V2686

REPORT NO.: 214D-MGA-98-05

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING
PASSENGER CARS

1997 FORD MUSTANG
2-DOOR SEDAN
NHTSA NO: MV0210

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: October 3, 1997

Report Date: October 21, 1997

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
ROOM 5313, NPS-10
400 SEVENTH STREET, SW
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Prepared By: Norkham Khenthavong
Norkham Khenthavong, Project Engineer

Approved By: John Fleck
John Fleck, Facility Director

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15. Supplementary Notes

16. Abstract

A 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 1998 Ford Mustang 2-Door Sedan to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on October 3, 1997.

The impact velocity of the Moving Deformable Barrier (MDB) was 60.9 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21°C. The target vehicle post test maximum crush was 331 mm at level 2. The test vehicle's performance follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	76	50
Left Lower Rib (LLR) Accel., g	80	67
Lower Spine (T_{12}) Accel., g	94	88
Thoracic Trauma Index (TTI)	87	77
Pelvis (PEV) Accel., g	90	73

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

17. Key Words	18. Distribution Statement
New Car Assessment Program (NCAP) FMVSS No. 214D Side Impact Dummy (SID) Occupant Side Impact Protection	Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590

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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY98 NCAP Side Impact Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-93-C-02047. The purpose of this test was to evaluate side impact protection of a 1997 Ford Mustang 2-Door.

This side impact test was conducted in accordance with the New Car Assessment Program Side Impact Testing Procedure dated October 1996.

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

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 1997 Ford Mustang was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 37.9 mph (60.9 kph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on October 3, 1997. Pre- and post-test photographs of the test vehicle, the MDB and the side impact dummies (SIDs) are included in Appendix A.

Two Side Impact Dummies (SIDs) were placed in the driver and left rear designated seating positions according to instructions specified in the New Car Assessment Program Side Impact Laboratory Test Procedure which is dated October 1996. The side impact event was documented by nine high speed cameras. Camera locations and other pertinent camera information can be found in this report.

The SIDs were instrumented with the following accelerometers.

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3. Lower Thoracic Spine (T_{12}) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)
5. Head Center of Gravity triaxial accelerometers (X, Y, and Z-direction)

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

The following table summarizes the results of the test:

Injury Criteria	Front SID	Rear SID
TTI (g)	87	77
Pelvis (g)	90	73

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

DATA SHEET NO. 1

GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 VIN: 1FALP4040VF197104

Vehicle Body Color: Black Build Date: 6/97

Engine Data: 6 Cylinders; ___ CID; 3.8 Liter; ___cc

Placement X Longitudinal; ____ Lateral

Transmission: 5 Speed; X Manual; ___ Automatic; ___ Overdrive

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

Odometer Reading 134 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): 35 Psi FRONT

35 Psi REAR

Recommended Tire Size: P205/65/R15

Tires on Test Vehicle: P205/65/R15 Manufacturer: Goodyear Eagle GA

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 = 317.5 kg (A)

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

Cargo Capacity (A-B) = 45.3 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE WITH MAXIMUM FLUIDS:

Right Front	= 387.4 kg	Right Rear	= 308.4 kg
Left Front	= 411.0 kg	Left Rear	= 292.6 kg
TOTAL FRONT =	798.4 kg	TOTAL REAR =	601.0 kg
% of Total Vehicle Weight =	57.1 %;	% of Total Weight =	42.9 %

TOTAL WEIGHT = 1399.4 kg

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Maximum Fluids	= 1399.4 kg
Cargo Carrying Capacity of Test Vehicle	= 45.3 kg
Weight of 2 Side Impact Dummies (2 x 80.7 kg.)	= 161.4 kg
TEST VEHICLE TARGET WEIGHT	= 1606.1 kg

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO (Fully Loaded):

Right Front	= 383.3 kg	Right Rear	= 378.8 kg
Left Front	= 468.1 kg	Left Rear	= 376.0 kg
TOTAL FRONT	= 851.4 kg	TOTAL REAR	= 754.8 kg
% of Total Weight	= 53 %	% of Total Weight	= 47 %

TOTAL TEST WEIGHT = 1606.2 kg

TEST VEHICLE ATTITUDE:

CURB WEIGHT ATTITUDE:

Right Front 728 mm Left Front 726 mm Right Rear 742 mm Left Rear 727 mm

FULLY LOADED WEIGHT ATTITUDE:

Right Front 725 mm Left Front 712 mm Right Rear 708 mm Left Rear 684 mm

TEST ATTITUDE:

Right Front 720 mm Left Front 716 mm Right Rear 704 mm Left Rear 691 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Test Vehicle Wheelbase: 2576 mm

C.G. = 1176 mm rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4364 mm

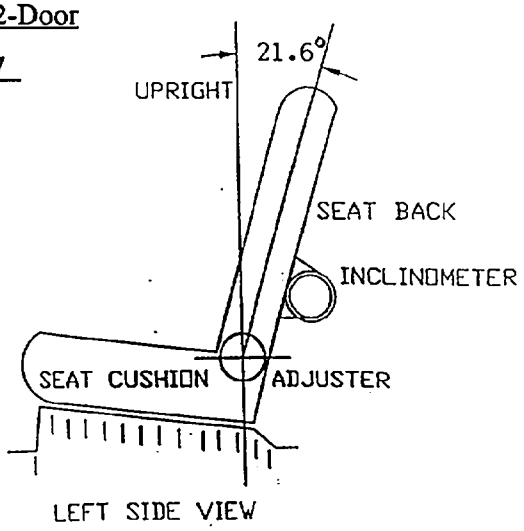
Centerline = 4546 mm

Left Side = 4364 mm

GENERAL VEHICLE TEST PARAMETER DATA (Cont'd)

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

NHTSA No.: MV0210 Test Date: October 3, 1997



FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel: 183 mm

Test Position: 8th detent of 15 total

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Angle = 21.6°

SECOND POSITION SEAT:

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

Seat Back Adjustment Position: Non-adjustable

ADJUSTABLE STEERING COLUMN POSITION:

WINDOW POSITIONS: Left Front Closed Left Rear N/A

Right Front Open Right Rear N/A

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel system usable capacity = 15.4 gallons

Test Volume: 14.3 gallons 93 % of capacity

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

Wheelbase: = 2576 mm

Impact Point is 348 mm rearward of front axle centerline

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

Overall Length = 4546 mm; Overall Width = 1764 mm

TEST WEIGHT:

Right Front	= 410.1 kg	Right Rear	= 367.4 kg
Left Front	= 459.9 kg	Left Rear	= 363.8 kg
TOTAL FRONT	= 870.0 kg	TOTAL REAR	= 731.2 kg
% of Total Weight	= 54.3 %	% of Total Weight	= 45.7 %

TOTAL VEHICLE WEIGHT = 1601.2 kg

Wheelbase = 2576 mm

Longitudinal C.G. from Center of Front Axle = 1176 mm

Impact Angle with Respect to Impactor = 90 ° degrees

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (285 mm above ground) = 177 mm
2. LEVEL 2 (495 mm above ground) = 317 mm
3. LEVEL 3 (588 mm above ground) = 321 mm
4. LEVEL 4 (878 mm above ground) = 263 mm
5. LEVEL 5 (1240 mm above ground) = 75 mm

Maximum Post-Test Intrusion = 331 mm

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

TEST VEHICLE SUMMARY OF RESULTS (Cont'd)

INSTRUMENTATION:

Number of Vehicle Data Channels:		= 23
Number of Cameras:	Onboard Vehicle	= 3
	Offboard Vehicle	= 4
	Deformable Barrier	= 2
	TOTAL	= 9

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

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

MDB WEIGHT:

Left Front	= 440.0 kg	Left Rear	= 242.5 kg
Right Front	= 338.2 kg	Right Rear	= 331.9 kg
TOTAL FRONT = 778.2 kg		TOTAL REAR = 574.4 kg	

TOTAL MDB WEIGHT = 1352.9 kg

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

Impact Speed = Primary: 37.9 mph (61.0 kph) Secondary: 37.9 mph (61.0 kph)

CRASH TEST SUMMARY FOR SIDE IMPACTOR (Cont'd)

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Top of Stack (813 mm) = 149 mm
2. Row B Mid Stack (686 mm) = 125 mm
3. Row C Top of Bumper (533 mm) = 96 mm
4. Row D Center of Bumper (432 mm) = 180 mm

INSTRUMENTATION:

Number of MDB Data Channels = 7

DATA SHEET NO. 4

POST-TEST OBSERVATIONS

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

VISIBLE DUMMY CONTACT POINTS:

	LEFT FRONT SID	LEFT REAR SID
Head	to window sill and headrest	to C-post and rear window
Arm	to door panel	to side trim panel
Pelvis	to armrest	to armrest
Left Knee	to door panel	to side trim panel
Right Knee	to left knee	to left knee

DOOR OPENING:

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

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal: 13 mm rearward Vertical: 3 mm high

ARM REST LOCATIONS:

Front: 267 mm from bottom of window

Rear: 325 mm from bottom of window

POST-TEST OBSERVATIONS (Cont'd)

SEAT CRUSH:

Front Seat Back: 66 mm Front Seat Cushion: 43 mm

Left Rear Seat Back: 104 mm Rear Seat Cushion: 23 mm

GLAZING DAMAGE:

Windshield cracked, driver door glass broken, left side quarter window broken

PILLAR PERFORMANCE:

Left side mid B-pillar torn at approximately 634 mm forward of rear spindle and approximately 958 mm from ground. The tear is approximately 60 mm wide.

SILL SEPARATION:

None noted

AIRBAG DEPLOYMENT STATUS:

	DRIVER	REAR PASSENGER
Front:	No	None
Side:	None	None

OTHER NOTABLE IMPACT EFFECTS:

Driver airbag did not deploy

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

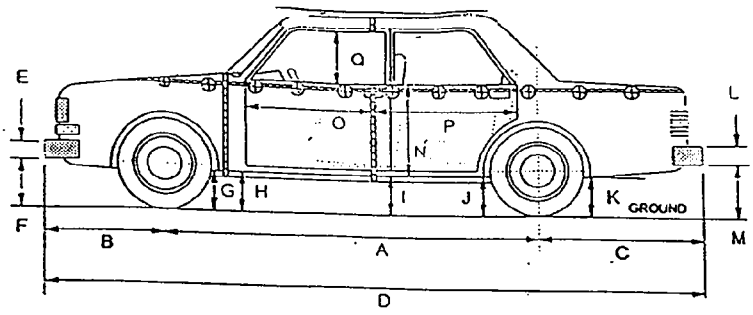
Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

	Front Dummy ID # 272				Rear Dummy ID # 271			
	Pos. Direct.		Neg. Direct		Pos. Direct.		Neg. Direct	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y	76.5	28	-27.3	75	49.9	44	-9.6	103
Left Lower Rib (LLR) Y	80.4	29	-20.6	99	66.5	44	-12.6	78
SPINE ACCELERATIONS								
Lower Lateral Y	94.3	32	-19.6	64	88.4	54	-36.5	74
PELVIS ACCELERATIONS								
Lateral Y	90.1	27	-18.9	81	73.0	46	-9.1	118

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)

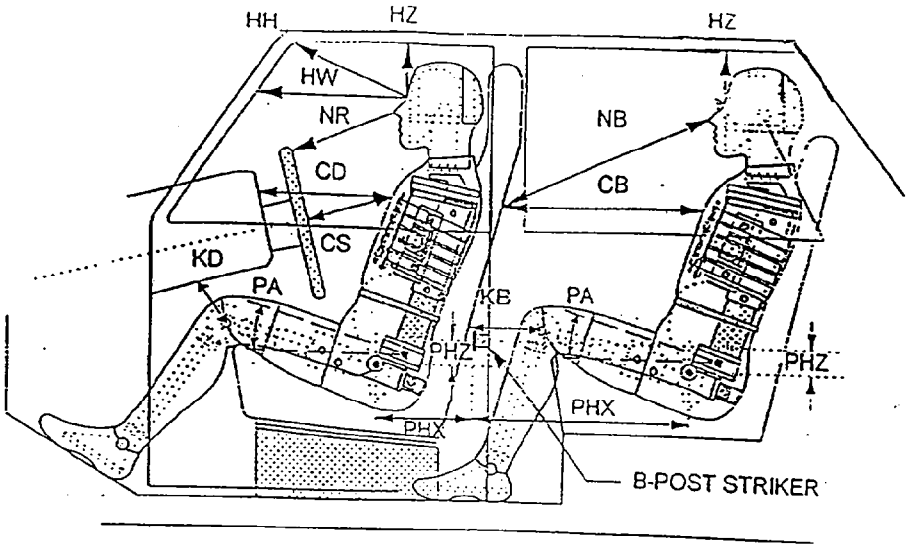
	PRE-TEST	POST-TEST	Δ CHANGE
A	2576	2540	-36
B	990	1001	11
C	980	968	-12
D	4546	3509	-1037
E	200	201	1
F	388	402	14
G	162	203	41
H	168	196	28
I	168	154	-14
J1/J2	168/162	152/143	-16/-19
K	262	270	8
L	210	212	2
M	380	405	25
N	700	625	-75
O	636	630	-6
P	766	764	-2
Q	335	360	25
R	4364	4401	37
S	4364	4300	-64
T	1764	1616	-148

DATA SHEET NO. 7

SIDE IMPACT DUMMY (SID) LONGITUDINAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

NHTSA NO.: MV0210 Test Date: October 3, 1997



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

	DRIVER SID ID # 272
HH	338
HW	568
HZ	162
NR	428
CD	522
CS	292
KDL(KDA°)	120 (19°)
KDR(KDA°)	124 (15.6°)
PA°	24.3°
PHX	532
PHZ	164

	LEFT REAR PASSENGER SID ID # 271
HZ	106
NB	444
CB	368
KBL (KBA)	107 (0.0°)
KBR (KBA)	110 (0.0°)
PA°	24.1°
PHX	275
PHZ	130

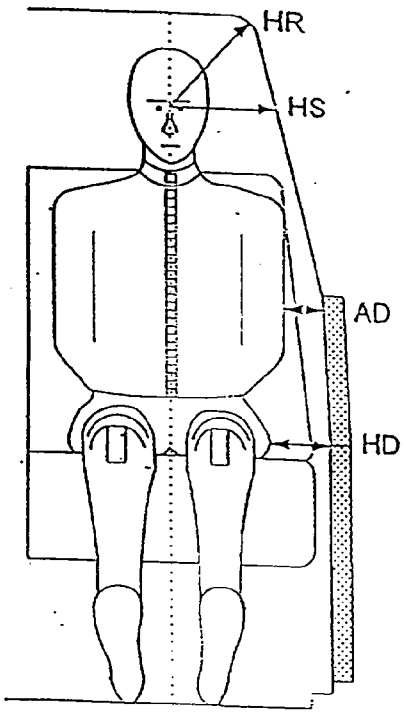
NOTE: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as reference point.

DATA SHEET NO. 8

SIDE IMPACT DUMMY (SID) LATERAL CLEARANCE DIMENSIONS

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

NHTSA NO.: MV0210 Test Date: October 3, 1997



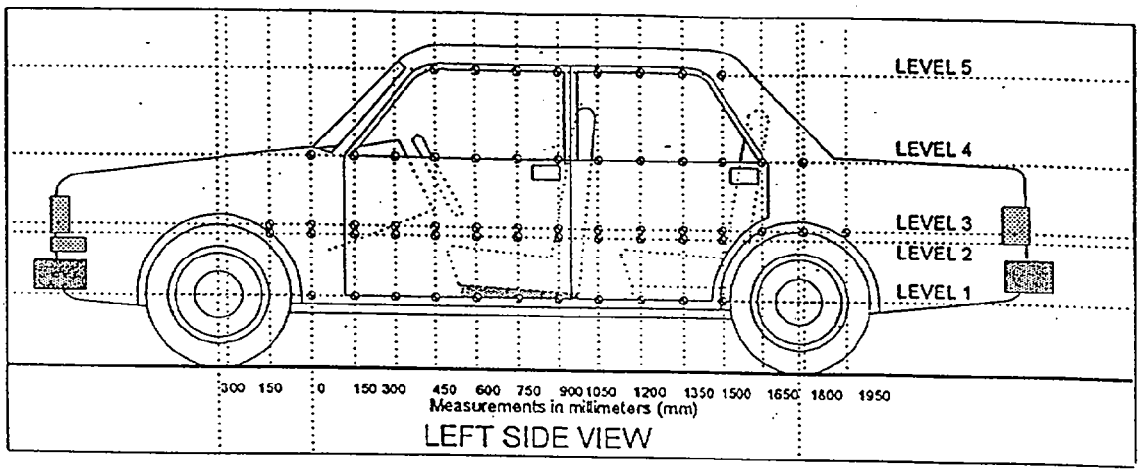
NOTE: All dimensions are in mm

	DRIVER SID ID # 272	LEFT REAR PASSENGER SID ID # 271
HR	202	269
HS	302	314
AD	81	138
HD	122	184

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

NHTSA NO.: MV0210 Test Date: October 3, 1997



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

MEASUREMENTS ALONG THE VERTICAL 750 mm. LINE SHOWN ABOVE

Level 1 @ Axle Centerline Height (or Sill Top Height)	= 285	mm
Level 2 @ Occupant H-Point	= 495	mm
Level 3 @ Mid Door	= 588	mm
Level 4 @ Window Sill	= 878	mm
Level 5 @ Window Top	= 1240	mm

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150	630	780	150
300	630	807	177
450	630	806	176
600	628	804	176
750	628	804	176
900	628	796	168
1050	625	771	146
1200	620	754	134
1350	617	728	111
1500	612	708	96
1650	608	703	95
1800	602	687	85

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

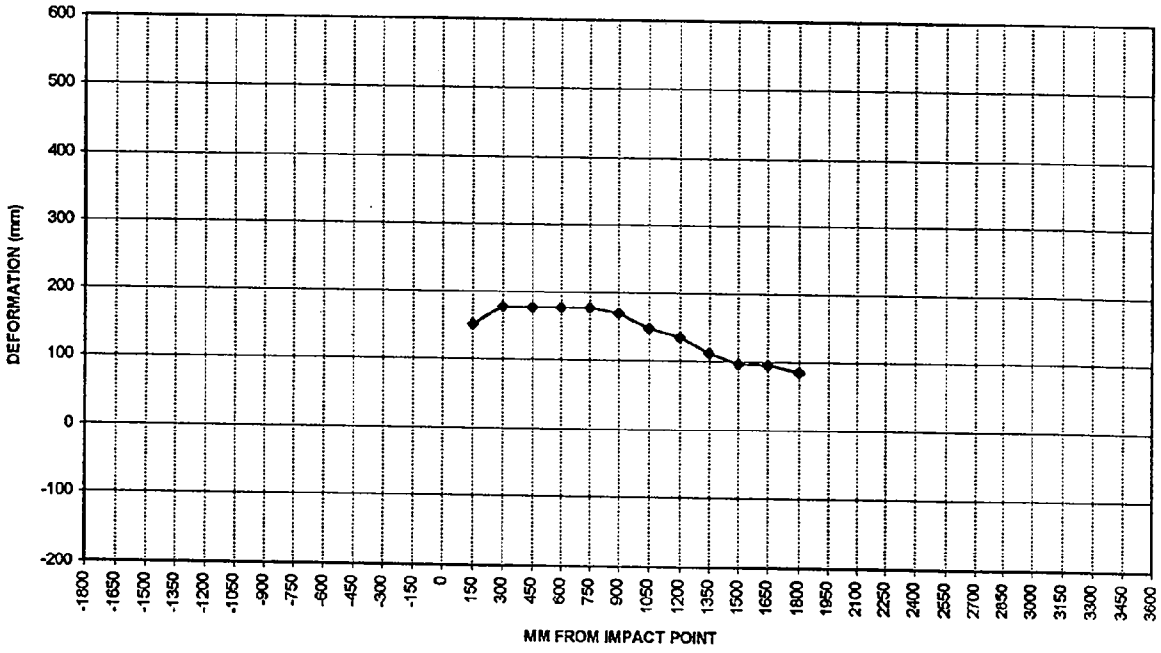
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 1 - Axle Centerline		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 1 - AXLE CENTERLINE

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050	634	652	18
-900	607	630	23
-750	587	620	33
-600			
-450			
-300			
-150			
0 (impact point)			
150	597	804	207
300	593	838	245
450	594	881	287
600	595	905	310
750	597	914	317
900	598	912	314
1050	598	909	311
1200	598	901	303
1350	596	893	297
1500	595	882	287
1650	597	848	251
1800	546	765	219

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

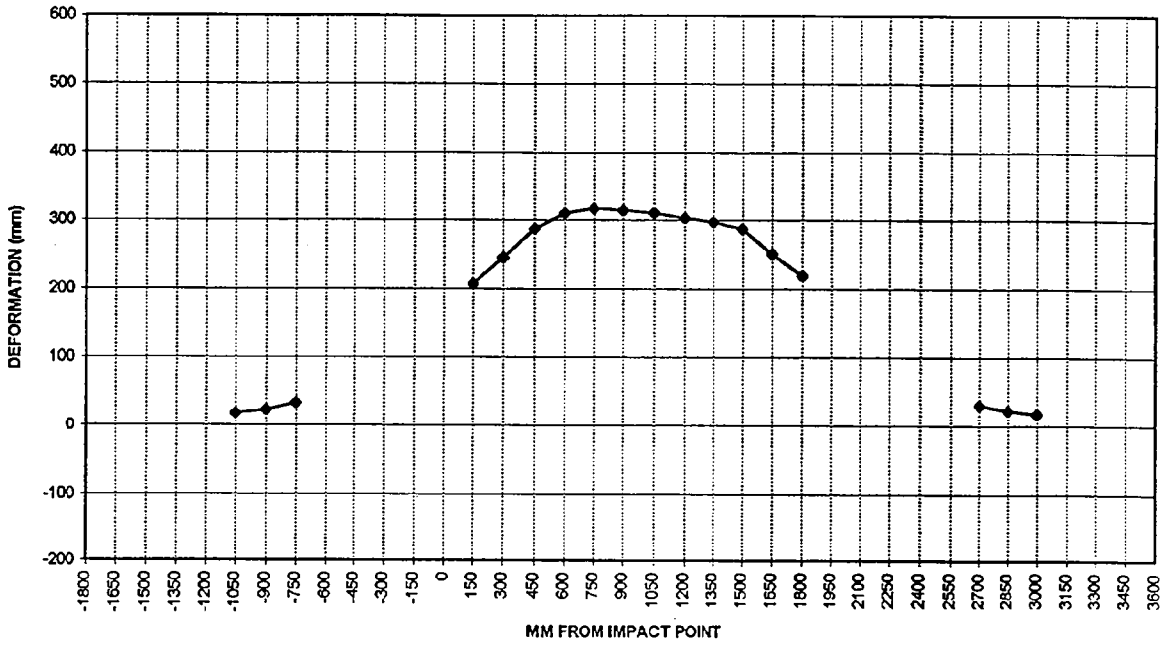
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 2 - Occupant H-Point		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950			
2100			
2250			
2400			
2550			
2700	583	614	31
2850	612	635	23
3000	644	662	18
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 2 - OCCUPANT H-POINT

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid-Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050	636	652	16
-900	601	627	26
-750	577	620	43
-600			
-450			
-300			
-150			
0 (impact point)	575	764	189
150	581	825	244
300	584	845	261
450	587	887	300
600	588	909	321
750	587	907	320
900	587	907	320
1050	587	900	313
1200	587	884	297
1350	588	865	277
1500	580	846	266
1650	578	875	297
1800	553	799	246

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

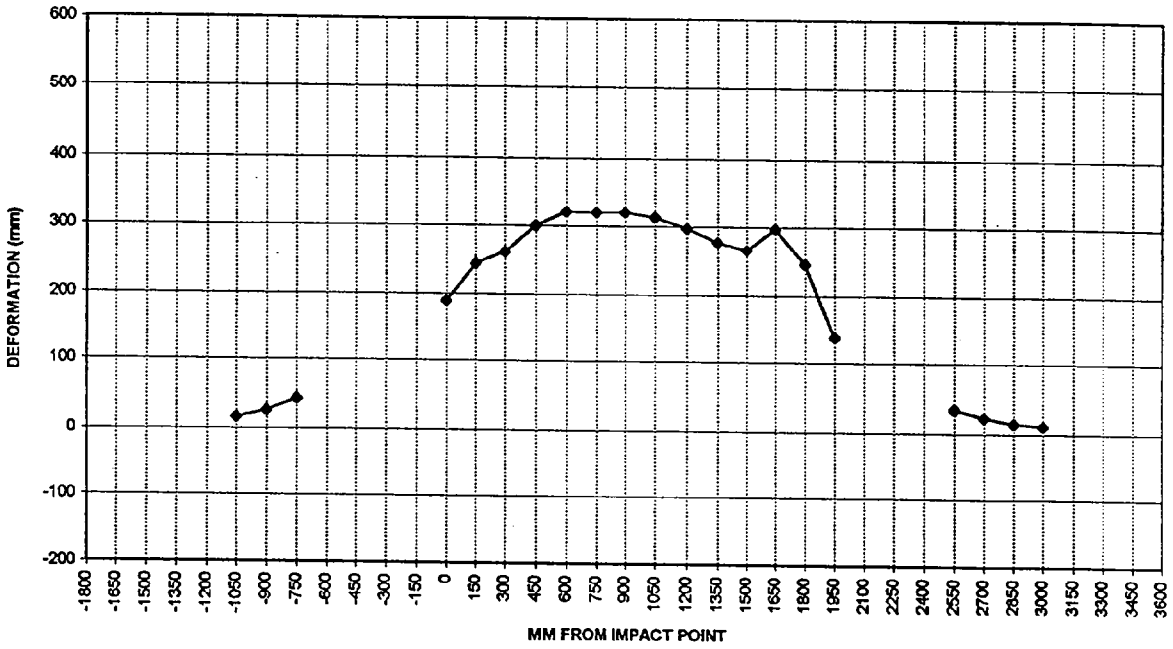
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 3 - Mid-Door		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	535	672	137
2100			
2250			
2400			
2550	562	597	35
2700	587	610	23
2850	617	632	15
3000	651	662	11
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 3 - MID-DOOR

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050	704	714	10
-900	672	690	18
-750	647	673	26
-600	634	668	34
-450	625	670	45
-300	620	676	56
-150	618	690	72
0 (impact point)	621	705	84
150	622	736	114
300	629	800	171
450	630	830	200
600	632	854	222
750	635	860	225
900	636	860	224
1050	637	862	225
1200	637	864	227
1350	637	866	229
1500	637	866	229
1650	631	894	263
1800	630	768	138

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

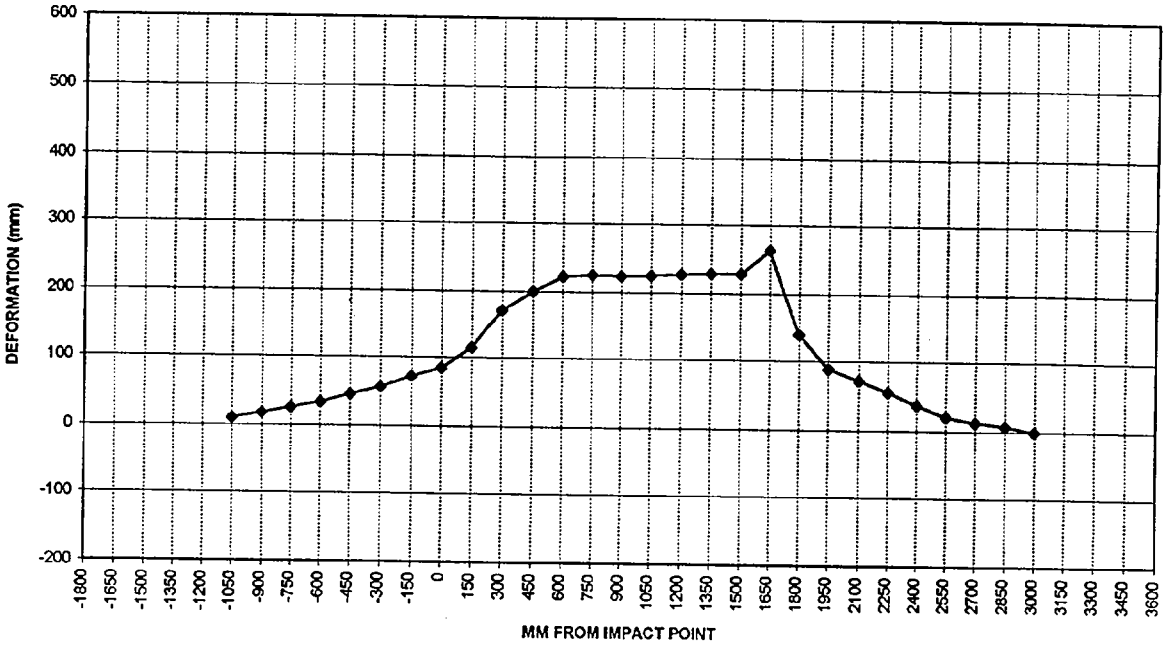
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 4 - Window Sill		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950	630	718	88
2100	633	705	72
2250	635	690	55
2400	643	680	37
2550	653	674	21
2700	665	678	13
2850	682	690	8
3000	735	734	-1
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



LEVEL 4 - WINDOW SILL

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
-1800			
-1650			
-1500			
-1350			
-1200			
-1050			
-900			
-750			
-600			
-450			
-300			
-150			
0 (impact point)			
150			
300			
450			
600			
750			
900	828	888	60
1050	826	890	64
1200	828	899	71
1350	828	902	74
1500	827	902	75
1650	828	897	69
1800	843	889	46

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

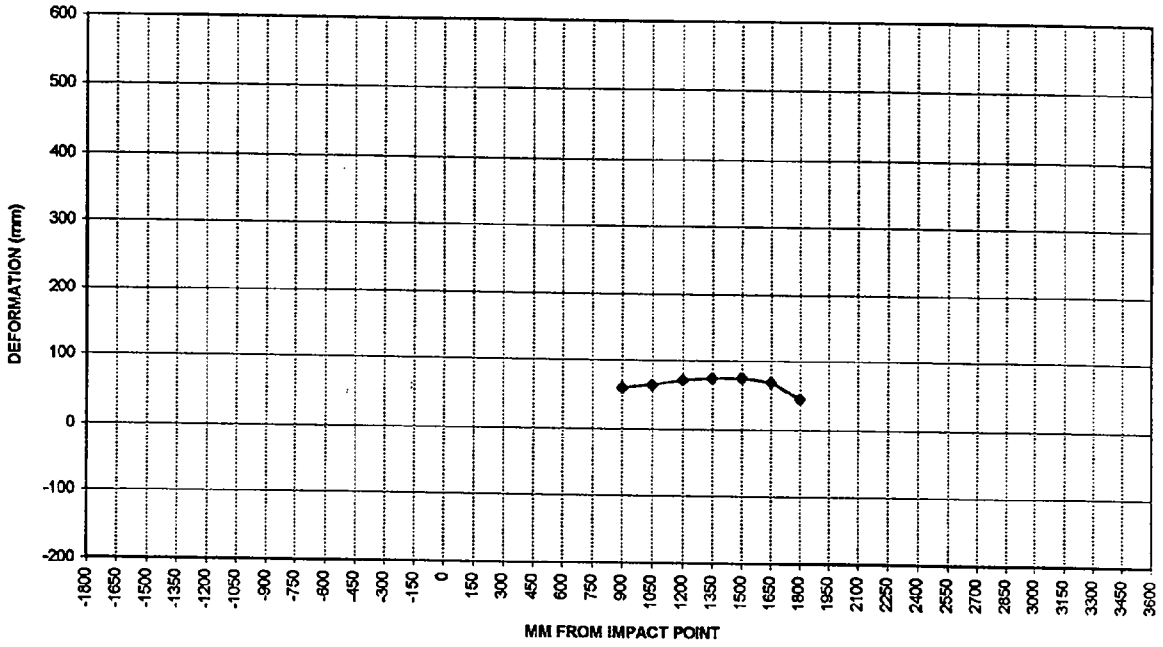
DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

	Level 5 - Window Top		
Longitudinal Distance (mm)	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
1950			
2100			
2250			
2400			
2550			
2700			
2850			
3000			
3150			
3300			
3450			
3600			

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

VEHICLE EXTERIOR STATIC CRUSH



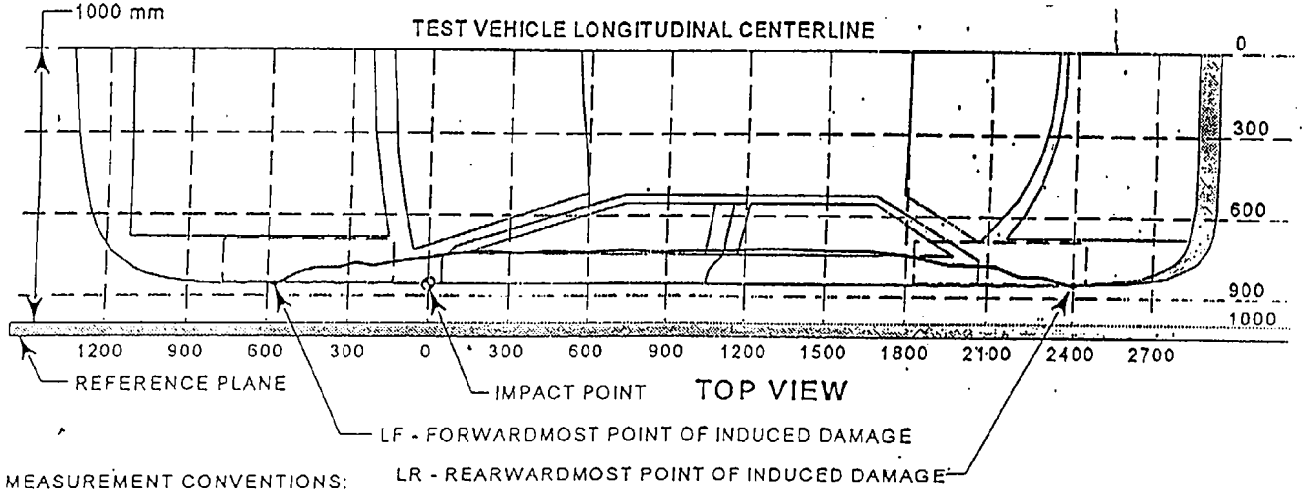
LEVEL 5 - WINDOW TOP

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

NHTSA NO.: MV0210 Test Date: October 3, 1997



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

DPD MEASUREMENTS	POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1. (LF = -1050 mm)	714	704	10
2. -250 mm	678	619	59
3. 510 mm	917	596	321
4. 1300 mm	900	597	303
5. 2210 mm	694	634	60
6. (LR = 3000 mm)	734	735	-1

DATA SHEET NO. 12

EXTERIOR STATIC CRUSH FOR SIDE IMPACTOR

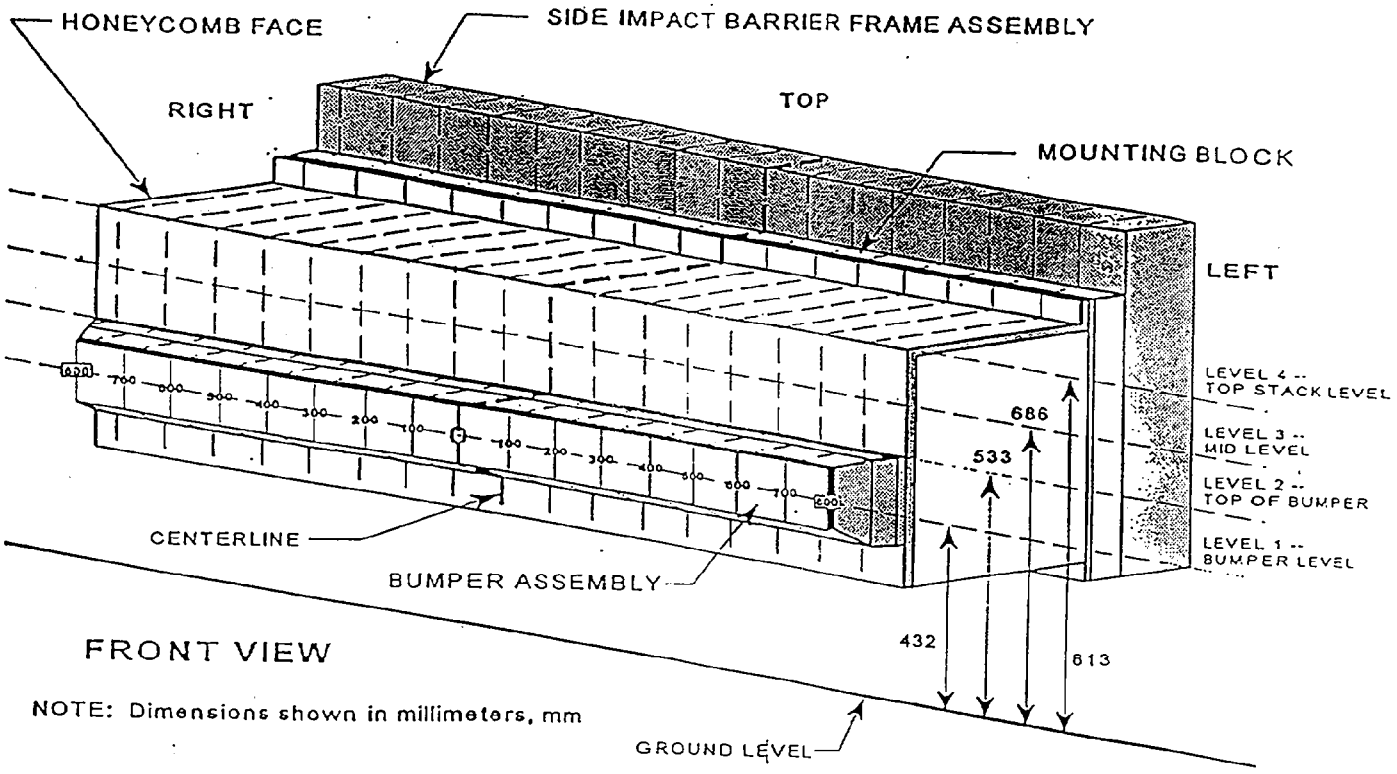
Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height at CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level 4	813 mm	77	32	59	12	10	12	13	15	18	22	26	30	40	56	94	117	149
Mid Level Level 3	686 mm	46	27	71	13	11	6	6	5	7	9	12	16	21	25	50	92	125
Top Bumper Level 2	533 mm	94	96	95	91	53	31	21	21	23	26	28	31	41	56	76	92	85
Mid Bumper Level 1	432 mm	180	177	177	136	102	79	66	61	57	53	54	56	62	78	104	117	121

See next page for Barrier Face Graphic

DATA SHEET NO. 12 (Cont'd)

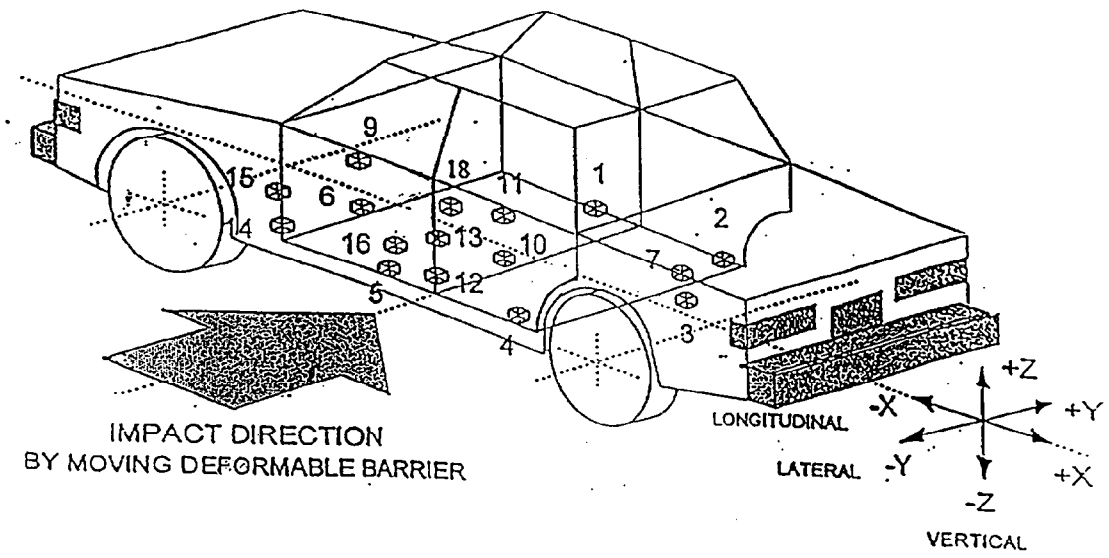


DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997



1-RT. Side Sill @ Frt Seat
2-RT. Side Sill @ Rr. Seat
3-Rr. Floorpan Above Axle
4-Left Side Sill @ Rr. Seat
5-Left Side Sill @ Frt. Seat
6-Left Frt. Door on Centerline
7-Rt. Rr. Occ. Compartment
9-Left Frt. Door Upper Ctrline
10-Midrear of Left Rear Door
11-Left Rear Door Upper Ctrline
12-Left Lower B-Post
13-Left Middle B-Post
14-Left Lower A-Post
15-Left Middle A-Post
16-Front Seat Track
18-Vehicle C.G.

DATA SHEET NO. 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

Accel. No.	Description	Coordinates (mm)*			Long. (X) Maximums (g's)		Lat. (Y) Maximums (g's)		Vert. (Z) Maximums (g's)		Resultant (g's)
		X	Y	Z	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Max.
1	Rt. Side Sill @ Front Seat	2200	656	210	5.7	-6.9	38.6	-5.6	6.0	-14.8	40.0
2	Rt. Side Sill @ Rear Seat	1431	668	218	4.1	-10.4	35.3	-6.0	4.1	-9.5	35.6
3	Rr. Floorpan Above Axle	1032	0	572	2.3	-6.2	32.8	-2.0	17.2	-8.5	32.8
4	Left Side Sill @ Rr. Seat	1427	668	216	---	---	44.8	-2.5	---	---	---
5	Left Side Sill @ Frt. Seat	2194	657	209	---	---	53.5	-5.0	---	---	---
6	Left Front Door Centerline	2279	765	601	---	---	277.0	-6.7	---	---	---
7	Right Rear Occupant Compartment	1742	385	343	---	---	292.2	-86.0	---	---	---
8	Mid Rear of Left Front Door	1961	757	465	---	---	292.2	-86.0	---	---	---
9	Left Front Door Upper Centerline	2281	763	790	---	---	32.6	-6.3	---	---	---
12	Left Lower B-Post	1744	675	335	---	---	27.4	-0.7	---	---	---
13	Left Mid B-Post	1653	683	794	---	---	93.8	-42.5	---	---	---
14	Left Lower A-Post	2895	666	339	---	---	111.9	-32.9	---	---	---
15	Left Mid A-Post	2932	762	869	---	---	54.2	-23.1	---	---	---
16	Driver Left Seat Track	2284	-570	380	---	---	105.5	-46.9	---	---	---
18	Vehicle CG	2422	-500	380	14.3	-18.3	63.5	-51.0	96.8	-68.3	100.1

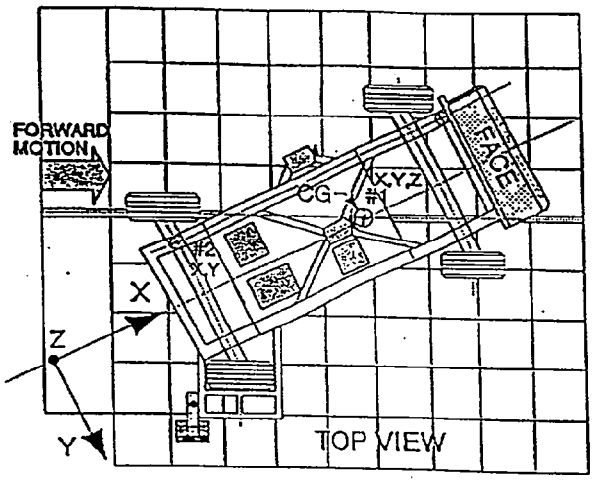
*Reference: X - Rear Bumper (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 14

MOVING DEFORMABLE BARRIER (MDB) ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997



Accel. No.	Description	Coordinates (mm)*			(+) Positive		(-) Negative	
		X	Y	Z	Max. (g)	Time (msec)	Max. (g)	Time (msec)
1	MDB Center of Gravity	-1092	0	483				
	Longitudinal (X)	---	---	---	1.02	156	-18.7	30
	Lateral (Y)	---	---	---	1.11	63	-5.5	20
	Vertical (Z)	---	---	---	17.4	56	-23.9	41
	Resultant (R)	---	---	---	30.2	41	---	---
2	Rear Frame Member	-2591	-625	622				
	Longitudinal (X)	---	---	---	1.4	190	-22.8	23
	Lateral (Y)	---	---	---	2.7	15	-1.7	191

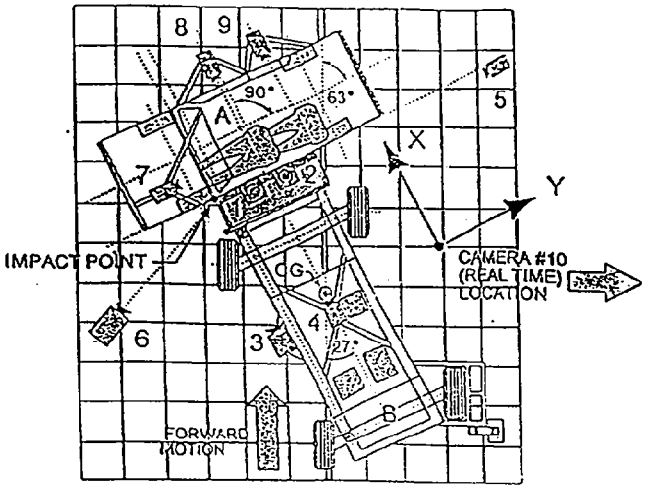
*Reference: X - Front Axle (+ Forward)
Y - Vehicle Centerline (+ To right)
Z - Ground Level (+ Up)

DATA SHEET NO. 15

HIGH SPEED CAMERA LOCATIONS AND DATA

Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997



Camera No.	View	Coordinates (mm)*			Angle	Lens (mm)	Film Speed (fps)
		X	Y	Z			
	Real Time						
6	Left Impact	-610	-2260	1680		13	1005
8	Onboard Hood					13	1005
9	Onboard Front Occupant					8	922
7	Onboard Rear Occupant					8	1099
5	Right Impact	-590	10540	1910		25	813
1	Top Overall	70	1340	5000		8	1000
2	Top Impact	-290	30	5000		13	926
4	Cart Overall					13	935
3	Cart Impact					35	1005

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

DATA SHEET 16
FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

TEST REQUIREMENTS:

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

TEST VEHICLE IMPACT TYPE: X Side Impact MDB 37.9 mph (61.0 kph)

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATION(S): None

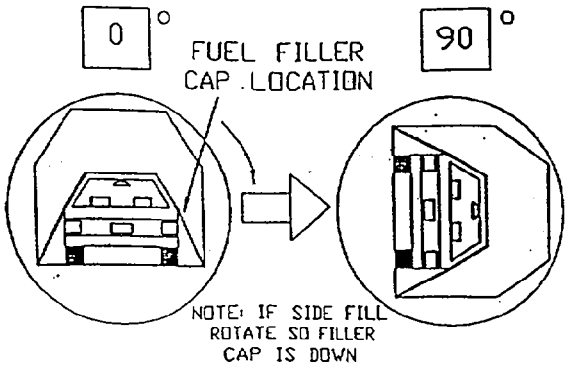
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

TEST PHASE: 0° - 90°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 32 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 32 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

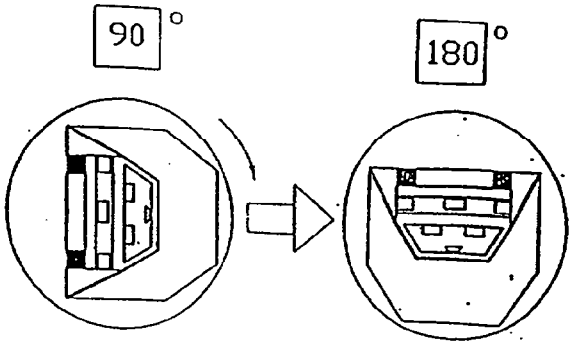
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

TEST PHASE: 90° - 180°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 28 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 28 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

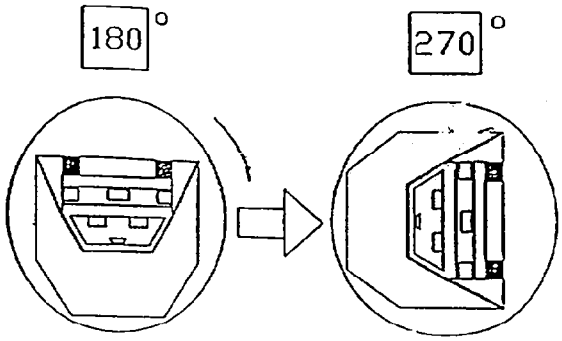
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA (Cont'd)

Vehicle Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

TEST PHASE: 180° - 270°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 23 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 23 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

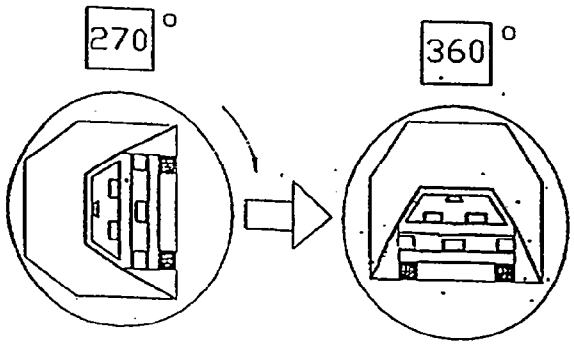
DATA SHEET 16

FMVSS 301 STATIC ROLLOVER TEST DATA

Vehicle Year/Make/Model/Body Style: 1997/Ford/Mustang/2-Door

Vehicle NHTSA No.: MV0210 Test Date: October 3, 1997

TEST PHASE: 270° - 360°



DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time = 2 minutes 46 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time = 5 minutes 0 seconds

TOTAL TIME = 7 minutes 46 seconds

Next Whole Minute Interval = 8 minutes

FUEL SPILLAGE MEASUREMENT:

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

FUEL SPILLAGE LOCATIONS(S): None

APPENDIX A - PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

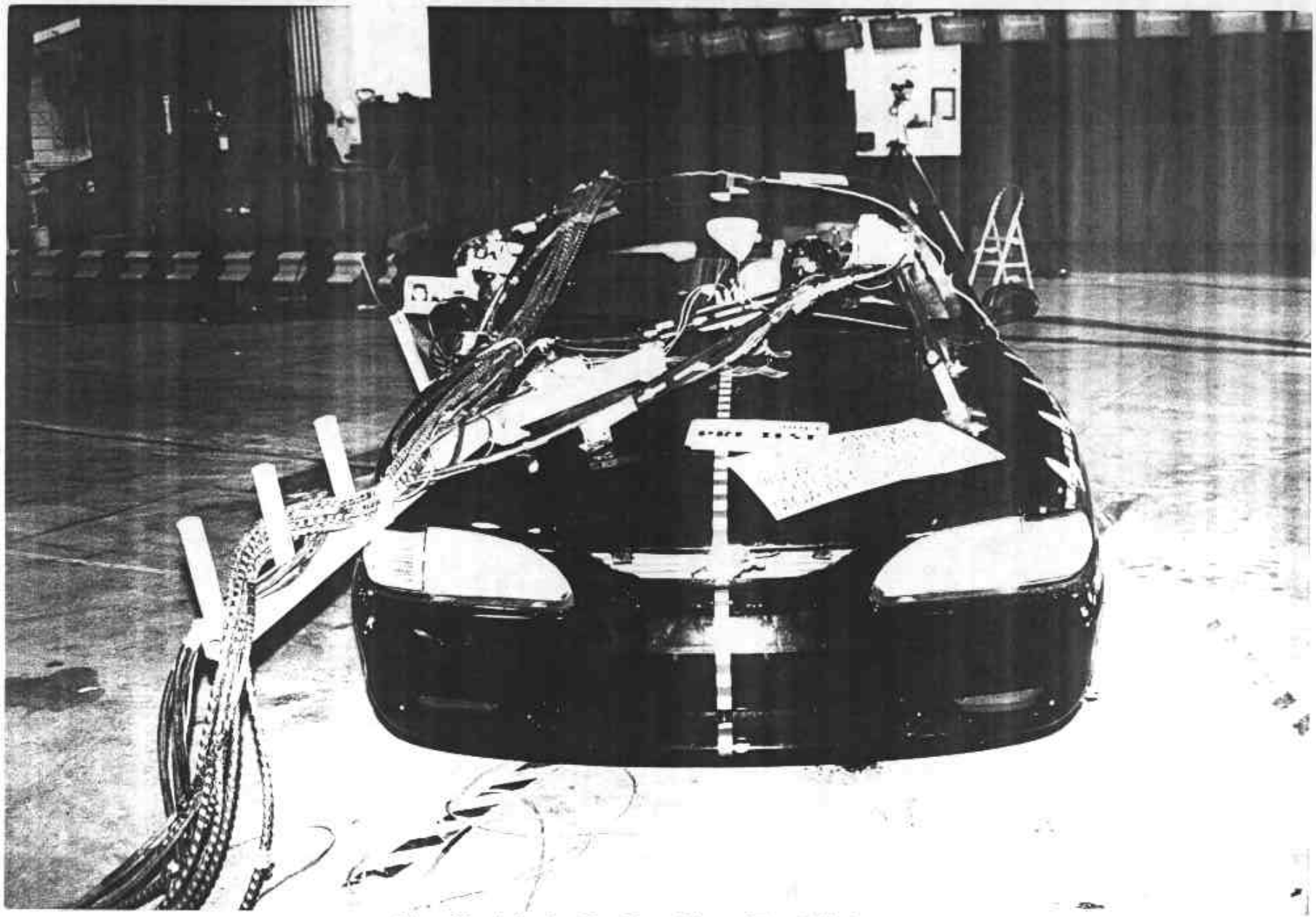


Photo No. A-1 - Pre-Test Front View of Test Vehicle

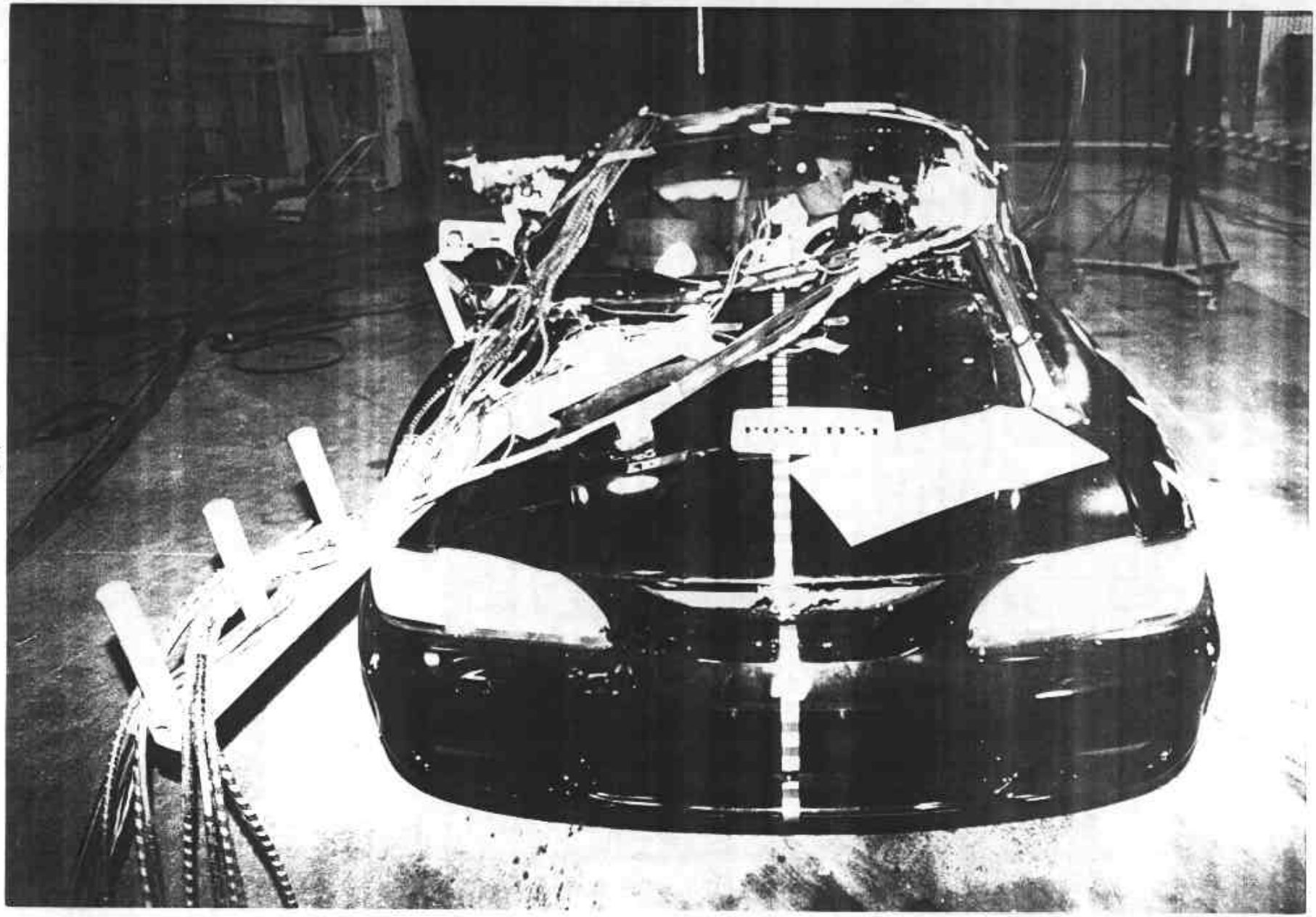


Photo No. A-2 - Post-Test Front View of Test Vehicle

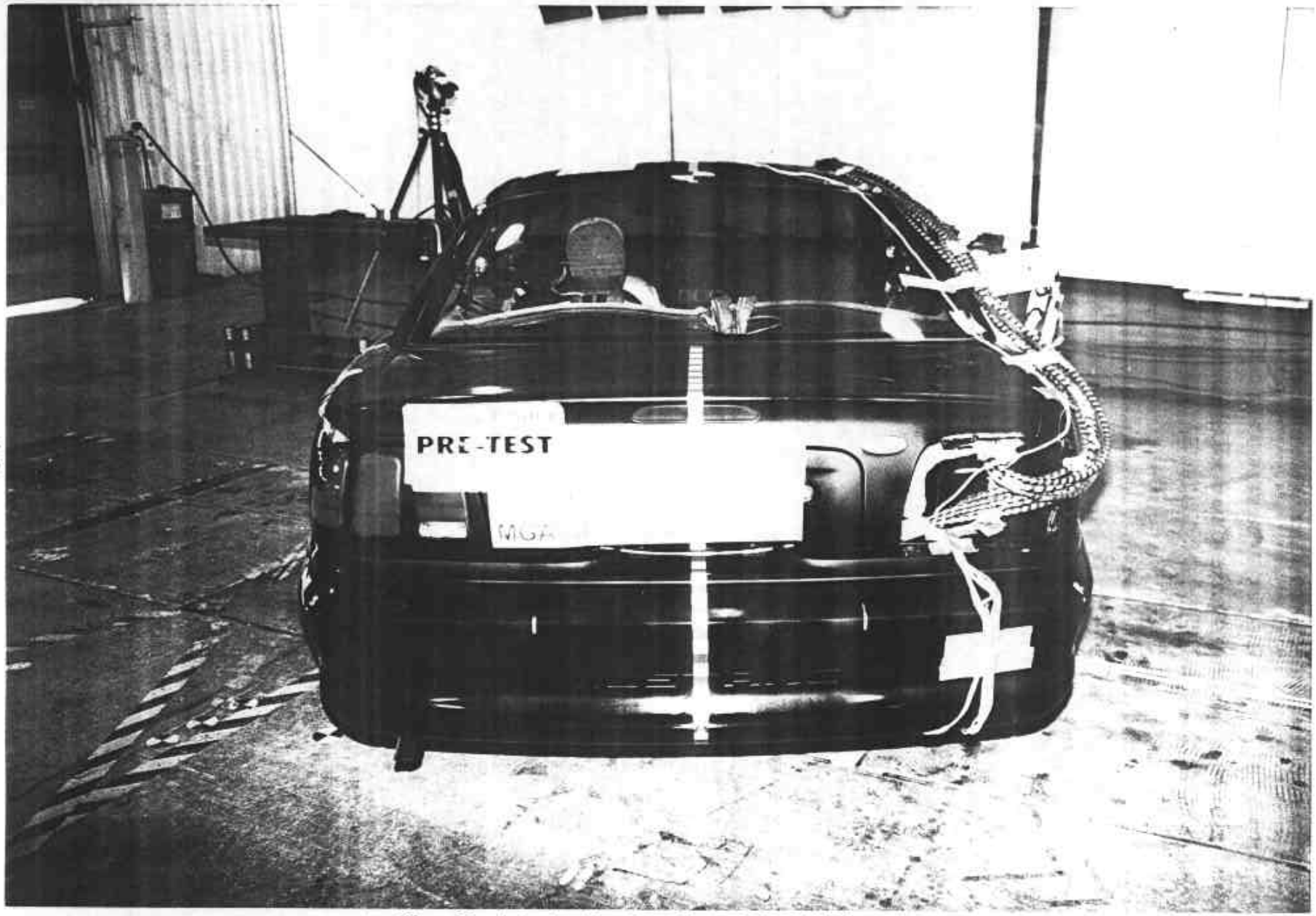


Photo No. A-3 - Pre-Test Rear View of Test Vehicle

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

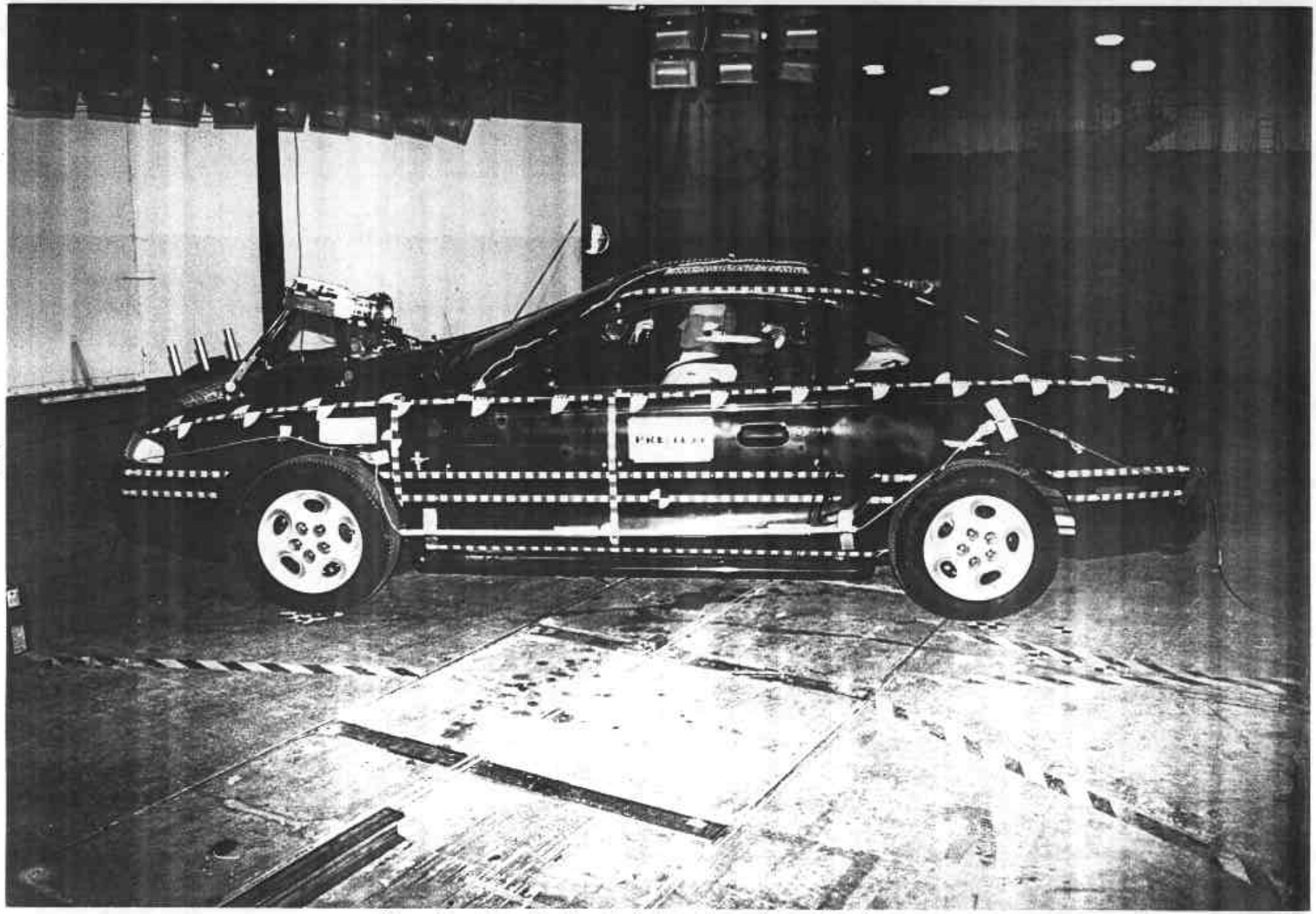


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

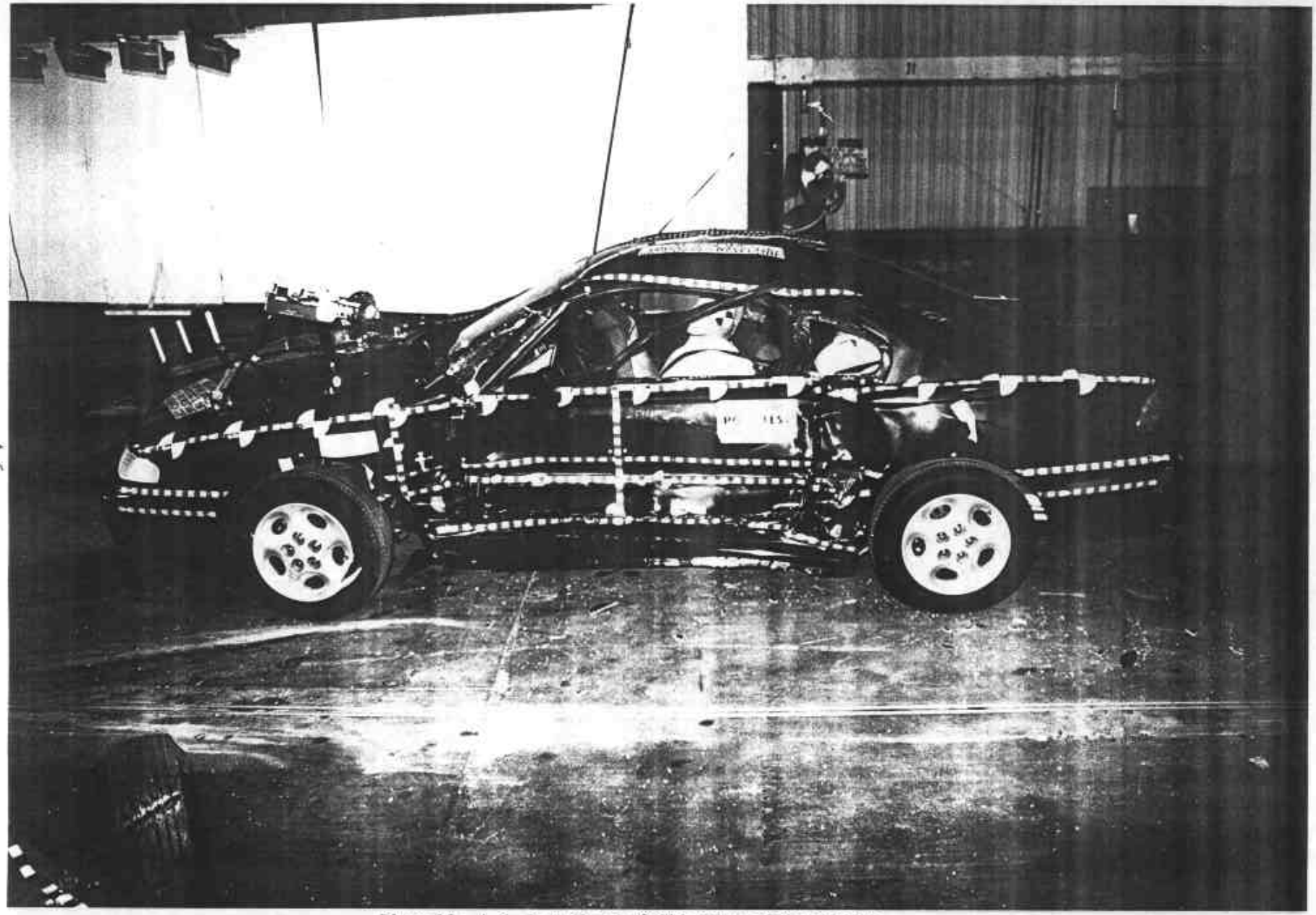


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

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

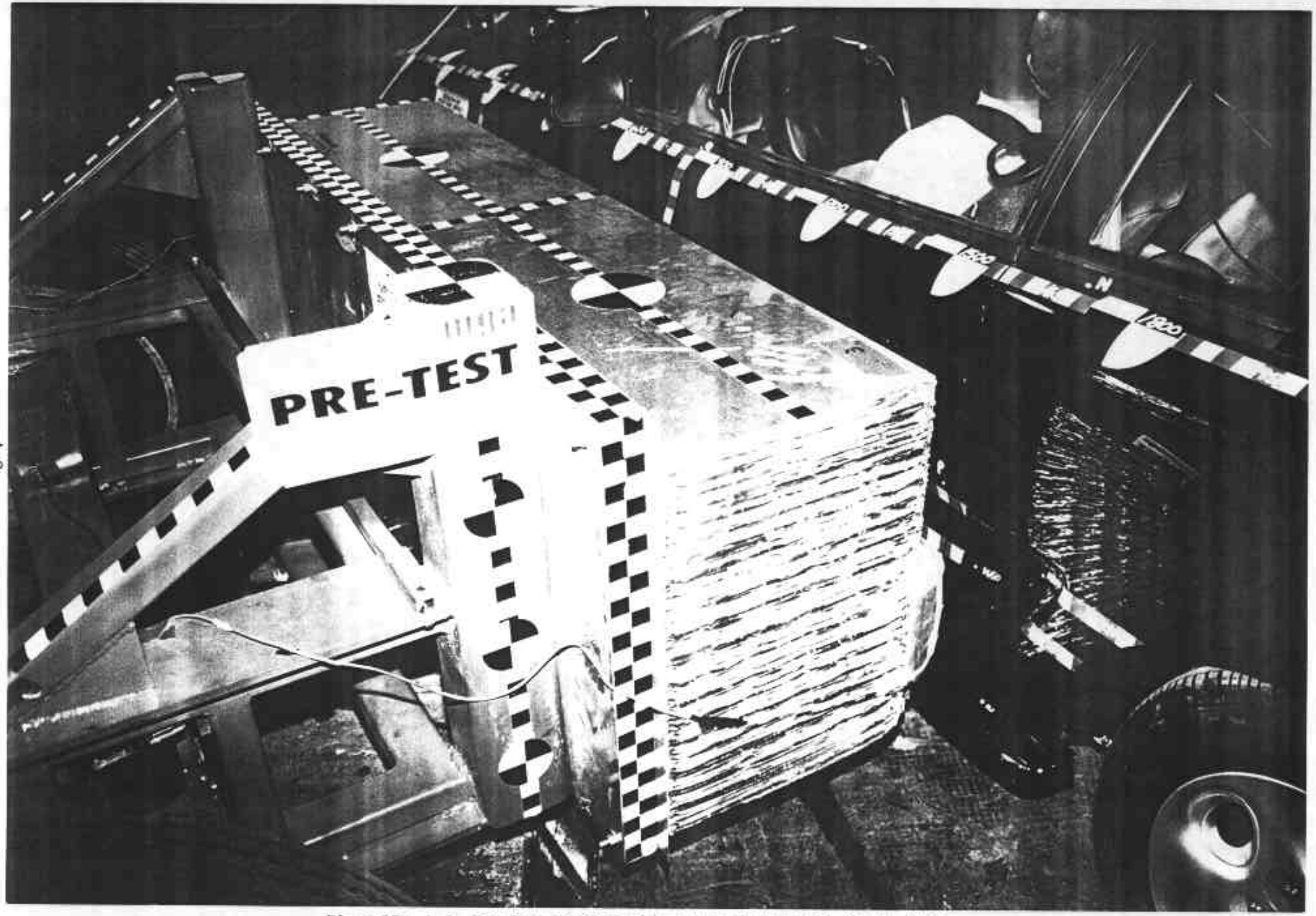


Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle (right side)

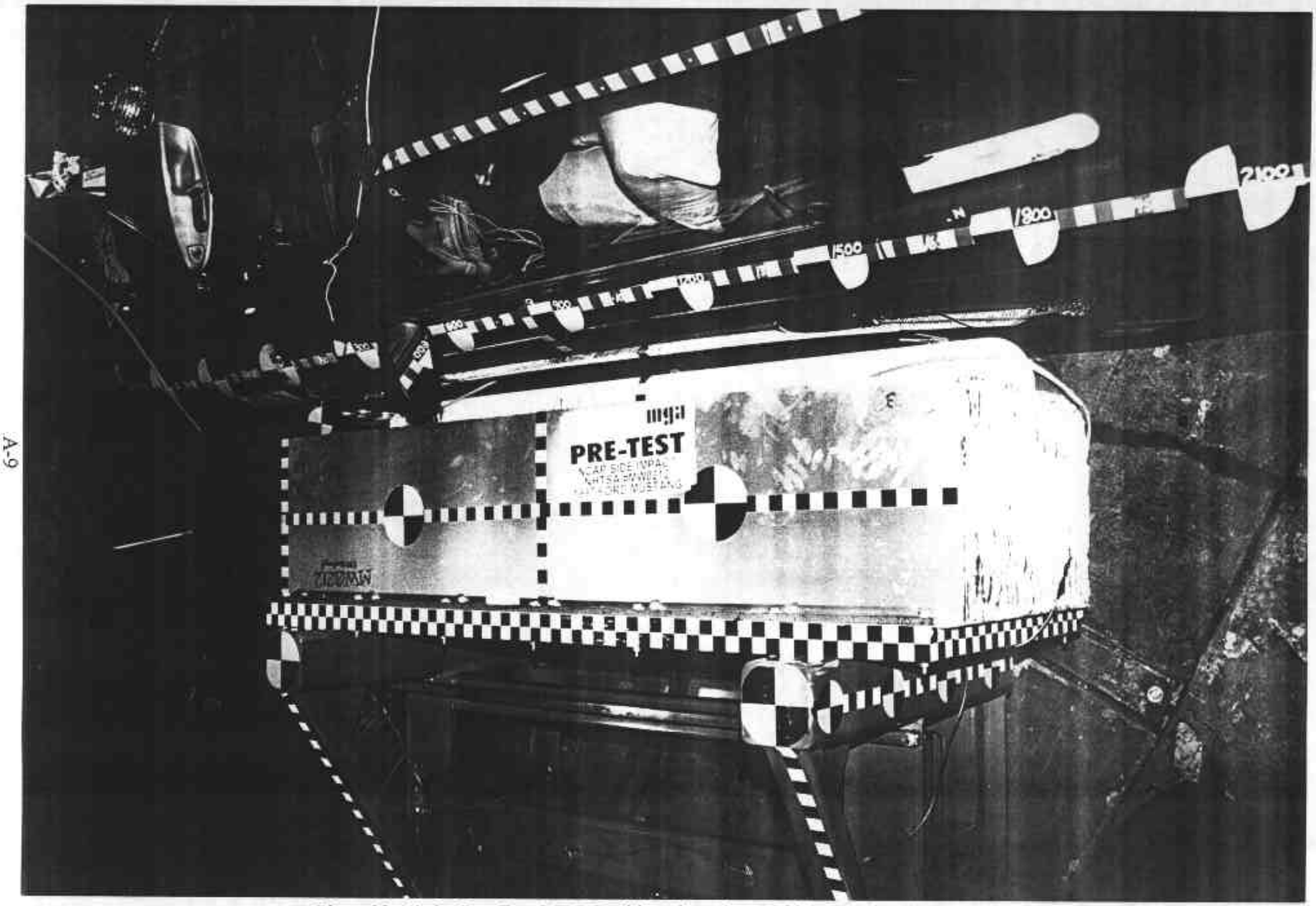


Photo No. A-9 - Pre-Test MDB Positioned Against Vehicle Overhead View

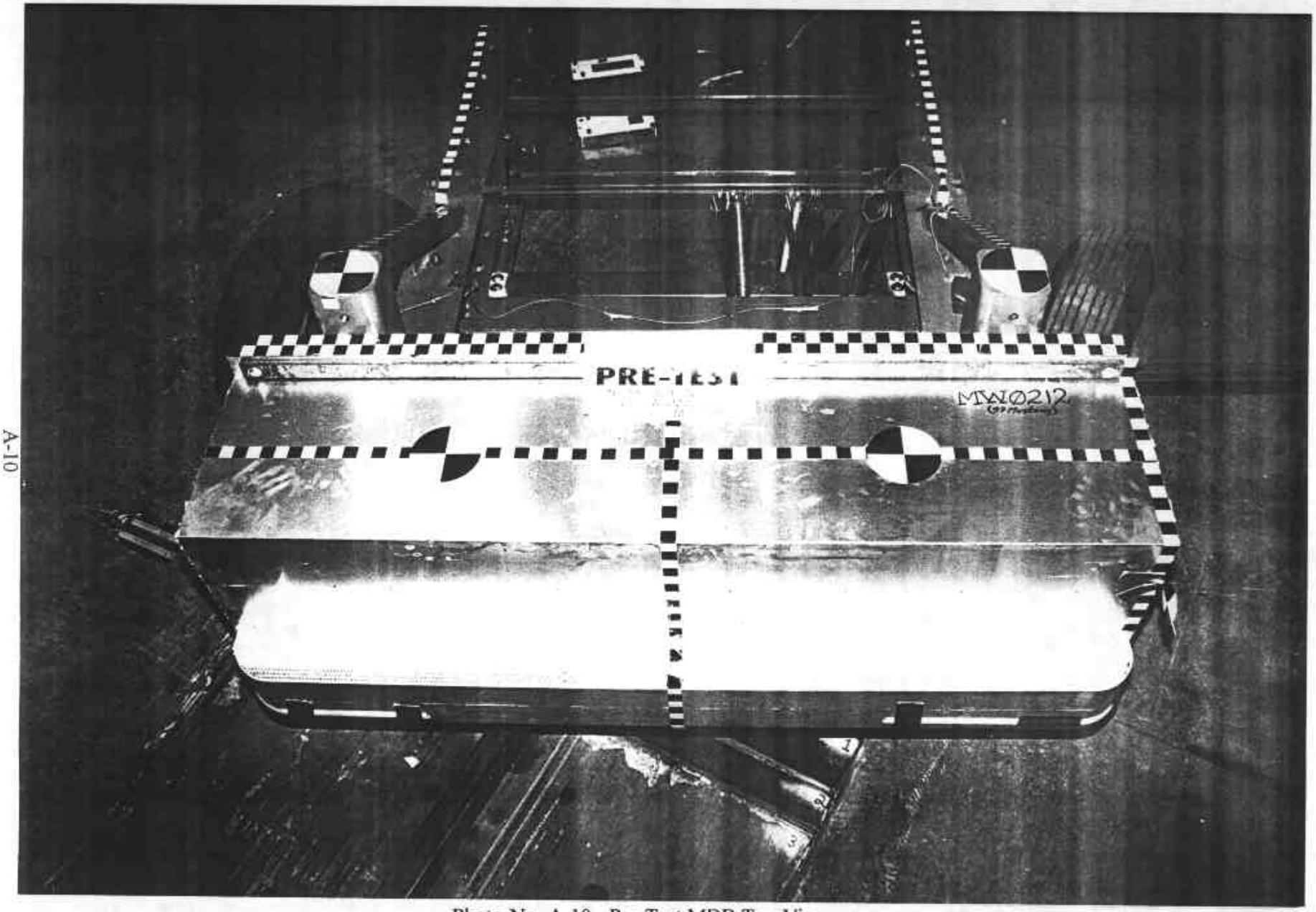


Photo No. A-10 - Pre-Test MDB Top View

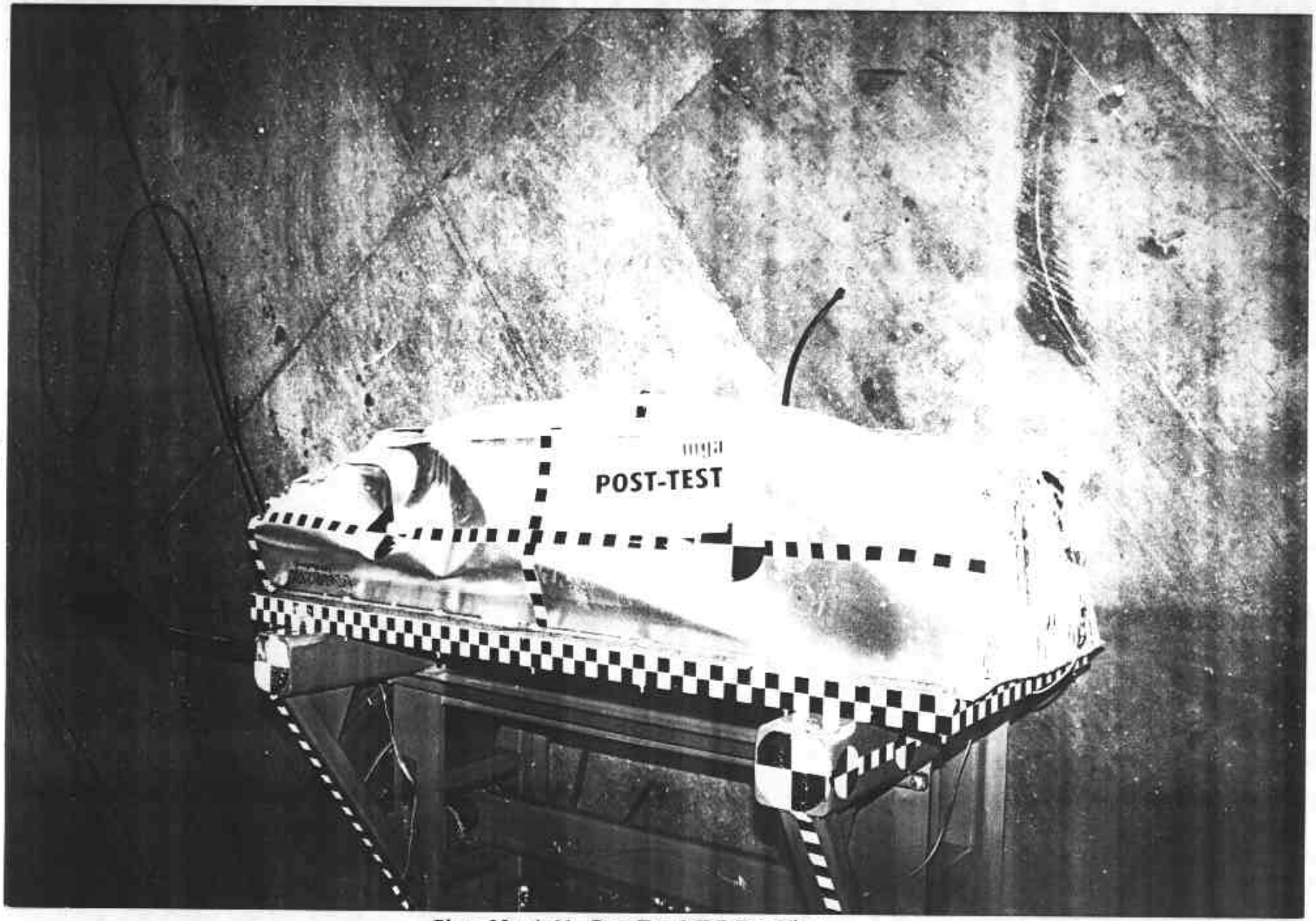
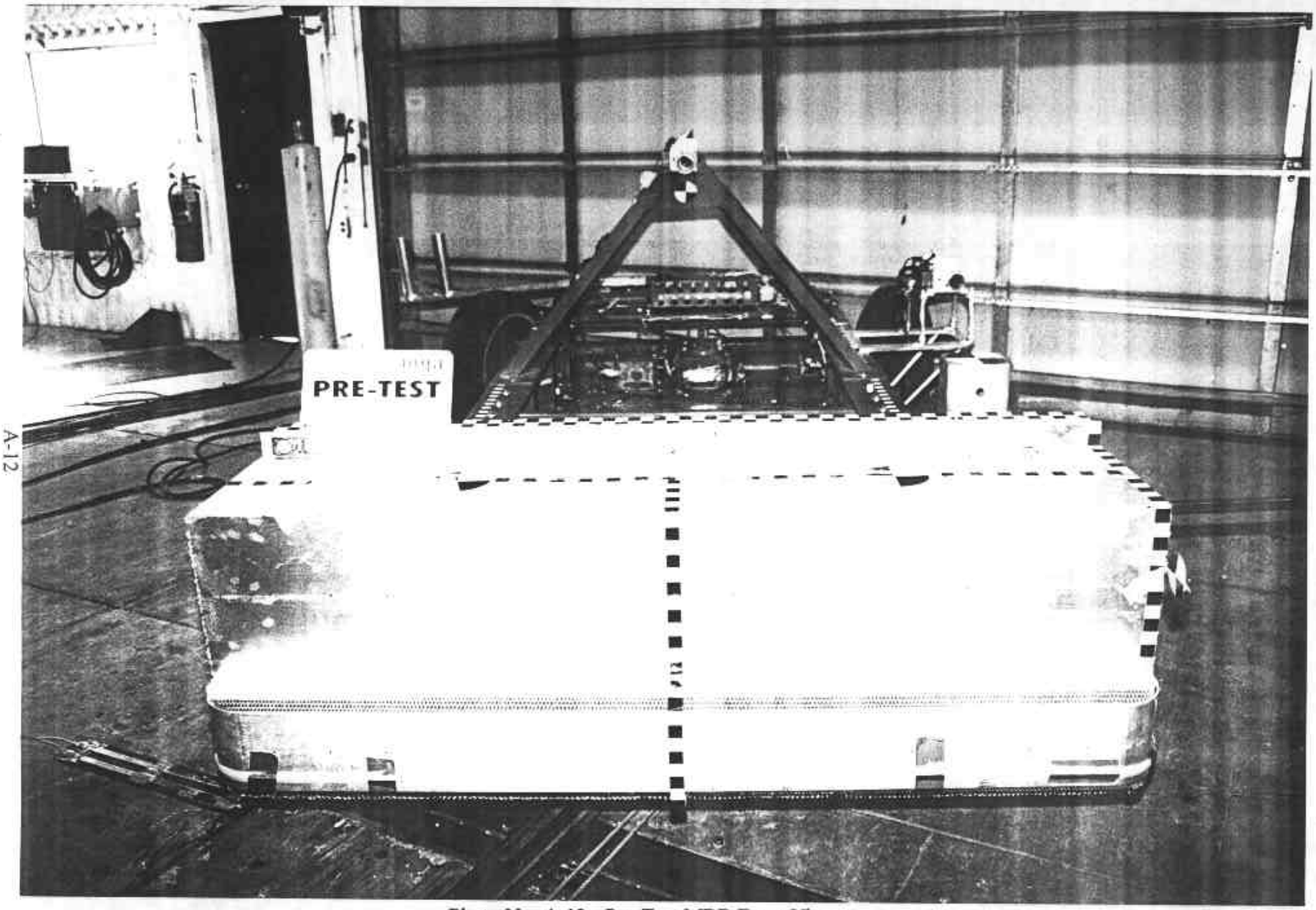


Photo No. A-11 - Post-Test MDB Top View



A-12

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

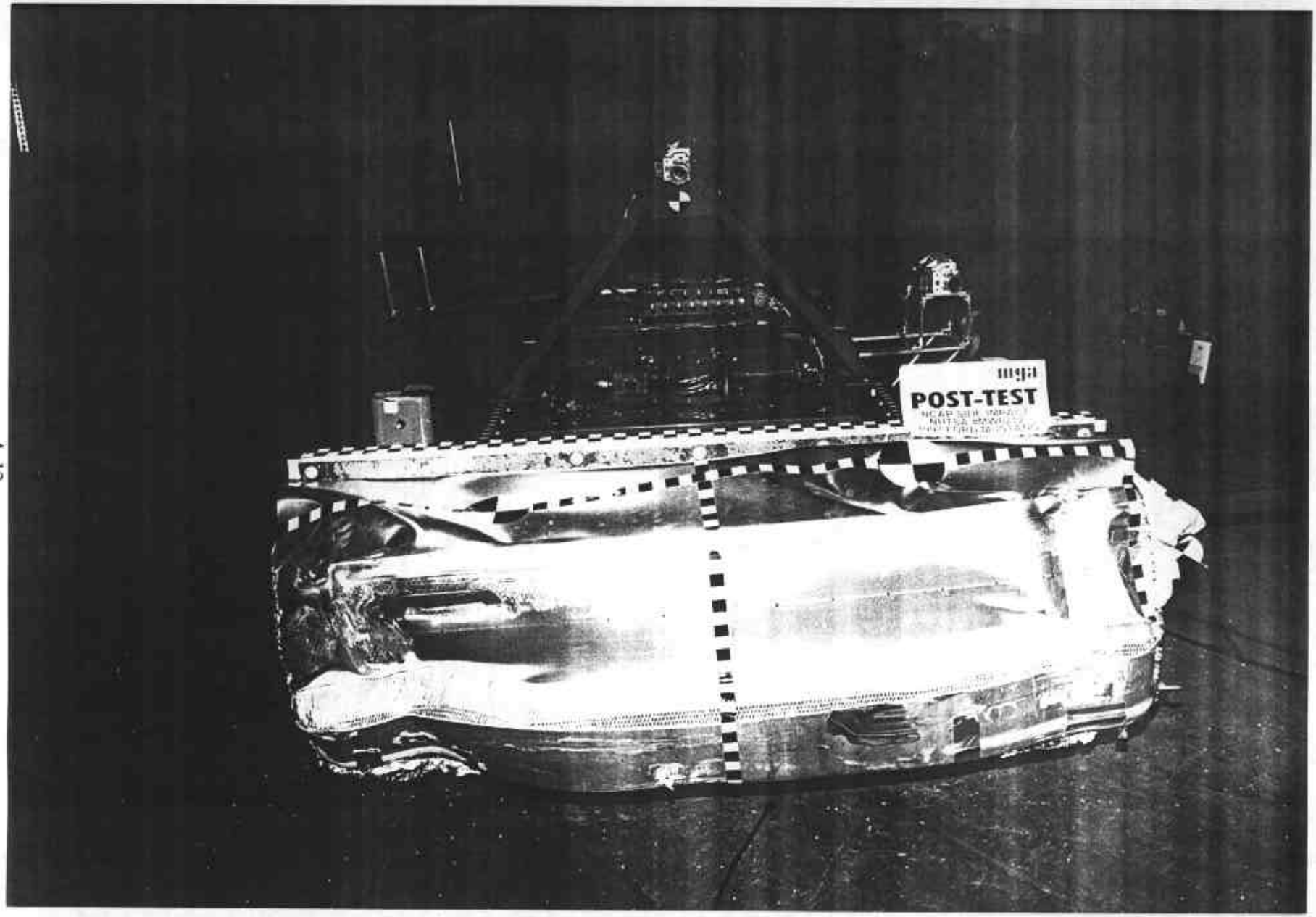


Photo No. A-13 - Post-Test MDB Front View

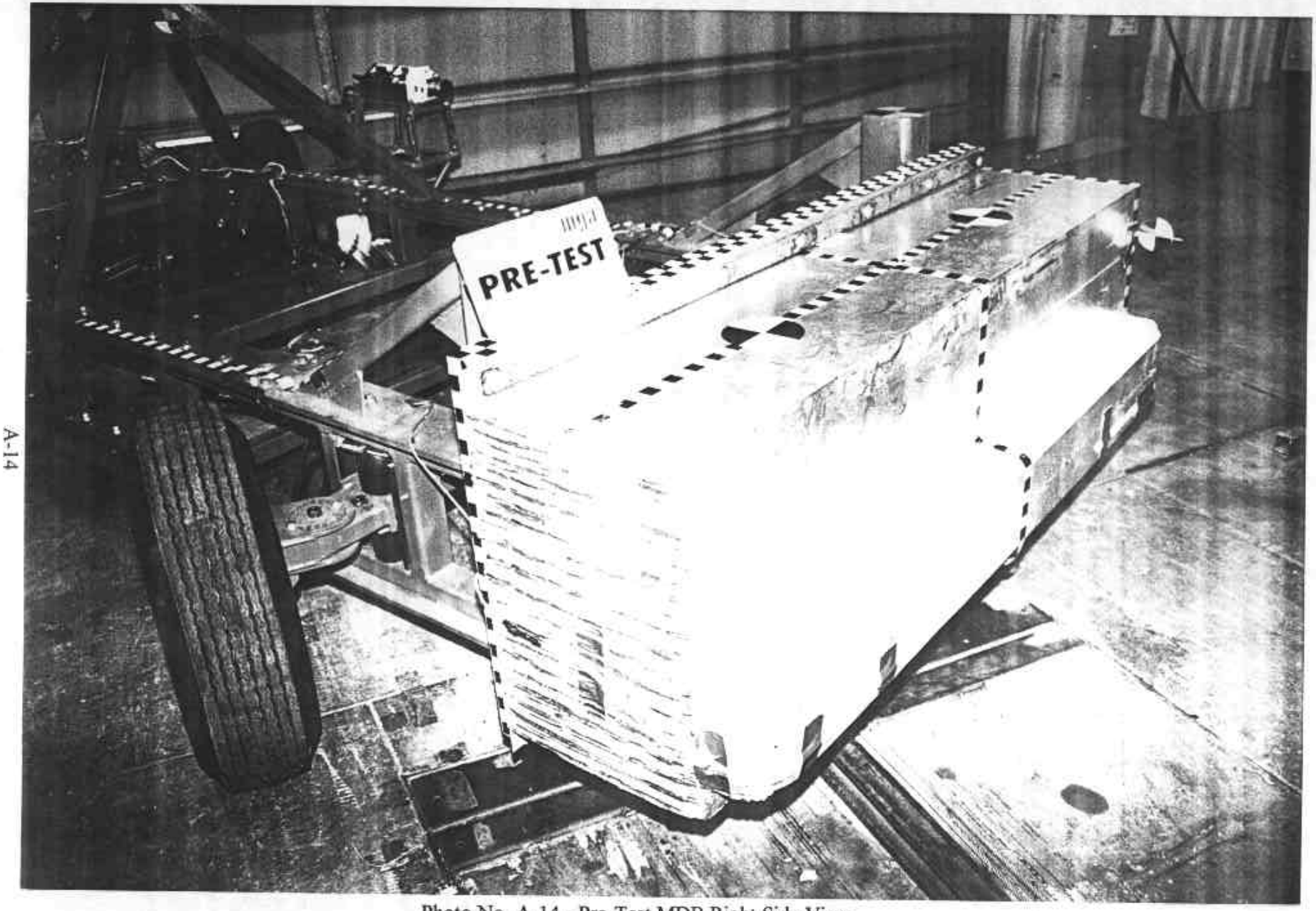


Photo No. A-14 - Pre-Test MDB Right Side View

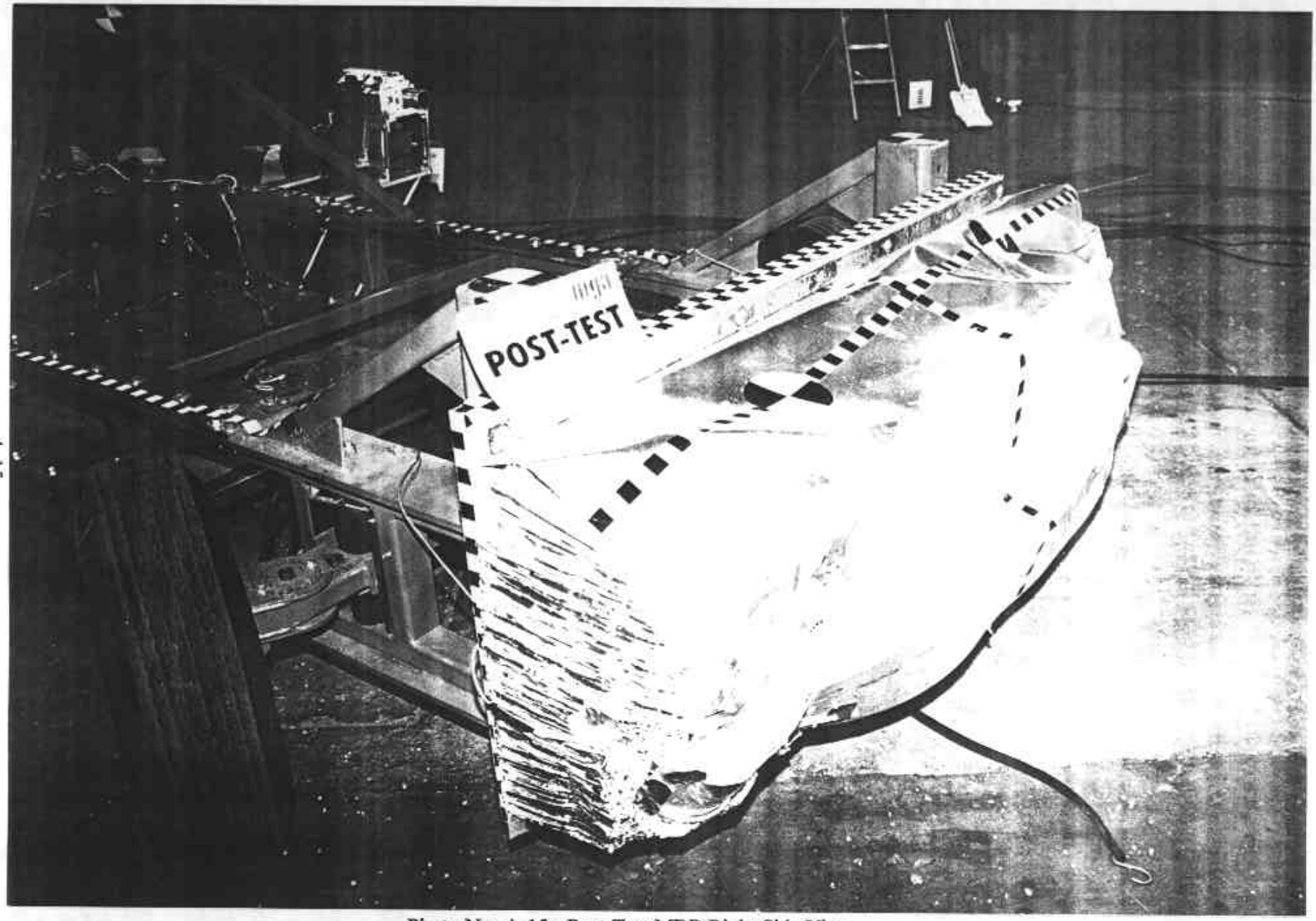


Photo No. A-15 - Post-Test MDB Right Side View

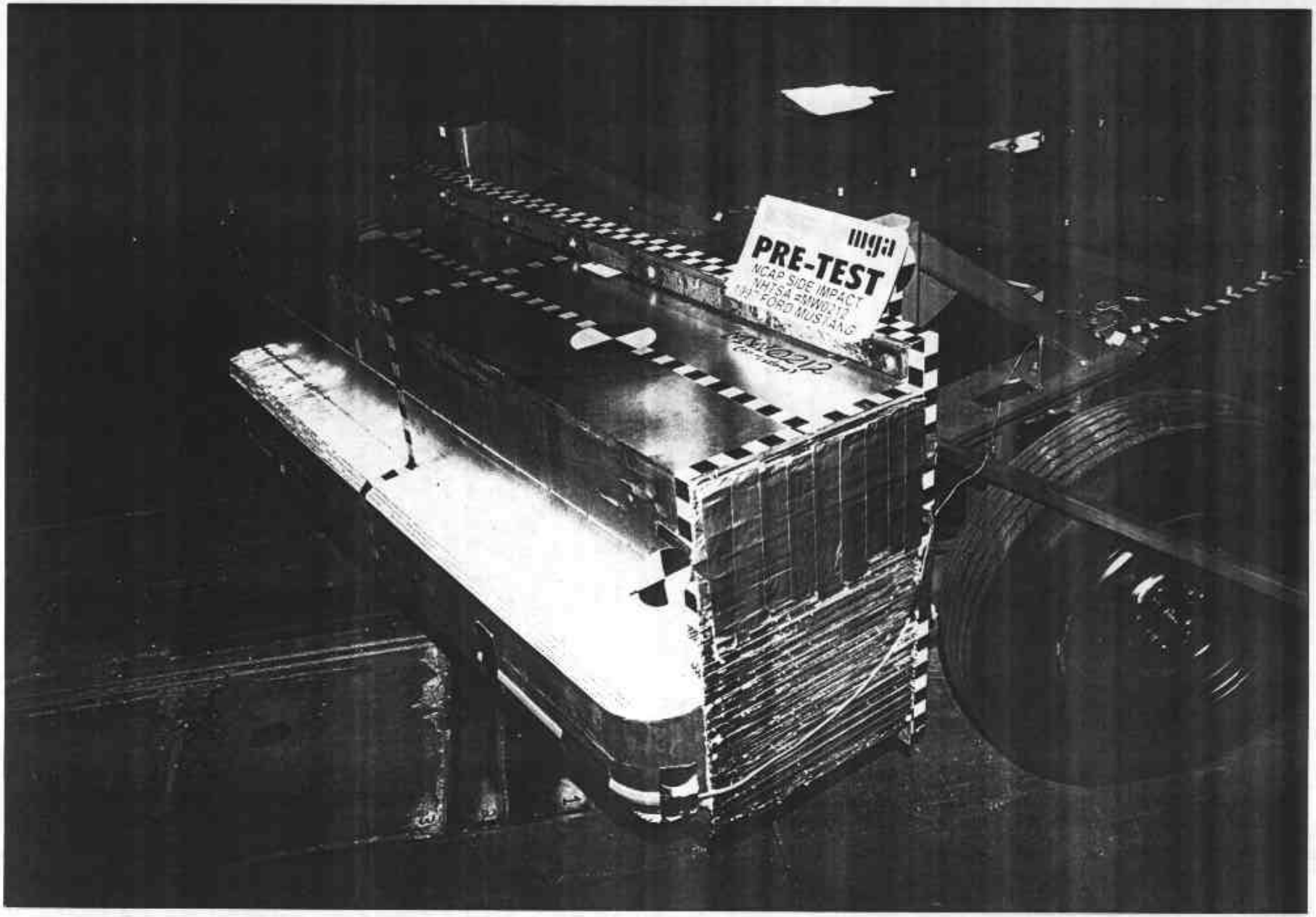


Photo No. A-16 - Pre-Test MDB Left Side View

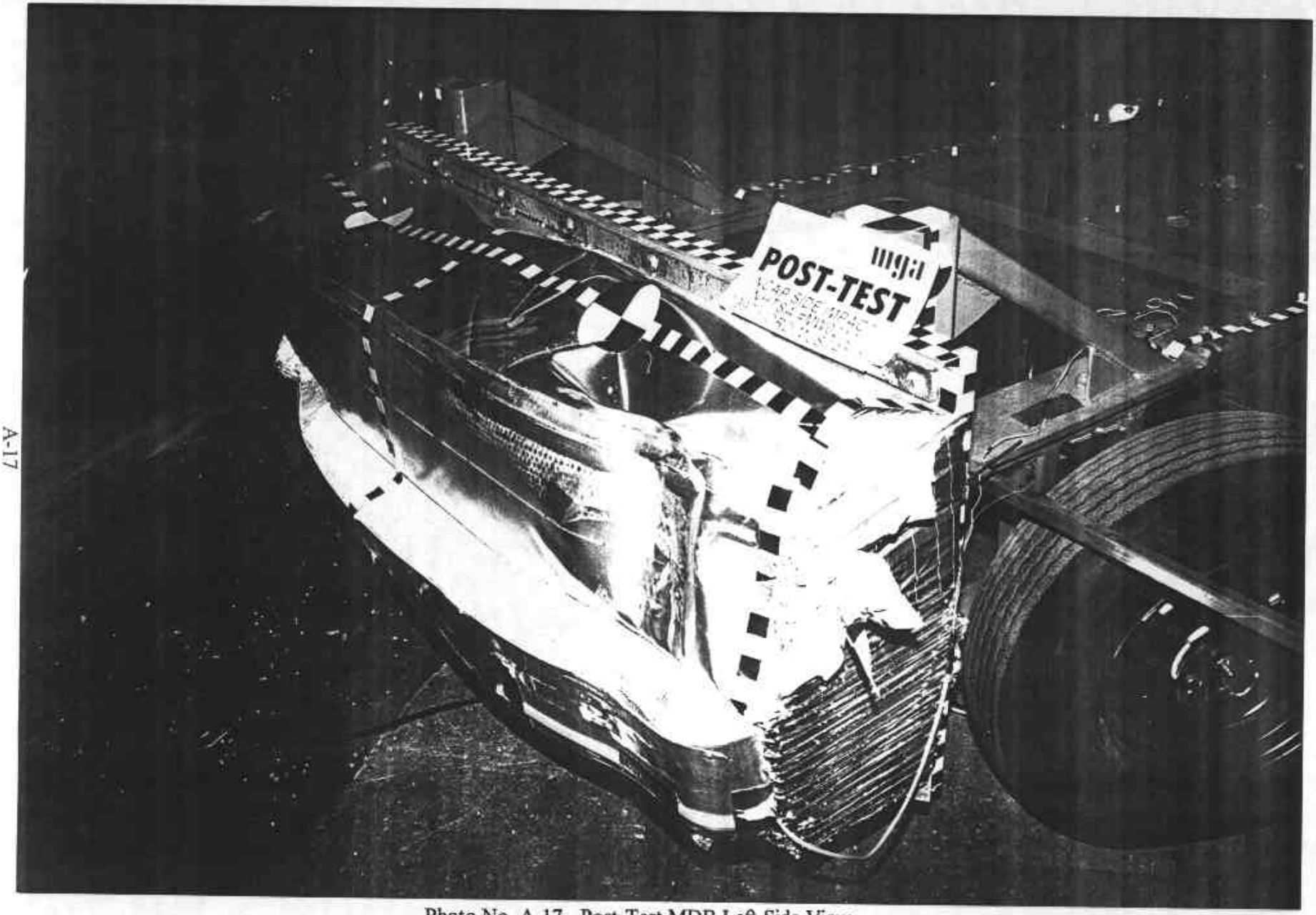


Photo No. A-17 - Post-Test MDB Left Side View

Photo No. A-18 - Pre-Test Driver Dummy Right Side View

Photo No. A-19 - Post-Test Driver Dummy Right Side View

A-20

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

A-21

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

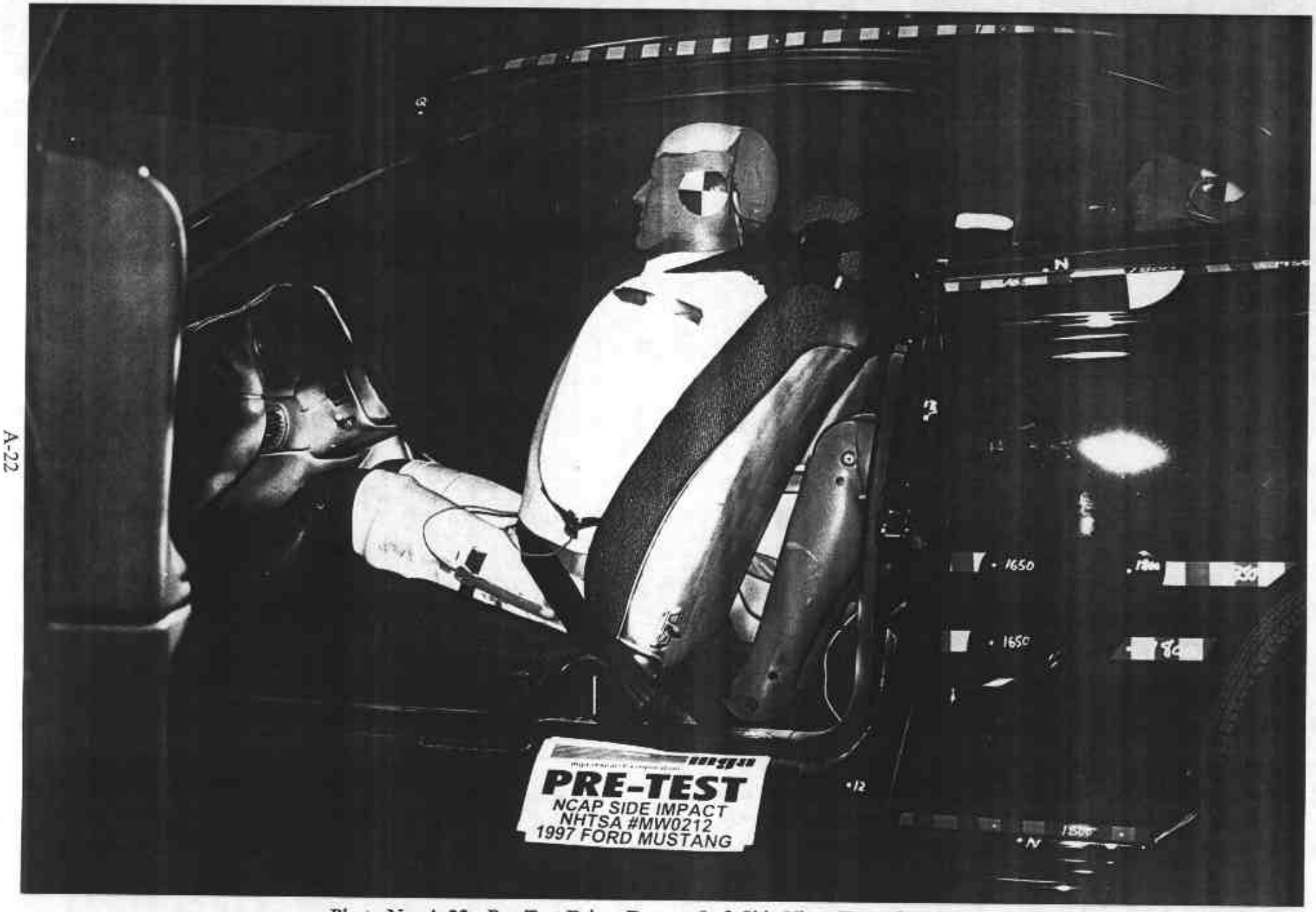


Photo No. A-22 - Pre-Test Driver Dummy Left Side View (Door Open)

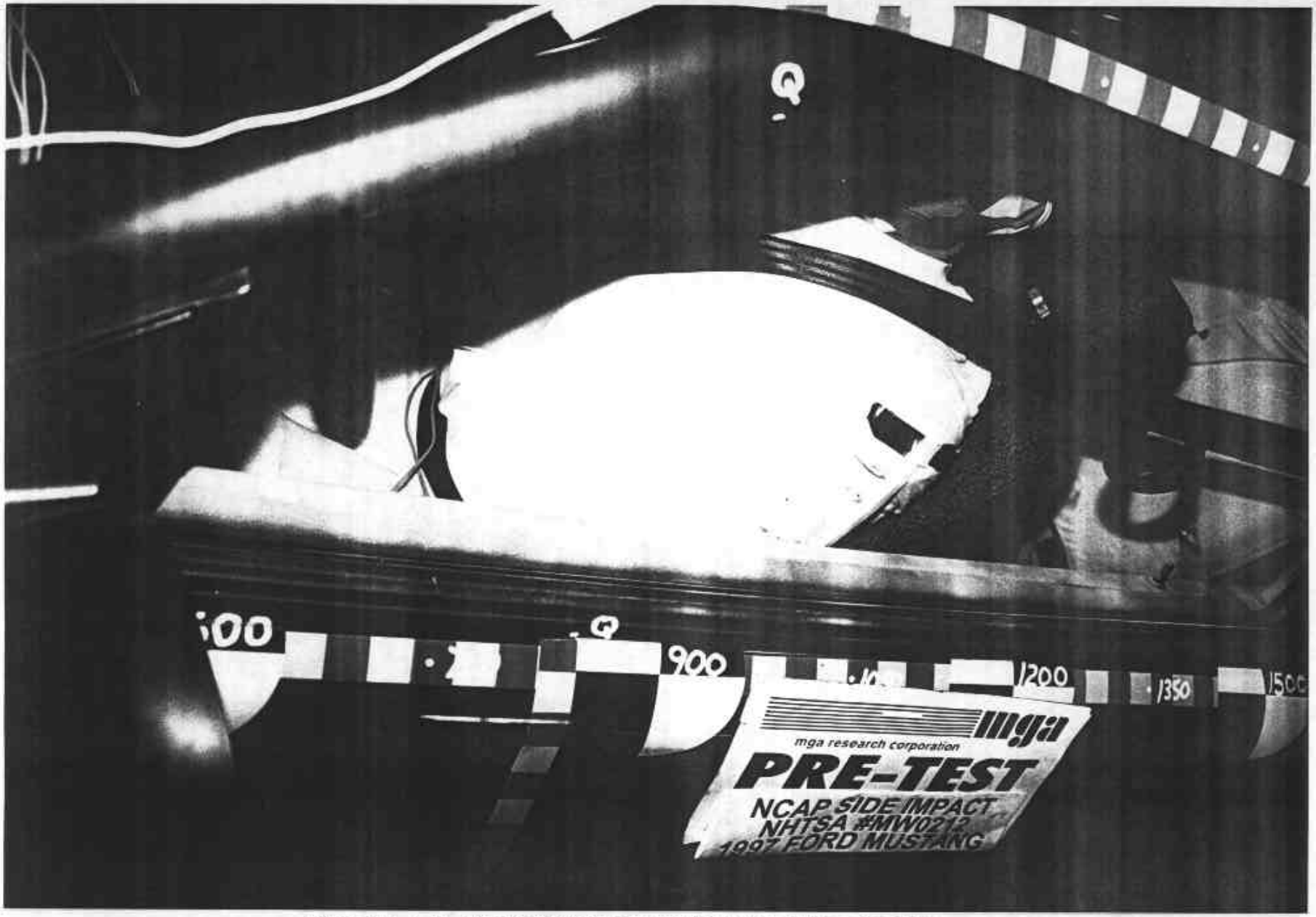


Photo No. A-23 - Pre-Test Driver Dummy Shoulder and Door Top View

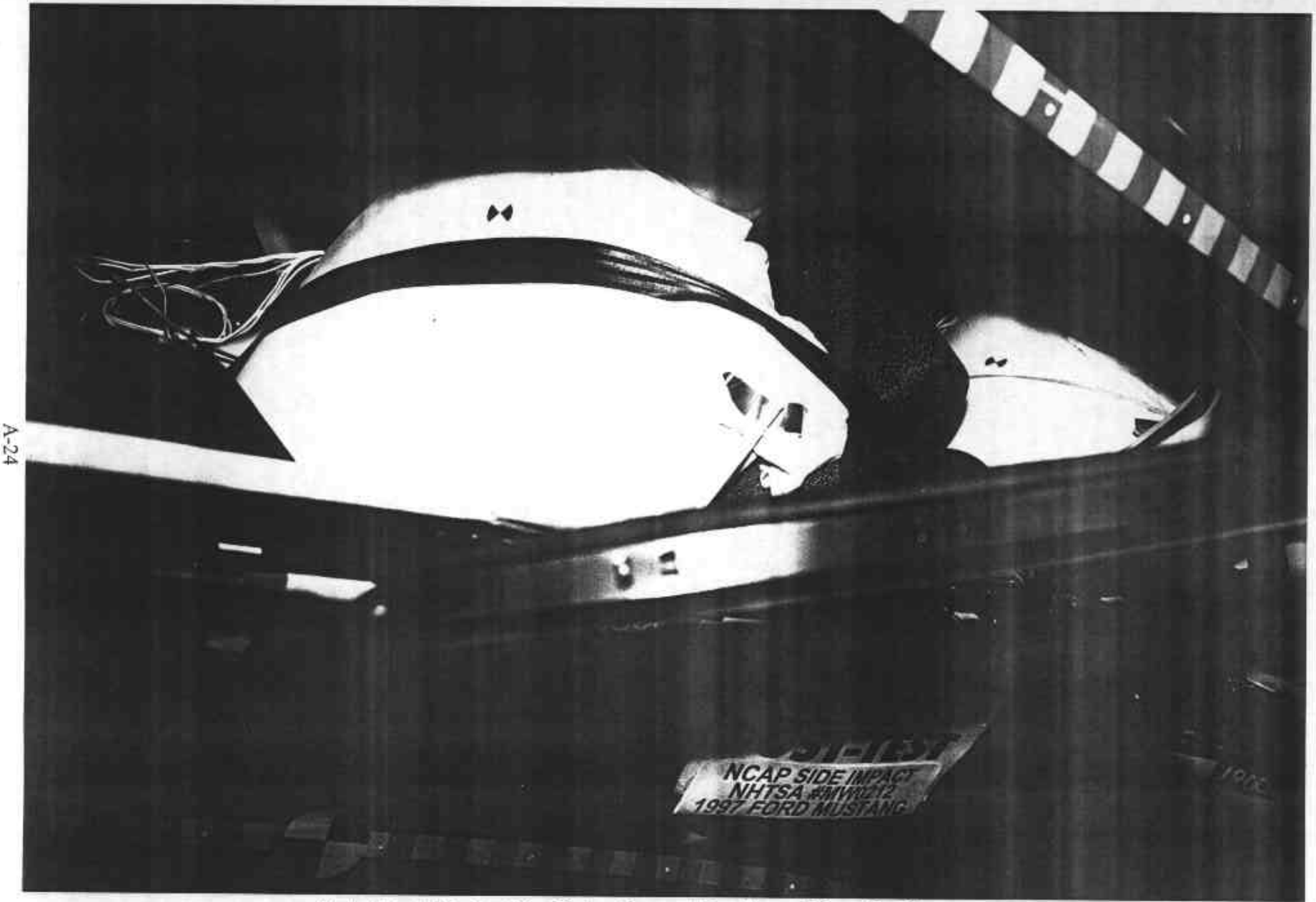


Photo No. A-24 - Post-Test Driver Dummy Shoulder and Door Top View

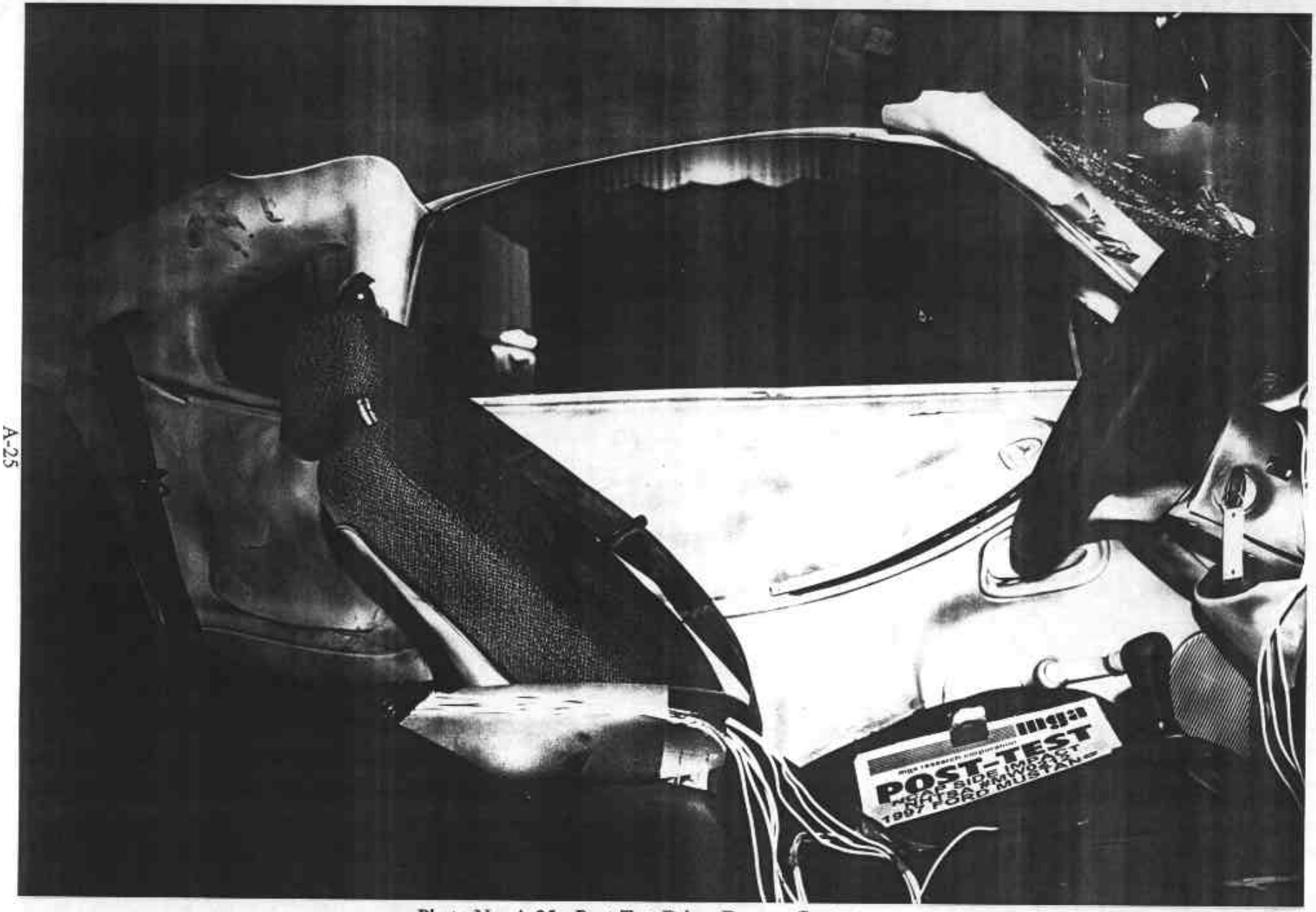
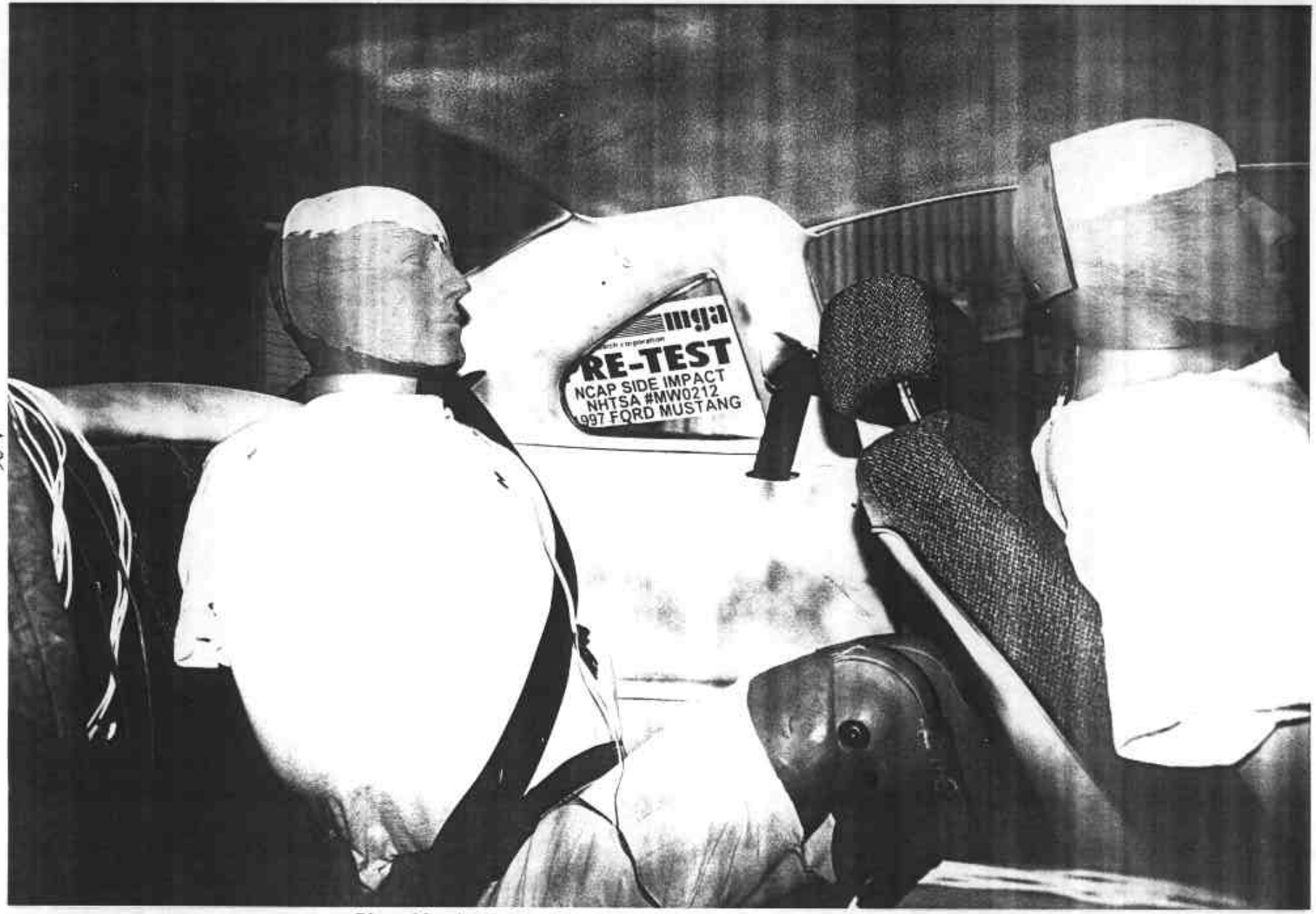


Photo No. A-25 - Post-Test Driver Dummy Contact



A-26

Photo No. A-26 - Pre-Test Passenger Dummy Right Side View

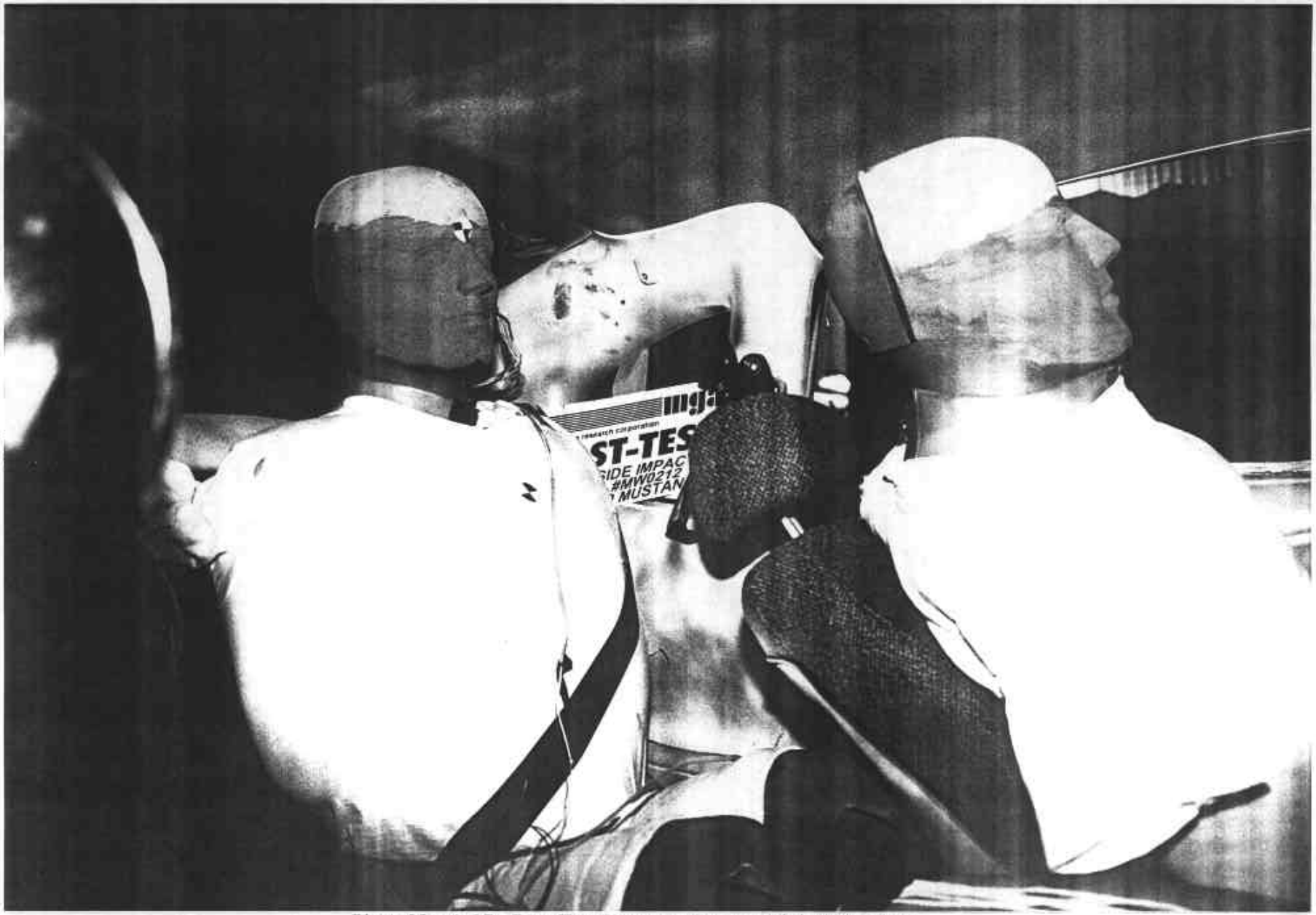
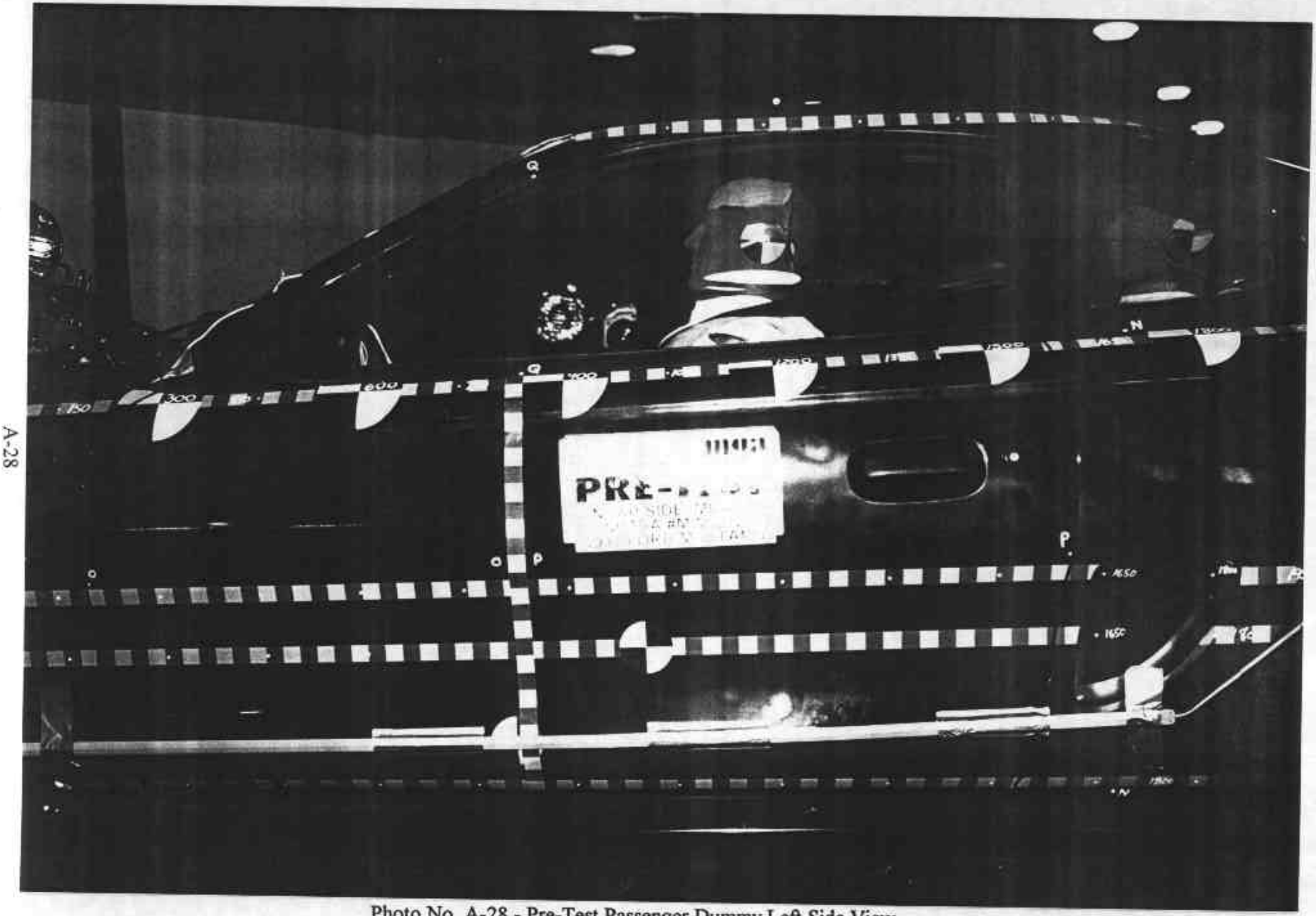


Photo No. A-27 - Post-Test Passenger Dummy Right Side View



A-28

Photo No. A-28 - Pre-Test Passenger Dummy Left Side View

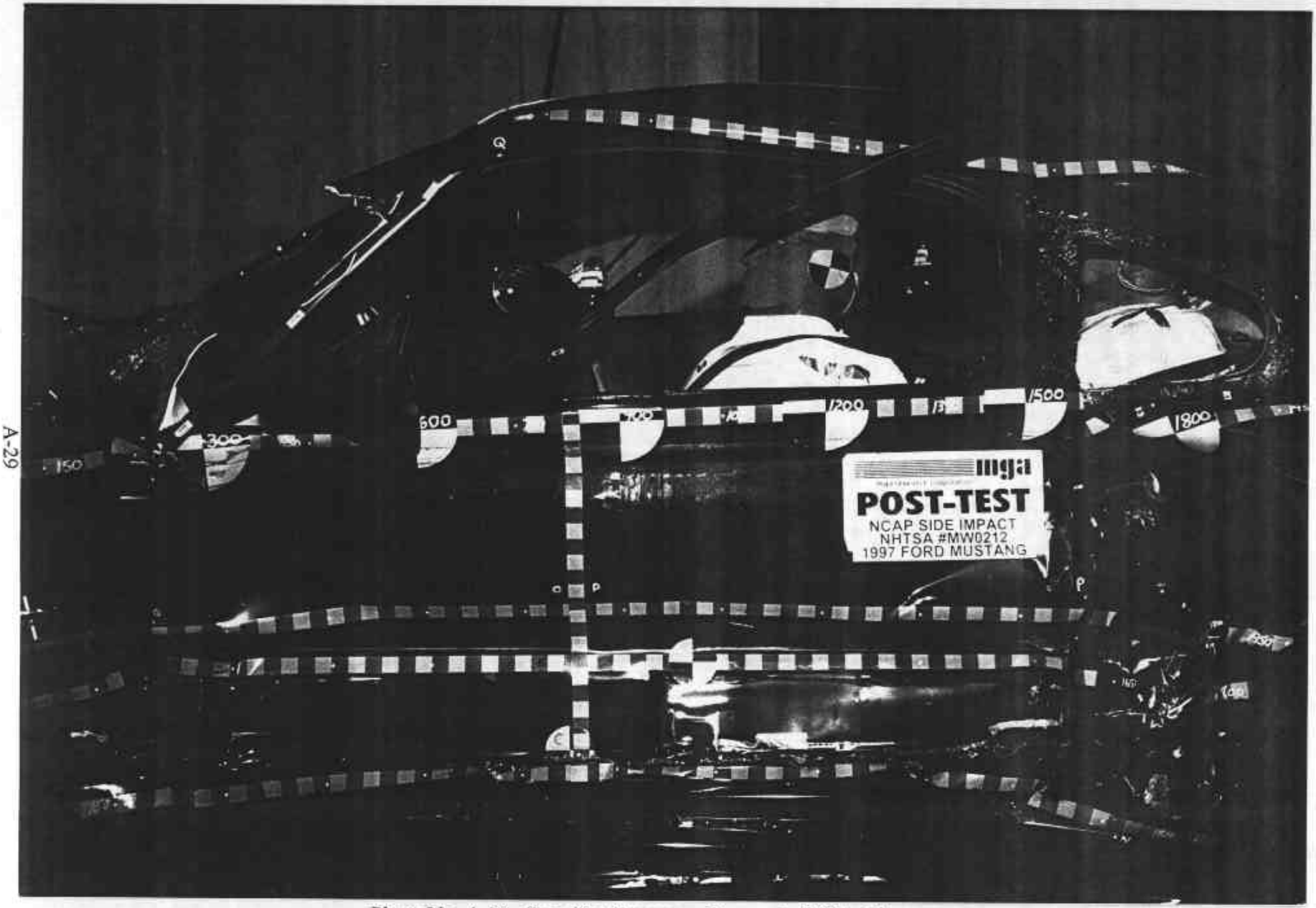


Photo No. A-29 - Post-Test Passenger Dummy Left Side View

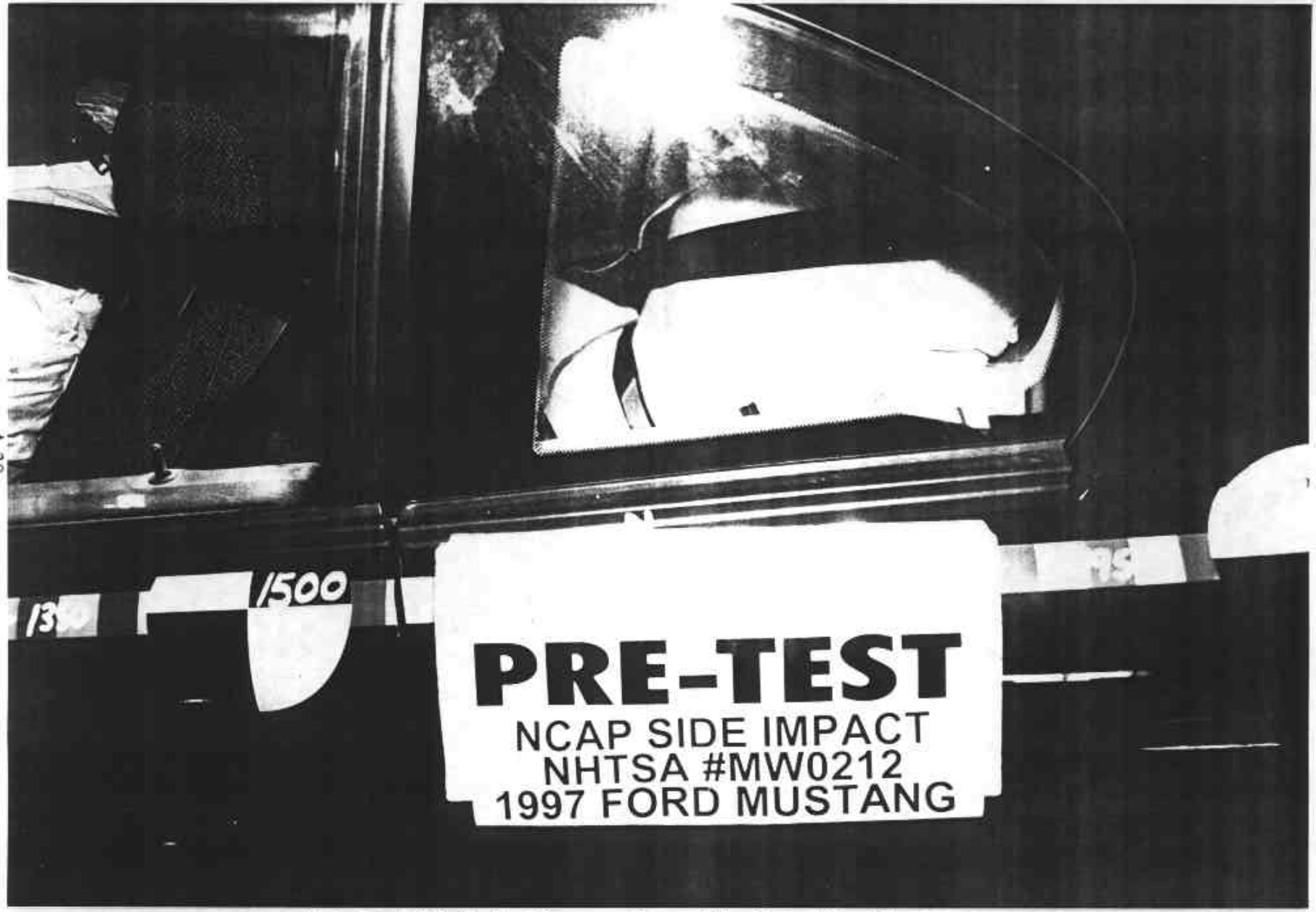


Photo No. A-30 - Pre-Test Passenger Dummy Shoulder and Panel Top View

Photo No. A-31 - Post-Test Passenger Dummy Shoulder and Panel Top View

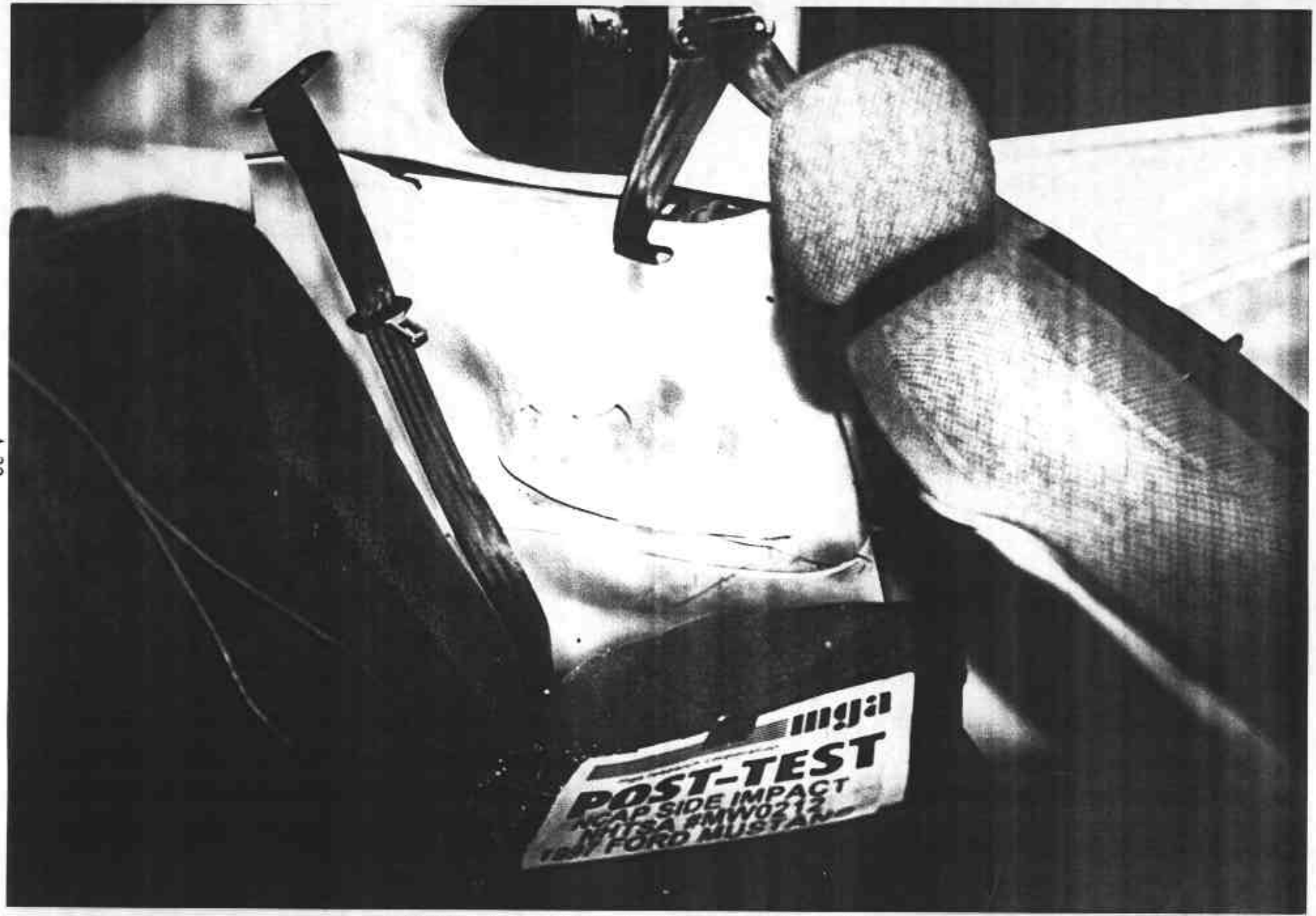


Photo No. A-32 - Post-Test Passenger Dummy Contact

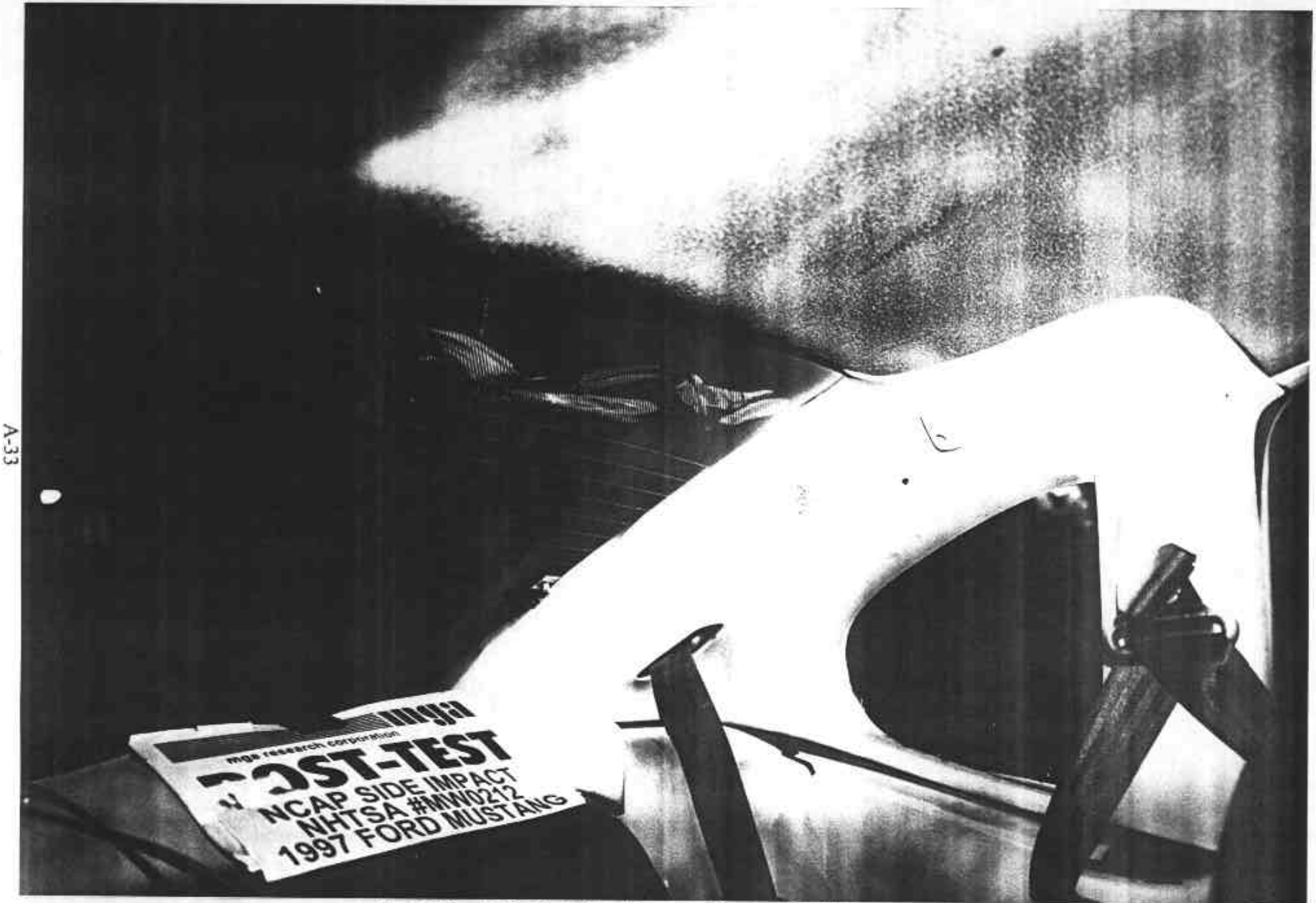
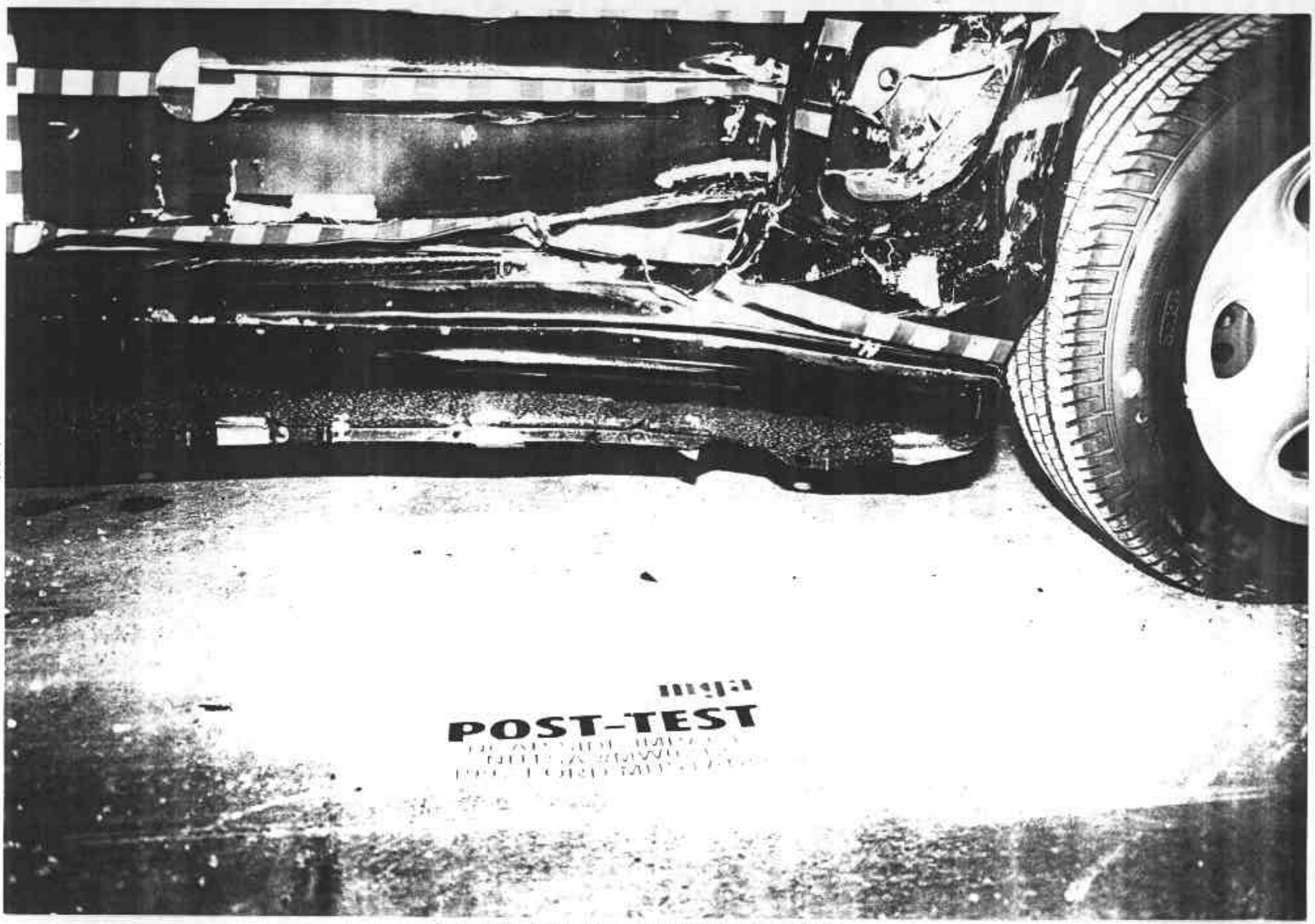


Photo No. A-33 - Post-Test Passenger Dummy Head Contact

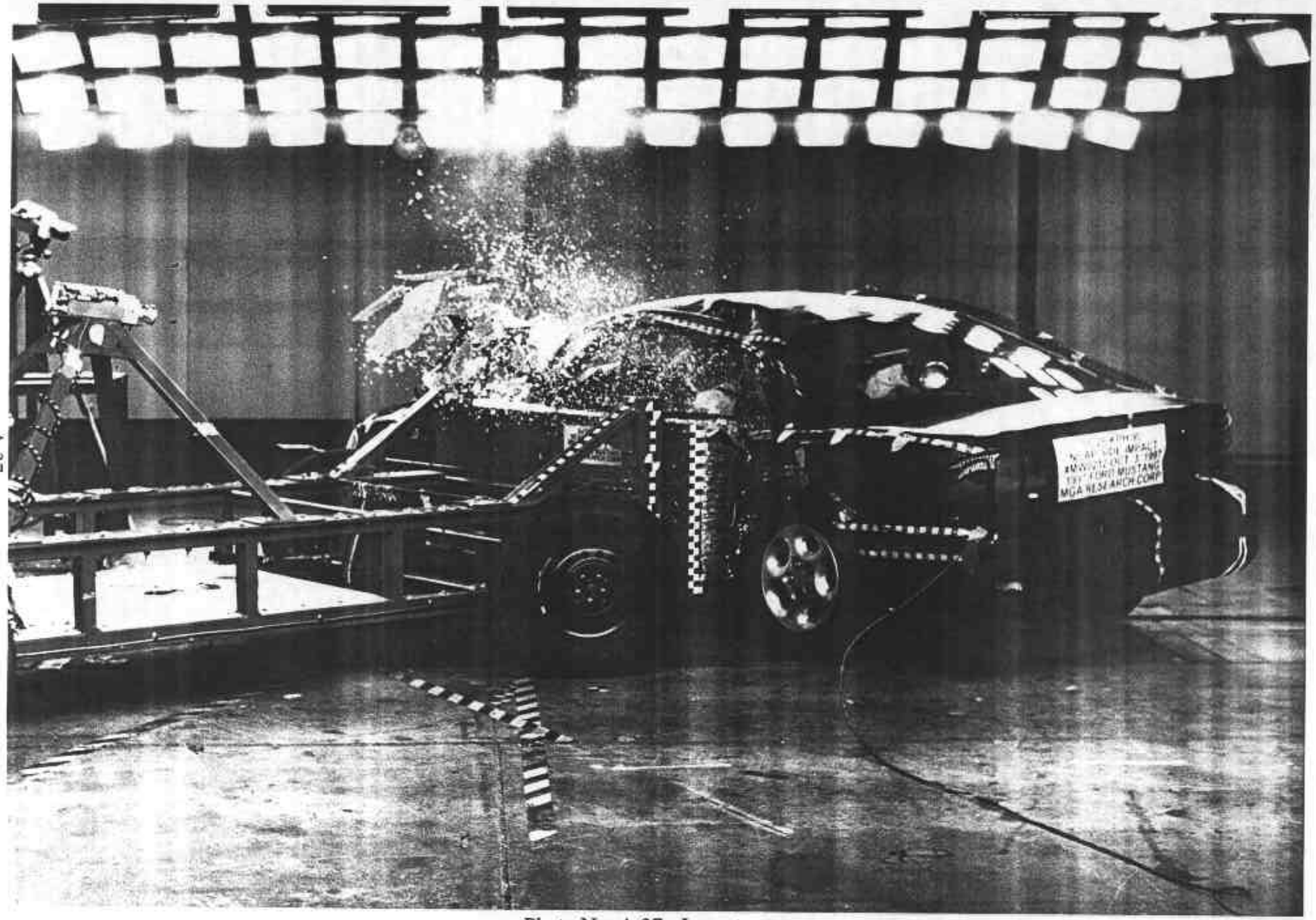
Photo No. A-34 - Pre-Test Left Front Impact Point on Vehicle

Photo No. A-35 - Post-Test Left Front Impact Point on Vehicle



A-36

Photo No. A-36 - Post-Test Left B-Pillar View



A-37

Photo No. A-37 - Impact

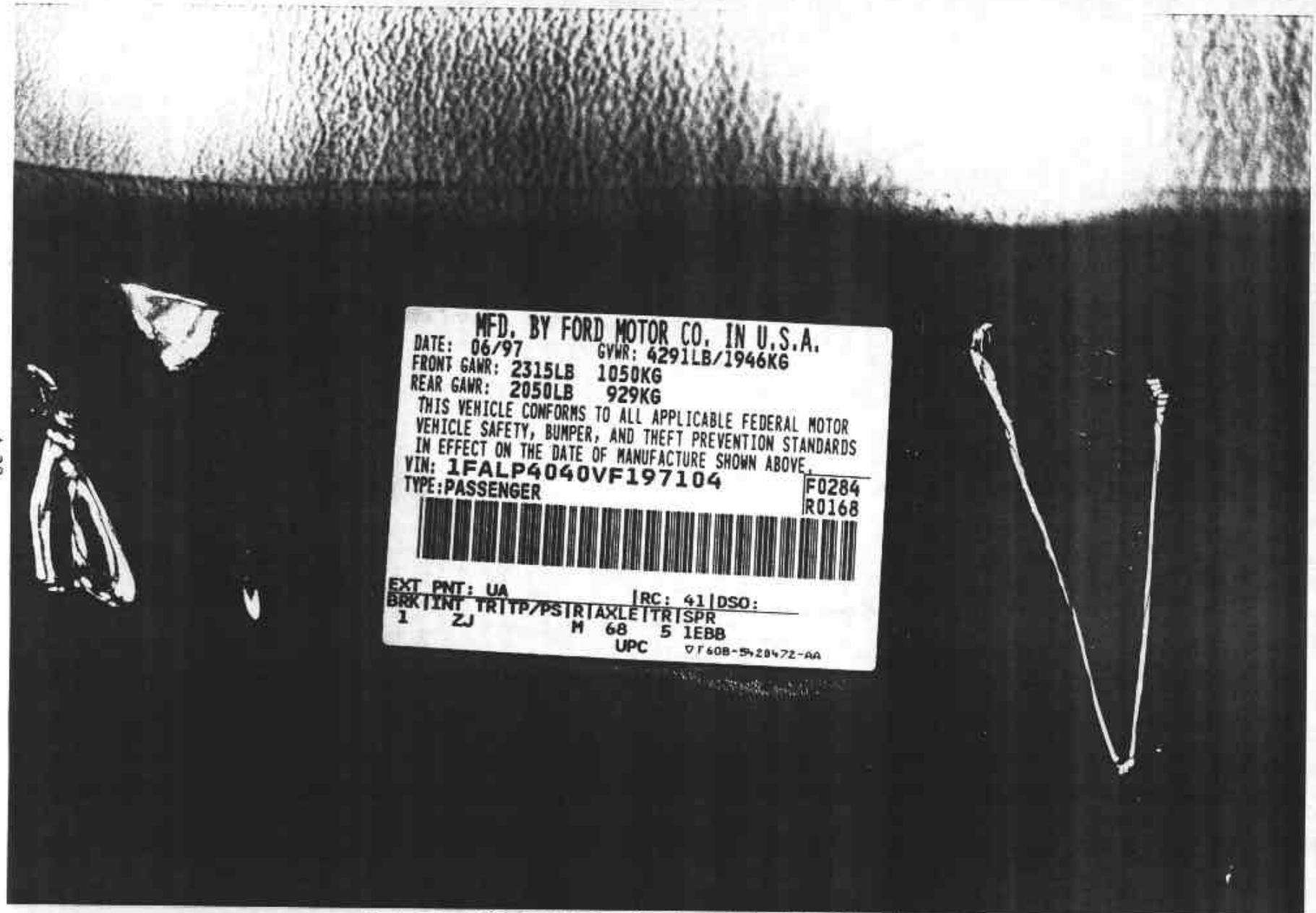
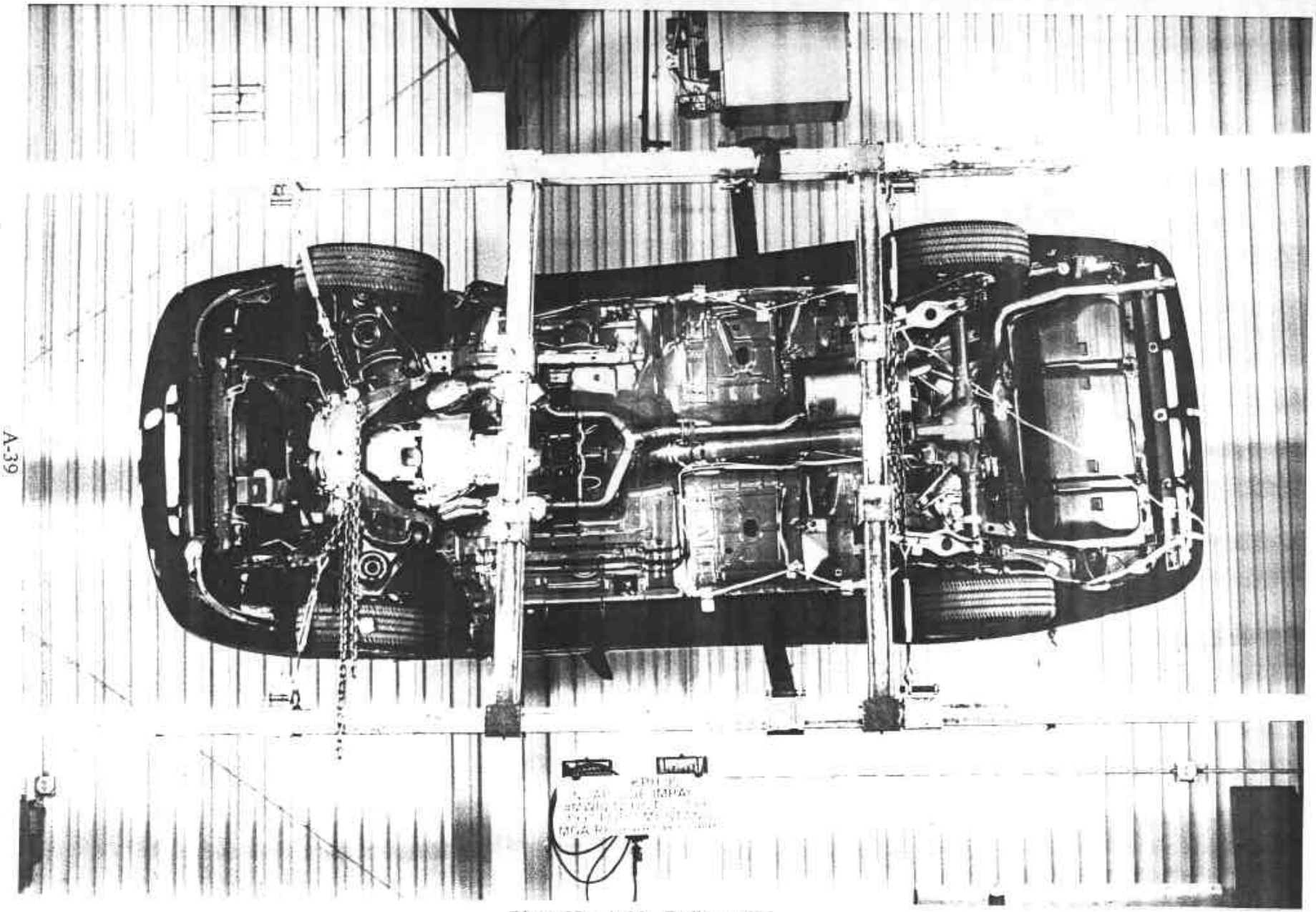
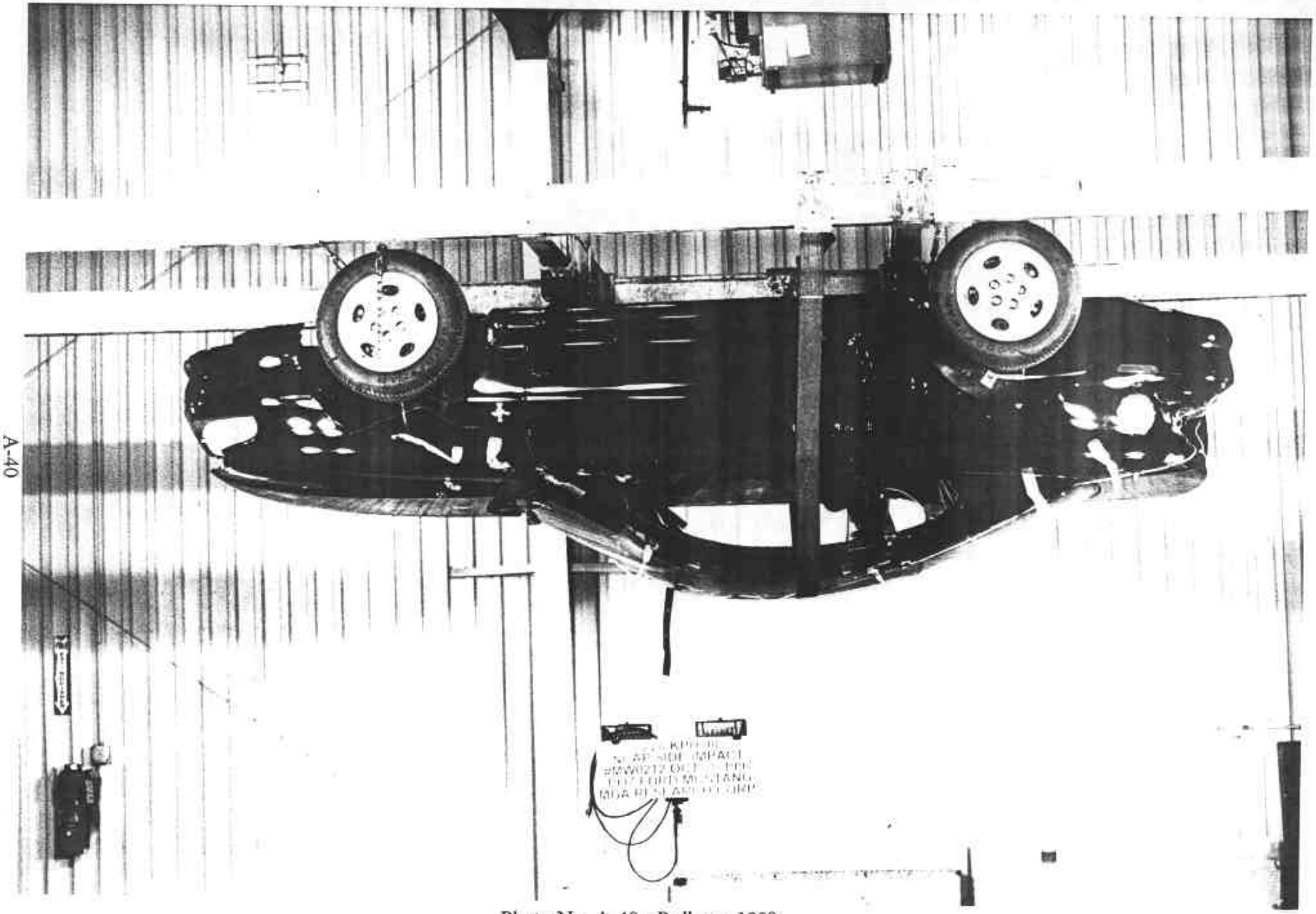


Photo No. A-38 - Vehicle Certification Label and Tire Placard



A-39

Photo No. A-39 - Rollover 90°



A-40

Photo No. A-40 - Rollover 180°

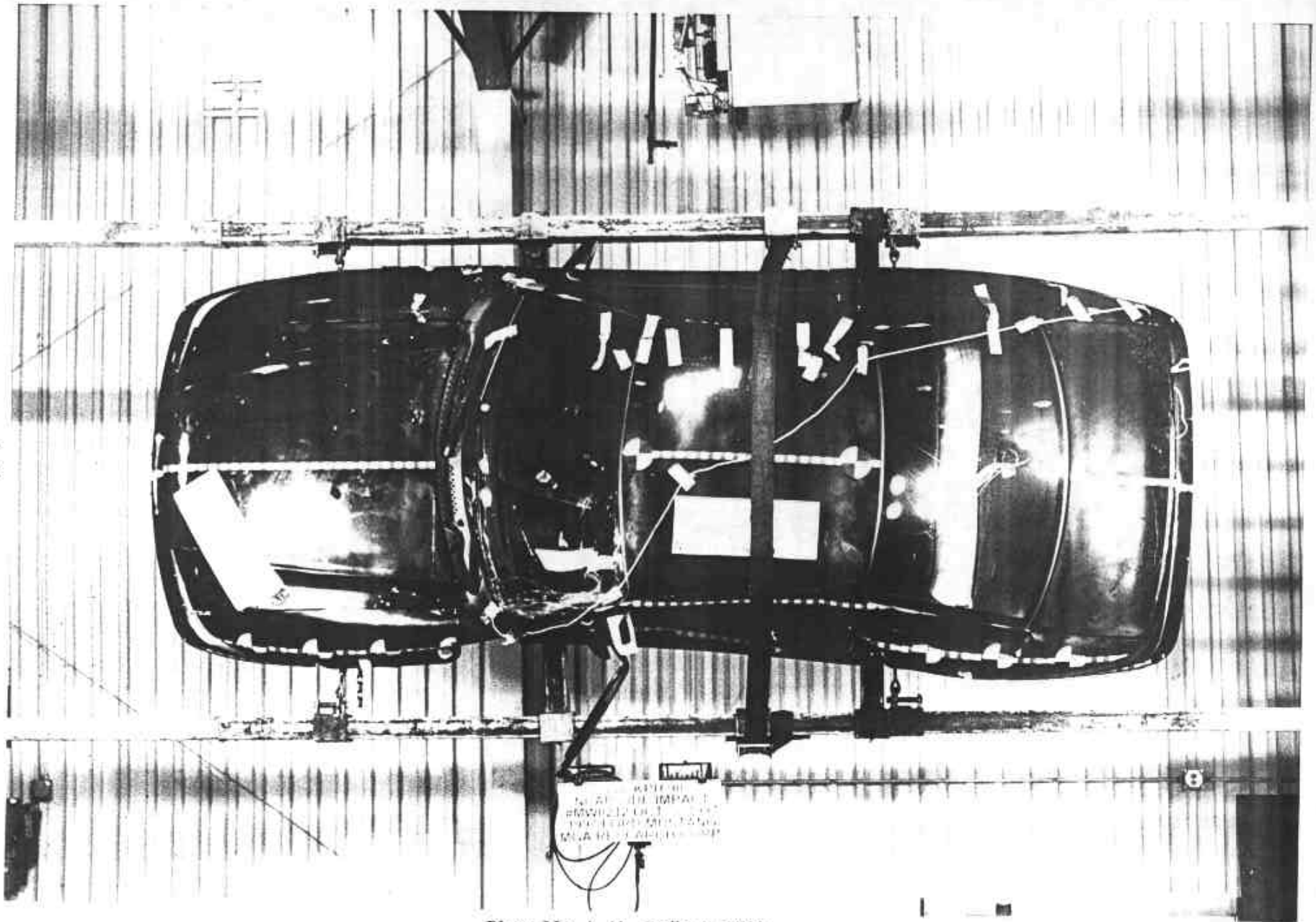


Photo No. A-41 - Rollover 270°

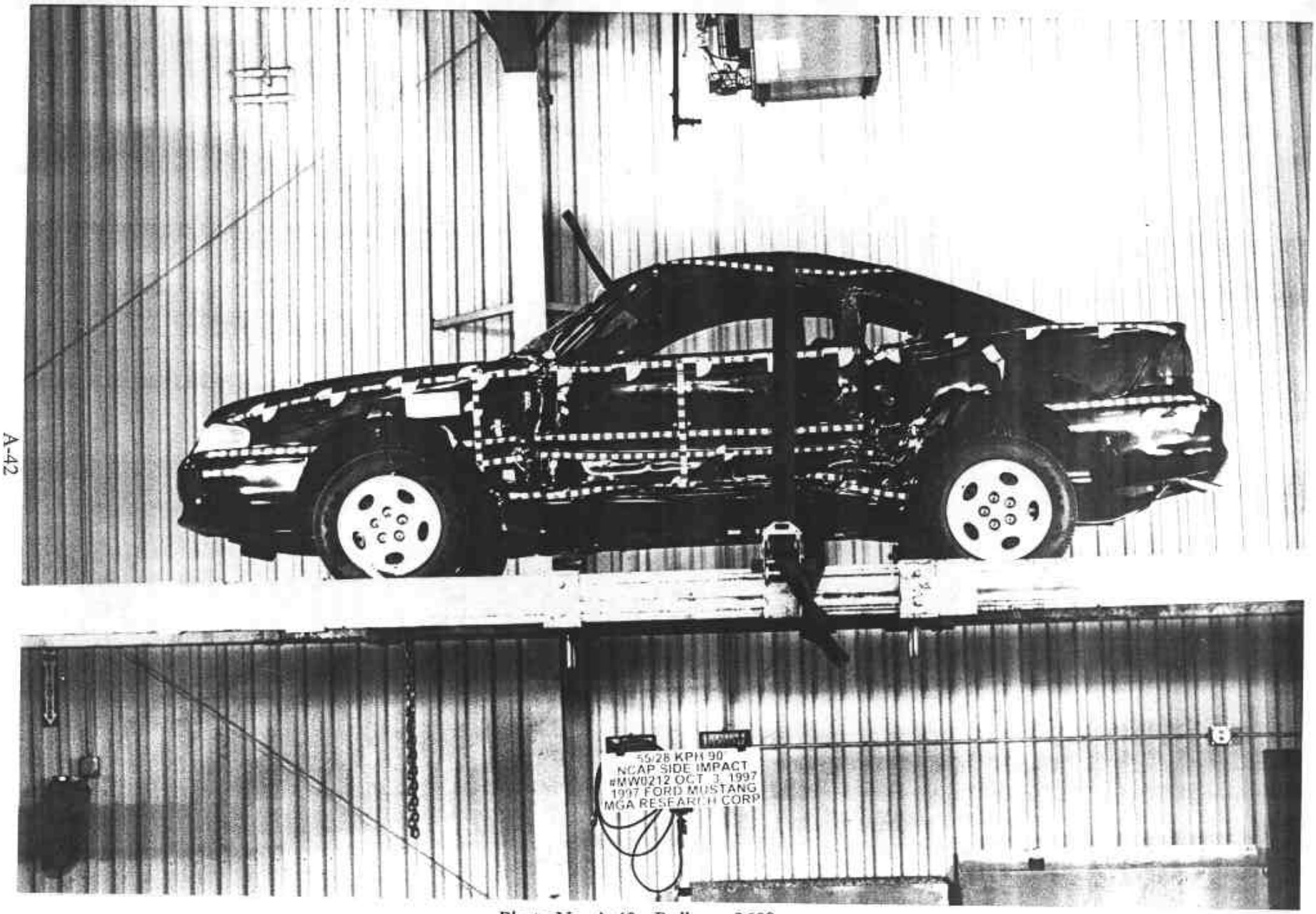


Photo No. A-42 - Rollover 360°

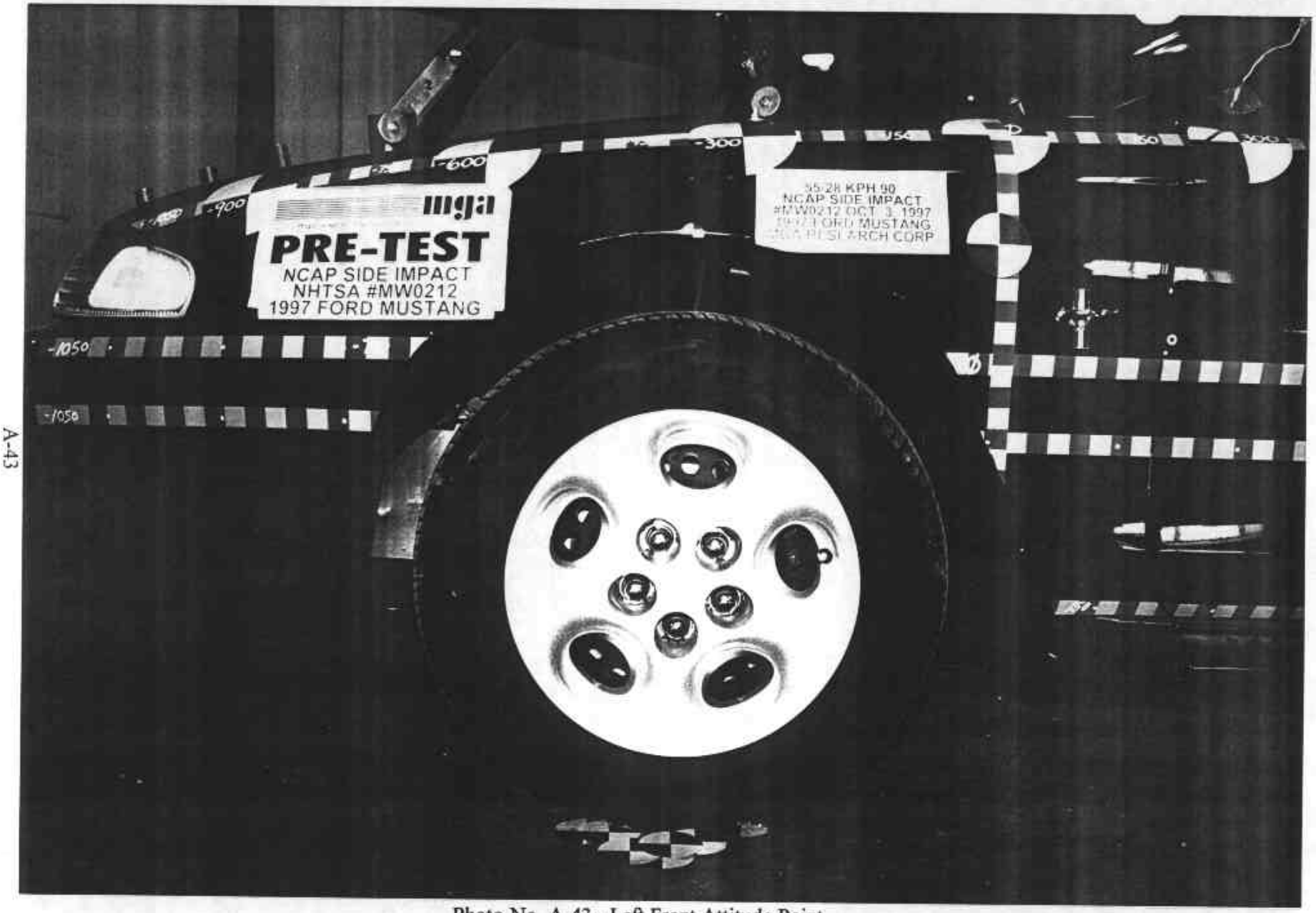


Photo No. A-43 - Left Front Attitude Point

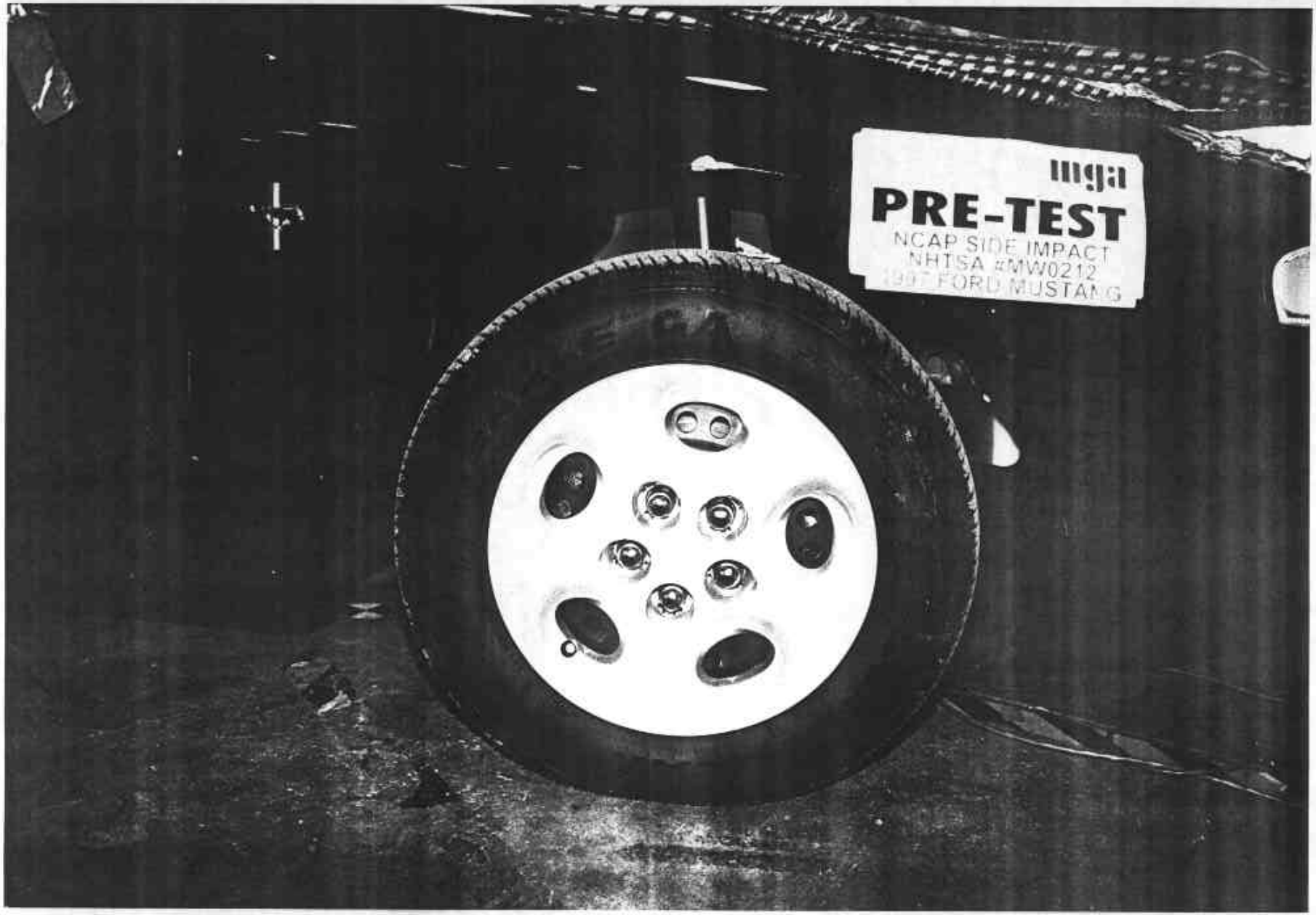


Photo No. A-44 - Right Front Attitude Point

Photo No. A-45 - Left Rear Attitude Point

A-46

Photo No. A-46 - Right Rear Attitude Point

APPENDIX B - VEHICLE AND SID RESPONSE DATA

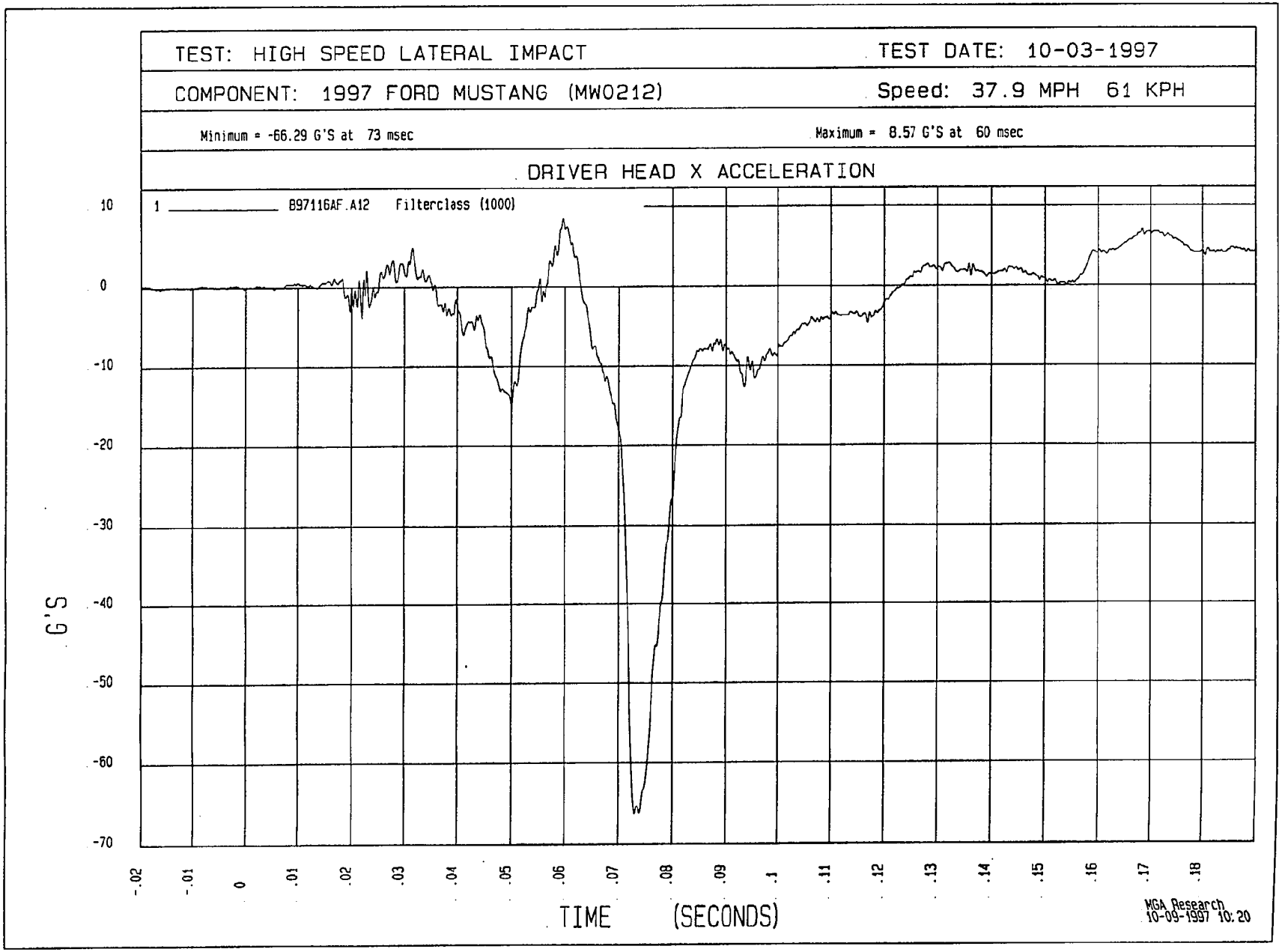
Table of Data Plots

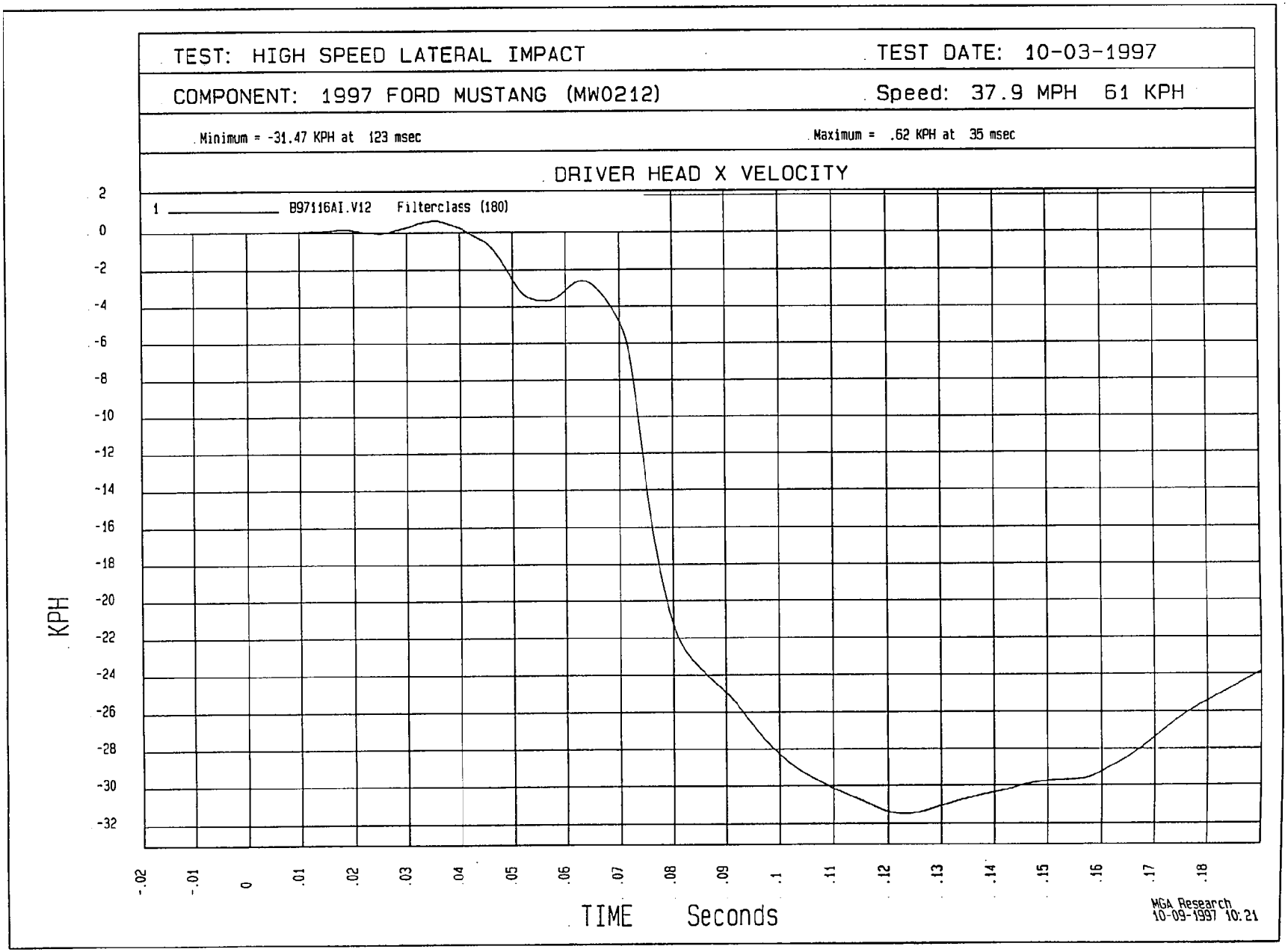
Table of Data Plots

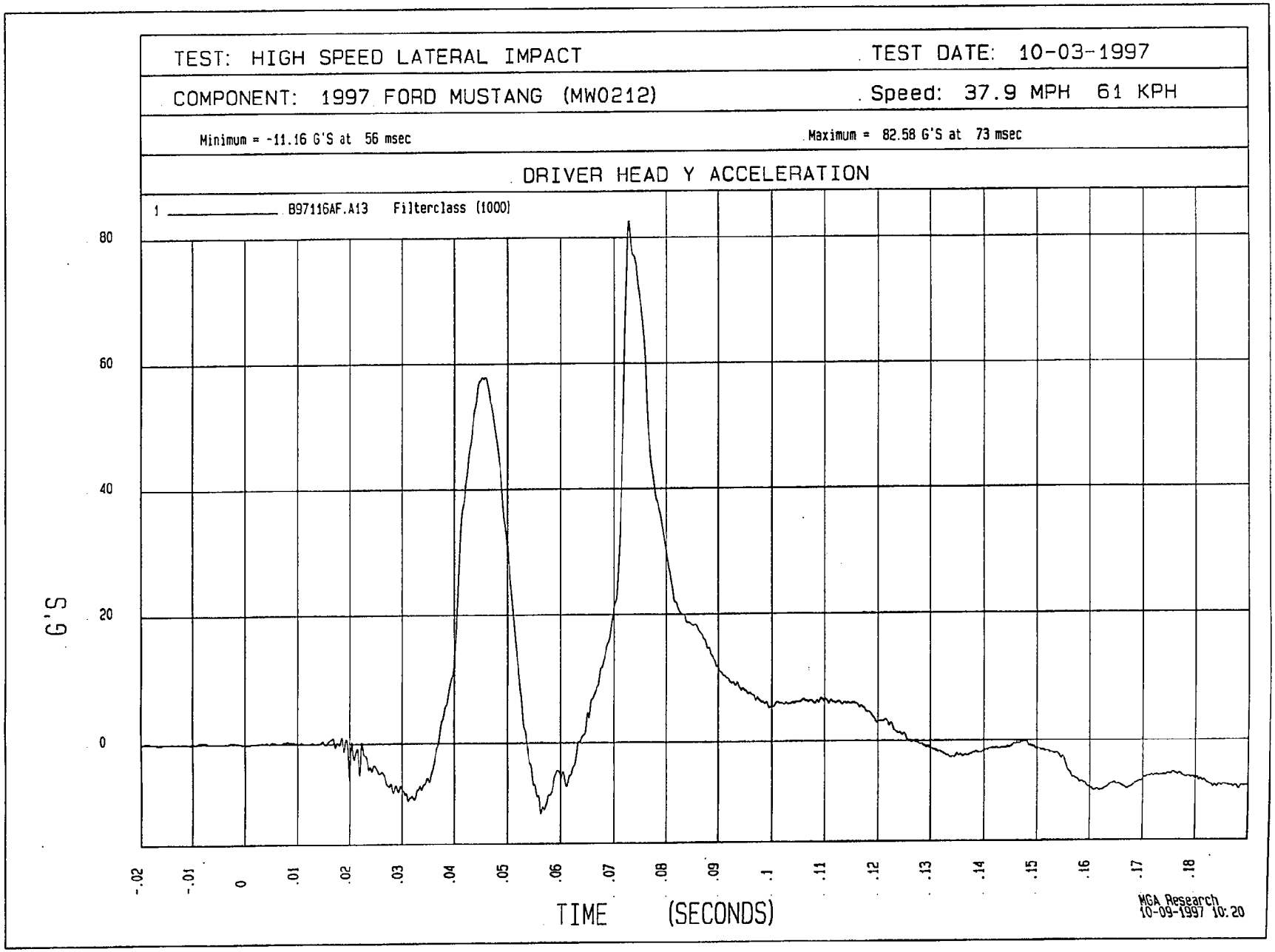
Table of Data Plots

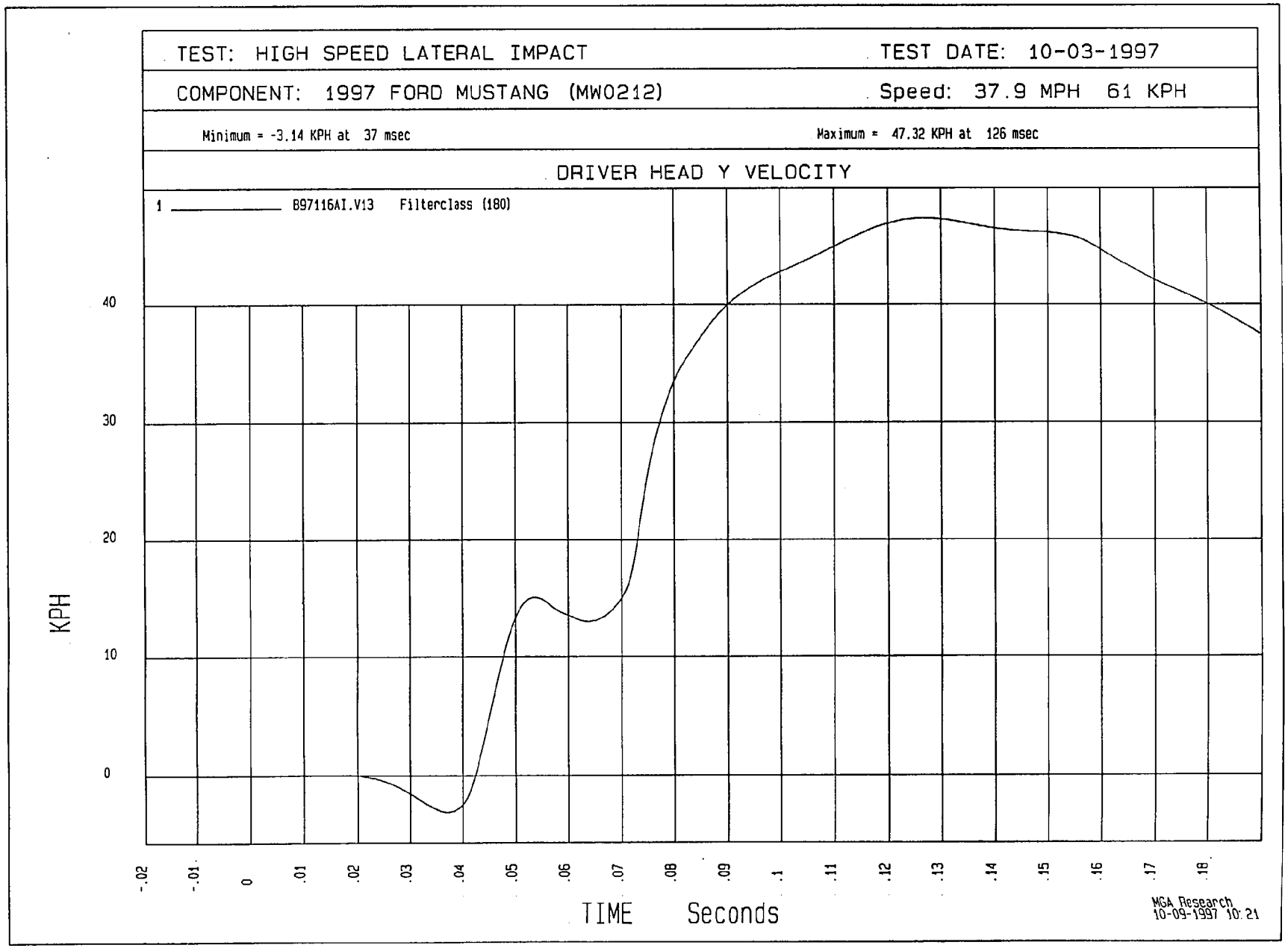
Table of Data Plots

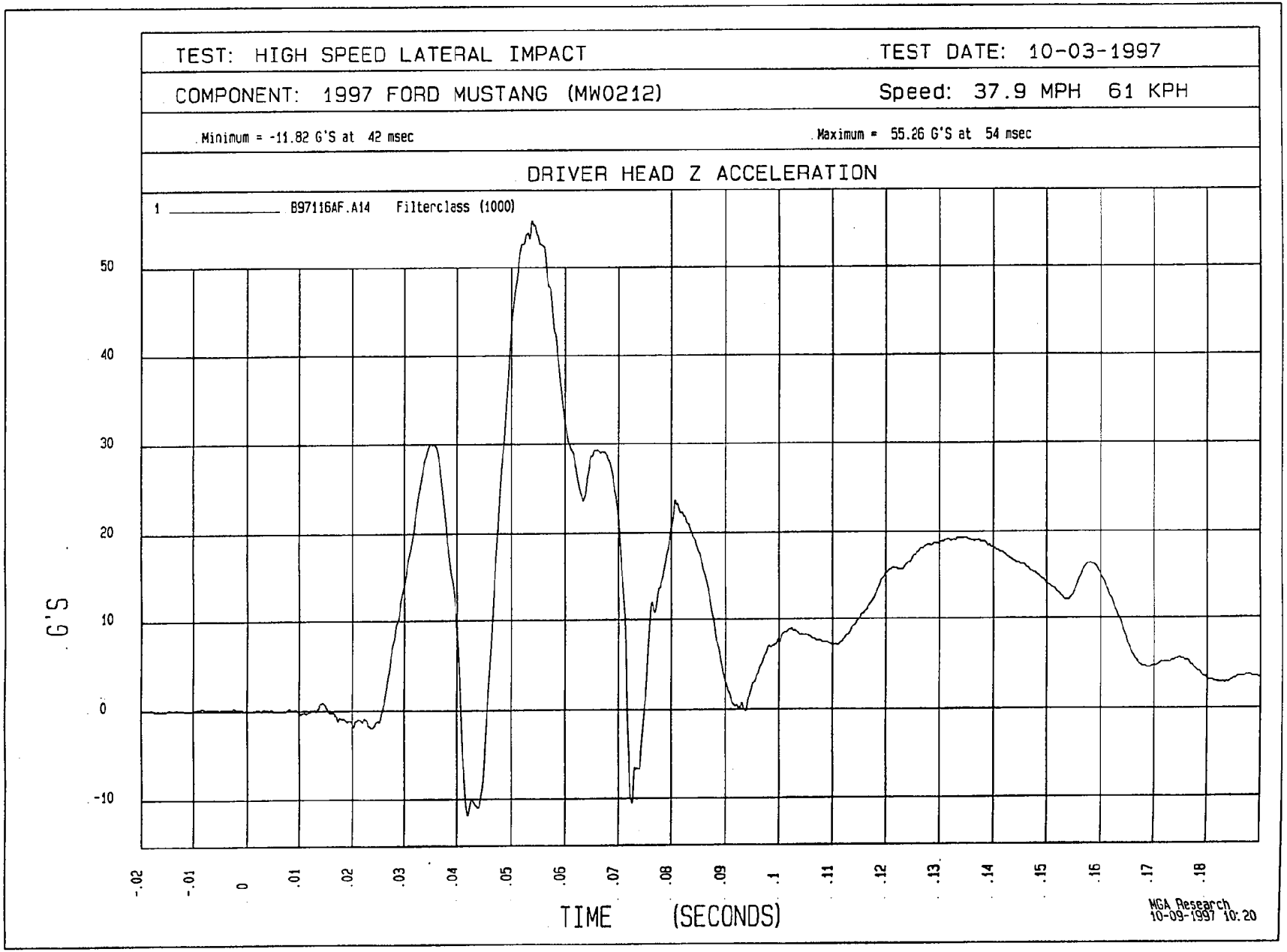
Table of Data Plots

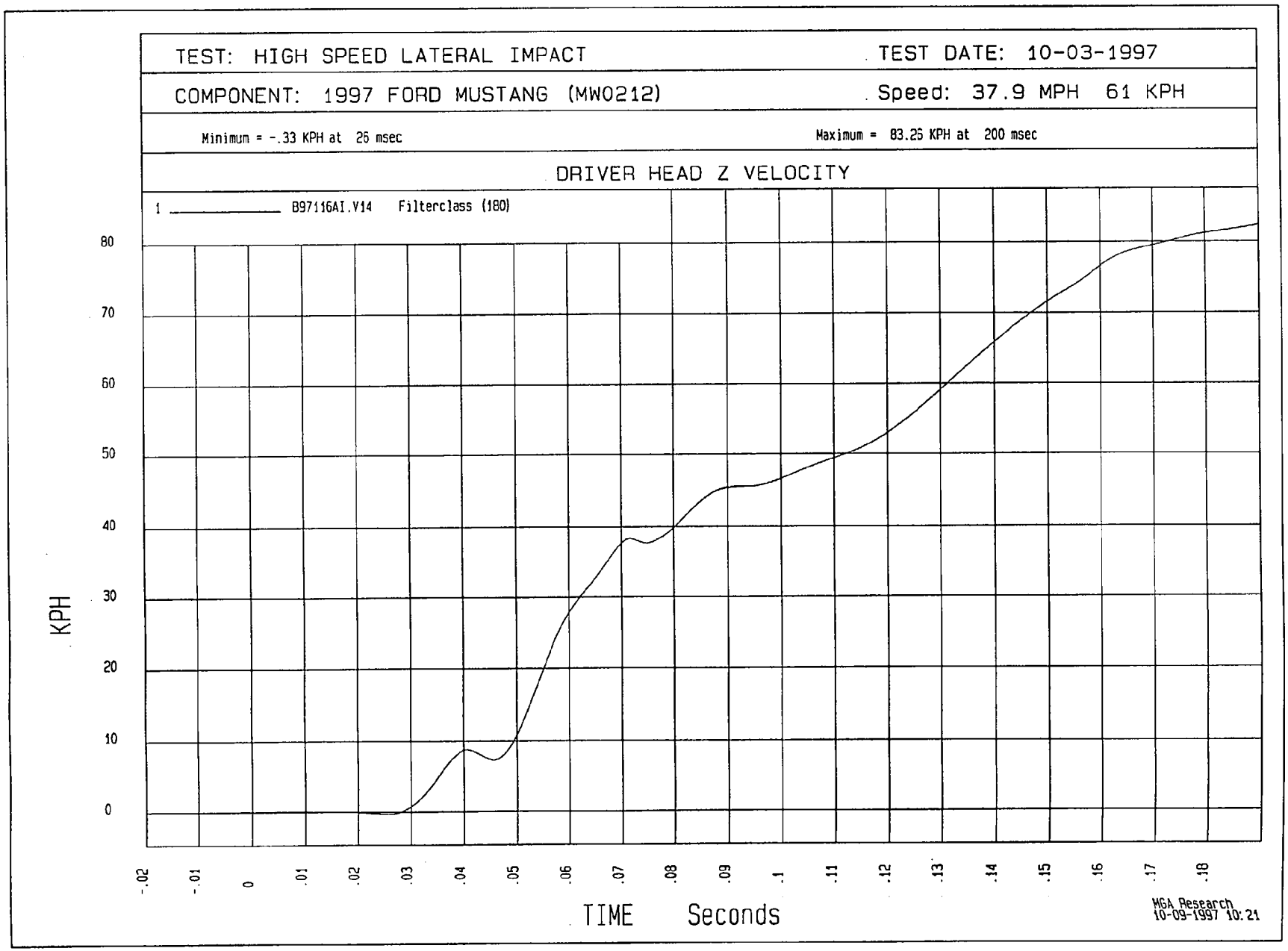

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -66.29 G'S at 73 msec
Maximum = 8.57 G'S at 60 msec
DRIVER HEAD X ACCELERATION
1 B97116AF.A12 Filterclass (1000)
10
0
-10
-20
-30
-40
-50
-60
-70
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

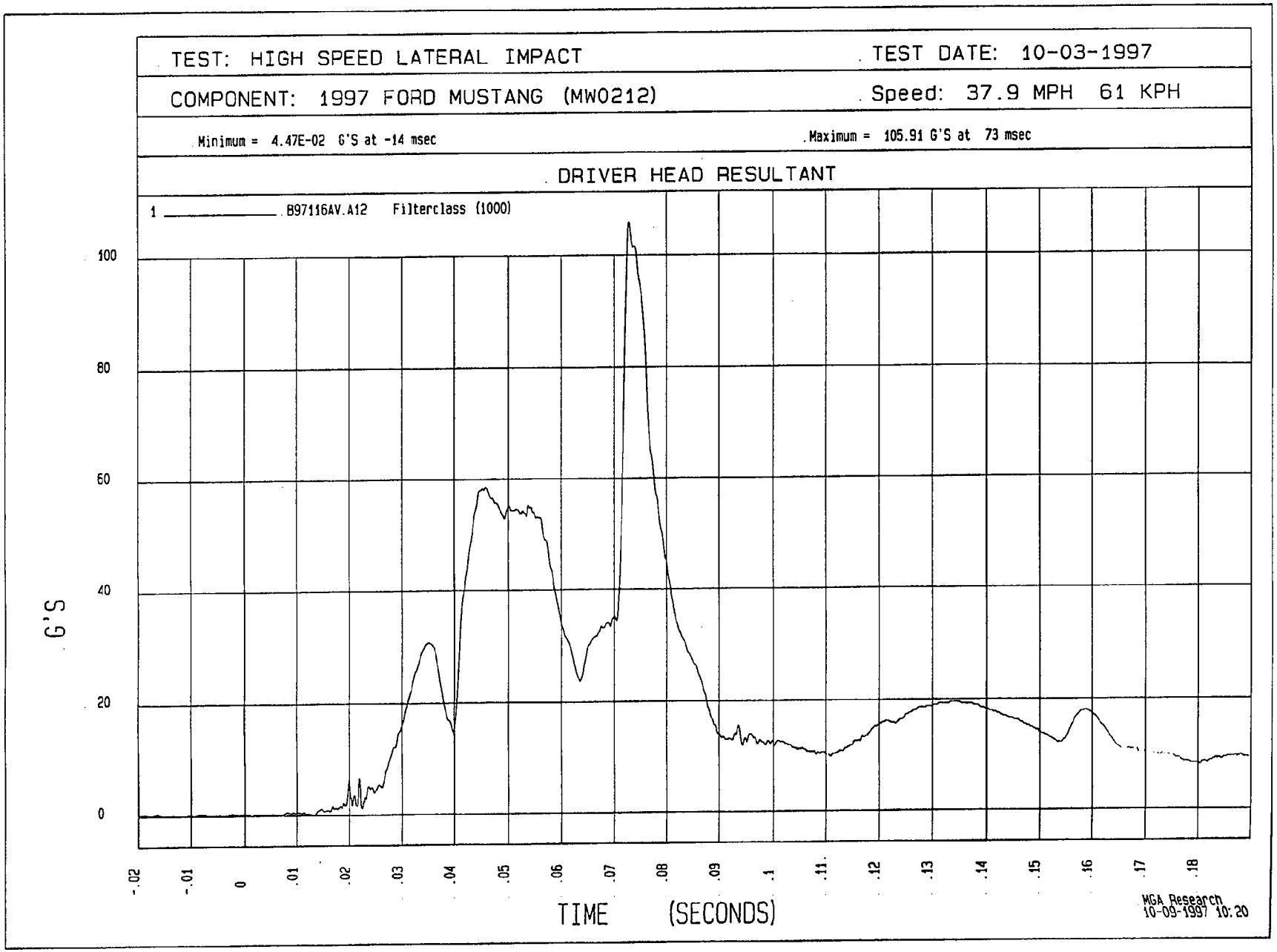

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -31.47 KPH at 123 msec
Maximum = .62 KPH at 35 msec
DRIVER HEAD X VELOCITY
1 B97116AI.V12 Filterclass (180)
KPH
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:21

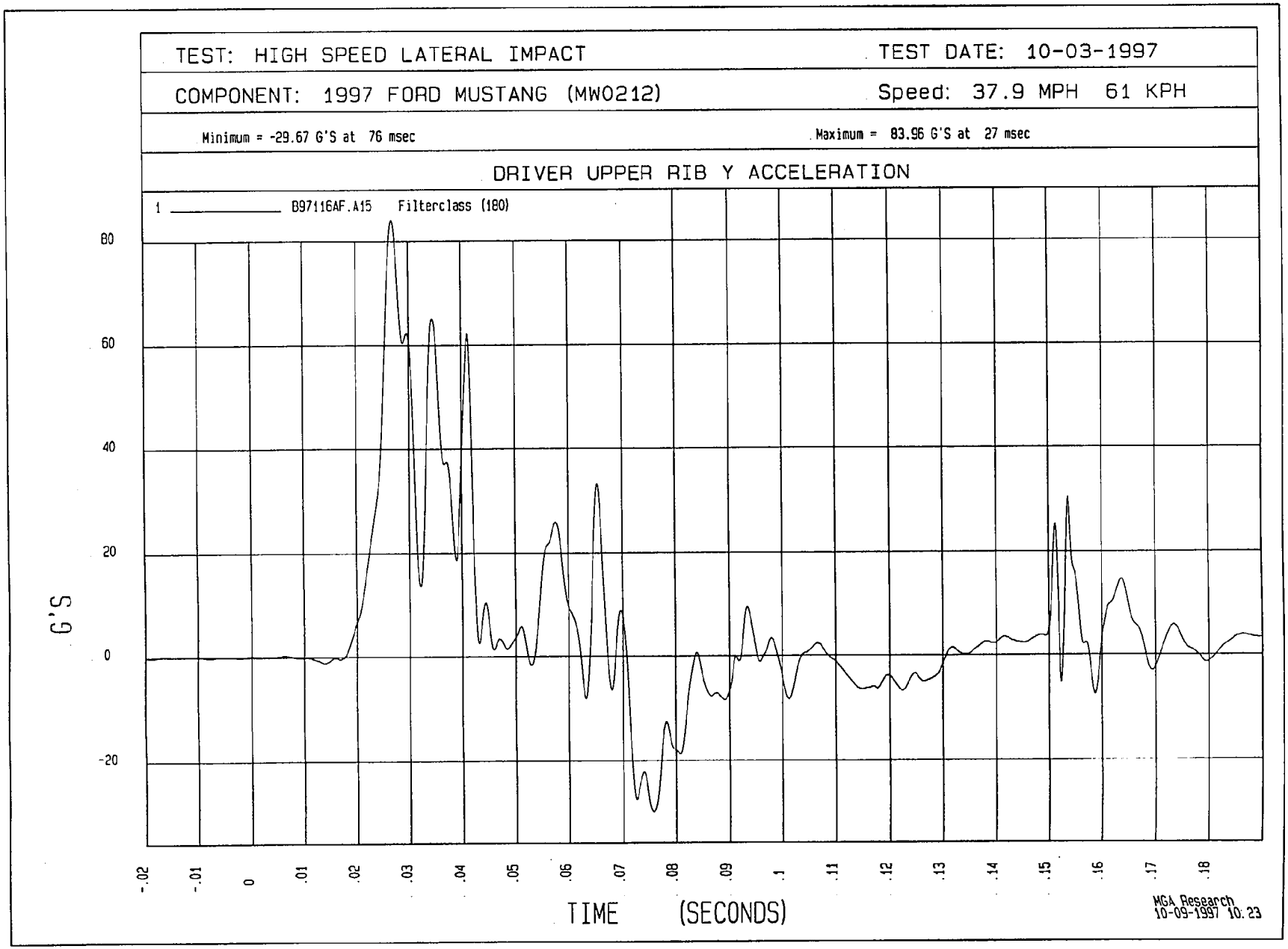

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -11.16 G'S at 56 msec
Maximum = 82.58 G'S at 73 msec
DRIVER HEAD Y ACCELERATION
1 B97116AF.A13 Filterclass (1000)
80
60
40
20
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

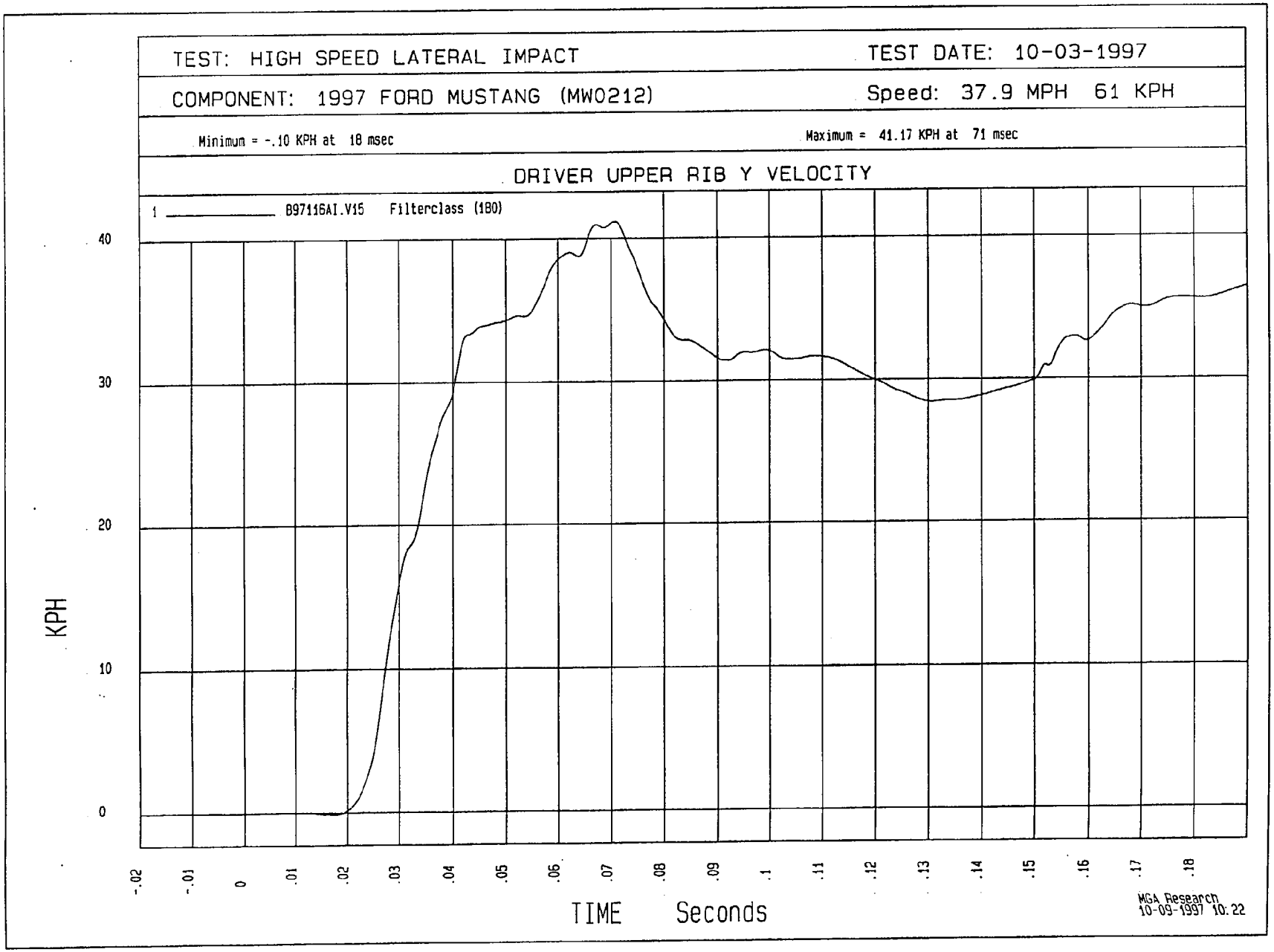

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.14 KPH at 37 msec
Maximum = 47.32 KPH at 126 msec
DRIVER HEAD Y VELOCITY
1 B97116AI.V13 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:21

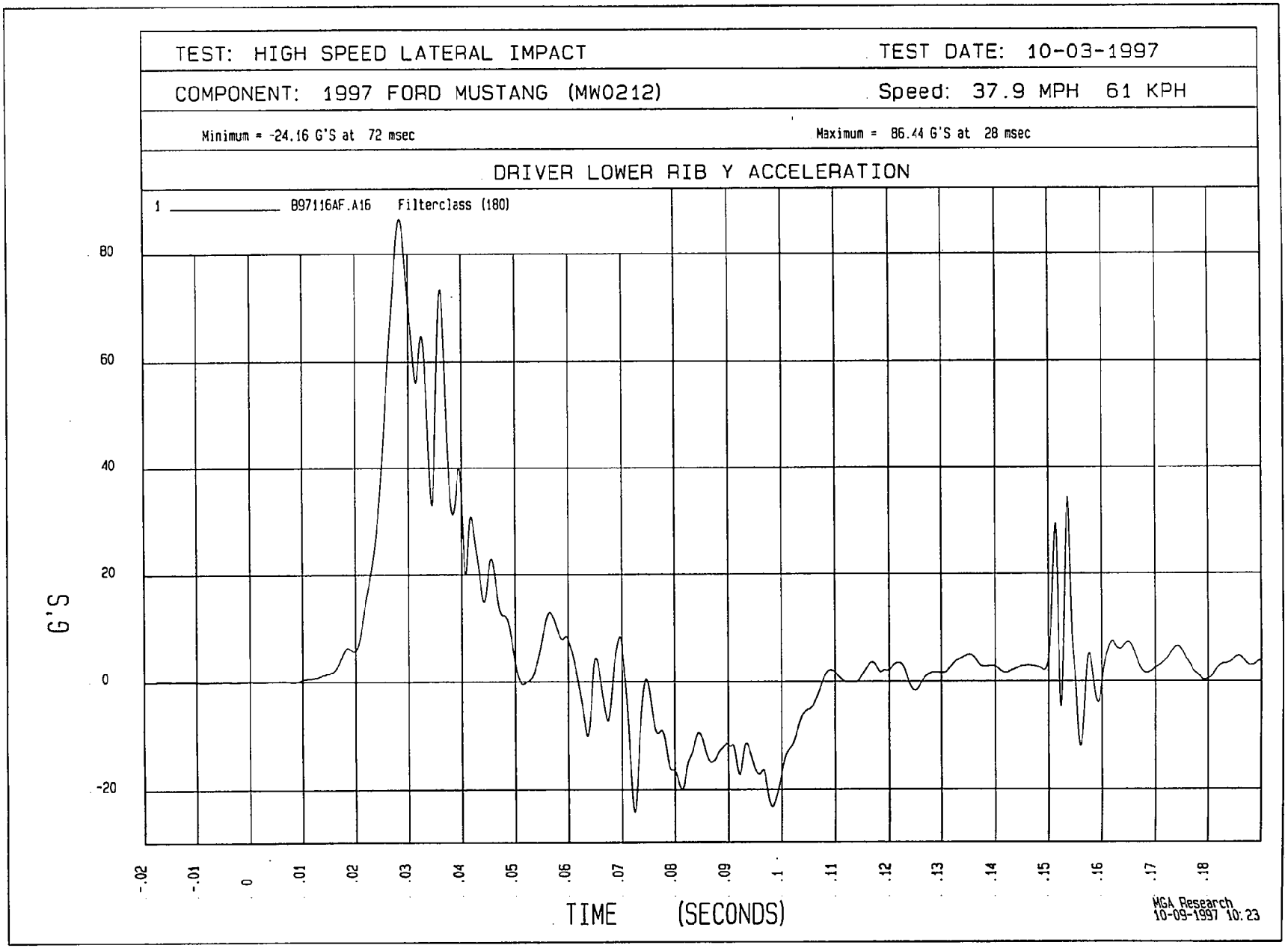

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -11.82 G'S at 42 msec
Maximum = 55.26 G'S at 54 msec
DRIVER HEAD Z ACCELERATION
1 B97116AF.A14 Filterclass (1000)
G'S
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

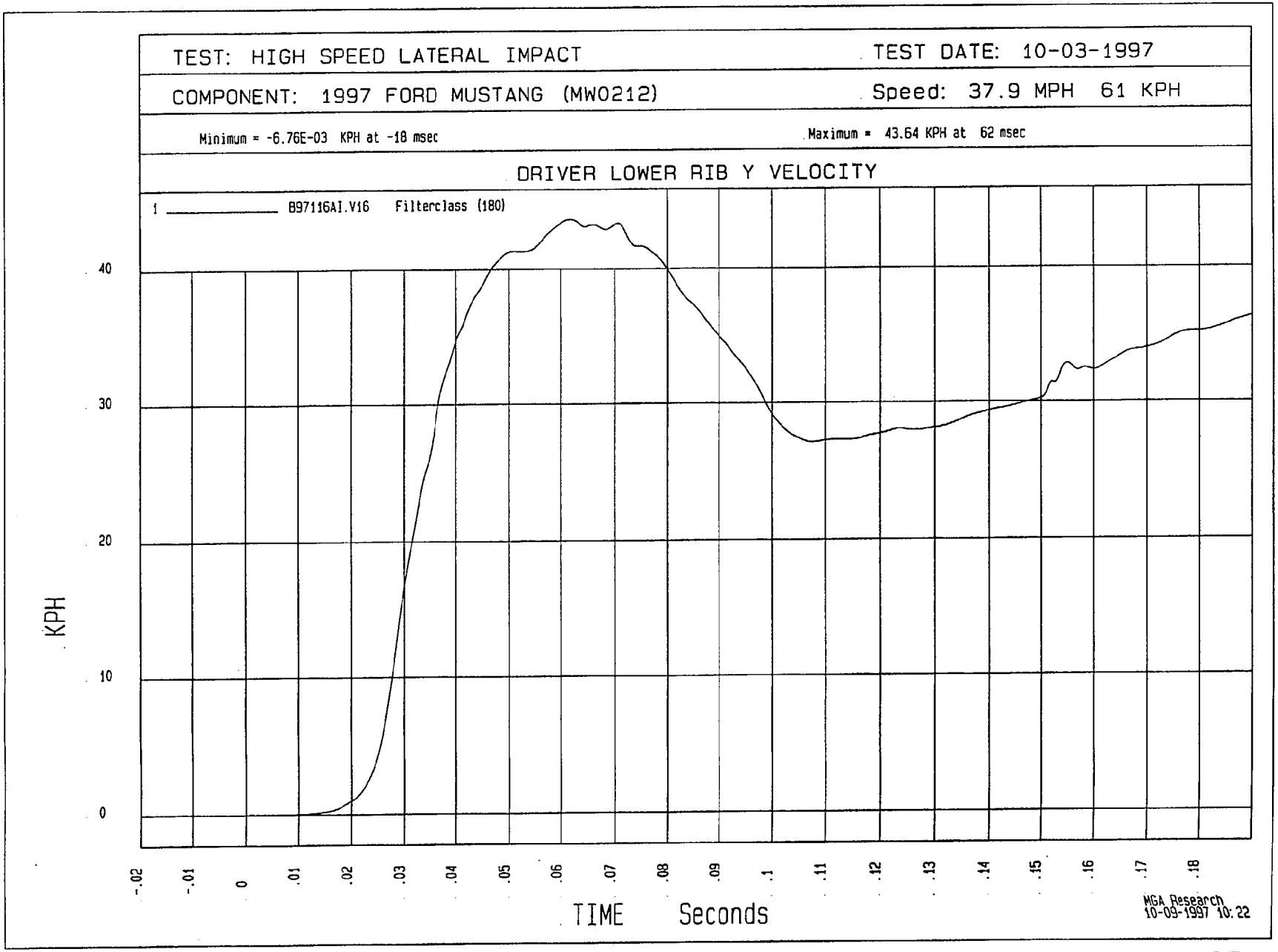

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.33 KPH at 26 msec
Maximum = 83.25 KPH at 200 msec
DRIVER HEAD Z VELOCITY
1 B97116AI.V14 Filterclass (180)
KPH
80
70
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:21

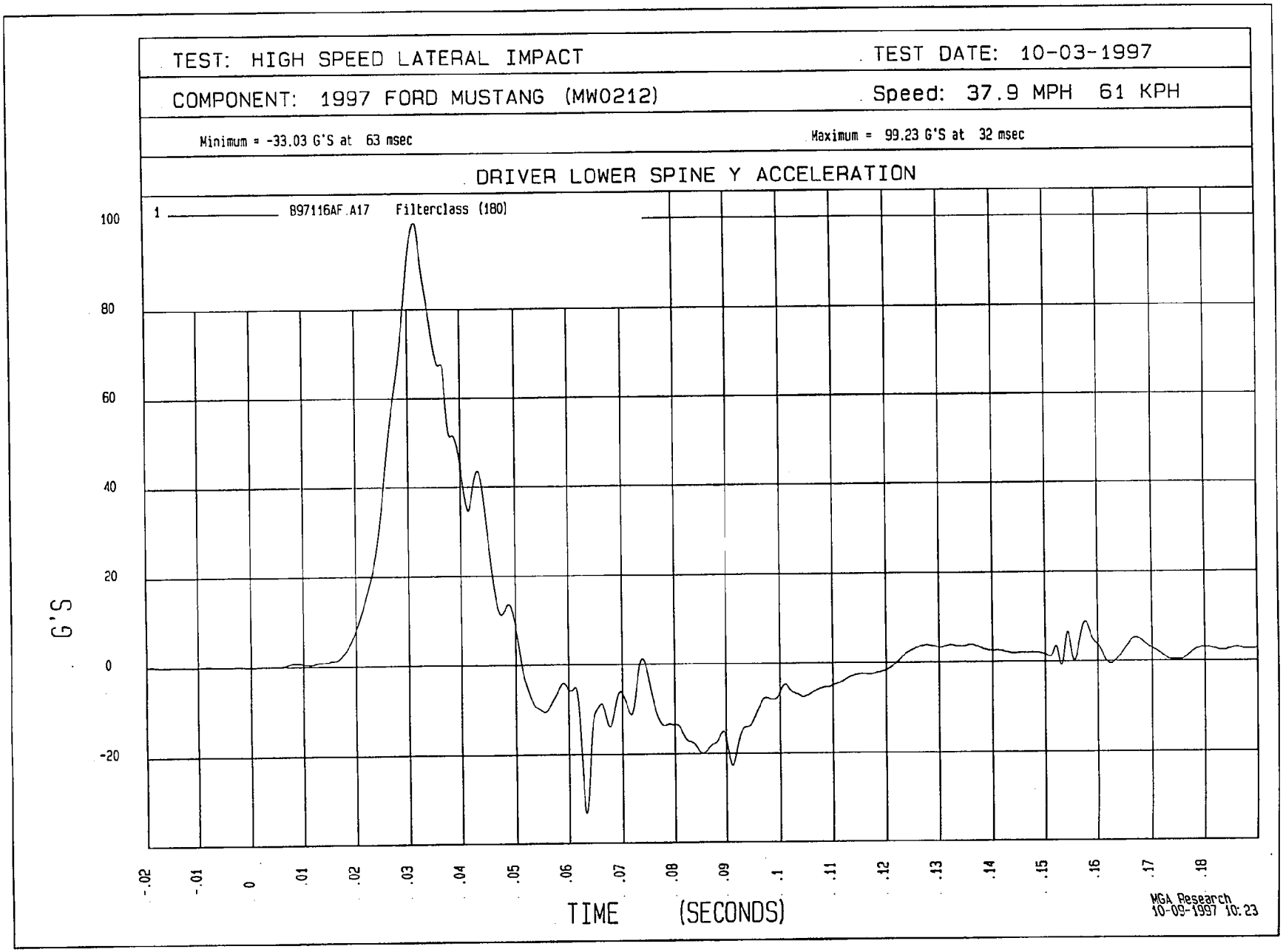

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 4.47E-02 G'S at -14 msec
Maximum = 105.91 G'S at 73 msec
DRIVER HEAD RESULTANT
1 B97116AV.A12 Filterclass (1000)
100
80
60
40
20
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

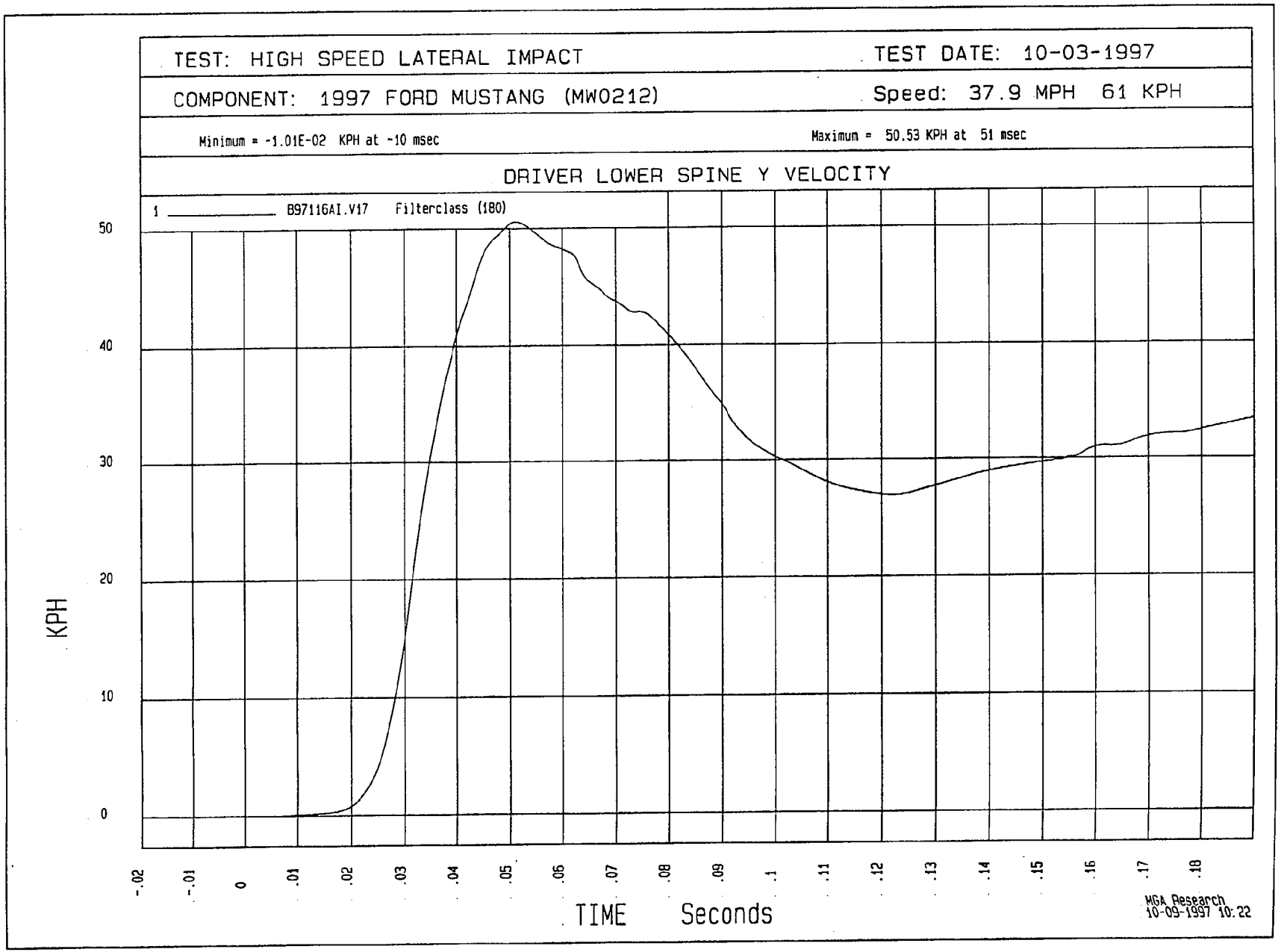

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -29.67 G'S at 76 msec
Maximum = 83.96 G'S at 27 msec
DRIVER UPPER RIB Y ACCELERATION
1 B97116AF.A15 Filterclass (180)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.10 KPH at 18 msec
Maximum = 41.17 KPH at 71 msec
DRIVER UPPER RIB Y VELOCITY
1 B97116AI.V15 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -24.16 G'S at 72 msec
Maximum = 86.44 G'S at 28 msec
DRIVER LOWER RIB Y ACCELERATION
1 B97116AF.A16 Filterclass (180)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.76E-03 KPH at -18 msec
Maximum = 43.64 KPH at 62 msec
DRIVER LOWER RIB Y VELOCITY
1 B97116AI.V16 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -33.03 G'S at 63 msec
Maximum = 99.23 G'S at 32 msec
DRIVER LOWER SPINE Y ACCELERATION
1 B97116AF.A17 Filterclass (180)
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.01E-02 KPH at -10 msec
Maximum = 50.53 KPH at 51 msec
DRIVER LOWER SPINE Y VELOCITY
1 B97116AI.V17 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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.1
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.16
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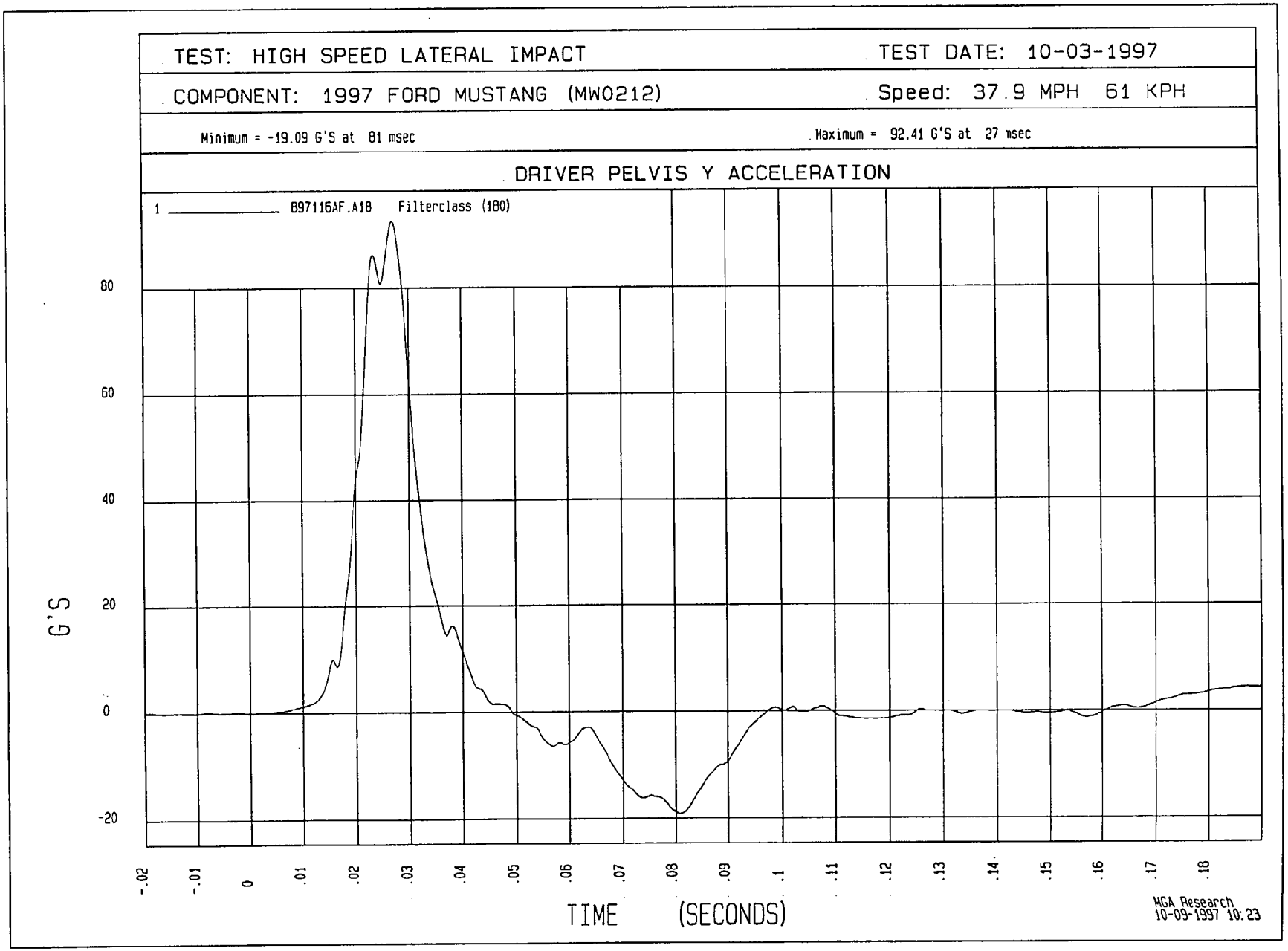
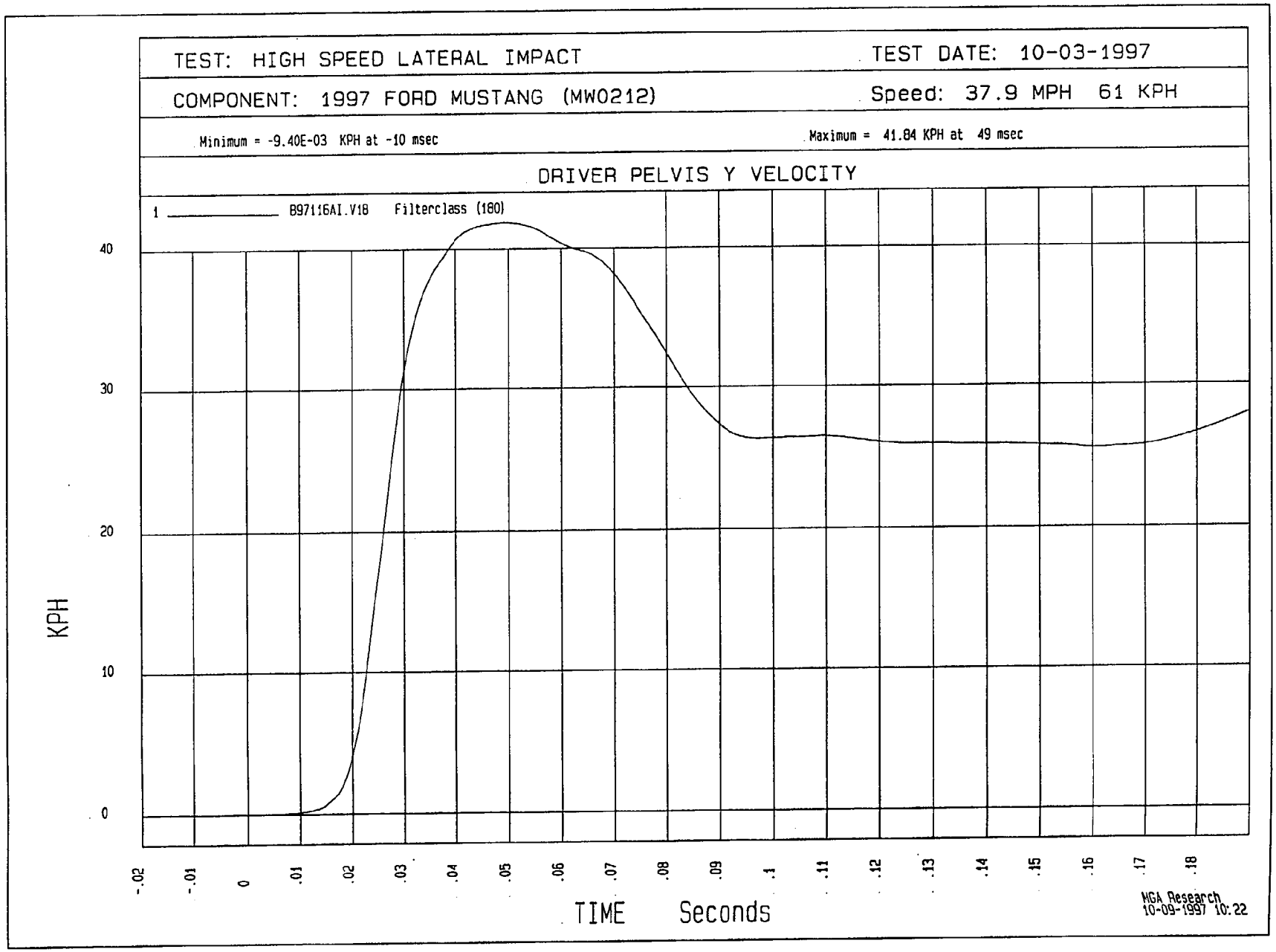
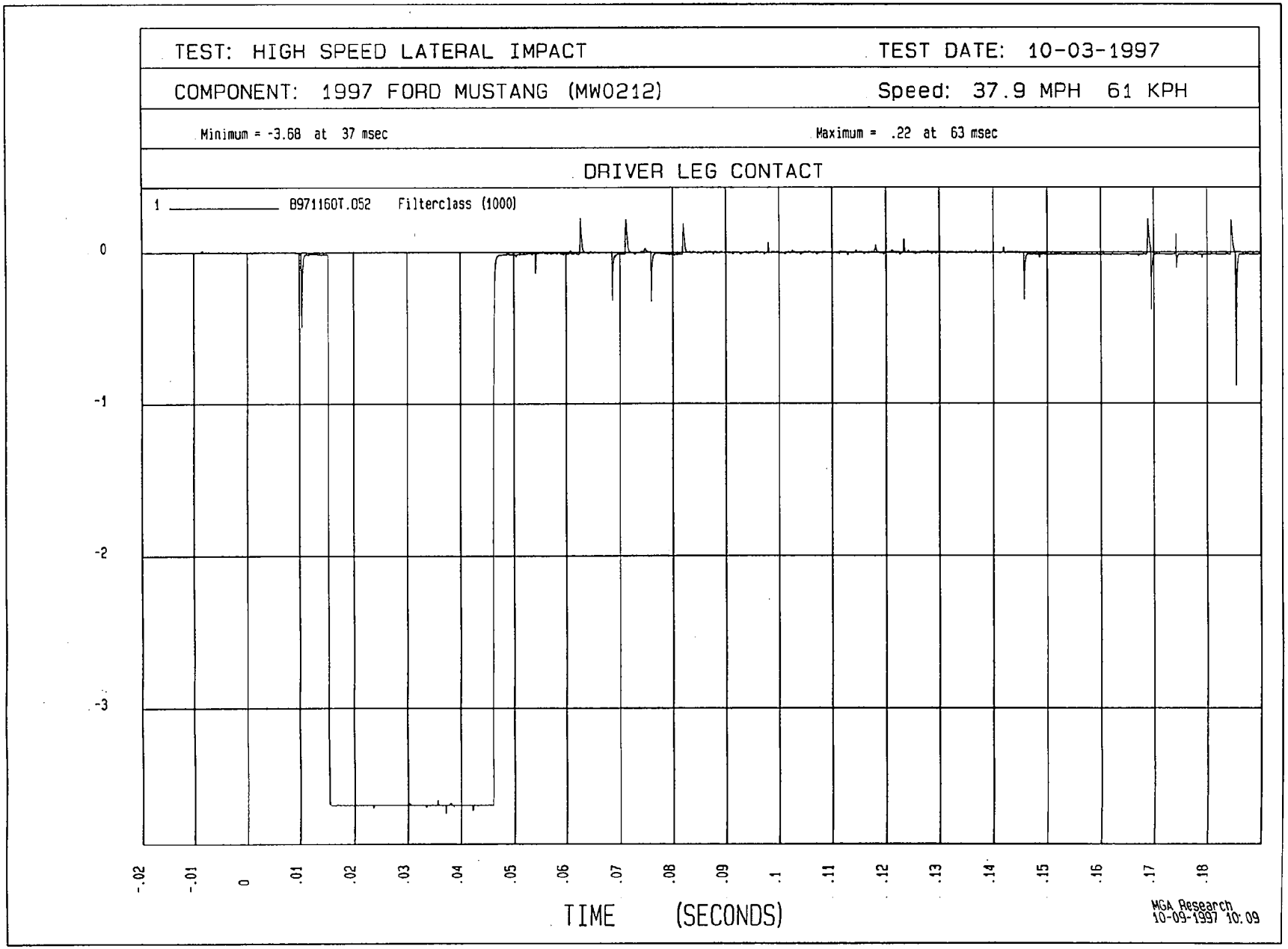
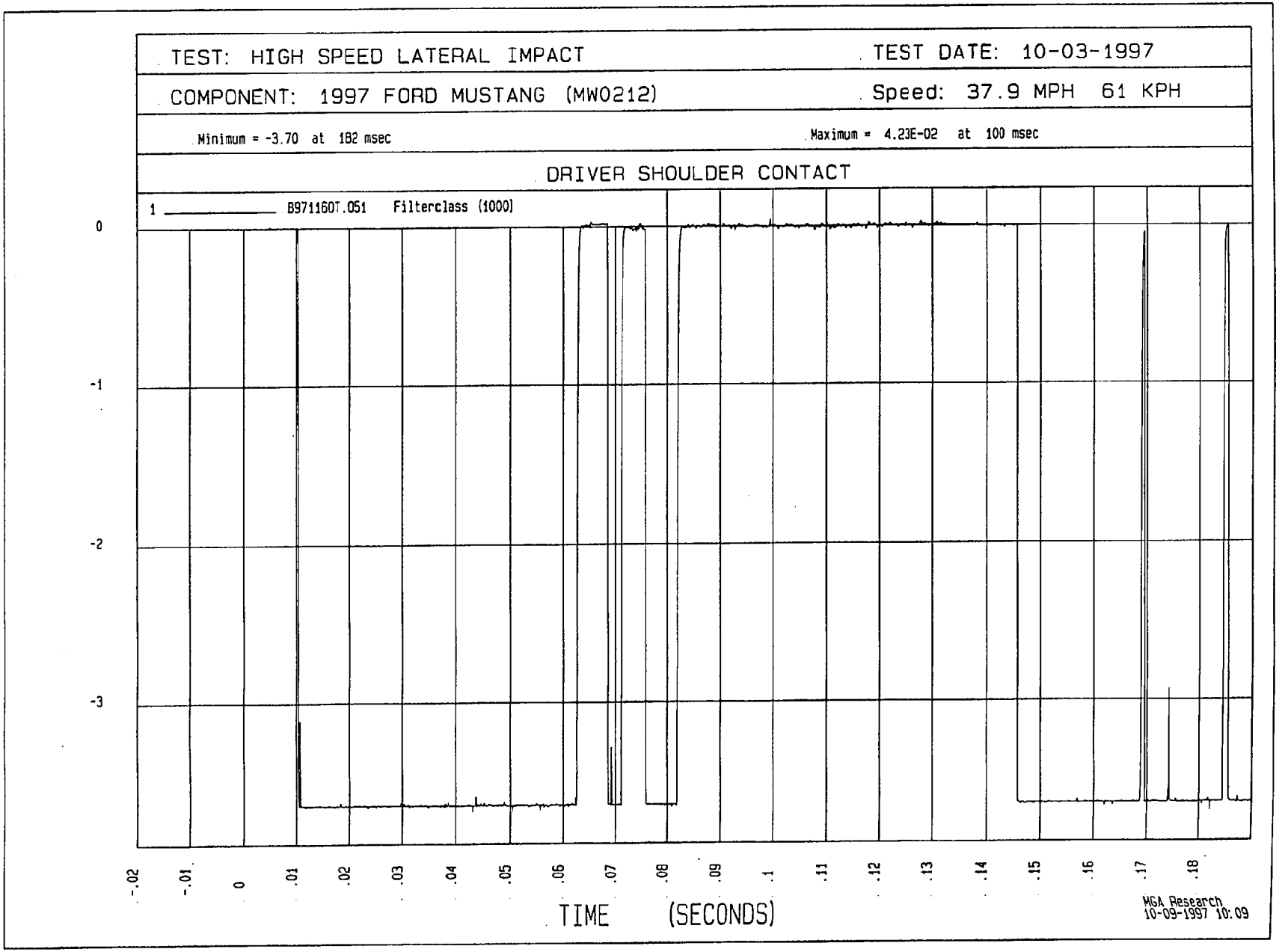
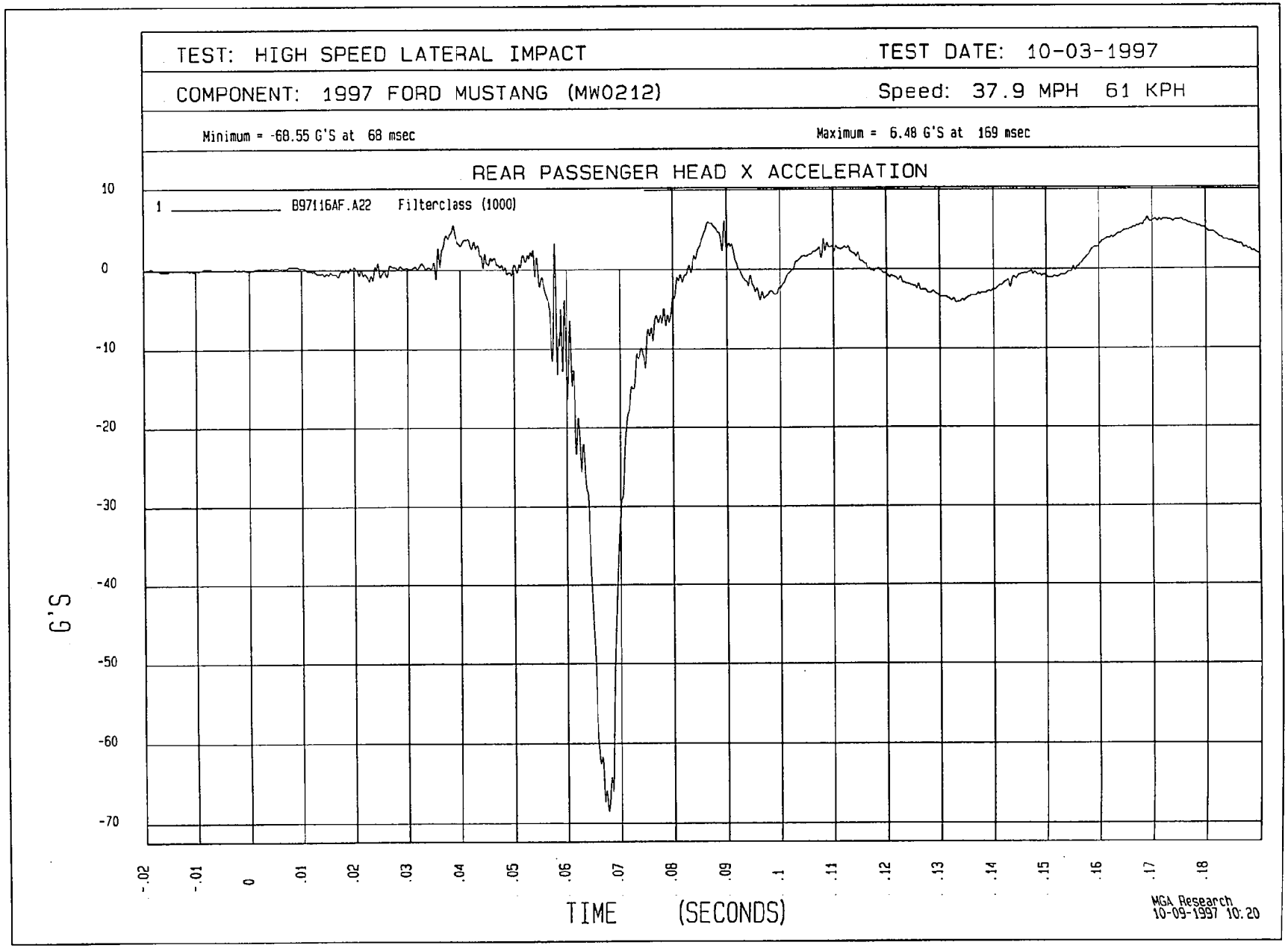
TIME Seconds
MGA Research
10-09-1997 10:22

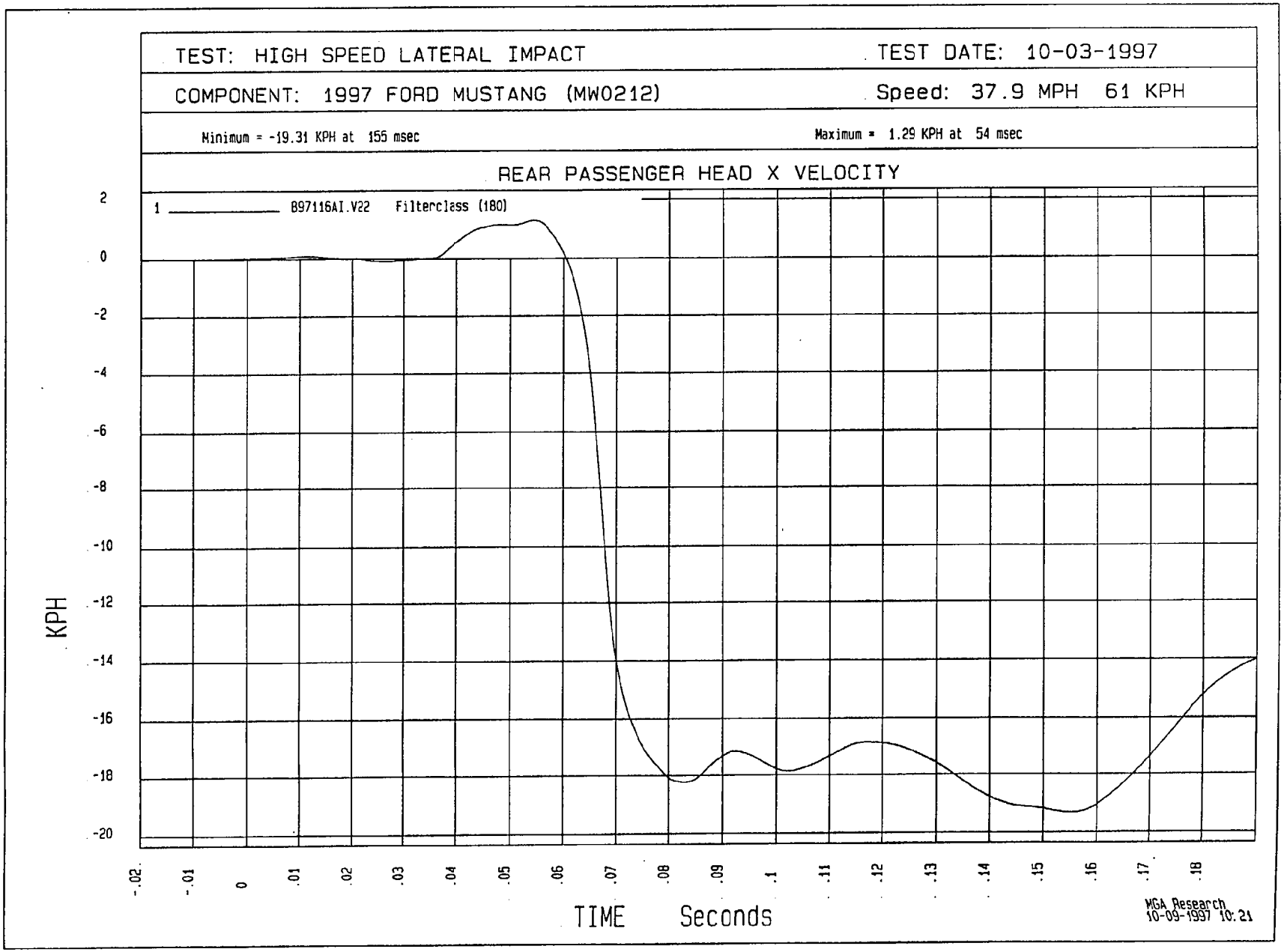

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -19.09 G'S at 81 msec
Maximum = 92.41 G'S at 27 msec
DRIVER PELVIS Y ACCELERATION
1 B97116AF.A18 Filterclass (180)
G'S
80
60
40
20
0
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:23

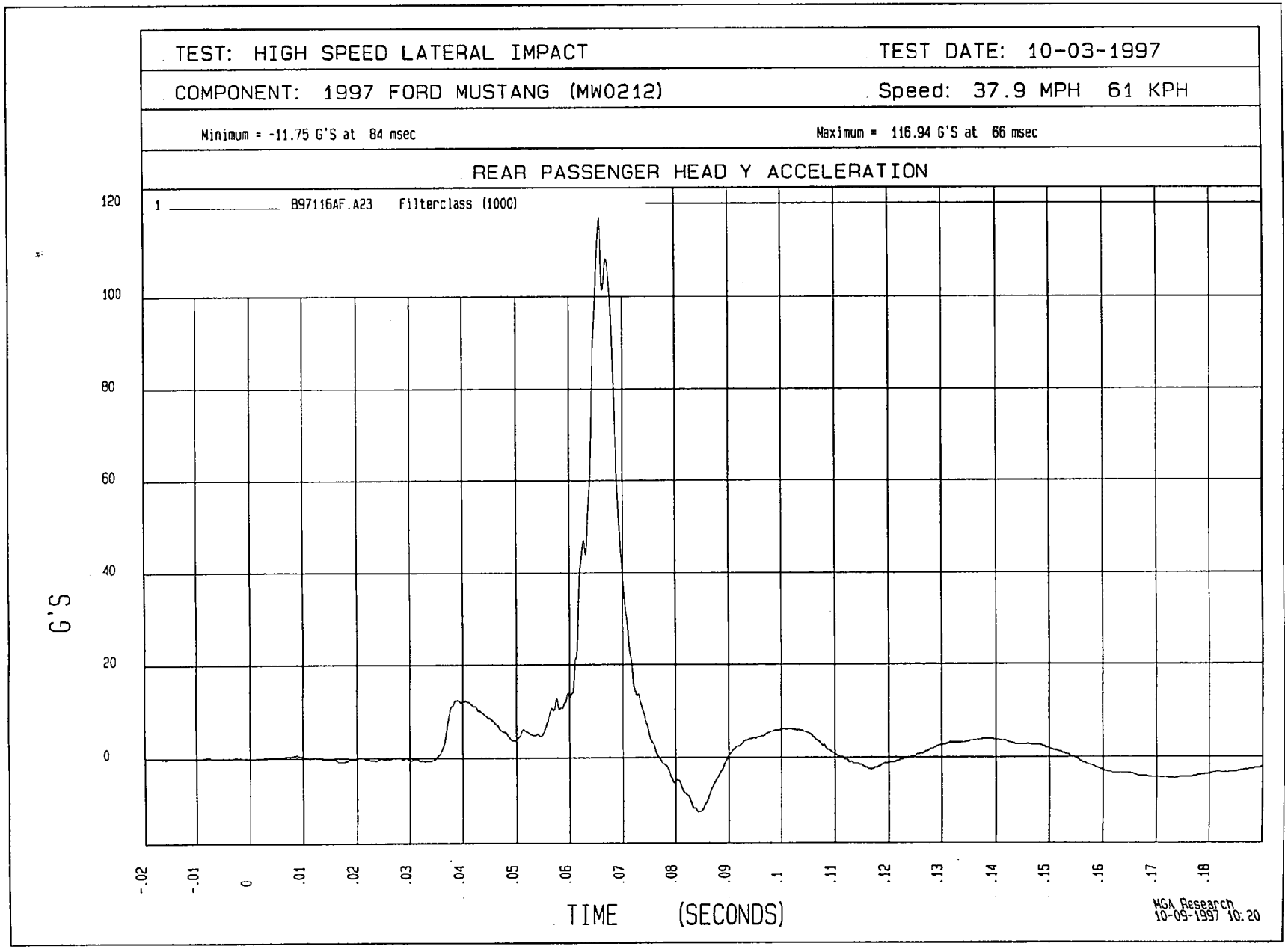

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.40E-03 KPH at -10 msec
Maximum = 41.84 KPH at 49 msec
DRIVER PELVIS Y VELOCITY
1 B97116AI.V18 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22

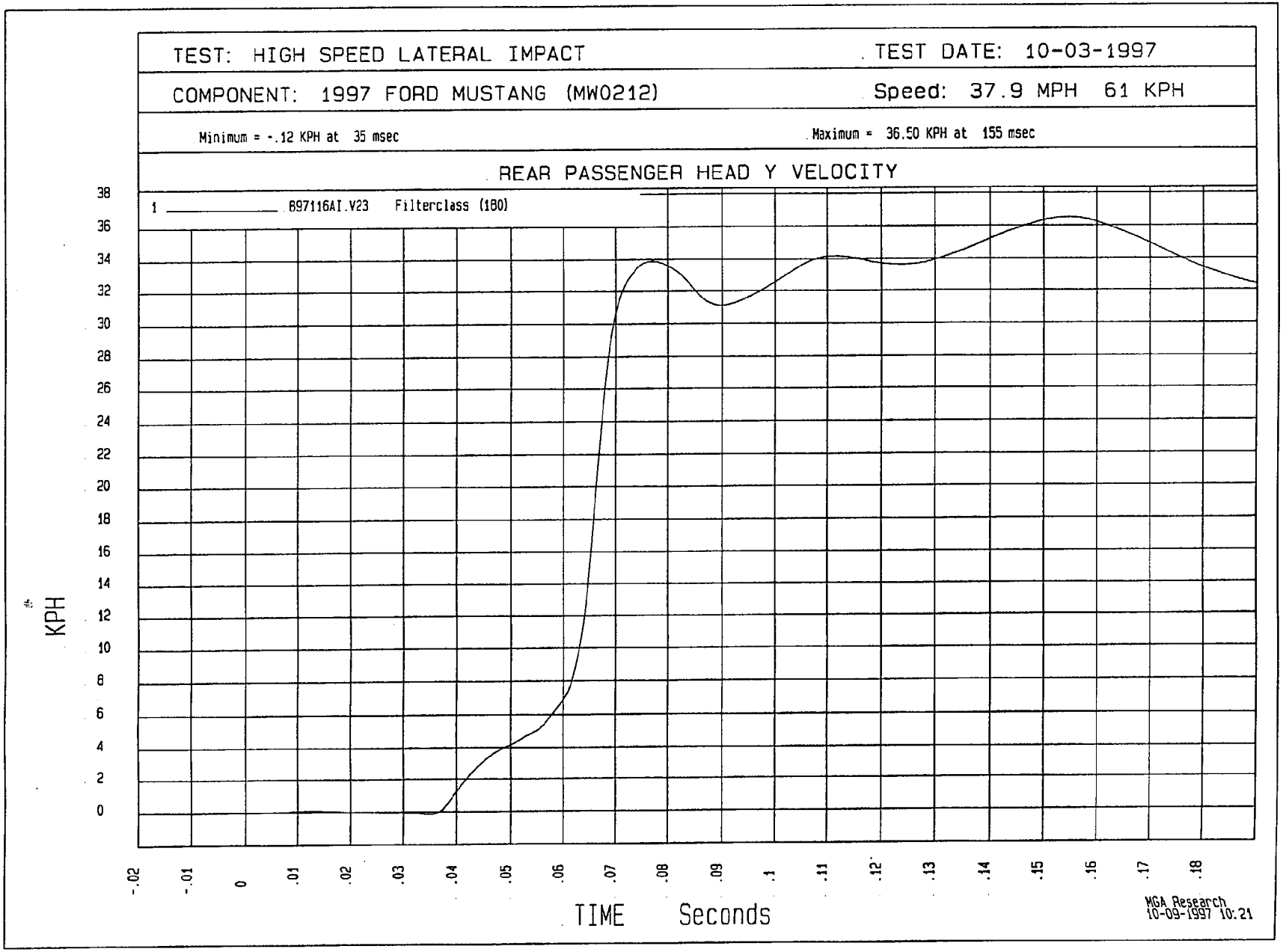

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.68 at 37 msec
Maximum = .22 at 63 msec
DRIVER LEG CONTACT
1 B971160T.052 Filterclass (1000)
0
-1
-2
-3
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:09

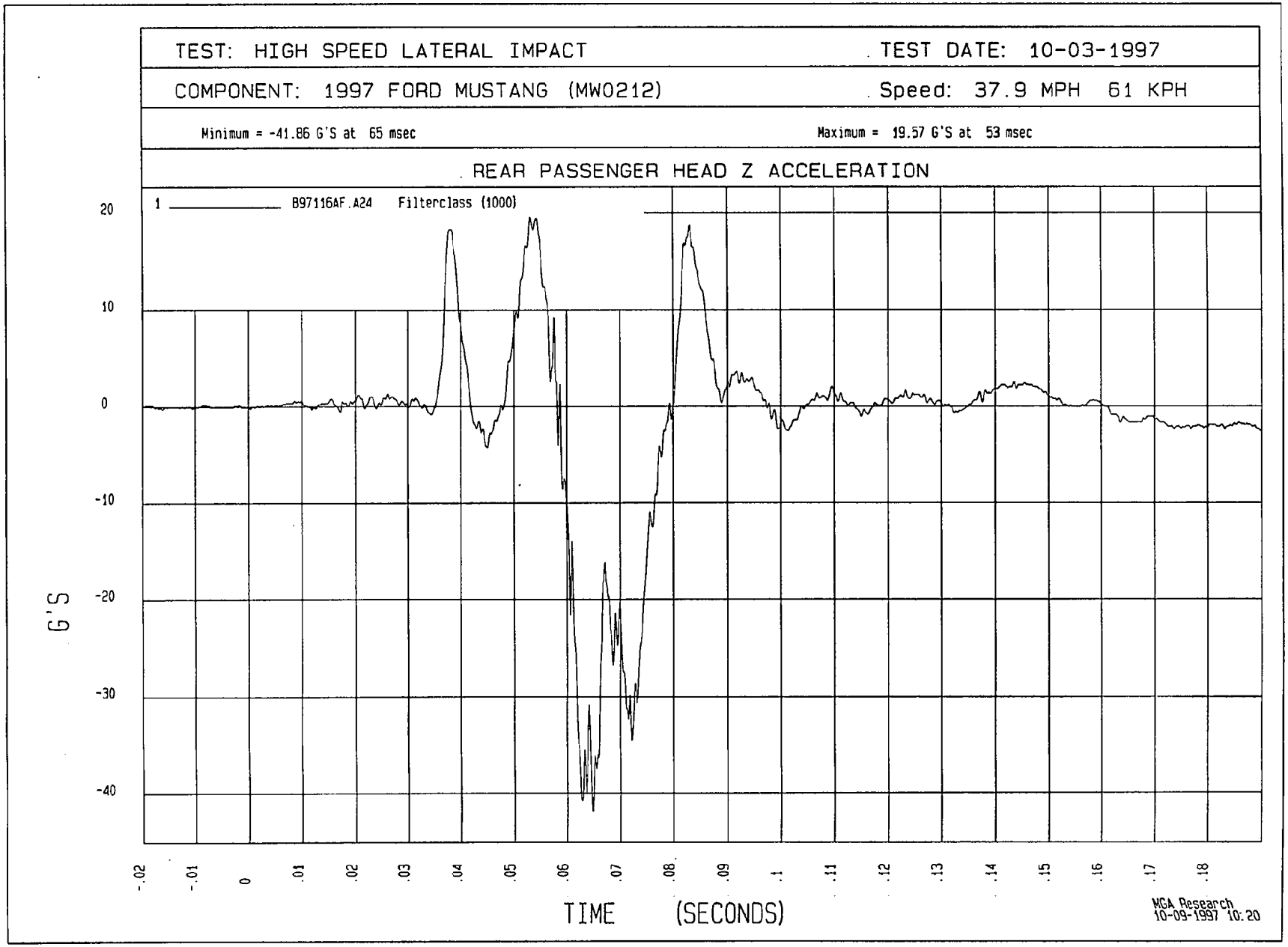

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.70 at 182 msec
Maximum = 4.23E-02 at 100 msec
DRIVER SHOULDER CONTACT
1 B9711607.051 Filterclass (1000)
0
-1
-2
-3
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:09

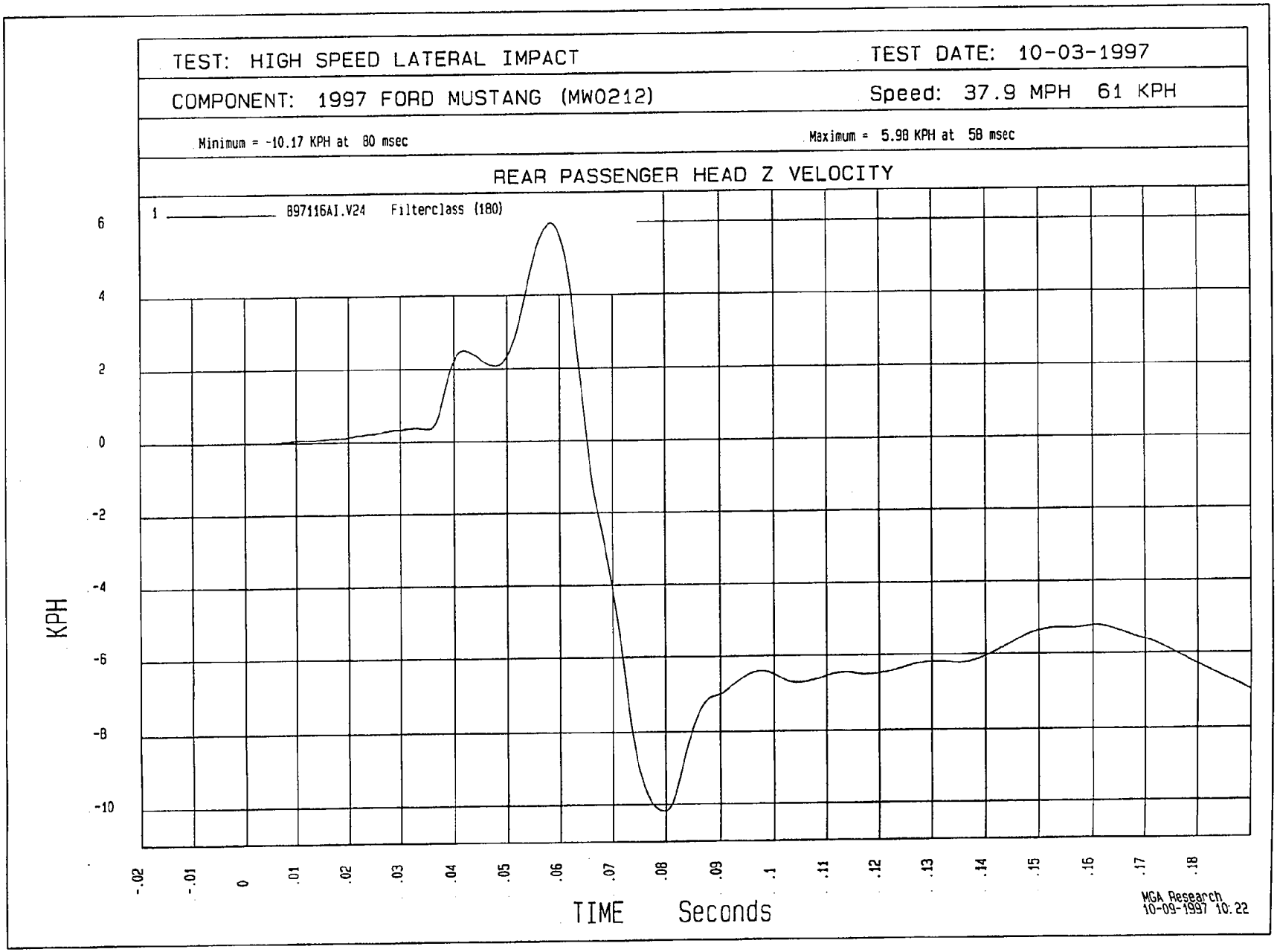

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -68.55 G'S at 68 msec
Maximum = 6.48 G'S at 169 msec
REAR PASSENGER HEAD X ACCELERATION
1 B97116AF.A22 Filterclass (1000)
10
0
-10
-20
-30
-40
-50
-60
-70
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

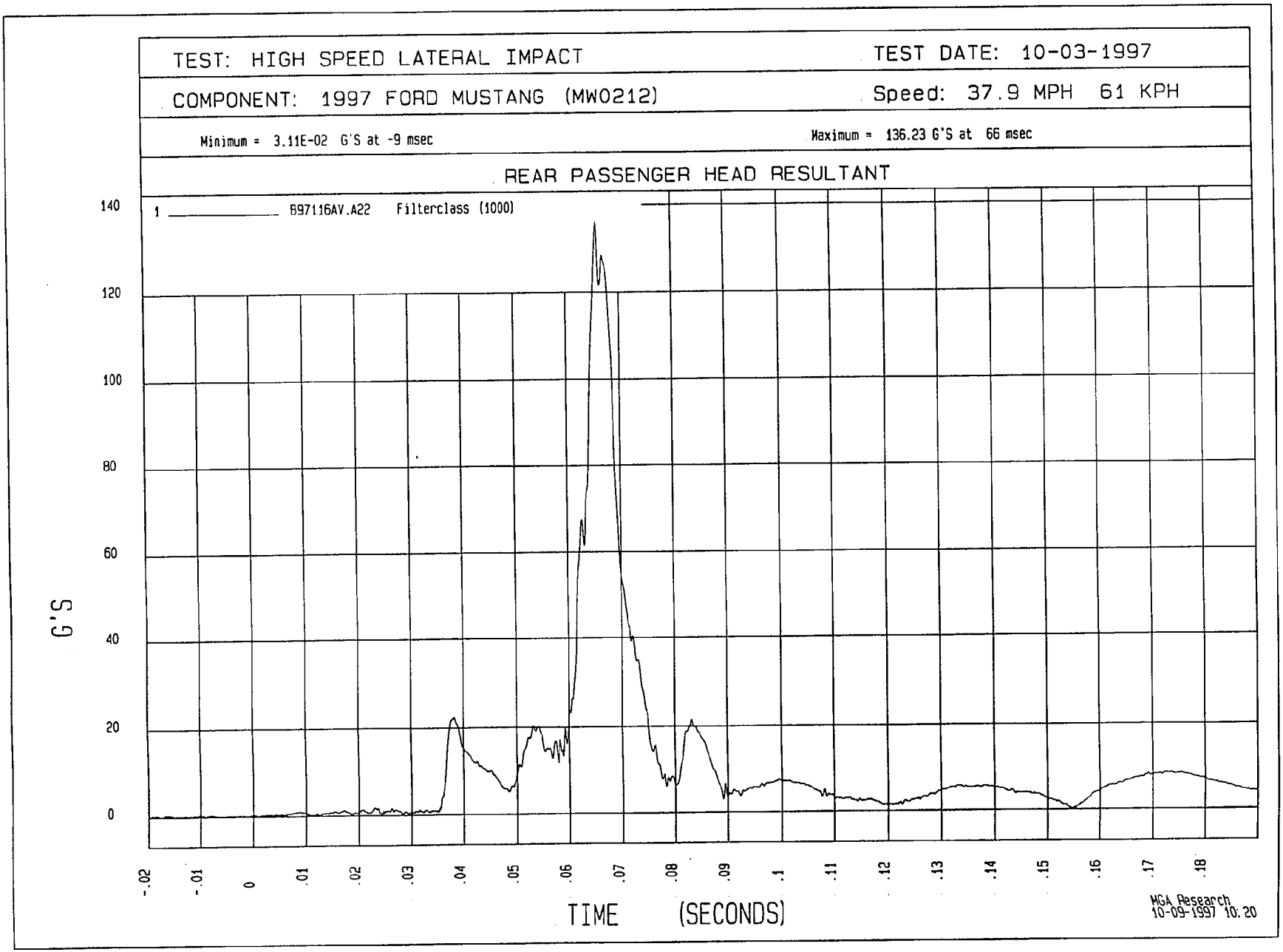

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -19.31 KPH at 155 msec
Maximum = 1.29 KPH at 54 msec
REAR PASSENGER HEAD X VELOCITY
1 B97116AI.V22 Filterclass (180)
KPH
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:21

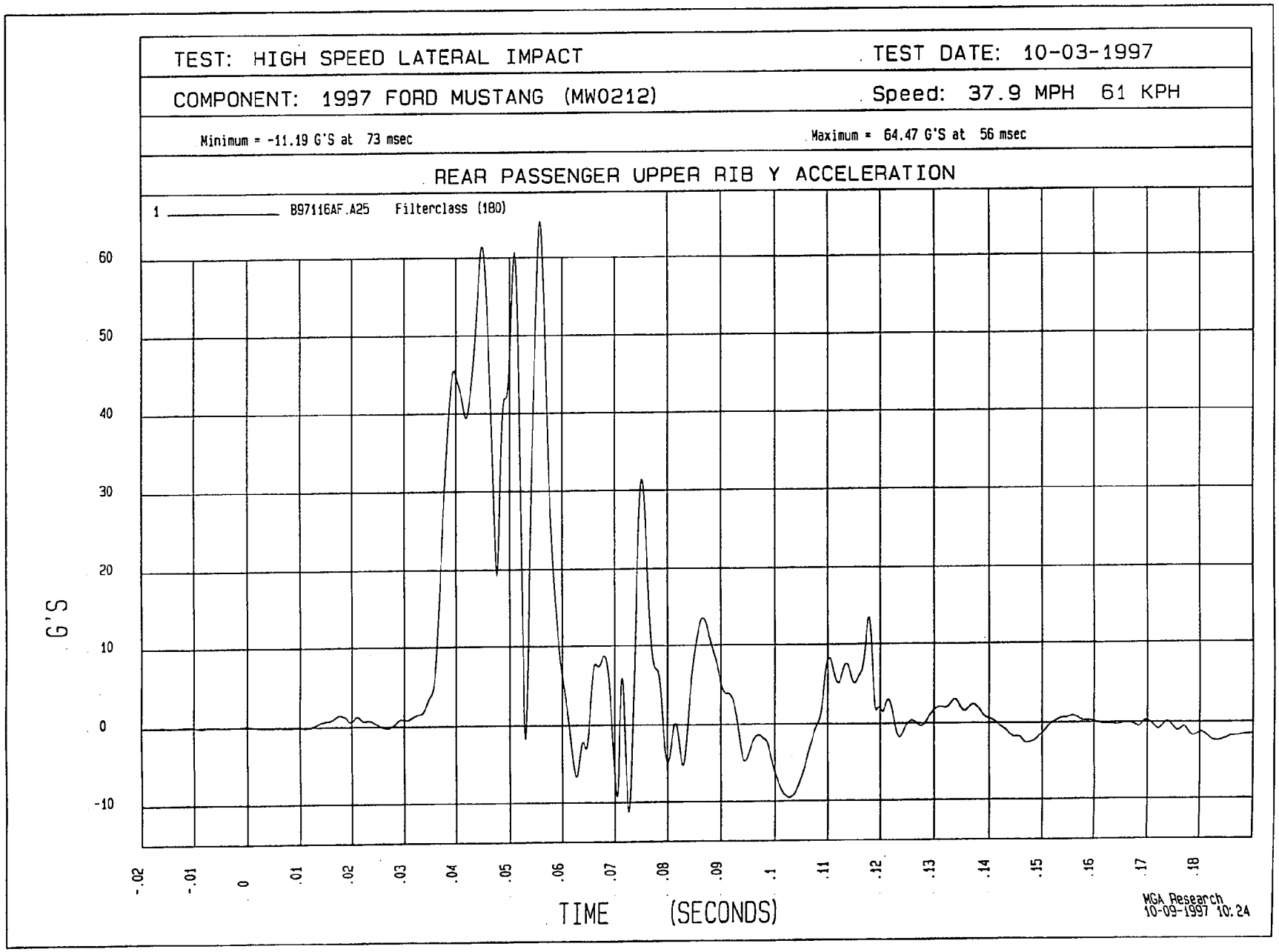

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -11.75 G'S at 84 msec
Maximum = 116.94 G'S at 66 msec
REAR PASSENGER HEAD Y ACCELERATION
1 B97116AF.A23 Filterclass (1000)
120
100
80
60
40
20
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

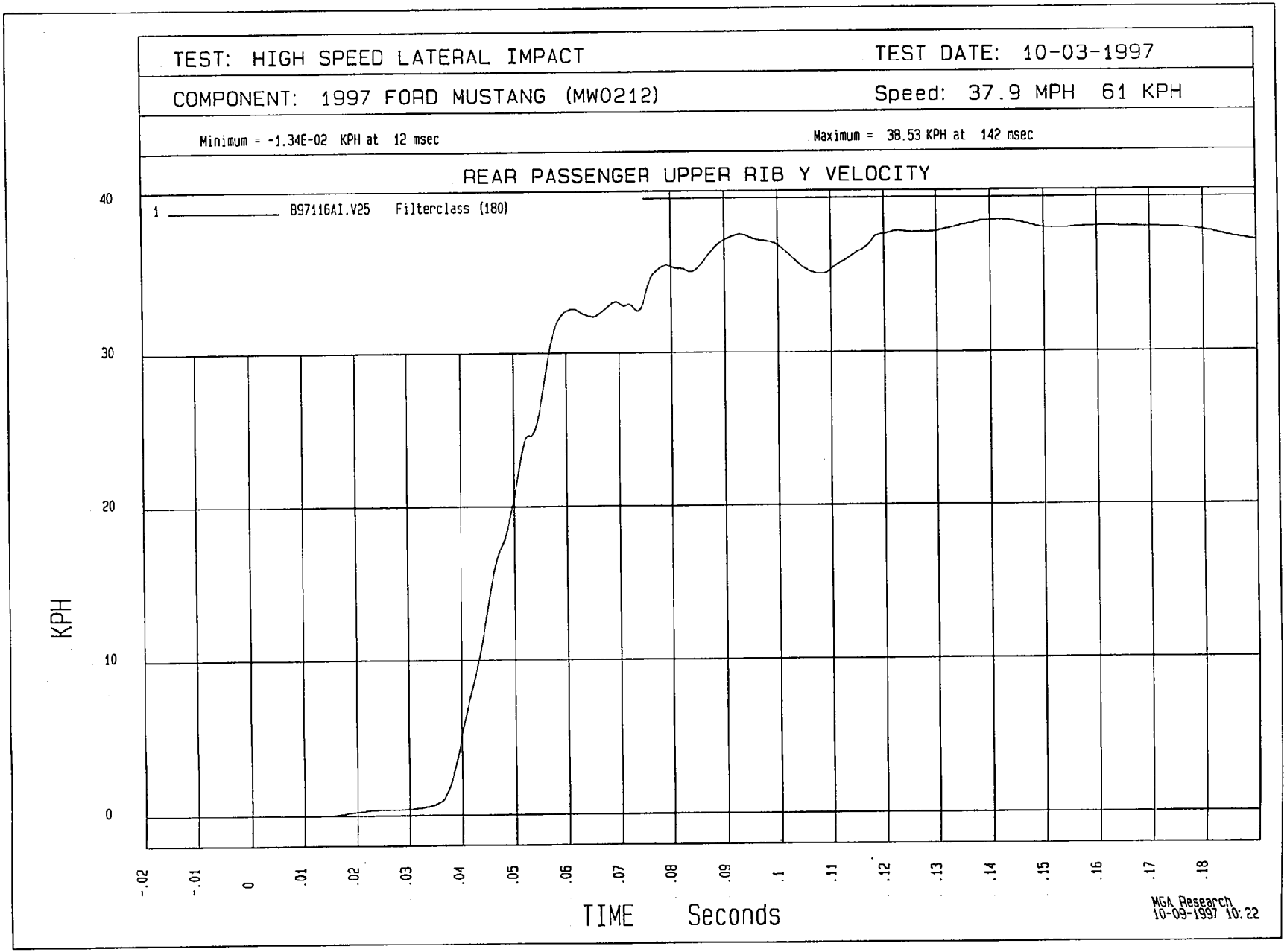

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.12 KPH at 35 msec
Maximum = 36.50 KPH at 155 msec
REAR PASSENGER HEAD Y VELOCITY
1 B97116AI.V23 Filterclass (180)
KPH
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:21

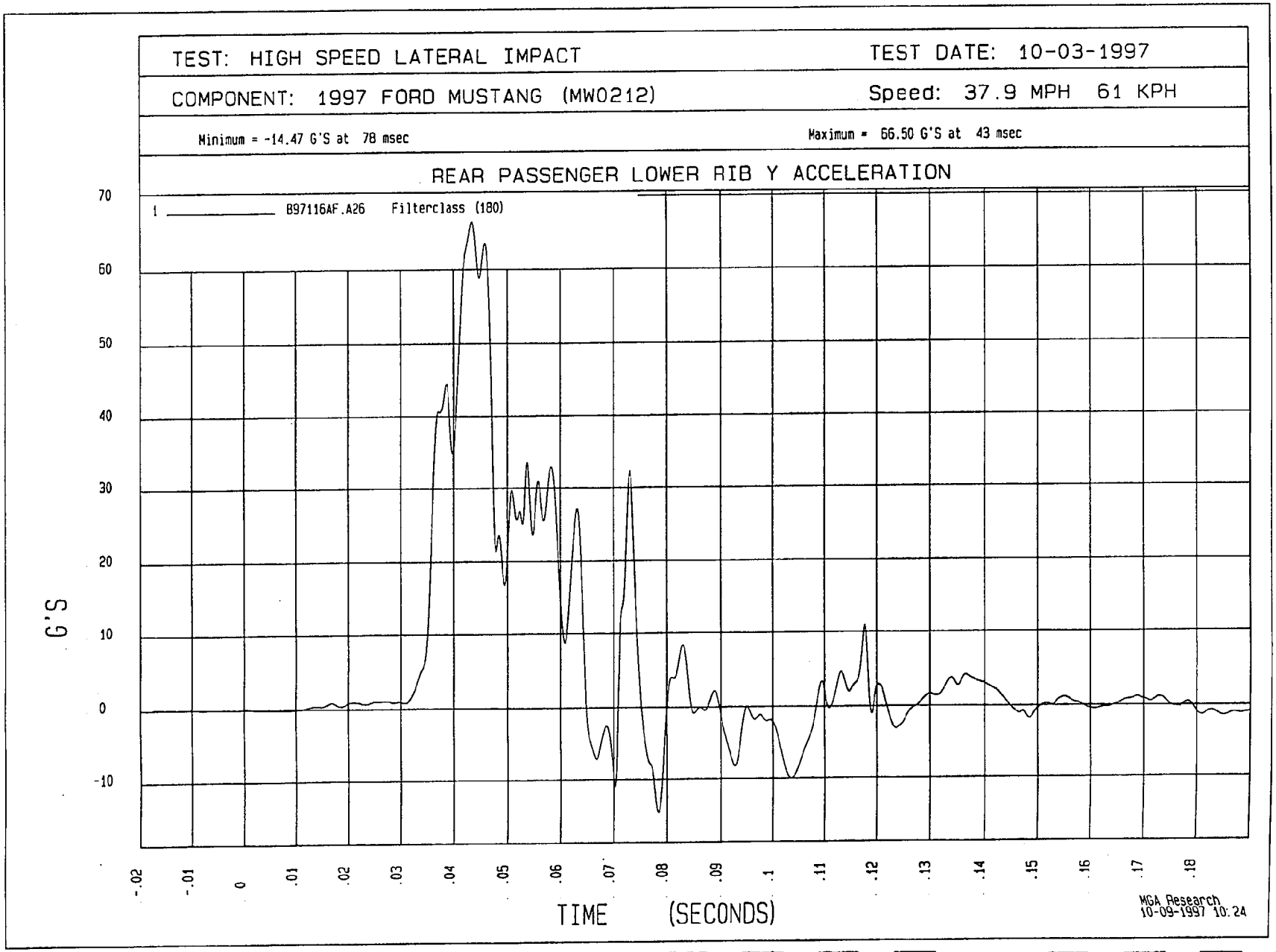

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -41.86 G'S at 65 msec
Maximum = 19.57 G'S at 53 msec
REAR PASSENGER HEAD Z ACCELERATION
1 B97116AF.A24 Filterclass (1000)
20
10
0
-10
-20
-30
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

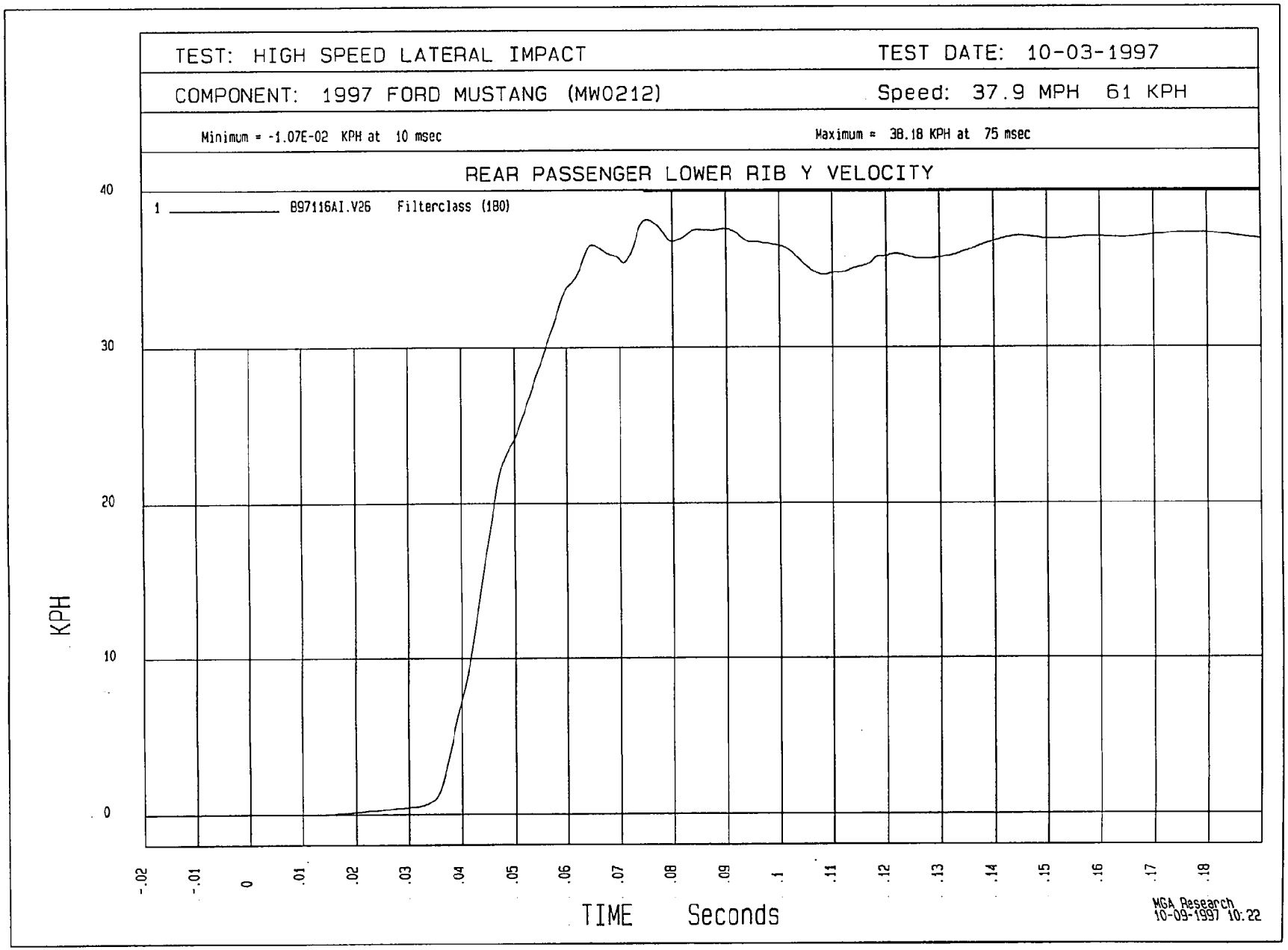

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -10.17 KPH at 80 msec
Maximum = 5.98 KPH at 58 msec
REAR PASSENGER HEAD Z VELOCITY
1 897116AI.V24 Filterclass (180)
KPH
6
4
2
0
-2
-4
-6
-8
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22

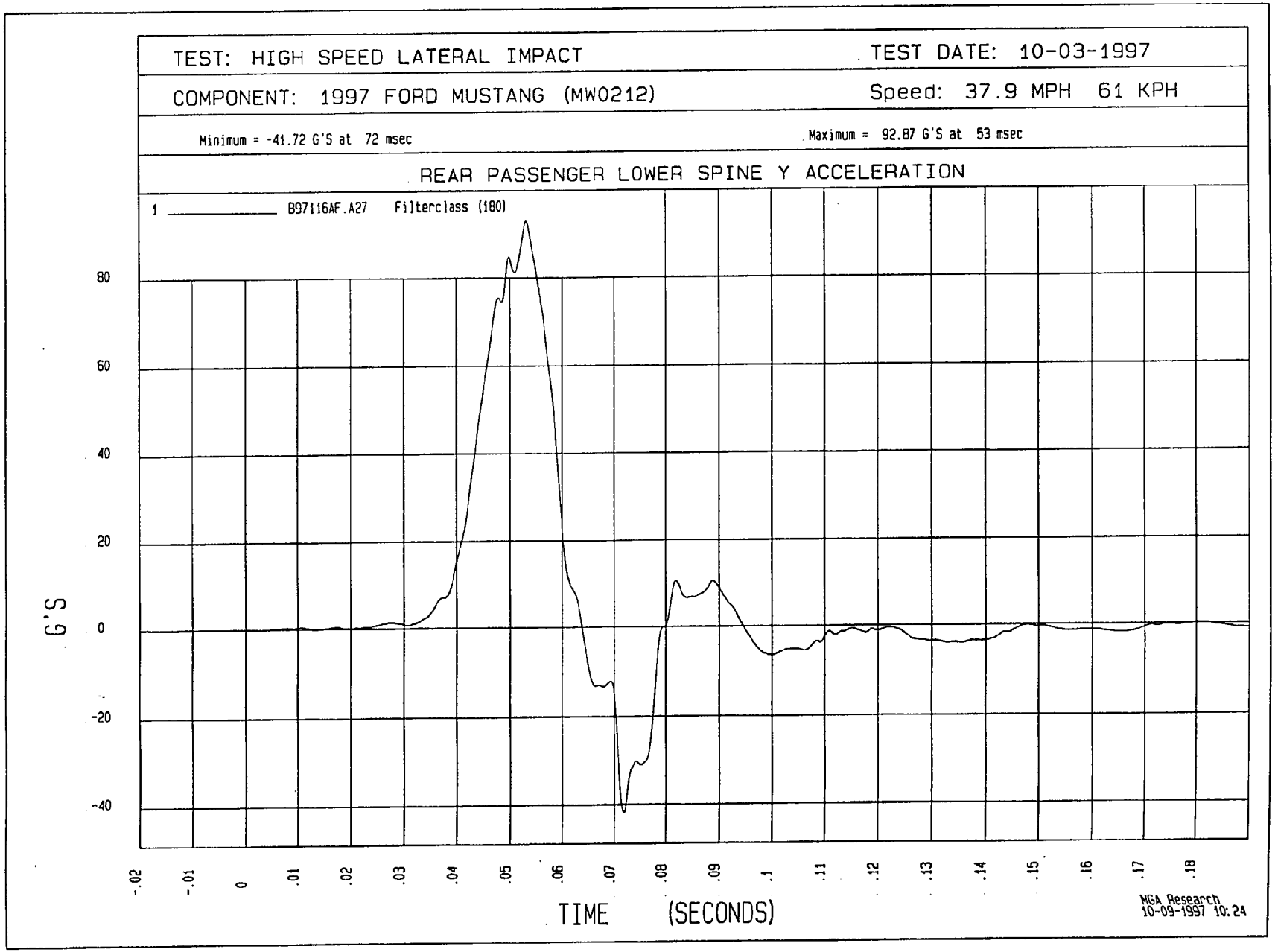

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 3.11E-02 G'S at -9 msec
Maximum = 136.23 G'S at 66 msec
REAR PASSENGER HEAD RESULTANT
1 B97116AV.A22 Filterclass (1000)
G'S
140
120
100
80
60
40
20
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:20

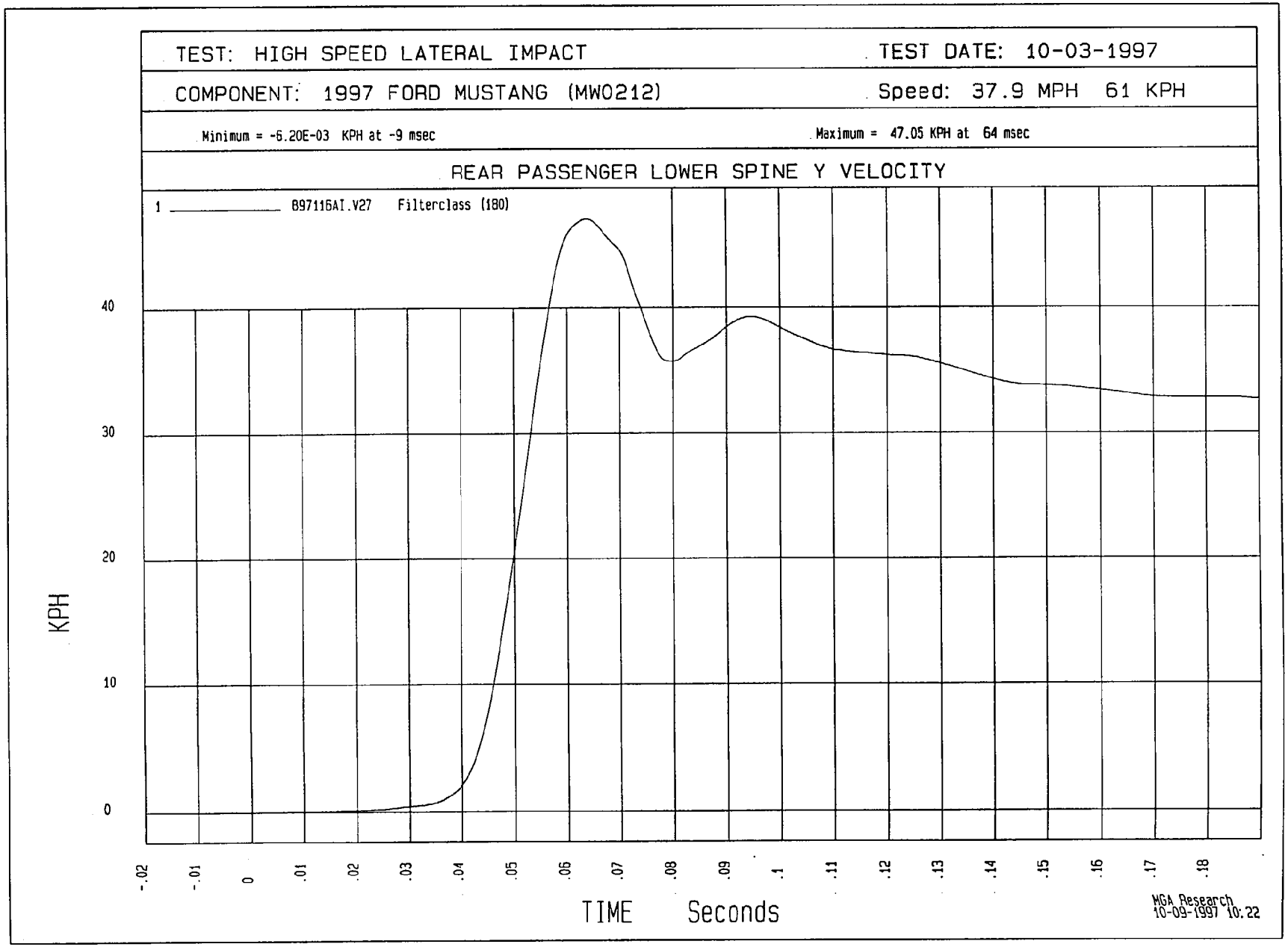

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -11.19 G'S at 73 msec
Maximum = 64.47 G'S at 56 msec
REAR PASSENGER UPPER RIB Y ACCELERATION
1 B97116AF.A25 Filterclass (180)
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:24

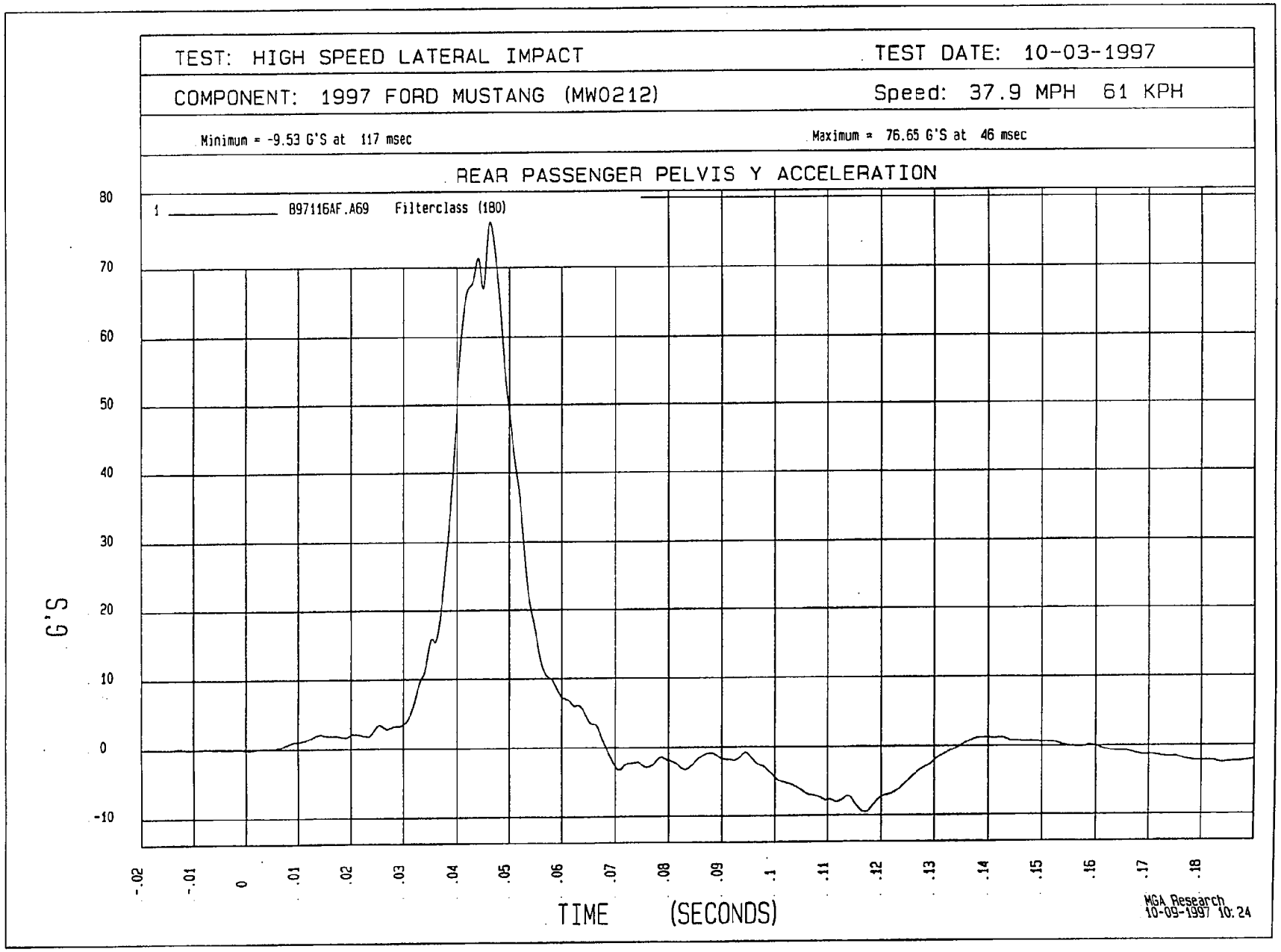

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.34E-02 KPH at 12 msec
Maximum = 38.53 KPH at 142 msec
REAR PASSENGER UPPER RIB Y VELOCITY
1 B97116A1.V25 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22

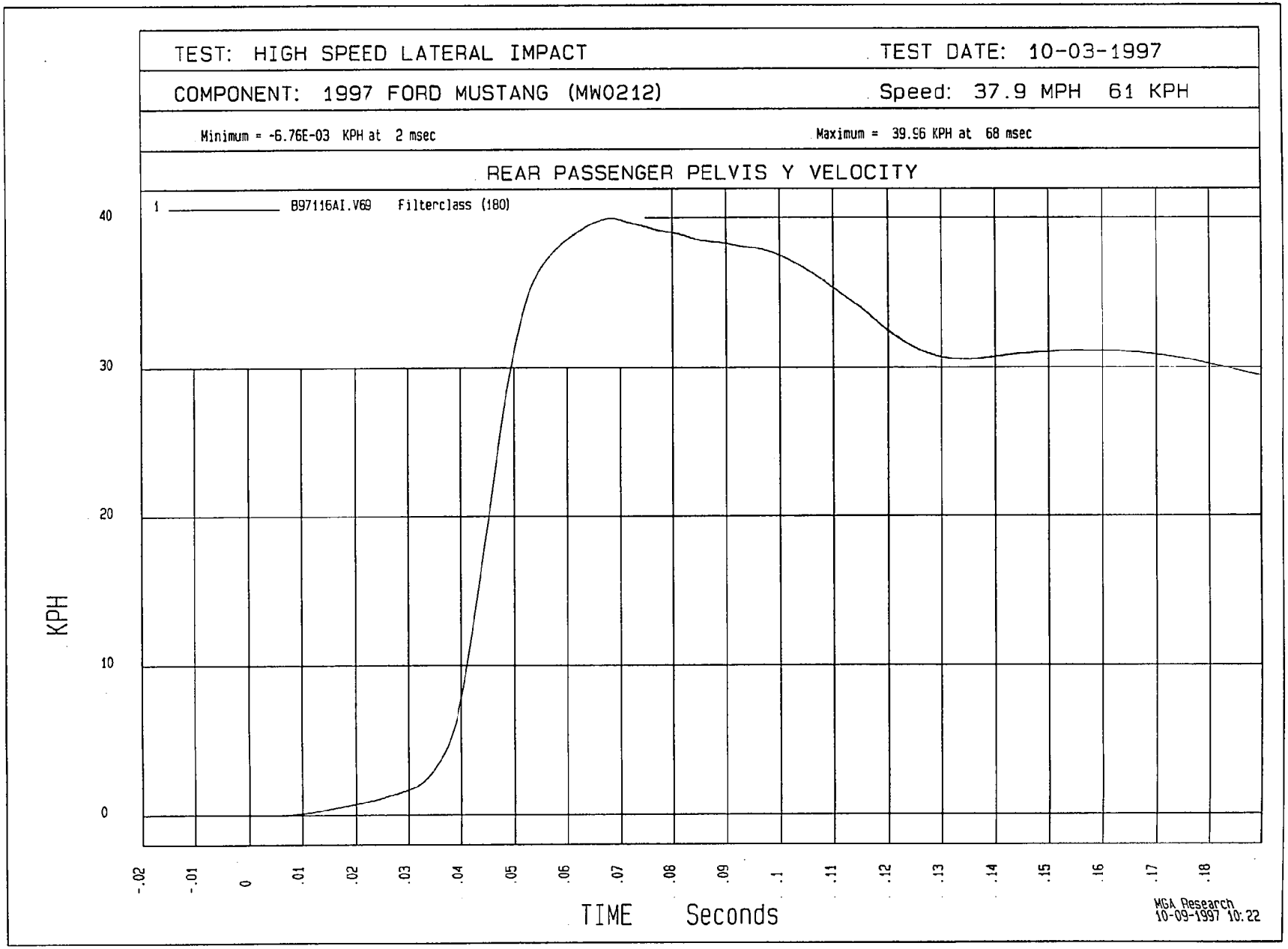

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -14.47 G'S at 78 msec
Maximum = 66.50 G'S at 43 msec
REAR PASSENGER LOWER RIB Y ACCELERATION
1 B97116AF.A26 Filterclass (180)
70
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.07E-02 KPH at 10 msec
Maximum = 38.18 KPH at 75 msec
REAR PASSENGER LOWER RIB Y VELOCITY
1 B97116AI.V26 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -41.72 G'S at 72 msec
Maximum = 92.87 G'S at 53 msec
REAR PASSENGER LOWER SPINE Y ACCELERATION
1 B97116AF.A27 Filterclass (180)
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.20E-03 KPH at -9 msec
Maximum = 47.05 KPH at 64 msec
REAR PASSENGER LOWER SPINE Y VELOCITY
1 B97116AI.V27 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.53 G'S at 117 msec
Maximum = 76.65 G'S at 46 msec
REAR PASSENGER PELVIS Y ACCELERATION
1 B97116AF.A69 Filterclass (180)
80
70
60
50
40
30
20
10
0
-10
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.76E-03 KPH at 2 msec
Maximum = 39.96 KPH at 68 msec
REAR PASSENGER PELVIS Y VELOCITY
1 B97116AI.V69 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.16
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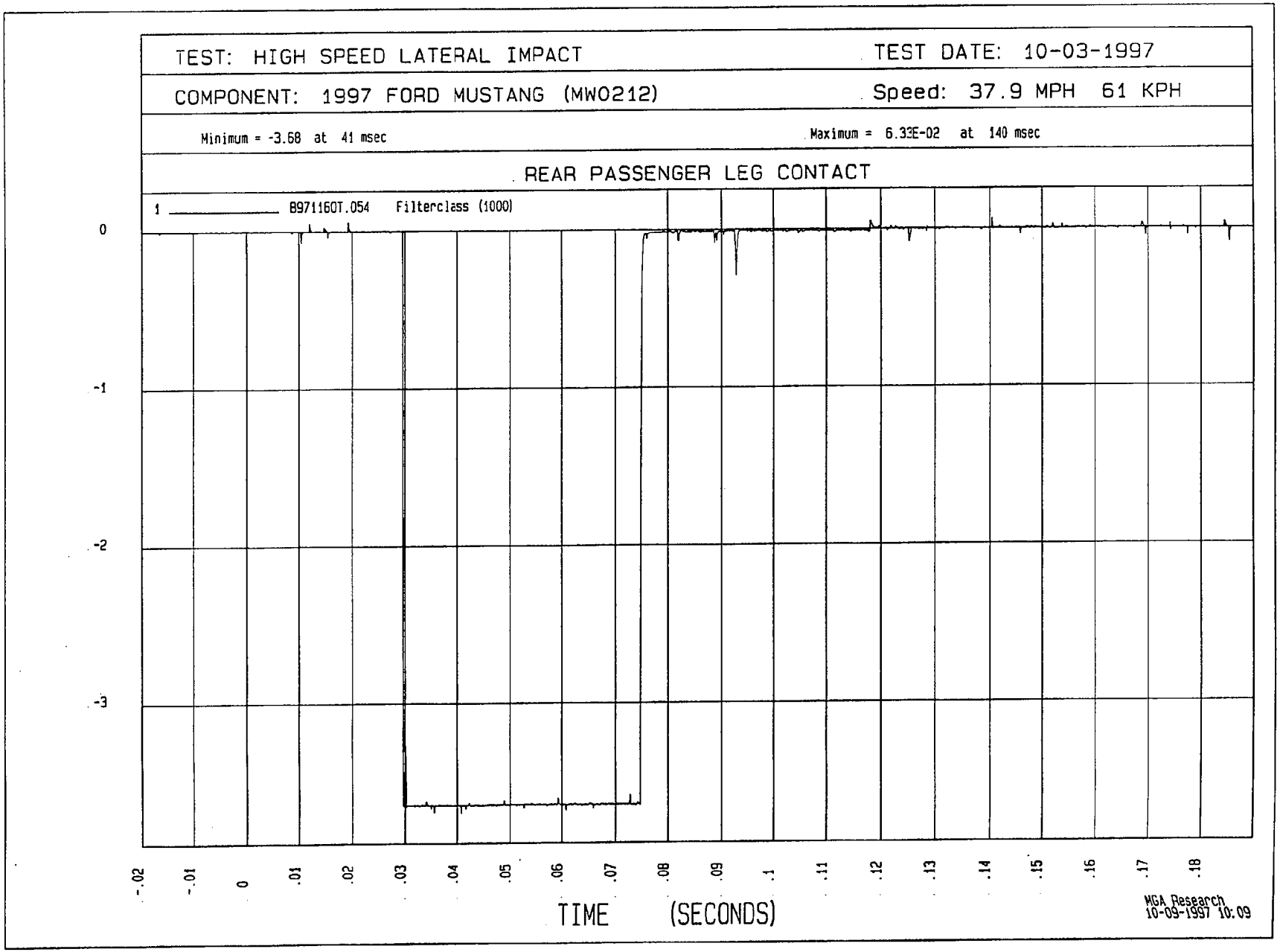
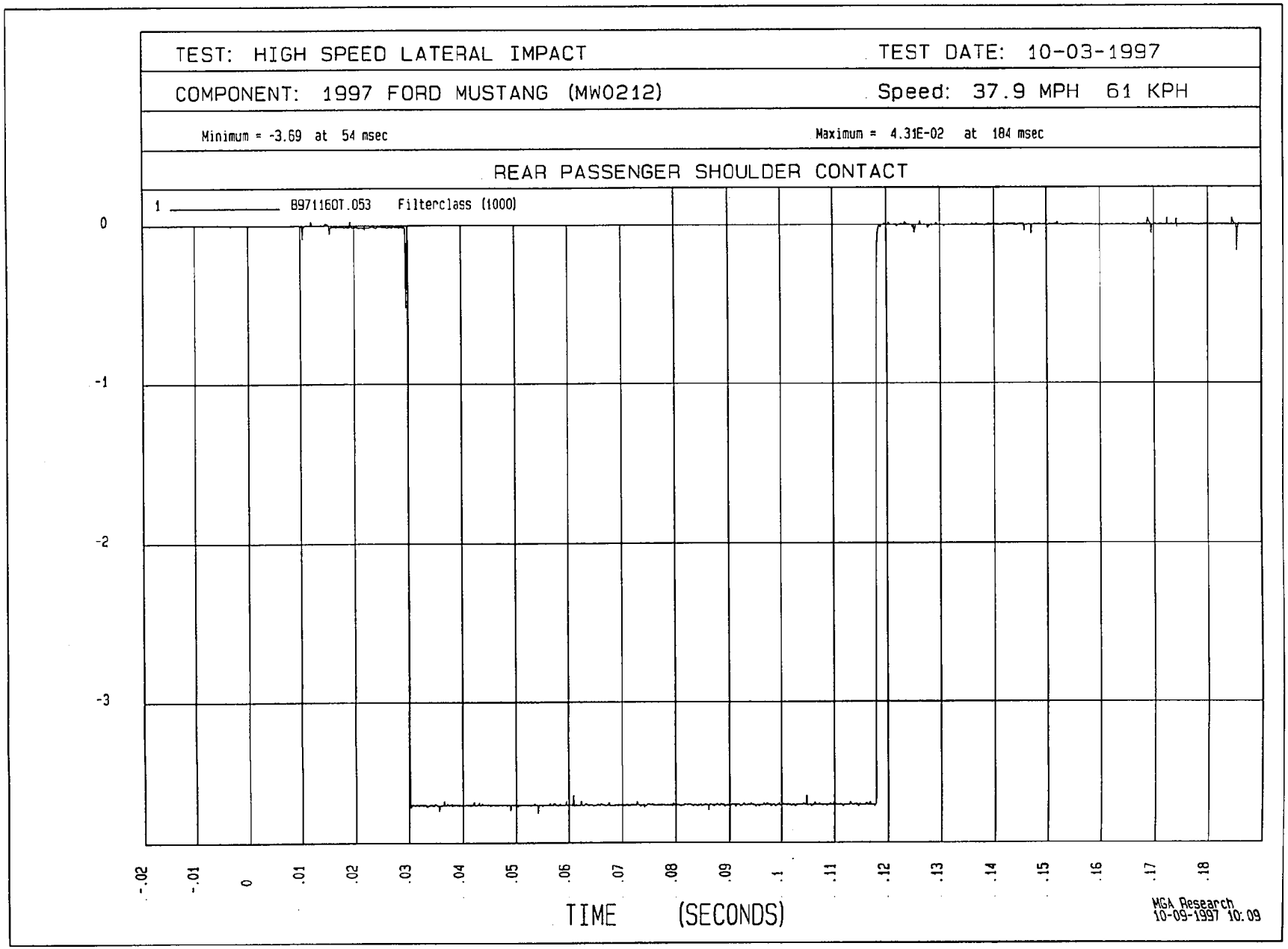
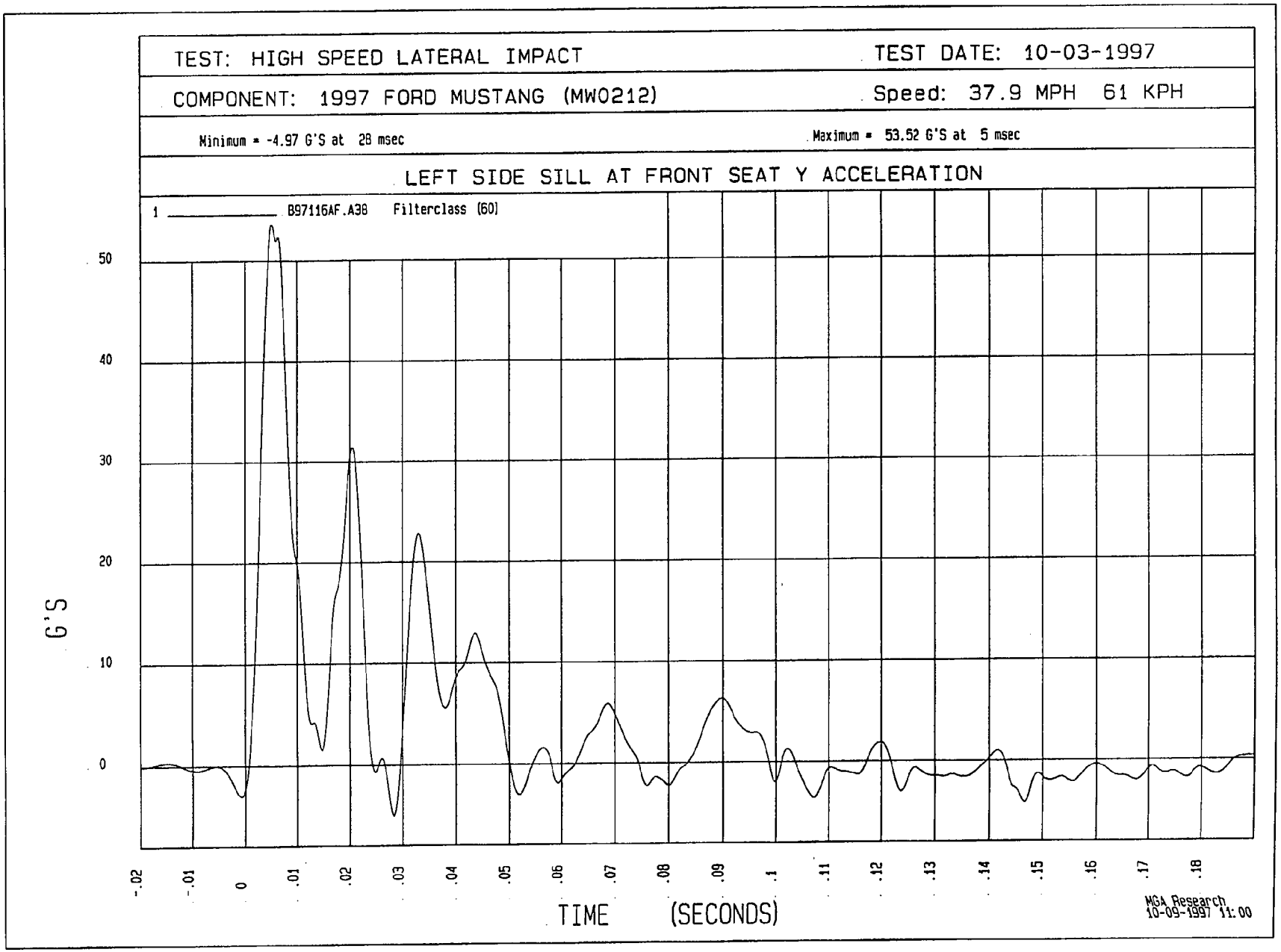
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.68 at 41 msec
Maximum = 6.33E-02 at 140 msec
REAR PASSENGER LEG CONTACT
1 B971160T.054 Filterclass (1000)
0
-1
-2
-3
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:09


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.69 at 54 msec
Maximum = 4.31E-02 at 184 msec
REAR PASSENGER SHOULDER CONTACT
1 B971160T.053 Filterclass (1000)
0
-1
-2
-3
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:09


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.97 G'S at 28 msec
Maximum = 53.52 G'S at 5 msec
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B97116AF.A38 Filterclass (60)
G'S
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
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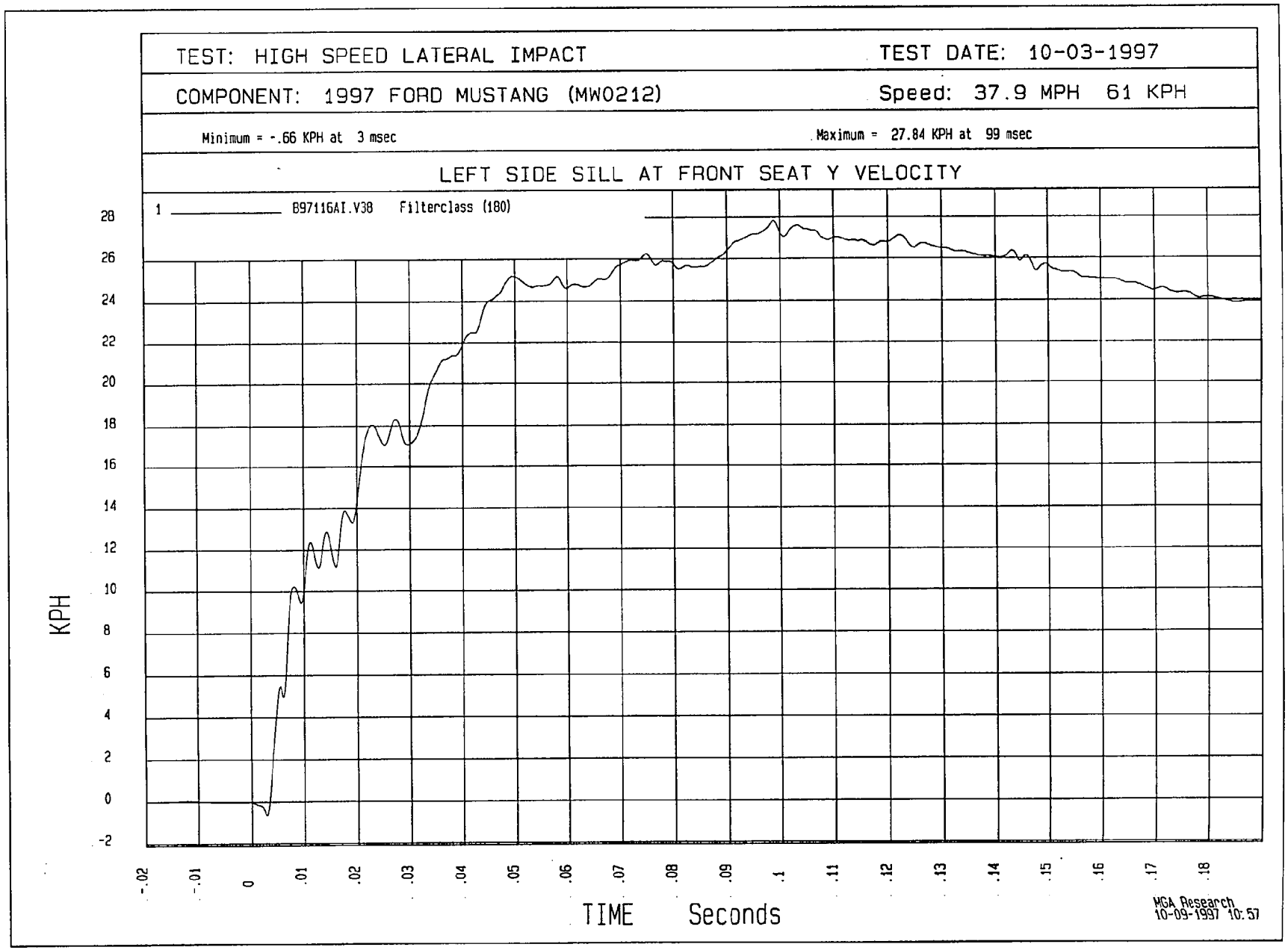
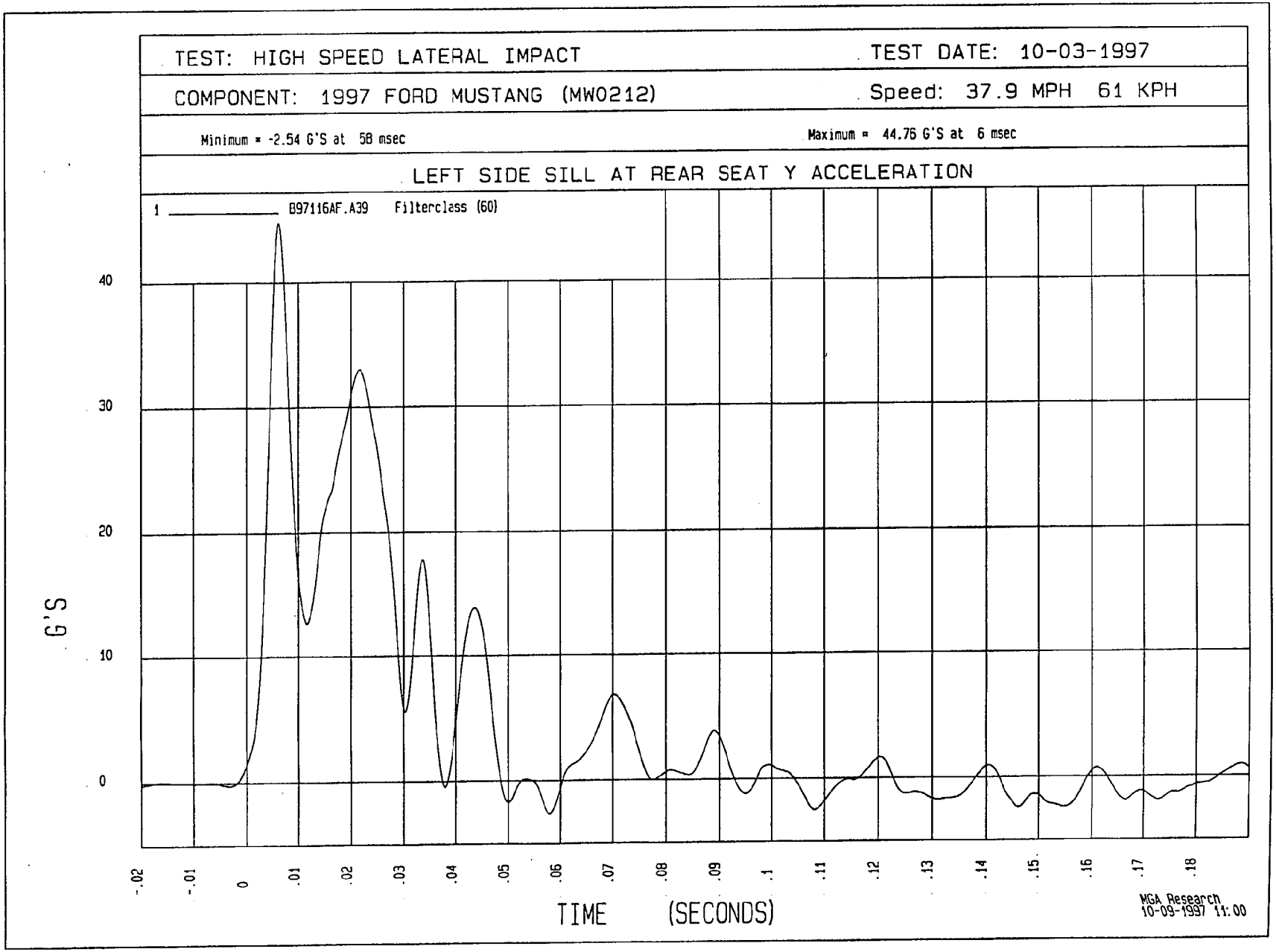
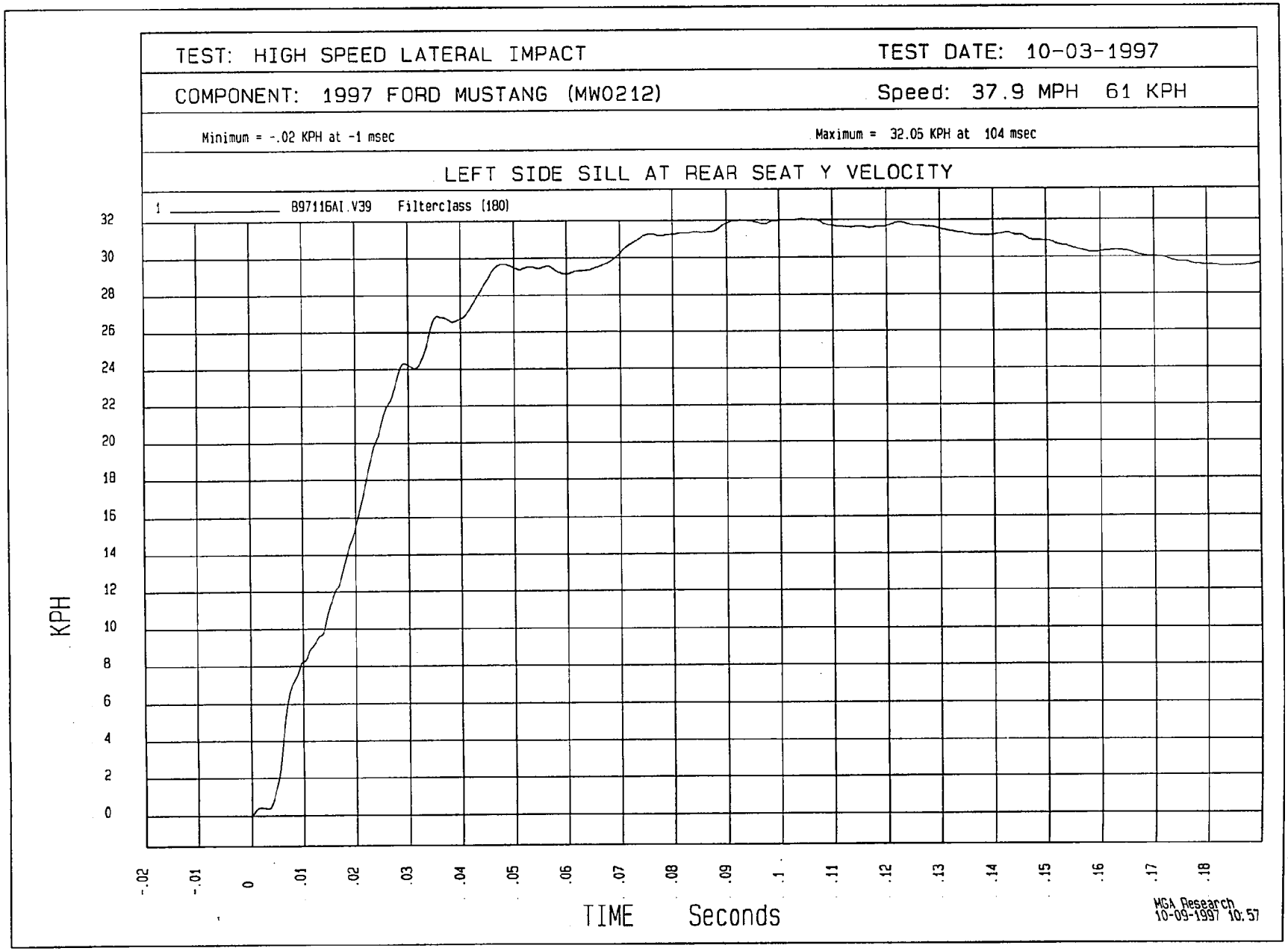
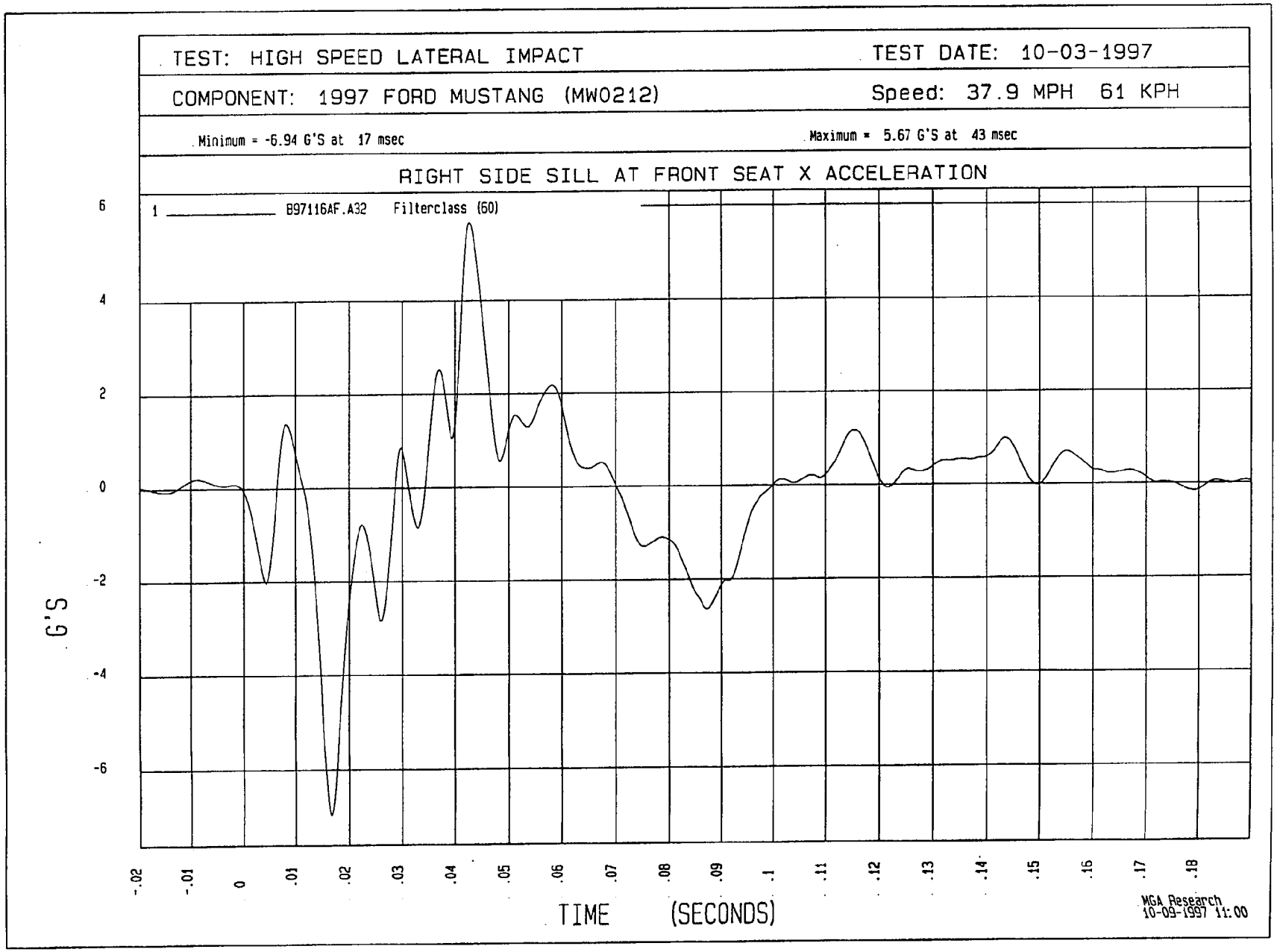
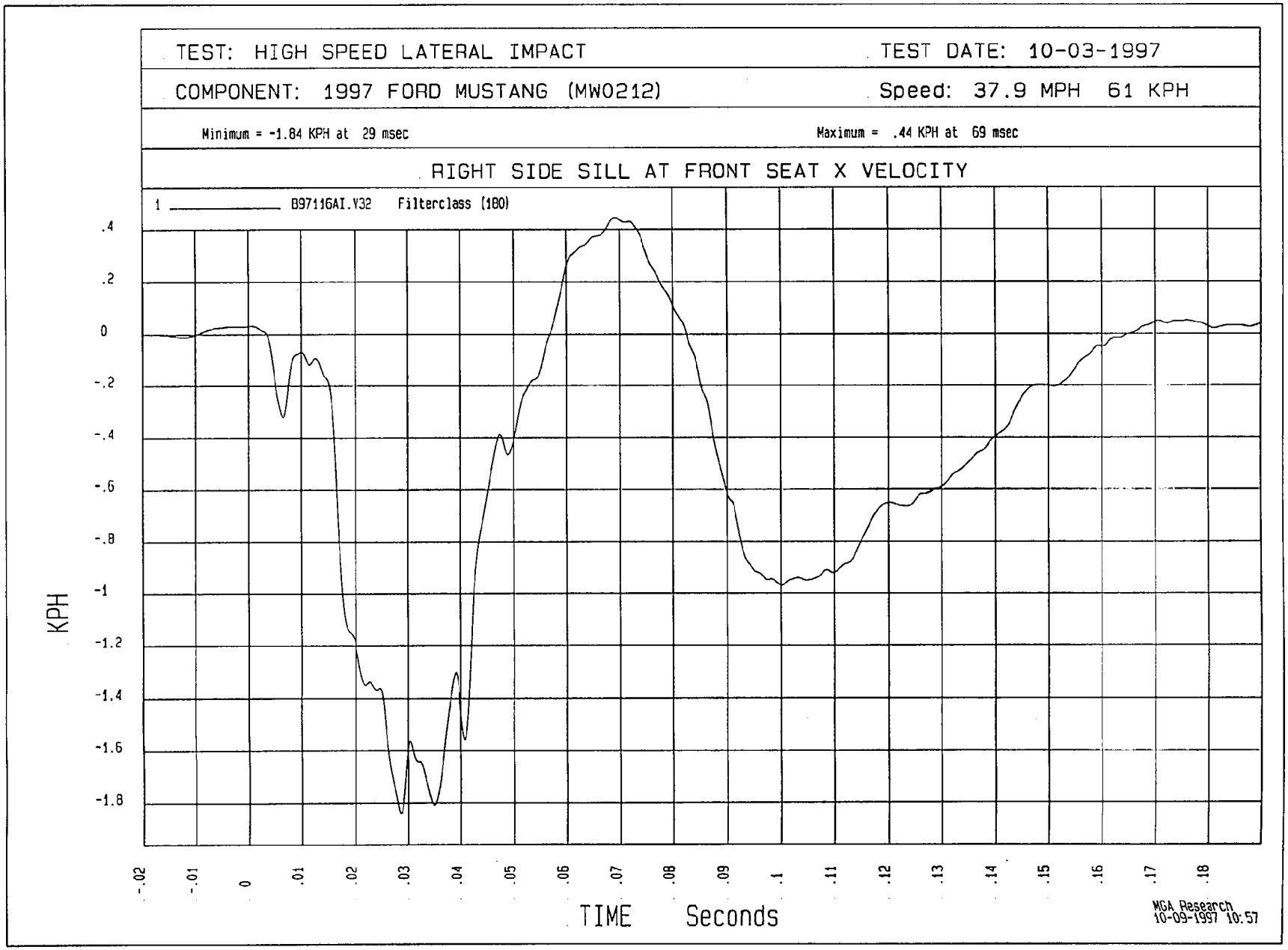
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:00

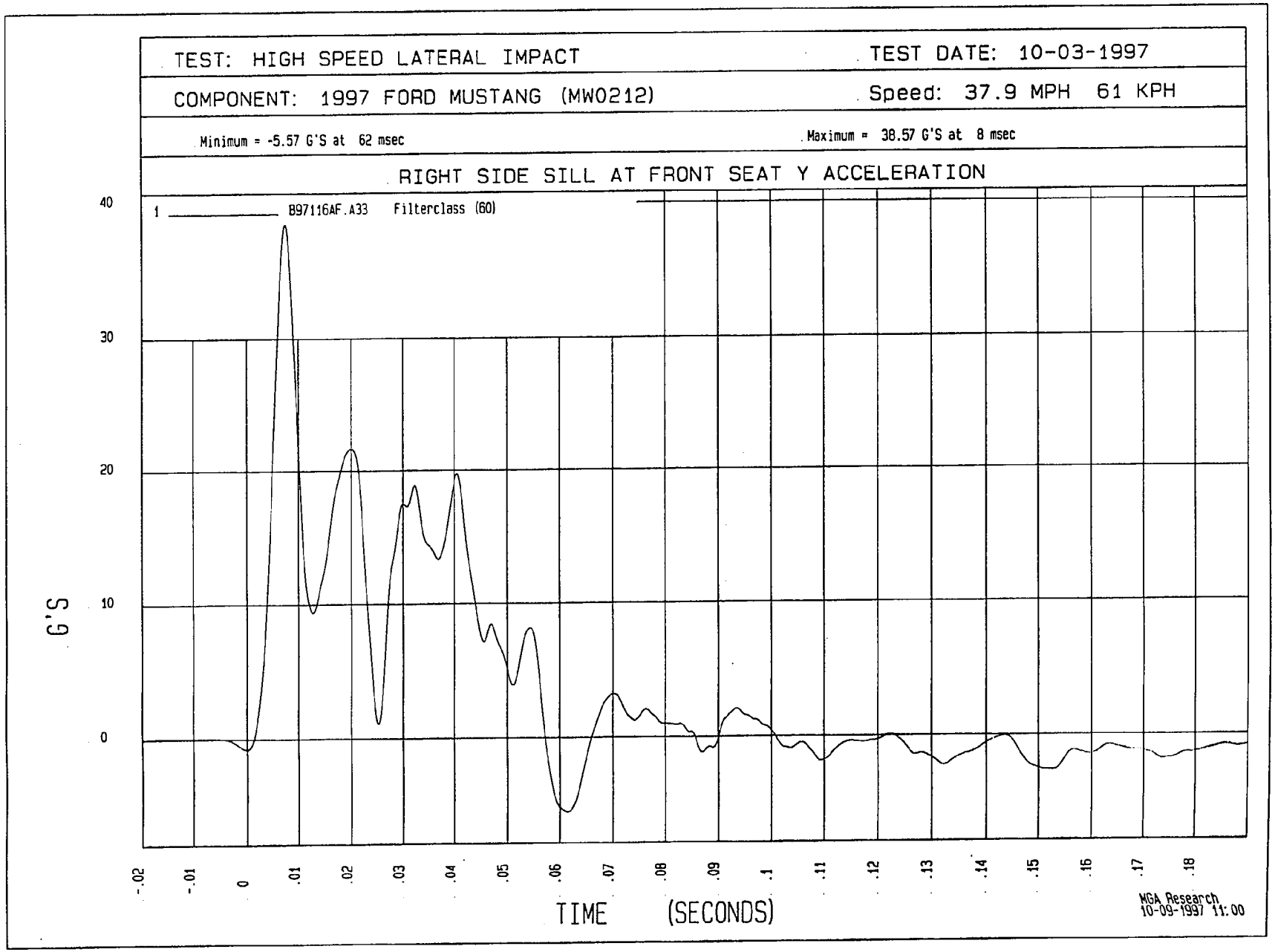

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.66 KPH at 3 msec
Maximum = 27.84 KPH at 99 msec
LEFT SIDE SILL AT FRONT SEAT Y VELOCITY
1 B97116AI.V38 Filterclass (180)
KPH
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

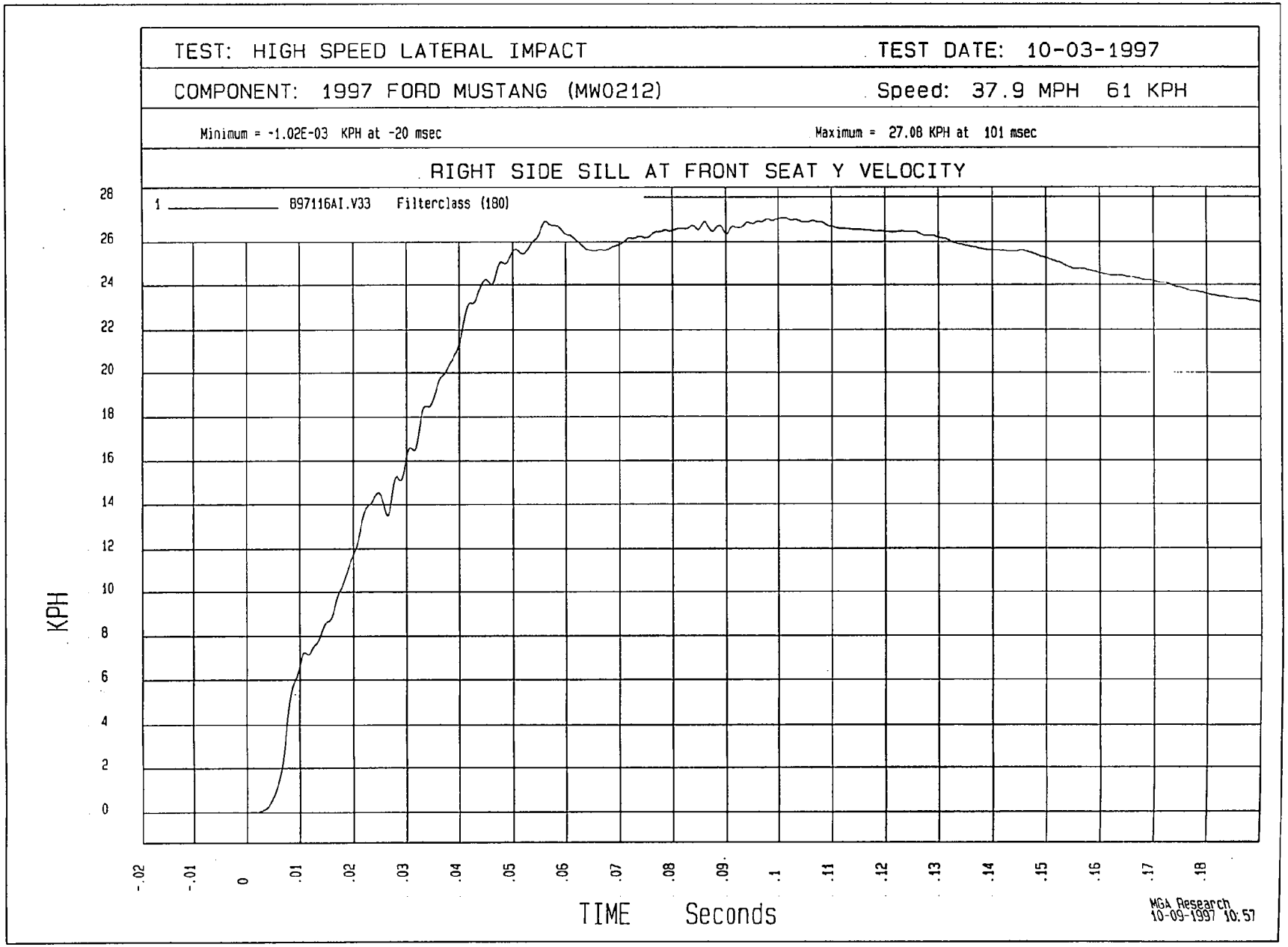

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -2.54 G'S at 58 msec
Maximum = 44.76 G'S at 6 msec
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B97116AF.A39 Filterclass (60)
G'S
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:00

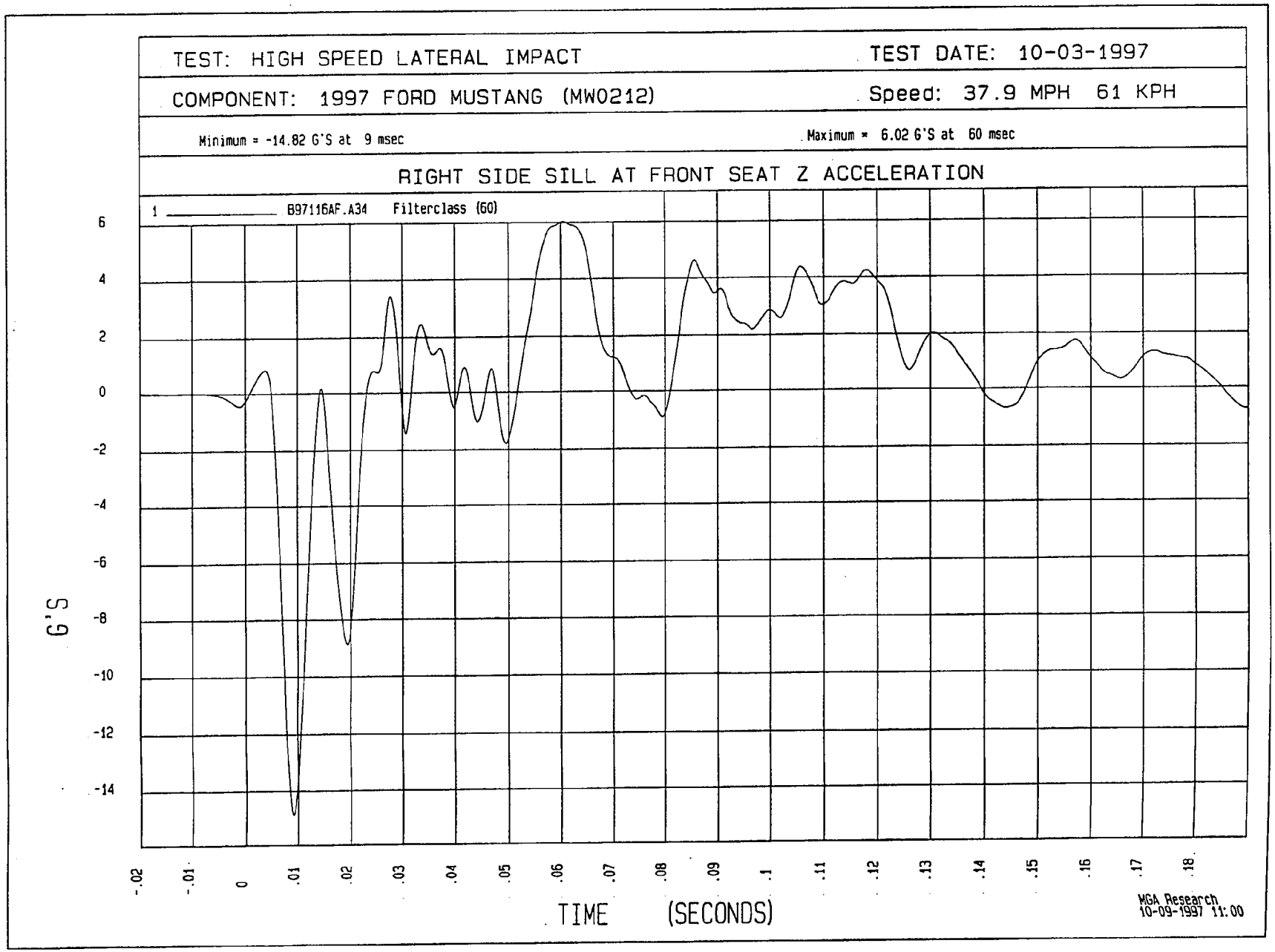

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.02 KPH at -1 msec
Maximum = 32.05 KPH at 104 msec
LEFT SIDE SILL AT REAR SEAT Y VELOCITY
1 B97116AI.V39 Filterclass (180)
KPH
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

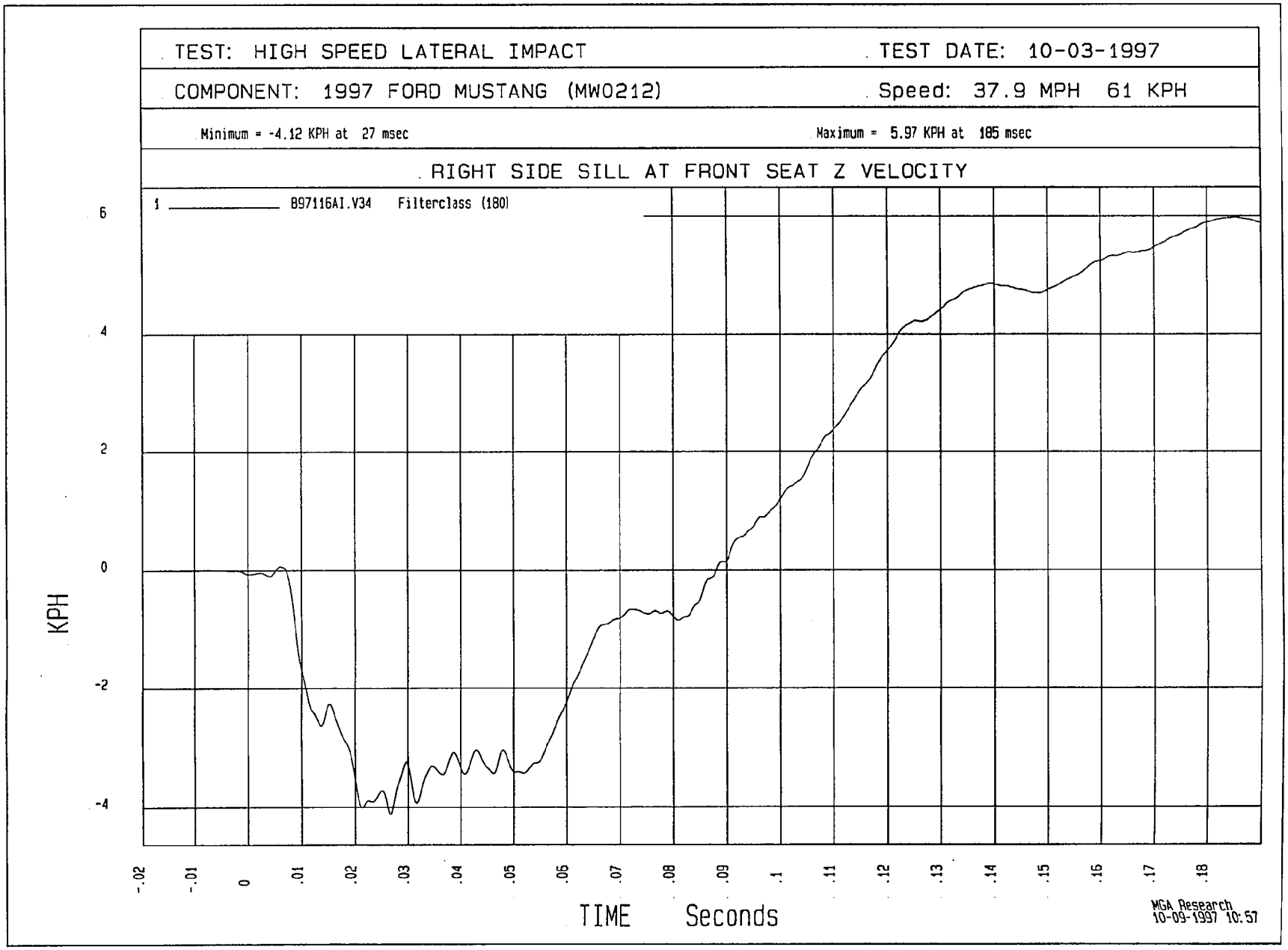

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.94 G'S at 17 msec
Maximum = 5.67 G'S at 43 msec
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION
1 B97116AF.A32 Filterclass (60)
6
4
2
0
-2
-4
-6
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:00

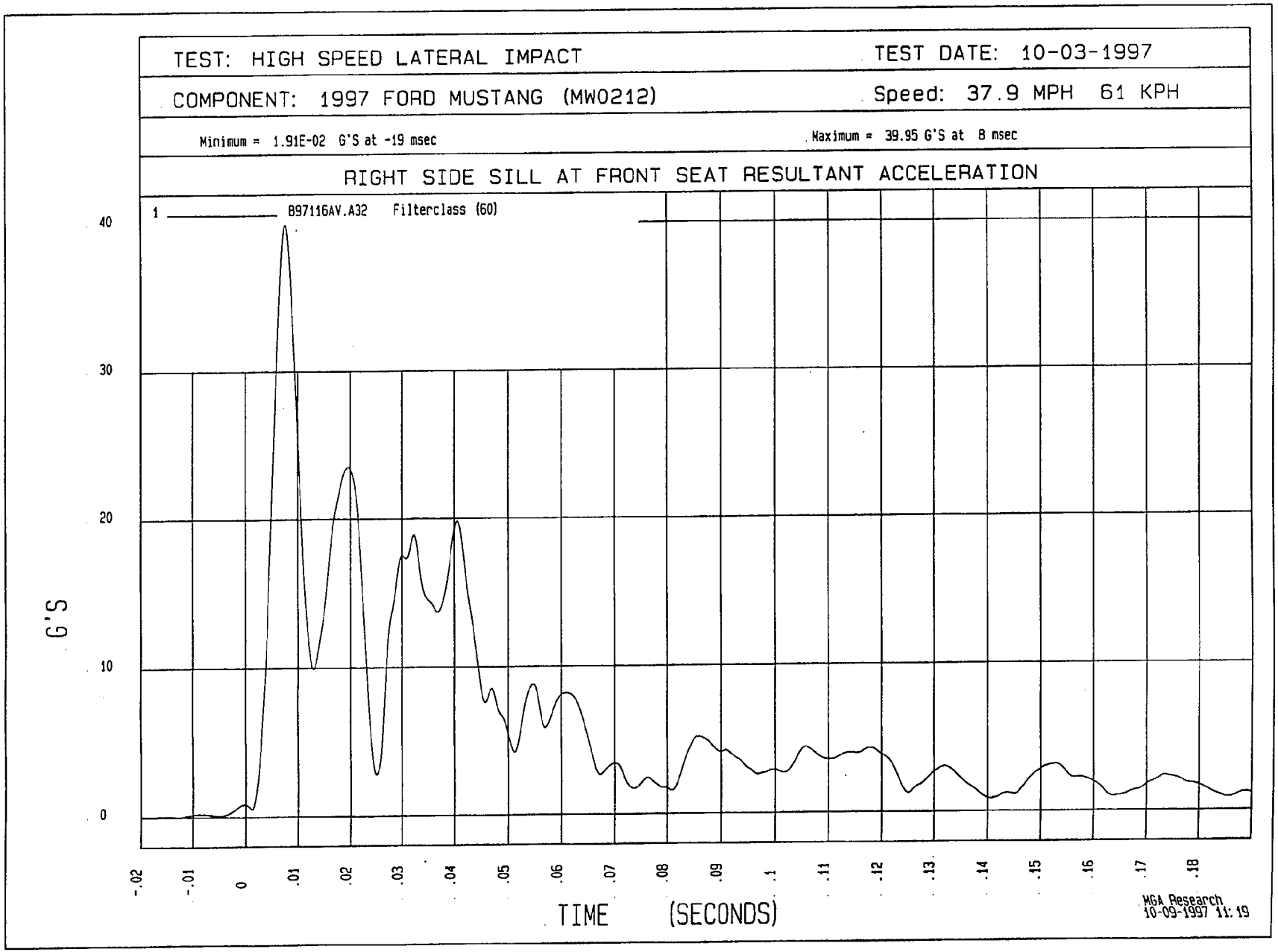

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.84 KPH at 29 msec
Maximum = .44 KPH at 69 msec
RIGHT SIDE SILL AT FRONT SEAT X VELOCITY
1 B97116AI.V32 Filterclass (180)
.4
.2
0
-.2
-.4
-.6
-.8
-1
-1.2
-1.4
-1.6
-1.8
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

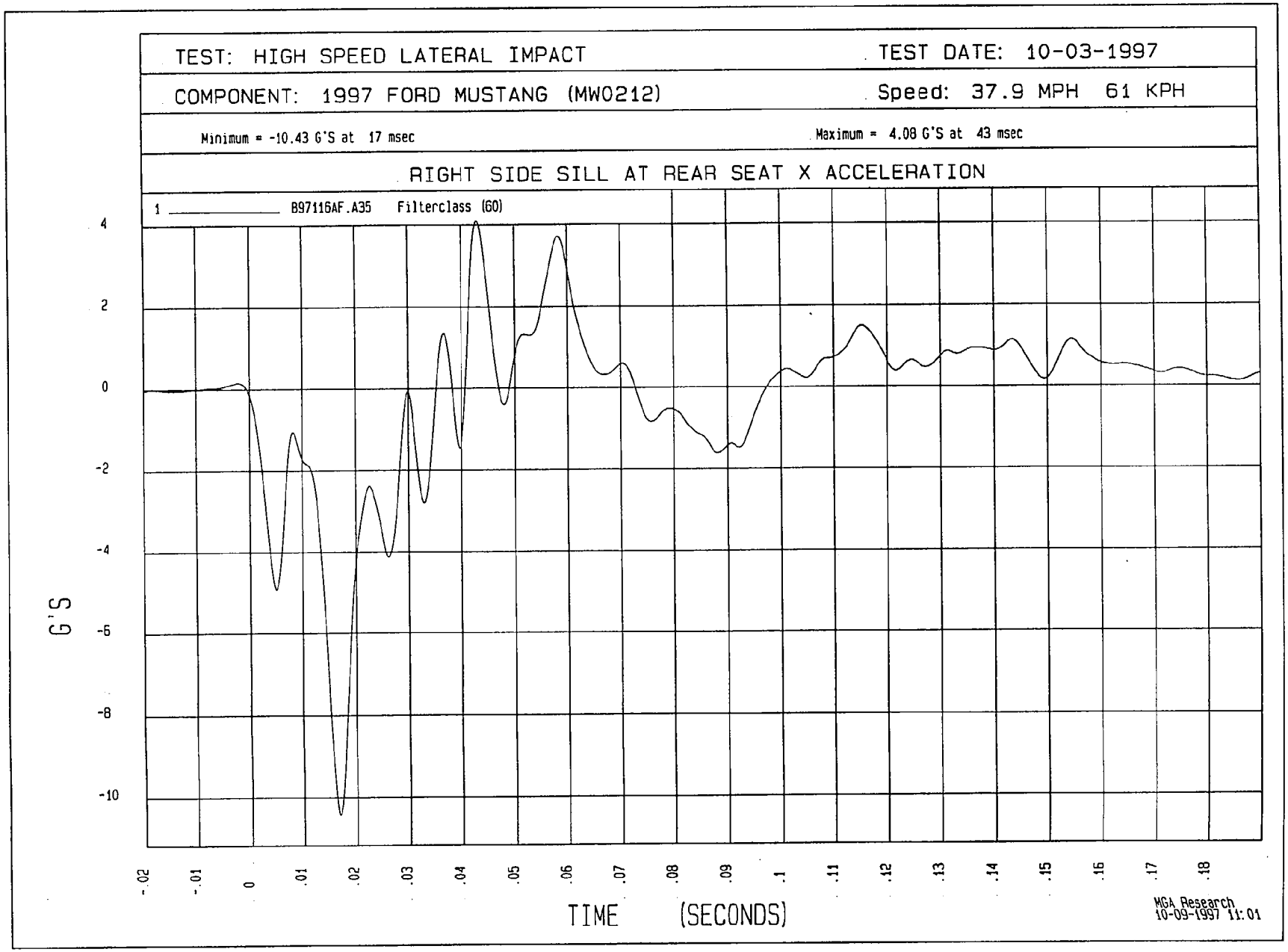

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -5.57 G'S at 62 msec
Maximum = 38.57 G'S at 8 msec
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION
1 B97116AF.A33 Filterclass (60)
40
30
20
10
0
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:00

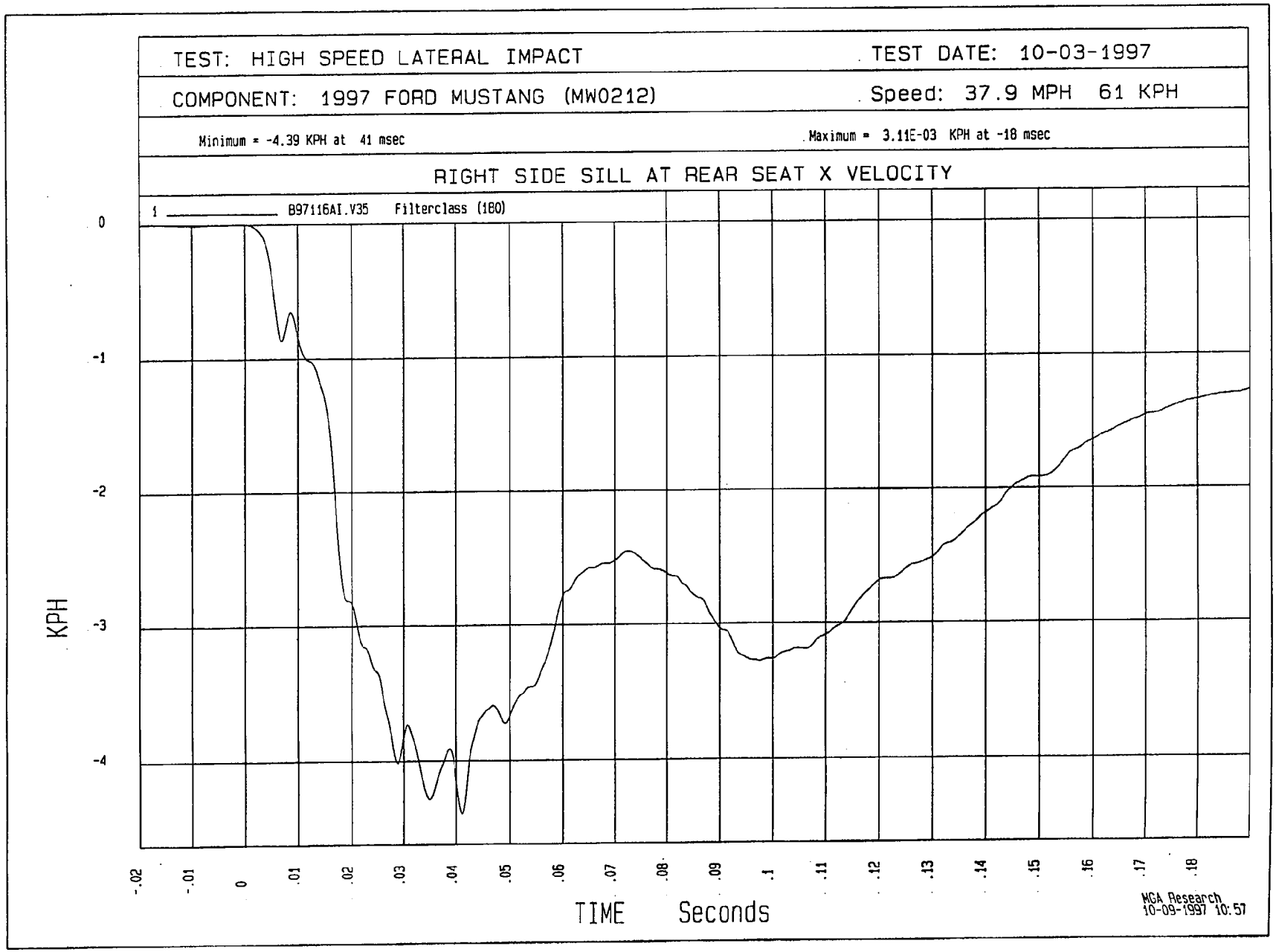

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.02E-03 KPH at -20 msec
Maximum = 27.08 KPH at 101 msec
RIGHT SIDE SILL AT FRONT SEAT Y VELOCITY
1 B97116AI.V33 Filterclass (180)
KPH
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

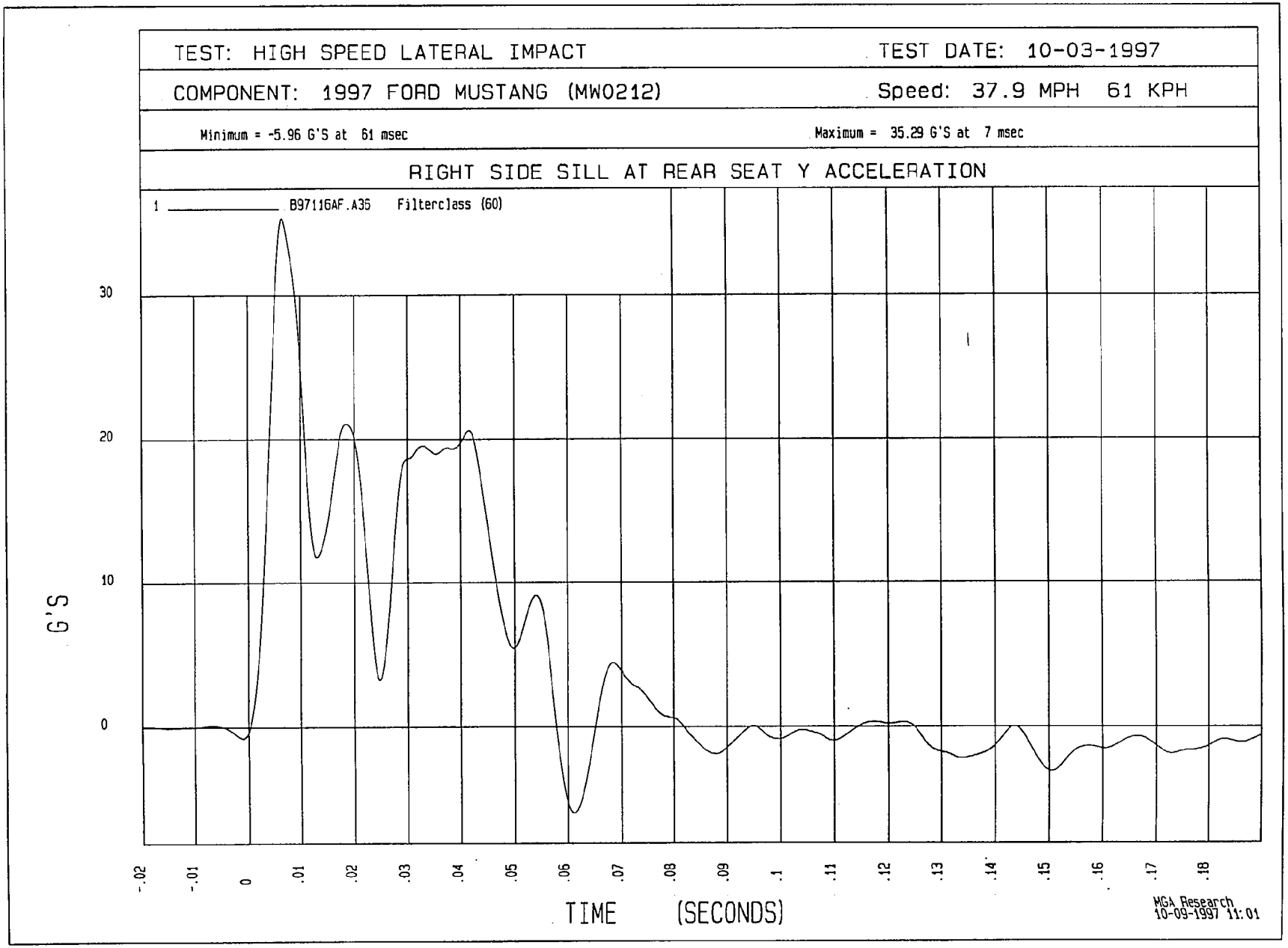

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -14.82 G'S at 9 msec
Maximum = 6.02 G'S at 60 msec
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION
1 B97116AF.A34 Filterclass (60)
G'S
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:00

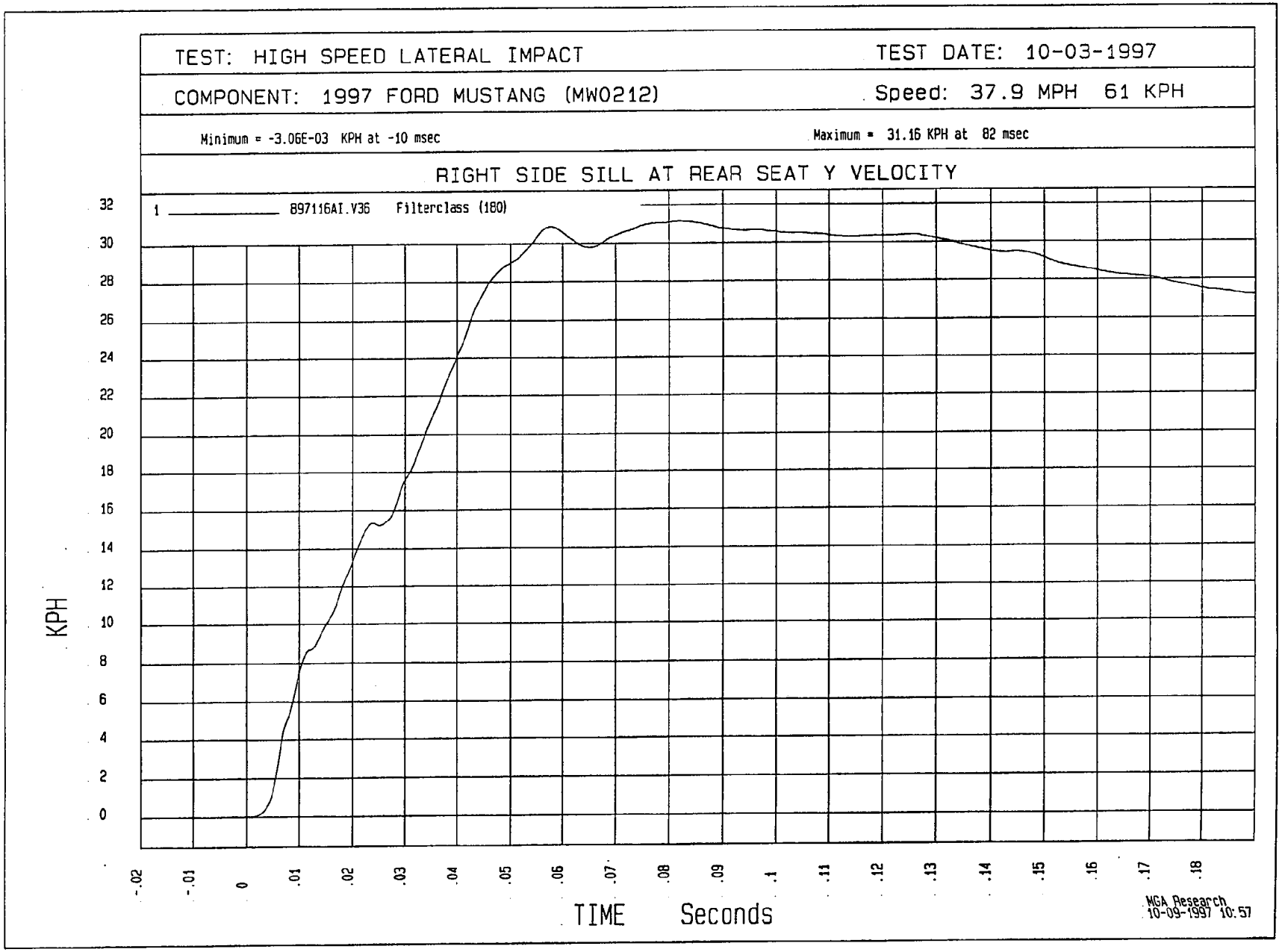

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.12 KPH at 27 msec
Maximum = 5.97 KPH at 185 msec
RIGHT SIDE SILL AT FRONT SEAT Z VELOCITY
1 B97116AI.V34 Filterclass (180)
6
4
2
0
-2
-4
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

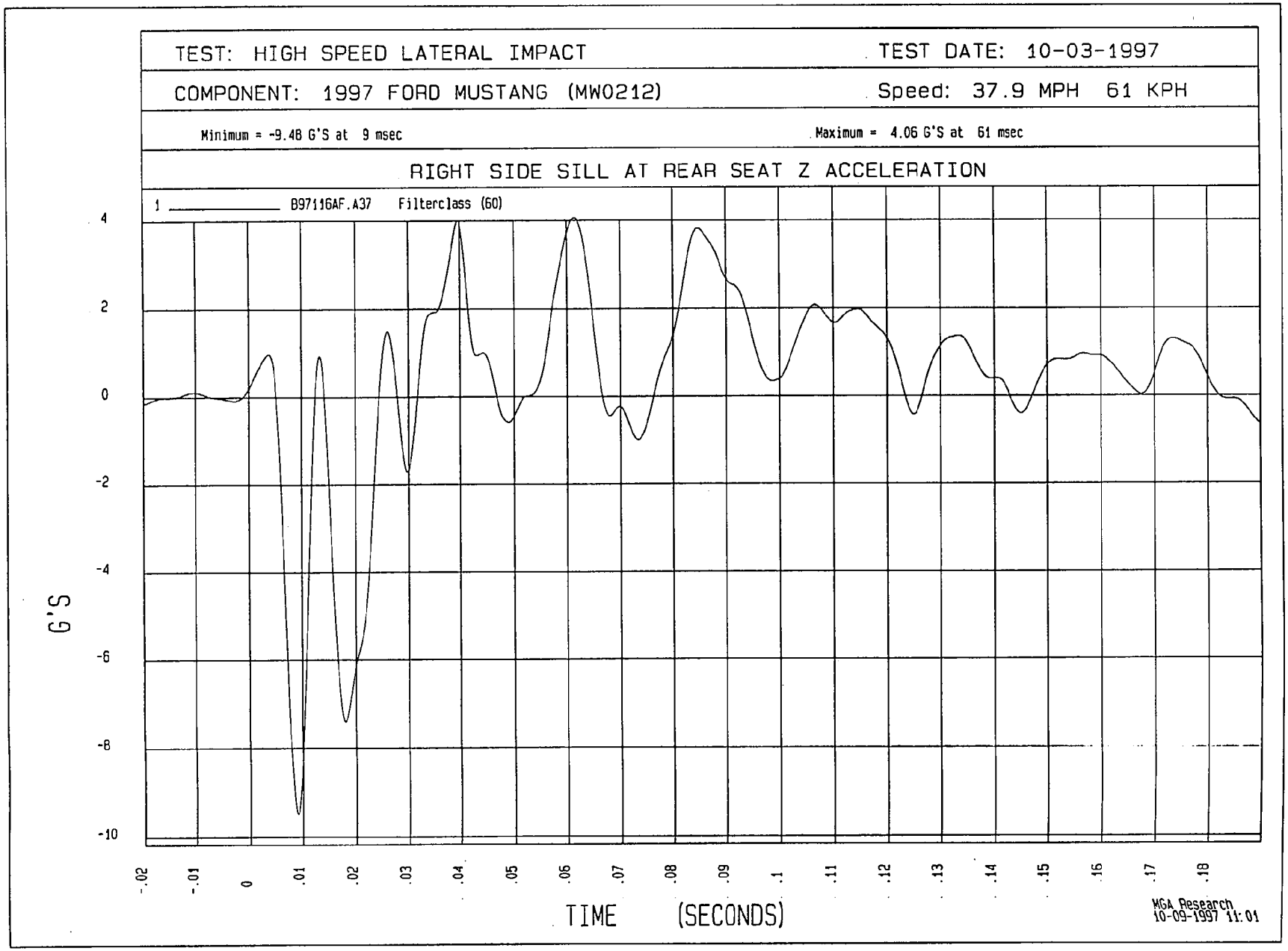

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 1.91E-02 G'S at -19 msec
Maximum = 39.95 G'S at 8 msec
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION
1 B97116AV.A32 Filterclass (60)
40
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:19

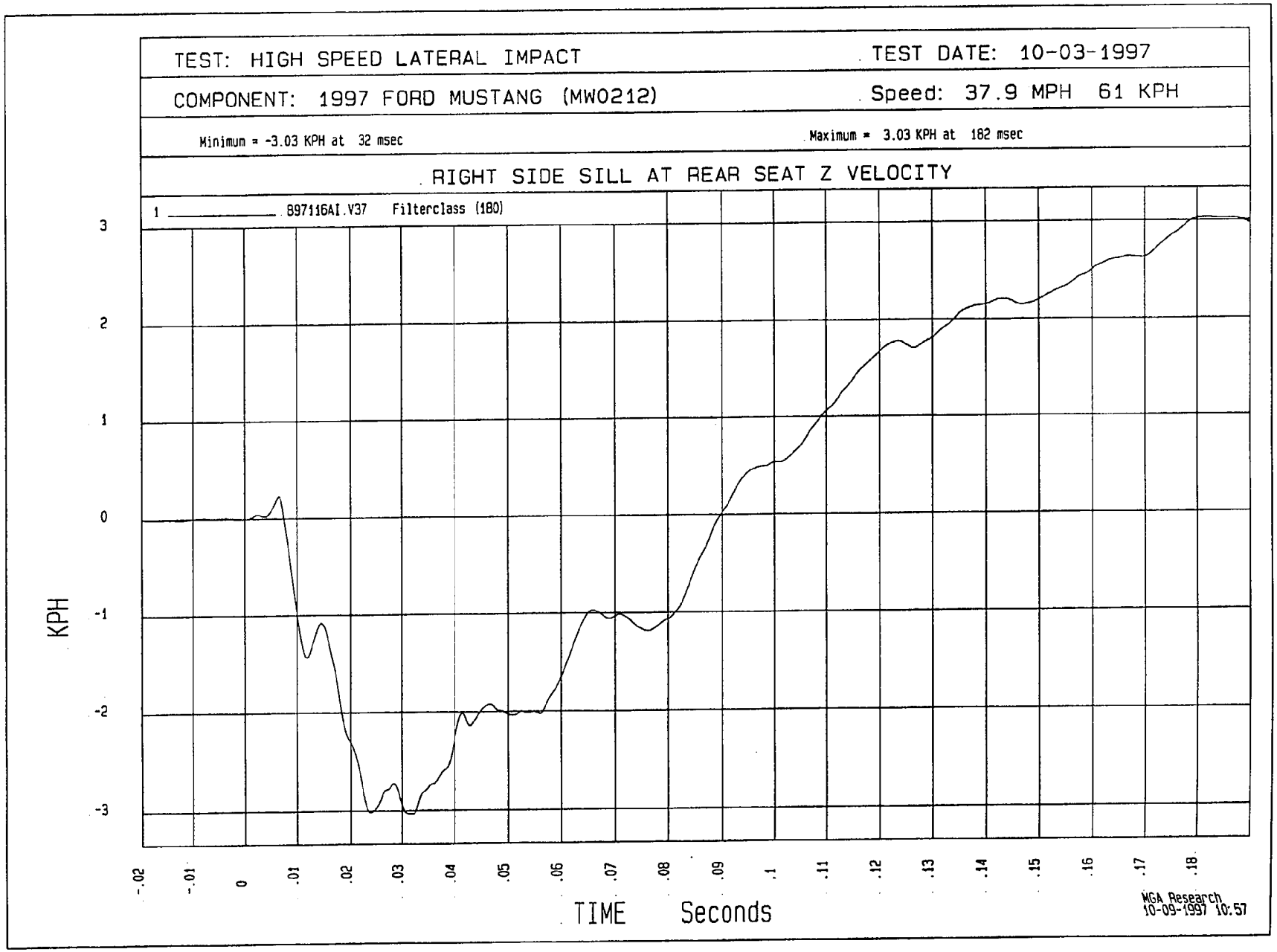

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -10.43 G'S at 17 msec
Maximum = 4.08 G'S at 43 msec
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION
1 B97116AF.A35 Filterclass (60)
4
2
0
-2
-4
-6
-8
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:01

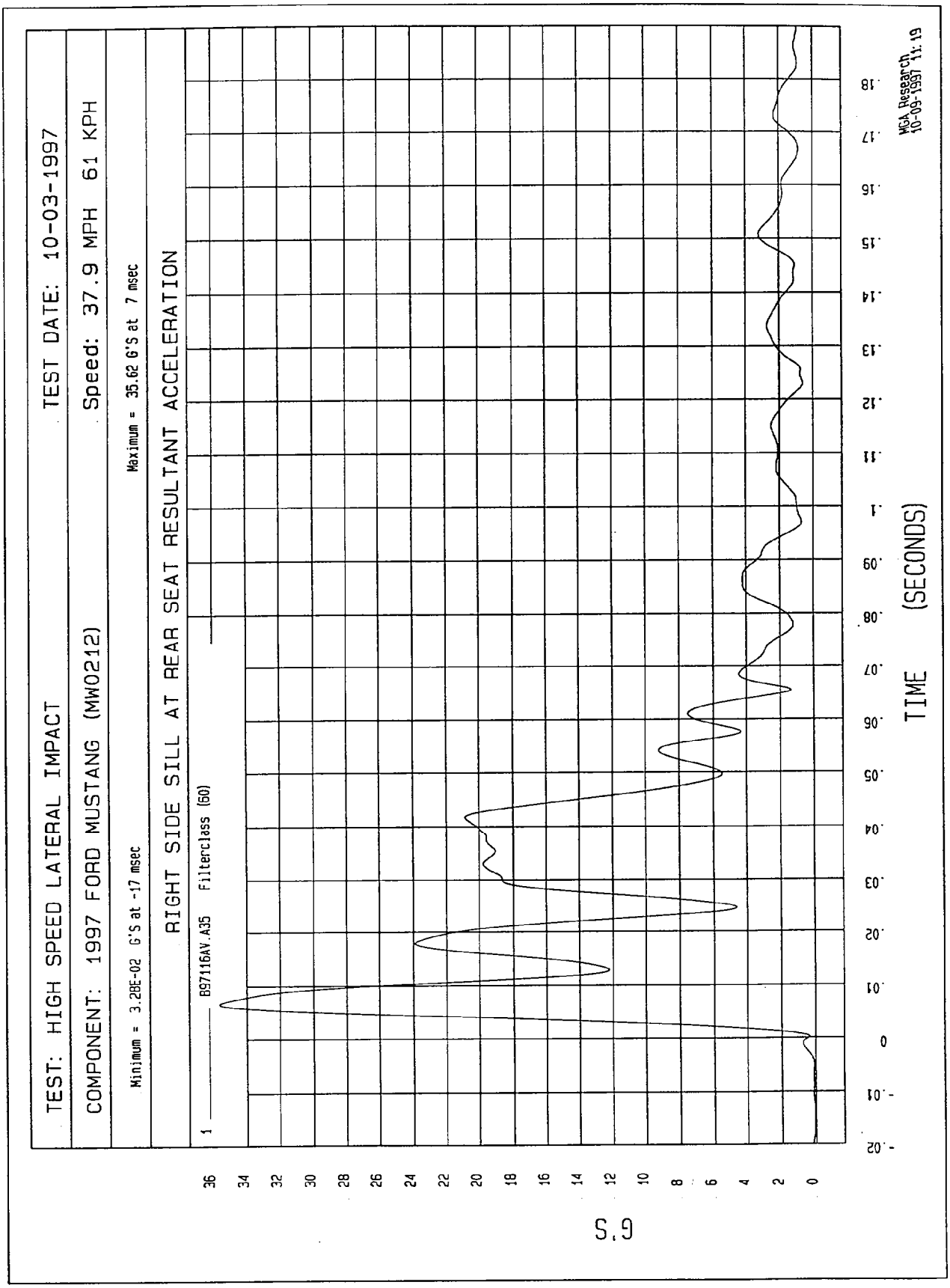

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.39 KPH at 41 msec
Maximum = 3.11E-03 KPH at -18 msec
RIGHT SIDE SILL AT REAR SEAT X VELOCITY
1 B97116AI.V35 Filterclass (180)
KPH
0
-1
-2
-3
-4
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

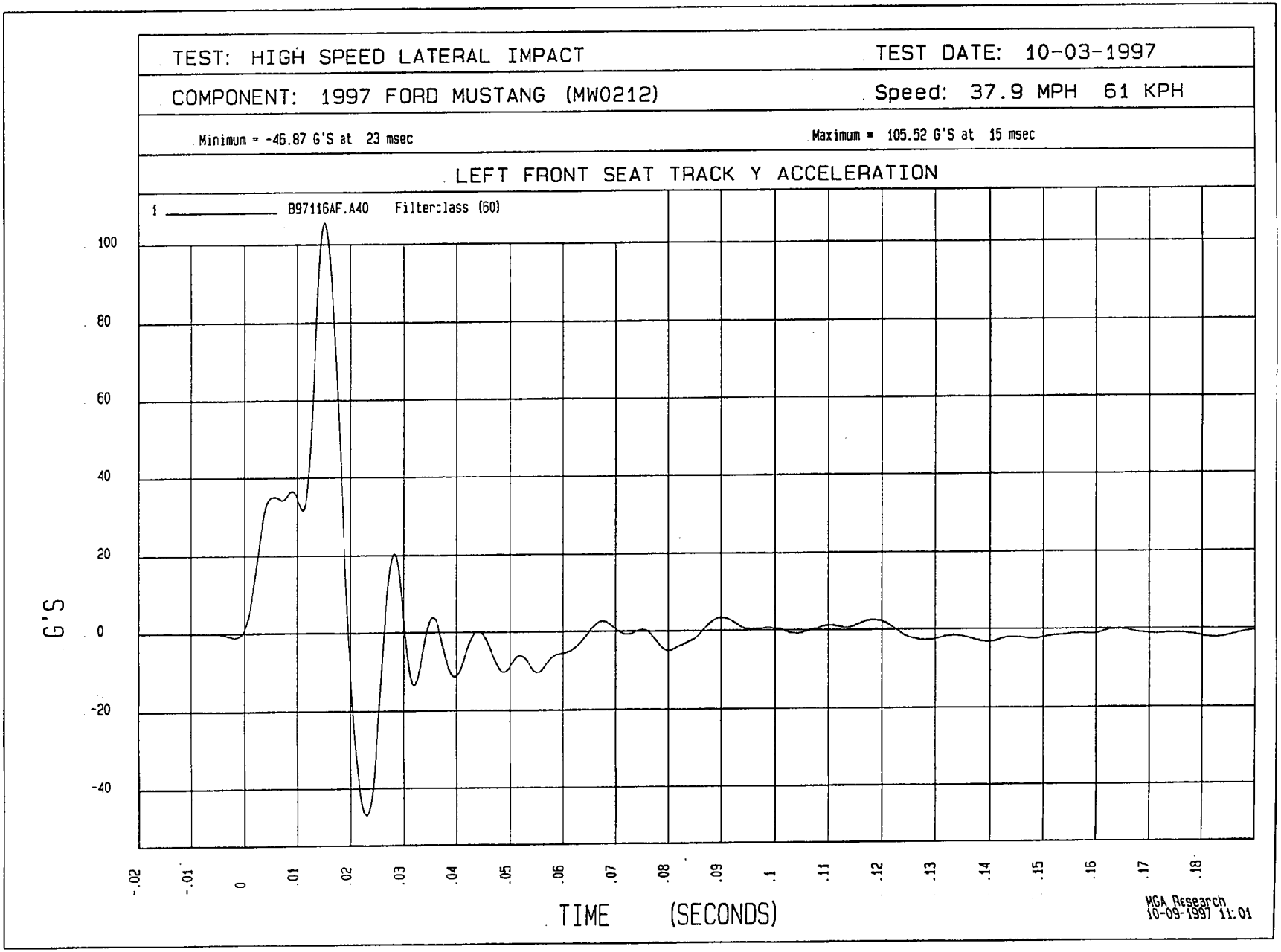

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -5.96 G'S at 61 msec
Maximum = 35.29 G'S at 7 msec
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION
1 B97116AF.A35 Filterclass (60)
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:01

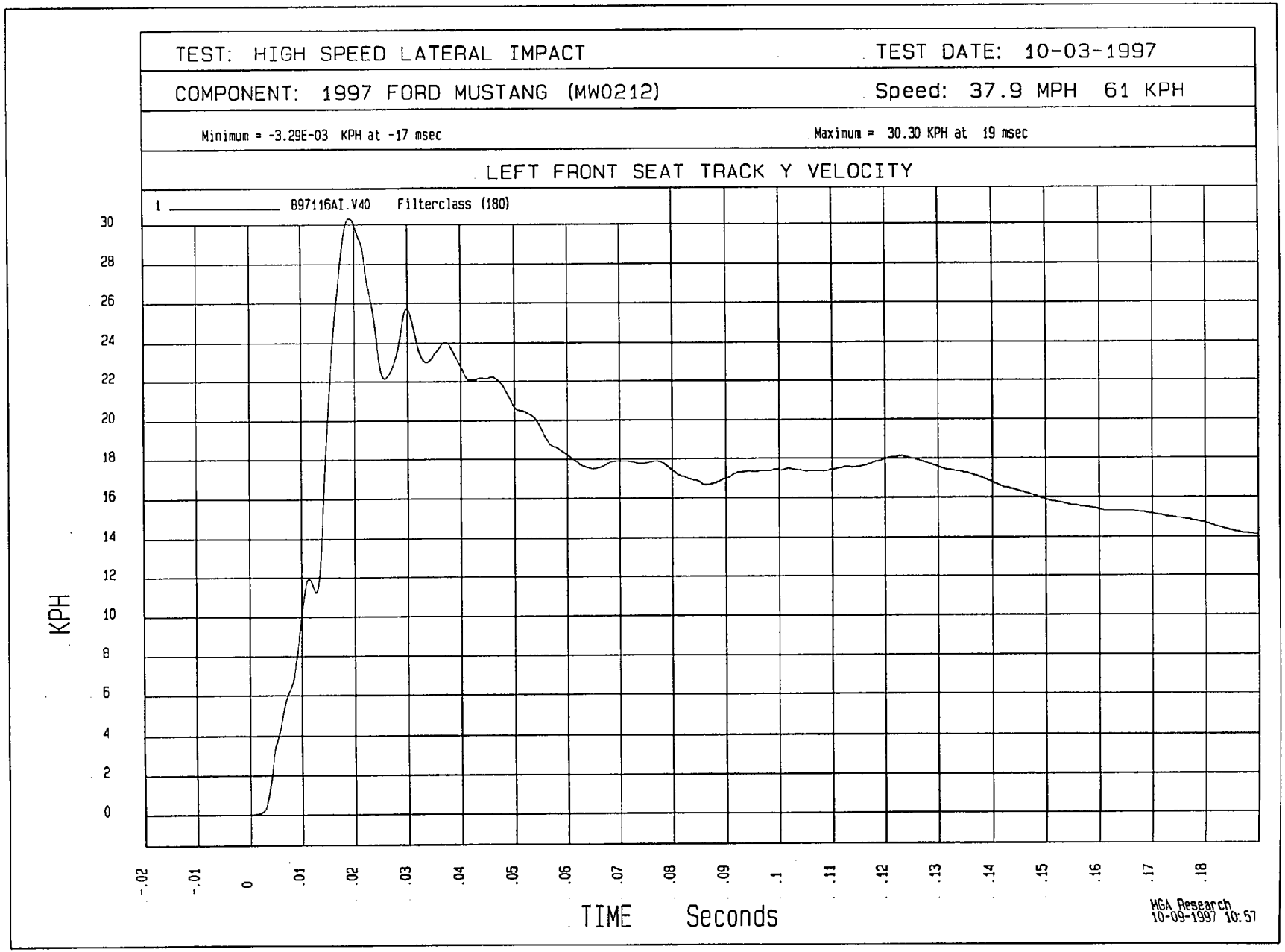

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.06E-03 KPH at -10 msec
Maximum = 31.16 KPH at 82 msec
RIGHT SIDE SILL AT REAR SEAT Y VELOCITY
1 897116AI.V36 Filterclass (180)
KPH
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

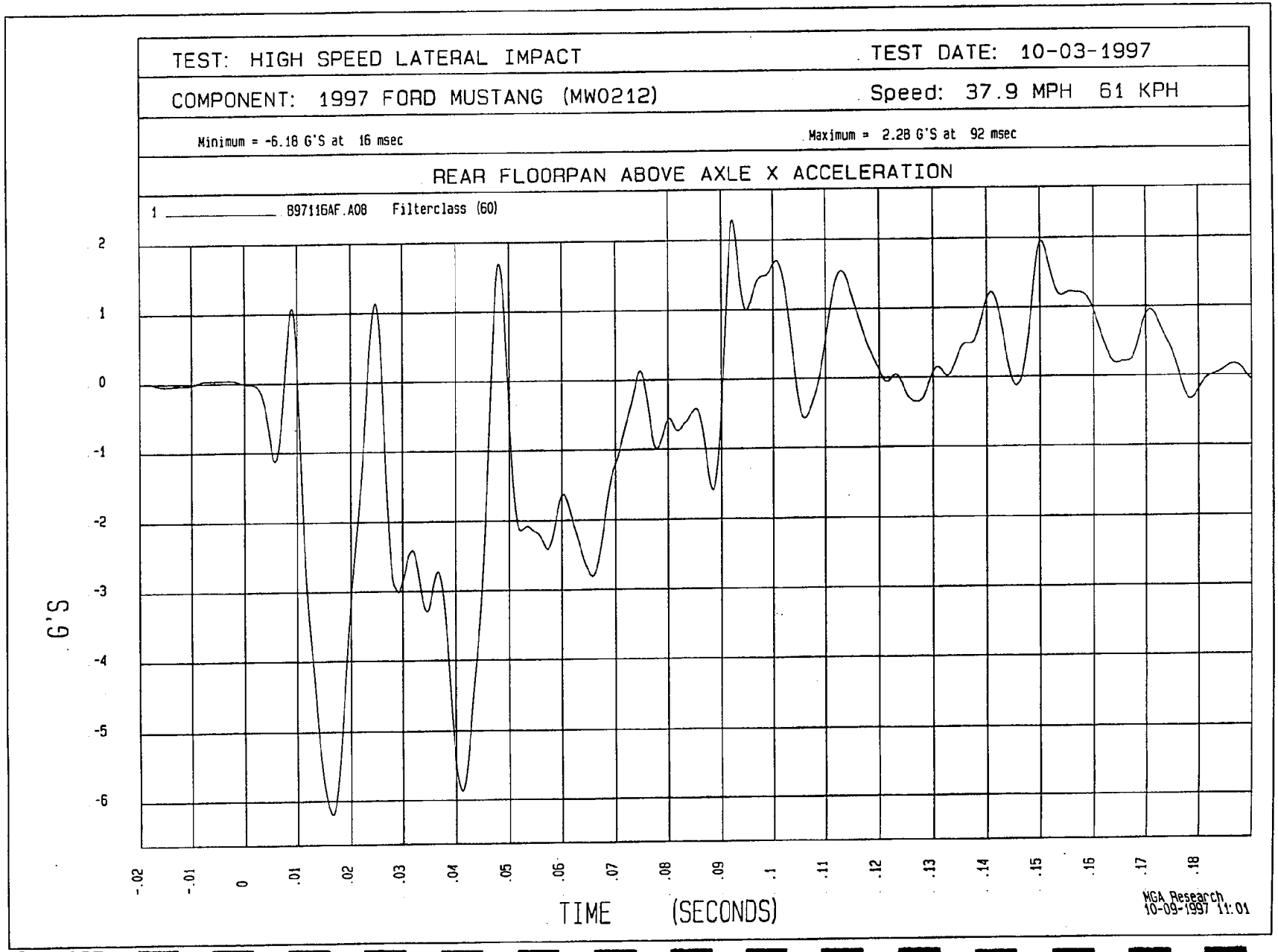

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.48 G'S at 9 msec
Maximum = 4.06 G'S at 61 msec
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION
1 B9711GAF.A37 Filterclass (60)
G'S
4
2
0
-2
-4
-6
-8
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:01

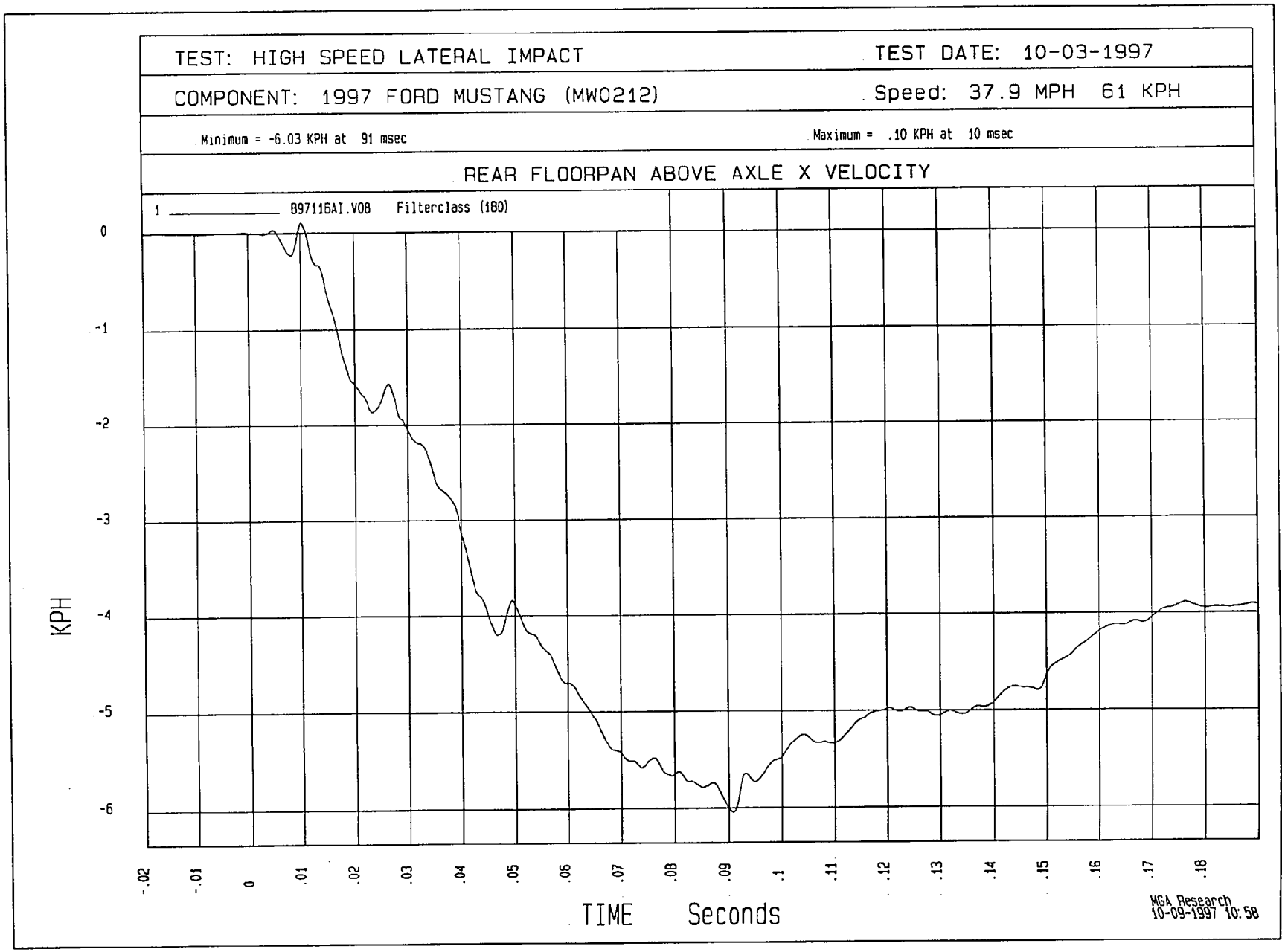

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.03 KPH at 32 msec
Maximum = 3.03 KPH at 182 msec
RIGHT SIDE SILL AT REAR SEAT Z VELOCITY
1 897116AI.V37 Filterclass (180)
KPH
3
2
1
0
-1
-2
-3
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57

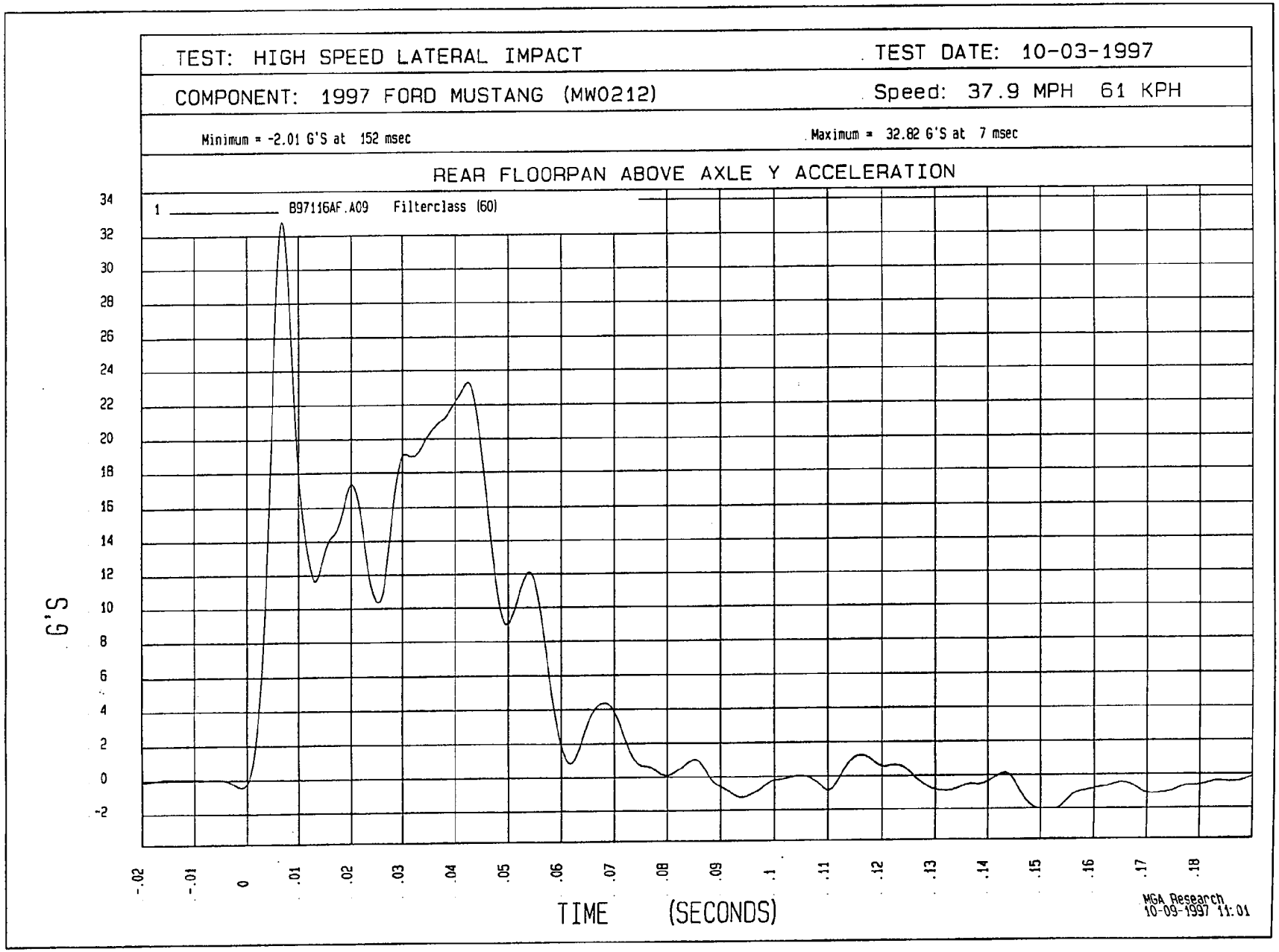

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 3.28E-02 G'S at -17 msec
Maximum = 35.62 G'S at 7 msec
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION
1 B97116AV.A35 Filterclass (60)
TIME (SECONDS)
G's
MGA Research
10-09-1997 11:19


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -46.87 G'S at 23 msec
Maximum = 105.52 G'S at 15 msec
LEFT FRONT SEAT TRACK Y ACCELERATION
1 B97116AF.A40 Filterclass (60)
100
80
60
40
20
0
-20
-40
G's
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:01


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.29E-03 KPH at -17 msec
Maximum = 30.30 KPH at 19 msec
LEFT FRONT SEAT TRACK Y VELOCITY
1 B97116AI.V40 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:57


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.18 G'S at 16 msec
Maximum = 2.28 G'S at 92 msec
REAR FLOORPAN ABOVE AXLE X ACCELERATION
1 B97116AF.A08 Filterclass (60)
G'S
2
1
0
-1
-2
-3
-4
-5
-6
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:01


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.03 KPH at 91 msec
Maximum = .10 KPH at 10 msec
REAR FLOORPAN ABOVE AXLE X VELOCITY
1 B97115AI.V08 Filterclass (180)
KPH
0
-1
-2
-3
-4
-5
-6
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -2.01 G'S at 152 msec
Maximum = 32.82 G'S at 7 msec
REAR FLOORPAN ABOVE AXLE Y ACCELERATION
1 B97116AF.A09 Filterclass (60)
G'S
34
32
30
28
26
24
22
20
18
16
14
12
10
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-.02
-.01
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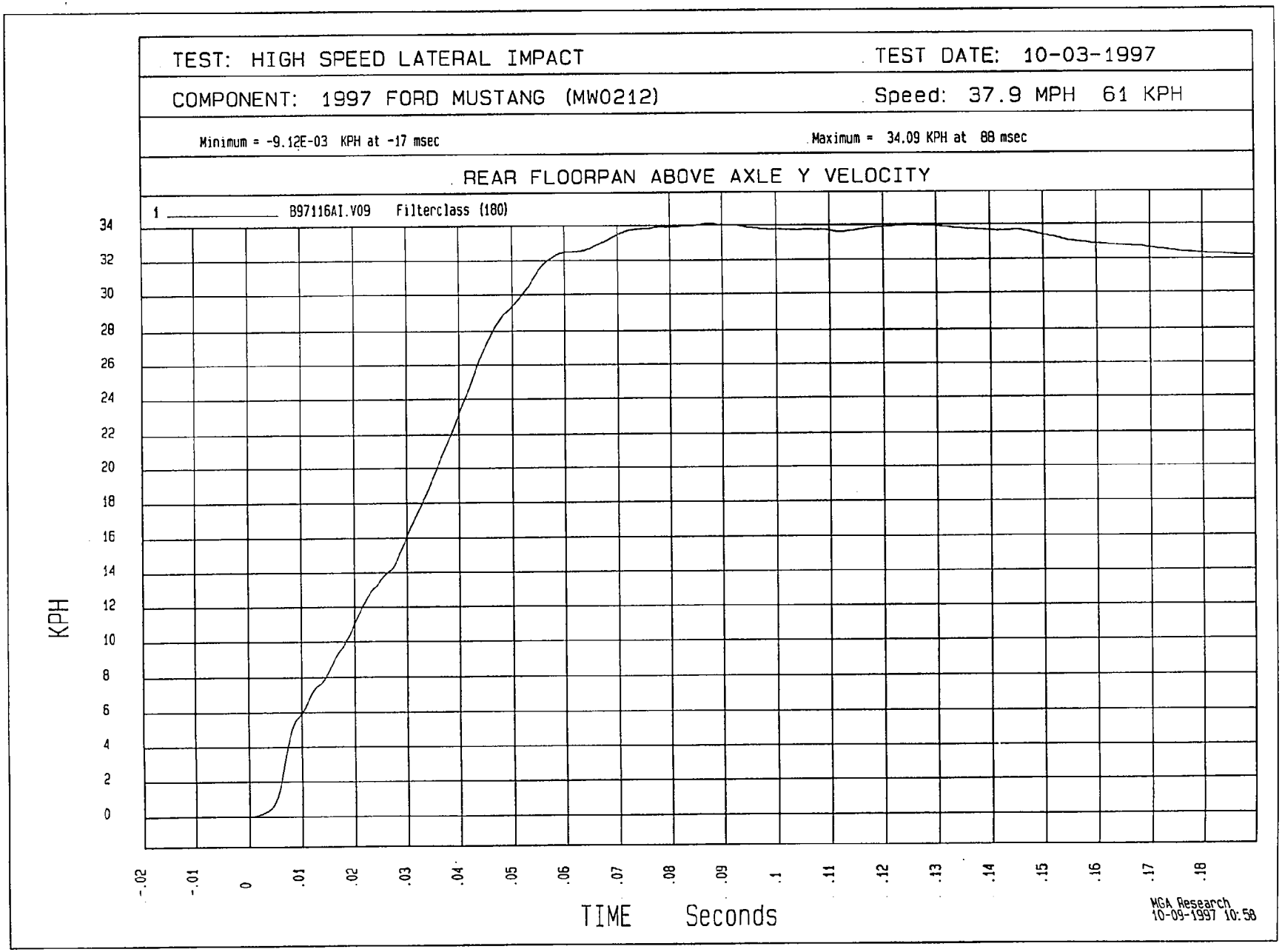
TIME (SECONDS)
MGA Research
10-09-1997 11:01


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.12E-03 KPH at -17 msec
Maximum = 34.09 KPH at 88 msec
REAR FLOORPAN ABOVE AXLE Y VELOCITY
1 B97116AI.V09 Filterclass (180)
KPH
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
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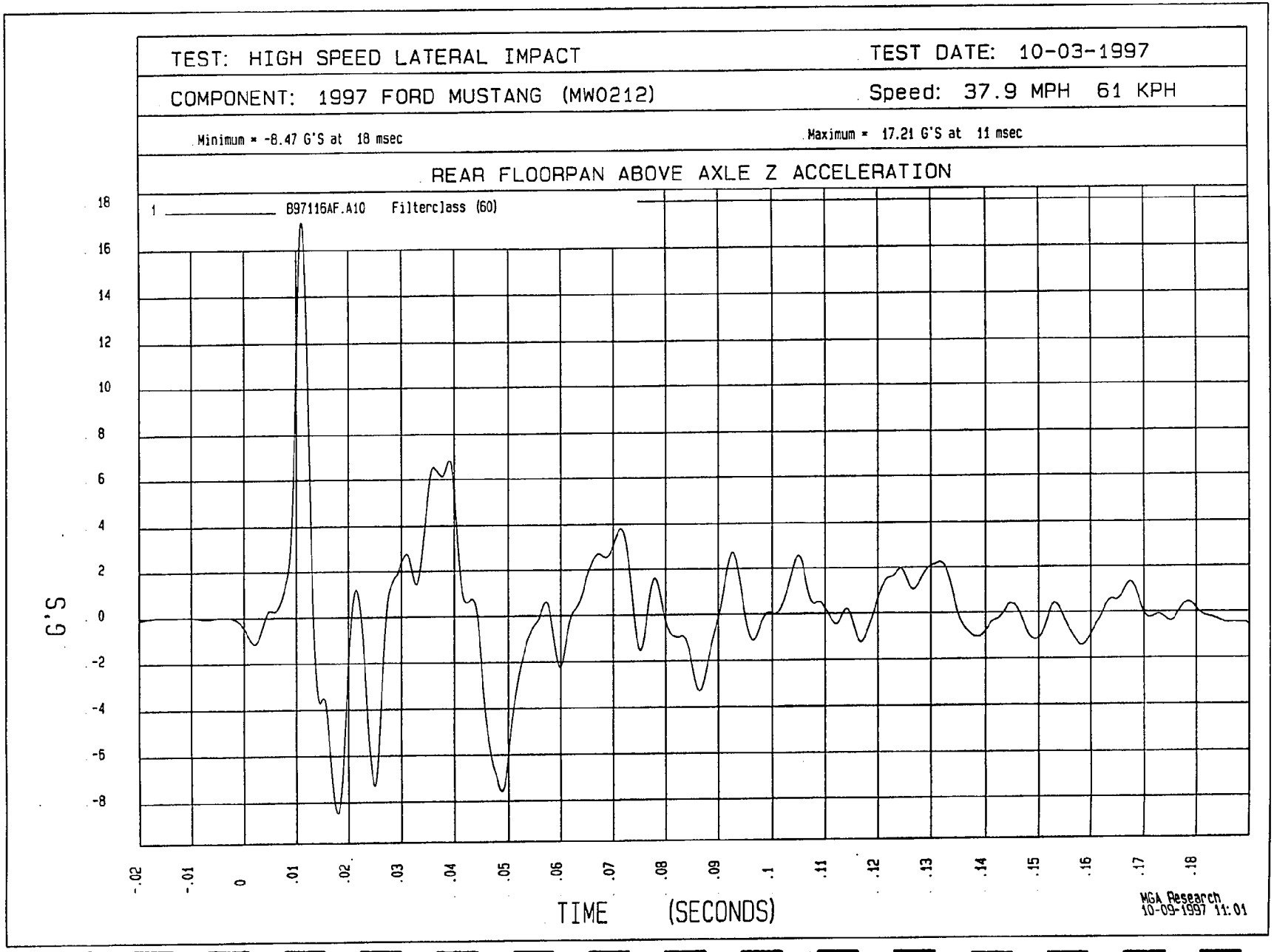
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -8.47 G'S at 18 msec
Maximum = 17.21 G'S at 11 msec
REAR FLOORPAN ABOVE AXLE Z ACCELERATION
1 B97116AF.A10 Filterclass (60)
G'S
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-.02
-.01
0
.01
.02
.03
.04
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.11
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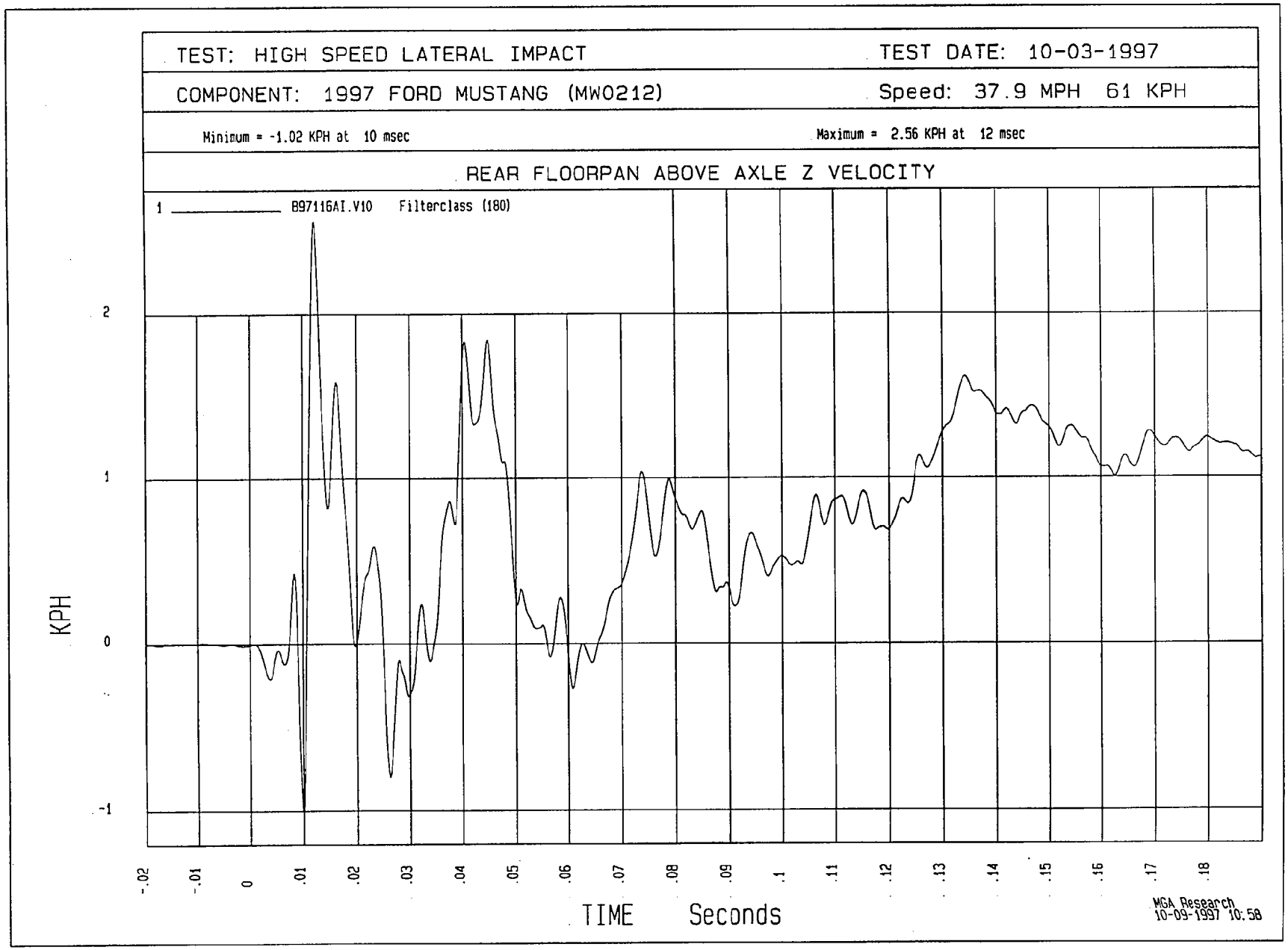
TIME (SECONDS)
MGA Research
10-09-1997 11:01


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.02 KPH at 10 msec
Maximum = 2.56 KPH at 12 msec
REAR FLOORPAN ABOVE AXLE Z VELOCITY
1 B97116AI.V10 Filterclass (180)
KPH
2
1
0
-1
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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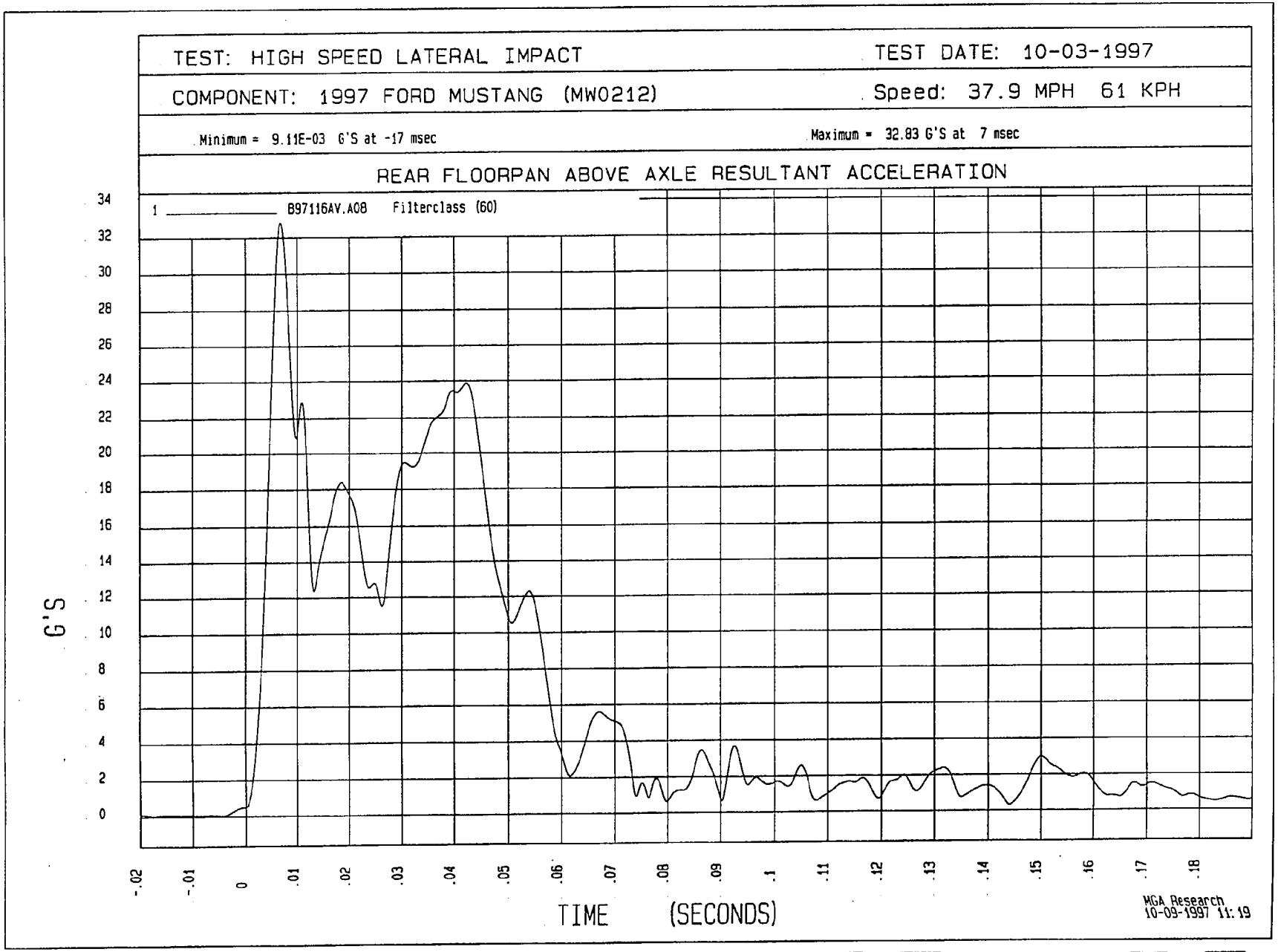
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 9.11E-03 G'S at -17 msec
Maximum = 32.83 G'S at 7 msec
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION
1 B97116AV.A08 Filterclass (60)
G'S
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
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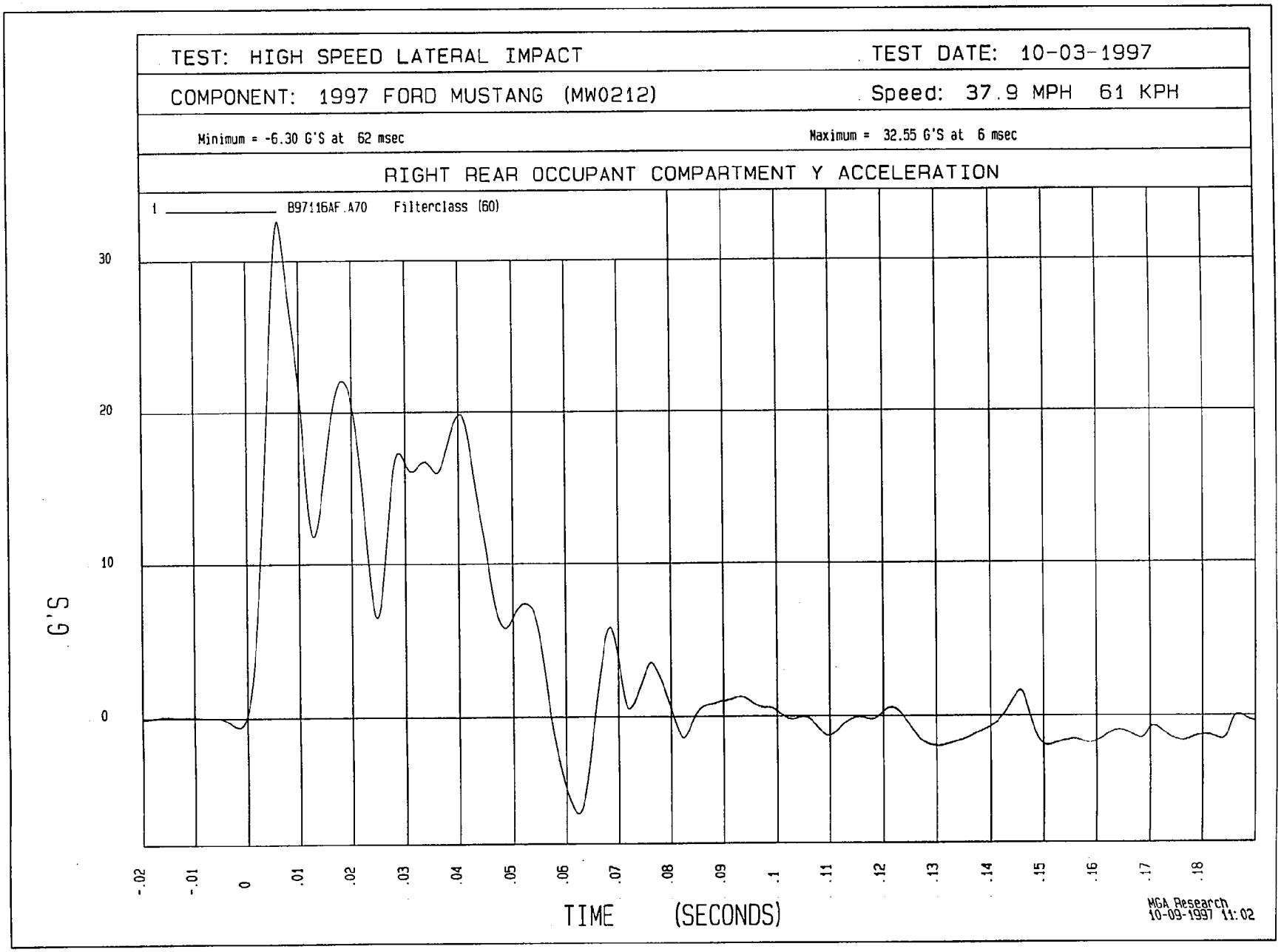
TIME (SECONDS)
MGA Research
10-09-1997 11:19


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.30 G'S at 62 msec
Maximum = 32.55 G'S at 6 msec
RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION
1 B97116AF.A70 Filterclass (60)
30
20
10
0
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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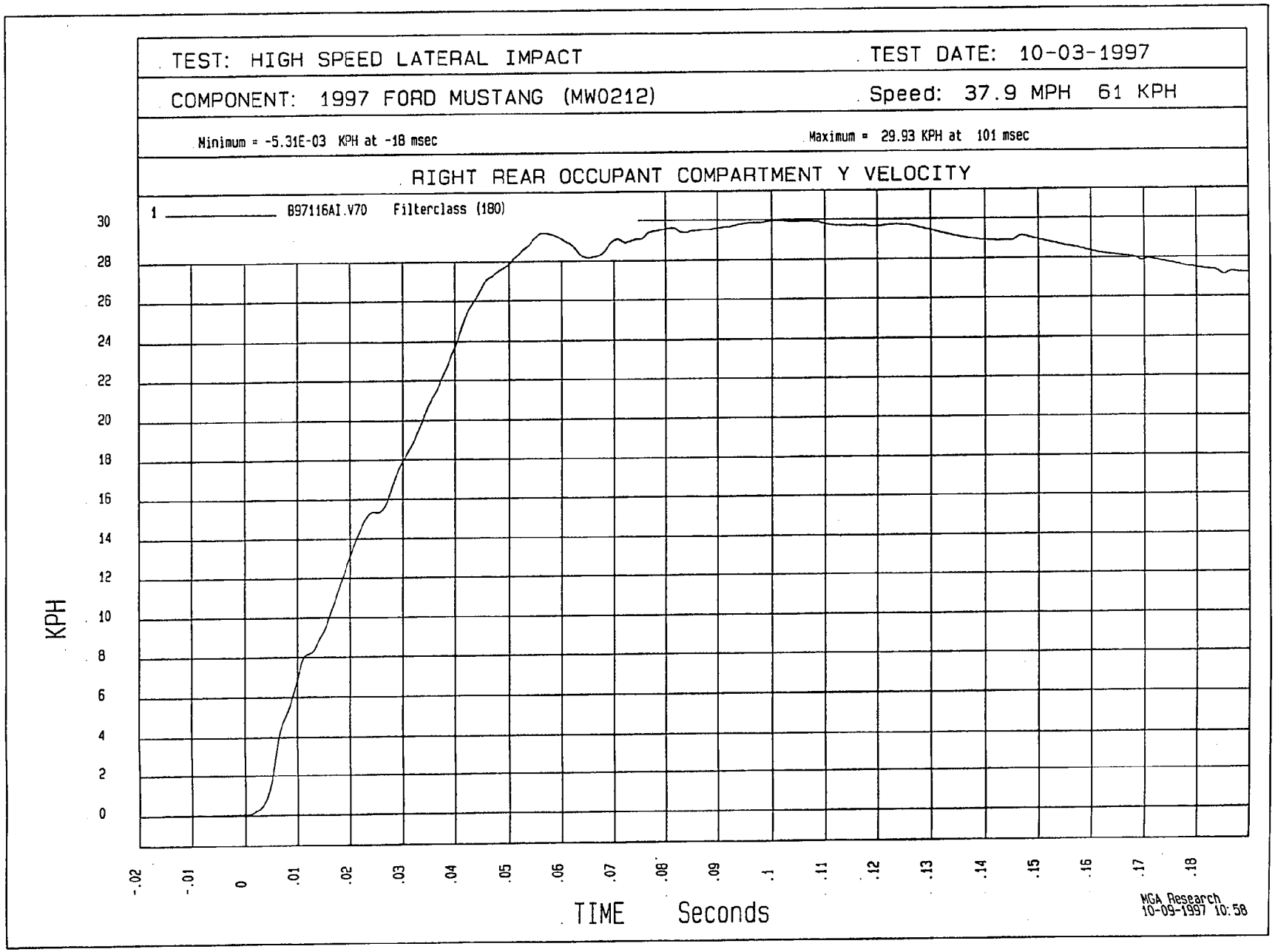
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:02


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -5.31E-03 KPH at -18 msec
Maximum = 29.93 KPH at 101 msec
RIGHT REAR OCCUPANT COMPARTMENT Y VELOCITY
1 B97116AI.V70 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
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.04
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.11
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.13
.14
.15
.16
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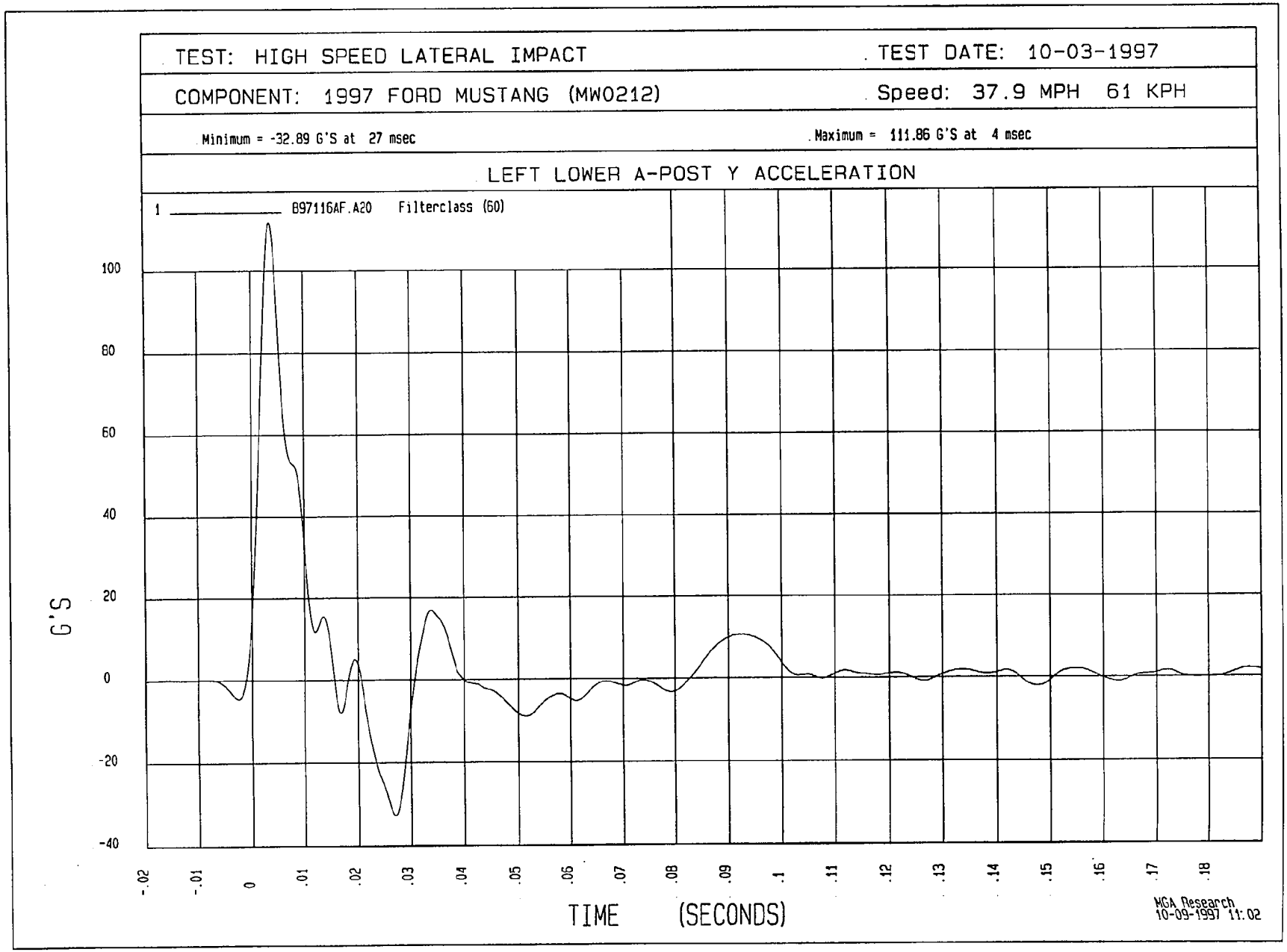
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -32.89 G'S at 27 msec
Maximum = 111.86 G'S at 4 msec
LEFT LOWER A-POST Y ACCELERATION
1 B97116AF.A20 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
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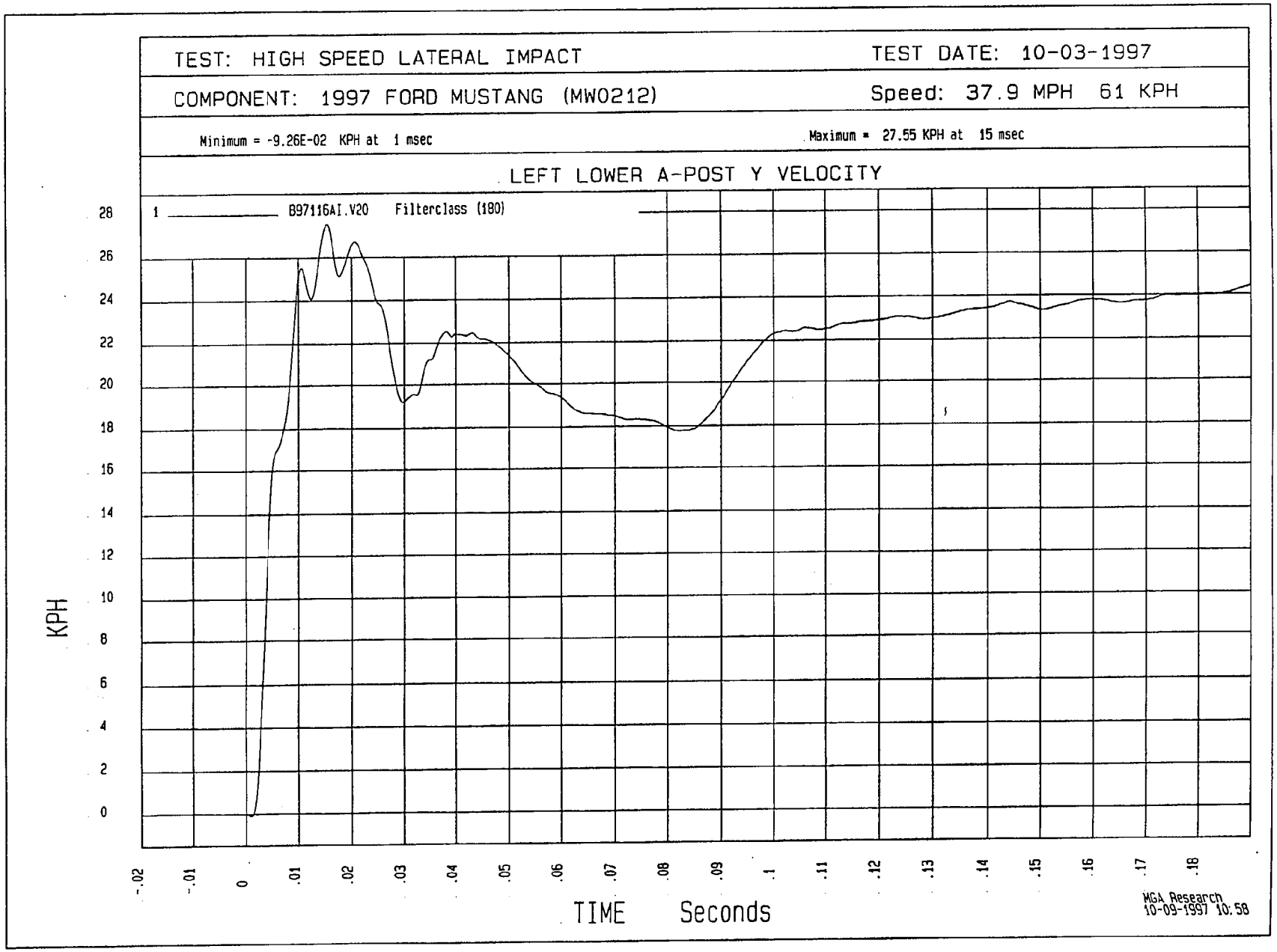
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:02


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.26E-02 KPH at 1 msec
Maximum = 27.55 KPH at 15 msec
LEFT LOWER A-POST Y VELOCITY
1 B97116AI.V20 Filterclass (180)
KPH
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
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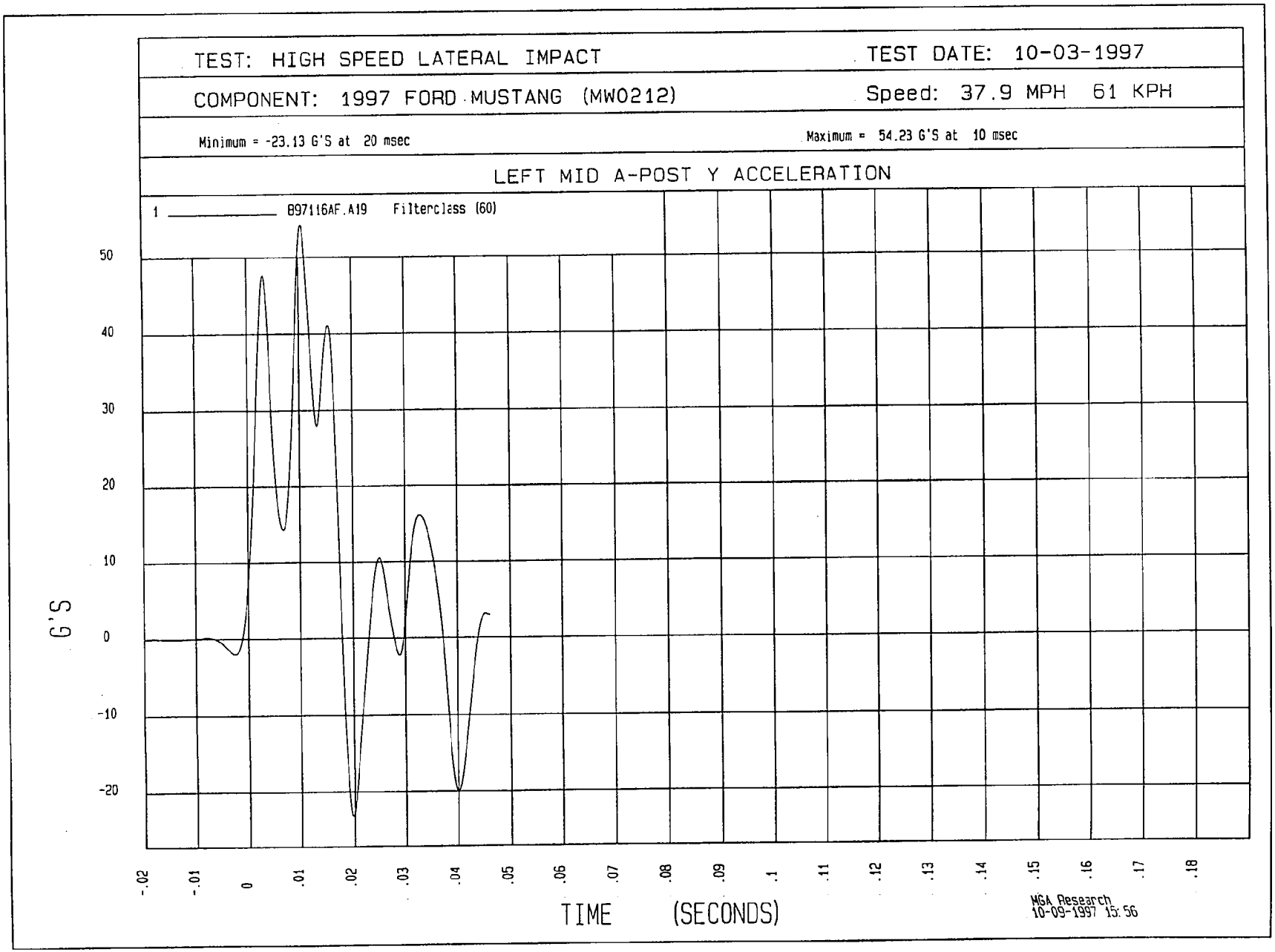
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -23.13 G'S at 20 msec
Maximum = 54.23 G'S at 10 msec
LEFT MID A-POST Y ACCELERATION
1 B97116AF.A19 Filterclass (60)
50
40
30
20
10
0
-10
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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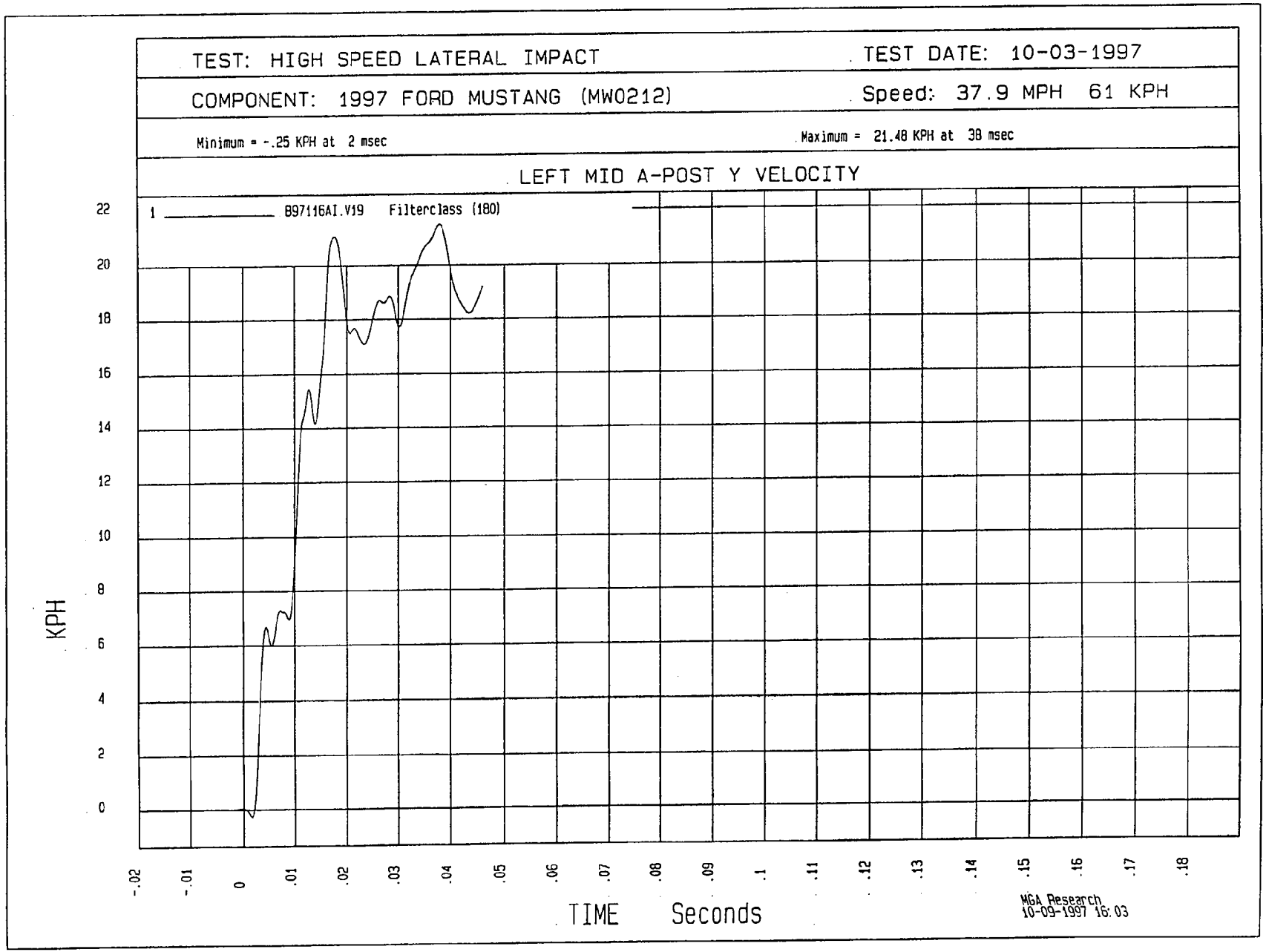
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 15:56


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.25 KPH at 2 msec
Maximum = 21.48 KPH at 38 msec
LEFT MID A-POST Y VELOCITY
1 B97116AI.V19 Filterclass (180)
KPH
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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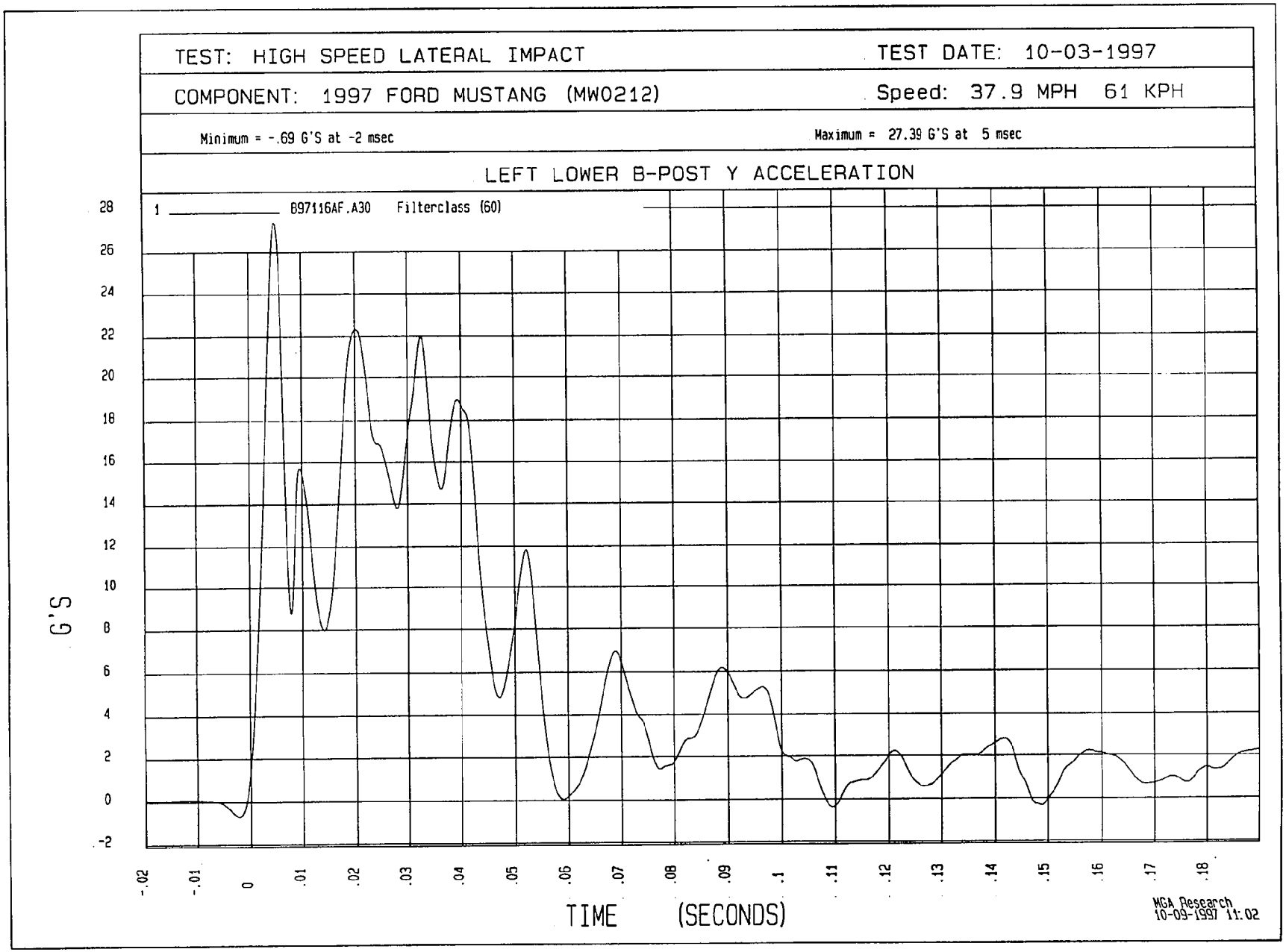
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 16:03


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.69 G'S at -2 msec
Maximum = 27.39 G'S at 5 msec
LEFT LOWER B-POST Y ACCELERATION
1 B97116AF.A30 Filterclass (60)
G'S
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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.1
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.13
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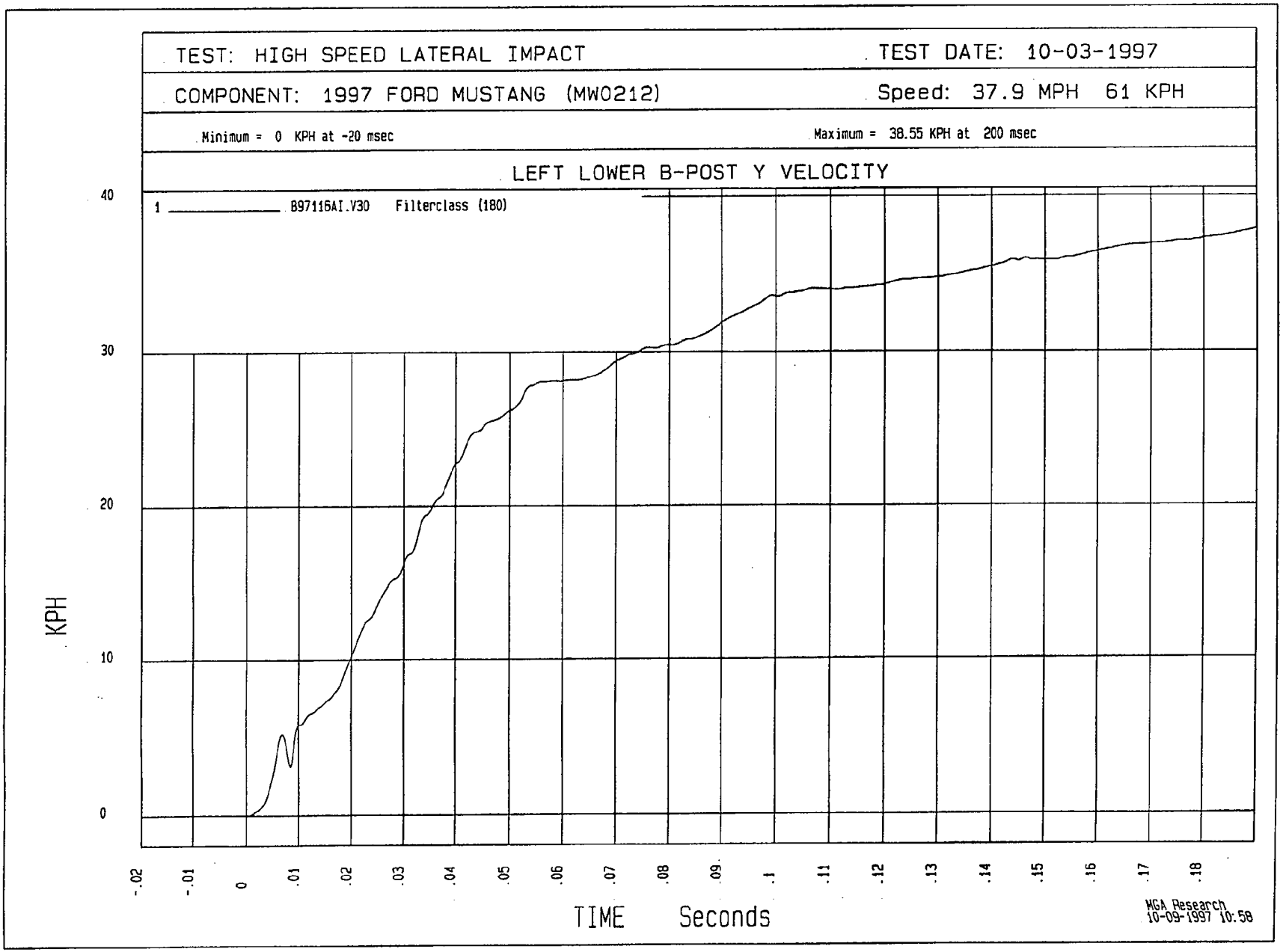
TIME (SECONDS)
MGA Research
10-09-1997 11:02


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 0 KPH at -20 msec
Maximum = 38.55 KPH at 200 msec
LEFT LOWER B-POST Y VELOCITY
1 B97116AI.V30 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
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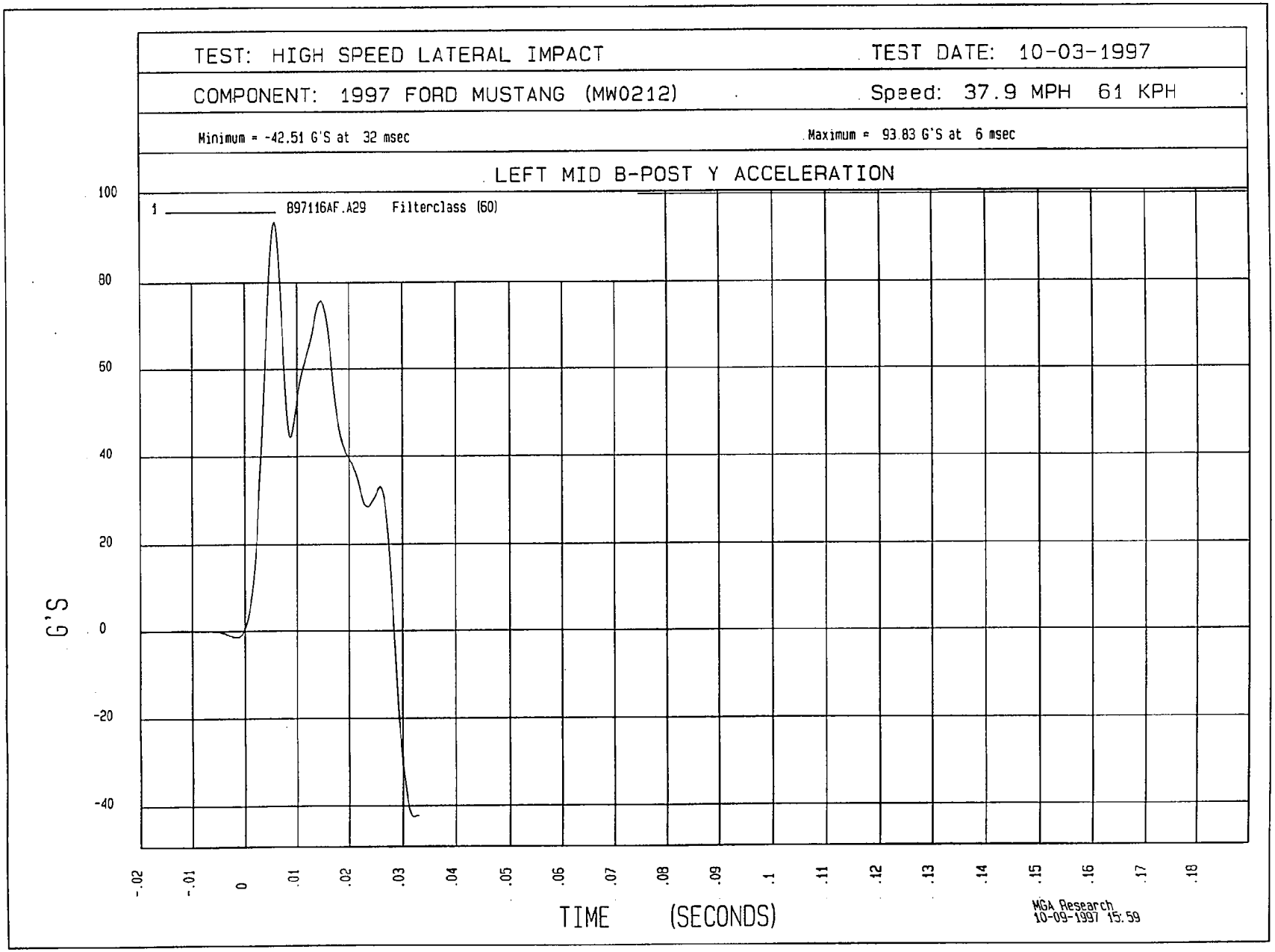
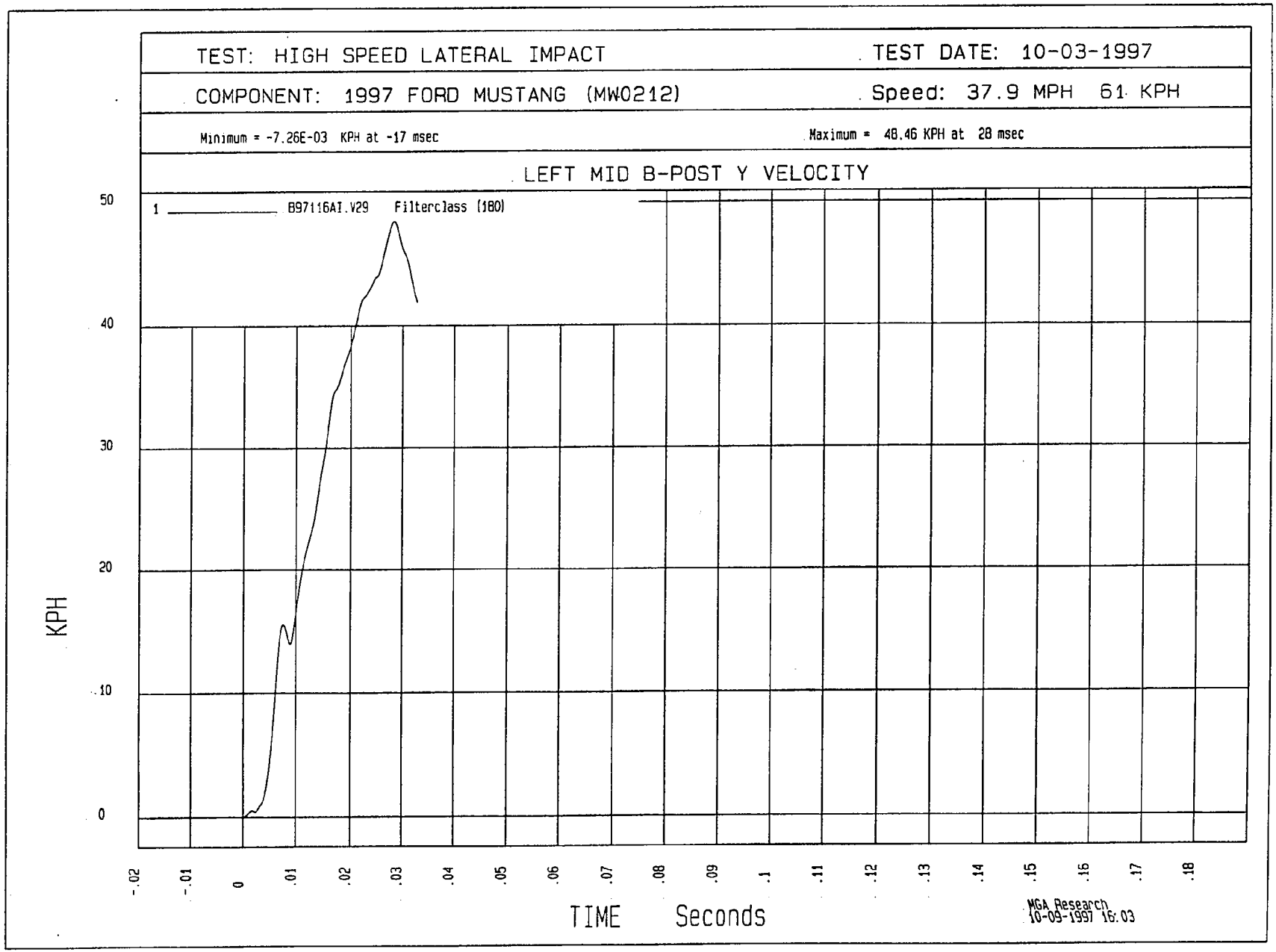
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -42.51 G'S at 32 msec
Maximum = 93.83 G'S at 6 msec
LEFT MID B-POST Y ACCELERATION
1 B97116AF.A29 Filterclass (60)
100
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 15:59


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -7.26E-03 KPH at -17 msec
Maximum = 48.46 KPH at 28 msec
LEFT MID B-POST Y VELOCITY
1 B97116AI.V29 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
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.13
.14
.15
.16
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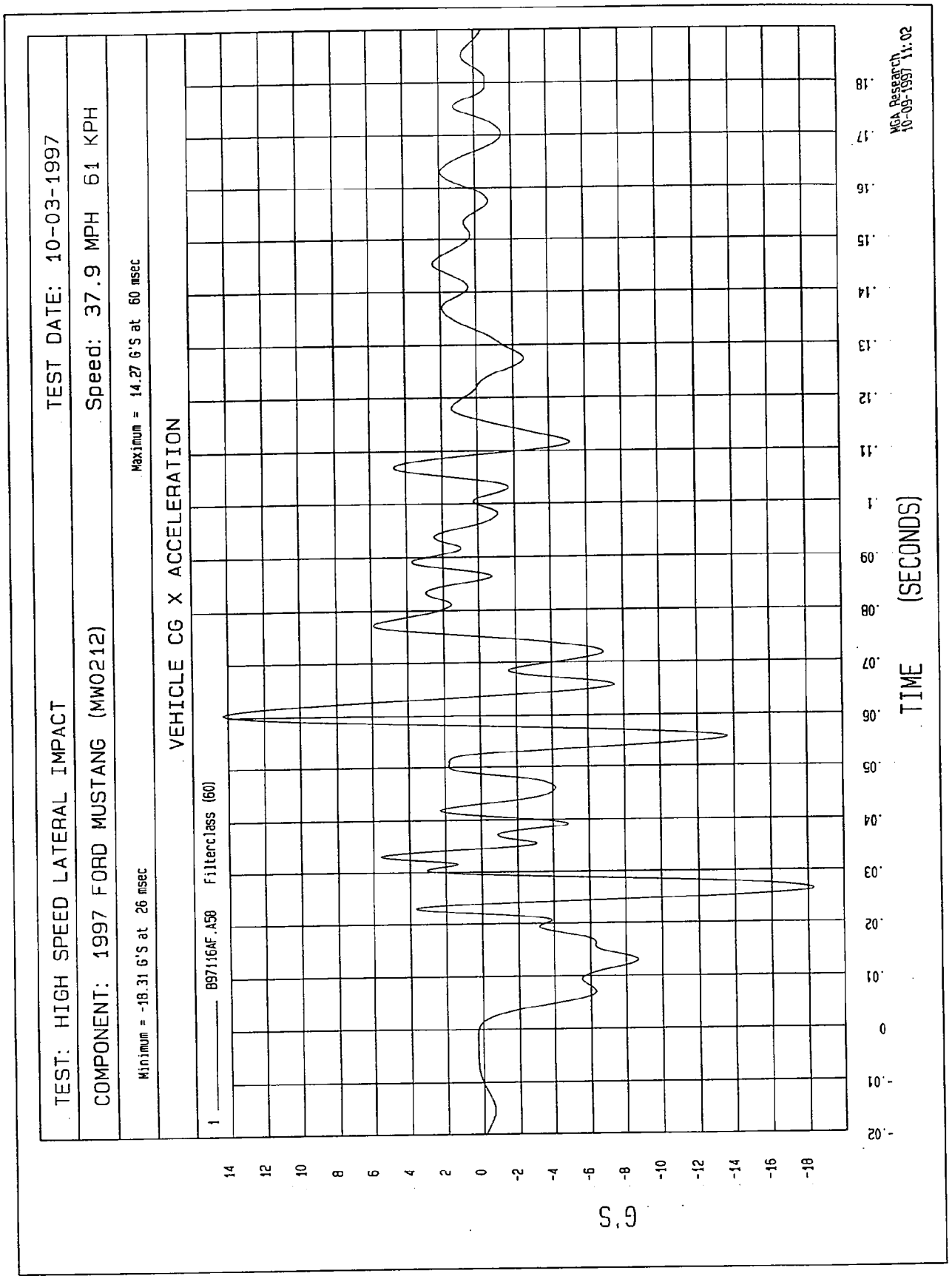
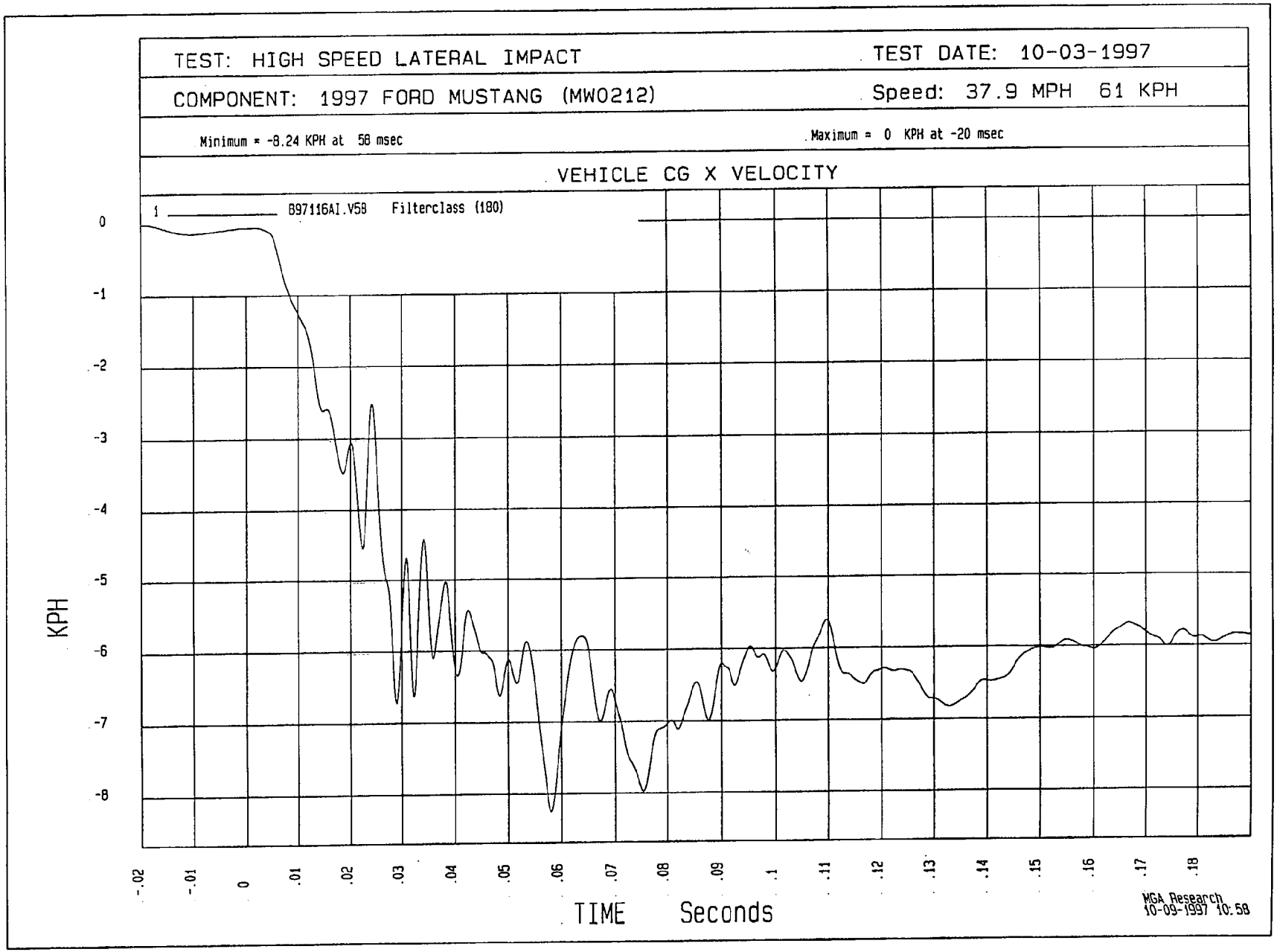
.18
TIME Seconds
MGA Research
10-09-1997 16:03


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -18.31 G'S at 26 msec
Maximum = 14.27 G'S at 60 msec
VEHICLE CG X ACCELERATION
1 B97116AF.A50 Filterclass (60)
MGA Research
10-09-1997 11:02
TIME (SECONDS)
G'S


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -8.24 KPH at 58 msec
Maximum = 0 KPH at -20 msec
VEHICLE CG X VELOCITY
1 B97116AI.V58 Filterclass (180)
KPH
0
-1
-2
-3
-4
-5
-6
-7
-8
-.02
-.01
0
.01
.02
.03
.04
.05
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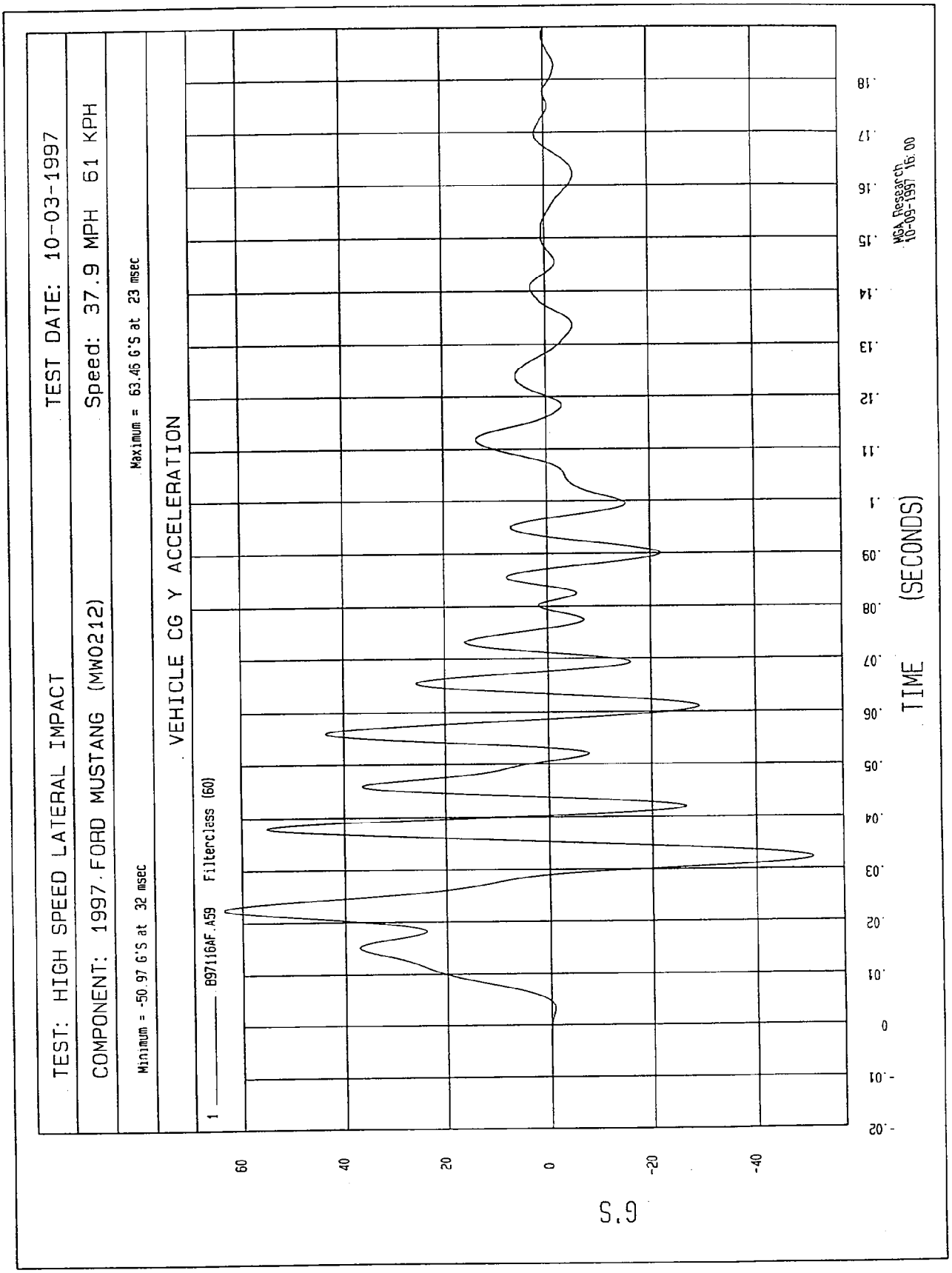
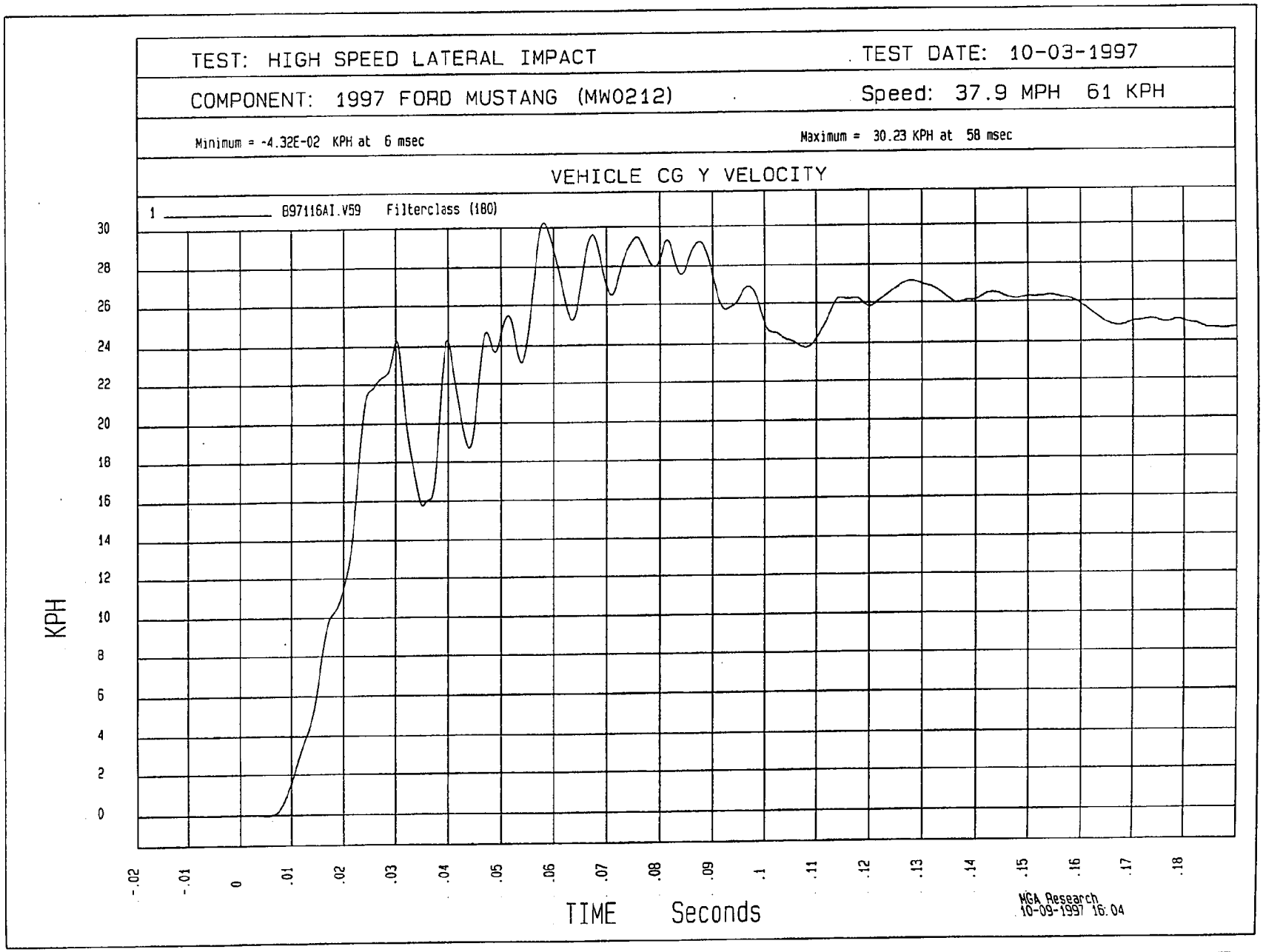
TIME Seconds
MGA Research
10-09-1997 10:58


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997.FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -50.97 G'S at 32 msec
Maximum = 63.45 G'S at 23 msec
VEHICLE CG Y ACCELERATION
1 B97116AF.A59 Filterclass (60)
60
40
20
0
-20
-40
G'S
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
10-03-1997 16:00


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.32E-02 KPH at 6 msec
Maximum = 30.23 KPH at 58 msec
VEHICLE CG Y VELOCITY
1 B97116AI.V59 Filterclass (180)
KPH
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
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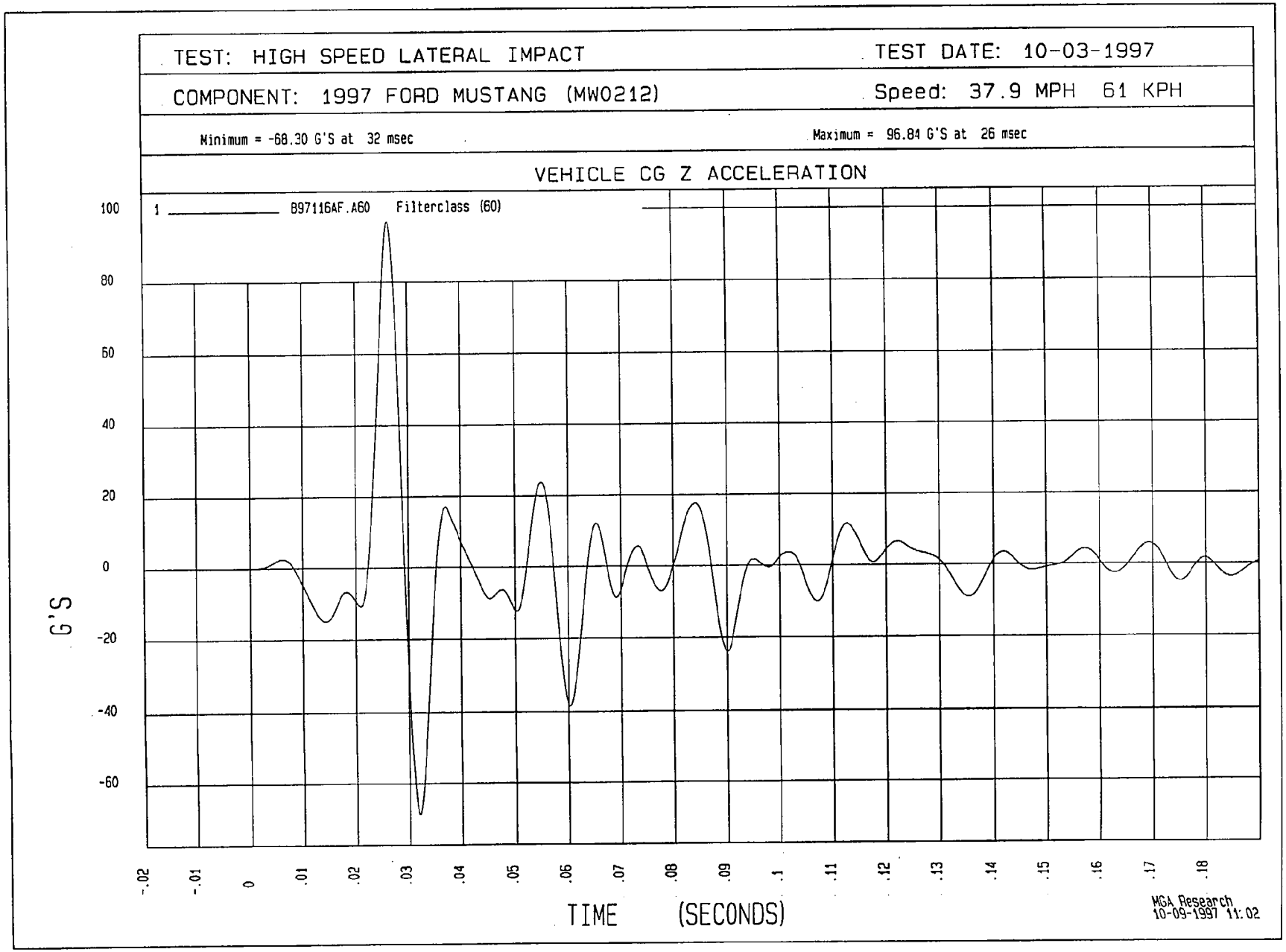
TIME Seconds
NGA Research
10-09-1997 16:04


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -68.30 G'S at 32 msec
Maximum = 96.84 G'S at 26 msec
VEHICLE CG Z ACCELERATION
1 B97116AF.A60 Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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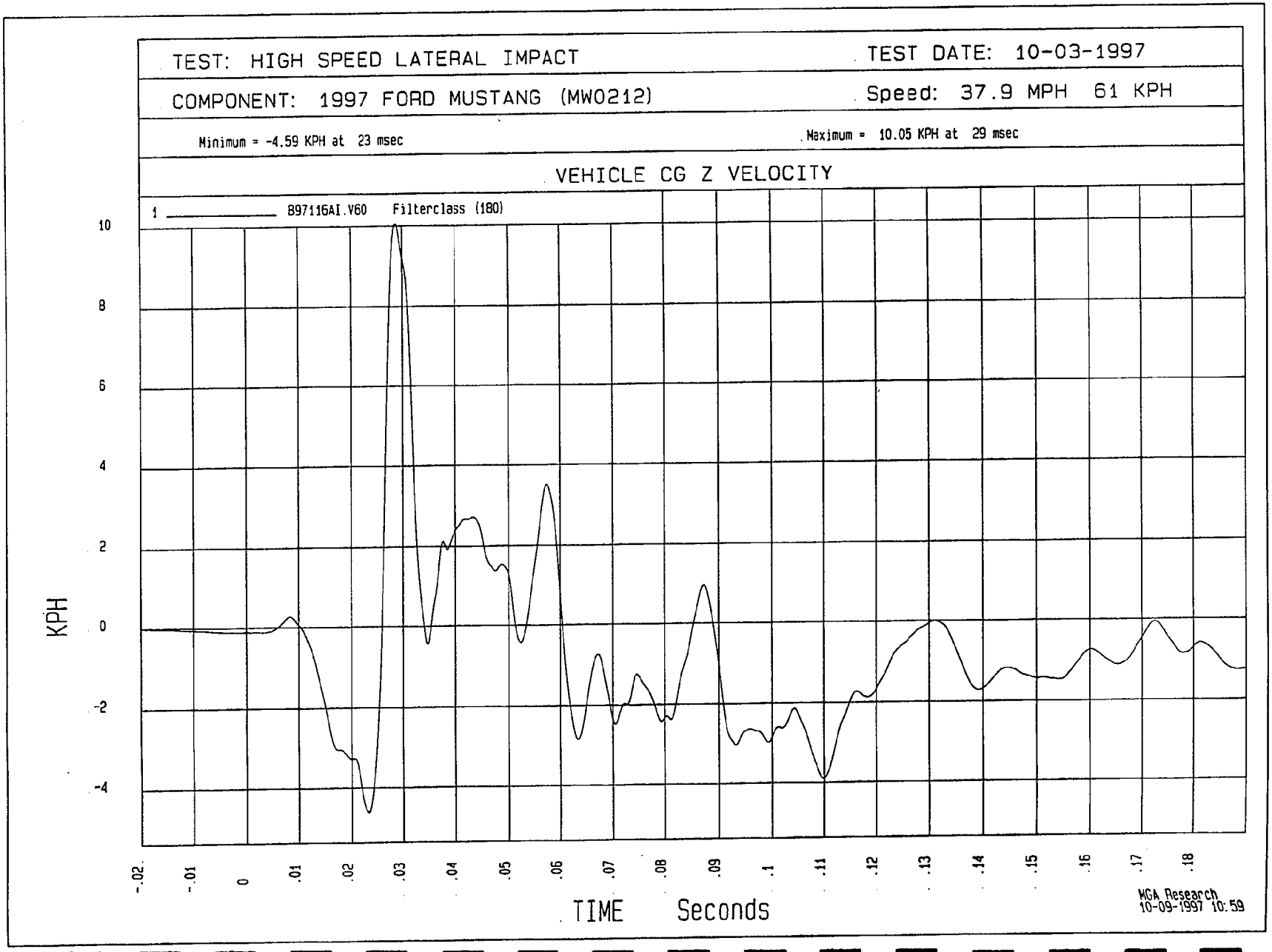
TIME (SECONDS)
MGA Research
10-09-1997 11:02


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.59 KPH at 23 msec
Maximum = 10.05 KPH at 29 msec
VEHICLE CG Z VELOCITY
1 B97116AI.V60 Filterclass (180)
KPH
10
8
6
4
2
0
-2
-4
-.02
-.01
0
.01
.02
.03
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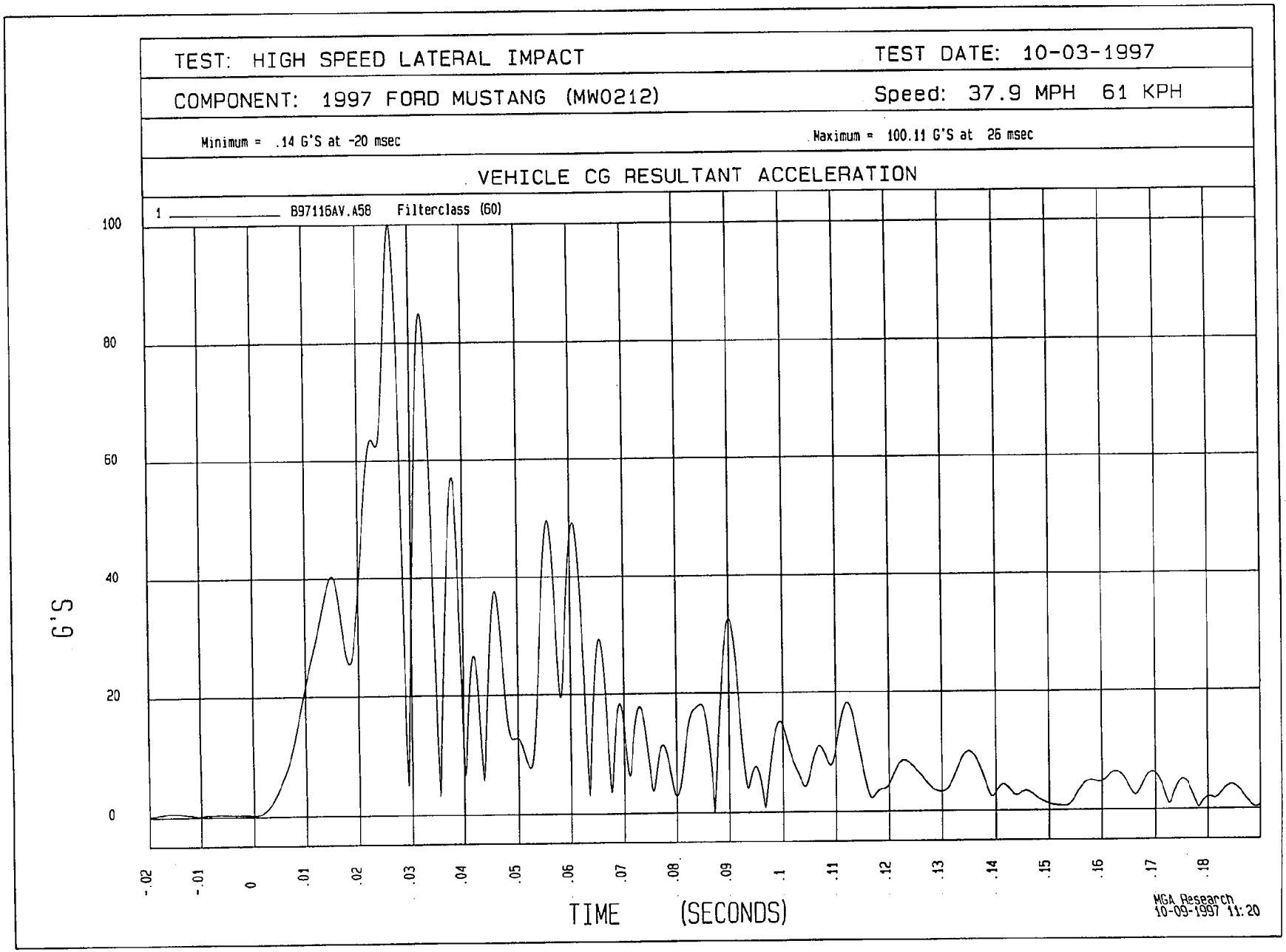
TIME Seconds
MGA Research
10-09-1997 10:59


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = .14 G'S at -20 msec
Maximum = 100.11 G'S at 26 msec
VEHICLE CG RESULTANT ACCELERATION
1 B97116AV.A58 Filterclass (60)
G'S
100
80
60
40
20
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
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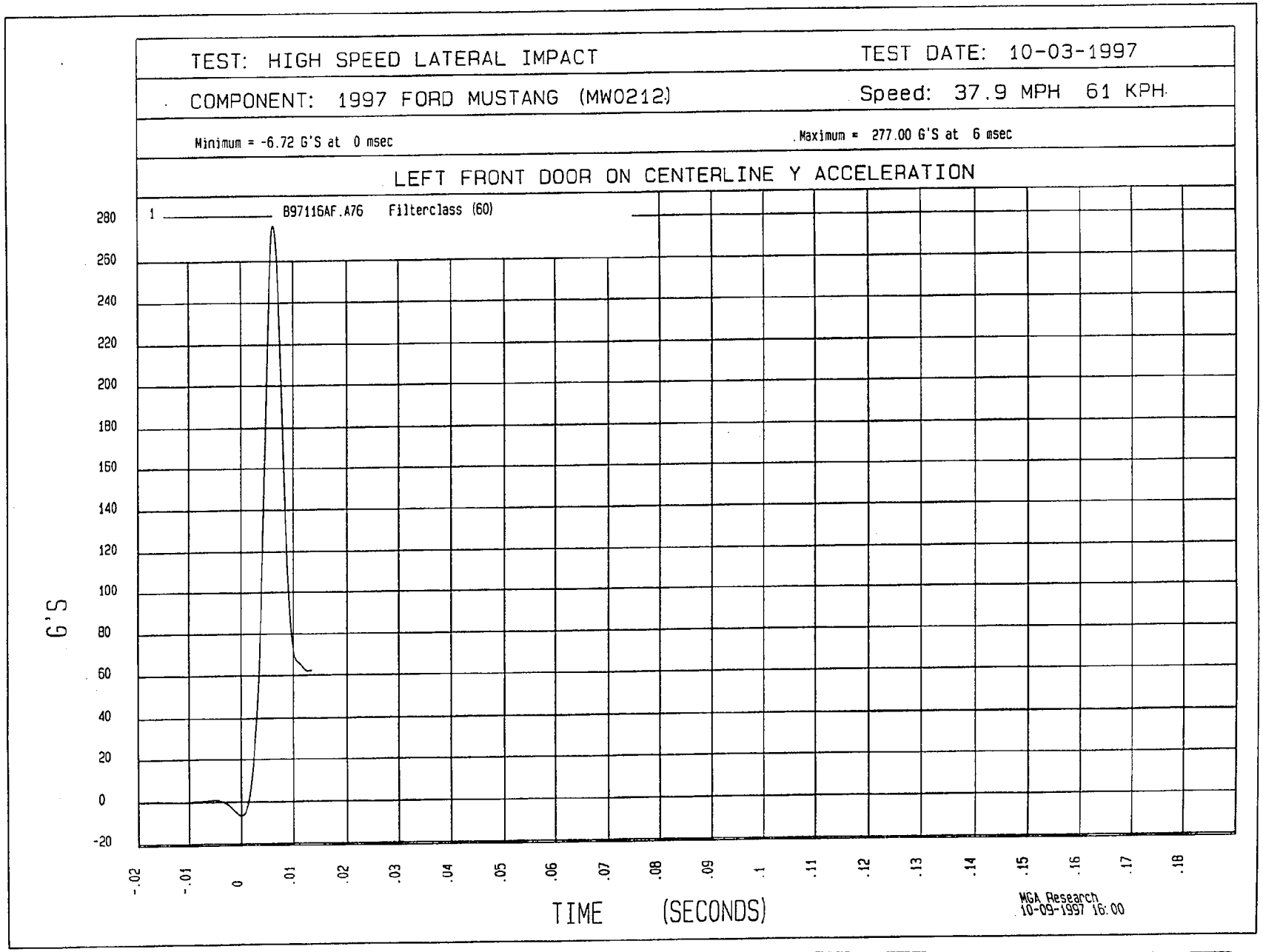
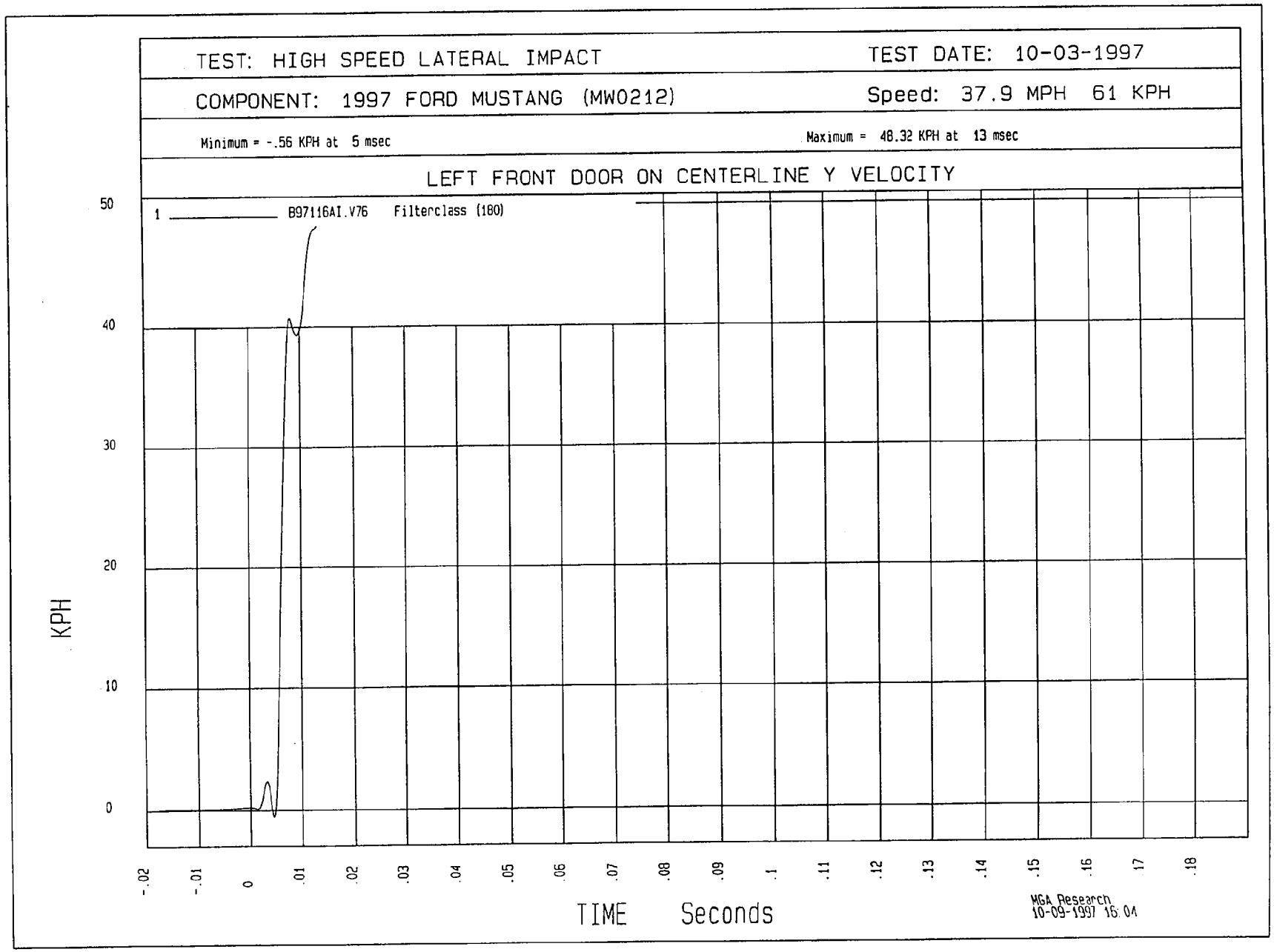
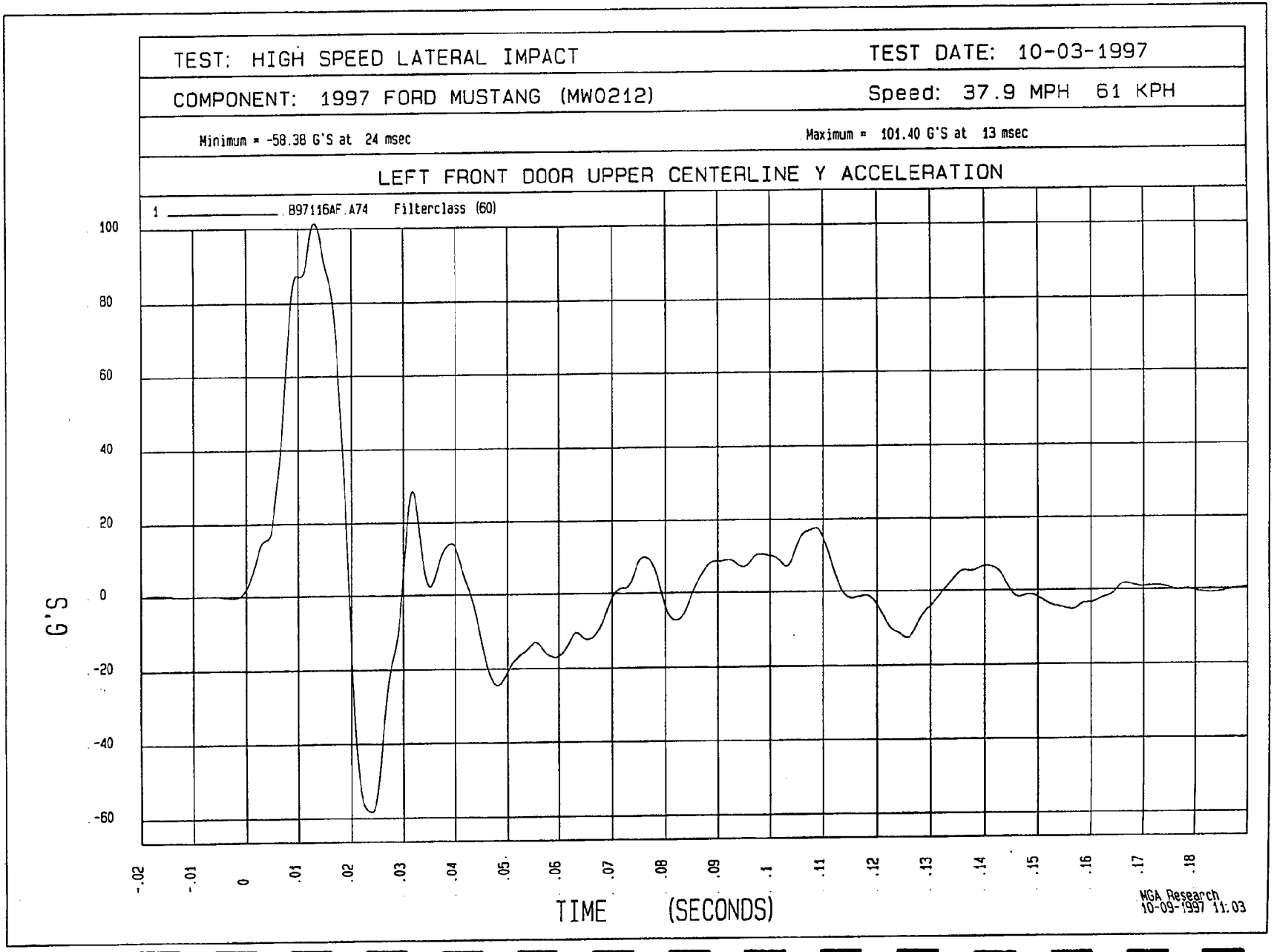
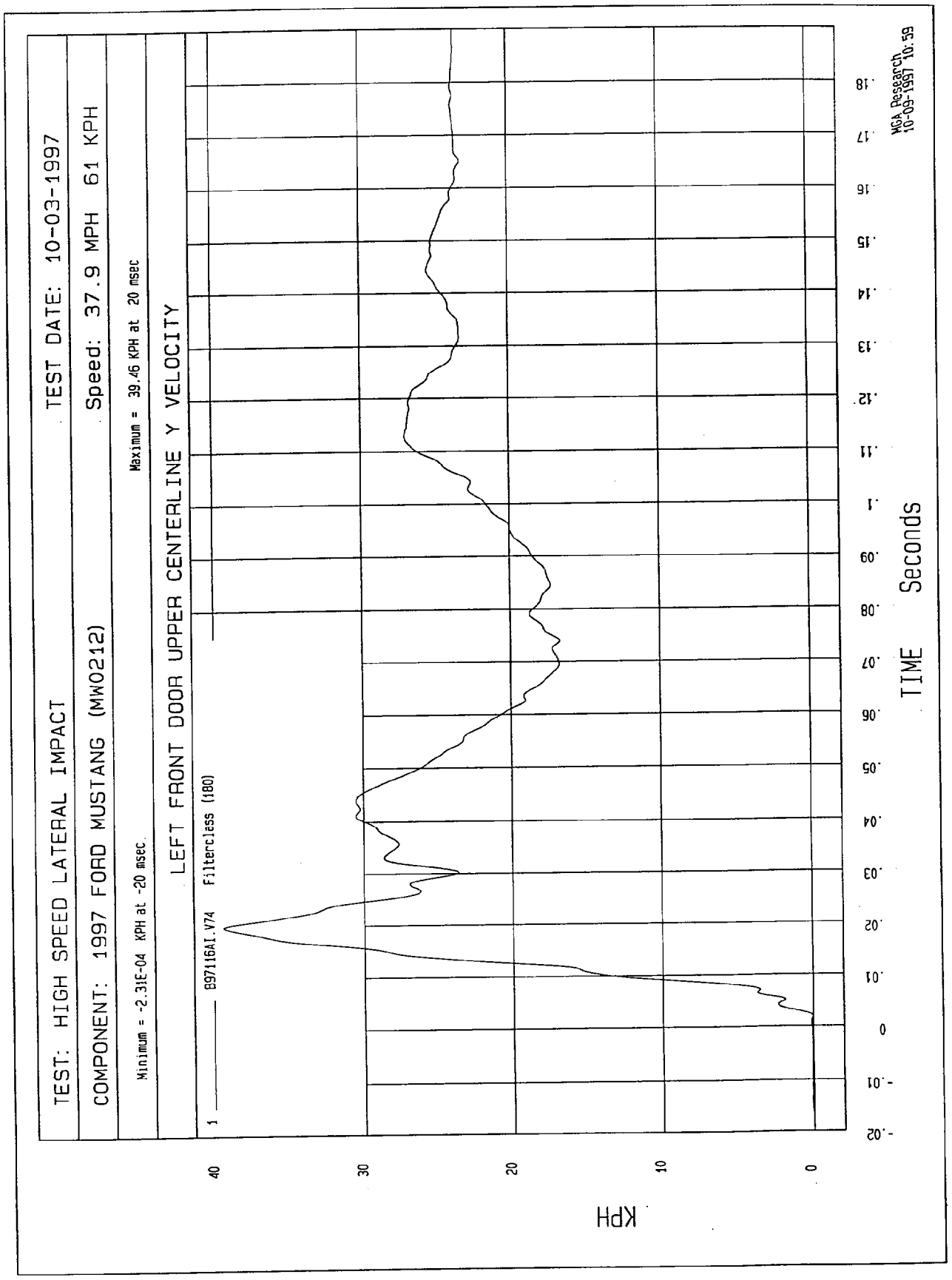
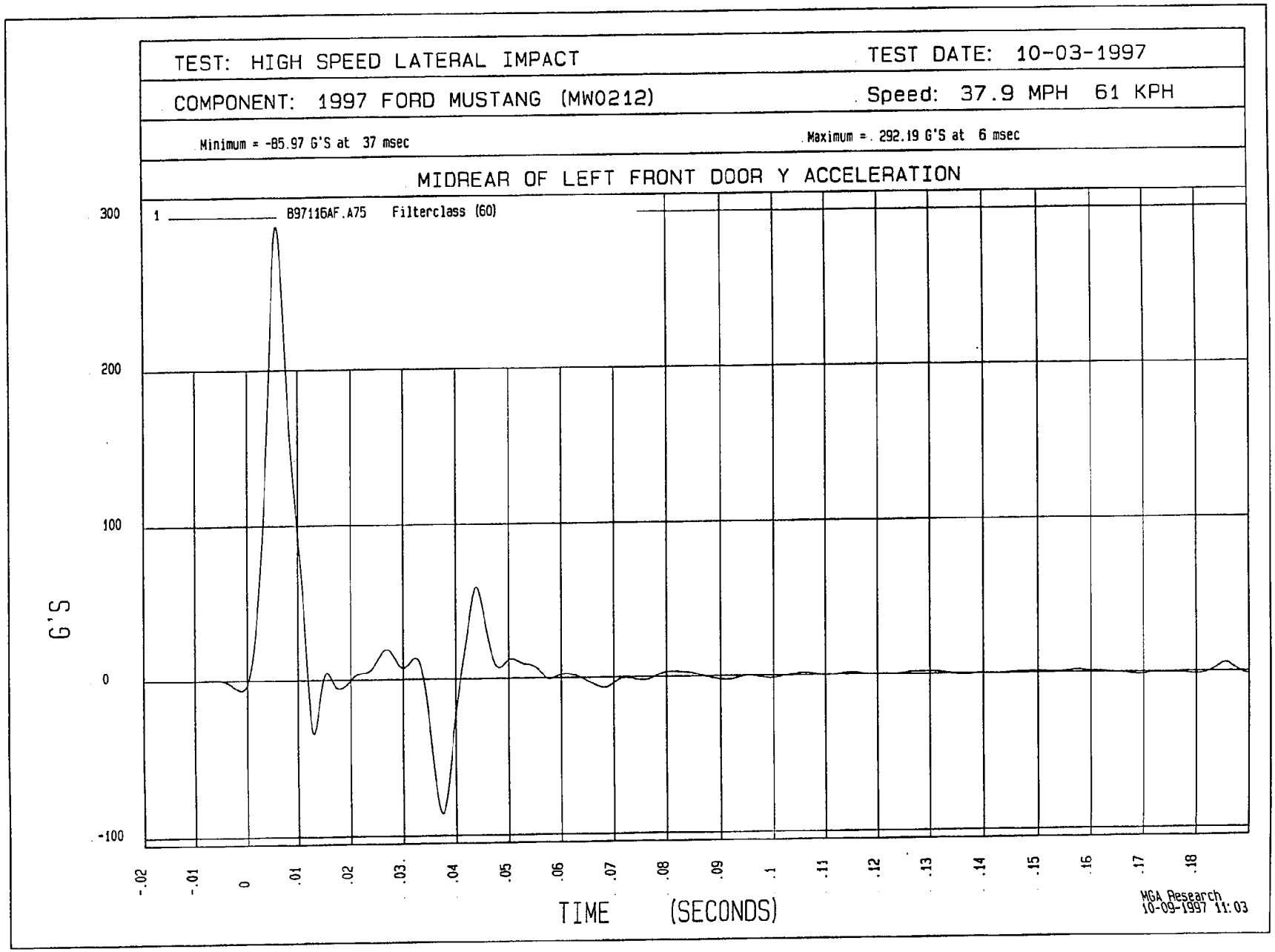
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:20

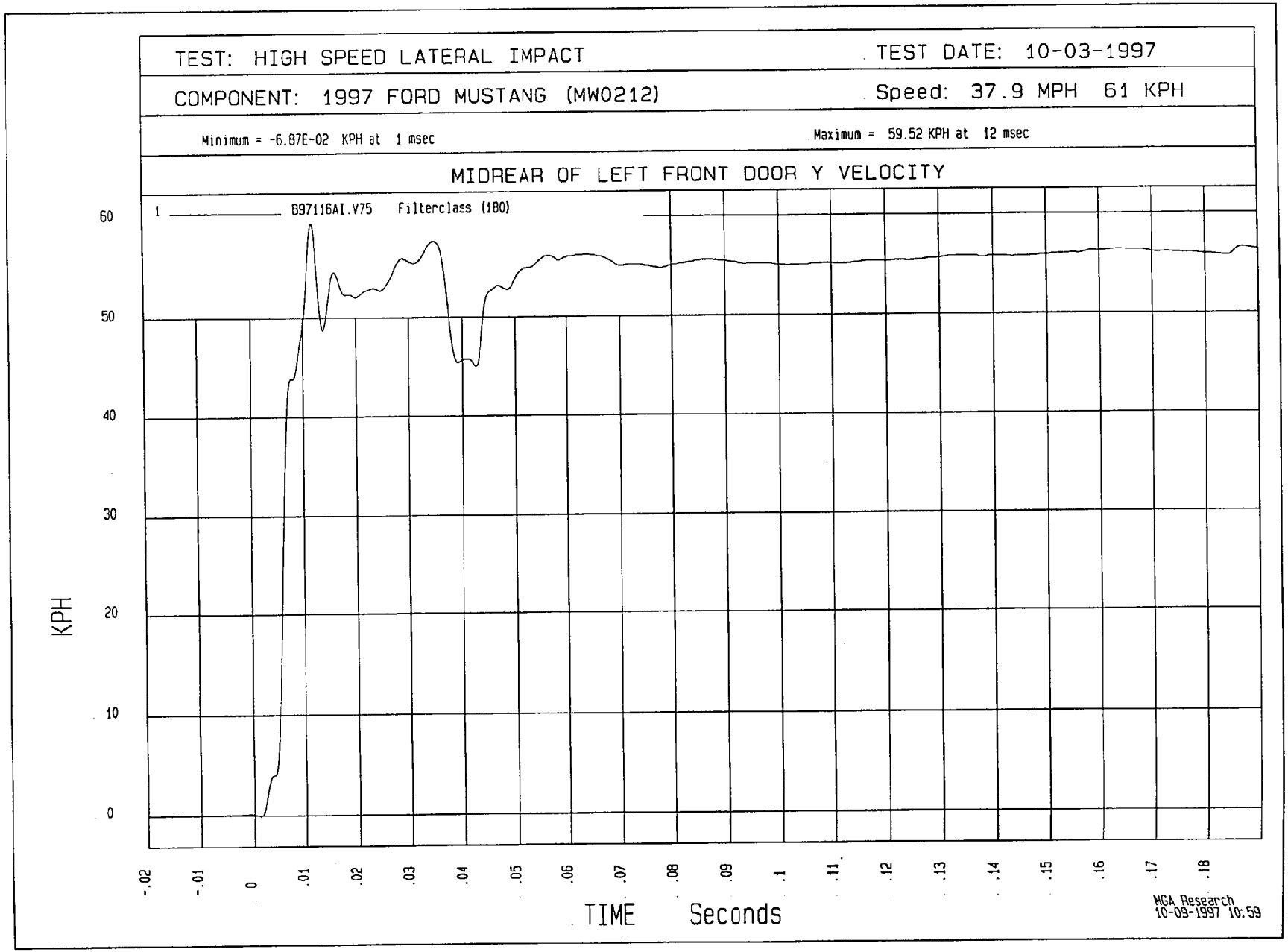

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.72 G'S at 0 msec
Maximum = 277.00 G'S at 6 msec
LEFT FRONT DOOR ON CENTERLINE Y ACCELERATION
1 B97116AF.A76 Filterclass (60)
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 16:00

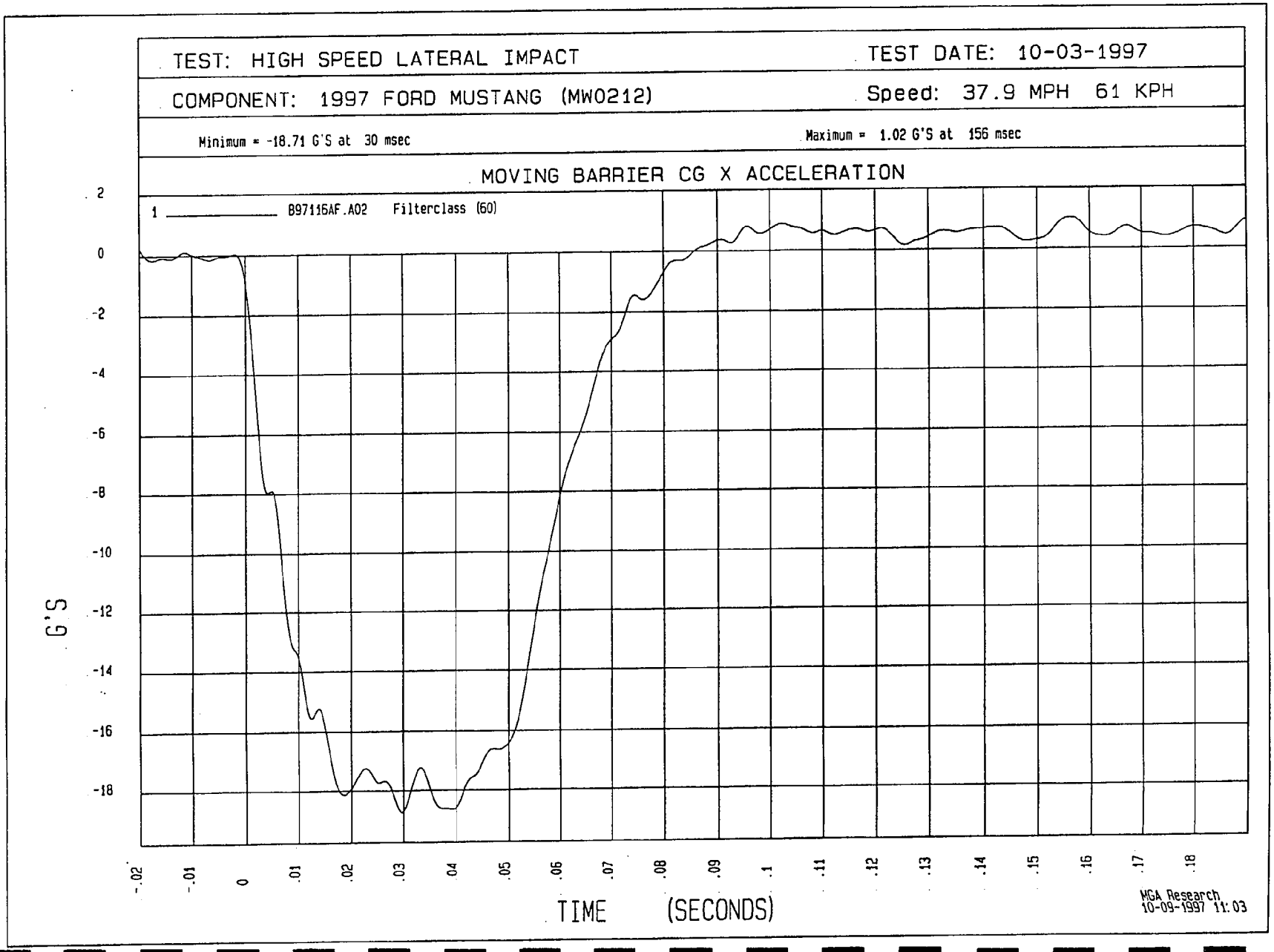

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -.56 KPH at 5 msec
Maximum = 48.32 KPH at 13 msec
LEFT FRONT DOOR ON CENTERLINE Y VELOCITY
1 B97116AI.V76 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 16:04

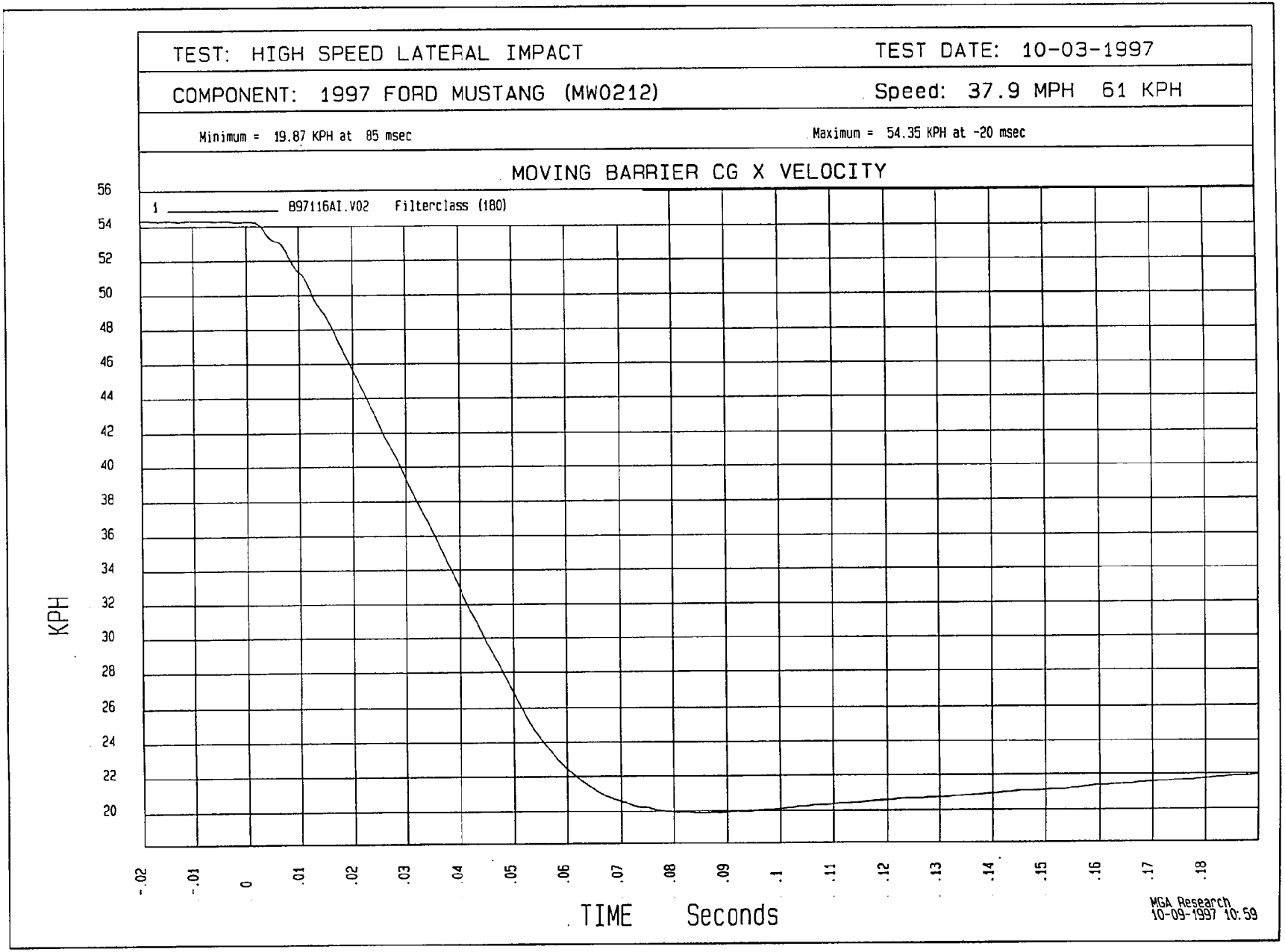

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -58.38 G'S at 24 msec
Maximum = 101.40 G'S at 13 msec
LEFT FRONT DOOR UPPER CENTERLINE Y ACCELERATION
1 B97116AF.A74 Filterclass (60)
100
80
60
40
20
0
-20
-40
-60
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03

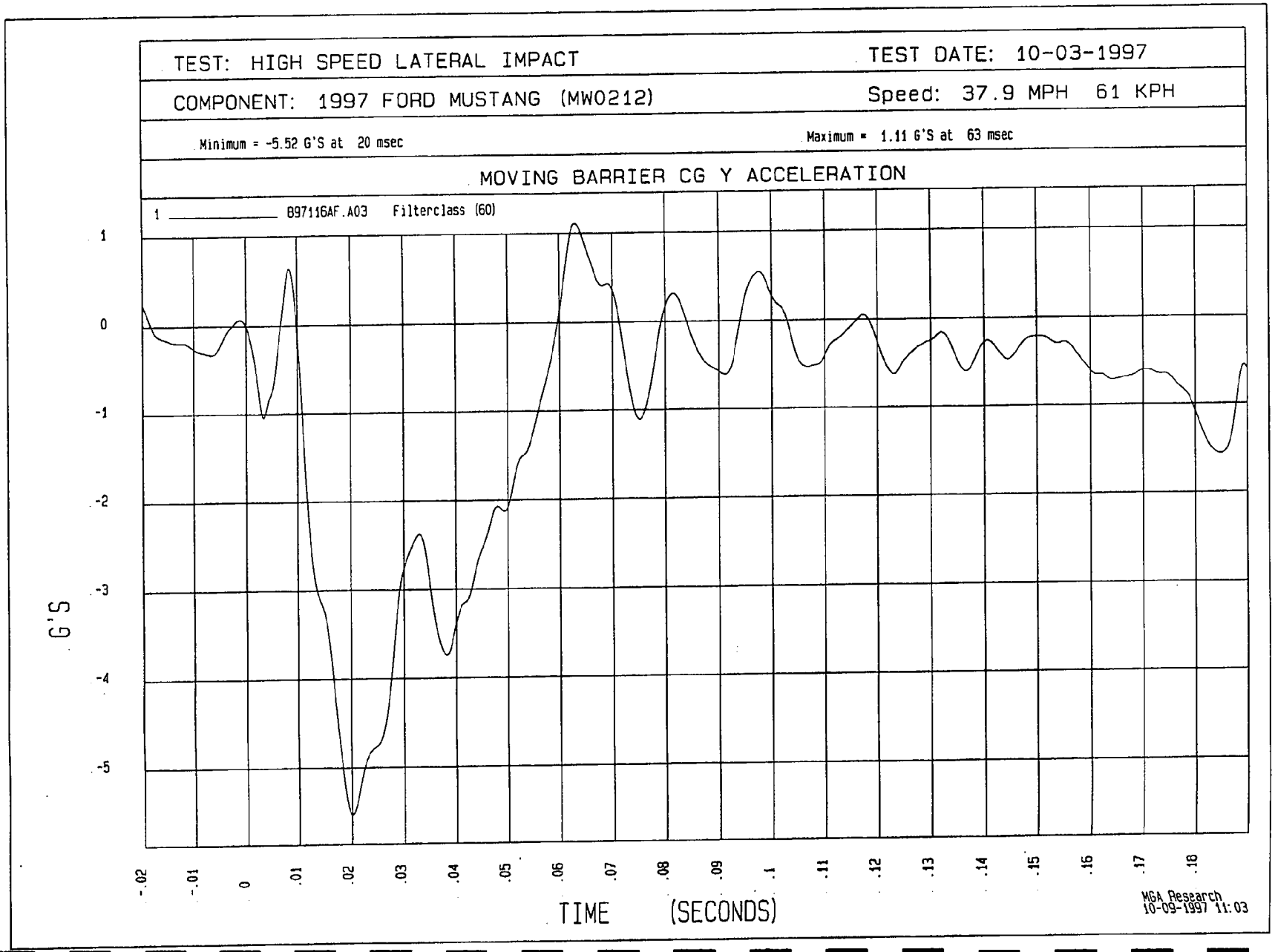

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -2.31E-04 KPH at -20 msec.
Maximum = 39.46 KPH at 20 msec
LEFT FRONT DOOR UPPER CENTERLINE Y VELOCITY
1 B97116AI.V74 Filtercless (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

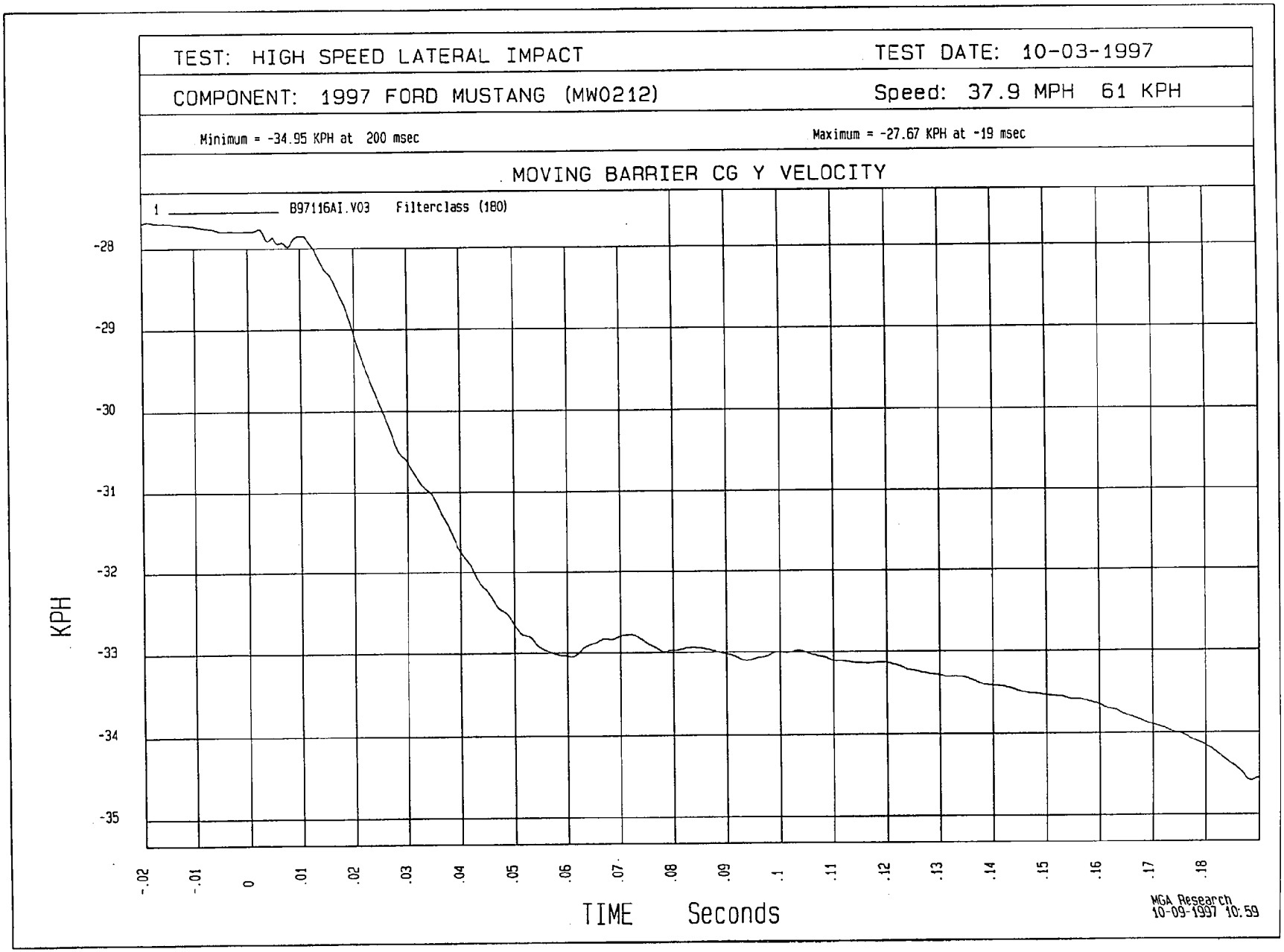

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -85.97 G'S at 37 msec
Maximum = 292.19 G'S at 6 msec
MIDREAR OF LEFT FRONT DOOR Y ACCELERATION
1 B97116AF.A75 Filterclass (60)
300
200
100
0
-100
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03

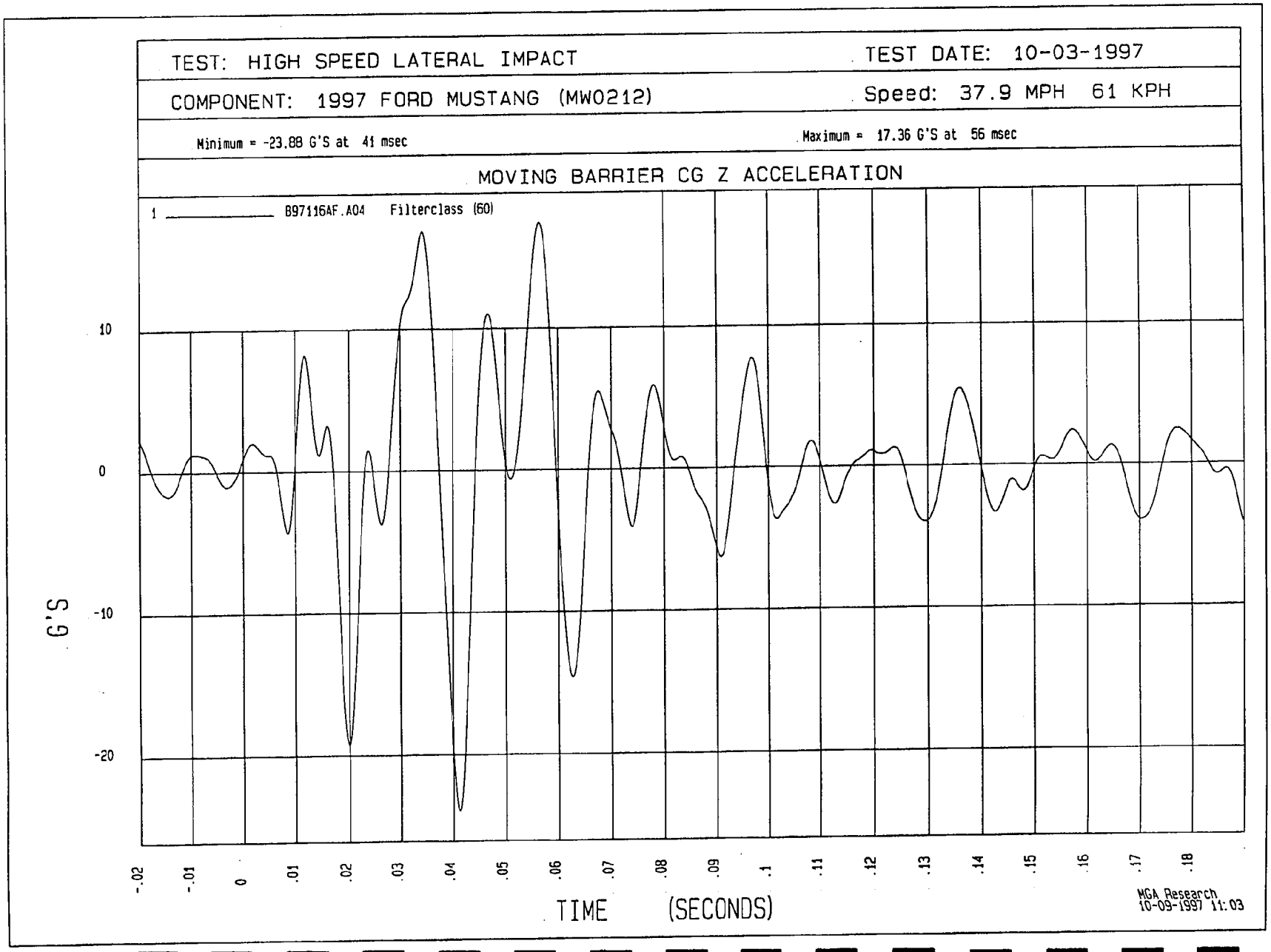

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.87E-02 KPH at 1 msec
Maximum = 59.52 KPH at 12 msec
MIDREAR OF LEFT FRONT DOOR Y VELOCITY
1 B97116AI.V75 Filterclass (180)
KPH
60
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

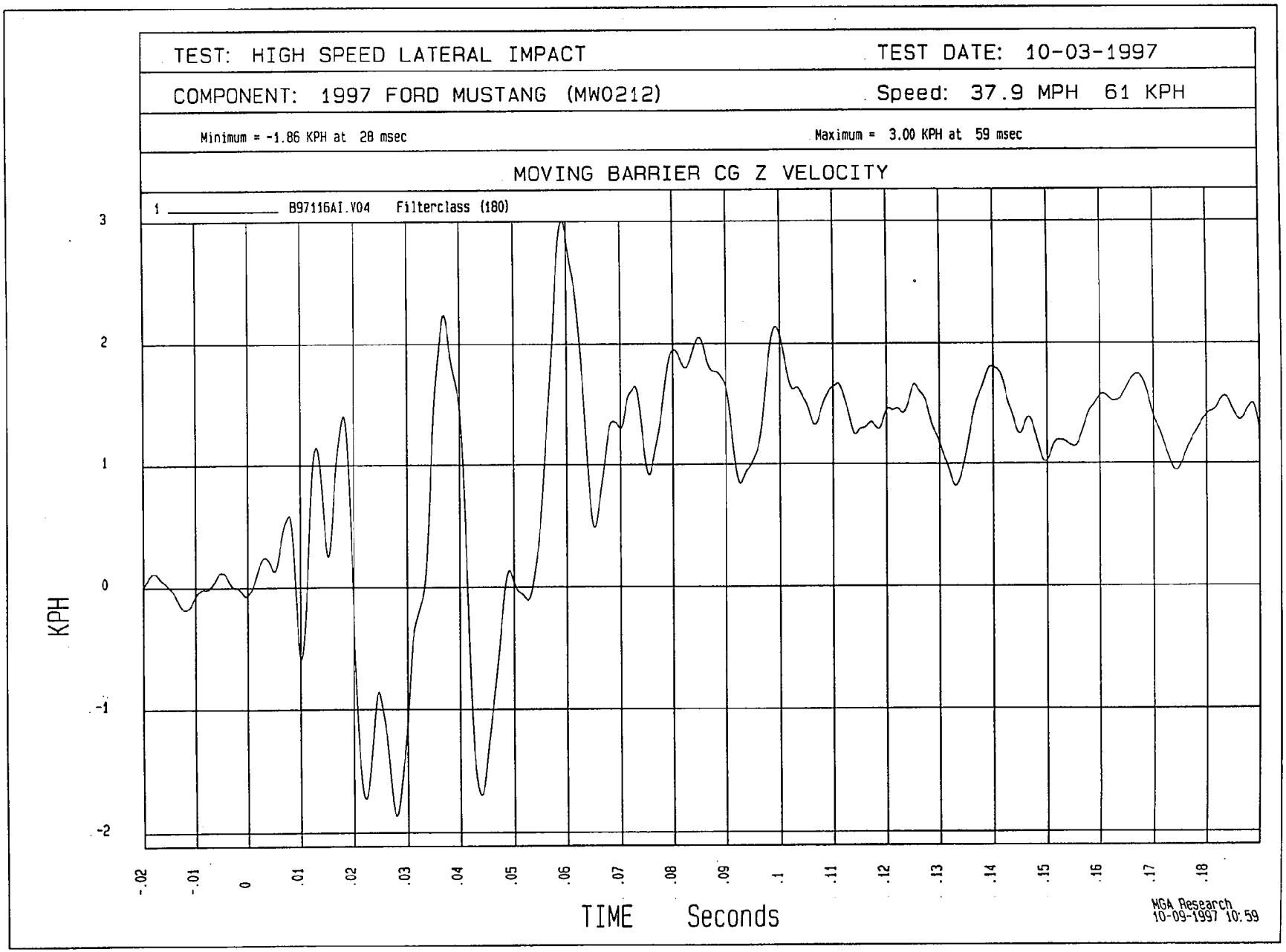

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -18.71 G'S at 30 msec
Maximum = 1.02 G'S at 156 msec
MOVING BARRIER CG X ACCELERATION
1 B97116AF.A02 Filterclass (60)
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03

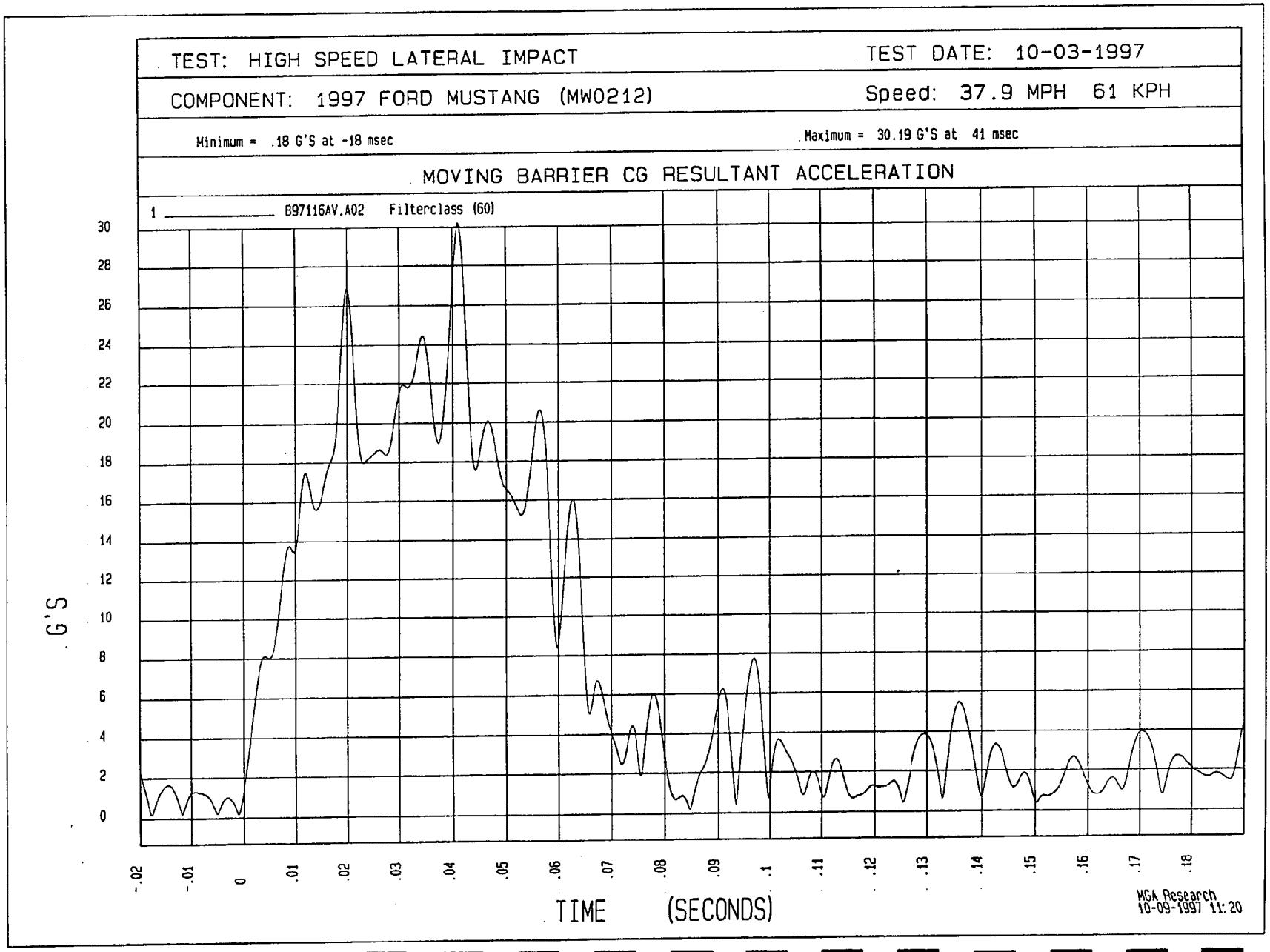

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 19.87 KPH at 85 msec
Maximum = 54.35 KPH at -20 msec
MOVING BARRIER CG X VELOCITY
1 B97116AI.V02 Filterclass (180)
KPH
56
54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

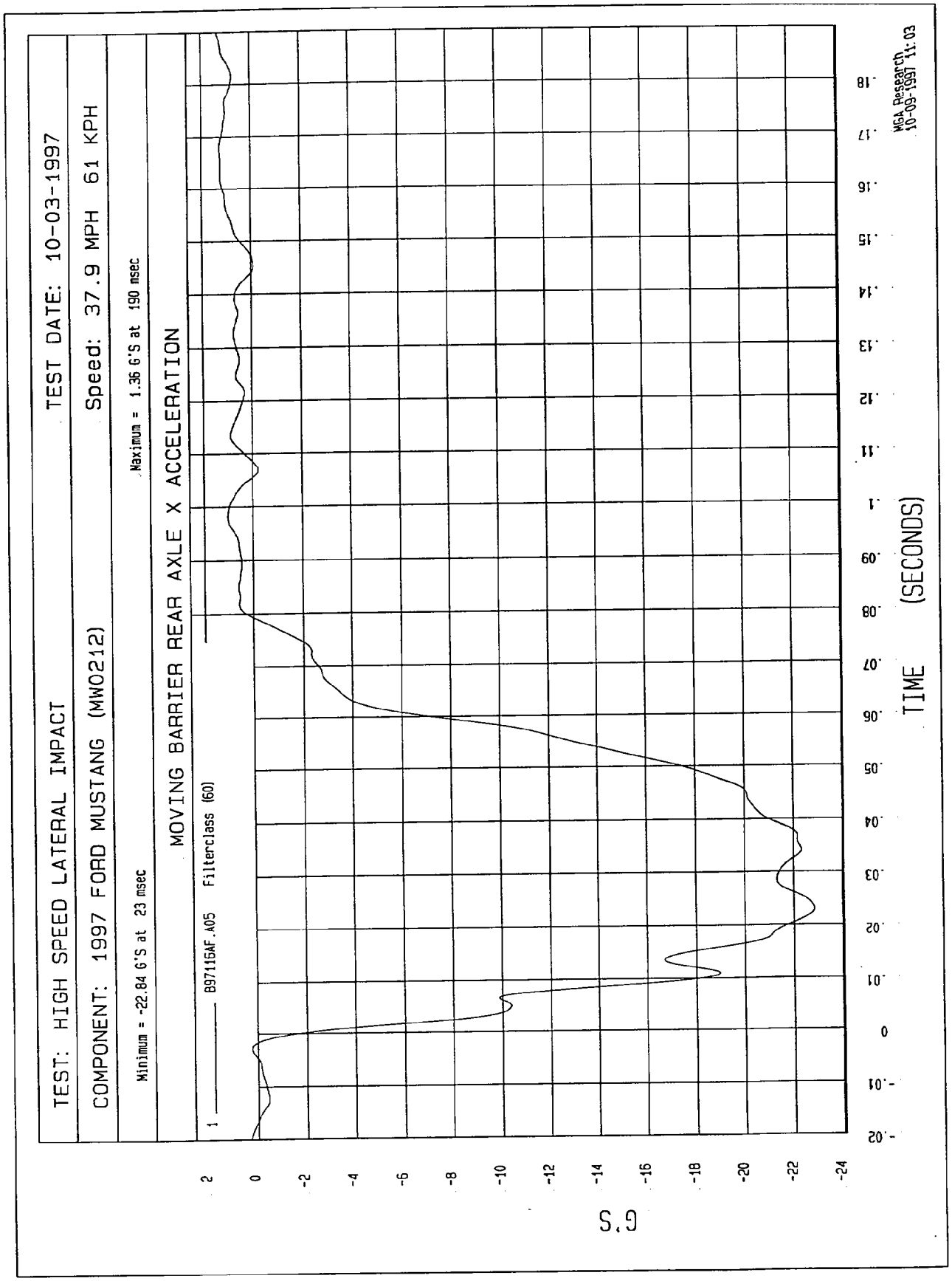

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -5.52 G'S at 20 msec
Maximum = 1.11 G'S at 63 msec
MOVING BARRIER CG Y ACCELERATION
1 B97116AF.A03 Filterclass (60)
1
0
-1
-2
-3
-4
-5
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03

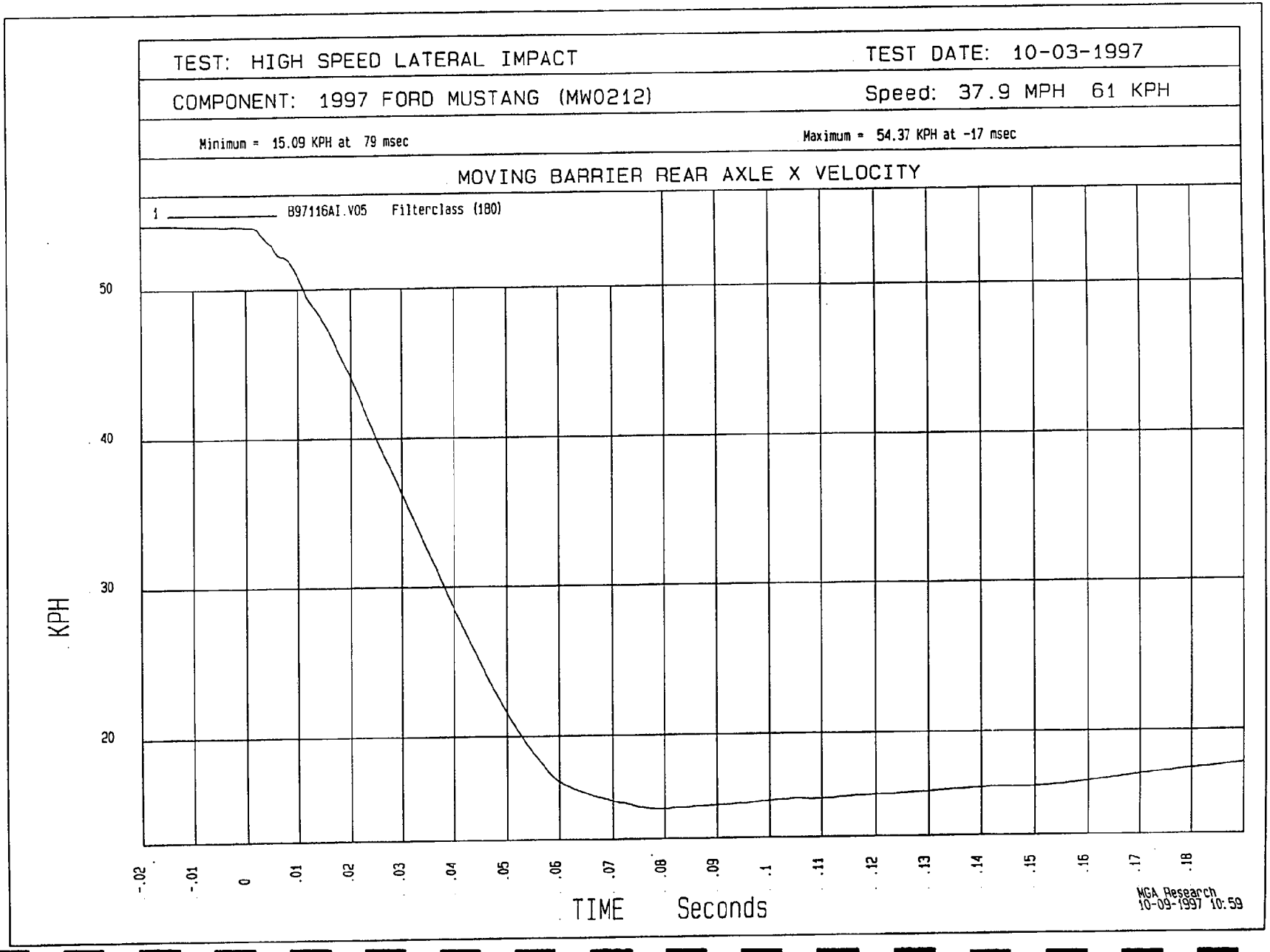

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -34.95 KPH at 200 msec
Maximum = -27.67 KPH at -19 msec
MOVING BARRIER CG Y VELOCITY
1 B97116AI.V03 Filterclass (180)
-28
-29
-30
-31
-32
-33
-34
-35
KPH
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

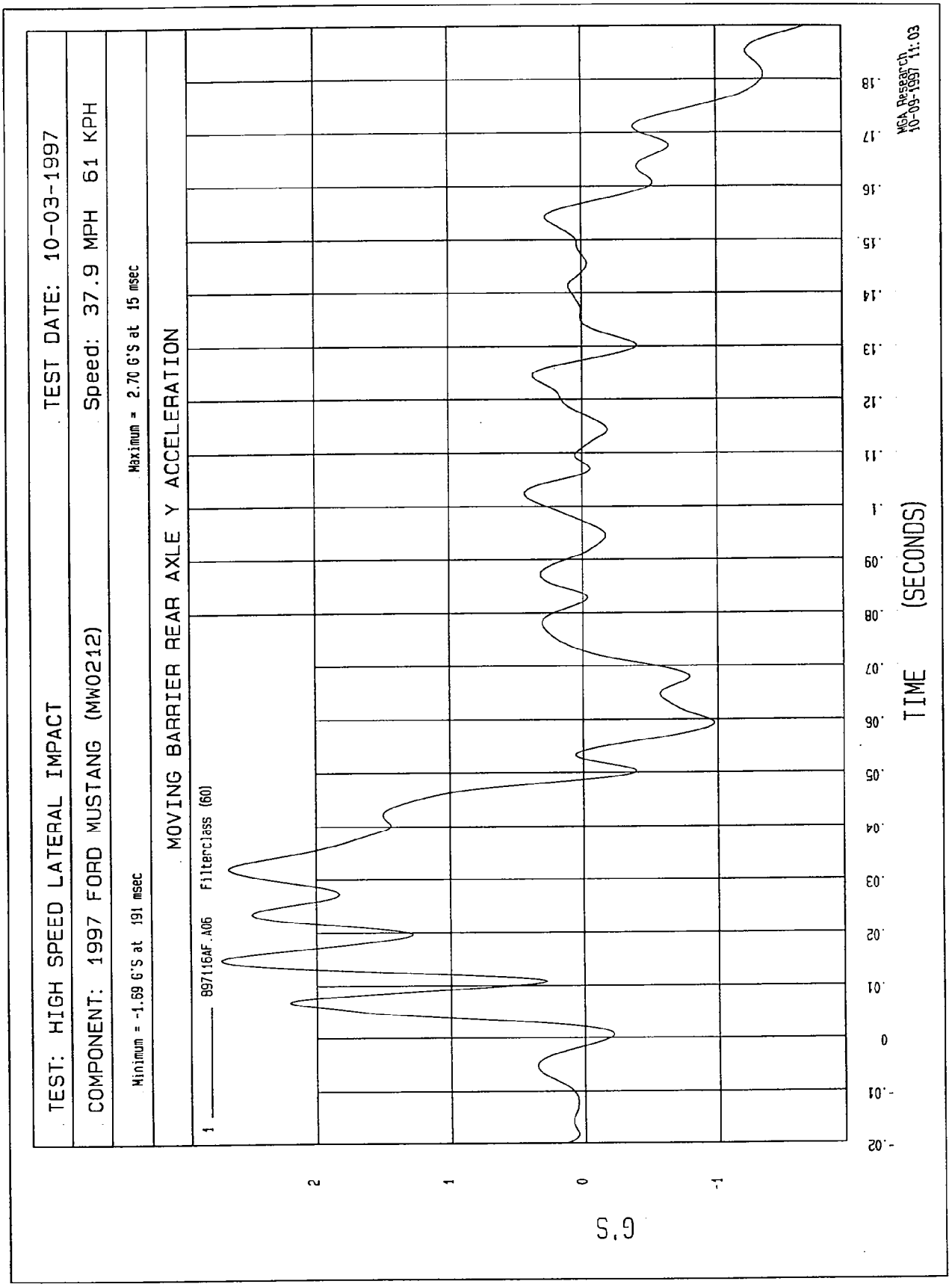

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -23.88 G'S at 41 msec
Maximum = 17.36 G'S at 56 msec
MOVING BARRIER CG Z ACCELERATION
1 B97116AF.A04 Filterclass (60)
10
0
-10
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03

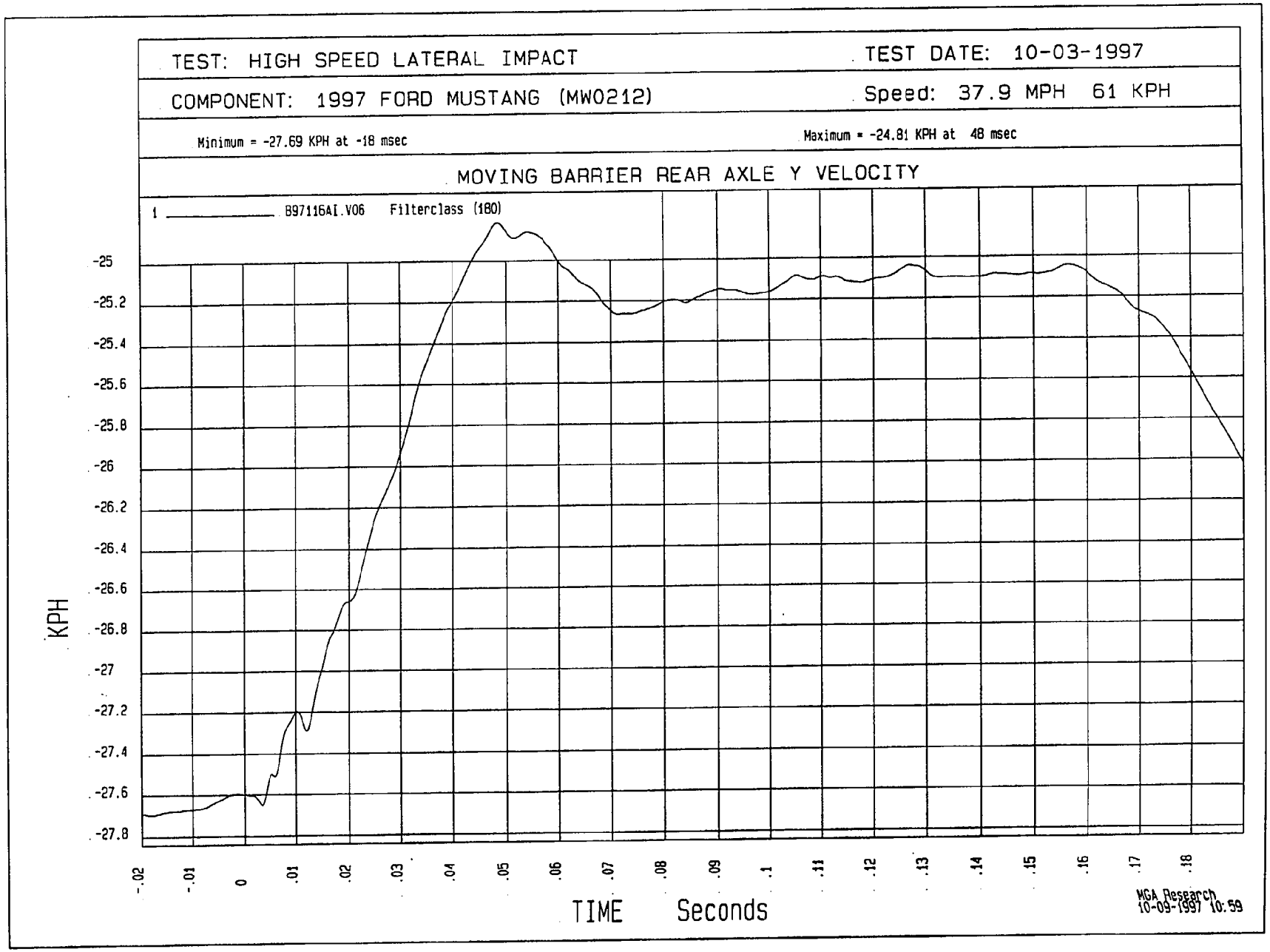

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.86 KPH at 28 msec
Maximum = 3.00 KPH at 59 msec
MOVING BARRIER CG Z VELOCITY
1 B97116AI.V04 Filterclass (180)
KPH
3
2
1
0
-1
-2
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

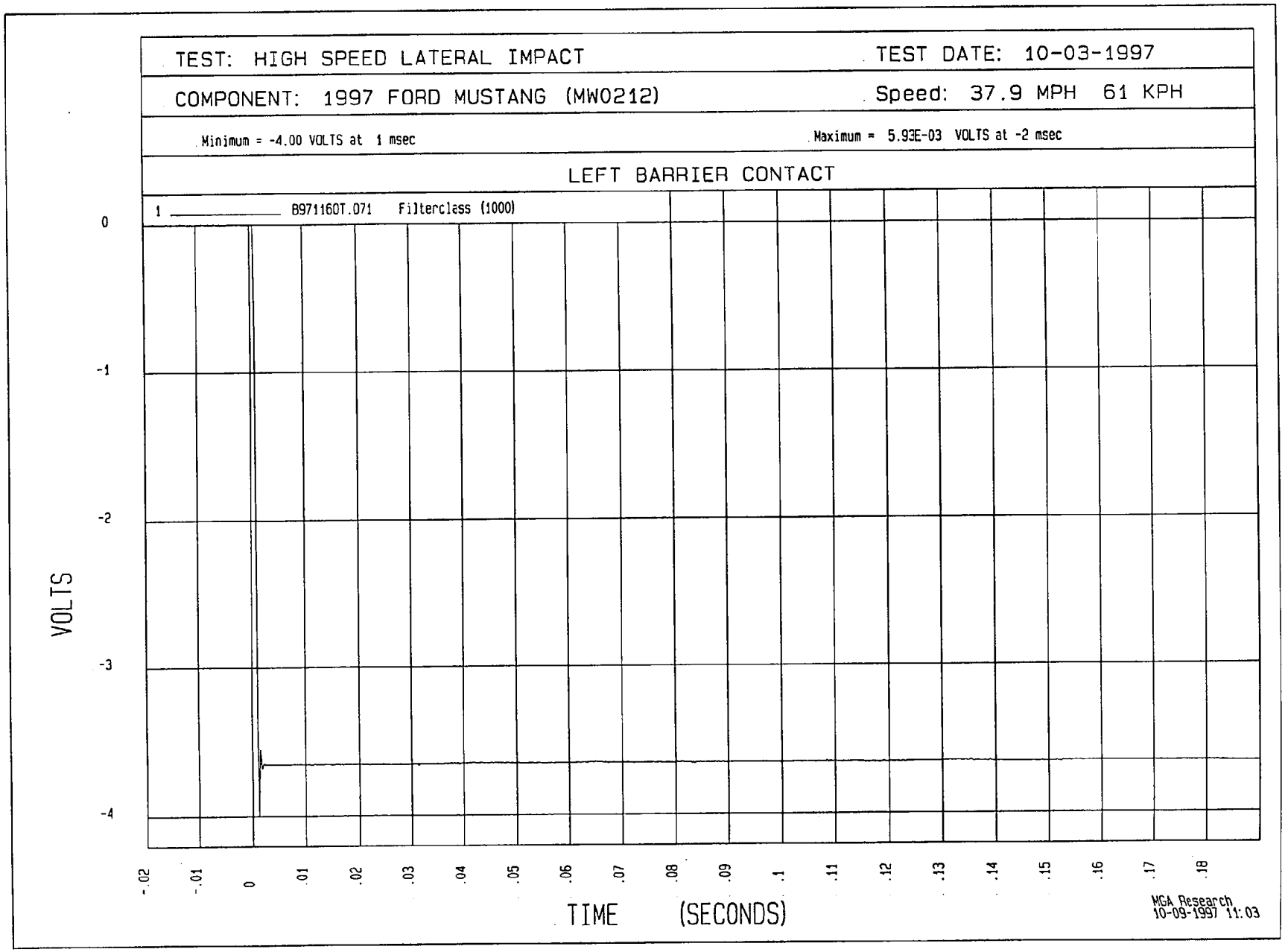

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = .18 G'S at -18 msec
Maximum = 30.19 G'S at 41 msec
MOVING BARRIER CG RESULTANT ACCELERATION
1 B97116AV.A02 Filterclass (60)
G'S
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:20

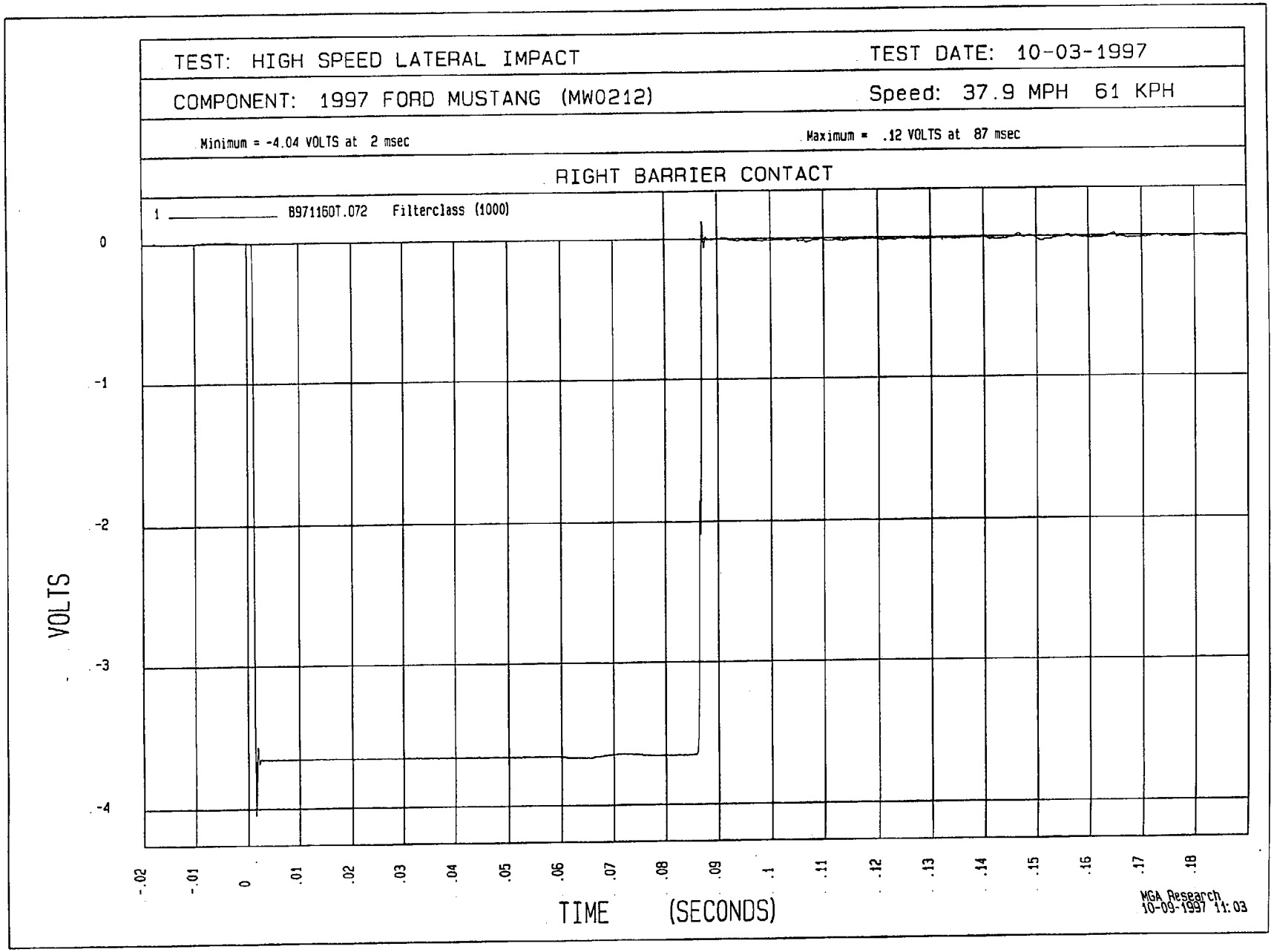

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -22.84 G'S at 23 msec
Maximum = 1.36 G'S at 190 msec
MOVING BARRIER REAR AXLE X ACCELERATION
1 B97116AF.A05 Filterclass (60)
G'S
TIME (SECONDS)
MGA Research
10-09-1997 11:03

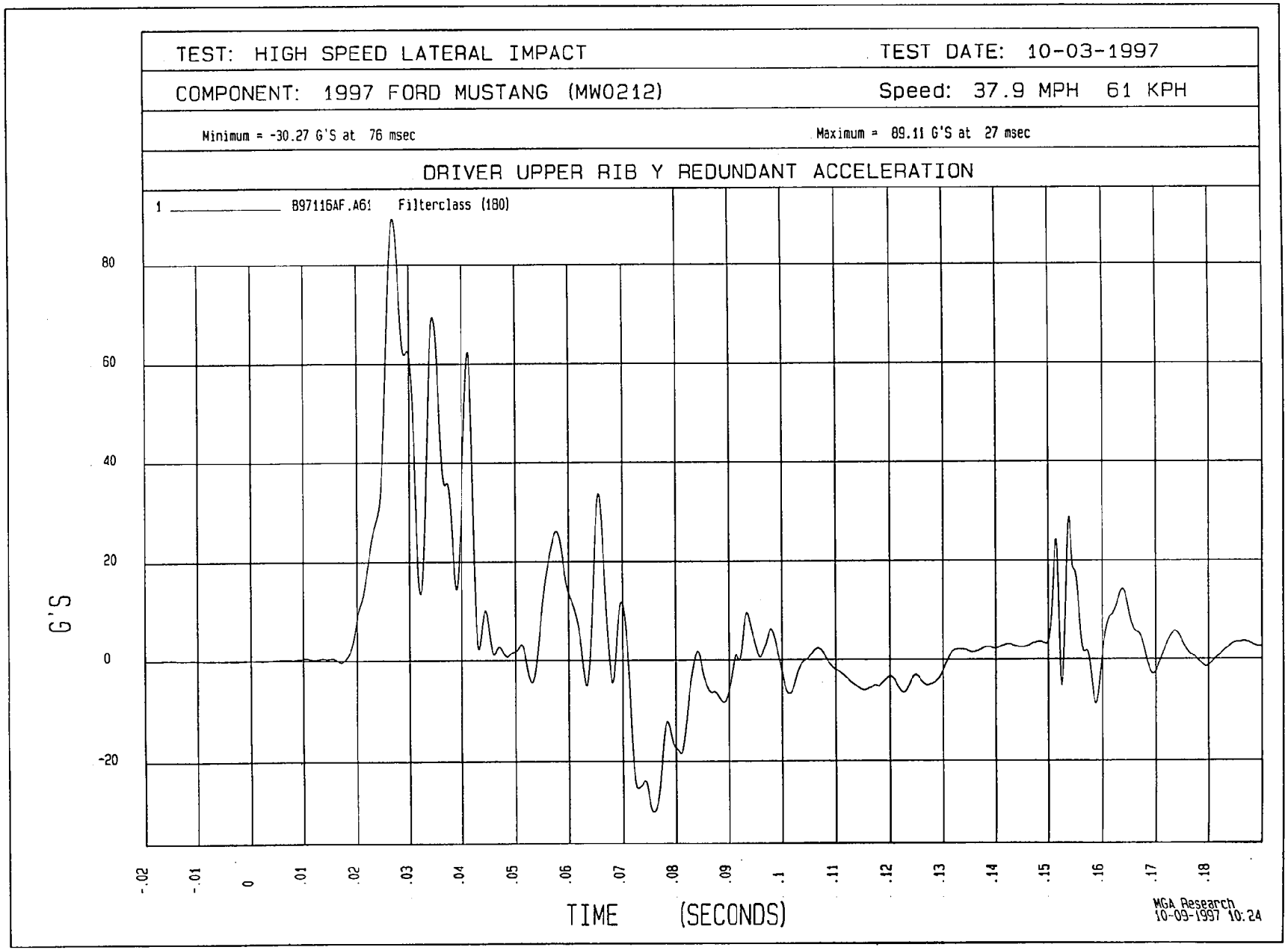

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 15.09 KPH at 79 msec
Maximum = 54.37 KPH at -17 msec
MOVING BARRIER REAR AXLE X VELOCITY
1 B97116AI.V05 Filterclass (180)
KPH
50
40
30
20
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

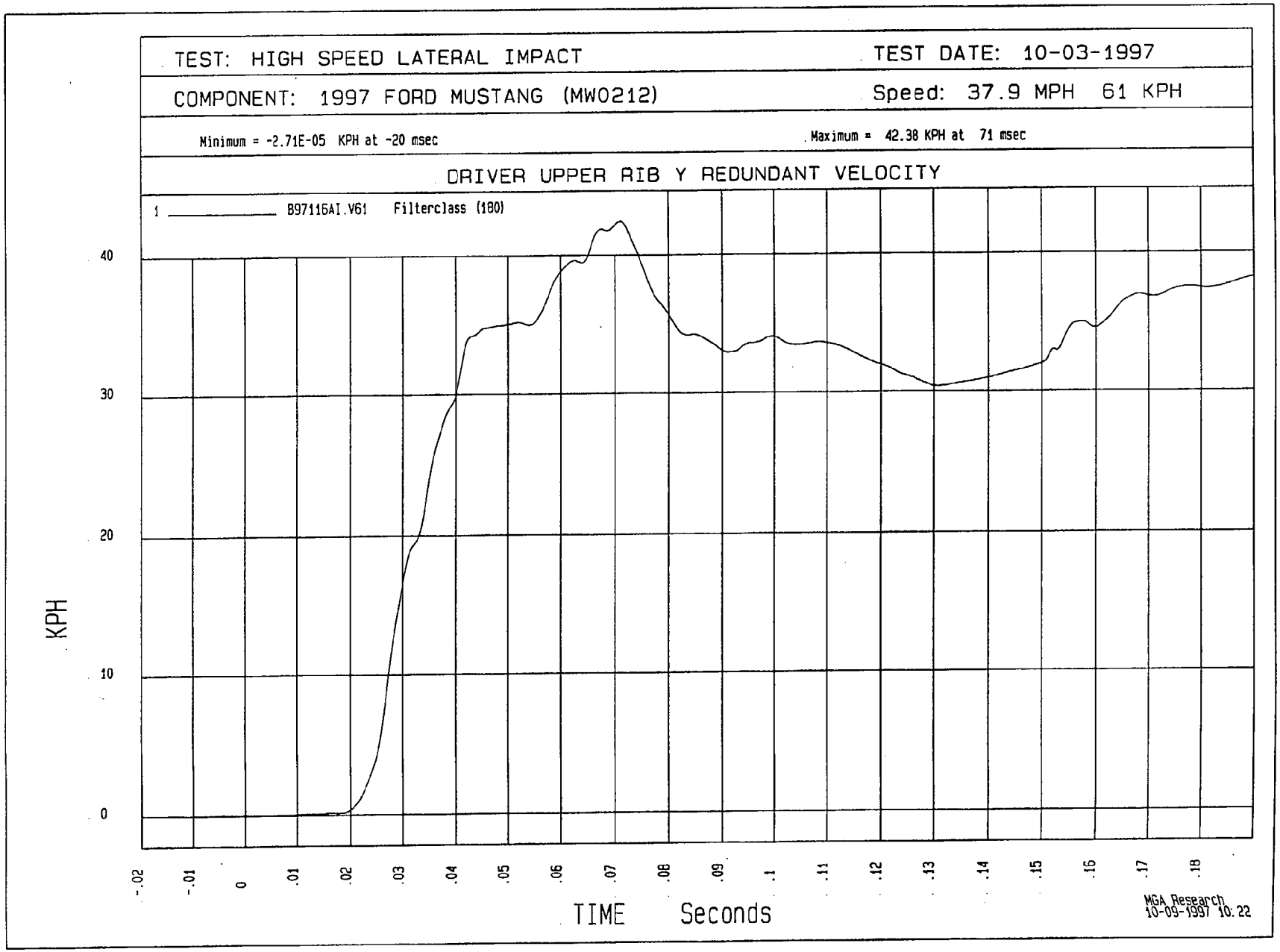

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.69 G'S at 191 msec
Maximum = 2.70 G'S at 15 msec
MOVING BARRIER REAR AXLE Y ACCELERATION
1 _____ 897116AF.A06 Filterclass (60)
MGA Research
10-09-1997 11:03
TIME (SECONDS)
G'S

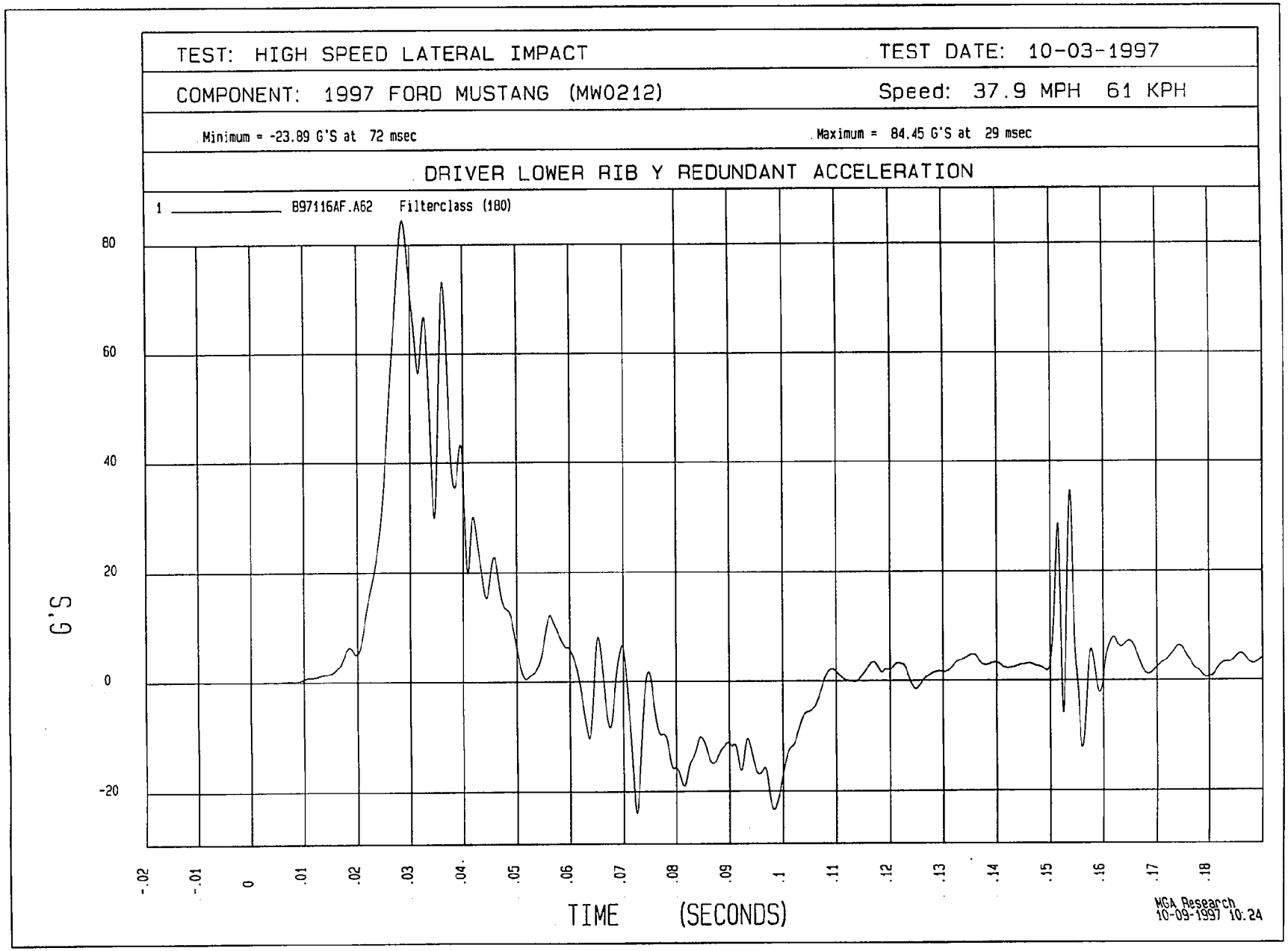

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -27.69 KPH at -18 msec
Maximum = -24.81 KPH at 48 msec
MOVING BARRIER REAR AXLE Y VELOCITY
1 B97116AI.V06 Filterclass (180)
KPH
-25
-25.2
-25.4
-25.6
-25.8
-26
-26.2
-26.4
-26.6
-26.8
-27
-27.2
-27.4
-27.6
-27.8
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

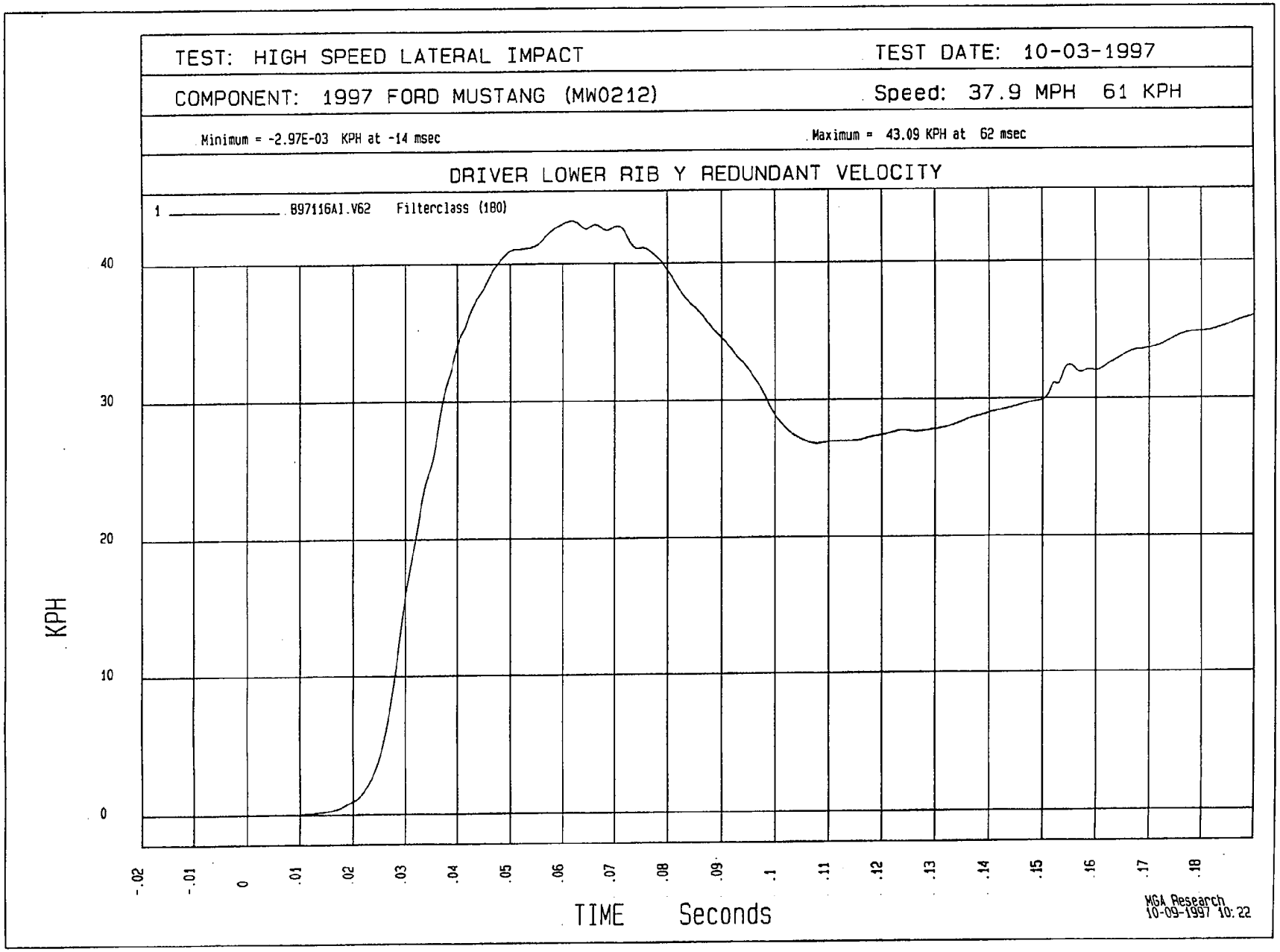

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.00 VOLTS at 1 msec
Maximum = 5.93E-03 VOLTS at -2 msec
LEFT BARRIER CONTACT
1 B971160T.071 Filtercless (1000)
VOLTS
0
-1
-2
-3
-4
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -4.04 VOLTS at 2 msec
Maximum = .12 VOLTS at 87 msec
RIGHT BARRIER CONTACT
1 B9711607.072 Filterclass (1000)
VOLTS
0
-1
-2
-3
-4
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:03


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -30.27 G'S at 76 msec
Maximum = 89.11 G'S at 27 msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B97116AF.A61 Filterclass (180)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -2.71E-05 KPH at -20 msec
Maximum = 42.38 KPH at 71 msec
DRIVER UPPER RIB Y REDUNDANT VELOCITY
1 B97116AI.V61 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -23.89 G'S at 72 msec
Maximum = 84.45 G'S at 29 msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B97116AF.A62 Filterclass (180)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -2.97E-03 KPH at -14 msec
Maximum = 43.09 KPH at 62 msec
DRIVER LOWER RIB Y REDUNDANT VELOCITY
1 B97116A1.V62 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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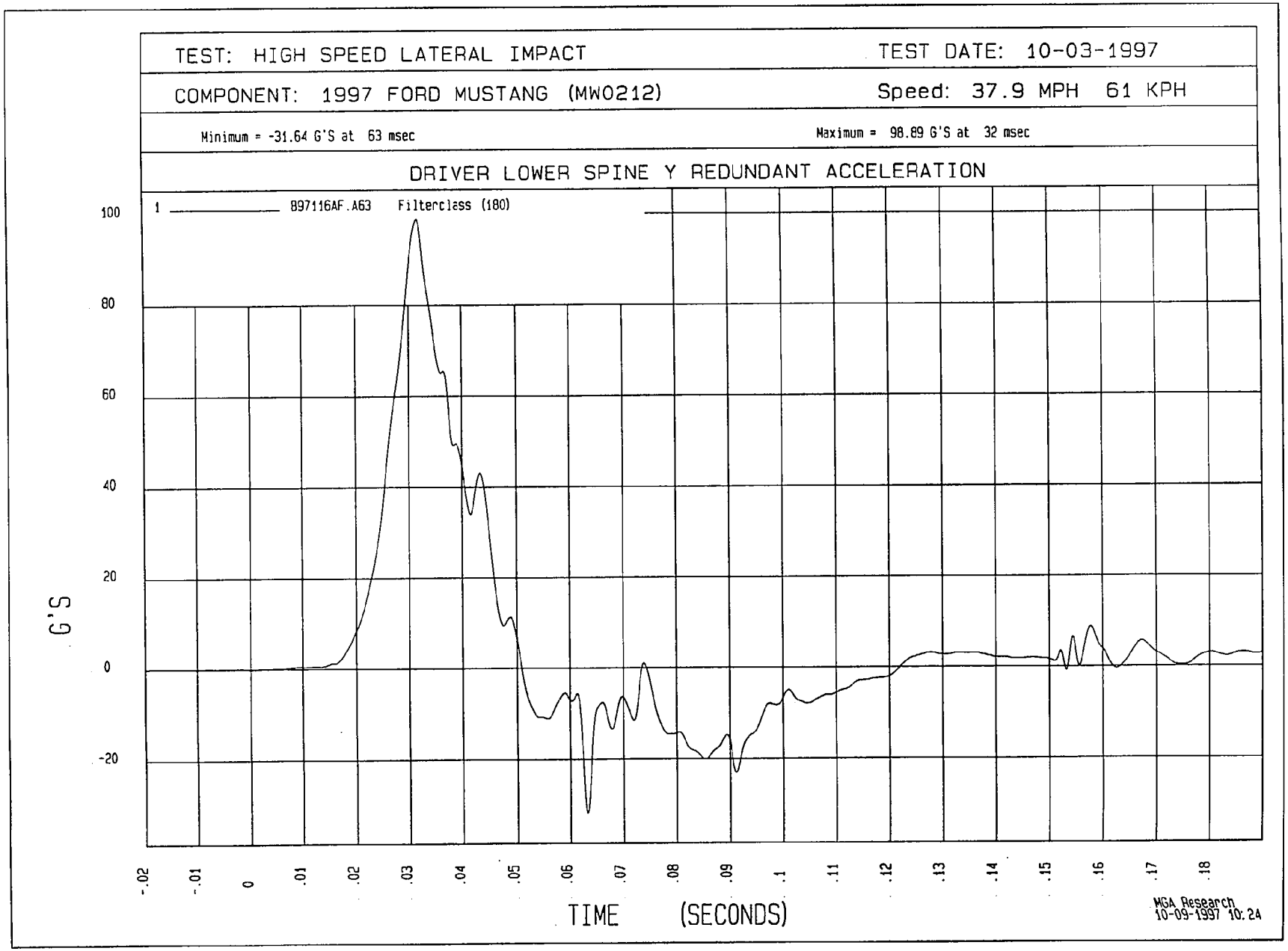
TIME Seconds
MGA Research
10-09-1997 10:22


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -31.64 G'S at 63 msec
Maximum = 98.89 G'S at 32 msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 B97116AF.A63 Filterclass (180)
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.12
.13
.14
.15
.16
.17
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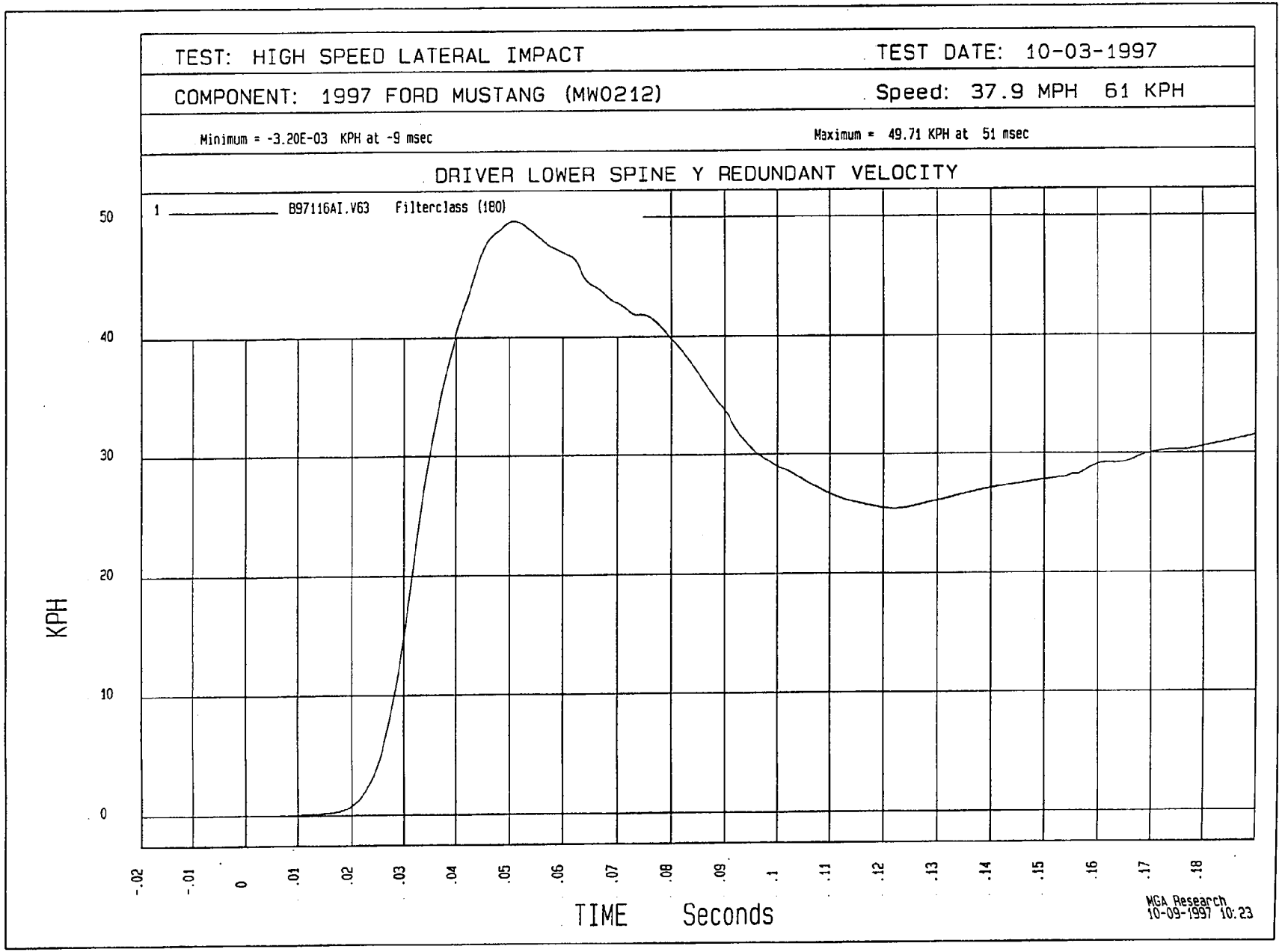
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -3.20E-03 KPH at -9 msec
Maximum = 49.71 KPH at 51 msec
DRIVER LOWER SPINE Y REDUNDANT VELOCITY
1 B97116AI.V63 Filterclass (180)
KPH
50
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
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.11
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.16
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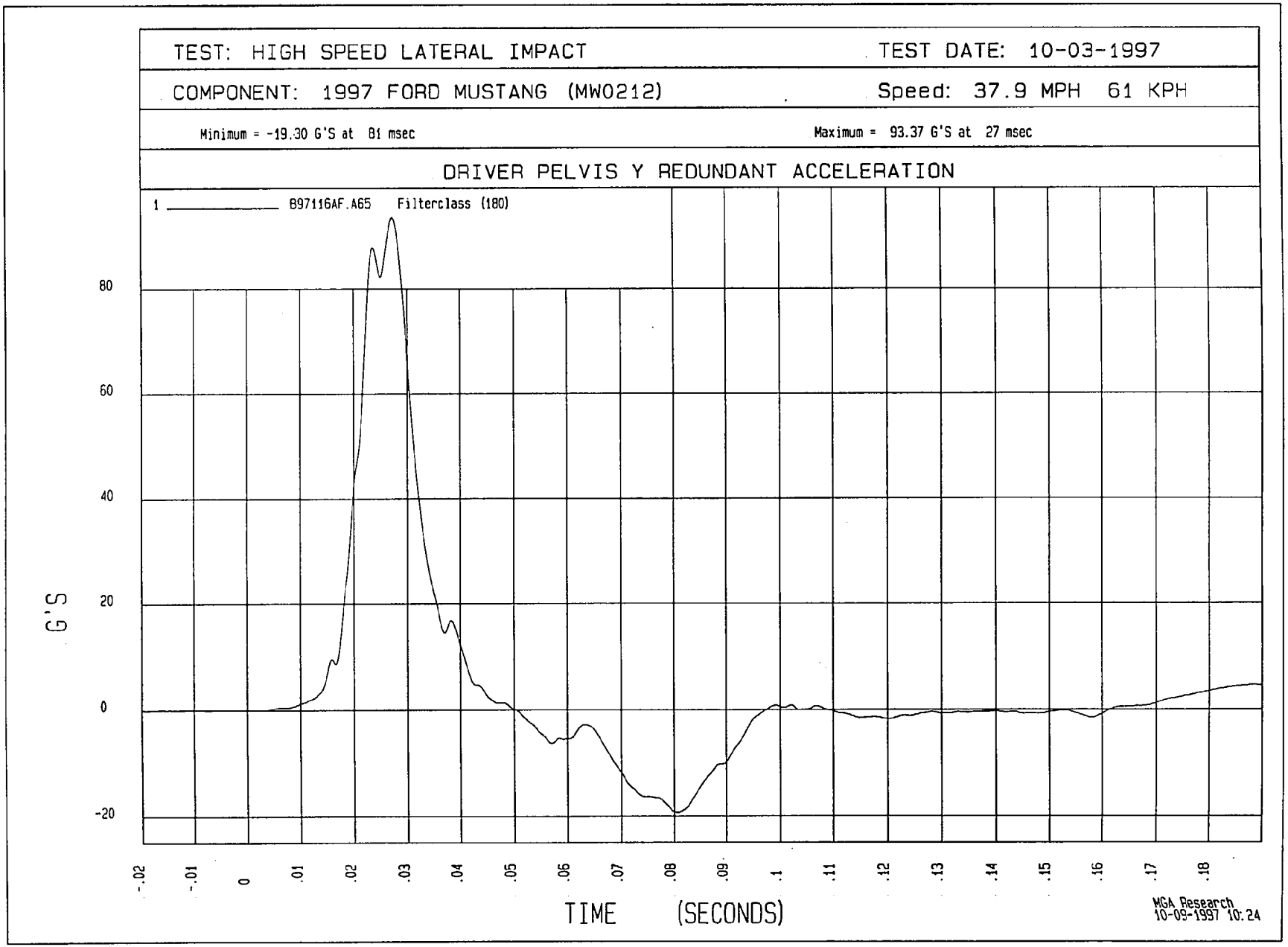
TIME Seconds
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -19.30 G'S at 81 msec
Maximum = 93.37 G'S at 27 msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 B97116AF.A65 Filterclass (180)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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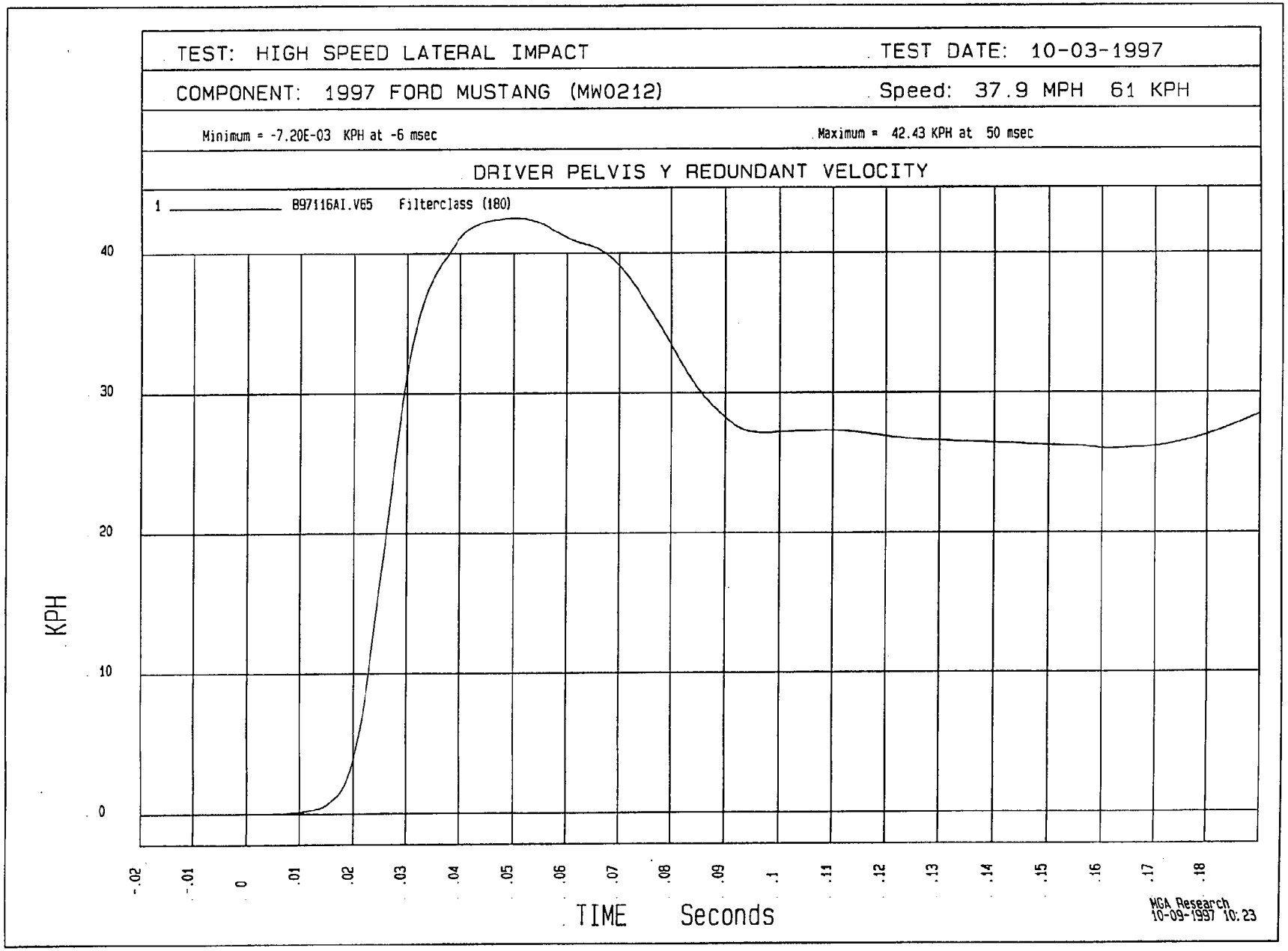
TIME (SECONDS)
MGA Research
10-09-1997 10:24


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -7.20E-03 KPH at -6 msec
Maximum = 42.43 KPH at 50 msec
DRIVER PELVIS Y REDUNDANT VELOCITY
1 B97116AI.V65 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
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.08
.09
.1
.11
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.16
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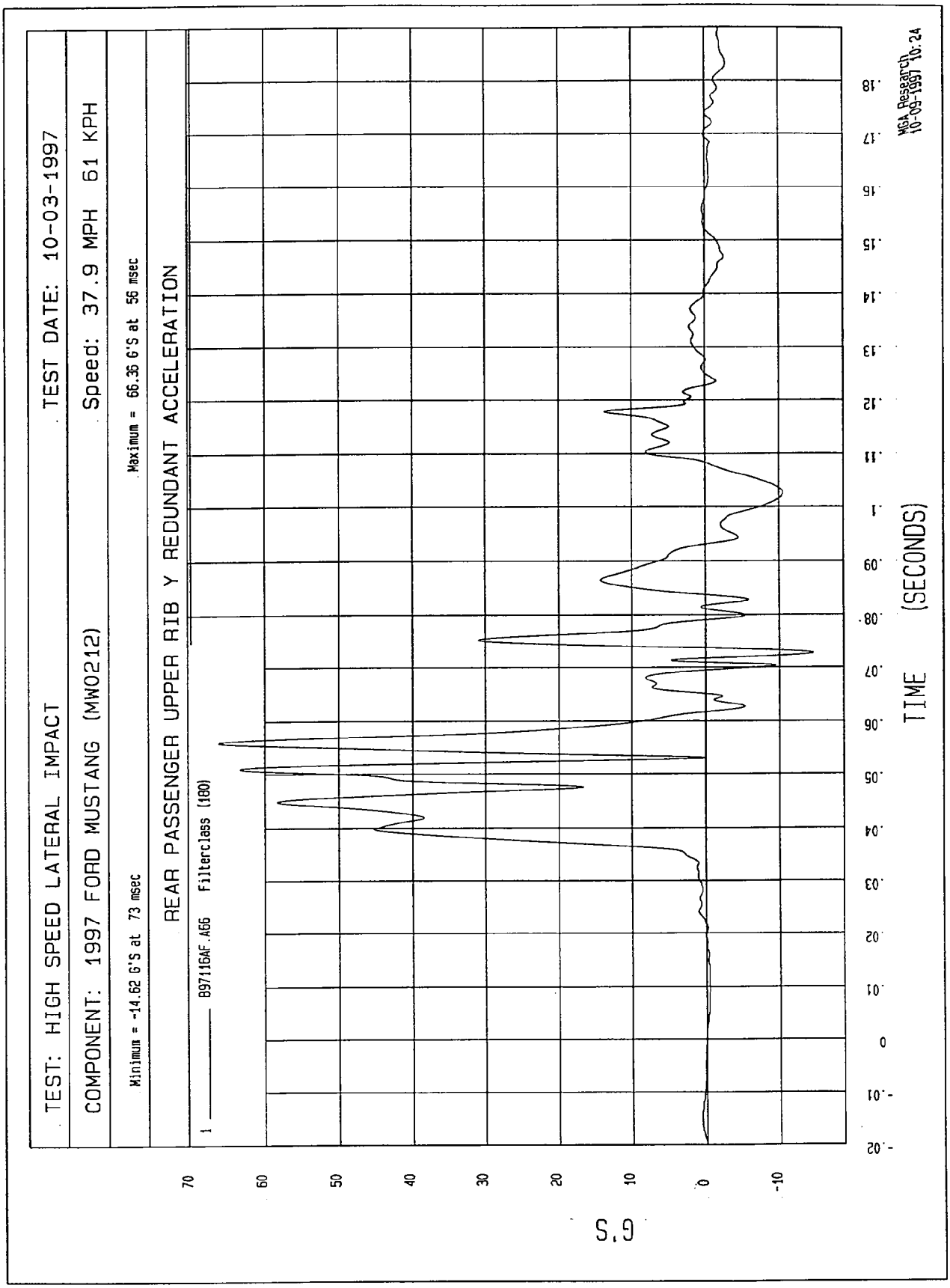
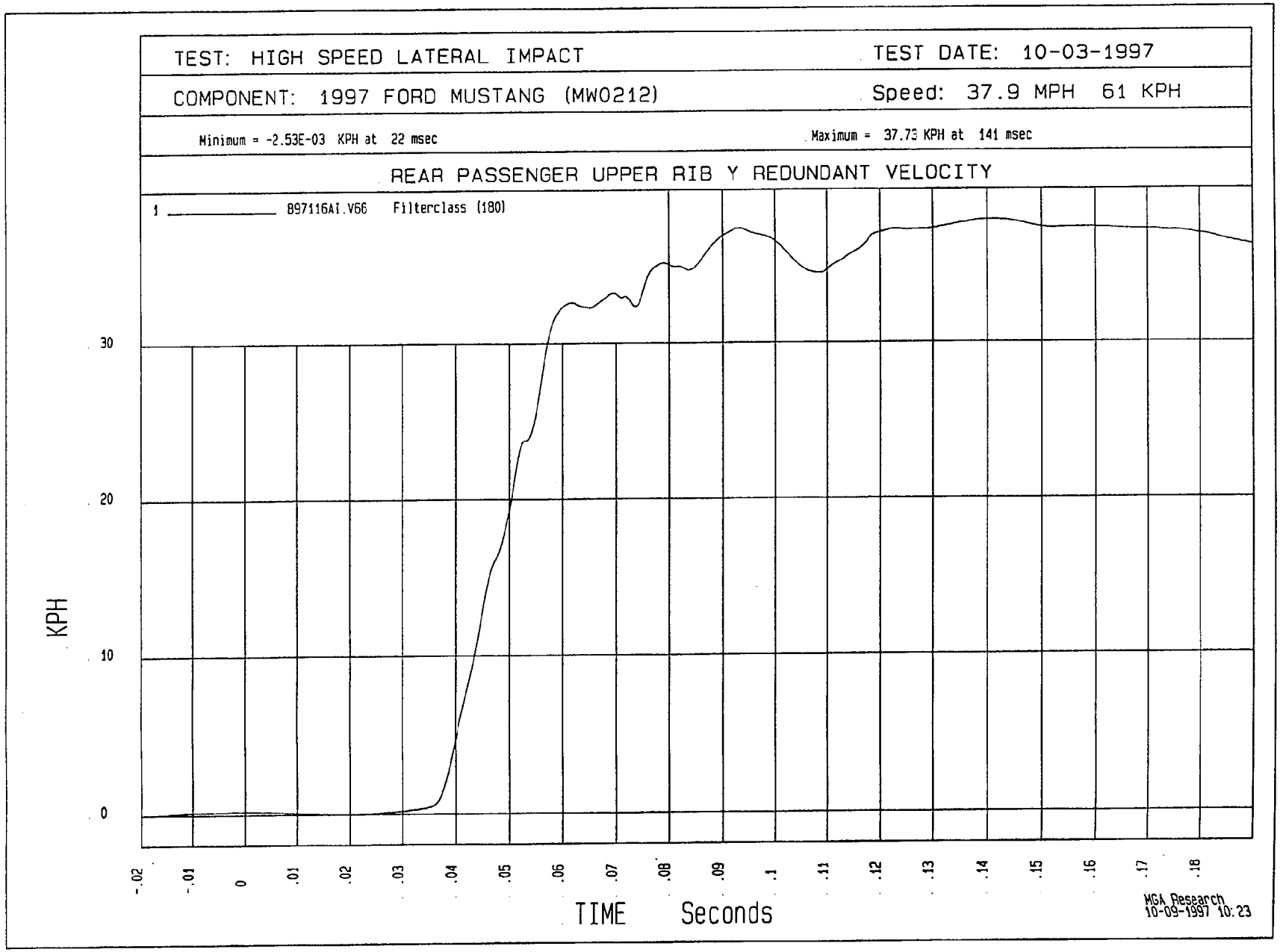
TIME Seconds
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -14.62 G'S at 73 msec
Maximum = 66.36 G'S at 56 msec
REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B97116AF.A66 Filterclass (180)
MGA Research
10-03-1997 10:24
TIME (SECONDS)
G'S


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -2.53E-03 KPH at 22 msec
Maximum = 37.73 KPH at 141 msec
REAR PASSENGER UPPER RIB Y REDUNDANT VELOCITY
1 897116AI.V66 Filterclass (180)
KPH
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
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.16
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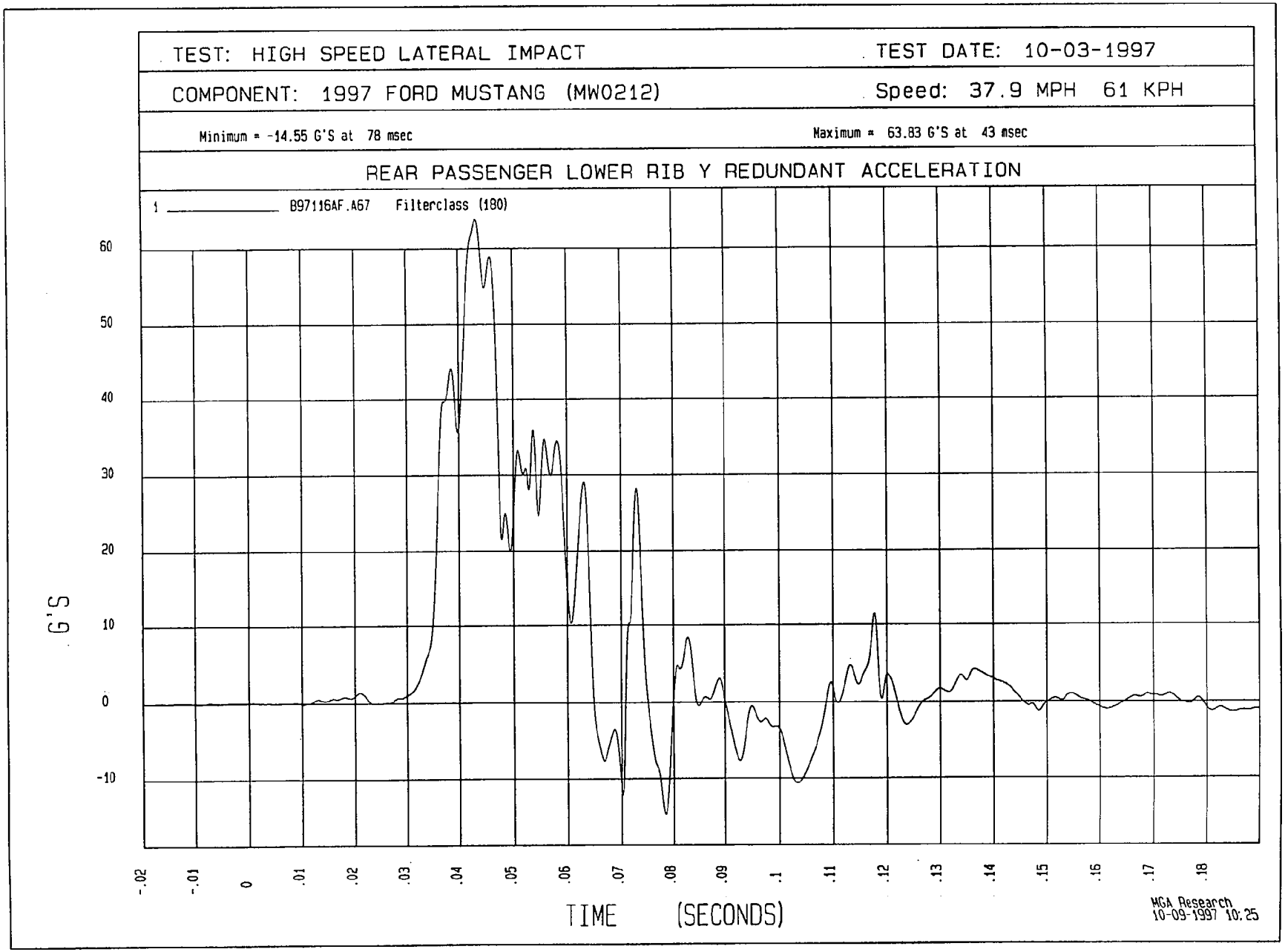
TIME Seconds
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -14.55 G'S at 78 msec
Maximum = 63.83 G'S at 43 msec
REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 B97116AF.A67 Filterclass (180)
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
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.13
.14
.15
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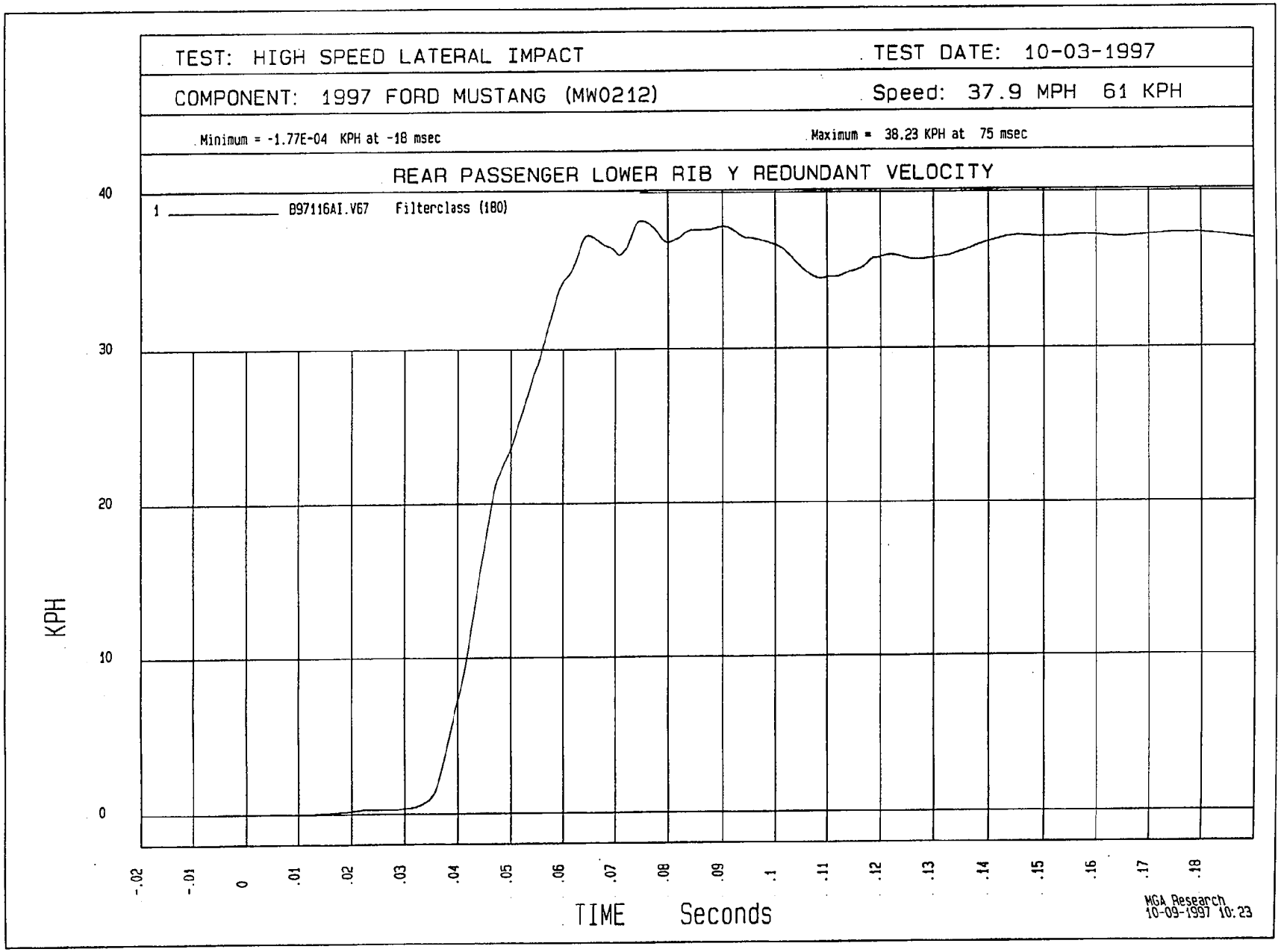
TIME (SECONDS)
MGA Research
10-09-1997 10:25


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -1.77E-04 KPH at -18 msec
Maximum = 38.23 KPH at 75 msec
REAR PASSENGER LOWER RIB Y REDUNDANT VELOCITY
1 B97116AI.V67 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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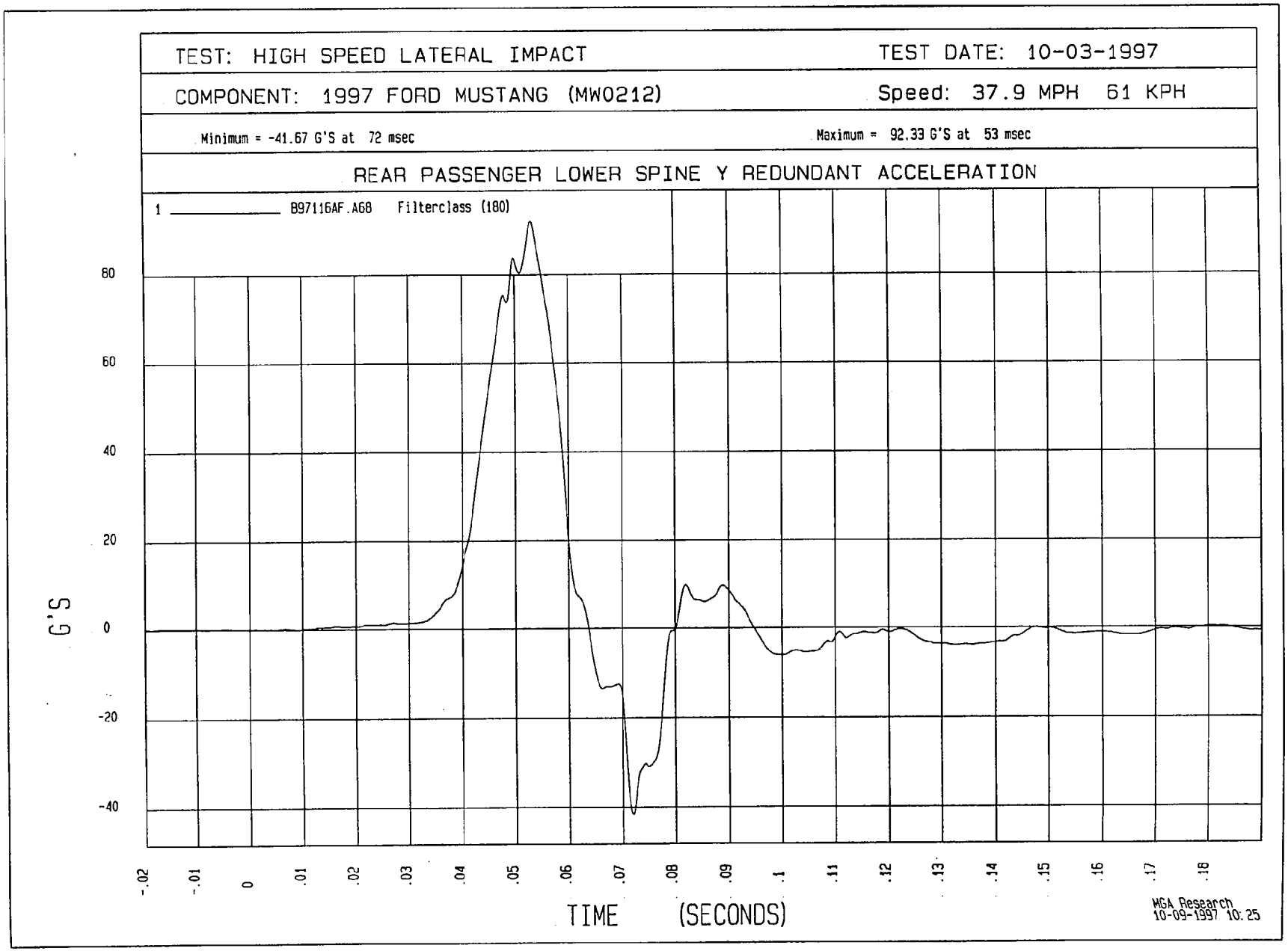
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -41.67 G'S at 72 msec
Maximum = 92.33 G'S at 53 msec
REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 B97116AF.A68 Filterclass (180)
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
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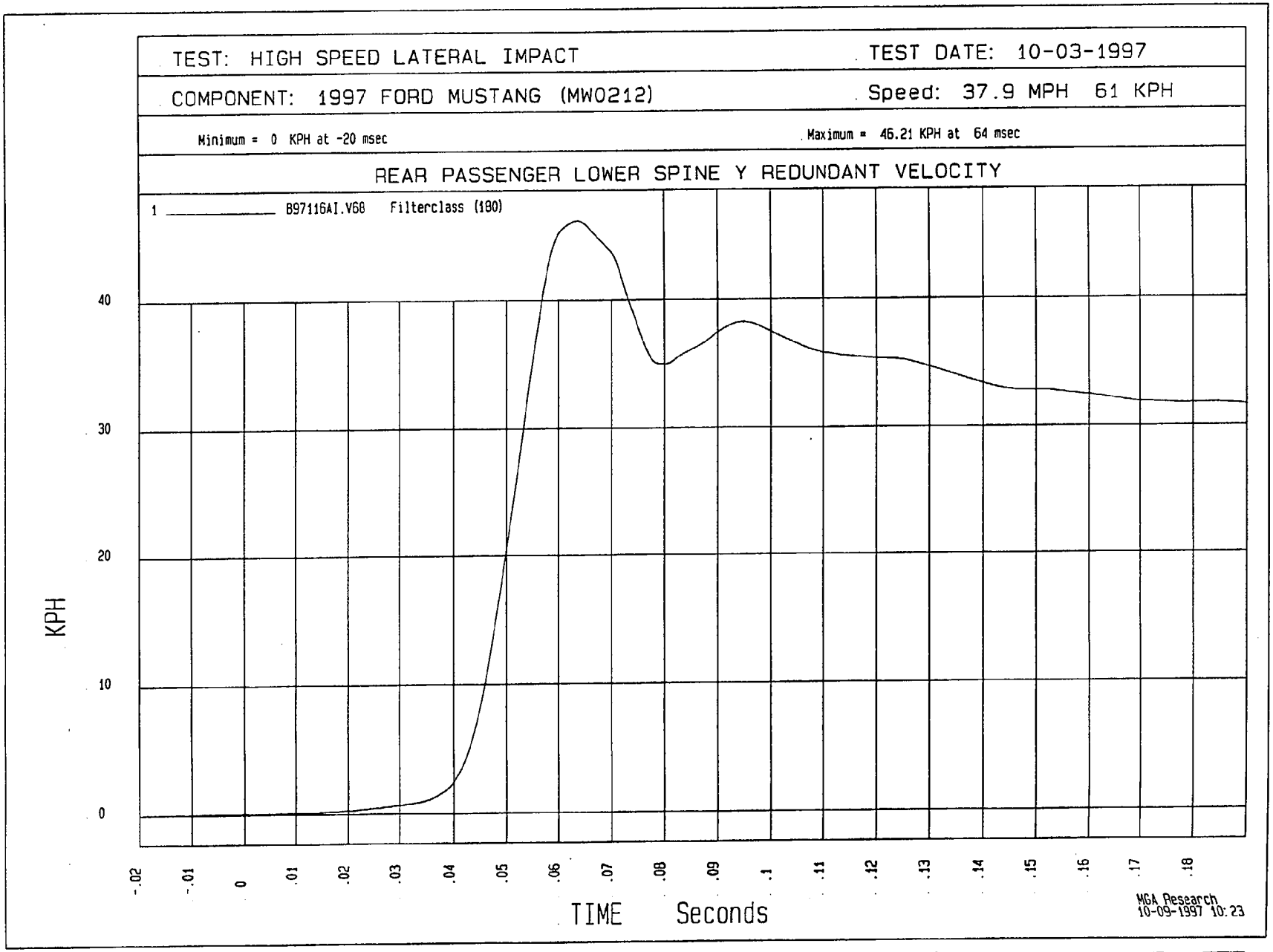
TIME (SECONDS)
MGA Research
10-09-1997 10:25


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = 0 KPH at -20 msec
Maximum = 46.21 KPH at 64 msec
REAR PASSENGER LOWER SPINE Y REDUNDANT VELOCITY
1 B97116AI.V68 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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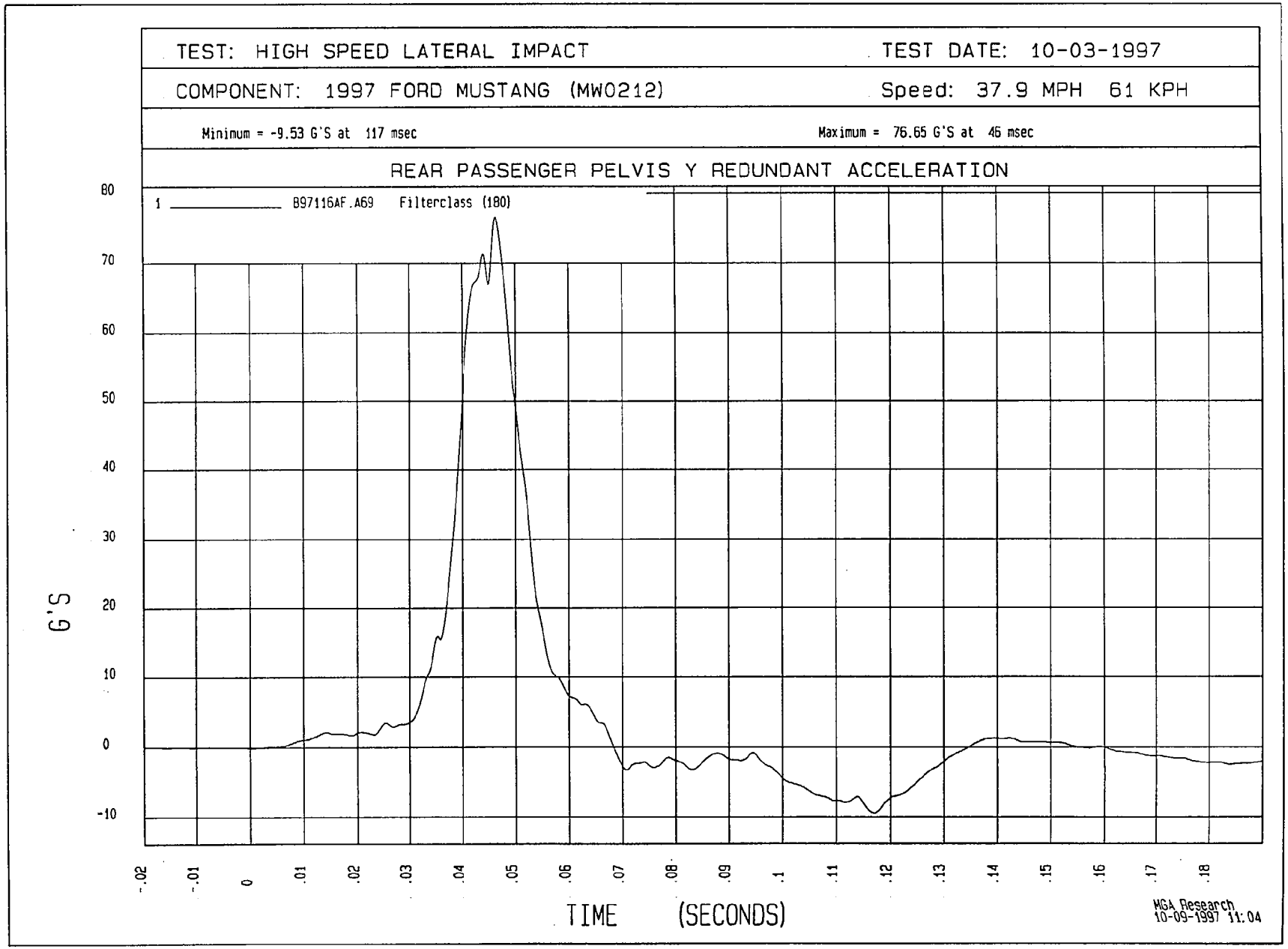
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:23


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.53 G'S at 117 msec
Maximum = 76.65 G'S at 46 msec
REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 B97116AF.A69 Filterclass (180)
80
70
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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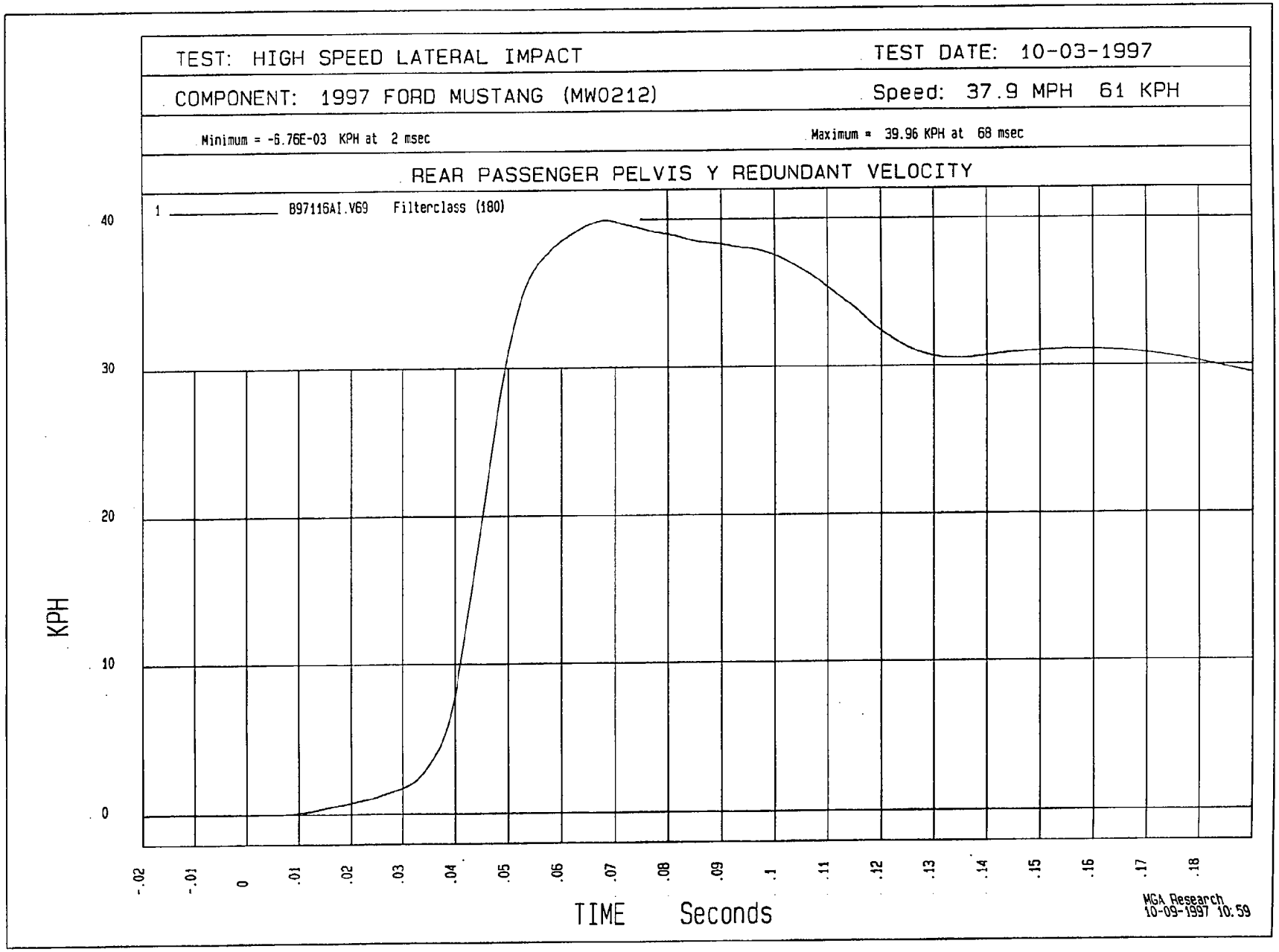
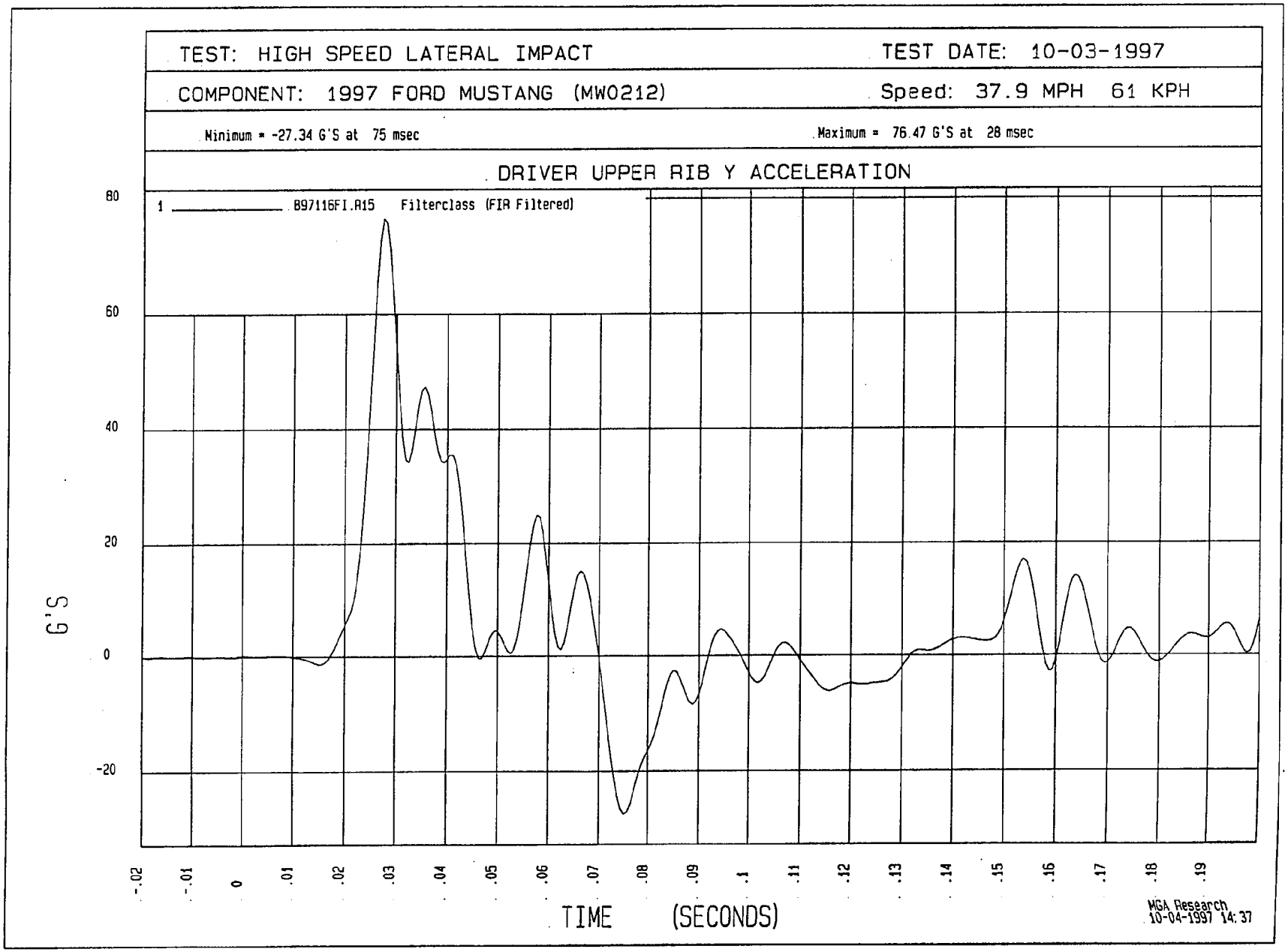
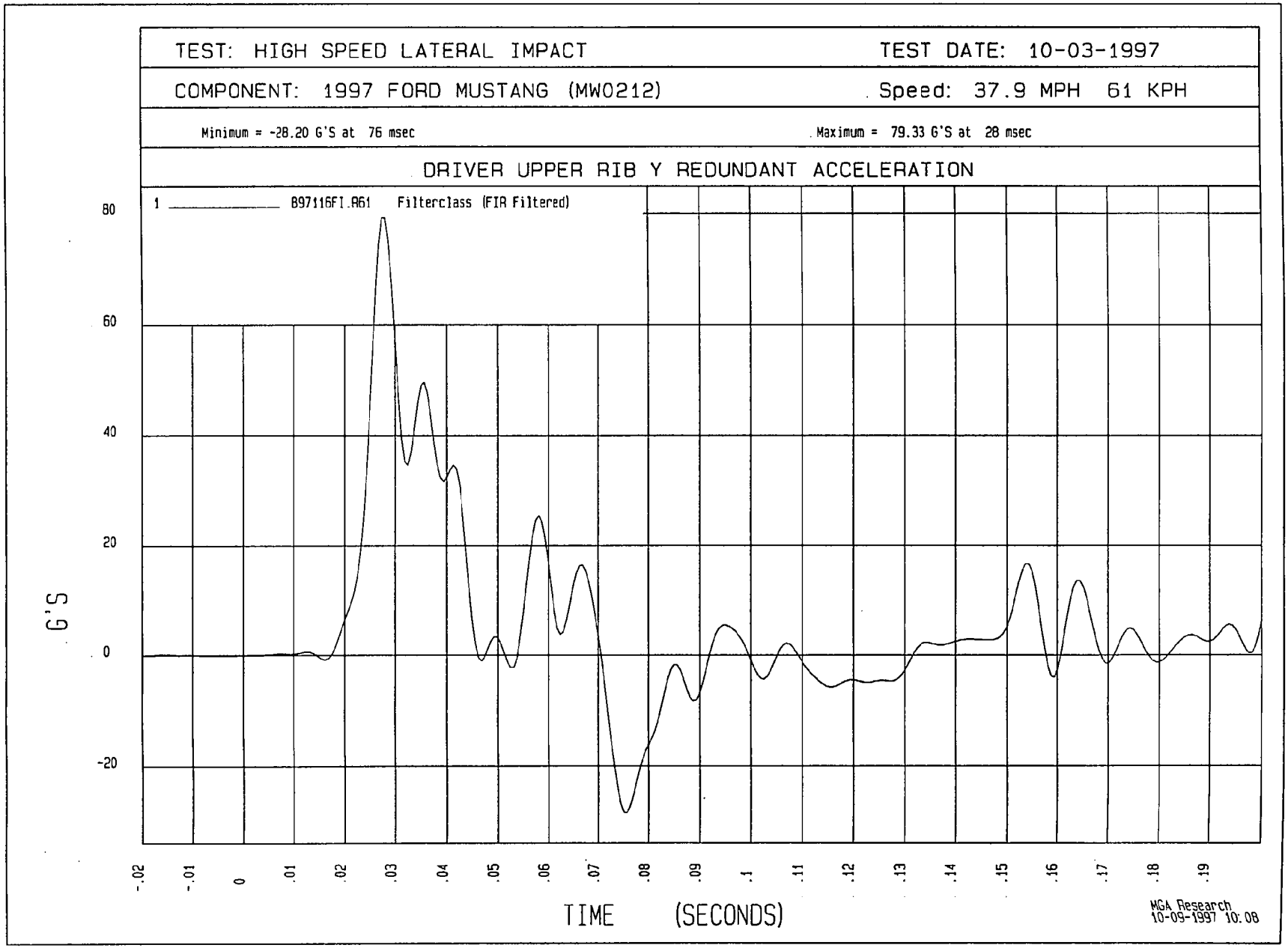
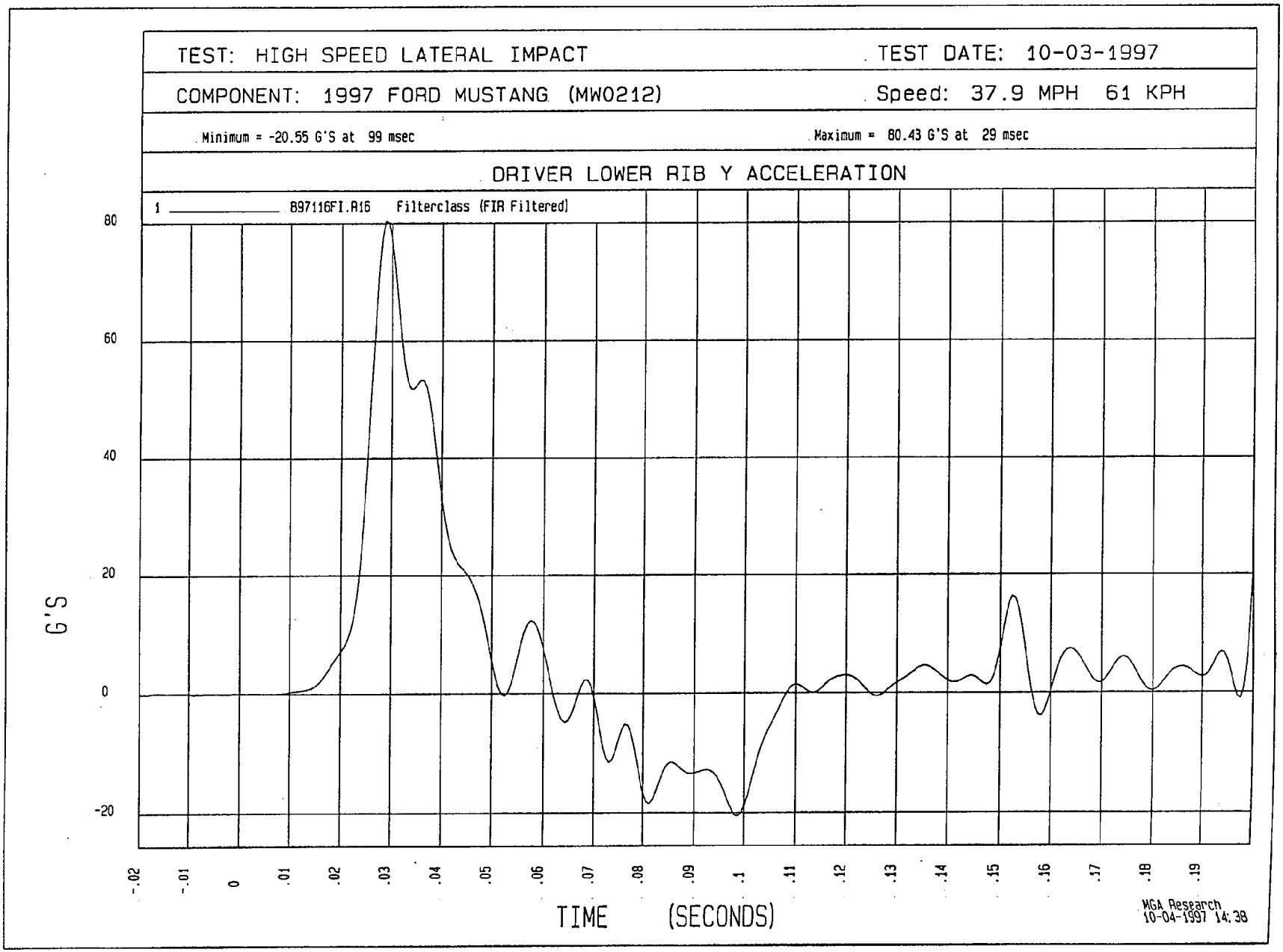
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME (SECONDS)
MGA Research
10-09-1997 11:04


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -6.76E-03 KPH at 2 msec
Maximum = 39.96 KPH at 68 msec
REAR PASSENGER PELVIS Y REDUNDANT VELOCITY
1 B97116AI.V69 Filterclass (180)
KPH
40
30
20
10
0
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
TIME Seconds
MGA Research
10-09-1997 10:59

FINITE IMPULSE RESPONSE (FIR) FILTERED DATA


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -27.34 G'S at 75 msec
Maximum = 76.47 G'S at 28 msec
DRIVER UPPER RIB Y ACCELERATION
1 B97116FI.A15 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:37


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -28.20 G'S at 76 msec
Maximum = 79.33 G'S at 28 msec
DRIVER UPPER RIB Y REDUNDANT ACCELERATION
1 B97116FI.A61 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:08


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -20.55 G'S at 99 msec
Maximum = 80.43 G'S at 29 msec
DRIVER LOWER RIB Y ACCELERATION
1 B97116FI.A16 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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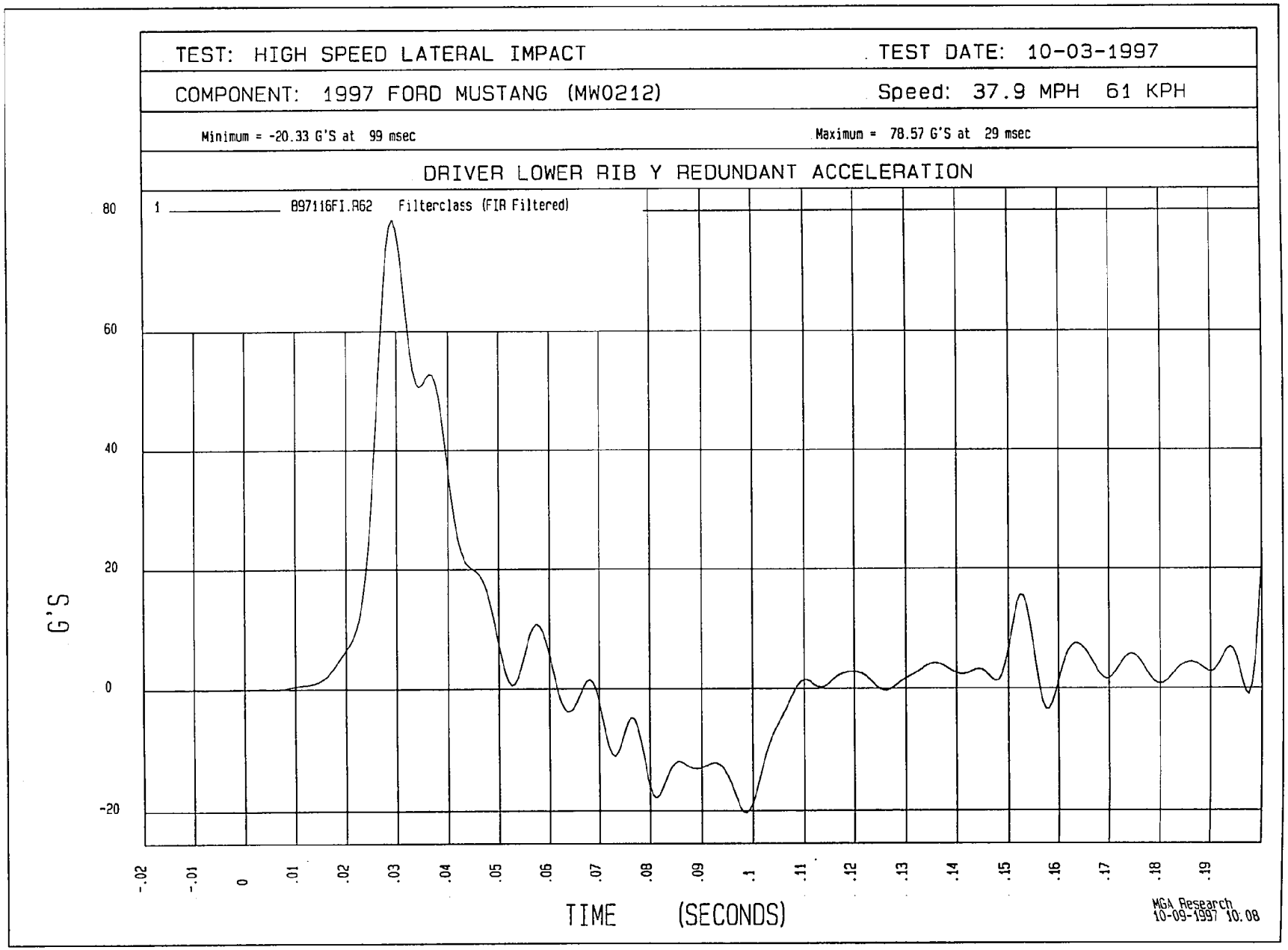
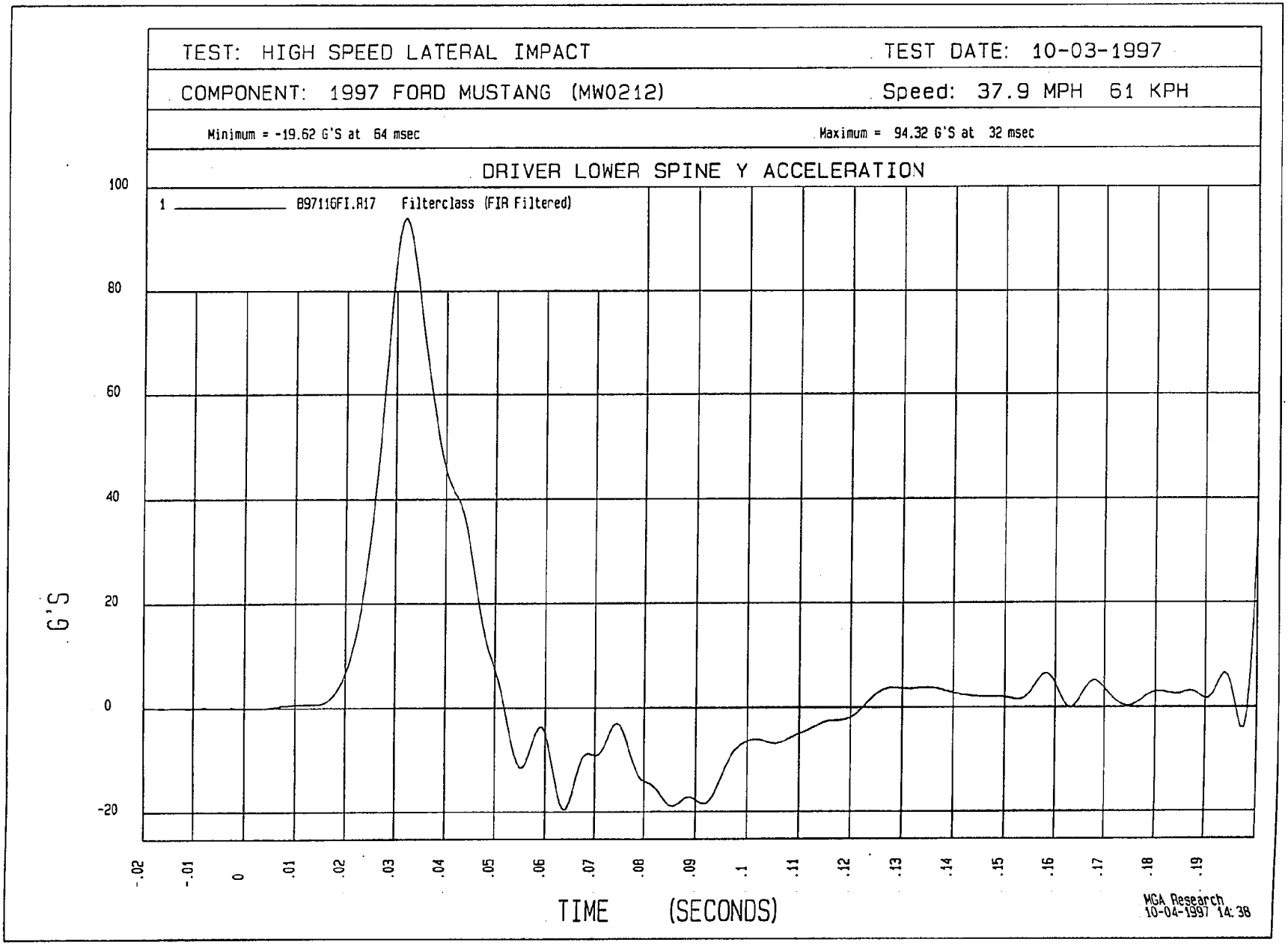
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:38


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -20.33 G'S at 99 msec
Maximum = 78.57 G'S at 29 msec
DRIVER LOWER RIB Y REDUNDANT ACCELERATION
1 B97116FI.A62 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:08


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -19.62 G'S at 64 msec
Maximum = 94.32 G'S at 32 msec
DRIVER LOWER SPINE Y ACCELERATION
1 B9711GFI.A17 Filterclass (FIR Filtered)
100
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
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.11
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.14
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.16
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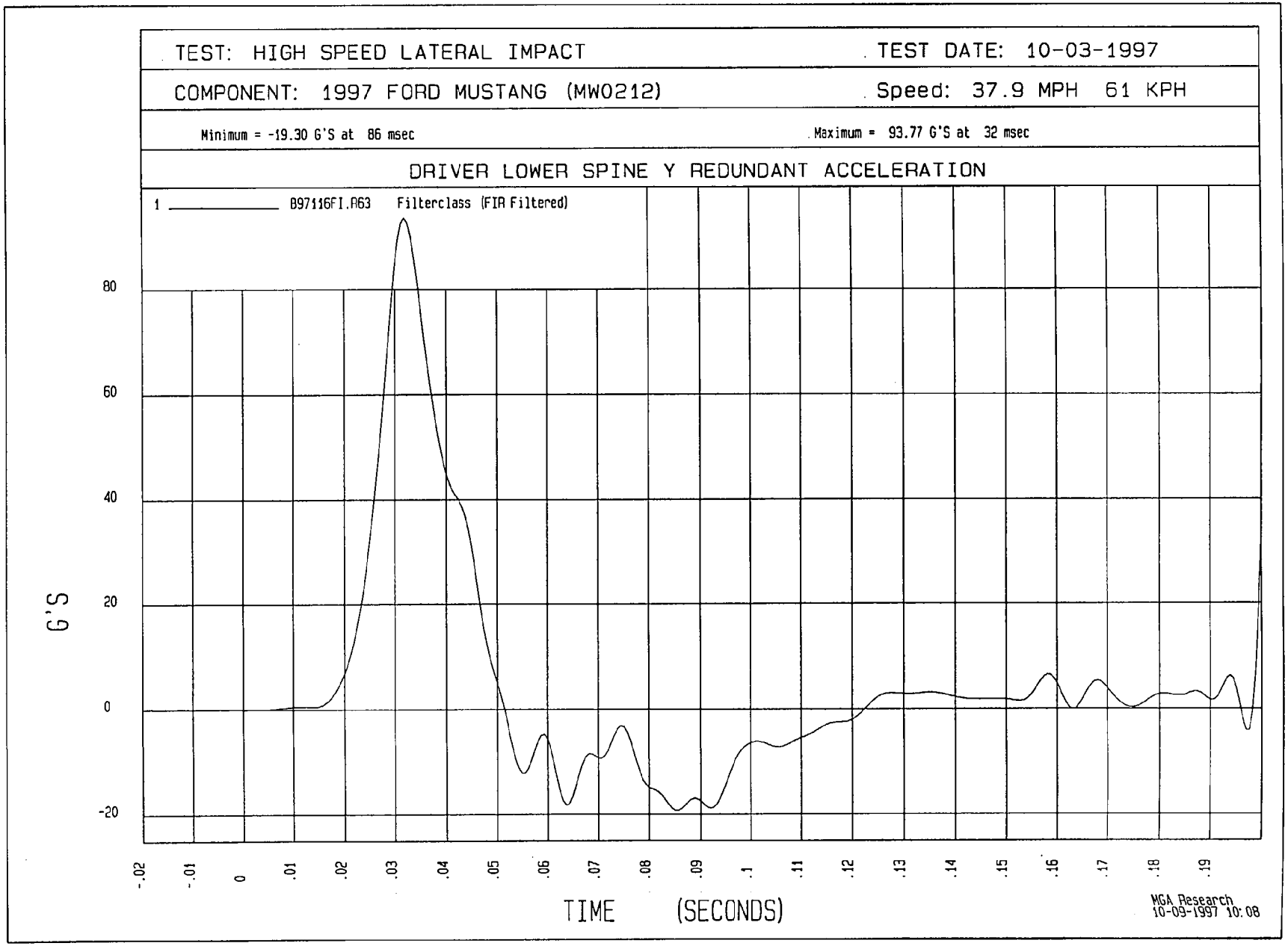
.18
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:38


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -19.30 G'S at 86 msec
Maximum = 93.77 G'S at 32 msec
DRIVER LOWER SPINE Y REDUNDANT ACCELERATION
1 B97116FI.A63 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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.07
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.16
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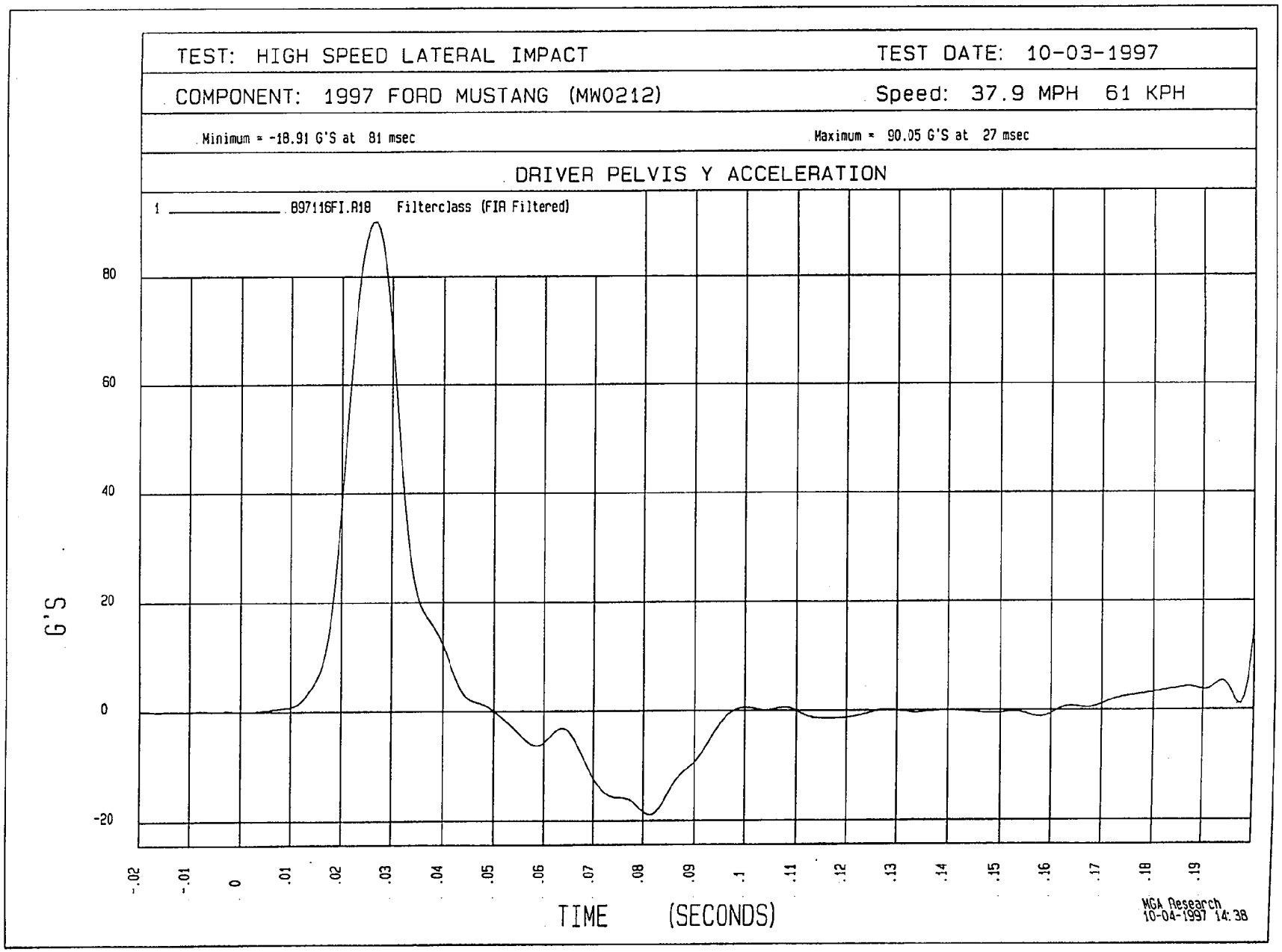
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:08


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -18.91 G'S at 81 msec
Maximum = 90.05 G'S at 27 msec
DRIVER PELVIS Y ACCELERATION
1 897116FI.A18 Filterclass (FIA Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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.16
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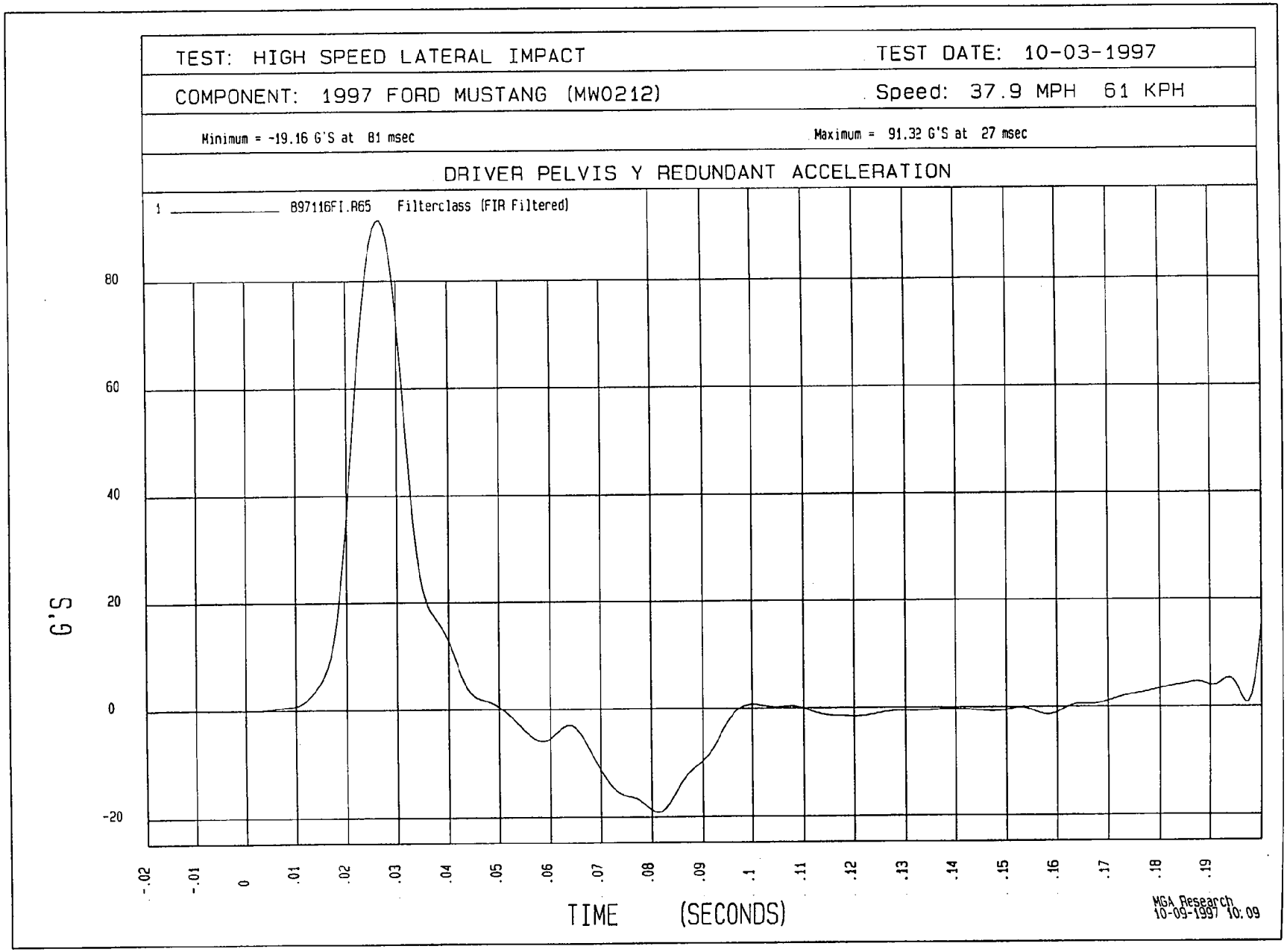
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:38


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -19.16 G'S at 81 msec
Maximum = 91.32 G'S at 27 msec
DRIVER PELVIS Y REDUNDANT ACCELERATION
1 897116FI.R65 Filterclass (FIR Filtered)
80
60
40
20
0
-20
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
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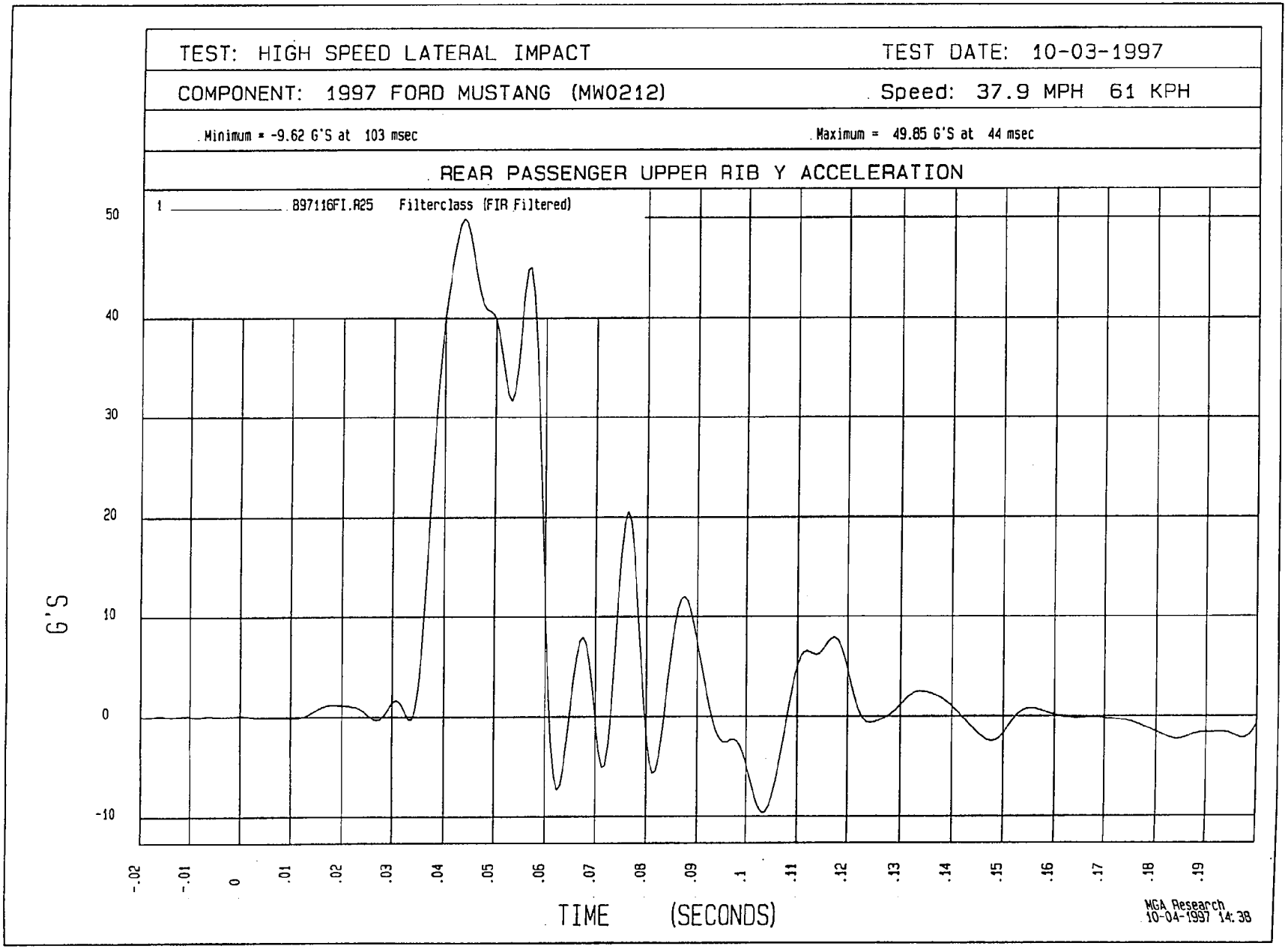
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:09


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.62 G'S at 103 msec
Maximum = 49.85 G'S at 44 msec
REAR PASSENGER UPPER RIB Y ACCELERATION
1 897116FI.A25 Filterclass (FIR Filtered)
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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.09
.1
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.14
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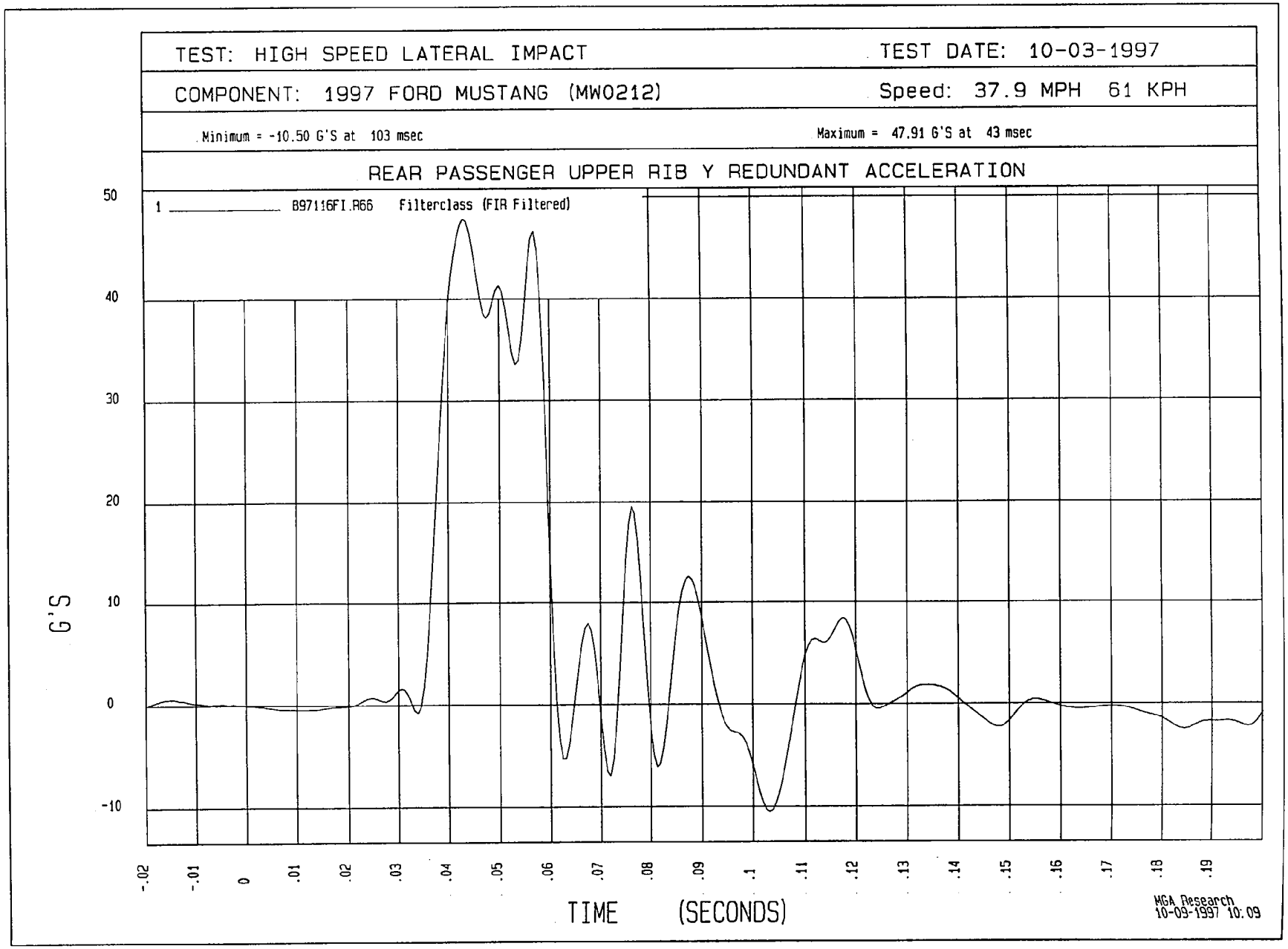
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:38


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -10.50 G'S at 103 msec
Maximum = 47.91 G'S at 43 msec
REAR PASSENGER UPPER RIB Y REDUNDANT ACCELERATION
1 B97116FI.R66 Filterclass (FIR Filtered)
G'S
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
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.09
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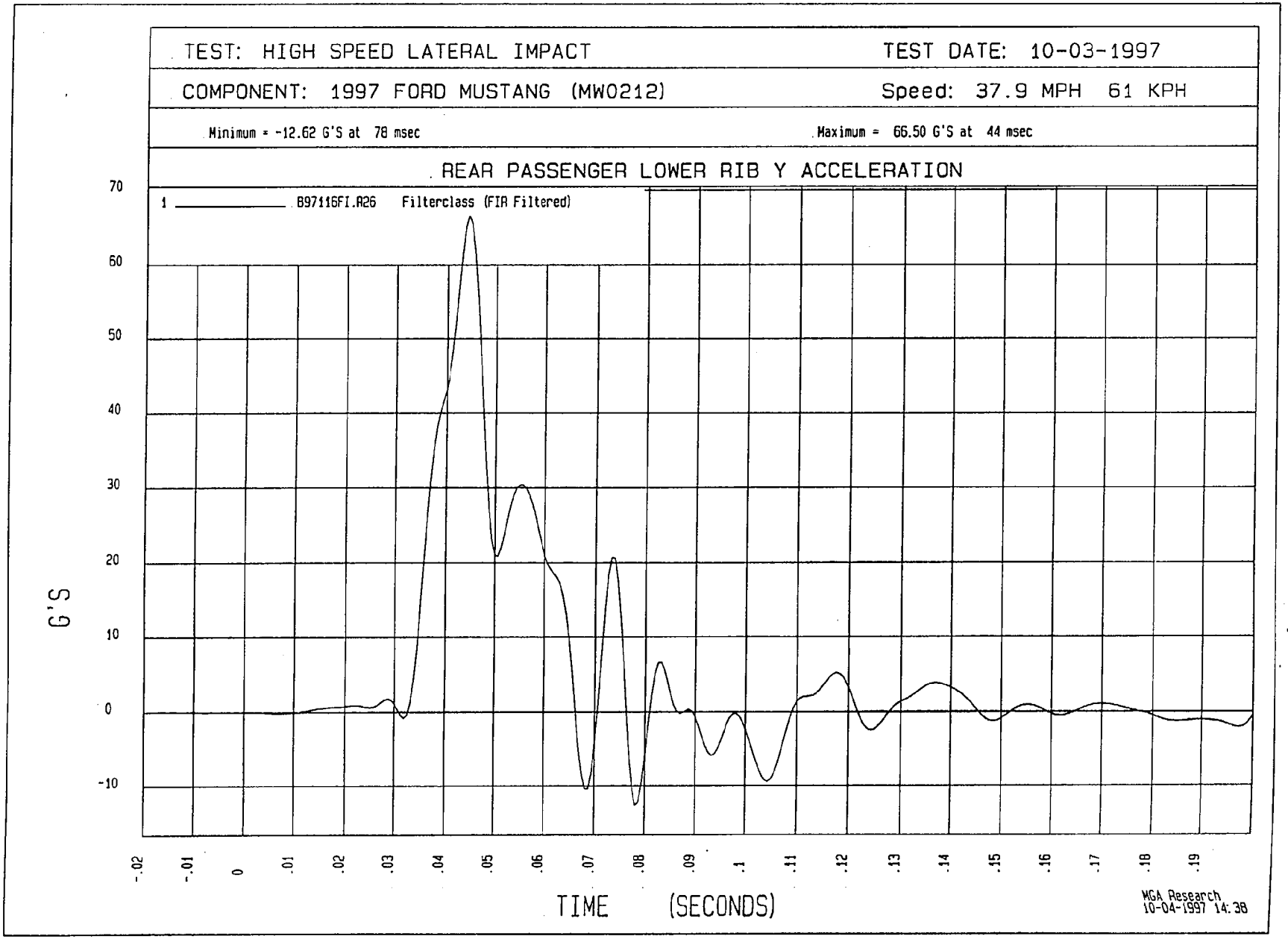
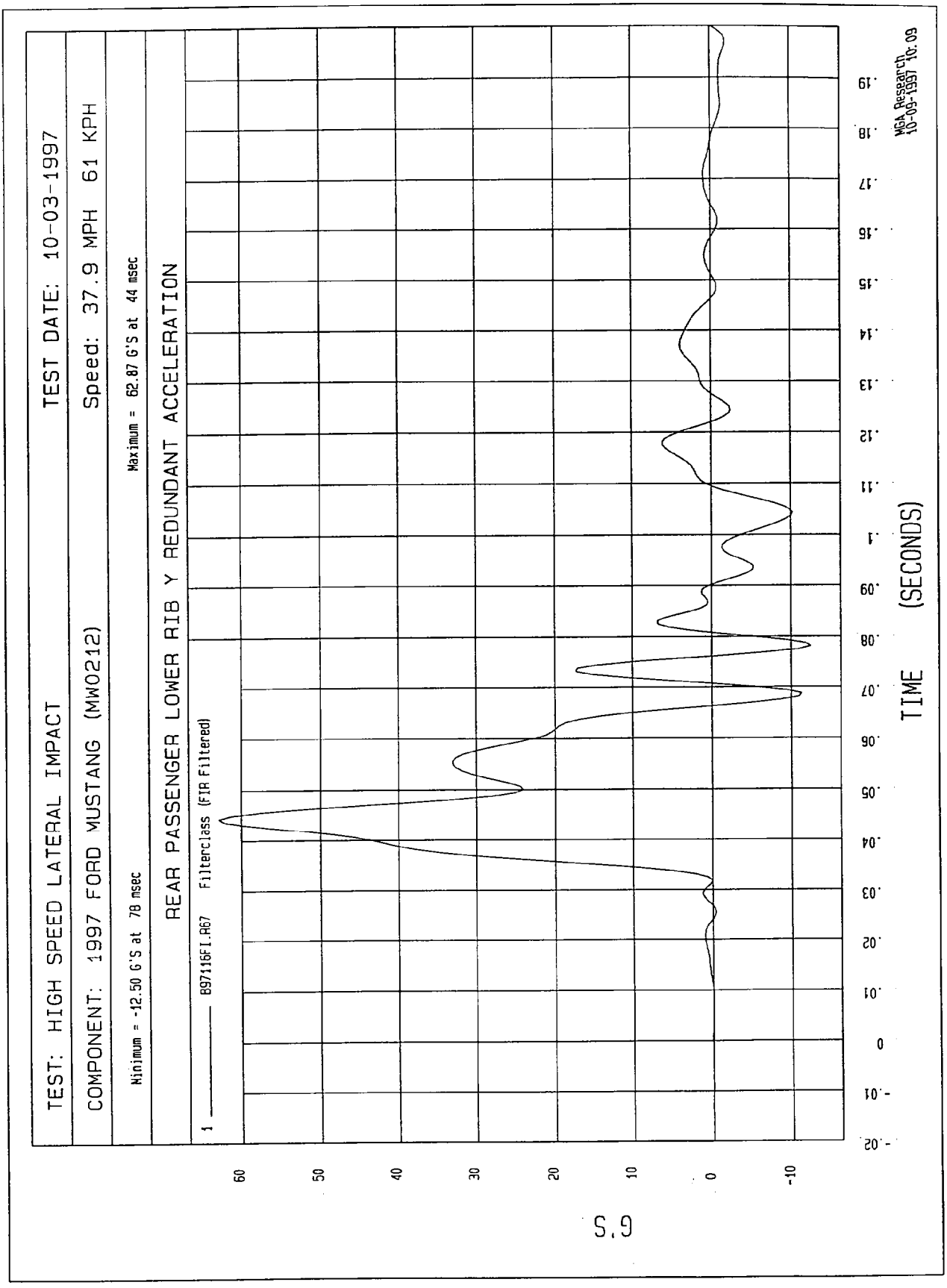
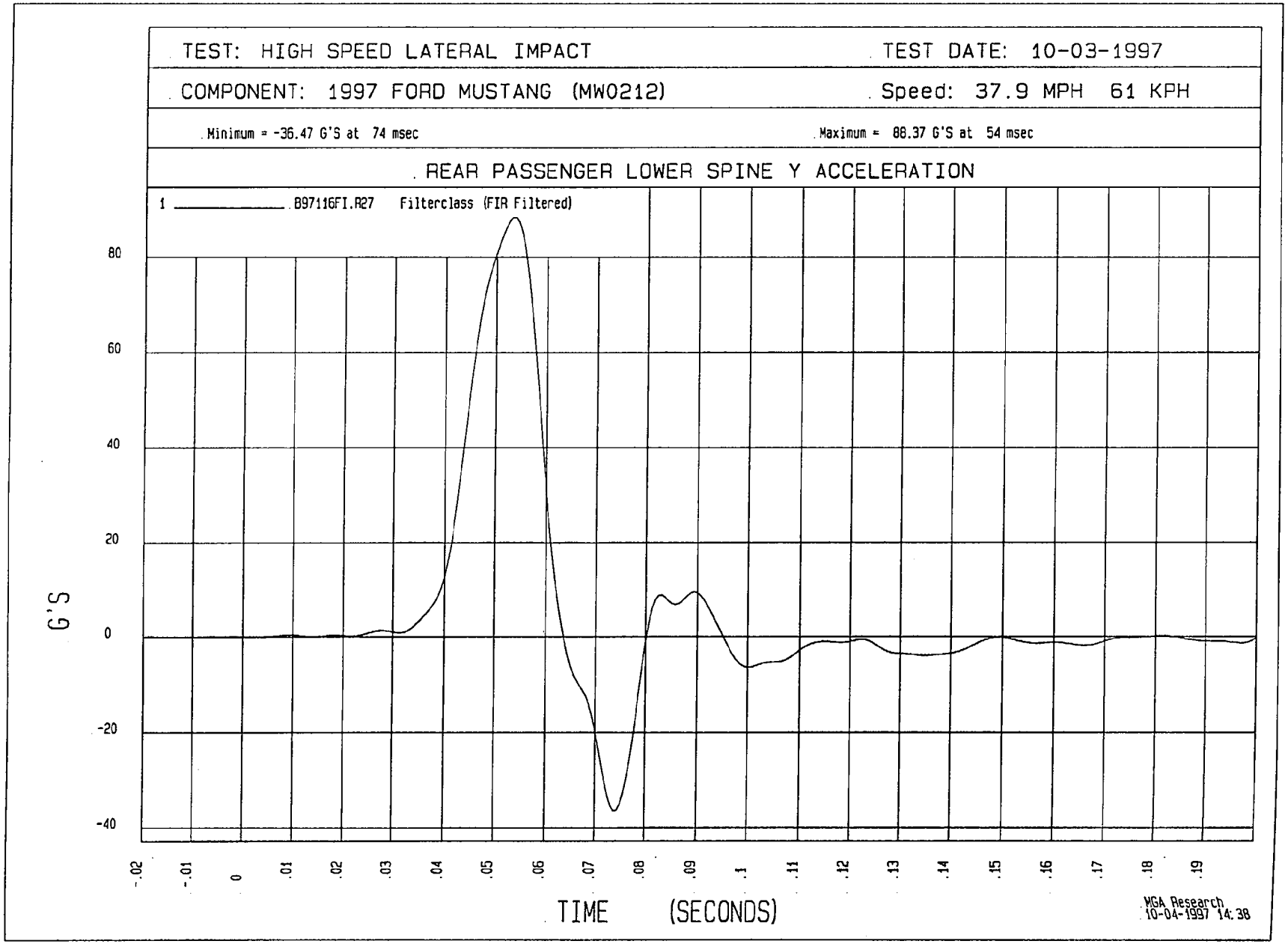
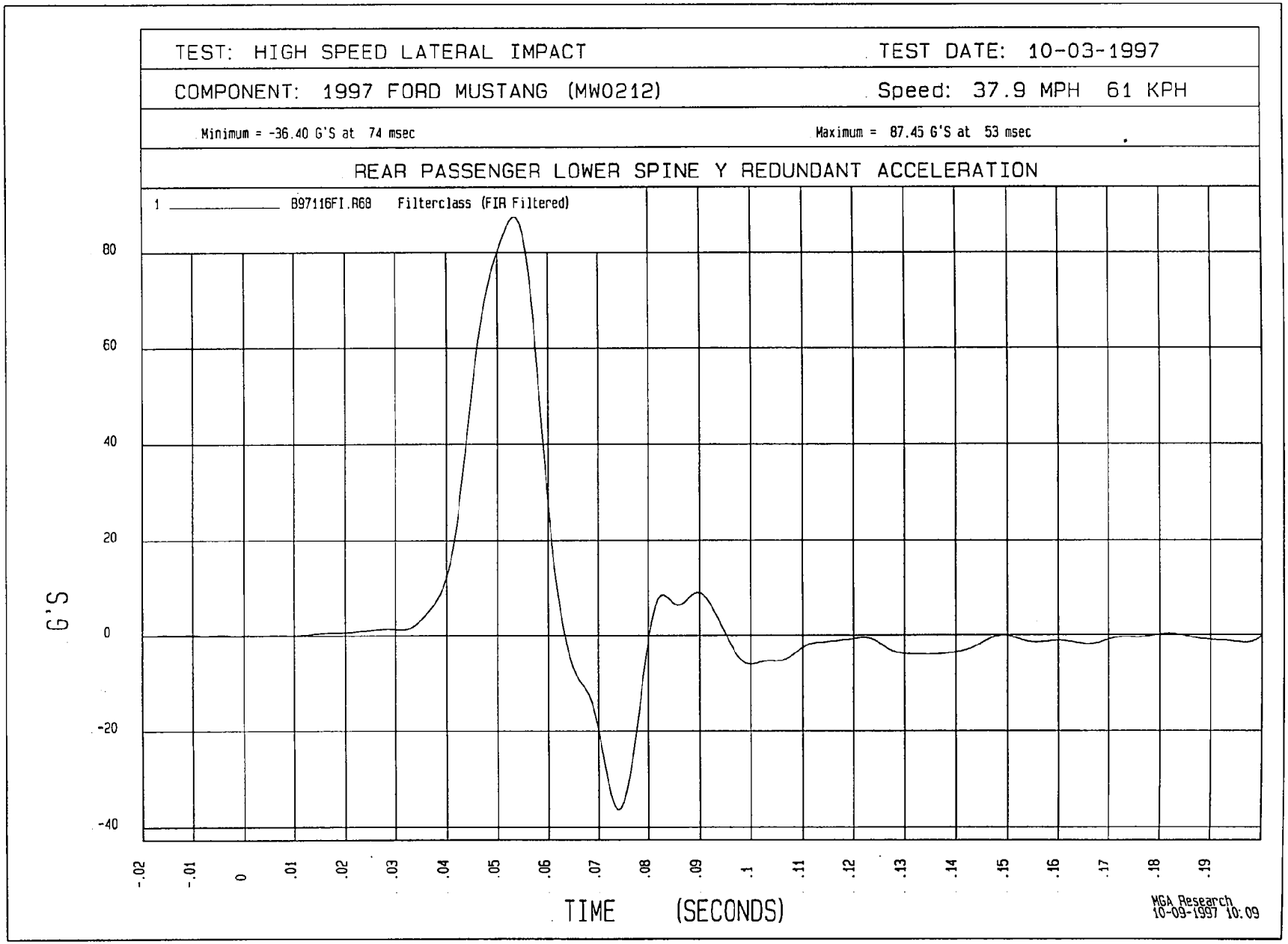
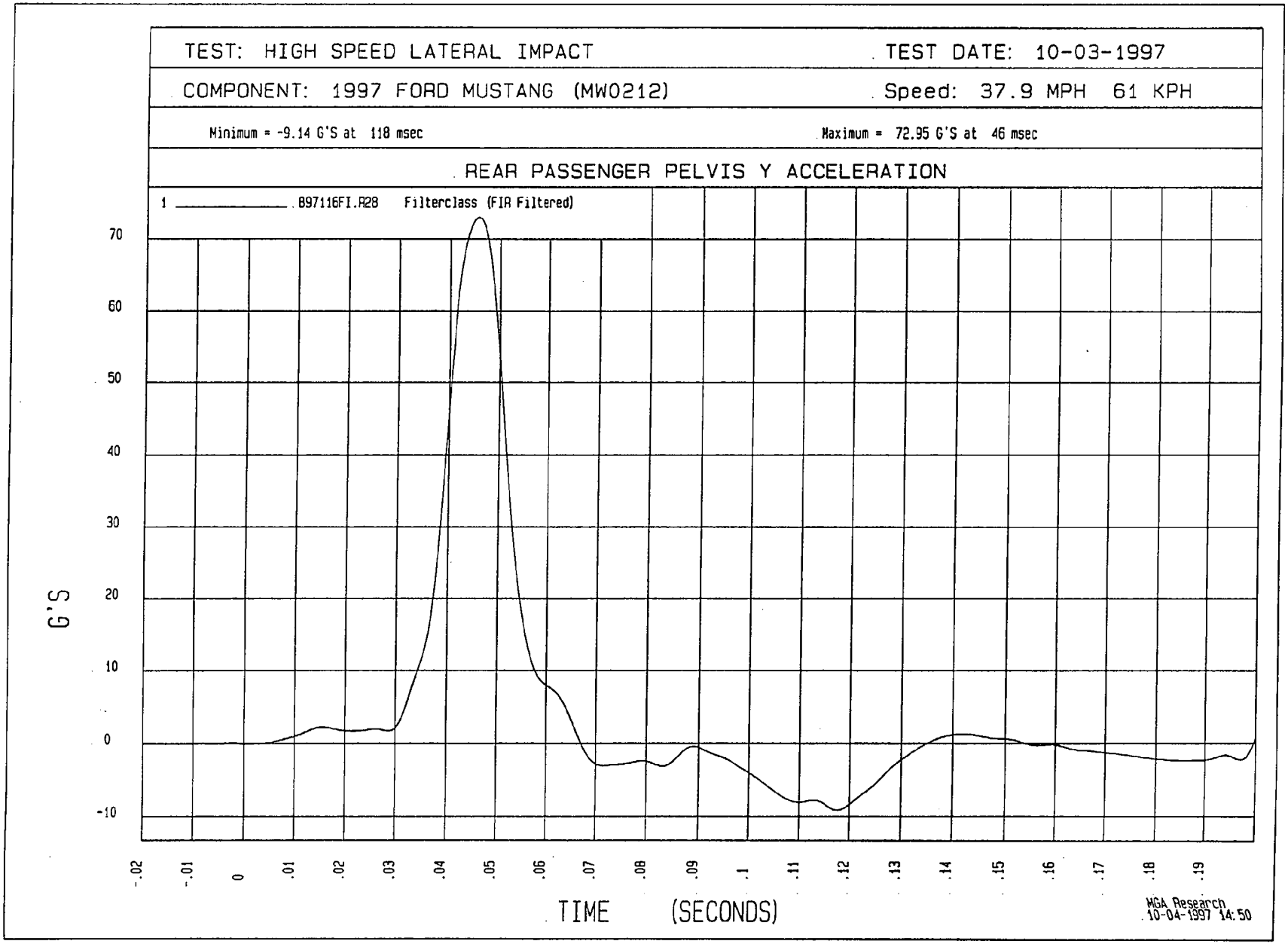
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:09

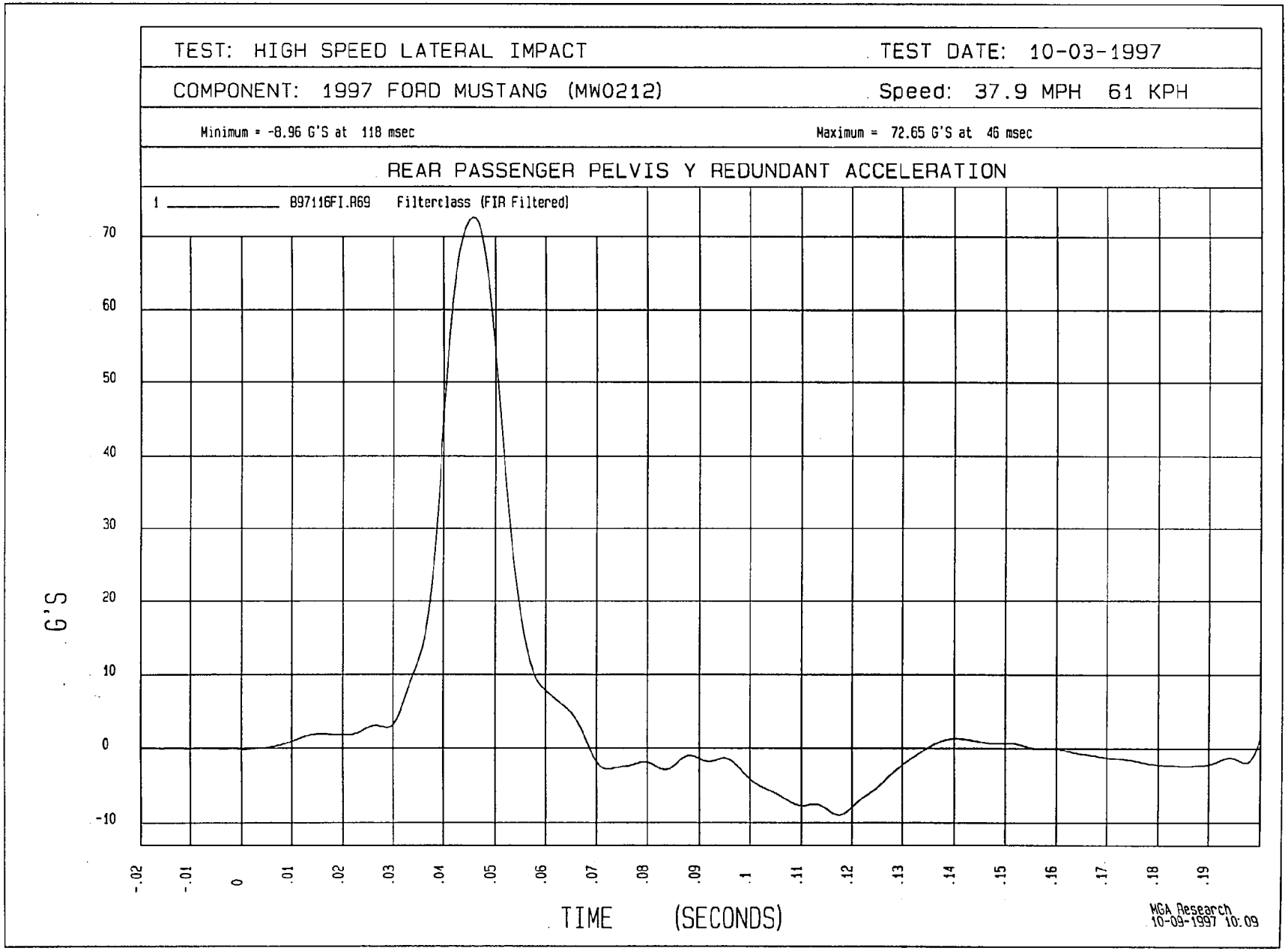

TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -12.62 G'S at 78 msec
Maximum = 66.50 G'S at 44 msec
REAR PASSENGER LOWER RIB Y ACCELERATION
1 B97116FI.A26 Filterclass (FIR Filtered)
70
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:38


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -12.50 G'S at 78 msec
Maximum = 62.87 G'S at 44 msec
REAR PASSENGER LOWER RIB Y REDUNDANT ACCELERATION
1 B97116FI.A67 Filterclass (FIR Filtered)
60
50
40
30
20
10
0
-10
.19
.18
.17
.16
.15
.14
.13
.12
.11
.1
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
-.01
-.02
TIME (SECONDS)
MGA Research
10-09-1997 10:09
G's


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -36.47 G'S at 74 msec
Maximum = 88.37 G'S at 54 msec
REAR PASSENGER LOWER SPINE Y ACCELERATION
1 B97116FI.R27 Filterclass (FIR Filtered)
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:38


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -36.40 G'S at 74 msec
Maximum = 87.45 G'S at 53 msec
REAR PASSENGER LOWER SPINE Y REDUNDANT ACCELERATION
1 B97116FI.R68 Filterclass (FIR Filtered)
80
60
40
20
0
-20
-40
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:09


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -9.14 G'S at 118 msec
Maximum = 72.95 G'S at 46 msec
REAR PASSENGER PELVIS Y ACCELERATION
1 _____ 897116FI.R28 Filterclass (FIR Filtered)
70
60
50
40
30
20
10
0
-10
G'S
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-04-1997 14:50


TEST: HIGH SPEED LATERAL IMPACT
TEST DATE: 10-03-1997
COMPONENT: 1997 FORD MUSTANG (MW0212)
Speed: 37.9 MPH 61 KPH
Minimum = -8.96 G'S at 118 msec
Maximum = 72.65 G'S at 46 msec
REAR PASSENGER PELVIS Y REDUNDANT ACCELERATION
1 B97116FI.A69 Filterclass (FIR Filtered)
G'S
70
60
50
40
30
20
10
0
-10
-.02
-.01
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
.13
.14
.15
.16
.17
.18
.19
TIME (SECONDS)
MGA Research
10-09-1997 10:09

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION

REPORT NO. MGA-97-DC05

DUMMY PERFORMANCE CALIBRATIONS

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

1997 FORD MUSTANG 2-DOOR SEDAN
NHTSA NO. MW0212

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: October 3, 1997

Report Date: October 21, 1997

FINAL REPORT

Prepared For:

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
ROOM 5313, NPS-10
400 SEVENTH STREET, S.W.
Washington, D.C. 20590

TABLE OF CONTENTS

PRE-TEST CERTIFICATION DATA

Front Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

Pre-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 272 DATE OF VERIFICATION: October 1, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.20
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: _____

APPROVED BY: _____

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

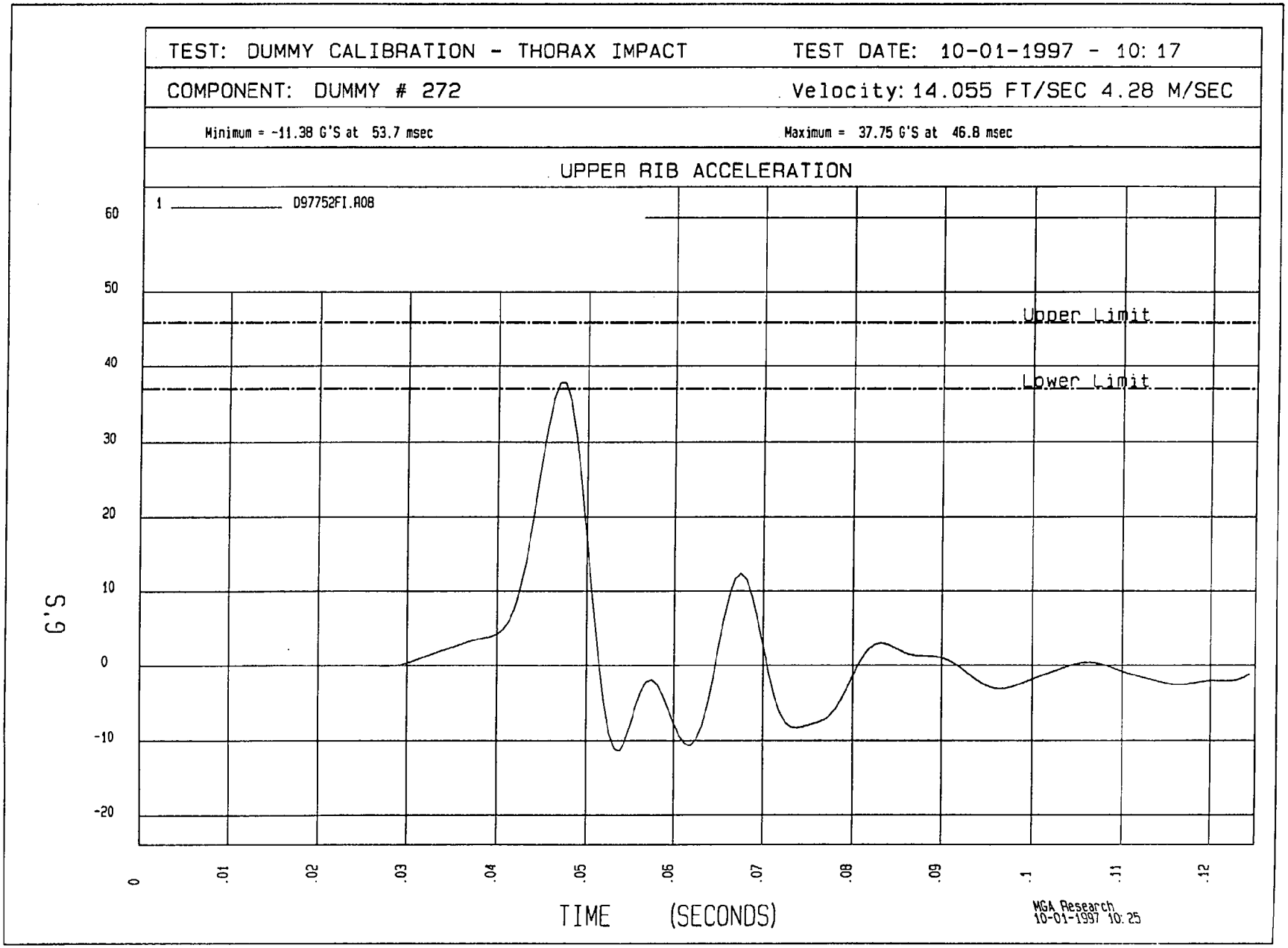
DUMMY NUMBER: 272 TEST NUMBER: D971752

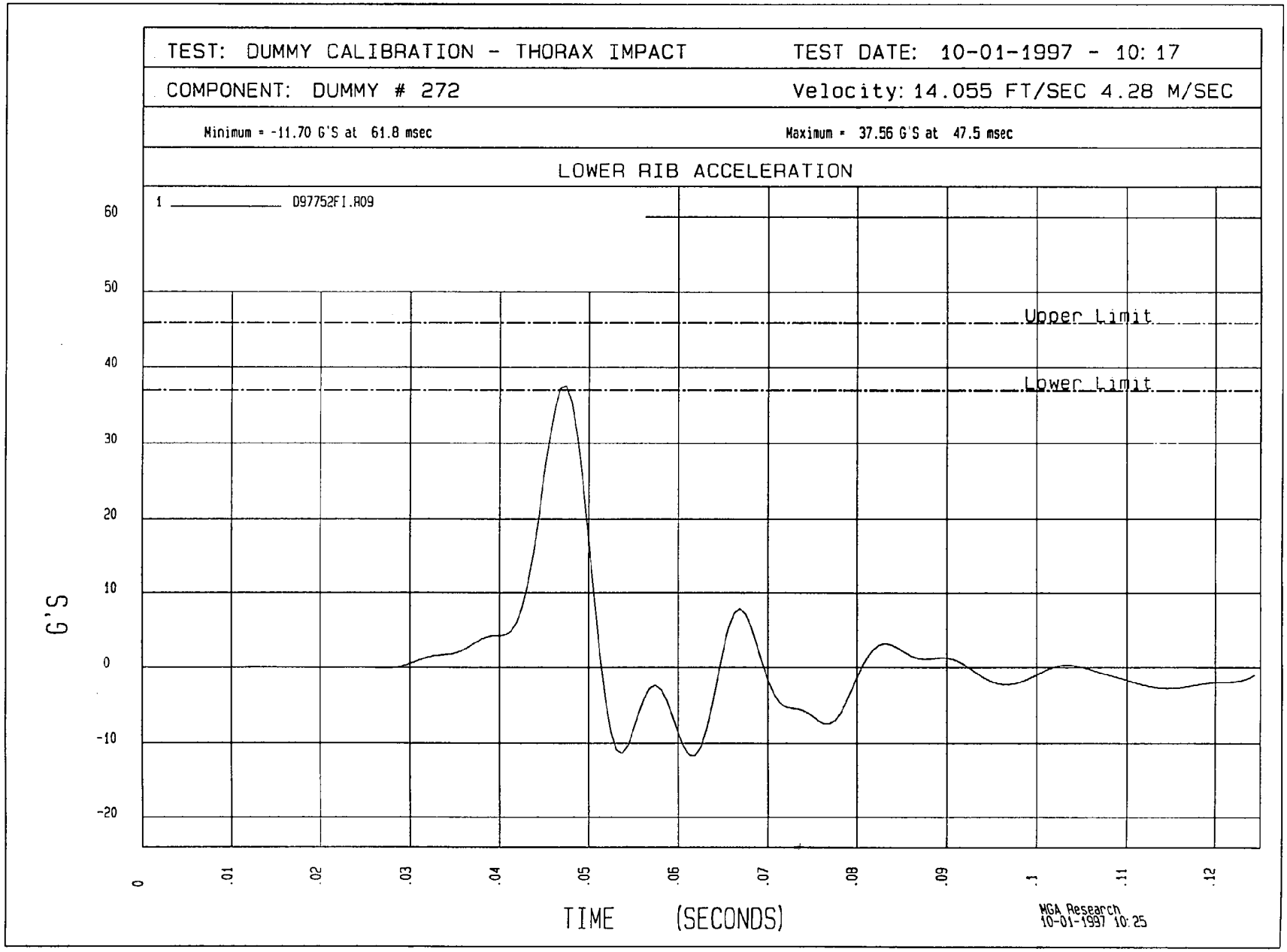
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	34%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	38
LOWER RIB	37 - 46 g's	38
LOWER SPINE	15 - 22 g's	18

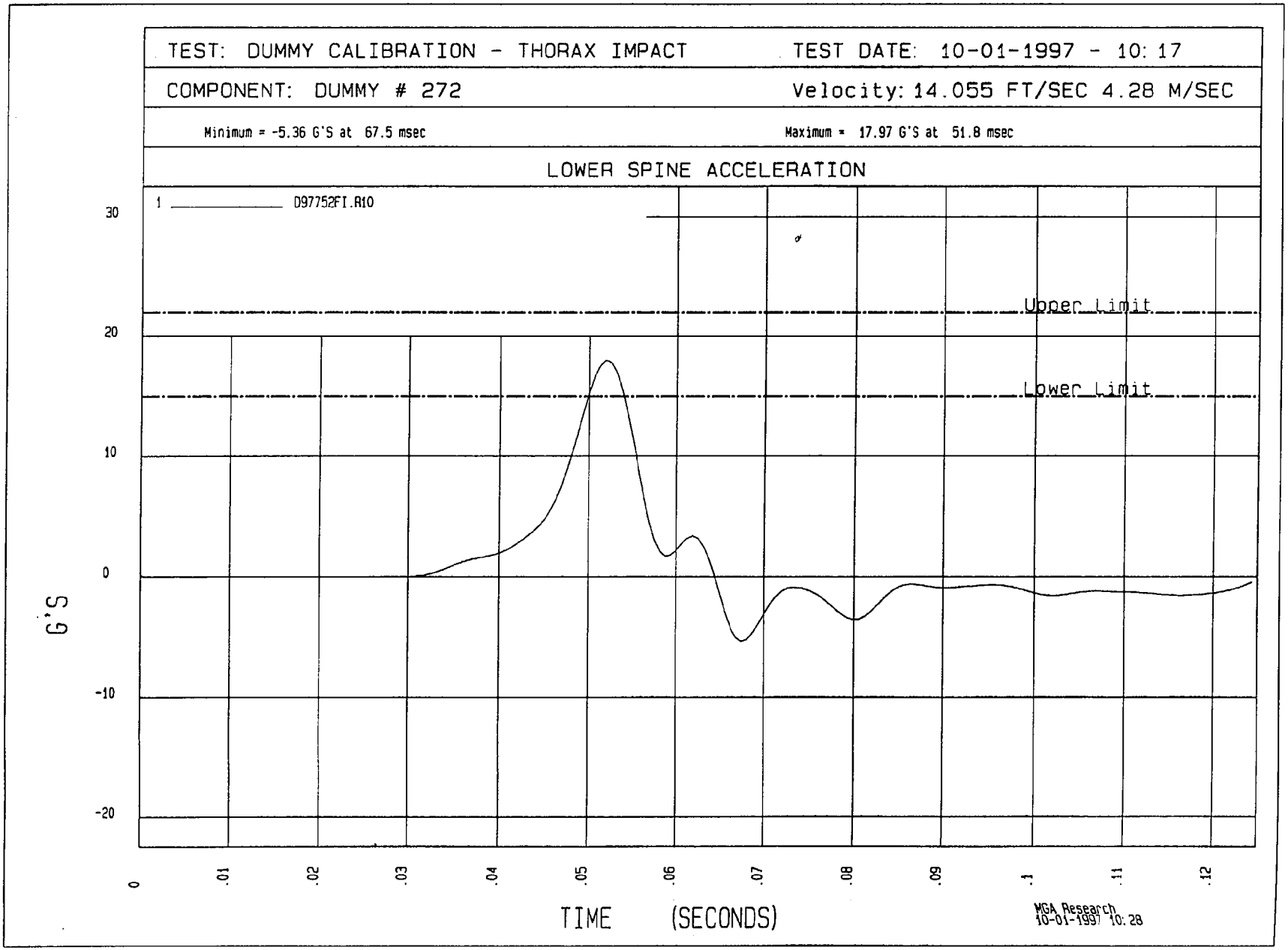
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-01-1997 - 10:17
COMPONENT: DUMMY # 272
Velocity: 14.055 FT/SEC 4.28 M/SEC
Minimum = -11.38 G'S at 53.7 msec
Maximum = 37.75 G'S at 46.8 msec
UPPER RIB ACCELERATION
1 D97752FI.A08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 10:25


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-01-1997 - 10:17
COMPONENT: DUMMY # 272
Velocity: 14.055 FT/SEC 4.28 M/SEC
Minimum = -11.70 G'S at 61.8 msec
Maximum = 37.56 G'S at 47.5 msec
LOWER RIB ACCELERATION
1 D97752FI.R09
Upper Limit
Lower Limit
G'S
60
50
40
30
20
10
0
-10
-20
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 10:25


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-01-1997 - 10:17
COMPONENT: DUMMY # 272
Velocity: 14.055 FT/SEC 4.28 M/SEC
Minimum = -5.36 G'S at 67.5 msec
Maximum = 17.97 G'S at 51.8 msec
LOWER SPINE ACCELERATION
1 D97752FI.R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 10:28

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

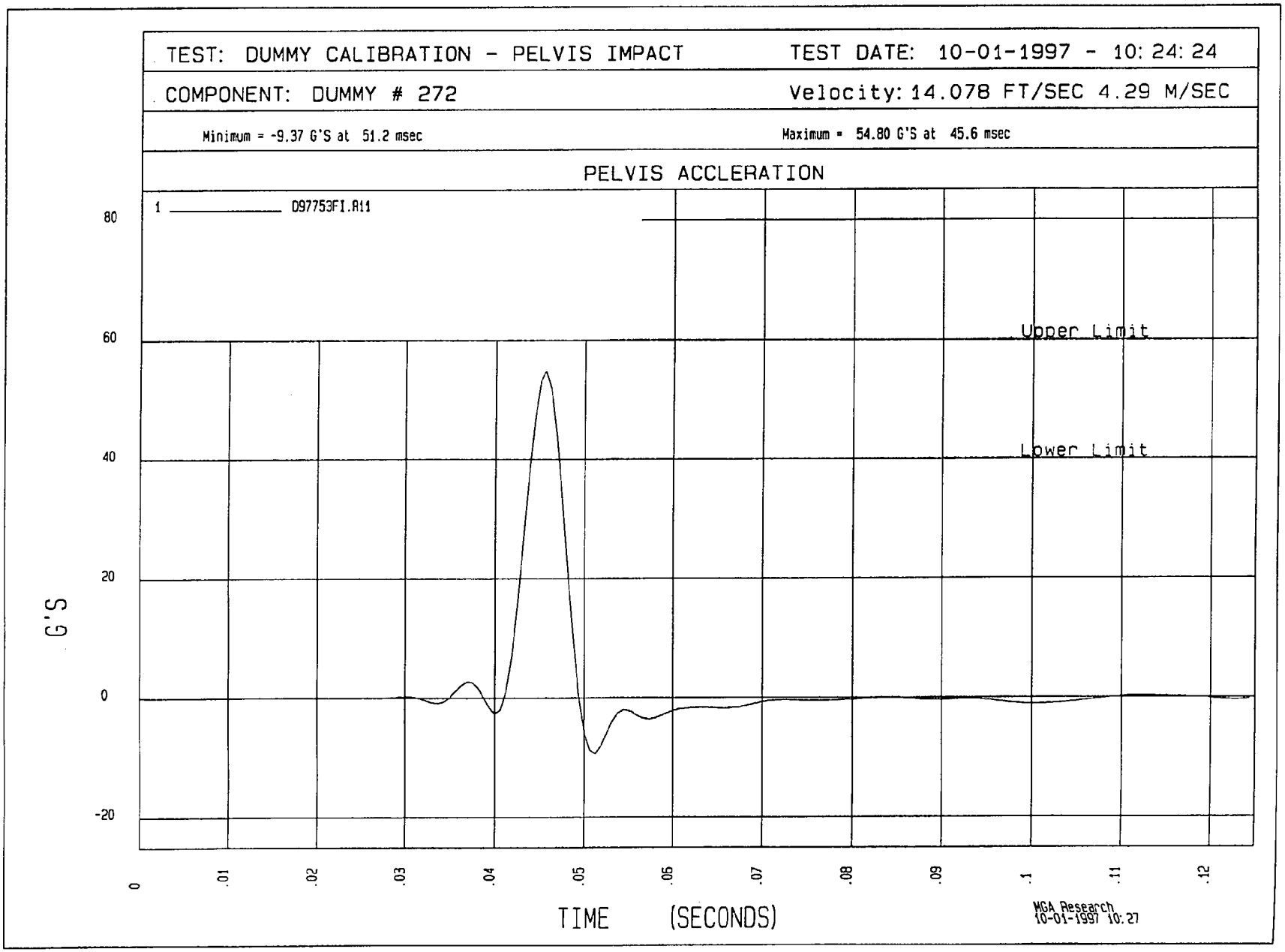
DUMMY NUMBER: 272 TEST NUMBER: D971753

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	34%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	55

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE: 10-01-1997 - 10:24:24
COMPONENT: DUMMY # 272
Velocity: 14.078 FT/SEC 4.29 M/SEC
Minimum = -9.37 G'S at 51.2 msec
Maximum = 54.80 G'S at 45.6 msec
PELVIS ACCLERATION
1 D97753FI.A11
Upper Limit
Lower Limit
80
60
40
20
0
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 10:27

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1977

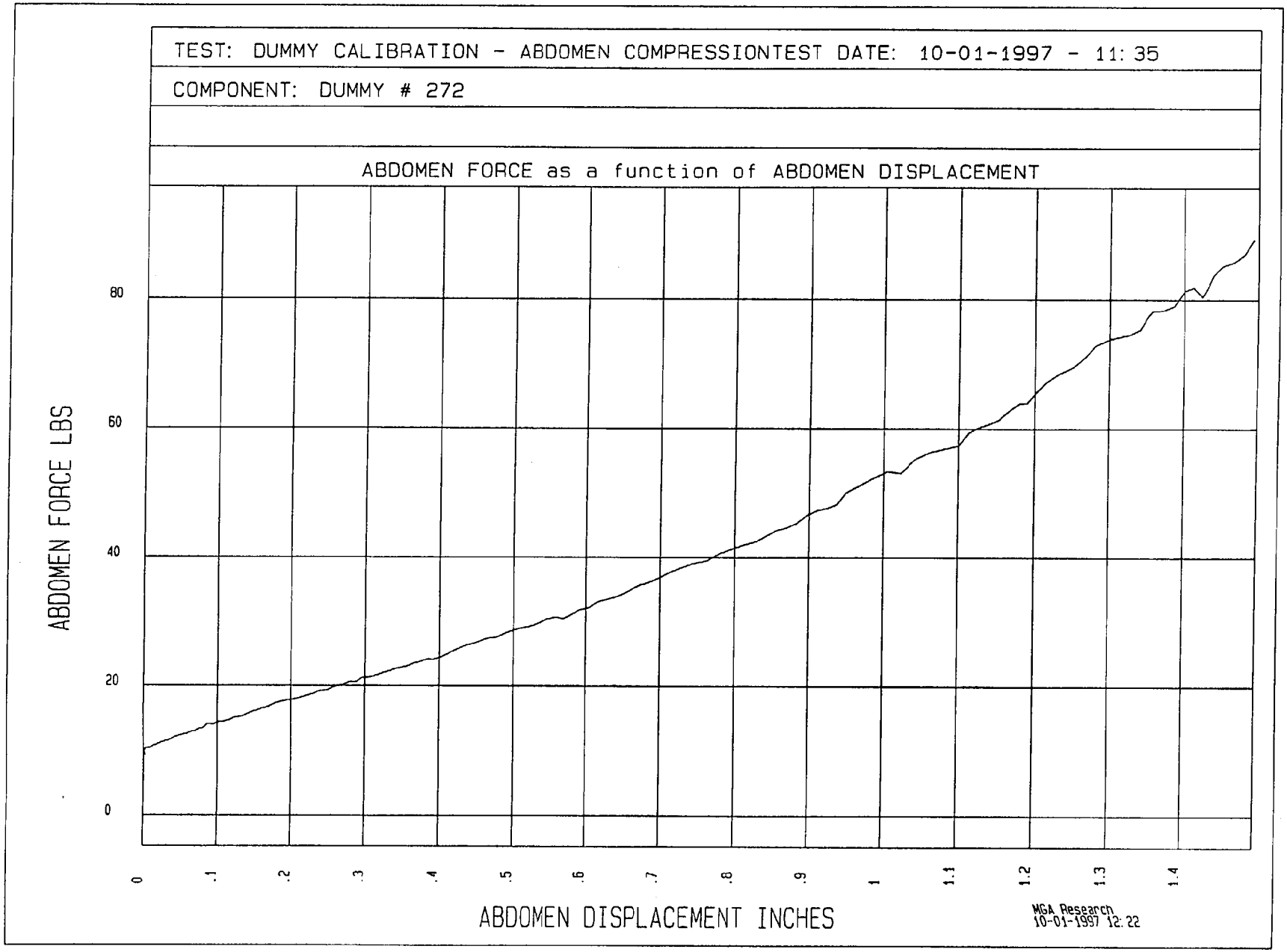
DUMMY NUMBER: 272 TEST NUMBER: D971754

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	34%
FORCE @ 0.5 in	23.3 - 36.5 lbs	28.9
FORCE @ 0.75 in	36.7 - 49.8 lbs	39.5
FORCE @ 1.0 in	50 - 63 lbs	53.3
FORCE @ 1.3 in	73 - 88 lbs	73.9

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE: 10-01-1997 - 11:35
COMPONENT: DUMMY # 272
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
0
20
40
60
80
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
1.1
1.2
1.3
1.4
ABDOMEN DISPLACEMENT INCHES
MGA Research
10-01-1997 12:22

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

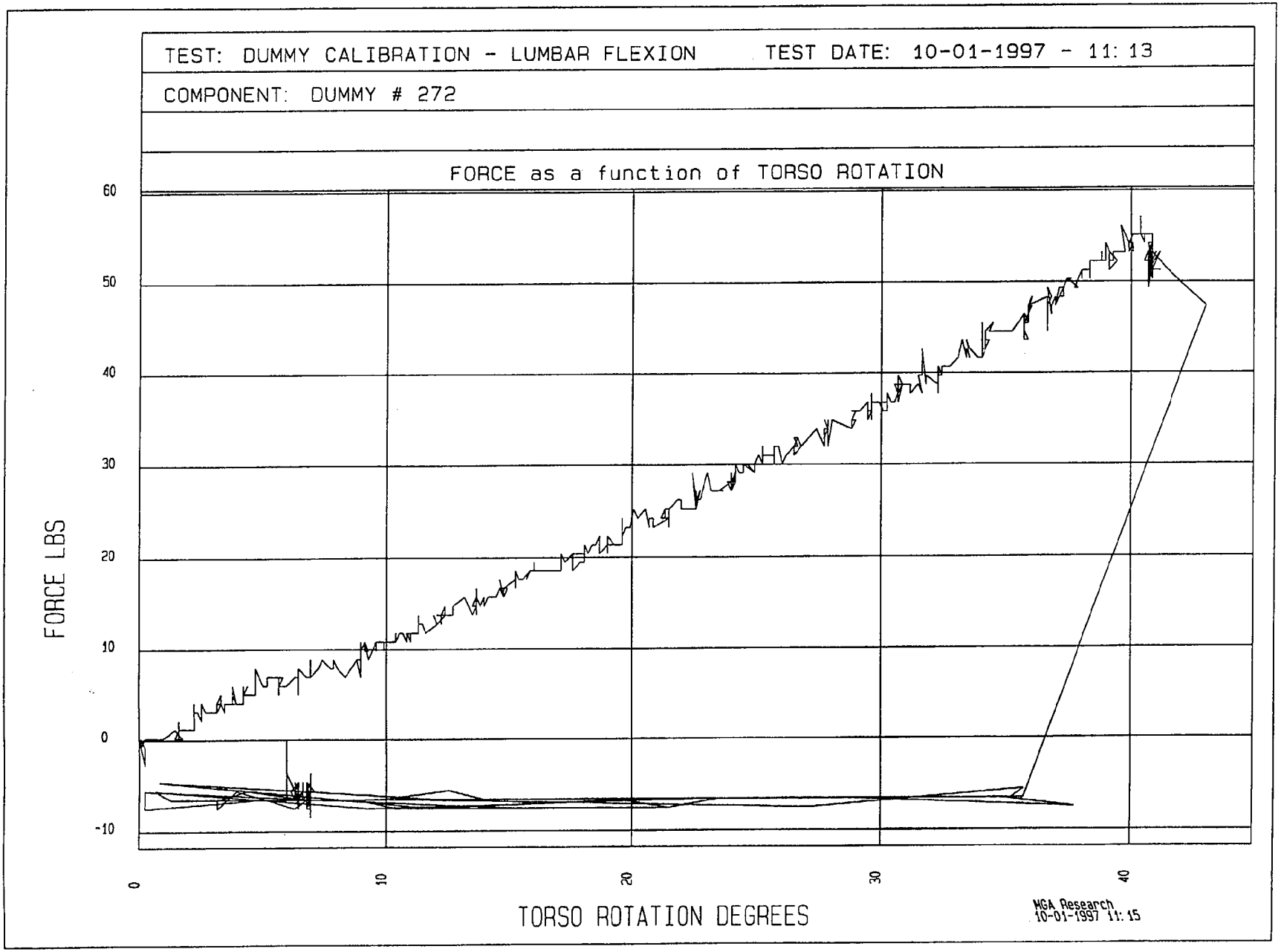
DUMMY NUMBER: 272 TEST NUMBER: D971755

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	34%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	36
FORCE @ 40°	46 - 58 lbs	54
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - LUMBAR FLEXION
TEST DATE: 10-01-1997 - 11:13
COMPONENT: DUMMY # 272
FORCE as a function of TORSO ROTATION
FORCE LBS
60
50
40
30
20
10
0
-10
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
10-01-1997 11:15

PRE-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Pre-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271 DATE OF VERIFICATION: October 1, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.6
RH - Rib Height	19.75" - 20.50"	20.40
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.1

MEASUREMENTS BY: _____

APPROVED BY: Dave Kabaske

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

DUMMY NUMBER: 271

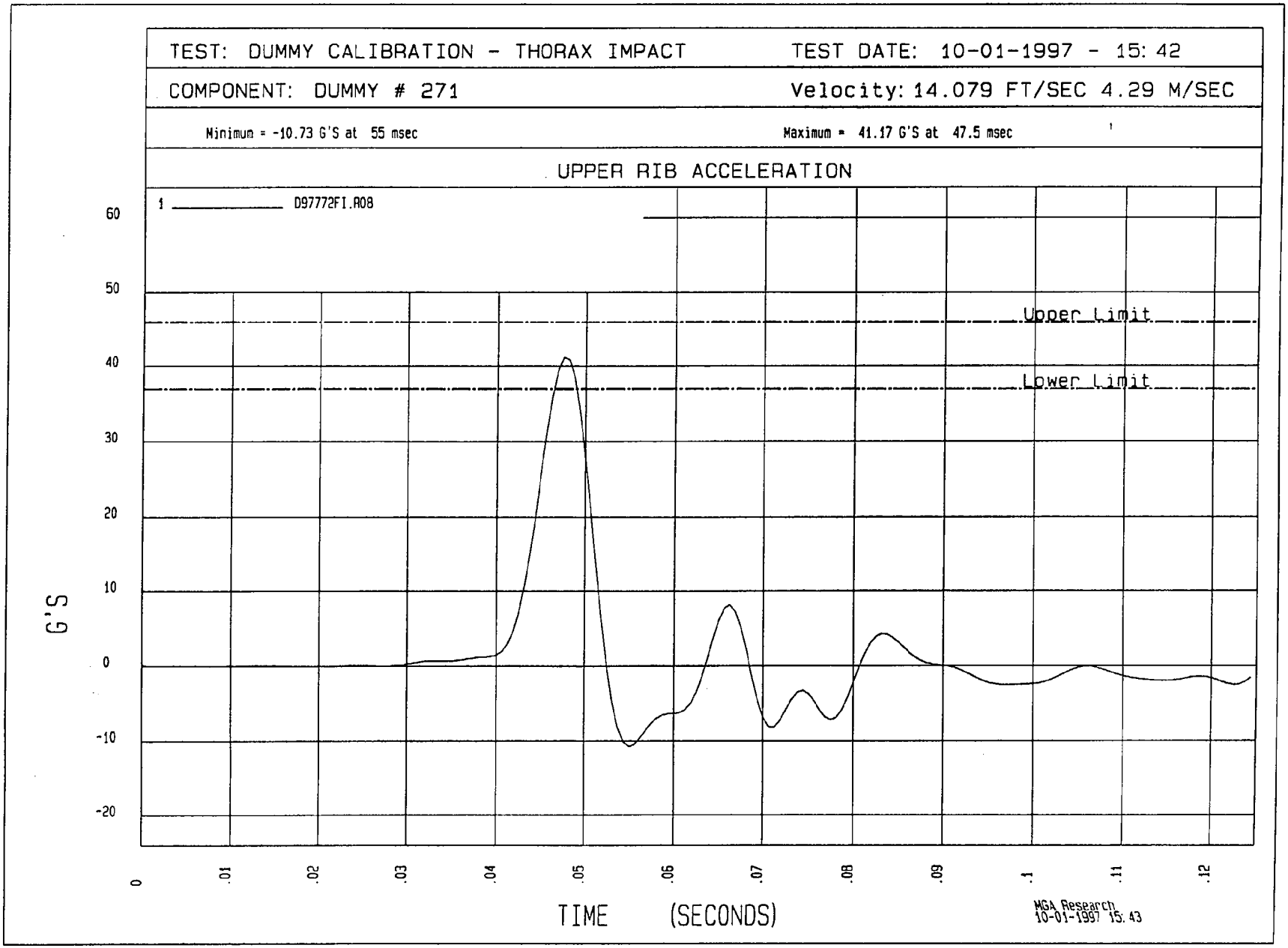
TEST NUMBER: D971772

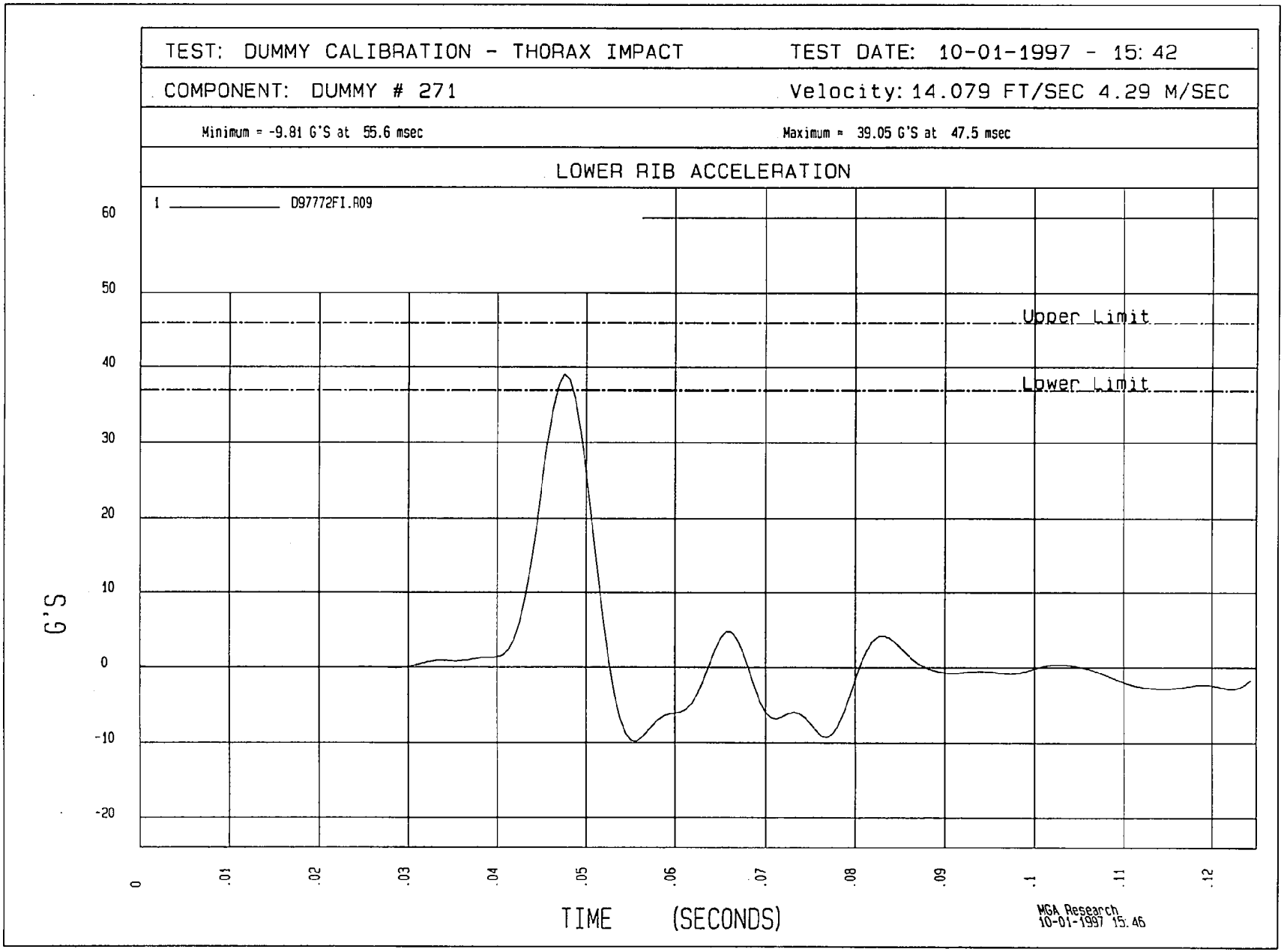
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	32%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	41
LOWER RIB	37 - 46 g's	39
LOWER SPINE	15 - 22 g's	21

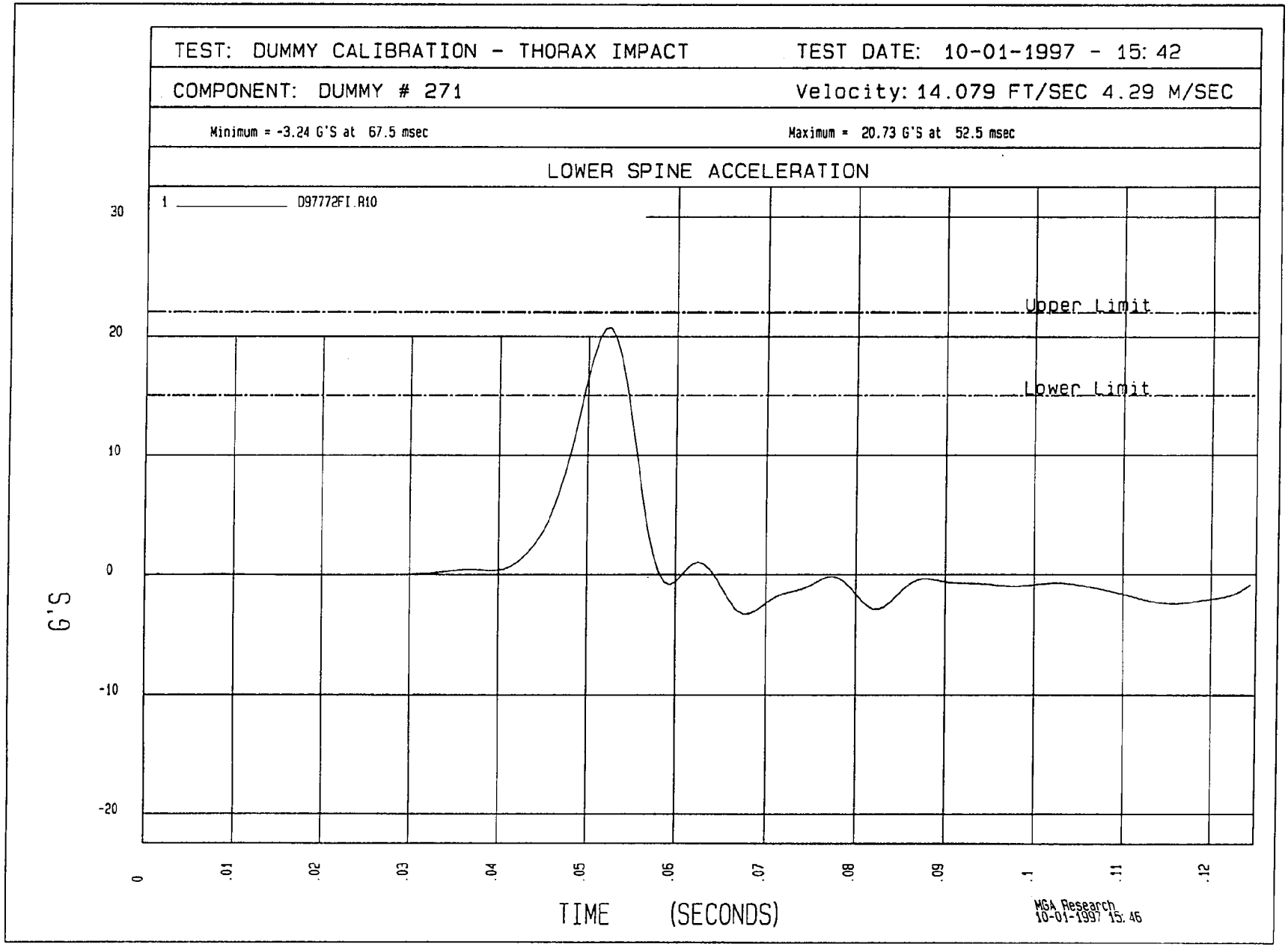
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-01-1997 - 15: 42
COMPONENT: DUMMY # 271
Velocity: 14.079 FT/SEC 4.29 M/SEC
Minimum = -10.73 G'S at 55 msec
Maximum = 41.17 G'S at 47.5 msec
UPPER RIB ACCELERATION
1 D97772FI.A08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 15:43


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-01-1997 - 15:42
COMPONENT: DUMMY # 271
Velocity: 14.079 FT/SEC 4.29 M/SEC
Minimum = -9.81 G'S at 55.6 msec
Maximum = 39.05 G'S at 47.5 msec
LOWER RIB ACCELERATION
1 D97772F1.R09
Upper Limit
Lower Limit
G'S
60
50
40
30
20
10
0
-10
-20
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 15:46


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-01-1997 - 15:42
COMPONENT: DUMMY # 271
Velocity: 14.079 FT/SEC 4.29 M/SEC
Minimum = -3.24 G'S at 67.5 msec
Maximum = 20.73 G'S at 52.5 msec
LOWER SPINE ACCELERATION
1 D97772FI.R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 15:46

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

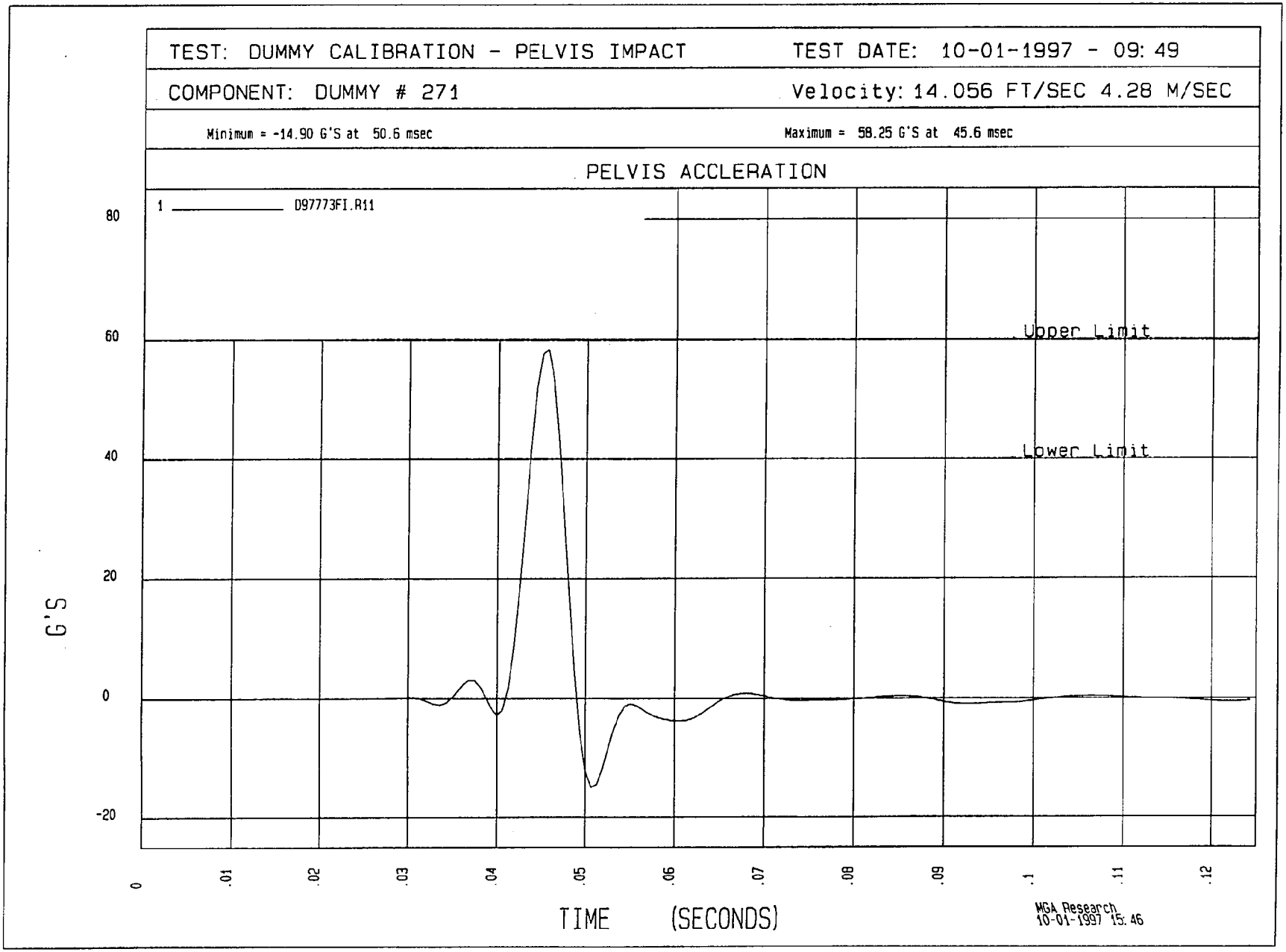
DUMMY NUMBER: 271 TEST NUMBER: D971773

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	34%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	58

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE: 10-01-1997 - 09:49
COMPONENT: DUMMY # 271
Velocity: 14.056 FT/SEC 4.28 M/SEC
Minimum = -14.90 G'S at 50.6 msec
Maximum = 58.25 G'S at 45.6 msec
PELVIS ACCLERATION
1 D97773FI.R11
Upper Limit
Lower Limit
80
60
40
20
0
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-01-1997 15:46

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

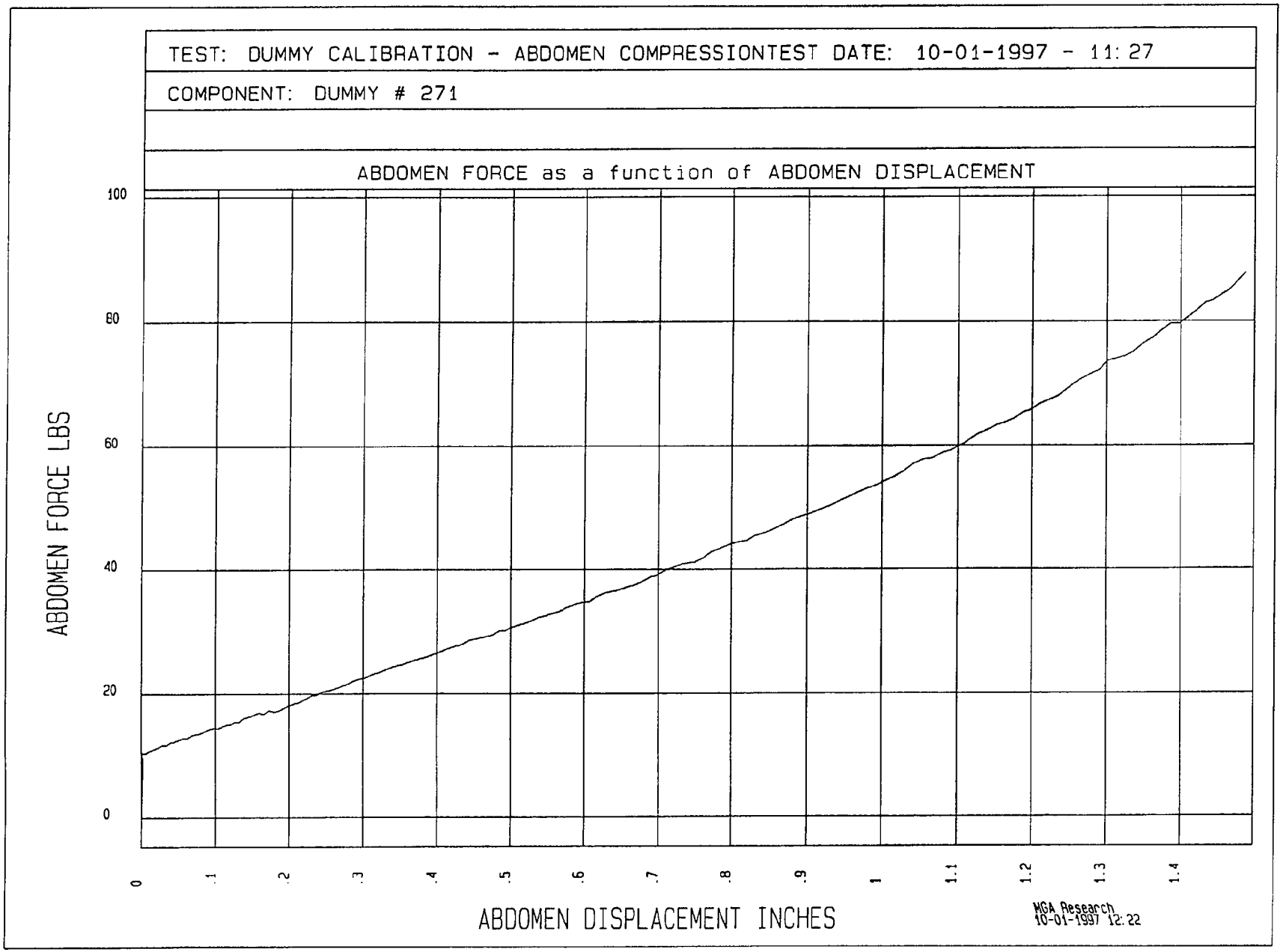
DUMMY NUMBER: 271 TEST NUMBER: D971774

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	71°
RELATIVE HUMIDITY	10 - 70%	34%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.7
FORCE @ 0.75 in	36.7 - 49.8 lbs	41.8
FORCE @ 1.0 in	50 - 63 lbs	54
FORCE @ 1.3 in	73 - 88 lbs	73

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE: 10-01-1997 - 11:27
COMPONENT: DUMMY # 271
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
100
80
60
40
20
0
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
1.1
1.2
1.3
1.4
ABDOMEN DISPLACEMENT INCHES
MGA Research
10-01-1997 12:22

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 1, 1997

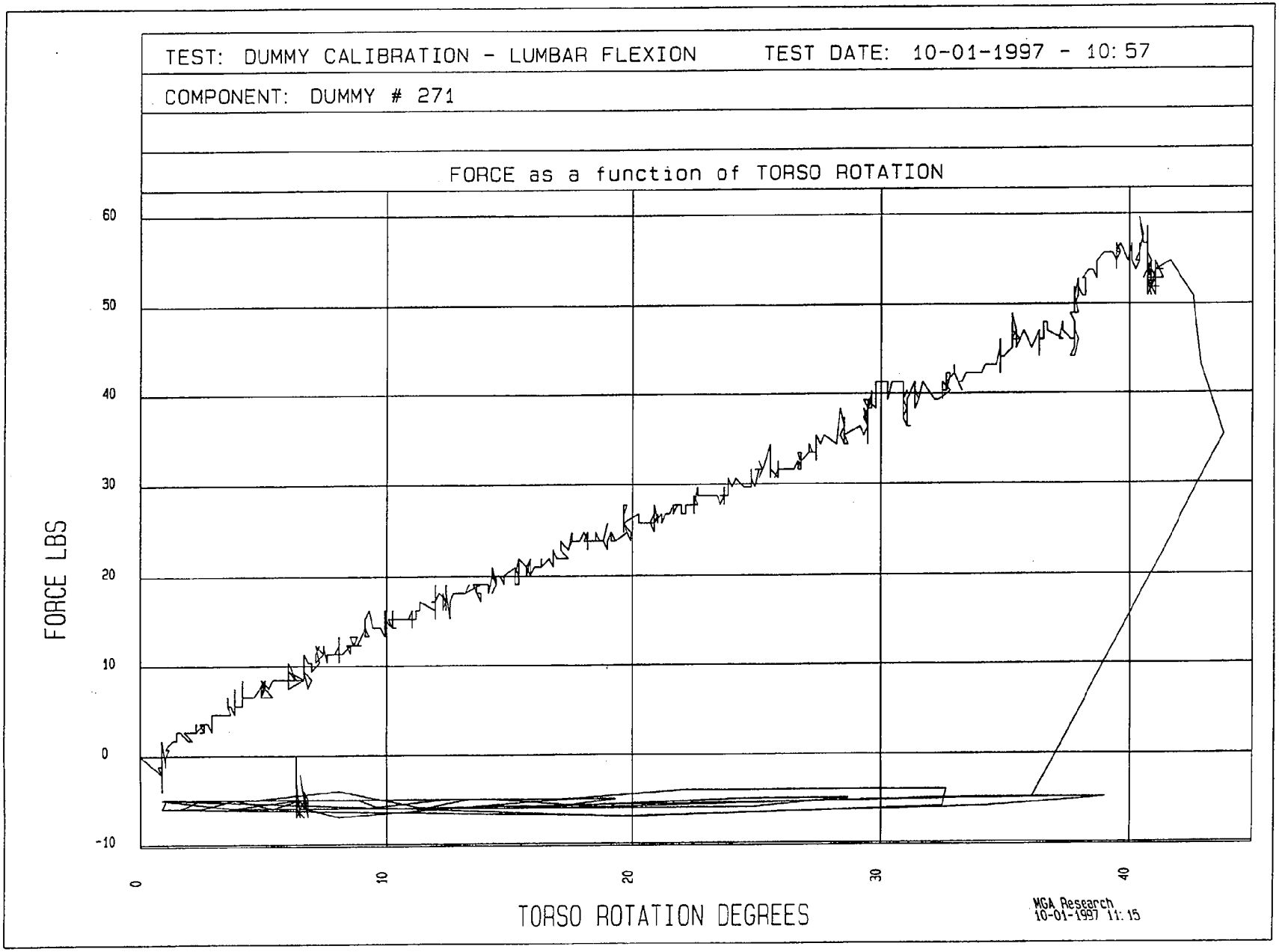
DUMMY NUMBER: 271 TEST NUMBER: D971775

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	71°
RELATIVE HUMIDITY	10 - 70%	34%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	27
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	57
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - LUMBAR FLEXION
TEST DATE: 10-01-1997 - 10:57
COMPONENT: DUMMY # 271
FORCE as a function of TORSO ROTATION
FORCE LBS
60
50
40
30
20
10
0
-10
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
10-01-1997 11:15

POST-TEST CERTIFICATION DATA

Front Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

Post-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 272 DATE OF VERIFICATION: October 20, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.2
RH - Rib Height	19.75" - 20.50"	20.20
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.7
SW - Knee Pivot to Floor	19.3" - 19.9"	19.6
HW - Hip Width	14.0" - 15.4"	15.0

MEASUREMENTS BY: _____

APPROVED BY: _____

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 20, 1997

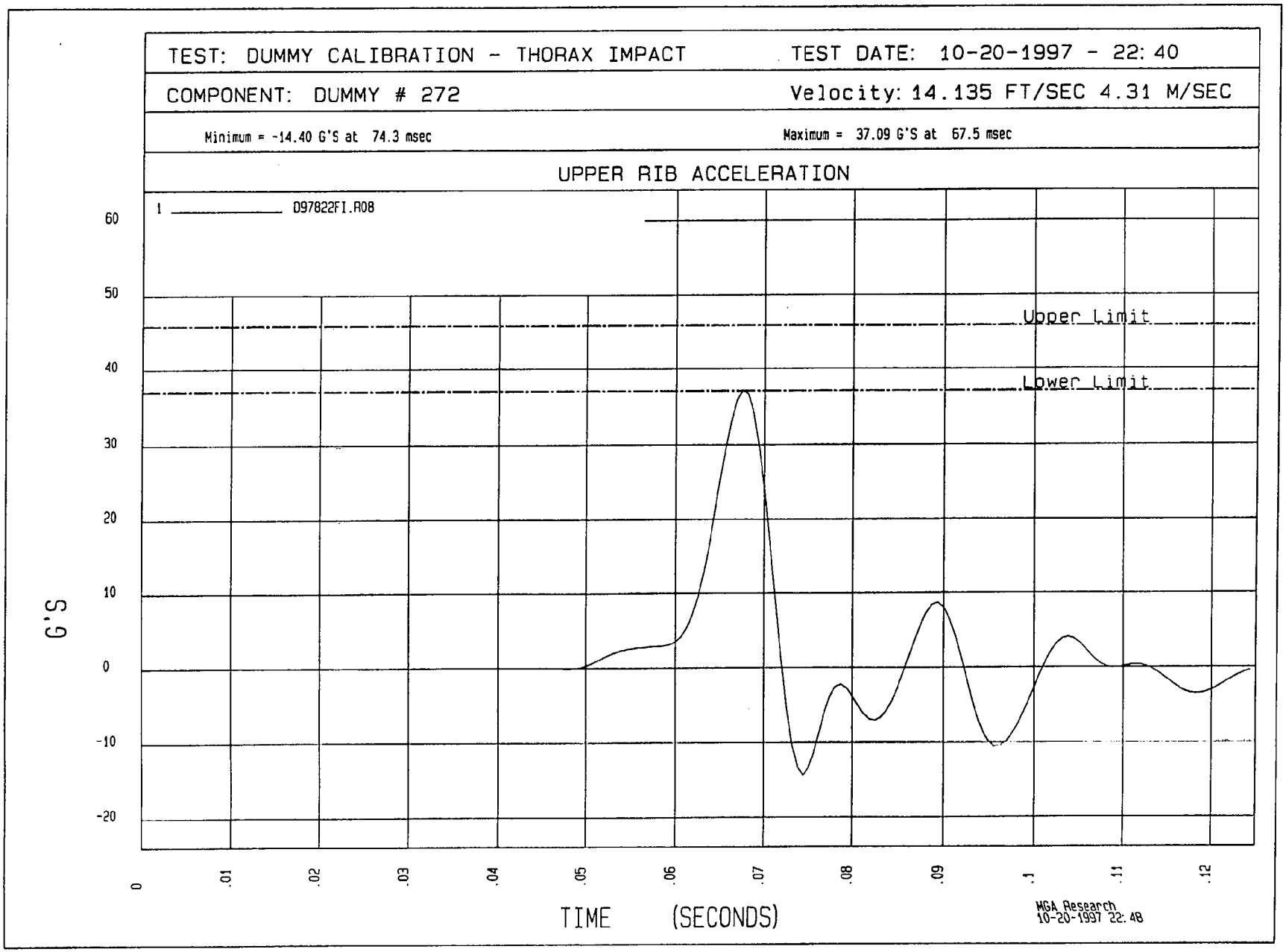
DUMMY NUMBER: 272 TEST NUMBER: D971822

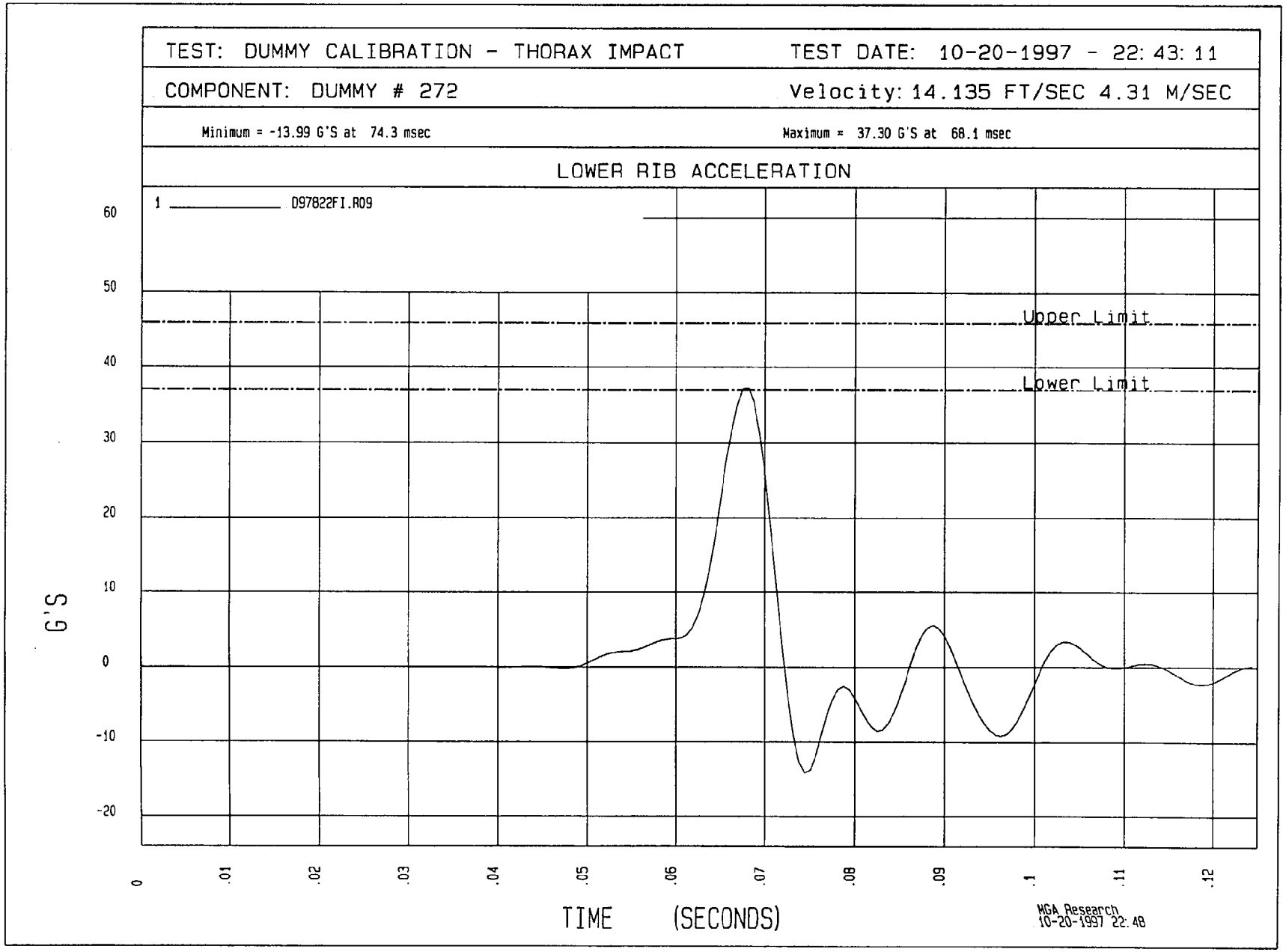
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	37
LOWER RIB	37 - 46 g's	37
LOWER SPINE	15 - 22 g's	18

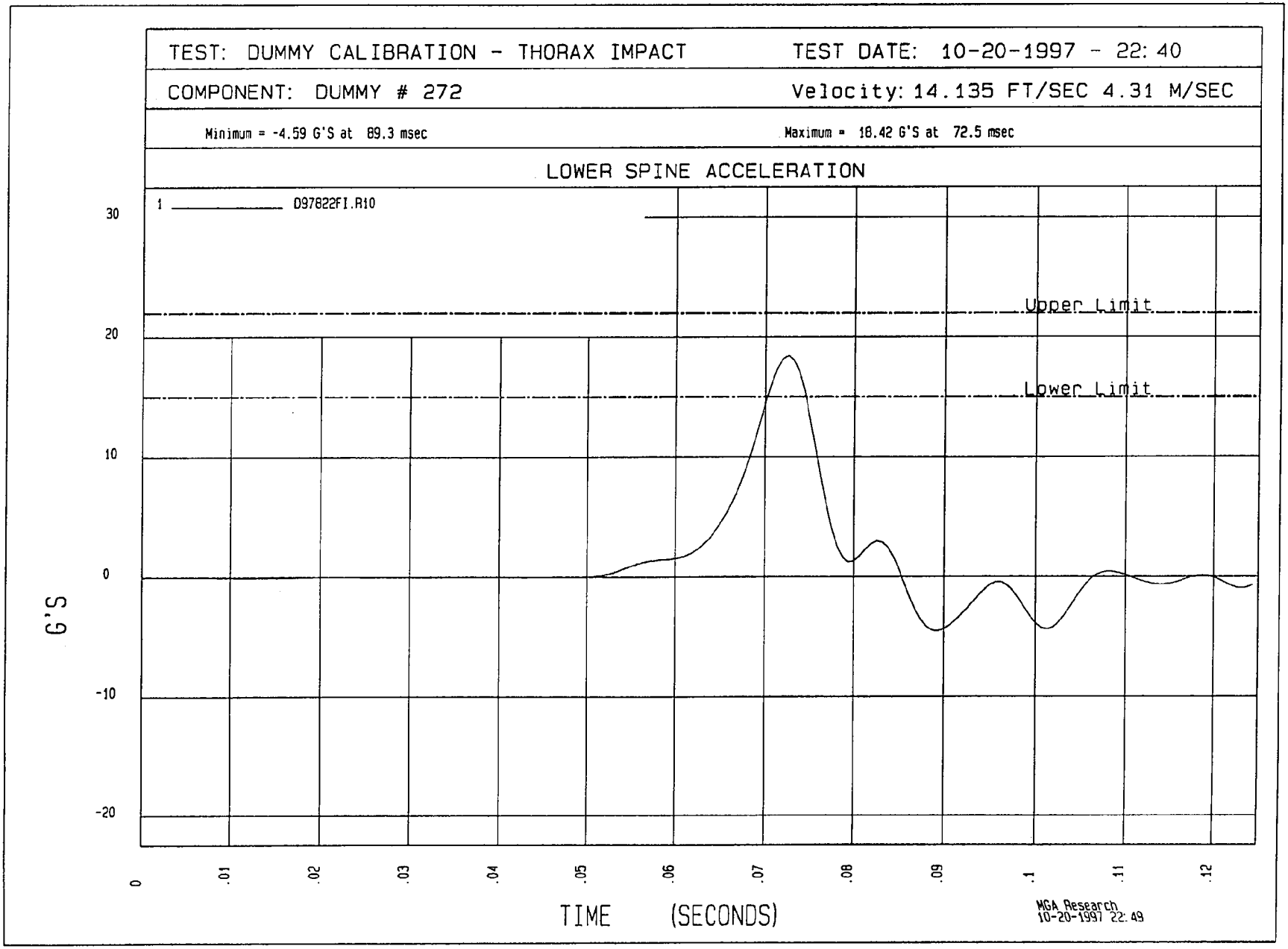
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-20-1997 - 22:40
COMPONENT: DUMMY # 272
Velocity: 14.135 FT/SEC 4.31 M/SEC
Minimum = -14.40 G'S at 74.3 msec
Maximum = 37.09 G'S at 67.5 msec
UPPER RIB ACCELERATION
1 D97822FI.R08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 22:48


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-20-1997 - 22:43:11
COMPONENT: DUMMY # 272
Velocity: 14.135 FT/SEC 4.31 M/SEC
Minimum = -13.99 G'S at 74.3 msec
Maximum = 37.30 G'S at 68.1 msec
LOWER RIB ACCELERATION
1 D97822FI.R09
Upper Limit
Lower Limit
G'S
60
50
40
30
20
10
0
-10
-20
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 22:48


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-20-1997 - 22:40
COMPONENT: DUMMY # 272
Velocity: 14.135 FT/SEC 4.31 M/SEC
Minimum = -4.59 G'S at 89.3 msec
Maximum = 18.42 G'S at 72.5 msec
LOWER SPINE ACCELERATION
1 D97822FI.R10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 22:49

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 20, 1997

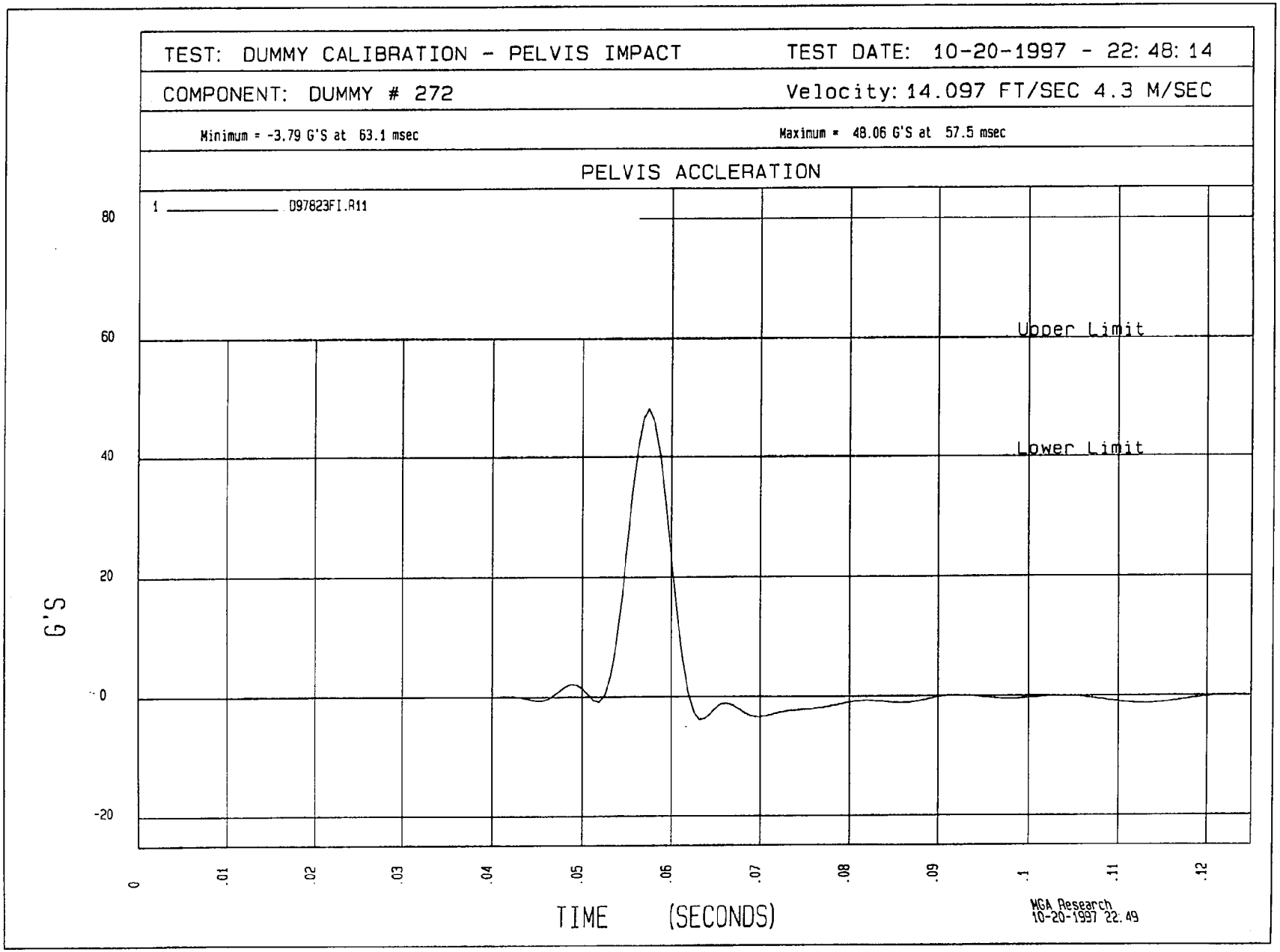
DUMMY NUMBER: 272 TEST NUMBER: D971823

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	48

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE: 10-20-1997 - 22:48:14
COMPONENT: DUMMY # 272
Velocity: 14.097 FT/SEC 4.3 M/SEC
Minimum = -3.79 G'S at 63.1 msec
Maximum = 48.06 G'S at 57.5 msec
PELVIS ACCLERATION
1 D97823FI.R11
Upper Limit
Lower Limit
80
60
40
20
0
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 22:49

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: October 17, 1997

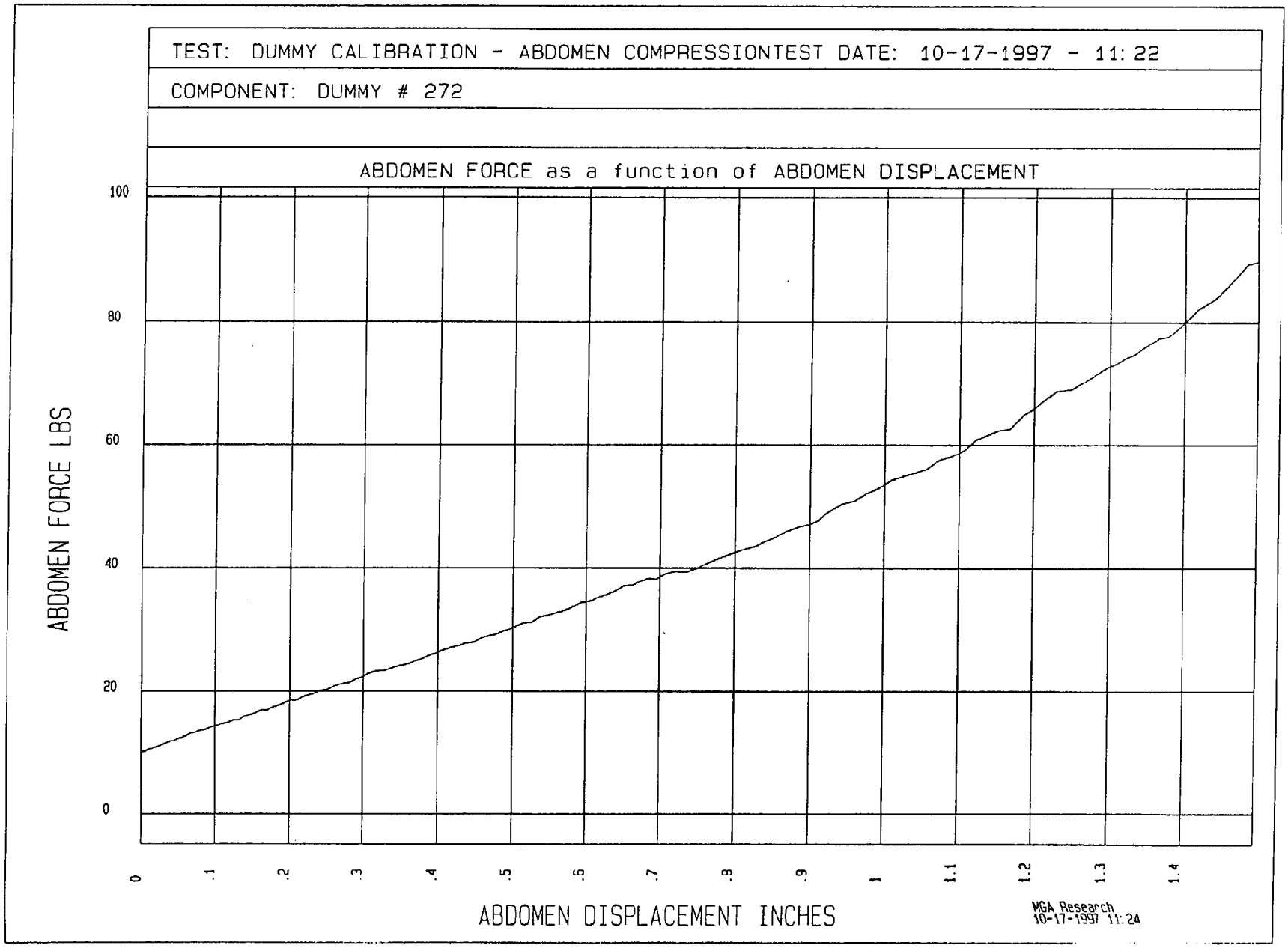
DUMMY NUMBER: 272 TEST NUMBER: D971824

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
FORCE @ 0.5 in	23.3 - 36.5 lbs	30.6
FORCE @ 0.75 in	36.7 - 49.8 lbs	40.8
FORCE @ 1.0 in	50 - 63 lbs	54
FORCE @ 1.3 in	73 - 88 lbs	73

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE: 10-17-1997 - 11:22
COMPONENT: DUMMY # 272
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
100
80
60
40
20
0
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
1.1
1.2
1.3
1.4
ABDOMEN DISPLACEMENT INCHES
MGA Research
10-17-1997 11:24

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 17, 1997

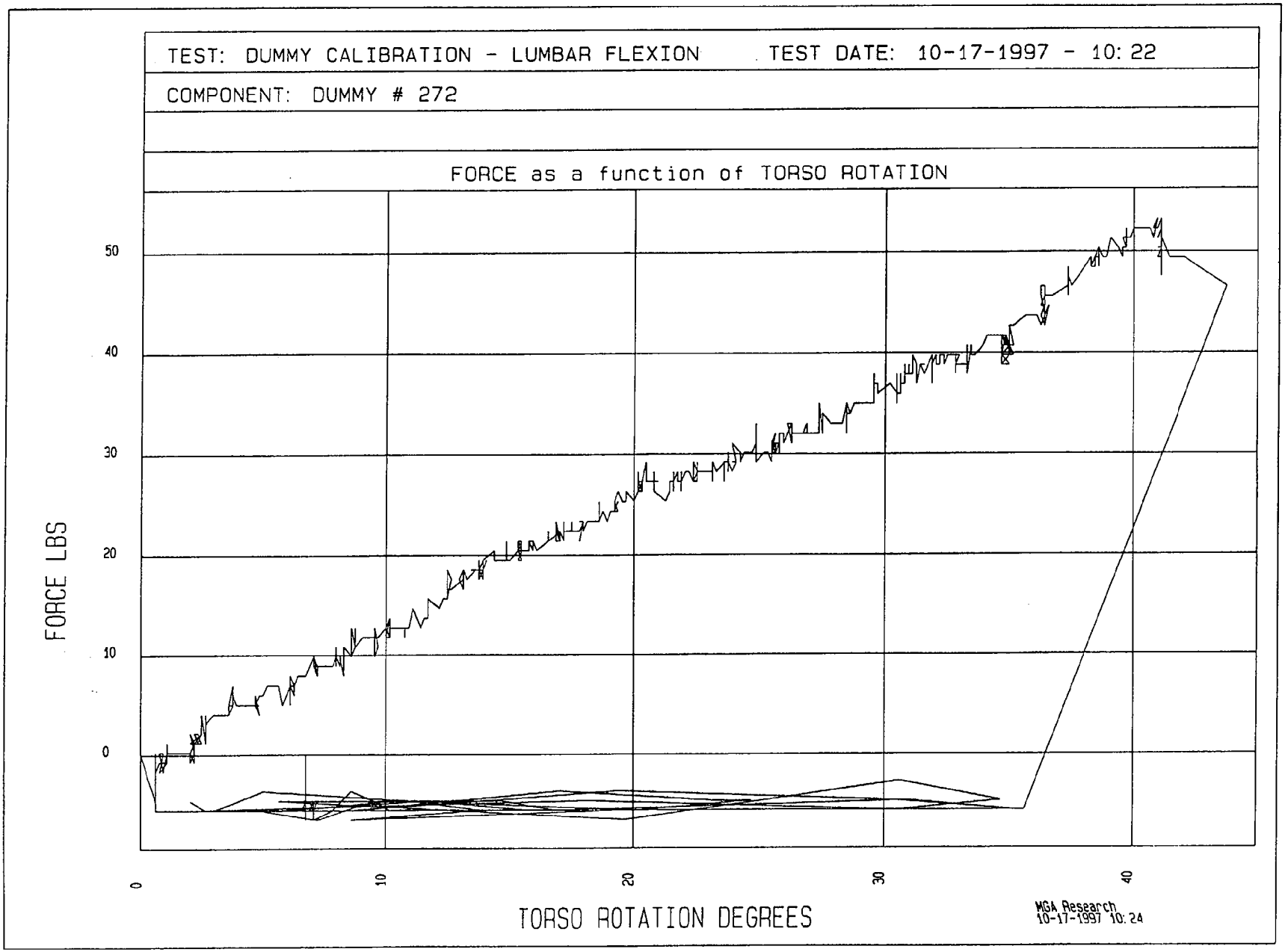
DUMMY NUMBER: 272 TEST NUMBER: D971825

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	25
FORCE @ 30°	34 - 46 lbs	37
FORCE @ 40°	46 - 58 lbs	52
RETURN ANGLE	12° maximum	6°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - LUMBAR FLEXION
TEST DATE: 10-17-1997 - 10:22
COMPONENT: DUMMY # 272
FORCE as a function of TORSO ROTATION
FORCE LBS
50
40
30
20
10
0
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
10-17-1997 10:24

POST-TEST CERTIFICATION DATA

Rear Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Post-Test Calibration

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

SIDE IMPACT DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

DUMMY NO.: 271 DATE OF VERIFICATION: October 20, 1997

DESCRIPTION	SPECIFICATION	TEST RESULTS
SH - Seated Height	35.0" - 35.8"	35.6
RH - Rib Height	19.75" - 20.50"	20.40
HP - Hip Pivot Height	3.9" ref.	3.9
RD - Rib From Back Line	9.0" to 9.5"	9.4
KV - Knee Pivot From Back Line	20.1" - 20.7"	20.4
SW - Knee Pivot to Floor	19.3" - 19.9"	19.5
HW - Hip Width	14.0" - 15.4"	15.1

MEASUREMENTS BY: _____

APPROVED BY: _____

MGA RESEARCH CORPORATION

THORAX IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 20, 1997

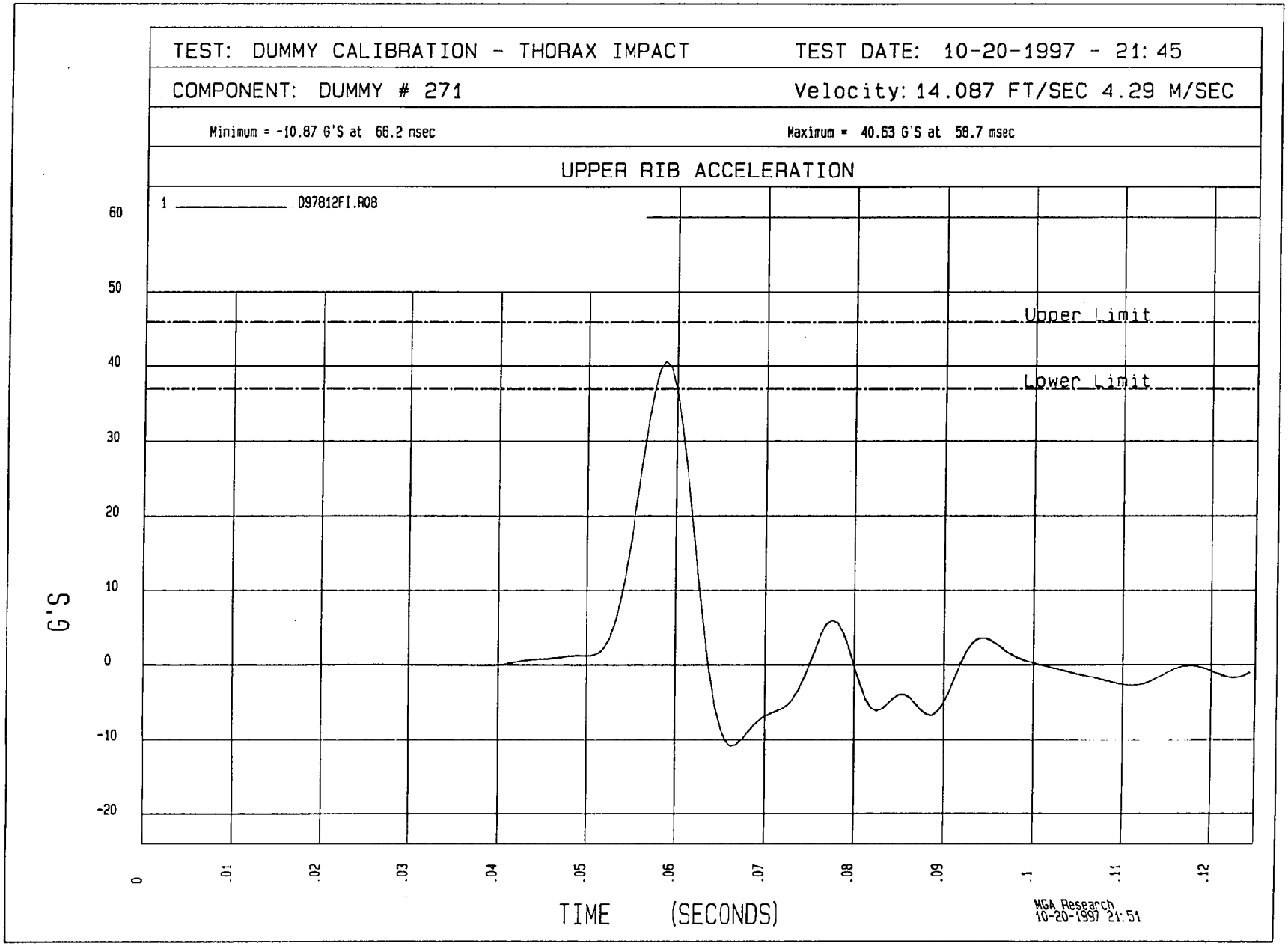
DUMMY NUMBER: 271 TEST NUMBER: D971812

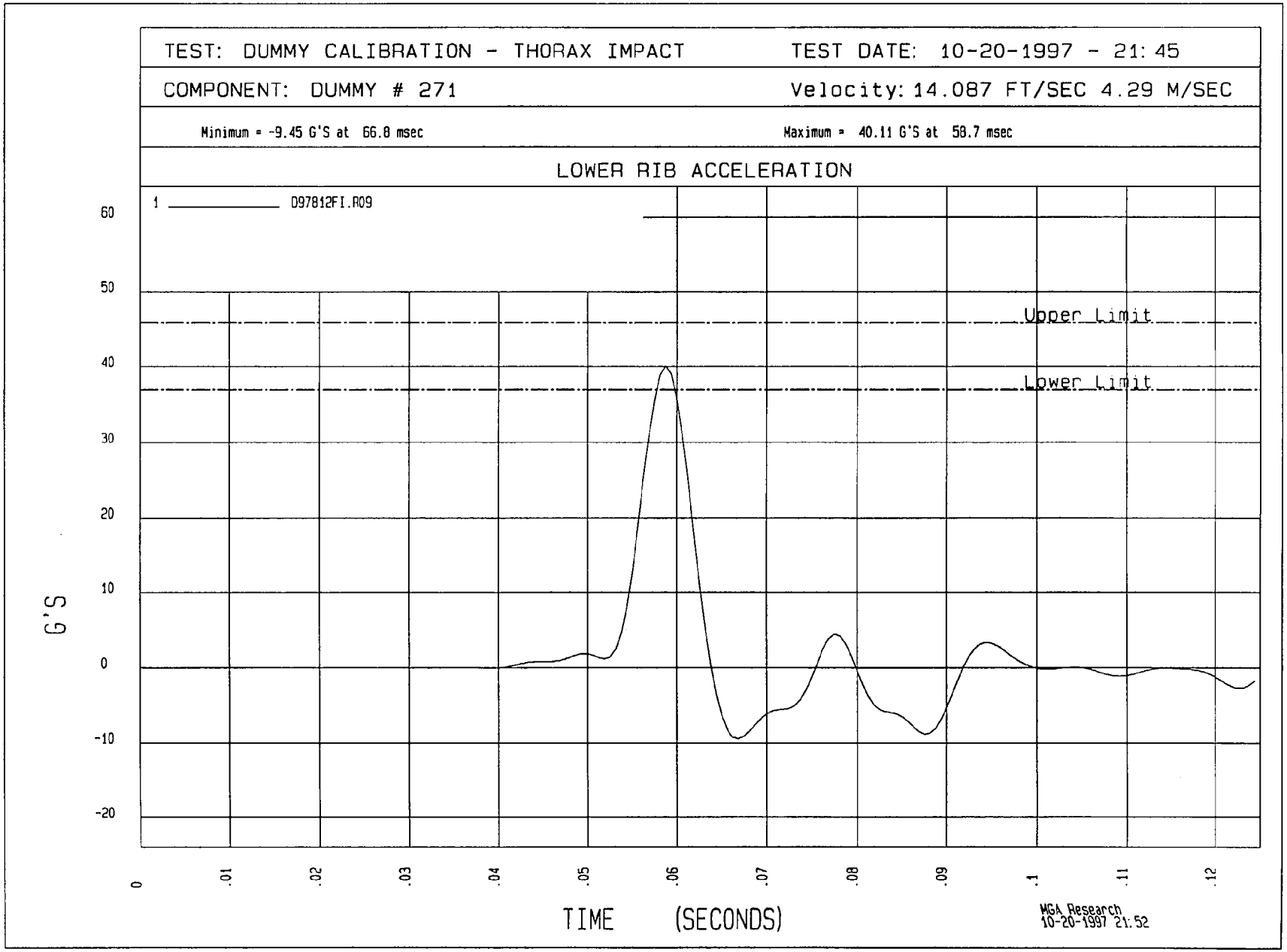
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
PROBE SPEED	14.0 - 14.2 fps	14.1
UPPER RIB	37 - 46 g's	41
LOWER RIB	37 - 46 g's	40
LOWER SPINE	15 - 22 g's	20

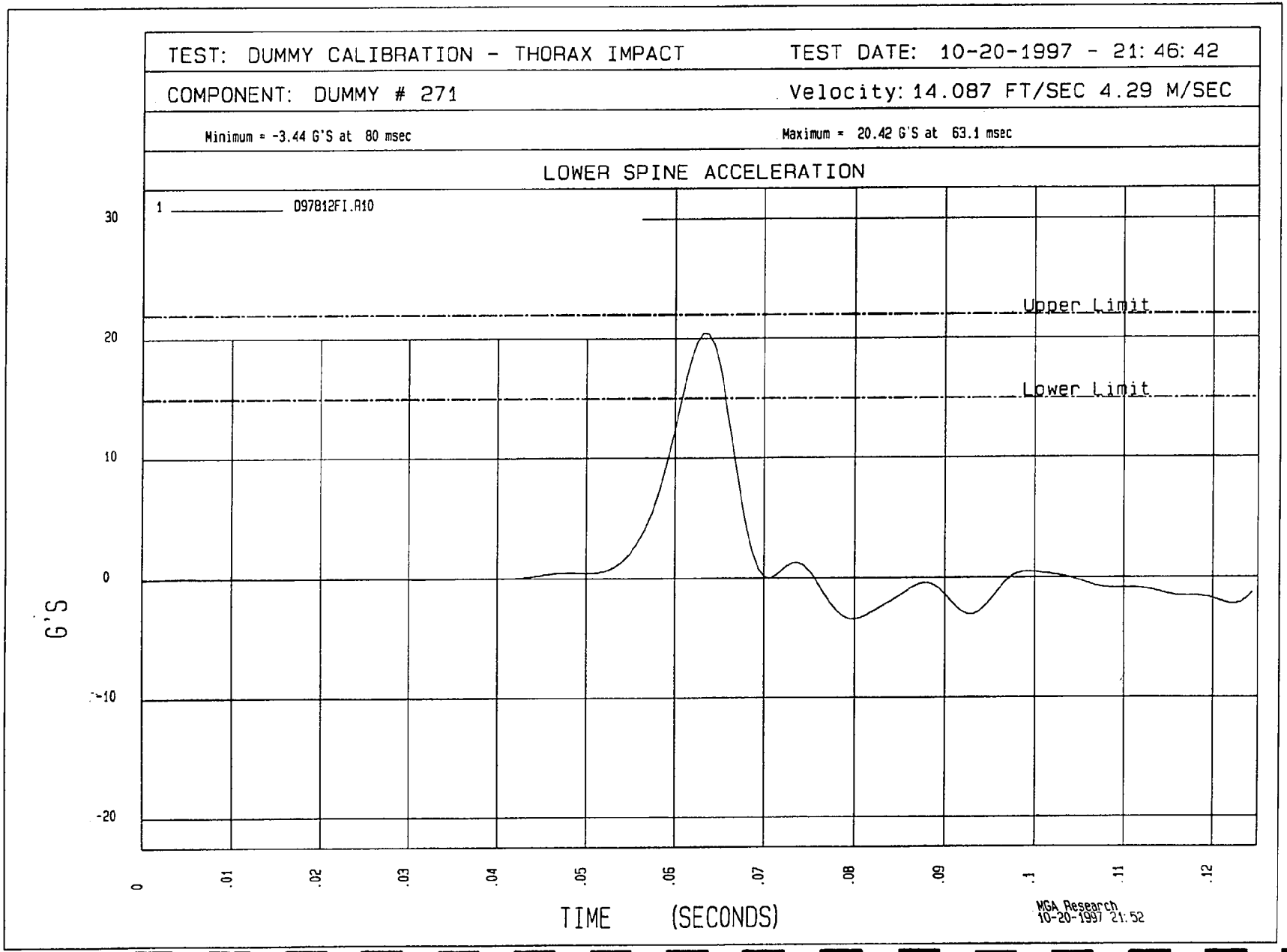
TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-20-1997 - 21:45
COMPONENT: DUMMY # 271
Velocity: 14.087 FT/SEC 4.29 M/SEC
Minimum = -10.87 G'S at 66.2 msec
Maximum = 40.63 G'S at 58.7 msec
UPPER RIB ACCELERATION
1 D97812FI.R08
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 21:51


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-20-1997 - 21:45
COMPONENT: DUMMY # 271
Velocity: 14.087 FT/SEC 4.29 M/SEC
Minimum = -9.45 G'S at 66.8 msec
Maximum = 40.11 G'S at 58.7 msec
LOWER RIB ACCELERATION
1 D97812FI.R09
Upper Limit
Lower Limit
60
50
40
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 21:52


TEST: DUMMY CALIBRATION - THORAX IMPACT
TEST DATE: 10-20-1997 - 21:46:42
COMPONENT: DUMMY # 271
Velocity: 14.087 FT/SEC 4.29 M/SEC
Minimum = -3.44 G'S at 80 msec
Maximum = 20.42 G'S at 63.1 msec
LOWER SPINE ACCELERATION
1 D97812FI.A10
Upper Limit
Lower Limit
30
20
10
0
-10
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 21:52

MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SIDE IMPACT DUMMY (SID)

DATE: October 20, 1997

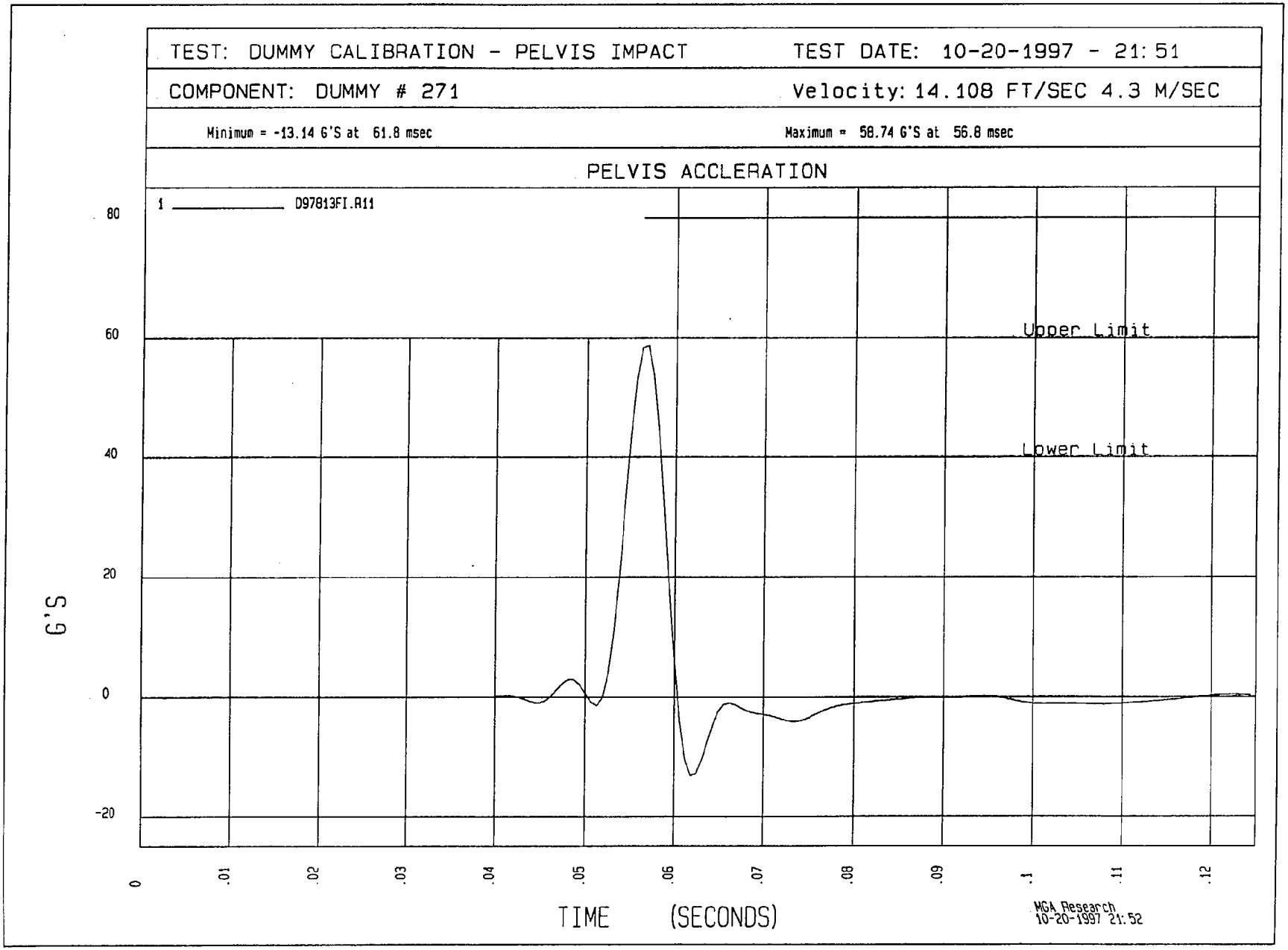
DUMMY NUMBER: 271 TEST NUMBER: D971813

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
PROBE SPEED	14.0 - 14.2 f/s	14.1
PELVIS ACCELERATION	40 - 60 g's	59

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - PELVIS IMPACT
TEST DATE: 10-20-1997 - 21:51
COMPONENT: DUMMY # 271
Velocity: 14.108 FT/SEC 4.3 M/SEC
Minimum = -13.14 G'S at 61.8 msec
Maximum = 58.74 G'S at 56.8 msec
PELVIS ACCLERATION
1 D97813FI.A11
Upper Limit
Lower Limit
80
60
40
20
0
-20
G'S
0
.01
.02
.03
.04
.05
.06
.07
.08
.09
.1
.11
.12
TIME (SECONDS)
MGA Research
10-20-1997 21:52

MGA RESEARCH CORPORATION

ABDOMINAL COMPRESSION TEST
(PRELOAD = 10 LBS)

SIDE IMPACT DUMMY (SID)

DATE: October 17, 1997

DUMMY NUMBER: 271

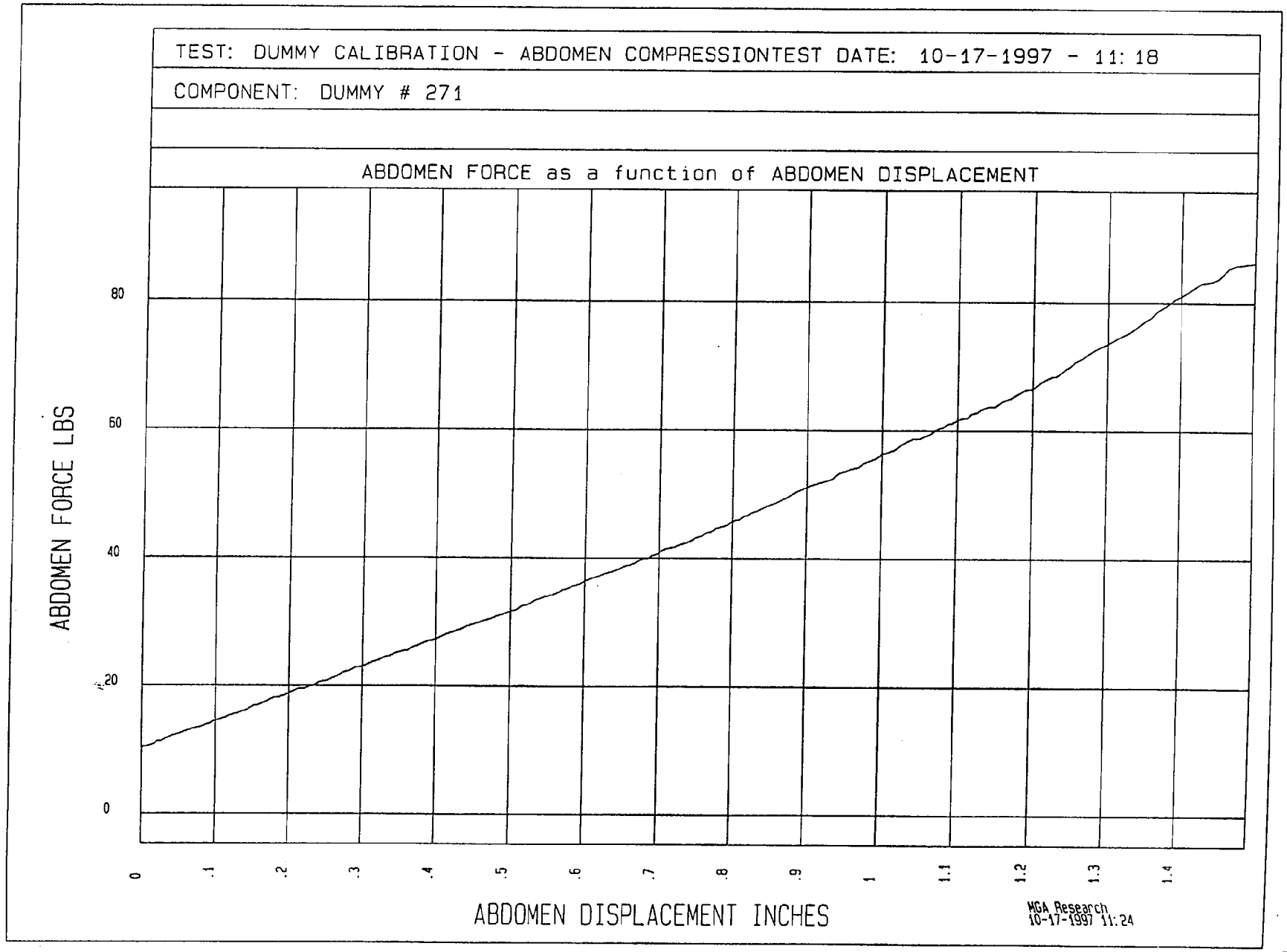
TEST NUMBER: D971814

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
FORCE @ 0.5 in	23.3 - 36.5 lbs	31.7
FORCE @ 0.75 in	36.7 - 49.8 lbs	43.4
FORCE @ 1.0 in	50 - 63 lbs	57
FORCE @ 1.3 in	73 - 88 lbs	74

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - ABDOMEN COMPRESSIONTEST DATE: 10-17-1997 - 11:18
COMPONENT: DUMMY # 271
ABDOMEN FORCE as a function of ABDOMEN DISPLACEMENT
ABDOMEN FORCE LBS
80
60
40
20
0
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
1.1
1.2
1.3
1.4
ABDOMEN DISPLACEMENT INCHES
MGA Research
10-17-1997 11:24

MGA RESEARCH CORPORATION

LUMBAR FLEXION TEST

SIDE IMPACT DUMMY (SID)

DATE: October 17, 1997

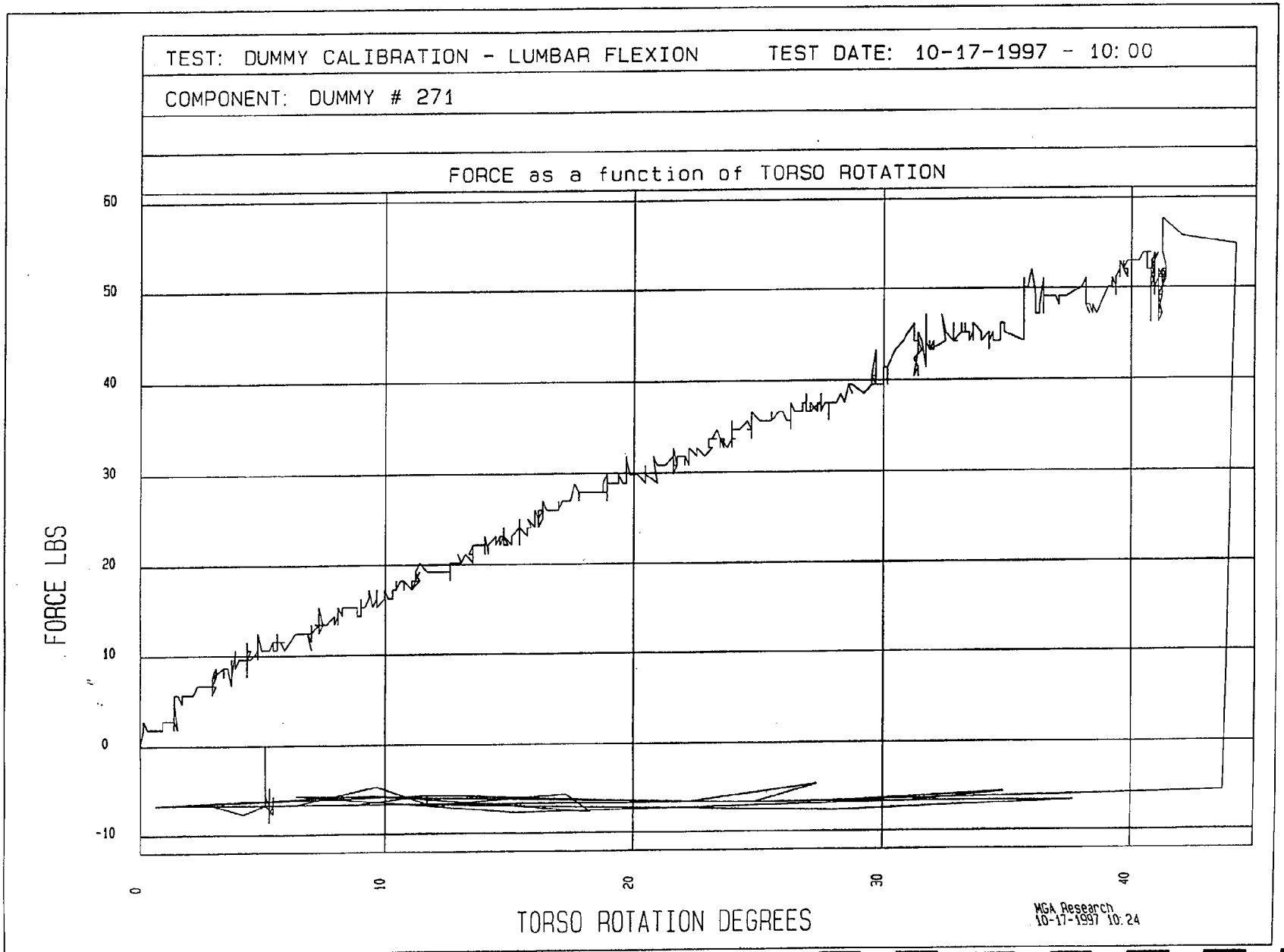
DUMMY NUMBER: 271 TEST NUMBER: D971815

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	66 - 78° F	70°
RELATIVE HUMIDITY	10 - 70%	27%
FORCE @ 0°	0 - 6 lbs	0
FORCE @ 20°	22 - 34 lbs	30
FORCE @ 30°	34 - 46 lbs	41
FORCE @ 40°	46 - 58 lbs	53
RETURN ANGLE	12° maximum	5°

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

APPROVED BY _____


TEST: DUMMY CALIBRATION - LUMBAR FLEXION
TEST DATE: 10-17-1997 - 10:00
COMPONENT: DUMMY # 271
FORCE as a function of TORSO ROTATION
FORCE LBS
60
50
40
30
20
10
0
-10
0
10
20
30
40
TORSO ROTATION DEGREES
MGA Research
10-17-1997 10:24

POST-TEST DRIVER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 272

Inspected By: Tim Michnay

Date: October 17, 1997

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

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

POST-TEST PASSENGER DUMMY INSPECTION CHECKLIST

Type: Side Impact Dummy

Serial Number: 271

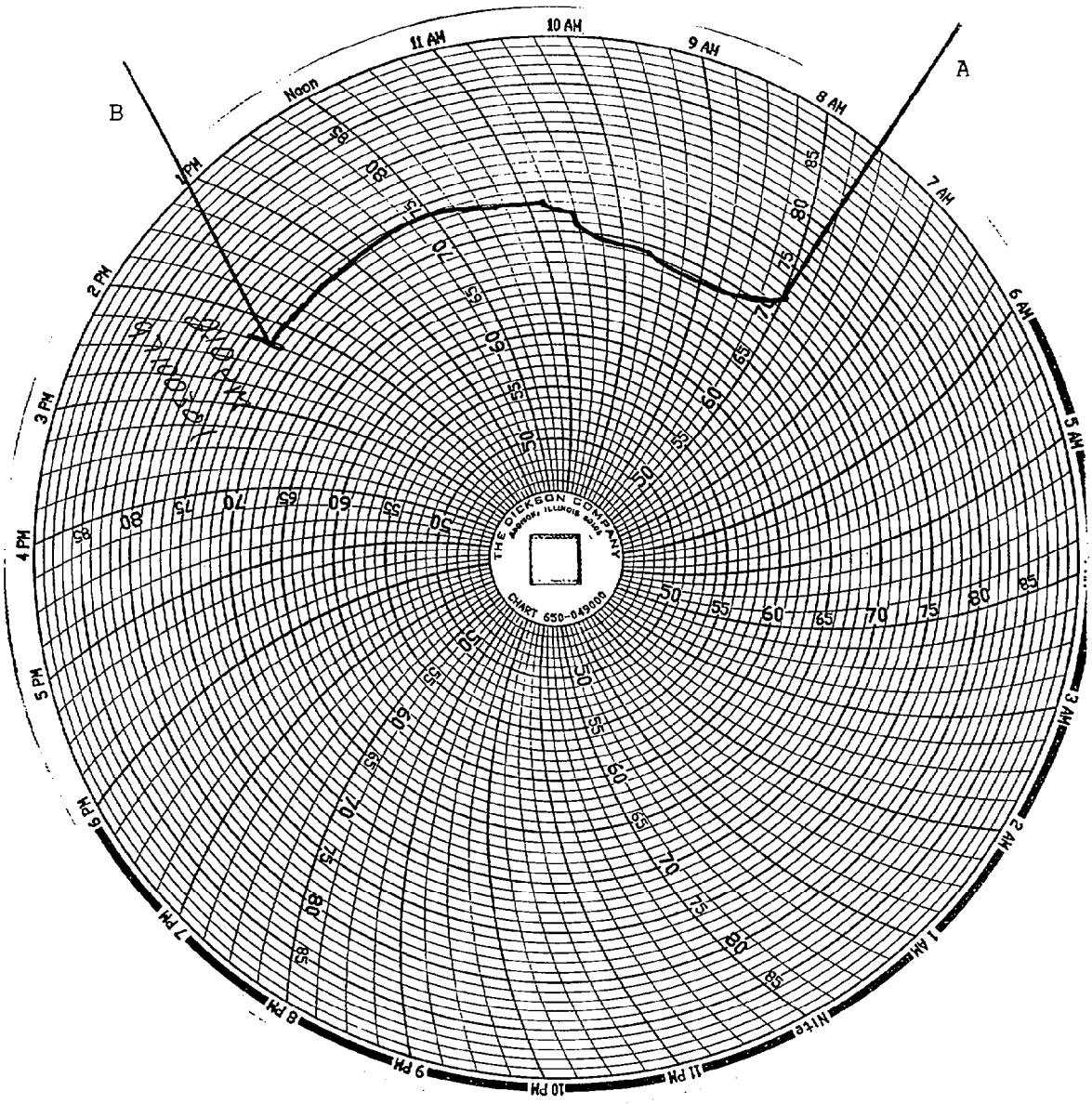
Inspected By: Tim Michnay

Date: October 17, 1997

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

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

VEHICLE AND DUMMY TEMPERATURE



A = dummies installed in vehicle
B = test conducted

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

INSTRUMENTS FOR DRIVER DUMMY NO. 272

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	ALFJ7	Endevco	September 11, 1997
Lower Rib Y	APYN0	Endevco	September 11, 1997
Lower Spine Y	AP0G2	Endevco	September 11, 1997
Pelvis Y	APY15	Endevco	September 11, 1997
Upper Rib Redundant Y	ALDD6	Endevco	September 11, 1997
Lower Rib Redundant Y	APYN3	Endevco	September 11, 1997
Lower Spine Redundant Y	AP138	Endevco	September 11, 1997
Pelvis Redundant Y	APY16	Endevco	September 11, 1997
Head X	ALFL9	Endevco	September 11, 1997
Head Y	AJ9N4	Endevco	September 11, 1997
Head Z	AJ808	Endevco	September 11, 1997

INSTRUMENTS FOR PASSENGER DUMMY NO. 271

	LEFT REAR PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AP2A4	Endevco	September 11, 1997
Lower Rib Y	AP13B	Endevco	September 11, 1997
Lower Spine Y	ANAP1	Endevco	September 11, 1997
Pelvis Y	AHTC3	Endevco	September 11, 1997
Upper Rib Redundant Y	AP2D8	Endevco	September 11, 1997
Lower Rib Redundant Y	AP1C6	Endevco	September 11, 1997
Lower Spine Redundant Y	ANAT6	Endevco	September 11, 1997
Pelvis Redundant Y	AGP53	Endevco	September 11, 1997
Head X	AMP95	Endevco	September 11, 1997
Head Y	AALH1	Endevco	September 11, 1997
Head Z	AM748	Endevco	September 11, 1997

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	J04-F10	Entran	August 7, 1997
Moving Barrier CG Y	F11-G04	Entran	August 7, 1997
Moving Barrier CG Z	J04-F12	Entran	August 7, 1997
Moving Barrier Rear Axle X	G13-B07	Entran	August 6, 1997
Moving Barrier Rear Axle Y	L14-D04	Entran	August 4, 1997
Left Mid A-Post Y	F12-G02	Entran	July 11, 1997
Left Lower A-Post Y	E23-R11	Entran	August 6, 1997
Left Mid B-Post Y	G01-J07	Entran	July 14, 1997
Left Lower B-Post Y	J13-F16	Entran	August 6, 1997
Rear Floorpan Above Axle X	G01-J14	Entran	August 7, 1997
Rear Floorpan Above Axle Y	I25-J10	Entran	August 7, 1997
Rear Floorpan Above Axle Z	J13-F17	Entran	August 6, 1997
Driver Seat Track Y	F20-G03	Entran	August 7, 1997
Right Side Sill at Front Seat X	I25-J20	Entran	August 7, 1997
Right Side Sill at Front Seat Y	J04-F13	Entran	August 7, 1997
Right Side Sill at Front Seat Z	J04-F16	Entran	August 7, 1997
Right Side Sill at Rear Seat X	F12-G03	Entran	July 11, 1997
Right Side Sill at Rear Seat Y	D05-R20	Entran	July 7, 1997
Right Side Sill at Rear Seat Z	D05-R16	Entran	July 7, 1997
Left Side Sill at Front Seat Y	E10-F10	Entran	August 7, 1997

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO	MANUFACTURER	CALIBRATION DATE
Left Side Sill at Rear Seat Y	D05-R05	Entran	July 2, 1997
Right Rear Occupant Compartment Y	F13-B12	Entran	August 7, 1997
Vehicle CG X	F12-G09	Entran	August 7, 1997
Vehicle CG Y	G08-B01	Entran	August 7, 1997
Vehicle CG Z	G13-B03	Entran	August 7, 1997
Left Front Door on Centerline	H02-J04	Entran	August 7, 1997
Midrear of Left Front Door	E10-F14	Entran	August 7, 1997
Left Front Door Upper Centerline	I24-D20	Entran	August 7, 1997
Midrear of Left Rear Door	N/A	Entran	August 7, 1997
Left Rear Door Upper Centerline	N/A	Entran	August 7, 1997

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