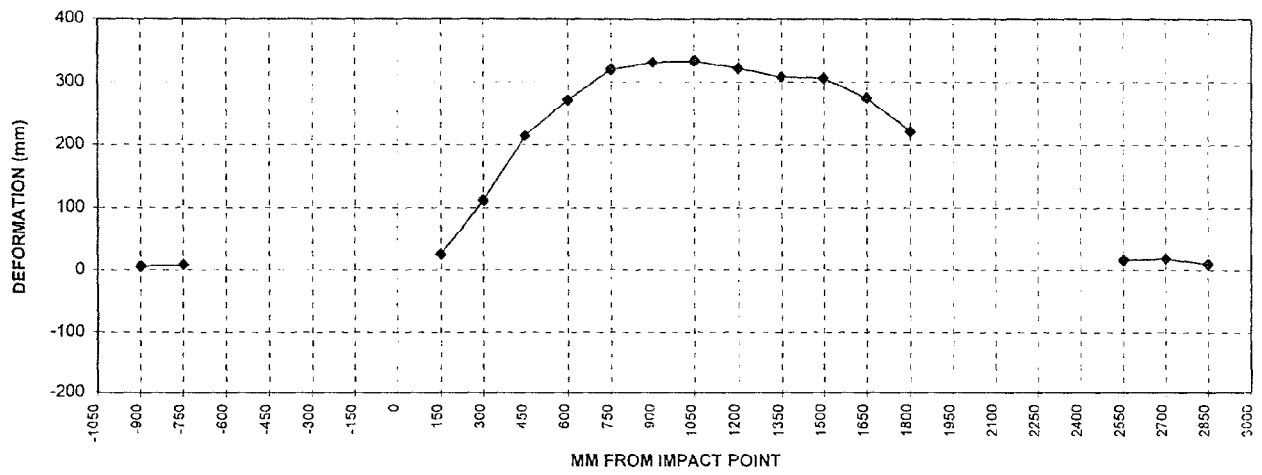
LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 2 - Occupant H Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	636	642	6
-750	583	591	8
-600			
-450			
-300			
-150			
0 (impact point)			
150	583	608	25
300	584	696	112
450	586	800	214
600	587	859	272
750	587	907	320
900	586	917	331
1050	586	919	333
1200	585	907	322
1350	584	892	308
1500	582	888	306
1650	580	855	275
1800	578	799	221
1950			
2100			
2250			
2400			
2550	591	607	16
2700	614	632	18
2850	660	670	10
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



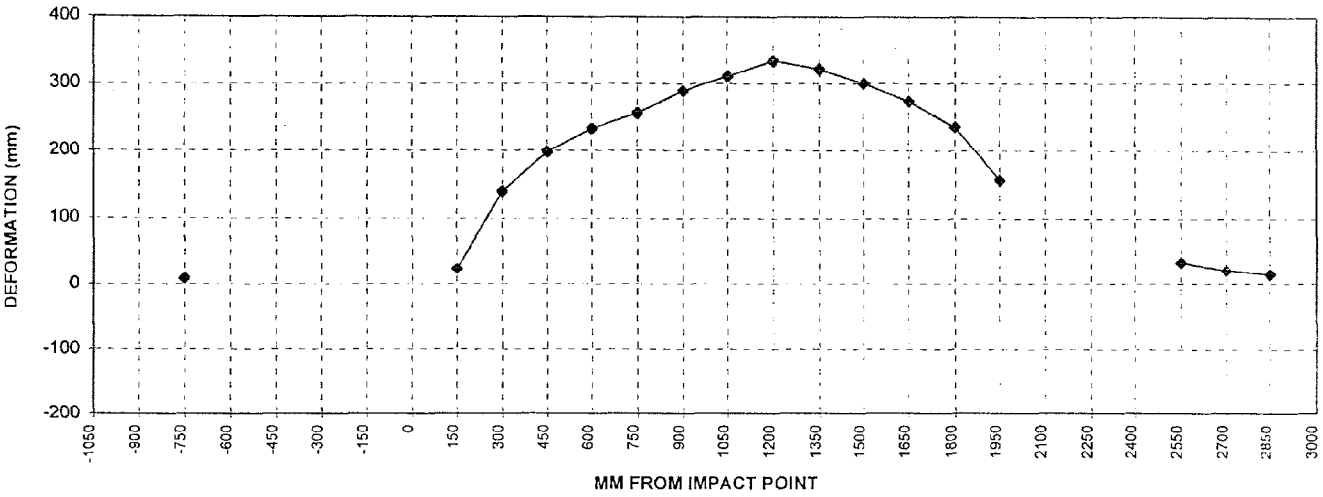
LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750	587	596	9
-600			
-450			
-300			
-150			
0 (impact point)			
150	572	596	24
300	574	713	139
450	577	775	198
600	578	811	233
750	581	837	256
900	580	869	289
1050	579	890	311
1200	577	910	333
1350	575	896	321
1500	573	873	300
1650	569	842	273
1800	568	803	235
1950	576	732	156
2100			
2250			
2400			
2550	586	620	34
2700	622	643	21
2850	667	682	15
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



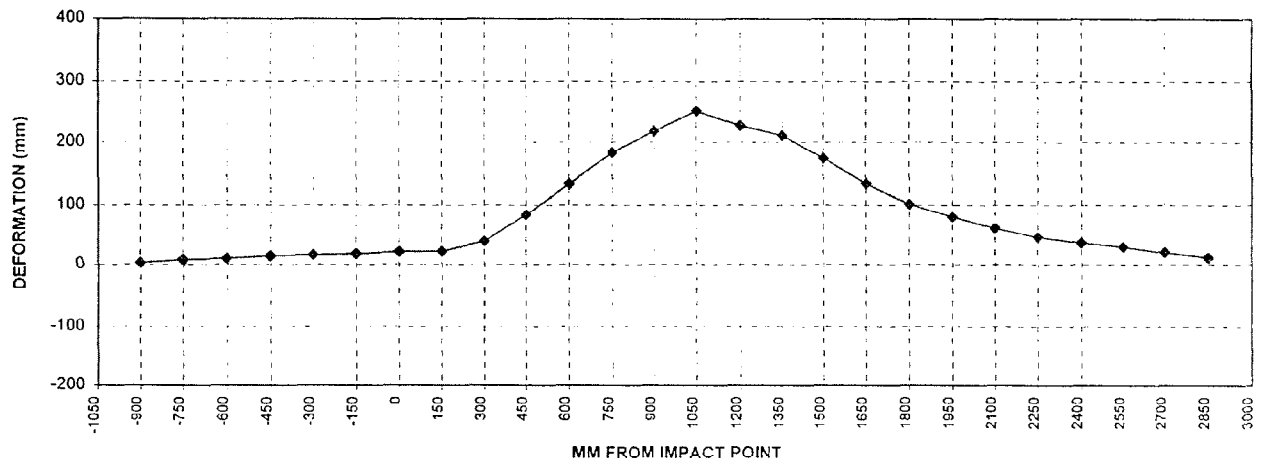
LEVEL 3 - MID DOOR

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900	730	733	3
-750	695	703	8
-600	671	681	10
-450	650	664	14
-300	640	656	16
-150	639	657	18
0 (impact point)	640	661	21
150	638	660	22
300	638	676	38
450	641	724	83
600	643	777	134
750	644	828	184
900	644	862	218
1050	645	895	250
1200	648	875	227
1350	651	862	211
1500	655	830	175
1650	658	793	135
1800	666	767	101
1950	673	752	79
2100	681	741	60
2250	690	735	45
2400	702	738	36
2550	713	742	29
2700	743	763	20
2850	777	788	11
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



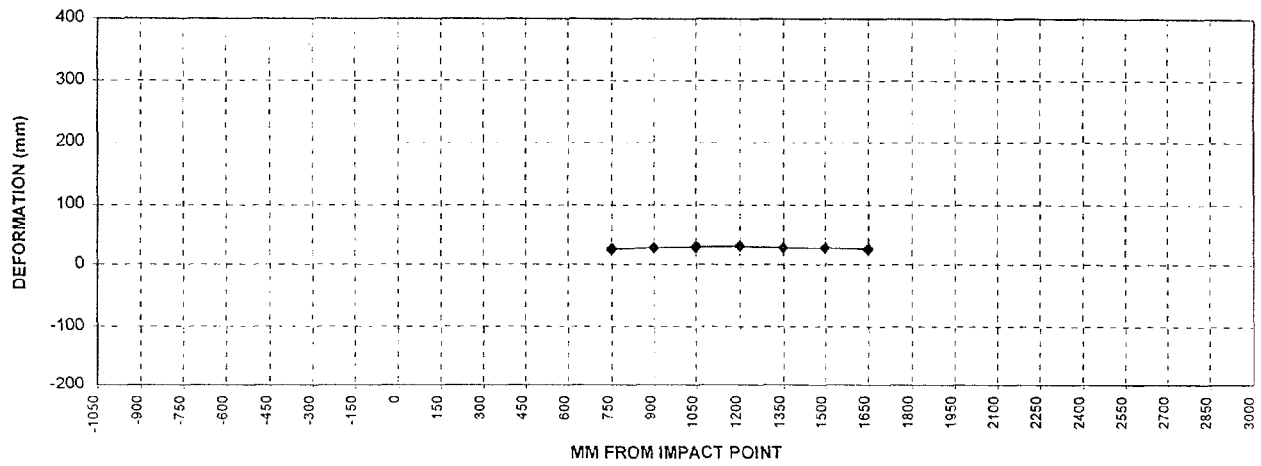
LEVEL 4 - WINDOW SILL

DATA SHEET NO. 11 (Cont'd)
VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750	884	909	25
900	884	911	27
1050	887	916	29
1200	892	922	30
1350	898	925	27
1500	909	936	27
1650	925	950	25
1800			
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			

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

VEHICLE EXTERIOR STATIC CRUSH (Cont'd)



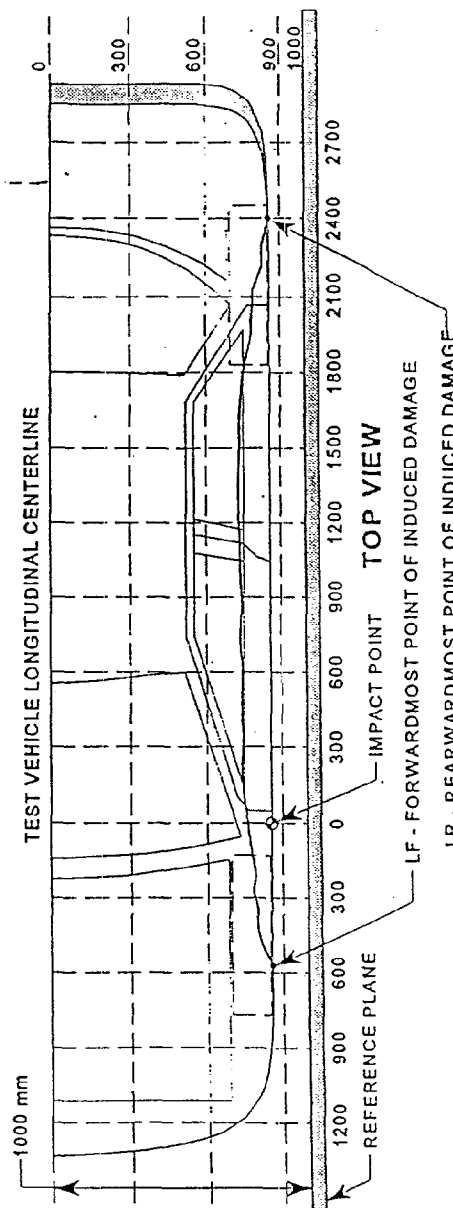
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 12
VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

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



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (toward rear of vehicle) is considered positive (+).

Maximum Crush Level: 832 Location: 1050 mm Depth: 333 mm

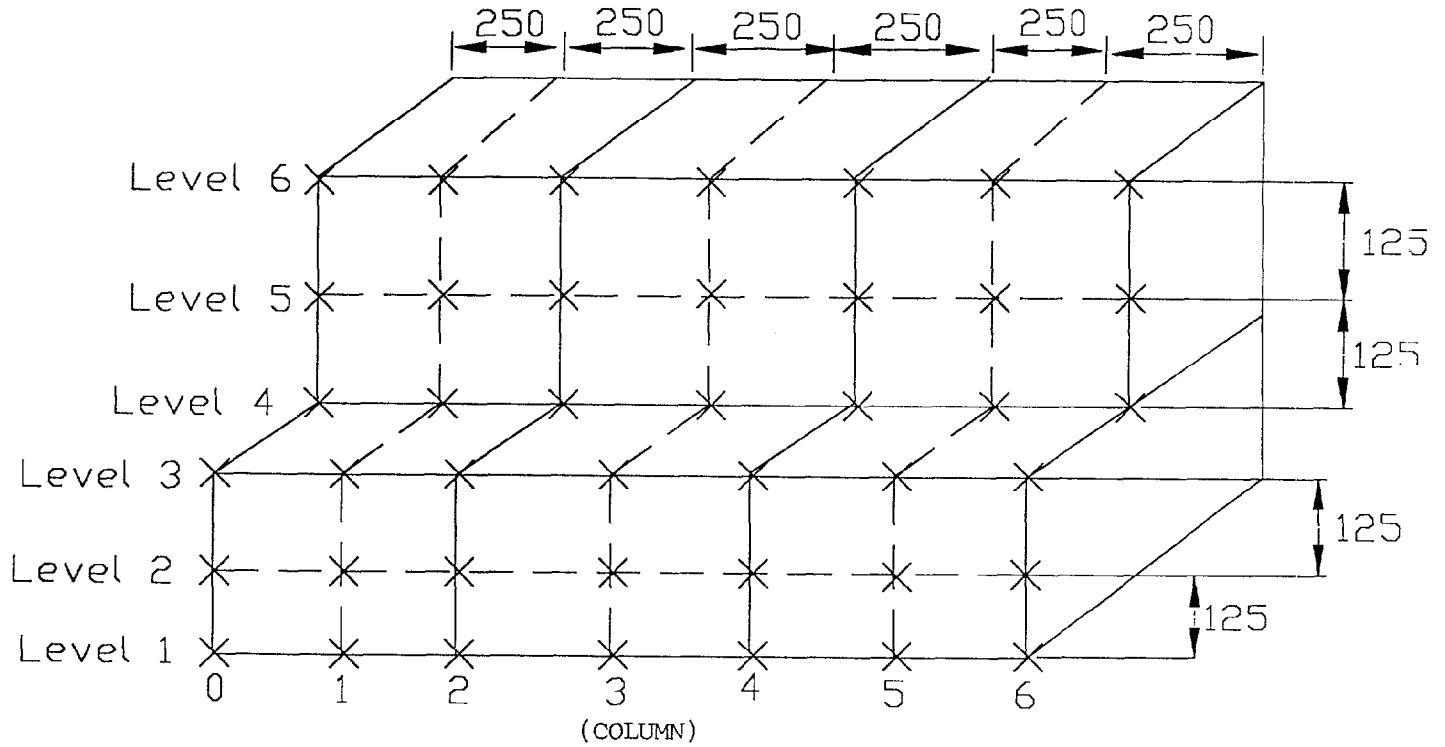
LEVEL	DPD MEASUREMENTS	STATIC CRUSH (mm)
3	1. (LF = -900 mm)	0
4	2. -150 mm	18
2	3. 610 mm	276
3	4. 1340 mm	329
4	5. 2115 mm	60
3	6. (LR = 2850 mm)	0

DATA SHEET NO. 13

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997



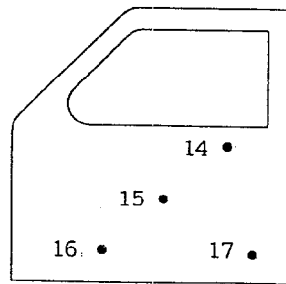
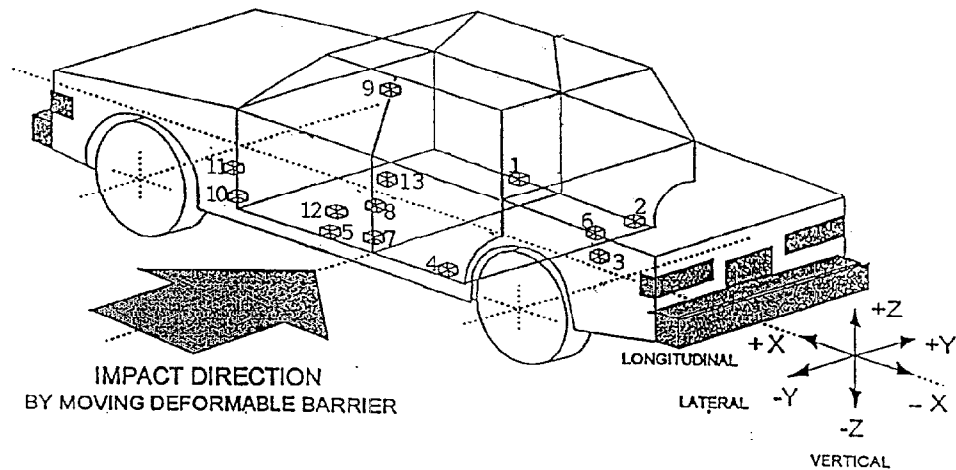
Post-Test Static Deformation (mm)

LEVEL	COLUMN						
	0	1	2	3	4	5	6
6	244	184	141	96	132	220	335
5	194	149	113	62	104	189	318
4	203	128	75	65	108	177	281
3	258	165	111	93	136	213	318
2	237	181	113	73	93	177	316
1	234	215	156	85	57	200	338

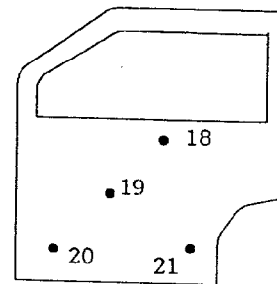
DATA SHEET 14
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997



Front



Rear

- | | | |
|----------------------------------|---------------------------------|----------------------------|
| 1 - Right Side Sill @ Front Seat | 10 - Left Lower A Post | 18 - Left Rear Upper |
| 2 - Right Side Sill @ Rear Seat | 11 - Left Mid A Post | 19 - Left Rear Mid |
| 3 - Rear Floorpan Above Axle | 12 - Driver Seat Track | 20 - Left Rear Lower |
| 4 - Left Side Sill @ Rear Seat | 13 - Vehicle C.G. | 21 - Left Rear, Rear Lower |
| 5 - Left Side Sill @ Front Seat | 14 - Left Front Door Upper | |
| 6 - Right Rear Occ. Compartment | 15 - Left Front Door Mid | |
| 7 - Left Lower B Post | 16 - Left Front Door Lower | |
| 8 - Left Mid B Post | 17 - Left Front Door Rear Lower | |
| 9 - Left Upper B Post | | |

DATA SHEET NO. 14
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY
Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 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.	
1	Right Side Sill @ Front Seat	2210	668	157	3.9	.9	13.2	2.1	3.2	3.4	13.2
2	Right Side Sill @ Rear Seat	1525	664	175	4.7	.8	13.9	1.9	2.8	4.1	14.2
3	Rr. Floorpan Above Axle	922	0	408	5.9	5.6	15.9	2.1	5.7	4.0	16.1
4	Left Side Sill @ Rr. Seat	1539	-665	153	---	---	29.9	22.9	---	---	---
5	Left Side Sill @ Frt. Seat	2164	-669	150	---	---	44.1	17.8	---	---	---
6	Right Rear Occupant Compartment	1665	332	251	---	---	21.2	7.2	---	---	---
7	Left Lower B Post	1669	-713	548	---	---	94.2	52.8	---	---	---
8	Left Mid B Post	1632	-704	871	---	---	53.3	20.5	---	---	---
9	Left Upper B Post	1611	-554	1238	---	---	26.5	8.1	---	---	---
10	Left Lower A Post	2780	-668	263	---	---	11.4	2.3	---	---	---
11	Left Mid A Post	2982	-723	766	---	---	12.5	2.3	---	---	---
12	Driver Left Seat Track	1905	-550	200	---	---	51.0	17.3	---	---	---
13	Vehicle CG	2155	24	340	**	**	**	**	**	**	**
14	Left Front Door Upper	1889	-720	872	---	---	153.6	125.1	---	---	---
15	Left Front Door Mid	2134	-728	560	---	---	118.4	67.0	---	---	---
16	Left Front Door Lower	2369	-667	388	---	---	134.9	77.4	---	---	---
17	Left Front Door Rear Lower	1887	-712	394	---	---	145.7	58.9	---	---	---
18	Left Rear Quarter Panel Upper	1486	-694	807	---	---	50.2	19.9	---	---	---
19	Left Rear Quarter Panel Mid	1385	-696	739	---	---	75.1	29.6	---	---	---
20	Left Rear Quarter Panel Lower	1266	-732	658	---	---	76.5	34.7	---	---	---
21	Left Rear Quarter Panel Lower	1581	-708	607	---	---	76.6	36.4	---	---	---

** No valid data collected

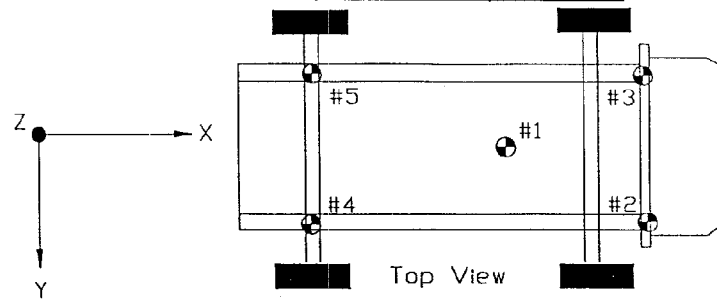
*Reference: X - Rear Bumper (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 15

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997



Acce l. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	2220	0	462				
	Longitudinal (X)	---	---	---	.5	162	-17.5	45
	Lateral (Y)	---	---	---	2.8	48	-.9	137
	Vertical (Z)	---	---	---	6.4	12	-4.2	45
	Resultant (R)	---	---	---	18.1	45	---	---
2	Right Rear Frame Member	215	595	670				
	Right Longitudinal (X)	---	---	---	.8	125	-19.8	46
	Right Lateral (Y)	---	---	---	2.3	84	1.7	49
3	Left Rear Frame Member	230	-525	670				
	Left Longitudinal (X)	---	---	---	.8	185	-18.1	44
	Left Lateral (Y)	---	---	---	1.7	36	-2.1	58
4	Right Front Face	3650	765	770				
	Right Face (X)	---	---	---	.9	168	-19.8	34
	Right Face (Y)	---	---	---	2.2	56	-.6	113
5	Left Front Face	3655	-780	770				
	Left Face (X)	---	---	---	1.0	171	-18.0	9
	Left Face (Y)	---	---	---	.5	69	-3.6	33

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

DATA SHEET NO. 16
HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 1997/Mitsubishi/Eclipse/RS

Test Date: October 16, 1997

View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
	X	Y	Z			
Real Time					13	
Left Overall	-100	-6120	1760	90°	13	1010
Left Impact Oblique	-3850	-7770	1150		25	617
Left Pointer Close-up	-1660	-2350	770		35	775
Onboard Hood					13	1005
Onboard Hood Angle					13	922
Onboard Rear					13	1190
Right Overall	-400	7770	1670	90°	13	1020
Right Impact Oblique	-5170	7760	760		25	1015
Top Overall	600	0	5000		8	1053
Top Impact	100	0	5000		13	NR
Cart					13	1000

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

APPENDIX A - PHOTOGRAPHS

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



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

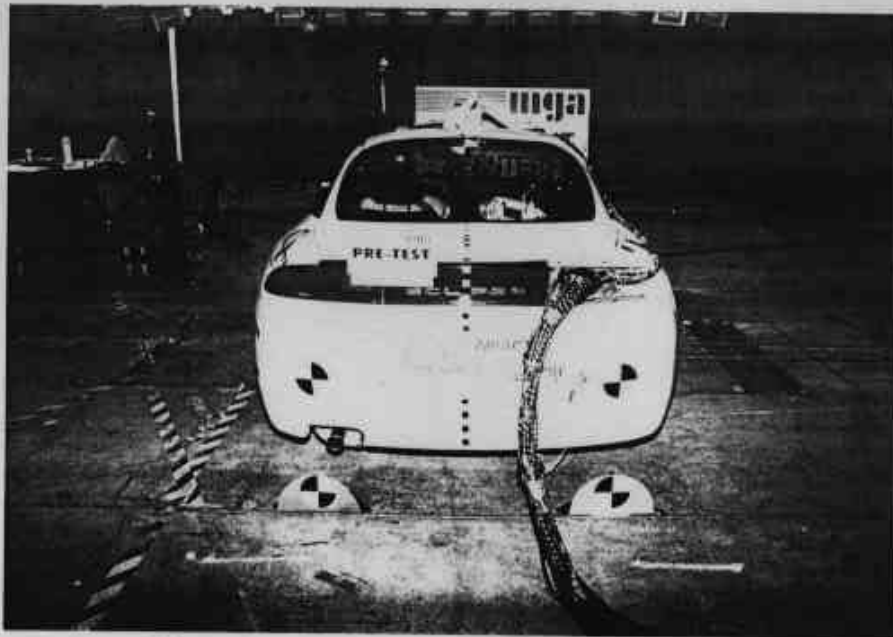


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



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



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



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

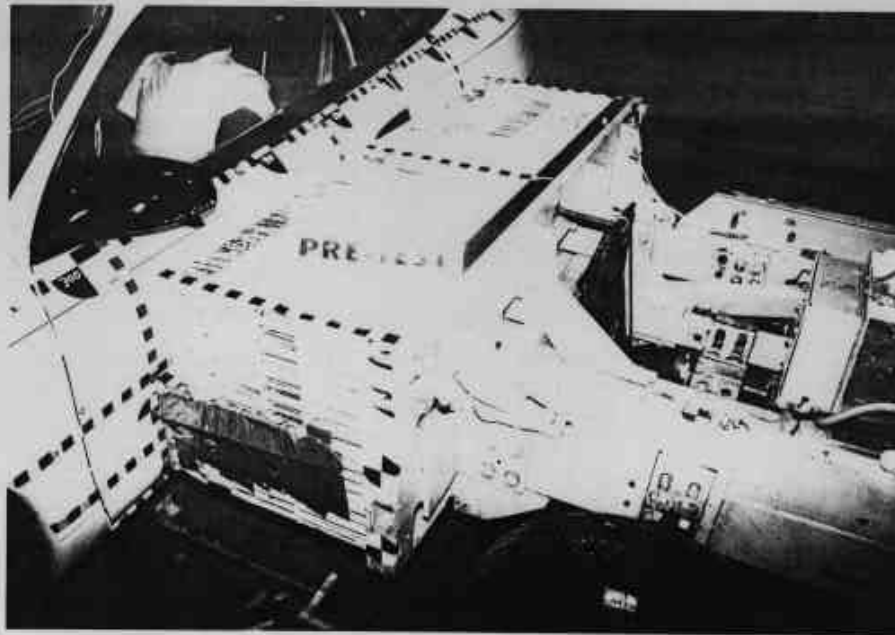


Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (left side)

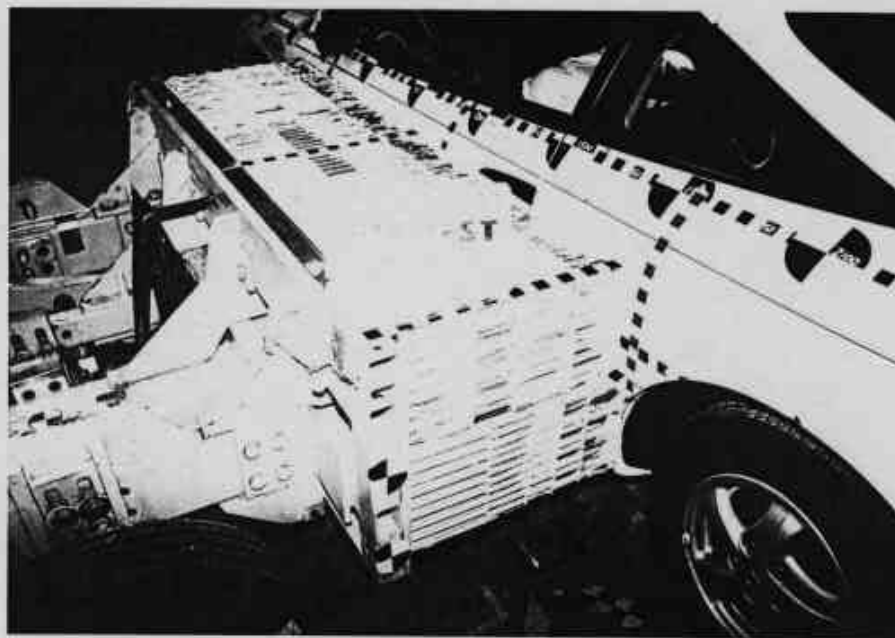


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

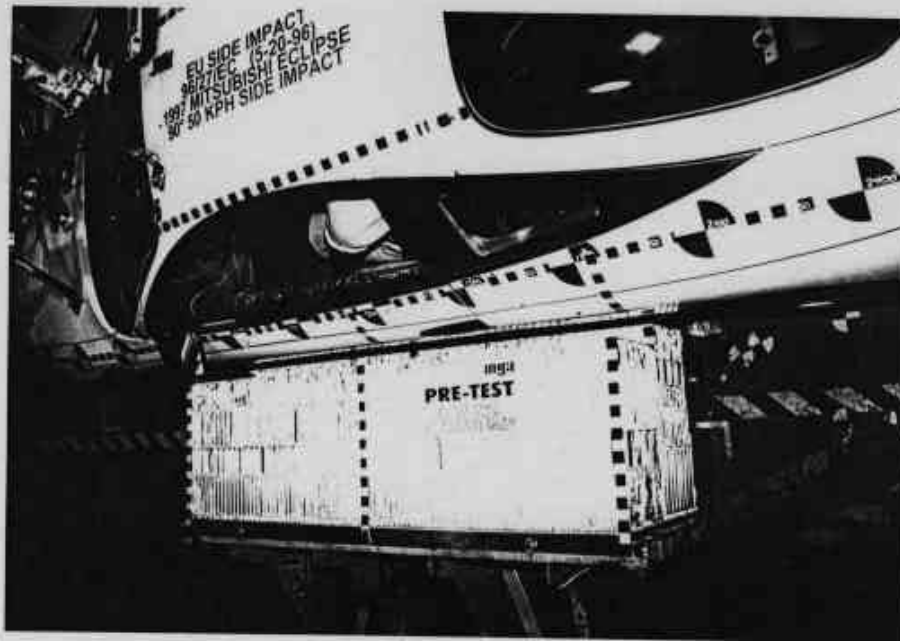


Photo No. A-9 - Pre-Test MDB Position Against Vehicle Overhead View

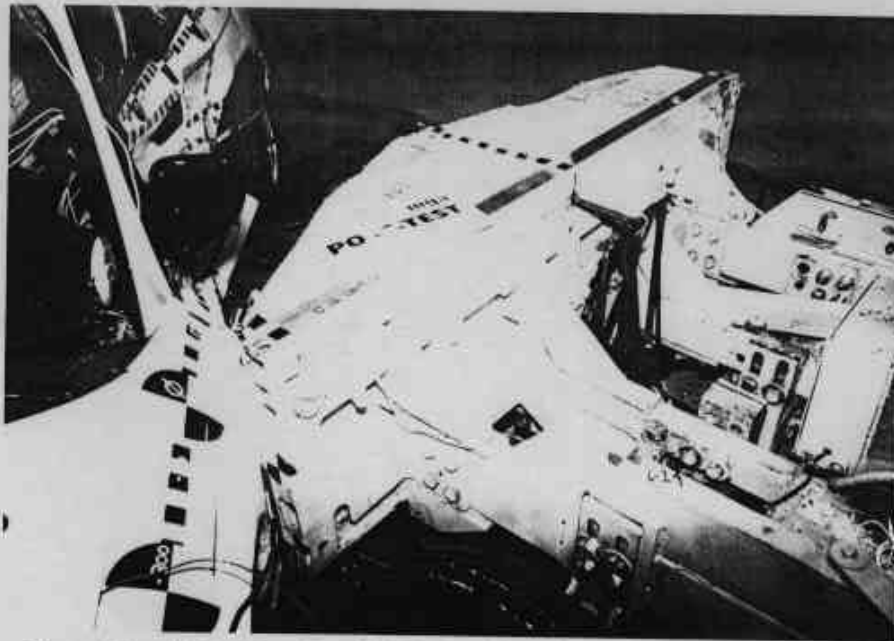


Photo No. A-10 - Post-Test MDB Positioned Against Vehicle (left side)

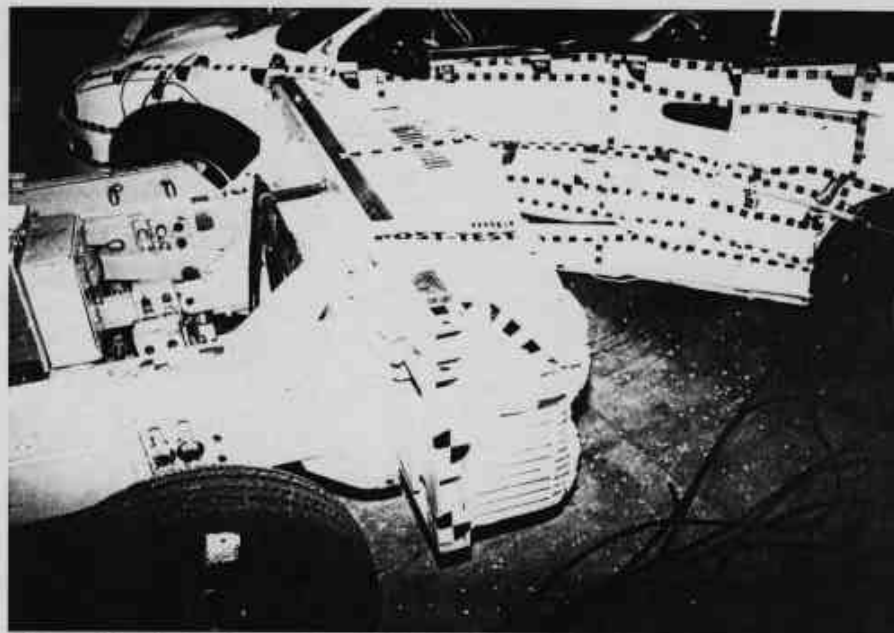


Photo No. A-11 - Post-Test MDB Positioned Against Vehicle (right side)

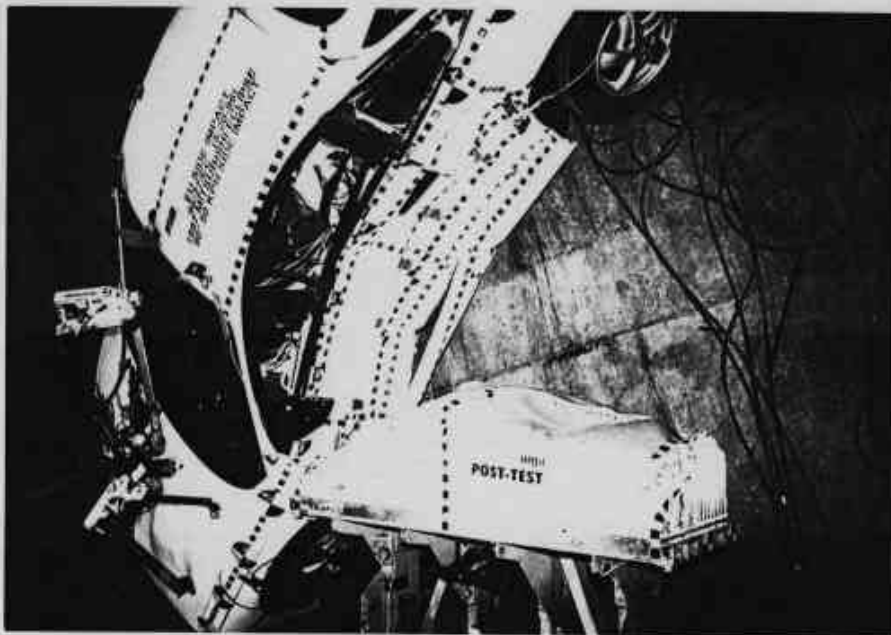


Photo No. A-12 - Post-Test Vehicle Overhead View

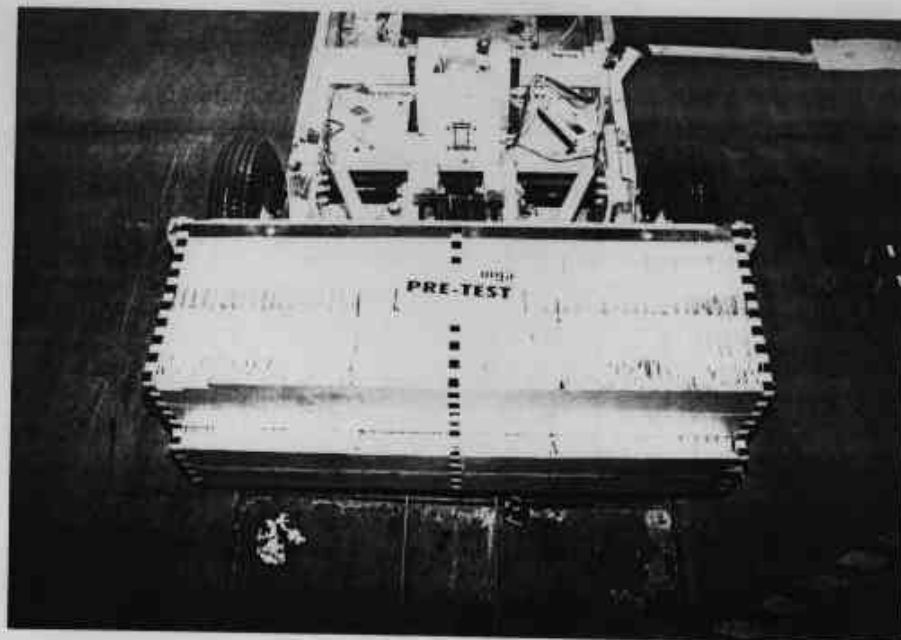


Photo No. A-13 - Pre-Test MDB Top View

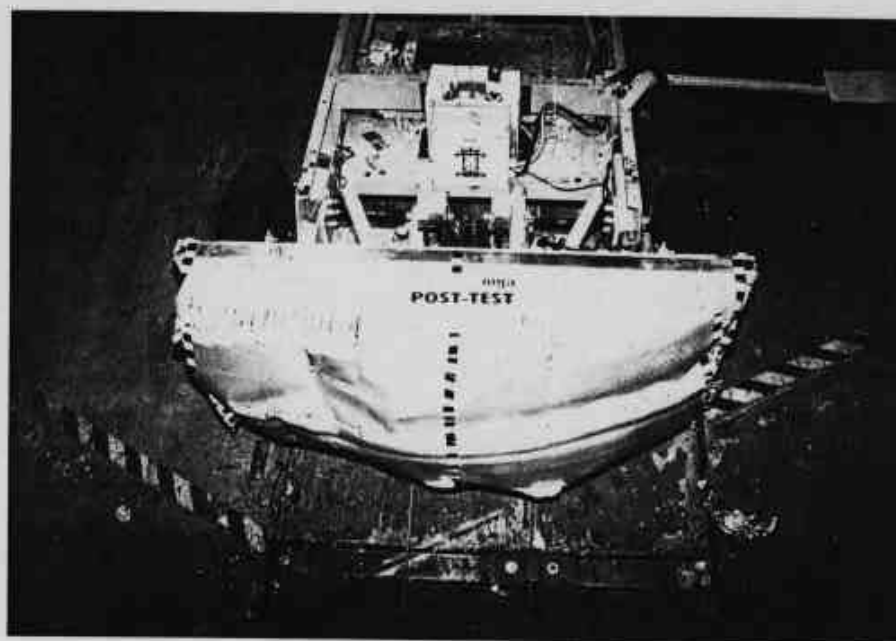


Photo No. A-14 - Post-Test MDB Top View

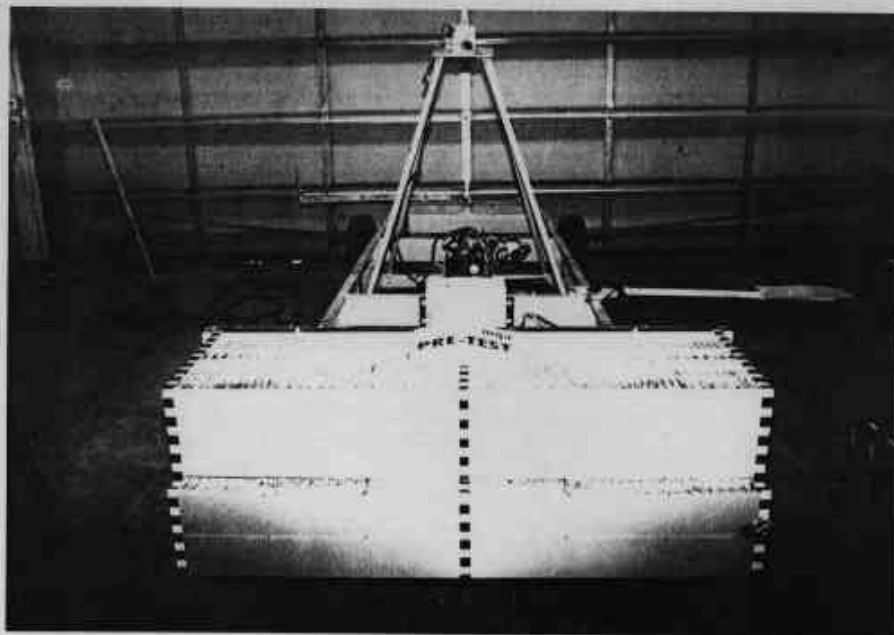


Photo No. A-15 - Pre-Test MDB Front View

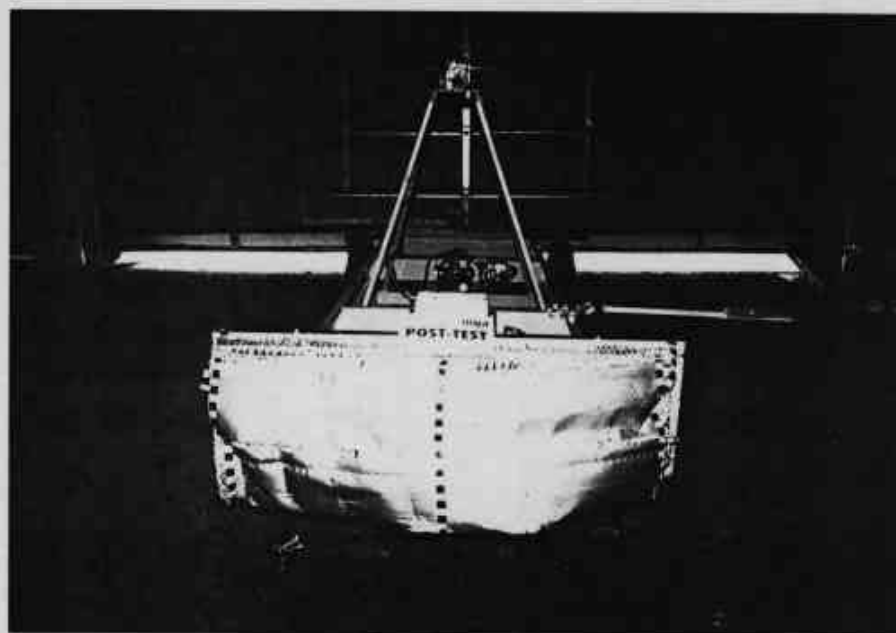


Photo No. A-16 - Post-Test MDB Front View



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



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

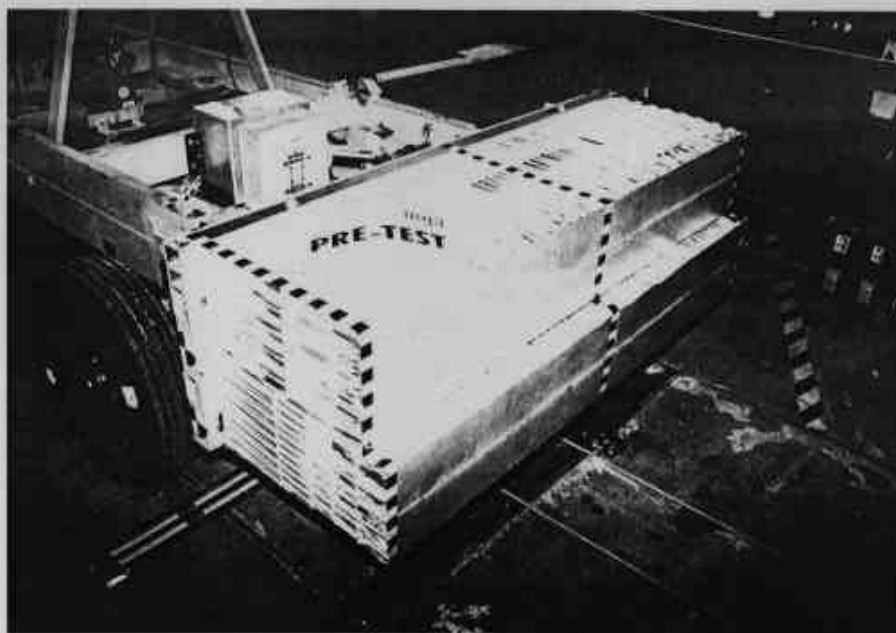


Photo No. A-19 - Pre-Test MDB Right Side View

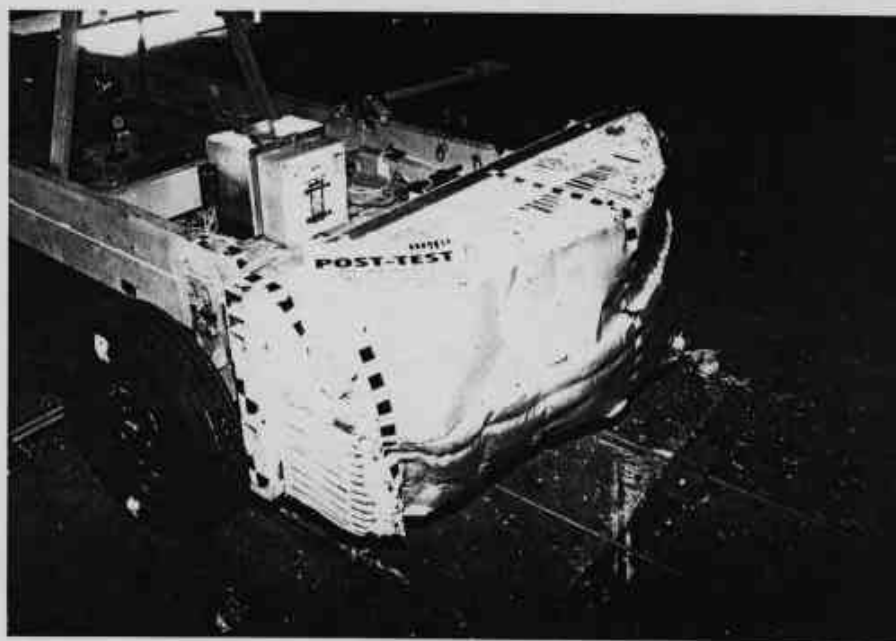


Photo No. A-20 - Post-Test MDB Right Side View

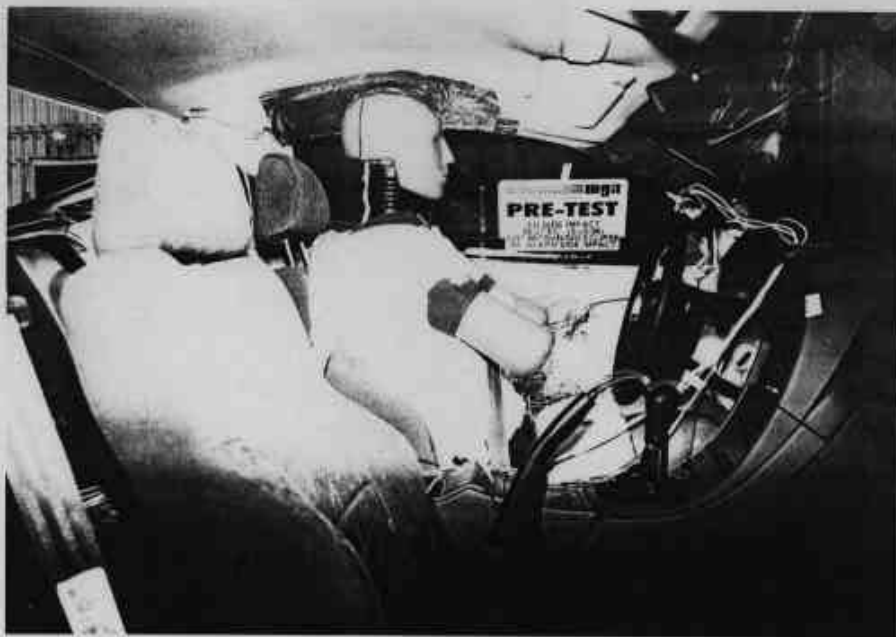


Photo No. A-21 - Pre-Test Driver Dummy Right Side View

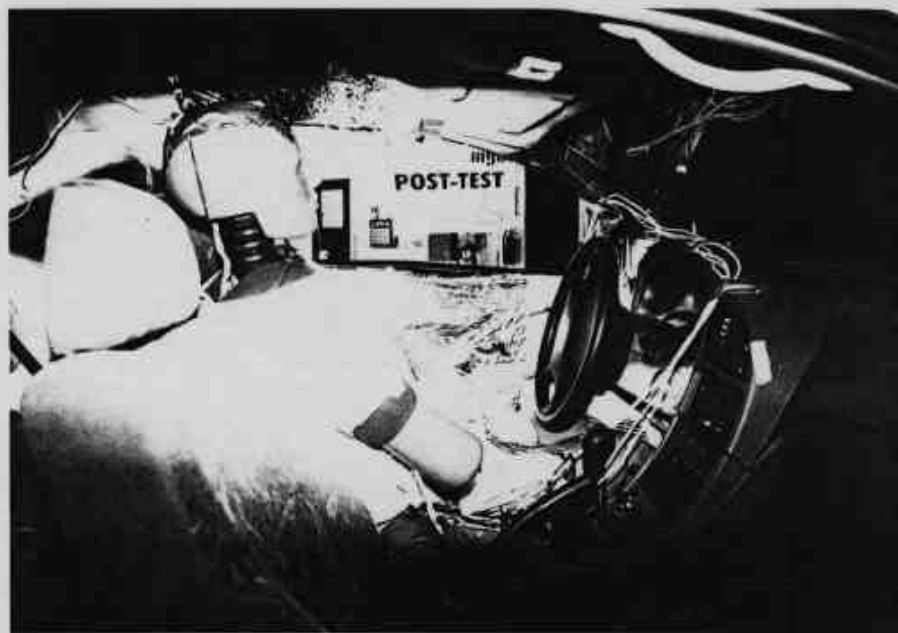


Photo No. A-22 - Post-Test Driver Dummy Right Side View

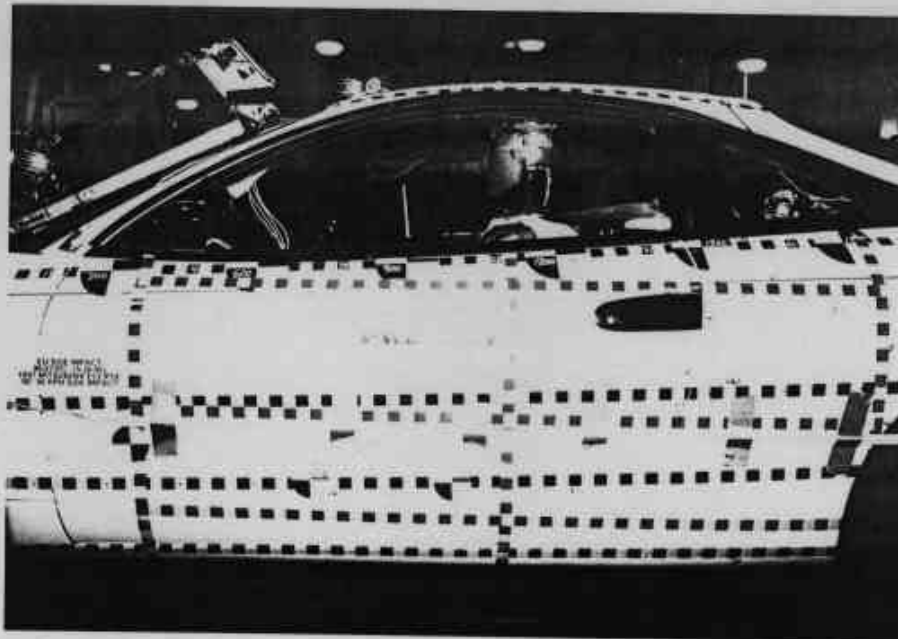


Photo No. A-23 - Pre-Test Driver Dummy Left Side View

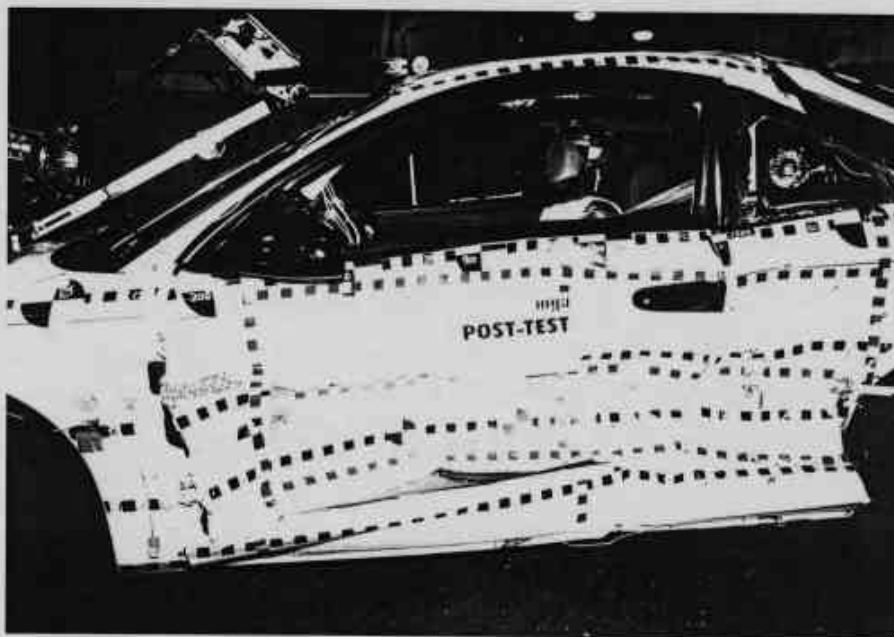


Photo No. A-24 - Post-Test Driver Dummy Left Side View

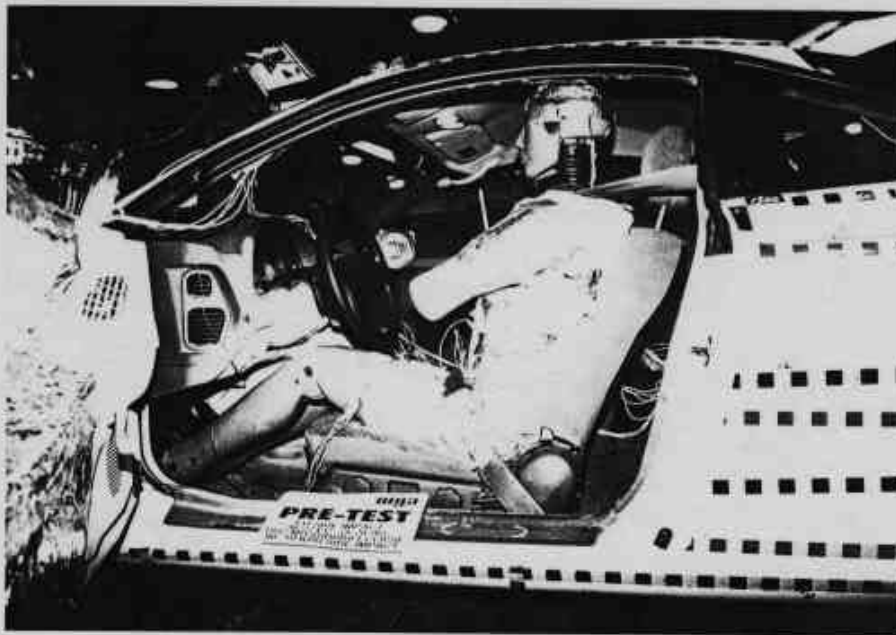


Photo No. A-25 - Pre-Test Driver Dummy Left Side View (Door Open)



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



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



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



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



Photo No. A-30 - Pre-Test Left Rear Passenger Seat Ballast



Photo No. A-31 - Pre-Test Left Front Impact Point on Vehicle



Photo No. A-32 - Post-Test Left Front Impact Point on Vehicle

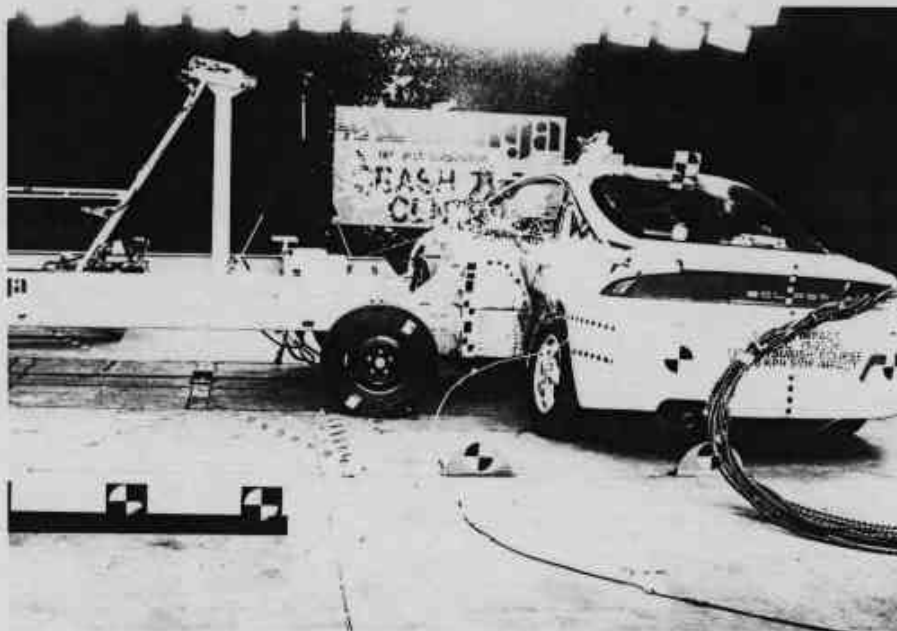


Photo No. A-33 - Impact



Photo No. A-34 - Left Front Attitude Point



Photo No. A-35 - Right Front Attitude Point

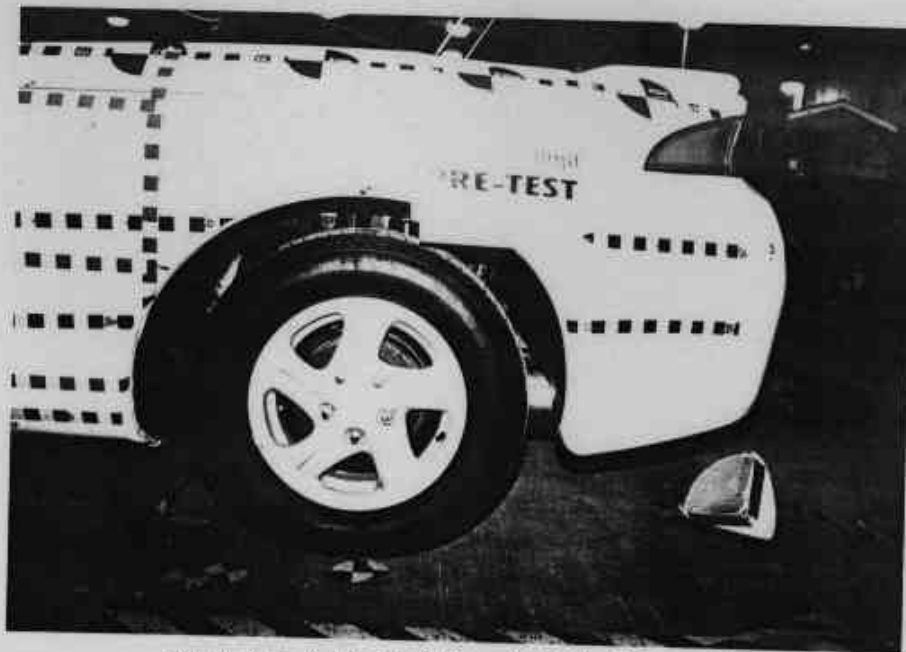


Photo No. A-36 - Left Rear Attitude Point



Photo No. A-37 - Right Rear Attitude Point

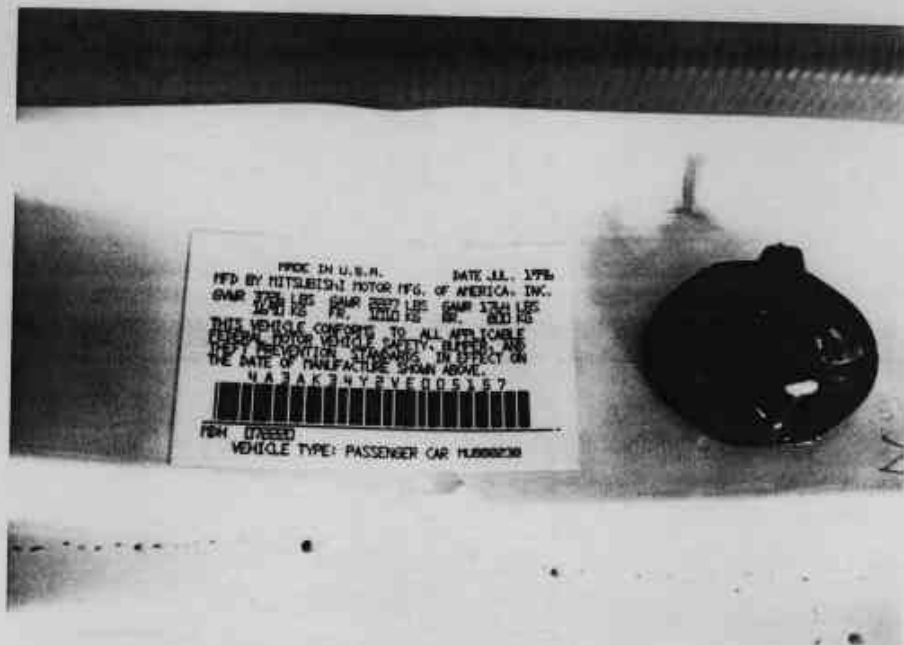


Photo No. A-38 - Vehicle Certification Label



Photo No. A-39 - Tire Placard

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* No valid data collected

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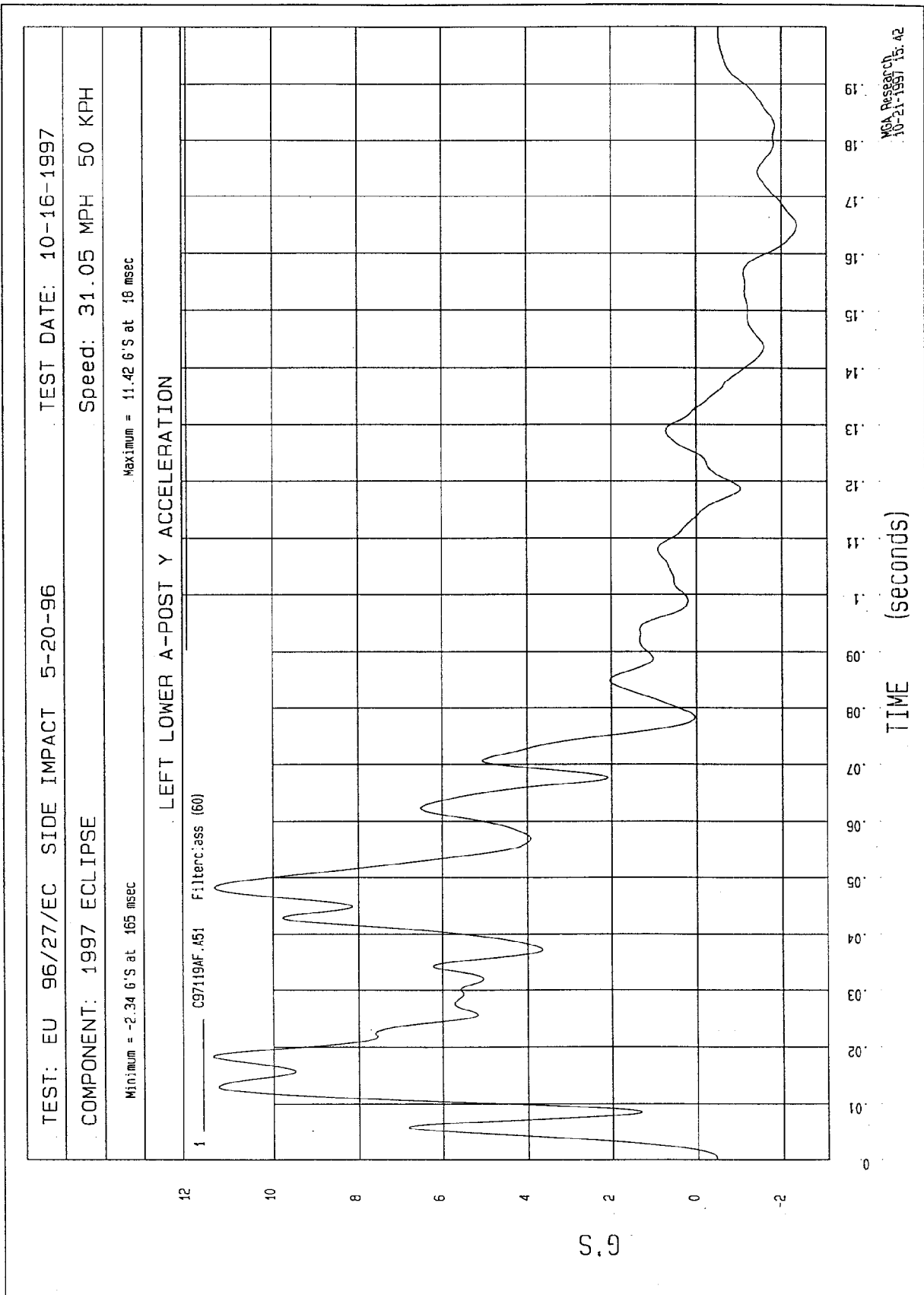
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TEST: EU 96/27/EC SIDE IMPACT 5-20-96 TEST DATE: 10-16-1997

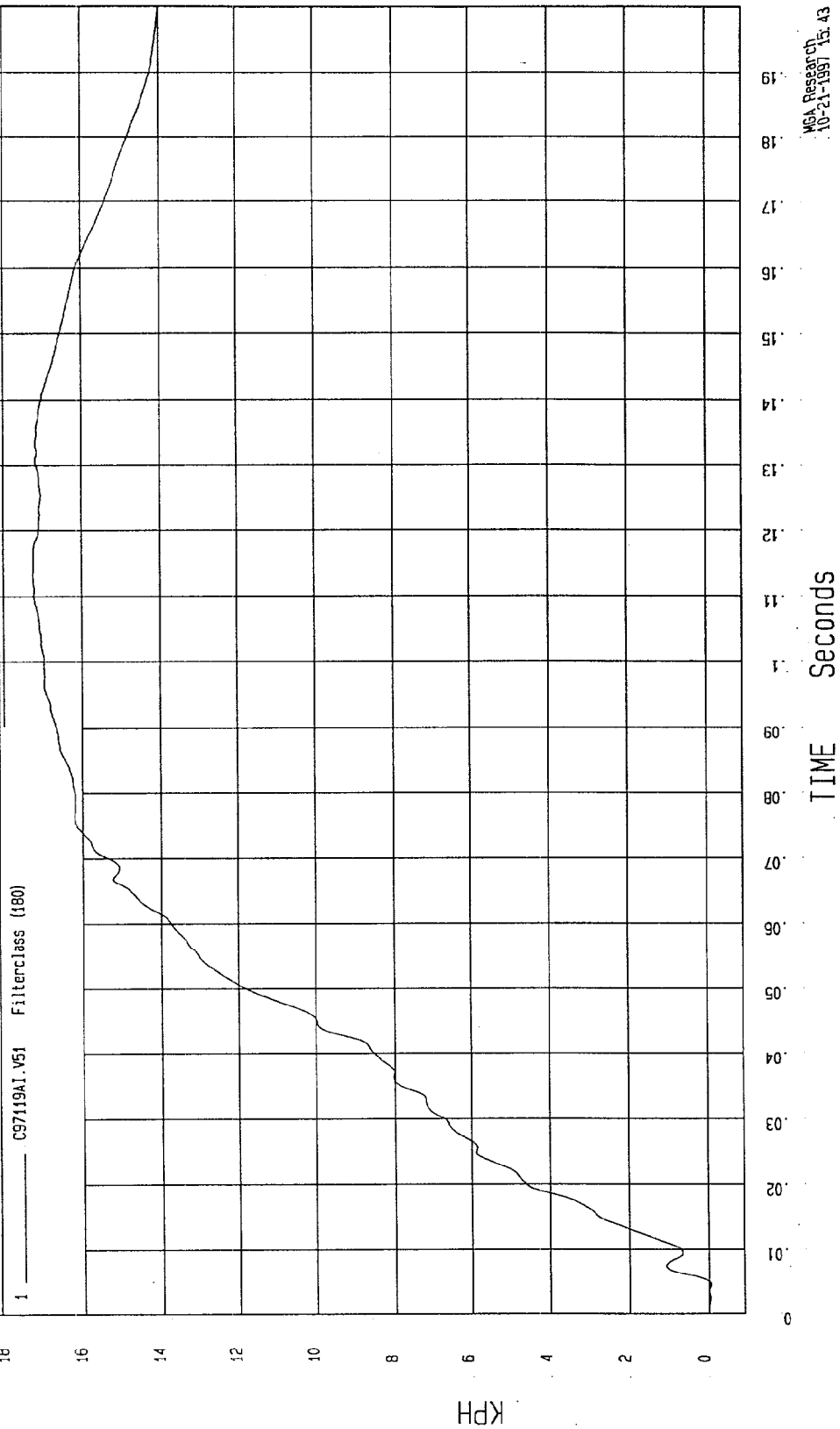
SPEED: 31.05 MPH 50 KPH

COMPONENT: 1997 ECLIPSE

Minimum = -5.28E-02 KPH at 4 msec

Maximum = 17.26 KPH at 113 msec

LEFT LOWER A-POST Y VELOCITY



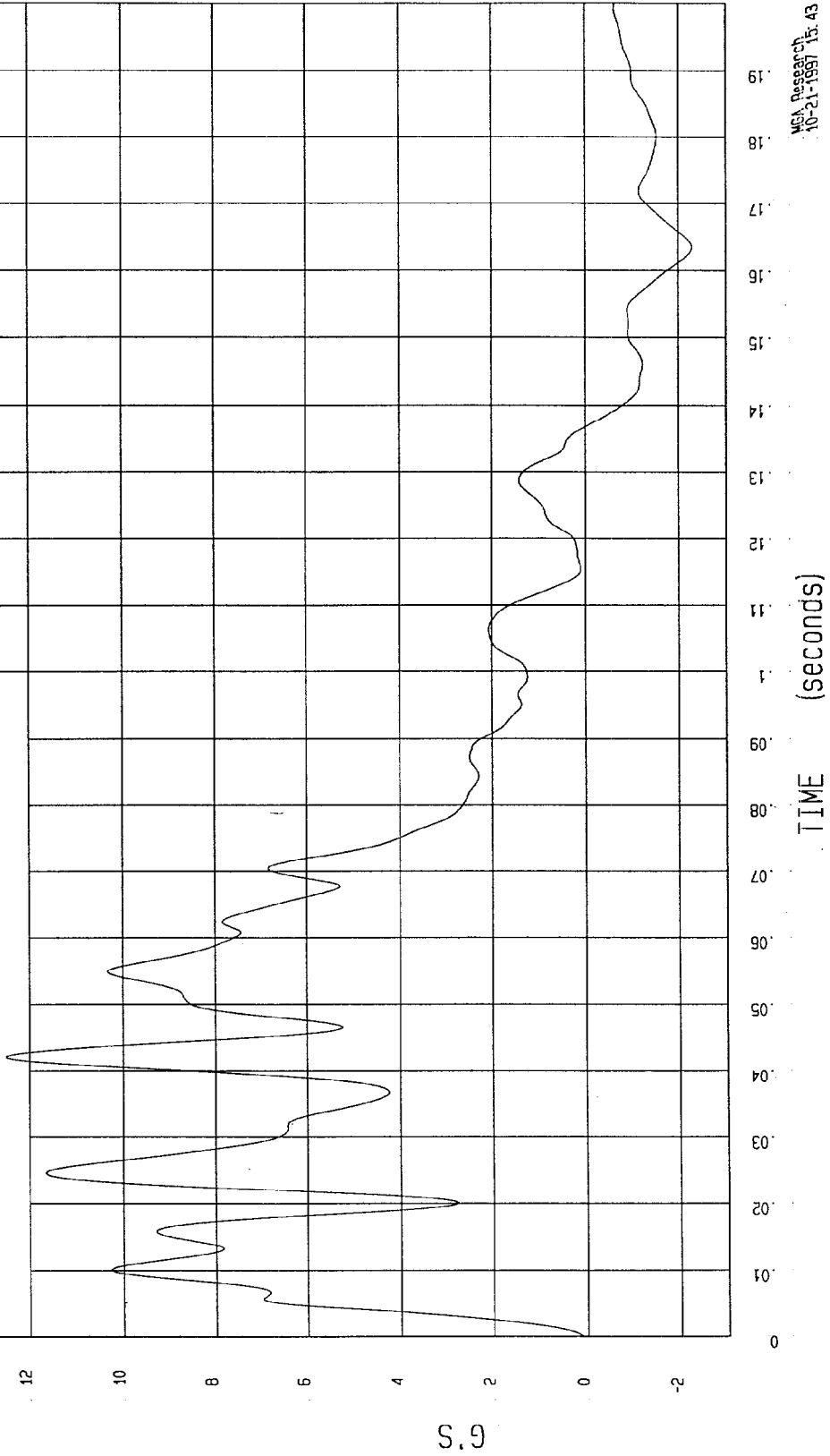
TEST: EU 96/27/EC SIDE IMPACT 5-20-96 TEST DATE: 10-16-1997

COMPONENT: 1997 ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -2.28 G'S at 164 msec Maximum = 12.49 G'S at 42 msec

LEFT MID A-POST Y ACCELERATION

1 C97119AF.A55 FilterClass (60)



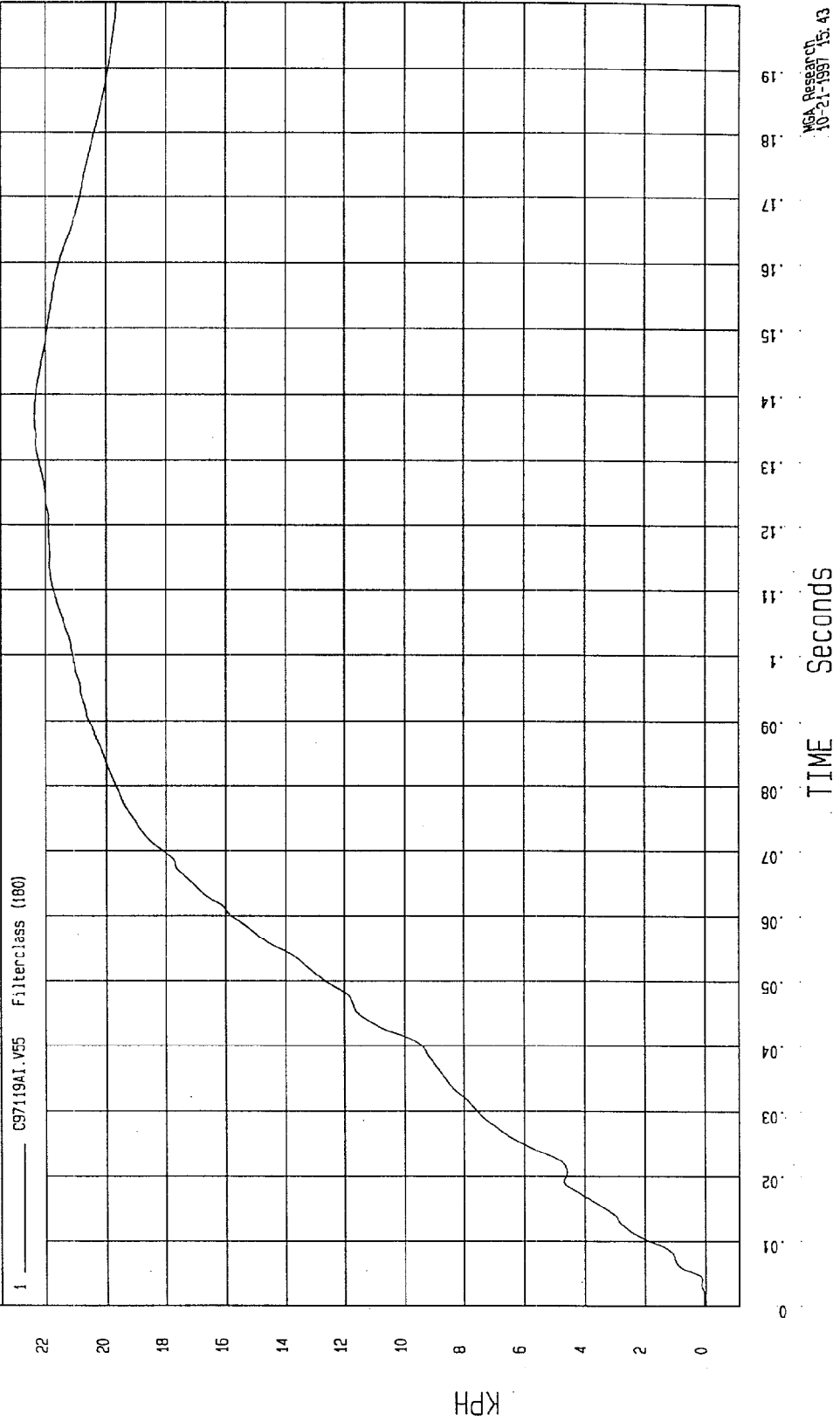
NCA Research
10-21-1997 15.43

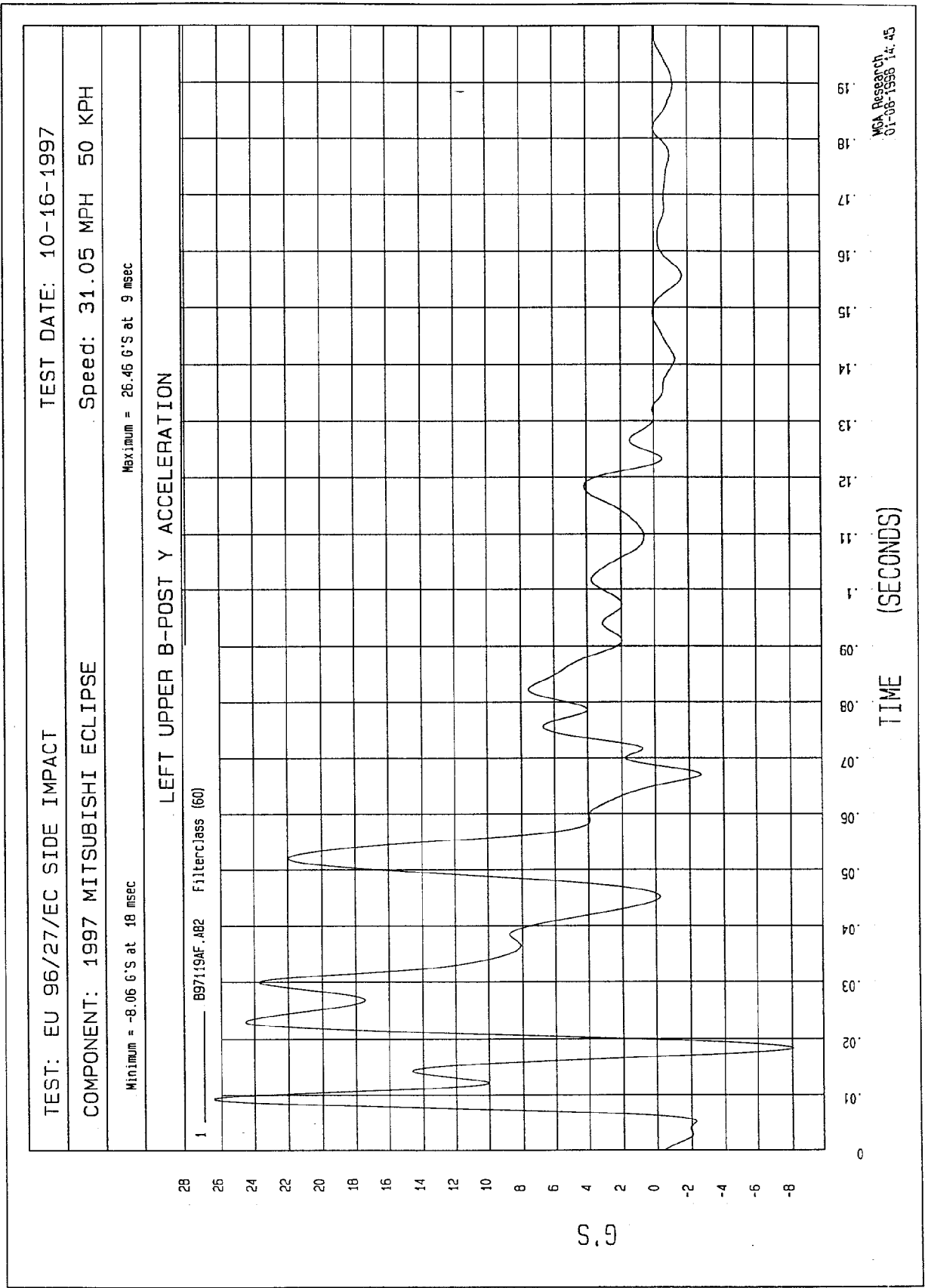
TEST: EU 96/27/EC SIDE IMPACT 5-20-96 TEST DATE: 10-16-1997

COMPONENT: 1997 ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -.01 KPH at -.19 msec Maximum = 22.38 KPH at 136 msec

LEFT MID A-POST Y VELOCITY





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

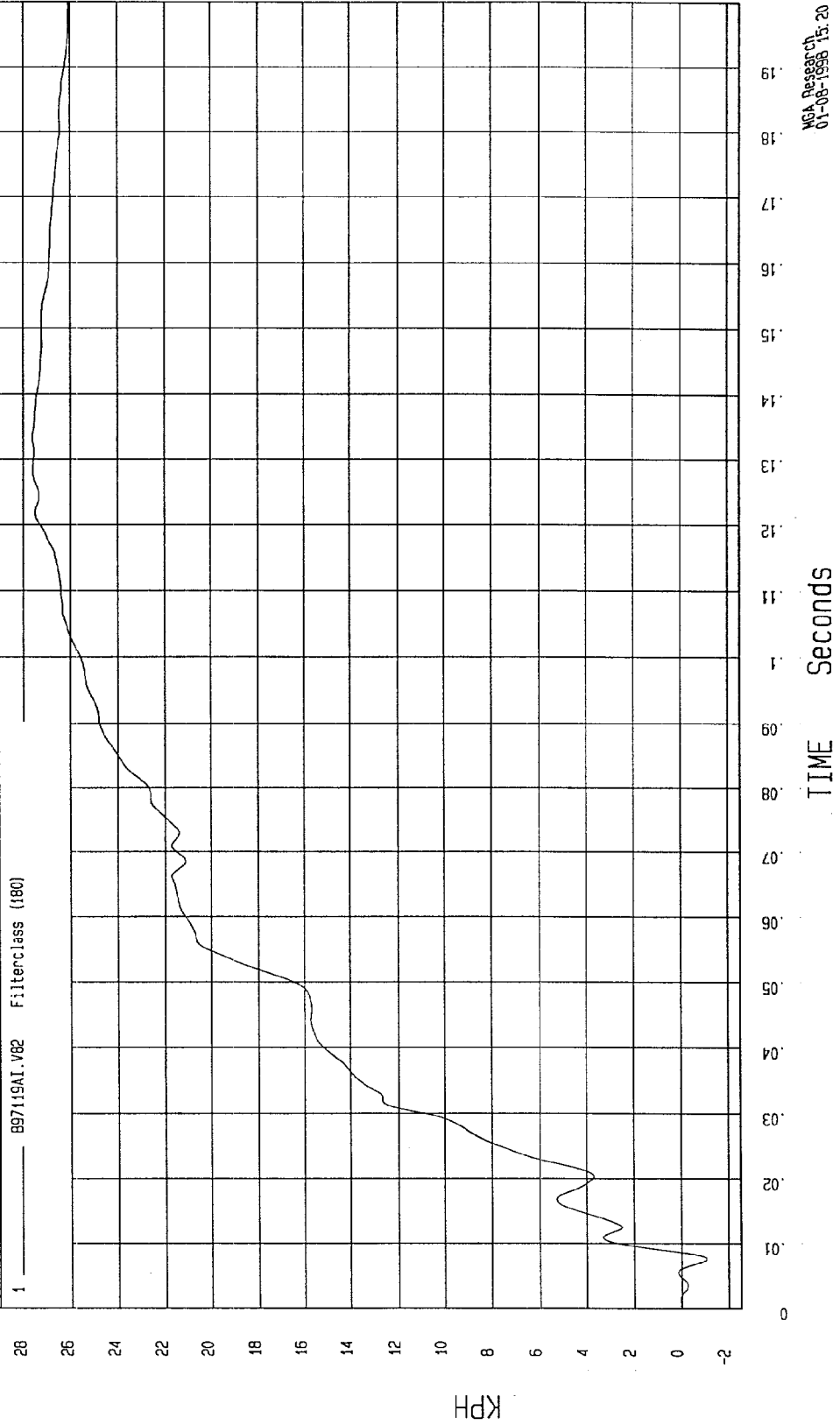
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 27.60 KPH at 133 msec

Minimum = -1.08 KPH at 8 msec

LEFT UPPER B-POST Y VELOCITY



TEST: EU 96/27/EC SIDE IMPACT 5-20-96 TEST DATE: 10-16-1997

SPEED: 31.05 MPH 50 KPH

COMPONENT: 1997 ECLIPSE

Maximum = 94.15 G'S at 14 msec

Minimum = -52.81 G'S at 31 msec

LEFT LOWER B-POST Y ACCELERATION

100

80

60

40

20

0

-20

-40

-60

G.S

1

CS97119AF.A53

Filterclass (60)

TIME (seconds)

0

.01

.02

.03

.04

.05

.06

.07

.08

.09

.1

.11

.12

.13

.14

.15

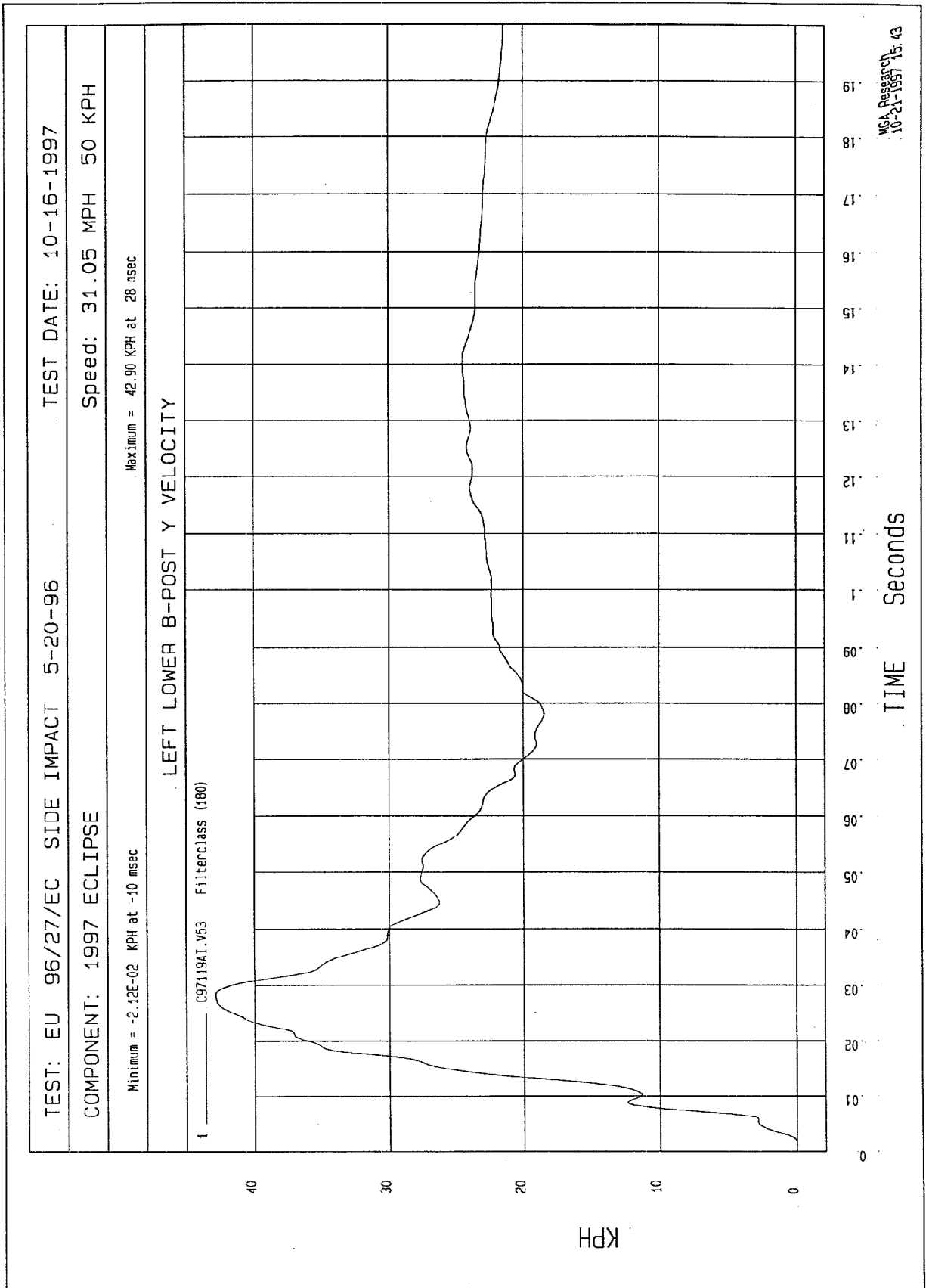
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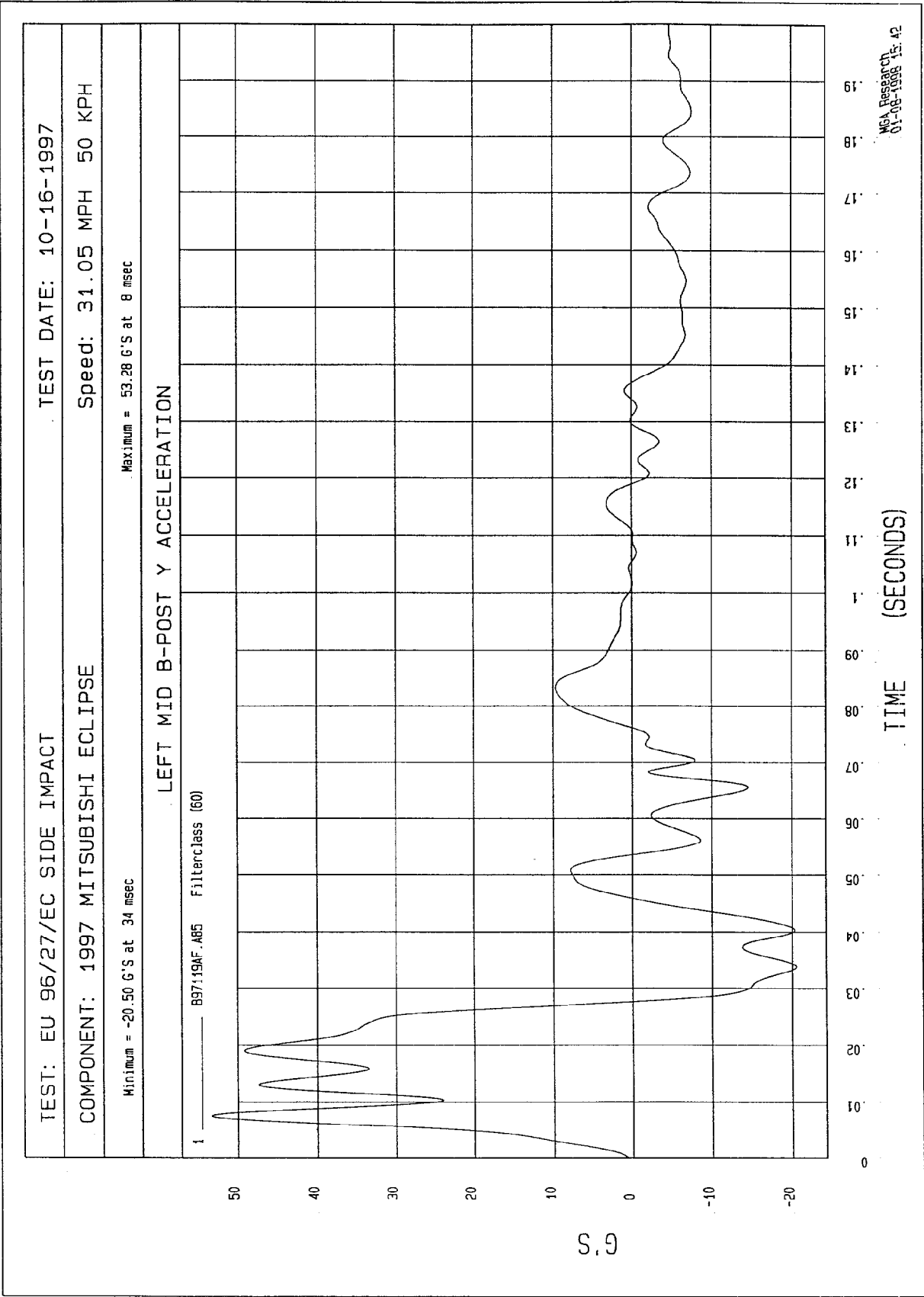
.17

.18

.19

WCA Research
10-21-1997 15.43



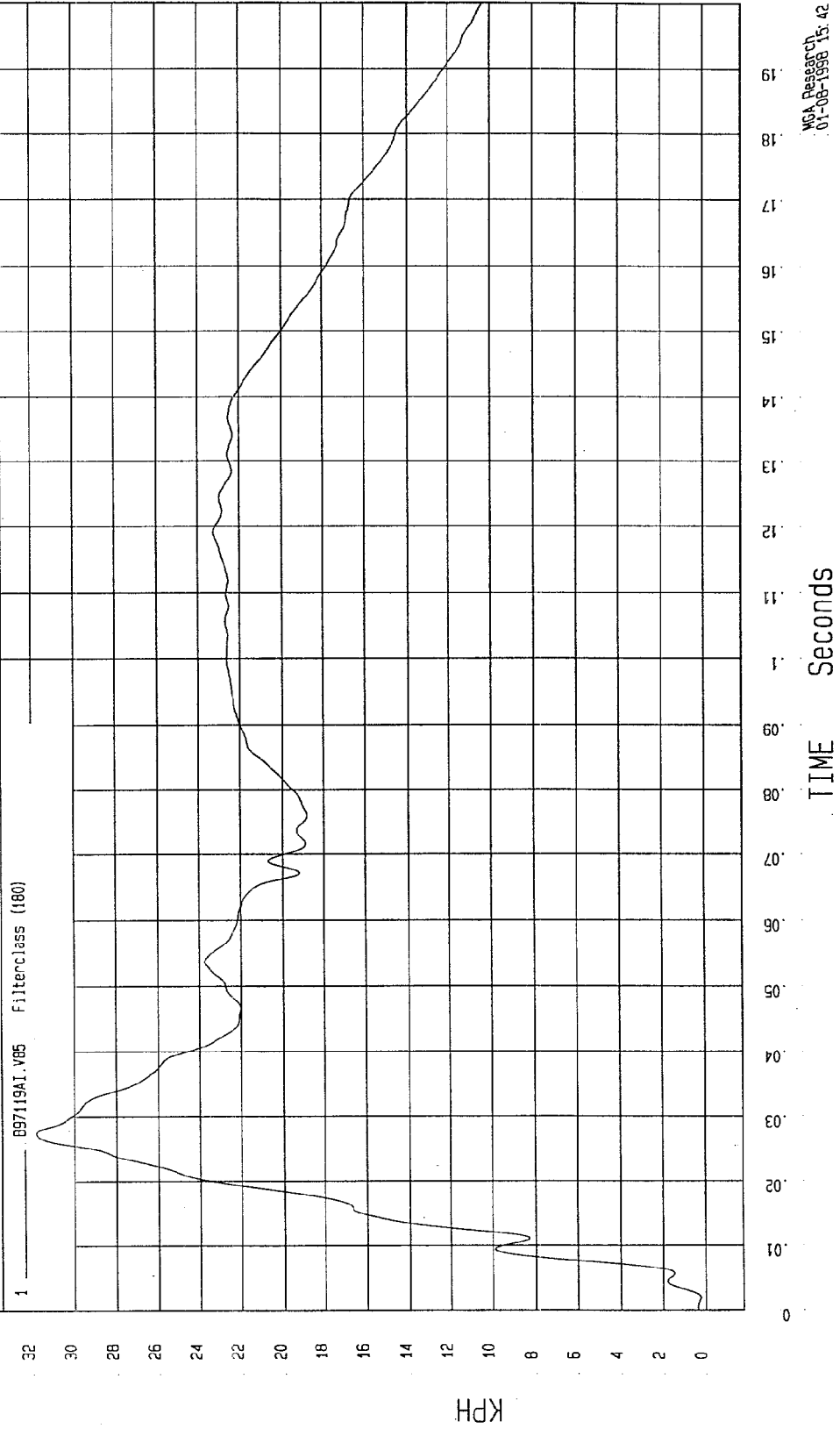


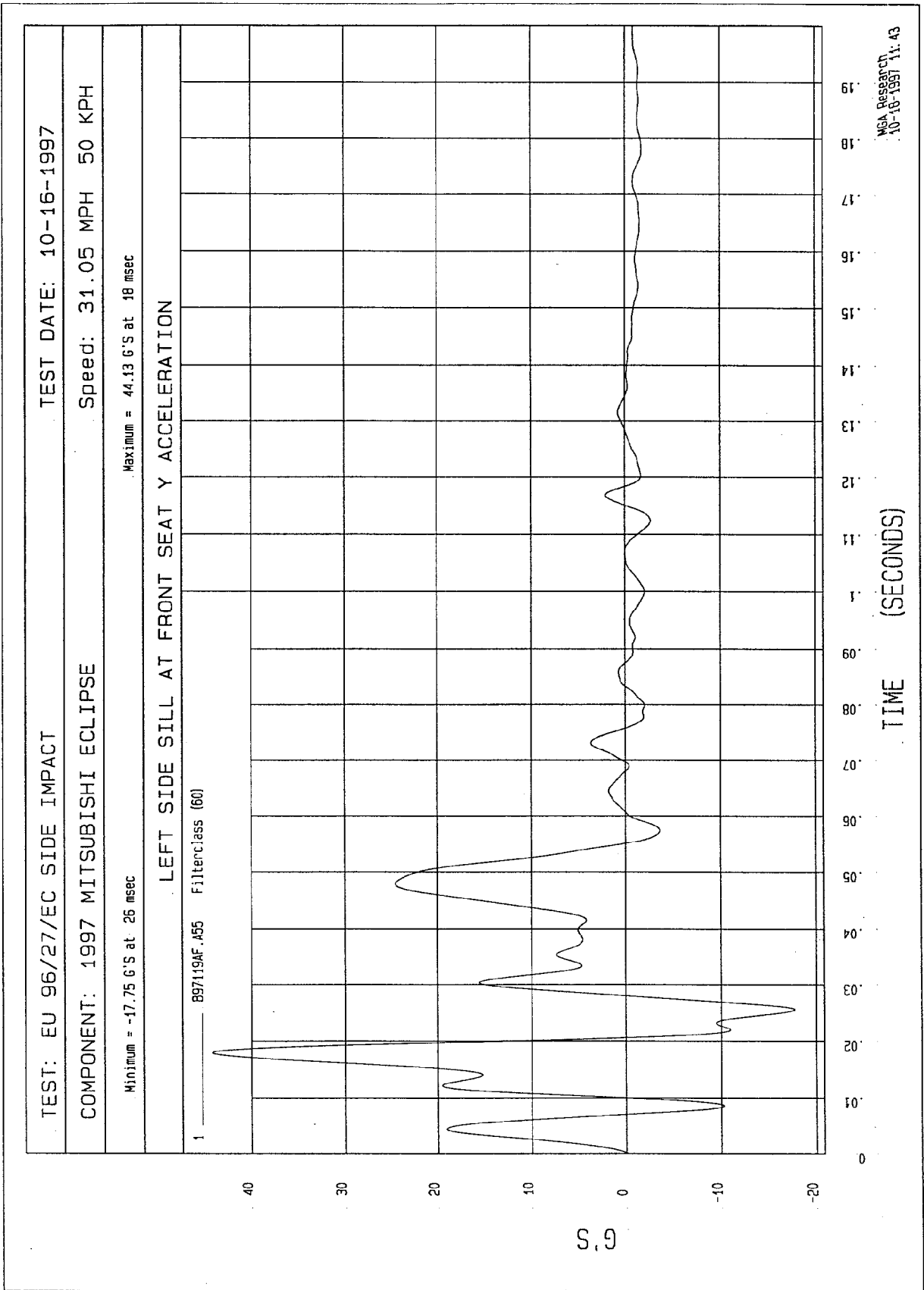
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

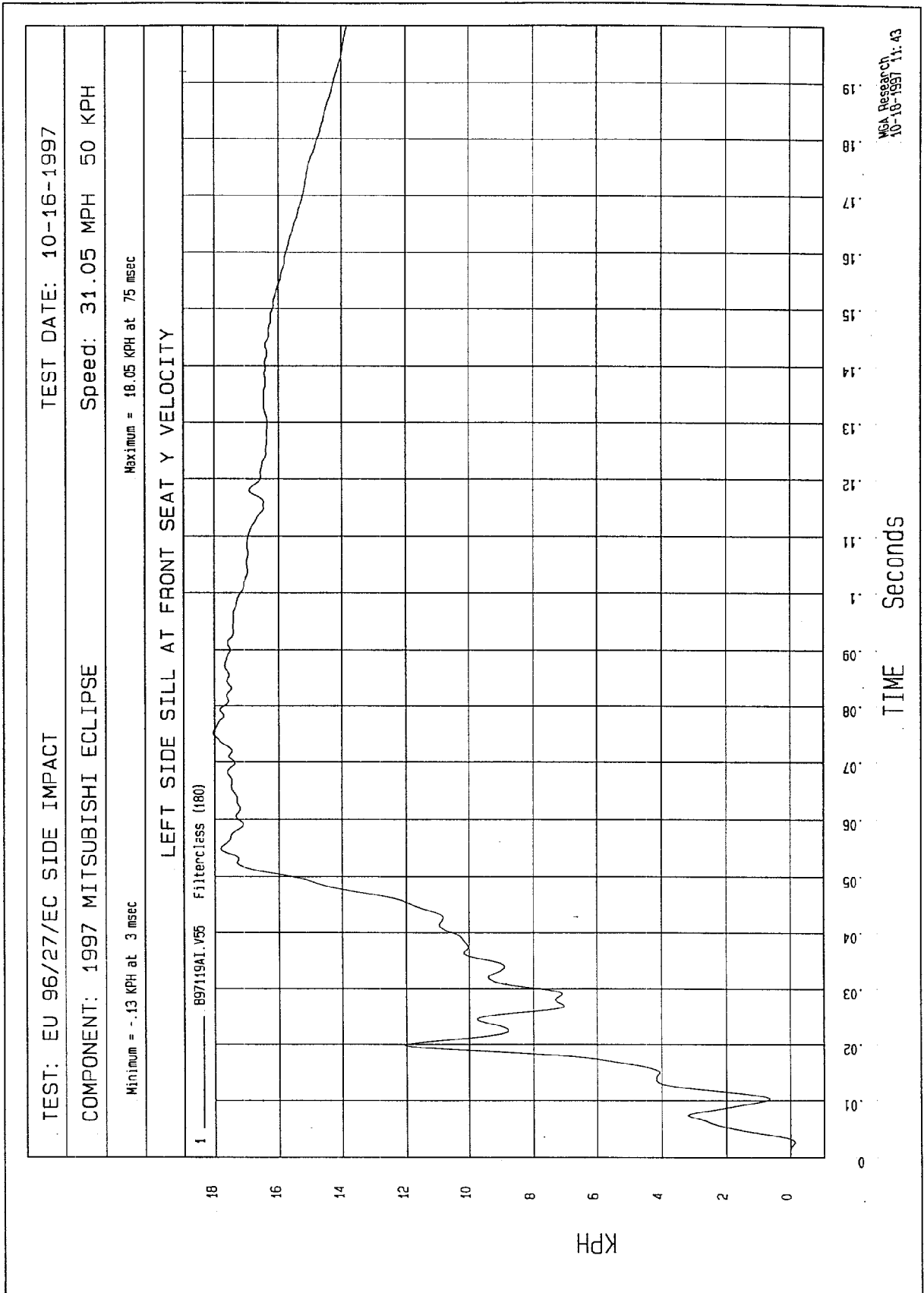
COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

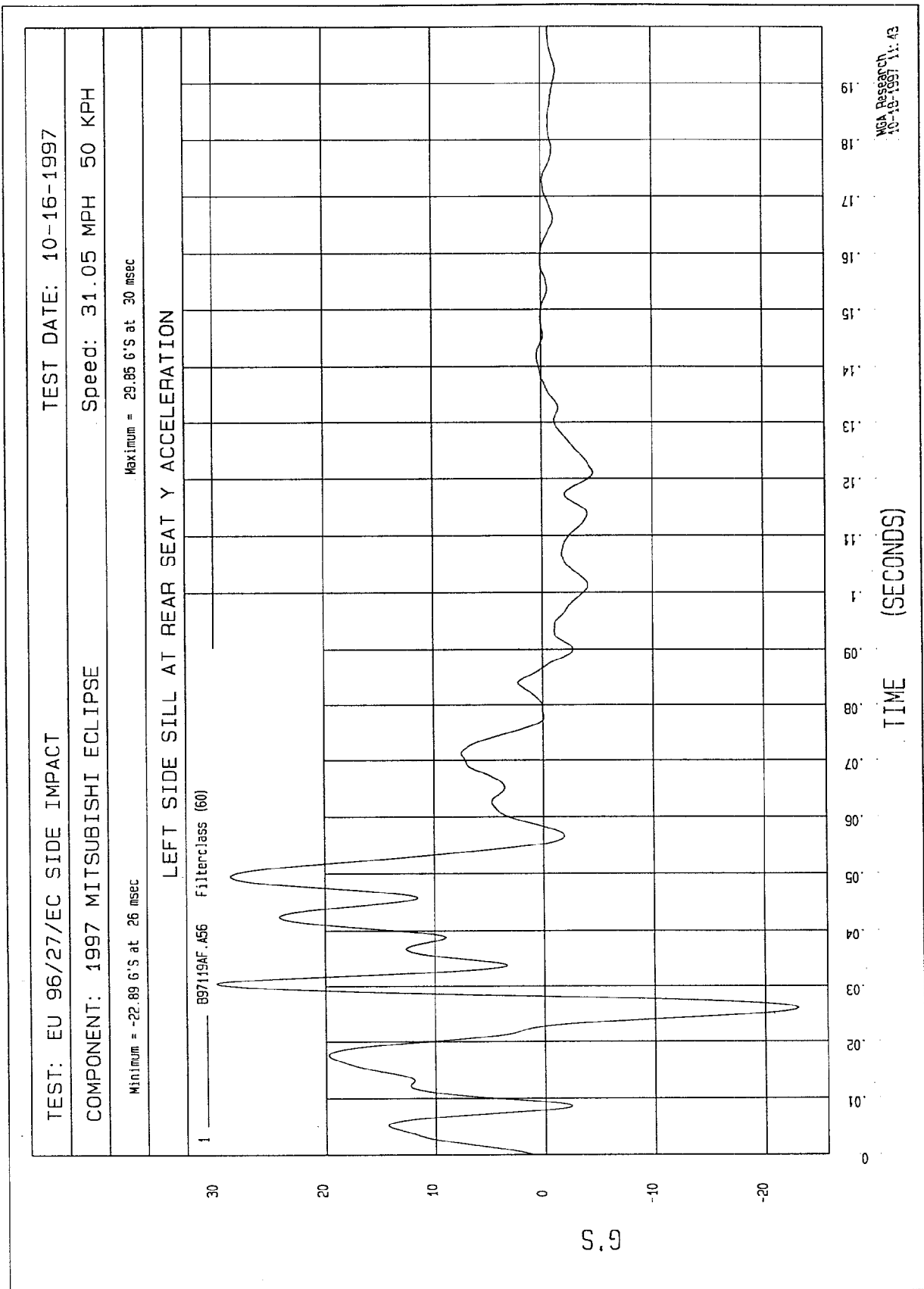
Minimum = -17 KPH at -15 msec Maximum = 31.63 KPH at 27 msec

LEFT MID B-POST Y VELOCITY









TEST DATE: 10-16-1997

TEST: EU 96/27/EC SIDE IMPACT

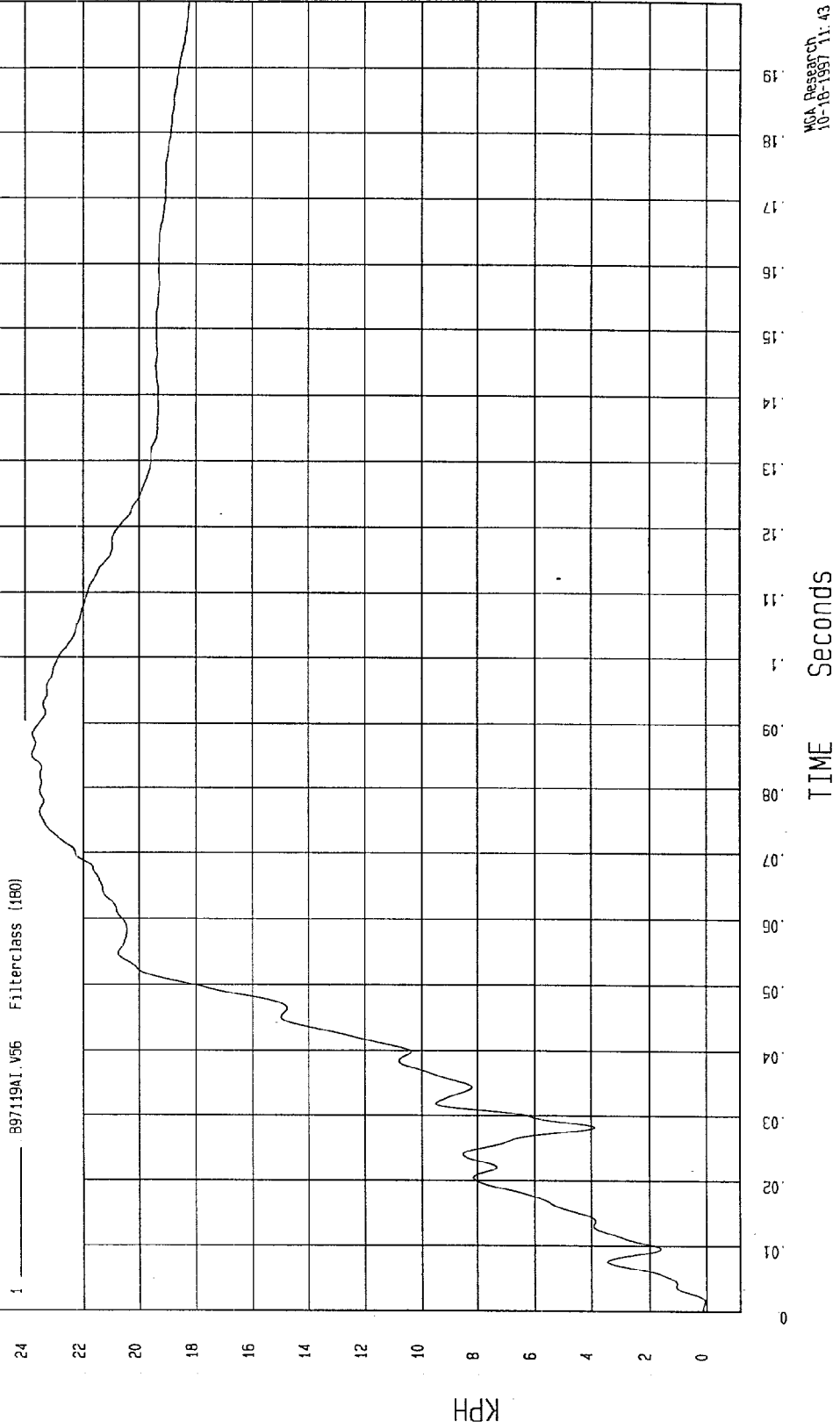
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 23.77 KPH at 85 msec

Minimum = 0 KPH at -20 msec

LEFT SIDE SILL AT REAR SEAT Y VELOCITY



TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

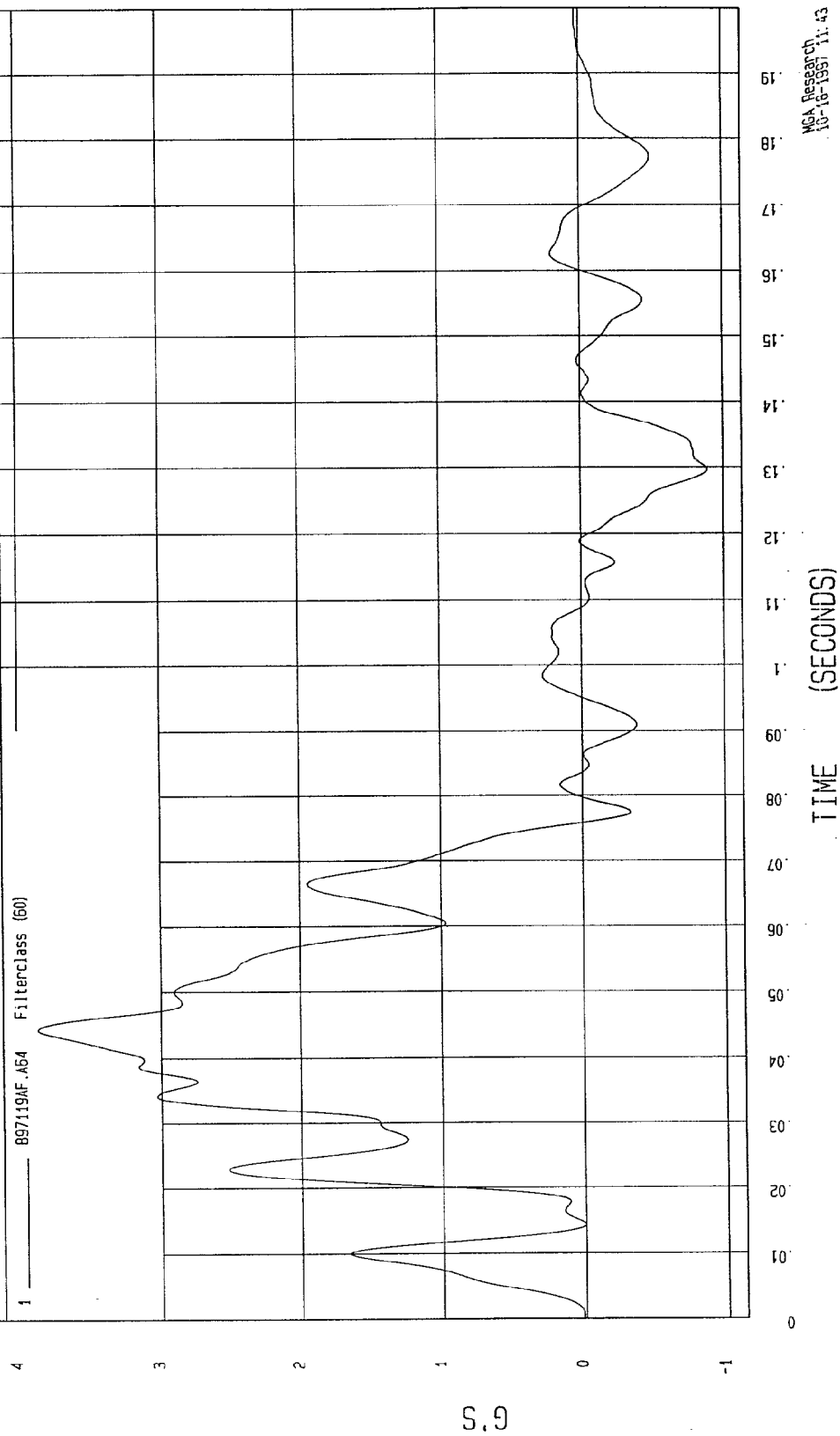
Speed: 31.05 MPH 50 KPH

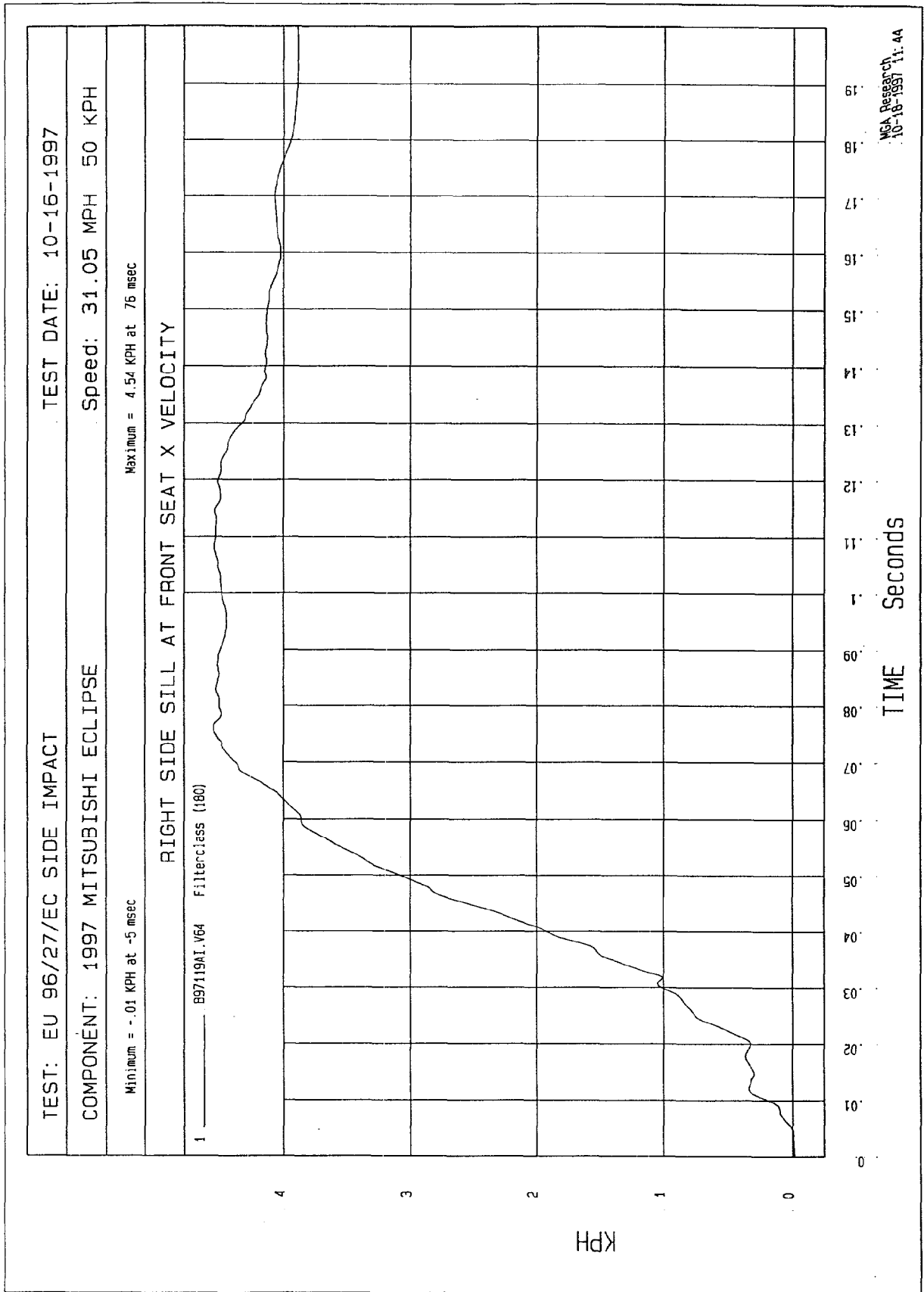
COMPONENT: 1997 MITSUBISHI ECLIPSE

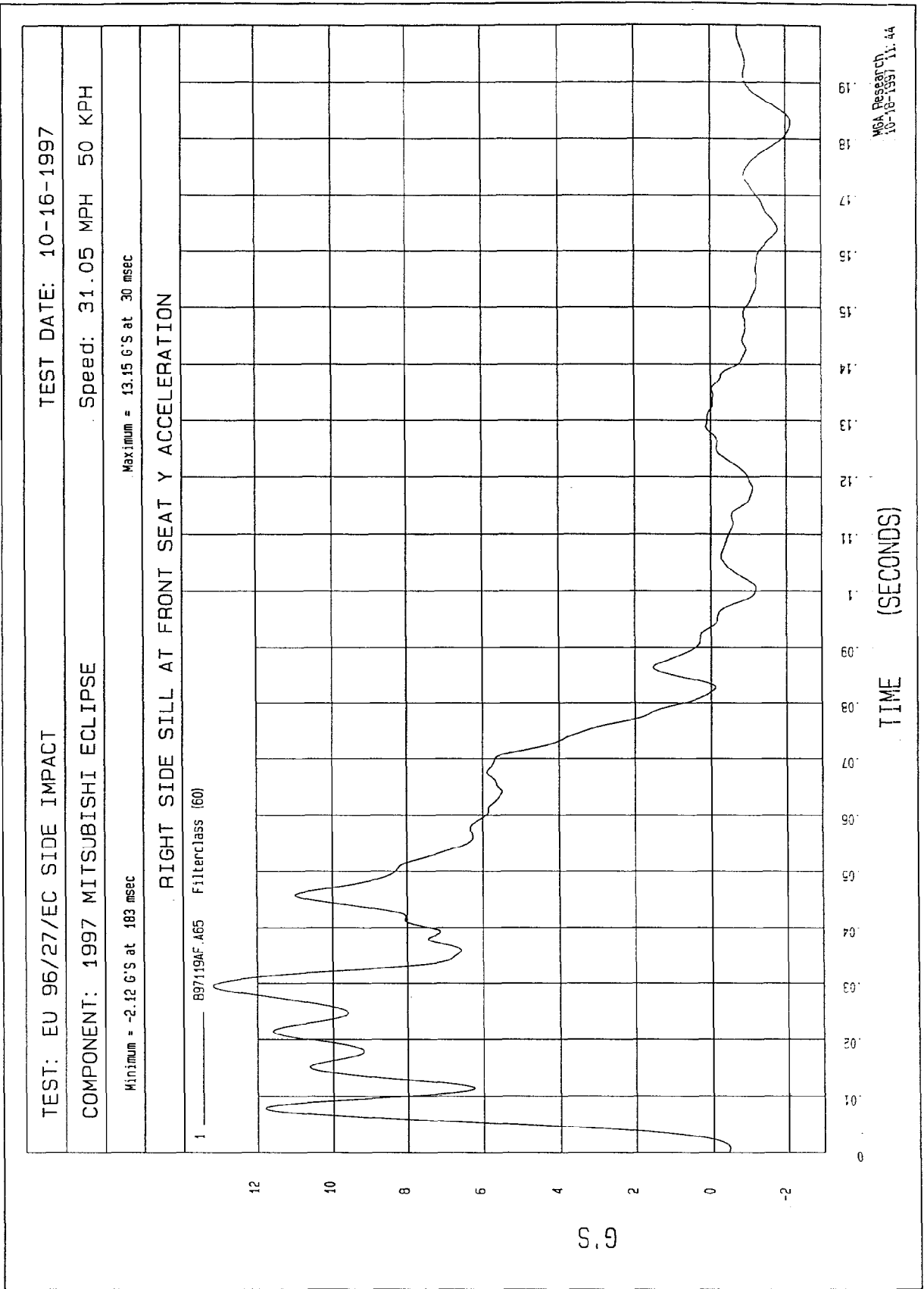
Maximum = 3.86 G'S at 44 msec

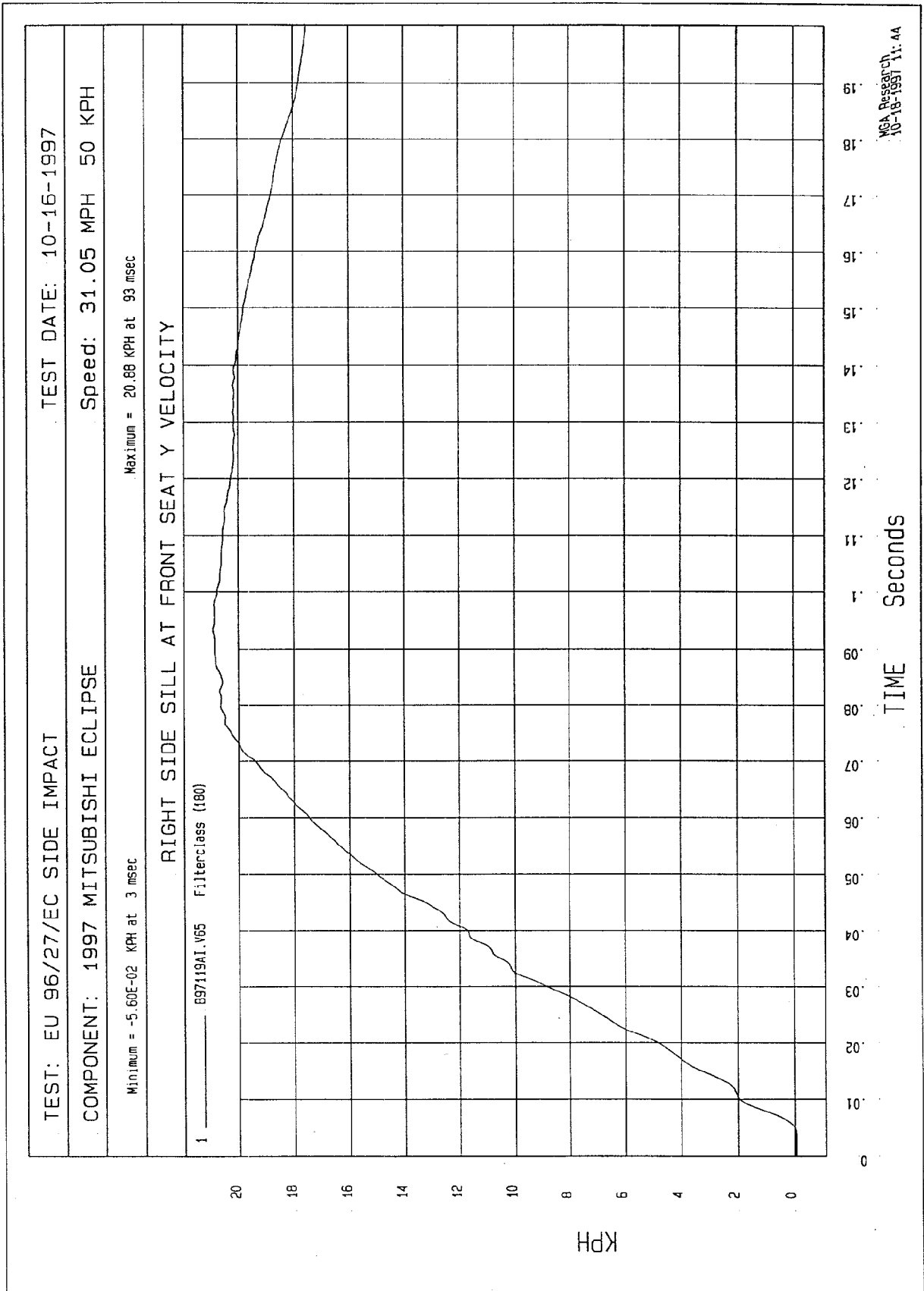
Minimum = -.89 G'S at 130 msec

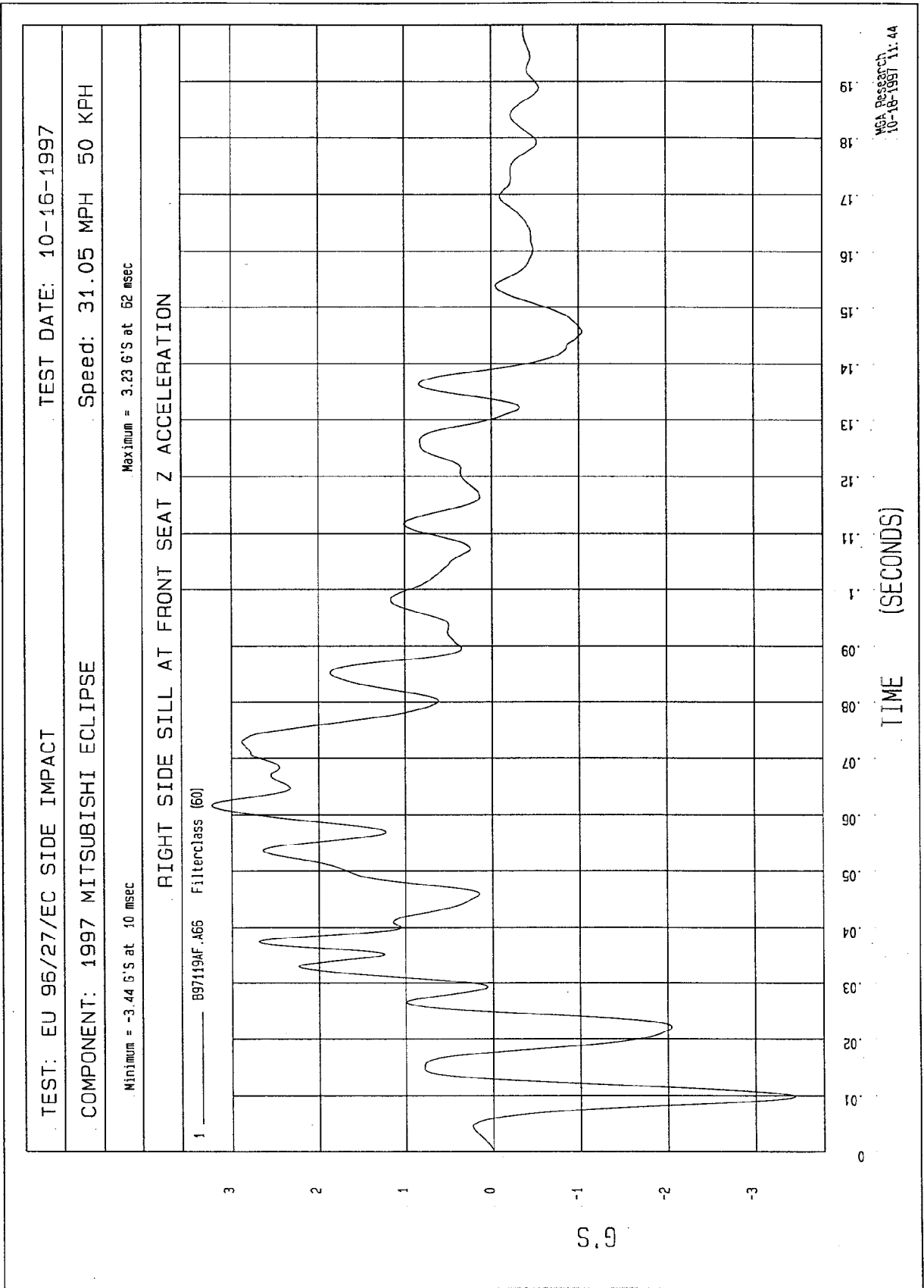
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

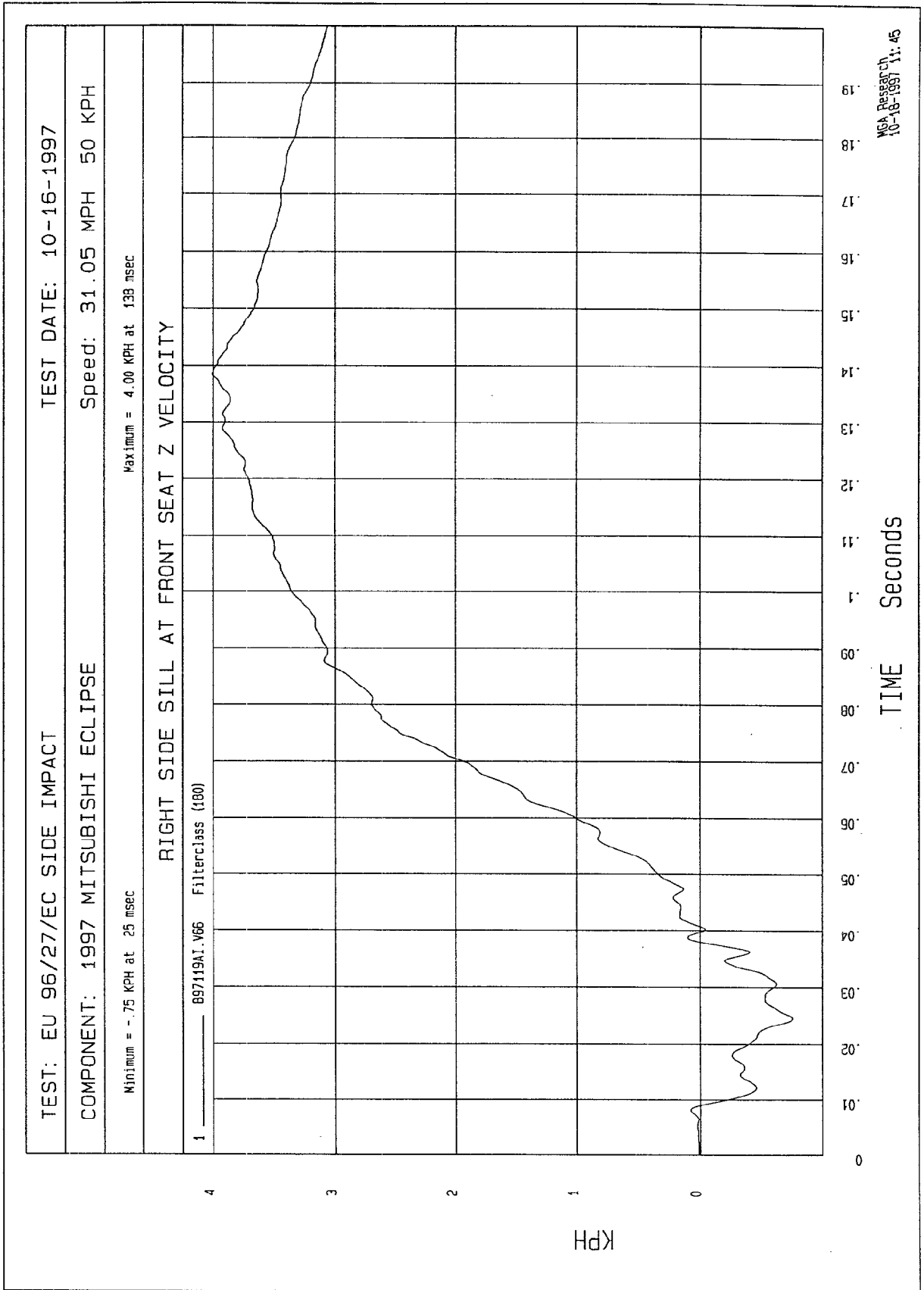


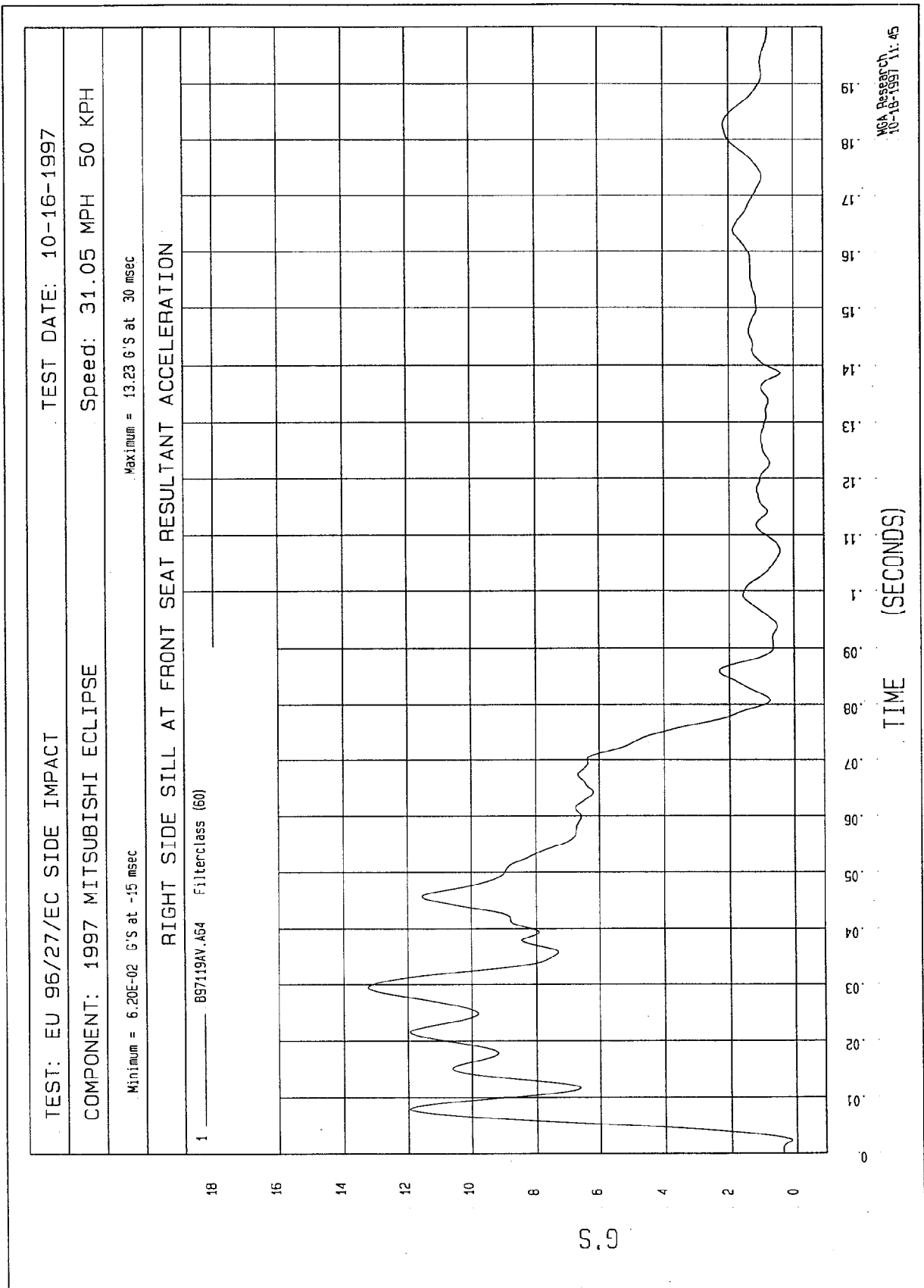












TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

Speed: 31.05 MPH 50 KPH

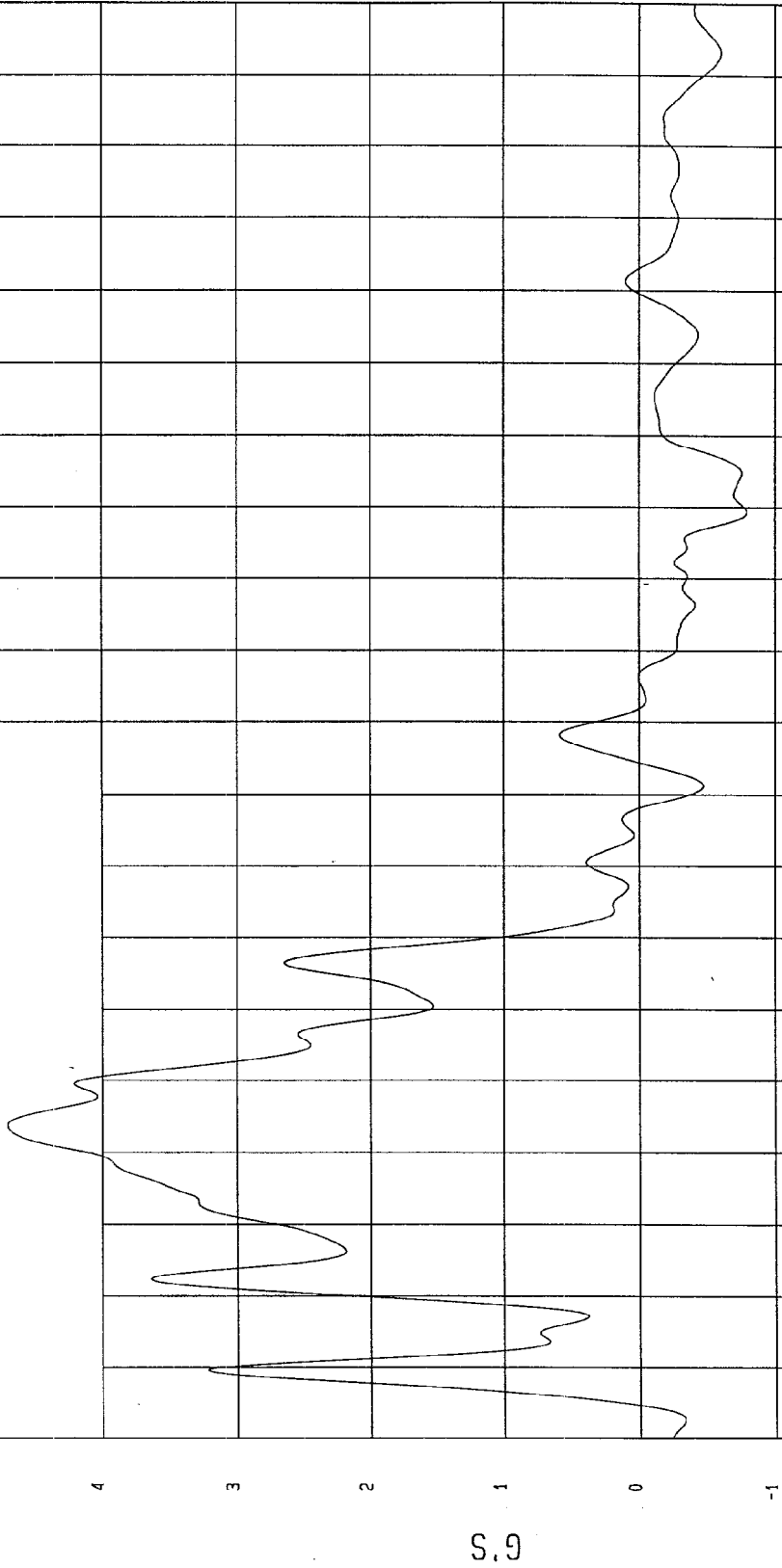
COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 4.69 G'S at 44 msec

Minimum = -.79 G'S at 129 msec

RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

1 B9719AF.A57 Filterclass (60)



MSA Research
10-16-1997 11:45

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

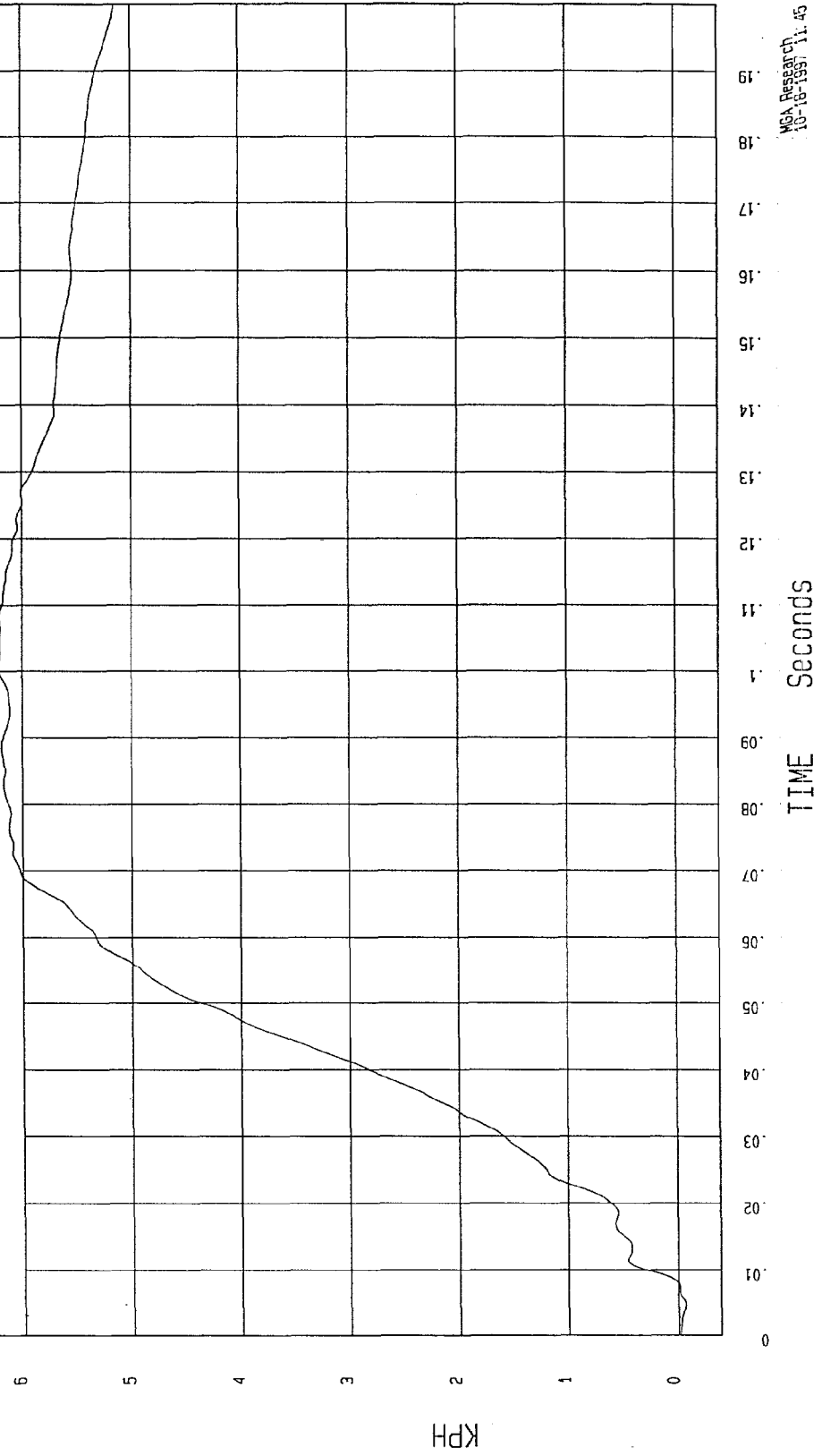
Speed: 31.05 MPH 50 KPH

Minimum = -7.18E-02 KPH at 5 msec

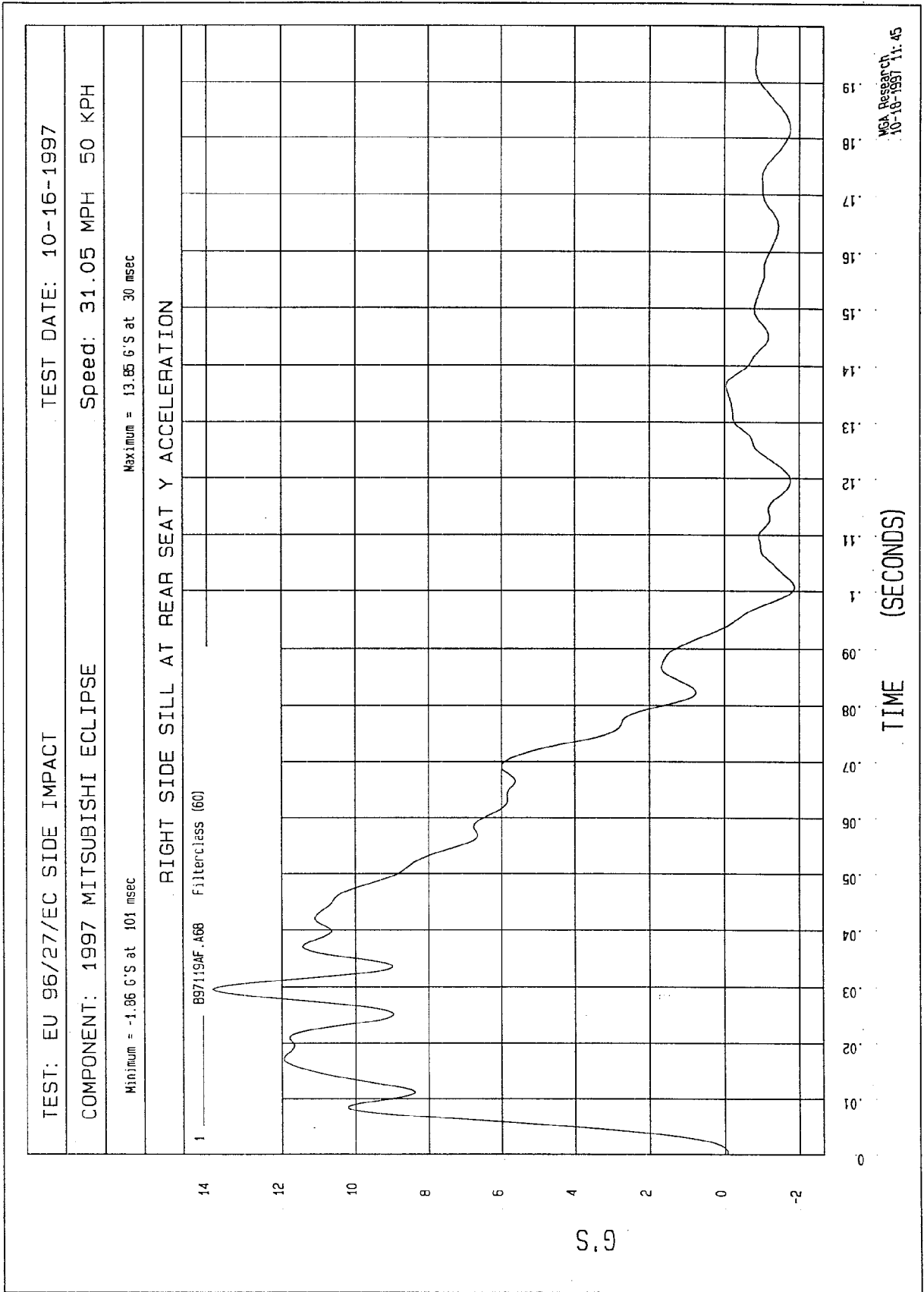
Maximum = 6.20 KPH at 100 msec

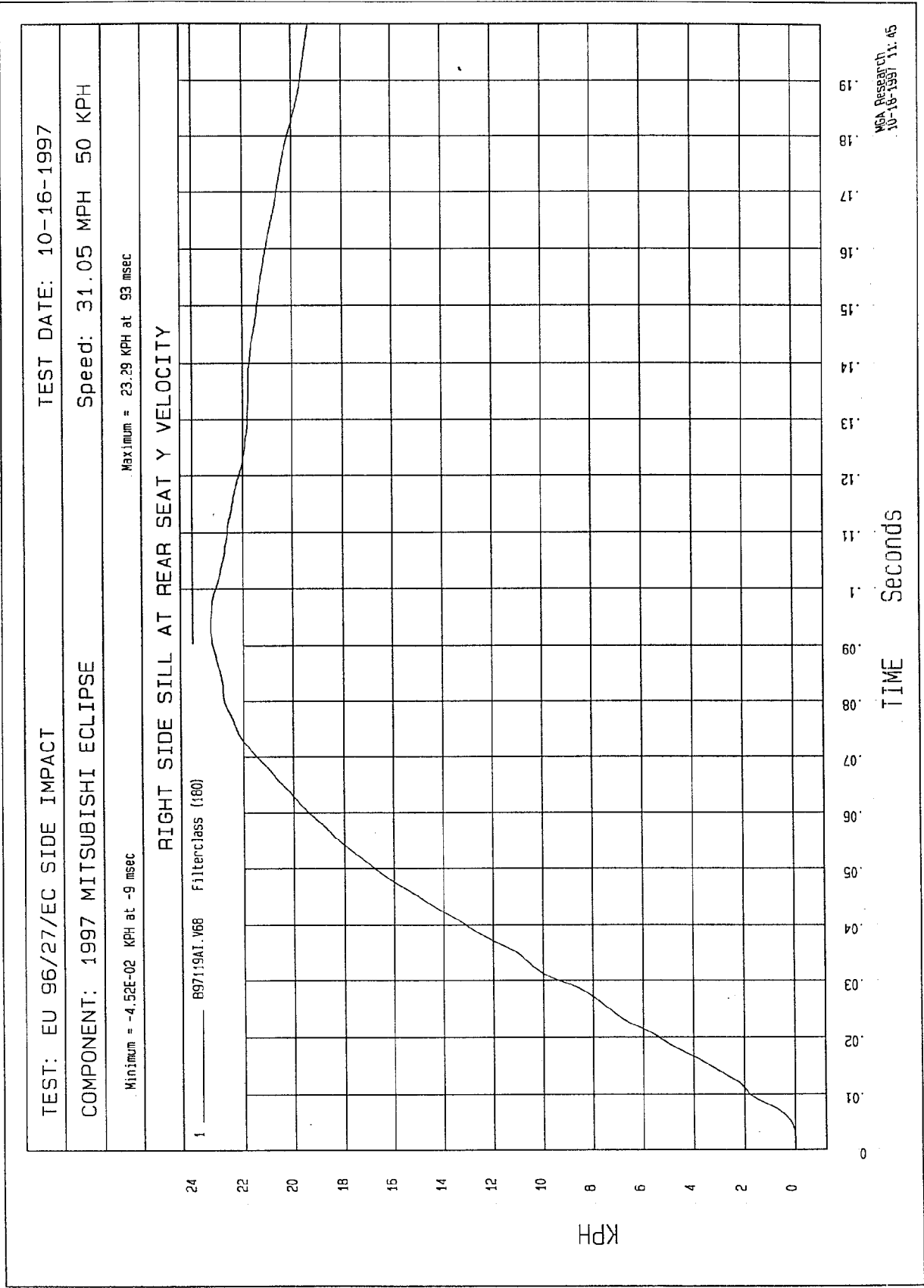
RIGHT SIDE SILL AT REAR SEAT X VELOCITY

1 ——— B9719AT.V67 Filterclass (160)



MOA Research
10-16-1997 11:45





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

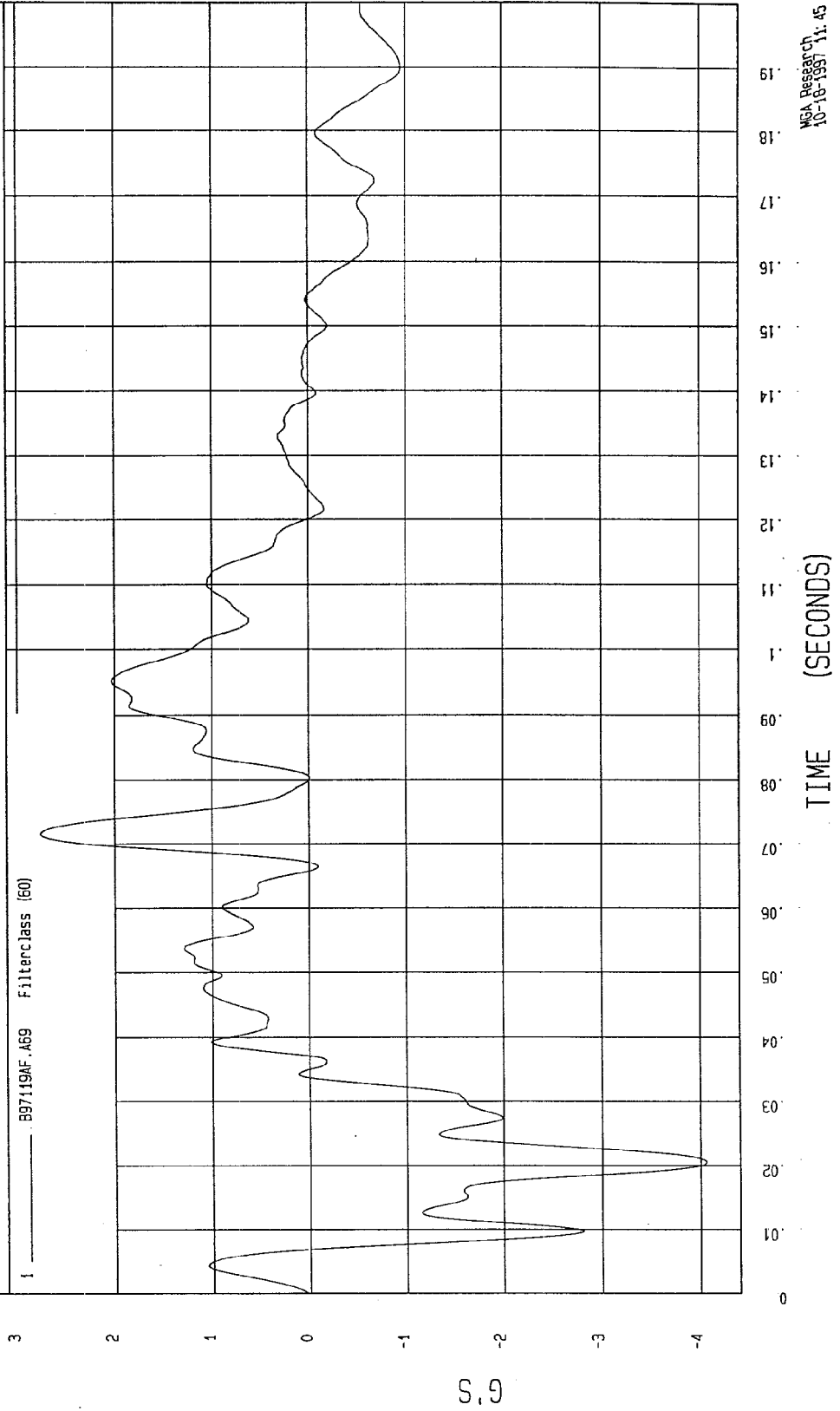
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 2.75 G'S at 72 msec

Minimum = -4.05 G'S at 20 msec

RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

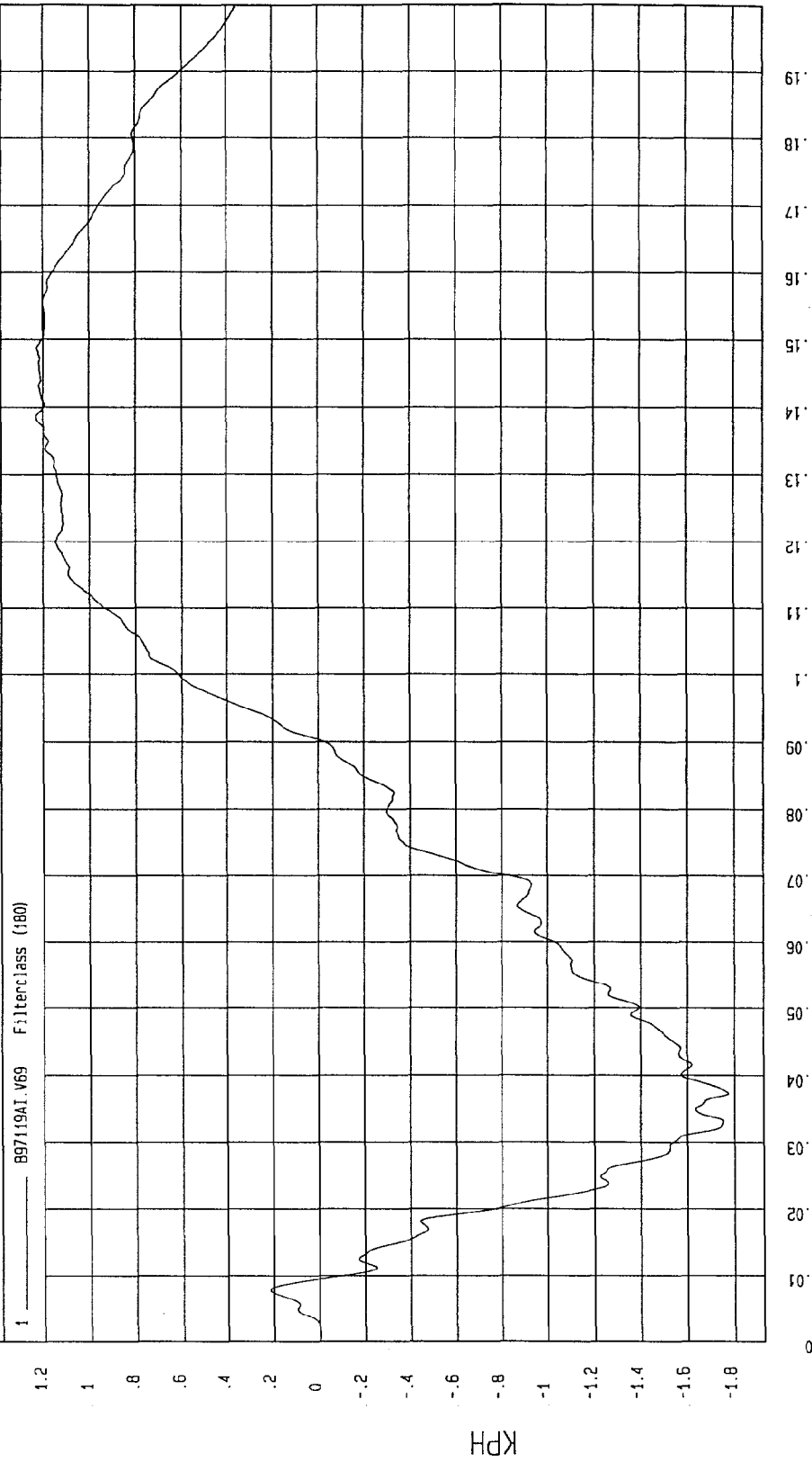


TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -1.77 KPH at 37 msec Maximum = 1.22 KPH at 139 msec

RIGHT SIDE SILL AT REAR SEAT Z VELOCITY



WCA Research
10-18-1997 11:45

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

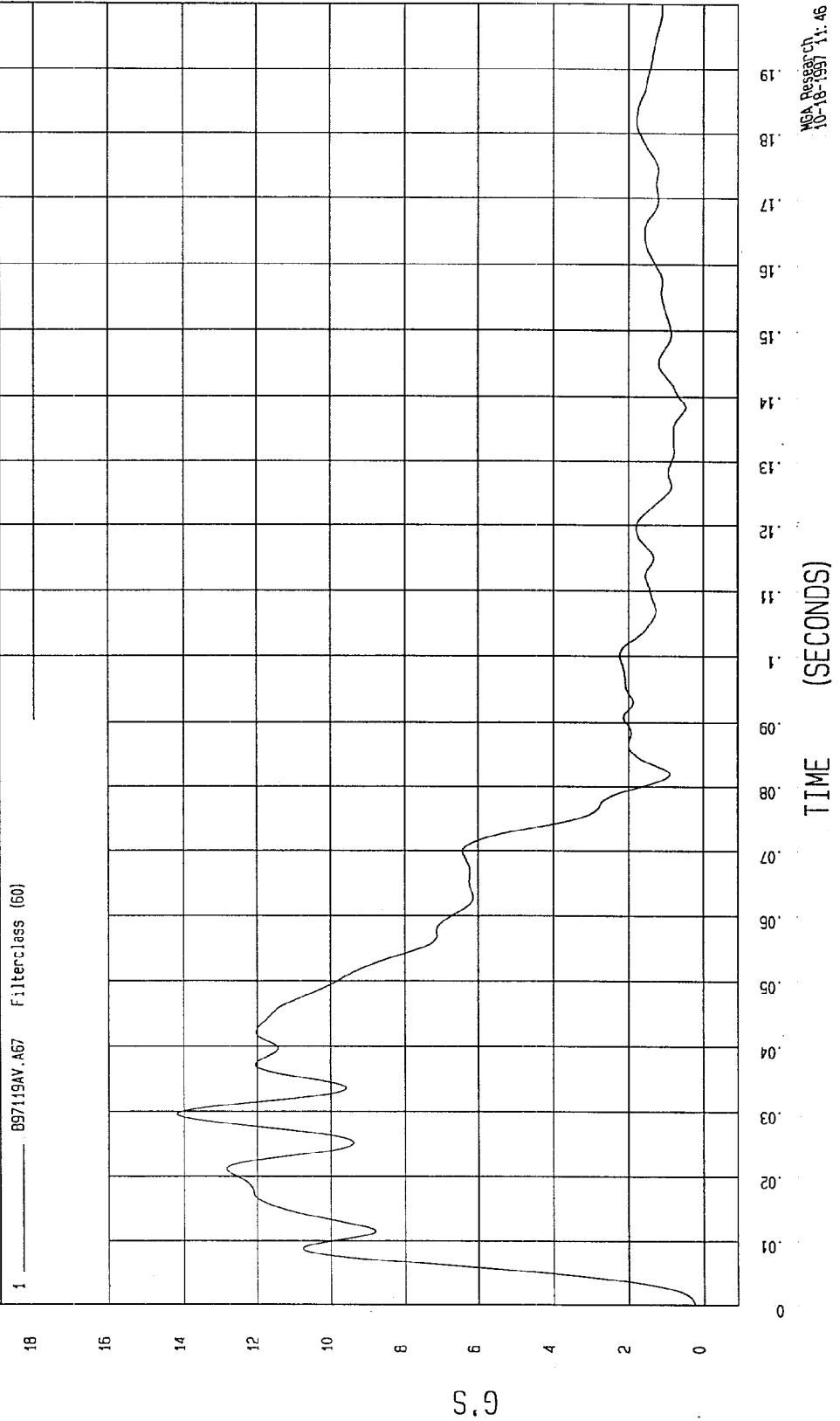
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 14.18 G'S at 30 msec

Minimum = .12 G'S at -11 msec

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

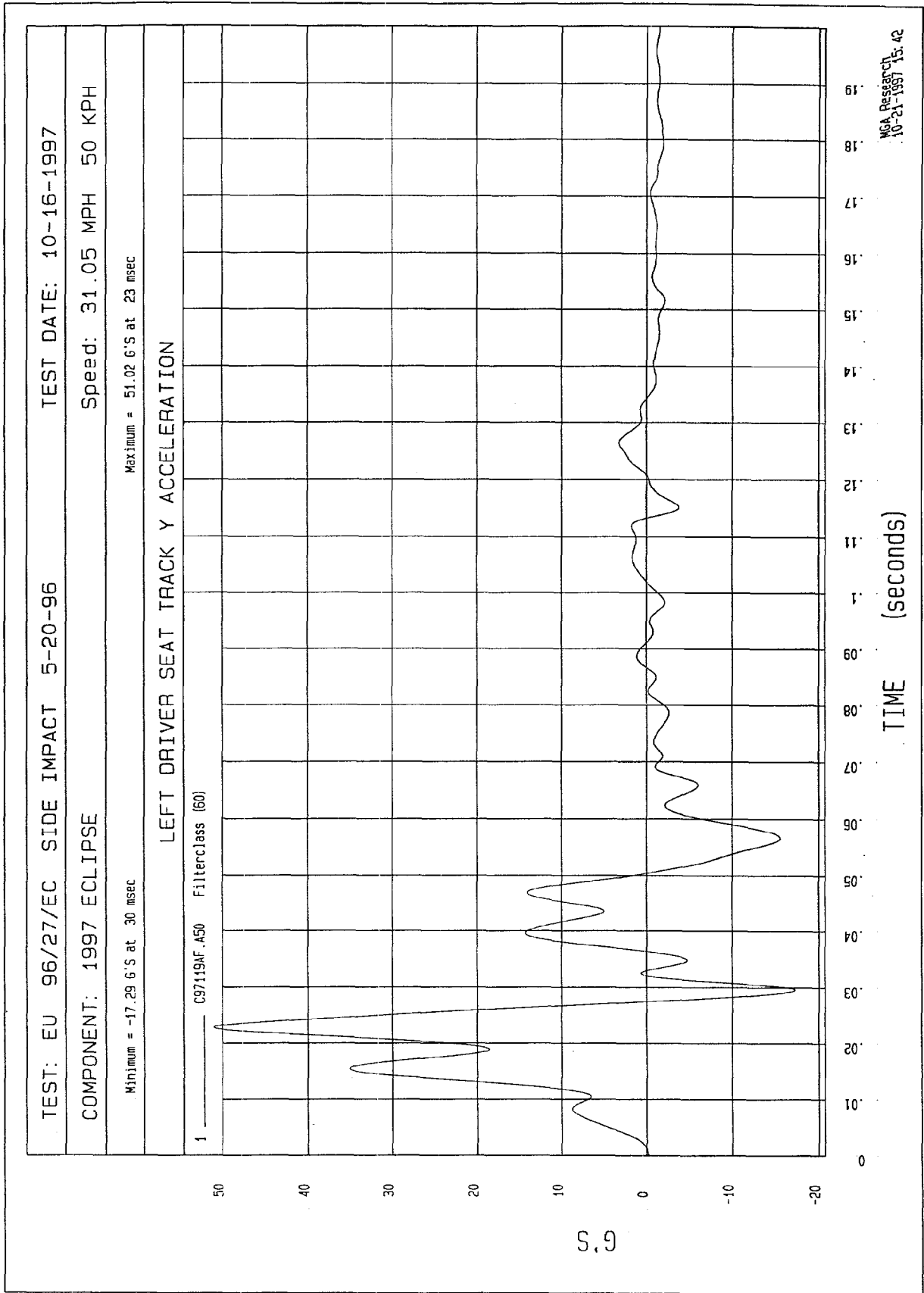


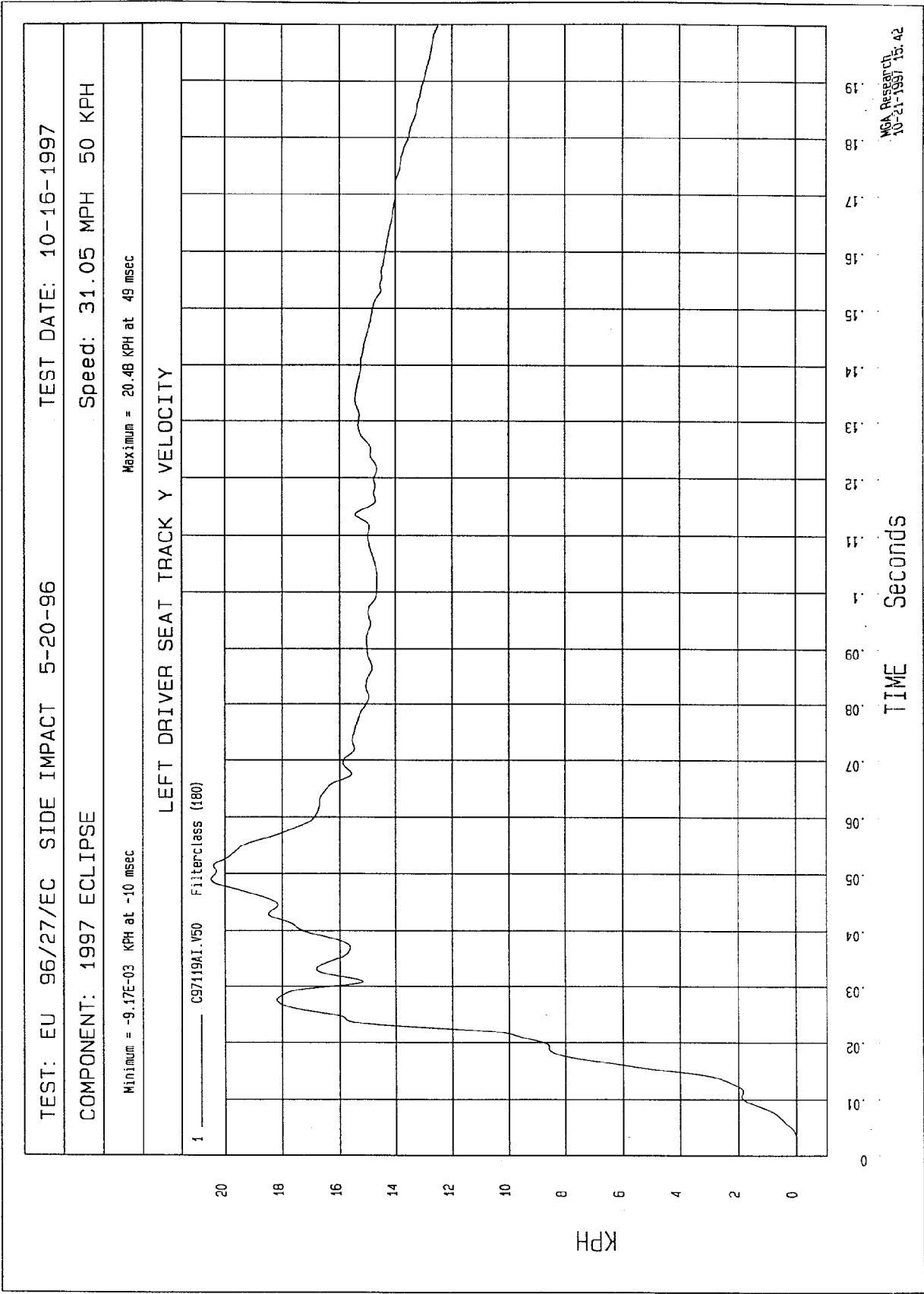
VEHICLE CG X ACCELERATION VS. TIME
NO VALID DATA COLLECTED

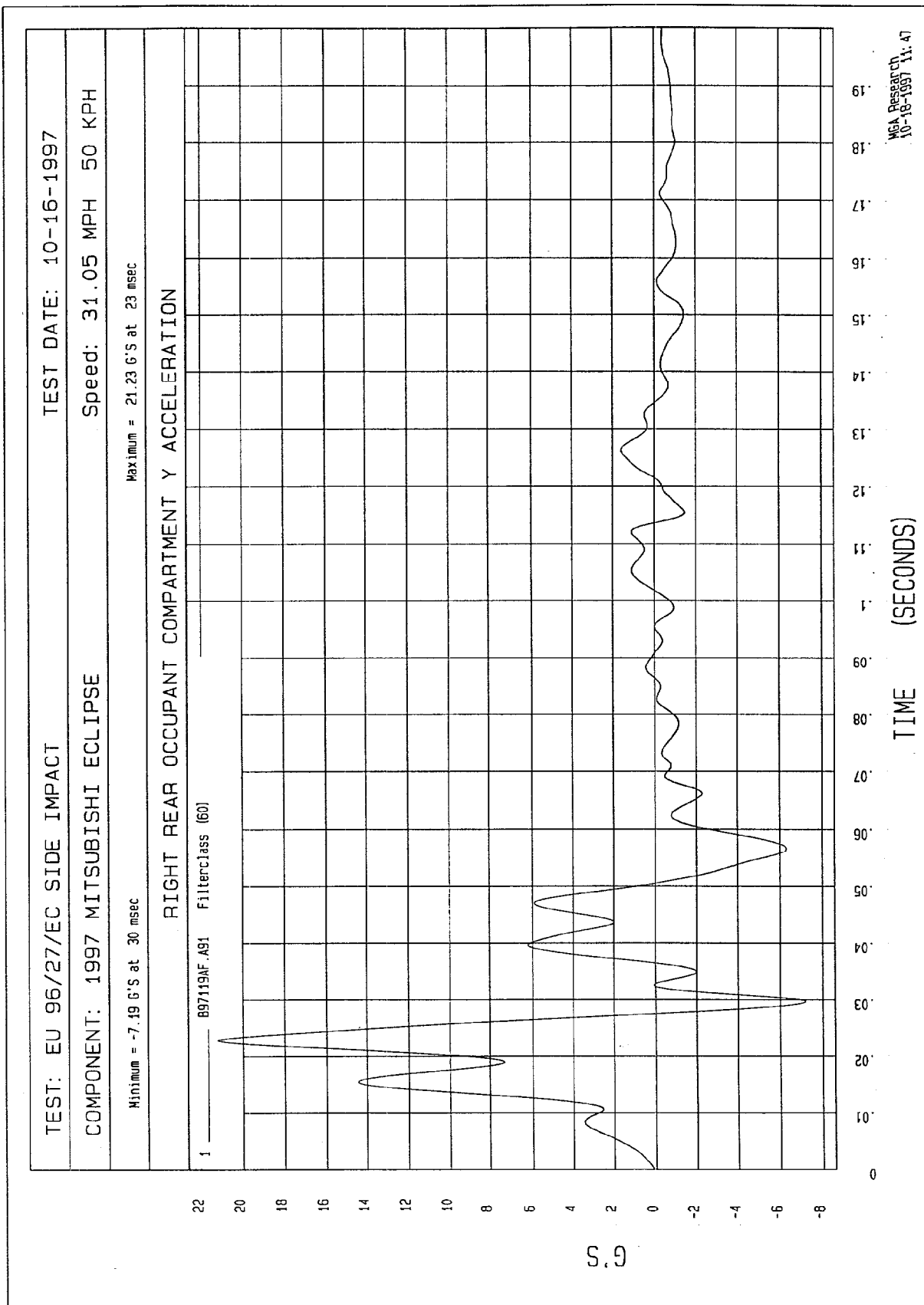
VEHICLE CG Y ACCELERATION VS. TIME

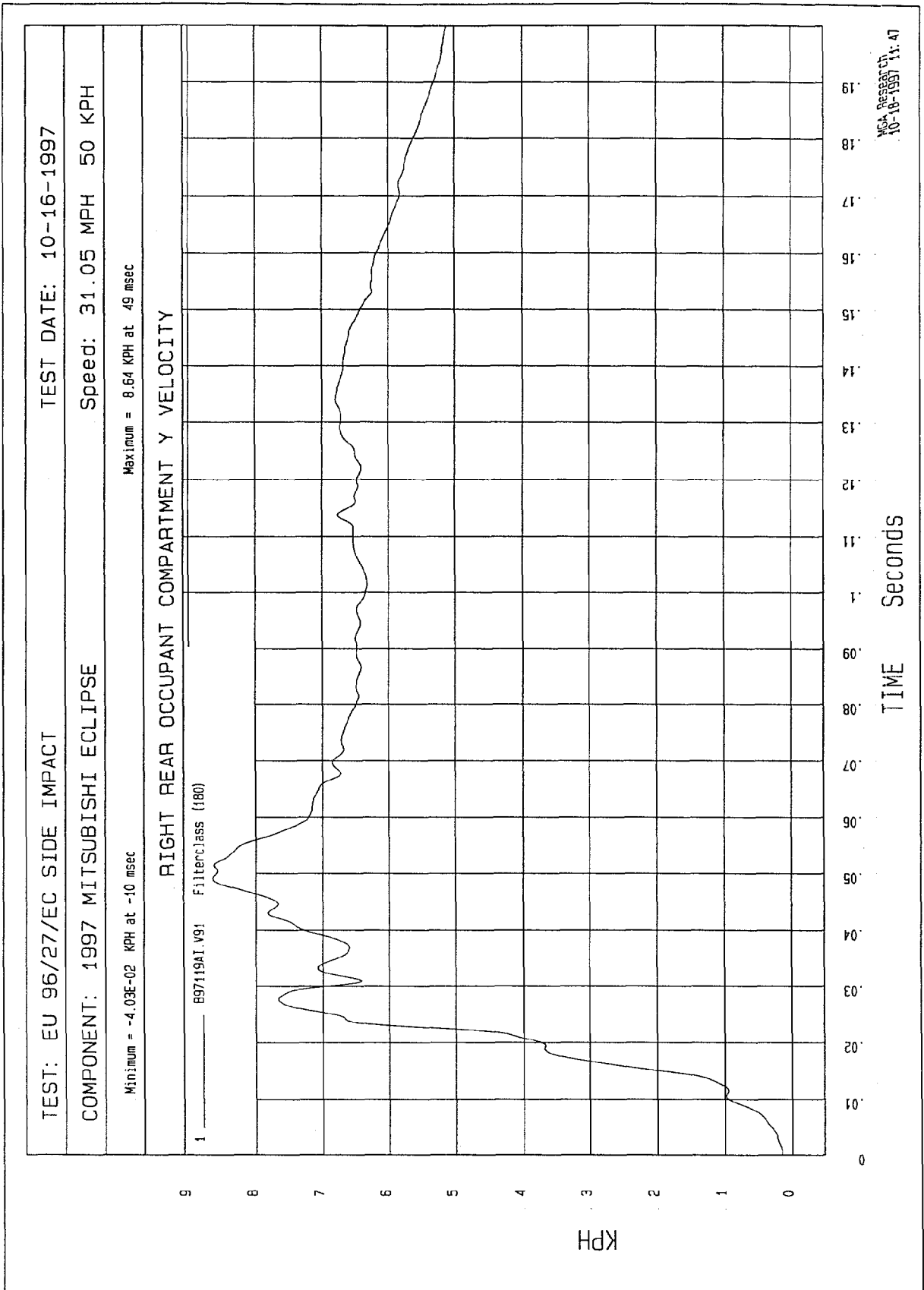
NO VALID DATA COLLECTED

VEHICLE CG Z ACCELERATION VS. TIME
NO VALID DATA COLLECTED









TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

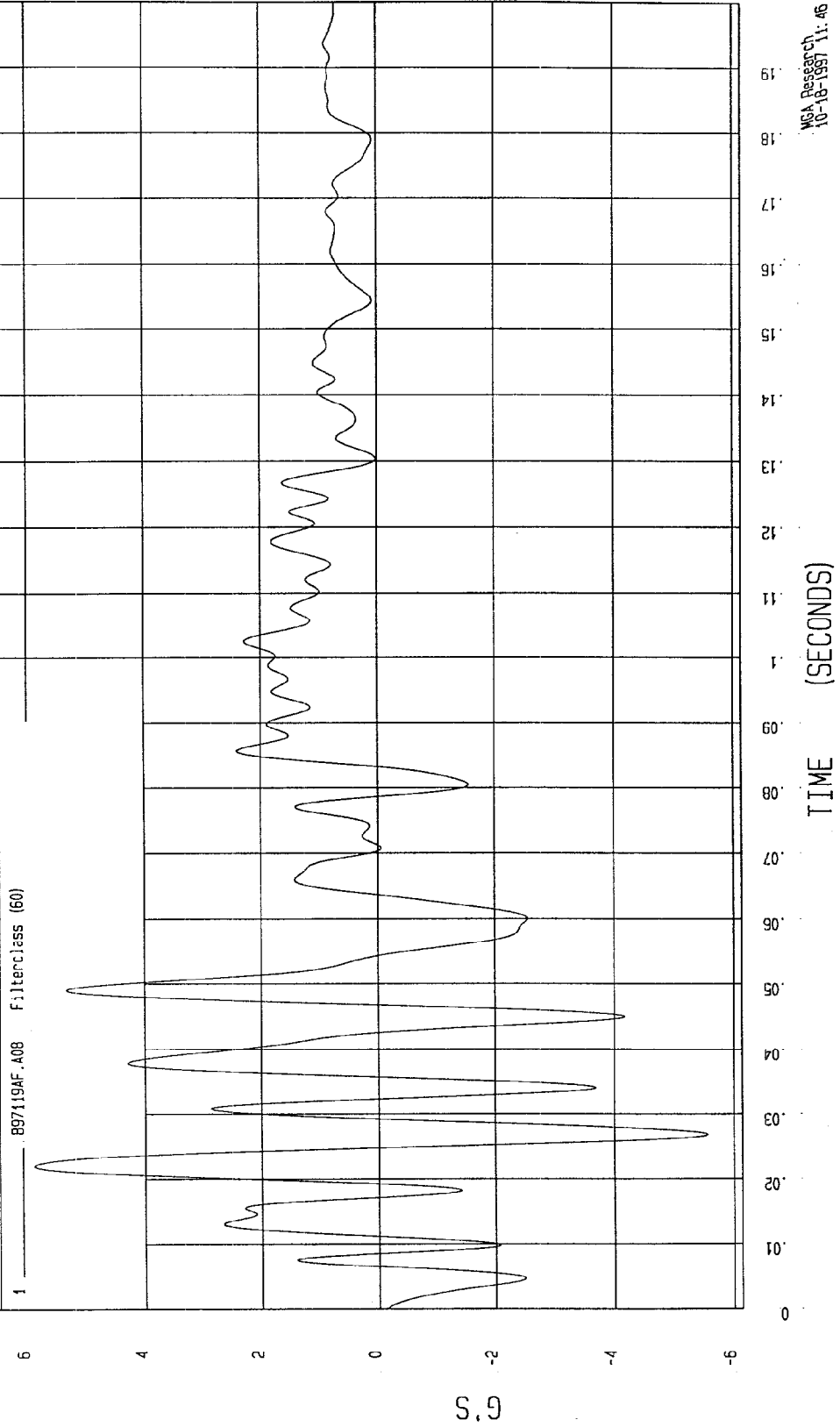
Speed: 31.05 MPH 50 KPH

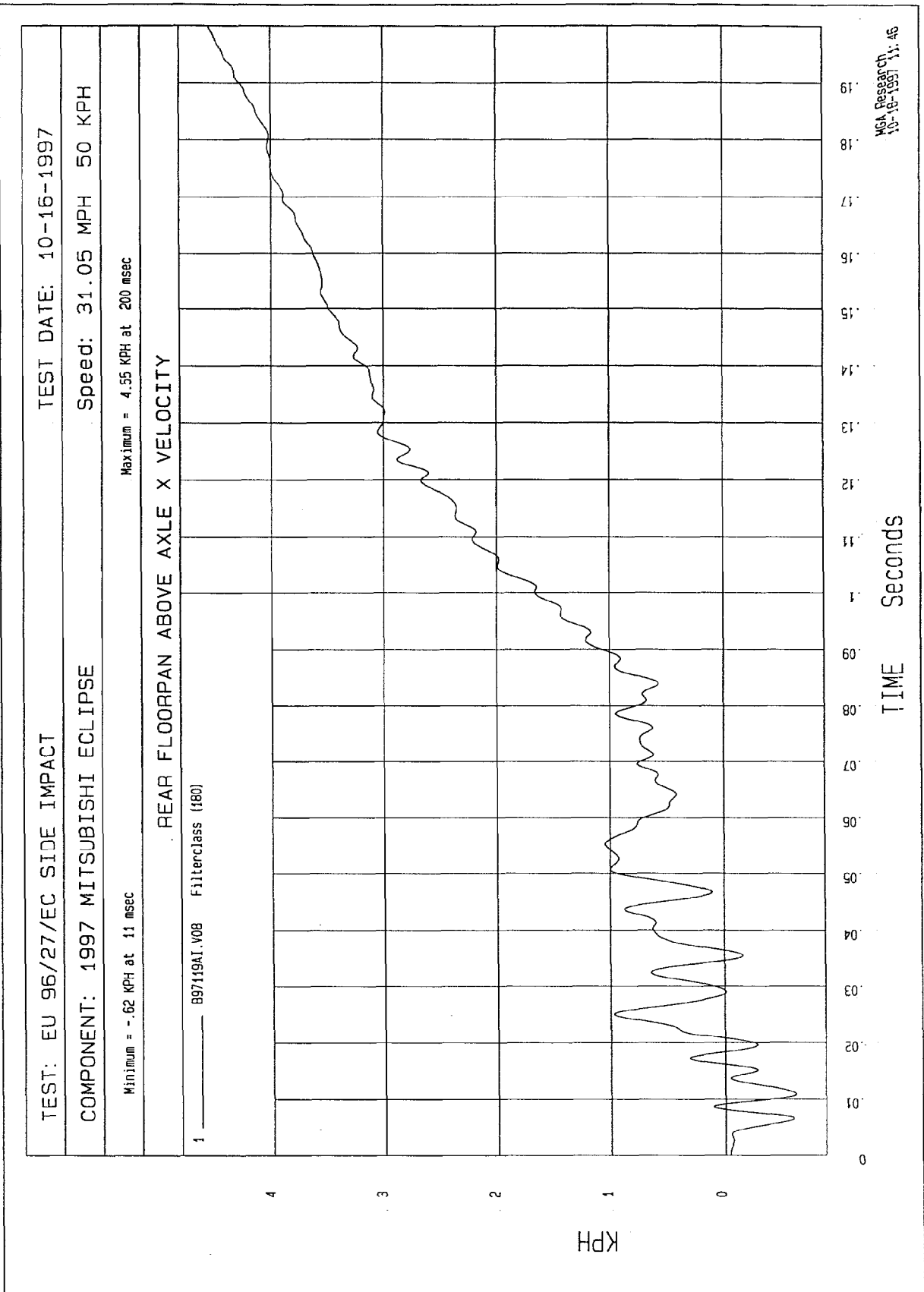
COMPONENT: 1997 MITSUBISHI ECLIPSE

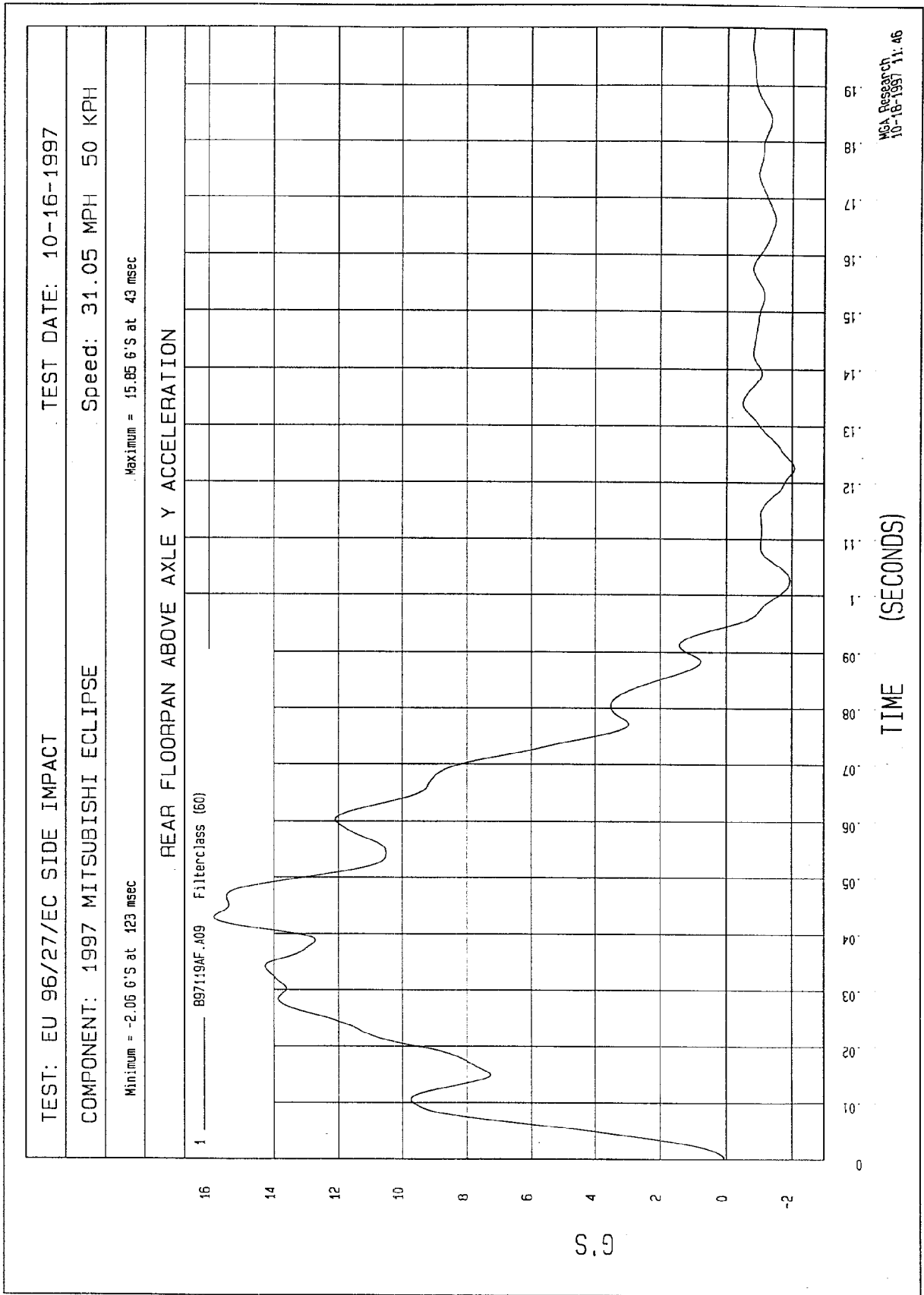
Maximum = 5.88 G'S at 22 msec

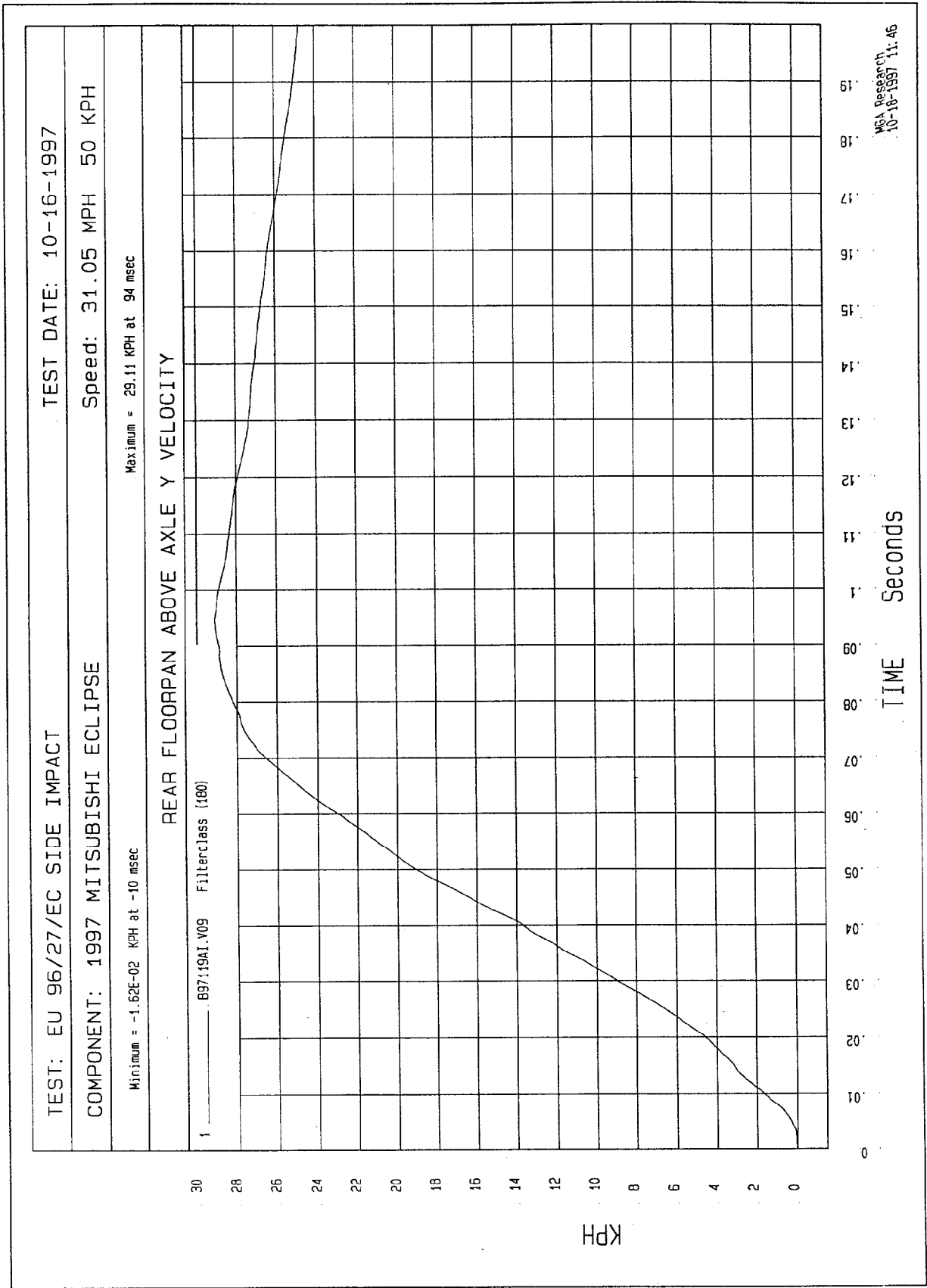
Minimum = -5.56 G'S at 27 msec

REAR FLOORPAN ABOVE AXLE X ACCELERATION









TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

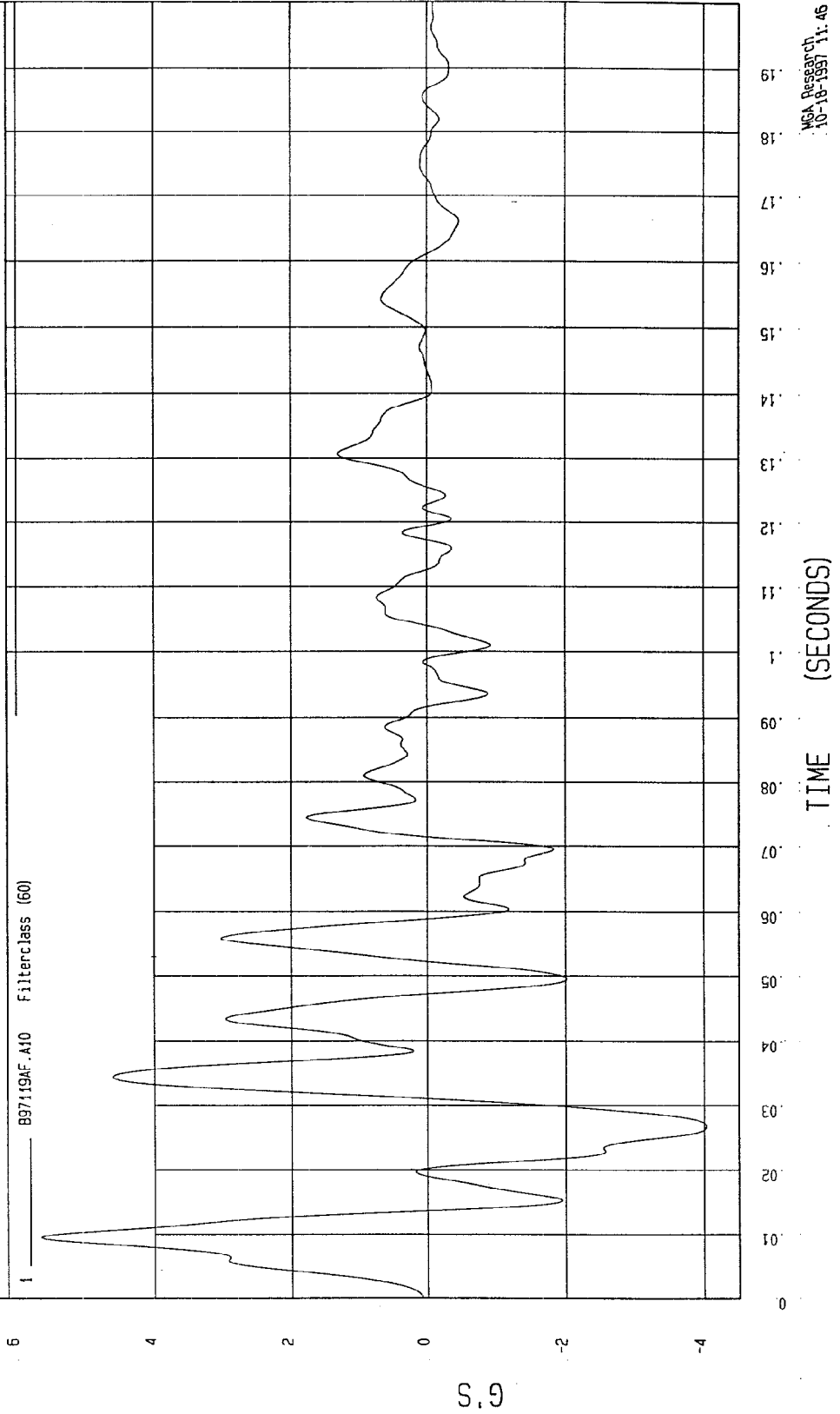
COMPONENT: 1997 MITSUBISHI ECLIPSE

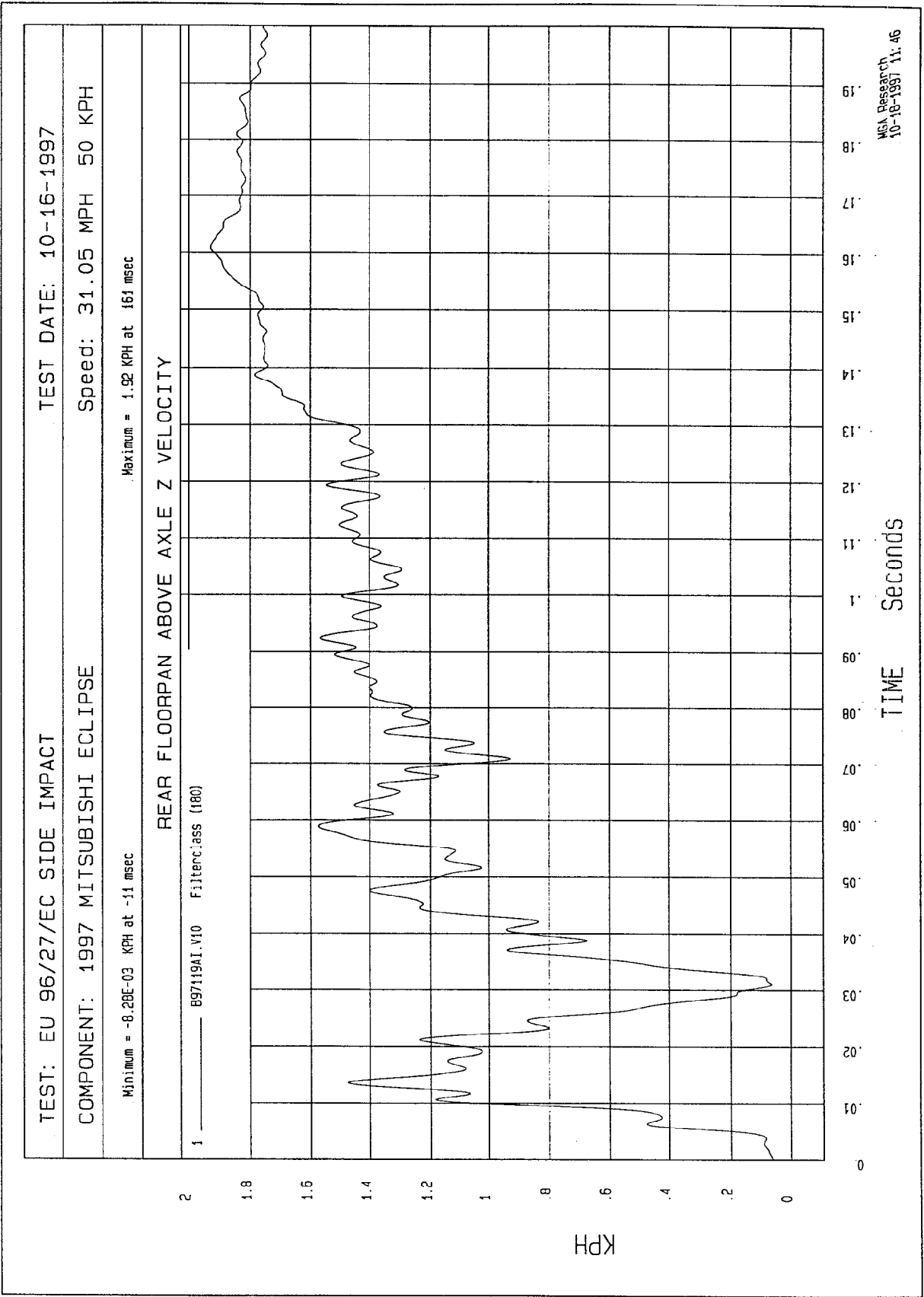
Speed: 31.05 MPH 50 KPH

Minimum = -4.03 G'S at 27 msec

Maximum = 5.65 G'S at 10 msec

REAR FLOORPAN ABOVE AXLE Z ACCELERATION





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = 1.04E-02 G'S at -12 msec

Maximum = 16.14 G'S at 43 msec

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

1 ——— B97149AV.A08 Filterclass (60)

18

16

14

12

10

8

6

4

2

0

G.S

16

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

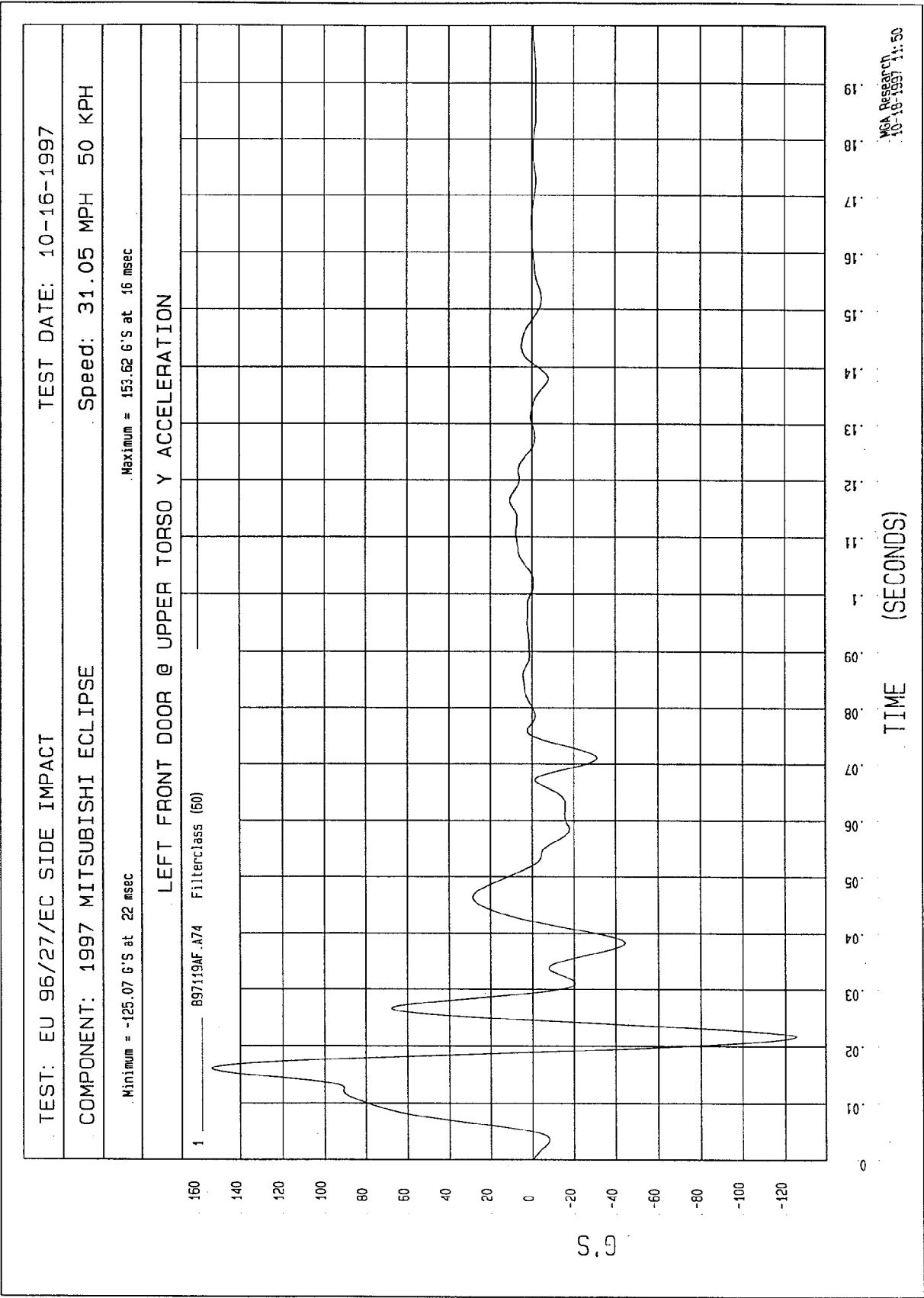
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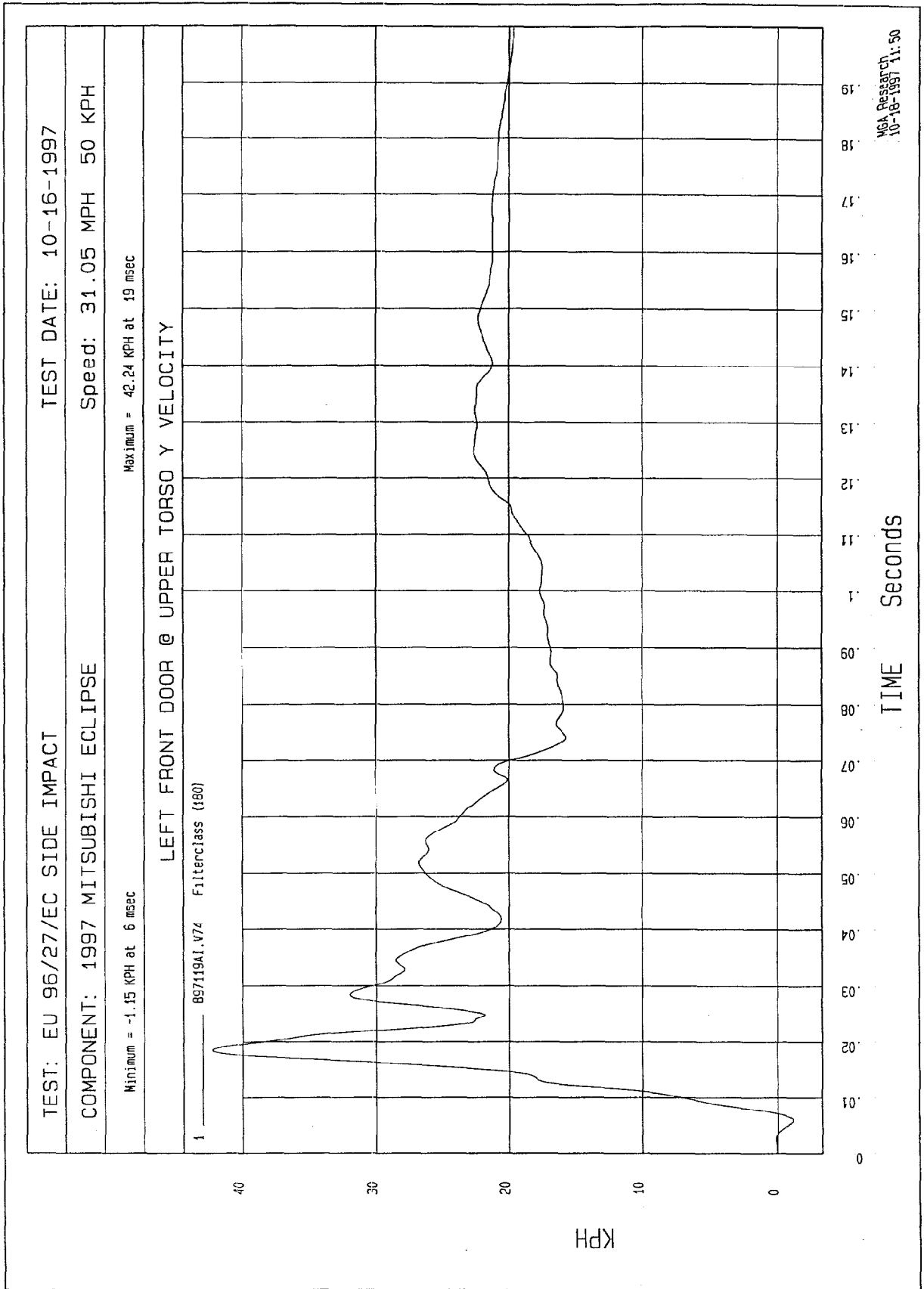
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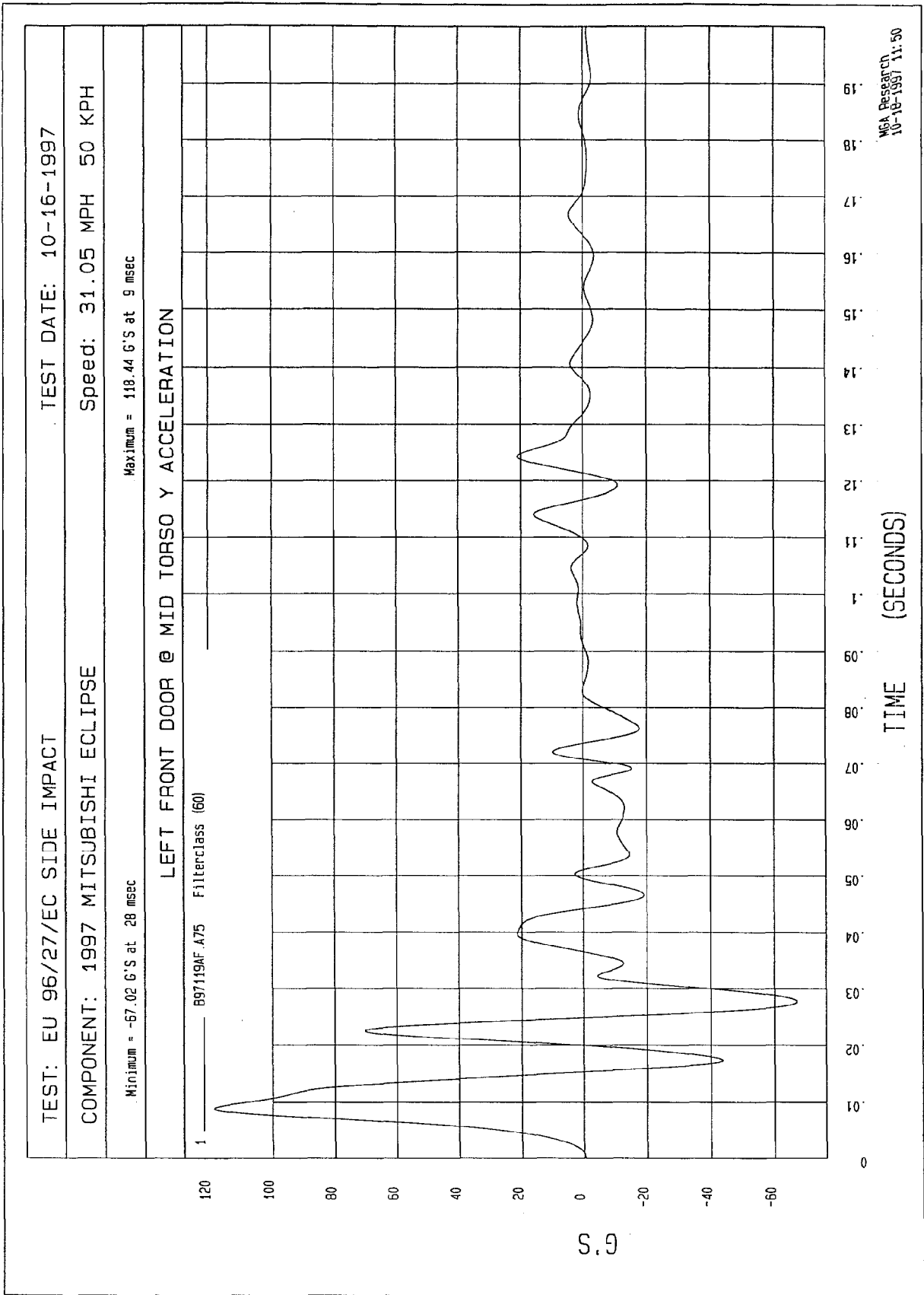
0

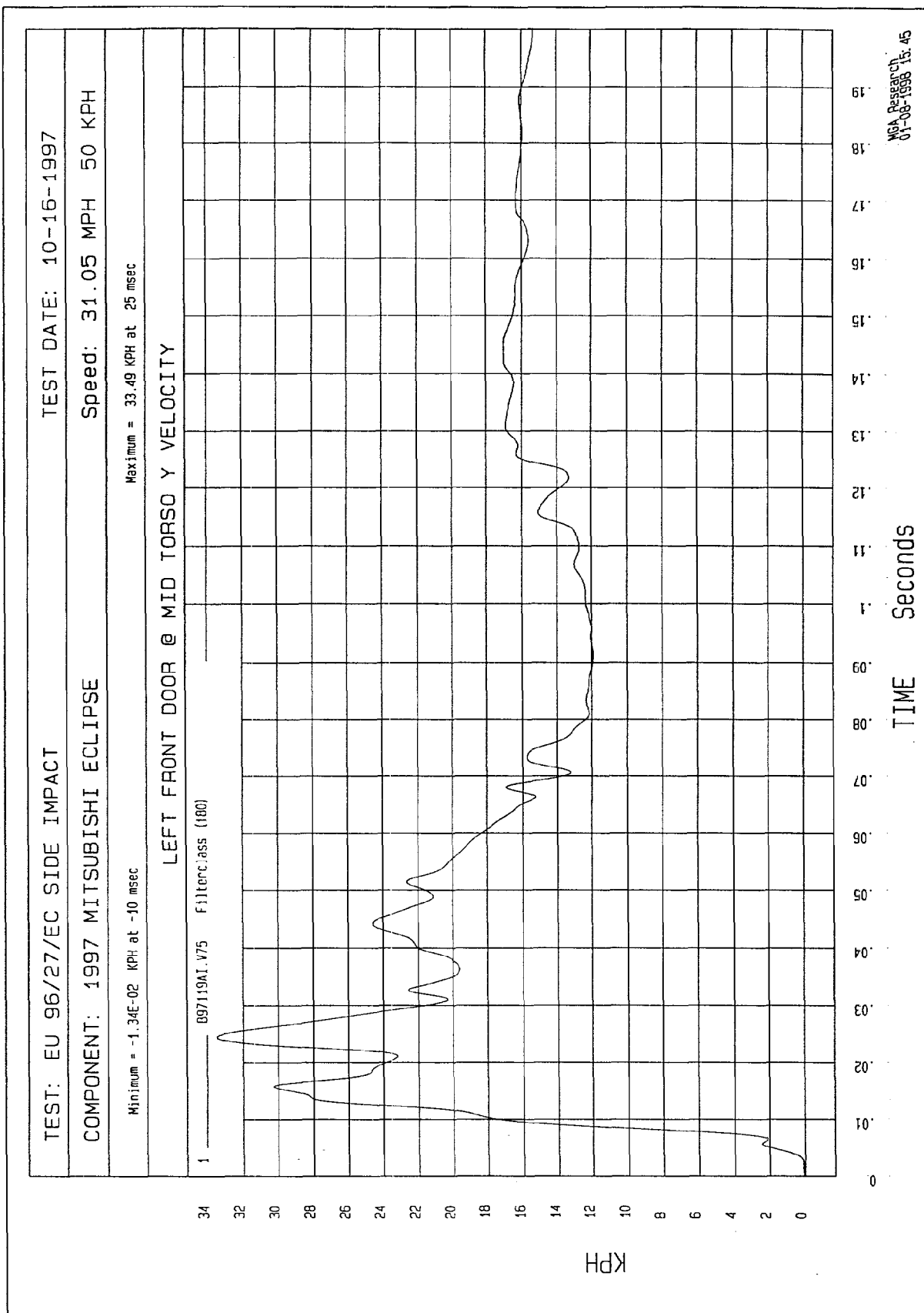
TIME (SECONDS)

MGA Research
10-18-1997 11:47









TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

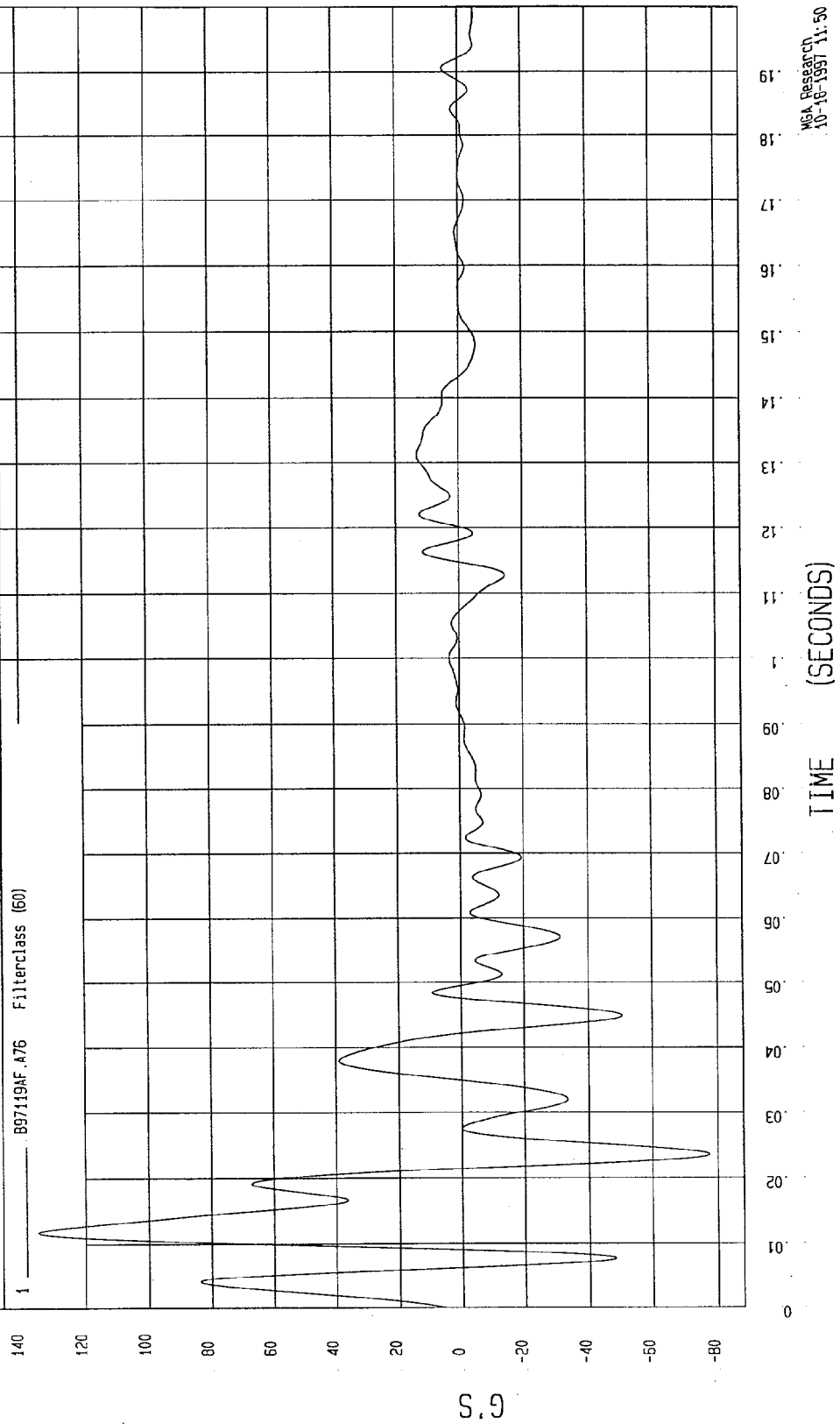
Speed: 31.05 MPH 50 KPH

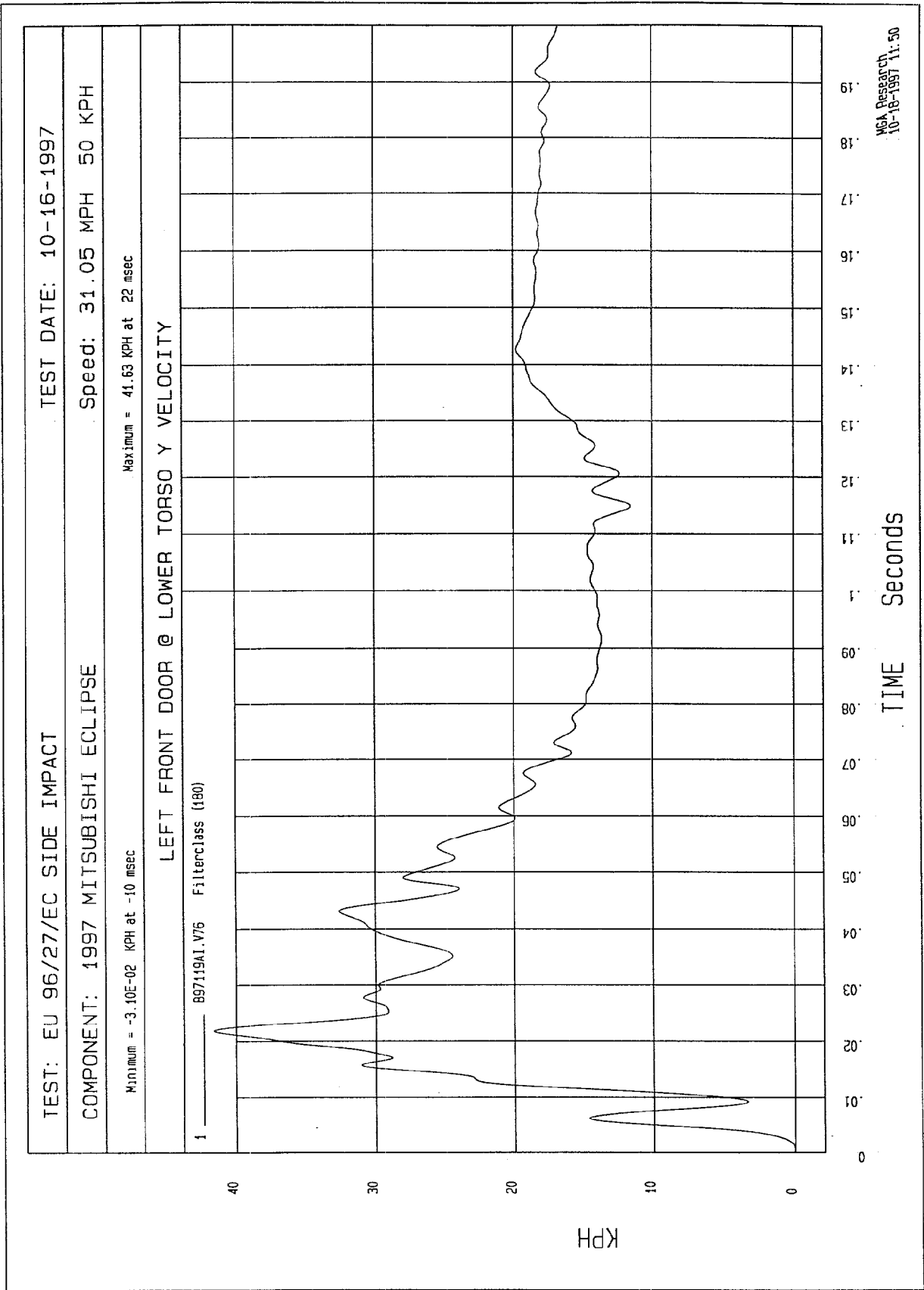
COMPONENT: 1997 MITSUBISHI ECLIPSE

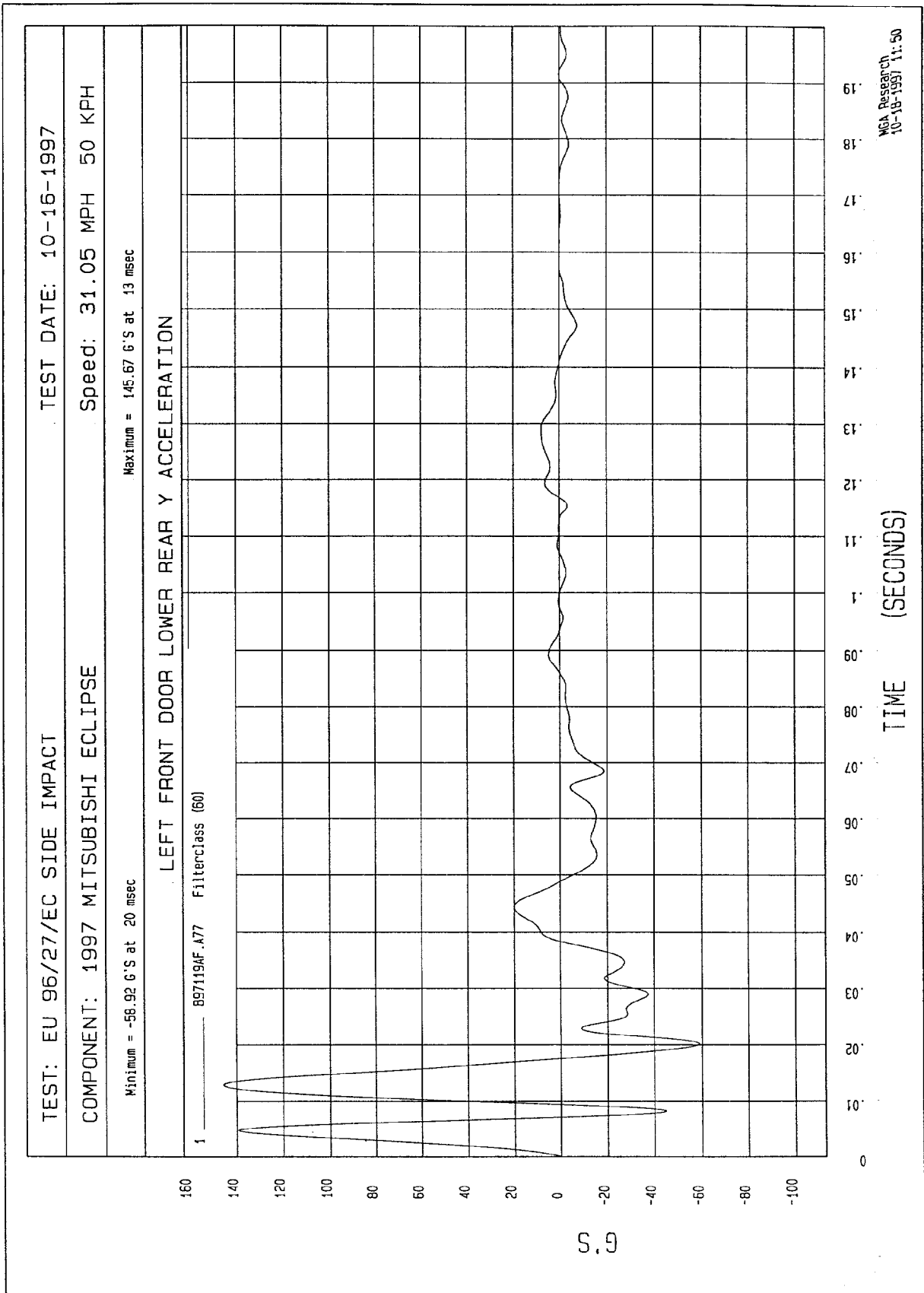
Maximum = 134.91 G'S at 12 msec

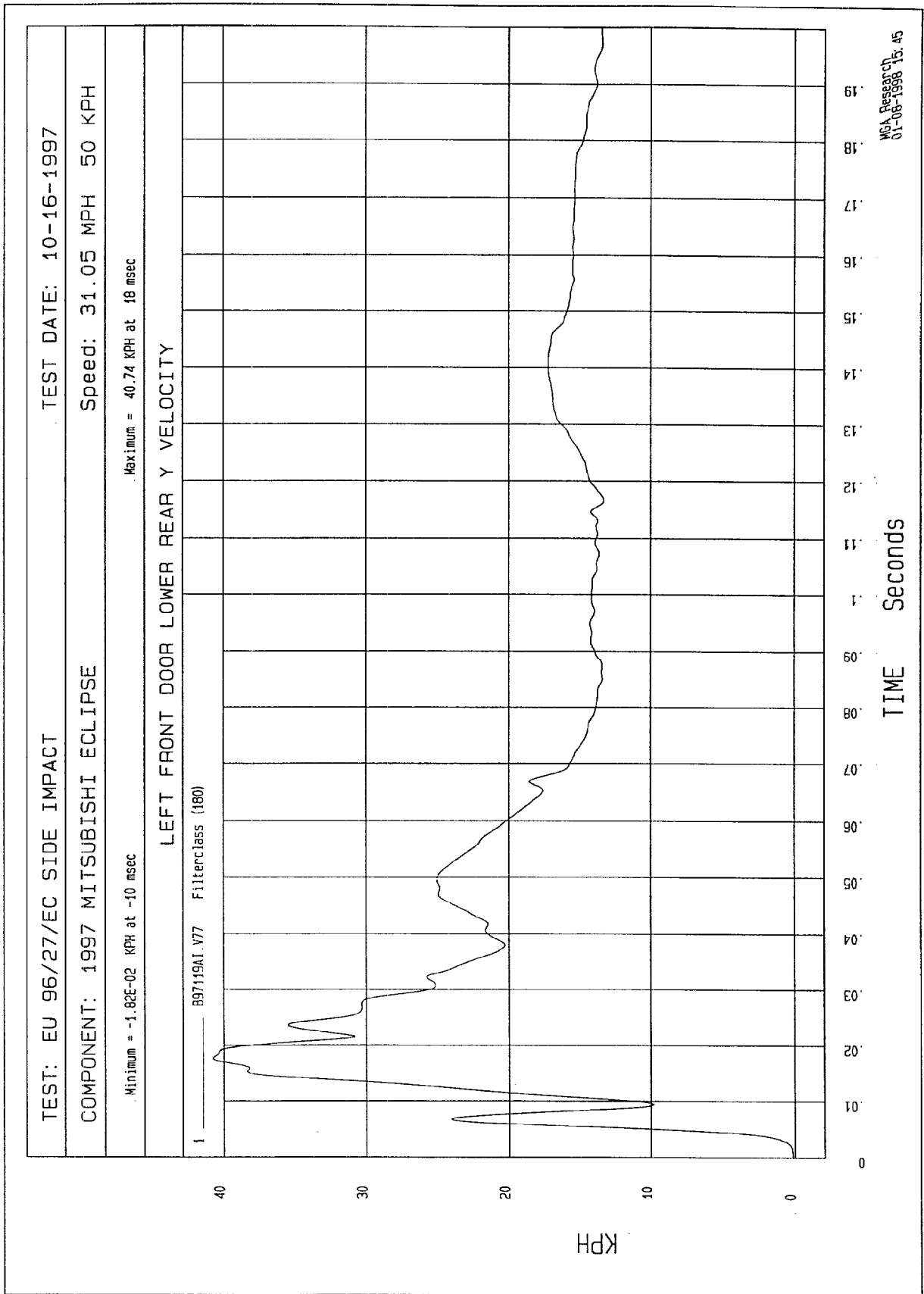
Minimum = -77.41 G'S at 24 msec

LEFT FRONT DOOR @ LOWER TORSO Y ACCELERATION









TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

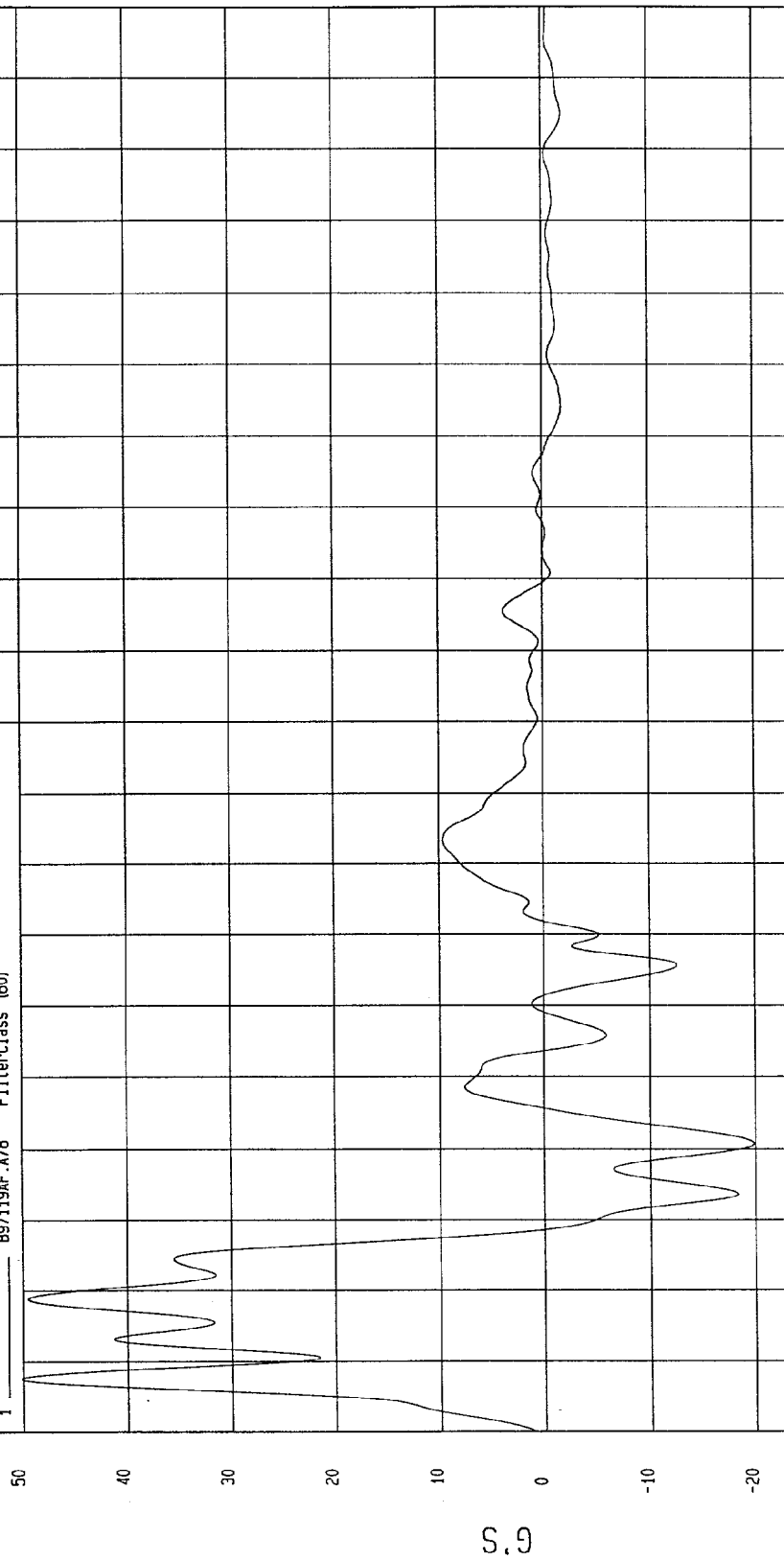
Speed: 31.05 MPH 50 KPH

Minimum = -19.86 G'S at 41 msec

Maximum = 50.15 G'S at 8 msec

LEFT REAR DOOR @ UPPER TORSO Y ACCELERATION

1 B07119AF.A78 Filterclass (60)



MEA Research
10-16-1997 11:50

TIME (SECONDS)

G.S

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 30.15 KPH at 28 msec

Minimum = -2.62E-02 KPH at 2 msec

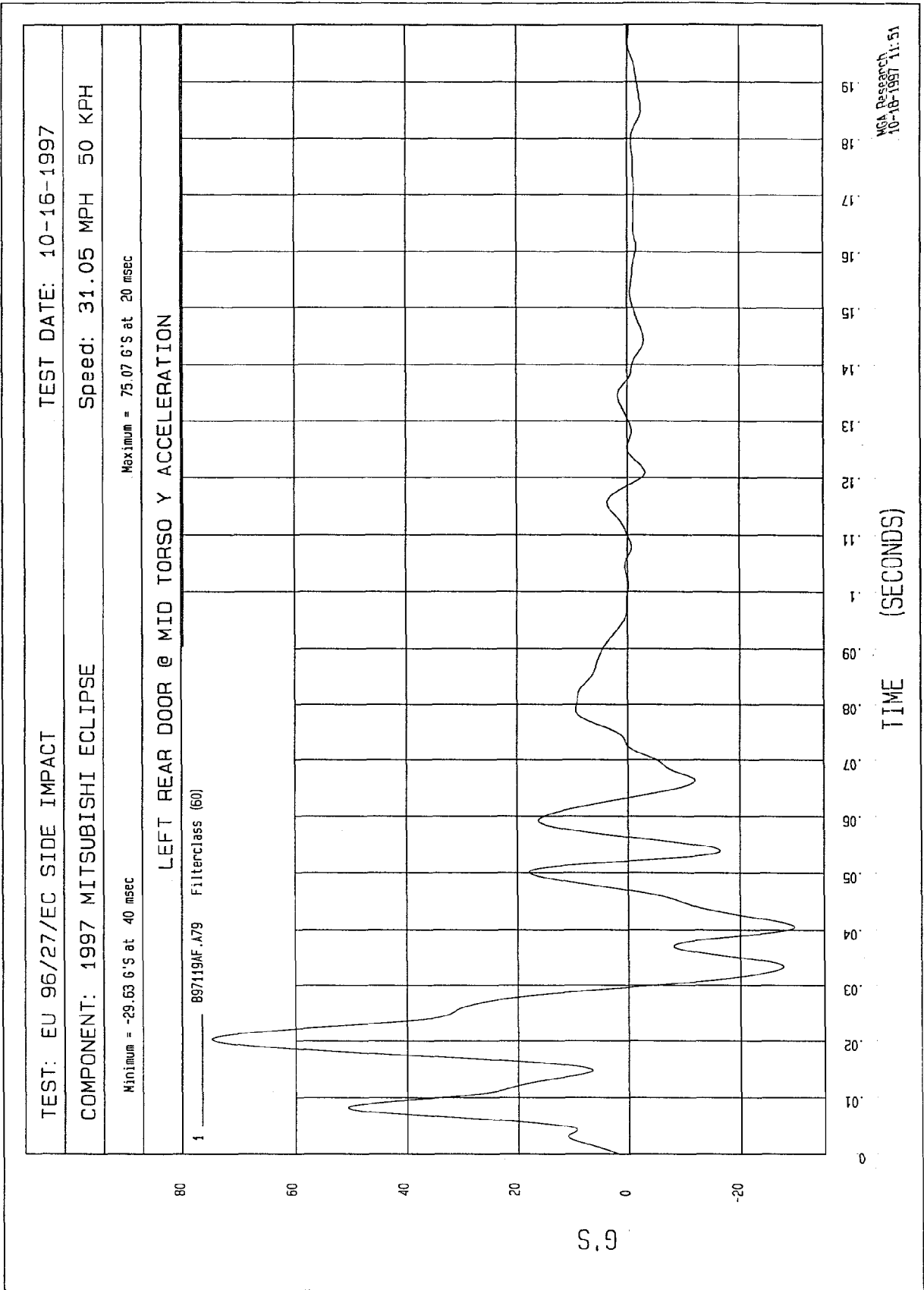
LEFT REAR DOOR @ UPPER TORSO Y VELOCITY

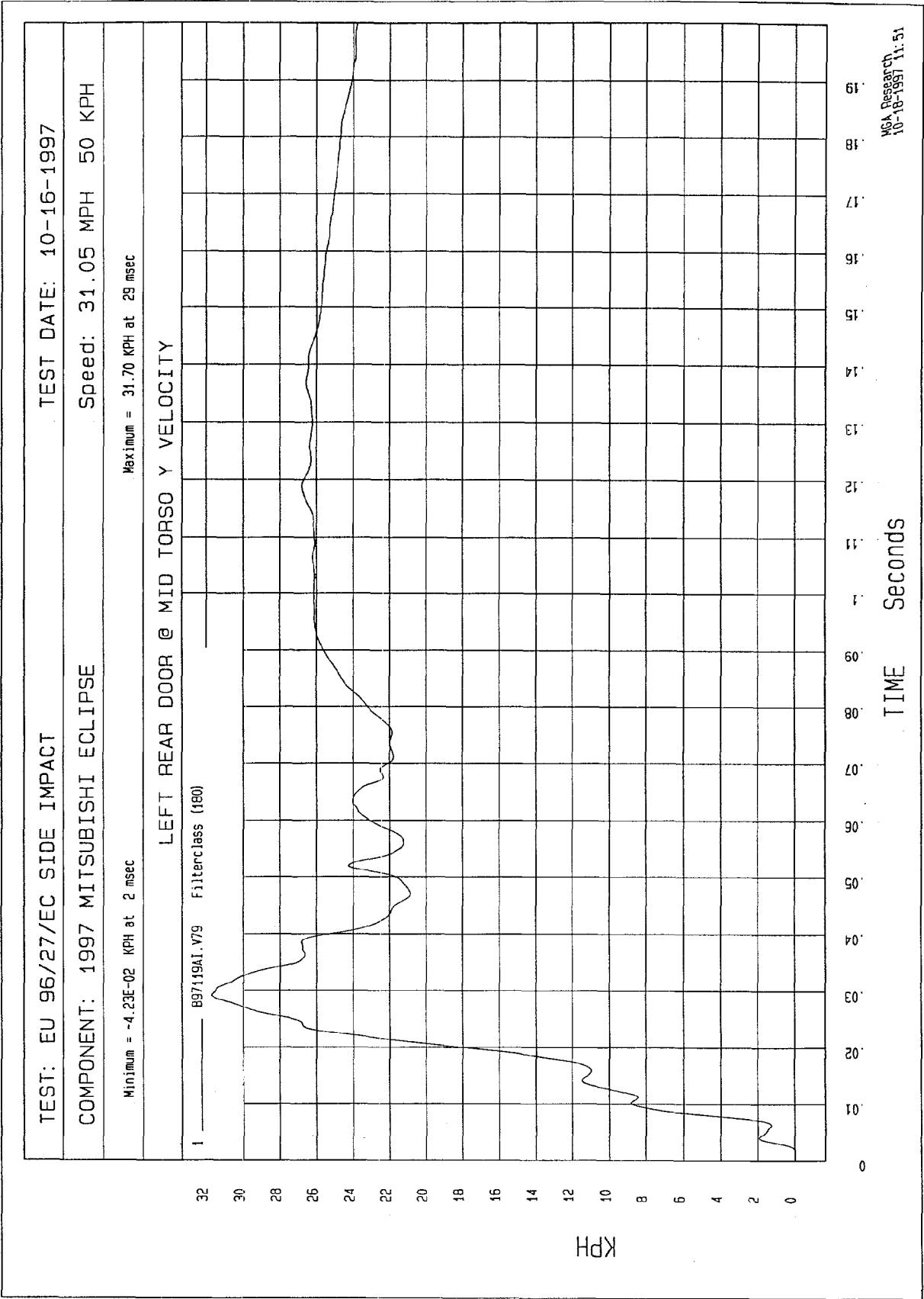
1 897119A1.V78 Filterclass (180)

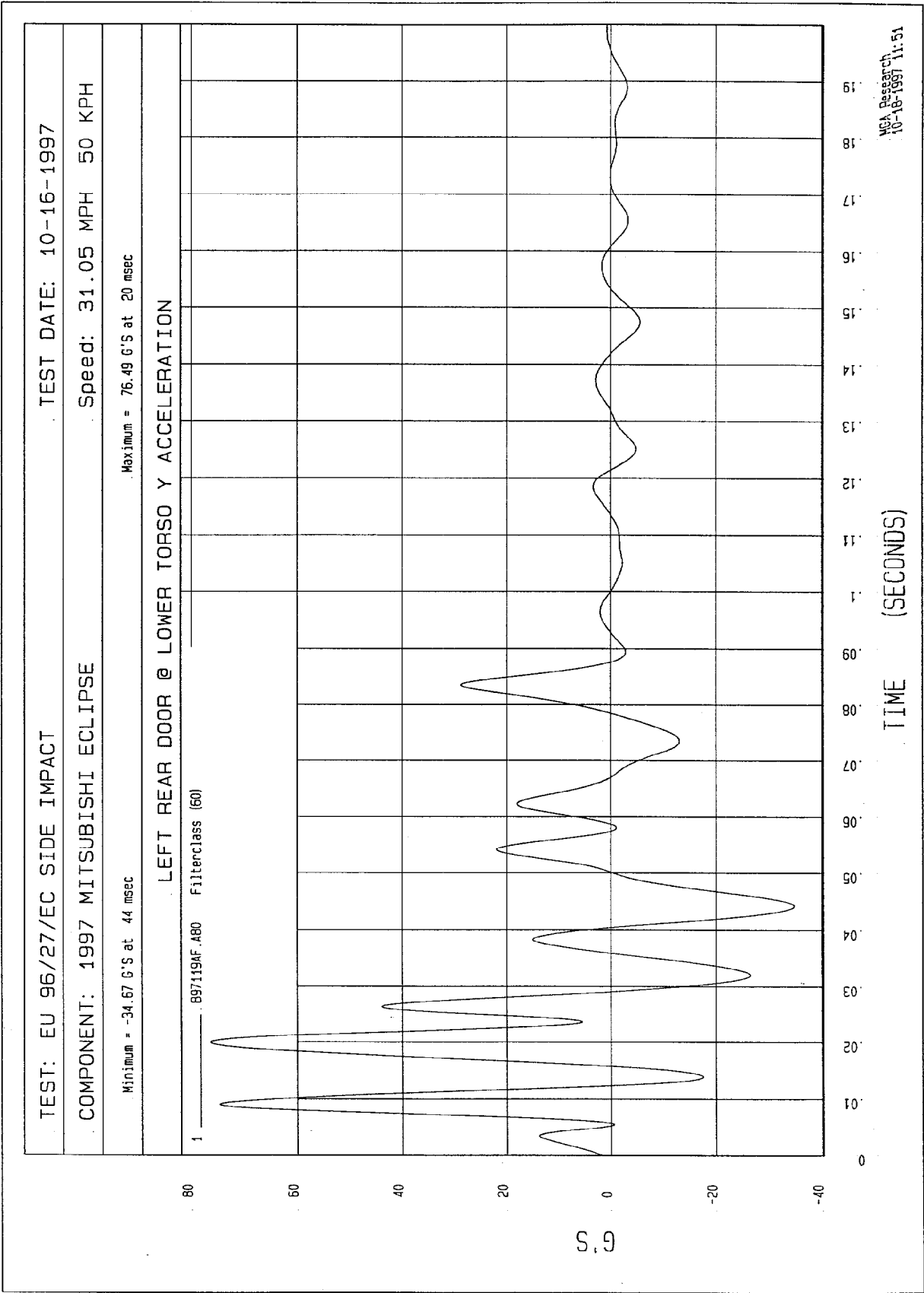


TIME Seconds

NSA Research
10-16-1997 11:50







TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 28.06 KPH at 28 msec

Minimum = -5.51 KPH at 7 msec

LEFT REAR DOOR @ LOWER TORSO Y VELOCITY

1 897119A1.V60 FilterClass (180)

28

26

24

22

20

18

16

14

12

10

8

6

4

2

0

KPH

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

TIME Seconds

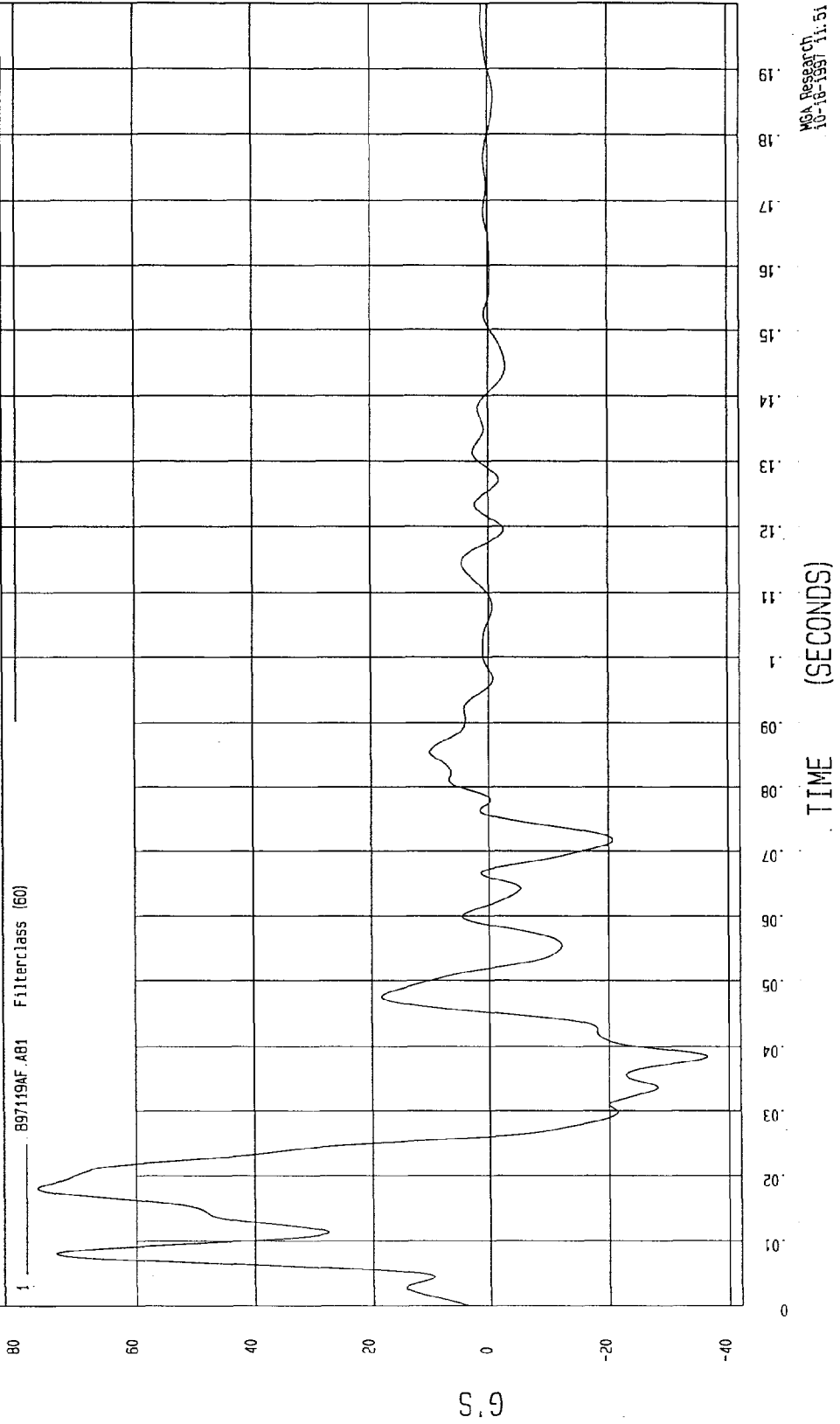
NGA Research
10-18-1997 11:51

TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -36.44 G'S at 38 msec
Maximum = 76.59 G'S at 18 msec

LEFT REAR DOOR LOWER REAR Y ACCELERATION



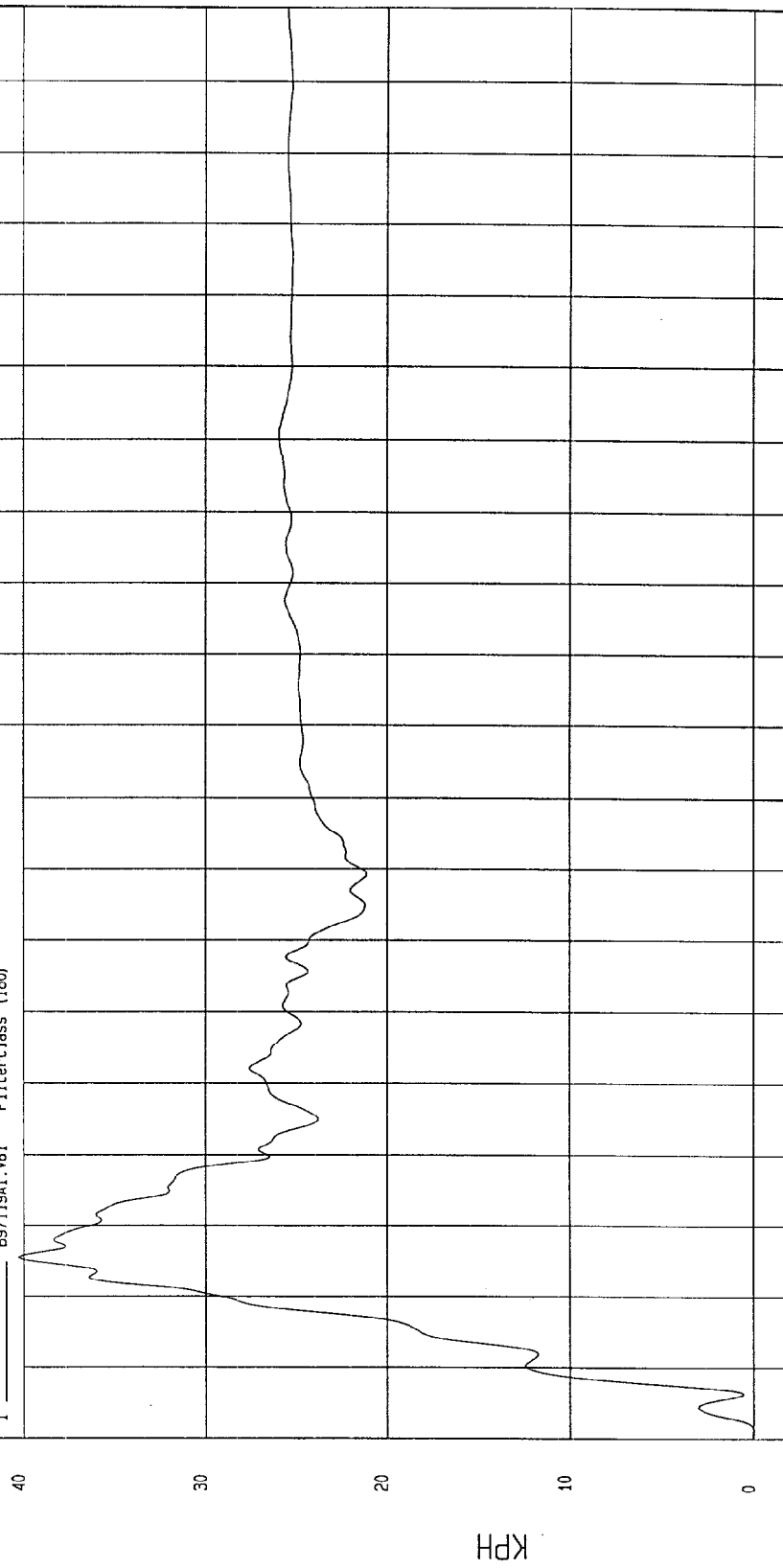
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -8.17E-03 KPH at -10 msec Maximum = 40.28 KPH at 26 msec

LEFT REAR DOOR LOWER REAR Y VELOCITY

1 B97119A1.VB1 Filterclass (180)



TIME Seconds
WSA Research
10-16-1997 11:51

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

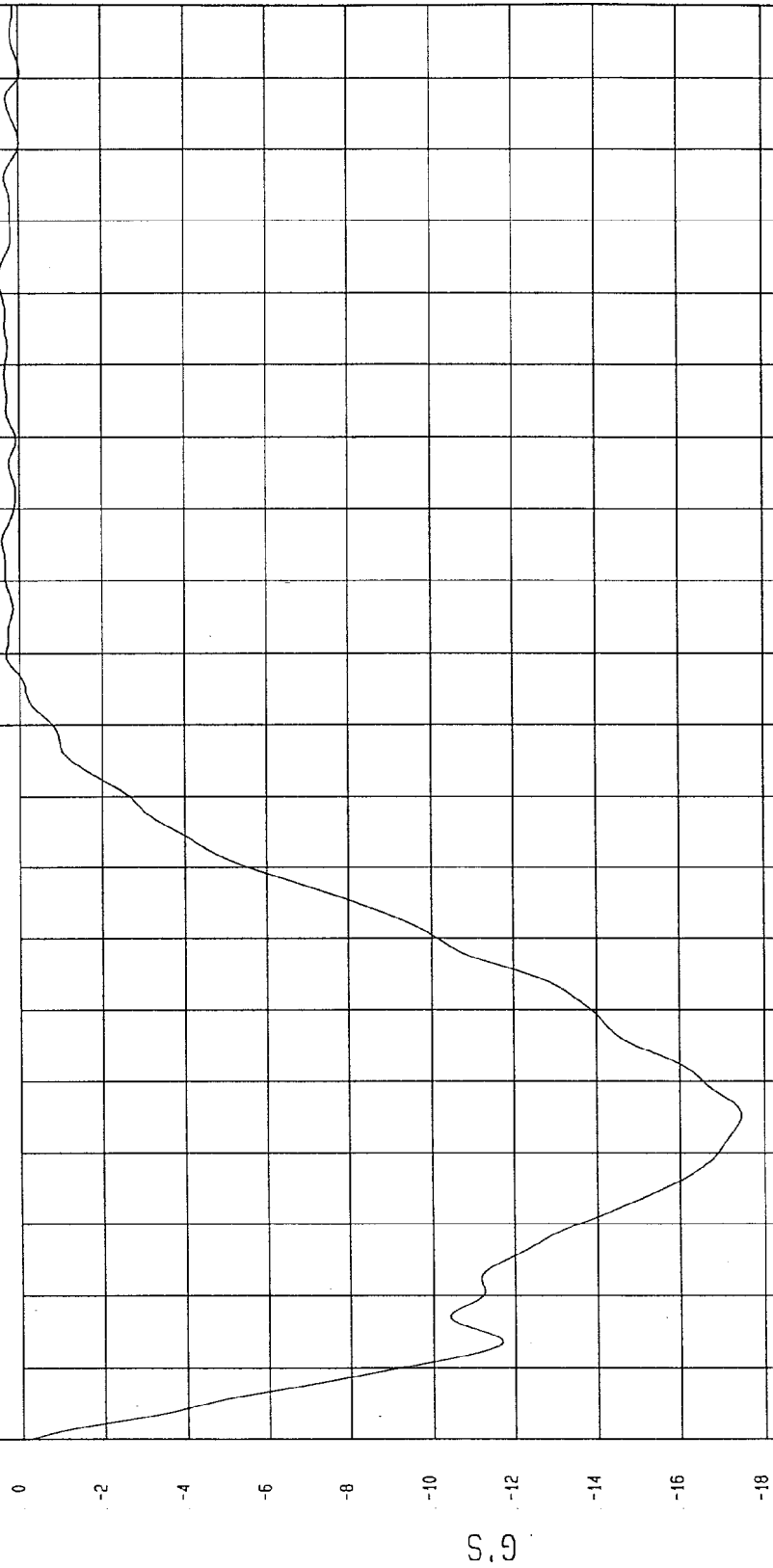
Speed: 31.05 MPH 50 KPH

Minimum = -17.46 G'S at 45 msec

Maximum = .46 G'S at 162 msec

MOVING BARRIER CG X ACCELERATION

1 ——— B97119AF.A02 FilterClass (60)



MCA Research
10-16-1997 11:51

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

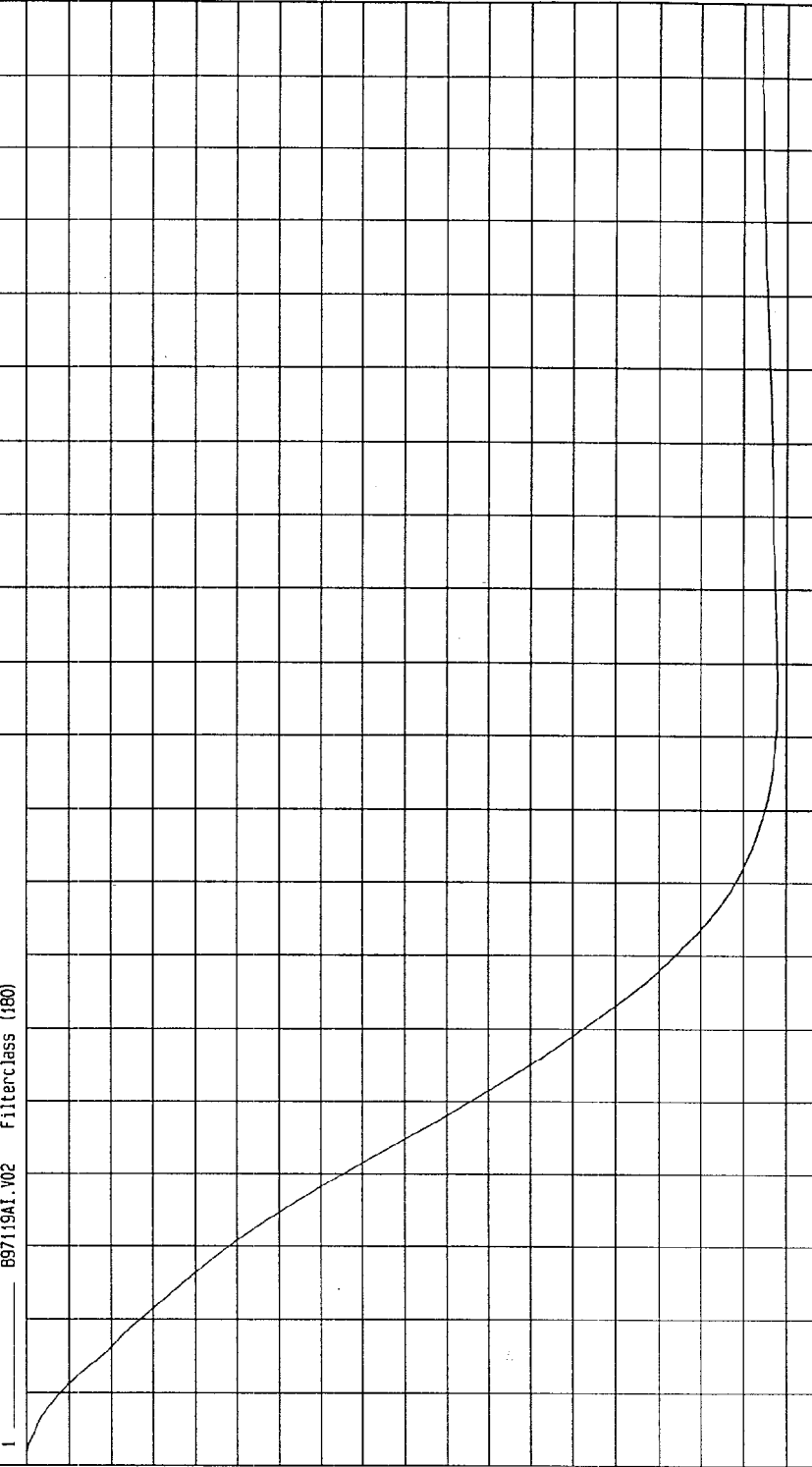
Minimum = 14.40 KPH at 107 msec

Maximum = 50.01 KPH at -18 msec

MOVING BARRIER CG X VELOCITY

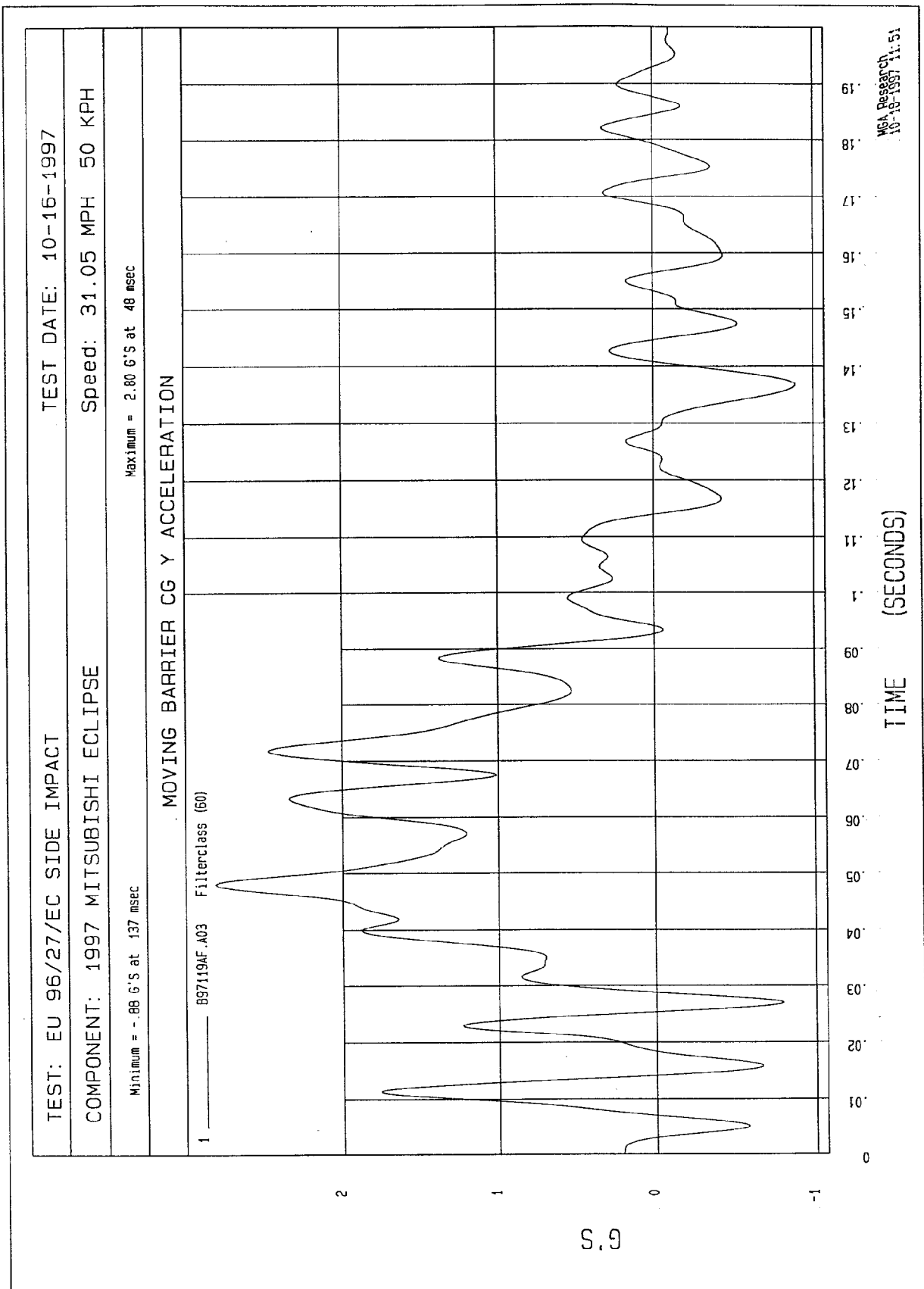
1 B97119A1.V02 Filterclass (180)

KPH



TIME Seconds

MSA Research
10-16-1997 11:51



TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

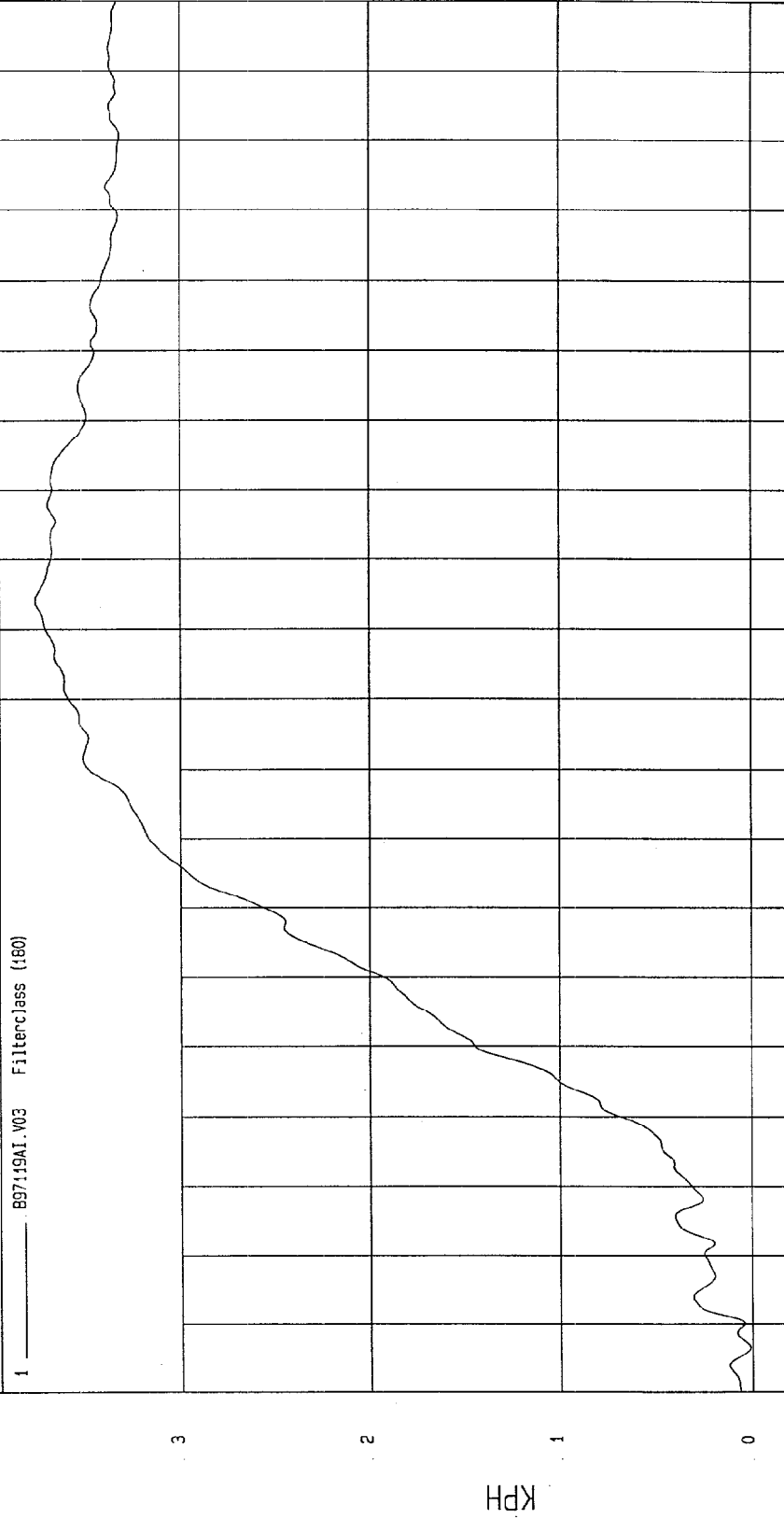
Speed: 31.05 MPH 50 KPH

Minimum = -8.26E-03 KPH at -18 msec

Maximum = 3.76 KPH at 114 msec

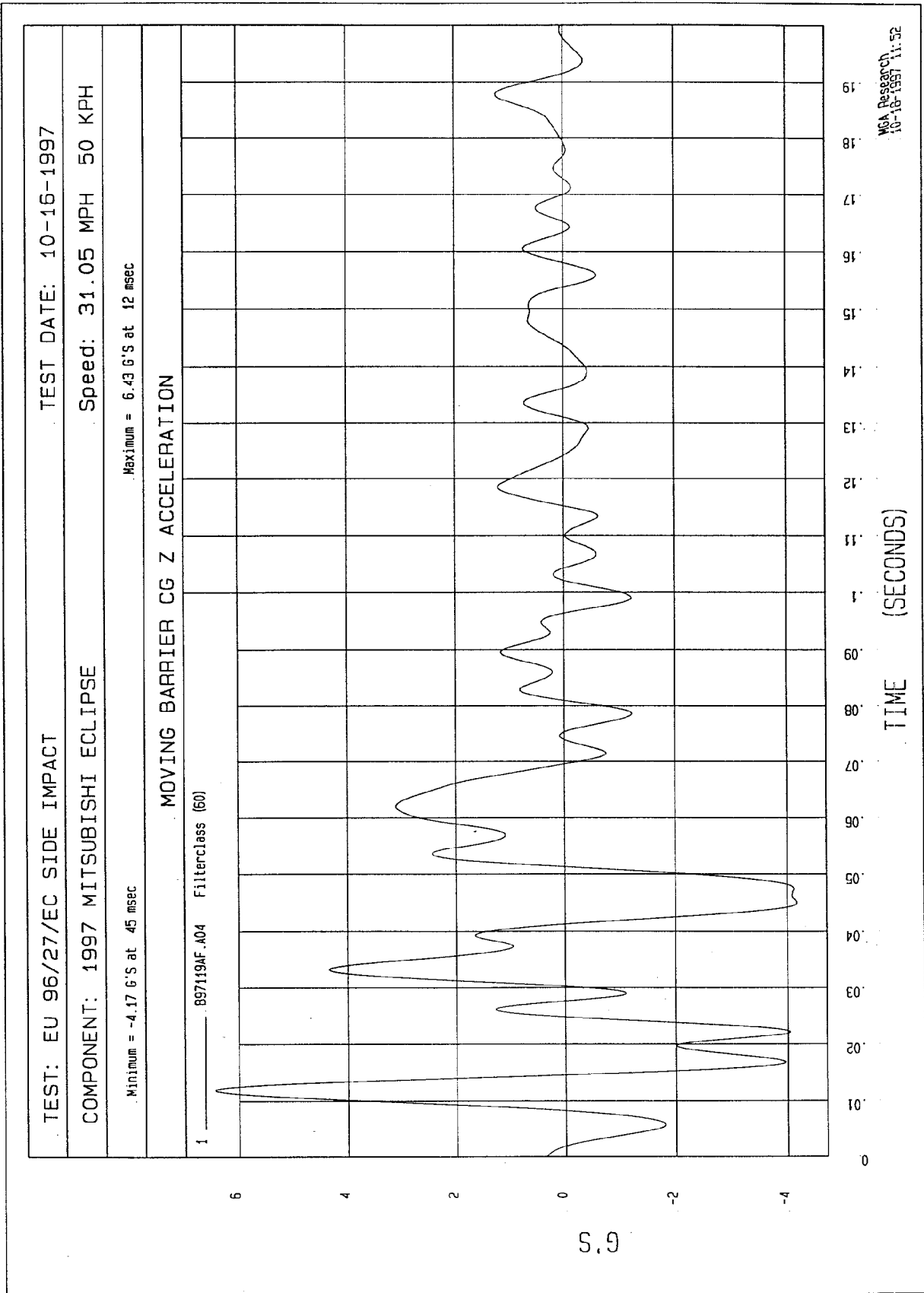
MOVING BARRIER CG Y VELOCITY

1 _____ B97119A1.V03 Filterclass (180)



TIME Seconds

NCA Research
10-16-1997 11:51



TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

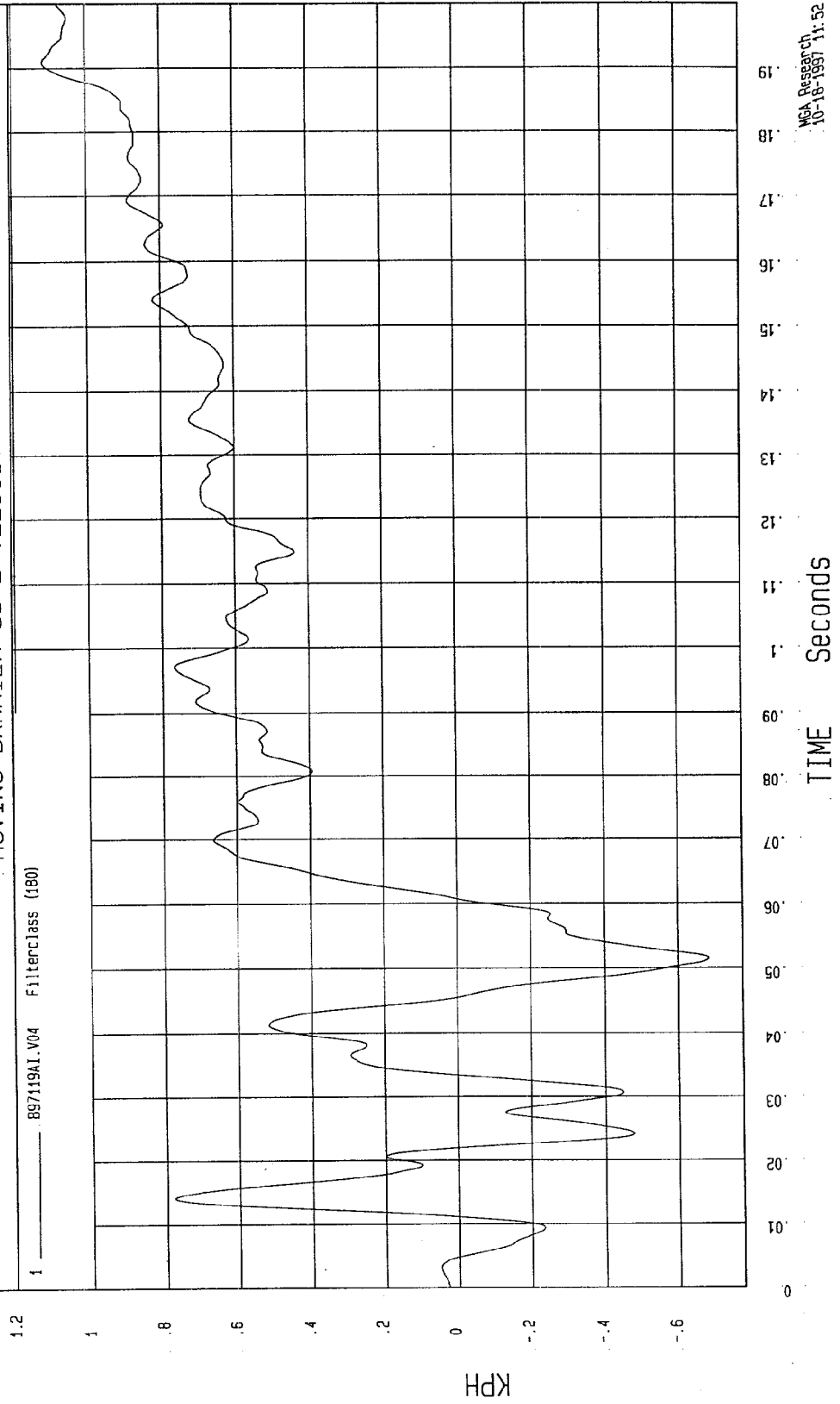
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 1.11 KPH at 191 msec

Minimum = -.68 KPH at 52 msec

MOVING BARRIER CG Z VELOCITY

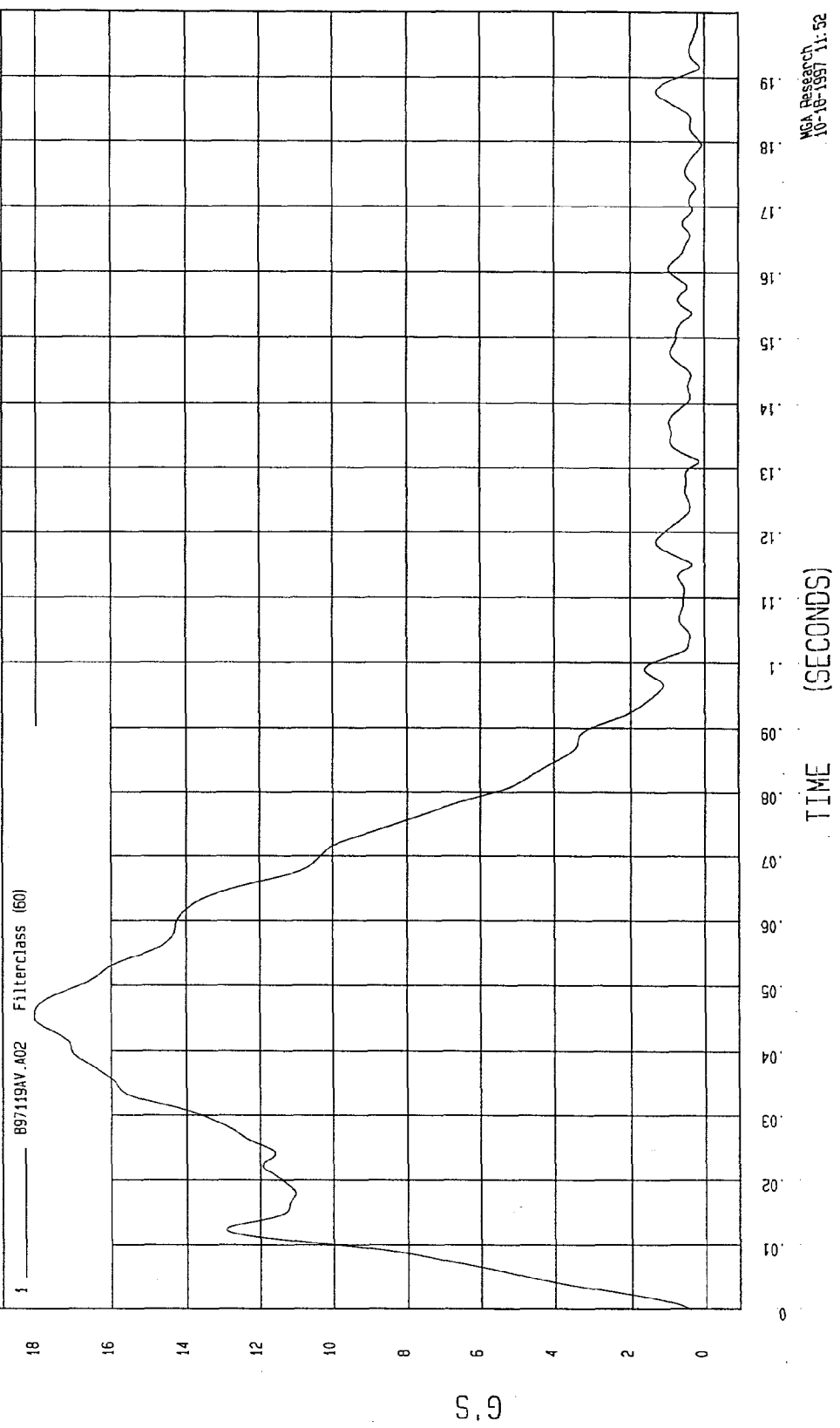


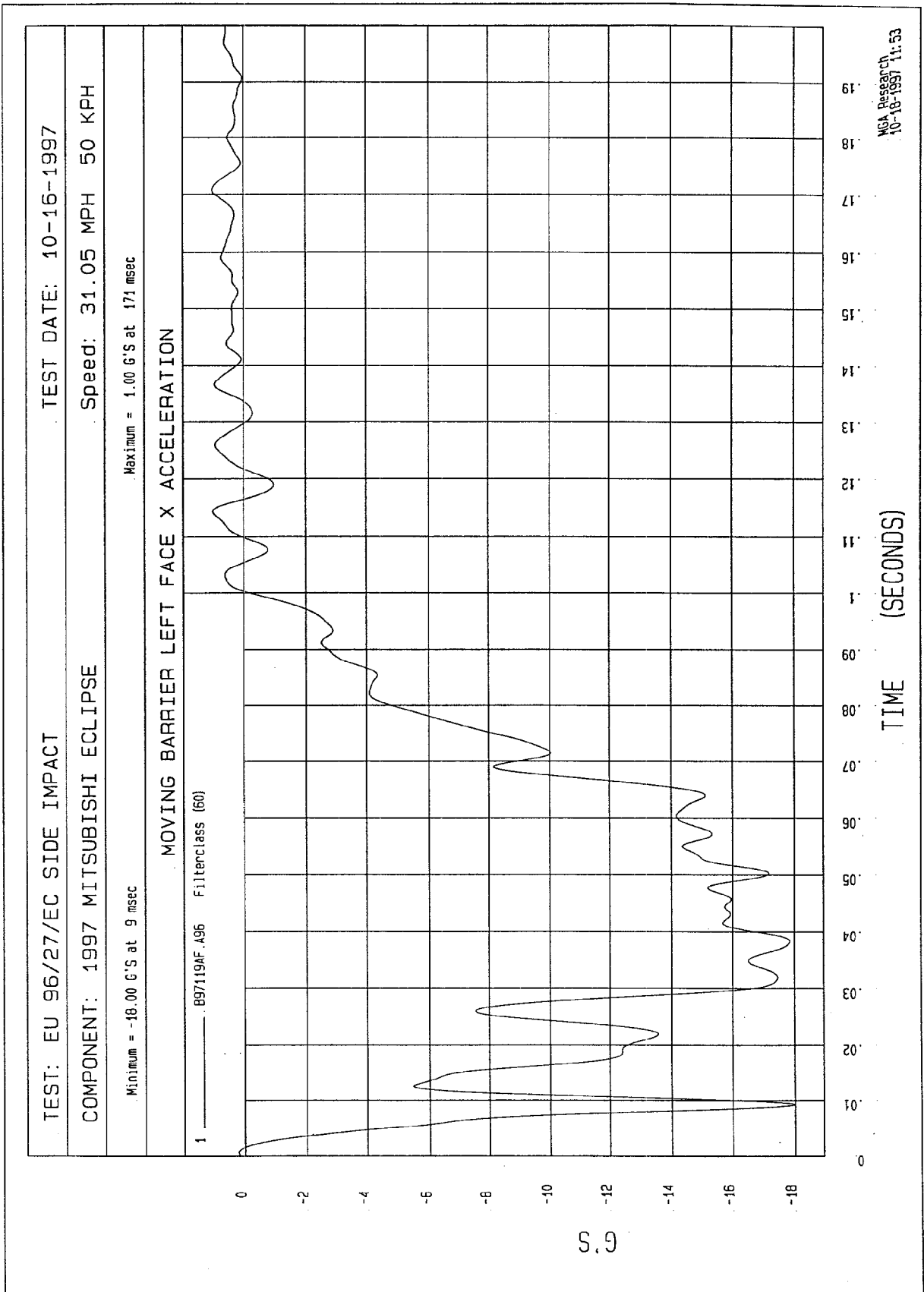
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = 5.94E-02 G'S at 180 msec Maximum = 18.06 G'S at 45 msec

MOVING BARRIER CG RESULTANT ACCELERATION





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

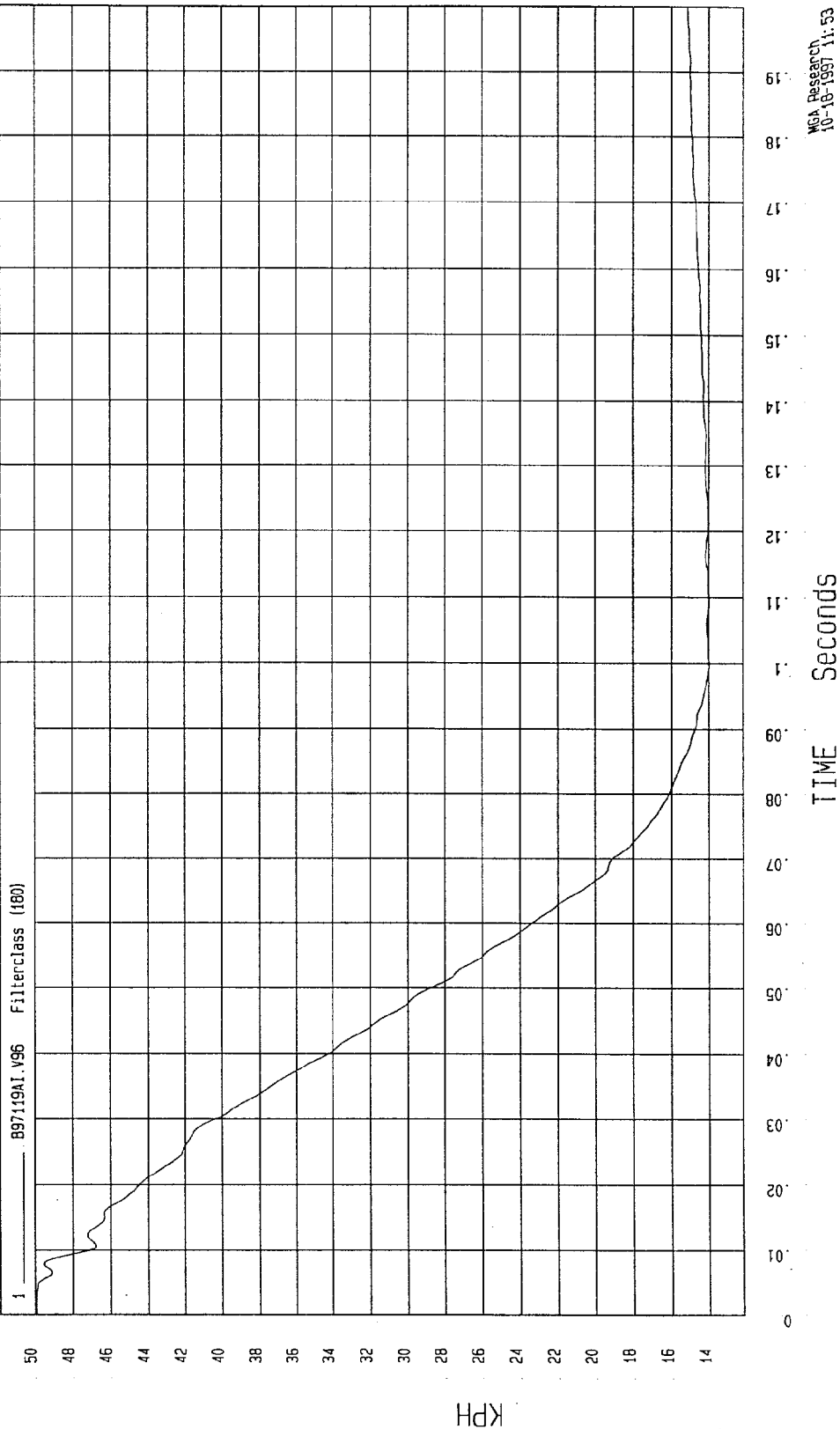
COMPONENT: 1997 MITSUBISHI ECLIPSE

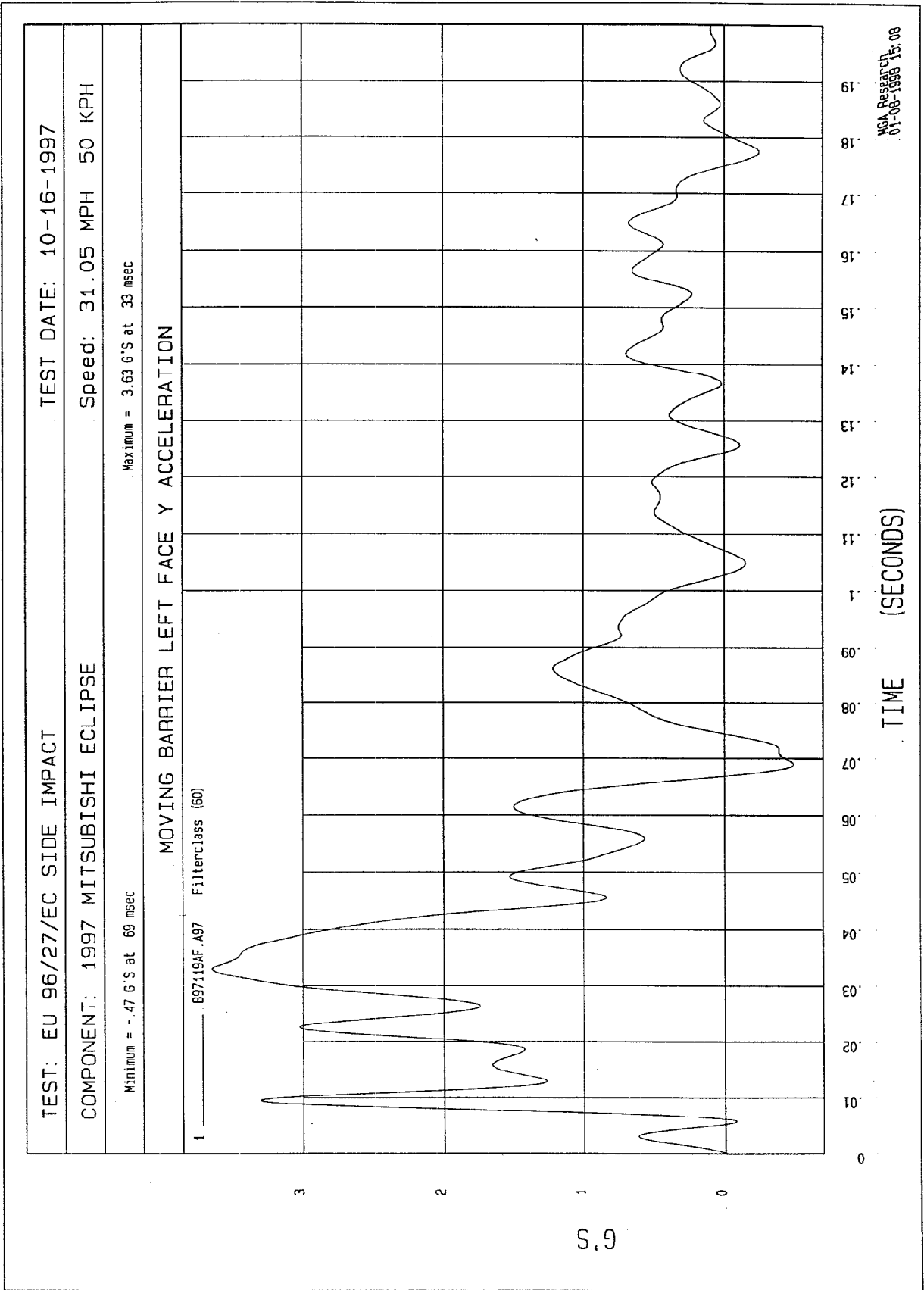
Speed: 31.05 MPH 50 KPH

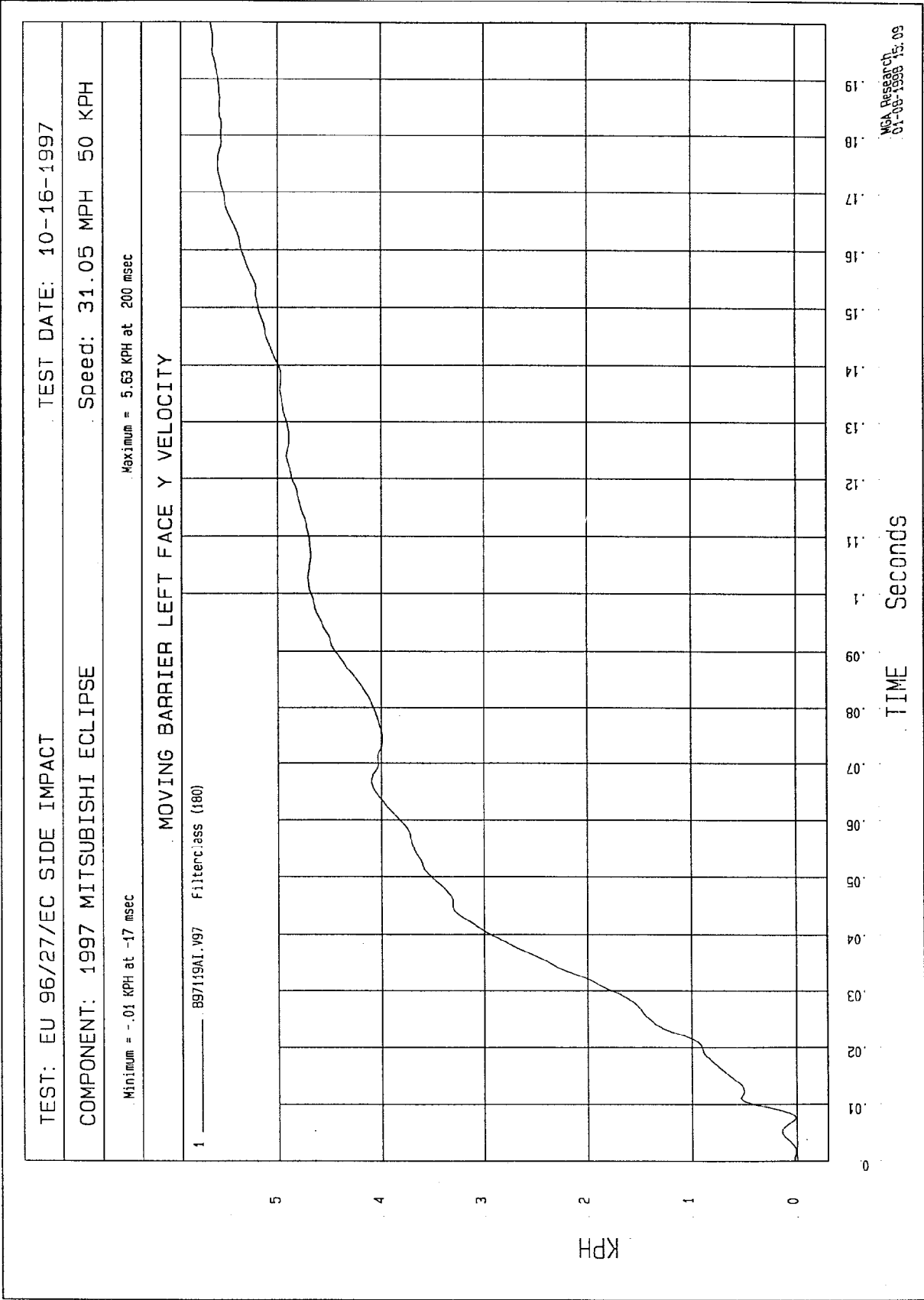
Minimum = 13.97 KPH at 109 msec

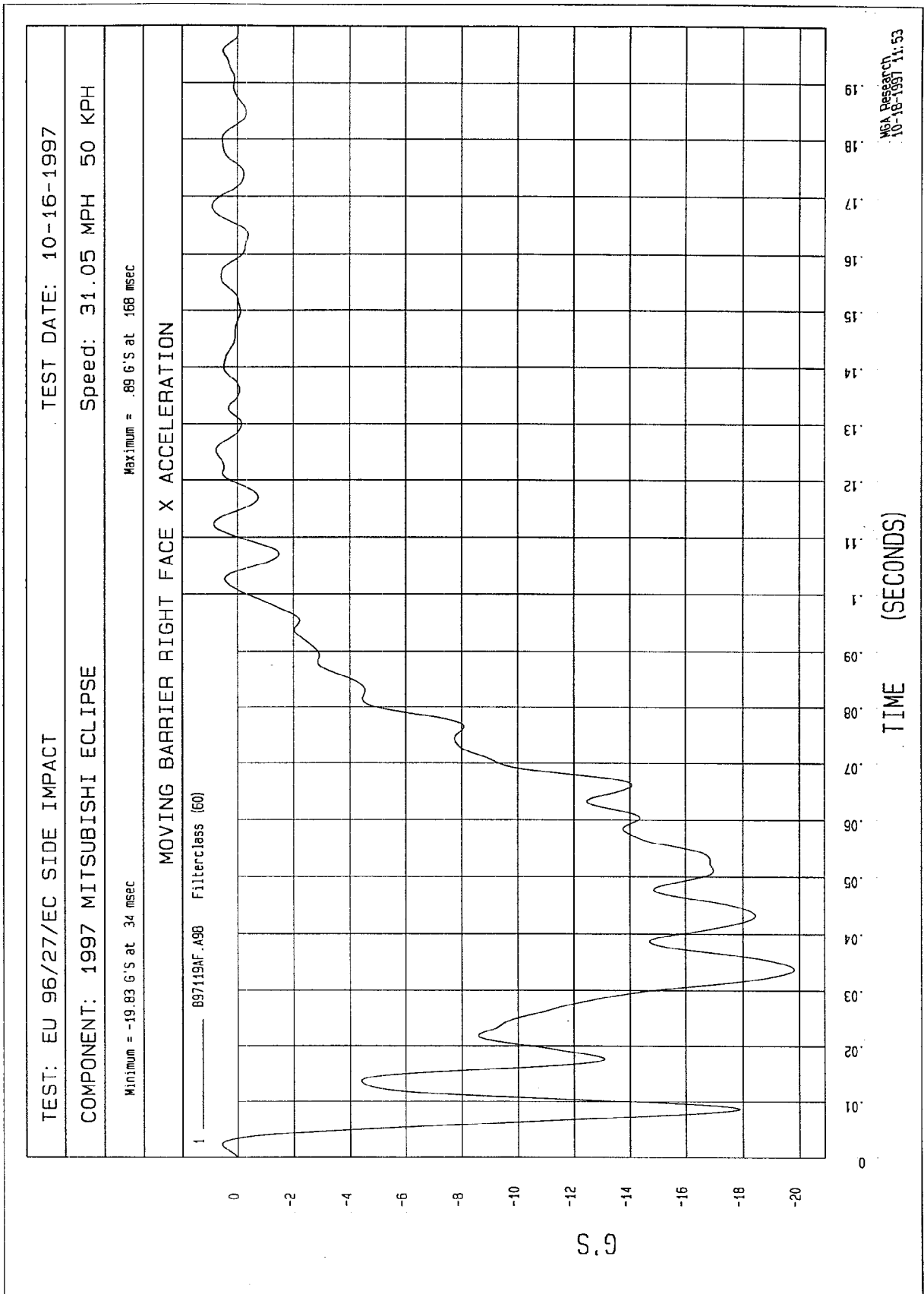
Maximum = 50.04 KPH at -12 msec

MOVING BARRIER LEFT FACE X VELOCITY







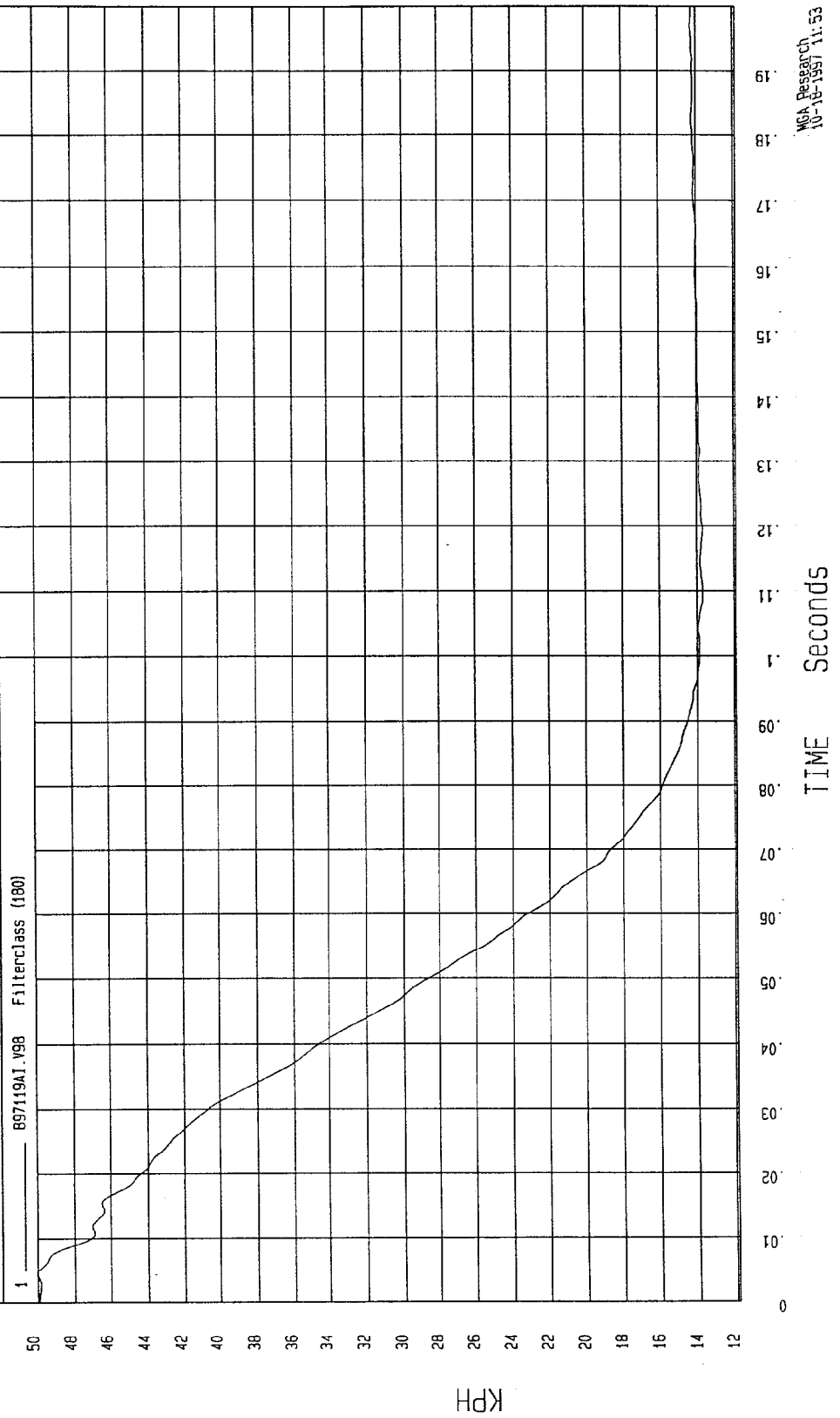


TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = 13.69 KPH at 120 msec Maximum = 50.05 KPH at 5 msec

MOVING BARRIER RIGHT FACE X VELOCITY



MCA Research
10-16-1997 11:53

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

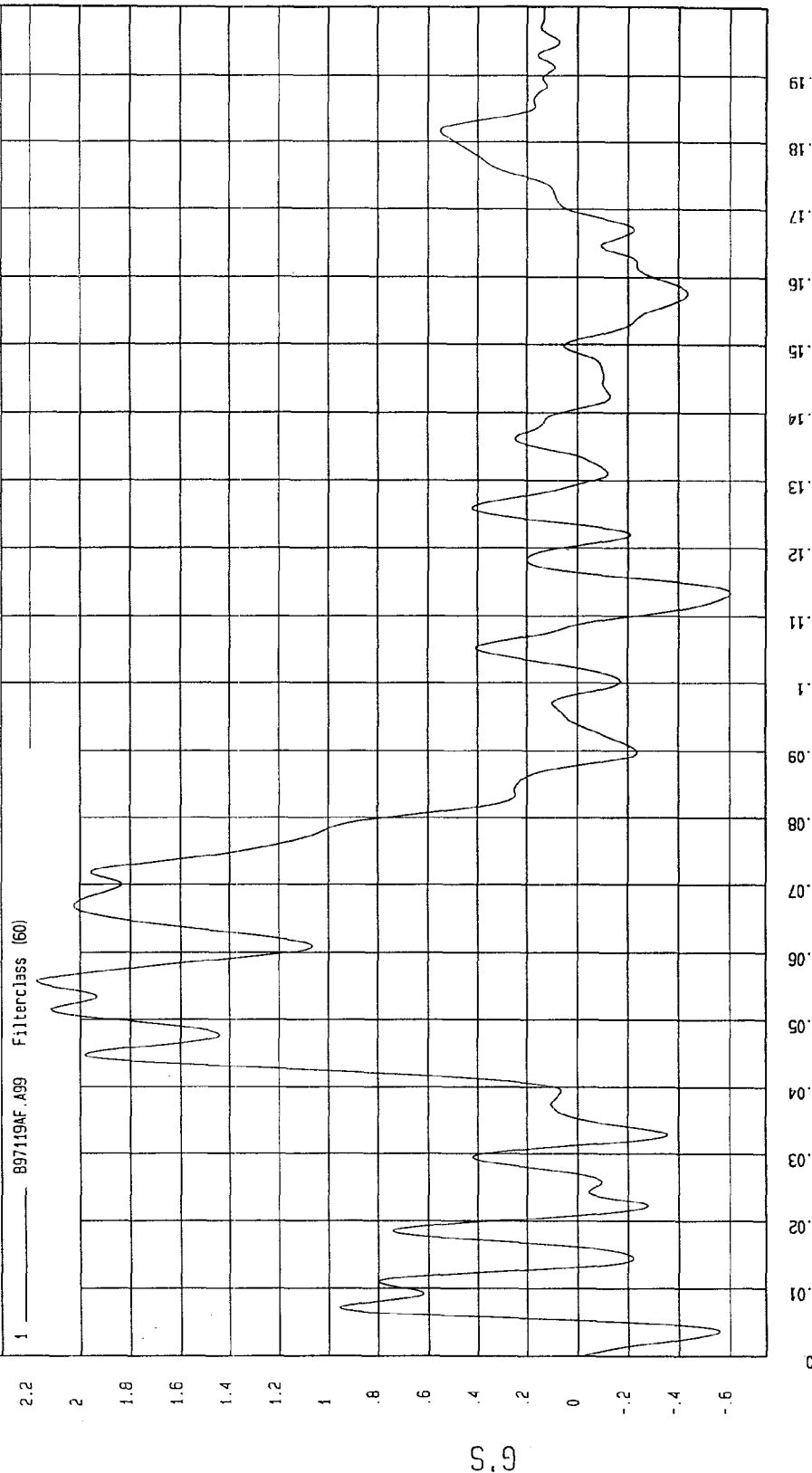
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

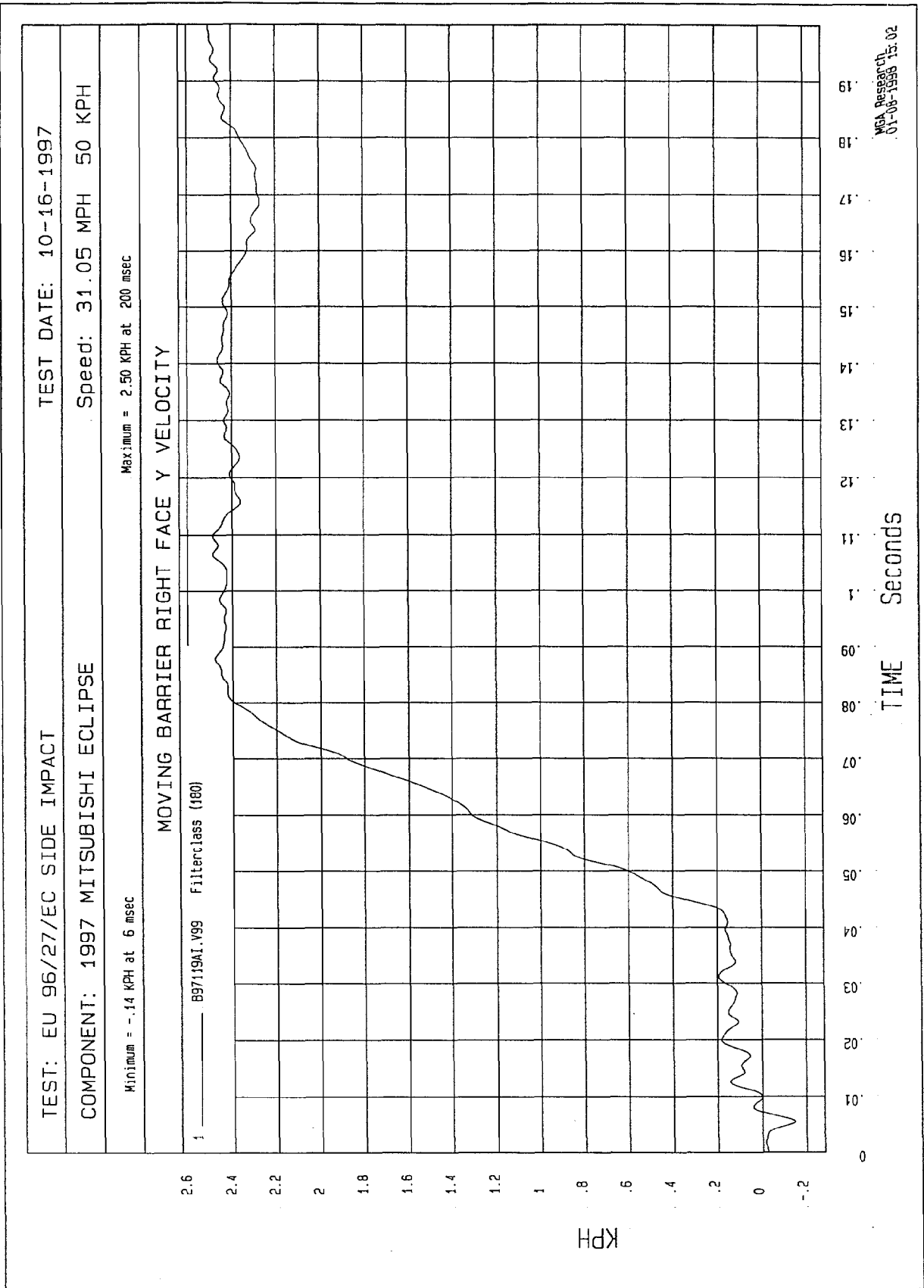
Maximum = 2.17 G'S at 56 msec

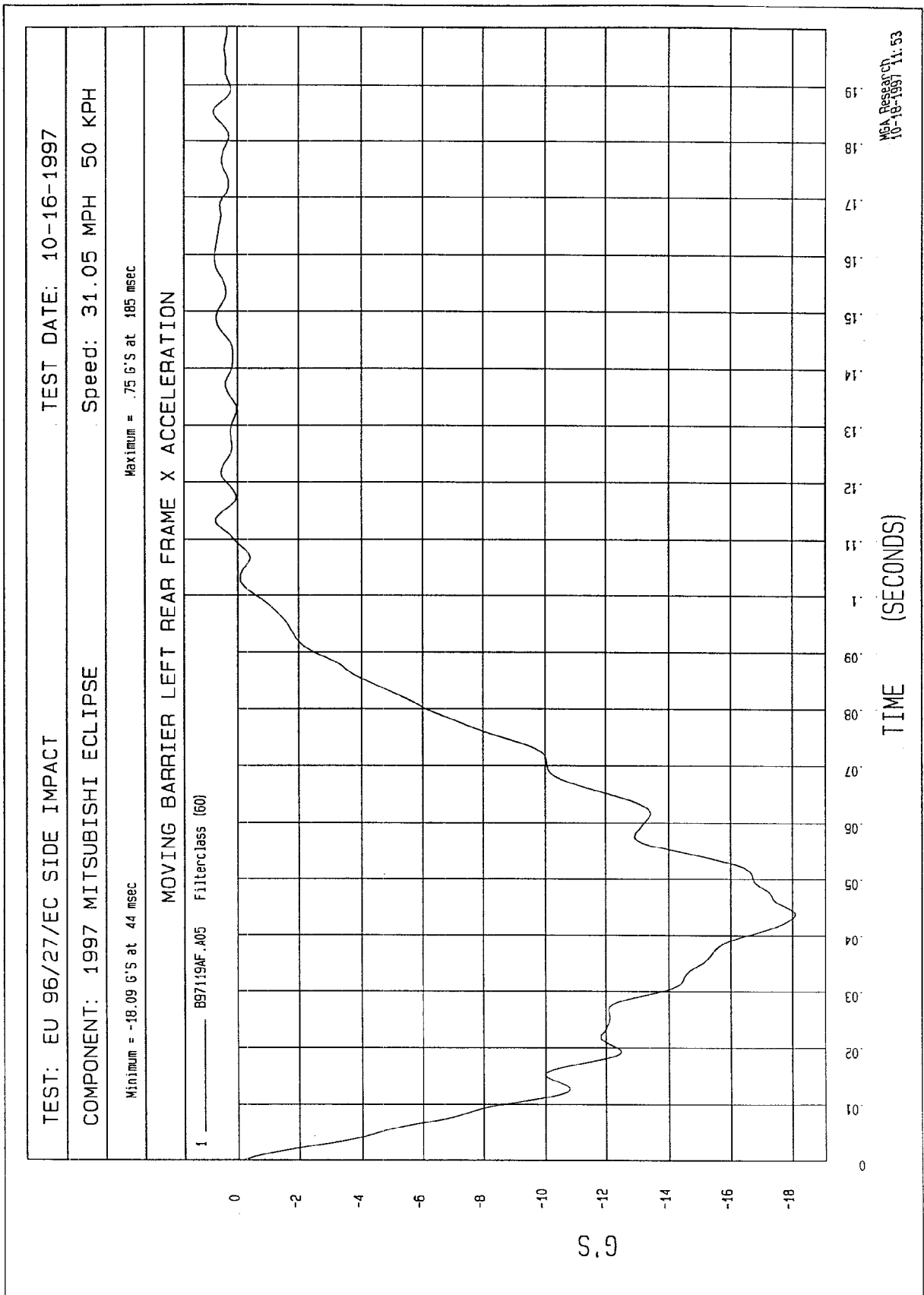
Minimum = -.60 G'S at 113 msec

MOVING BARRIER RIGHT FACE Y ACCELERATION



NSA Research
10-16-1997 11:54





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

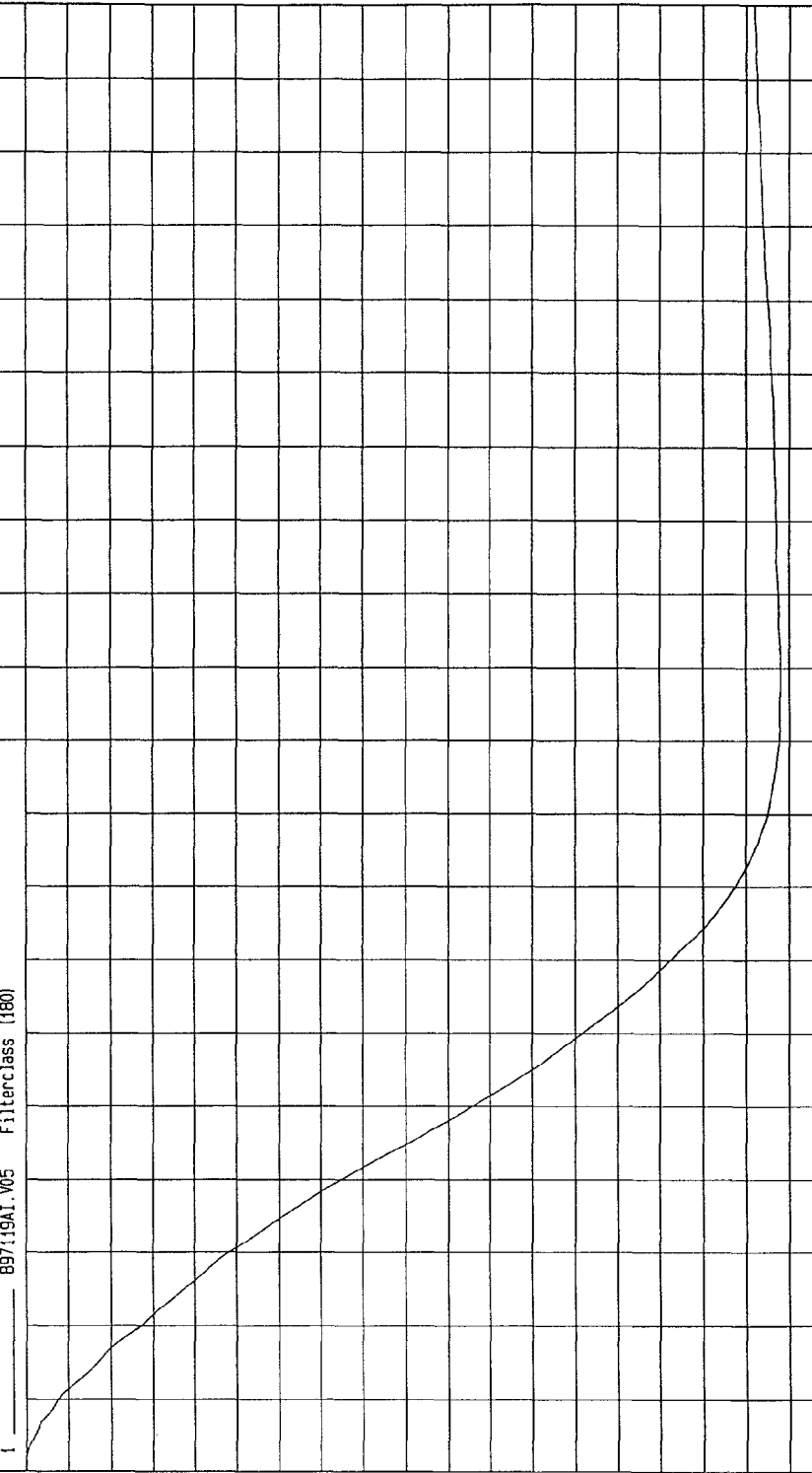
Minimum = 14.38 KPH at 109 msec

Maximum = 50.02 KPH at -1 msec

MOVING BARRIER LEFT REAR FRAME X VELOCITY

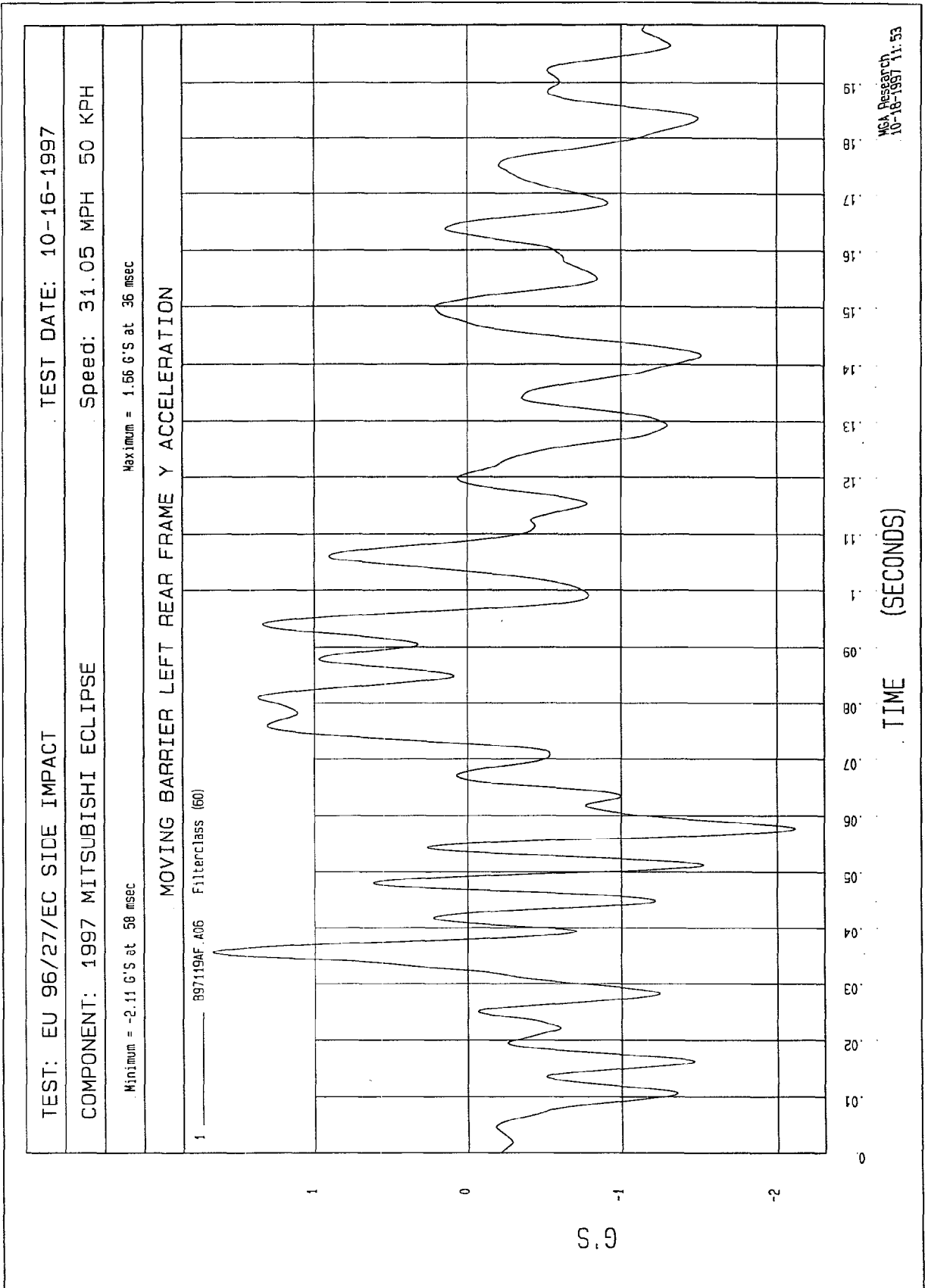
1 B9719AI.V05 FilterClass (180)

KPH



TIME Seconds

WGA Research
10-16-1997 11:53

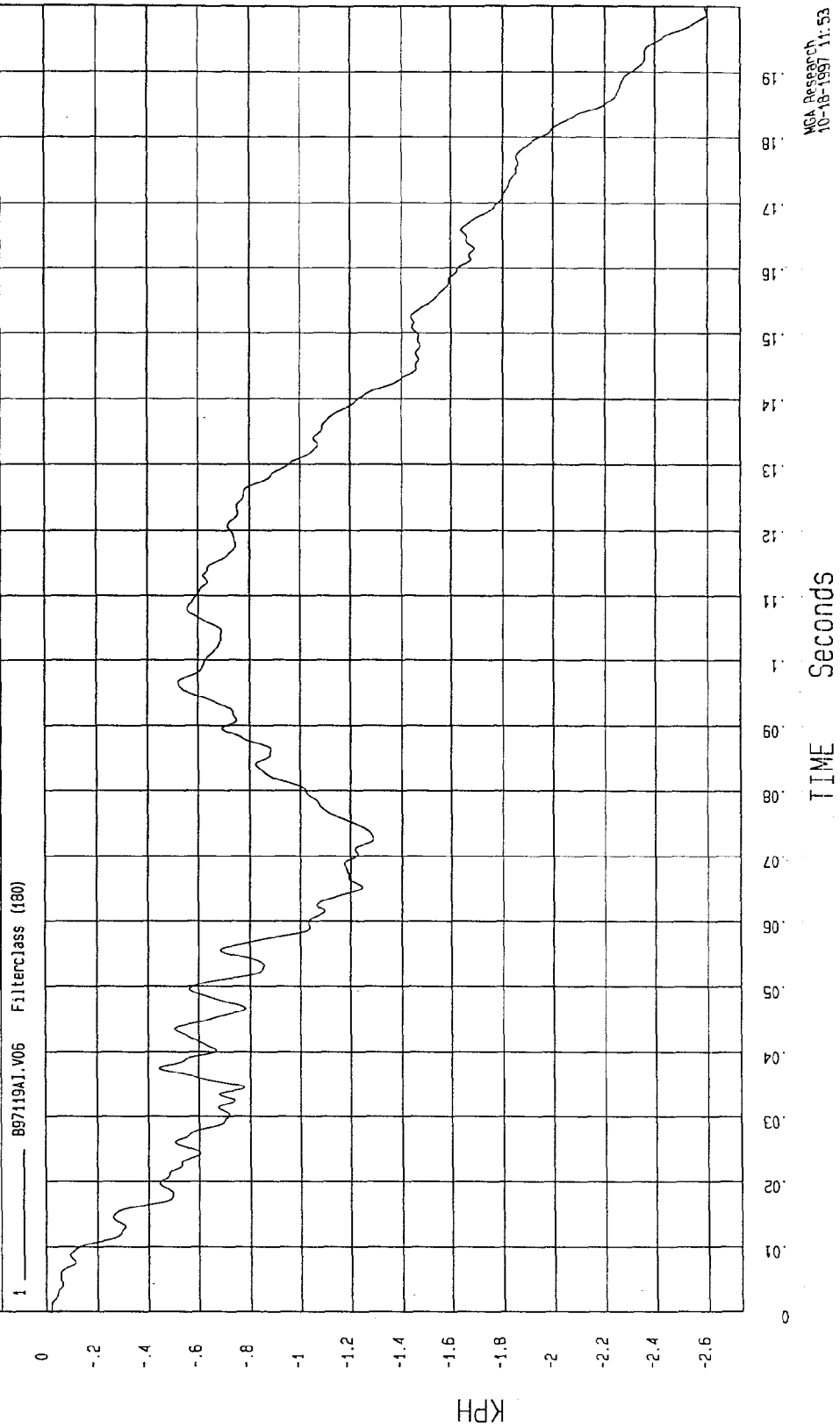


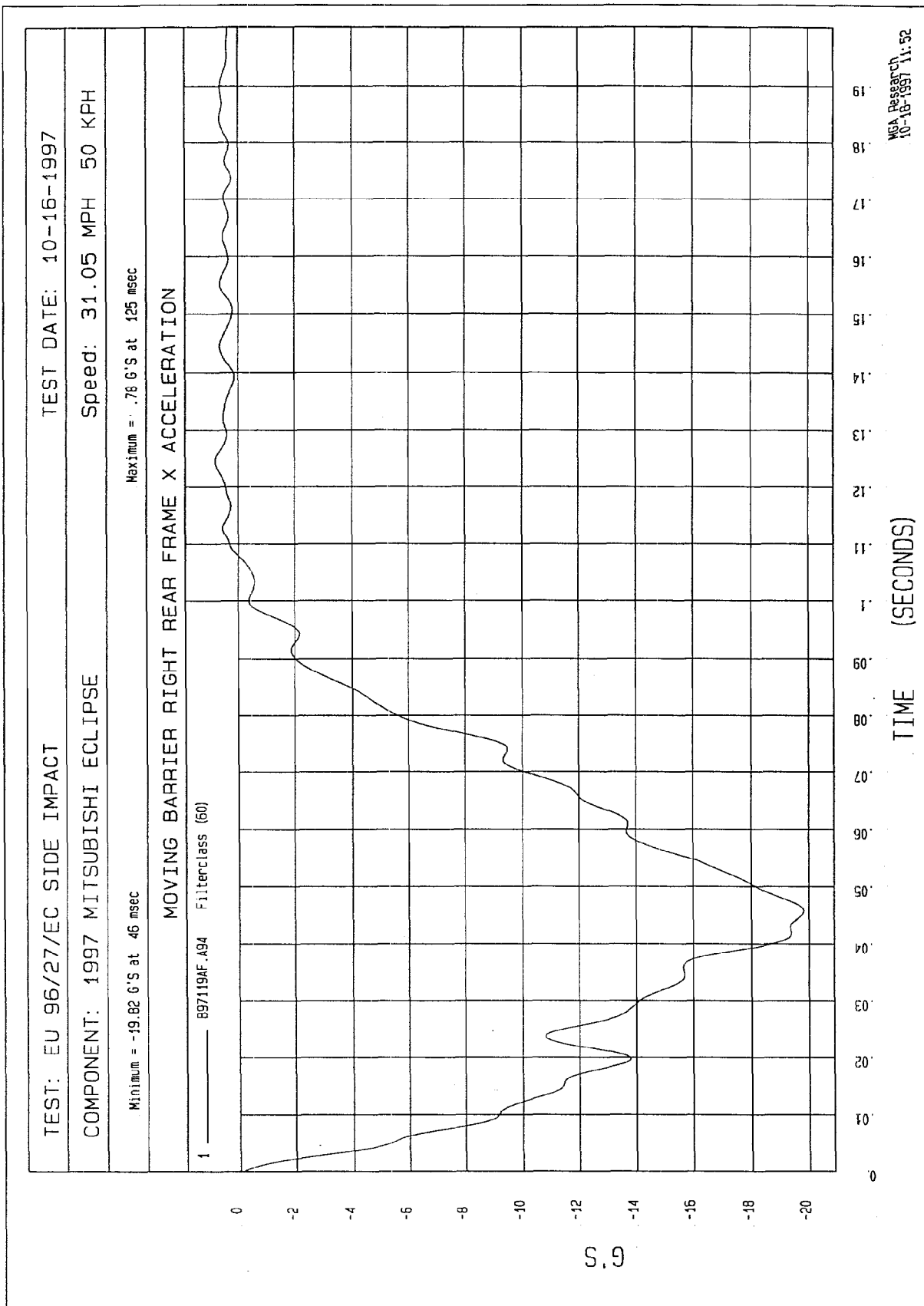
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -2.59 KPH at 199 msec Maximum = 4.06E-02 KPH at -15 msec

MOVING BARRIER LEFT REAR FRAME Y VELOCITY





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

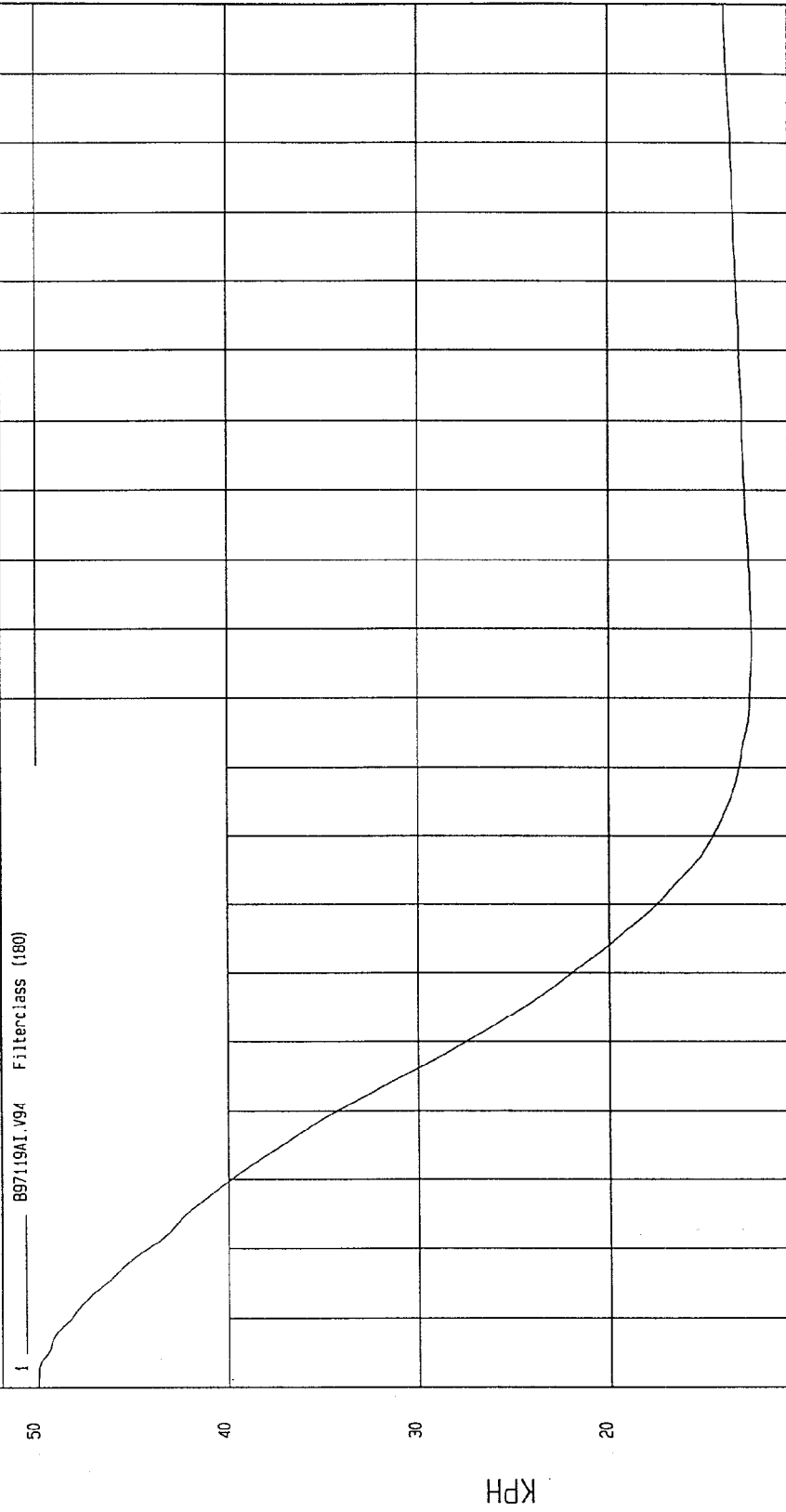
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

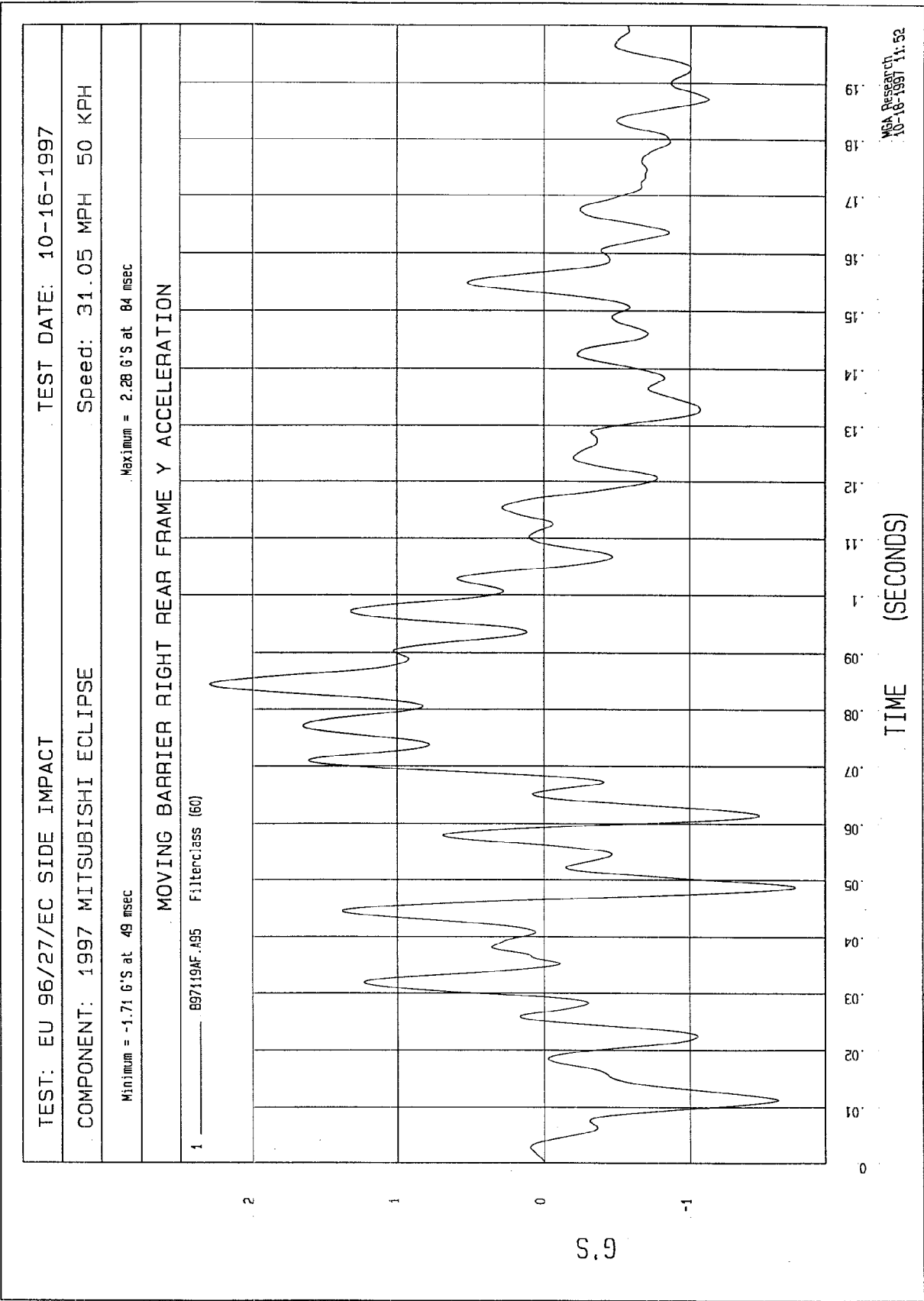
Maximum = 50.00 KPH at ~20 msec

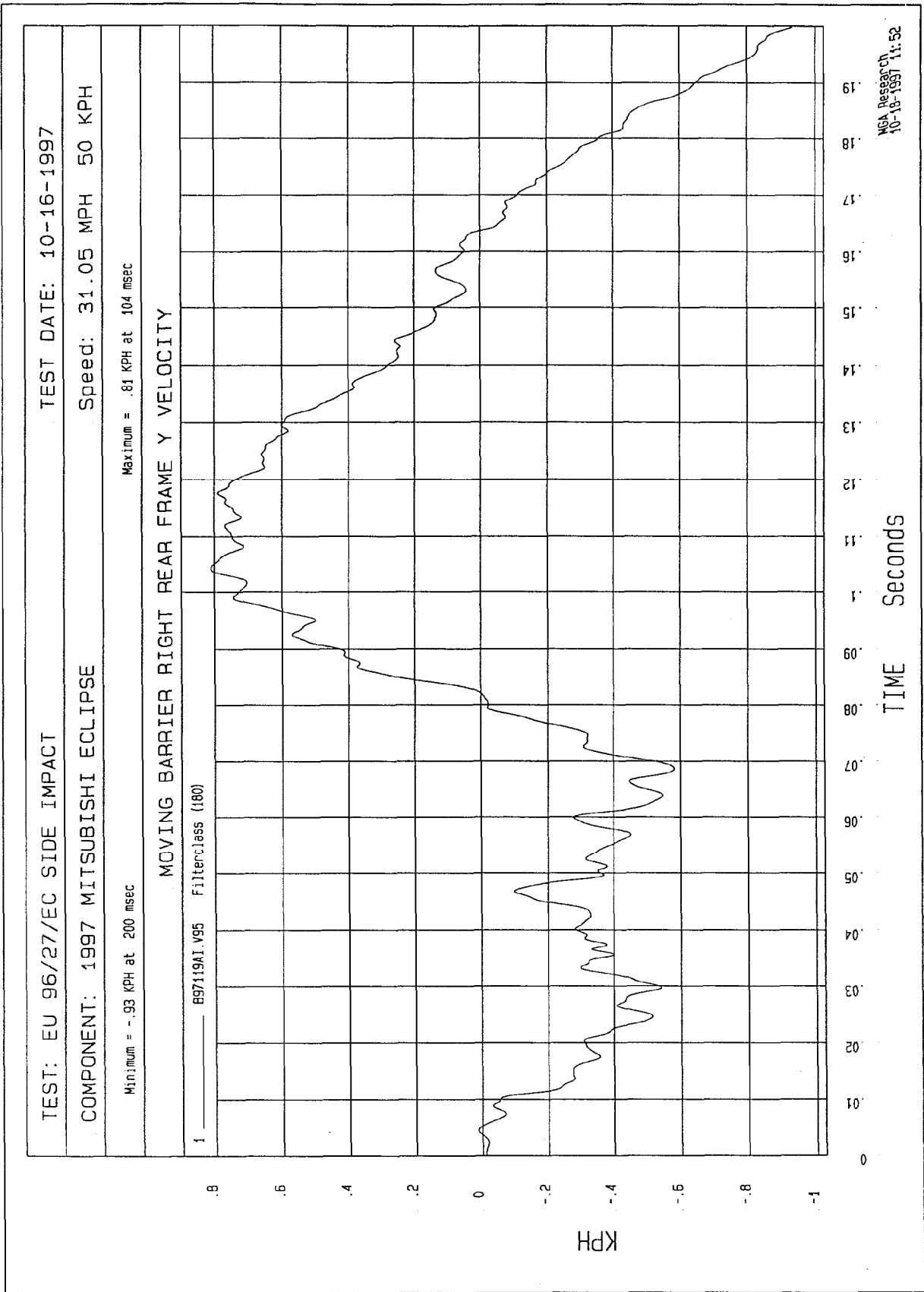
Minimum = 12.57 KPH at 108 msec

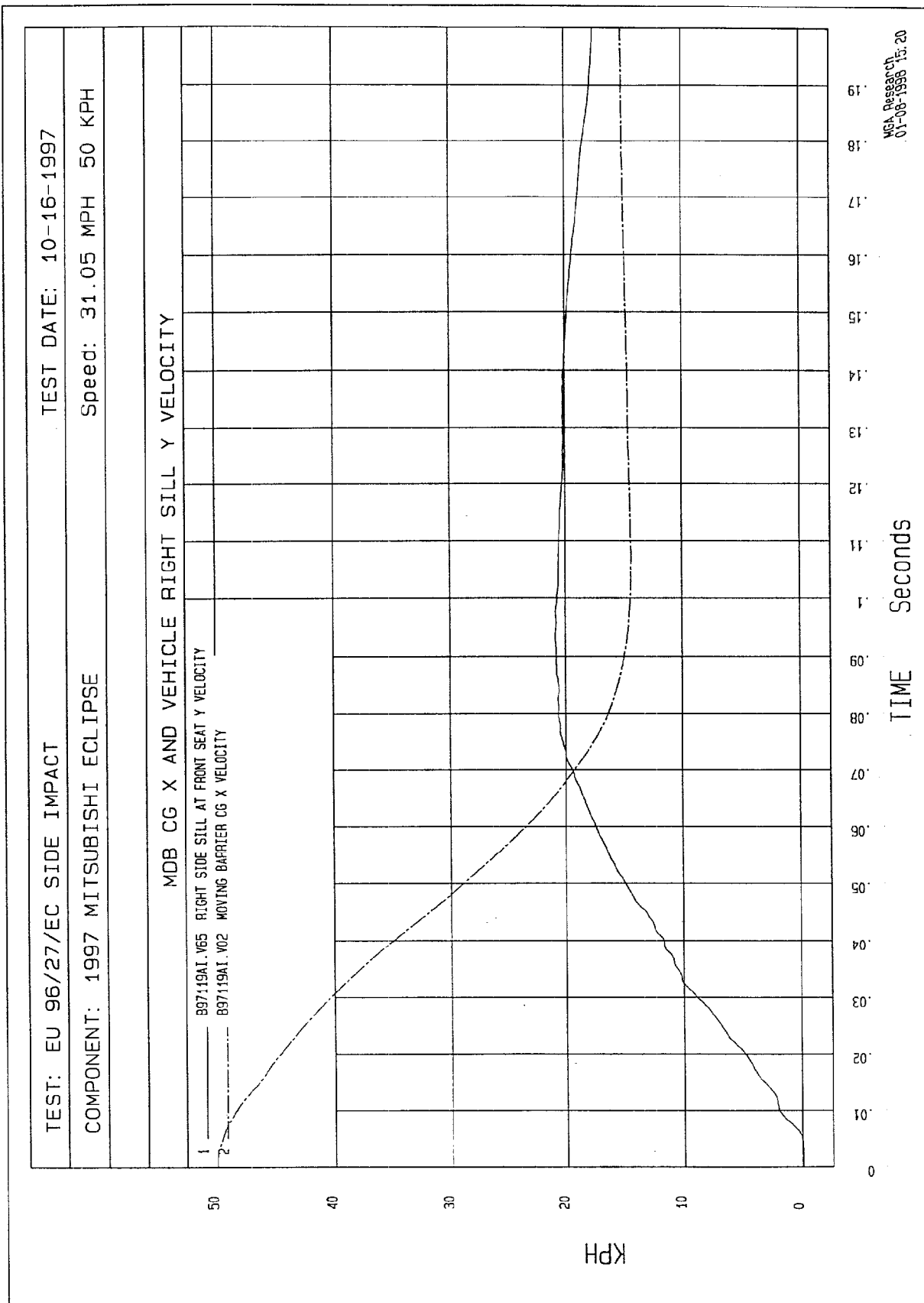
MOVING BARRIER RIGHT REAR FRAME X VELOCITY

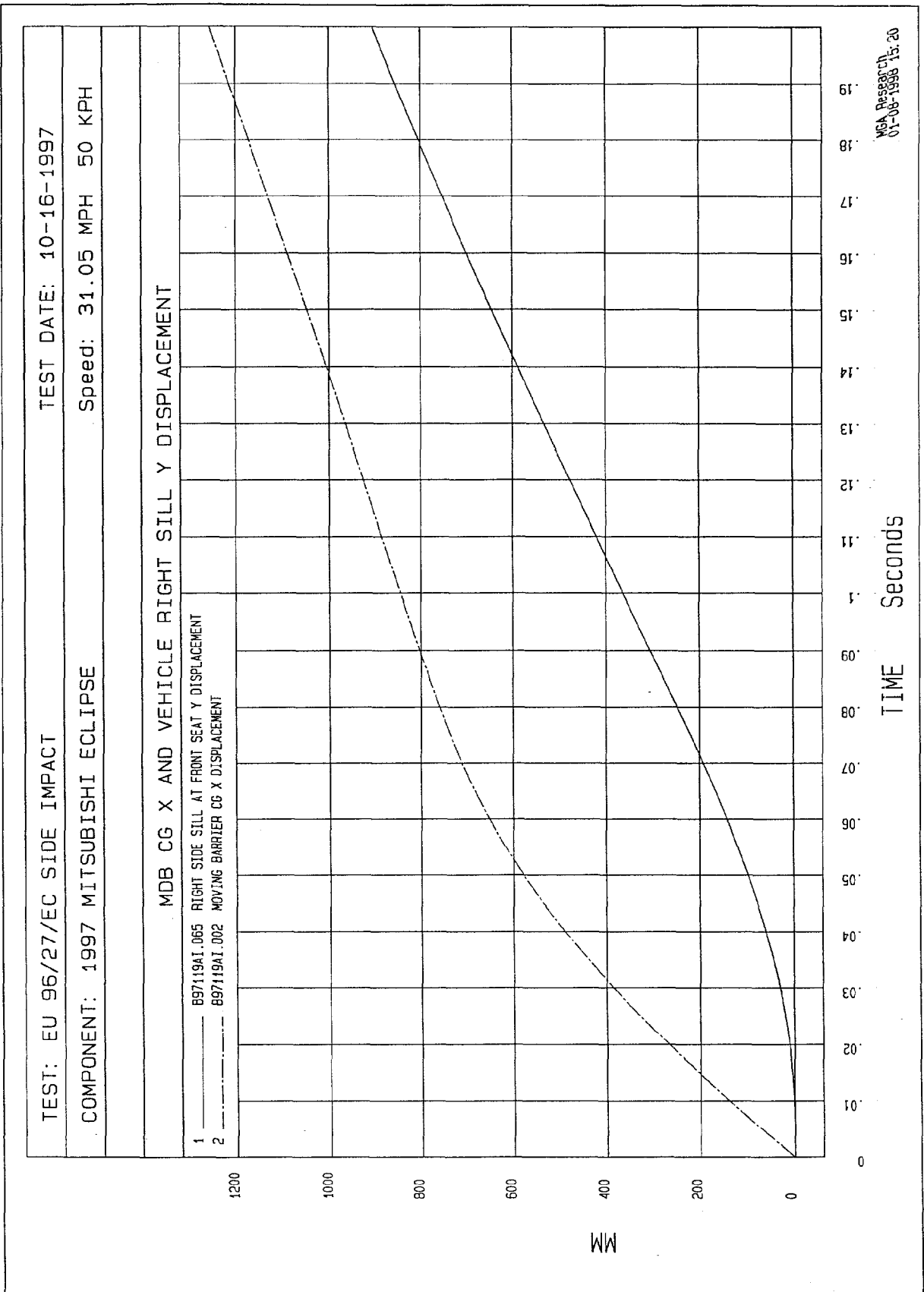


NCA Research
10-16-1997 11:52









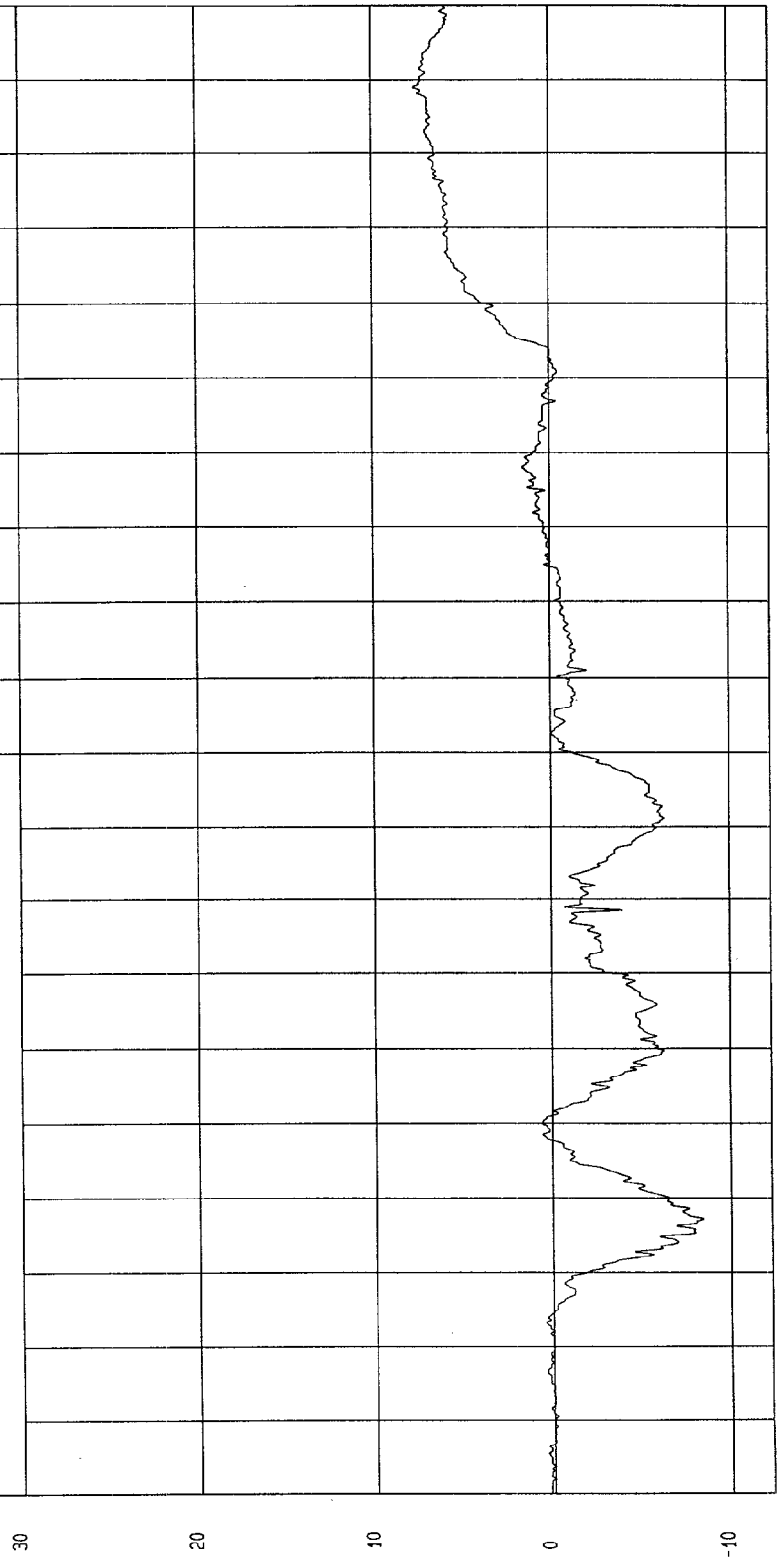
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -8.42 G'S at 37 msec Maximum = 7.57 G'S at 189 msec

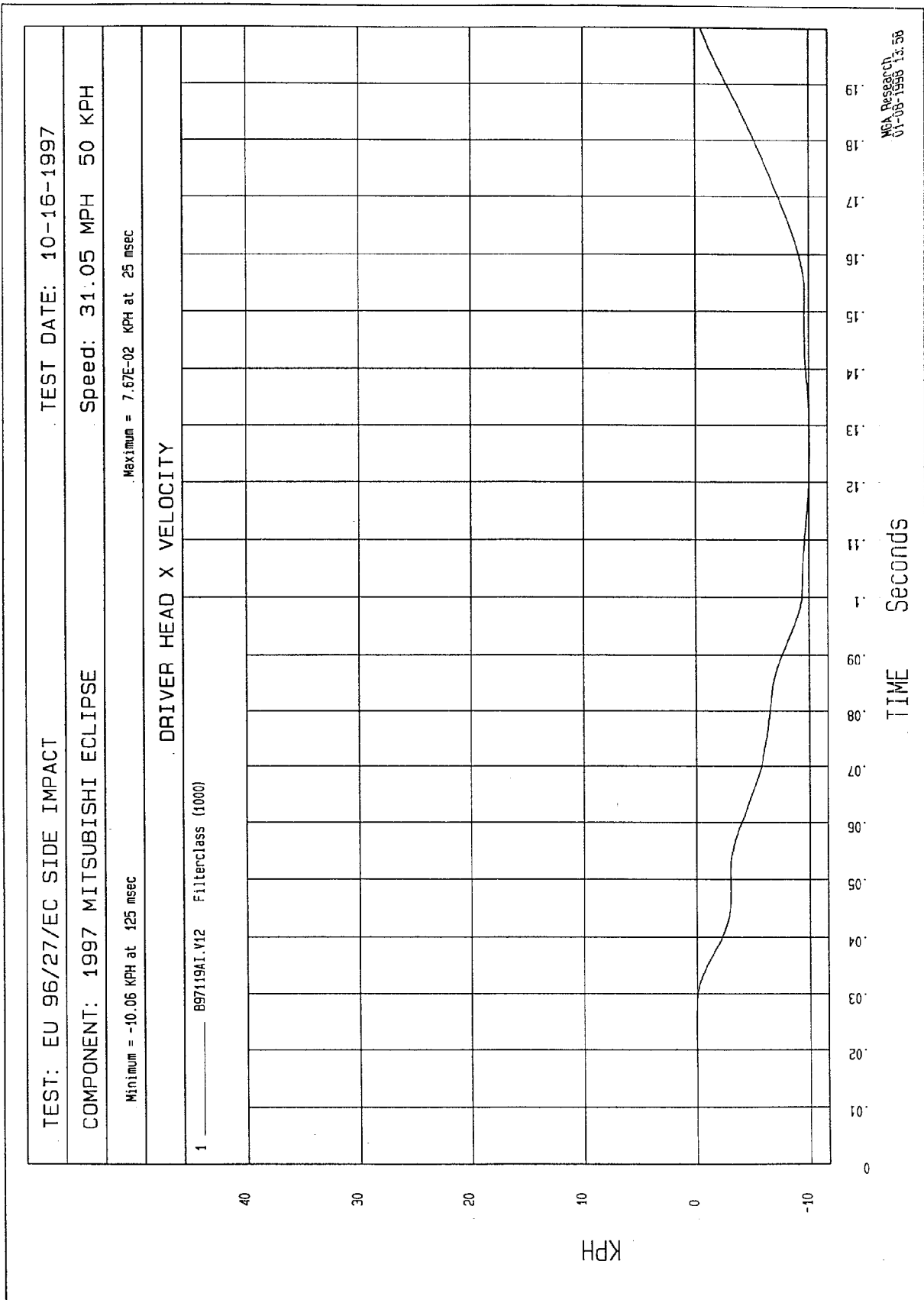
DRIVER HEAD X ACCELERATION

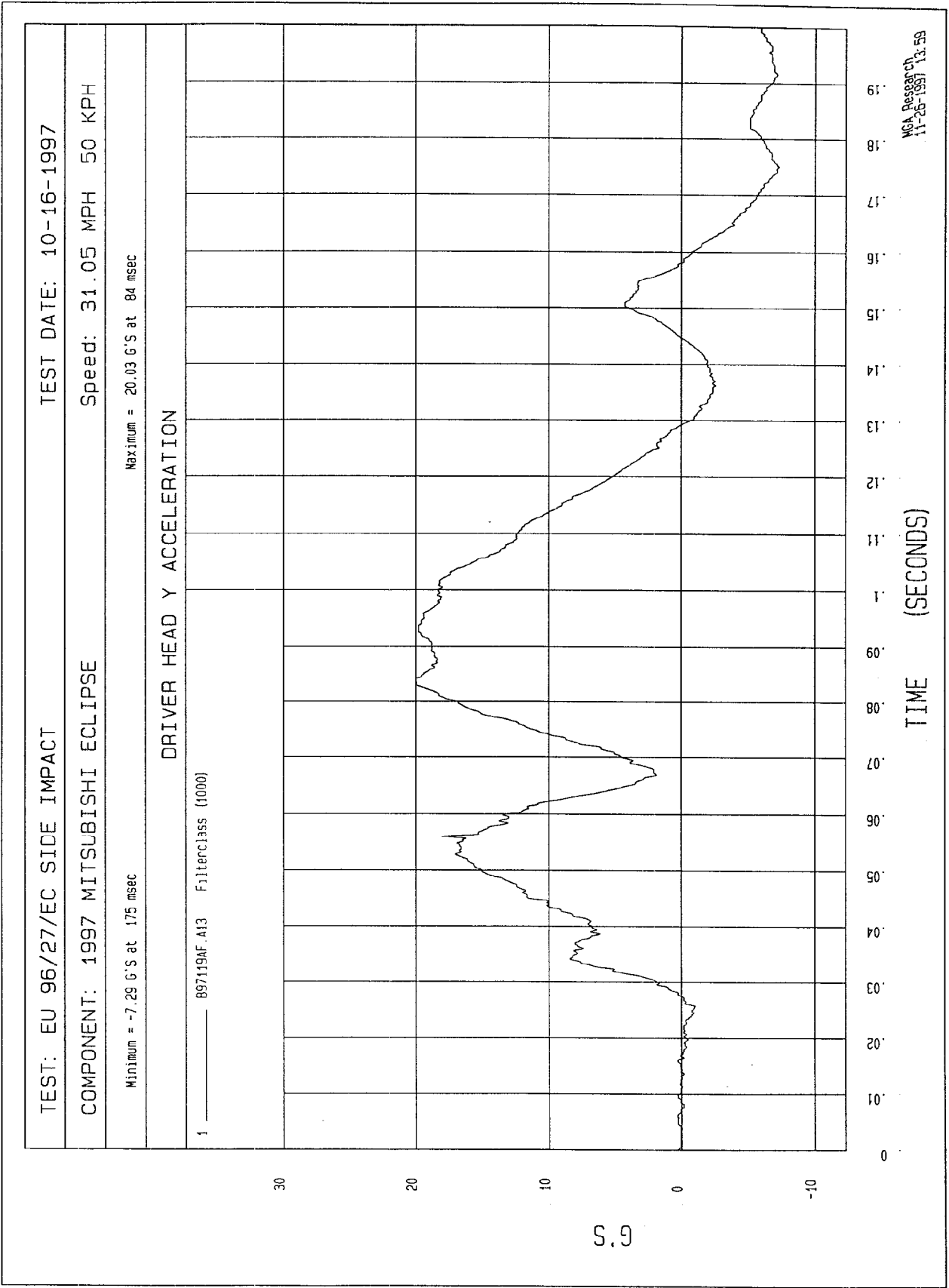
1 _____ 897119AF.A12 FilterClass (1000)



TIME (SECONDS)

MGA Research
11-26-1997 13:59





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

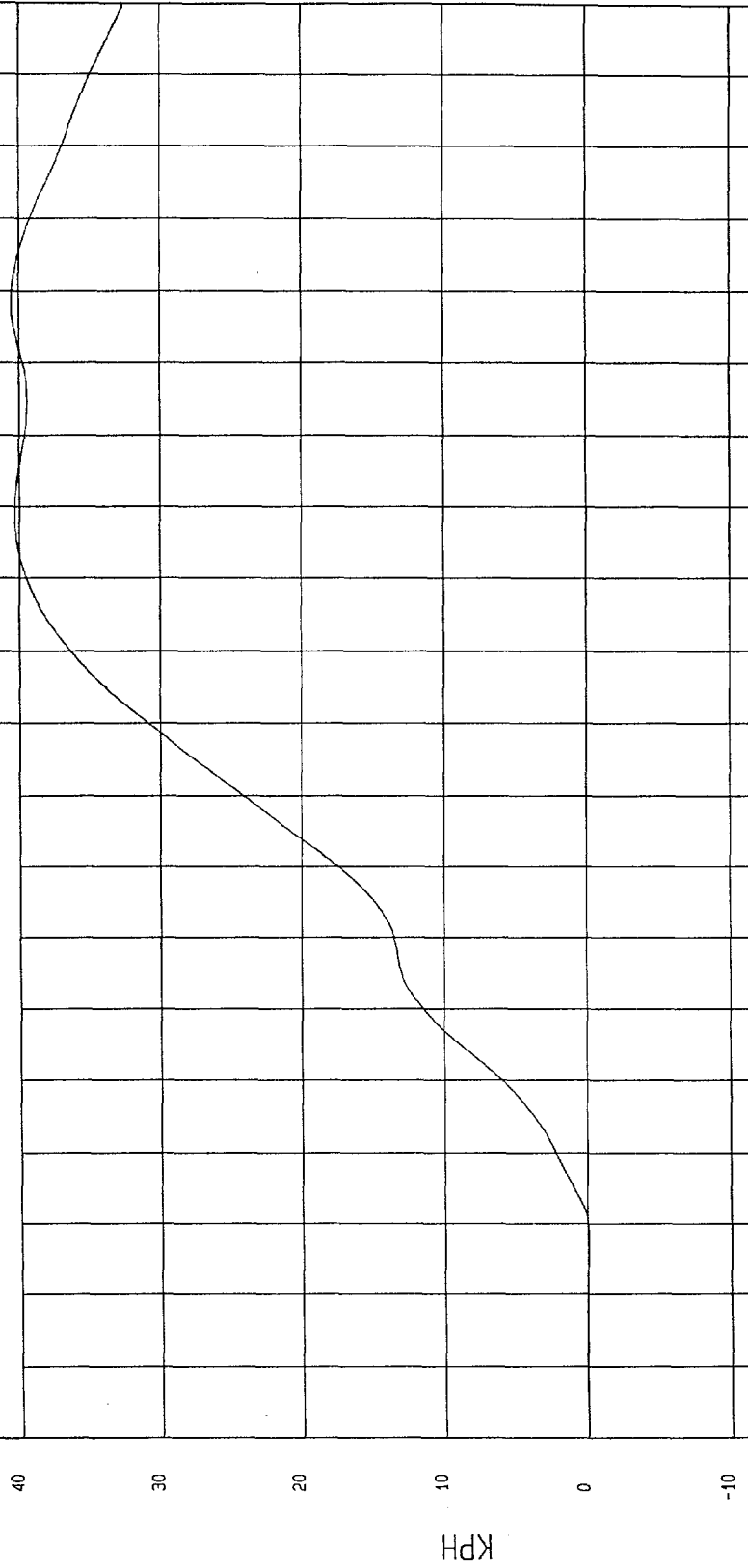
Speed: 31.05 MPH 50 KPH

Minimum = -8.54E-02 KPH at 28 msec

Maximum = 40.51 KPH at 158 msec

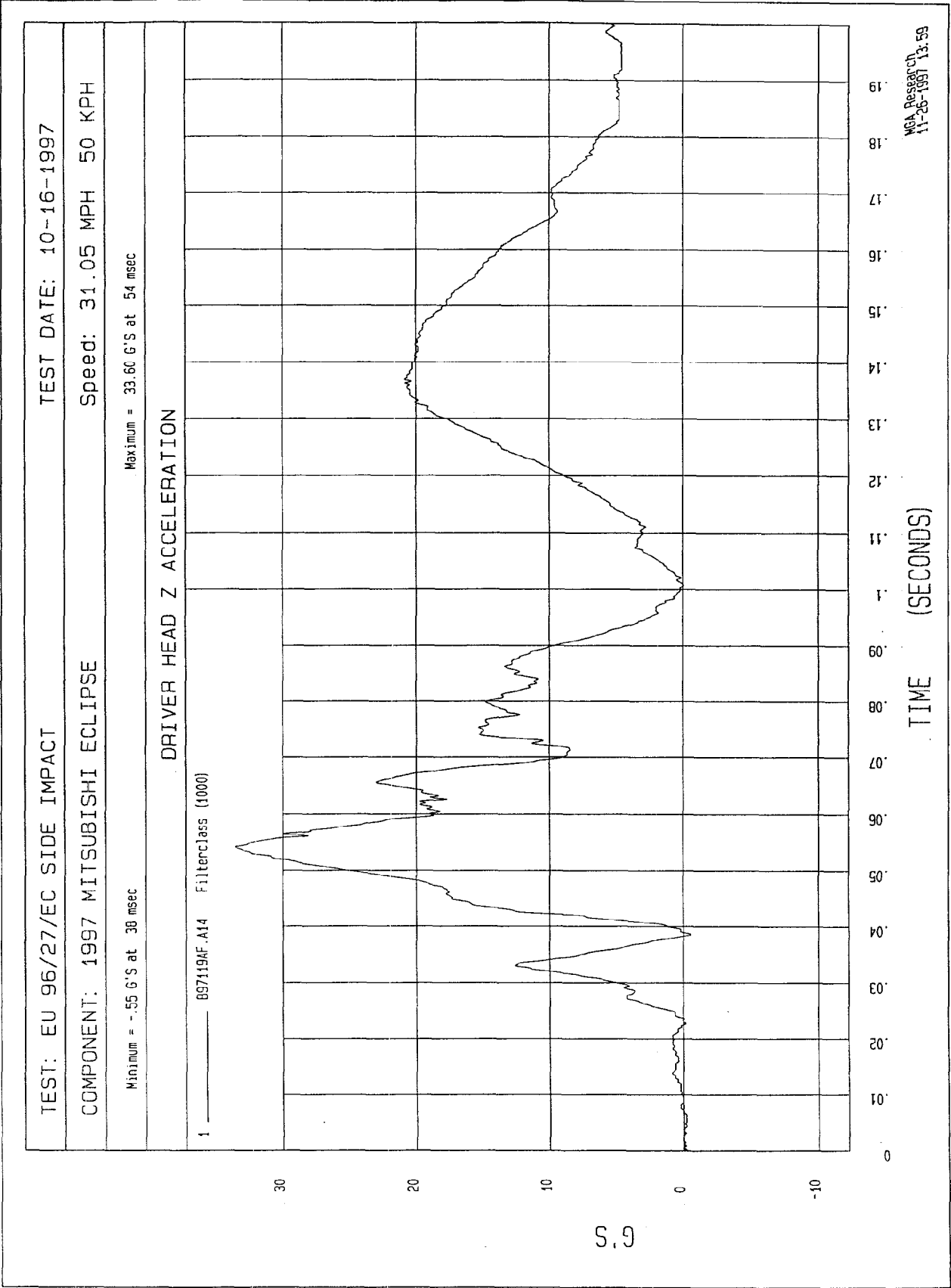
DRIVER HEAD Y VELOCITY

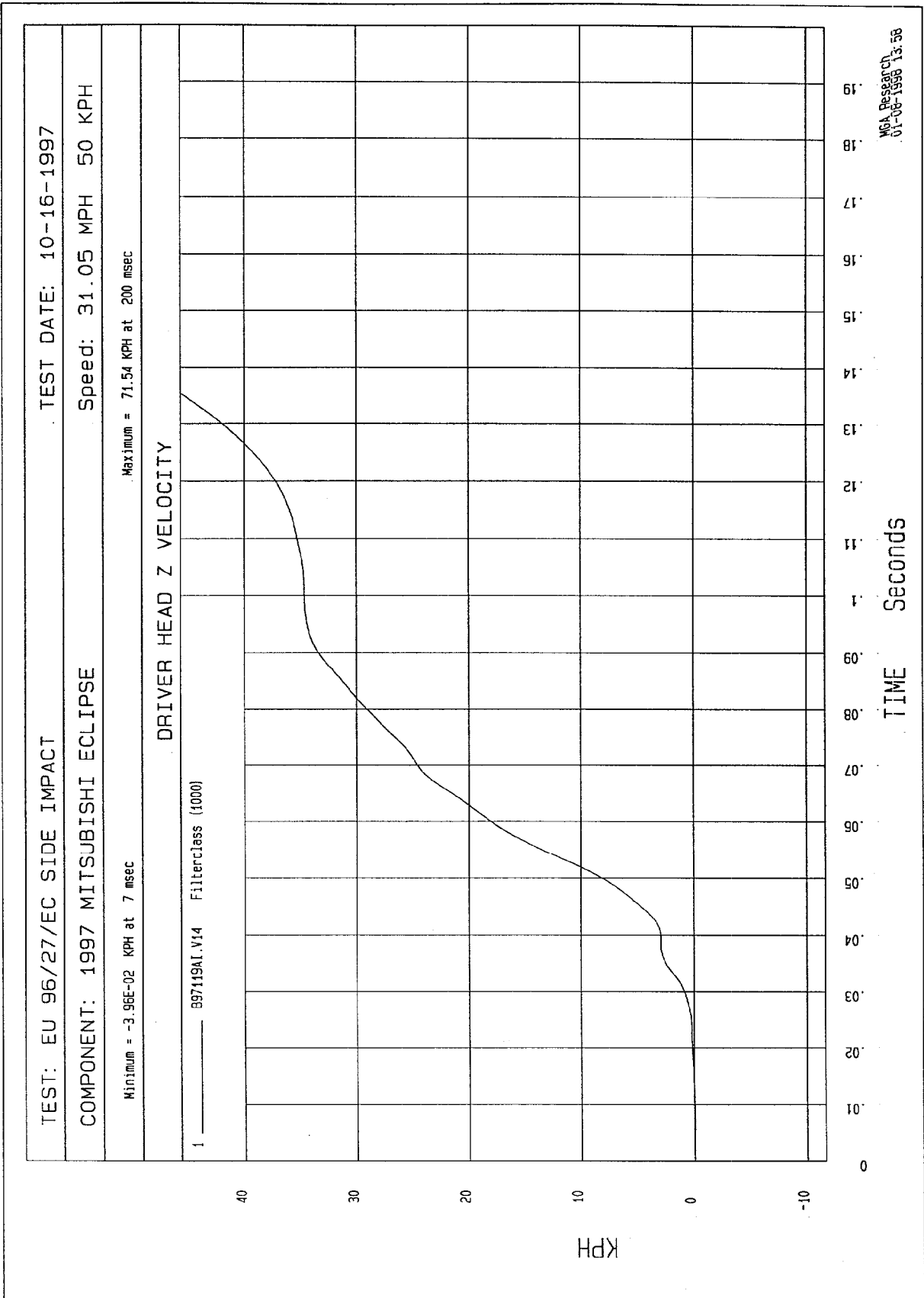
1 ——— B97119A1.V13 Filterclass (1000)



MCA Research
01-08-1998 13:58

TIME Seconds





TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = 5.02E-02 G'S at -19 msec

Maximum = 37.57 G'S at 54 msec

DRIVER HEAD RESULTANT ACCELERATION

1 _____ B97119AV.A12 Filterclass (1000)

G.S

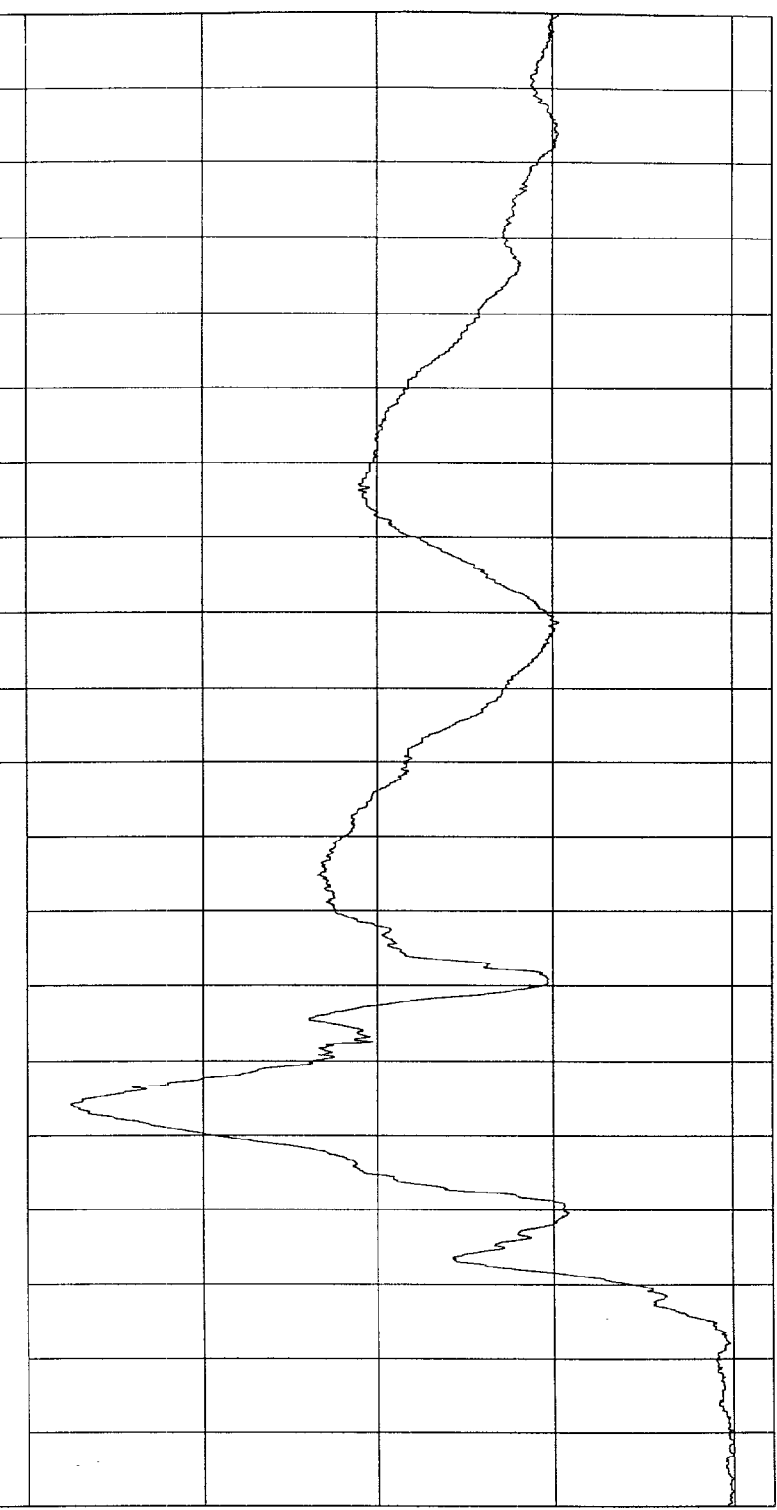
40

30

20

10

0



NCA Research
04-14-1998 15:08

TIME (SECONDS)

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = -15.35 G'S at 25 msec

Maximum = 13.91 G'S at 41 msec

DRIVER UPPER SPINE X ACCELERATION

1 ——— 897119AF.A42 Filterclass (180)

80

60

40

20

0

-20

G.S

19

18

17

16

15

14

13

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11

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03

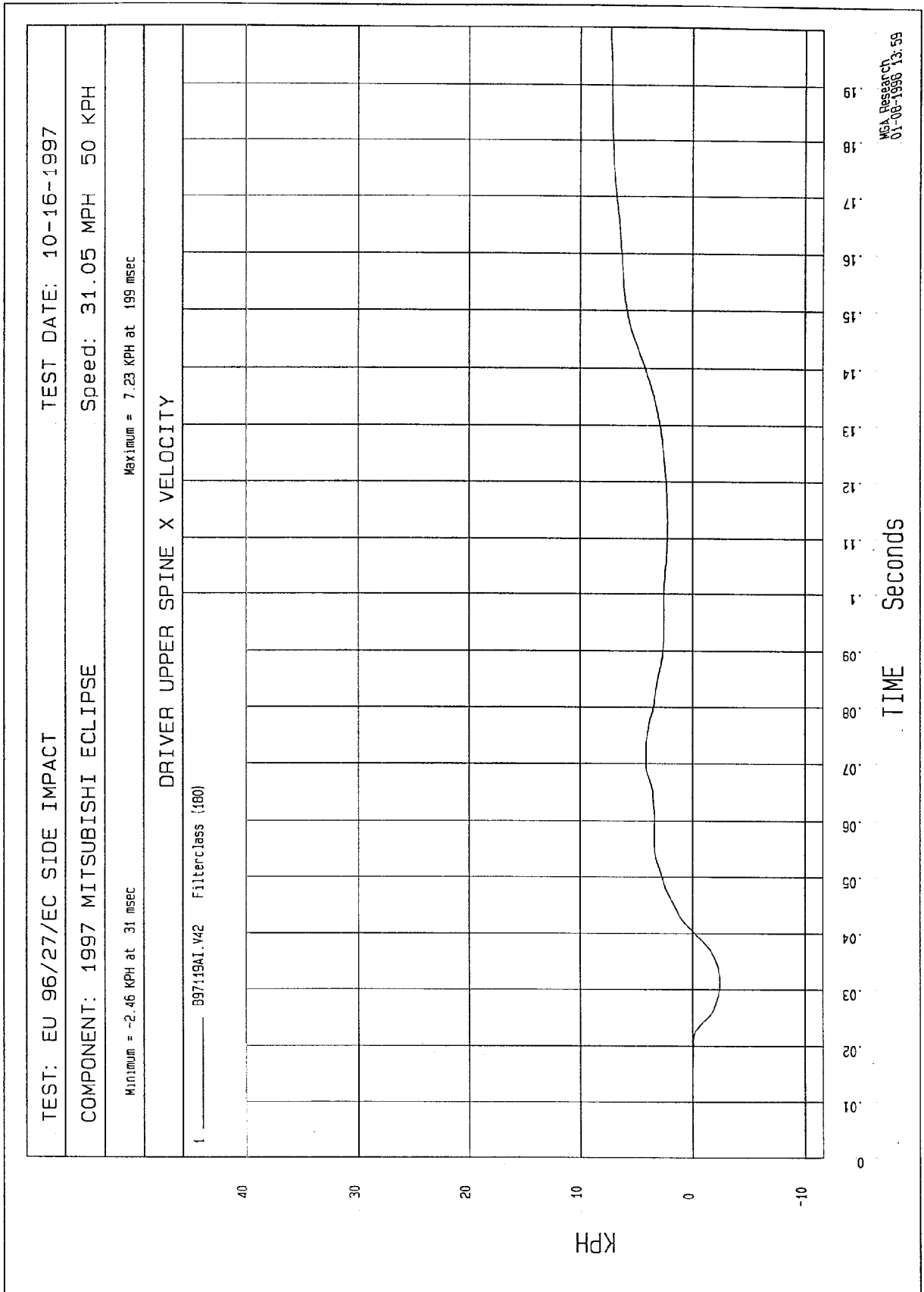
02

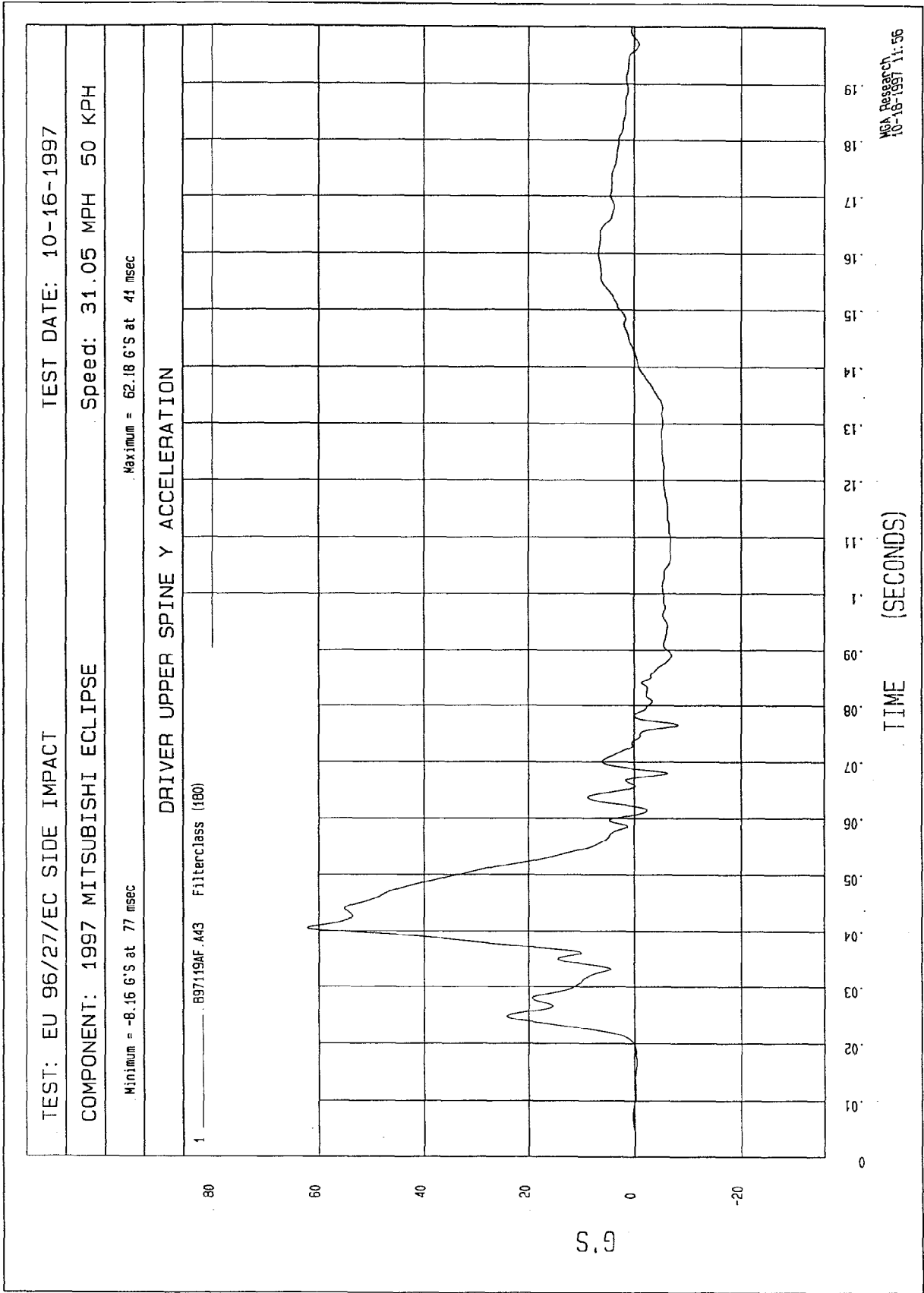
01

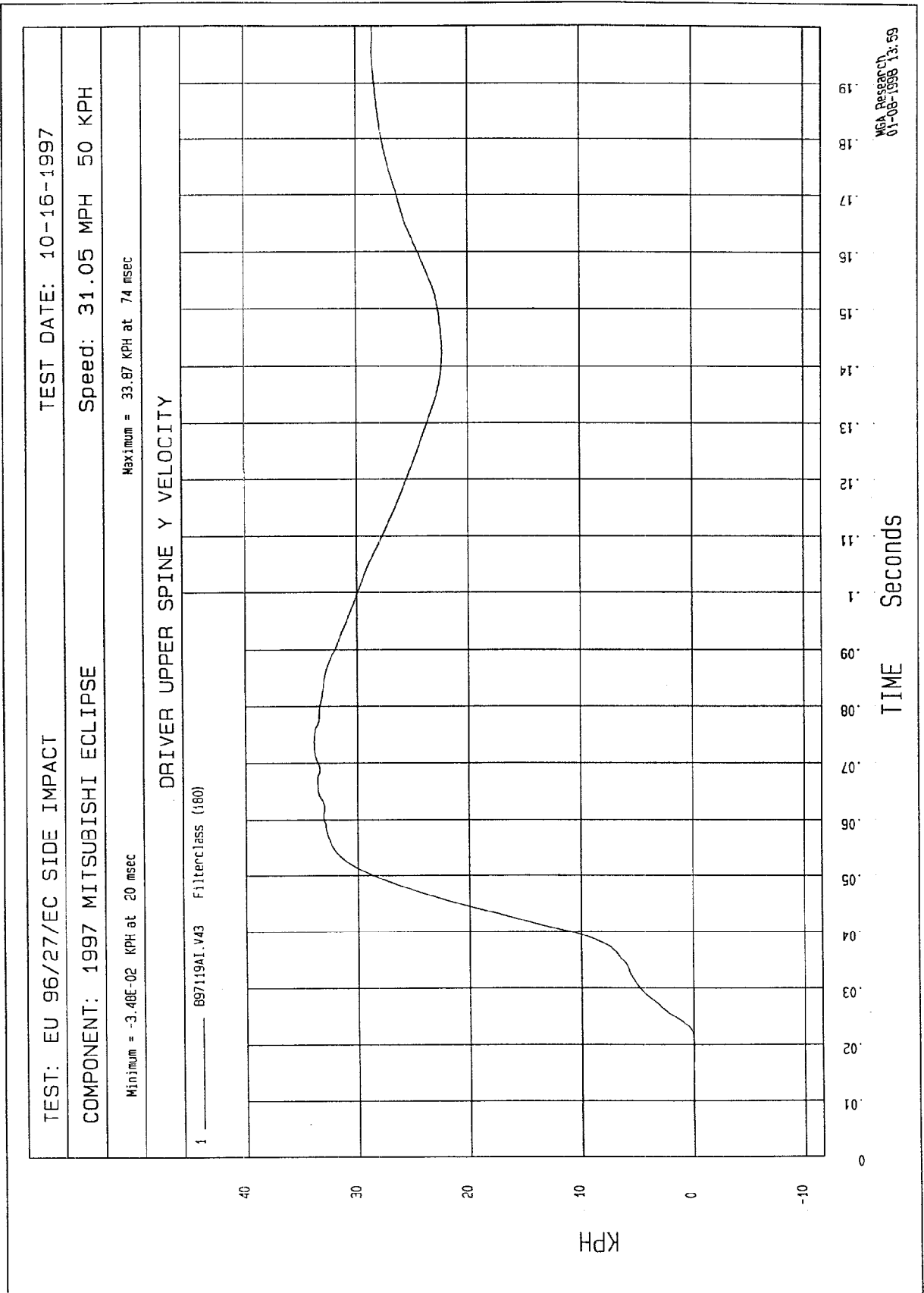
0

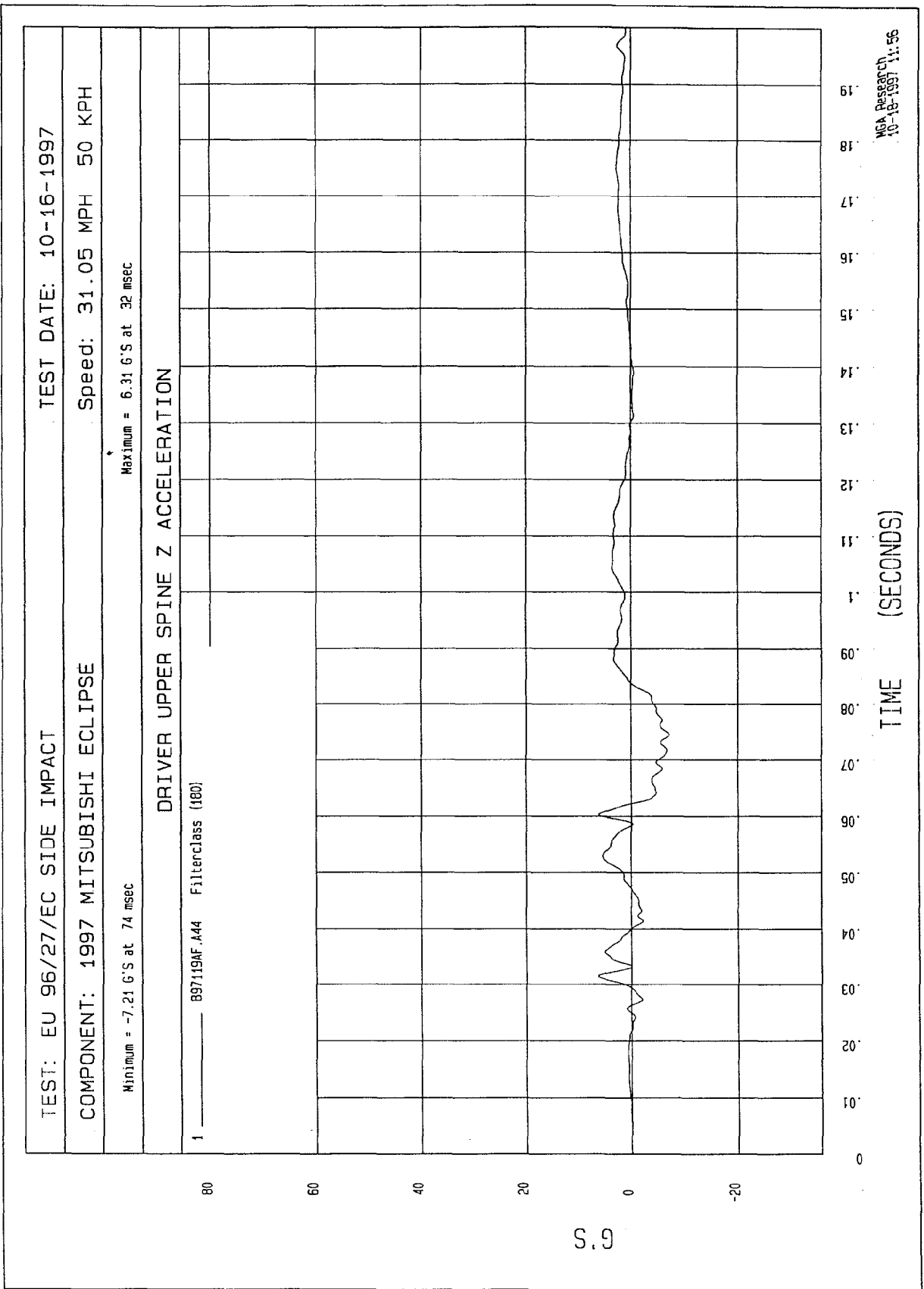
TIME (SECONDS)

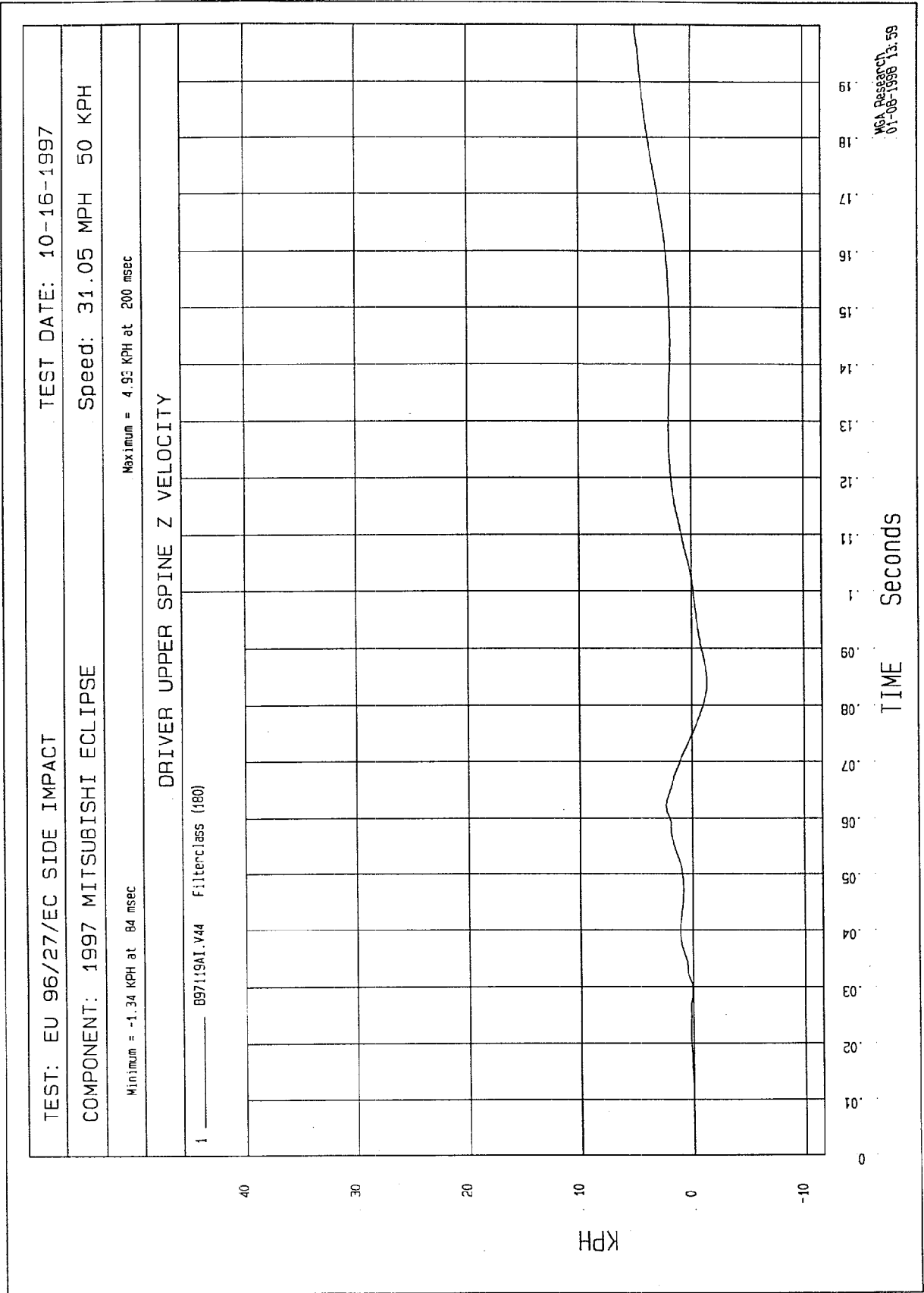
MCA Research
10-16-1997 11:56

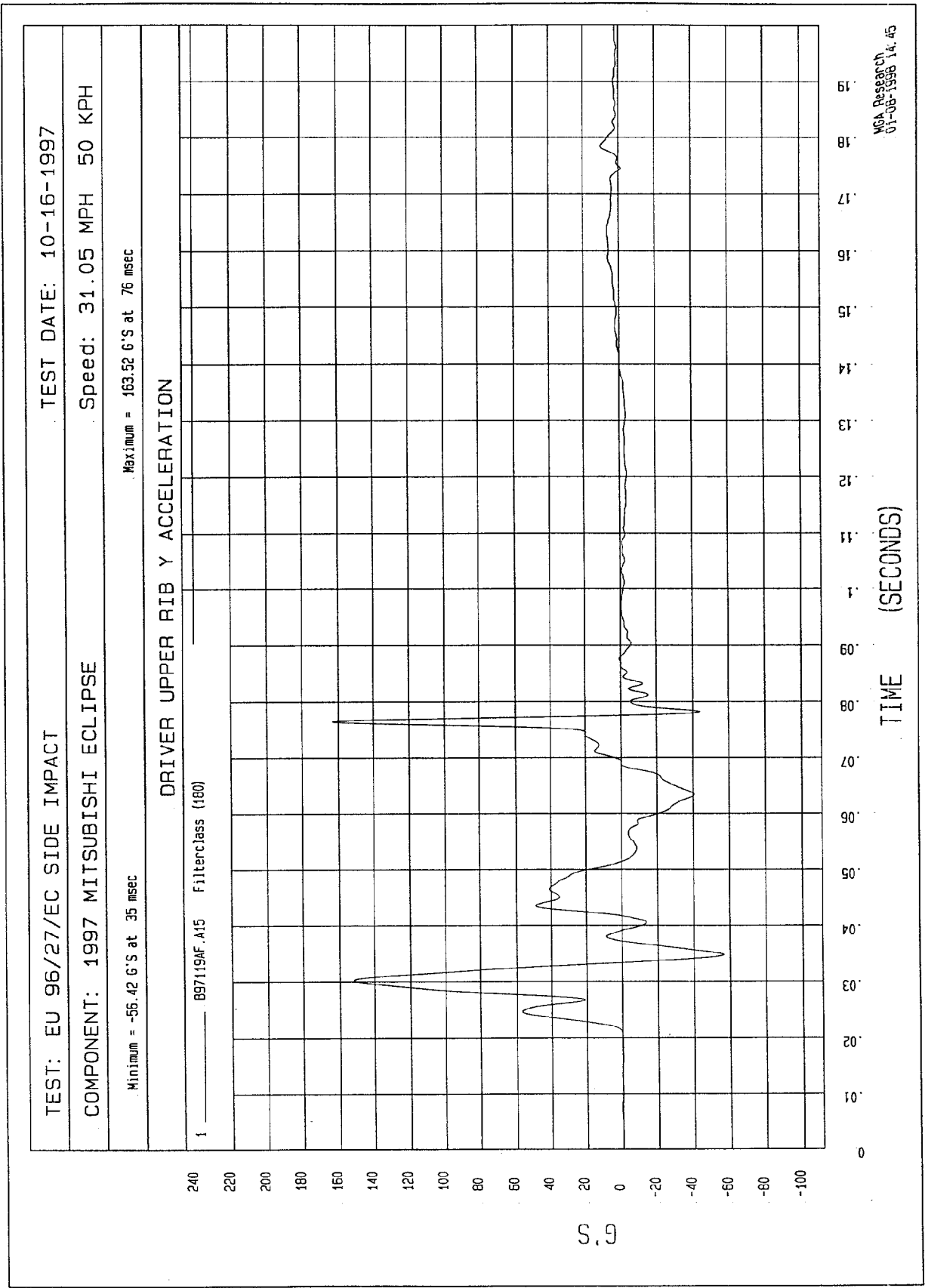










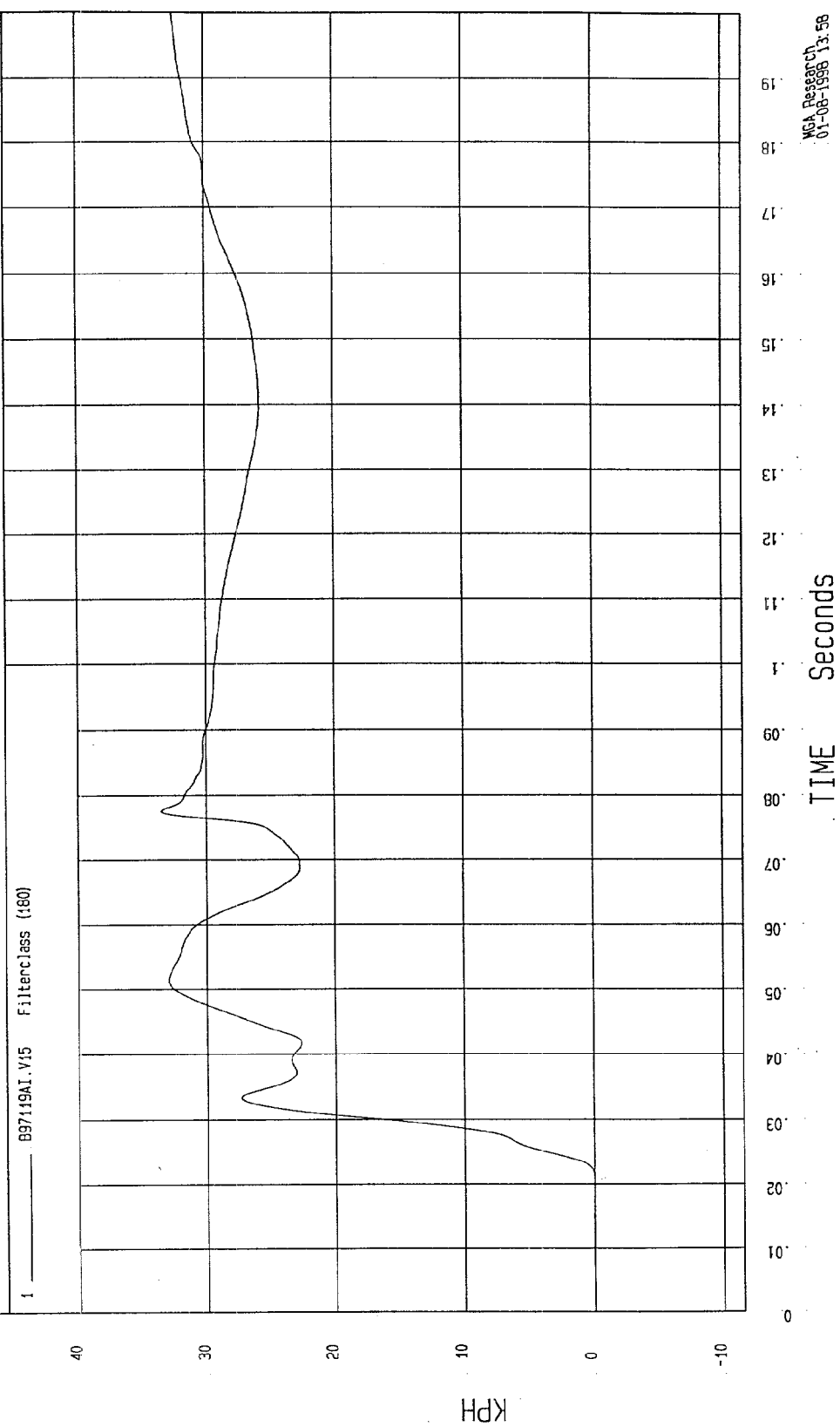


TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -1.42E-02 KPH at -10 msec Maximum = 33.55 KPH at 78 msec

DRIVER UPPER RIB Y VELOCITY



NGA Research
01-08-1998 13:56

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = -5.09E-02 MM at -20 msec

Maximum = 48.64 MM at 48 msec

DRIVER UPPER RIB Y COMPRESSION

1 897190F.D58 Filterclass (180)

50

40

30

20

10

0

MM

.19

.18

.17

.16

.15

.14

.13

.12

.11

.1

.09

.08

.07

.06

.05

.04

.03

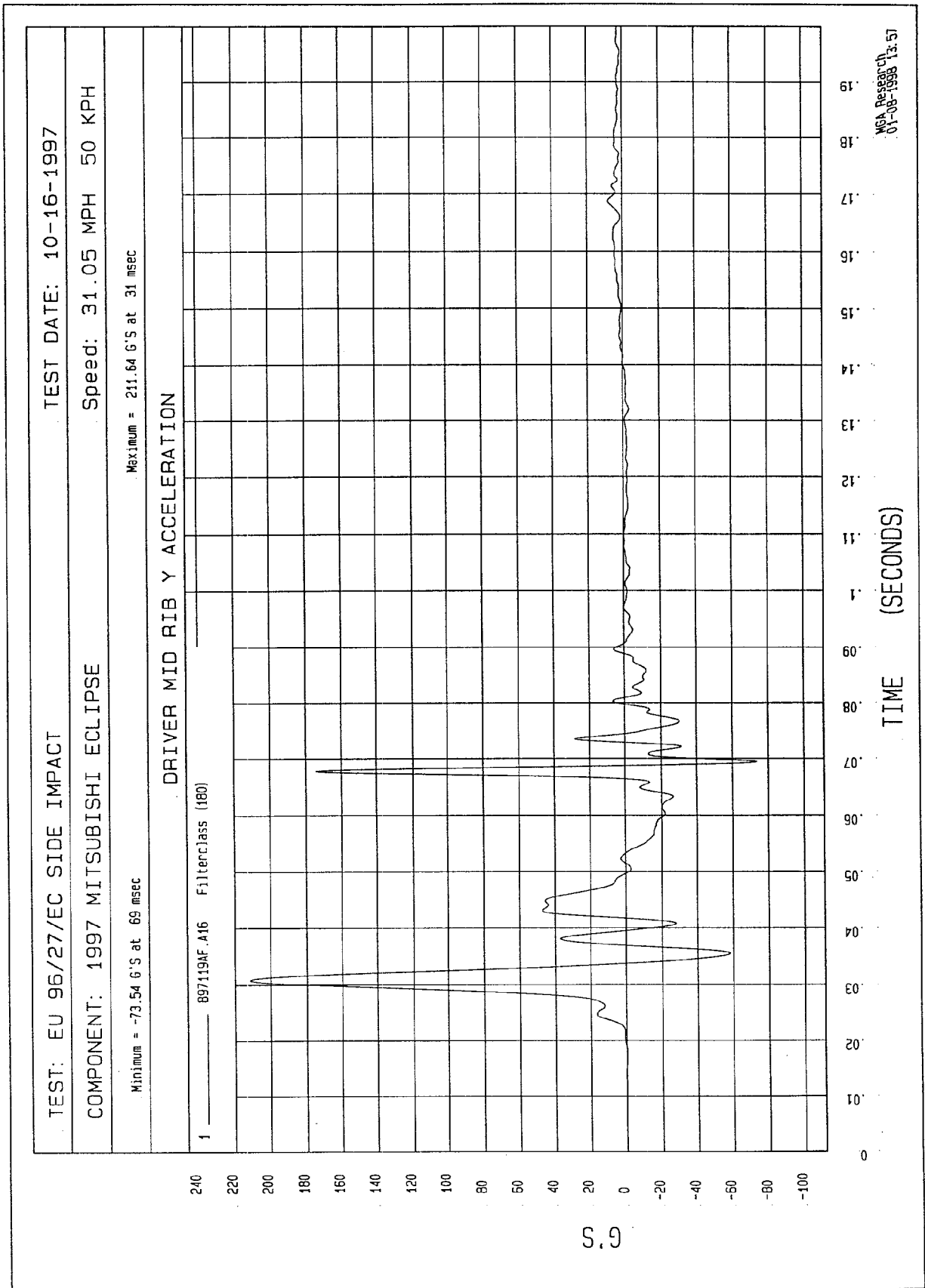
.02

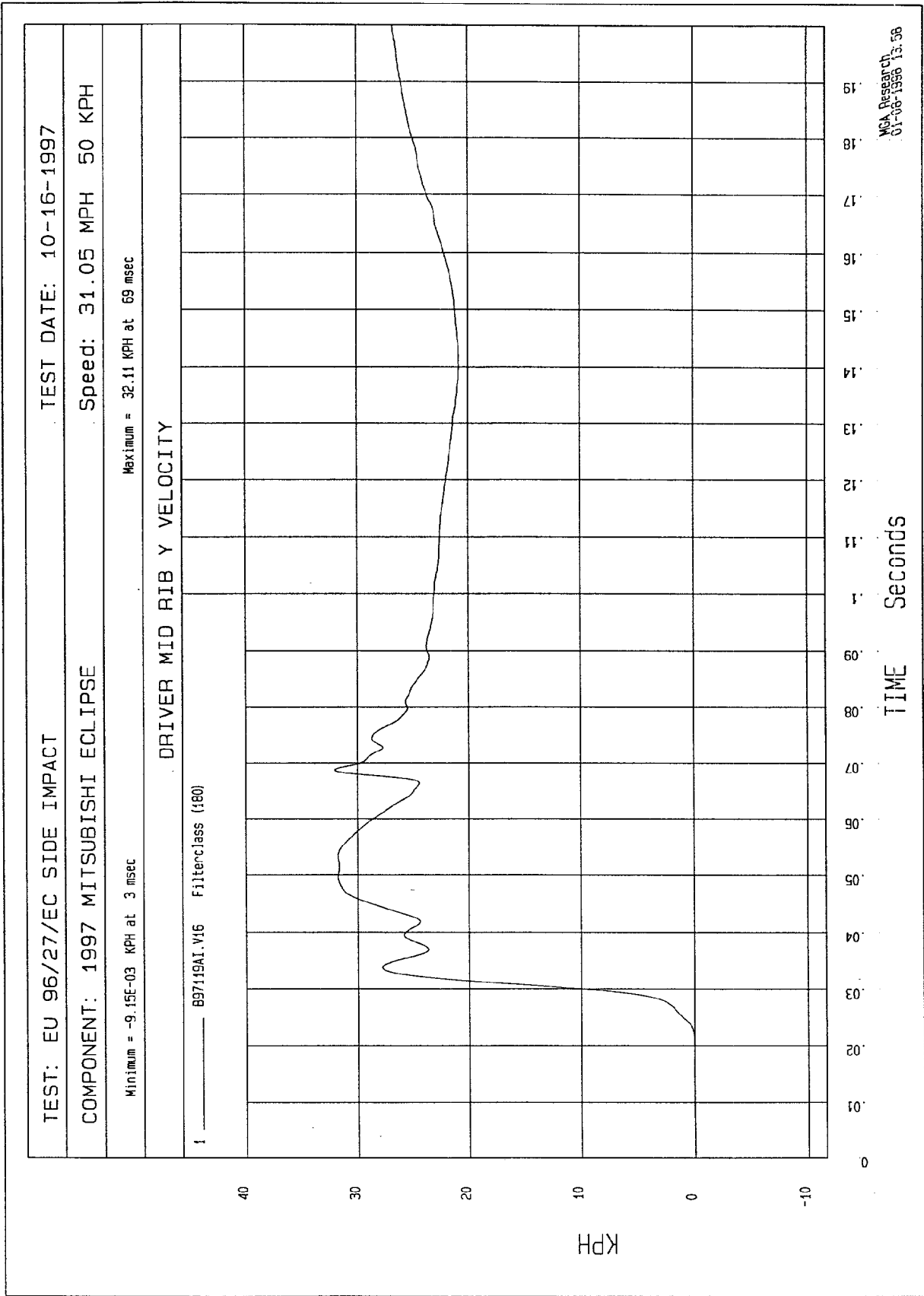
.01

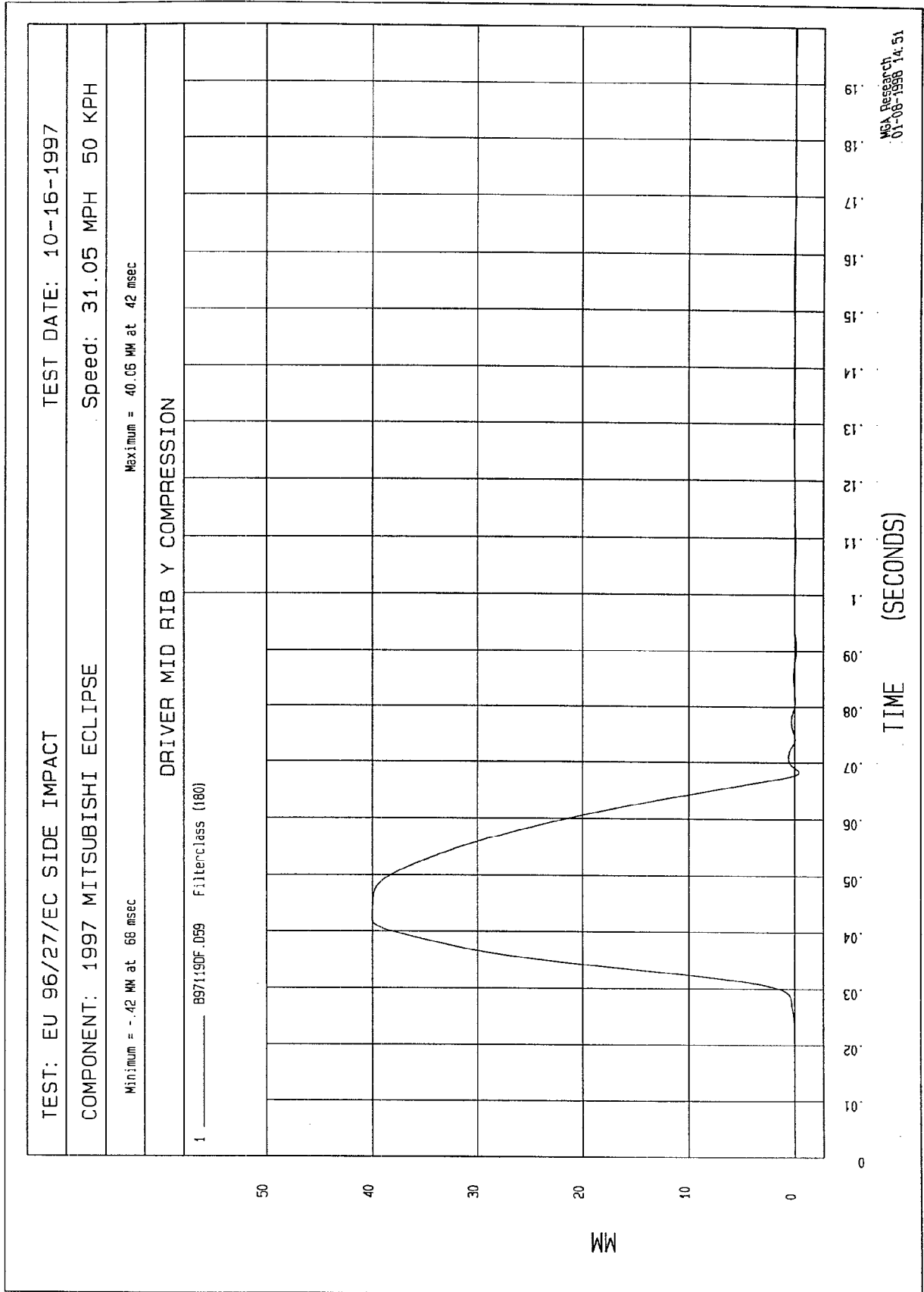
0

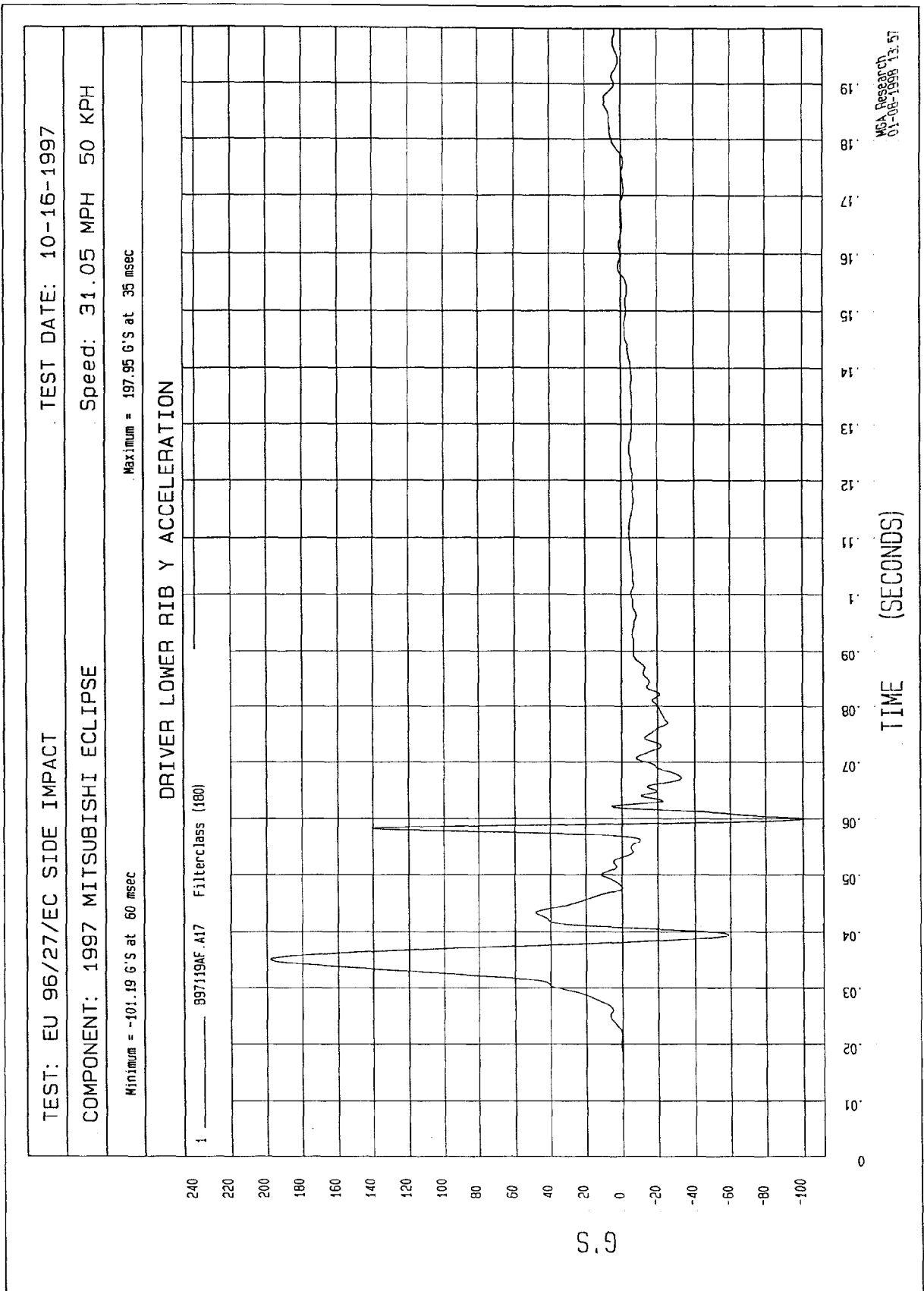
TIME (SECONDS)

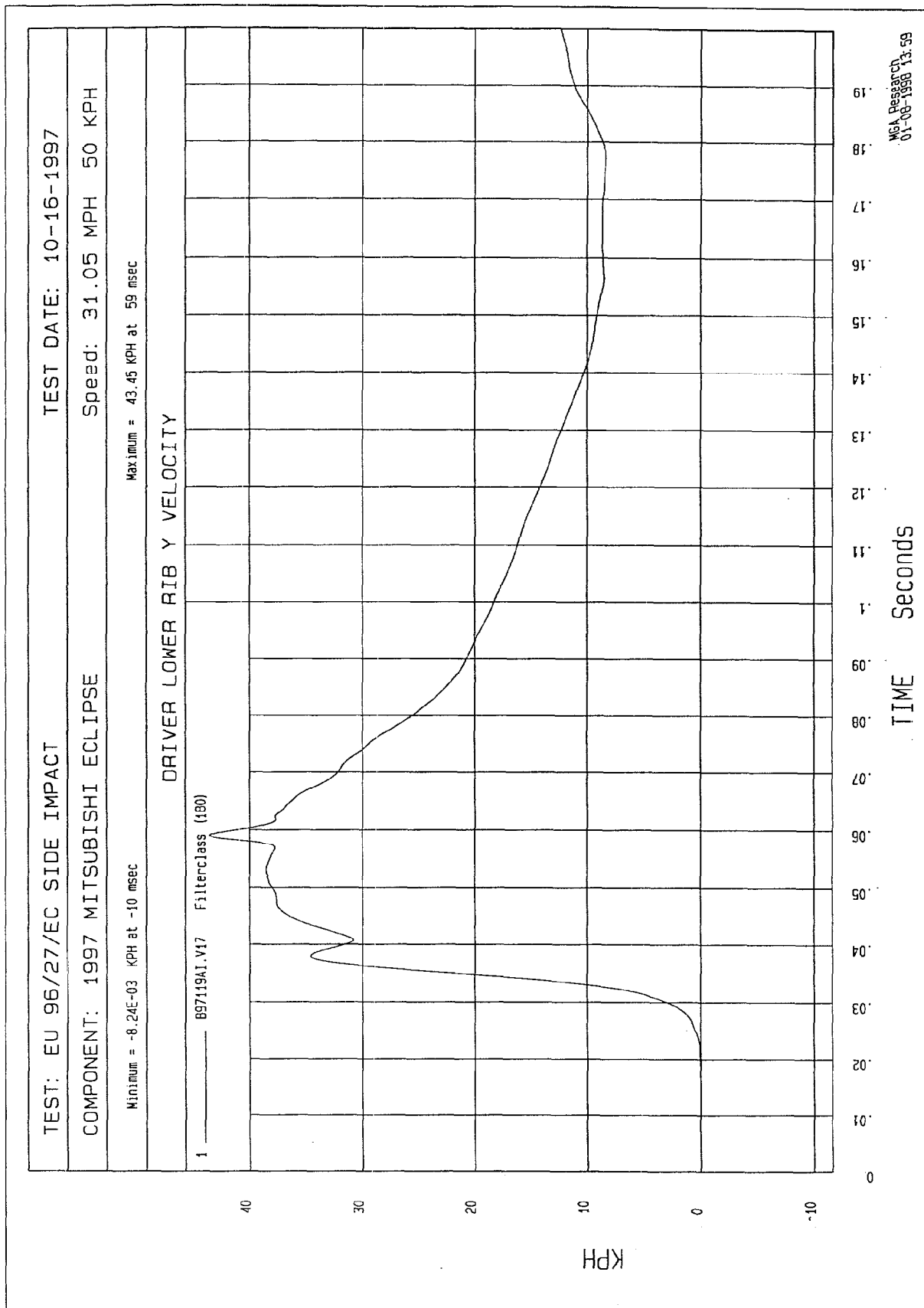
WCA Research
01-08-1998 14.51

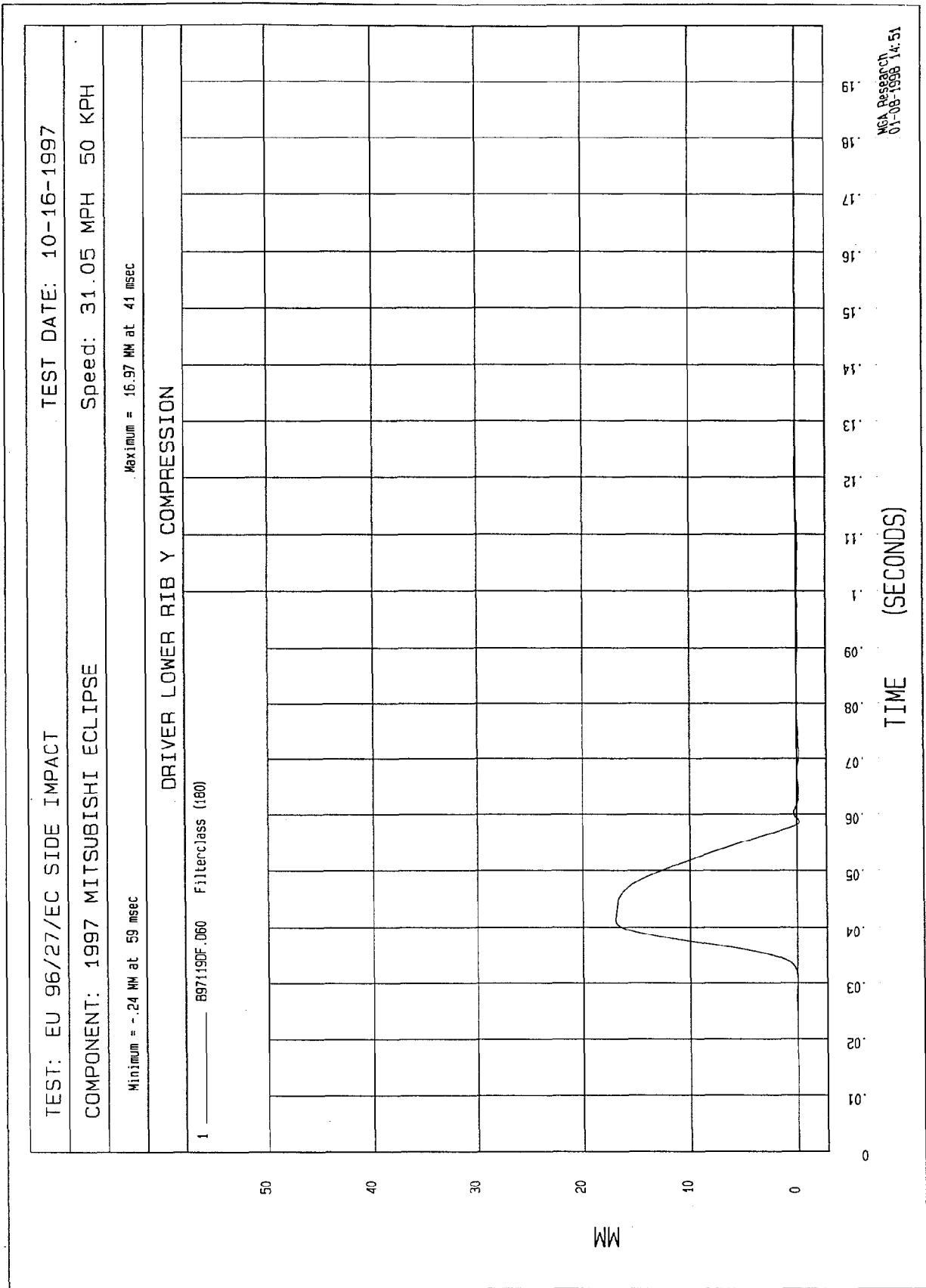


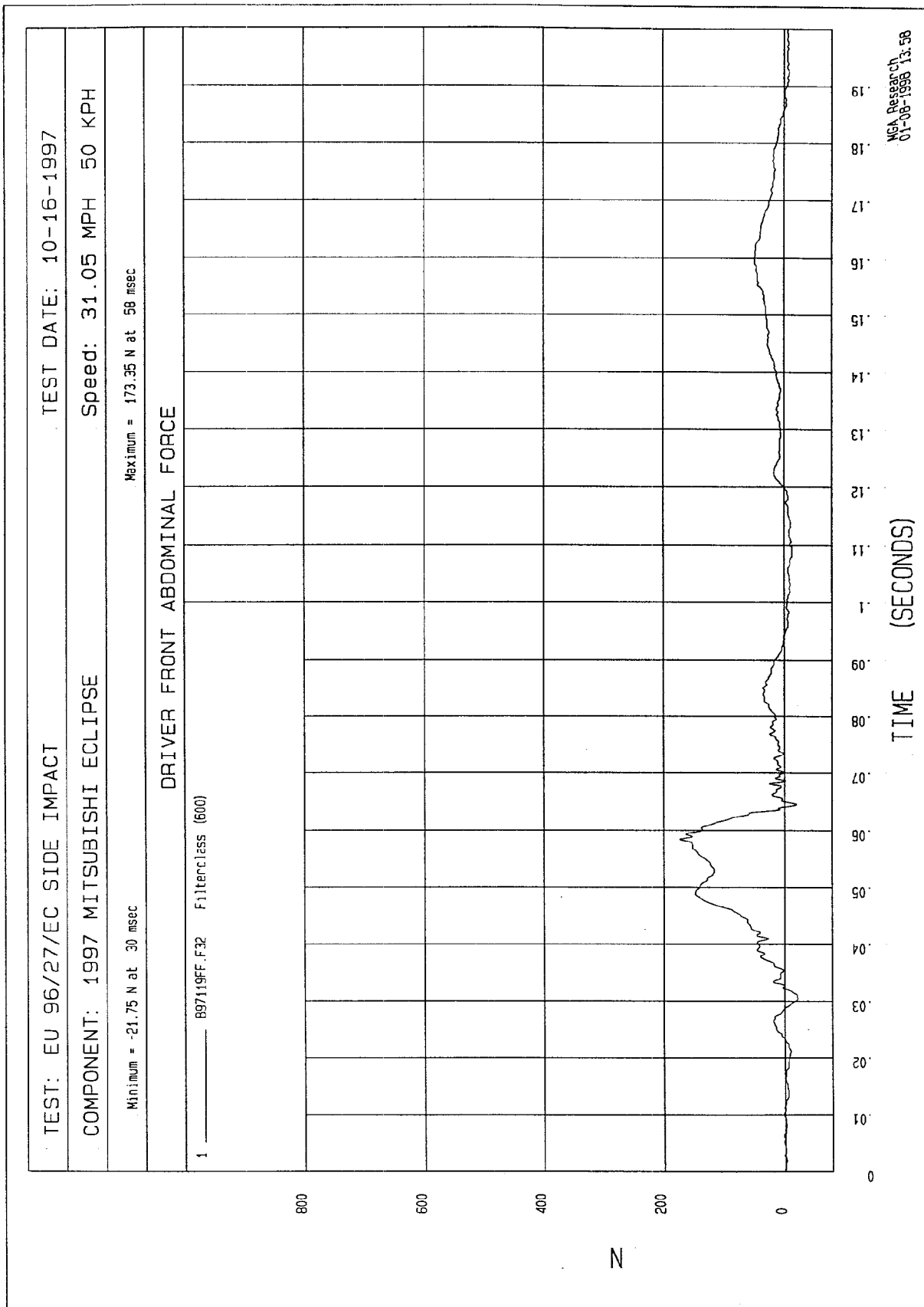


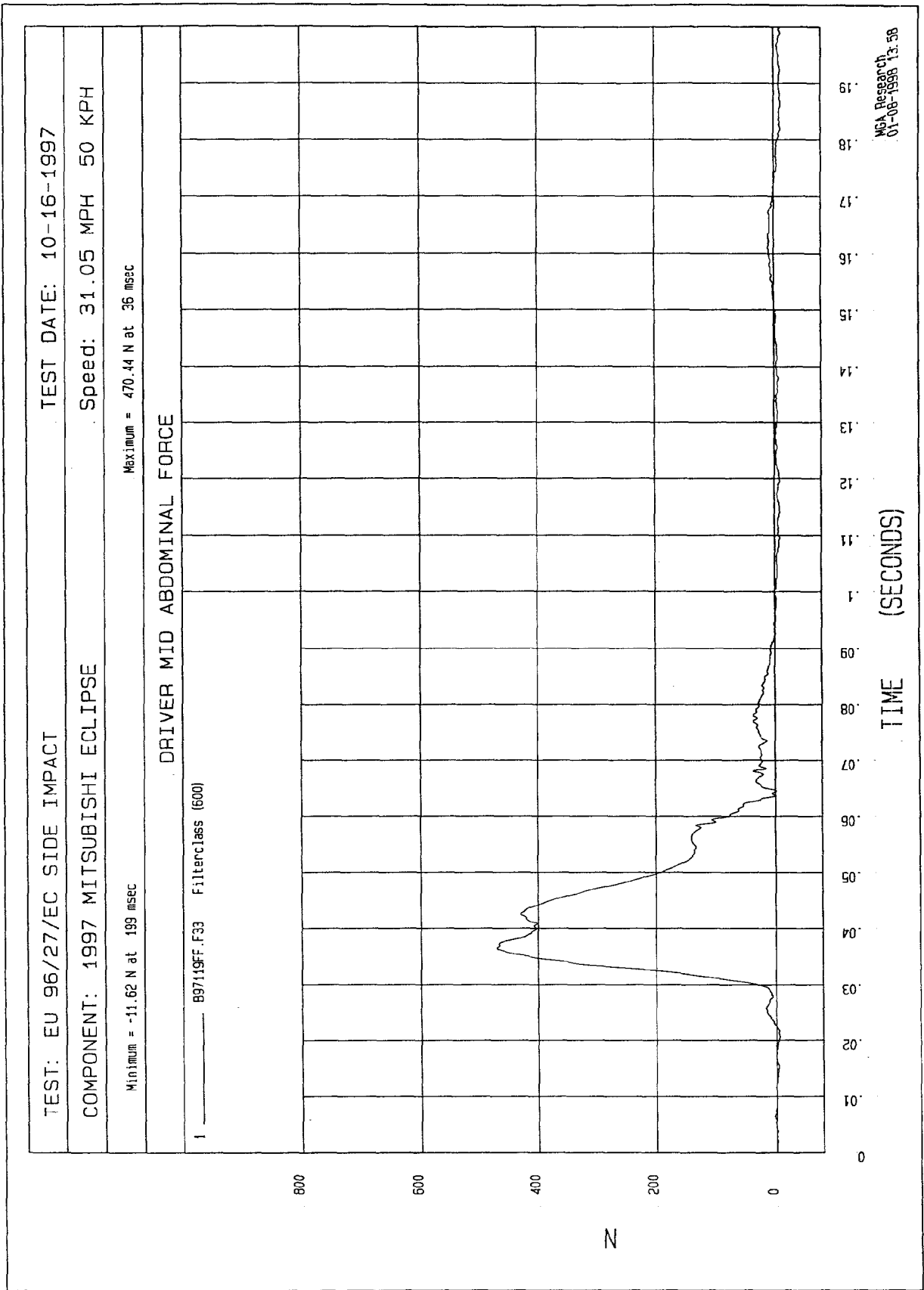


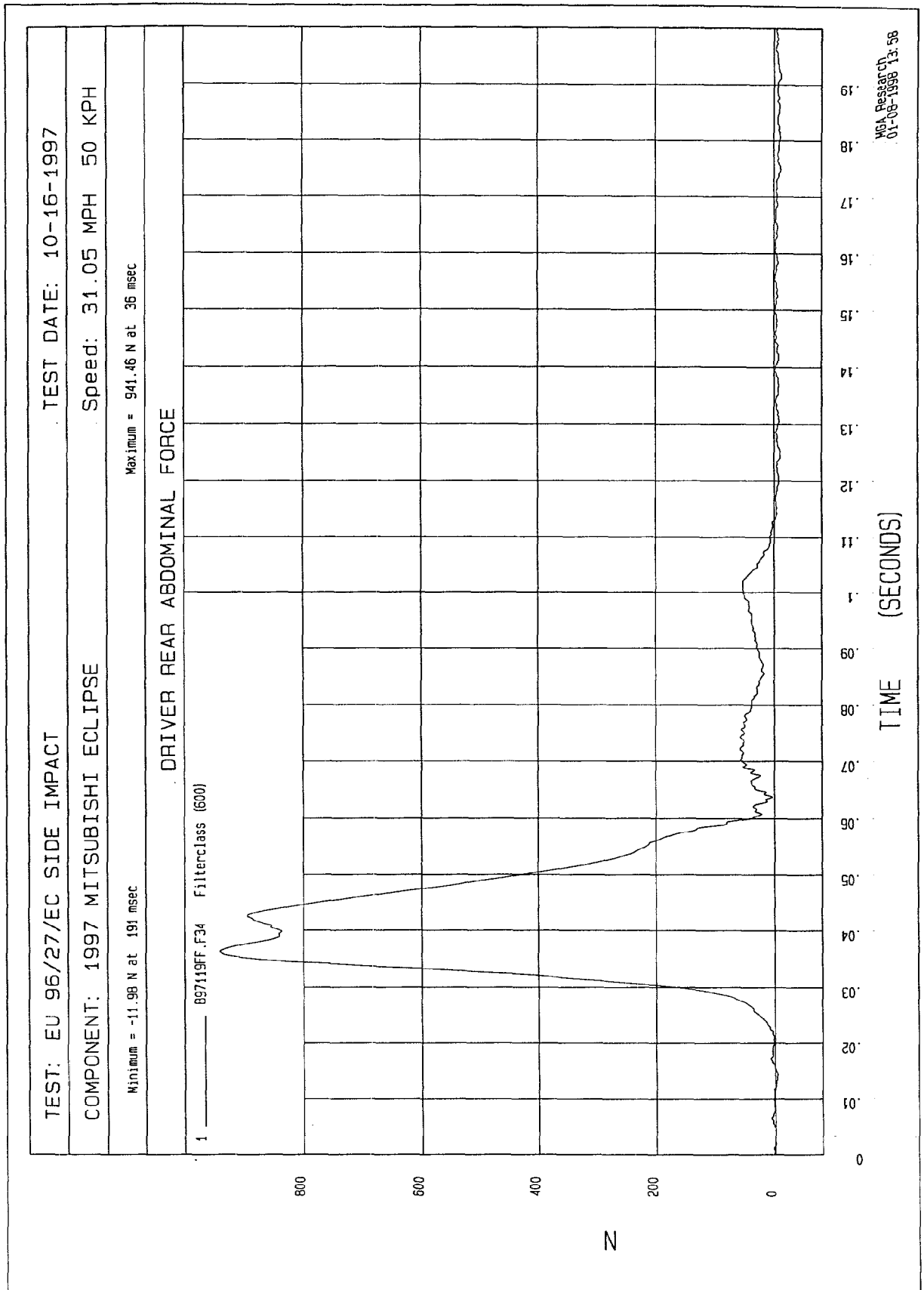


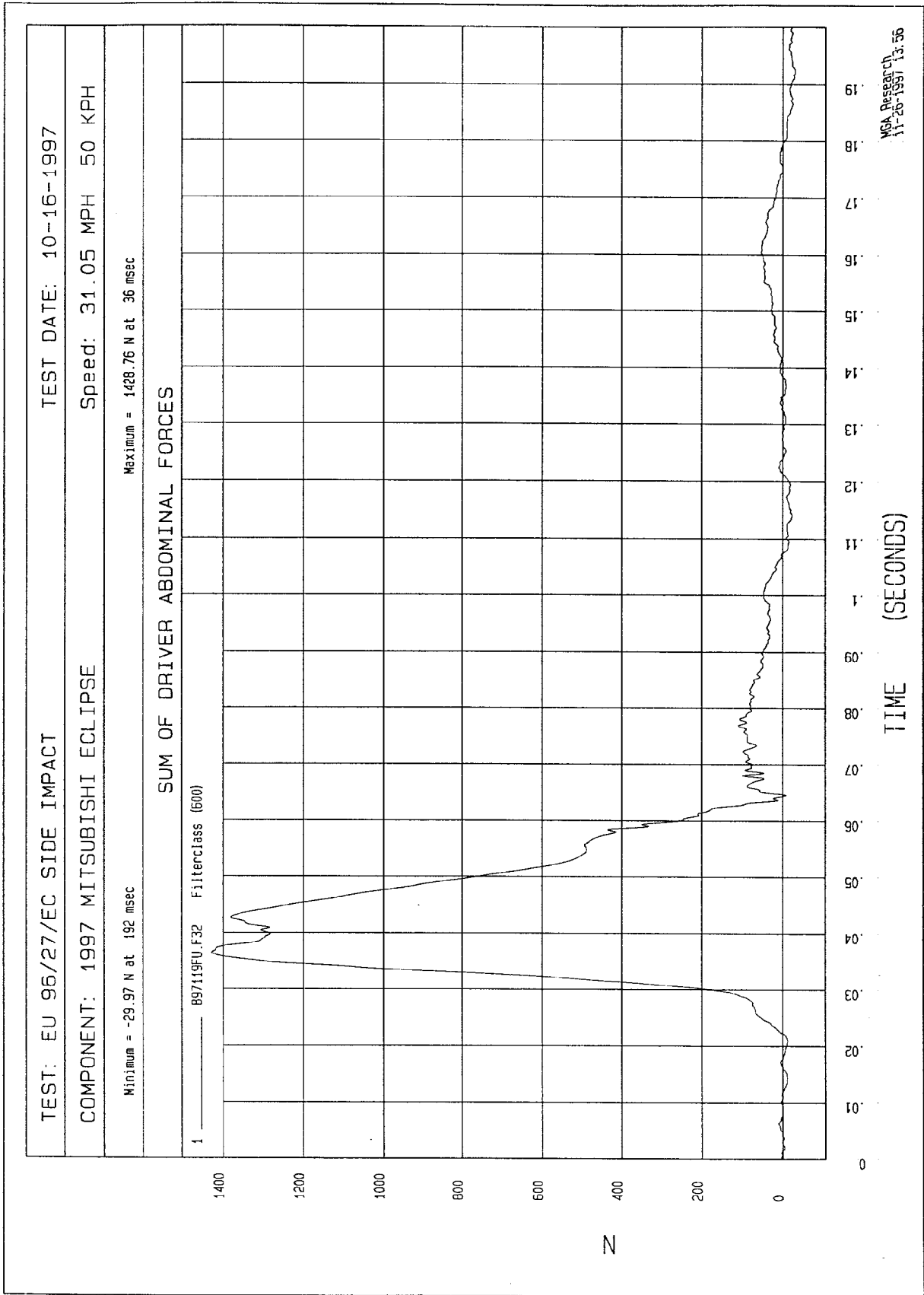


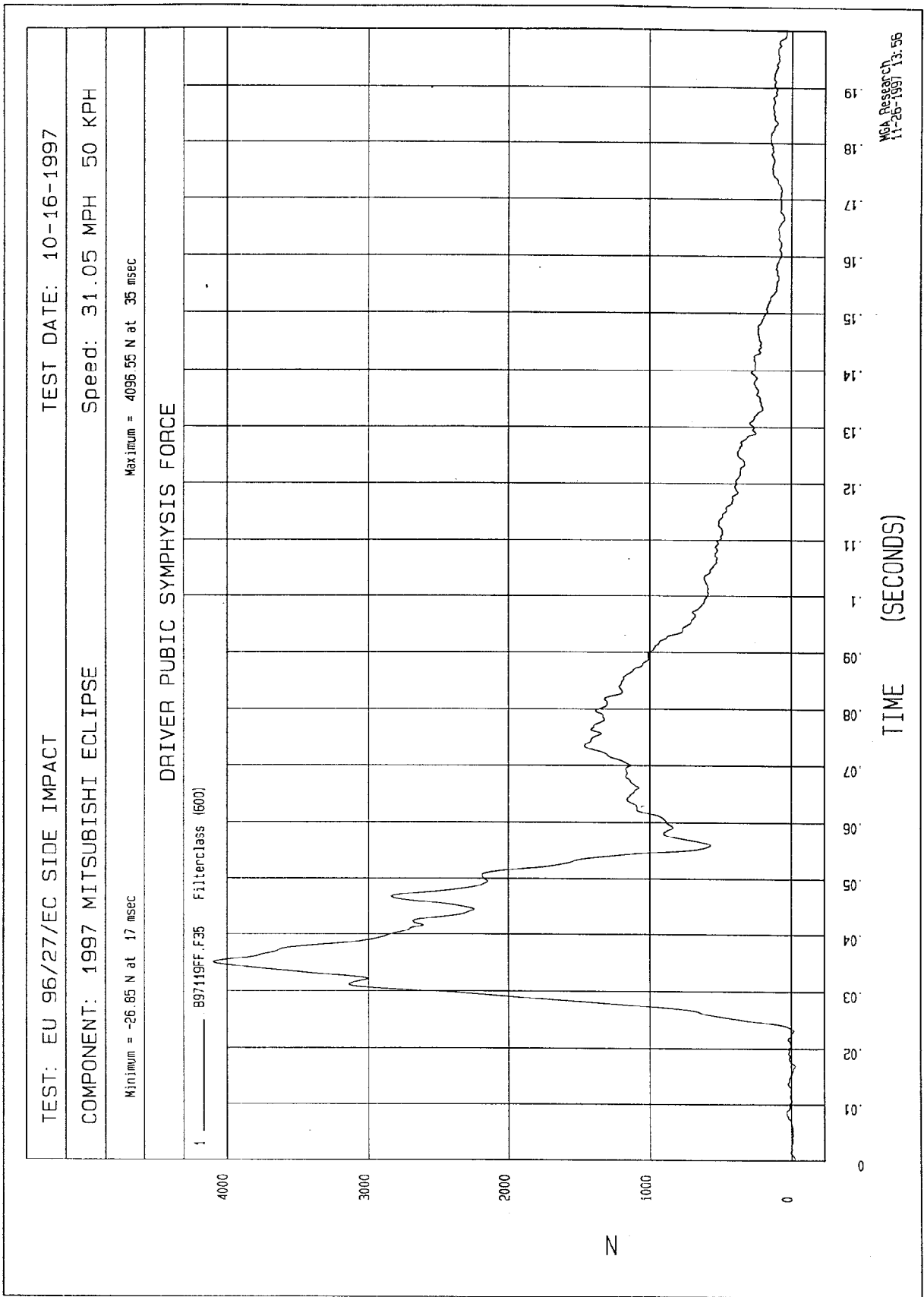












TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 12.18 G'S at 46 msec

Minimum = -8.98 G'S at 70 msec

DRIVER LOWER SPINE X ACCELERATION

1 ——— 897119AF.A1B Filterclass (180)

80

60

40

20

0

-20

G.S

0

.01

.02

.03

.04

.05

.06

.07

.08

.09

.1

.11

.12

.13

.14

.15

.16

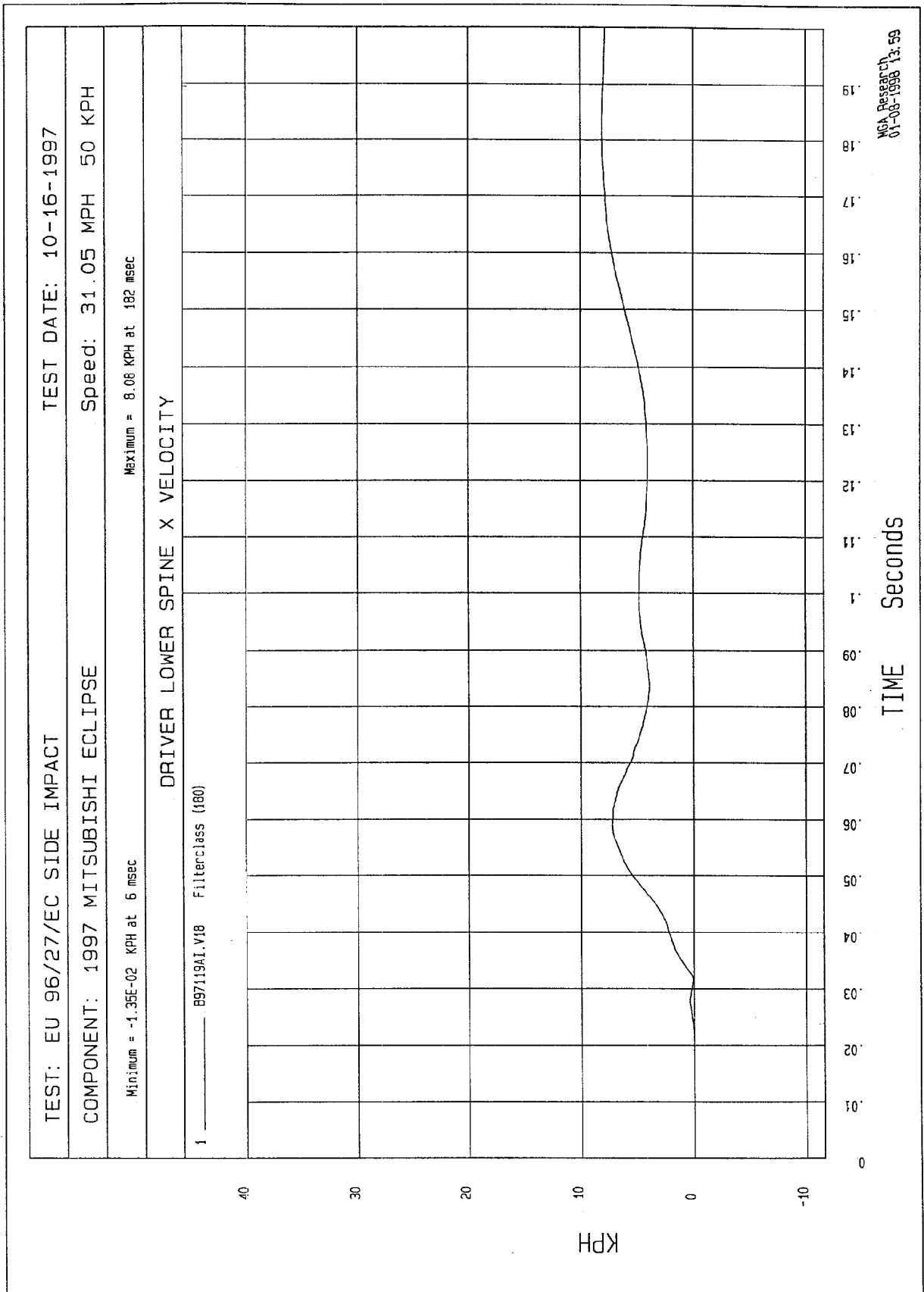
.17

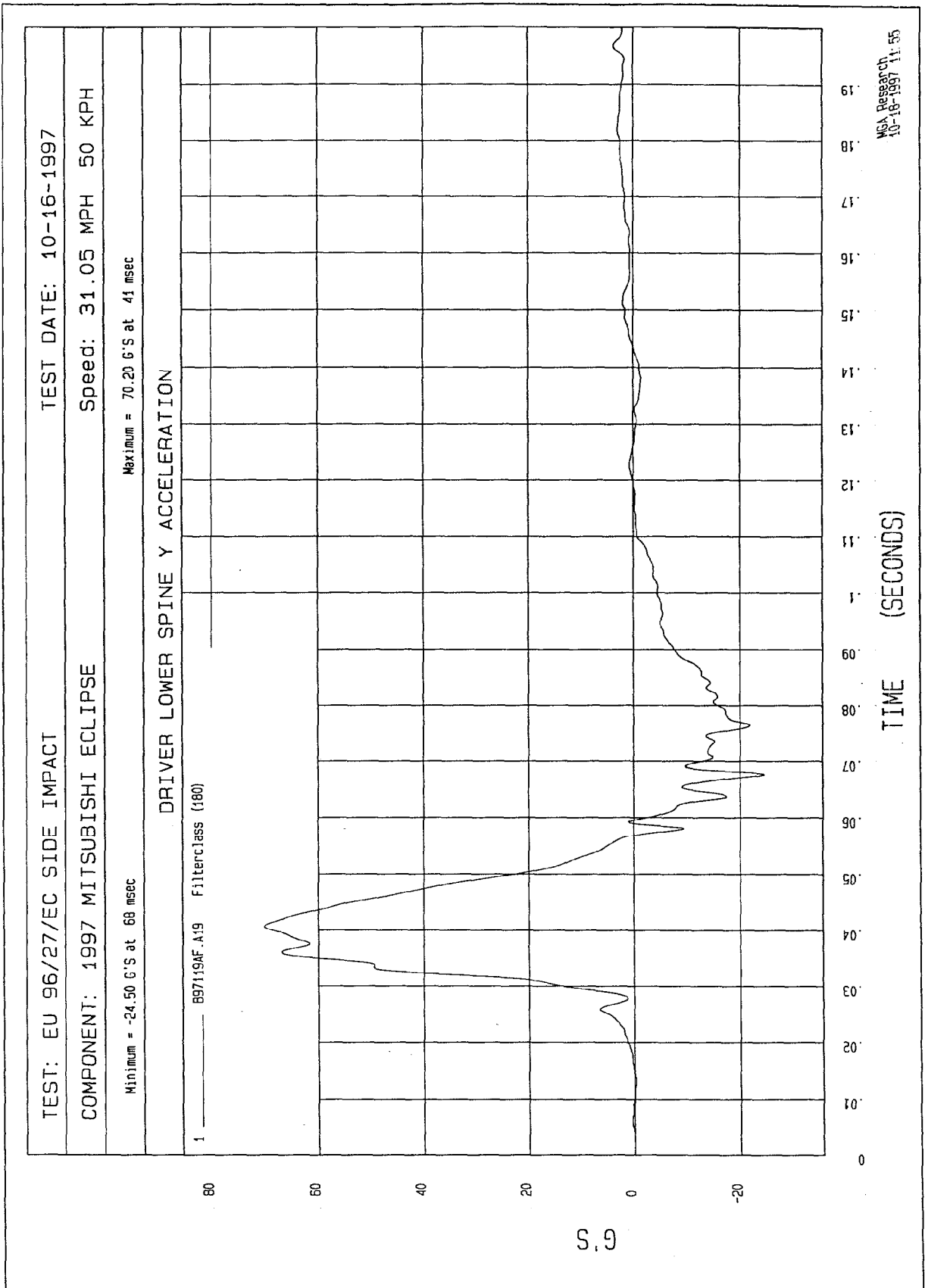
.18

.19

TIME (SECONDS)

MGA Research
10-16-1997 11:55





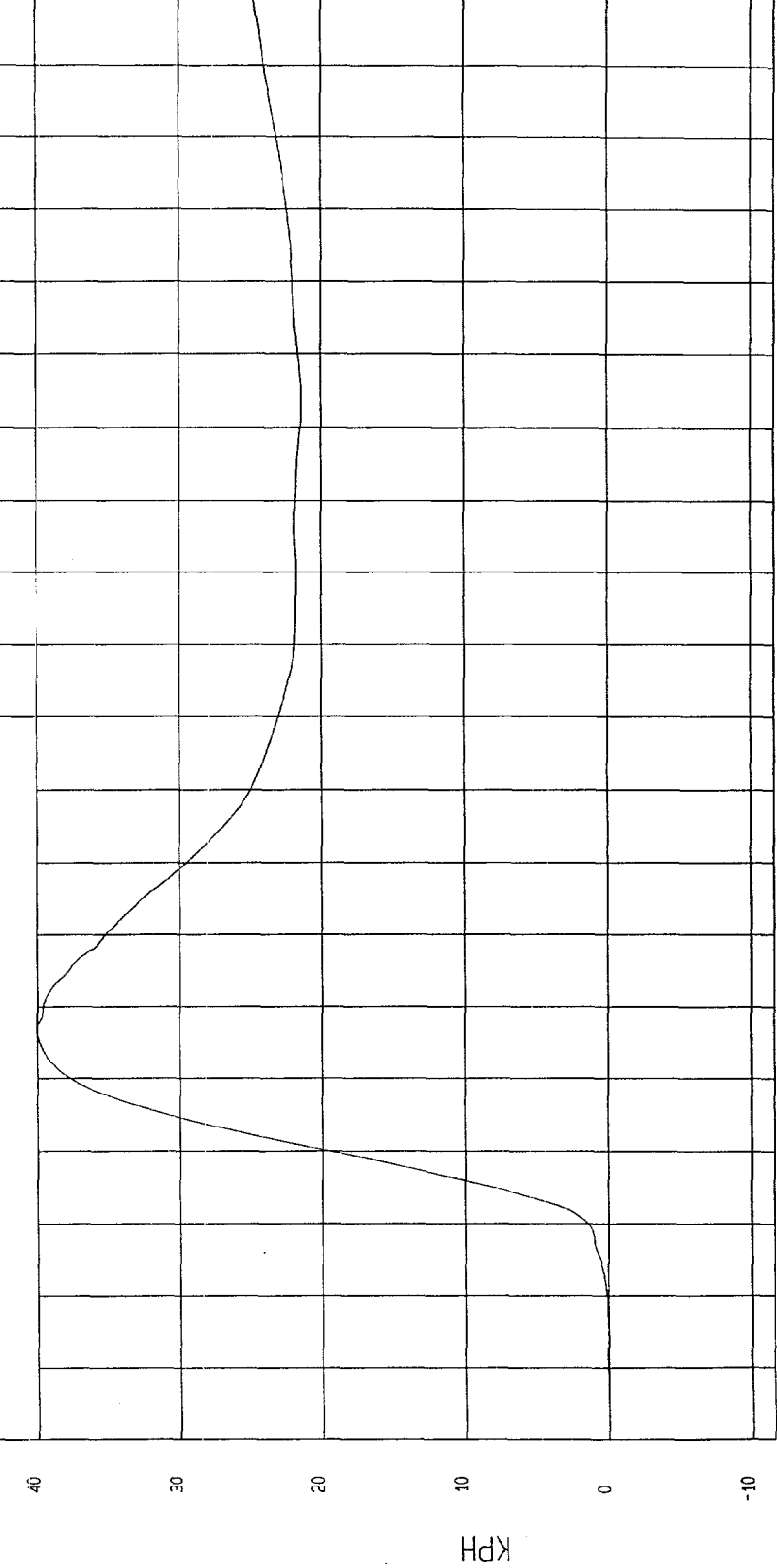
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -3.84E-03 KPH at -18 msec Maximum = 40.03 KPH at 57 msec

DRIVER LOWER SPINE Y VELOCITY

1 B97119A1.V19 Filterclass (180)



MECA Research
01-08-1998 13:59

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = -7.71 G'S at 63 msec

Maximum = 9.75 G'S at 60 msec

DRIVER LOWER SPINE Z ACCELERATION

1 ——— B97119AF.A20 Filterclass (160)

80

60

40

20

0

-20

G.S

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

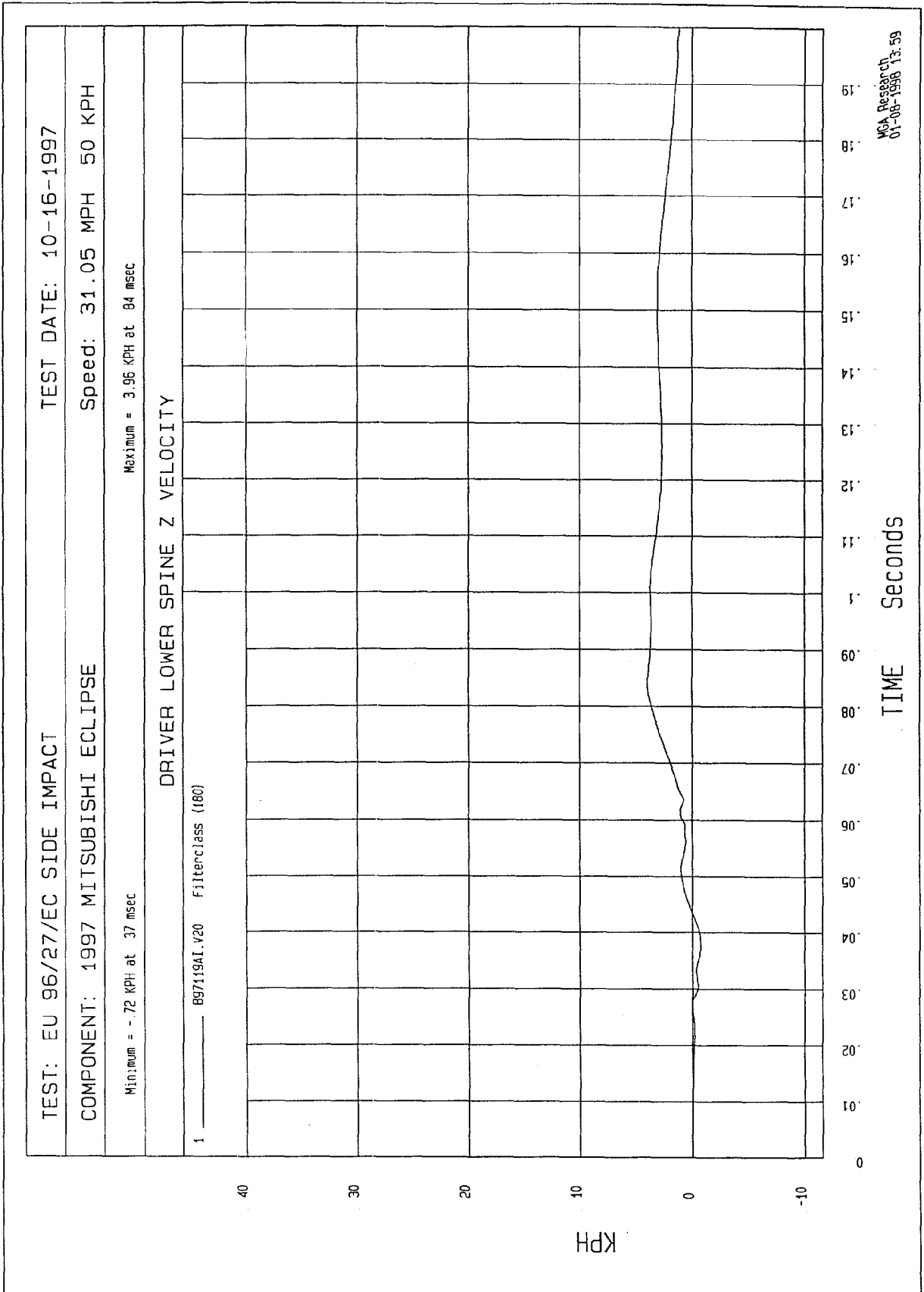
02

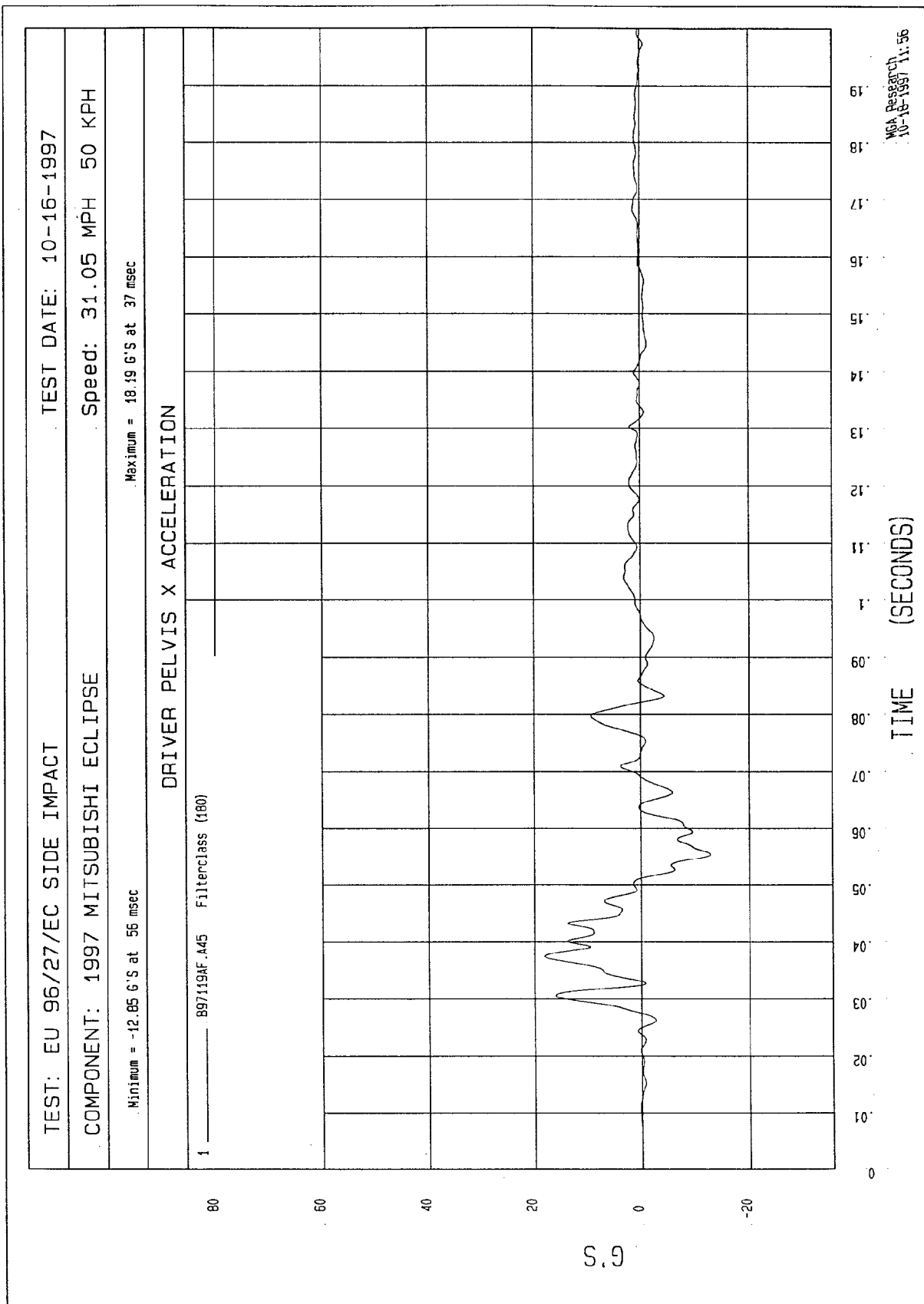
01

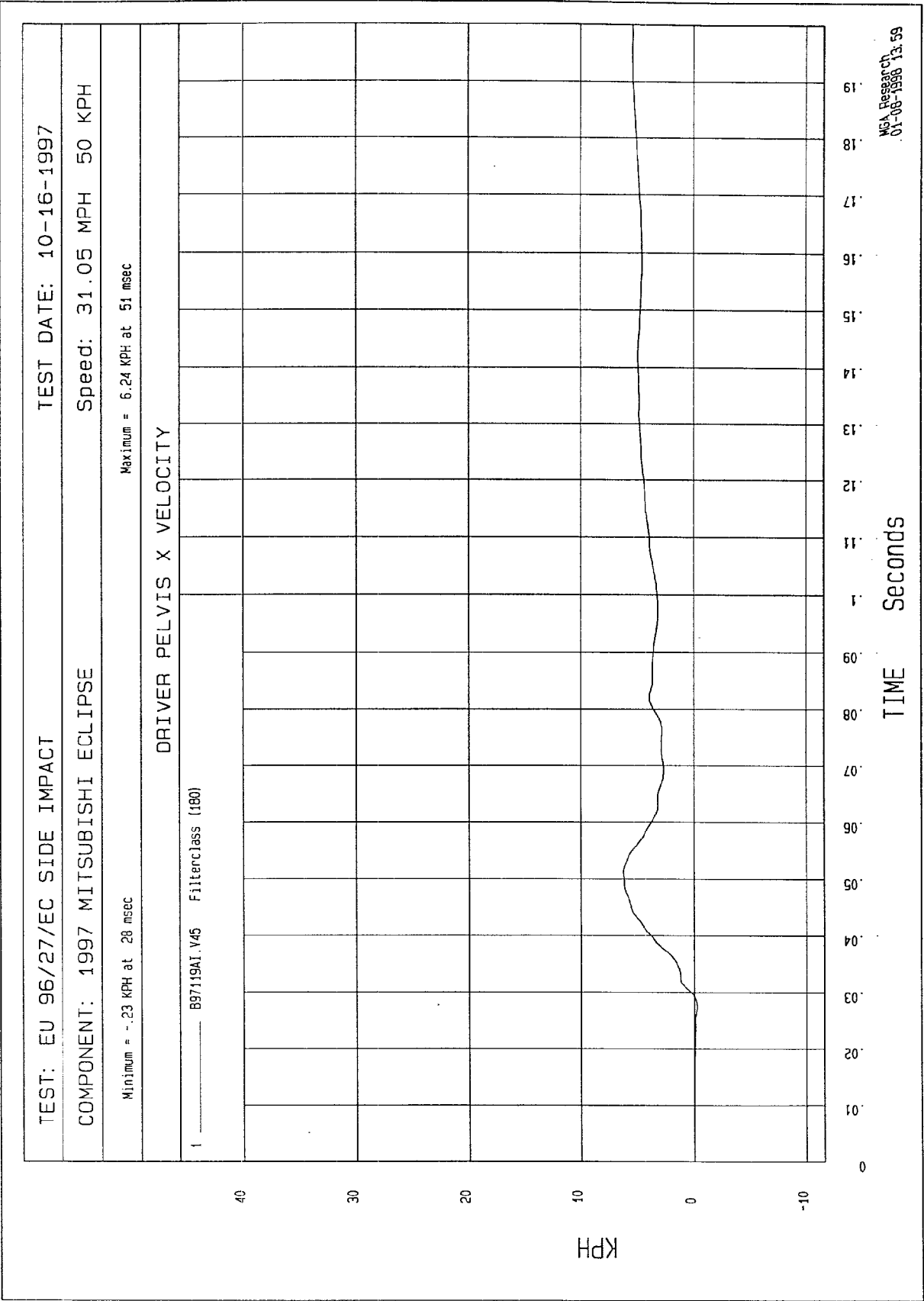
0

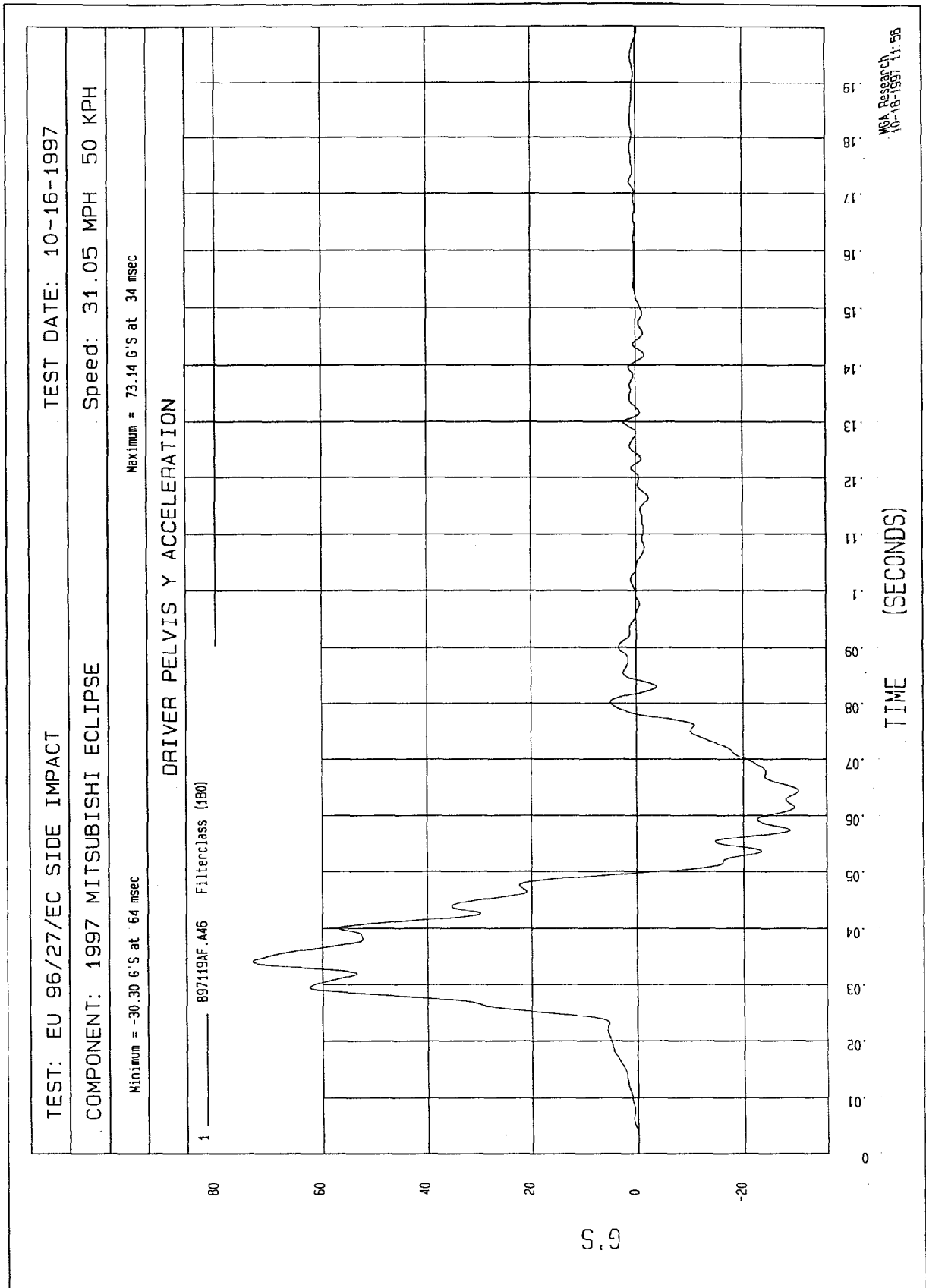
TIME (SECONDS)

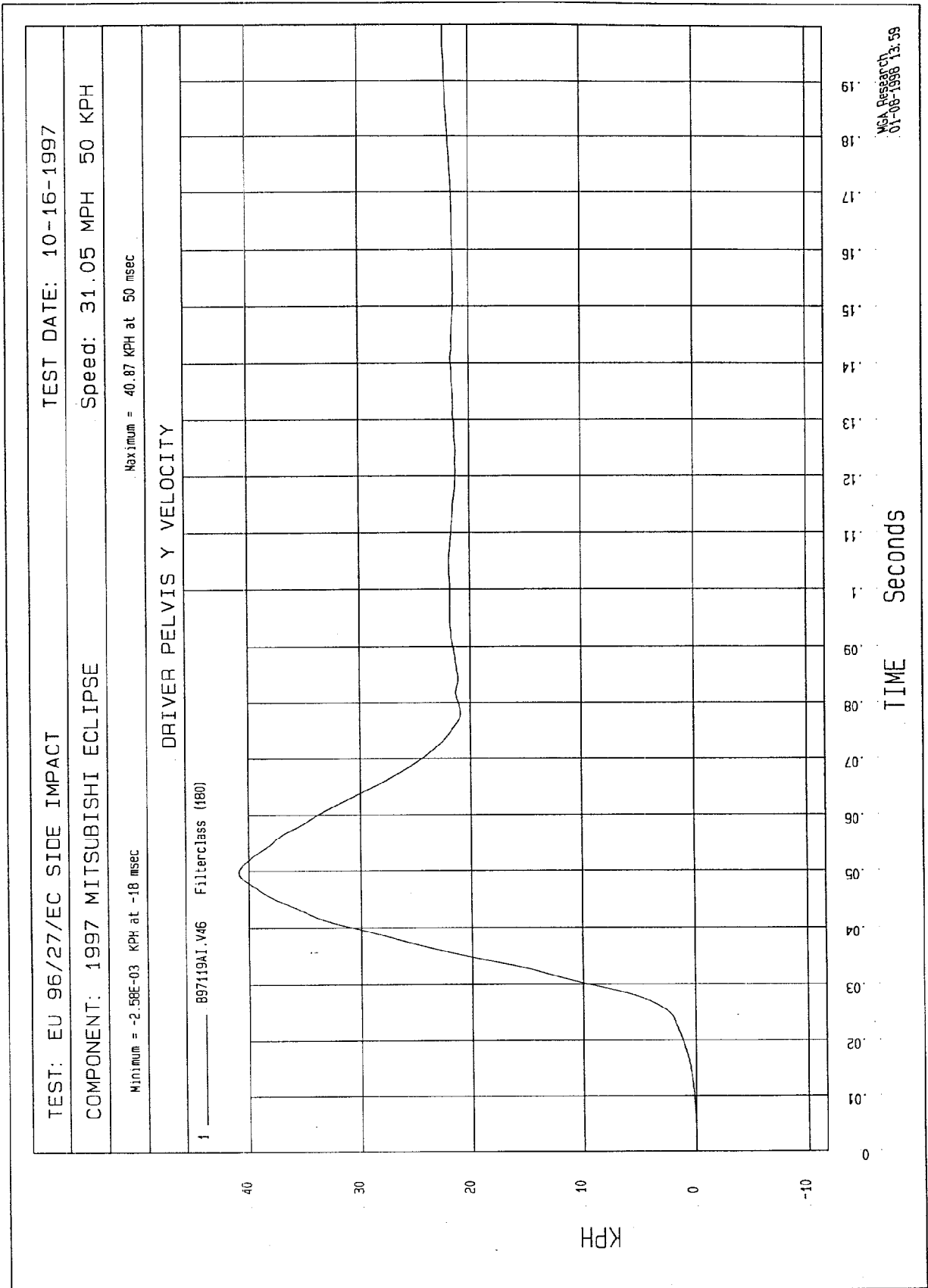
WCA Research
10-16-1997 11:56

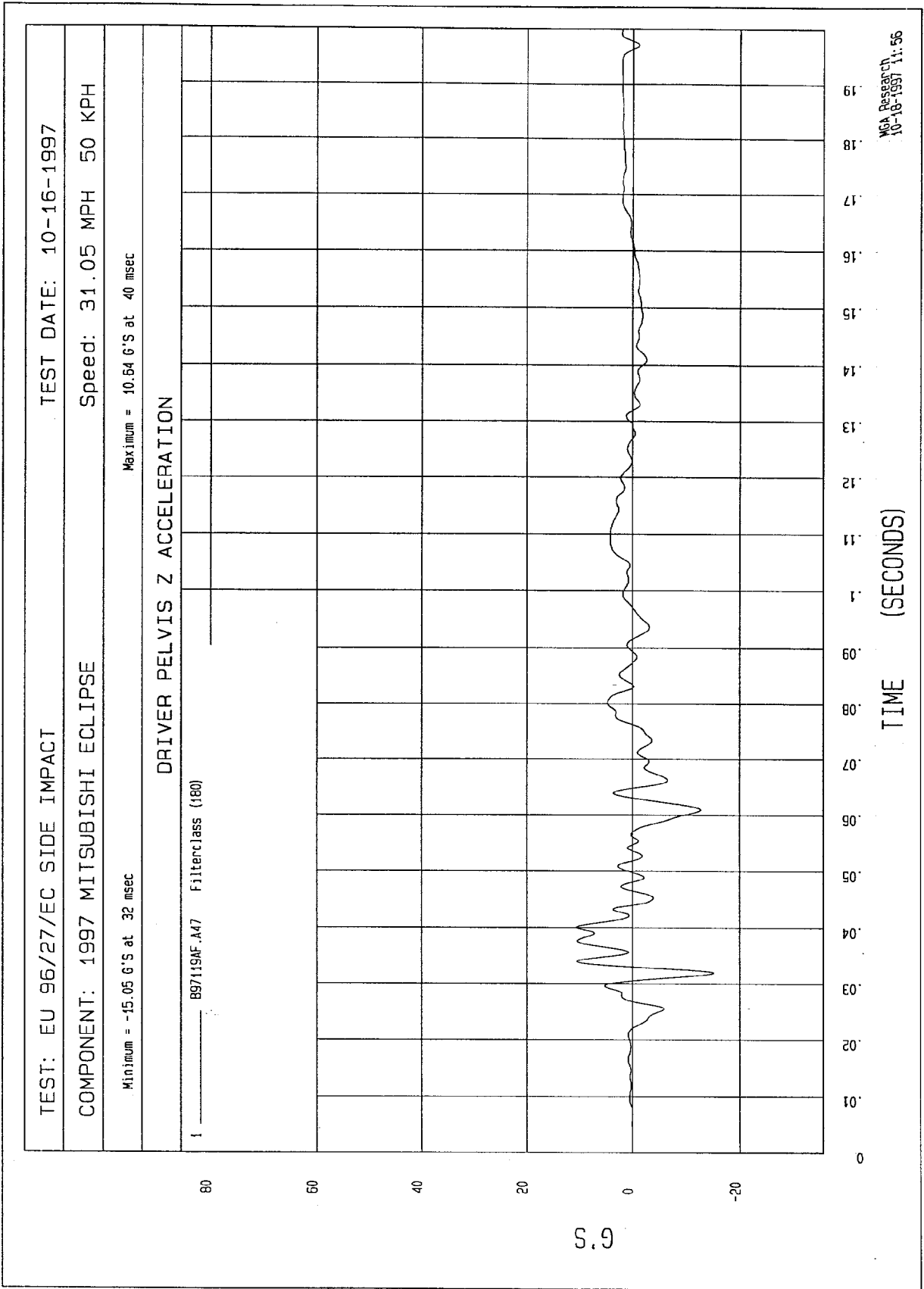


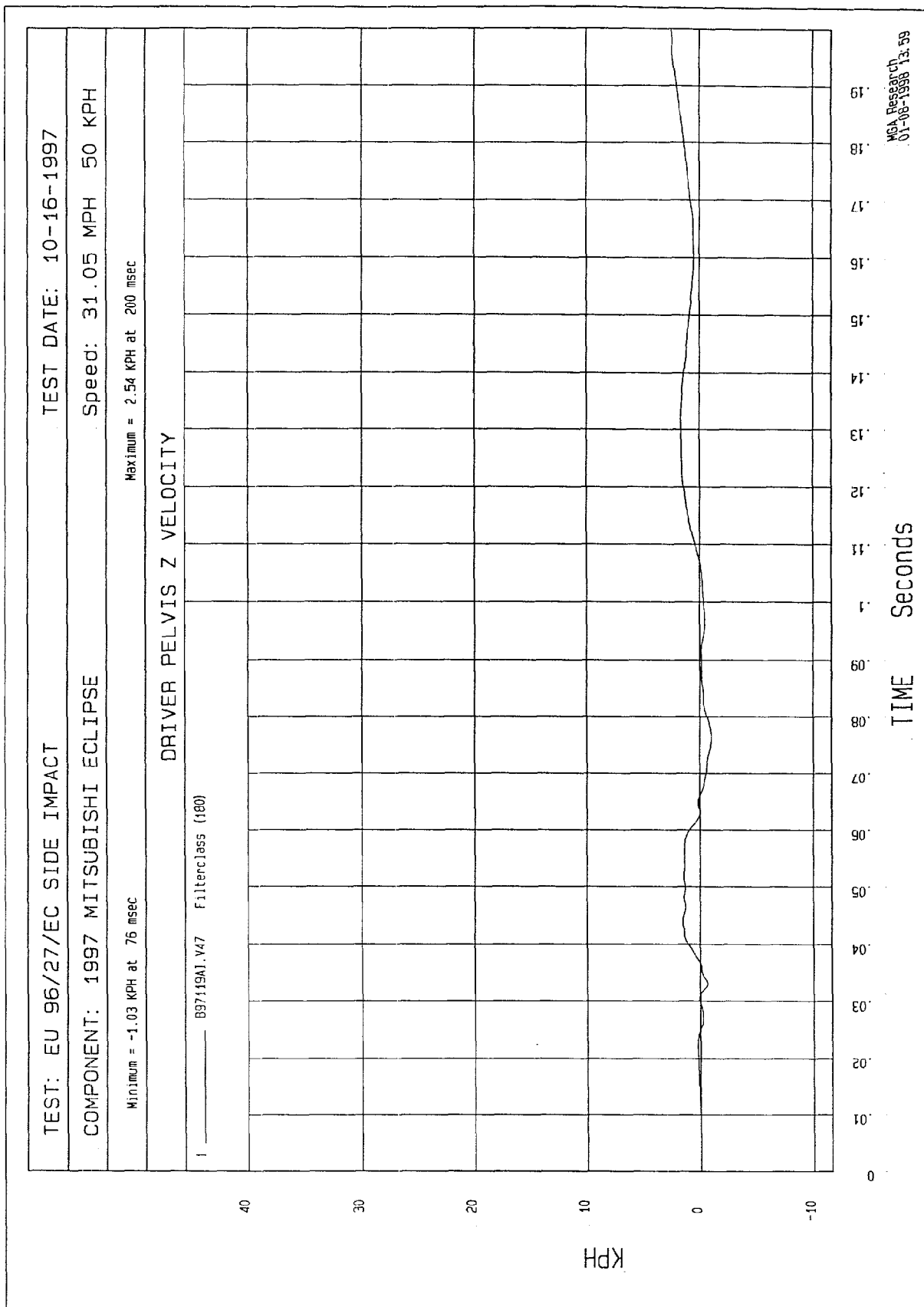


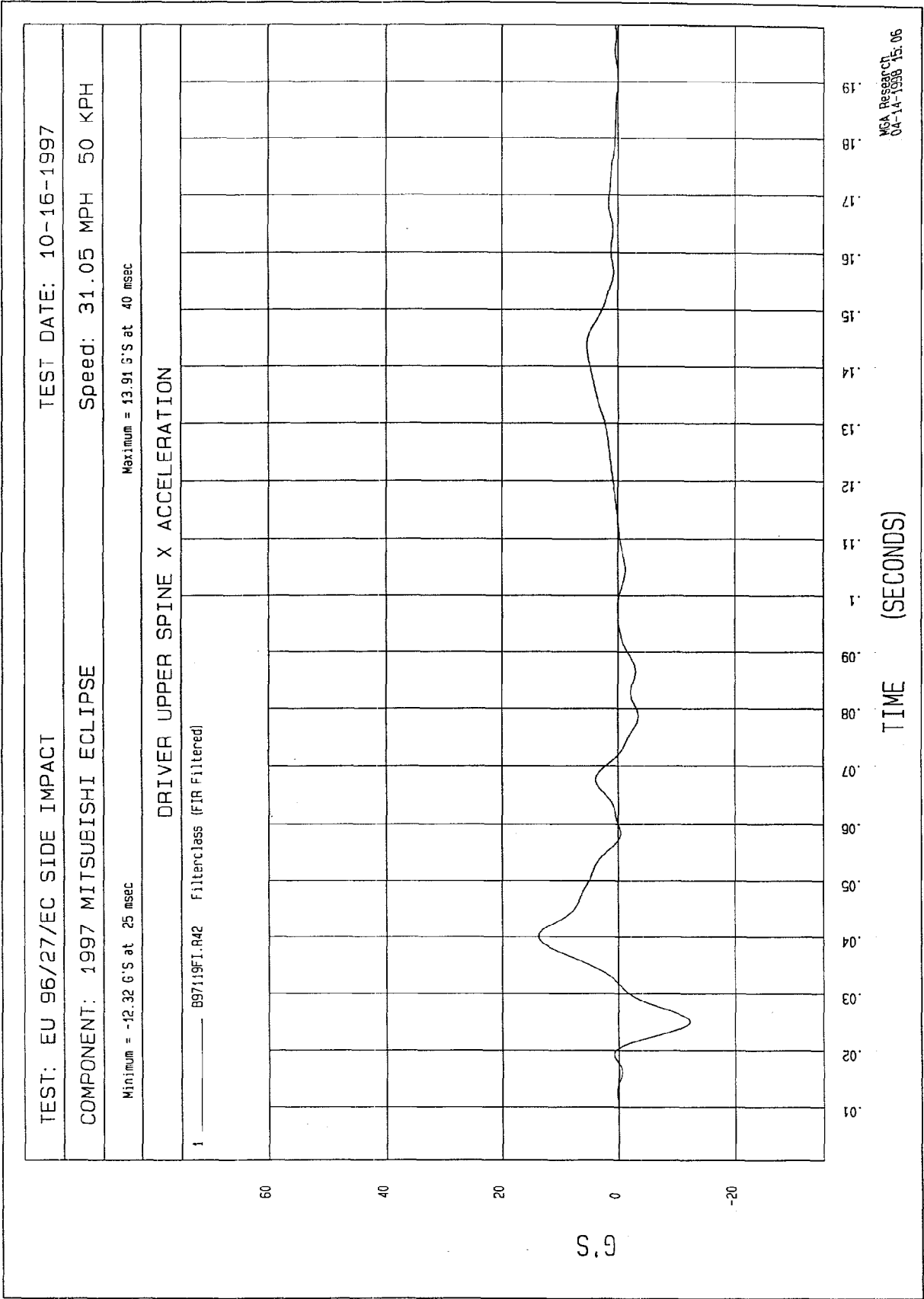


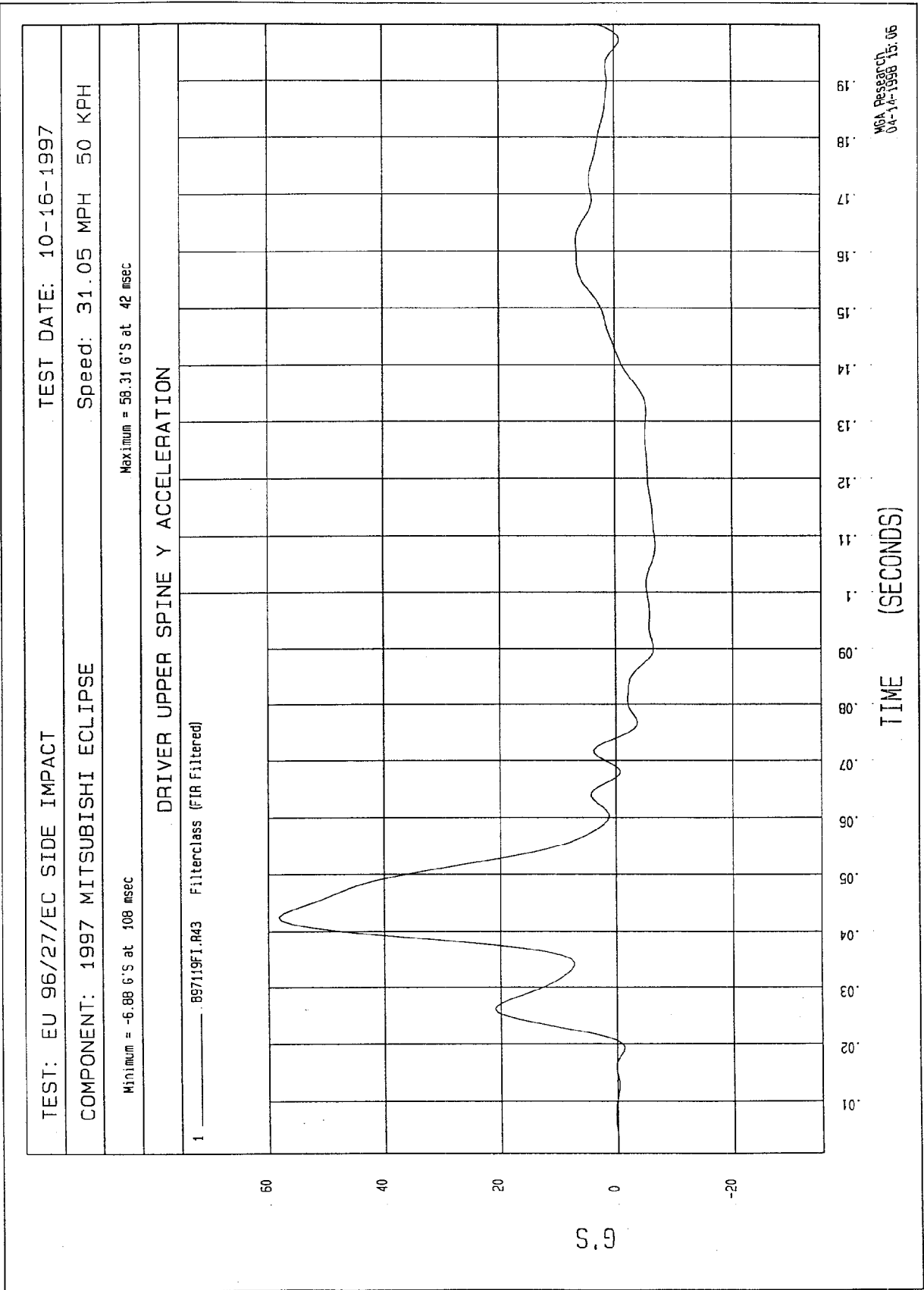












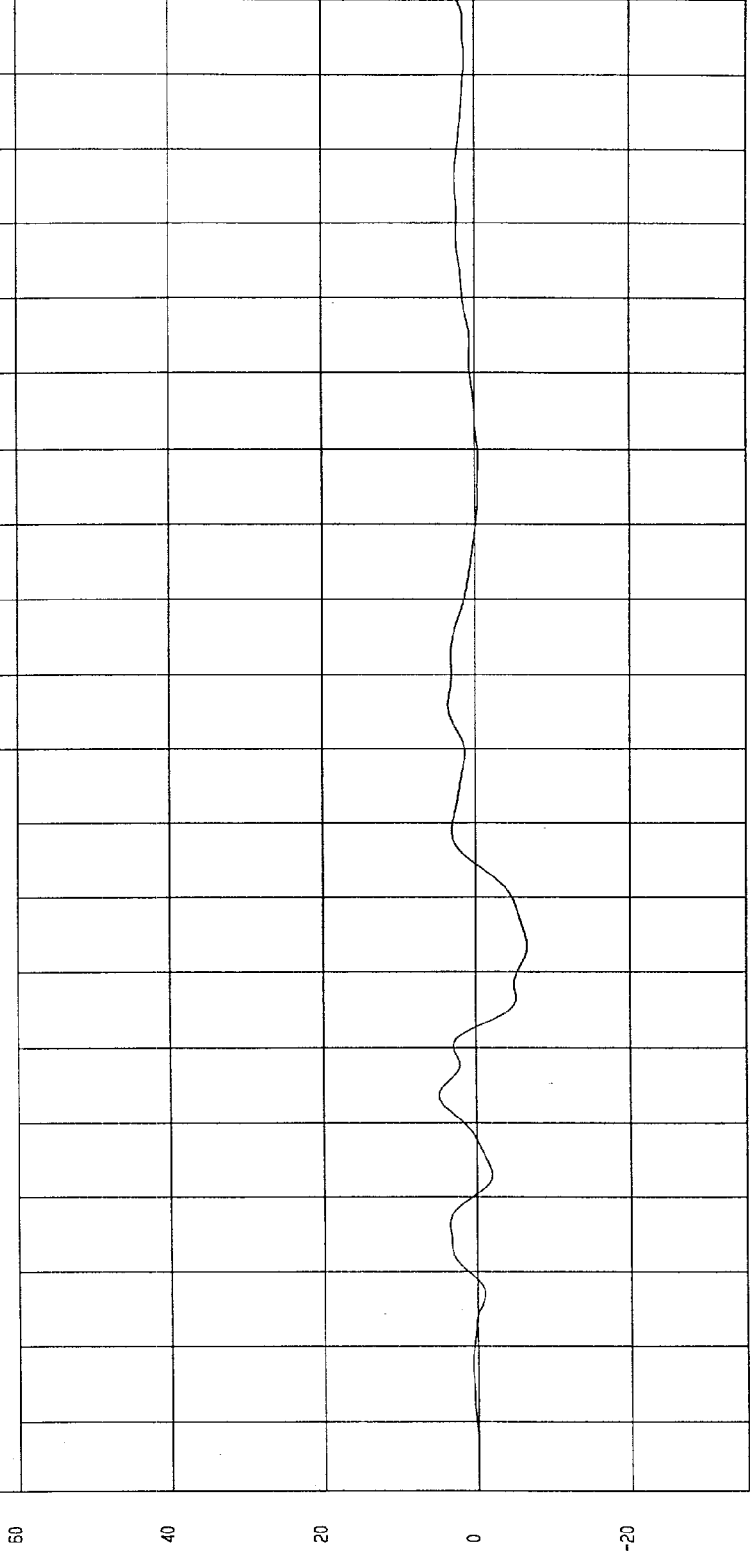
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

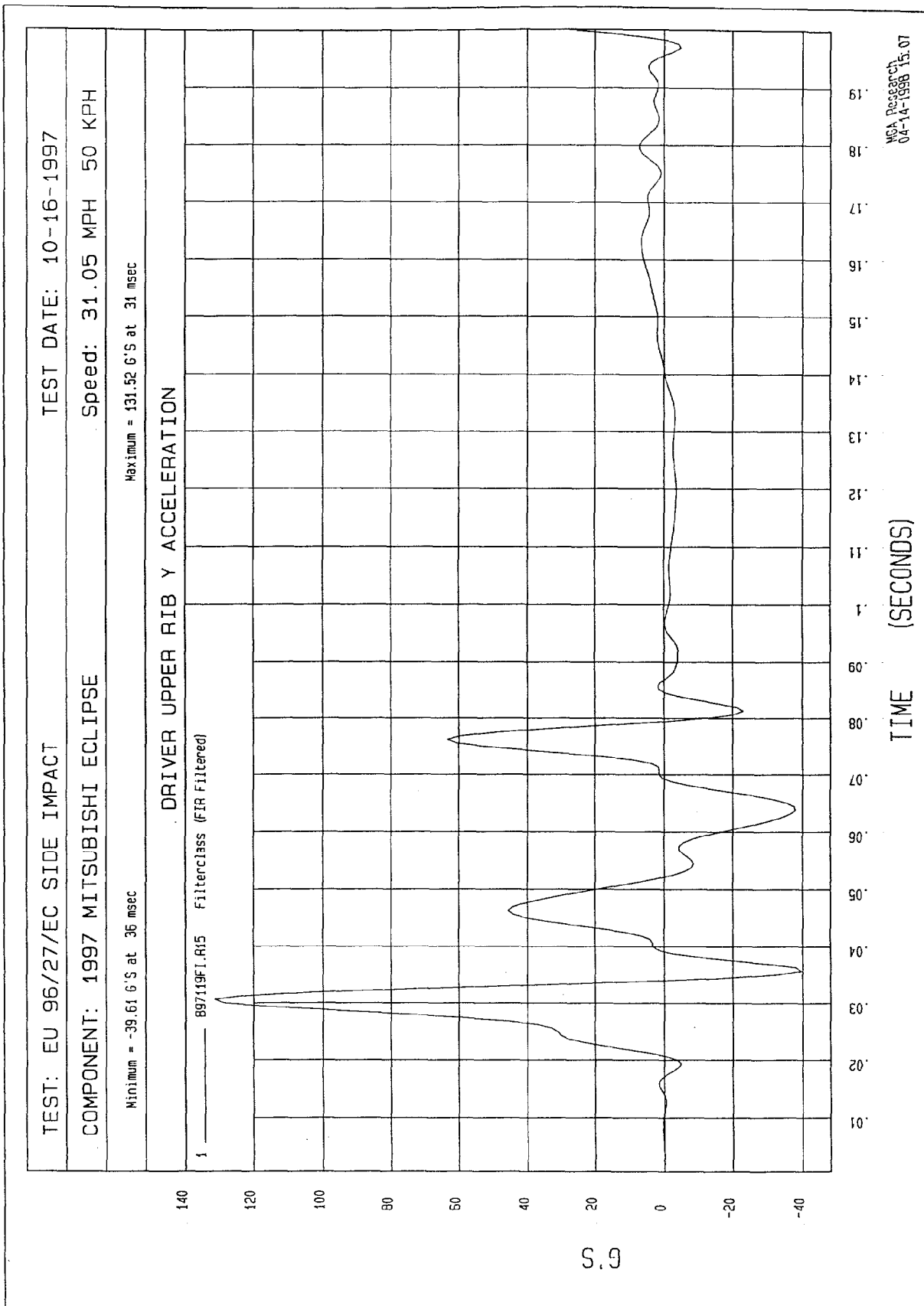
Minimum = -5.61 G'S at 73 msec Maximum = 4.91 G'S at 54 msec

DRIVER UPPER SPINE Z ACCELERATION

1 897119F1.R44 Filterclass (FIR Filtered)



MGA Research
04-14-1998 15.06



TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

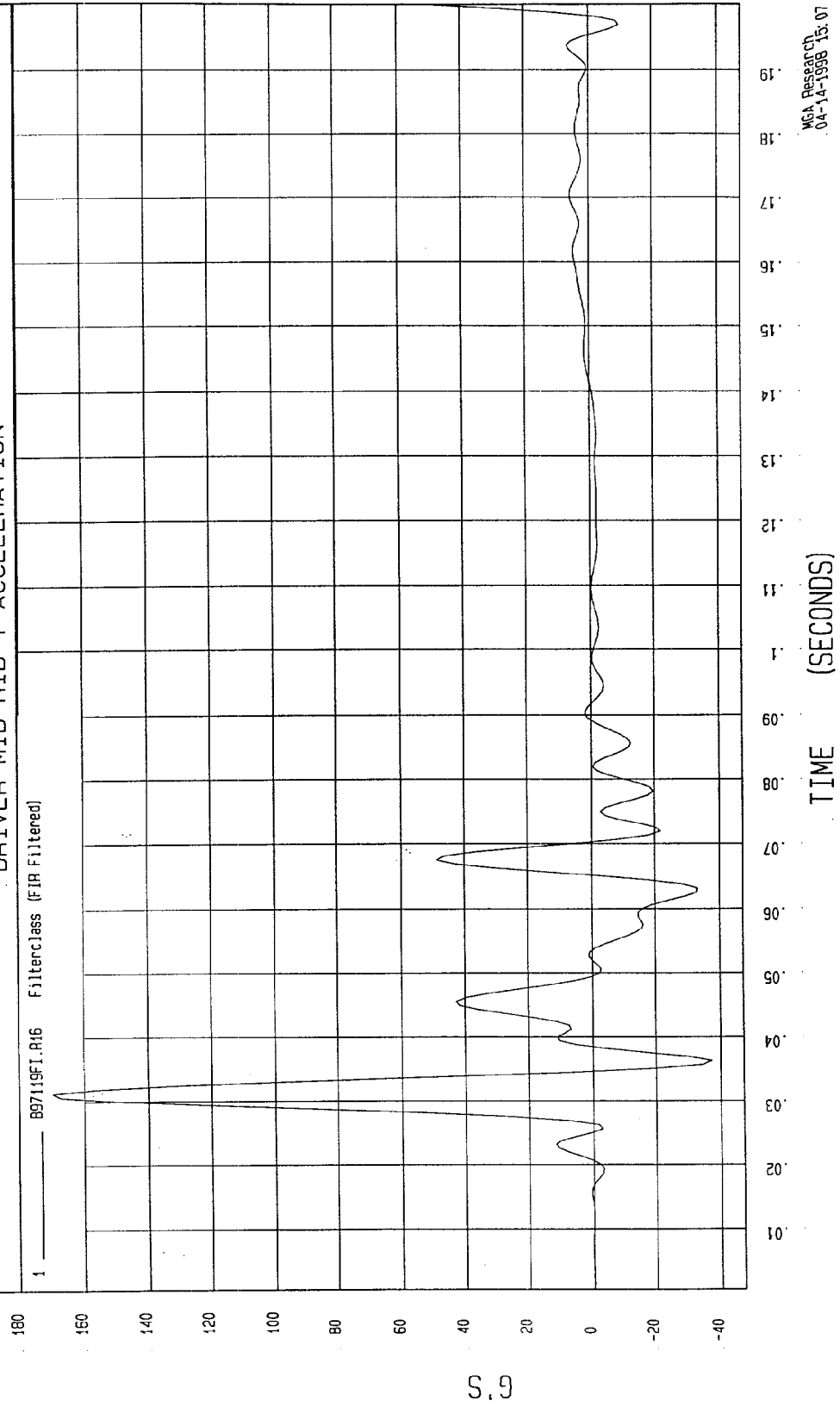
Speed: 31.05 MPH 50 KPH

COMPONENT: 1997 MITSUBISHI ECLIPSE

Maximum = 170.12 G'S at 31 msec

Minimum = -37.03 G'S at 36 msec

DRIVER MID RIB Y ACCELERATION

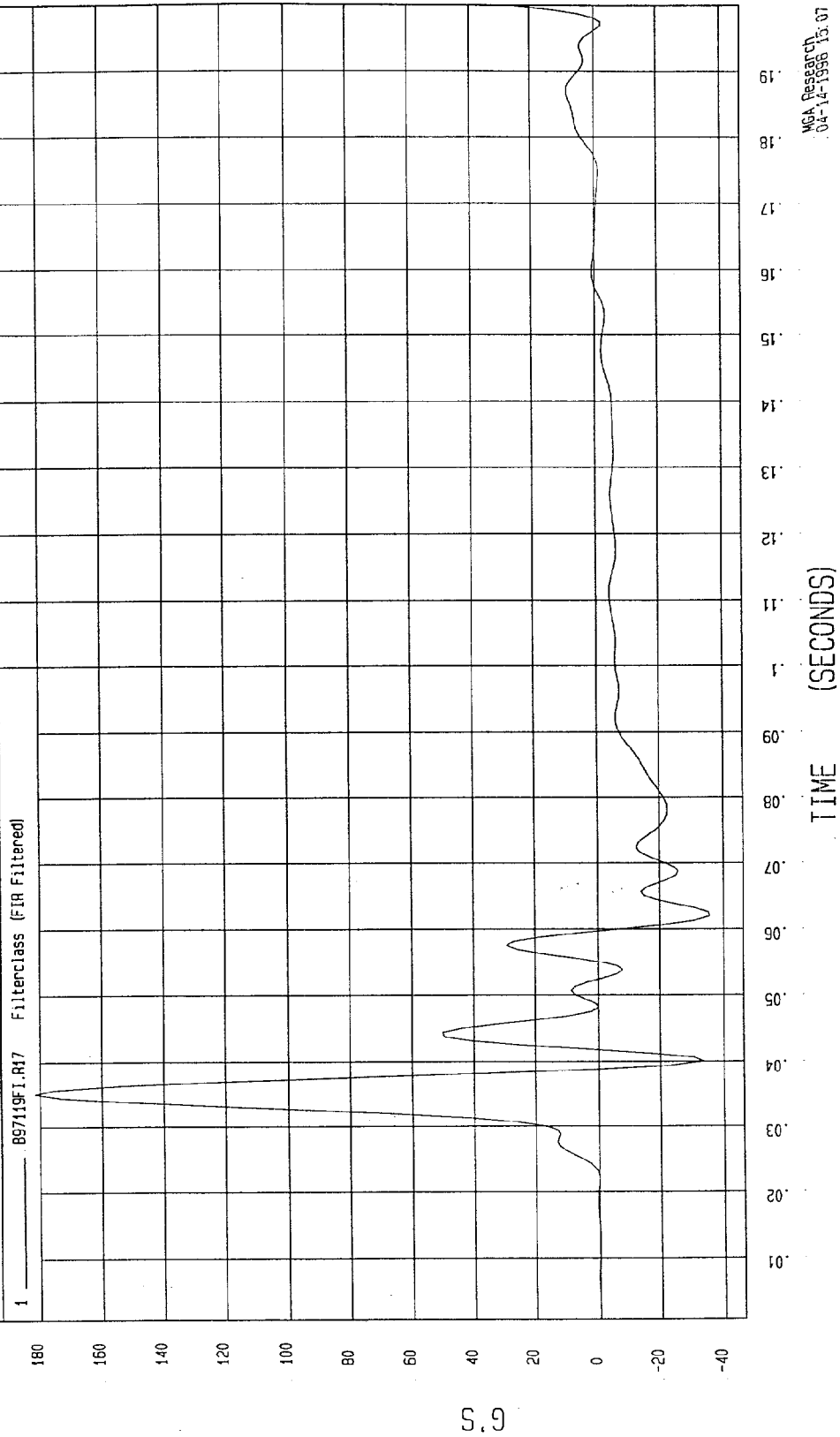


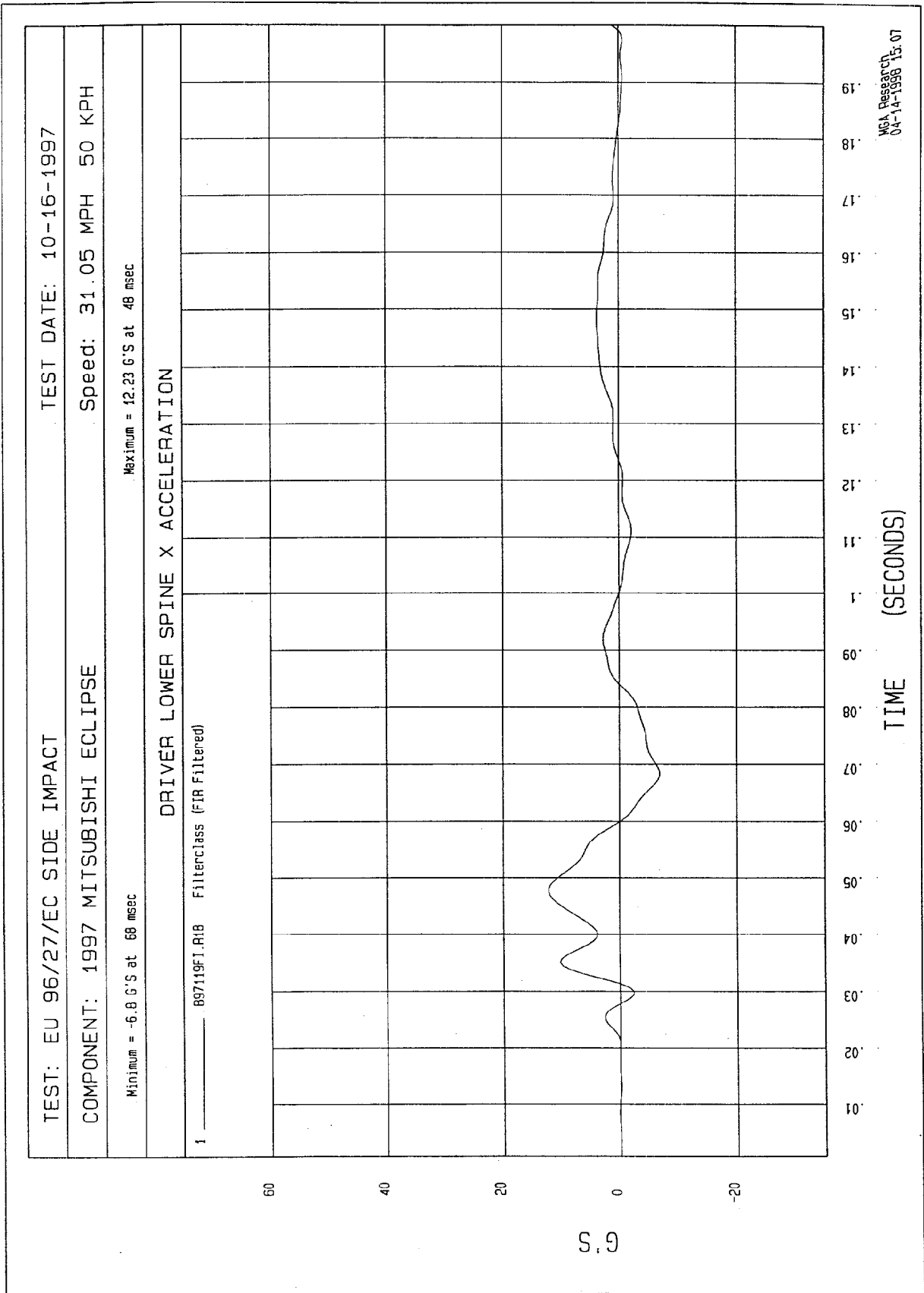
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

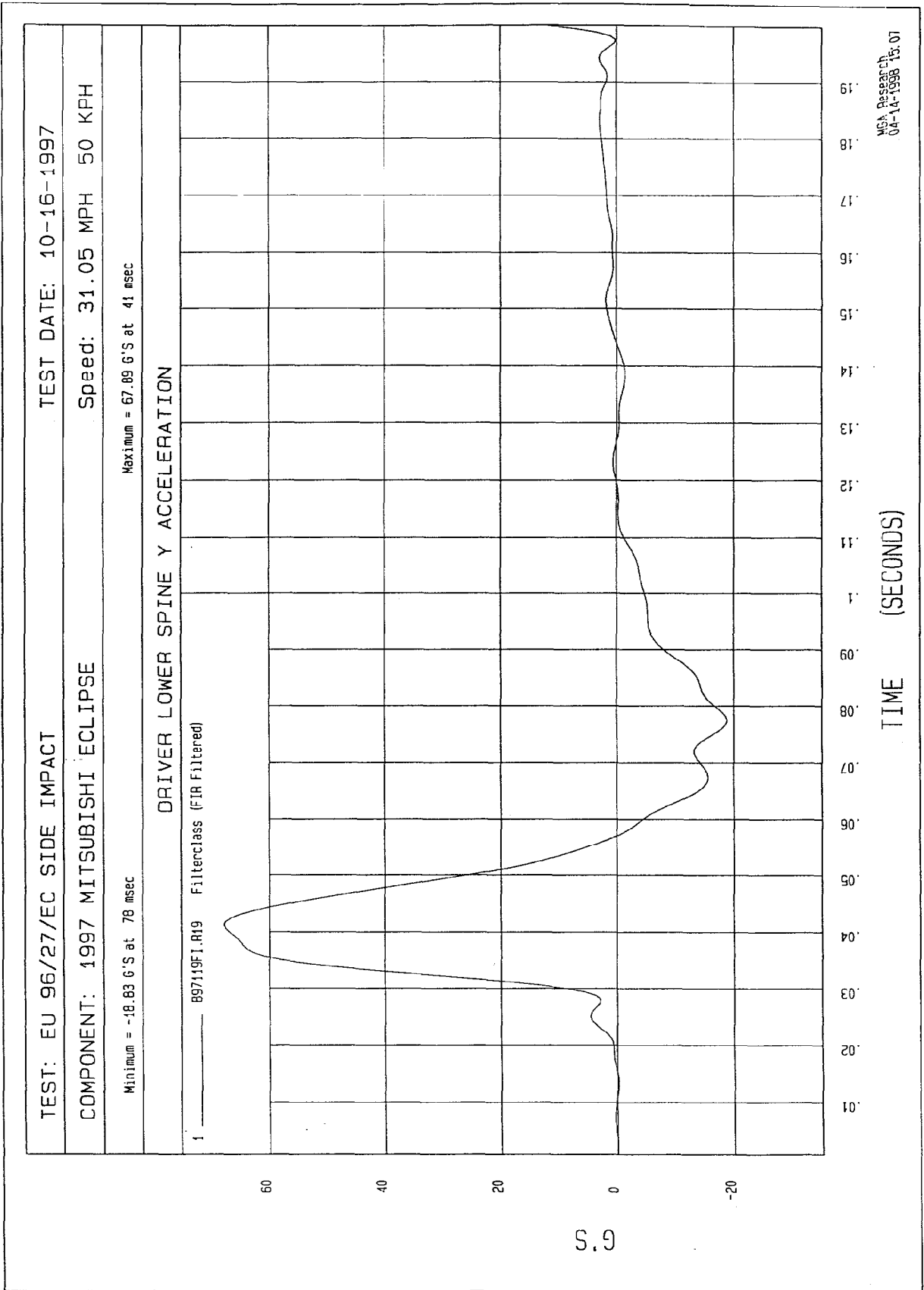
COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

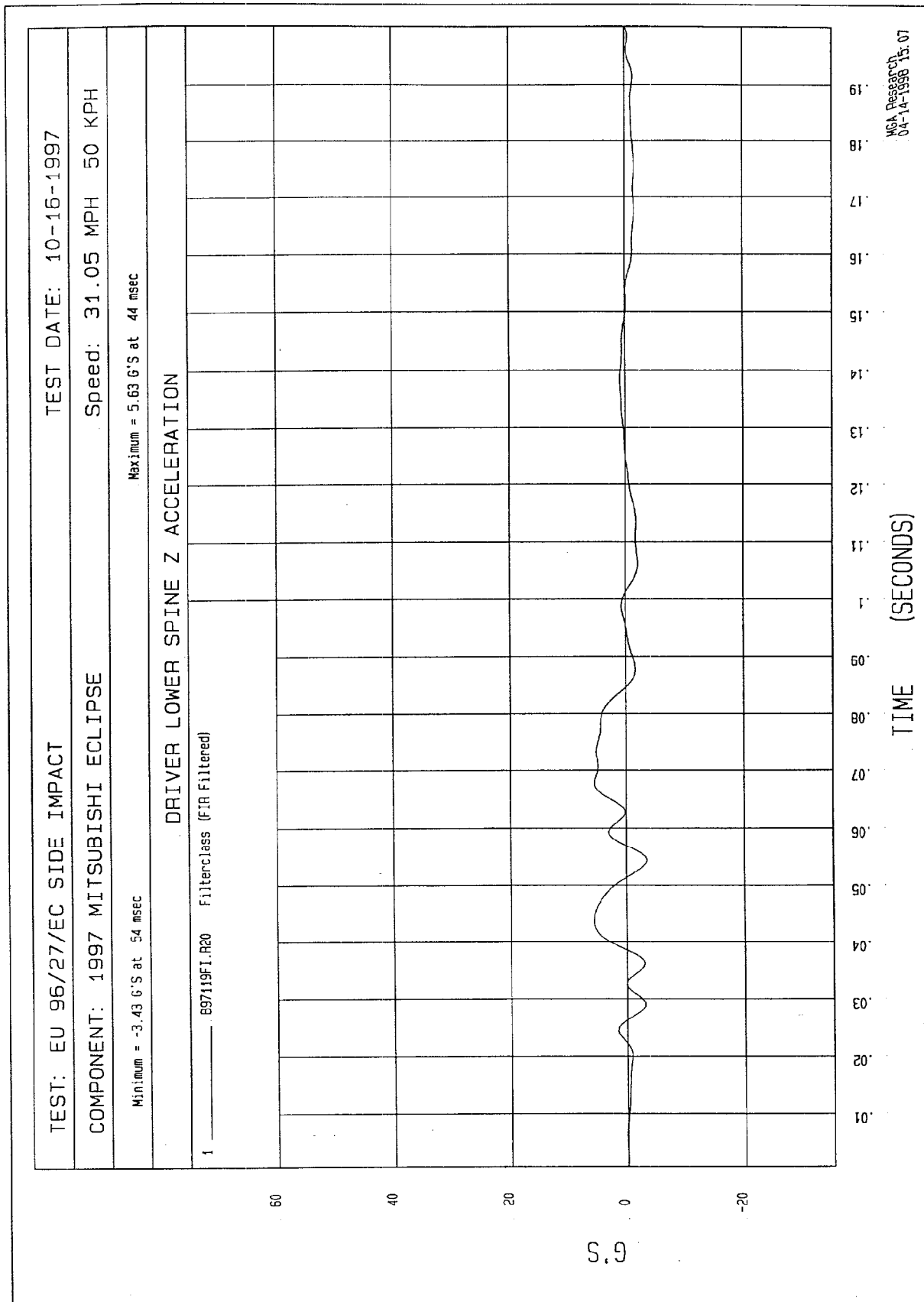
Minimum = -35.56 G'S at 62 msec Maximum = 181.62 G'S at 35 msec

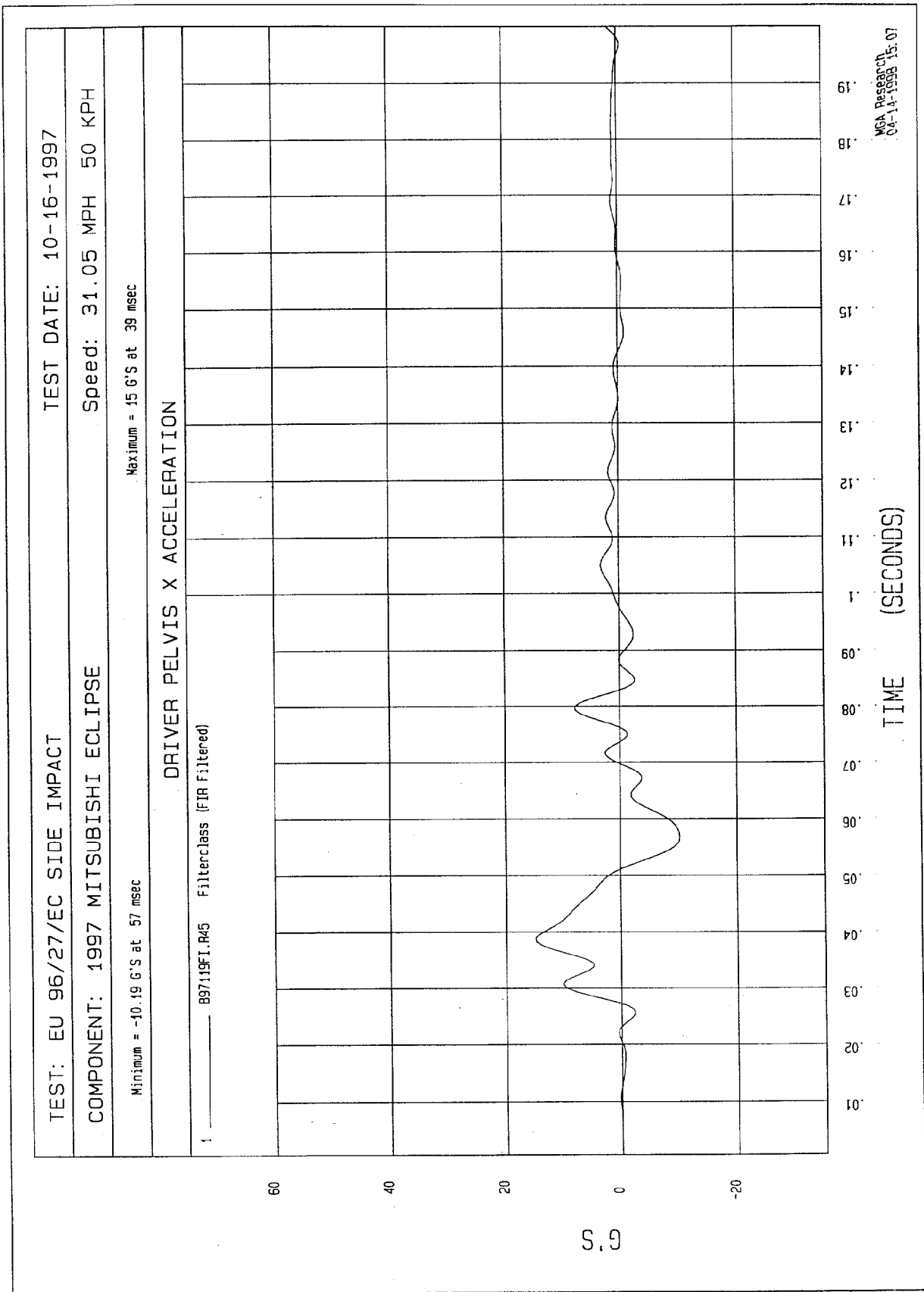
DRIVER LOWER RIB Y ACCELERATION

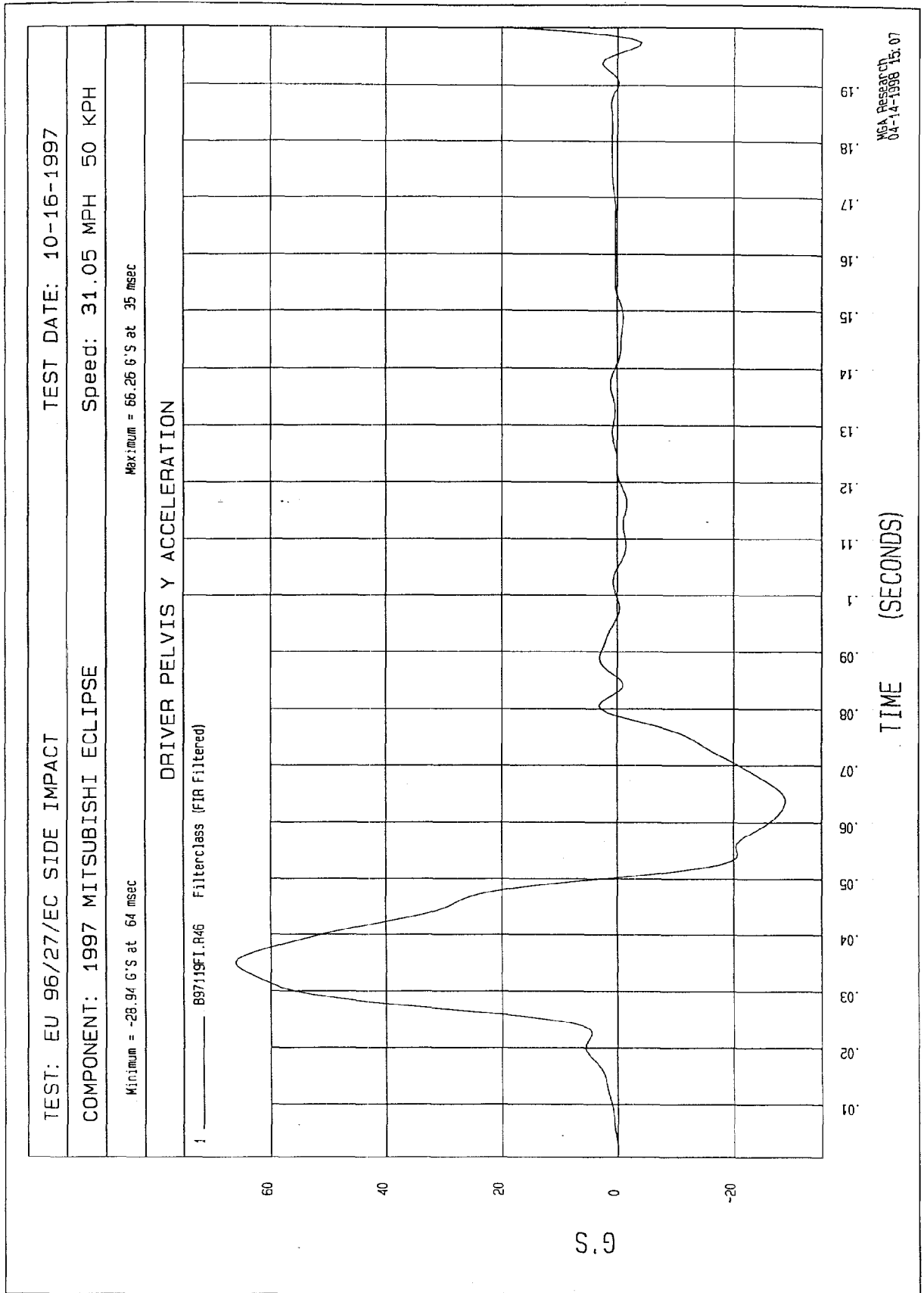


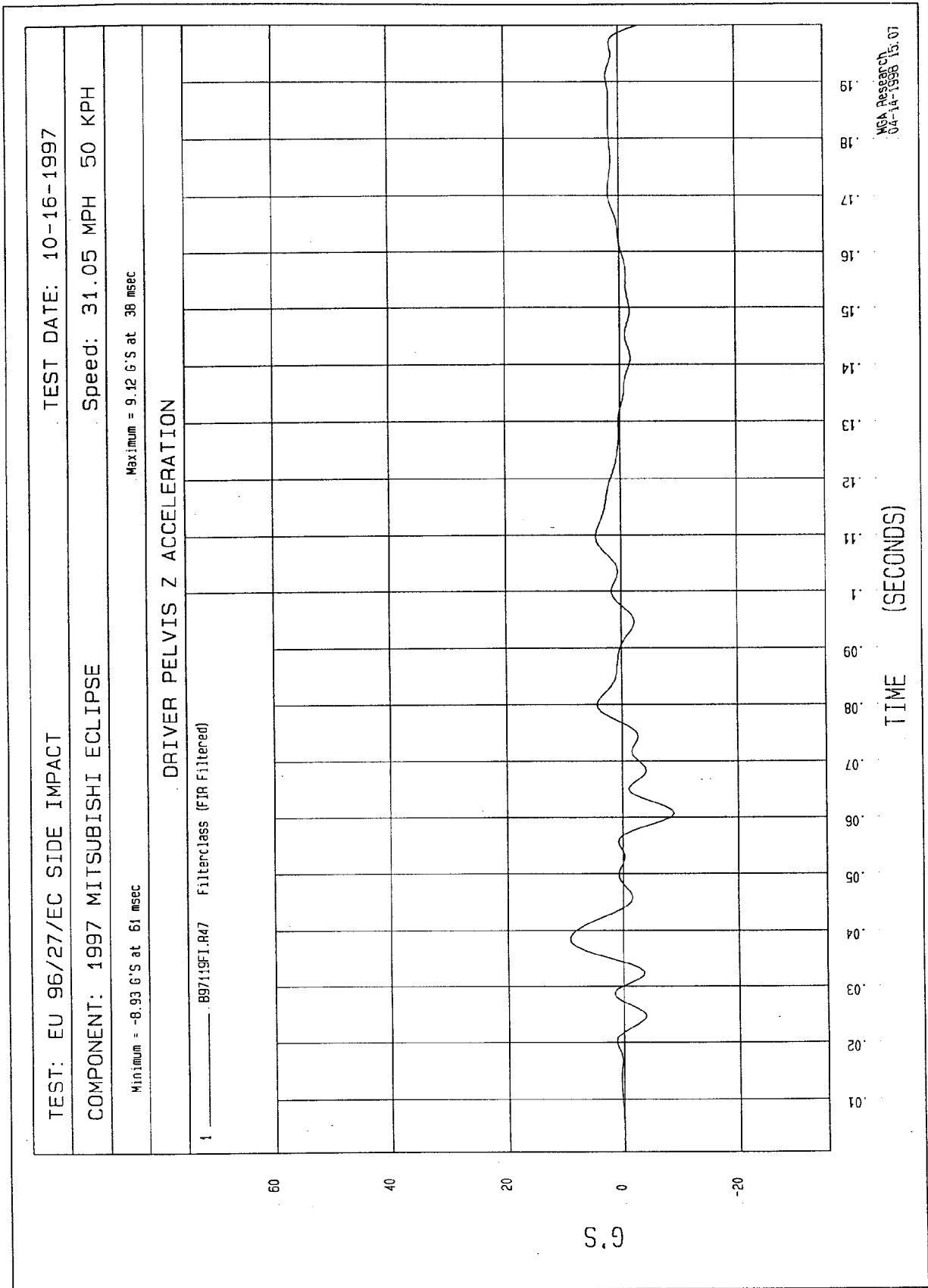












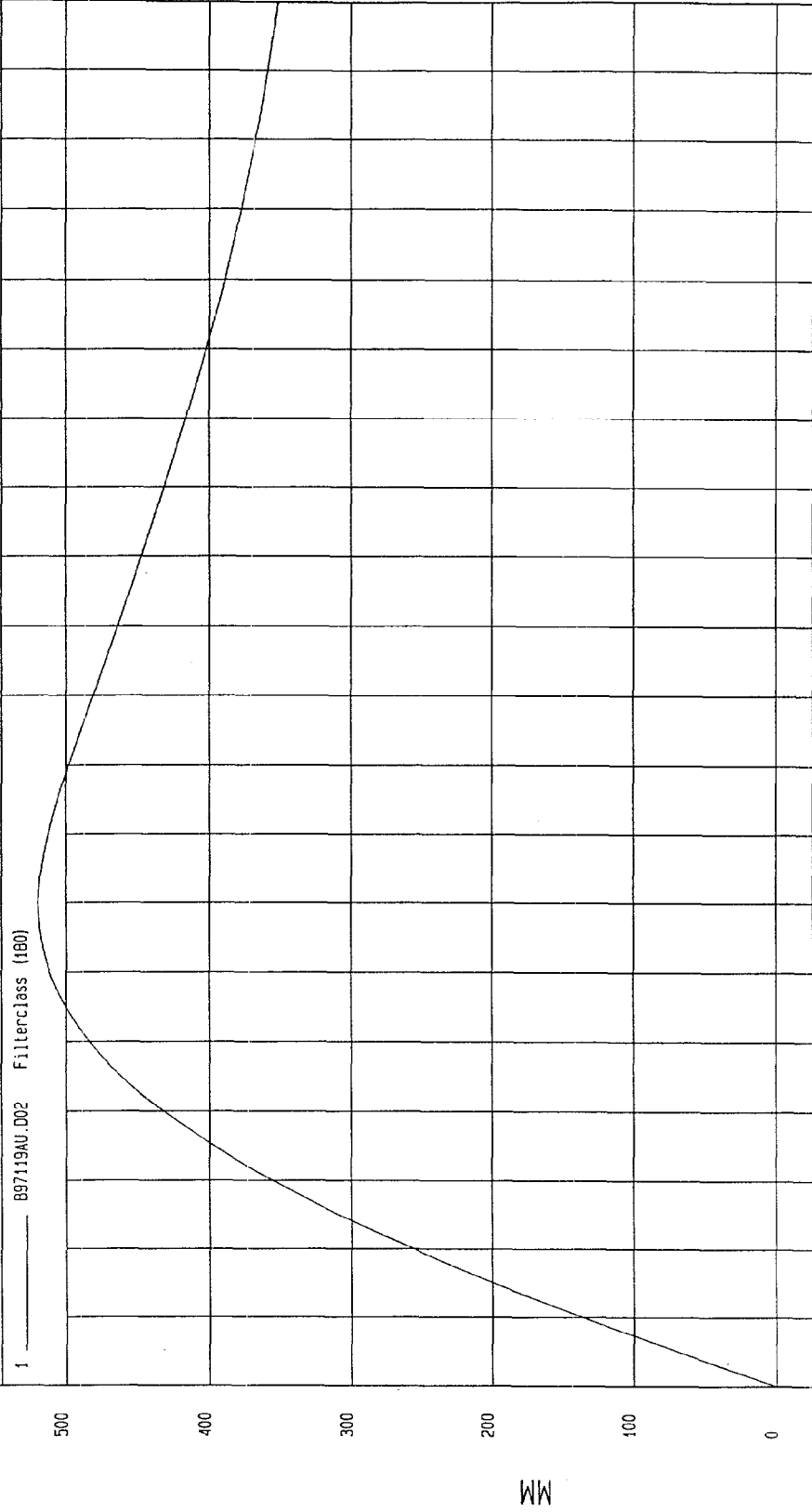
RELATIVE DISPLACEMENTS

TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = 0 MM at 0 msec Maximum = 519.09 MM at 70 msec

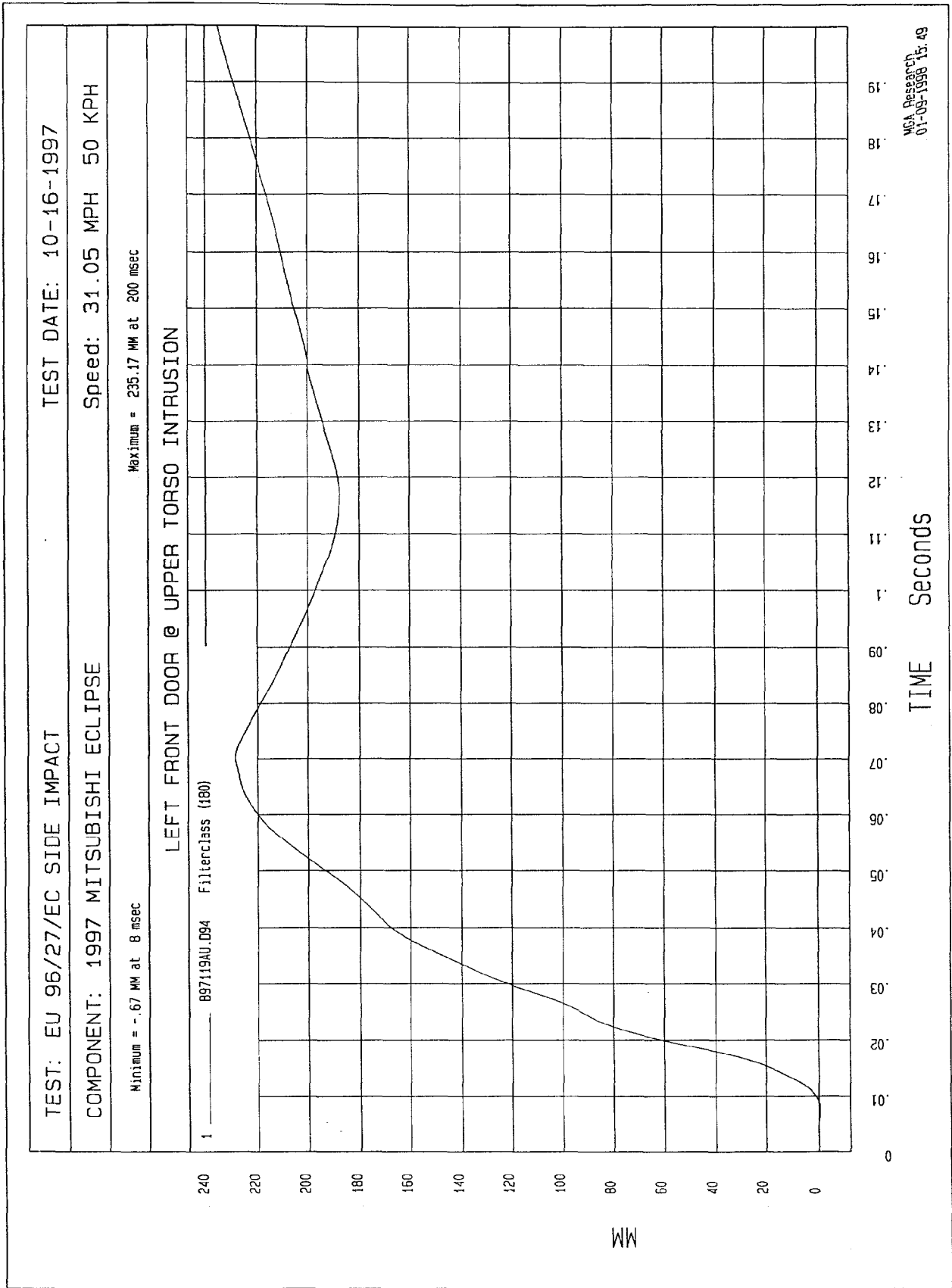
Cart CG X minus Right Front Sill Y Displacement

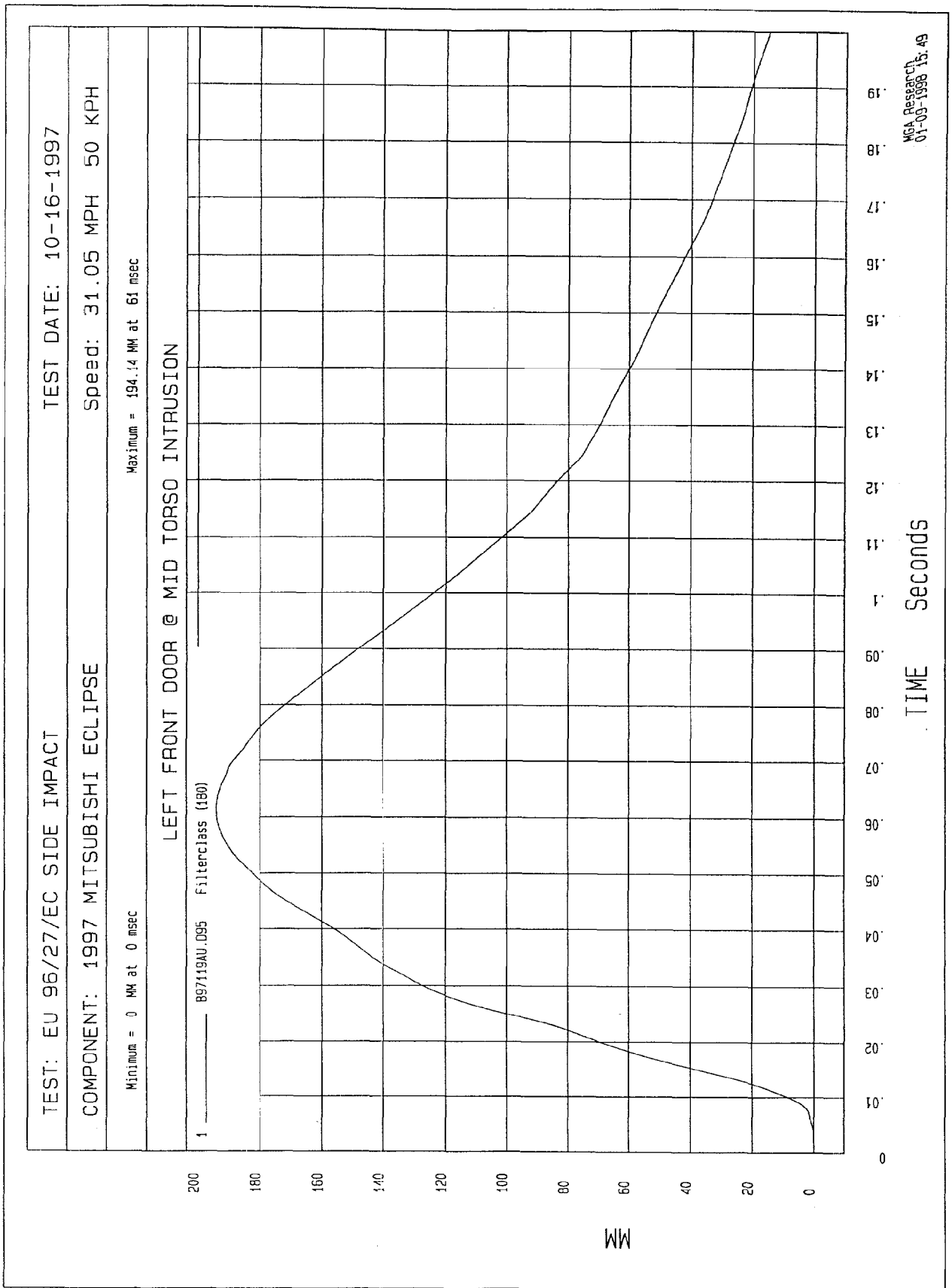


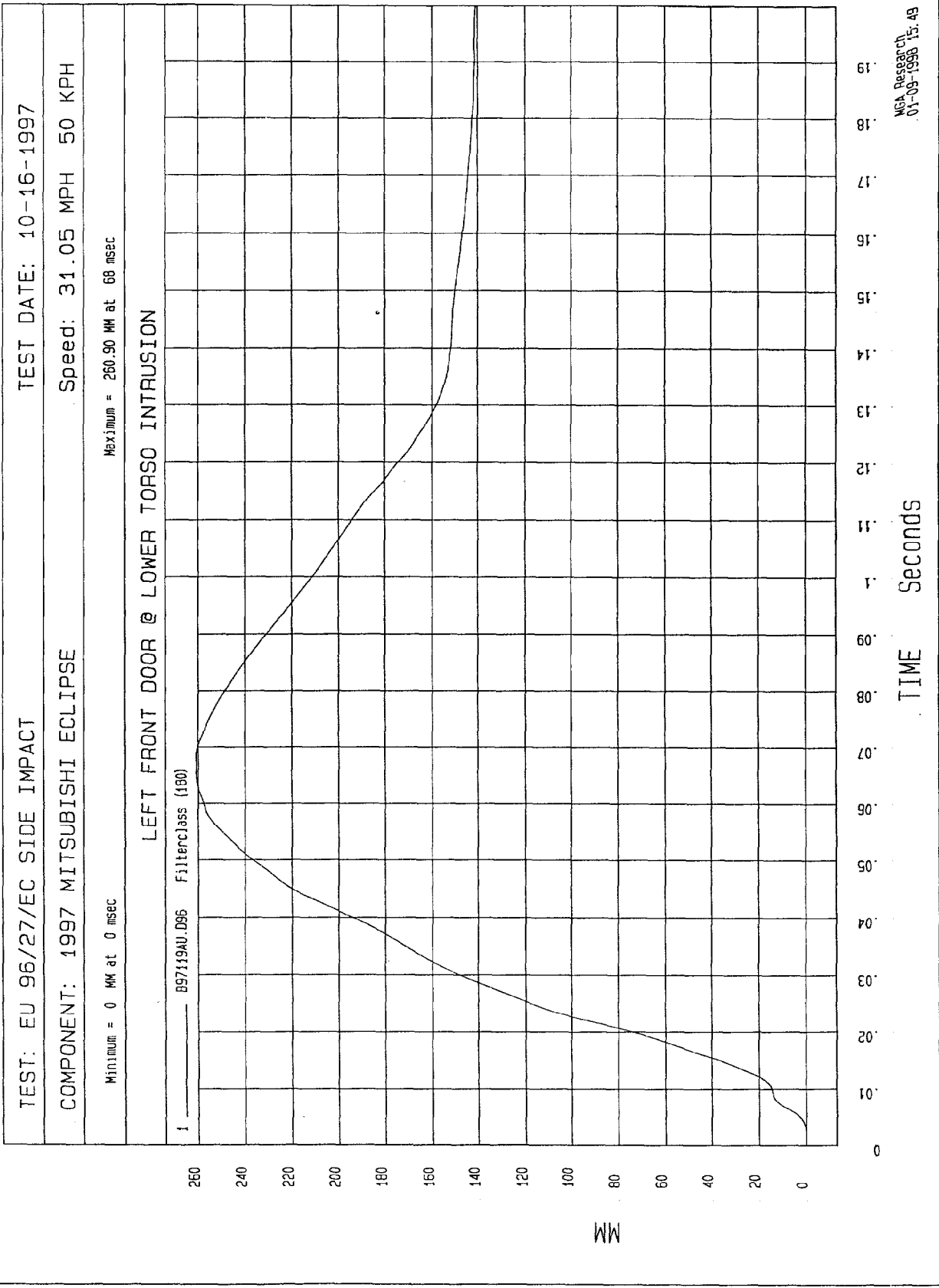
TIME Seconds

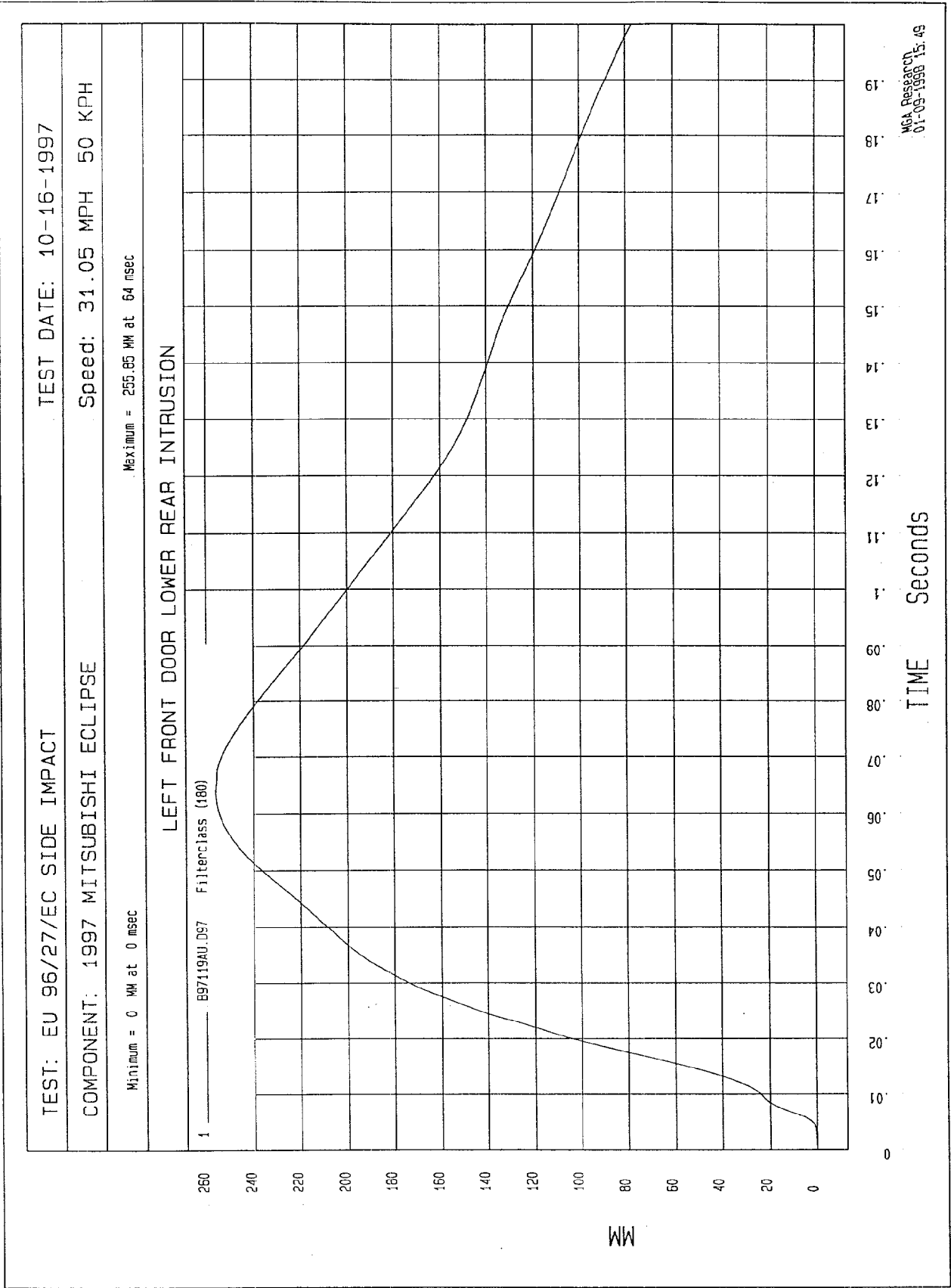
MM

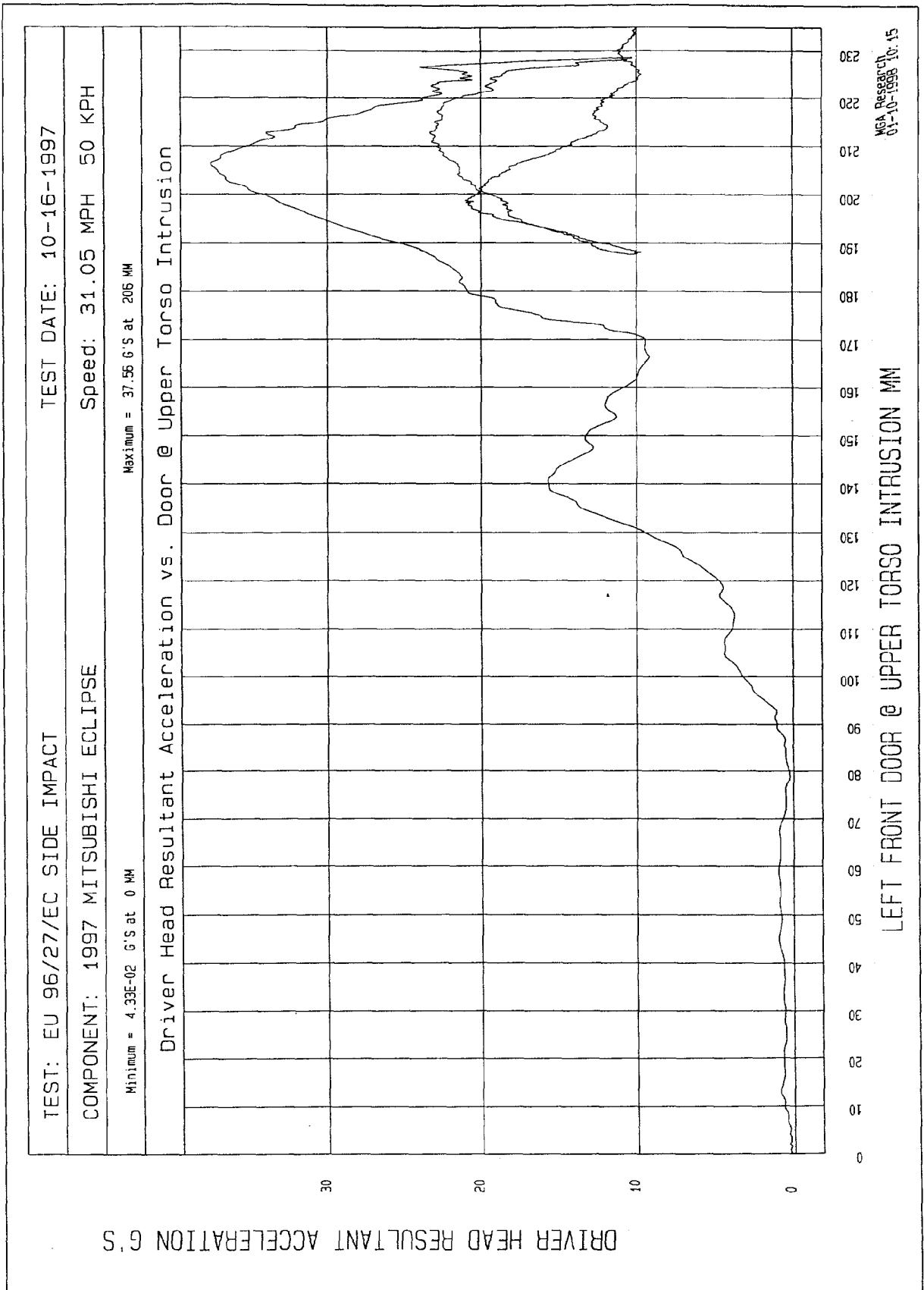
MSA Research
01-09-1998 15.48

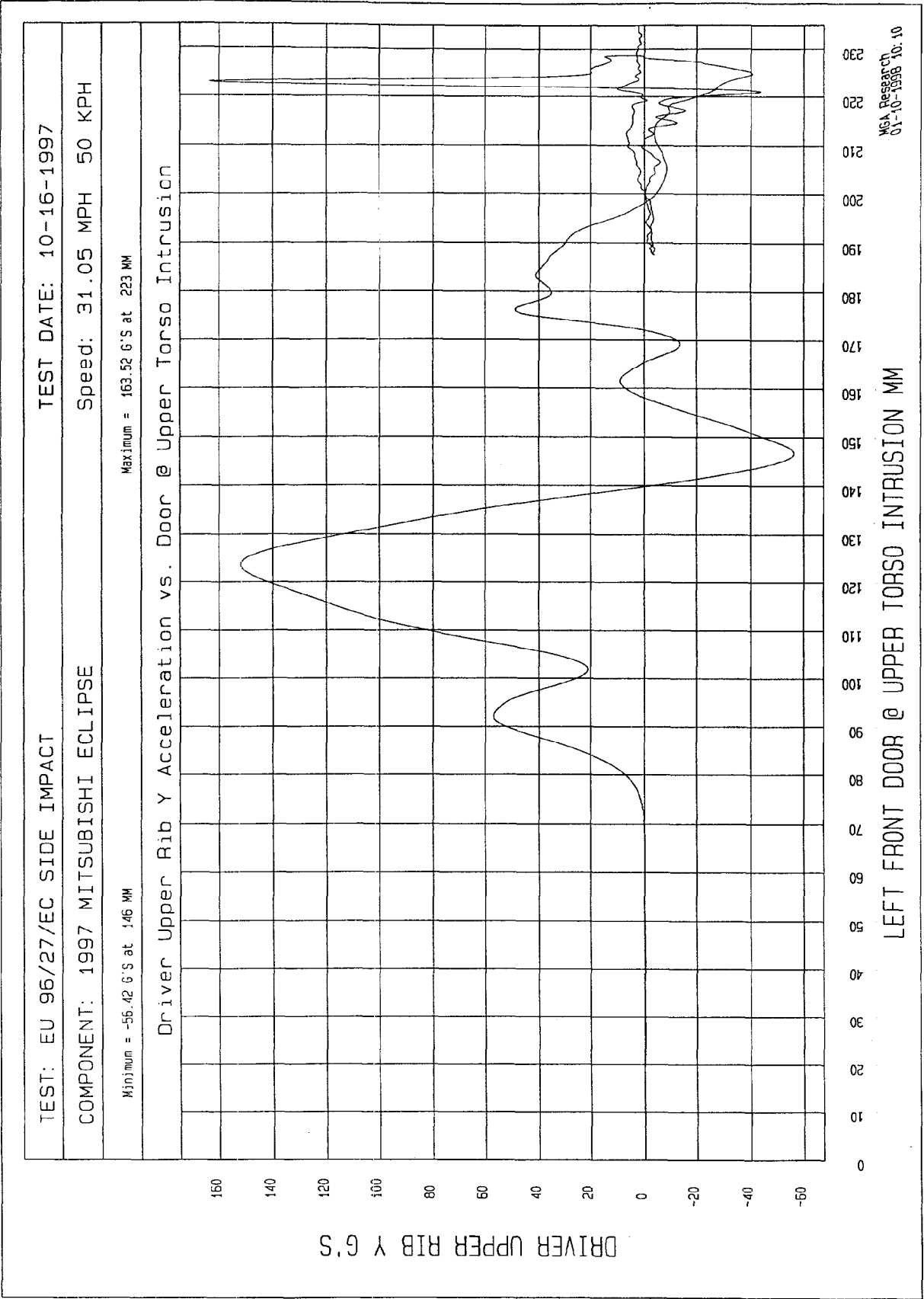


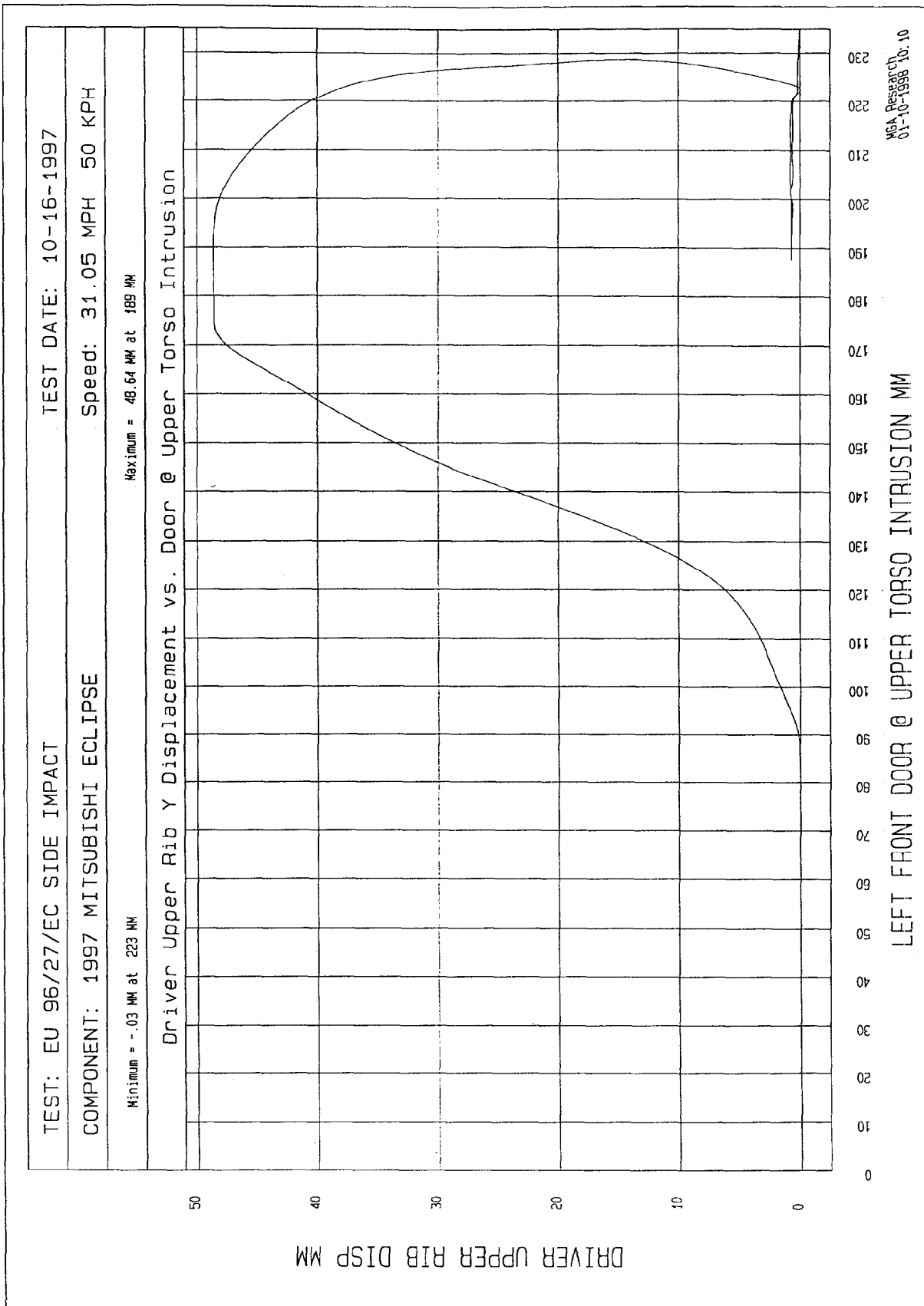










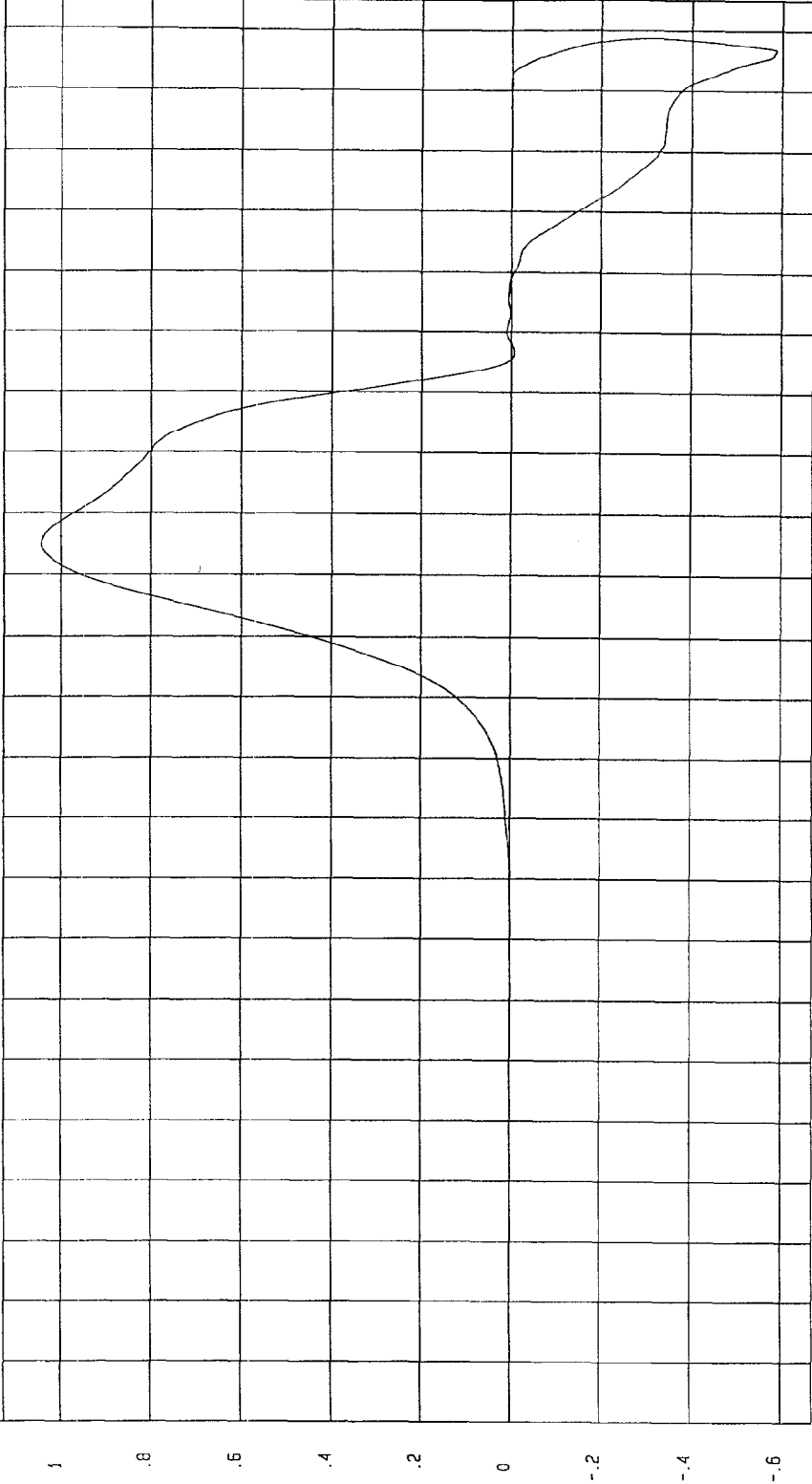


TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -.58 at 227 MM Maximum = 1.04 at 145 MM

Driver Upper Rib Viscous Criteria vs. Door @ Upper Torso Intrusion



LEFT FRONT DOOR @ UPPER TORSO INTRUSION MM
MGA Research
01-10-1998 10:10

TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

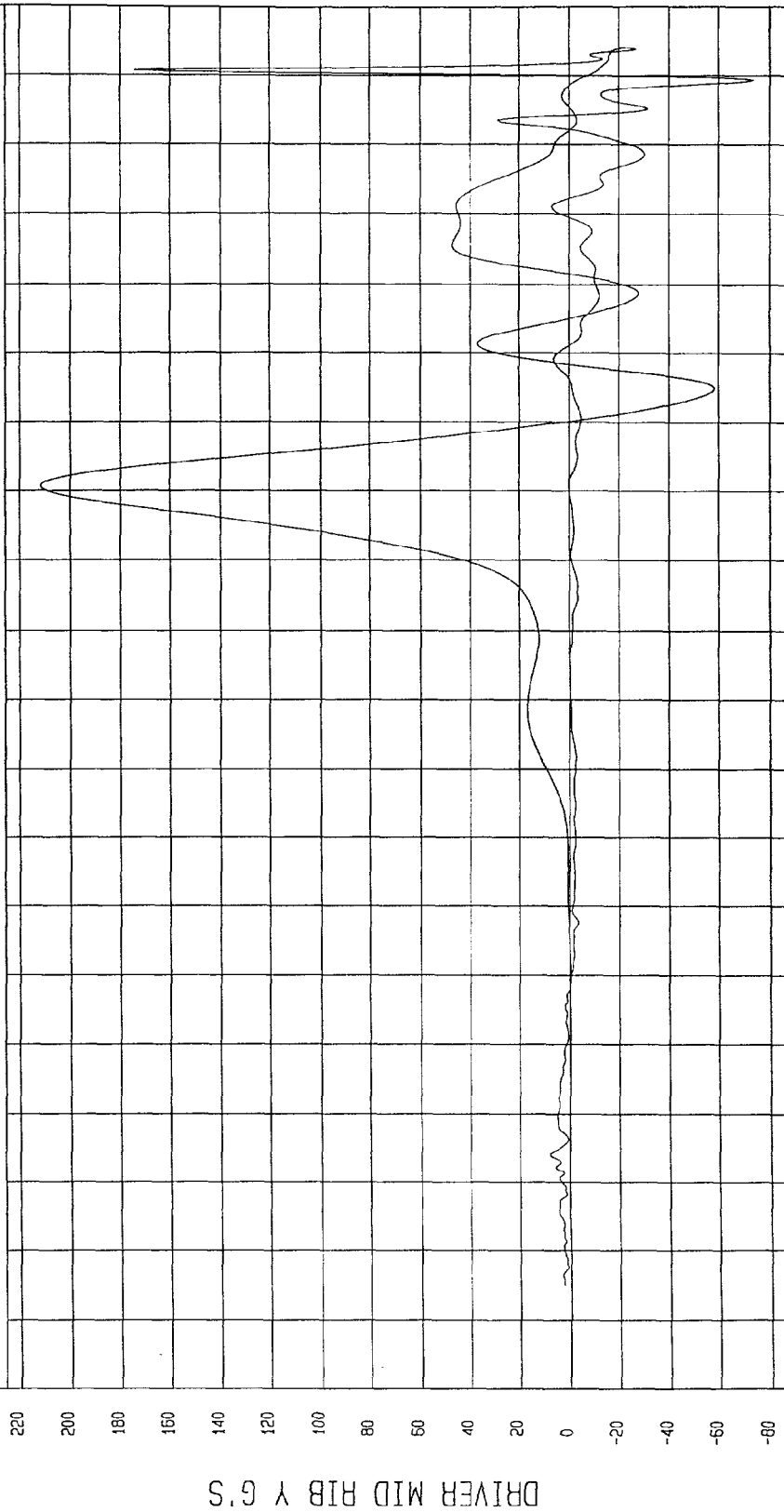
COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = -73.54 G'S at 189 MM

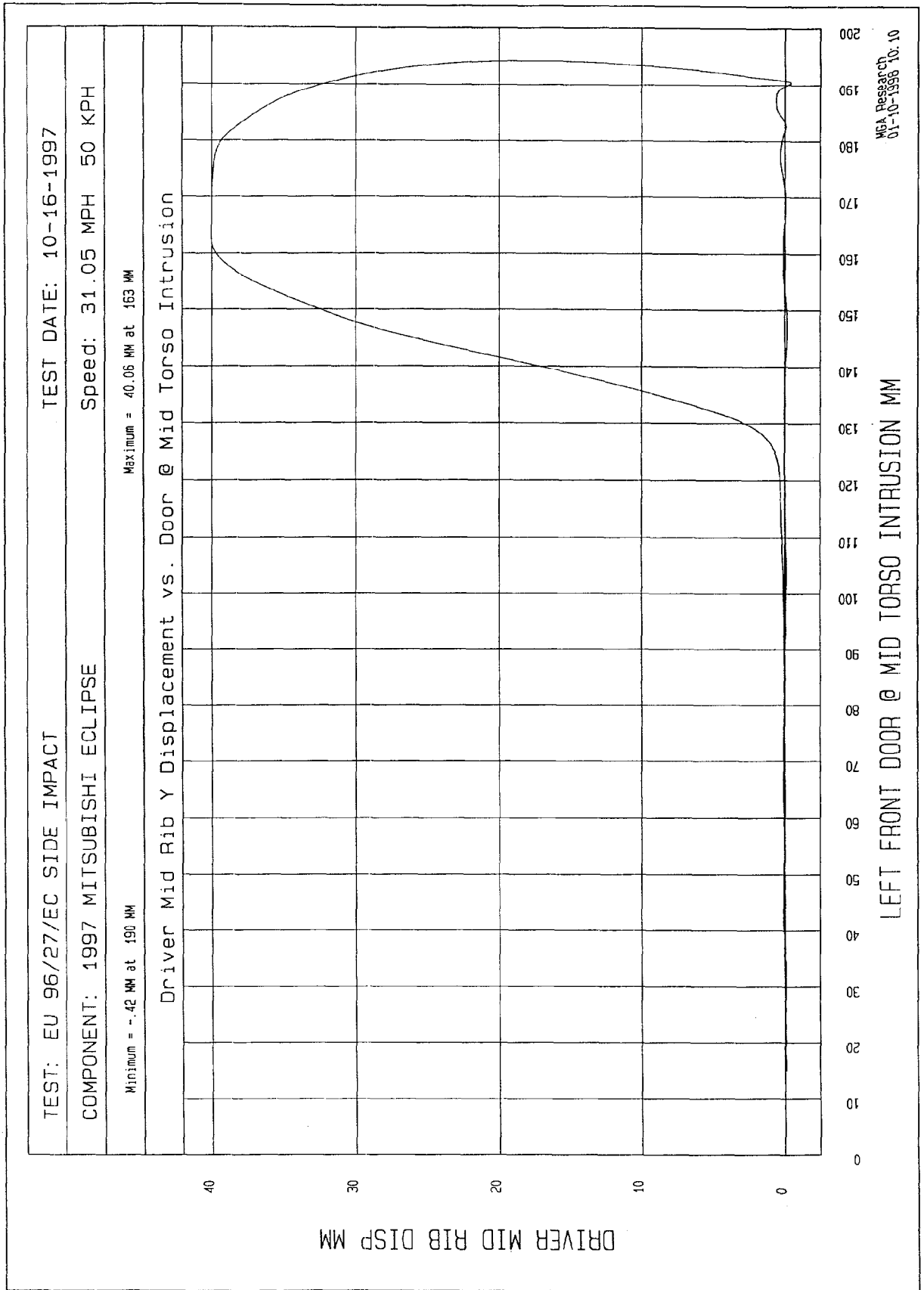
Maximum = 211.64 G'S at 130 MM

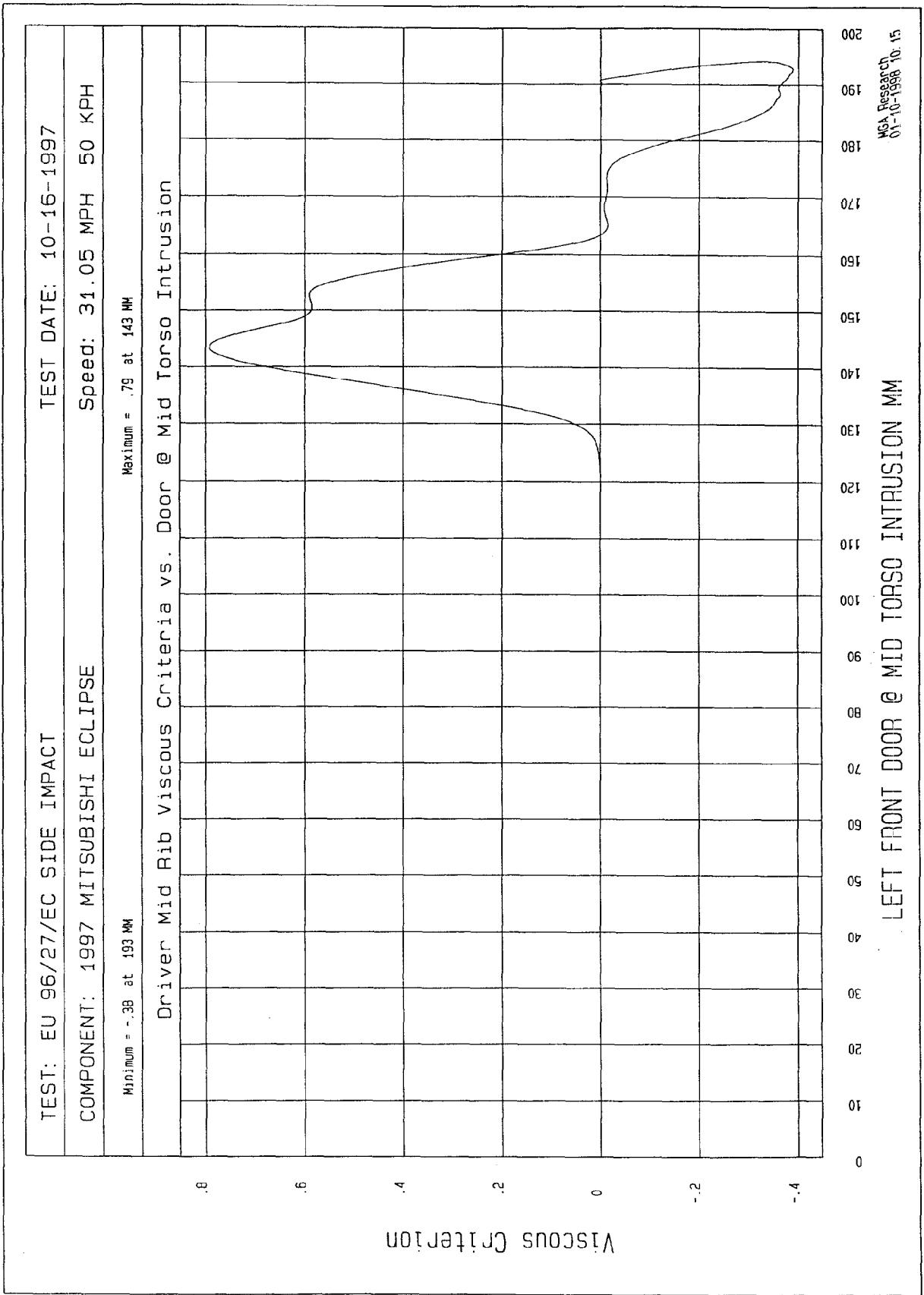
Driver Mid Rib Y Acceleration vs. Door @ Mid Torso Intrusion

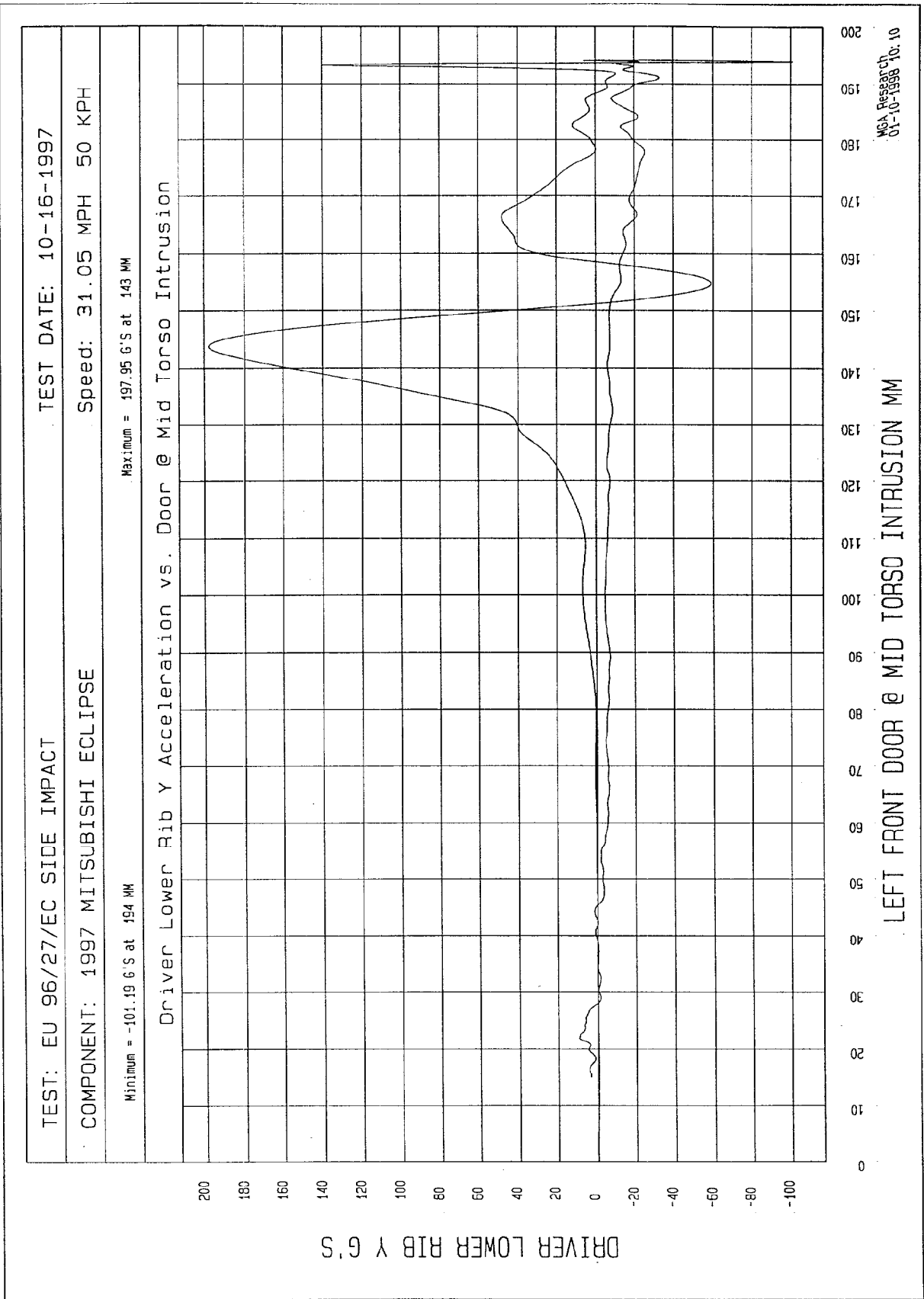


LEFT FRONT DOOR @ MID TORSO INTRUSION MM

WCA Research
01-10-1998 10:10







TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

Speed: 31.05 MPH 50 KPH

Minimum = -24 MM at 193 MM

Maximum = 16.97 MM at 160 MM

Driver Lower Rib Y Displacement vs. Door @ Mid Torso Intrusion

16

DRIVER LOWER RIB DISP MM

14

12

10

8

6

4

2

0

200

190

180

170

160

150

140

130

120

110

100

90

80

70

60

50

40

30

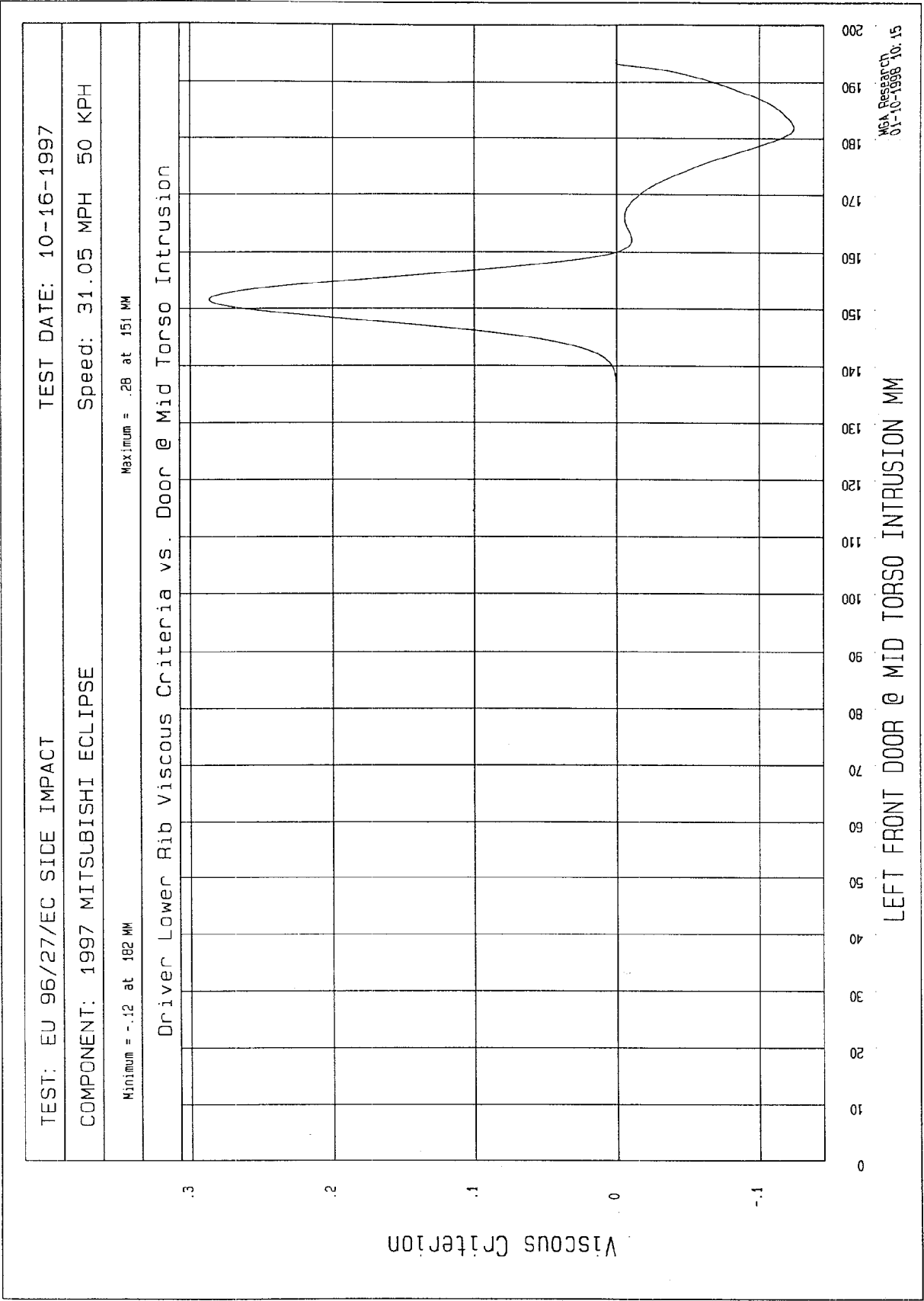
20

10

0

LEFT FRONT DOOR @ MID TORSO INTRUSION MM

MSA Research
01-10-1998 10:11



TEST: EU 96/27/EC SIDE IMPACT

TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE

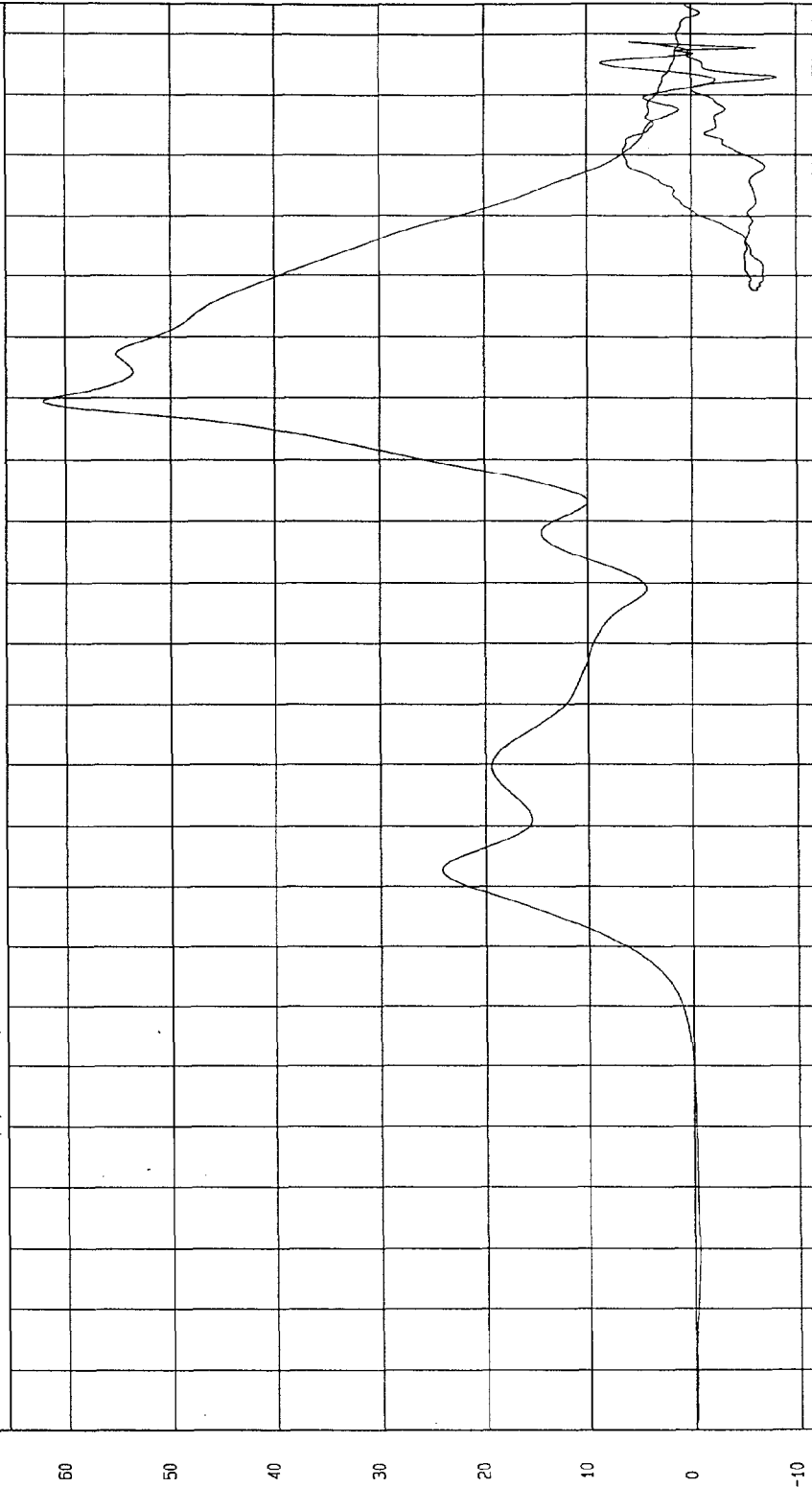
Speed: 31.05 MPH 50 KPH

Minimum = -8.16 G'S at 223 MM

Maximum = 62.18 G'S at 169 MM

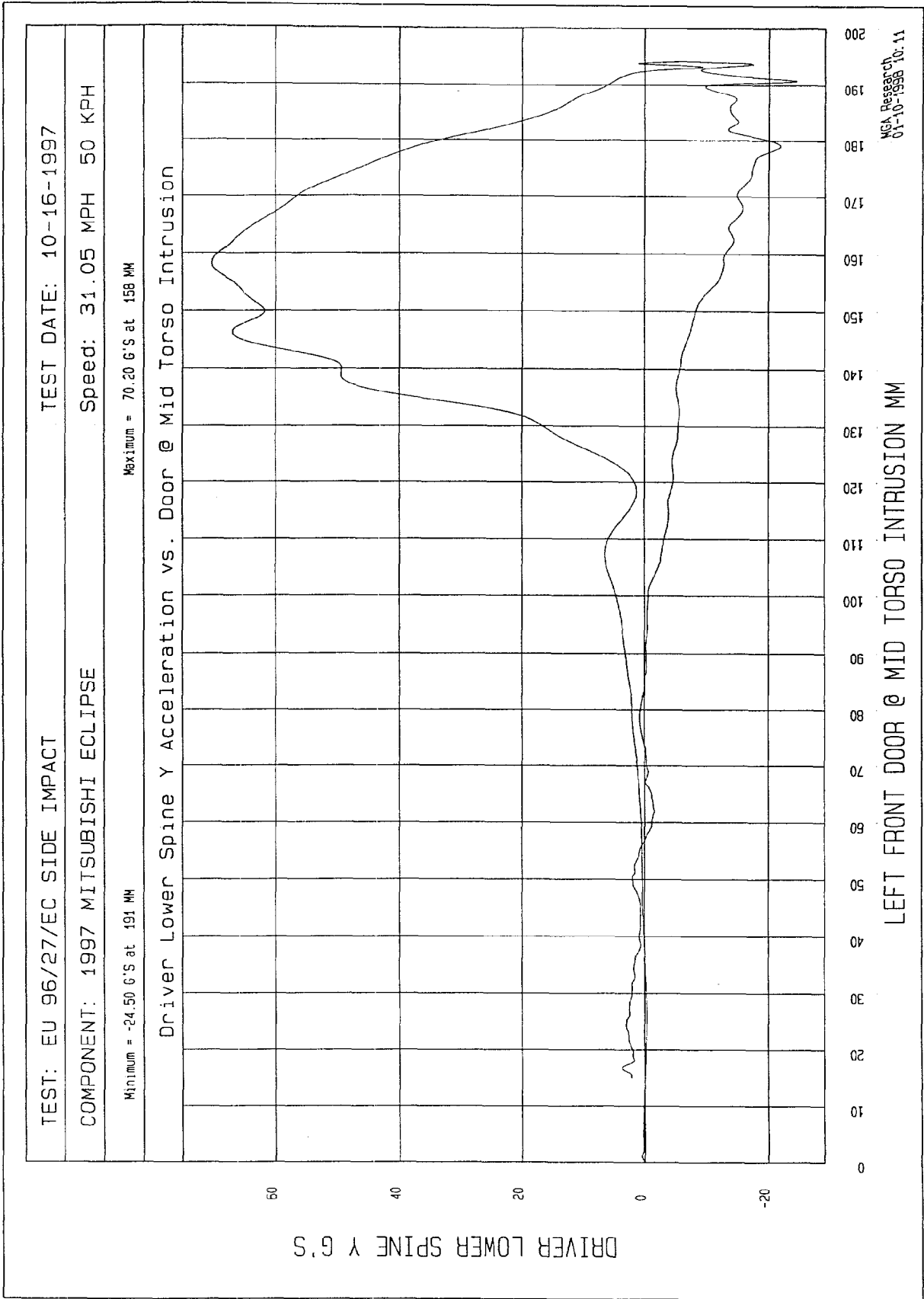
Driver Upper Spine Acceleration vs. Door @ Upper Torso Intrusion

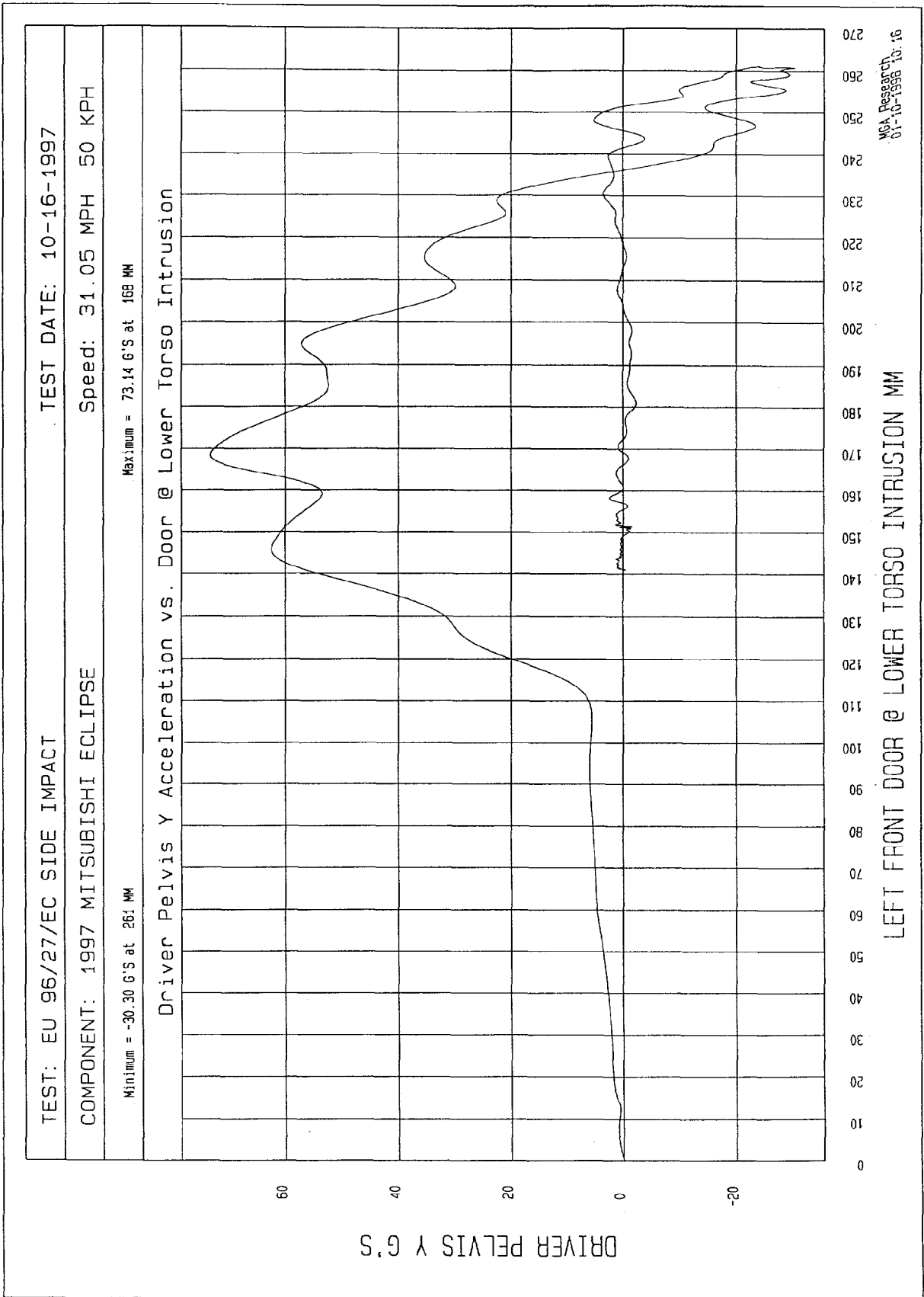
DRIVER UPPER SPINE Y G'S

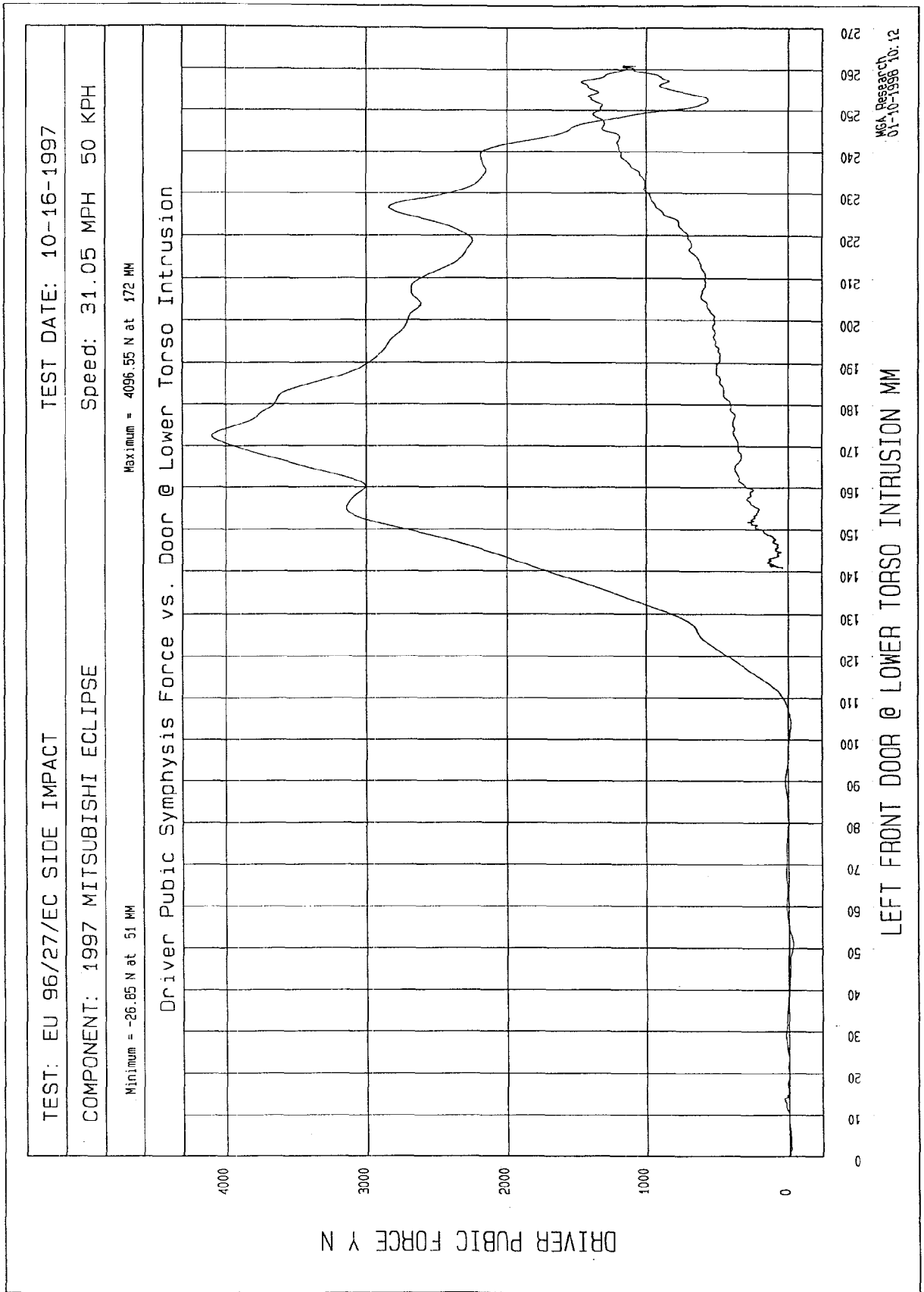


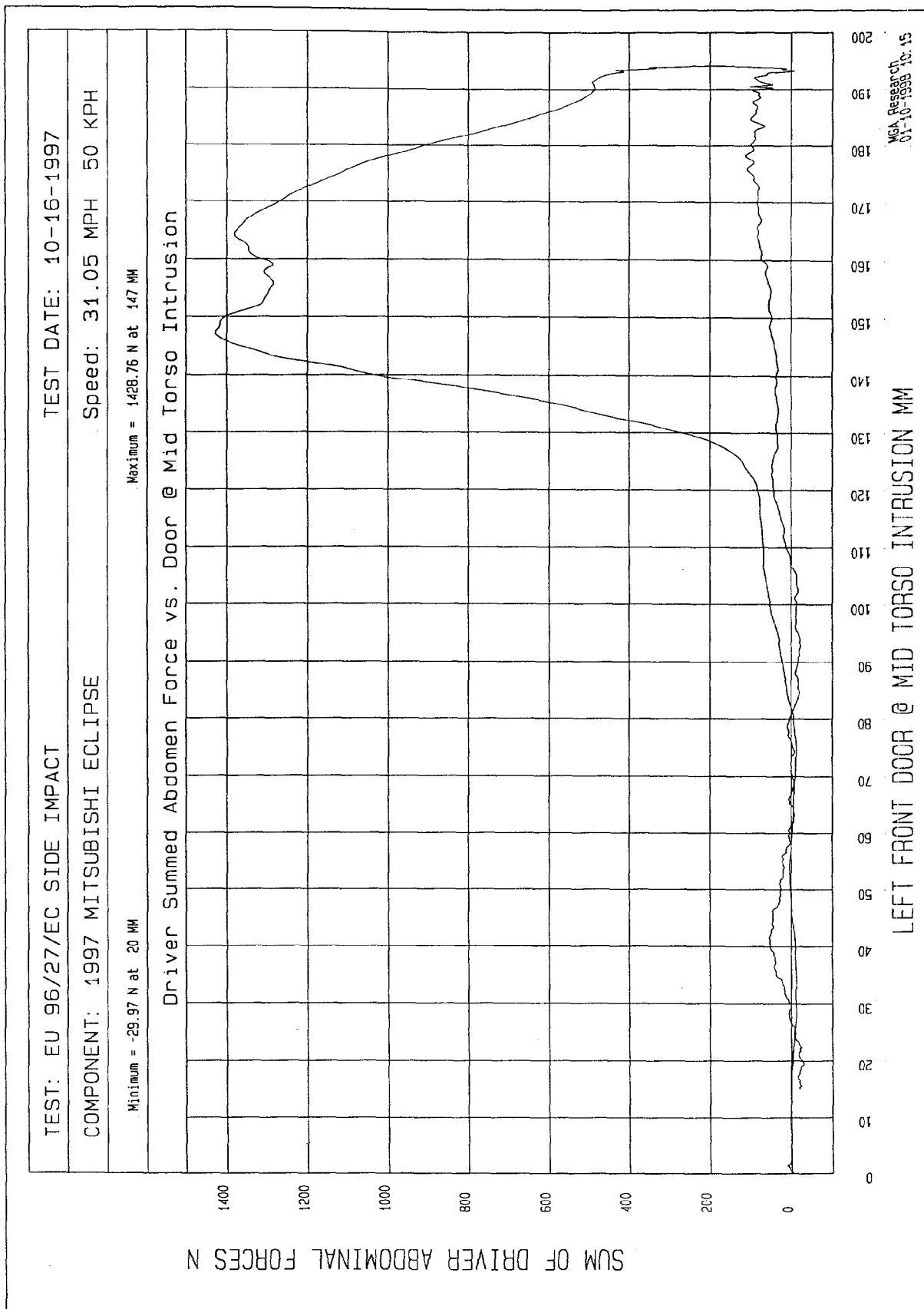
WCA Research
01-12-1998 15:48

LEFT FRONT DOOR @ UPPER TORSO INTRUSION MM









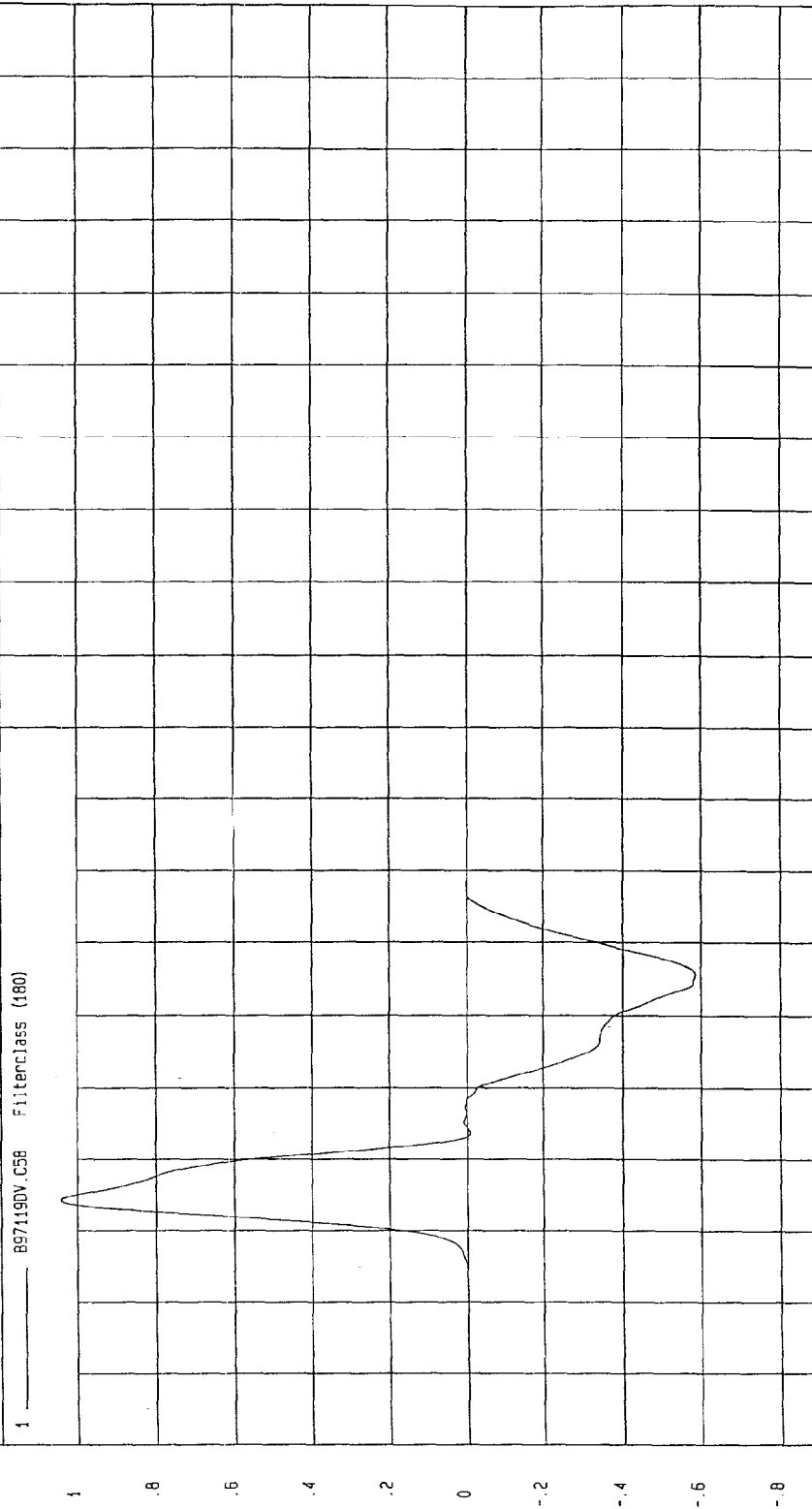
VISCOUS CRITERIA DATA

TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -.58 at 66 msec Maximum = 1.04 at 34 msec

DRIVER UPPER RIB VISCOUS CRITERIA



TIME (SECONDS)

MGA Research
11-26-1997 13:56

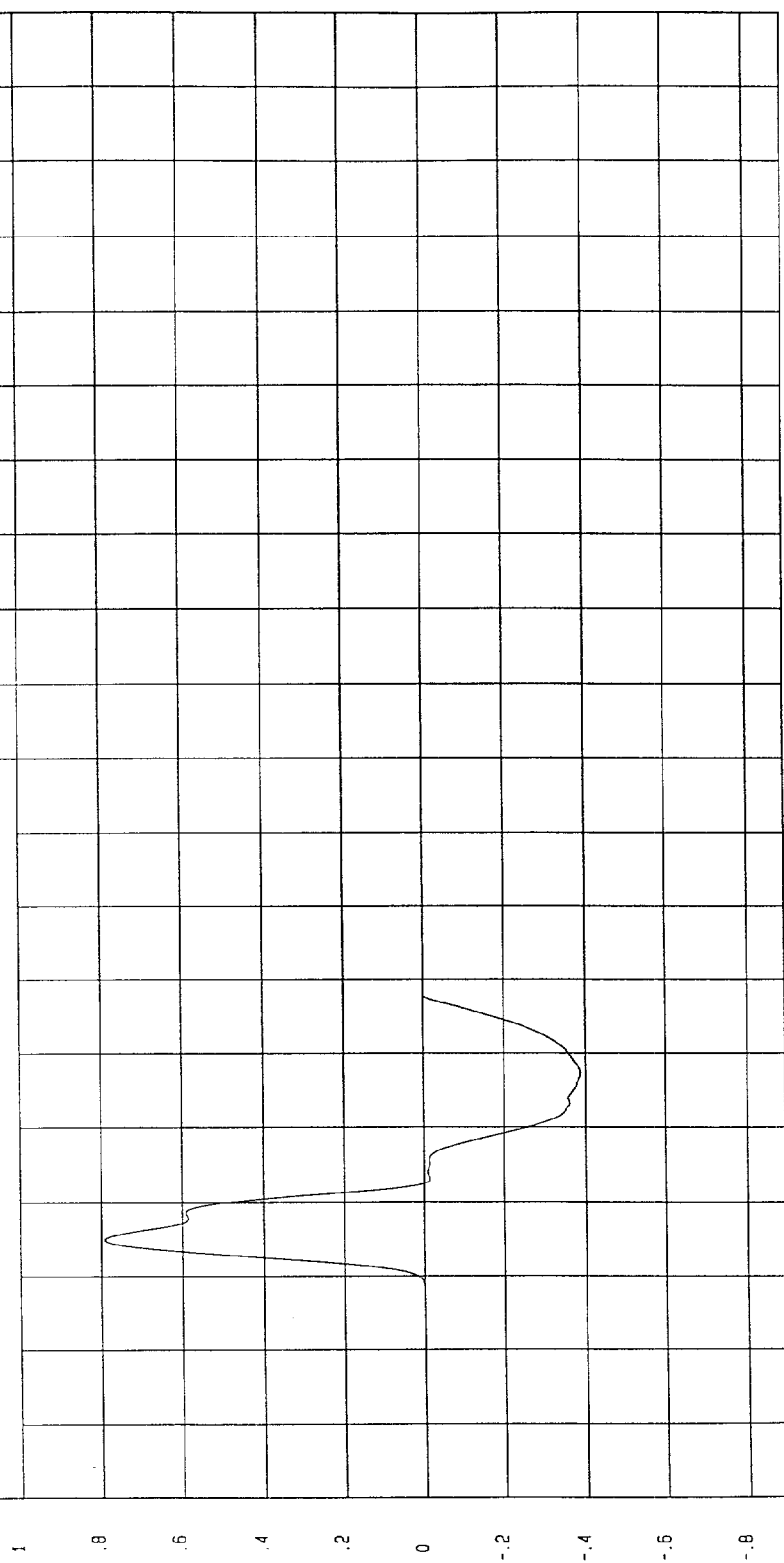
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -.38 at 57 msec Maximum = .73 at 35 msec

DRIVER MID RIB VISCOUS CRITERIA

1 _____ B97119DV.C59 Filterclass (180)



ME&A Research
11-26-1997 13:56

TIME (SECONDS)

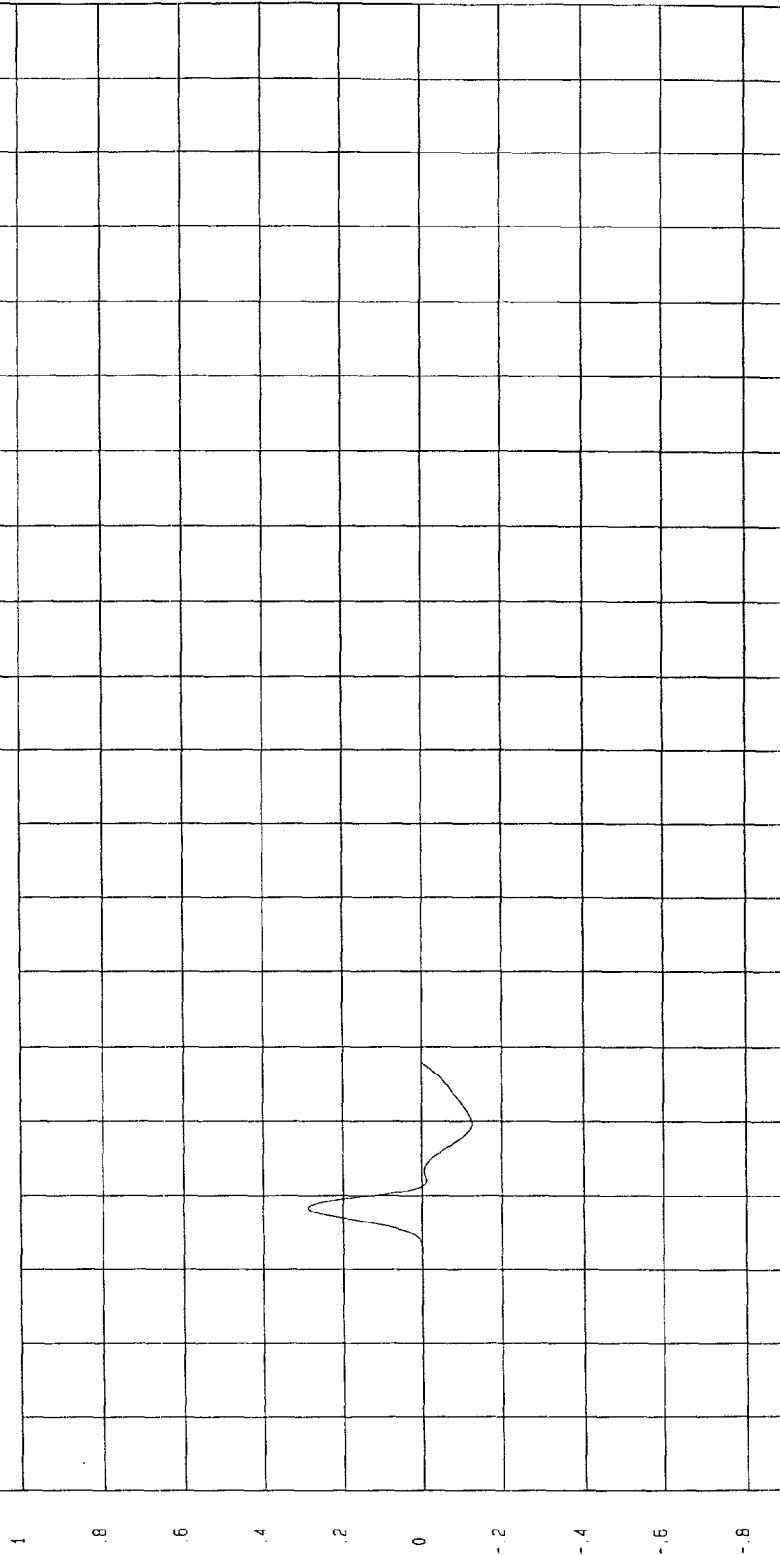
TEST: EU 96/27/EC SIDE IMPACT TEST DATE: 10-16-1997

COMPONENT: 1997 MITSUBISHI ECLIPSE Speed: 31.05 MPH 50 KPH

Minimum = -.12 at 50 msec Maximum = .28 at 36 msec

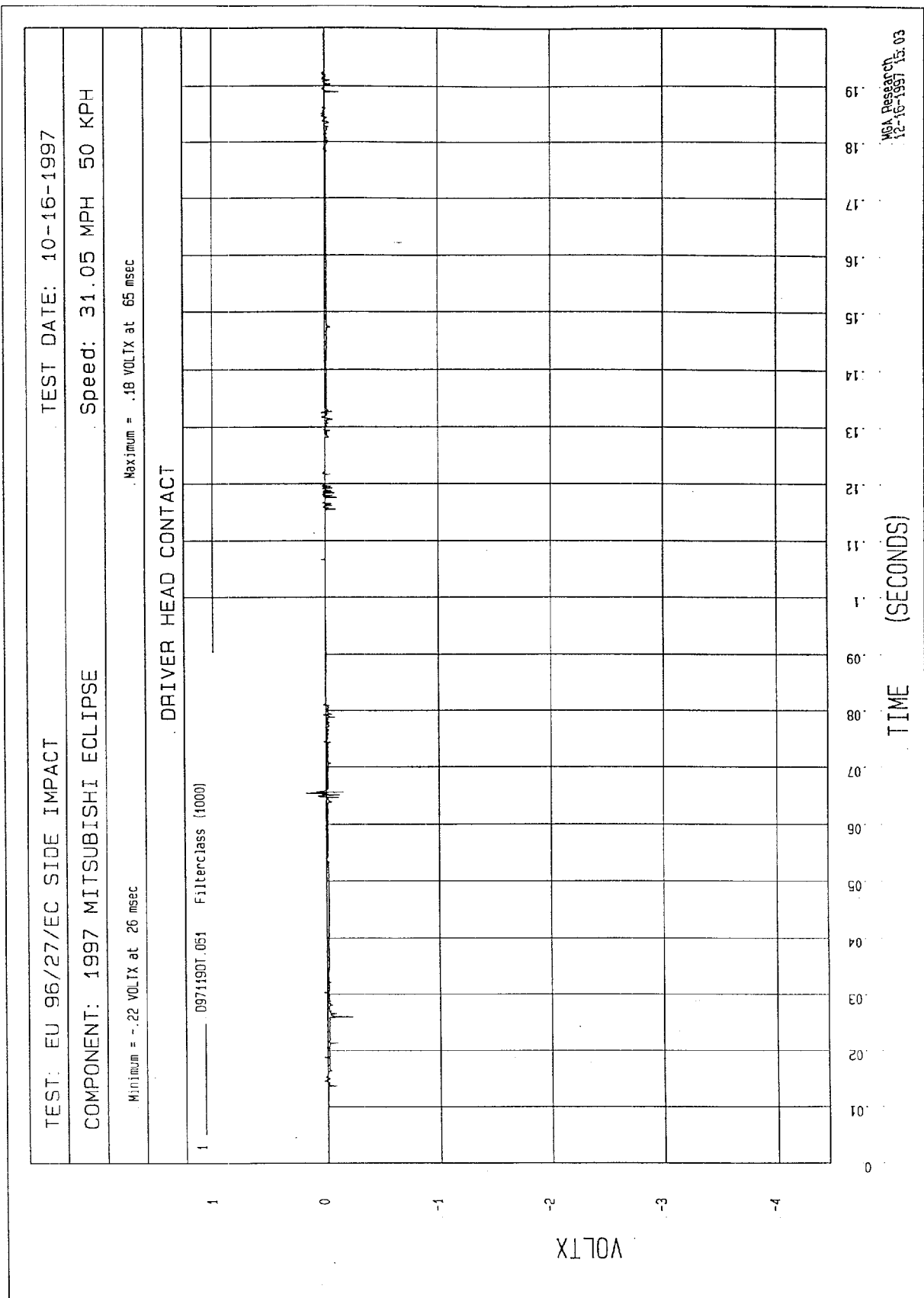
DRIVER LOWER RIB VISCOUS CRITERIA

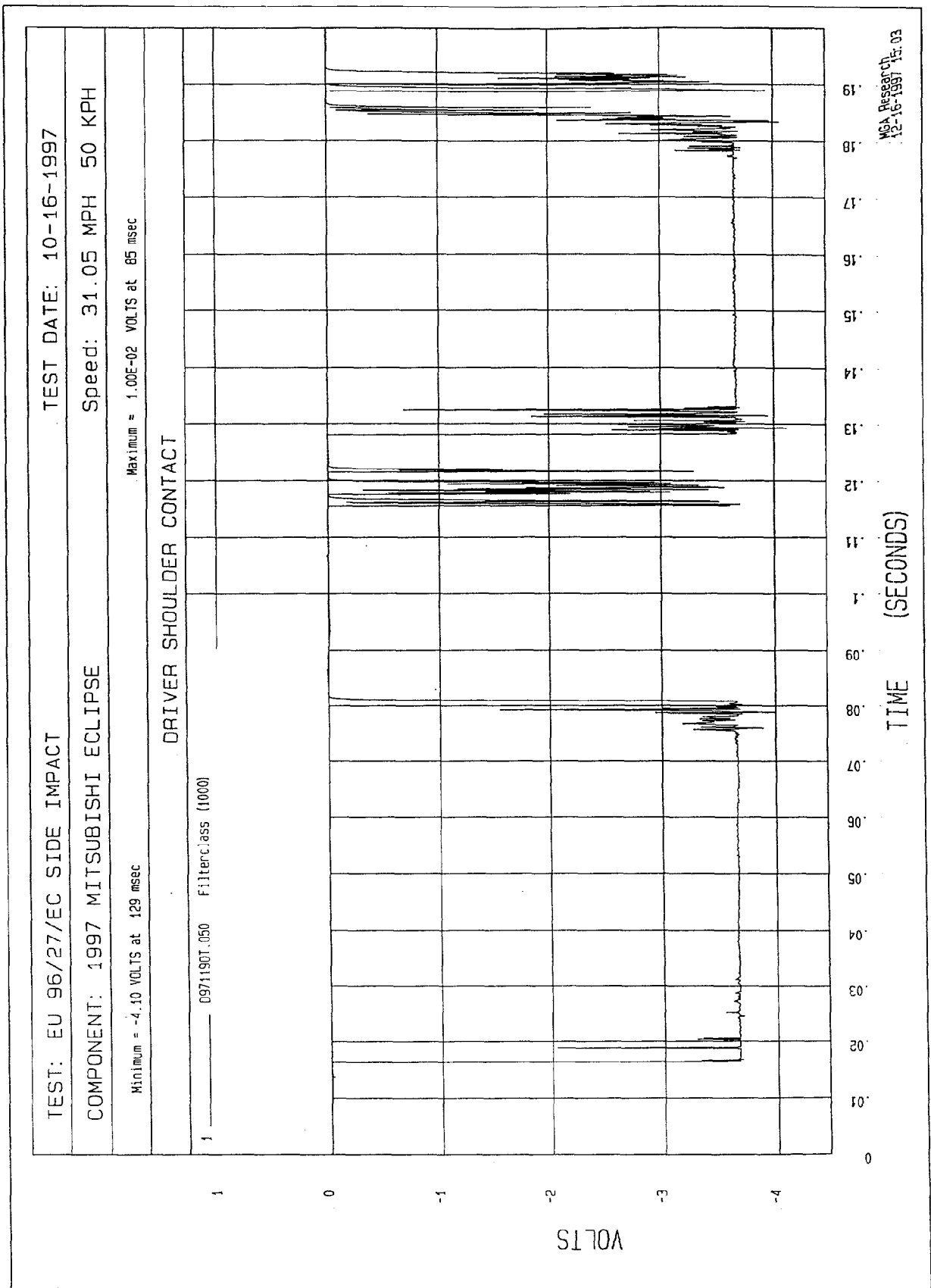
f _____ B971190V.C60 Filterclass (180)

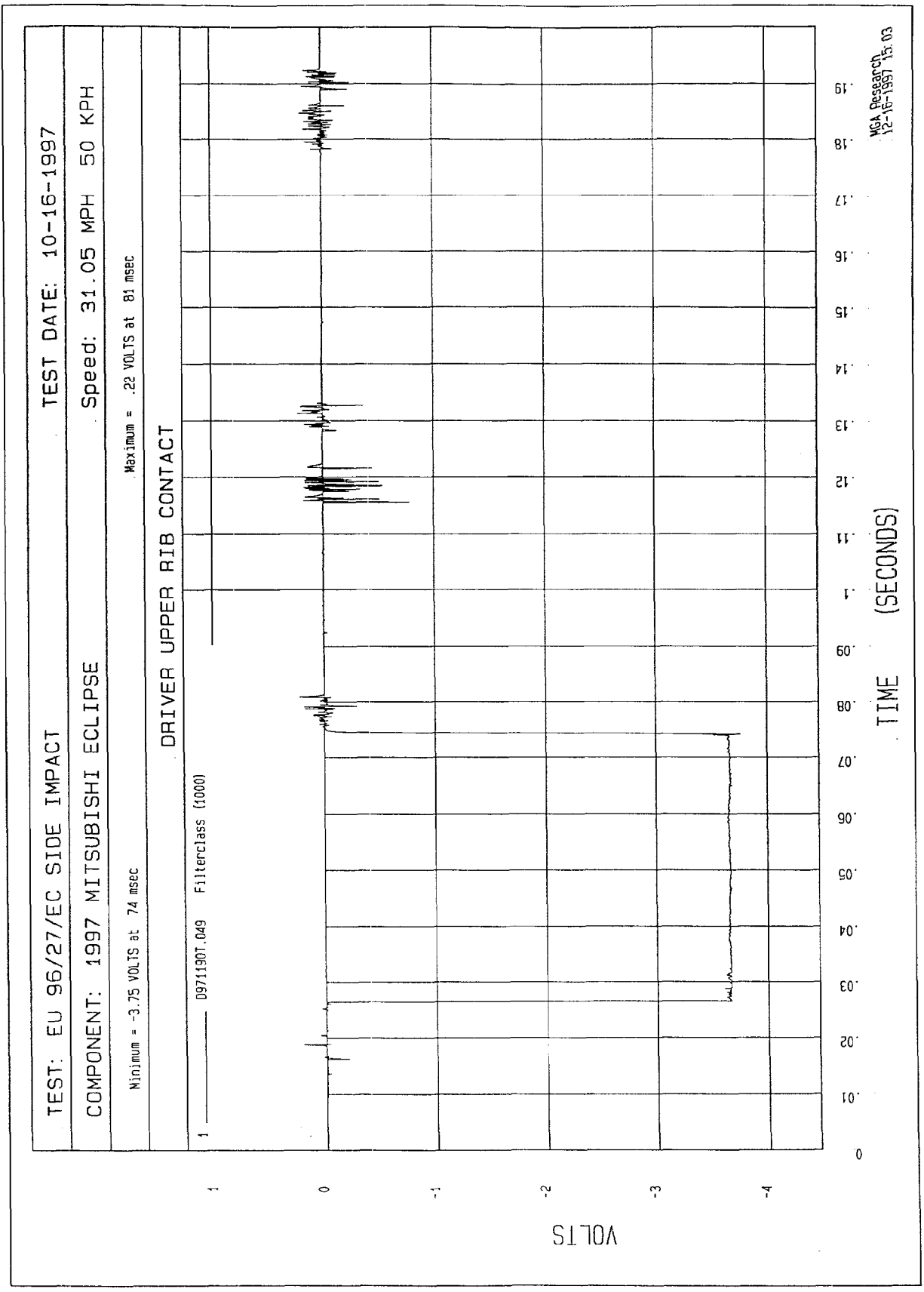


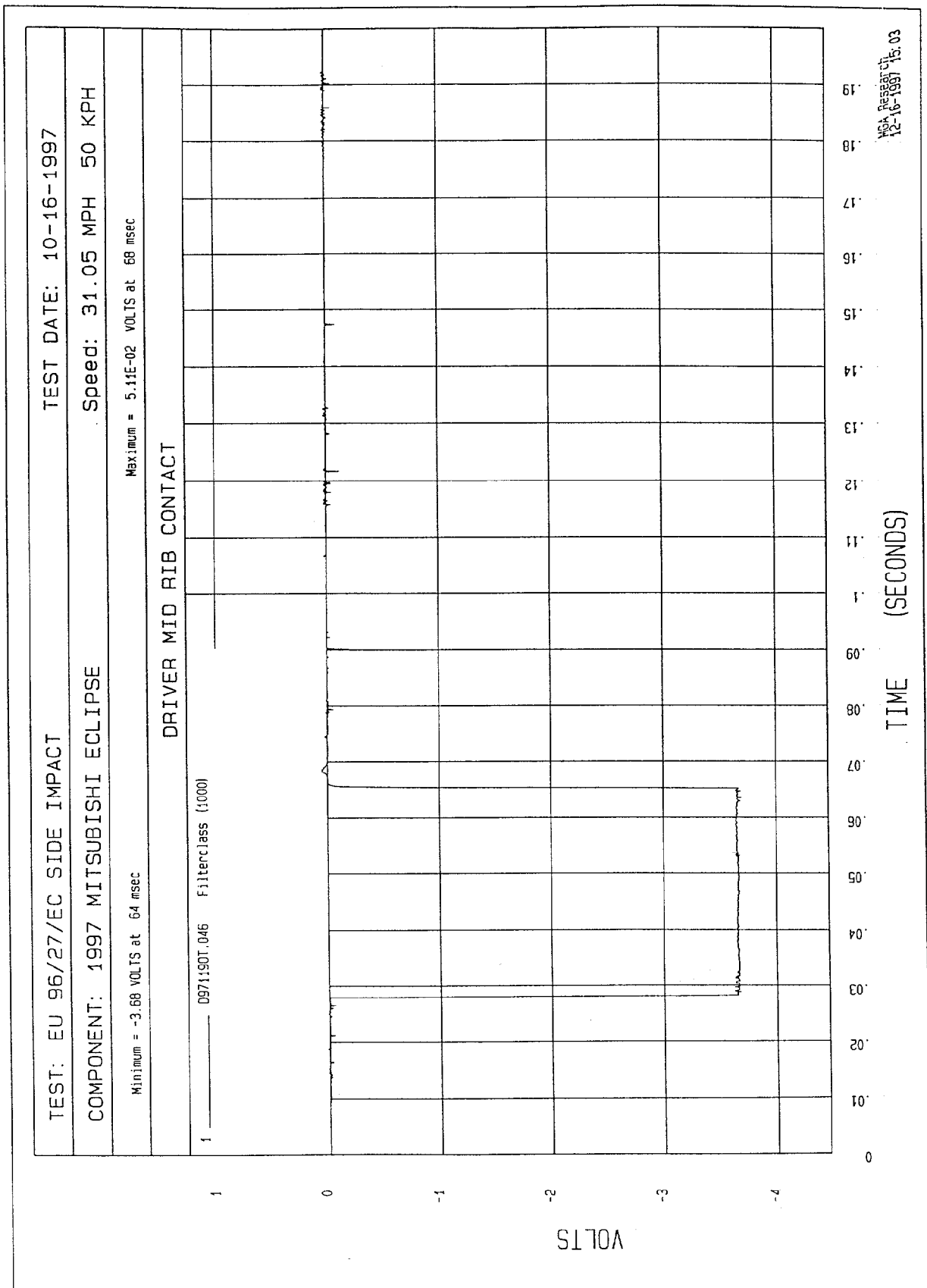
TIME (SECONDS)

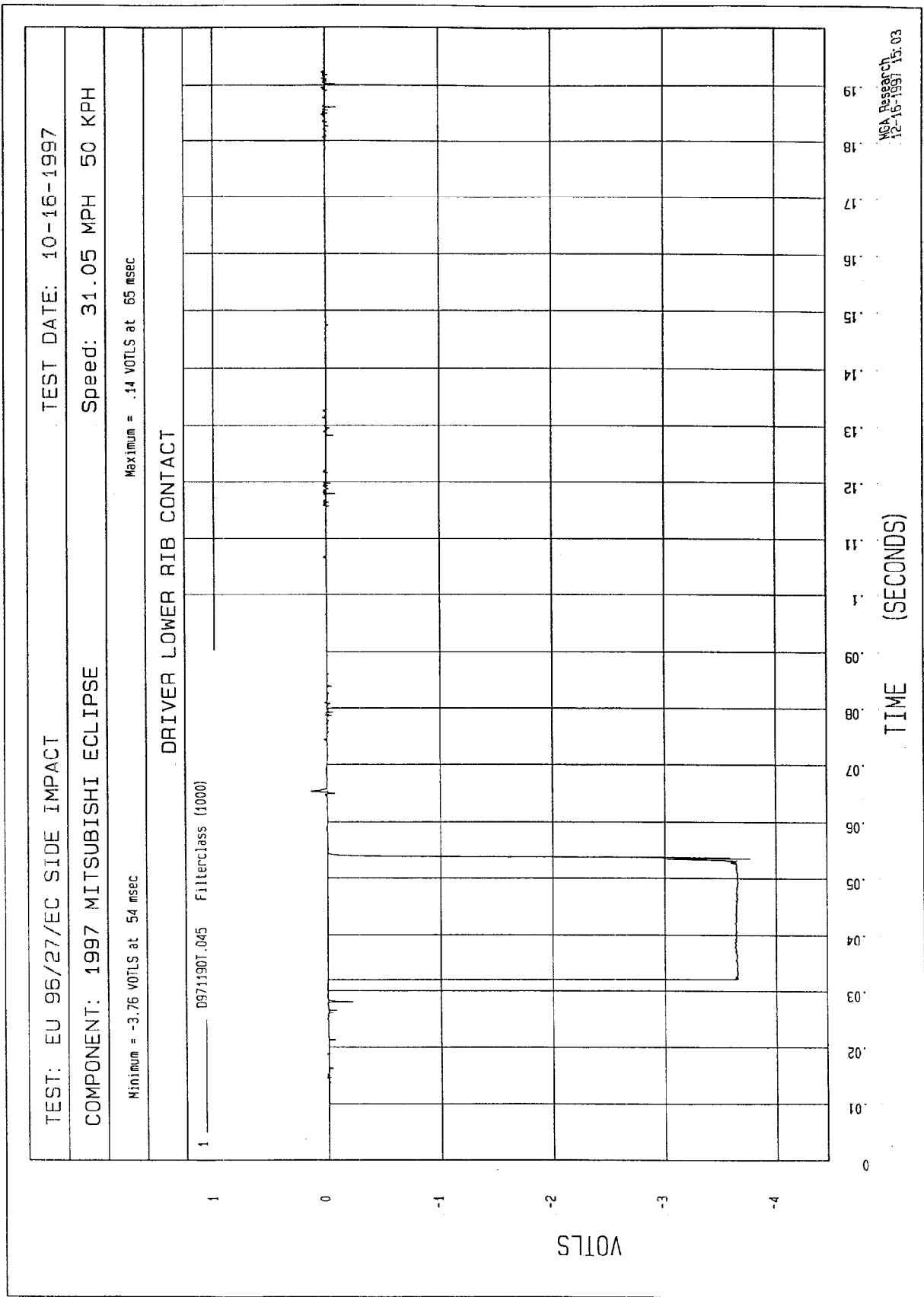
NCA Research
11-26-1997 13.56

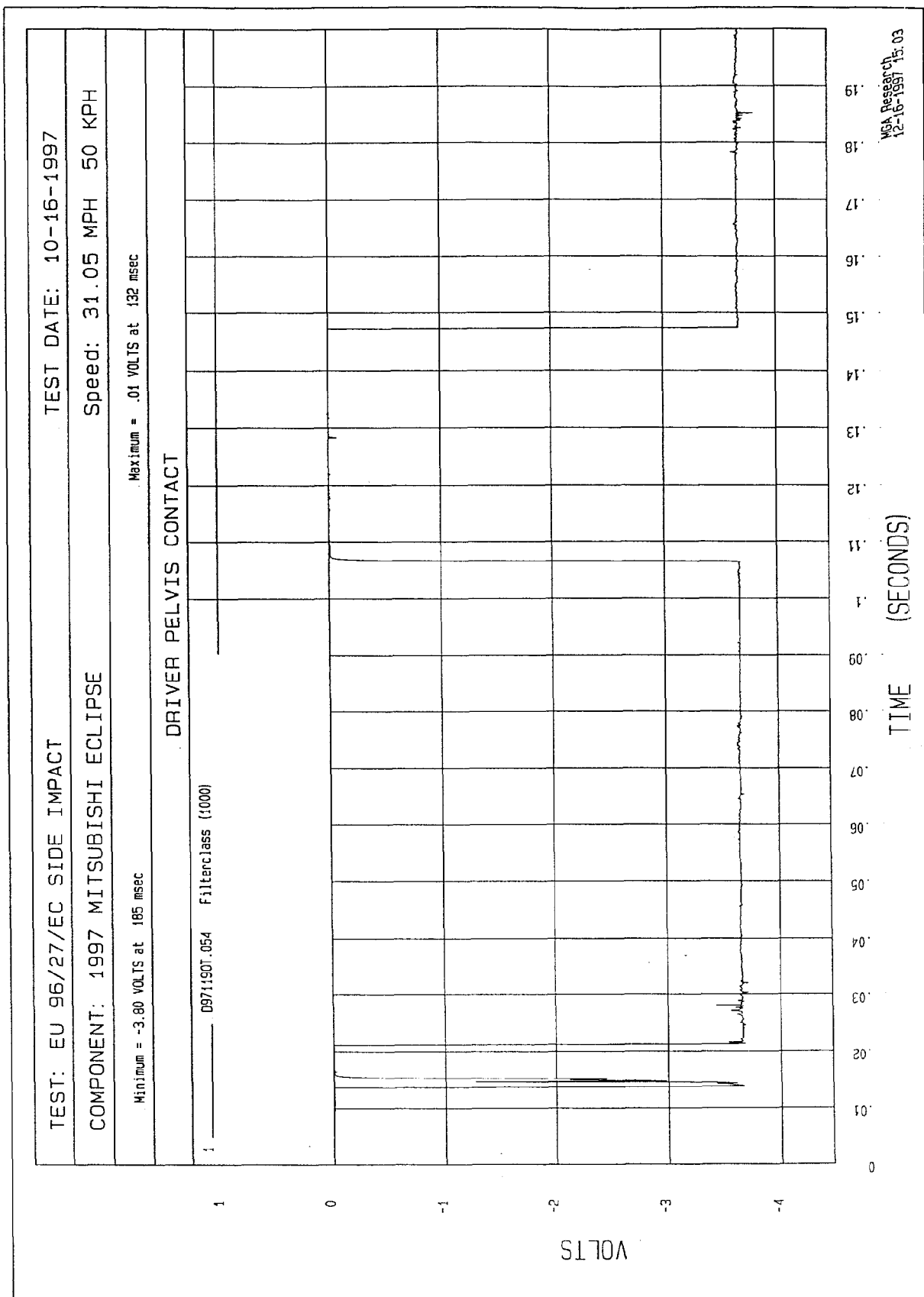


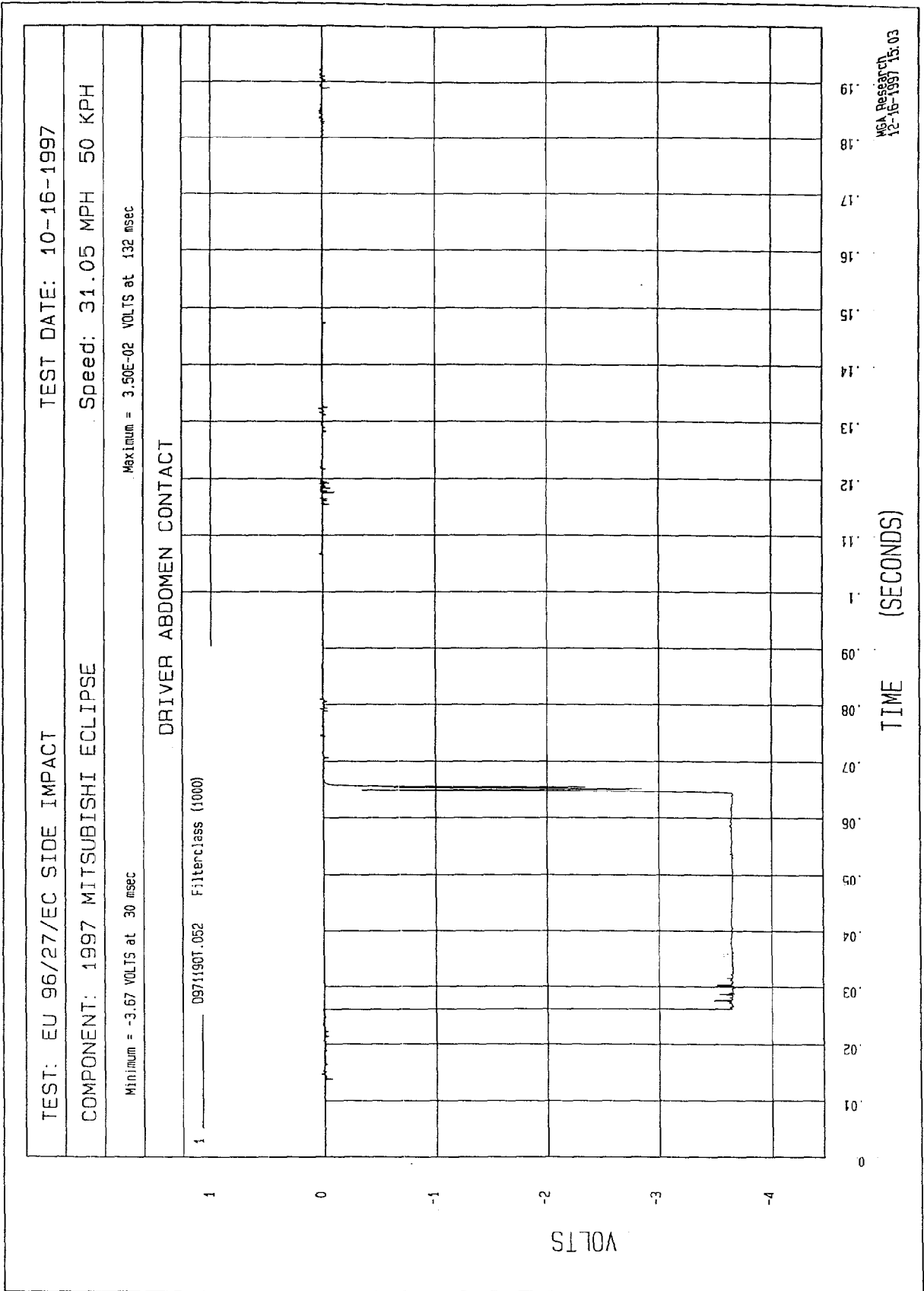












APPENDIX C
OVERPLOT DATA

This section contains overplot data from the European Lateral Impact testing conducted at MGA Research on September 5, 1997 and the FMVSS 214D Side Impact testing conducted at MGA Research on December 13, 1996.

	<u>European Lateral Impact</u>	<u>FMVSS 214D</u>
Vehicle	1997 Mitsubishi Eclipse RS	1996 Mitsubishi Eclipse RS
Test Weight (kg)	1458.6	1423.4
Impact Speed (kph)	50.0	52.8
Driver Dummy	EuroSID	SID
Passenger Dummy	EuroSID	SID
Impact Angle (°)	90°	90°
Crab Angle (°)	0°	27°
Driver (TTI)*	---	82
Passenger (TTI)*	---	60

* These values were calculated using the FMVSS 214D injury criteria

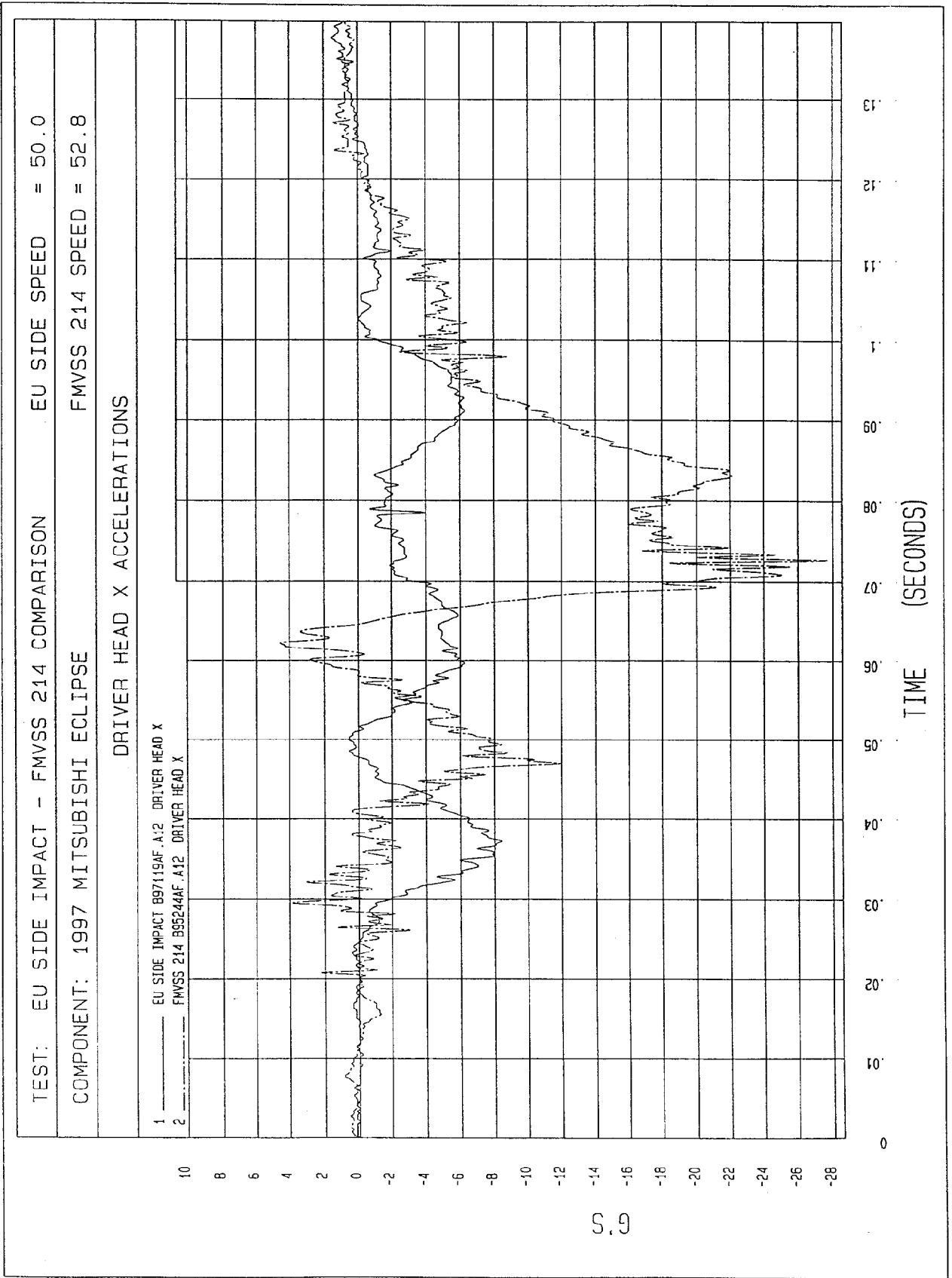
Table of Data Plots

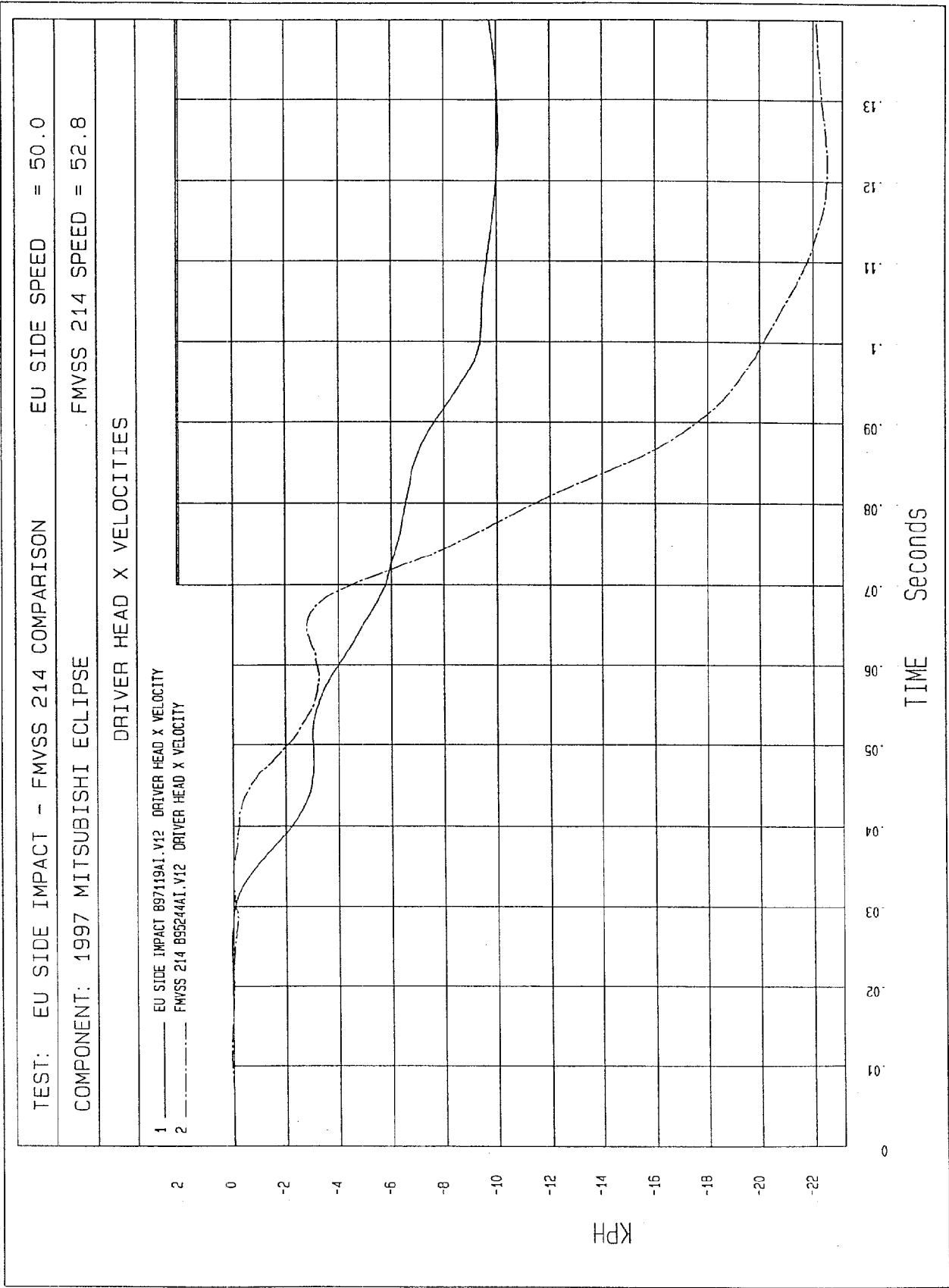
<u>Overplot Data:</u>	<u>Page No.</u>
Figure C-1 - Driver Head X Accelerations vs. Time	C-1
Figure C-2 - Driver Head X Velocities vs. Time	C-2
Figure C-3 - Driver Head Y Accelerations vs. Time	C-3
Figure C-4 - Driver Head Y Velocities vs. Time	C-4
Figure C-5 - Driver Head Z Accelerations vs. Time	C-5
Figure C-6 - Driver Head Z Velocities vs. Time	C-6
Figure C-7 - Driver Head Resultant Accelerations vs. Time	C-7
Figure C-8 - Driver Upper Rib Y Accelerations vs. Time (FIR Filtered)	C-8
Figure C-9 - Driver Upper Rib Y Velocities vs. Time (Filterclass 180)	C-9
Figure C-10 - Driver Lower Rib Y Accelerations vs. Time (FIR Filtered)	C-10
Figure C-11 - Driver Lower Rib Y Velocities vs. Time (Filterclass 180)	C-11
Figure C-12 - Driver Lower Spine Y Accelerations vs. Time (FIR Filtered)	C-12
Figure C-13 - Driver Lower Spine Y Velocities vs. Time (Filterclass 180)	C-13
Figure C-14 - Driver Pelvis Y Accelerations vs. Time (FIR Filtered)	C-14
Figure C-15 - Driver Pelvis Y Velocities vs. Time (Filterclass 180)	C-15
Figure C-16 - Right Front Sill X Accelerations vs. Time (Filter Class 60)	C-16
Figure C-17 - Right Front Sill X Velocities vs. Time (Filter Class 180)	C-17
Figure C-18 - Right Front Sill Y Accelerations vs. Time (Filter Class 60)	C-18
Figure C-19 - Right Front Sill Y Velocities vs. Time (Filter Class 180)	C-19
Figure C-20 - Right Front Sill Z Accelerations vs. Time (Filter Class 60)	C-20
Figure C-21 - Right Front Sill Z Velocities vs. Time (Filter Class 180)	C-21
Figure C-22 - Right Front Sill Resultant Accelerations (Filter Class 60)	C-22
Figure C-23 - Right Rear Sill X Accelerations vs. Time (Filter Class 60)	C-23
Figure C-24 - Right Rear Sill X Velocities vs. Time (Filter Class 180)	C-24
Figure C-25 - Right Rear Sill Y Acceleration vs. Time (Filter Class 60)	C-25
Figure C-26 - Right Rear Sill Y Velocities vs. Time (Filter Class 180)	C-26
Figure C-27 - Right Rear Sill Z Acceleration vs. Time (Filter Class 60)	C-27
Figure C-28 - Right Rear Sill Z Velocities vs. Time (Filter Class 180)	C-28
Figure C-29 - Right Rear Sill Resultant Accelerations (Filter Class 60)	C-29
Figure C-30 - Left Front Sill Y Accelerations vs. Time (Filter Class 60)	C-30

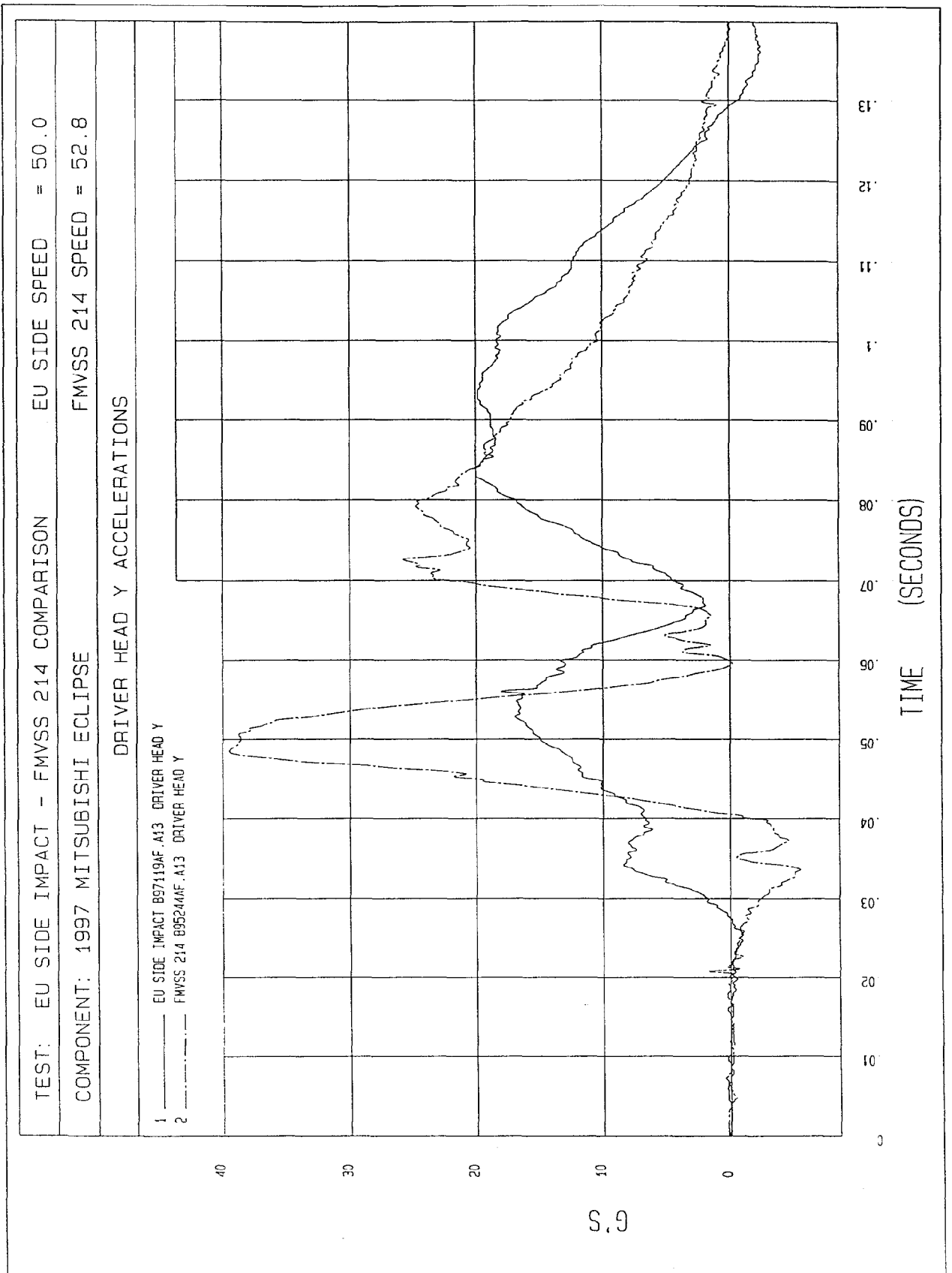
Table of Data Plots

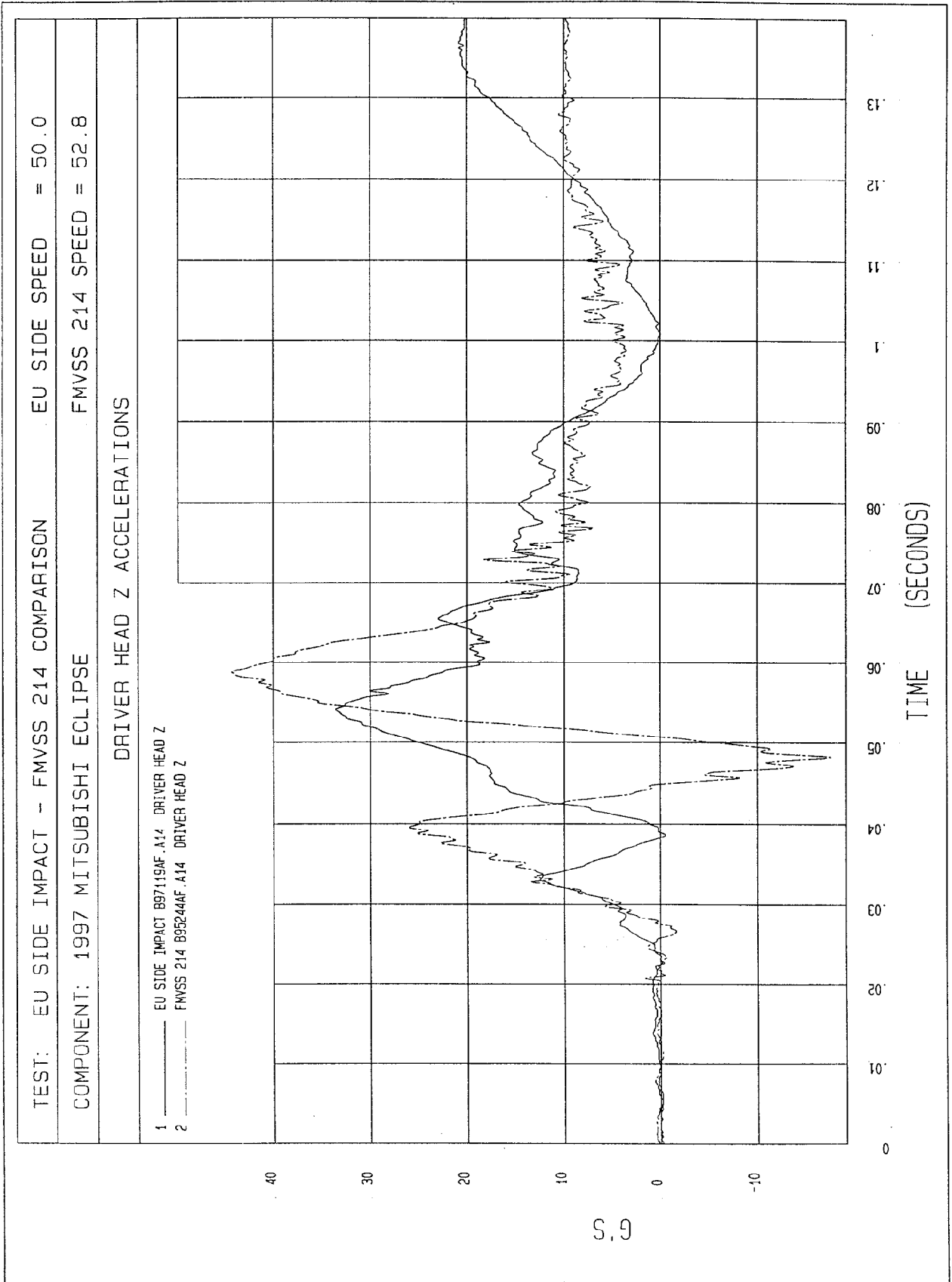
<u>Overplot Data:</u>	<u>Page No.</u>
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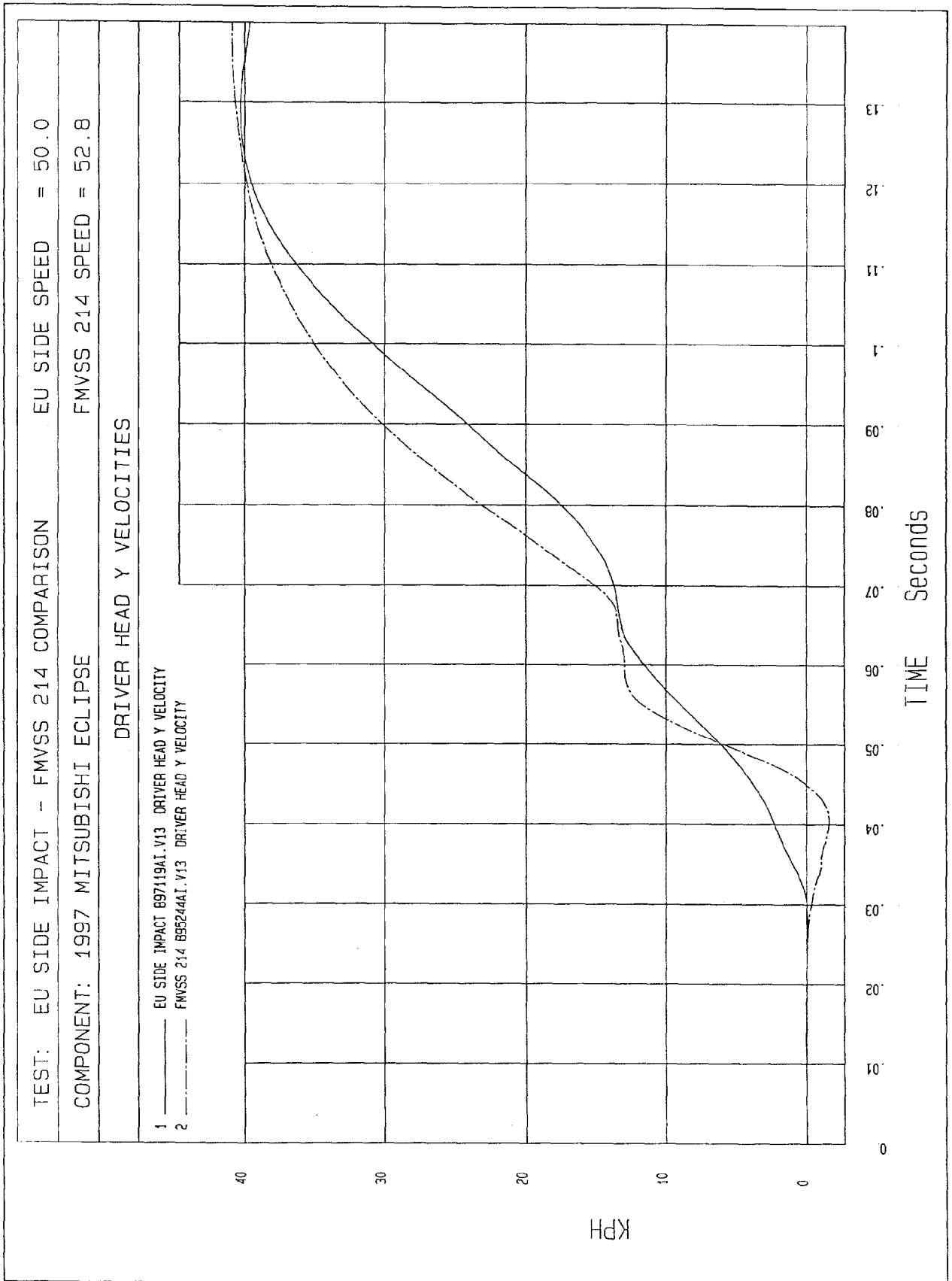
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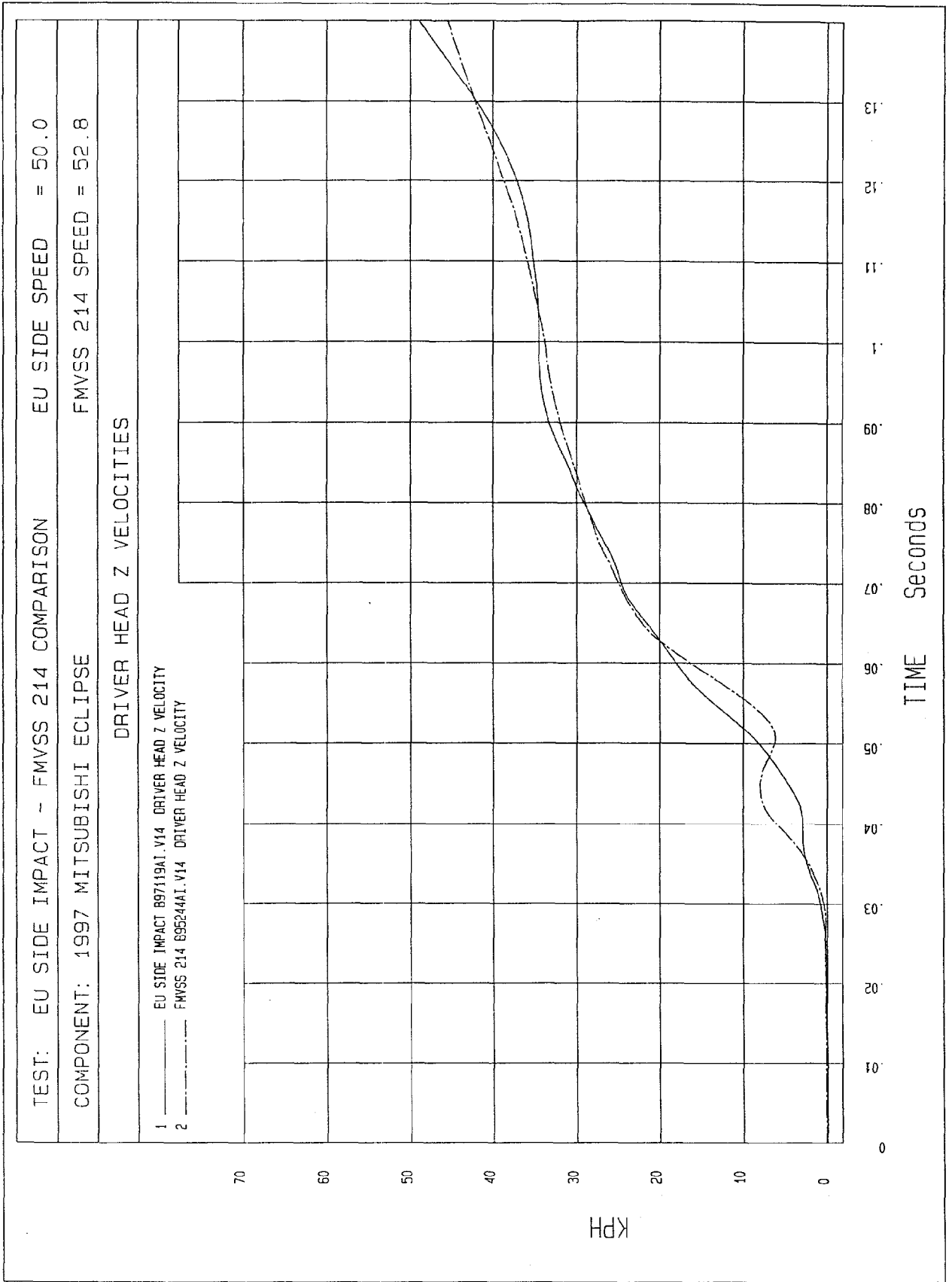


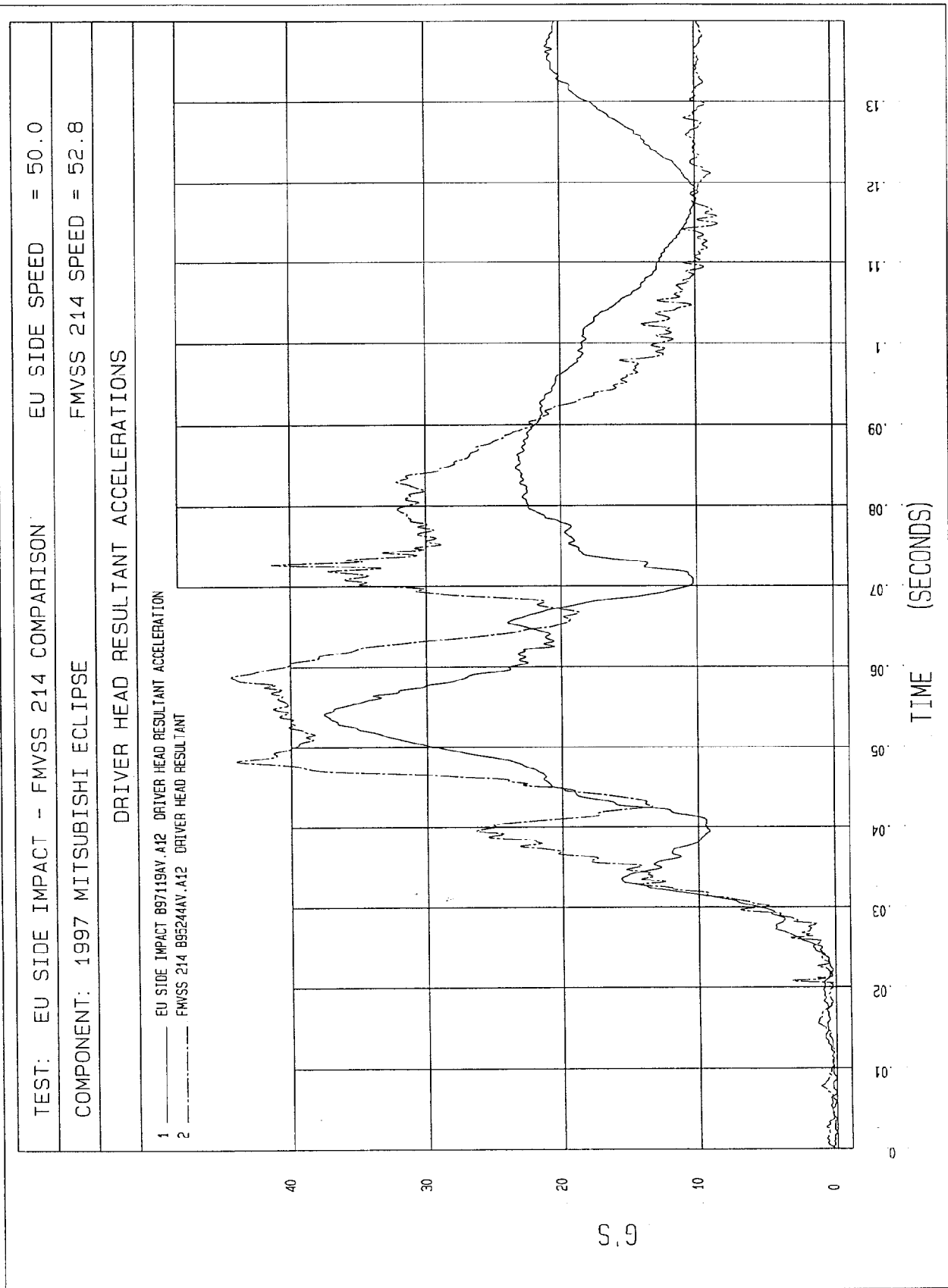


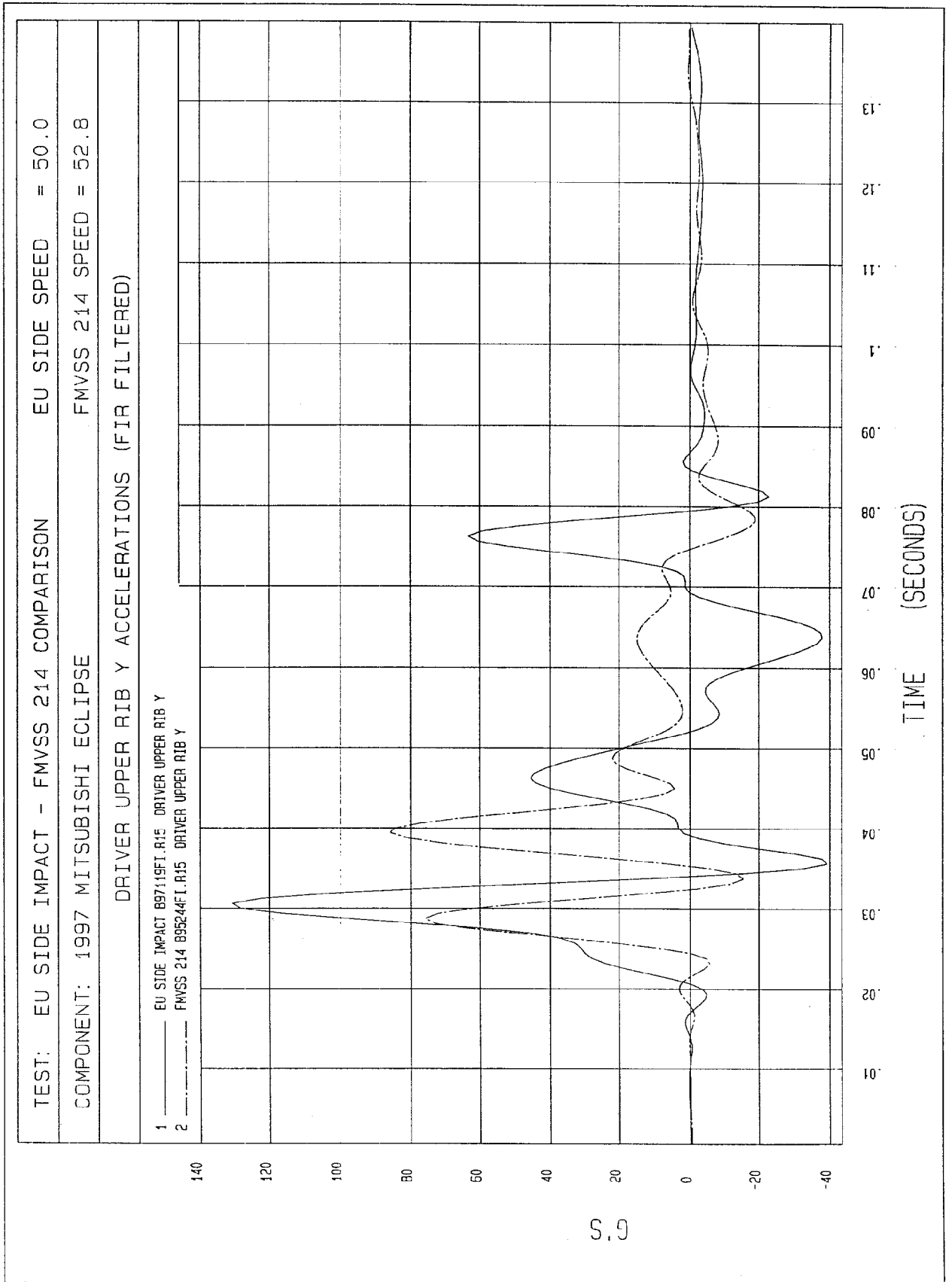


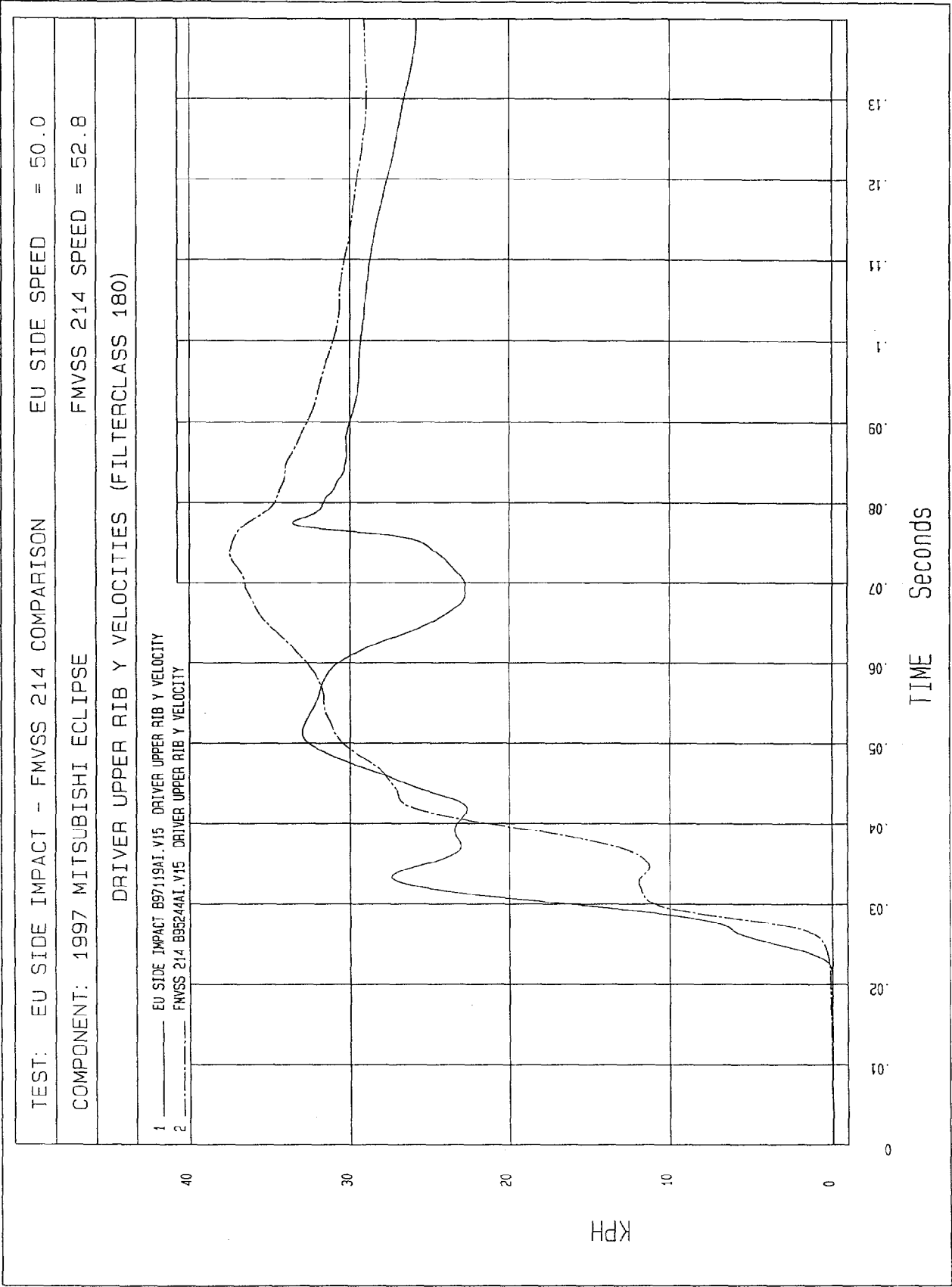


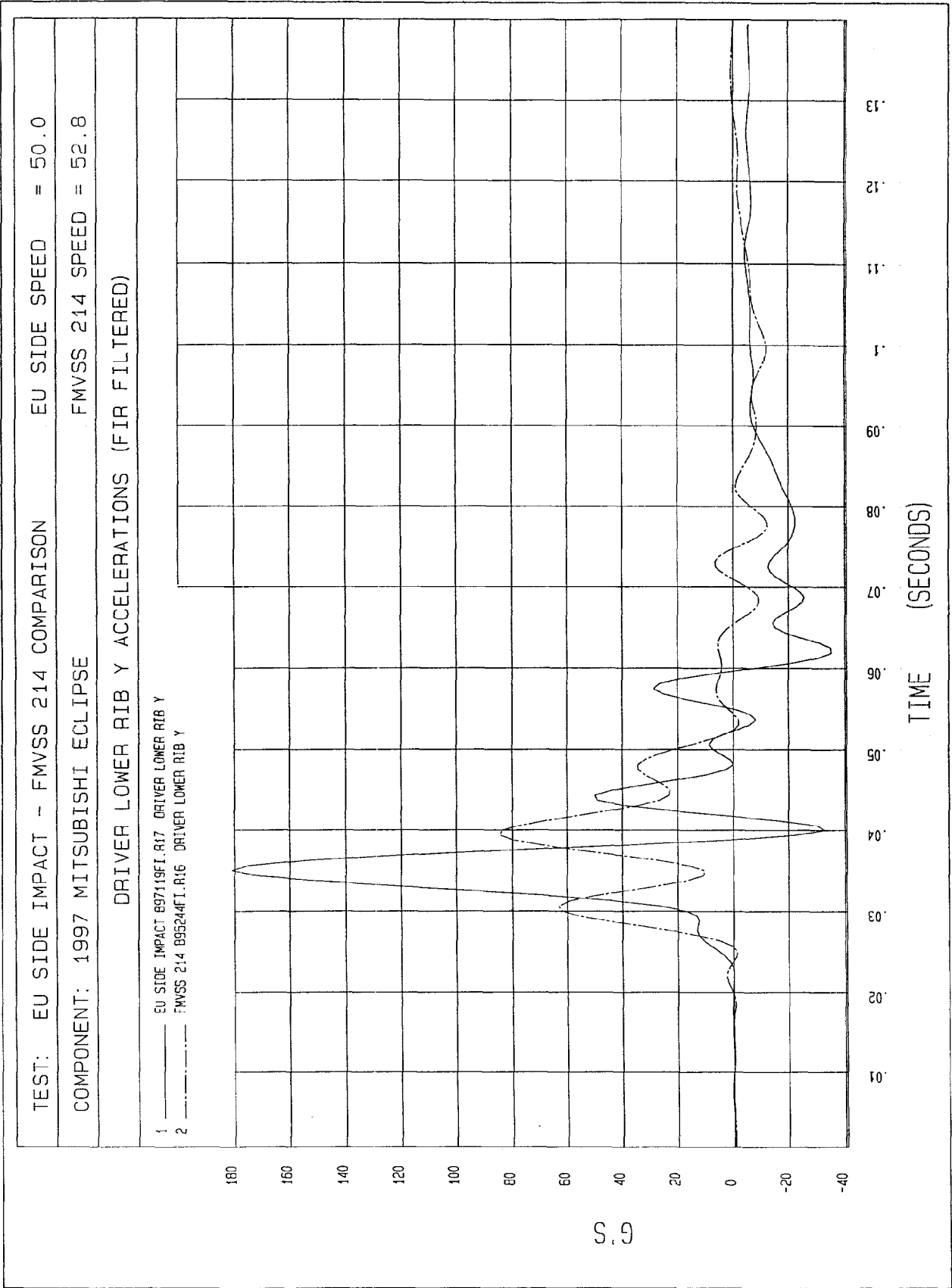


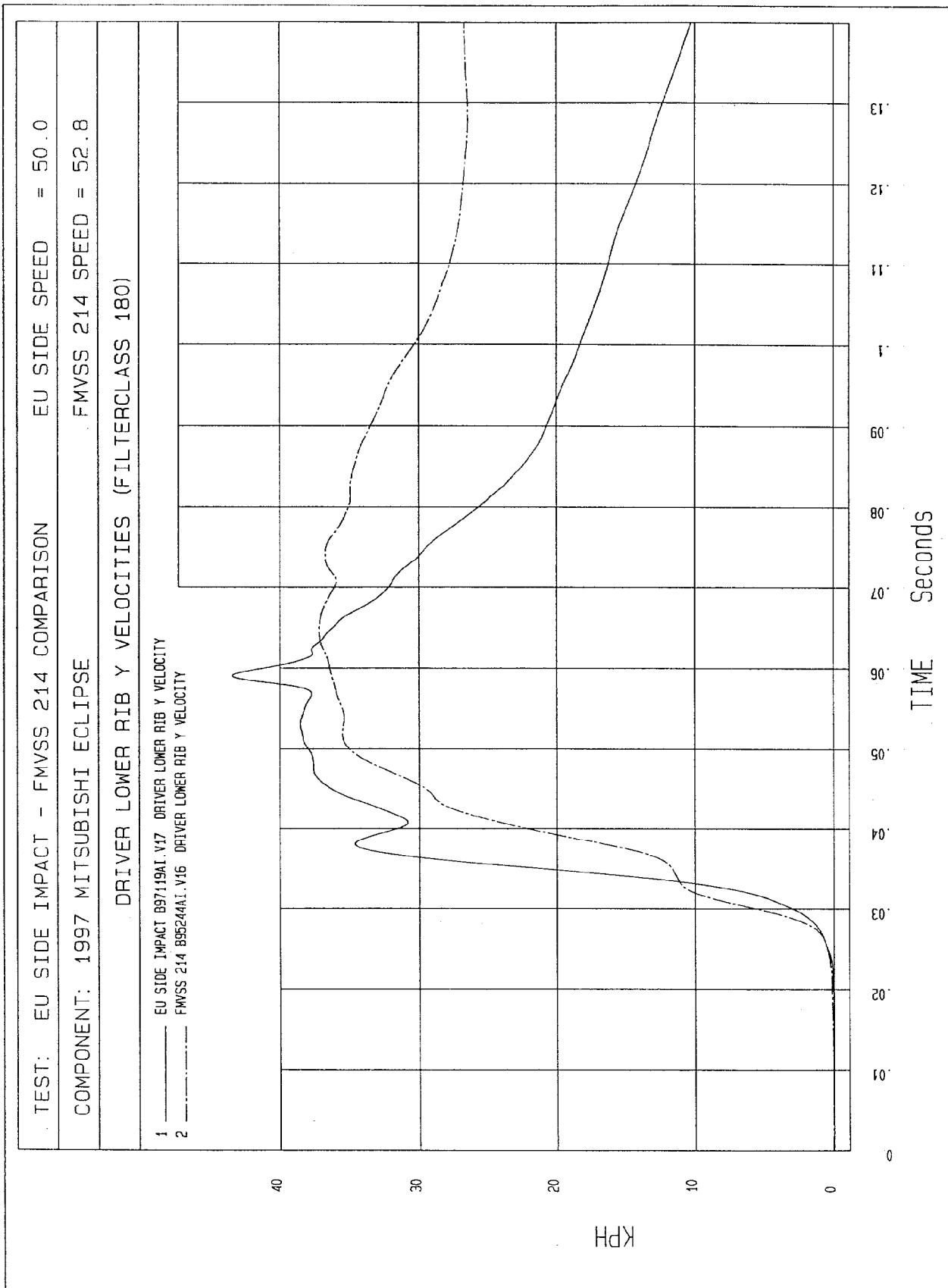


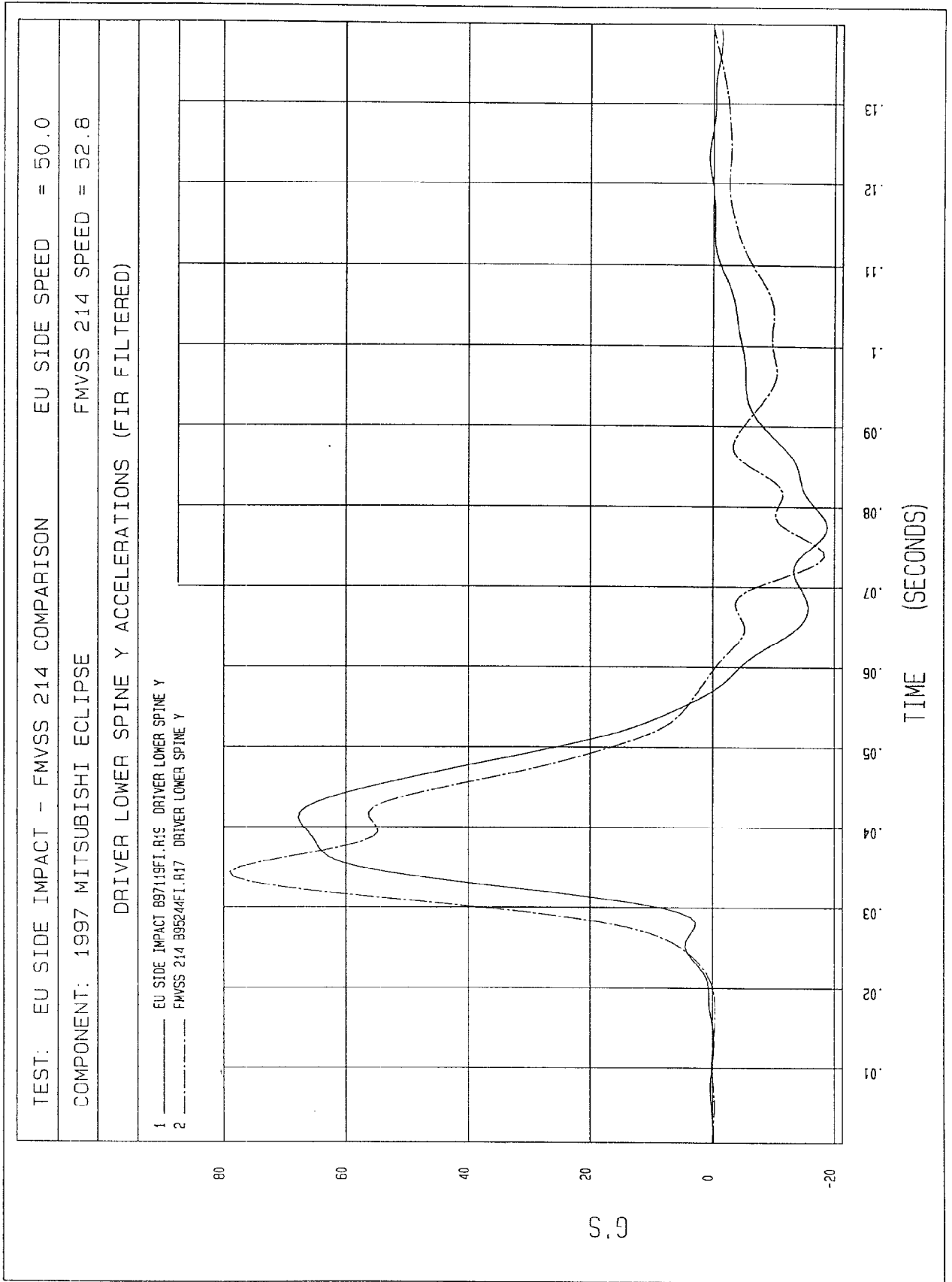


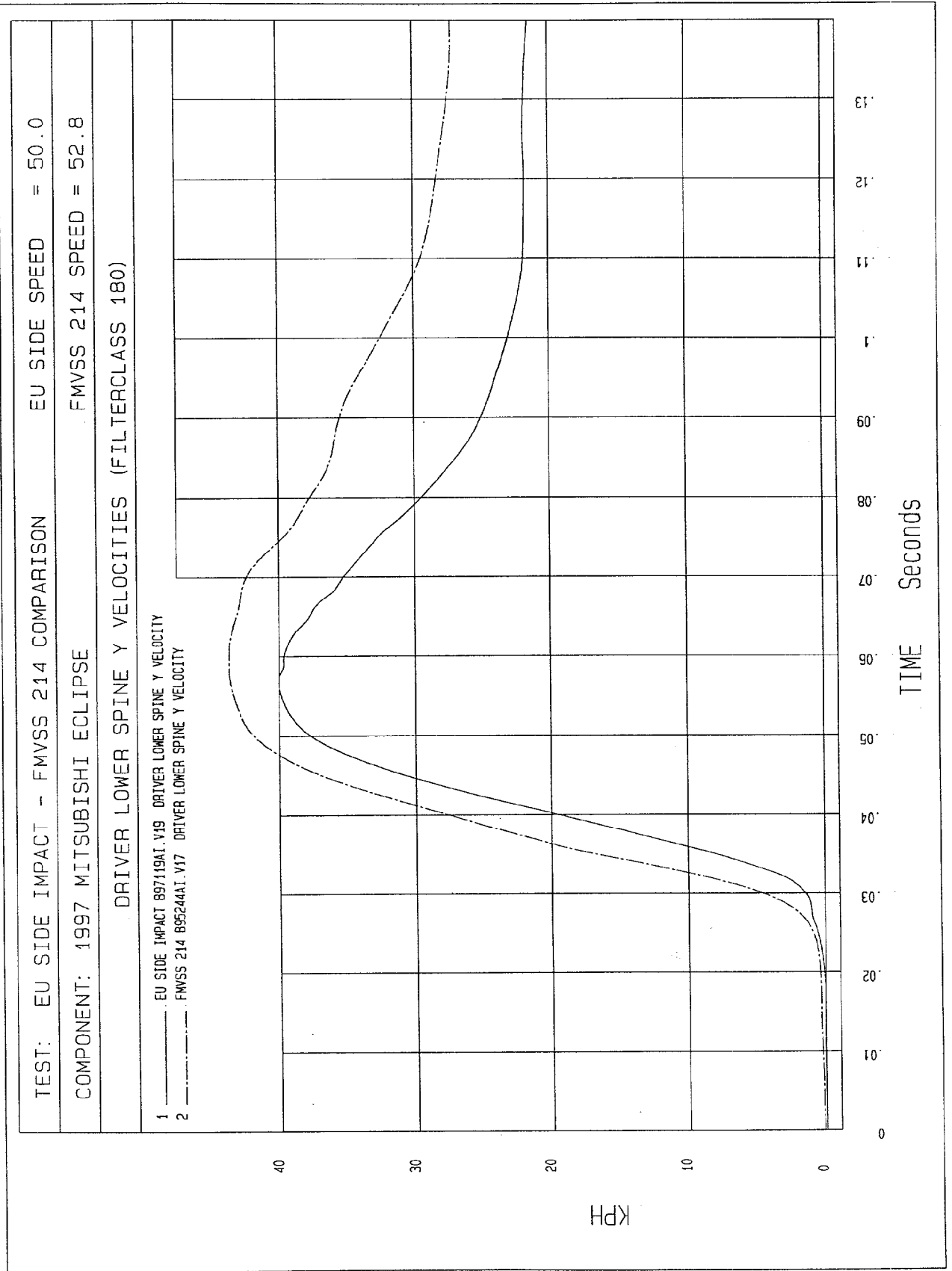


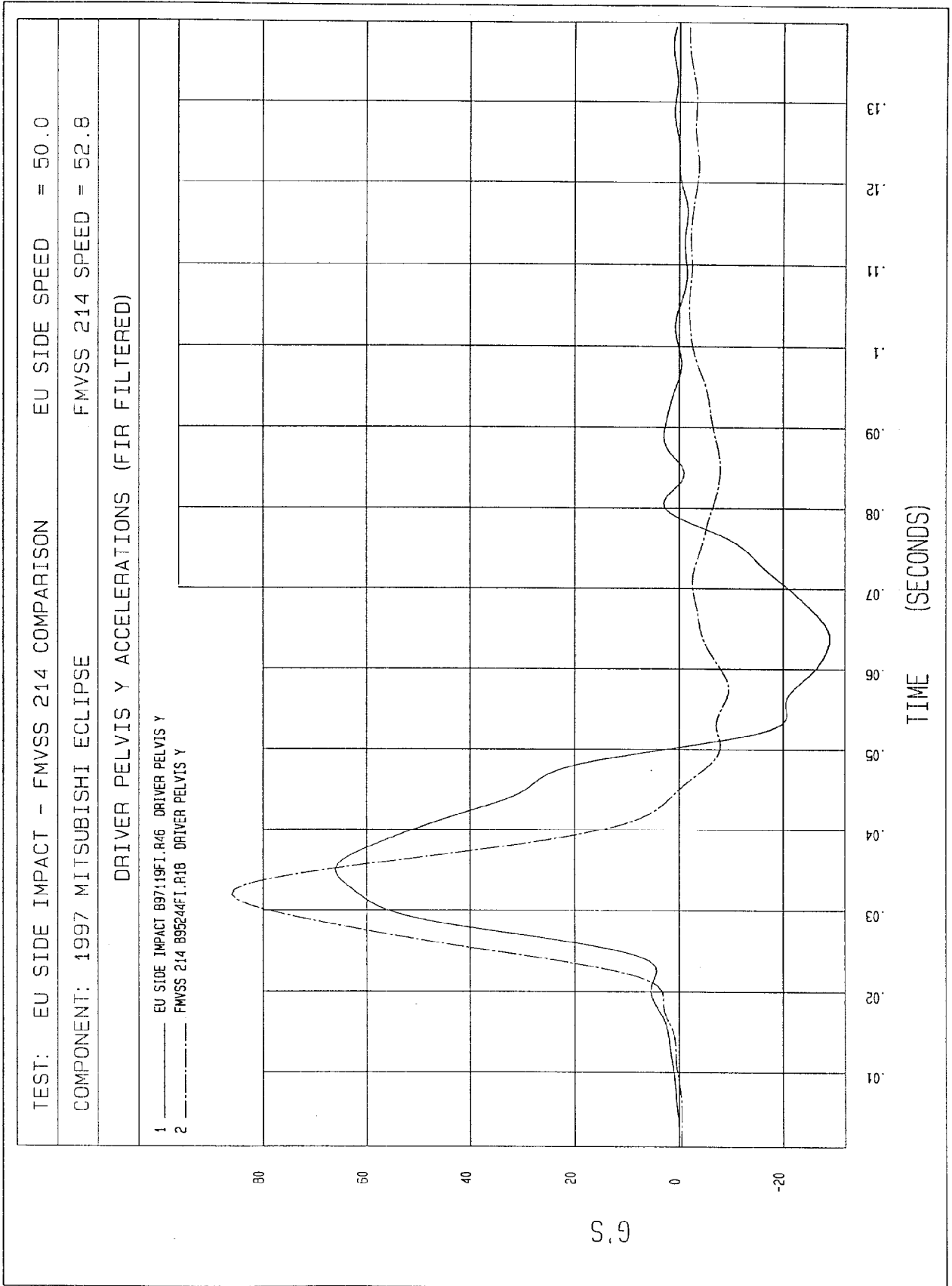


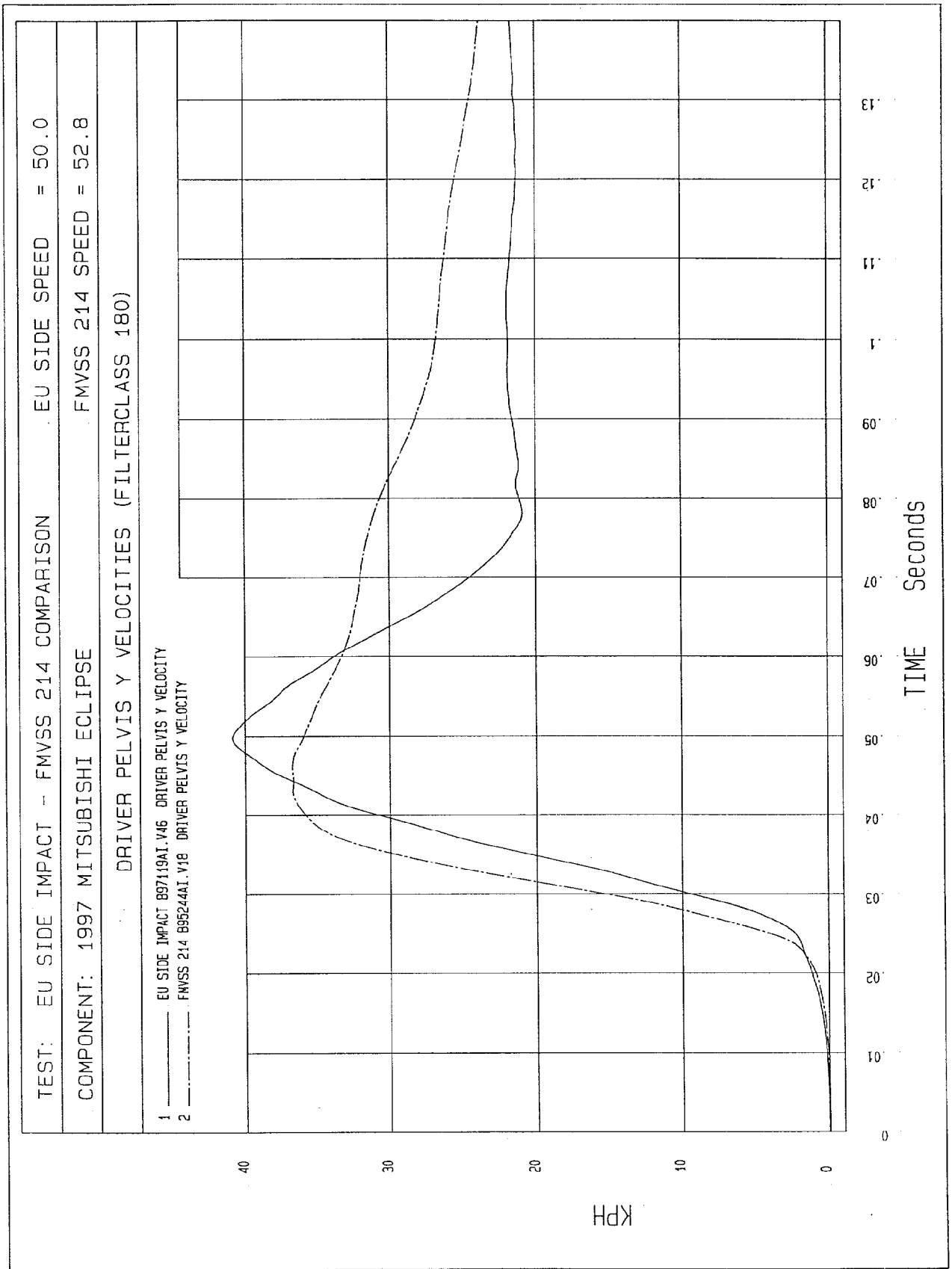


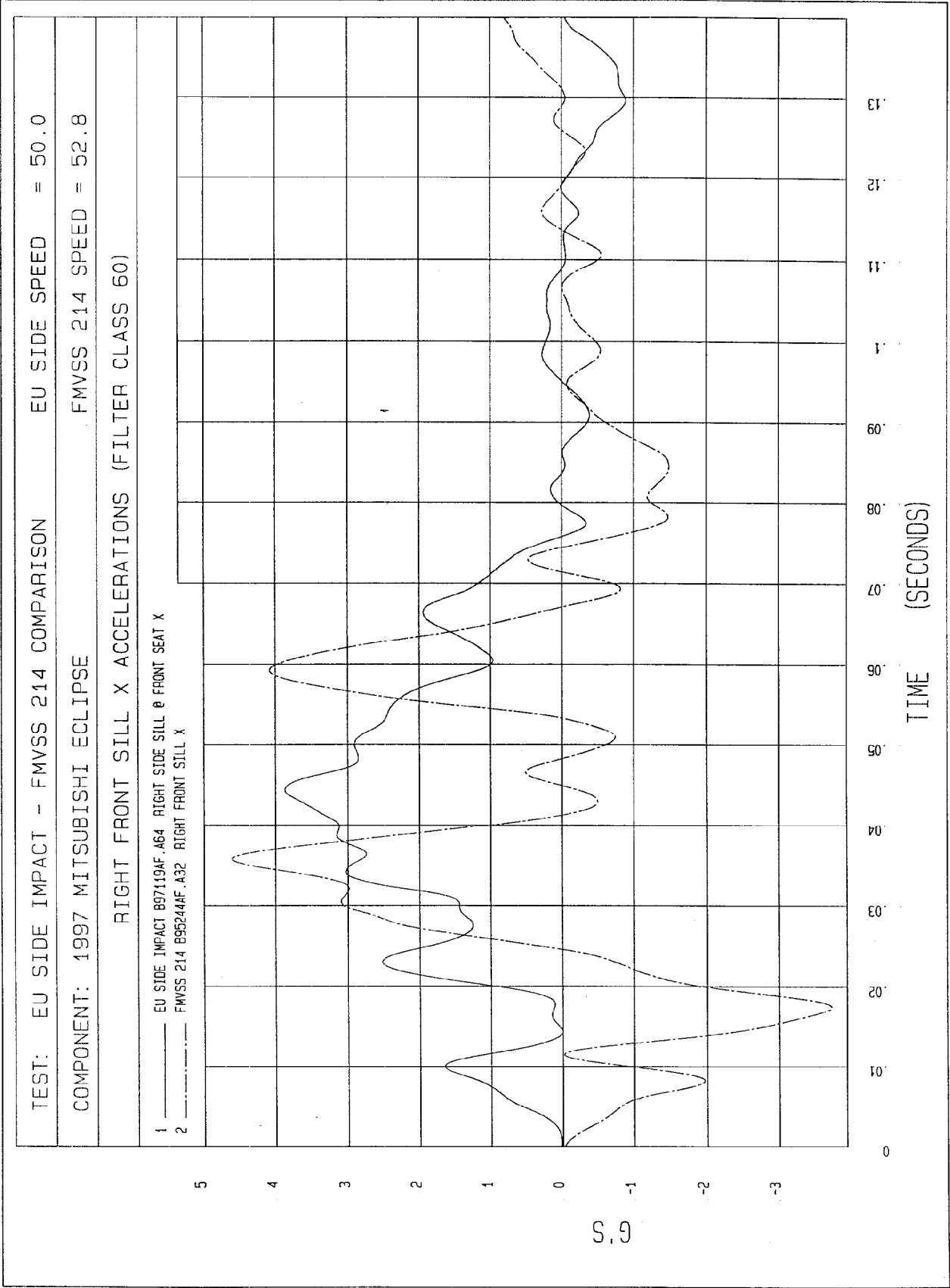


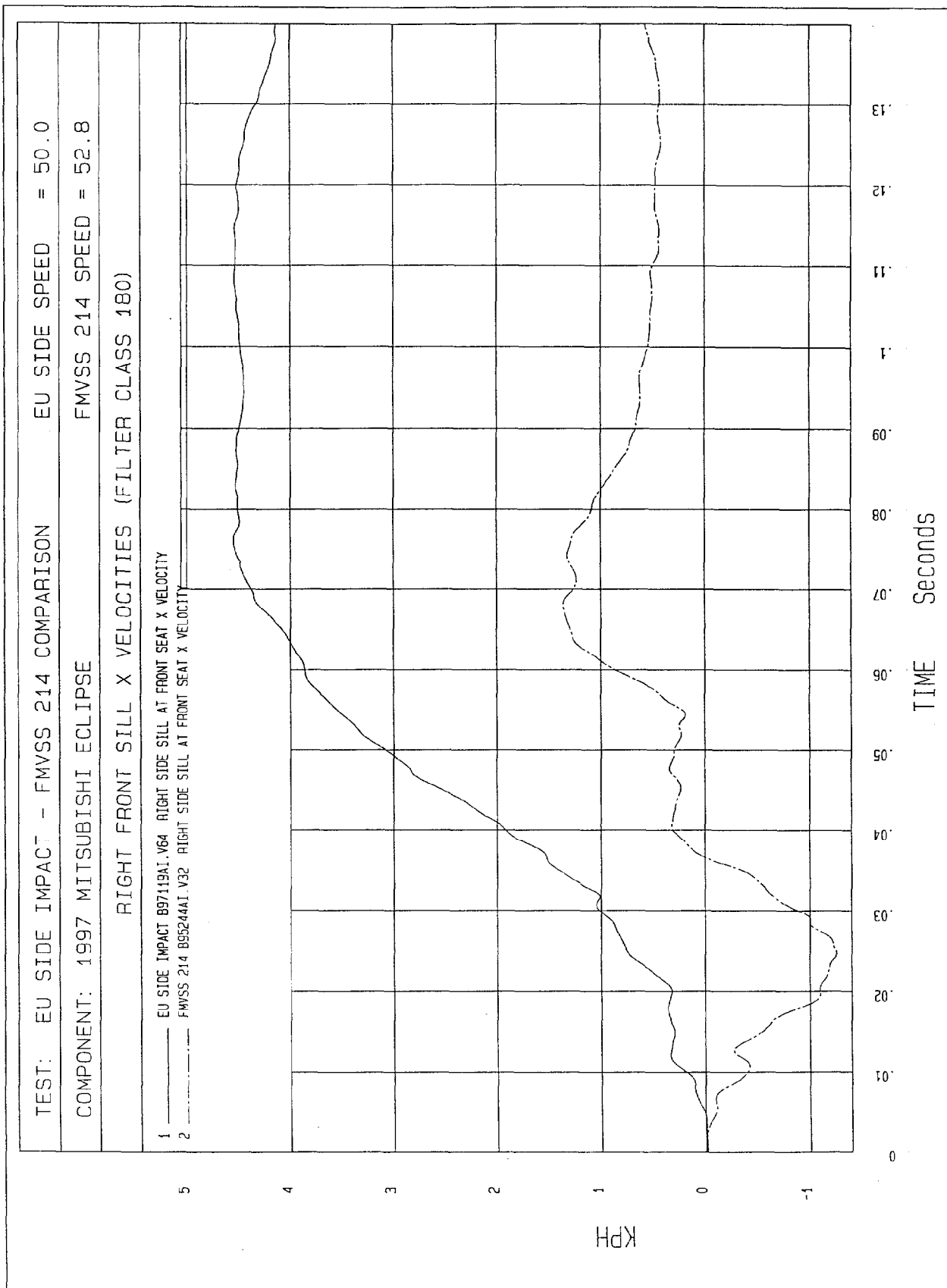


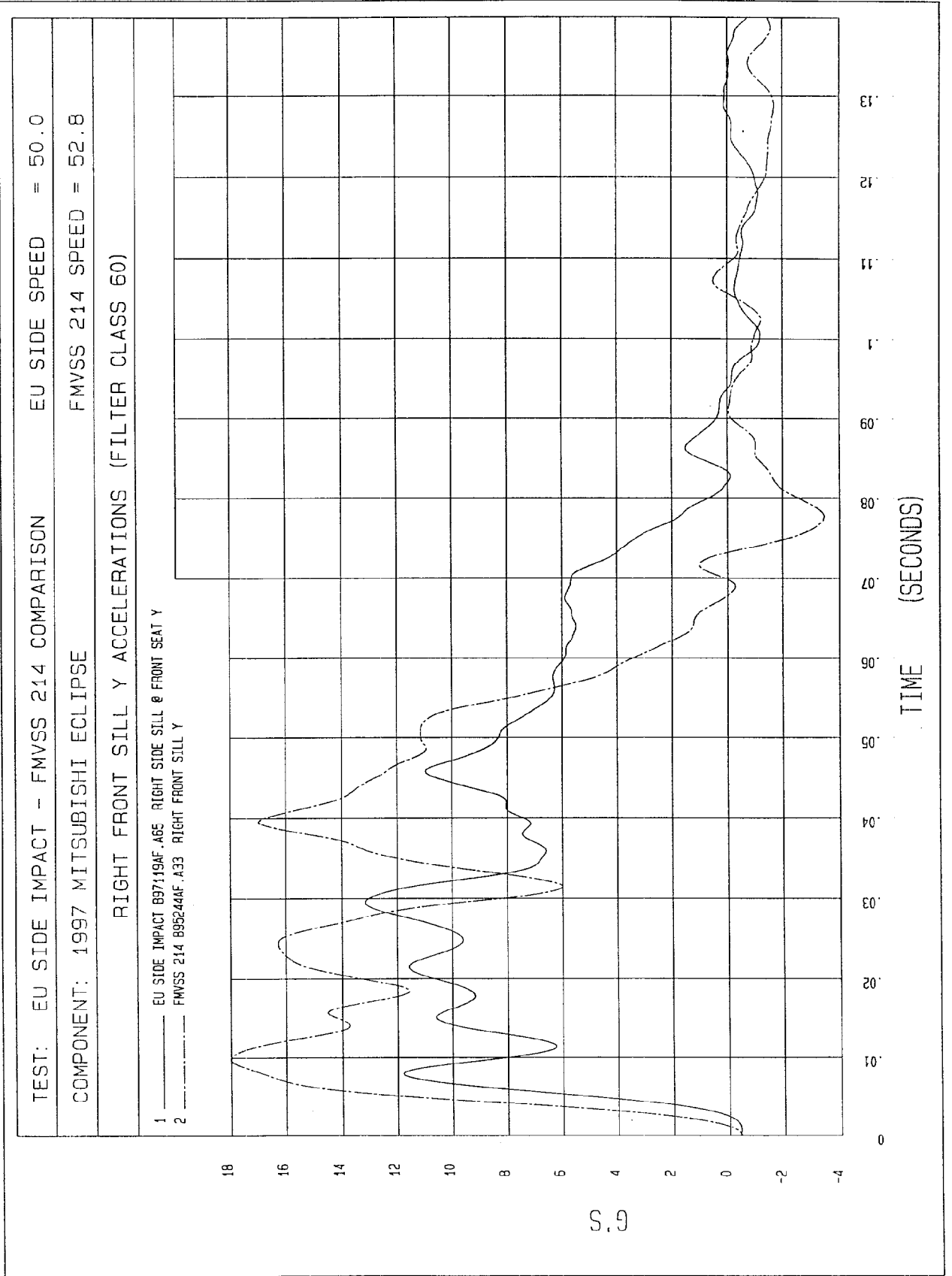


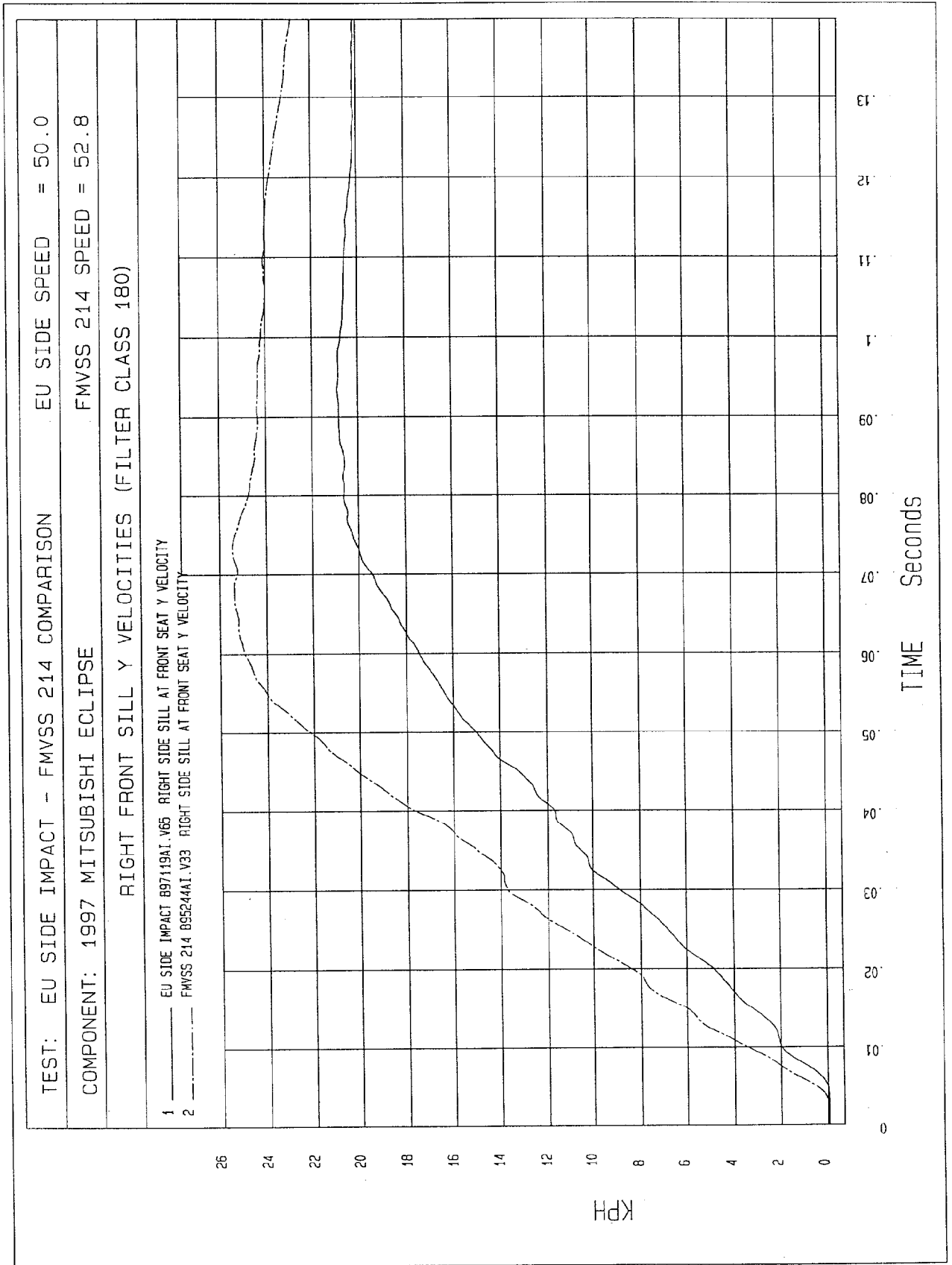


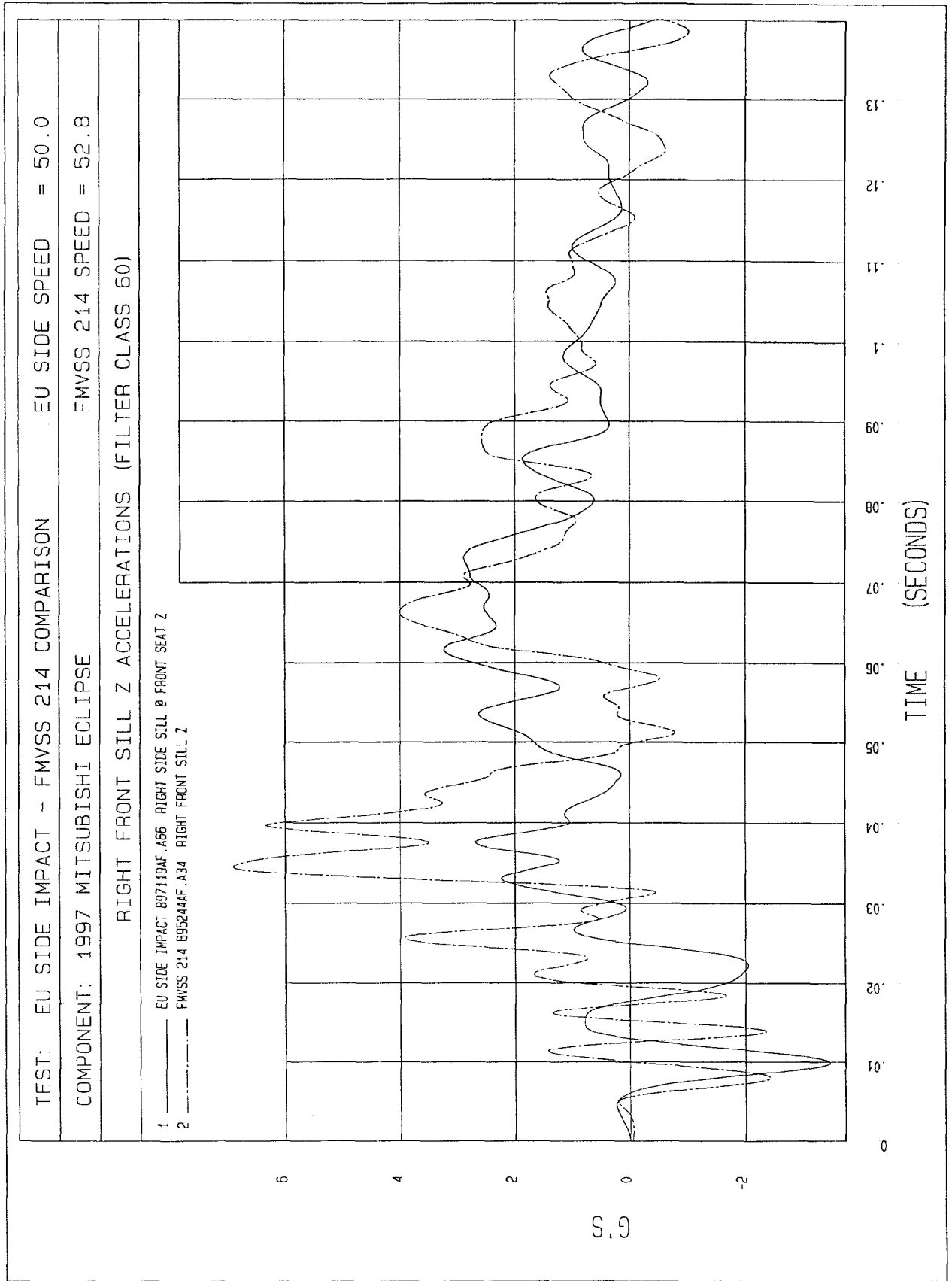


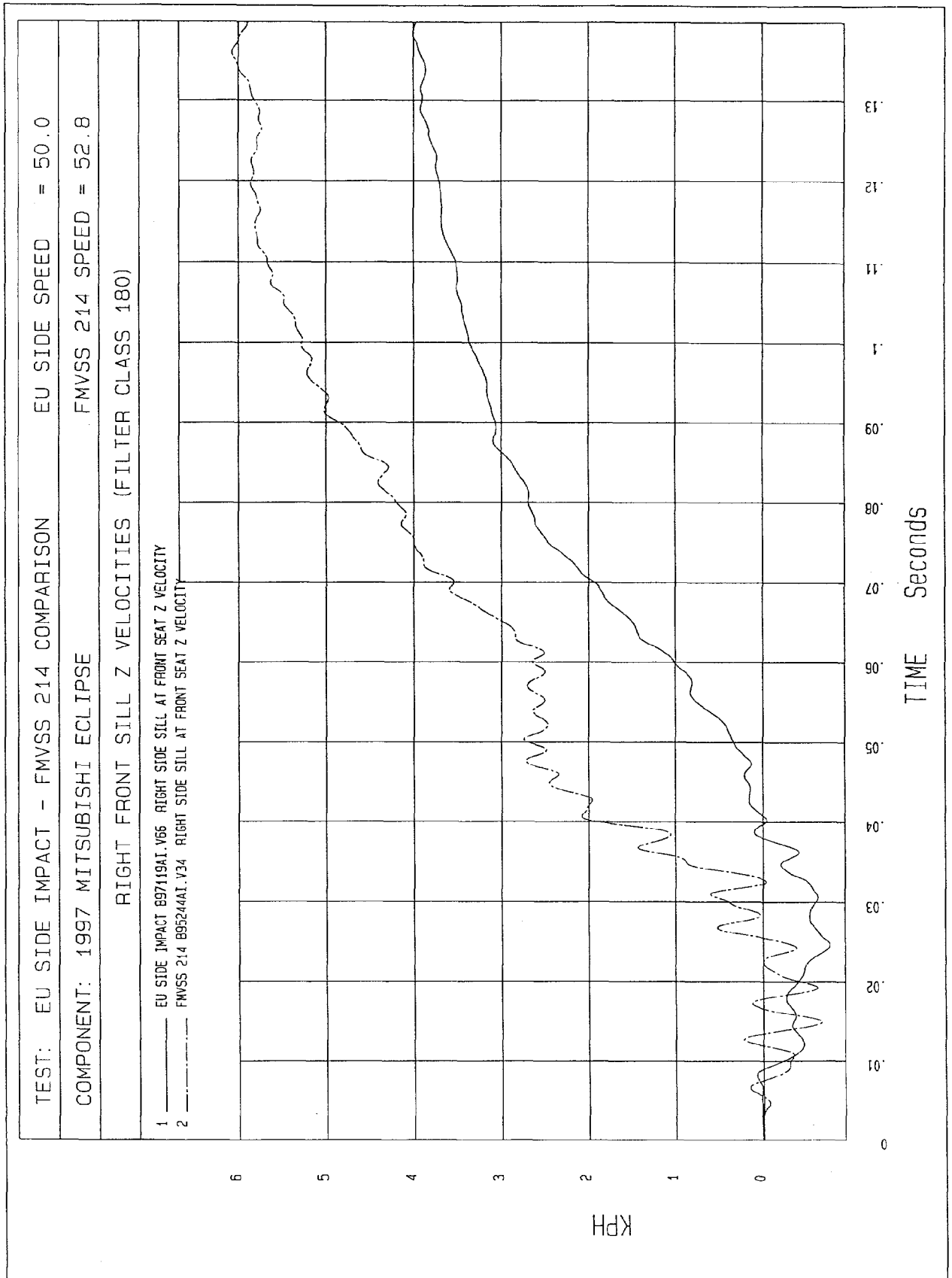


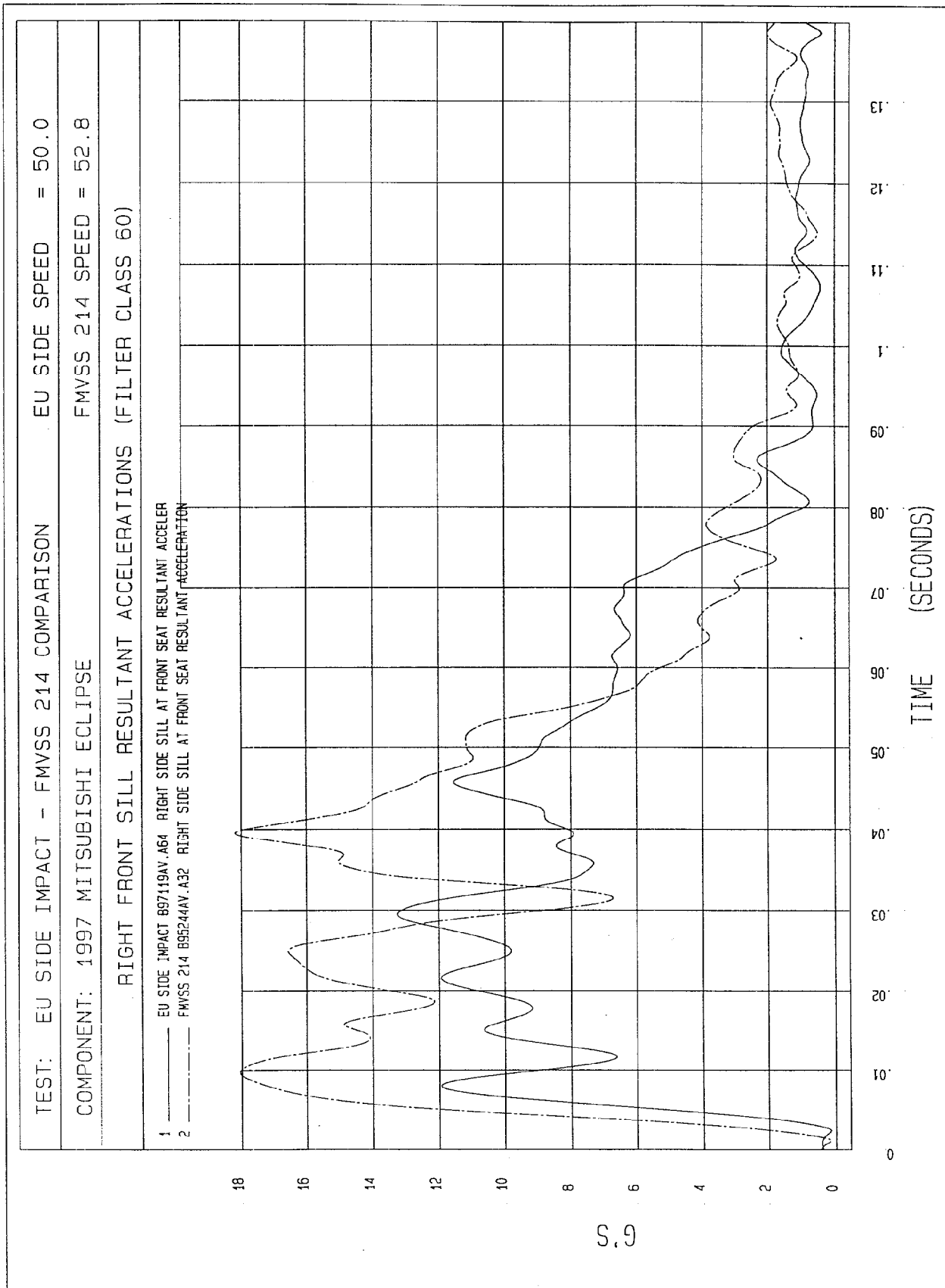


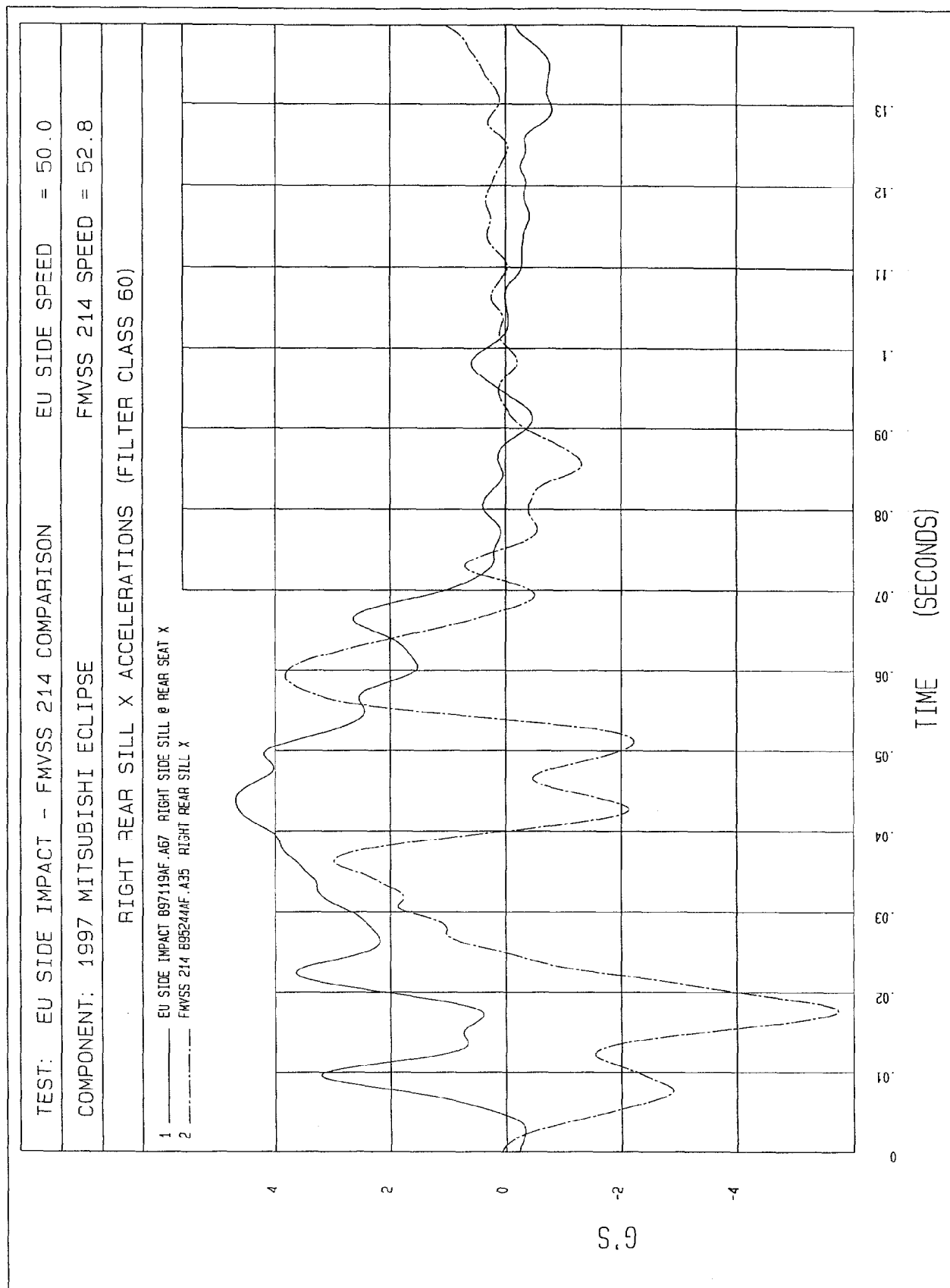


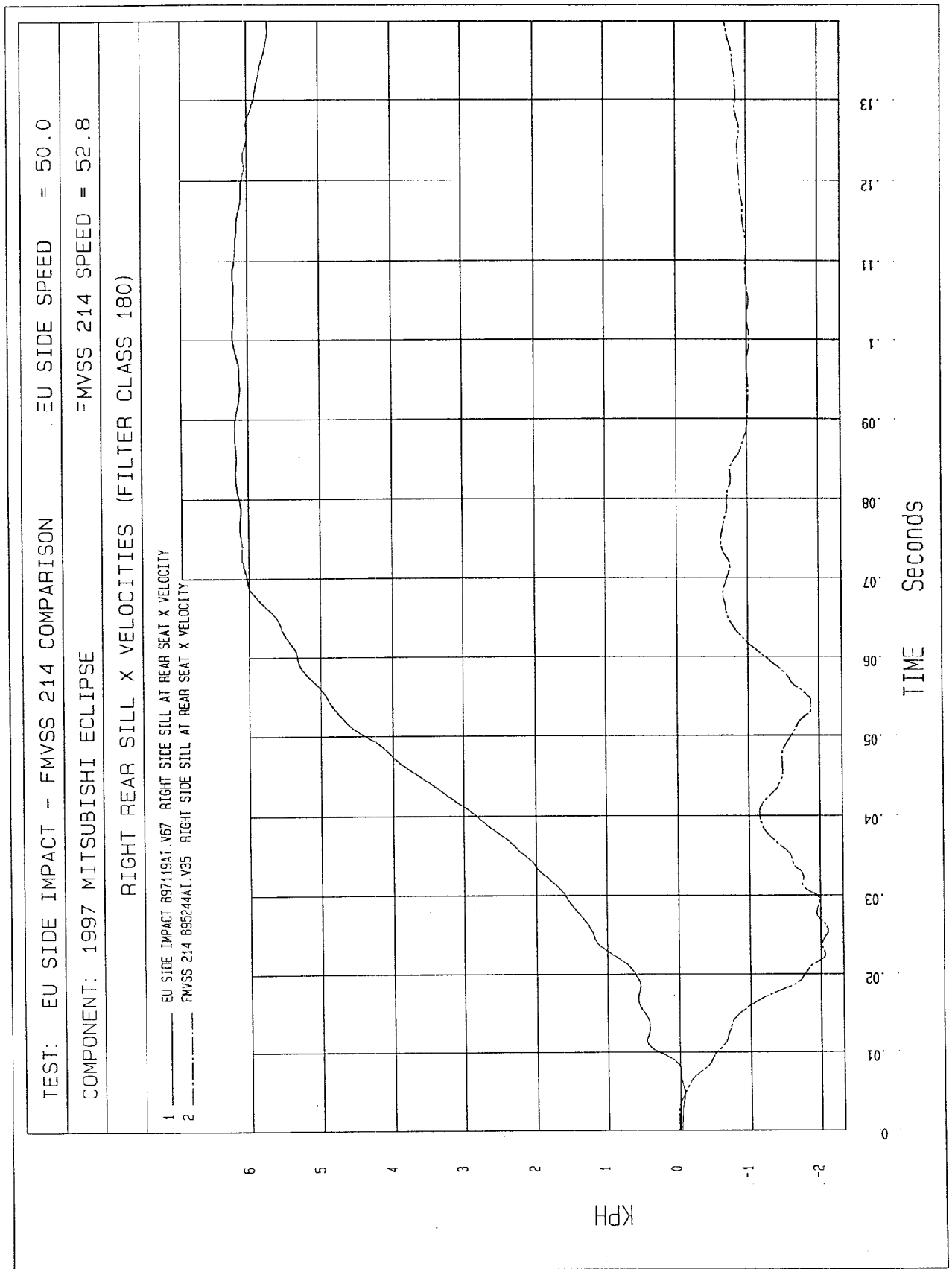


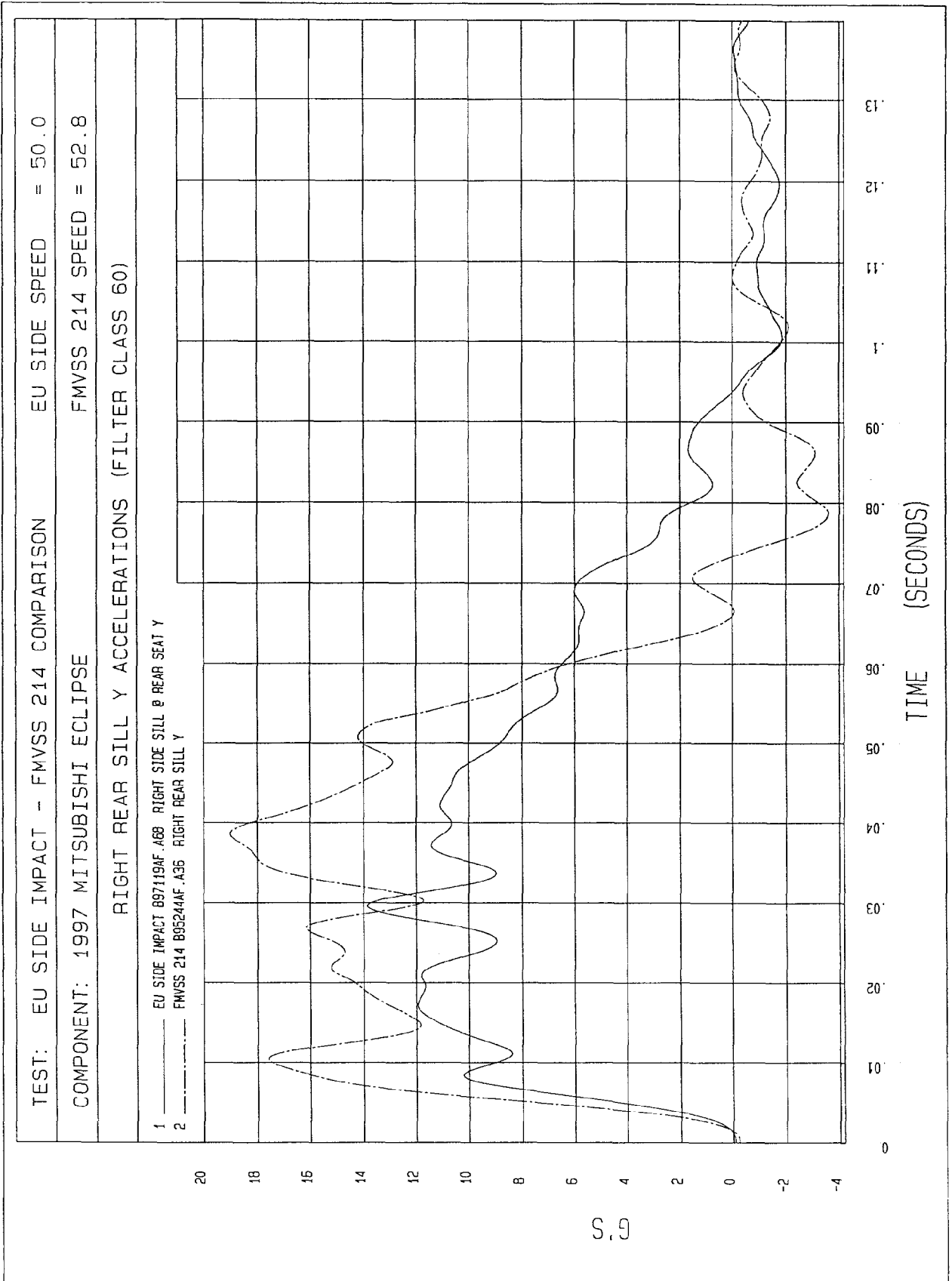


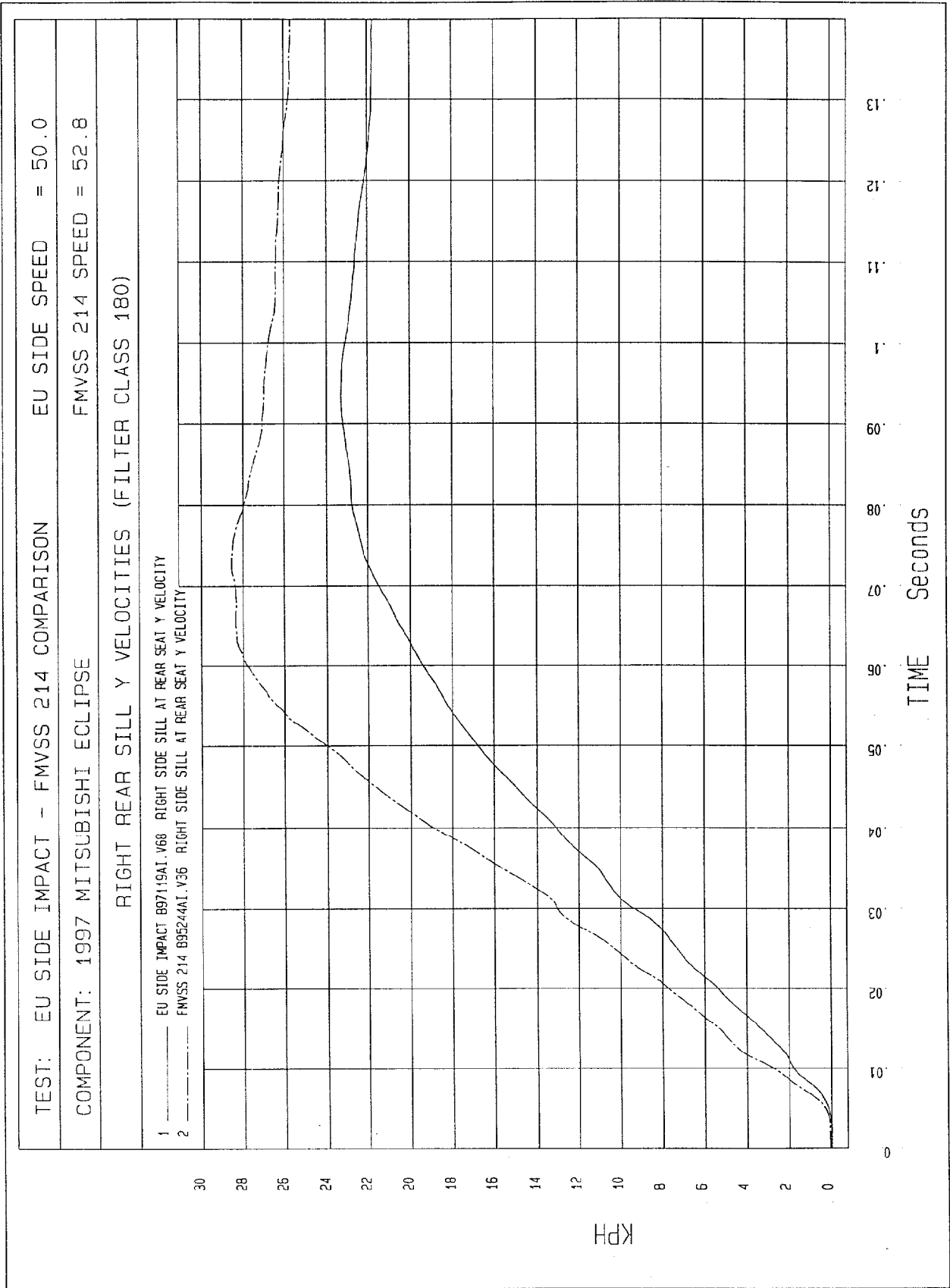


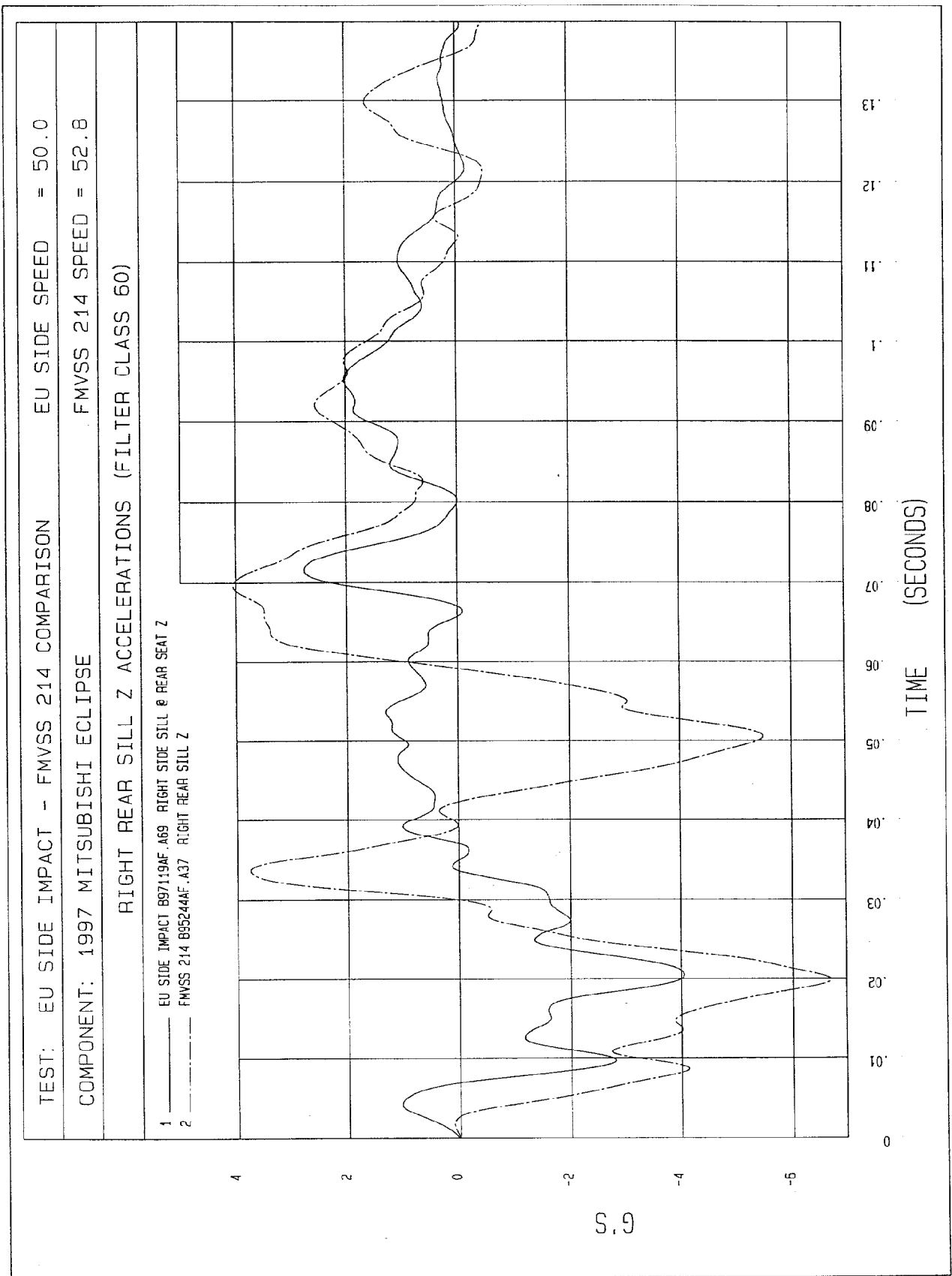


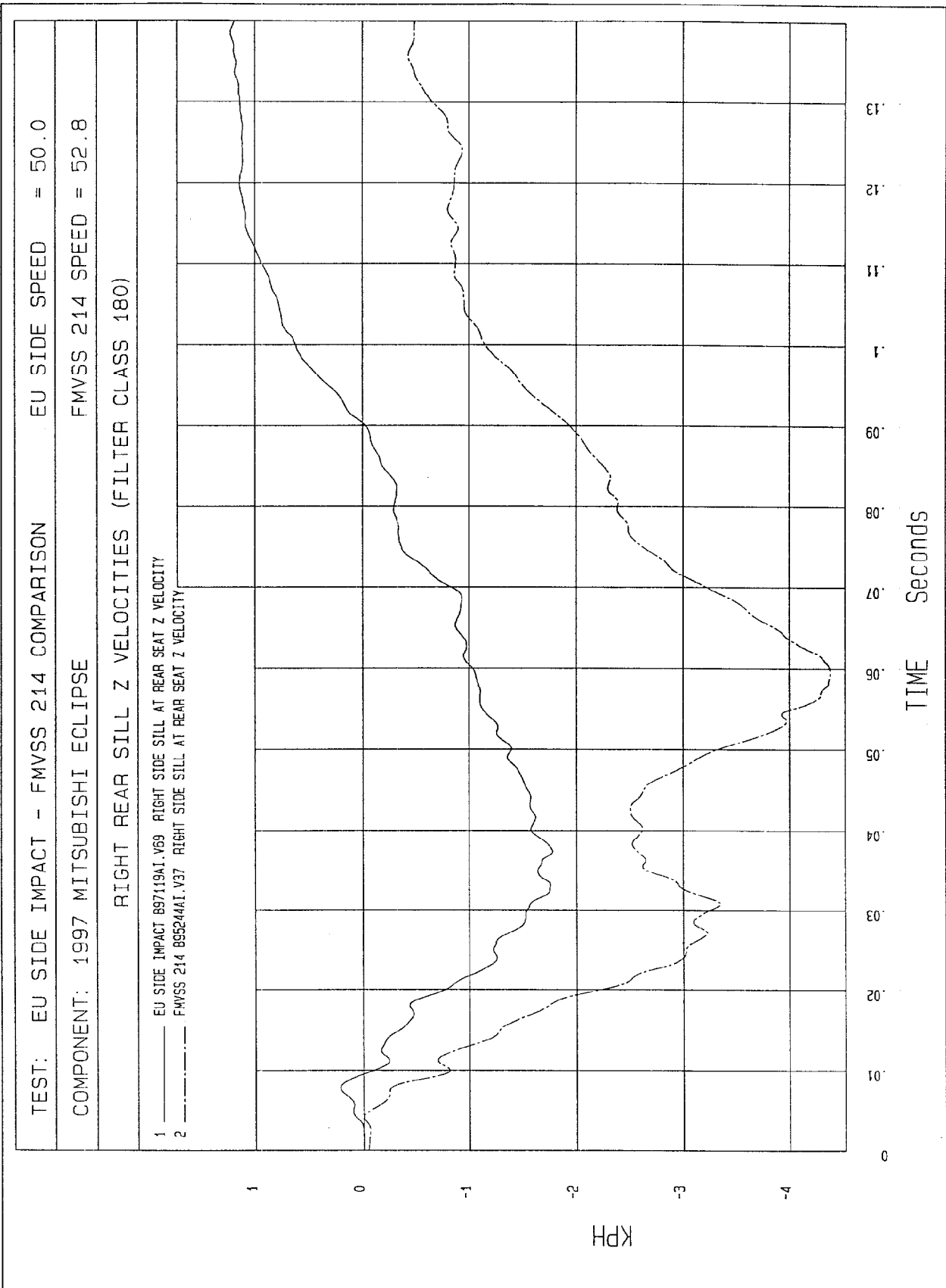


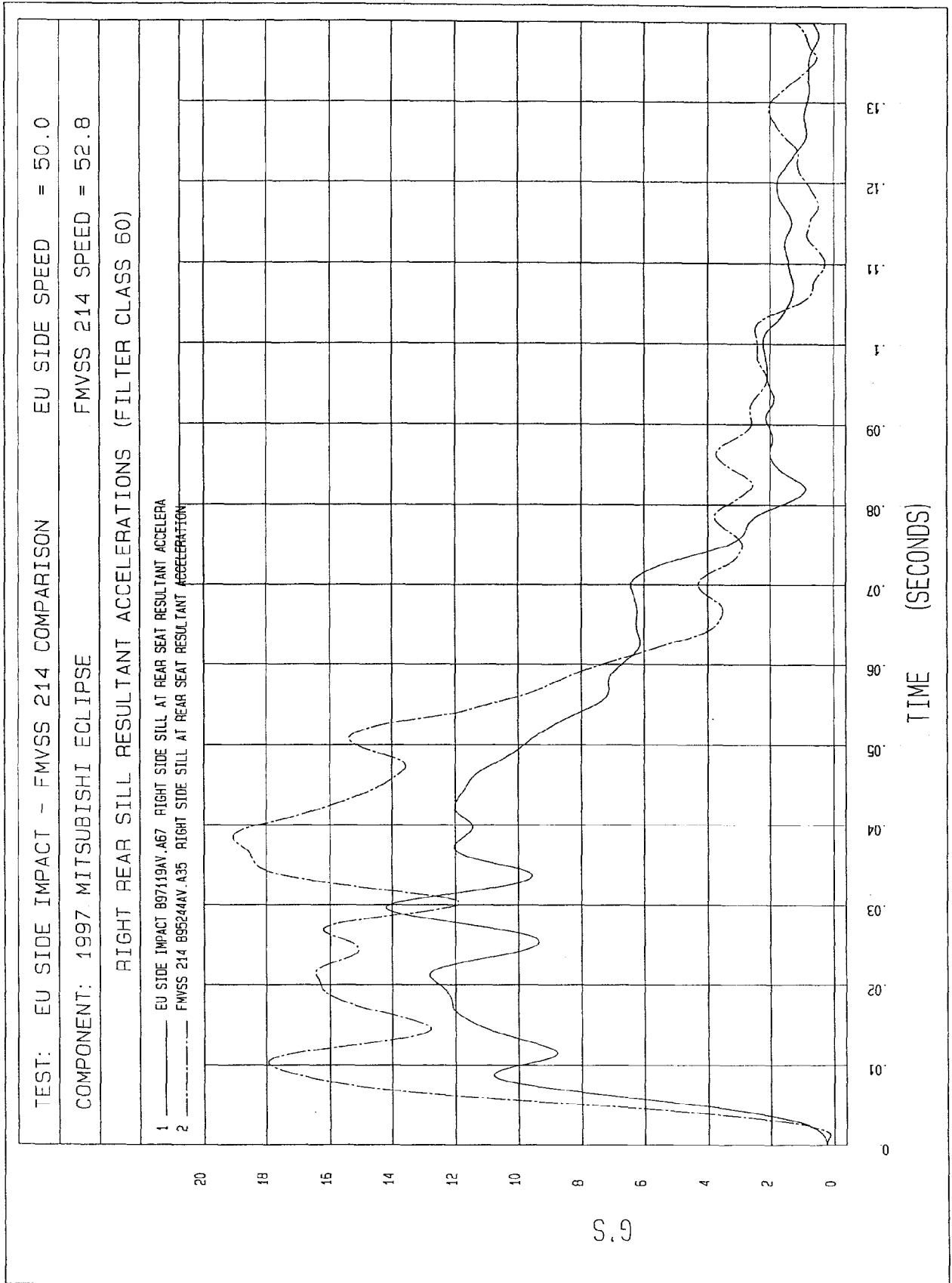


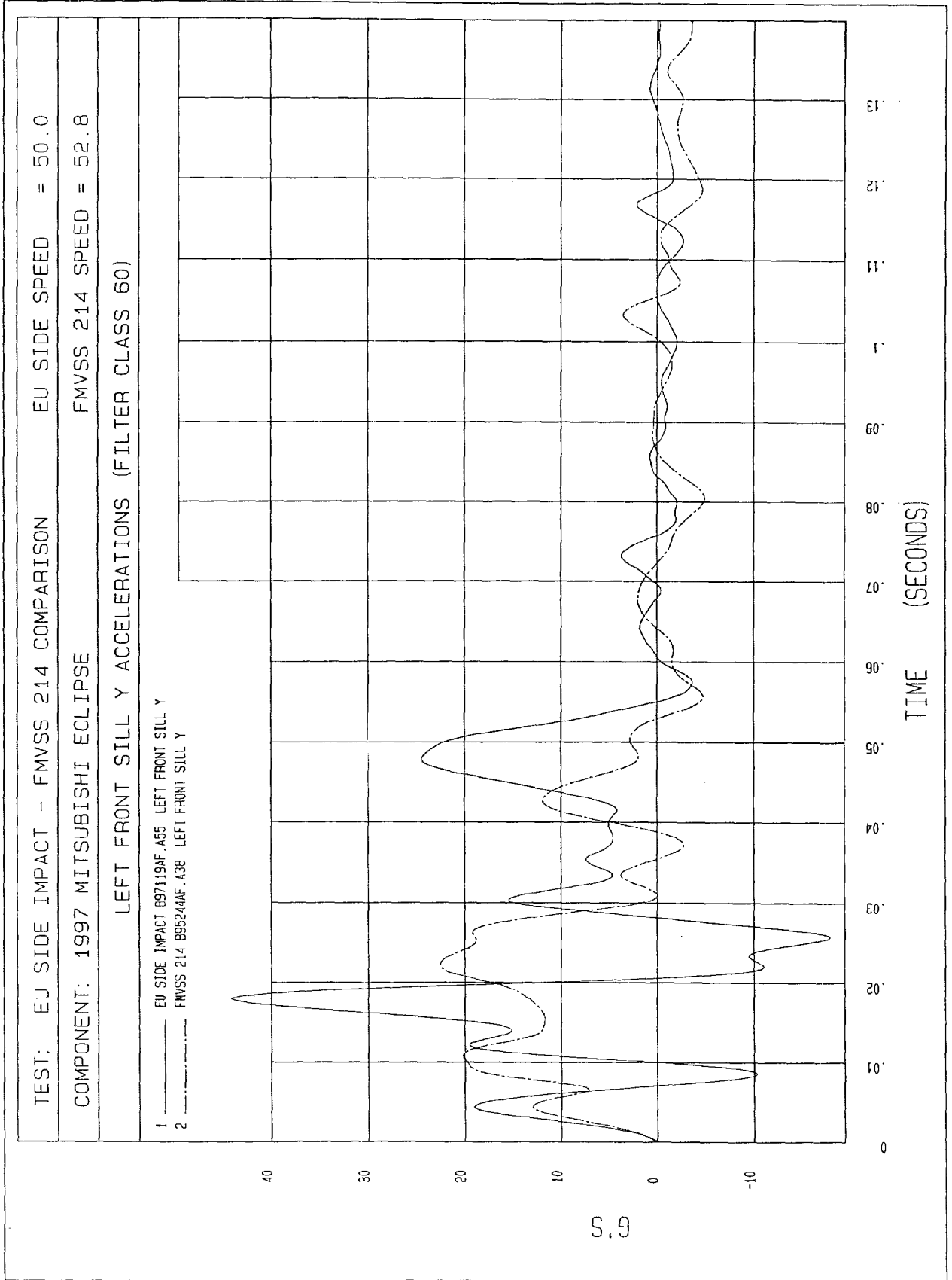


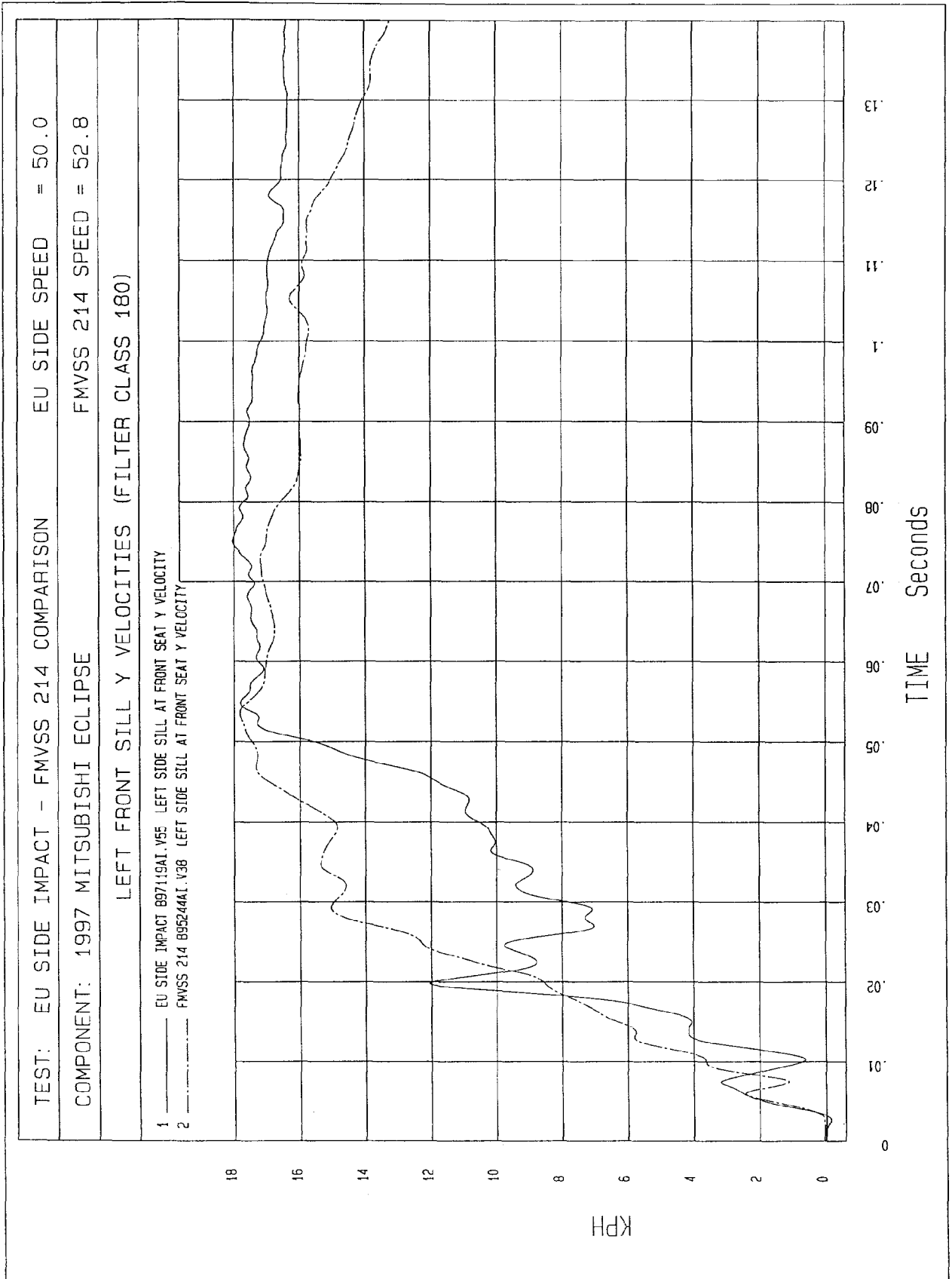


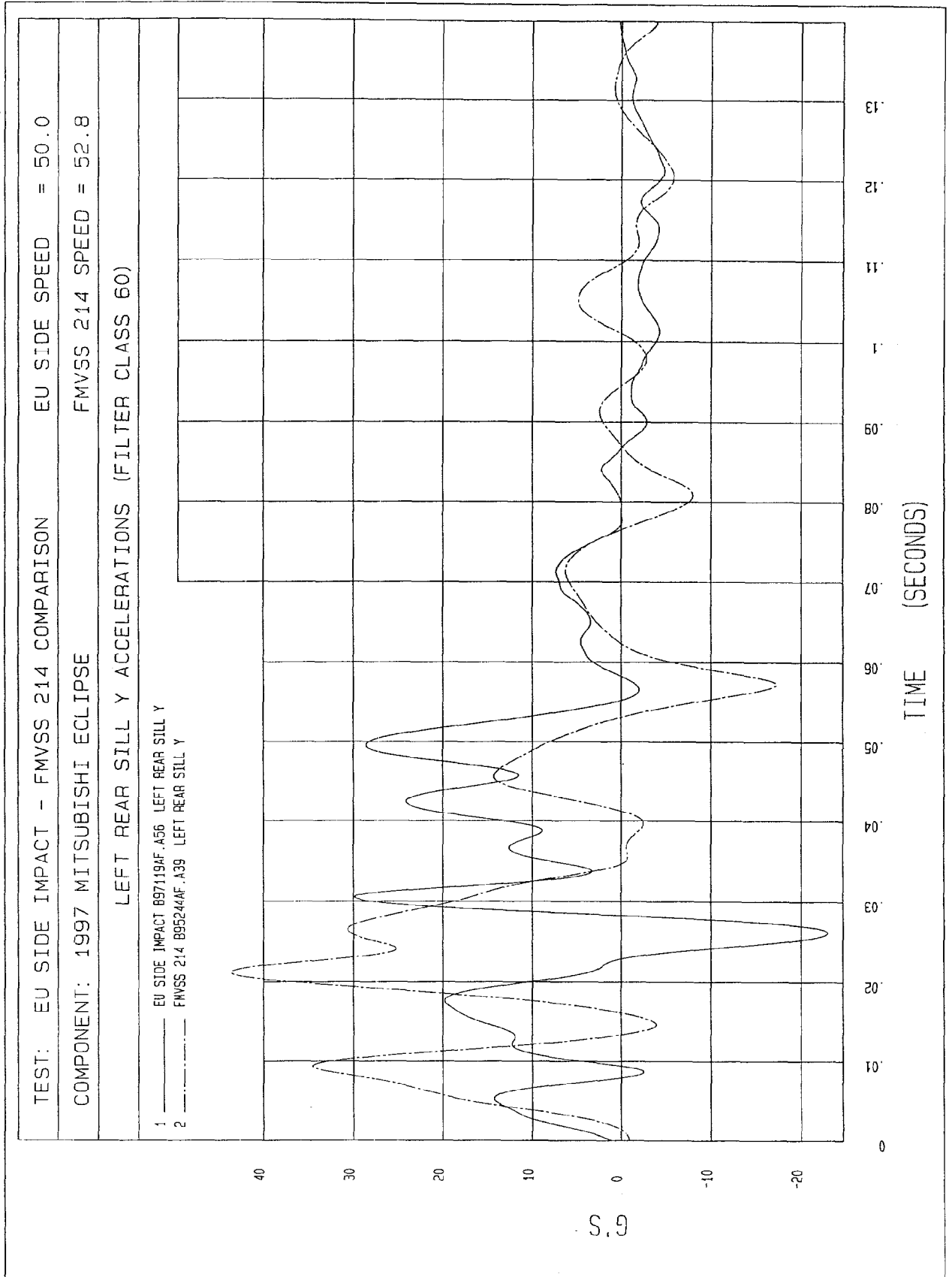


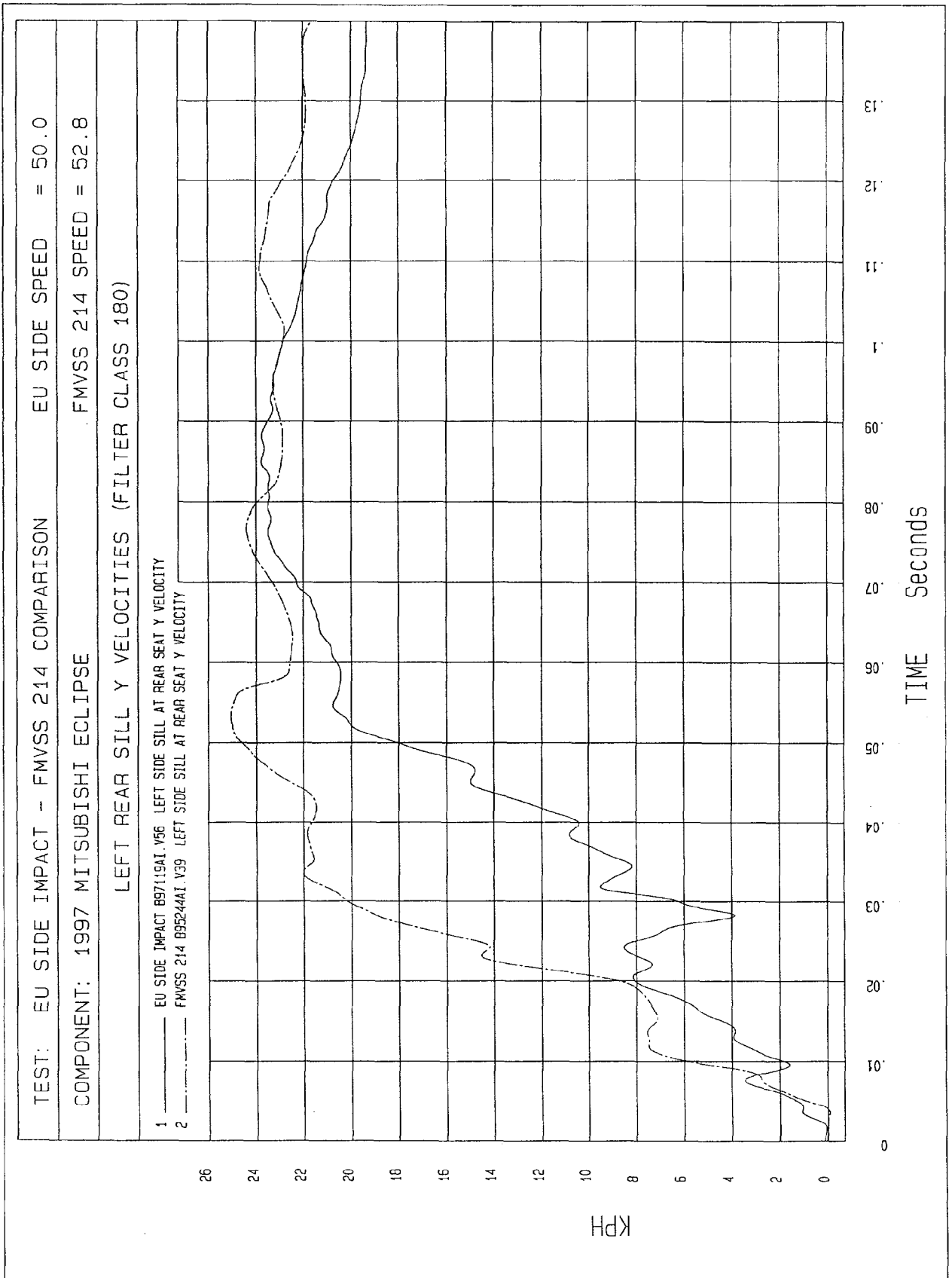


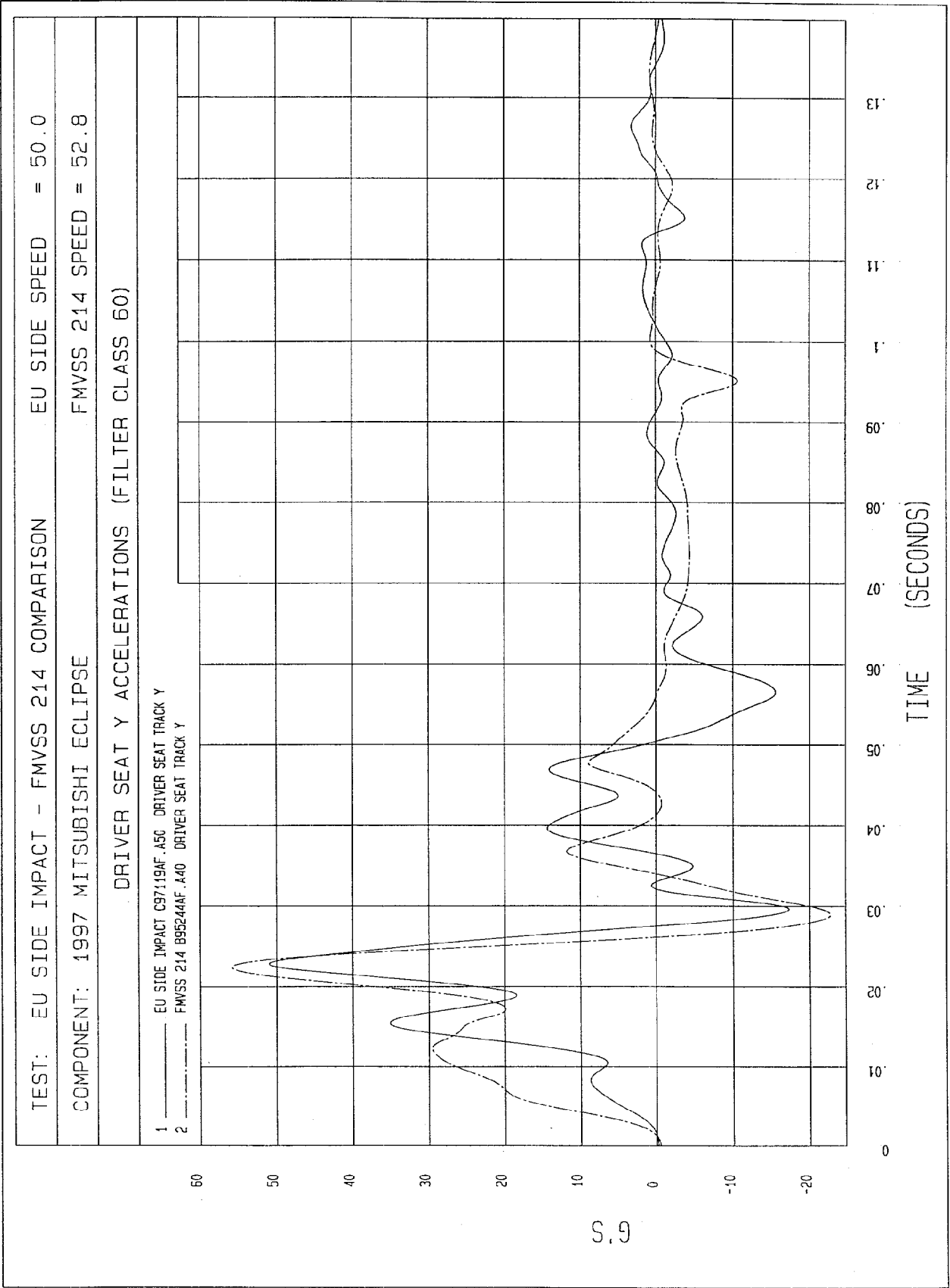


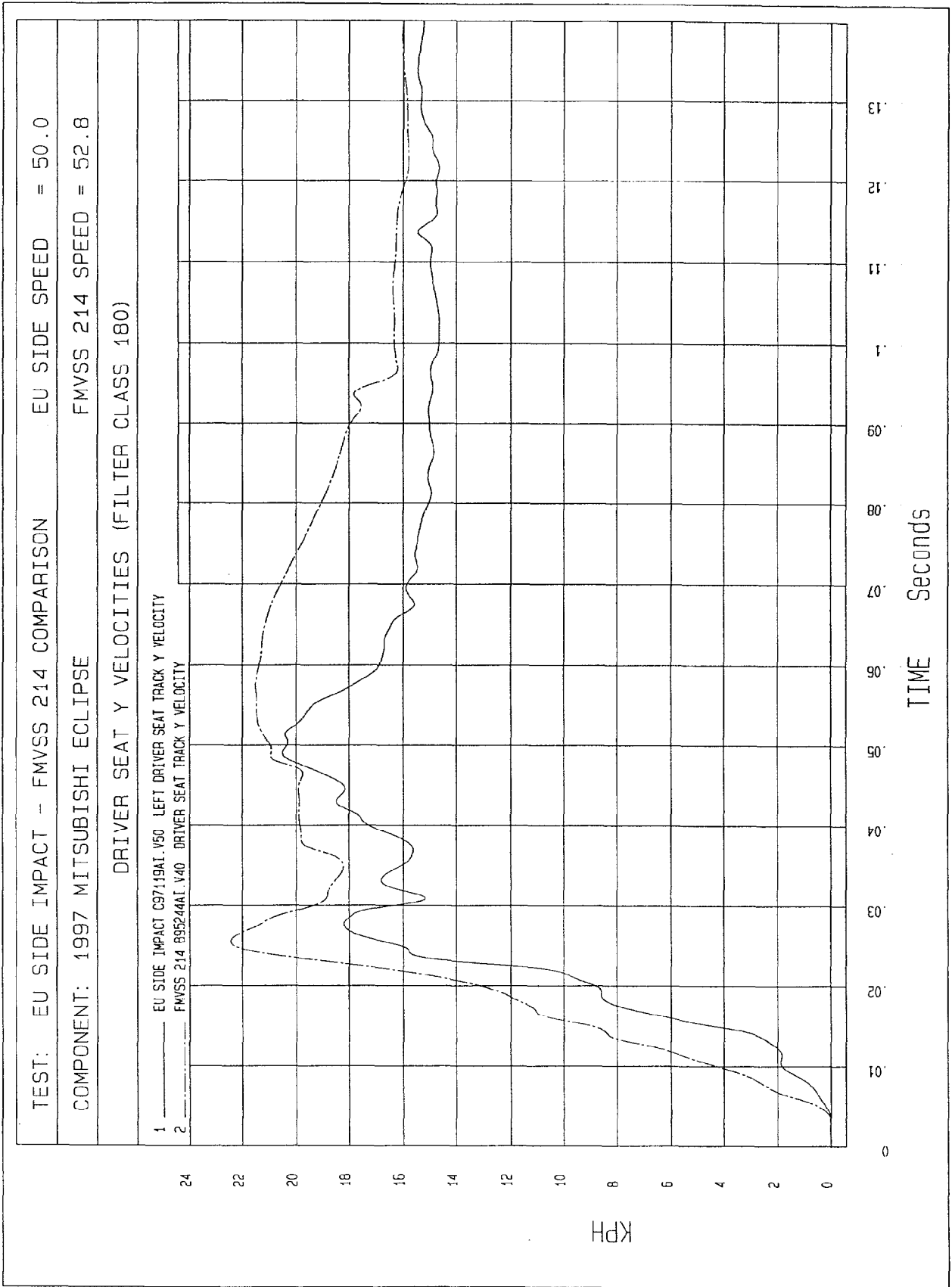










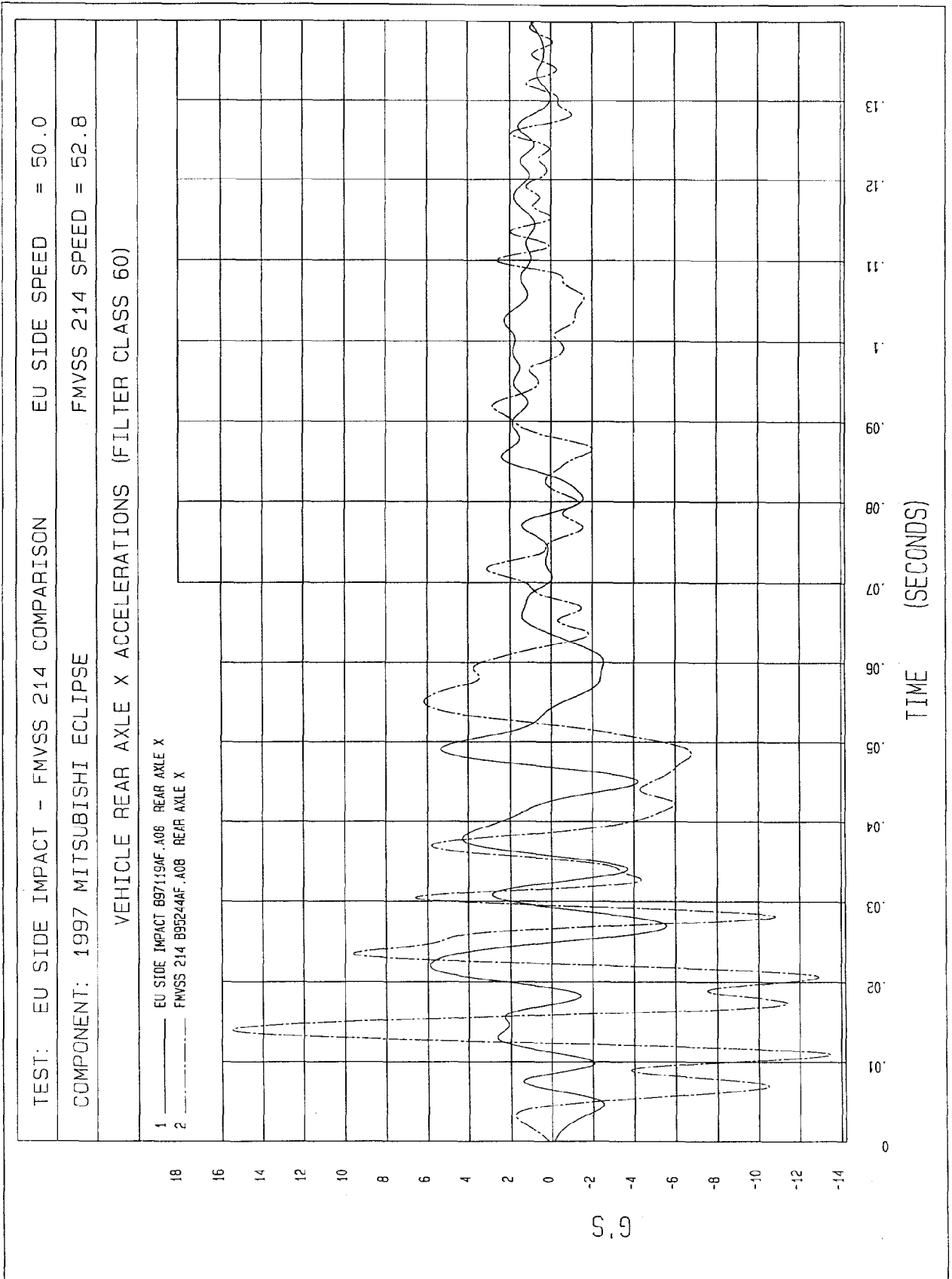


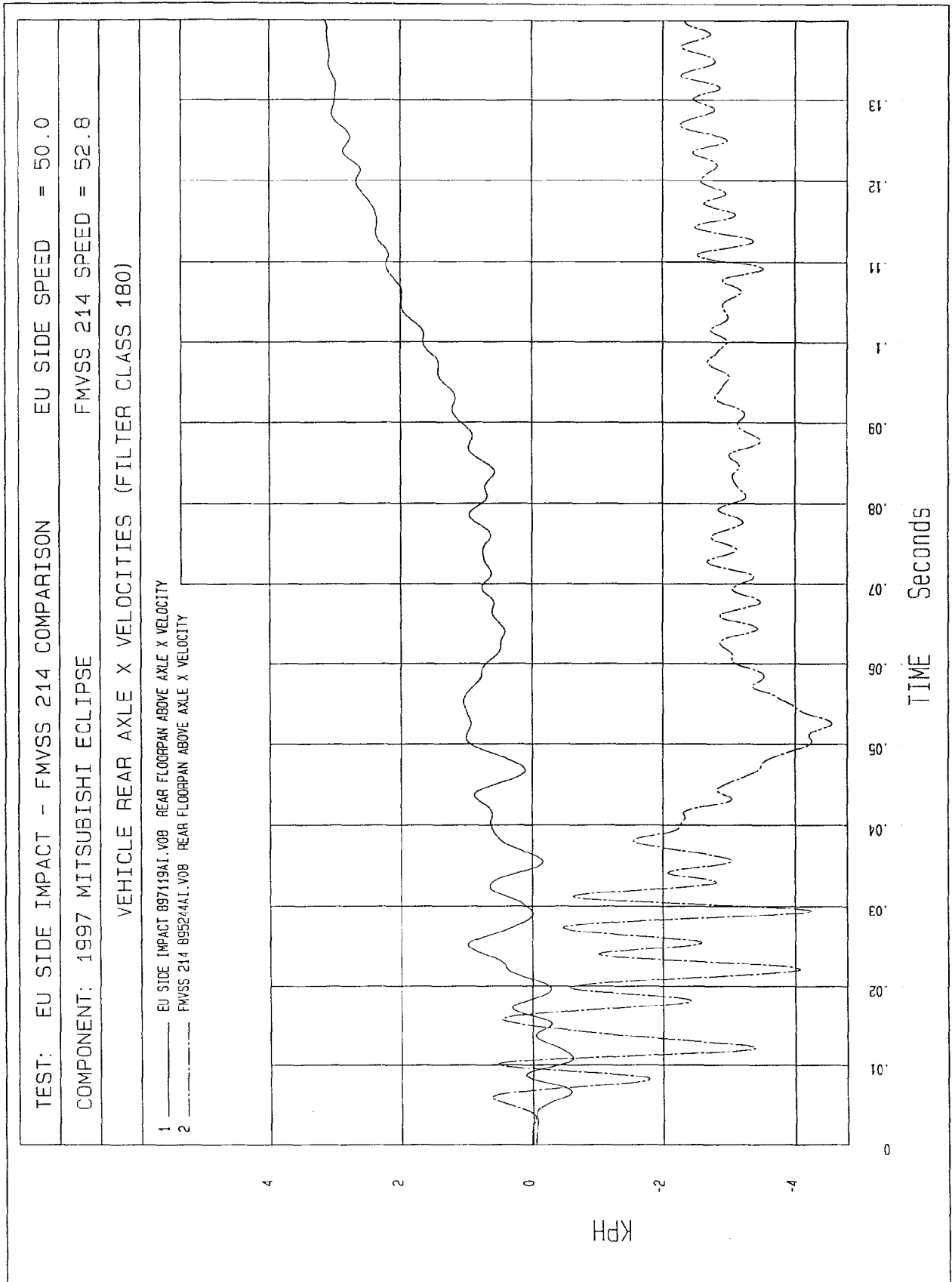
VEHICLE CG X ACCELERATIONS VS. TIME

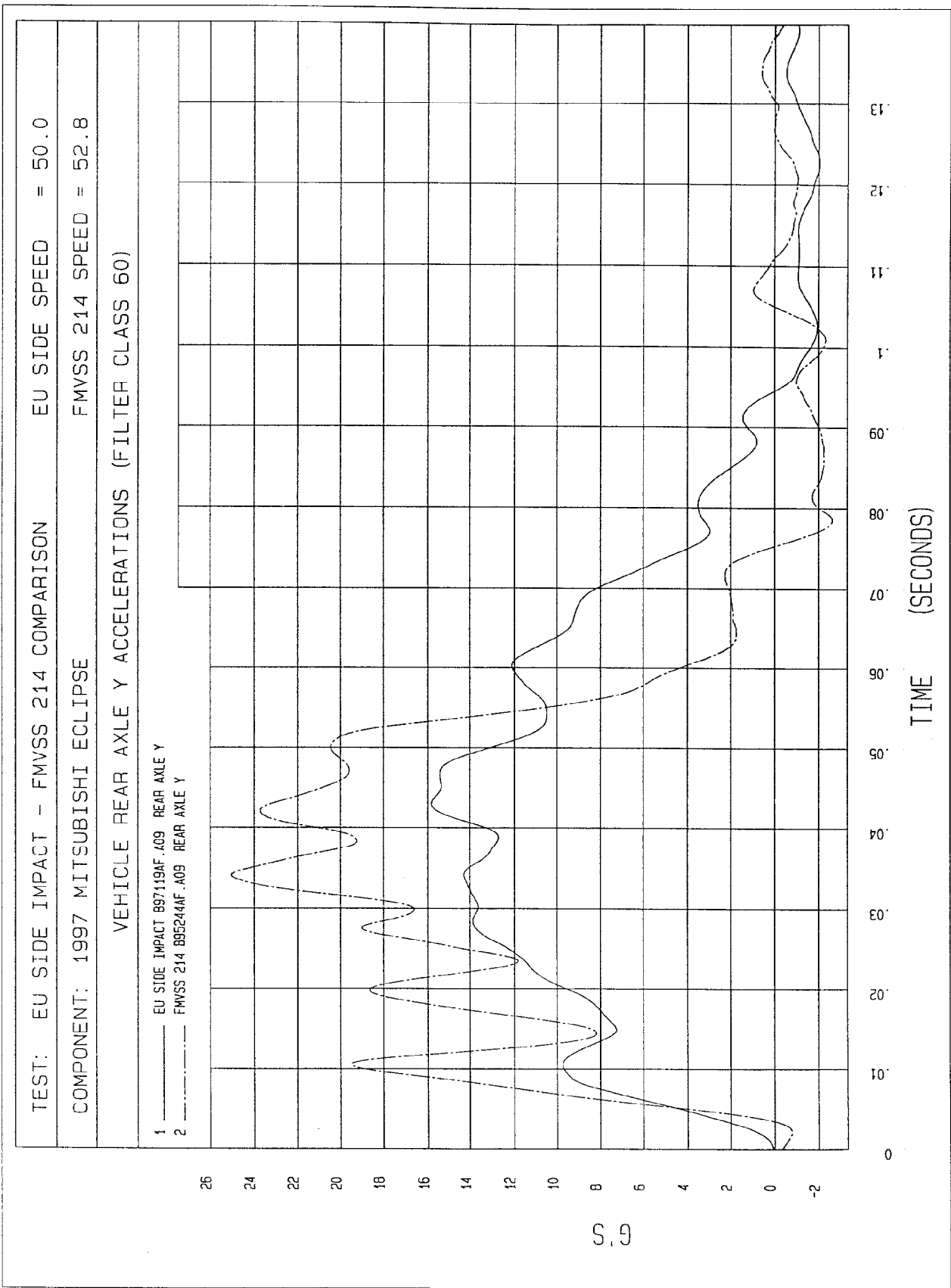
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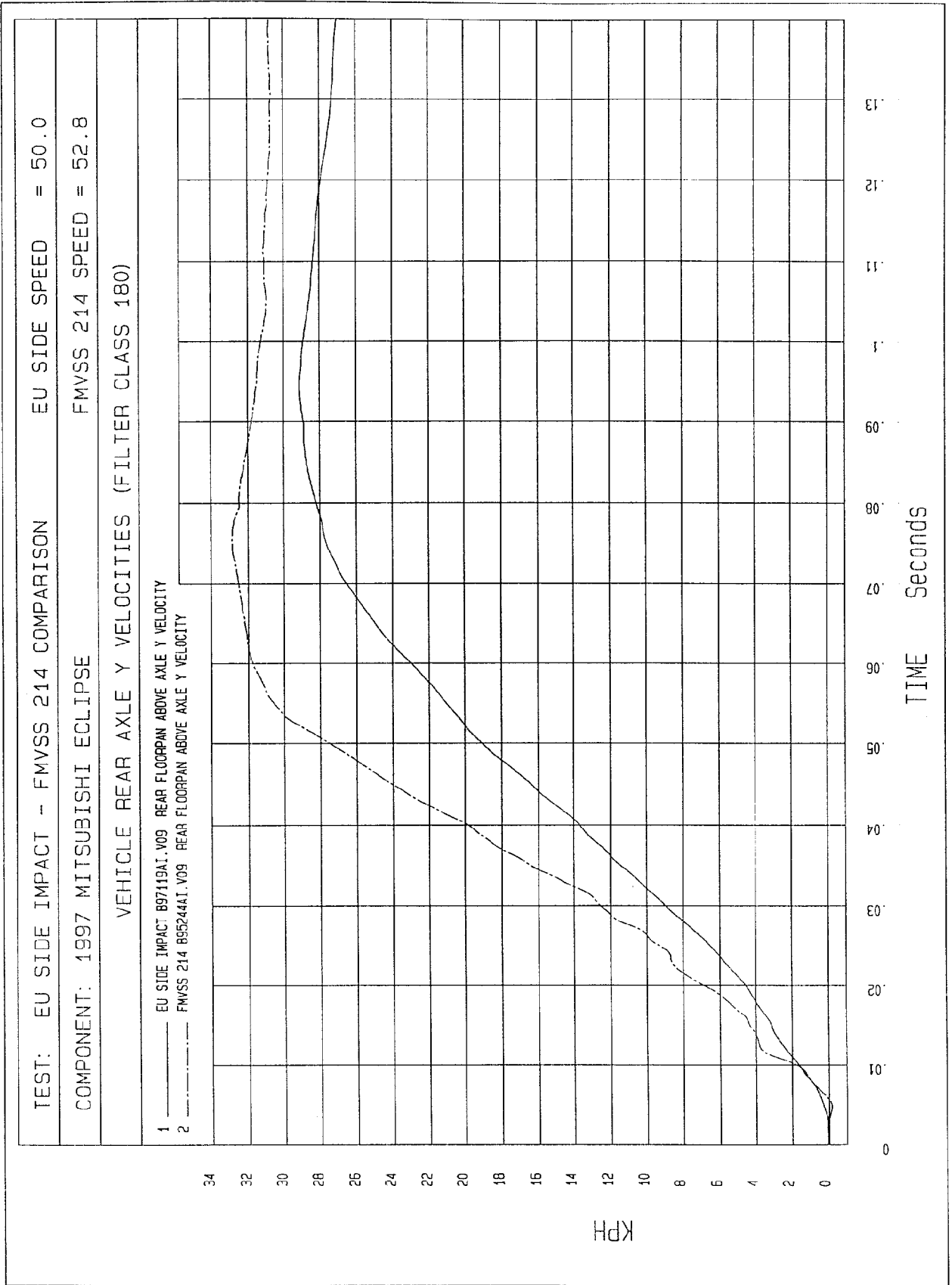
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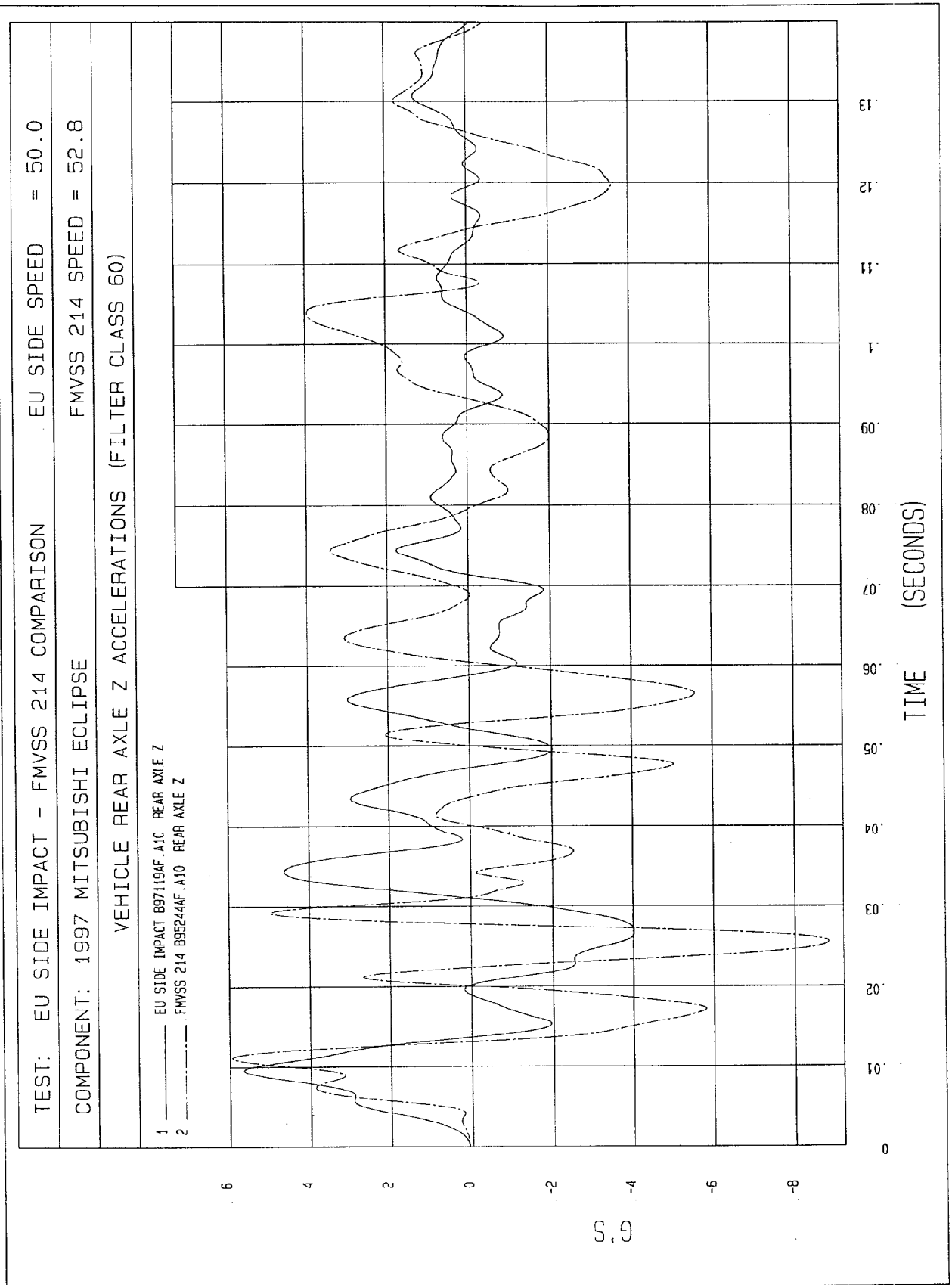
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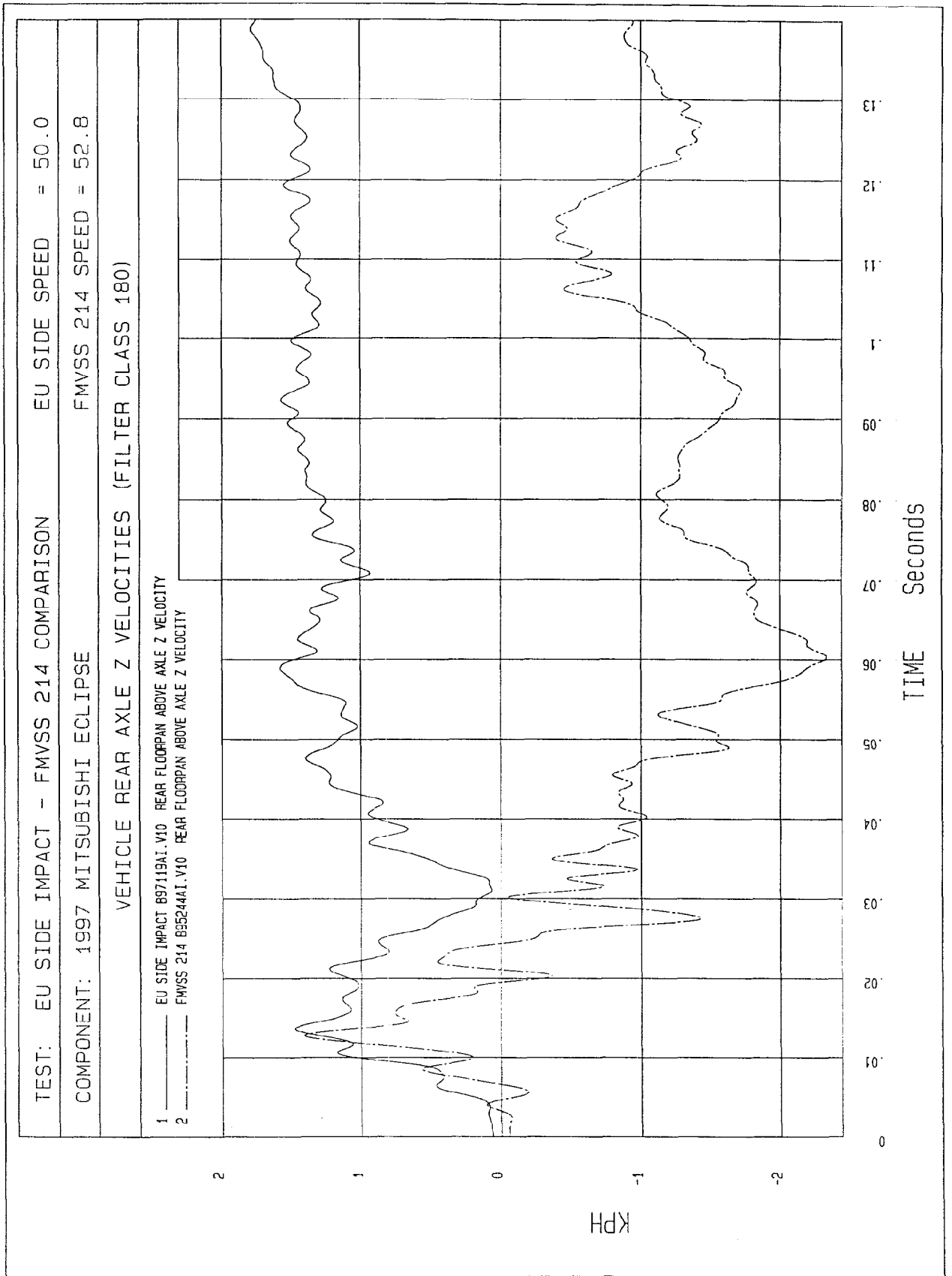


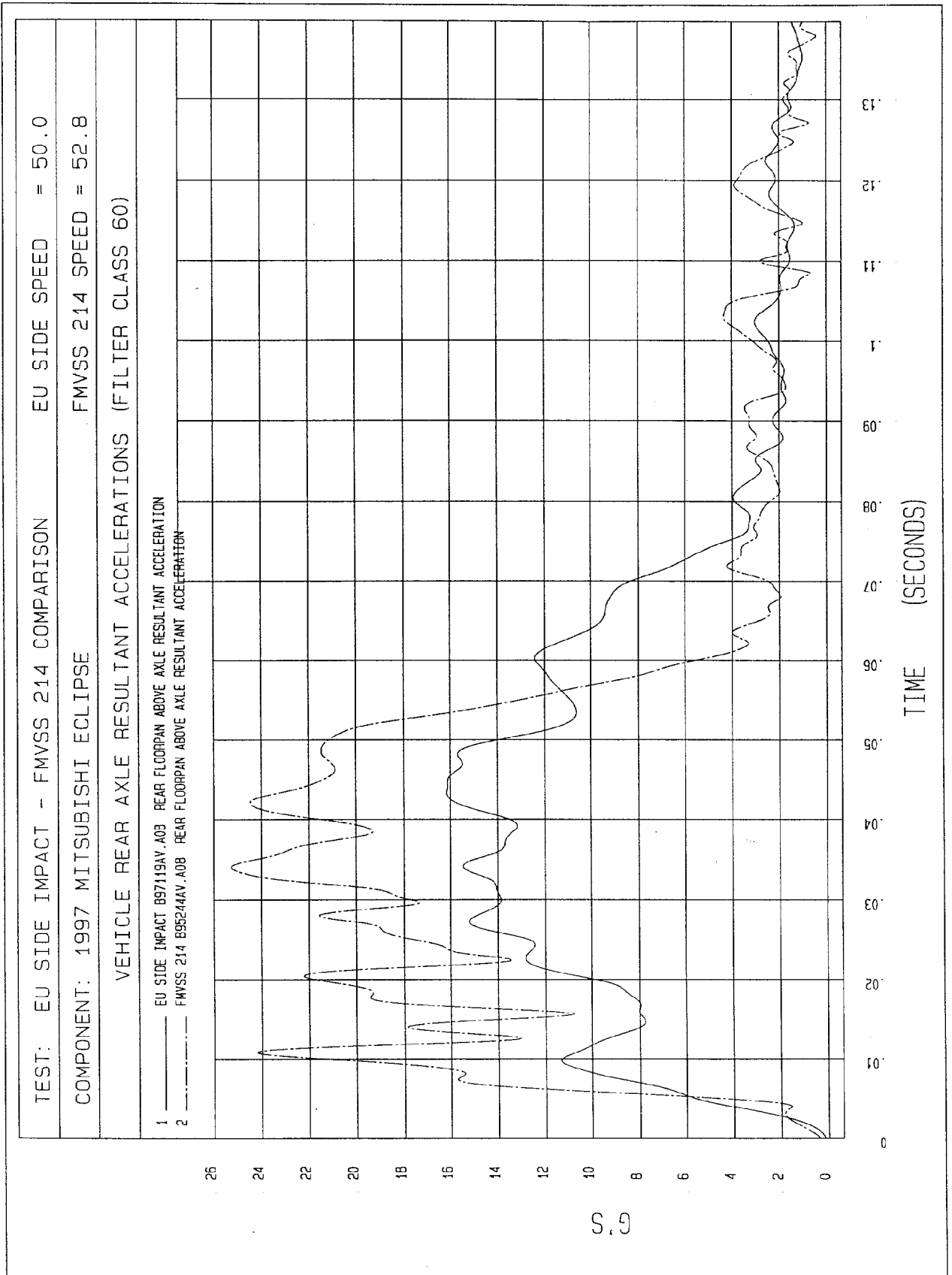


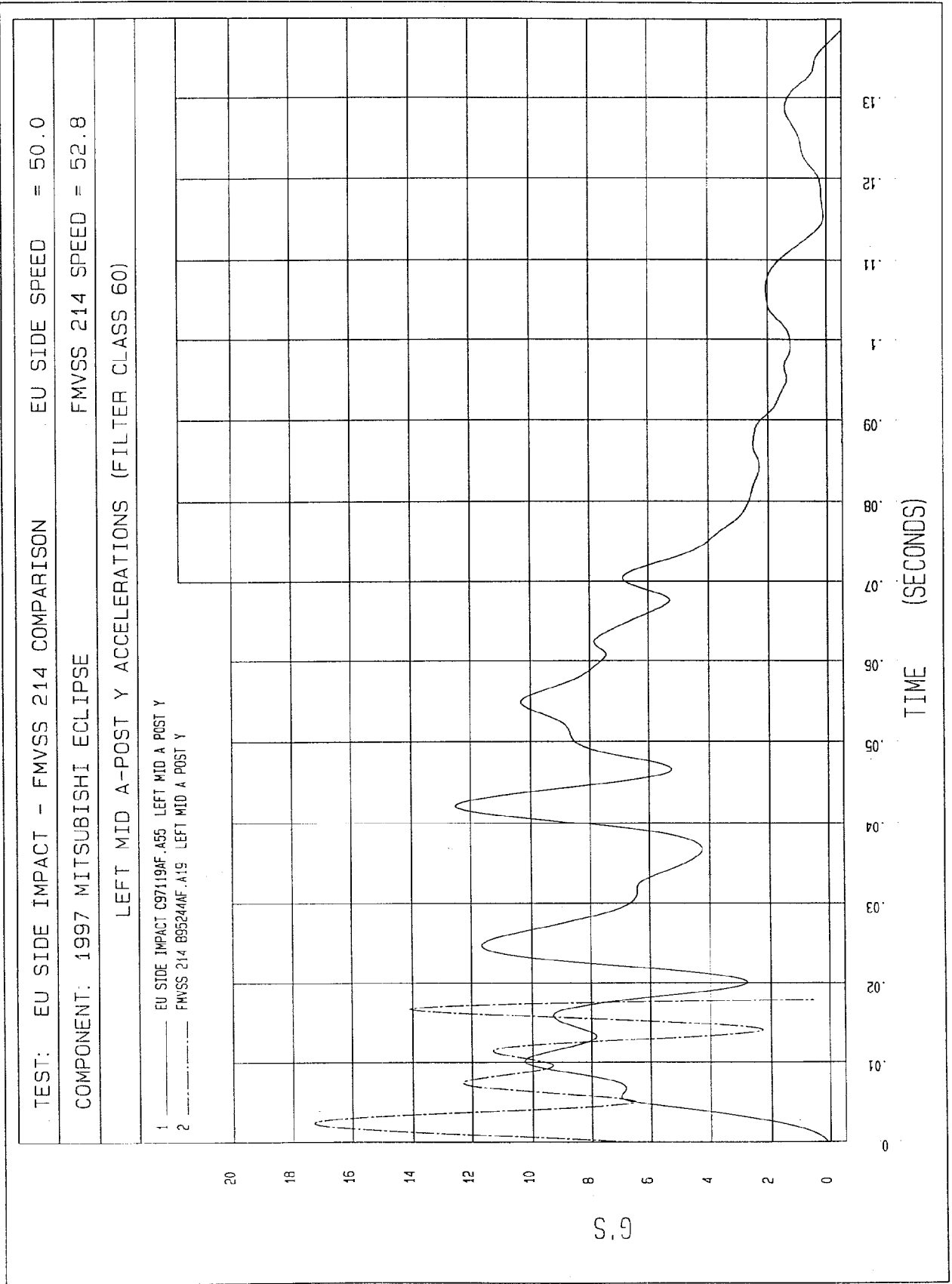


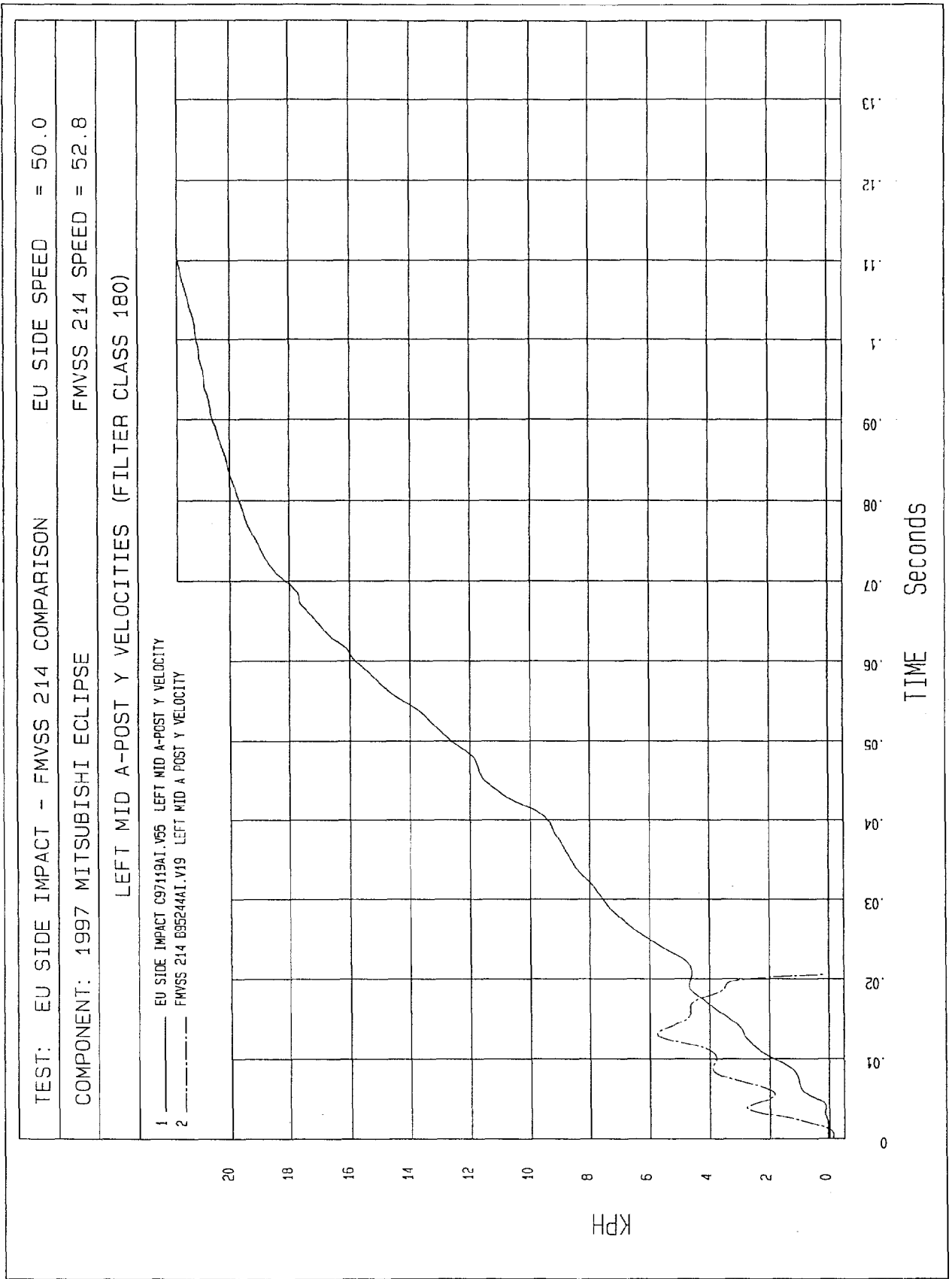


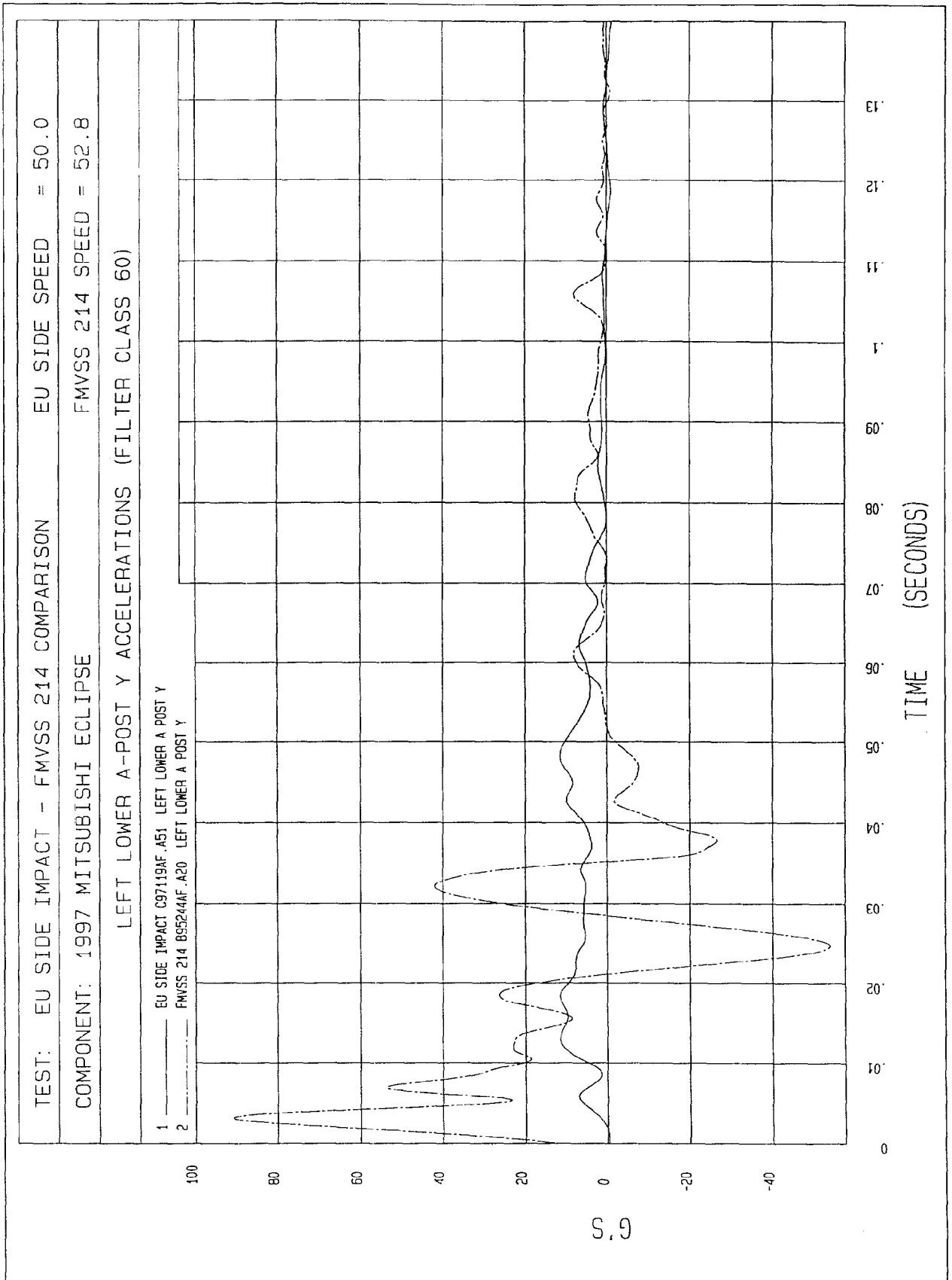


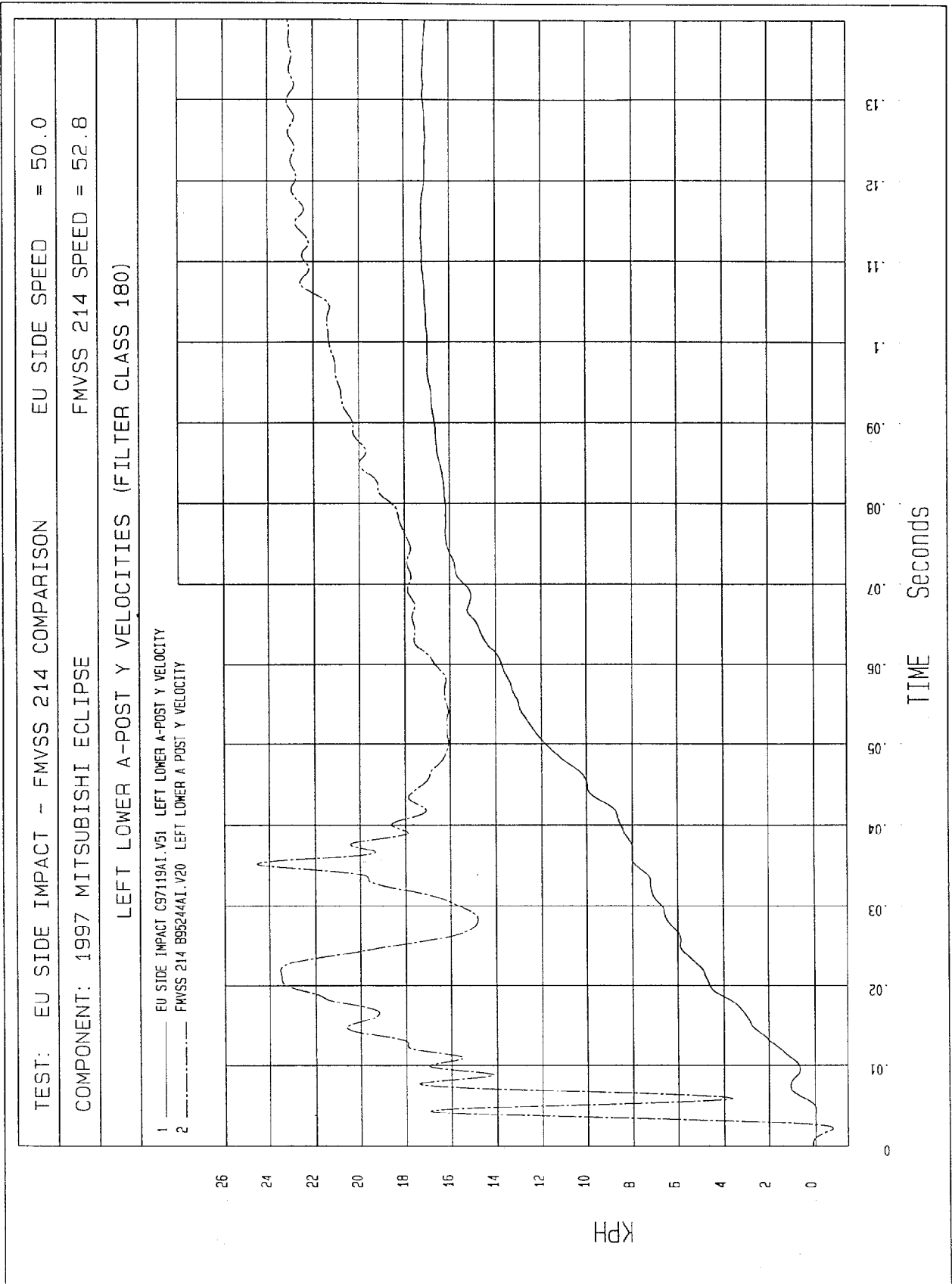


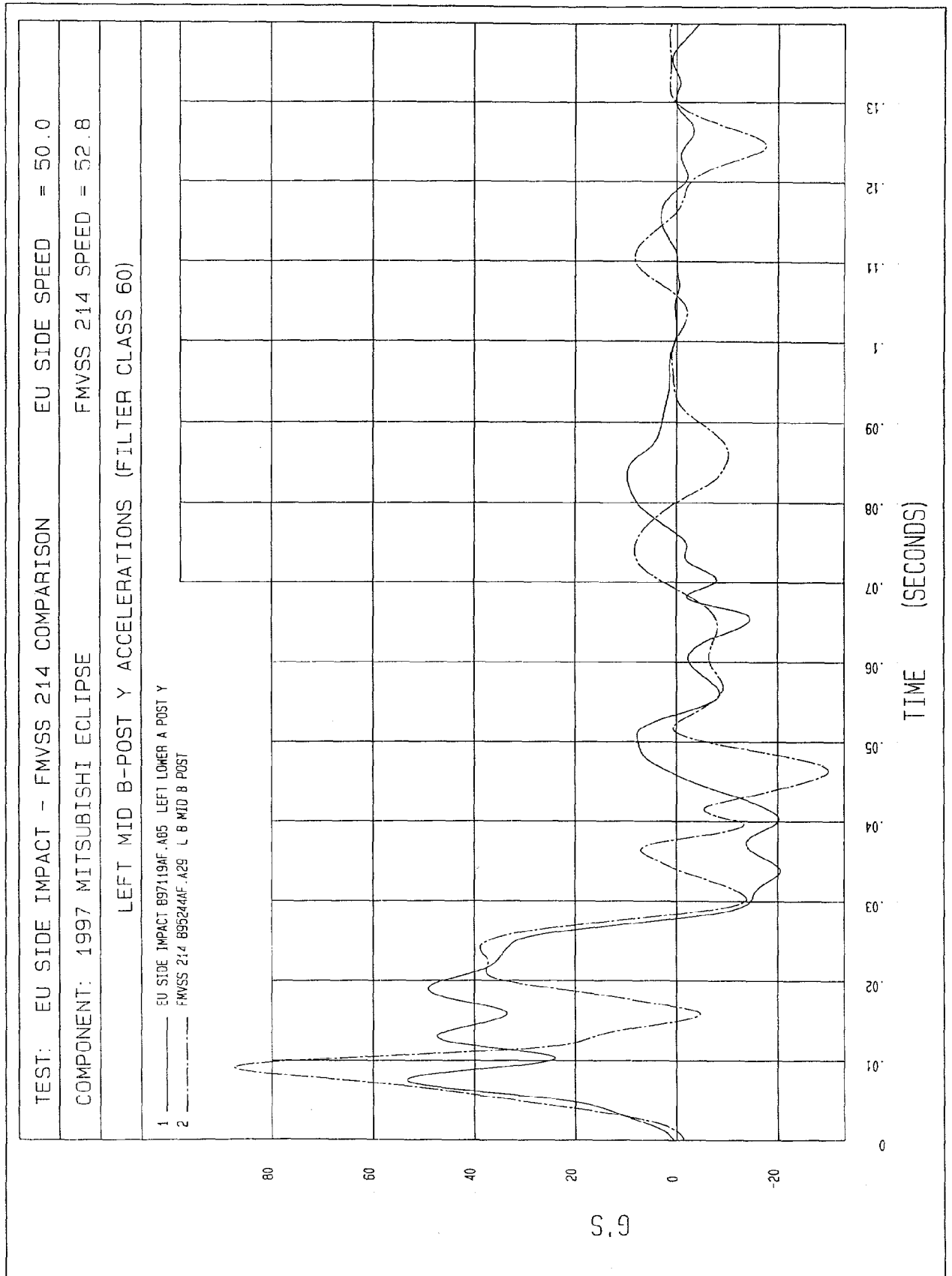


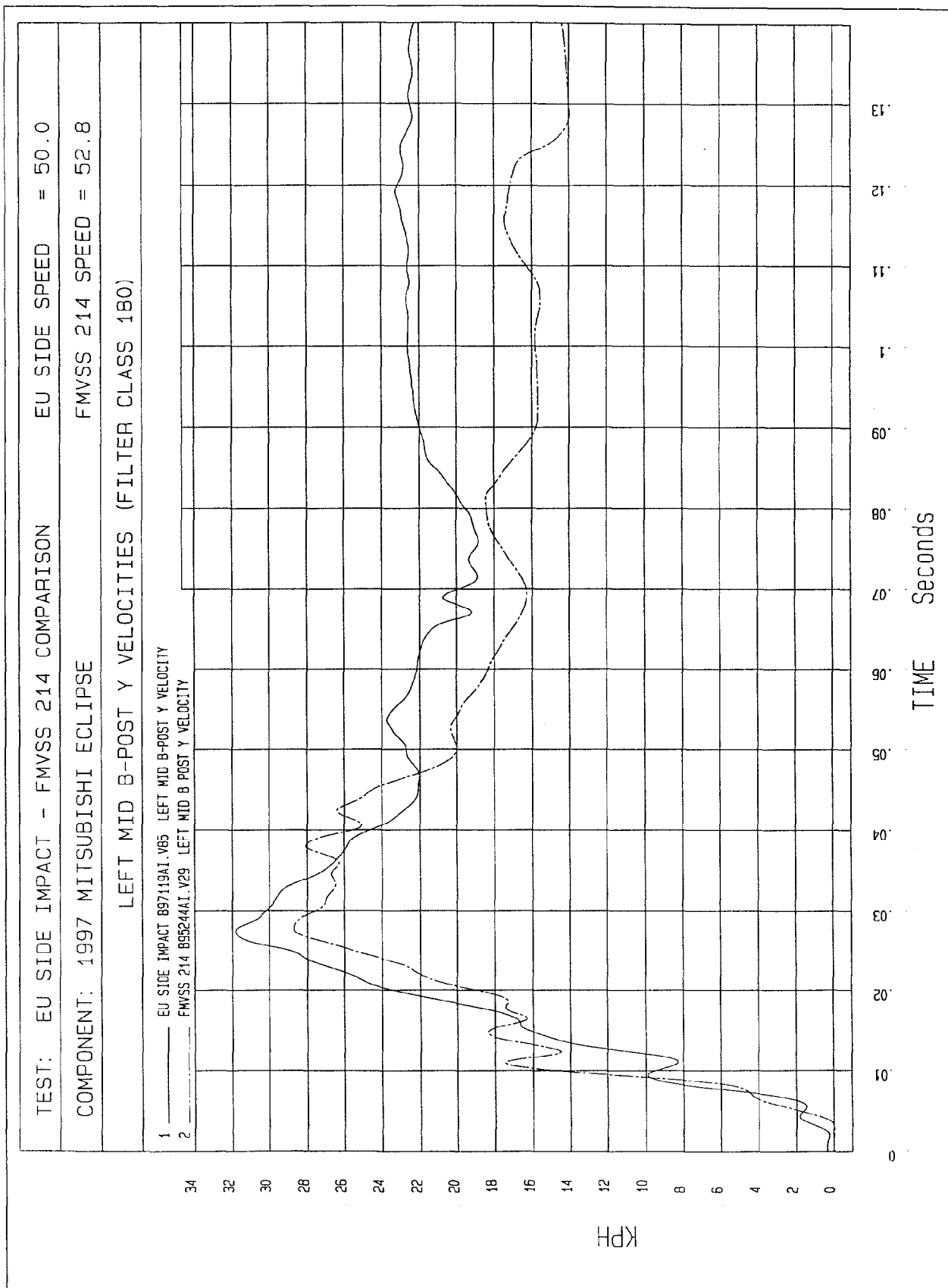


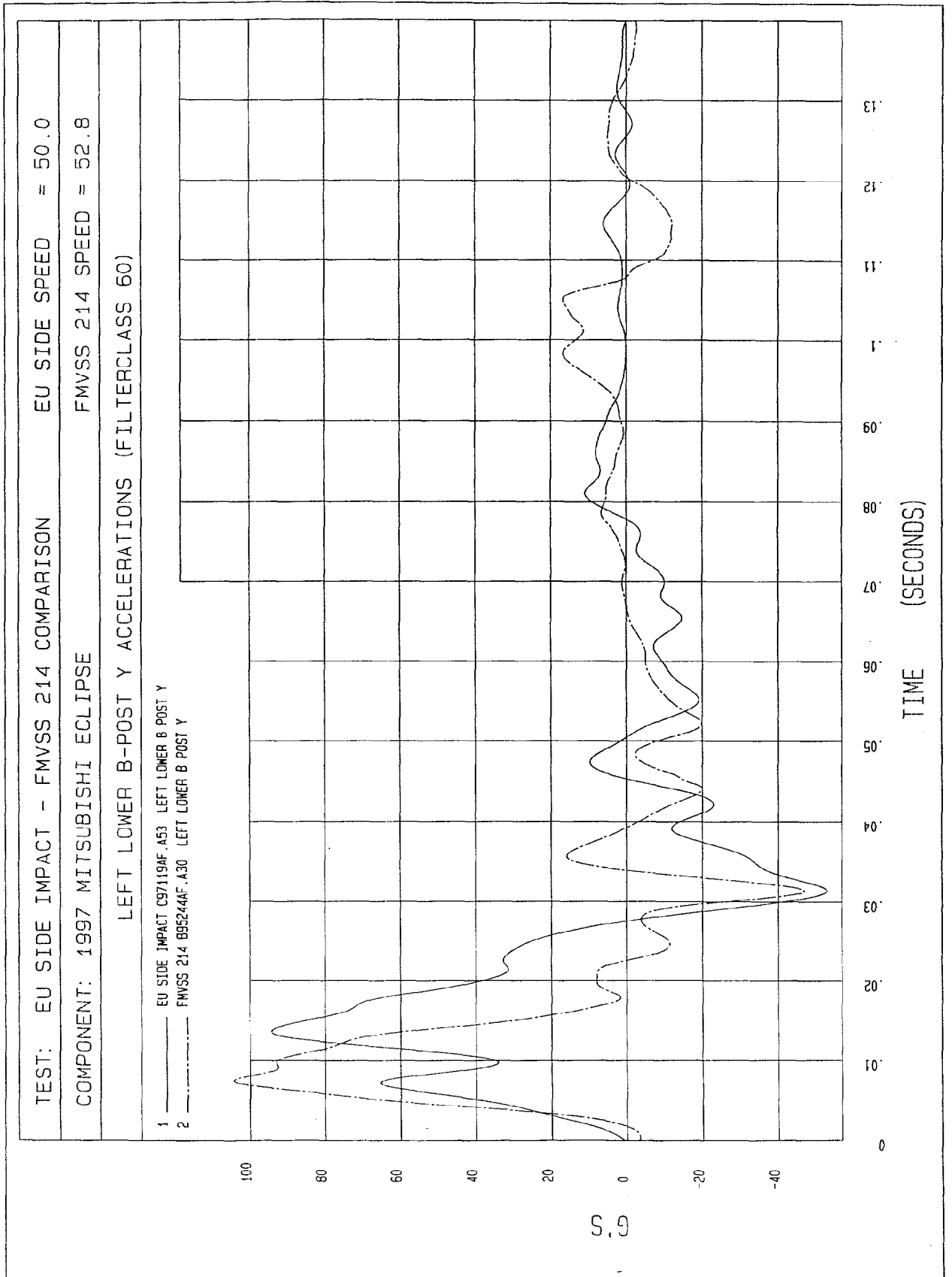


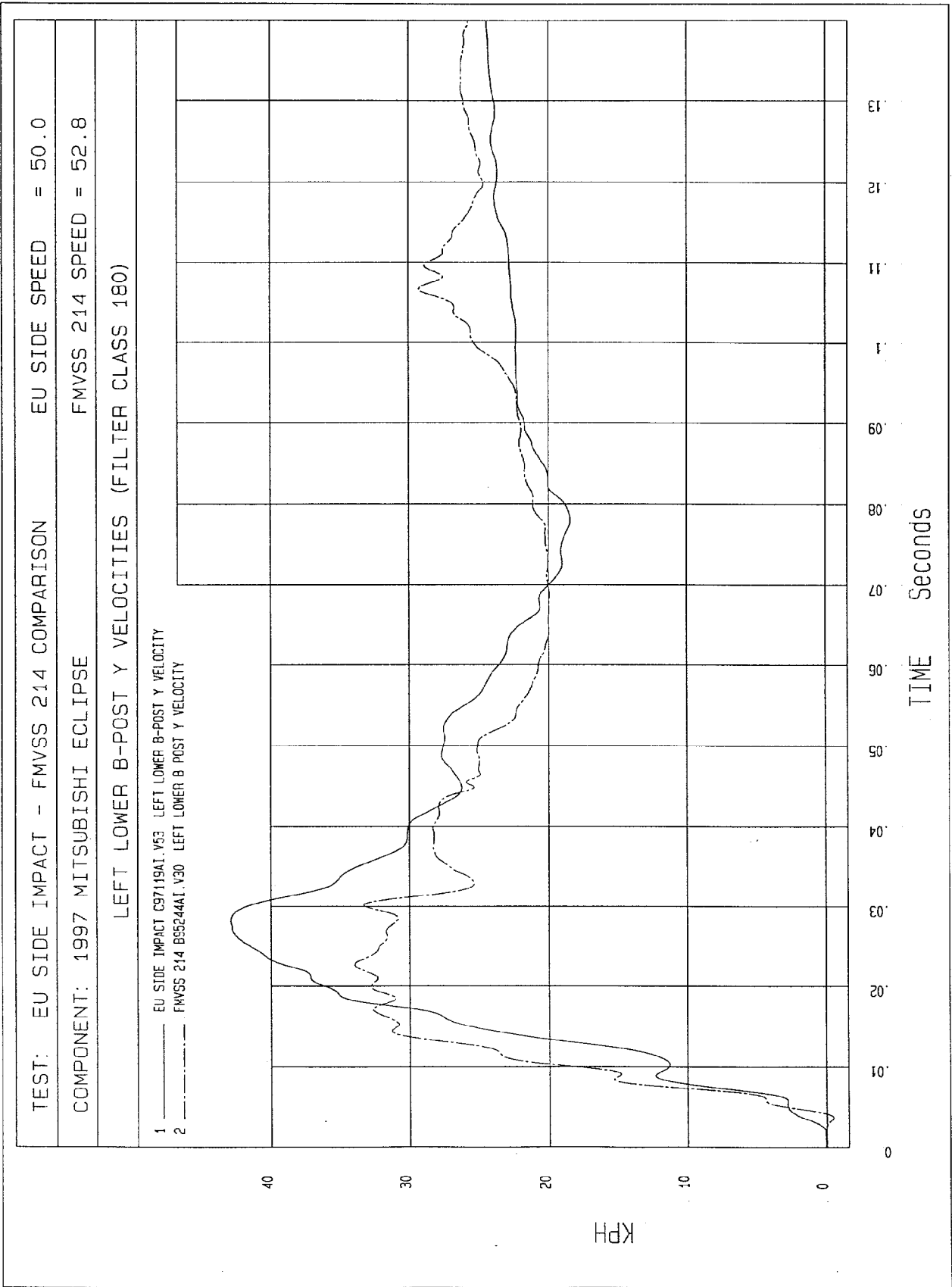




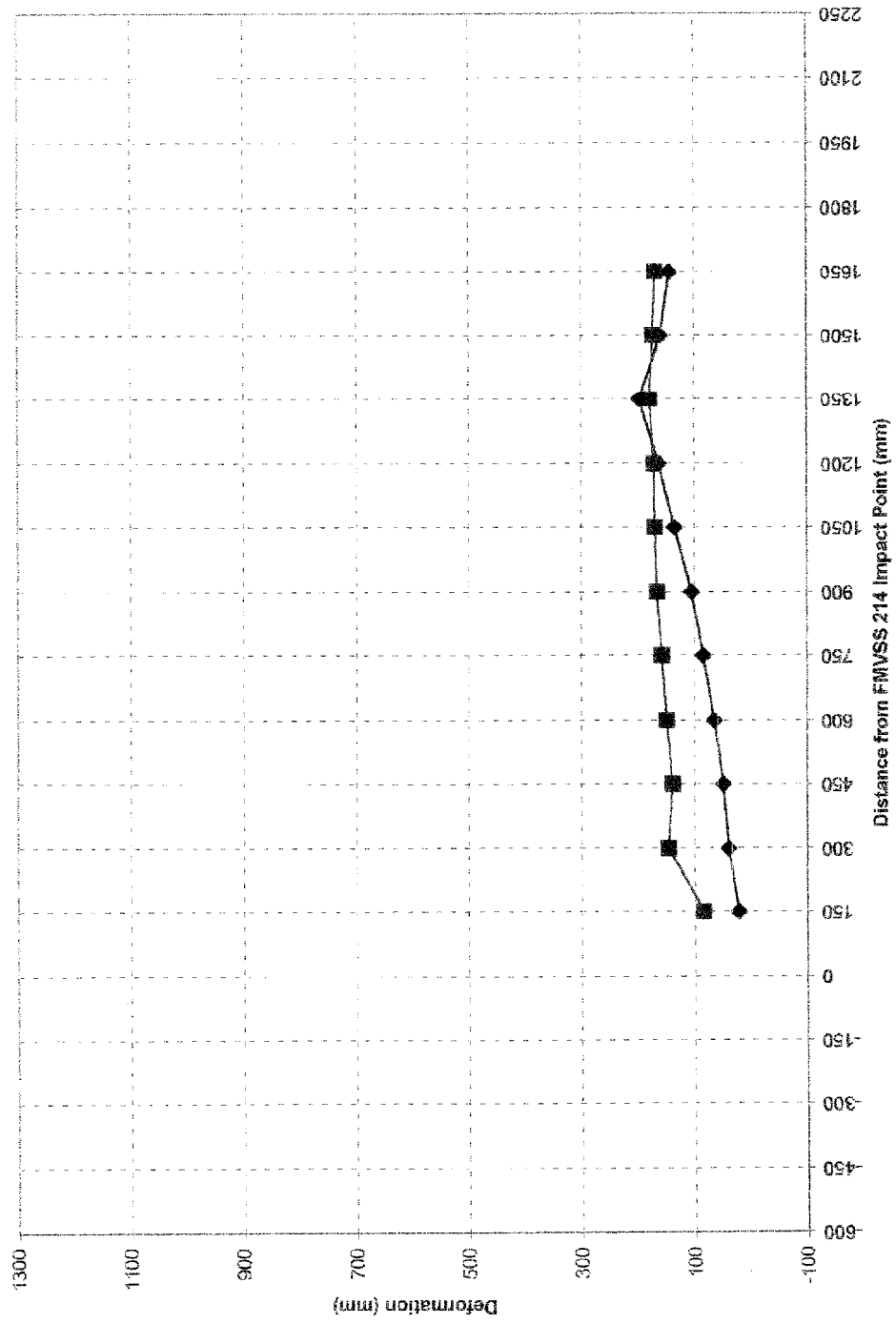




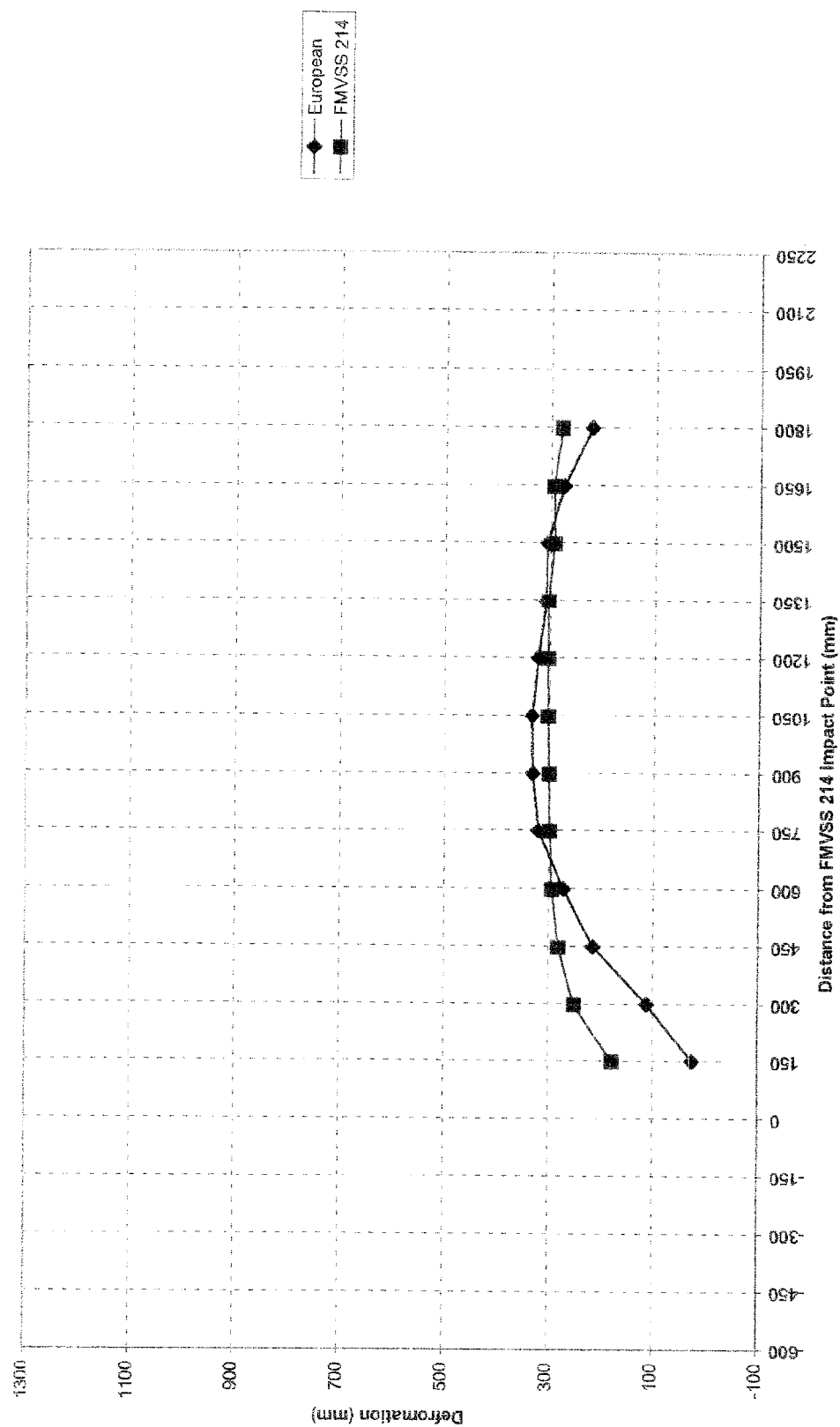




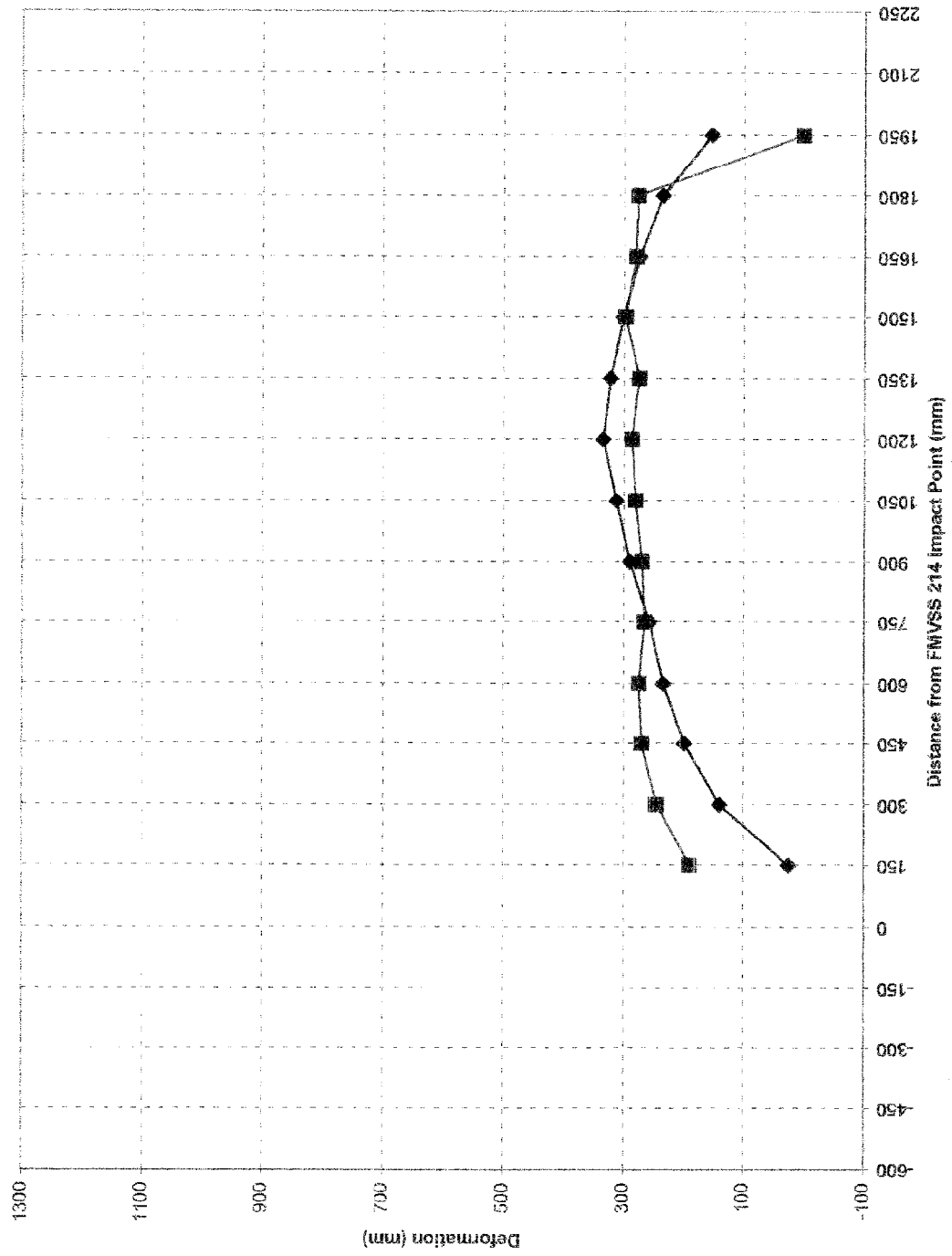
Level 1: Sill Deformation



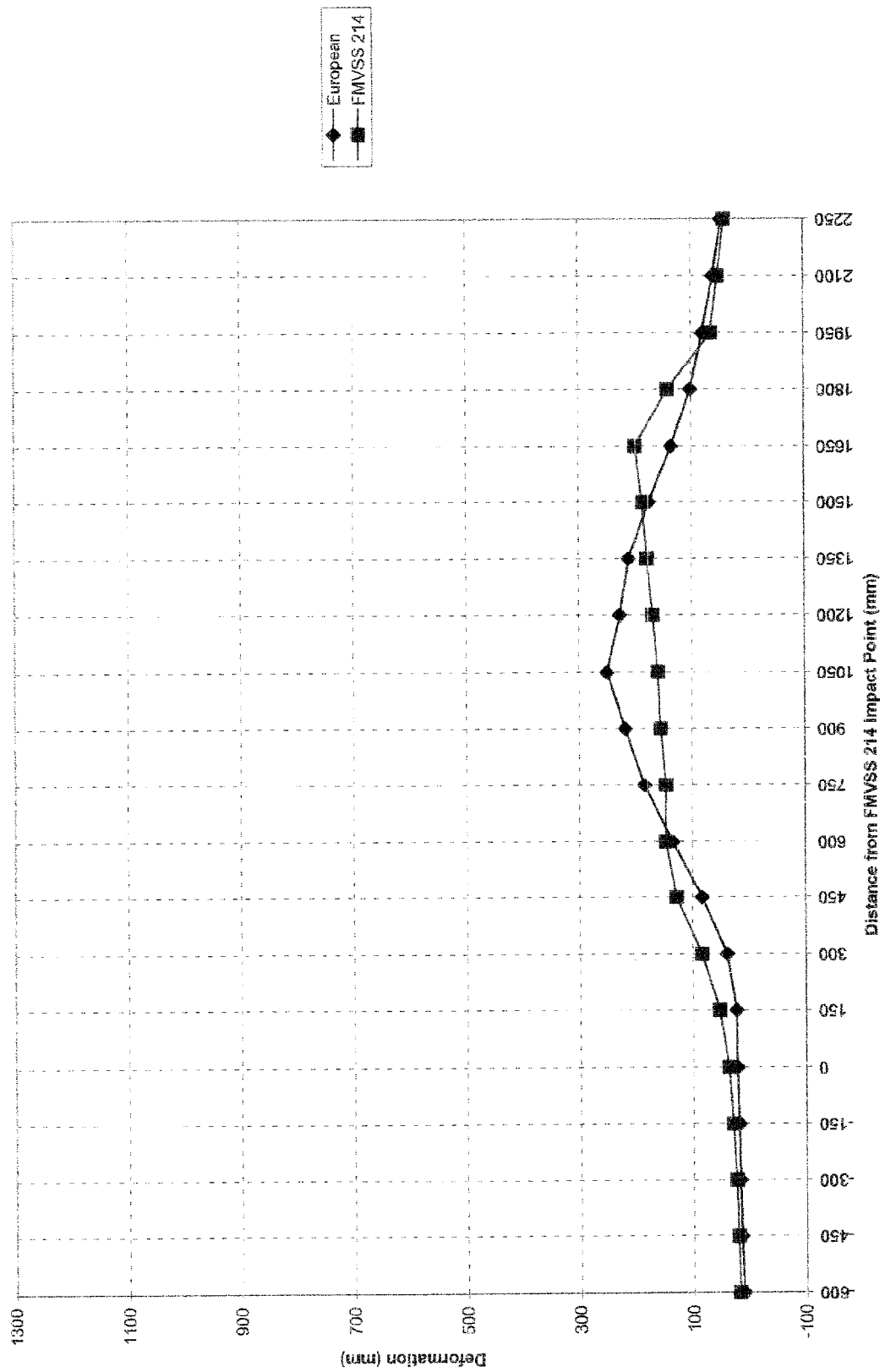
Level 2: Occupant H-Point Deformation



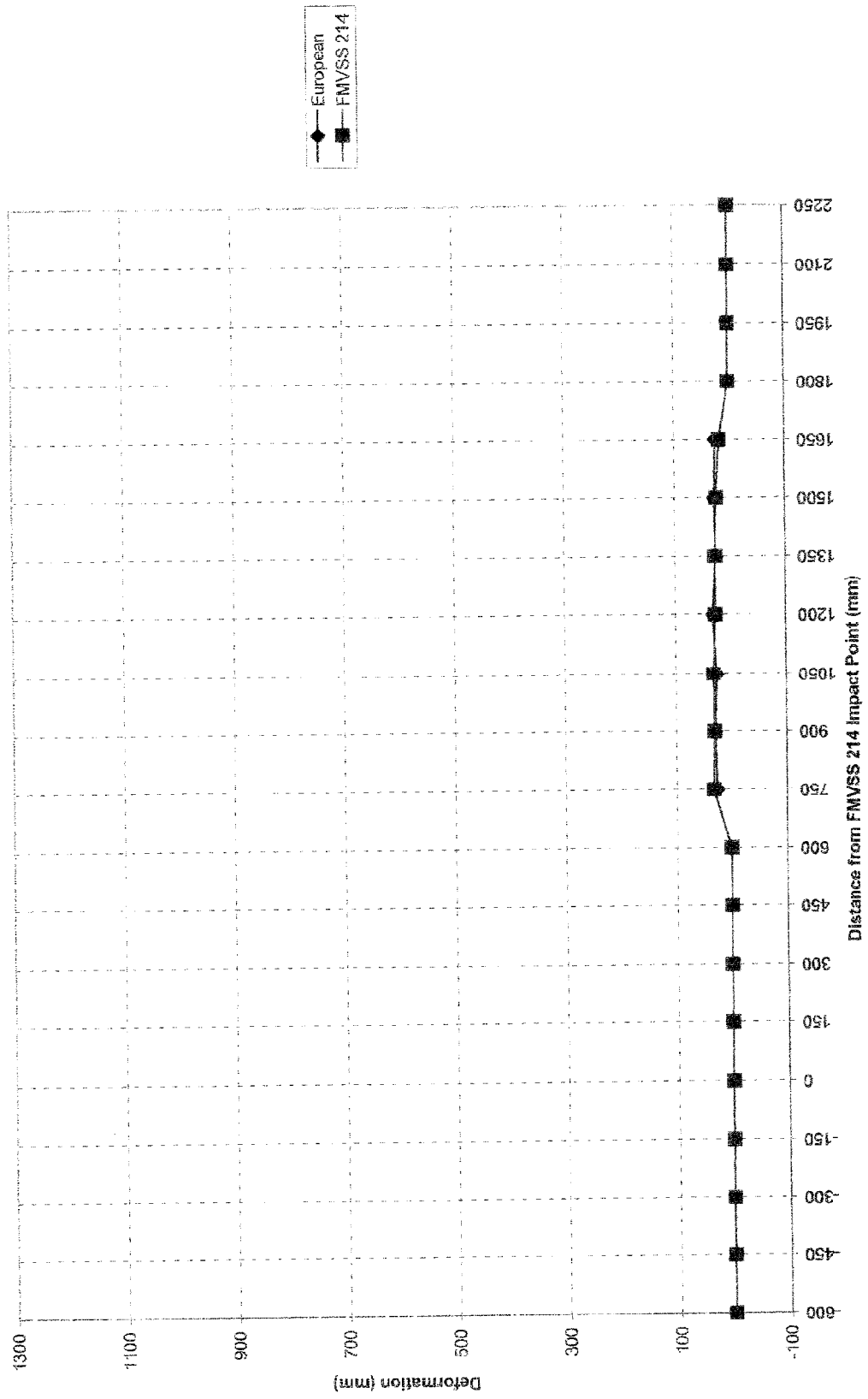
Level 3: Mid Door Deformation



Level 4: Window Sill Deformation



Level 5: Window Top Deformation



APPENDIX D
EUROSID-1 CONFIGURATION AND
PERFORMANCE VERIFICATION

EUROSID DUMMY PRE-TEST CALIBRATION DATA SUMMARY SHEET

Dummy #: E1- 213

Calibration Date: October 9, 1997

1.0 Head Drop Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Max. Resultant Acceleration	100 - 150 g's	115
Time of Max. Res. Acceleration		3.1 msec.

Calibrated By: Tim Michnay

Date: October 9, 1997

2.0 Neck Pendulum Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	45%
Pendulum Speed	10.83 - 11.48 ft/sec	10.99
Max. Pendulum Acceleration		-29.14
Time Max. Pend. Acceleration		9.85
Maximum Flexion Angle	46.0 - 56.0 deg.	52.8
Time of Max. Flexion Angle	50.0 - 62.0 ms	56.1
Maximum Angle Theta (A)	30.0 - 34.0 deg	31.4
Time of Max. Theta (A)	50.0 - 60.0 ms	58.9
Maximum Angle Theta (B)	26.0 - 30.0 deg.	29.1
Time of Max. Theta (B)	50.0 - 60.0 ms	50.9

Calibrated By: Tim Michnay

Date: October 8, 1997

3.0 Shoulder Impact Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	46%
Pendulum Speed	13.78 - 14.43 ft/sec	13.87
Max. Pendulum Acceleration	7.5 - 10.5 g's	7.6
Time of Max. Pendulum Acceleration		19.5

Calibrated By: Tim Michnay

Date: October 9, 1997

4.0 Upper Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.97
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.51
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.90

Calibrated By: Tim Michnay

Date: October 8, 1997

5.0 Middle Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Displacement at 3.28 ft/sec	.39 - .55 in	.45
Displacement at 6.56 ft/sec	.93 - 1.08 in	.98
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.54
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.95

Calibrated By: Tim Michnay

Date: October 8, 1997

6.0 Lower Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Displacement at 3.28 ft/sec	.39 - .55 in	.44
Displacement at 6.56 ft/sec	.93 - 1.08 in	.94
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.47
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.89

Calibrated By: Tim Michnay

Date: October 8, 1997

7.0 Abdomen Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Probe Speed	20.34 - 20.99 ft/sec	20.86
Maximum Impact Force	2136 - 2495 lbs	2445
Time of Maximum Force	8.8 - 10.4 ms	9.4
Max. Total Abdomen Force	1326 - 1776 lbs	1453
Time of Max. Total Force	8.5 - 10.1 ms	9.4

Calibrated By: Tim Michnay

Date: October 9, 1997

8.0 Lumbar Spine Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	71°
Laboratory Relative Humidity	10% - 70%	35%
Pendulum Speed	19.52 - 20.17 ft/sec	19.94
Max. Pendulum Acceleration		-30.3
Time Max. Pend. Acceleration		11.0
Maximum Flexion Angle	45.0 - 55.0 deg.	51.5
Time of Max. Flexion Angle	39.0 - 53.0 ms	49.4
Maximum Angle Theta (A)	31.0 - 35.0 deg	34.3
Time of Max. Theta (A)	45.0 - 55.0 ms	49.6
Maximum Angle Theta (B)	27.0 - 31.0 deg.	30.9
Time of Max. Theta (B)	45.0 - 55.0 ms	48.0

Calibrated By: First Technology Safety Systems

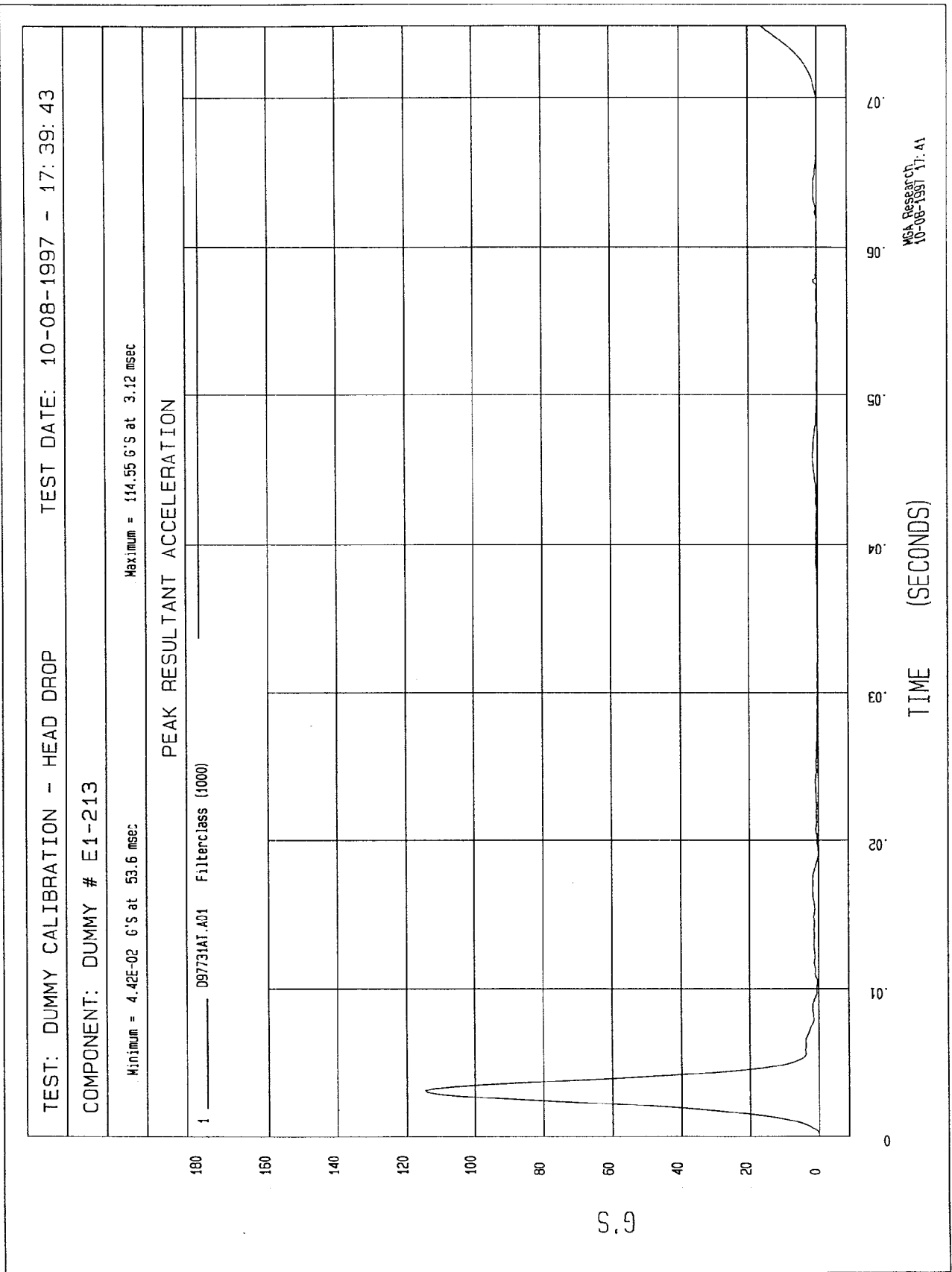
Date: September 23, 1997

9.0 Pelvis Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	47%
Pendulum Speed	13.77 - 14.43 ft/sec	14.05
Maximum Impactor Force	989 - 1214 lbs	1159
Time of Max. Impactor Force	10.3 - 15.5 ms	13.6
Maximum Pubic Force	233.8 - 368.7 lbs	322.0
Time of Max. Pubic Force	9.9 - 15.9 ms	14.3

Calibrated By: Tim Michnay

Date: October 9, 1997



TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 10-08-1997 - 15:26

COMPONENT: DUMMY # E1-213 Velocity: 10.991 FT/SEC 3.35 M/SEC

Minimum = -29.14 G'S at 9.85 msec Maximum = 5.17 G'S at 48.9 msec

PENDULUM ACCELERATION

1 _____ D97732AT.A04

10

0

-10

-20

-30

-40

G'S

0

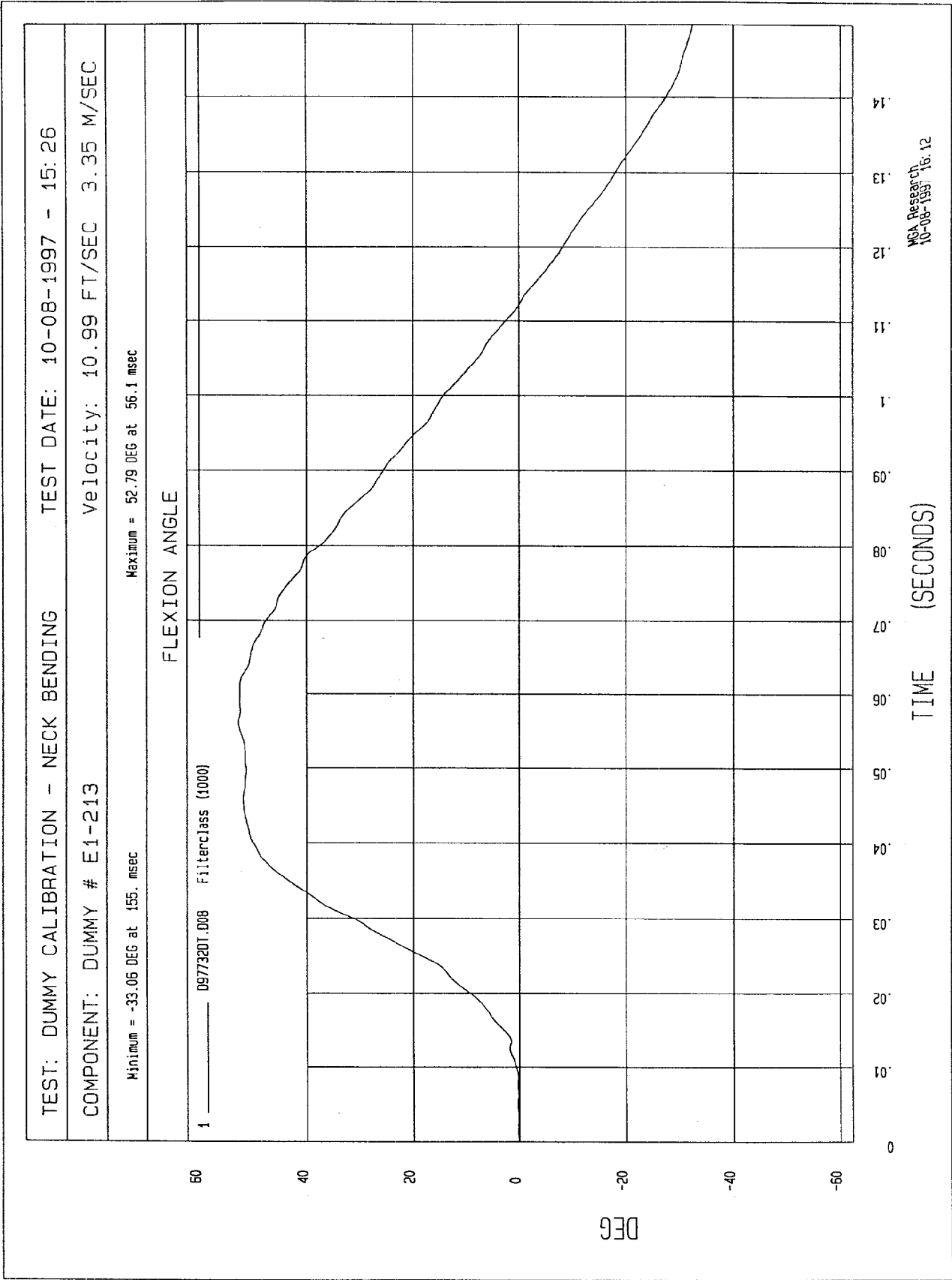
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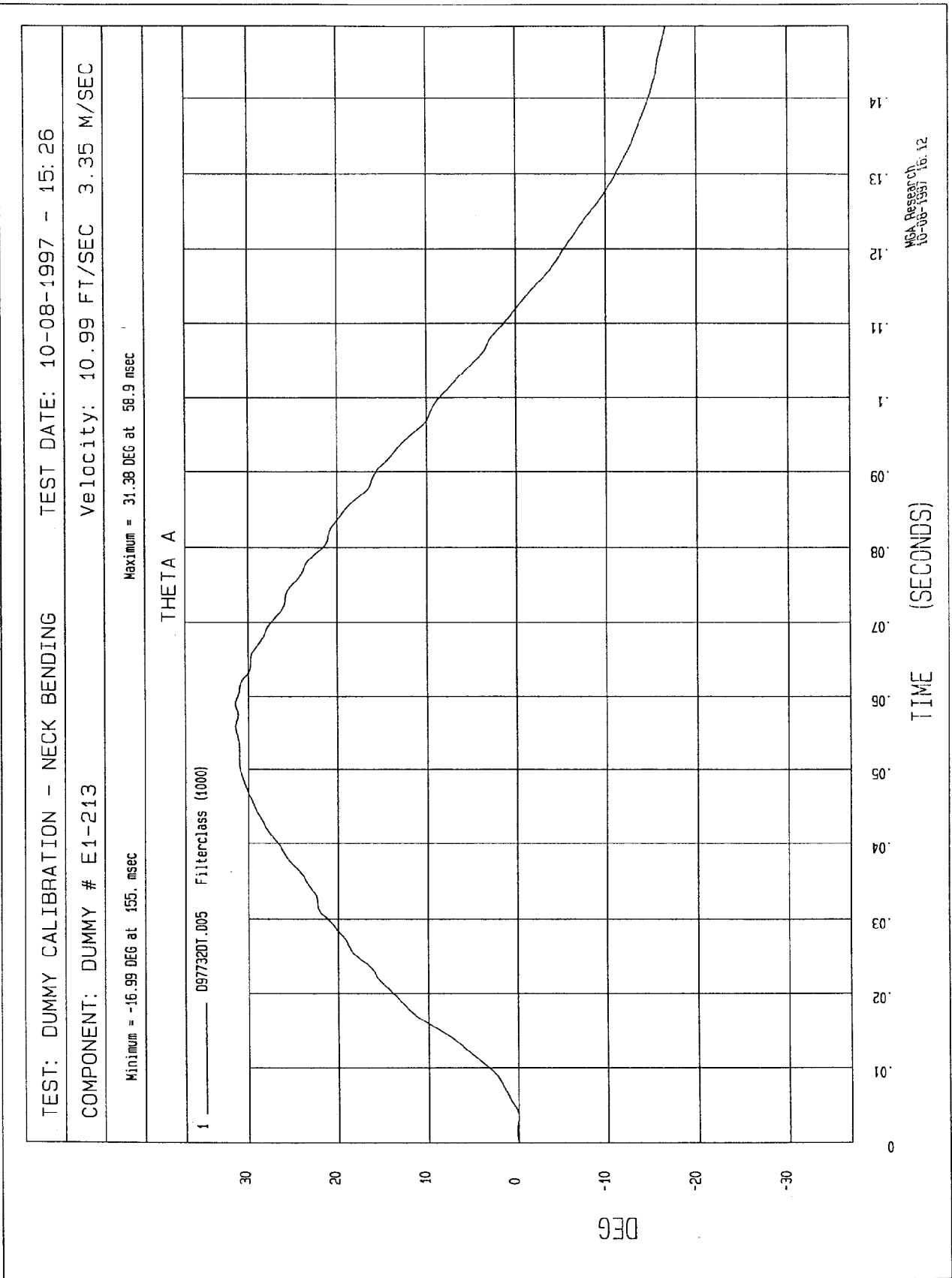
.02

.03

TIME (SECONDS)

H&A Research
10-08-1997 16:10





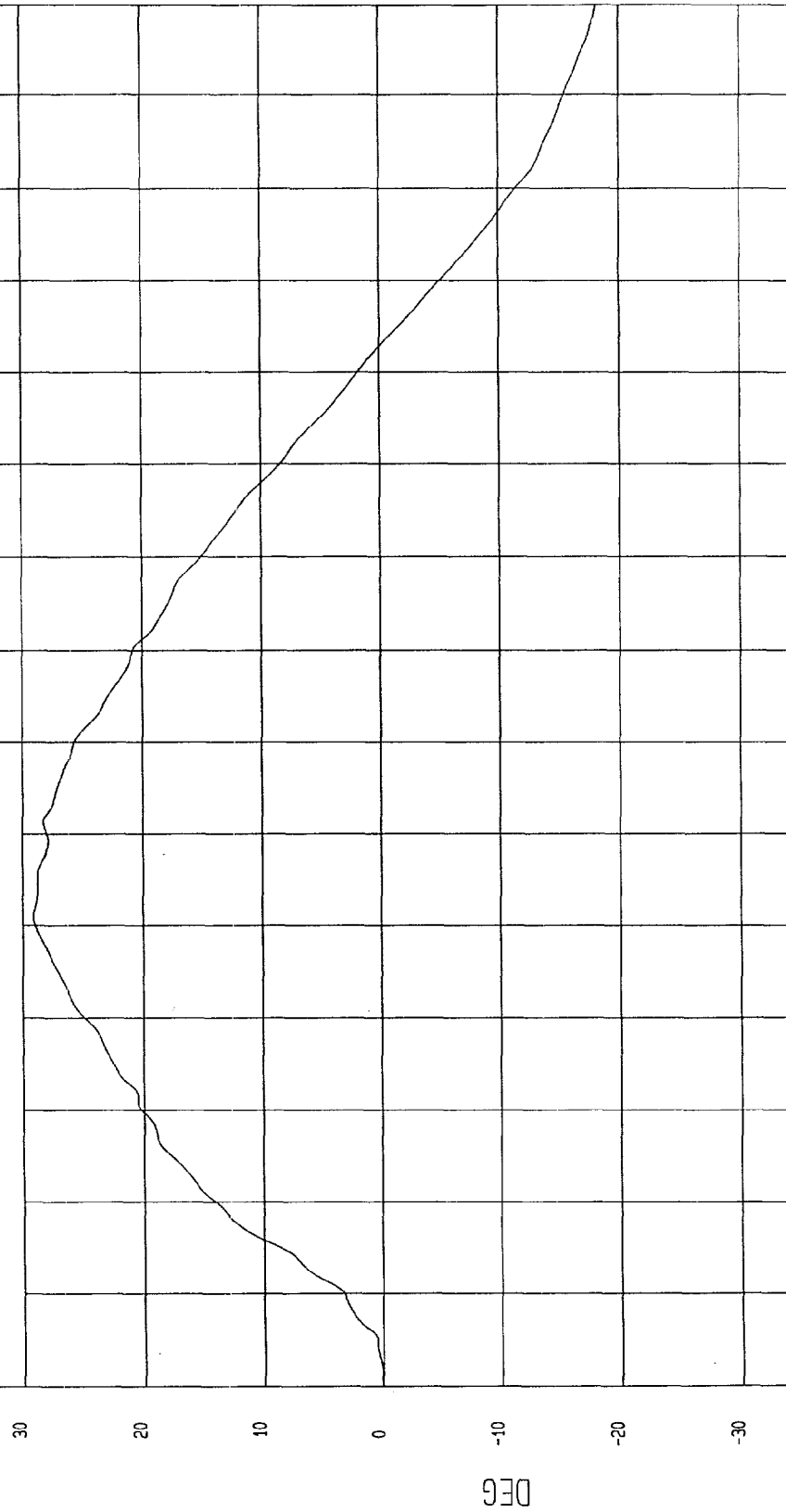
TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 10-08-1997 - 15:26

COMPONENT: DUMMY # E1-213 Velocity: 10.99 FT/SEC 3.35 M/SEC

Minimum = -18.44 DEG at 159. msec Maximum = 29.11 DEG at 50.9 msec

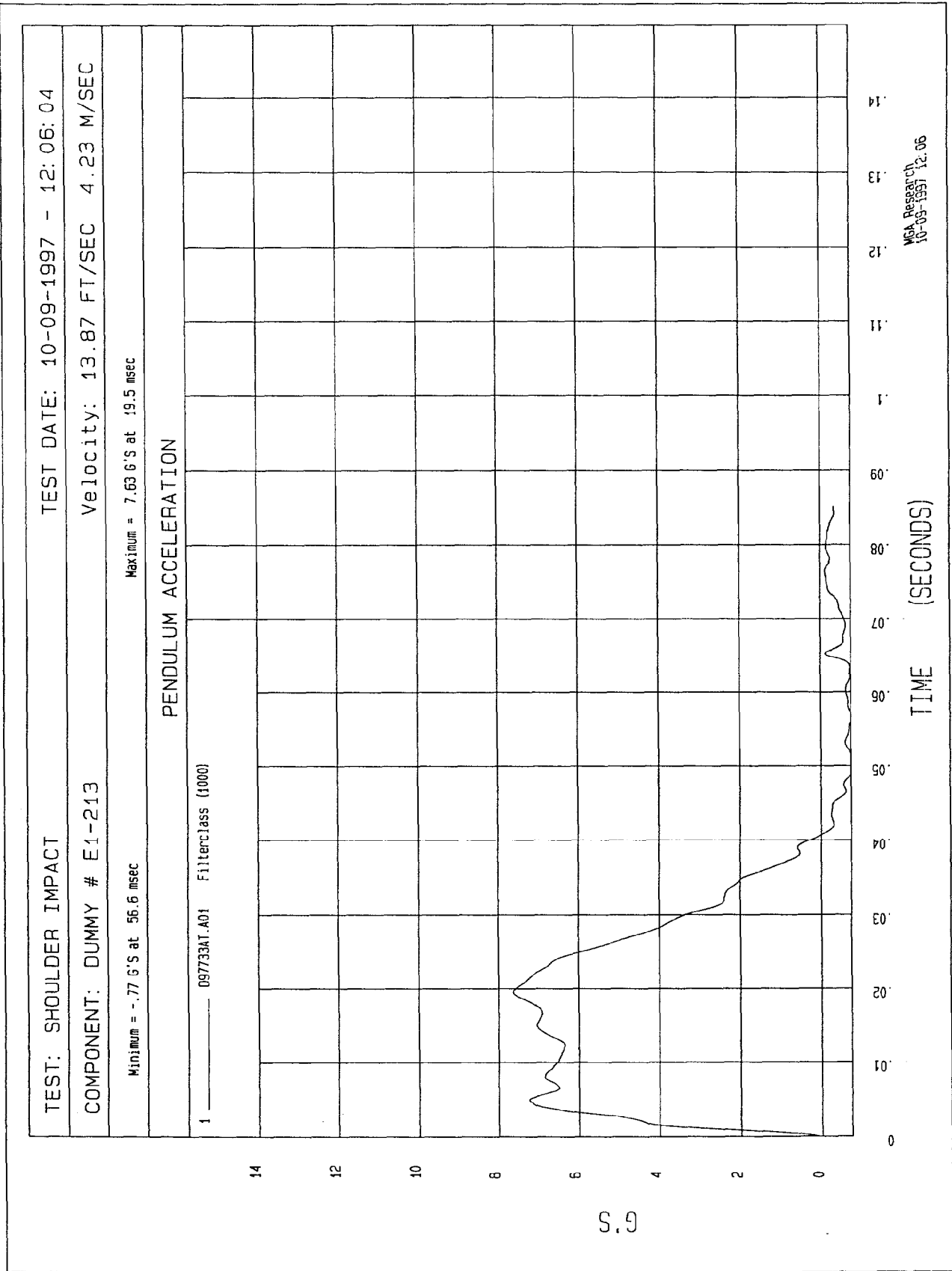
THETA B

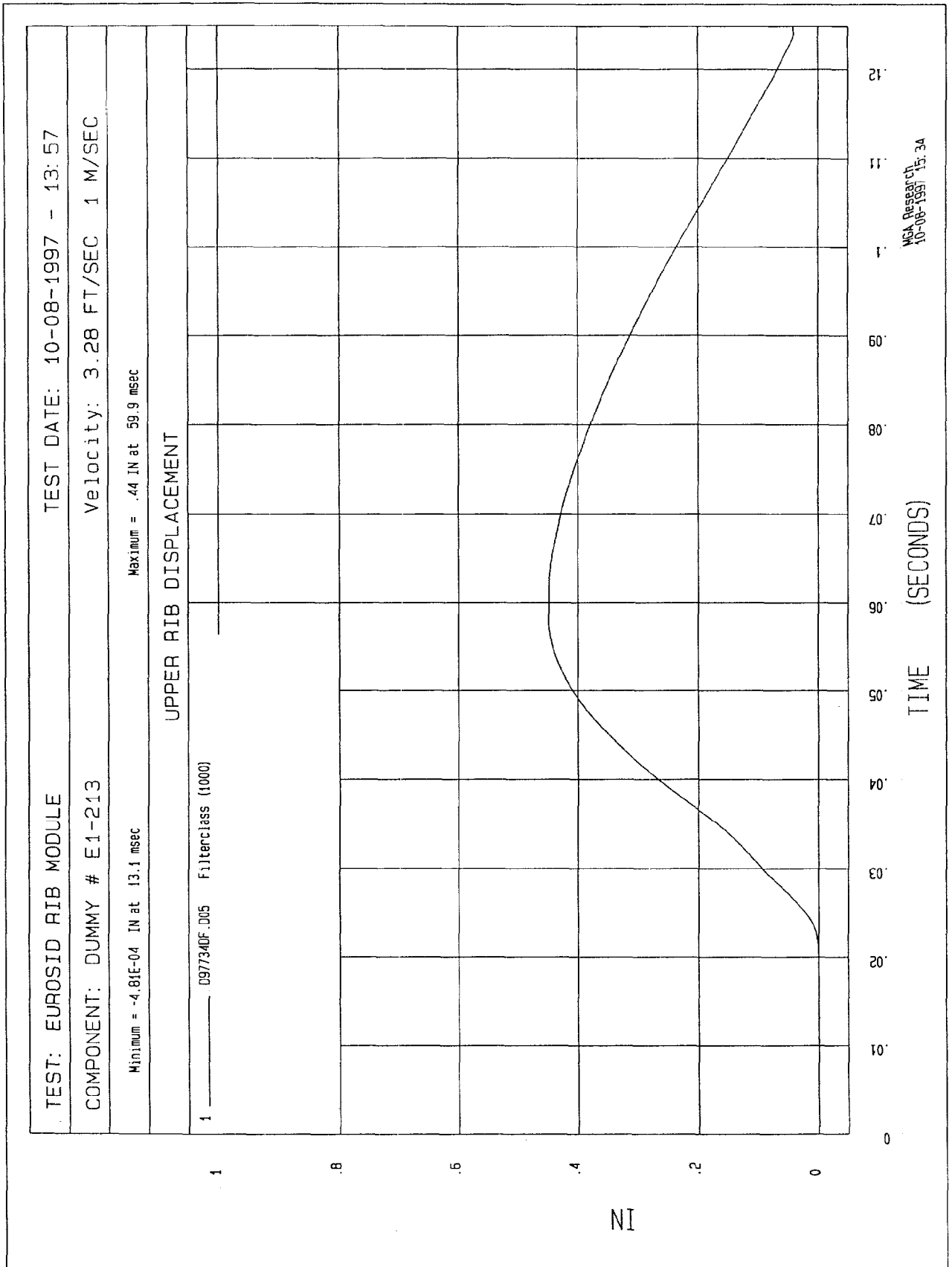
1 ——— D977320T.D06 Filterclass (1000)



TIME (SECONDS)

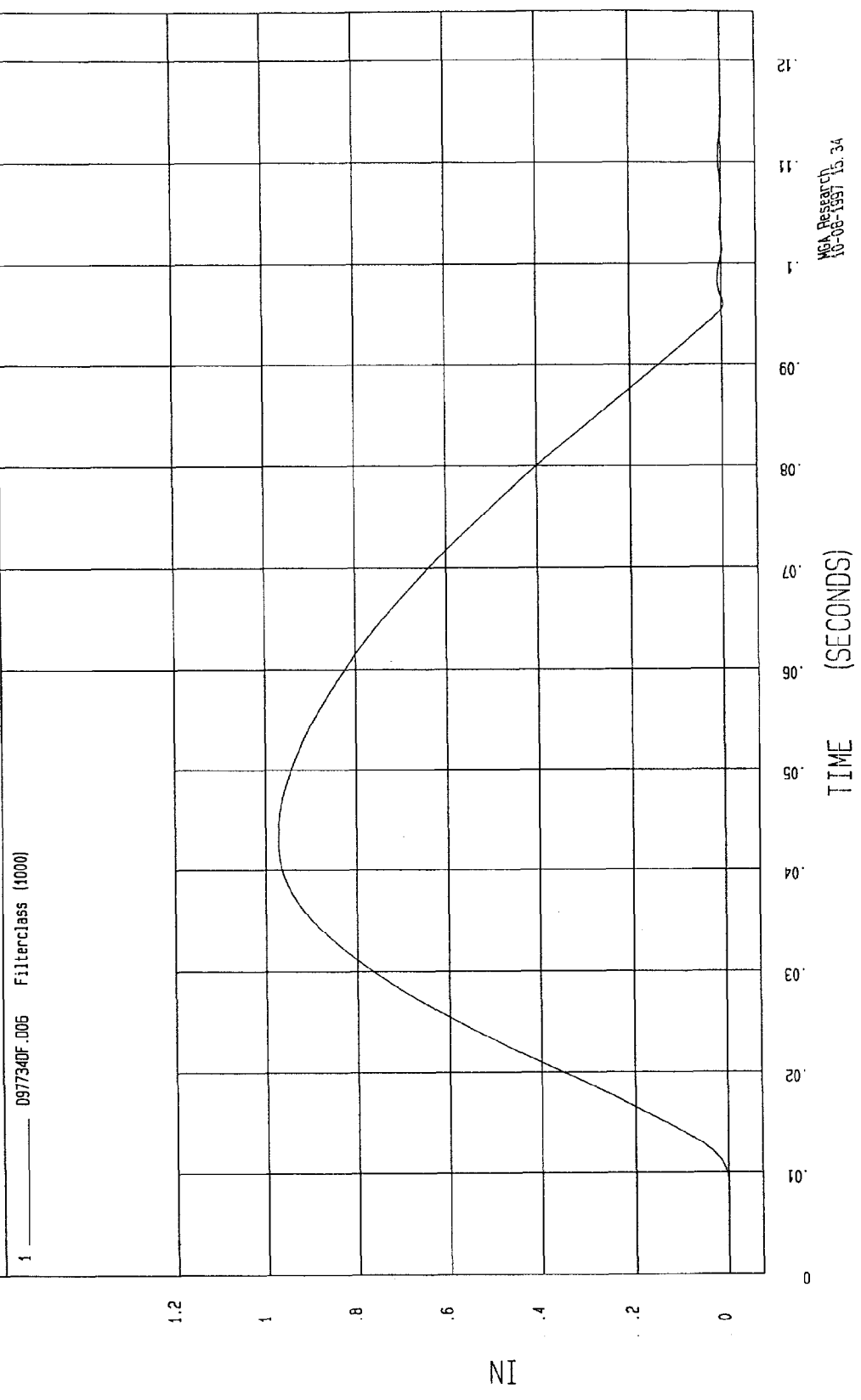
NCA Research
10-08-1997 16.12





TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 14:05
COMPONENT: DUMMY # E1-213	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -4.44E-03 IN at 95.9 msec	Maximum = .97 IN at 42.6 msec

UPPER RIB DISPLACEMENT



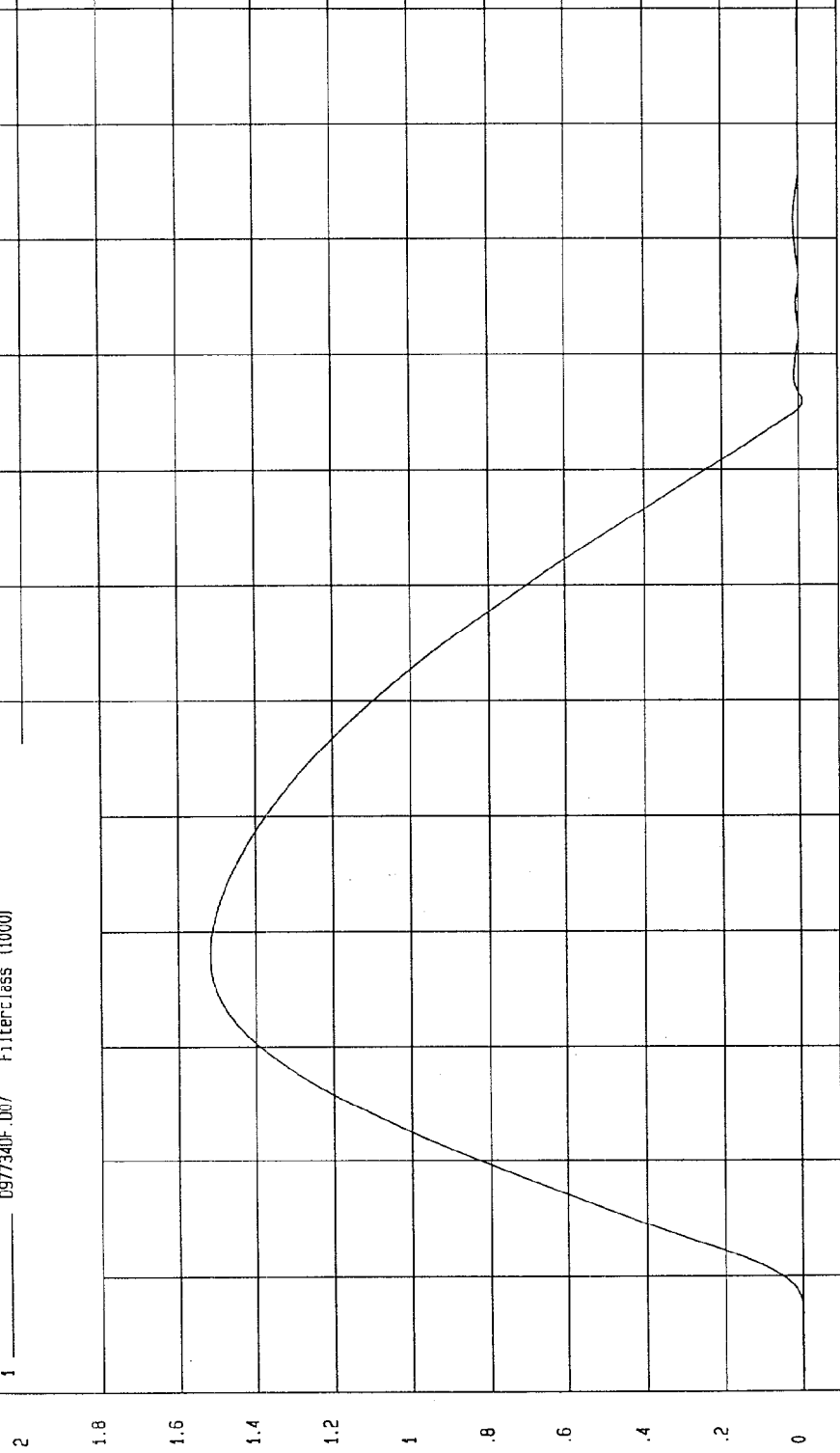
TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 14:15

COMPONENT: DUMMY # E1-213 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -9.79E-03 IN at 85.8 msec Maximum = 1.51 IN at 38.1 msec

UPPER RIB DISPLACEMENT

1 0977340F.D07 Filterclass (1000)



TIME (SECONDS)

MCA Research
10-08-1997 15:34

TEST: EUROSID RIB MODULE

TEST DATE: 10-08-1997 - 13:49

COMPONENT: DUMMY # E1-213

Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.80E-02 IN at 79.7 msec

Maximum = 1.90 IN at 32.9 msec

UPPER RIB DISPLACEMENT

1 _____ 097734DF.004 Filterclass (1000)

2.6

2.4

2.2

2.0

1.8

1.6

1.4

1.2

1.0

.8

.6

.4

.2

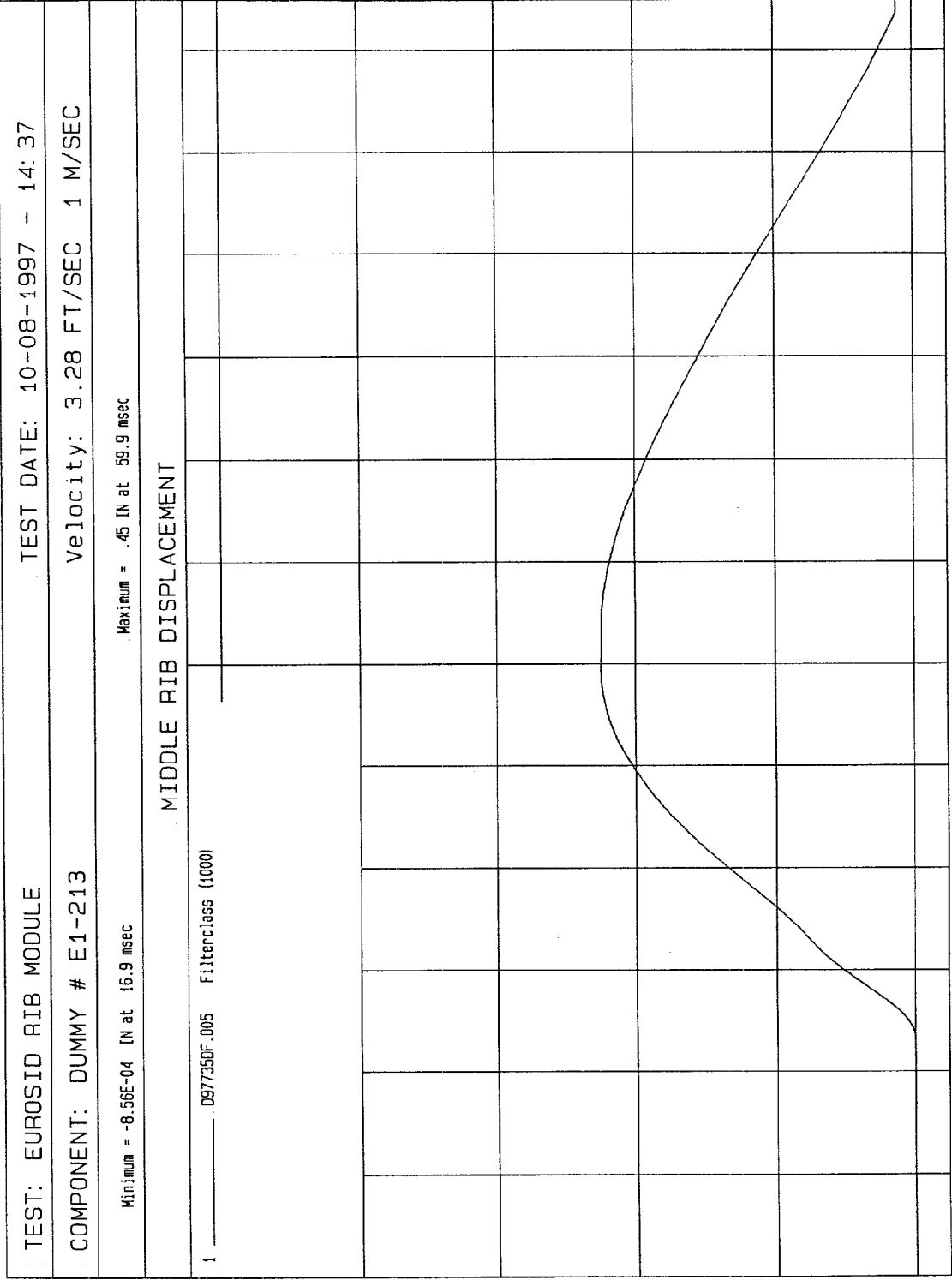
0

NI

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

TIME (SECONDS)

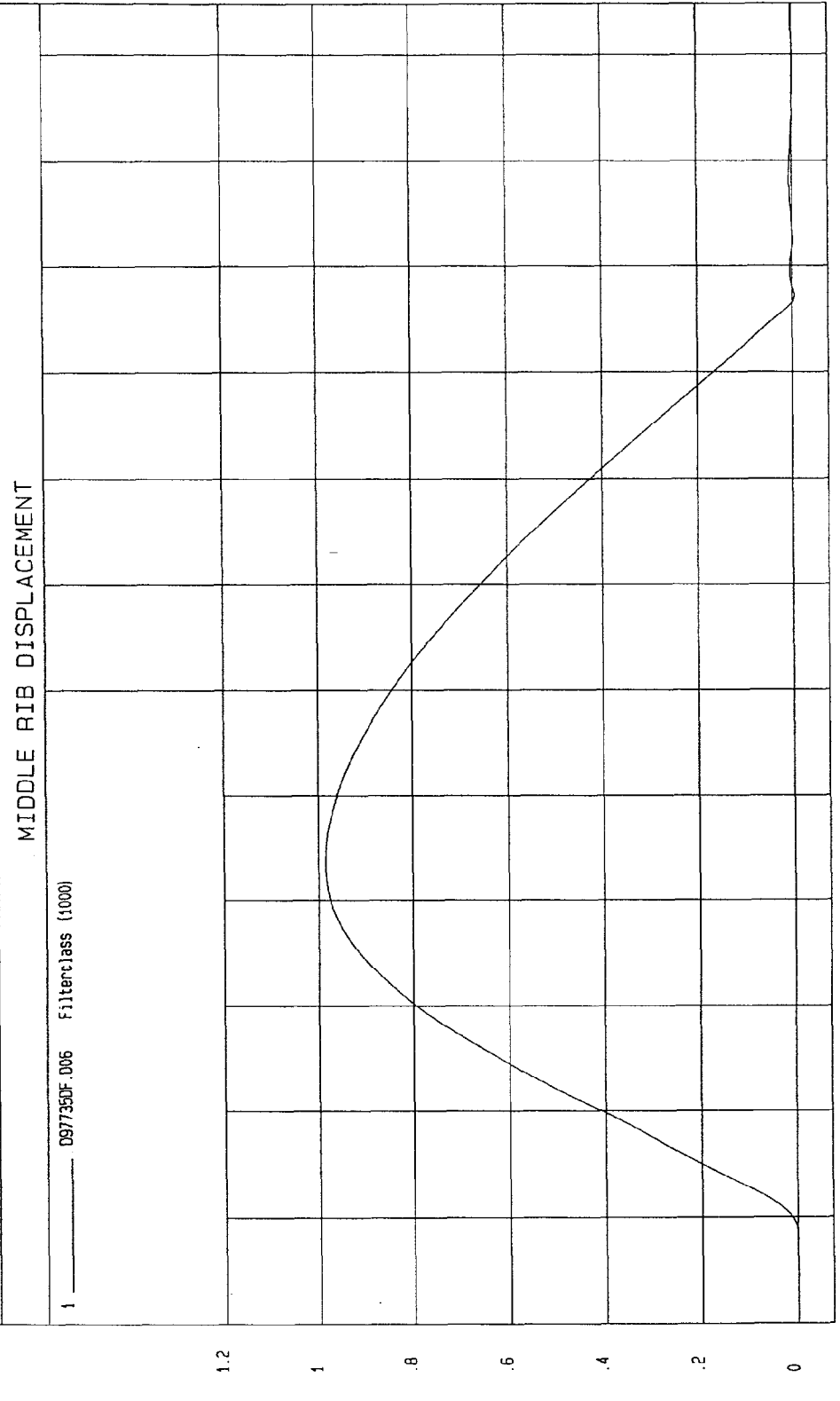
NCA Research
10-08-1997 15:33



TIME (SECONDS)

MCA Research
10-08-1997 15:44

TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 14: 46
COMPONENT: DUMMY # E1-213	Velocity: 6.56 FT/SEC 2 M/SEC
Minimum = -4.69E-03 IN at 97.2 msec	Maximum = .98 IN at 42.8 msec

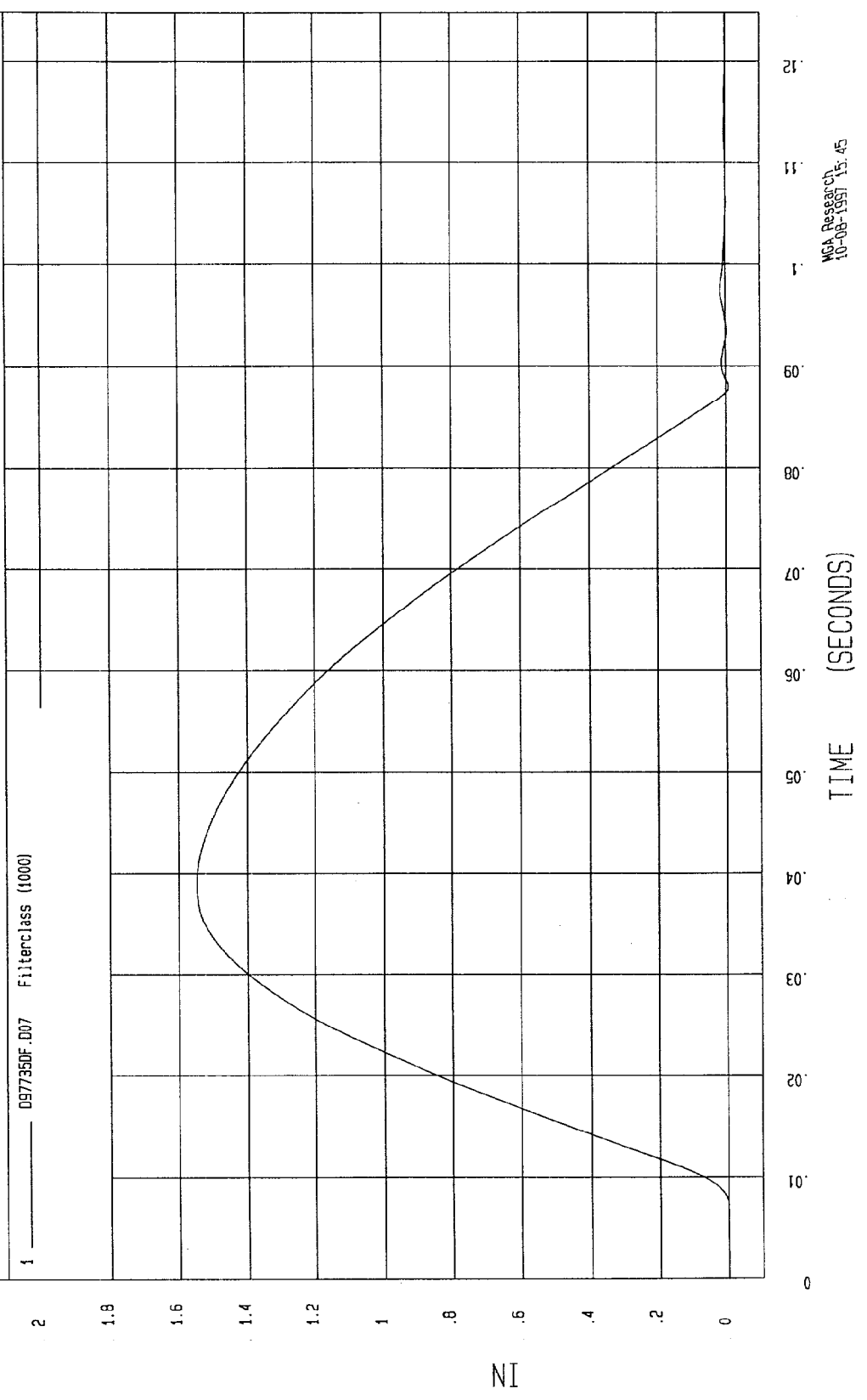


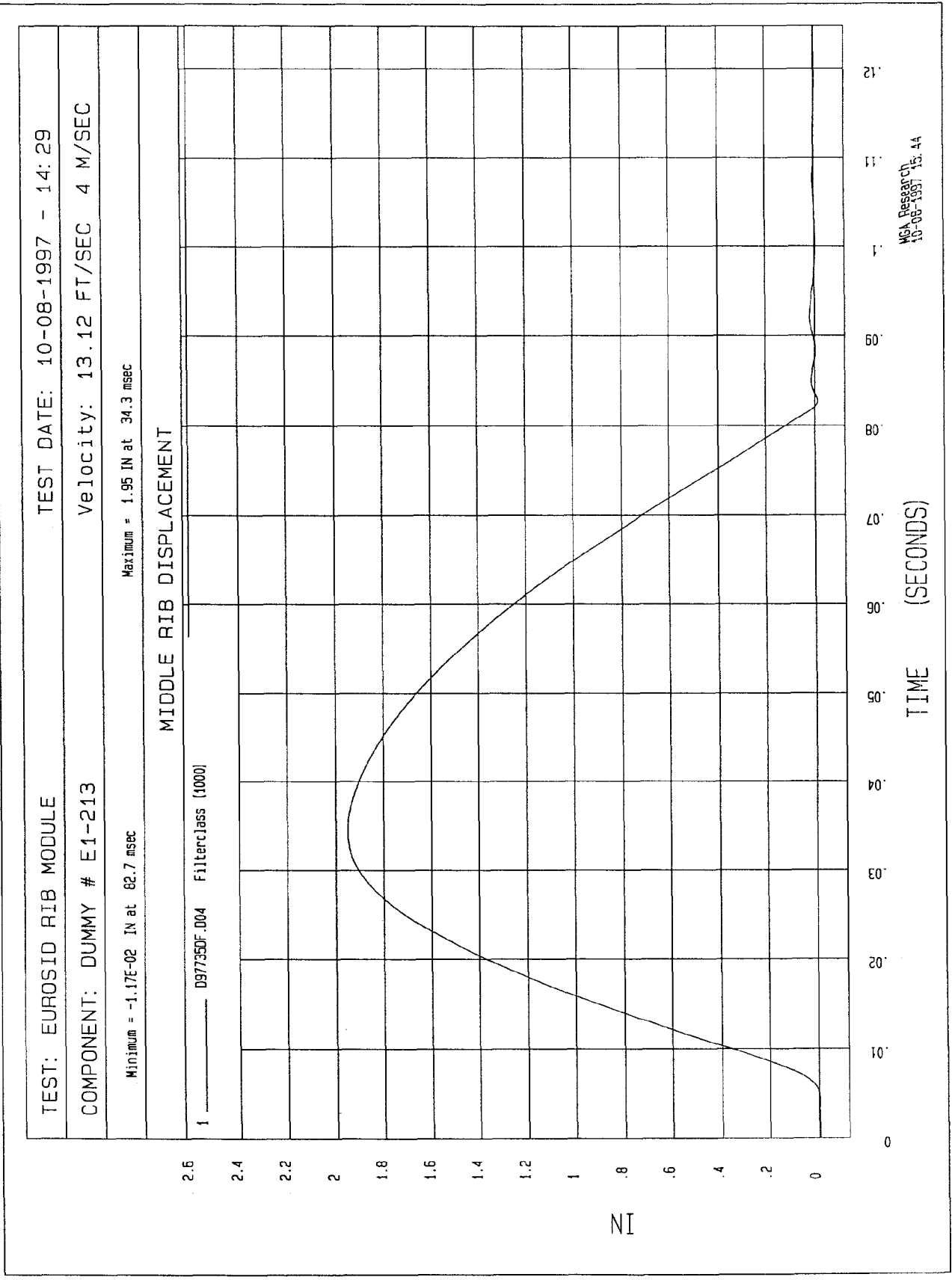
TIME (SECONDS)

MOA Research
10-08-1997 15: 45

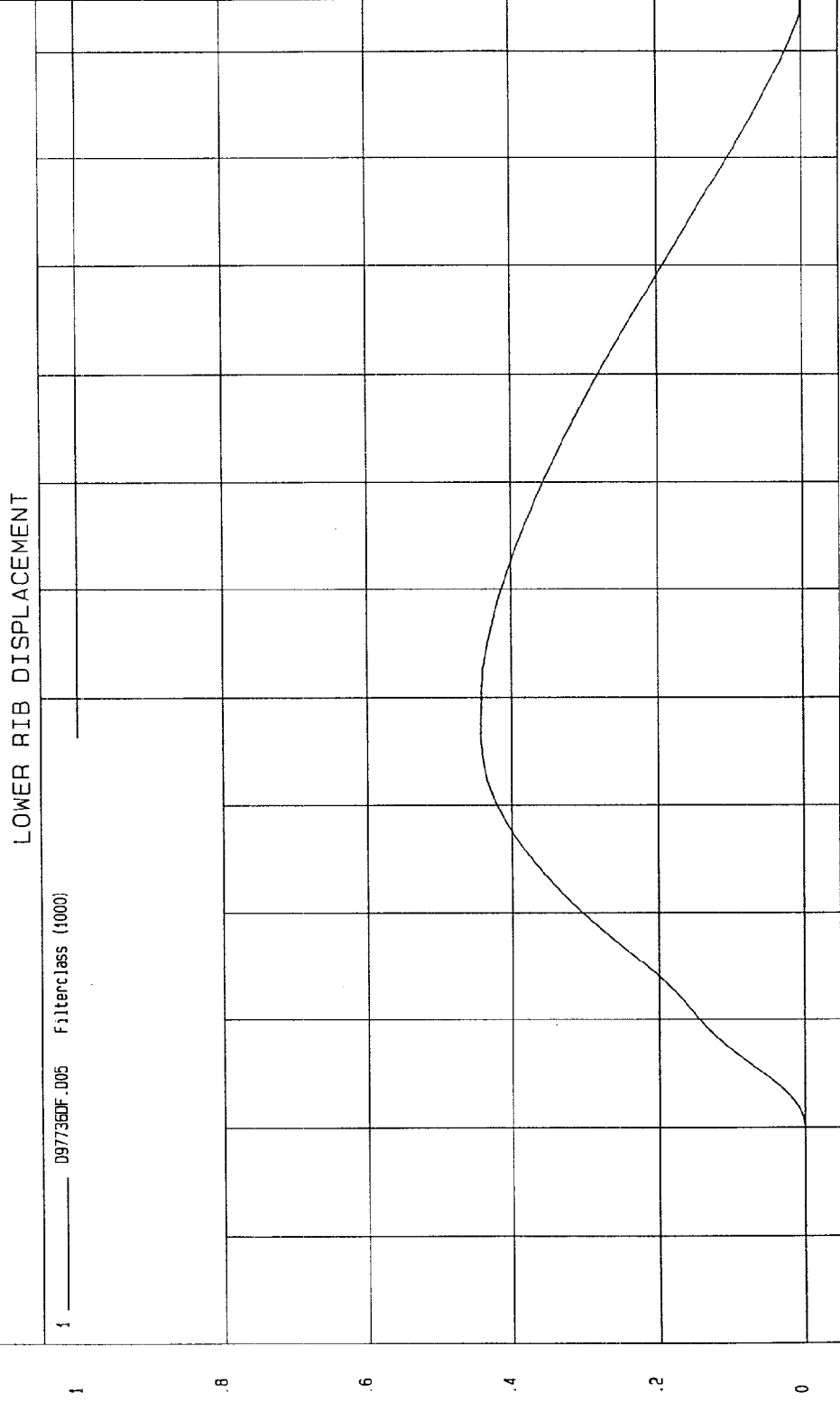
TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 14:52
COMPONENT: DUMMY # E1-213	Velocity: 9.84 FT/SEC 3 M/SEC
Minimum = -8.17E-03 IN at 87.5 msec Maximum = 1.54 IN at 38.5 msec	

MIDDLE RIB DISPLACEMENT





TEST: EUROSID RIB MODULE	TEST DATE: 10-08-1997 - 15:04
COMPONENT: DUMMY # E1-213	Velocity: 3.28 FT/SEC 1 M/SEC
Minimum = -2.75E-04 IN at 3.74 msec	Maximum = .44 IN at 56.5 msec



TIME (SECONDS)

VGA Research
10-08-1997 16:01

TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 15:10

COMPONENT: DUMMY # E1-213 Velocity: 6.56 FT/SEC 2 M/SEC

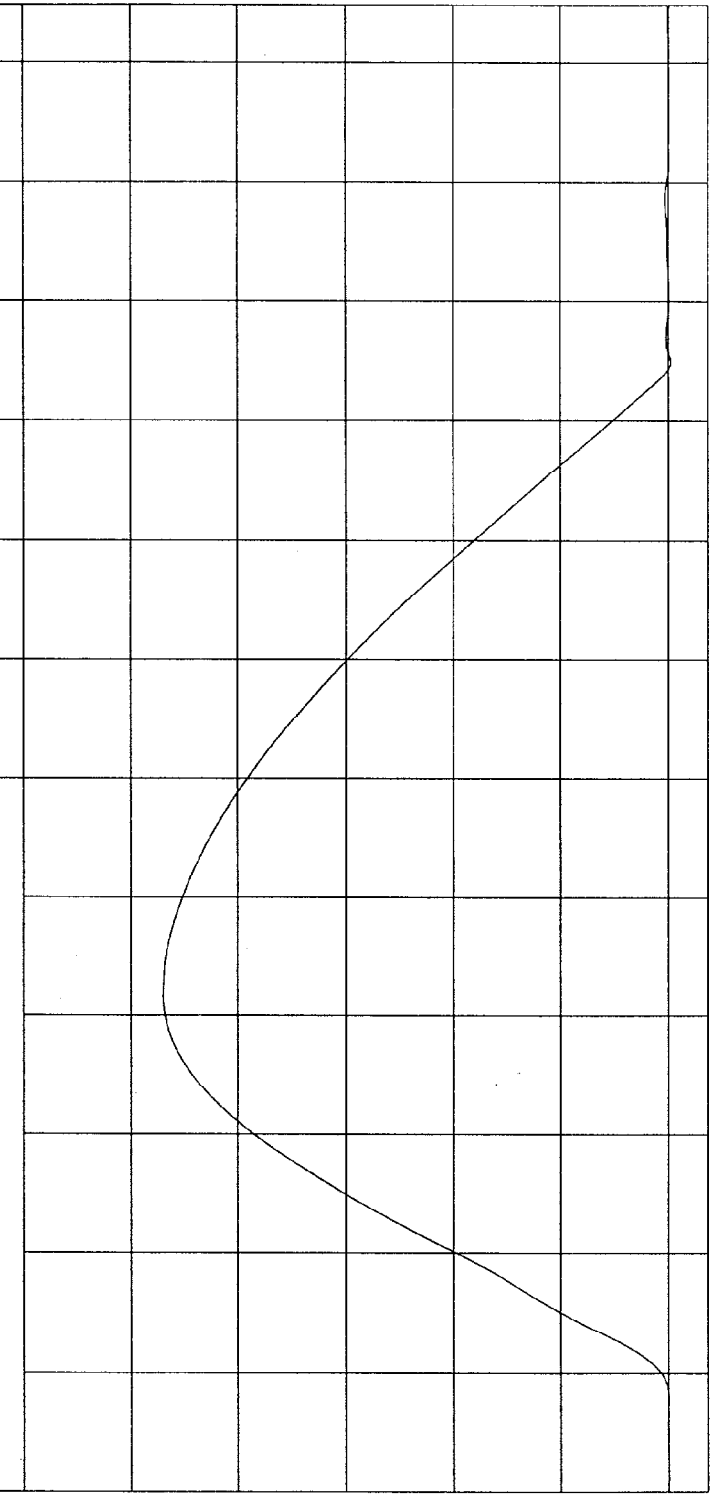
Minimum = -4.91E-03 IN at 94.8 msec Maximum = .94 IN at 41.5 msec

LOWER RIB DISPLACEMENT

1 ——— 0977360F.006 Filterclass (1000)

NI

1.2
1
.8
.6
.4
.2
0



TIME (SECONDS)

0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0

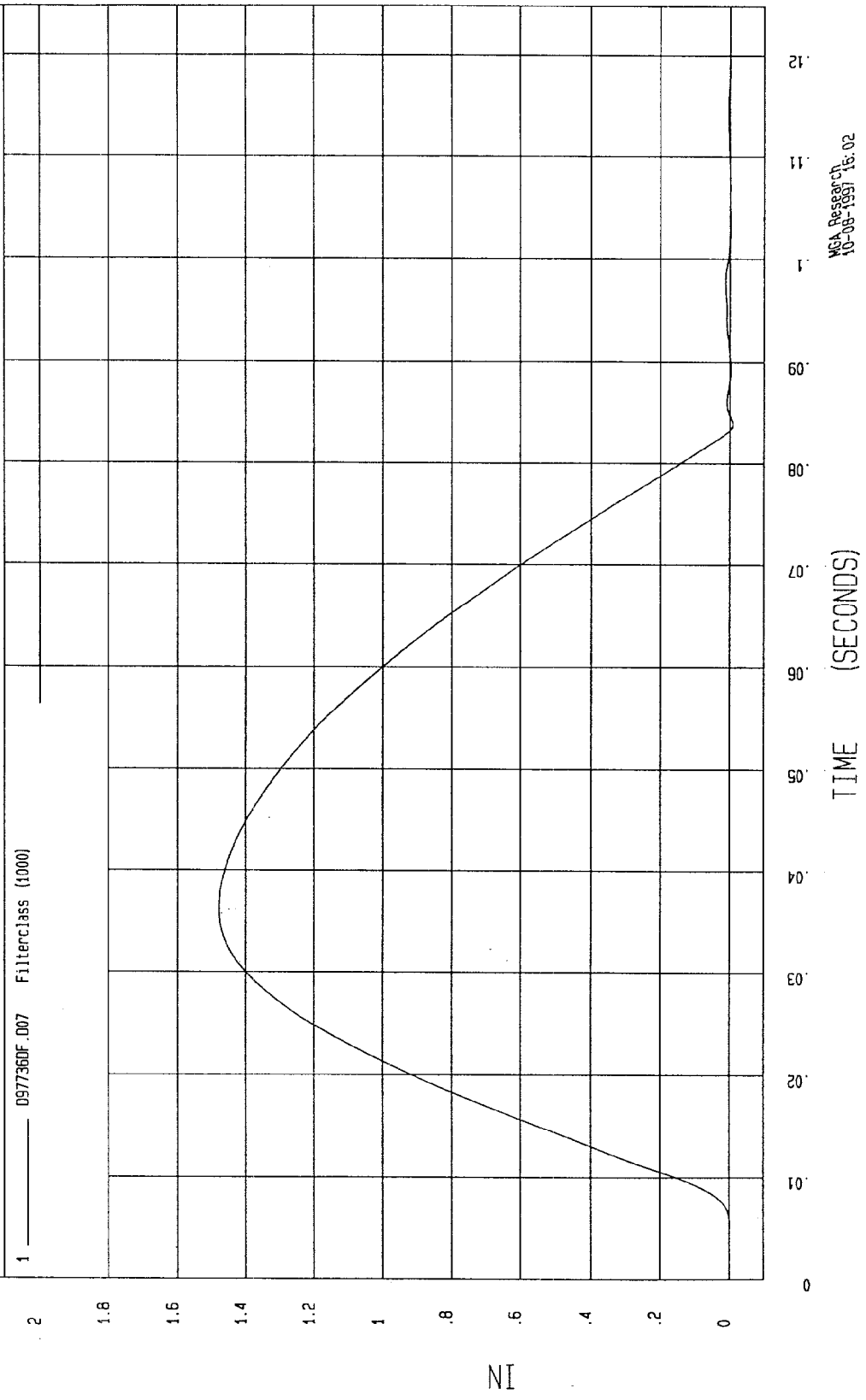
WCA Research
10-08-1997 16:01

TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 15:21

COMPONENT: DUMMY # E1-213 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -8.87E-03 IN at 83.8 msec Maximum = 1.47 IN at 36.1 msec

LOWER RIB DISPLACEMENT



TEST: EUROSID RIB MODULE TEST DATE: 10-08-1997 - 14:57

COMPONENT: DUMMY # E1-213 Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.22E-02 IN at 80.5 msec Maximum = 1.89 IN at 33.9 msec

LOWER RIB DISPLACEMENT



TIME (SECONDS)

MSA Research
10-08-1997 16:01

EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SM6183-3

Temperature : 22 deg C

Test number : 20403

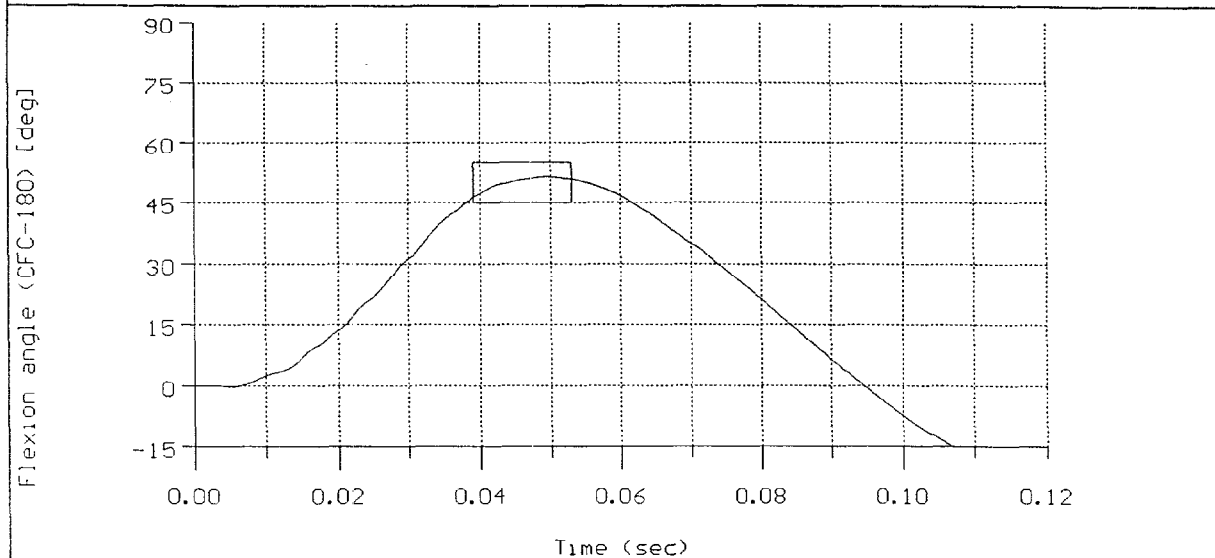
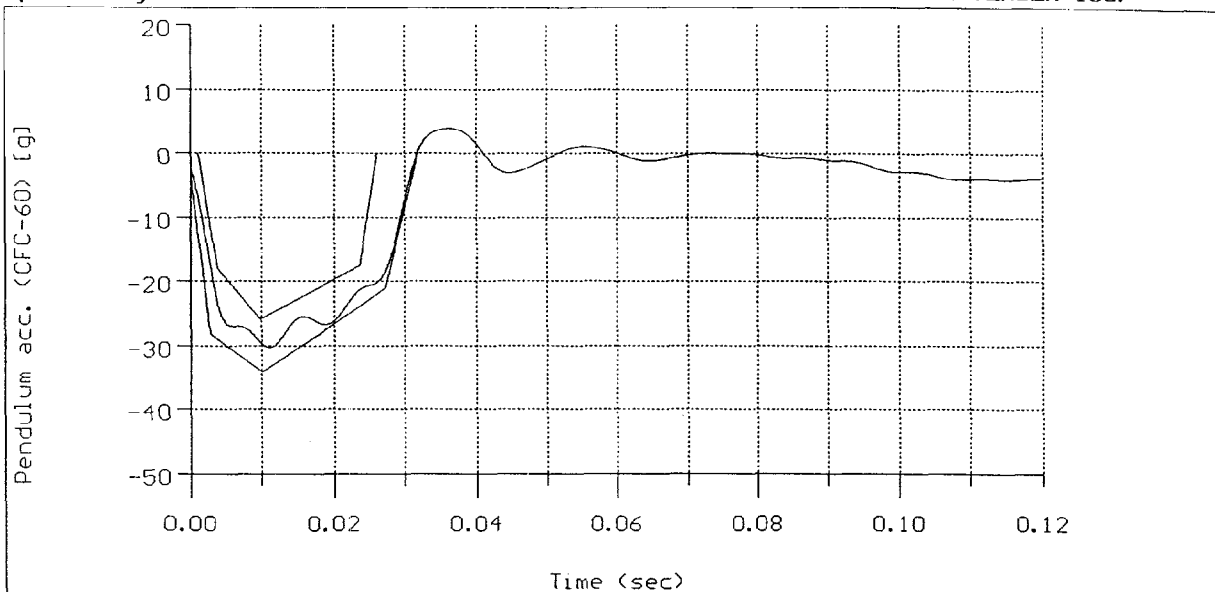
Rel. Humidity : 35 %

Impact side : LHS

Technician : DP

Spine length :

Test date : 23-SEPTEMBER-1997



Parameter	Specification	Result	Passed/Failed
Pendulum Speed	5.95 - 6.15 m/s	6.08 m/s	
Maximum pendulum acc.		-30.3 g	
Time of max pend. acc.		11.0 msec	
Maximum flexion angle	45.0 - 55.0 deg	51.5 deg	
Time of max. flex. angle	39.0 - 53.0 msec	49.4 msec	

EUROSID-1

COMMENTS: MGA

TEST : EUROSID-1 SPINE CERTIFICATION

Part number : SM6183-3

Temperature : 22 deg C

Test number : 20403

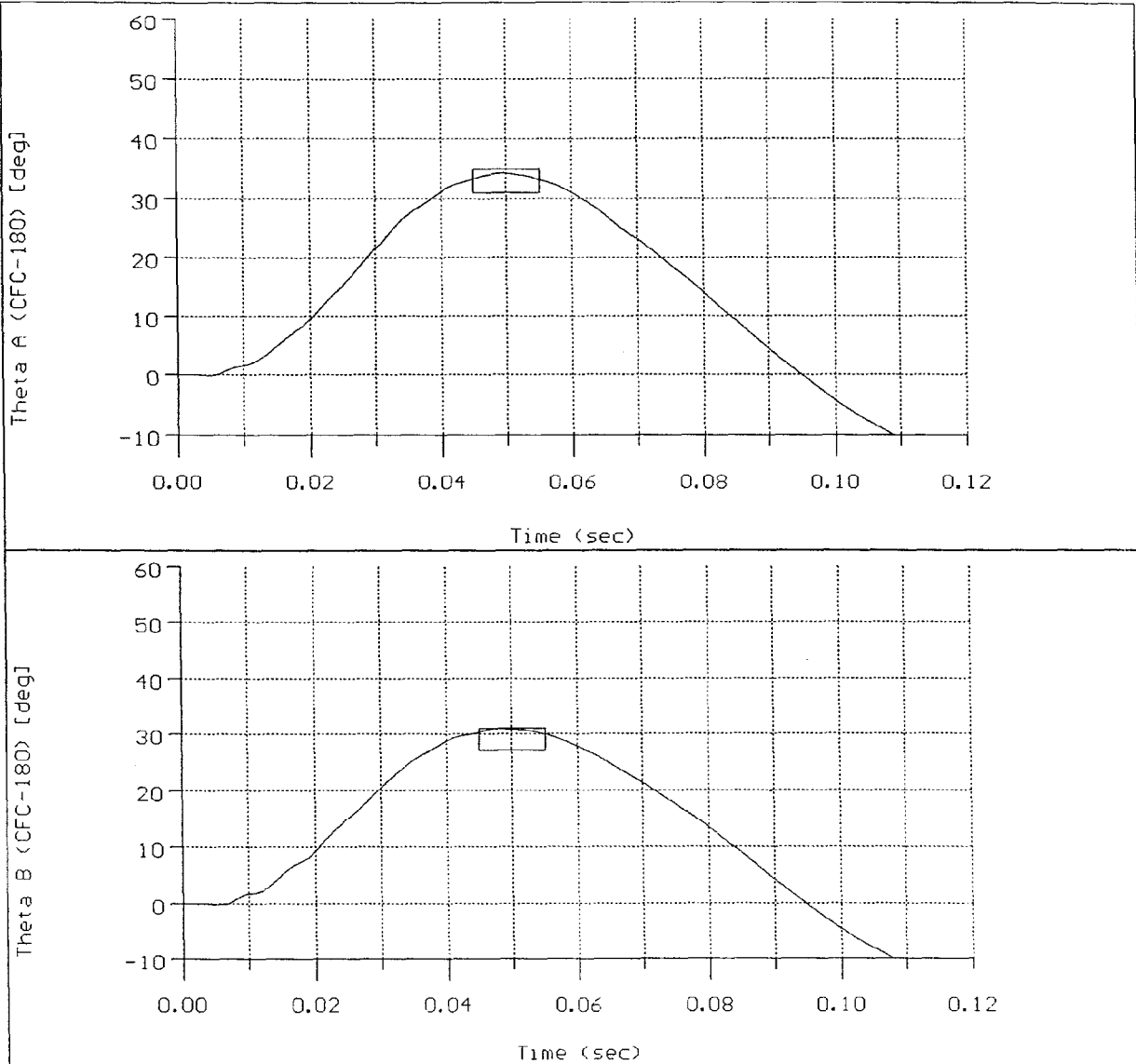
Rel. Humidity : 35 %

Impact side : LHS

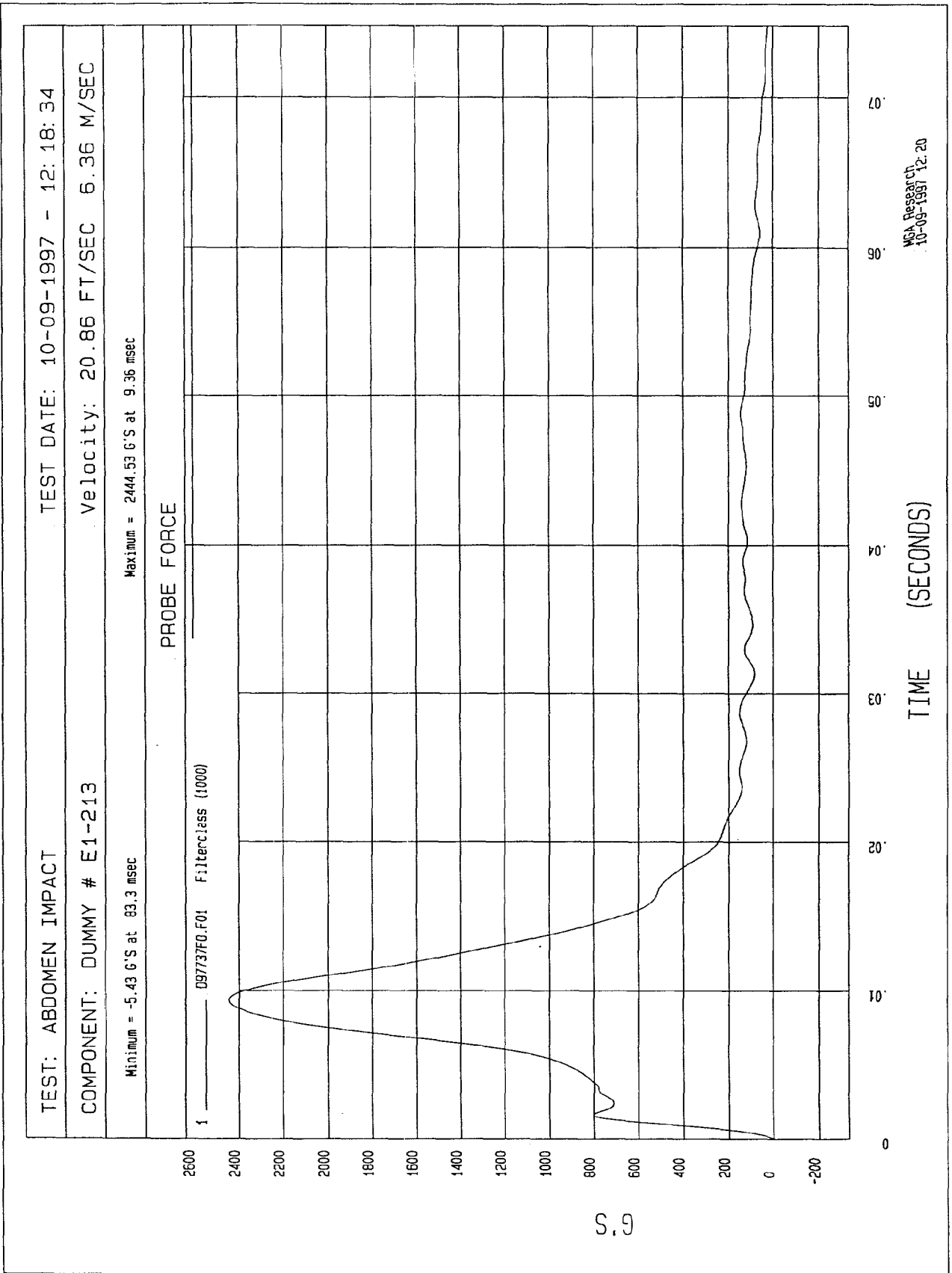
Technician : DP

Spine length :

Test date : 23-SEPTEMBER-1997



Parameter	Specification	Result	Passed/Failed
Maximum Theta(A)	31.0 - 35.0 deg	34.3 deg	
Time of max. Theta(A)	45.0 - 55.0 msec	49.6 msec	
Maximum Theta(B)	27.0 - 31.0 deg	30.9 deg	
Time of max. Theta(B)	45.0 - 55.0 msec	48.0 msec	



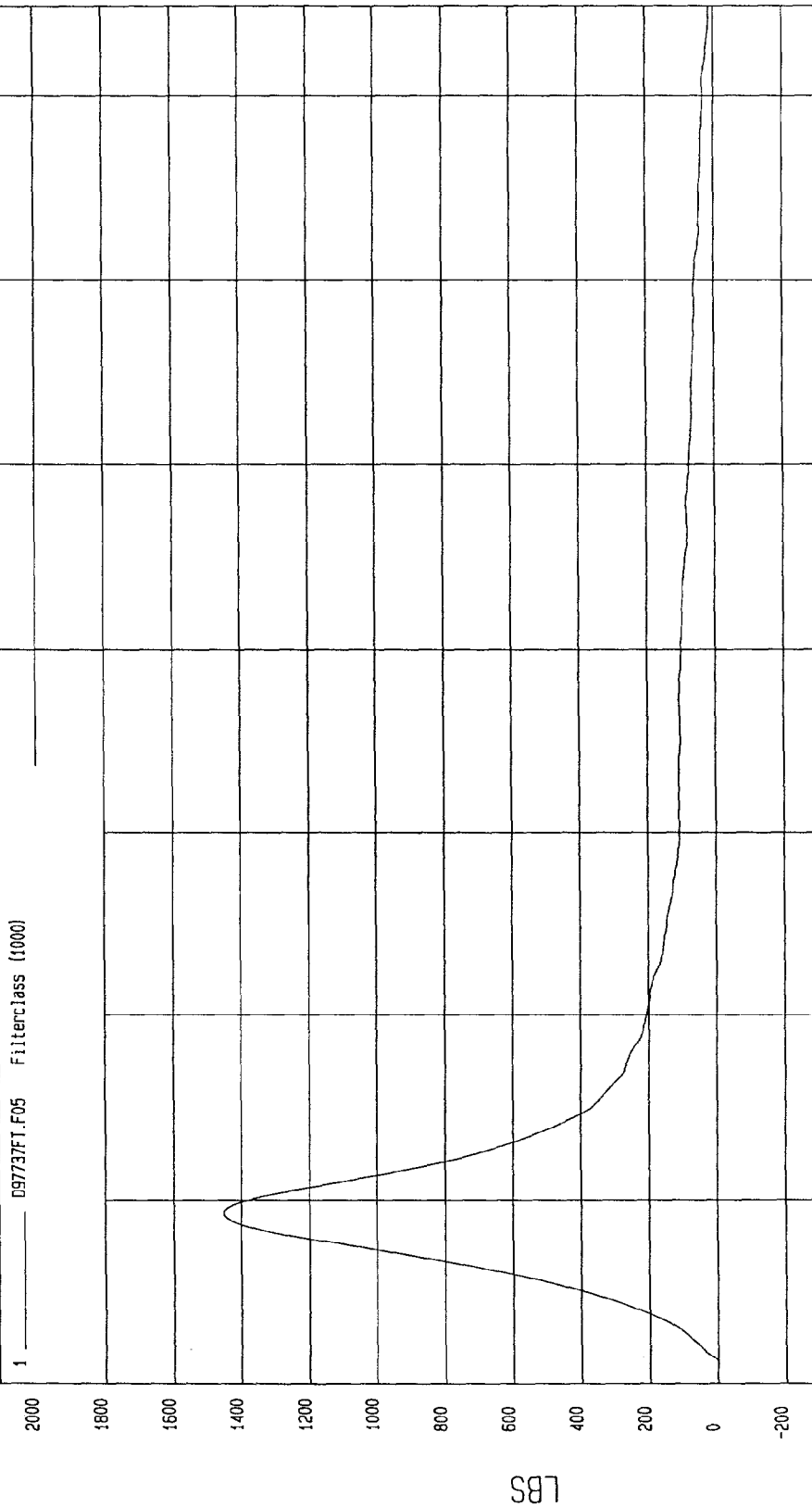
TEST: ABDOMEN IMPACT TEST DATE: 10-09-1997 - 12:19:26

COMPONENT: DUMMY # E1-213 Velocity: 20.86 FT/SEC 6.36 M/SEC

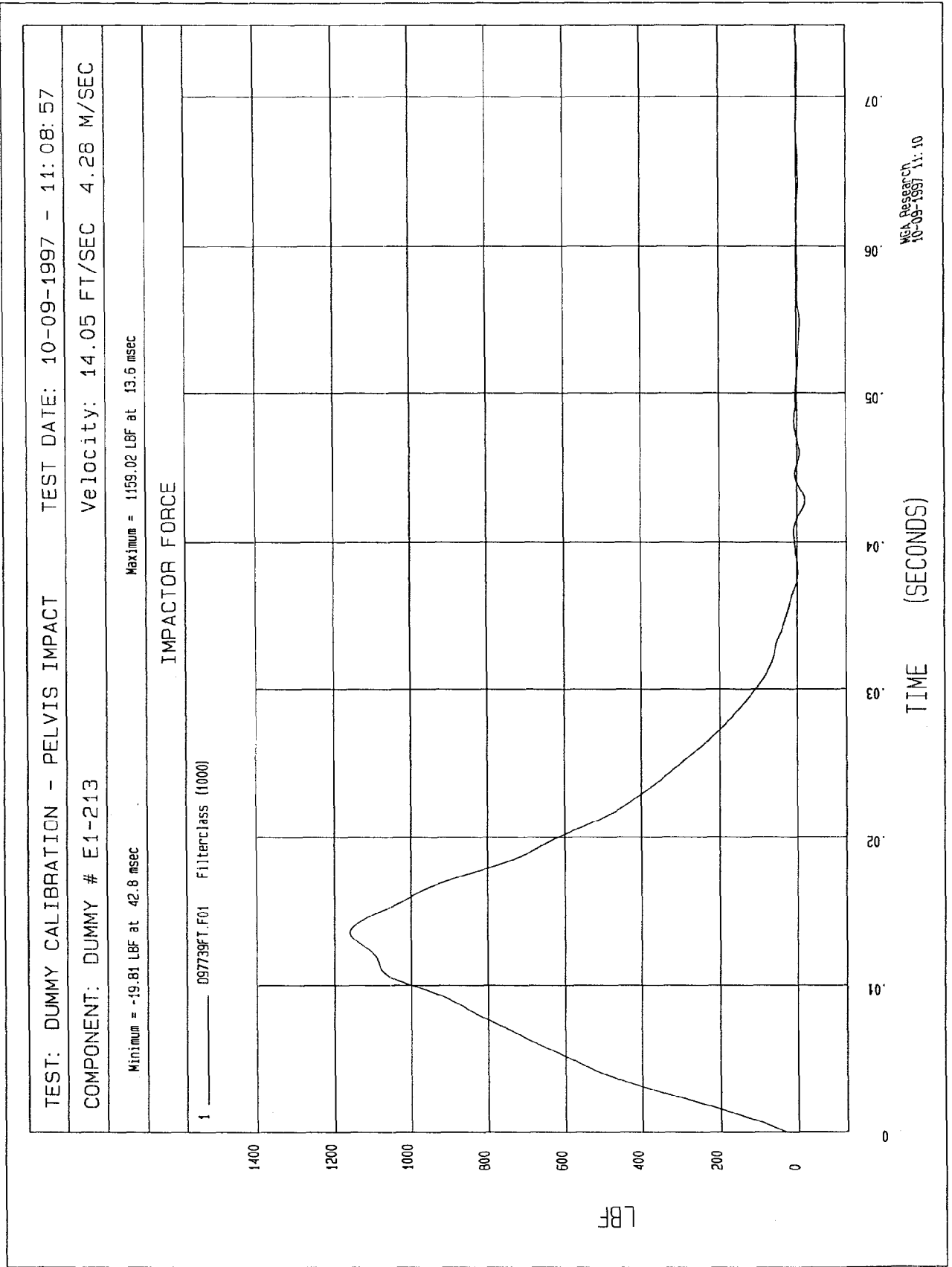
Minimum = -4.46 LBS at 95.8 msec Maximum = 1453.10 LBS at 9.36 msec

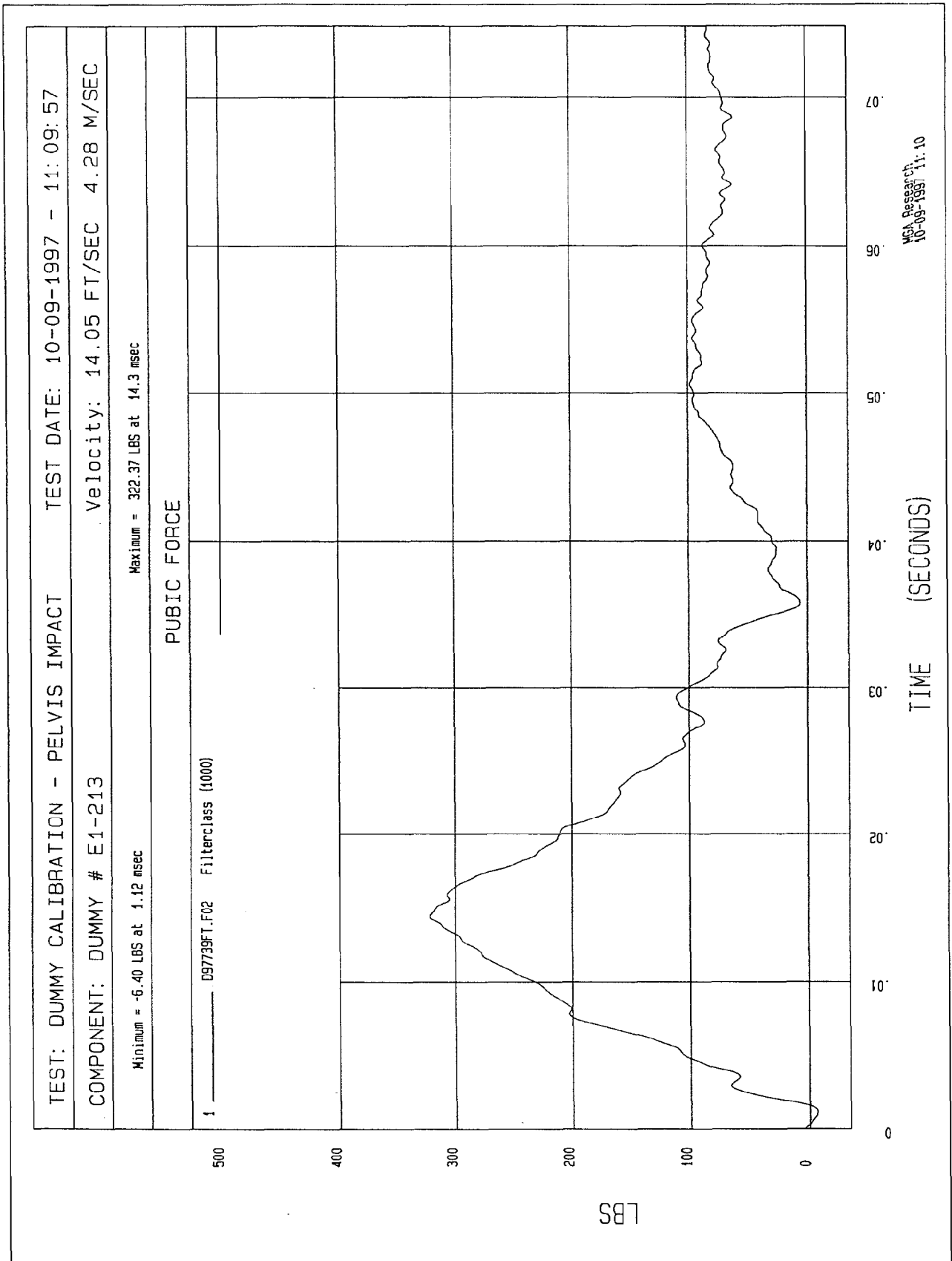
ABDOMEN FORCE

1 ——— D977371.F05 Filterclass (1000)



MCA Research
10-09-1997 12:20





EUROSID DUMMY POST-TEST CALIBRATION DATA SUMMARY SHEET

Dummy #: E1-213

Calibration Date: January 9, 1998

1.0 Head Drop Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Max. Resultant Acceleration	100 - 150 g's	138
Time of Max. Res. Acceleration		2.8 msec.

Calibrated By: Tim Michnay

Date: January 9, 1998

2.0 Neck Pendulum Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Pendulum Speed	10.83 - 11.48 ft/sec	11.18
Max. Pendulum Acceleration		-32.76
Time Max. Pend. Acceleration		9.73
Maximum Flexion Angle	46.0 - 56.0 deg.	53.4
Time of Max. Flexion Angle	50.0 - 62.0 ms	54.2
Maximum Angle Theta (A)	30.0 - 34.0 deg	31.3
Time of Max. Theta (A)	50.0 - 60.0 ms	54.4
Maximum Angle Theta (B)	26.0 - 30.0 deg.	28.7
Time of Max. Theta (B)	50.0 - 60.0 ms	51.0

Calibrated By: Tim Michnay

Date: January 9, 1998

3.0 Shoulder Impact Test

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Pendulum Speed	13.78 - 14.43 ft/sec	14.10
Max. Pendulum Acceleration	7.5 - 10.5 g's	7.6
Time of Max. Pendulum Acceleration		17.3

Calibrated By: Tim Michnay

Date: January 8, 1998

4.0 Upper Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Displacement at 3.28 ft/sec	.39 - .55 in	.43
Displacement at 6.56 ft/sec	.93 - 1.08 in	.95
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.50
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.89

Calibrated By: Tim Michnay

Date: January 9, 1998

5.0 Middle Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Displacement at 3.28 ft/sec	.39 - .55 in	.46
Displacement at 6.56 ft/sec	.93 - 1.08 in	.97
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.52
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.95

Calibrated By: Tim Michnay

Date: January 9, 1998

6.0 Lower Rib

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Displacement at 3.28 ft/sec	.39 - .55 in	.41
Displacement at 6.56 ft/sec	.93 - 1.08 in	.100
Displacement at 9.84 ft/sec	1.42 - 1.57 in	1.51
Displacement at 13.12 ft/sec	1.81 - 2.00 in	1.86

Calibrated By: Tim MichnayDate: January 9, 1998**7.0 Abdomen Test**

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Probe Speed	20.34 - 20.99 ft/sec	20.85
Maximum Impact Force	2136 - 2495 lbs	2154
Time of Maximum Force	8.8 - 10.4 ms	9.1
Max. Total Abdomen Force	1326 - 1776 lbs	1358
Time of Max. Total Force	8.5 - 10.1 ms	9.1

Calibrated By: Tim MichnayDate: January 8, 1998

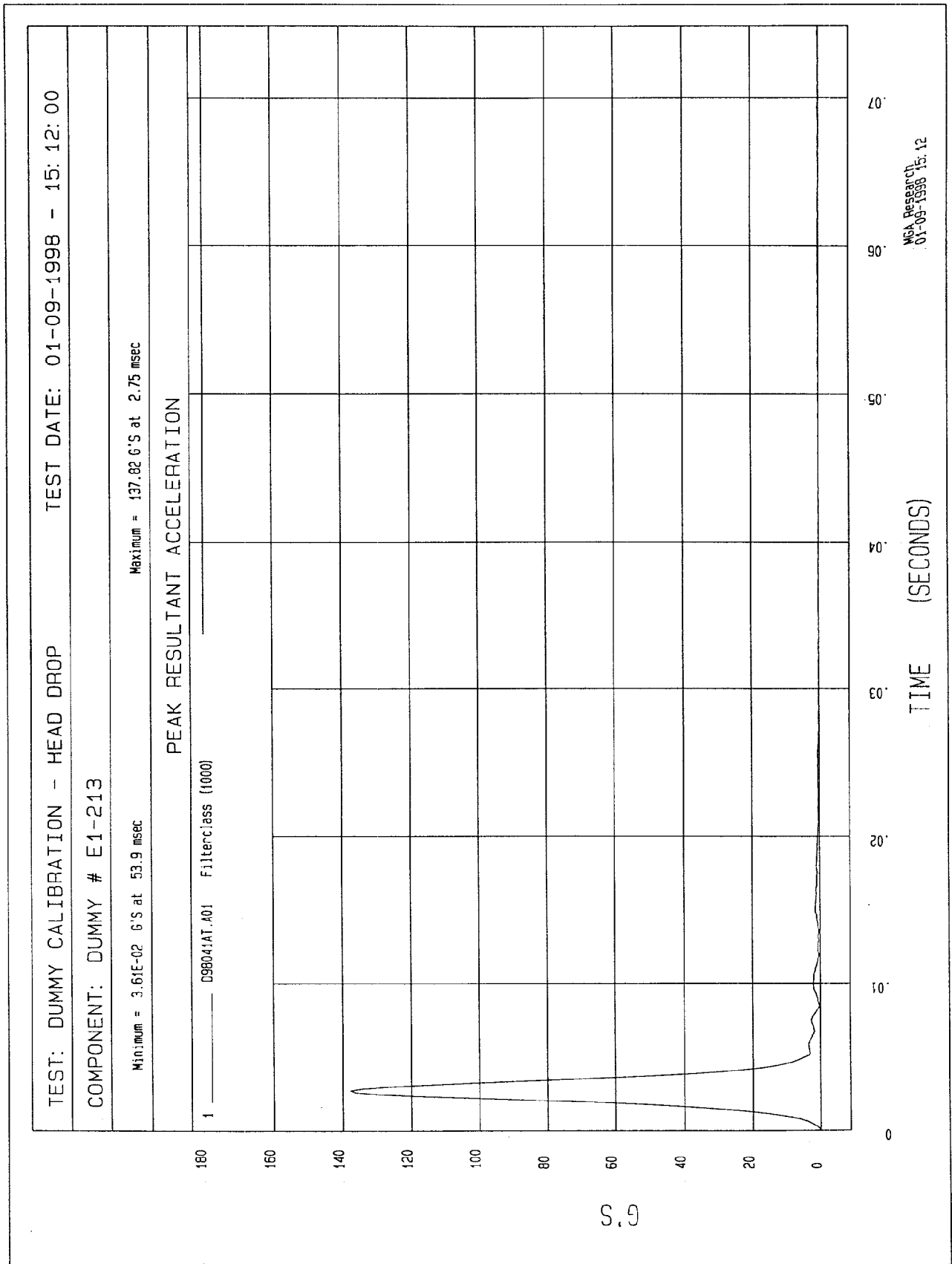
8.0 Lumbar Spine Test

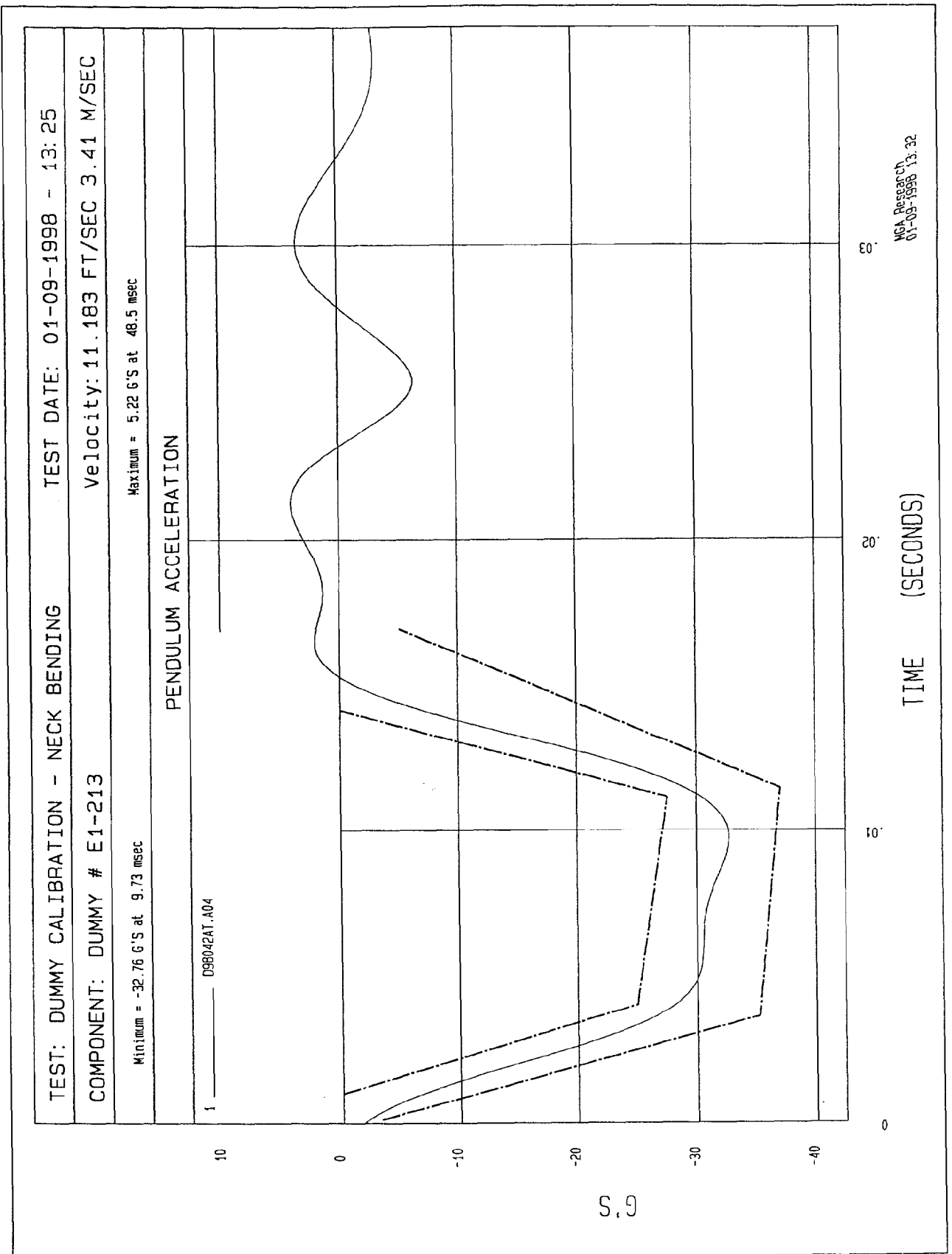
	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Pendulum Speed	19.52 - 20.17 ft/sec	19.84
Max. Pendulum Acceleration		-29.4
Time Max. Pend. Acceleration		10.0
Maximum Flexion Angle	45.0 - 55.0 deg.	46.7
Time of Max. Flexion Angle	39.0 - 53.0 ms	43.9
Maximum Angle Theta (A)	31.0 - 35.0 deg	33.8
Time of Max. Theta (A)	45.0 - 55.0 ms	46.6
Maximum Angle Theta (B)	27.0 - 31.0 deg.	31.0
Time of Max. Theta (B)	45.0 - 55.0 ms	45.8

Calibrated By: First Technology Safety SystemsDate: January 9, 1998**9.0 Pelvis Test**

	SPECIFICATION	MEASUREMENT
Laboratory Temperature	65° - 71° F	70°
Laboratory Relative Humidity	10% - 70%	18%
Pendulum Speed	13.77 - 14.43 ft/sec	14.22
Maximum Impactor Force	989 - 1214 lbs	1106
Time of Max. Impactor Force	10.3 - 15.5 ms	12.7
Maximum Pubic Force	233.8 - 368.7 lbs	294.8
Time of Max. Pubic Force	9.9 - 15.9 ms	14.9

Calibrated By: Tim MichnayDate: January 8, 1998





TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 01-09-1998 - 13:25

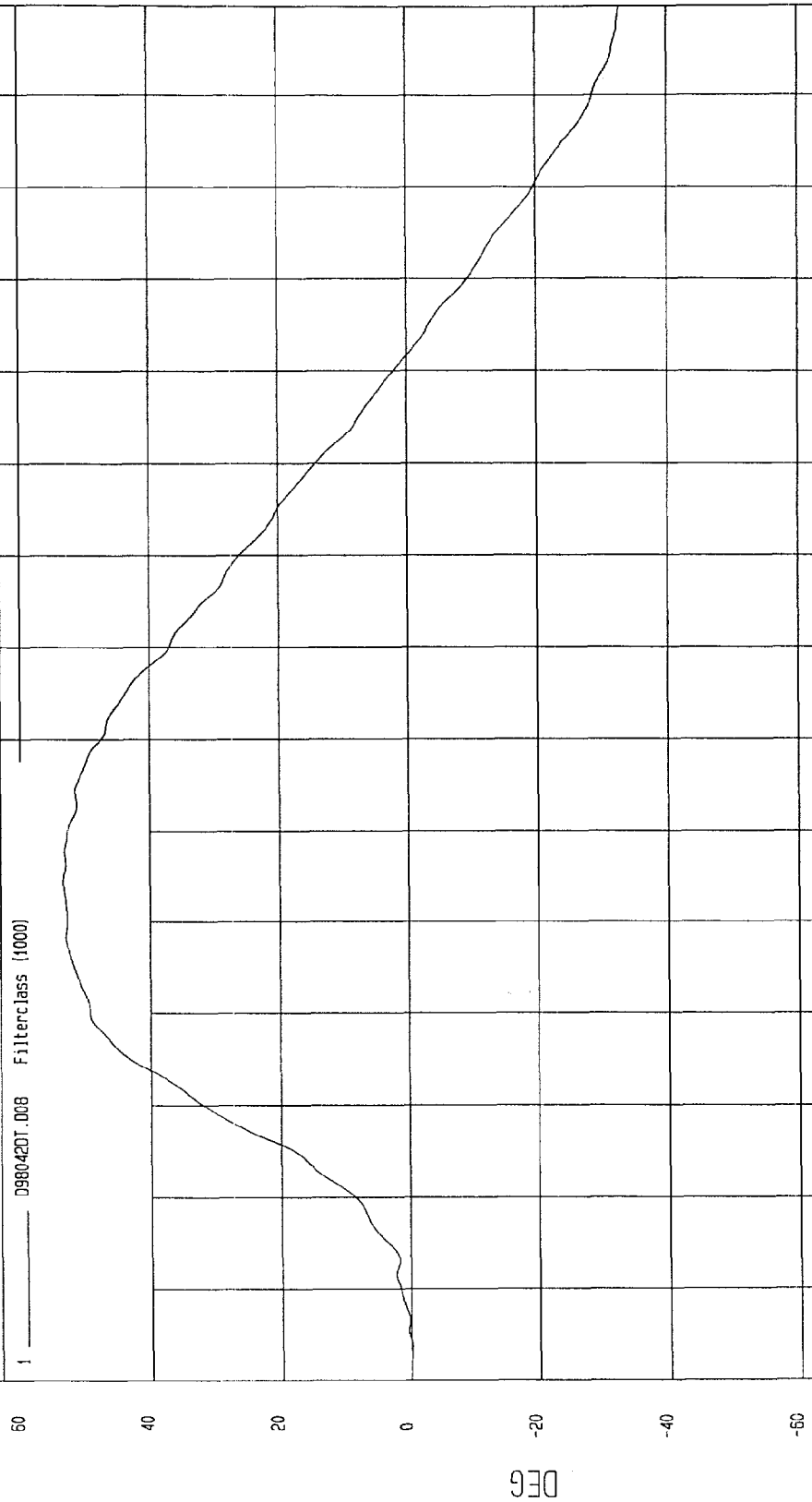
COMPONENT: DUMMY # E1-213 Velocity: 11.18 FT/SEC 3.41 M/SEC

Minimum = -33.00 DEG at 157 msec

Maximum = 53.38 DEG at 54.2 msec

FLEXION ANGLE

1 D980420T.008 Filterclass (1000)



NSA Research
01-09-1998 13:35

TIME (SECONDS)

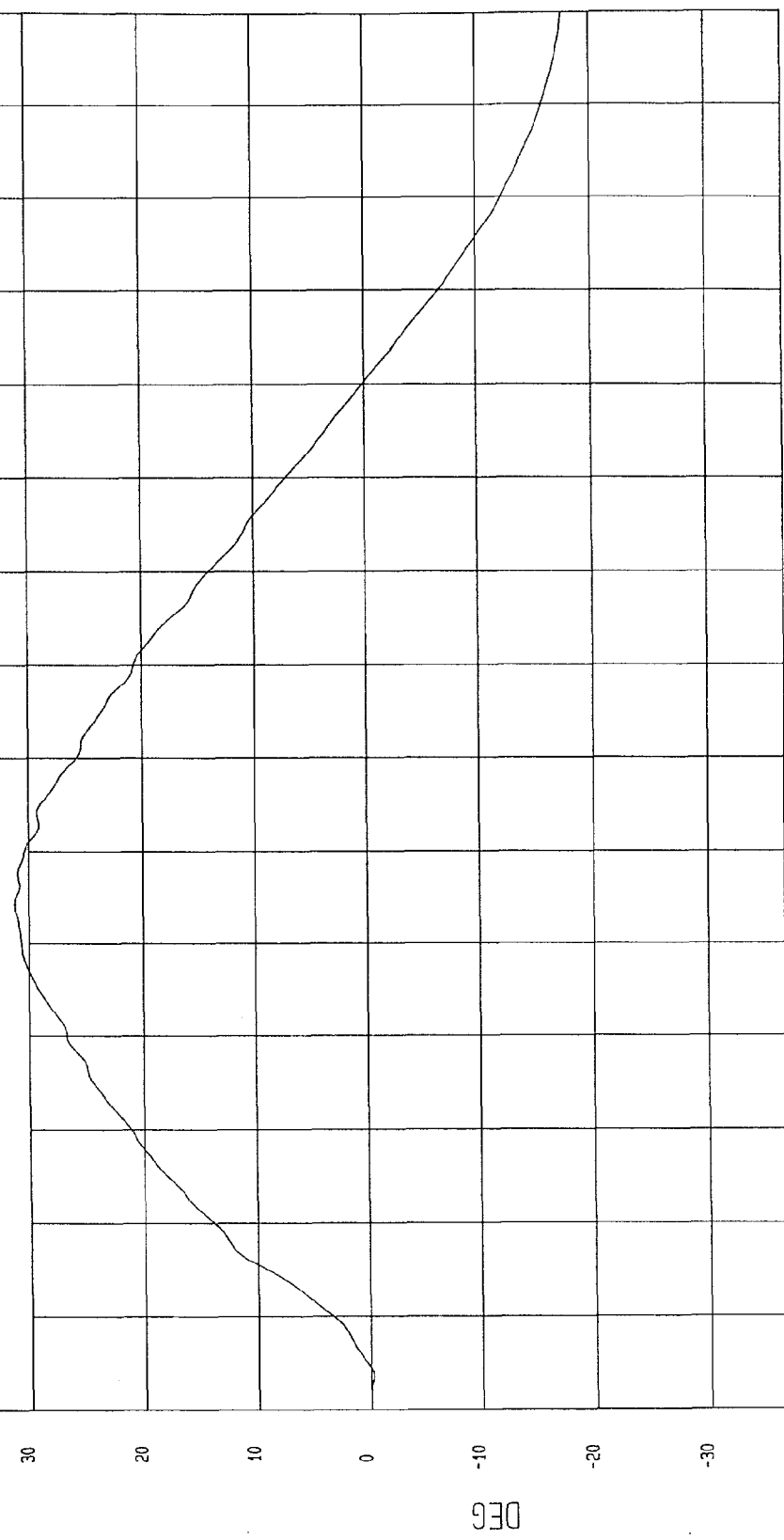
TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 01-09-1998 - 13:25

COMPONENT: DUMMY # E1-213 Velocity: 11.18 FT/SEC 3.41 M/SEC

Minimum = -17.66 DEG at 153. msec Maximum = 31.25 DEG at 54.4 msec

THETA A

1 ——— D9804201.005 Filterclass (4000)



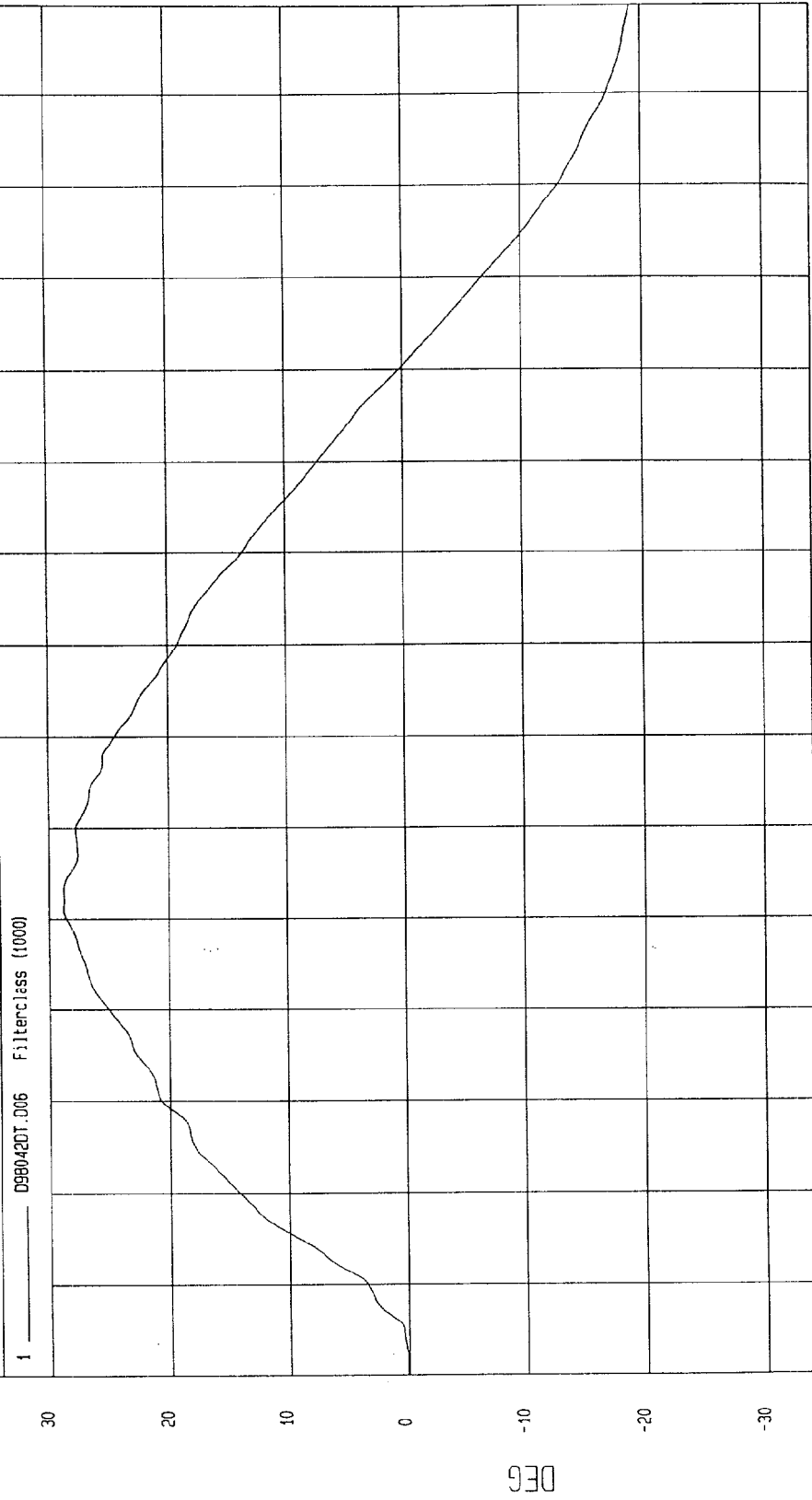
WCA Research
01-09-1998 13:37

TEST: DUMMY CALIBRATION - NECK BENDING TEST DATE: 01-09-1998 - 13:25

COMPONENT: DUMMY # E1-213 Velocity: 11.18 FT/SEC 3.41 M/SEC

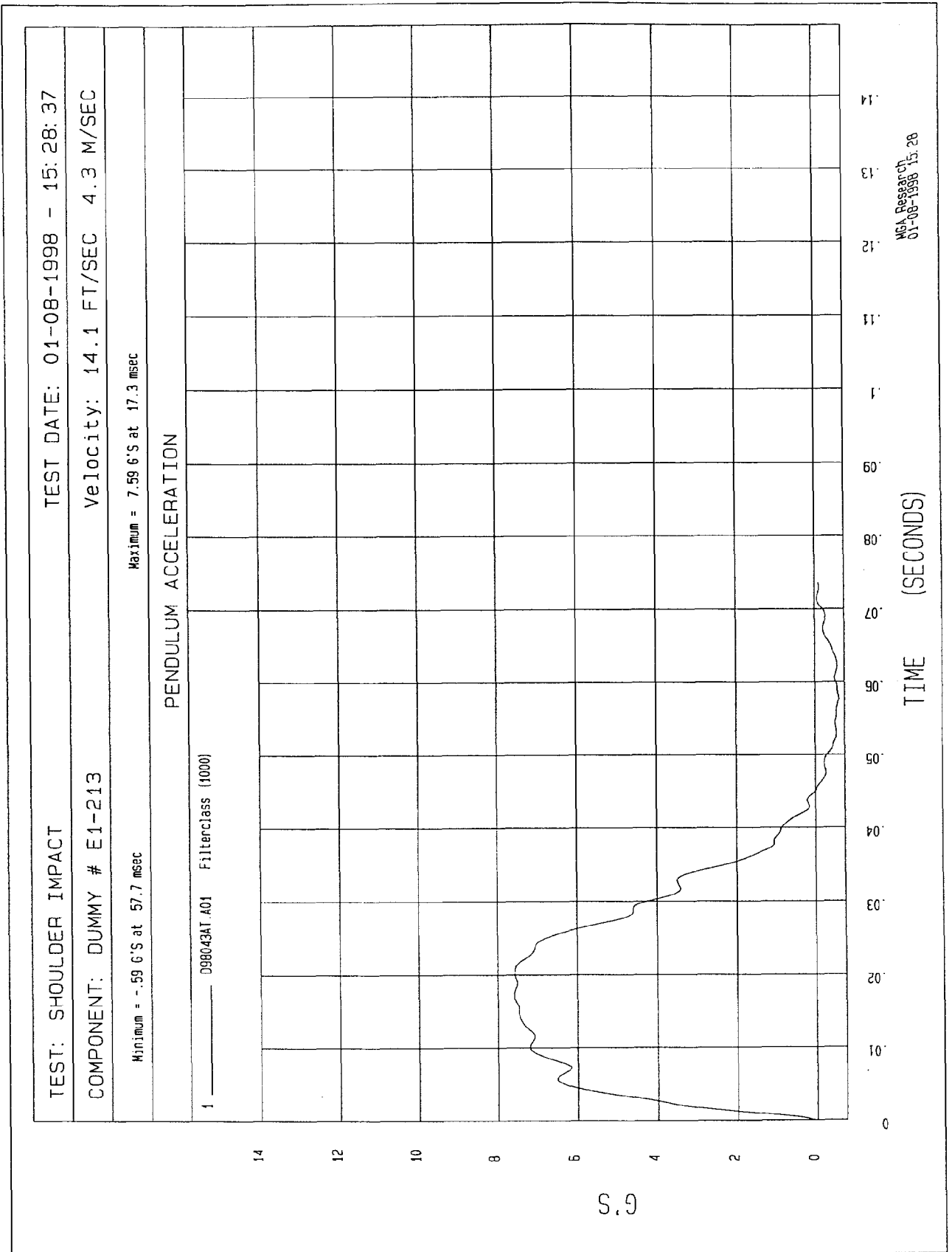
Minimum = -19.37 DEG at 157. msec Maximum = 28.74 DEG at 51.0 msec

THETA B



TIME (SECONDS)

WCA Research
01-09-1998 13:37



TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 11:40

COMPONENT: DUMMY # E1-213 Velocity: 3.28 FT/SEC 1 M/SEC

Minimum = -3.99E-04 IN at 16.6 msec
Maximum = .43 IN at 64.9 msec

UPPER RIB DISPLACEMENT

1 0980440F.D05 Filterclass (1000)

1

.8

.6

.4

.2

0

NI

.12

.11

.1

.09

.08

.07

.06

.05

.04

.03

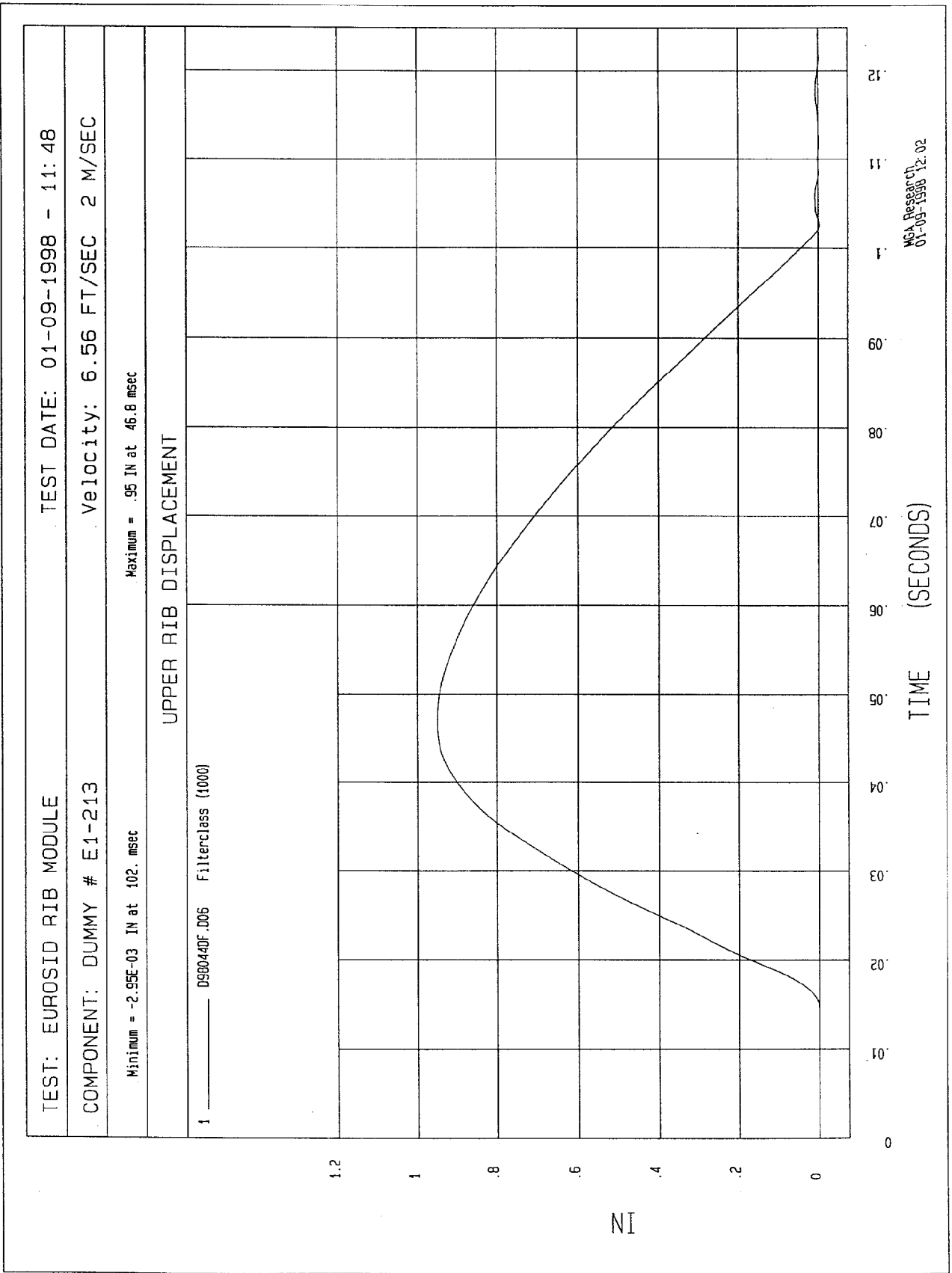
.02

.01

0

WCA Research
01-09-1998 12:01

TIME (SECONDS)



TEST: EUROSID LUMBAR FLEXION

TEST DATE: 01-09-1998 - 12:00

COMPONENT: DUMMY # E1-213

Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -8.05E-03 IN at 88.4 msec

Maximum = 1.50 IN at 38.6 msec

UPPER RIB DISPLACEMENT

1 ——— D980440F.D07 Filterclass (4000)

2

1.8

1.6

1.4

1.2

1

.8

.6

.4

.2

0

NI

12

11

10

09

08

07

06

05

04

03

02

01

0

WCA Research
01-09-1998 12:02

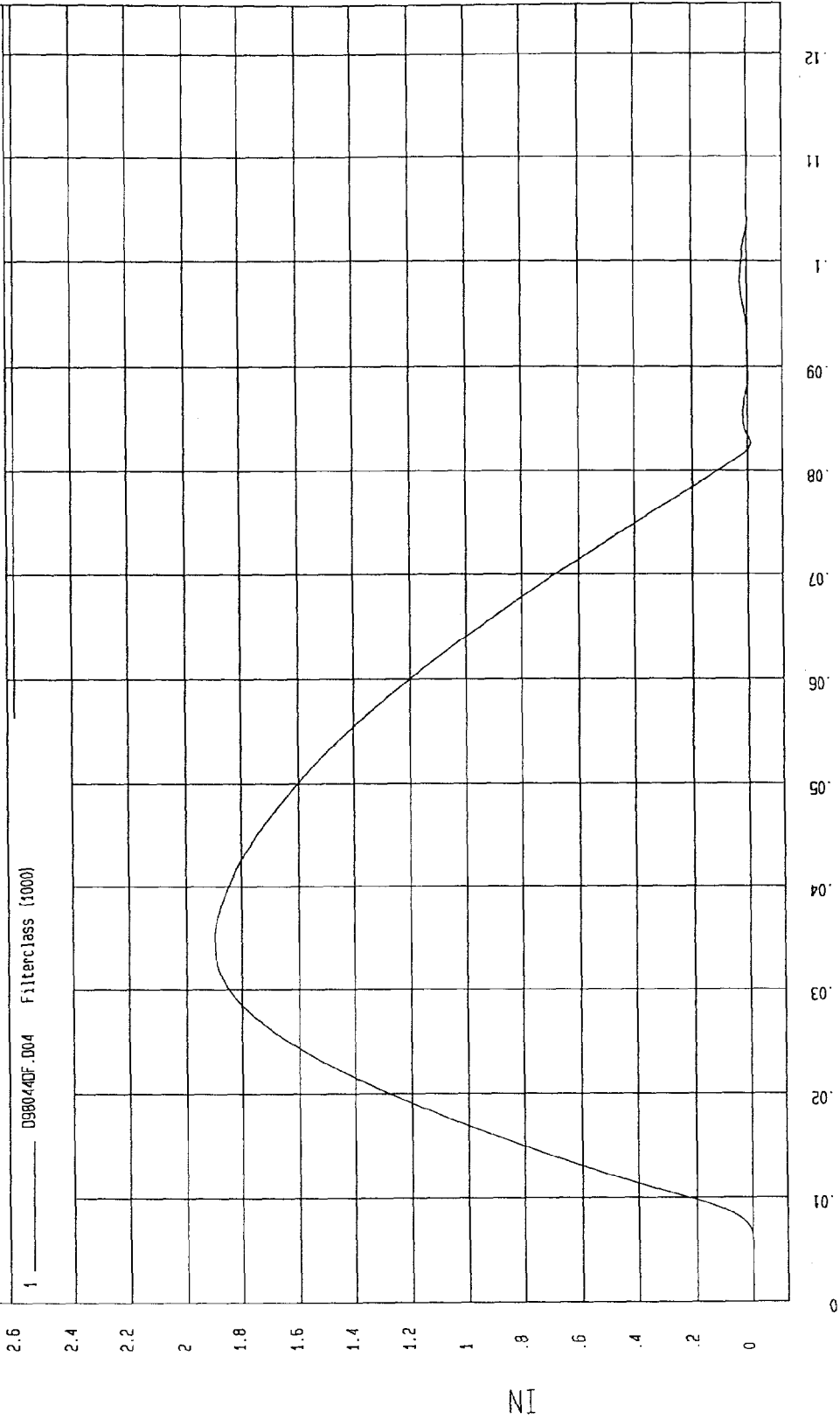
TIME (SECONDS)

TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 11:27

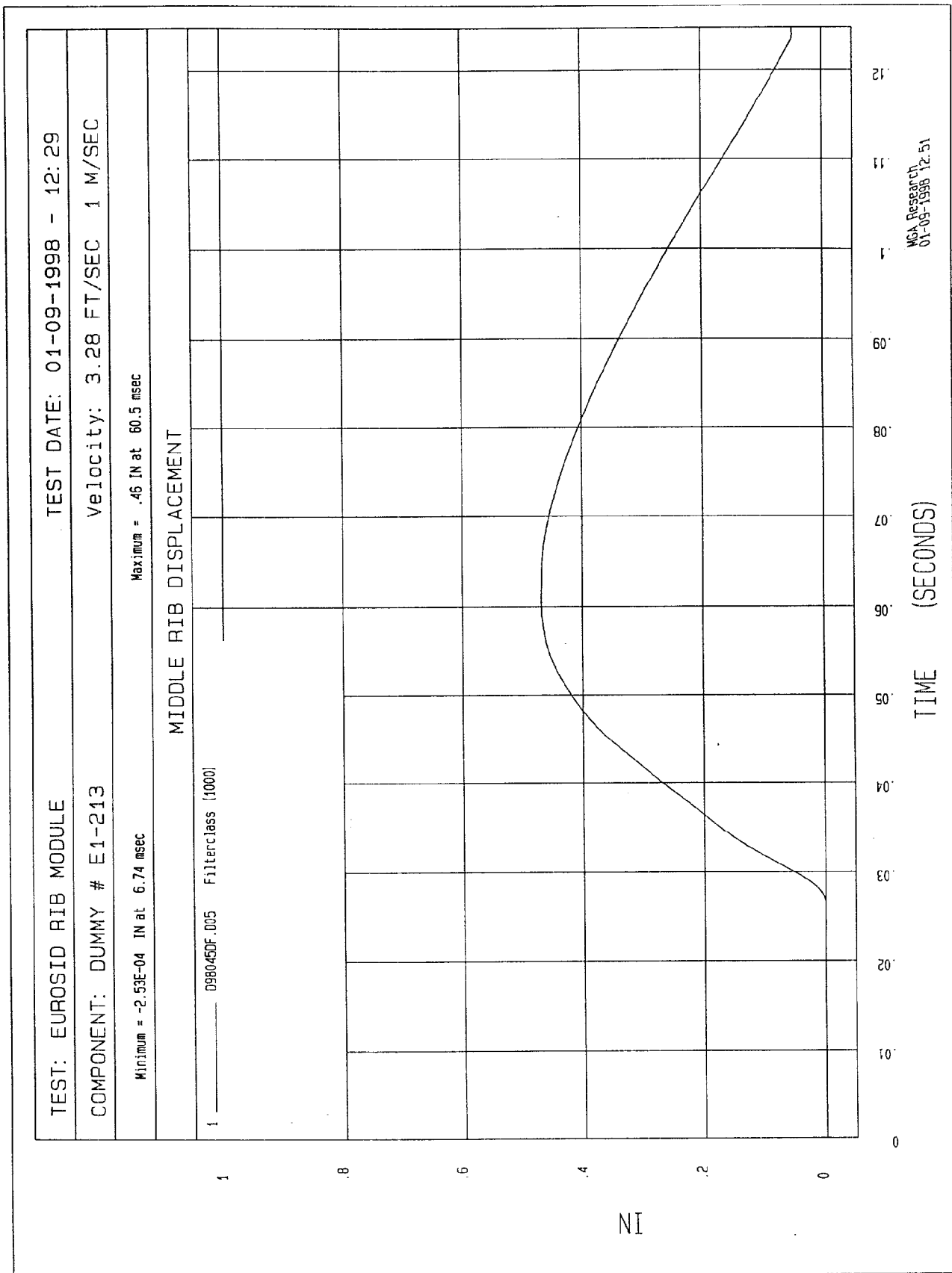
COMPONENT: DUMMY # E1-213 Velocity: 13.12 FT/SEC 4 M/SEC

Minimum = -1.07E-02 IN at 82.5 msec Maximum = 1.89 IN at 34.9 msec

UPPER RIB DISPLACEMENT



MCA Research
01-09-1998 12:02

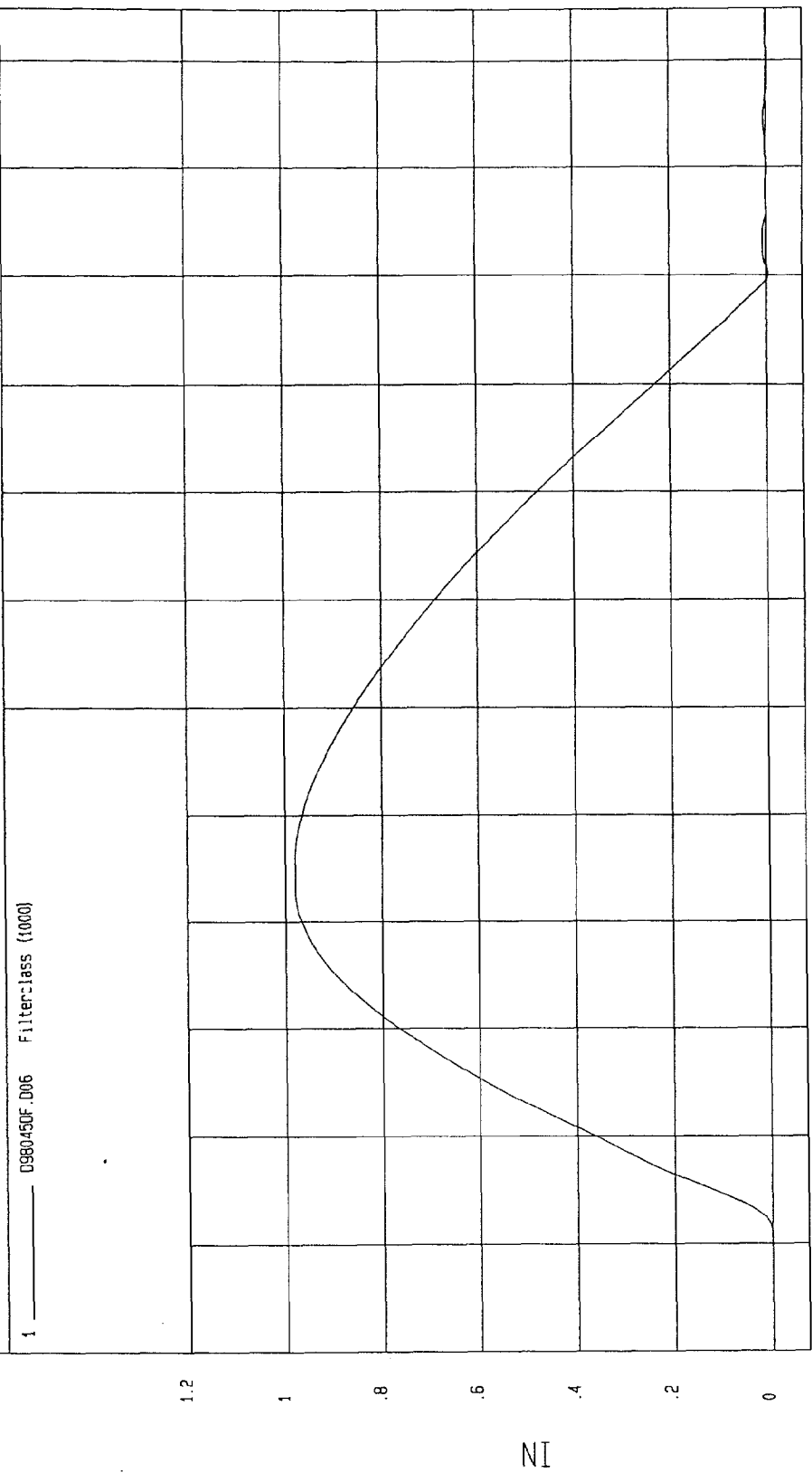


TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 12:40

COMPONENT: DUMMY # E1-213 Velocity: 6.56 FT/SEC 2 M/SEC

Minimum = -3.88E-03 IN at 100. msec
Maximum = .97 IN at 43.6 msec

MIDDLE RIB DISPLACEMENT



MOA Research
01-09-1998 12:51

TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 12:50

COMPONENT: DUMMY # E1-213 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -7.44E-03 IN at 89.4 msec

Maximum = 1.52 IN at 38.6 msec

MIDDLE RIB DISPLACEMENT

1 _____ D980450F.007 FilterClass (1000)

2

1.8

1.6

1.4

1.2

1

.8

.6

.4

.2

0

NI

12

11

10

09

08

07

06

05

04

03

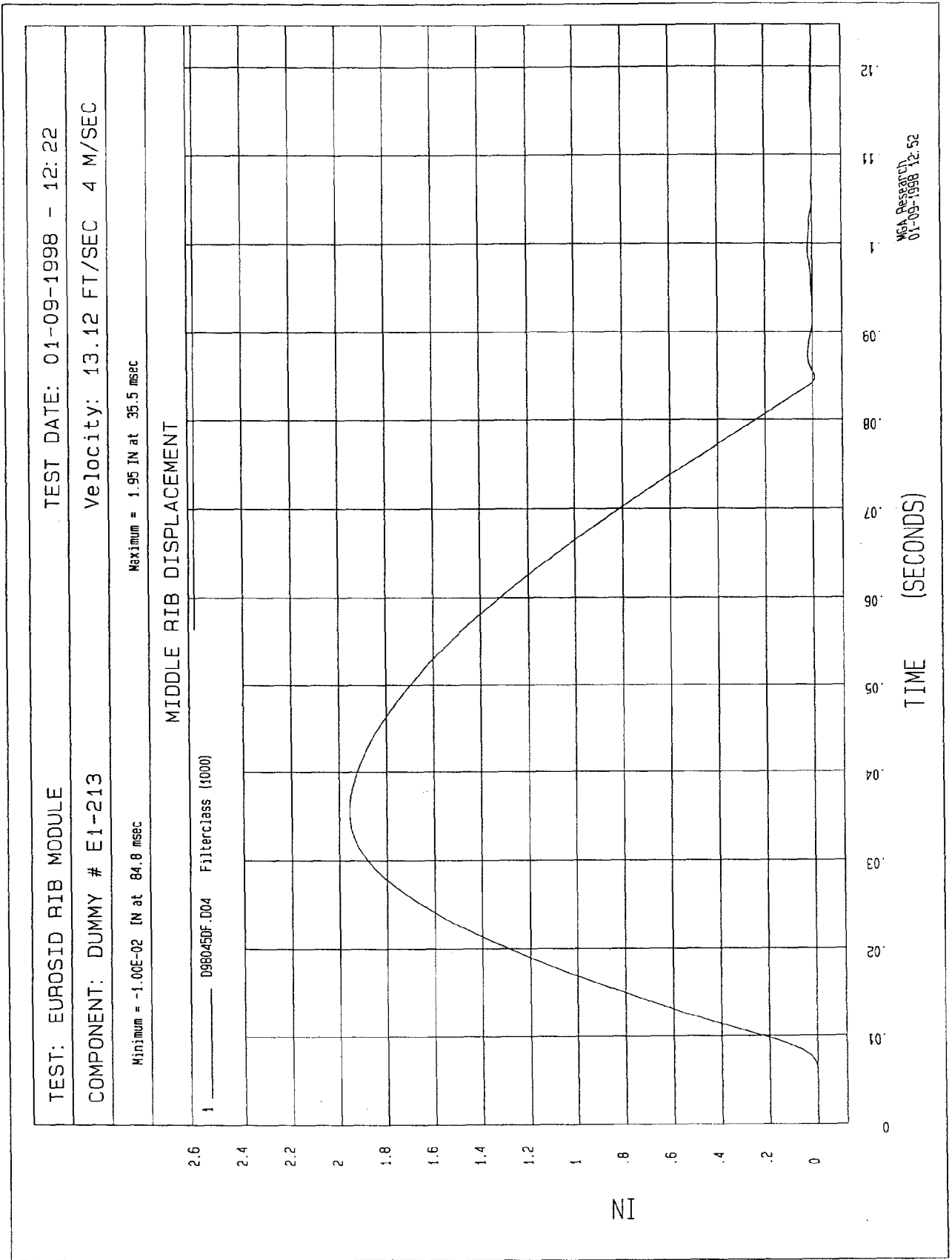
02

01

0

NSA Research
01-09-1998 12:51

TIME (SECONDS)



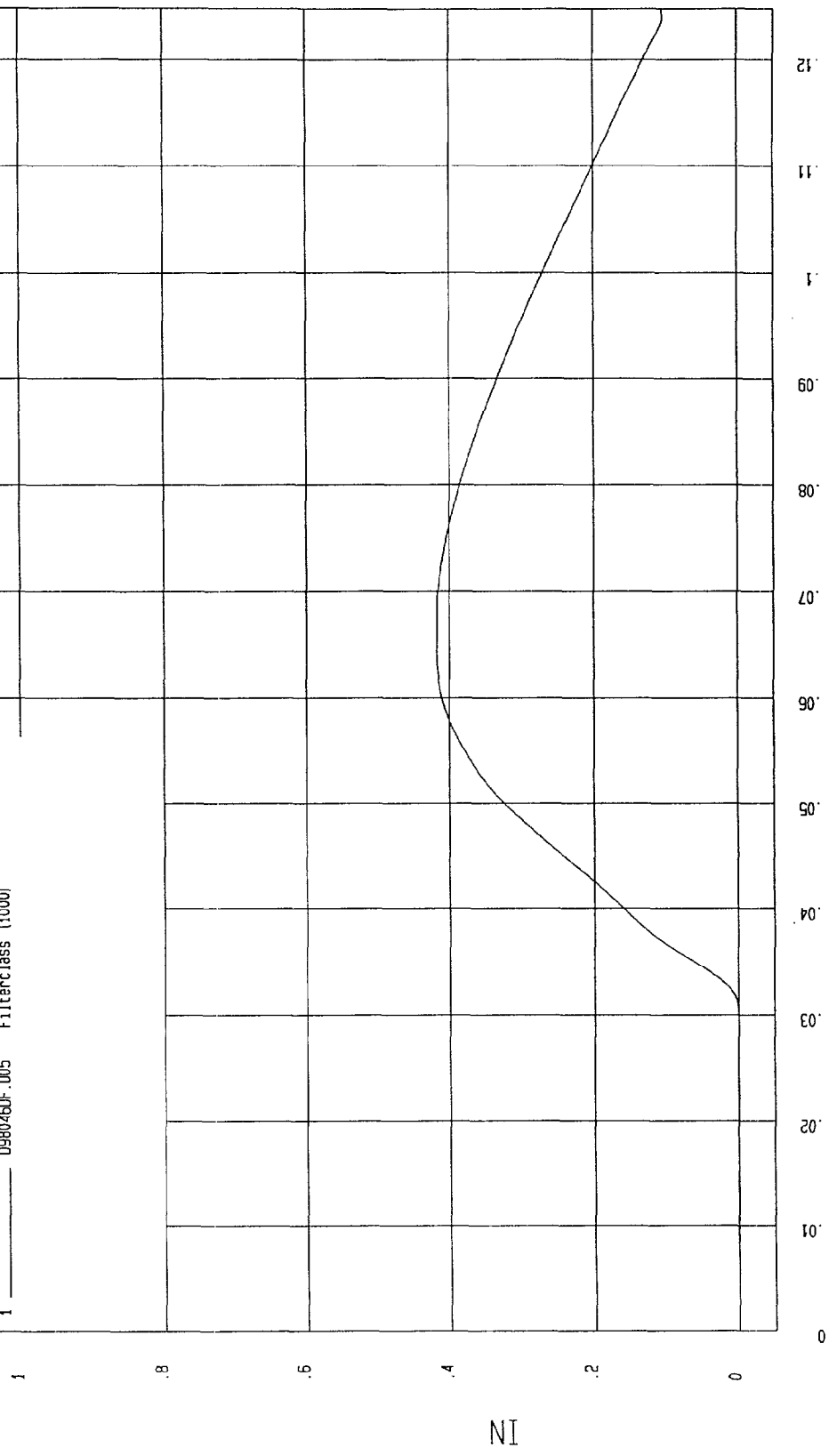
TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 13:07

COMPONENT: DUMMY # E1-213 Velocity: 3.28 FT/SEC 1 M/SEC

Minimum = -5.59E-04 IN at 5.74 msec
Maximum = .41 IN at 64.4 msec

LOWER RIB DISPLACEMENT

1 _____ D980460F.005 Filterclass (1000)



WCA Research
01-09-1998 13:51

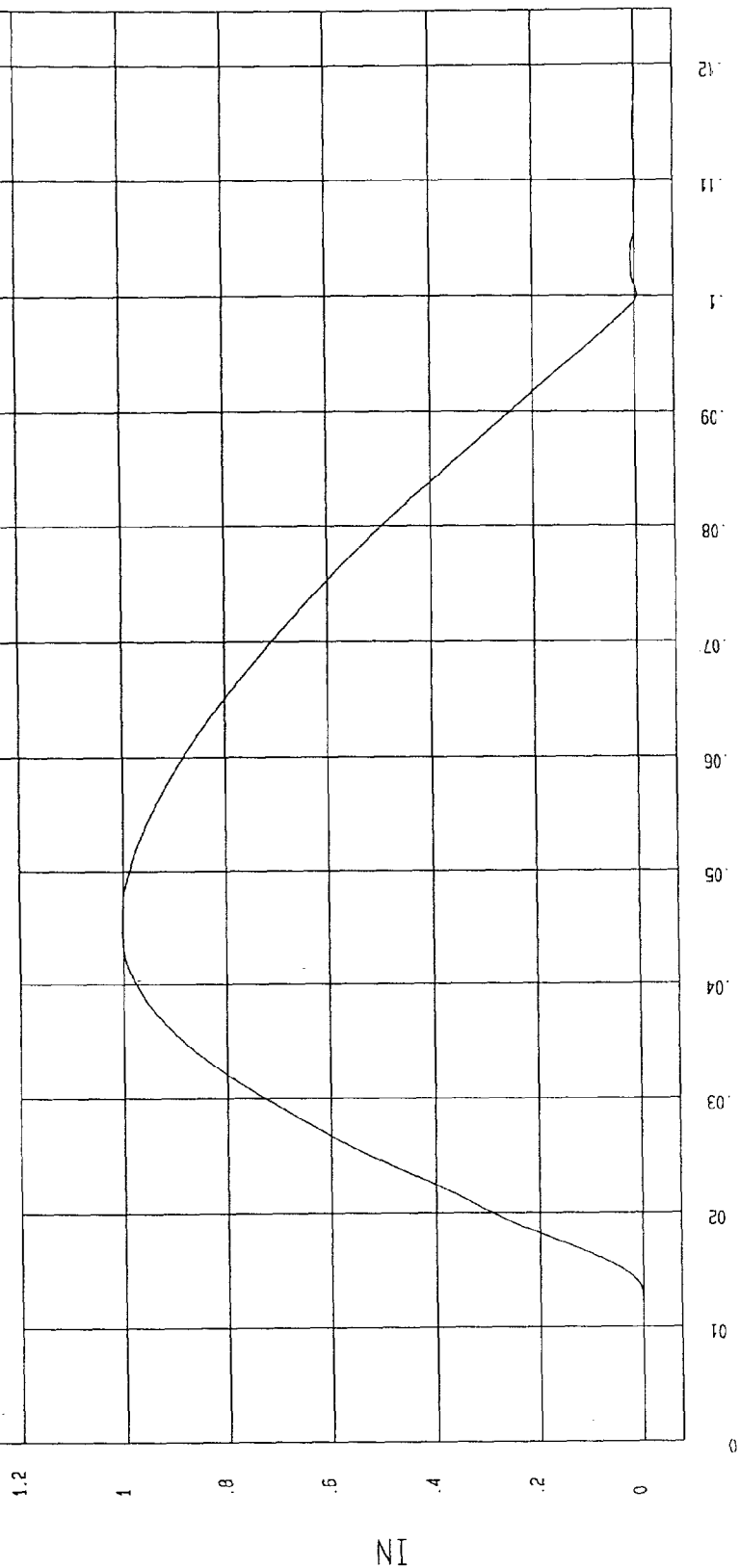
TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 13:32

COMPONENT: DUMMY # E1-213 Velocity: 6.56 FT/SEC 2 M/SEC

Minimum = -4.41E-03 IN at 100. msec Maximum = 1.00 IN at 44.6 msec

LOWER RIB DISPLACEMENT

1 _____ D380460F.D06 Filterclass (1000)

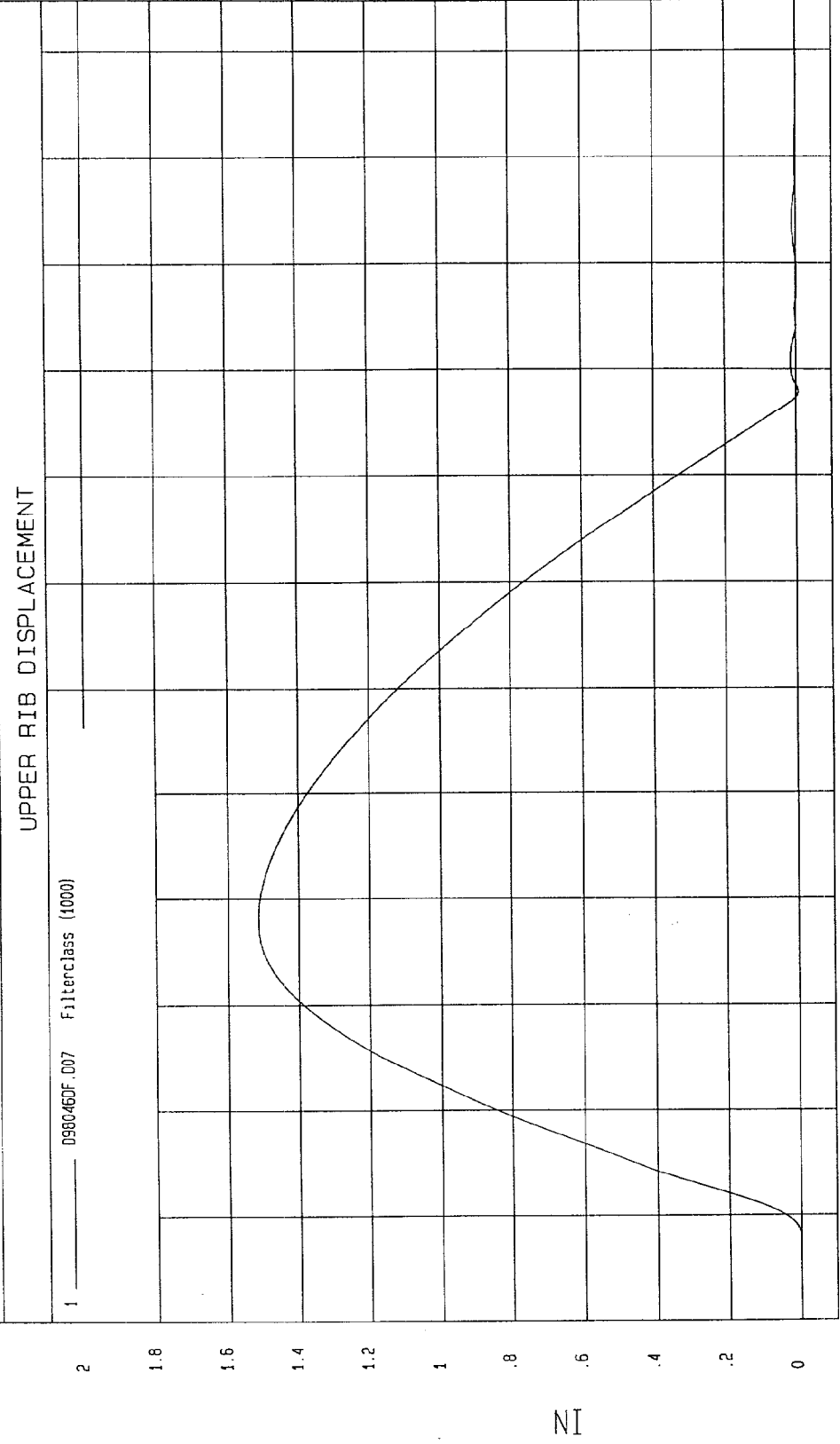


NSI P02411
01-09-1998 13:52

TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 13: 46

COMPONENT: DUMMY # E1-213 Velocity: 9.84 FT/SEC 3 M/SEC

Minimum = -.00 IN at 87.8 msec Maximum = 1.51 IN at 38.0 msec



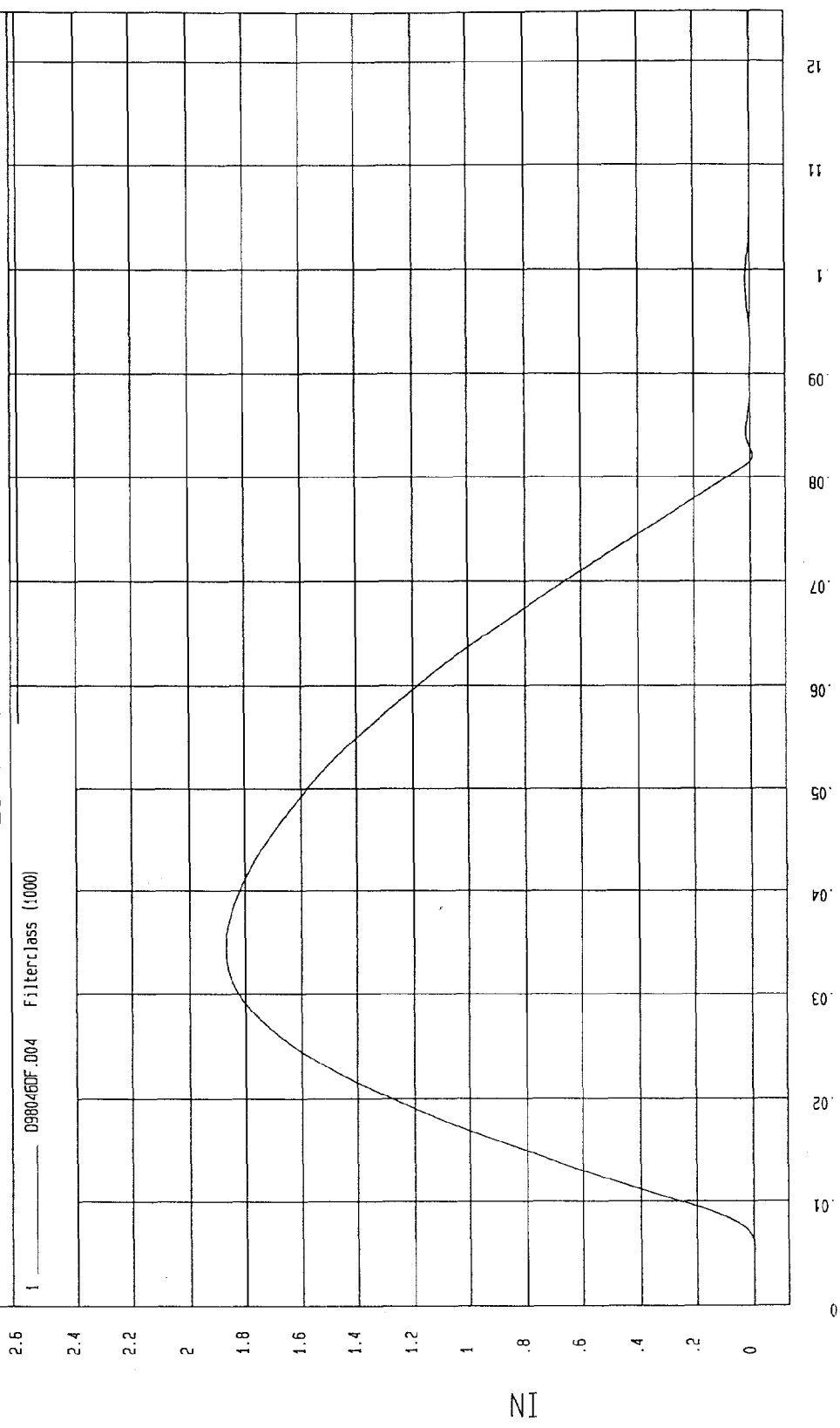
TIME (SECONDS)

MCA Research
01-09-1998 13: 55

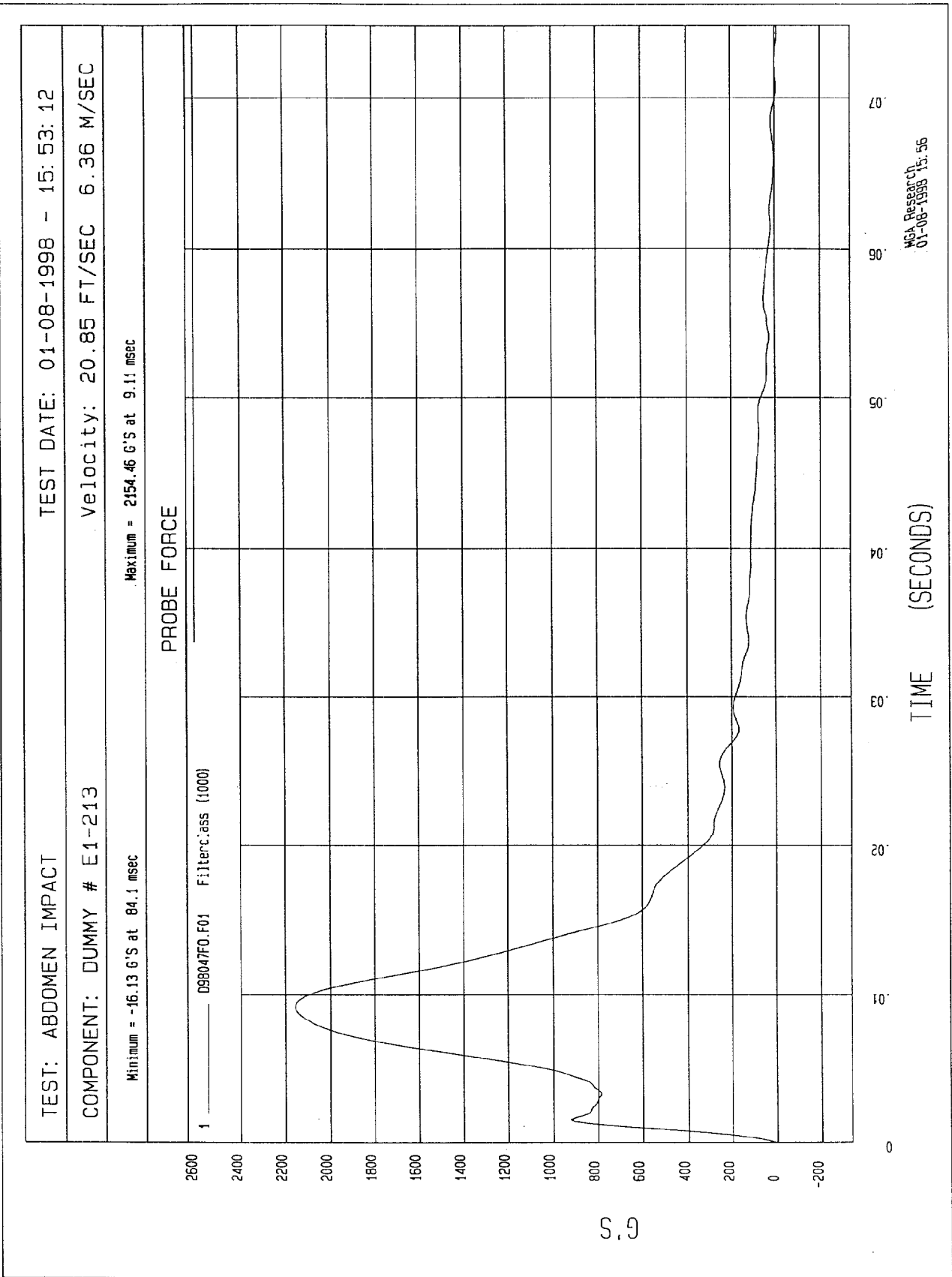
TEST: EUROSID RIB MODULE TEST DATE: 01-09-1998 - 13:00
COMPONENT: DUMMY # E1-213 Velocity: 13.12 FT/SEC 4 M/SEC

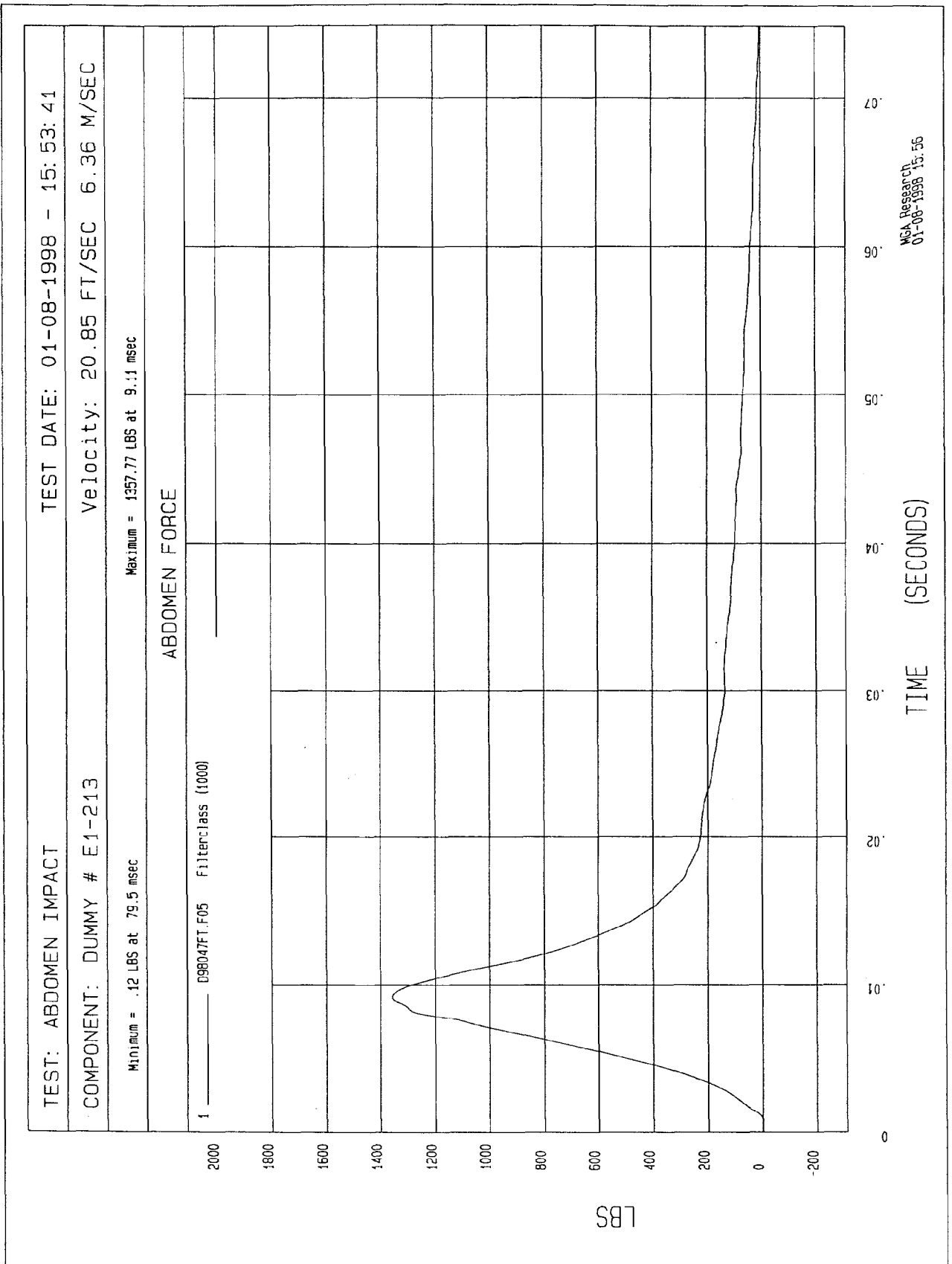
Minimum = -.00 IN at 82.1 msec Maximum = 1.86 IN at 34.4 msec

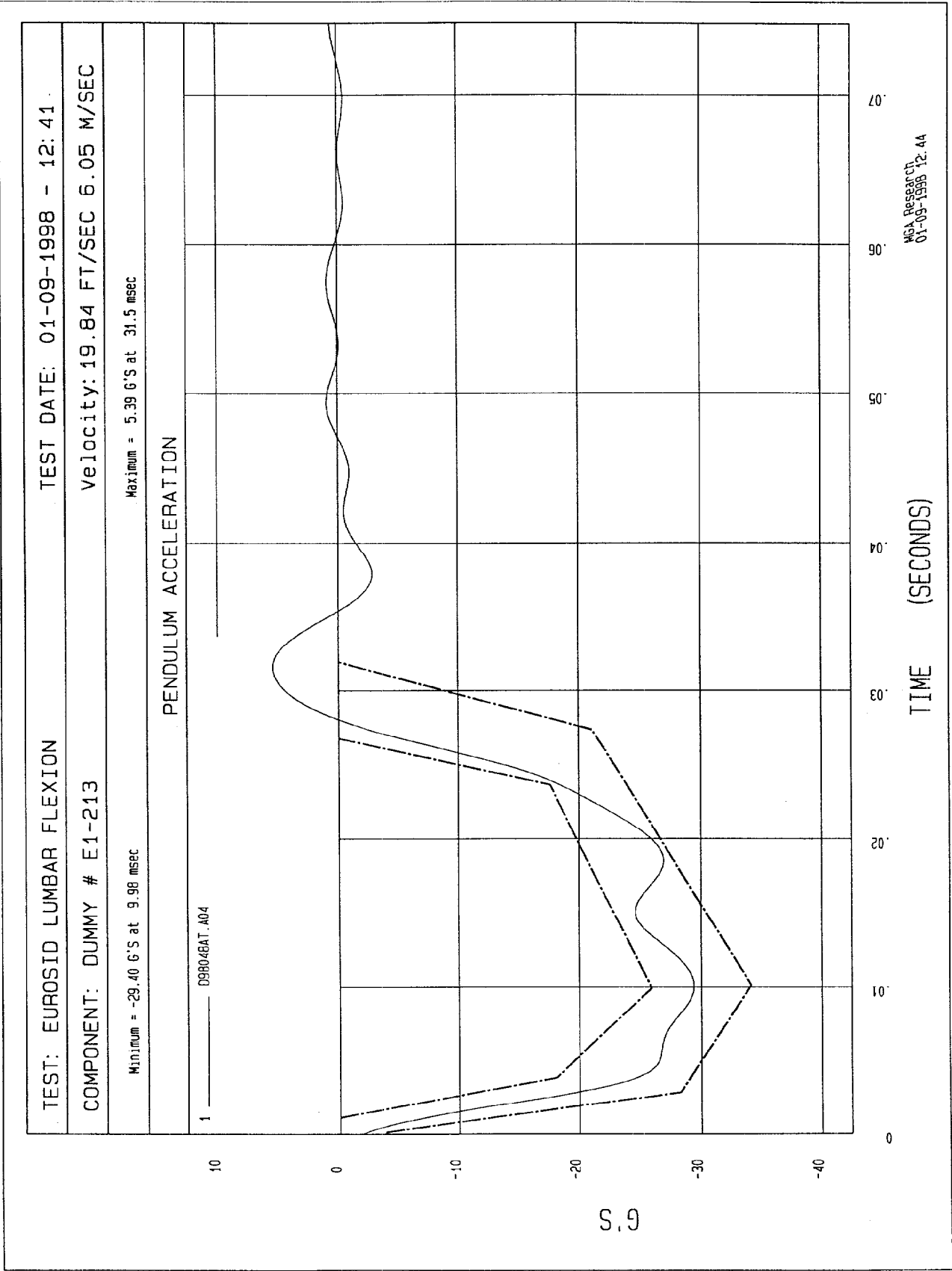
LOWER RIB DISPLACEMENT

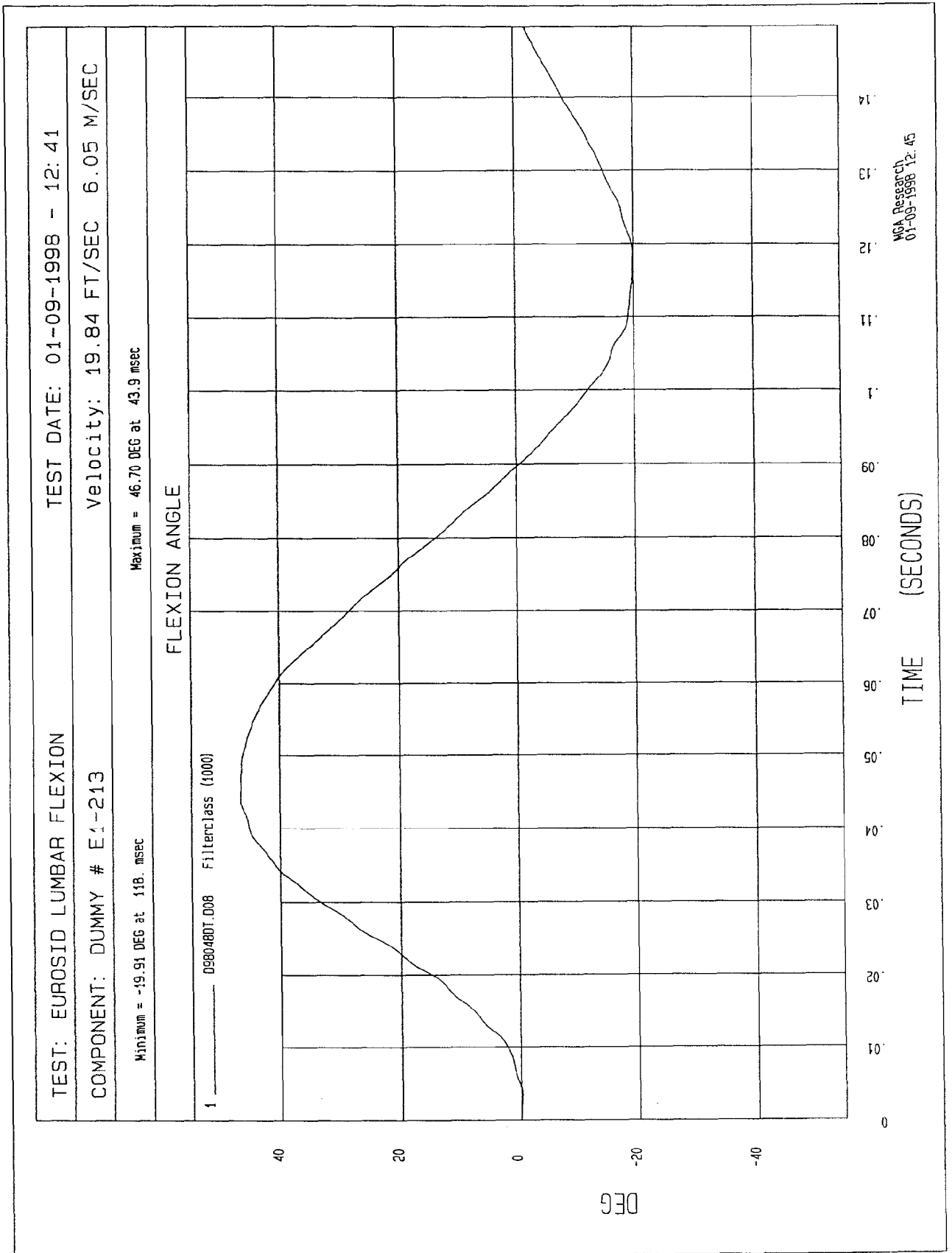


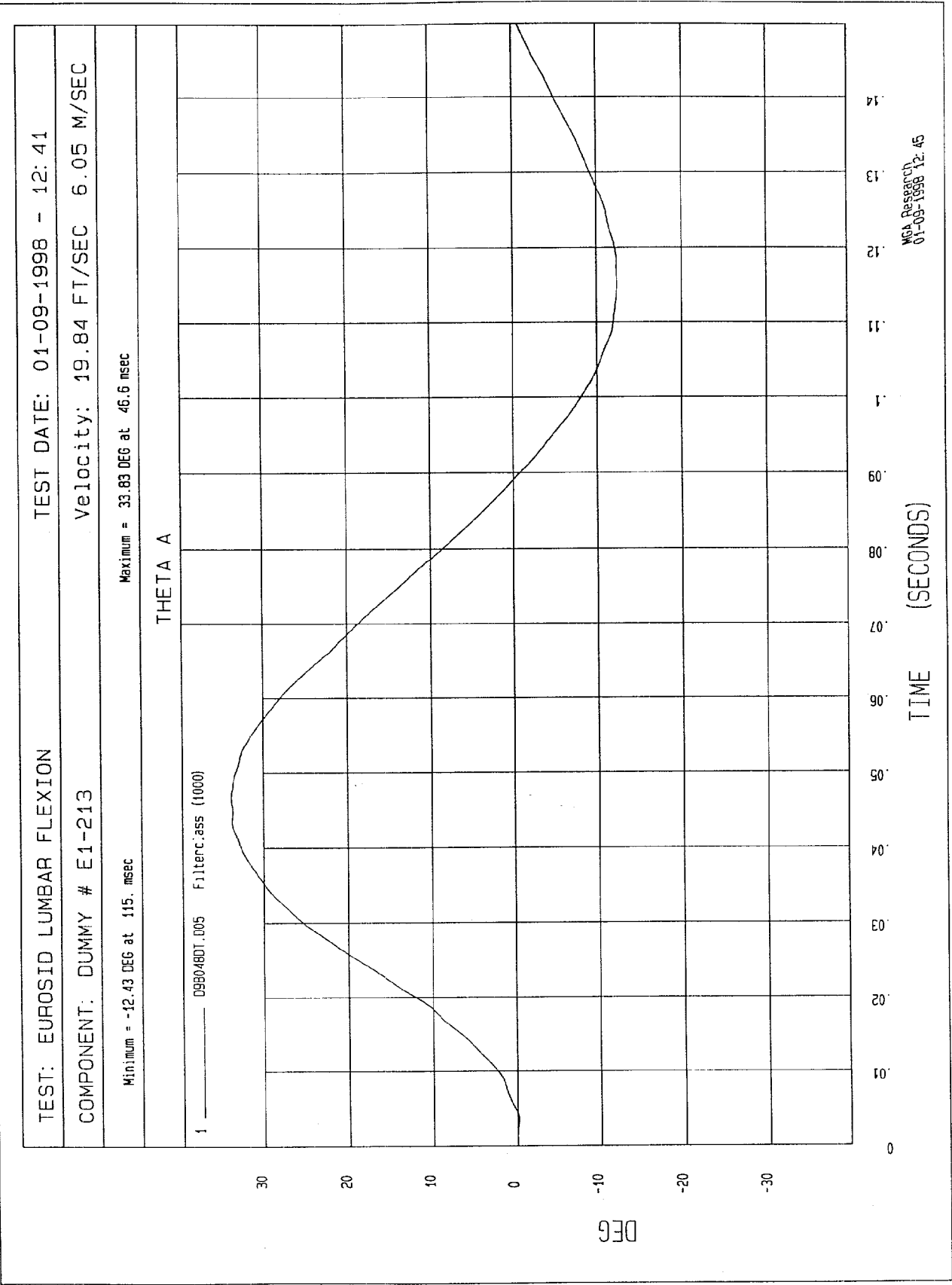
MGA Research
01-09-1998 13:53

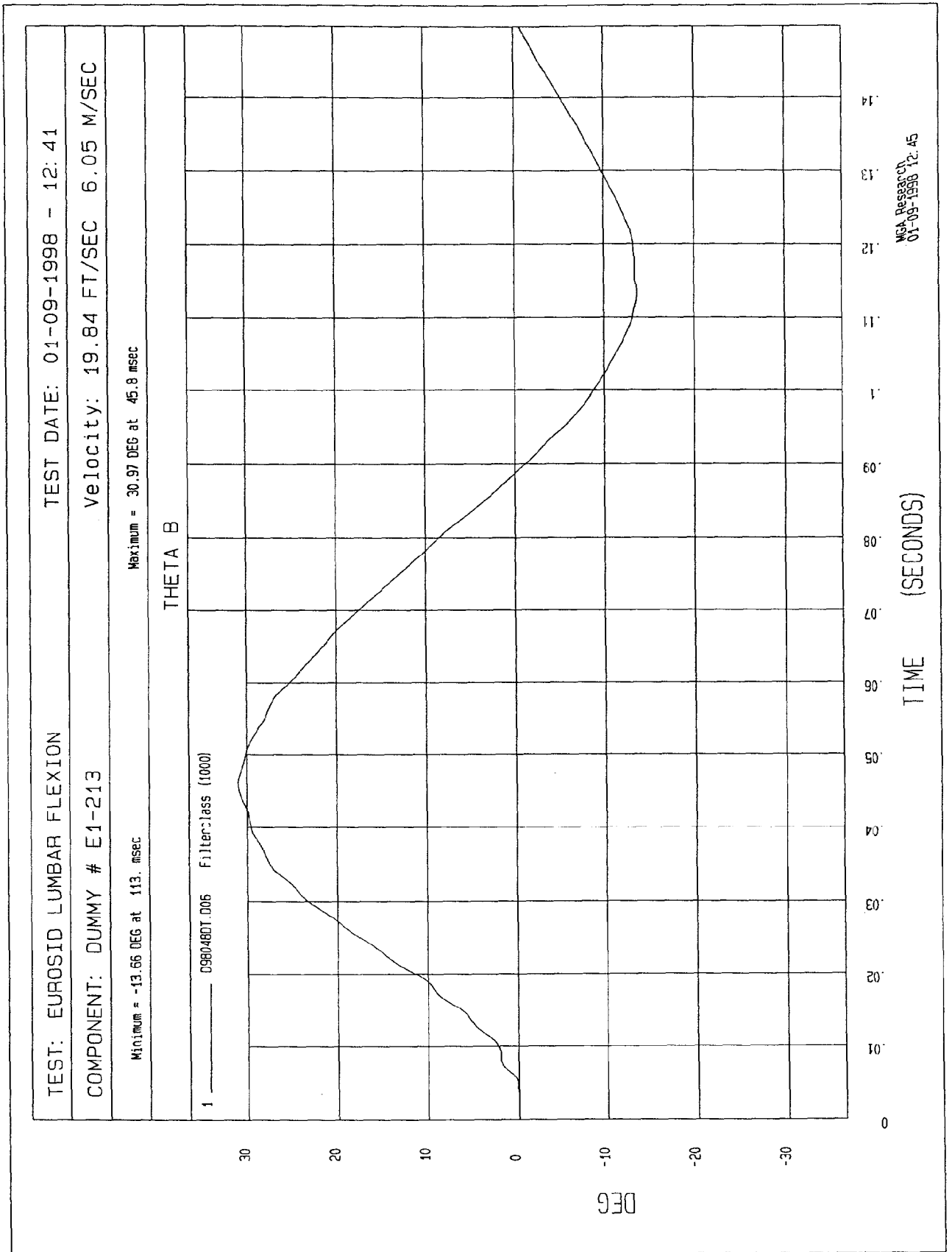












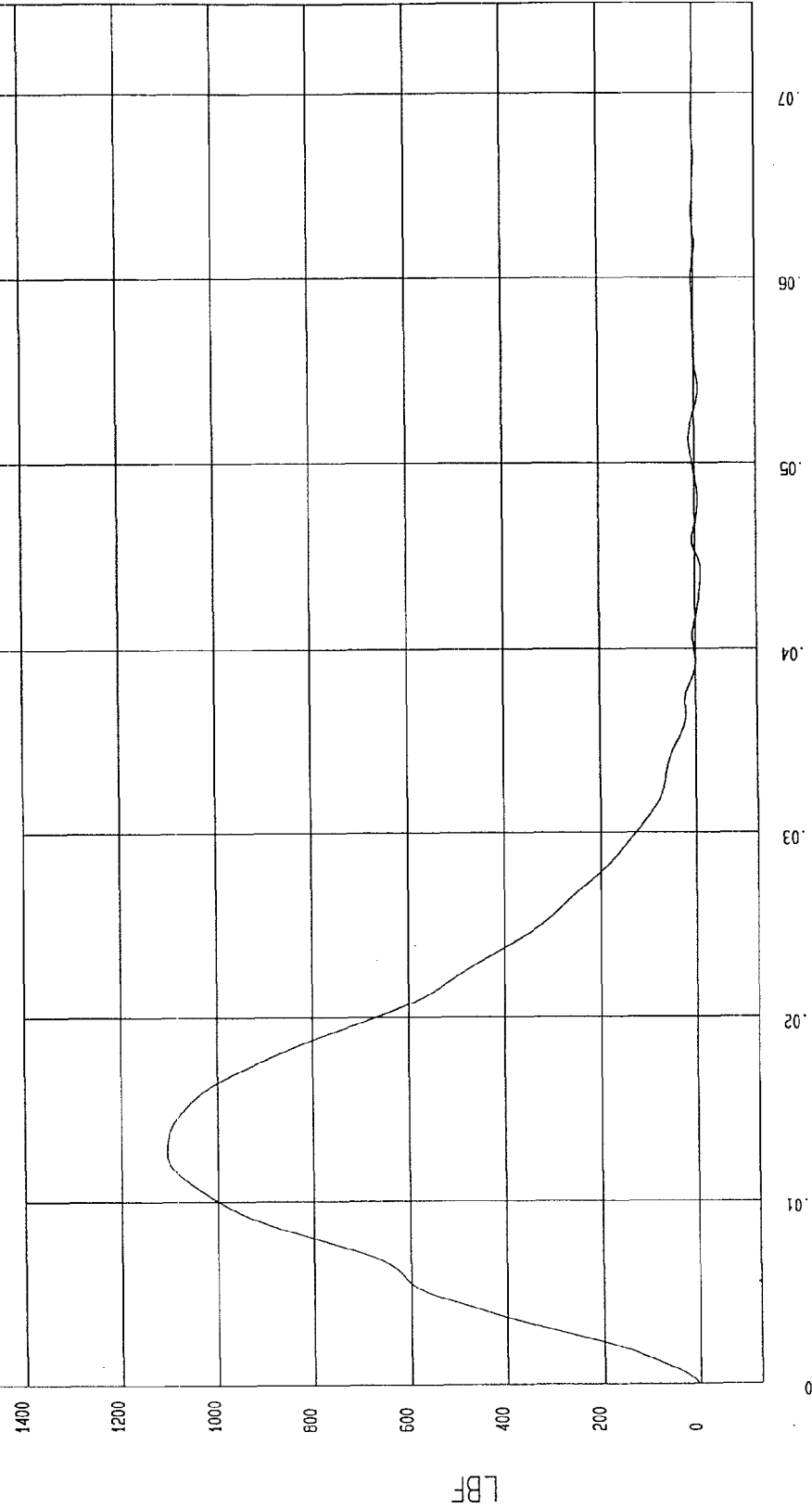
TEST: DUMMY CALIBRATION - PELVIS IMPACT TEST DATE: 01-08-1998 - 15:14:48

COMPONENT: DUMMY # E1-213 Velocity: 14.22 FT/SEC 4.33 M/SEC

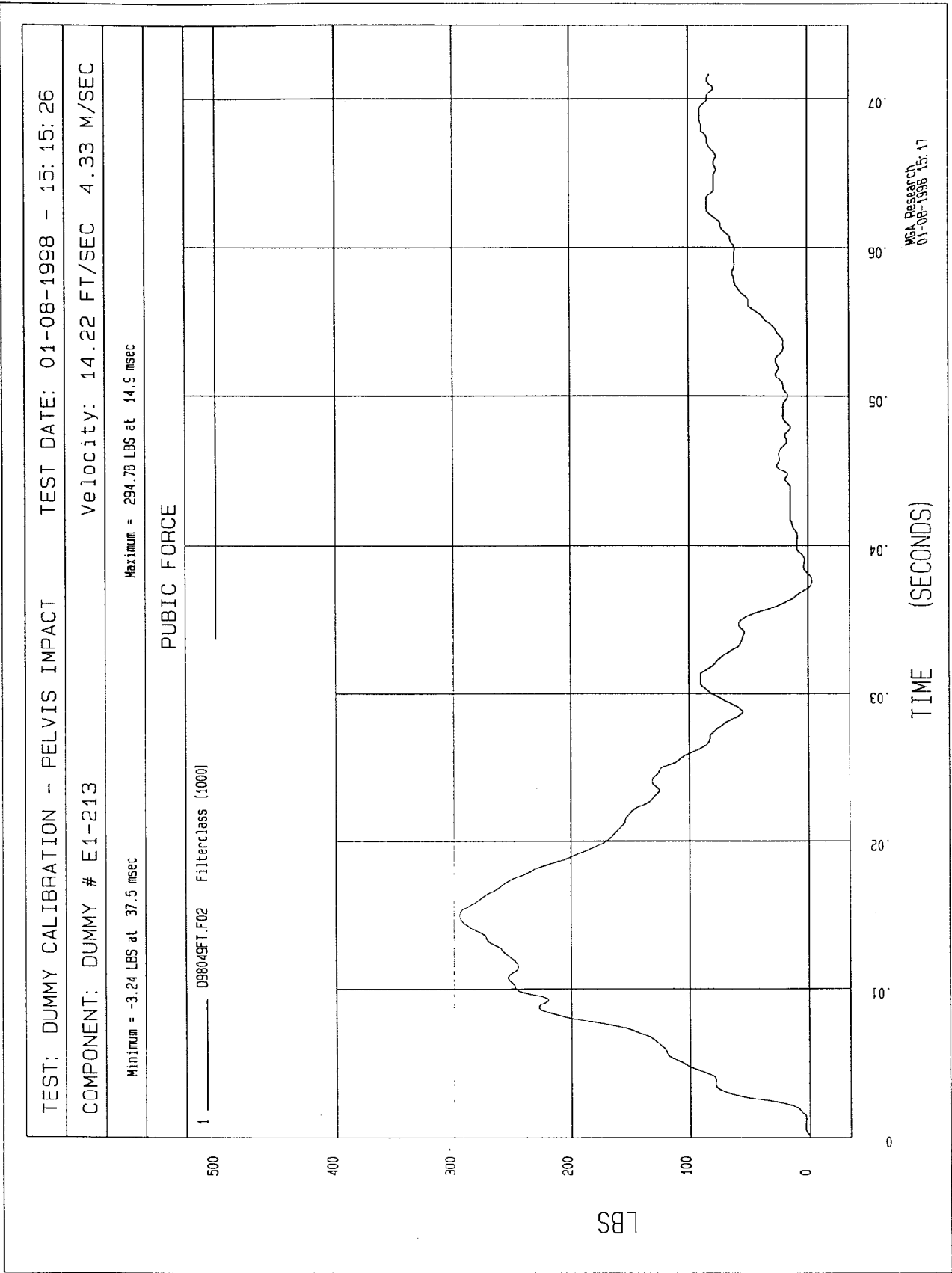
Minimum = -11.26 LBF at 44.1 msec Maximum = 1106.37 LBF at 12.7 msec

IMPACTOR FORCE

1 _____ D98049FT.F01 Filterclass (1000)



WCA Research
01-08-1998 15:17



POST-TEST DUMMY INSPECTION CHECKLIST

Type: EuroSID 1

Serial Number: E1-213

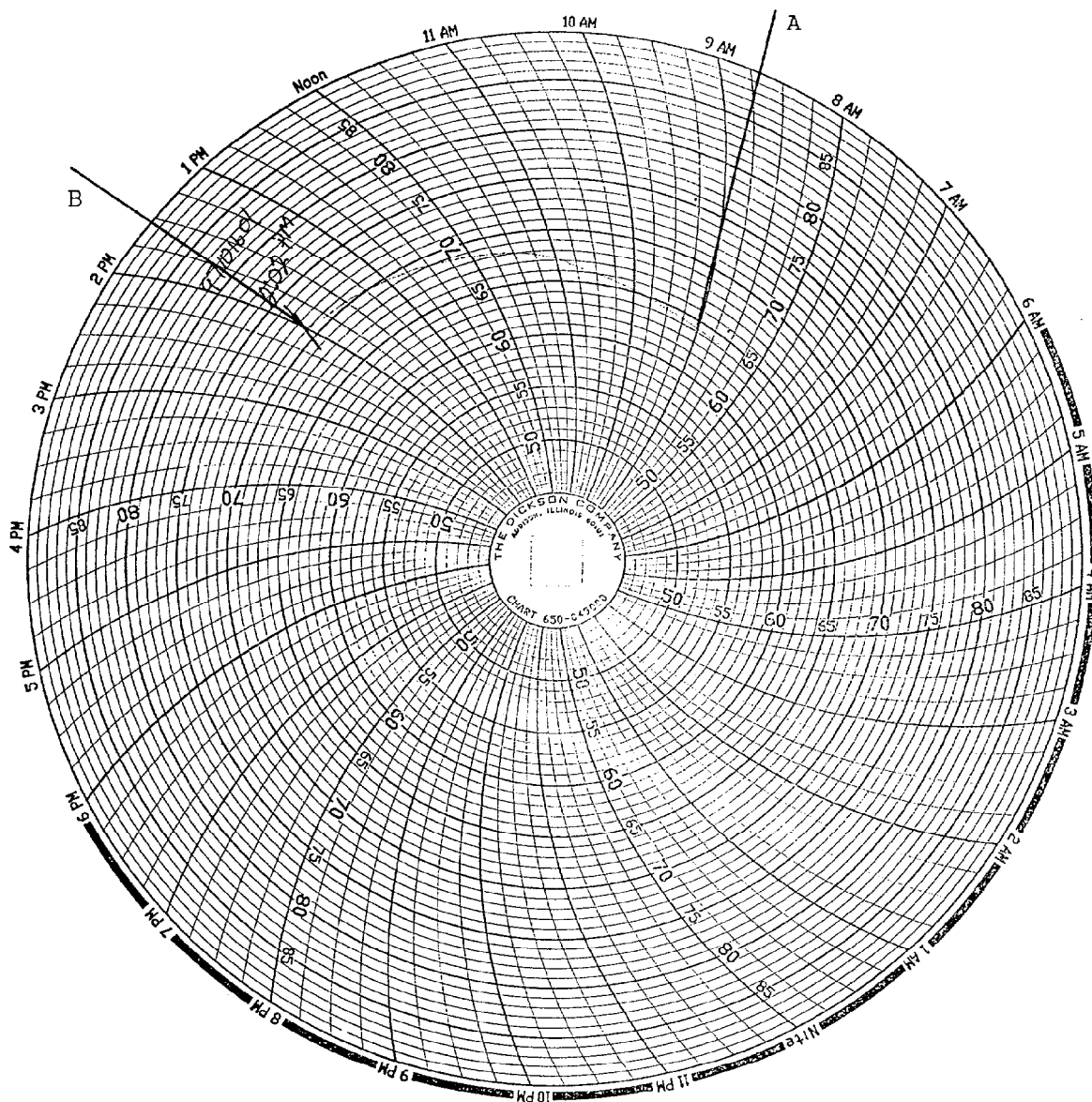
Inspected By: Tim Michnay

Date: January 9, 1998

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

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

DUMMY AND VEHICLE TEMPERATURE



A = Dummy installed in vehicle
B = Test Conducted

APPENDIX E
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

DUMMY #	E1-213	EXPOSURE	DATE	TYPE OF TEST	POSITION
CALIBRATION DATE:		1	10/16/97	TTD #4	FRONT
10/9/97		2			
		3			

POSITION	MFR.	MODEL	SERIAL #	CAL DATE	DLR
HEAD					
HX (B)	ENDEVCO	7264-2000	AGTM2	8/13/97	117.105
HY (L)	ENDEVCO	7264-2000	AGTB5	8/13/97	106.186
HZ (D)	ENDEVCO	7264-2000	AH1G2	8/13/97	116.333
HYR (R)	ENDEVCO	7264-2000	AM751	8/13/97	113.35
RIBS					
UR (R)	ENDEVCO	7264-2000	J18953	7/9/97	105.738
UPPER DISP	NOVOTEC	T-75	213U	4/21/97	.601"V
MR (R)	ENDEVCO	7264-2000	J18843	7/9/97	82.944
MID DISP	NOVOTEC	T-75	213M	4/21/97	.602"V
LR (R)	ENDEVCO	7264-2000	AHTB2	8/6/97	116.704
LOWER DISP	NOVOTEC	T-75	213L	4/21/97	.601"V
SPINE					
USX (F)	ENDEVCO	7264-2000	ANAN3	7/9/97	112.6
USY (R)	ENDEVCO	7264-2000	AJ9H0	7/9/97	105.188
USZ (D)	ENDEVCO	7264-2000	ANAN6	7/9/97	105.851
LSX (F)	ENDEVCO	7264-2000	AGWA4	7/9/97	110.85
LSY (L)	ENDEVCO	7264-2000	ALBA7	7/9/97	93.486
LSZ (U)	ENDEVCO	7264-2000	AGT18	7/9/97	111.904
PELVIS					
PX (F)	ENDEVCO	7264-2000	ALD31	7/9/97	110.692
PY (L)	ENDEVCO	7264-2000	AHY21	7/9/97	104.909
PZ (U)	ENDEVCO	7264-2000	AHTF1	7/9/97	110.446
ABDOMEN					
FRONT	DENTON	2631	692	7/8/97	1323.6 N
MID	DENTON	2631	702	7/8/97	1317.8 N
REAR	DENTON	2631	706	7/8/97	1283.1 N
PUBIC	DENTON	3096	144	7/9/97	-14700.4 N

DUMMY INSTRUMENTED BY: _____

VEHICLE INSTRUMENT CALIBRATION

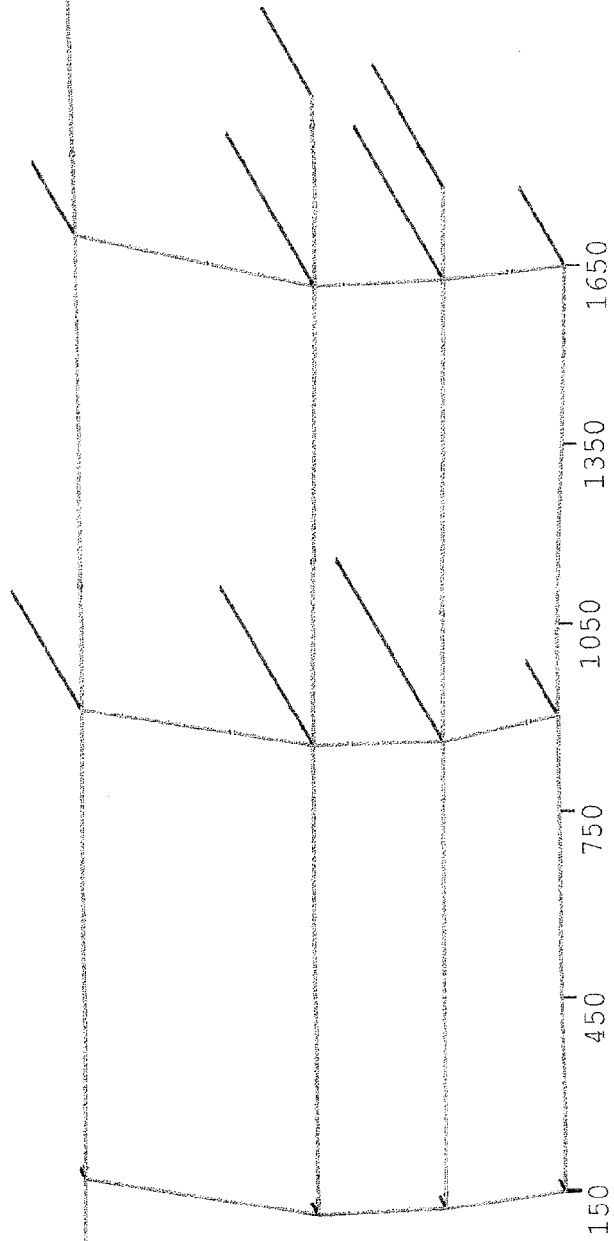
VEHICLE AND MDB ACCELEROMETERS			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Lower A-Post	F07-A04	Entran	July 14, 1997
Left Mid A-Post	F10-D02	Entran	July 14, 1997
Left Lower B-Post	C25-A22	Entran	August 1, 1997
Left Mid B-Post	G08-B02	Entran	August 4, 1997
Left Upper B-Post	F10-D04	Entran	August 4, 1997
Left Side Sill at Front Seat Y	E10-F18	Entran	August 6, 1997
Left Side Sill at Rear Seat Y	G01-J06	Entran	August 5, 1997
Right Side Sill at Front Seat X	F11-G04	Entran	August 7, 1997
Right Side Sill at Front Seat Y	J04-F10	Entran	August 7, 1997
Right Side Sill at Front Seat Z	J04-F12	Entran	August 7, 1997
Right Side Sill at Rear Seat X	F20-G02	Entran	August 6, 1997
Right Side Sill at Rear Seat Y	E23-R07	Entran	August 7, 1997
Right Side Sill at Rear Seat Z	F20-G06	Entran	August 7, 1997
Driver Seat Track Y	L14-D16	Entran	July 7, 1997
Right Rear Occupant Compartment Y	B14-R11	Entran	August 1, 1997
Rear Floorpan Above Axle X	C14-Z05	Entran	August 1, 1997
Rear Floorpan Above Axle Y	J06-D22	Entran	June 12, 1997
Rear Floorpan Above Axle Z	J06-D16	Entran	August 1, 1997
Vehicle C.G. X	H07-A10	Entran	April 23, 1997
Vehicle C.G. Y	B14-R13	Entran	July 2, 1997
Vehicle C.G. Z	C14-Z07	Entran	July 2, 1997

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier Left Rear Frame X	E10-F04	Entran	August 7, 1997
Moving Barrier Left Rear Frame Y	J04-F14	Entran	August 7, 1997
Moving Barrier Right Rear Frame X	H07-A25	Entran	July 14, 1997
Moving Barrier Right Rear Frame Y	C25-A11	Entran	August 5, 1997
Moving Barrier Left Face X	H02-J16	Entran	August 5, 1997
Moving Barrier Left Face Y	D05-R14	Entran	June 12, 1997
Moving Barrier Right Face X	F11-G08	Entran	August 7, 1997
Moving Barrier Right Face Y	I26-D02	Entran	August 7, 1997
Barrier C.G. X	E13-D01	Entran	August 1, 1997
Barrier C.G. Y	C14-Z08	Entran	August 1, 1997
Barrier C.G. Z	A09-G05	Entran	August 1, 1997
Left Front Door Upper	J10-E17	Entran	April 23, 1997
Left Front Door Mid	B14-R14	Entran	July 12, 1997
Left Front Door Lower	D05-R19	Entran	July 7, 1997
Left Front Door Rear	F12-G02	Entran	July 11, 1997
Left Rear Door Upper	C14-Z05	Entran	August 1, 1997
Left Rear Door Mid	J06-D22	Entran	June 12, 1997
Left Rear Door Lower	MGA095	Entran	June 12, 1997
Left Rear Door Rear	J06-D16	Entran	August 1, 1997

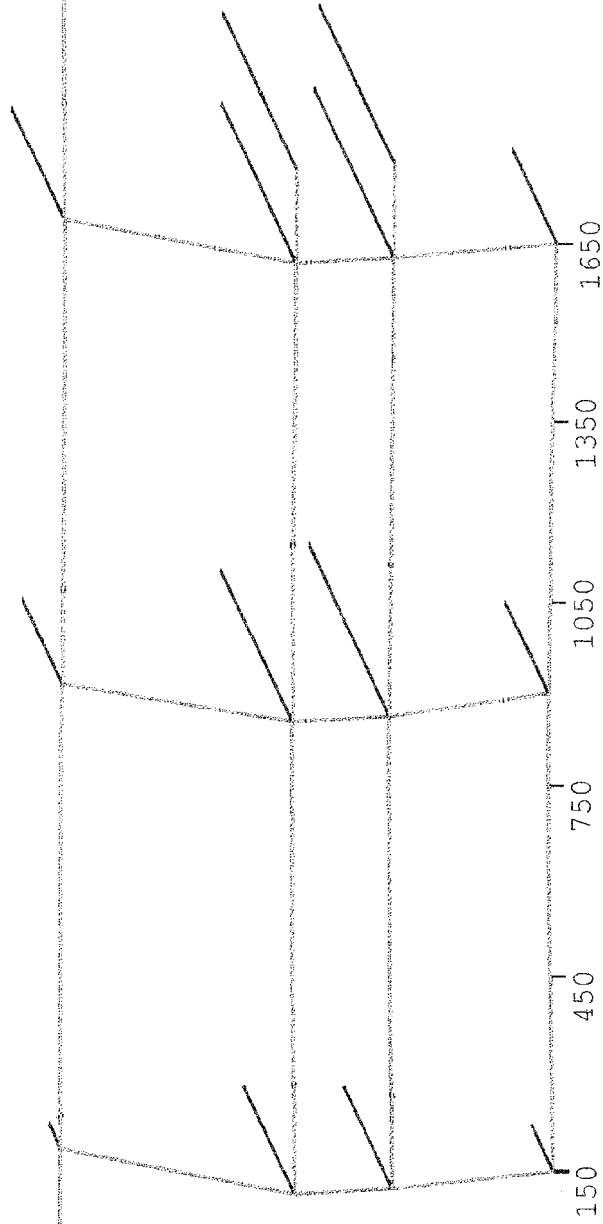
APPENDIX F
STATIC CRUSH

1997 MITSUBISHI ECLIPSE



EUROPEAN LATERAL IMPACT TEST VEHICLE STATIC DEFORMATION MEASUREMENT

1997 MITSUBISHI ECLIPSE



FMVSS 214 SIDE IMPACT - VEHICLE STATIC DEFORMATION MEASUREMENT