

REPORT NUMBER: CAL-94-N08

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

**FORD MOTOR COMPANY  
1994 FORD MUSTANG  
2-DOOR COUPE**

NHTSA NUMBER: MR0205

CALSPAN TEST NUMBER: 8120-8

MAY 12, 1994

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FINAL REPORT

PREPARED FOR:

U. S. Department of Transportation  
National Highway Traffic Safety Administration  
Office of Market Incentives  
400 Seventh Street, S. W.  
Room No. 5313 (NRM-20)  
Washington, DC 20590

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**TECHNICAL REPORT STANDARD TITLE PAGE**

1. <i>Report No.</i> CAL-94-N08		2. <i>Government Accession No.</i>		3. <i>Recipient's Catalog No.</i>	
4. <i>Title and Subtitle</i> NHTSA New Car Assessment Program (NCAP) Frontal Barrier Impact Test of a 1994 Ford Mustang 2-Door Coupe				5. <i>Report Date</i> May 12, 1994	
				6. <i>Performing Organization Code</i> CAL	
7. <i>Author(s)</i> Michael J. Kilgallon, Project Engineer Walter E. Levan, Program Manager				8. <i>Performing Organization Report No.</i> 8120-8	
9. <i>Performing Organization Name and Address</i> Calspan Advanced Technology Center 4455 Genesee Street Buffalo, New York 14225				10. <i>Work Unit No.</i> X035 -080-1409	
				11. <i>Contract or Grant No.</i> DTNH22-90-D-02121	
12. <i>Sponsoring Agency Name and Address</i> U.S. Department of Transportation National Highway Traffic Safety Administration 400 Seventh , S.W. Washington, D.C. 20590				13. <i>Type of Report and Period Covered</i> Final Report May - June 1994	
				14. <i>Sponsoring Agency Code</i> DOT/NHTSA/RM/OMI	
15. <i>Supplementary Notes</i>					
<p>16. <i>Abstract</i></p> <p>A frontal load cell barrier test of a 1994 Ford Mustang 2-Door Coupe was performed at the Calspan Advanced Technology Center crash test facility in Buffalo, New York on May 12, 1994.</p> <p>The impact velocity was 56.3 kph and the temperature at the barrier face was 11° C. The maximum post test vehicle crush was 645 mm. The test vehicle was equipped with 3-point restraint devices at each of the front outboard seating positions. The vehicle was also equipped with supplemental airbags at each of the front outboard seating positions.</p> <p>With regard to FMVSS 208 - "Occupant Crash Protection", injury criteria, both the driver and passenger appear to comply with the head, chest and femur requirements.</p>					
17. <i>Key Words</i>			18. <i>Distribution Statement</i>		
19. <i>Security Classif. (of this report)</i> UNCLASSIFIED		20. <i>Security Classif. (of this page)</i> UNCLASSIFIED		21. <i>No. of Pages</i>	22. <i>Price</i>

Form DOT F1700.7 (8-69)

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Section 1

PURPOSE AND TEST PROCEDURE

This 56.3 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 56.3 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 MR0205

A load cell barrier consisting of 36 load cells was impacted by a 1994 Ford Mustang 2-Door Coupe at a velocity of 56.3 kph. The test was performed at the Calspan Corporation Advanced Technology Center on May 12, 1994. 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 572E, 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, 6-axis neck load cells, chest displacement potentiometers 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 ATD (Serial No. 313) and the right-front passenger ATD (Serial No. 290) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C and D.

The 81 channels of data were recorded on a P.C. based data acquisition system. The location of the restraint's D-Ring prevented measurement of the belt spool-out Appendix B contains the vehicle, load cell barrier and dummy response data traces.

The driver's head struck the airbag; the HIC was 473.0. The maximum chest deceleration over 3 milliseconds was 47.3 g's and maximum chest deflection was 6.5 mm. Femur loads were -3799.0 newtons on the left femur and -6105.2 newtons on the right femur.

The right front passenger's HIC was 418.5. Maximum chest deceleration over 3 milliseconds was 52.1 g's and maximum chest deflection was 8.9 mm. Femur loads were -6455.5 newtons on the left and -3087.8 newtons on the right.

Table 1

GENERAL TEST AND VEHICLE DATA

Vehicle Year/Make/Model/Body Style: 1994 Ford Mustang 2-Door Coupe

NHTSA Test No.: MR0205 VIN.: 1FALP404XRF164407

Body Color: Blue Date of Manufacture: 3/94

Date Received: 4/25/94

Odometer Reading: 177 miles

Engine: 6 Cylinders; - C.I.D.; 3.8 Liters; - CC  
X Gas; - Diesel; - Turbocharged  
X Longitudinal; - Transverse

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

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

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

Type of Occupant Restraint: 3-point continuous belt system . Driver and right front passenger airbags as supplemental restraint devices.

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 300 kPa, Rear 300 kPa

Recommended Tire Size: P205/65R15

Recommended Cold Tire Pressure: Front 240 kPa, Rear 240 kPa

Tires on Vehicle: Eagle GA Manufacturer: Goodyear

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

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

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

Vehicle Capacity Weight (VCW) = 317 kgs. (A)

No. of Occupants x 68 kgs. = 272 kgs. (B)

Rated Cargo and Luggage Weight (RCLW) A-B = 45 kgs.

GVWR 2004 kgs. GAWR: Front 1071 kgs. Rear 939 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>404</u>	kgs.	Right Rear =	<u>295</u>	kgs.
Left Front =	<u>408</u>	kgs.	Left Rear =	<u>308</u>	kgs.
TOTAL FRONT WEIGHT =	<u>812</u>	kgs.	(	<u>57</u>	% of Total Vehicle Weight )
TOTAL REAR WEIGHT =	<u>603</u>	kgs.	(	<u>43</u>	% of Total Vehicle Weight )
TOTAL DELIVERED WEIGHT =	<u>1415</u>	kgs.			

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight	<u>1415</u>	kgs.
VCW = Vehicle Capacity Weight	<u>317</u>	kgs.
DSC = Designated Seating Capacity	<u>4</u>	
RCLW = VCW - 68 (DSC) =	<u>45</u>	kgs.
Target Test Weight = UDW + RCLW + (2 dummies x 74.4 kgs./ dummy)		
Target Test Weight =	<u>1608</u>	kgs.

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 42 KGS CARGO:

Right Front =	<u>399</u>	kgs.	Right Rear =	<u>399</u>	kgs.
Left Front =	<u>435</u>	kgs.	Left Rear =	<u>372</u>	kgs.
TOTAL FRONT WEIGHT =	<u>834</u>	kgs.	(	<u>52</u>	% of Total Vehicle Weight )
TOTAL REAR WEIGHT =	<u>771</u>	kgs.	(	<u>48</u>	% of Total Vehicle Weight )
TOTAL TEST WEIGHT =	<u>1605</u>	kgs.			
Weight of ballast secured in vehicle trunk area =	<u>0</u>	kgs.			

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude:	RF	<u>742</u>	LF	<u>745</u>	RR	<u>754</u>	LR	<u>754</u>
Test Attitude:	RF	<u>727</u>	LF	<u>727</u>	RR	<u>690</u>	LR	<u>690</u>
Wheel Base:	<u>2575</u>	mm.;	C.G. =	<u>1236</u>	mm. rearward of front wheel C/L			

Remarks: 54 liters of Stoddard solution was placed in the fuel tank.

Table 1

GENERAL TEST AND VEHICLE DATA (cont'd)

POST -IMPACT DATA:

Type of Test: Frontal Barrier Impact Angle: 0°  
 Date of Test: May 12, 1994 Time of Test: 13:45  
 Ambient Temperature: 11 ° 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 = 56.3 kph, secondary = 56.3 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>4530</u>	C <sub>L</sub>	<u>4605</u>	L	<u>4515</u>
	Post-test = R	<u>3910</u>	C <sub>L</sub>	<u>3960</u>	L	<u>3925</u>
	Crush = R	<u>620</u>	C <sub>L</sub>	<u>645</u>	L	<u>590</u>

Distance from front of test vehicle to point of impact:

R 0 C<sub>L</sub> 50 L 0

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>Lower Dashpanel</u>	<u>Glove Box Door</u>
Right Knee	<u>Lower Dashpanel</u>	<u>Glove Box Door</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>-</u>	<u>-</u>
	<u>Front</u>		<u>Rear</u>	
<u>Seat Movement</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>
<u>Glazing Damage</u>				
Backlight/Windshield:	<u>Windshield sustained stress fractures but remained intact.</u>			
Other Notable Impact Effects:	<u>None</u>			

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 No.: MR0205 Vehicle: 1994 Ford Mustang 2-Door Coupe

	MAXIMUM HEAD ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-45.6	-6.3	27.6	50.9
Position #2 - Passenger	-60.4	-10.3	16.2	60.6

	MAXIMUM CHEST ACCELERATION (g's)			
	X	Y	Z	R*
Position #1 - Driver	-47.4	-6.6	-17.5	47.3
Position #2 - Passenger	-53.2	6.9	16.3	52.1

\* 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	-3799.0	-6105.2
Position #2 - Passenger	-6455.5	-3087.8

	MAXIMUM FORCE - SEAT BELT LOADS (nwt)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
Position #1 - Driver	6320.2	-	5128.8
Position #2 - Passenger	7592.9	6592.8	-

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t <sub>1</sub> (mSec)	t <sub>2</sub> (mSec)	Average Acceleration t <sub>1</sub> to t <sub>2</sub>
Position #1 - Driver	473.0	60.6	96.48	44.46
Position #2 - Passenger	418.5	47.64	75.6	46.78

\*\* HIC is as defined in FMVSS 208. The maximum time interval from t<sub>1</sub> to t<sub>2</sub> is 36 milliseconds.

Table 3

HYBRID III NECK AND CHEST DATA SHEET

Vehicle Year/Make/Model/Body Style: 1994 Ford Mustang 2-Door Coupe

Vehicle NHTSA No.: MR0205 Test Date: May 12, 1994

MAXIMUM VALUES	DRIVER DUMMY ID # : 313	PASSENGER DUMMY ID # : 290
Neck Load X ( nwt )	-427.4	1886.1
Neck Load Y ( nwt )	280.0	387.0
Neck Load Z ( nwt )	1520.2	3247.7
Neck Moment X ( nwt-m )	-14.5	73.9
Neck Moment Y ( nwt-m )	33.8	118.1
Neck Moment Z ( nwt-m )	5.9	15.1
Chest Deflection X (mm.)	6.5	8.9
Time of Max. Occurrence (msec )	87.6	61.9

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

Figure 1

## DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

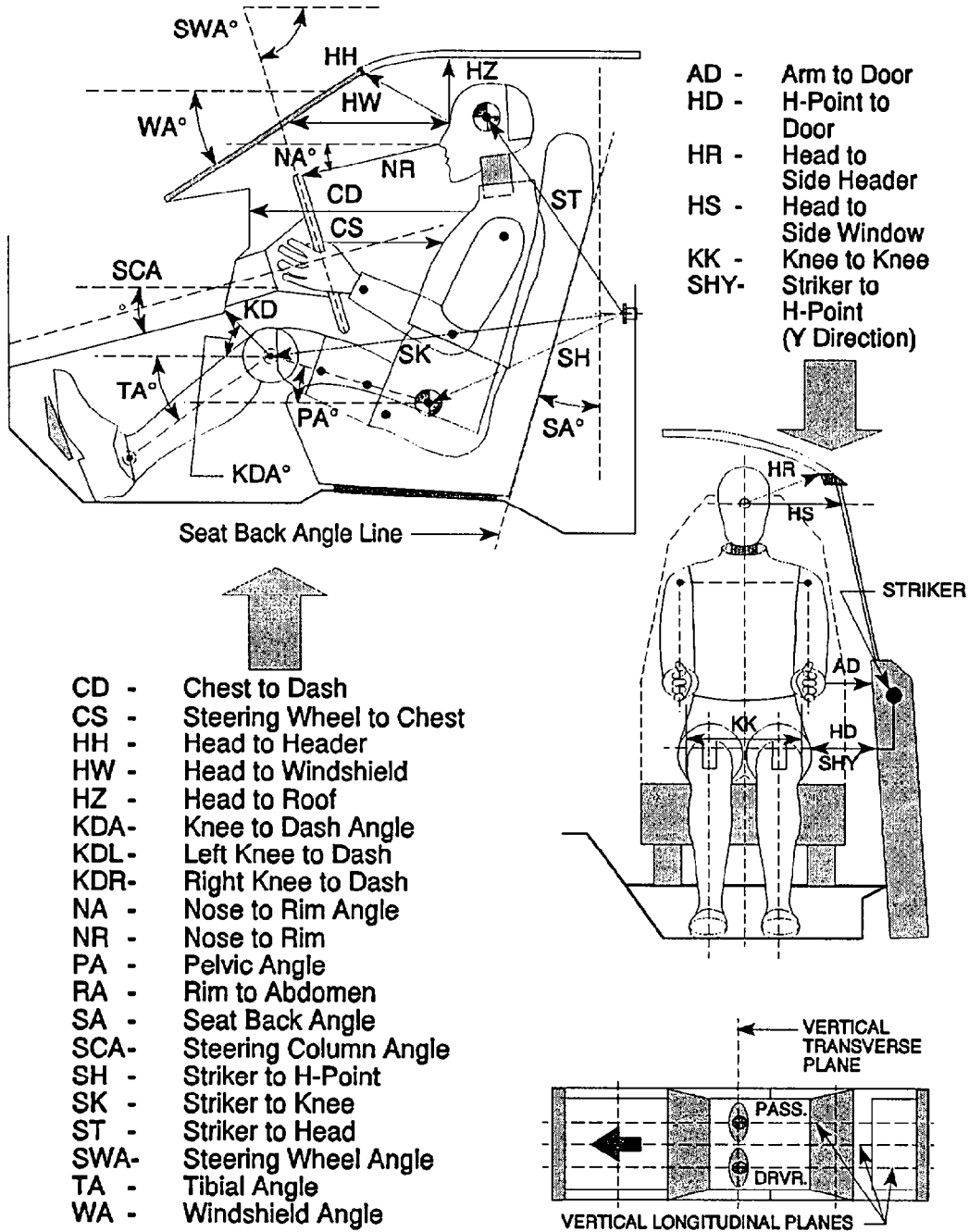
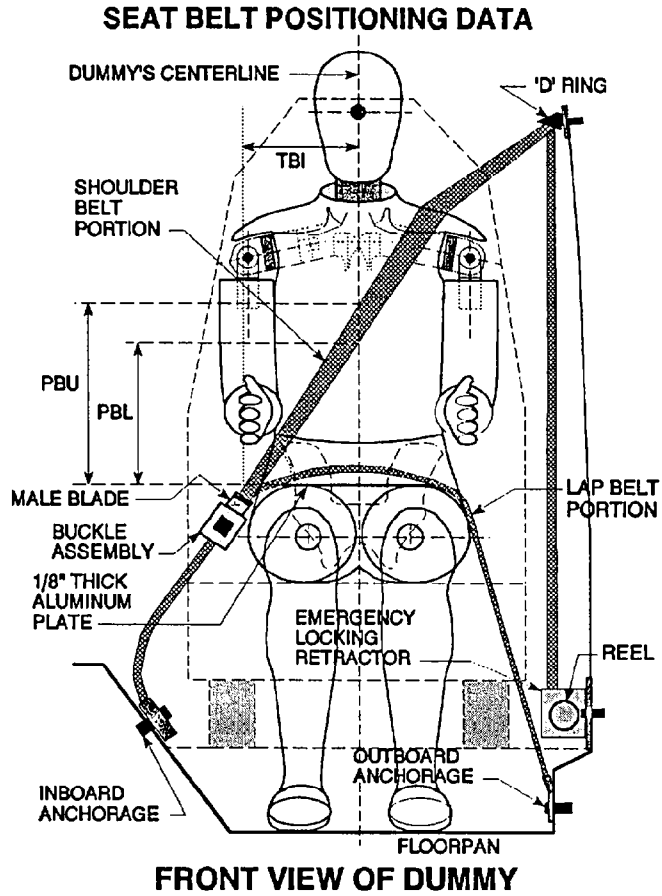


Table 4  
FRONT SEAT OCCUPANT MEASUREMENTS

	DRIVER (Serial # 313 )			PASS. (Serial # 290 )		
WA°	28°			28°		
SWA°	68°			N/A		
SCA°	22°			N/A		
SA°	69°			69°		
HZ	150			125		
HH	268			255		
HW	465			456		
HR	195			209		
NR	345	Angle	12°	N/A		
CD	524			463		
CS	270			N/A		
RA	170			N/A		
KDL	150	Angle (KDA)	42°	140		
KDR	143			139	Angle (KDA)	38°
PA°	23°			25°		
TA°	15°			19°		
KK	220			200		
ST	650	Angle	40°	627	Angle	41°
SK	914	Angle	95°	909	Angle	95°
SH	513	Angle	110°	559	Angle	110°
SHY	240			210		
HS	207			208		
HD	116			110		
AD	70			80		

Figure 2

SEAT BELT POSITIONING DATA



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	315	310
PBL-- Top surface of alum. plate to belt lower edge	225	220
<u>LAP BELT TENSION</u>	-	-
<u>SHOULDER BELT TENSION</u>	13 Nwt	13 Nwt

Table 5

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

	<u>Driver</u>	<u>Passenger</u>
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	<u>2160 mm</u>	<u>2210 mm</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>1120 mm</u>	<u>1130 mm</u>
Lap belt length as measured on Part 572 Dummy.	<u>890 mm</u>	<u>930 mm</u>

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.	<u>86 mm</u>	<u>63 mm</u>
As determined mechanically.	<u>75 mm</u>	<u>68 mm</u>

BELT STRETCH DATA:

Measured electronically between shoulder belt load cell and the "D" ring.	<u>16 mm/M</u>	<u>0 mm/M</u>
Measured mechanically.	<u>0 mm/M</u>	<u>0 mm/M</u>

Figure 3

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information Shown on Table 4

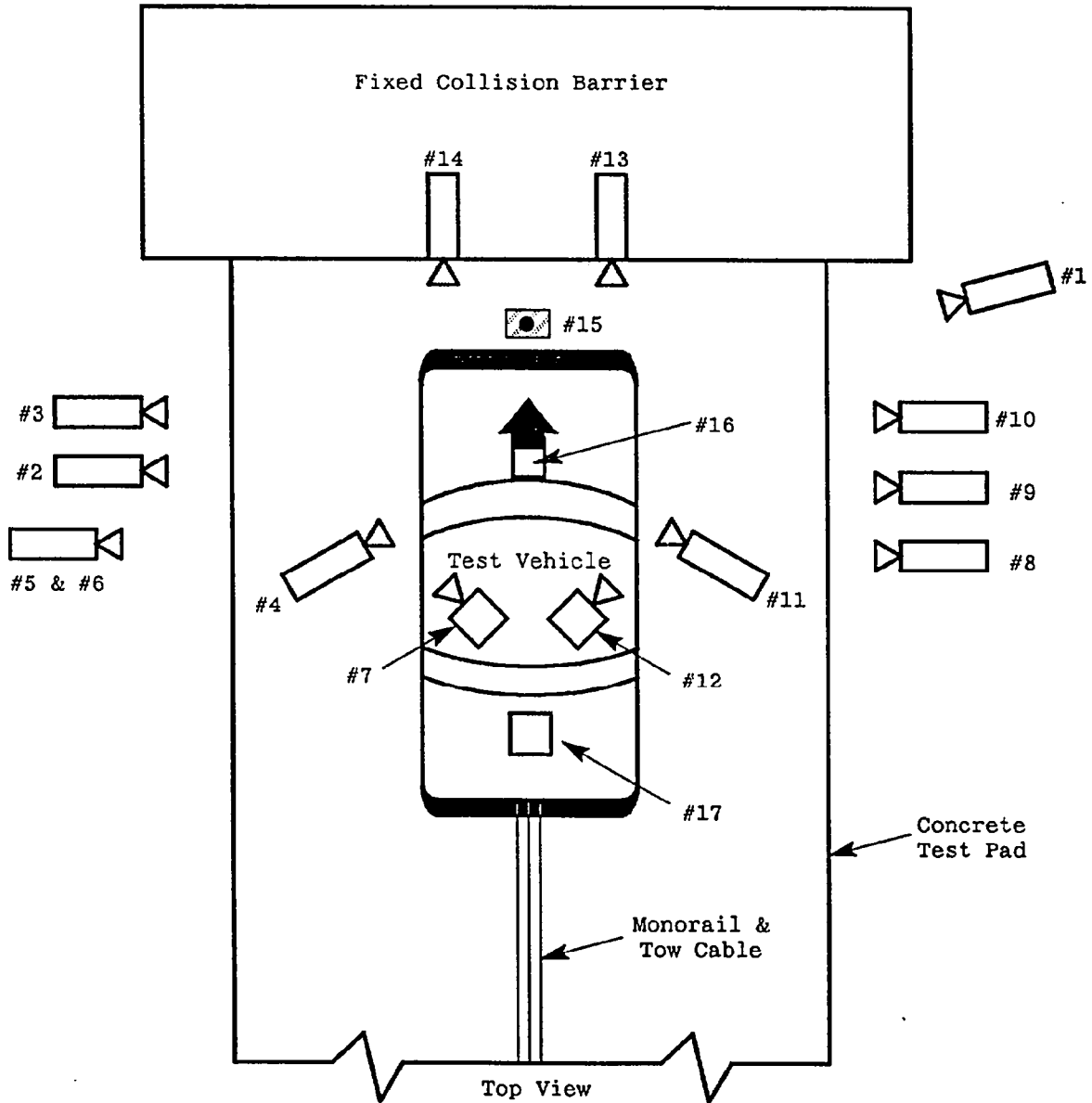


Table 6  
HIGH-SPEED CAMERA LOCATIONS

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	6020	1549	1041	-6	5577	1020	
3	Left Side View	8661	1016	1067	-3	8218	950	
4	Driver and Interior View	2921	2845	1829	-22	2478	920	
5	Steering Column (Bottom)	6985	1905	1168	-5	6542	960	
6	Steering Column (Top)	6985	1905	1778	-10	6542	1030	
7	Left Belt	-	-	-	-	-	N/A	
8	Overall Right Side	6071	1854	1092	-4	5628	1170	
9	Right Side View	7772	991	1041	-2	7329	1110	
10	Right Passenger View	7595	1854	1422	-5	7152	890	
11	Passenger and Interior View	2769	2845	1778	-20	2326	1140	
12	Right Belt	-	-	-	-	-	540	
13	Passenger Front View	610	0	1930	-35	-	970	
14	Driver Front View	610	0	1956	-35	-	980	
15	Windshield View	0	0	3050	-45	-	1100	
16	Pit View of Engine	0	500	-3050	90	-	680	
17	Pit View of Fuel Tank	0	3400	-3050	90	-	680	

Test No. MR0205 Vehicle: 1994 Ford Mustang 2-Door Coupe

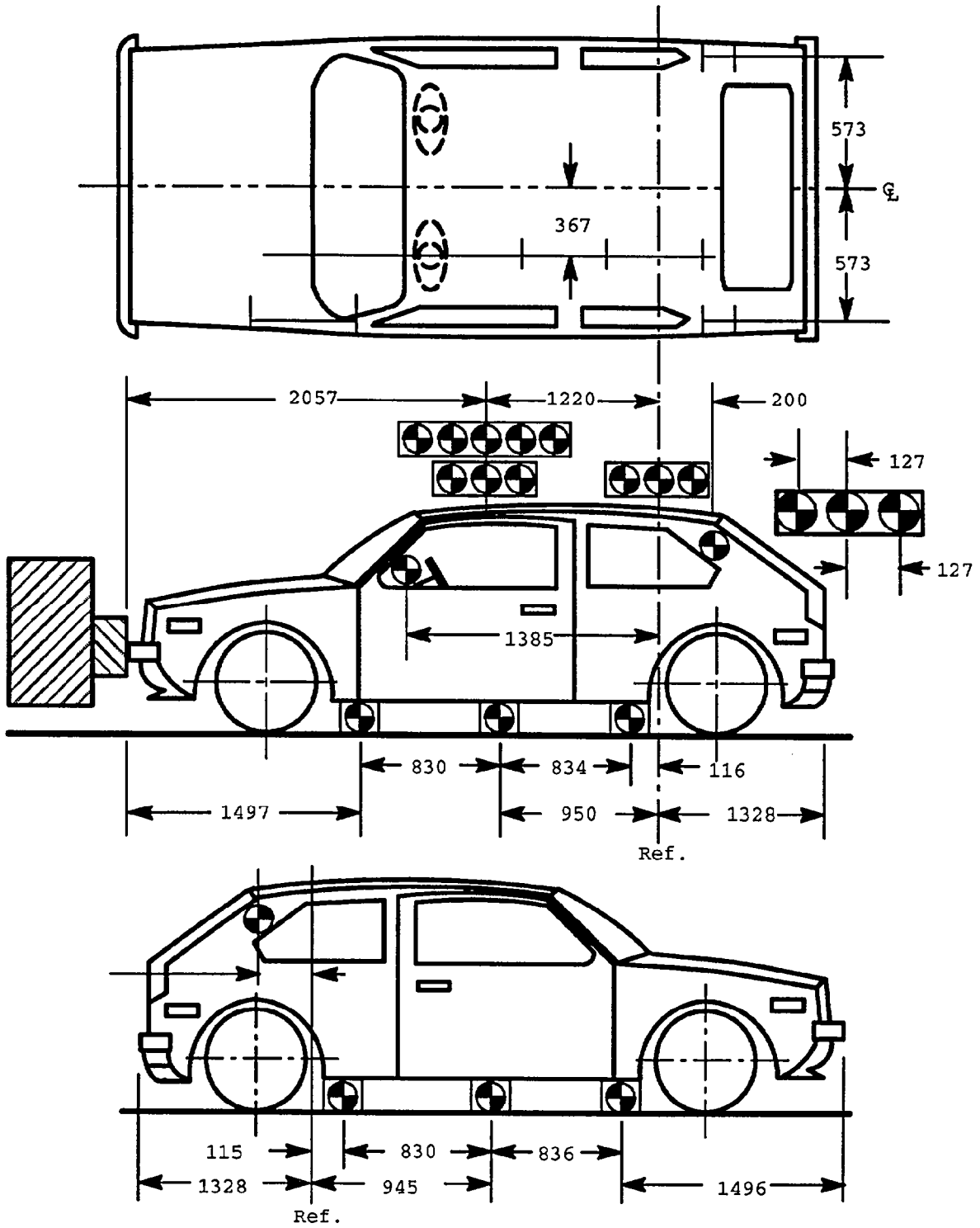
\*X = film plane to monorail centerline \*\* = referenced to horizontal plane

Y = film plane to impact location N.T. indicates No Timing

Z = film plane to ground

Figure 4

VEHICLE TARGET LOCATIONS

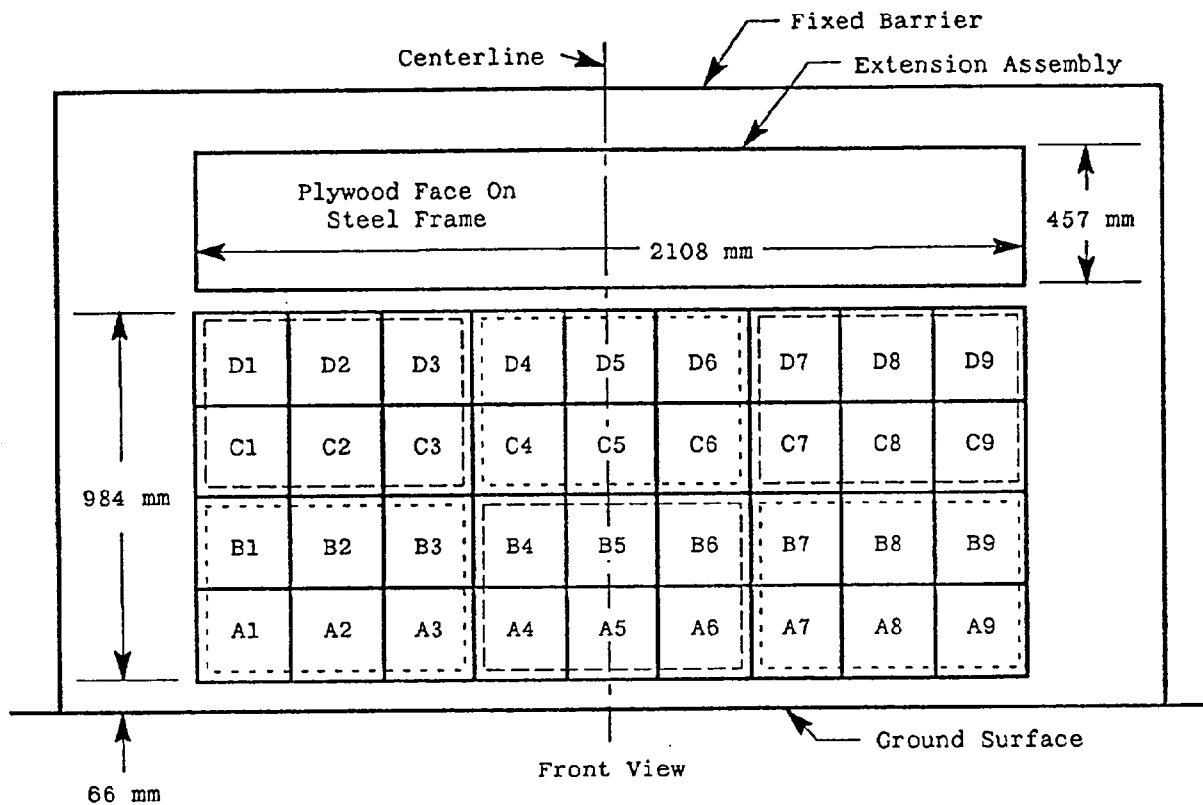


(Dimensions in millimeters)

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

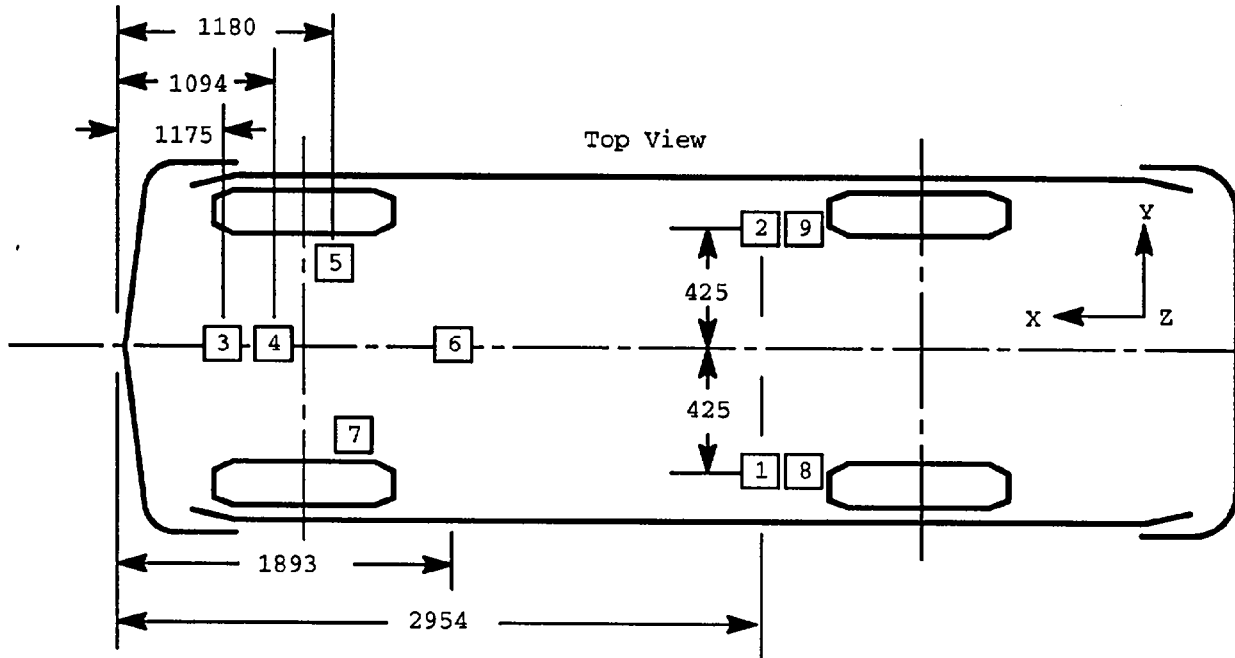
Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

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



All dimensions are in millimeters

All dimensions are in millimeters

ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	LOCATION		
		X	Y	Z
1	Left Rear Seat Crossmember	✓		
2	Right Rear Seat Crossmember	✓		
3	Top of engine	✓		
4	Bottom of engine	✓		
5	Right Disc Brake Caliper	✓		
6	Left Disc Brake Caliper	✓		
7	Instrument Panel	✓		
8	Left Rear Seat Crossmember	✓		
9	Right Rear Seat Crossmember	✓		

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

Figure 7

TEST VEHICLE MEASUREMENTS

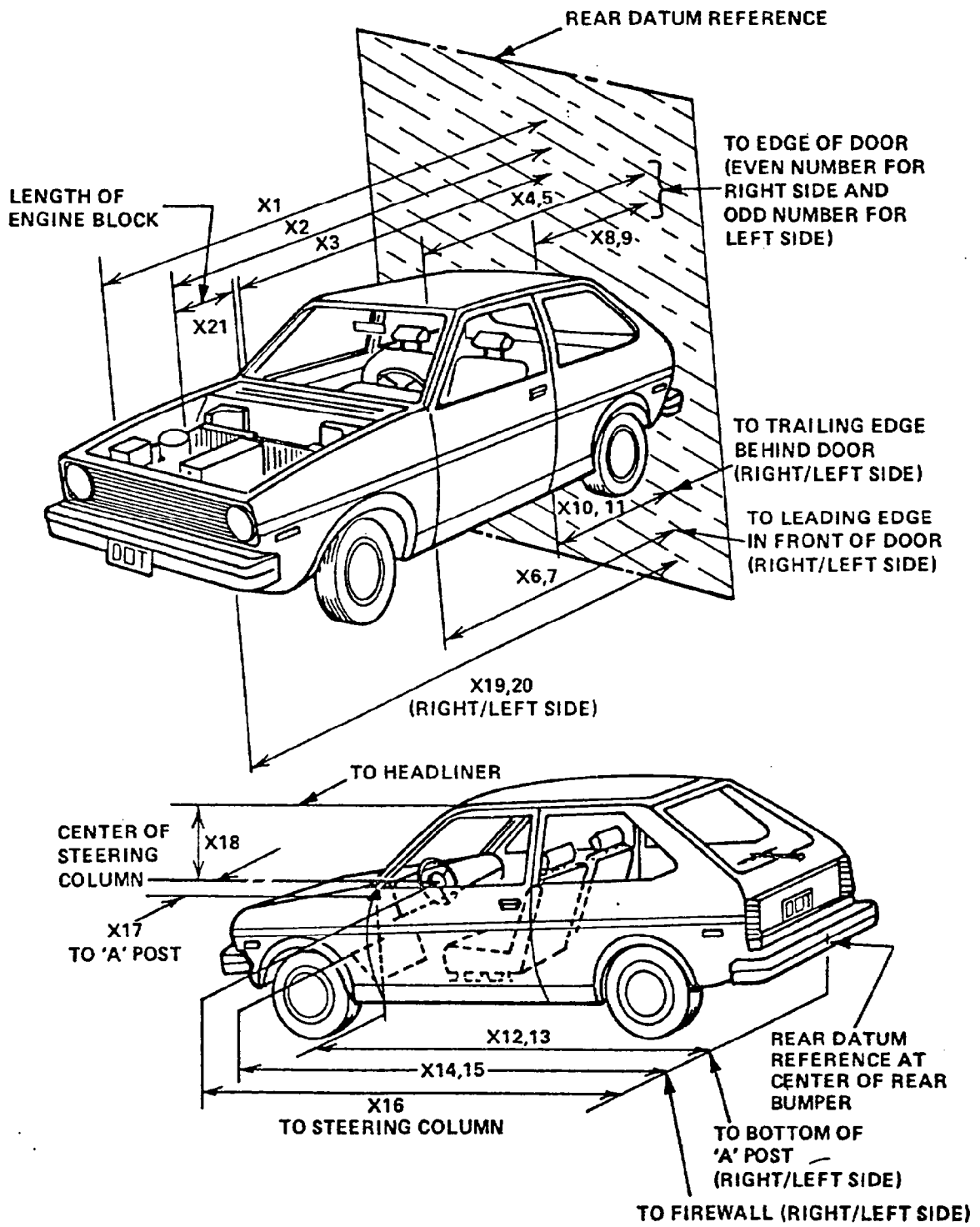


Table 7

## VEHICLE MEASUREMENTS

No.		All Dimensions in mm		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	4605	3960	645
X2	Rear Surface of Vehicle to Front of Engine	3670	3420	250
X3	Rear Surface of Vehicle to Firewall	3270	3150	120
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3014	3013	1
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3002	3010	-8
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	2960	2930	30
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	2956	2937	19
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	1642	1640	2
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	1629	1643	-14
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	1691	1658	33
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	1675	1660	15
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	2955	2925	30
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	2945	2923	22
X14	Rear Surface of Vehicle to Firewall, Right Side	3262	3155	107
X15	Rear Surface of Vehicle to Firewall, Left Side	3262	3075	187
X16	Rear Surface of Vehicle to Steering Column	2495	2510	-15
X17	Center of Steering Column to "A" Post	380	375	5
X18	Center of Steering Column to Headliner	390	381	9
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4530	3910	620
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4515	3925	590
X21	Length of Engine Block	450	450	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2703	2683	20
CD	Rear Surface of Vehicle to Center of Dash Panel	2740	2708	32
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2702	2680	22

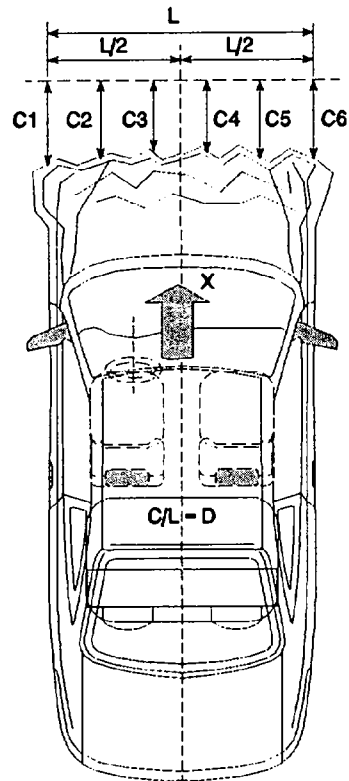
Table 8

ACCIDENT INVESTIGATION DIVISION DATA  
FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: 1994 Ford Mustang 2-Door Coupe  
 Vehicle NHTSA No.: MR0205 VIN: 1FALP404XRF164407  
 Model Year: 1994 Build Date: 3/94 Test Date: May 12, 1994  
 Vehicle Size Category: Mid Size Test Weight: 1605 Kgs  
 Vehicle Wheelbase: 2575 mm; Front Overhang: 1497 mm; Overall Width: 1530 mm  
 Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions:

C1 = 525 mm  
 C2 = 597 mm  
 C3 = 635 mm  
 C4 = 645 mm  
 C5 = 630 mm  
 C6 = 600 mm



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

Longitude Length of Damaged Region: 1530 mm  
 L =

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 20 mm. molding.

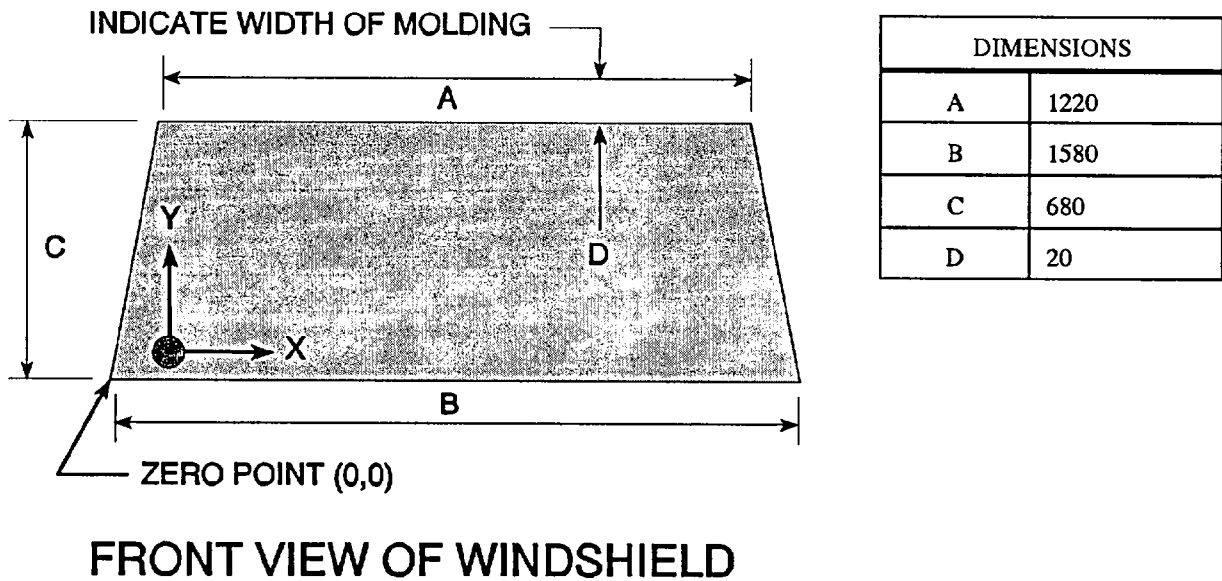
FMVSS 212 REQUIREMENTS:

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	2080	2080	100%
LEFT SIDE	2080	2080	100%
TOTAL	4160	4160	100%

AREA OF RETENTION FAILURE:



FAILURE DETAILS: None

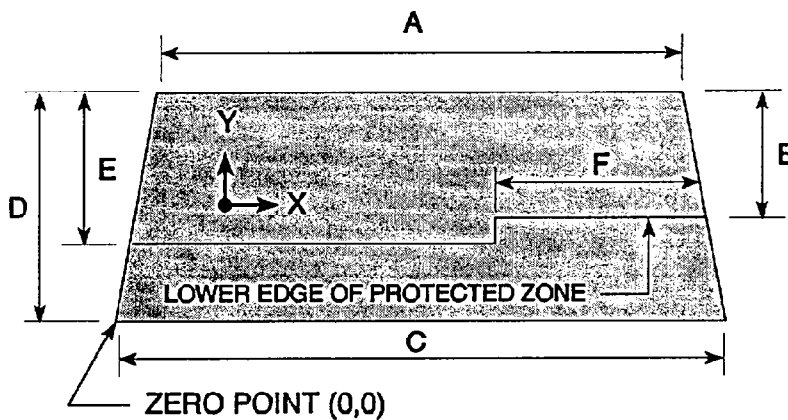
Figure 9

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	1220
B	360
C	1580
D	680
E	390
F	588

**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.		

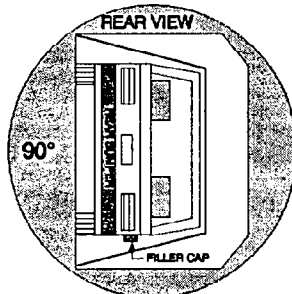


Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.  
MR0205



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	50	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
<b>TOTAL</b>	7	minutes	50	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.

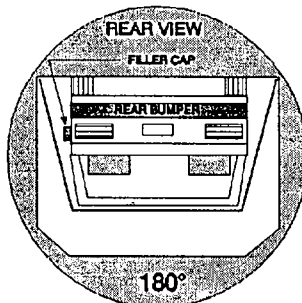
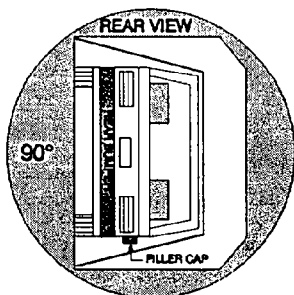
IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.  
MR0205



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	<u>2</u>	minutes	<u>50</u>	seconds
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>00</u>	seconds
<b>TOTAL</b>	<u>7</u>	minutes	<u>50</u>	seconds
Next whole minute interval	<u>8</u>	minutes	<u>00</u>	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.

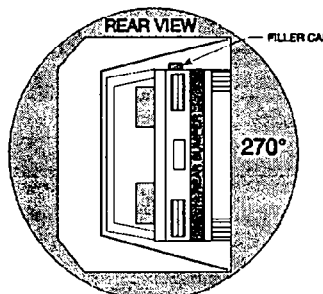
IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.  
MR0205



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	50	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
<b>TOTAL</b>	7	minutes	50	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.

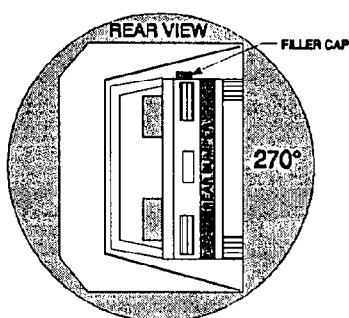
IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.  
MR0205



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	<u>2</u>	minutes	<u>50</u>	seconds
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>00</u>	seconds
<b>TOTAL</b>	<u>7</u>	minutes	<u>50</u>	seconds
Next whole minute interval	<u>8</u>	minutes	<u>00</u>	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
---	---	---	---

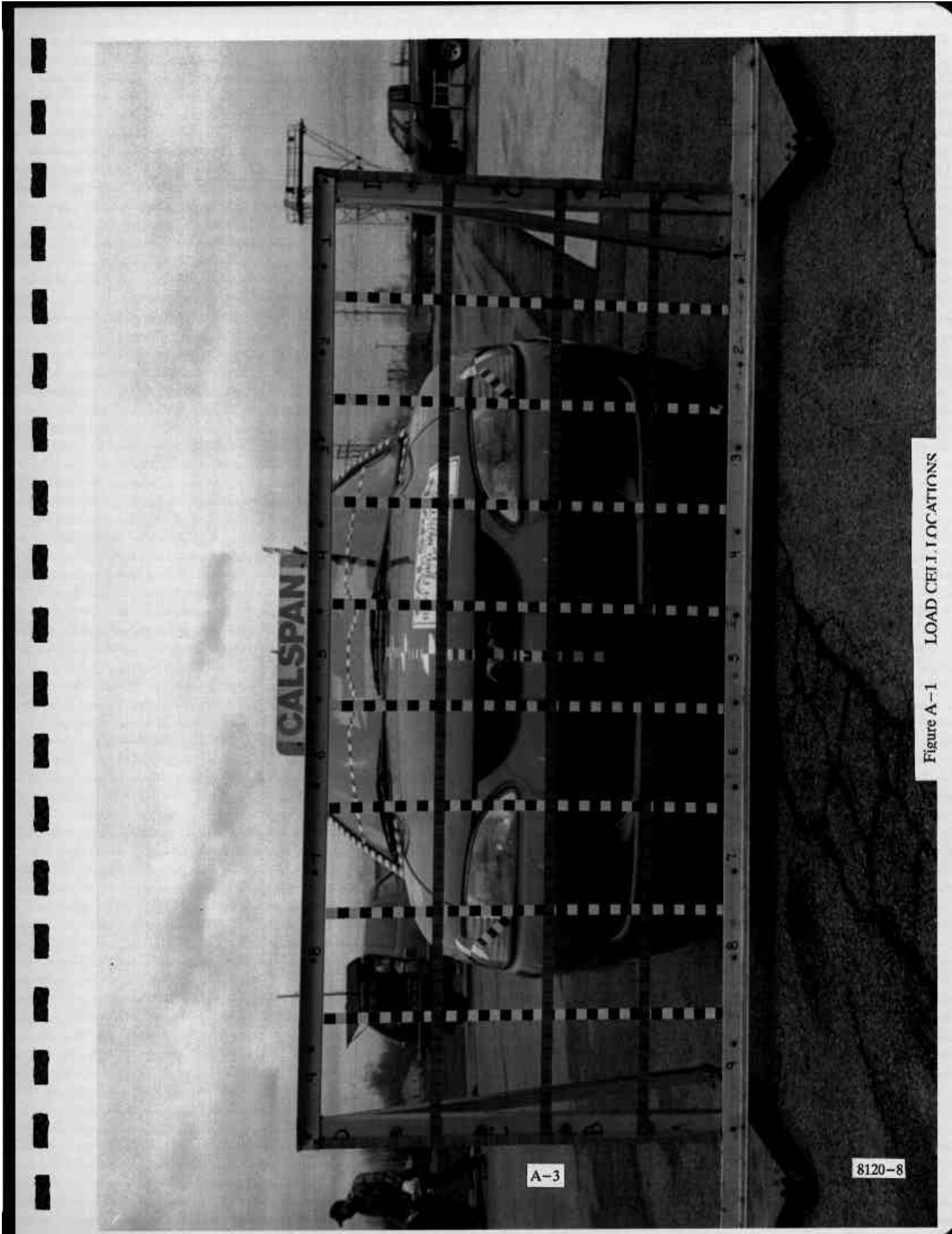
Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S): None

Appendix A  
PHOTOGRAPHS

PHOTOGRAPHS

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A-3

8120-8

Figure A-1 LOAD CELL LOCATIONS

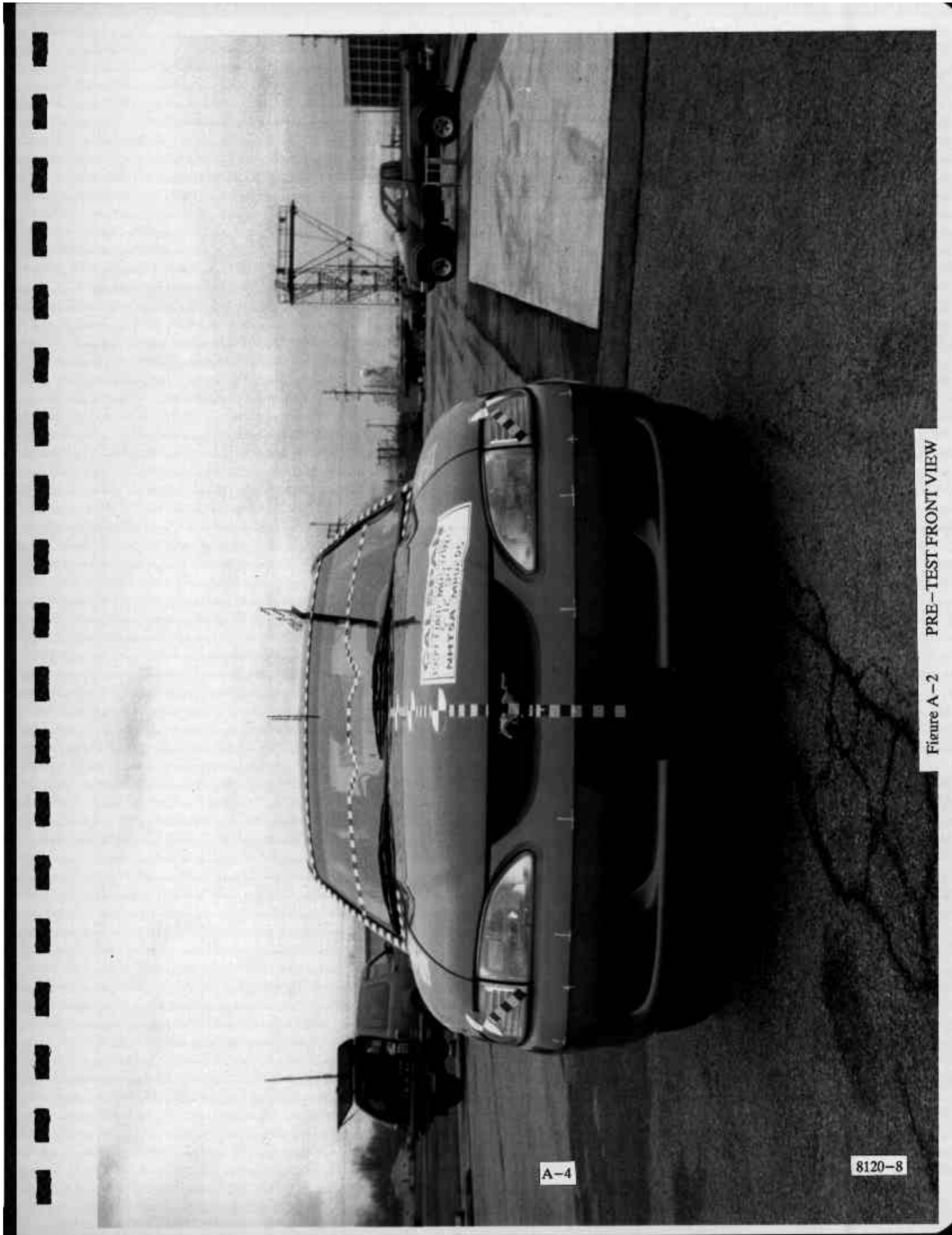


Figure A-2 PRE-TEST FRONT VIEW

A-4

8120-8

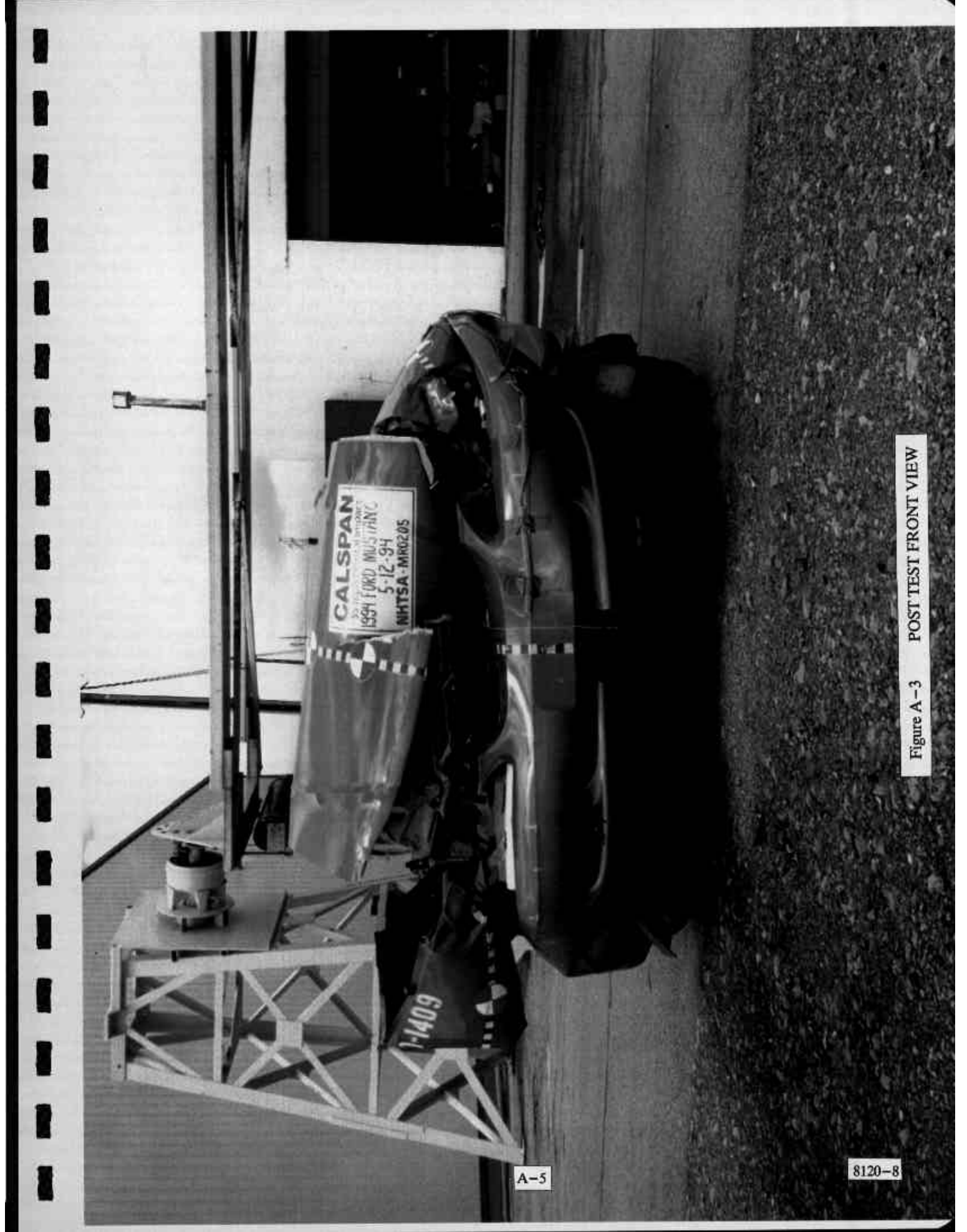


Figure A-3 POST TEST FRONT VIEW

A-5

8120-8

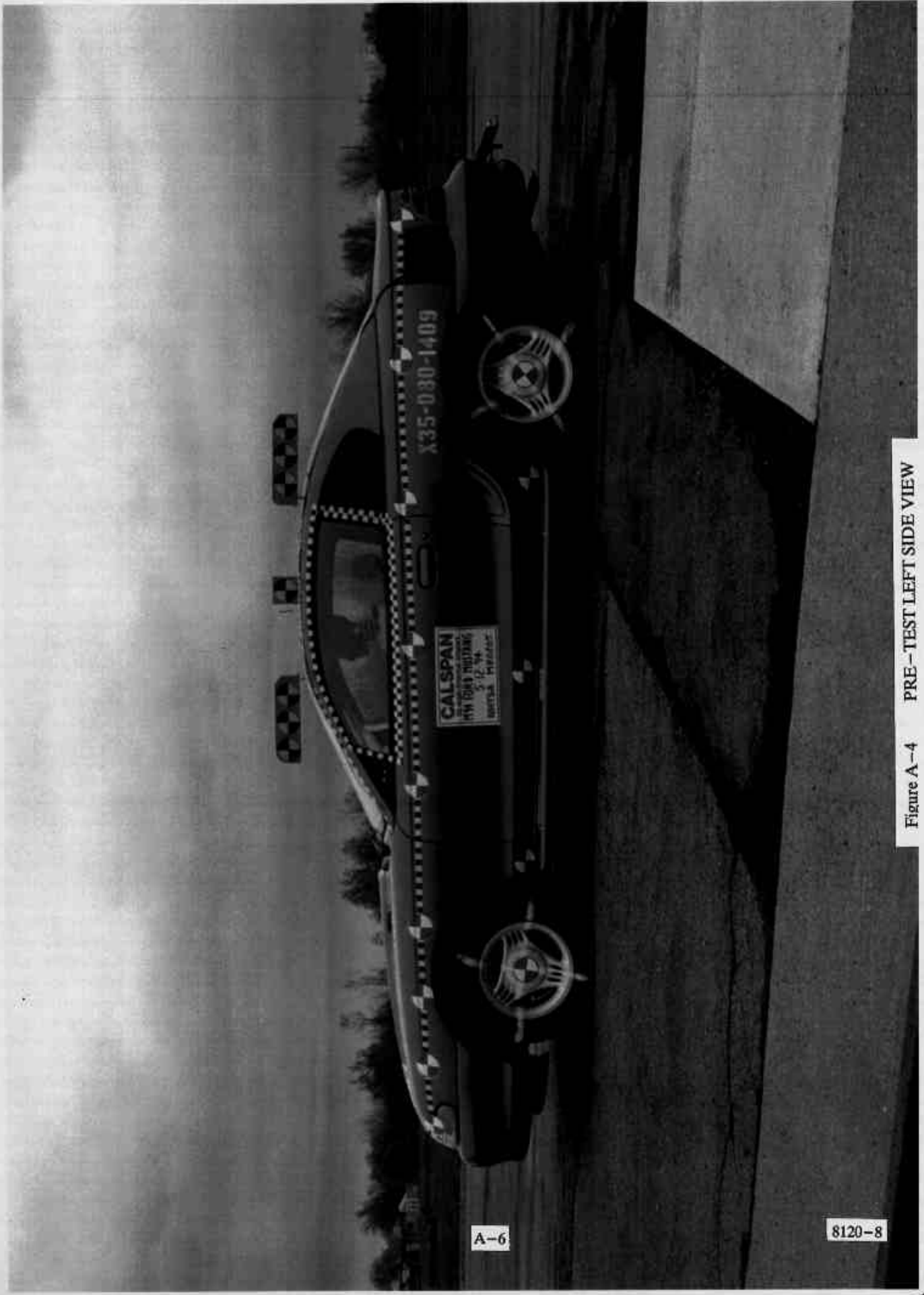


Figure A-4 PRE-TEST LEFT SIDE VIEW

A-6

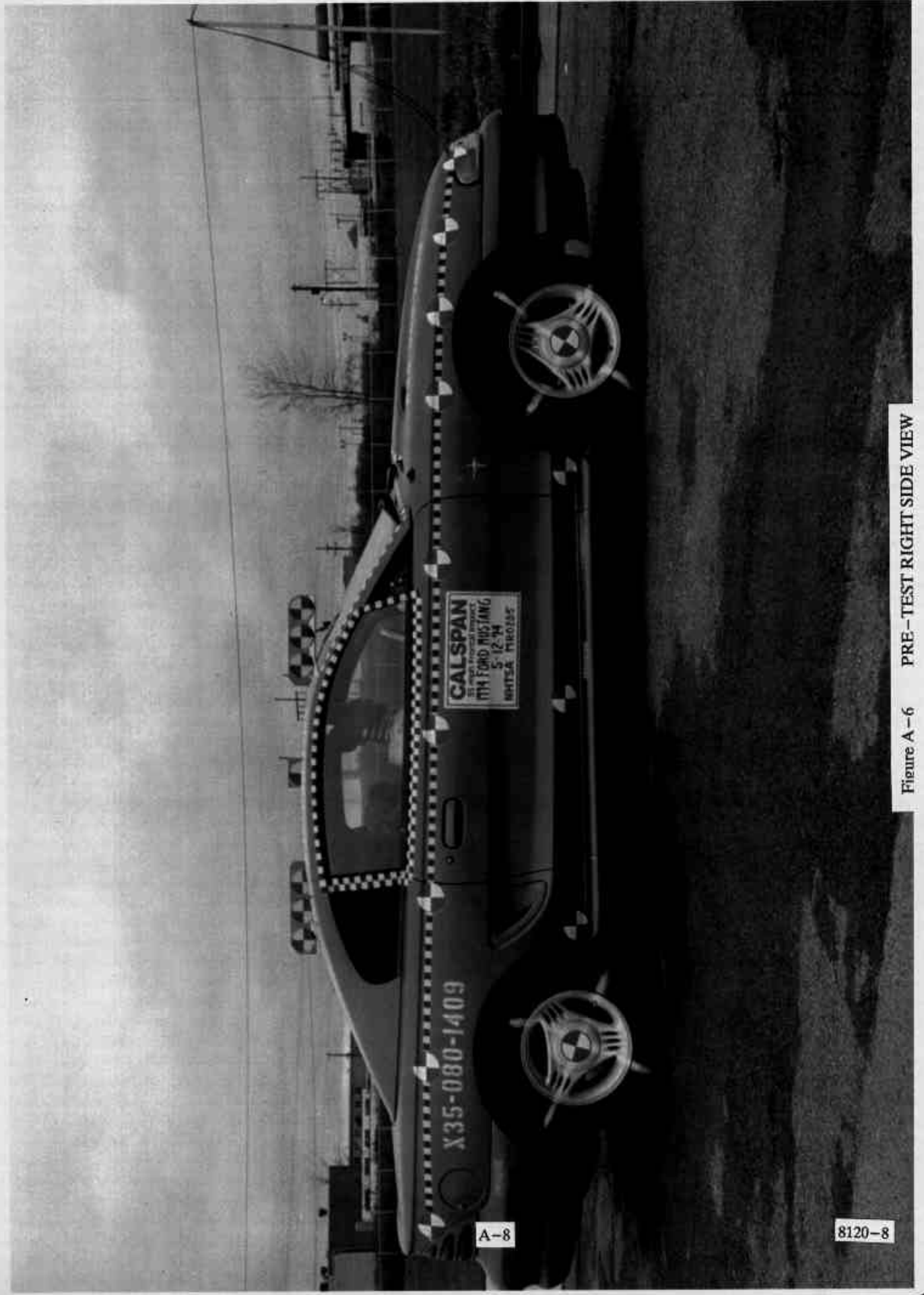
8120-8



Figure A-5 POST TEST LEFT SIDE VIEW

A-7

8120-8



A-8

8120-8

Figure A-6 PRE-TEST RIGHT SIDE VIEW

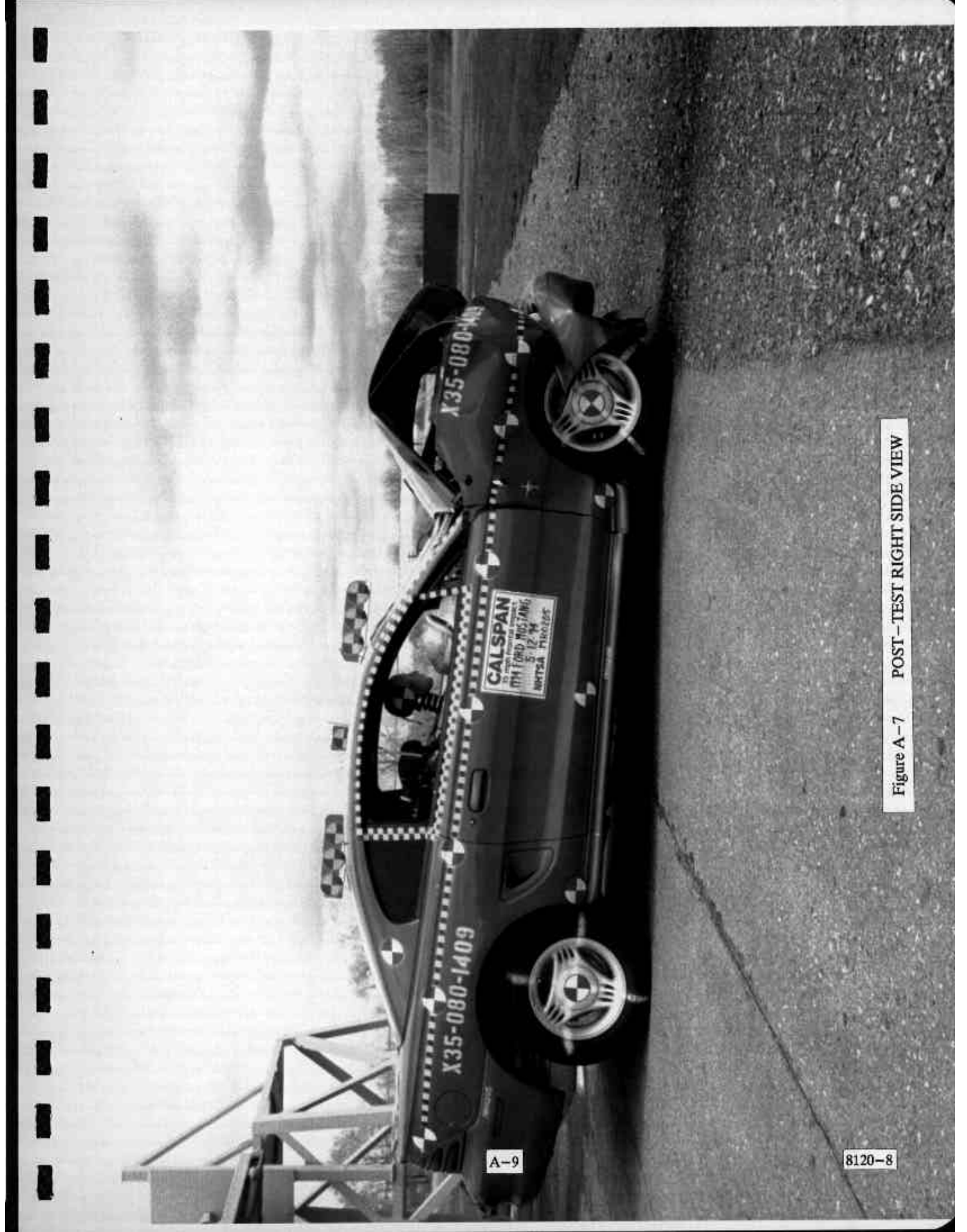
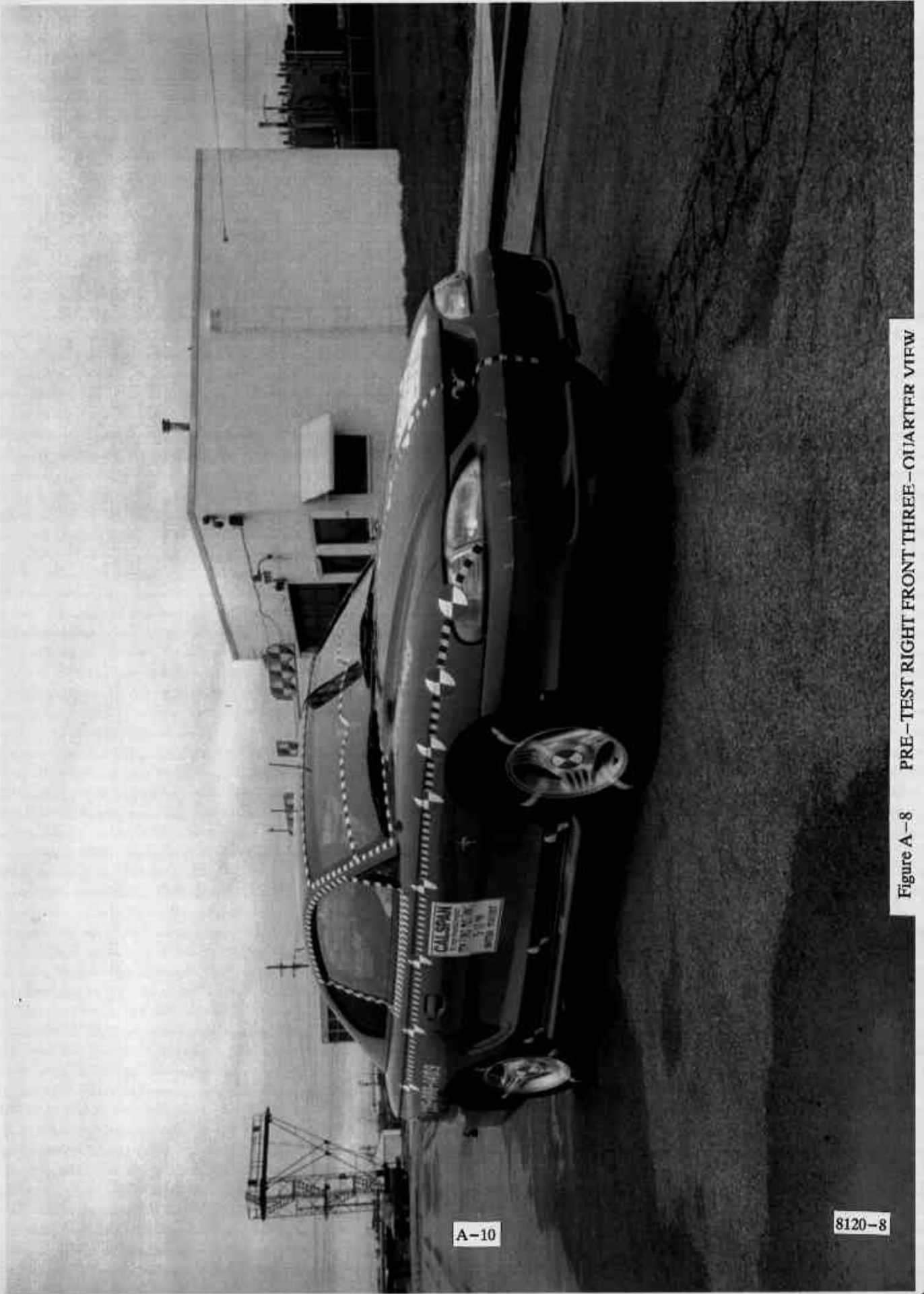


Figure A-7 POST - TEST RIGHT SIDE VIEW

A-9

8120-8



A-10

8120-8

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

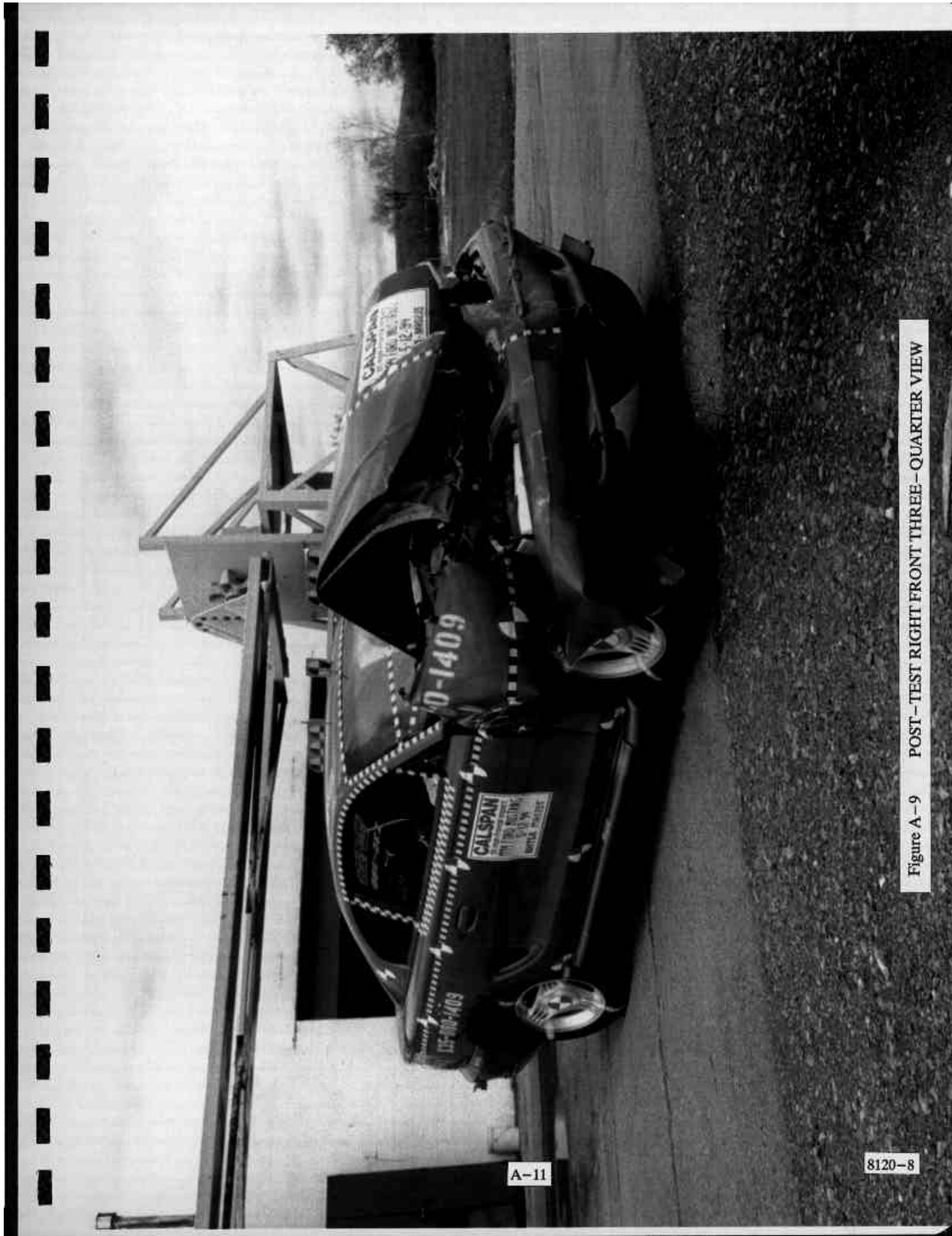


Figure A-9 POST - TEST RIGHT FRONT THREE - QUARTER VIEW

A-11

8120-8



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

A-12

8120-8

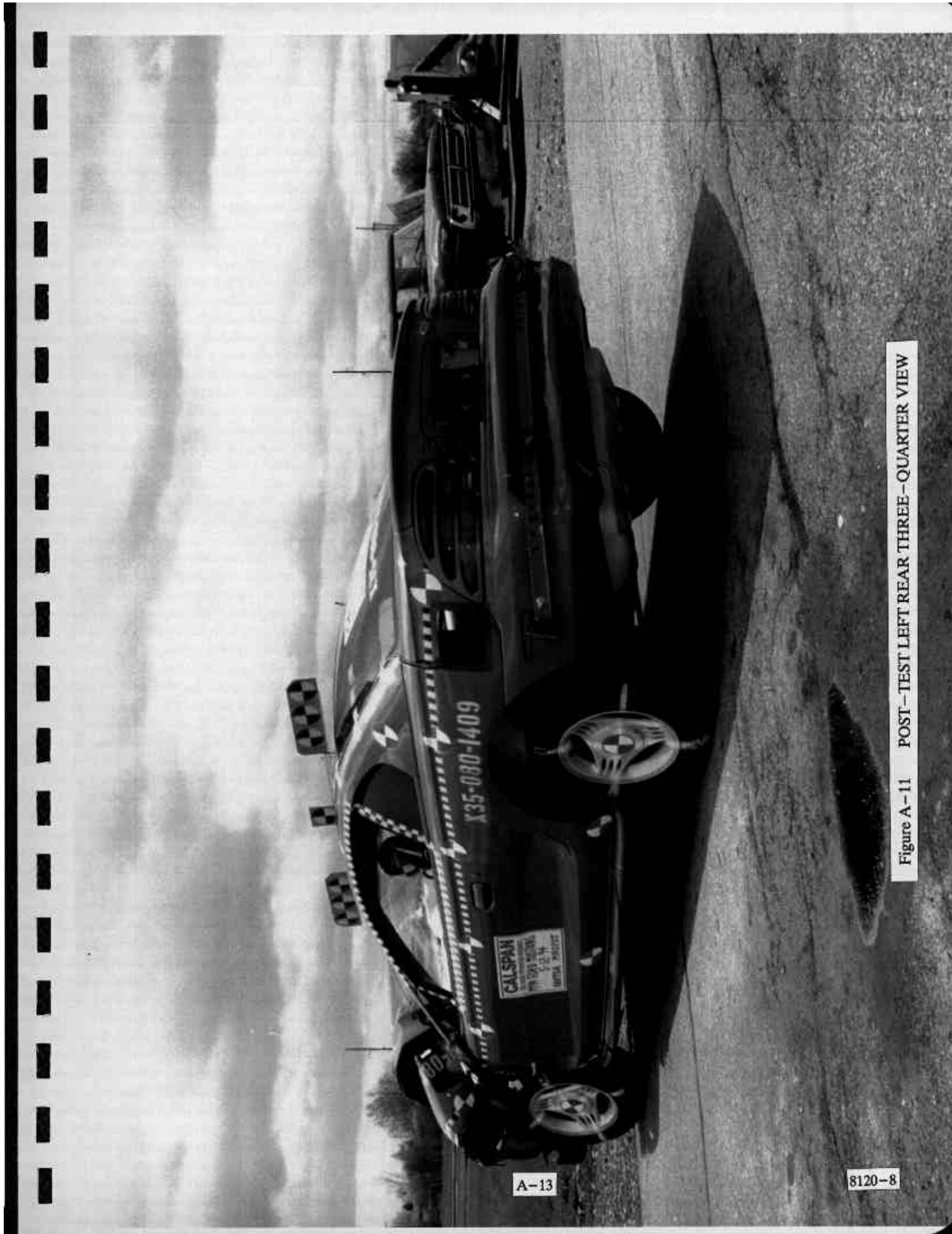


Figure A-11. POST-TEST LEFT REAR THREE-QUARTER VIEW

A-13

8120-8

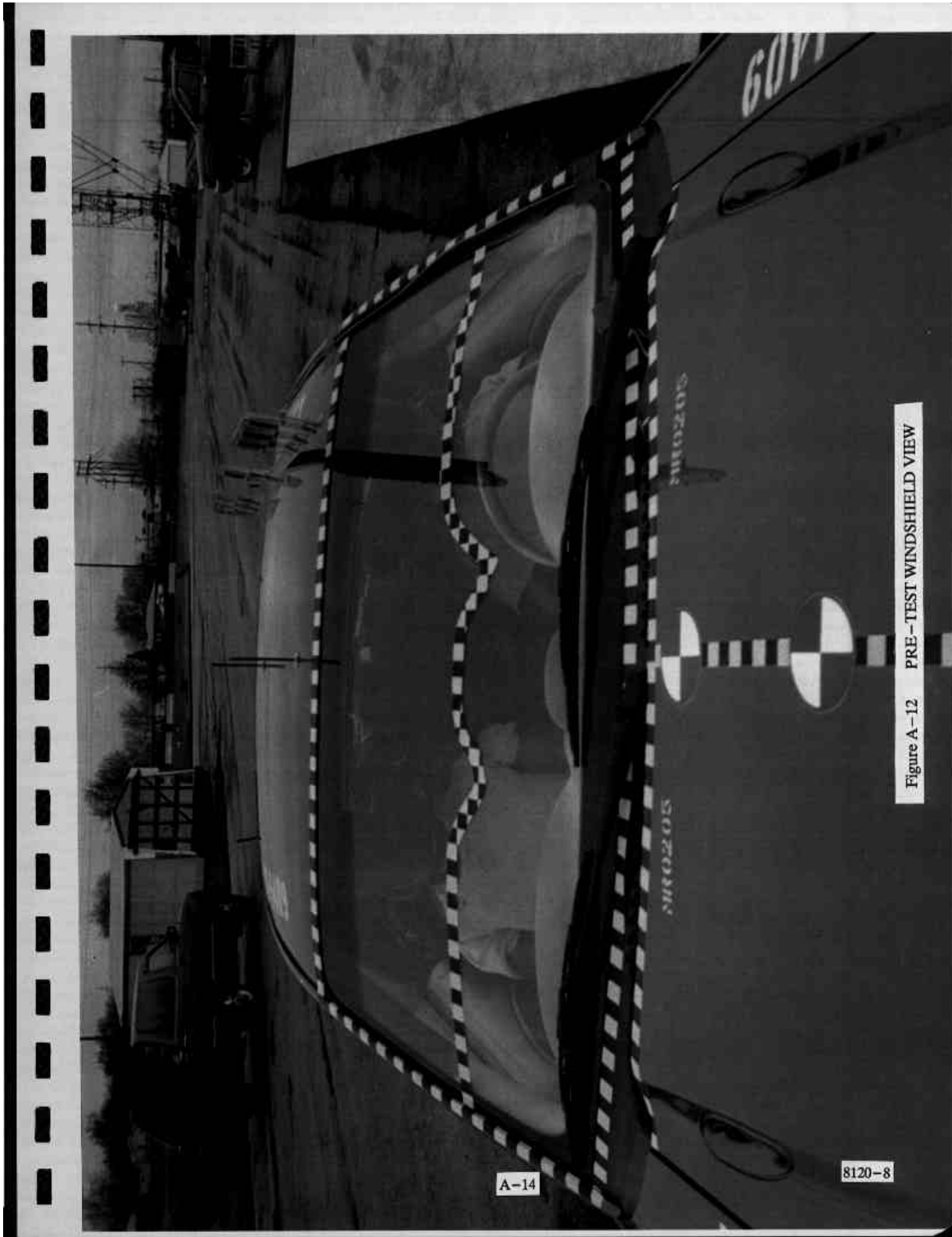


Figure A-12 PRE-TEST WINDSHIELD VIEW

A-14

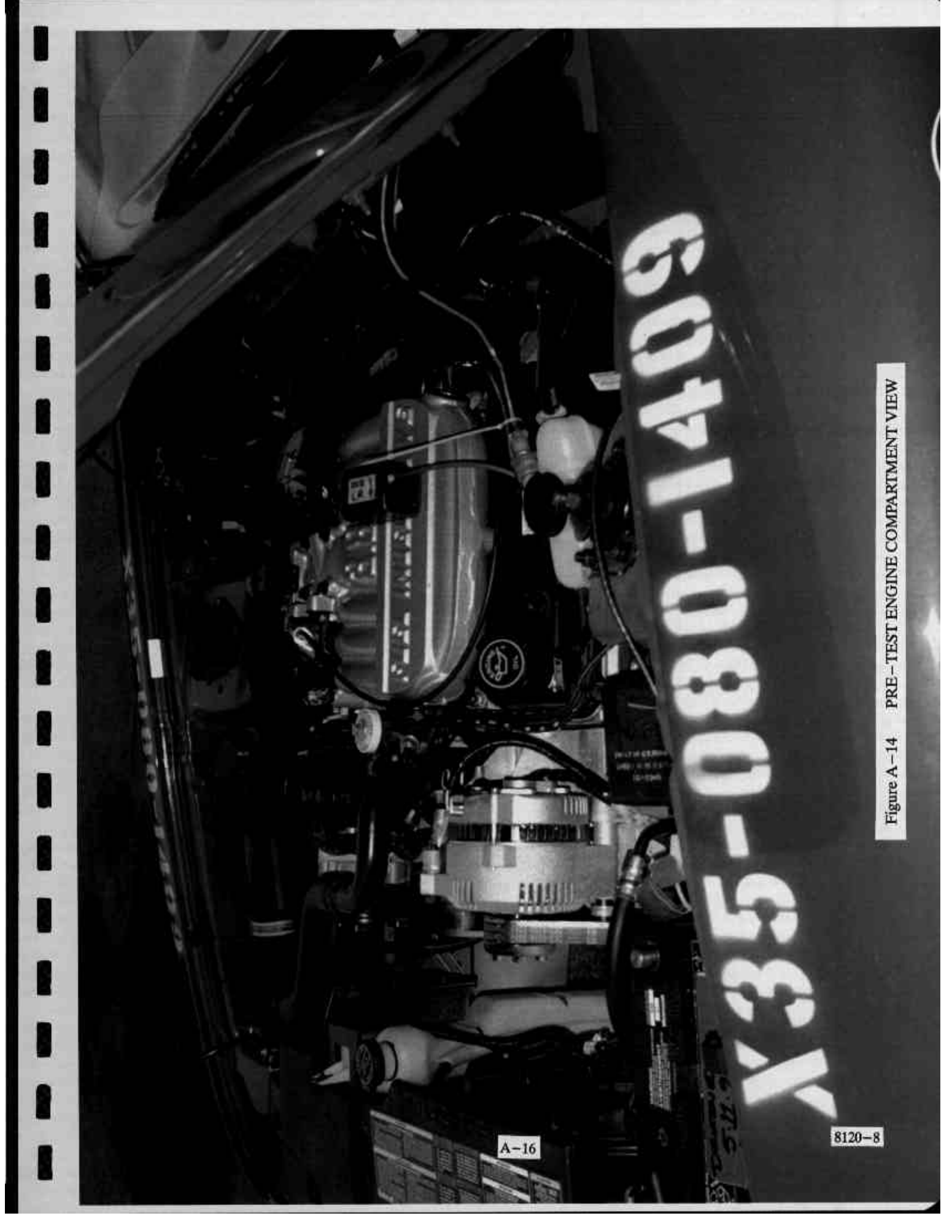
8120-8



Figure A-13 POST-TEST WINDSHIELD VIEW

A-15

8120-8



X335-0880-1409

Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

A-16

8120-8



Figure A-15 FUEL CAP VIEW

A-17

8120-8



Figure A-16 PRE-TEST FRONT UNDERBODY VIEW

A-18

8120-8

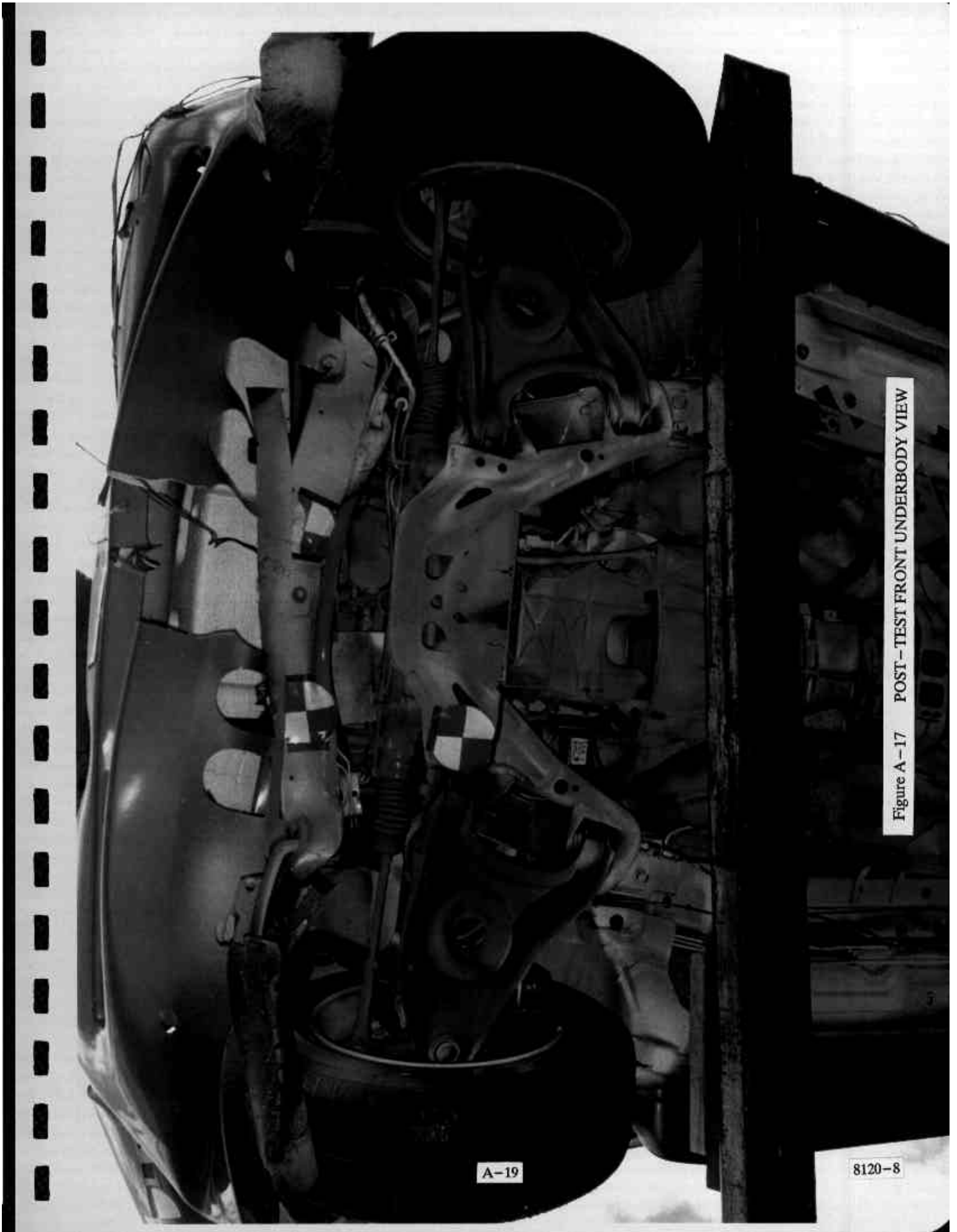


Figure A-17 POST-TEST FRONT UNDERBODY VIEW

A-19

8120-8

Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW



A-20

8120-8

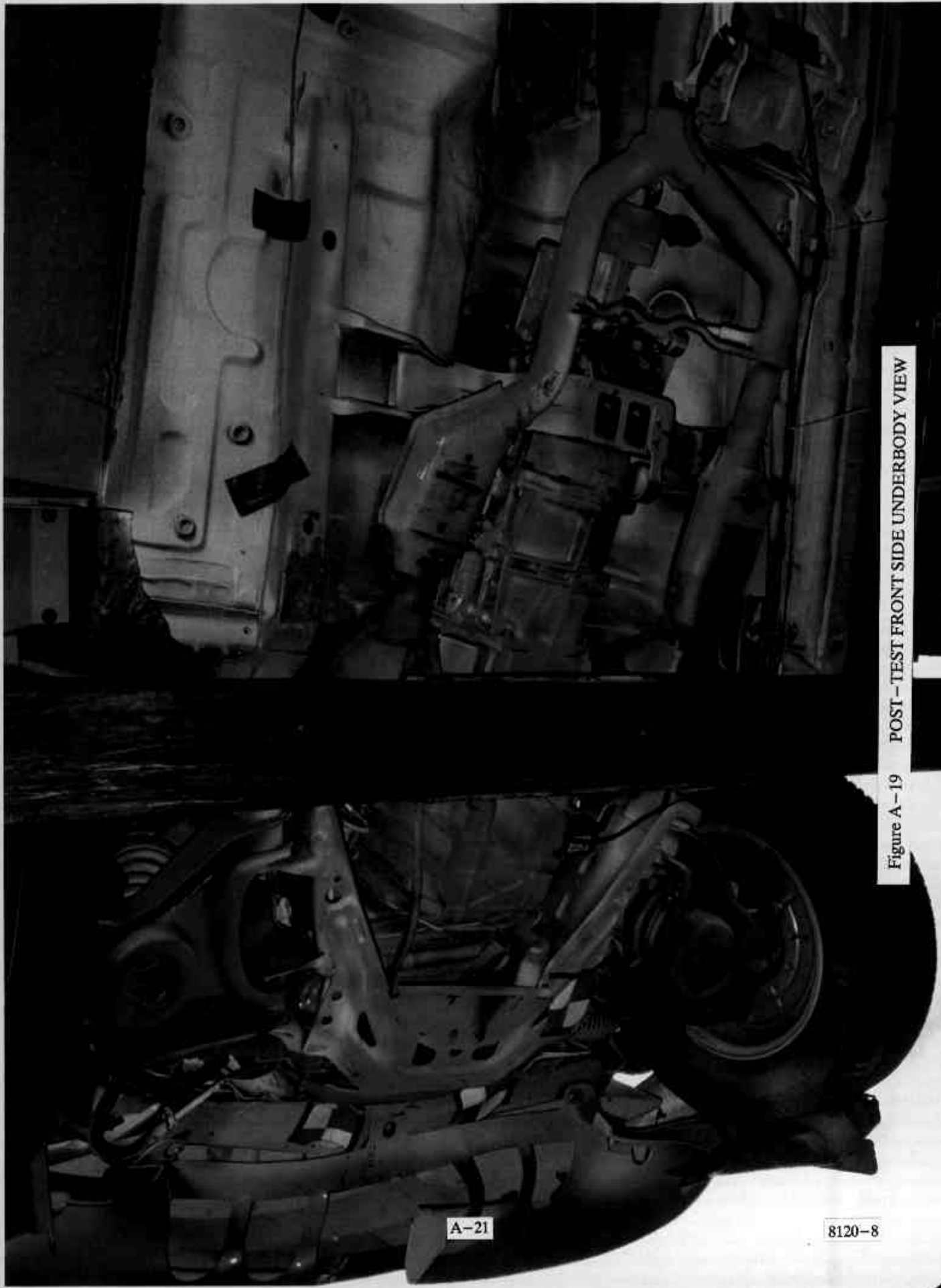


Figure A - 19 POST - TEST FRONT SIDE UNDERBODY VIEW

A-21

8120-8



Figure A - 20 PRE - TEST REAR UNDERBODY VIEW

A-22

8120-8



Figure A-21 POST-TEST REAR UNDERBODY VIEW

A-23

8120-8



Figure A-22 PRE-TEST DRIVER POSITION VIEW

A-24

8120-8

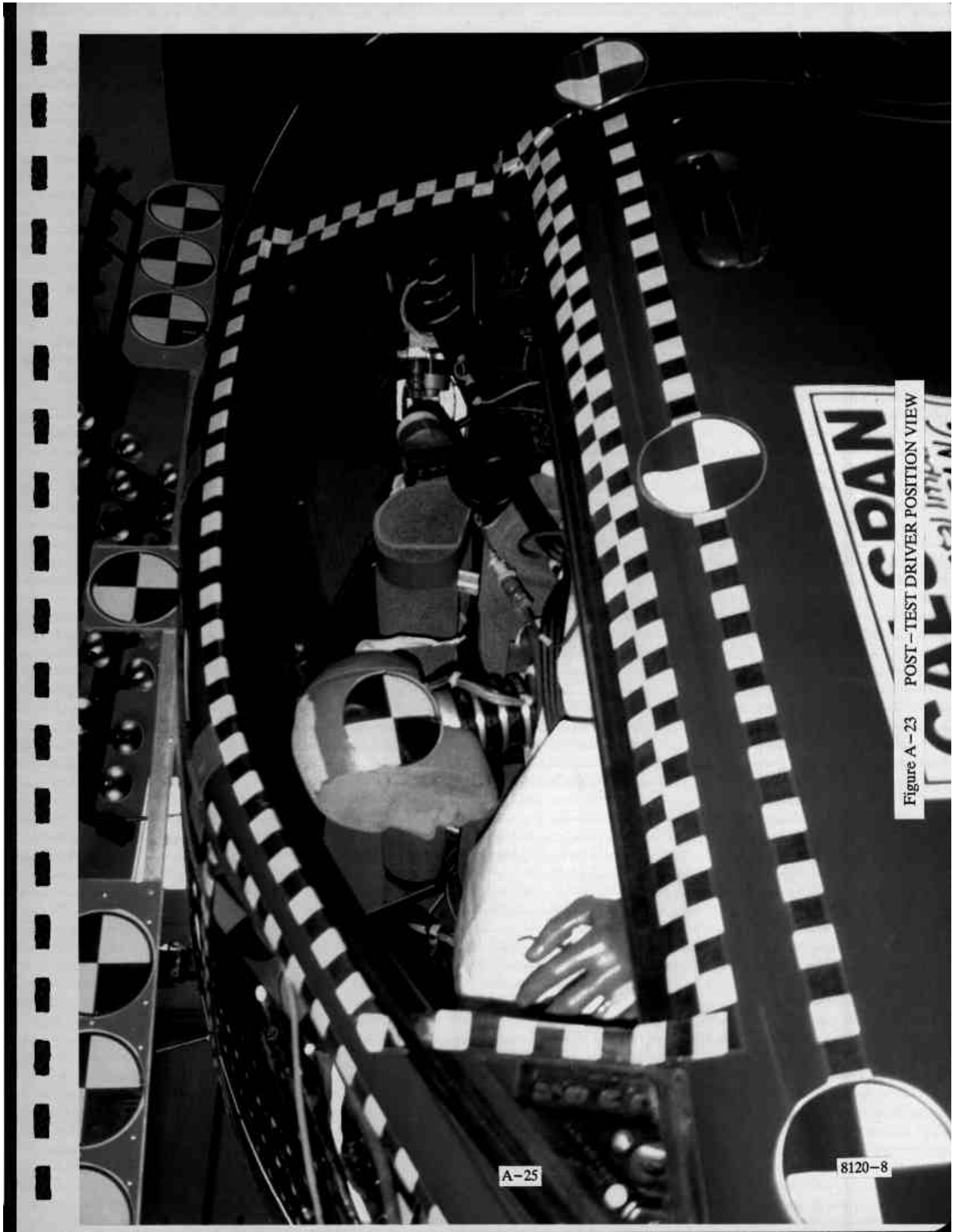


Figure A-23 POST-TEST DRIVER POSITION VIEW

A-25

8120-8



Figure A-24 PRE-TEST PASSENGER POSITION VIEW

A-26

8120-8

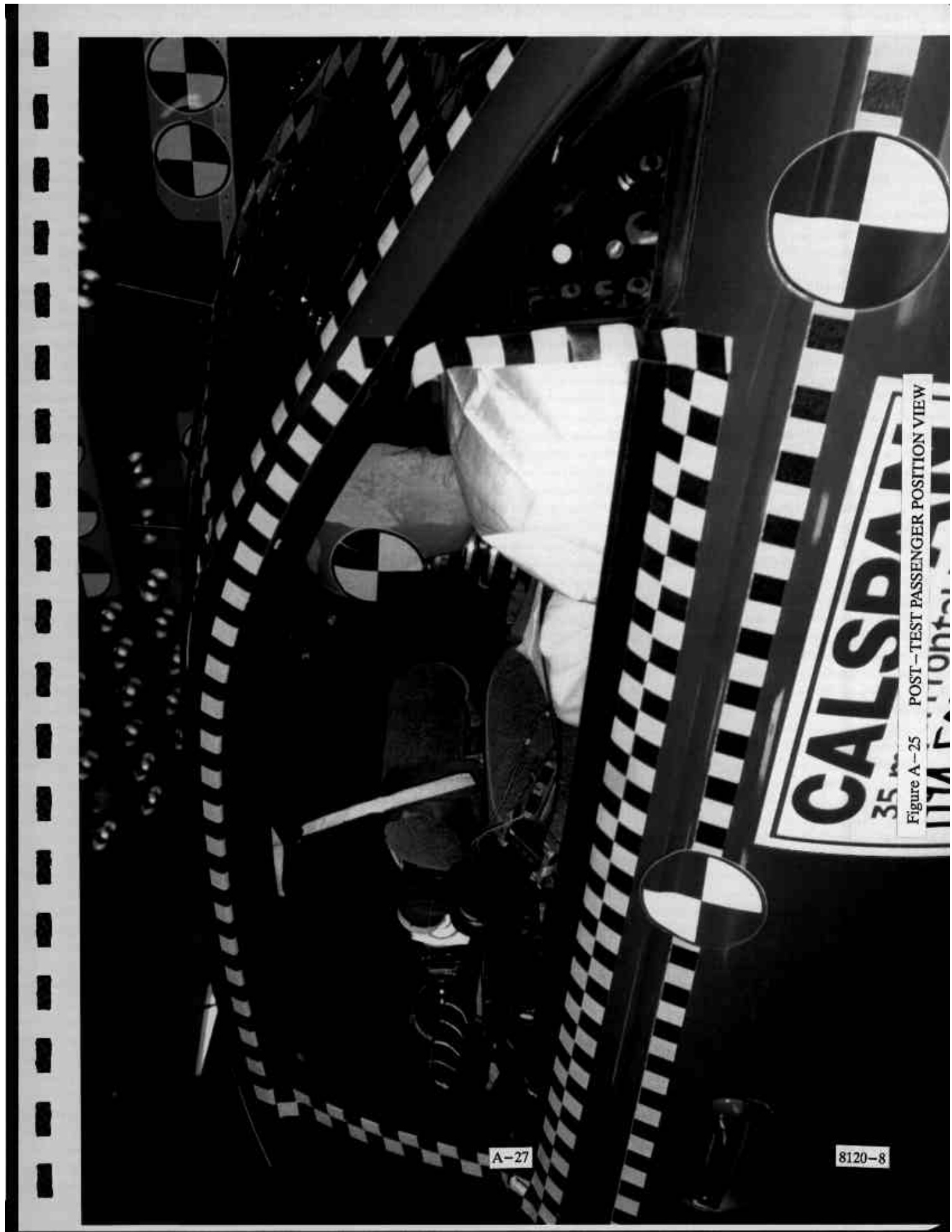


Figure A-25 POST-TEST PASSENGER POSITION VIEW

A-27

8120-8



Figure A-26 PRE-TEST DRIVER AND INTERIOR VIEW

A-28

8120-8



Figure A - 27 POST-TEST DRIVER AND INTERIOR VIEW

A-29

8120-8



Figure A - 28 PRE - TEST PASSENGER AND INTERIOR VIEW

A-30

8120-8



Figure A-29 POST-TEST PASSENGER AND INTERIOR VIEW

A-31

8120-8



Figure A-30 PRE-TEST DRIVER HEAD LOCATION

A-32

8120-8

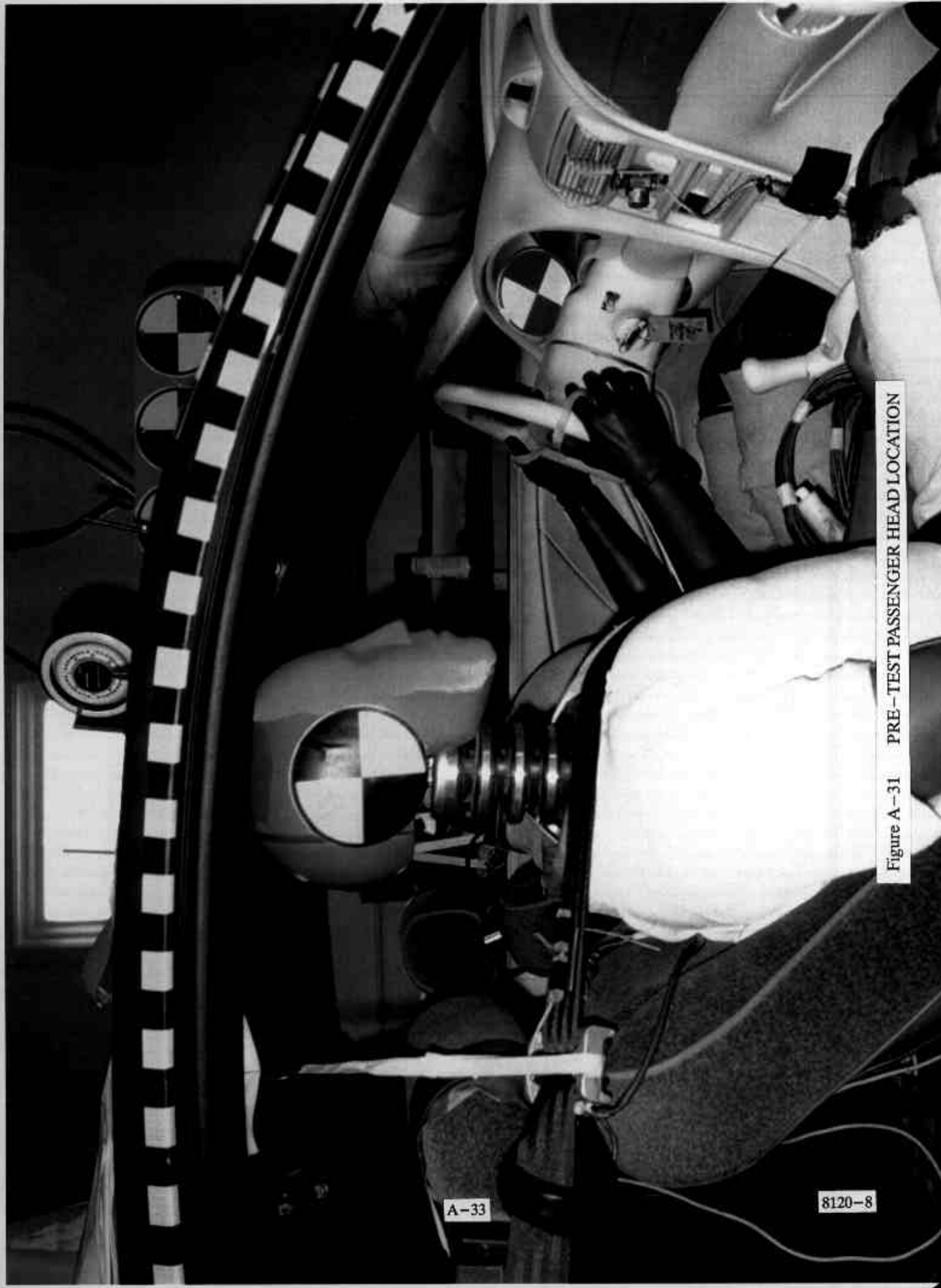
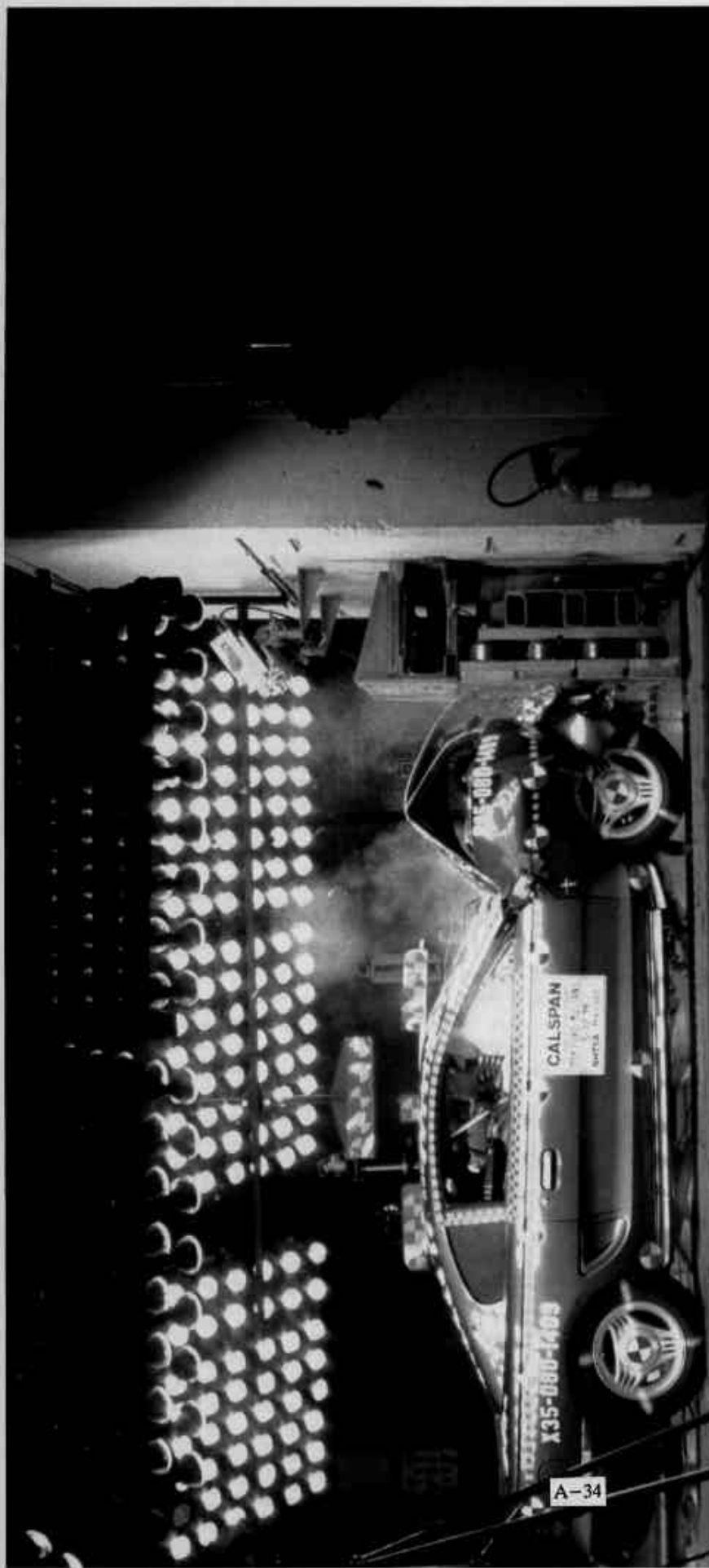


Figure A-31 PRE-TEST PASSENGER HEAD LOCATION

A-33

8120-8



A-34

8120-8

Figure A-32 IMPACT VIEW

Appendix B

VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA

TEST NO. MR0205

VEHICLE DATA

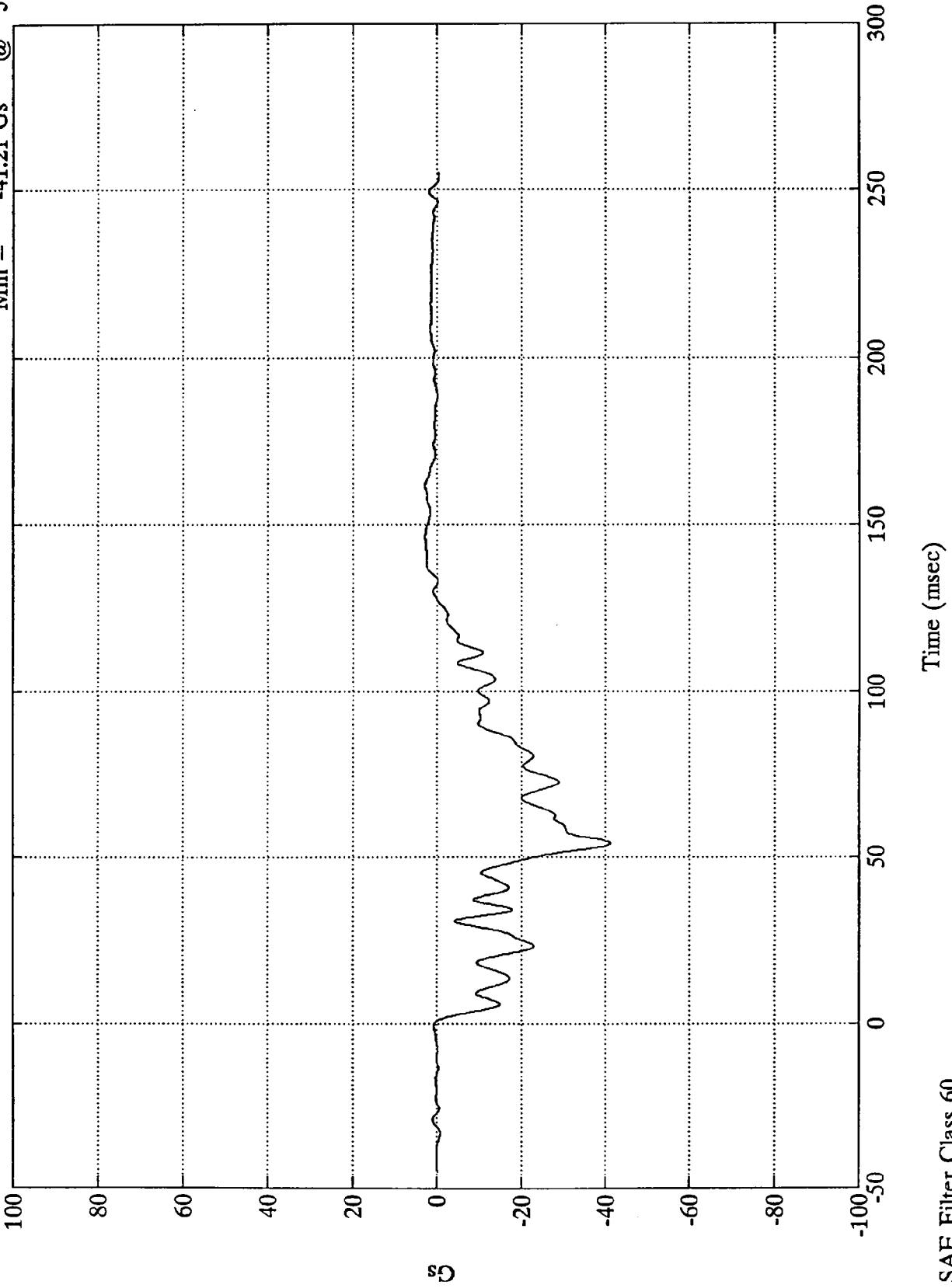
FILTER CHANNEL CLASS

60

NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #1(x)

Max = 2.92 Gs @ 161.88 msec  
Min = -41.21 Gs @ 54.23 msec



B-3

8120-8

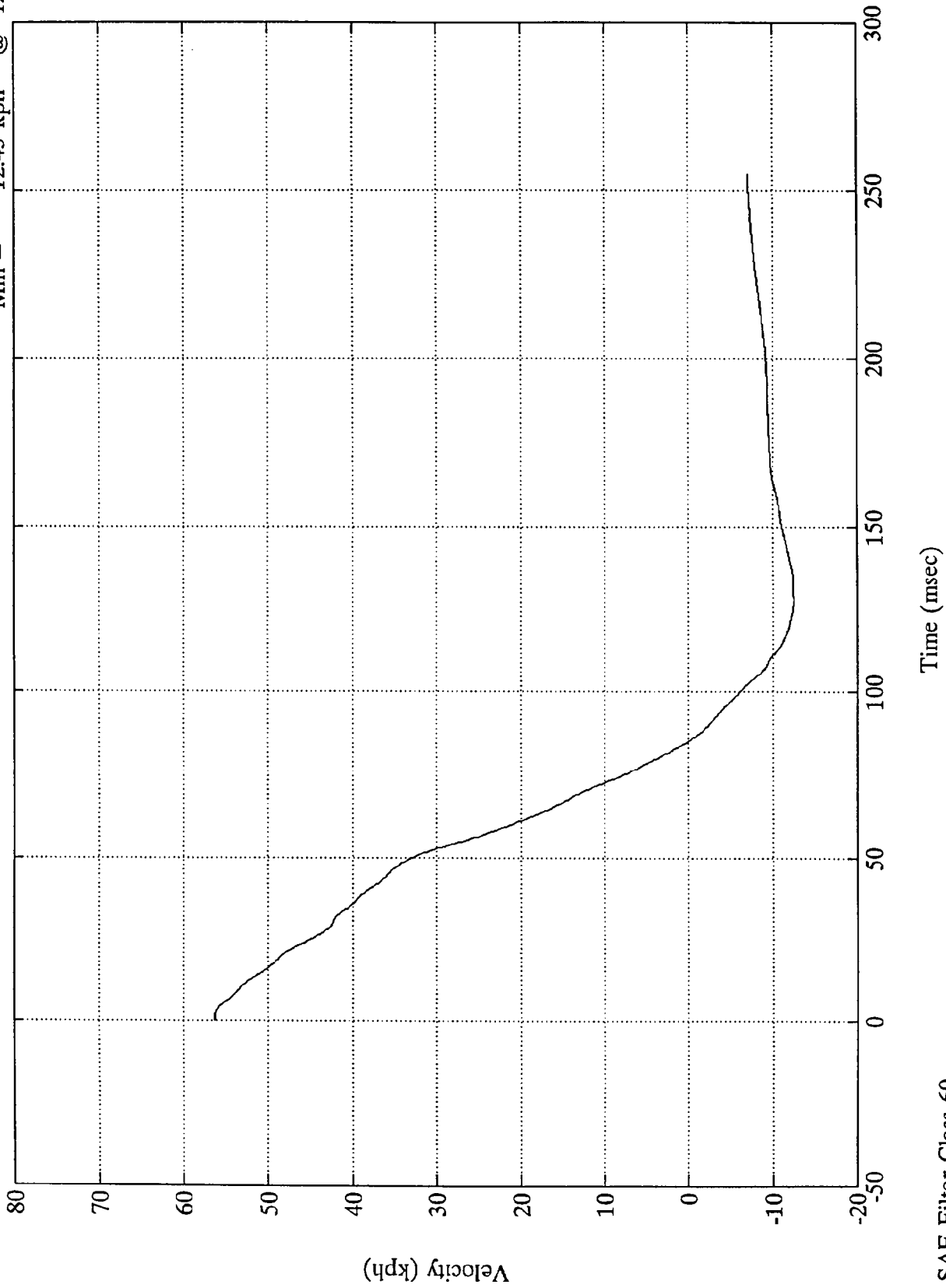
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 56.33 kph @ 0.71 msec  
Min = -12.45 kph @ 127.44 msec

Acc. #1(x)

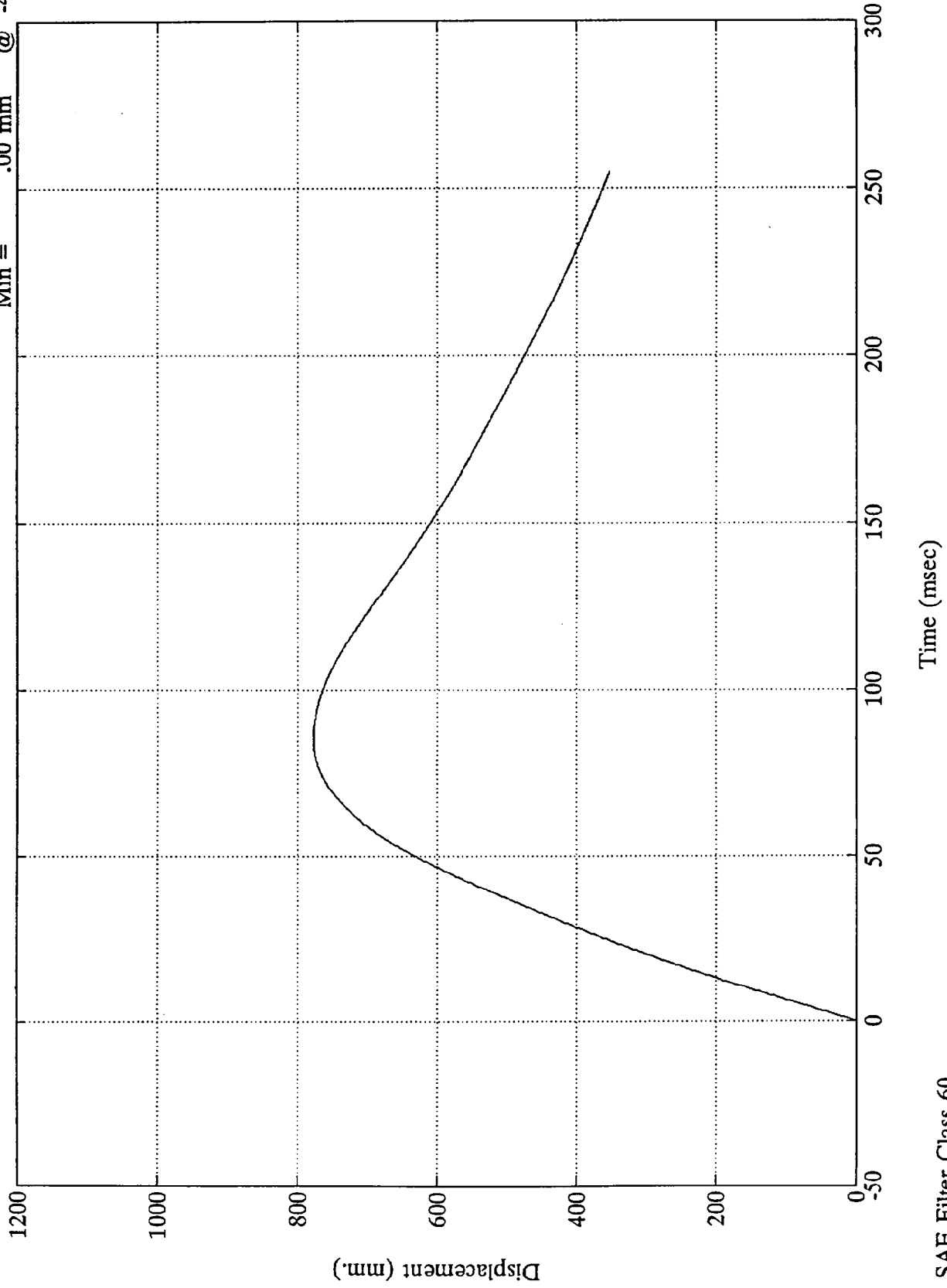


SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #1(x)

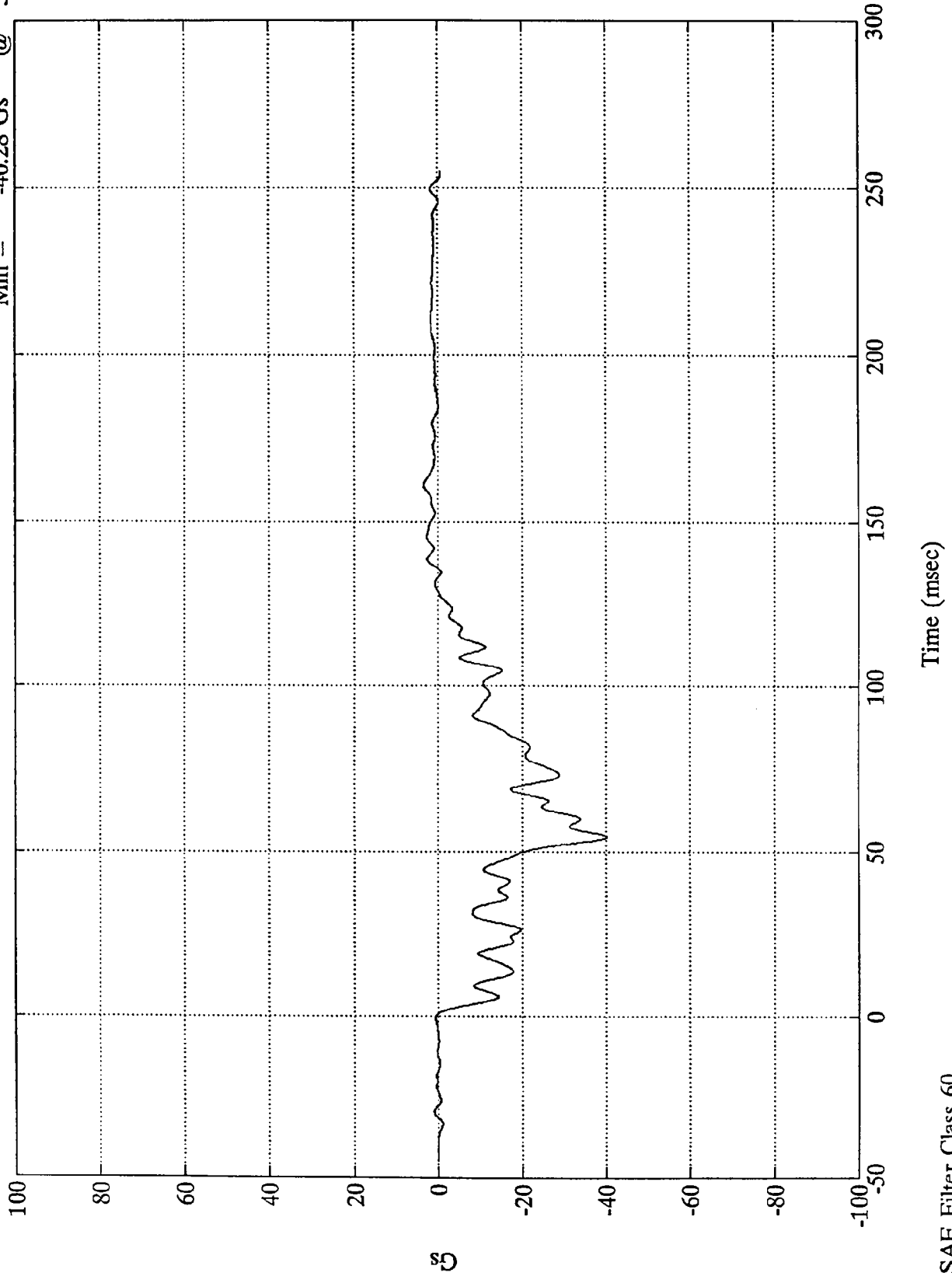
Max = 777.91 mm @ 85.32 msec  
Min = .00 mm @ -44.88 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #2(x)

Max = 3.38 Gs @ 160.92 msec  
Min = -40.28 Gs @ 54.47 msec



B-6

8120-8

SAE Filter Class 60

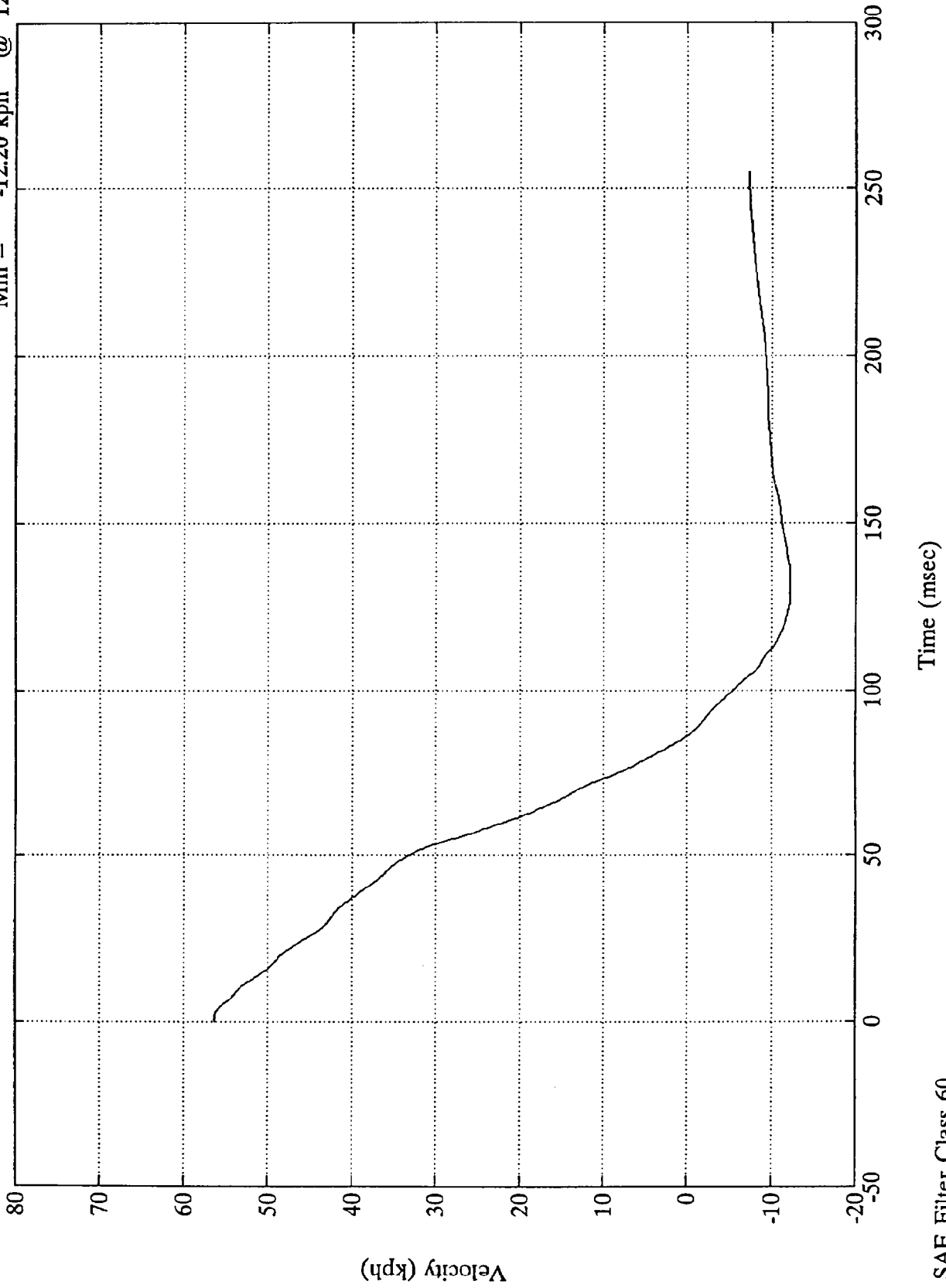
Time (msec)



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #2(x)

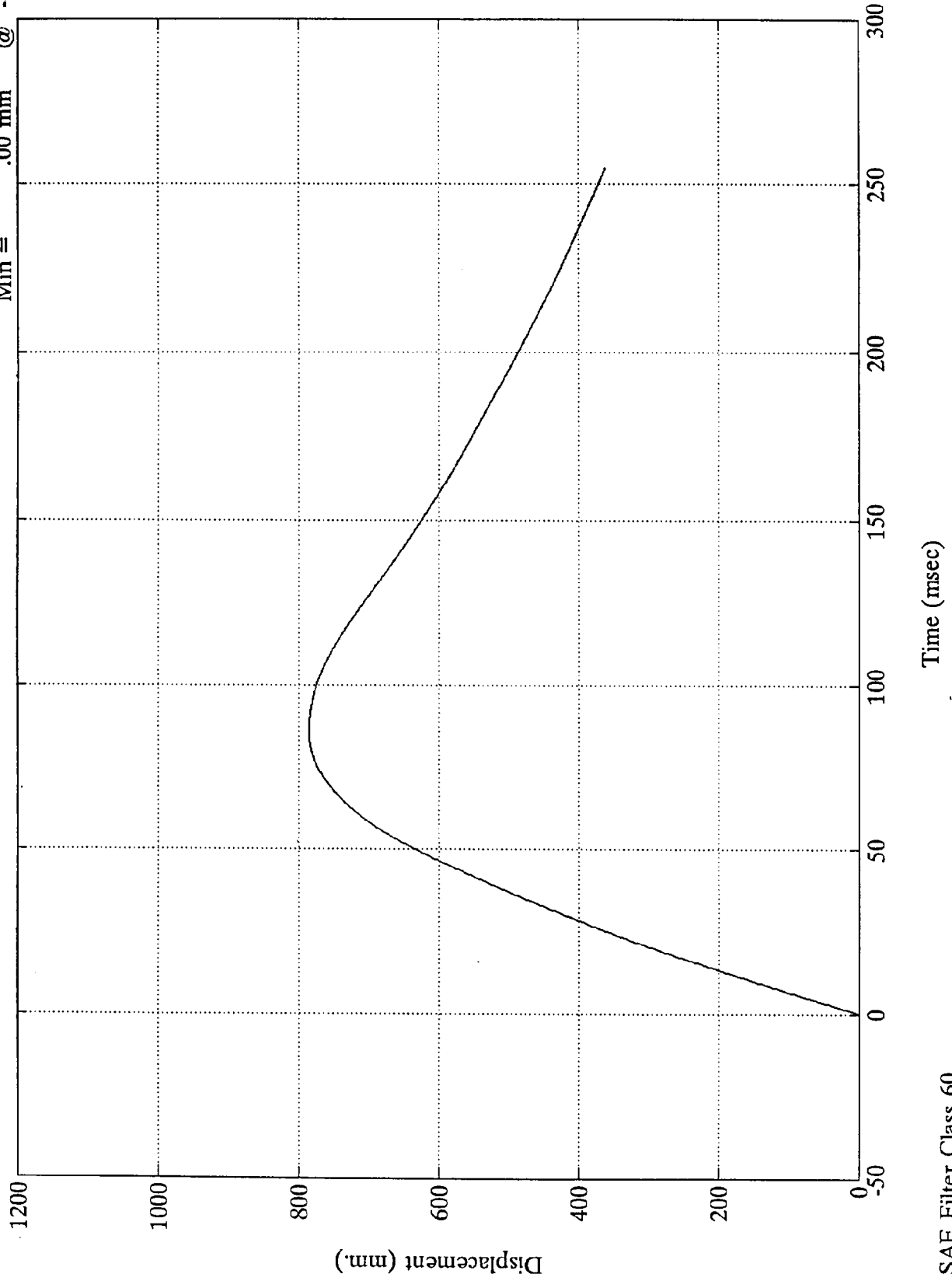
Max = 56.33 kph @ 0.59 msec  
Min = -12.20 kph @ 128.39 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 785.83 mm @ 86.16 msec  
Min = .00 mm @ -44.88 msec

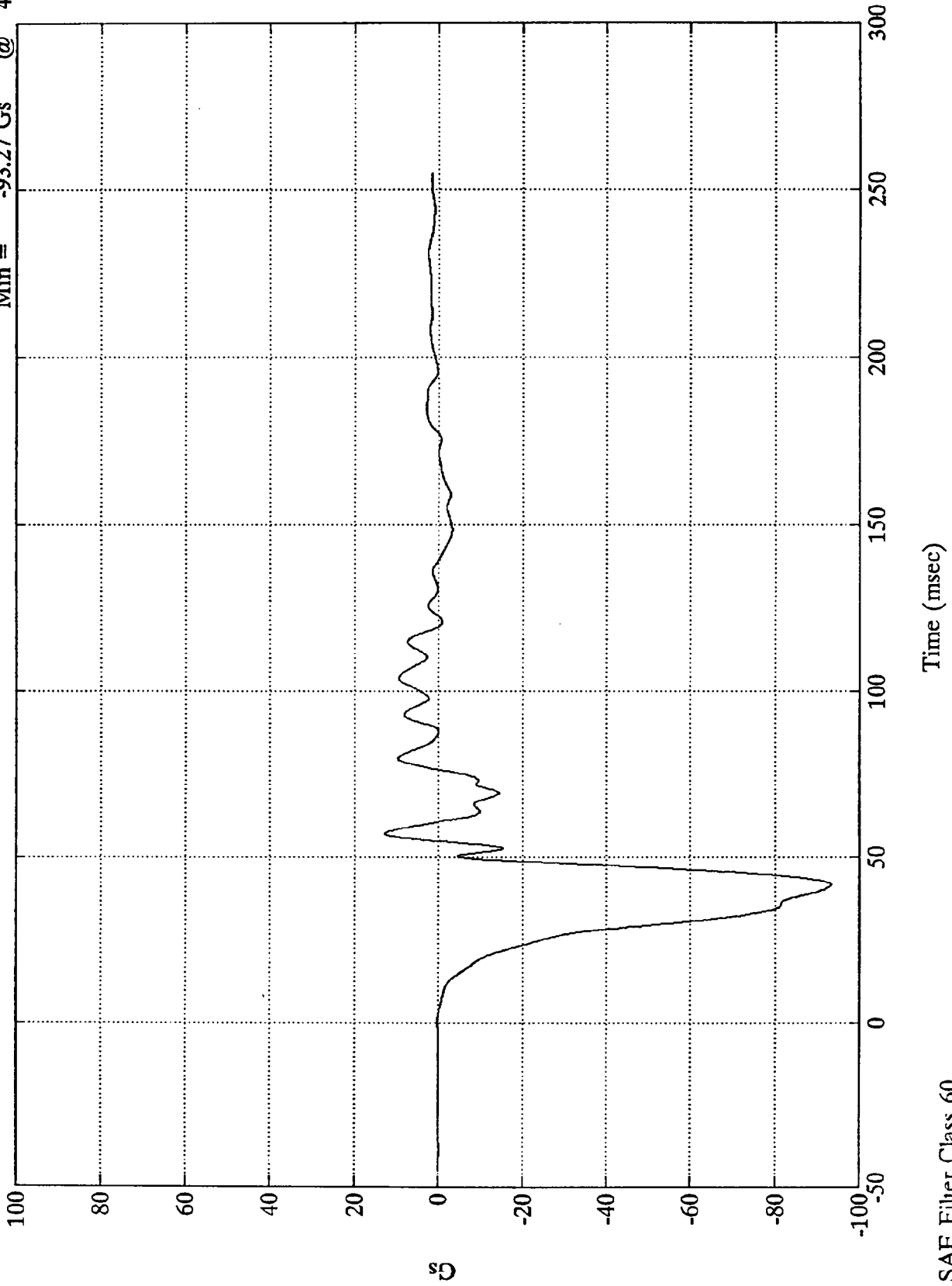
Acc. #2(x)



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #3(x)

Max = 12.74 Gs @ 57.00 msec  
Min = -93.27 Gs @ 41.40 msec



B-9

8120-8

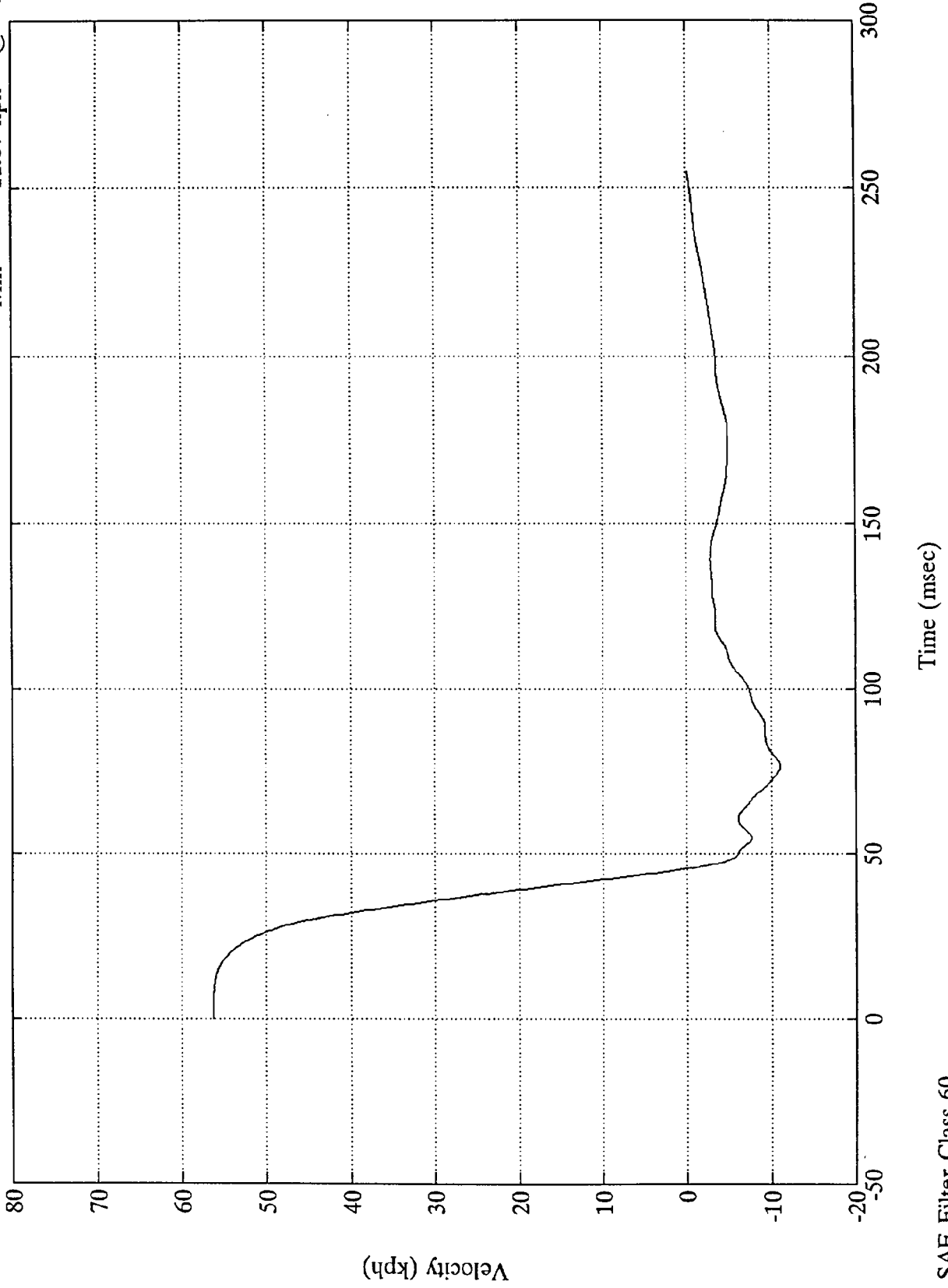
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

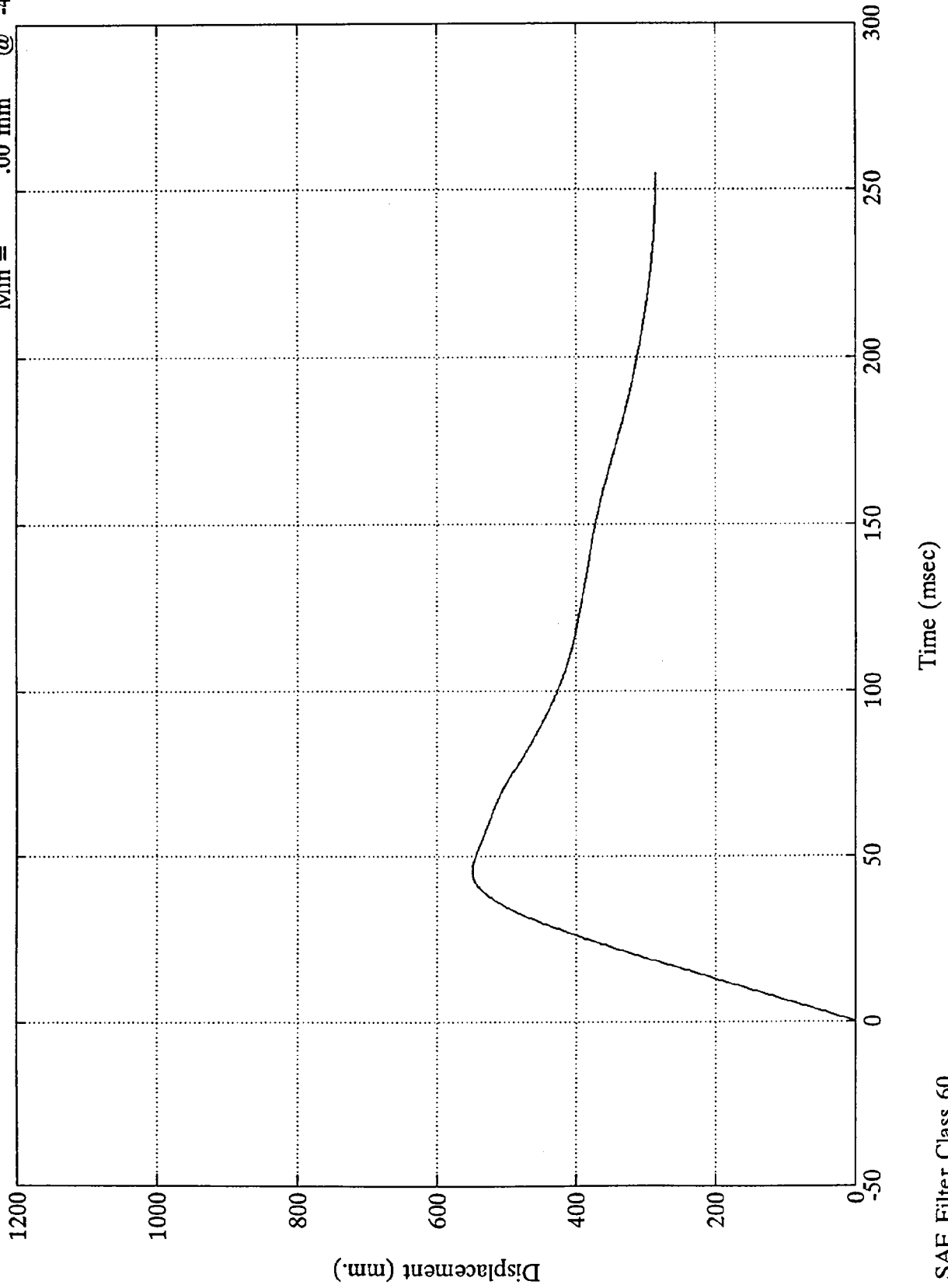
Max = 56.34 kph @ 2.63 msec  
Min = -11.07 kph @ 76.43 msec

Acc. #3(x)



NCAP TEST #8 - 1994 FORD MUSTANG

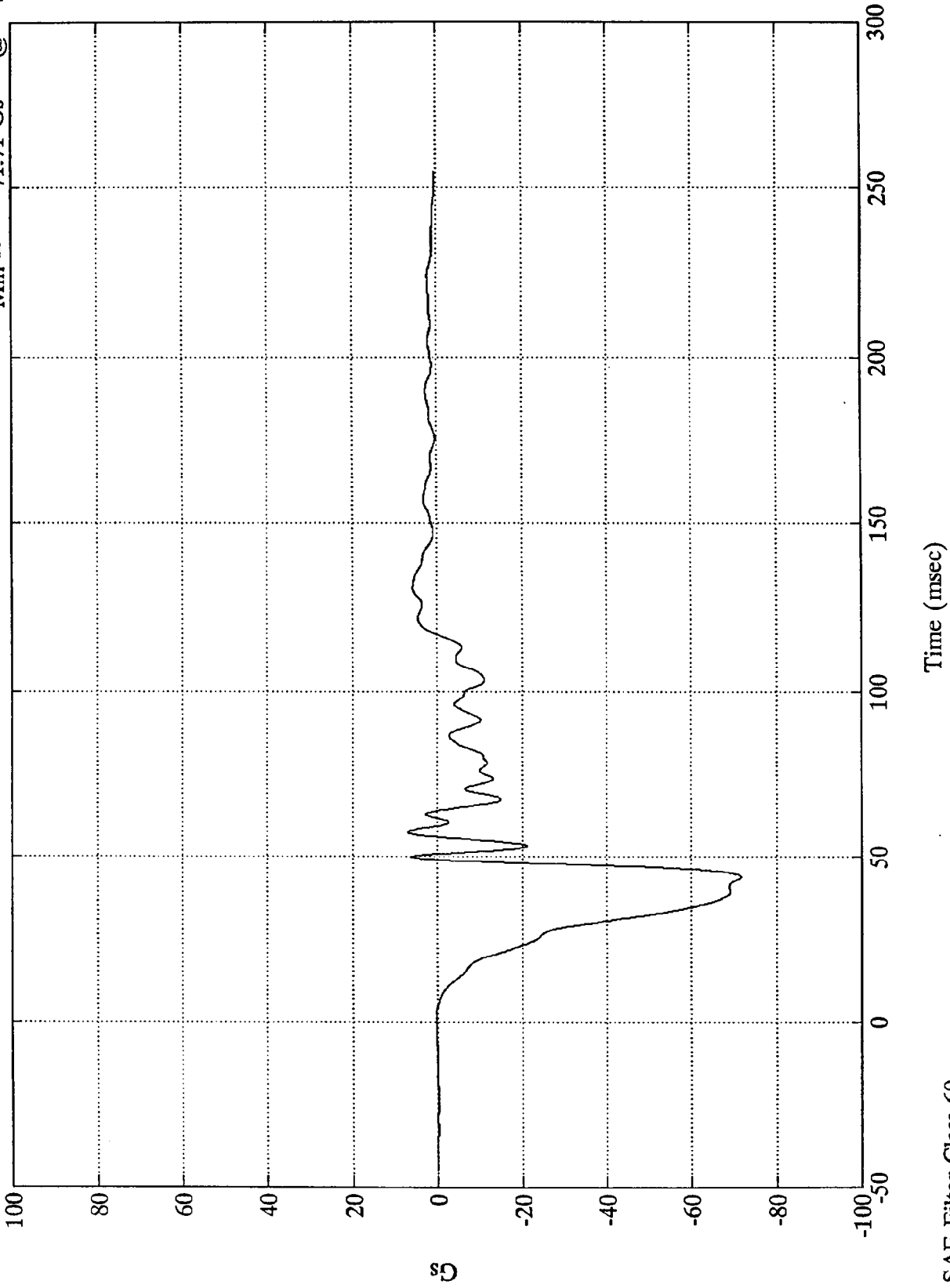
Acc. #3(x)      Max = 549.63 mm @ 45.35 msec  
Min = .00 mm @ -44.88 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 6.90 Gs @ 57.47 msec  
Min = -71.71 Gs @ 43.79 msec

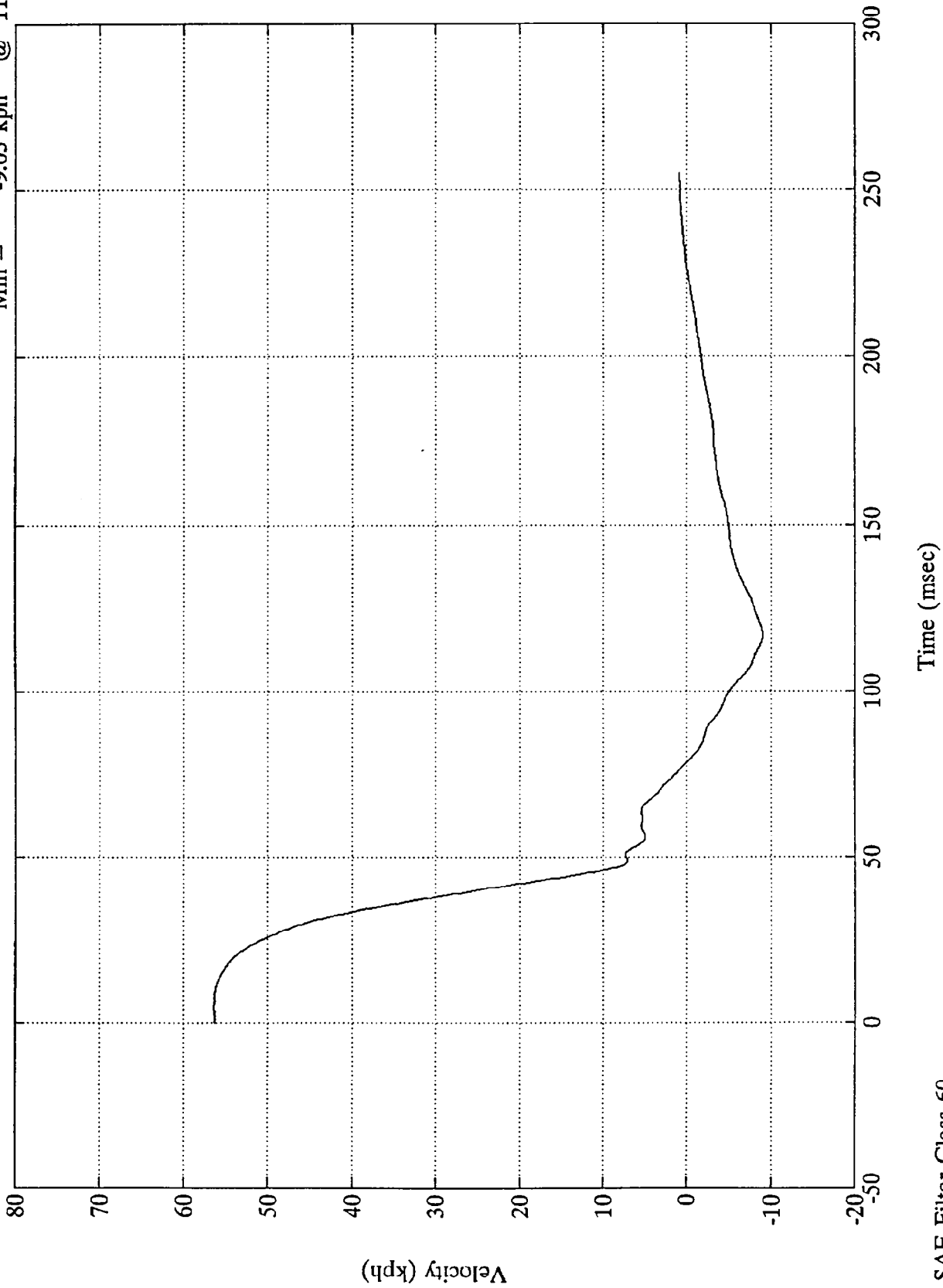
Acc. #4(x)



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 56.36 kph @ 4.55 msec  
Min = -9.03 kph @ 116.88 msec

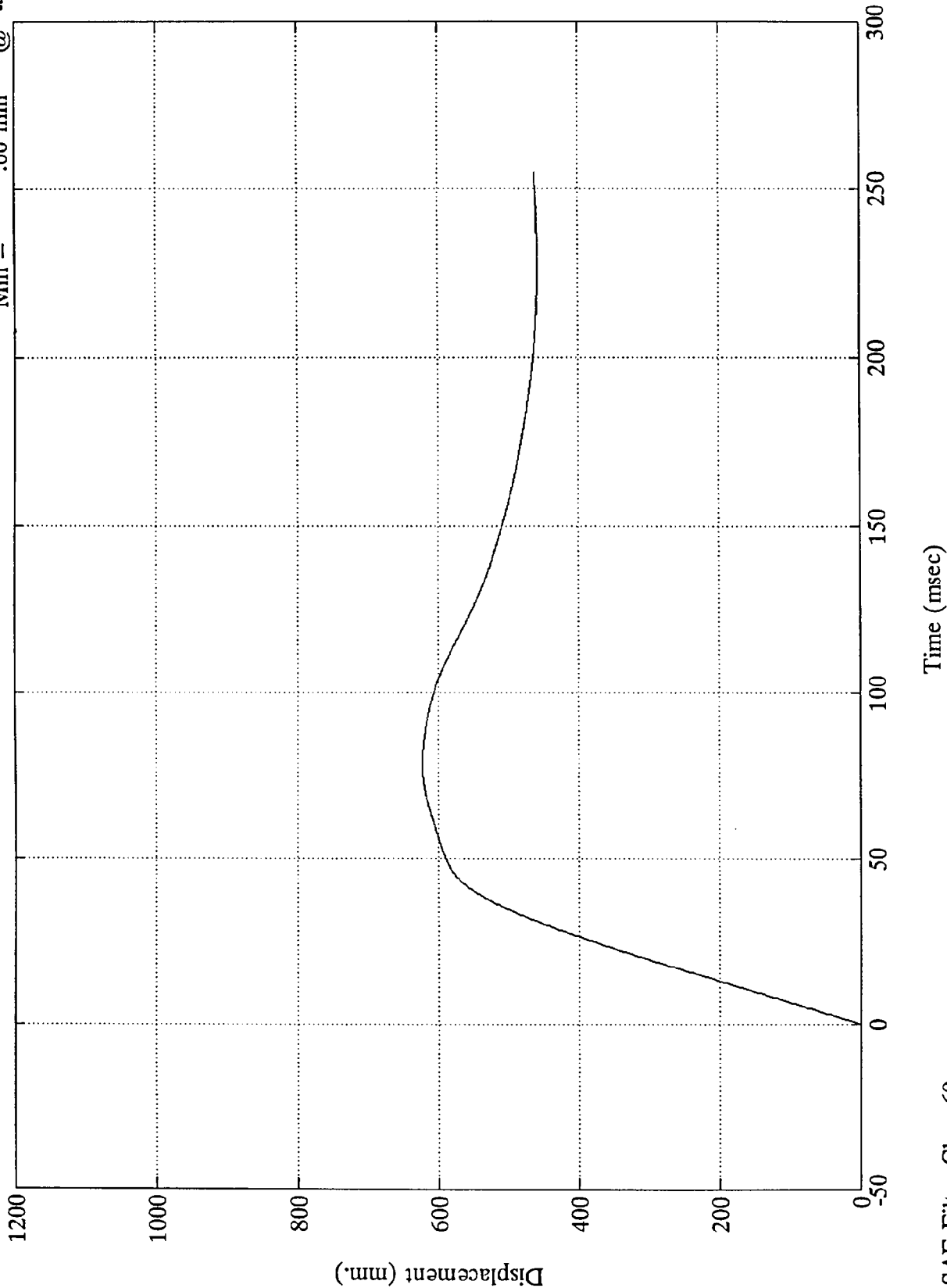
Acc. #4(x)



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 623.30 mm @ 78.72 msec  
Min = .00 mm @ -44.88 msec

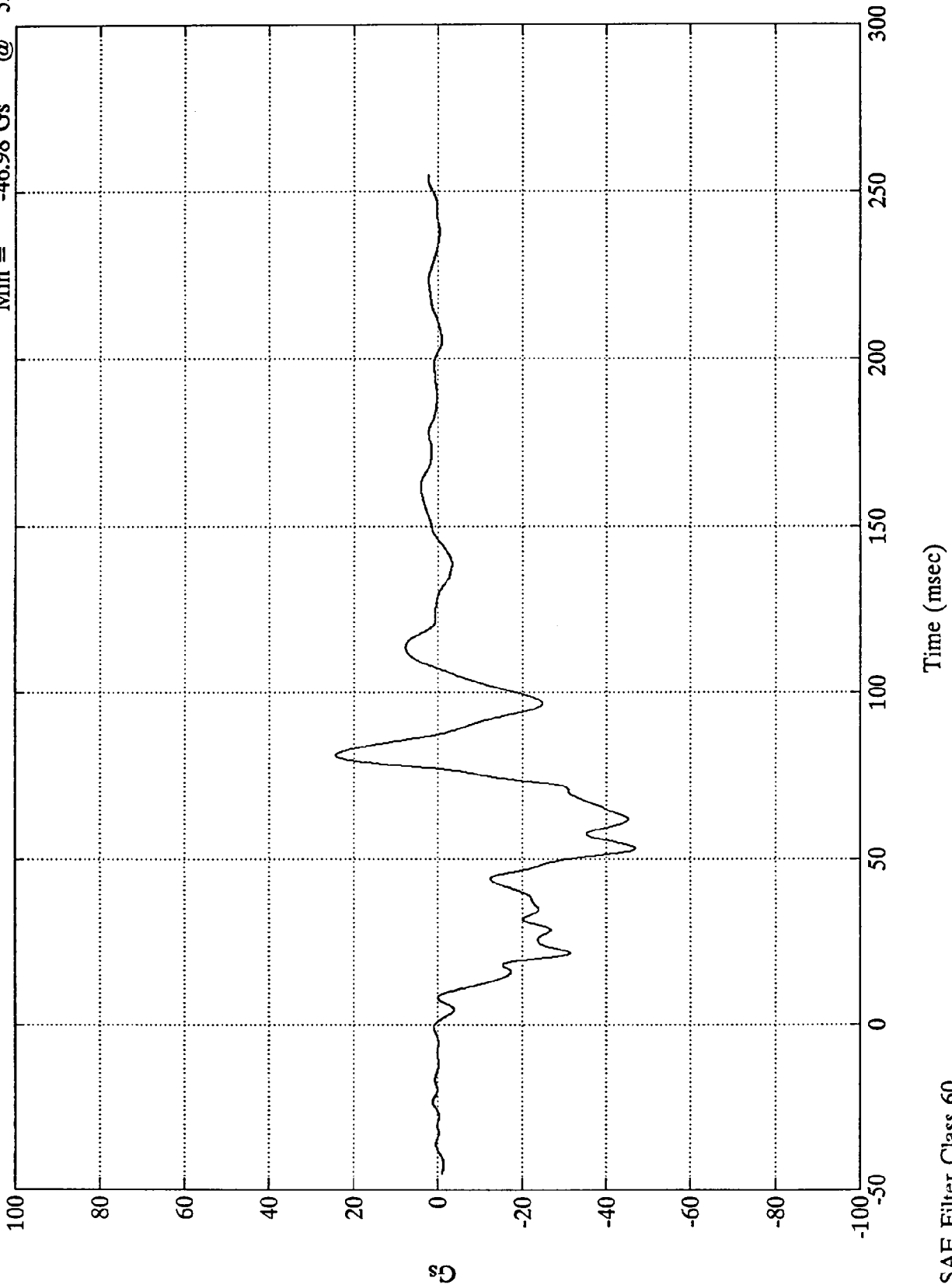
Acc. #4(x)



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #5(x)

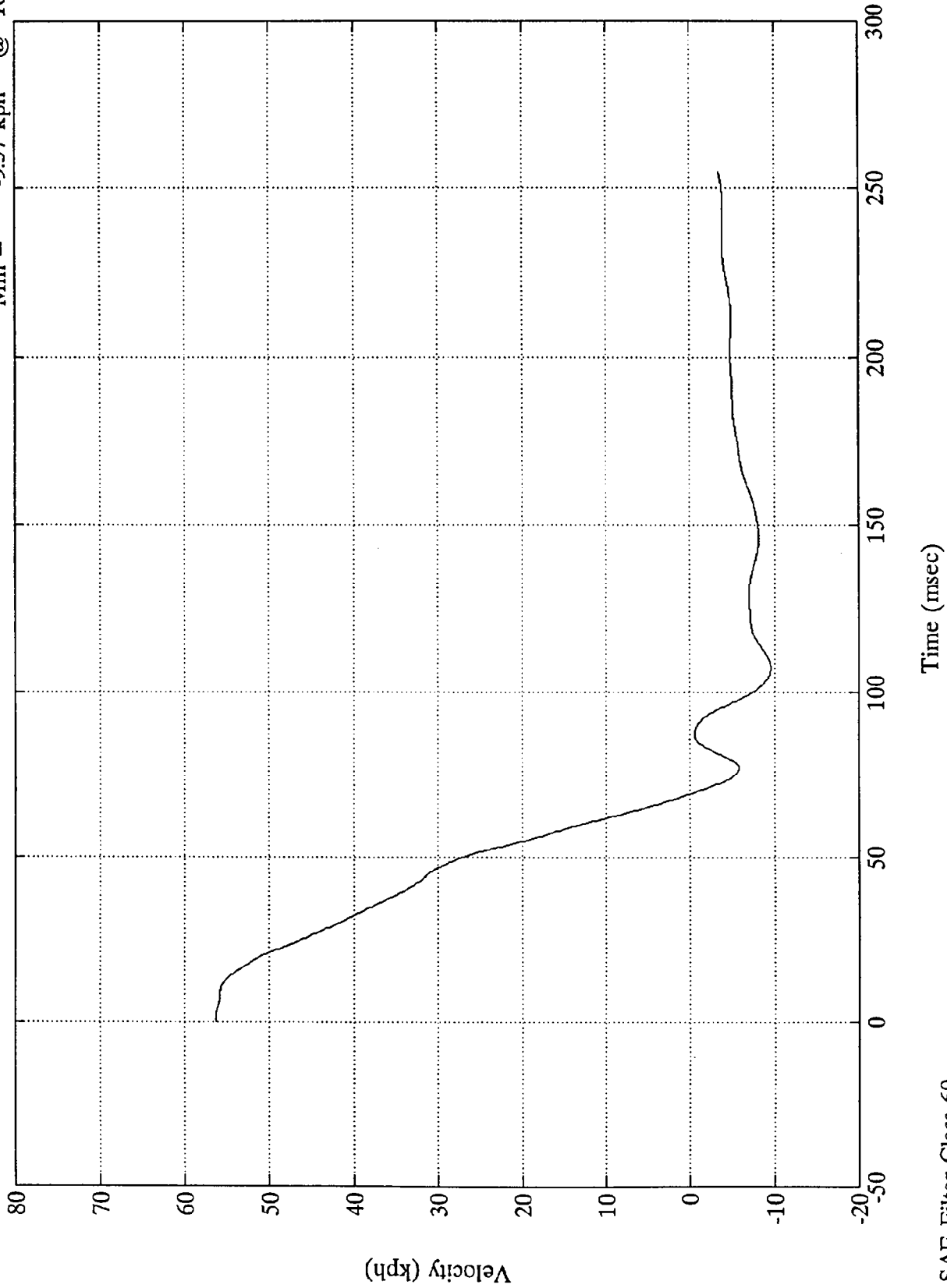
Max = 24.32 Gs @ 81.36 msec  
Min = -46.98 Gs @ 53.27 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 56.34 kph @ 0.95 msec  
Min = -9.57 kph @ 107.28 msec

Acc. #5(x)

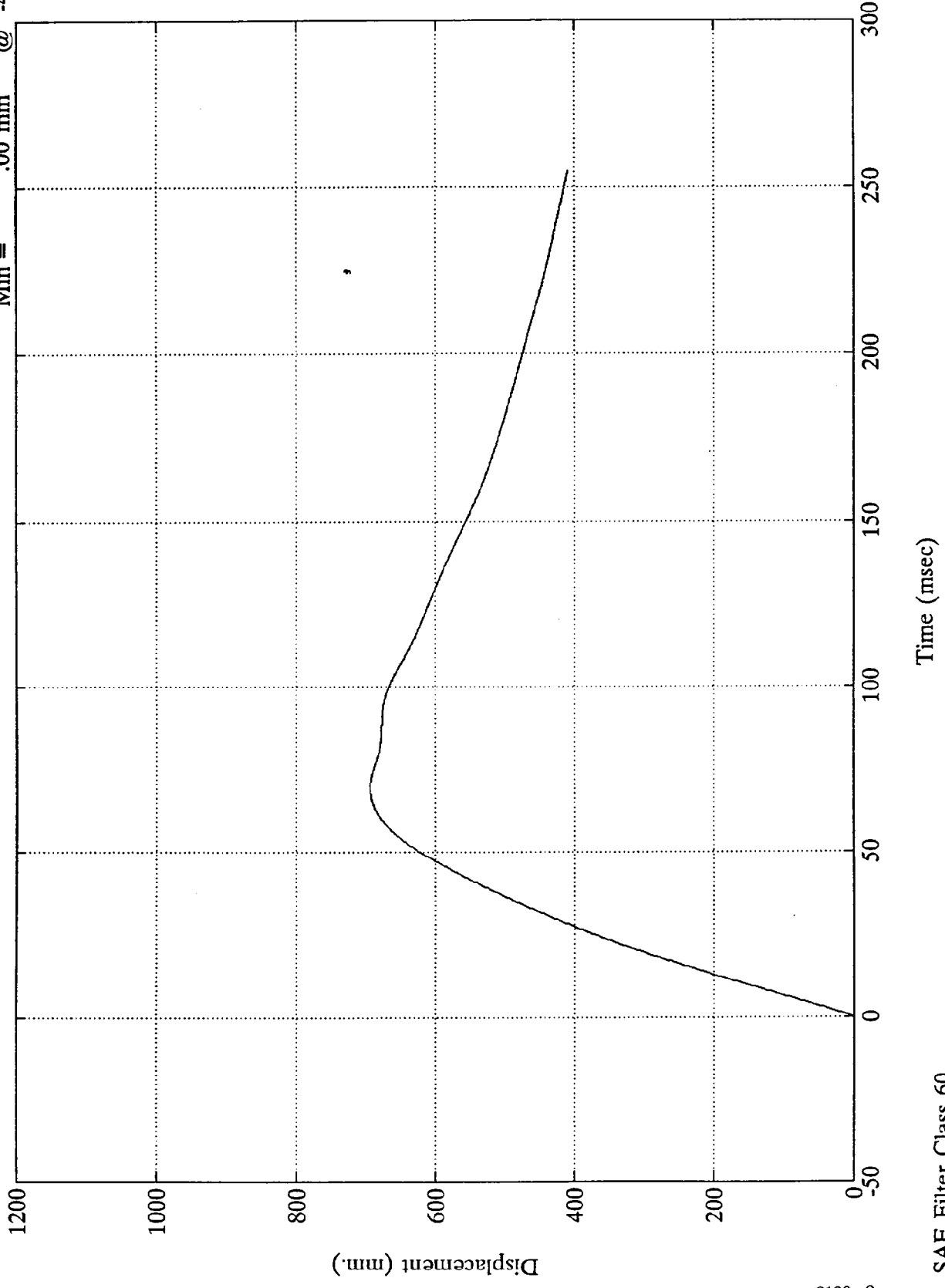


SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 693.95 mm @ 69.24 msec  
Min = .00 mm @ -44.88 msec

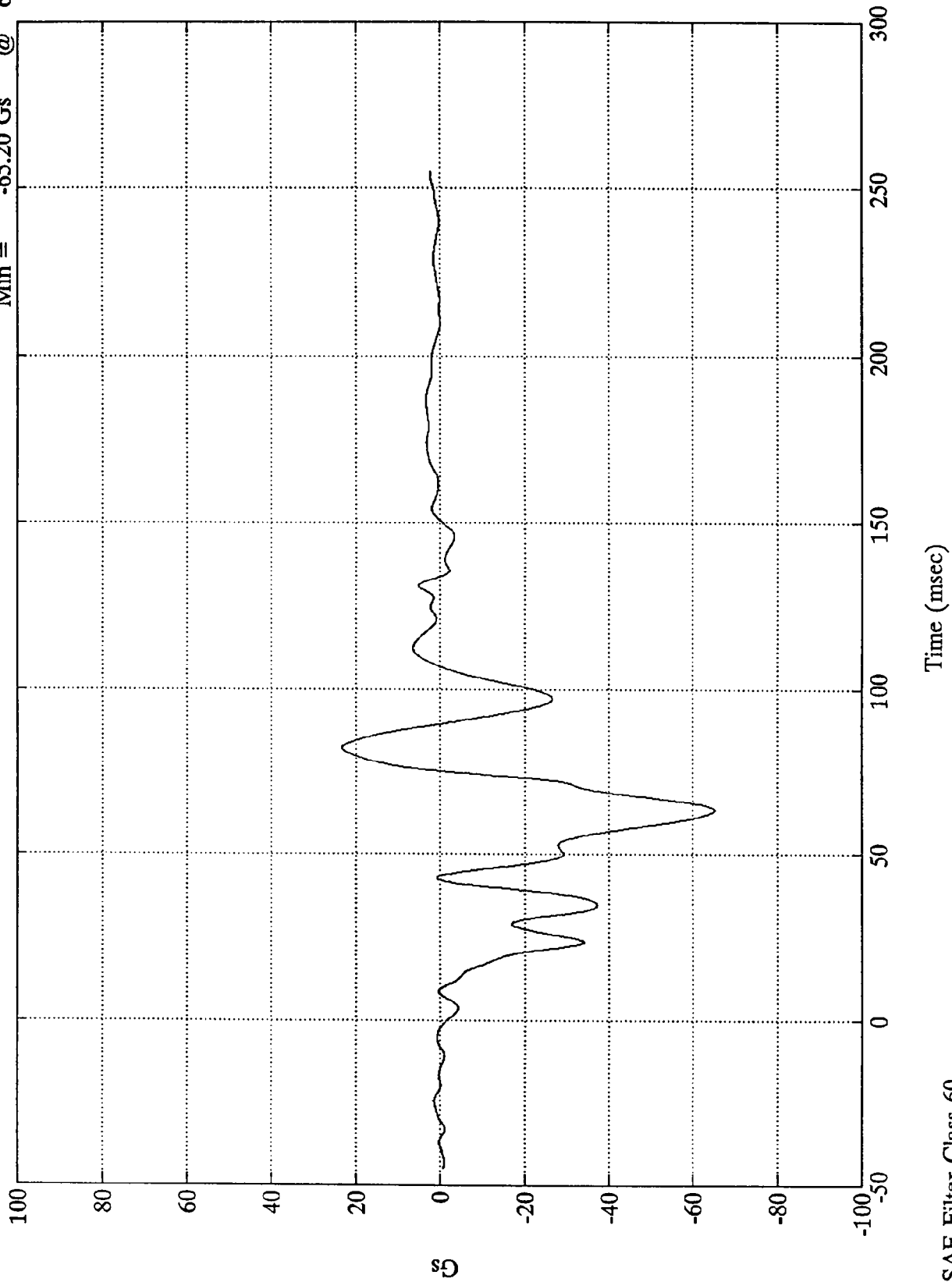
Acc. #5(x)



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 23.32 Gs @ 82.08 msec  
Min = -65.20 Gs @ 63.35 msec

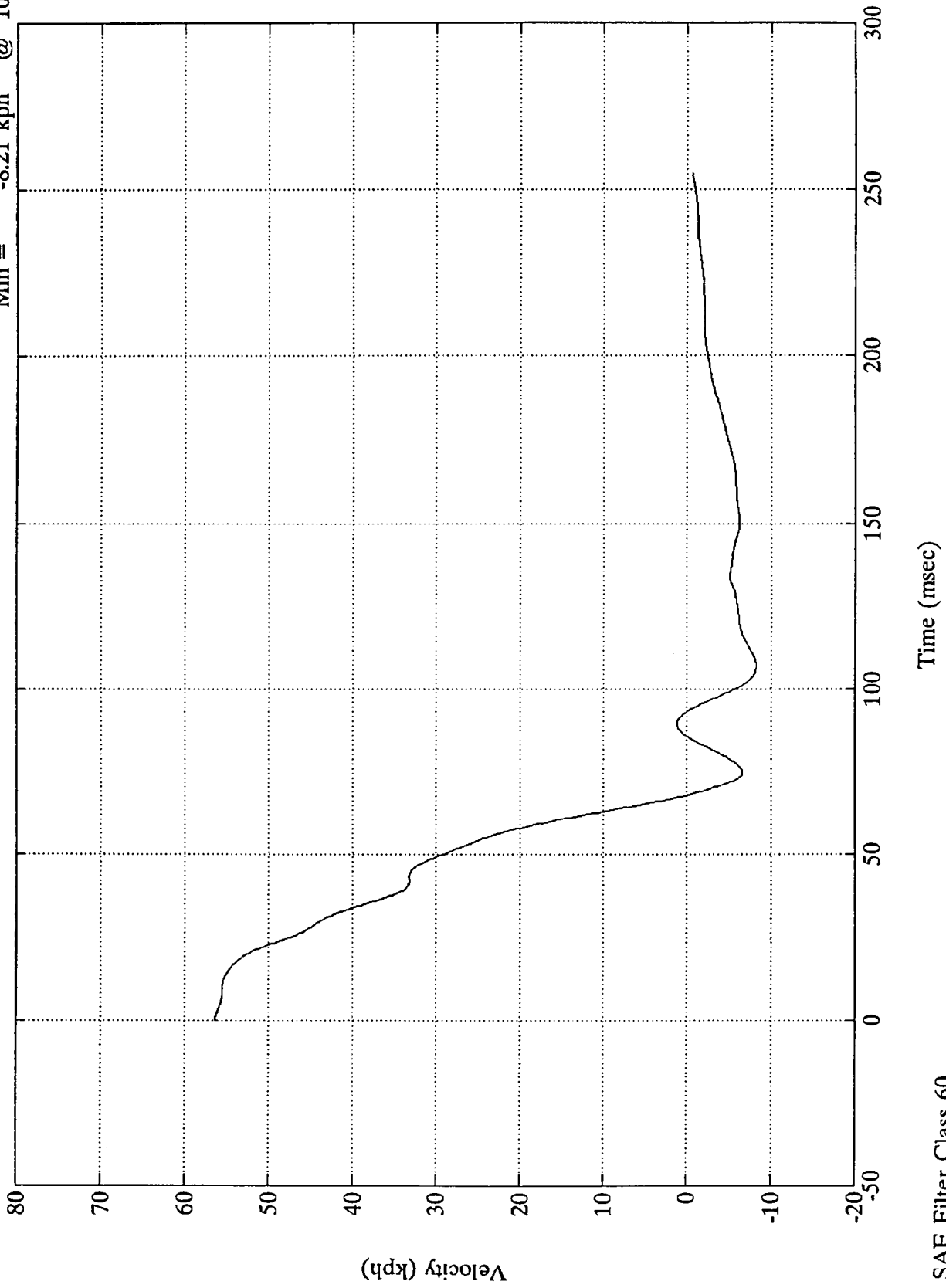
Acc. #6(x)



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #6(x)

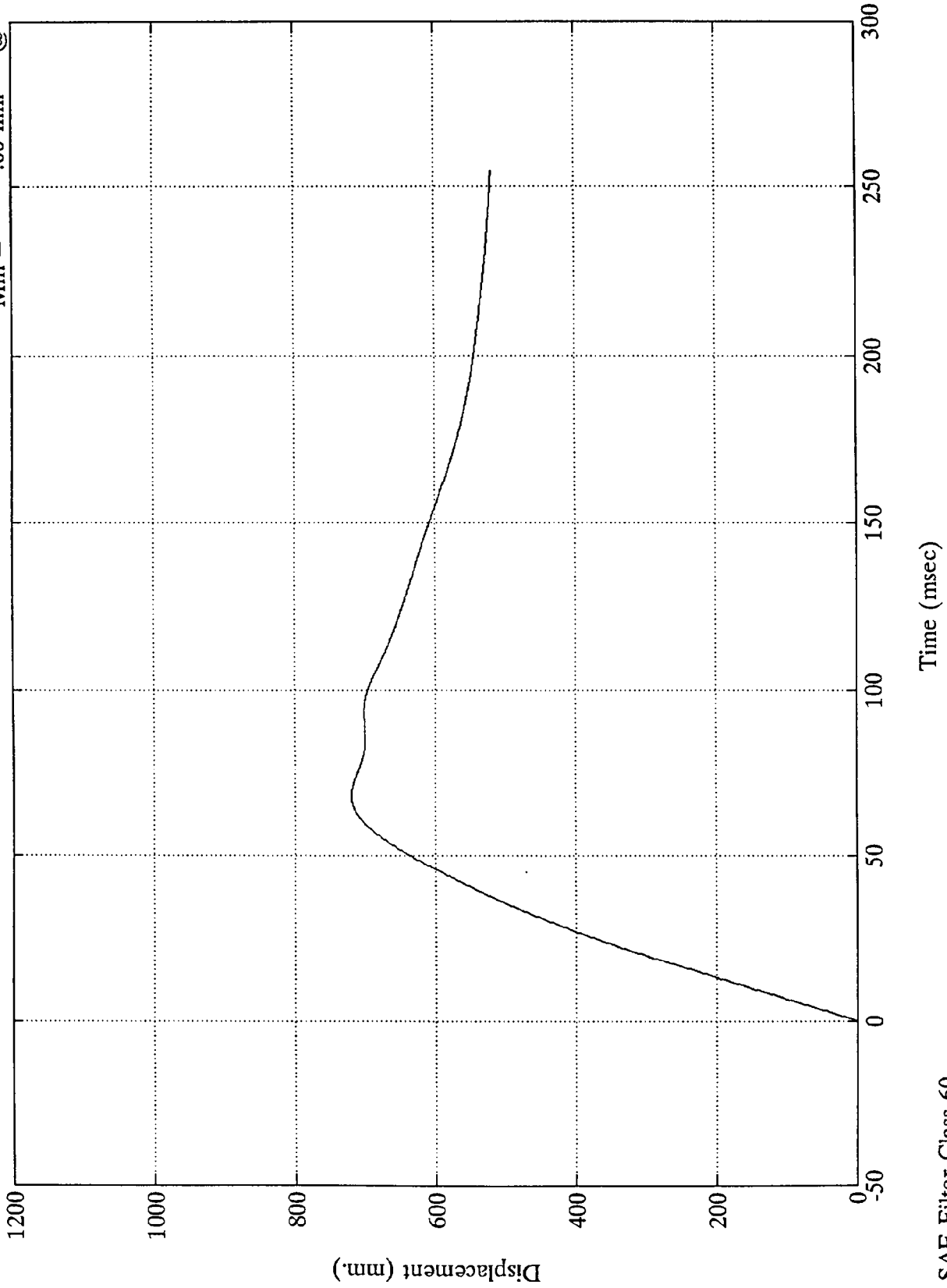
Max = 56.33 kph @ -0.00 msec  
Min = -8.21 kph @ 106.80 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 719.76 mm @ 67.80 msec  
Min = .00 mm @ -44.88 msec

Acc. #6(x)



8-120-8

B-20

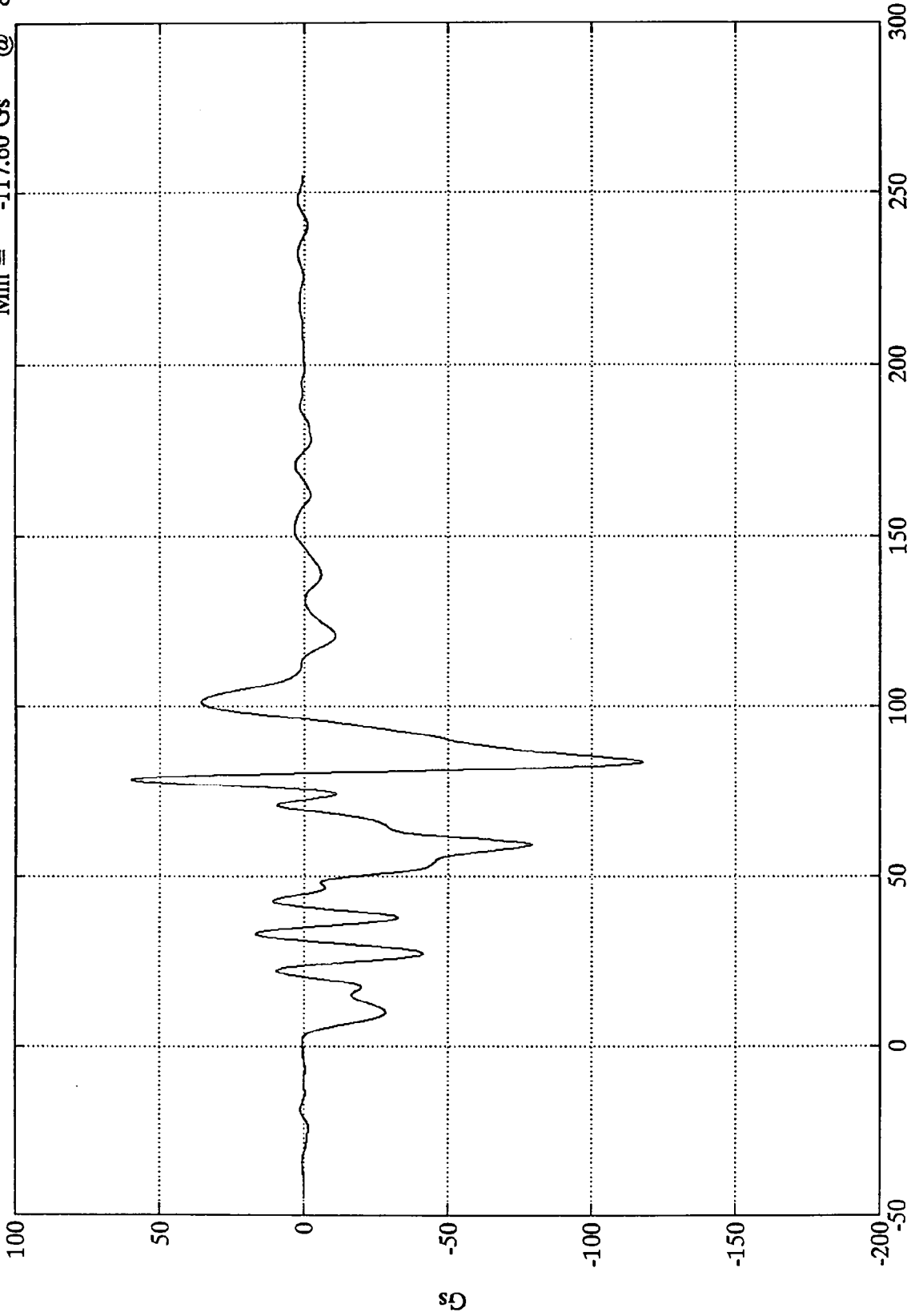
SAE Filter Class 60



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #7(x)

Max = 60.25 Gs @ 78.23 msec  
Min = -117.60 Gs @ 83.52 msec



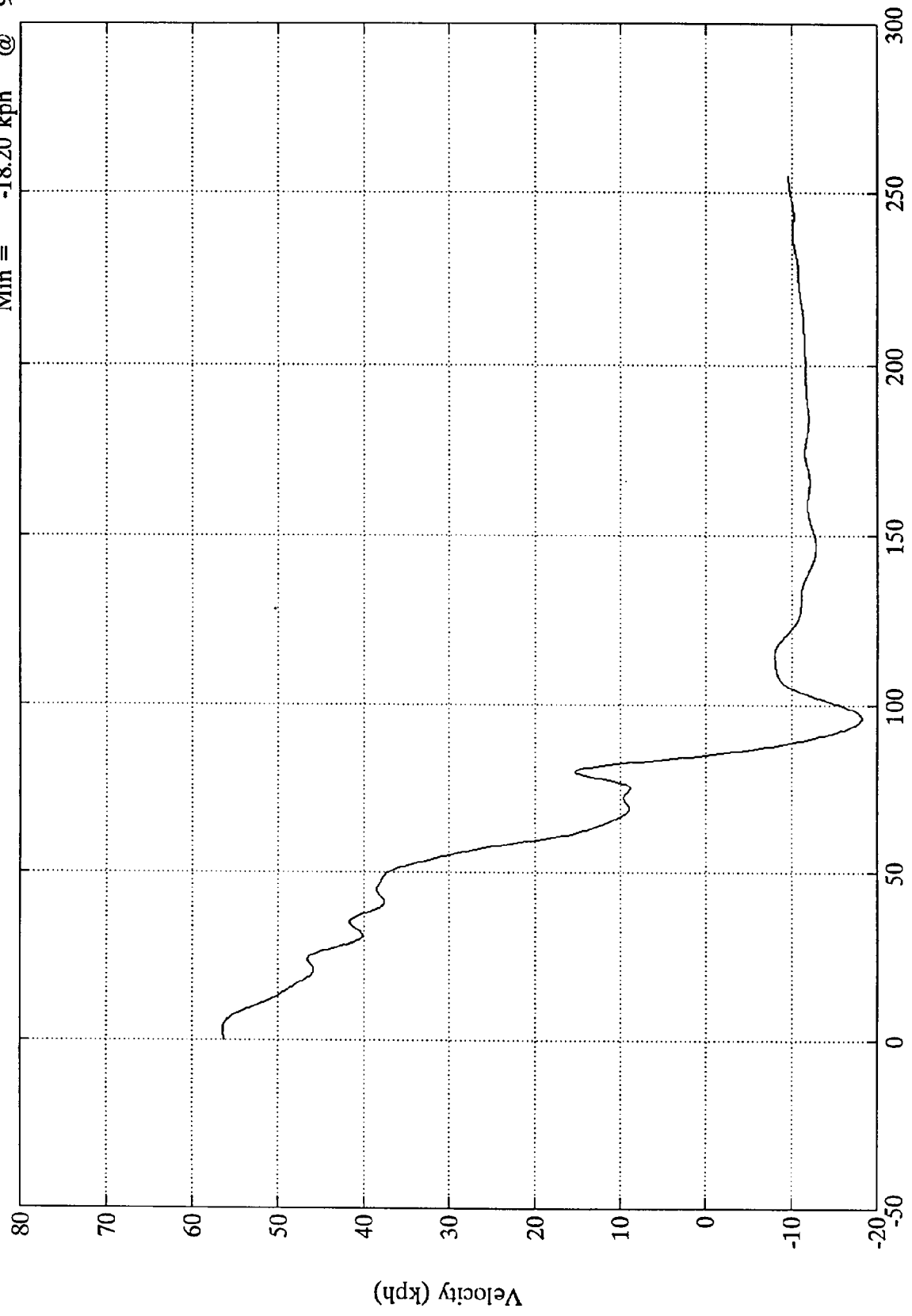
Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 56.40 kph @ 2.99 msec  
Min = -18.20 kph @ 96.24 msec

Acc. #7(x)

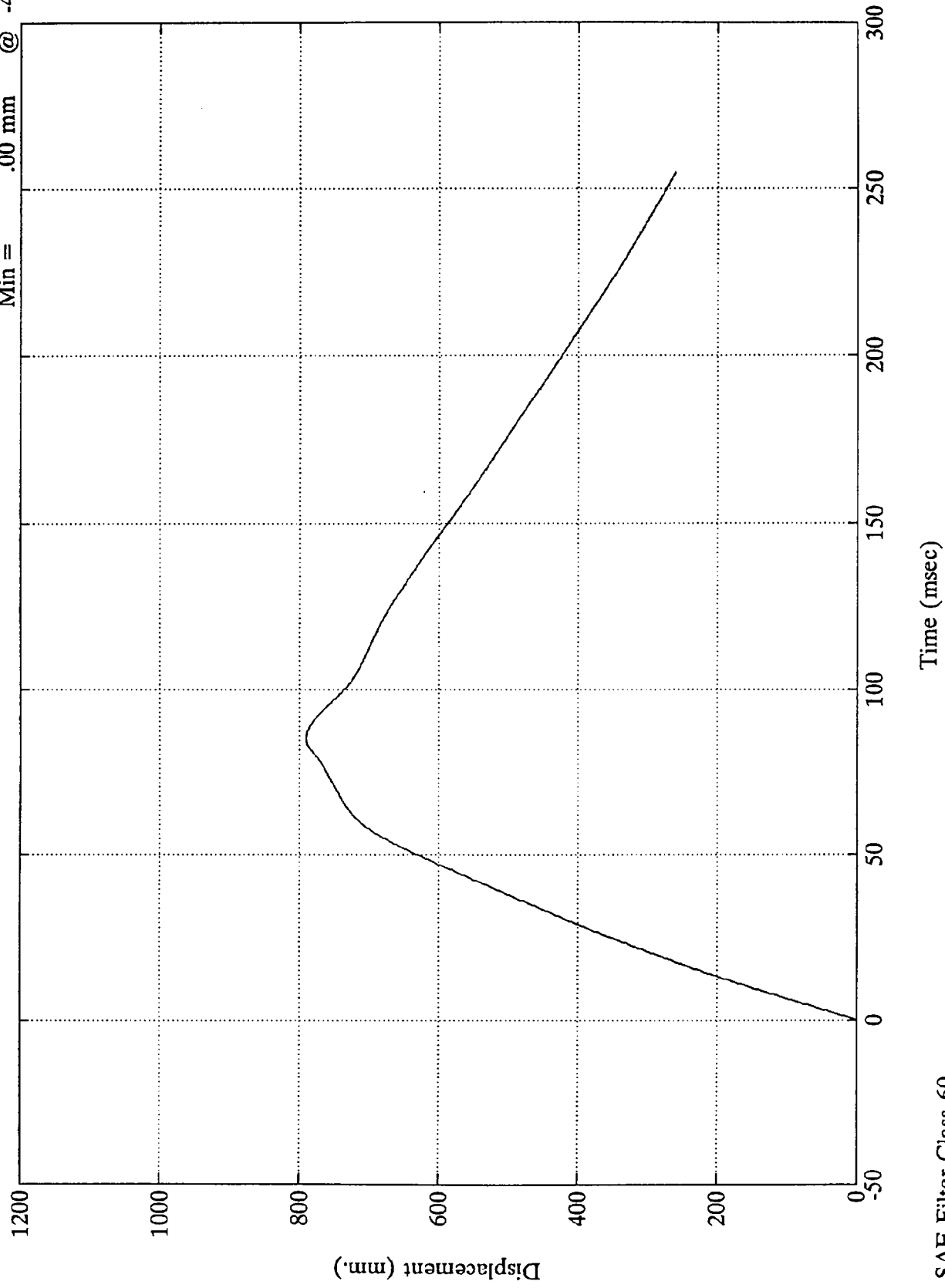


Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #7(x)  
Max = 790.79 mm @ 85.20 msec  
Min = .00 mm @ -44.88 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #8(x)

Max =

3.18 Gs

@

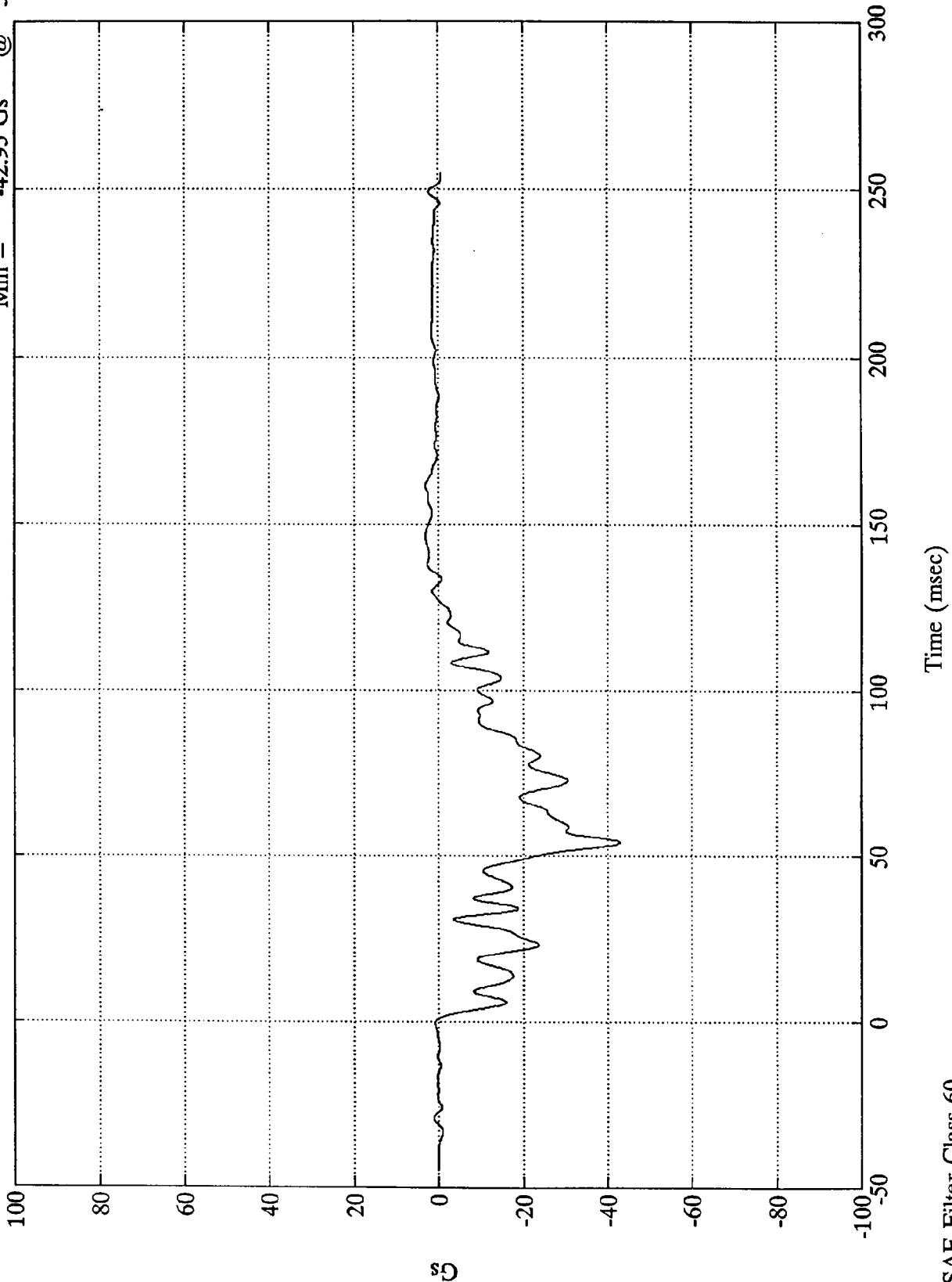
161.52 msec

Min =

-42.95 Gs

@

54.11 msec



8120-8  
B-24

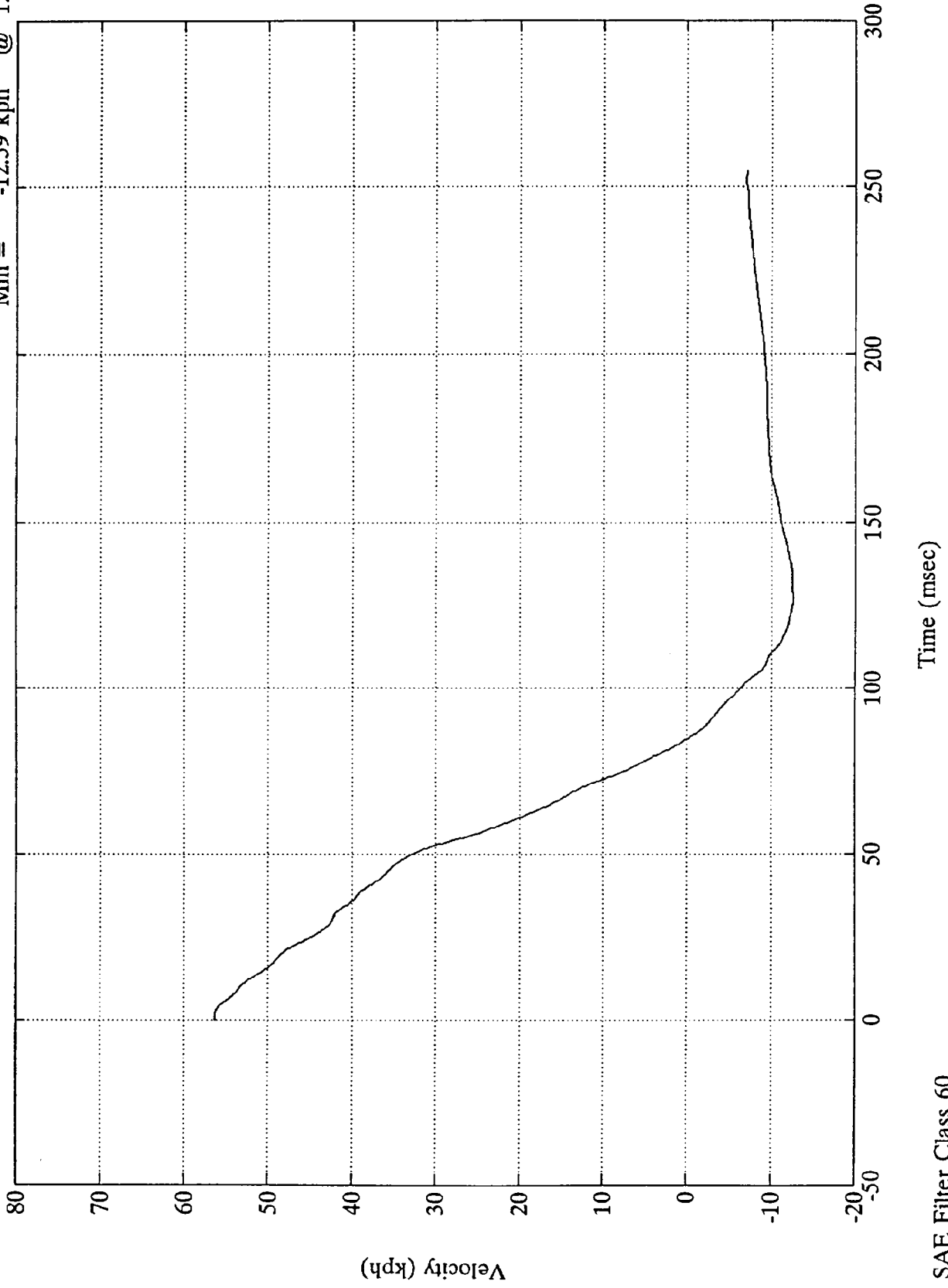
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

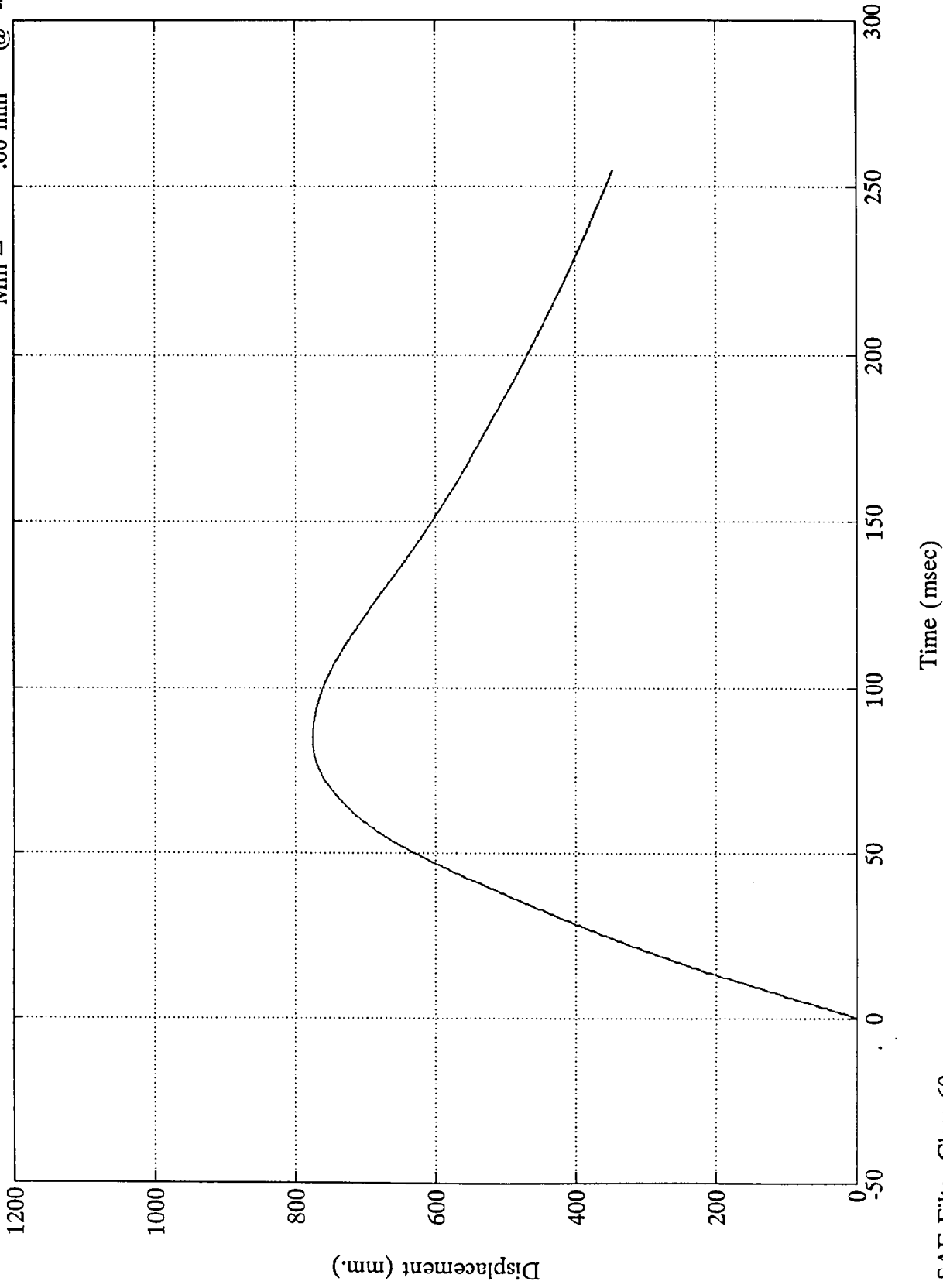
Max = 56.34 kph @ 0.95 msec  
Min = -12.59 kph @ 126.96 msec

Acc. #8(x)



NCAP TEST #8 - 1994 FORD MUSTANG

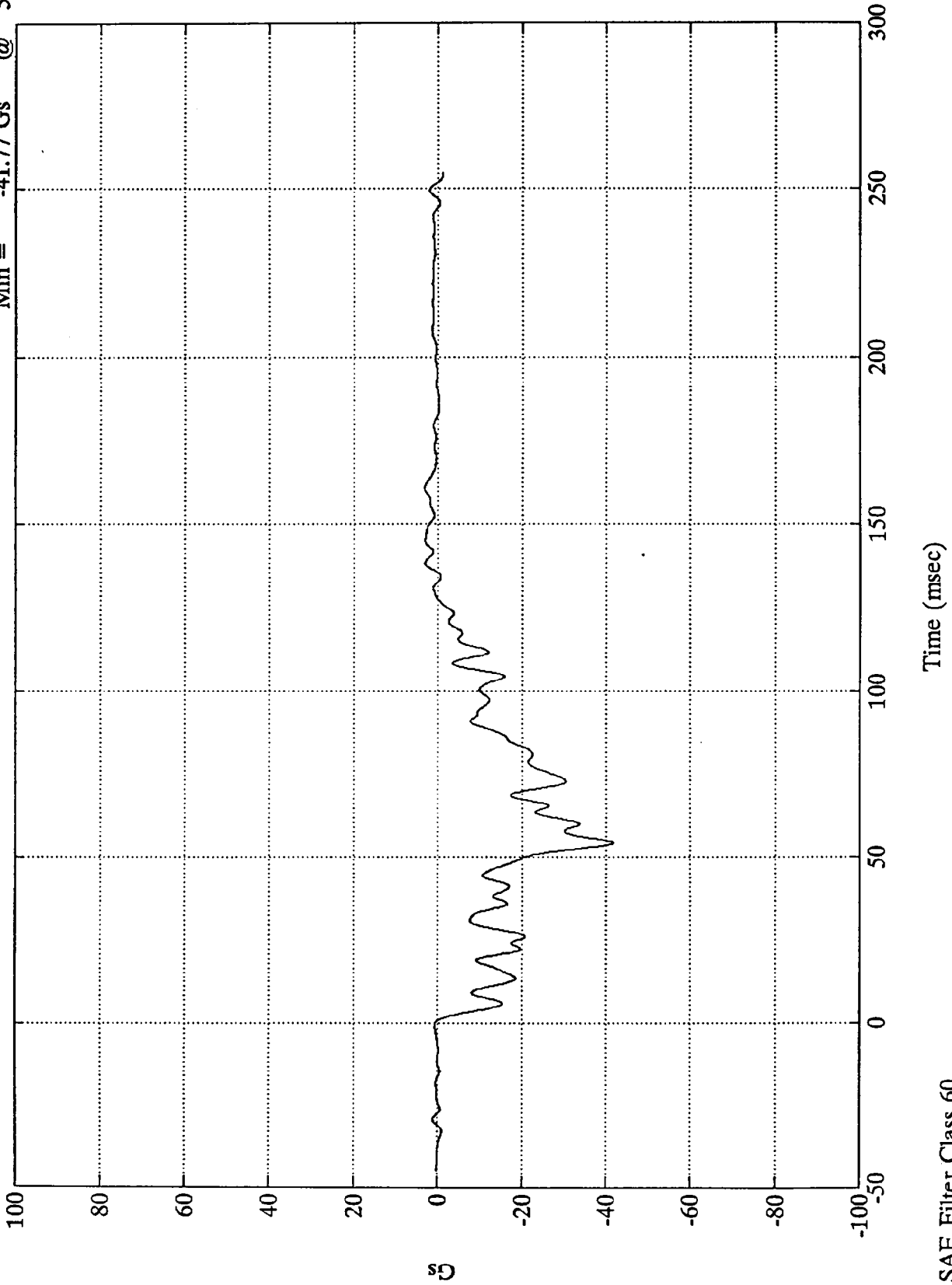
Acc. #8(x) Max = 776.01 mm @ 84.83 msec  
Min = .00 mm @ -44.88 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Acc. #9(x)

Max = 3.25 Gs @ 160.68 msec  
Min = -41.77 Gs @ 54.36 msec



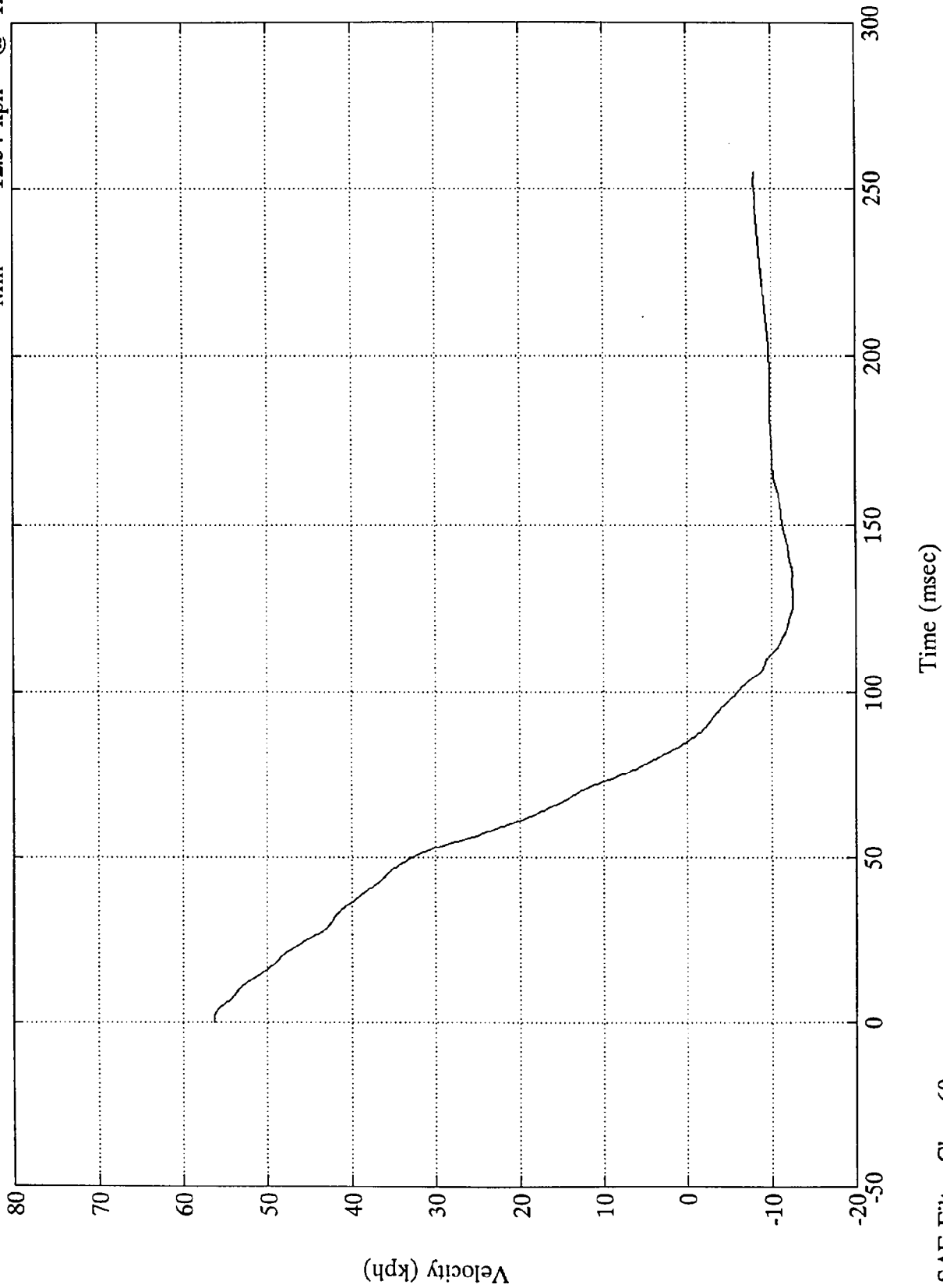
8120-8  
B-27

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 56.33 kph @ 0.71 msec  
Min = -12.54 kph @ 127.44 msec

Acc. #9(x)

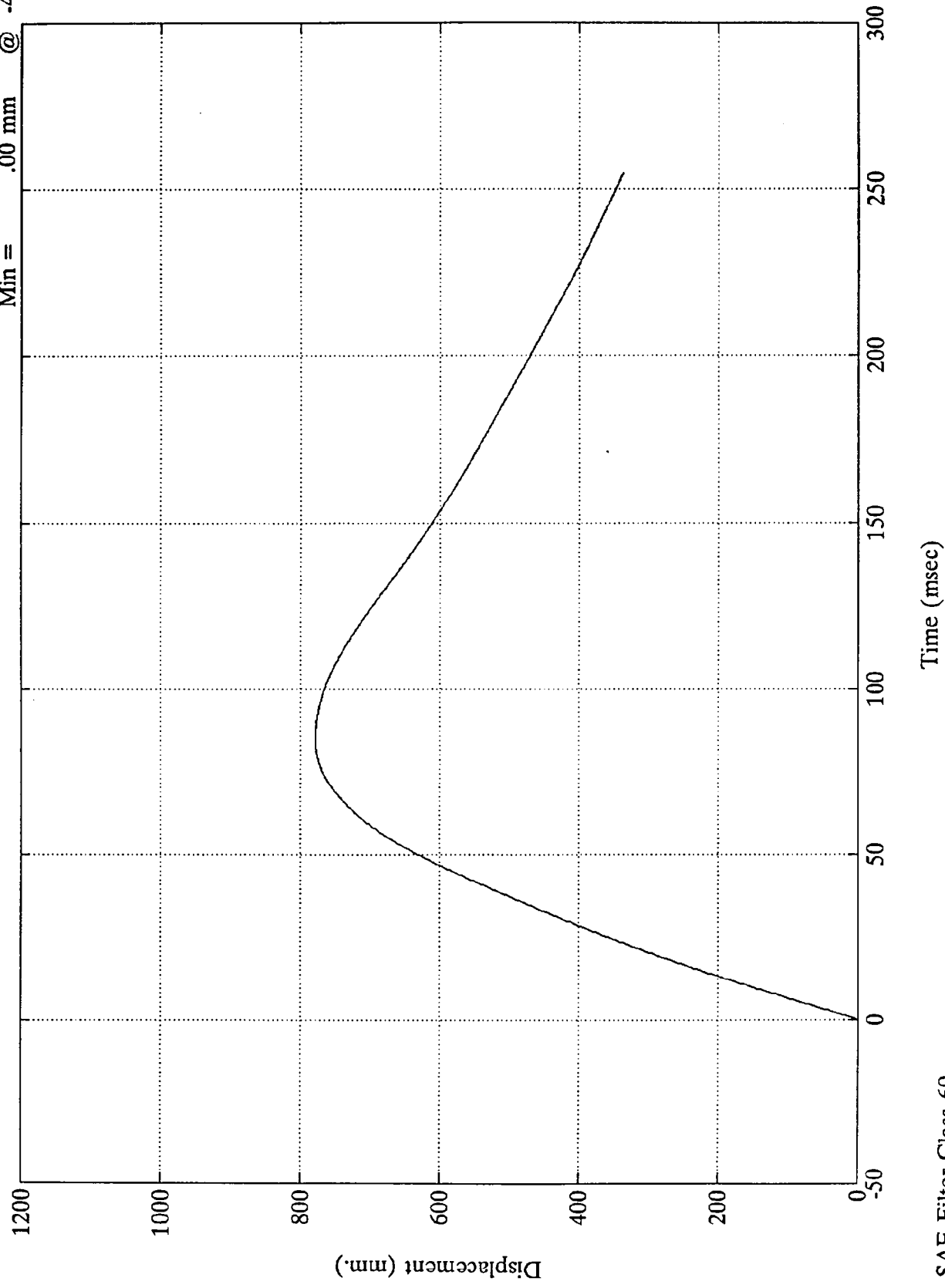


SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 778.80 mm @ 85.20 msec  
Min = .00 mm @ -44.88 msec

Acc. #9(x)



TEST NO. MR0205

LOAD CELL BARRIER DATA

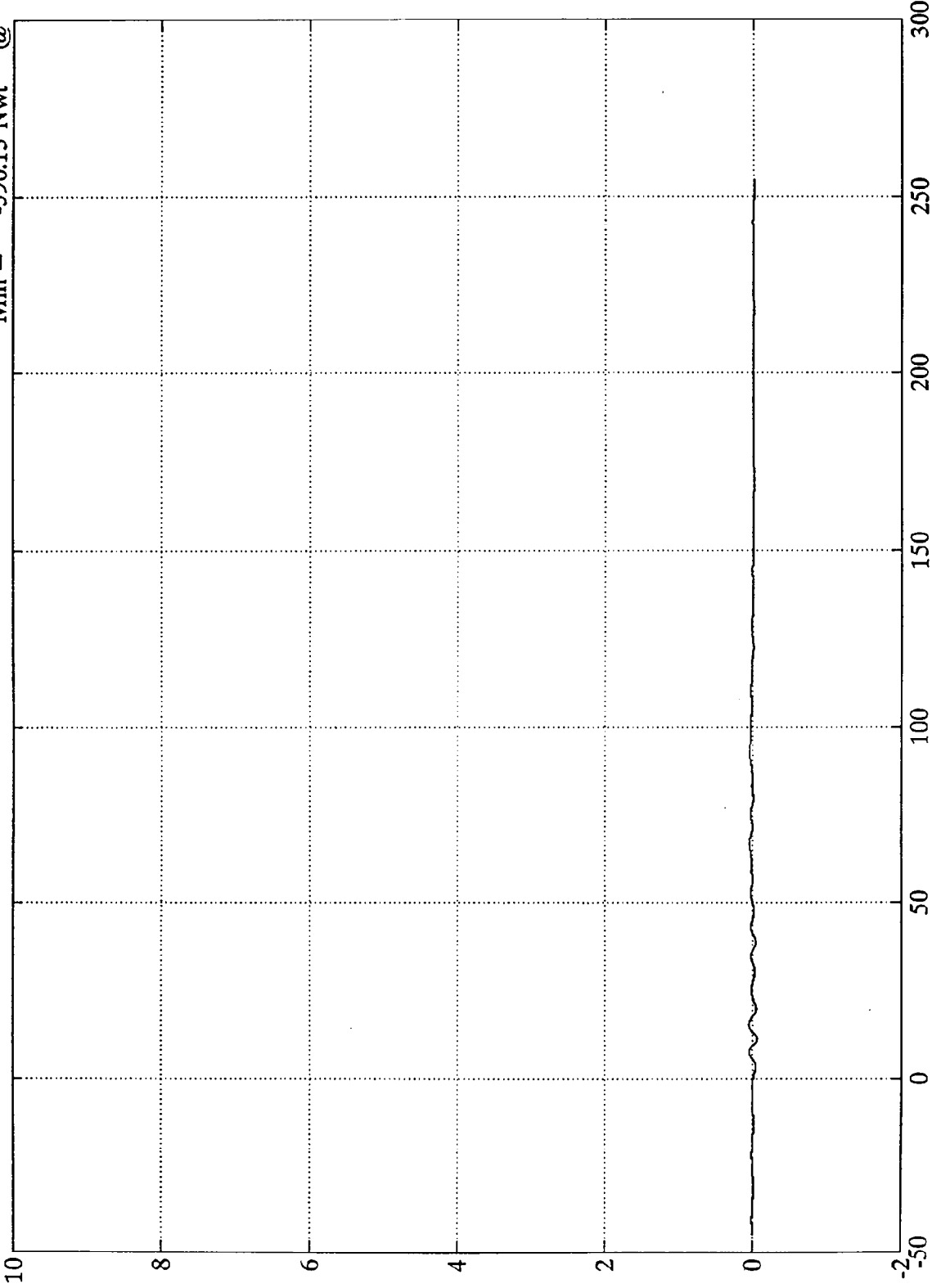
FILTER CHANNEL CLASS

60

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell A1

Max = 534.47 Nwt @ 15.35 msec  
Min = -590.13 Nwt @ 11.39 msec



x10<sup>4</sup>

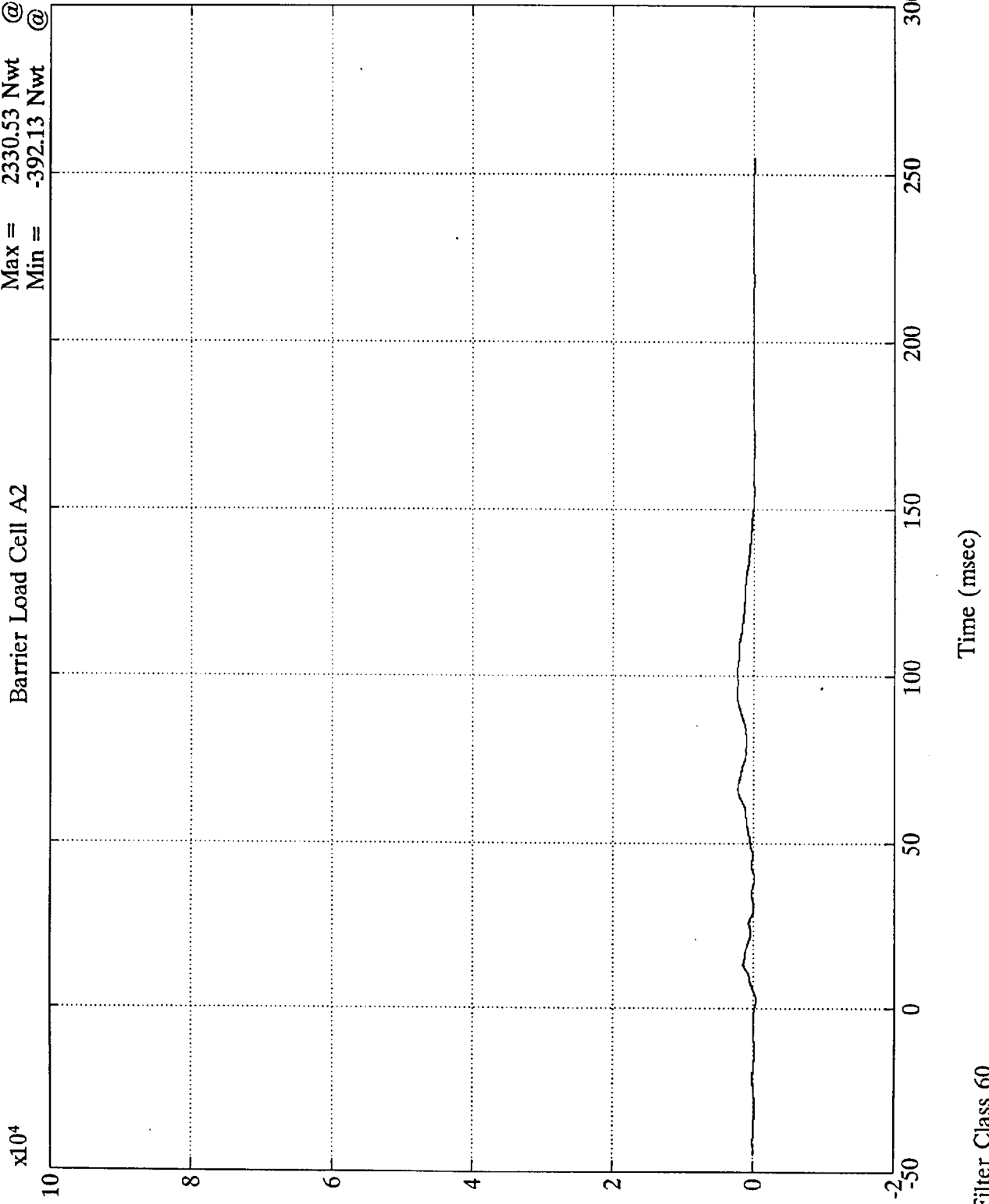
10N  
B-31

Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell A2  
Max = 2330.53 Nwt @ 94.31 msec  
Min = -392.13 Nwt @ 2.39 msec



1MN

B-32

8120-8

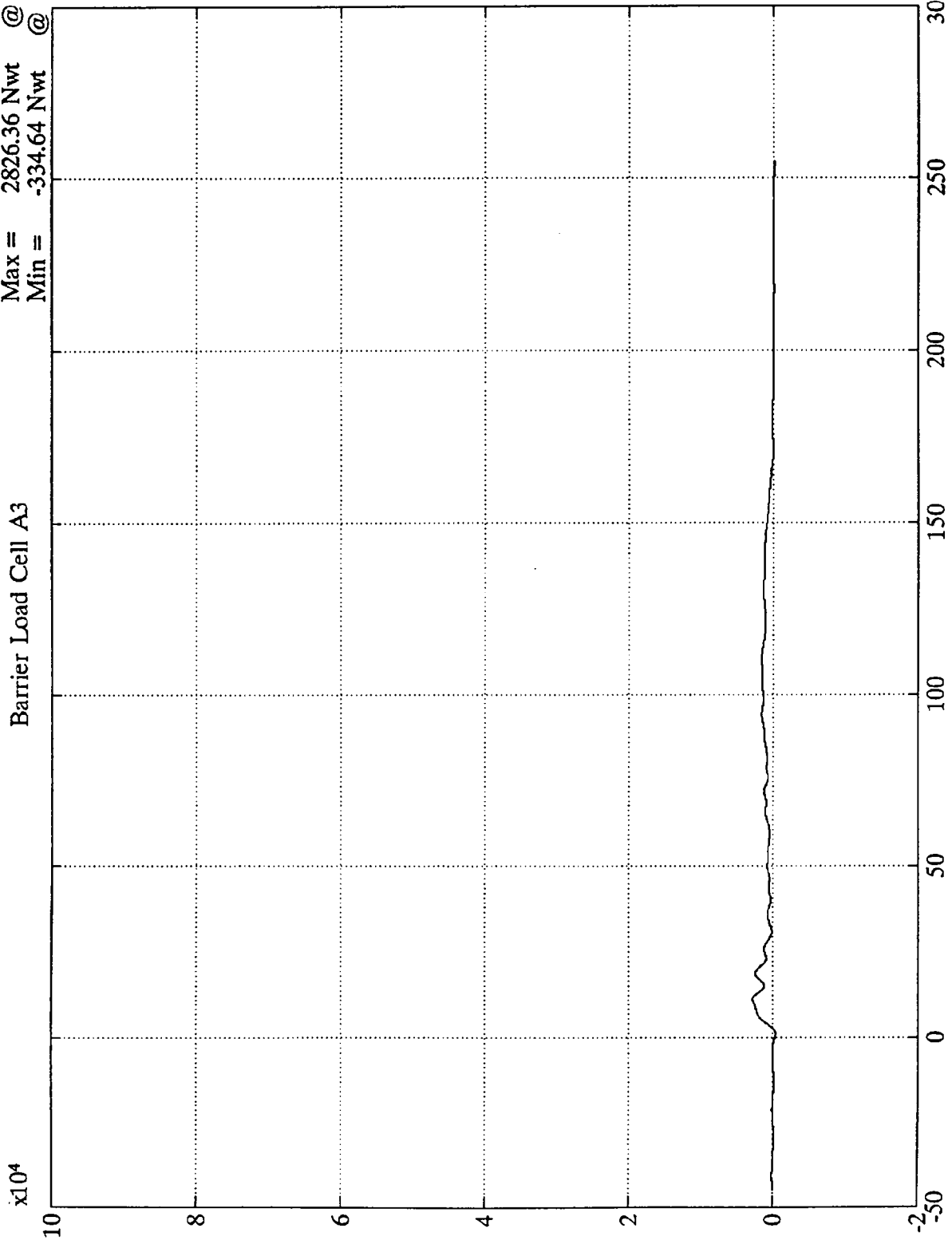
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 2826.36 Nwt @ 11.15 msec  
Min = -334.64 Nwt @ 0.95 msec

Barrier Load Cell A3



B-33

8120-8

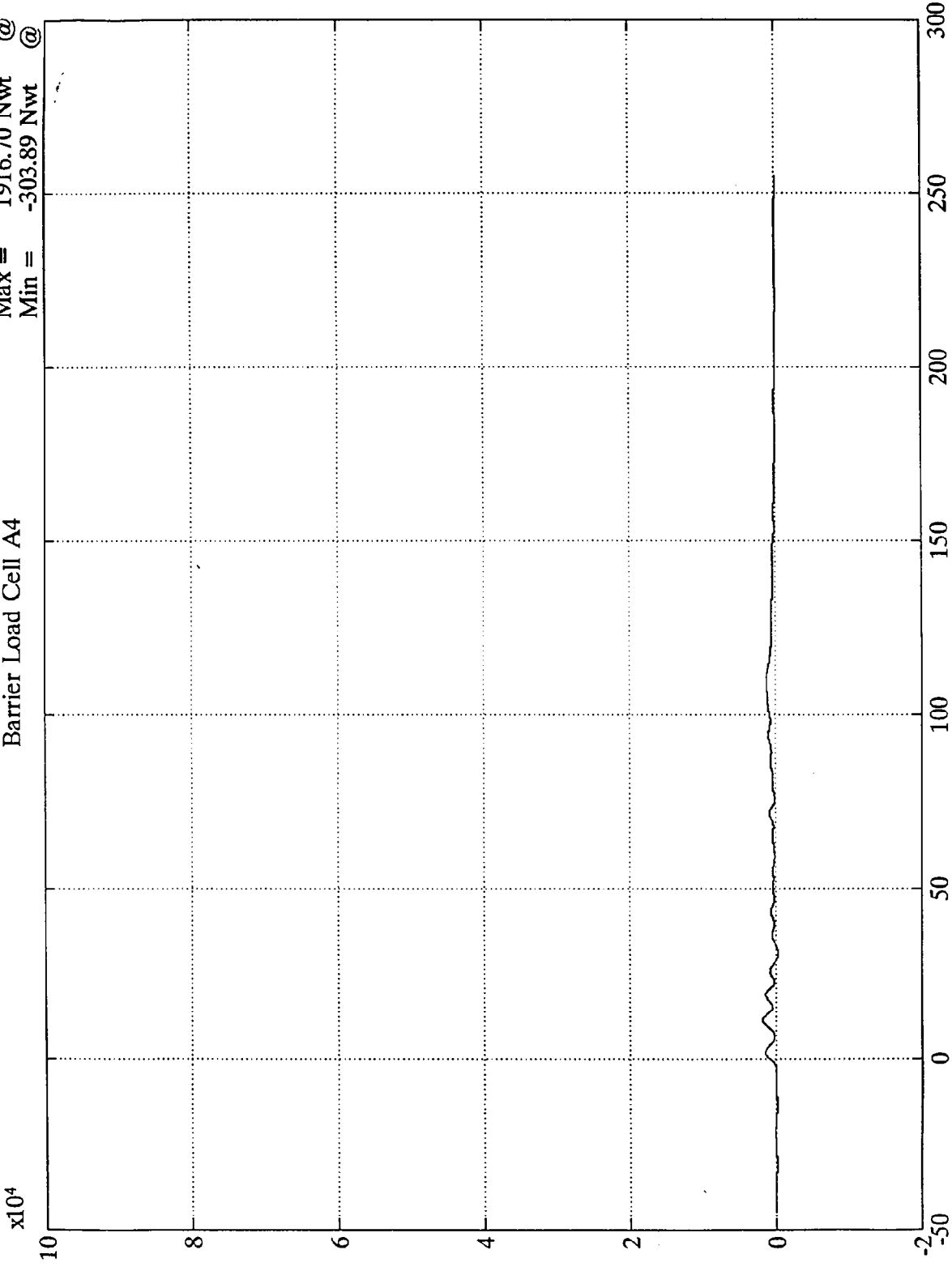
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell A4

Max = 1916.70 Nwt @ 11.27 msec  
Min = -303.89 Nwt @ 31.07 msec

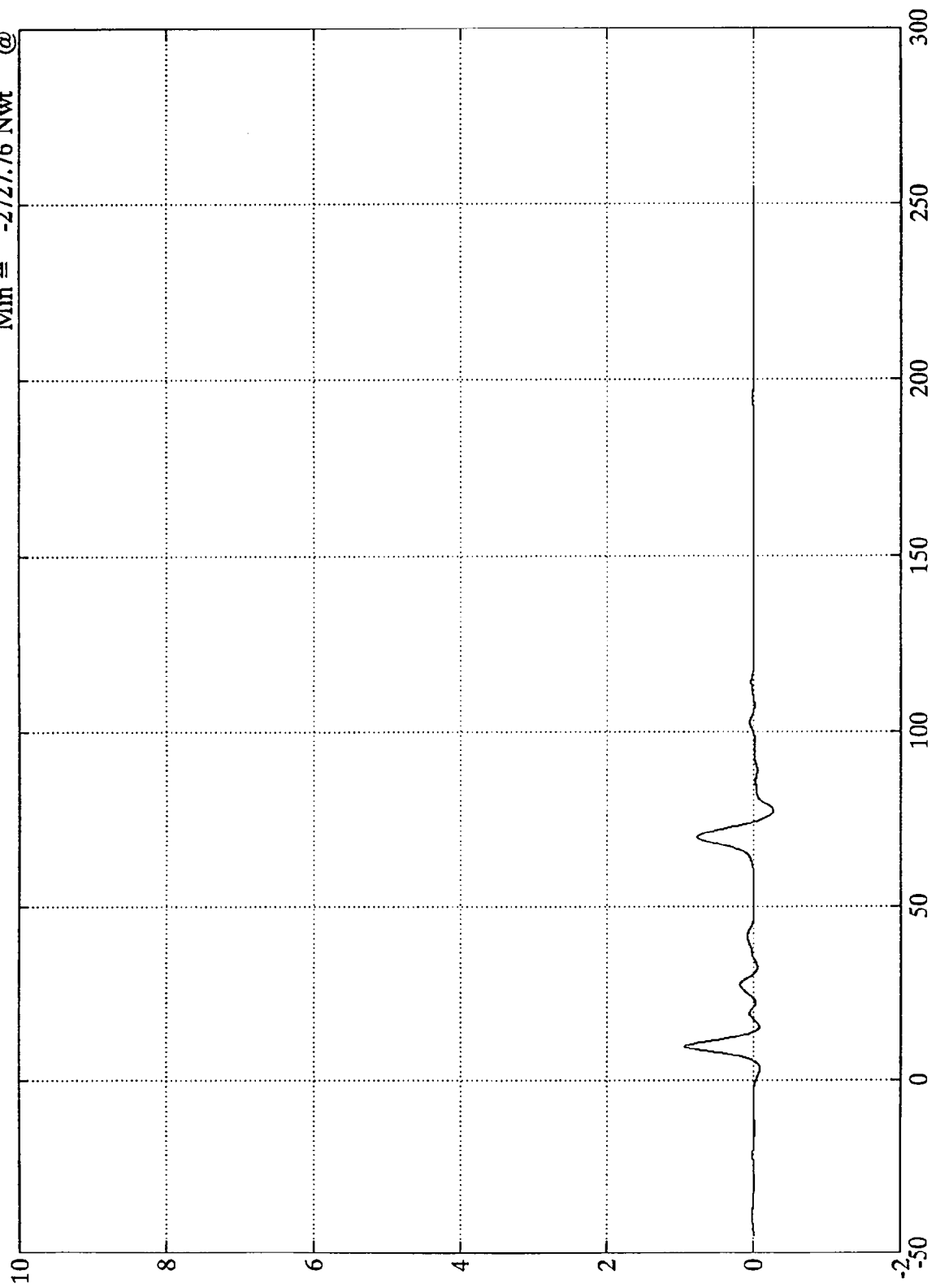


Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell A5  
Max = 9379.39 Nwt @ 9.71 msec  
Min = -2727.76 Nwt @ 77.40 msec



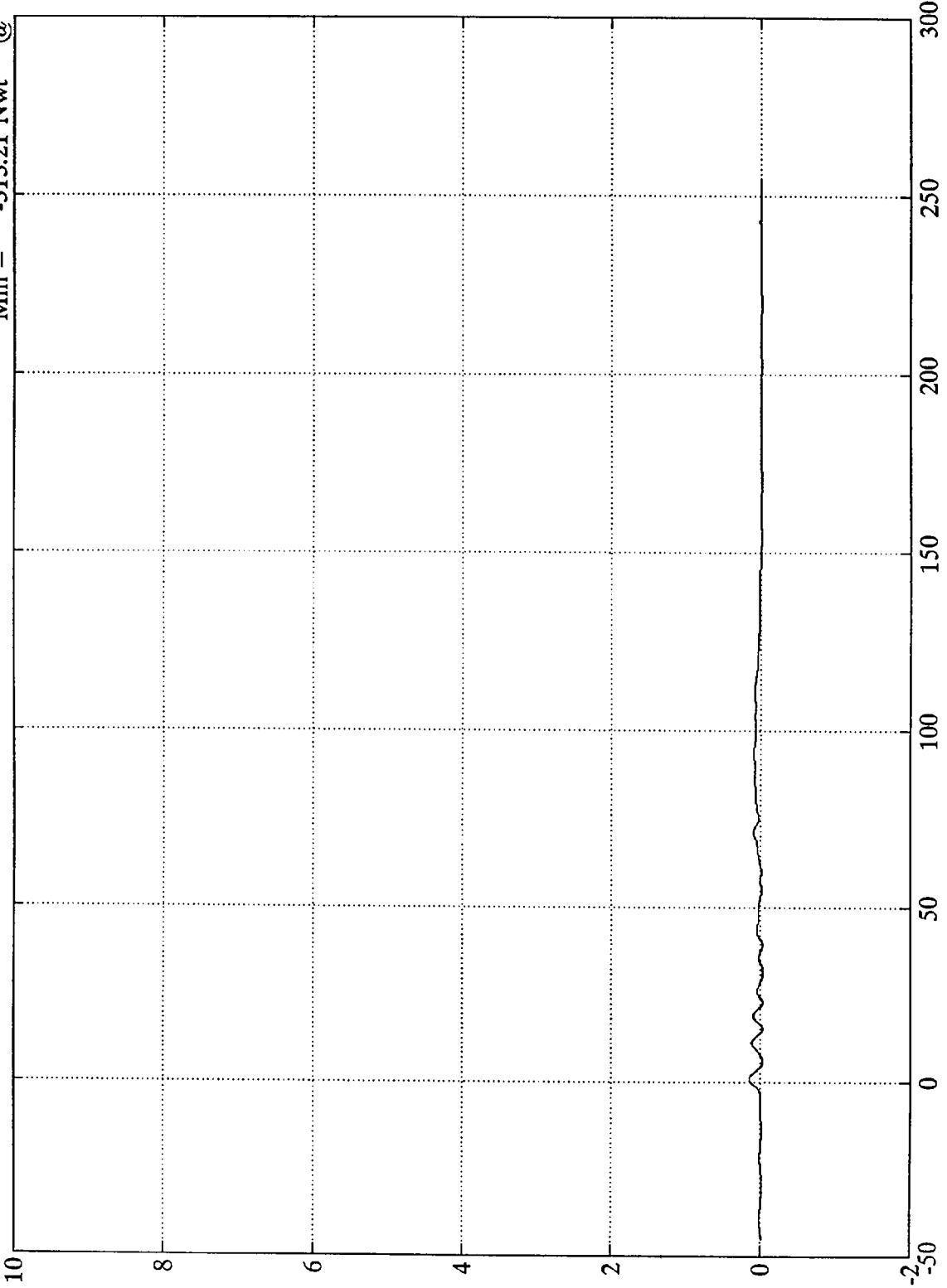
Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell A6

Max = 1553.77 Nwt @ 0.83 msec  
Min = -313.21 Nwt @ 31.67 msec



1Wt  
B-36

Time (msec)

SAE Filter Class 60

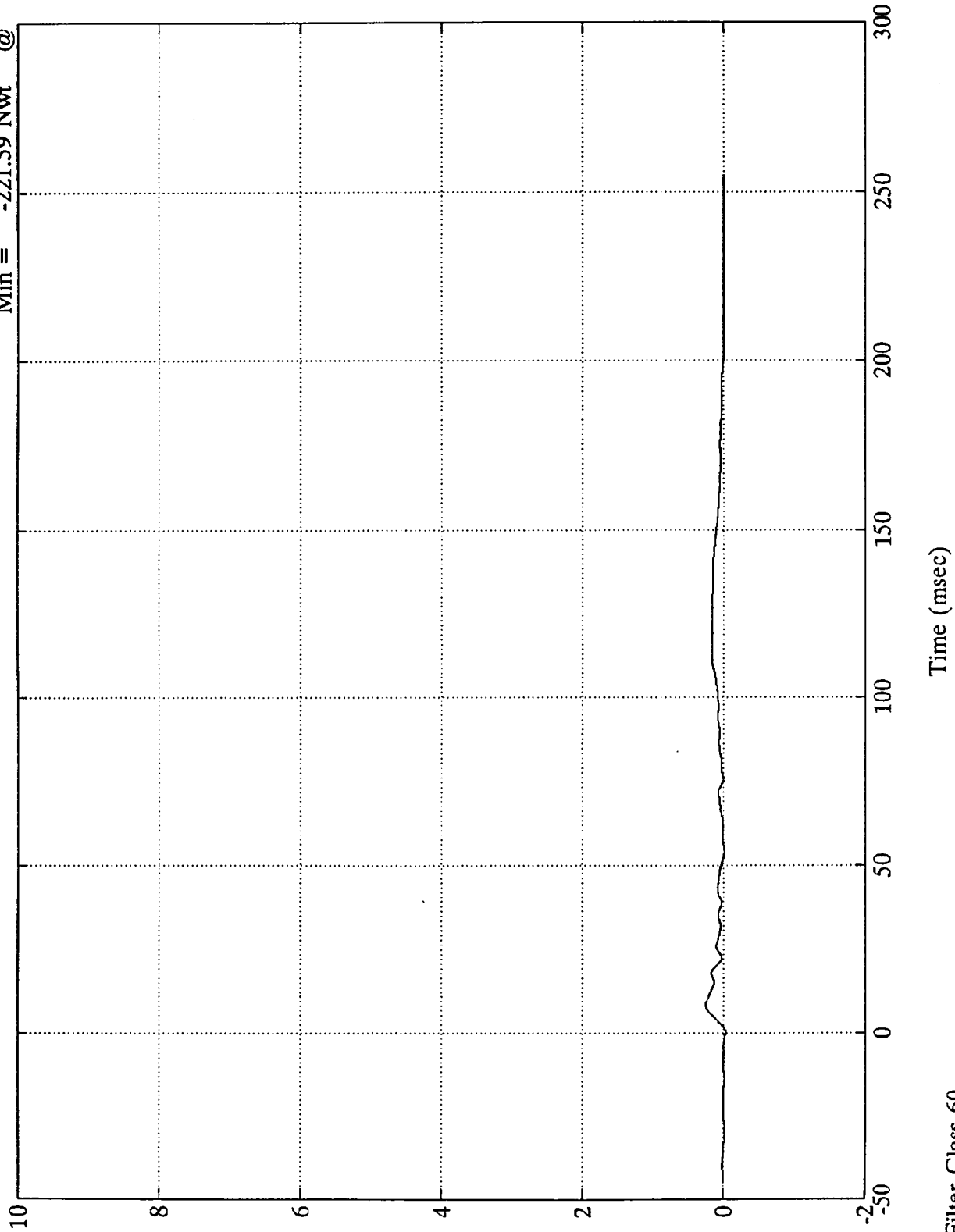
8120-8

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 2550.66 Nwt @ 8.39 msec  
Min = -221.59 Nwt @ 0.23 msec

Barrier Load Cell A7

$\times 10^4$



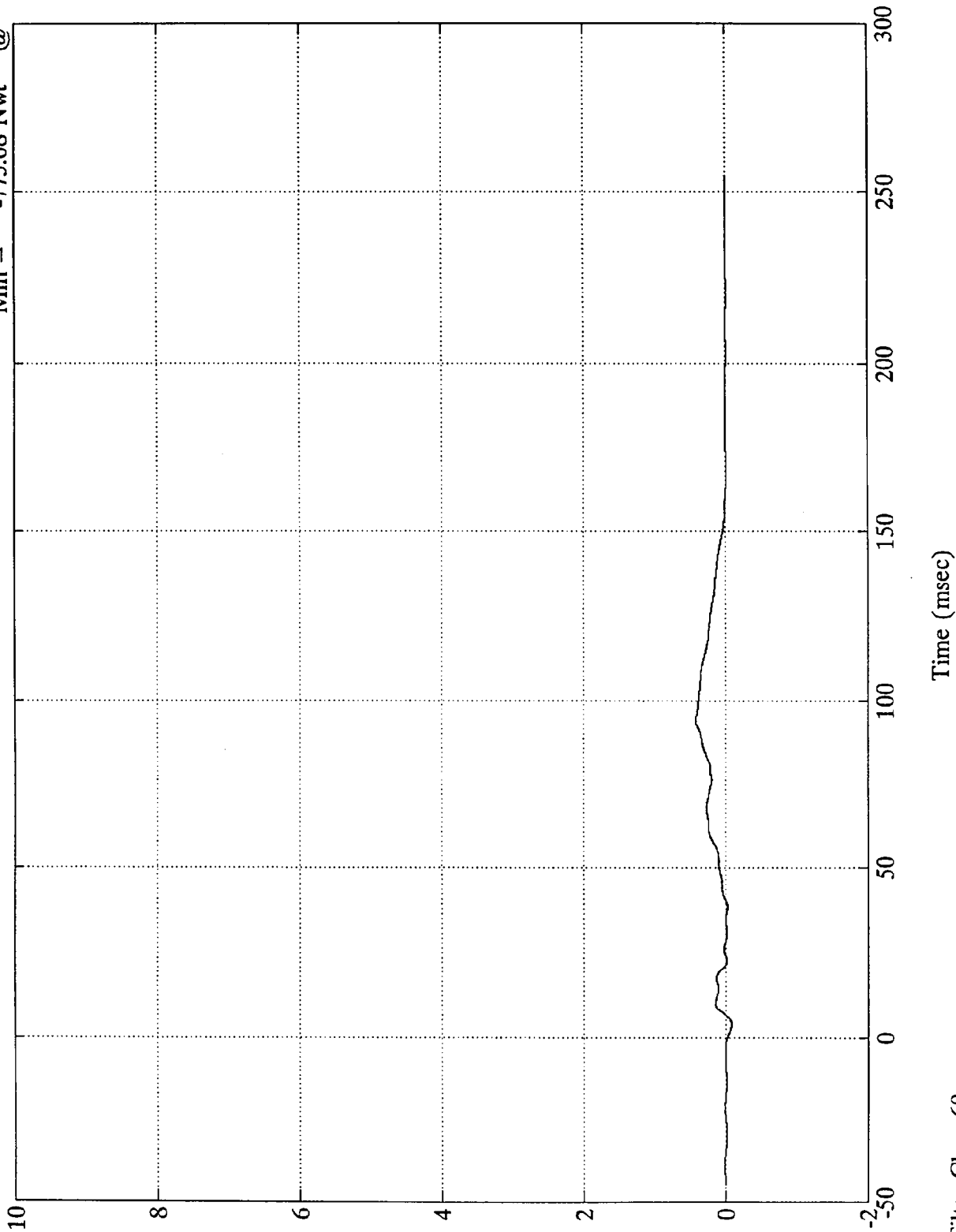
1MN  
B-37

8120-8

SAE Filter Class 60

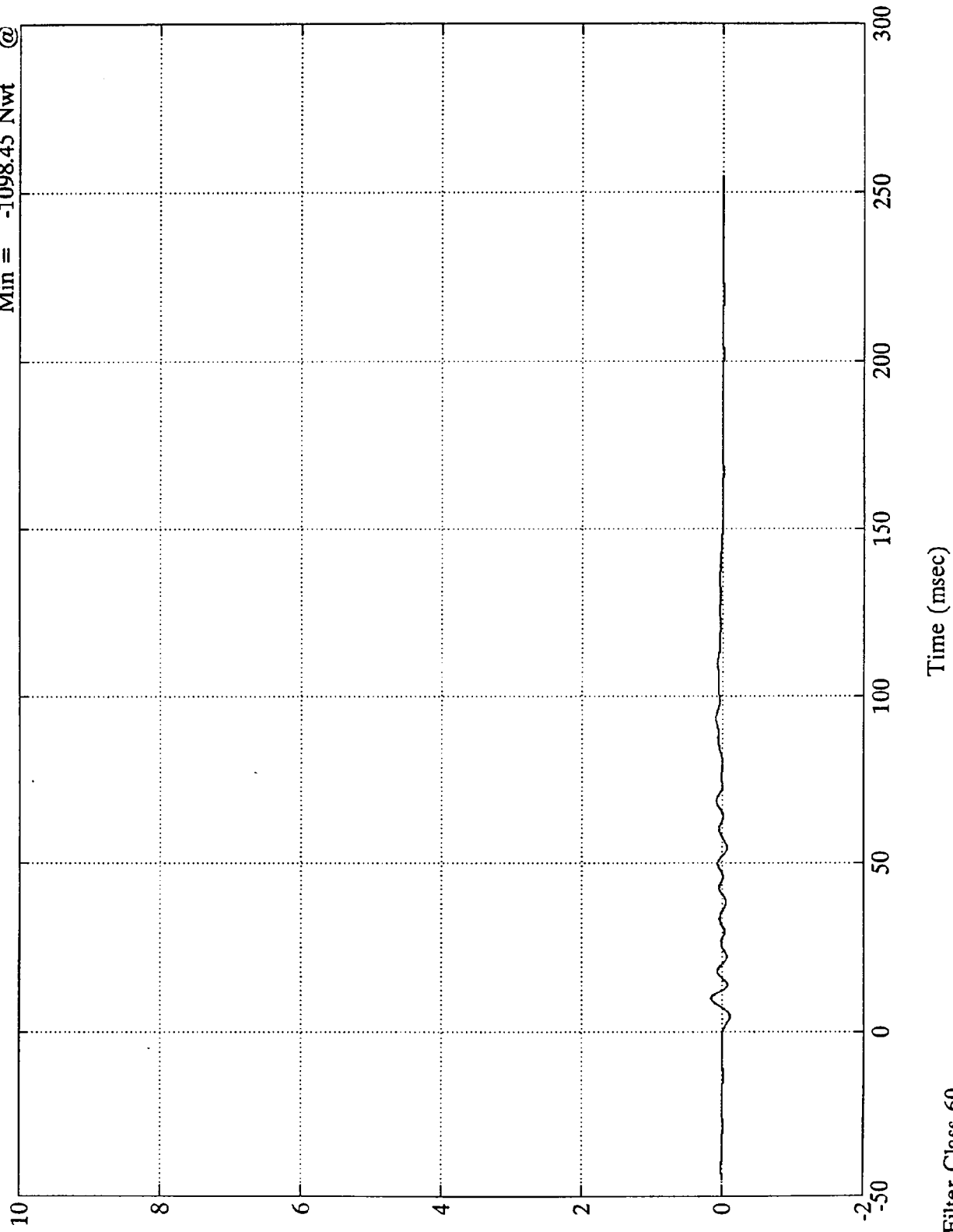
NCAP TEST #8 - 1994 FORD MUSTANG  
x10<sup>4</sup>

Barrier Load Cell A8  
Max = 4181.68 Nwt @ 94.08 msec  
Min = -775.08 Nwt @ 3.83 msec



NCAP TEST #8 - 1994 FORD MUSTANG  
x10<sup>4</sup>

Barrier Load Cell A9  
Max = 1583.38 Nwt @ 9.83 msec  
Min = -1098.45 Nwt @ 4.55 msec

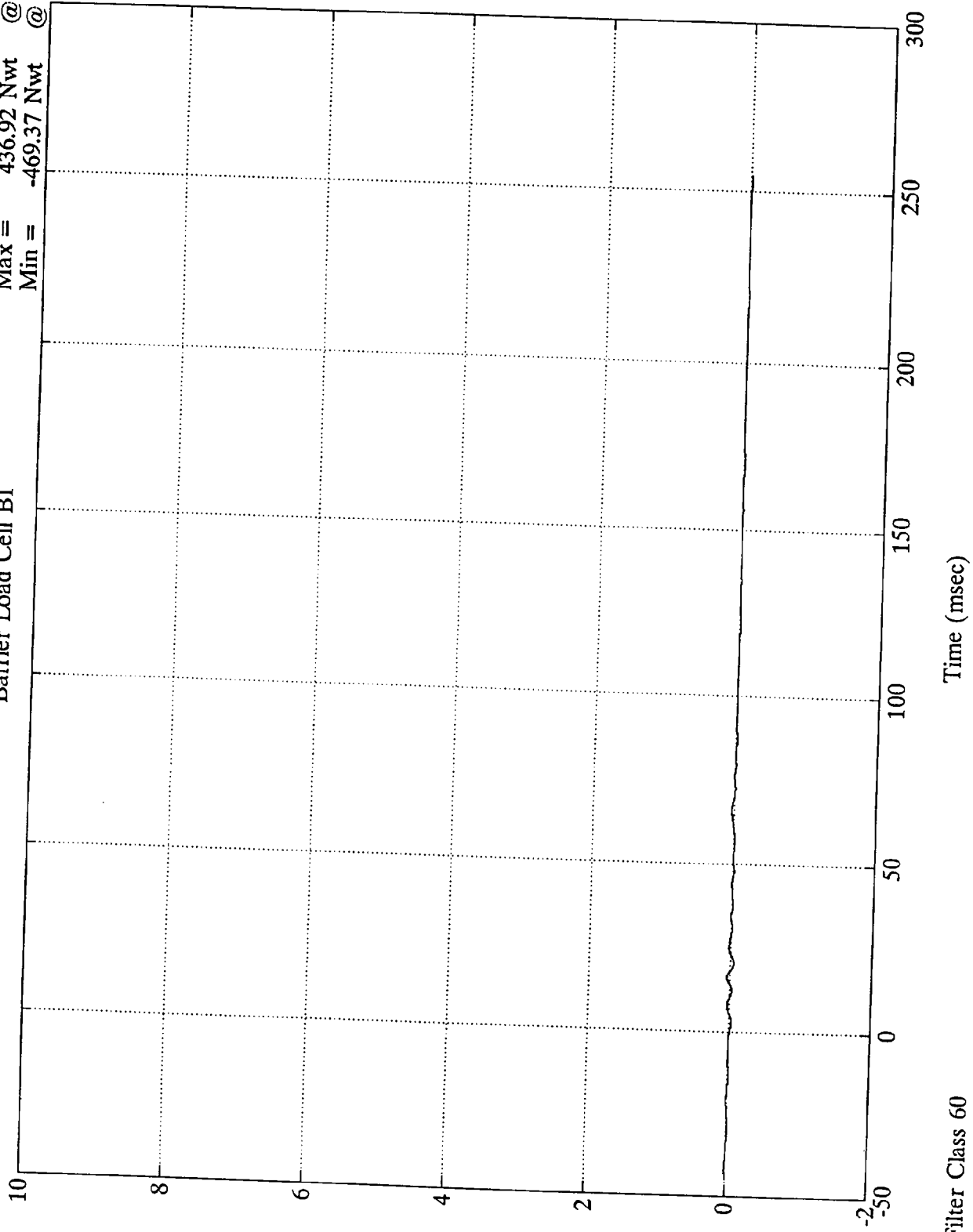


NCAP TEST #8 - 1994 FORD MUSTANG

x10<sup>4</sup>

Barrier Load Cell B1

Max = 436.92 Nwt @ 15.95 msec  
Min = -469.37 Nwt @ 20.15 msec



1MN  
B-40

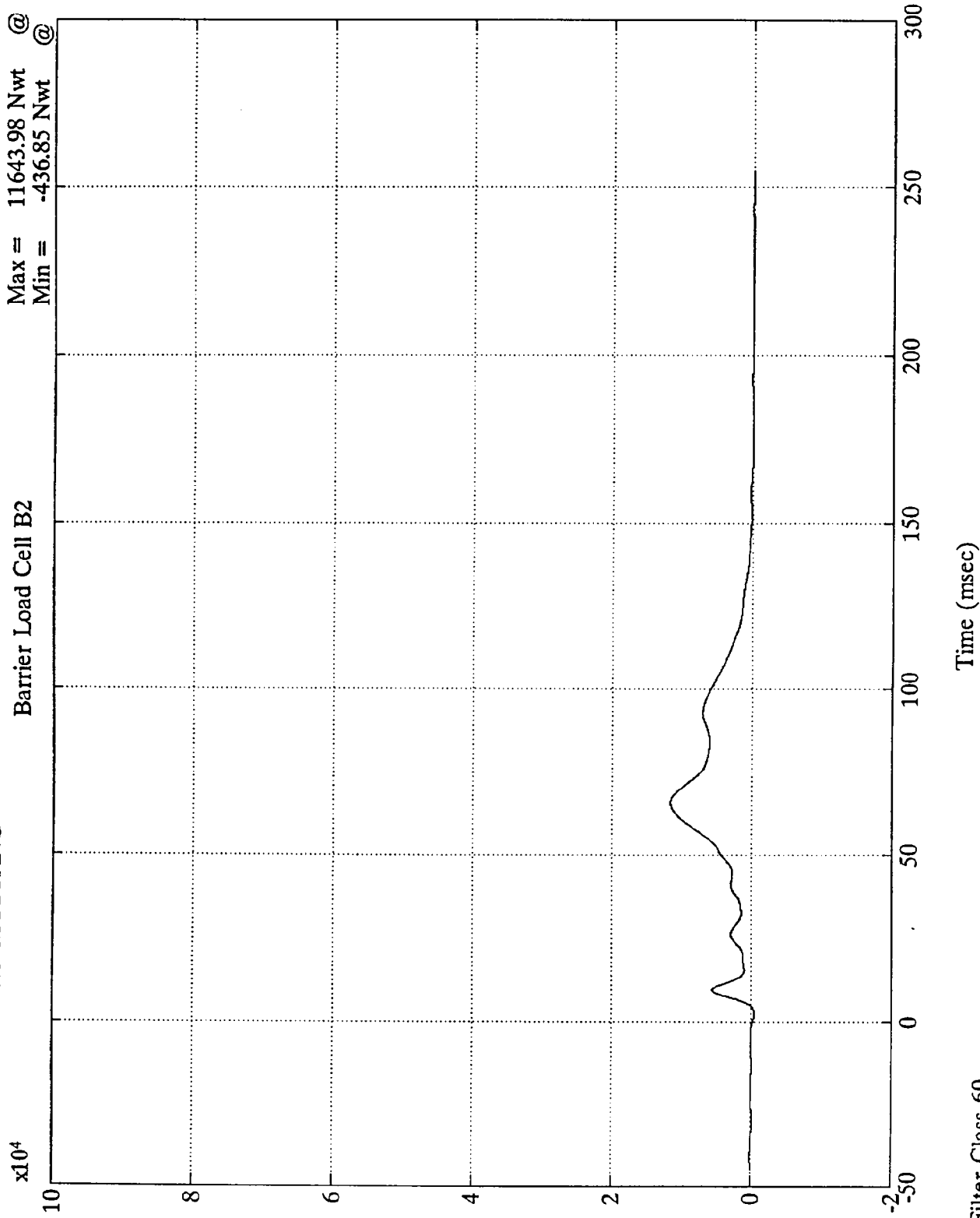
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B2  
Max = 11643.98 Nwt @ 65.52 msec  
Min = -436.85 Nwt @ 2.39 msec



10N  
B-41

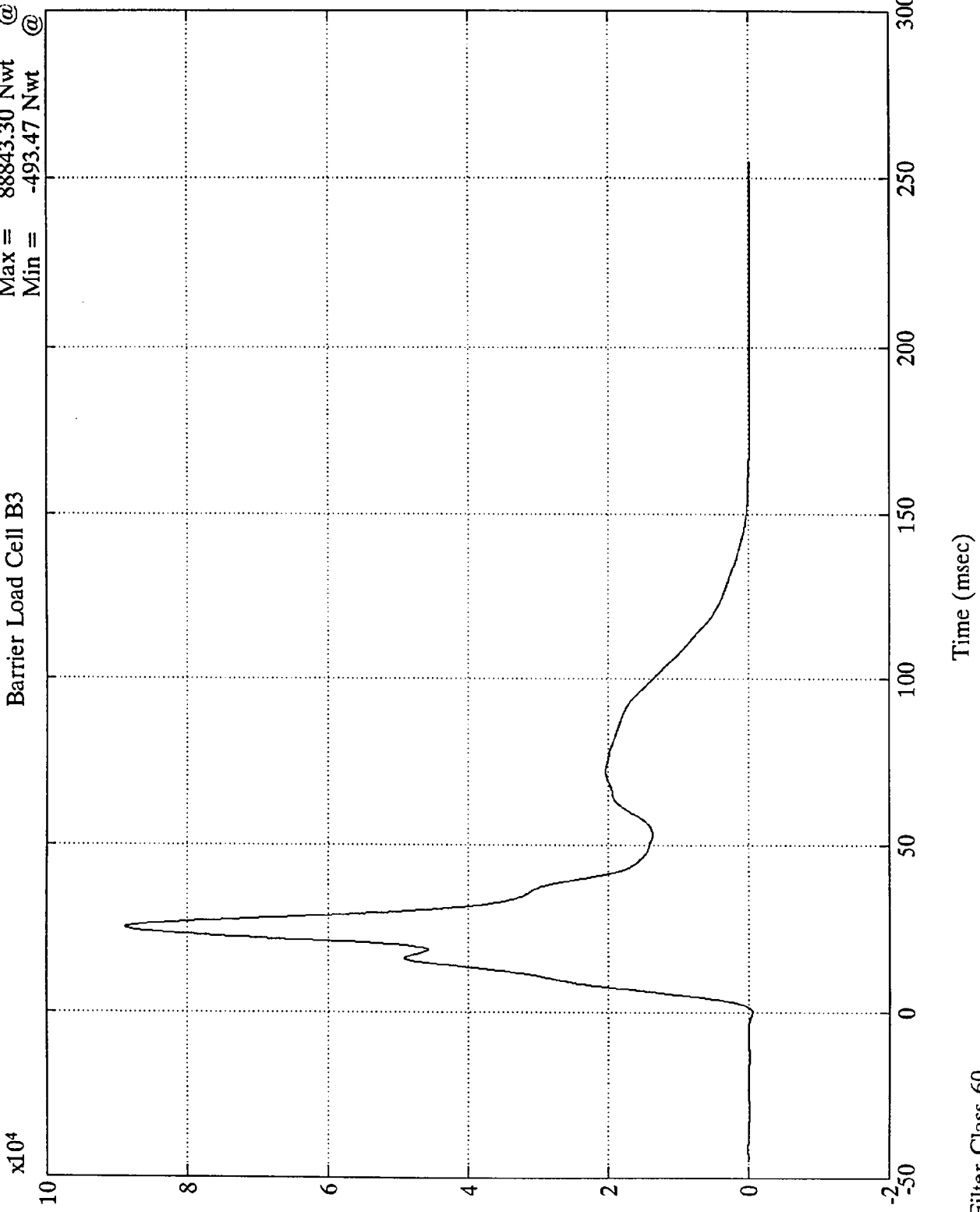
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B3  
Max = 88843.30 Nwt @ 25.31 msec  
Min = -493.47 Nwt @ -0.00 msec



1MN  
B-42

8120-8

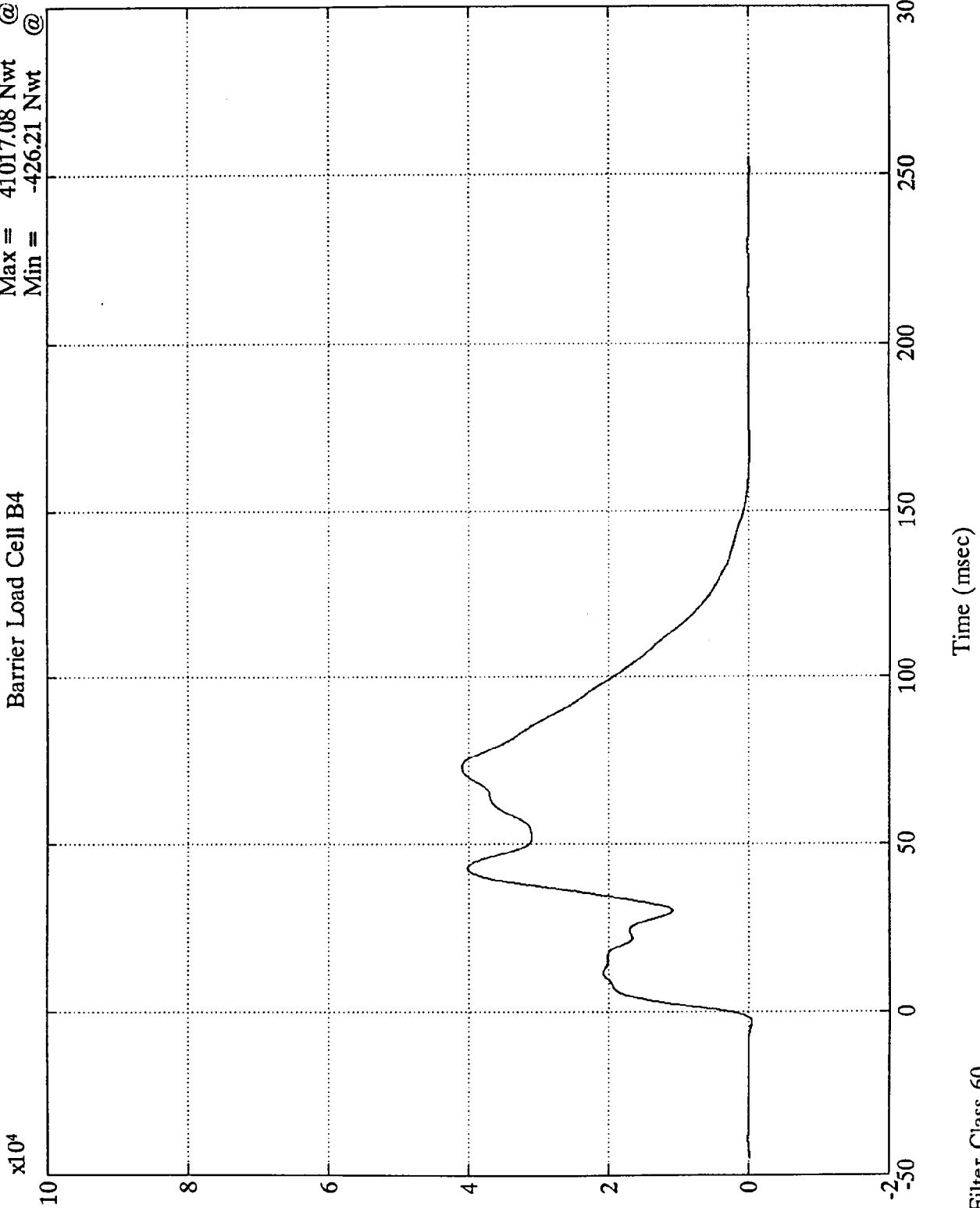
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B4

Max = 41017.08 Nwt @ 72.83 msec  
Min = -426.21 Nwt @ -3.24 msec



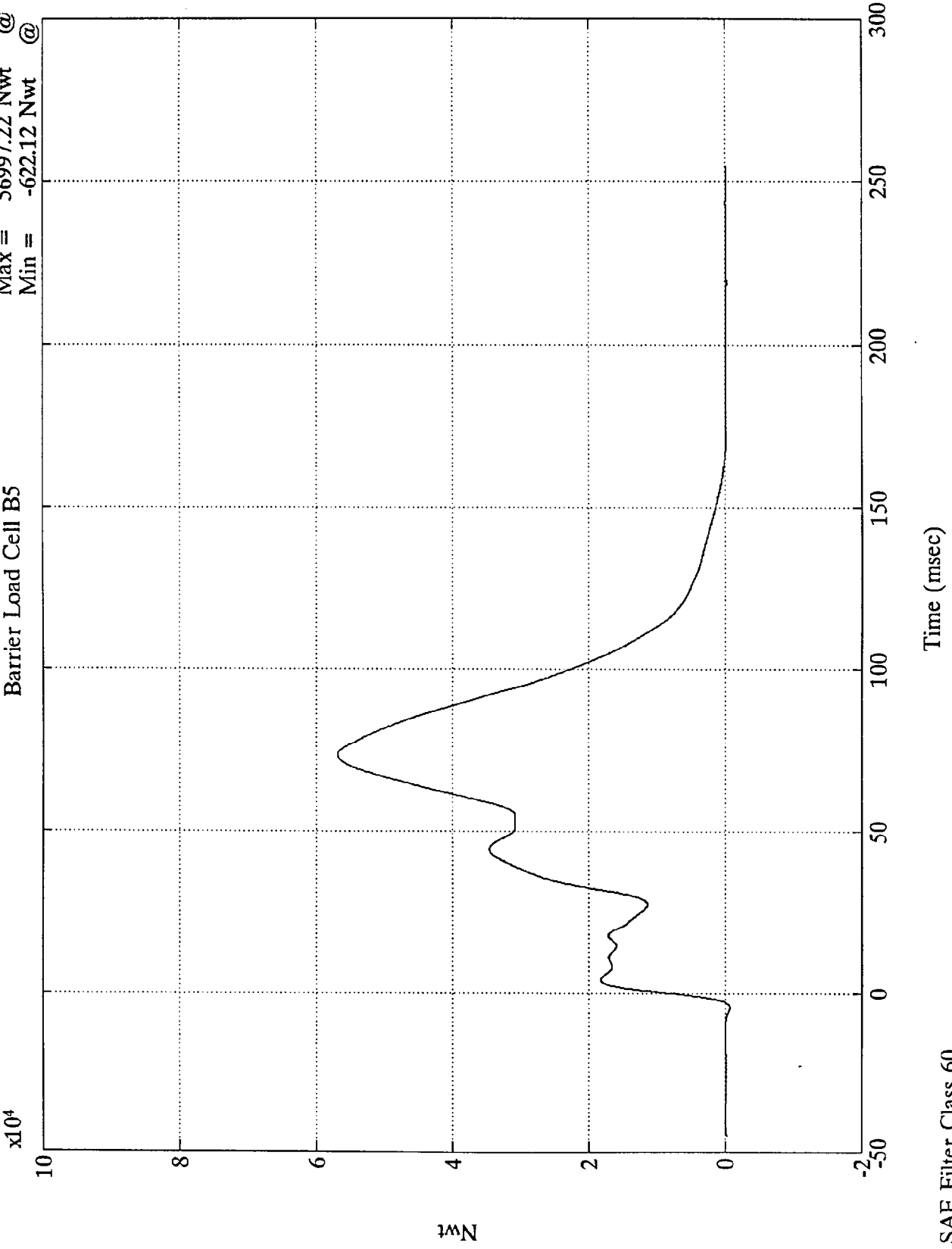
1MN  
B-43

8120-8

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B5  
Max = 56997.22 Nwt @ 73.44 msec  
Min = -622.12 Nwt @ -4.32 msec



Nwt  
B-44

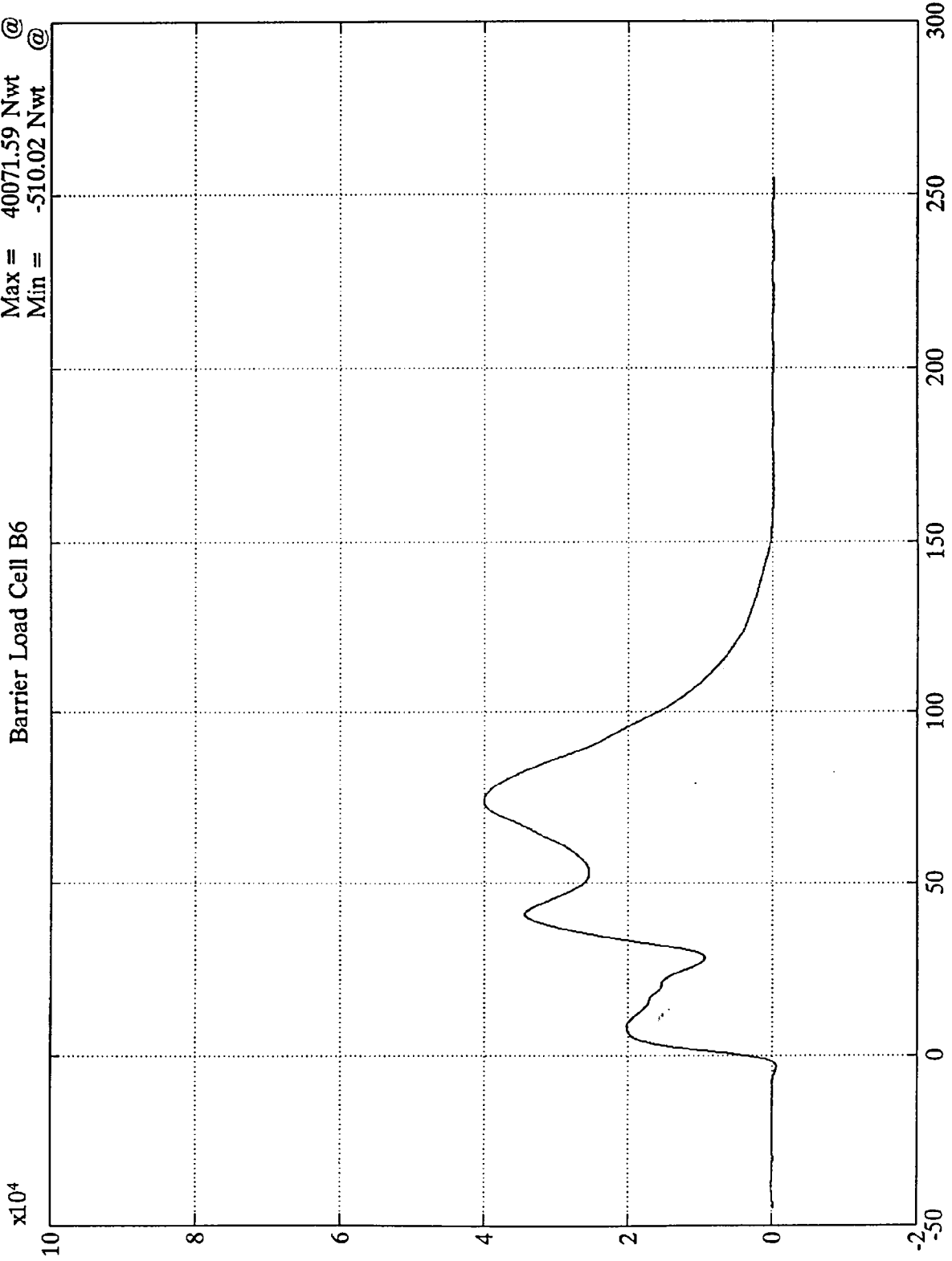
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B6  
Max = 40071.59 Nwt @ 73.92 msec  
Min = -510.02 Nwt @ -3.36 msec



1WV  
B-45

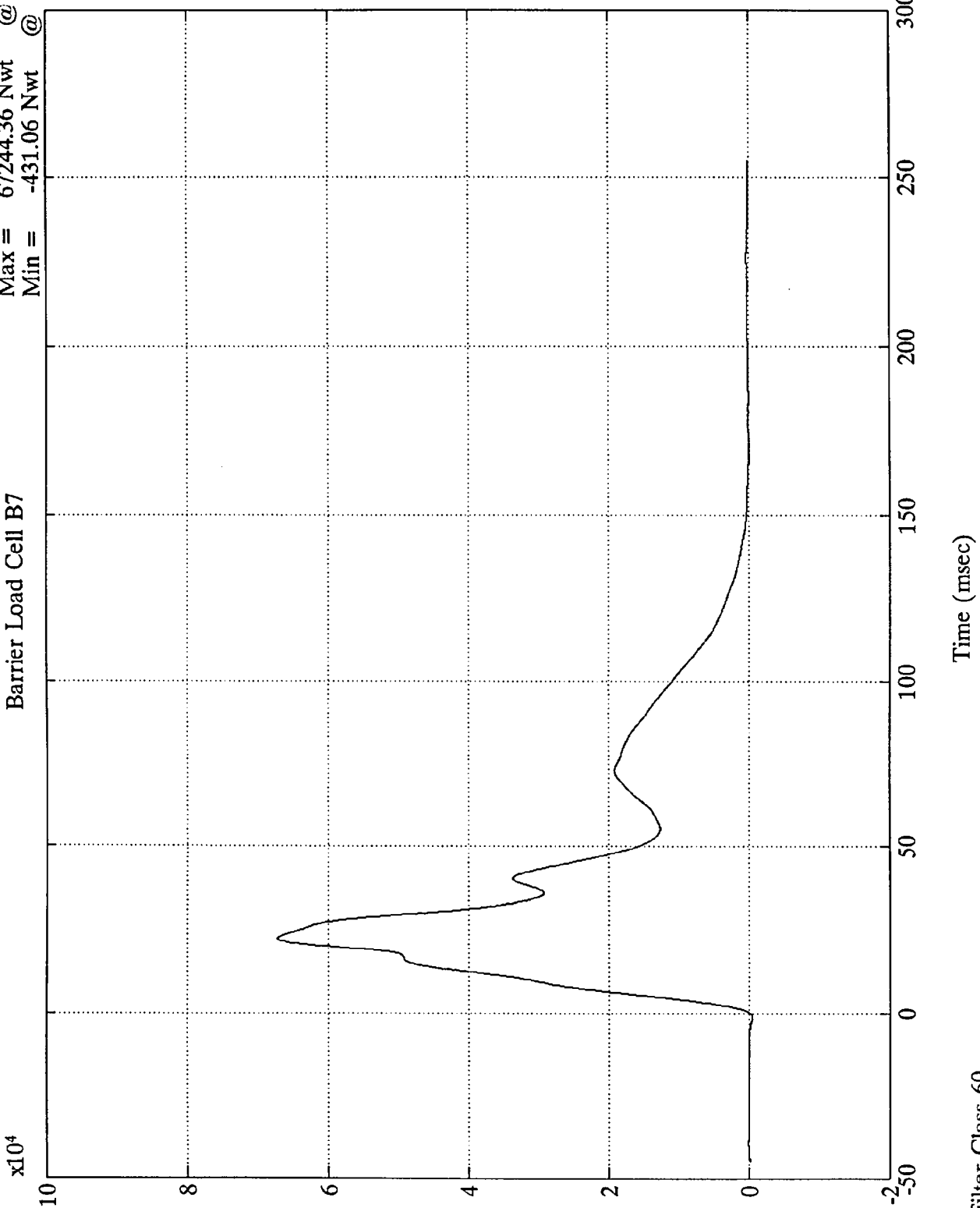
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B7  
Max = 67244.36 Nwt @ 22.43 msec  
Min = -431.06 Nwt @ -1.20 msec



1MN  
B-46

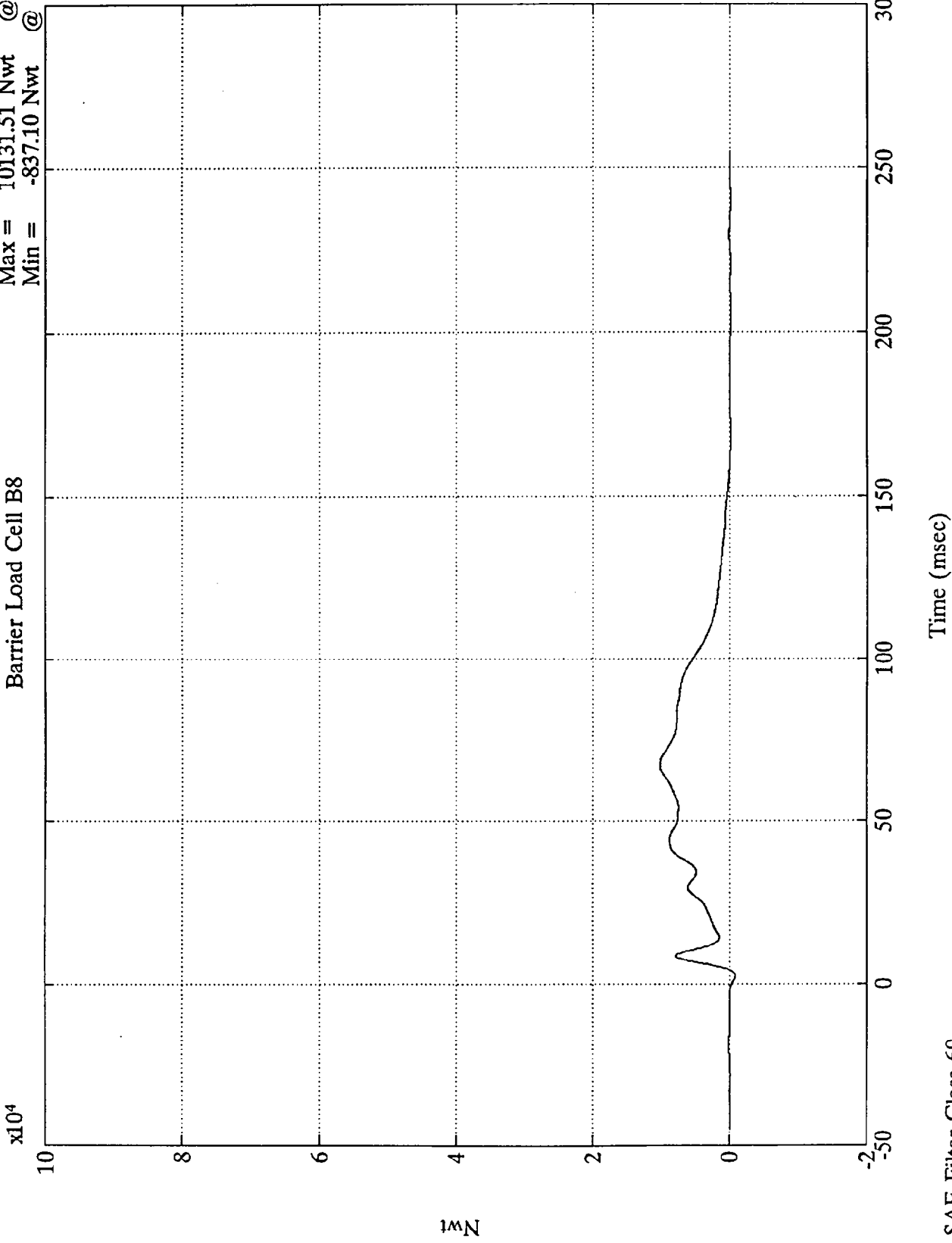
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell B8  
Max = 10131.51 Nwt @ 67.32 msec  
Min = -837.10 Nwt @ 2.39 msec



1wN

B-47

8120-8

SAE Filter Class 60

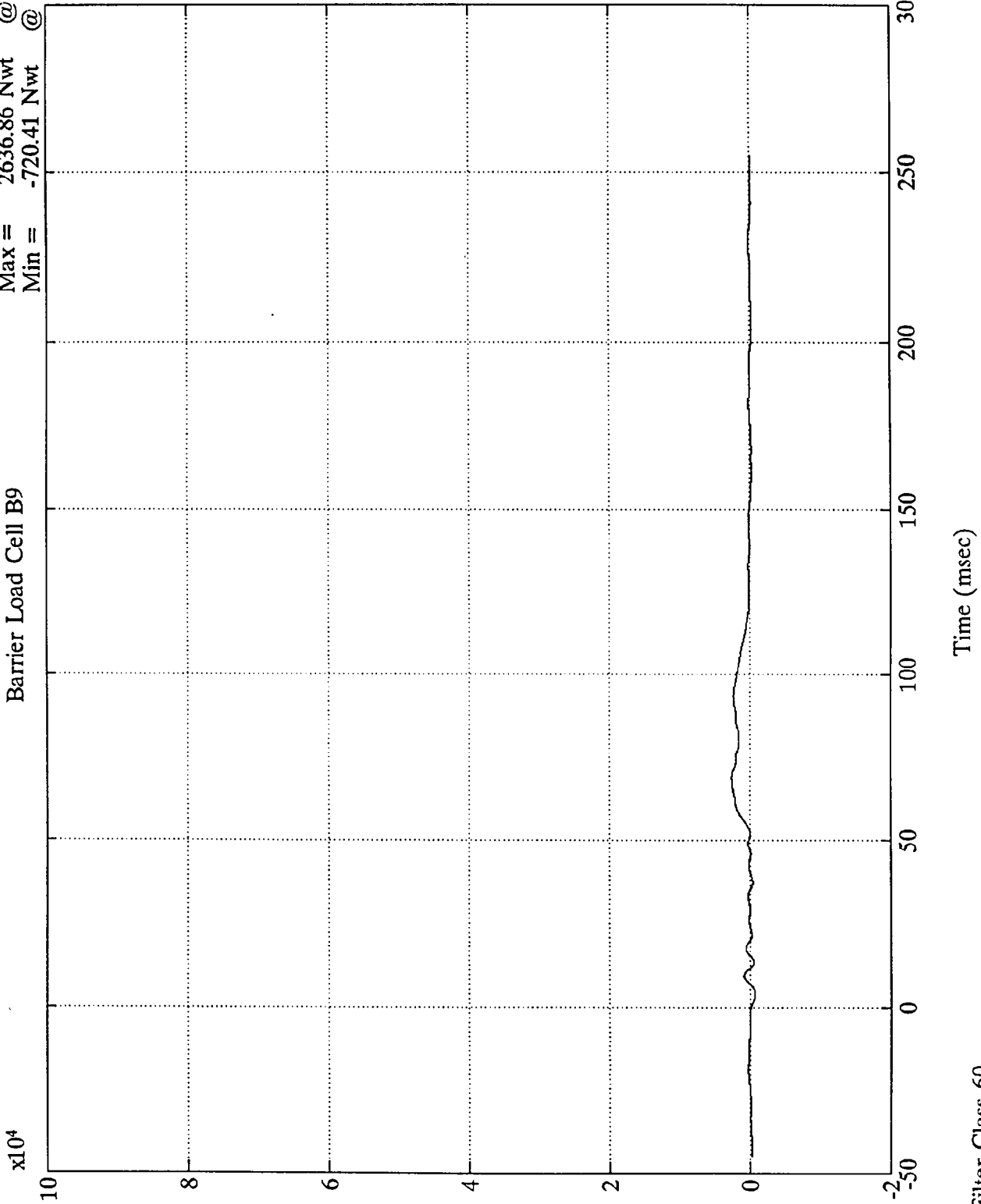
Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 2636.86 Nwt @ 68.40 msec  
Min = -720.41 Nwt @ 3.83 msec

Barrier Load Cell B9

Max = 2636.86 Nwt @ 68.40 msec  
Min = -720.41 Nwt @ 3.83 msec



1MN  
B-48

8120-8

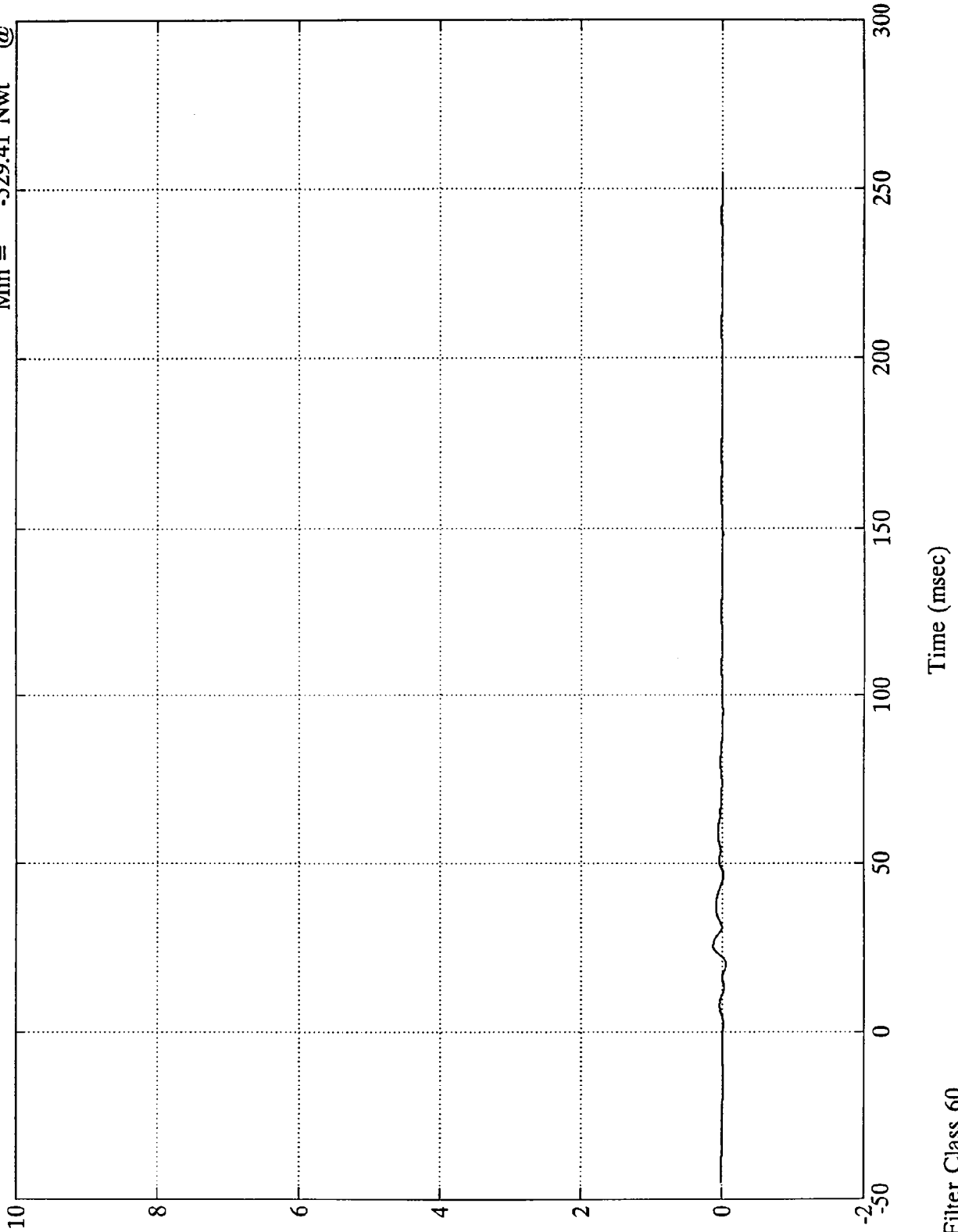
SAE Filter Class 60

Time (msec)



NCAP TEST #8 - 1994 FORD MUSTANG  
x10<sup>4</sup>

Barrier Load Cell C1  
Max = 1316.51 Nwt @ 25.31 msec  
Min = -529.41 Nwt @ 20.03 msec



1<sup>st</sup> N  
B-49

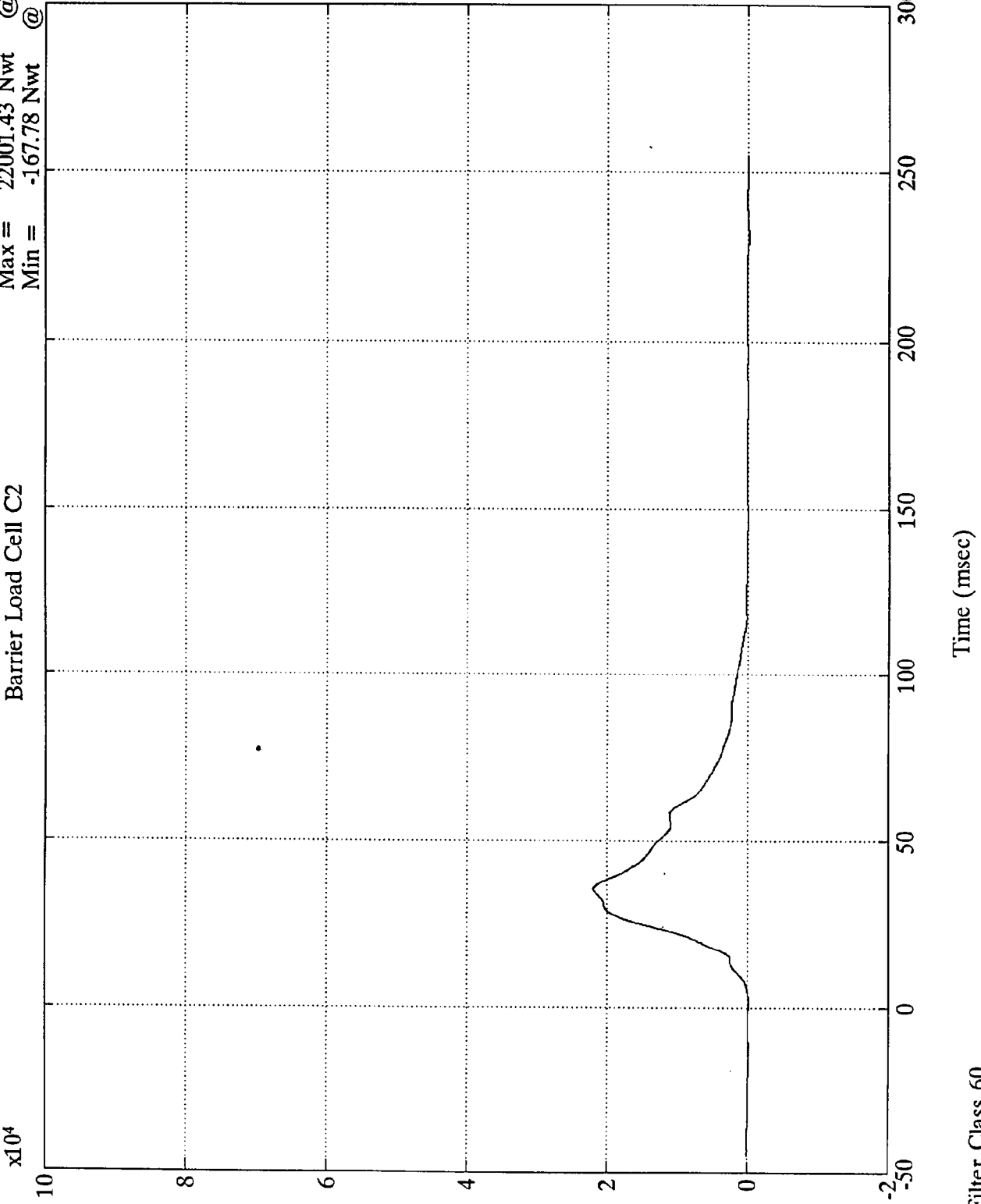
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell C2  
Max = 22001.43 Nwt @ 35.15 msec  
Min = -167.78 Nwt @ 1.79 msec



10<sup>4</sup>N  
B-50

8120-8

SAE Filter Class 60

Time (msec)

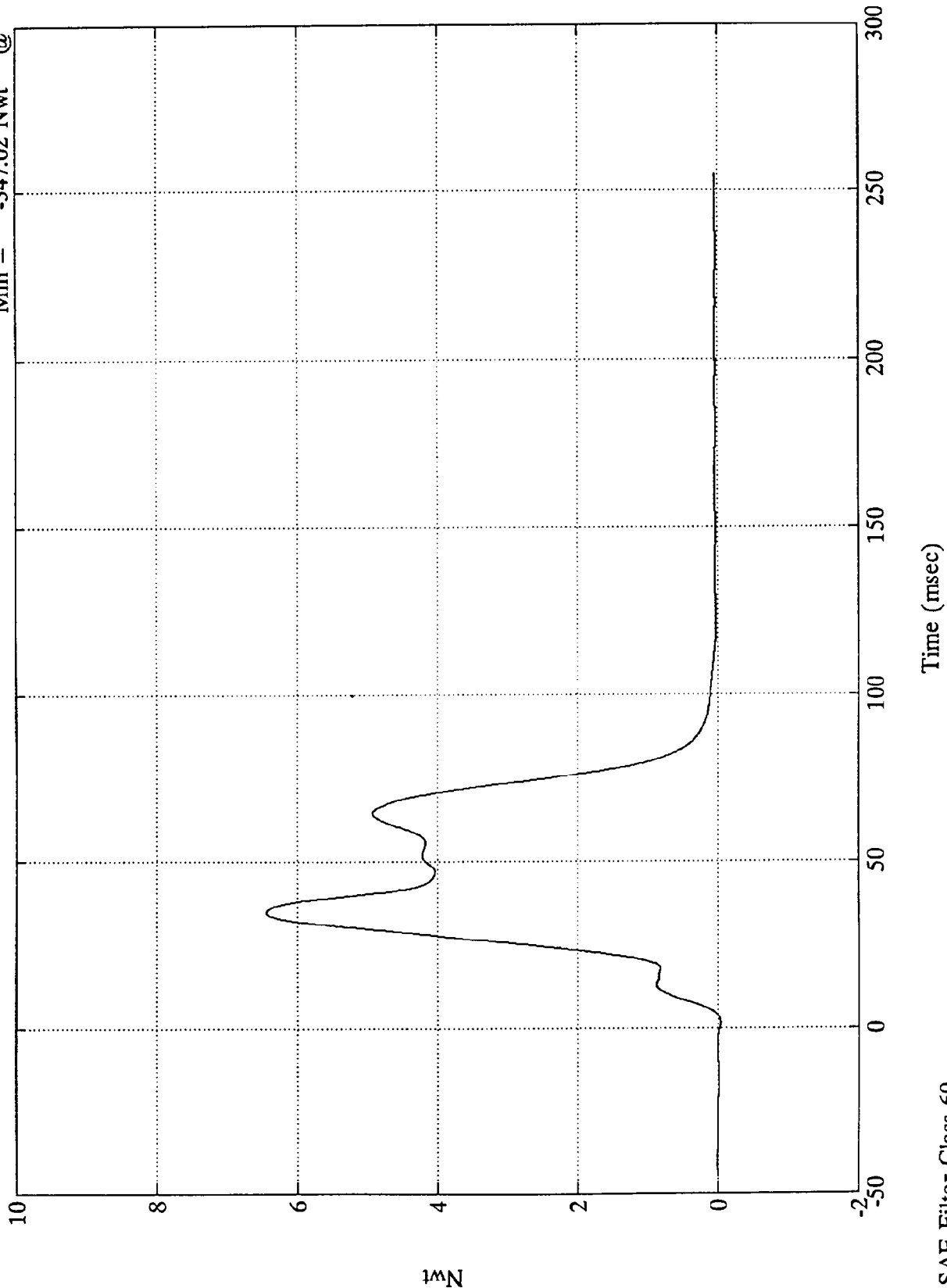


NCAP TEST #8 - 1994 FORD MUSTANG

$\times 10^4$

Barrier Load Cell C3

Max = 64452.63 Nwt @ 34.79 msec  
Min = -347.02 Nwt @ 1.43 msec



Nwt

B-51

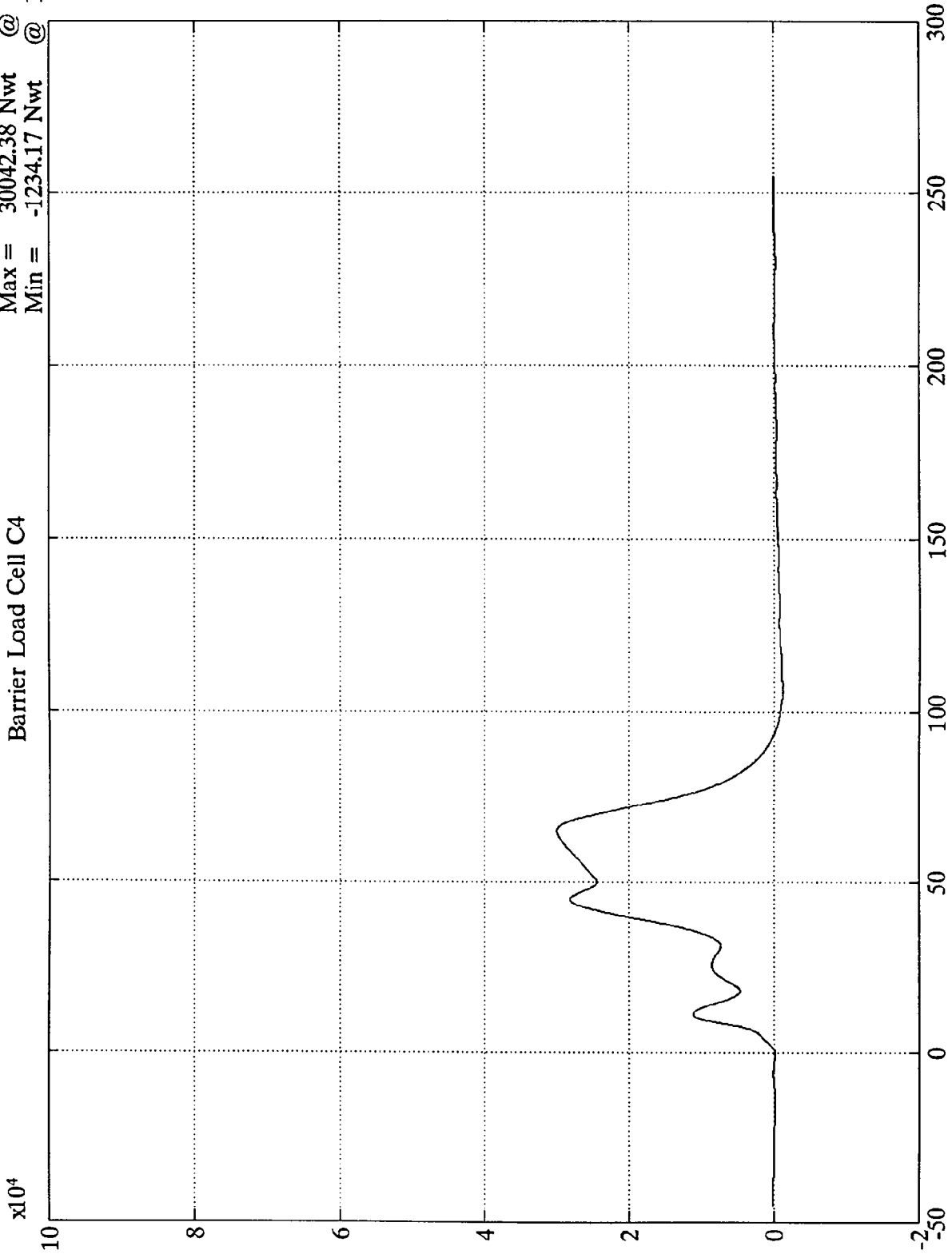
8120-8

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 30042.38 Nwt @ 65.04 msec  
Min = -1234.17 Nwt @ 105.96 msec

Barrier Load Cell C4



Time (msec)

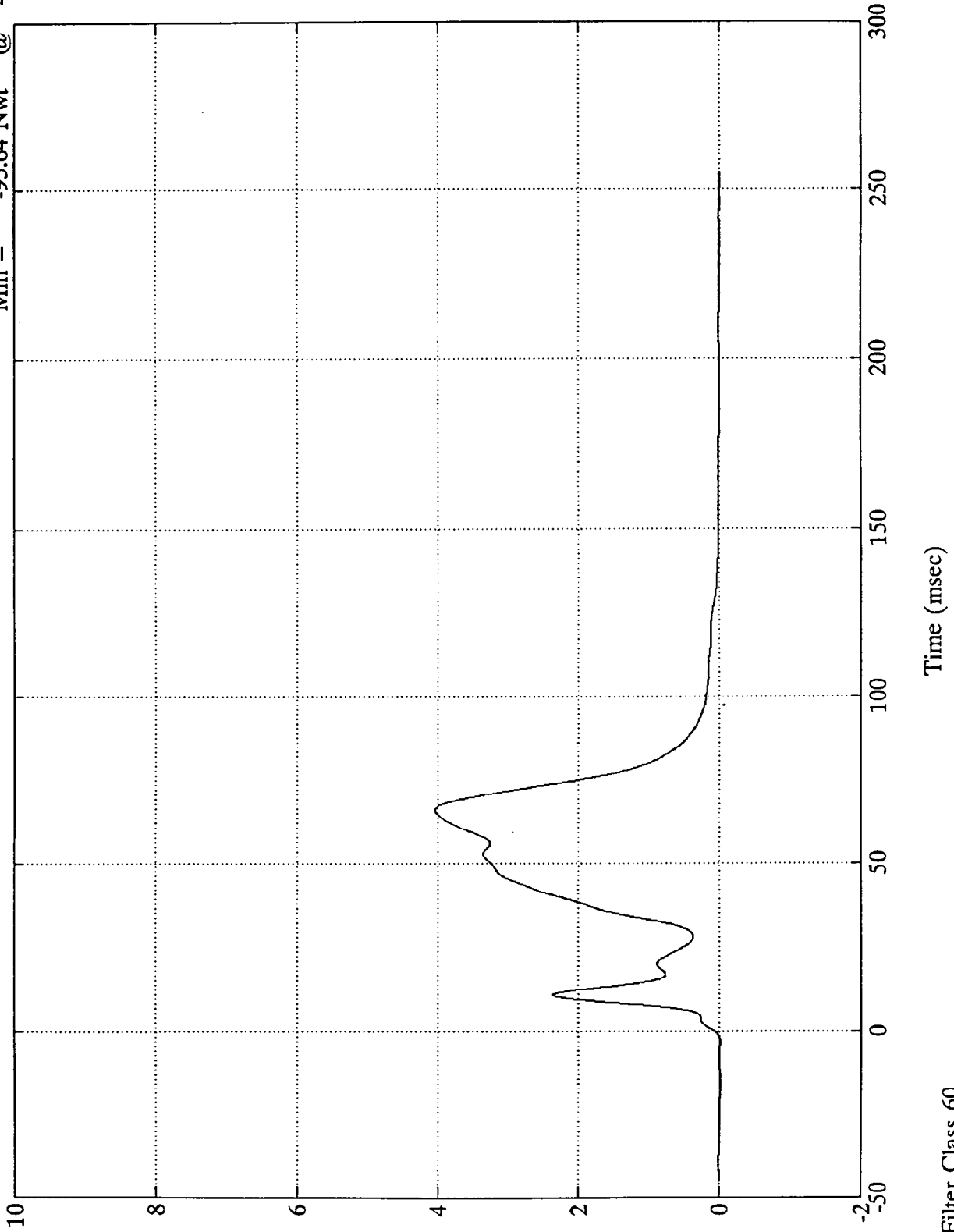
SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

x10<sup>4</sup>

Barrier Load Cell C5

Max = 40419.33 Nwt @ 65.76 msec  
Min = -95.64 Nwt @ -3.00 msec



10<sup>4</sup>N  
B-53

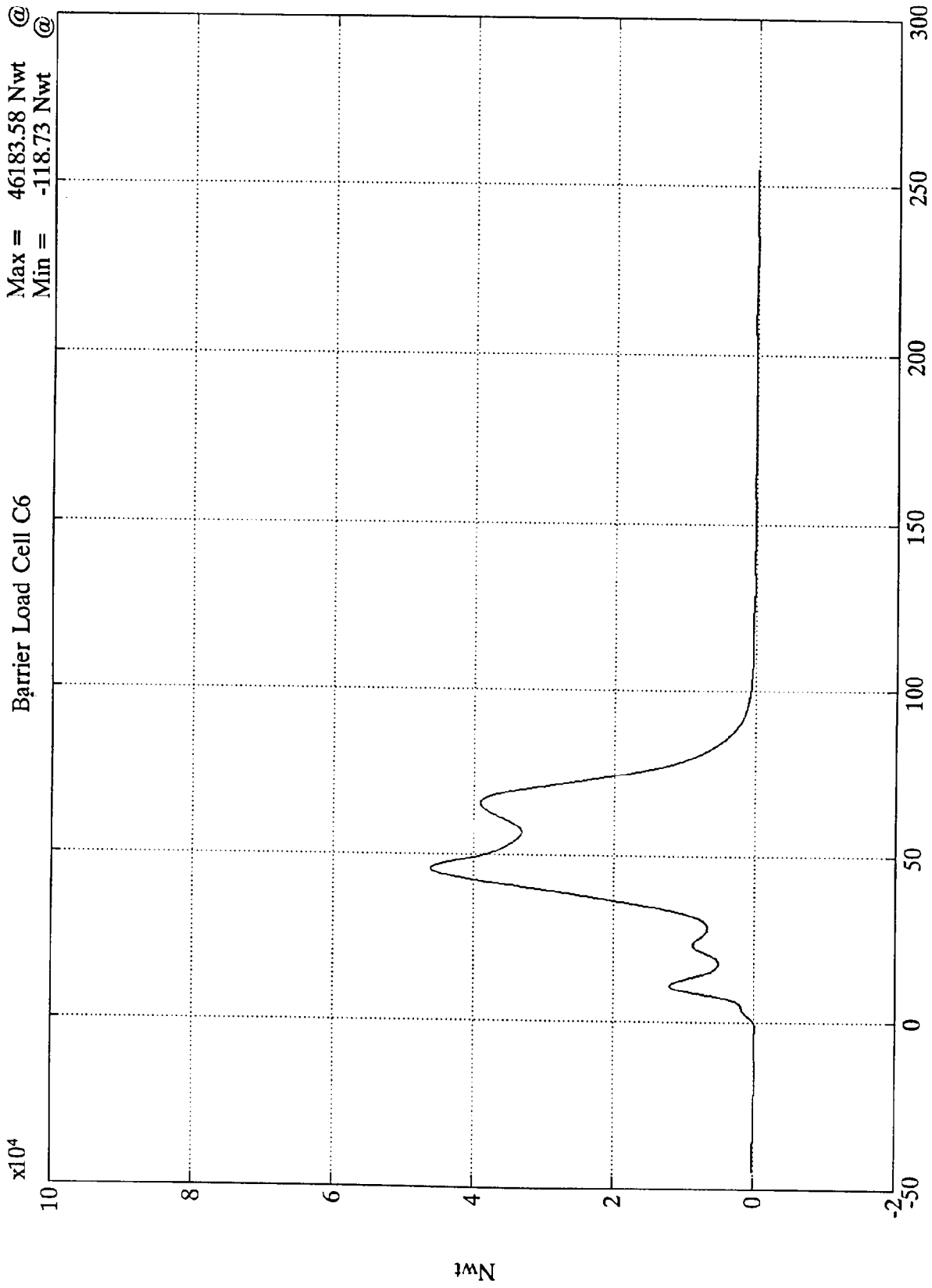
8120-8

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 46183.58 Nwt @ 45.72 msec  
Min = -118.73 Nwt @ -18.00 msec

Barrier Load Cell C6

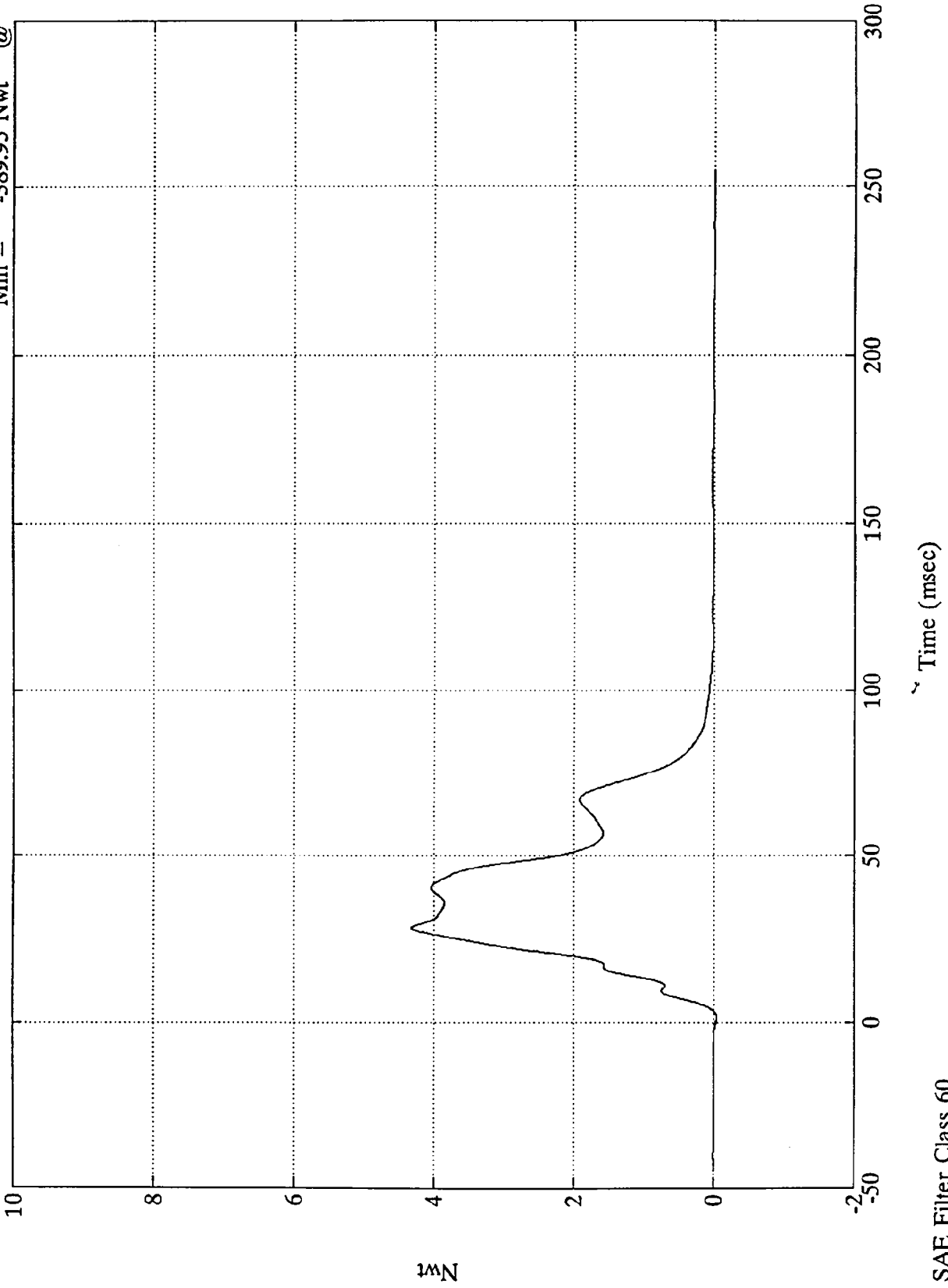


Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

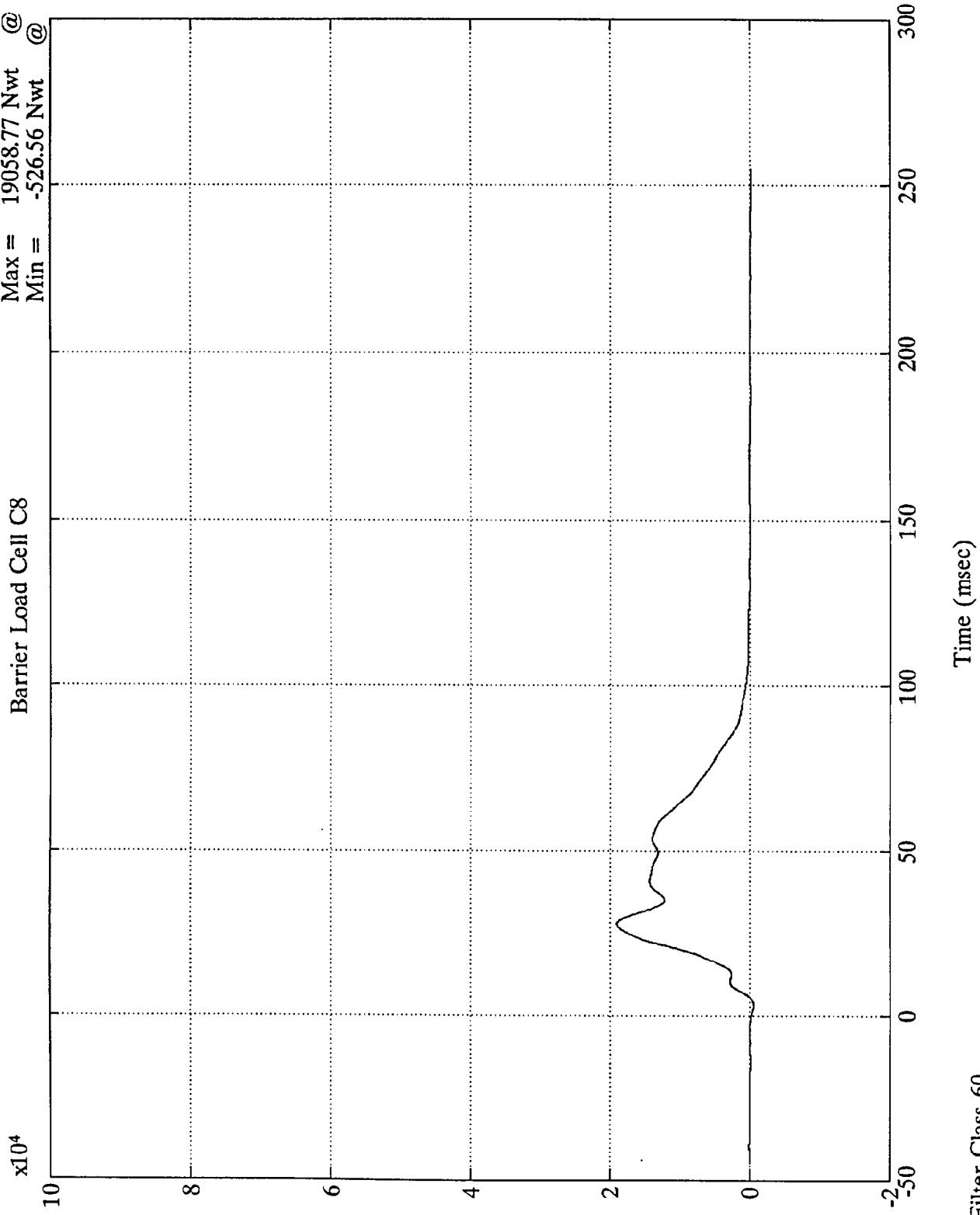
Barrier Load Cell C7  
Max = 43228.52 Nwt @ 28.44 msec  
Min = -389.95 Nwt @ 1.43 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell C8

Max = 19058.77 Nwt @ 27.60 msec  
Min = -526.56 Nwt @ 2.99 msec



B-56

8120-8

SAE Filter Class 60

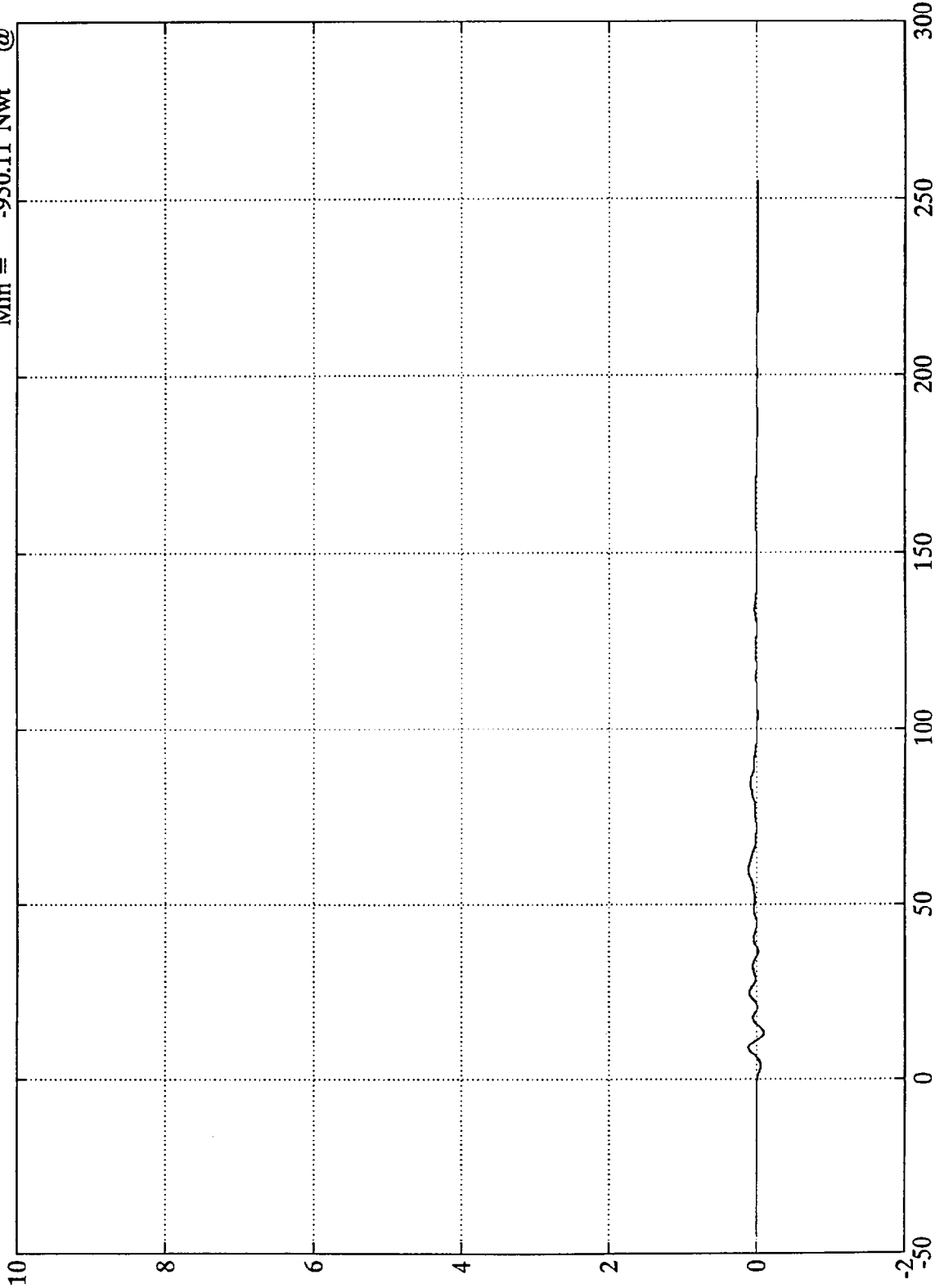


NCAP TEST #8 - 1994 FORD MUSTANG

$\times 10^4$

Barrier Load Cell C9

Max = 1147.06 Nwt @ 59.76 msec  
Min = -950.11 Nwt @ 13.31 msec



Nwt  
B-57

8120-8

SAE Filter Class 60

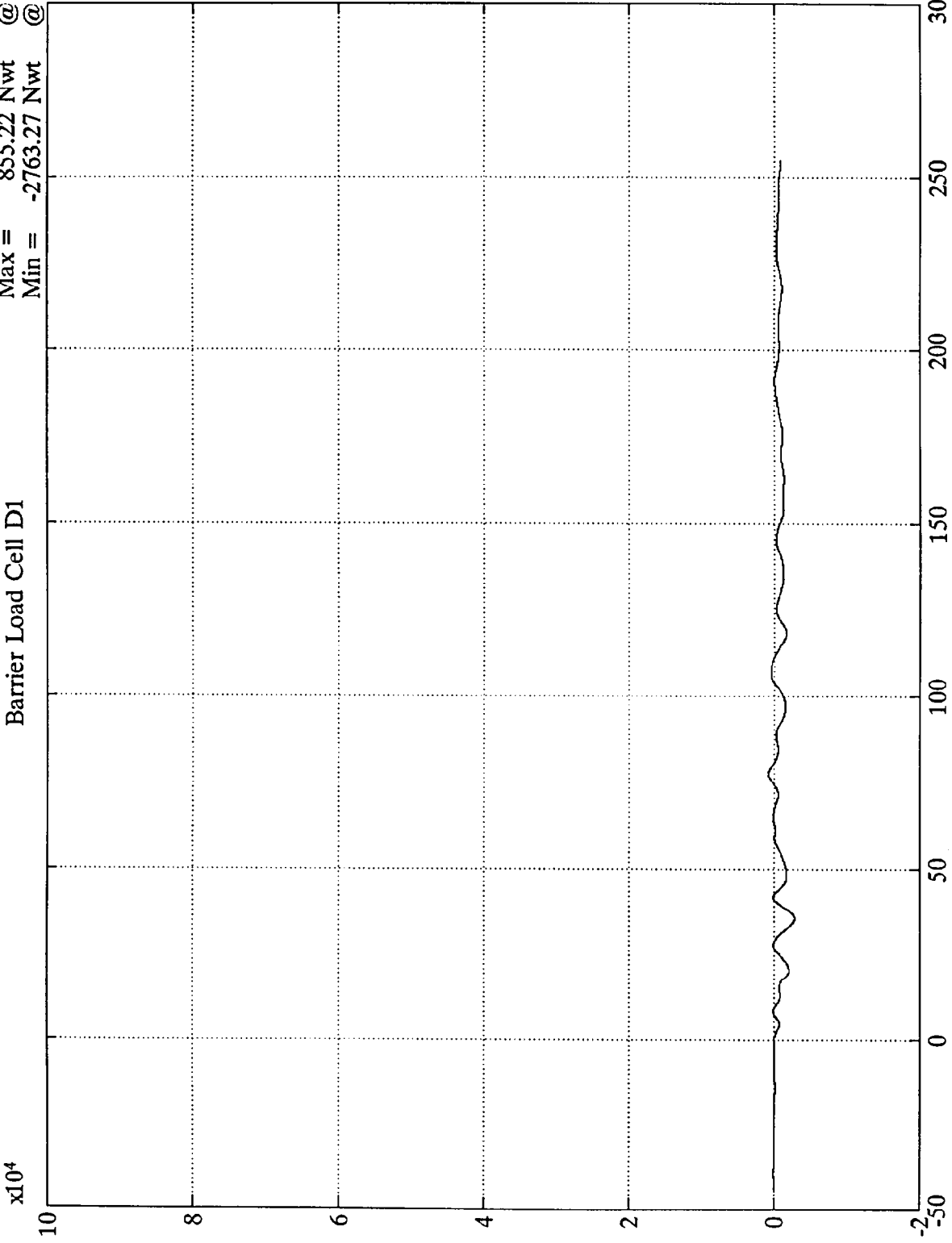
Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 855.22 Nwt @ 77.40 msec  
Min = -2763.27 Nwt @ 35.88 msec

Barrier Load Cell D1

Max = 855.22 Nwt @ 77.40 msec  
Min = -2763.27 Nwt @ 35.88 msec



Nwt

B-58

8120-8

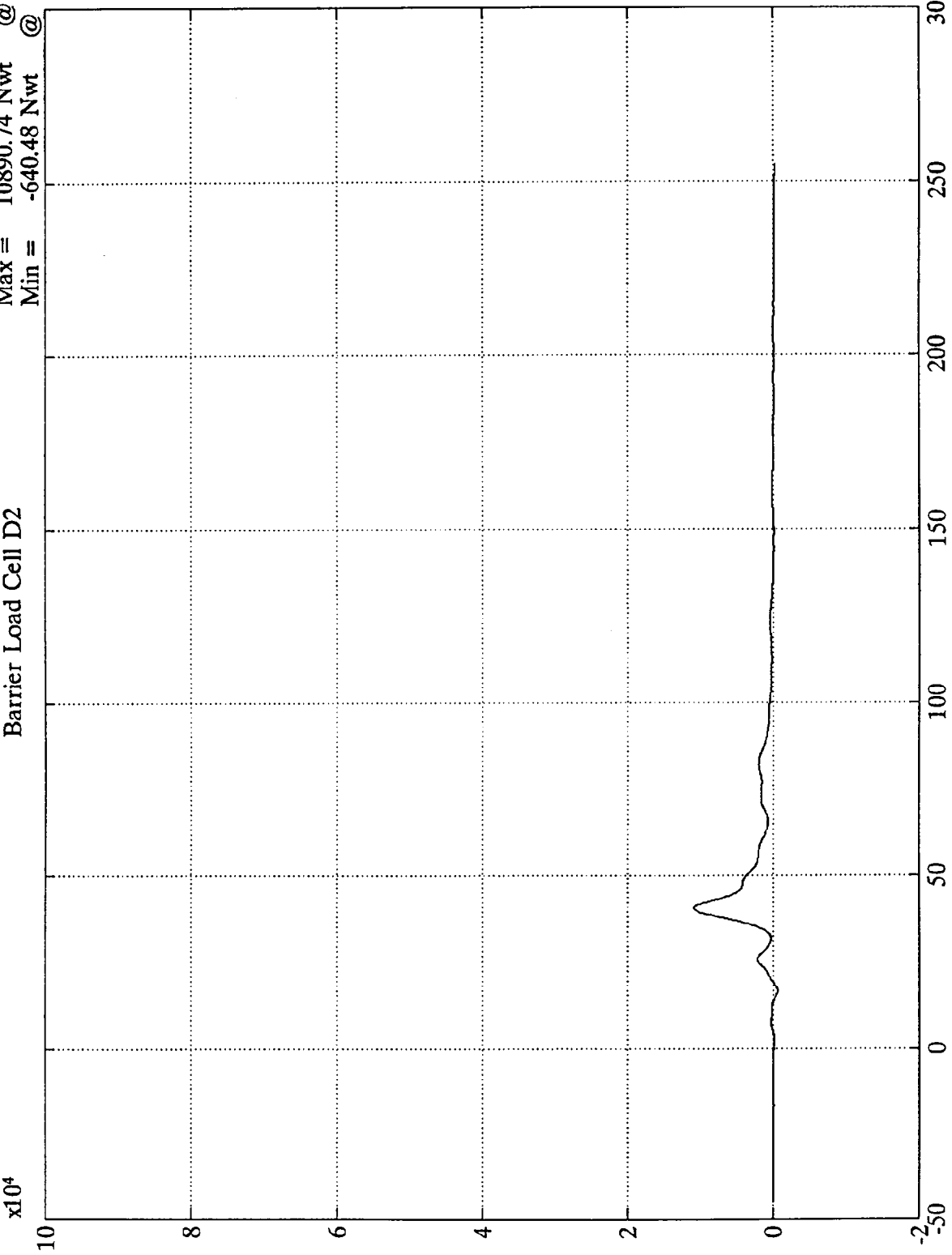
SAE Filter Class 60

Time (msec)



NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell D2  
Max = 10890.74 Nwt @ 40.44 msec  
Min = -640.48 Nwt @ 16.55 msec



1Nwt  
B-59

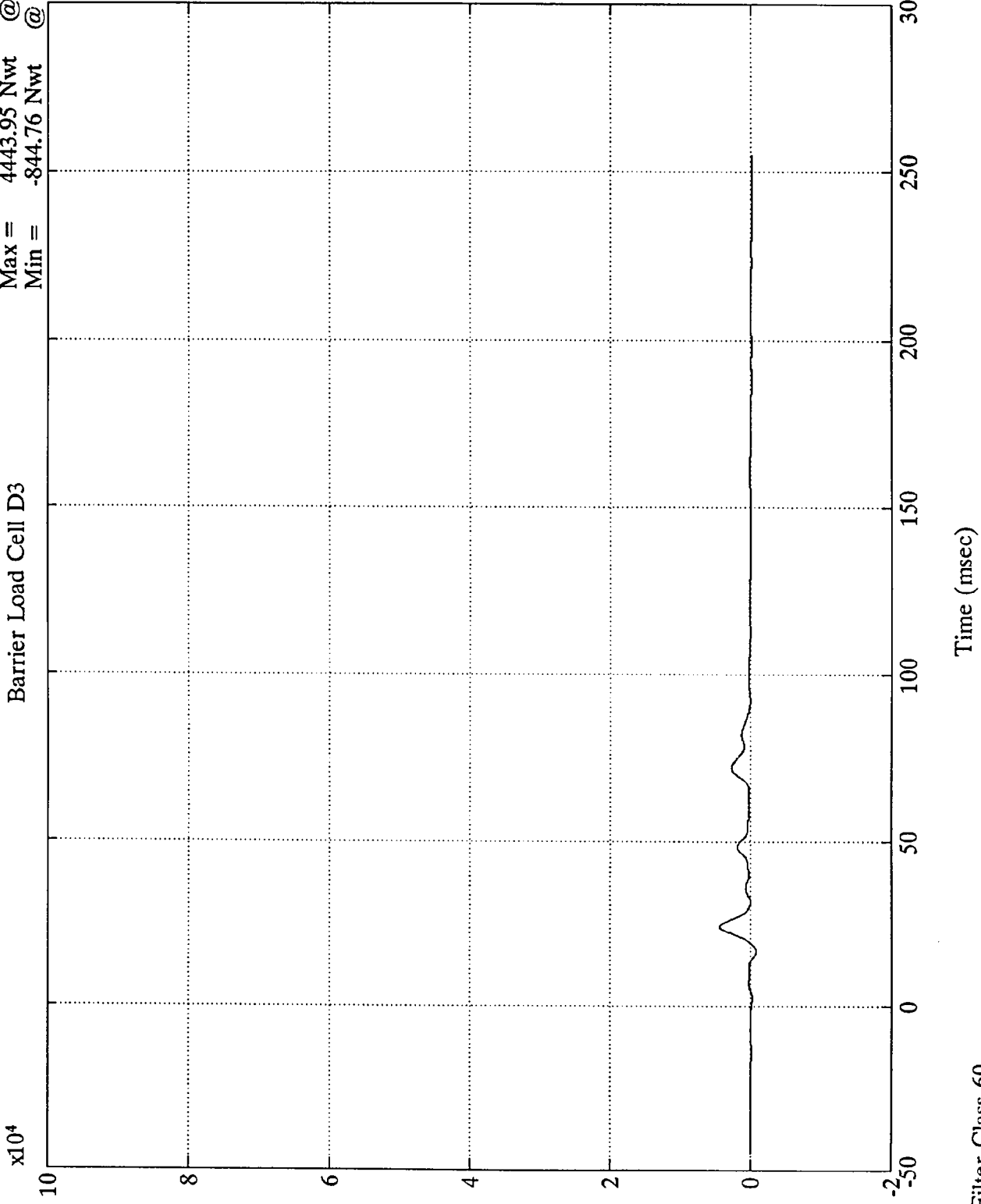
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell D3  
Max = 4443.95 Nwt @ 24.23 msec  
Min = -844.76 Nwt @ 16.68 msec



1N  
B-60

8120-8

SAE Filter Class 60

Time (msec)

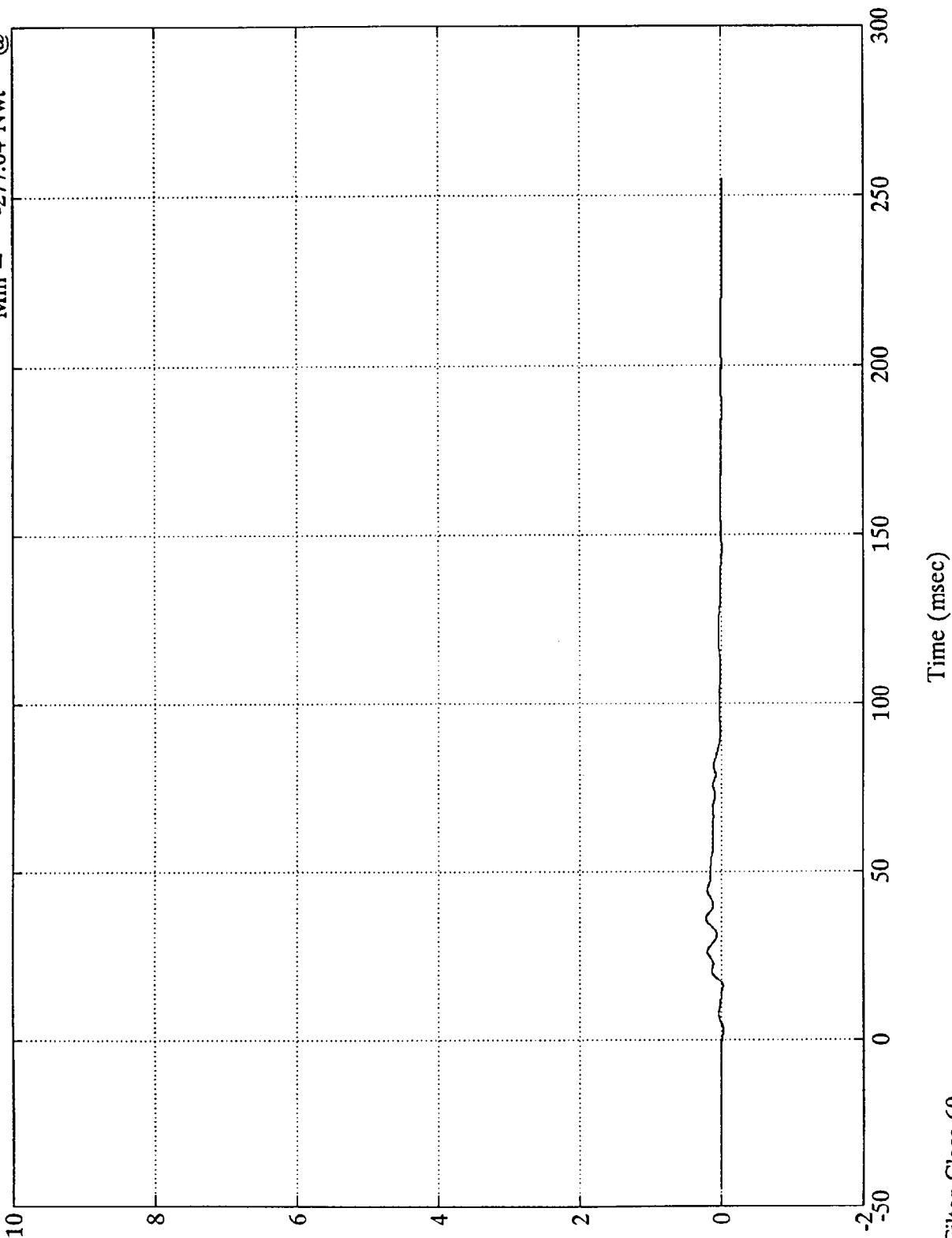


NCAP TEST #8 - 1994 FORD MUSTANG

Max = 2220.44 Nwt @ 36.12 msec  
Min = -277.04 Nwt @ 2.99 msec

Barrier Load Cell D4

Max = 2220.44 Nwt @ 36.12 msec  
Min = -277.04 Nwt @ 2.99 msec



10N  
B-61

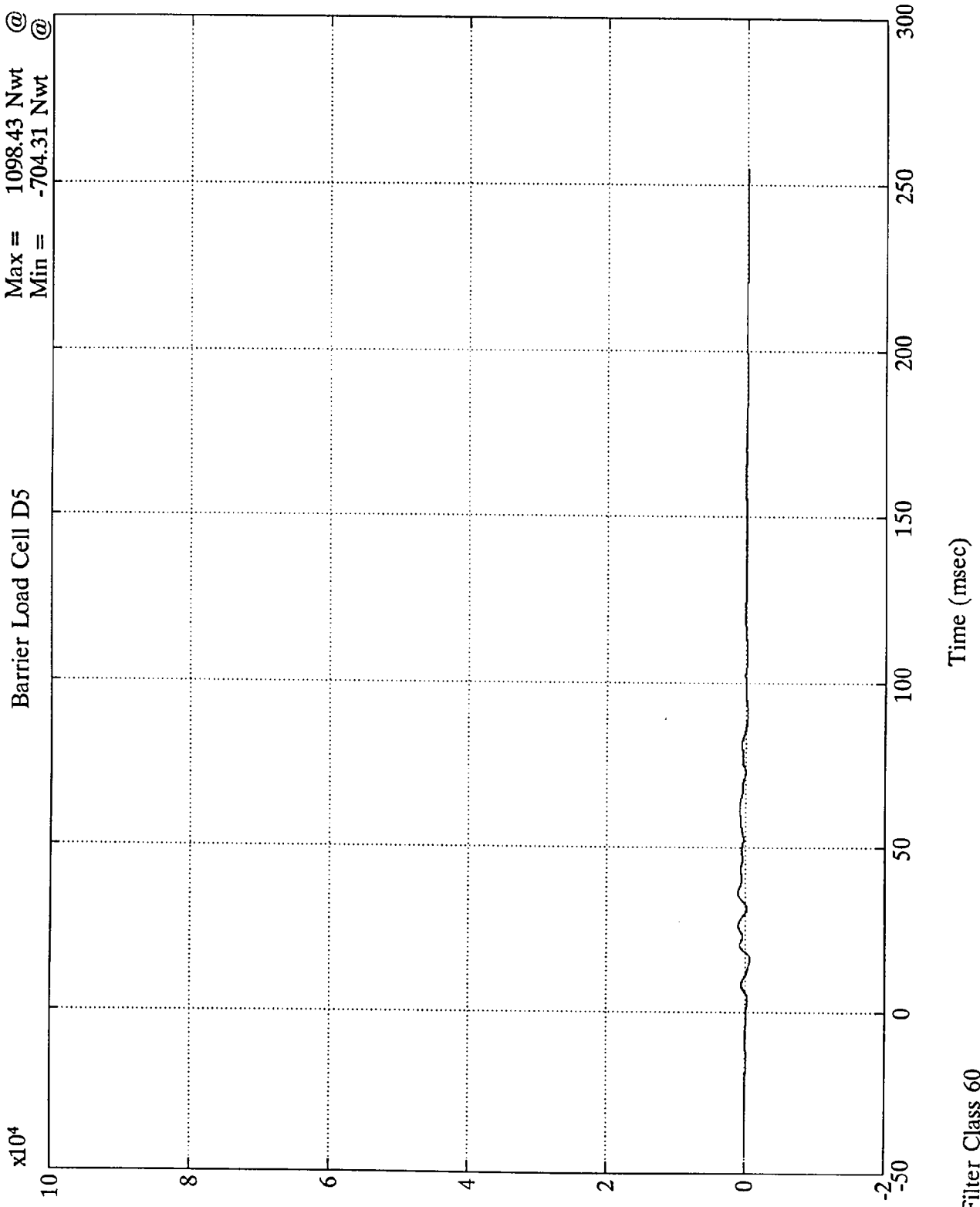
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell D5  
Max = 1098.43 Nwt @ 36.12 msec  
Min = -704.31 Nwt @ 16.19 msec



11N  
B-62

8120-8

SAE Filter Class 60

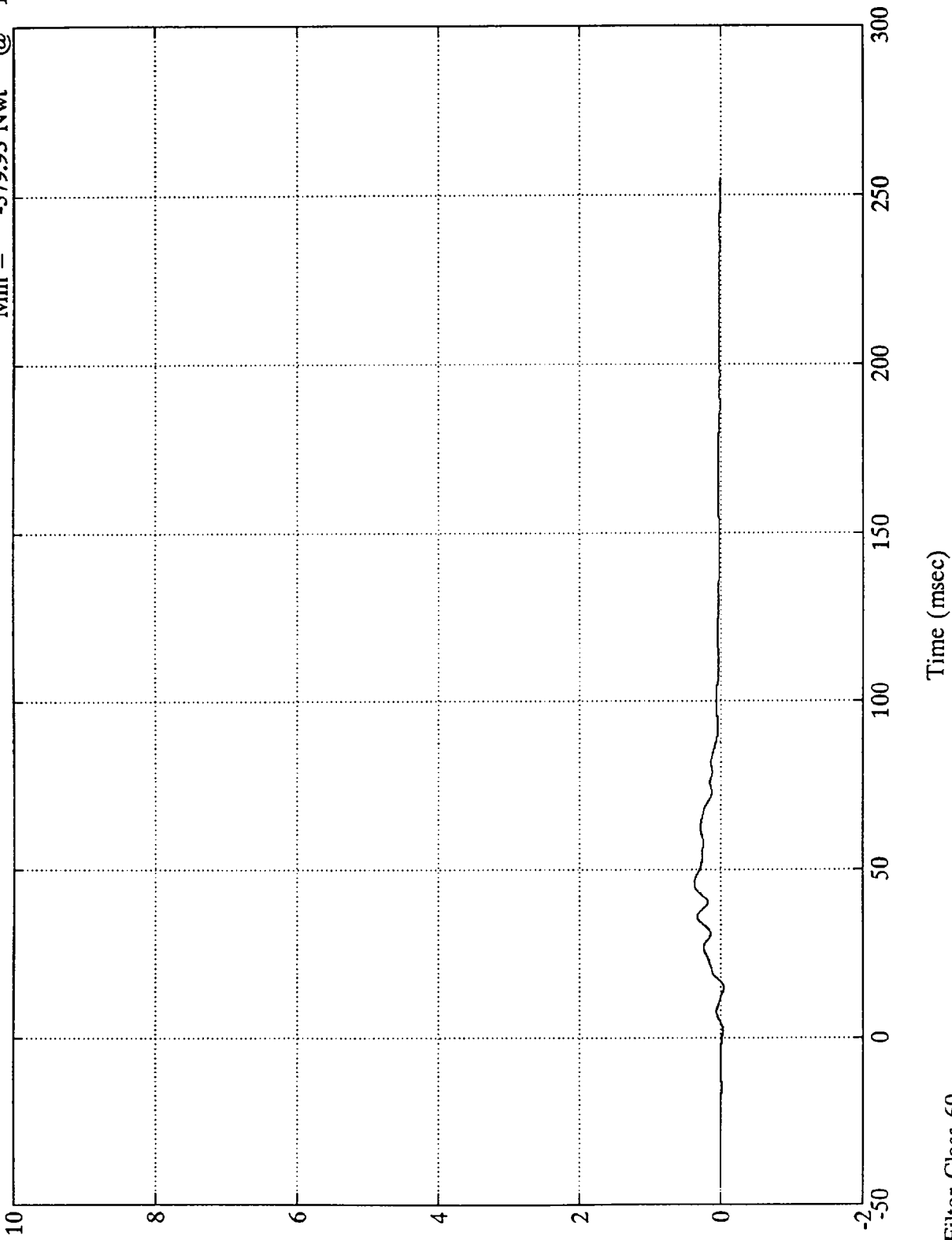


NCAP TEST #8 - 1994 FORD MUSTANG

Max = 3804.60 Nwt @ 45.60 msec  
Min = -379.93 Nwt @ 15.00 msec

Barrier Load Cell D6

x10<sup>4</sup>



1MN  
B-63

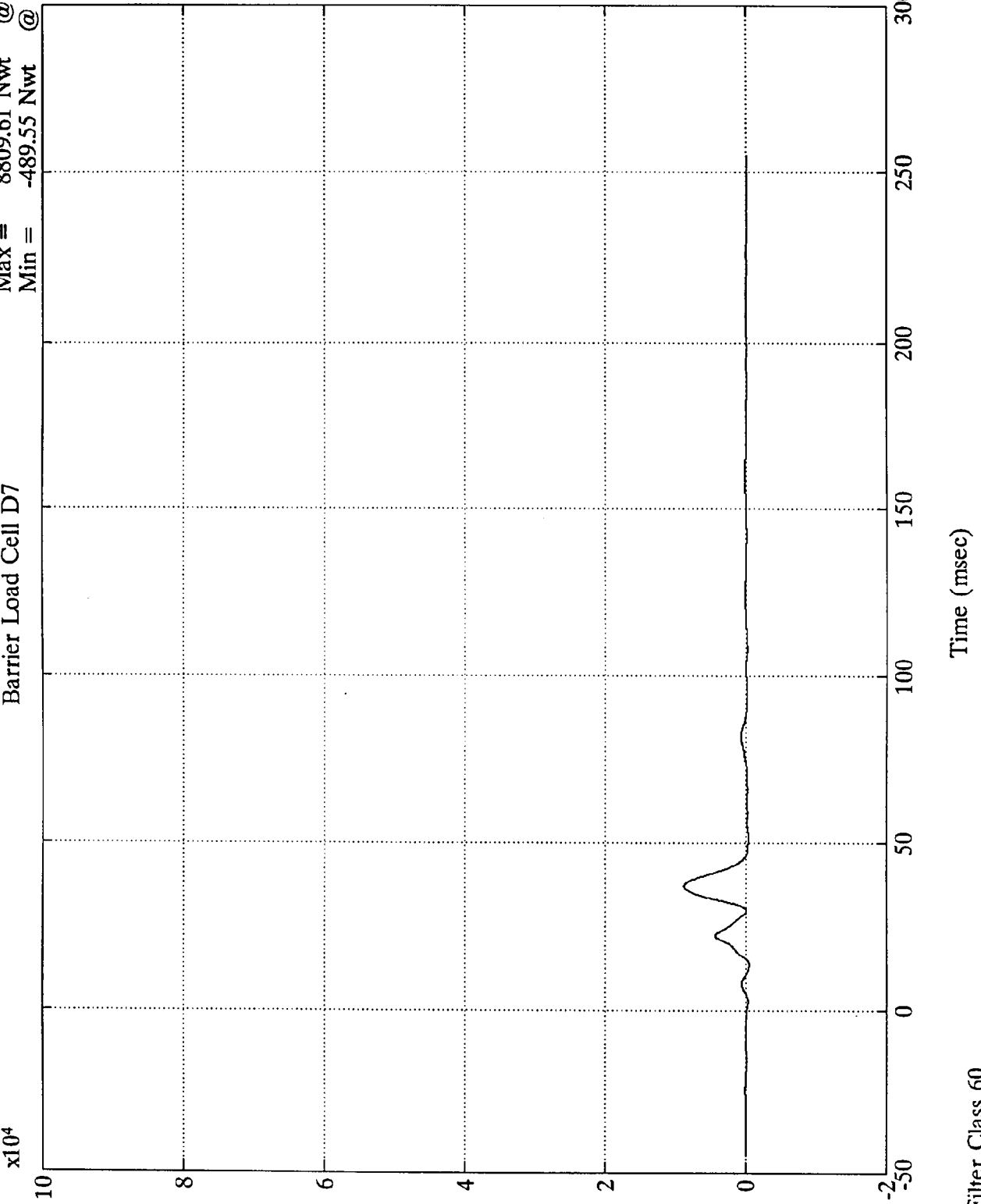
8120-8

SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell D7  
Max = 8809.61 Nwt @ 37.08 msec  
Min = -489.55 Nwt @ 13.43 msec



1MN  
B-64

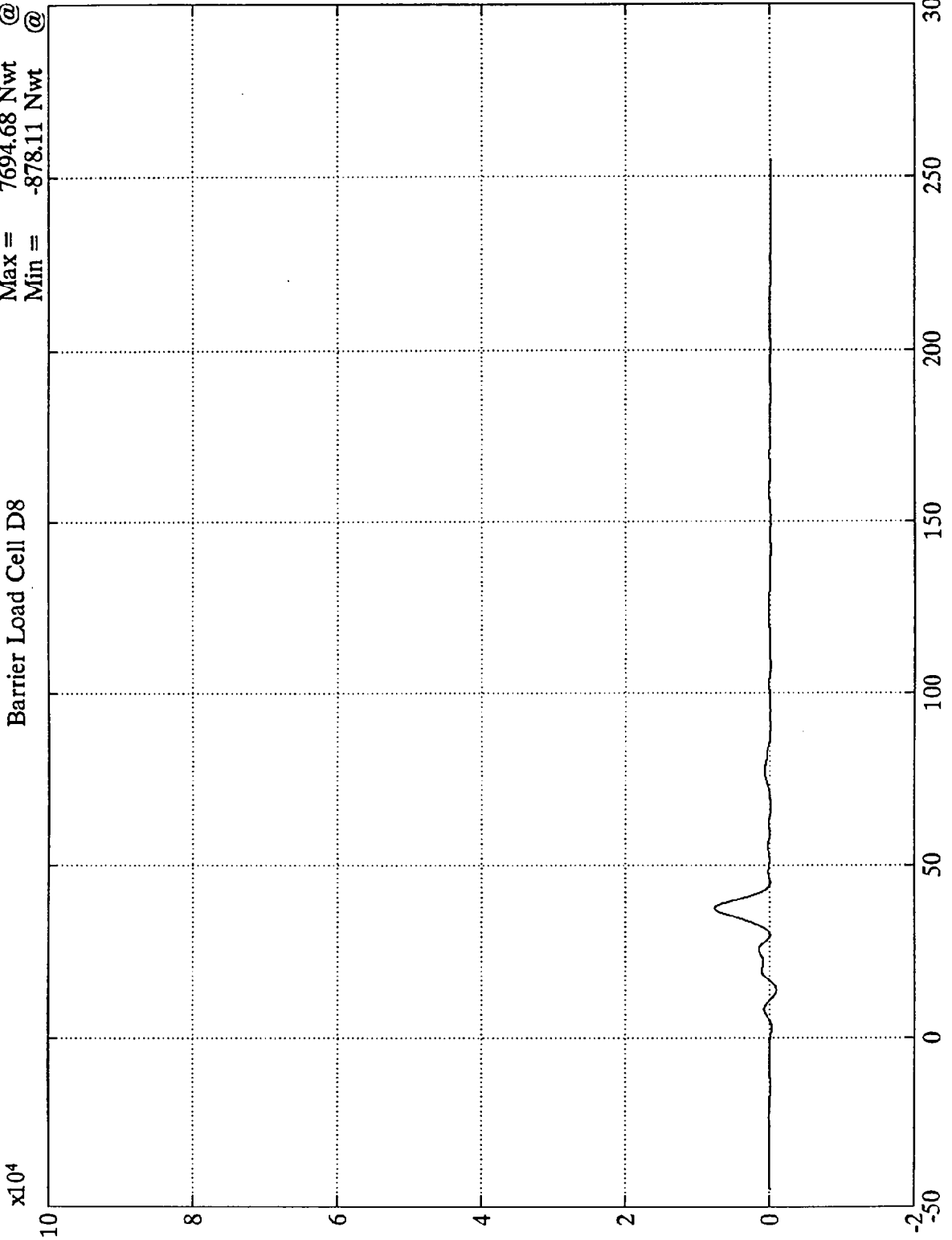
8120-8

SAE Filter Class 60



NCAP TEST #8 - 1994 FORD MUSTANG

Barrier Load Cell D8  
Max = 7694.68 Nwt @ 37.56 msec  
Min = -878.11 Nwt @ 13.79 msec



B-65

8120-8

SAE Filter Class 60

Time (msec)

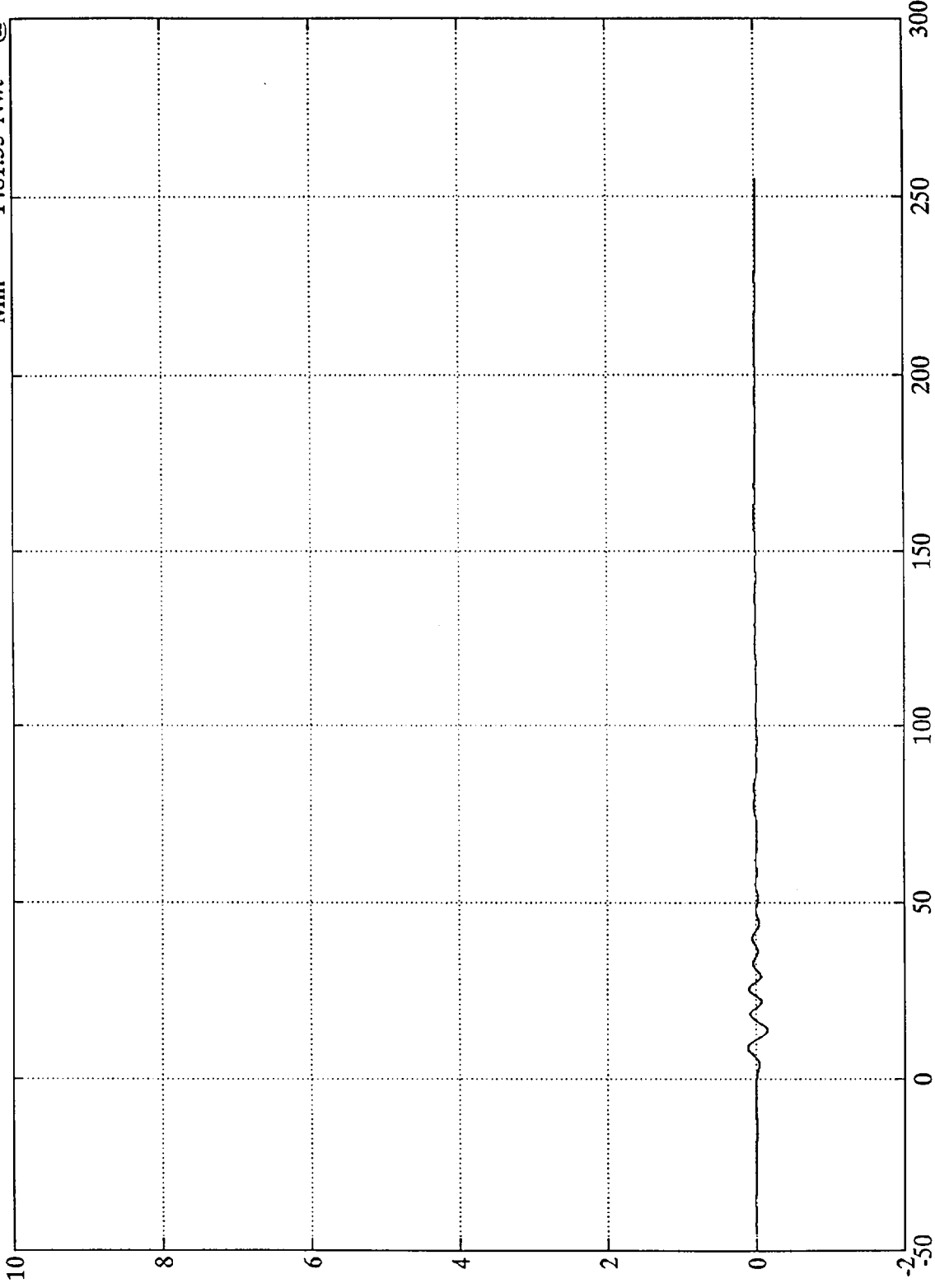
NCAP TEST #8 - 1994 FORD MUSTANG

$\times 10^4$

Barrier Load Cell D9

Max = 1113.51 Nwt @  
Min = -1481.35 Nwt @

8.51 msec  
13.43 msec



1kN  
B-66

8120-8

Time (msec)

SAE Filter Class 60

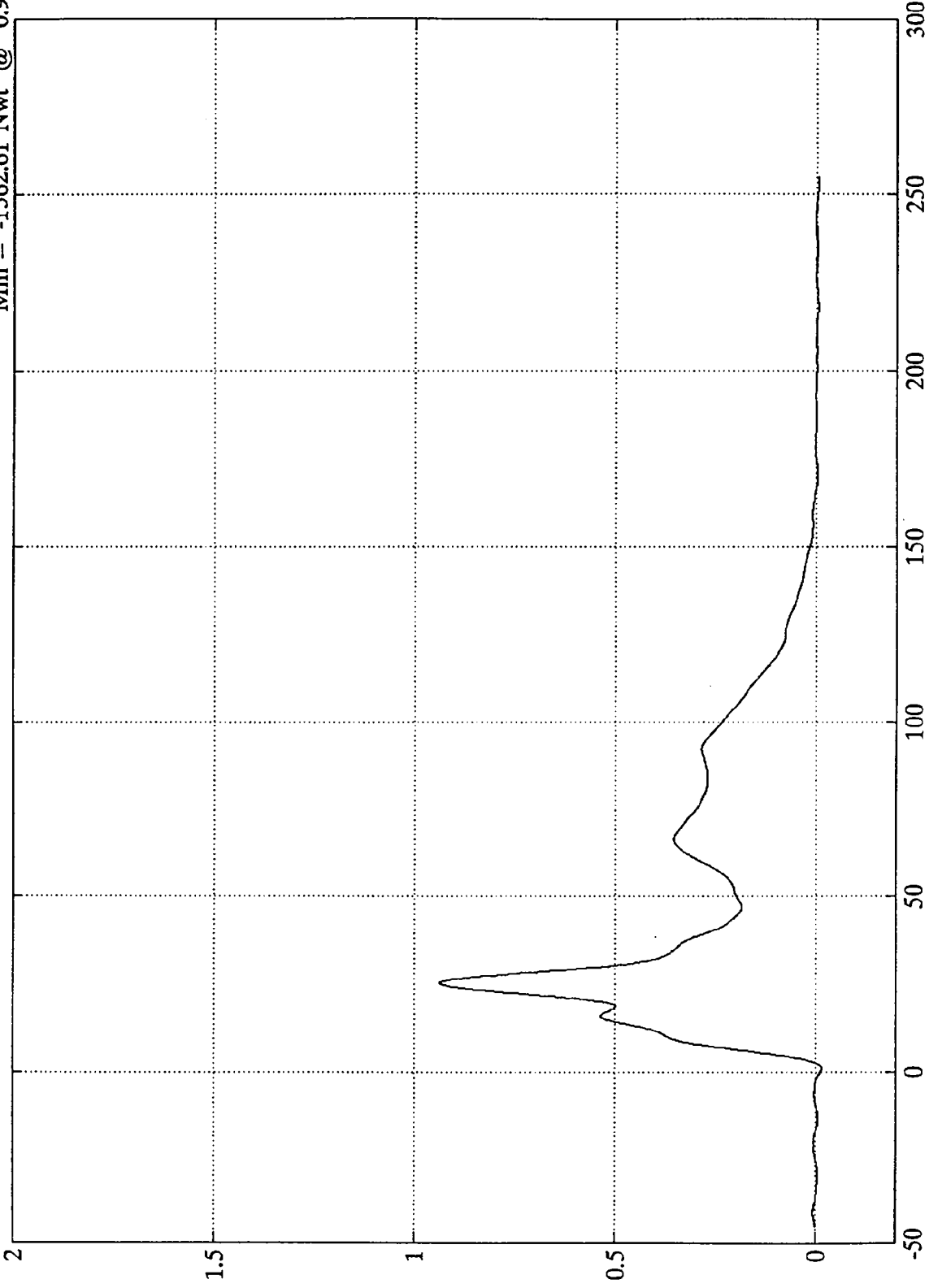


NCAP TEST #8 - 1994 FORD MUSTANG

Group 1 Load Cell Sum

Max = 93880.00 Nwt @ 25.44 msec  
Min = -1562.61 Nwt @ 0.96 msec

x10<sup>5</sup>



1Nwt  
B-67

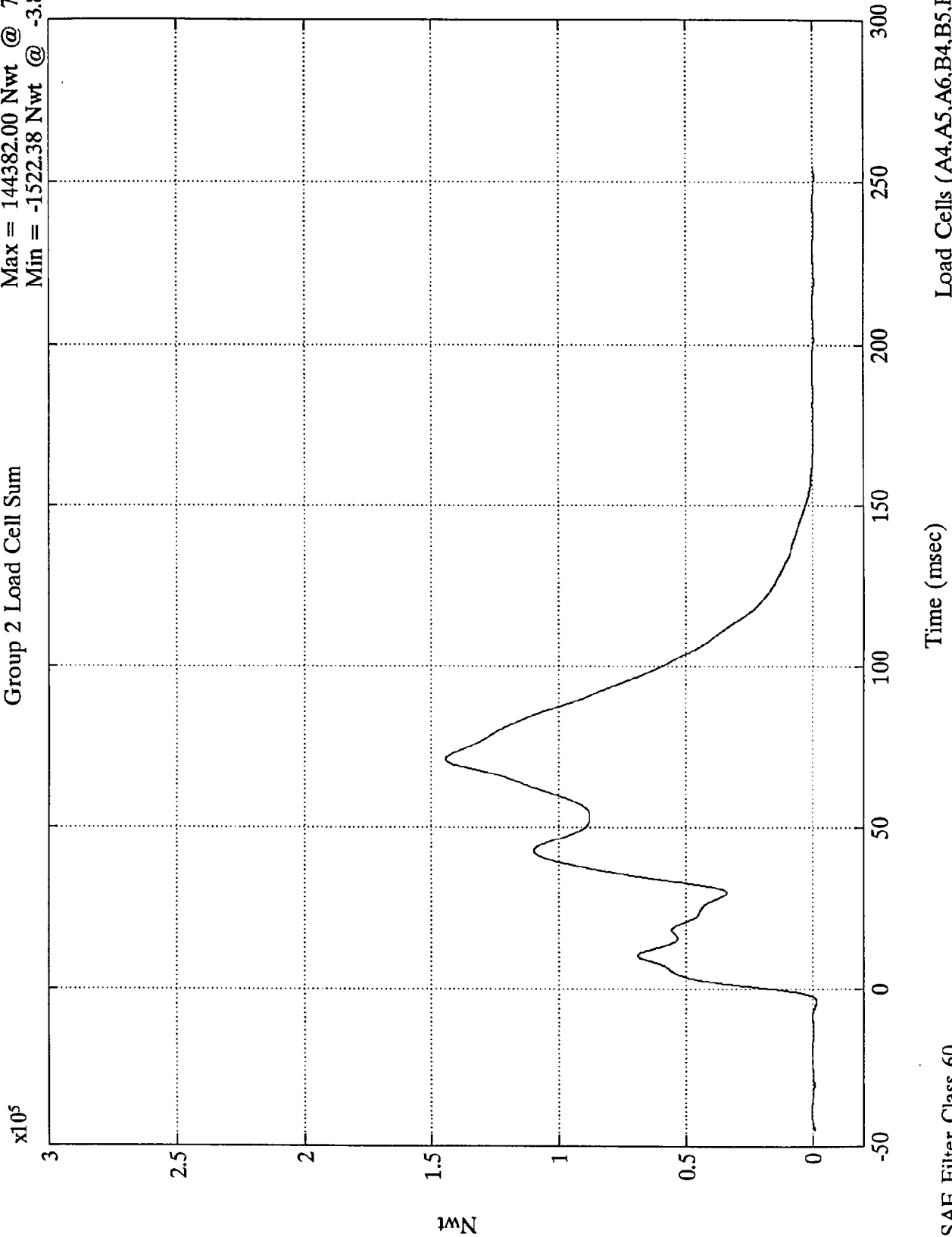
8120-8

SAE Filter Class 60  
Load Cells (A1,A2,A3,B1,B2,B3)

NCAP TEST #8 - 1994 FORD MUSTANG

Group 2 Load Cell Sum

Max = 144382.00 Nwt @ 71.28 msec  
Min = -1522.38 Nwt @ -3.84 msec



Nwt  
B-68

8120-8

SAE Filter Class 60

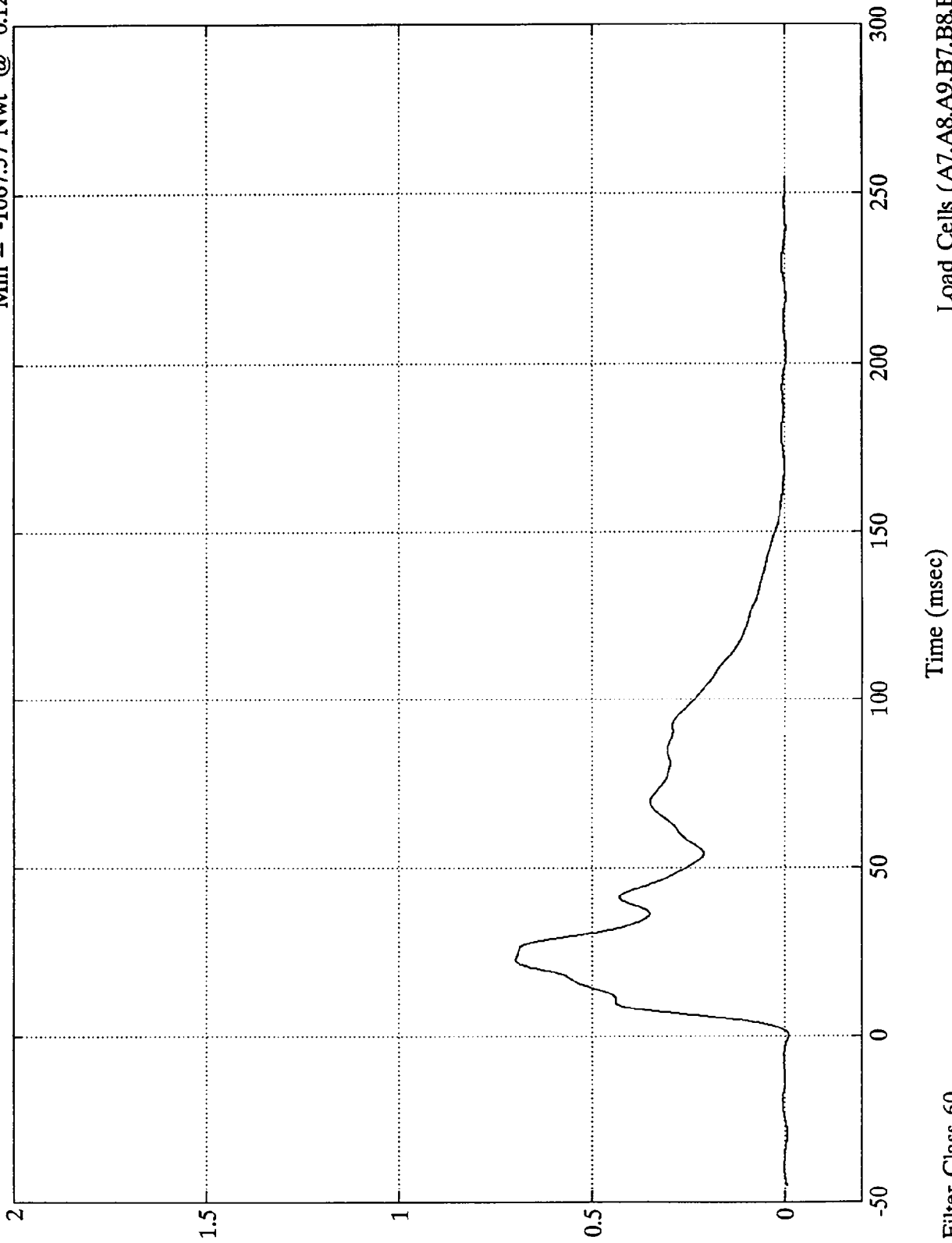
Time (msec)

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

NCAP TEST #8 - 1994 FORD MUSTANG  
x10<sup>5</sup>

Group 3 Load Cell Sum

Max = 69785.80 Nwt @ 22.56 msec  
Min = -1067.57 Nwt @ 0.12 msec



SAE Filter Class 60

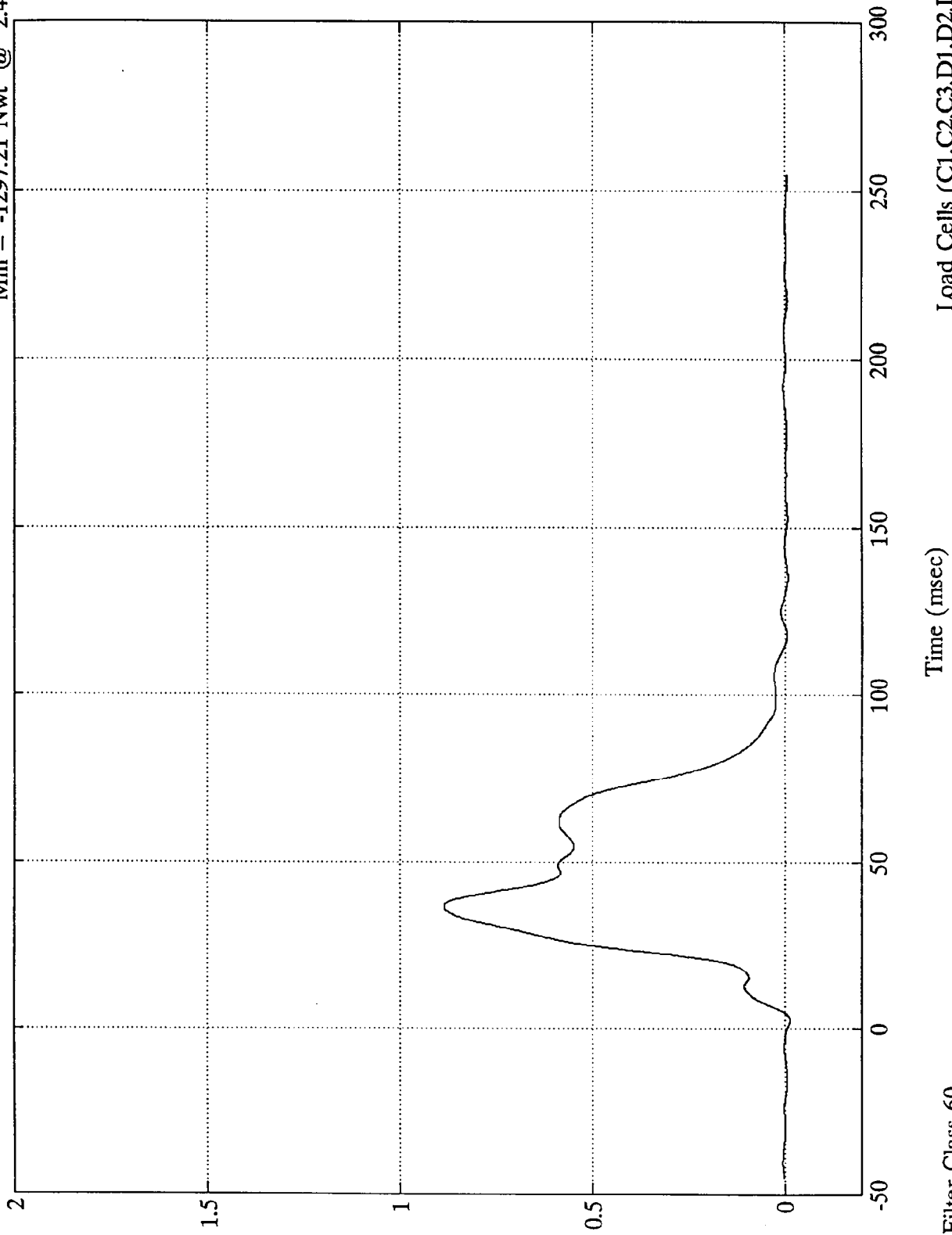
Time (msec)

Load Cells (A7,A8,A9,B7,B8,B9)

NCAP TEST #8 - 1994 FORD MUSTANG  
x10<sup>5</sup>

Group 4 Load Cell Sum

Max = 88673.40 Nwt @ 36.60 msec  
Min = -1297.21 Nwt @ 2.40 msec



SAE Filter Class 60

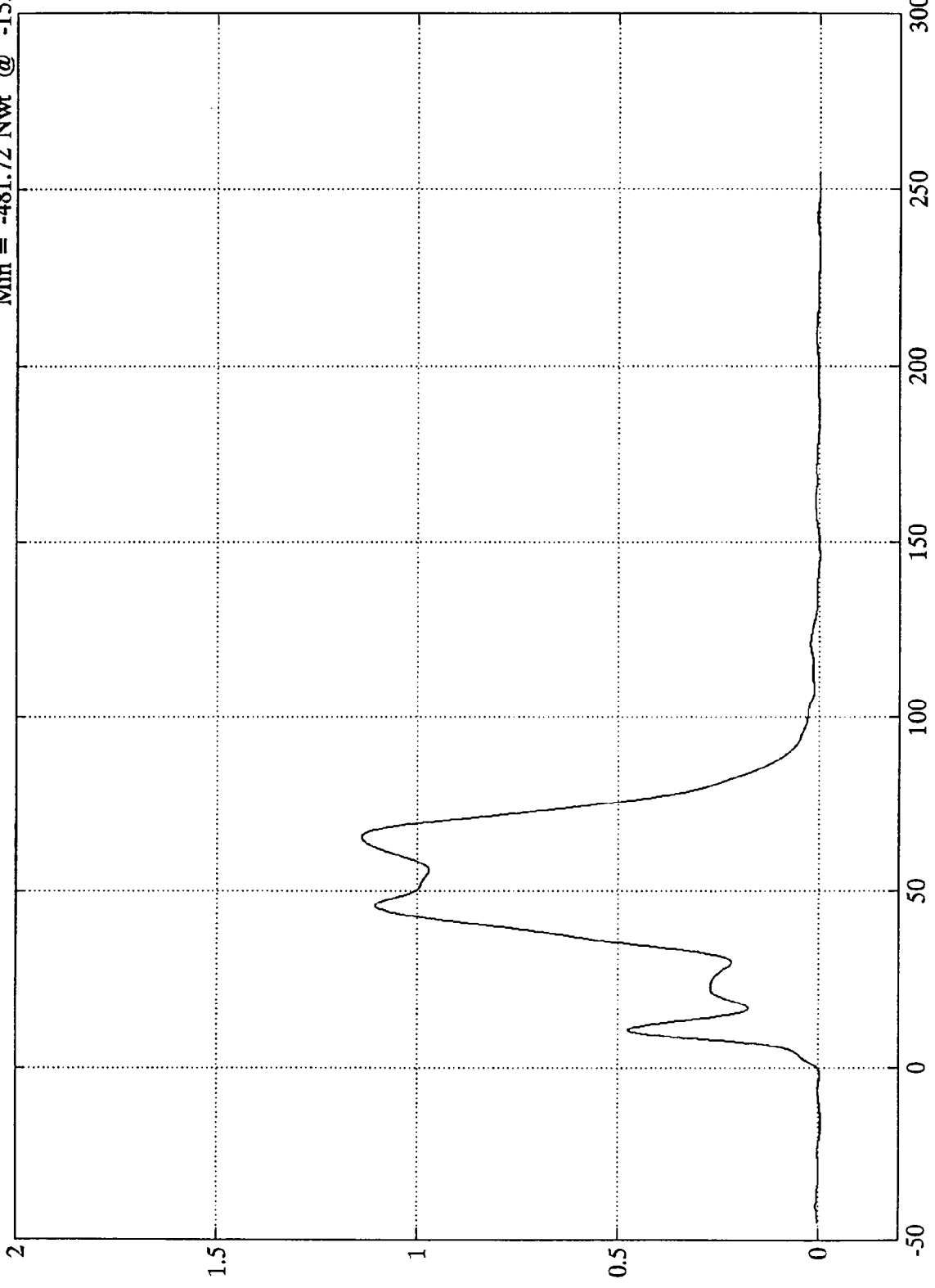
Time (msec)

Load Cells (C1,C2,C3,D1,D2,D3)

NCAP TEST #8 - 1994 FORD MUSTANG

Group 5 Load Cell Sum

Max = 113967.00 Nwt @ 65.16 msec  
Min = -481.72 Nwt @ -15.84 msec



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

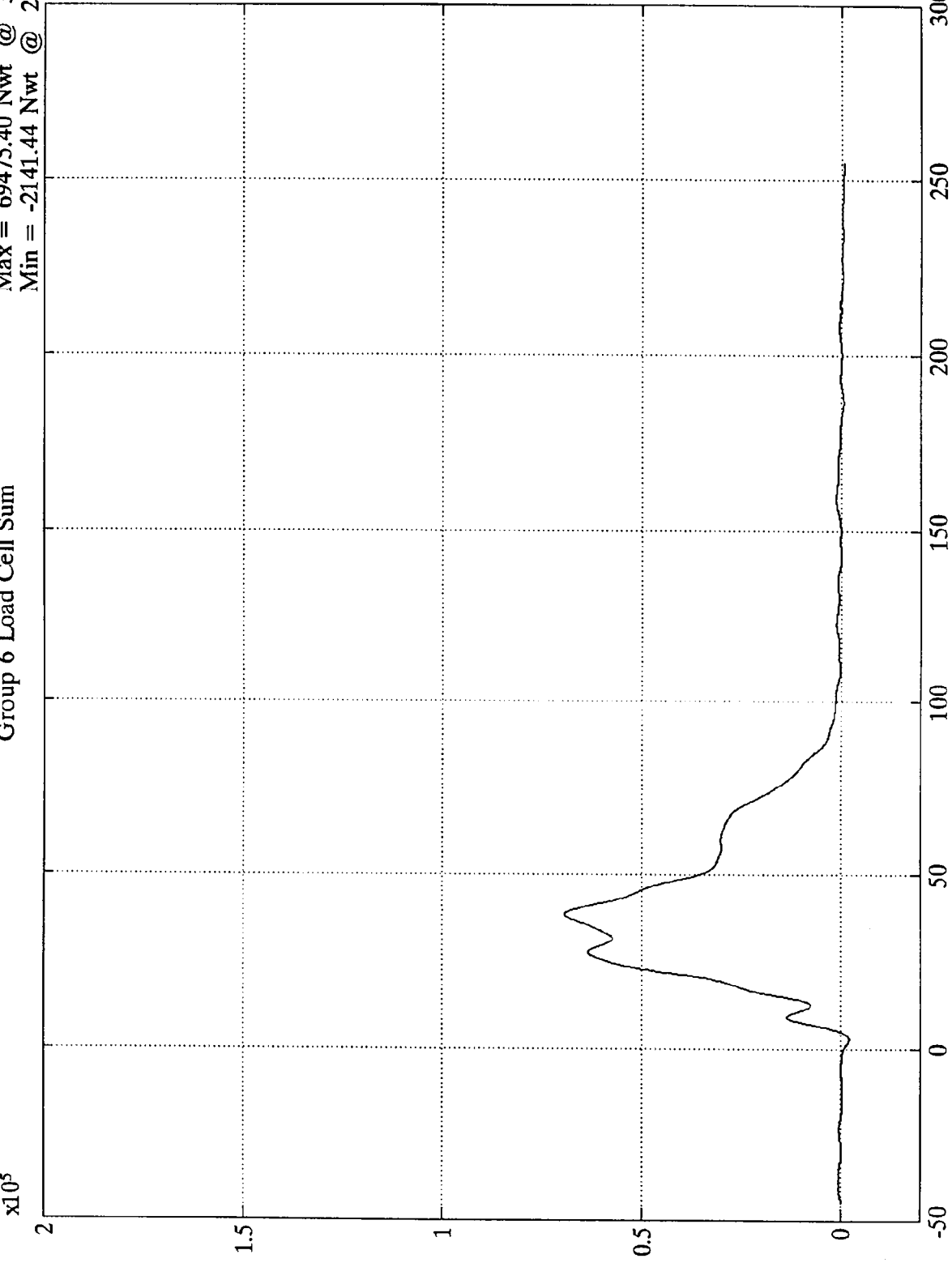
Time (msec)

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 69475.40 Nwt @ 38.16 msec  
Min = -2141.44 Nwt @ 2.76 msec

Group 6 Load Cell Sum



Load Cells (C7,C8,C9,D7,D8,D9)

Time (msec)

SAE Filter Class 60

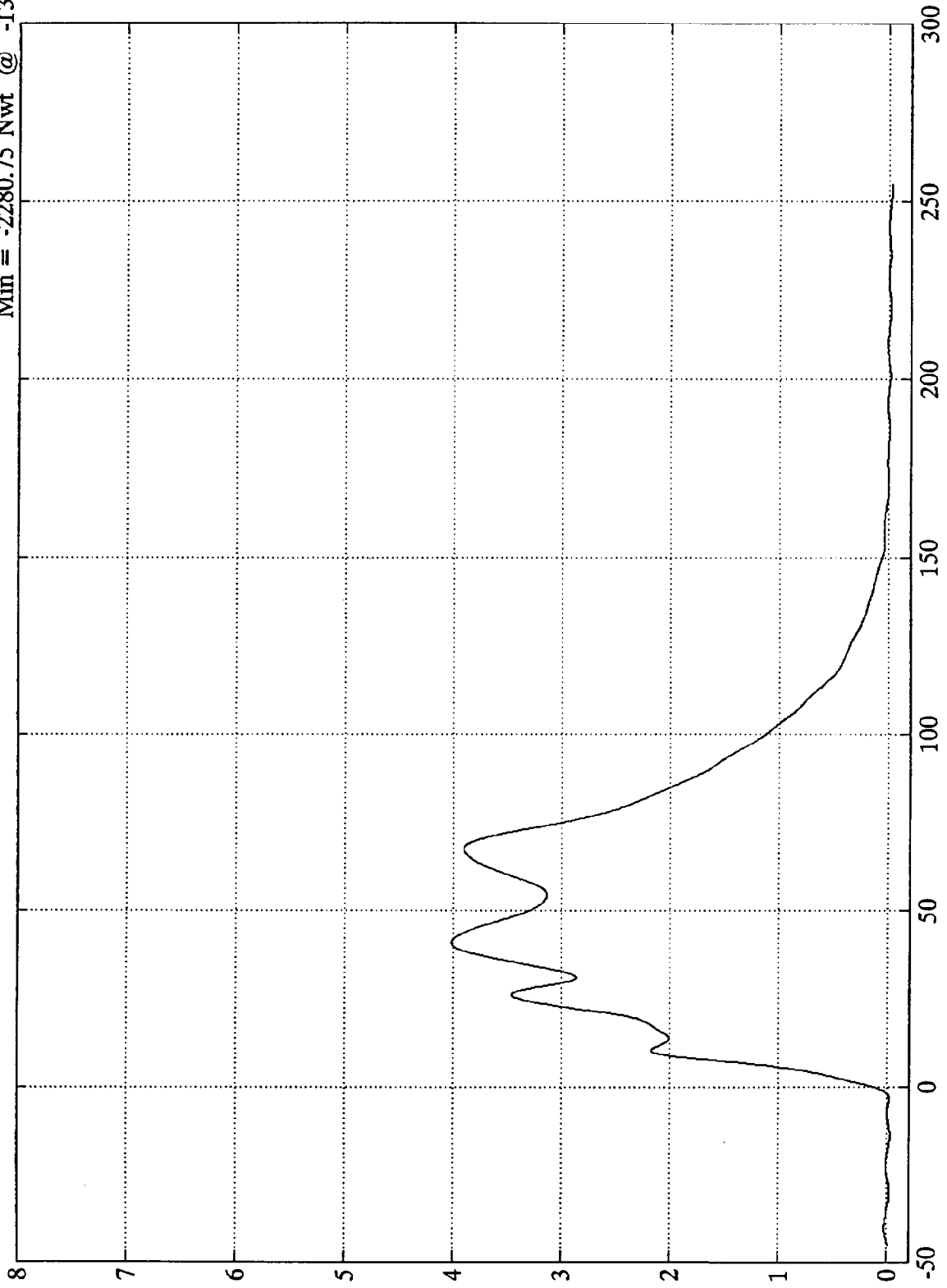


NCAP TEST #8 - 1994 FORD MUSTANG

$\times 10^5$

Total Load Cell Sum

Max = 401667.00 Nwt @ 40.80 msec  
Min = -2280.75 Nwt @ -13.92 msec



Nwt

B-73

8120-8

SAE Filter Class 60

Time (msec)

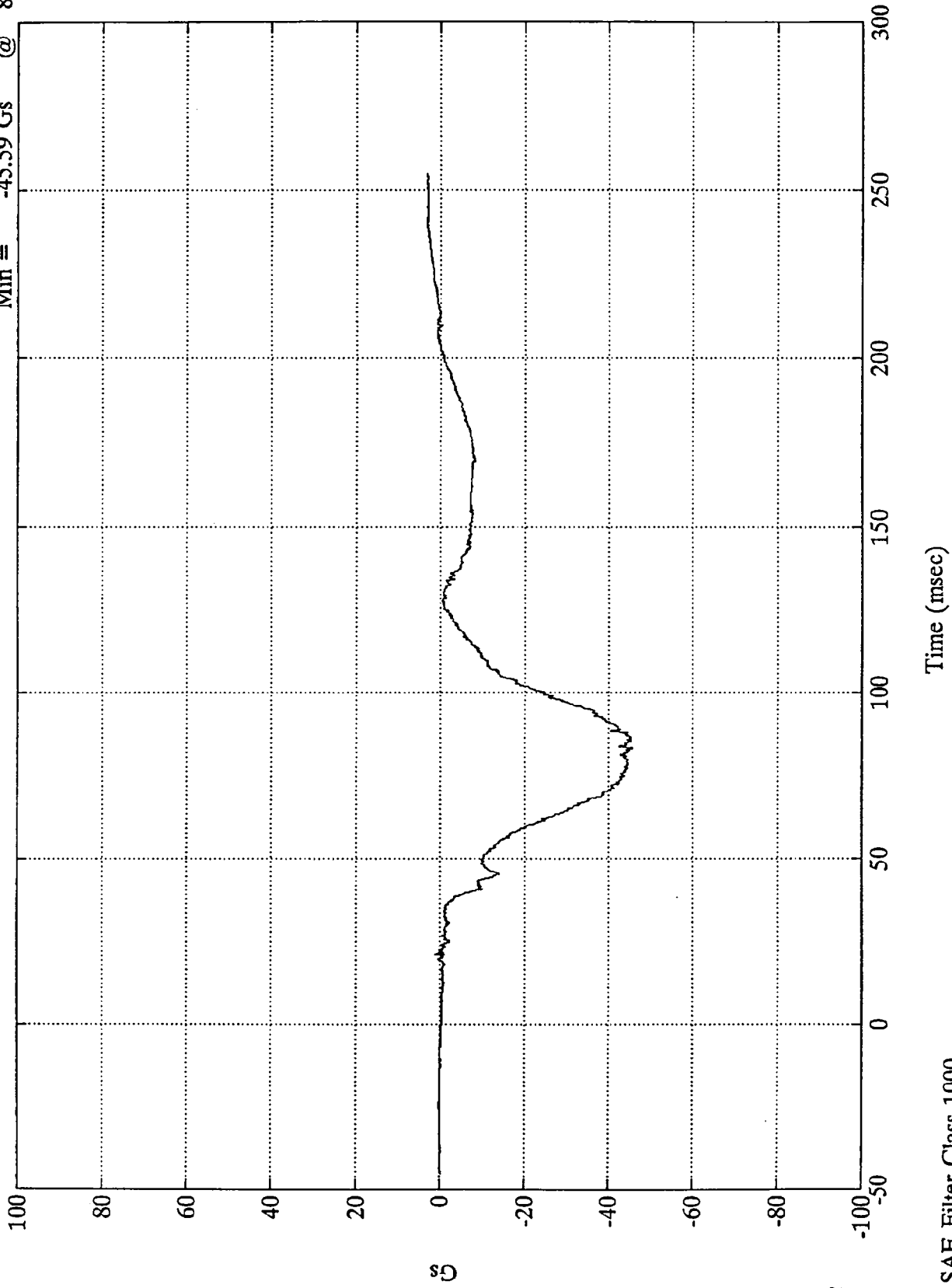
TEST NO. MR0205

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

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Head X  
Max = 3.20 Gs @ 254.52 msec  
Min = -45.59 Gs @ 83.04 msec



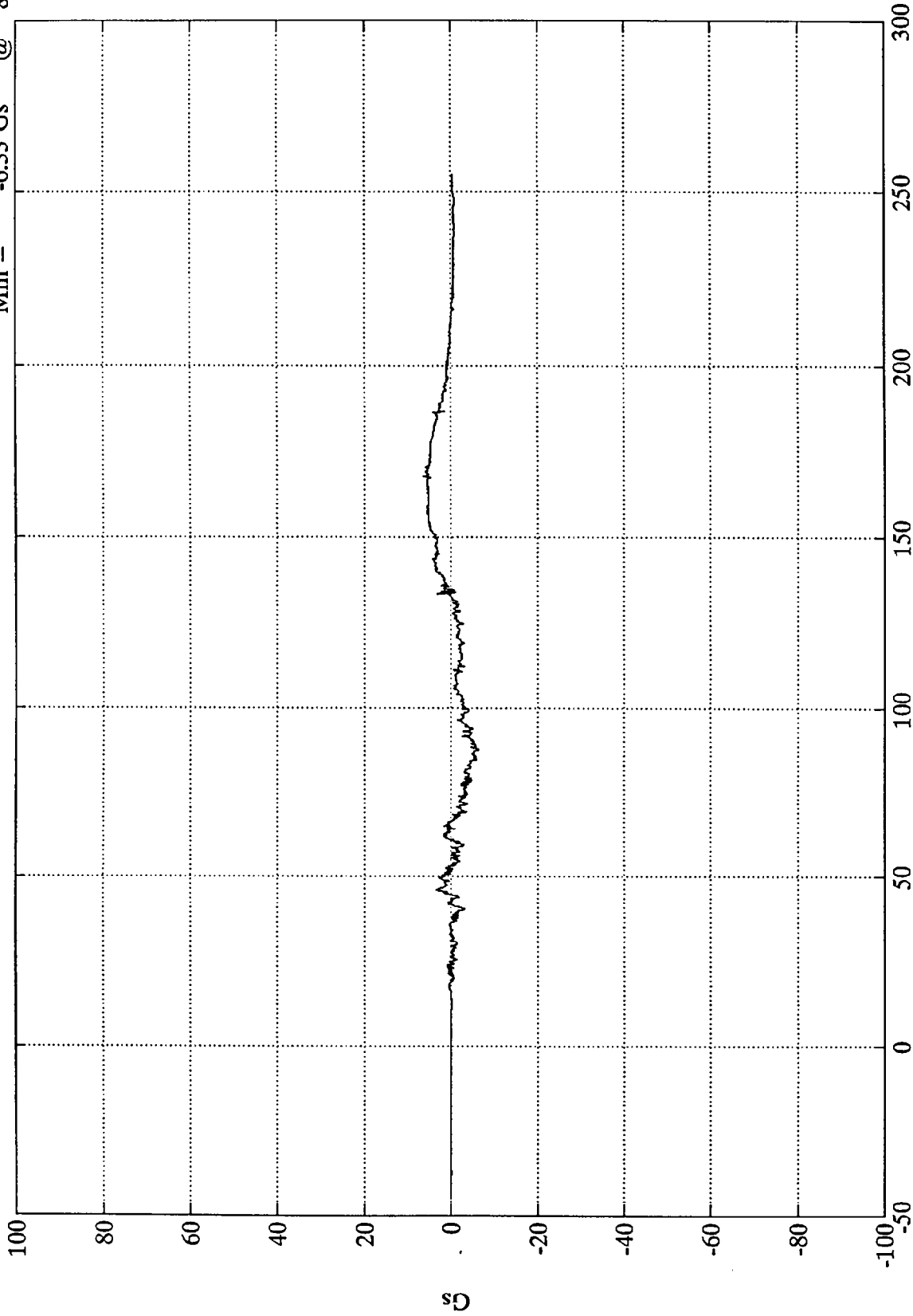
SD  
B-75

8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Head Y  
Max = 6.18 Gs @ 167.88 msec  
Min = -6.33 Gs @ 87.96 msec



SAE Filter Class 1000  
B-76

8120-8

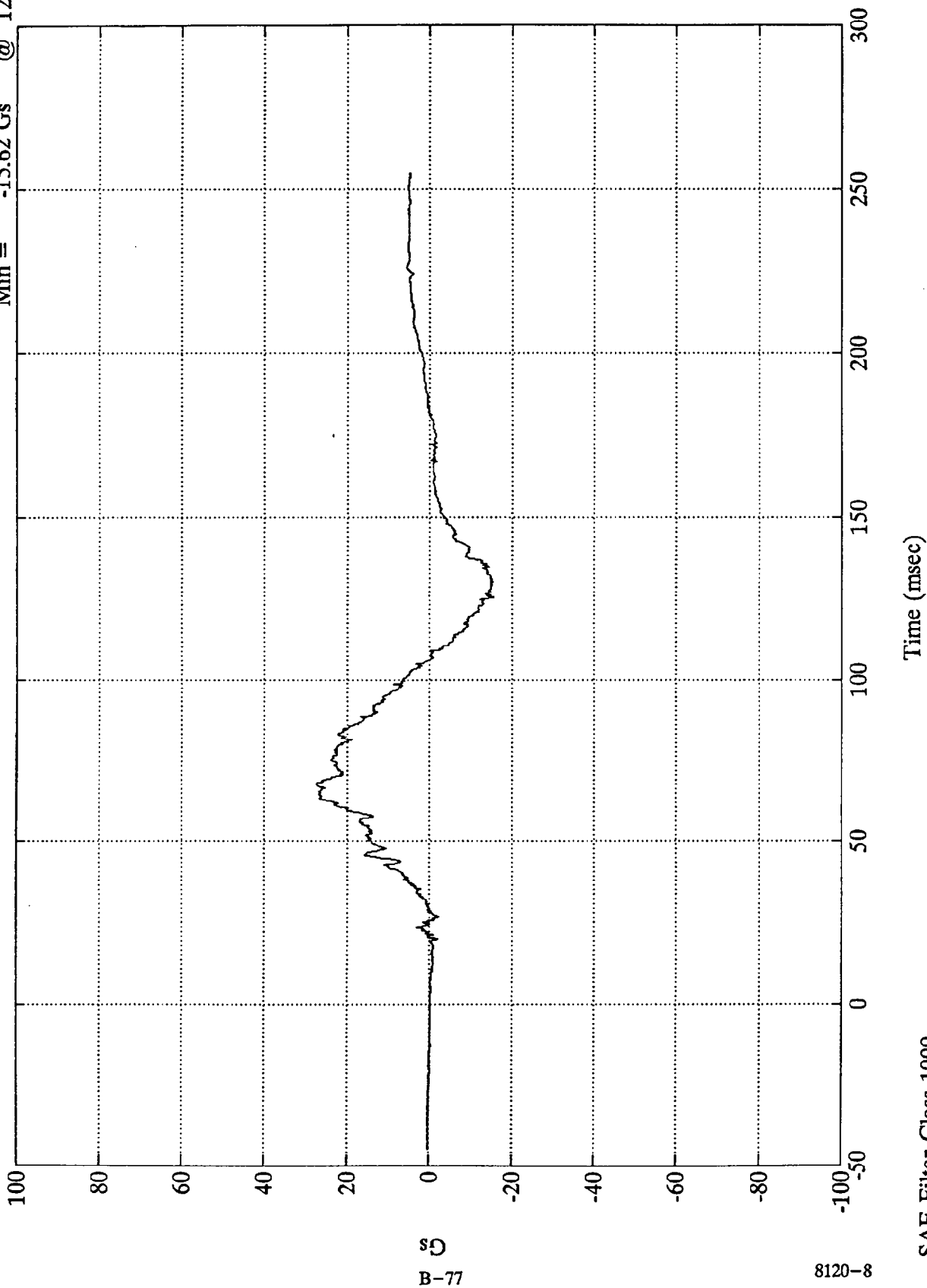
Time (msec)

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 27.61 Gs @ 67.56 msec  
Min = -15.62 Gs @ 125.28 msec

Pos. 1 Head Z



SD

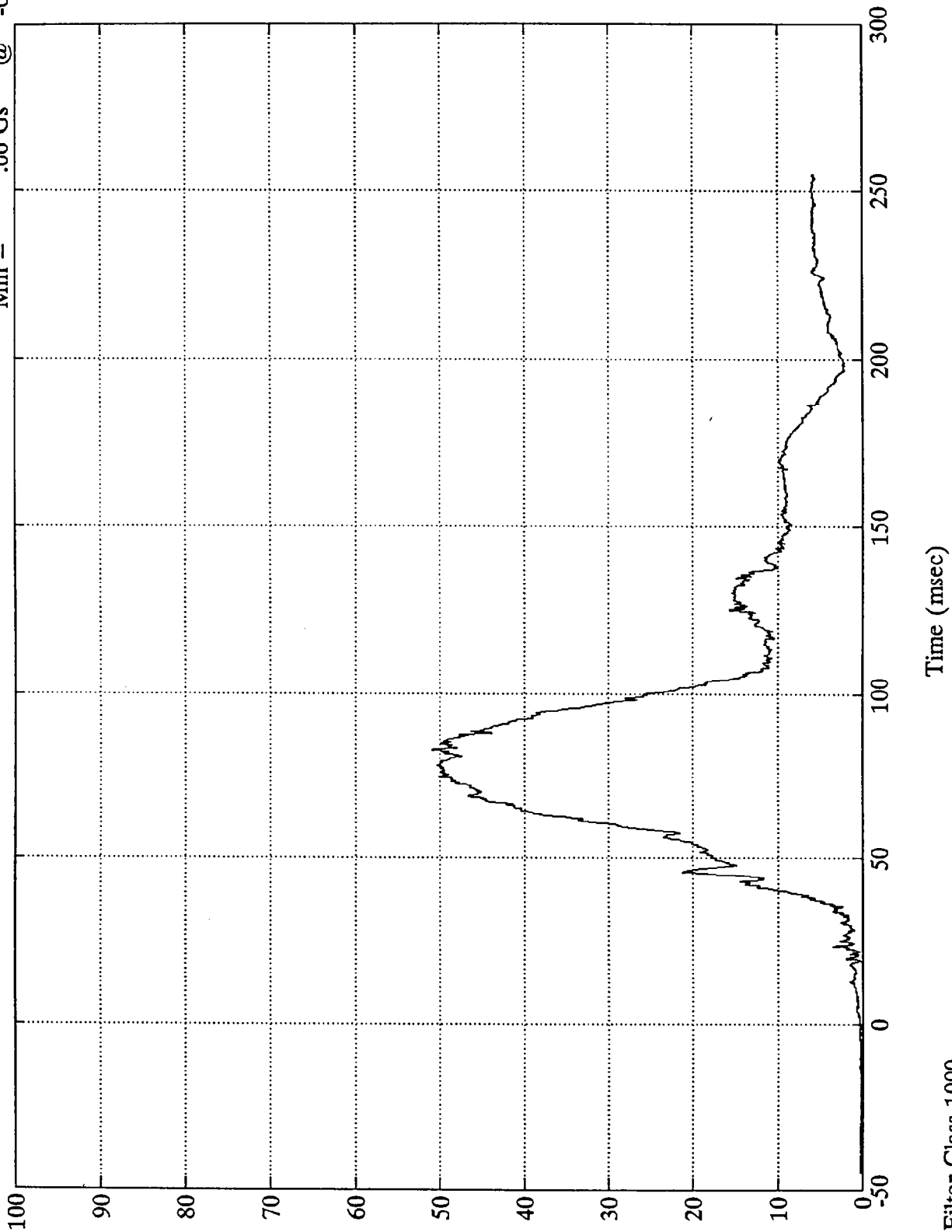
B-77

8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Head Resultant  
Max = 50.90 Gs @ 82.91 msec  
Min = .06 Gs @ -0.96 msec



50  
B-78

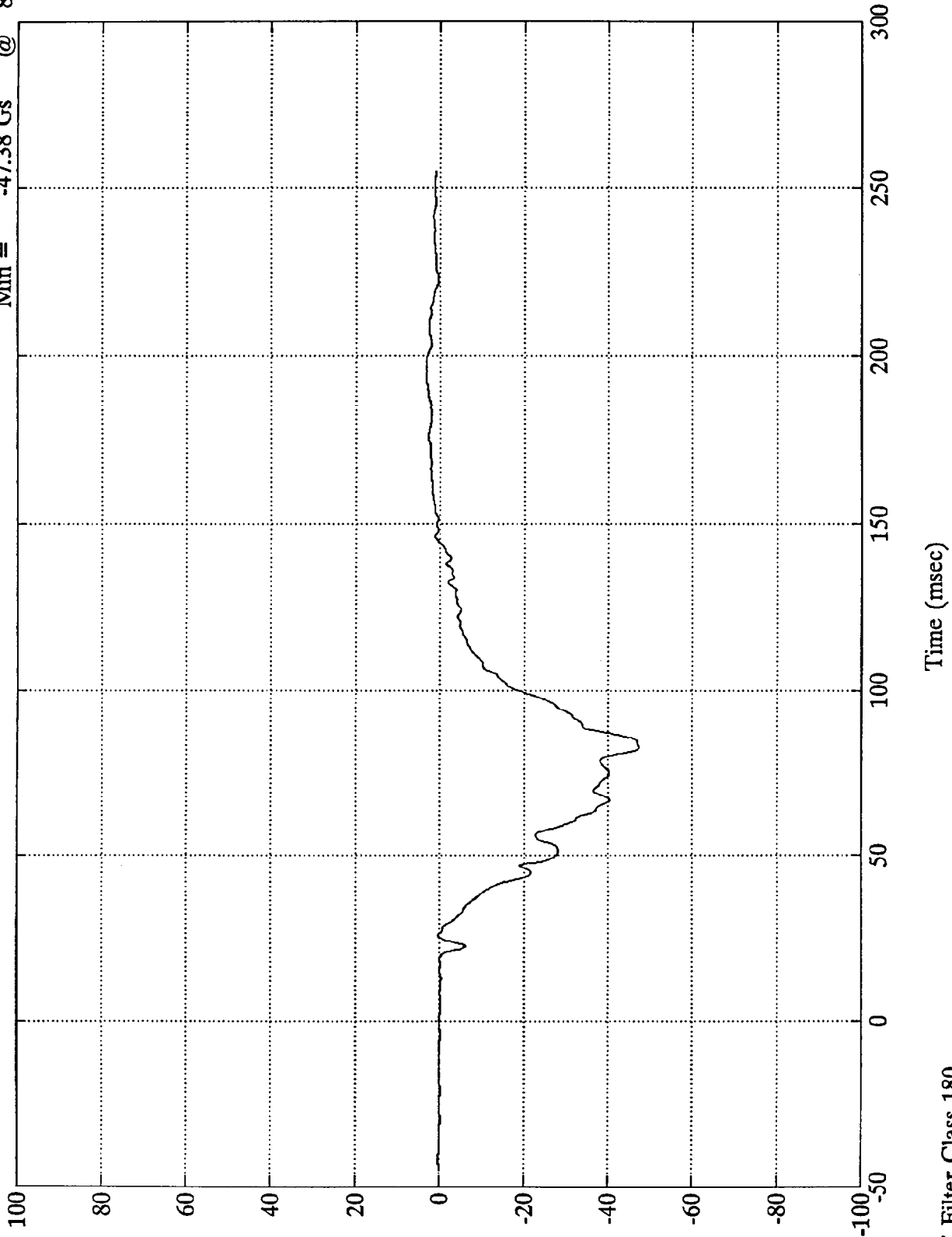
8120-8

SAE Filter Class 1000

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Chest X  
Max = 3.18 Gs @ 192.48 msec  
Min = -47.38 Gs @ 82.56 msec



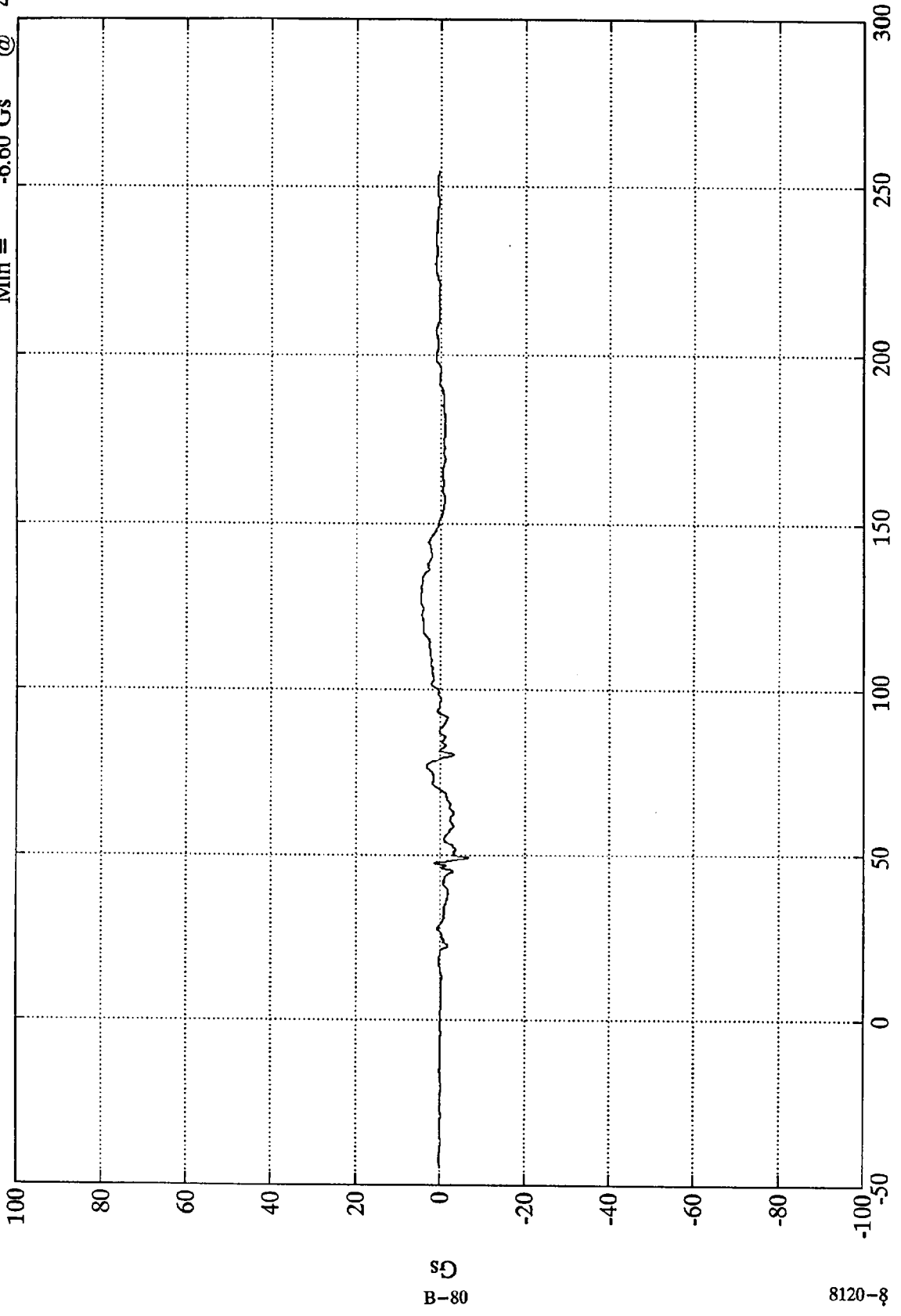
8D  
B-79

8120-8

SAE Filter Class 180

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Chest Y  
Max = 4.80 Gs @ 126.71 msec  
Min = -6.60 Gs @ 49.07 msec



B-80

8120-8

Time (msec)

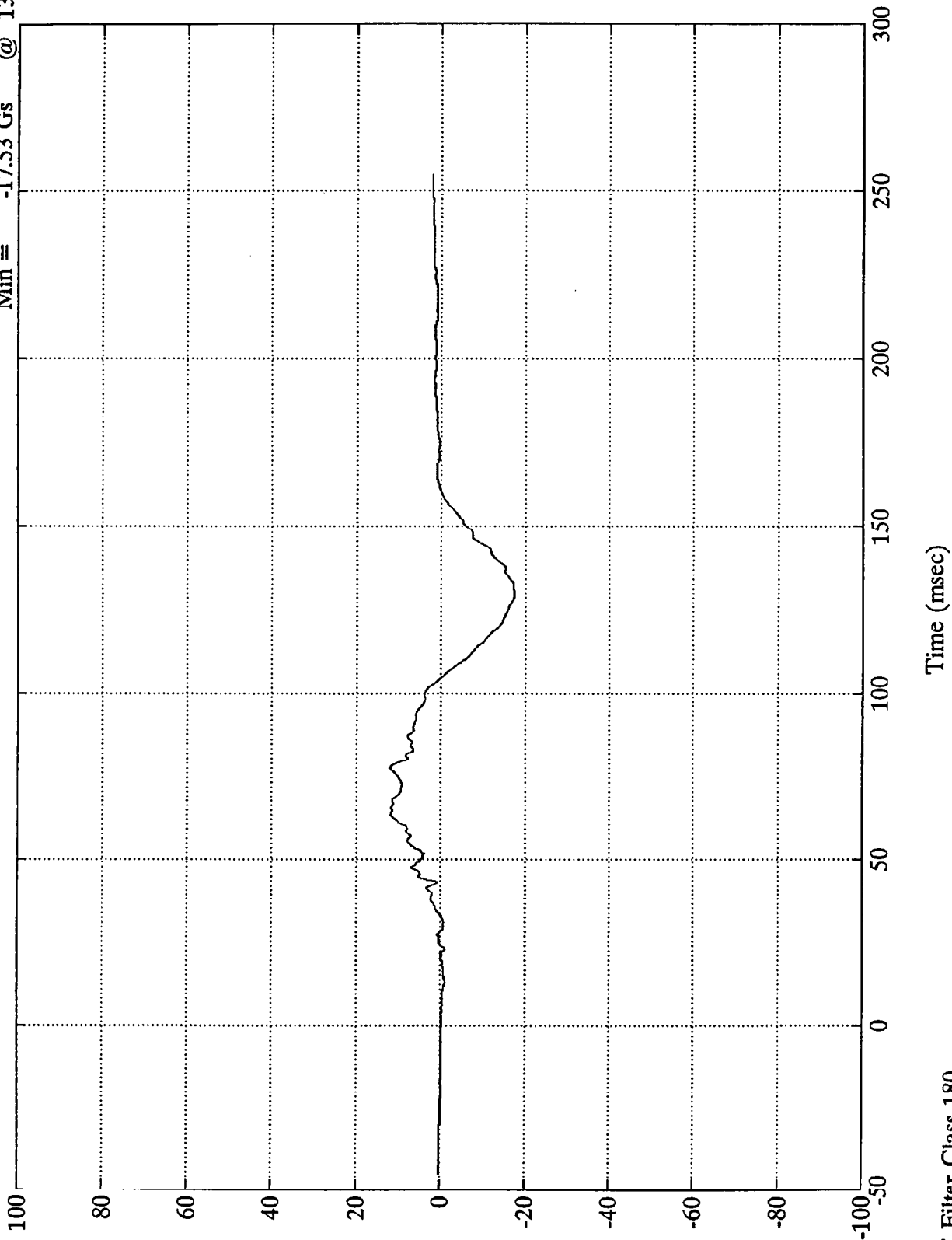
SAE Filter Class 180



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 12.03 Gs @ 77.64 msec  
Min = -17.53 Gs @ 130.08 msec

Pos. 1 Chest Z



SD  
B-81

8120-8

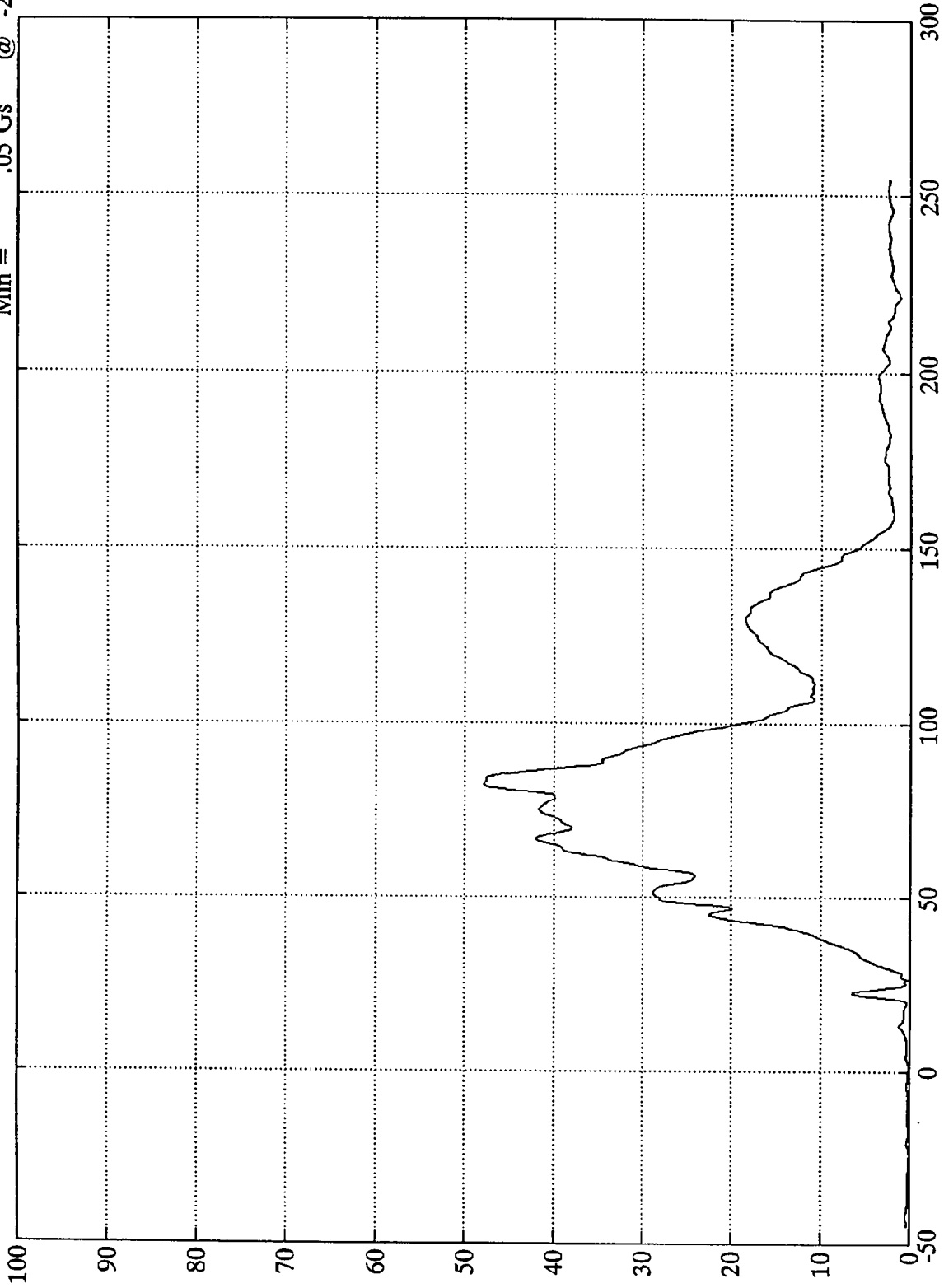
SAE Filter Class 180

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 47.84 Gs @ 82.44 msec  
Min = .05 Gs @ -24.24 msec

Pos. 1 Chest Resultant



SD  
B-82

8120-8

Time (msec)

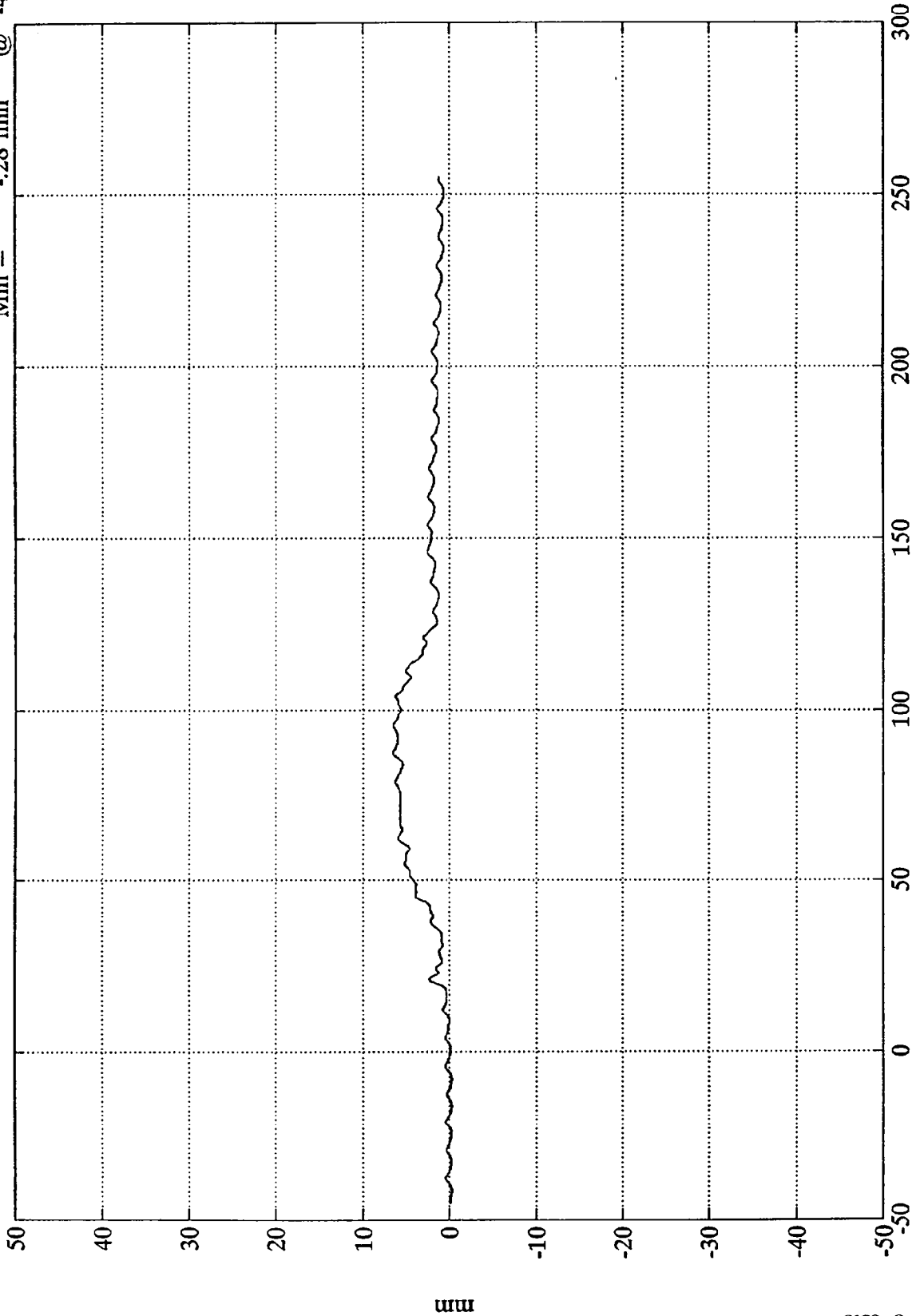
SAE Filter Class 180



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Chest Disp.

Max = 6.55 mm @ 87.59 msec  
Min = -2.28 mm @ -41.28 msec



B-83

8120-8

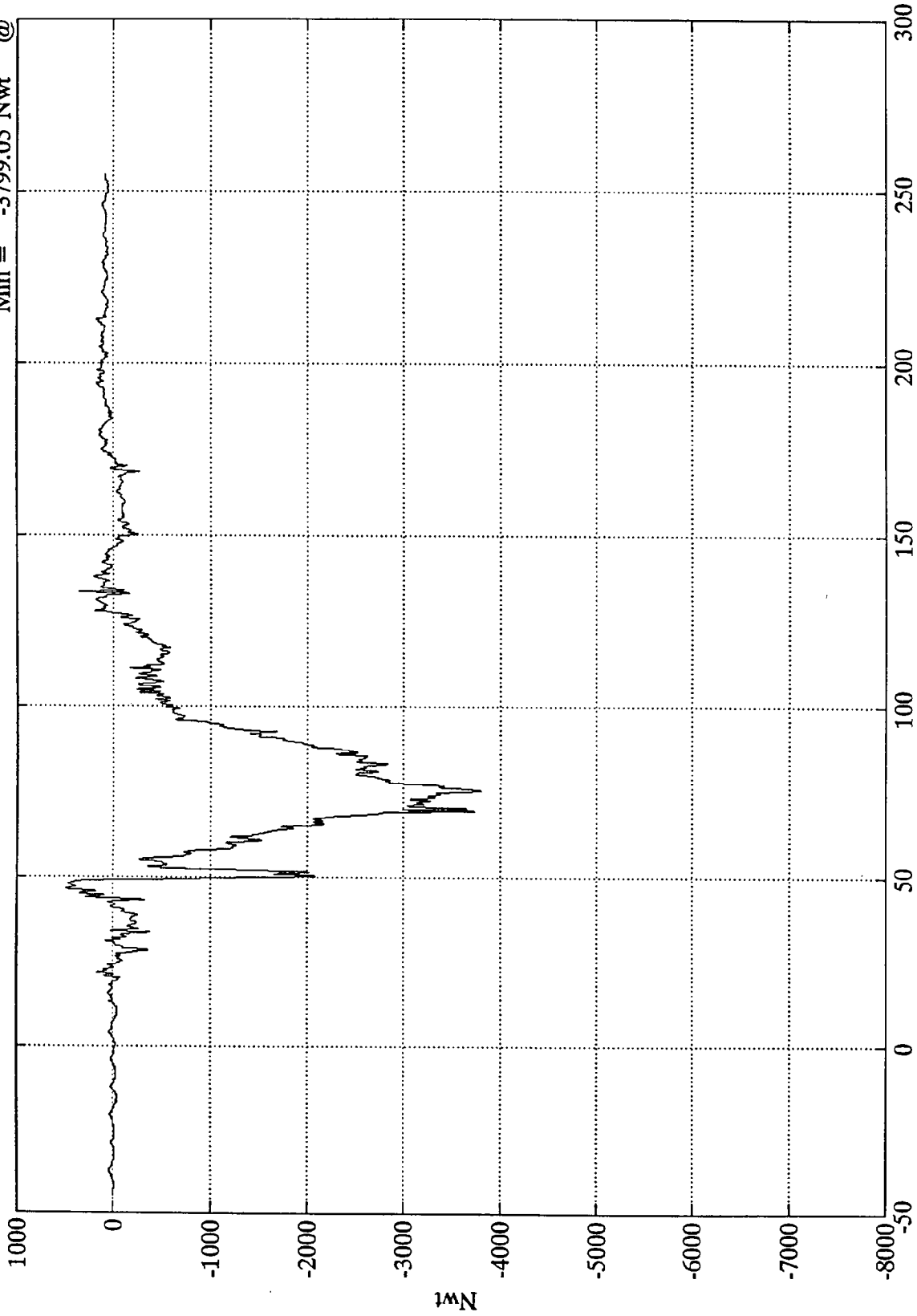
Time (msec)

SAE Filter Class 180

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 488.81 Nwt @ 46.31 msec  
Min = -3799.05 Nwt @ 75.23 msec

Pos. 1 Left Femur



1MN  
B-84

8120-8

Time (msec)

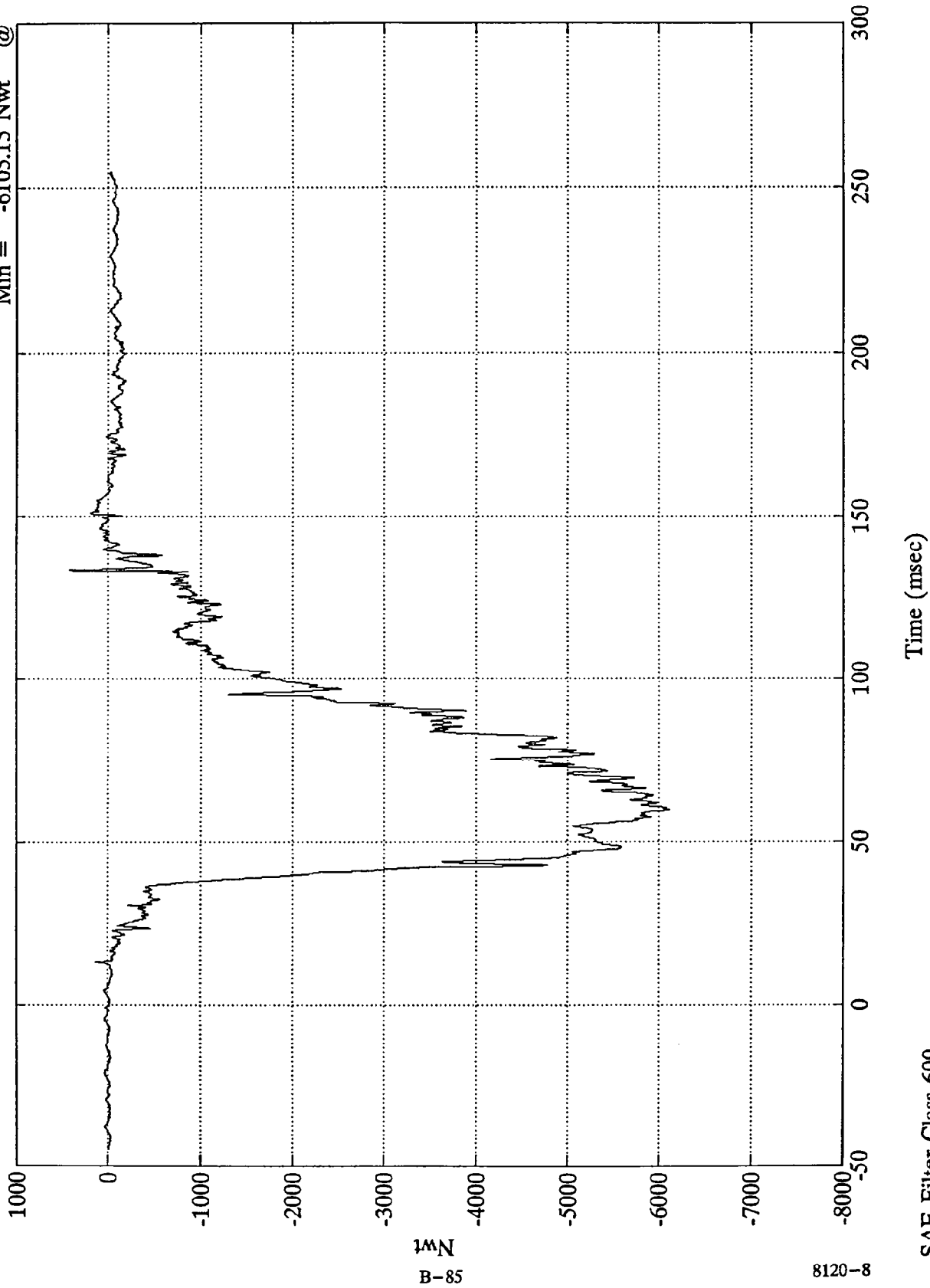
SAE Filter Class 600



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Right Femur

Max = 417.60 Nwt @ 133.55 msec  
Min = -6105.15 Nwt @ 59.88 msec



B-85  
1Wt

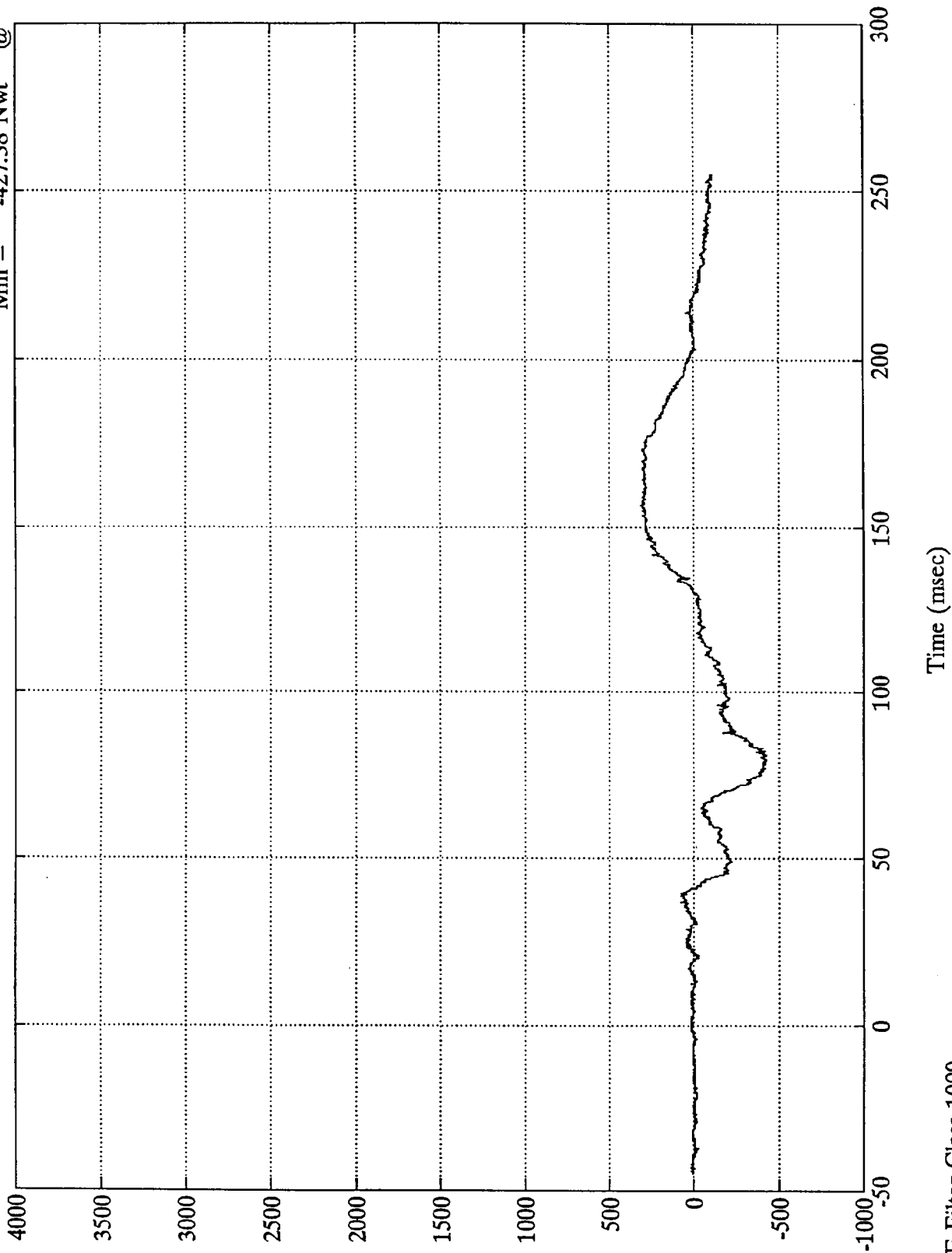
8120-8

SAE Filter Class 600

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Upper Neck Fx

Max = 315.73 Nwt @ 156.96 msec  
Min = -427.38 Nwt @ 81.12 msec



1 Nwt  
B-86

8120-8

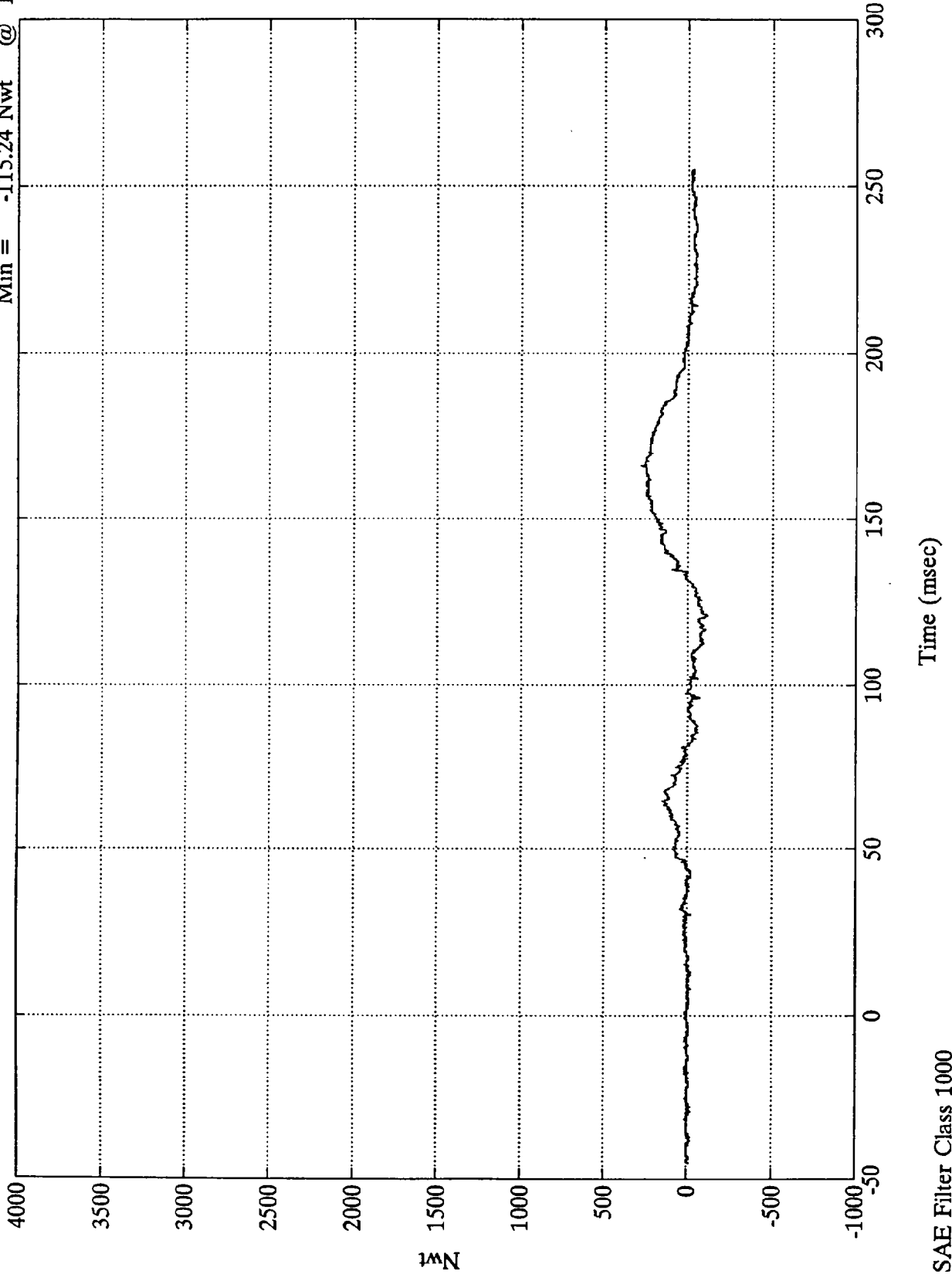
SAE Filter Class 1000

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Upper Neck Fy

Max = 279.98 Nwt @ 166.44 msec  
Min = -115.24 Nwt @ 120.96 msec



B-87

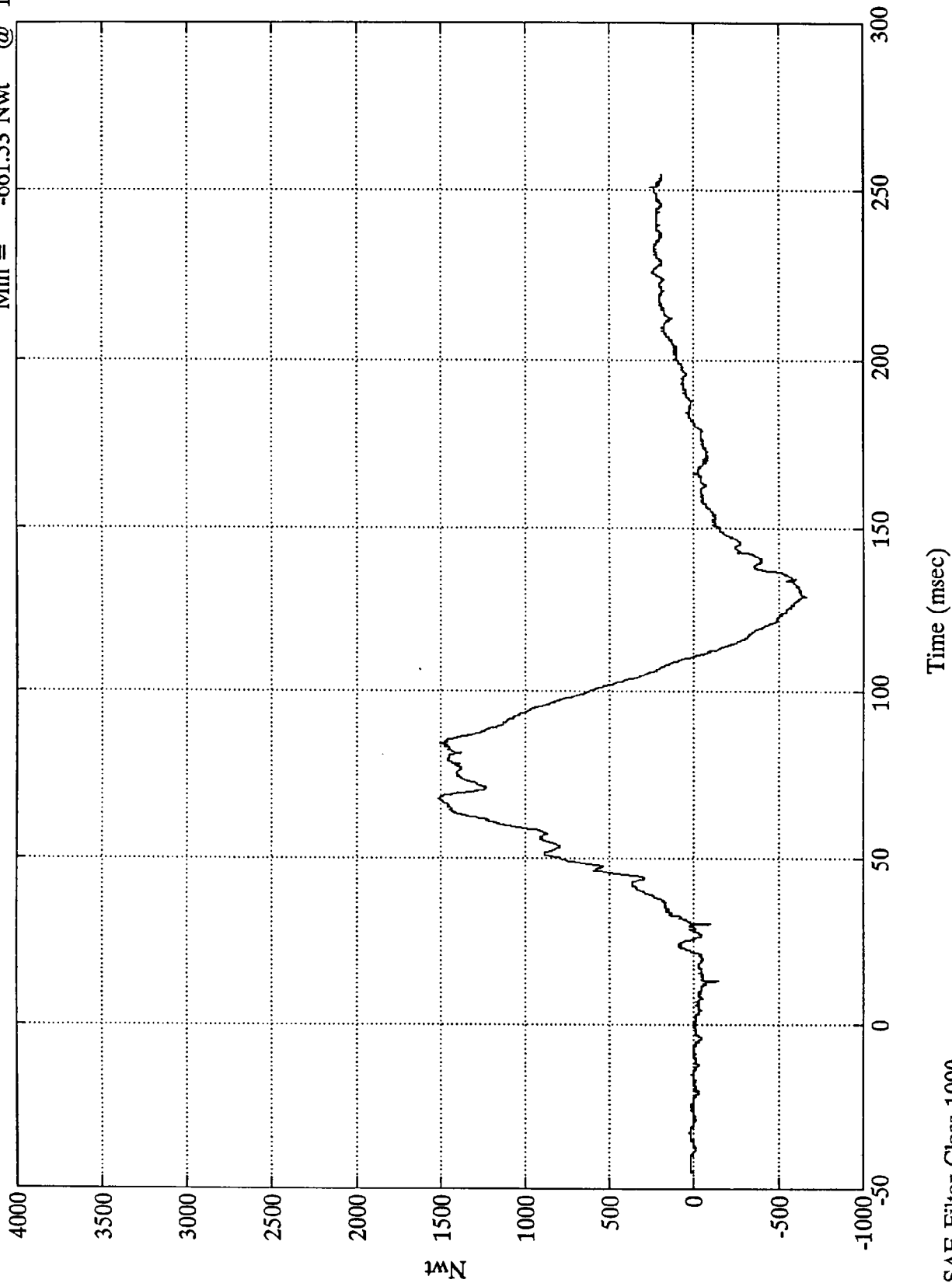
8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Upper Neck Fz

Max = 1520.16 Nwt @ 67.91 msec  
Min = -661.53 Nwt @ 129.12 msec



B-88

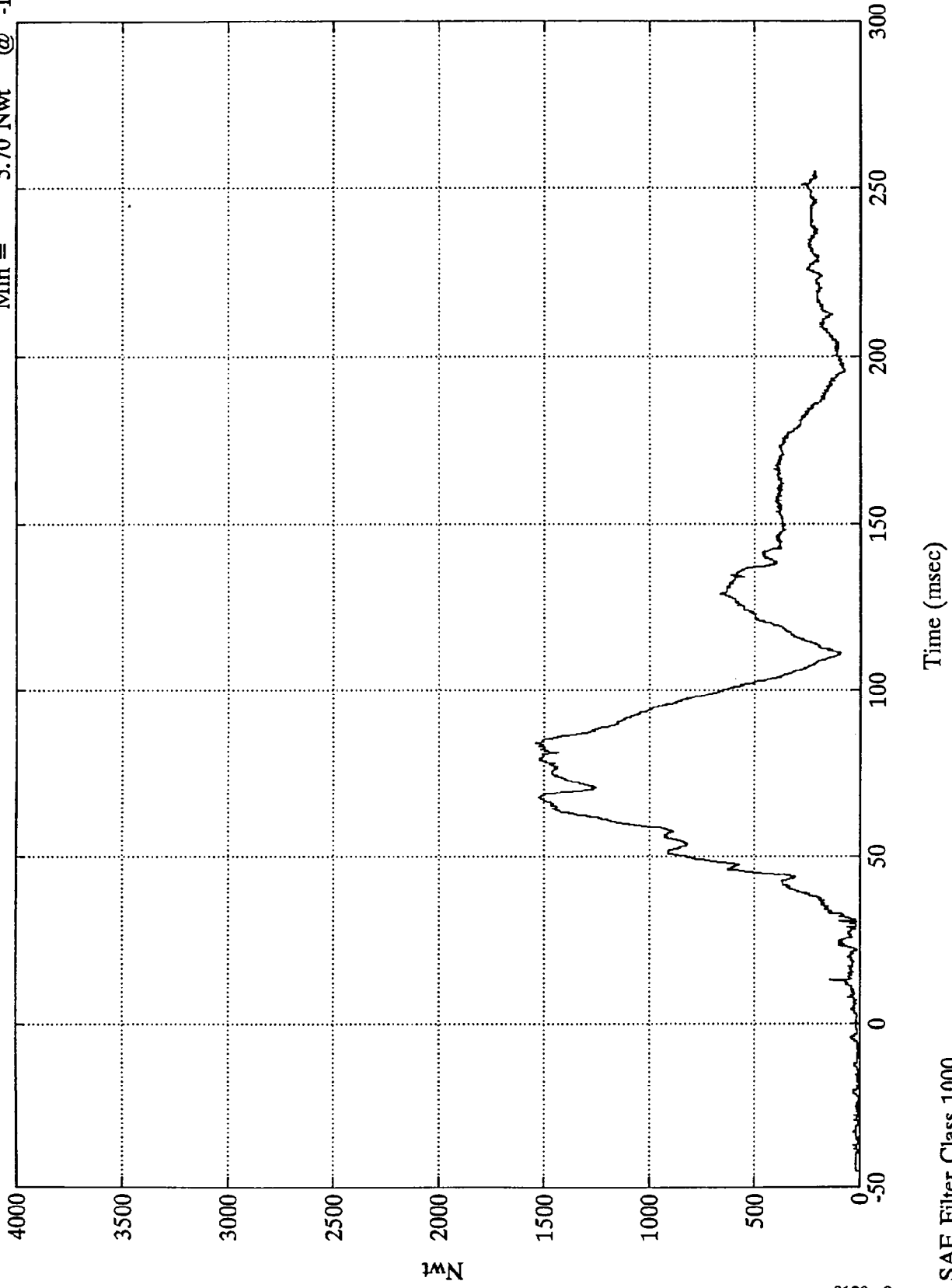
8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Neck Force Res.

Max = 1540.50 Nwt @ 84.24 msec  
Min = 5.70 Nwt @ -14.16 msec



1<sup>st</sup> N  
B-89

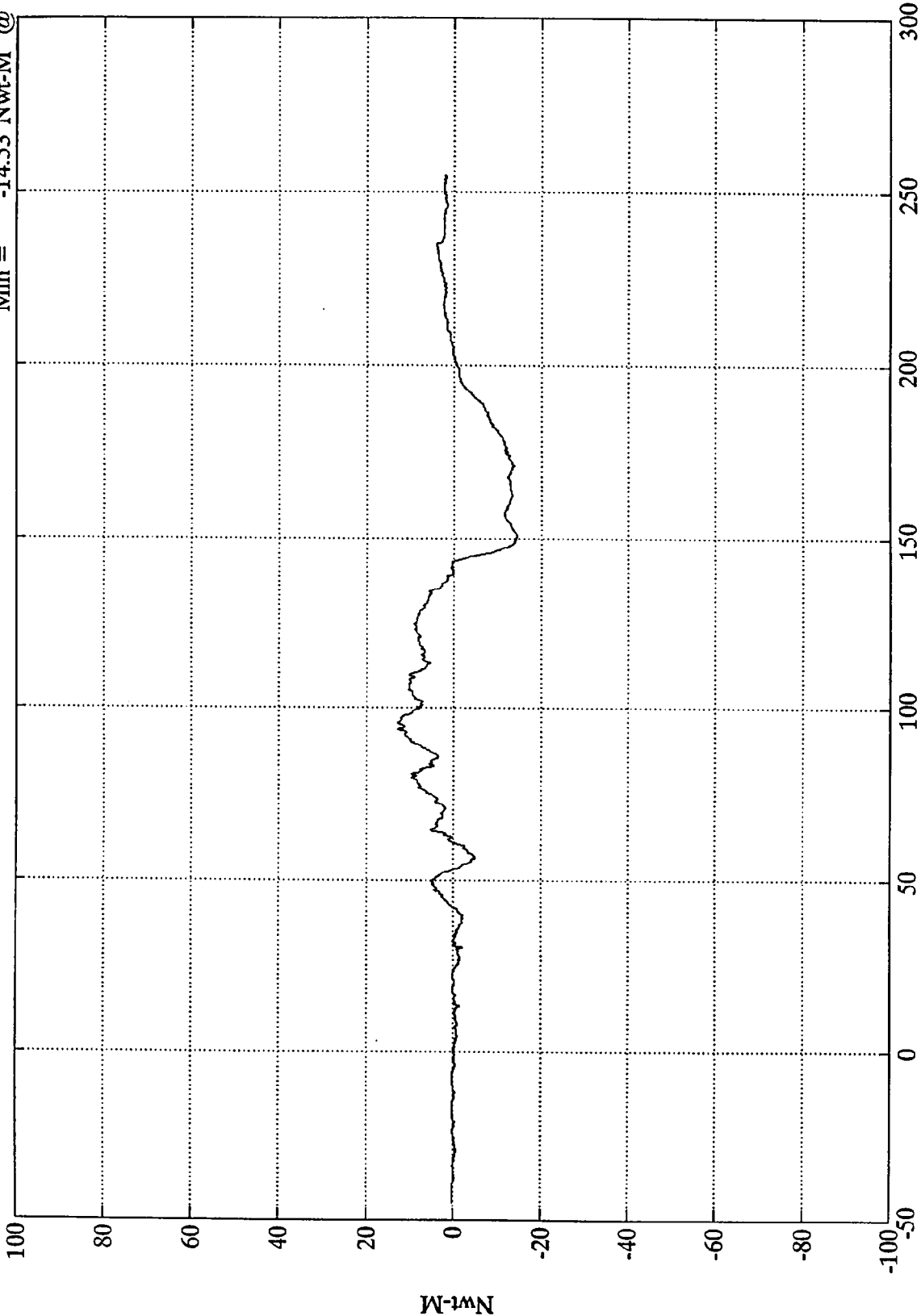
8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Upper Neck Mx

Max = 12.82 Nwt-M @ 93.72 msec  
Min = -14.53 Nwt-M @ 150.72 msec



B-90  
Nwt-M

Time (msec)

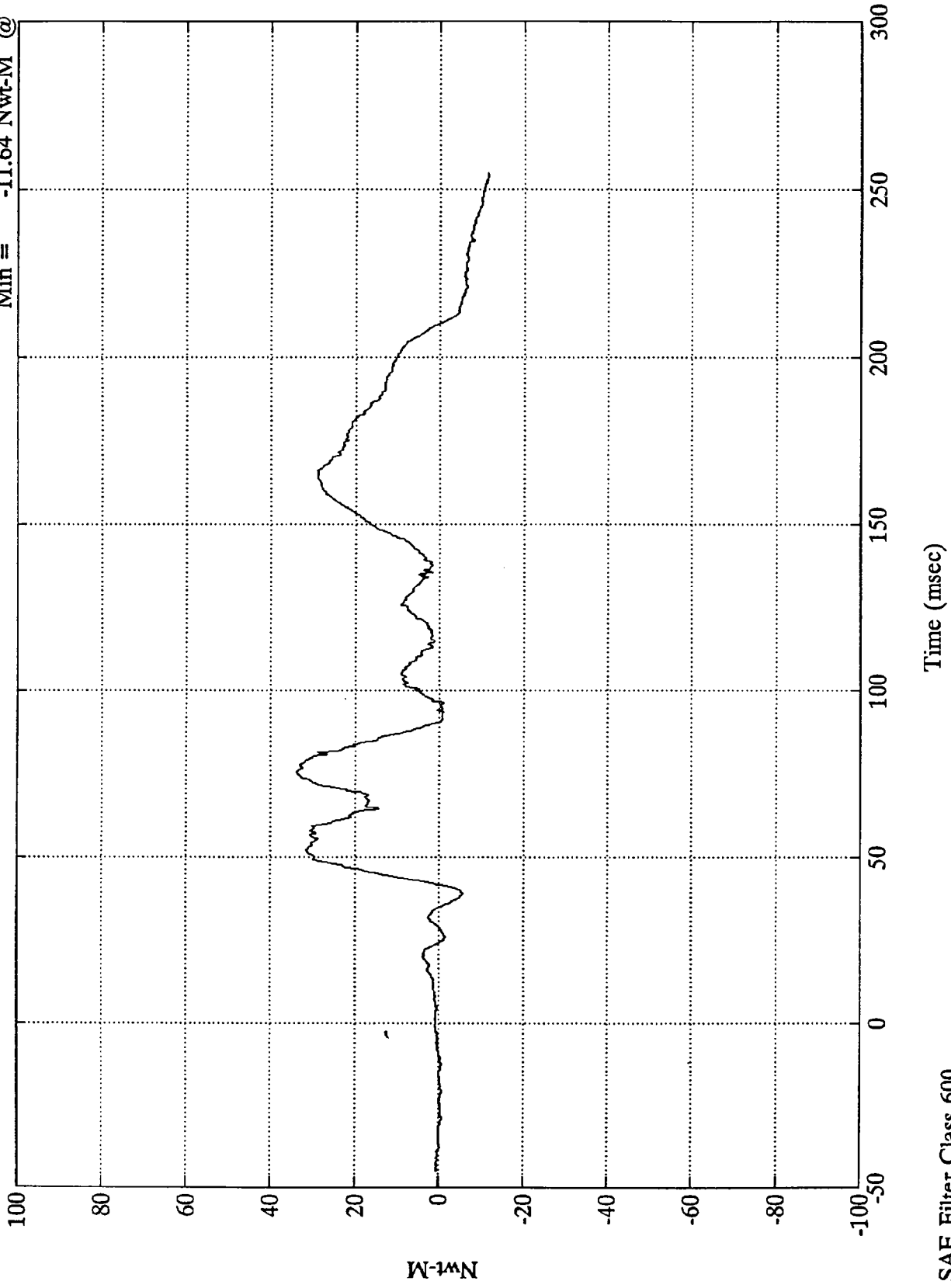
SAE Filter Class 600

8120-8

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Upper Neck My

Max = 33.80 Nwt-M @ 75.47 msec  
Min = -11.64 Nwt-M @ 254.16 msec



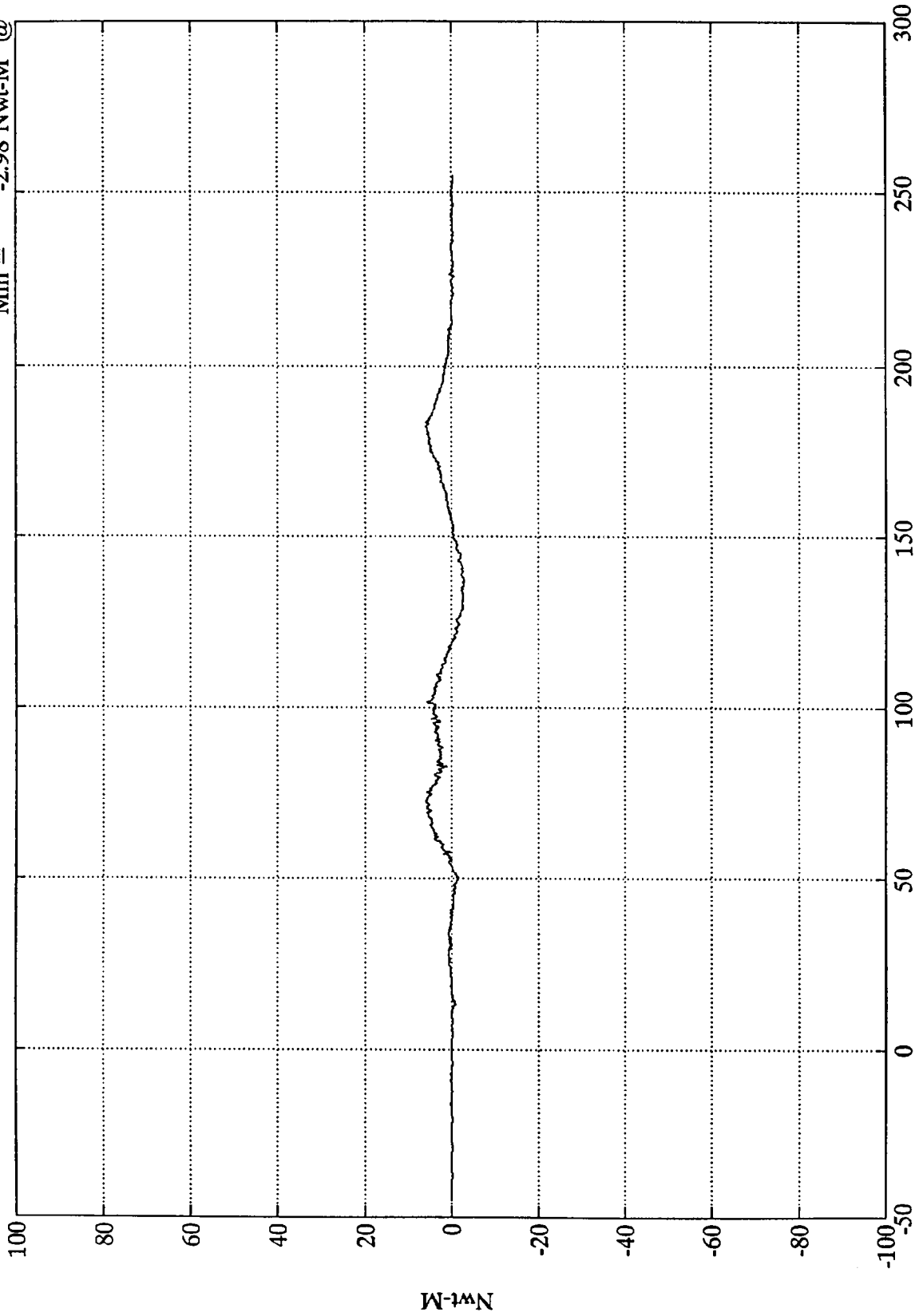
B-91

8120-8

SAE Filter Class 600

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Upper Neck Mz  
Max = 5.90 Nwt-M @ 182.52 msec  
Min = -2.98 Nwt-M @ 135.83 msec



B-92

8120-8

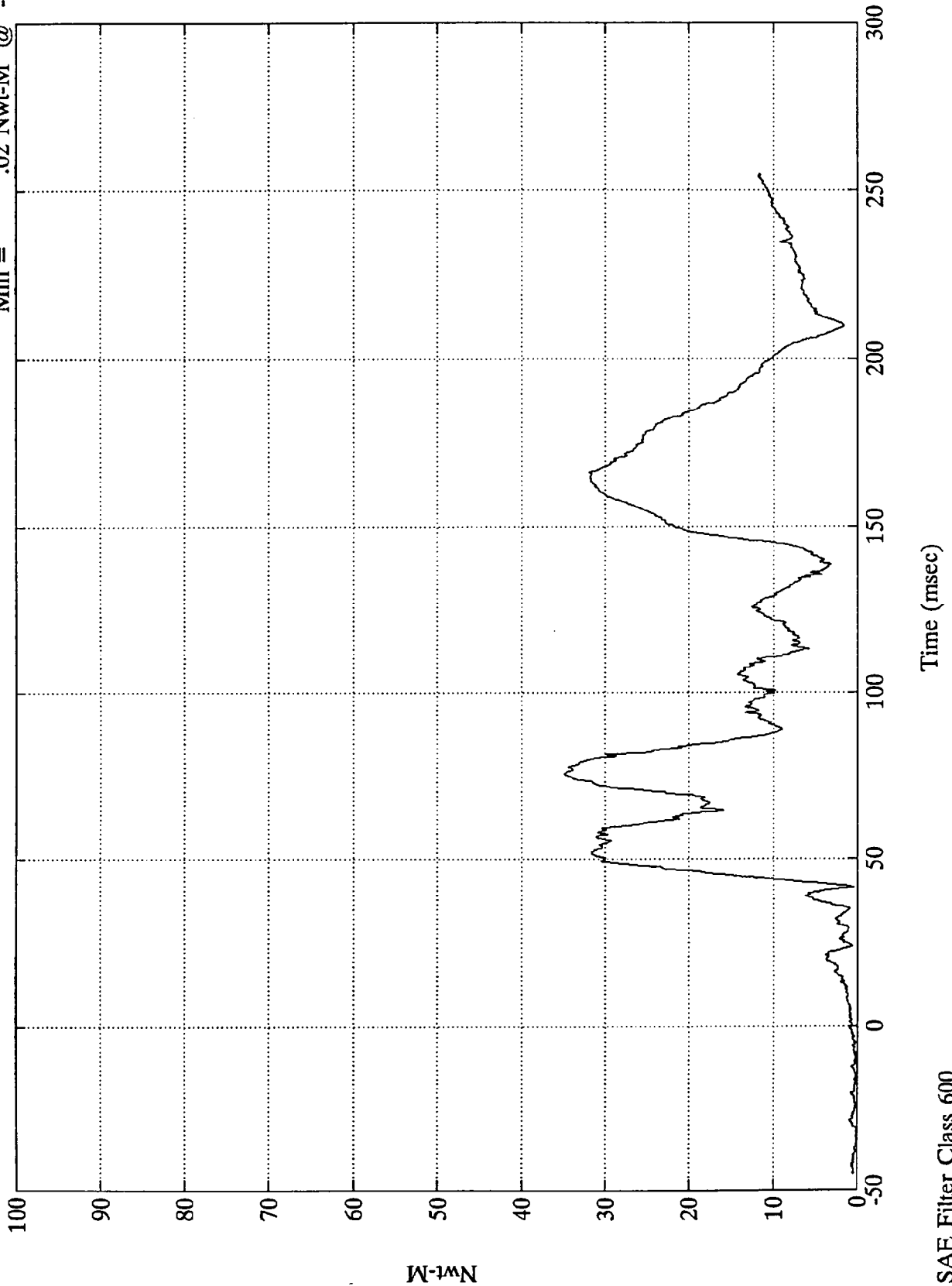
SAE Filter Class 600

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

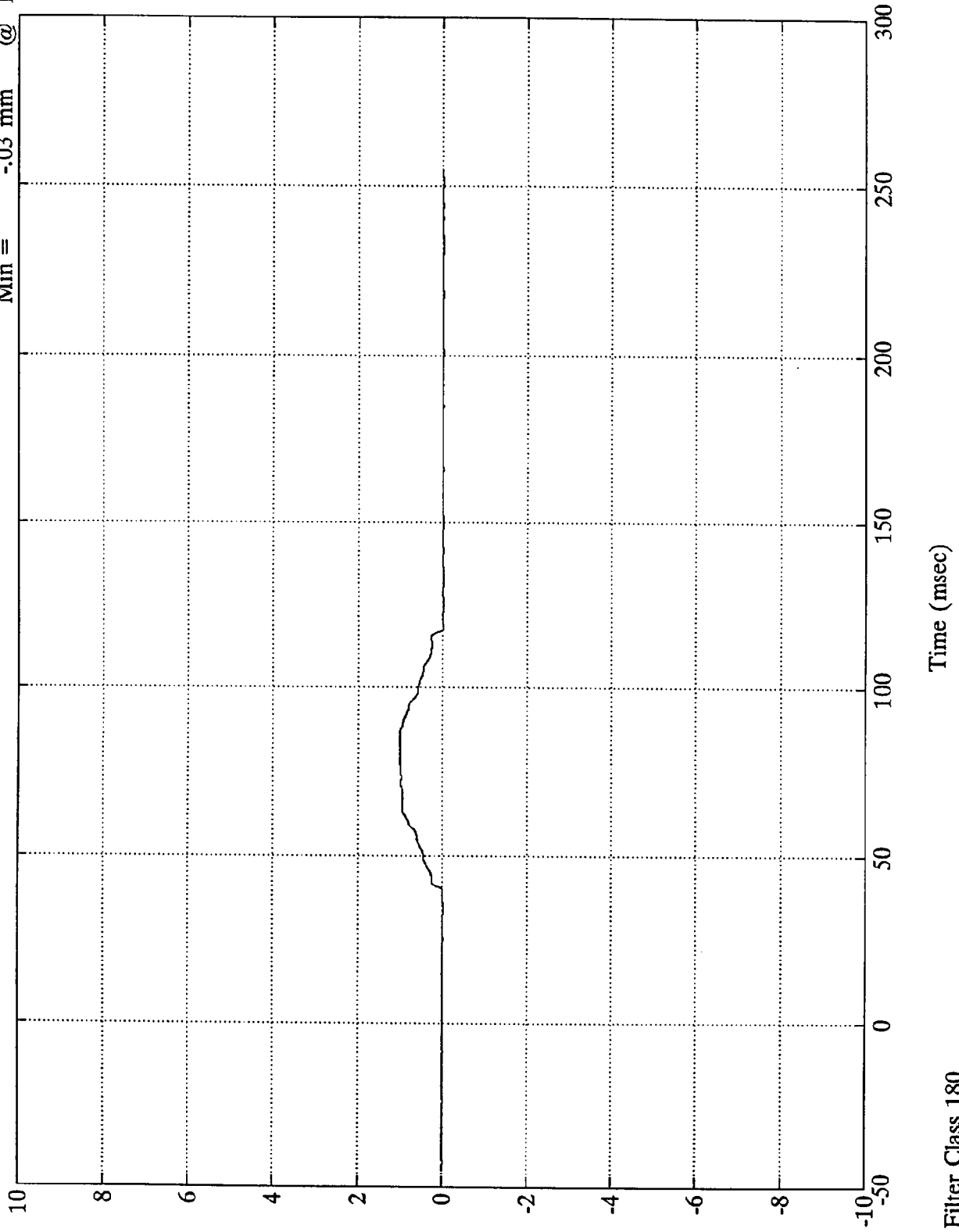
Pos. 1 Neck Moment Res.

Max = 34.79 Nwt-M @ 75.59 msec  
Min = .02 Nwt-M @ -34.44 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Belt Elongation  
Max = 1.01 mm @ 82.19 msec  
Min = -0.03 mm @ 118.08 msec



UUI  
B-94

8120-8

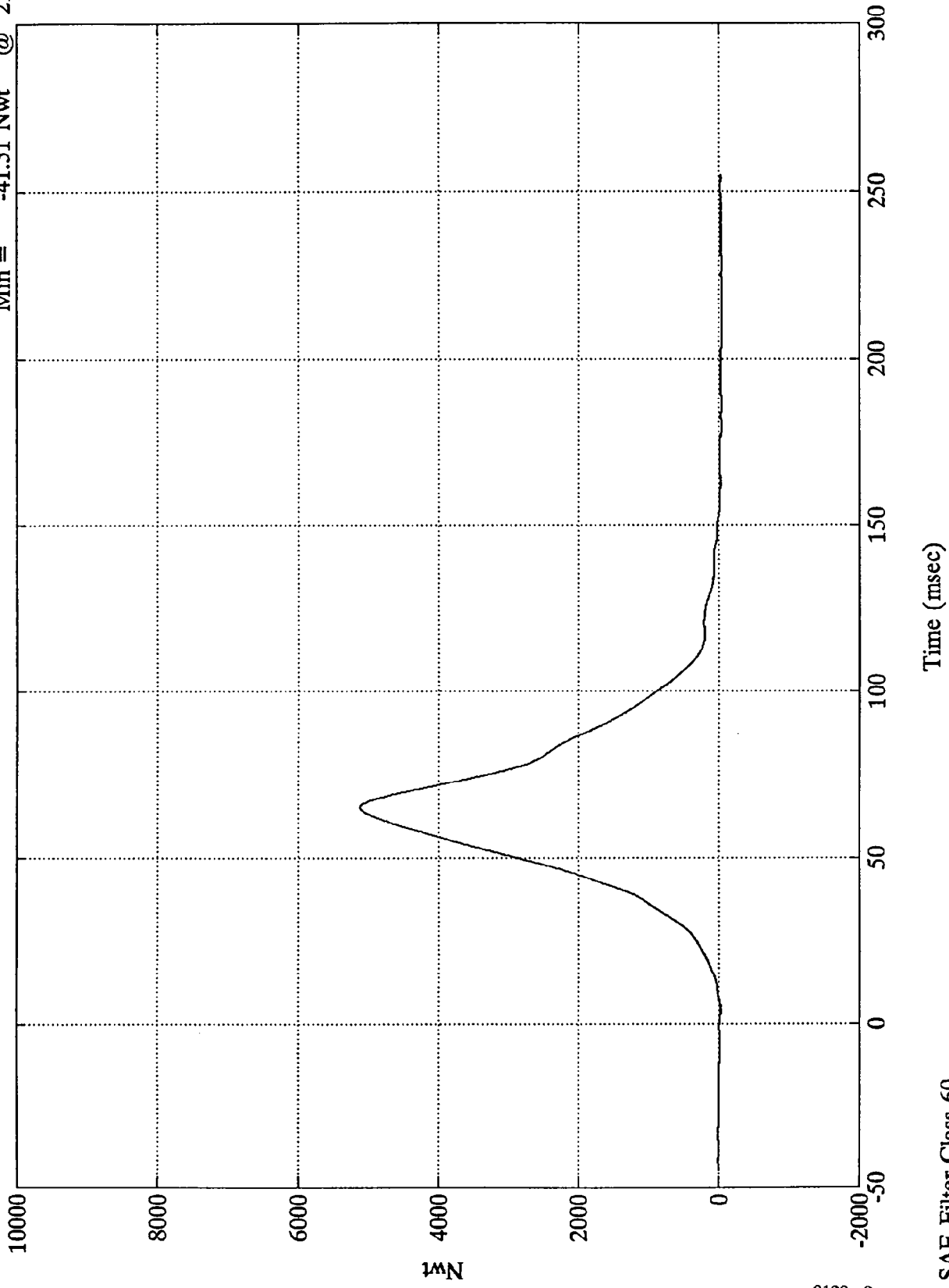
SAE Filter Class 180



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Left Belt Load

Max = 5128.85 Nwt @ 65.15 msec  
Min = -41.51 Nwt @ 212.75 msec



1N  
B-95

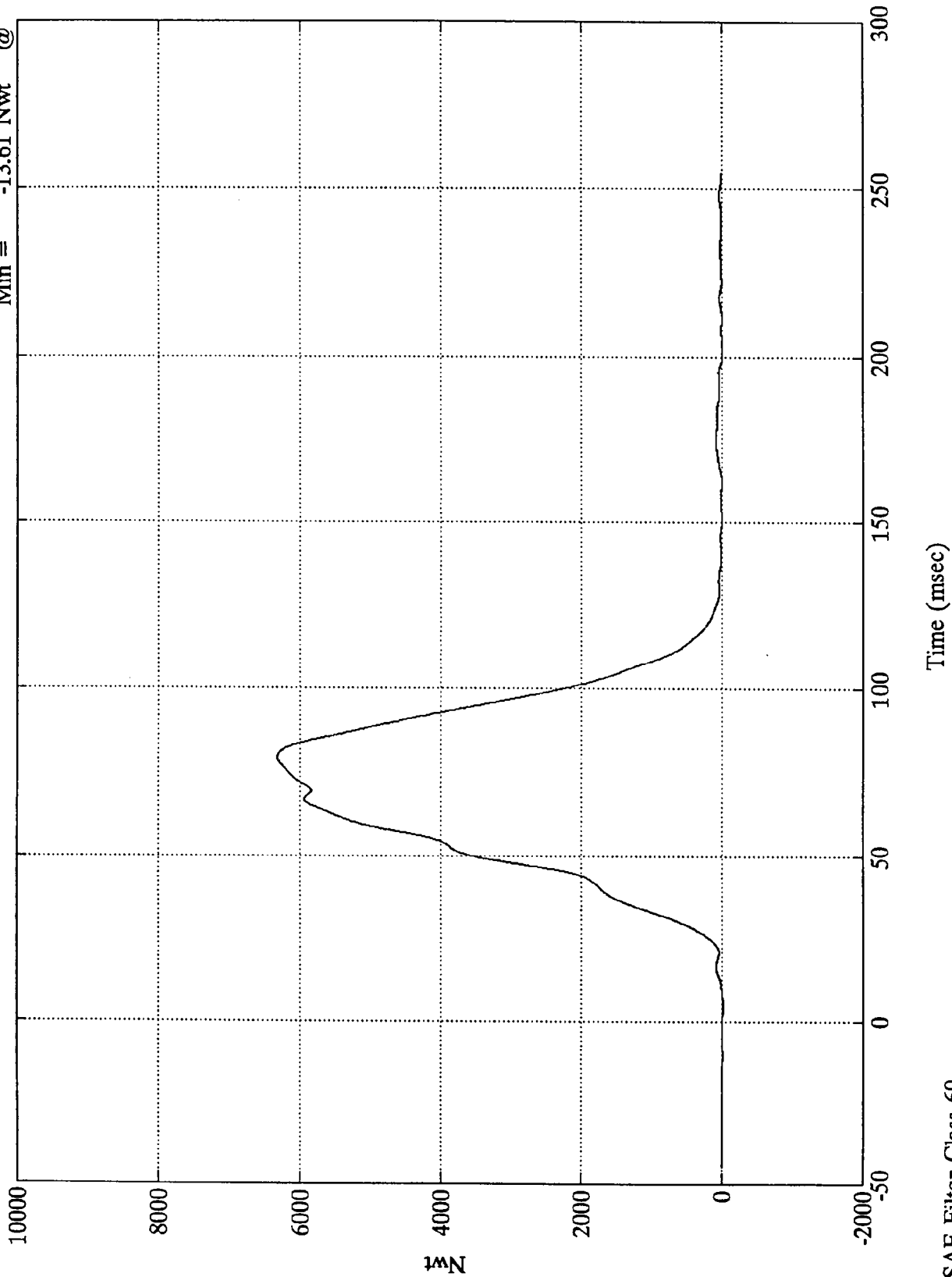
8120-8

SAE Filter Class 60

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 1 Torso Belt Load

Max = 6320.15 Nwt @ 79.19 msec  
Min = -13.61 Nwt @ 4.19 msec



1kN  
B-96

8120-8

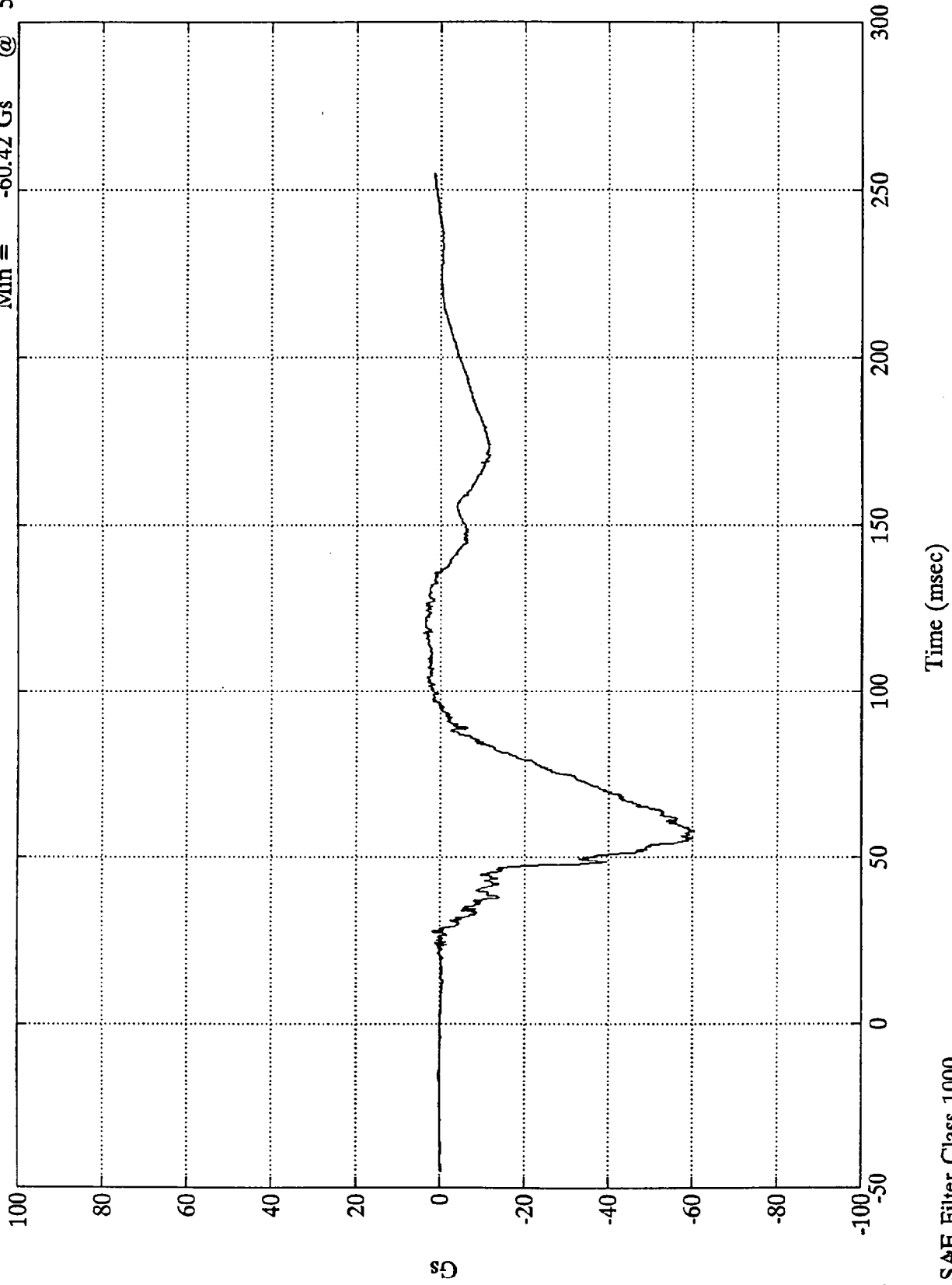
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Head X

Max = 4.02 Gs @ 117.24 msec  
Min = -60.42 Gs @ 57.84 msec



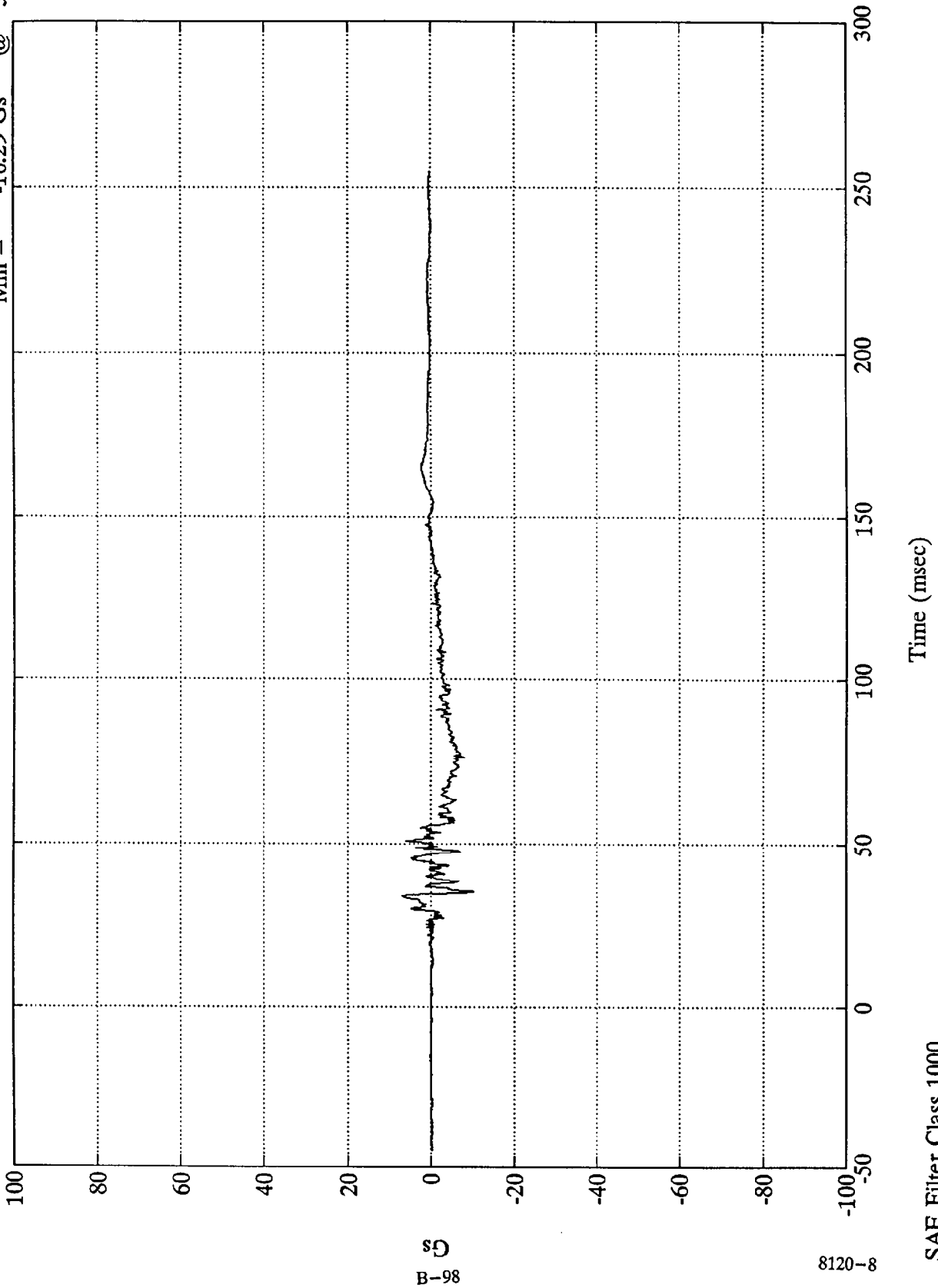
8D  
B-97

8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Head Y  
Max = 7.02 Gs @ 33.84 msec  
Min = -10.29 Gs @ 35.03 msec



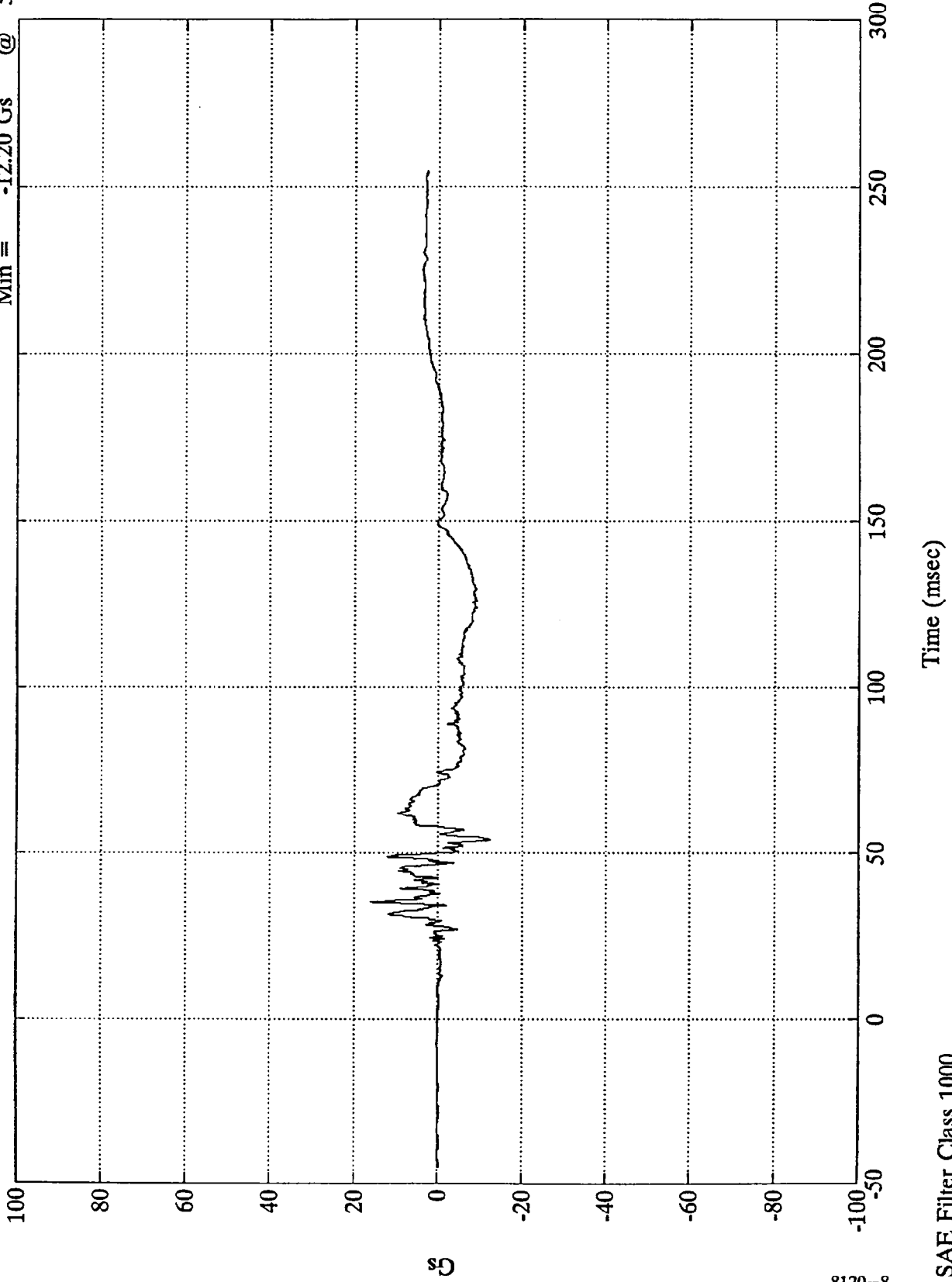
8120-8  
B-98

SAE Filter Class 1000



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Head Z  
Max = 16.20 Gs @ 35.15 msec  
Min = -12.20 Gs @ 53.88 msec



B-99

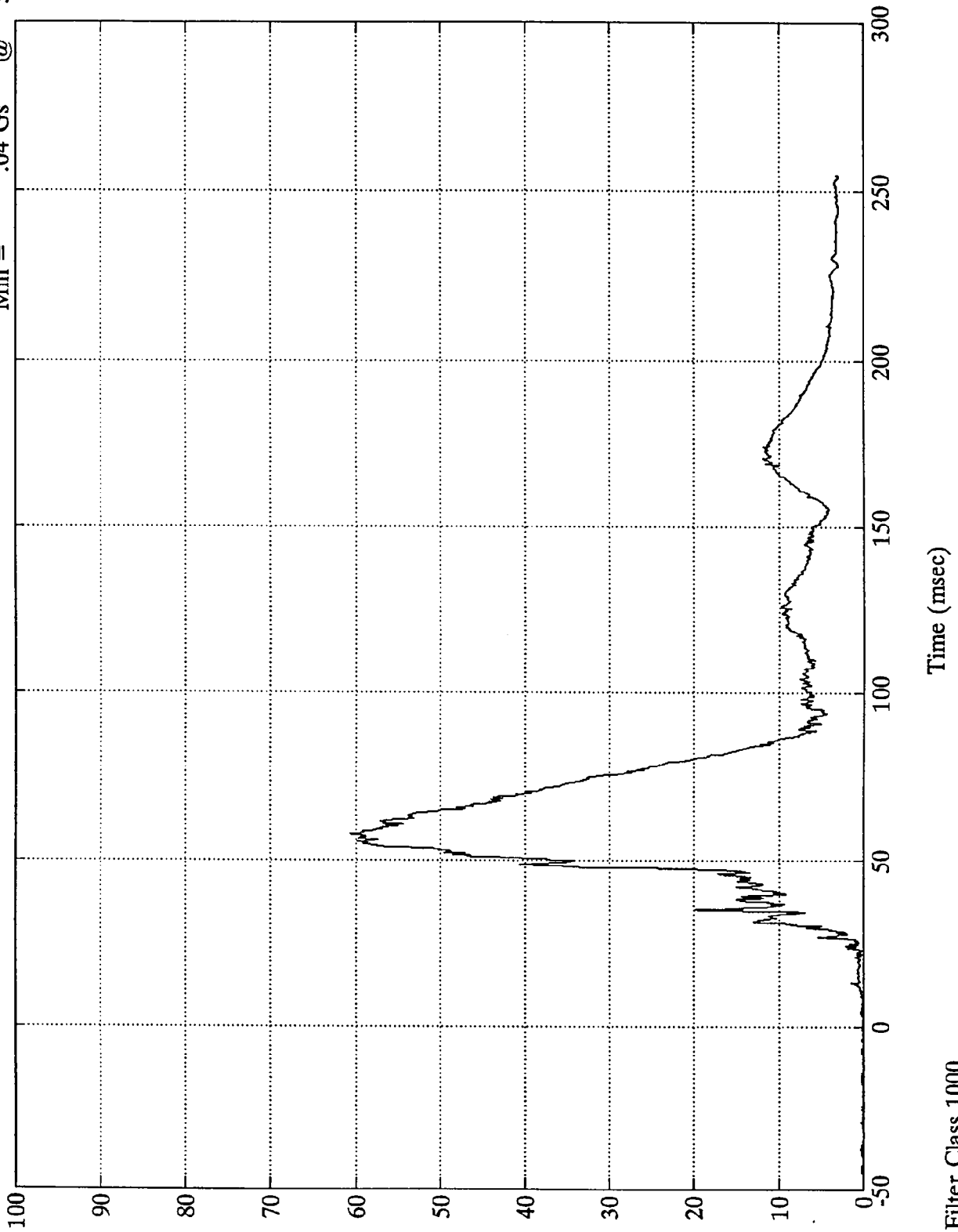
8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Head Resultant

Max = 60.64 Gs @ 57.84 msec  
Min = .04 Gs @ 3.23 msec



B-100

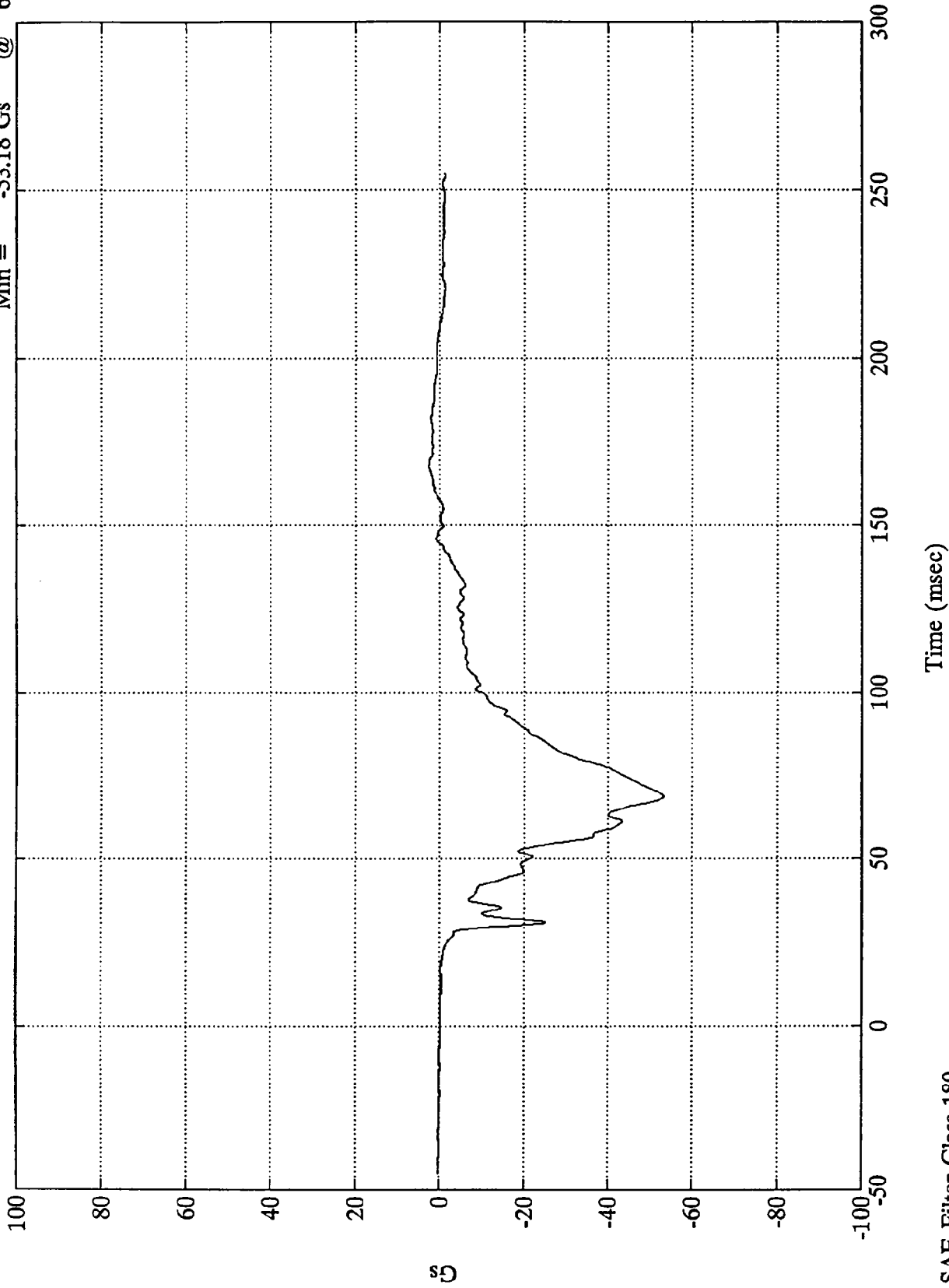
8120-8

SAE Filter Class 1000



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Chest X  
Max = 2.63 Gs @ 167.75 msec  
Min = -53.18 Gs @ 68.87 msec



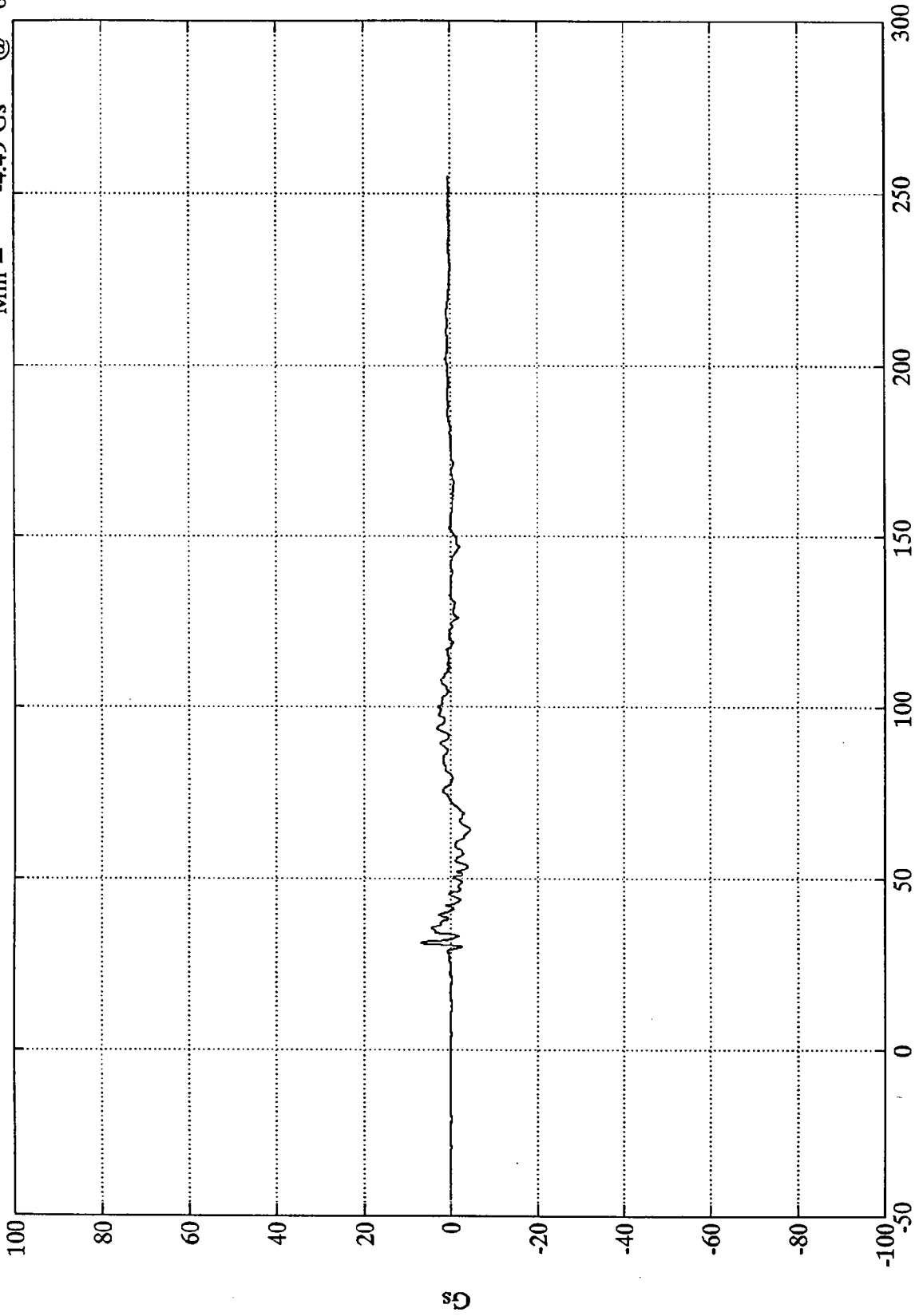
B-101

8120-8

SAE Filter Class 180

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Chest Y  
Max = 6.88 Gs @ 30.84 msec  
Min = -4.49 Gs @ 64.56 msec



B-102

8120-8

Time (msec)

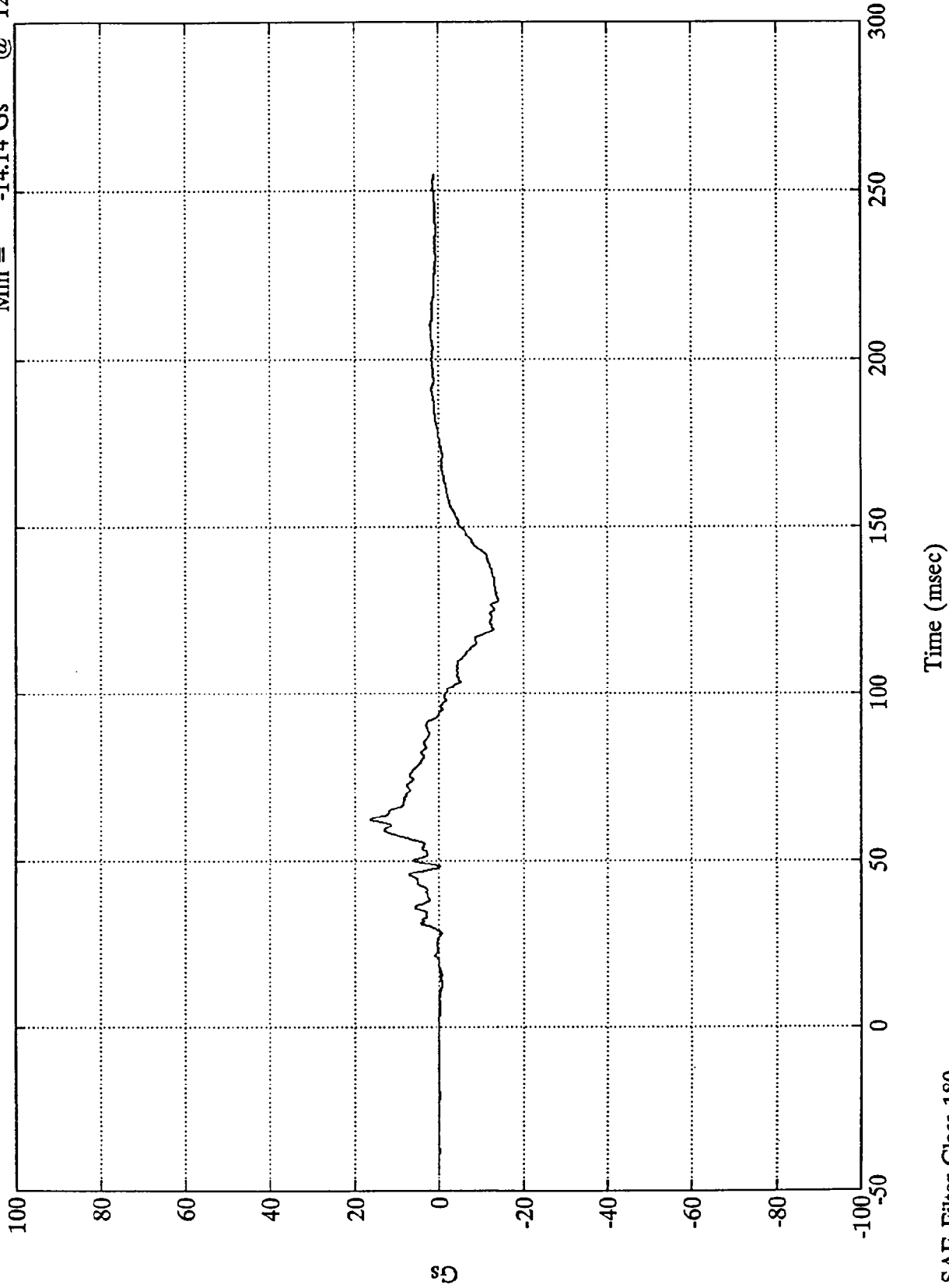
SAE Filter Class 180



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 16.31 Gs @ 62.40 msec  
Min = -14.14 Gs @ 127.80 msec

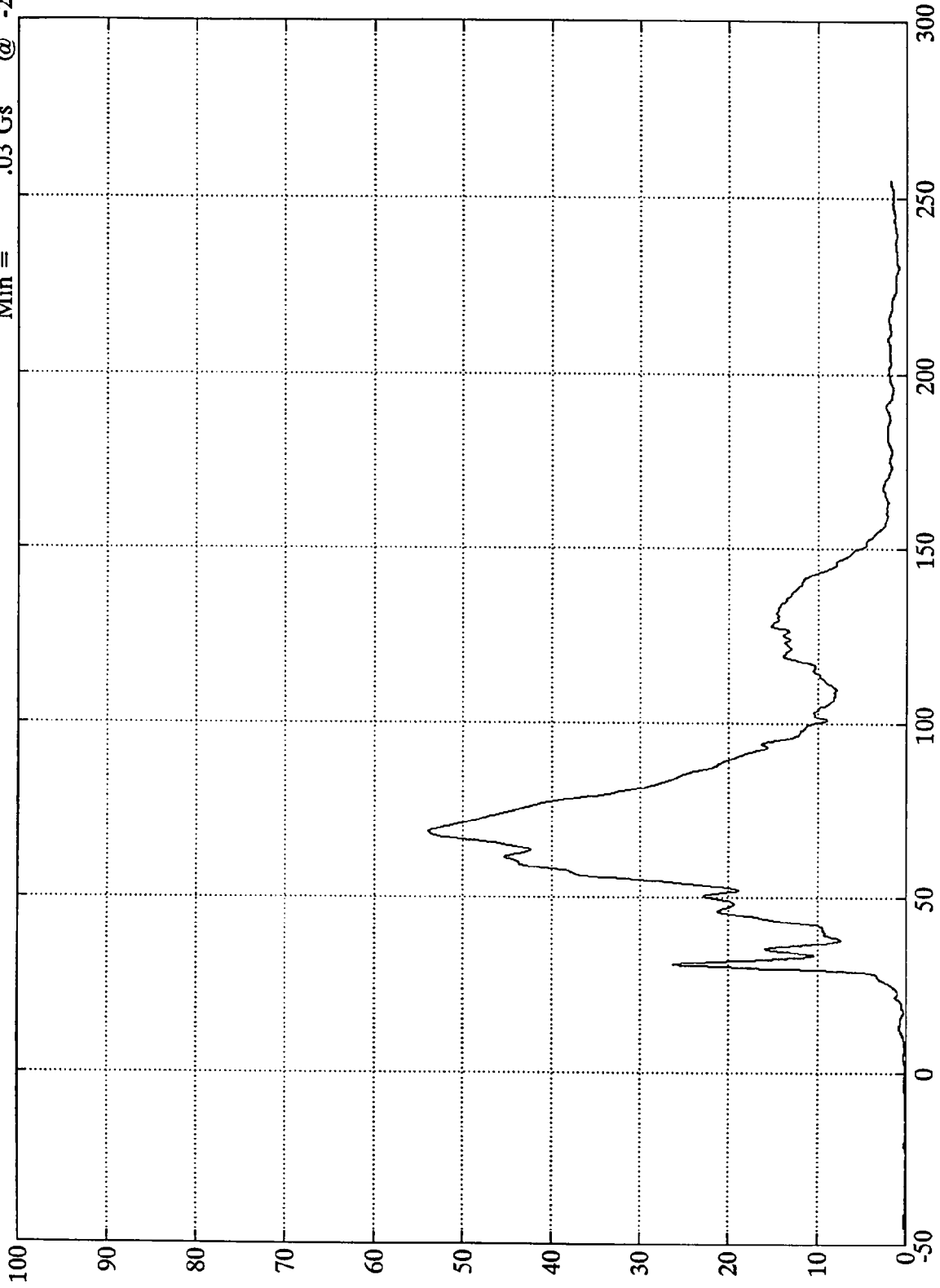
Pos. 2 Chest Z



NCAP TEST #8 - 1994 FORD MUSTANG

Max = 53.89 Gs @ 68.76 msec  
Min = .03 Gs @ -23.76 msec

Pos. 2 Chest Resultant

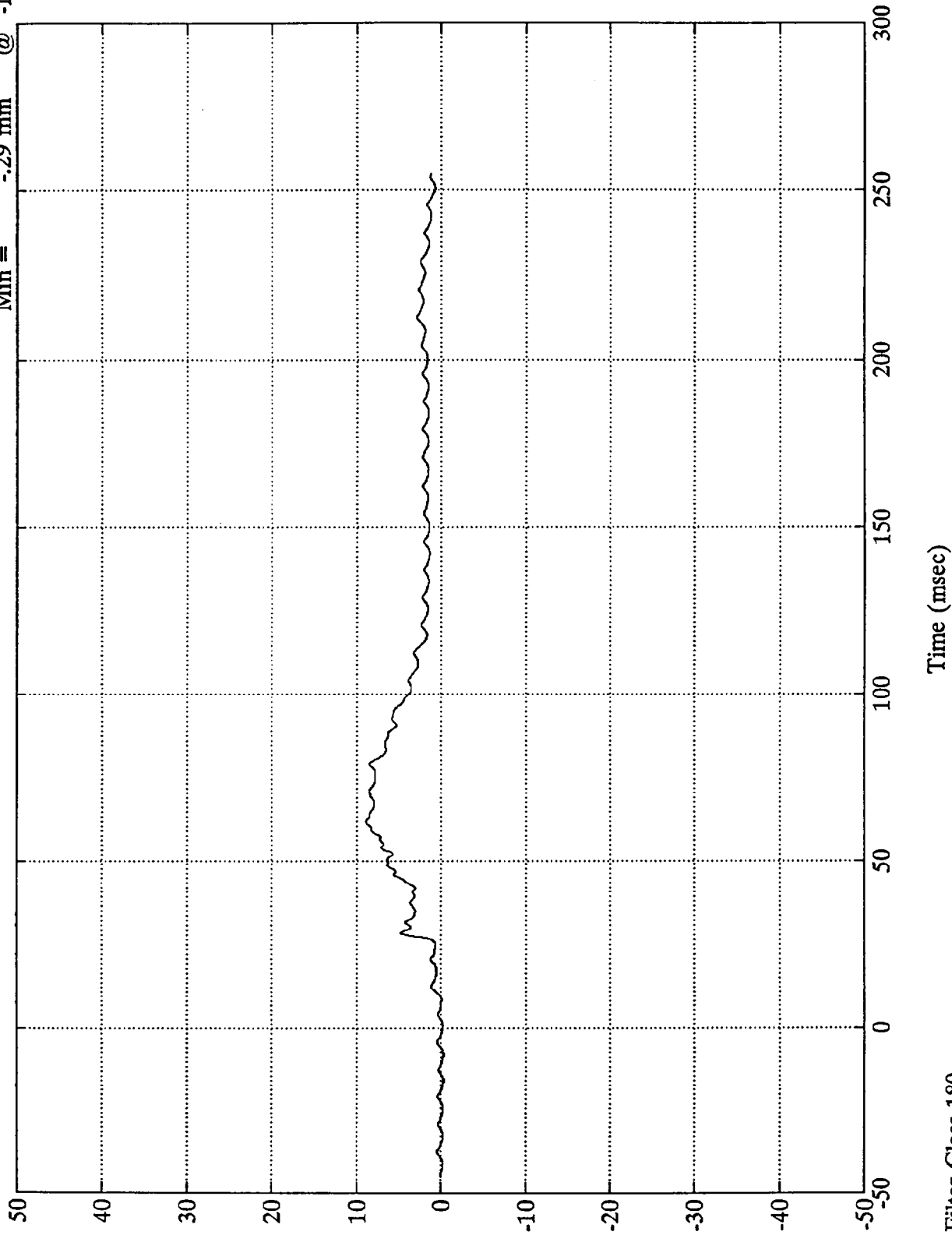


Time (msec)

SAE Filter Class 180

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Chest Disp.      Max = 8.91 mm @ 61.92 msec  
Min = -2.29 mm @ -15.96 msec



|||||  
B-105

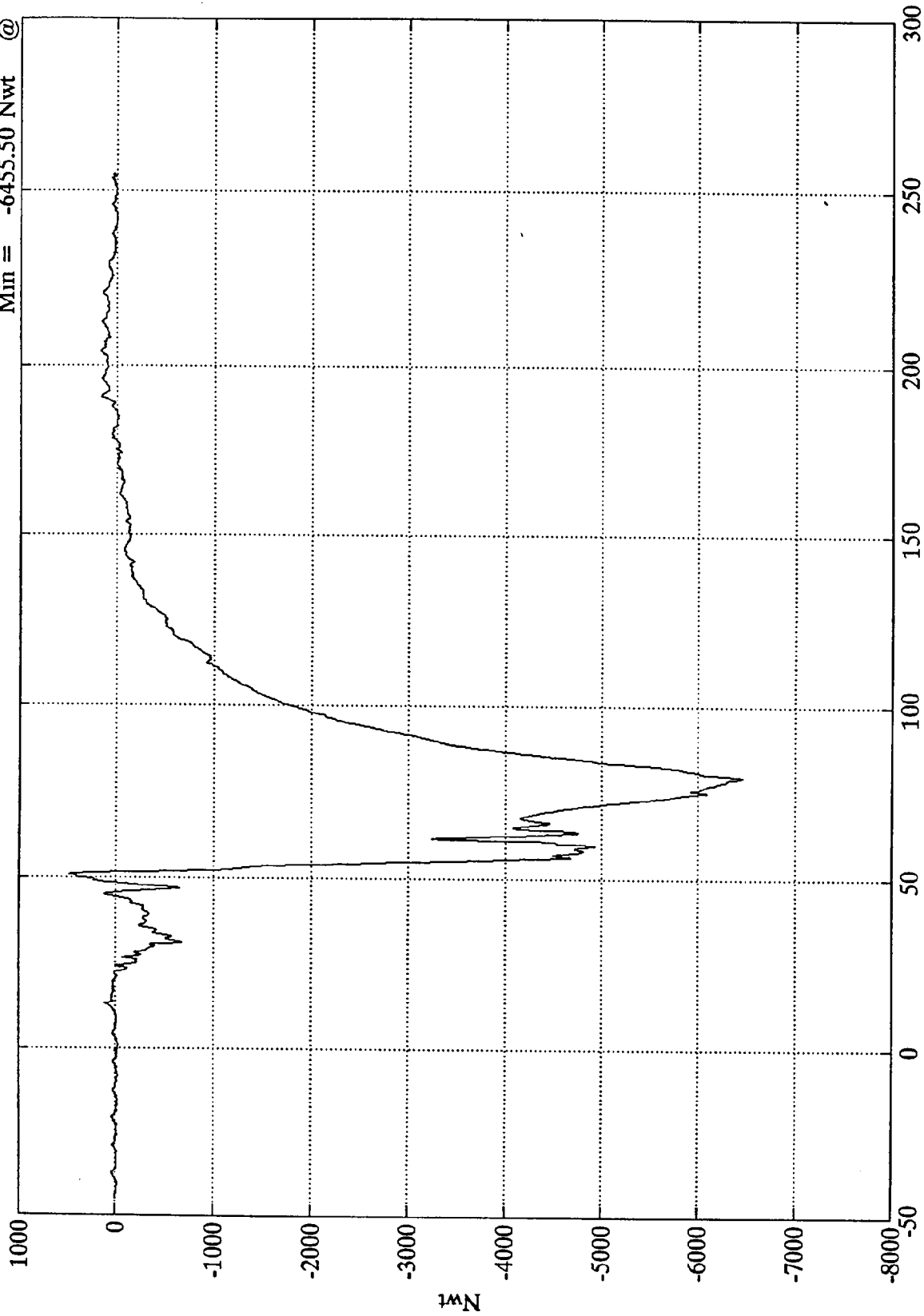
8120-8

SAE Filter Class 180

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 488.16 Nwt @ 51.00 msec  
Min = -6455.50 Nwt @ 79.80 msec

Pos. 2 Left Femur



Time (msec)

SAE Filter Class 600

Nwt

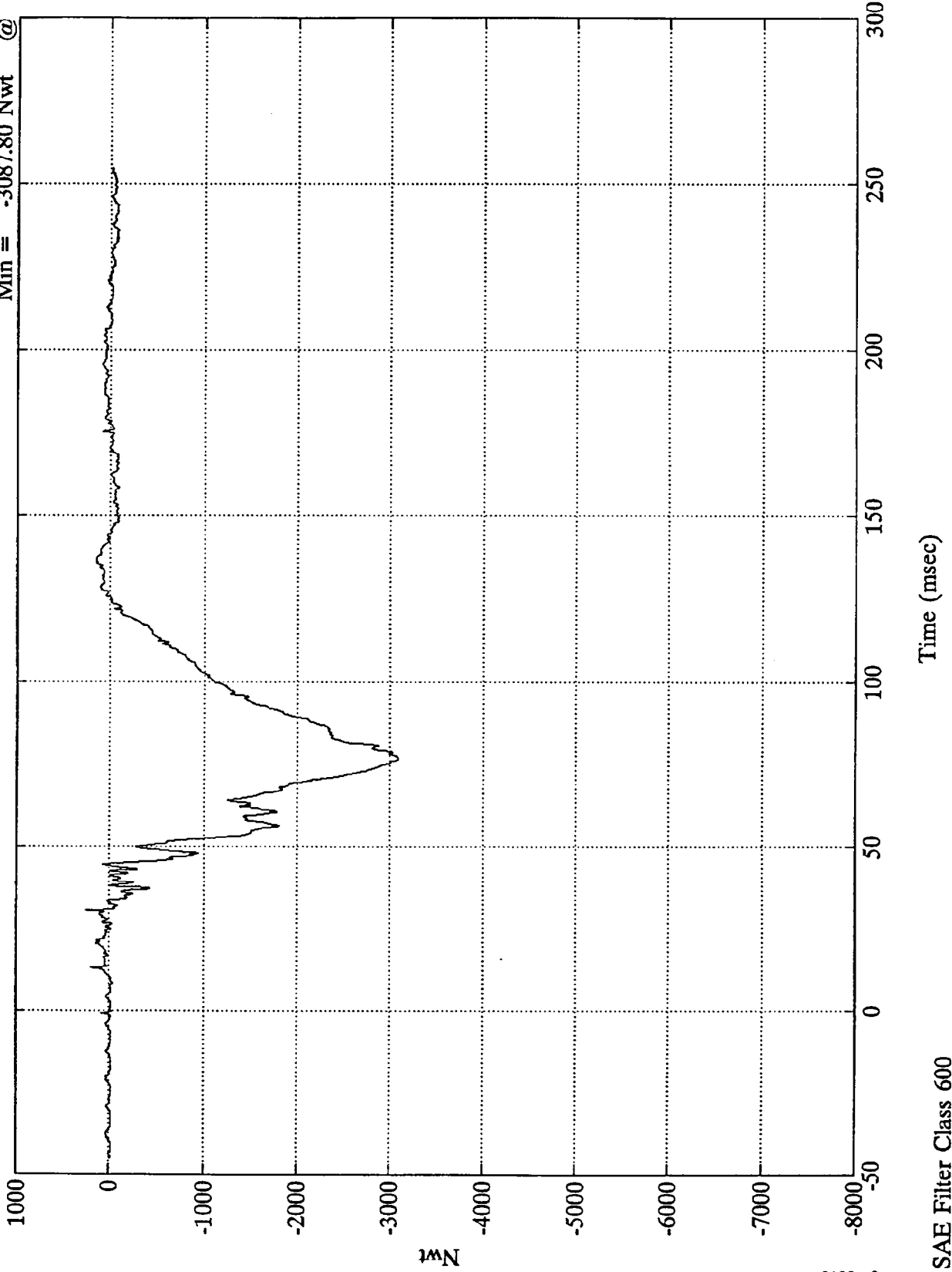
B-106

8120-8

NCAP TEST #8 - 1994 FORD MUSTANG

Max = 256.76 Nwt @ 30.36 msec  
Min = -3087.80 Nwt @ 76.68 msec

Pos. 2 Right Femur



100N  
B-107

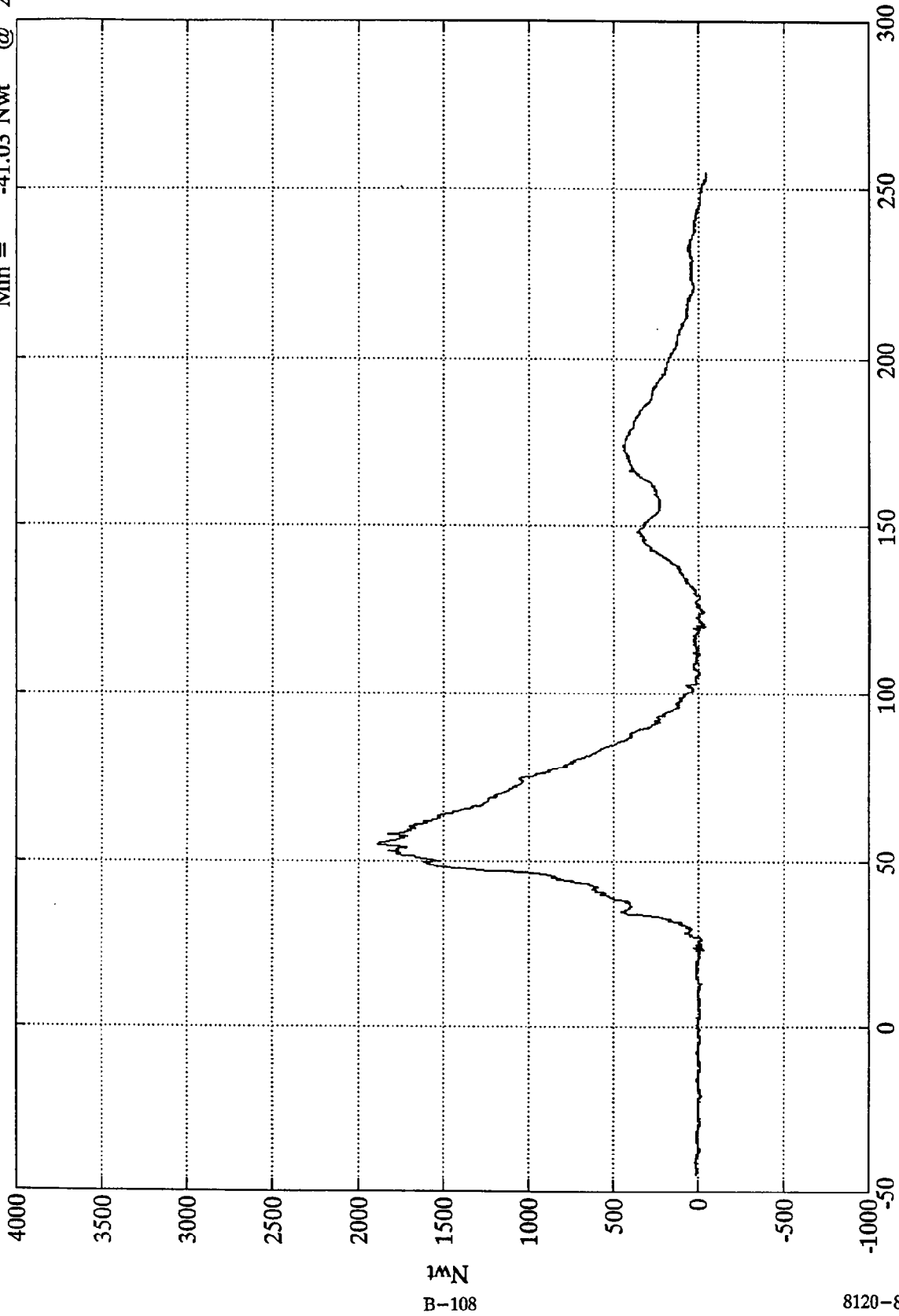
8120-8

SAE Filter Class 600

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Upper Neck Fx

Max = 1886.09 Nwt @ 55.20 msec  
Min = -41.03 Nwt @ 254.88 msec

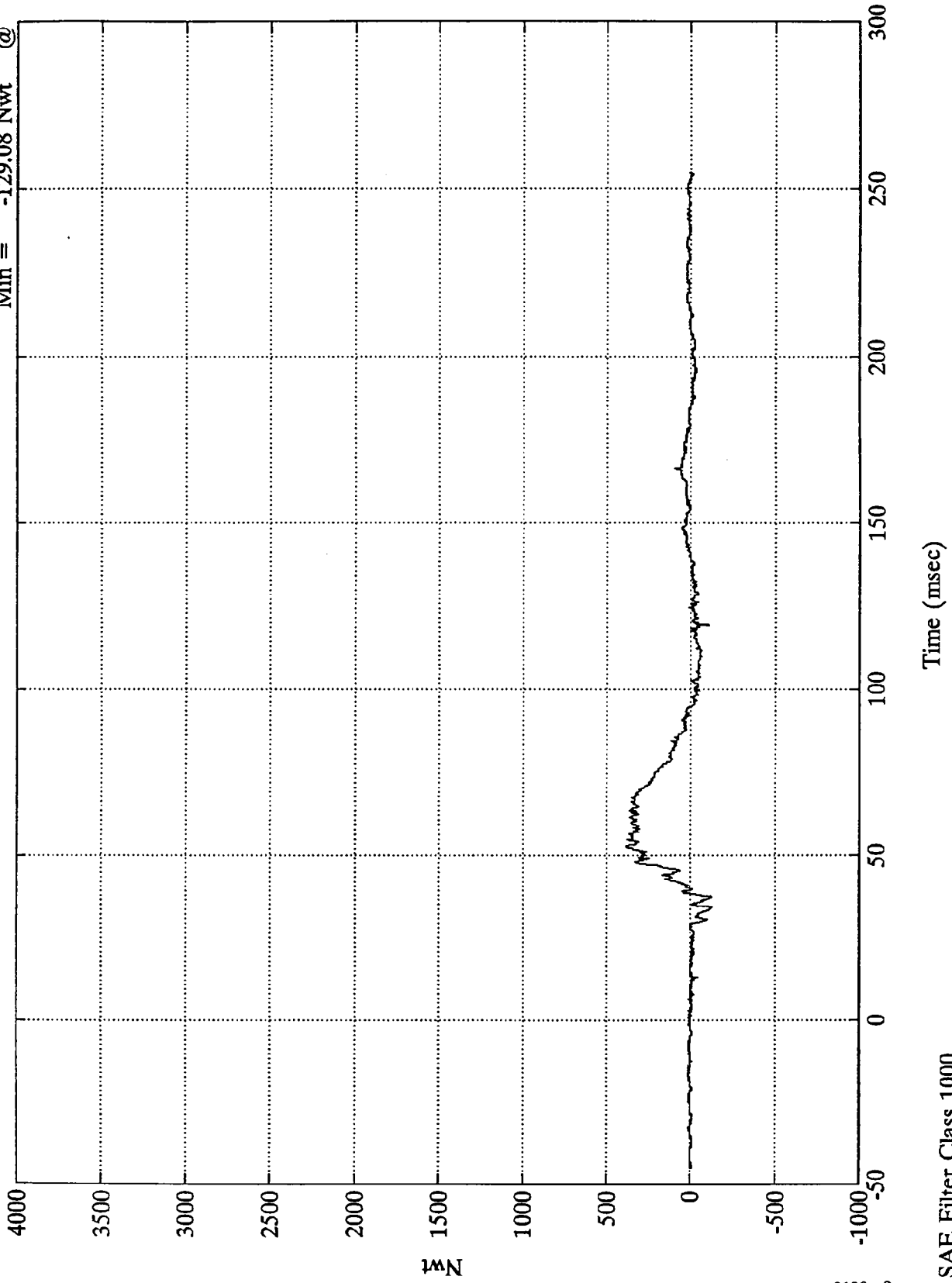


Time (msec)

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

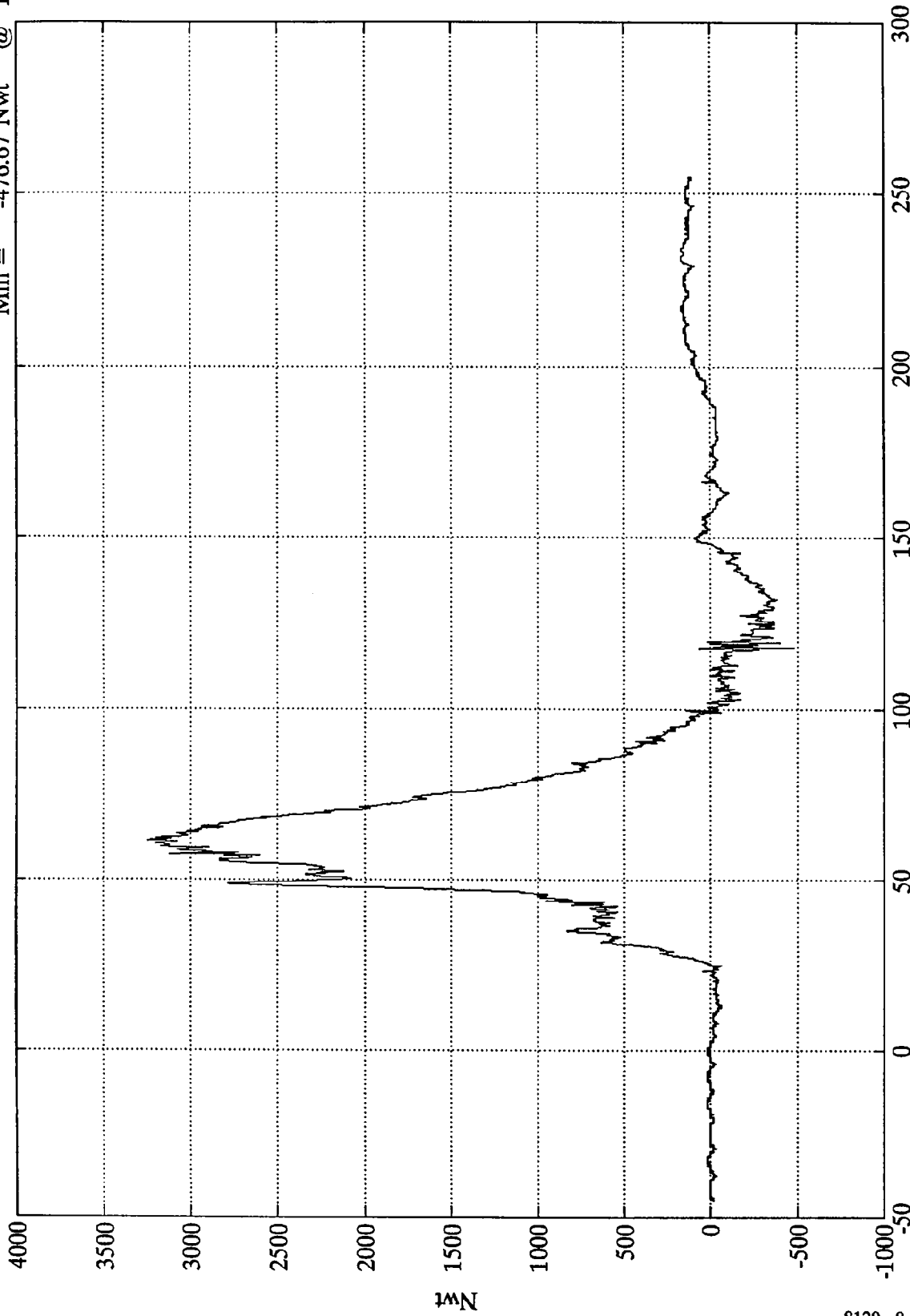
Pos. 2 Upper Neck Fy  
Max = 387.02 Nwt @ 52.79 msec  
Min = -129.08 Nwt @ 37.31 msec



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Upper Neck Fz

Max = 3247.67 Nwt @ 61.44 msec  
Min = -476.67 Nwt @ 118.31 msec



14N  
B-110

8120-8

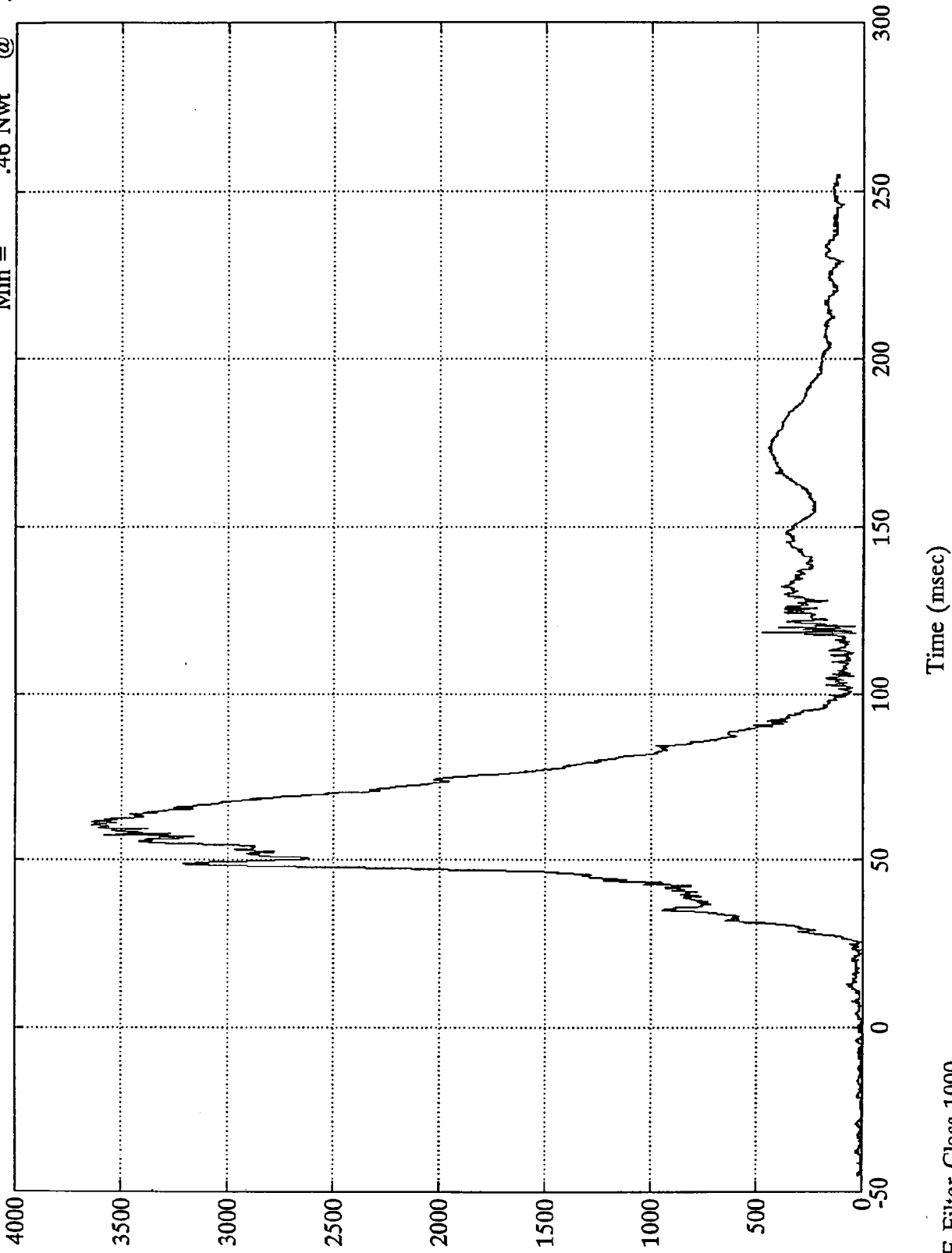
Time (msec)

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Neck Force Res.

Max = 3637.73 Nwt @ 61.44 msec  
Min = .46 Nwt @ 2.39 msec



1MN  
B-111

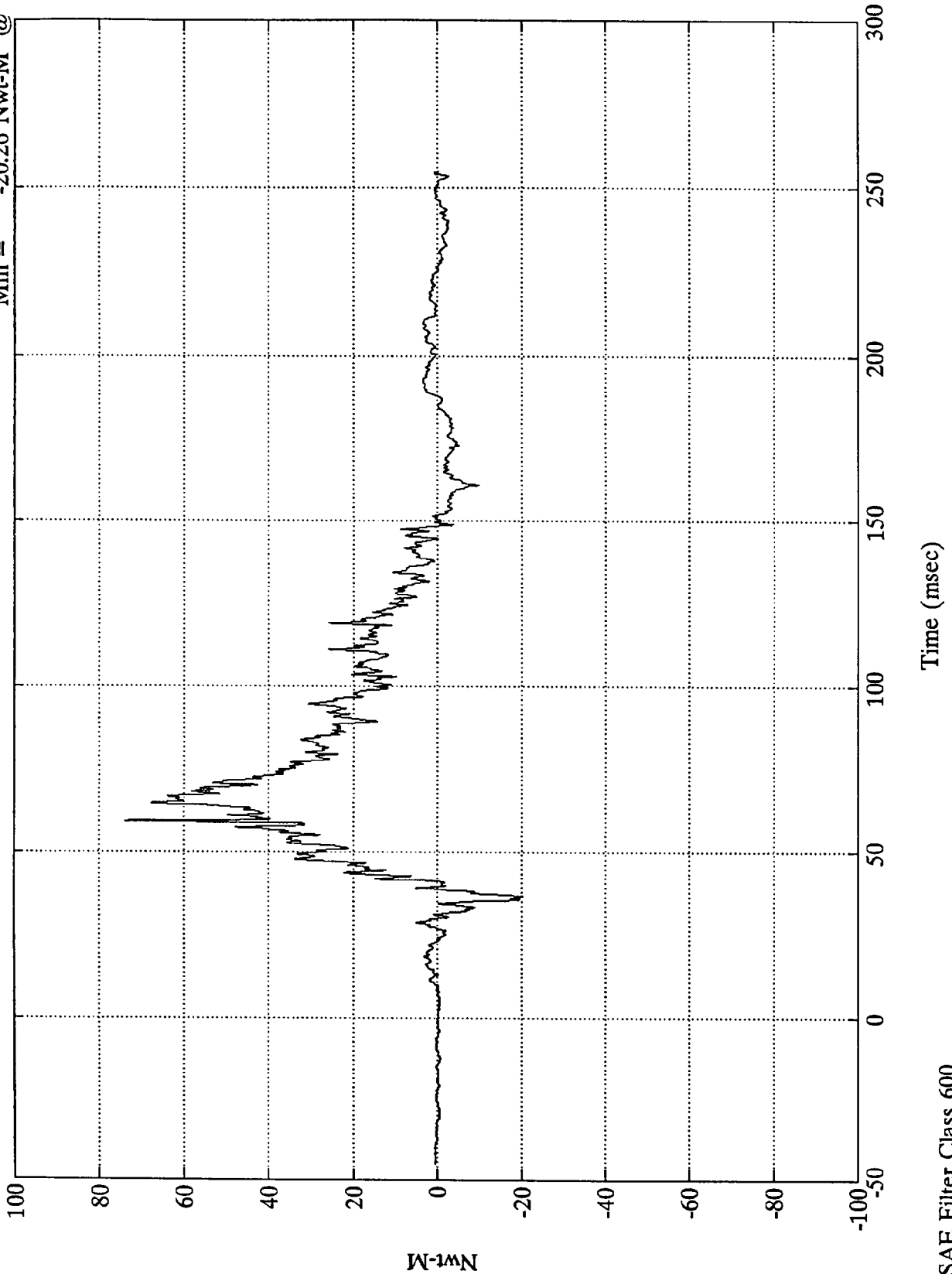
8120-8

SAE Filter Class 1000

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Upper Neck Mx

Max = 73.87 Nwt-M @ 59.15 msec  
Min = -20.26 Nwt-M @ 36.60 msec



W-1MN  
B-112

8120-8

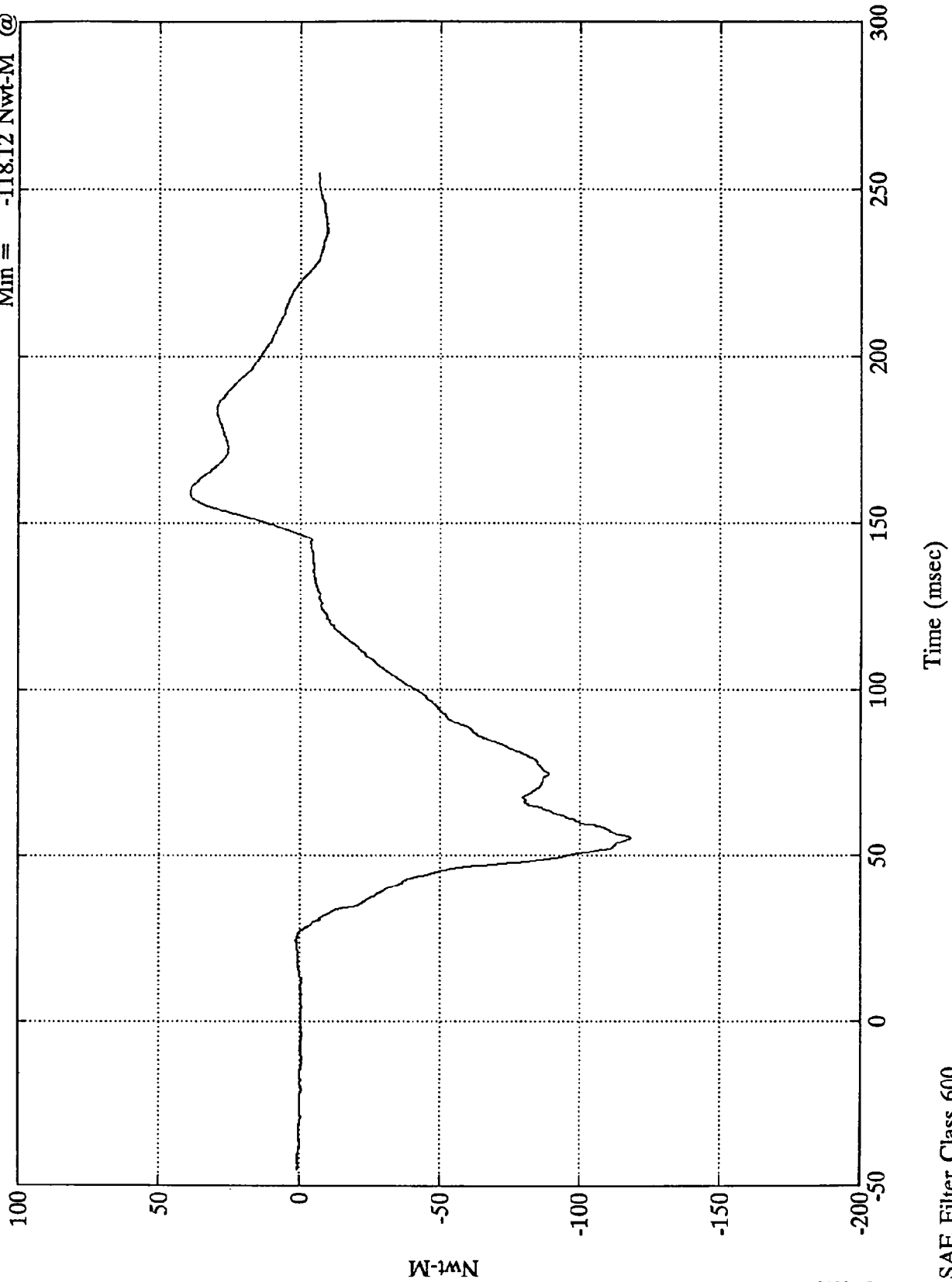
SAE Filter Class 600



NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Upper Neck My

Max = 38.96 Nwt-M @ 159.72 msec  
Min = -118.12 Nwt-M @ 55.08 msec



B-113

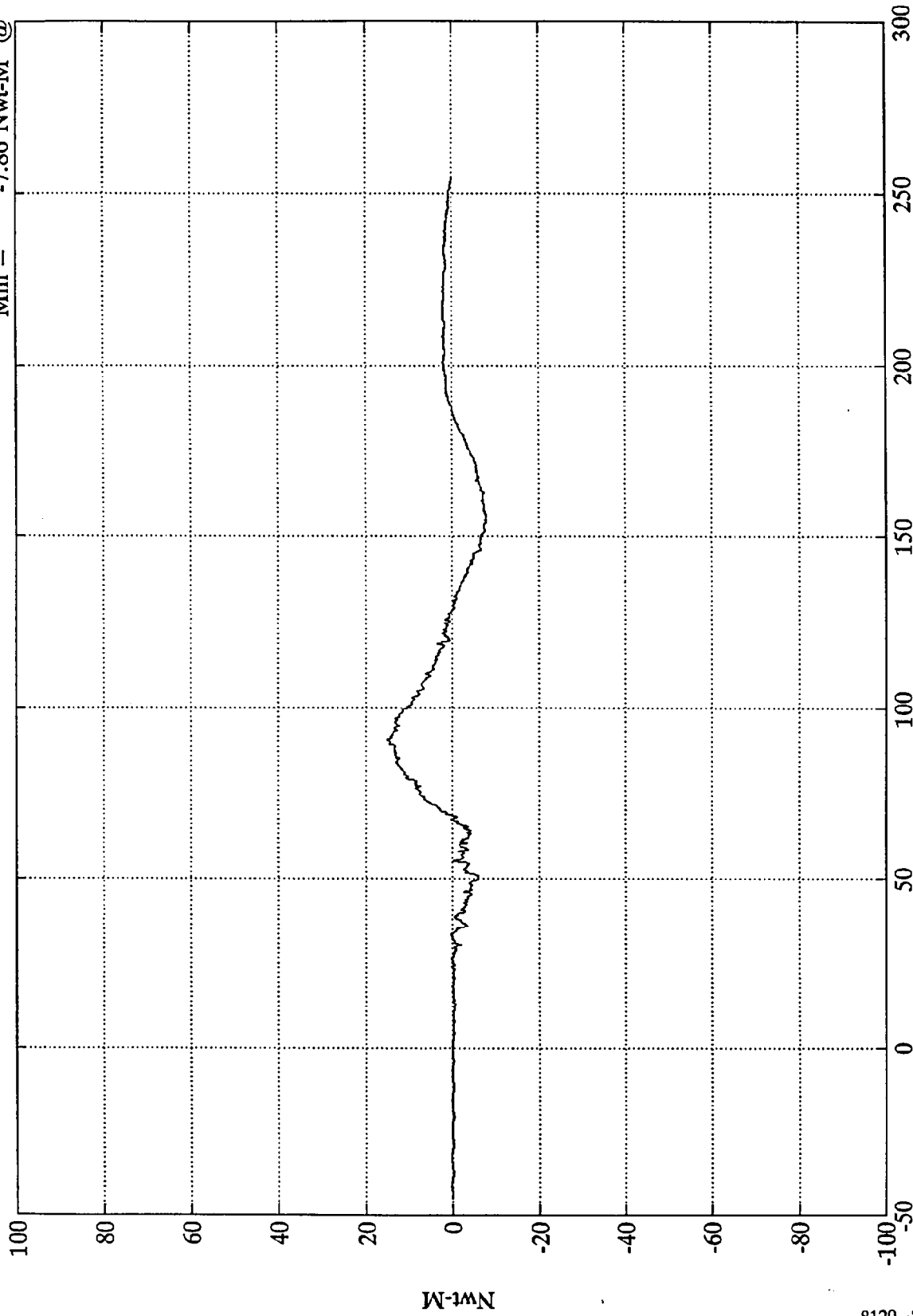
8120-8

SAE Filter Class 600

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Upper Neck Mz

Max = 15.07 Nwt-M @ 90.72 msec  
Min = -7.86 Nwt-M @ 153.96 msec



IN-1AN  
B-114

8120-8

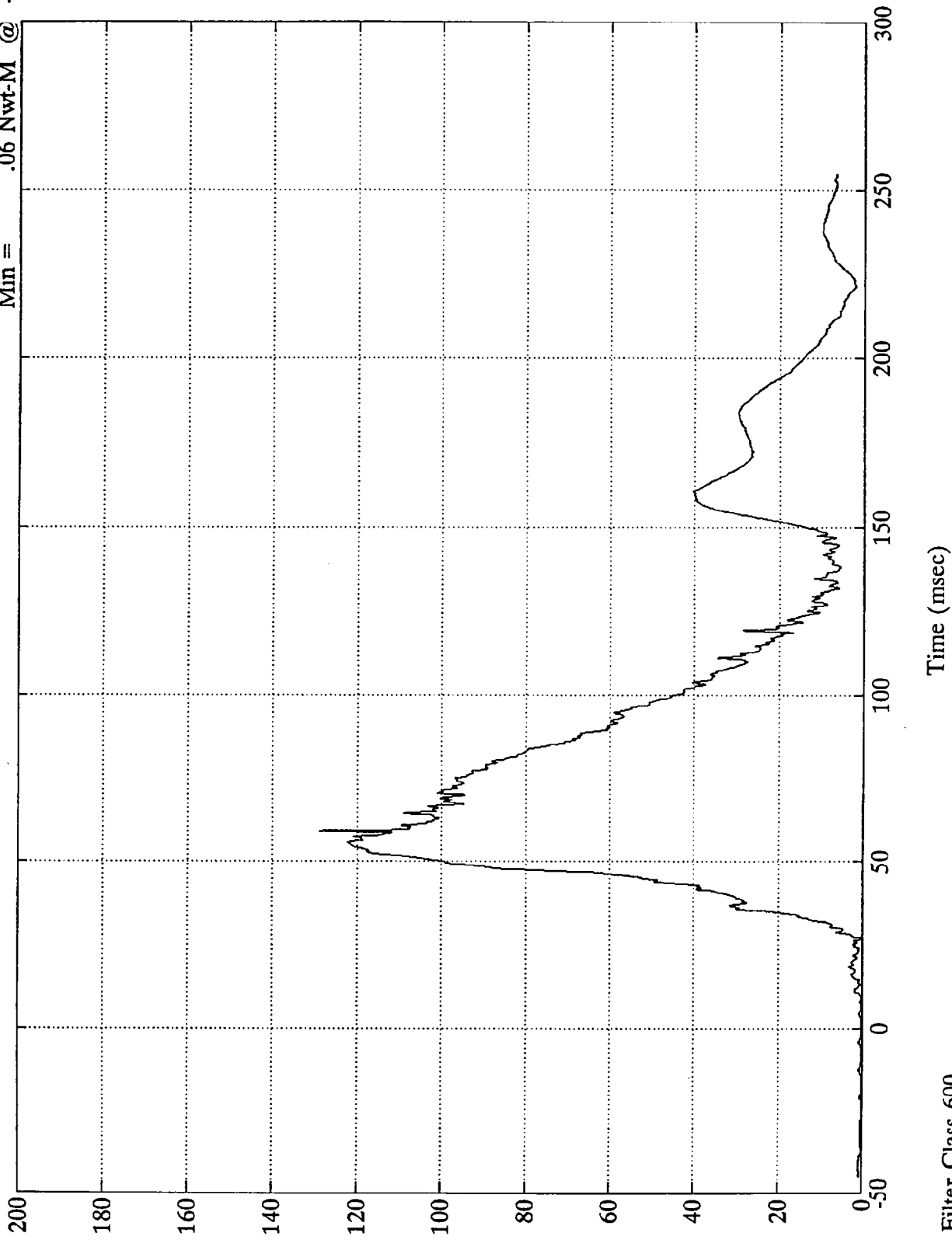
Time (msec)

SAE Filter Class 600

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Neck Moment Res.

Max = 128.79 Nwt-M @ 59.15 msec  
Min = .06 Nwt-M @ -22.20 msec



Nwt-M  
B-115

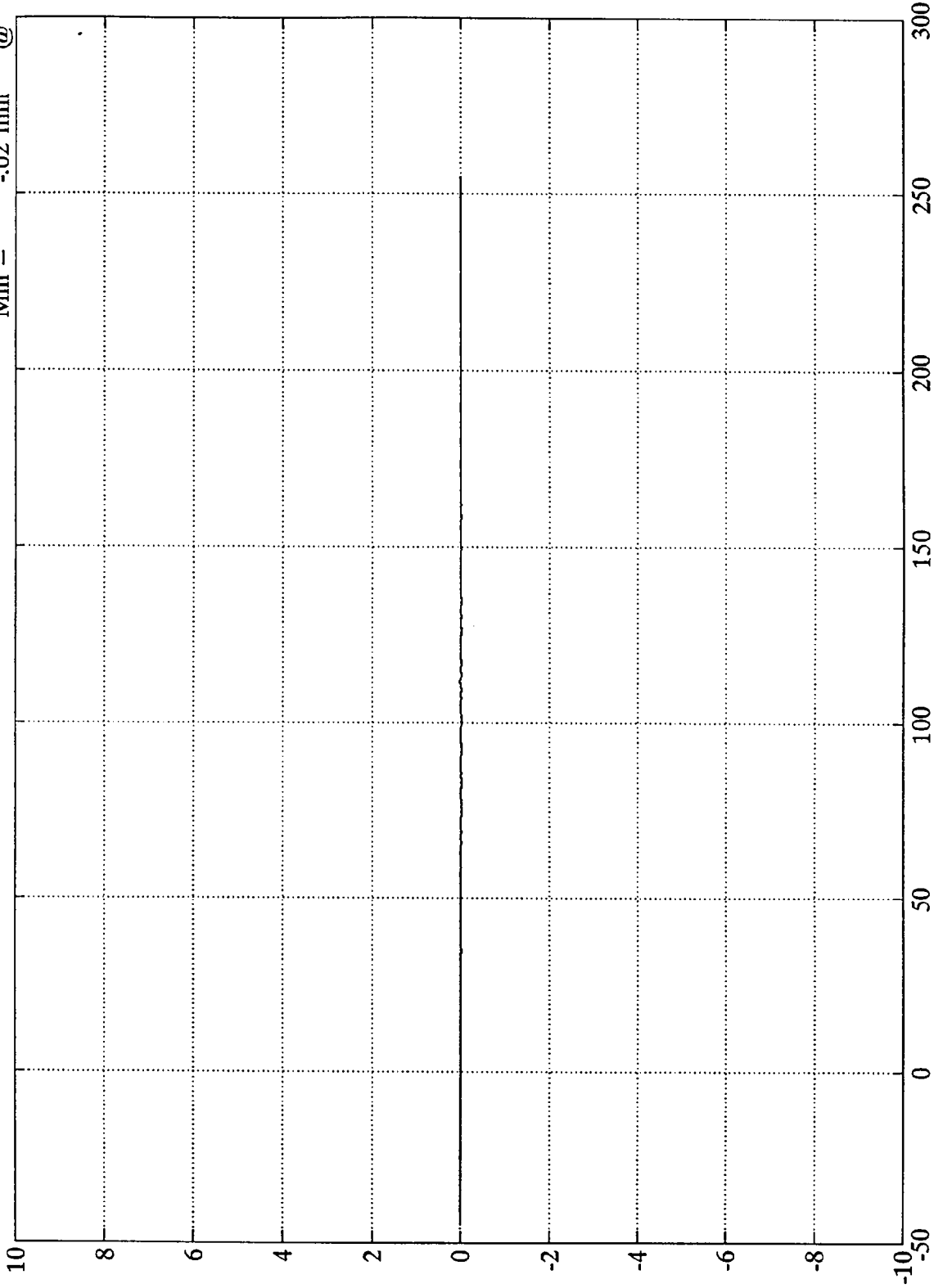
8120-8

SAE Filter Class 600

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Belt Elongation

Max = .02 mm @ 111.84 msec  
Min = -.02 mm @ 83.40 msec



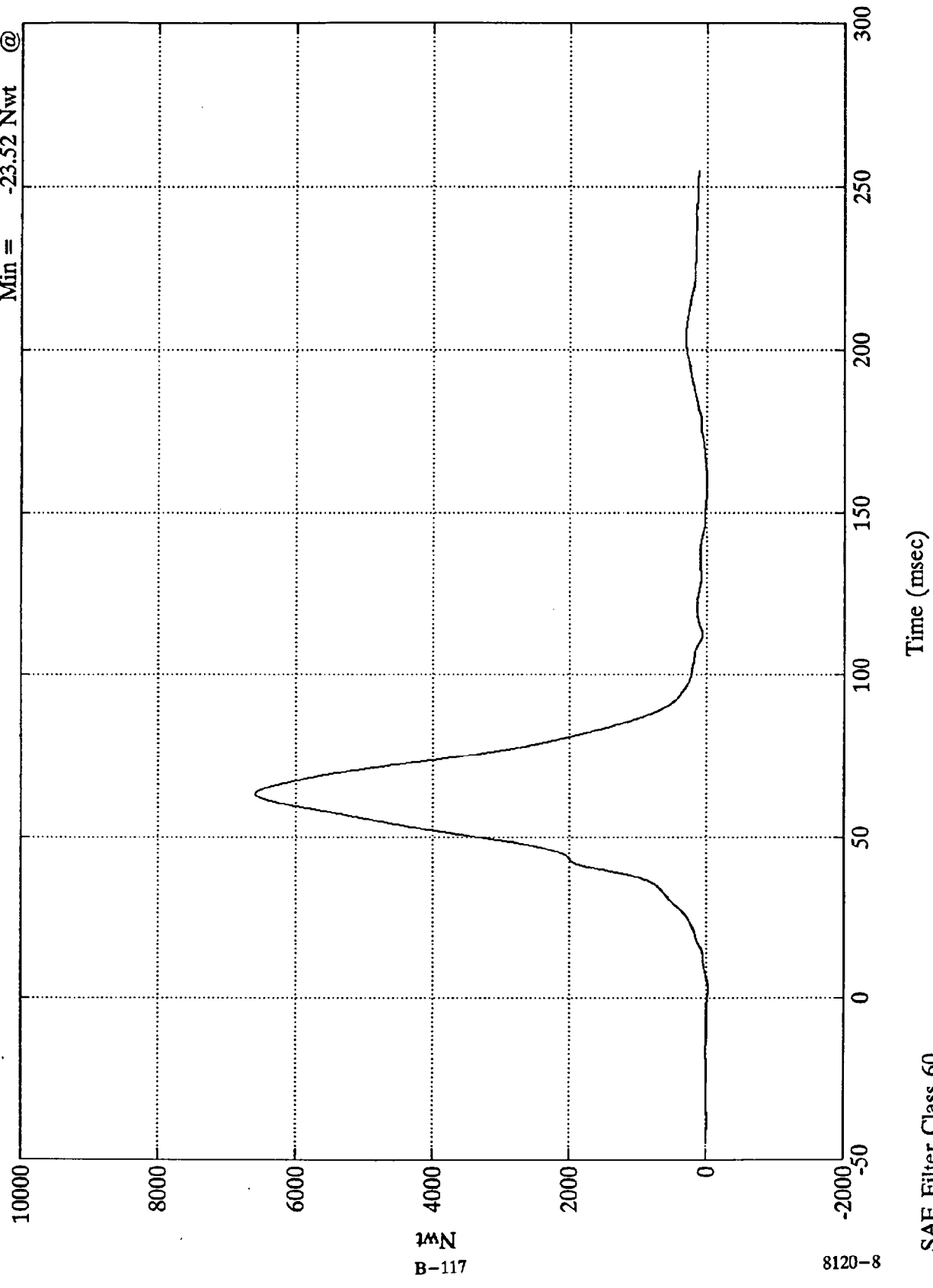
SAE Filter Class 180

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Right Belt Load

Max = 6592.77 Nwt @ 63.23 msec  
Min = -23.52 Nwt @ 2.87 msec



10N  
B-117

8120-8

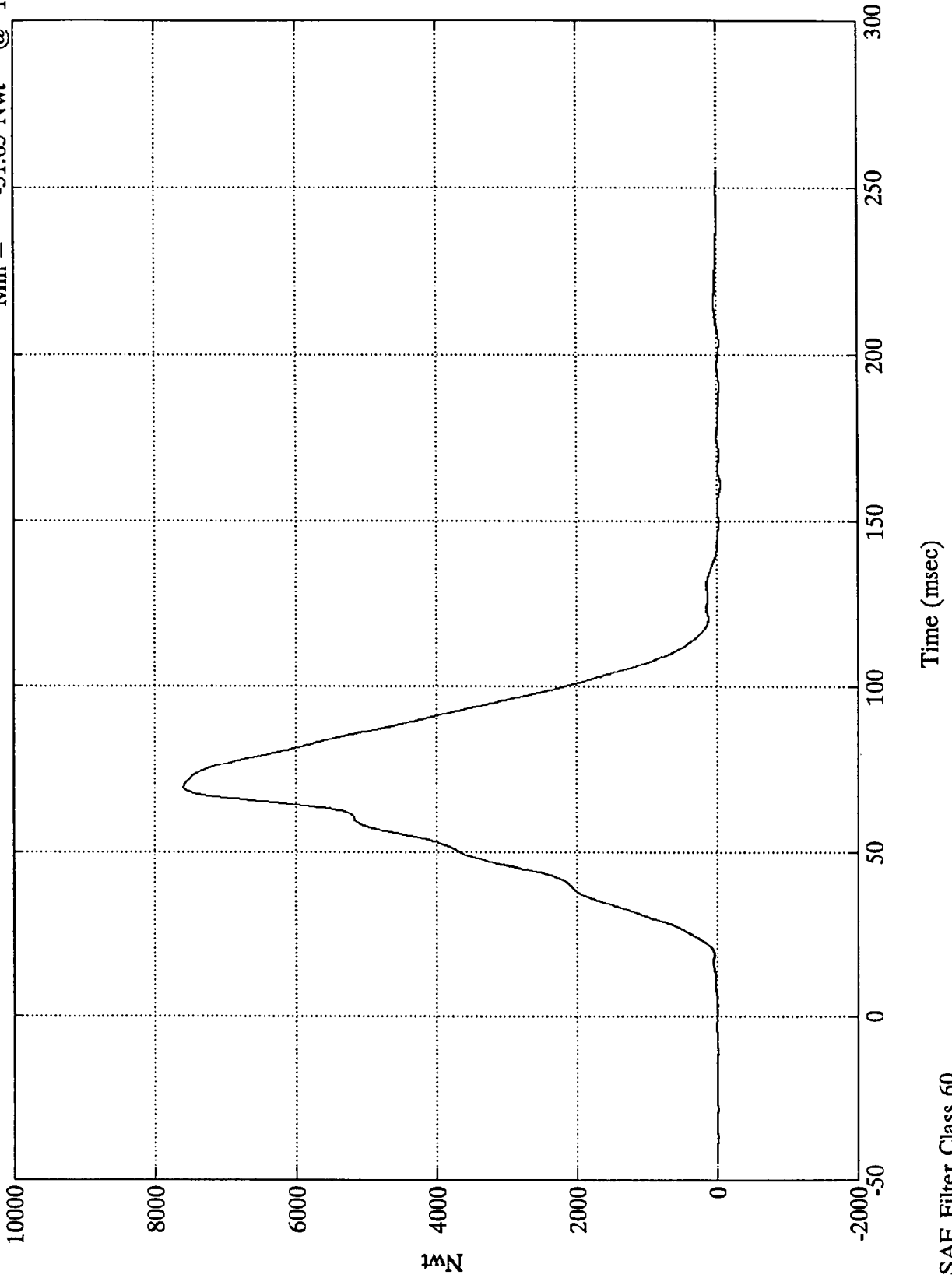
SAE Filter Class 60

Time (msec)

NCAP TEST #8 - 1994 FORD MUSTANG

Pos. 2 Torso Belt Load

Max = 7592.92 Nwt @ 69.36 msec  
Min = -51.65 Nwt @ 161.04 msec



1N  
B-118

8120-8

SAE Filter Class 60

Time (msec)

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 Corporation, Advanced Technology Center. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

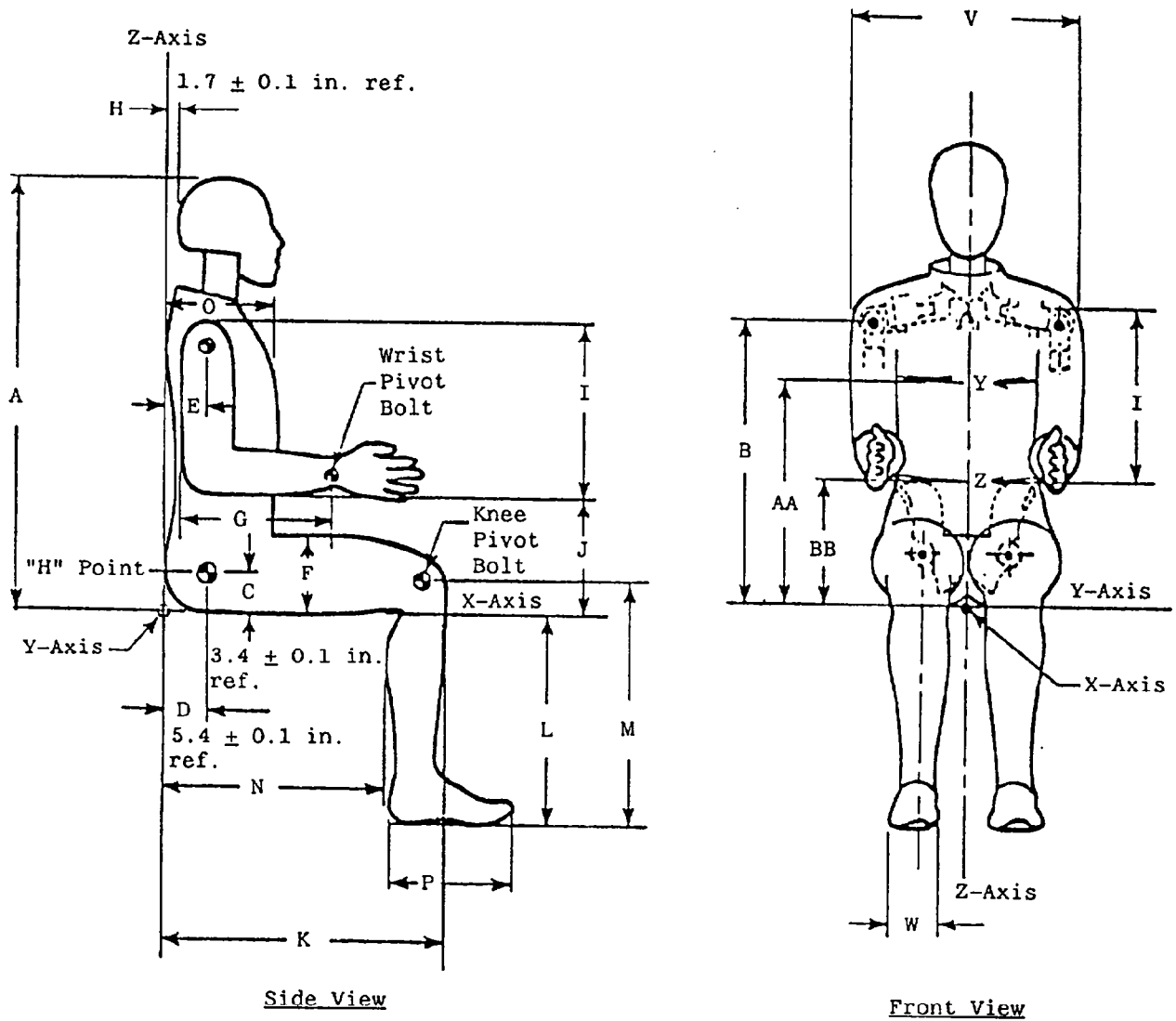
<u>Serial No.</u>	<u>Completion Date</u>
313	3/21/94
290	3/17/94

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 Indicant Testing Final Report No. 6525-V-1.

Figure 10

DUMMY CONFIGURATION DIMENSIONS



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.

HYBRID III EXTERNAL DIMENSIONS

S/N 313 HUMANOID

DUMMY SERIAL NO. 313

DATE: 5/10/94

TEMPERATURE		20.5 DEG. C
RELATIVE HUMIDITY		45 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	429-434 mm	431.8 mm
LOCATION FOR WAIST CIRCUMFERENCE (BB)	226-231 mm	228.6 mm
CHEST CIRCUMFERENCE (Y)	970-1001 mm	998.2 mm
WAIST CIRCUMFERENCE (Z)	836-866 mm	858.5 mm
CHEST DEPTH (O)	213-229 mm	215.9 mm
H-POINT HEIGHT (C)	84-89 mm	86.4 mm
H-POINT FROM SEAT BACK (D)	135-140 mm	137.2 mm
SKULL CAP TO BACKLINE (H)	41-46 mm	43.2 mm
TOTAL SITTING HEIGHT (A)	879-889 mm	88.39 mm
THIGH CLEARANCE (F)	140-155 mm	147.3 mm
BUTTOCK KNEE LENGTH (K)	580-605 mm	596.9 mm
BUTTOCK POPLITAL LENGTH (N)	452-477 mm	462.3 mm
POPLITEAL LENGTH (L)	430-455 mm	452.1 mm
KNEE PIVOT HEIGHT (M)	485-501 mm	490.2 mm
FOOT LENGTH (P)	252-267 mm	259.1 mm
FOOT BREADTH (W)	91-107 mm	99.1 mm
SHOULDER PIVOT FROM BACKLINE (E)	84-94 mm	94 mm
SHOULDER BREADTH (V)	422-437 mm	429.3 mm
SHOULDER PIVOT HEIGHT (B)	505-521 mm	515.6 mm
ELBOW REST HEIGHT (J)	190-211 mm	208.3 mm
SHOULDER-ELBOW LENGTH (I)	330-345 mm	335.3 mm
BACK OF ELBOW TO WRIST PIVOT (G)	290-305 mm	292.1 mm

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT

HEAD DROP TEST  
HYBRID III

DATE : 3/28/94

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN: 313 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	35 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	251.6 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	5.2 G'S
IS ACCELERATION CURVE UNIMODAL?	YES	YES

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
 TRANSPORTATION RESEARCH DEPARTMENT

NECK FLEXION TEST

HYBRID III

DATE : 3/21/94

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN:313 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10% - 70%	35 %
IMPACT VELOCITY		24.8 - 25.7 KPH	25.34 KPH
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	24.03 G'S
	20 MS	17.60 - 22.60 G'S	21.41 G'S
	30 MS	12.50 - 18.50 G'S	18.49 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	18.49 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	39.88 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	74.43 DEG.
	TIME	57 - 64 MS	60.13 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88 - 108 N-M	107.04 N-M
	TIME	47 - 58 MS	53.75 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	115.88 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	101 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
 TRANSPORTATION RESEARCH DEPARTMENT  
NECK EXTENSION TEST  
 HYBRID III

DATE : 3/22/94

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN:313 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	34 %
IMPACT VELOCITY		21.4 - 22.3 KPH	22.16 KPH
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	19.3 G'S
	20 MS	14.00 - 19.00 G'S	17.52 G'S
	30 MS	11.00 - 16.00 G'S	15.75 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	15.75 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	42.13 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	90.03 DEG.
	TIME	72 - 82 MS	73.13 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-80.0/-52.9 N-M	-74.4 N-M
	TIME	65 - 79 MS	69.5 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	148.63 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	129.63 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT  
THORAX IMPACT TEST  
HYBRID III

DATE : 5/10/94

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN 313 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.5 - 22.2 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10% - 70%	44 %
PENDULUM VELOCITY	23.7 - 24.6 KPH	24.0 KPH
MAXIMUM DEFLECTION	64 - 73 mm	65.5 mm
MAXIMUM RESISTIVE FORCE	5160 - 5894 NEWTONS	5867 NEWTONS
INTERNAL HYSTERESIS	69% - 85%	69.1 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT  
KNEE IMPACT TEST  
HYBRID III

DATE : 5/9/94

KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN: 313 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10% - 70%	45 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.66 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4719 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 5/9/94

KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN: 313 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10% - 70%	45 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.66 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4723 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY I.D. NUMBER: 313

A. DUMMY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. HEAD ACCELEROMETER				
HX LONGITUDINAL	ENDEVCO	A26A	5/94	11/94
HY LATERAL	ENDEVCO	A51A	5/94	11/94
HZ VERTICAL	ENDEVCO	A27A	5/94	11/94
2. CHEST ACCELEROMETER				
CX LONGITUDINAL	ENDEVCO	FB32L	5/94	11/94
CY LATERAL	ENDEVCO	A33A	5/94	11/94
CZ VERTICAL	ENDEVCO	AF480	5/94	11/94
3. FEMUR LOAD CELLS				
LEFT SIDE	GSE	311	5/94	11/94
RIGHT SIDE	GSE	312	5/94	11/94

B. CALIBRATION LABORATORY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. PENDULUM ACC.	CEC	A160	1/94	7/94
2. TEST PROBE ACCELEROMETER	CEC	A161	1/94	7/94
3. LUMBAR FLEXION TEST PUSH FORCE GAUGE	TRANS- DUCER INC	20051	11/93	5/94
4. ABDOMINAL COMPRESS. TEST FORCE GAUGE	BLH	72952	11/93	5/94
5. ABDOMINAL COMPRESS. TEST FORCE GAUGE	CIC	567-11	11/93	5/94

HYBRID III EXTERNAL DIMENSIONS

S/N 290 HUMANOID

DUMMY SERIAL NO. 290

DATE: 5/10/94

TEMPERATURE		20.5 DEG. C
RELATIVE HUMIDITY		41 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	429-434 mm	431.8 mm
LOCATION FOR WAIST CIRCUMFERENCE (BB)	226-231 mm	228.6 mm
CHEST CIRCUMFERENCE (Y)	970-1001 mm	998.2 mm
WAIST CIRCUMFERENCE (Z)	836-866 mm	850.9 mm
CHEST DEPTH (O)	213-229 mm	213.4 mm
H-POINT HEIGHT (C)	84-89 mm	86.4 mm
H-POINT FROM SEAT BACK (D)	135-140 mm	137.2 mm
SKULL CAP TO BACKLINE (H)	41-46 mm	43.2 mm
TOTAL SITTING HEIGHT (A)	879-889 mm	886.5 mm
THIGH CLEARANCE (F)	140-155 mm	152.4 mm
BUTTOCK KNEE LENGTH (K)	580-605 mm	591.8 mm
BUTTOCK POPLITAL LENGTH (N)	452-477 mm	459.7 mm
POPLITEAL LENGTH (L)	430-455 mm	436.9 mm
KNEE PIVOT HEIGHT (M)	485-501 mm	492.8 mm
FOOT LENGTH (P)	252-267 mm	259.1 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	429.3 mm
SHOULDER PIVOT HEIGHT (B)	505-521 mm	518.2 mm
ELBOW REST HEIGHT (J)	190-211 mm	208.3 mm
SHOULDER-ELBOW LENGTH (I)	330-345 mm	337.8 mm
BACK OF ELBOW TO WRIST PIVOT (G)	290-305 mm	292.1 mm

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT  
HEAD DROP TEST  
HYBRID III

DATE : 3/28/94

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN: 290 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	35 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	266.1 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	7.7 G'S
IS ACCELERATION CURVE UNIMODAL?	YES	YES

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
 TRANSPORTATION RESEARCH DEPARTMENT

NECK FLEXION TEST

HYBRID III

DATE : 3/21/94

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN:290 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5-22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	30 %
IMPACT VELOCITY		24.8 - 25.7 KPH	23.3 KPH
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	27.2 G'S
	20 MS	17.60 - 22.60 G'S	21.13 G'S
	30 MS	12.50 - 18.50 G'S	16.67 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	16.67 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	37.25 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	71.1 DEG.
	TIME	57 - 64 MS	58 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88 - 108 N-M	104.1 N-M
	TIME	47 - 58 MS	52.25 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	113.13 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	97.88 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
 TRANSPORTATION RESEARCH DEPARTMENT  
NECK EXTENSION TEST  
 HYBRID III

DATE : 3/17/94

6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN:290 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	27 %
IMPACT VELOCITY		21.4 - 22.3 KPH	22 KPH
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	20.45 G'S
	20 MS	14.00 - 19.00 G'S	18.73 G'S
	30 MS	11.00 - 16.00 G'S	15.88 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	15.88 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	44.25 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	88.34 DEG.
	TIME	72 - 82 MS	75.25 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-80.0/-52.9 N-M	-70.84 N-M
	TIME	65 - 79 MS	68 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	149.63 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	127.63 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT  
THORAX IMPACT TEST  
HYBRID III

DATE : 5/10/94

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN 290 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	45 %
PENDULUM VELOCITY	23.7 - 24.6 KPH	24.47 KPH
MAXIMUM DEFLECTION	64 - 73 mm	64.5 mm
MAXIMUM RESISTIVE FORCE	5160 - 5894 NEWTONS	5364 NEWTONS
INTERNAL HYSTERESIS	69% - 85%	72.3 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 5/9/94

KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN: 290 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21.6 DEG. C
RELATIVE HUMIDITY	10% - 70%	45 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.66 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4968 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION  
TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 5/9/94

KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 1

HY3 SN: 290 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21.6 DEG. C
RELATIVE HUMIDITY	10% - 70%	45 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.63 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4937 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY I.D. NUMBER: 290

A. DUMMY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. HEAD ACCELEROMETER				
HX LONGITUDINAL	ENDEVCO	A28F	5/94	11/94
HY LATERAL	ENDEVCO	A08A	5/94	11/94
HZ VERTICAL	ENDEVCO	ADL42	5/94	11/94
2. CHEST ACCELEROMETER				
CX LONGITUDINAL	ENDEVCO	A84J	5/94	11/94
CY LATERAL	ENDEVCO	A57G	5/94	11/94
CZ VERTICAL	ENDEVCO	ER74	5/94	11/94
3. FEMUR LOAD CELLS				
LEFT SIDE	GSE	551	5/94	11/94
RIGHT SIDE	GSE	552	5/94	11/94

B. CALIBRATION LABORATORY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. PENDULUM ACC.	CEC	A160	1/94	7/94
2. TEST PROBE ACCELEROMETER	CEC	A161	1/94	7/94
3. LUMBAR FLEXION TEST PUSH FORCE GAUGE	TRANS- DUCER INC	20051	11/93	5/94
4. ABDOMINAL COMPRESS. TEST FORCE GAUGE	BLH	72952	11/93	5/94
5. ABDOMINAL COMPRESS. TEST FORCE GAUGE	CIC	567-11	11/93	5/94

Appendix D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

( 6 Month Calibration Minimum )

DRIVER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X	A26A	ENDEVCO	5/94	11/94
Y	A51A	ENDEVCO	5/94	11/94
Z	A27A	ENDEVCO	5/94	11/94
Chest				
X	FB32L	ENDEVCO	5/94	11/94
Y	A33A	ENDEVCO	5/94	11/94
Z	AD39S	ENDEVCO	5/94	11/94
Right Femur Load Cell	312	GSE	5/94	11/94
Left Femur Load Cell	311	GSE	5/94	11/94
Neck Load Cell				
X	466	DENTON	10/93	4/94
Y	466	DENTON	10/93	4/94
Z	466	DENTON	10/93	4/94
Neck Moment				
X	466	DENTON	10/93	4/94
Y	466	DENTON	10/93	4/94
Z	466	DENTON	10/93	4/94
Chest Deflection Gauge				
Hybrid III Use Only	313	HUMANOID	5/94	11/94
Lap Belt Load Cells	706	LEBOW	11/93	5/94
Shoulder Belt Load Cells	707	LEBOW	11/93	5/94
Spool-Out Potentiometer	Not Used	SERVONIC INST.	-	-
Belt Stretch Transducer	E1	CALSPAN	2/94	8/94

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY  
( 6 Month Calibration Minimum )

PASSENGER DUMMY	Serial #	Manufacturer	Calibration	
			Last	Next
Head				
X	A28F	ENDEVCO	5/94	11/94
Y	A08F	ENDEVCO	5/94	11/94
Z	ADL42	ENDEVCO	5/94	11/94
Chest				
X	A84J	ENDEVCO	5/94	11/94
Y	A57G	ENDEVCO	5/94	11/94
Z	ER74	ENDEVCO	5/94	11/94
Right Femur Load Cell				
	552	GSE	5/94	11/94
Left Femur Load Cell				
	551	GSE	5/94	11/94
Neck Load Cell				
X	269	DENTON	10/93	4/94
Y	269	DENTON	10/93	4/94
Z	269	DENTON	10/93	4/94
Neck Moment				
X	269	DENTON	10/93	4/94
Y	269	DENTON	10/93	4/94
Z	269	DENTON	10/93	4/94
Chest Deflection Gauge				
Hybrid III Use Only				
	290	HUMANOID	5/94	11/94
Lap Belt Load Cells				
	710	LEBOW	11/93	5/94
Shoulder Belt Load Cells				
	711	LEBOW	11/93	5/94
Spool-Out Potentiometer				
	Not Used	SERVONIC INST.	-	-
Belt Stretch Transducer				
	E5	CALSPAN	2/94	8/94

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

( 6 Month Calibration Minimum )

	Serial #	Manufacturer	Calibration	
			Last	Next
Left Seat Rear Crossmember	A149	CEC	5/94	11/94
Right Rear Seat Crossmember	A44	CEC	4/94	10/94
Top of Engine	A70	CEC	3/94	9/94
Bottom of Engine	A69	CEC	3/94	9/94
Left Disc Brake Caliper	A185	CEC	12/93	6/94
Right Disc Brake Caliper	A73	CEC	5/94	11/94
Instrument Panel	A164	CEC	3/94	9/94
Left Rear Crossmember Redundant	A145	CEC	12/93	6/94
Right Rear Crossmember Redundant	A157	CEC	9/94	9/94

Appendix E

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

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## Safety Restraints

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### Using Safety Restraints Properly

#### Safety Belts

The use of safety belts helps to restrain you and your passengers in case of a collision. In most states and in Canada, the law requires their use. We strongly recommend that you use them every time you travel in your vehicle.

**Warning:** Always drive and ride with your seatback upright and the lap belt portion of your safety belt snug and low across the hips. This will reduce the risk of serious injury to the abdomen or neck that could be caused by sliding under the safety belts in a collision.

Safety belts provide best restraint when:

- the seatback is upright
- the occupant is sitting upright (not slouched)
- the lap belt is snug and low on the hips
- the shoulder belt is snug against the chest
- the knees are straight forward
- seat belt is placed in guide on top of seat

For your safety, your vehicle has:

- Lap and Shoulder Belts – for all seats

**Warning:** All safety belt assemblies, including retractors, buckles, front seat belt buckle support assemblies (slide bar) (if so equipped), and attaching hardware, should be inspected after any collision. Ford recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

### Combination Lap and Shoulder Belts

While your vehicle is in motion, the combination lap and shoulder belt adjusts to your movement. However, if you brake hard, corner hard or if your vehicle receives an impact of 5 mph (8 km/h) or more, the lap and shoulder belt locks and helps reduce your forward movement.

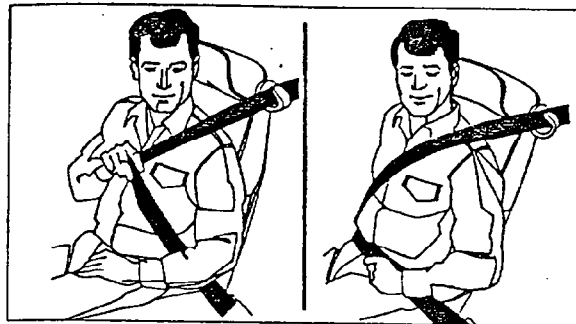
After you get into your vehicle, close the door and lock it. Then adjust the seat to the position that suits you best.

Before fastening the front seat belt, make sure the shoulder belt passes through the belt holder on the top of the seatback.

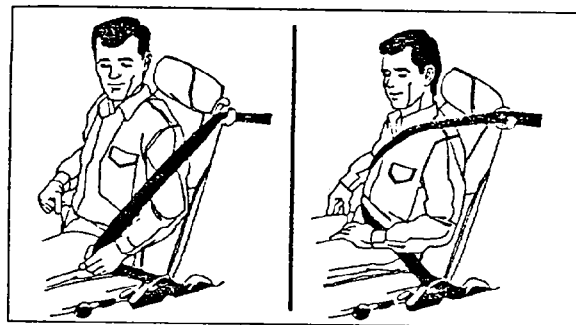
To fasten the belt, pull the lap/shoulder belt from the retractor so that the shoulder portion of the belt crosses your shoulder and chest. Be sure the belt is not twisted. If it is, remove the twist. Insert the belt tongue into the proper buckle until you hear a snap and feel it latch.

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Make sure the tongue is securely fastened in the buckle.



Fastening the front seat lap and shoulder belt (coupe models)



Fastening the front seat lap and shoulder belt (convertible models)

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Fastening the rear seat lap and shoulder belt coupe and convertible

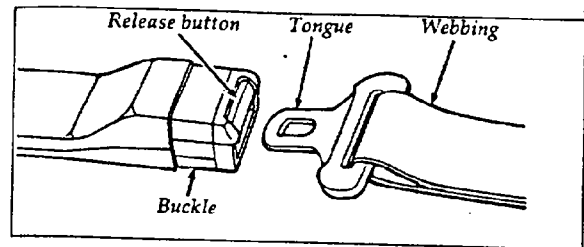
**Warning:** Make sure that the lap belt is as low around your hips as possible. Do not wear the lap belt around your waist. If you do not use the lap belts properly, the risk of being injured in a collision greatly increases.

**Warning:** Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. Never swing it around your neck over the inside shoulder. Never use a single belt for more than one person. Failure to follow these precautions could increase the risk and/or severity of injury in a collision.

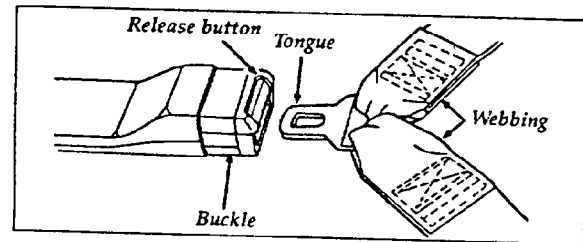
To adjust the lap part of the belt, pull up on the shoulder belt until the lap belt fits snugly and as low as possible around your hips.

**To unfasten the belt:**

1. Push the release button on the end of the buckle. This allows the tongue to unlatch from the buckle.



Unfastening the front (coupes) and rear outboard lap/shoulder belts



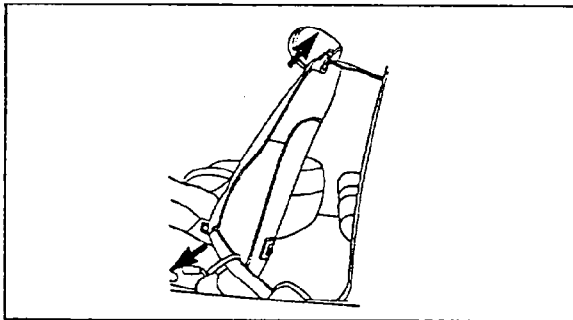
Unfastening the Mustang convertible front outboard lap/shoulder belts

2. While the belt retracts, guide the tongue to its original position. If you do not guide the tongue, it may strike you or part of the vehicle.
3. (Mustang coupe only). Place the belt in the belt holder at the top of the seatback. The retracted belt should be stored on this holder when not in use, except when a passenger is entering or leaving the rear seat area of the vehicle.

The rotating boot on the lap belt is designed to allow rear seat entry/exit. To enter the rear seat:

1. Remove seat belt from seat belt guide on top of front seat.
2. Rotate the safety belt boot rearward.
3. Enter the rear seat in front of the safety belt.
4. Rotate the safety belt boot forward and place the belt in the belt guide on the seat back to allow use by the front seat passengers.

#### *Convertible models*



Entering the rear seat convertible models

To enter the rear seat:

1. Remove the shoulder belt from the seat belt guide on top of front seat.
2. Remove the lap belt from the seat belt guide on side of seat.
3. Enter the rear seat in front of the safety belt.
4. Place the lap and shoulder belt into the guides to allow use by the front seat passengers.

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#### **Safety Belt Light/Chime**

This warning light and chime remind you to fasten your safety belt. The following conditions will take place:

- If safety belt is not buckled when the key is turned to the ON position, the light and chime will turn on for 4 to 8 seconds.
- If safety belt is buckled while the light is on and the chime is sounding, both the light and chime turn off.
- If safety belt is buckled before the key is turned to the ON position, the light will come on for 4 to 8 seconds with no chime.



The safety belt light

#### **Front Passenger Lap Belt Retractor (Convertible Only)**

##### *Dual Locking Mode Passenger Seat Lap Belt Retractor*

Your convertible is equipped with a dual locking mode retractor on the lap belt part of the lap/shoulder belt for the front seat passenger. The retractor modes function as follows:

##### *Vehicle Sensitive (Emergency) Locking Mode*

In this operating mode, the lap belt retractor will allow the occupant freedom of movement, locking tight only on hard braking, hard cornering or impacts of approximately 5 mph (8 km/h) or more. The retractor cannot be made to lock by pulling on the belt.

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### *Automatic Locking Mode*

In this operating mode, the lap belt retractor will remain locked and does not allow the occupant freedom of movement. This mode provides the following:

- A tight lap belt on the hips.
- Child seat or infant carrier installation.

This mode **must be used** when installing a child seat or infant carrier on the front passenger seat. To switch the retractor from the emergency locking mode to the automatic locking mode, perform the following steps:

1. Buckle the lap/shoulder belt.
2. Grasp the lap portion of the belt below the child seat label. Pull upward until all of the belt is extracted and a click is heard. At this time, the lap belt retractor is in the automatic locking mode (child restraint mode).
3. Allow the belt to retract. A clicking sound will be heard as the belt retracts. This indicates that the retractor is in the automatic locking mode.
4. Pull down on the belt to remove slack in the belt.

**NOTE:** When the lap/shoulder belt is unbuckled and allowed to retract completely, the retractor will switch to the vehicle sensitive (emergency) locking mode. See the detailed instructions under *Safety Seats for Children* in this chapter.

### **Front Passenger Lap/Shoulder Belt Retractor (Coupe Only) And All Rear Seating Positions (Coupe and Convertible)**

#### *Dual Locking Mode Passenger Seat Lap Belt Retractor*

Your coupe is equipped with a dual locking mode retractor on the **shoulder** belt portion of the combination lap/shoulder safety belt for the front seat passengers and all rear passengers (coupe and convertibles). The retractor modes function as follows:

#### *Vehicle Sensitive (Emergency) Locking Mode*

In this operating mode, the lap/shoulder belt retractor will allow the occupant freedom of movement, locking tight only on hard braking, hard cornering or impacts of approximately 5 mph (8 km/h) or more. The retractor cannot be made to lock by pulling on the belt.

#### *Automatic Locking Mode*

In this operating mode, the lap/shoulder belt retractor will remain locked and does not allow the occupant freedom of movement. This mode provides the following:

- A tight lap belt on the hips.
- Child seat or infant carrier installation.

This mode **must be used** when installing a child seat or infant carrier on the front passenger seat and in the rear seat. To switch the retractor from the emergency locking mode to the automatic locking mode, perform the following steps:

Never install a rear facing child seat or infant carrier in the front seat.

1. Buckle the lap/shoulder belt.