

V2405

REPORT NUMBER: CAL-96-N03

**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

**HONDA MOTOR CORPORATION
1996 ACURA TL
4-DOOR SEDAN**

NHTSA NUMBER: MT5302

CALSPAN TEST NUMBER: 8313-3

January 23, 1996

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FINAL REPORT

PREPARED FOR:

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16. <i>Abstract</i> A frontal load cell barrier test of a 1996 Acura TL 4-Door Sedan was performed at the Calspan SRL Corporation crash test facility in Buffalo, New York, on January 23, 1996. The impact velocity was 56.6 kph and the temperature at the barrier face was 21°C. The maximum post-test vehicle crush was 640 mm. The test vehicle was equipped with a 3-point continuous belt system and a supplemental airbag at both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria," both the driver and passenger appear to comply with the head, chest and femur requirements.			
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TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
1 PURPOSE AND TEST PROCEDURE	1-1
2 SUMMARY OF TEST	2-1
3 OCCUPANT AND VEHICLE INFORMATION	3-1
4 SUMMARY OF RESULTS FOR: FMVSS 212, "Windshield Mounting" FMVSS 219 (Partial), "Windshield Zone Intrusion" FMVSS 301, "Fuel System Integrity"	4-1
APPENDIX A PHOTOGRAPHS	A-1
APPENDIX B VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA	B-1
APPENDIX C PART 572 B/E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION TESTS	C-1
APPENDIX D DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION	D-1
APPENDIX E VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS	E-1

LIST OF FIGURES

<u>Figure No.</u>		<u>Page No.</u>
1	Dummy Measurements for Front Seat Passengers	3-4
2	Seat Belt Positioning Data	3-6
3	Camera Positions for Frontal Impacts	3-8
4	Vehicle Target Locations	3-10
5	Load Cell Locations on Fixed Barrier	3-11
6	Vehicle Accelerometer Locations	3-12
7	Test Vehicle Measurements	3-13
8	FMVSS No. 212 - "Windshield Mounting" Data	4-2
9	FMVSS No. 219 (Partial) - "Windshield Intrusion" Data	4-3
10	Driver Side Floorboard Deformation	4-9
11	Passenger Side Floorboard Deformation	4-10
12	Interior Deformation	4-11
13	Floorboard Deformation	4-12
14	Dummy Configuration Dimensions	C-3

LIST OF TABLES

<u>Table No.</u>		<u>Page No.</u>
1	General Test and Vehicle Data	2-2
2	Dummy Injury Criteria Values	3-2
3	Hybrid III Neck and Chest Data Sheet	3-3
4	Front Seat Occupant Measurements	3-5
5	Seat Belt Performance Assessment Test Data	3-7
6	High Speed Camera Locations	3-9
7	Vehicle Measurements	3-14
8	Accident Investigation Division Data	3-15
9	FMVSS No. 301-75 "Fuel System Integrity" Post Impact Test Data	4-4
10	FMVSS No. 301 - "Static Rollover" Data	4-5

Section 1

PURPOSE AND TEST PROCEDURE

This 56.6 kph frontal barrier impact test is part of the Composite FY 92 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-90-D-02121. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 56.6 kph frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test procedure.

Section 2

SUMMARY OF TEST MT5302

A load cell barrier consisting of 36 load cells was impacted by a 1996 Acura TL 4-Door Sedan at a velocity of 56.6 kph. The test was performed at the Calspan SRL Corporation on January 23, 1996. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by 1 real-time camera and 16 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head and chest triaxial accelerometers and right/left femur load cells. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 150) and the right-front passenger (position 2) ATD (Serial No. 064) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 133 channels of data were recorded on a P.C. based data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Position 1—redundant head X acceleration — did not record accurately. Position 2 belt elongation data did not record accurately. Data traces for these channels, as well as the position 1 redundant head resultant acceleration, are consequently omitted from this report. Data from vehicle accelerometer number 6 (left disc brake caliper) did not record accurately after approximately 40 milliseconds of event time. This data trace is labeled accordingly. Its two integrations are omitted from this report.

The driver's HIC was 739.9. The maximum chest deceleration over 3 milliseconds was 48.4 g's and maximum chest deflection was -52.9 mm. Femur loads were -5922.3 newtons on the left and -5528.0 newtons on the right.

The right front passenger's HIC was 627.9. Maximum chest deceleration over 3 milliseconds was 48.5 g's and maximum chest deflection was -39.8 mm. Femur loads were -2313.0 newtons on the left and -2620.8 newtons on the right.

Table 1

GENERAL TEST AND VEHICLE DATA

Vehicle Year/Make/Model/Body Style: 1996 Acura TL 4-Door Sedan

NHTSA Test No.: MT5302 VIN.: JH4VA2658TC008054

Body Color: White Date of Manufacture: 4/95

Date Received: 12/7/95

Odometer Reading: 00028

Engine: 5 Cylinders; - C.I.D.; 2.5 Liters; CC
X Gas; - Diesel; - Turbocharged
X Longitudinal; - Transverse

Transmission: 4 Speed; - Manual; X Automatic; - Overdrive

Final Drive: X Front Wheel; - Rear Wheel; - Four Wheel

Accessories: X A/C; X P/S; X P/B; X P/wdo
X Tilt Wheel; X P/seats; X Cruise Control - Other

Type of Occupant Restraint: 3-point restraint system with supplemental driver and passenger airbags.

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 210 kPa, Rear 200 kPa

Recommended Tire Size: P205/60R15

Recommended Cold Tire Pressure: Front 210 kPa, Rear 200 kPa

Tires on Vehicle: P205/60R15 Manufacturer: Bridgestone

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 TOTAL

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

Type of Front Seat Back: - Fixed; X Adj. with X Lever - Rot. Knob

Vehicle Capacity Weight (VCW) = 386 kgs. (A)

No. of Occupants x 68 kgs. = 340 kgs. (B)

Rated Cargo and Luggage Weight (RCLW) A-B = 46 kgs.

GVWR 1941 kgs. GAWR: Front 1000 kgs. Rear 955 kgs.

Table 1

GENERAL TEST AND VEHICLE DATA (cont'd)WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids) = UDW:

Right Front	=	<u>430</u>	kgs.	Right Rear	=	<u>319</u>	kgs.
Left Front	=	<u>427</u>	kgs.	Left Rear	=	<u>314</u>	kgs.
TOTAL FRONT WEIGHT	=	<u>857</u>	kgs.	(<u>57.5</u> % of Total Vehicle Weight)			
TOTAL REAR WEIGHT	=	<u>633</u>	kgs.	(<u>42.5</u> % of Total Vehicle Weight)			
TOTAL DELIVERED WEIGHT	=	<u>1490</u>	kgs.				

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight	<u>1490</u>	kgs.
VCW = Vehicle Capacity Weight	<u>386</u>	kgs.
DSC = Designated Seating Capacity	<u>5</u>	
RCLW = VCW - 68 (DSC) =	<u>46</u>	kgs.
Target Test Weight = UDW + RCLW + (2 dummies x 74.4 kgs./ dummy)		
Target Test Weight =	<u>1685</u>	kgs.

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 39 KGS CARGO:

Right Front	=	<u>442</u>	kgs.	Right Rear	=	<u>397</u>	kgs.
Left Front	=	<u>472</u>	kgs.	Left Rear	=	<u>367</u>	kgs.
TOTAL FRONT WEIGHT	=	<u>914</u>	kgs.	(<u>54.5</u> % of Total Vehicle Weight)			
TOTAL REAR WEIGHT	=	<u>764</u>	kgs.	(<u>45.5</u> % of Total Vehicle Weight)			
TOTAL TEST WEIGHT	=	<u>1678</u>	kgs.				
Weight of ballast secured in vehicle trunk area = <u>0</u> kgs.							

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude:	RF	<u>661</u>	LF	<u>679</u>	RR	<u>692</u>	LR	<u>689</u>
Test Attitude:	RF	<u>665</u>	LF	<u>665</u>	RR	<u>623</u>	LR	<u>624</u>
Wheel Base: <u>2837</u> mm.; C.G. = <u>1292</u> mm. rearward of front wheel C/L								
Remarks: <u>60 liters of Stoddard solution was placed in the fuel tank.</u>								

Table 1

GENERAL TEST AND VEHICLE DATA (cont'd)POST -IMPACT DATA:

Type of Test: Frontal Barrier Impact Angle: 0°
 Date of Test: January 23, 1996 Time of Test: 14:35
 Ambient Temperature: 21 ° C at impact area
 Temperature in Occupant Compartment: 21 ° C
 Windshield Molding Temperature: 21 ° C
 Required Impact Velocity Range: 55.5 to 57.1 kph
 Impact Velocity: primary = 56.6 kph, secondary = 56.6 kph
 Distance From Front Bumper to Barrier Face When
 Entering Speed Trap: 1321 mm
 Exiting Speed Trap: 305 mm

VEHICLE REBOUND AND CRUSH (mm):

Vehicle Length:	Pre-test = R	<u>4740</u>	C _L	<u>4870</u>	L	<u>4735</u>
	Post-test = R	<u>4196</u>	C _L	<u>4230</u>	L	<u>4230</u>
	Crush = R	<u>544</u>	C _L	<u>640</u>	L	<u>505</u>

Distance from front of test vehicle to point of impact:

R	<u>578</u>	C _L	<u>574</u>	L	<u>574</u>
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VISIBLE DUMMY CONTACT POINTS:

	<u>Driver</u>	<u>Passenger</u>
Head	<u>Airbag</u>	<u>Airbag</u>
Chest	<u>Airbag</u>	<u>Airbag</u>
Abdomen	<u>No contact</u>	<u>No contact</u>
Left Knee	<u>Knee bolster</u>	<u>Dash panel</u>
Right Knee	<u>Knee bolster</u>	<u>Dash panel</u>

Table 1

GENERAL TEST AND VEHICLE DATA (cont'd)

	<u>Front</u>		<u>Rear</u>	
	<u>Left</u>	<u>Right</u>	<u>Left</u>	<u>Right</u>
Door Opening	<u>Operable</u>	<u>Operable</u>	<u>Operable</u>	<u>Operable</u>
<u>Seat Movement</u>	<u>Front</u>		<u>Rear</u>	
	<u>Left</u>	<u>Right</u>	<u>Left</u>	<u>Right</u>
Seat Back Failure	<u>None</u>	<u>None</u>	<u>-</u>	<u>-</u>
Seat Shift (mm.)	<u>0.0</u>	<u>0.0</u>	<u>-</u>	<u>-</u>

Glazing Damage

Backlight/Windshield: Windshield sustained stress fractures but remained intact.

Other Notable Impact Effects: None

Section 3

OCCUPANT AND VEHICLE INFORMATION

I.

DATA

1. Dummy Injury Criteria Data Summary
2. Dummy Positioning Data
3. Seat Belt Performance Assessment Data
4. Camera Locations
5. Vehicle Target Locations
6. Load Cell Barrier Data
7. Vehicle Accelerometer Data
8. Test Vehicle Measurements

Table 2

DUMMY INJURY CRITERIA VALUESNHTSA Test No.: MT5302 Vehicle: 1996 Acura TL 4-Door Sedan

	MAXIMUM HEAD ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-69.9	-5.9	26.5	73.6
Position #2 - Passenger	-55.5	-22.9	25.9	60.3

	MAXIMUM CHEST ACCELERATION (g's)			
	X	Y	Z	R*
Position #1 - Driver	-48.6	-7.8	16.0	48.4
Position #2 - Passenger	-50.0	-9.0	10.8	48.5

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

	MAXIMUM FORCE - FEMUR LOAD (nwt)	
	LEFT FEMUR	RIGHT FEMUR
Position #1 - Driver	-5922.3	-5528.0
Position #2 - Passenger	-2313.0	-2620.8

	MAXIMUM FORCE - SEAT BELT LOADS (nwt)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
Position #1 - Driver	7319.0	-	4865.2
Position #2 - Passenger	6734.8	5469.3	-

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t ₁ (mSec)	t ₂ (mSec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	739.9	59.76	94.56	53.83
Position #2 - Passenger	627.9	57.60	93.48	49.80

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

Table 3

HYBRID III NECK AND CHEST DATA SHEET

Vehicle Year/Make/Model/Body Style: 1996 Acura TL 4-Door Sedan
 NHTSA Test No.: MT5302 Test Date: January 23, 1996

MAXIMUM VALUES	DRIVER DUMMY ID #150:	PASSENGER DUMMY ID #064:
Neck Load X (nwt)	-519.4	701.6
Neck Load Y (nwt)	-391.7	-616.5
Neck Load Z (nwt)	1711.5	1223.1
Neck Moment X (nwt-m)	-18.2	33.2
Neck Moment Y (nwt-m)	58.7	57.4
Neck Moment Z (nwt-m)	-8.7	19.7
Chest Deflection X (mm.)	-52.9	-39.8
Time of Max. Occurrence (msec)	81.0	79.0

Note: All values listed occur during the primary impact event.

Figure 1

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

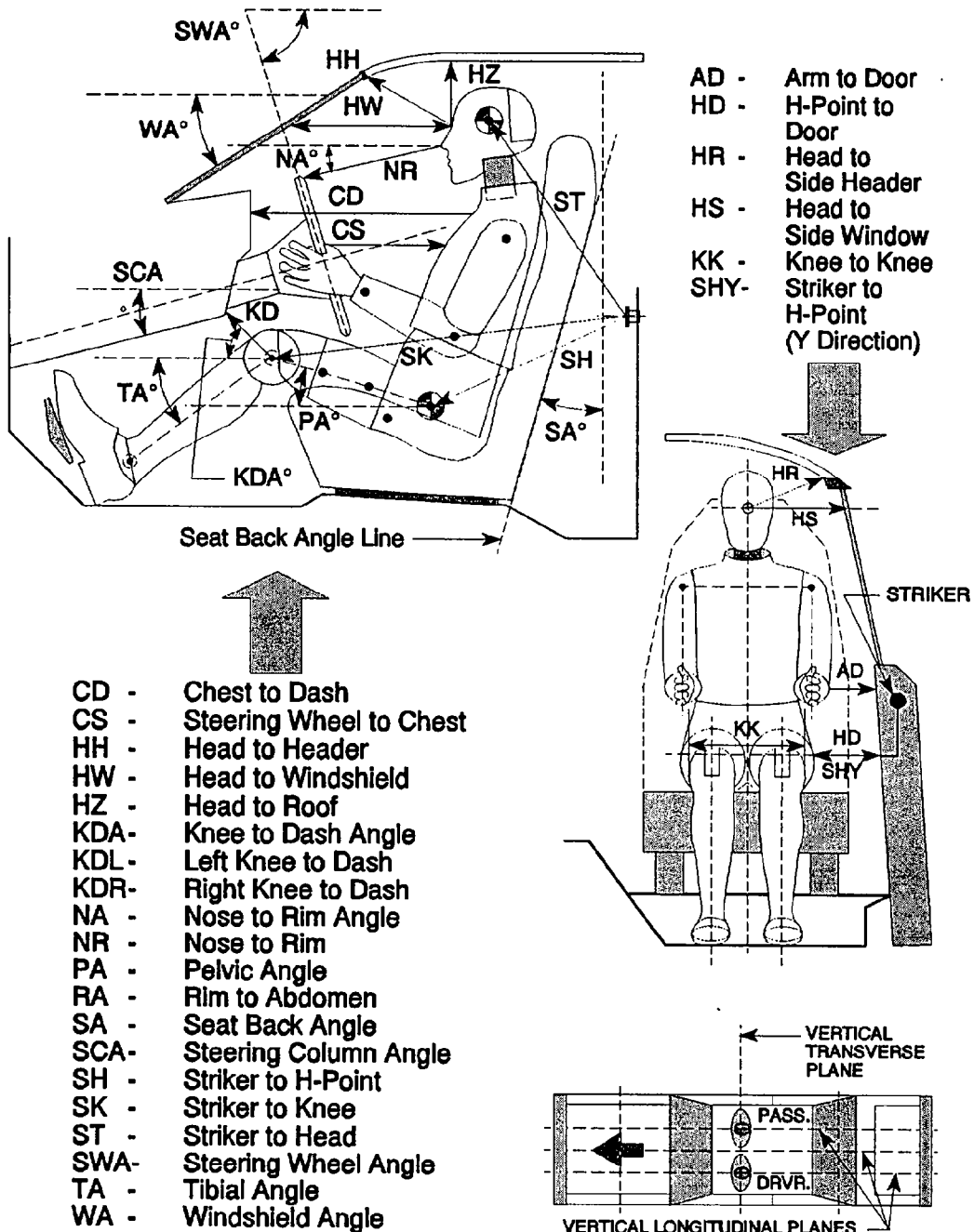


Table 4

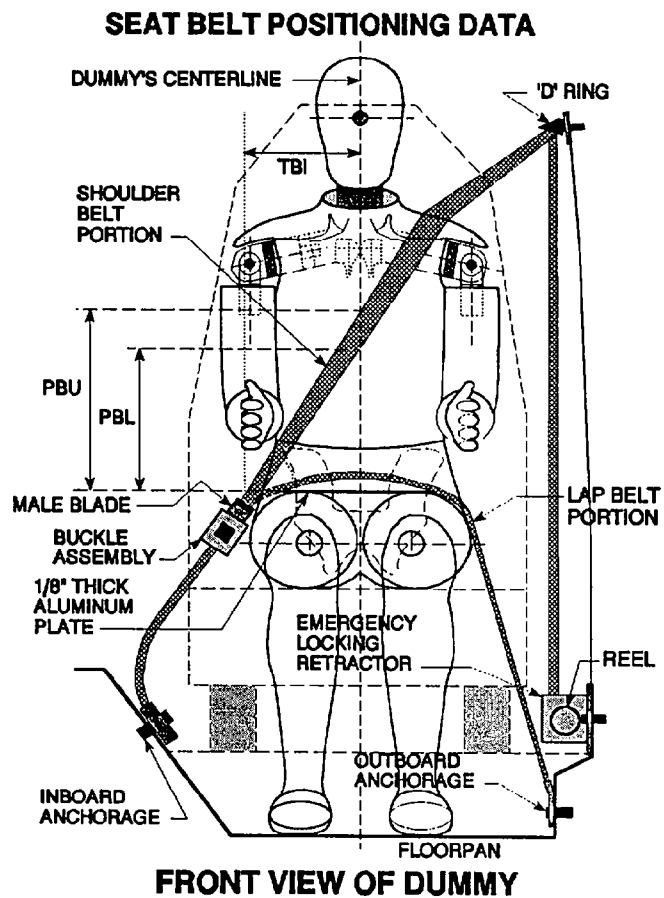
FRONT SEAT OCCUPANT MEASUREMENTS

	DRIVER (Serial #150)			PASS. (Serial # 064)		
WA°	28 deg.			N/A		
SWA°	69 deg.			N/A		
SCA°	21 deg.			N/A		
SA°	reclined to 4th notch			reclined to 4th notch		
HZ	172			143		
HH	250			312		
HW	469			479		
HR	202			191		
NR	445	Angle	13 deg.	N/A		
CD	569			515		
CS	330			N/A		
RA	229			N/A		
KDL	178	Angle (KDA)	34 deg.	138		
KDR	158			156	Angle (KDA)	25 deg.
PA°	25 deg.			25 deg.		
TA°	-30 deg.			-42 deg.		
KK	284			237		
ST	533	Angle	3 deg.	538	Angle	8 deg.
SK	528	Angle	98 deg.	572	Angle	99 deg.
SH	185	Angle	135 deg.	191	Angle	135 deg.
SHY	250			234		
HS	150			154		
HD	127			111		
AD	90			85		

Dimensions in millimeters

Figure 2

SEAT BELT POSITIONING DATA



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	340	350
PBL-- Top surface of alum. plate to belt lower edge	260	270
<u>LAP BELT TENSION</u>	10 nwt	10 nwt
<u>SHOULDER BELT TENSION</u>	Retractor	Retractor

Table 5

SEAT BELT PERFORMANCE ASSESSMENT TEST DATABELT LENGTH DATA:

Belt length from trim panel exit
to bolt hole anchor point for
continuous webbing systems.

DriverPassenger

1880

1880

Shoulder belt length as measured
on Part 572 Dummy.

840

840

Lap belt length as measured
on Part 572 Dummy.

830

830

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.

46

N/A*

As determined mechanically.

34

37

As determined electronically.

63

55

BELT STRETCH DATA:

Measured electronically between shoulder
belt load cell and the "D" ring.

 ≈ 40 mm/M

N/A**

Measured mechanically.

10 mm/M

20 mm/M

Dimensions in millimeters

* Belt markings not visible during entire spool-off action.

** Data did not record accurately.

Figure 3

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera information shown in Table 6.

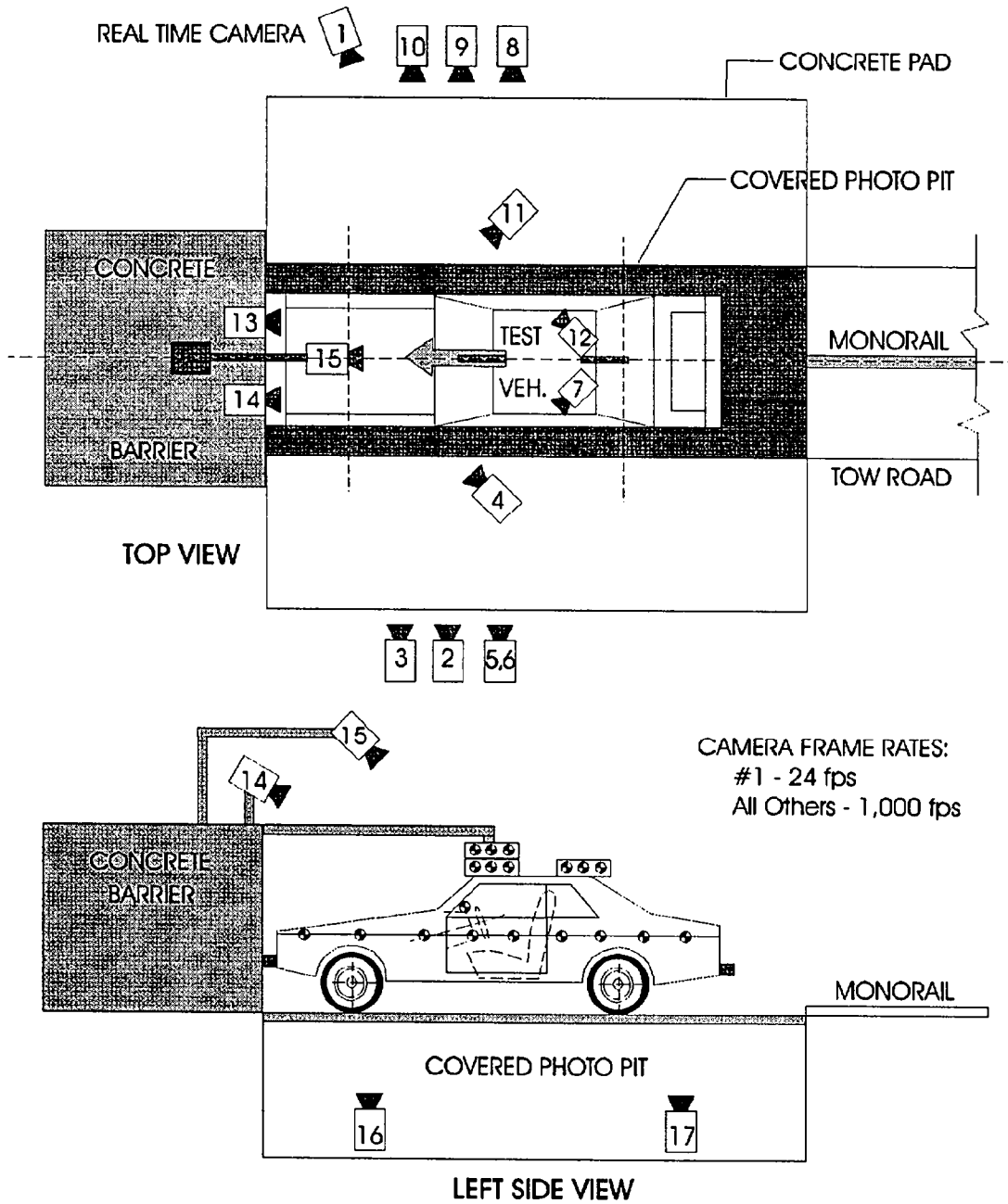


Table 6
HIGH-SPEED CAMERA LOCATIONS

NHTSA Test No.:			MT5302		Vehicle:		1996 Acura TL 4-Door Sedan			
CAMERA NO.	VIEW	CAMERA POSITIONS (MM.)*			ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)		
		X	Y	Z						
1	Real-Time Camera	-	-	-	-	-	-	24		
2	Overall Left Side	6720	1500	1320	-4	6284	13	1020		
3	Left Side View	6951	790	1300	-4	6515	28	1030		
4	Driver and Interior View	5410	3240	2090	-14	-	25	1070		
5	Steering Column (Bottom)	7060	1960	1160	-4	6624	35	870		
6	Steering Column (Top)	7060	1960	1780	-7	6624	35	1030		
7	Left Belt	-	-	-	-	-	8	390		
8	Overall Right Side	7030	1860	1170	-5	6594	13	1090		
9	Right Side View	9050	1010	1350	-5	8614	25	980		
10	Right Passenger View	9270	1860	1620	-5	8834	35	1120		
11	Passenger and Interior View	5210	3255	1970	-14	-	25	1060		
12	Right Belt	-	-	-	-	-	8	450		
13	Passenger Front View	570	127	1778	-38	-	13	1010		
14	Driver Front View	570	127	1778	-36	-	13	1010		
15	Windshield View	0	0	3048	-51	-	13	990		
16	Pit View of Engine	0	505	-3048	90	-	13	990		
17	Pit View of Fuel Tank	0	3432	-3048	90	-	13	N.T.		

*X = film plane to monorail centerline ** = referenced to horizontal plane

Y = film plane to impact location

N.T. indicates No Timing

Z = film plane to ground

Figure 4

VEHICLE TARGET LOCATIONS

(Dimensions in millimeters)

A	360
B	510
C	910
D	2467
E	84
F	1635
G	982
H	978
I	108
J	1309
K	1086
L	1493
M	84
N	108
O	975
P	974
Q	1493
R	1083
S	1320

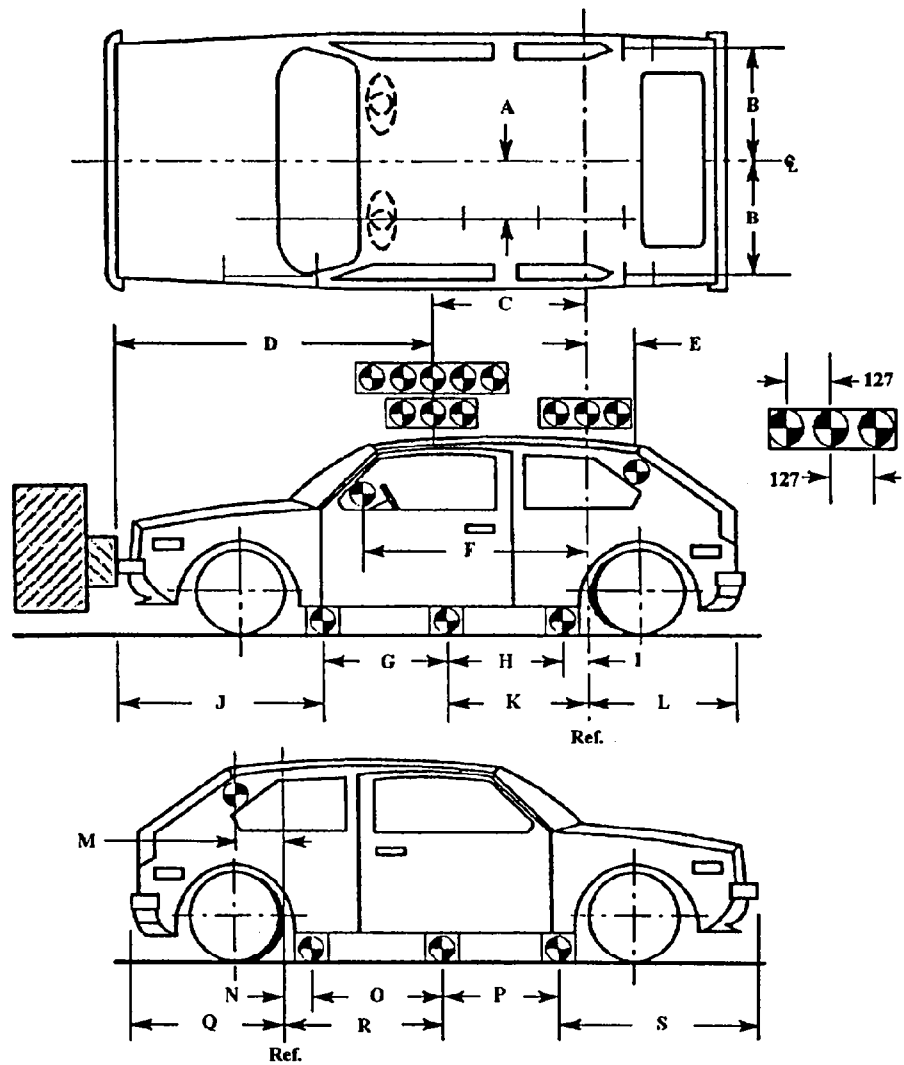
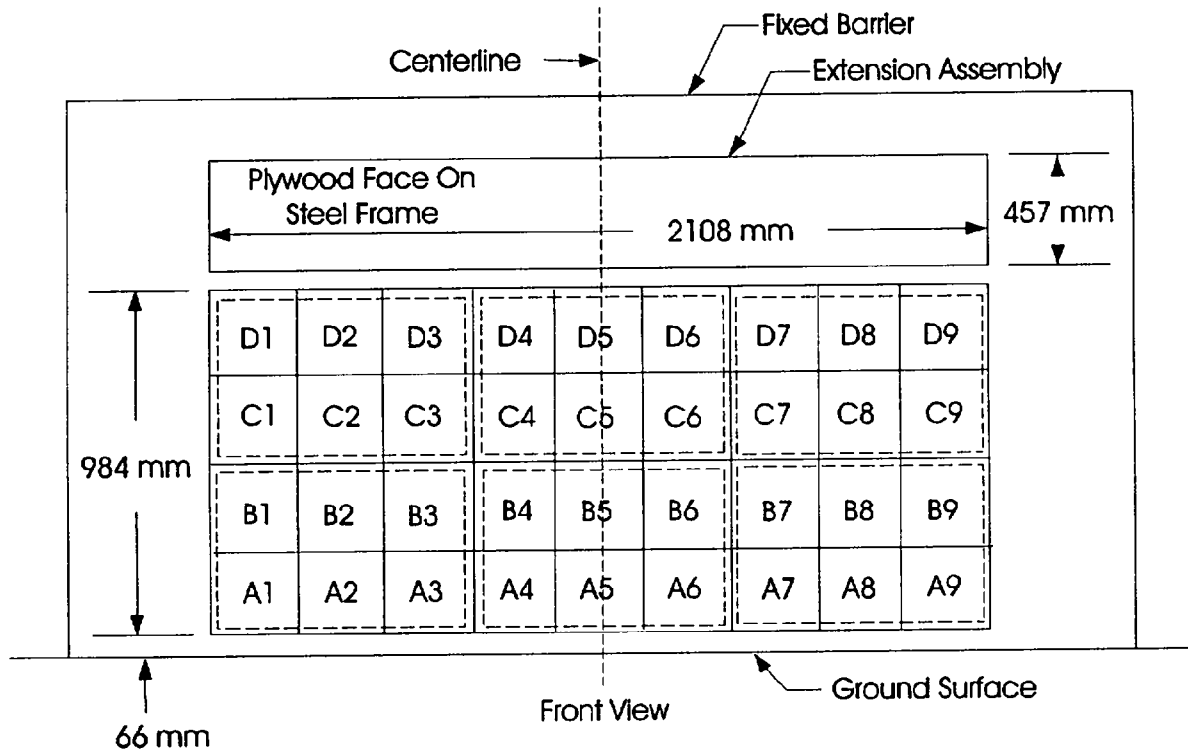


Figure 5

LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
 4 Rows
 9 Columns
 6 Groupings (6 cells/group)



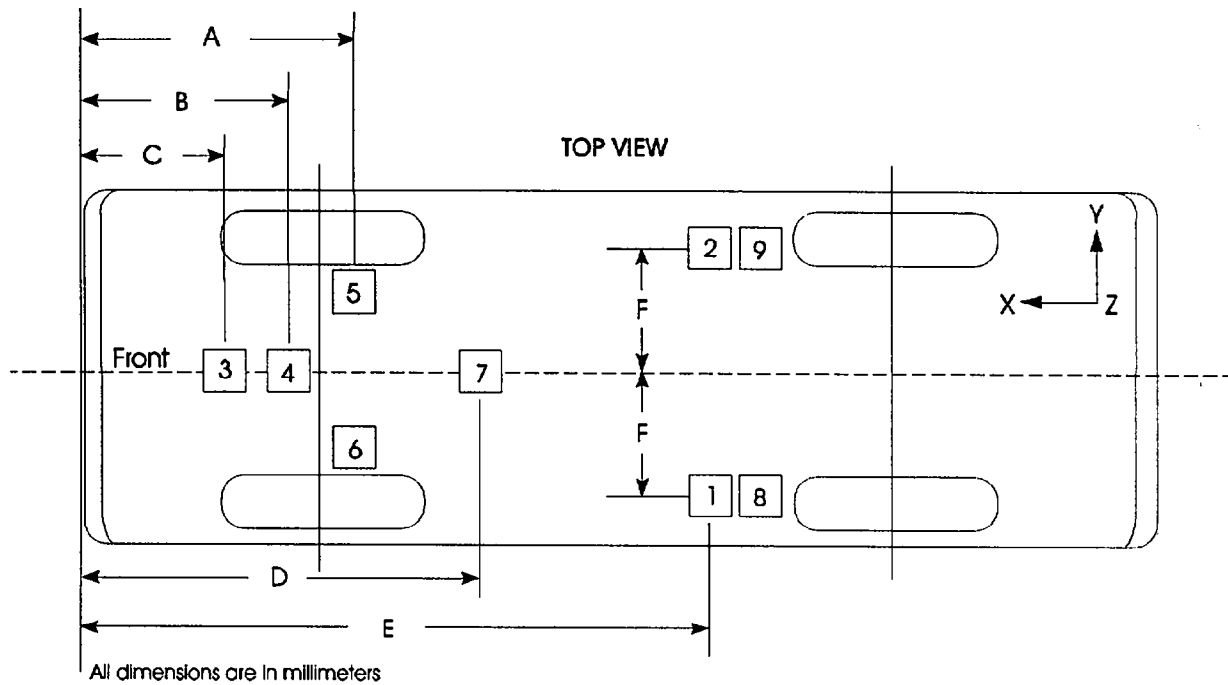
6 GROUPS OF 6 LOAD CELLS EACH

Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

- (1) Data from 36 individual load cells
- (2) Total or Sum of 36 individual load cells
- (3) Data from 6 Groupings shown above (6 cells/group)

Figure 6

VEHICLE ACCELEROMETER LOCATIONS

ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	Distances From Vehicle Front	
		All dimensions in millimeters	
1	Left Rear Seat Crossmember [E/F]	X = 2959	Y = 573
2	Right Rear Seat Crossmember [E/F]	X = 2959	Y = 573
3	Top of engine [C]	698	
4	Bottom of engine [B]	586	
5	Right Disc Brake Caliper [A]	945	
6	Left Disc Brake Caliper [A]	945	
7	Instrument Panel [D]	1880	
8	Left Rear Seat Crossmember [E/F]	X = 2959	Y = 573
9	Right Rear Seat Crossmember [E/F]	X = 2959	Y = 573

* The accelerometer pack number can be correlated with the vehicle response data traces found in Appendix B.

Figure 7

TEST VEHICLE MEASUREMENTS

REAR DATUM REFERENCE

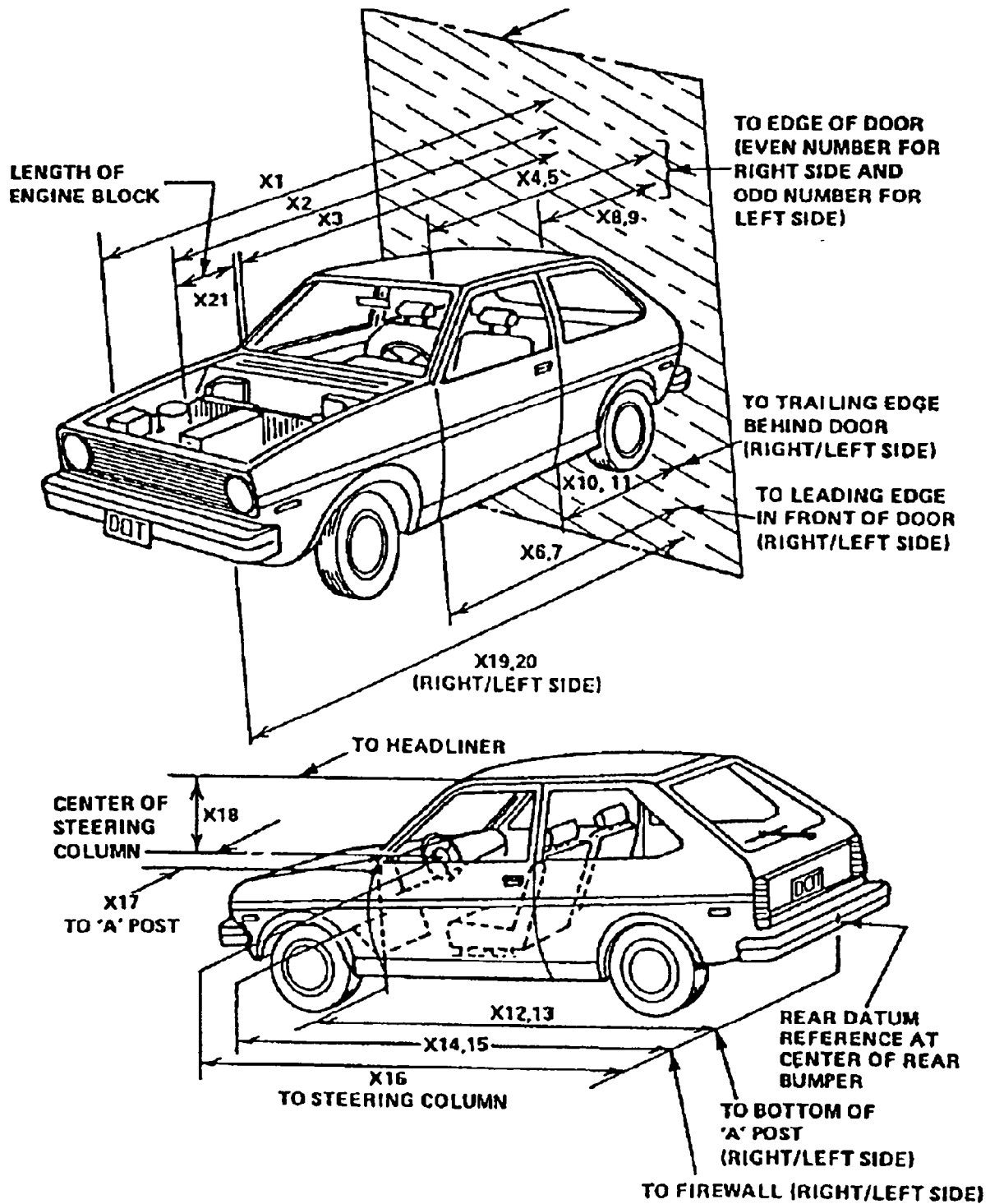


Table 7

VEHICLE MEASUREMENTS

No.		All Dimensions in mm		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	4870	4230	640
X2	Rear Surface of Vehicle to Front of Engine	4355	4025	330
X3	Rear Surface of Vehicle to Firewall	3666	3465*	201
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	N/A	3274	N/A
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3298	3298*	0
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	N/A	3275	N/A
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3298	3268	30
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2225	2195	30
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2223	2205	18
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2242	2208	34
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2241	2207	34
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3373	3284*	89
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3367	3374*	-7
X14	Rear Surface of Vehicle to Firewall, Right Side	3550	3420*	130
X15	Rear Surface of Vehicle to Firewall, Left Side	3585	3510*	75
X16	Rear Surface of Vehicle to Steering Column	2810	2805	5
X17	Center of Steering Column to "A" Post	407	390	17
X18	Center of Steering Column to Headliner	450	400	50
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4740	4196	544
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4735	4230	505
X21	Length of Engine Block	560	560	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2980	2990	-10
CD	Rear Surface of Vehicle to Center of Dash Panel	2990	2990	0
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2975	2985	-10

* Approximate measurement

Table 8

ACCIDENT INVESTIGATION DIVISION DATA
FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Acura TL 4-Door Sedan

NHTSA Test No.: MT5302 VIN: JH4VA2658TC008054

Model Year: 1996 Build Date: 4/95 Test Date: January 23, 1996

Vehicle Size Category: Compact Test Weight: 1678 Kgs

Vehicle Wheelbase: 2837 mm; Front Overhang: 1315 mm; Overall Width: 1650 mm

Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions:

C1 = 500 mm

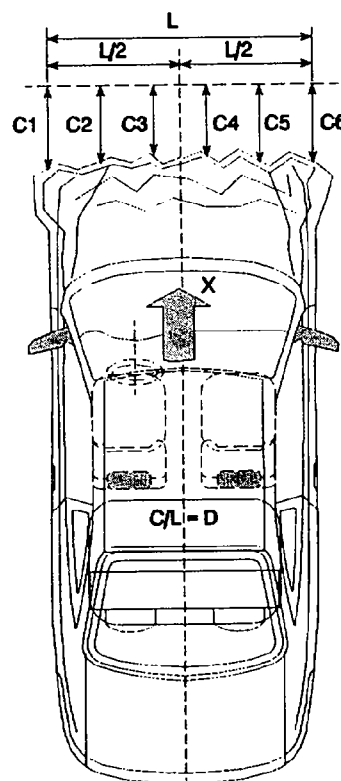
C2 = 540 mm

C3 = 590 mm

C4 = 610 mm

C5 = 575 mm

C6 = 520 mm



Midpoint of Damage: $D = \frac{\text{Vehicle Centerline}}{(\text{Longitud.})}$

Longitude Length of Damaged Region: $L = \underline{1650}$ mm

Section 4

SUMMARY OF RESULTS OF FMVSS 212, 219 (Partial) AND 301

"Windshield Mounting" FMVSS No. 212 Data

"Windshield Zone Intrusion" FMVSS No. 219 Data

"Fuel System Integrity" FMVSS No. 301

Figure 8

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with 16 mm molding.

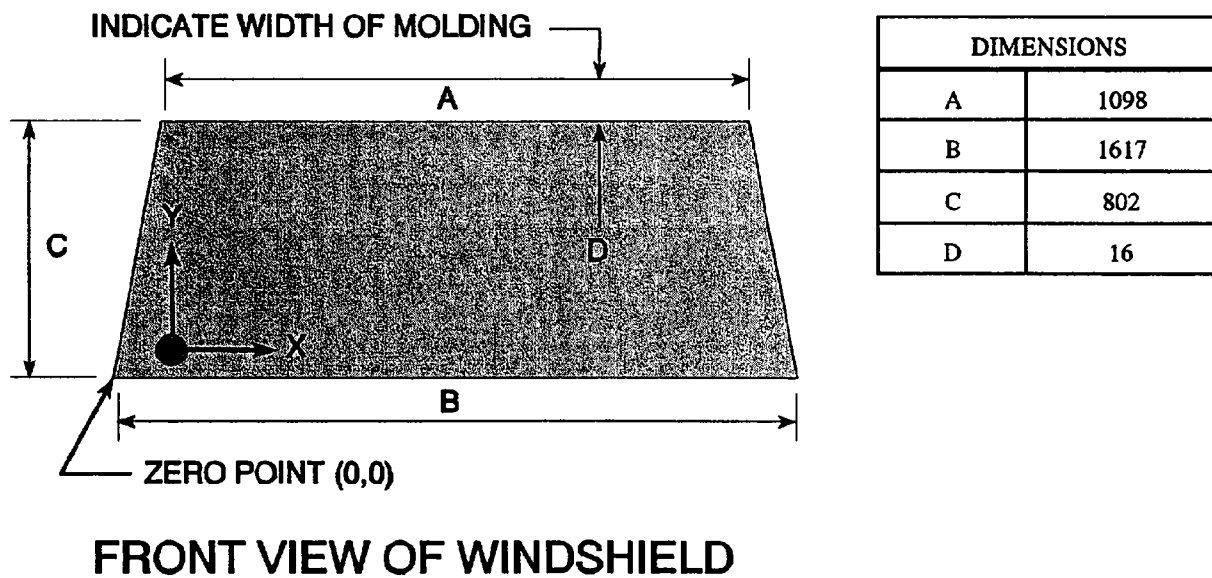
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST(mm)	
RIGHT SIDE	1080	1080	100
LEFT SIDE	1080	1080	100
TOTAL	2160	2160	100

AREA OF RETENTION FAILURE:



FAILURE DETAILS: None

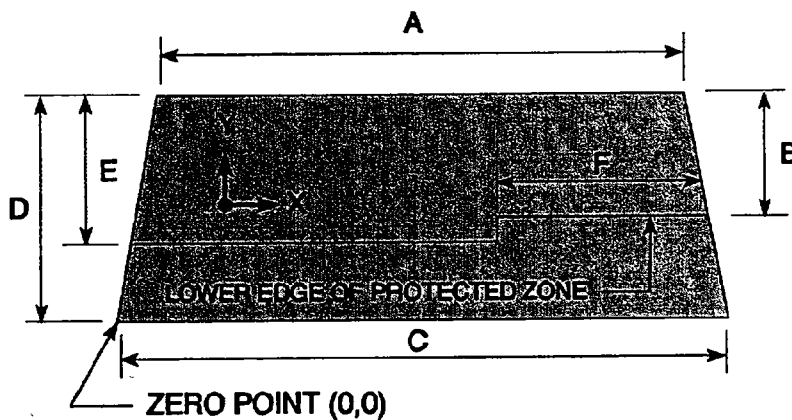
Figure 9

FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" diameter rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield, then draw a line on the inner surface of the windshield below and 1/2" distant from the locus line. The **LOWER EDGE OF THE PROTECTED ZONE** is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA: (Dimensions in mm)



DIMENSIONS	
A	1098
B	474
C	1617
D	802
E	479
F	630

FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4": None

(Show location of penetration on the above sketch)

COORDINATES		
	X	Y
1.		
2.		
3.		
4.		

Table 9

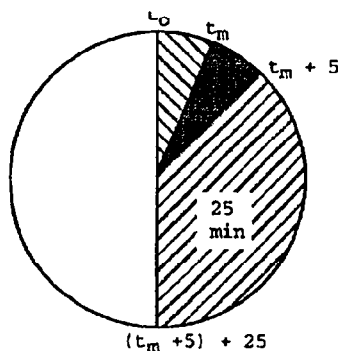
FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

NHTSA TEST No.: MT5302 TEST DATE: January 23, 1996
VEHICLE MAKE/MODEL: 1996 Acura TL 4-Door Sedan

The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

=====

TEST VEHICLE IMPACT TYPE: X Frontal (35 mph)
 Oblique (30 mph) with _____ deg. barrier face first
 contacting _____
 - (driver/passenger) side
 - Rear Moving Barrier (30 mph)
 - Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT:

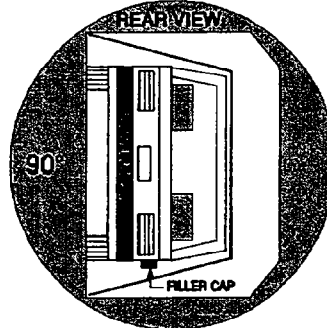
1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0	1 oz.
0	5 oz.
0	1 oz./min.

SOLVENT SPILLAGE DETAILS:

None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEETTEST PHASE:NHTSA Test No.:
MT5302I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)2

minutes

30

seconds

FMVSS 301 Position Hold Time +

5

minutes

00

seconds

TOTAL7

minutes

30

seconds

Next whole minute interval

8

minutes

00

seconds

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

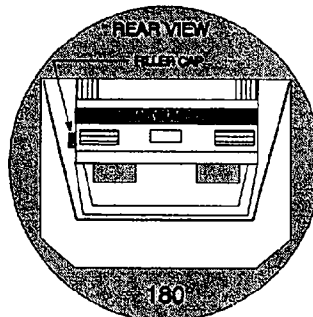
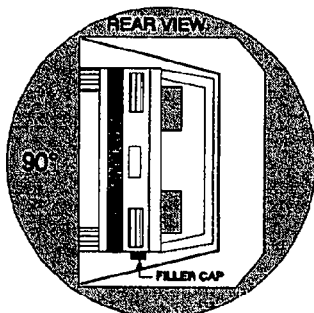
III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEETTEST PHASE:NHTSA Test No.:
MT5302I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)

2	minutes	30	seconds
---	---------	----	---------

FMVSS 301 Position Hold Time +

5	minutes	00	seconds
---	---------	----	---------

TOTAL

7	minutes	30	seconds
---	---------	----	---------

Next whole minute interval

8	minutes	00	seconds
---	---------	----	---------

II. FMVSS 301 REQUIREMENTS:(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

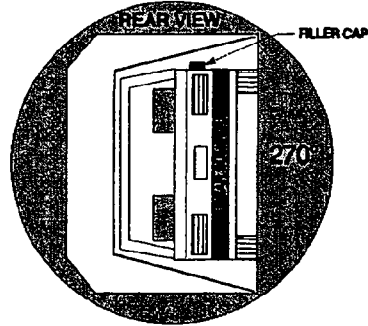
III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEETTEST PHASE:NHTSA Test No.:
MT5302I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)2 minutes 30 seconds

FMVSS 301 Position Hold Time +

5 minutes 00 seconds**TOTAL**7 minutes 30 seconds

Next whole minute interval

8 minutes 00 secondsII. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

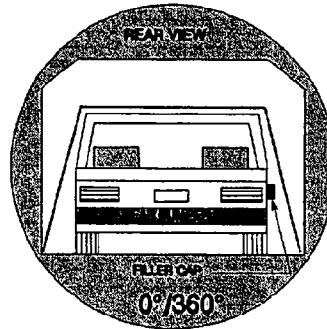
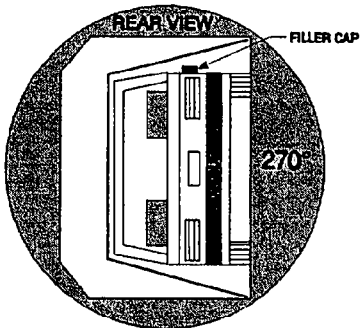
III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEETTEST PHASE:NHTSA Test No.:
MT5302I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time
(Spec. Range = 1 to 3 minutes)

2	minutes	30	seconds
---	---------	----	---------

FMVSS 301 Position Hold Time +

5	minutes	00	seconds
---	---------	----	---------

TOTAL

0	minutes	0	seconds
---	---------	---	---------

Next whole minute interval

1	minutes	00	seconds
---	---------	----	---------

II. FMVSS 301 REQUIREMENTS:(1) Time Period

First 5 min. from onset of rotation	6th min.	7th min.	8th min. if reqd.
-------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

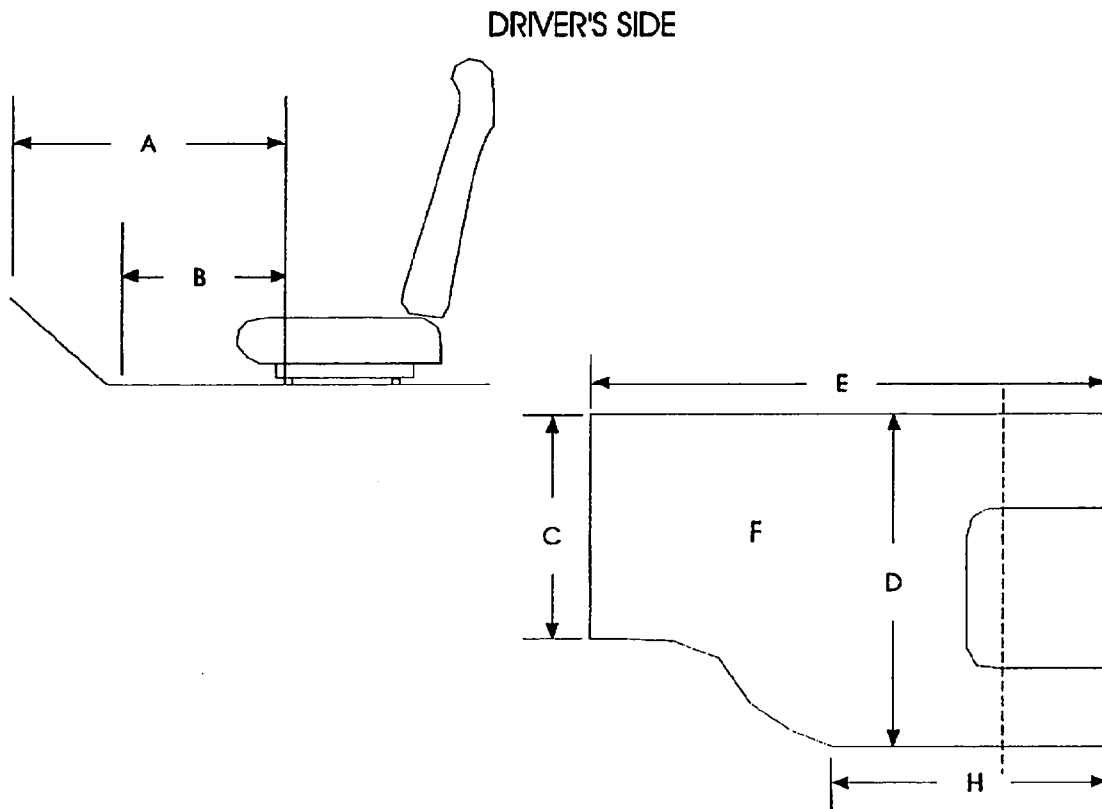
III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

Figure 10
DRIVER SIDE FLOORBOARD DEFORMATION

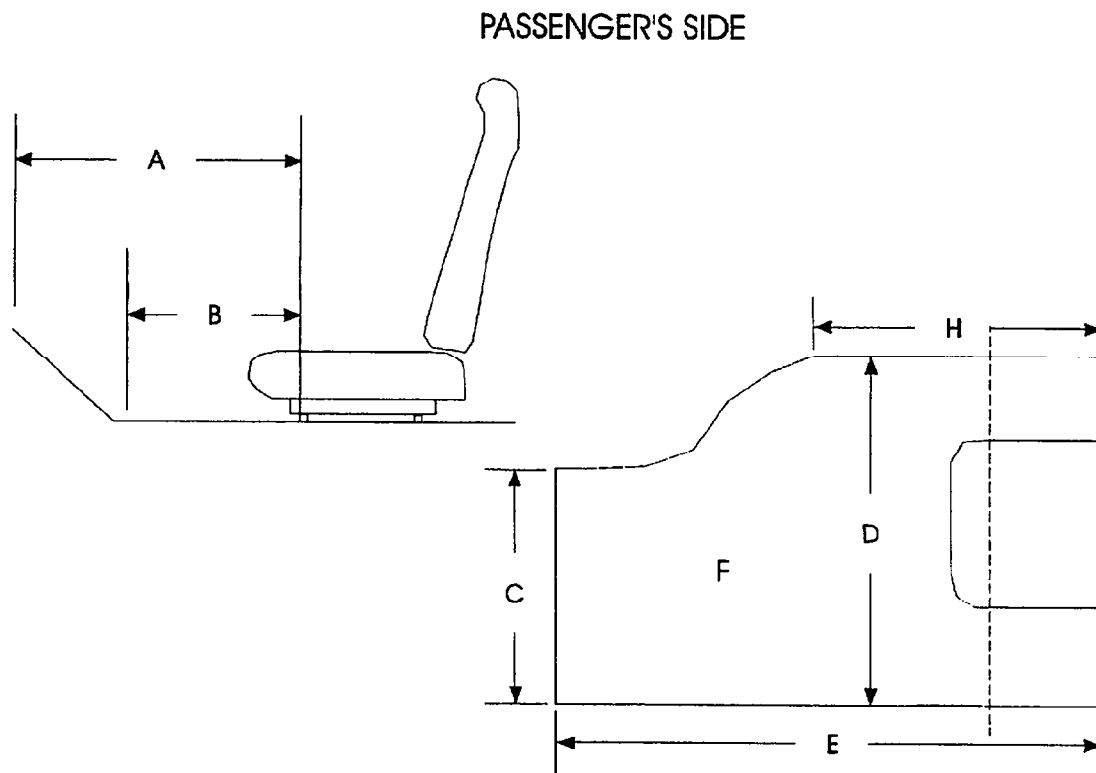


Measurement	Pre-Test	Post-Test	Difference
A	810	710	100
B	690	590	100
C	420	400	20
D	520	495	25
E	660	530	130
H	120	115	5
F (cm) ²	2892	2229	663

Units = mm

$$F = H \times D + (E - H) \times C$$

Figure 11
PASSENGER SIDE FLOORBOARD DEFORMATION

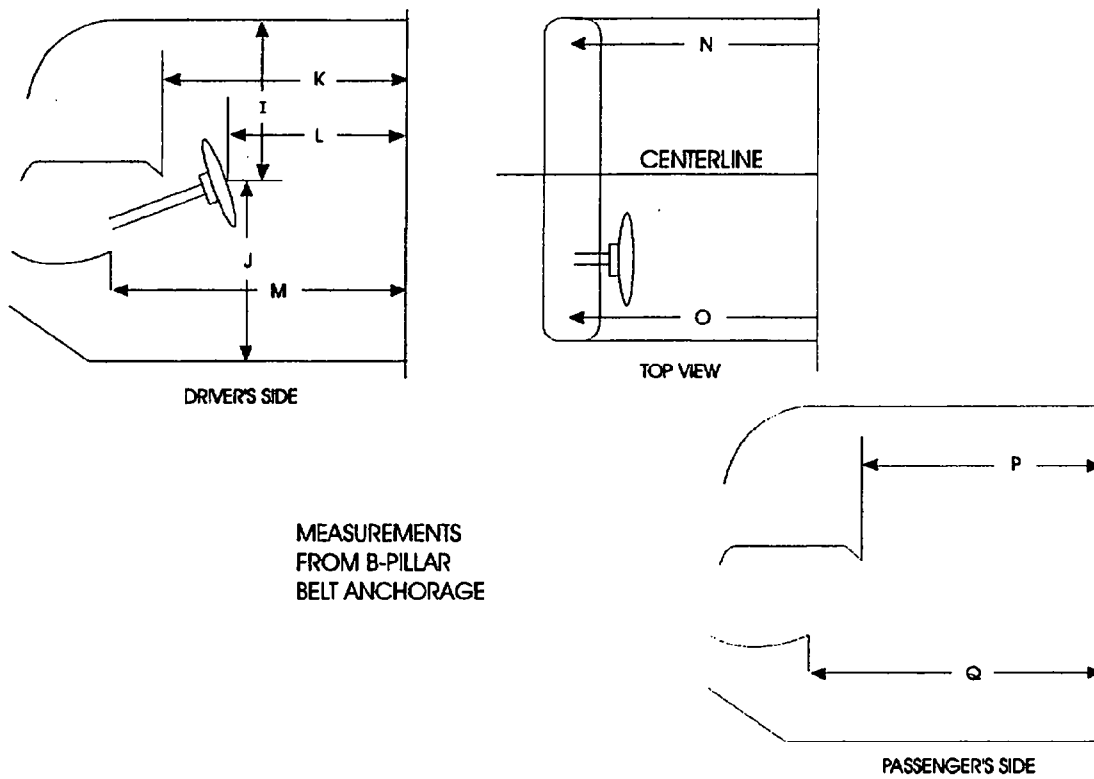


Measurement	Pre-Test	Post-Test	Difference
A	780	680	100
B	585	590	-5
C	350	330	20
D	470	440	30
E	550	485	65
H	210	225	-15
F (cm) ²	2177	1848	329

Units = mm

$$F = H \times D + (E - H) \times C$$

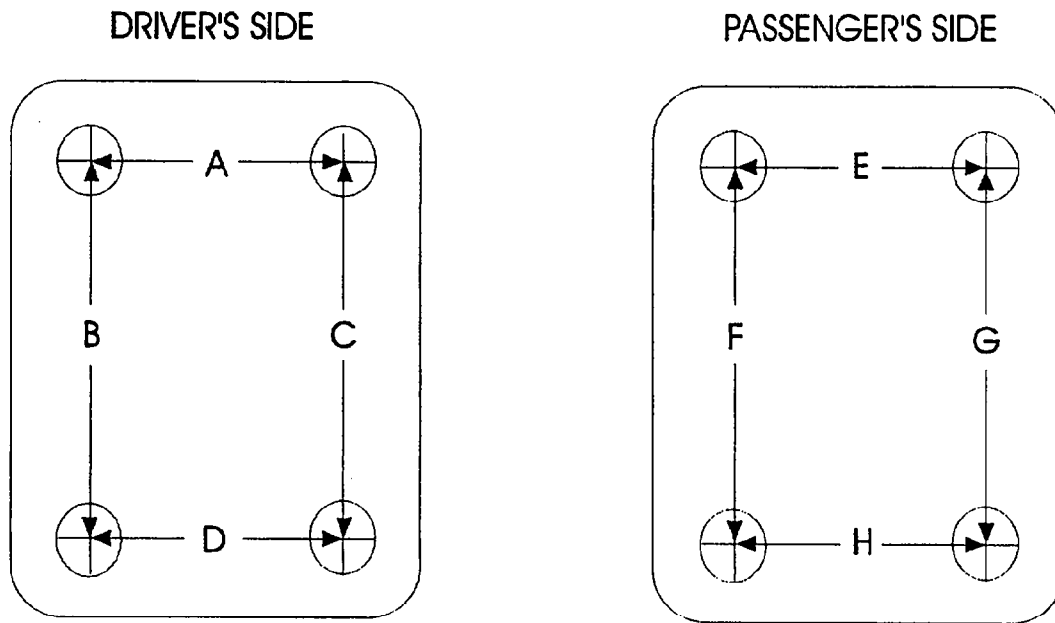
Figure 12
INTERIOR DEFORMATION



Measurement	Pre-Test	Post-Test	Difference
I	455	440	15
J	620	655	-35
K	1542	1485	57
L	1335	1275	60
M	1515	1450	65
N	1540	1465	75
O	1530	1470	60
P	1580	1505	75
Q	1530	1455	75

Units = mm

Figure 13
FLOORBOARD DEFORMATION



TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	235	273	-38
B	350	320	30
C	390	392	-2
D	245	300	-55
E	280	234	46
F	295	353	-58
G	330	395	-65
H	300	246	54

Units = mm

Appendix A
PHOTOGRAPHS

PHOTOGRAPHS

<u>Figure</u>	<u>Title</u>	<u>Page</u>
A-1	LOAD CELL LOCATIONS.	A-4
A-2	PRE-TEST FRONT VIEW.	A-5
A-3	POST-TEST FRONT VIEW.	A-6
A-4	PRE-TEST LEFT SIDE VIEW.	A-7
A-5	POST-TEST LEFT SIDE VIEW.	A-8
A-6	PRE-TEST RIGHT SIDE VIEW.	A-9
A-7	POST-TEST RIGHT SIDE VIEW.	A-10
A-8	PRE-TEST RIGHT FRONT THREE-QUARTER VIEW.	A-11
A-9	POST-TEST RIGHT FRONT THREE-QUARTER VIEW.	A-12
A-10	PRE-TEST LEFT REAR THREE-QUARTER VIEW.	A-13
A-11	POST-TEST LEFT REAR THREE-QUARTER VIEW.	A-14
A-12	PRE-TEST WINDSHIELD VIEW.	A-15
A-13	POST-TEST WINDSHIELD VIEW.	A-16
A-14	PRE-TEST ENGINE COMPARTMENT VIEW.	A-17
A-15	FUEL CAP VIEW.	A-18
A-16	PRE-TEST FRONT UNDERBODY VIEW.	A-19
A-17	POST-TEST FRONT UNDERBODY VIEW.	A-20
A-18	PRE-TEST FRONT SIDE UNDERBODY VIEW.	A-21
A-19	POST-TEST FRONT SIDE UNDERBODY VIEW.	A-22
A-20	PRE-TEST REAR UNDERBODY VIEW.	A-23
A-21	POST-TEST REAR UNDERBODY VIEW.	A-24
A-22	PRE-TEST DRIVER POSITION VIEW.	A-25
A-23	POST-TEST DRIVER POSITION VIEW.	A-26
A-24	PRE-TEST PASSENGER POSITION VIEW.	A-27
A-25	POST-TEST PASSENGER POSITION VIEW.	A-28
A-26	PRE-TEST DRIVER AND INTERIOR VIEW.	A-29
A-27	POST-TEST DRIVER AND INTERIOR VIEW.	A-30
A-28	PRE-TEST PASSENGER AND INTERIOR VIEW.	A-31
A-29	POST-TEST PASSENGER AND INTERIOR VIEW.	A-32
A-30	PRE-TEST DRIVER HEAD LOCATION.	A-33
A-31	POST-TEST DRIVER HEAD LOCATION.	A-34
A-32	PRE-TEST PASSENGER HEAD LOCATION.	A-35

PHOTOGRAPHS (continued)

<u>Figure</u>	<u>Title</u>	<u>Page</u>
A-33	POST-TEST PASSENGER HEAD LOCATION	A-36
A-34	PRE-TEST DRIVER FLOOR PAN VIEW	A-37
A-35	POST-TEST DRIVER FLOOR PAN VIEW	A-38
A-36	PRE-TEST PASSENGER FLOOR PAN VIEW	A-39
A-37	POST-TEST PASSENGER FLOOR PAN VIEW	A-40
A-38	ROLLOVER VIEW	A-41
A-39	IMPACT VIEW	A-42

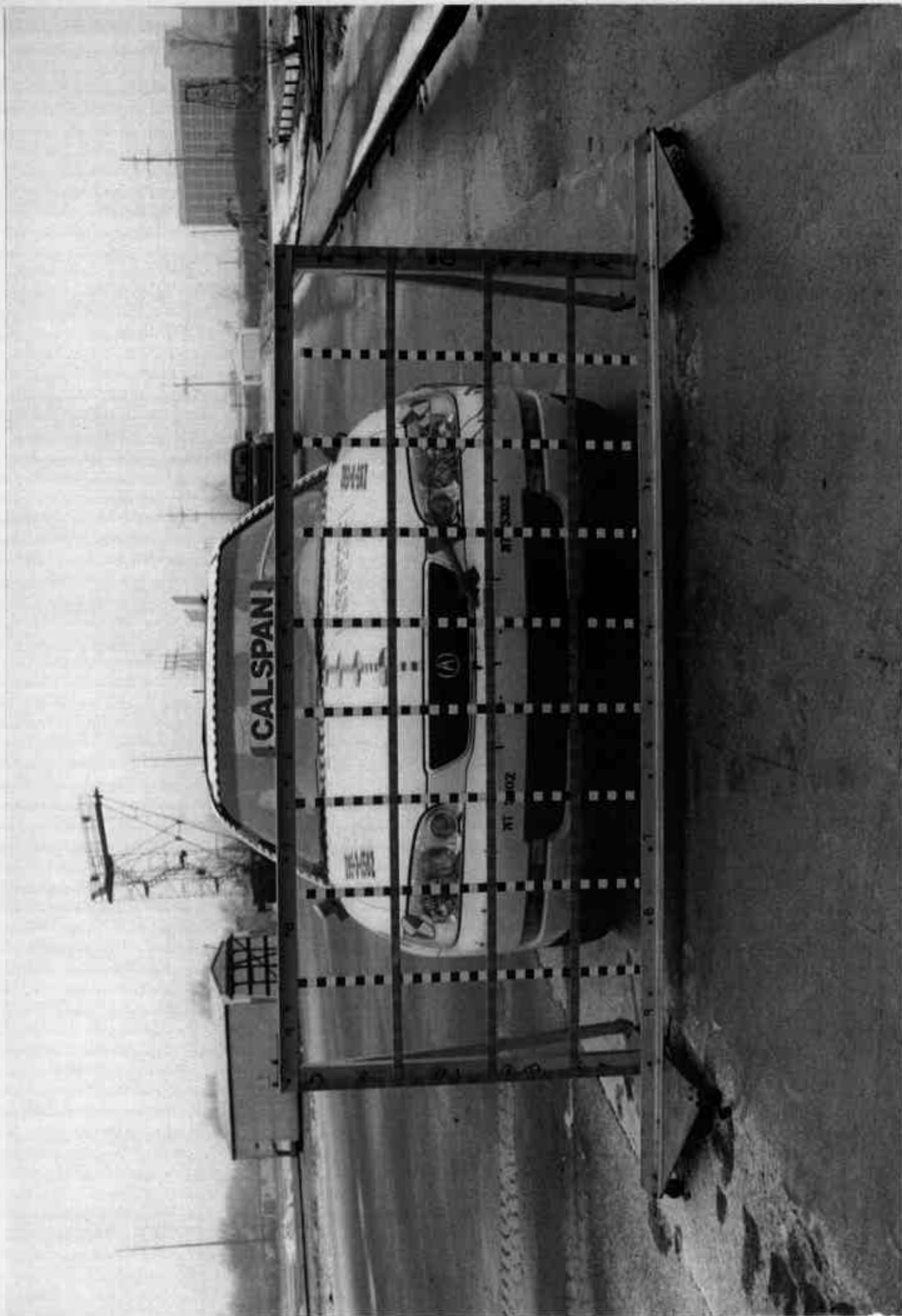


Figure A-1 LOAD CELL LOCATIONS

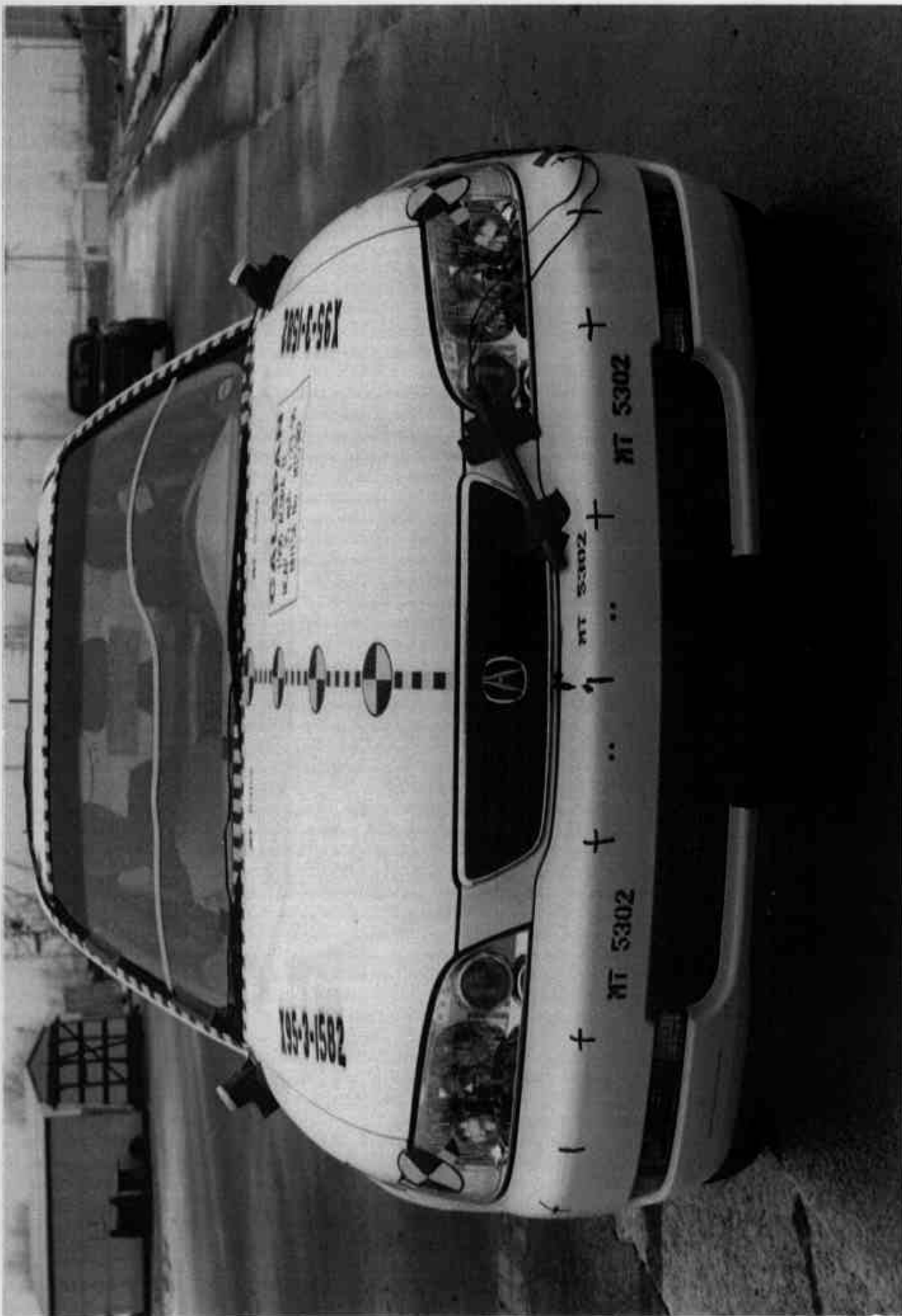


Figure A-2 PRE-TEST FRONT VIEW



Figure A-3 POST-TEST FRONT VIEW

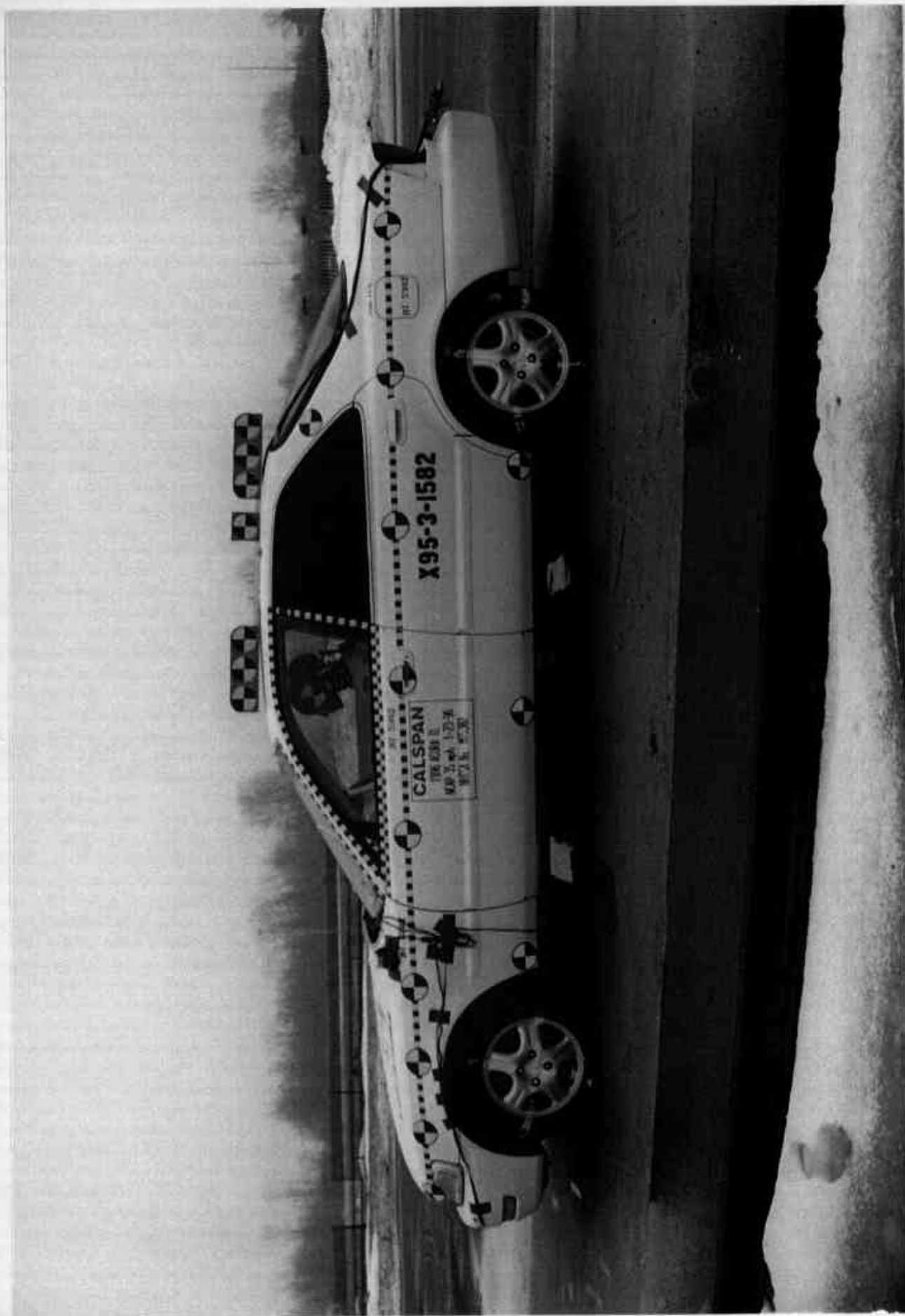


Figure A-4 PRE-TEST LEFT SIDE VIEW



Figure A-5 POST-TEST LEFT SIDE VIEW



Figure A-6 PRE-TEST RIGHT SIDE VIEW



Figure A-7 POST-TEST RIGHT SIDE VIEW

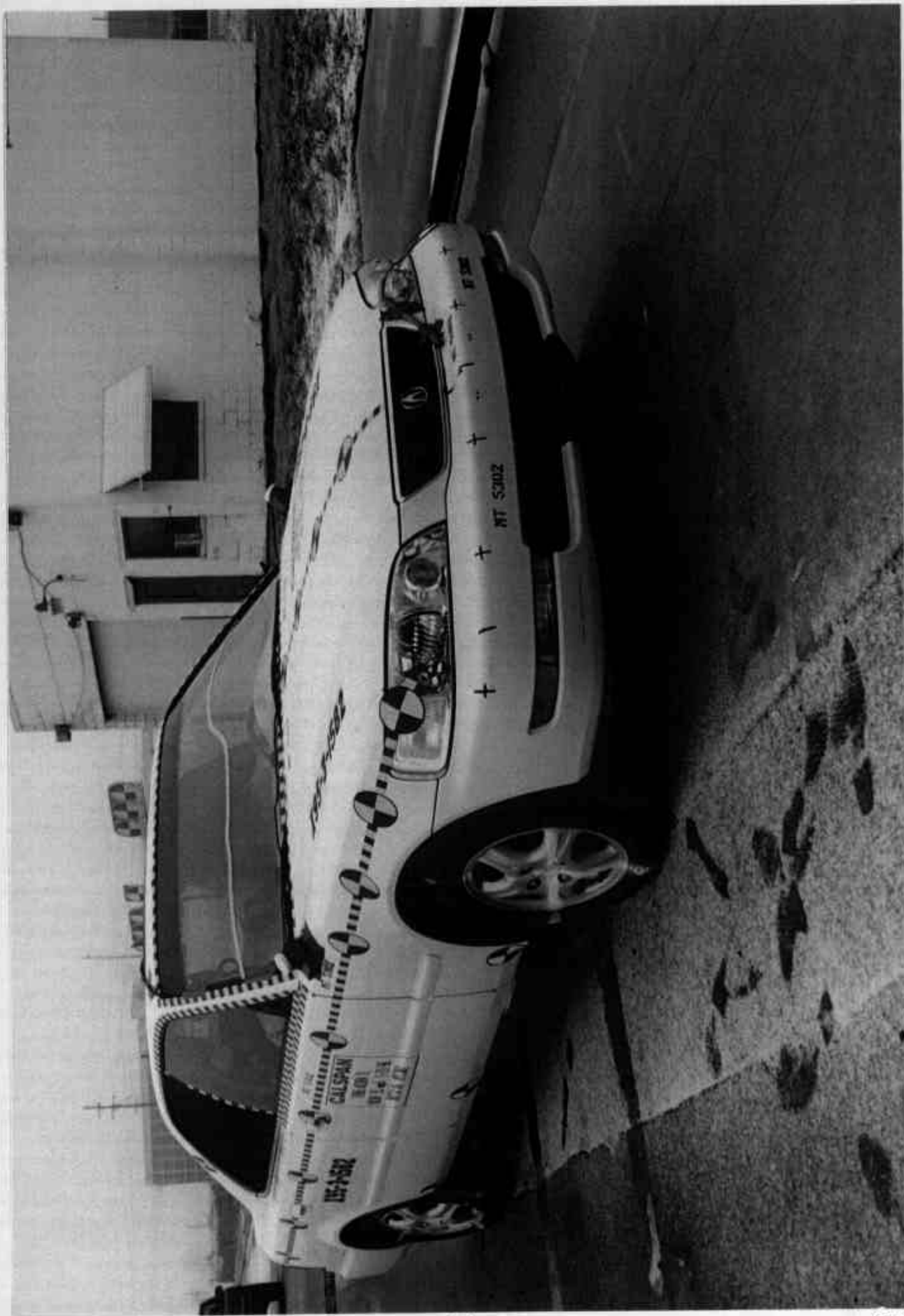


Figure A-8 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-9 POST-TEST RIGHT FRONT THREE-QUARTER VIEW

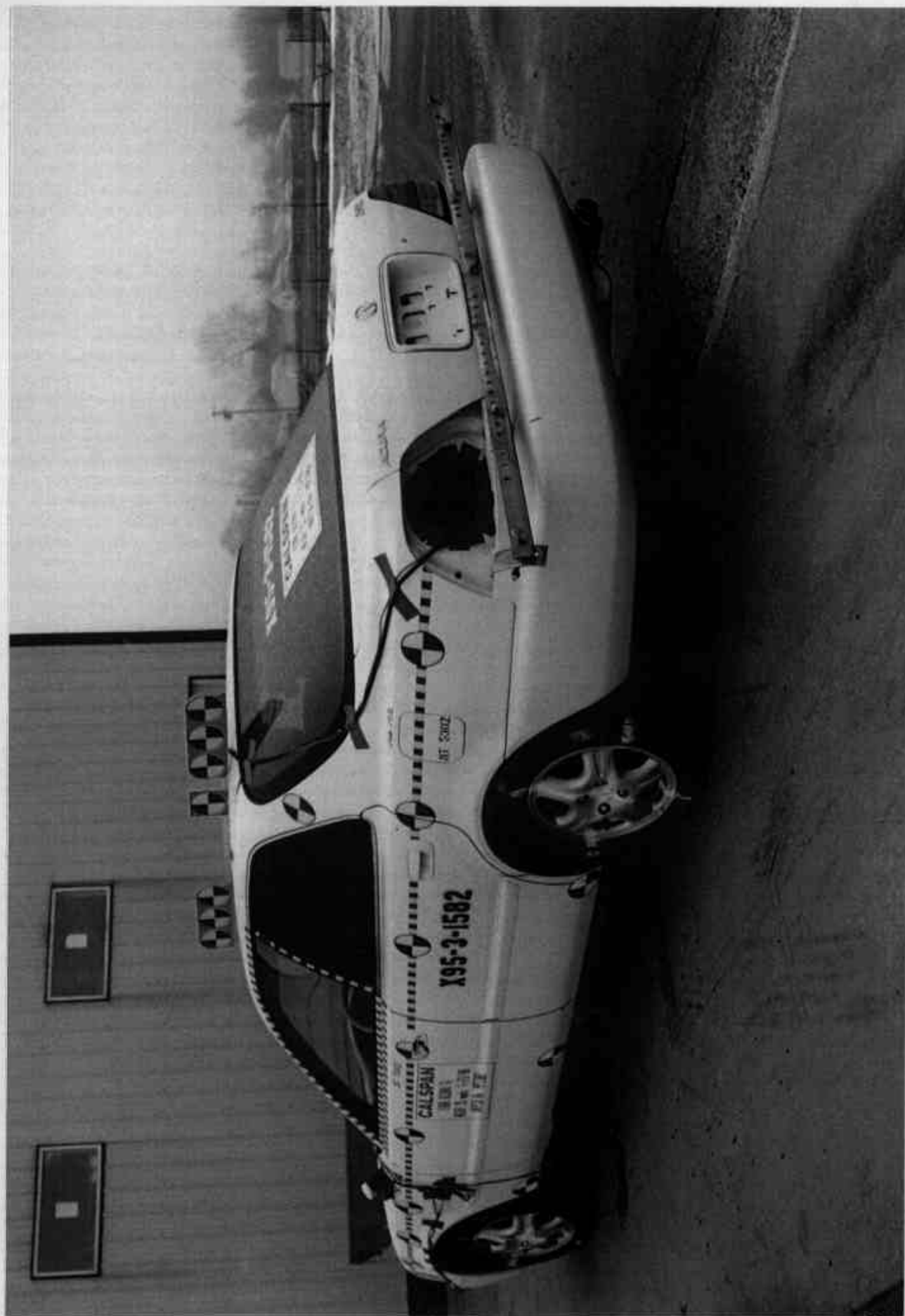


Figure A-10 PRE-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-11 POST-TEST LEFT REAR THREE-QUARTER VIEW

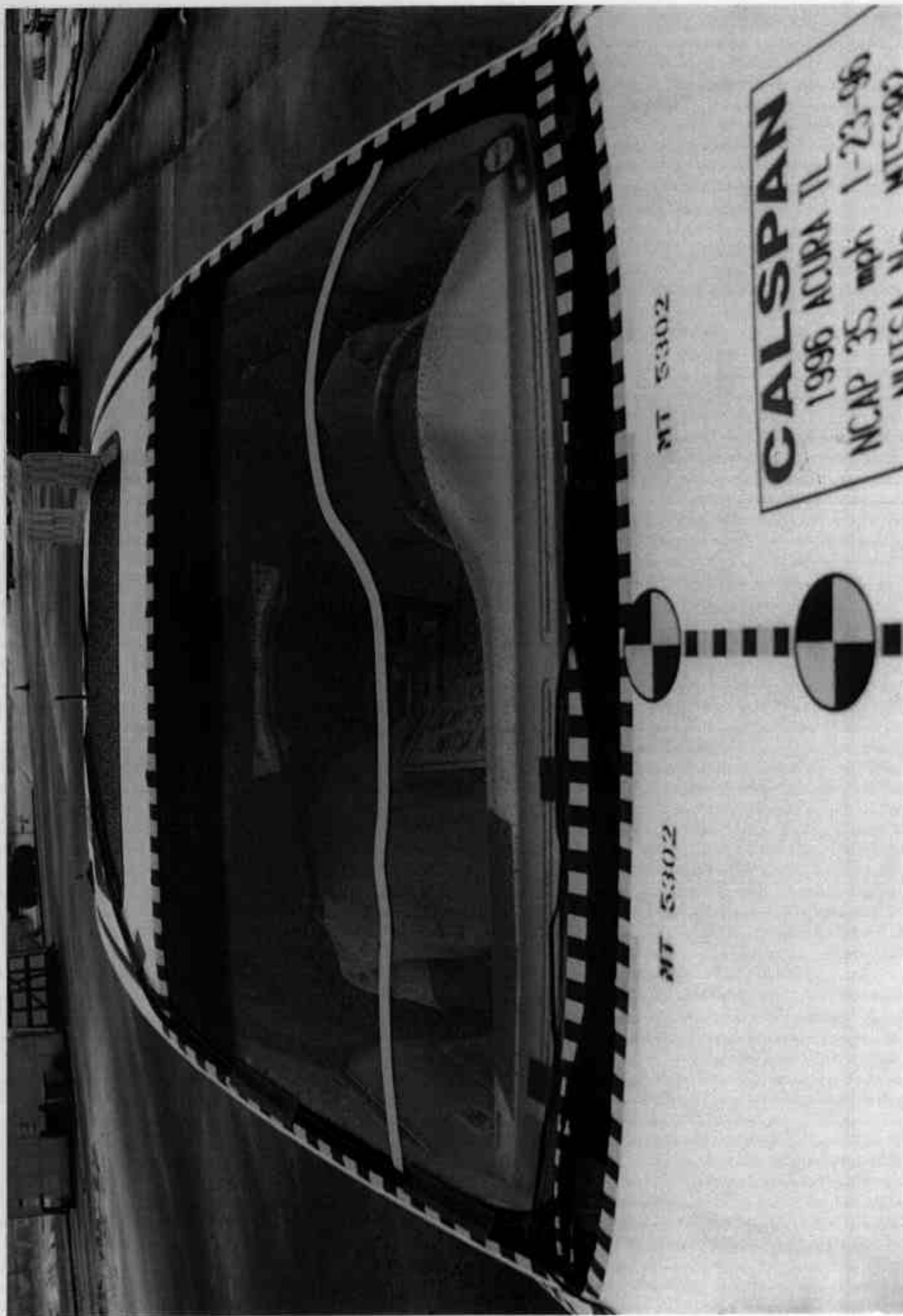


Figure A-12 PRE-TEST WINDSHIELD VIEW



Figure A-13 POST-TEST WINDSHIELD VIEW

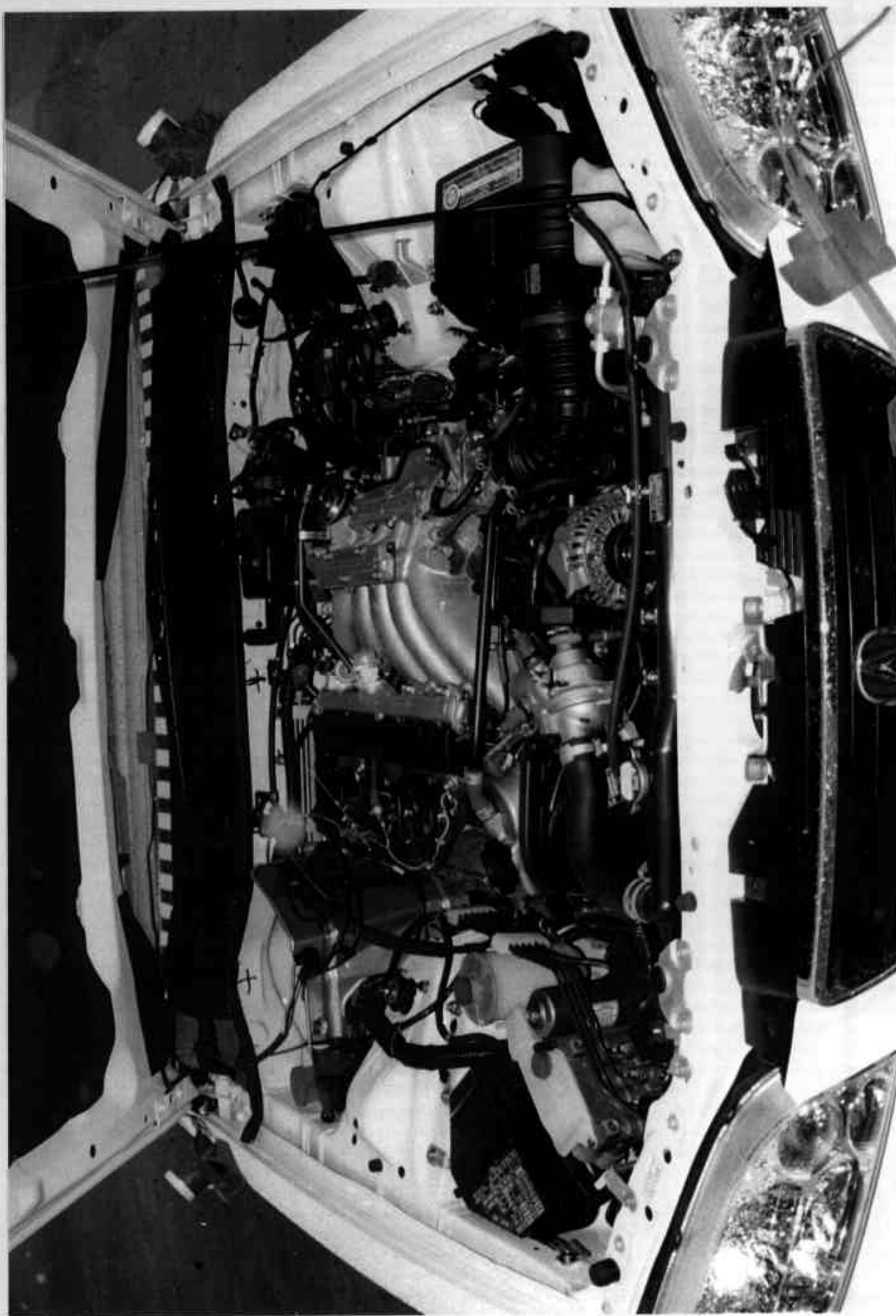


Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

STOD 17.2



Figure A-15 FUEL CAP VIEW

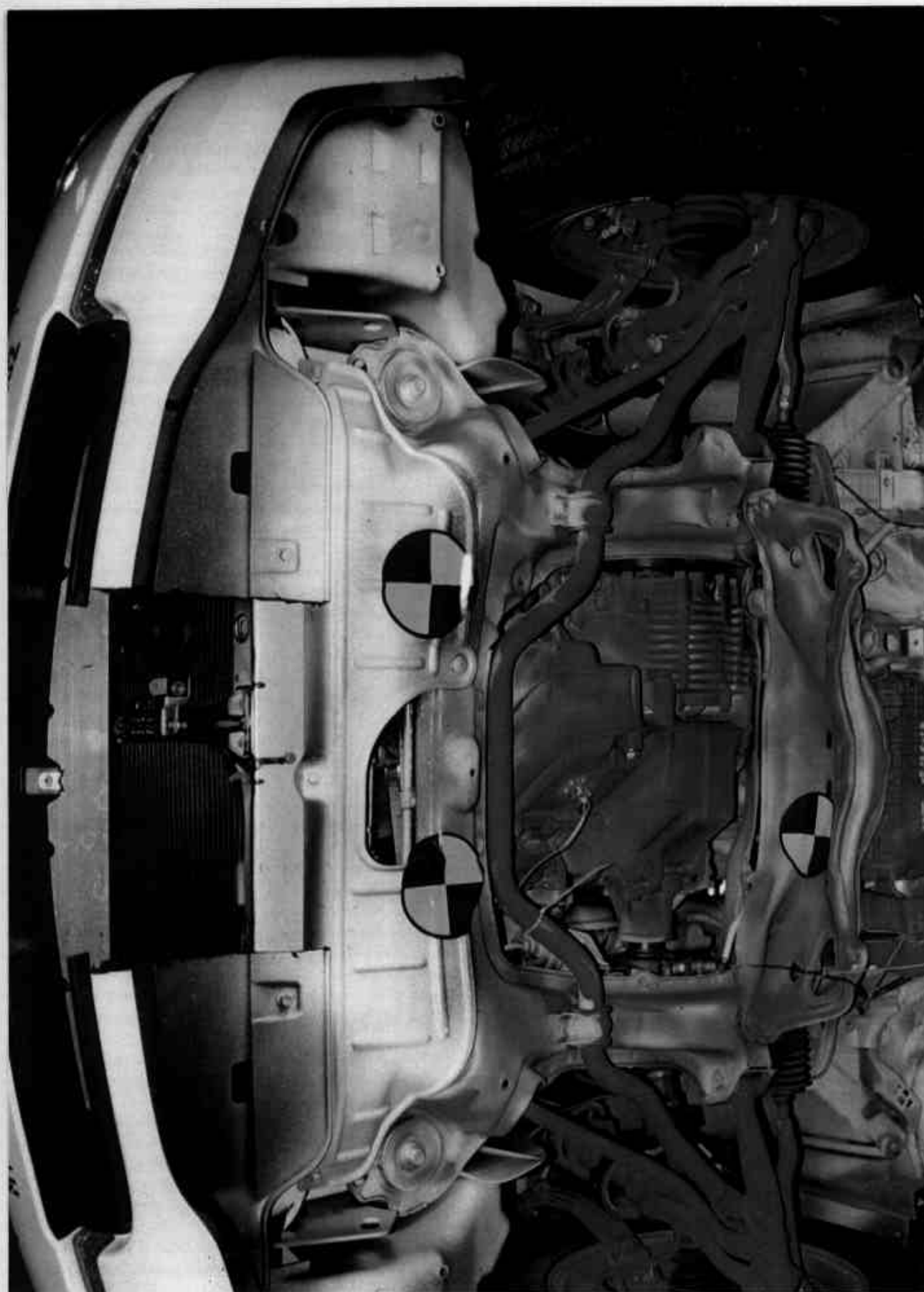


Figure A-16 PRE-TEST FRONT UNDERBODY VIEW



Figure A-17 POST-TEST FRONT UNDERBODY VIEW



Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW

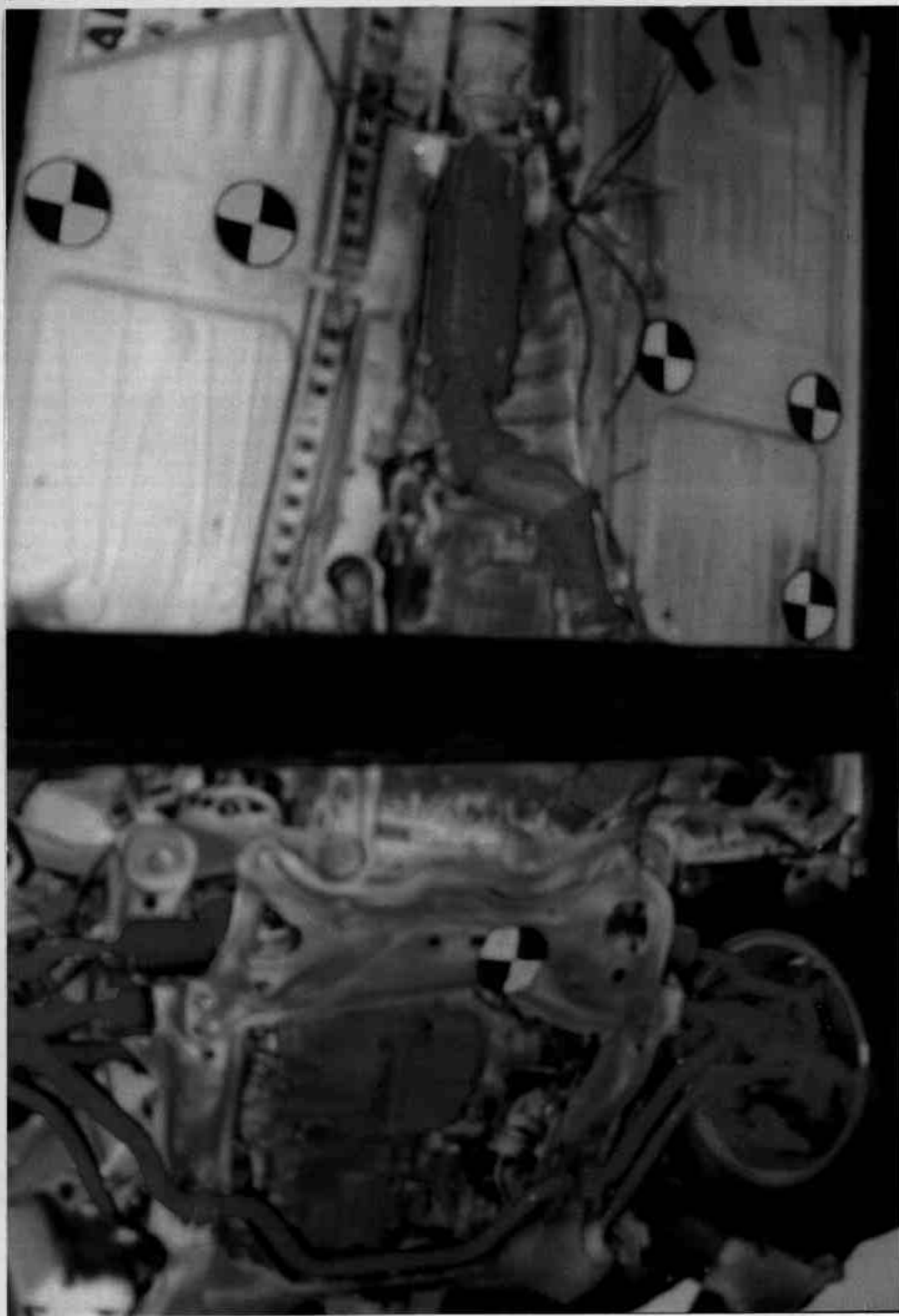


Figure A-19 POST-TEST FRONT SIDE UNDERBODY VIEW

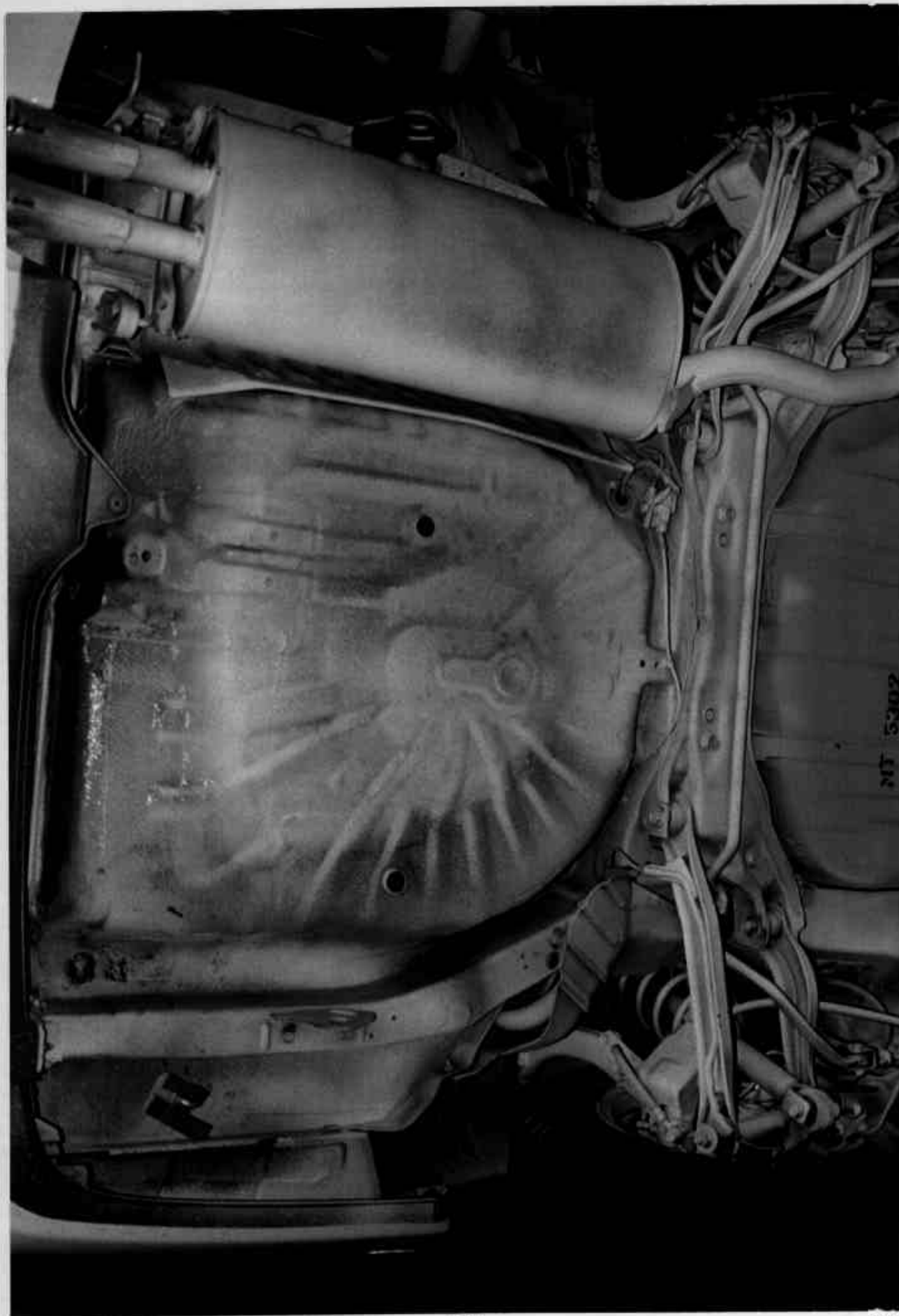


Figure A-20 PRE-TEST REAR UNDERBODY VIEW

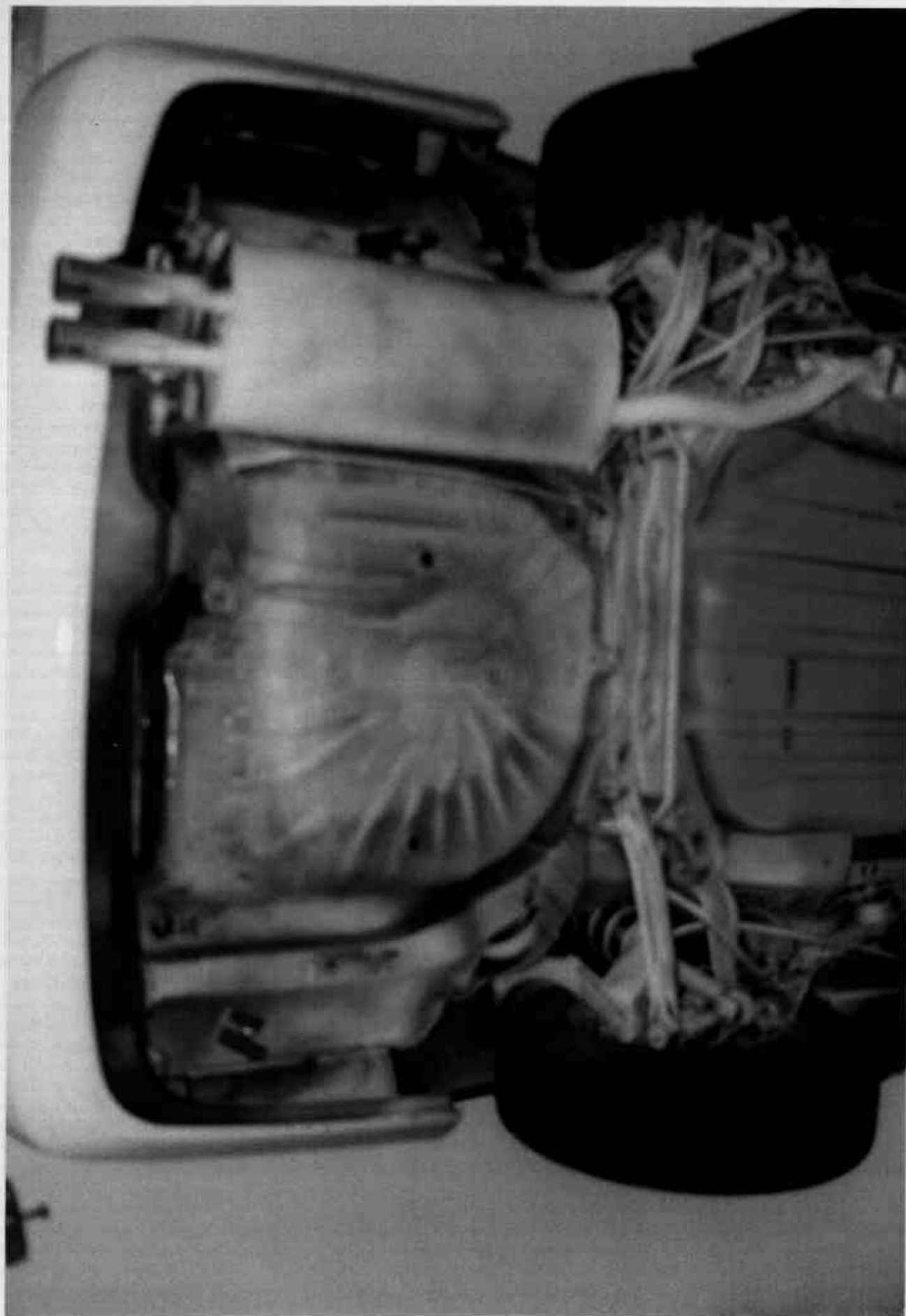


Figure A-21 POST-TEST REAR UNDERBODY VIEW



Figure A-22 PRE-TEST DRIVER POSITION VIEW

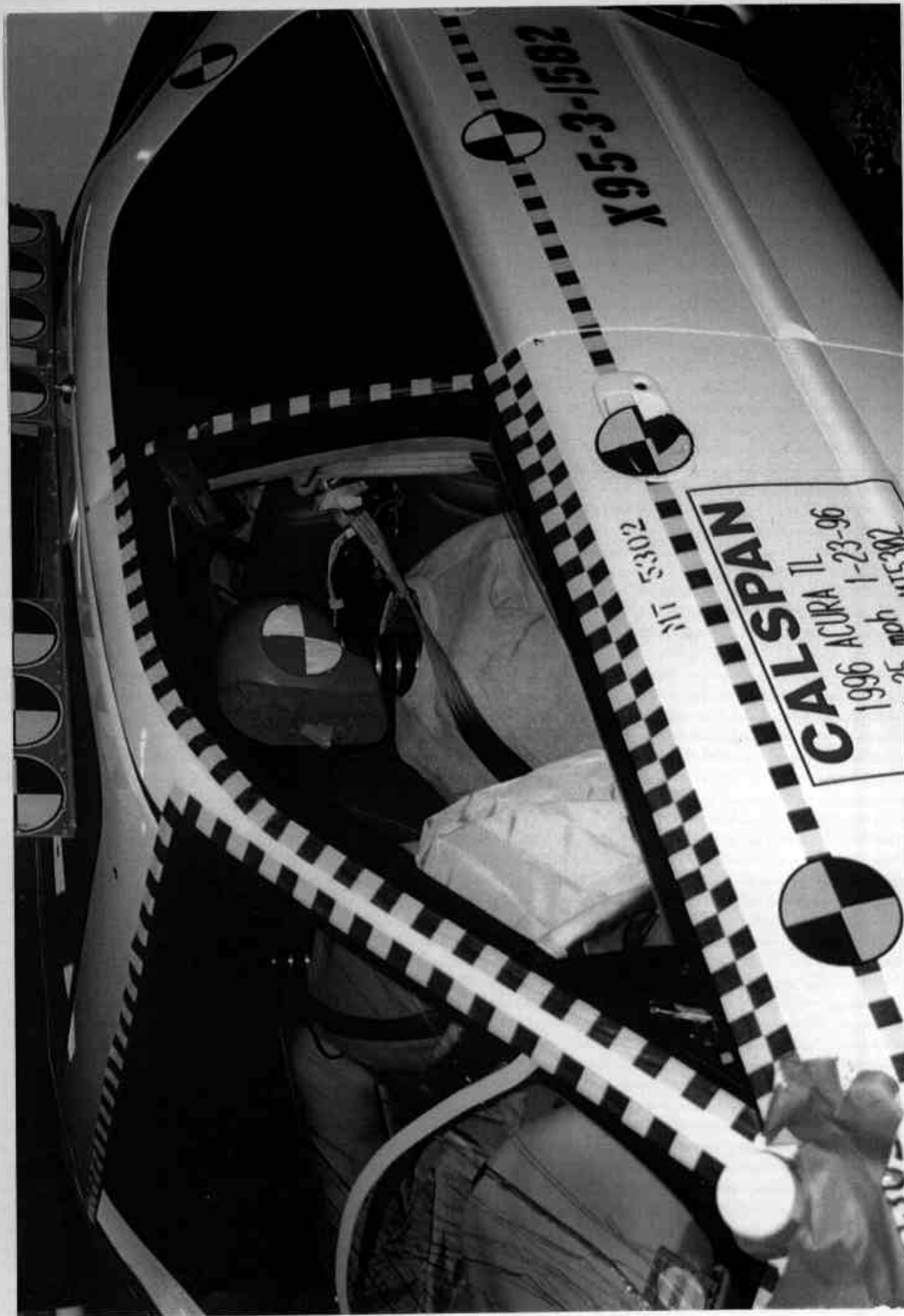


Figure A-23 POST-TEST DRIVER POSITION VIEW



Figure A-24 PRE-TEST PASSENGER POSITION VIEW



Figure A-25 POST-TEST PASSENGER POSITION VIEW



Figure A-26 PRE-TEST DRIVER AND INTERIOR VIEW

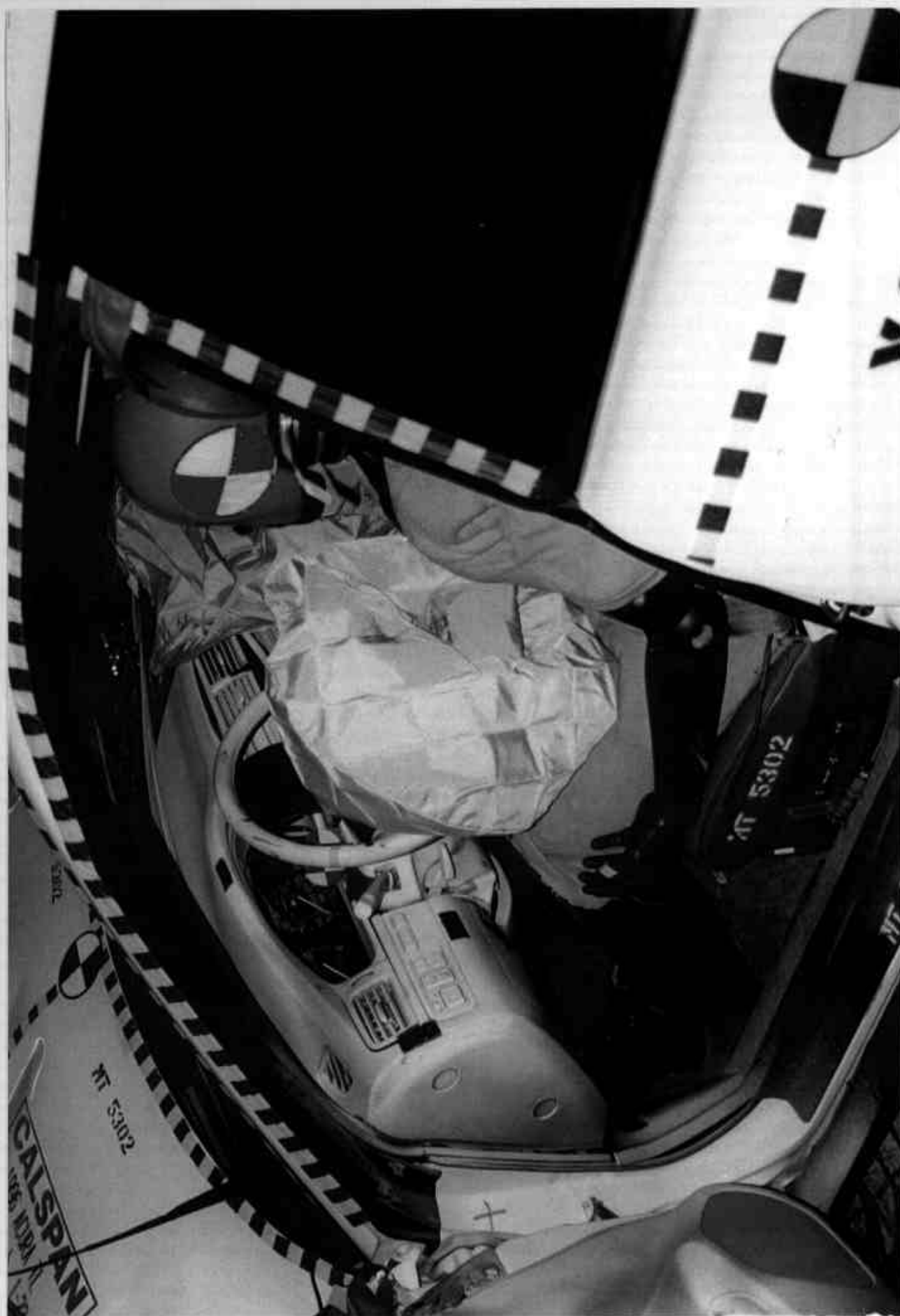


Figure A-27 POST-TEST DRIVER AND INTERIOR VIEW



Figure A-28 PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-29 POST-TEST PASSENGER AND INTERIOR VIEW

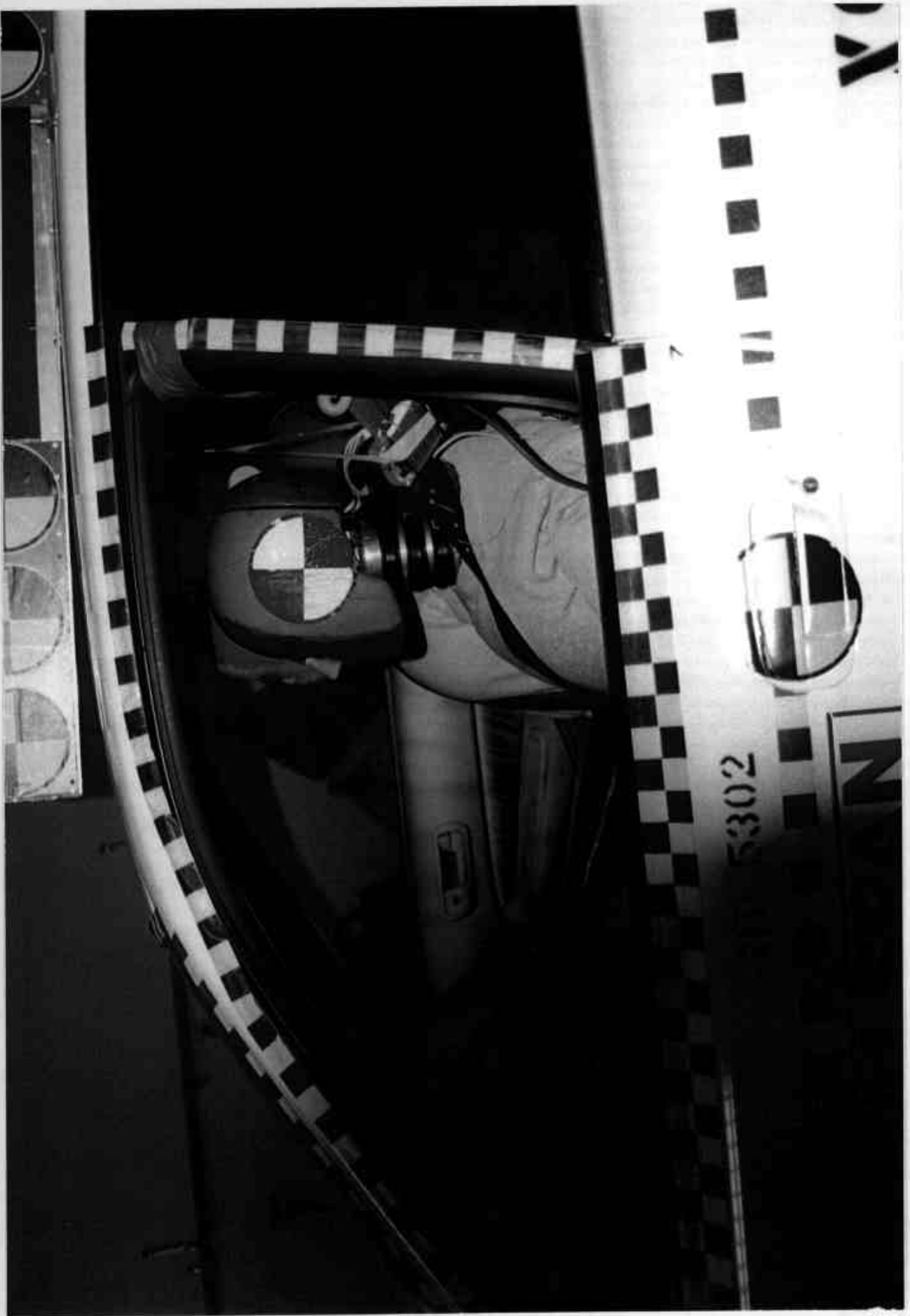


Figure A-30 PRE-TEST DRIVER HEAD LOCATION

PHOTOGRAPH NOT AVAILABLE



Figure A-32 PRE-TEST PASSENGER HEAD LOCATION

PHOTOGRAPH NOT AVAILABLE



Figure A-34 PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-35 POST-TEST DRIVER FLOOR PAN VIEW



Figure A-36 PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-37 POST-TEST PASSENGER FLOOR PAN VIEW

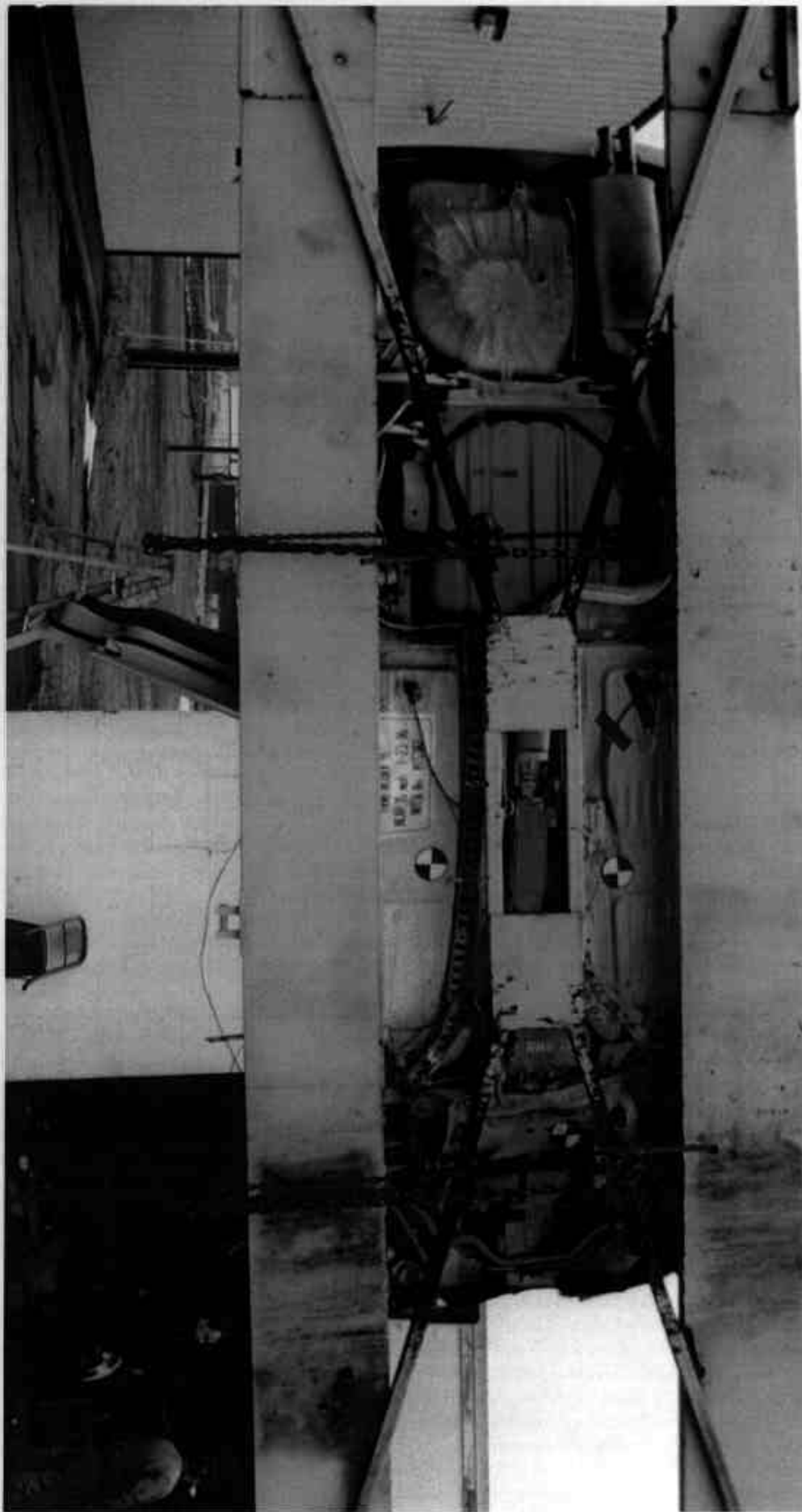


Figure A-38 ROLLOVER VIEW

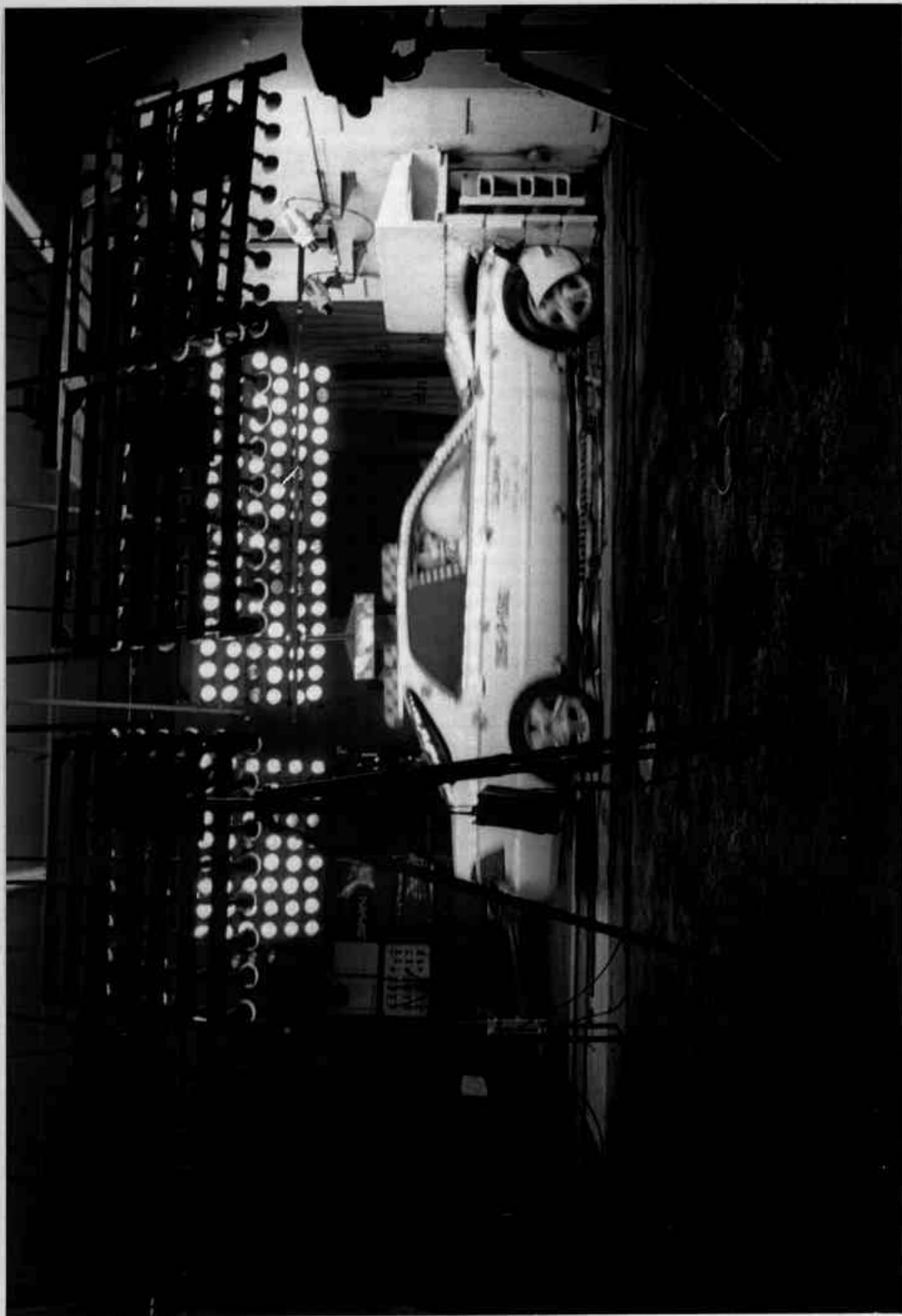


Figure A-39 IMPACT VIEW

Appendix B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

NHTSA TEST NO. MT5302

DUMMY DATA

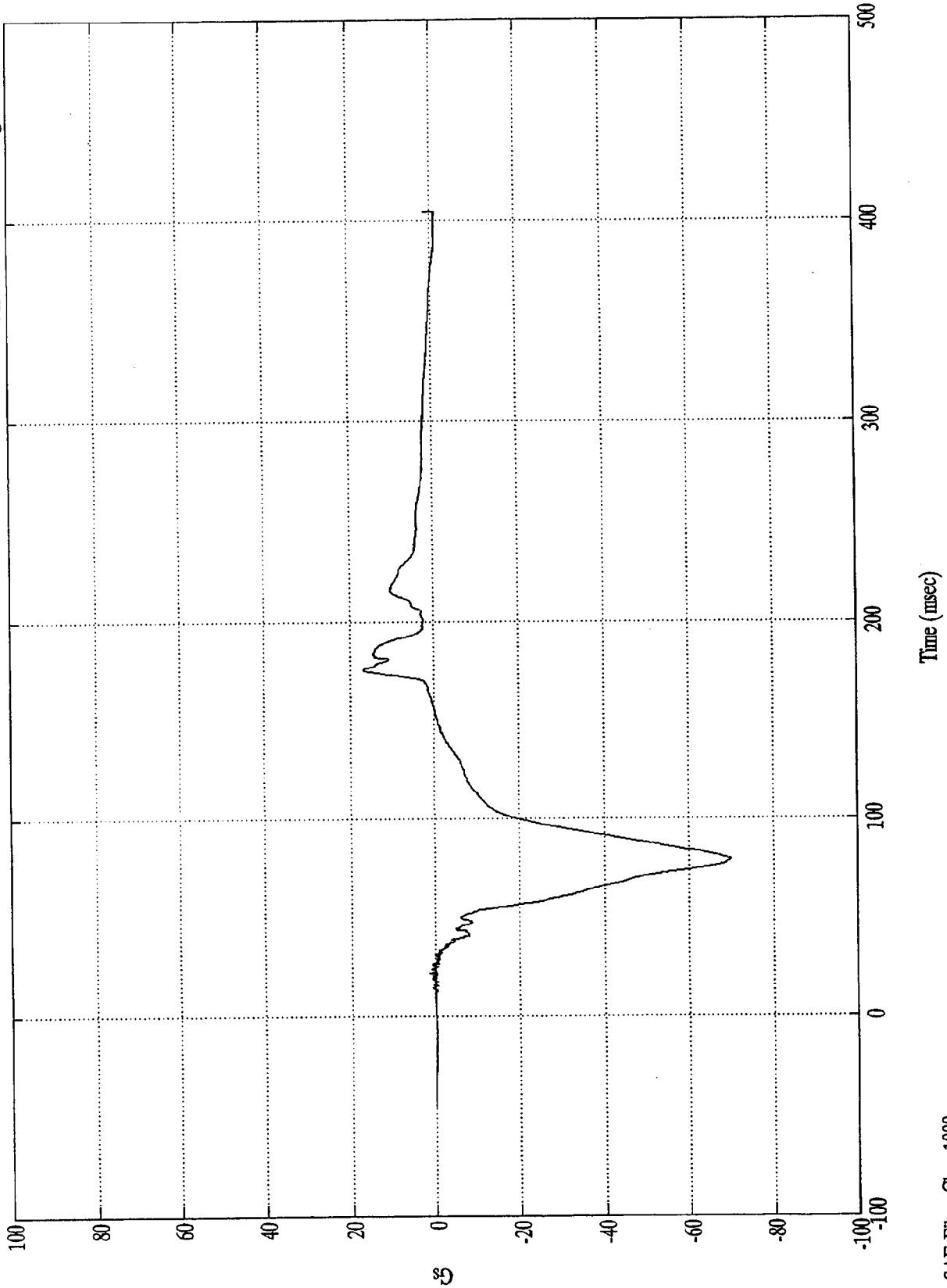
CLASS	FILTER CHANNEL
Head Accelerations	1000
Chest Accelerations	180
Chest Displacements	60
Femur Forces	600
Belt Loads	60
Belt Displacements	180
Neck Forces	1000
Neck Moments	600

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	DOT/NHTSA Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head forward Fy Head left Fz Neck in tension Mx Right ear to right shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	Fx Chest forward Fy Chest left Fz Spine in tension
Femur Load Cell	Compression is negative
Upper Tibia Load Cell (right and left leg)	Mx Support tibia, load right side center My Support tibia, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fy Foot right w/r to left Fz Tibia in tension Mx Support tibia, press right side center

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Head X
 Max = 16.89 Gs @ 175.31 msec
 Min = -69.94 Gs @ 79.91 msec

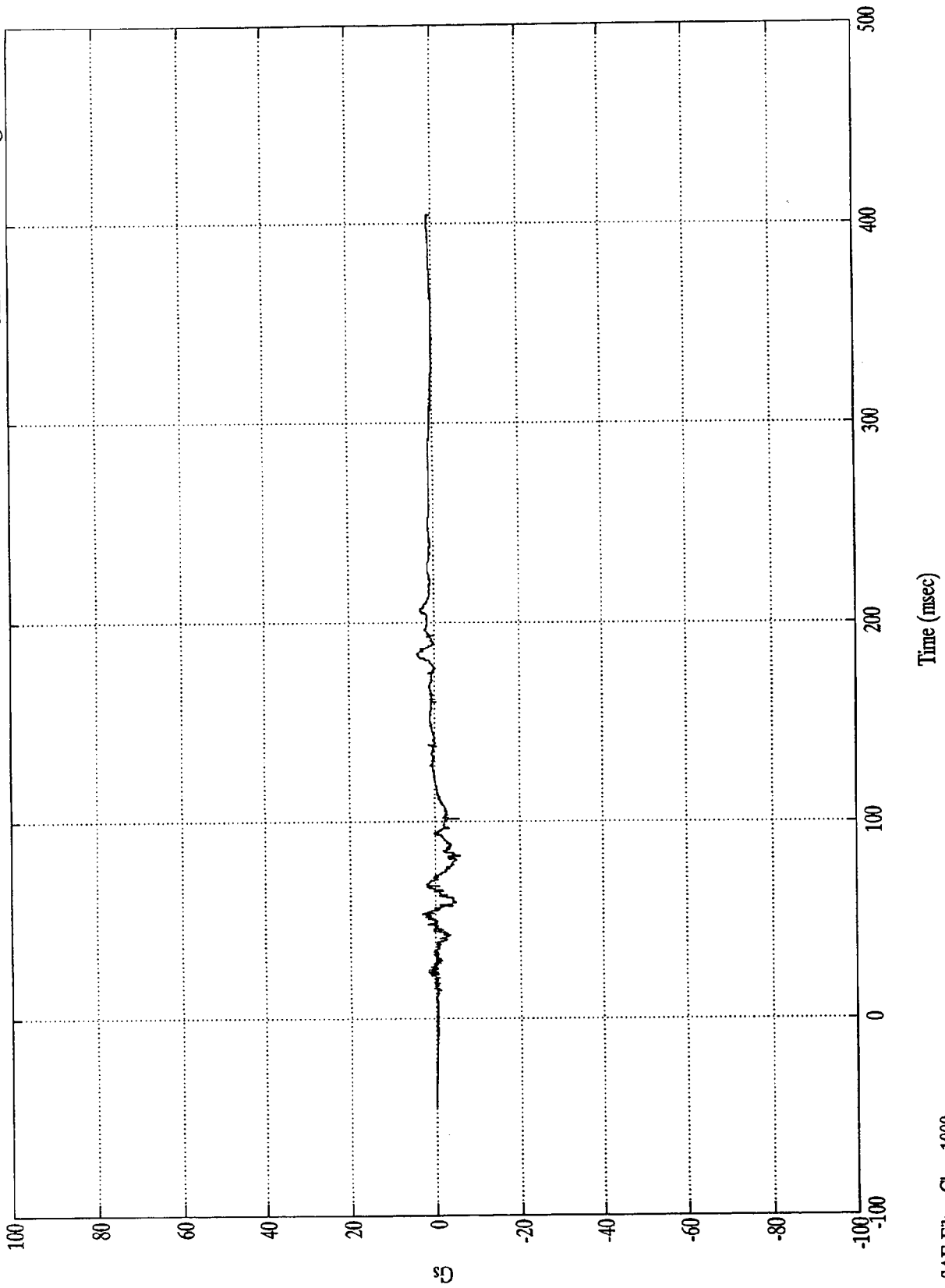


SAE Filter Class 1000

Plot omitted: data did not record accurately

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Head Y
Max = 3.95 Gs @ 184.67 msec
Min = -5.85 Gs @ 82.80 msec

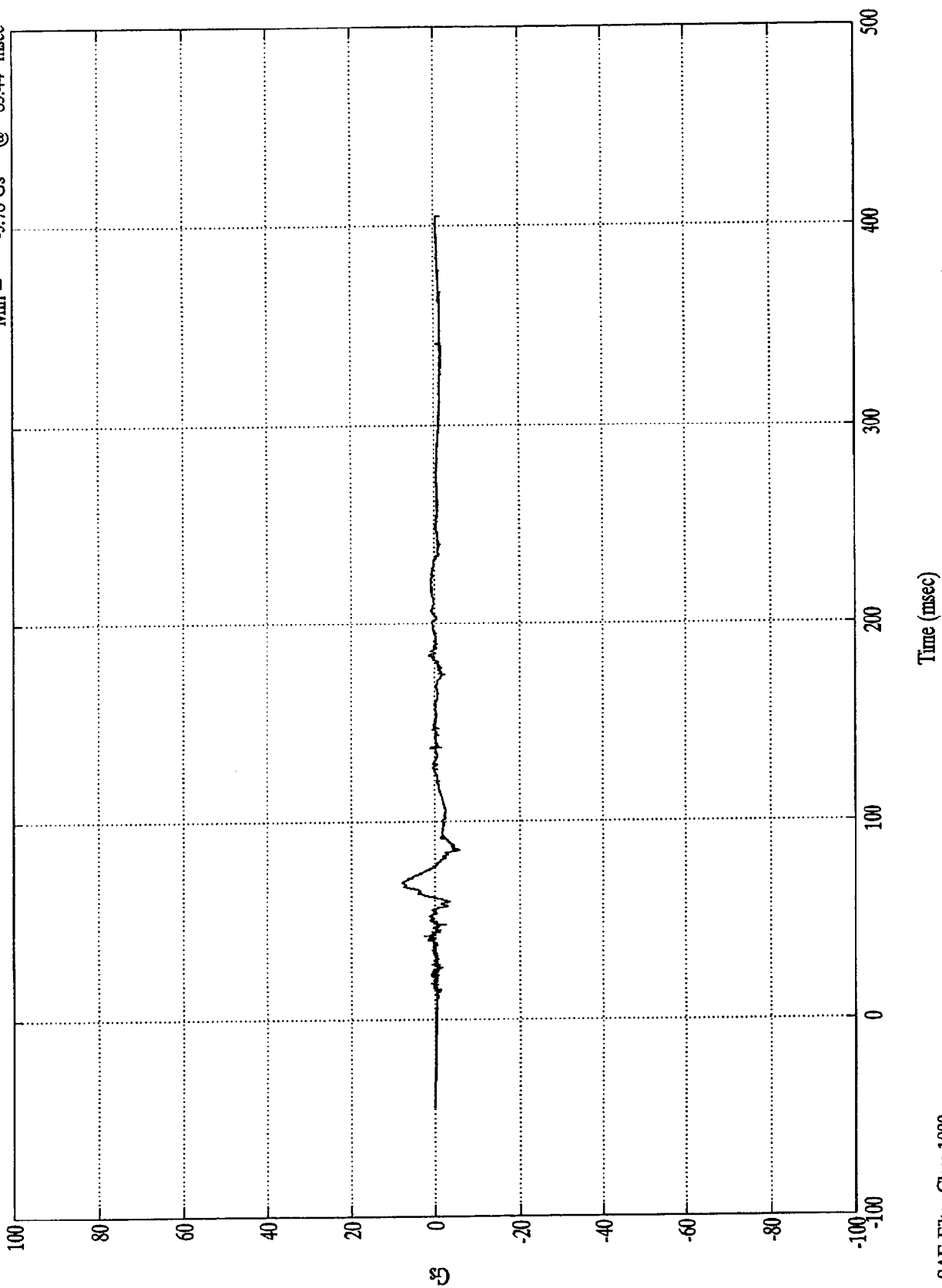


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Head Y(R)

Max = 7.81 Gs @ 68.87 msec
Min = -5.78 Gs @ 85.44 msec

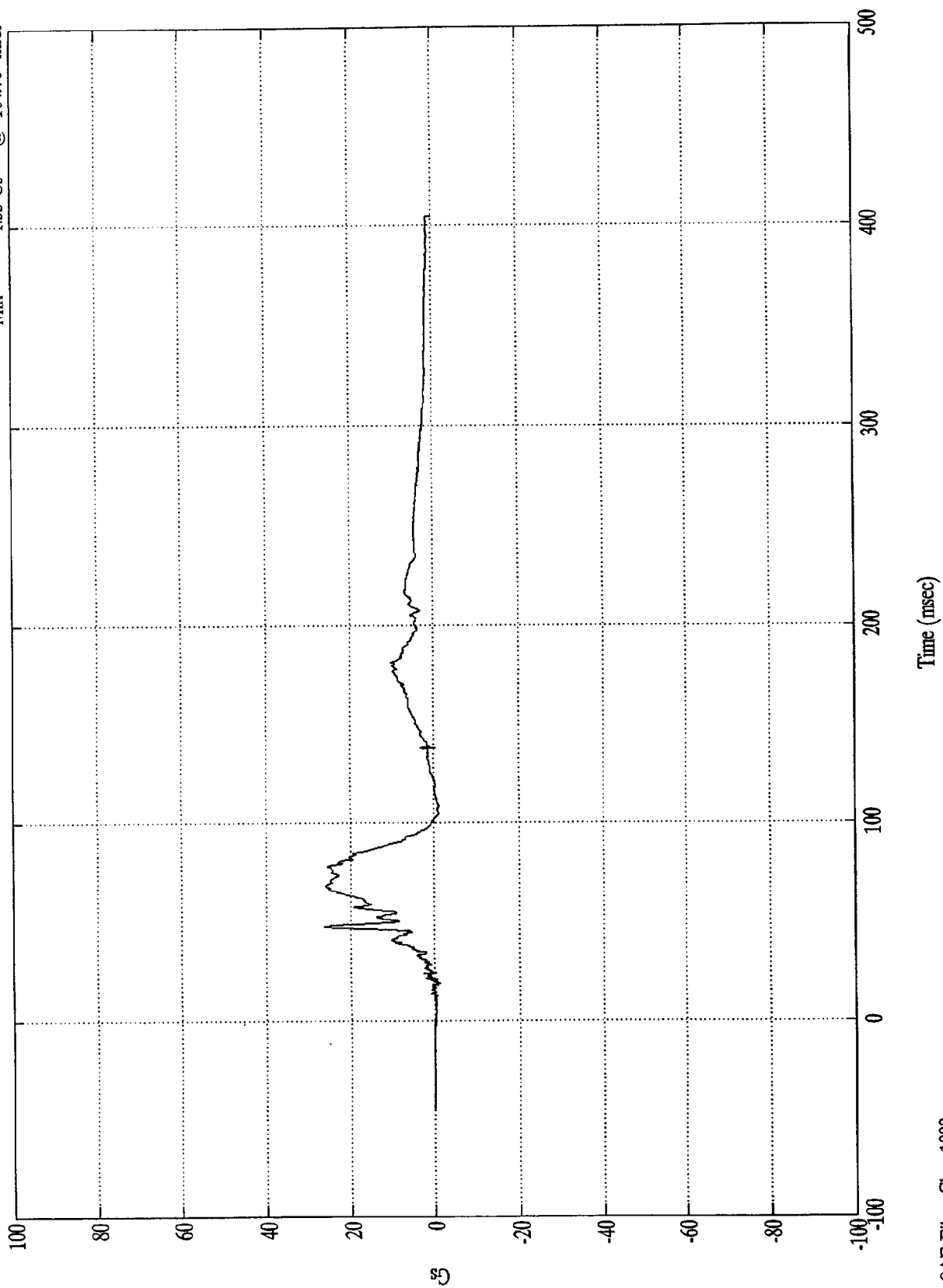


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Head Z

Max = 26.51 Gs @ 47.40 msec
Min = -1.35 Gs @ 104.76 msec

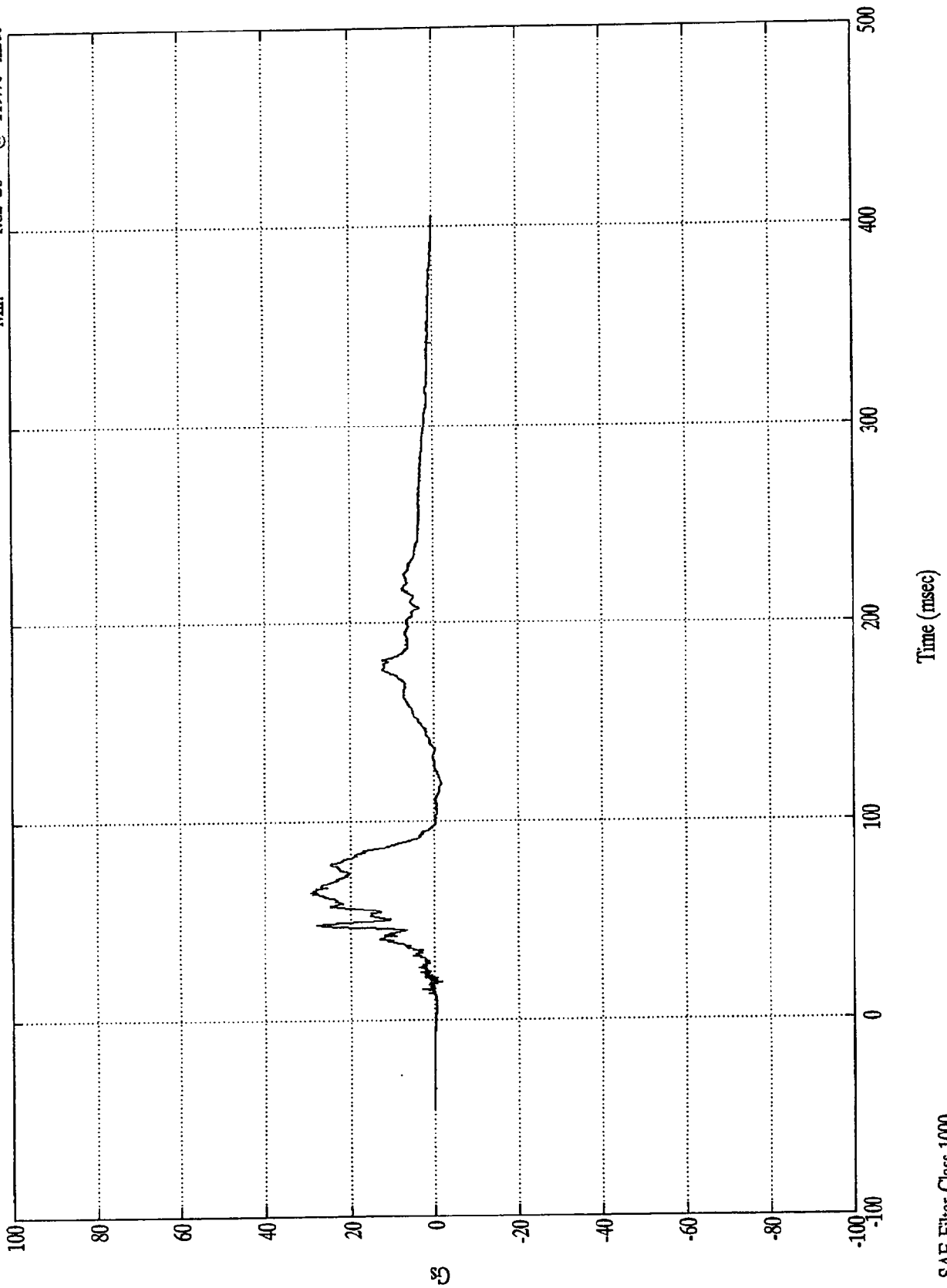


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Head Z(R)

Max = 29.23 Gs @ 64.31 msec
Min = -1.82 Gs @ 119.76 msec

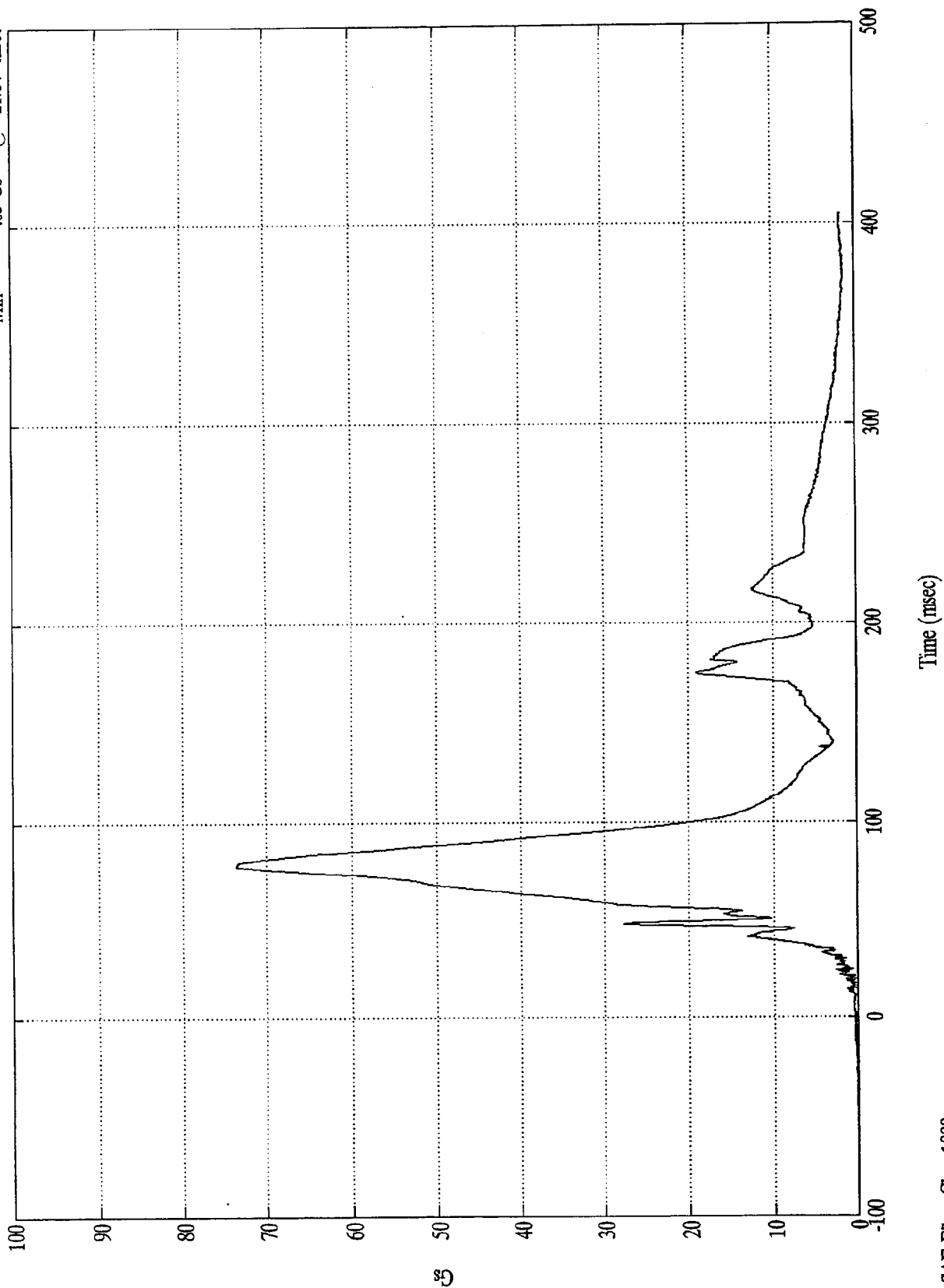


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Head Resultant

Max = 73.58 Gs @ 78.23 msec
Min = .03 Gs @ -21.84 msec



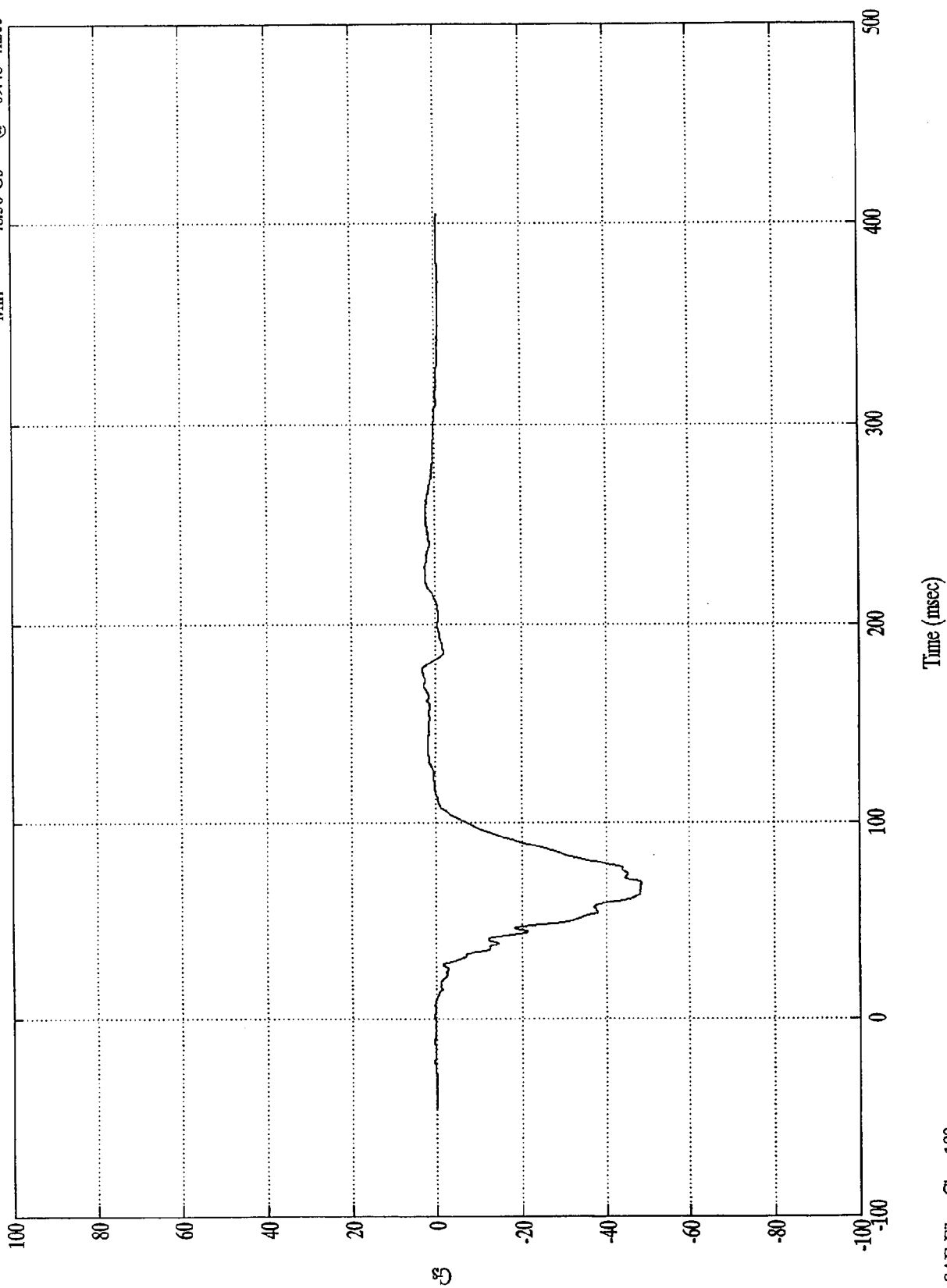
SAE Filter Class 1000

Plot omitted: data did not record accurately

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest X

Max = 3.24 Gs @ 176.76 msec
Min = -48.56 Gs @ 69.48 msec

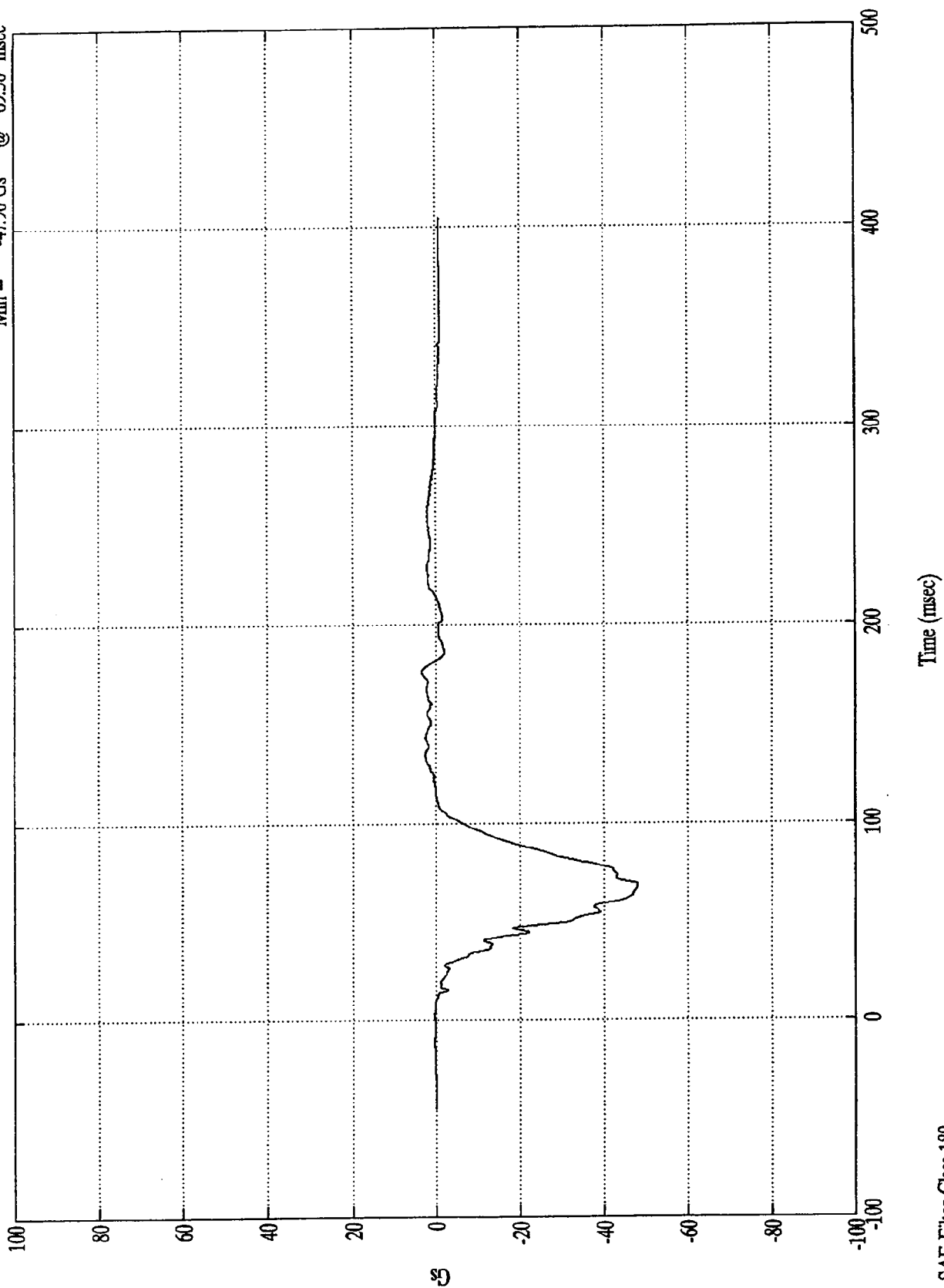


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest X(R)

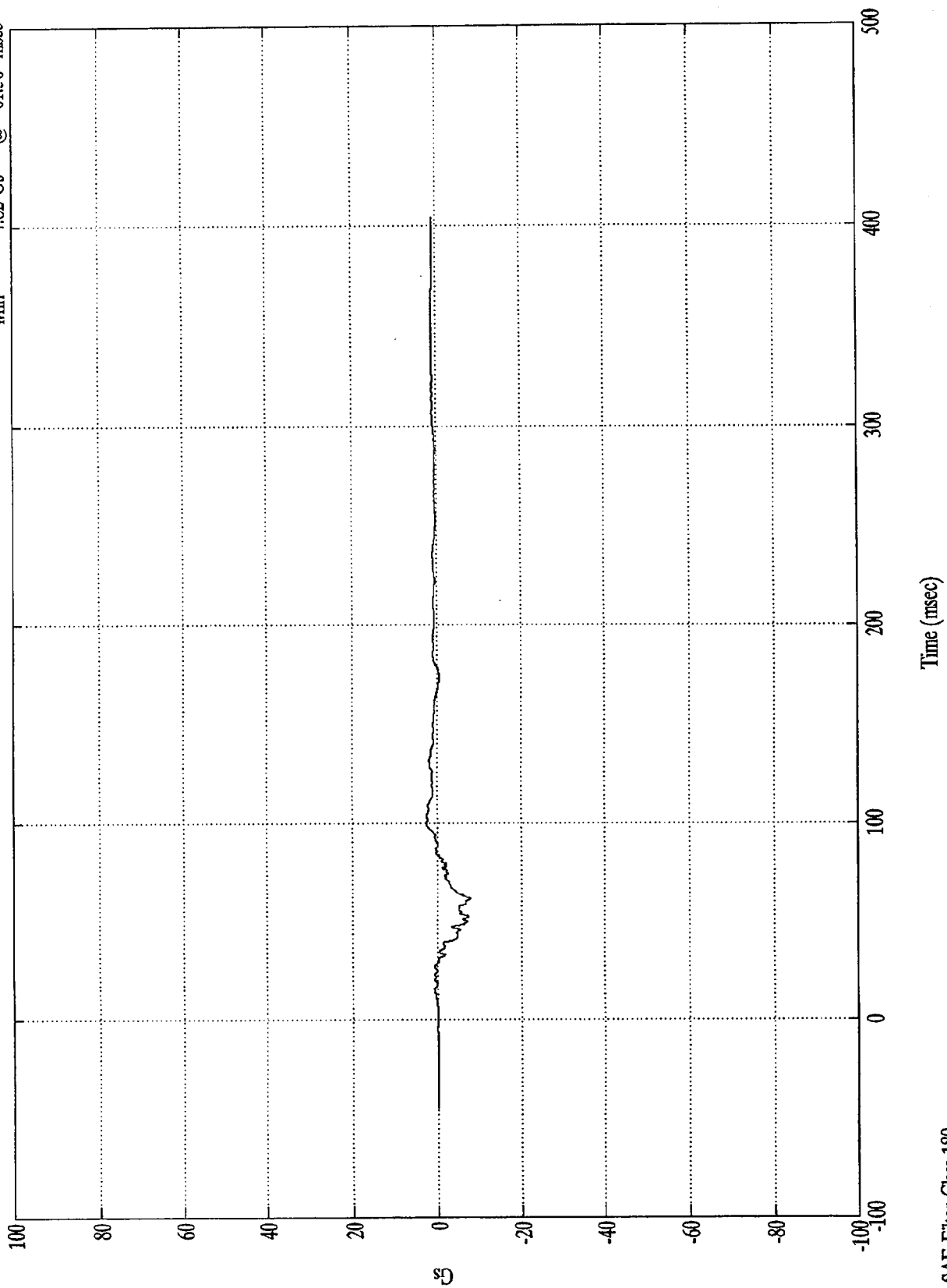
Max = 3.42 Gs @ 176.16 msec
Min = -47.90 Gs @ 69.36 msec



SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest Y
 Max = 2.49 Gs @ 99.00 msec
 Min = -7.82 Gs @ 61.56 msec

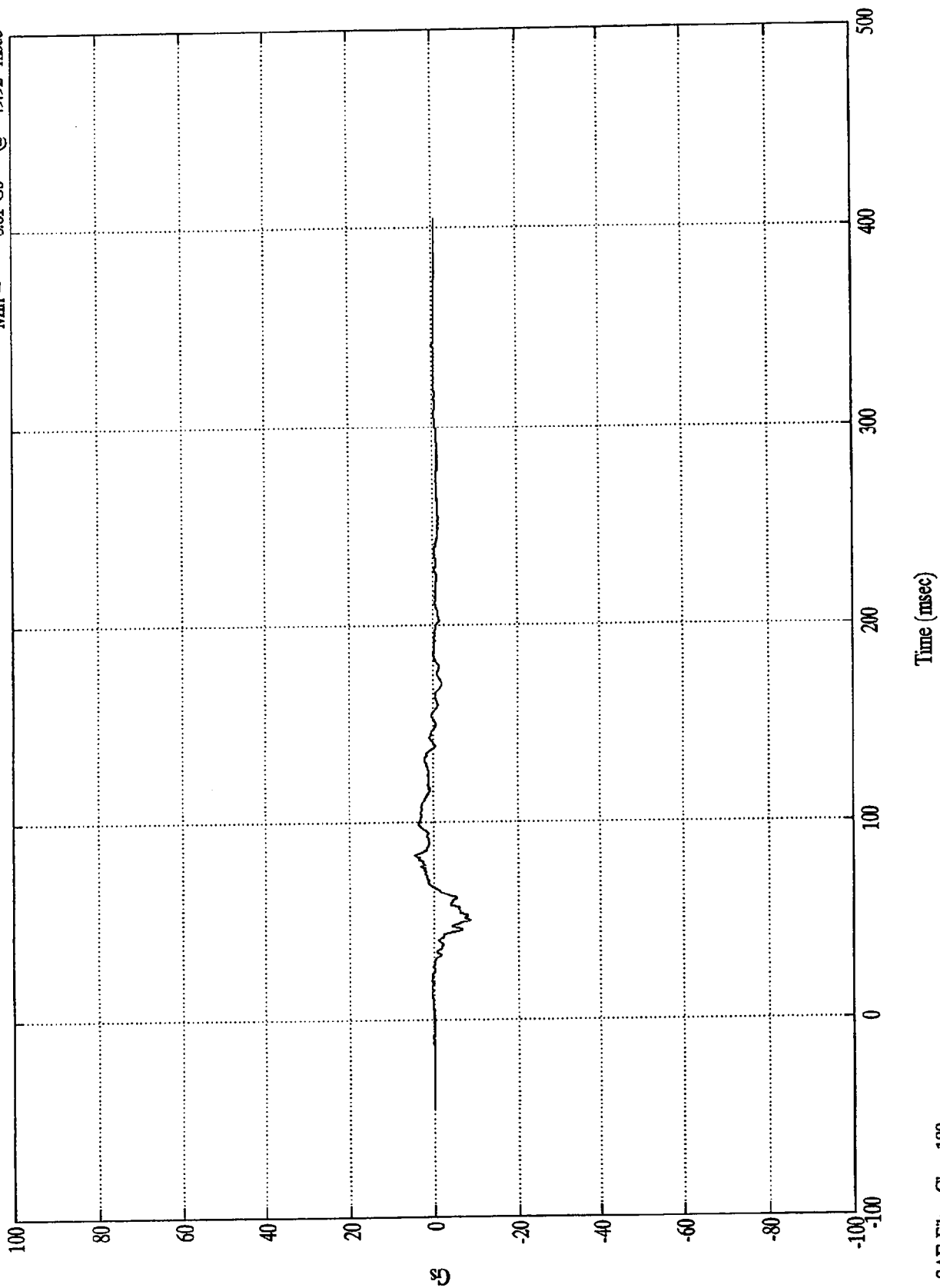


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

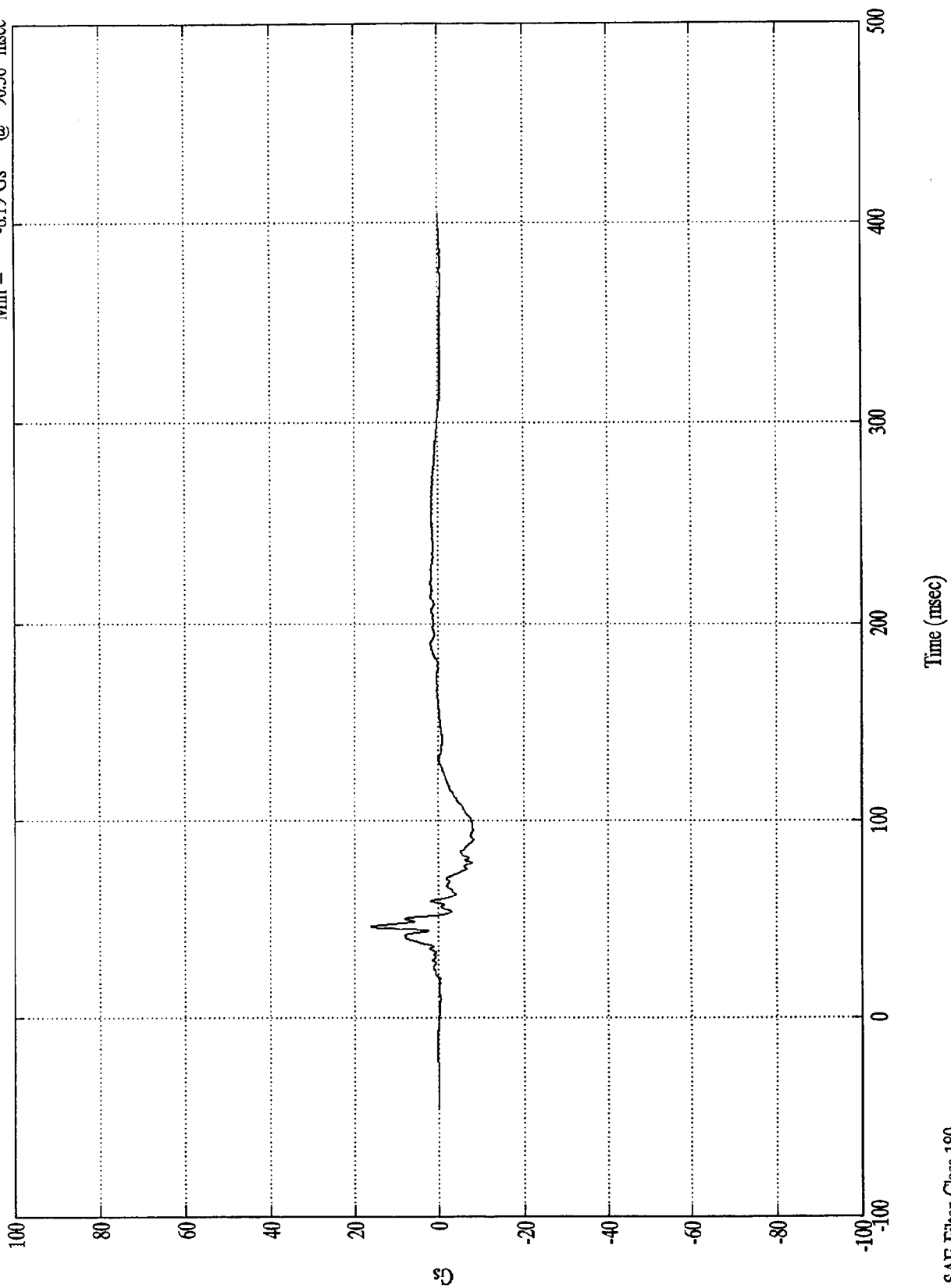
Pos. 1 Chest Y(R)

Max = 4.48 Gs @ 83.04 msec
Min = -3.61 Gs @ 49.92 msec



NCAP TEST #3 - 1996 ACURA LT

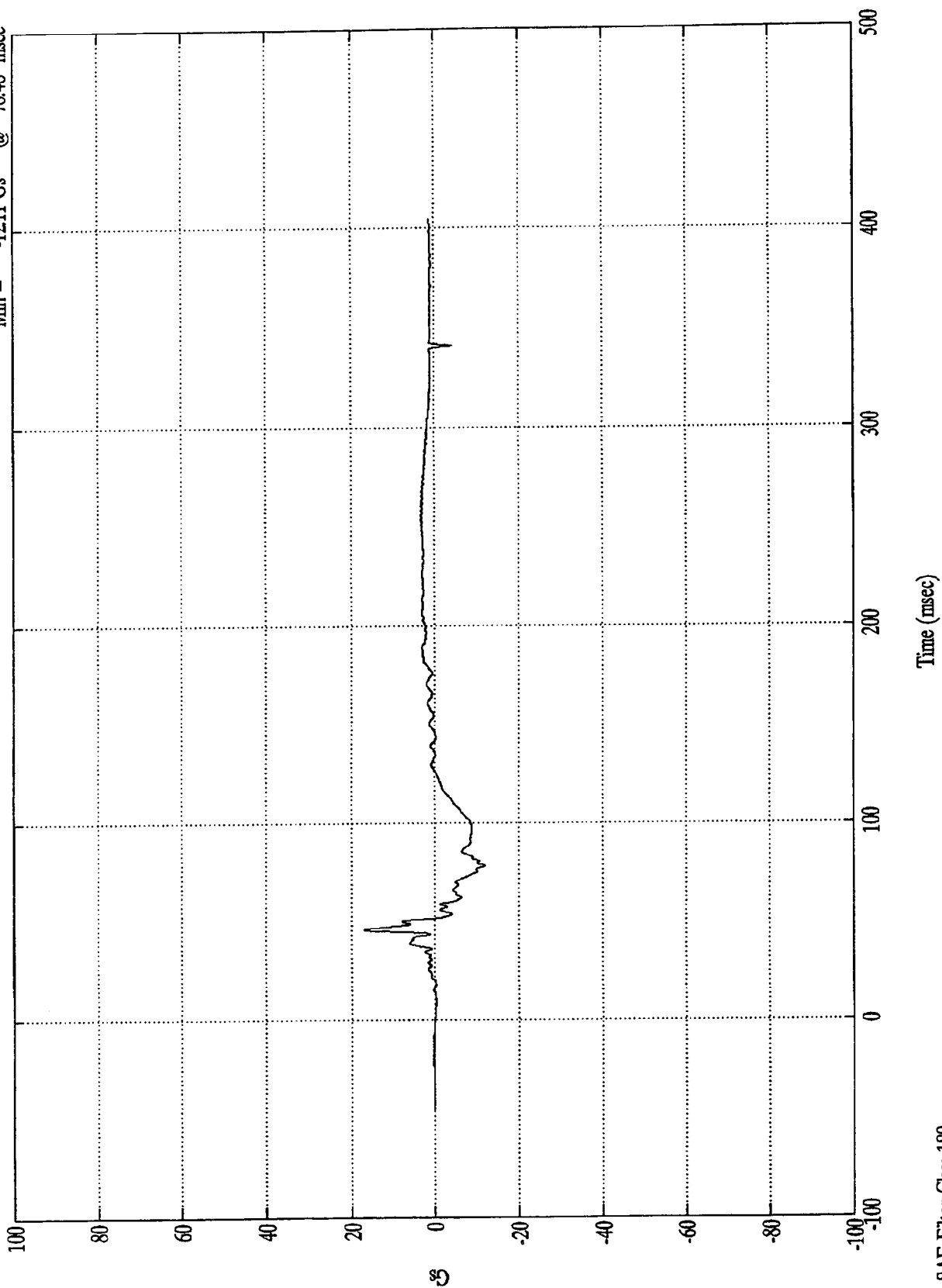
Pos. 1 Chest Z
Max = 16.02 Gs @ 46.08 msec
Min = -8.19 Gs @ 90.36 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest Z(R)

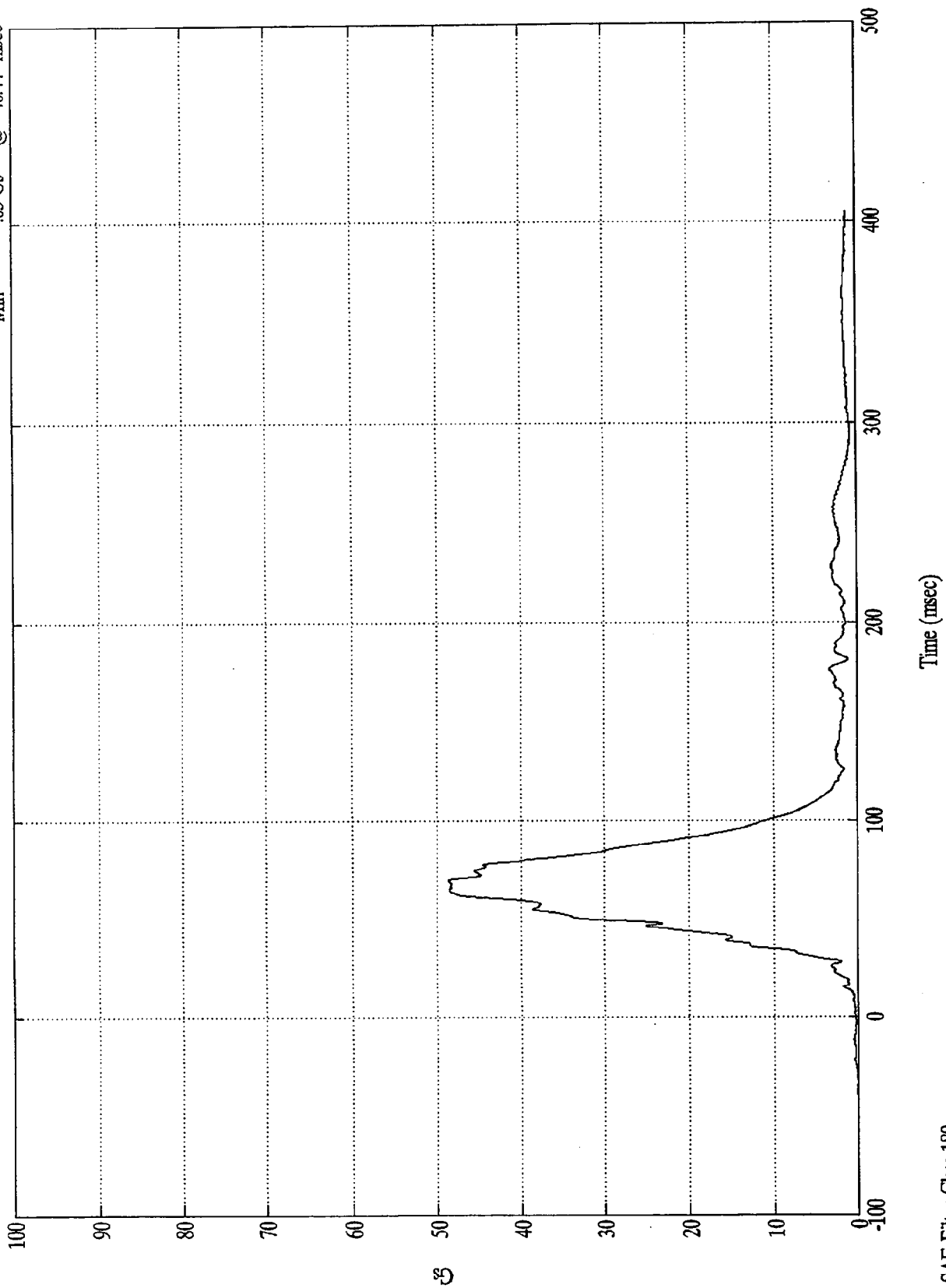
Max = 16.90 Gs @ 46.08 msec
Min = -12.11 Gs @ 78.48 msec



SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest Resultant
 Max = 48.71 Gs @ 69.48 msec
 Min = .03 Gs @ -40.44 msec

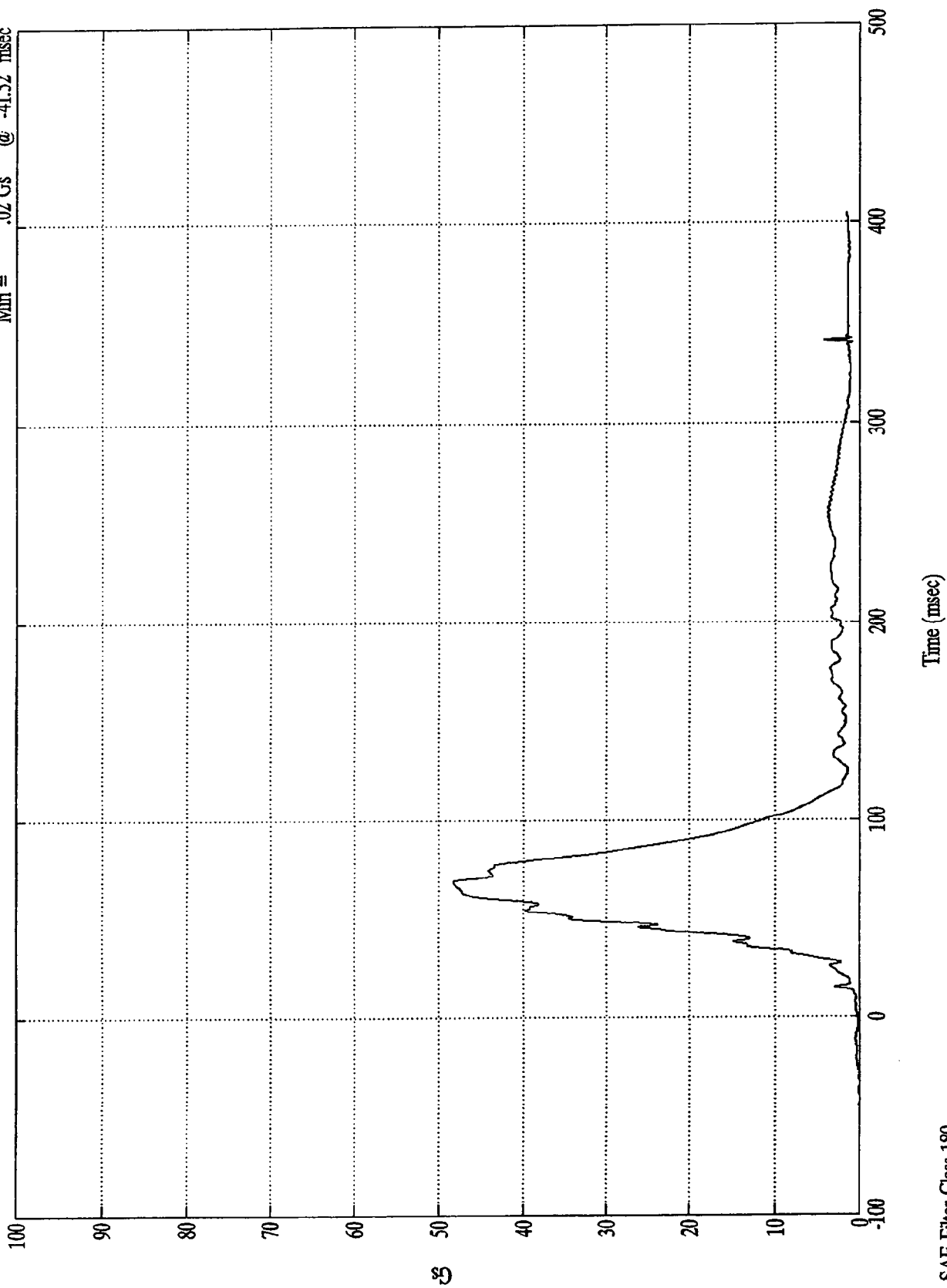


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest Res(RR)

Max = 48.24 Gs @ 69.36 msec
Min = .02 Gs @ -41.52 msec

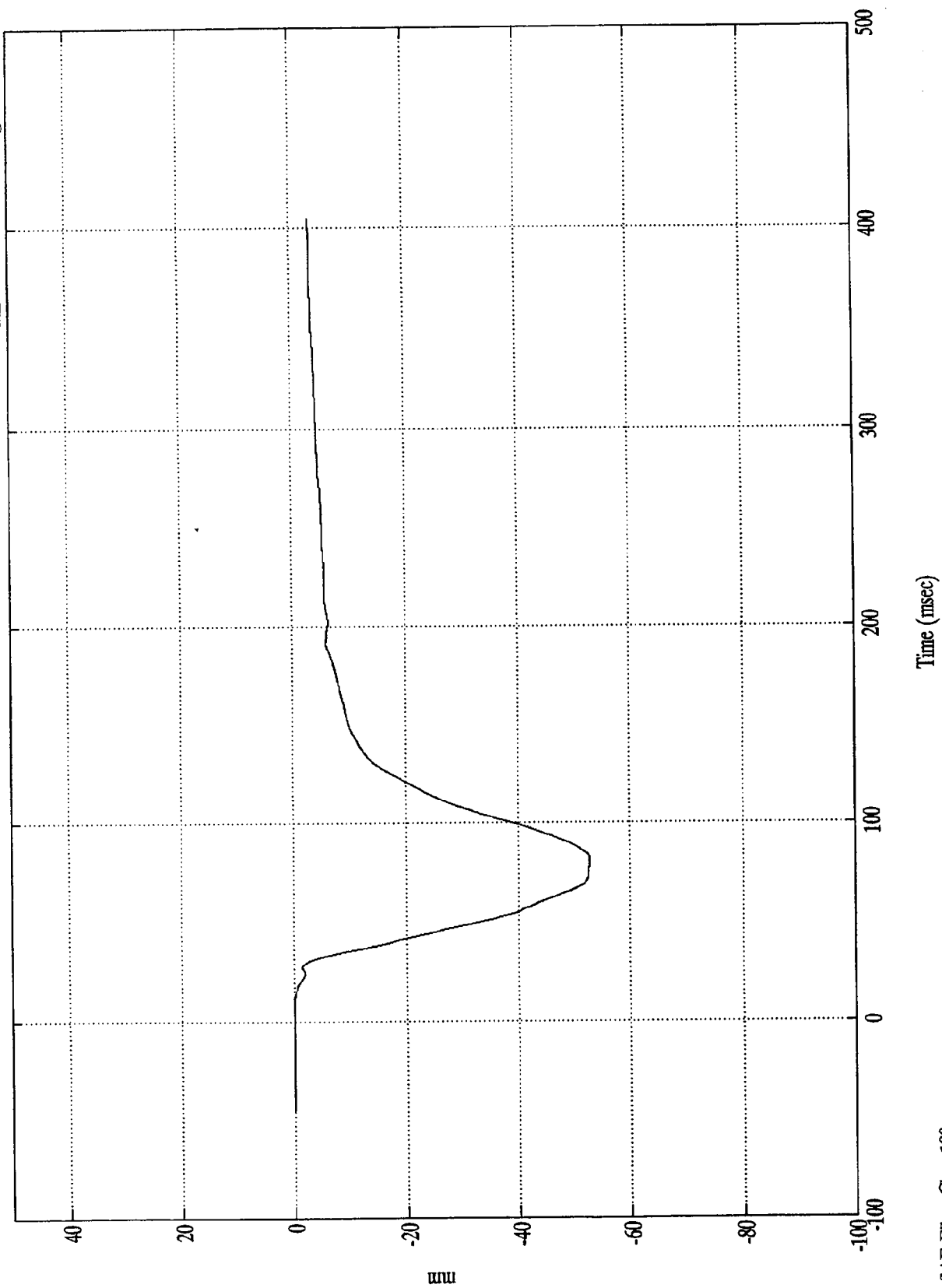


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Chest Disp.

Max = .04 mm @ 23.40 msec
Min = -52.91 mm @ 81.00 msec

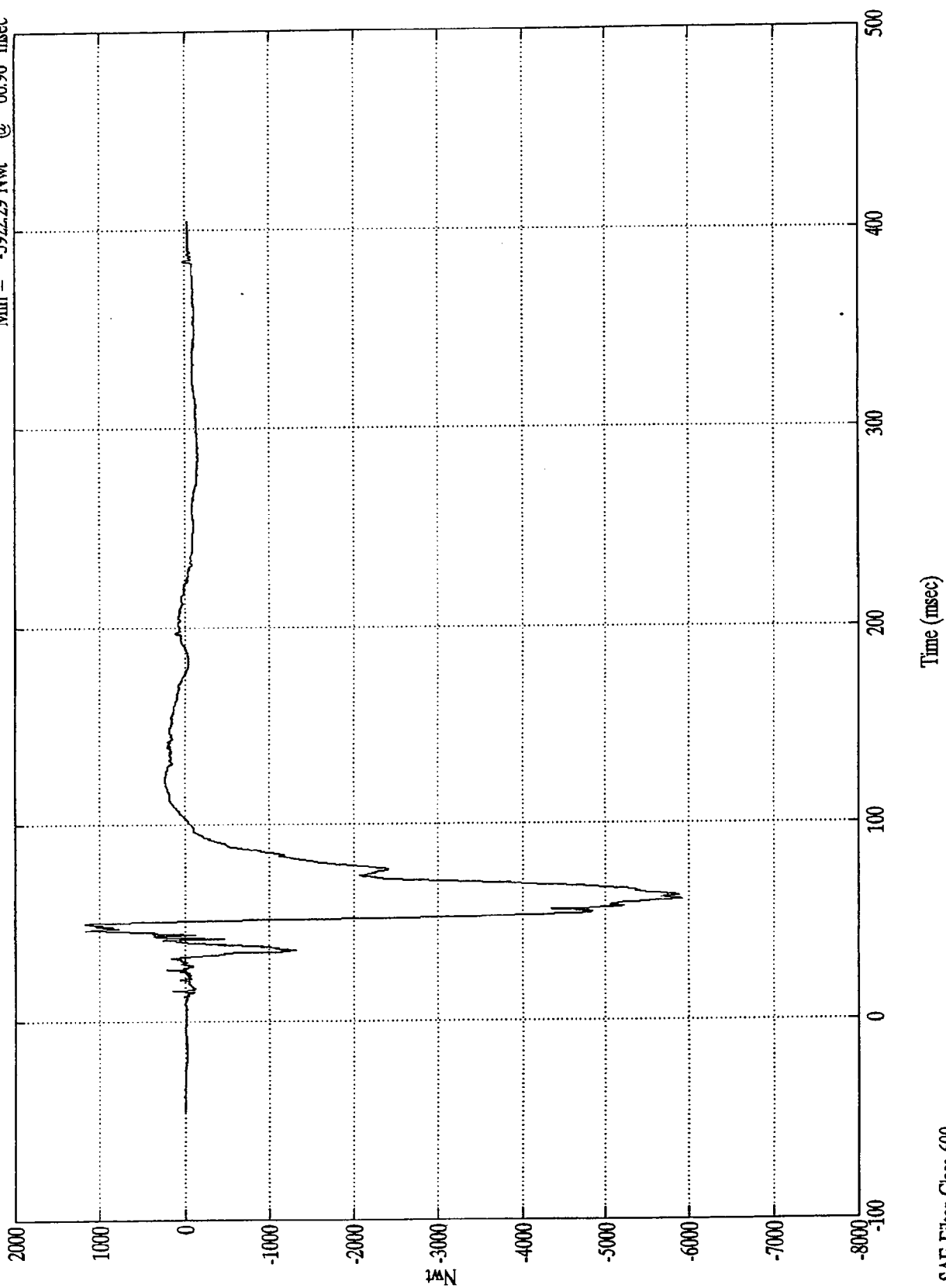


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Left Femur

Max = 1164.98 Nwt @ 46.31 msec
Min = -5922.29 Nwt @ 60.96 msec

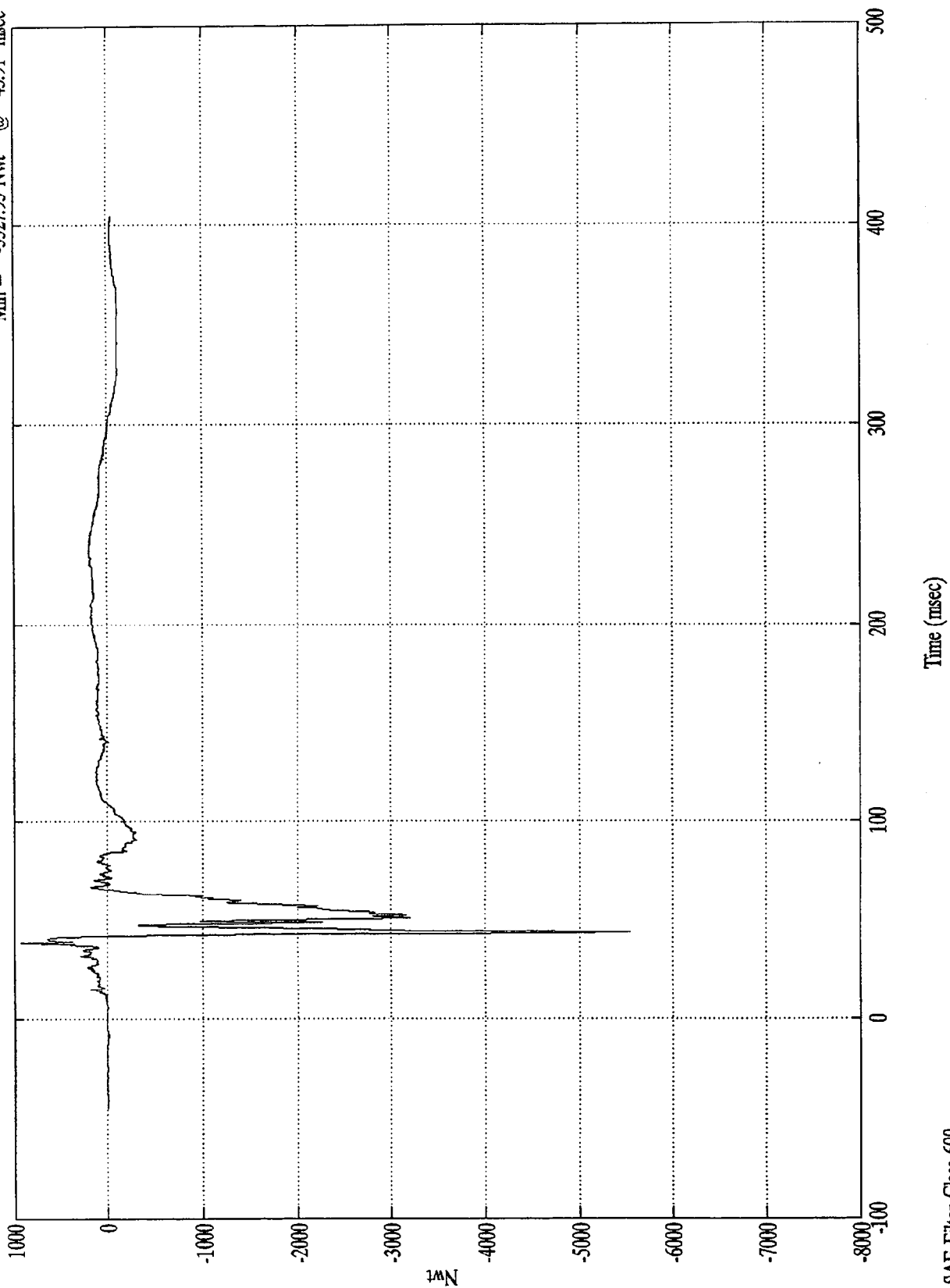


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Right Femur

Max = 929.29 Nwt @ 38.75 msec
Min = -5527.95 Nwt @ 43.91 msec

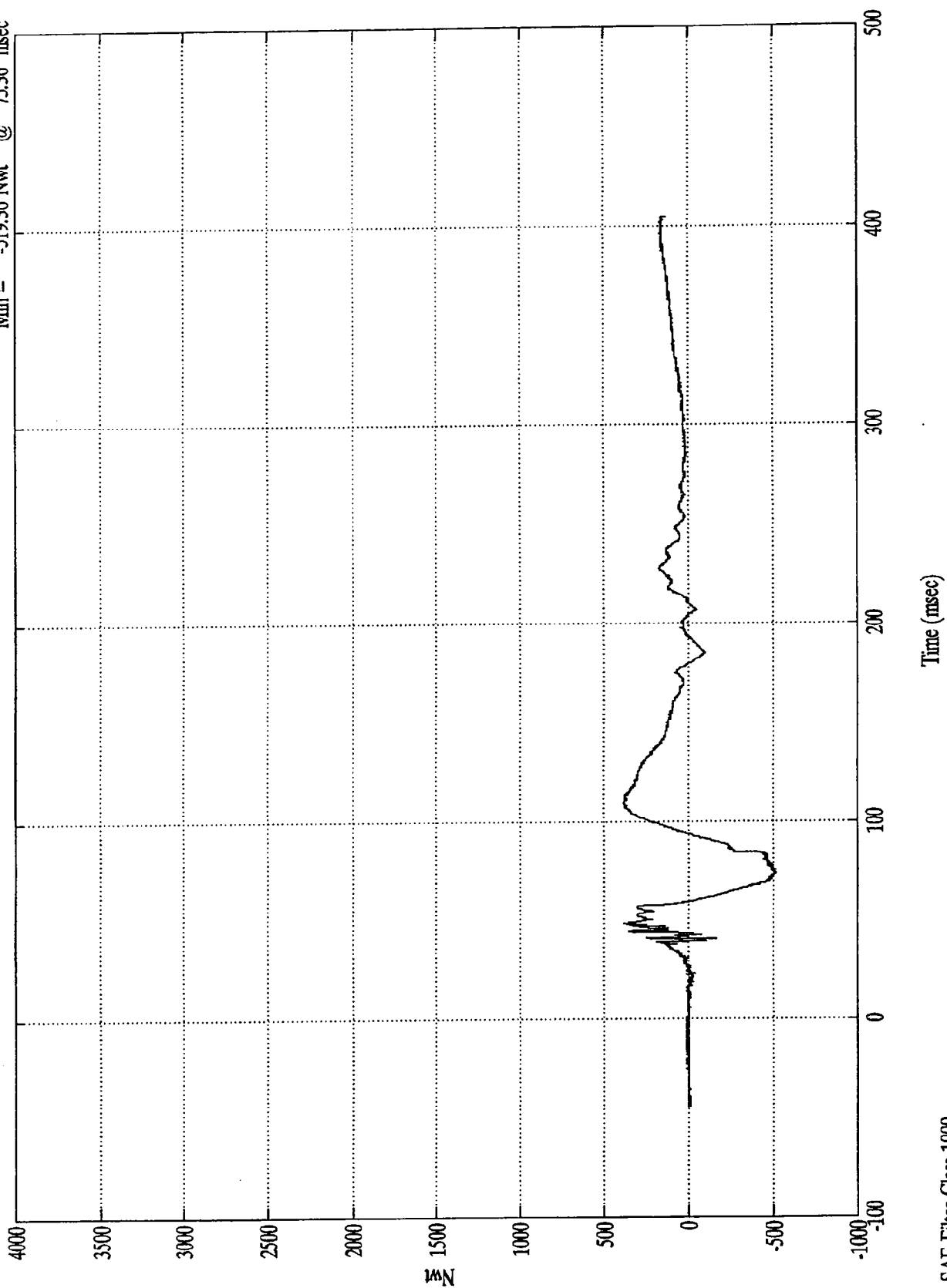


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Upper Neck Fx

Max = 383.82 Nwt @ 109.80 msec
Min = -519.36 Nwt @ 75.36 msec

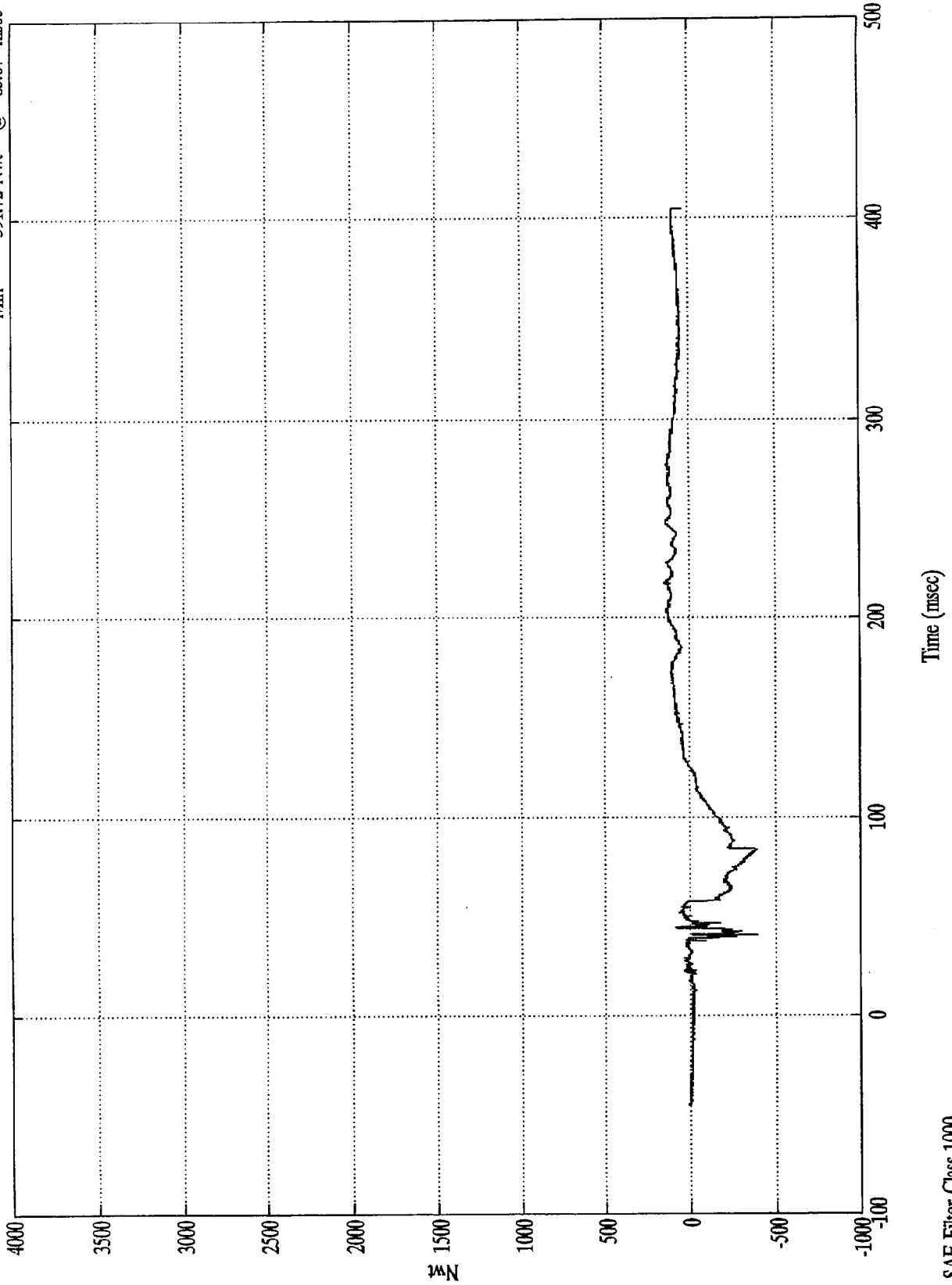


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Upper Neck Fy

Max = 146.94 Nwt @ 217.80 msec
Min = -391.72 Nwt @ 83.87 msec

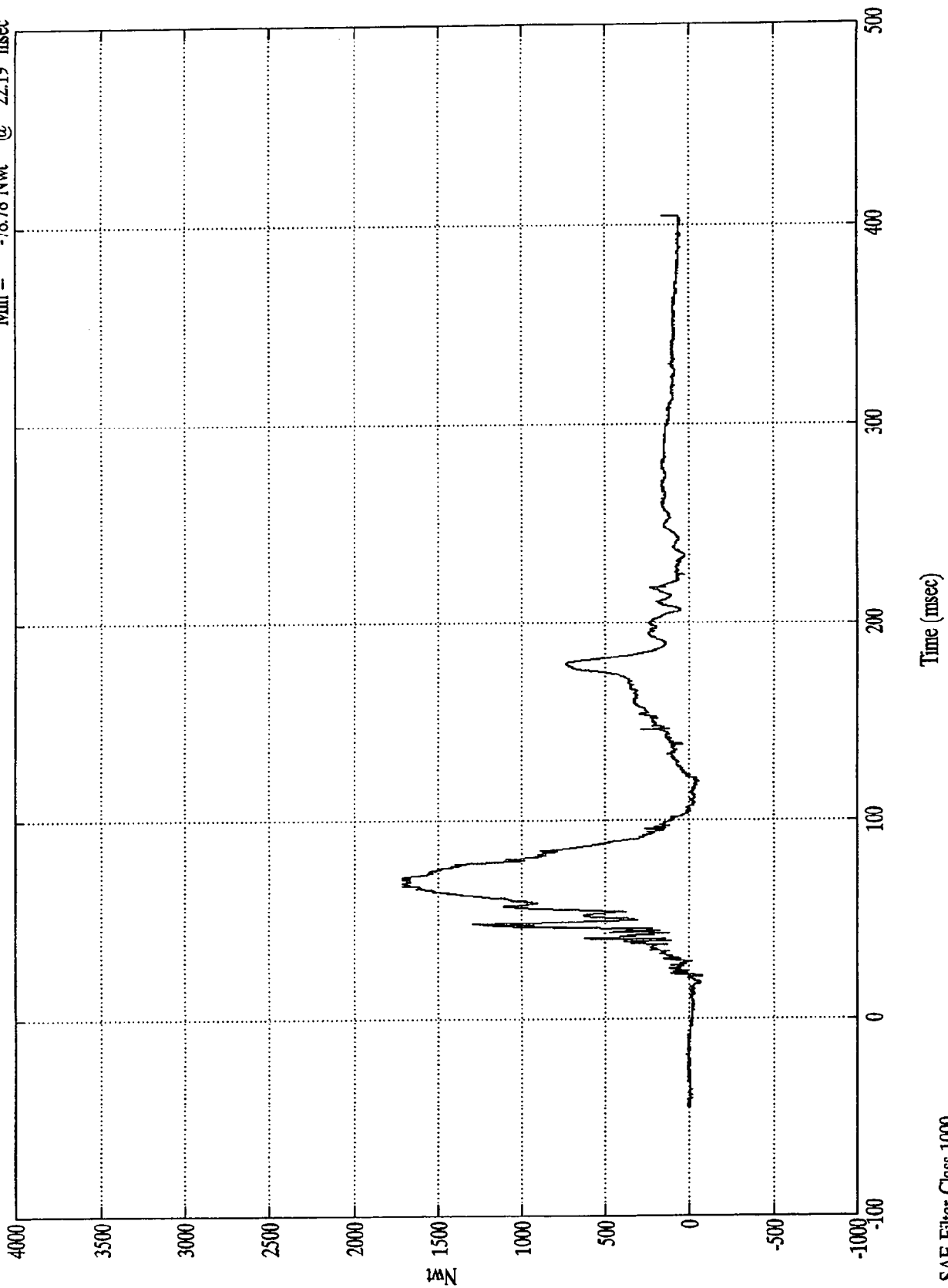


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Upper Neck Fz

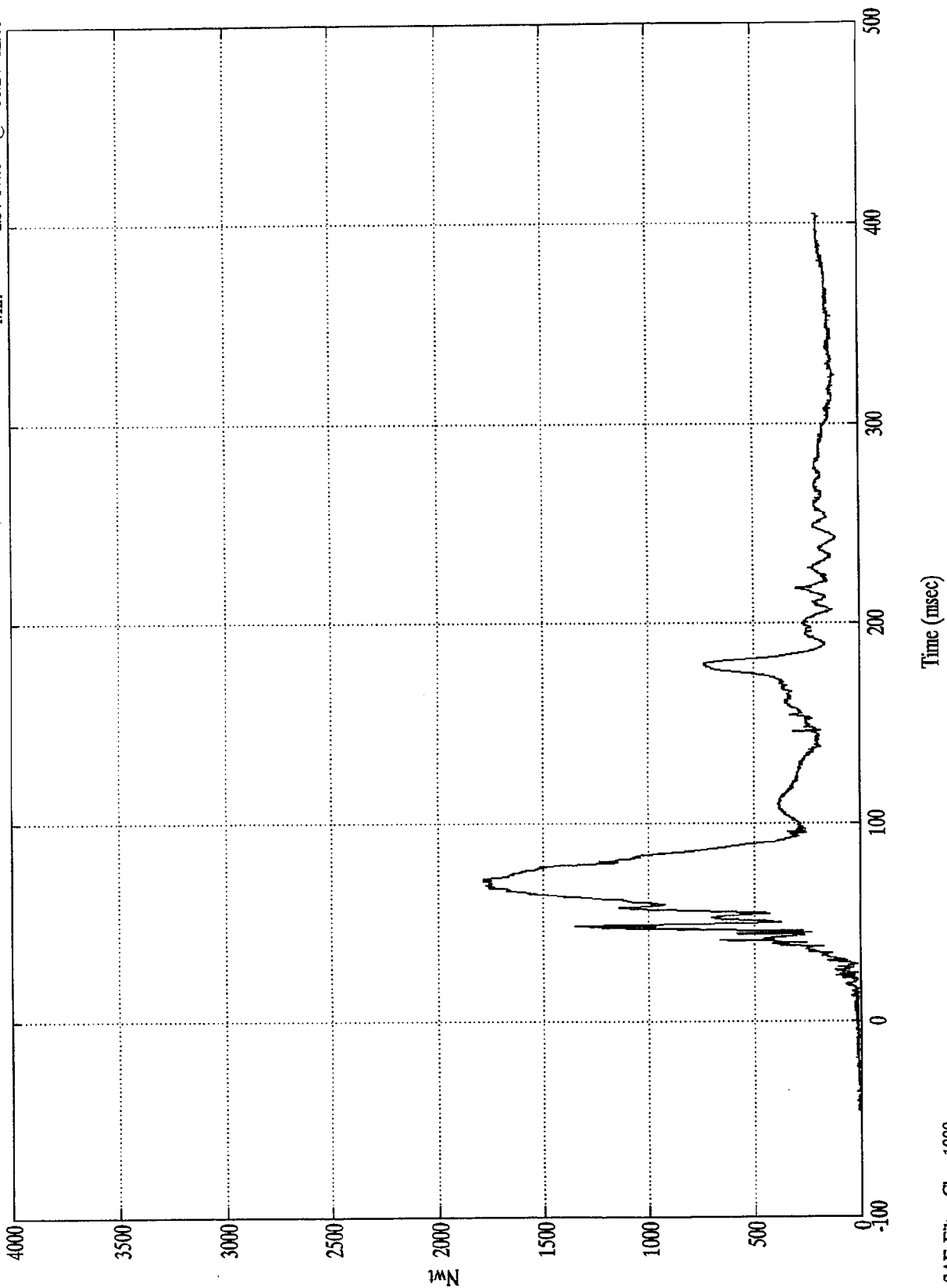
Max = 1711.47 Nwt @ 71.87 msec
Min = -78.78 Nwt @ 22.19 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Neck Force Res.

Max = 1790.56 Nwt @ 71.87 msec
Min = 2.57 Nwt @ -30.24 msec

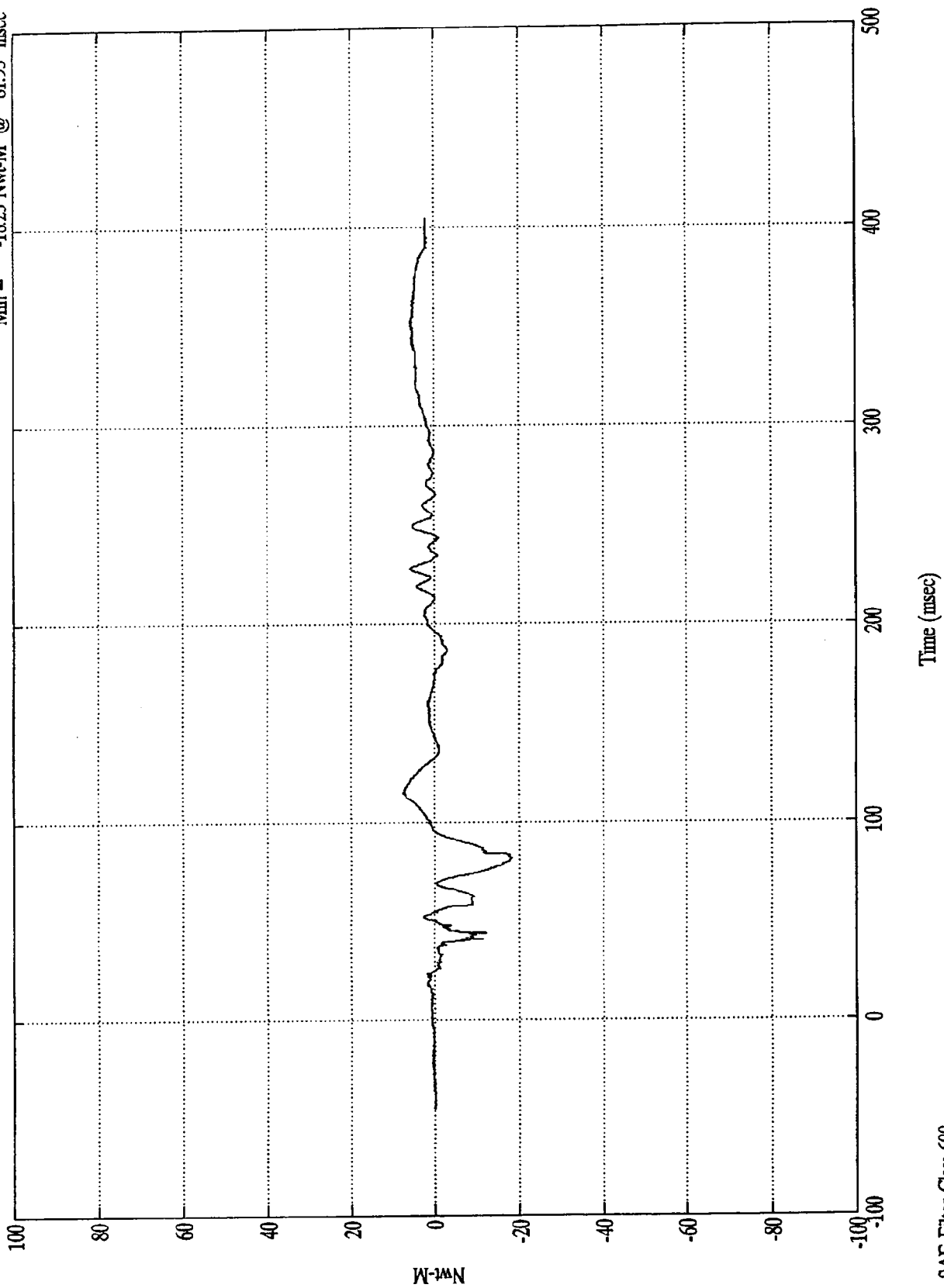


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Upper Neck Mx

Max = 7.47 Nwt-M @ 115.32 msec
Min = -18.23 Nwt-M @ 81.95 msec

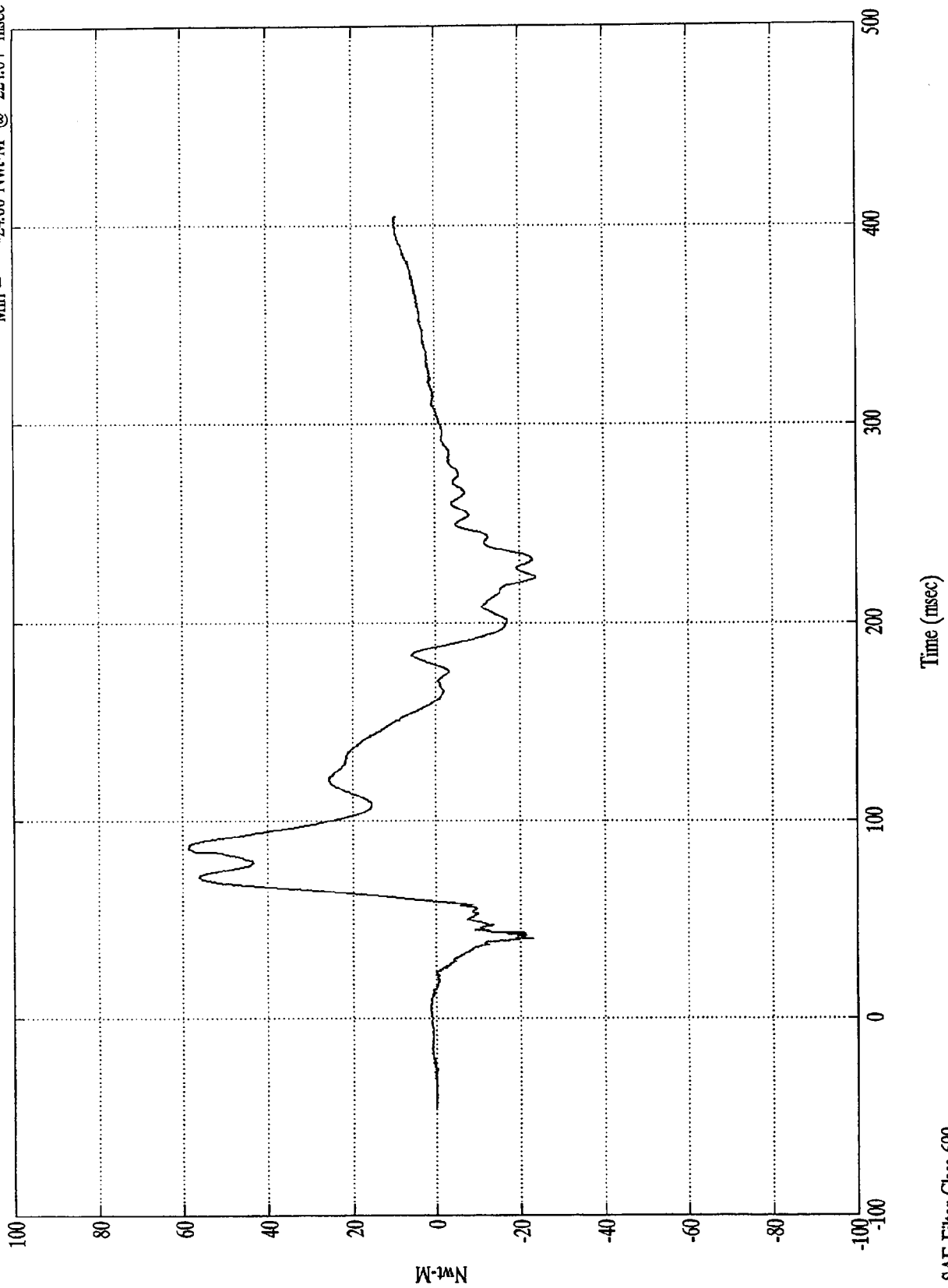


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Upper Neck Miy

Max = 58.68 Nwt-M @ 86.28 msec
Min = -24.00 Nwt-M @ 224.04 msec

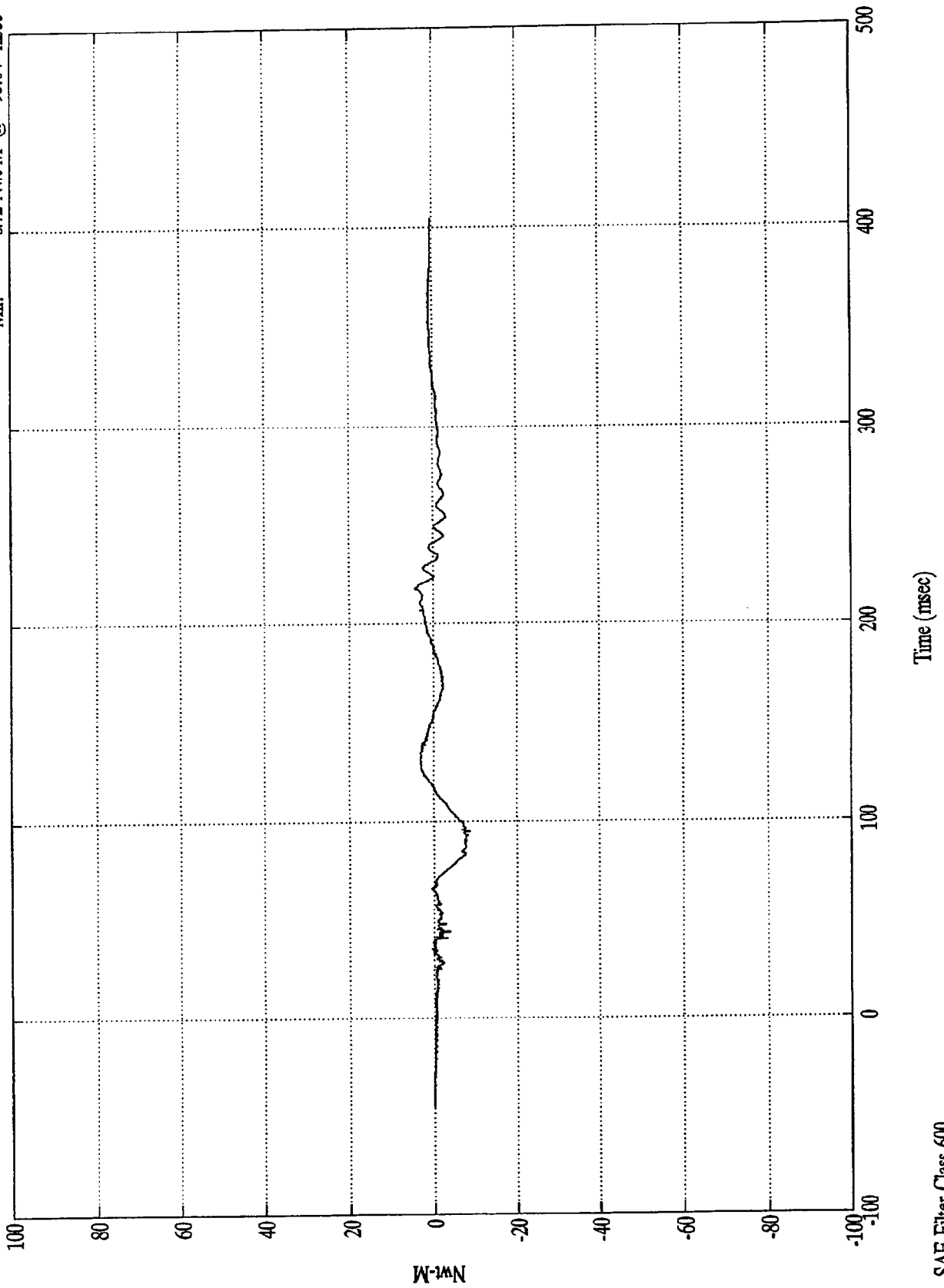


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Upper Neck Mz

Max = 4.26 Nwt-M @ 217.80 msec
Min = -8.72 Nwt-M @ 95.04 msec

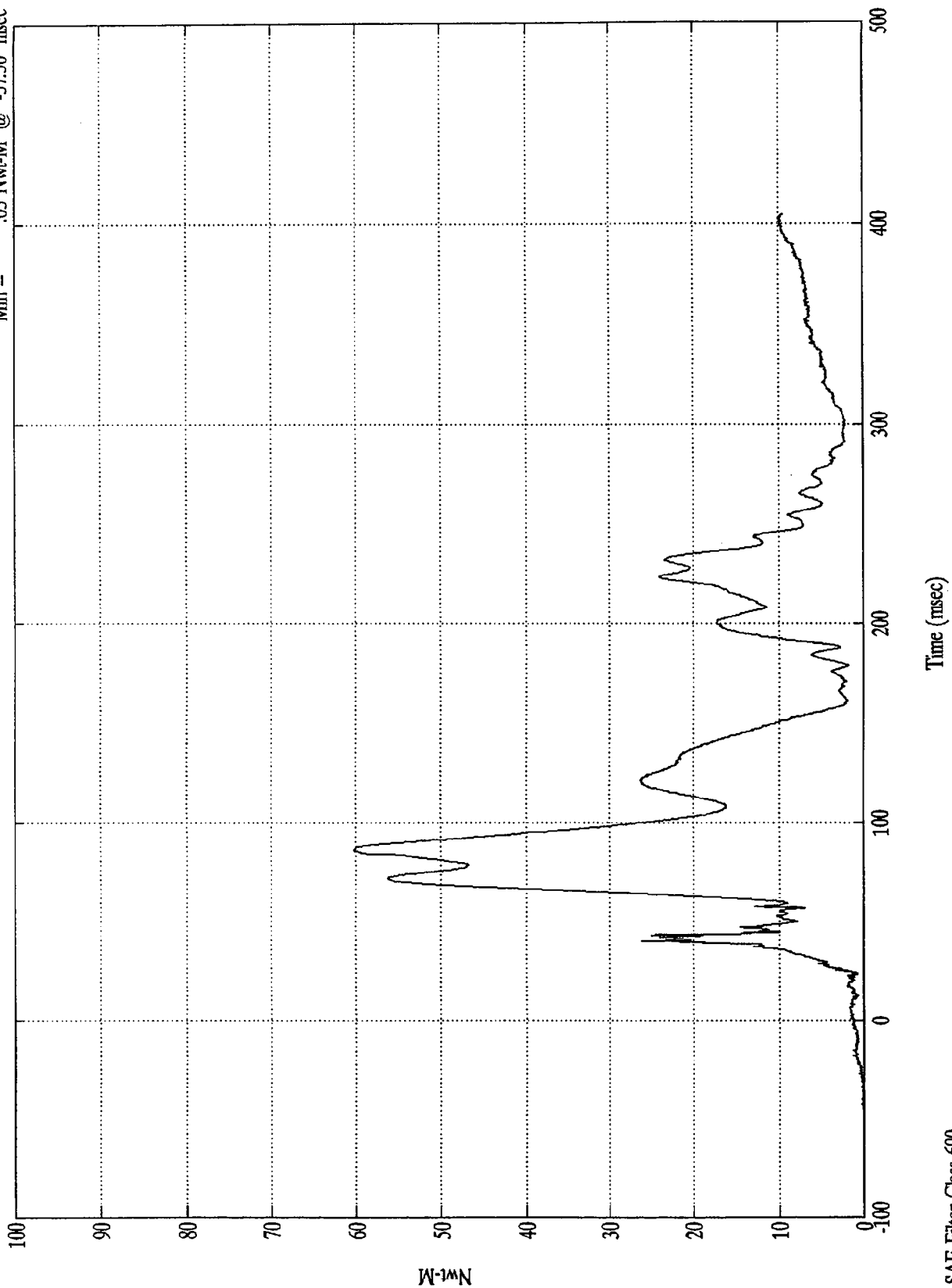


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Max = 60.25 Nwt-M @ 86.28 msec
Min = .03 Nwt-M @ -37.56 msec

Pos. 1 Neck Moment Res.

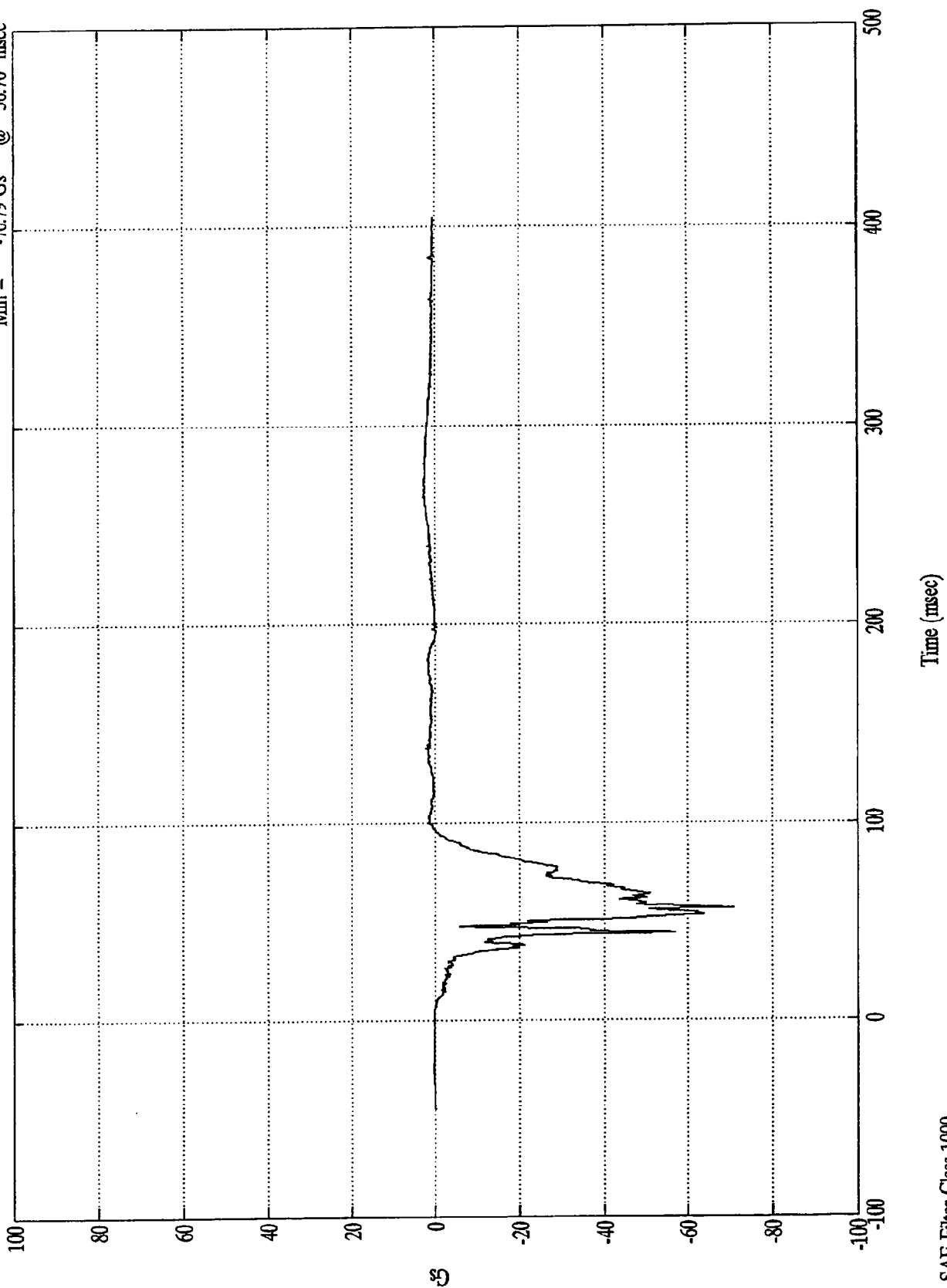


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Pelvic (X)

Max = 2.82 Gs @ 264.72 msec
Min = -70.79 Gs @ 56.76 msec

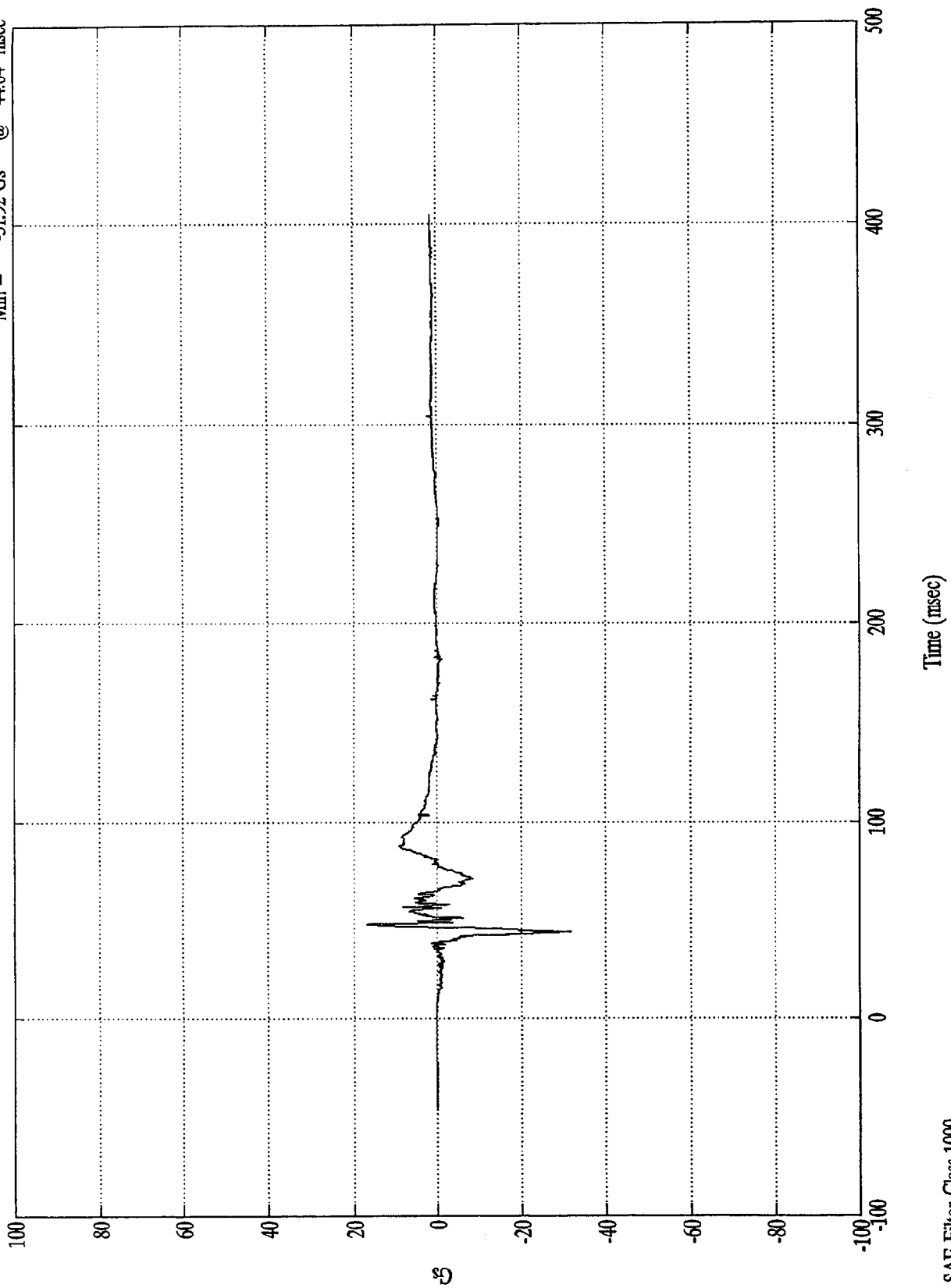


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Pelvic (Y)

Max = 16.77 Gs @ 47.88 msec
Min = -31.92 Gs @ 44.04 msec

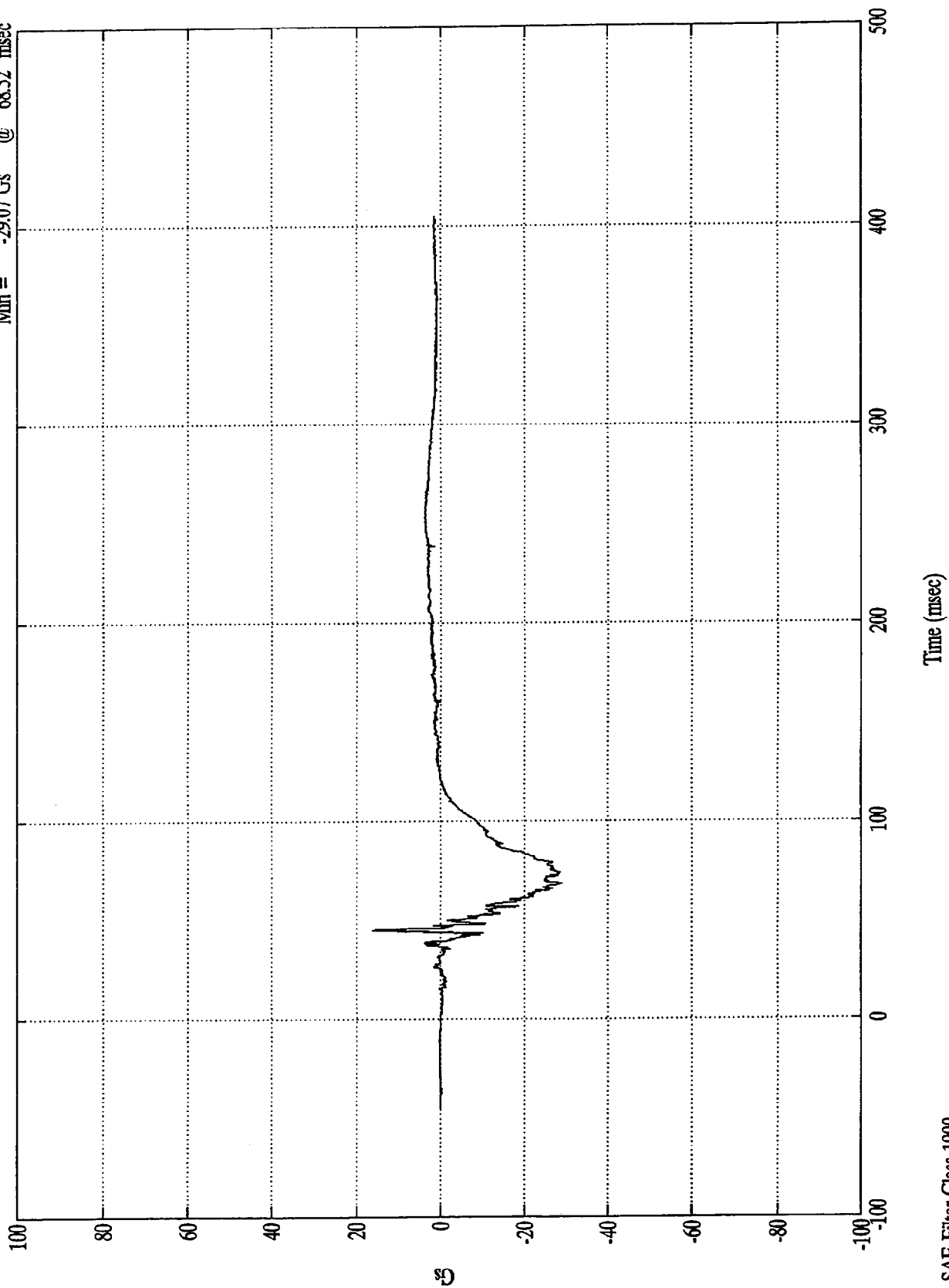


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Pelvic (Z)

Max = 16.02 Gs @ 44.87 msec
Min = -29.07 Gs @ 68.52 msec

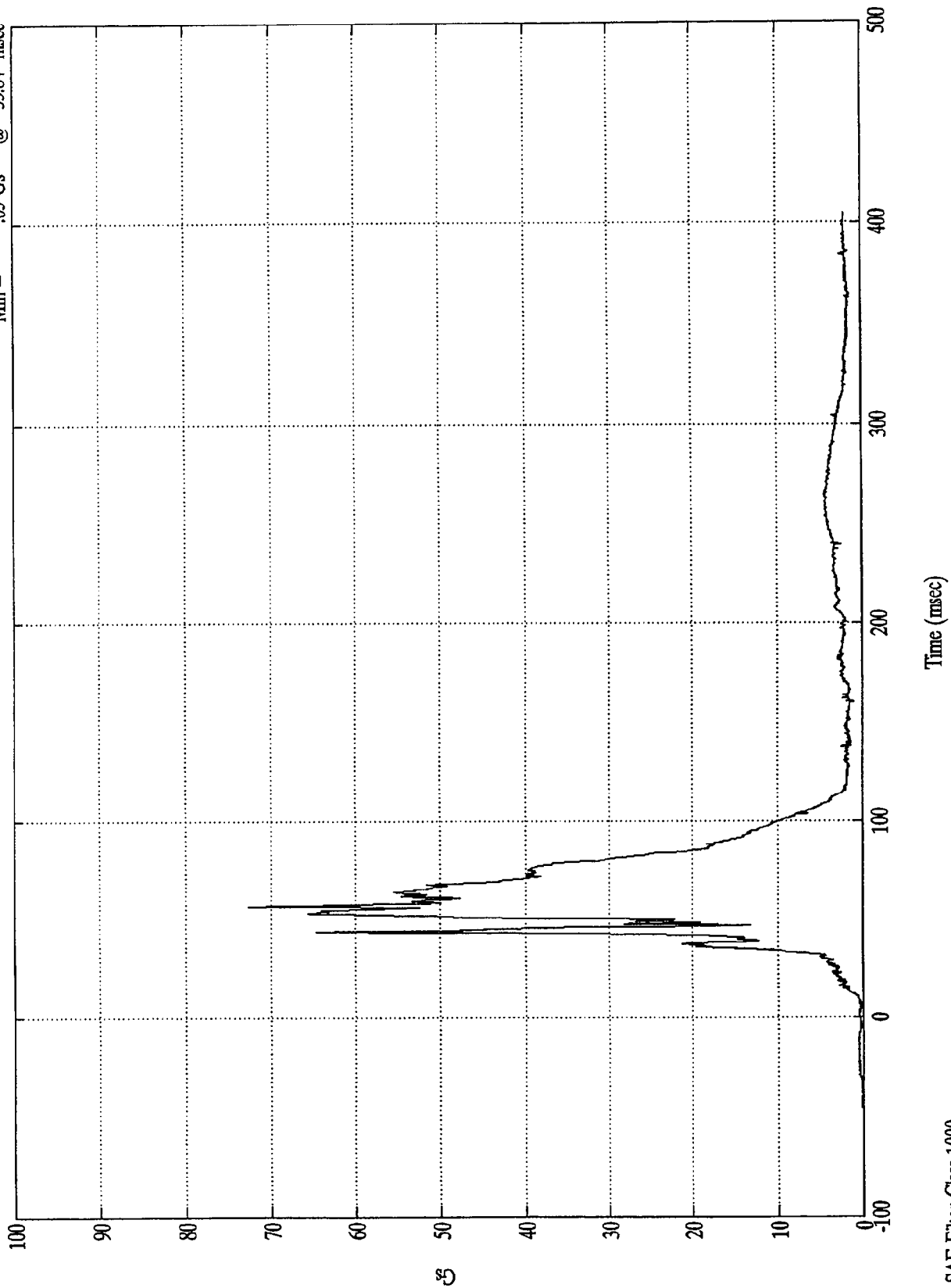


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Pelvic (R)

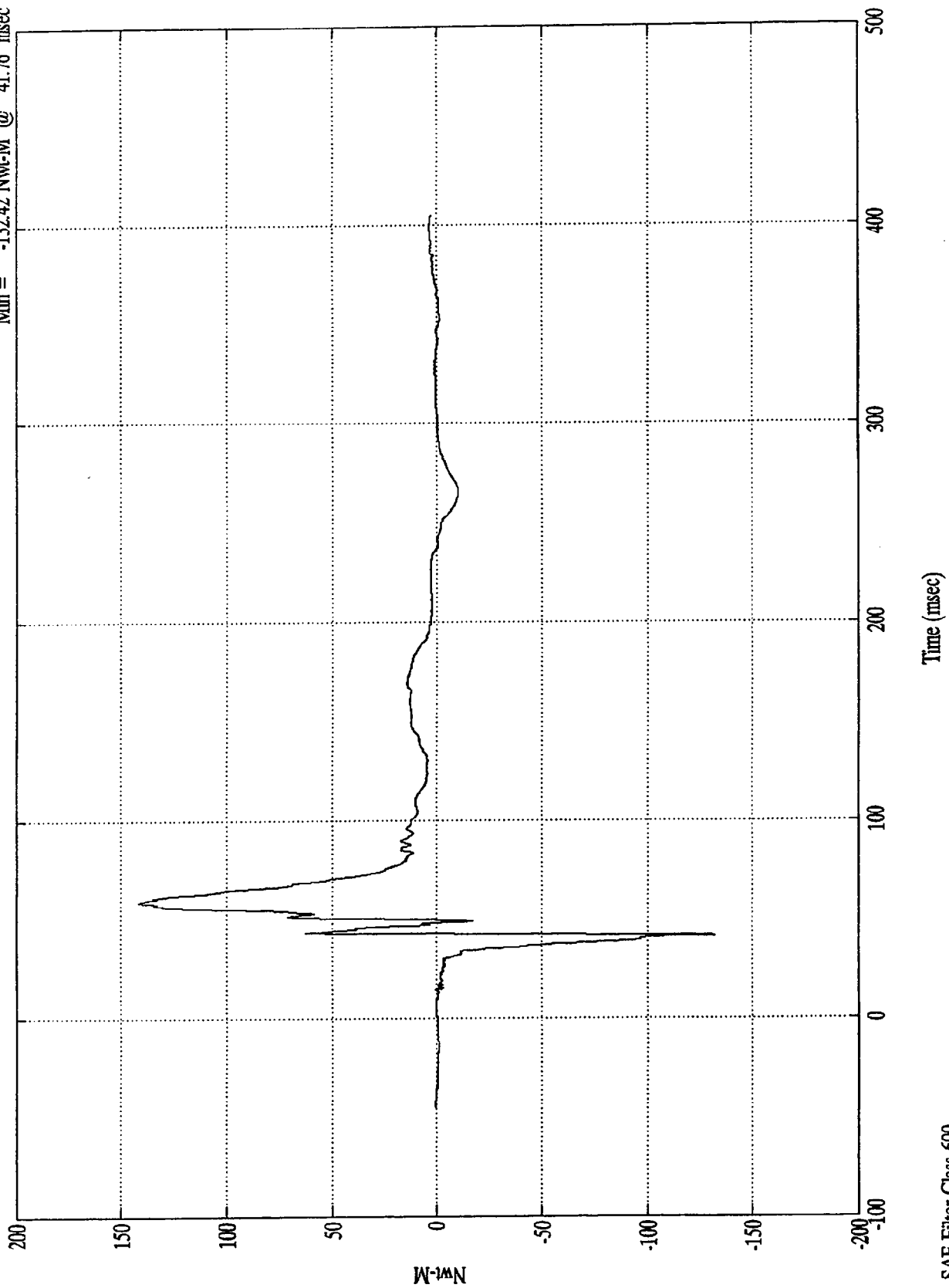
Max = 72.69 Gs @ 56.76 msec
Min = .05 Gs @ -33.84 msec



NCAP TEST #3 - 1996 ACURA LT

P1 Lt Upper Tibia Mx

Max = 141.43 Nwt-M @ 59.04 msec
Min = -132.42 Nwt-M @ 41.76 msec

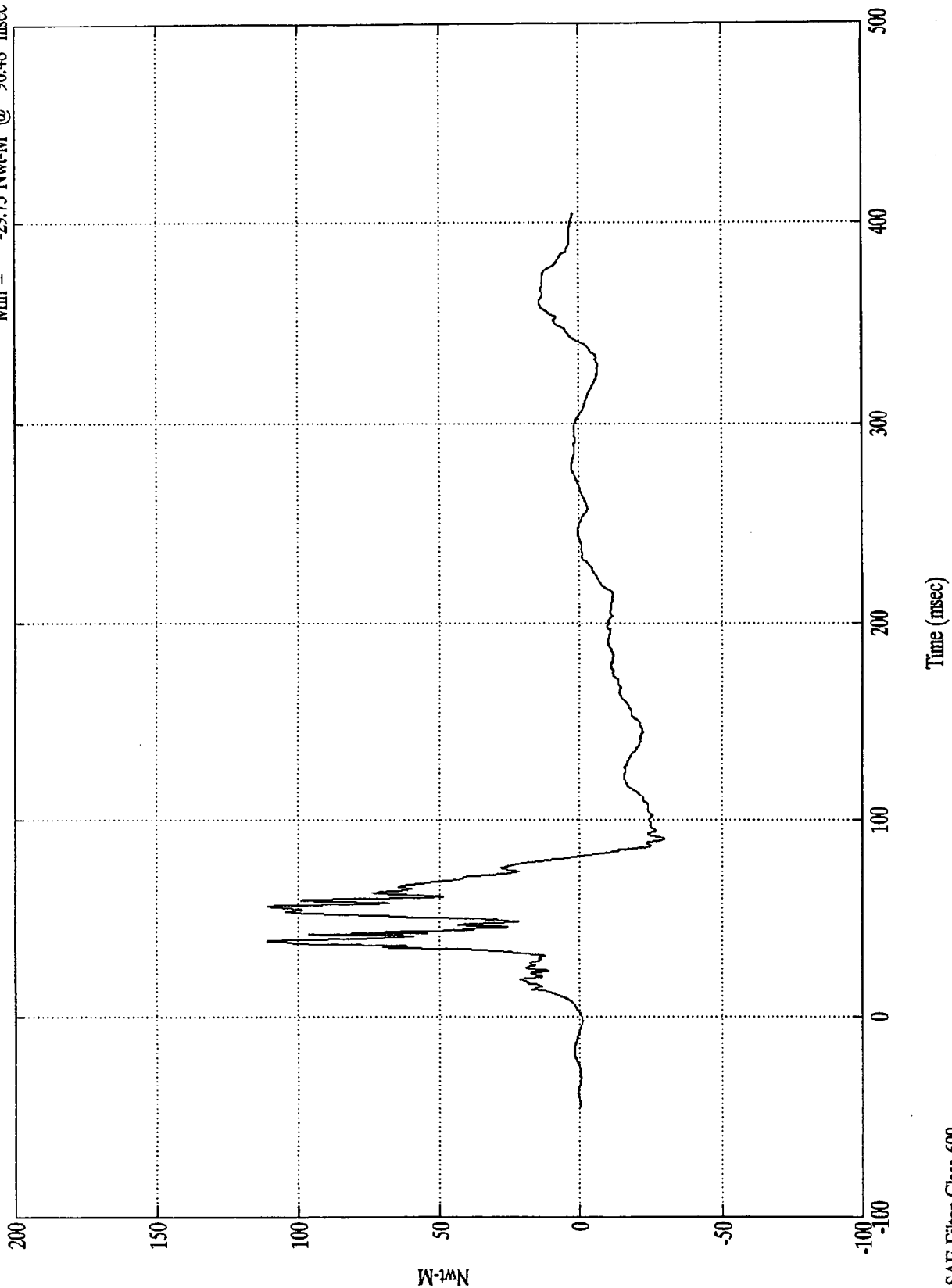


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

P1 L1 Upper Tibia My

Max = 110.94 Nwt-M @ 38.63 msec
Min = -29.73 Nwt-M @ 90.48 msec

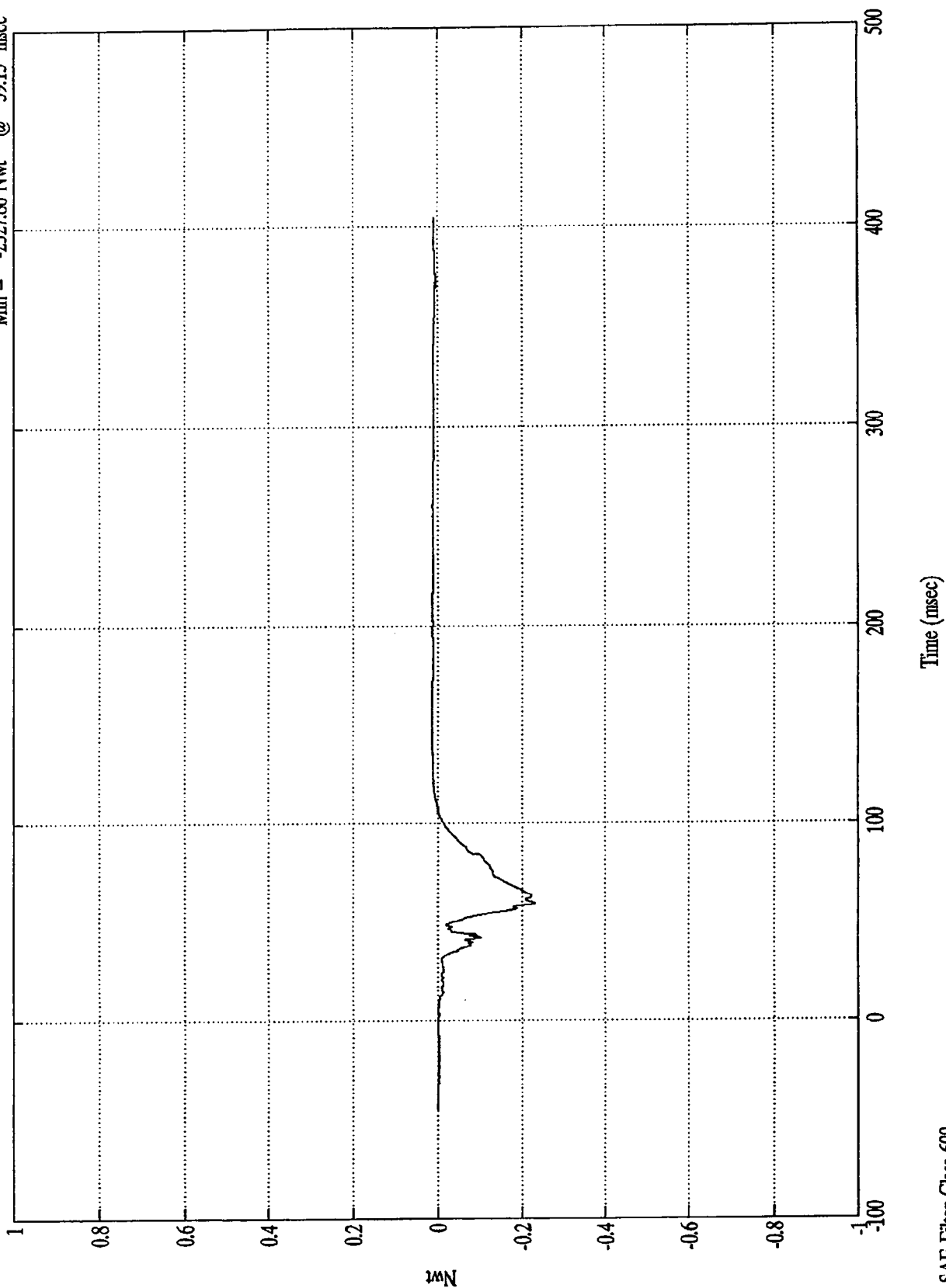


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT
x10⁴

P1 Lt Lower Tibia Fy

Max = 146.50 Nwt @ 142.80 msec
Min = -2327.86 Nwt @ 59.15 msec

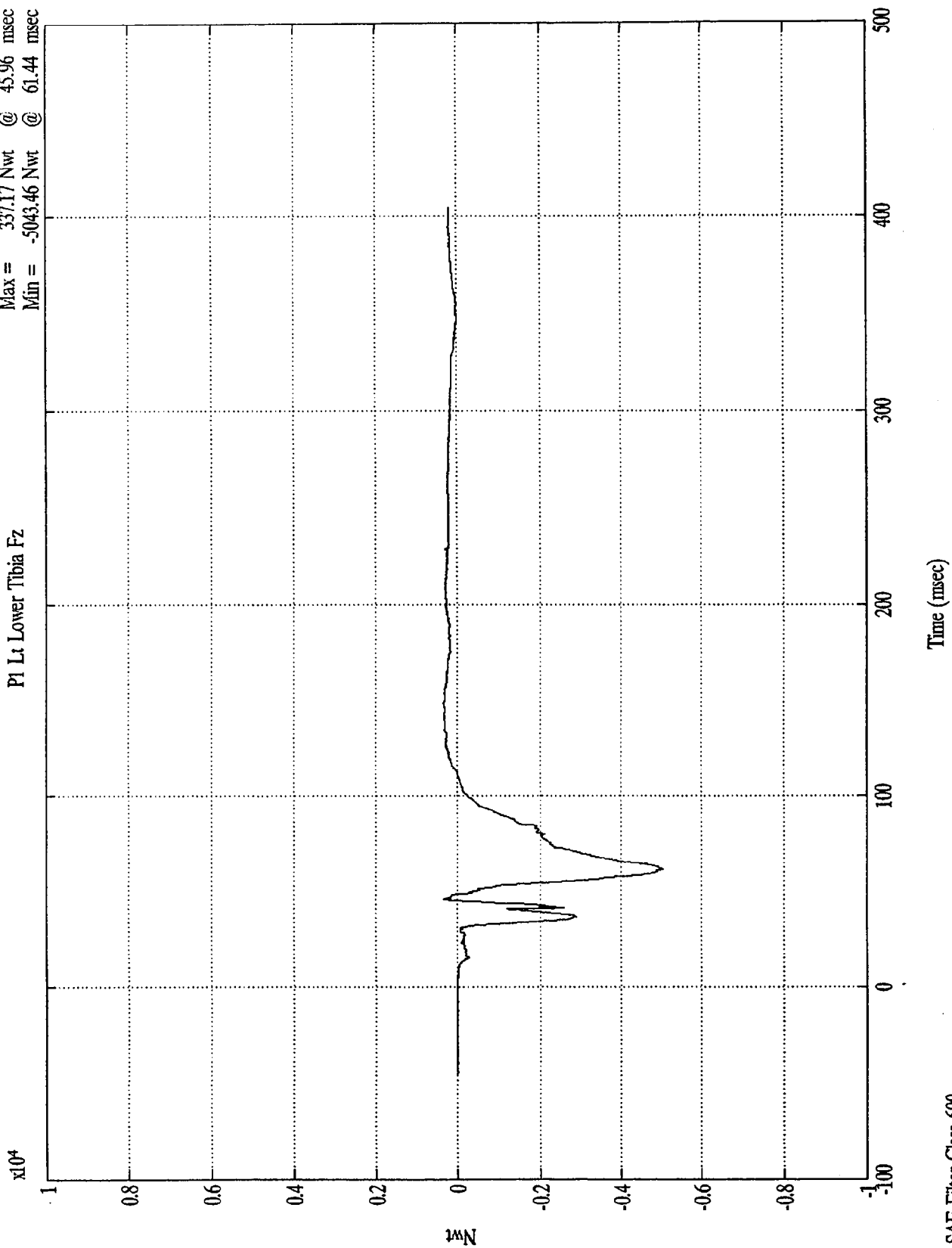


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

P1 Lt Lower Tibia Fz

Max = 337.17 Nwt @ 45.96 msec
Min = -5043.46 Nwt @ 61.44 msec

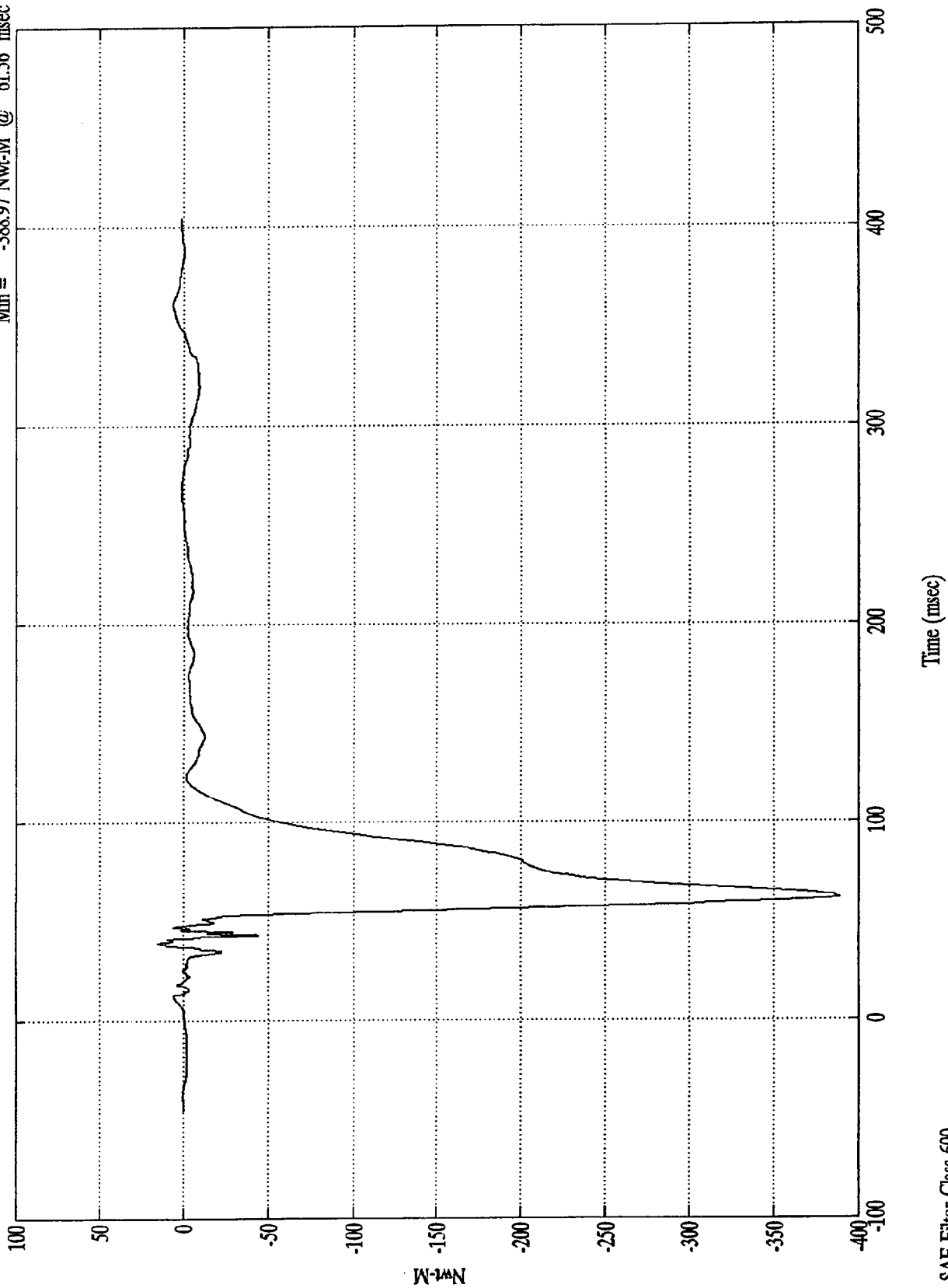


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Max = 15.26 Nwt-M @ 39.36 msec
Min = -388.97 Nwt-M @ 61.56 msec

P1 Lt Lower Tibia Mx

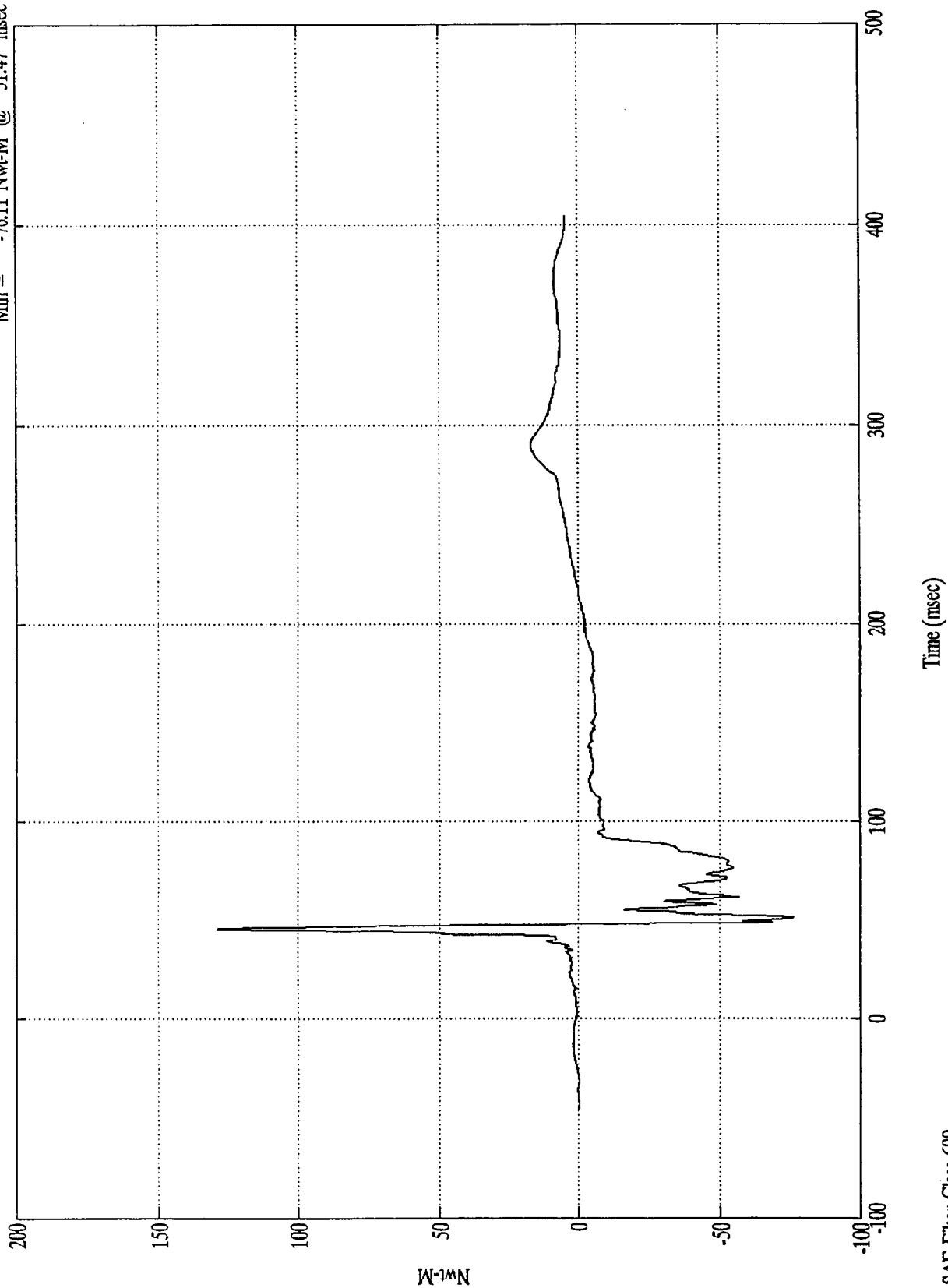


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Rt Upper Tibia Mx

Max = 128.91 Nwt-M @ 45.60 msec
Min = -76.11 Nwt-M @ 51.47 msec

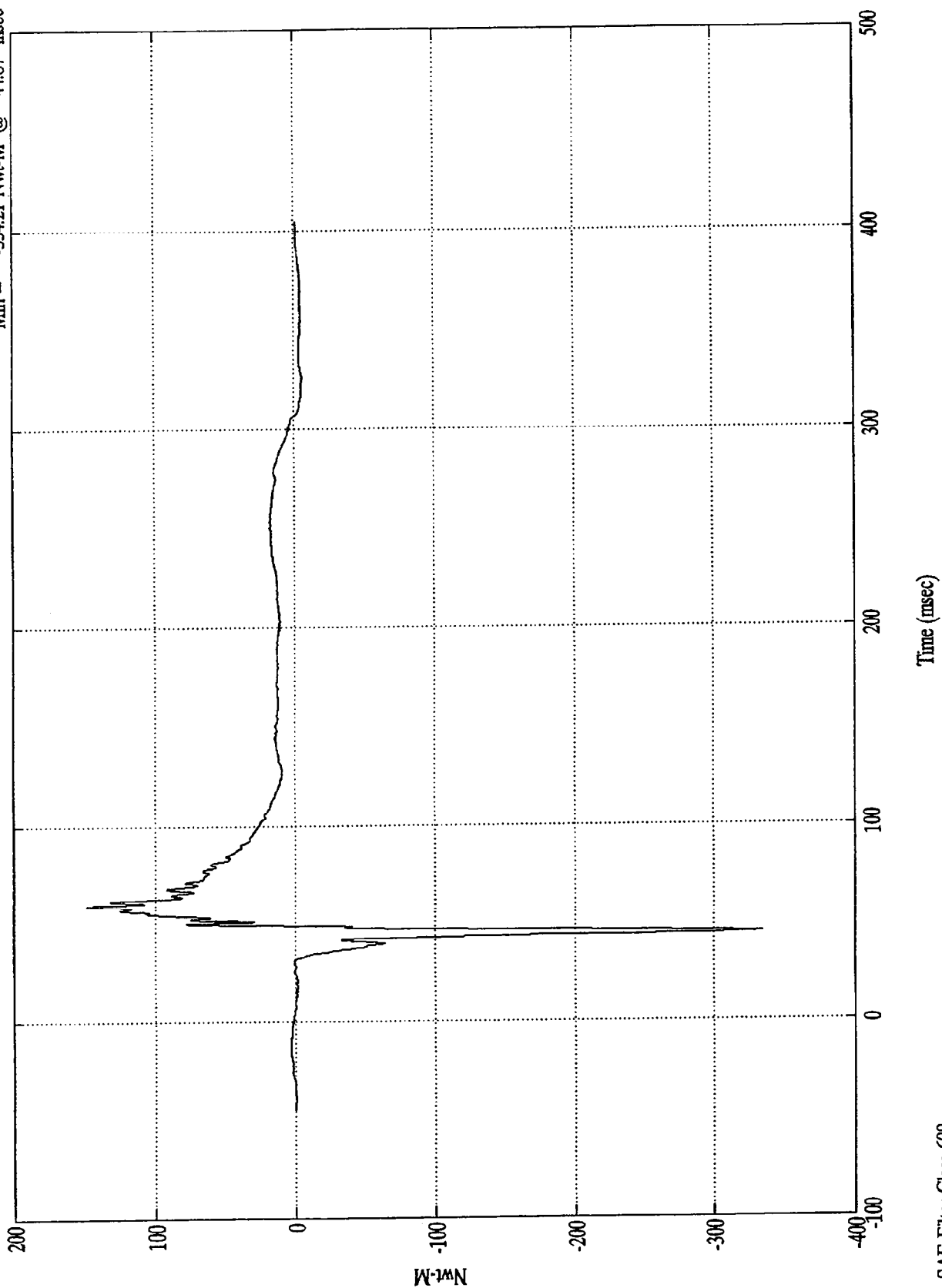


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Rt Upper Tibia My

Max = 147.51 Nwt-M @ 59.88 msec
Min = -334.21 Nwt-M @ 44.87 msec

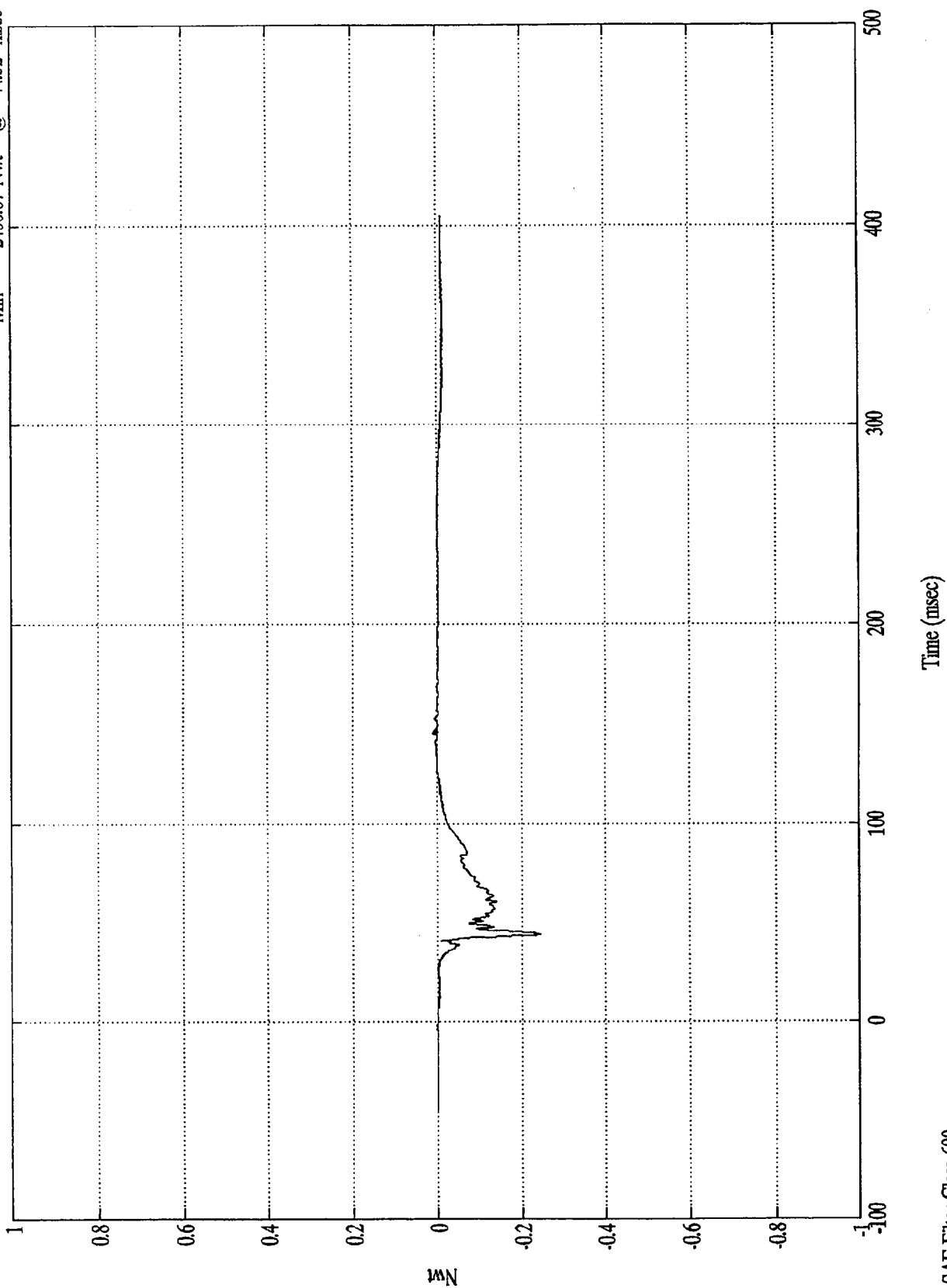


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Pos. 1 Rt Lower Tibia Fy

Max = 119.72 Nwt @ 145.44 msec
Min = -2466.07 Nwt @ 44.52 msec



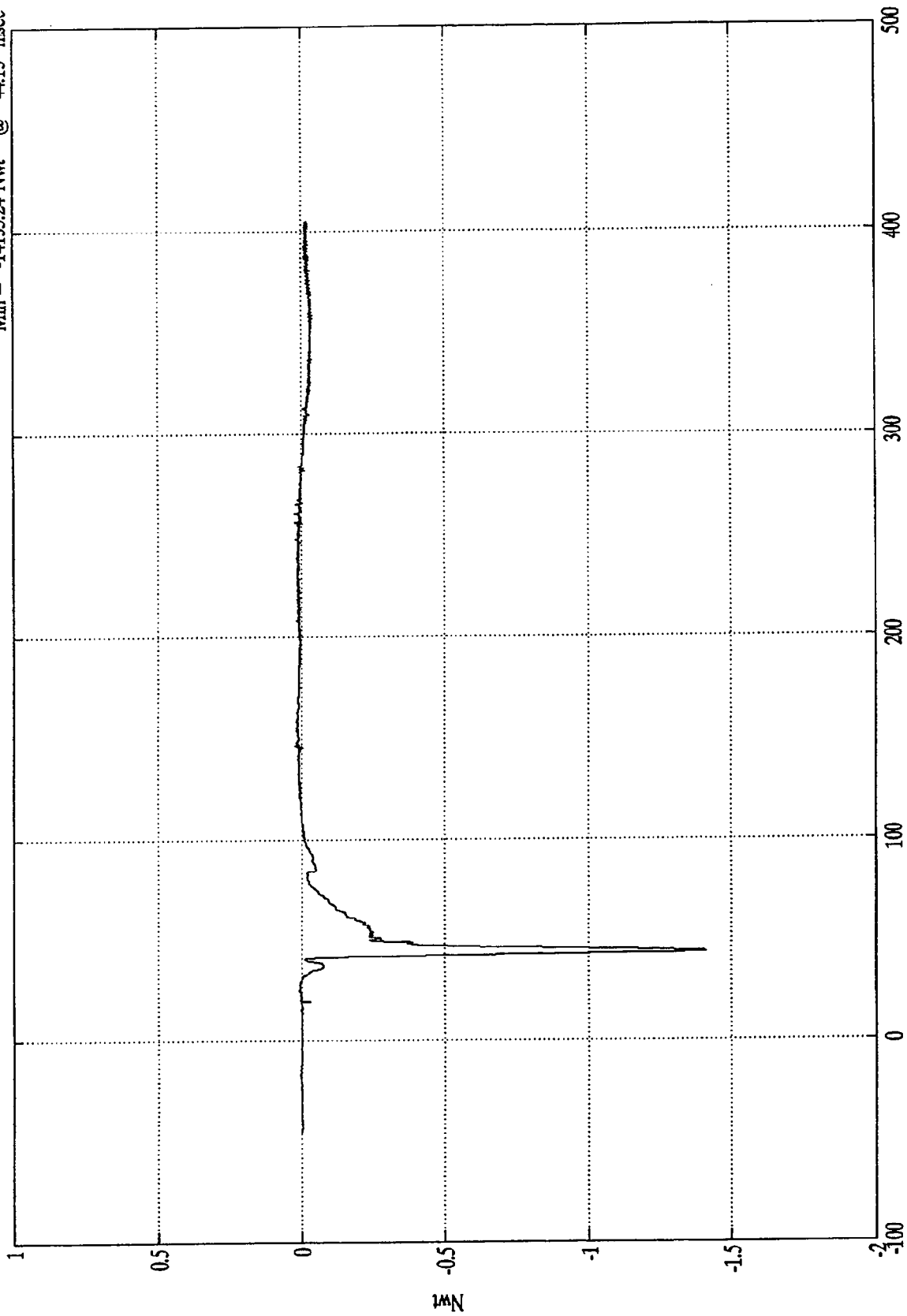
SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Rt Lower Tibia Fz

Max = 243.15 Nwt @ 145.92 msec
Min = -14135.24 Nwt @ 44.15 msec

$\times 10^4$

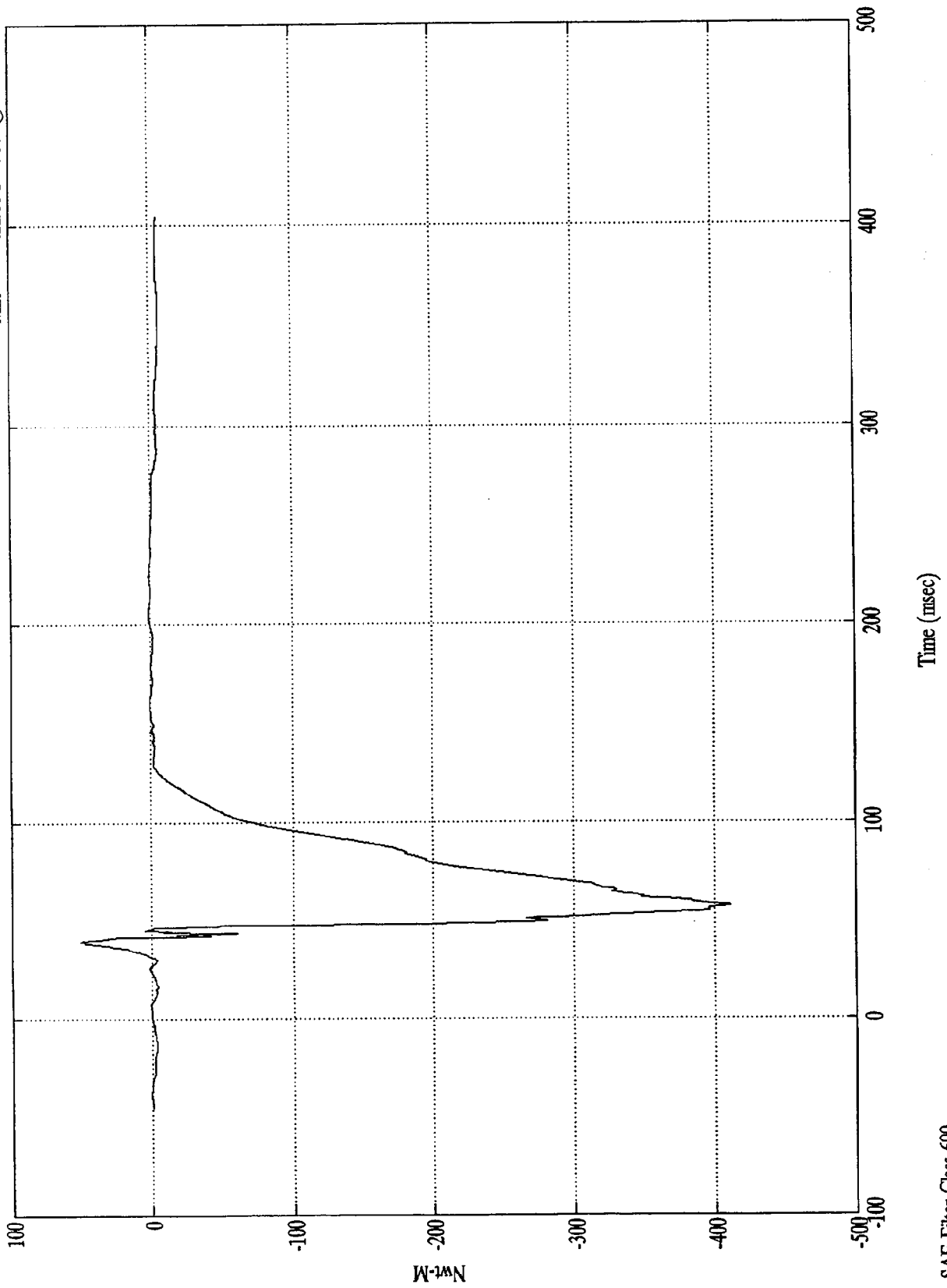


Time (msec)

SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Rt Lower Tibia Mx
Max = 51.16 Nwt-M @ 39.84 msec
Min = -411.06 Nwt-M @ 57.36 msec

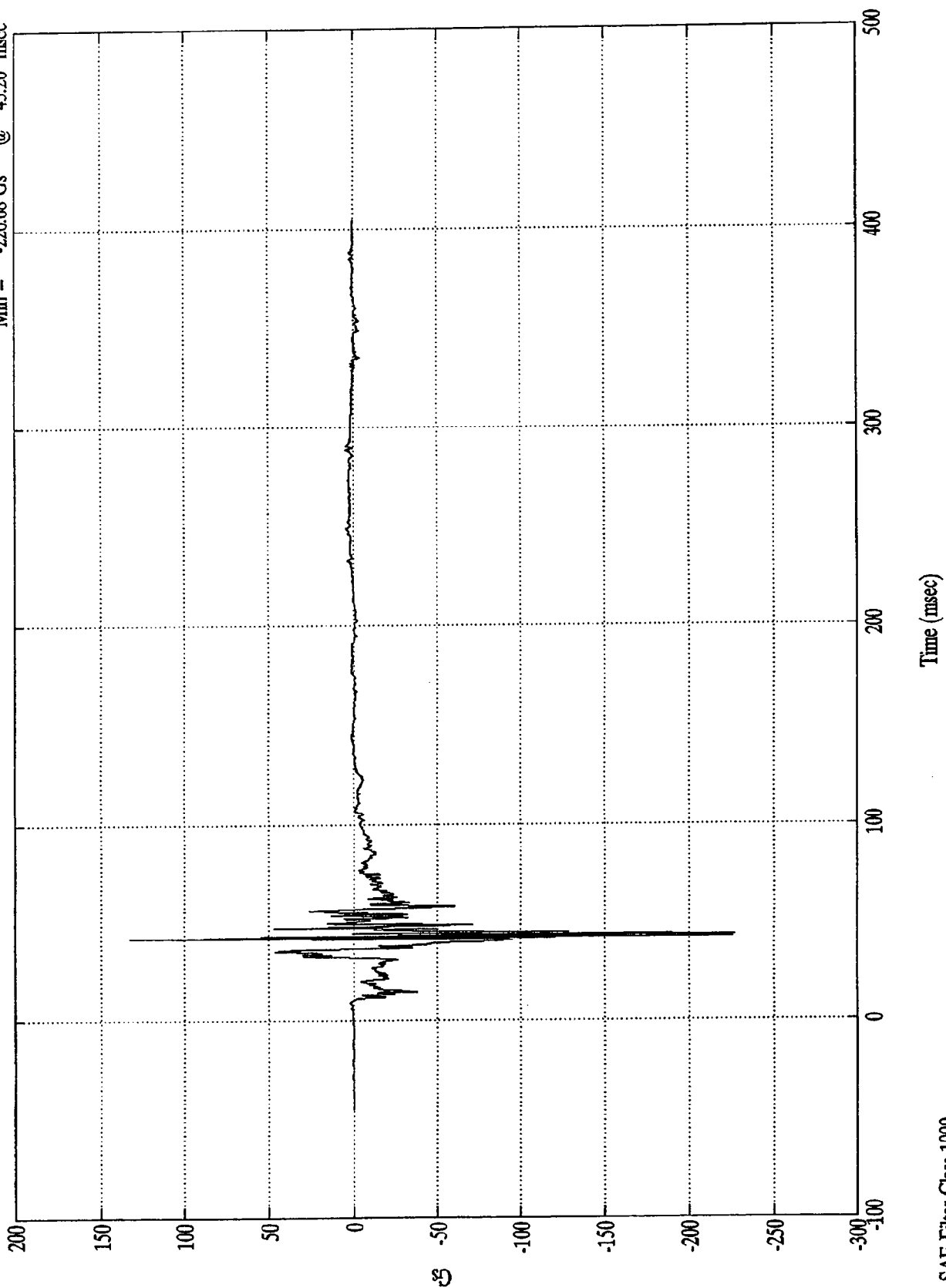


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 L Foot Front Z

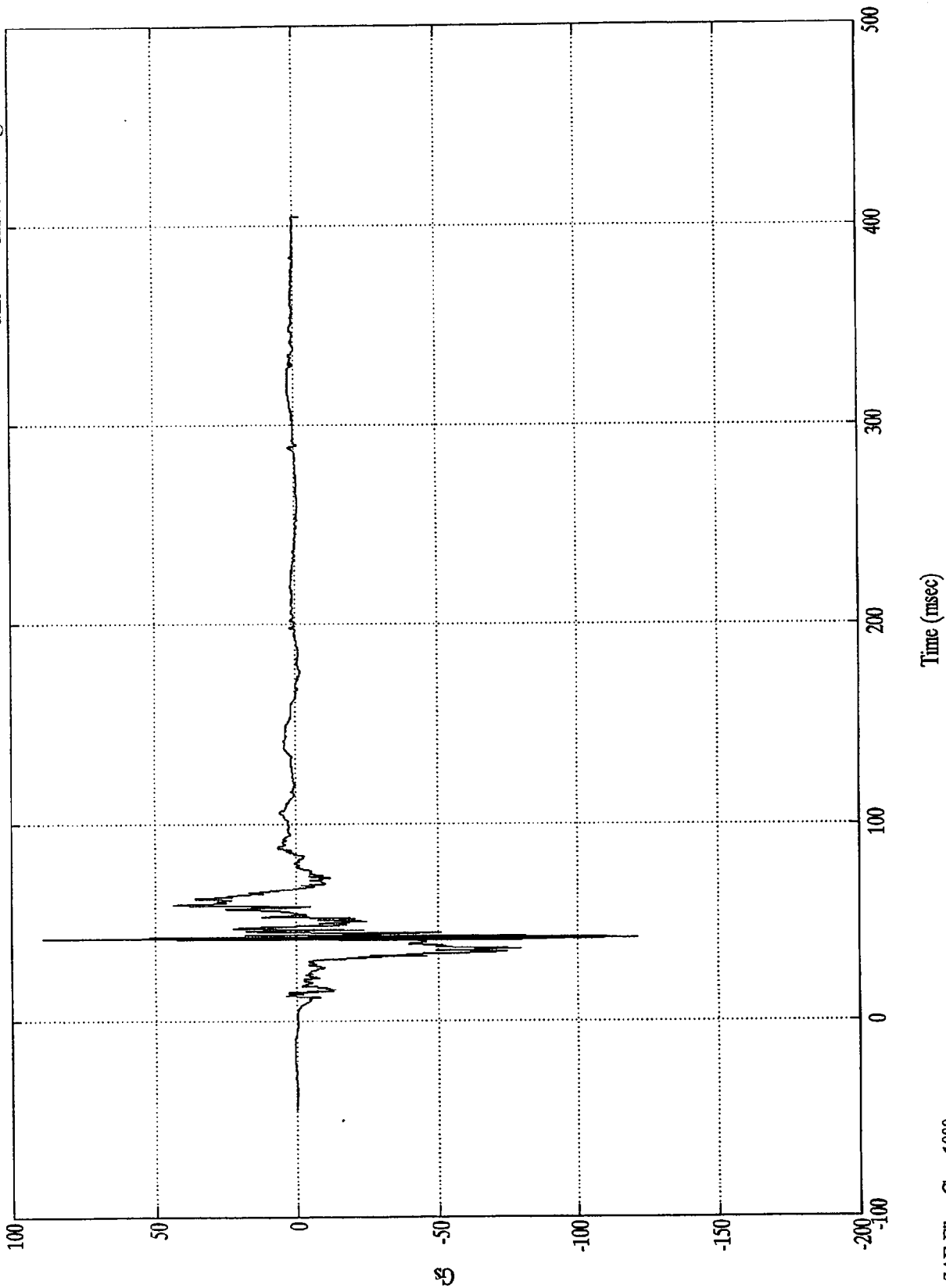
Max = 132.20 Gs @ 41.63 msec
Min = -226.68 Gs @ 43.20 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 1 L. Foot Rear X

Max = 88.90 Gs @ 42.24 msec
Min = -121.58 Gs @ 42.60 msec

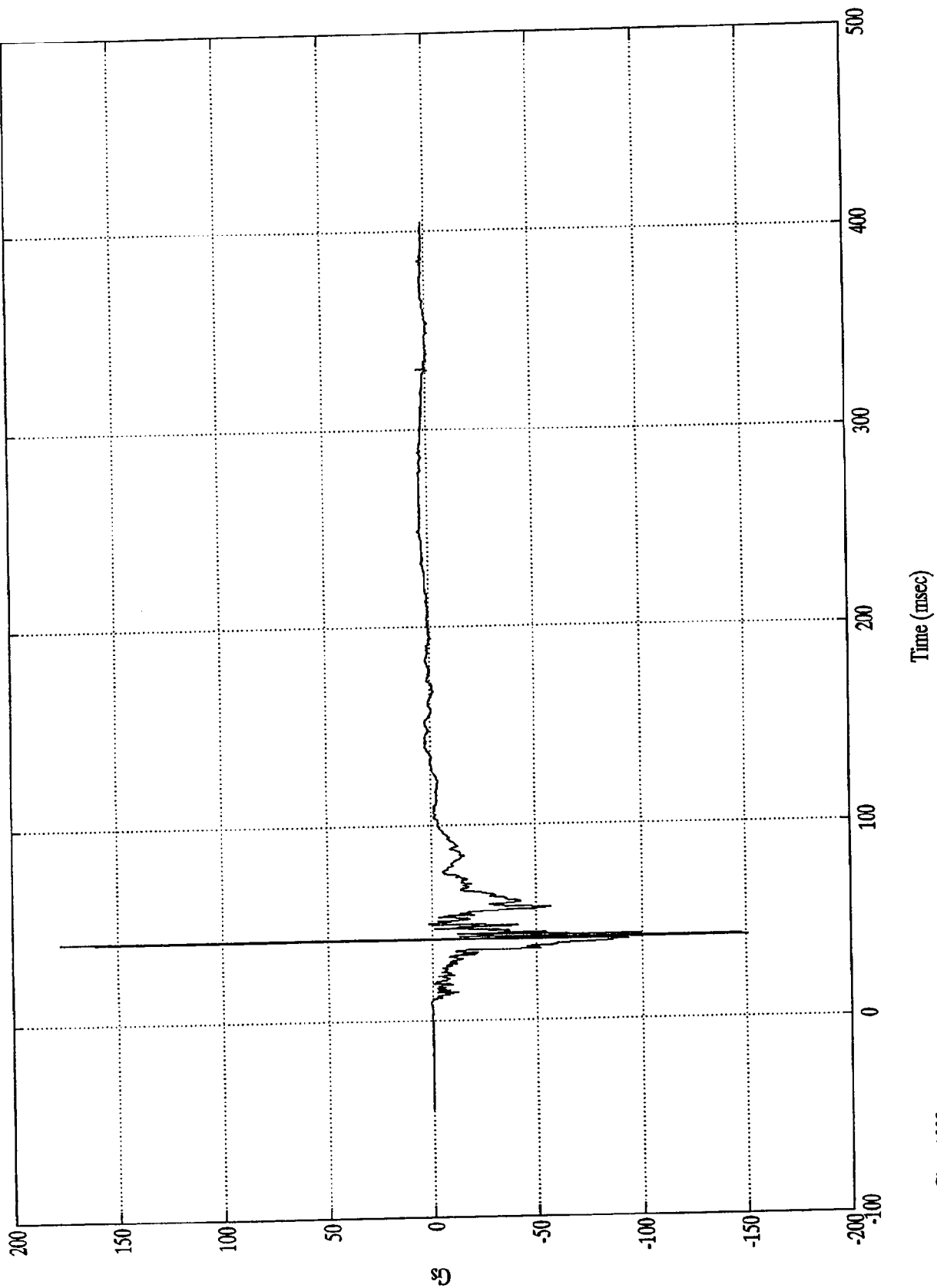


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 L Foot Rear Z

Max = 177.54 Gs @ 41.40 msec
Min = -150.64 Gs @ 41.76 msec

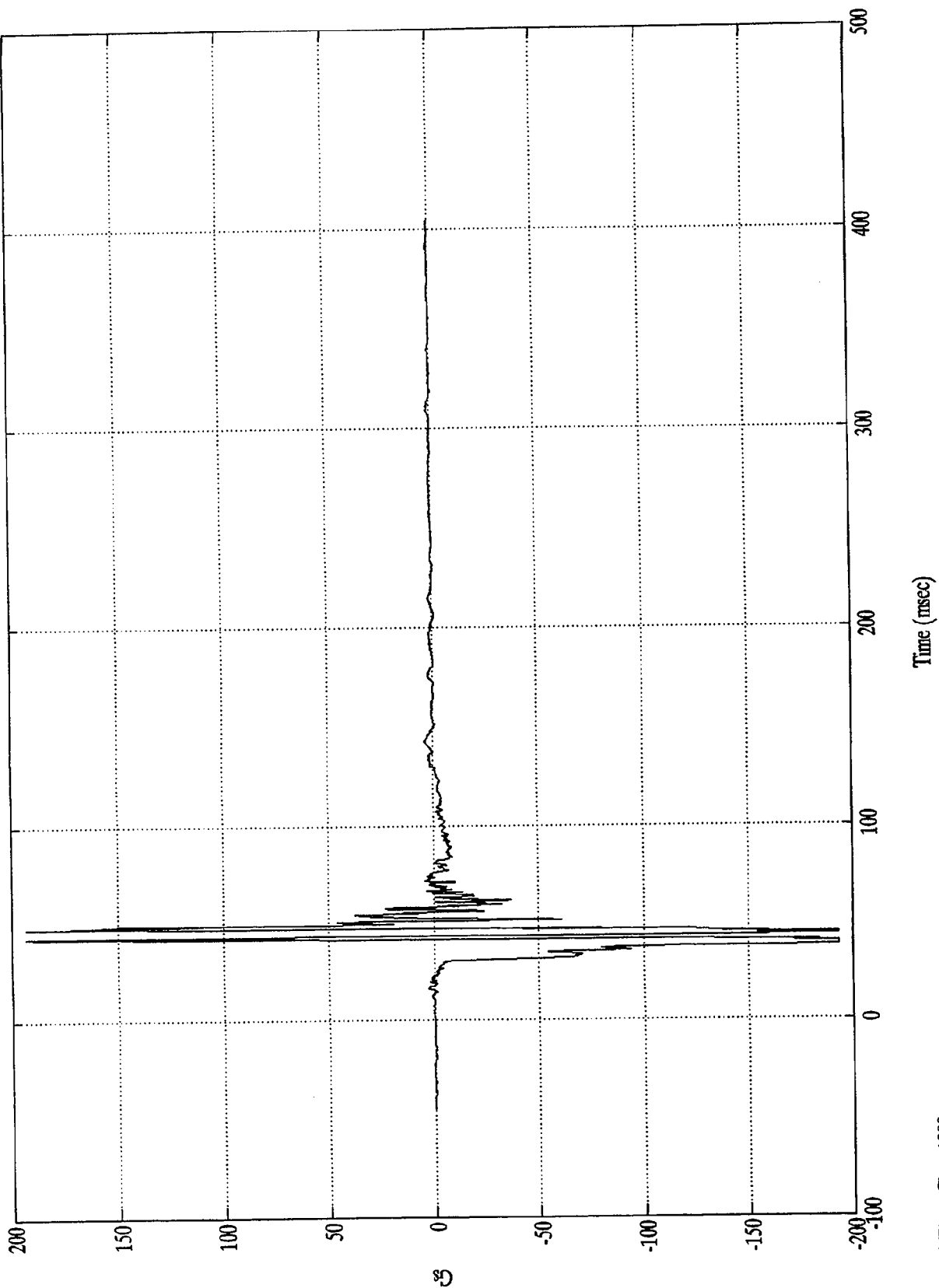


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 R. Foot Front Z

Max = 193.52 Gs @ 47.88 msec
Min = -193.40 Gs @ 45.00 msec

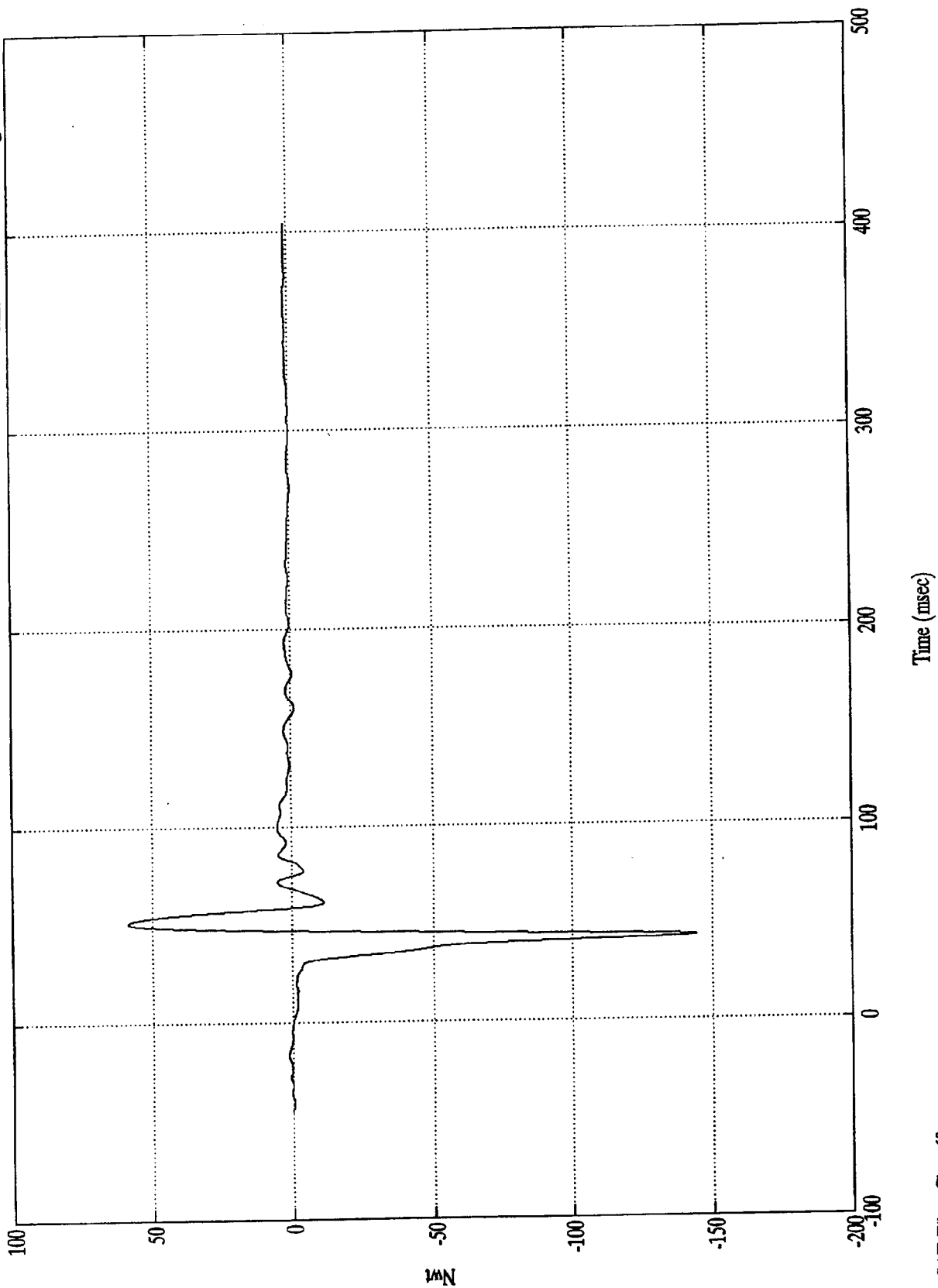


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 R.Foot Rear X

Max = 58.86 Nwt @ 51.47 msec
Min = -144.18 Nwt @ 43.20 msec

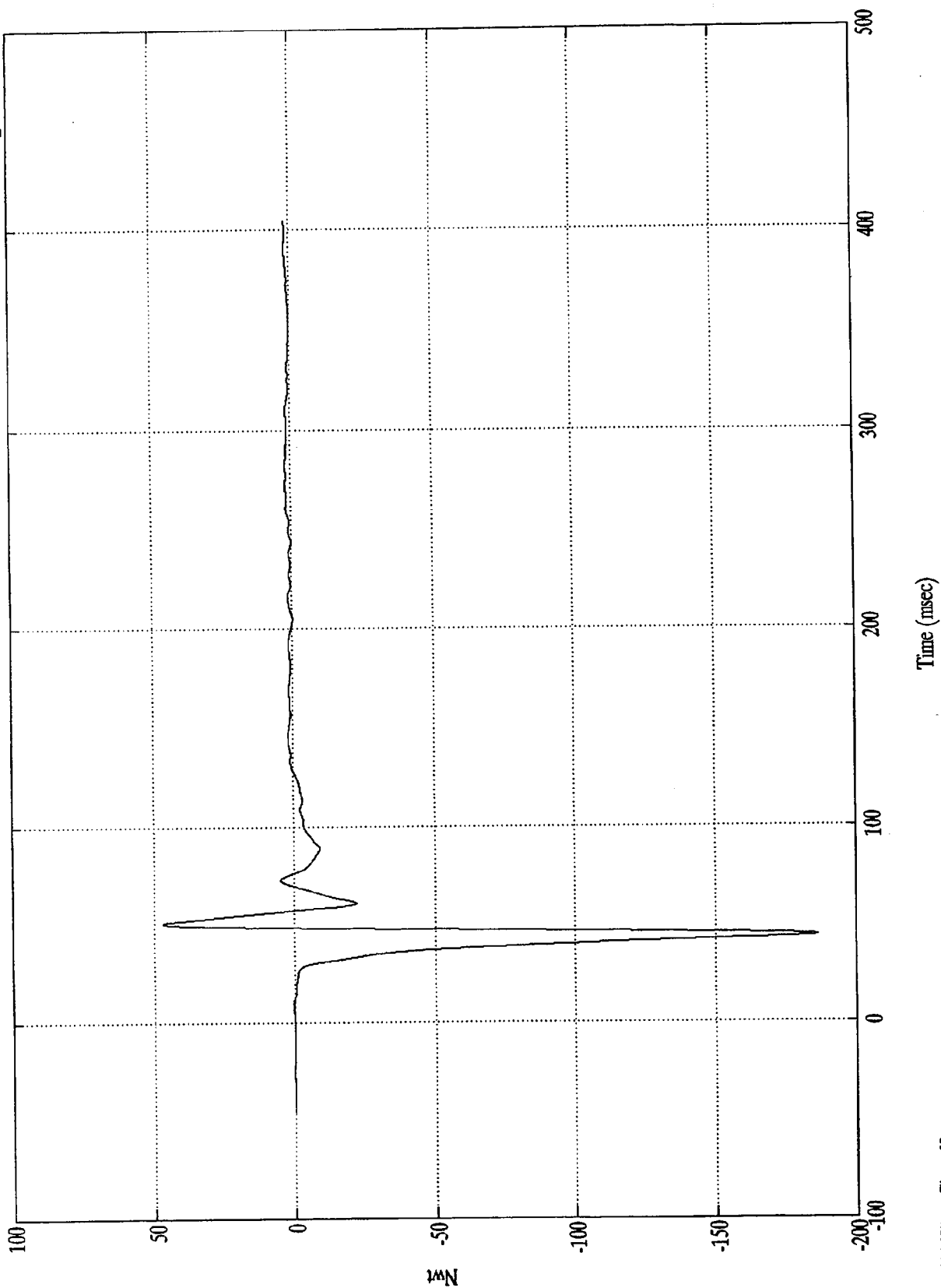


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 R.Foot Rear Z

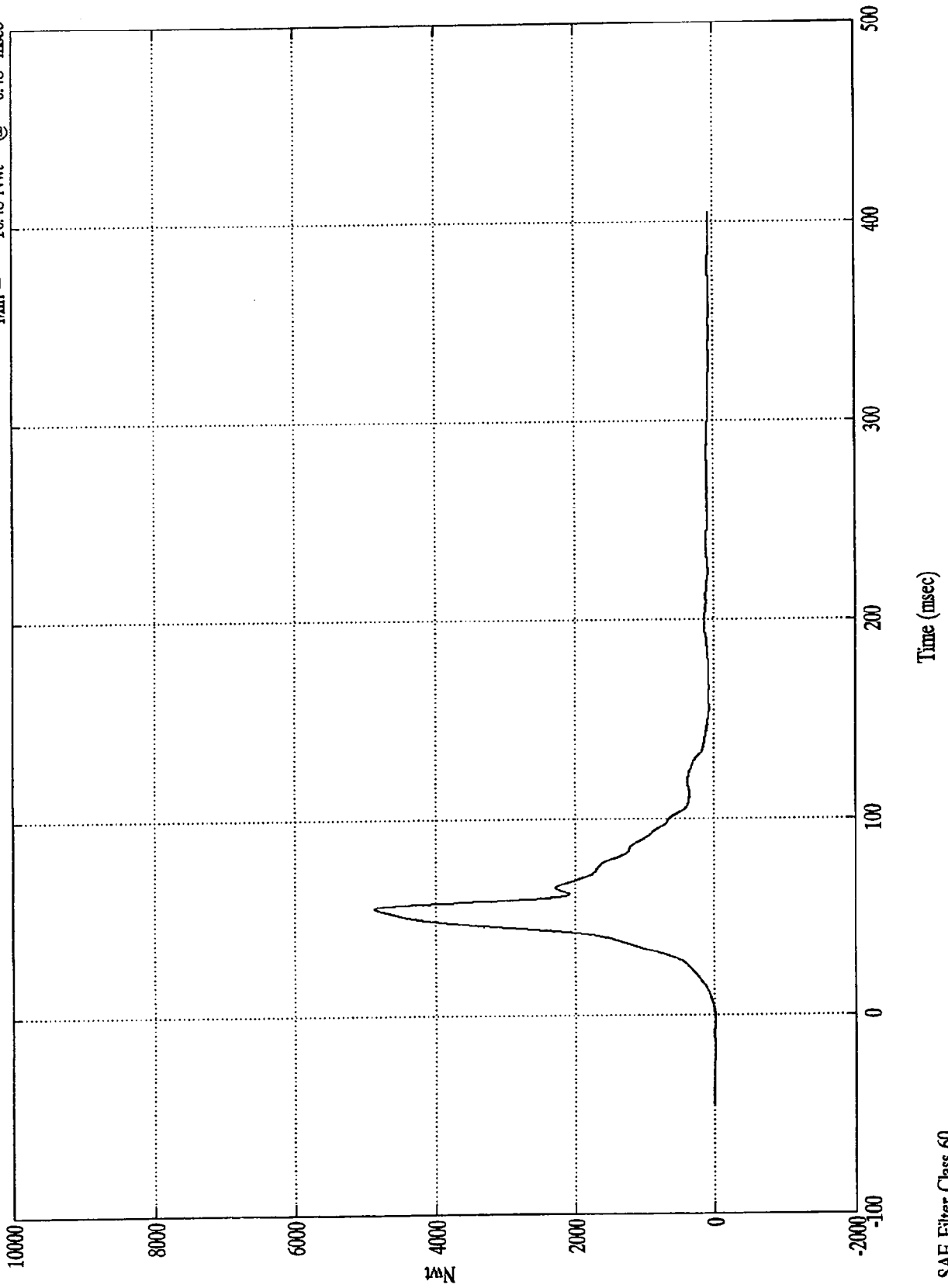
Max = 47.17 Nwt @ 50.28 msec
Min = -186.10 Nwt @ 43.91 msec



SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

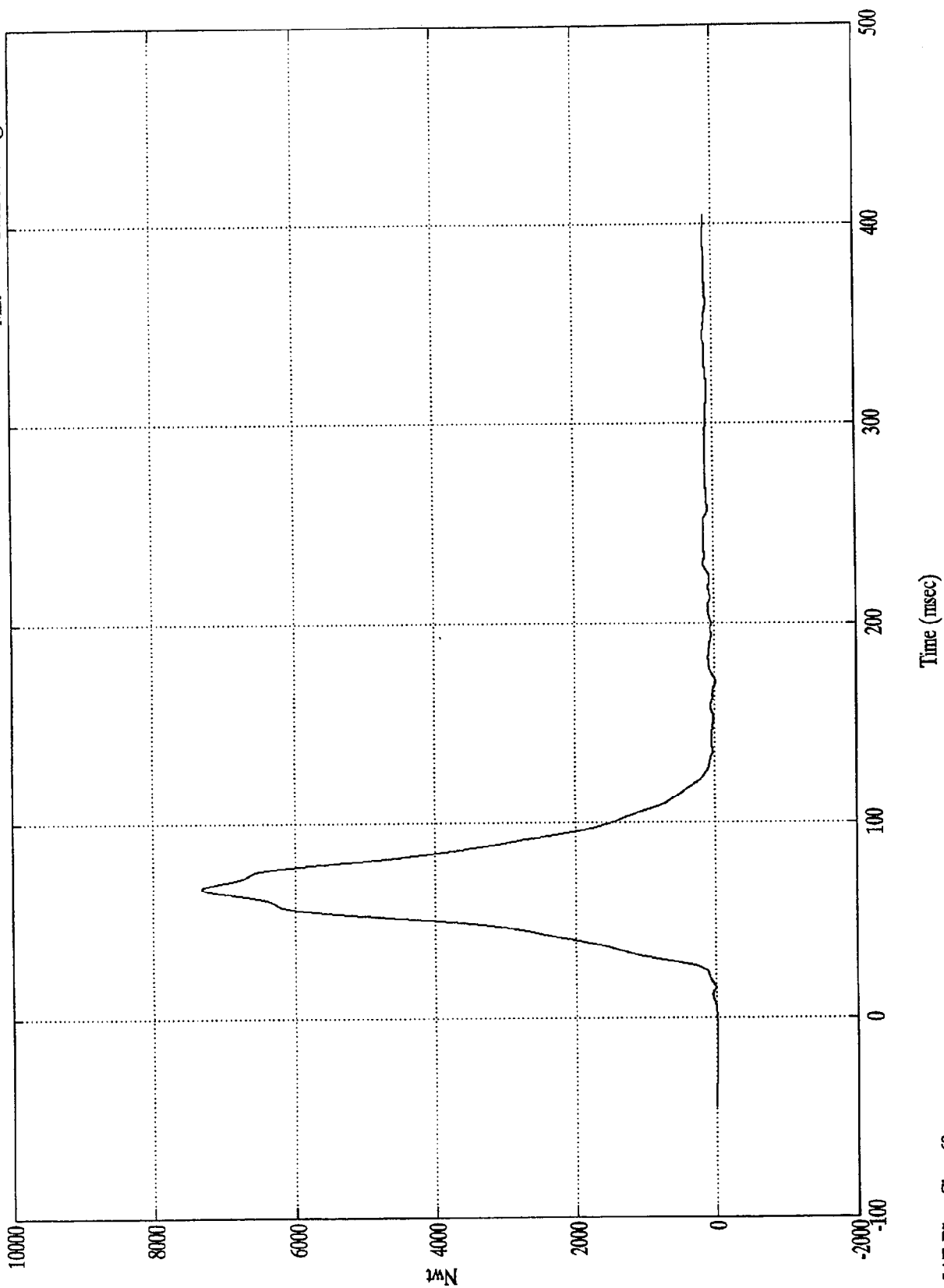
Pos. 1 Left Belt Load
Max = 4865.22 Nwt @ 54.36 msec
Min = -10.48 Nwt @ -0.48 msec



SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Torso Belt Load
Max = 7318.99 Nwt @ 67.08 msec
Min = -14.32 Nwt @ -12.96 msec

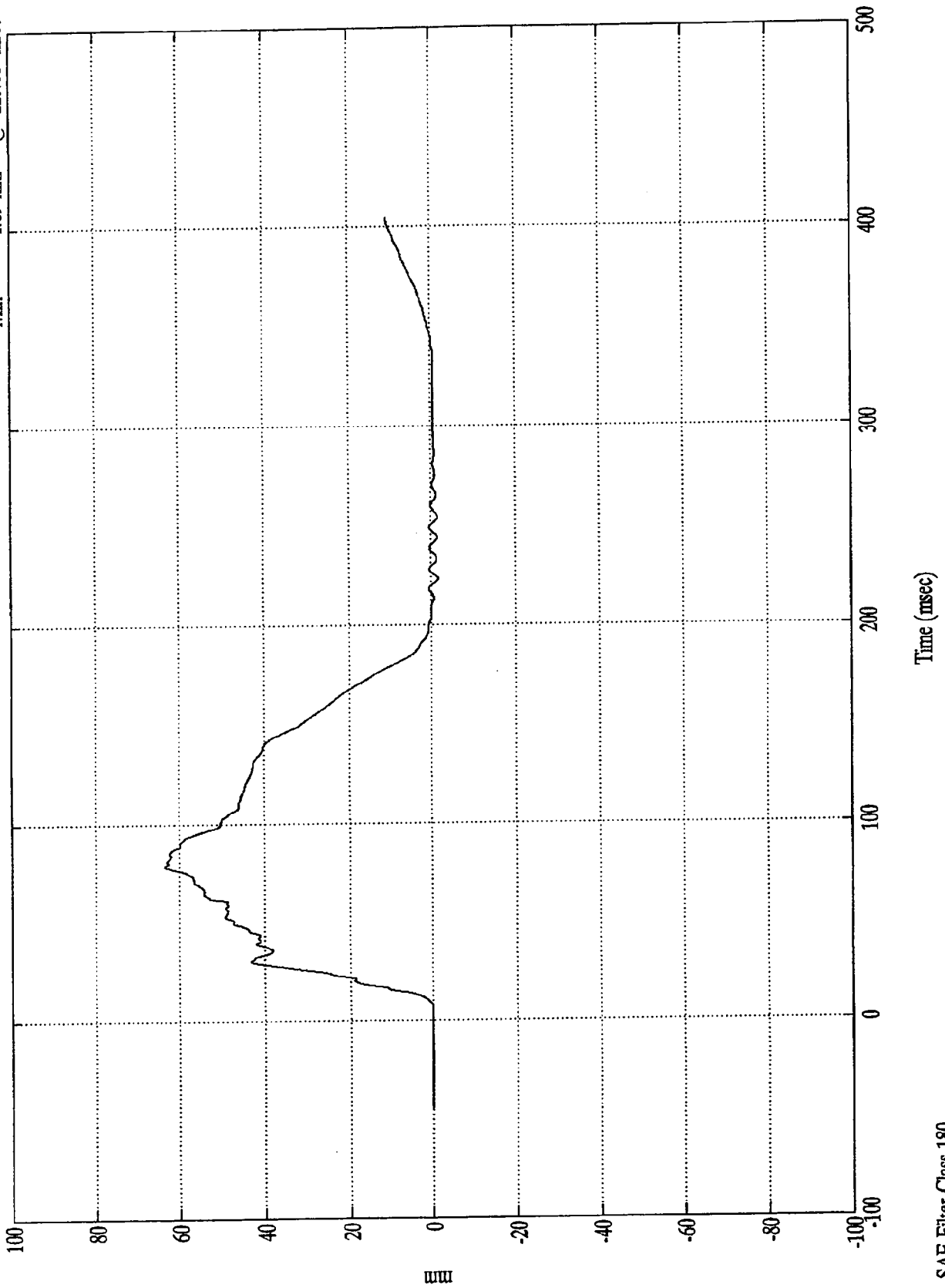


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Pos. 1 Belt Spool Out

Max = 63.32 mm @ 79.08 msec
Min = -1.69 mm @ 223.68 msec

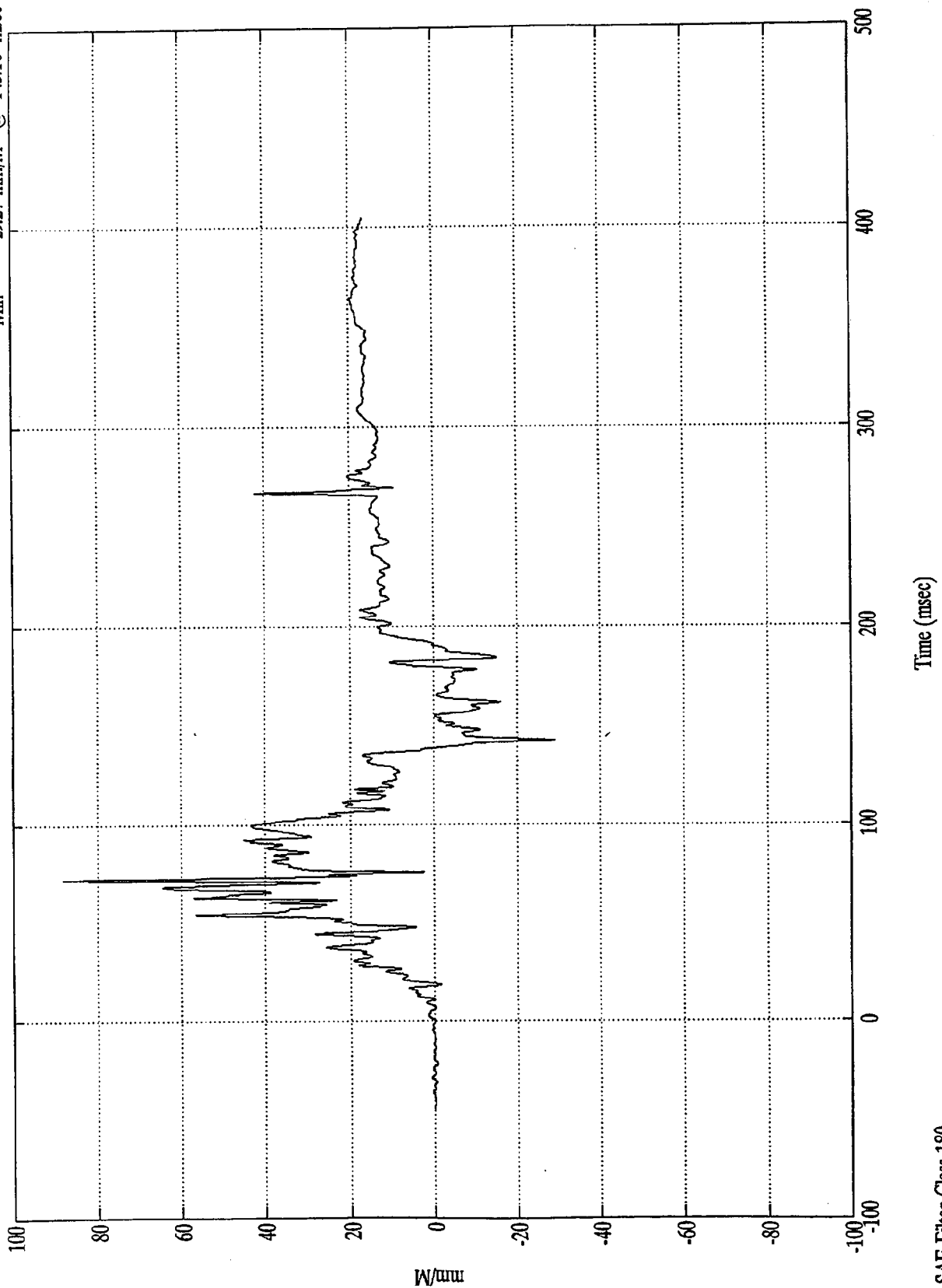


SAE Filter Class 180

NCAP TEST #3 - 19% ACURA LT

Pos. 1 Belt Elongation

Max = 88.16 mm/M @ 72.24 msec
Min = -29.27 mm/M @ 143.16 msec

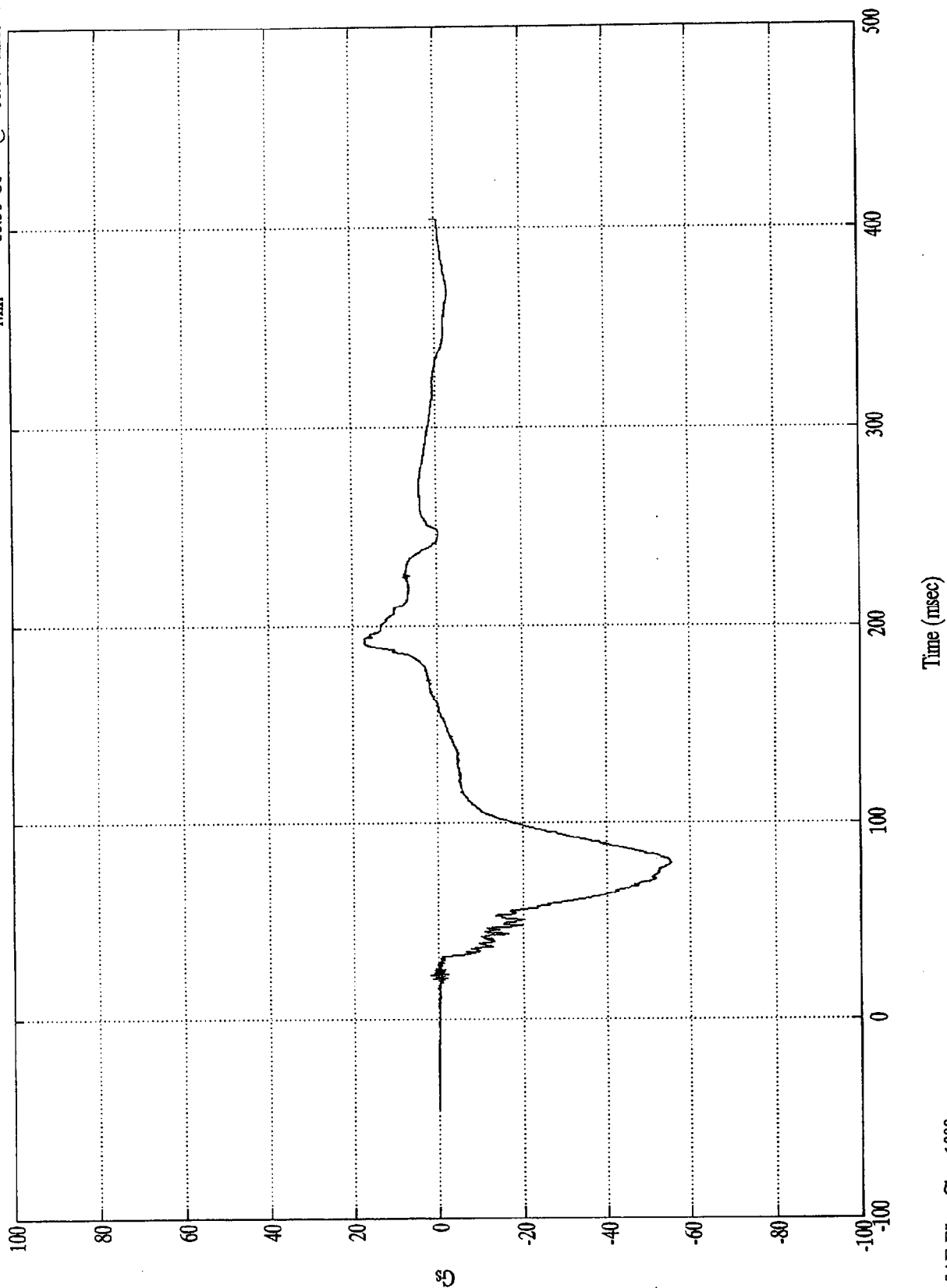


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head X

Max = 17.35 Gs @ 192.00 msec
Min = -55.50 Gs @ 80.04 msec

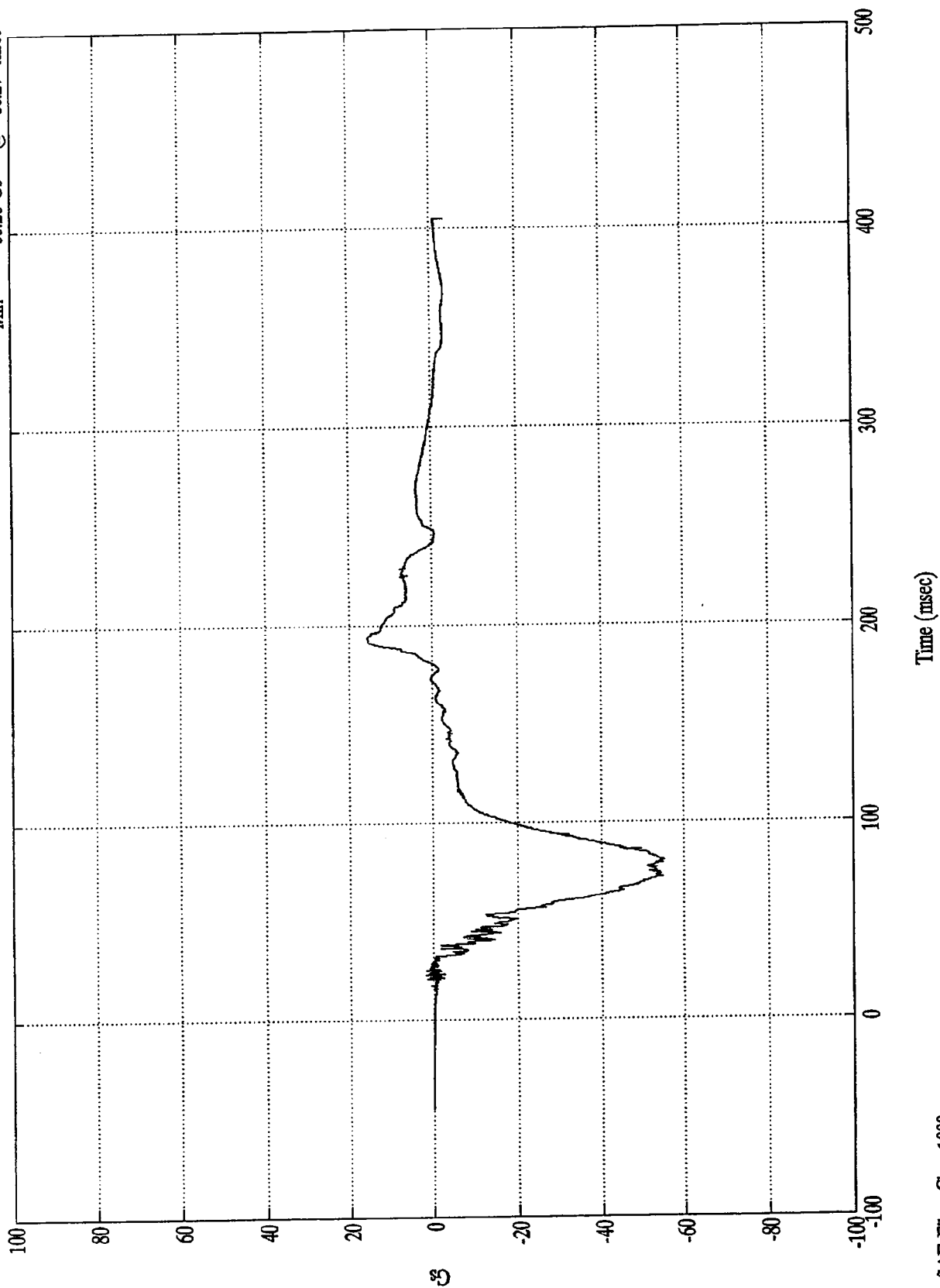


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head X(R)

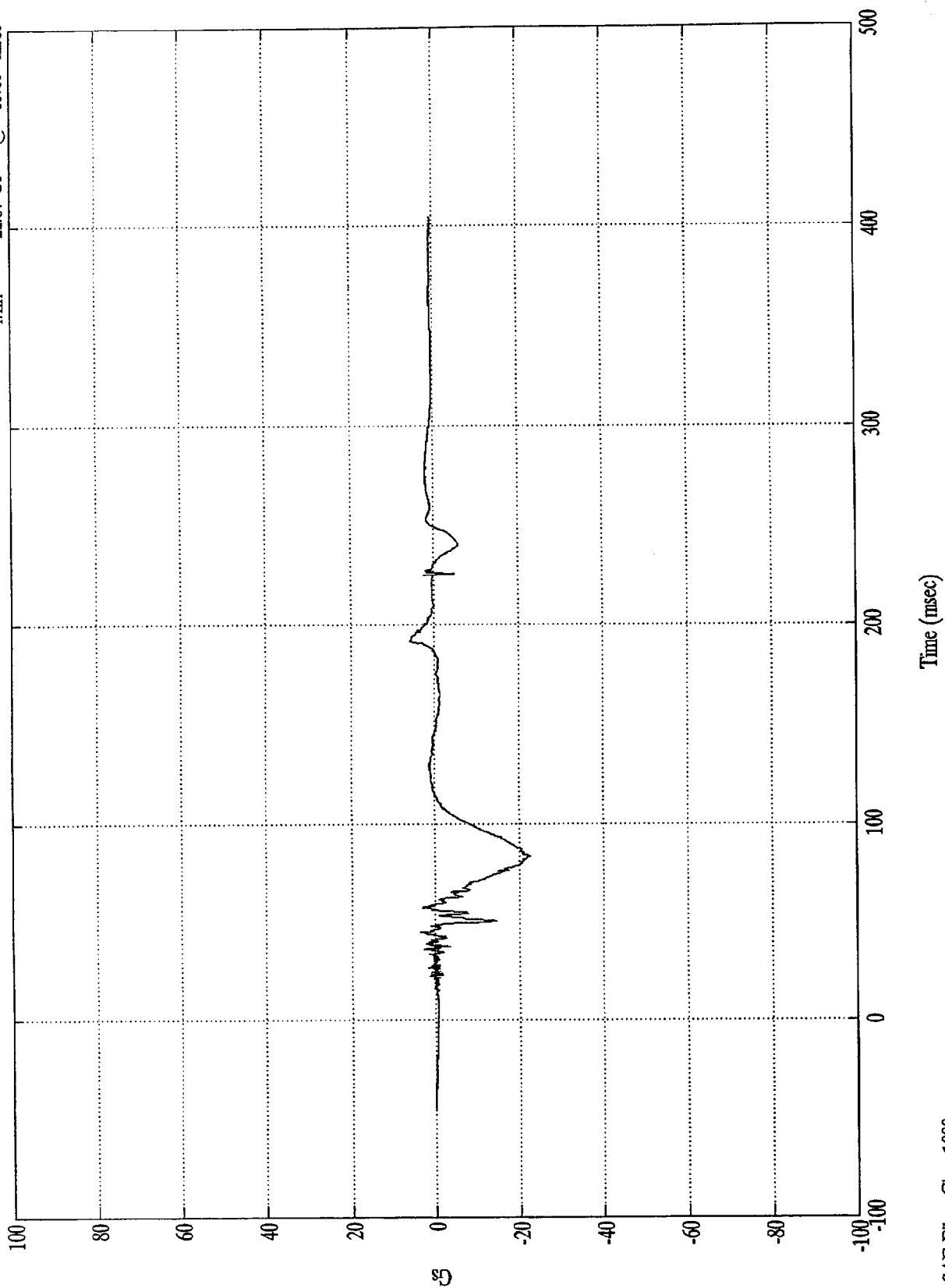
Max = 15.74 Gs @ 193.44 msec
Min = -55.20 Gs @ 80.27 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head Y

Max = 5.89 Gs @ 191.88 msec
Min = -22.87 Gs @ 83.63 msec

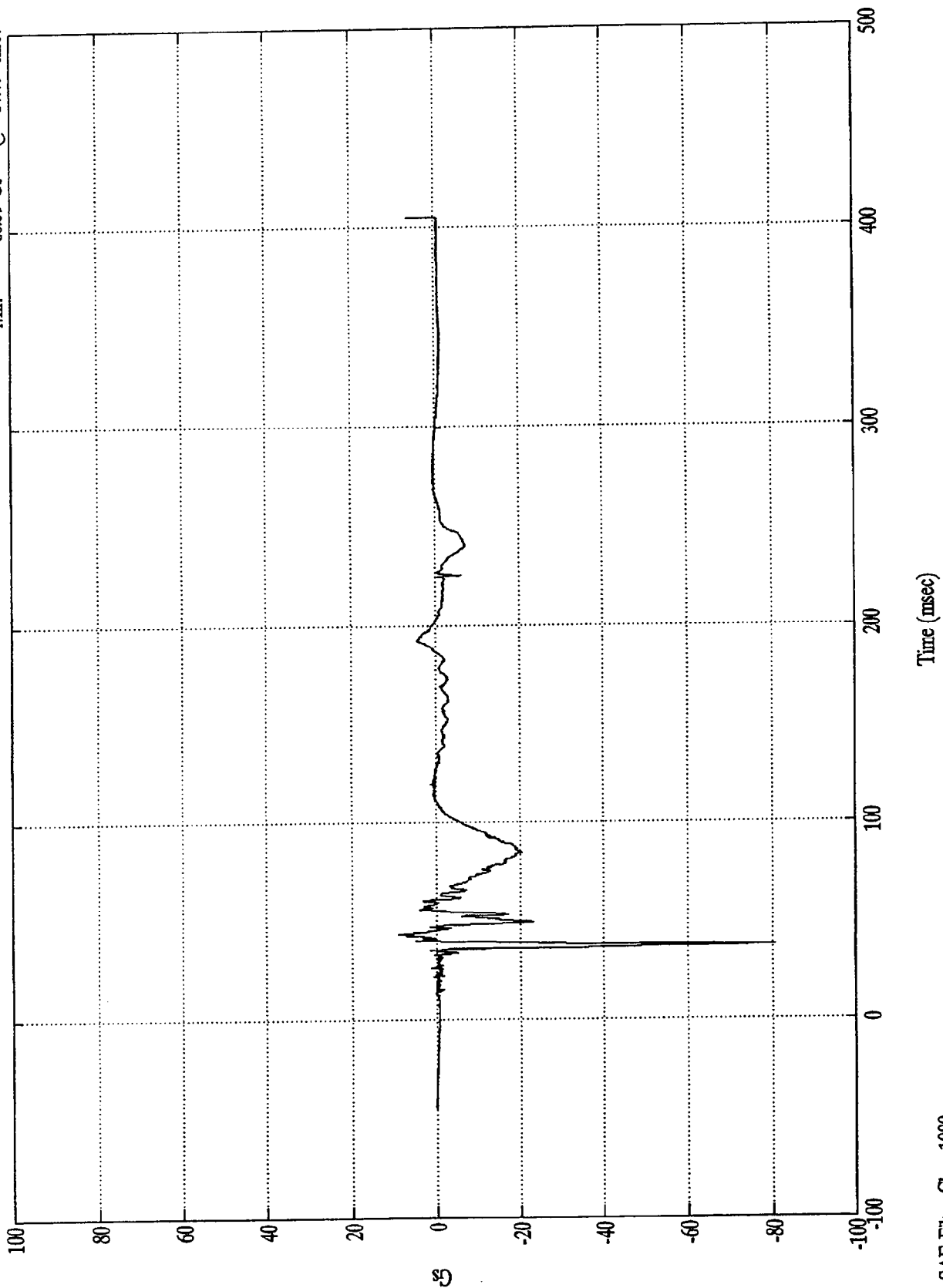


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head Y(R)

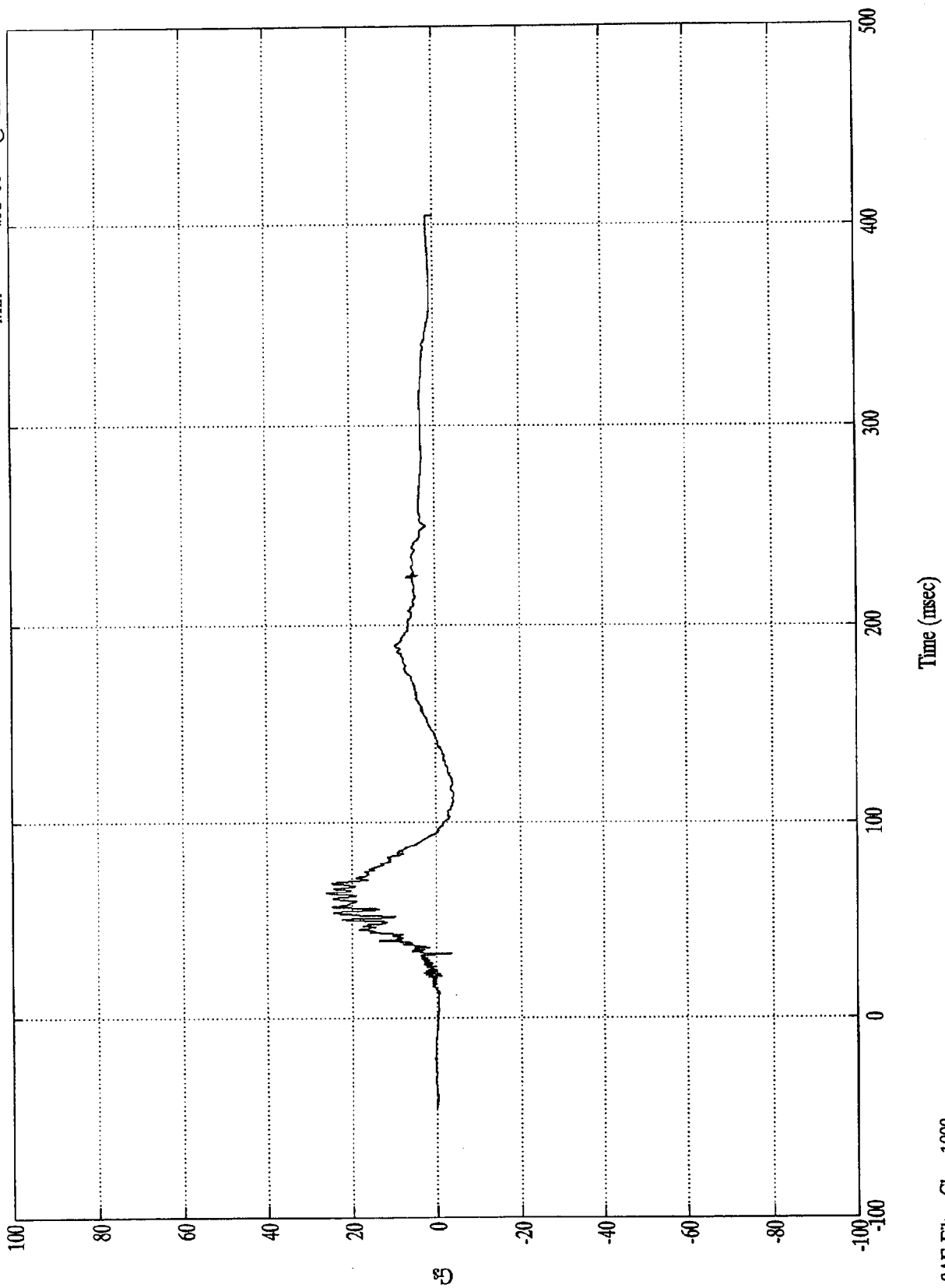
Max = 8.89 Gs @ 43.68 msec
Min = -80.59 Gs @ 37.79 msec



SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head Z
Max = 25.91 Gs @ 64.08 msec
Min = -4.31 Gs @ 115.20 msec

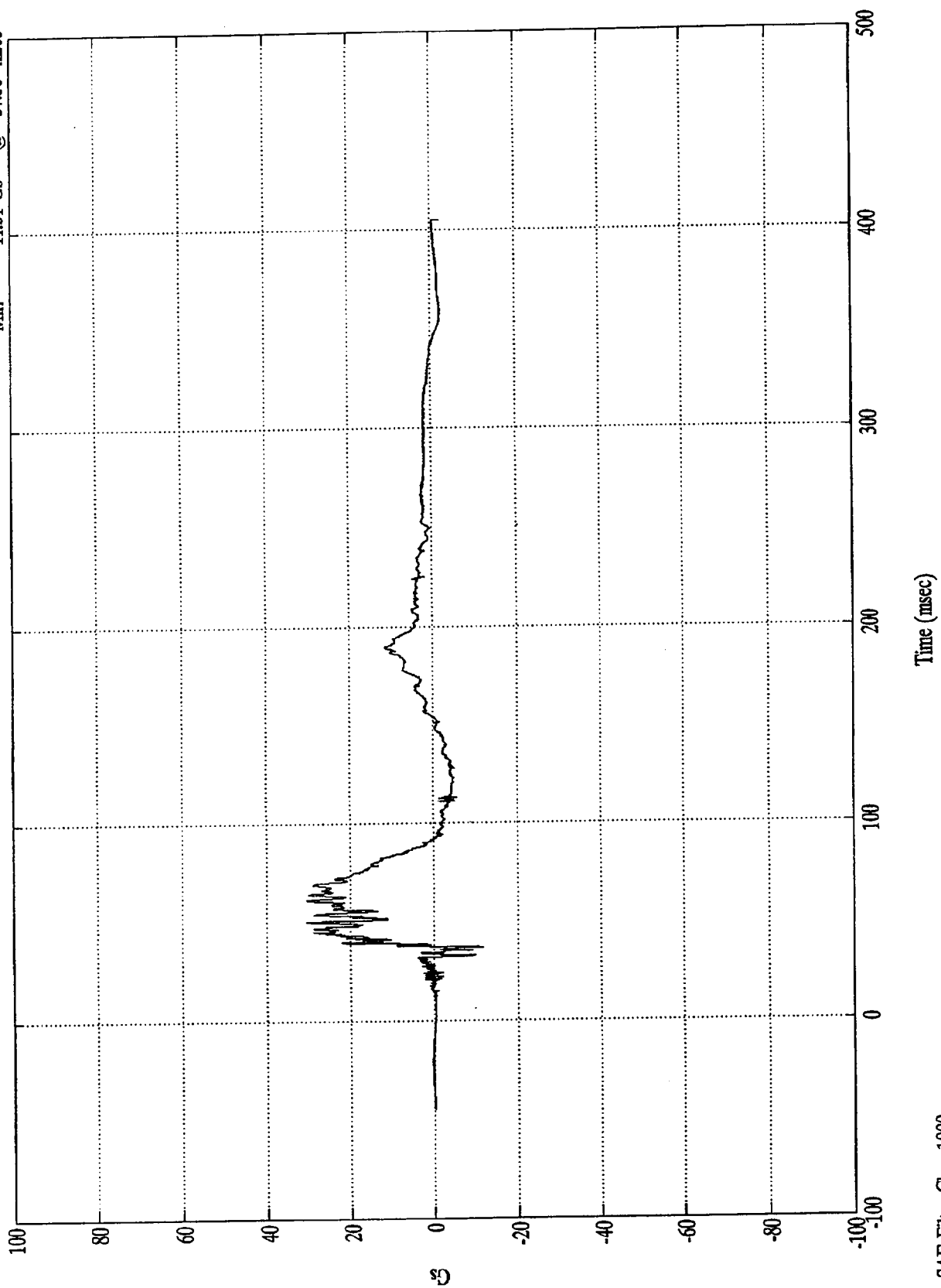


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head Z(R)

Max = 30.46 Gs @ 50.52 msec
Min = -11.51 Gs @ 37.56 msec

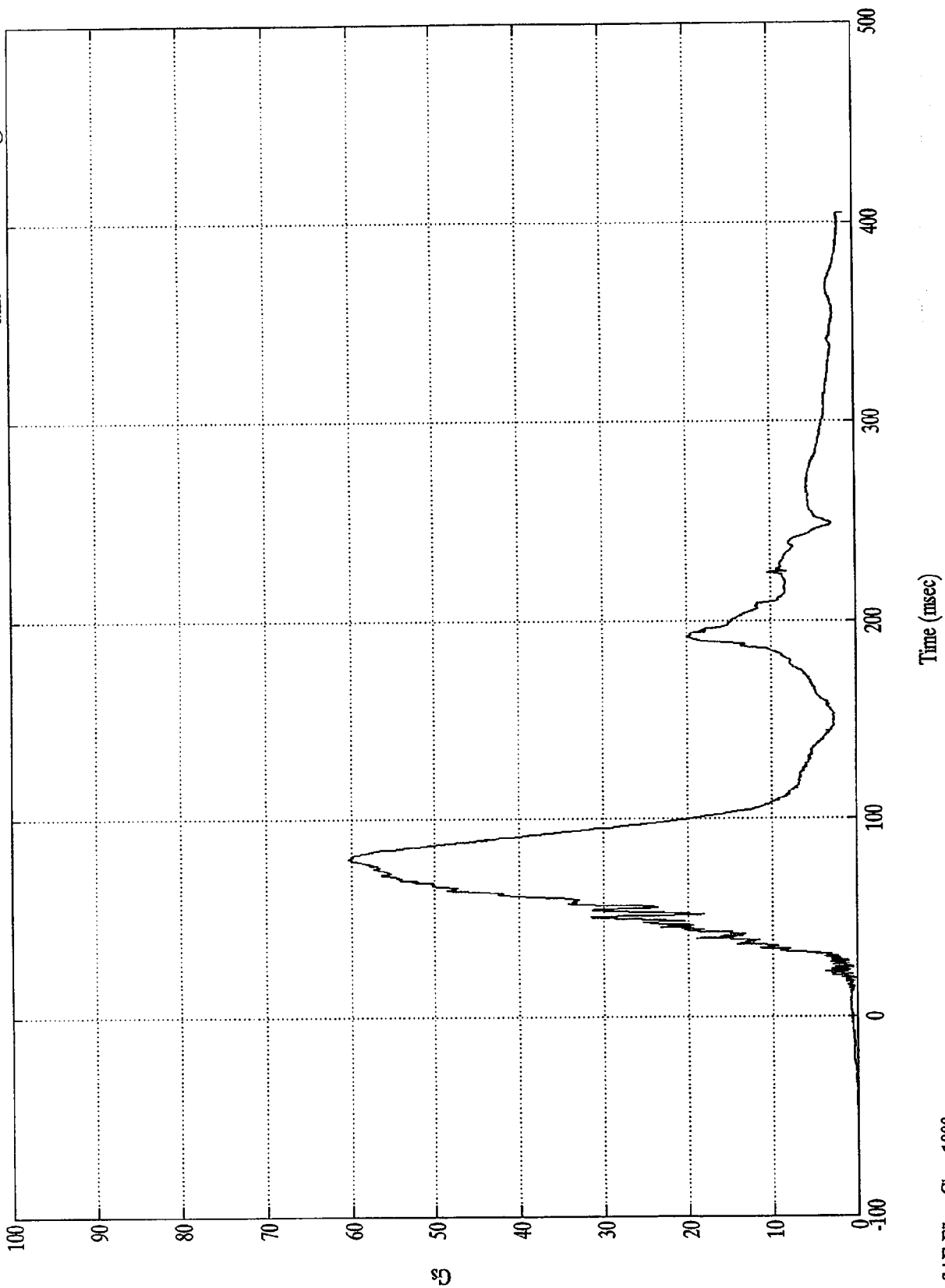


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head Resultant

Max = 60.27 Gs @ 79.91 msec
Min = .05 Gs @ -35.15 msec

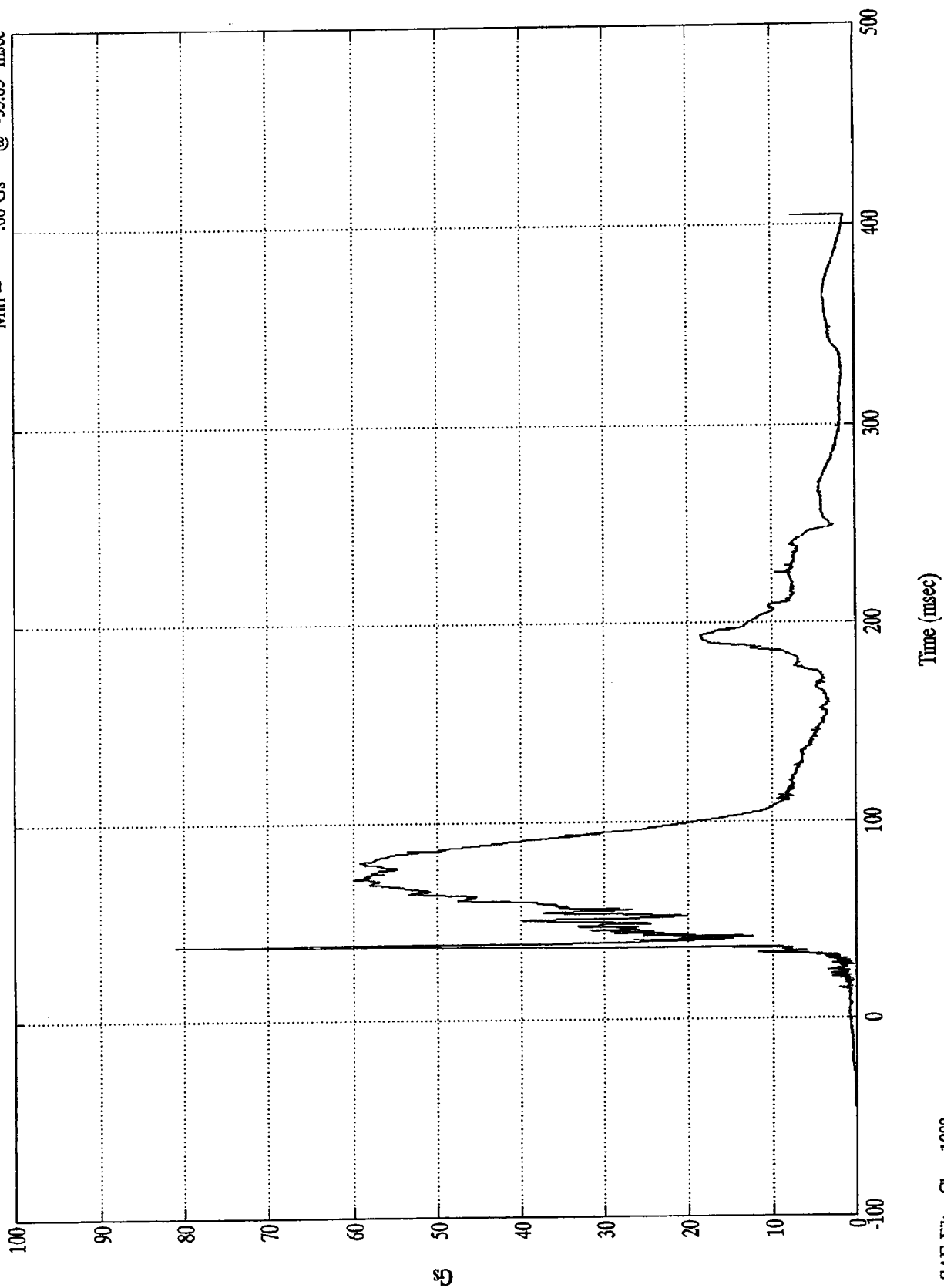


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Head Resultant(RR)

Max = 80.95 Gs @ 37.79 msec
Min = .06 Gs @ -35.63 msec

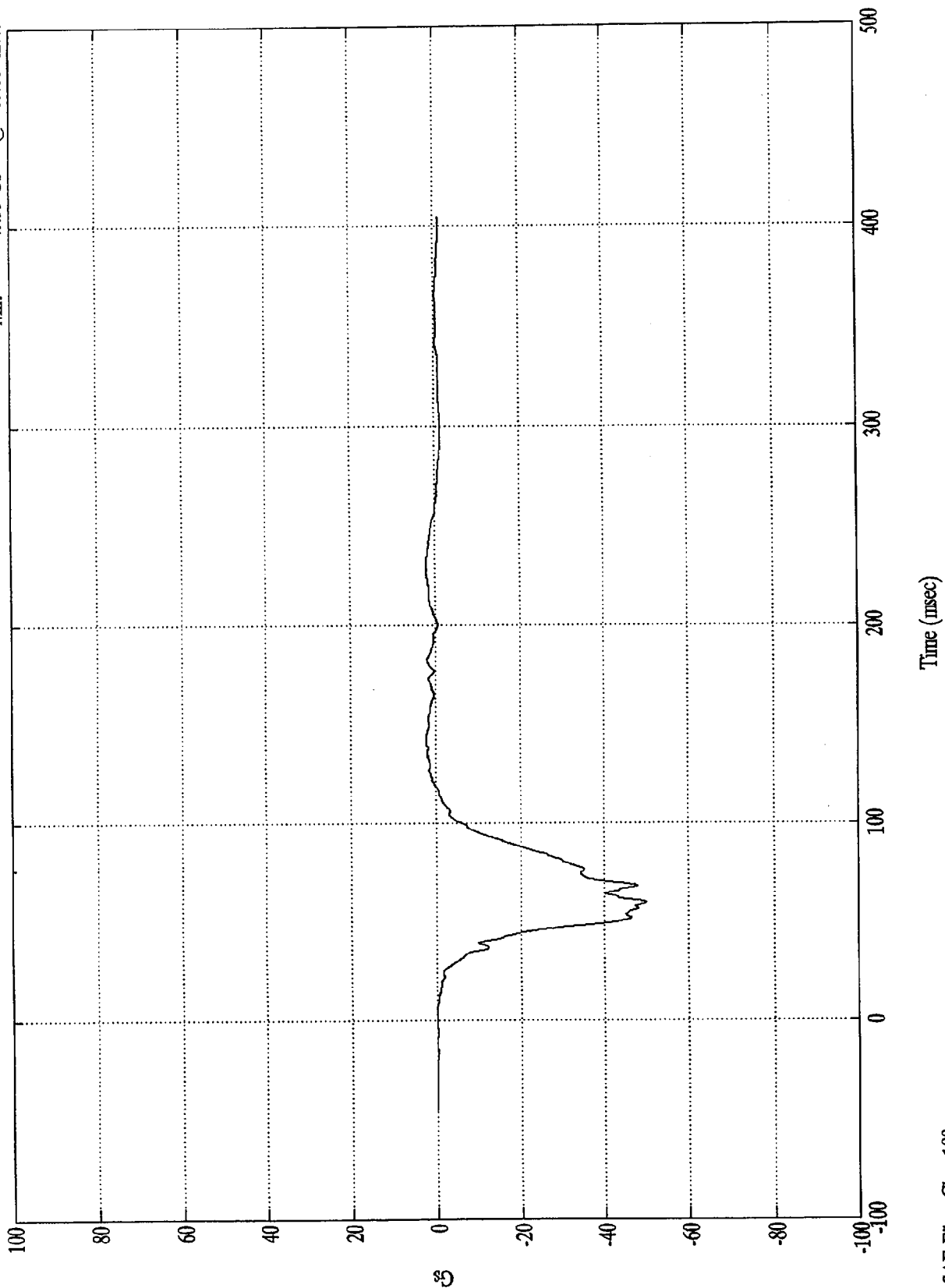


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest X

Max = 2.30 Gs @ 142.20 msec
Min = -49.99 Gs @ 59.88 msec

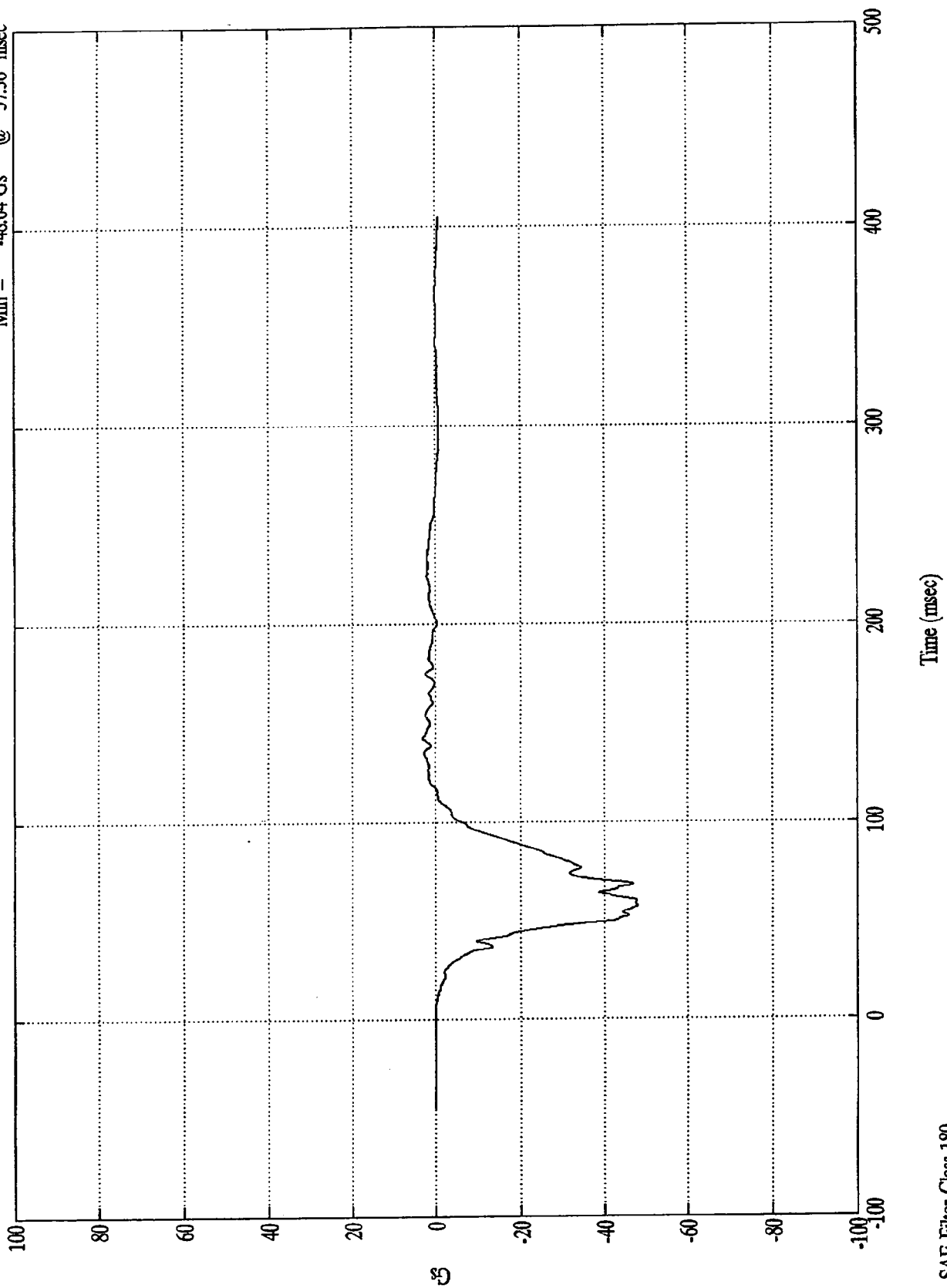


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest X(R)

Max = 3.16 Gs @ 142.32 msec
Min = -48.04 Gs @ 57.36 msec



SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest Y
Max = 7.99 Gs @ 53.63 msec
Min = -8.97 Gs @ 87.59 msec

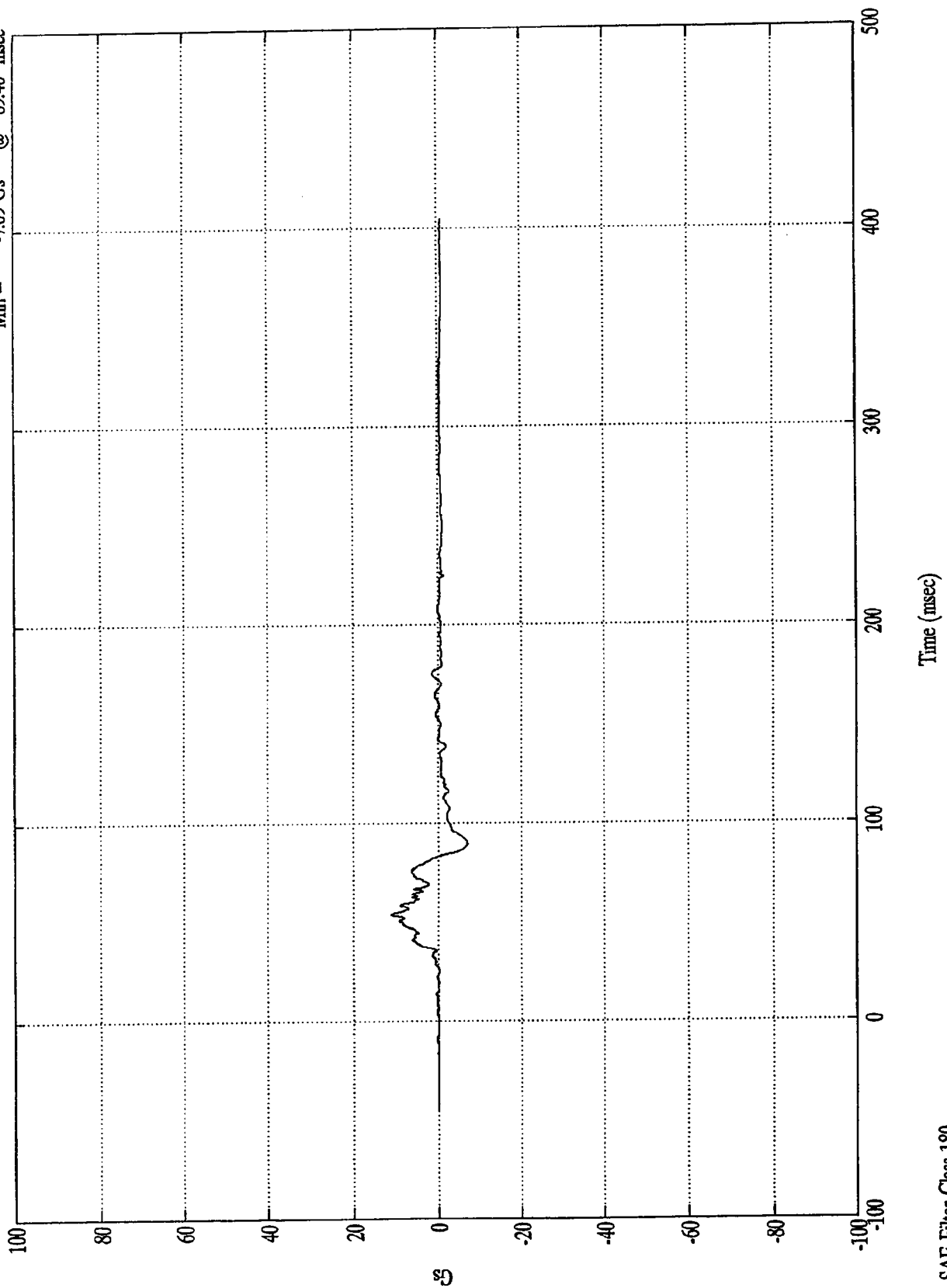


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest Y(R)

Max = 10.96 Gs @ 54.00 msec
Min = -7.09 Gs @ 89.40 msec

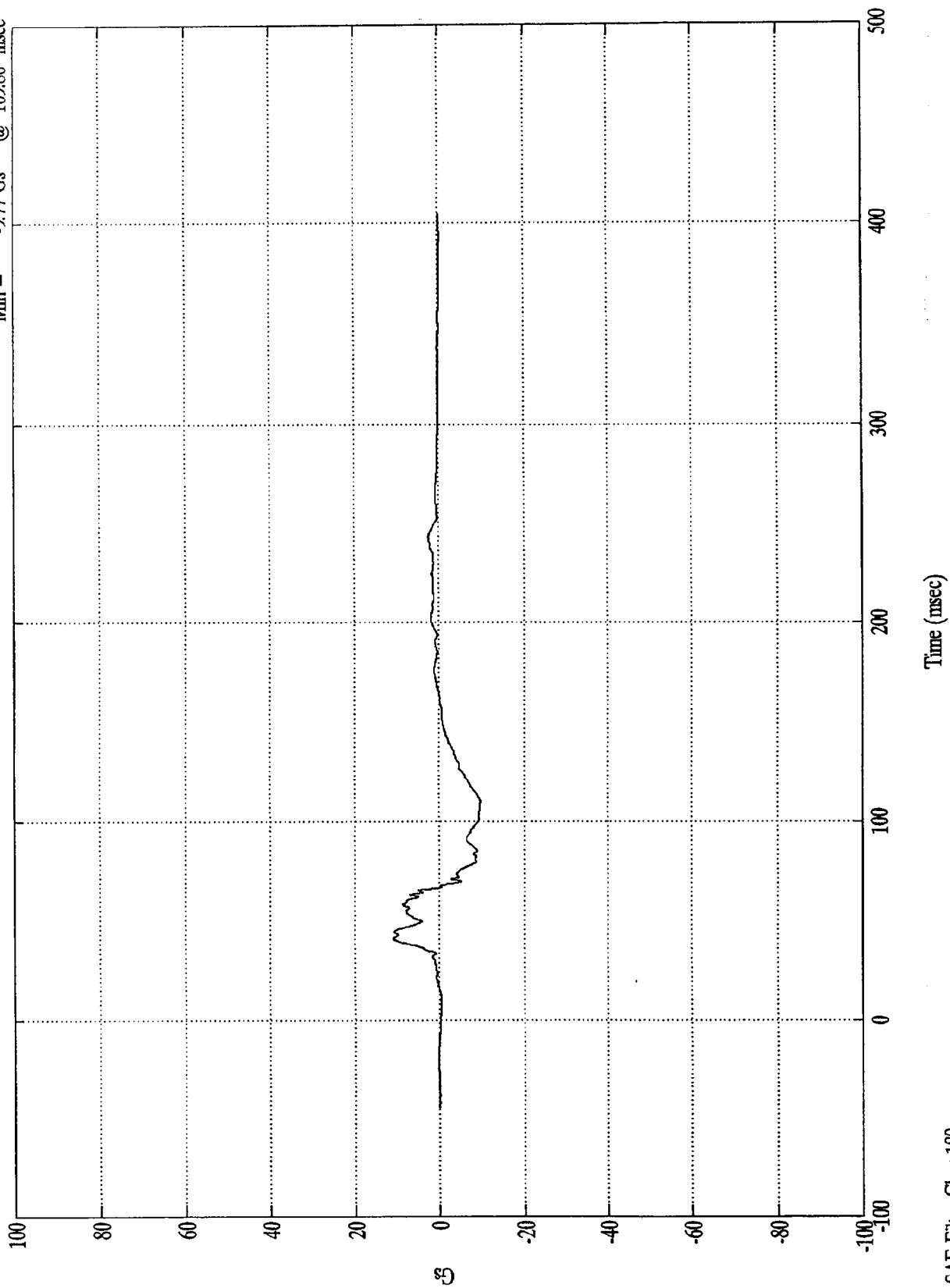


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Max = 10.77 Gs @ 41.28 msec
Min = -9.77 Gs @ 109.80 msec

Pos. 2 Chest Z

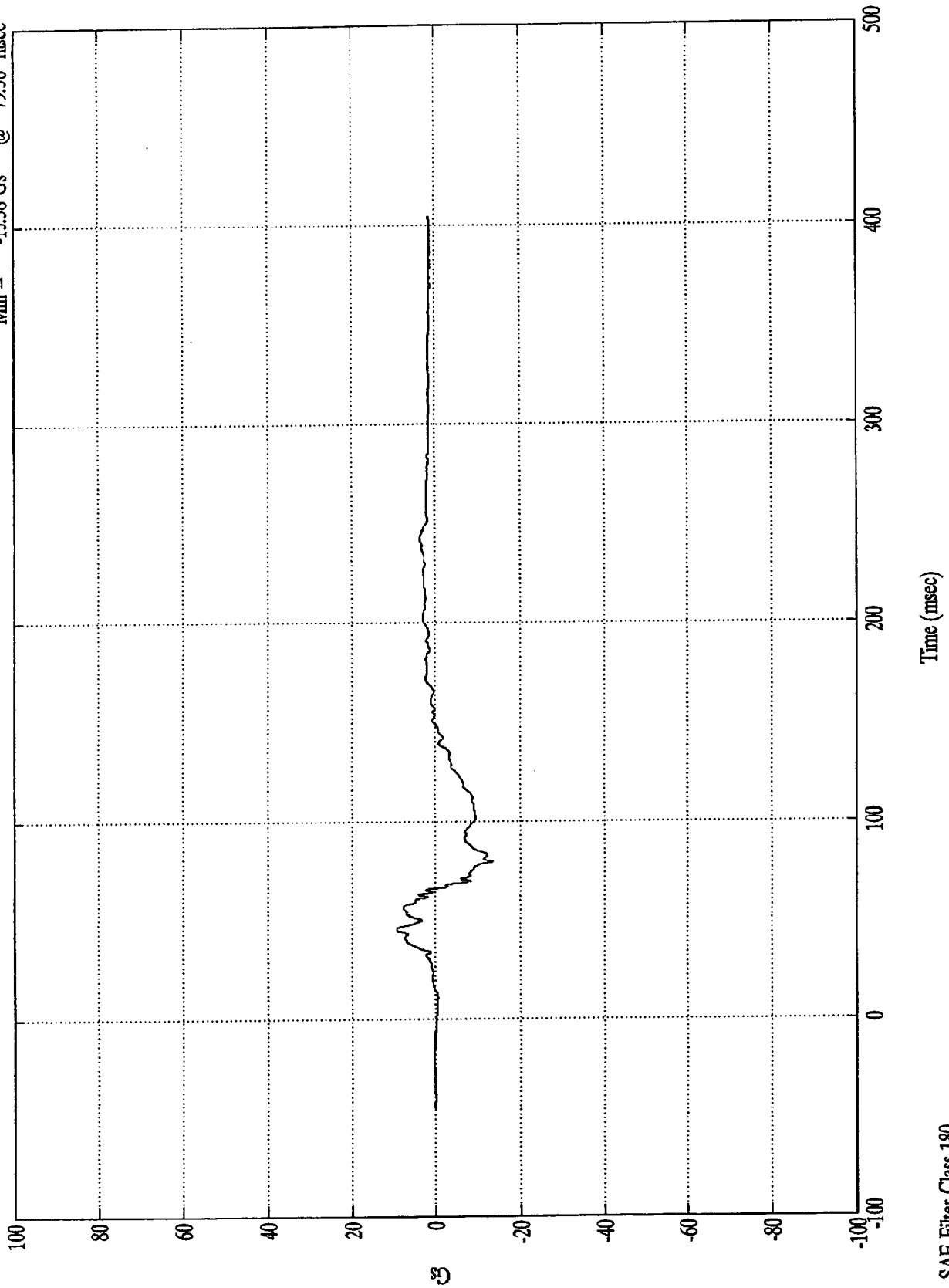


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest Z(R)

Max = 9.31 Gs @ 45.24 msec
Min = -13.58 Gs @ 79.56 msec

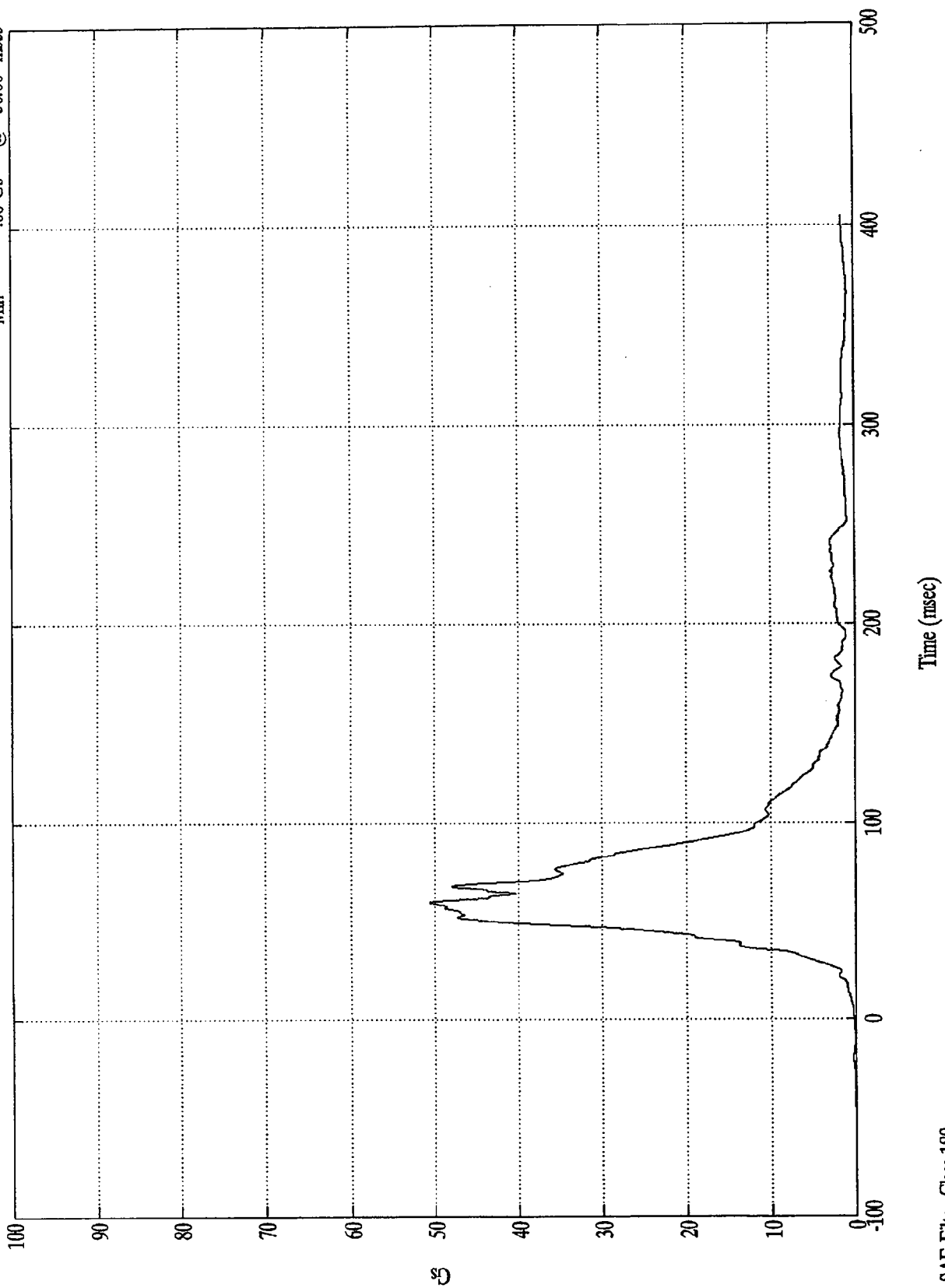


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest Resultant

Max = 50.59 Gs @ 59.88 msec
Min = .06 Gs @ -36.60 msec

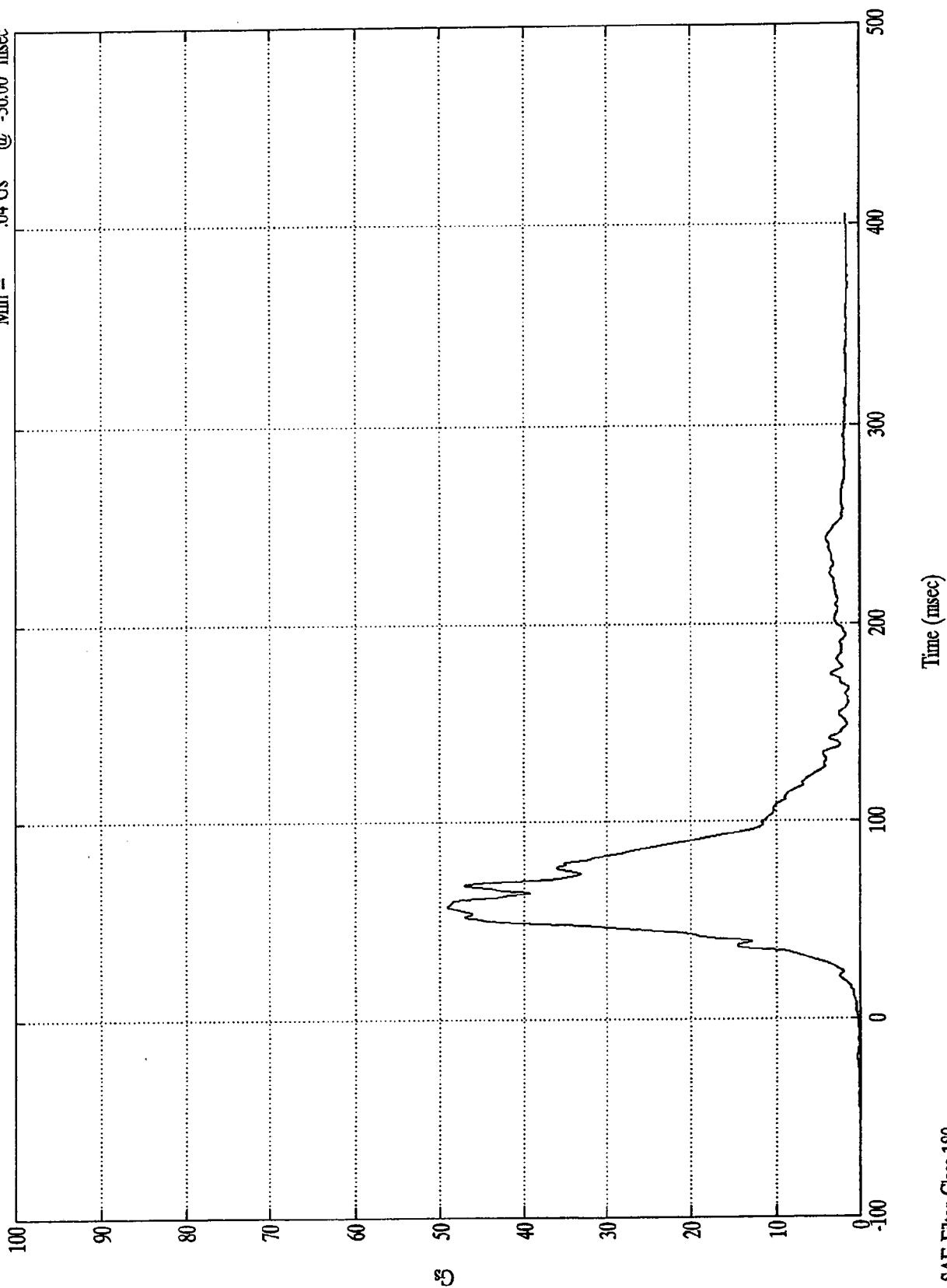


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest Res(RR)

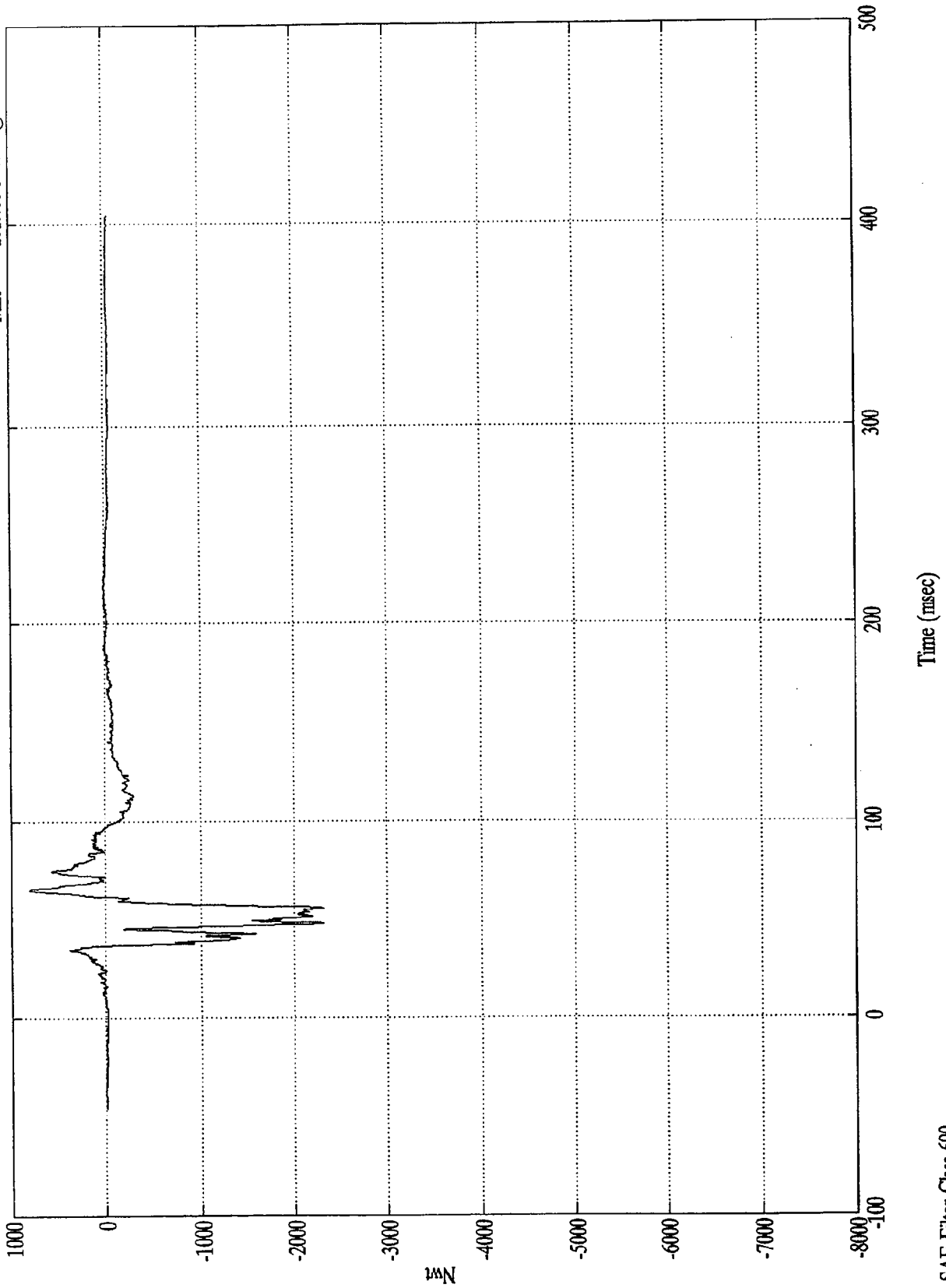
Max = 49.14 Gs @ 57.36 msec
Min = .04 Gs @ -36.00 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Left Femur

Max = 814.26 Nwt @ 64.91 msec
Min = -2313.00 Nwt @ 47.76 msec

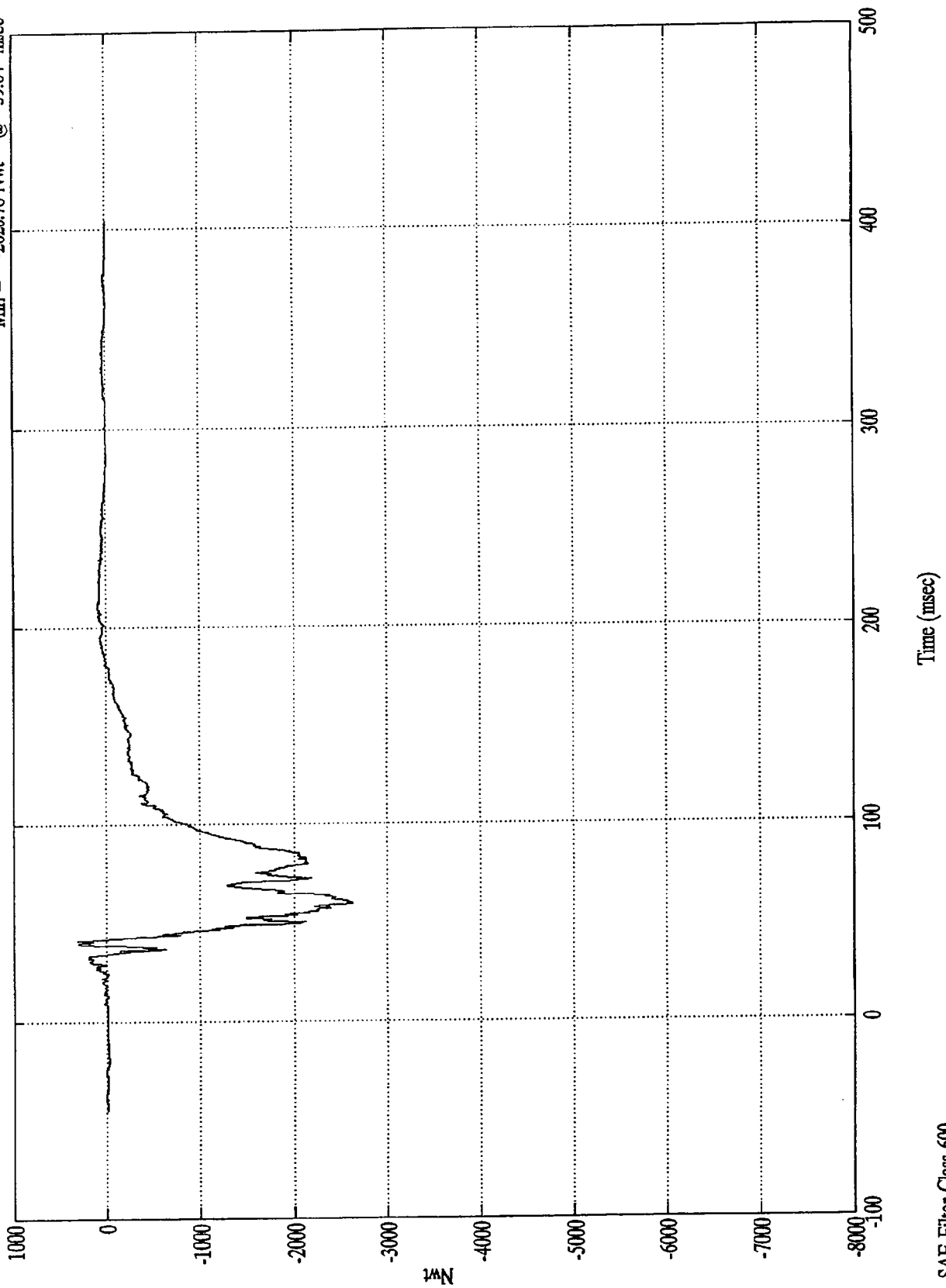


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Right Femur

Max = 321.01 Nwt @ 41.52 msec
Min = -2620.78 Nwt @ 59.64 msec

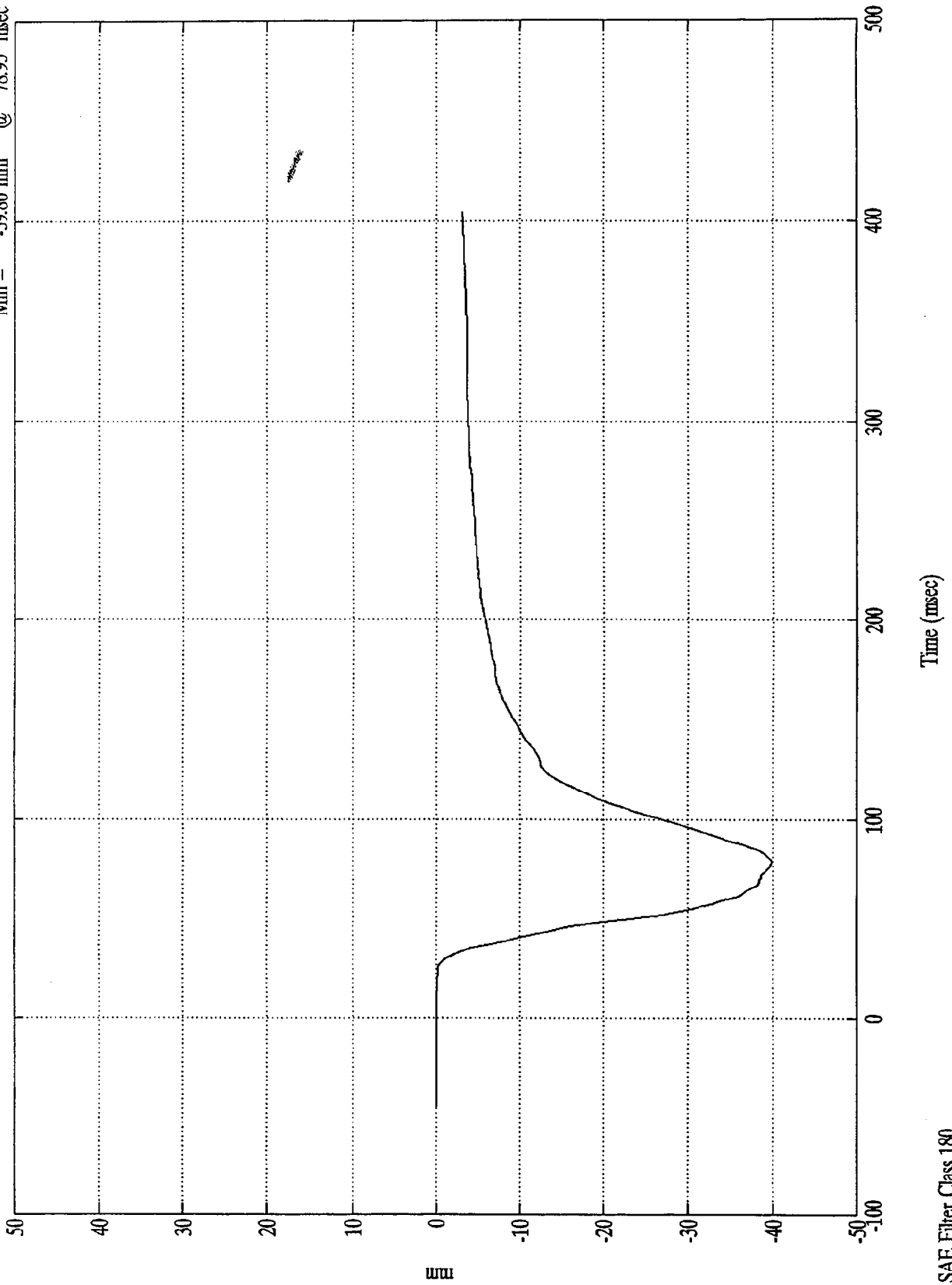


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Chest Disp.

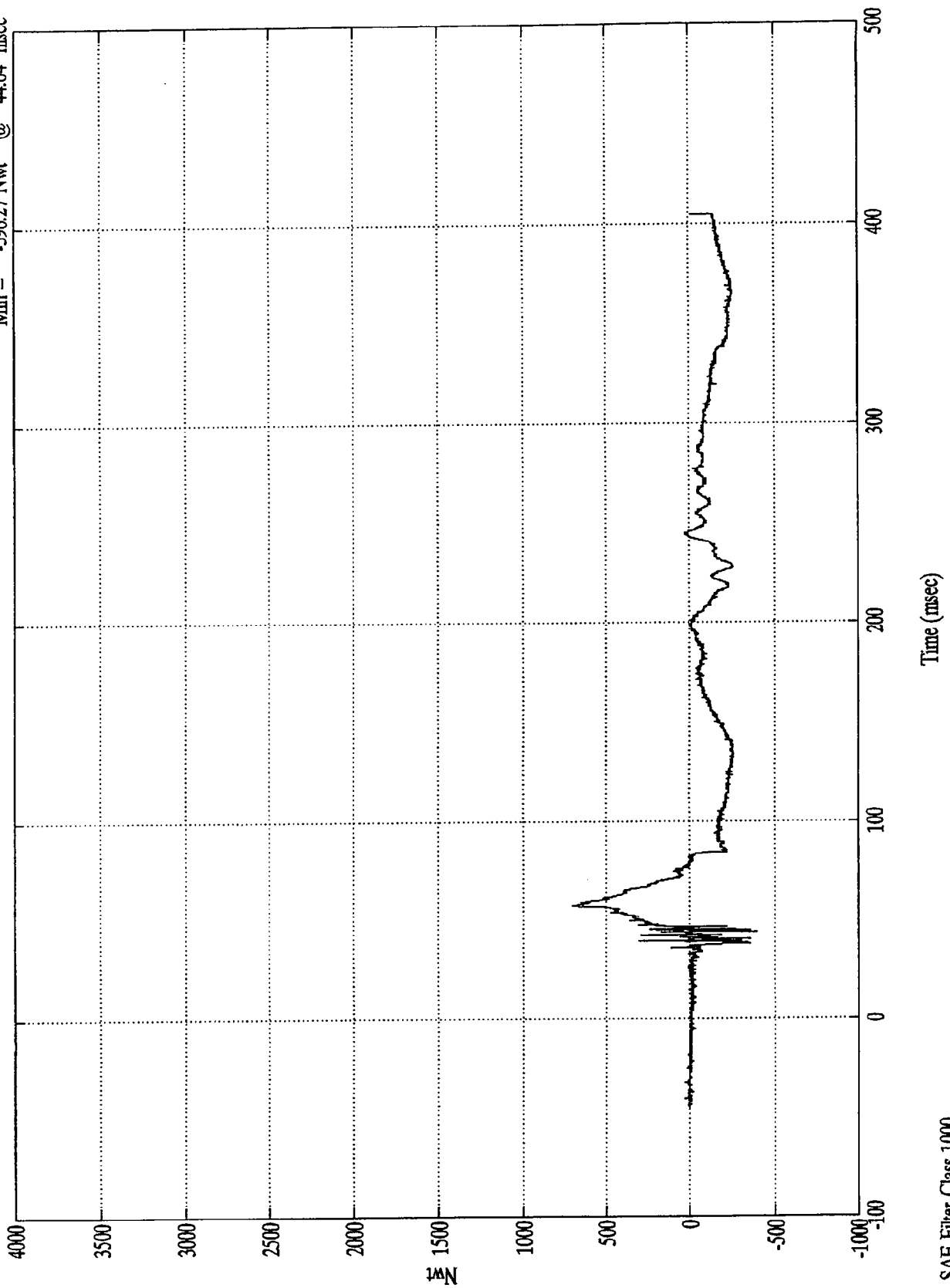
Max = .00 mm @ -9.60 msec
Min = -39.80 mm @ 78.95 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Upper Neck Fx

Max = 701.61 Nwt @ 57.84 msec
Min = -396.27 Nwt @ 44.04 msec

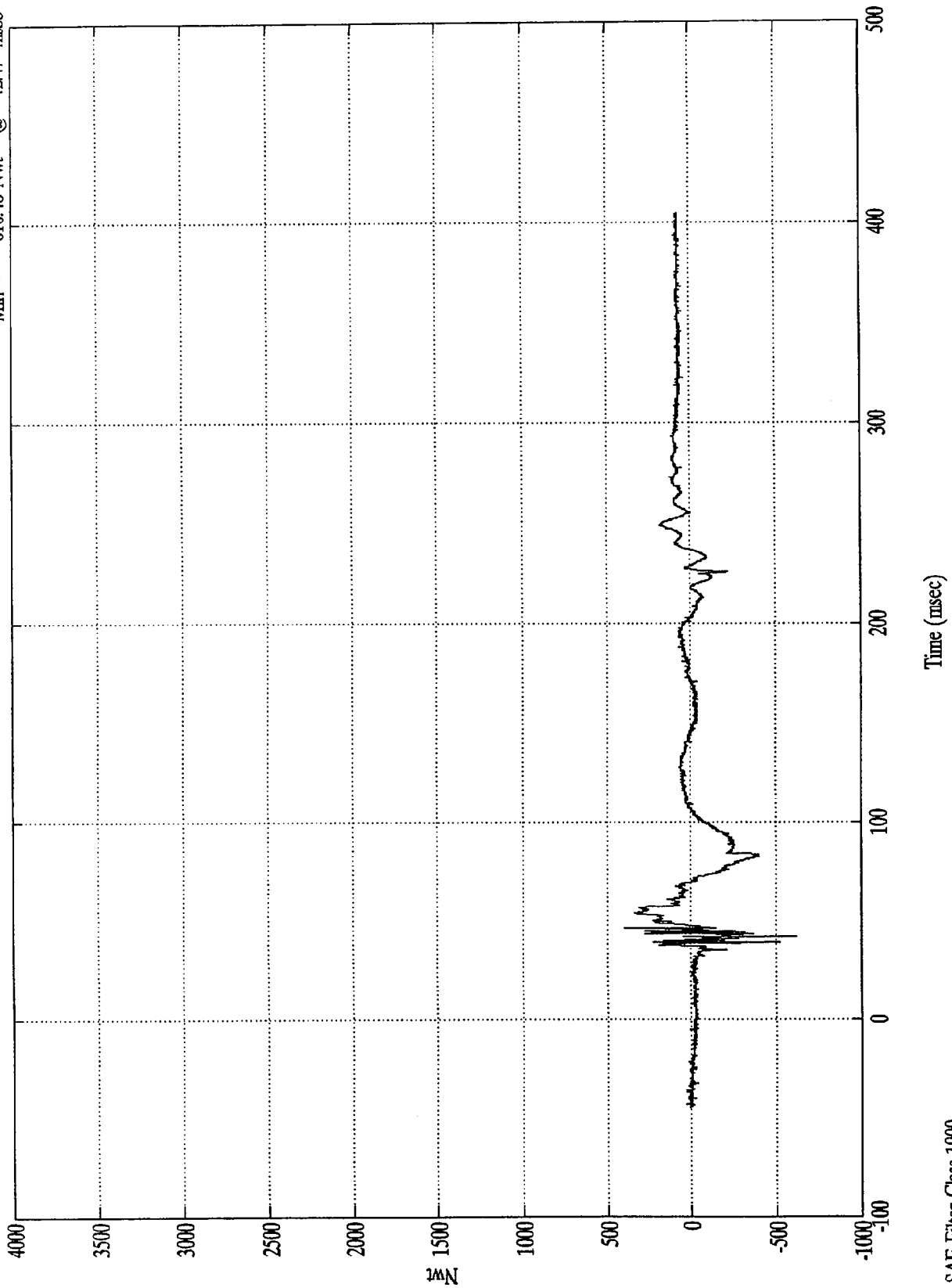


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Upper Neck Fy

Max = 400.54 Nwt @ 46.68 msec
Min = -616.46 Nwt @ 42.47 msec

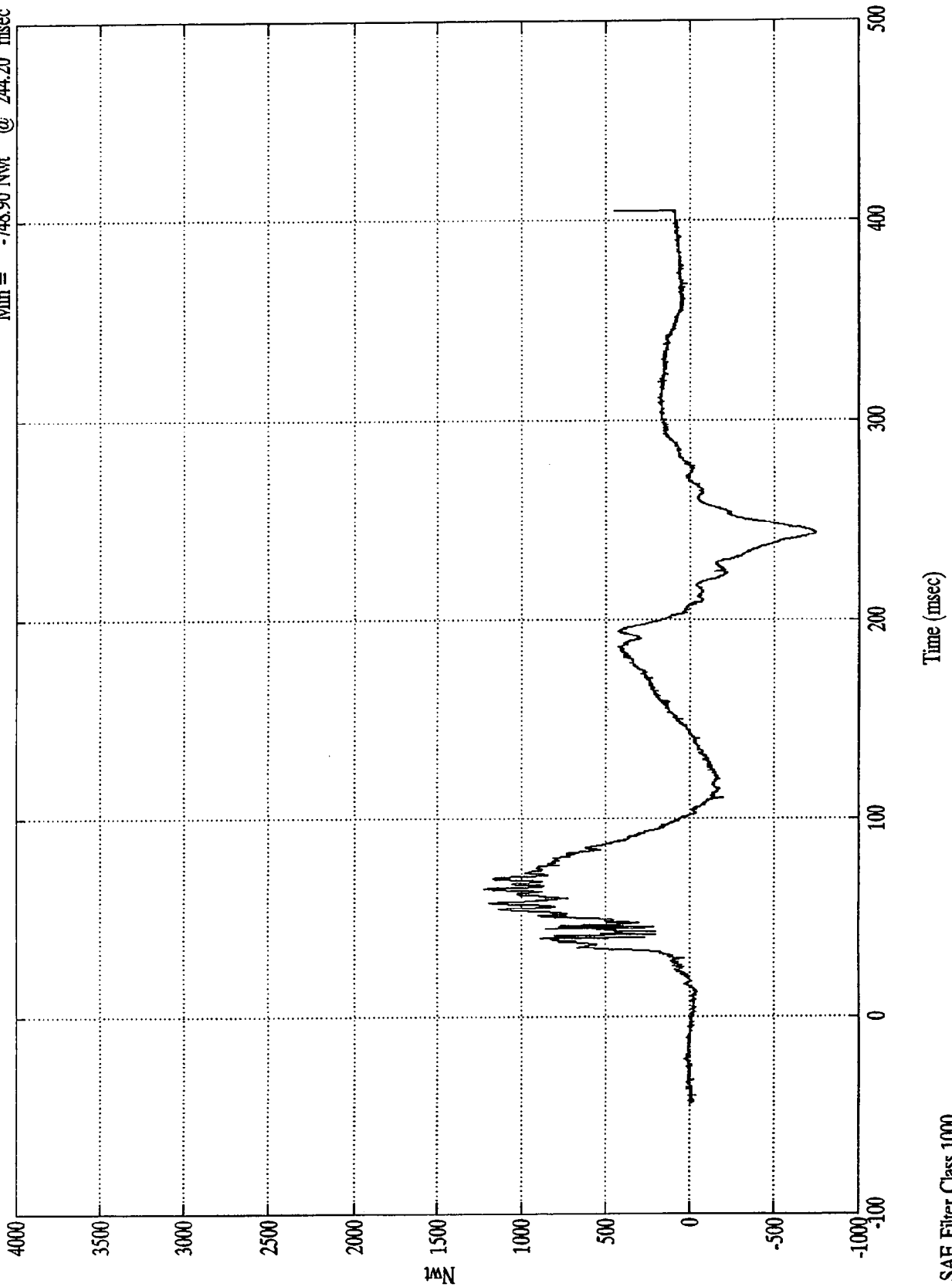


SAE Filter Class 1000

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Upper Neck Fz

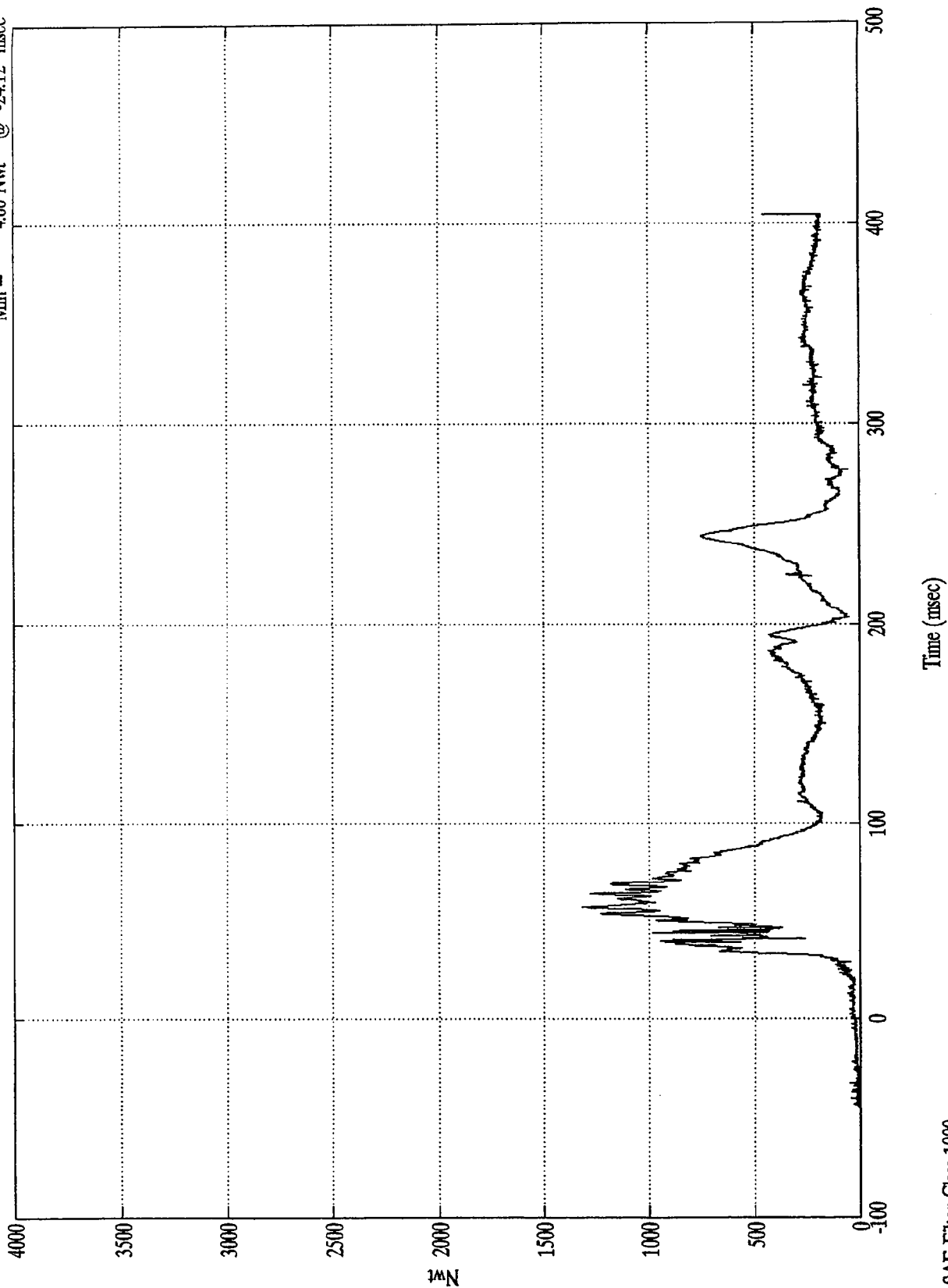
Max = 1223.12 Nwt @ 64.31 msec
Min = -748.90 Nwt @ 244.20 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Neck Force Res.

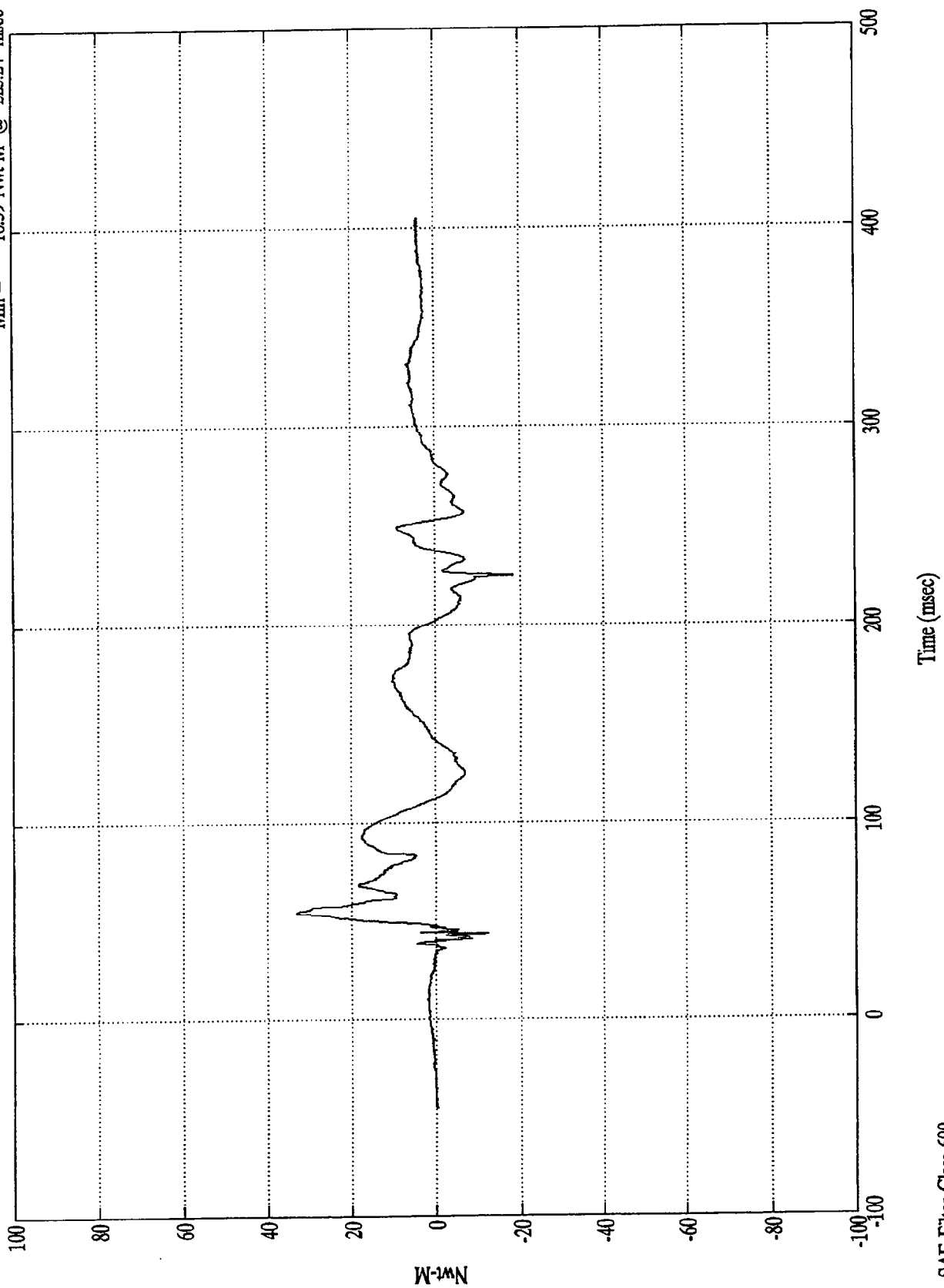
Max = 1316.83 Nwt @ 57.11 msec
Min = 4.60 Nwt @ -24.12 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Upper Neck Mx

Max = 33.15 Nwt-M @ 54.36 msec
Min = -18.39 Nwt-M @ 225.24 msec

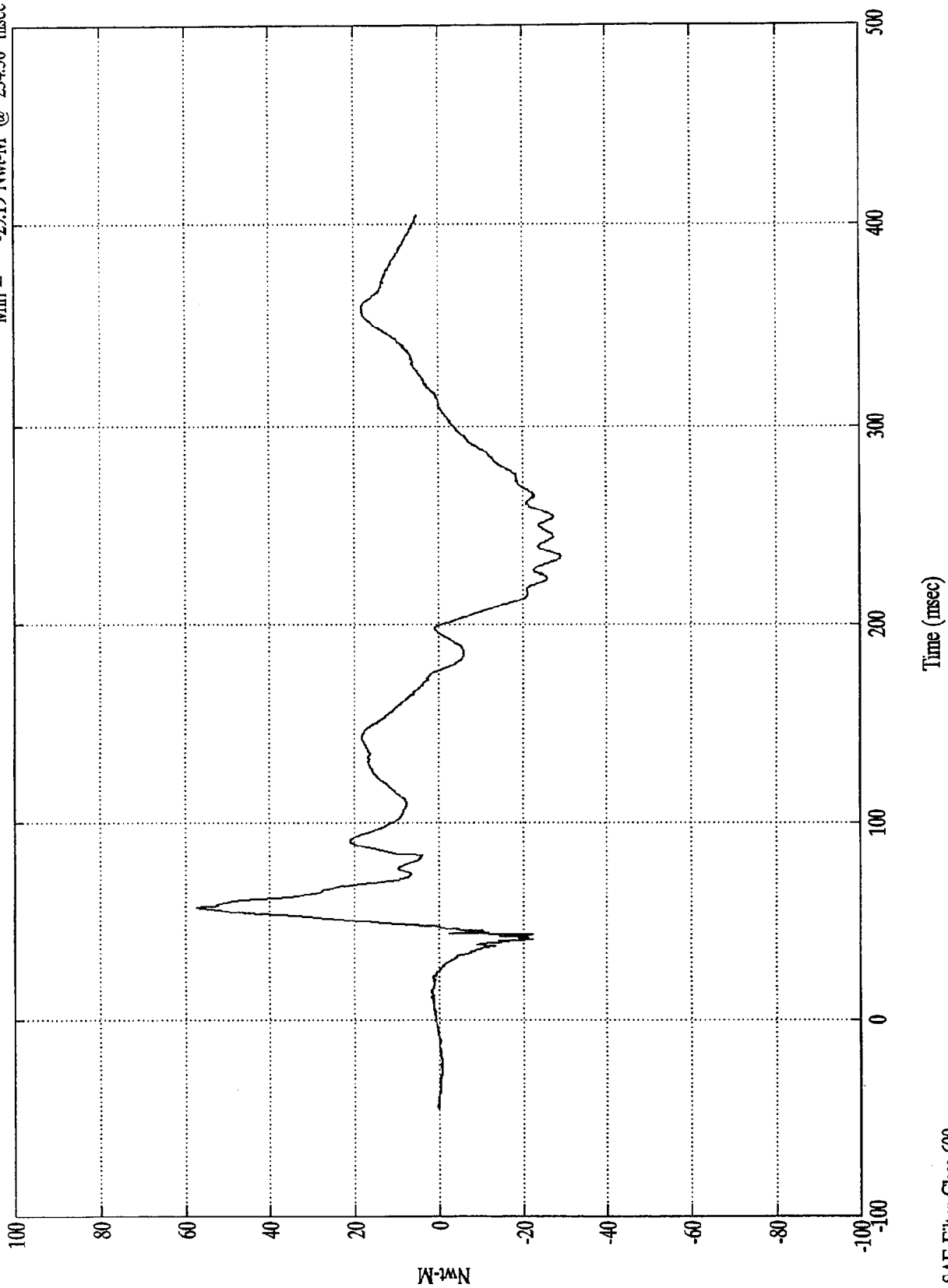


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Upper Neck My

Max = 57.37 Nwt-M @ 57.11 msec
Min = -29.19 Nwt-M @ 234.36 msec

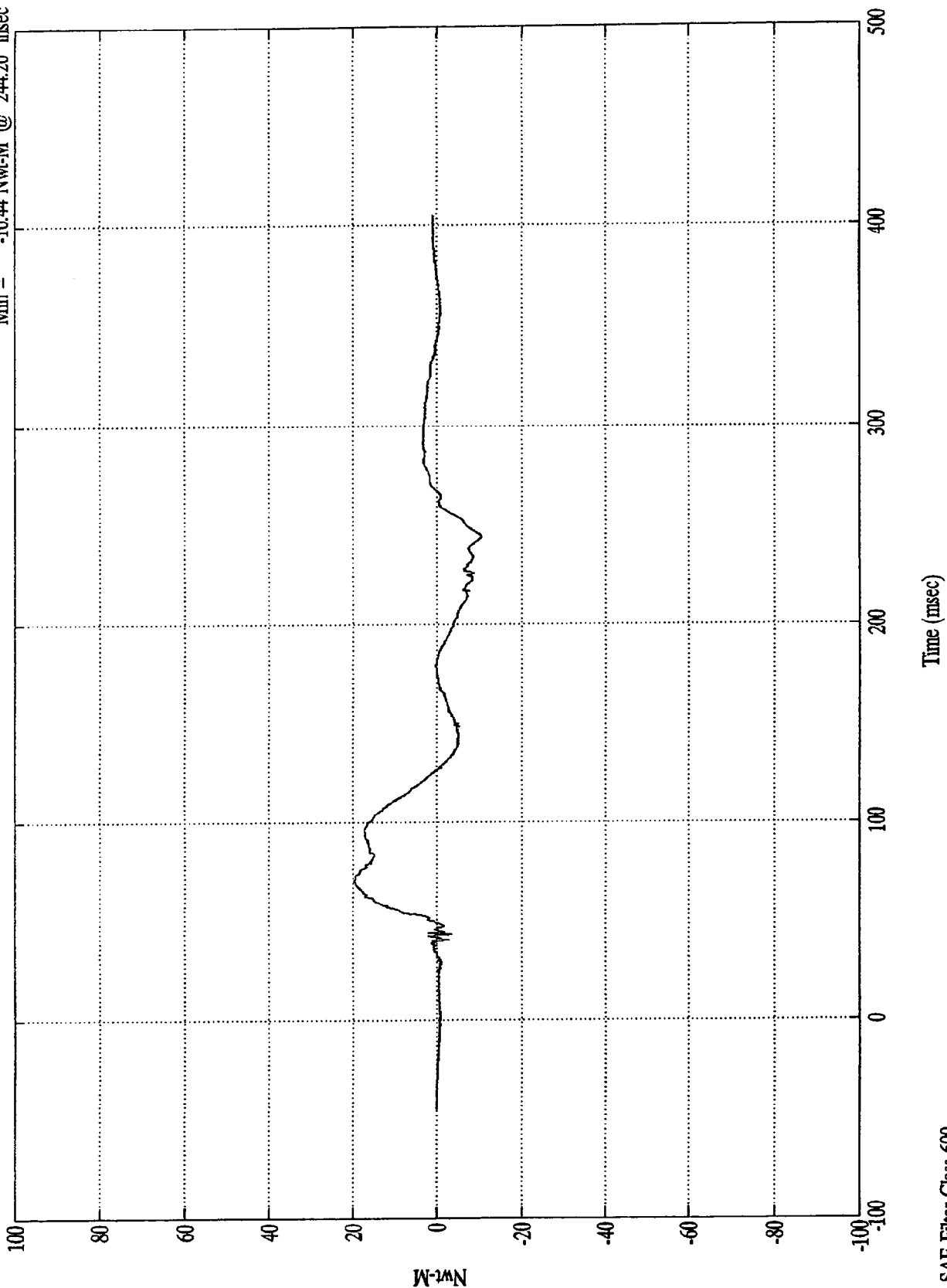


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Upper Neck Mz

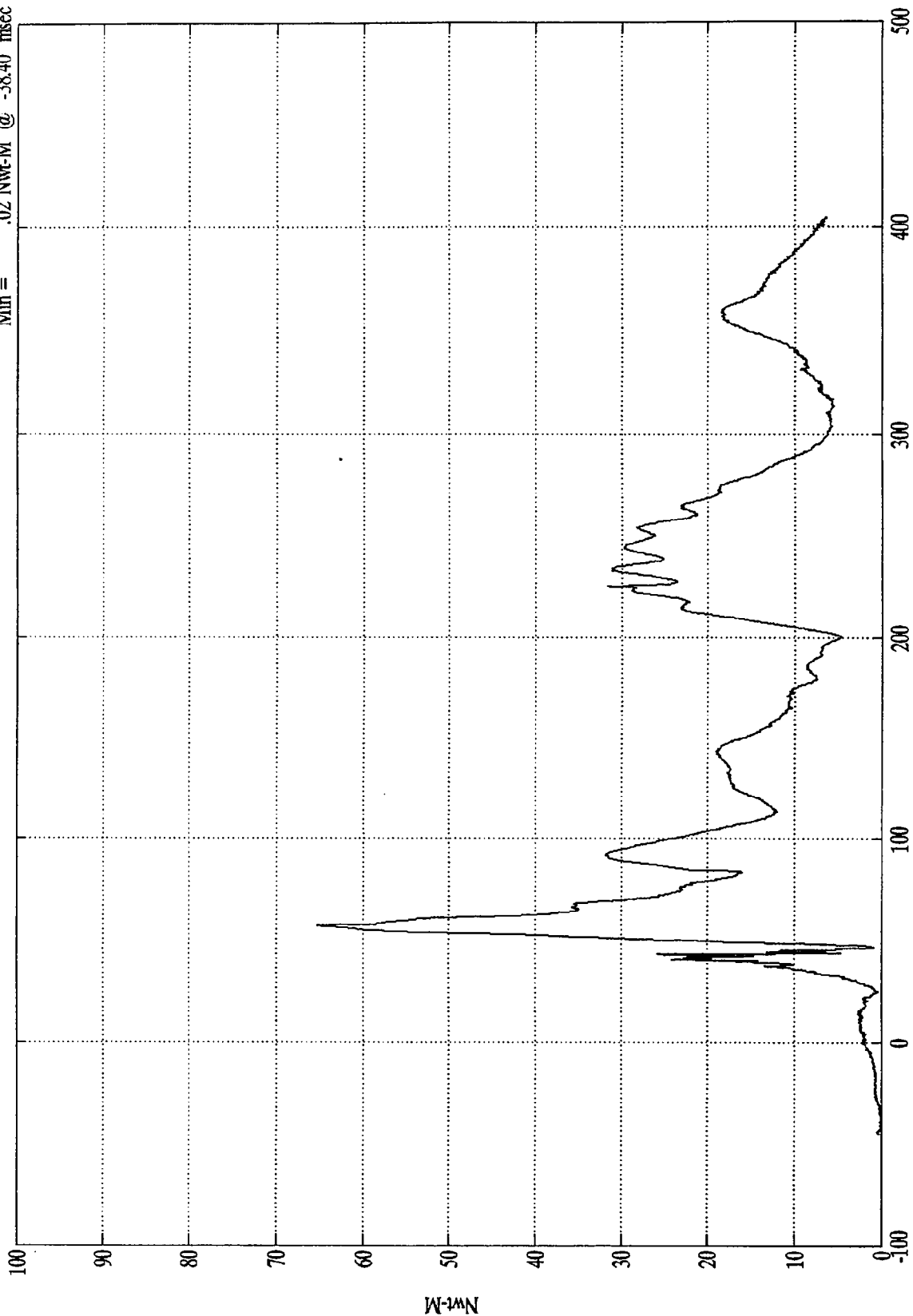
Max = 19.71 Nwt-M @ 70.31 msec
Min = -10.44 Nwt-M @ 244.20 msec



NCAP TEST #3 - 1996 ACURA LT

Max = 65.37 Nwt-M @ 57.11 msec
Min = .02 Nwt-M @ -38.40 msec

Pos. 2 Neck Moment Res.



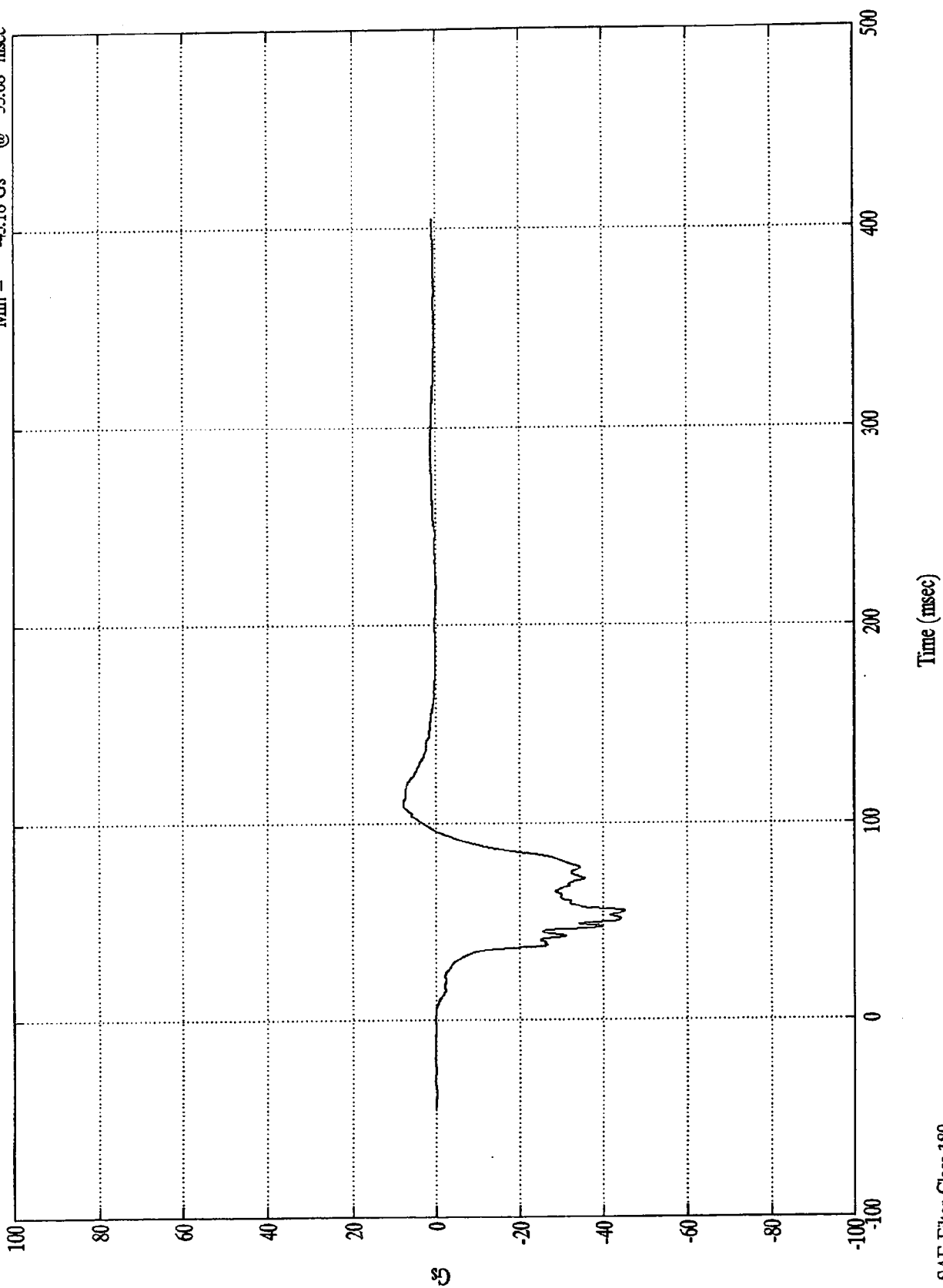
Time (msec)

SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Pelvic (X)

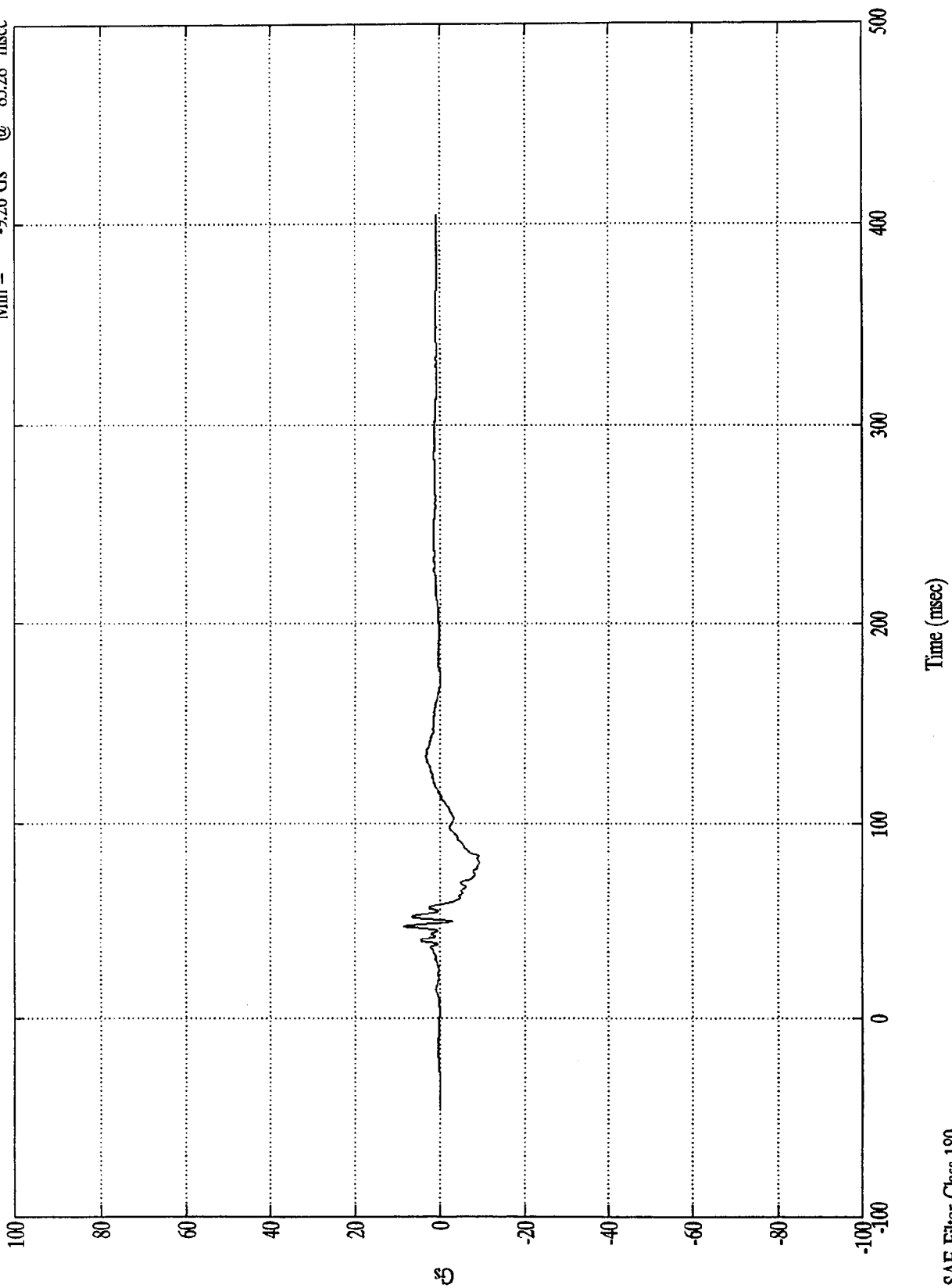
Max = 7.96 Gs @ 111.48 msec
Min = -45.18 Gs @ 55.68 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Pelvic (Y)

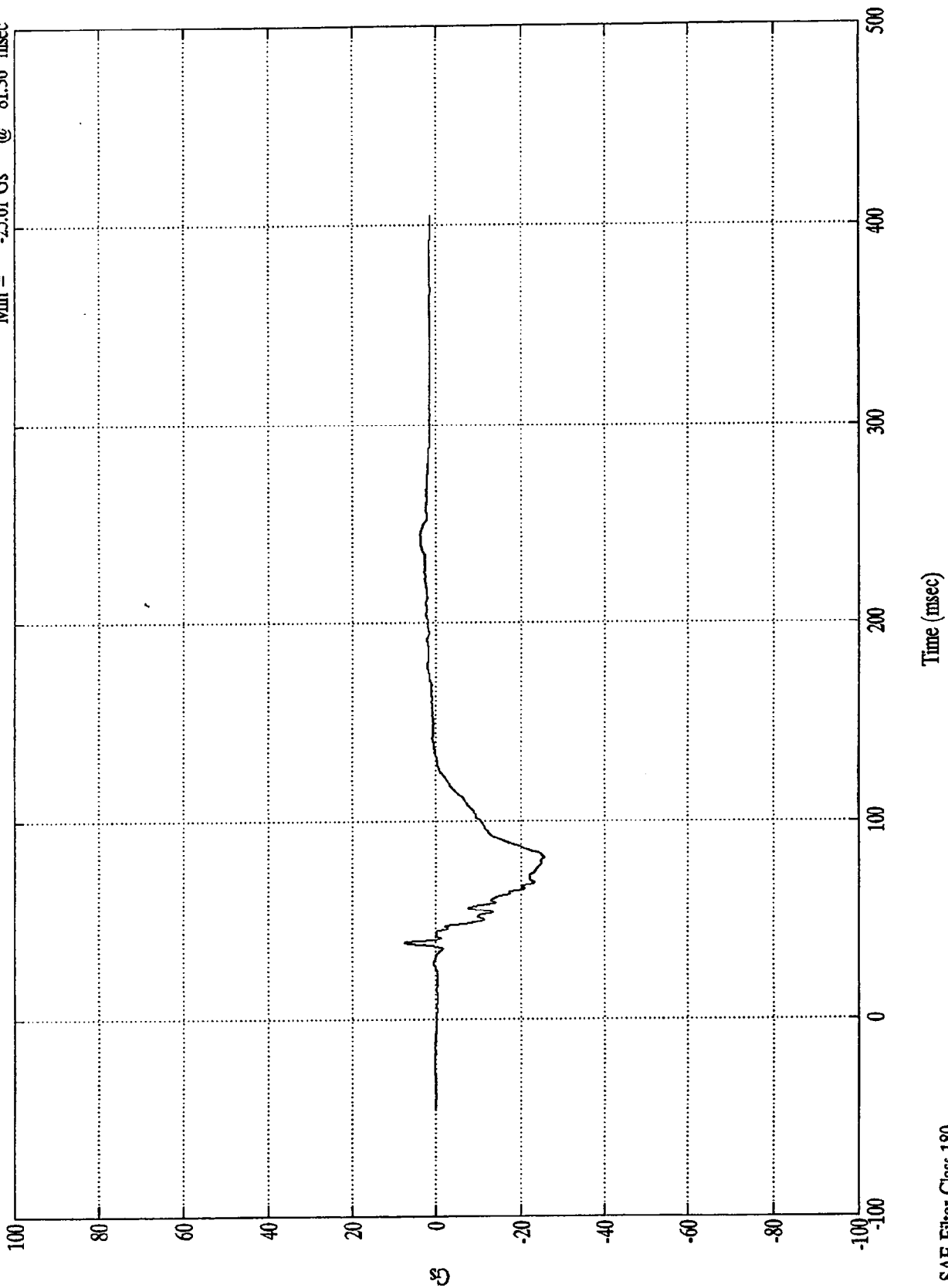
Max = 8.53 Gs @ 46.79 msec
Min = -9.26 Gs @ 83.28 msec



SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

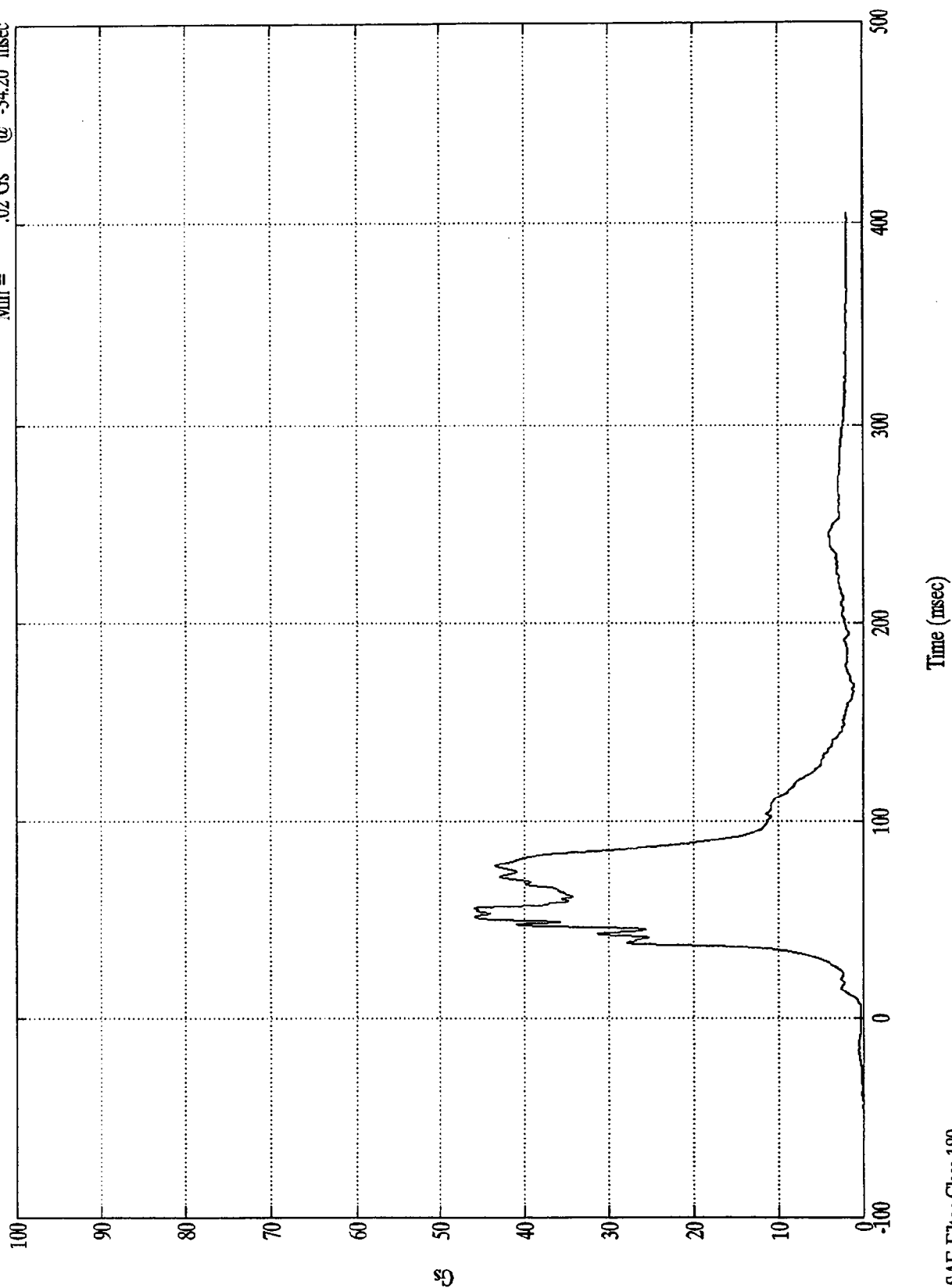
Pos. 2 Pelvic (Z)
Max = 7.42 Gs @ 38.40 msec
Min = -25.61 Gs @ 81.36 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Pelvic (R)

Max = 45.89 Gs @ 55.80 msec
Min = .02 Gs @ -34.20 msec

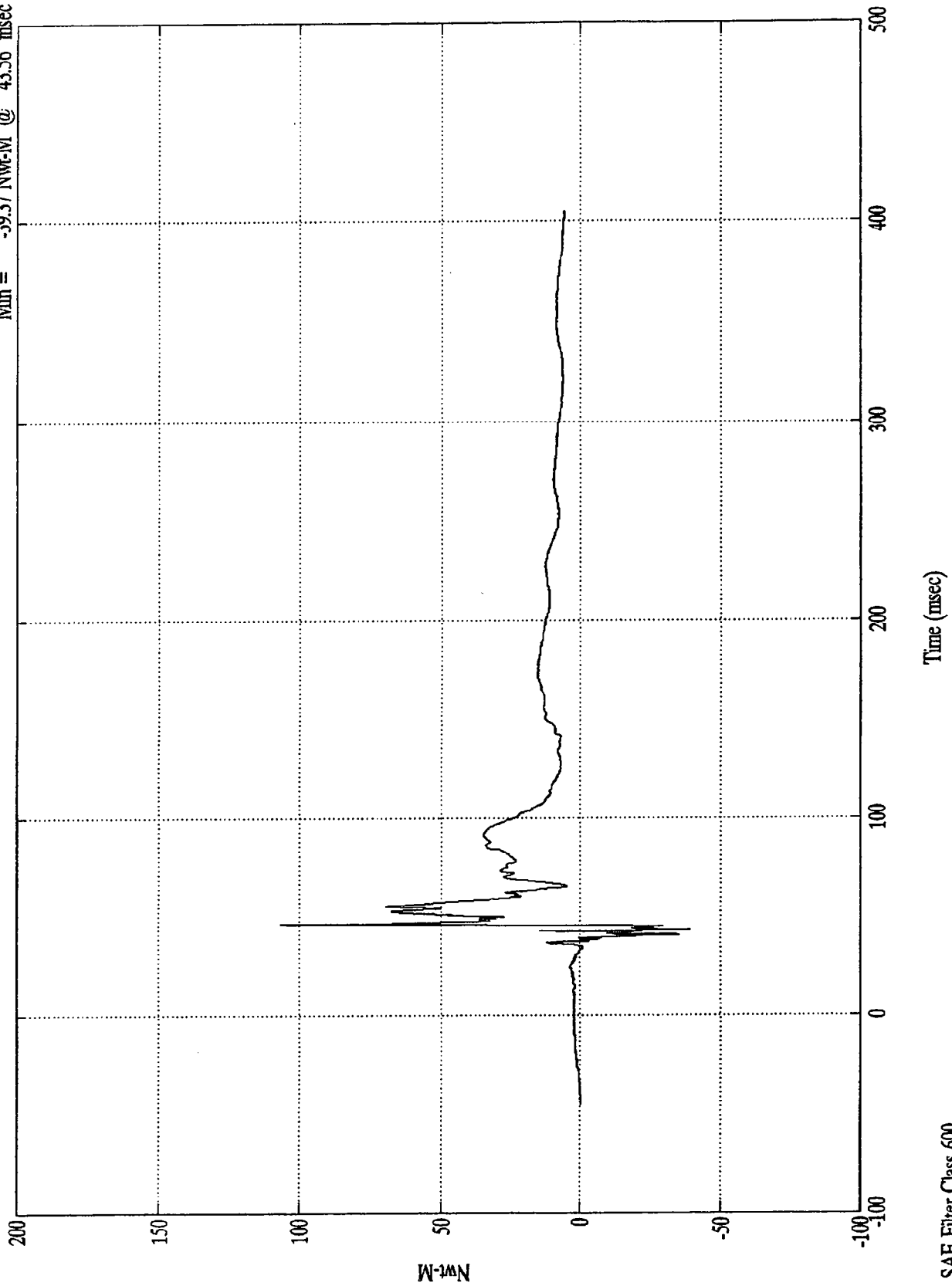


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Lt Upper Tibia Mx

Max = 106.59 Nwt-M @ 46.56 msec
Min = -39.37 Nwt-M @ 43.56 msec



Nwt-M

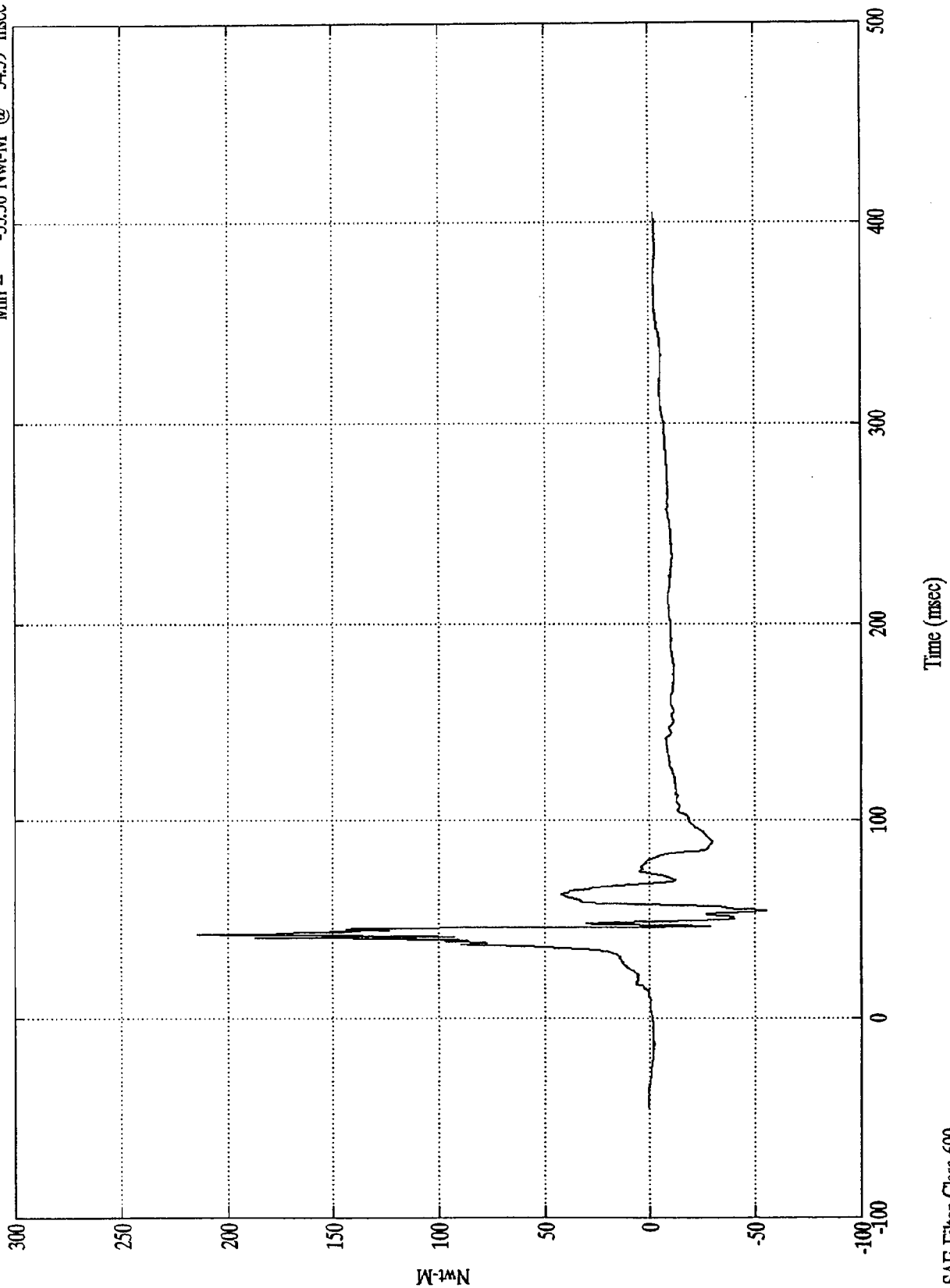
Time (msec)

SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Lt Upper Tibia My

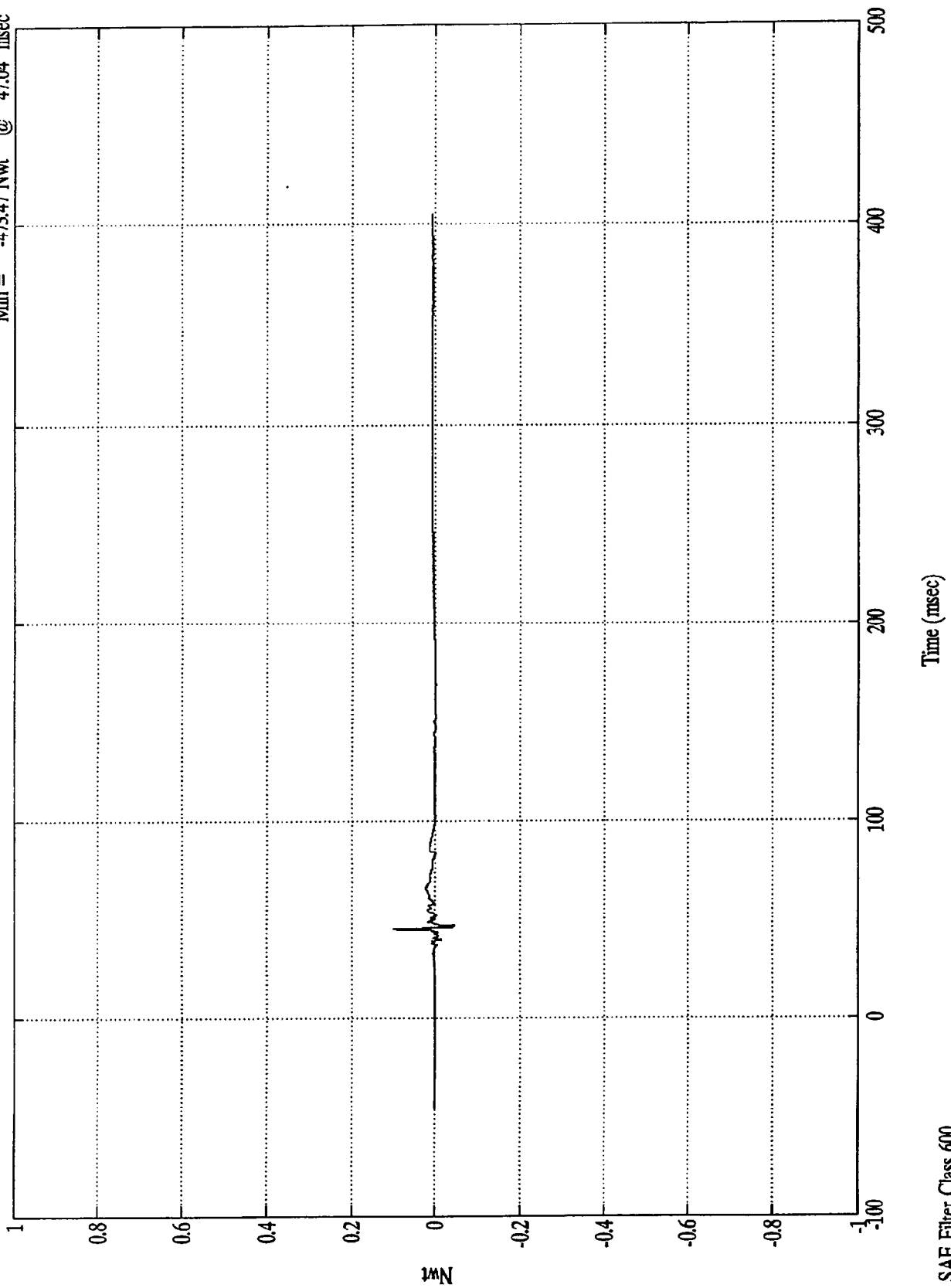
Max = 214.35 Nwt-M @ 42.95 msec
Min = -55.30 Nwt-M @ 54.59 msec



NCAP TEST #3 - 1996 ACURA LT
x10⁴

Pos. 2 Lt Lower Tibia Fy

Max = 991.30 Nwt @ 45.24 msec
Min = -473.47 Nwt @ 47.04 msec

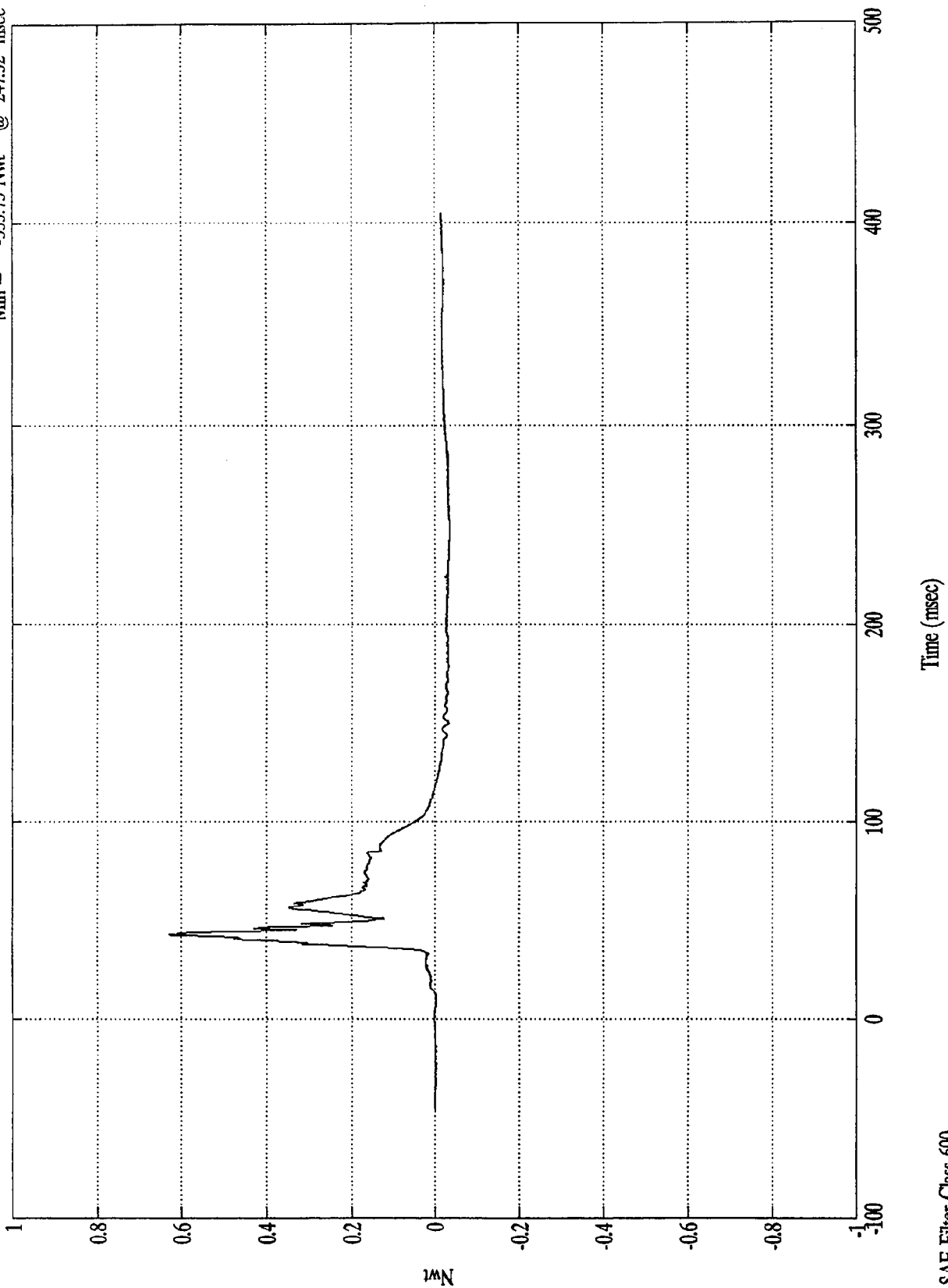


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Lt Lower Tibia Fz
 Max = 6281.02 Nwt @ 42.36 msec
 Min = -355.73 Nwt @ 247.32 msec

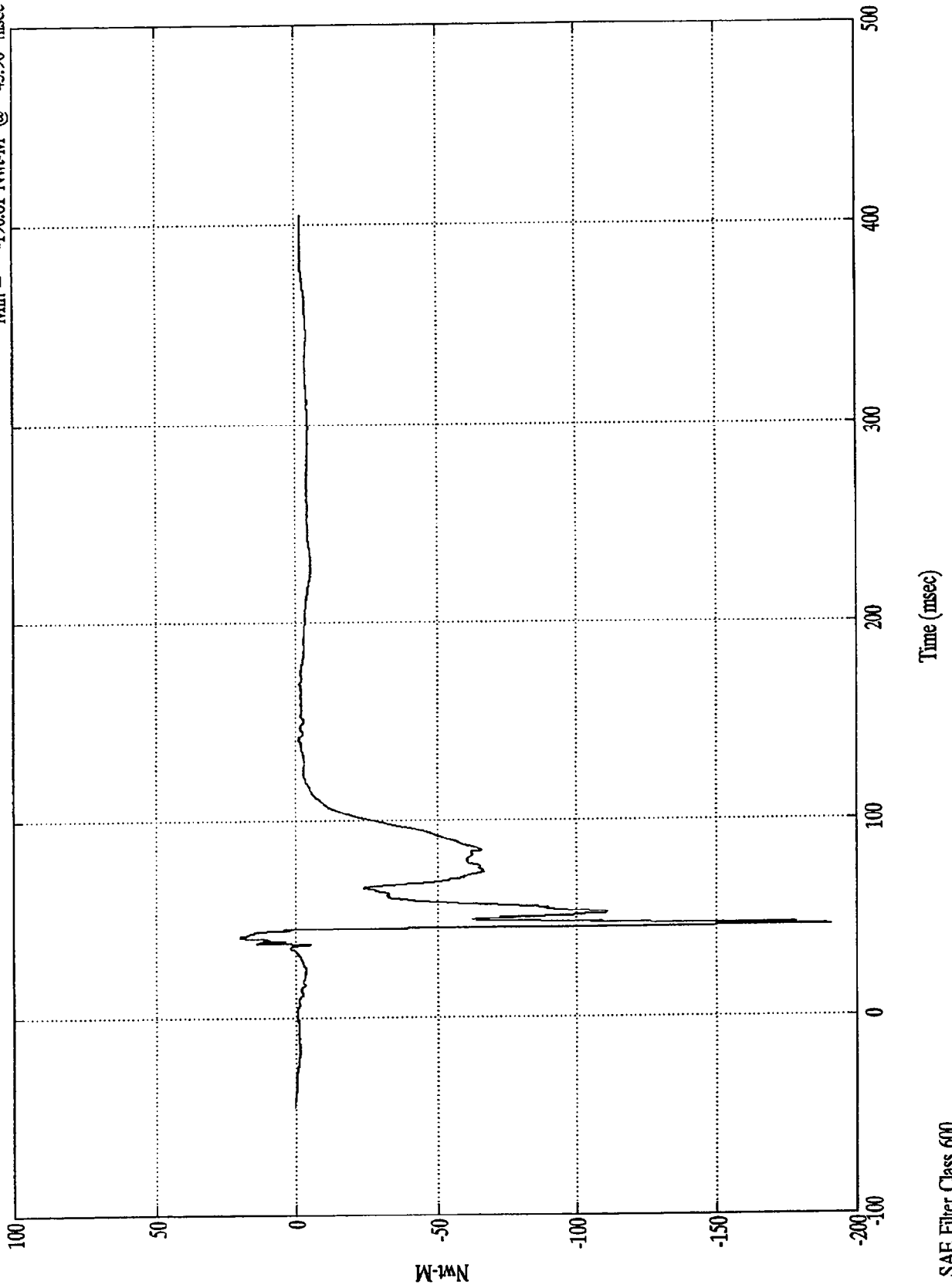
$\times 10^4$



SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

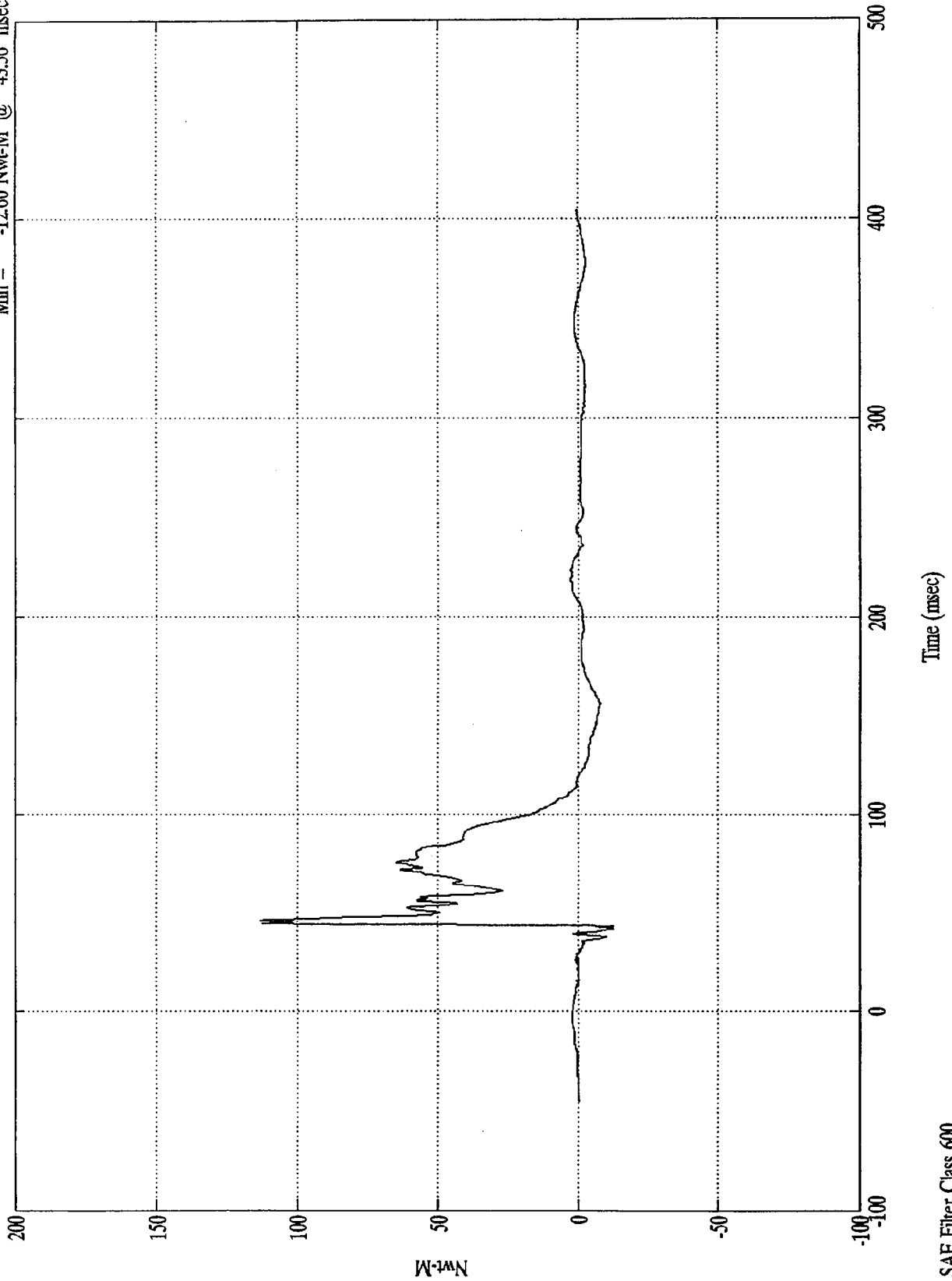
Pos. 2 Lt Lower Tibia Mx
Max = 20.25 Nwt-M @ 40.56 msec
Min = -190.61 Nwt-M @ 45.96 msec



NCAP TEST #3 - 1996 ACURA LT

P2 Rt Upper Tibia Mx

Max = 113.60 Nwt-M @ 46.31 msec
Min = -12.60 Nwt-M @ 43.56 msec

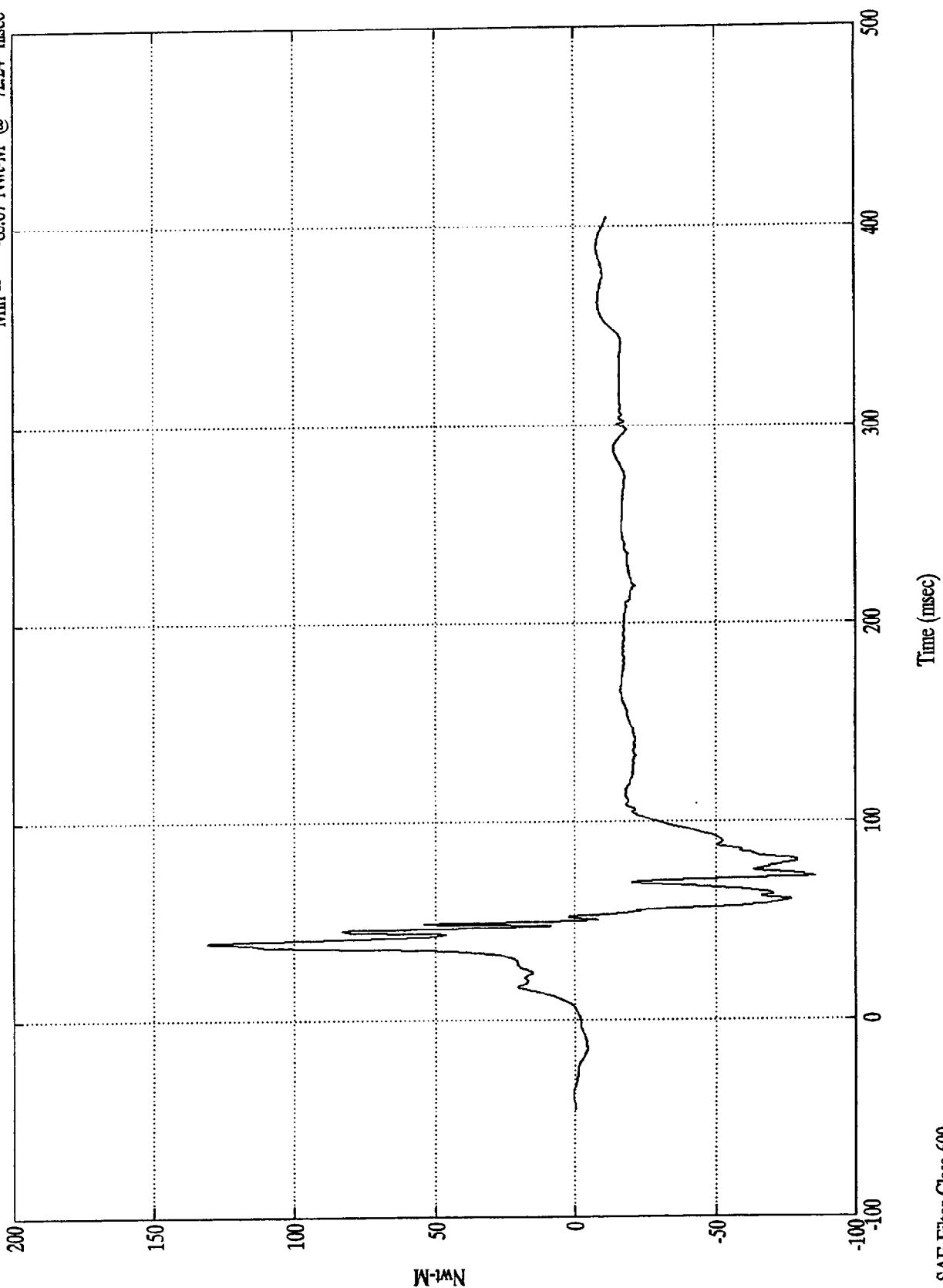


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

P2 Rt Upper Tibia My

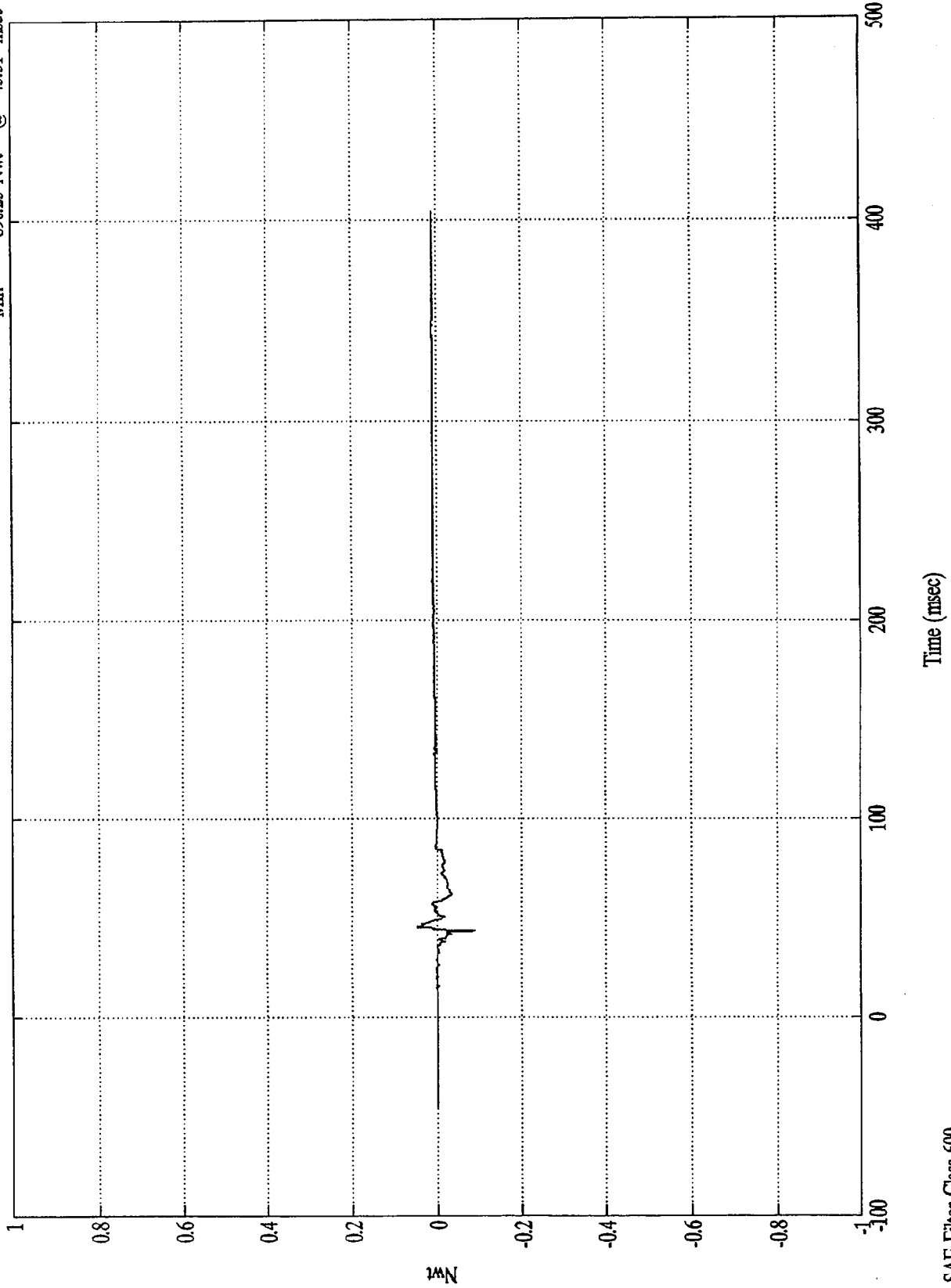
Max = 130.97 Nwt-M @ 38.88 msec
Min = -85.67 Nwt-M @ 72.24 msec



NCAP TEST #3 - 1996 ACURA LT
x10⁴

P2 Rt Lower Tibia Fy

Max = 470.09 Nwt @ 45.24 msec
Min = -896.25 Nwt @ 43.31 msec



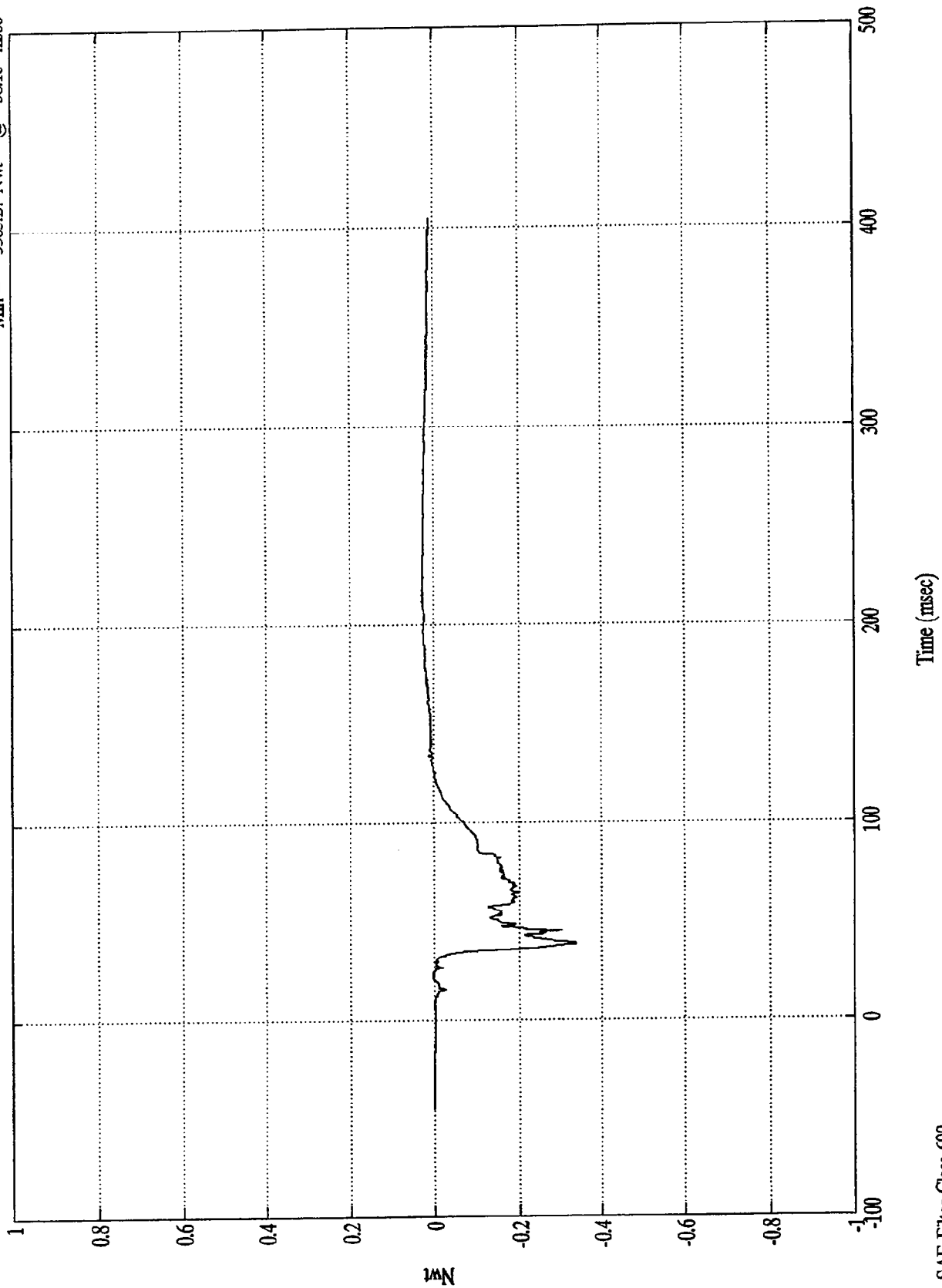
SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

P2 Rt Lower Tibia Fz

Max = 284.61 Nwt @ 215.28 msec
Min = -3385.27 Nwt @ 38.15 msec

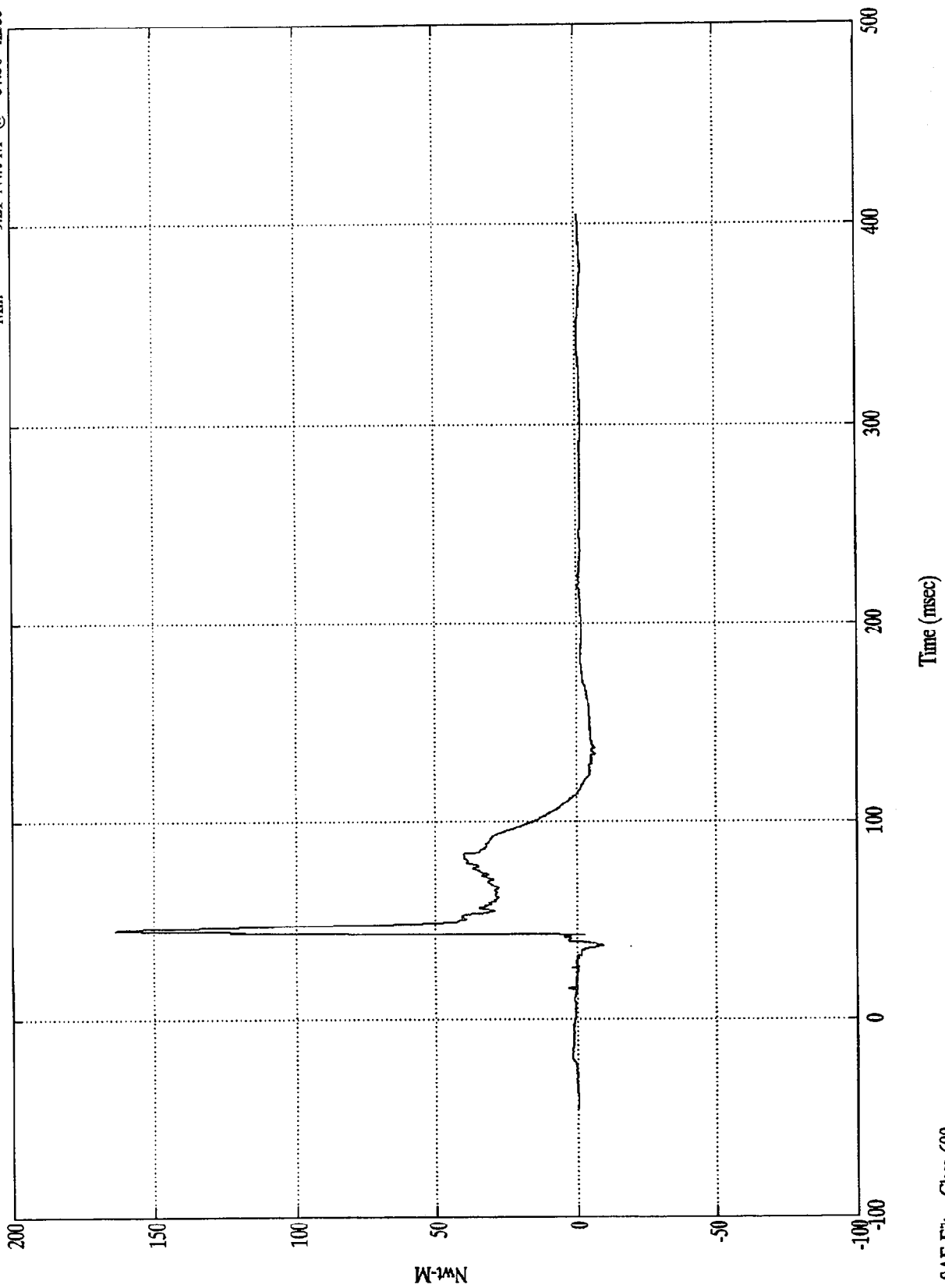


SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

Max = 163.47 Nwt-M @ 45.60 msec
Min = -9.21 Nwt-M @ 37.56 msec

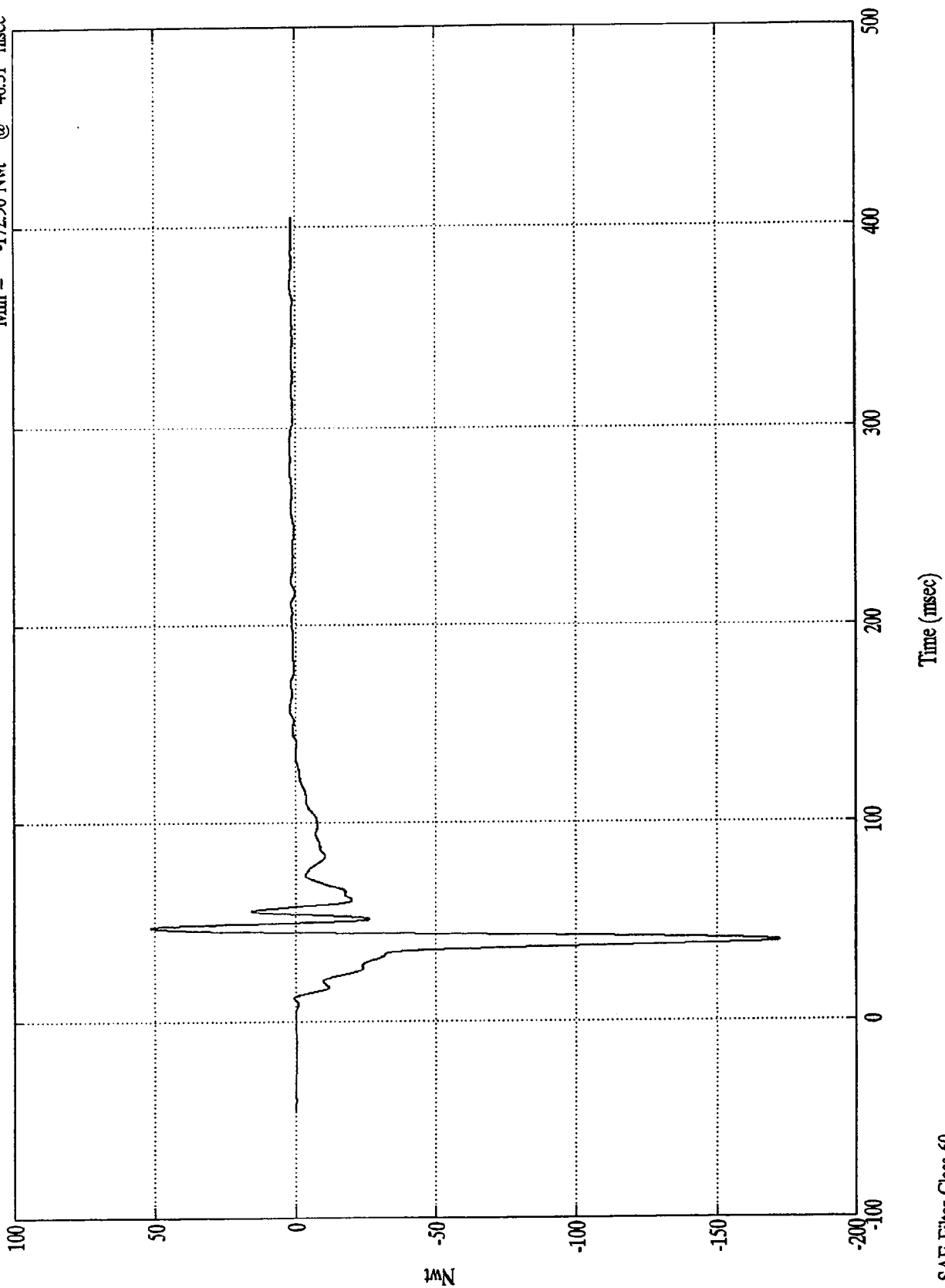
P2 Rt Lower Tibia Mx



SAE Filter Class 600

NCAP TEST #3 - 1996 ACURA LT

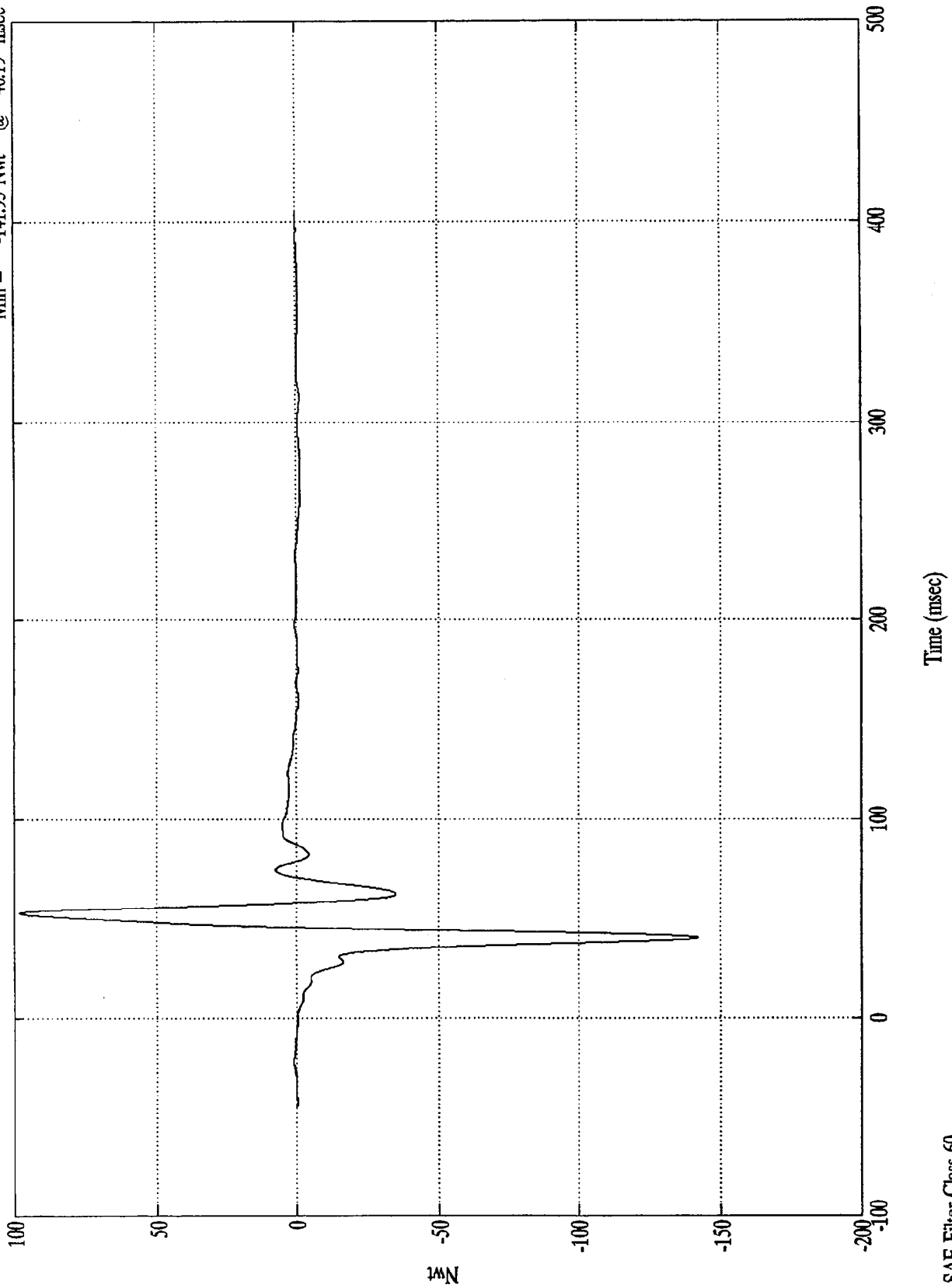
Pos. 2 L Foot Front Z
Max = 51.49 Nwt @ 47.40 msec
Min = -172.90 Nwt @ 40.31 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 LFoot Rear X

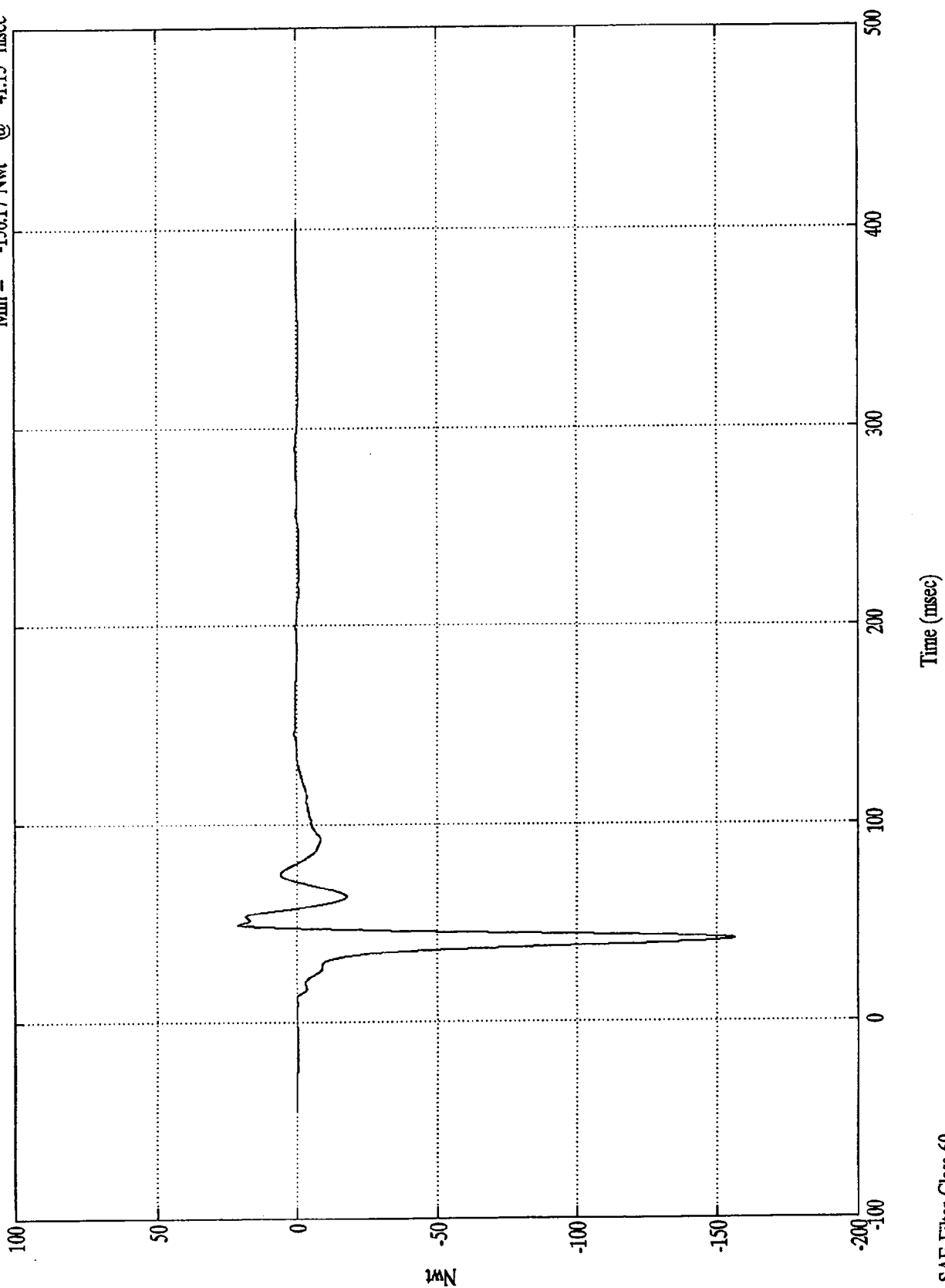
Max = 98.26 Nwt @ 52.56 msec
Min = -141.95 Nwt @ 40.19 msec



SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

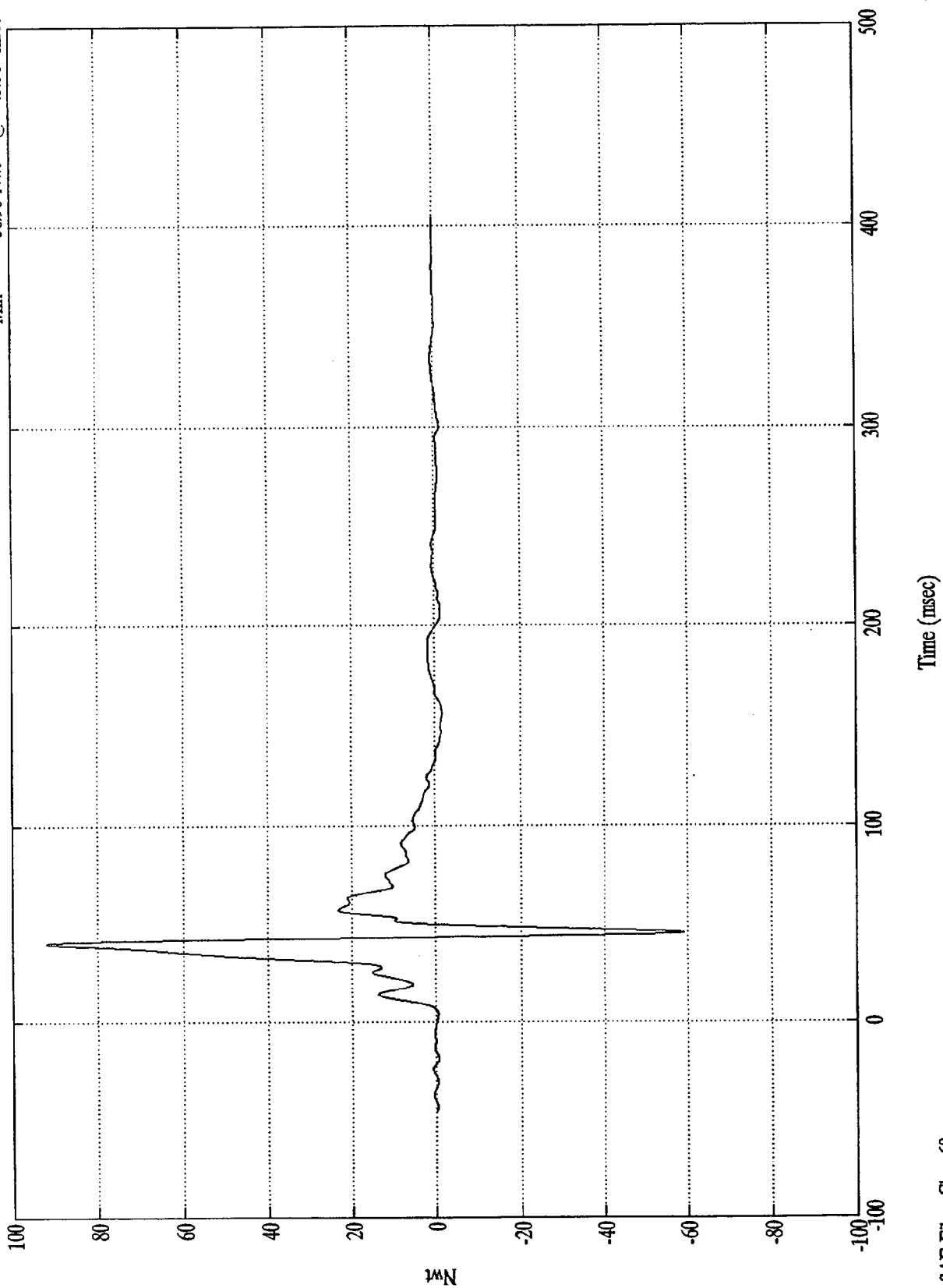
Pos. 2 LFoot Rear Z
Max = 21.33 Nwt @ 48.95 msec
Min = -156.17 Nwt @ 41.15 msec



NCAP TEST #3 - 1996 ACURA LT

Pos. 2 R.Foot Front Z

Max = 92.03 Nwt @ 40.19 msec
Min = -58.96 Nwt @ 45.36 msec

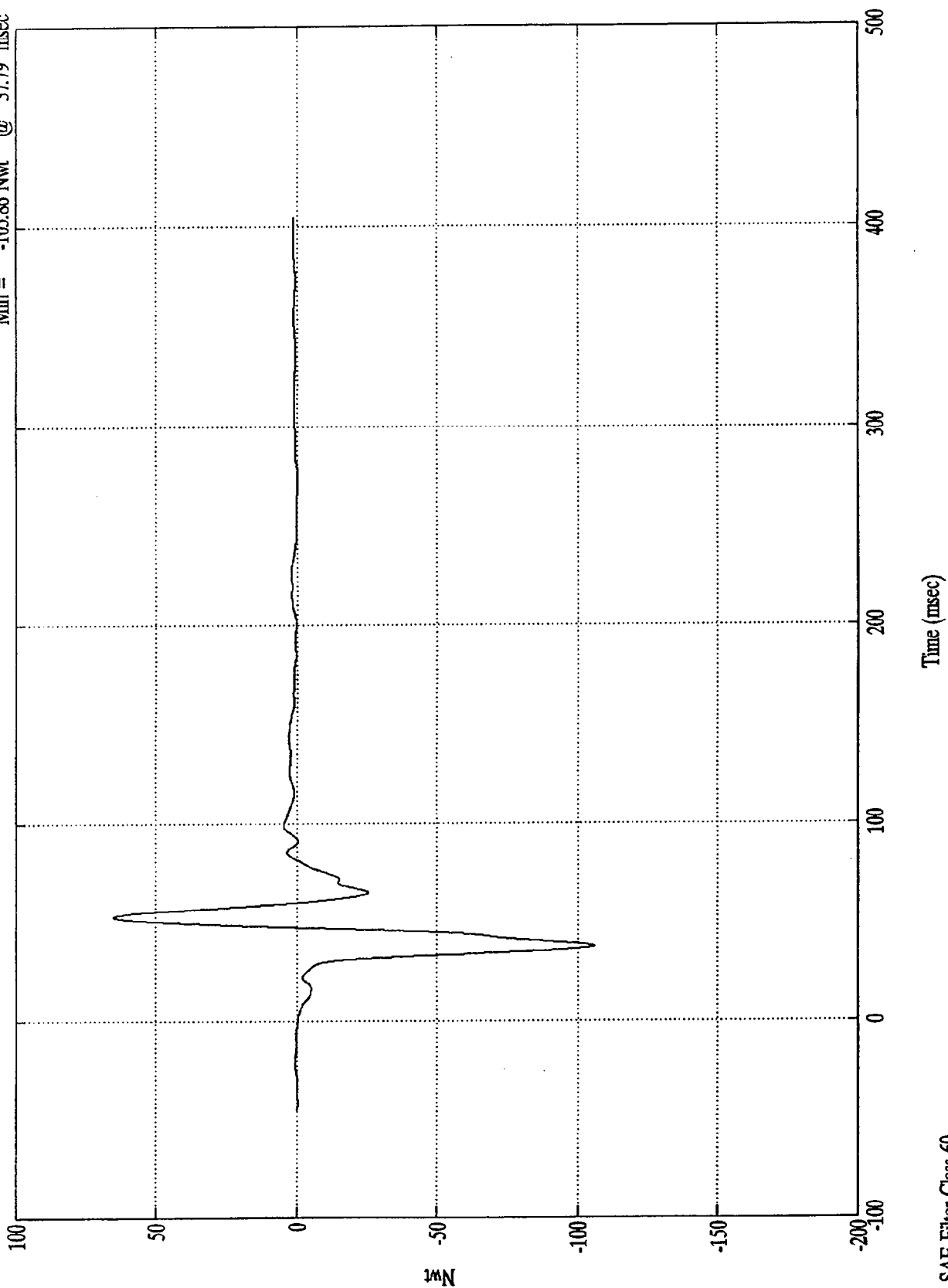


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 R.Foot Rear X

Max = 65.09 Nwt @ 52.92 msec
Min = -105.86 Nwt @ 37.79 msec



B-101

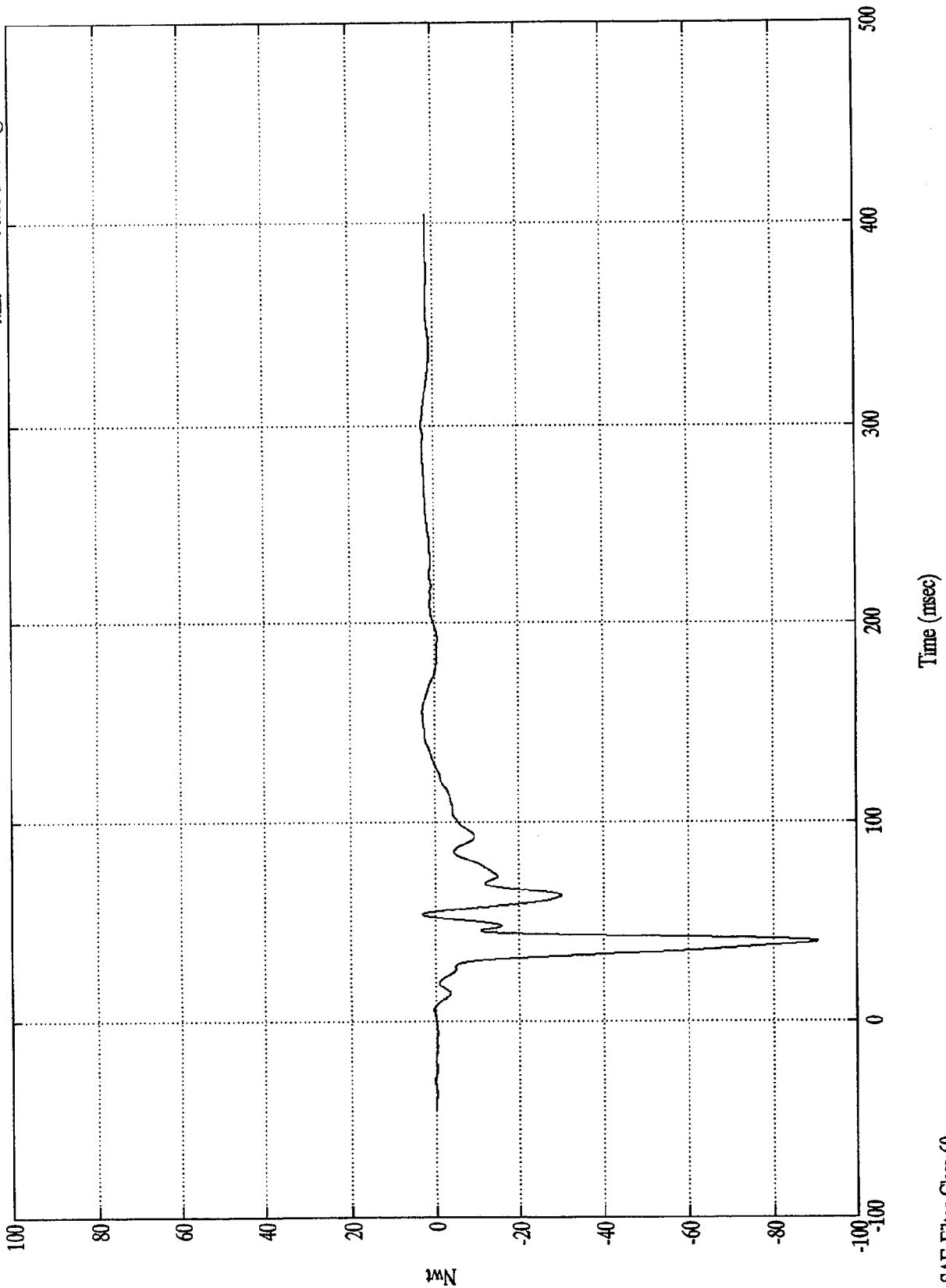
8313-3

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 R.Foot Rear Z

Max = 3.26 Nwt @ 53.52 msec
Min = -90.68 Nwt @ 40.19 msec

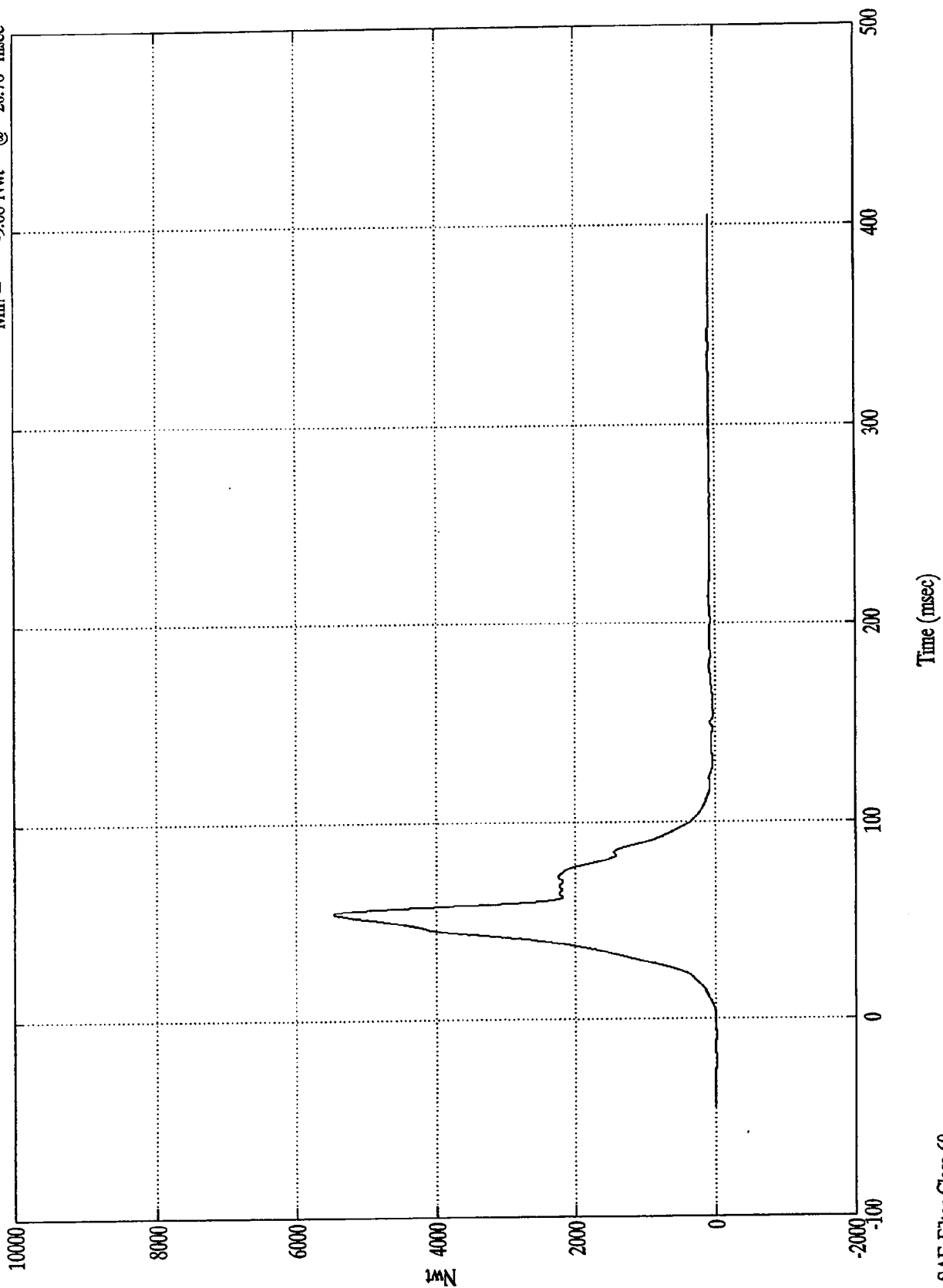


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Right Belt Load

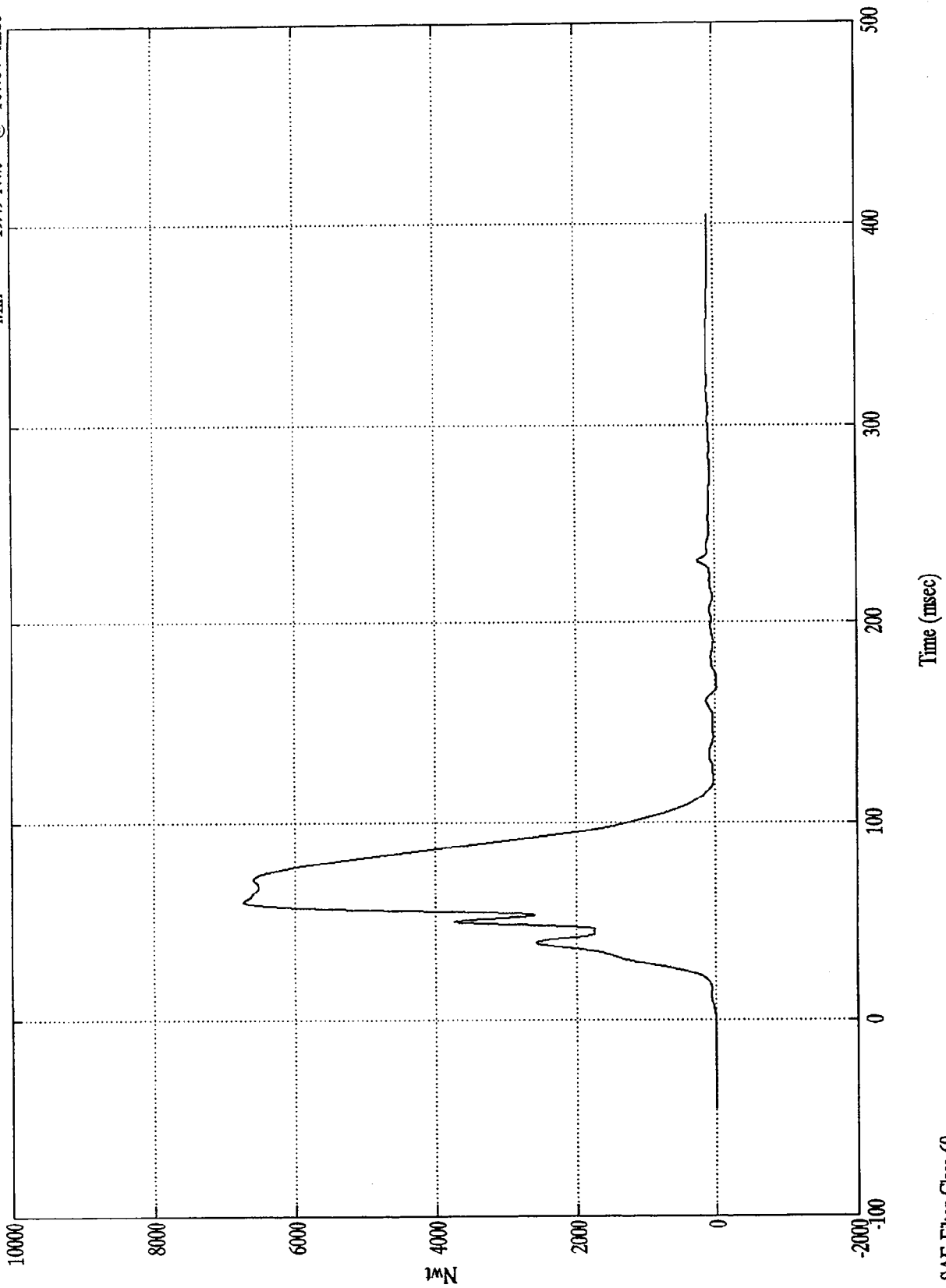
Max = 5469.33 Nwt @ 54.00 msec
Min = -9.68 Nwt @ -20.76 msec



SAE Filter Class 60

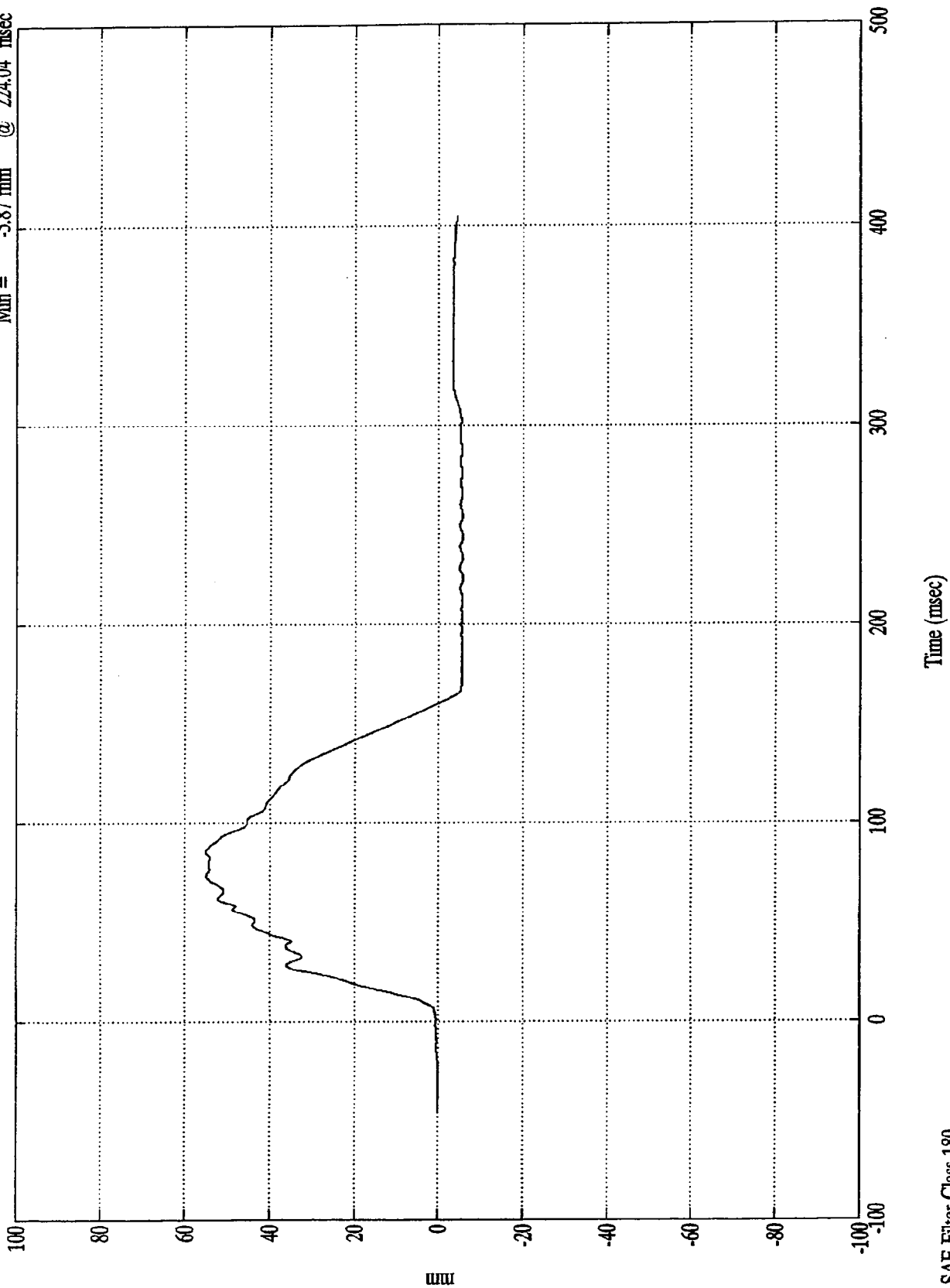
NCAP TEST #3 - 1996 ACURA LT

Pos. 2 Torso Belt Load
Max = 6734.82 Nwt @ 60.24 msec
Min = -19.49 Nwt @ 167.04 msec



Pos. 2 Belt Spool Out

Max = 55.14 mm @ 85.80 msec
Min = -5.87 mm @ 224.04 msec



NHTSA TEST NO. MT5302

VEHICLE DATA

Acceleration

Velocity

Displacement

FILTER CHANNEL CLASS

60

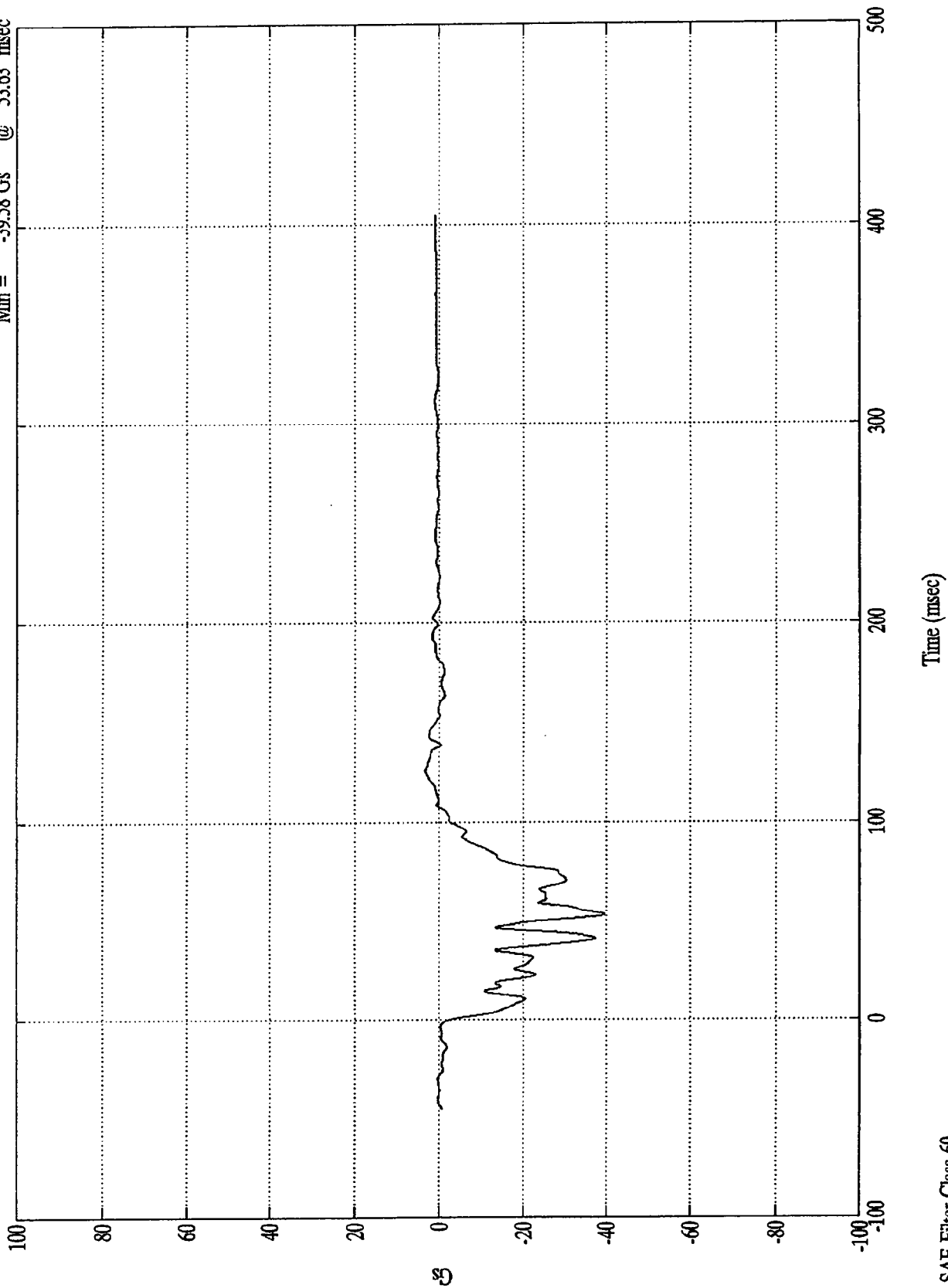
180

180

NCAP TEST #3 - 1996 ACURA LT

Max = 3.29 Gs @ 125.88 msec
 Min = -39.58 Gs @ 53.63 msec

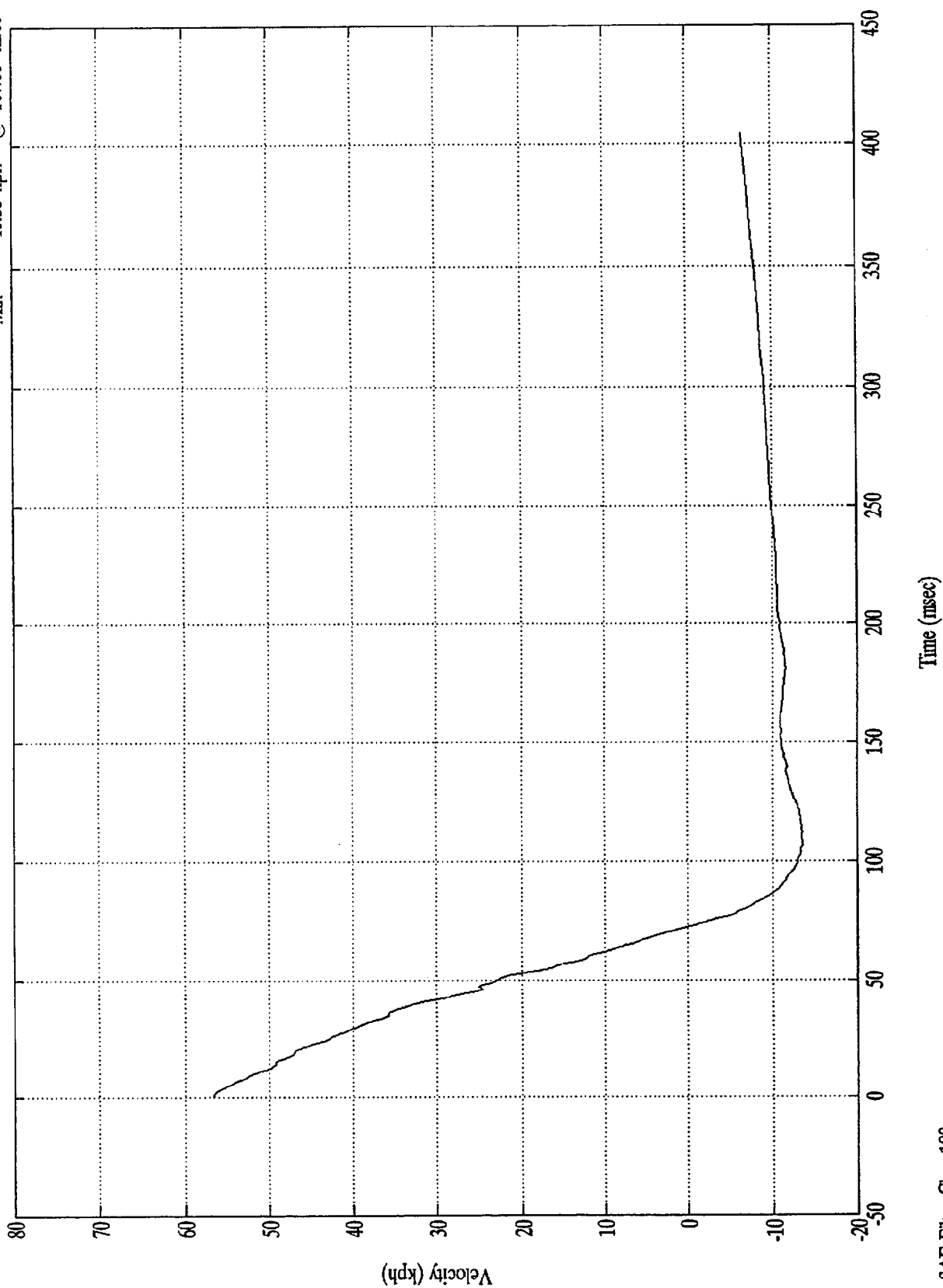
Acc. #1(x)



NCAP TEST #3 - 1996 ACURA LT

Max = 56.65 kph @ -0.00 msec
Min = -13.53 kph @ 107.88 msec

Acc. #1(x)

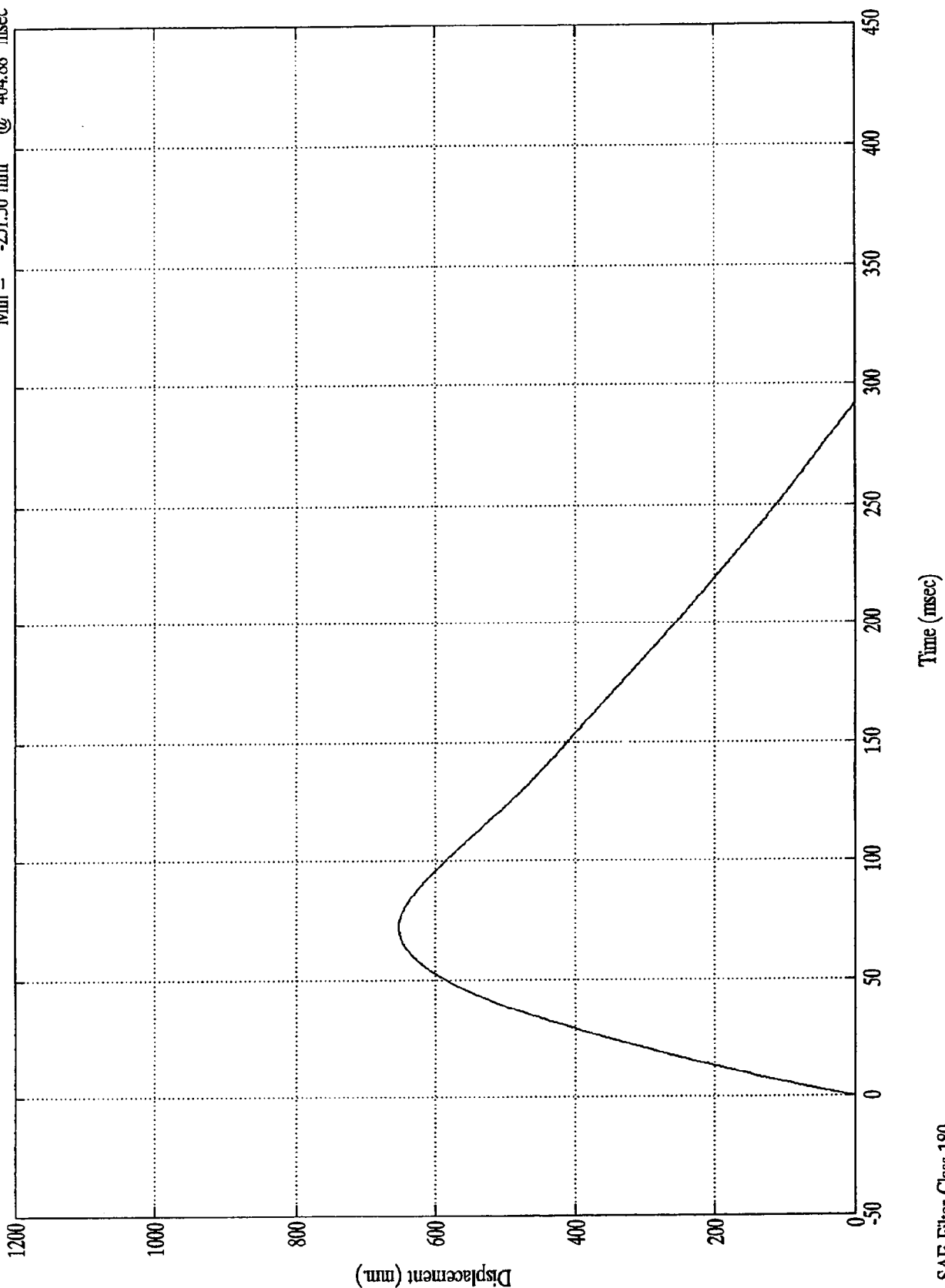


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Max = 652.44 mm @ 72.48 msec
Min = -251.50 mm @ 404.88 msec

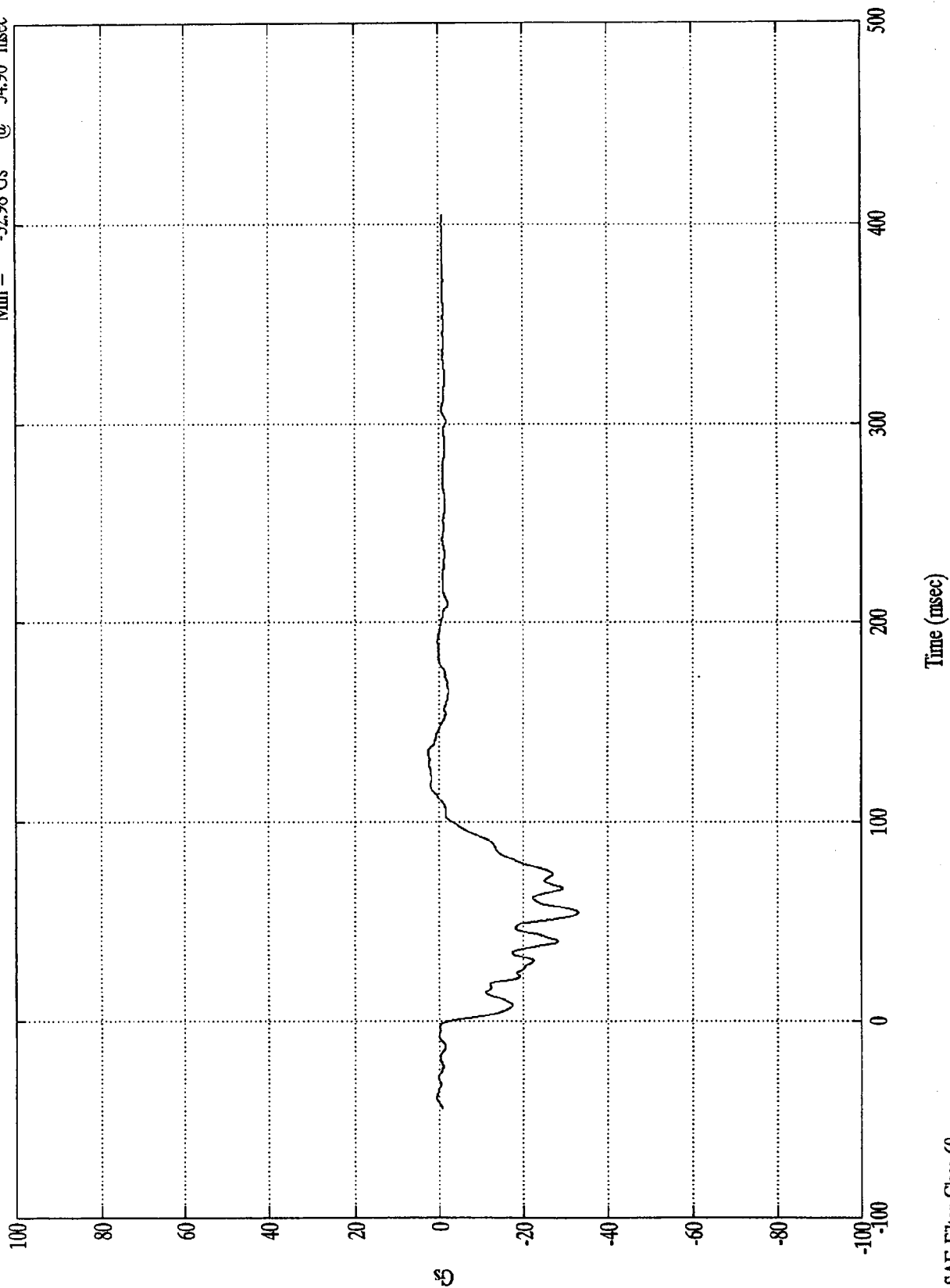
Acc. #1($\bar{x}$)



NCAP TEST #3 - 1996 ACURA LT

Max = 2.80 Gs @ 134.27 msec
 Min = -32.98 Gs @ 54.96 msec

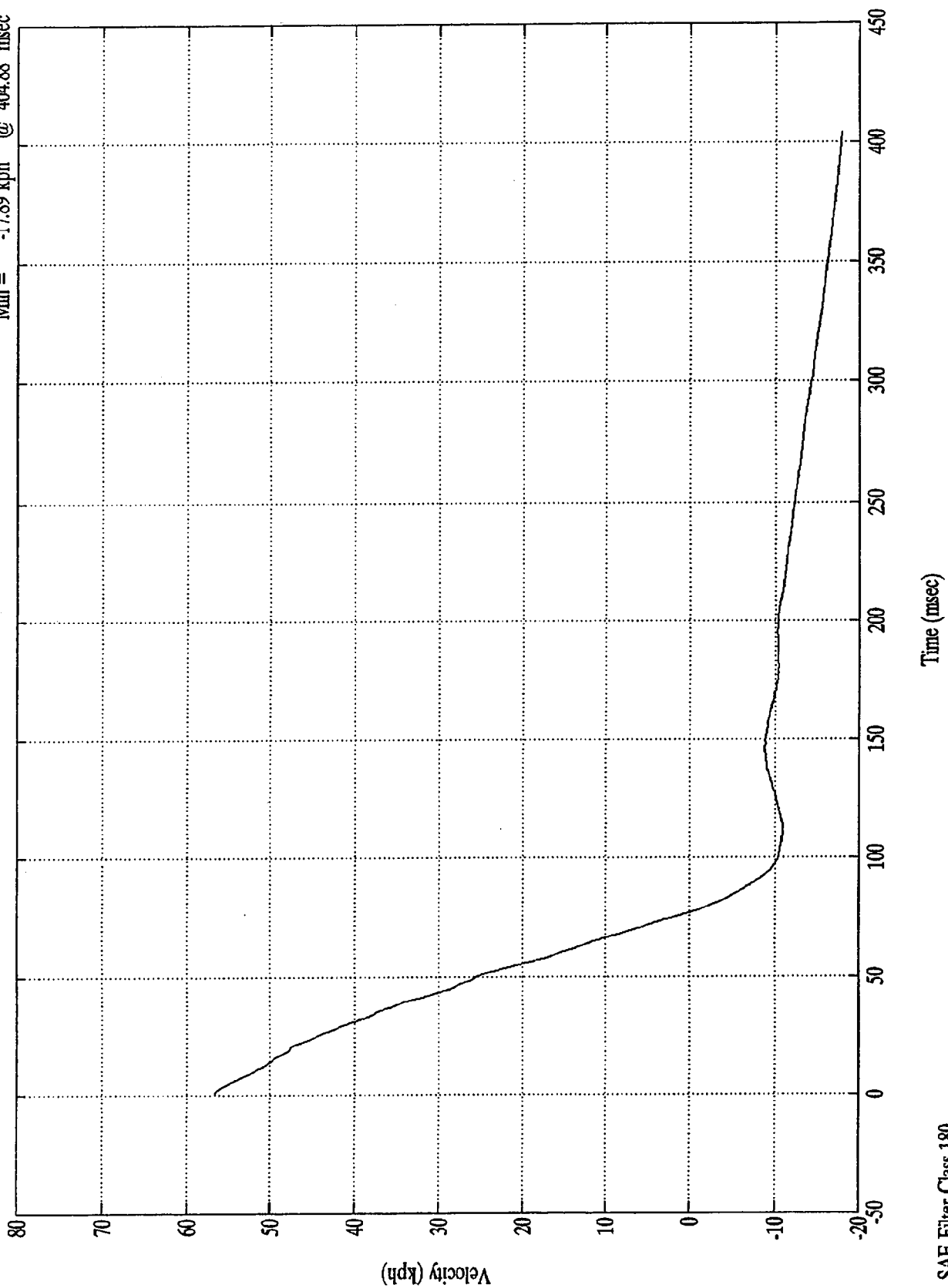
Acc. #2(x)



SAE Filter Class 60

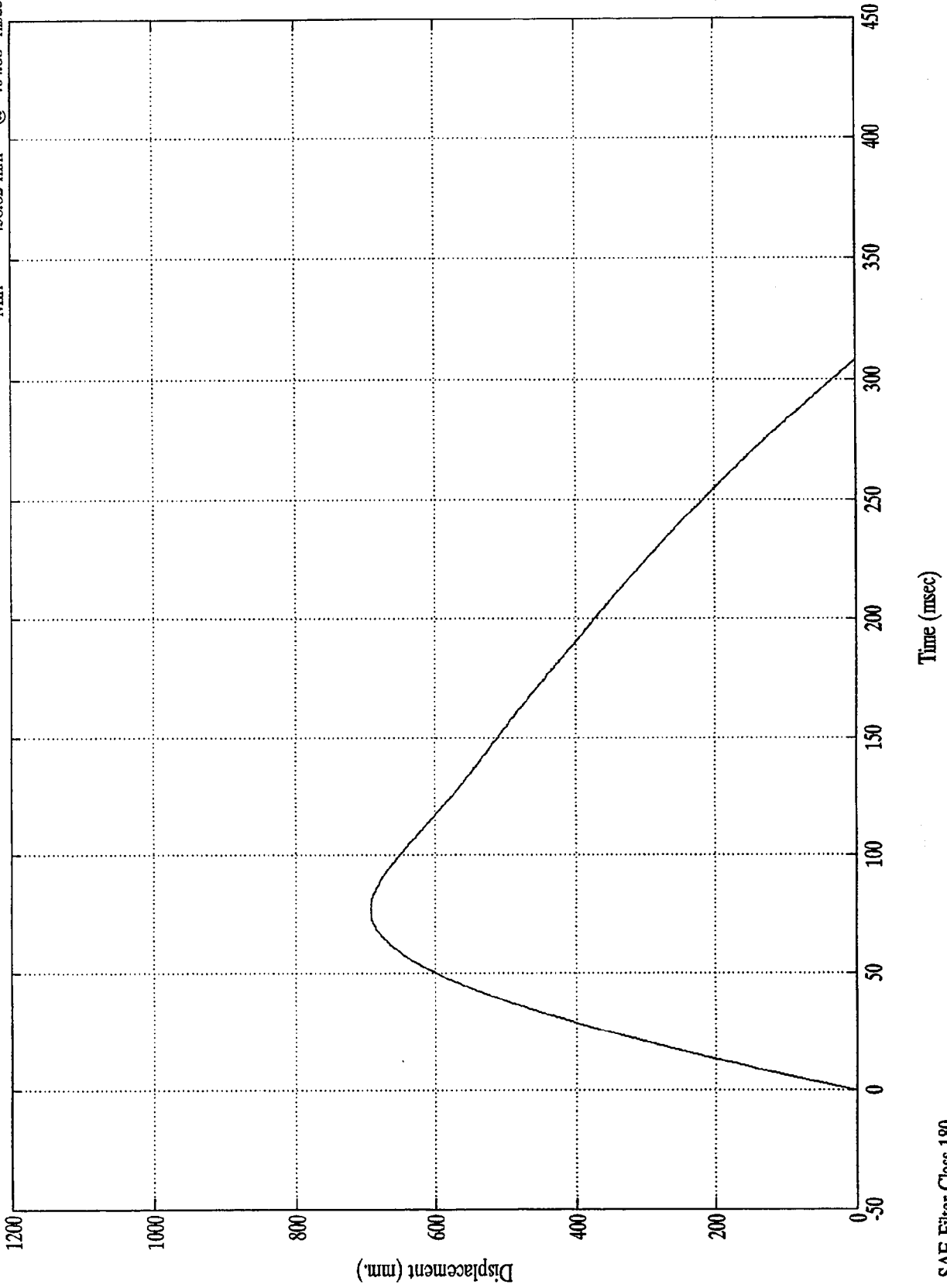
NCAP TEST #3 - 1996 ACURA LT

Acc. #2(x)
Max = 56.65 kph @ -0.00 msec
Min = -17.89 kph @ 404.88 msec



NCAP TEST #3 - 1996 ACURA LT

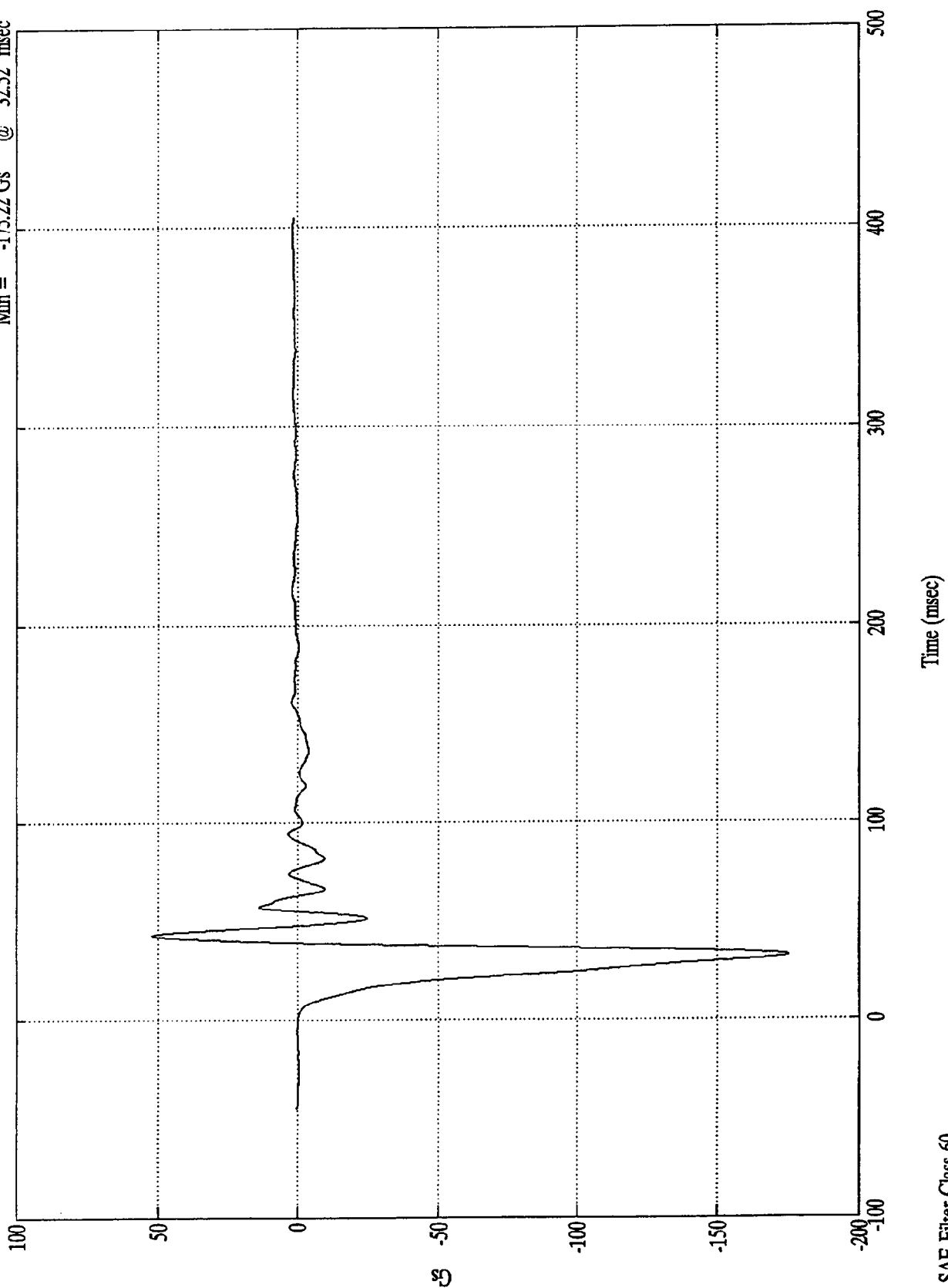
Acc. #2(x) Max = 692.14 mm @ 76.80 msec
Min = -438.82 mm @ 404.88 msec



NCAP TEST #3 - 1996 ACURA LT

Acc. #3(x)

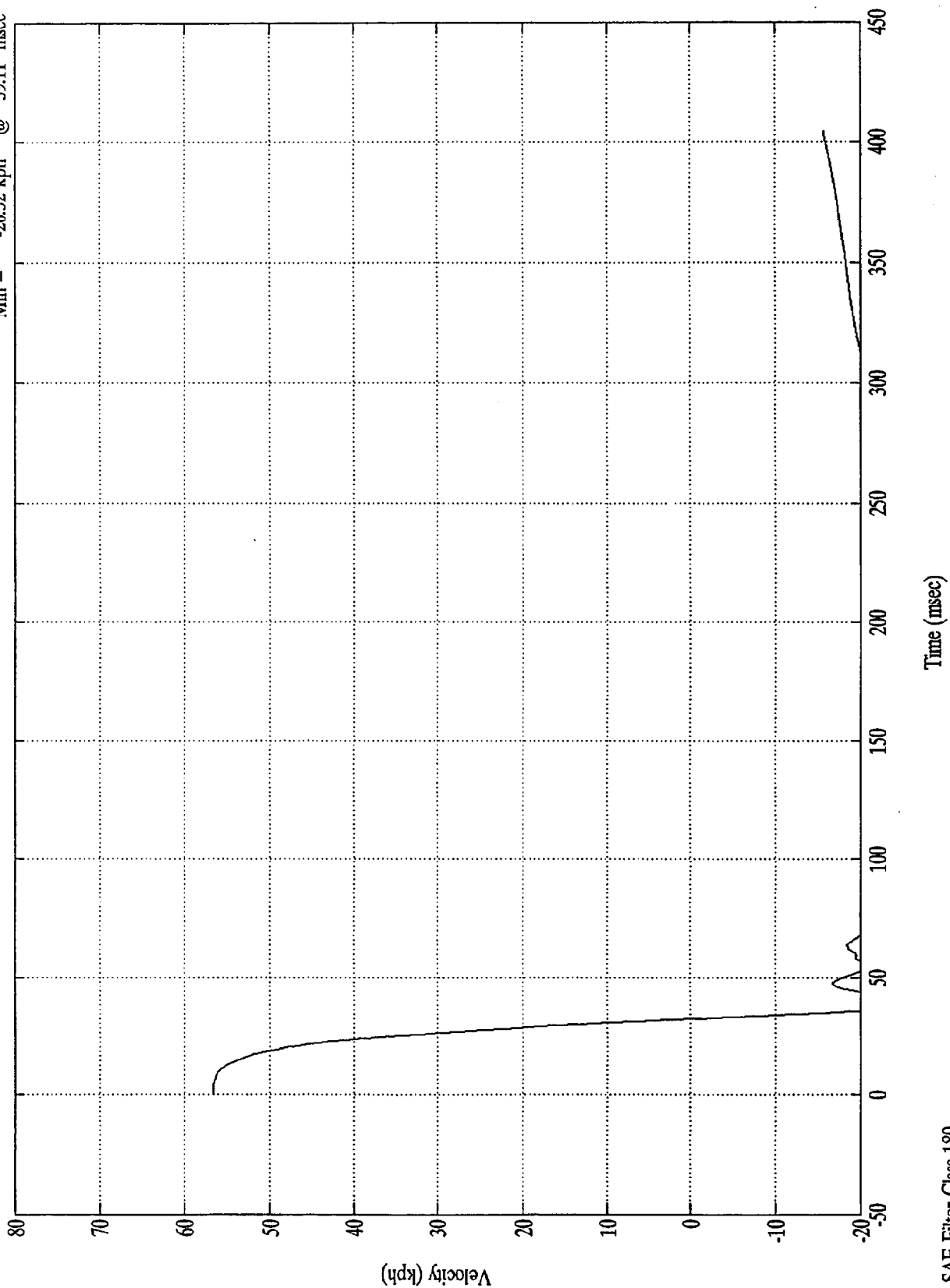
Max = 51.90 Gs @ 42.84 msec
Min = -175.22 Gs @ 32.52 msec



SAE Filter Class 60

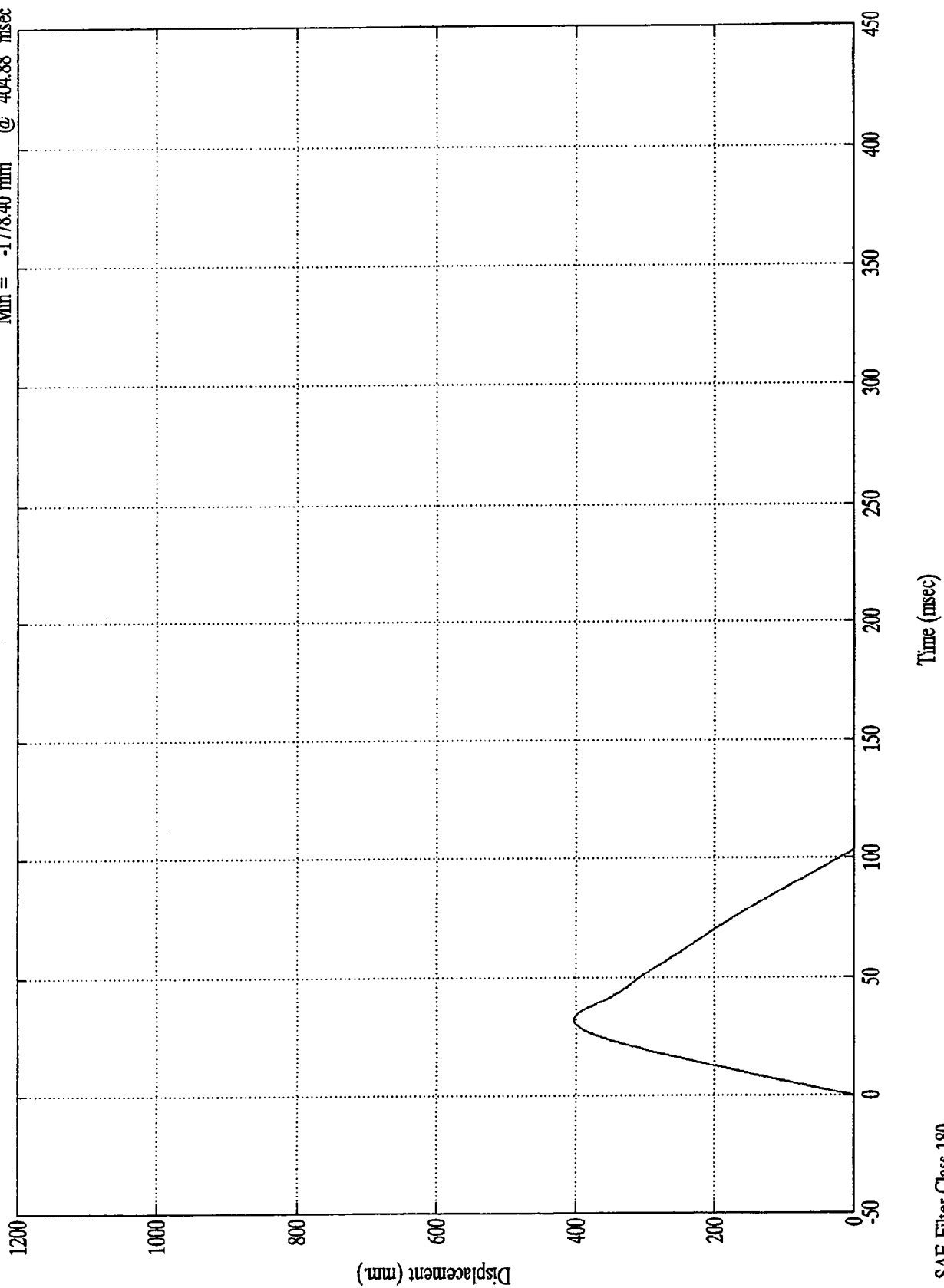
NCAP TEST #3 - 1996 ACURA LT

Acc. #3(x)
Max = 56.65 kph @ 1.31 msec
Min = -26.32 kph @ 39.11 msec



NCAP TEST #3 - 1996 ACURA LT

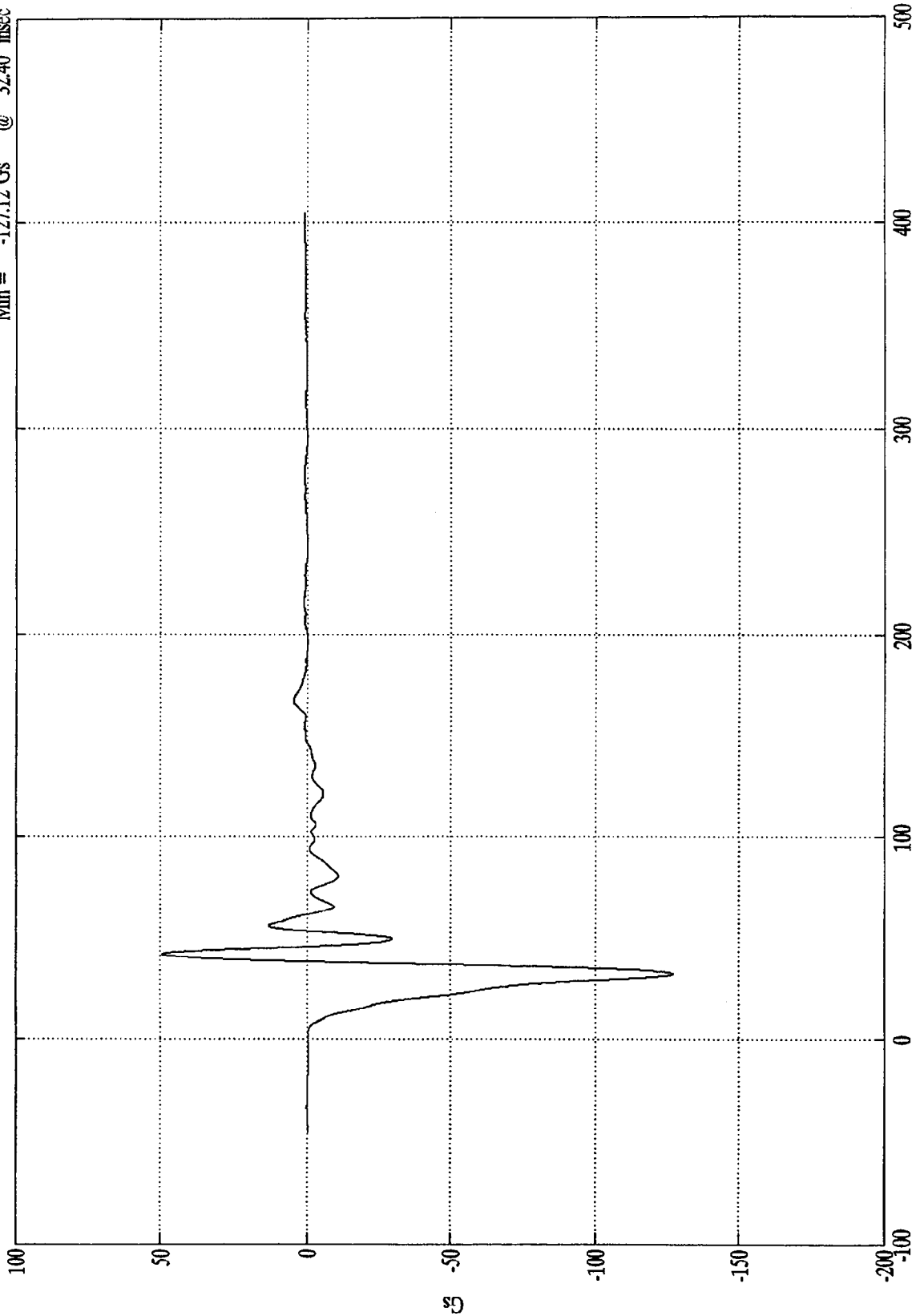
Acc. #3(x)
Max = 403.29 mm @ 32.28 msec
Min = -1778.40 mm @ 404.88 msec



NCAP TEST #3 - 1996 ACURA LT

Max = 49.41 Gs @ 42.00 msec
 Min = -127.12 Gs @ 32.40 msec

Acc. #4(x)



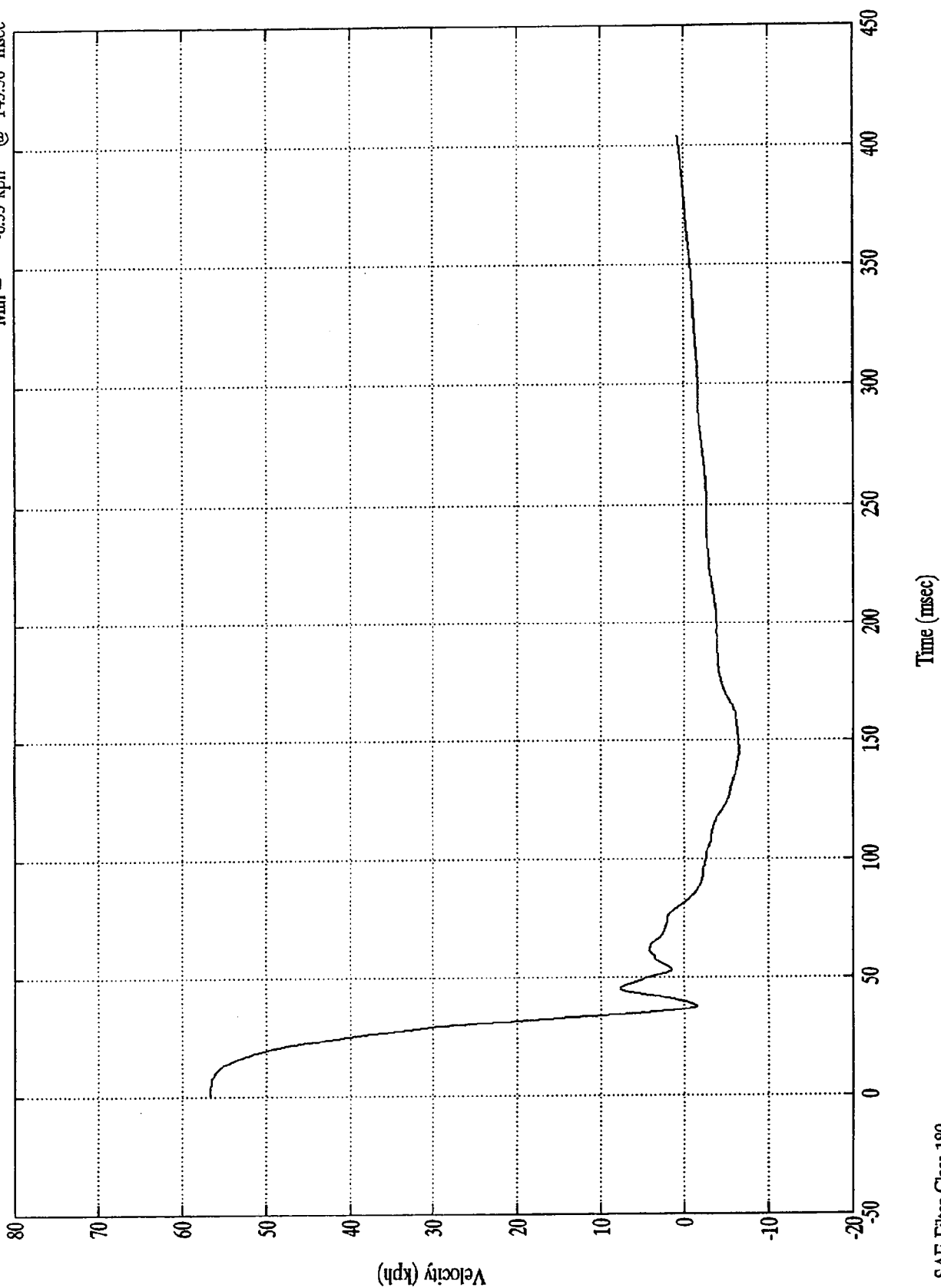
Time (msec)

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

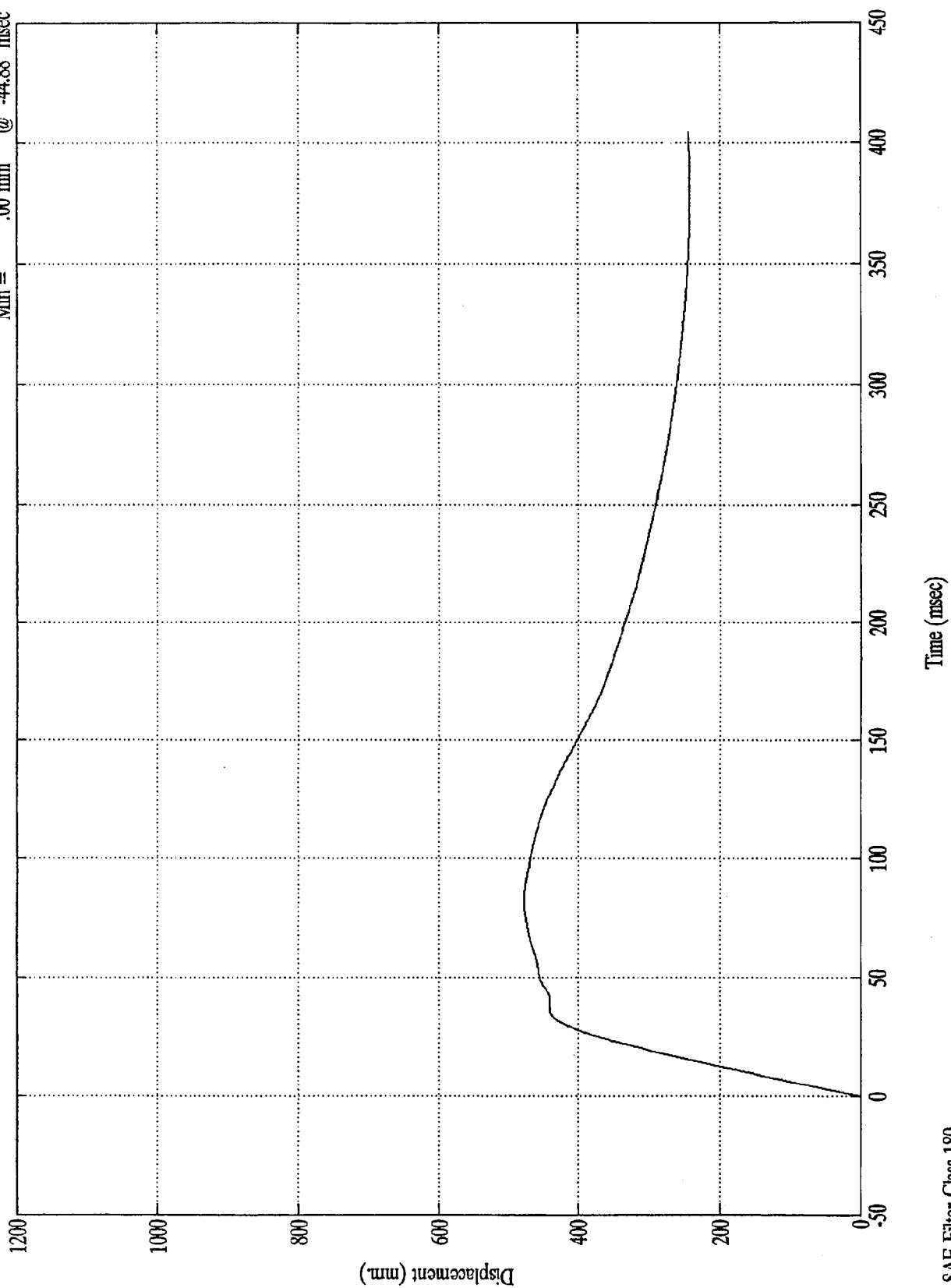
Max = 56.65 kph @ -0.00 msec
Min = -6.55 kph @ 145.56 msec

Acc. #4(x)



NCAP TEST #3 - 1996 ACURA LT

Acc. #4(x)
Max = 477.01 mm @ 82.07 msec
Min = .00 mm @ -44.88 msec

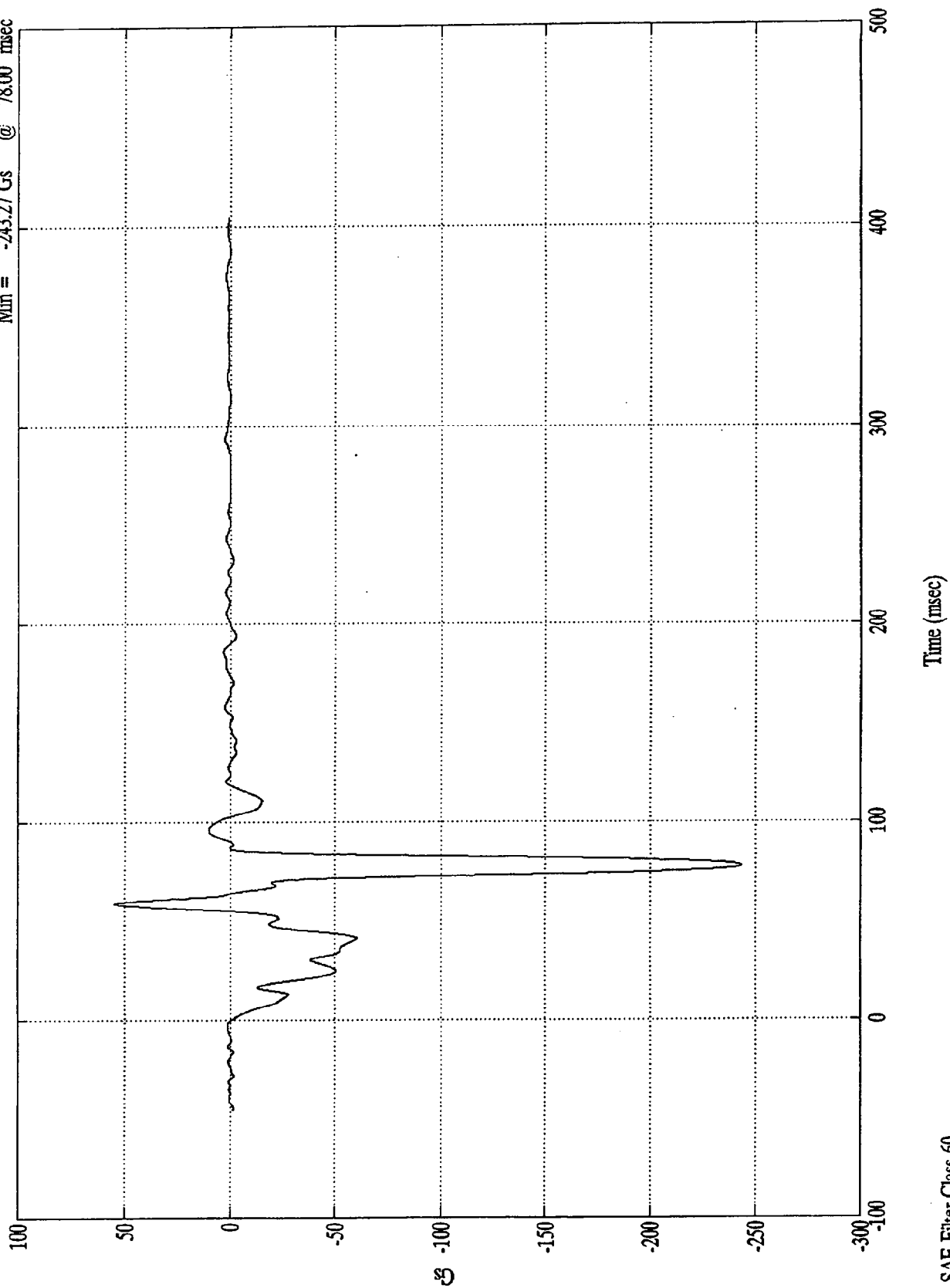


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Max = 54.39 Gs @ 59.27 msec
Min = -243.27 Gs @ 78.00 msec

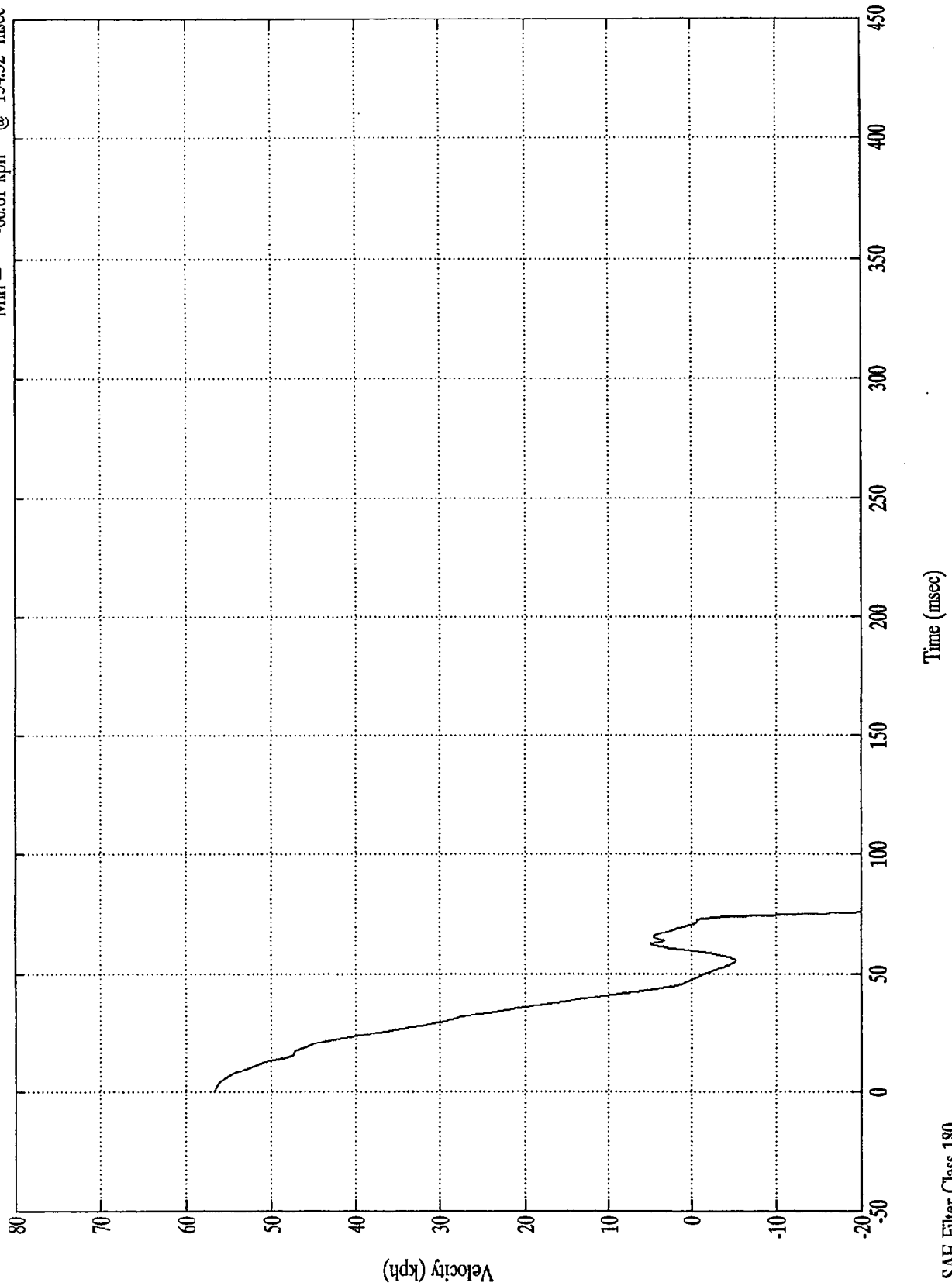
Acc. #5(x)



SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

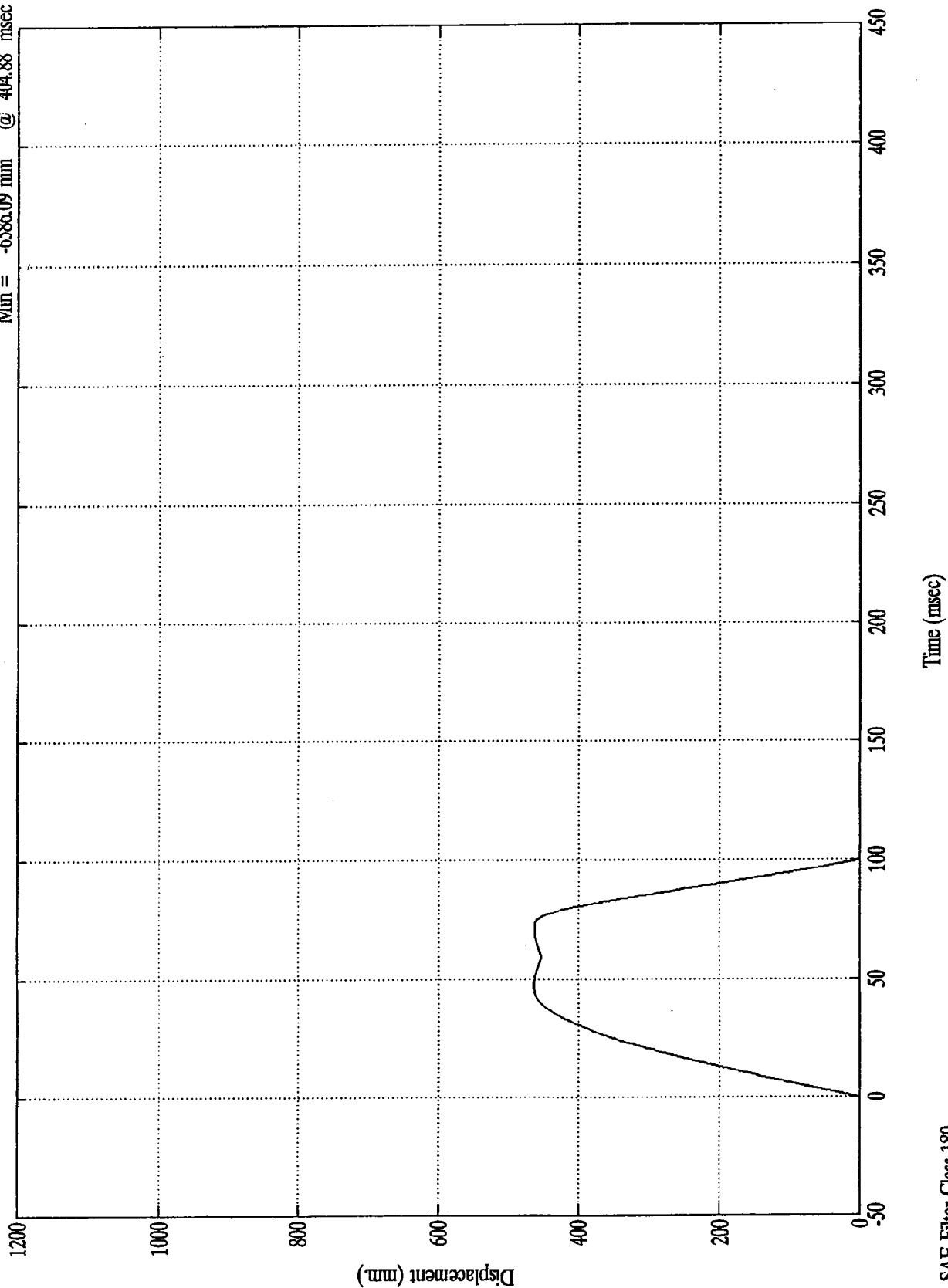
Acc. #5(x)
Max = 56.65 kph @ -0.00 msec
Min = -80.81 kph @ 154.32 msec



NCAP TEST #3 - 1996 ACURA LT

Acc. #5(x)

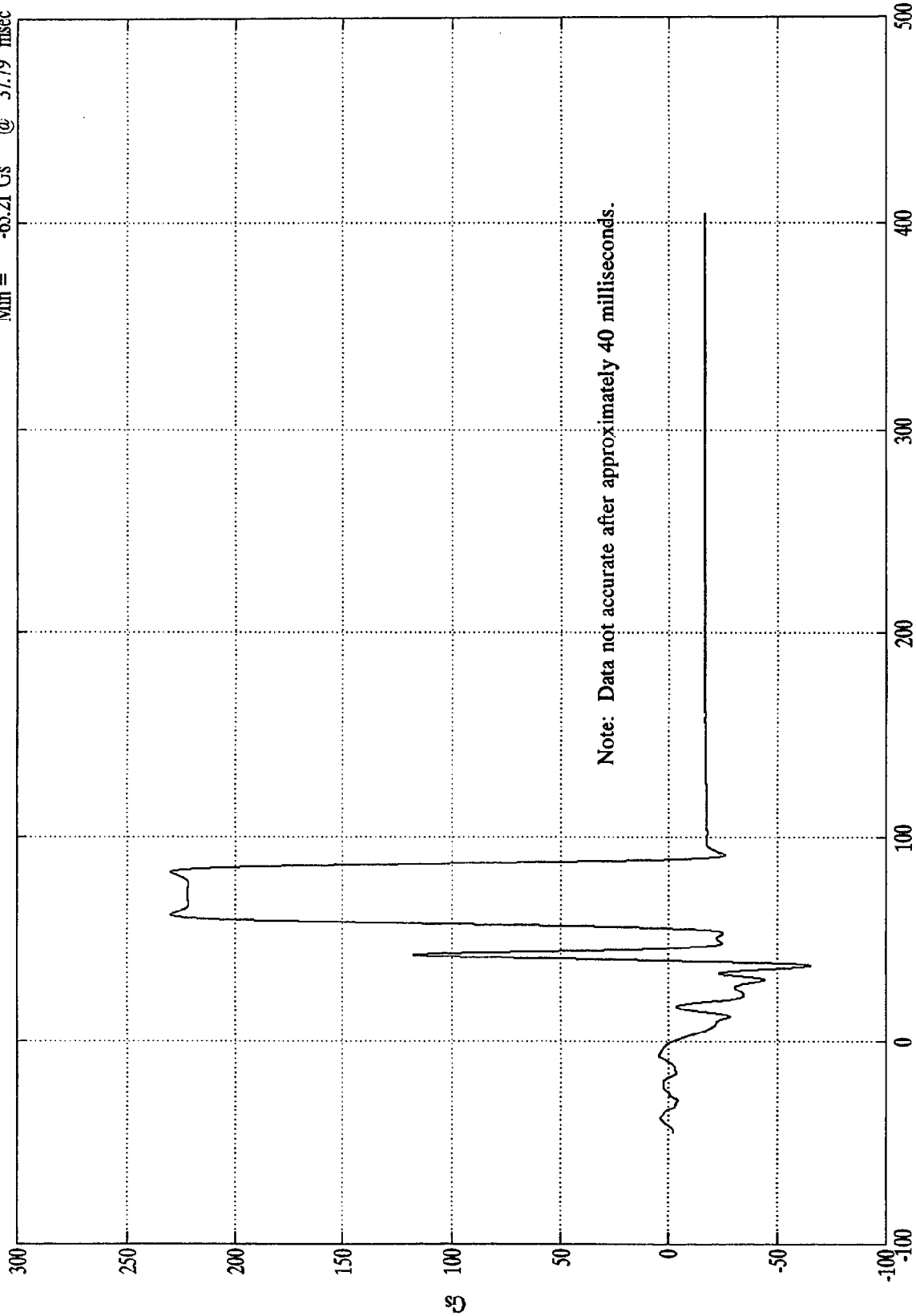
Max = 464.20 mm @ 47.63 msec
Min = -6586.09 mm @ 404.88 msec



NCAP TEST #3 - 1996 ACURA LT

Max = 230.23 Gs @ 82.68 msec
Min = -65.21 Gs @ 37.79 msec

Acc. #6(x)



Note: Data not accurate after approximately 40 milliseconds.

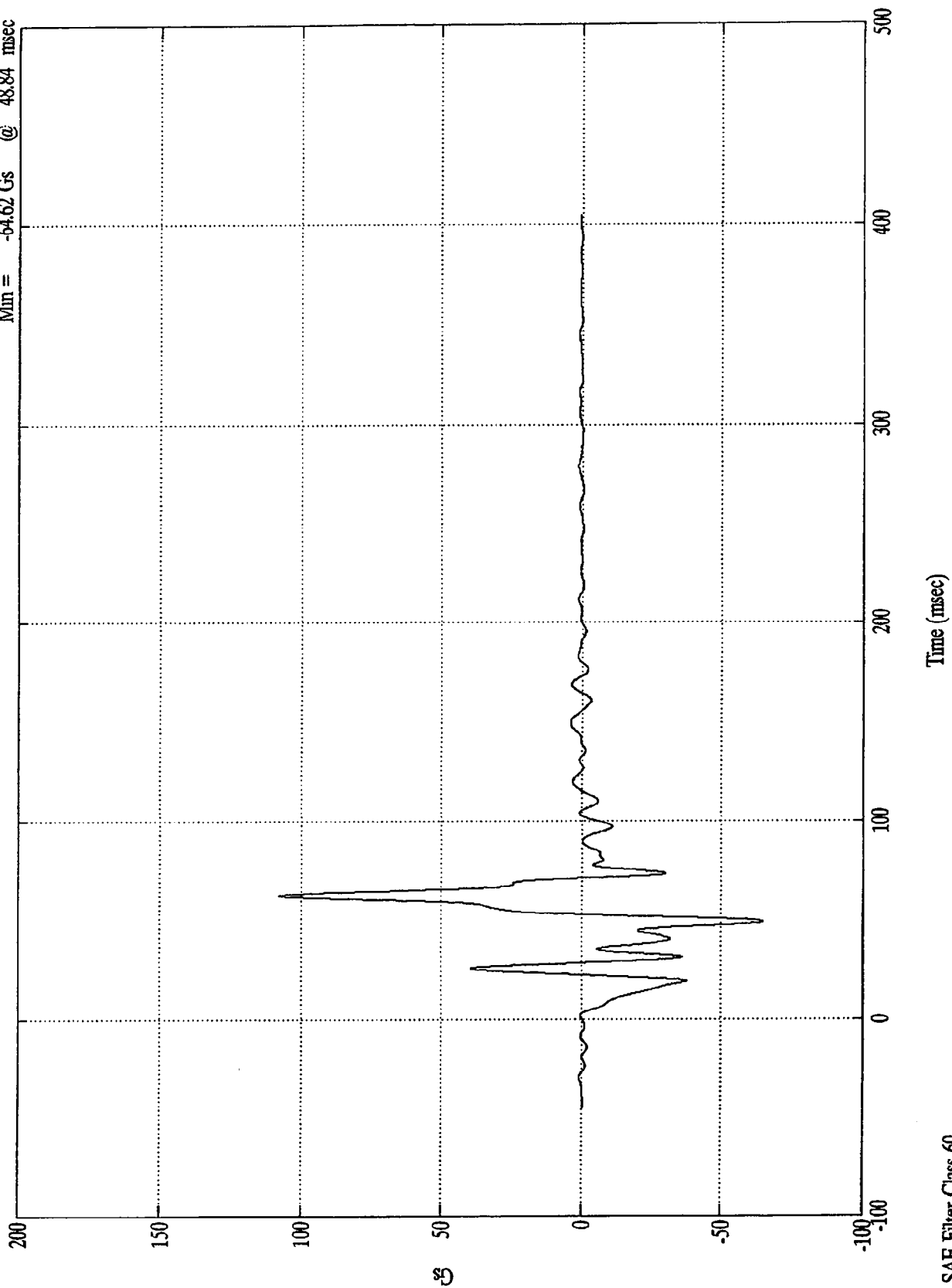
Time (msec)

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Max = 108.26 Gs @ 62.64 msec
 Min = -54.62 Gs @ 48.84 msec

Acc. #7(x)

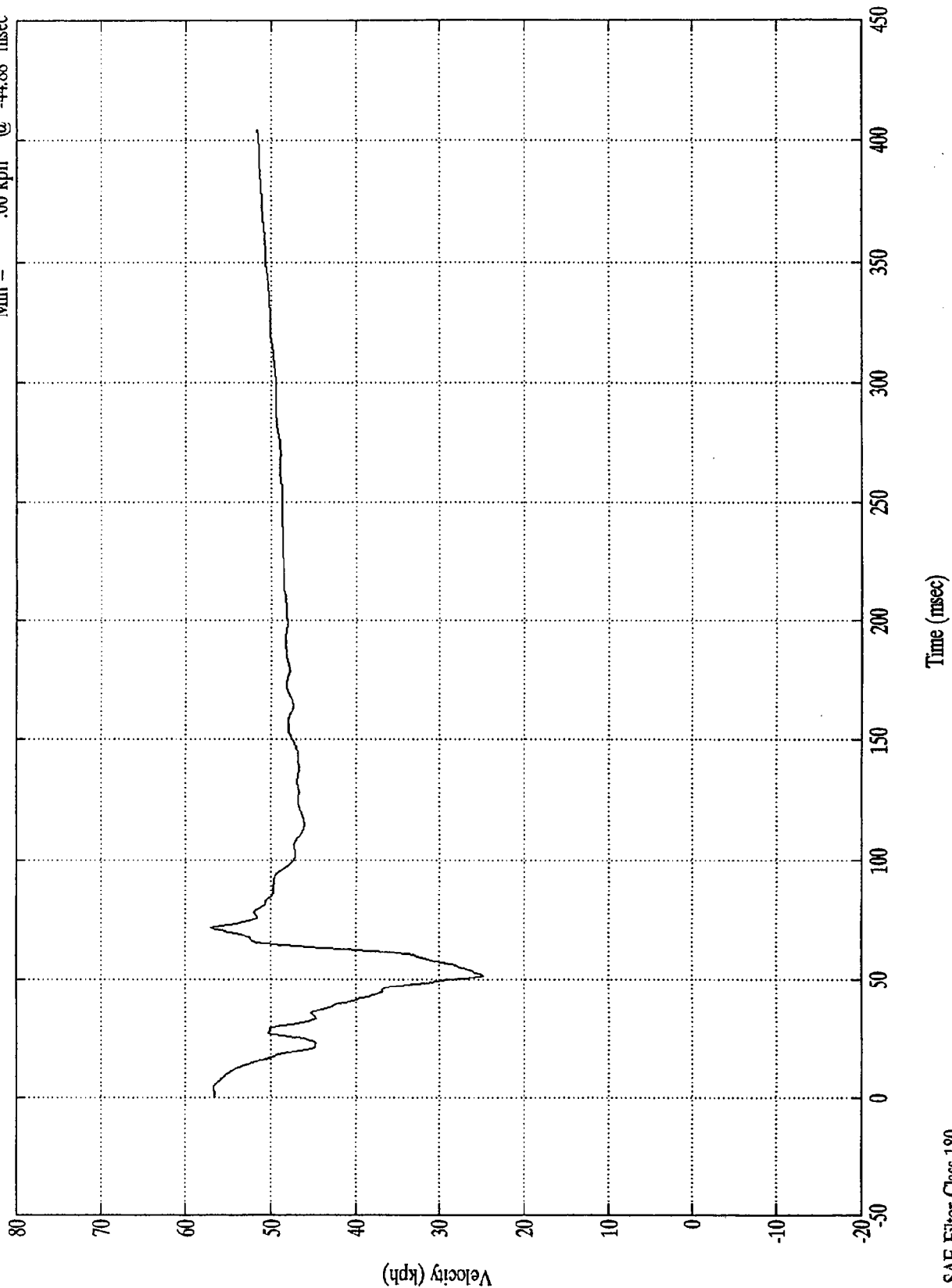


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Acc. #7(x)

Max = 57.06 kph @ 71.52 msec
Min = .00 kph @ -44.88 msec

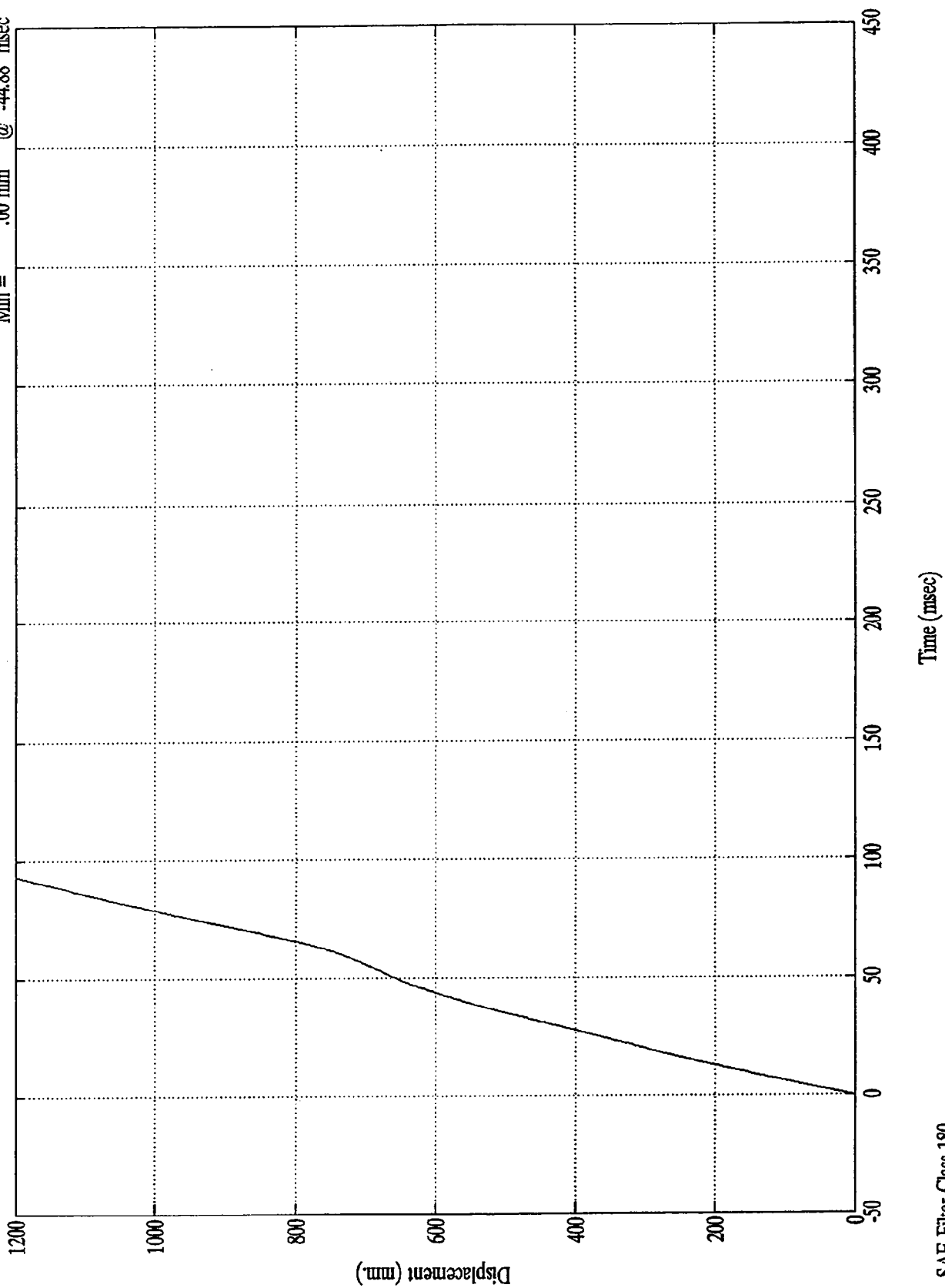


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Max = 5443.82 mm @ 404.88 msec
Min = .00 mm @ -44.88 msec

Acc. #7(x)

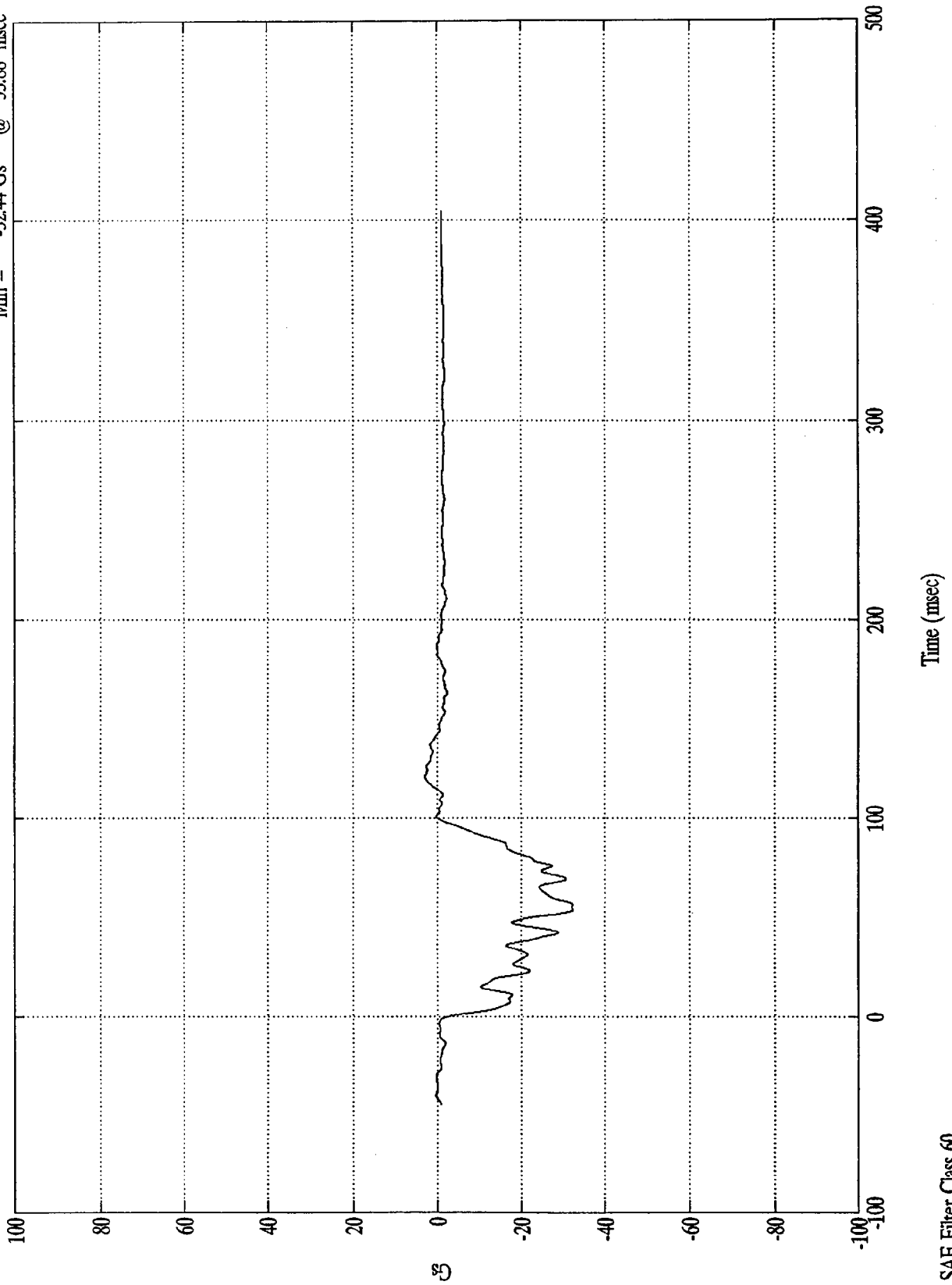


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Acc. #8(x)

Max = 2.89 Gs @ 120.96 msec
Min = -32.44 Gs @ 53.88 msec

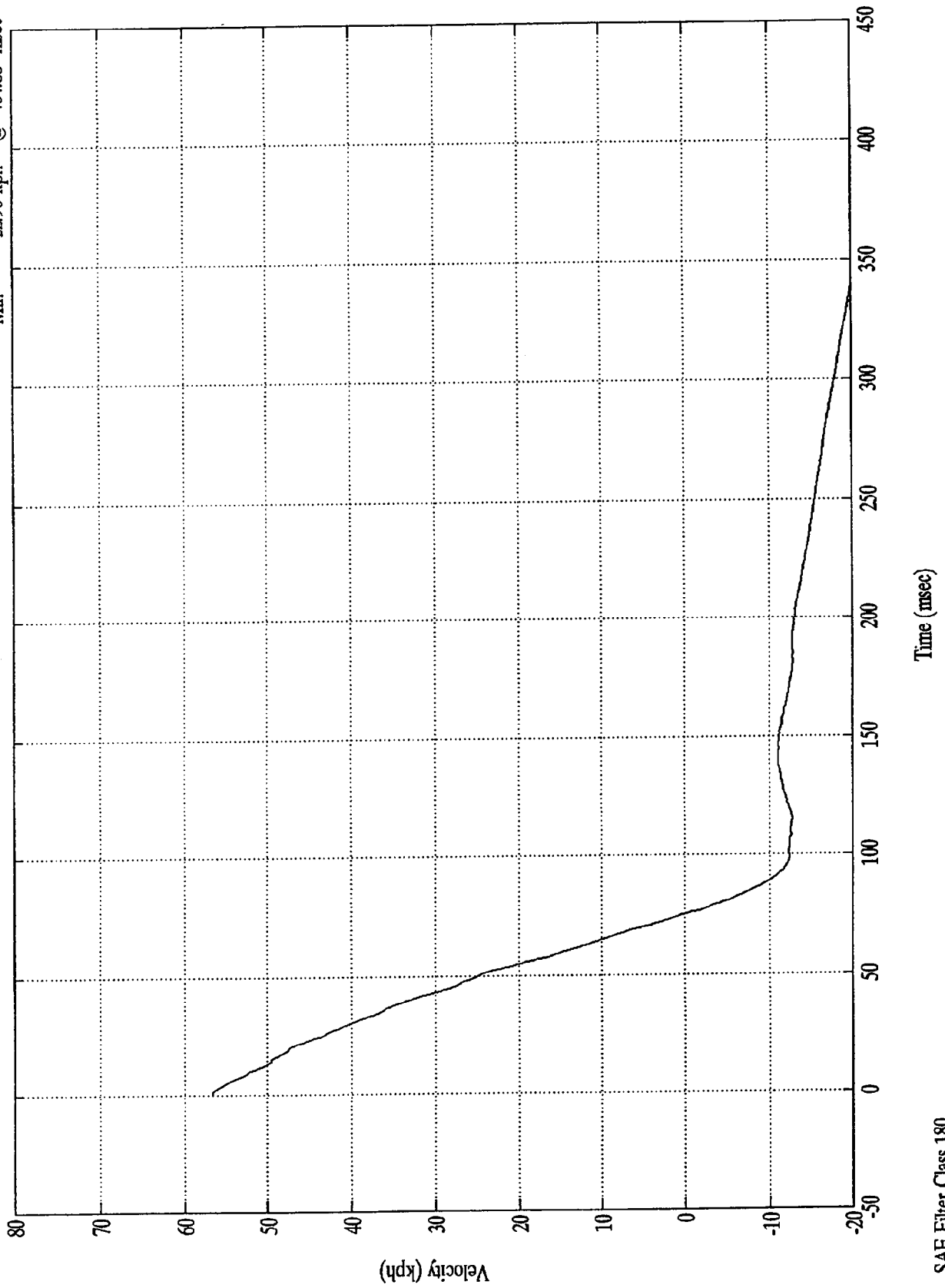


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

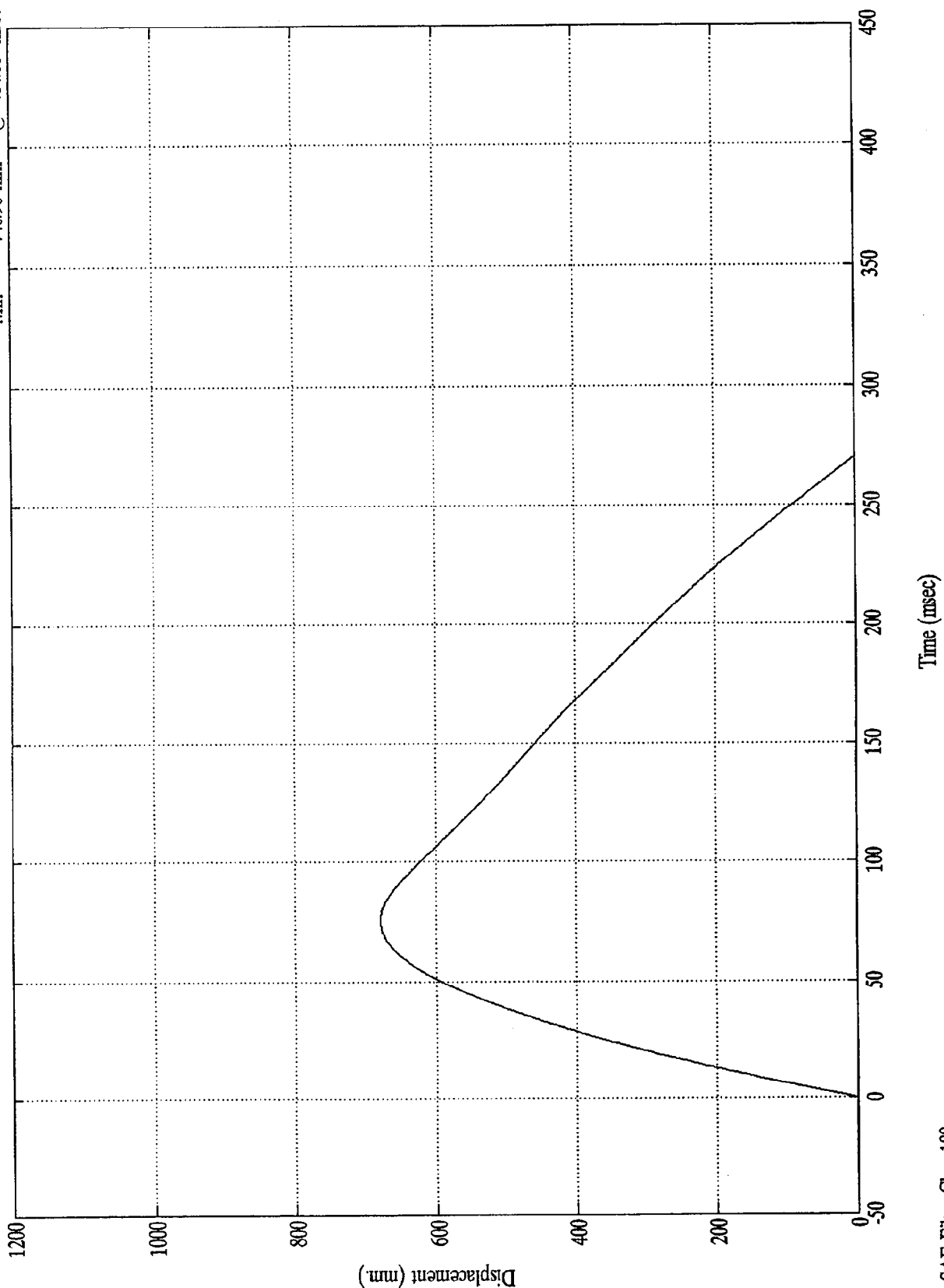
Acc. #8(x)

Max = 56.65 kph @ -0.00 msec
Min = -22.90 kph @ 404.88 msec



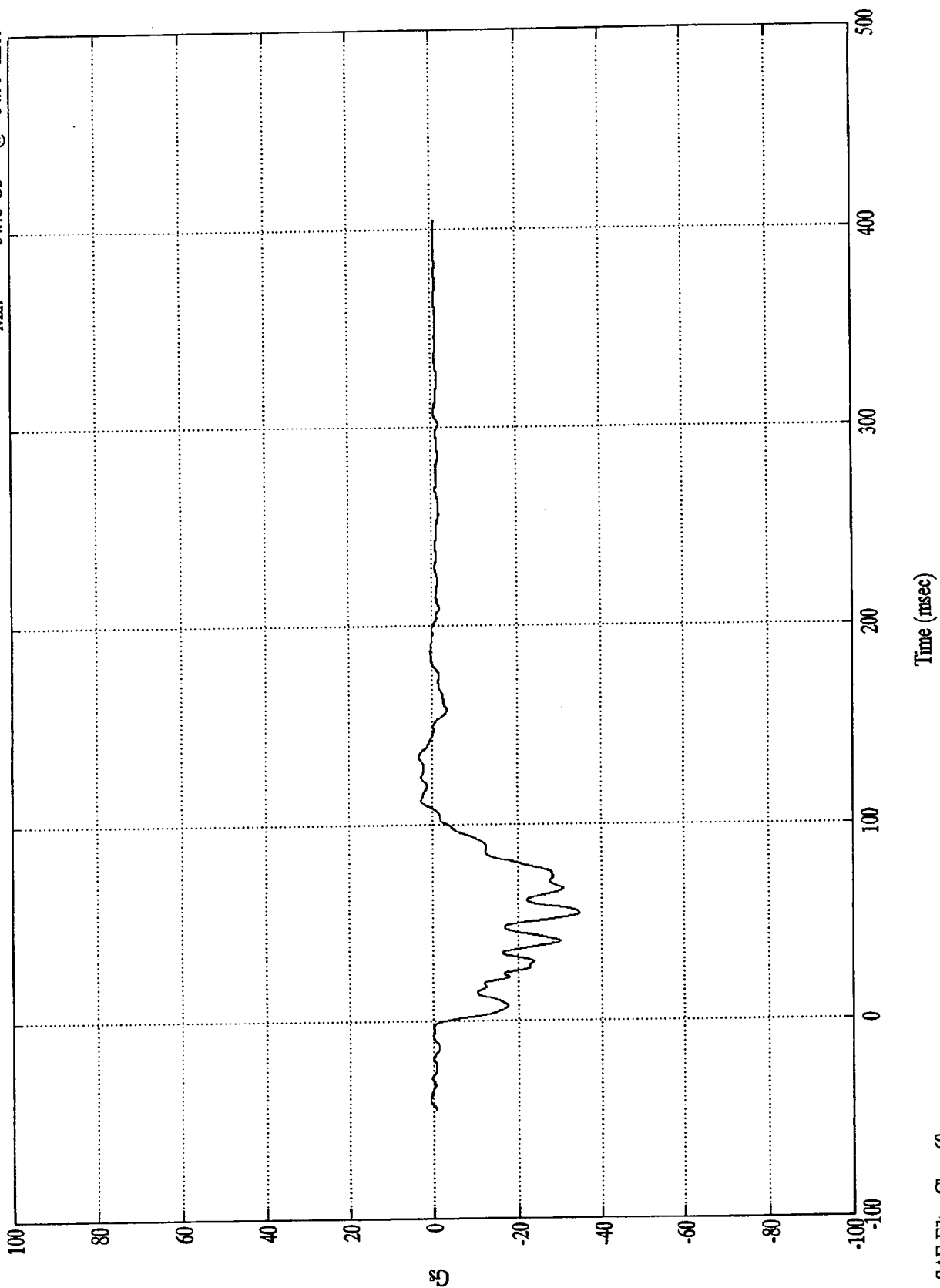
NCAP TEST #3 - 1996 ACURA LT

Acc. #8(x) Max = 679.44 mm @ 75.47 msec
 Min = -740.90 mm @ 404.88 msec



NCAP TEST #3 - 1996 ACURA LT

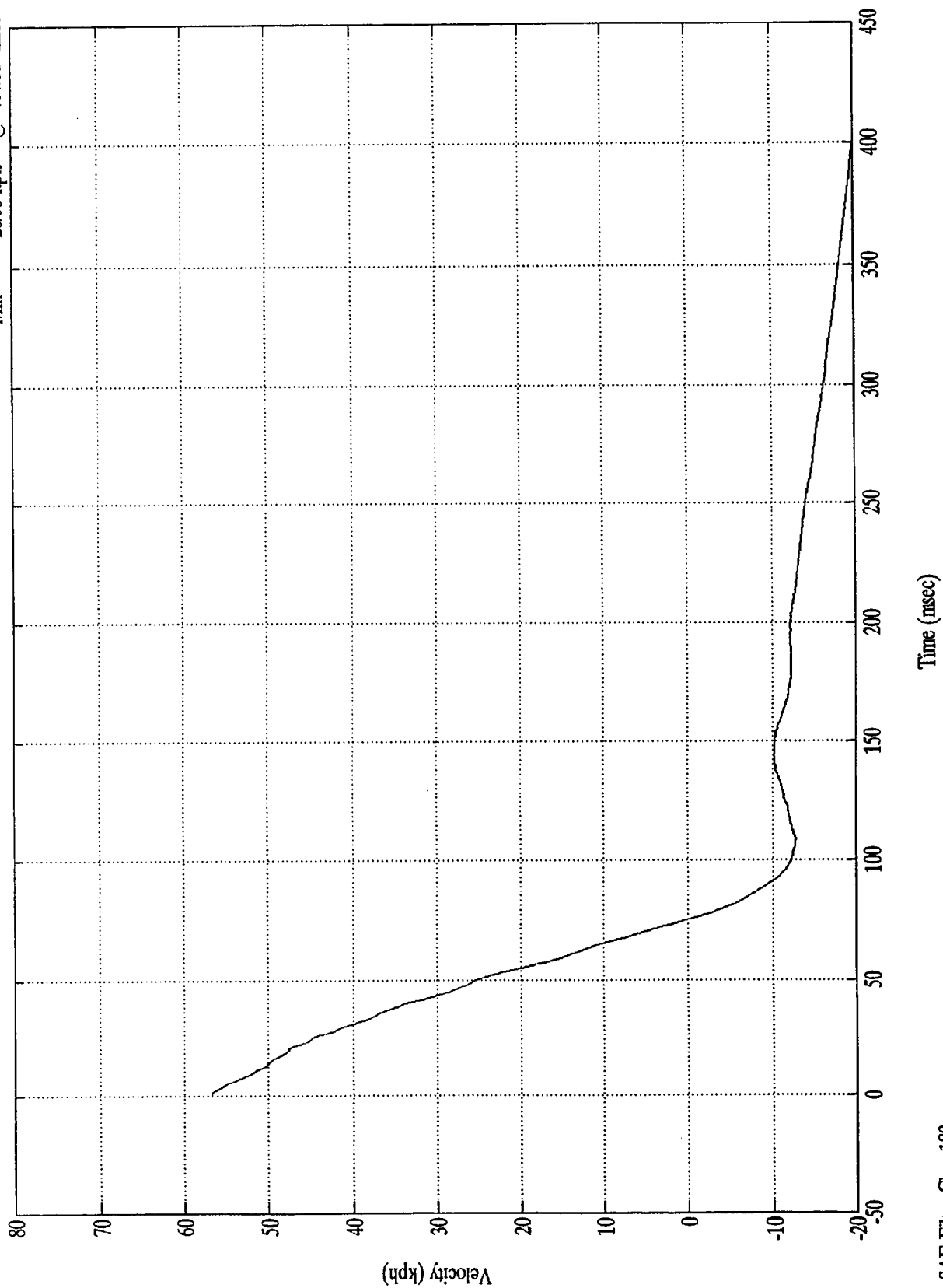
Acc. #9(x) Max = 3.18 Gs @ 134.16 msec
 Min = -34.75 Gs @ 54.96 msec



NCAP TEST #3 - 1996 ACURA LT

Max = 56.65 kph @ -0.00 msec
Min = -20.08 kph @ 404.88 msec

Acc. #9(x)

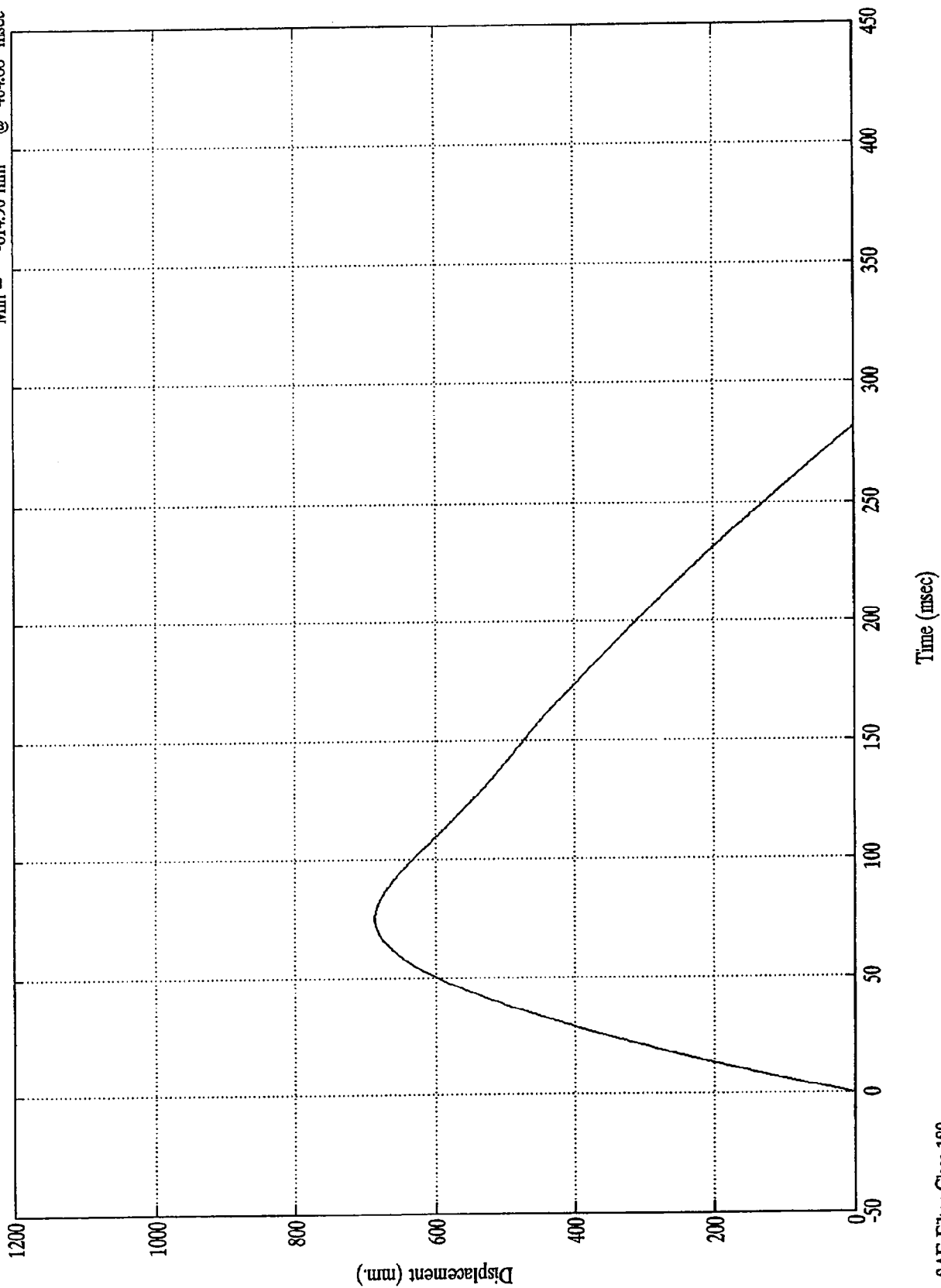


SAE Filter Class 180

NCAP TEST #3 - 1996 ACURA LT

Max = 685.94 mm @ 75.47 msec
Min = -614.90 mm @ 404.88 msec

Acc. #9(x)



SAE Filter Class 180

NHTSA TEST NO. MT5302

LOAD CELL BARRIER DATA

FILTER CHANNEL CLASS

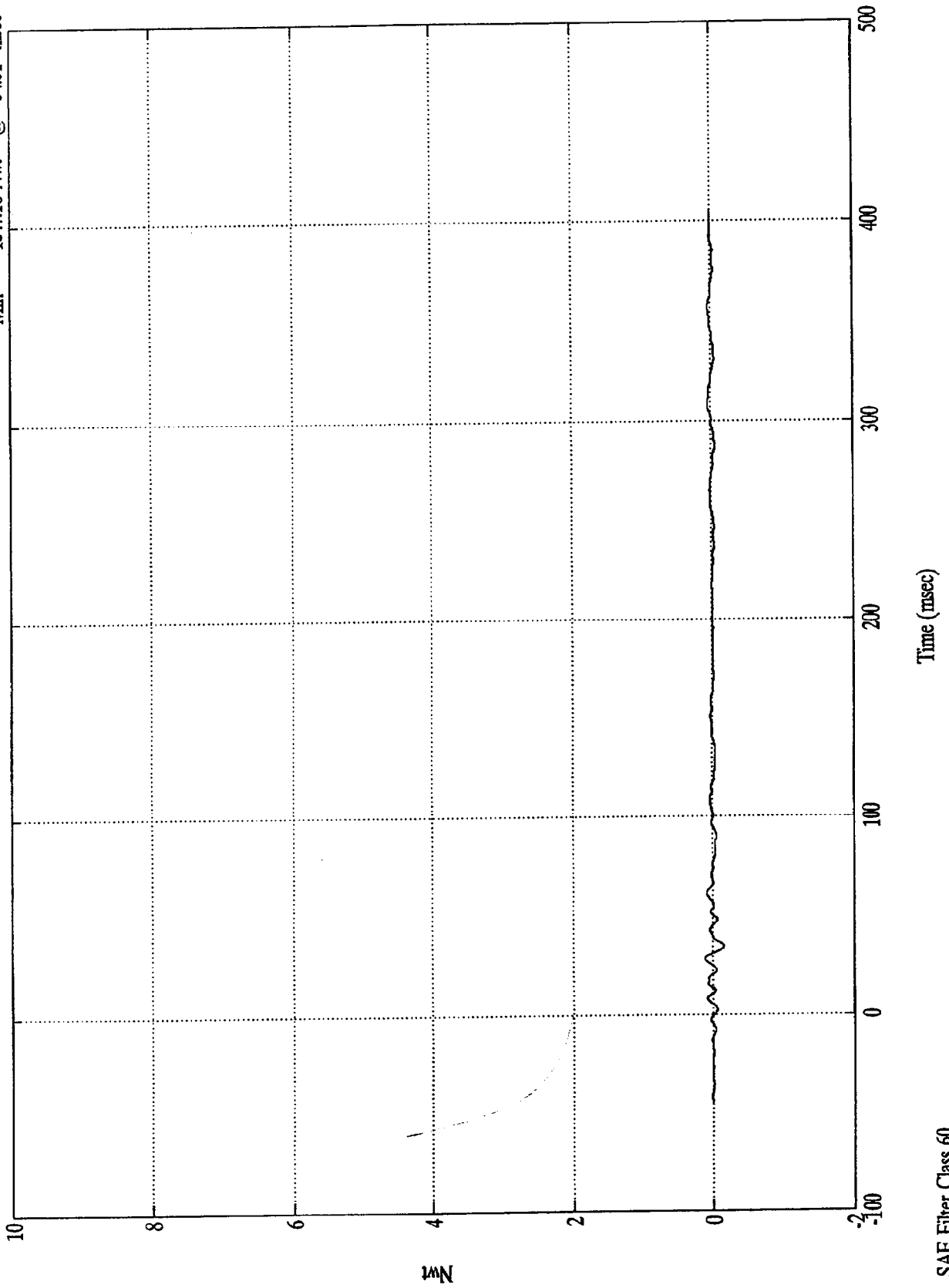
60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell A1

Max = 1147.76 Nwt @ 28.20 msec
Min = -1547.16 Nwt @ 34.31 msec



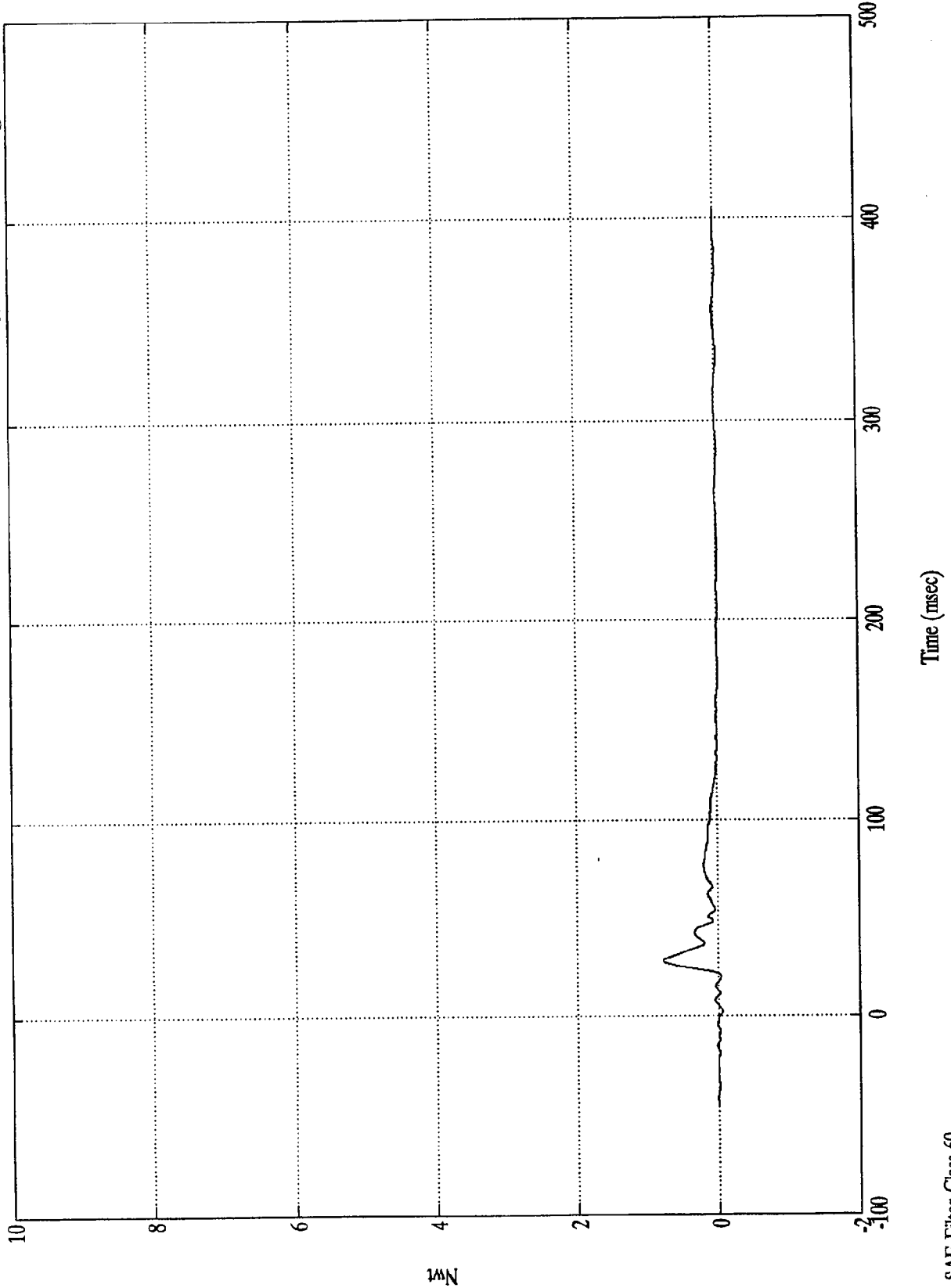
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell A2

Max = 7798.28 Nwt @ 28.20 msec
Min = -611.93 Nwt @ 2.39 msec



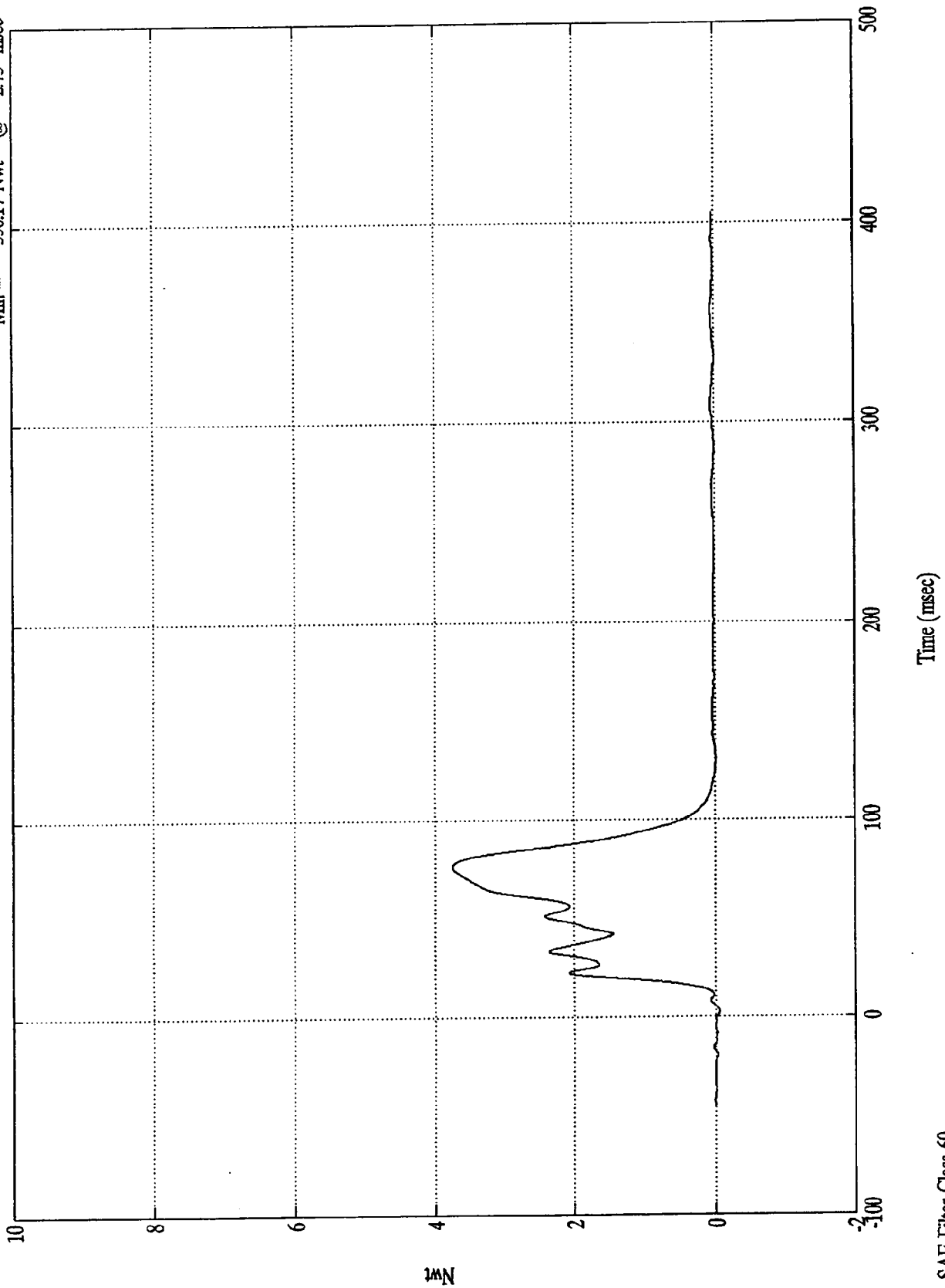
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell A3

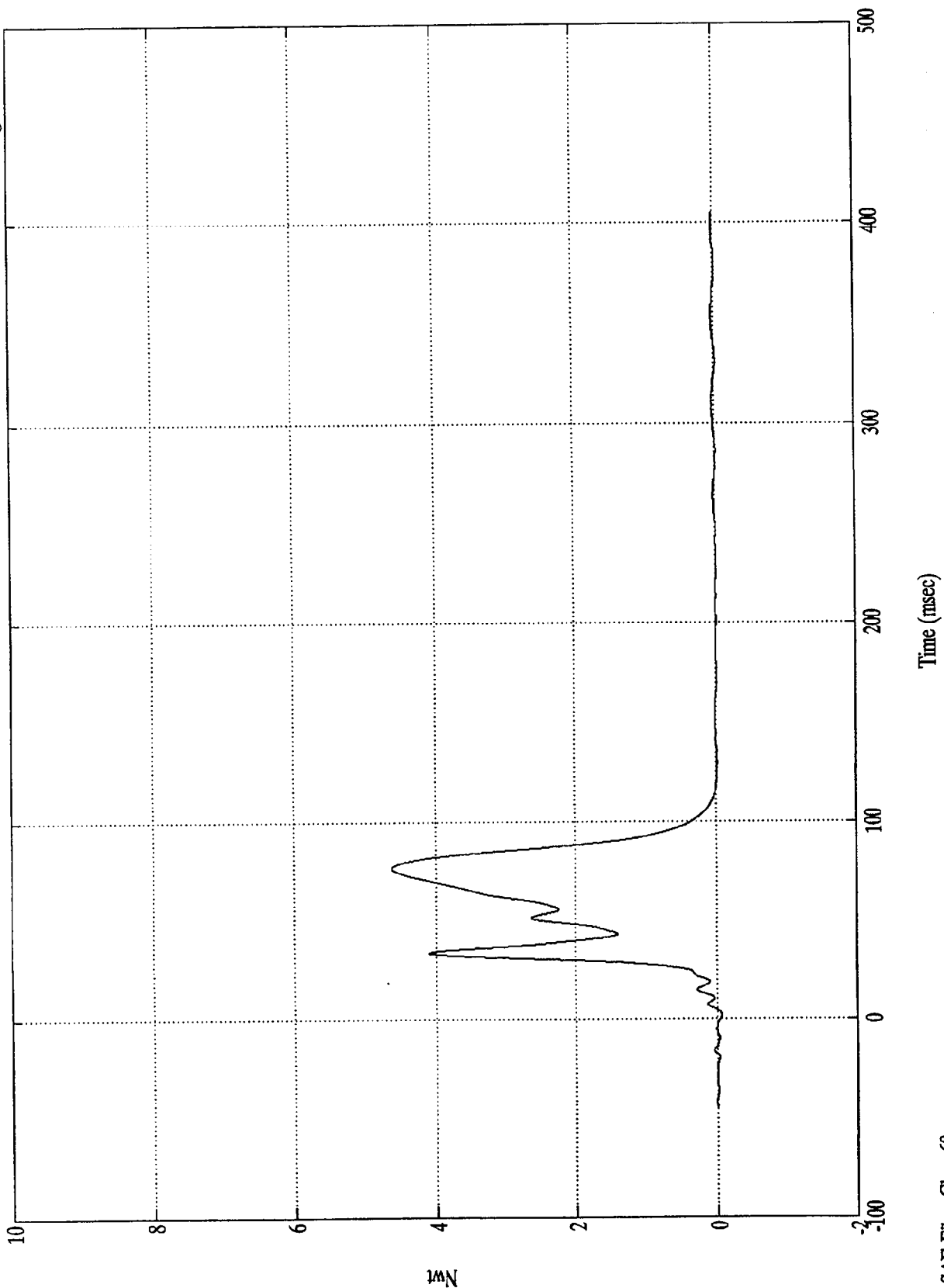
Max = 37527.99 Nwt @ 76.68 msec
Min = -550.17 Nwt @ 2.75 msec



NCAP TEST #3 - 1996 ACURA LT
x10⁴

Barrier Load Cell A4

Max = 46198.69 Nwt @ 76.55 msec
Min = -532.00 Nwt @ 1.91 msec



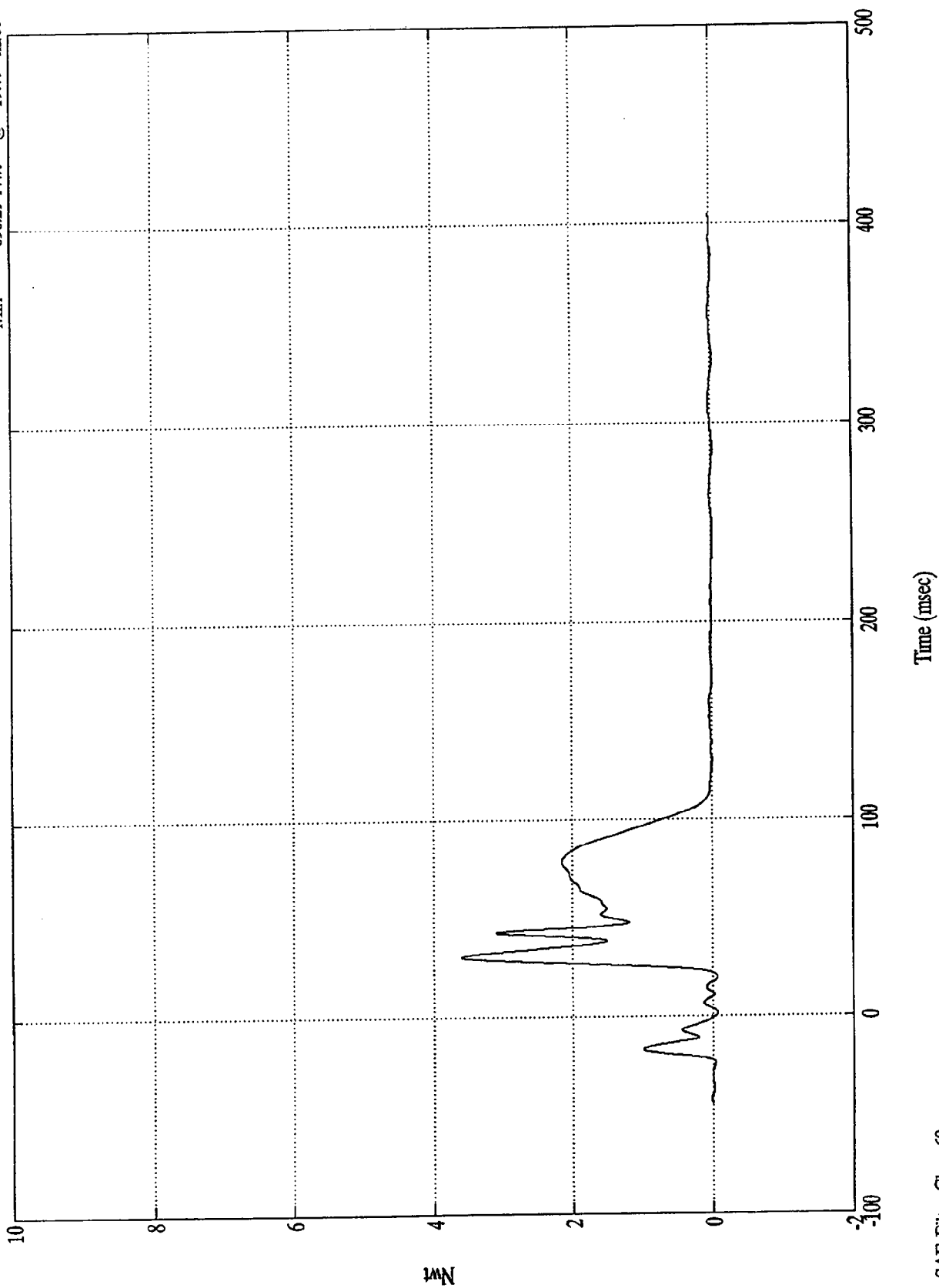
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell A5

Max = 36050.87 Nwt @ 30.47 msec
Min = -690.29 Nwt @ 19.79 msec



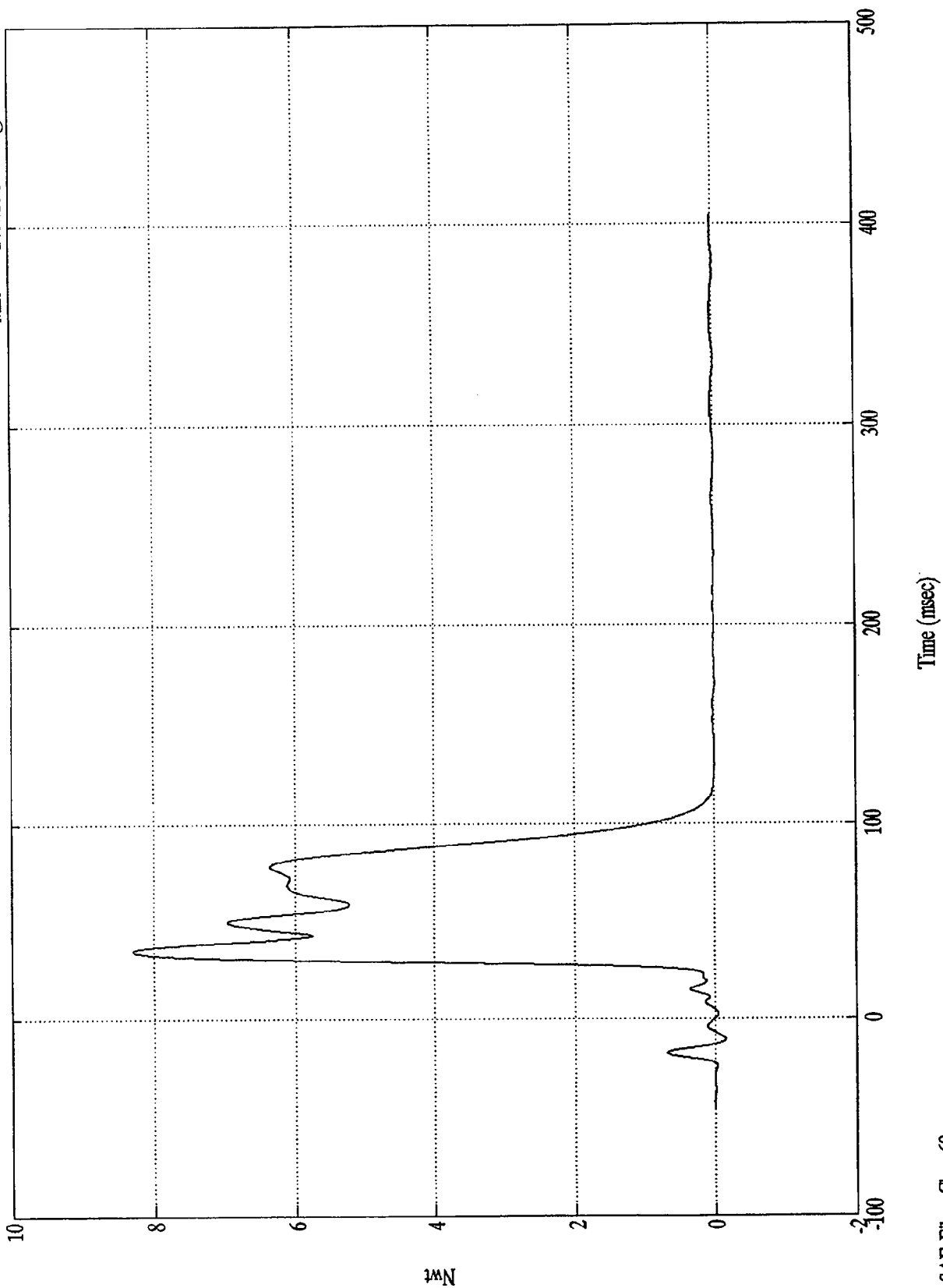
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Barrier Load Cell A6

Max = 83038.42 Nwt @ 34.68 msec
Min = -1467.16 Nwt @ -10.20 msec

x10⁴



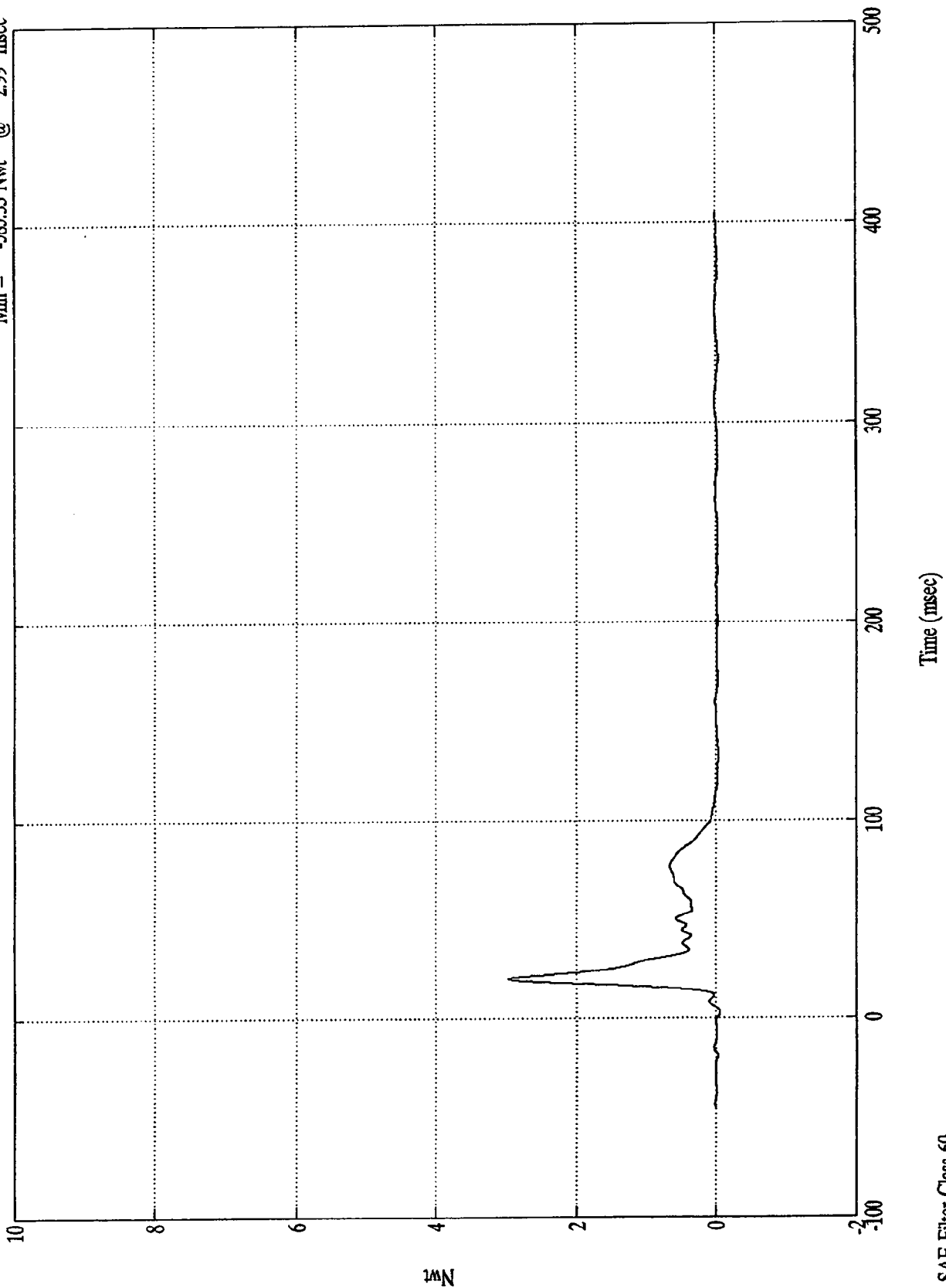
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell A7

Max = 29628.33 Nwt @ 20.15 msec
Min = -585.33 Nwt @ 2.99 msec

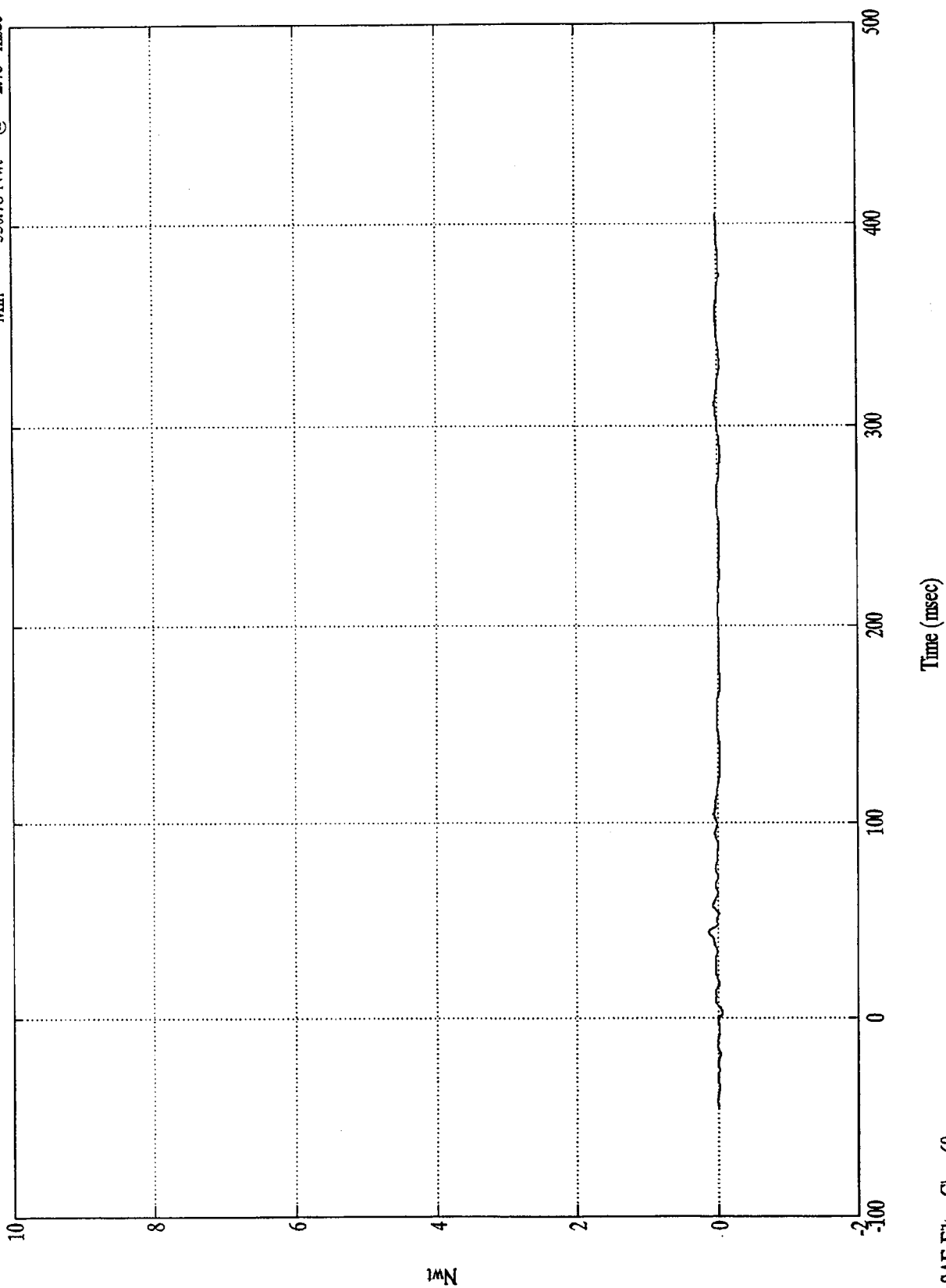


NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell A8

Max = 1443.43 Nwt @ 44.15 msec
Min = -530.78 Nwt @ 2.75 msec



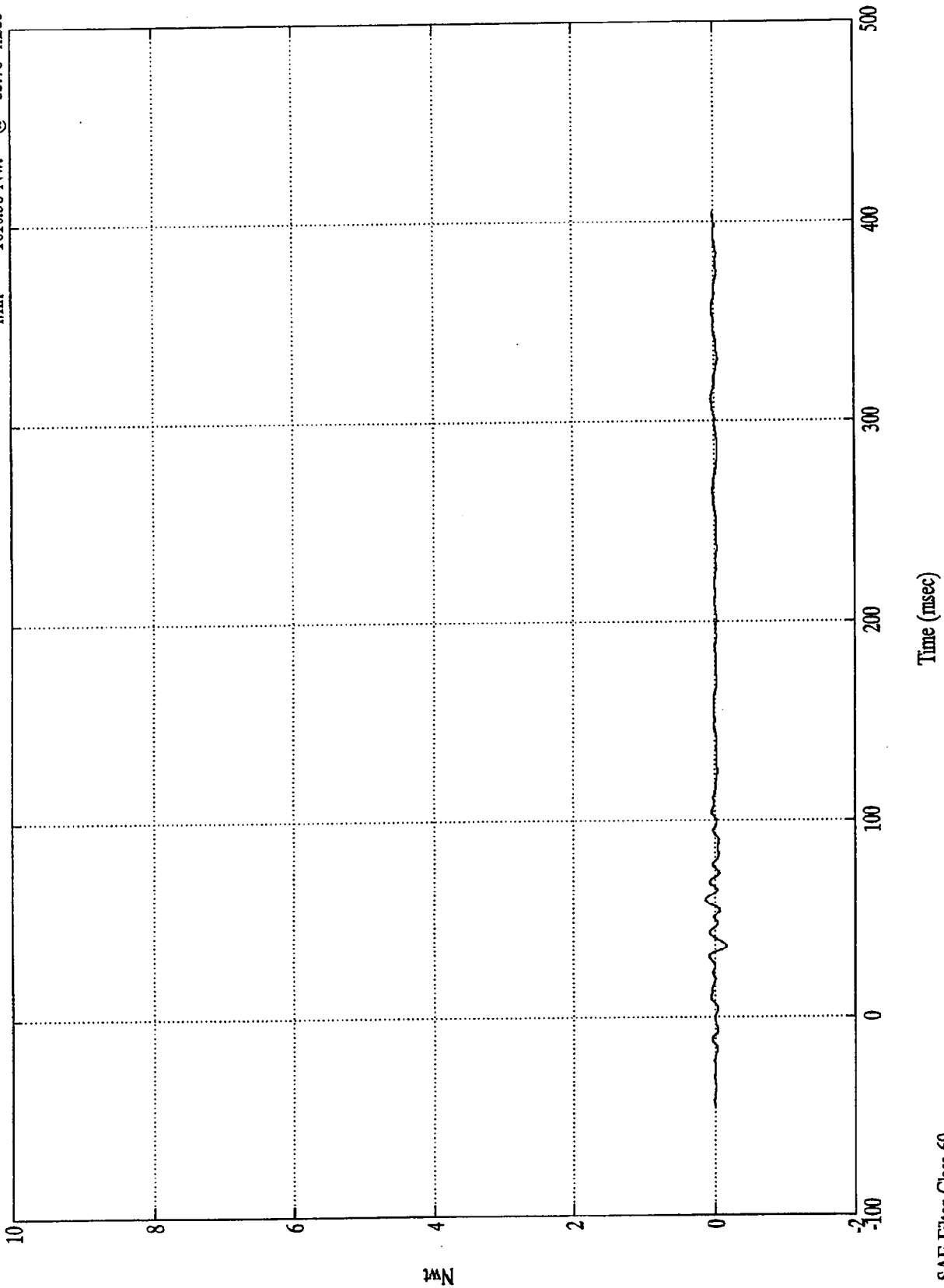
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Max = 1354.20 Nwt @ 59.15 msec
Min = -1610.50 Nwt @ 35.76 msec

Barrier Load Cell A9

$\times 10^4$



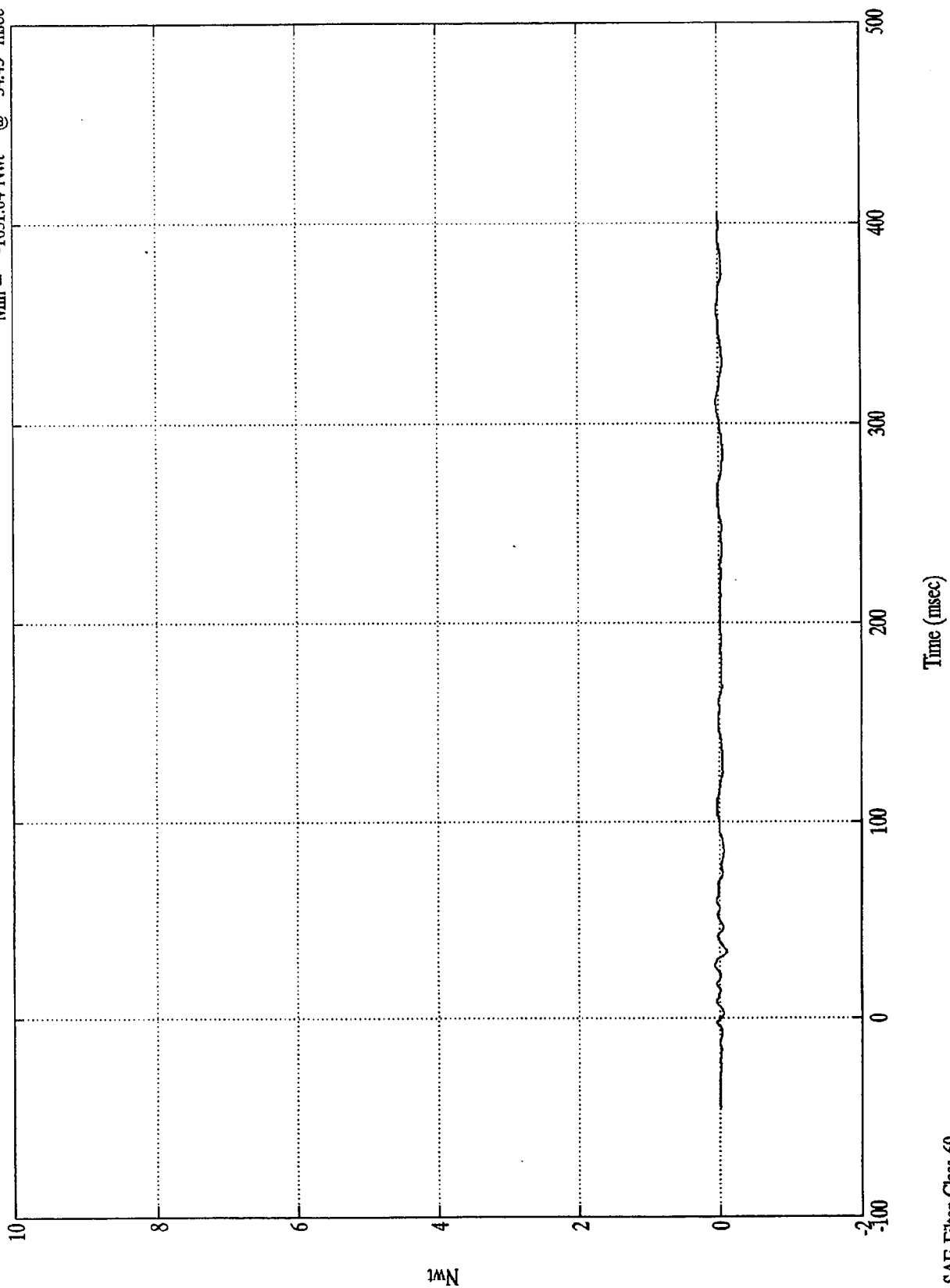
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell BI

Max = 671.55 Nwt @ 27.36 msec
Min = -1031.04 Nwt @ 34.43 msec



Nwt

SAE Filter Class 60

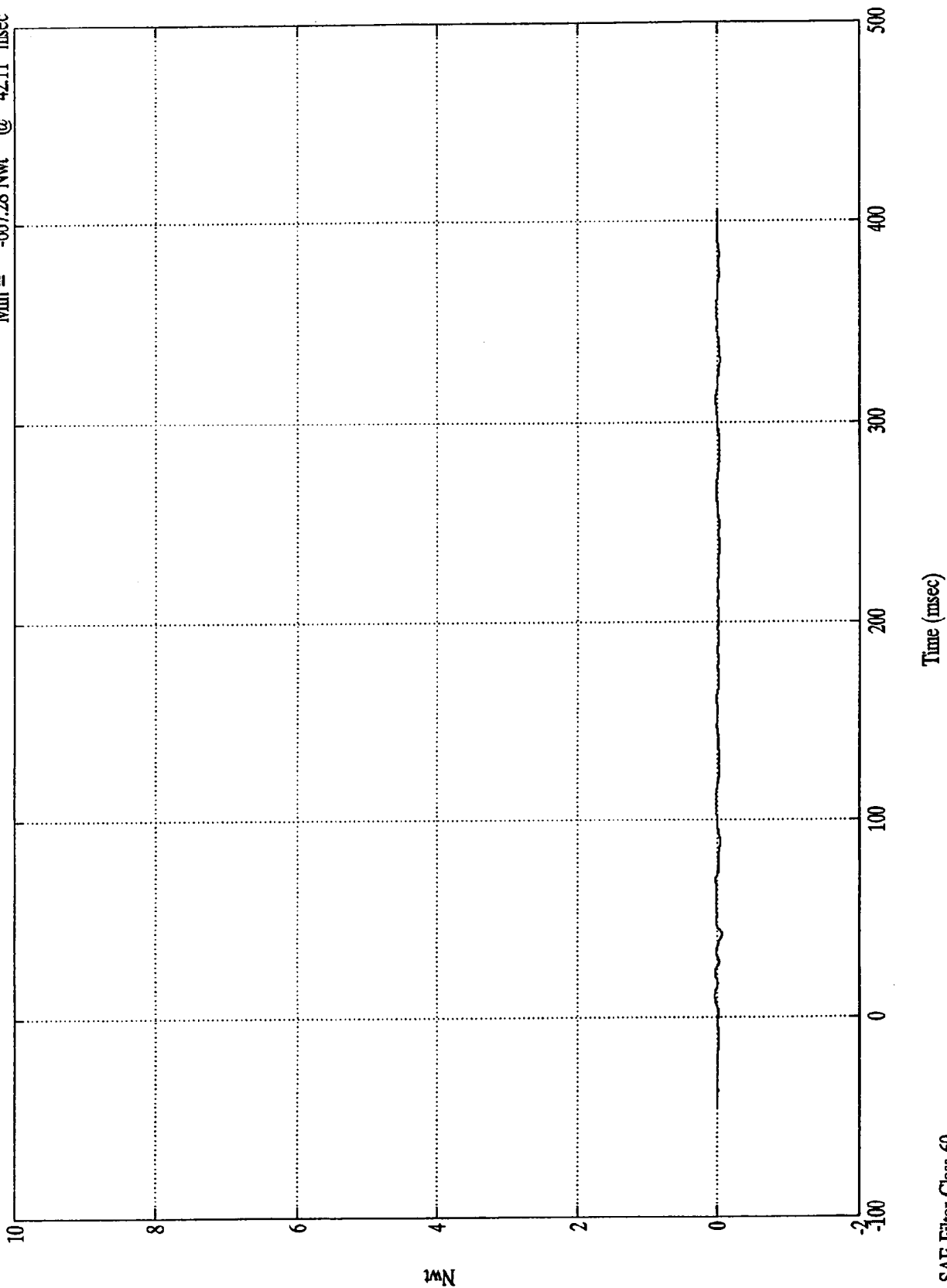
Time (msec)

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell B2

Max = 367.43 Nwt @ 11.27 msec
Min = -667.28 Nwt @ 42.11 msec



Nwt

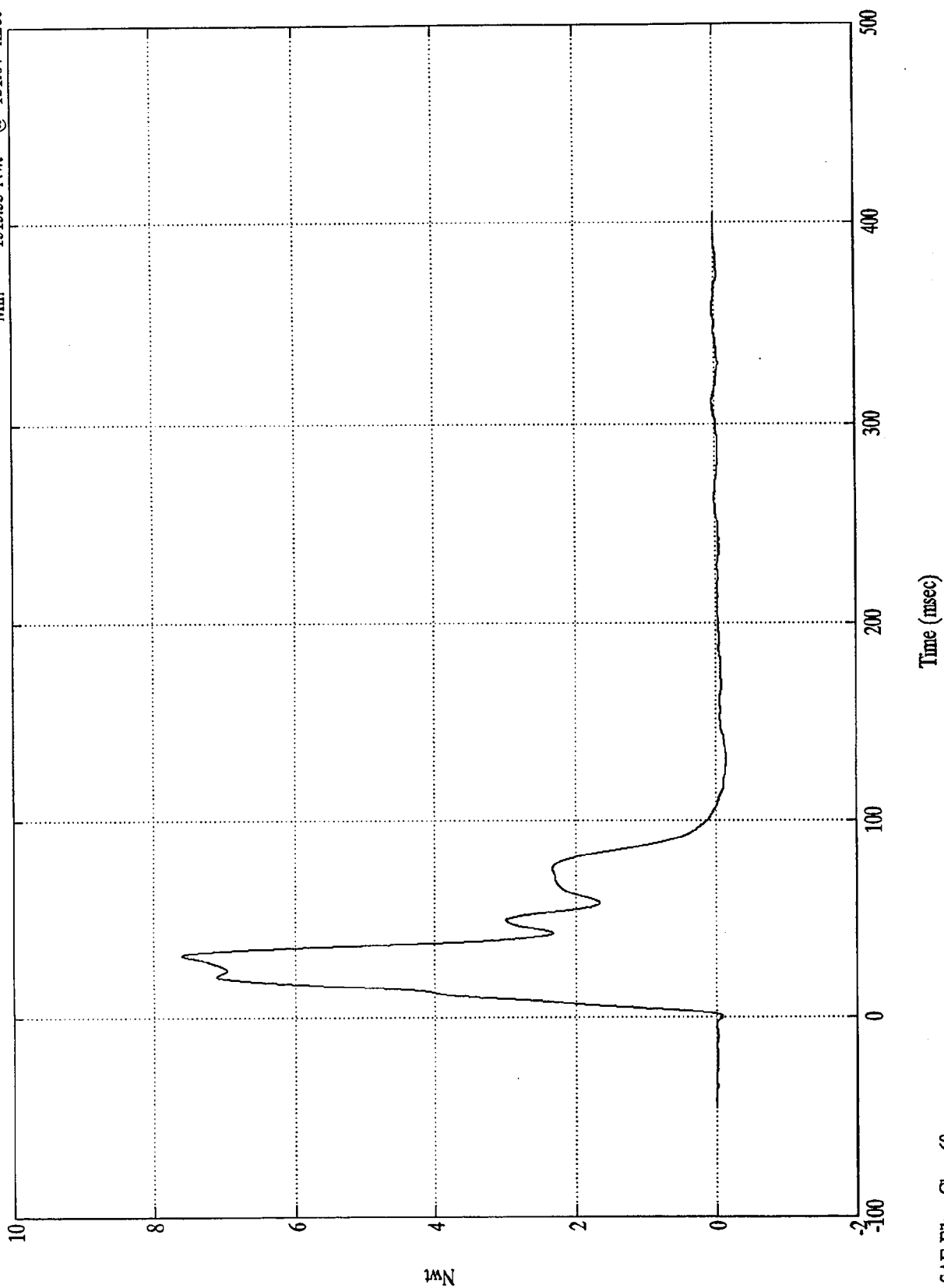
Time (msec)

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Barrier Load Cell B3

Max = 75957.69 Nwt @ 31.55 msec
Min = -1513.53 Nwt @ 131.04 msec

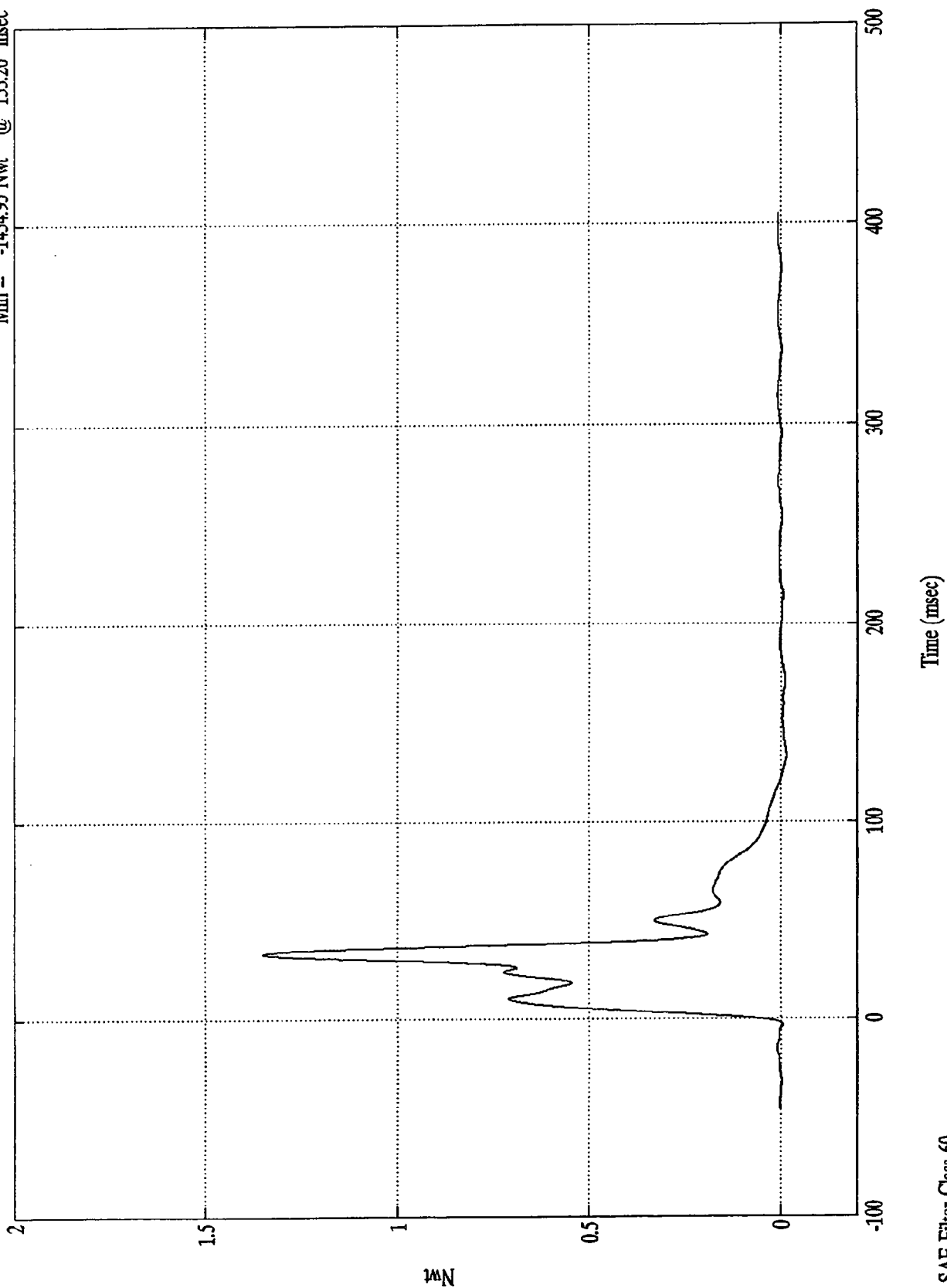


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Barrier Load Cell B4
Max = 135052.00 Nwt @ 33.00 msec
Min = -1434.95 Nwt @ 133.20 msec

$\times 10^5$



Nwt

Time (msec)

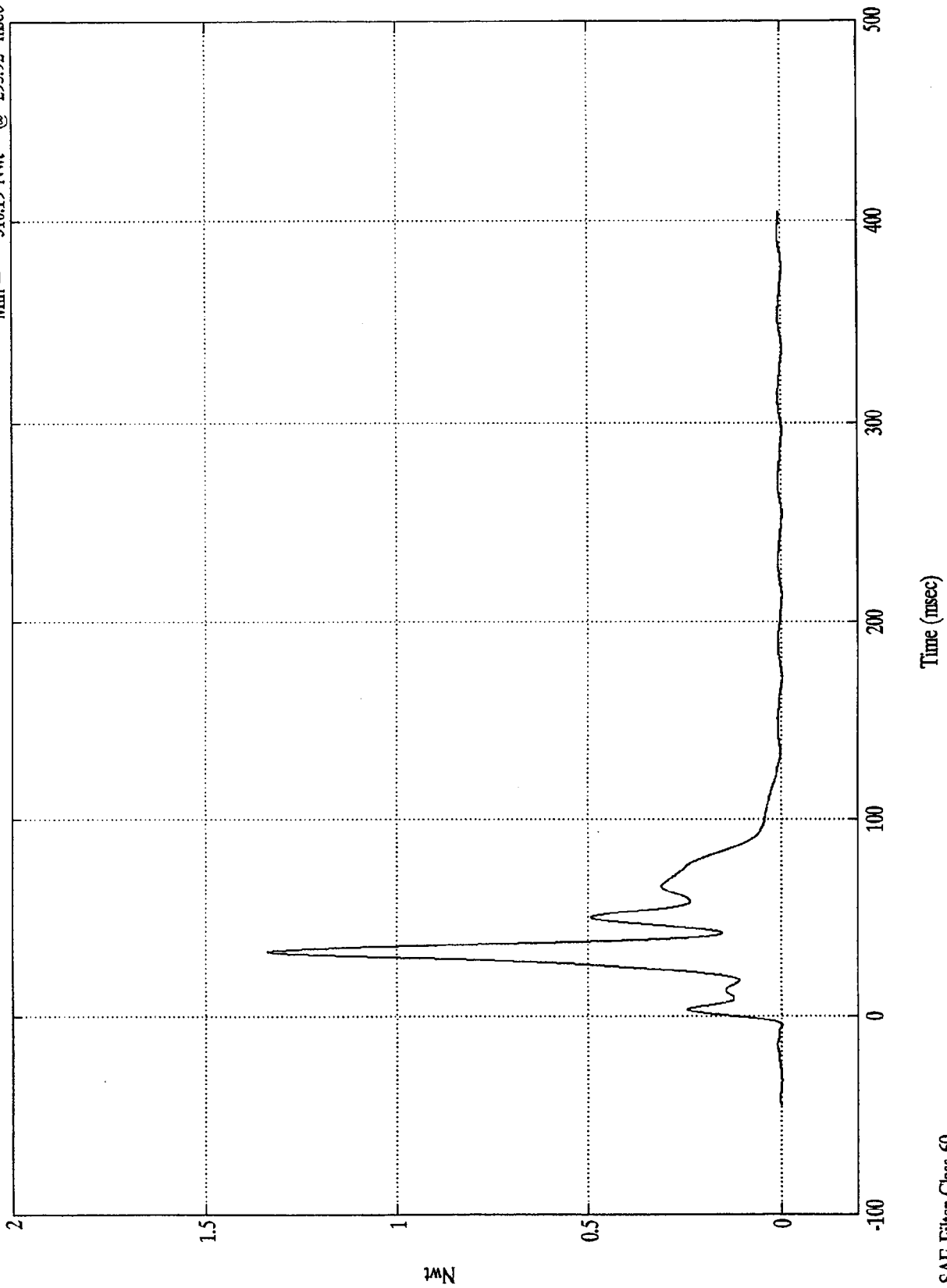
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^5$

Barrier Load Cell B5

Max = 133784.71 Nwt @ 33.00 msec
Min = -310.19 Nwt @ 295.92 msec



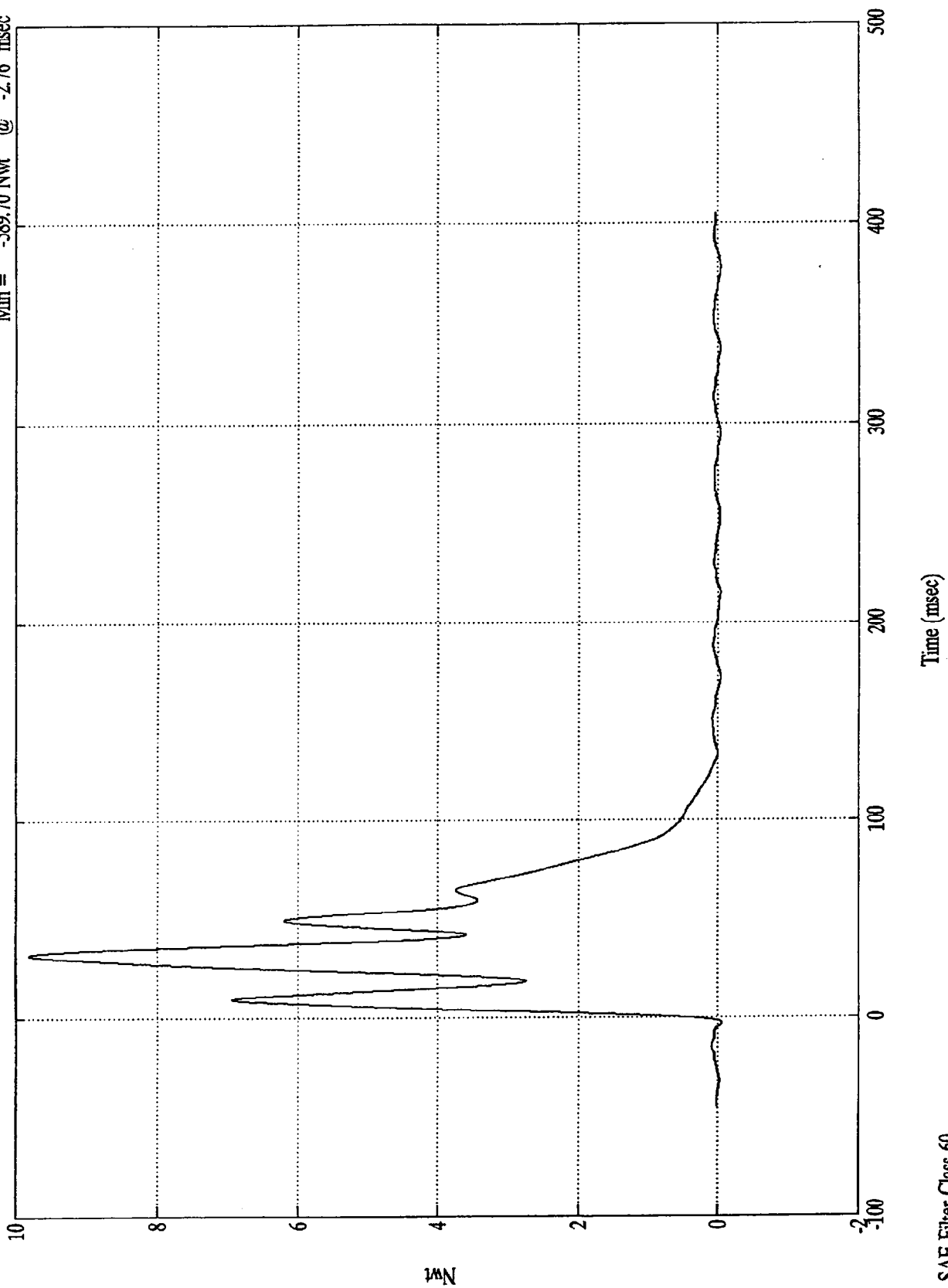
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell B6

Max = 98166.33 Nwt @ 32.15 msec
Min = -589.70 Nwt @ -2.76 msec



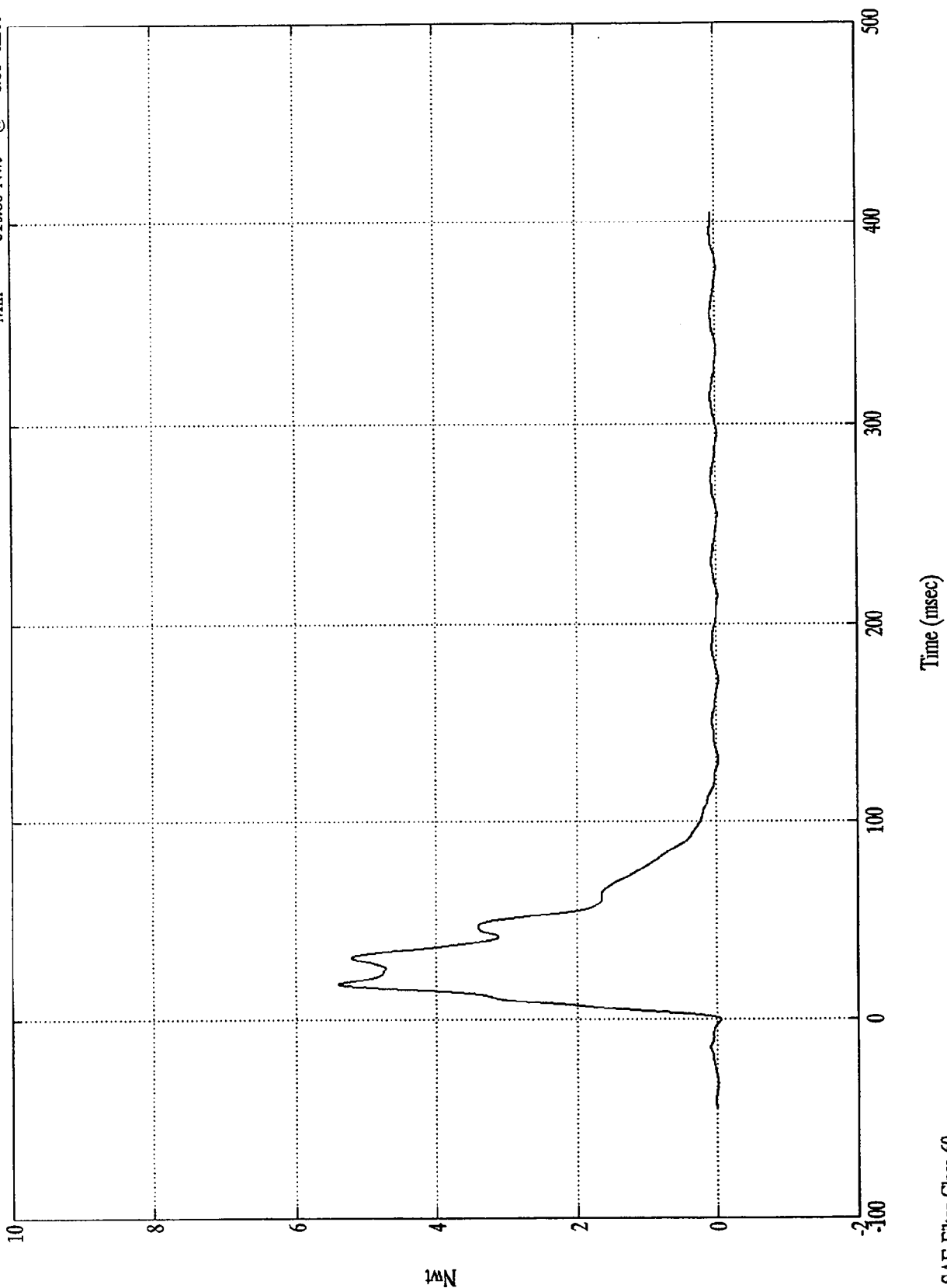
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell B7

Max = 53977.58 Nwt @ 18.47 msec
Min = -510.80 Nwt @ -0.00 msec

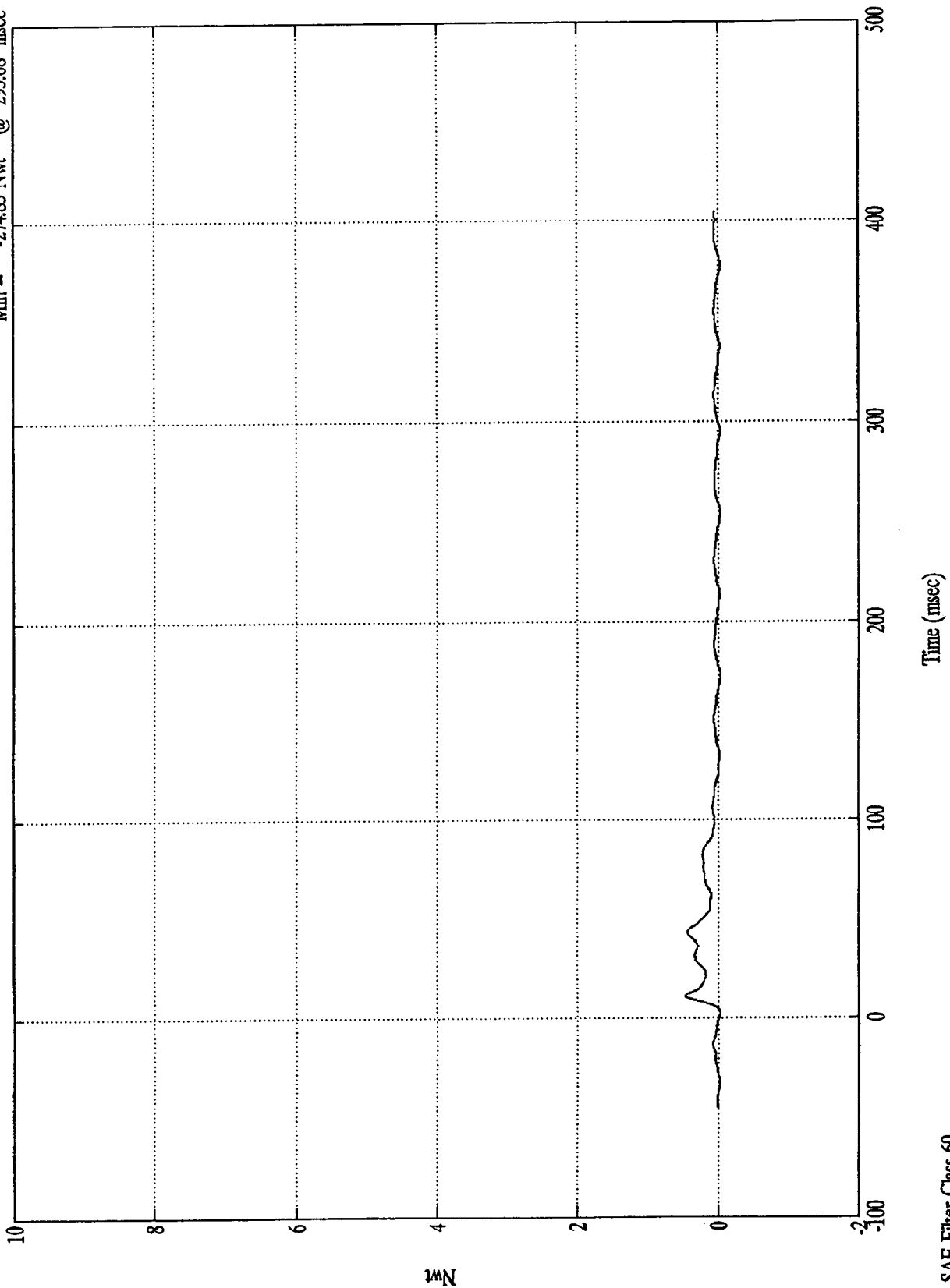


NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

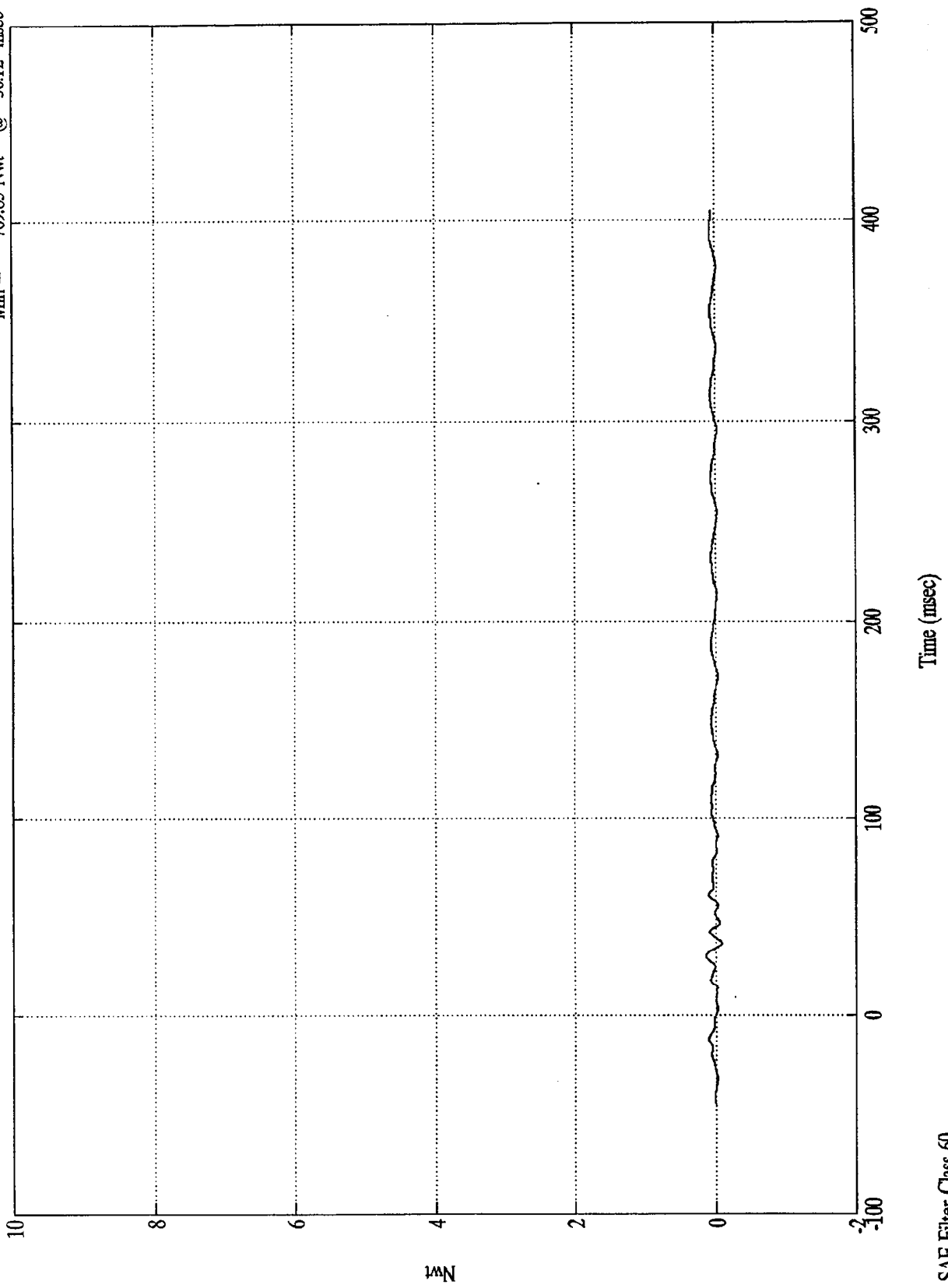
Barrier Load Cell B8

Max = 4762.37 Nwt @ 11.15 msec
Min = -274.85 Nwt @ 295.08 msec



NCAP TEST #3 - 1996 ACURA LT
x10⁴

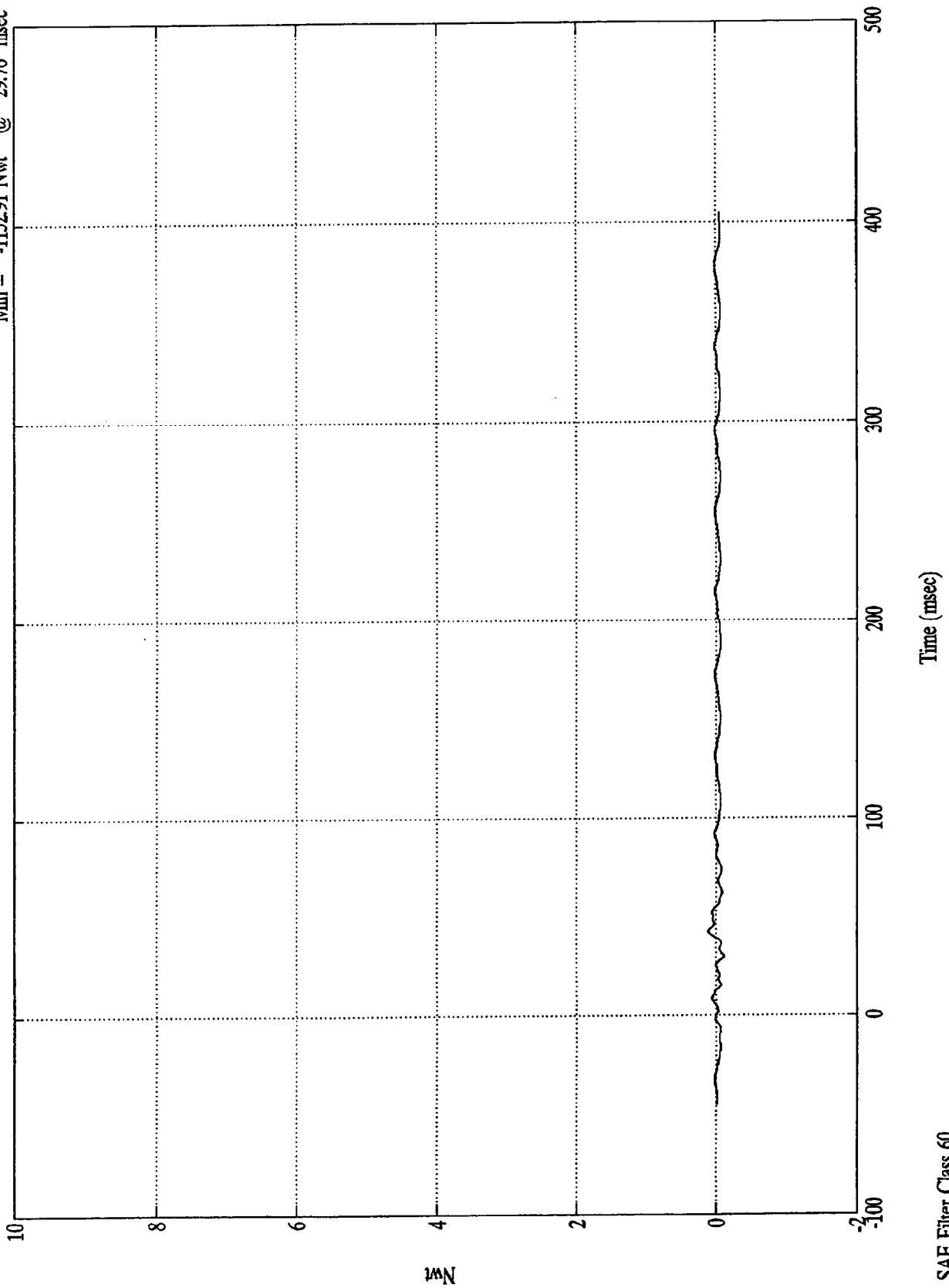
Barrier Load Cell B9
Max = 1460.80 Nwt @ 30.12 msec
Min = -769.85 Nwt @ 36.12 msec



NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell C1
Max = 1081.29 Nwt @ 42.36 msec
Min = -1152.91 Nwt @ 29.76 msec

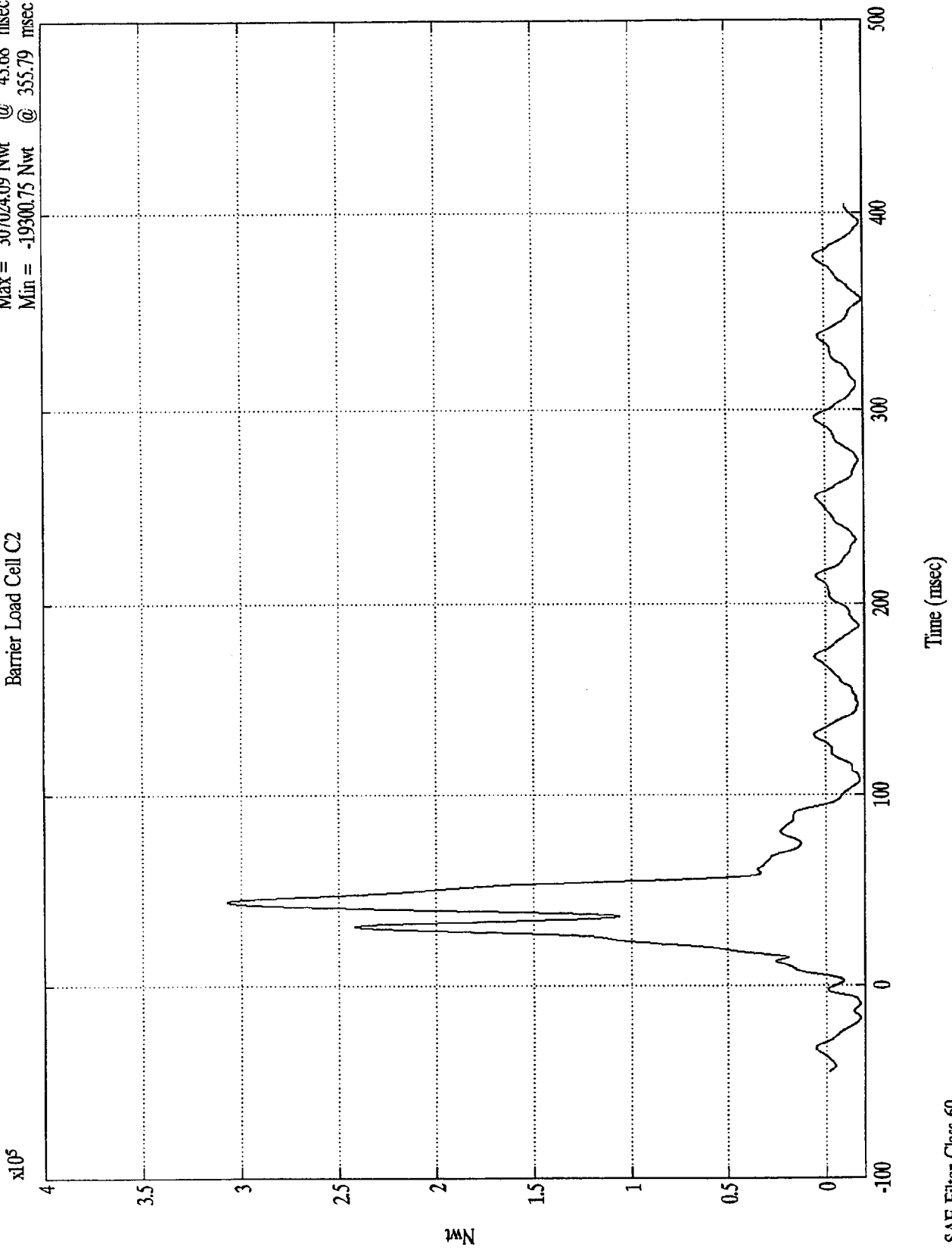


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Barrier Load Cell C2

Max = 307024.09 Nwt @ 43.68 msec
Min = -19300.75 Nwt @ 355.79 msec



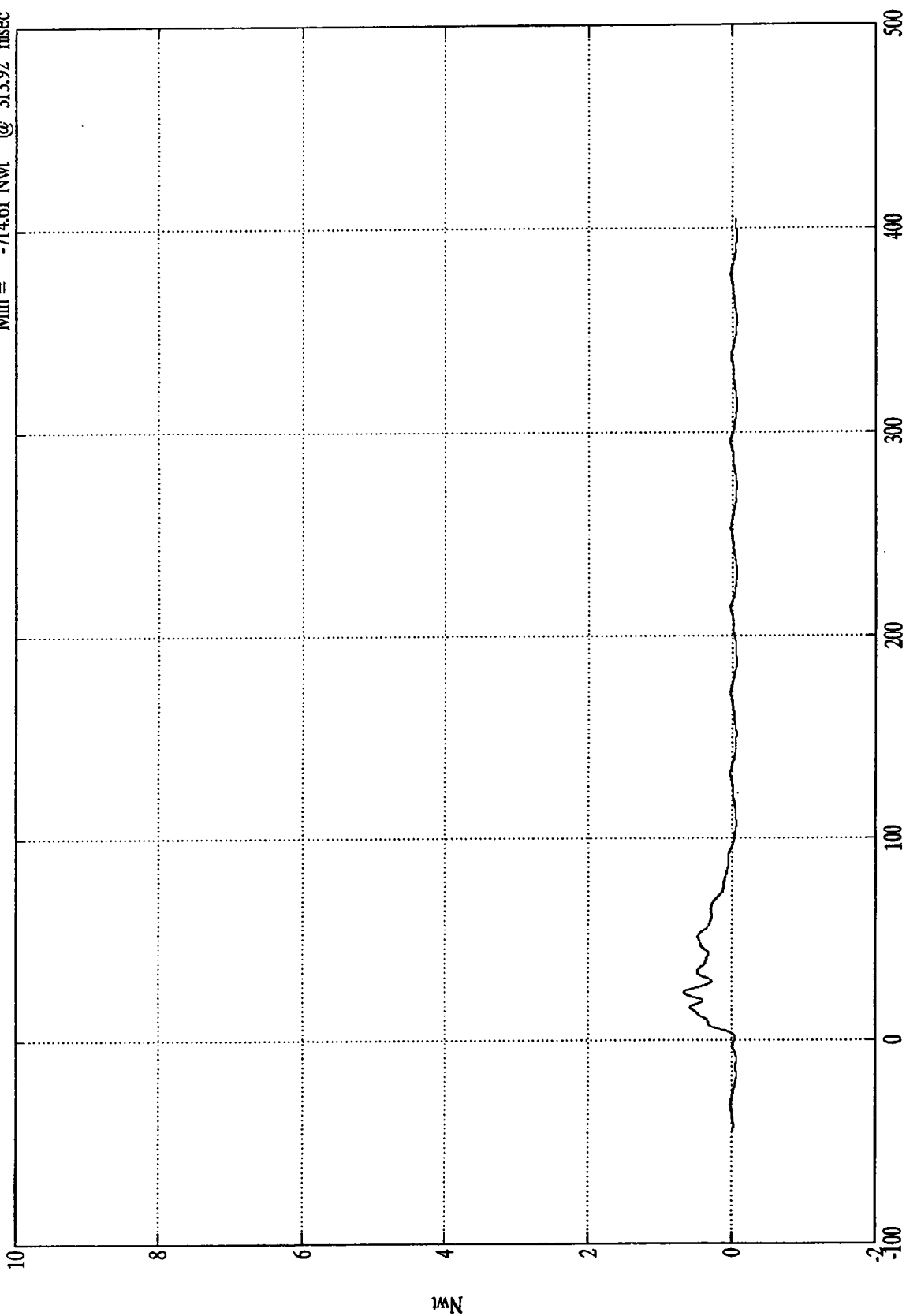
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell C3

Max = 6753.42 Nwt @ 24.11 msec
Min = -714.61 Nwt @ 313.92 msec



Time (msec)

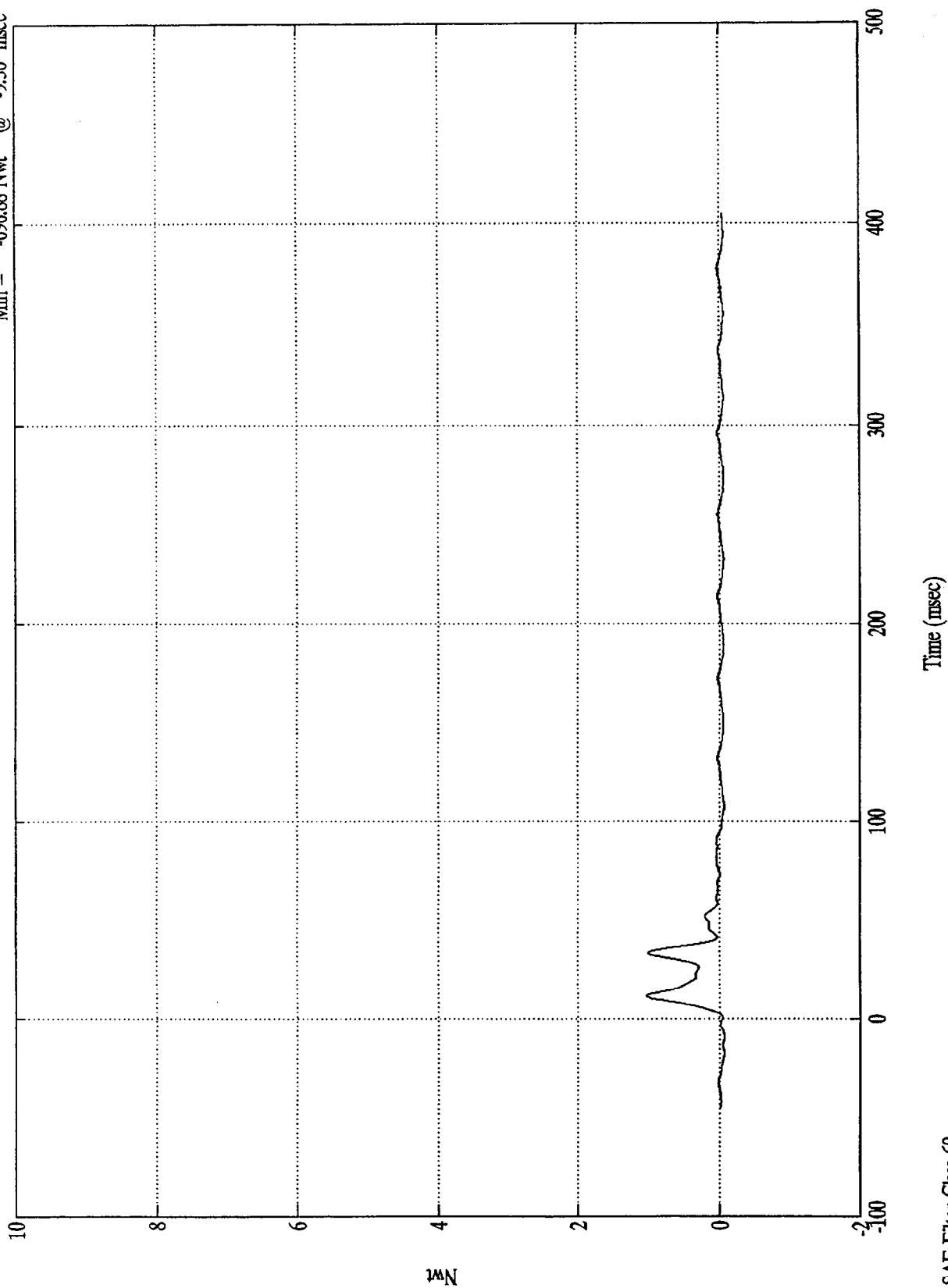
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Max = 10319.62 Nwt @ 11.63 msec
Min = -696.88 Nwt @ -9.36 msec

Barrier Load Cell C4

$\times 10^4$



SAE Filter Class 60

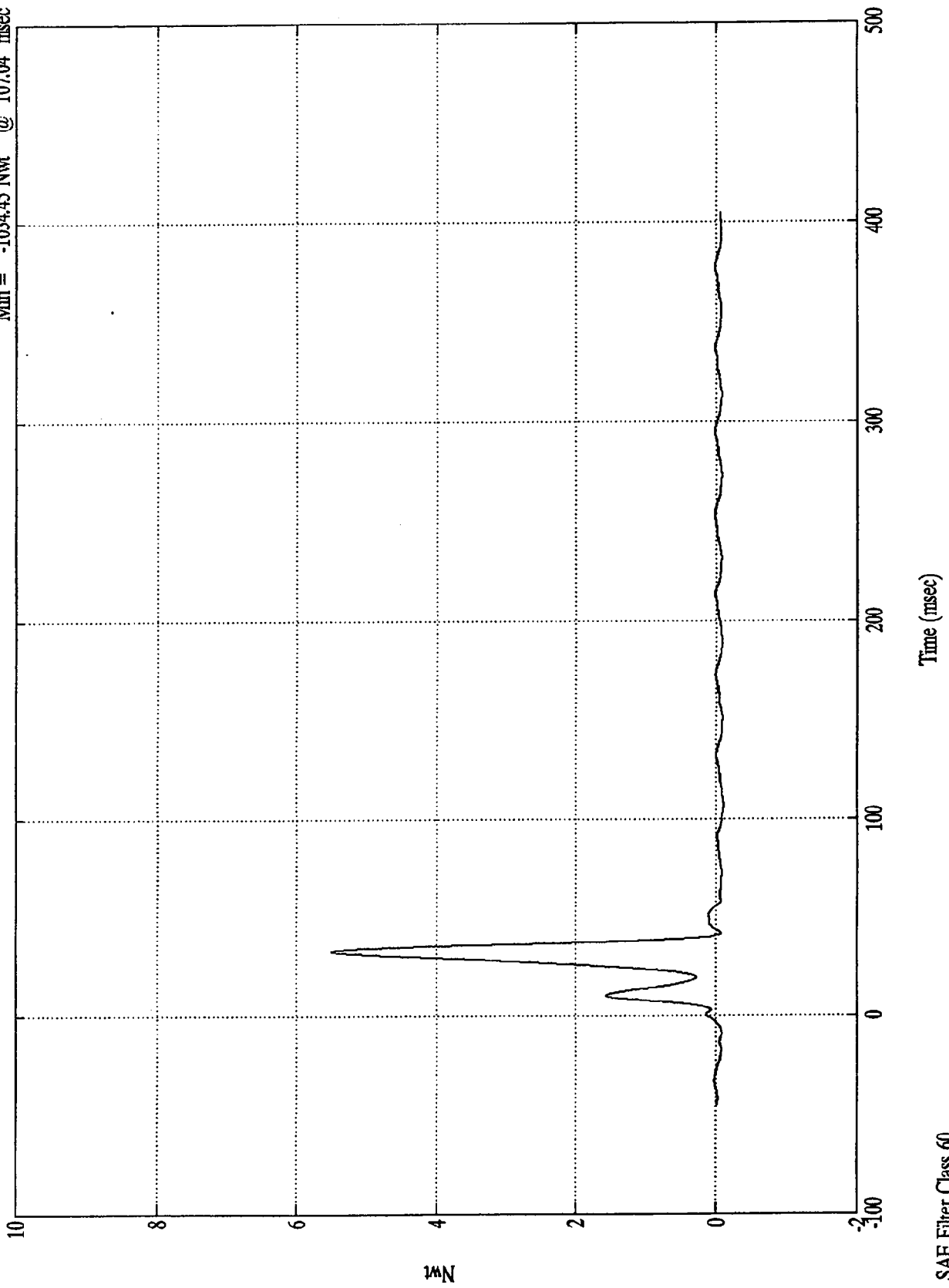
Nwt

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

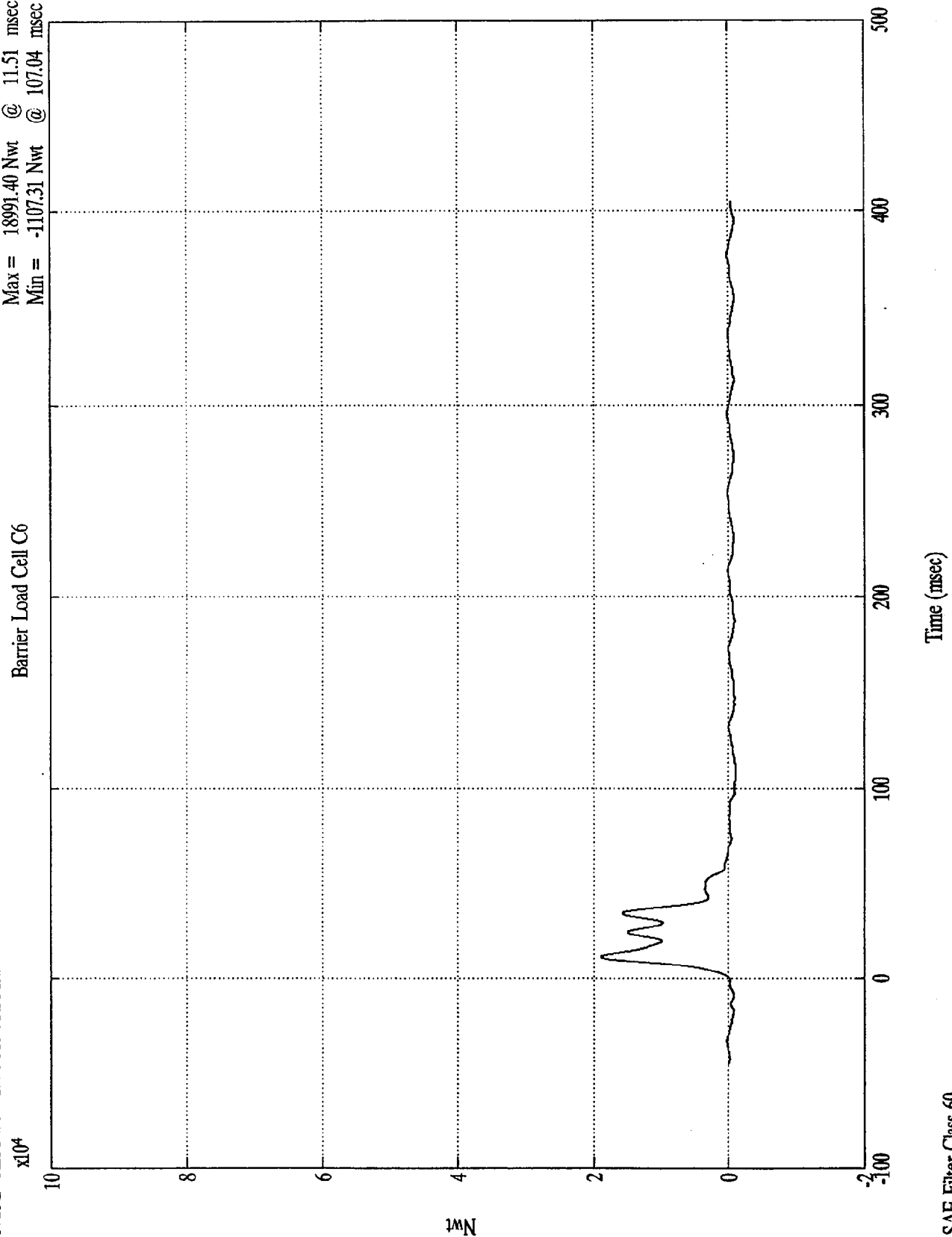
Barrier Load Cell C5

Max = 55111.20 Nwt @ 33.00 msec
Min = -1034.45 Nwt @ 107.04 msec



NCAP TEST #3 - 1996 ACURA LT

Barrier Load Cell C6
Max = 18991.40 Nwt @ 11.51 msec
Min = -1107.31 Nwt @ 107.04 msec



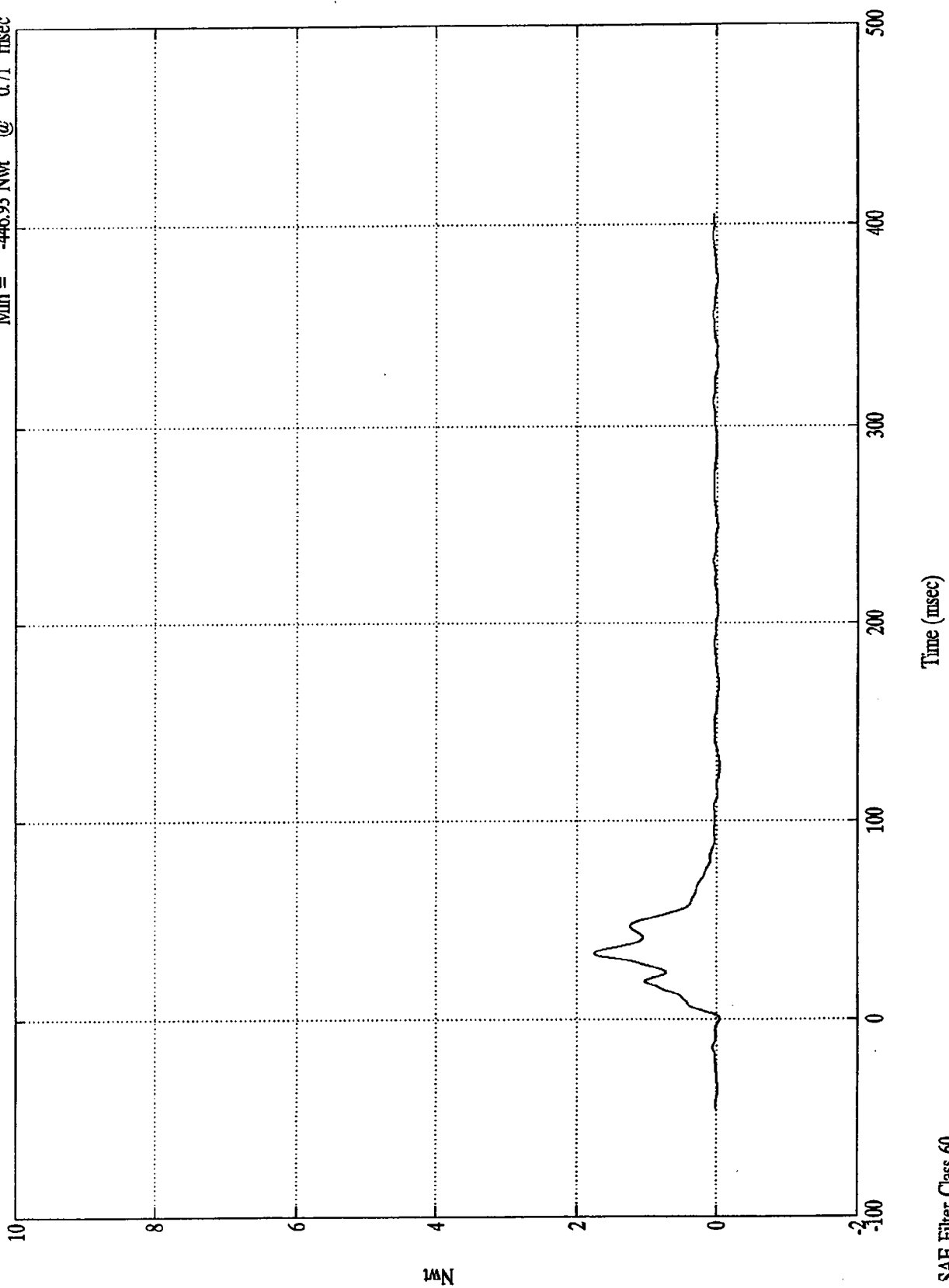
SAE Filter Class 60

1Nwt

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Barrier Load Cell C7

Max = 17578.69 Nwt @ 33.47 msec
Min = -446.93 Nwt @ 0.71 msec

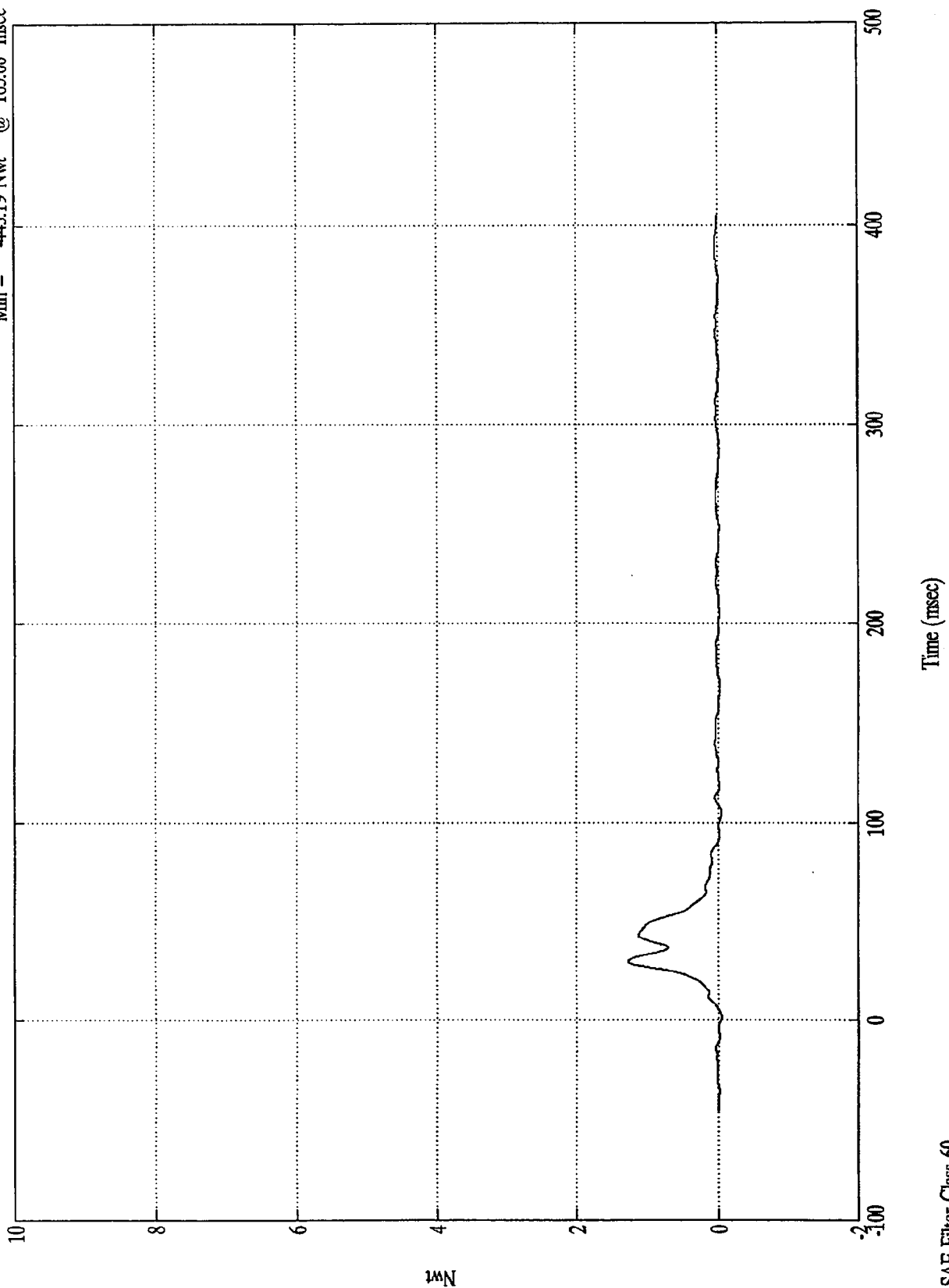


NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell C8

Max = 12777.42 Nwt @ 29.27 msec
Min = -443.19 Nwt @ 105.00 msec



Nwt

Time (msec)

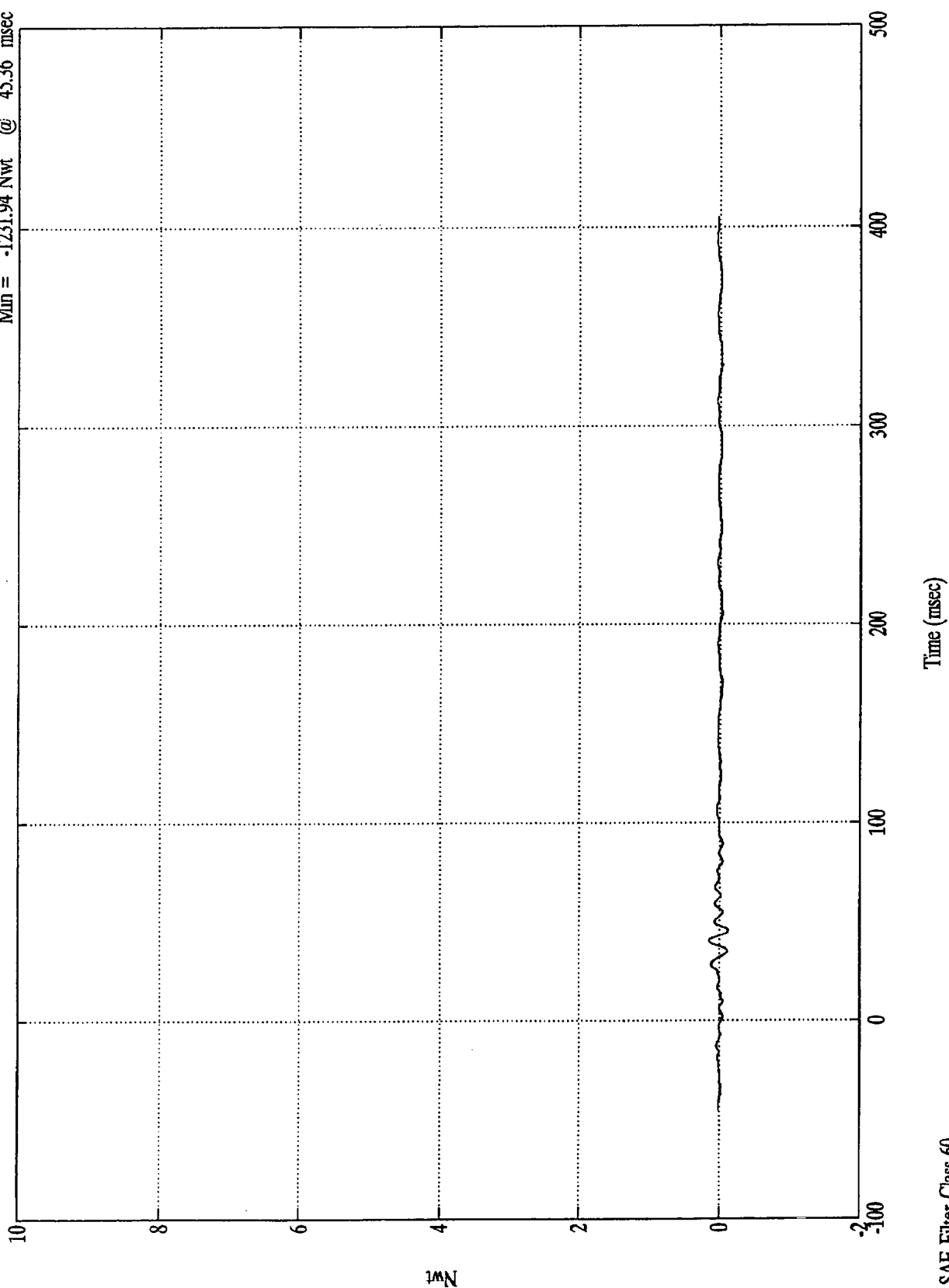
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell C9

Max = 1506.08 Nwt @ 40.56 msec
Min = -1231.94 Nwt @ 45.36 msec



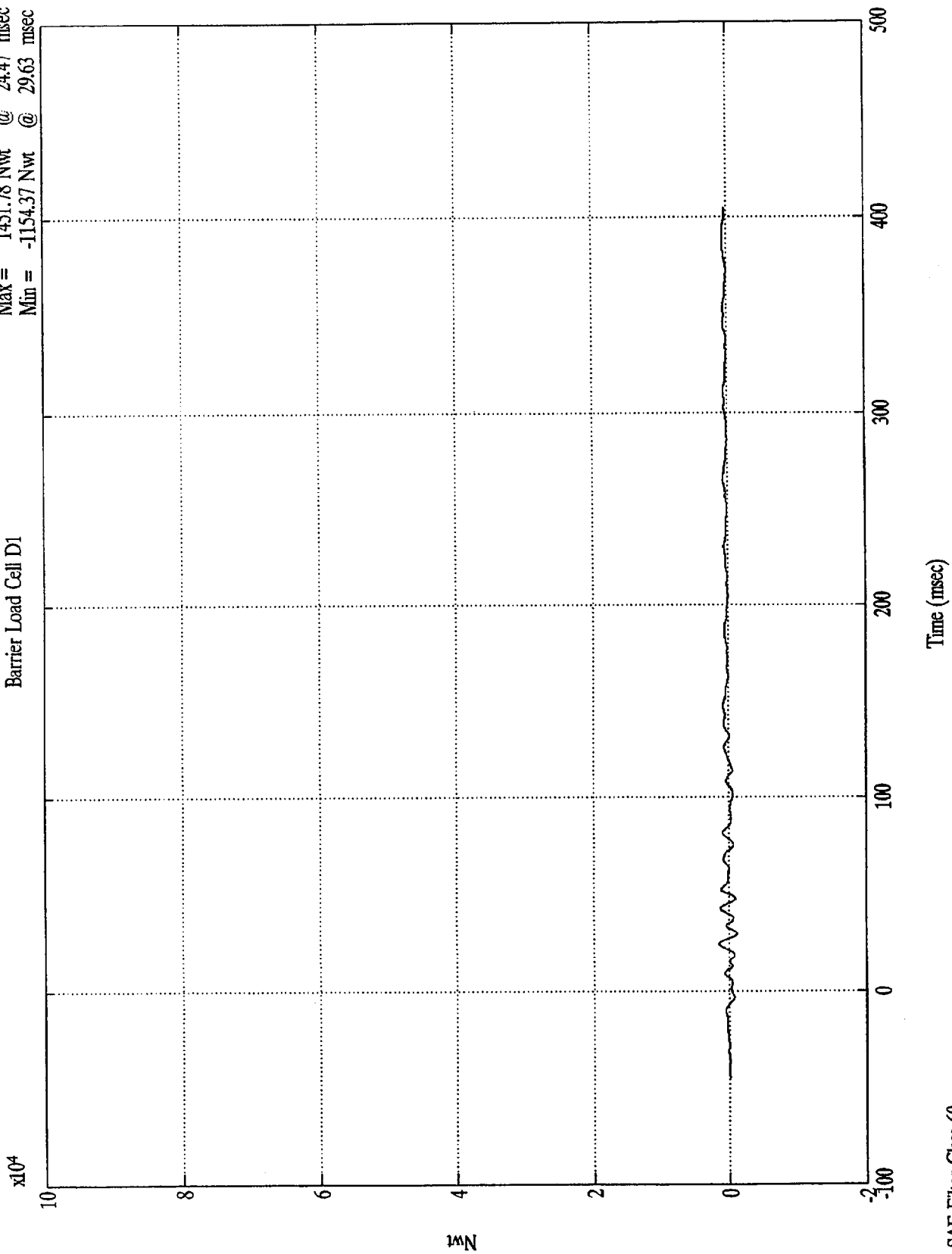
Nwt

Time (msec)

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Barrier Load Cell D1
Max = 1451.78 Nwt @ 24.47 msec
Min = -1154.37 Nwt @ 29.63 msec



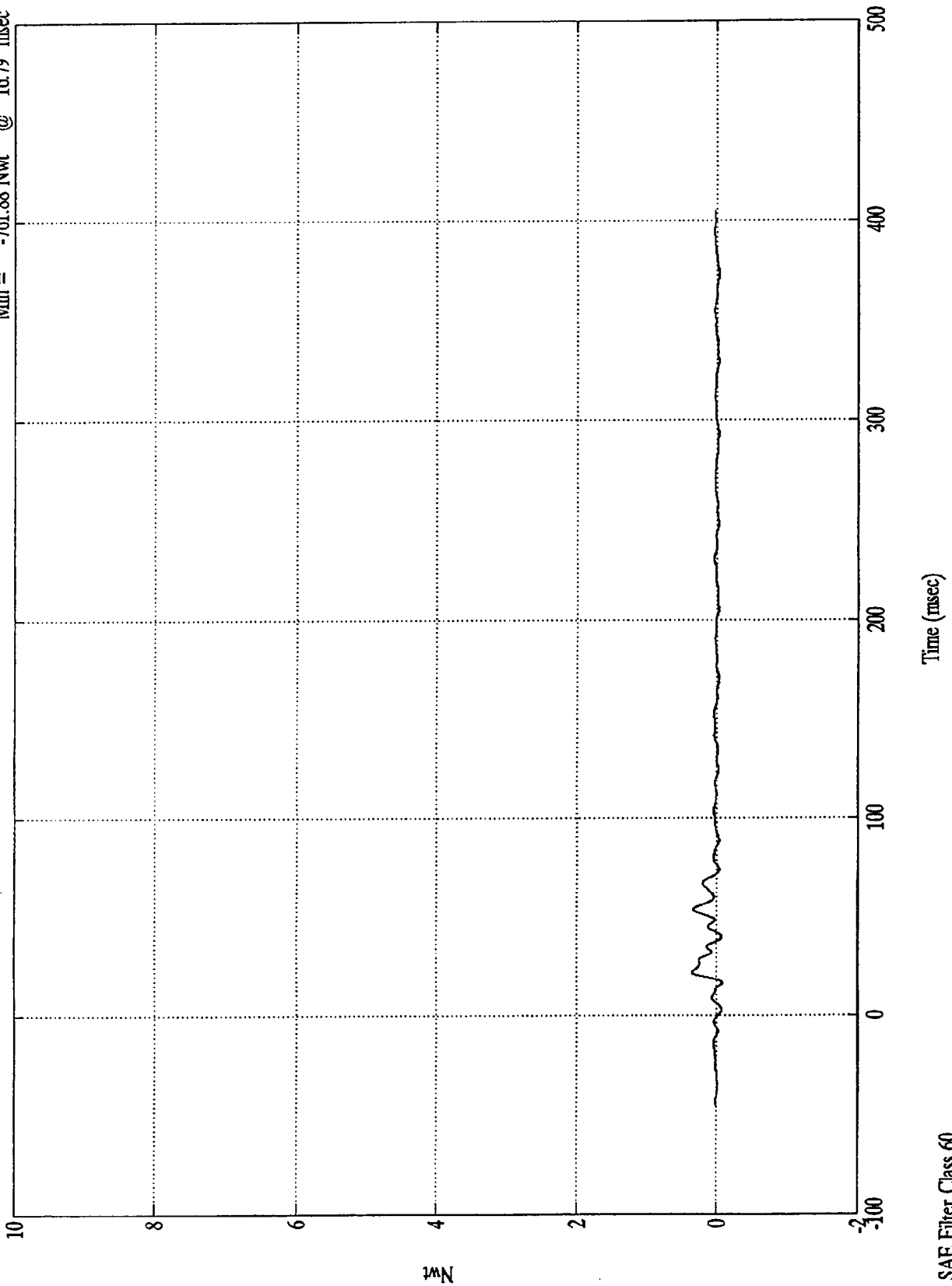
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell D2

Max = 3465.93 Nwt @ 21.71 msec
Min = -761.88 Nwt @ 16.79 msec

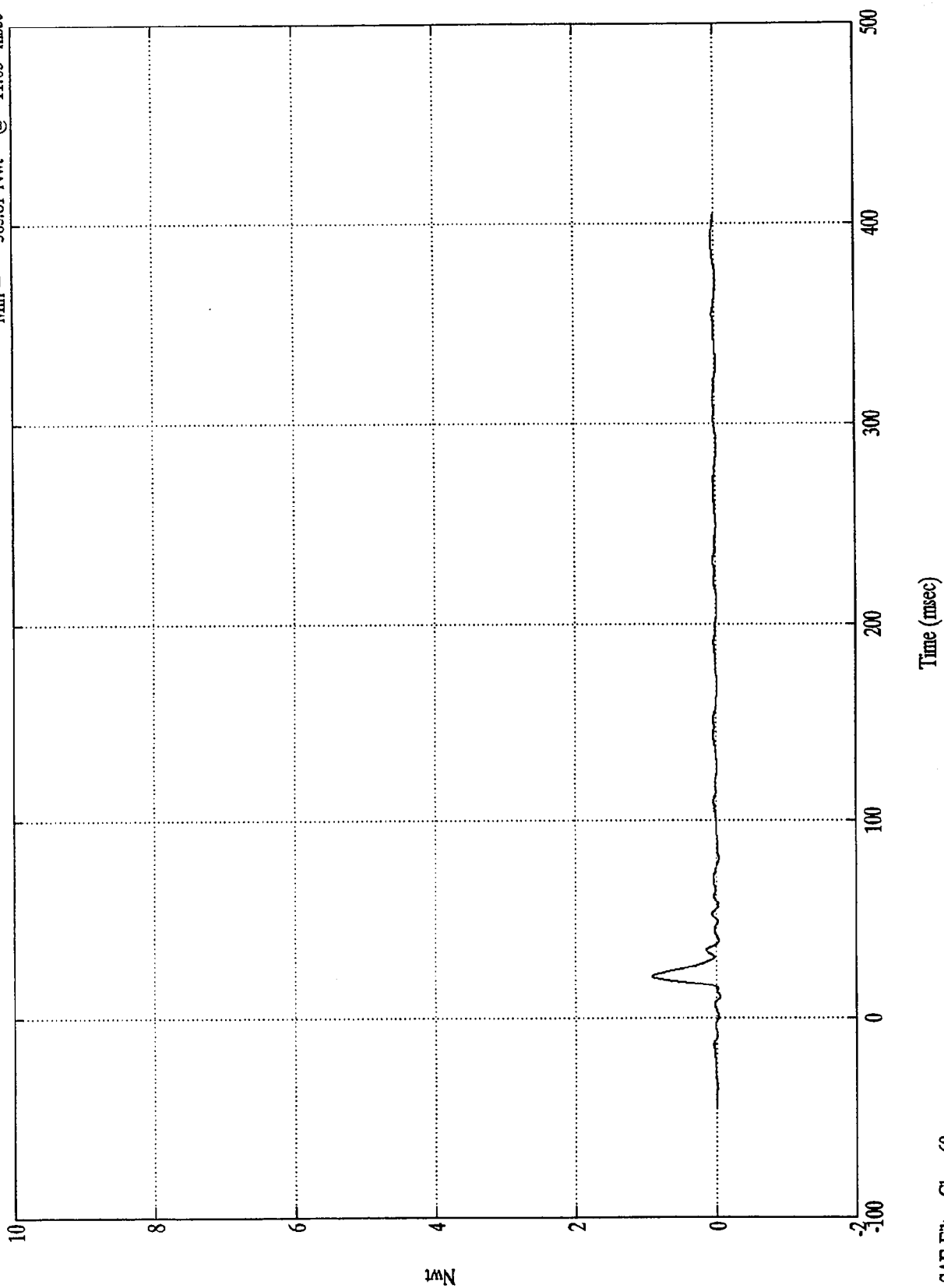


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Max = 9179.74 Nwt @ 21.84 msec
Min = -505.81 Nwt @ 11.03 msec

Barrier Load Cell D3



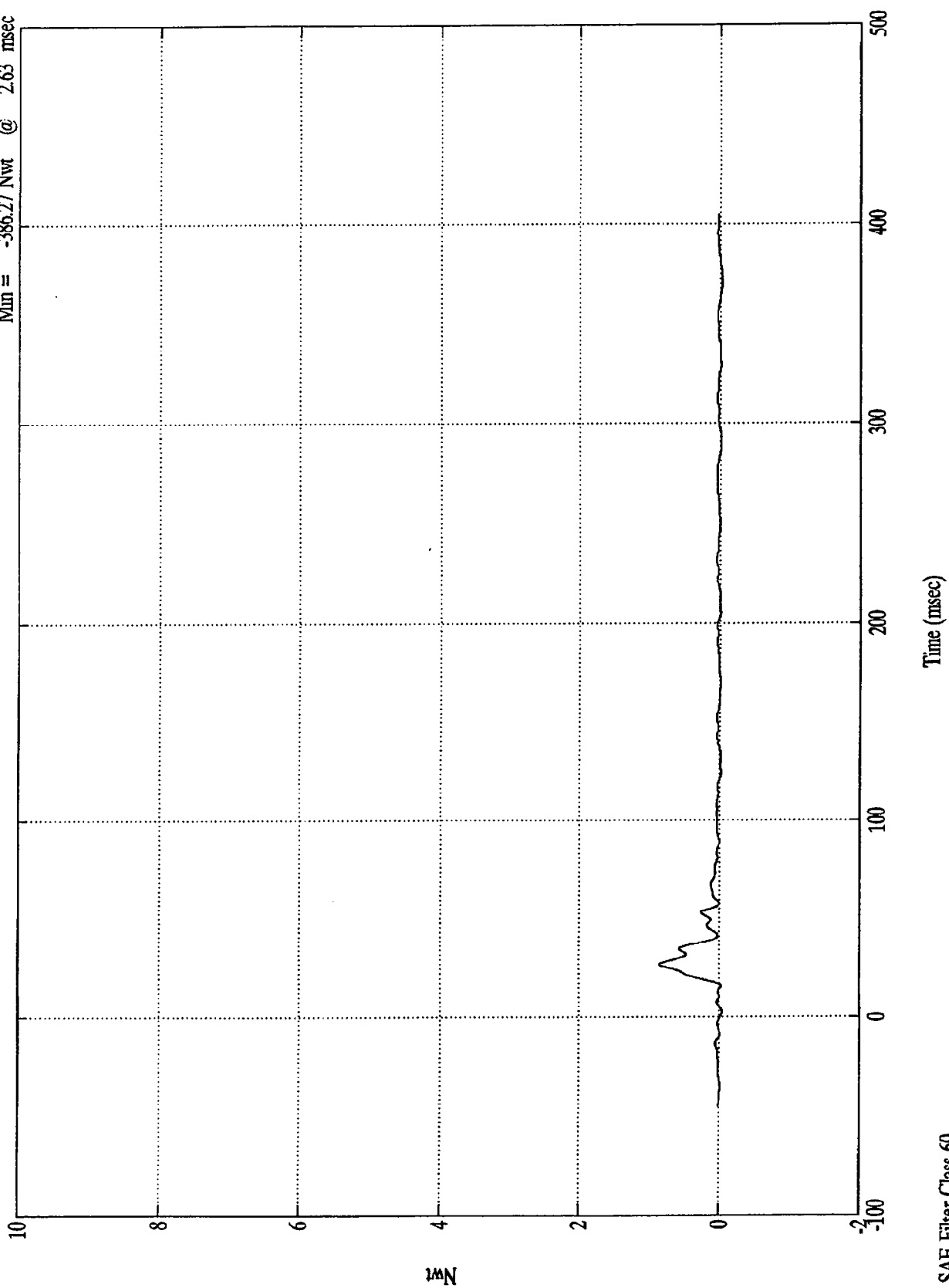
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell D4

Max = 8533.55 Nwt @ 26.75 msec
Min = -386.27 Nwt @ 2.63 msec



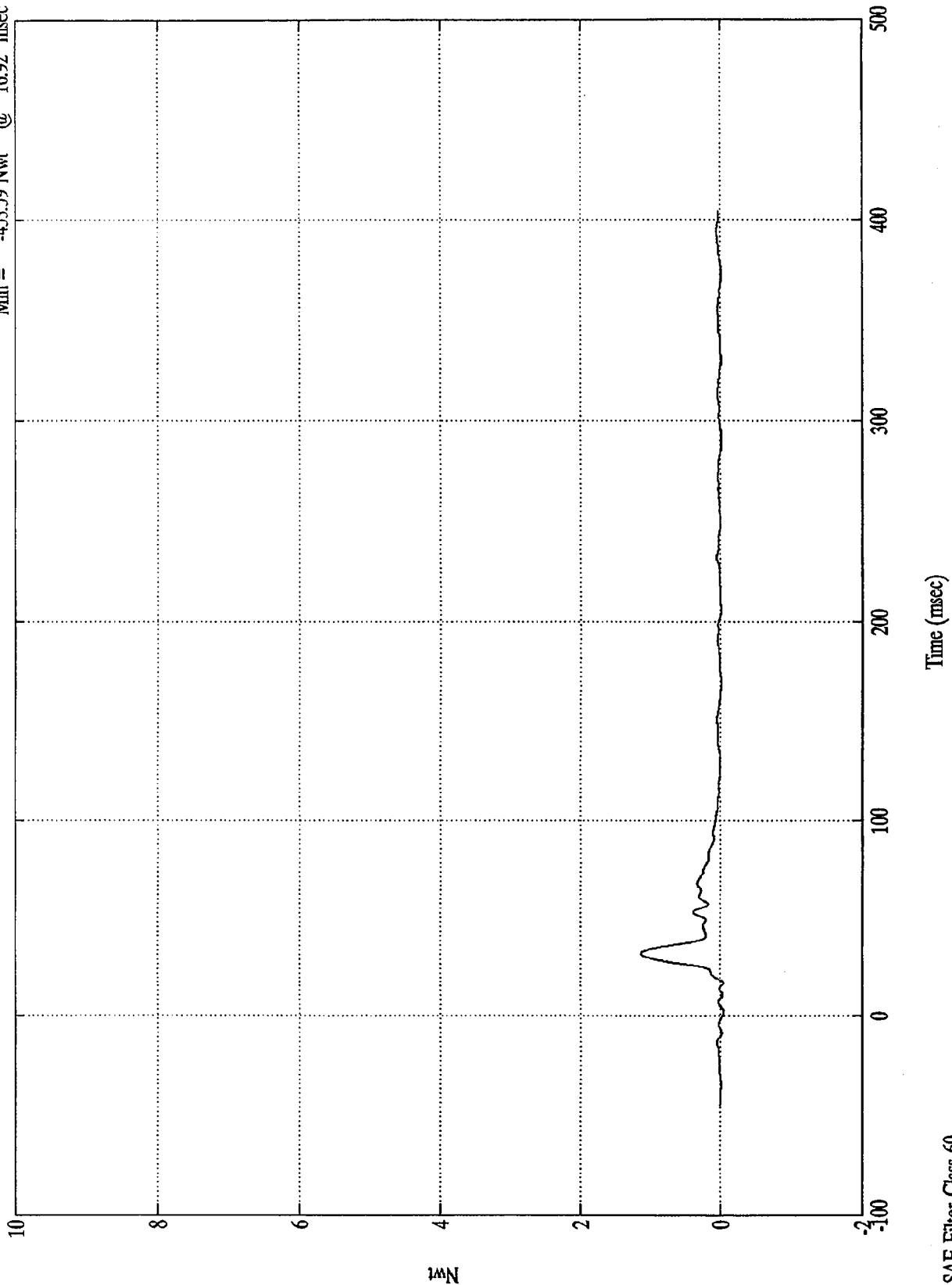
Nwt

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Barrier Load Cell D5

Max = 11334.77 Nwt @ 32.04 msec
Min = -453.59 Nwt @ 16.92 msec



Nwt

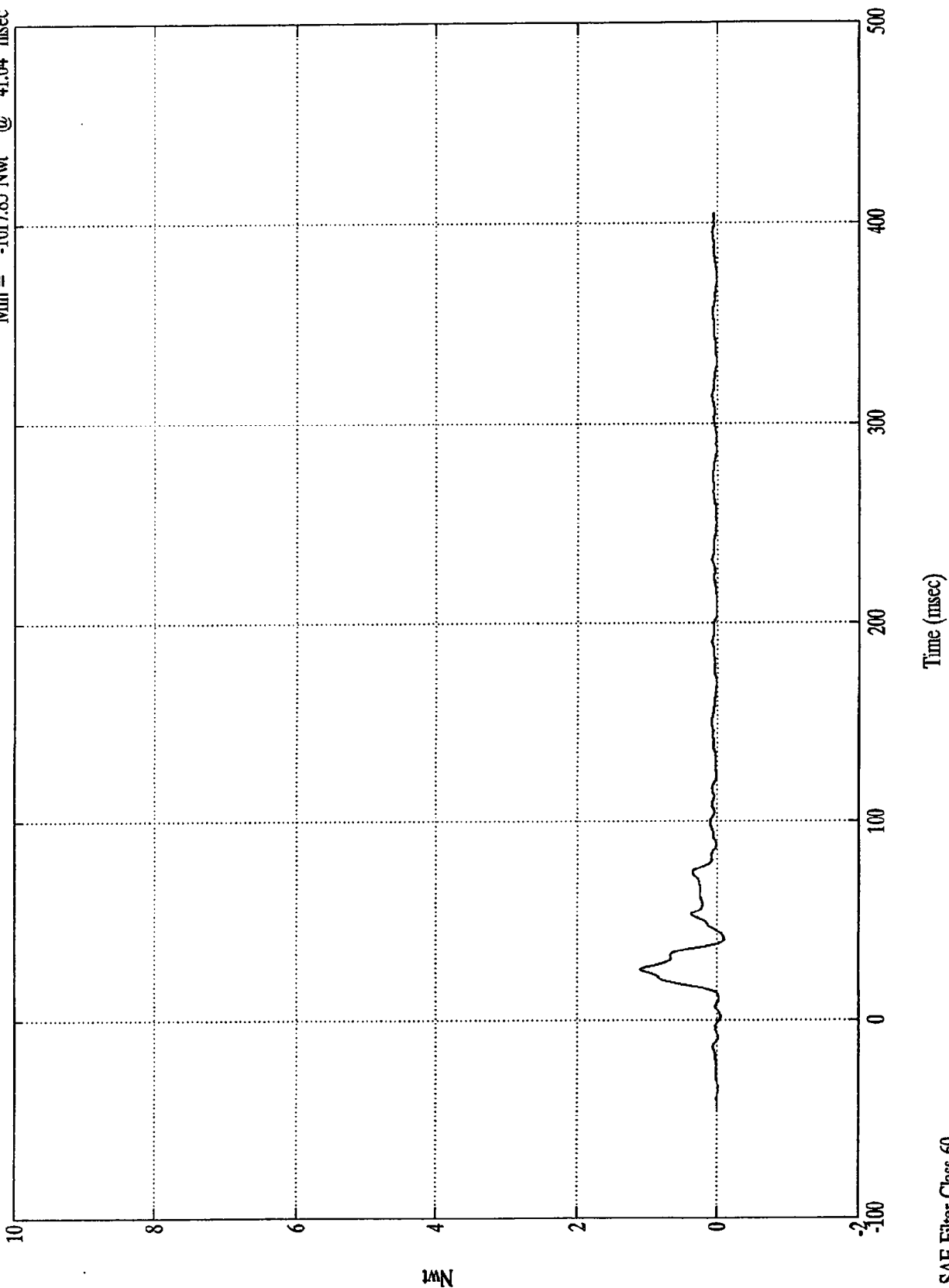
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Max = 11099.60 Nwt @ 26.15 msec
Min = -1017.85 Nwt @ 41.04 msec

Barrier Load Cell D6

$\times 10^4$

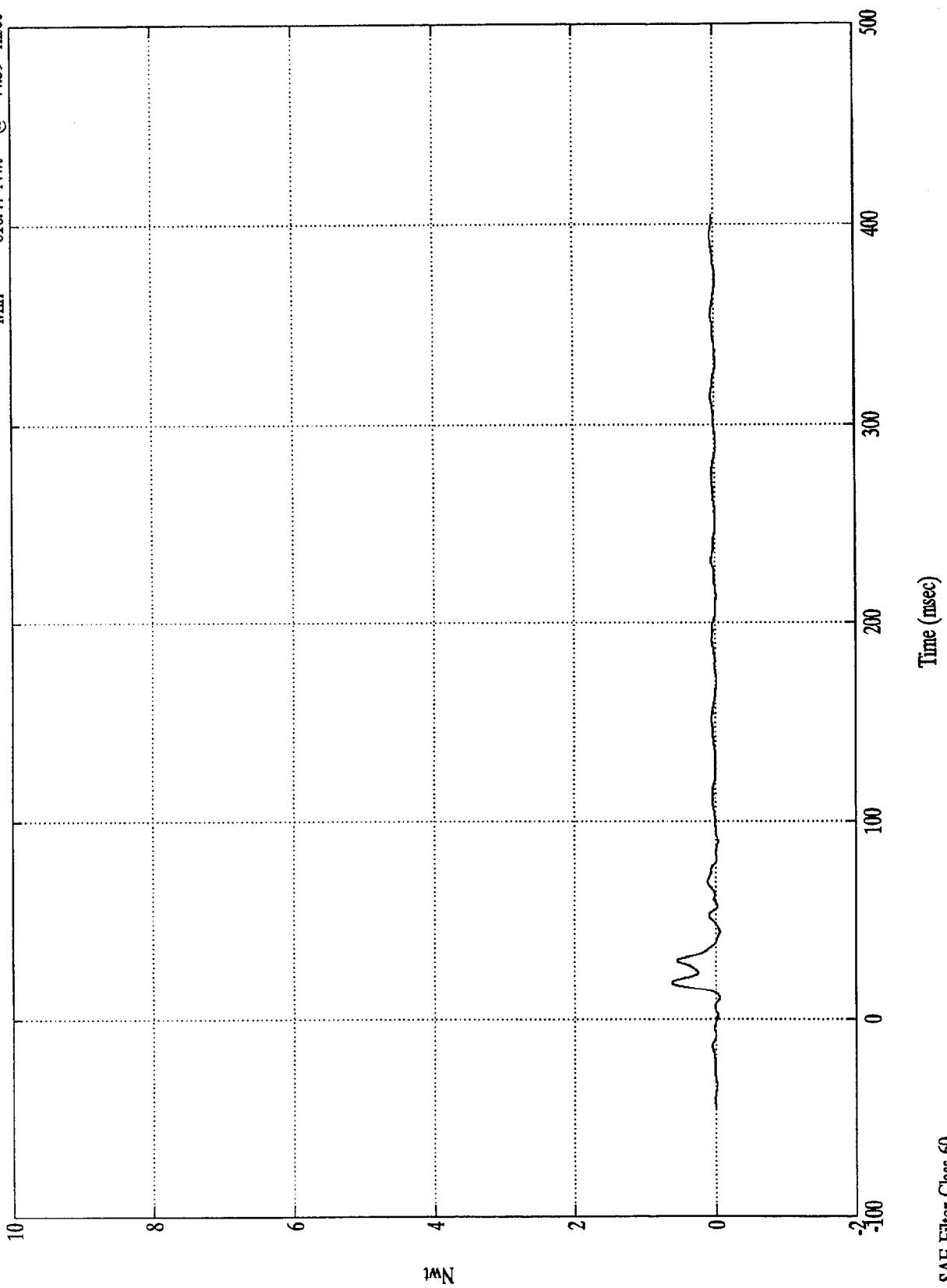


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Barrier Load Cell D7

Max = 6247.16 Nwt @ 18.71 msec
Min = -618.47 Nwt @ 44.39 msec



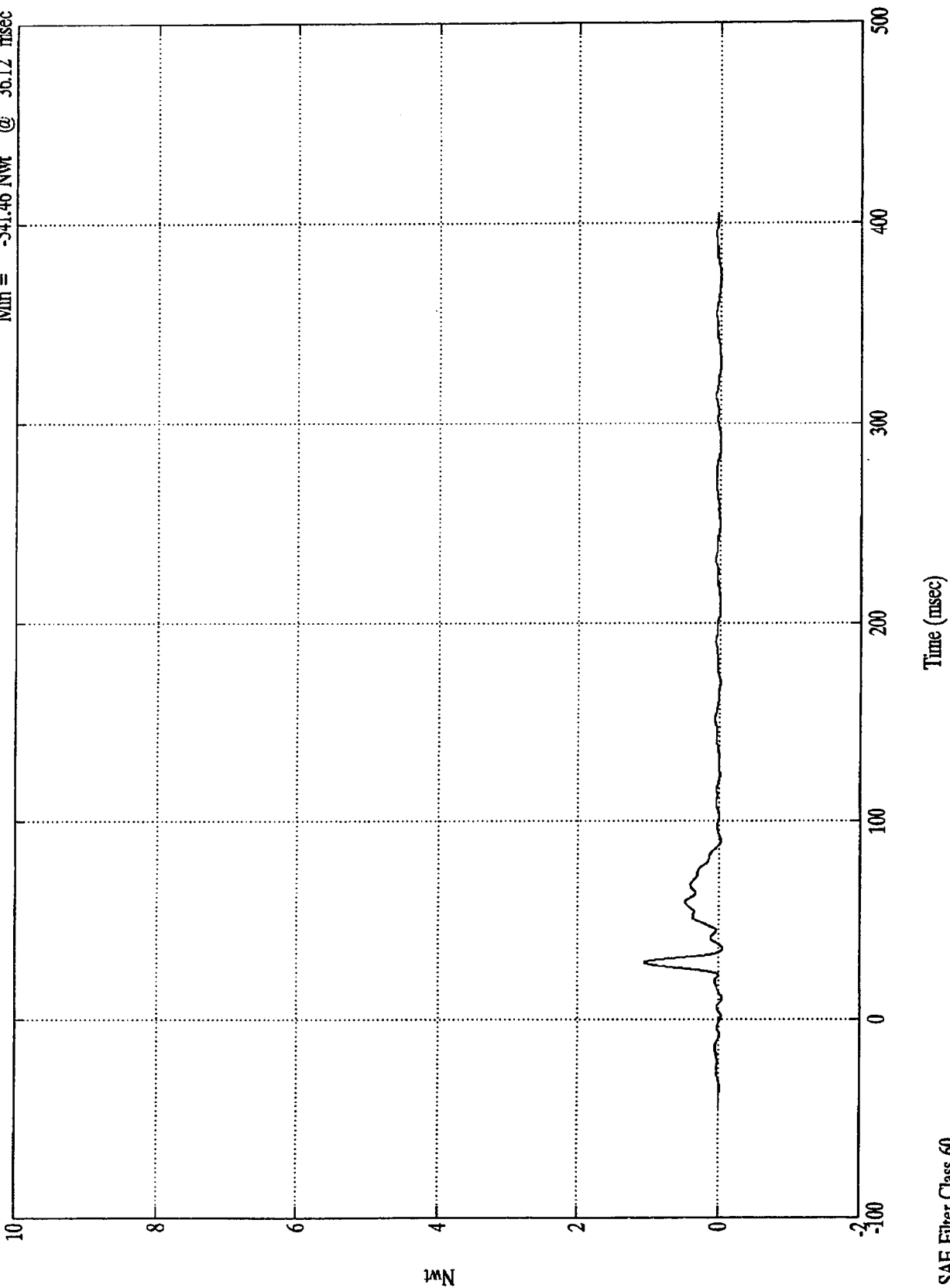
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

$\times 10^4$

Barrier Load Cell D8

Max = 10532.20 Nwt @ 29.39 msec
Min = -541.46 Nwt @ 36.12 msec

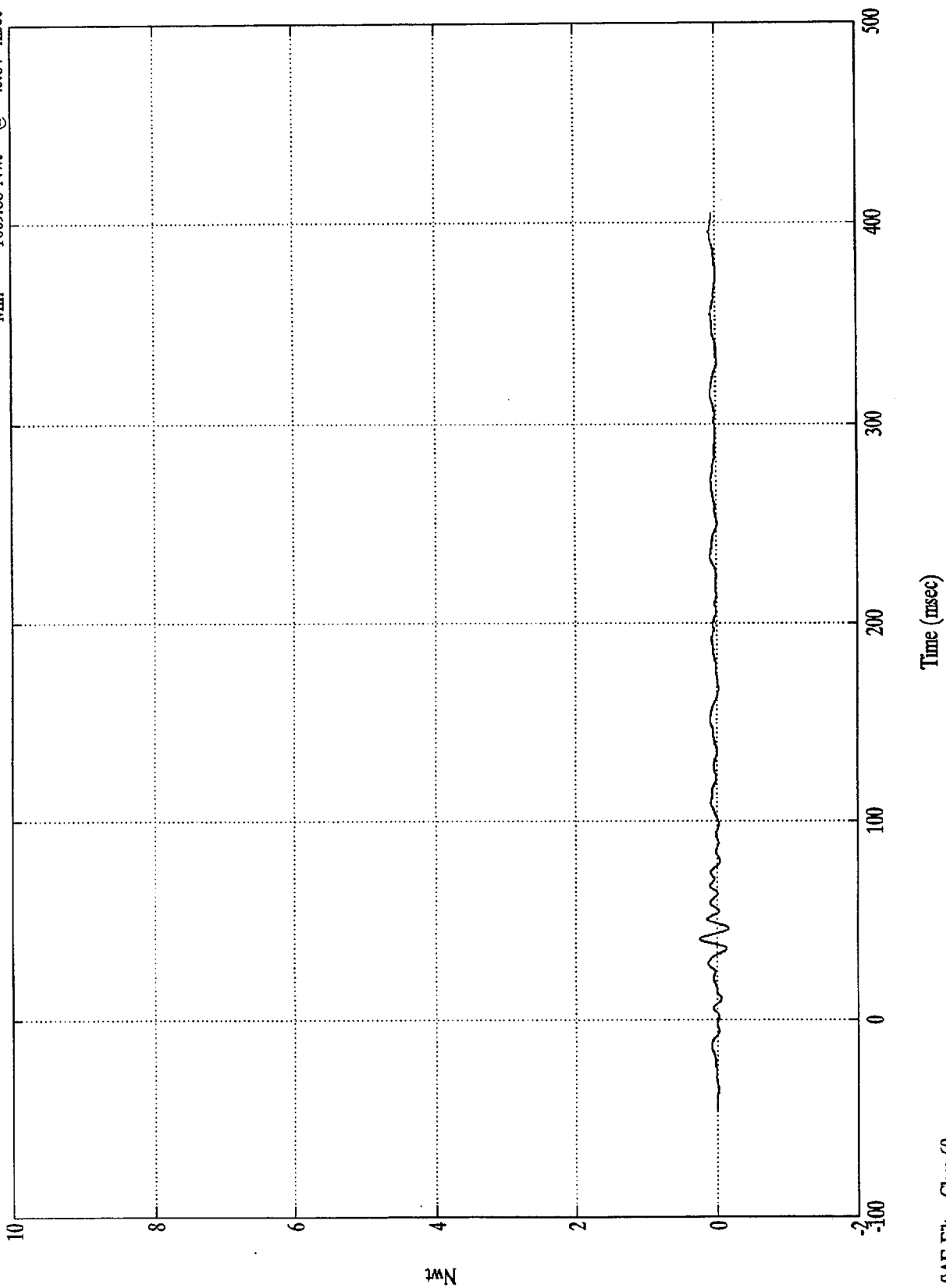


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Barrier Load Cell D9

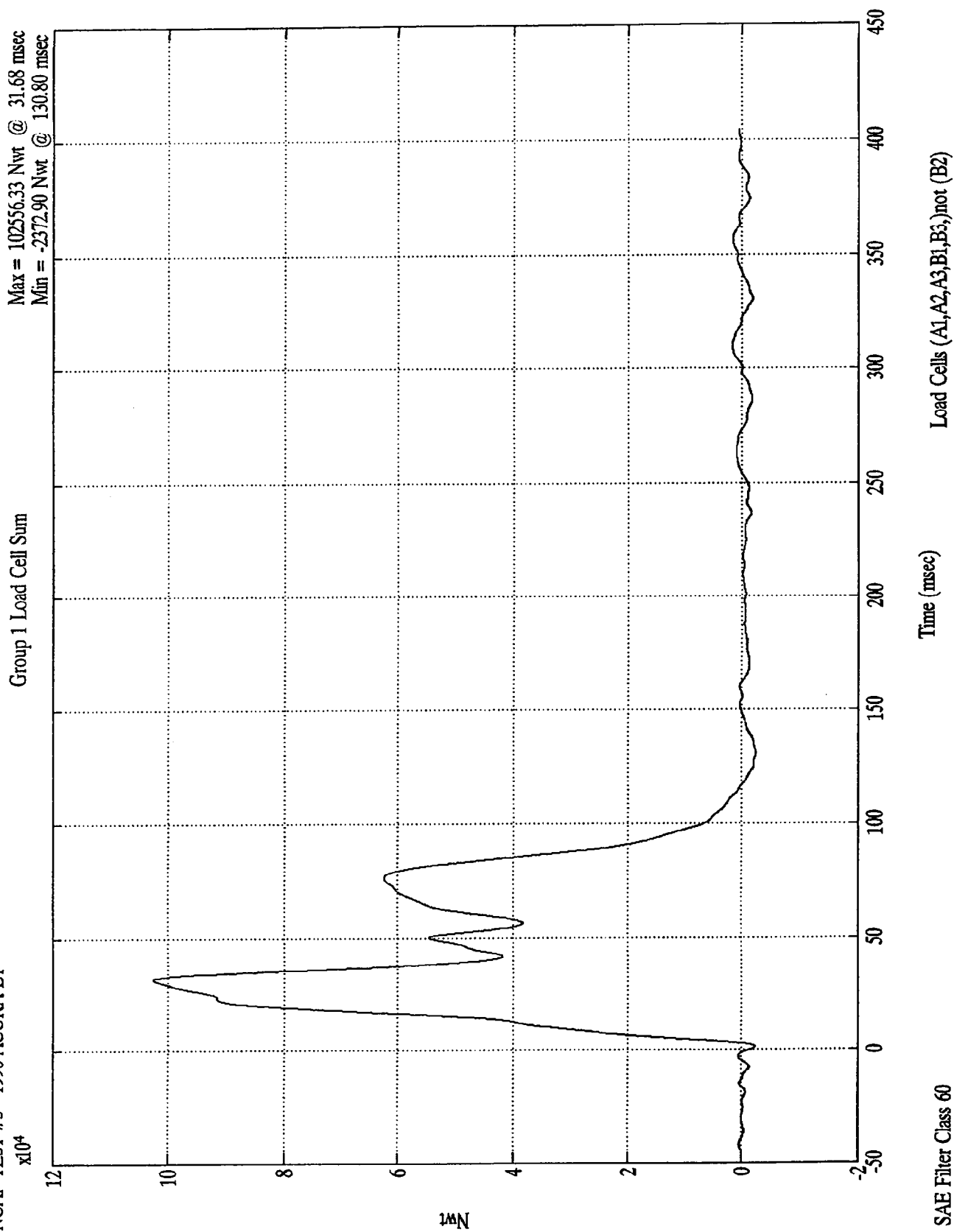
$\times 10^4$



SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

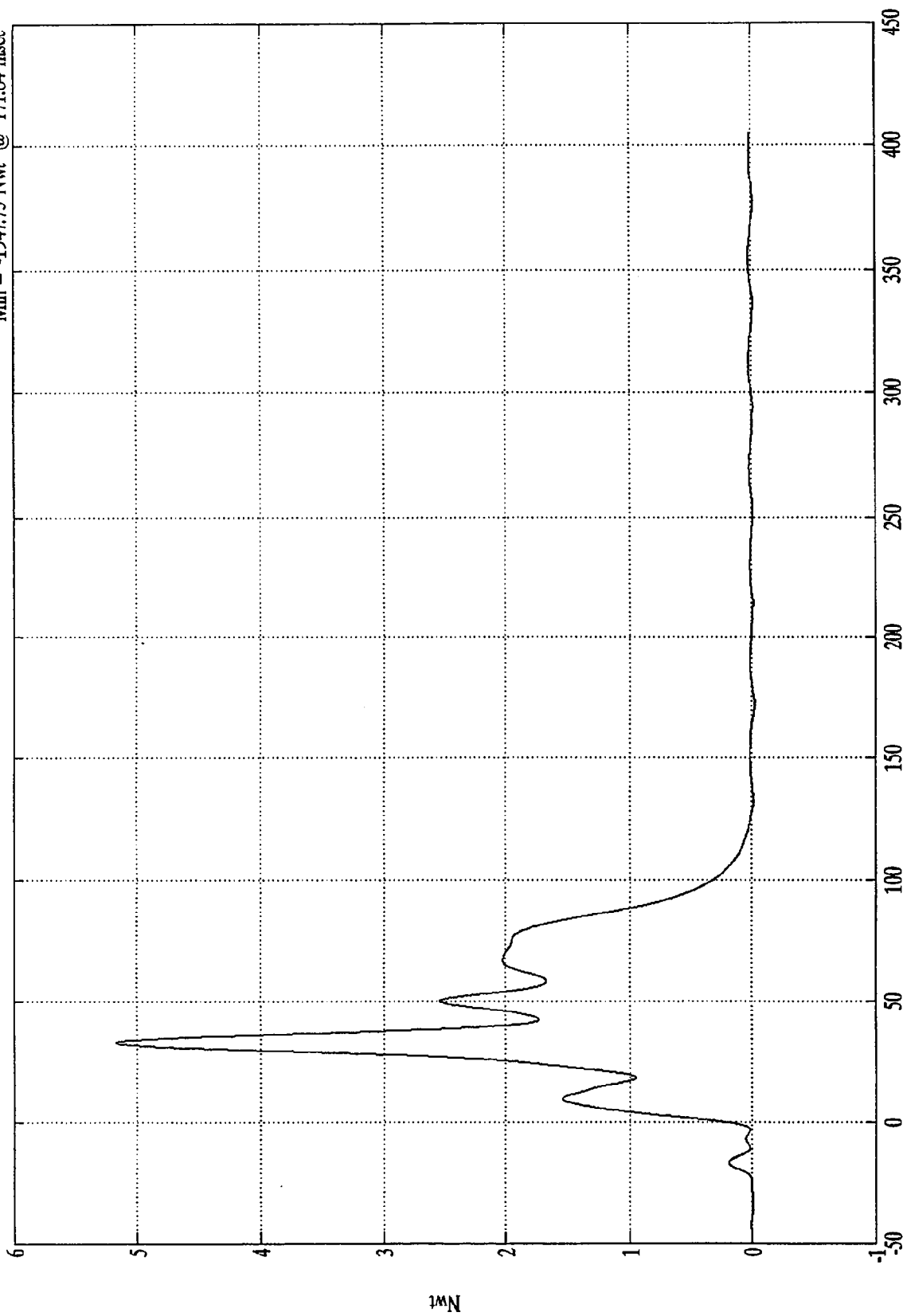
Group 1 Load Cell Sum
Max = 102556.33 Nwt @ 31.68 msec
Min = -2372.90 Nwt @ 130.80 msec



NCAP TEST #3 - 1996 ACURA LT
x10⁵

Group 2 Load Cell Sum

Max = 517168.00 Nwt @ 32.88 msec
Min = -1947.75 Nwt @ 171.84 msec



Load Cells (A4,A5,A6,B4,B5,B6)

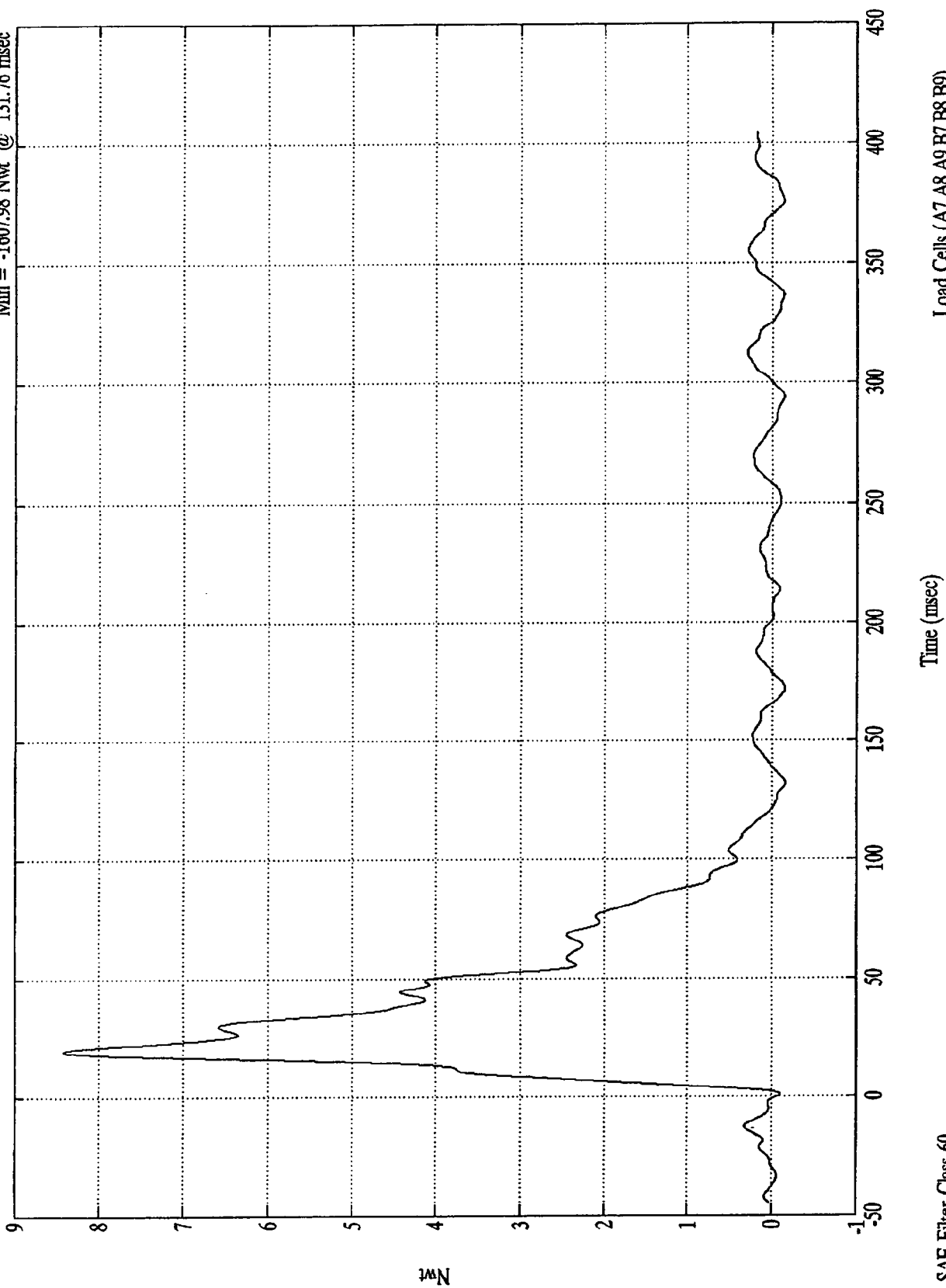
Time (msec)

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT
x10⁴

Group 3 Load Cell Sum

Max = 84187.60 Nwt @ 19.56 msec
Min = -1607.98 Nwt @ 131.76 msec

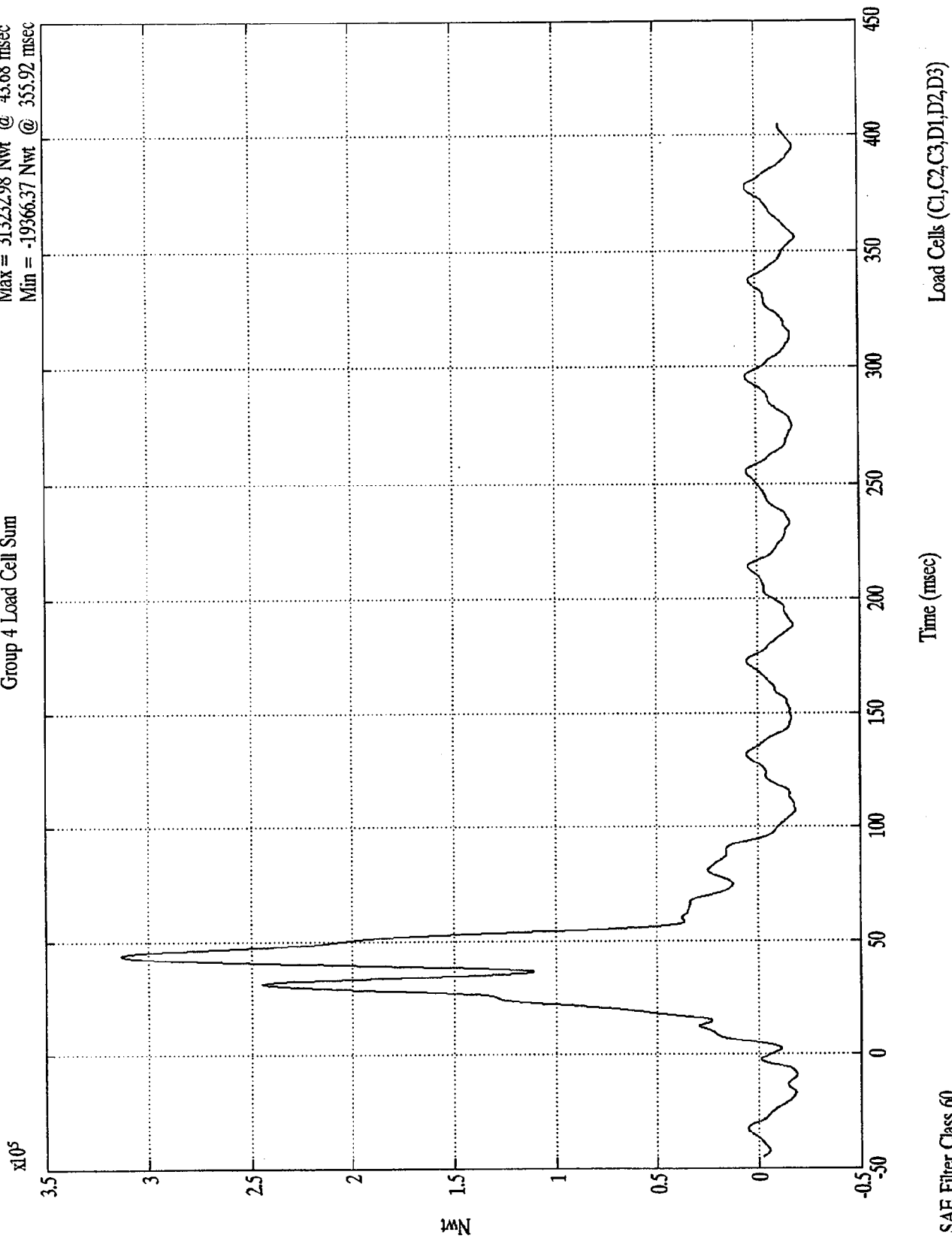


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Max = 31322.98 Nwt @ 43.68 msec
Min = -19366.37 Nwt @ 355.92 msec

Group 4 Load Cell Sum



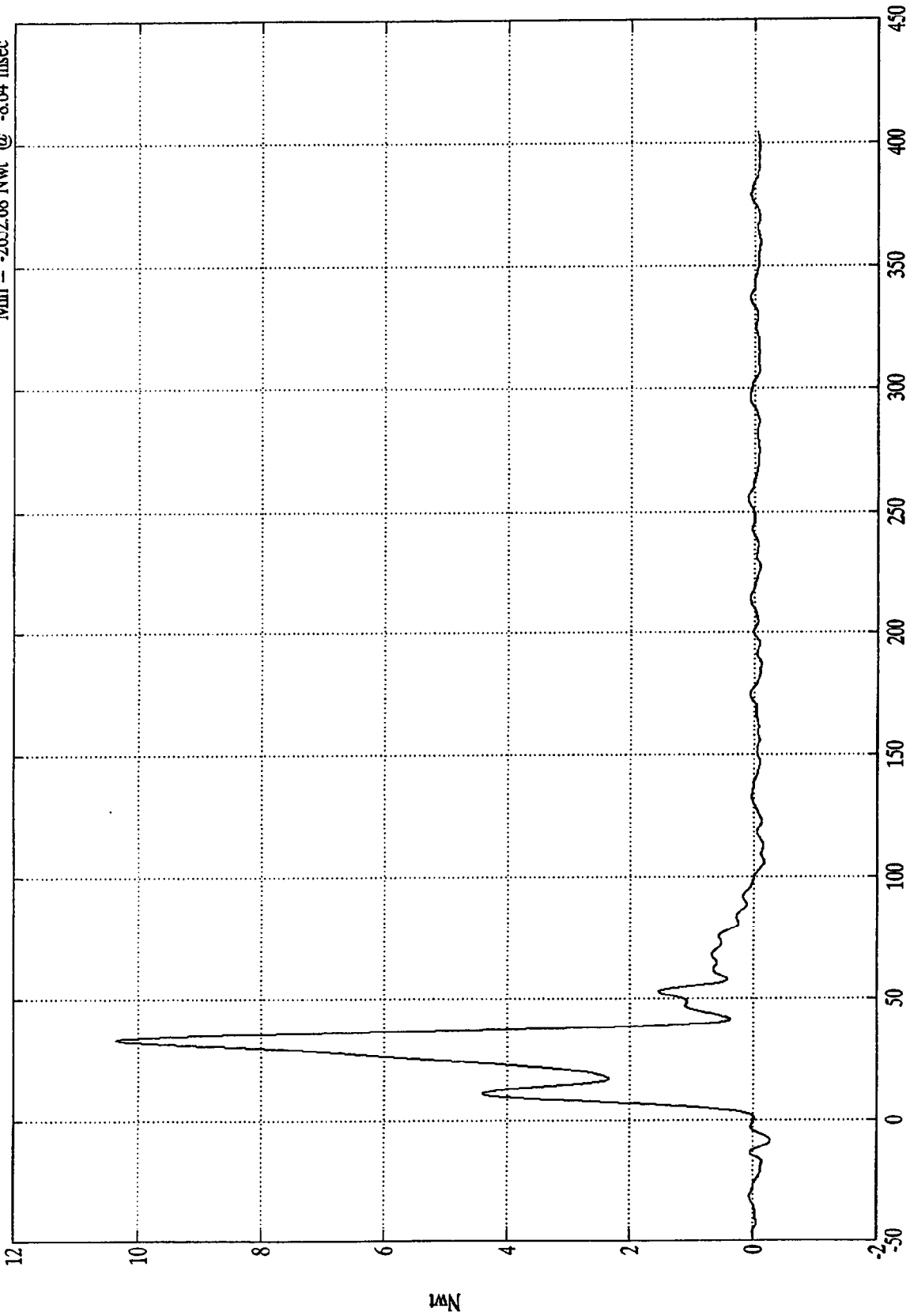
SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Max = 103514.40 Nwt @ 33.24 msec
Min = -2652.68 Nwt @ -8.64 msec

Group 5 Load Cell Sum

$\times 10^4$



Load Cells (C4, C5, C6, D4, D5, D6)

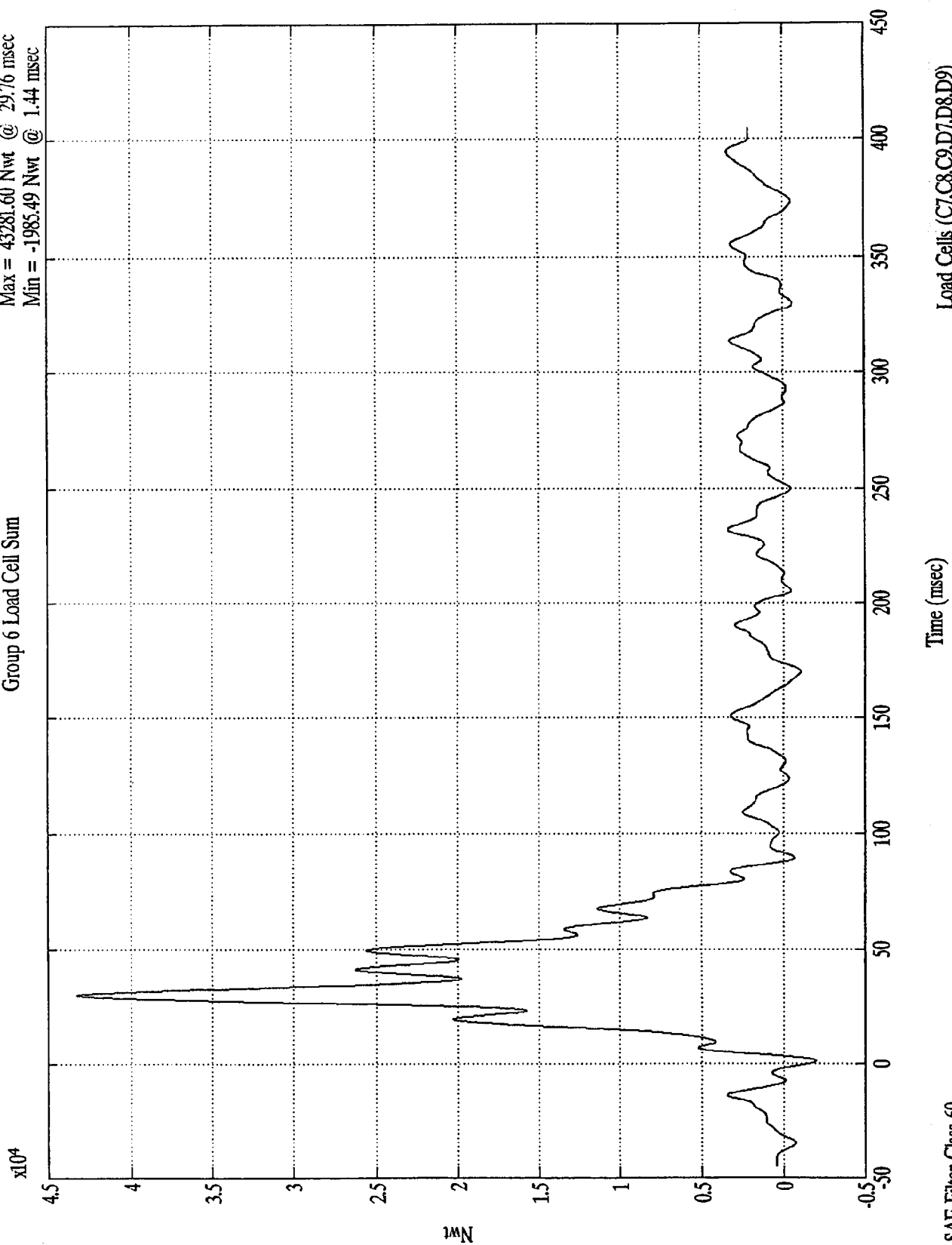
Time (msec)

SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT

Group 6 Load Cell Sum

Max = 43281.60 Nwt @ 29.76 msec
Min = -1985.49 Nwt @ 1.44 msec

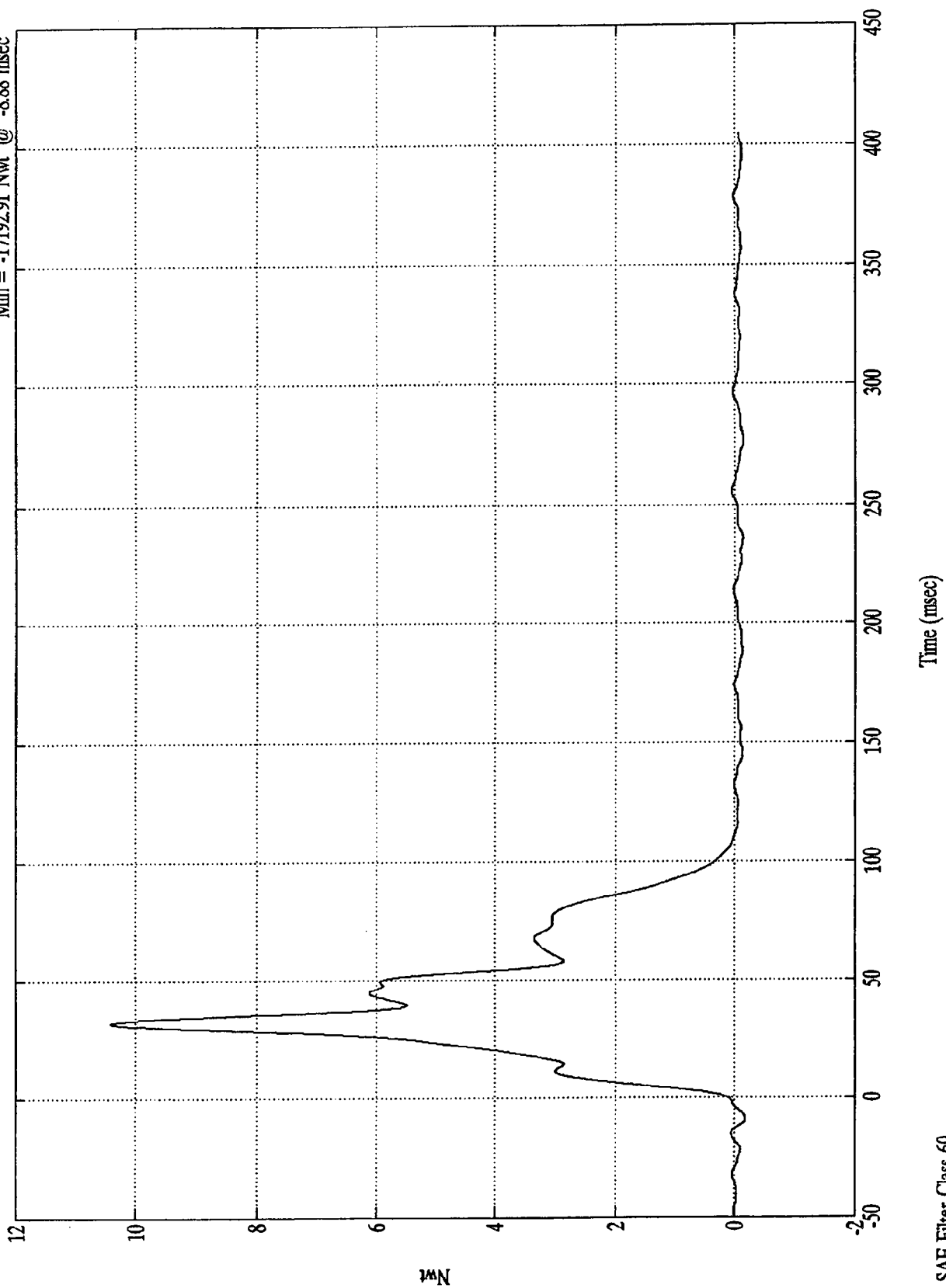


SAE Filter Class 60

NCAP TEST #3 - 1996 ACURA LT
x10⁵

Max = 1041463.21 Nwt @ 32.04 msec
Min = -17192.91 Nwt @ -8.88 msec

Total Load Cell Sum



Appendix C

PART 572B/E DUMMY CONFIGURATION

AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Calspan SRL Corporation. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	150	1/16/96
#2/Right Front Passenger	064	1/16/96

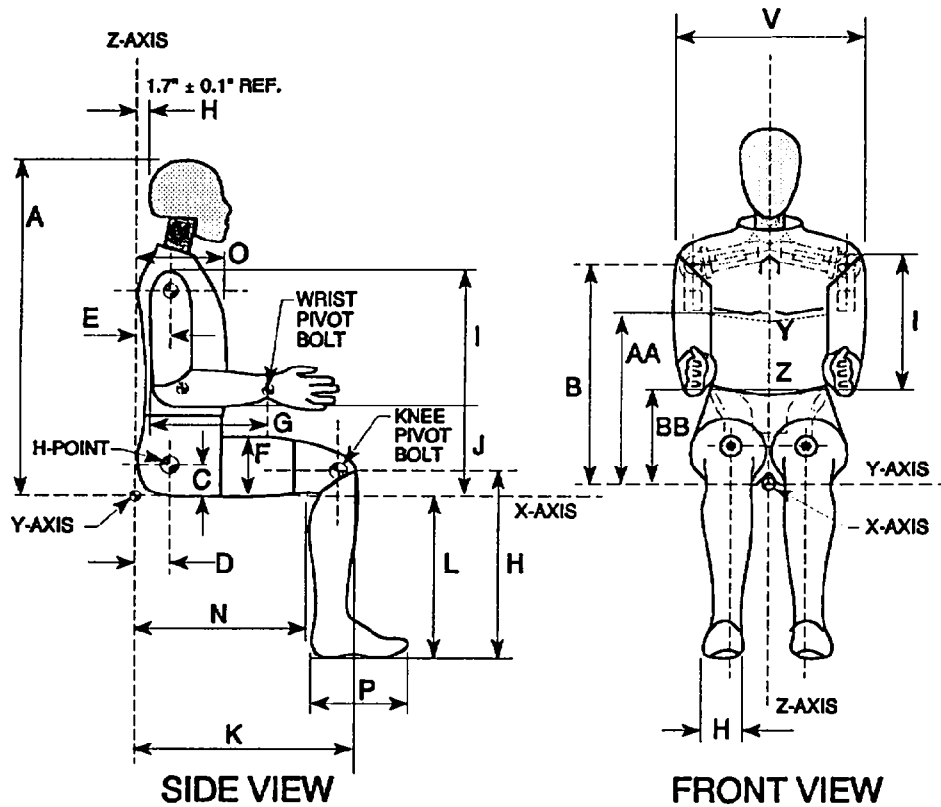
Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Inducant Testing Final Report No. 6525-V-1.

Figure 14

DUMMY CONFIGURATION DIMENSIONS

**EXTERNAL DIMENSIONS
SPECIFICATIONS**



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

HYBRID III EXTERNAL DIMENSIONS

S/N 150 HUMANOID

DUMMY SERIAL NO. 150

DATE: 1/16/96

TEMPERATURE		21 DEG. C
RELATIVE HUMIDITY		30 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	429-434 mm	432 mm
LOCATION FOR WAIST CIRCUMFERENCE (BB)	226-231 mm	228 mm
CHEST CIRCUMFERENCE (Y)	970-1001 mm	993 mm
WAIST CIRCUMFERENCE (Z)	836-866 mm	864 mm
CHEST DEPTH (O)	213-229 mm	213 mm
H-POINT HEIGHT (C)	84-89 mm	86 mm
H-POINT FROM SEAT BACK (D)	135-140 mm	137 mm
SKULL CAP TO BACKLINE (H)	41-46 mm	43 mm
TOTAL SITTING HEIGHT (A)	879-889 mm	886 mm
THIGH CLEARANCE (F)	140-155 mm	145 mm
BUTTOCK KNEE LENGTH (K)	580-605 mm	594 mm
BUTTOCK POPLITAL LENGTH (N)	452-477 mm	470 mm
POPLITEAL LENGTH (L)	430-455 mm	452 mm
KNEE PIVOT HEIGHT (M)	485-501 mm	498 mm
FOOT LENGTH (P)	252-267 mm	257 mm
FOOT BREADTH (W)	91-107 mm	96 mm
SHOULDER PIVOT FROM BACKLINE (E)	84-94 mm	94 mm
SHOULDER BREADTH (V)	422-437 mm	427 mm
SHOULDER PIVOT HEIGHT (B)	505-521 mm	513 mm
ELBOW REST HEIGHT (J)	190-211 mm	206 mm
SHOULDER-ELBOW LENGTH (I)	330-345 mm	335 mm
BACK OF ELBOW TO WRIST PIVOT (G)	290-305 mm	292 mm

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
HEAD DROP TEST
HYBRID III

DATE : 1/10/96

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 150 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	240.7 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	8 G'S
IS ACCELERATION CURVE UNIMODAL?	YES	YES

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
NECK FLEXION TEST
HYBRID III

DATE : 1/11/96

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 150 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5-22.2 DEG. C	21 DEG. C
RELATIVE HUMIDITY		10% - 70%	30 %
IMPACT VELOCITY		24.8 - 25.7 KPH	25.2 KPH
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	22.6 G'S
	20 MS	17.60 - 22.60 G'S	18.71 G'S
	30 MS	12.50 - 18.50 G'S	14.83 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	14.83 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	38.88 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	65.02 DEG.
	TIME	57 - 64 MS	57 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88 - 108 N-M	93.4 N-M
	TIME	47 - 58 MS	54.63 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	123.5 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	101.5 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
NECK EXTENSION TEST
HYBRID III

DATE : 1/11/96

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 150 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5 - 22.2 DEG. C	21 DEG. C
RELATIVE HUMIDITY		10% - 70%	30 %
IMPACT VELOCITY		21.4 - 22.3 KPH	21.6 KPH
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	17.45 G'S
	20 MS	14.00 - 19.00 G'S	16.89 G'S
	30 MS	11.00 - 16.00 G'S	13.23 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	13.23 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	41.5 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	89.66 DEG.
	TIME	72 - 82 MS	77.13 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-80.0/-52.9 N-M	-66.7 N-M
	TIME	65 - 79 MS	73.38 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	155 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	145.25 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
THORAX IMPACT TEST
HYBRID III

DATE : 1/12/96

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN 150 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.5 - 22.2 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PENDULUM VELOCITY	23.7 - 24.6 KPH	24.1 KPH
MAXIMUM DEFLECTION	64 - 73 mm	2.55 mm
MAXIMUM RESISTIVE FORCE	5160 - 5894 NEWTONS	5629 NEWTONS
INTERNAL HYSTERESIS	69% - 85%	73.4 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 1/16/96

KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 150 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	5133 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
KNEE IMPACT TEST
HYBRID III

DATE : 1/16/96

KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 150 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4840 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

HYBRID III EXTERNAL DIMENSIONS

S/N 064 HUMANOID

DUMMY SERIAL NO. 064

DATE: 1/16/96

TEMPERATURE		21 DEG. C
RELATIVE HUMIDITY		30 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	429-434 mm	432 mm
LOCATION FOR WAIST CIRCUMFERENCE (BB)	226-231 mm	229 mm
CHEST CIRCUMFERENCE (Y)	970-1001 mm	986 mm
WAIST CIRCUMFERENCE (Z)	836-866 mm	848 mm
CHEST DEPTH (O)	213-229 mm	218 mm
H-POINT HEIGHT (C)	84-89 mm	86 mm
H-POINT FROM SEAT BACK (D)	135-140 mm	137 mm
SKULL CAP TO BACKLINE (H)	41-46 mm	43.2 mm
TOTAL SITTING HEIGHT (A)	879-889 mm	884 mm
THIGH CLEARANCE (F)	140-155 mm	152 mm
BUTTOCK KNEE LENGTH (K)	580-605 mm	602 mm
BUTTOCK POPLITAL LENGTH (N)	452-477 mm	467 mm
POPLITEAL LENGTH (L)	430-455 mm	442 mm
KNEE PIVOT HEIGHT (M)	485-501 mm	493 mm
FOOT LENGTH (P)	252-267 mm	257 mm
FOOT BREADTH (W)	91-107 mm	96.5 mm
SHOULDER PIVOT FROM BACKLINE (E)	84-94 mm	91.4 mm
SHOULDER BREADTH (V)	422-437 mm	427 mm
SHOULDER PIVOT HEIGHT (B)	505-521 mm	518 mm
ELBOW REST HEIGHT (J)	190-211 mm	203 mm
SHOULDER-ELBOW LENGTH (I)	330-345 mm	338 mm
BACK OF ELBOW TO WRIST PIVOT (G)	290-305 mm	292 mm

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT

HEAD DROP TEST

HYBRID III

DATE : 1/10/96

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 064 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	250.7 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	5 G'S
IS ACCELERATION CURVE UNIMODAL?	YES	YES

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
 TRANSPORTATION RESEARCH DEPARTMENT
NECK FLEXION TEST
 HYBRID III

DATE : 1/11/96

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 064 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5-22.2 DEG. C	21 DEG. C
RELATIVE HUMIDITY		10% - 70%	30 %
IMPACT VELOCITY		24.8 - 25.7 KPH	25.2 KPH
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	22.7 G'S
	20 MS	17.60 - 22.60 G'S	19.77 G'S
	30 MS	12.50 - 18.50 G'S	14.36 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	14.36 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	38.88 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	67.88 DEG.
	TIME	57 - 64 MS	62.5 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88 - 108 N-M	99.4 N-M
	TIME	47 - 58 MS	53.38 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	116.5 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	105 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
 TRANSPORTATION RESEARCH DEPARTMENT
NECK EXTENSION TEST
 HYBRID III

DATE : 1/11/96

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 064 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5 - 22.2 DEG. C	21 DEG. C
RELATIVE HUMIDITY		10% - 70%	30 %
IMPACT VELOCITY		21.4 - 22.3 KPH	21.6 KPH
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	17.61 G'S
	20 MS	14.00 - 19.00 G'S	14.07 G'S
	30 MS	11.00 - 16.00 G'S	12.71 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	14.06 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	42.25 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	91.91 DEG.
	TIME	72 - 82 MS	77.88 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-80.0/-52.9 N-M	-62.6 N-M
	TIME	65 - 79 MS	72.63 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	154.38 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	146.63 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
THORAX IMPACT TEST
HYBRID III

DATE : 1/12/96

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN 064 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.5 - 22.2 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PENDULUM VELOCITY	23.7 - 24.6 KPH	24.1 KPH
MAXIMUM DEFLECTION	64 - 73 mm	65.5 mm
MAXIMUM RESISTIVE FORCE	5160 - 5894 NEWTONS	5817 NEWTONS
INTERNAL HYSTERESIS	69% - 85%	75.2 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
KNEE IMPACT TEST
HYBRID III

DATE : 1/16/96

KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 064 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4968 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

CALSPAN CORPORATION
TRANSPORTATION RESEARCH DEPARTMENT
KNEE IMPACT TEST
HYBRID III

DATE : 1/16/96

KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 2

HY3 SN: 064 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	30 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	5008 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN BRIAN SWIECICKI

Appendix D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 150)	Serial #	Manufacturer	Calibration	
			Last	Next
Head	X	ENDEVCO	10/95	4/96
	Y	ENDEVCO	10/95	4/96
	Z	ENDEVCO	10/95	4/96
Chest	X	ENDEVCO	10/95	4/96
	Y	ENDEVCO	10/95	4/96
	Z	ENDEVCO	10/95	4/96
Right Femur Load Cell	952	GSE	1/96	7/96
	951	GSE	1/96	7/96
Left Femur Load Cell	269	DENTON	11/95	5/96
	269	DENTON	11/95	5/96
	269	DENTON	11/95	5/96
Neck Load Cell	X	DENTON	11/95	5/96
	Y	DENTON	11/95	5/96
	Z	DENTON	11/95	5/96
Neck Moment	X	DENTON	11/95	5/96
	Y	DENTON	11/95	5/96
	Z	DENTON	11/95	5/96
Chest Deflection Gauge	150	HUMANOID	7/95	1/96
Lap Belt Load Cells	706	LEBOW	7/95	1/96
	707	LEBOW	7/95	1/96
Shoulder Belt Load Cells	M7	MAGNETEK	11/95	5/96
	E6	CALSPAN	11/95	5/96

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X (R)	AC827	ENDEVCO	9/95	3/96
Y (R)	AC8F6	ENDEVCO	10/95	4/96
Z (R)	ACCW0	ENDEVCO	9/95	3/96
Chest				
X (R)	AHRC9	ENDEVCO	10/95	4/96
Y (R)	AC7W8	ENDEVCO	8/95	2/96
Z (R)	ACC06	ENDEVCO	10/95	4/96
Pelvic				
X	AL6N5	ENDEVCO	1/96	7/96
Y	AL6R7	ENDEVCO	1/96	7/96
Z	A12C	ENDEVCO	1/96	7/96
Left Upper Tibia	Mx	DENTON	10/95	4/96
Left Upper Tibia	My	DENTON	10/95	4/96
Left Lower Tibia	Fy	DENTON	10/95	4/96
Left Lower Tibia	Fz	DENTON	10/95	4/96
Left Lower Tibia	Mx	DENTON	10/95	4/96
Right Upper Tibia	Mx	DENTON	10/95	4/96
Right Upper Tibia	My	DENTON	10/95	4/96
Right Lower Tibia	Fy	DENTON	10/95	4/96
Right Lower Tibia	Fz	DENTON	10/95	4/96
Right Lower Tibia	Mx	DENTON	10/95	4/96

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY	Serial #	Manufacture	Calibration	
			Last	Next
Left Foot Front Z	AET34	ENDEVCO	9/95	3/96
Left Foot Rear X	AKD93	ENDEVCO	9/95	3/96
Left Foot Rear Z	AEW70	ENDEVCO	9/95	3/96
Right Foot Front Z	AET76	ENDEVCO	7/95	1/96
Right Foot Rear X	AA4C5	ENDEVCO	7/95	1/96
Right Foot Rear Z	AET22	ENDEVCO	7/95	1/96

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 064)	Serial #	Manufacturer	Calibration	
			Last	Next
Head	X	ENDEVCO	10/95	4/96
	Y			
	Z			
Chest	X	ENDEVCO	10/95	4/96
	Y	ENDEVCO	10/95	4/96
	Z	ENDEVCO	10/95	4/96
		ENDEVCO	10/95	4/96
Right Femur Load Cell	419	GSE	7/95	1/96
Left Femur Load Cell	418	GSE	7/95	1/96
Neck Load Cell	446	DENTON	11/95	5/96
	446	DENTON	11/95	5/96
	446	DENTON	11/95	5/96
Neck Moment	446	DENTON	11/95	5/96
	446	DENTON	11/95	5/96
	446	DENTON	11/95	5/96
Chest Deflection Gauge	064	HUMANOID	11/95	5/96
Hybrid III Use Only				
Lap Belt Load Cells	710	LEBOW	7/95	1/96
Shoulder Belt Load Cells	711	LEBOW	7/95	1/96
Spool-Out Potentiometer	M8	MAGNETEK	11/95	5/96
Belt Stretch Transducer	E7	CALSPAN	11/95	5/96

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X (R)	AC7Y3	ENDEVCO	10/95	4/96
Y (R)	AC824	ENDEVCO	10/95	4/96
Z (R)	AC814	ENDEVCO	10/95	4/96
Chest				
X (R)	APIE0	ENDEVCO	8/95	2/96
Y (R)	AJ9F8	ENDEVCO	8/95	2/96
Z (R)	APIA2	ENDEVCO	8/95	2/96
Pelvic				
X	AH5F3	ENDEVCO	1/96	7/96
Y	AL6H7	ENDEVCO	1/96	7/96
Z	AL6C8	ENDEVCO	1/96	7/96
Left Upper Tibia	Mx	DENTON	10/95	4/96
Left Upper Tibia	My	DENTON	10/95	4/96
Left Lower Tibia	Fy	DENTON	10/95	4/96
Left Lower Tibia	Fz	DENTON	10/95	4/96
Left Lower Tibia	Mx	DENTON	10/95	4/96
Right Upper Tibia	Mx	DENTON	10/95	4/96
Right Upper Tibia	My	DENTON	10/95	4/96
Right Lower Tibia	Fy	DENTON	10/95	4/96
Right Lower Tibia	Fz	DENTON	10/95	4/96
Right Lower Tibia	Mx	DENTON	10/95	4/96

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY	Serial #	Manufacture	Calibration	
			Last	Next
Left Foot Front Z	AEW29	ENDEVCO	10/95	4/96
Left Foot Rear X	AEYW0	ENDEVCO	9/95	3/96
Left Foot Rear Z	AEW71	ENDEVCO	8/95	2/96
Right Foot Front Z	AEWE3	ENDEVCO	7/95	1/96
Right Foot Rear X	AEWJ5	ENDEVCO	7/95	1/96
Right Foot Rear Z	AEWK1	ENDEVCO	7/95	1/96

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Serial #	Manufacturer	Calibration	
			Last	Next
Left Seat Rear Crossmember	X96	ICS	10/95	4/96
Right Rear Seat Crossmember	Y13	ICS	1/96	7/96
Top of Engine	Y11	ICS	1/96	7/96
Bottom of Engine	Y02	ICS	1/96	7/96
Left Disc Brake Caliper	A73	CEC	9/95	3/96
Right Disc Brake Caliper	A157	CEC	9/95	3/96
Instrument Panel	Y94	ICS	10/95	4/96
Left Seat Rear Crossmember (R)	Y14	ICS	12/95	6/96
Right Seat Rear Crossmember (R)	X81	ICS	11/95	5/96

Appendix E

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

The Seat Belt System and How It Works

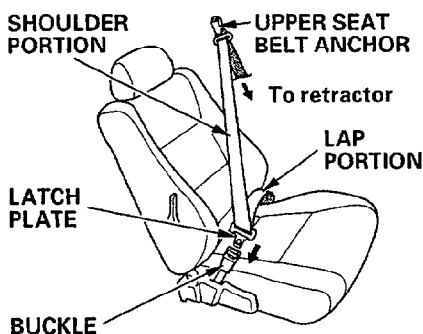
Seat Belt System Components

Your Acura has seat belts in all five seating positions. The front seats and the outside positions of the rear seat have lap/shoulder belts. The center position of the rear seat has a lap belt.

Your seat belt system also includes a light on the instrument panel to remind you to fasten your seat belt, and to make sure your passengers fasten theirs. This light comes on when you turn on the ignition if you have not fastened your seat belt. A beeper also sounds for several seconds (see page 34).

The following pages cover more about the seat belt components and how they work.

Lap/Shoulder Belt



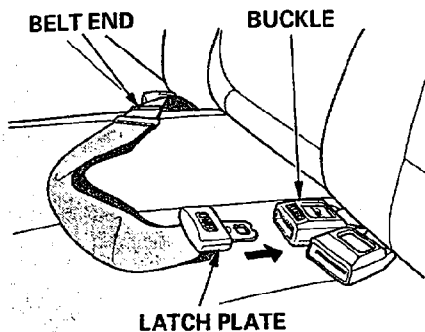
This style of seat belt has a single belt that goes over your shoulder, across your chest, and across your hips.

Each lap/shoulder belt has an emergency locking retractor. In normal driving, the retractor lets you move freely in your seat while it keeps some tension on the belt. During a collision or sudden stop, the retractor automatically locks the belt to help restrain your body.

The lap/shoulder belt retractor in each passenger seating position has an additional locking mechanism that is intended to secure a child seat (see page 24). If the shoulder part of the belt is pulled all the way out, this mechanism will engage. The belt will retract, but it will not allow the passenger to move freely. If the belt feels too tight, unlatch it, let it retract fully, then pull it out as far as needed.

The Seat Belt System and How It Works

Lap Belt



The lap belt has one manually-adjusted belt that fits across the hips. It is similar to safety belts used in airplanes.

Wearing Seat Belts Properly

You can increase the effectiveness of your seat belts if you take a little time to read the following pages and make sure you know how to wear seat belts properly.

WARNING

Not wearing seat belts properly increases the chance of serious injury or death in a crash.

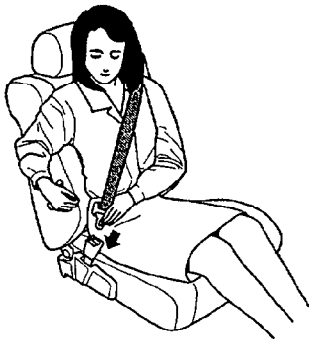
Be sure you and your passengers always wear seat belts and wear them properly.

Wearing a Lap/Shoulder Belt

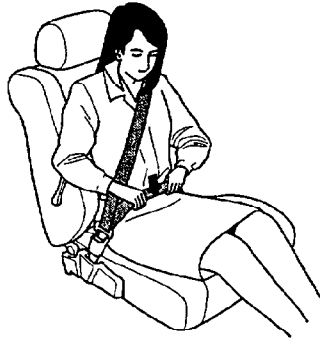
Before putting on the seat belt, move the driver's seat as far back as is practical while still allowing you to maintain full control of the vehicle. Make sure the seat-back is upright (see page 18). The front seat passenger should move the seat as far back as possible.

CONTINUED

The Seat Belt System and How It Works



1. Pull the latch plate across your body and insert it into the buckle. Tug on the belt to make sure the latch is securely locked.

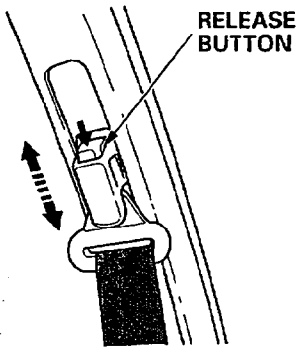


2. Check that the belt is not twisted.
3. Position the lap portion of the belt as low as possible across your hips, not across your stomach. This lets your strong pelvic bones take the force of a crash.



4. Pull up on the shoulder part of the belt to remove any slack. Make sure the belt goes over your collarbone and across your chest.

The Seat Belt System and How It Works



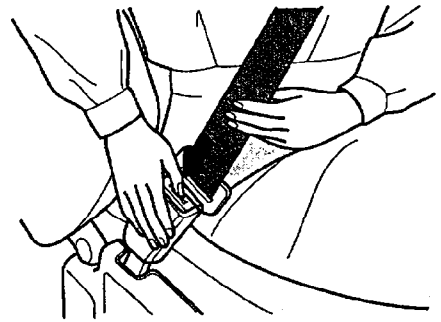
5. If the belt crosses your neck, you need to adjust the belt anchor height or your seating position.

Front seats:

Adjust the belt anchor by pressing the release button and sliding the anchor downward (it has four positions).

Rear seat:

Move toward the center of the seat until the belt fits over your collarbone.



To unlatch the seat belt, push the red PRESS button on the buckle. Guide the belt across your body to the door pillar. If the belt doesn't retract easily, pull it out and check for twists or kinks.