ARVIN
CALSPAN CORPORATION

ADVANCED TECHNOLOGY CENTER

1993 DODGE INTREPID ES 4-DOOR SEDAN
35 MPH FRONTAL BARRIER IMPACT TEST

CALSPAN REPORT NO. 8052-1

October 6, 1992

By:
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For:
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Section 1

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is sponsored by Gillis and Associates, Inc. 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 30 mph requirements.

The 35 mph frontal barrier impact test was conducted in accordance with the New Car Assessment Program as outlined by the National Highway Traffic Safety Administration.

Section 2

SUMMARY OF TEST NUMBER 1219

A load cell barrier consisting of 36 load cells was impacted by a 1993 Dodge Intrepid 4-Door Sedan at a velocity of 35.3 mph. The test was performed at the Calspan Corporation Advanced Technology Center on October 6, 1992. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 15 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

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

Both ATDs were fully instrumented with head and chest triaxial accelerometers and right/left femur load cells. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver ATD (Serial No. 143) and the right-front passenger ATD (Serial No. 249) 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. Appendix B contains the vehicle, load cell barrier and dummy response data traces. The vehicle front bumper was destroyed at impact. Overall vehicle lengths are not available due to the loss of the front bumper. Vehicle accelerometer #4 - Engine Bottom sustained a cut wire during impact. Velocity and displacement integrations are not available for this channel.

The driver's head struck the airbag; the HIC was 320.3. The maximum chest deceleration over 3 milliseconds was 43.0 g's and femur loads were -1420.1 and -1511.0 pounds.

The right front passenger's HIC was 657.4 and maximum chest deceleration over 3 milliseconds was 42.4 g's. Femur loads were -830.5 and -1416.2 pounds.

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Year/Make/Model/Body Style: 1993 Dodge Intrepid ES 4-Door Sedan

Test No.: 1219 VIN.: 2B3ED56T9PH502327

Body Color: White Date of Manufacture: 8-92

Engine: 6 Cylinders; - C.I.D.; 3.3 Liters; - CC

✓ Gas; - Diesel; - Turbocharged

✓ Longitudinal; - Transverse

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

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

Date Received: 9-29-92 Odometer Reading: 619.0

✓ A/C; ✓ P/S; ✓ P/B; ✓ P/wdo;

✓ Tilt Wheel ✓ P/seats; ✓ Cruise Control

Type of Occupant Restraint: 3-point restraint system with dual airbags

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 44 psi, Rear 44 psi

Recommended Tire Size: P225/60R-16

Recommended Cold Tire Pressure: Front 35 psi, Rear 35 psi

Tires on Vehicle: P225/60R16 ; Manufacturer: Goodyear Eagle GA

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

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

Type of Front Seat Back: - Fixed; ✓ Adj. With ✓ Lever - Rot. Knob

Vehicle Capacity Weight (VCW) = 865 lbs. (A)

No. of Occupants x 150 lbs. = 750 lbs. (B)

Rated Cargo and Luggage
Weight (RCLW) A-B = 115 lbs.

GVWR 4405 lbs. GAWR: Front 2524 lbs. Rear 1956 lbs.

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS) = UDW:

Right Front = 1090 lbs. Right Rear = 580 lbs.

Left Front = 1040 lbs. Left Rear = 580 lbs.

TOTAL FRONT WEIGHT = 2130 lbs. (65 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 1160 lbs. (35 % of Total Vehicle Weight)

TOTAL DELIVERED WEIGHT = 3290 lbs.

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight (3290 lbs.)

VCW = Vehicle Capacity Weight (865 lbs.)

DSC = Designated Seating Capacity (5)

RCLW = VCW - 150 (DSC) = 115 lbs.

Target Test Weight = UDW + RCLW + (2 dummies x 167 lbs./dummy)

Target Test Weight = 3739 lbs.

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 106 POUNDS CARGO:

Right Front = 1100 lbs. Right Rear = 760 lbs.

Left Front = 1100 lbs. Left Rear = 770 lbs.

TOTAL FRONT WEIGHT = 2200 lbs. (59 % of Total Vehicle Weight)

TOTAL REAR WEIGHT = 1530 lbs. (41 % of Total Vehicle Weight)

TOTAL TEST WEIGHT = 3730 lbs.

Weight of ballast secured in vehicle trunk area = 0 lbs.

VEHICLE ATTITUDE (all dimensions in inches):

Delivered Attitude: RF 28.8" LF 28.8" RR 29.2" LR 29.1"

Test Attitude: RF 28.3" LF 28.4" RR 27.4" LR 27.8"

Wheel Base: 113.4 in.; C.G. = 46.5 in. rearward of front wheel C/L

Remarks: 16.7 gallons of stoddard solution was placed in fuel tank

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

POST-IMPACT DATA:

Type of Test: Frontal Barrier Impact Angle: 0 °

Date of Test: October 6, 1992 Time of Test: 12:00

Ambient Temperature: 65 °F at impact area

Temperature in Occupant Compartment: 70 °F

Windshield Molding Temperature: 70 °F

Required Impact Velocity Range: 34.5 to 35.5 mph

Impact Velocity: primary = 35.3 mph, secondary = 35.3 mph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 52 inches

Exiting Speed Trap: 12 inches

Distance from front of test vehicle to point of impact:

R 20.8 C_L 20.4 L 19.8

VISIBLE DUMMY CONTACT POINTS:

	Driver	Passenger
Head	Airbag	Airbag
Chest	Airbag	Airbag
Abdomen	No contact	No contact
Left Knee	Dash panel	Glove box door
Right Knee	Dash panel	Glove box door

Table 1

GENERAL TEST AND VEHICLE PARAMETER DATA (cont'd)

	Front		Rear	
	Left	Right	Left	Right
Door Opening	Operable	Operable	Operable	Operable

	Front		Rear	
Seat Movement	Left	Right	Left	Right
Seat Back Failure	None	None	-	-
Seat Shift (in.)	0.0	0.0	-	-

Glazing Damage

Backlight/Windshield Windshield sustained stress fracture but remained intact

Other Notable Impact Effects: None

Section 3

FINAL DATA

Occupant and Vehicle Information

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

Table 2

DUMMY INJURY CRITERIA VALUES

Test No.: 1219 Vehicle: 1993 Dodge Intrepid ES 4-Door Sedan

	MAXIMUM HEAD ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-52.0	16.7	22.8	52.5
Position #2 - Passenger	-62.4	43.6	18.5	71.3

	MAXIMUM CHEST ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-42.5	7.5	-16.8	43.0
Position #2 - Passenger	-43.7	9.6	15.2	42.4

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

	MAXIMUM FORCE - FEMUR LOAD (lbs.)	
	LEFT FEMUR	RIGHT FEMUR
Position #1 - Driver	-1420.1	-1511.0
Position #2 - Passenger	-830.5	-1416.2

	MAXIMUM FORCE - SEAT BELT LOADS (lbs.)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
Position #1 - Driver	1505.7	-	1117.2
Position #2 - Passenger	1267.1	1669.0	-

	HEAD INJURY CRITERIA (HIC)			
	HIC	t_1 (SEC)	t_2 (SEC)	Average Acceleration t_1 TO t_2
Position #1 - Driver	320.3	0.054	0.087	39.3
Position #2 - Passenger	657.4	0.588	0.09228	52.1

HIC is as defined in FMVSS 208. The maximum time interval from t_1 to t_2 is 36 milliseconds.

Table 3

HYBRID III NECK AND CHEST DATA SHEET

Vehicle Year/Make/Model/Body Style: 1993 Dodge Intrepid ES 4-Door Sedan

Test No.: 1219 Test Date: 10-6-92

MAXIMUM VALUES	DRIVER DUMMY ID # 143	PASSENGER DUMMY ID #259
Neck Load X	124.8 lbs	82.1 lbs
Neck Load Y	-101.9 lbs	-31.3 lbs
Neck Load Z	333.4 lbs	563.8 lbs
Neck Moment X	-379.8 in-lbs	95.4 in-lbs
Neck Moment Y	-528.4 in-lbs	-345.0 in-lbs
Neck Moment Z	-509.8 in-lbs	-90.3 in-lbs
Chest Deflection X (in.)	2.5 in	2.2 in
Time of Max. Occurance	67.8 msec	62.6 msec

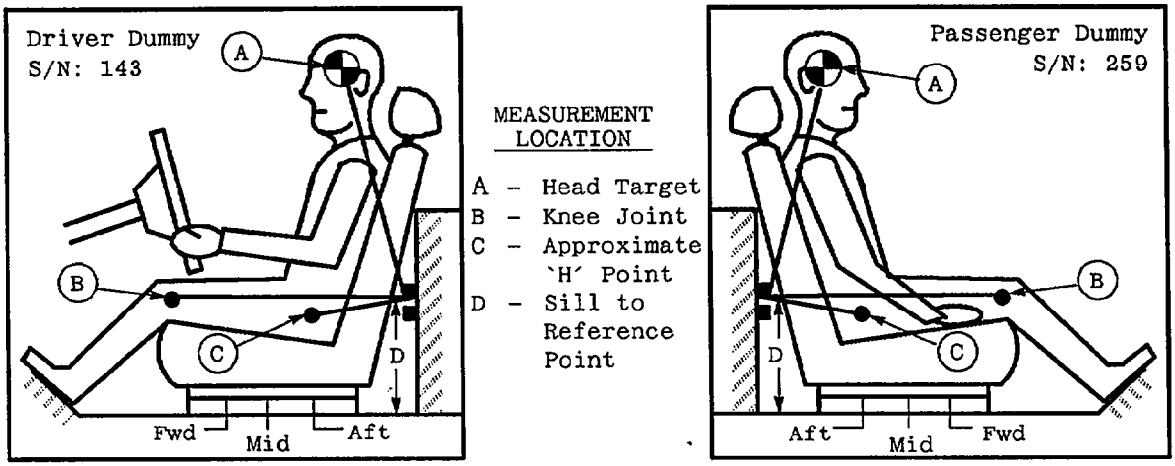
NOTE: All values listed must be occurring during primary impact event.

Figure 1

PART 572 DUMMY IN-VEHICLE POSITION

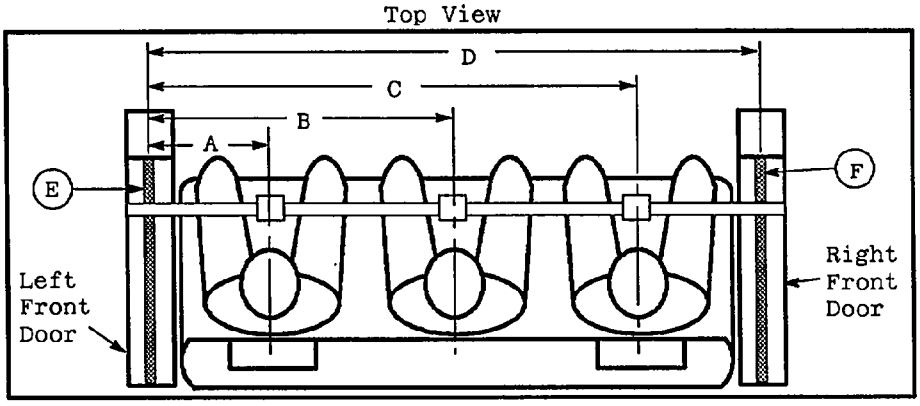
Test No.: 1219 Vehicle: 1993 Dodge Intrepid 4-Door Sedan

SEAT TYPE:	ADJUSTER TYPE:	SEAT BACK TYPE:
- Bench	X Manual (Pass.)	- Fixed
X Bucket	X Power (Driver)	X Adjustable Reclining
- Split Bench		



Driver Dummy		Passenger Dummy	
A = 20.0 in.	10 Degrees	A = 22.1 in.	11 Degrees
B = 22.3 in.	94 Degrees	B = 22.8 in.	93 Degrees
C = 8.3 in.	134 Degrees	C = 8.5 in.	132 Degrees
D = 14.5 in.		D = 14.5 in.	

Top View



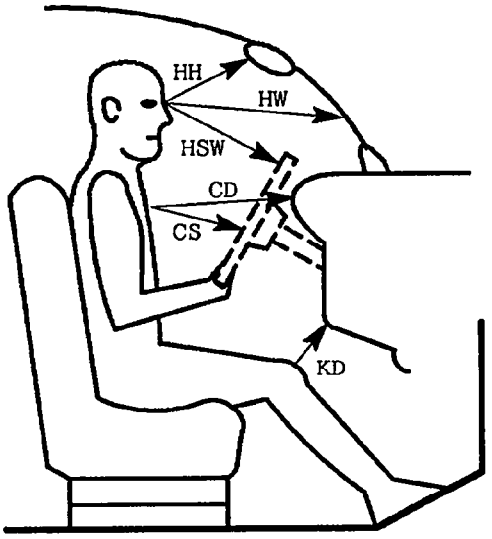
S/N 143 DUMMY ID S/N 259

A = Left Door to Driver Centerline	14.0	in.
B = Left Door to Center Passenger Centerline	-	in.
C = Left Door to Right Passenger Centerline	43.8	in.
D = Left Door to Right Door	58.5	in.
E,F = Window Glass Height (Right and Left Must Be Equal)	9.0	in.

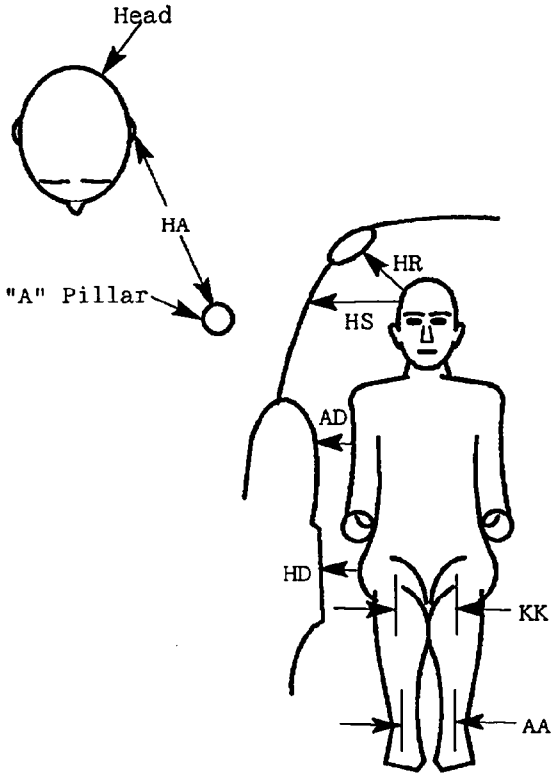
Figure 2

OCCUPANT CLEARANCE DIMENSIONS

	DRIVER	PASSENGER
HH	14.1	14.0
HW	24.5	23.3
CD	20.6	18.8
CS	11.4	-
KDL	3.3	3.8
KDR	3.5	3.4
SA	15.5°	15.5°
PA	24°	24°
HSW	16.1	-



HH = Head to Windshield Header
HW = Head to Windshield
HSW = Head to Steering Wheel
CD = Chest to Dash
CS = Chest to Steering Wheel
KD(L/R) = Knee to Dash (Left/Right)
SA = Seat Back Angle
PA = Pelvic Angle

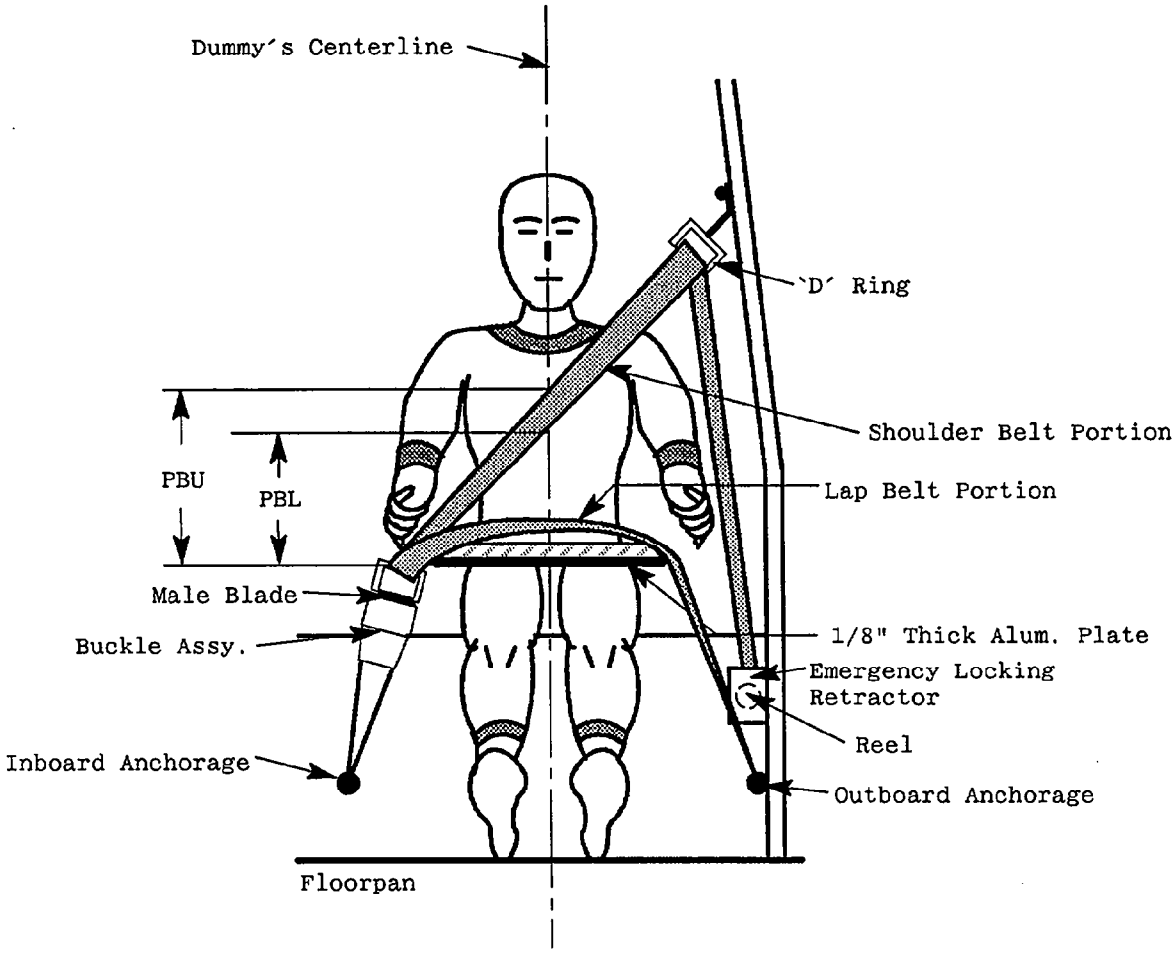


HA = Head Target to "A" Pillar
HR = Head to Side Roof
HS = Head to Side Window
AD = Arm to Door
HD = Hip to Door
KK = Knee to Knee
AA = Ankle to Ankle

	DRIVER	PASSENGER
HR	6.2	6.1
HS	11.1	11.8
AD	5.6	5.6
HD	6.5	5.8
KK	8.0	7.5
HA	20.1	18.4
AA	8.5	7.0

Figure 3

SEAT BELT POSITIONING DATA



Front View of Driver Dummy

	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
PBU -- Top surface of alum. plate to upper edge	12.5	12.5
PBL -- Top surface of alum. plate to belt lower edge	9.5	9.5
LAP BELT TENSION	-	-
SHOULDER BELT TENSION	2.0 lbs	2.0 lbs

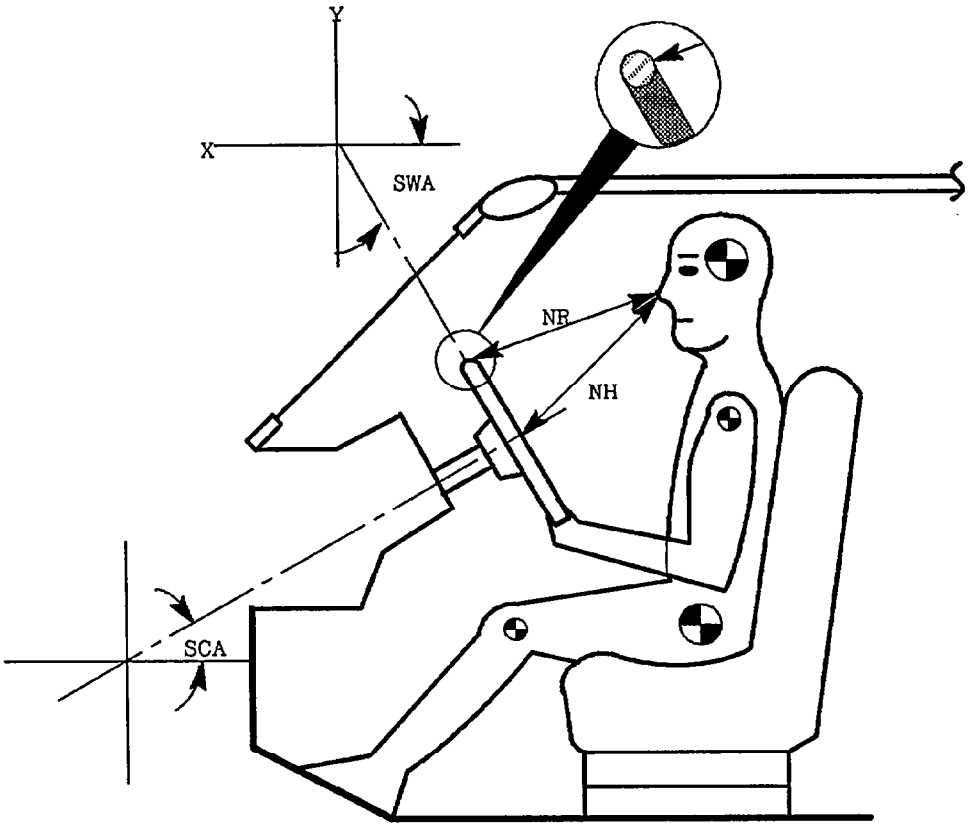
Table 4

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:	Driver	Passenger
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	88.0 in	88.0 in
Shoulder belt length as measured on Part 572 Dummy.	34.5 in	34.5 in
Lap belt length as measured on Part 572 Dummy.	33.0 in	33.0 in
SHOULDER BELT SPOOL-OFF DATA:		
As determined by film analysis.	N/A	1.5 in
As determined mechanically.	0.0 in	0.8 in
As determined electronically.	0.4 in	0.2 in
BELT STRETCH DATA:		
Measured electronically between shoulder belt load cell and the "D" ring.	0.0 in/ft	0.6 in/ft
Measured mechanically	0.0 in/ft	0.0 in/ft

Figure 4

DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSEMBLY REFERENCE DIMENSIONS



Left Side View

	MEASUREMENTS	
NR -- Distance from tip of dummy's nose to Top Rear surface of steering wheel rim	15.1	Inches
NH -- Distance from tip of dummy's nose to center of steering column hub	15.0	Inches
SCA -- Angle of steering column relative to the horizontal X axis	25	Degrees
SWA -- Angle of steering wheel relative to the horizontal X axis	-65	Degrees

Figure 5

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information Shown on Table 4

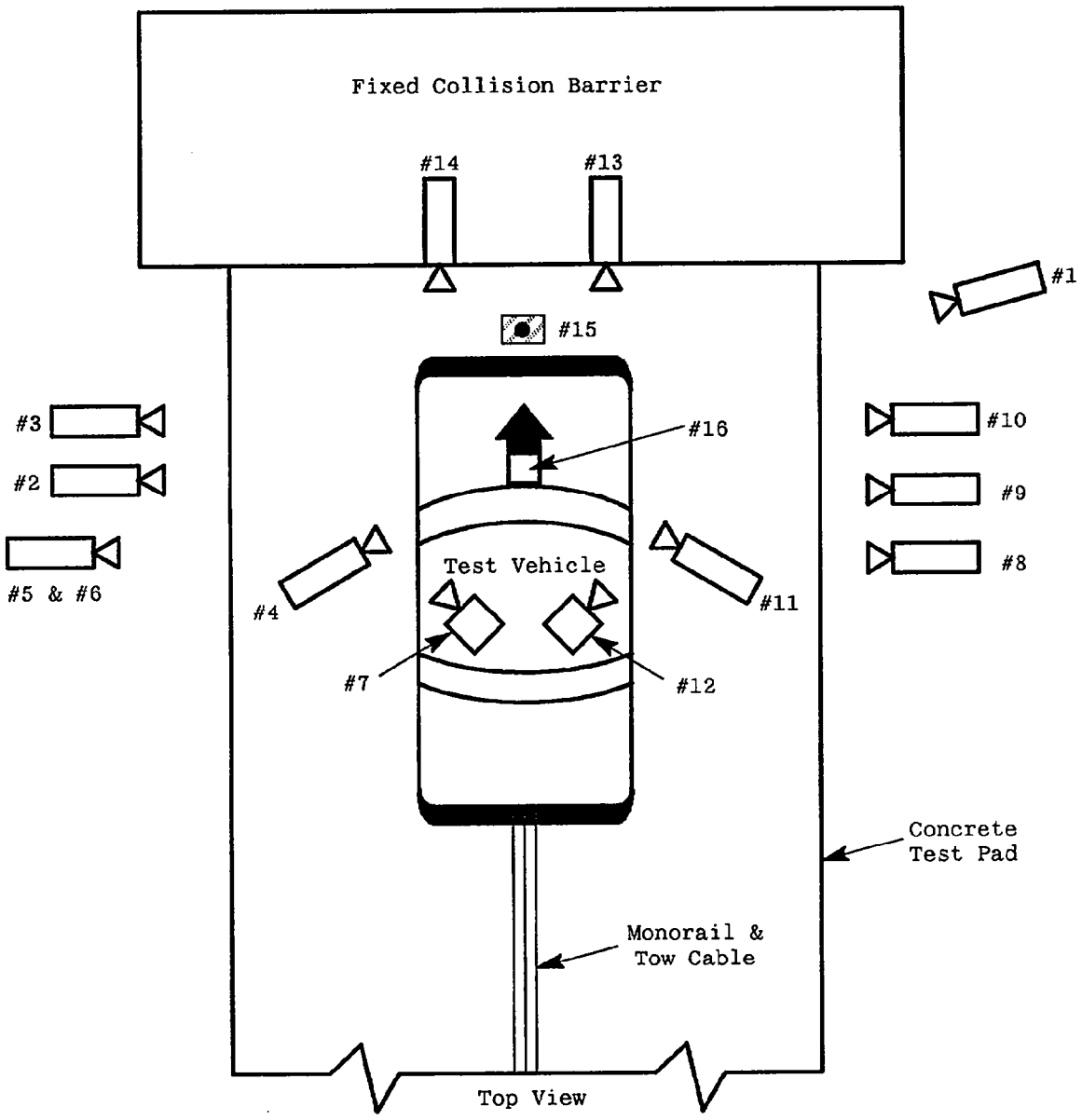


Table 5

HIGH-SPEED CAMERA LOCATIONS

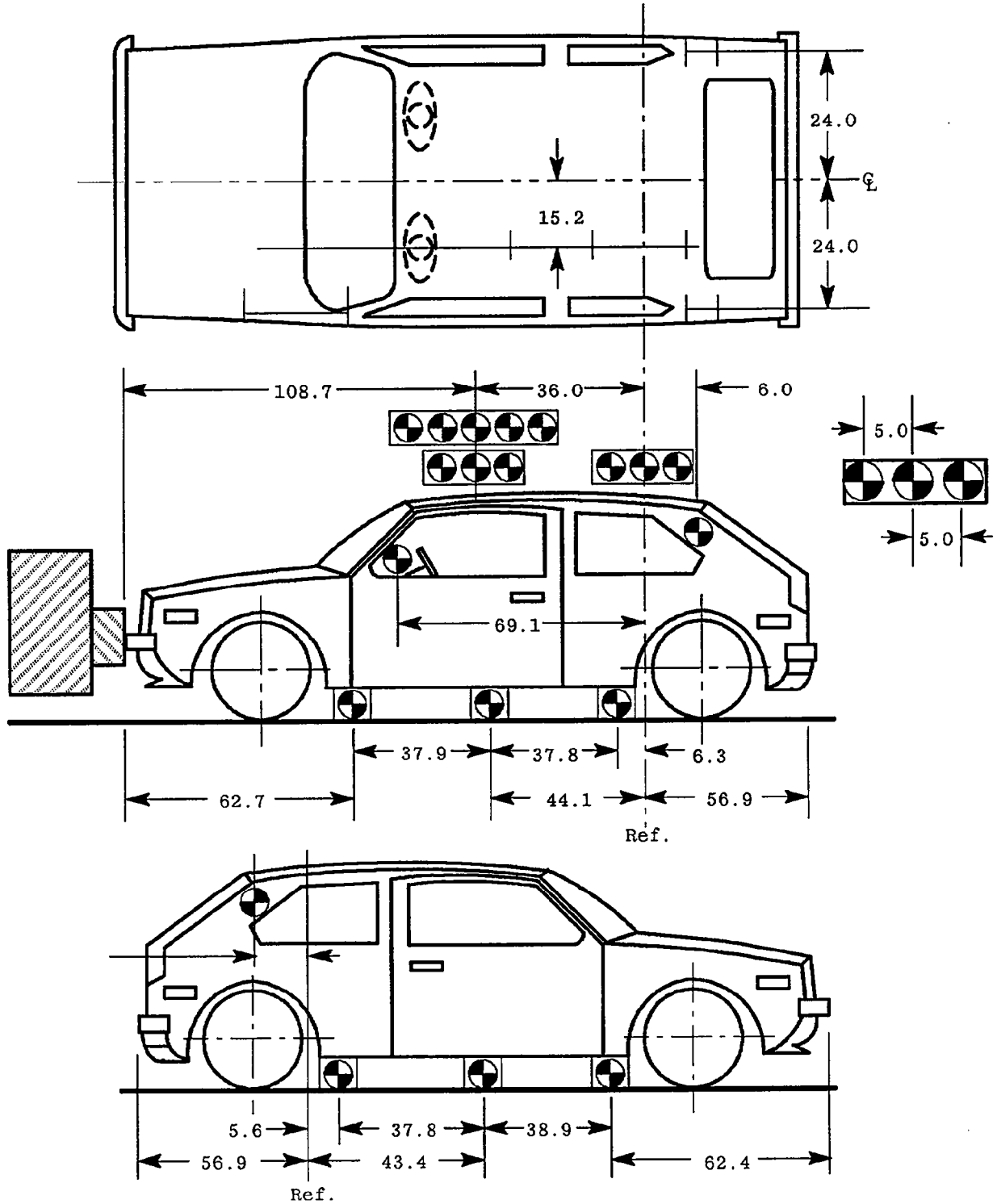
Test No. 1219 Vehicle: 1993 Dodge Intrepid ES 4-Door Sedan

CAMERA NO.	VIEW	CAMERA POSITIONS (in)* X	Y	Z	ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	259	67	42	-4	241	13	550
3	Left Side View	330	42	41	-3	312	25	610
4	Driver and Interior View	118	110	64	-16	100	13	570
5	Steering Column (Bottom)	287	76	46	-5	269	25	580
6	Steering Column (Top)	287	76	70	-9	269	25	570
7	Left Belt	-	-	-	-	-	8	N/A
8	Overall Right Side	252	78	42	-1	234	13	590
9	Right Side View	322	56	41	-3	304	25	530
10	Right Passenger View	312	76	58	-5	294	35	550
11	Passenger and Interior View	111	111	64	-19	93	13	570
12	Right Belt	-	-	-	-	-	8	660
13	Passenger Front View	22	0	77	-34	-	13	620
14	Driver Front View	22	0	77	-30	-	13	600
15	Windshield View	0	-22	120	-49	-	13	610
16	Pit View of Engine	0	34	-120	90	-	13	680

*X = film plane to monorail centerline
Y = film plane to impact location
Z = film plan to ground
** = referenced to horizontal plane

Figure 6

VEHICLE TARGET LOCATIONS

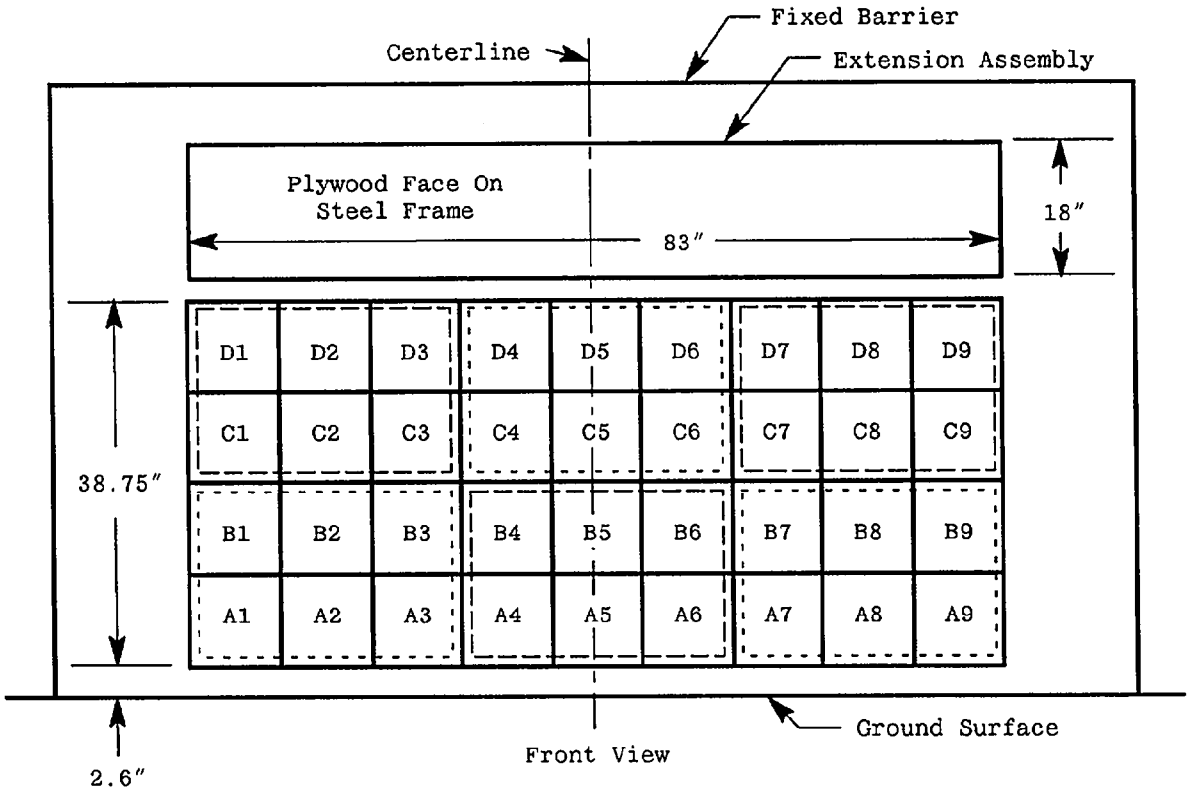


(Dimensions in inches)

Figure 7

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:

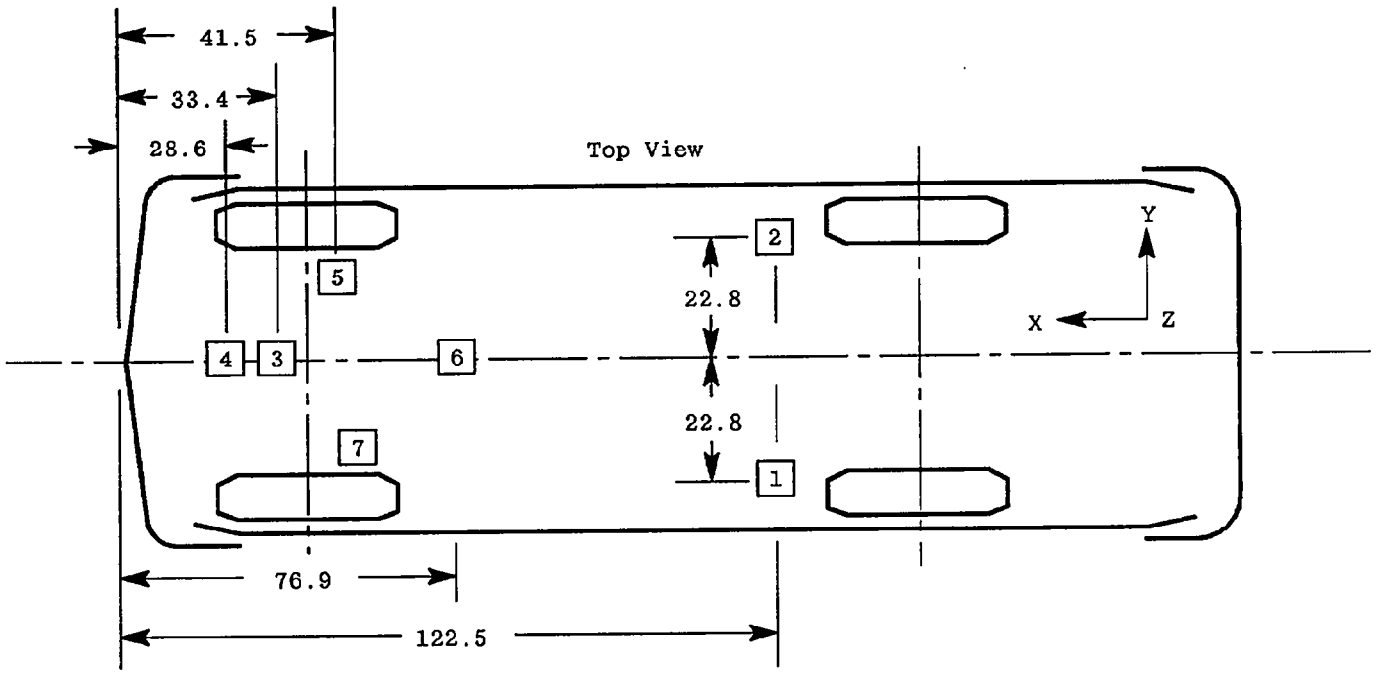
(1) Data from 36 individual load cells

(2) Total or Sum of 36 individual load cells

(3) Data from 6 Groupings shown above (6 cells/group)

Figure 8

VEHICLE ACCELEROMETER LOCATIONS



ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	DIRECTION		
		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	✓		

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

Figure 9

TEST VEHICLE MEASUREMENTS

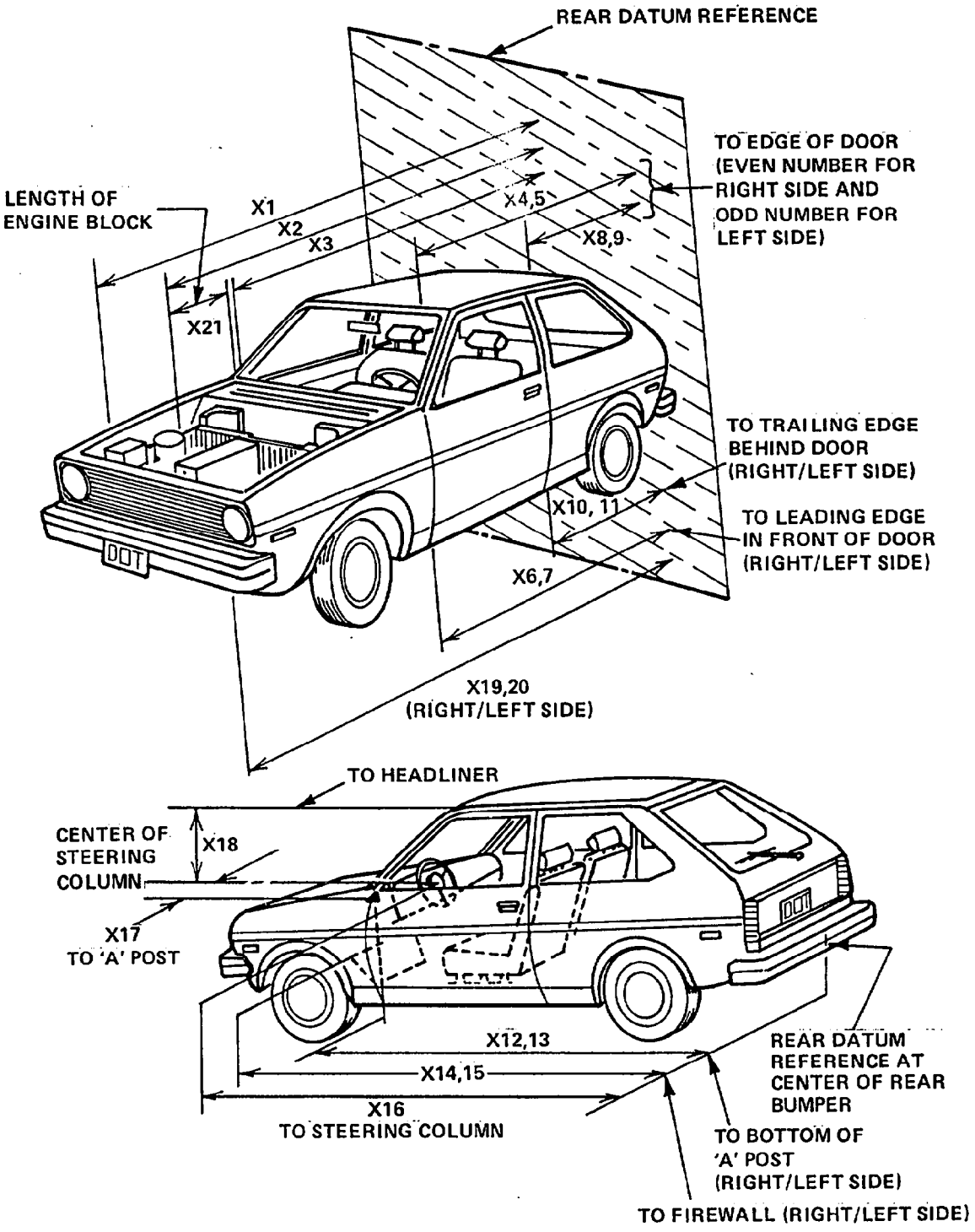


Table 6

VEHICLE MEASUREMENTS

No.		All Dimensions in Millimeters		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	201.6	N/A	N/A
X2	Rear Surface of Vehicle to Front of Engine	181.6	168.4	13.2
X3	Rear Surface of Vehicle to Firewall	159.4	154.2	5.2
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	139.9	139.4	0.5
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	139.8	139.6	0.2
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	135.1	136.0	-0.9
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	135.3	135.6	-0.3
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	95.9	95.8	0.1
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	95.6	95.6	0.0
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	95.8	96.0	-0.2
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	95.7	95.8	-0.1
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	133.0	133.2	-0.2
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	133.8	134.9	-1.1
X14	Rear Surface of Vehicle to Firewall, Right Side	158.2	153.0	5.2
X15	Rear Surface of Vehicle to Firewall, Left Side	161.5	158.1	3.4
X16	Rear Surface of Vehicle to Steering Column	119.0	119.5	-0.5
X17	Center of Steering Column to "A" Post	17.5	16.8	0.7
X18	Center of Steering Column to Headliner	15.2	10.4	4.8
X19	Rear Surface of Vehicle to Right Side of Front Bumper	196.9	N/A	N/A
X20	Rear Surface of Vehicle to Left Side of Front Bumper	196.9	N/A	N/A
X21	Length of Engine Block	21.3	21.3	0.0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	125.0	125.4	-0.4
CD	Rear Surface of Vehicle to Center of Dash Panel	125.2	124.5	0.7
LD	Rear Surface of Vehicle to Left Side of Dash Panel	124.8	124.8	0.0

Note: The front bumper was destroyed upon impact. X1, X19 and X20 are not available due to the lkoss of the bumper.

Appendix A

PHOTOGRAPHS

PHOTOGRAPHS

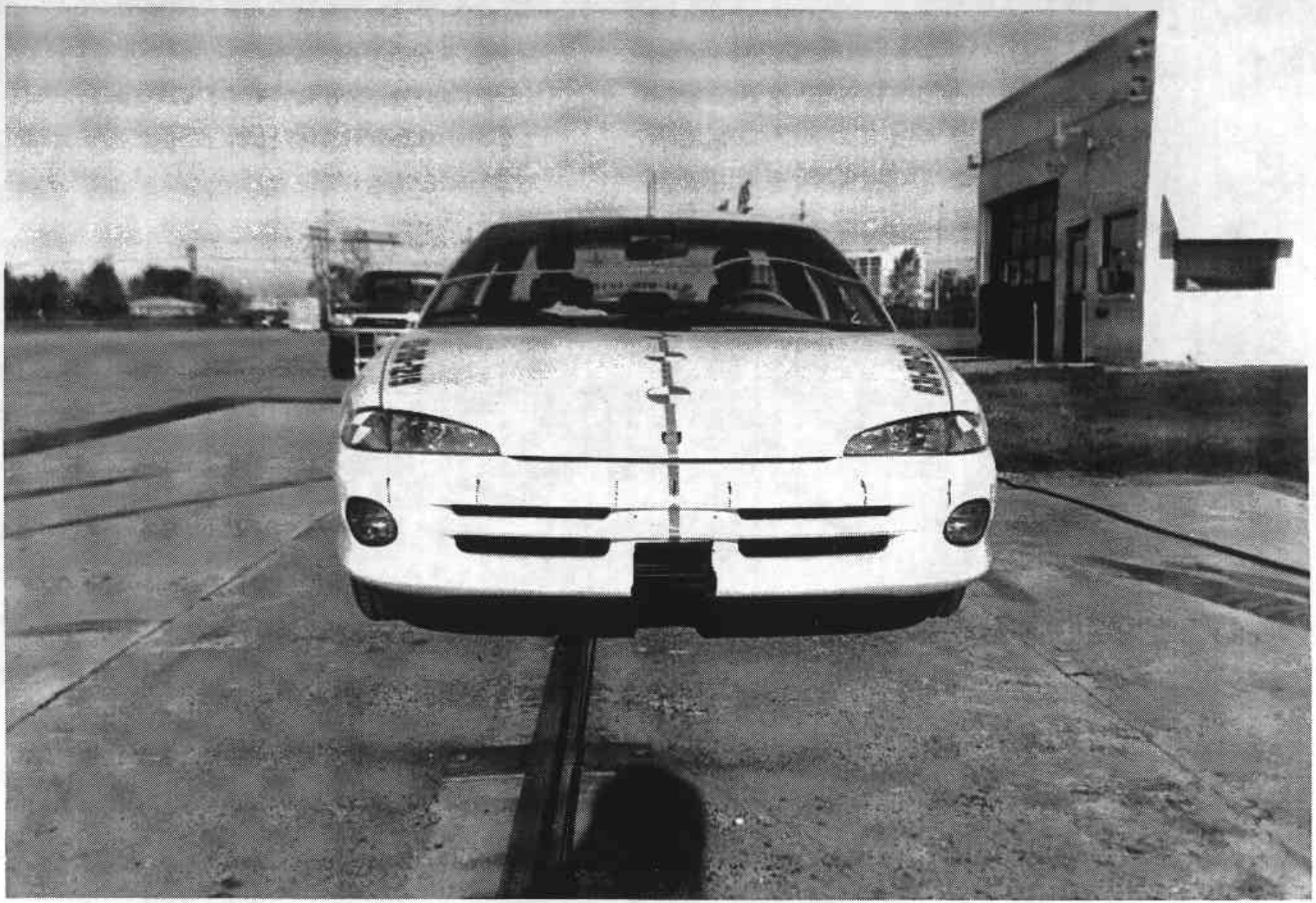


Figure A-1 PRE-TEST FRONT VIEW

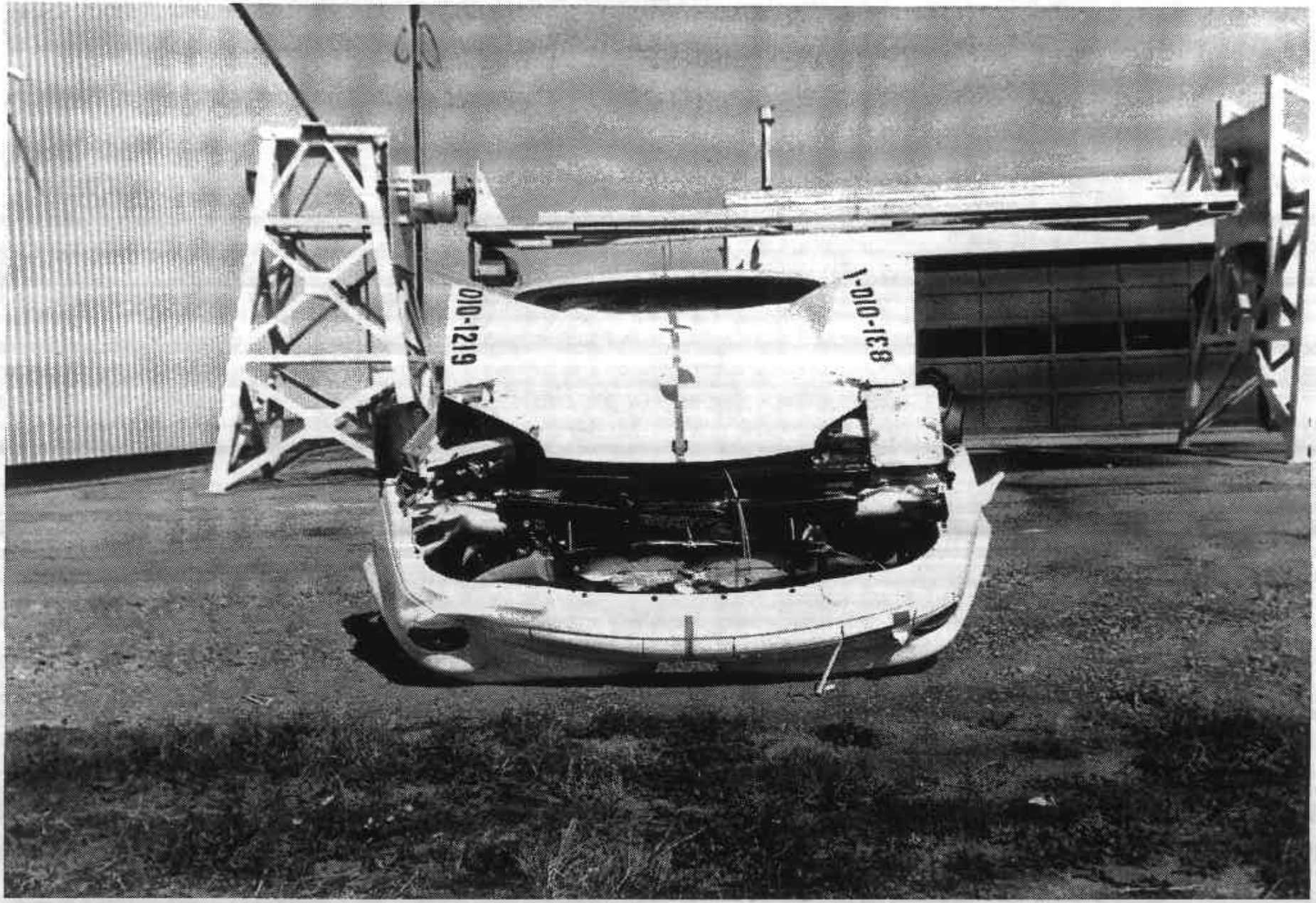


Figure A-2 POST TEST FRONT VIEW

Figure A-3 PRE-TEST LEFT SIDE VIEW

8052-1

Figure A-4 POST TEST LEFT SIDE VIEW

8052-1

Figure A-5 PRE-TEST RIGHT SIDE VIEW

8052-1

Figure A-6 POST-TEST RIGHT SIDE VIEW

Figure A-7 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

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

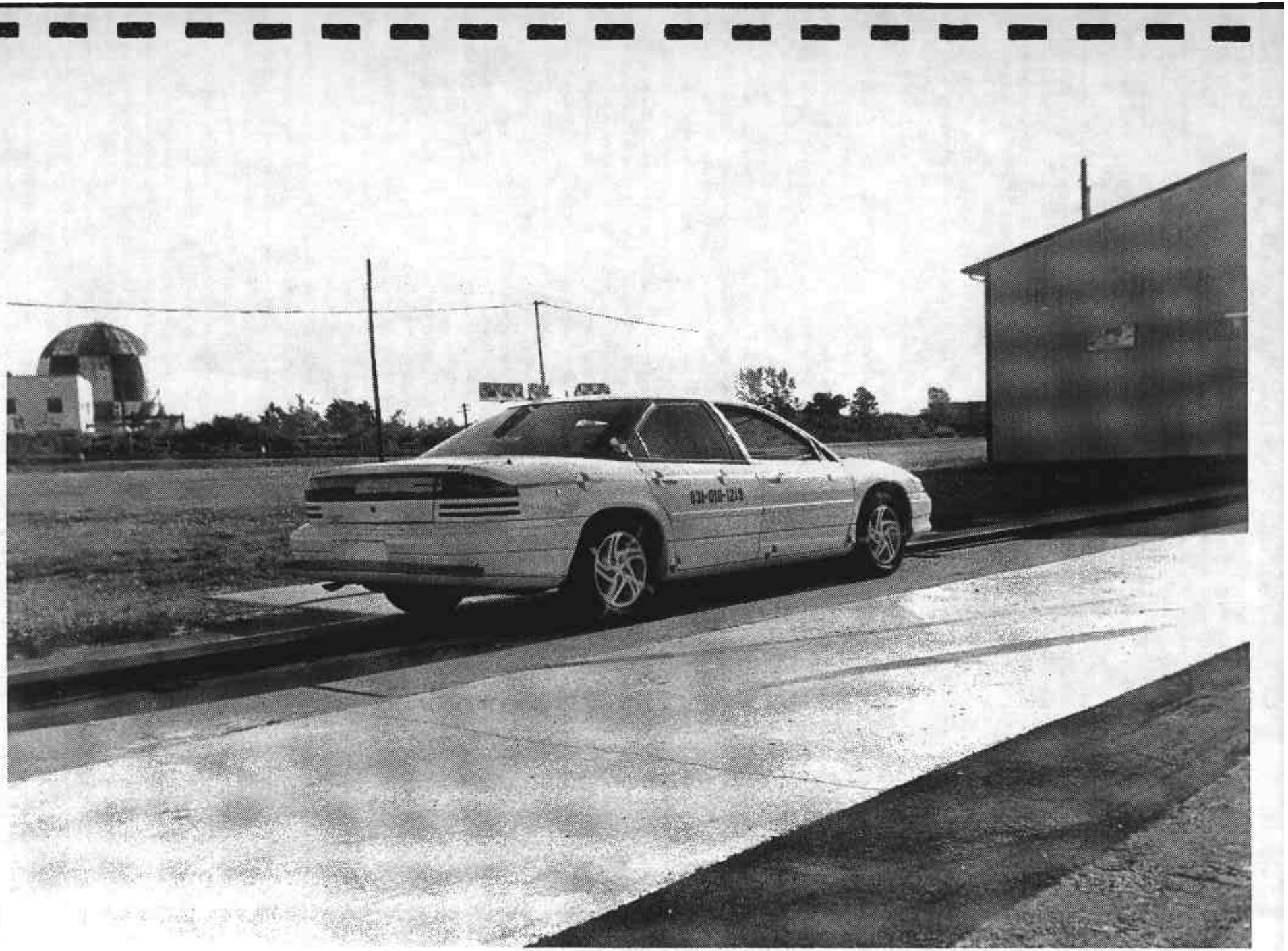
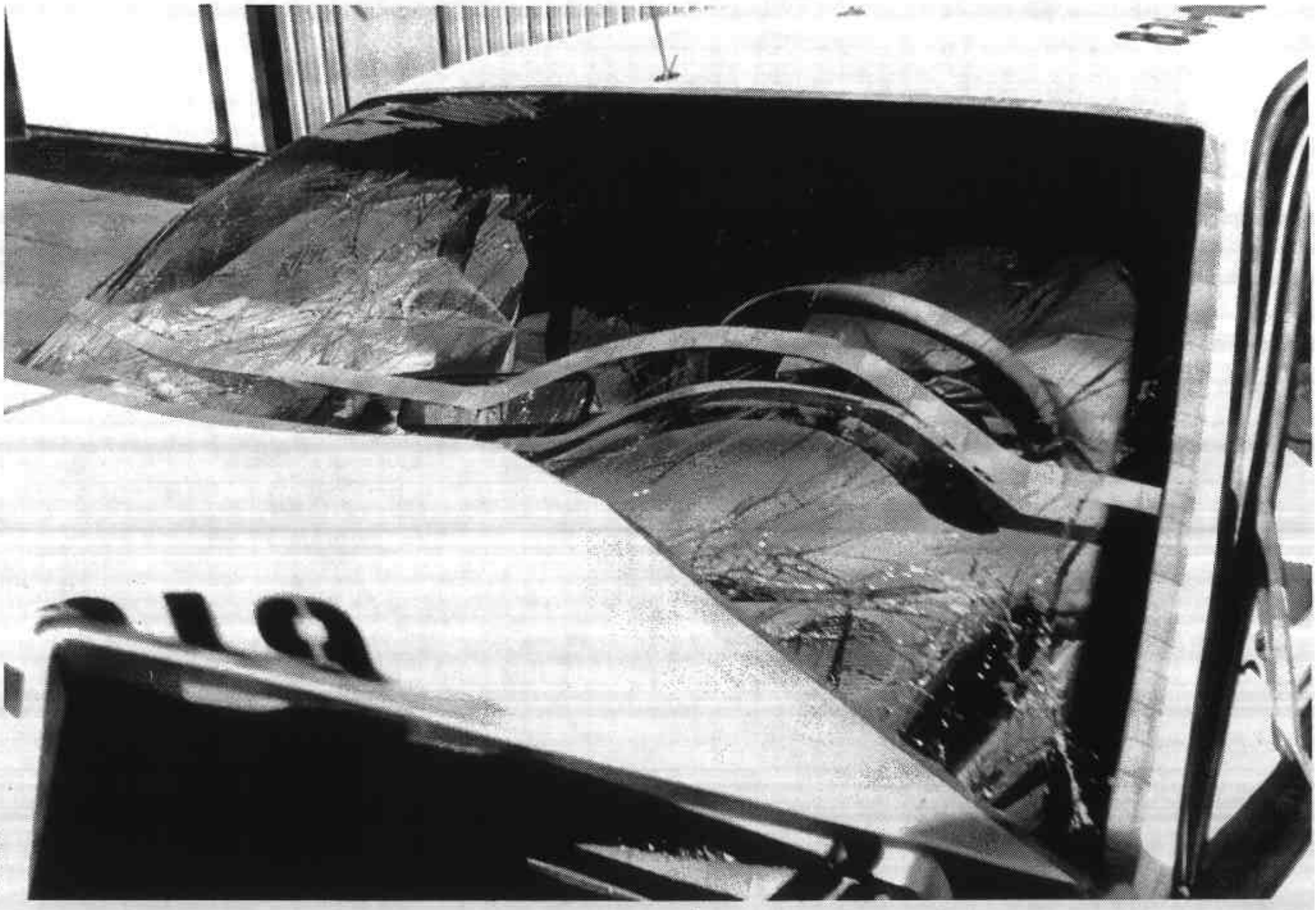


Figure A-9 PRE-TEST LEFT REAR THREE-QUARTER VIEW

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

Figure A-11 PRE-TEST WINDSHIELD VIEW



A-14

8052-1

Figure A-12 POST-TEST WINDSHIELD VIEW

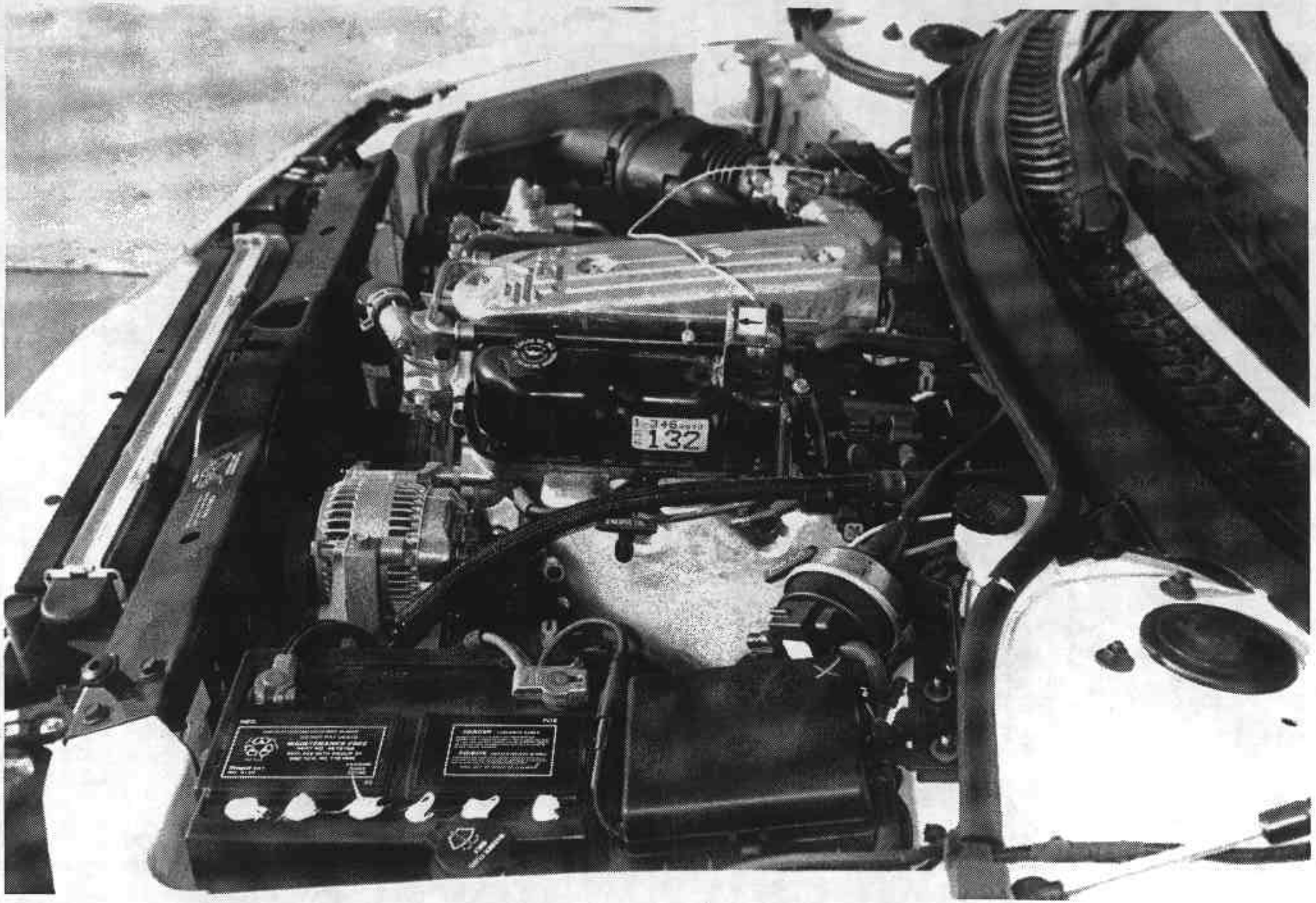


Figure A-13 PRE-TEST ENGINE COMPARTMENT VIEW

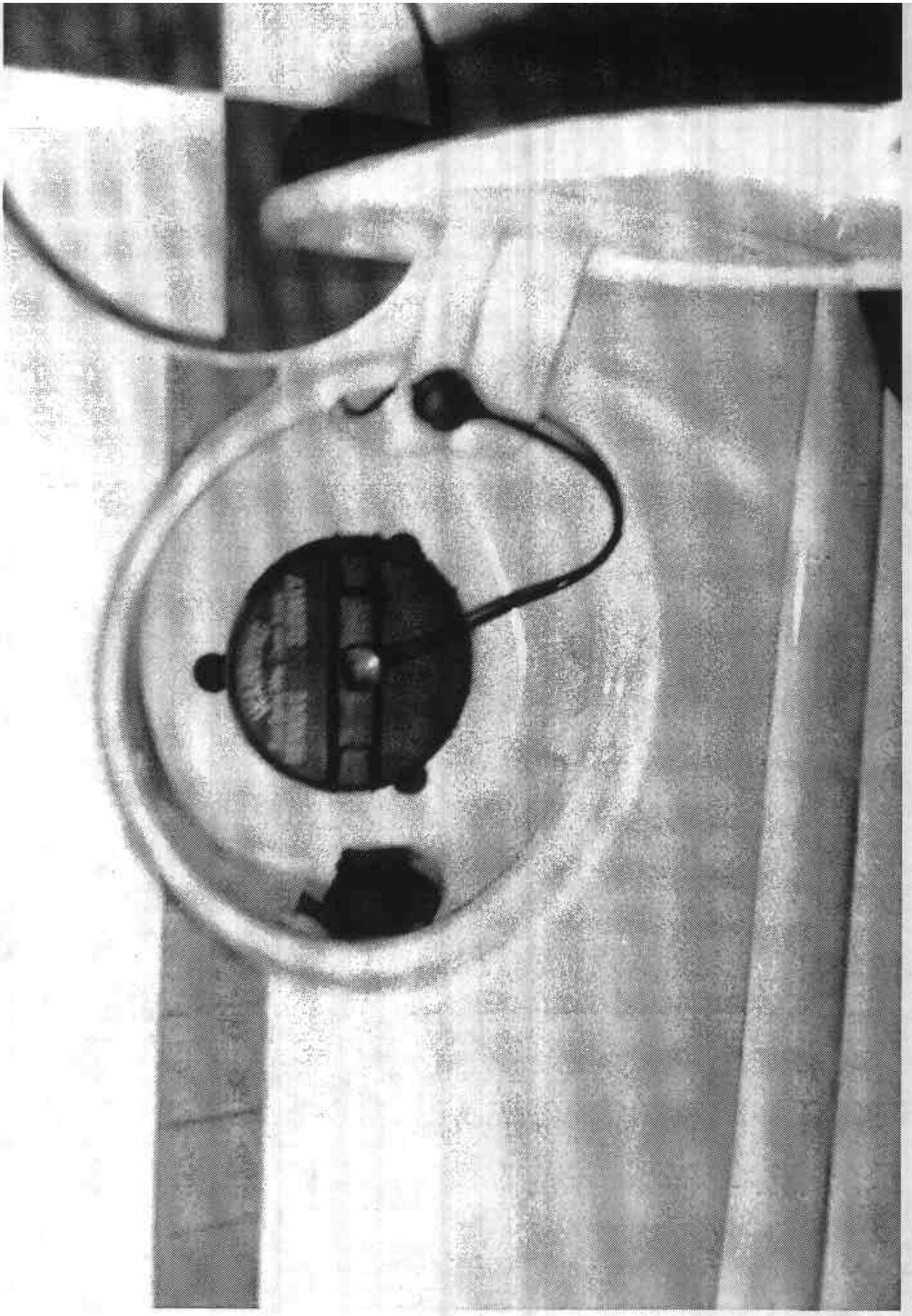
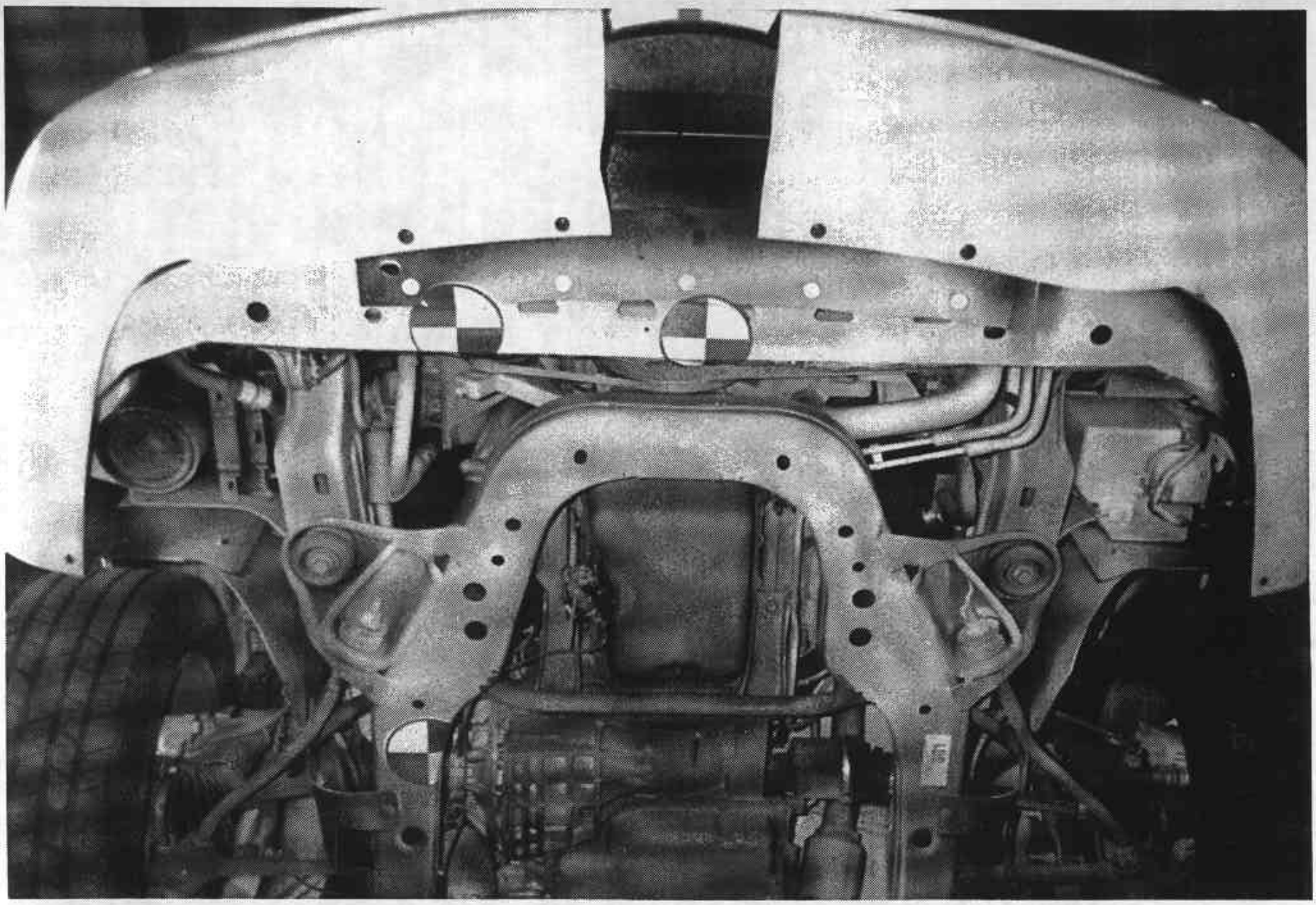


Figure A-14 FUEL CAP VIEW



8052-1

Figure A-15 PRE-TEST FRONT UNDERBODY VIEW

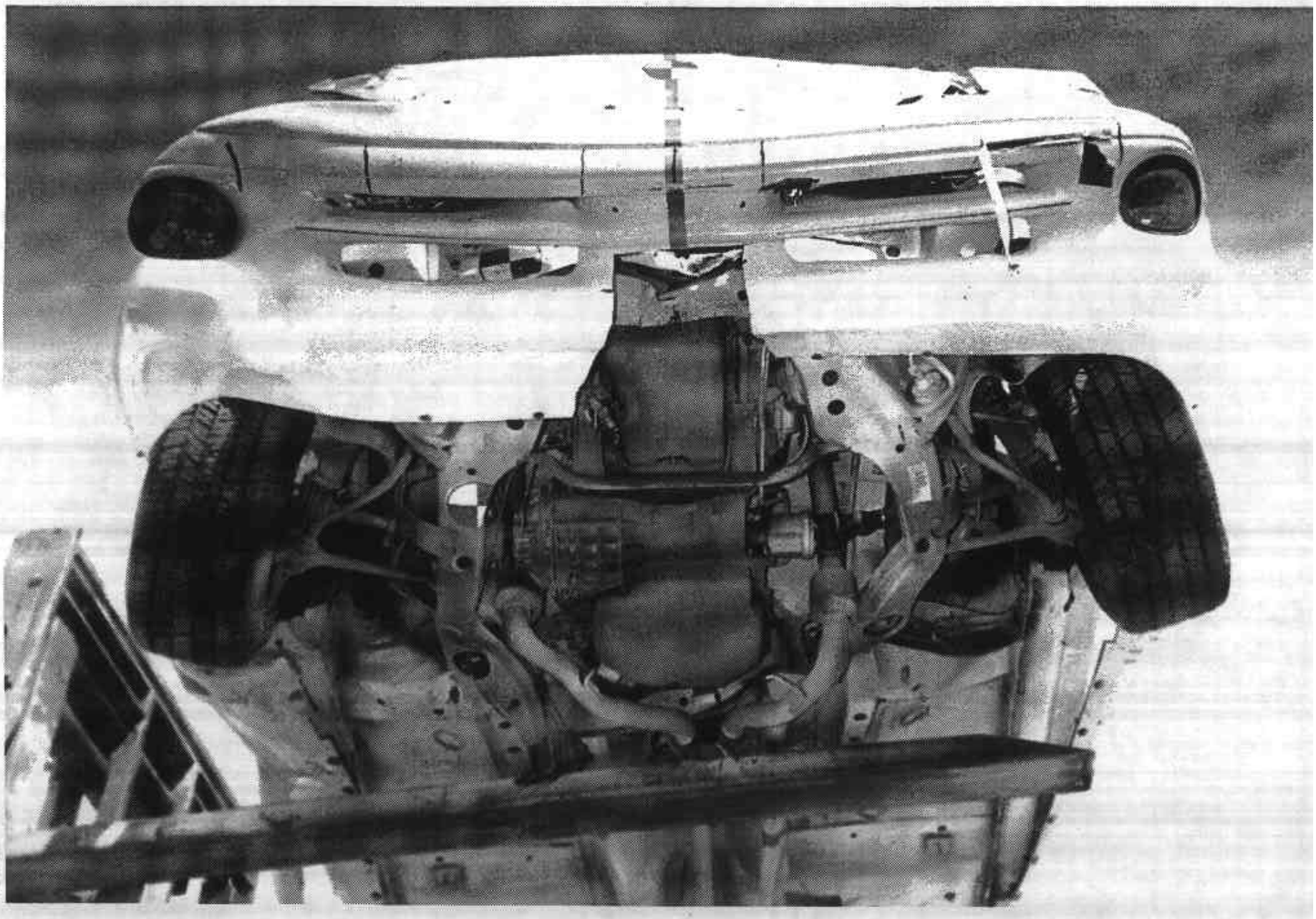


Figure A-16 POST-TEST FRONT UNDERBODY VIEW

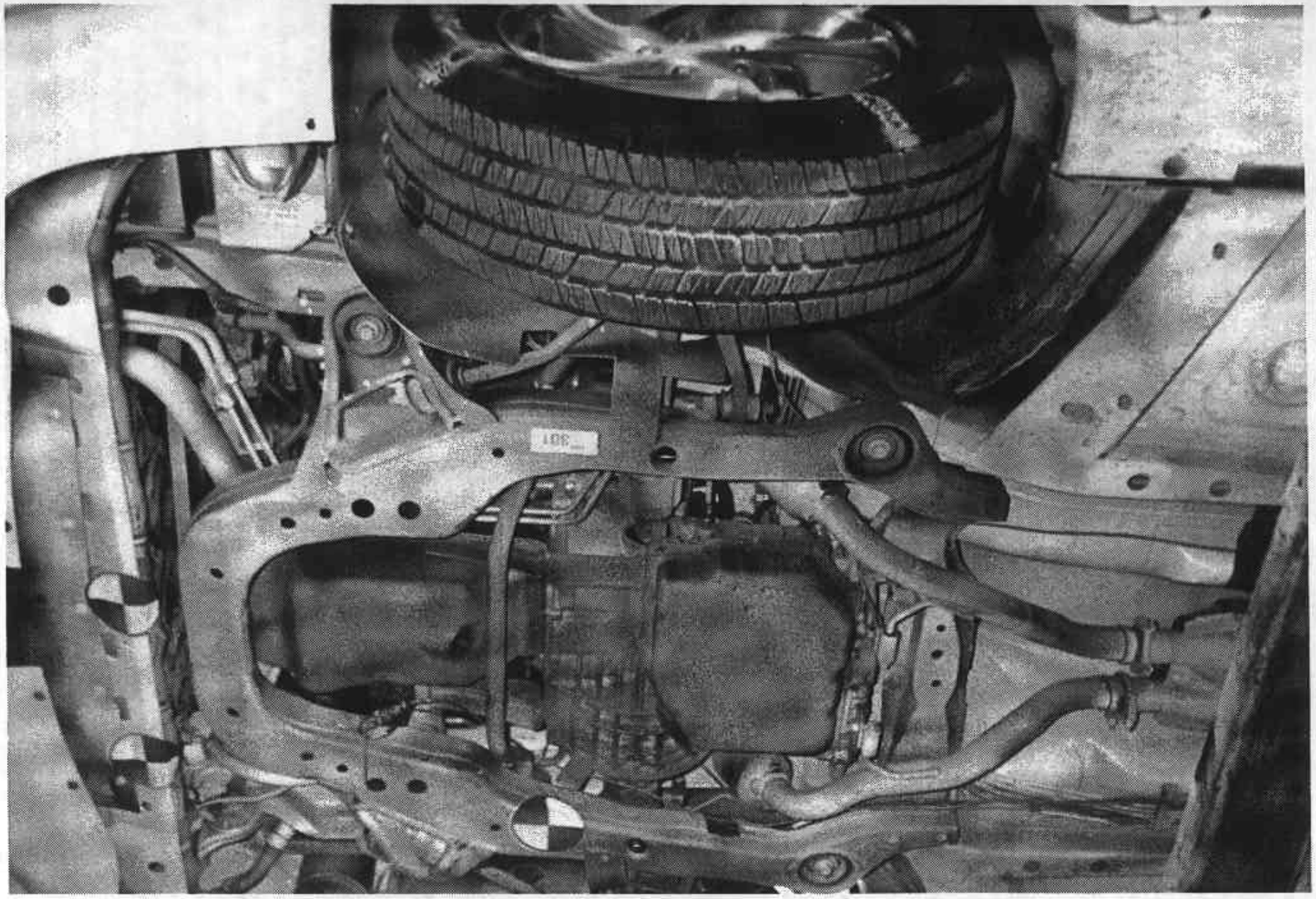


Figure A-17 PRE-TEST FRONT SIDE UNDERBODY VIEW

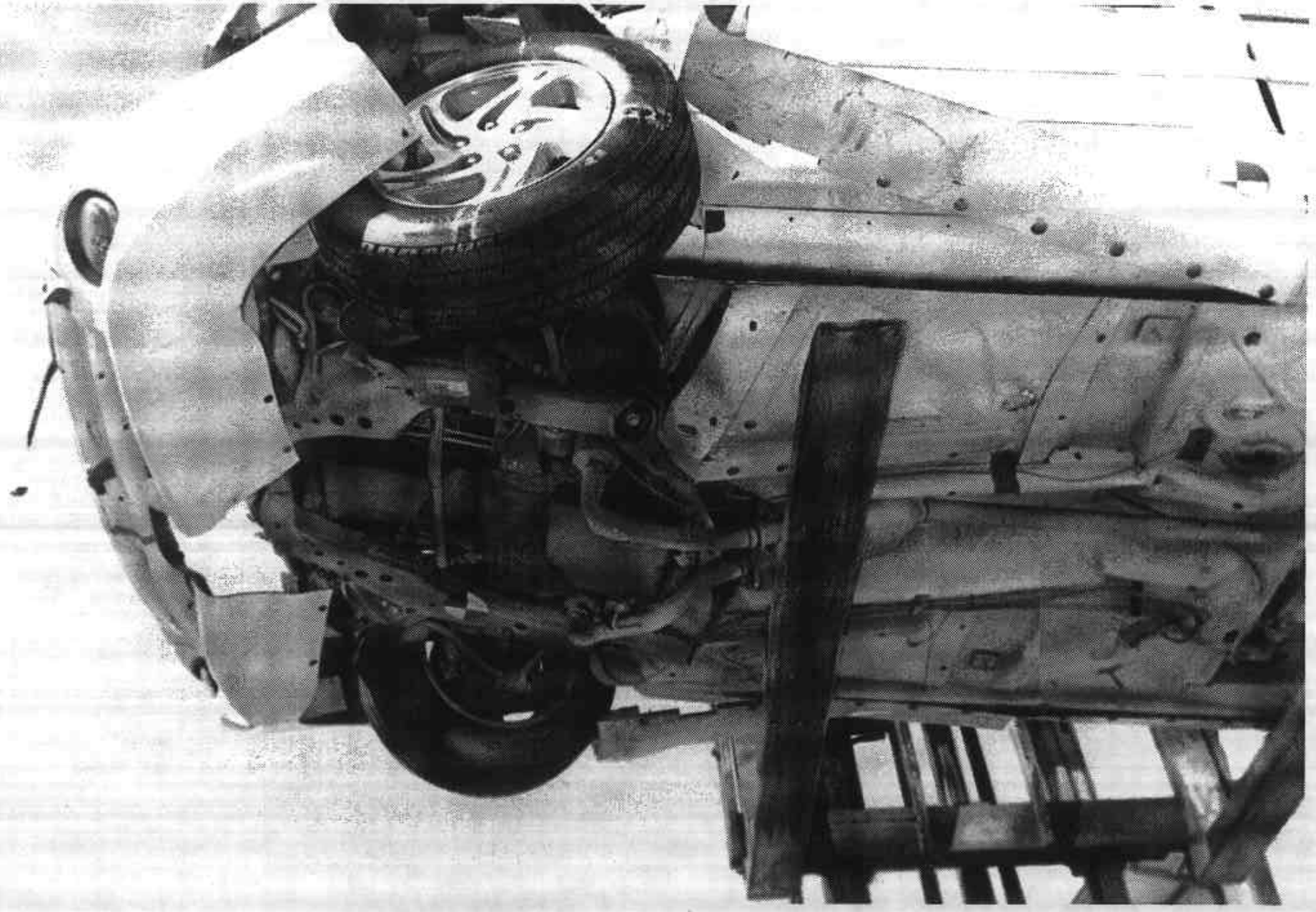


Figure A-18 POST-TEST FRONT SIDE UNDERBODY VIEW

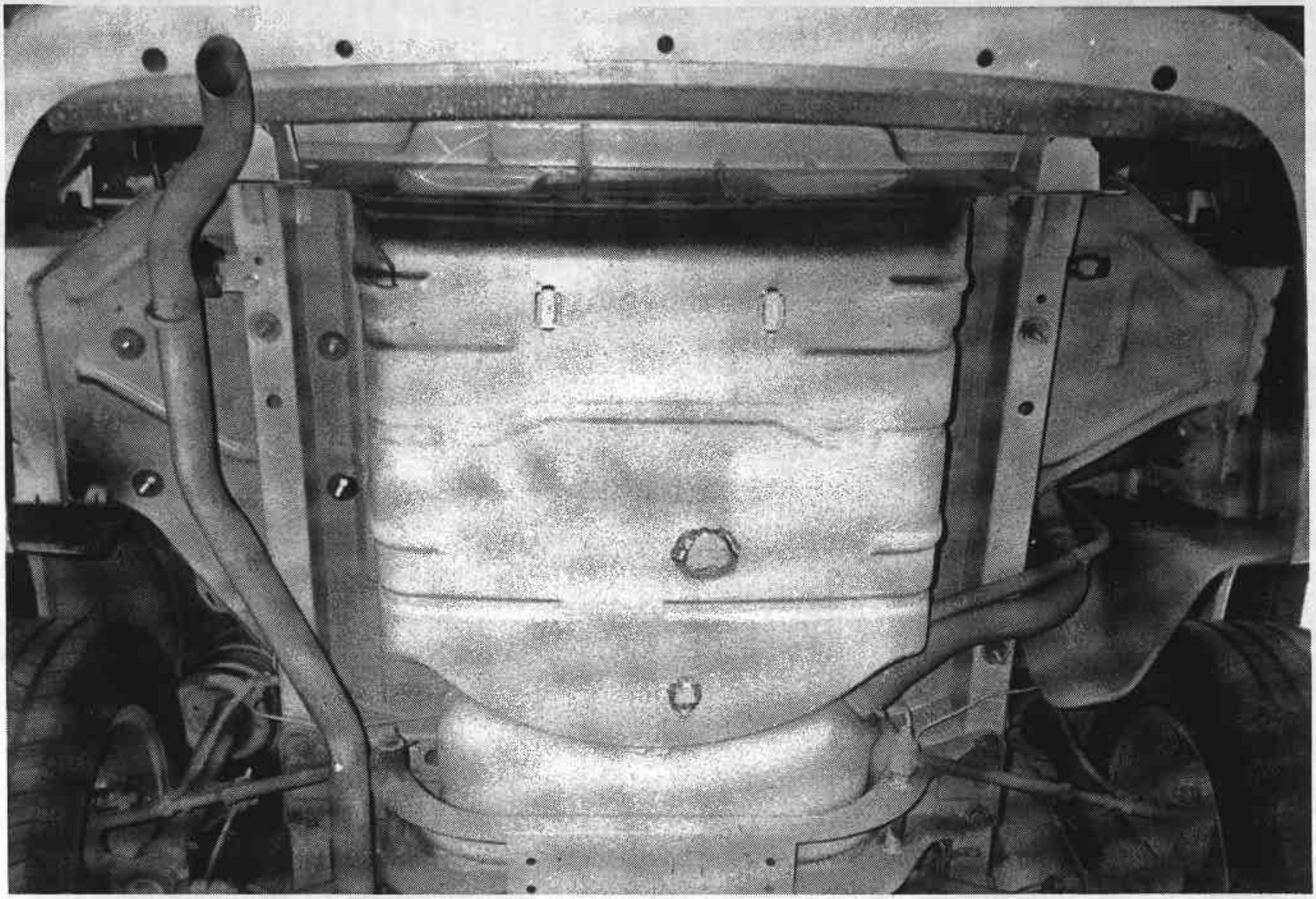


Figure A-19 PRE-TEST REAR UNDERBODY VIEW

Figure A-20 POST-TEST REAR UNDERBODY VIEW

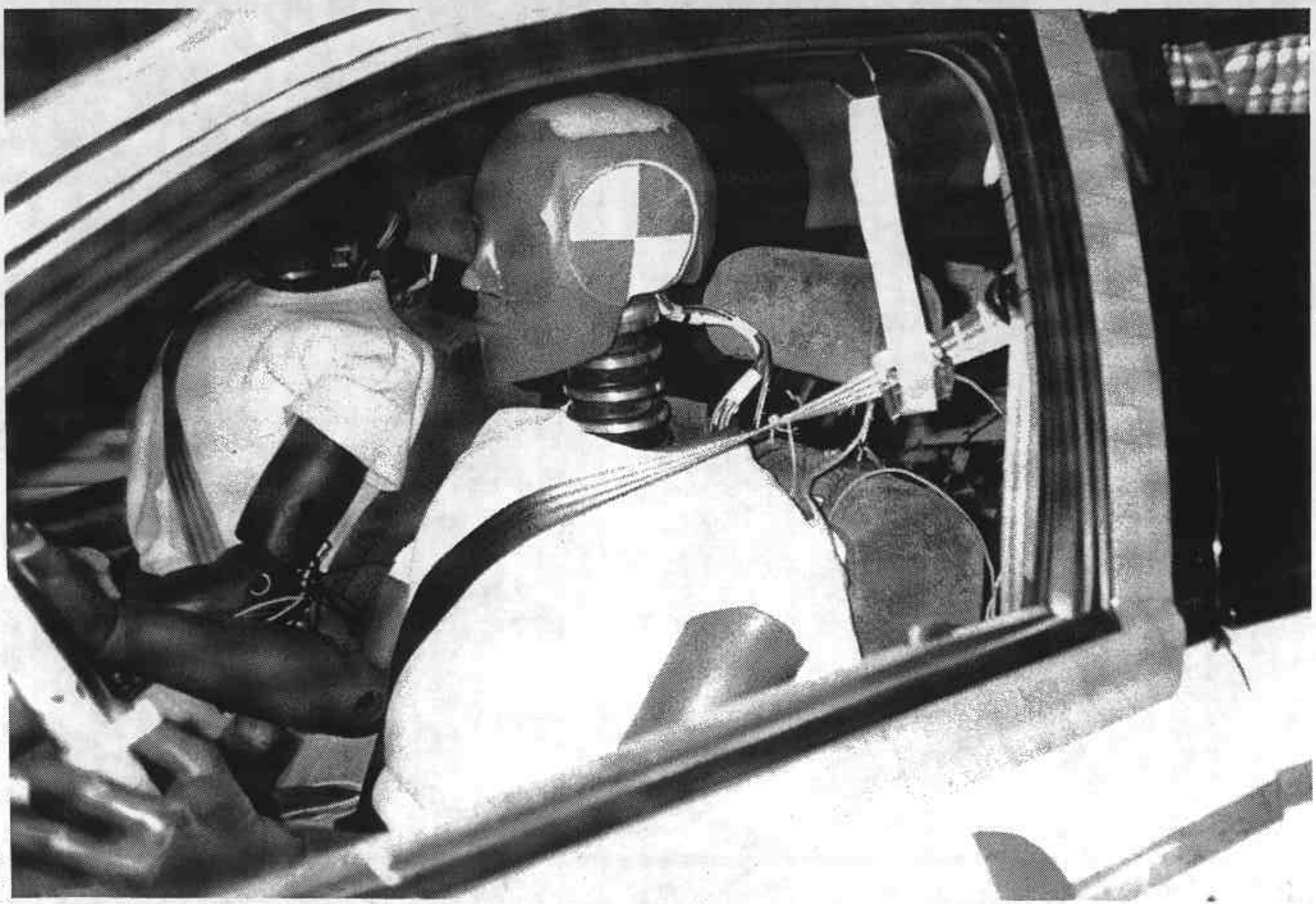


Figure A-21 PRE-TEST DRIVER POSITION VIEW

Figure A-22 POST-TEST DRIVER POSITION VIEW

Figure A-23 PRE-TEST PASSENGER POSITION VIEW

Figure A-24 POST-TEST PASSENGER POSITION VIEW

Figure A-25 PRE-TEST DRIVER AND INTERIOR VIEW

Figure A-26 POST-TEST DRIVER AND INTERIOR VIEW

8052-1

Figure A-27 PRE-TEST PASSENGER AND INTERIOR VIEW

Figure A-28 POST-TEST PASSENGER AND INTERIOR VIEW

Appendix B

VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA

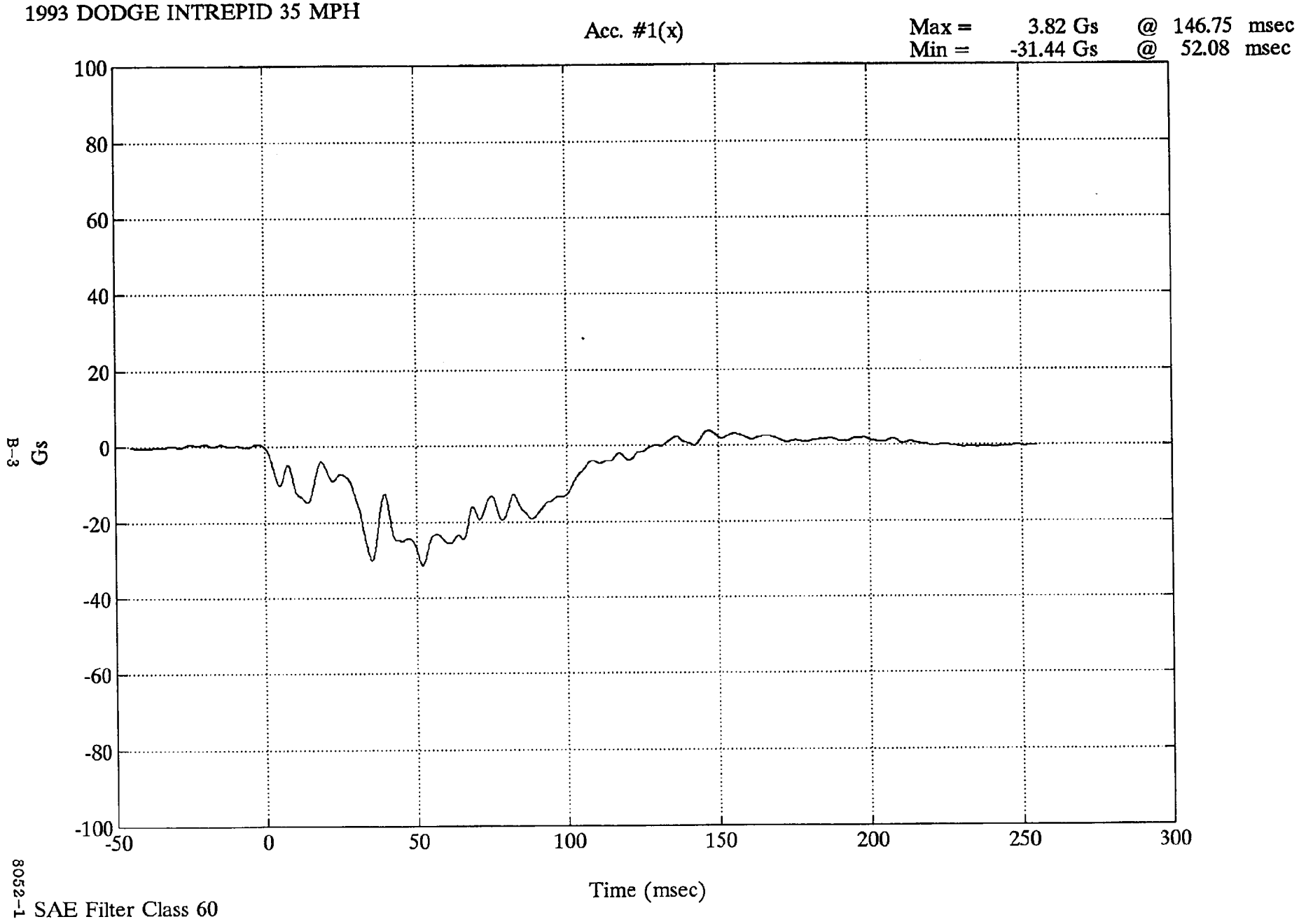
TEST NO. 1219

VEHICLE DATA

FILTER CHANNEL CLASS

60

1993 DODGE INTREPID 35 MPH

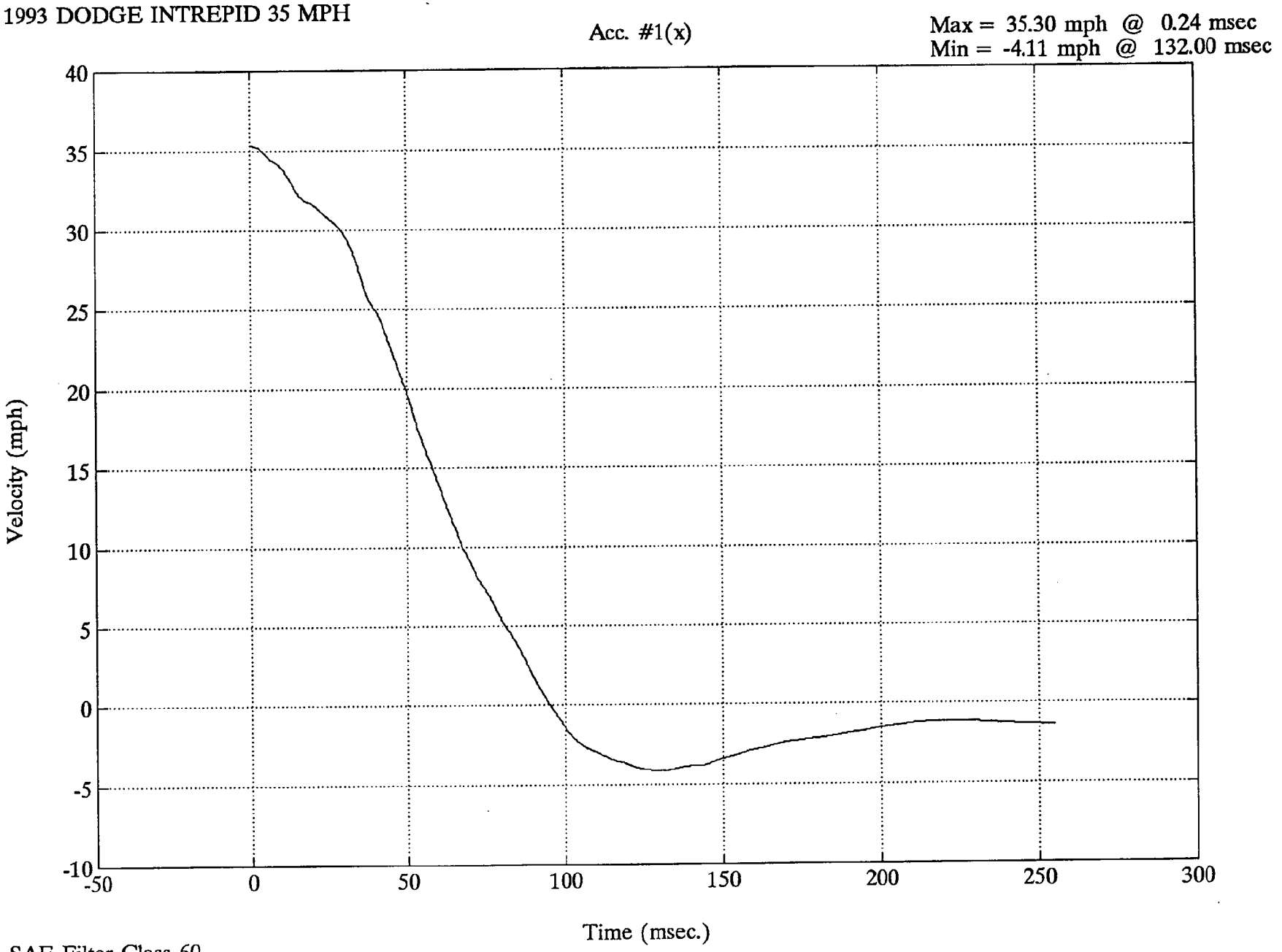


B-3

8052-1

SAE Filter Class 60

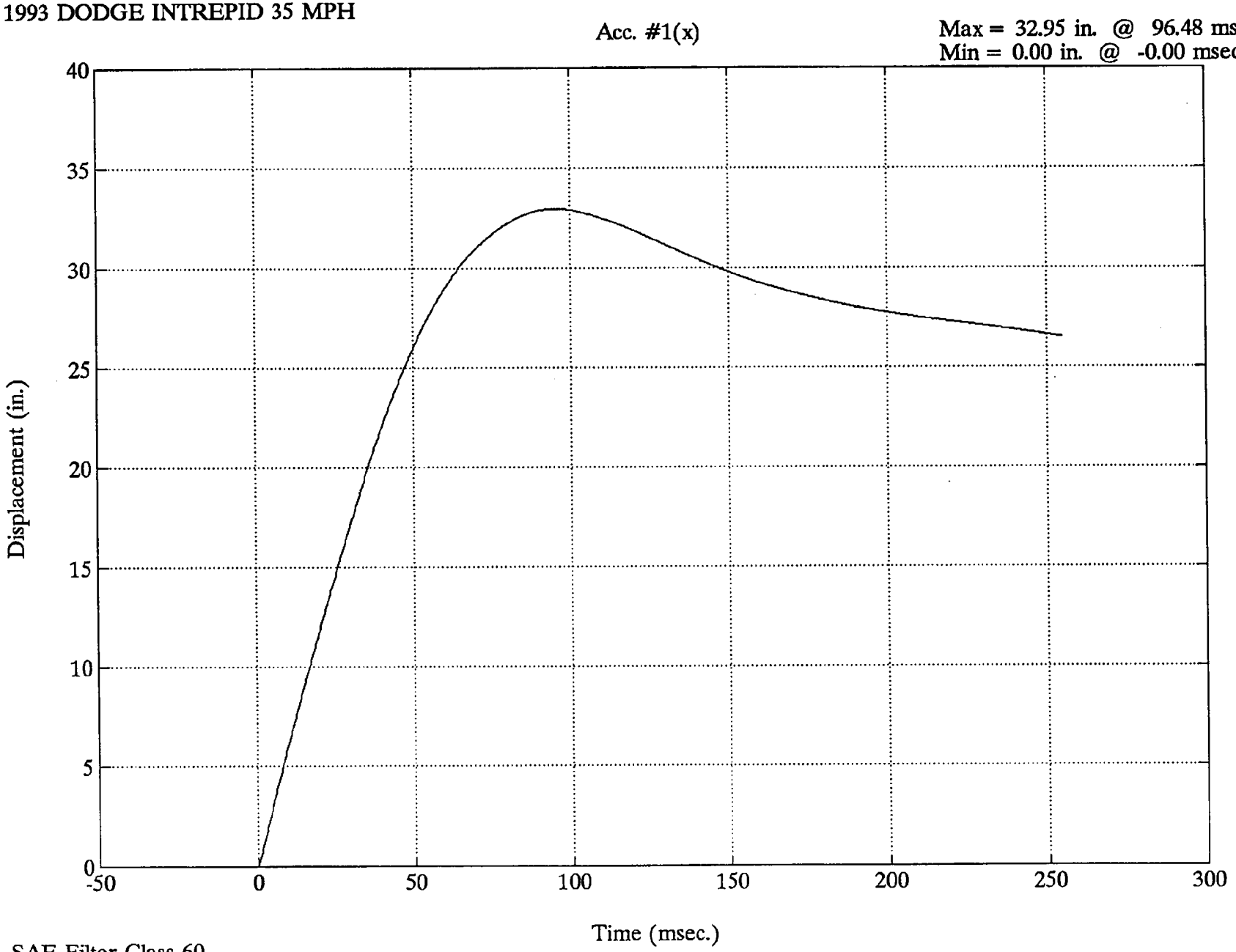
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

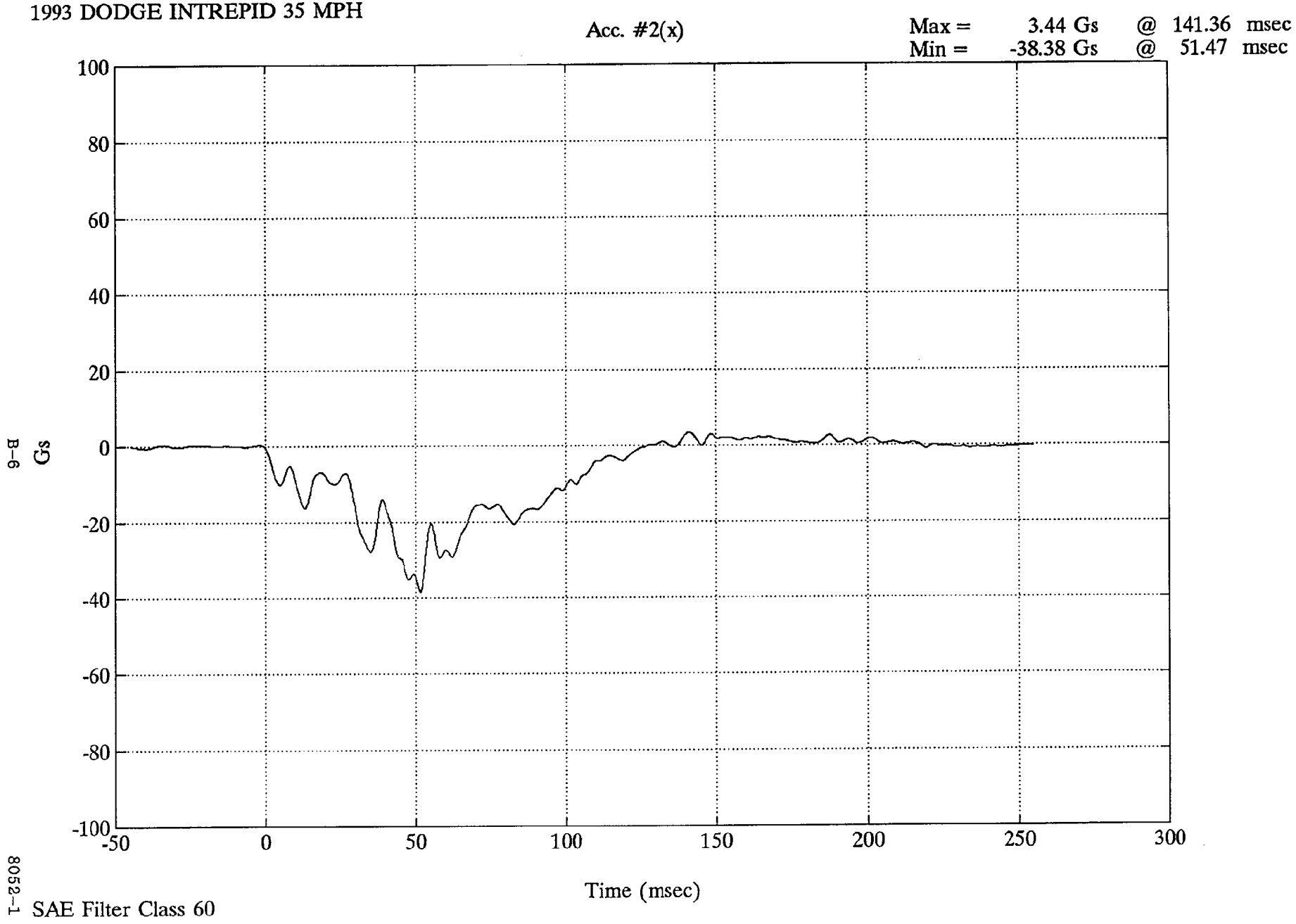
8052-1

1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

1993 DODGE INTREPID 35 MPH



B-6

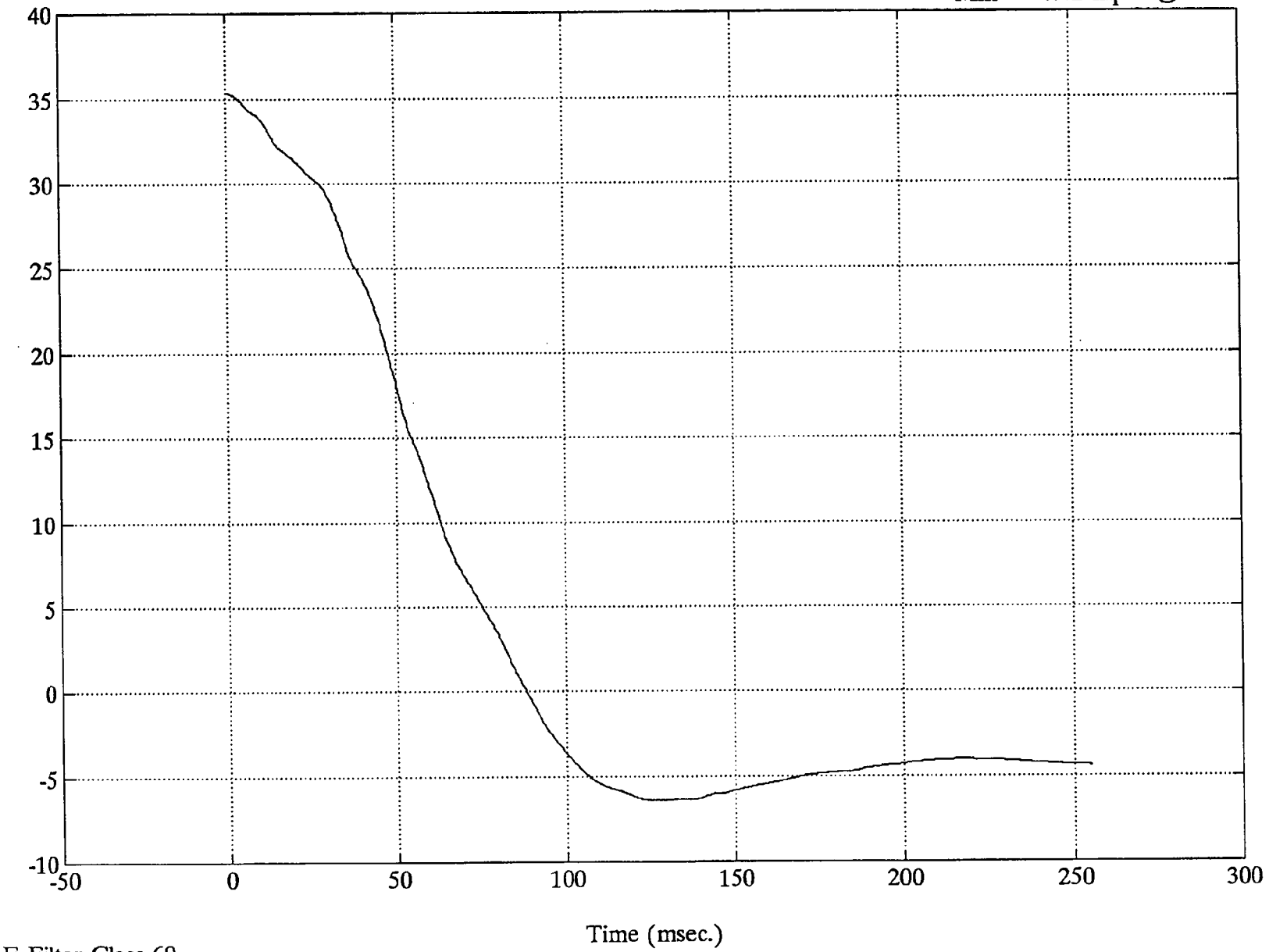
8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

Acc. #2(x)

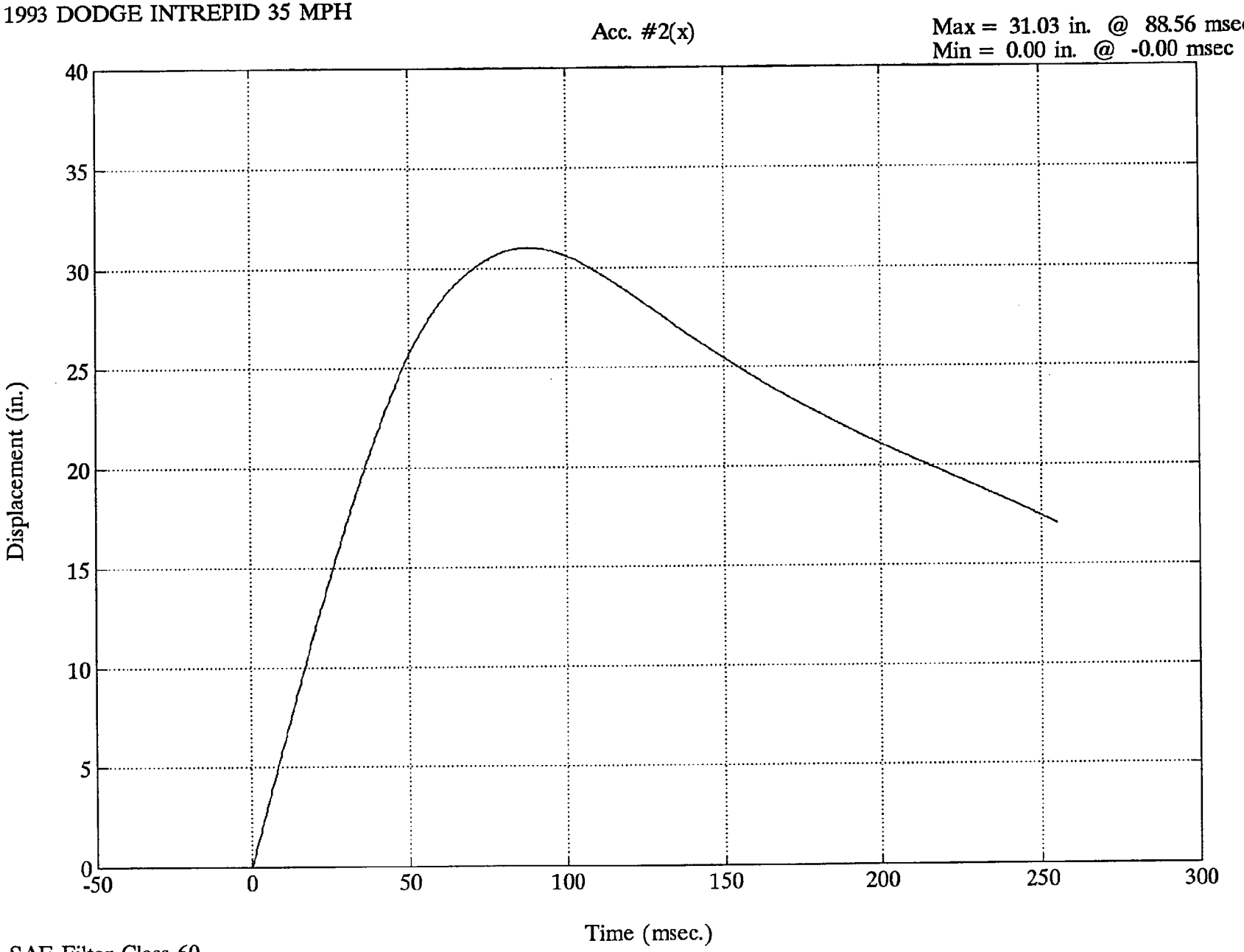
Max = 35.30 mph @ 0.24 msec
Min = -6.42 mph @ 127.20 msec



SAE Filter Class 60

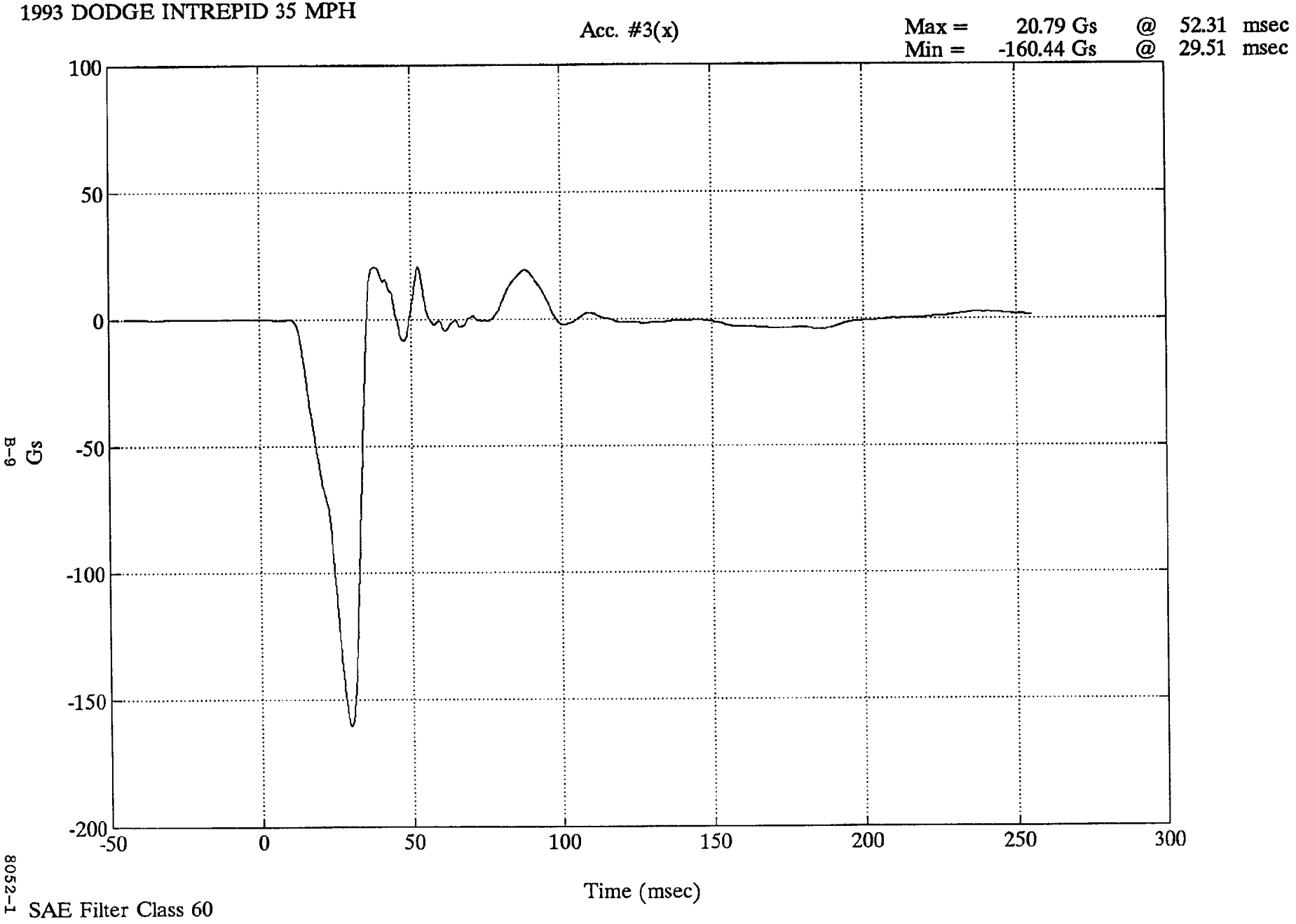
8052-1

1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

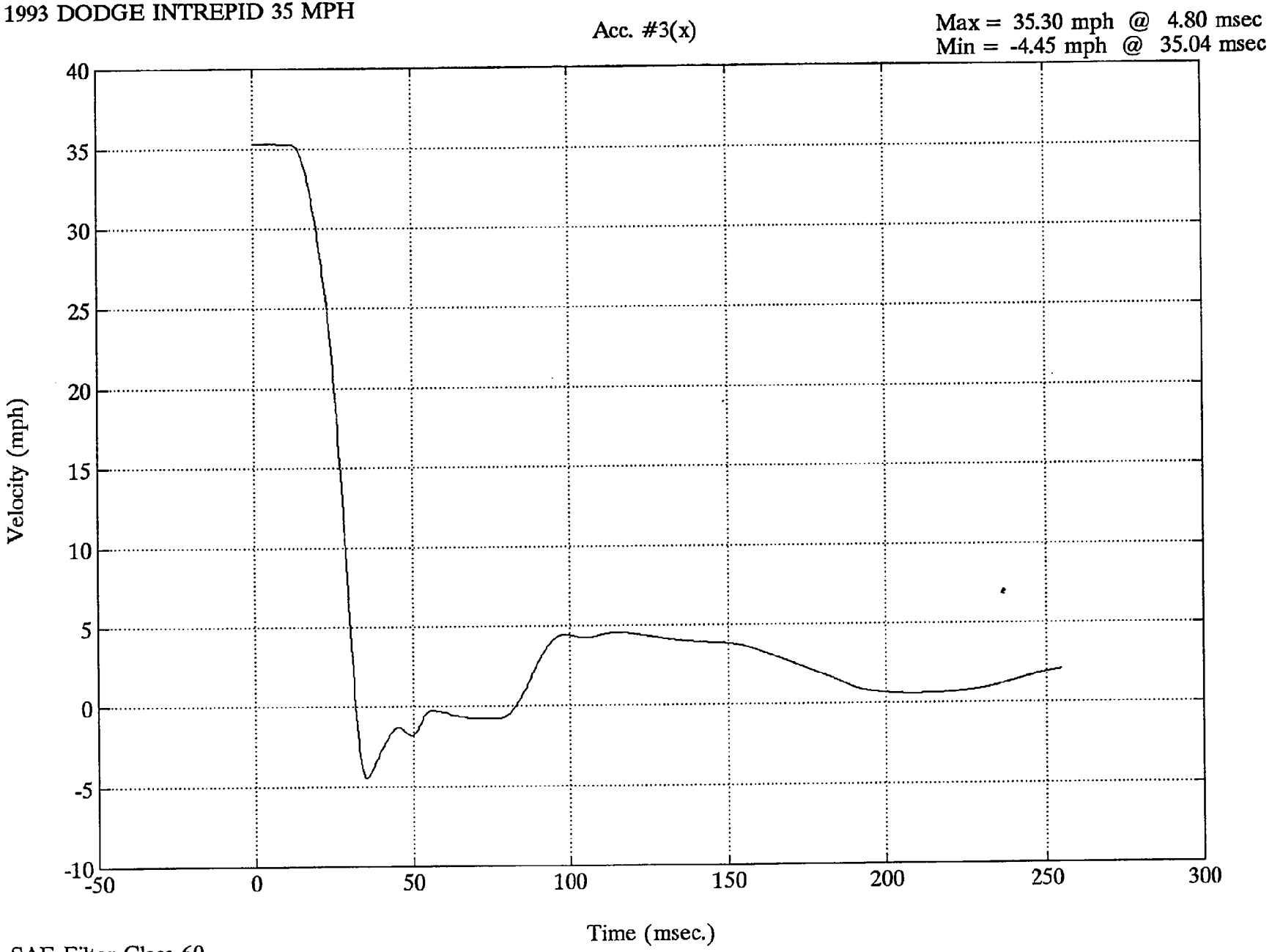


B-9

8052-1

SAE Filter Class 60

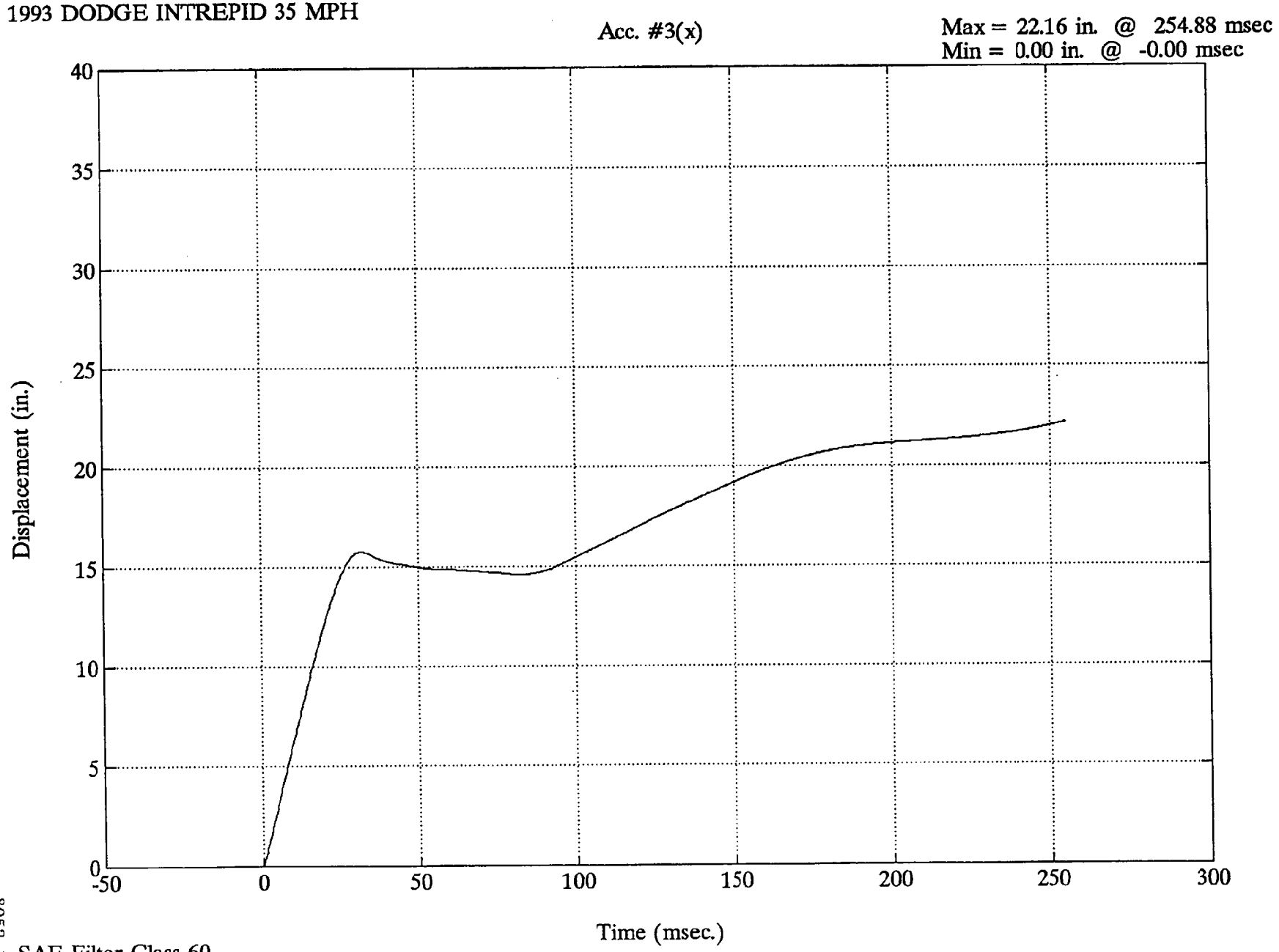
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

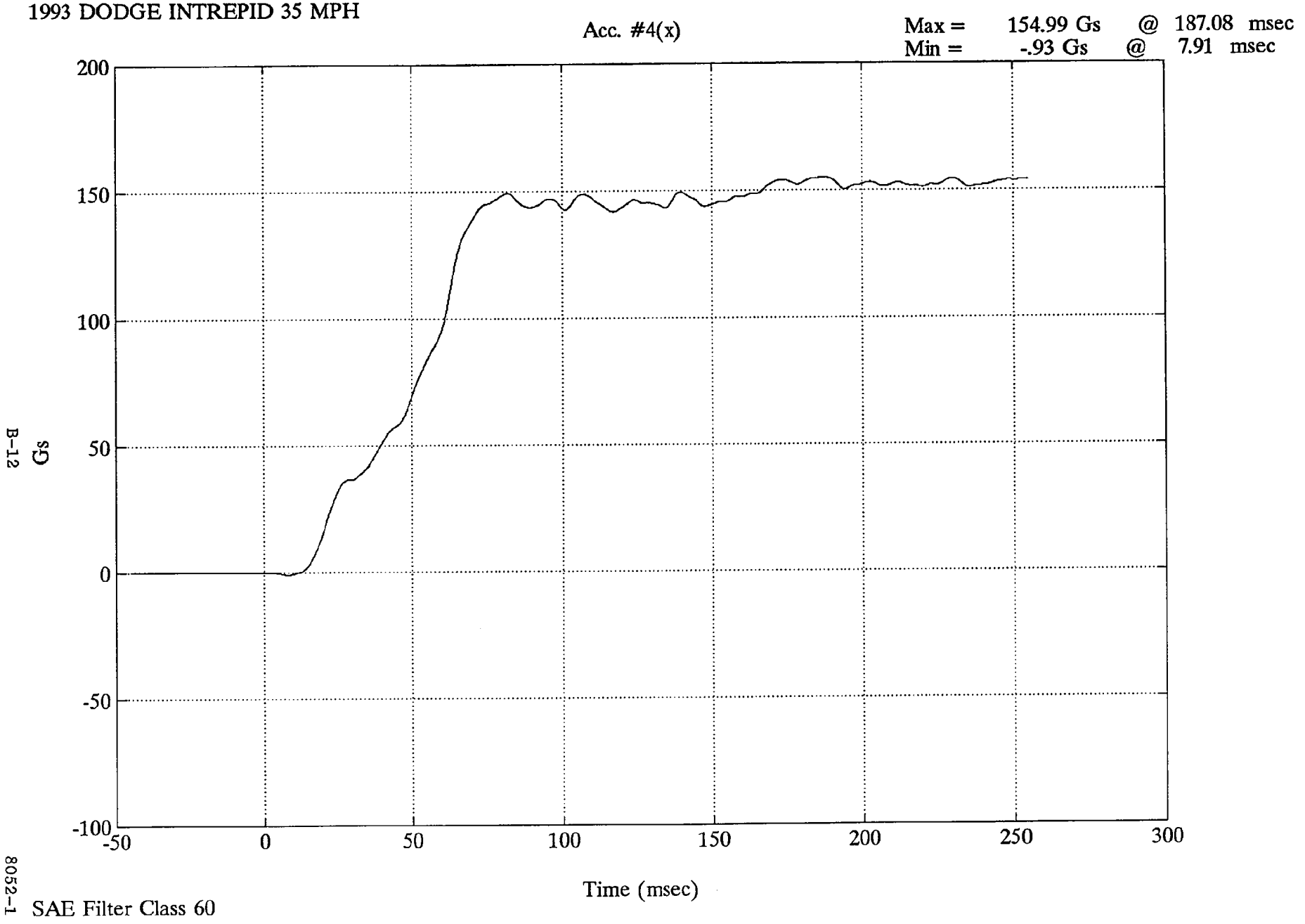
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

1993 DODGE INTREPID 35 MPH

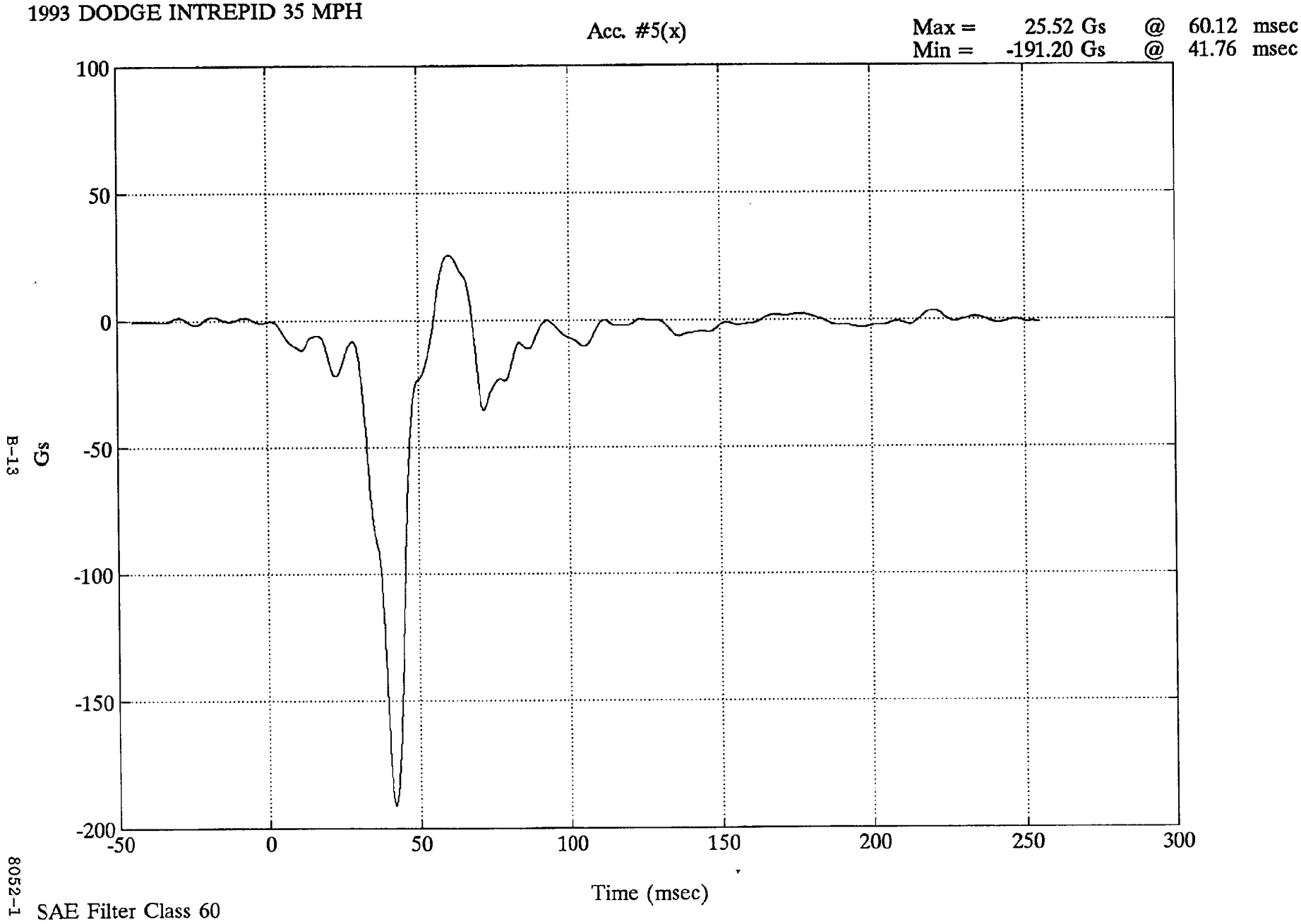


B-12

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH



B-13

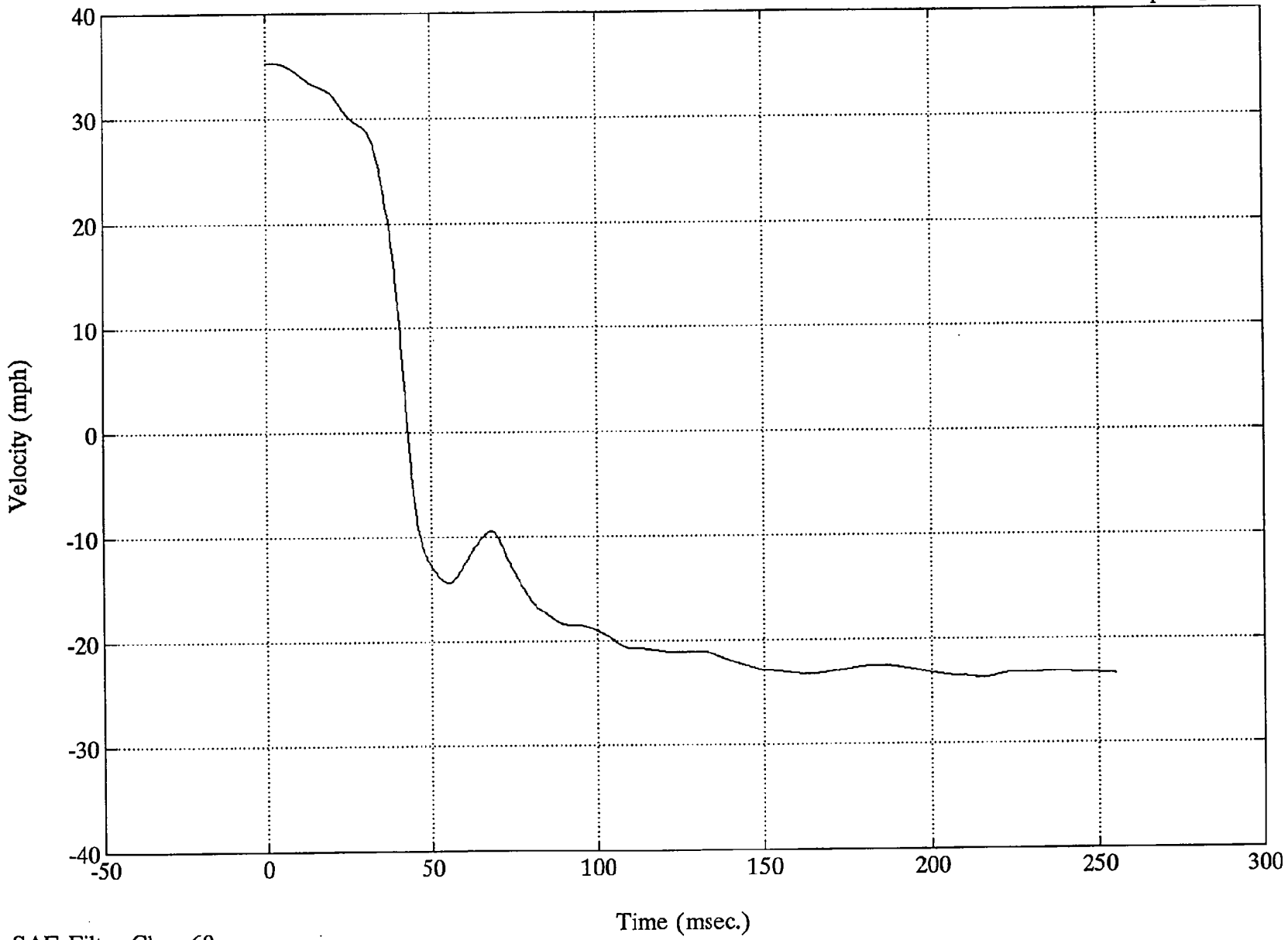
8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

Acc. #5(x)

Max = 35.30 mph @ 0.48 msec
Min = -23.70 mph @ 216.00 msec

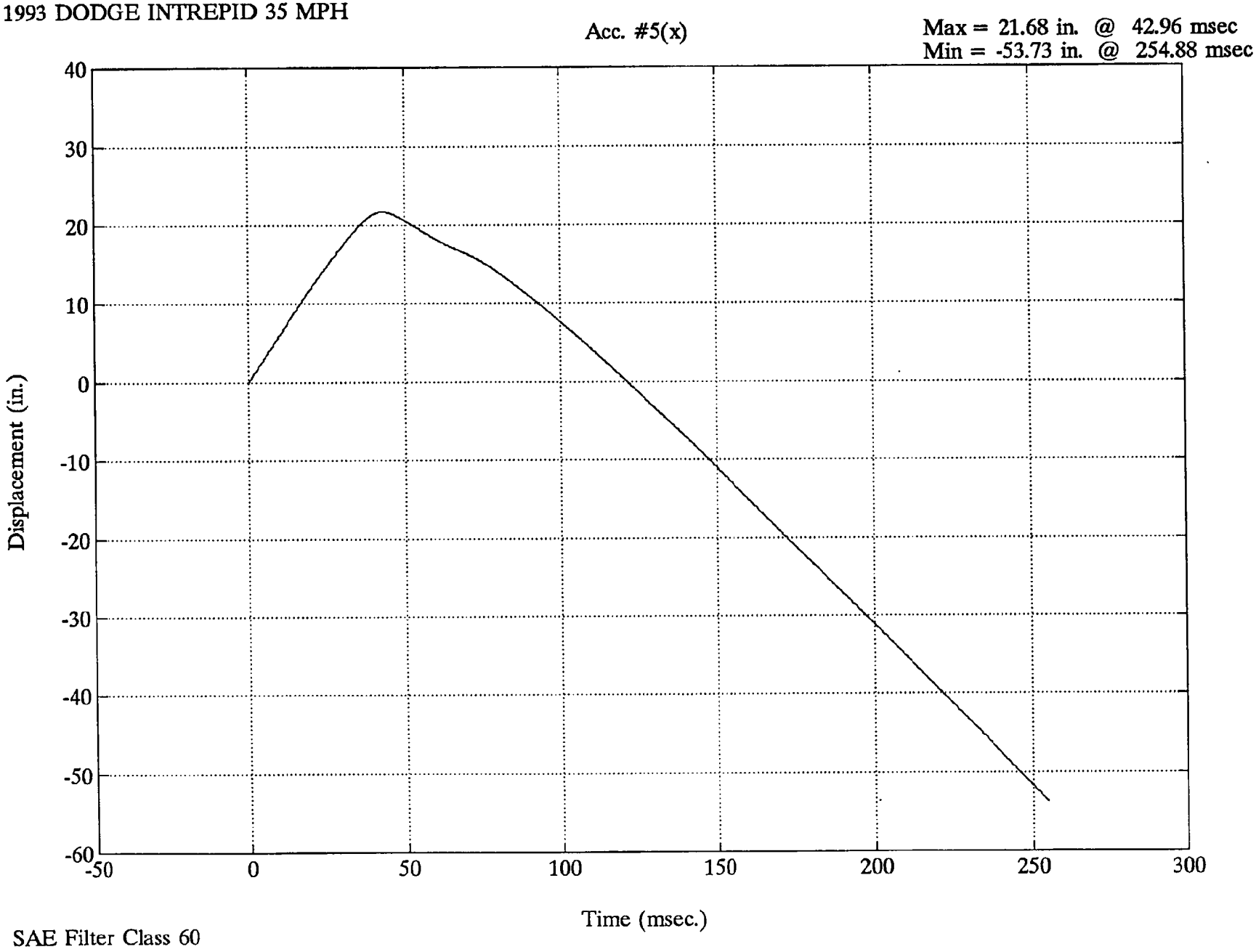


B-14

8052-1

SAE Filter Class 60

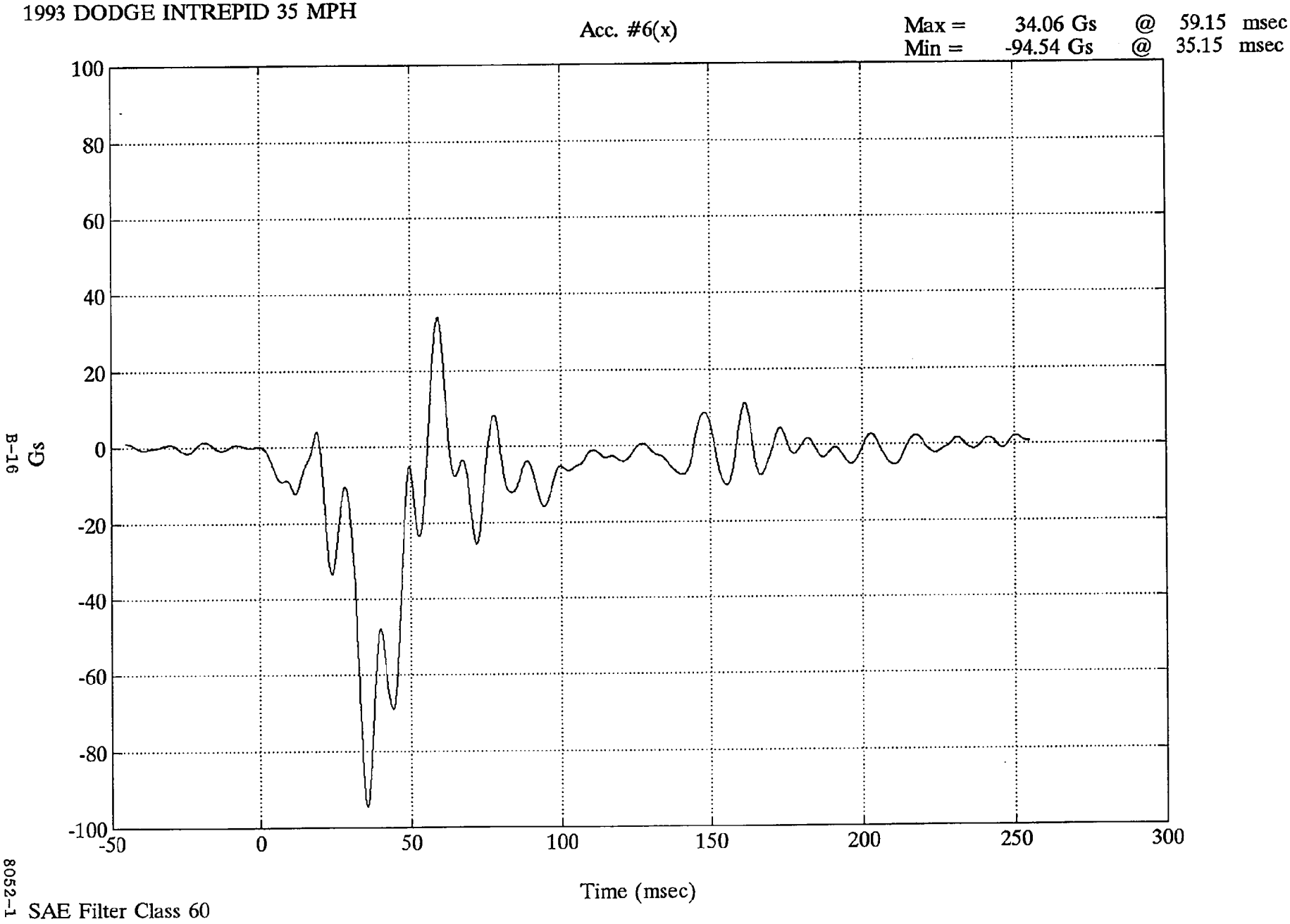
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

1993 DODGE INTREPID 35 MPH

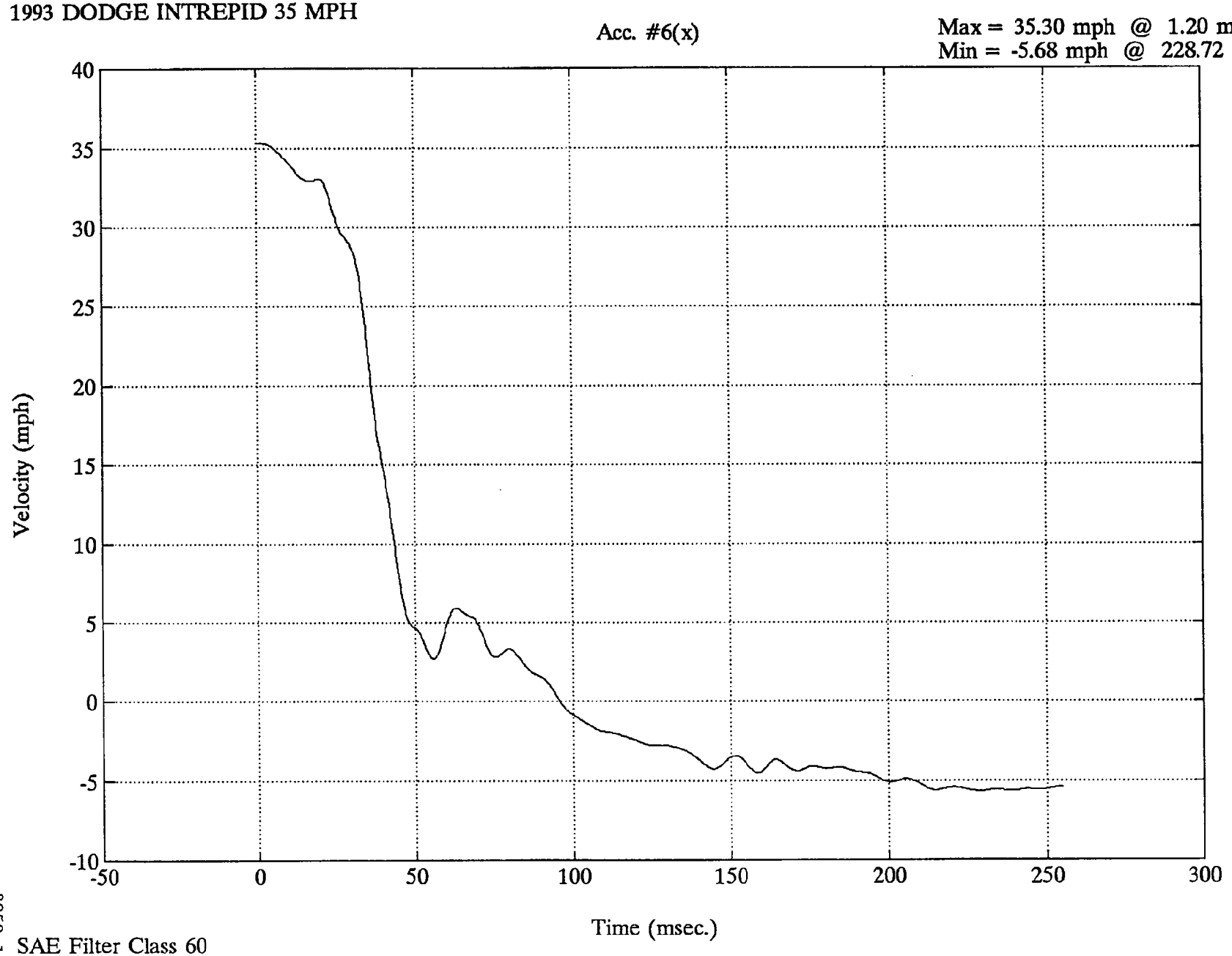


B-16

8052-1

SAE Filter Class 60

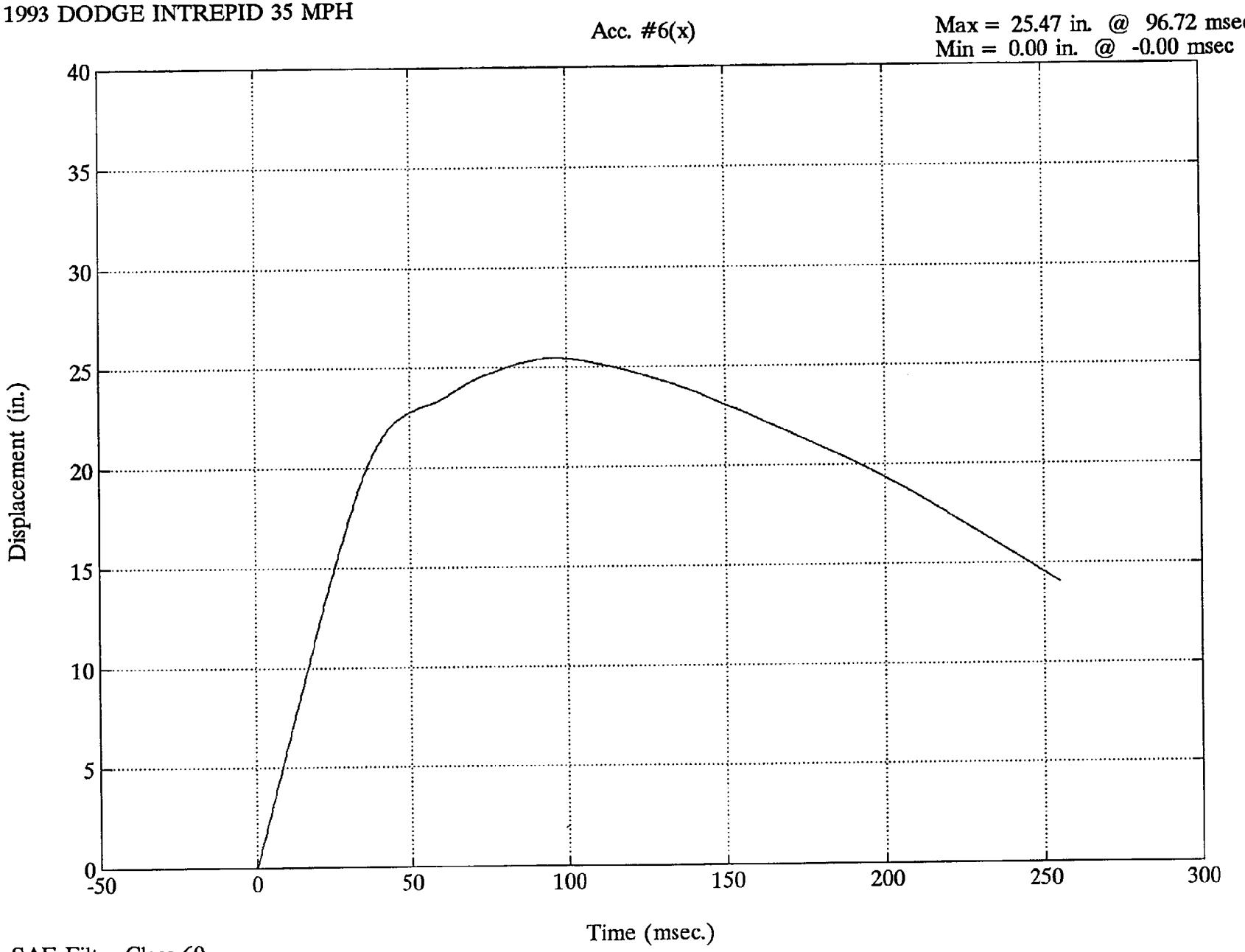
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

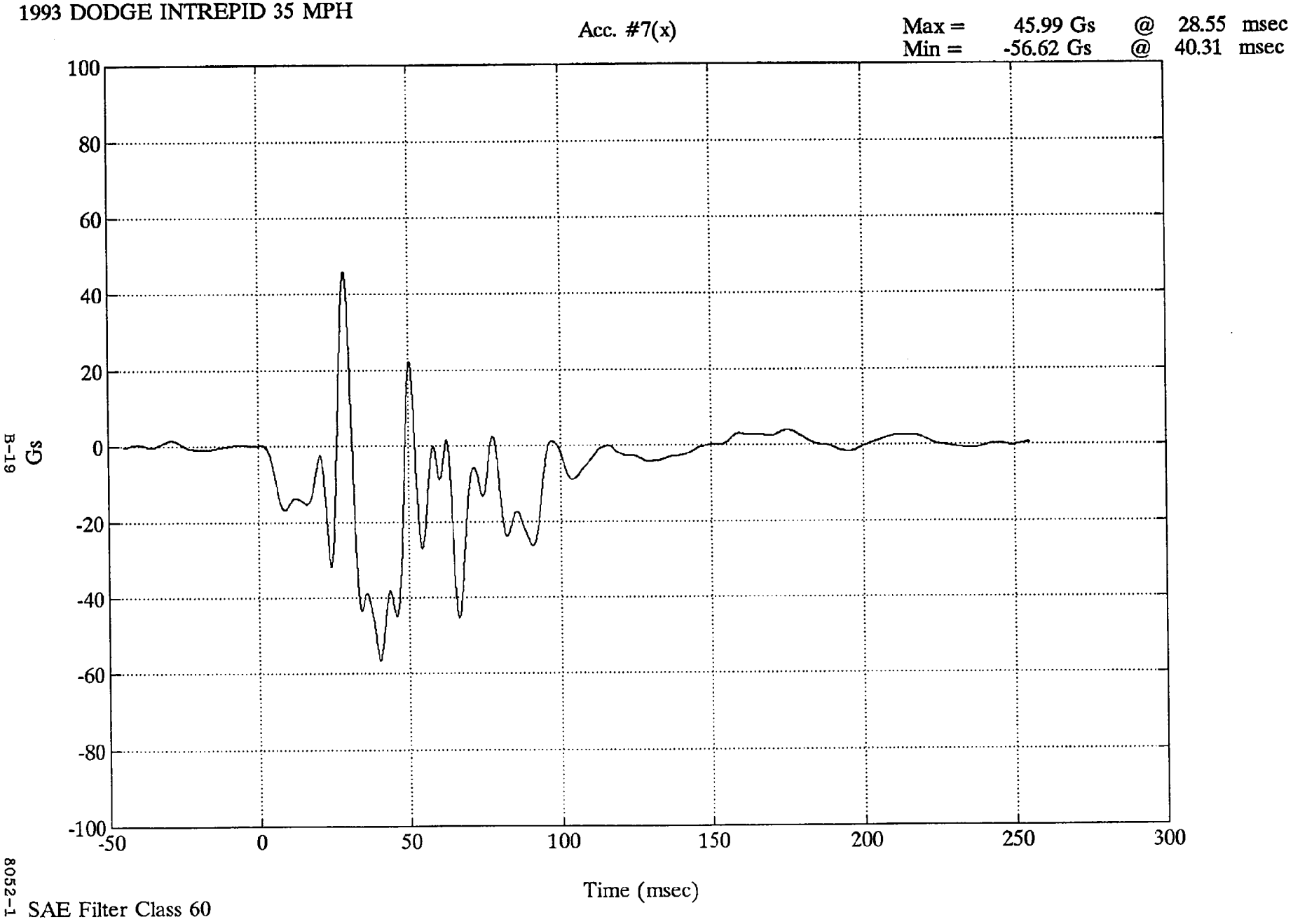
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

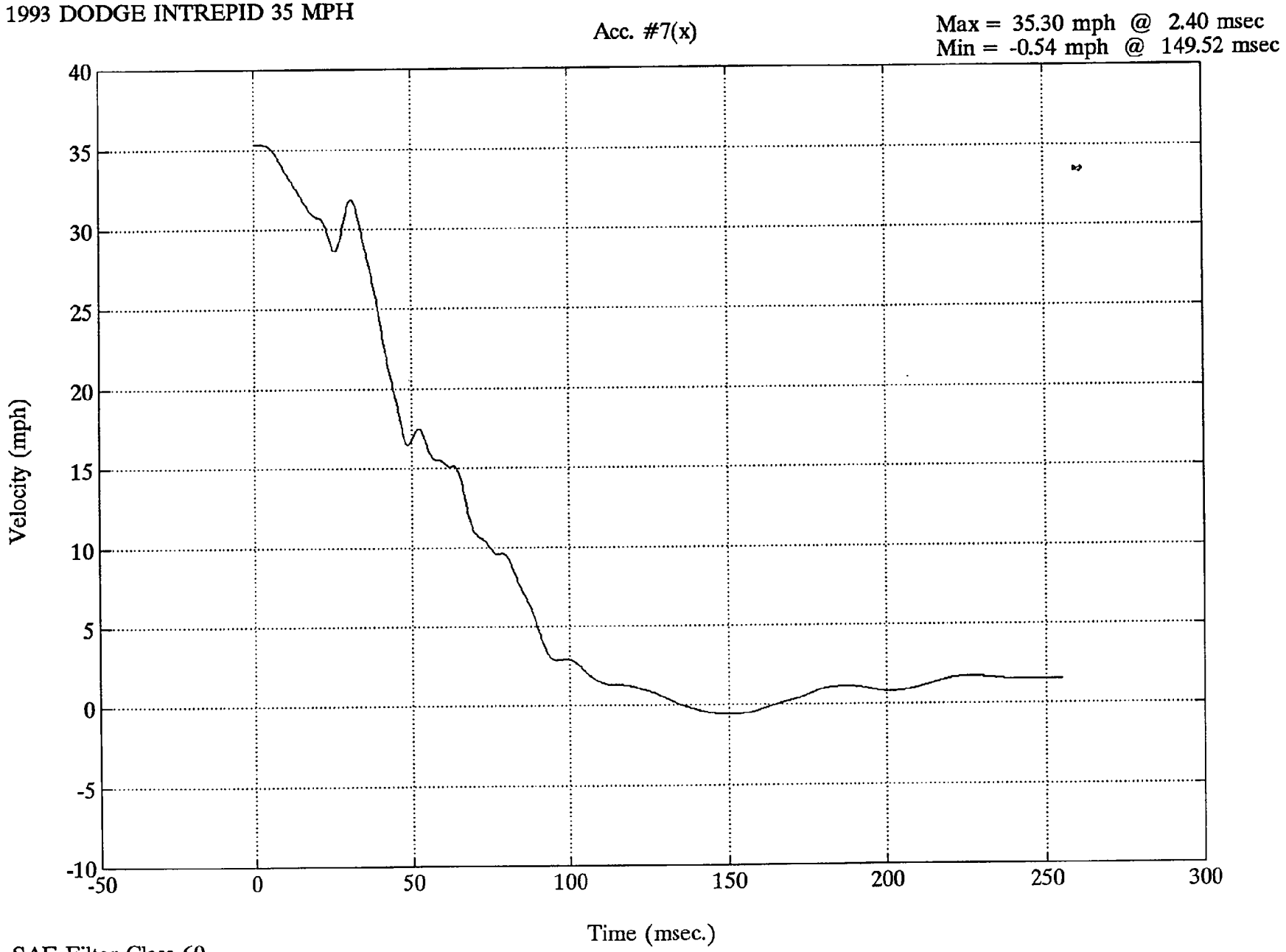
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

1993 DODGE INTREPID 35 MPH

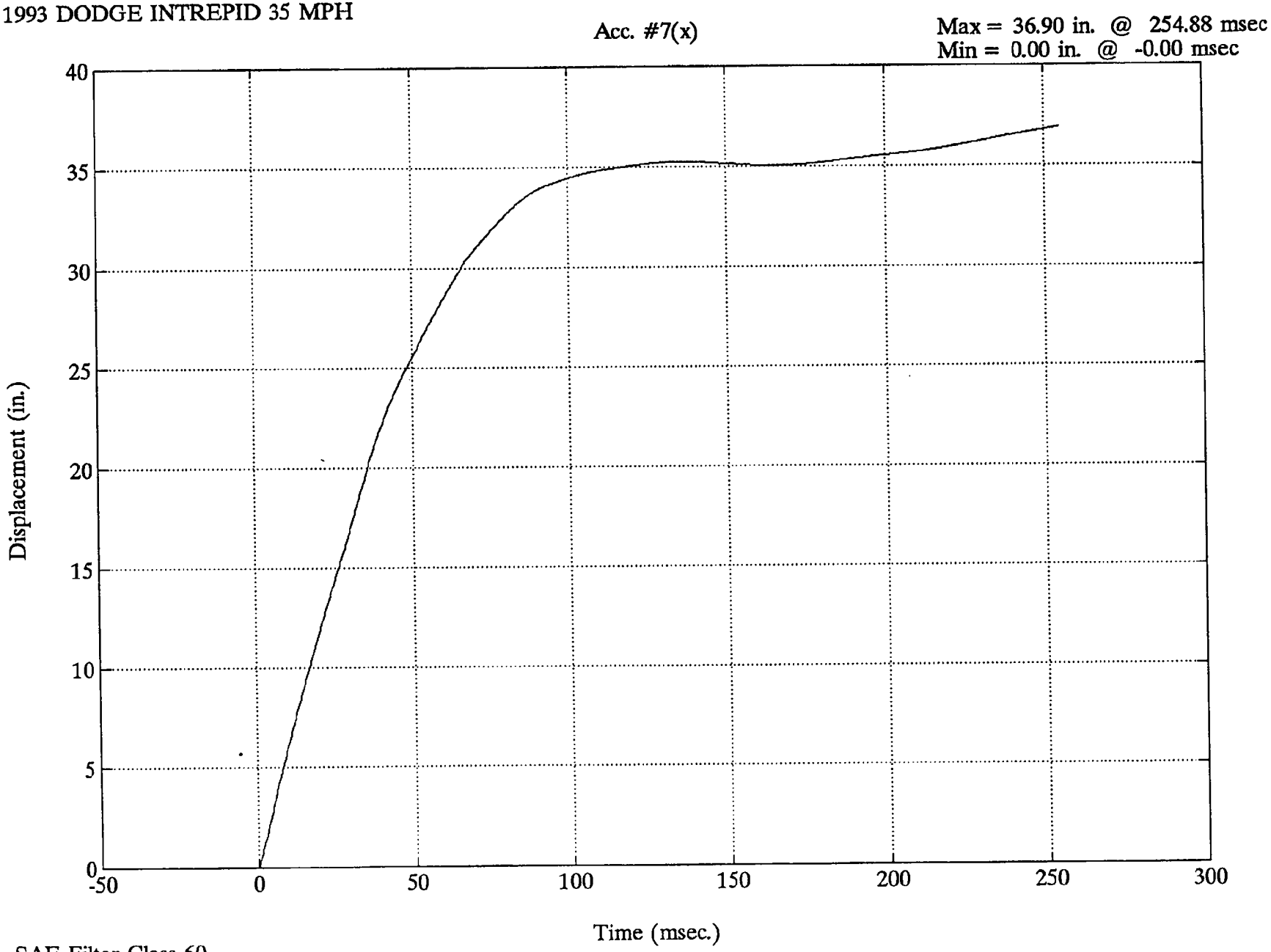


B-20

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

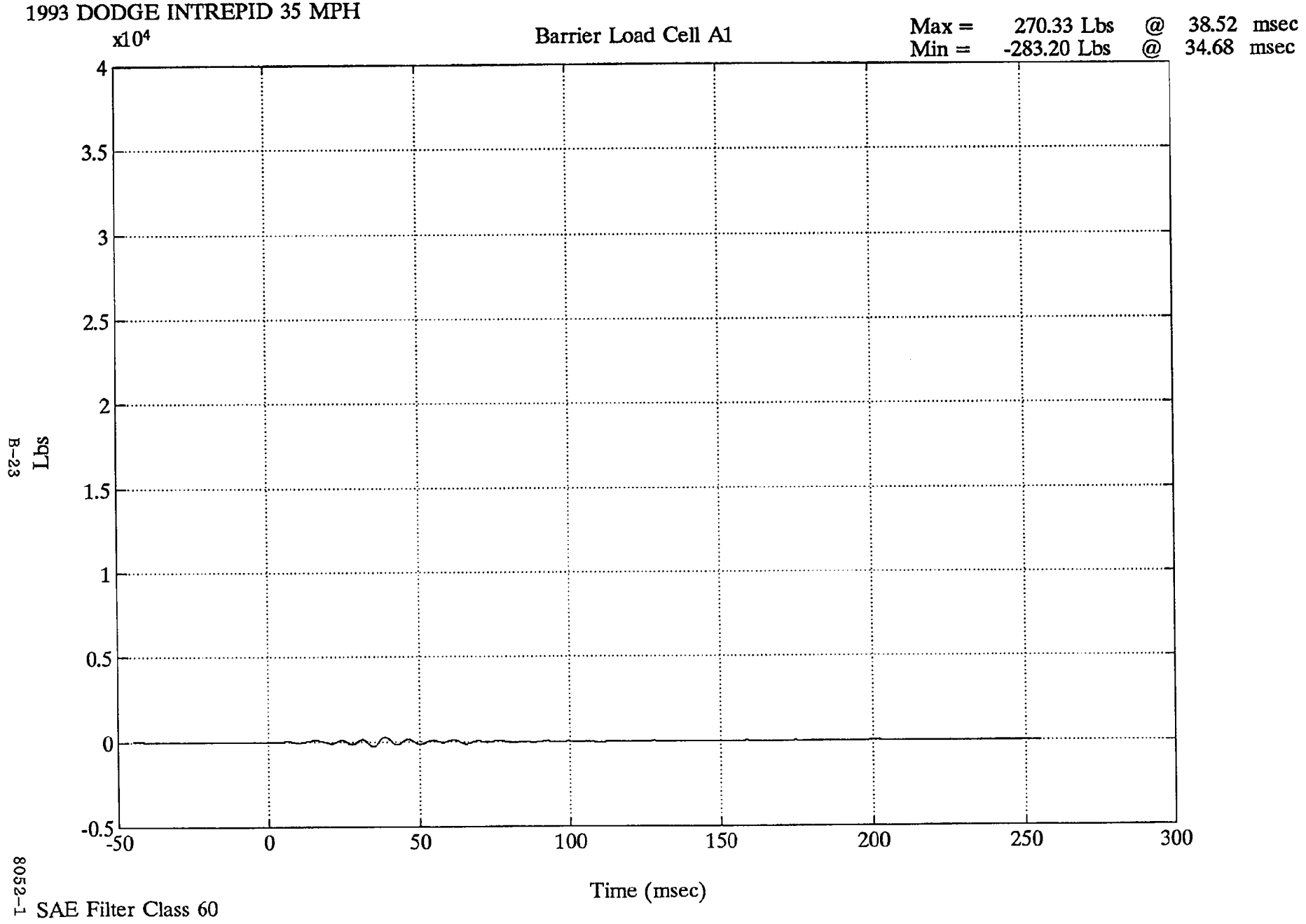
TEST NO. 1219

LOAD CELL BARRIER DATA

FILTER CHANNEL CLASS

60

1993 DODGE INTREPID 35 MPH

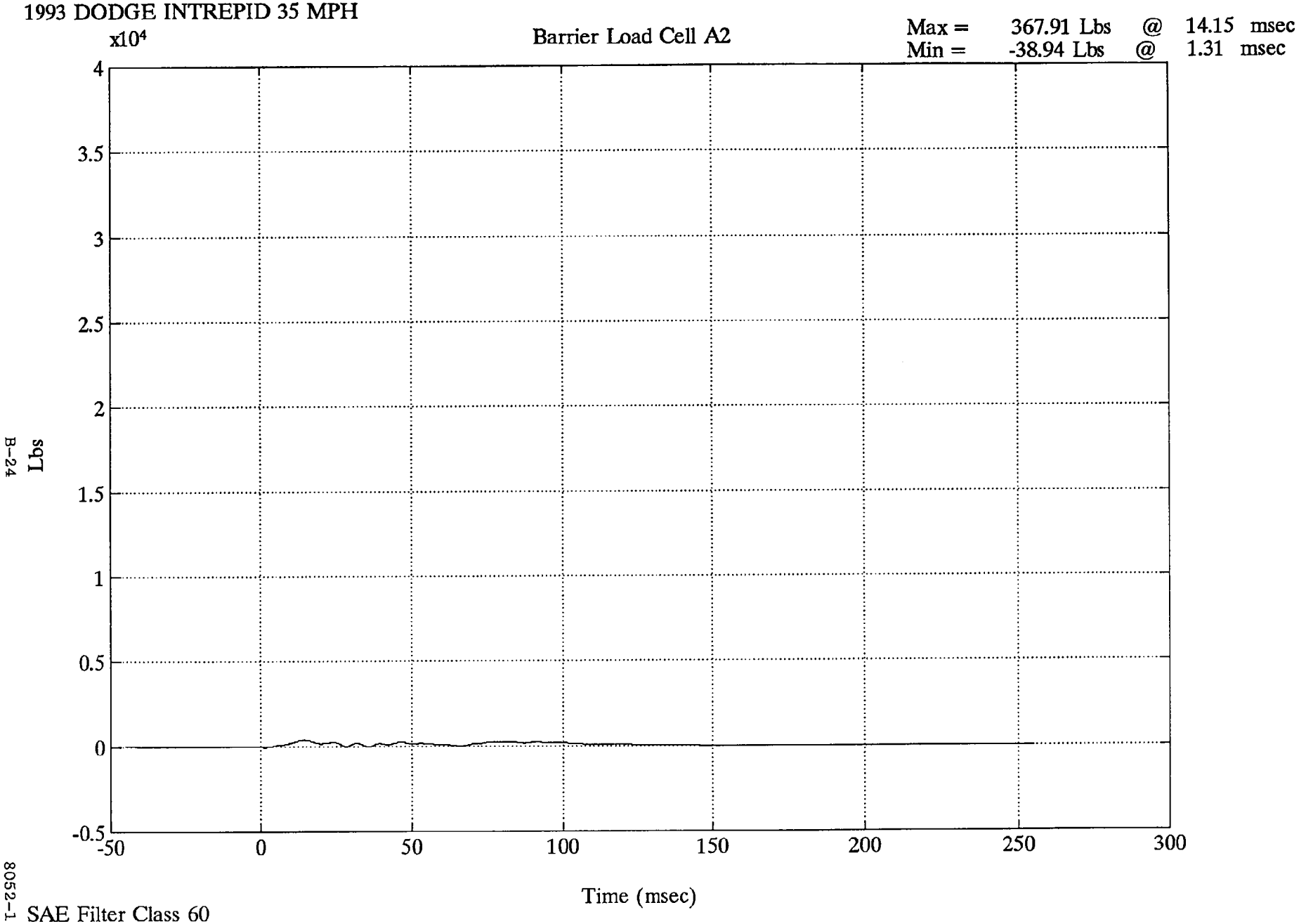


B-23

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

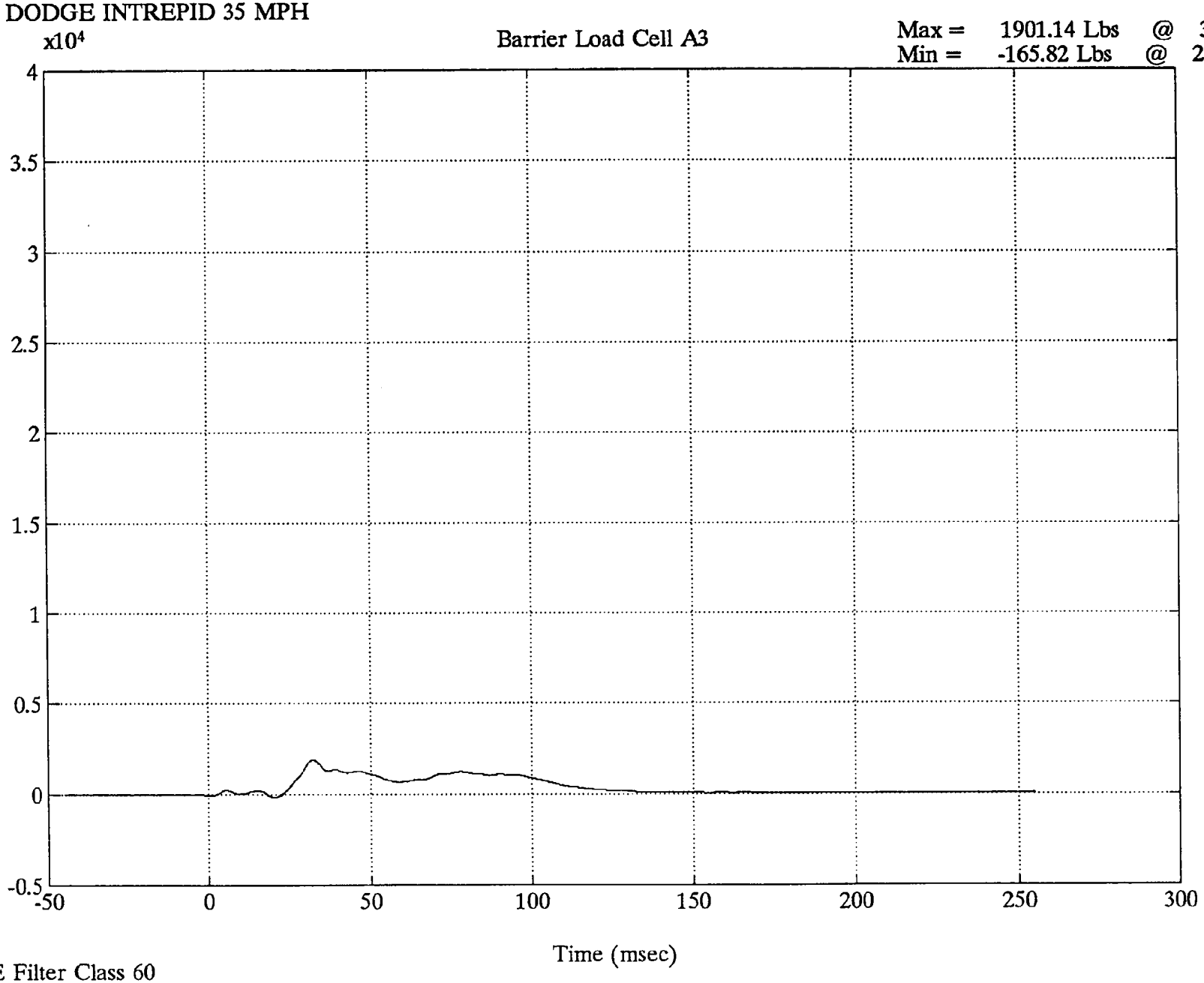


B-24

8052-1

SAE Filter Class 60

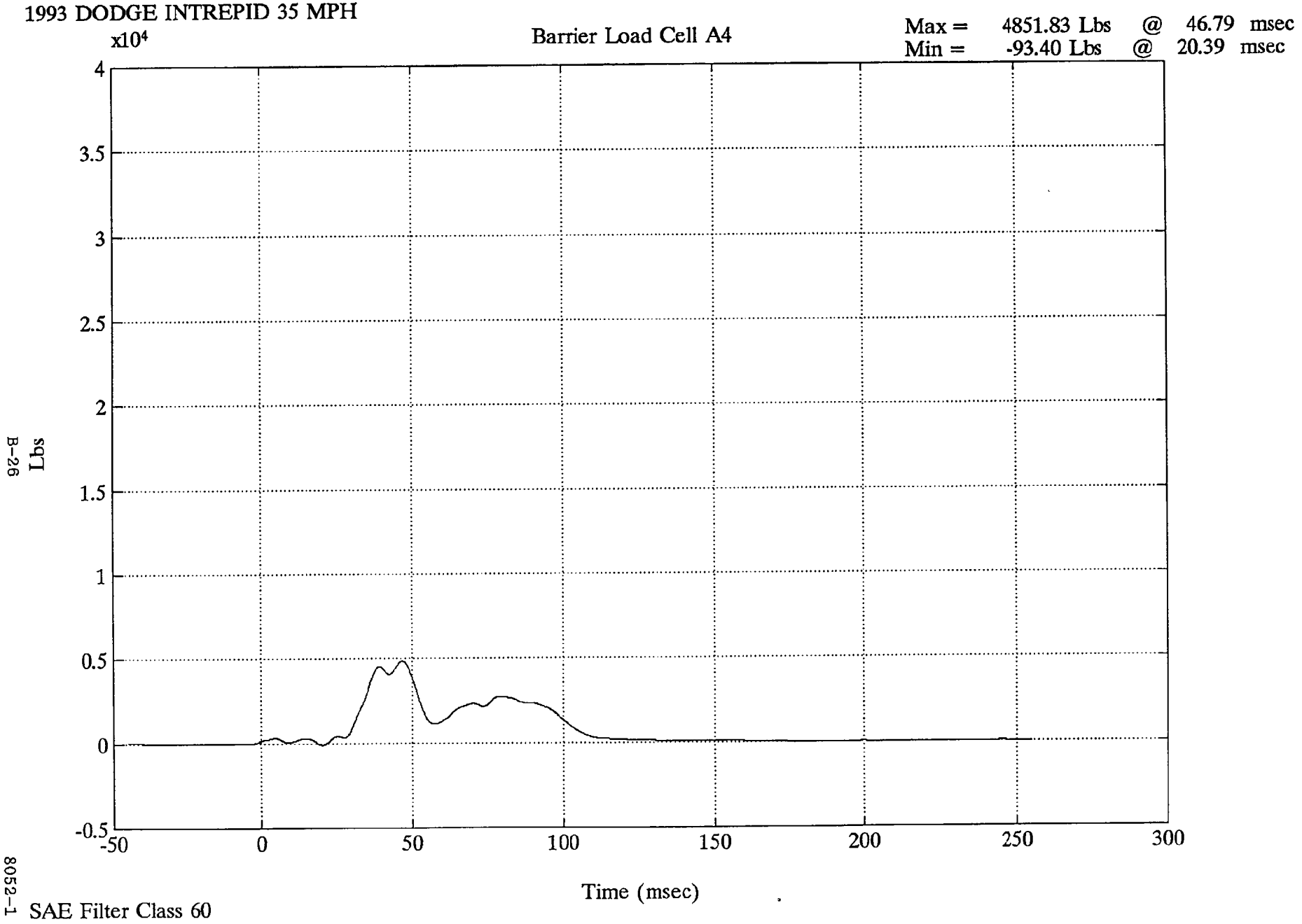
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

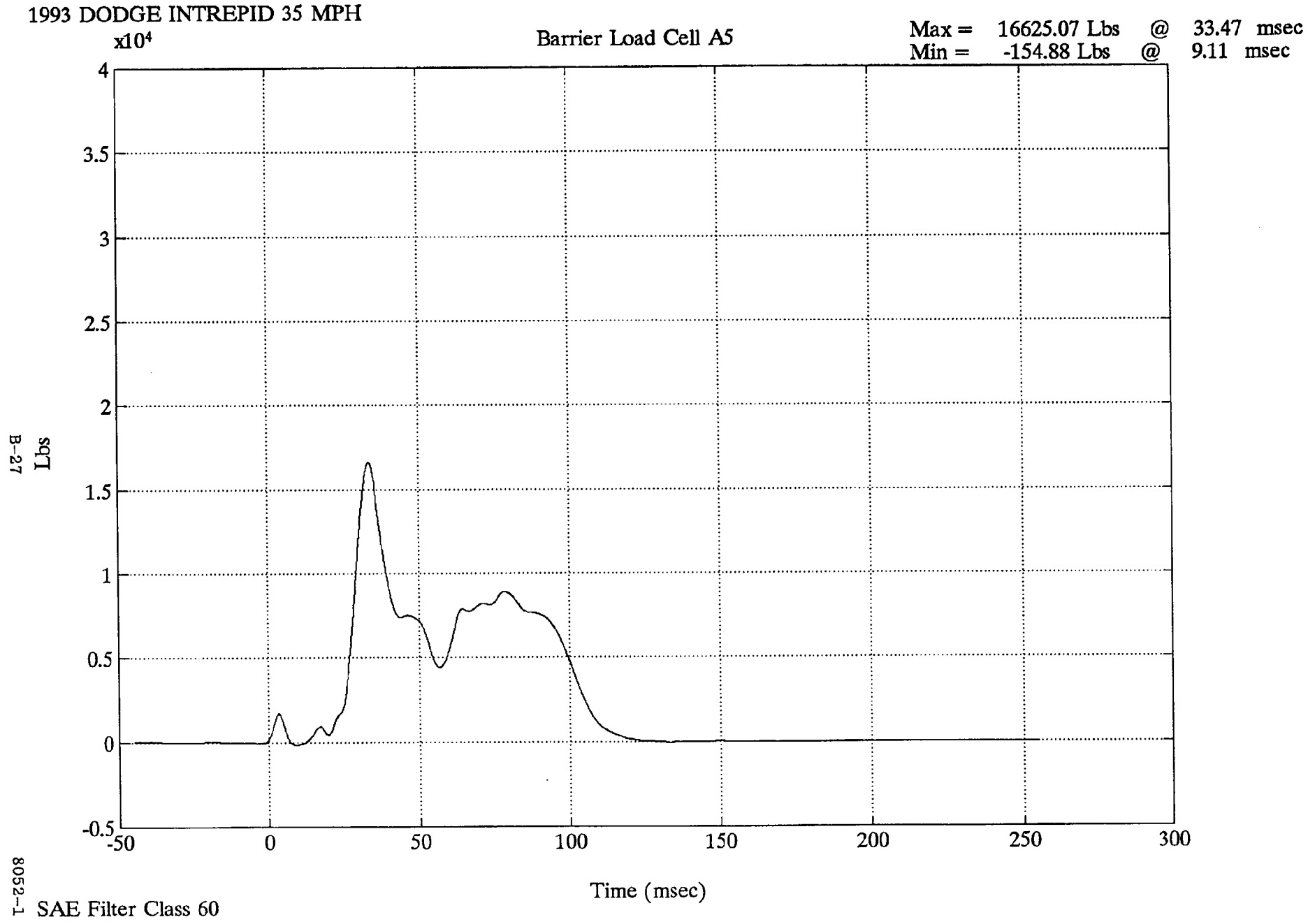
1993 DODGE INTREPID 35 MPH



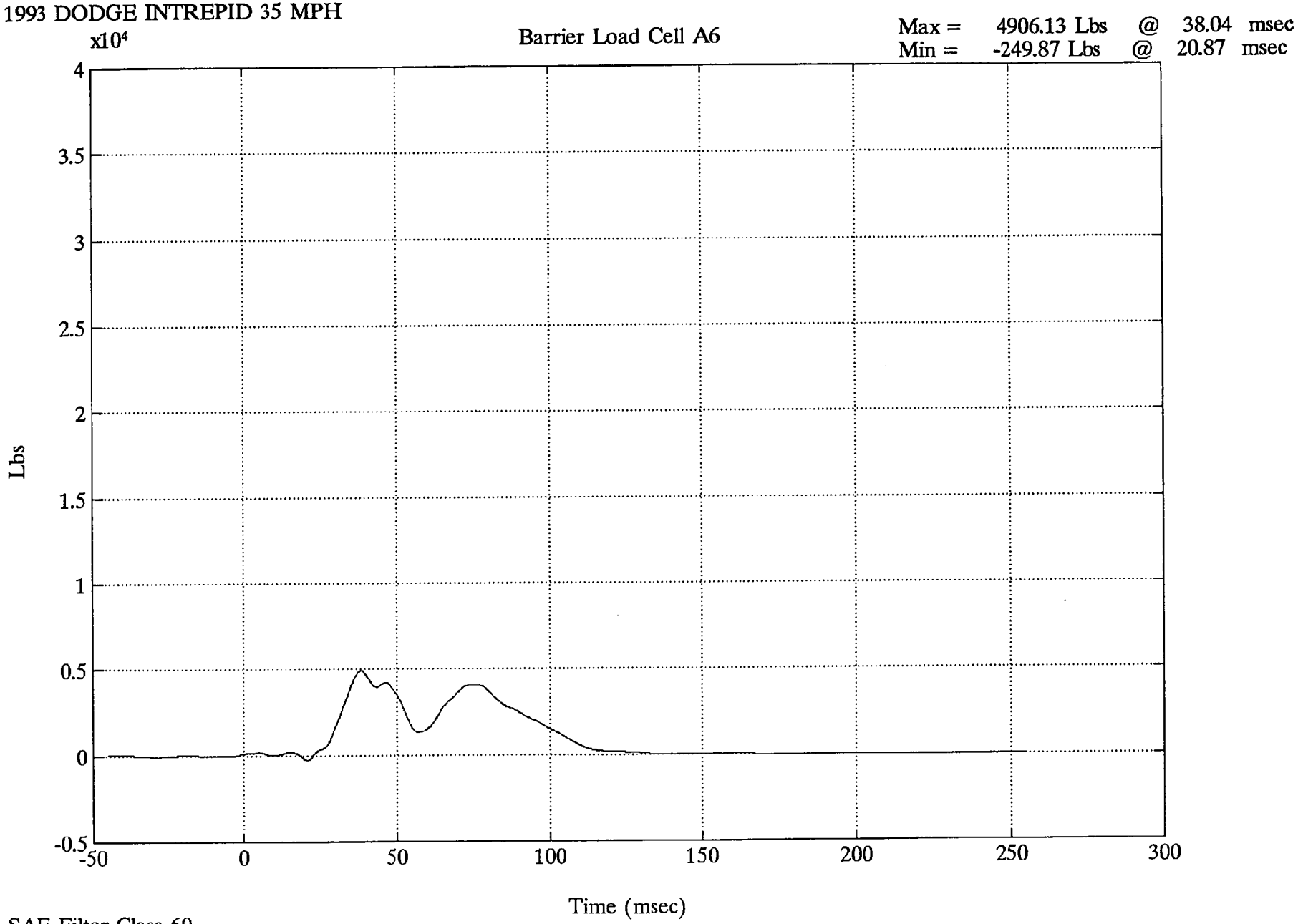
B-26

8052-1

SAE Filter Class 60


1993 DODGE INTREPID 35 MPH
x10^4
Barrier Load Cell A5
Max = 16625.07 Lbs @ 33.47 msec
Min = -154.88 Lbs @ 9.11 msec
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-50
0
50
100
150
200
250
300
Lbs
Time (msec)
B-27
80521-1
SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

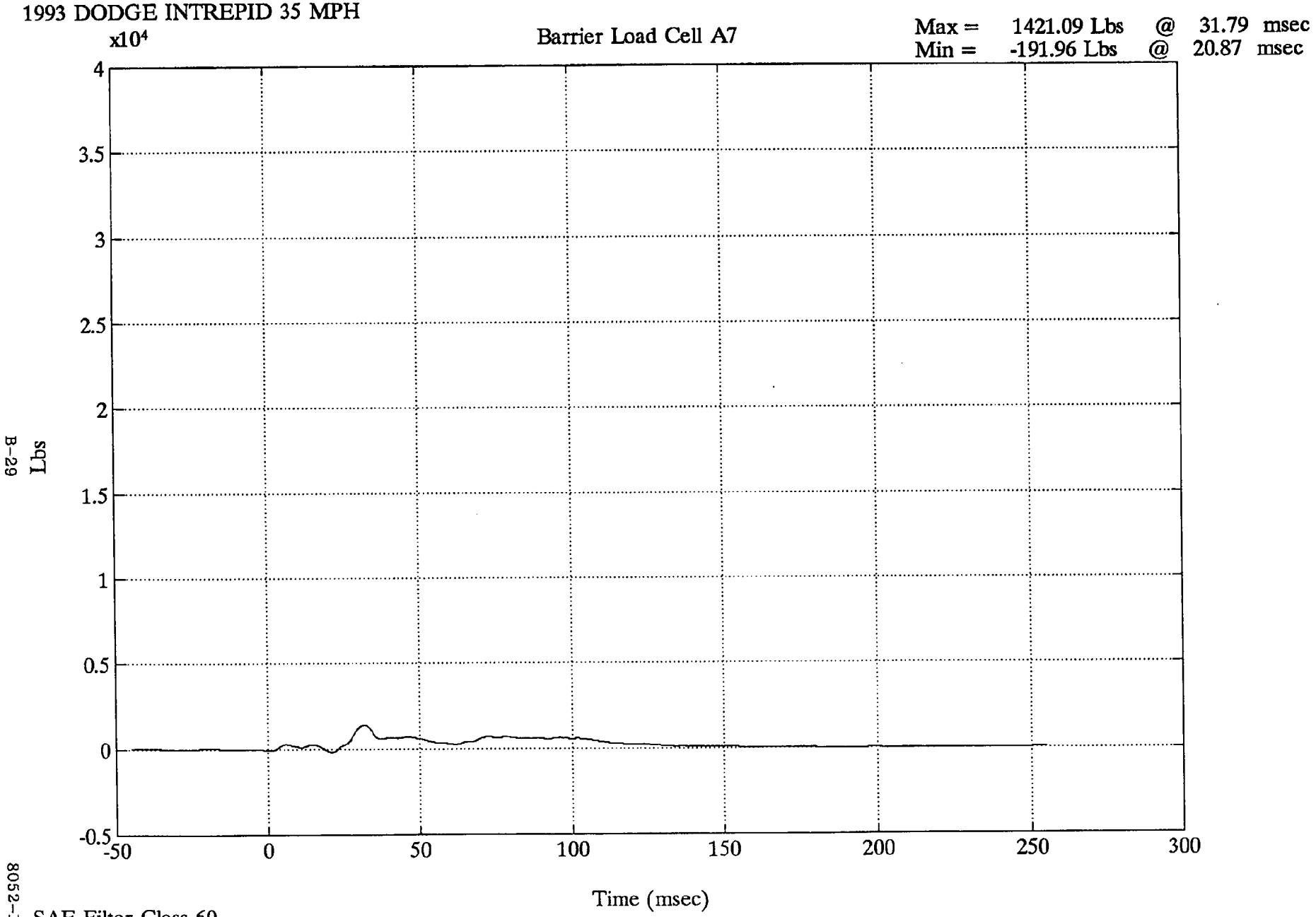


B-28

8052-1

SAE Filter Class 60

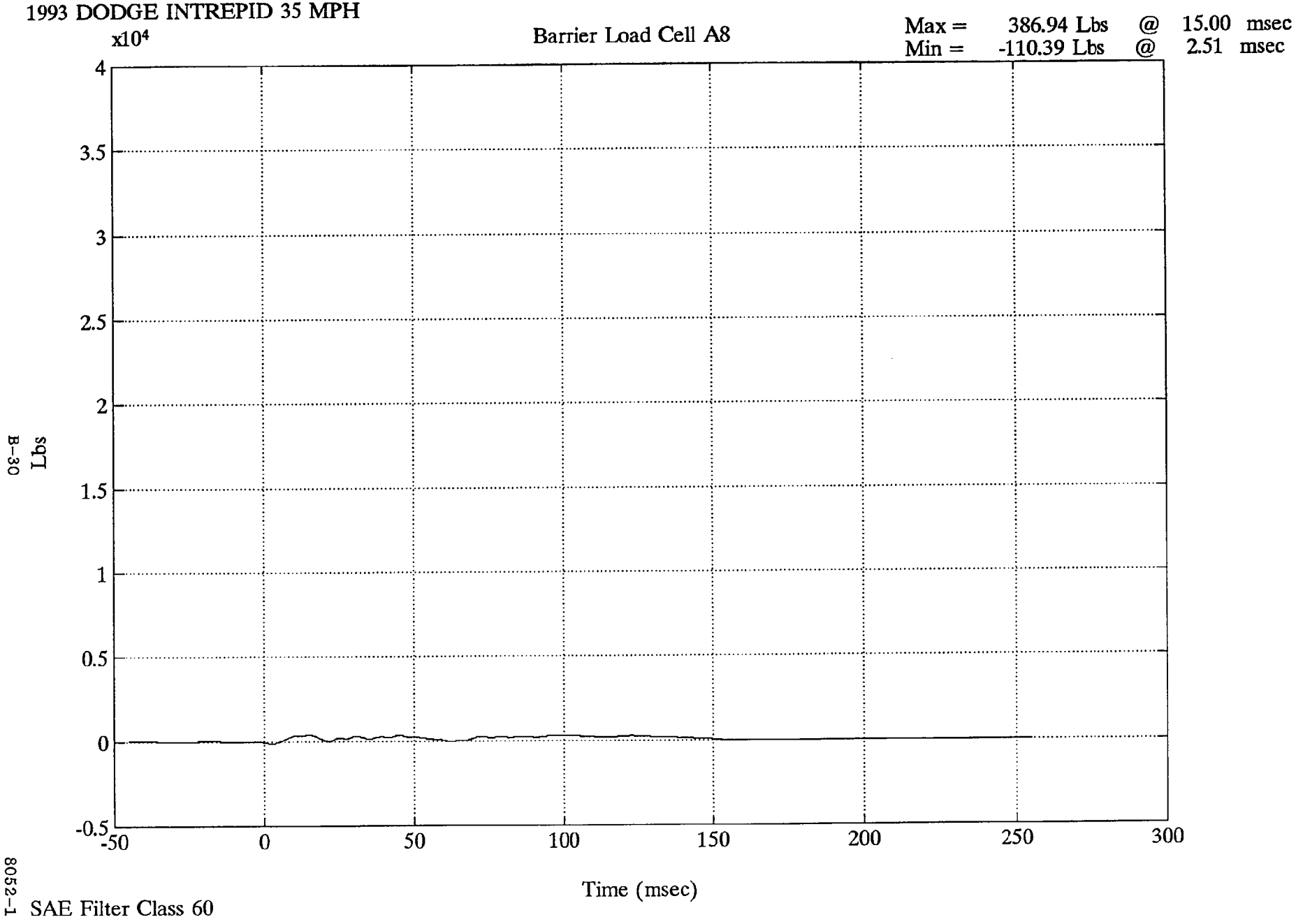
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

1993 DODGE INTREPID 35 MPH

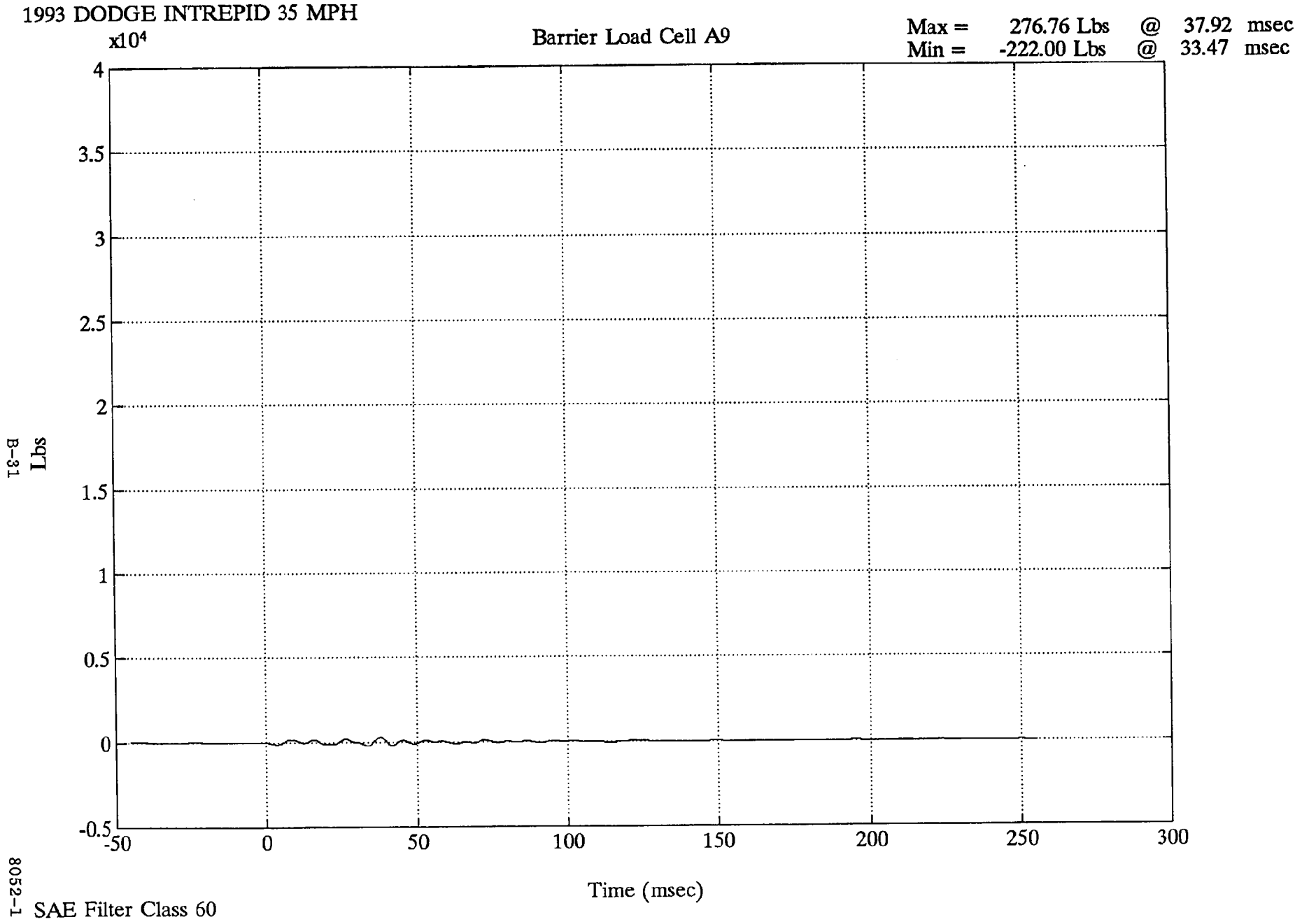


B-30

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

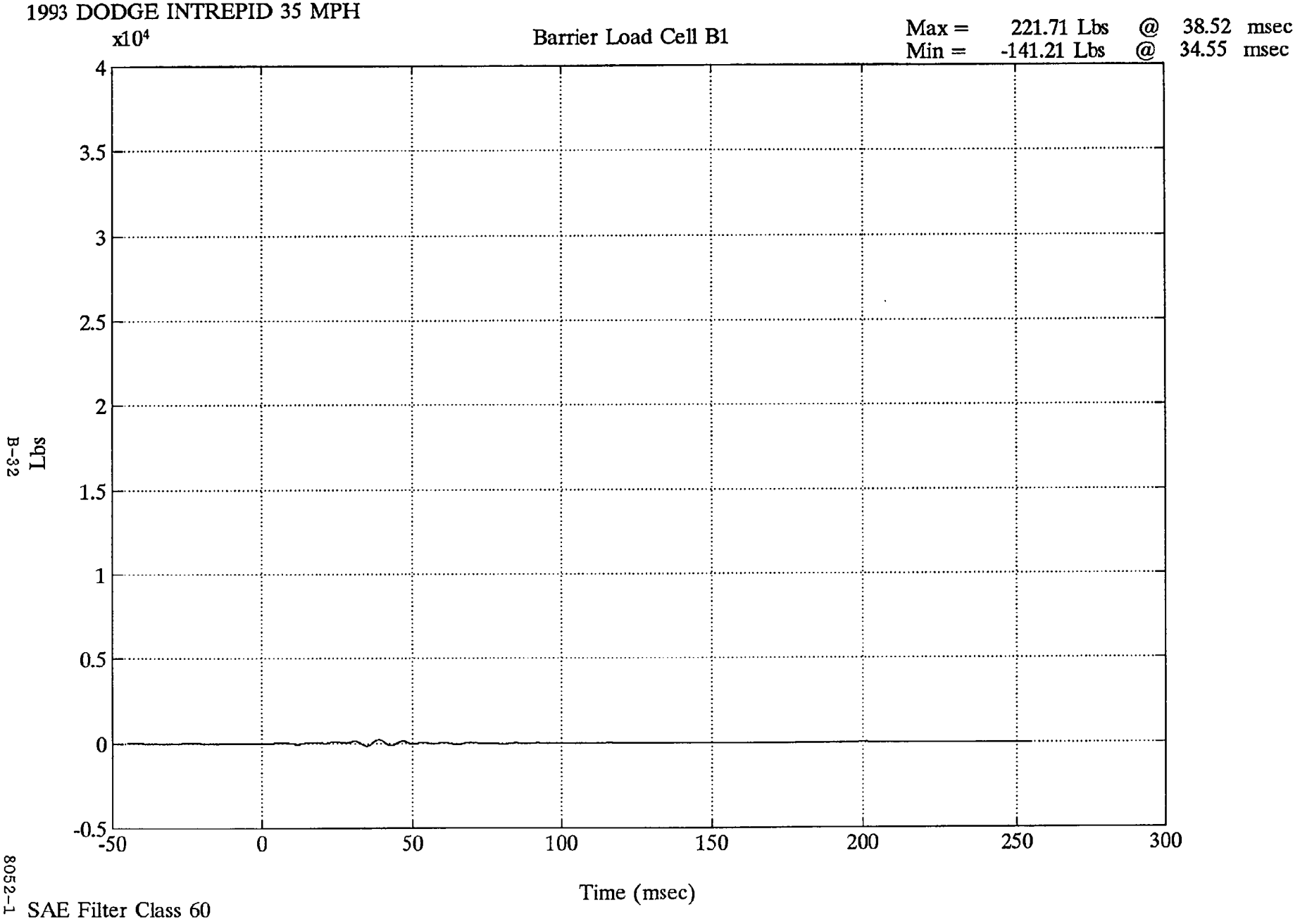


B-31

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

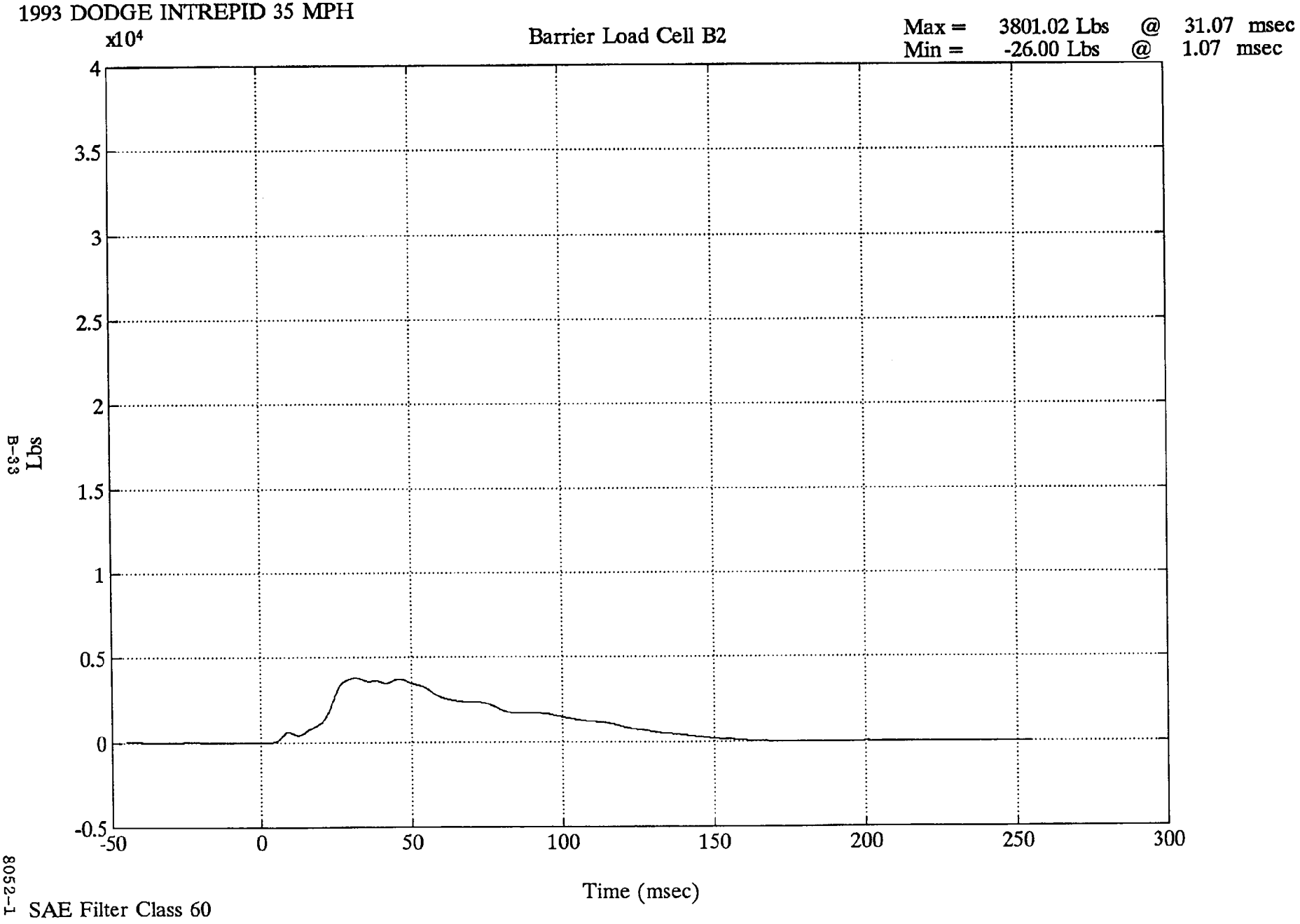


B-32

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

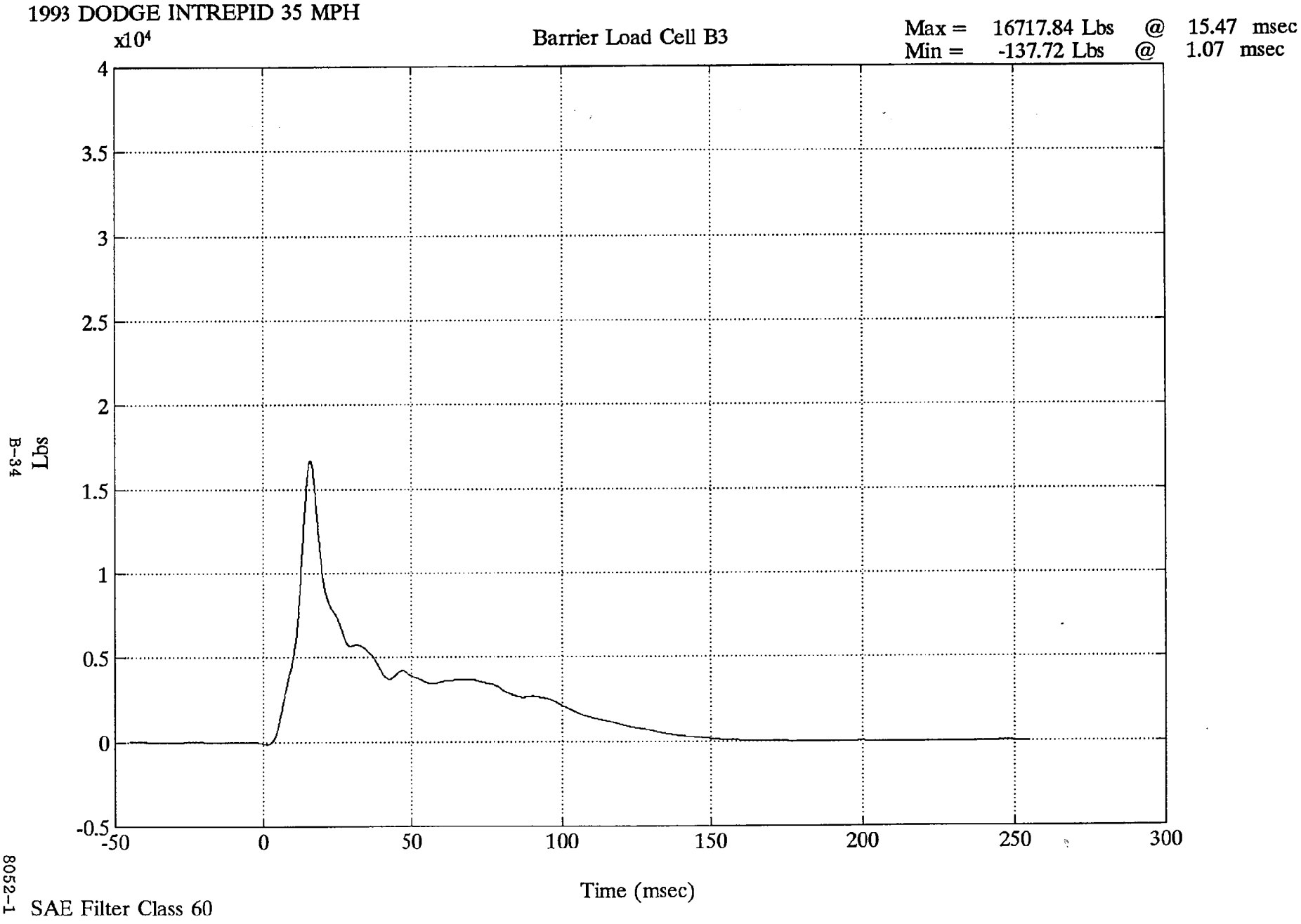


B-33

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

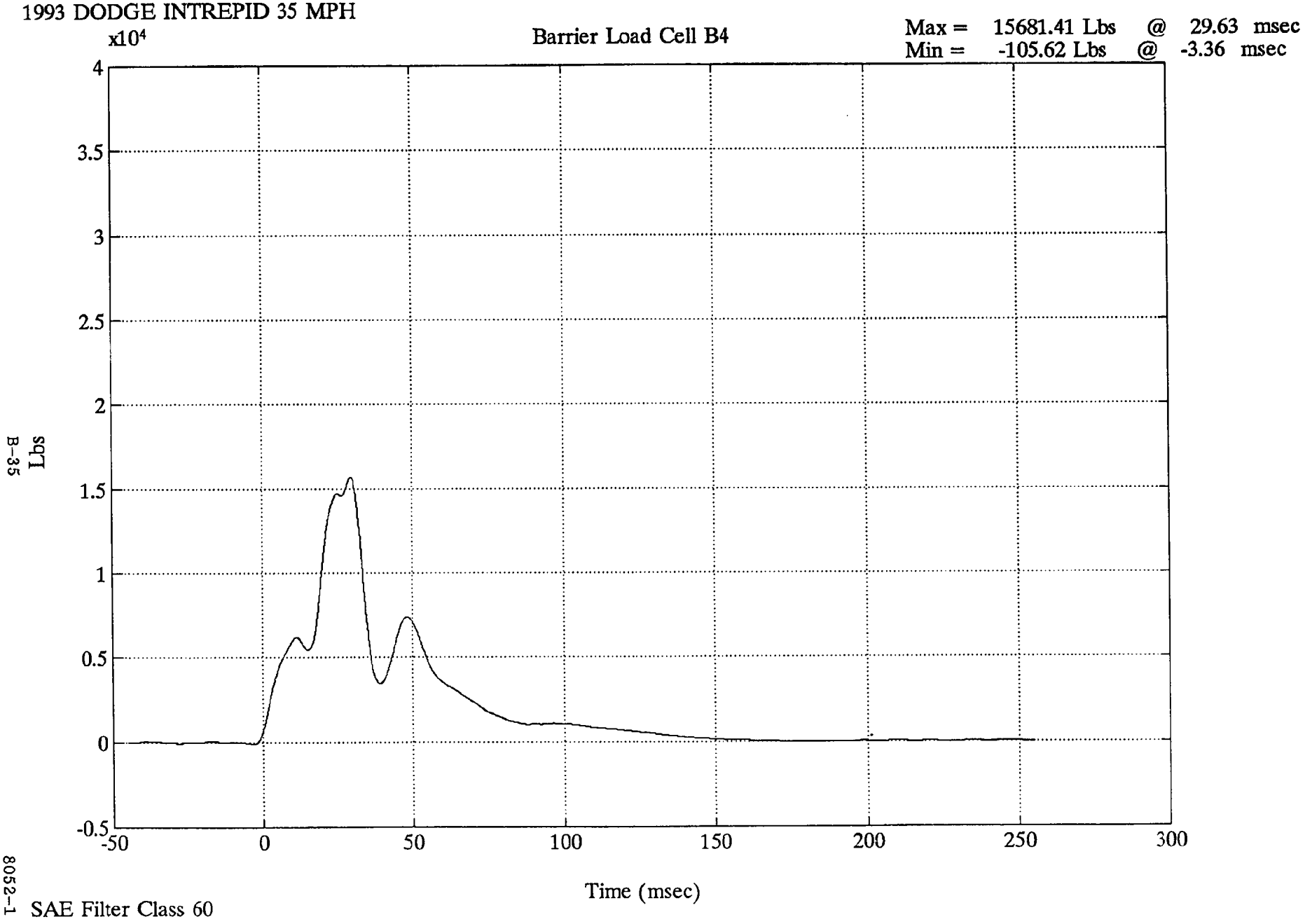


B-34

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

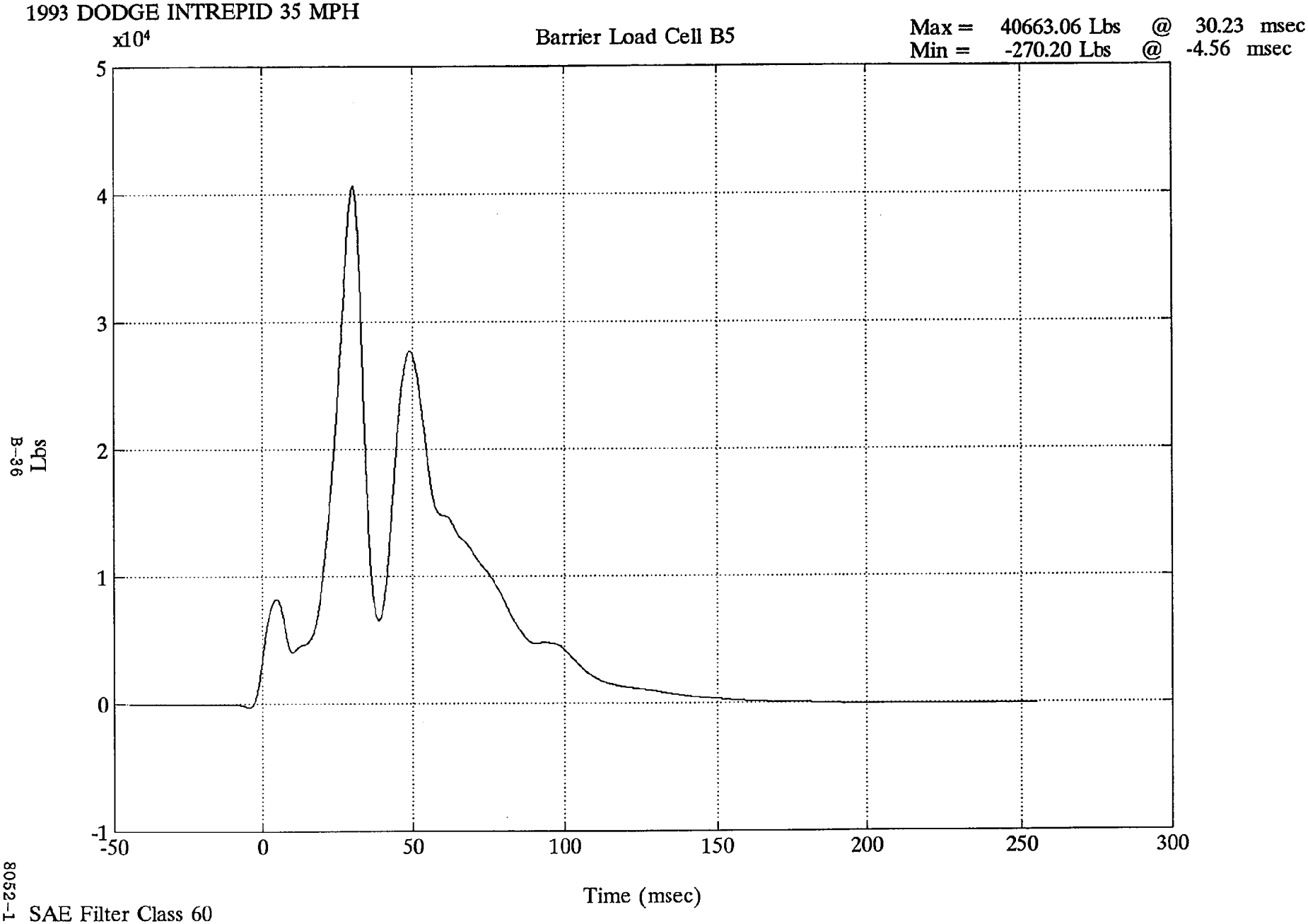


B-35

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

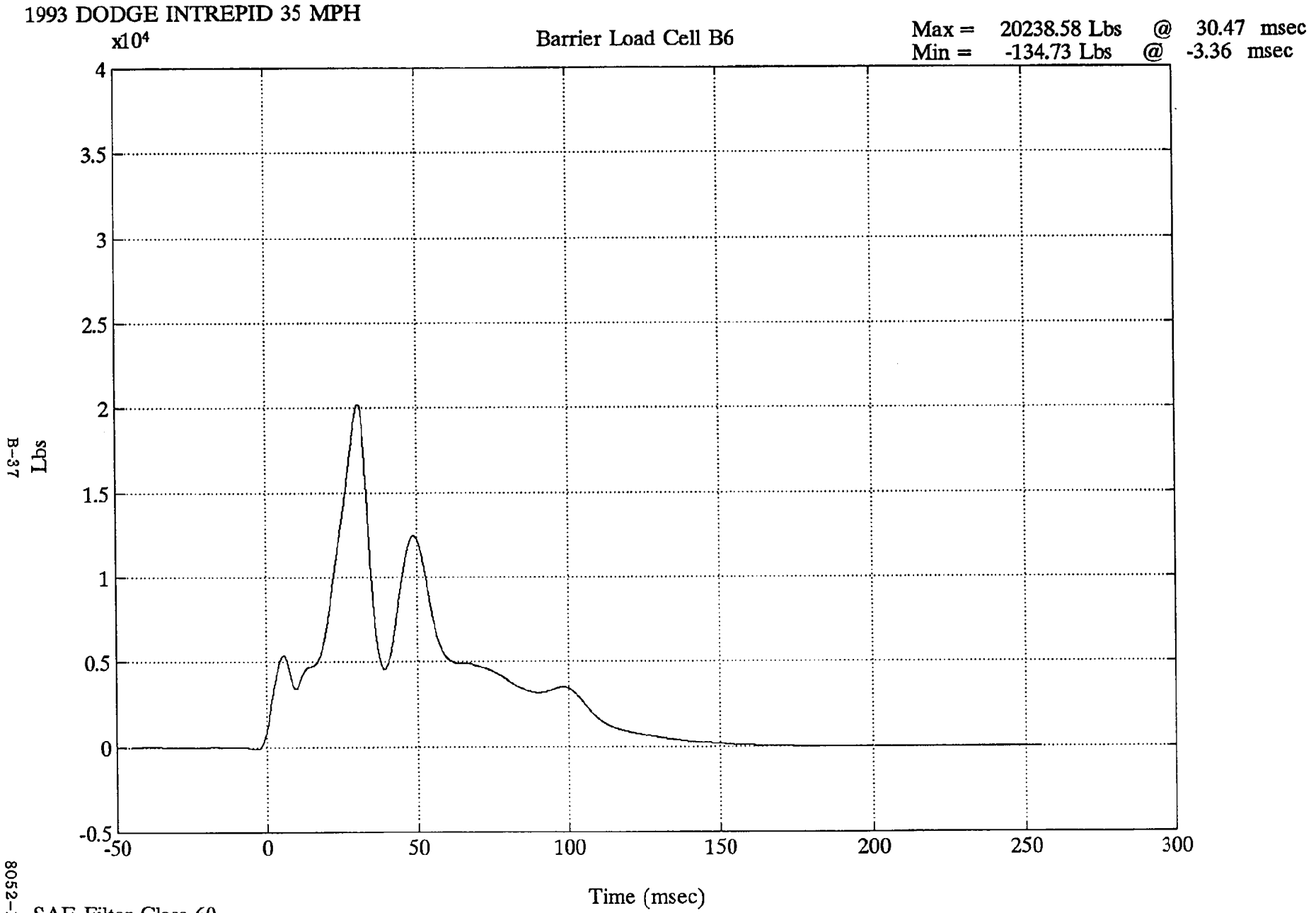


B-36

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

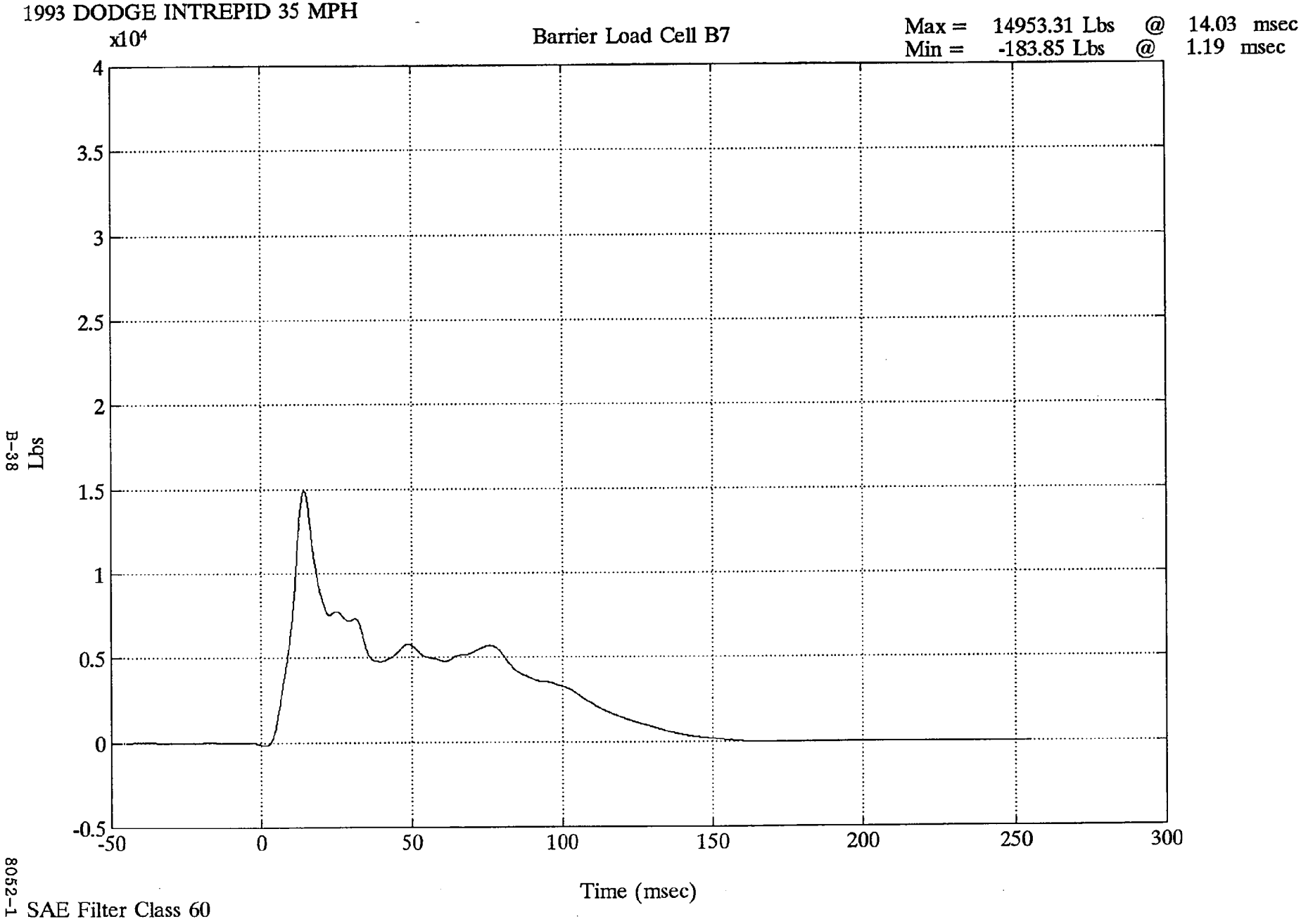


B-37

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

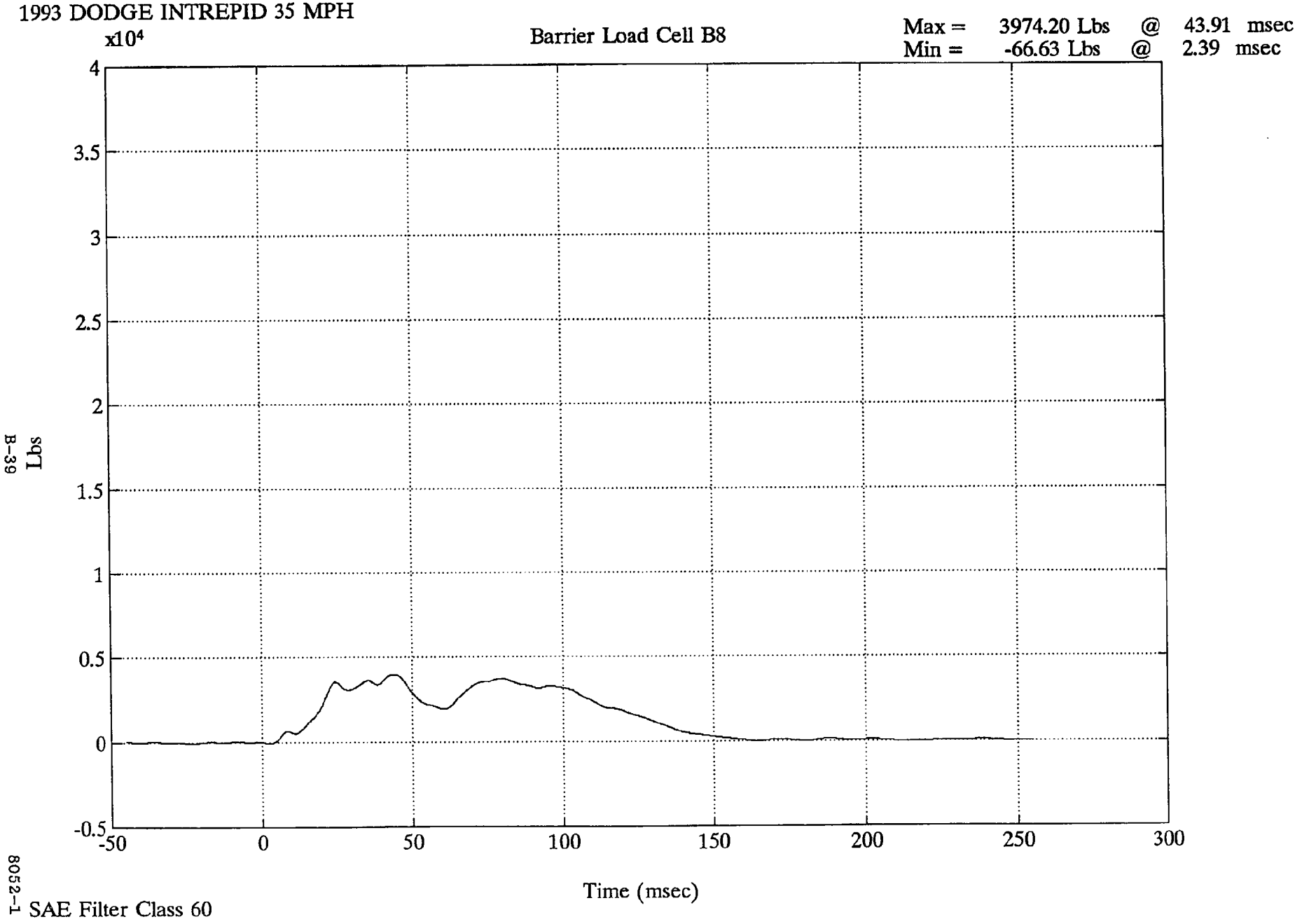


B-38

8052-1

SAE Filter Class 60

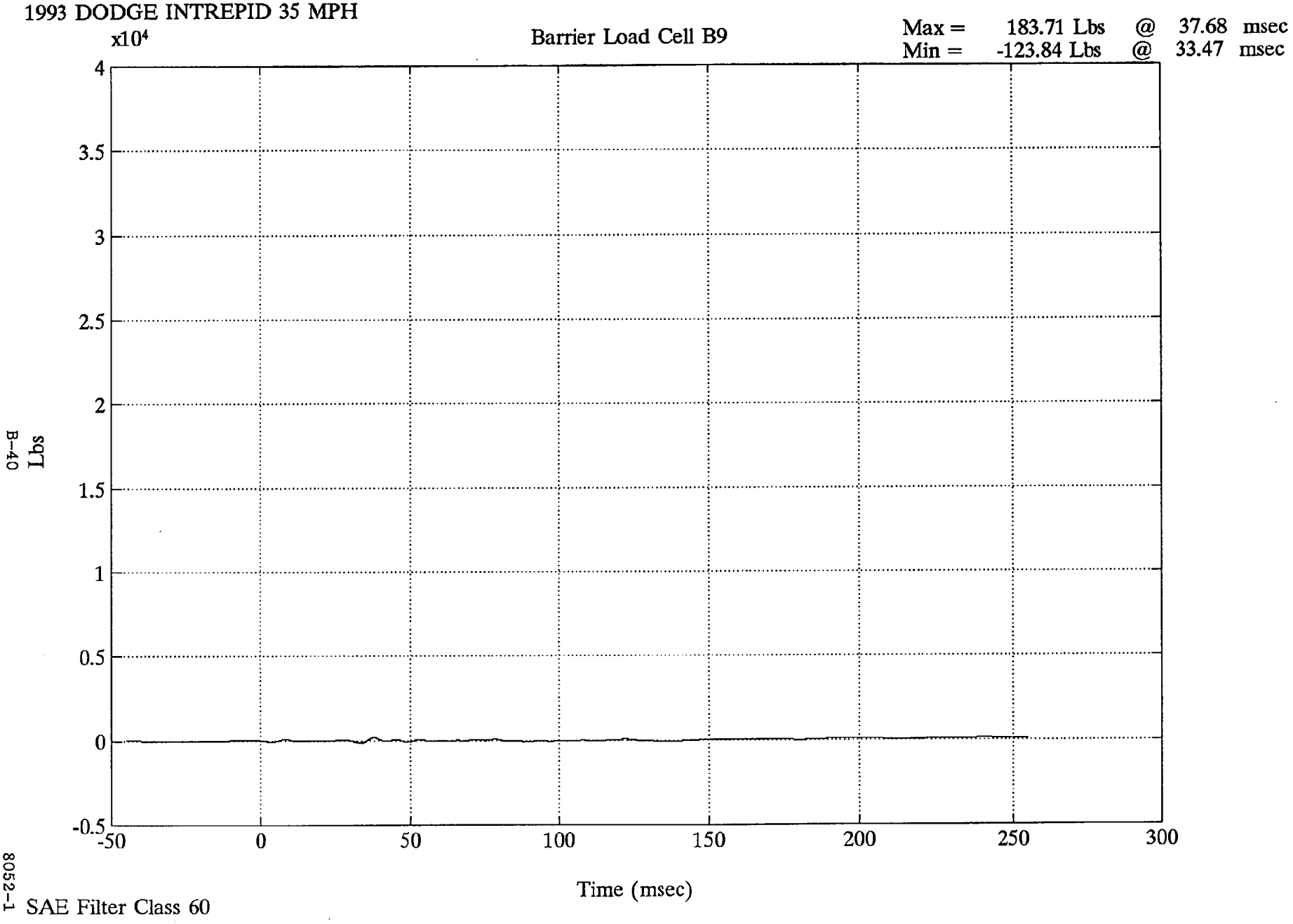
1993 DODGE INTREPID 35 MPH



B-39

8052-1 SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

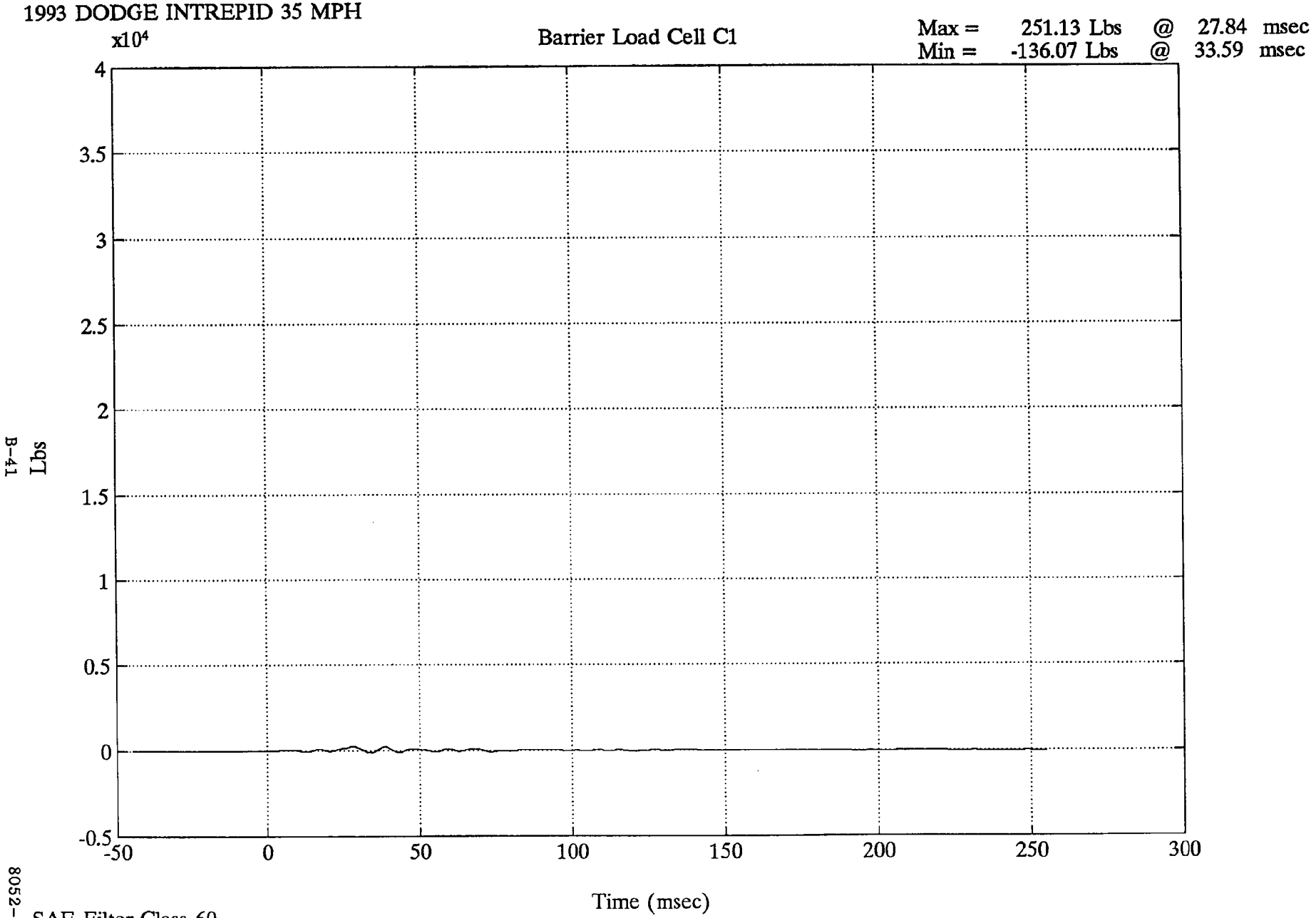


B-40

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

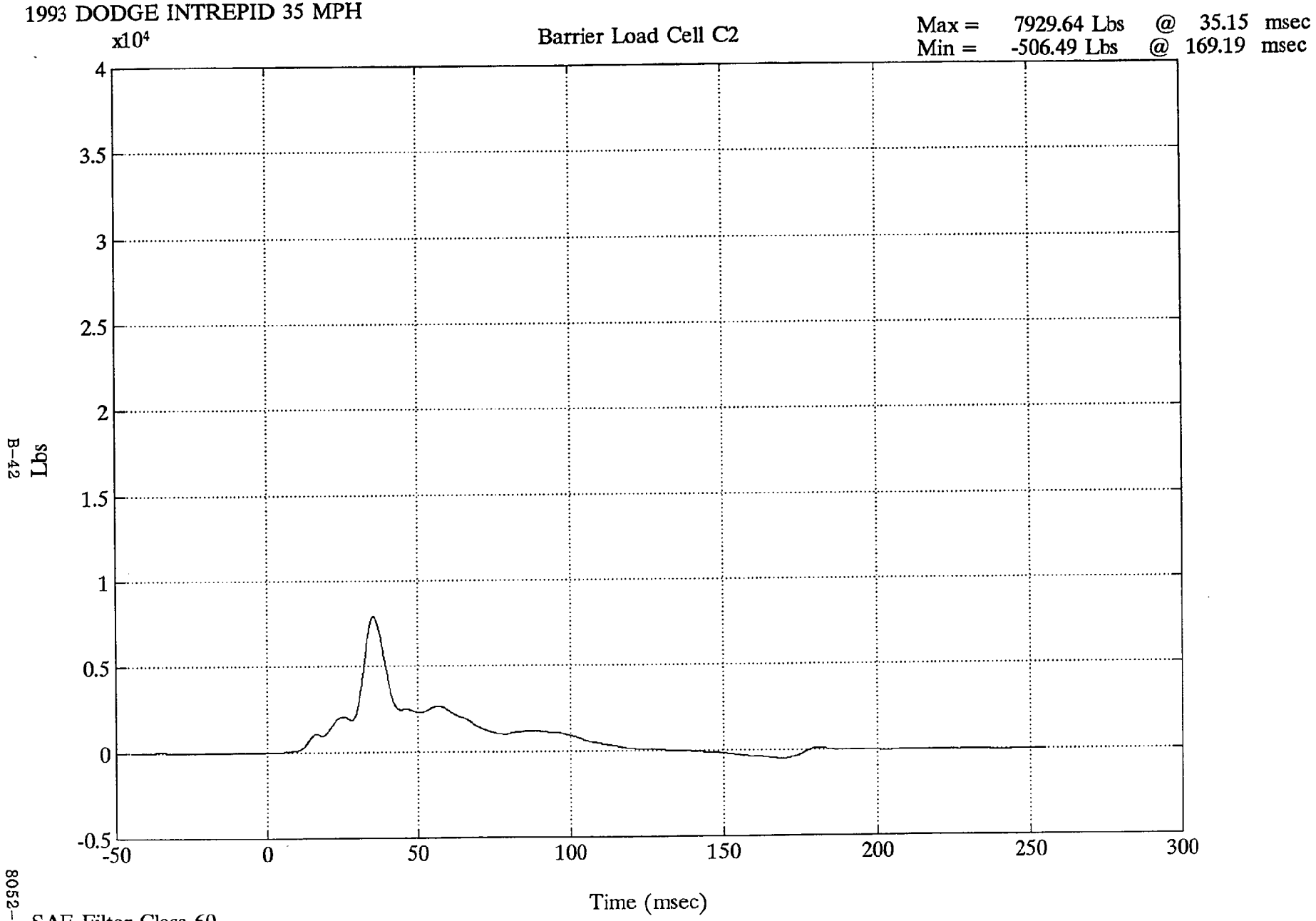


B-41

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

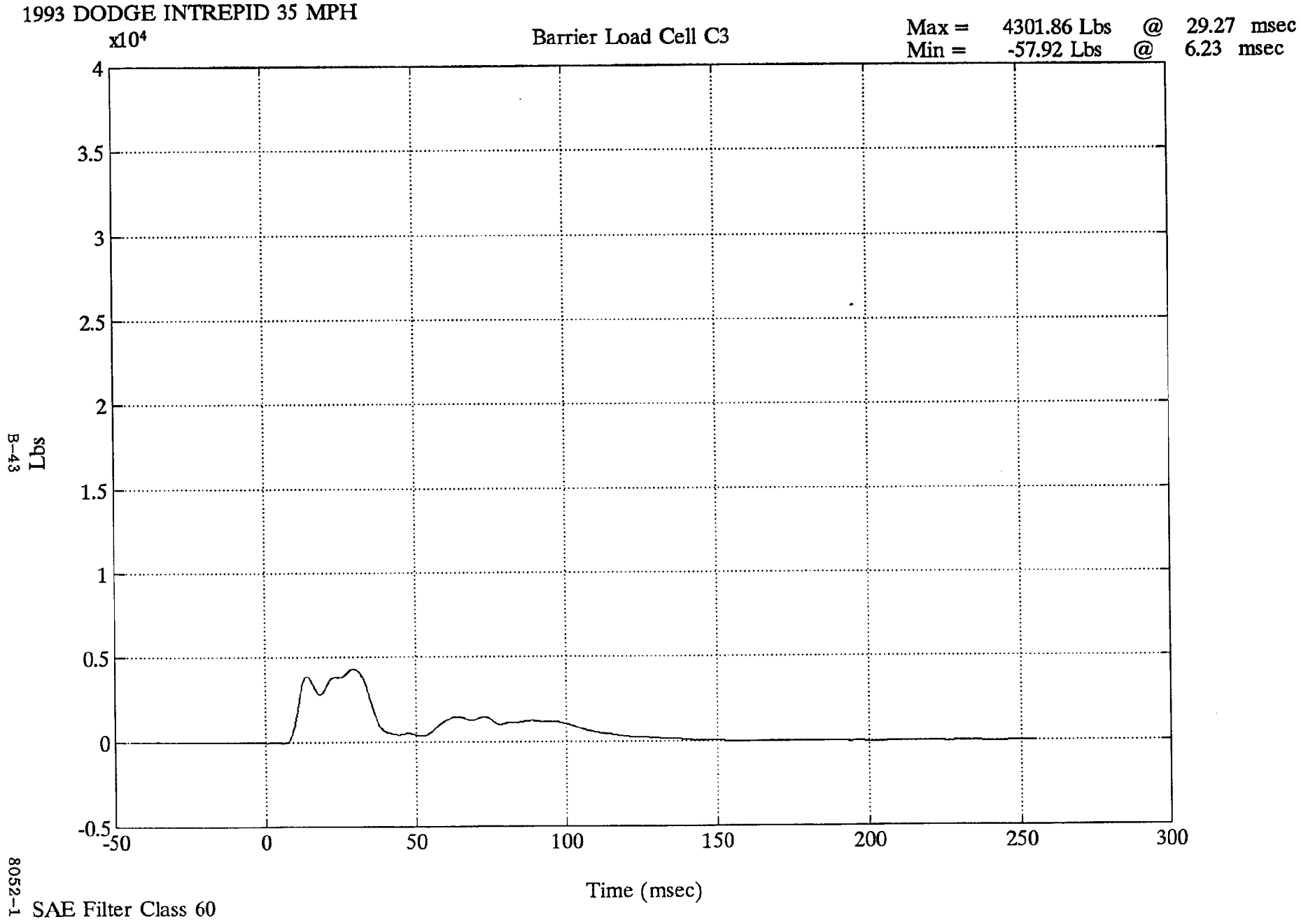


B-42

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

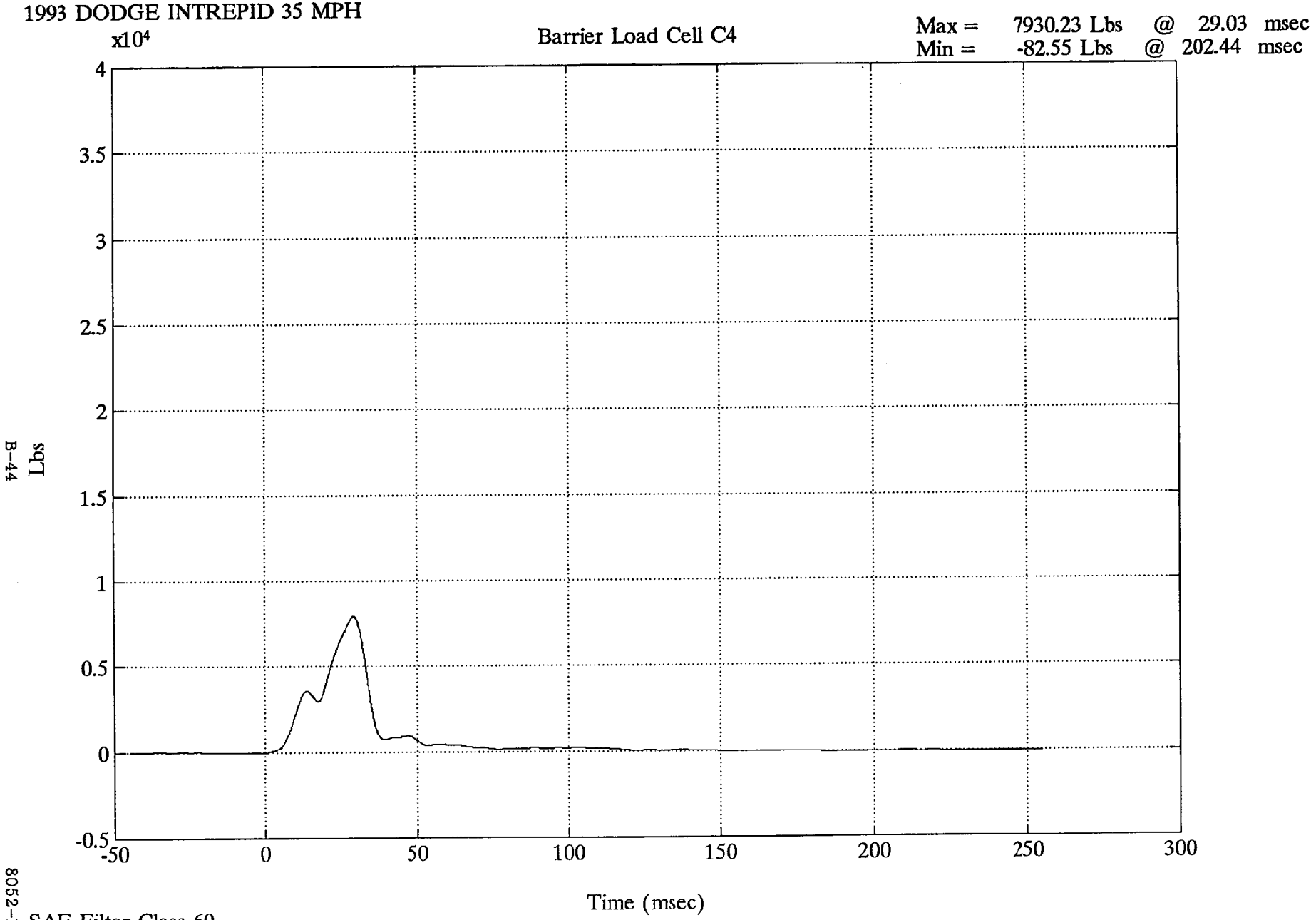


B-43

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

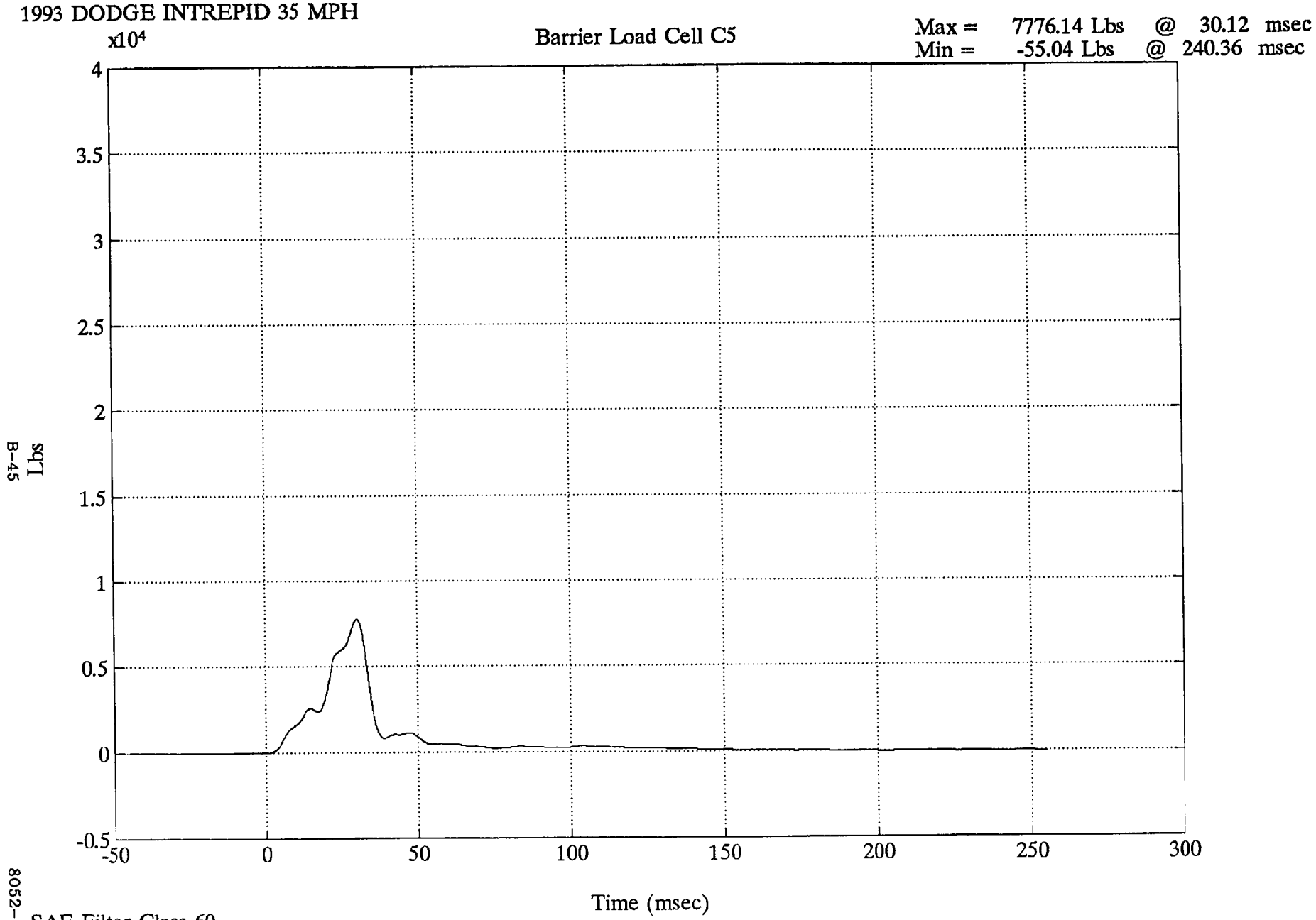


B-44

8052-1

SAE Filter Class 60

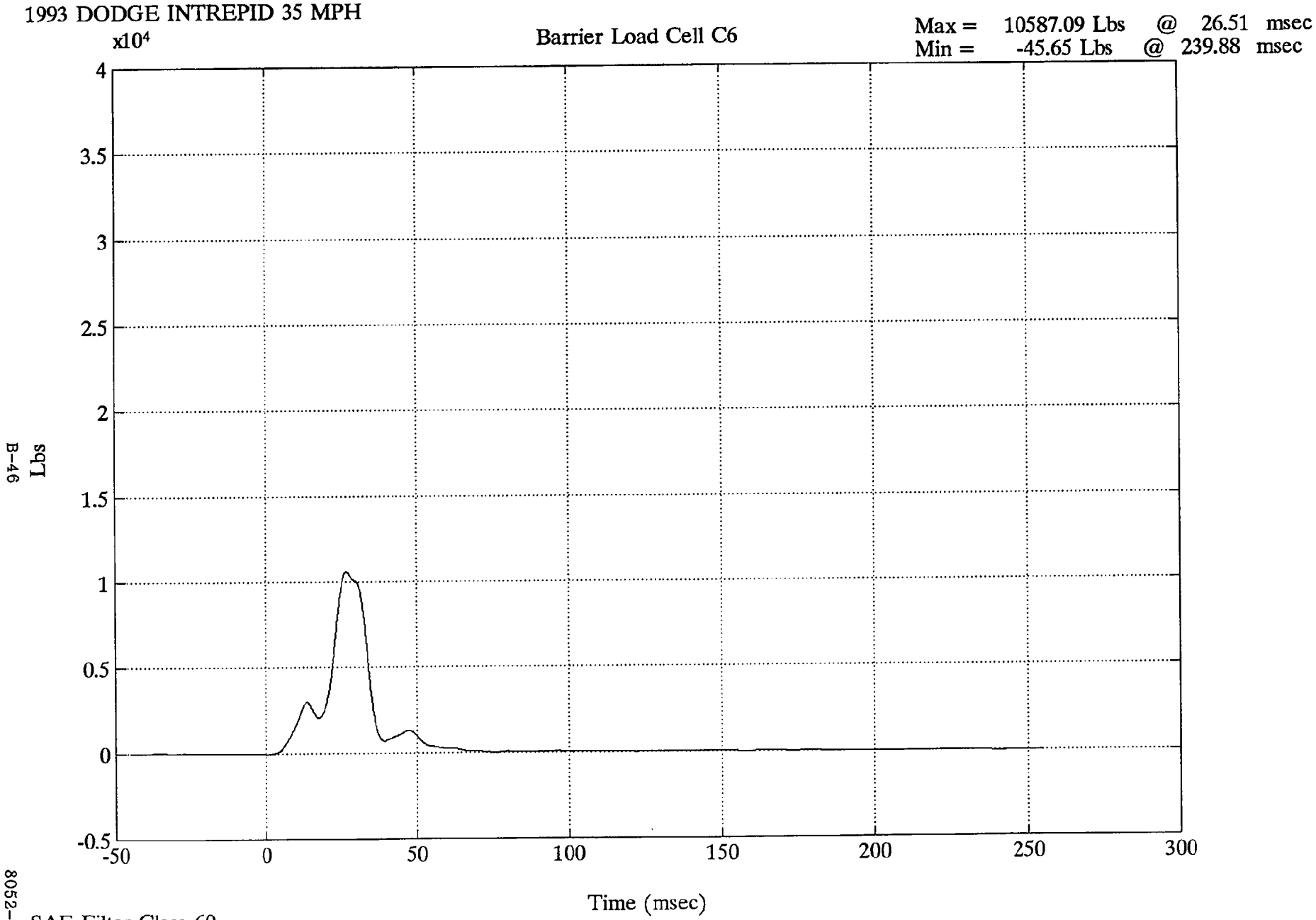
1993 DODGE INTREPID 35 MPH



SAE Filter Class 60

8052-1

1993 DODGE INTREPID 35 MPH



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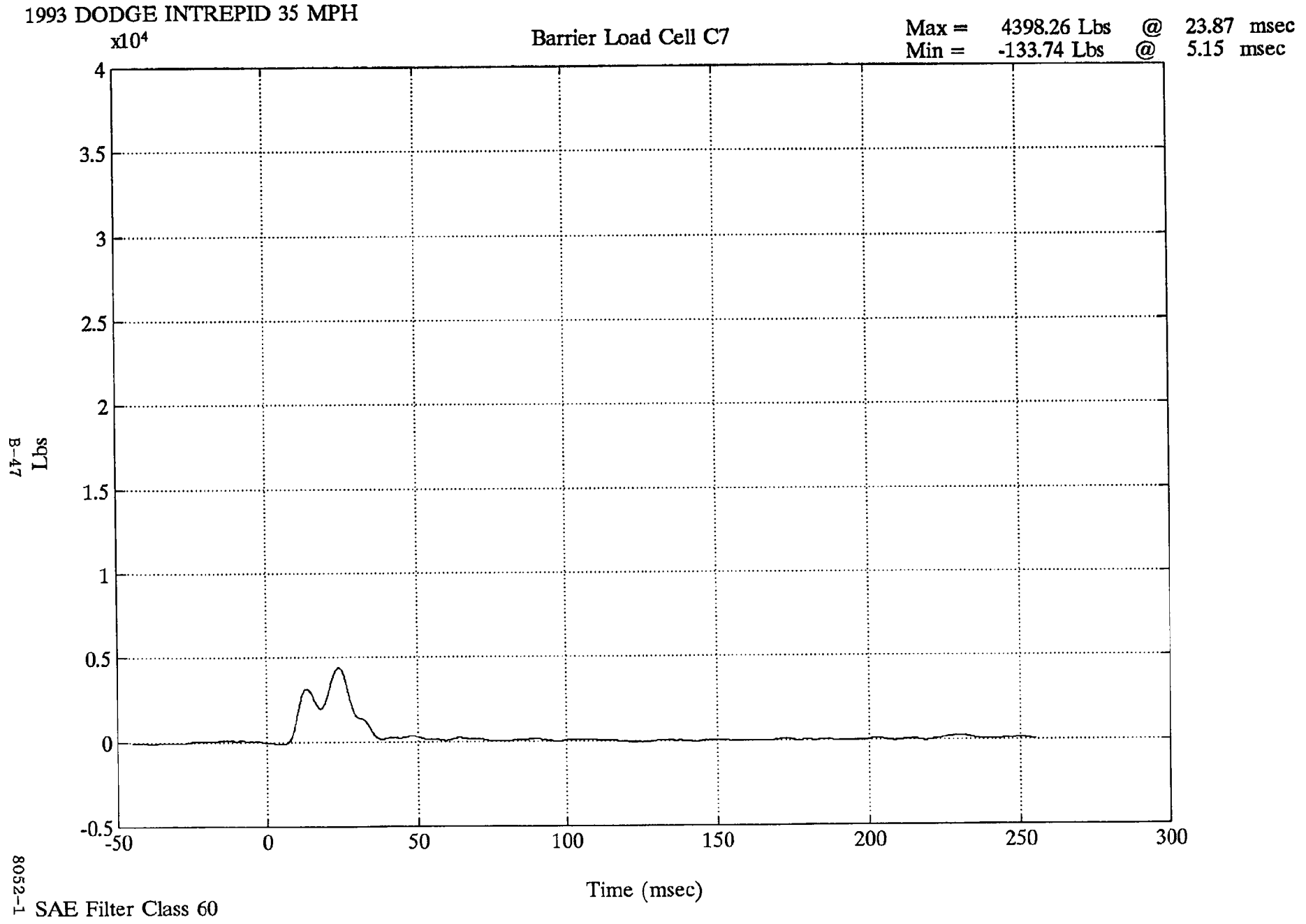
8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

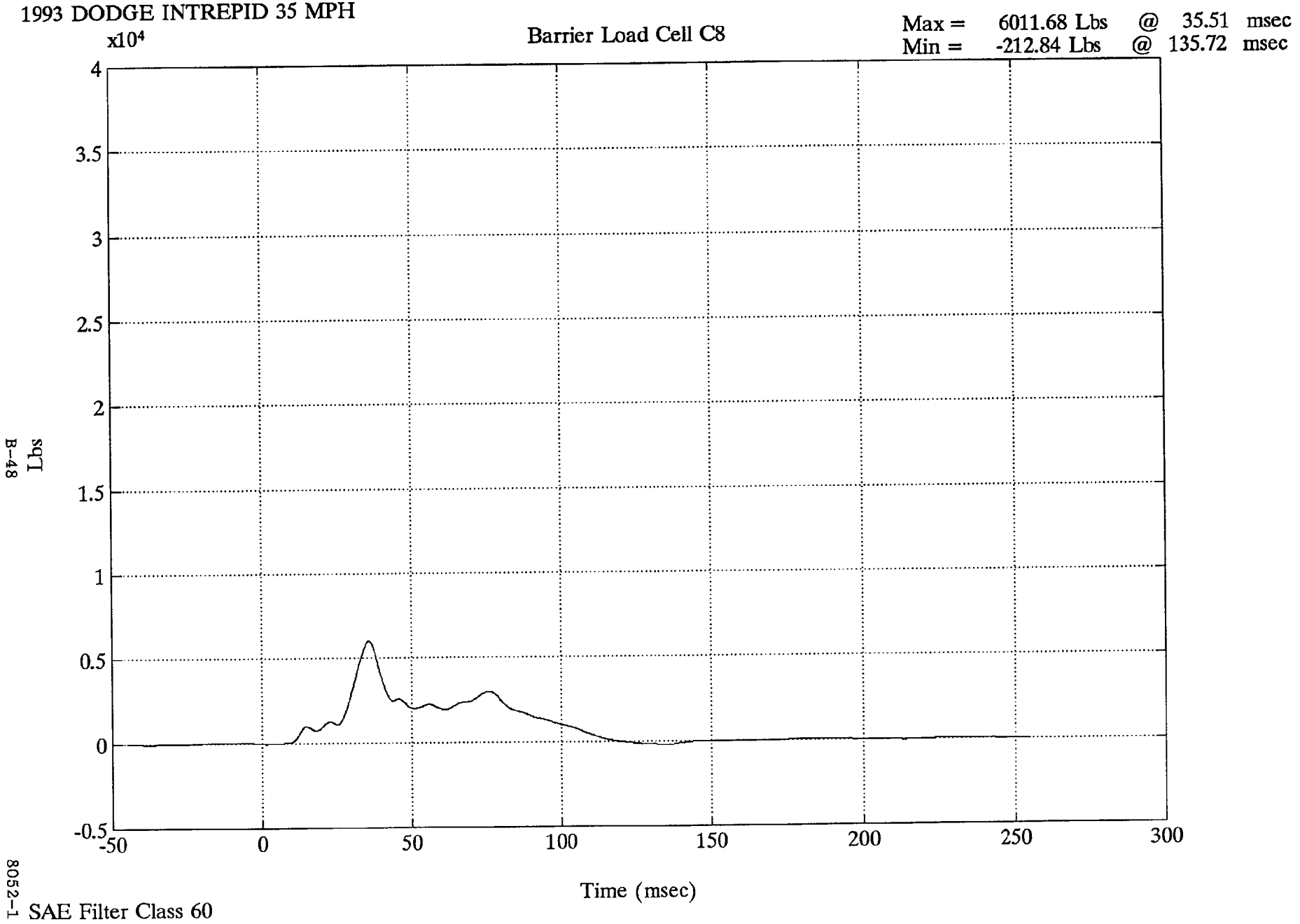


B-47

8052-1

SAE Filter Class 60

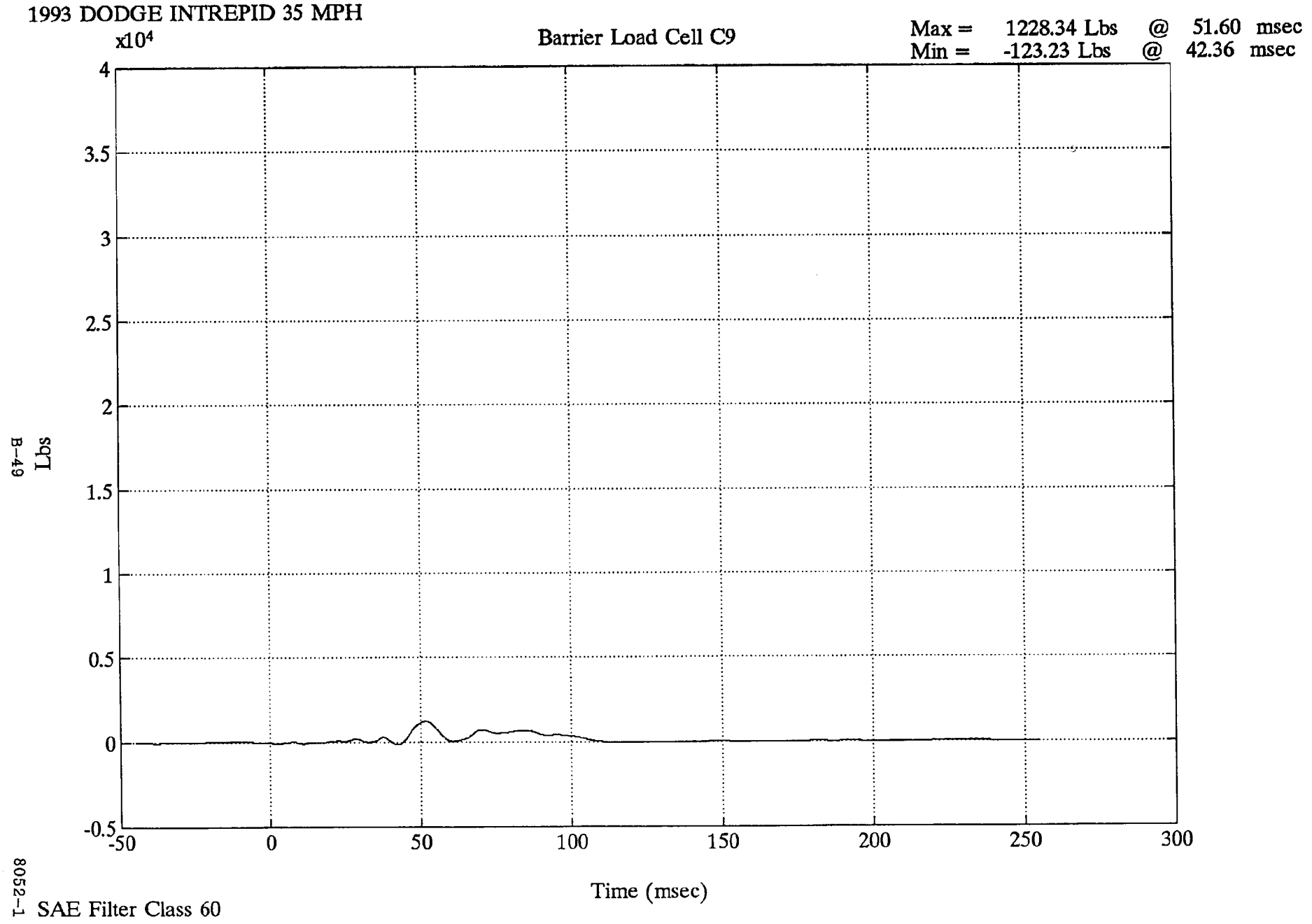
1993 DODGE INTREPID 35 MPH



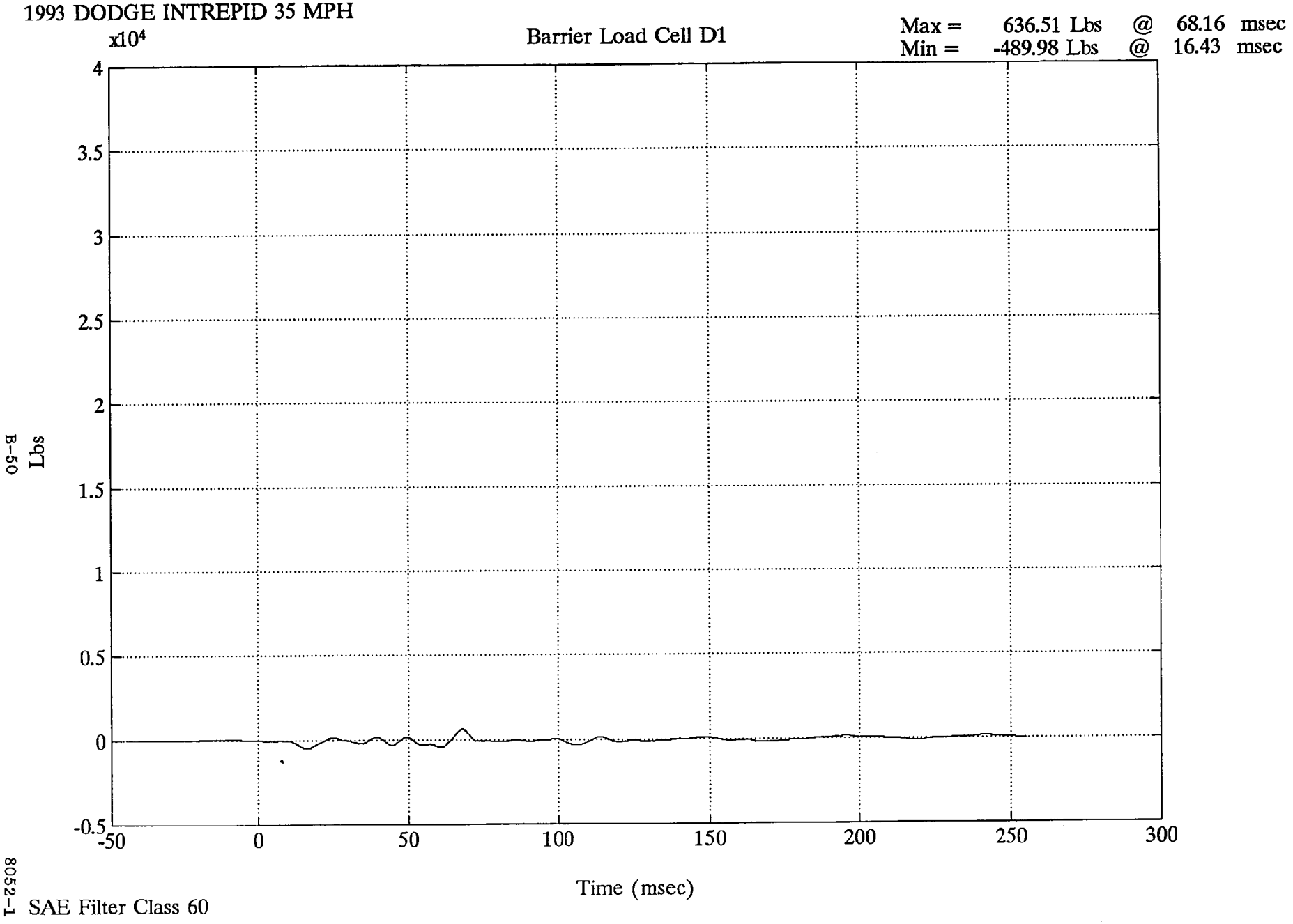
B-48

8052-1

SAE Filter Class 60


1993 DODGE INTREPID 35 MPH
x10^4
Barrier Load Cell C9
Max = 1228.34 Lbs @ 51.60 msec
Min = -123.23 Lbs @ 42.36 msec
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-50
0
50
100
150
200
250
300
Lbs
Time (msec)
SAE Filter Class 60
B-49
8052-1

1993 DODGE INTREPID 35 MPH

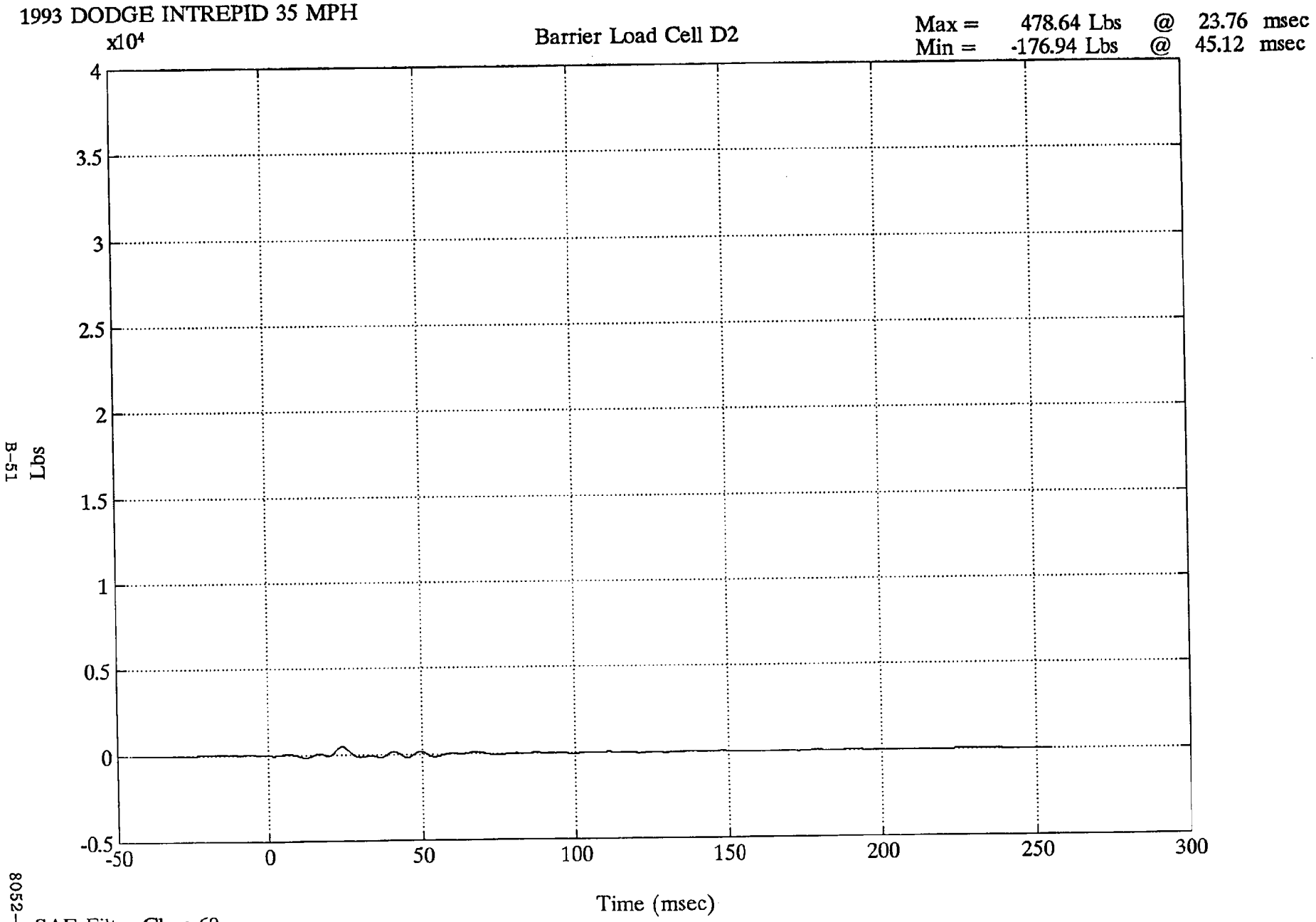


B-50

8052-1

SAE Filter Class 60

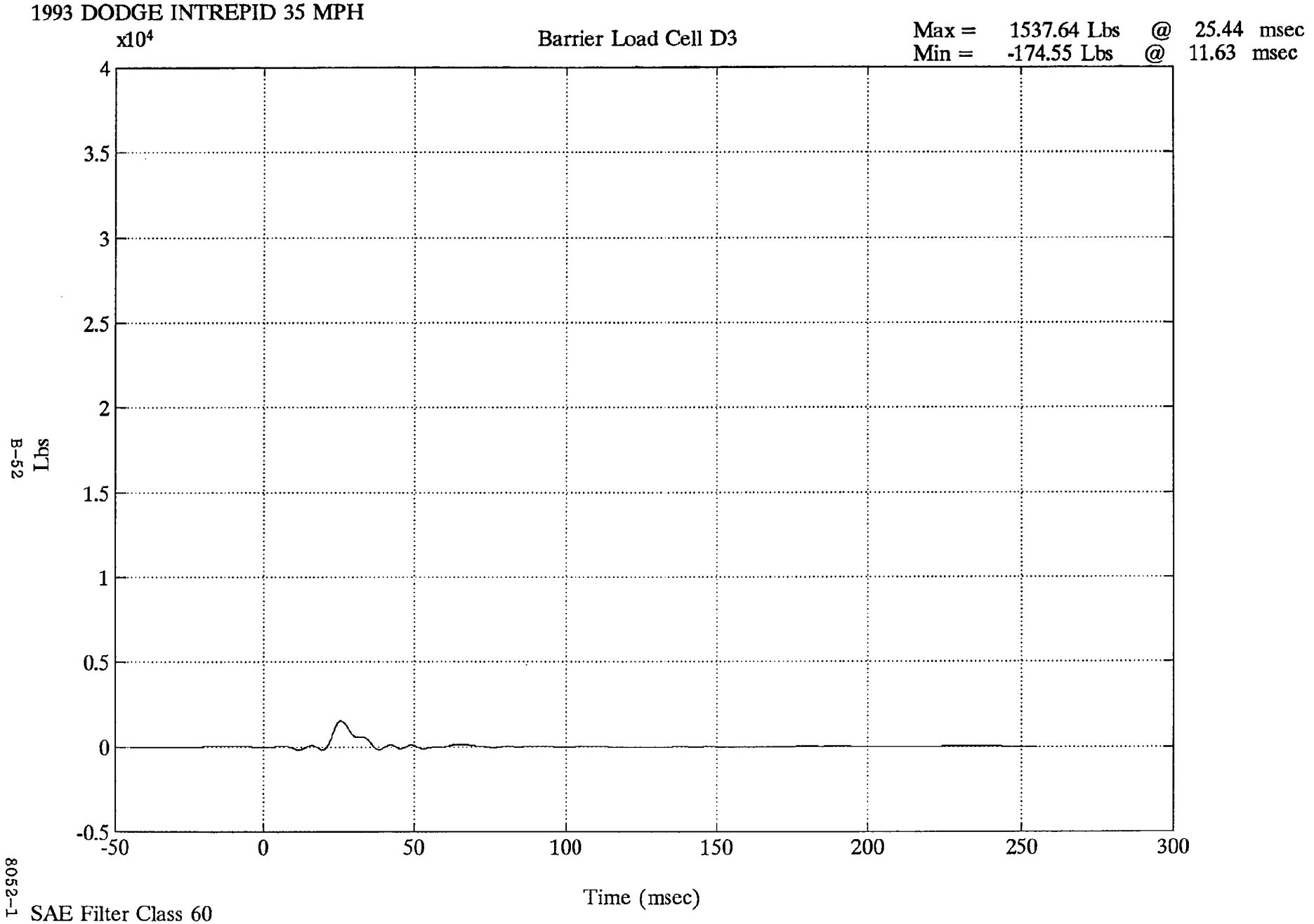
1993 DODGE INTREPID 35 MPH



B-51

8052-1 SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

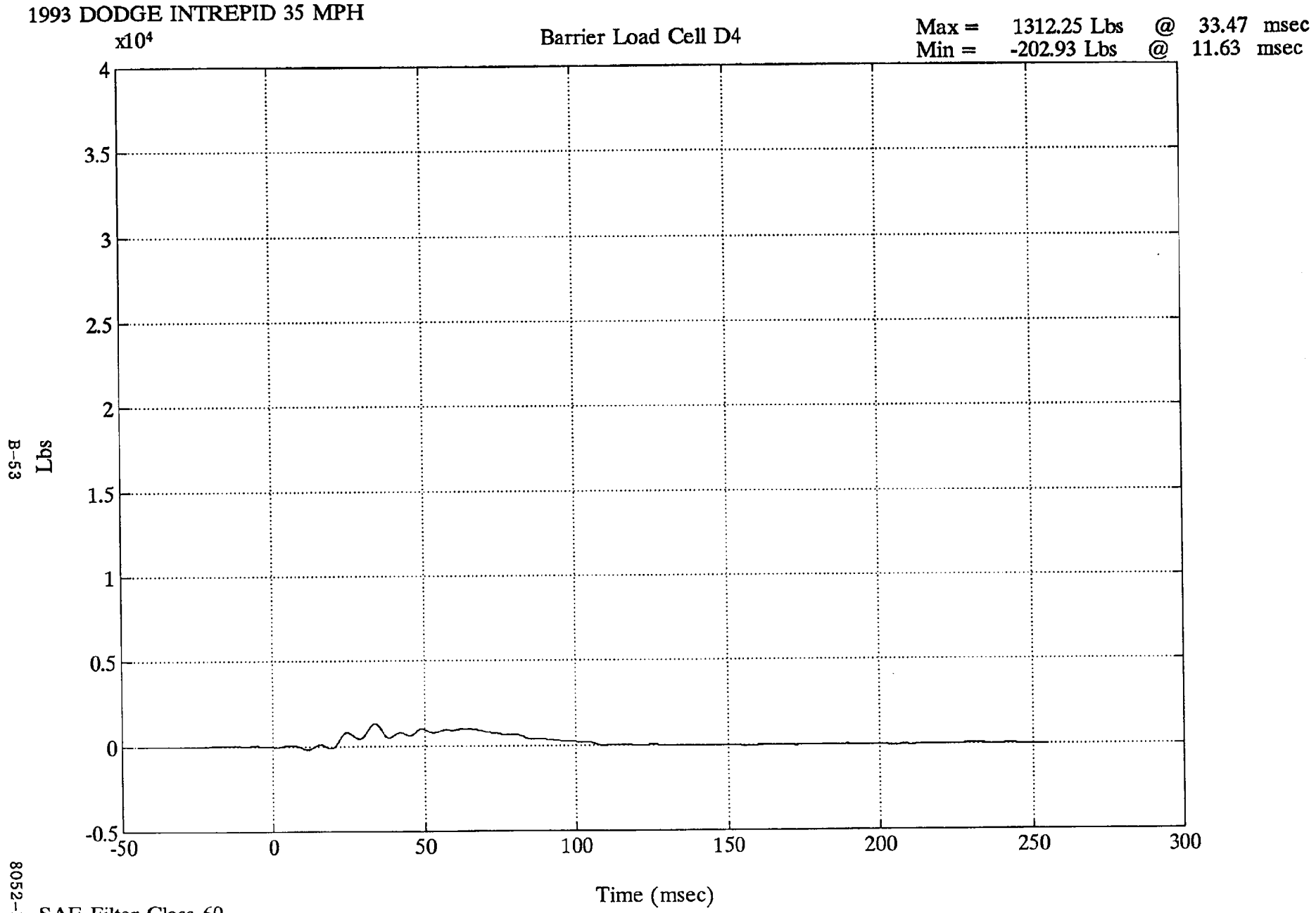


B-52

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

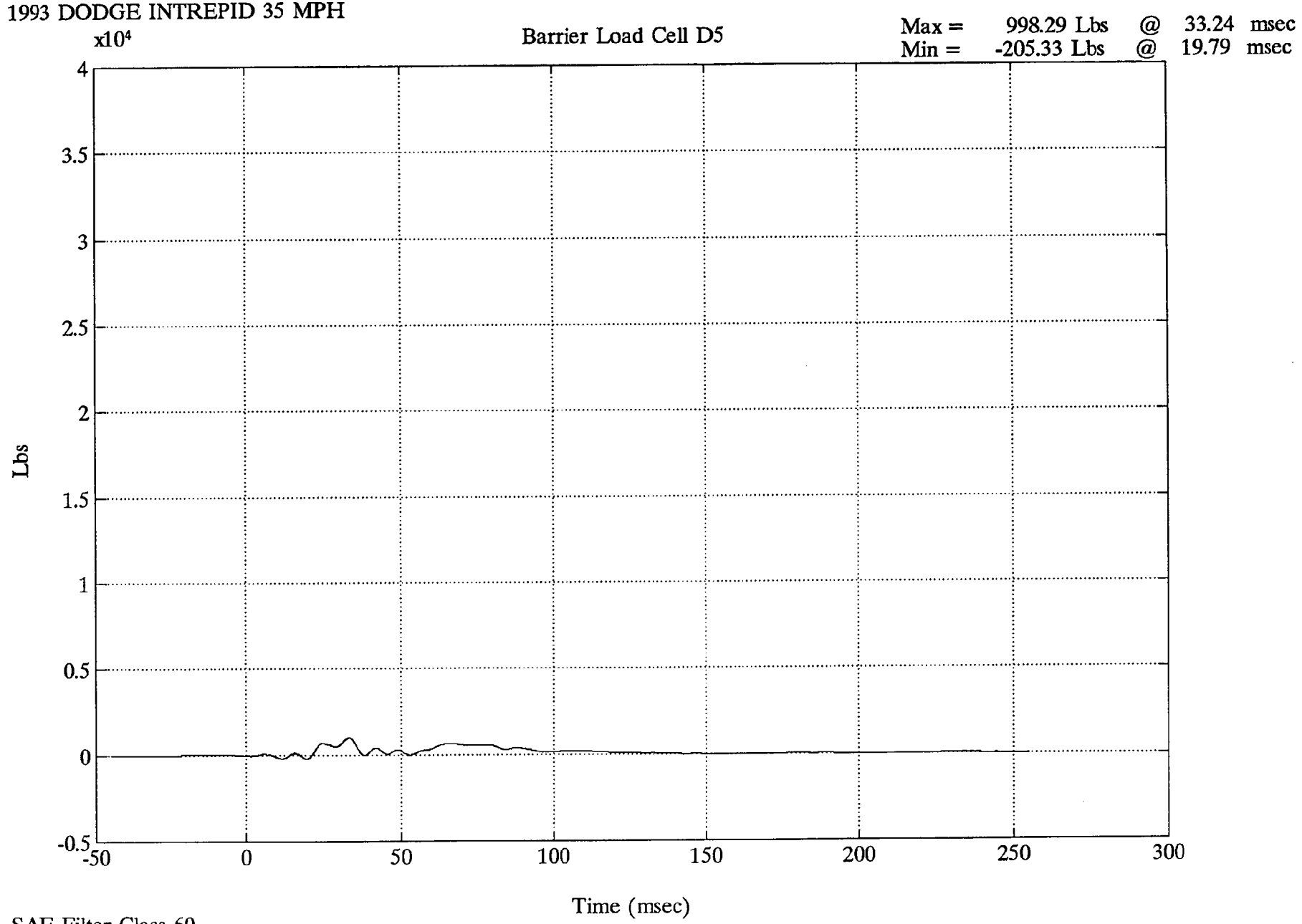


B-53

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

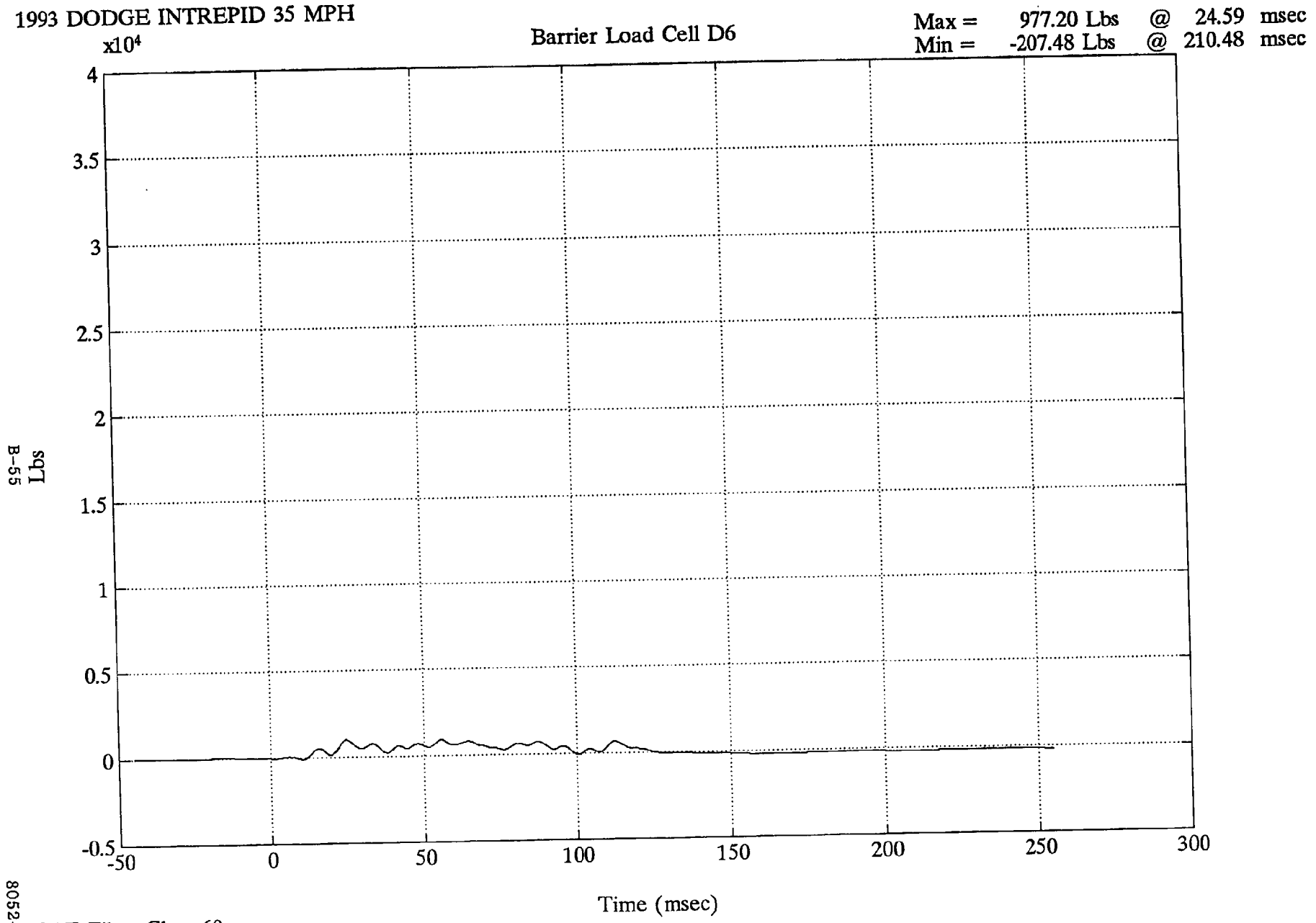


B-54

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

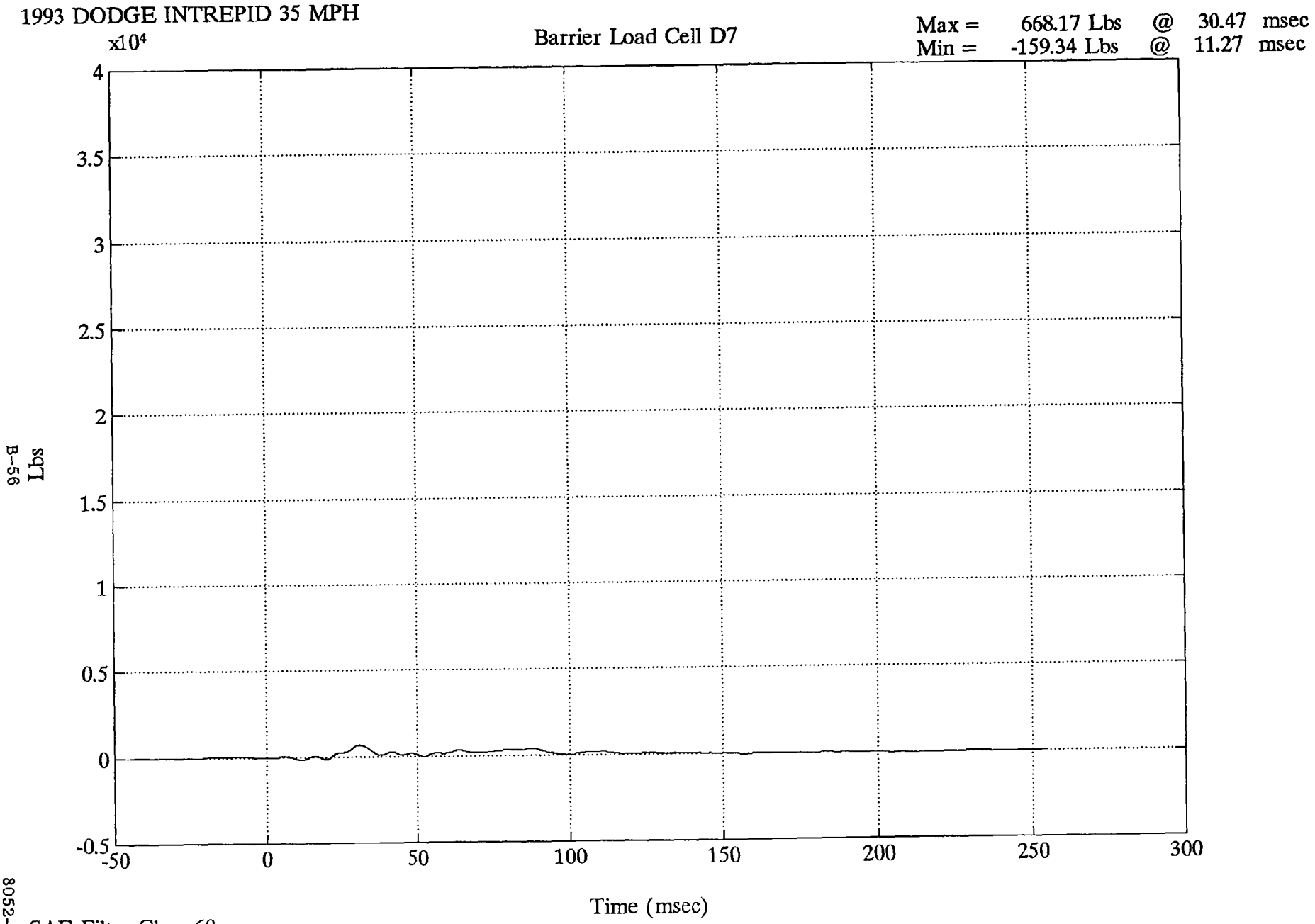


B-55

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

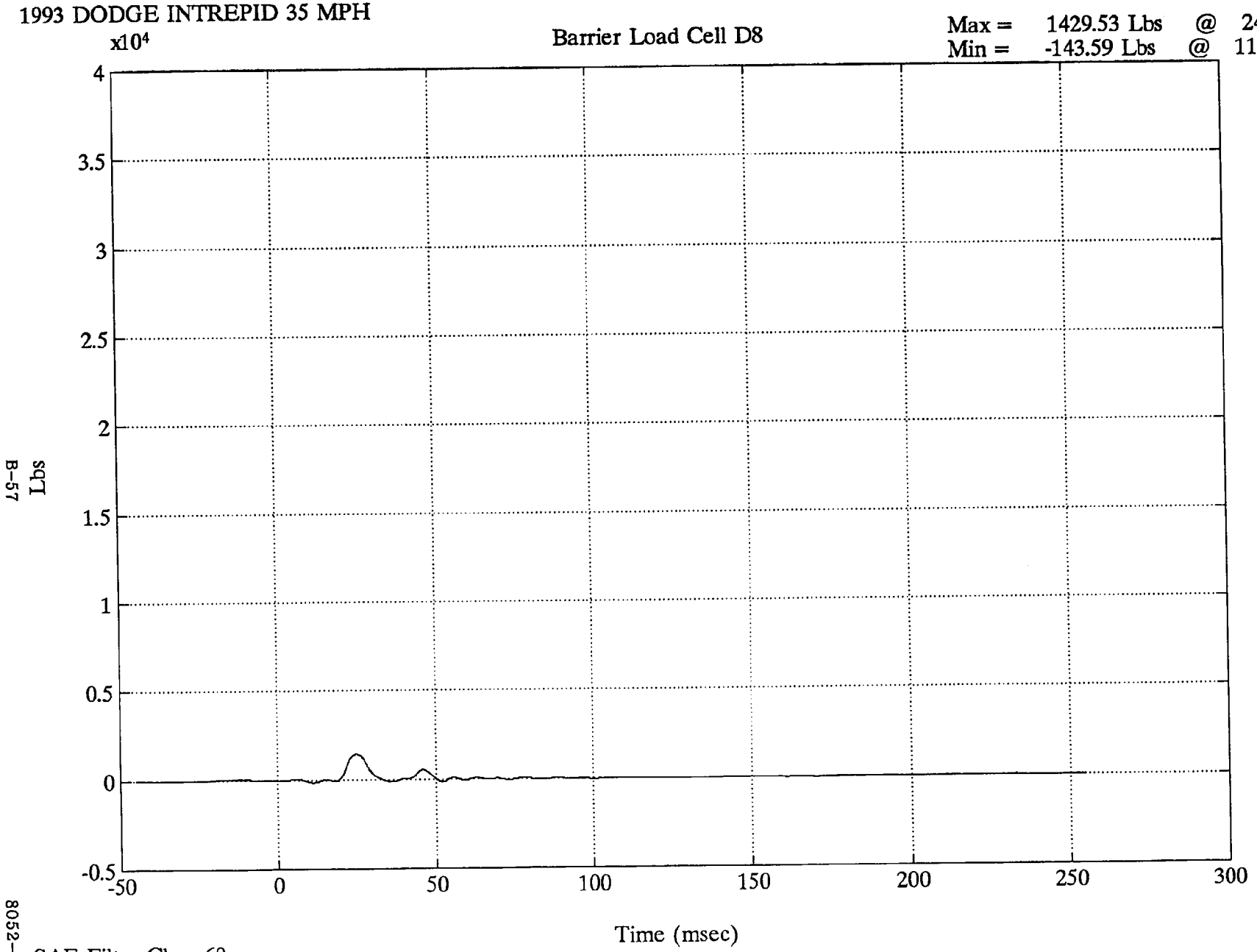


B-56

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

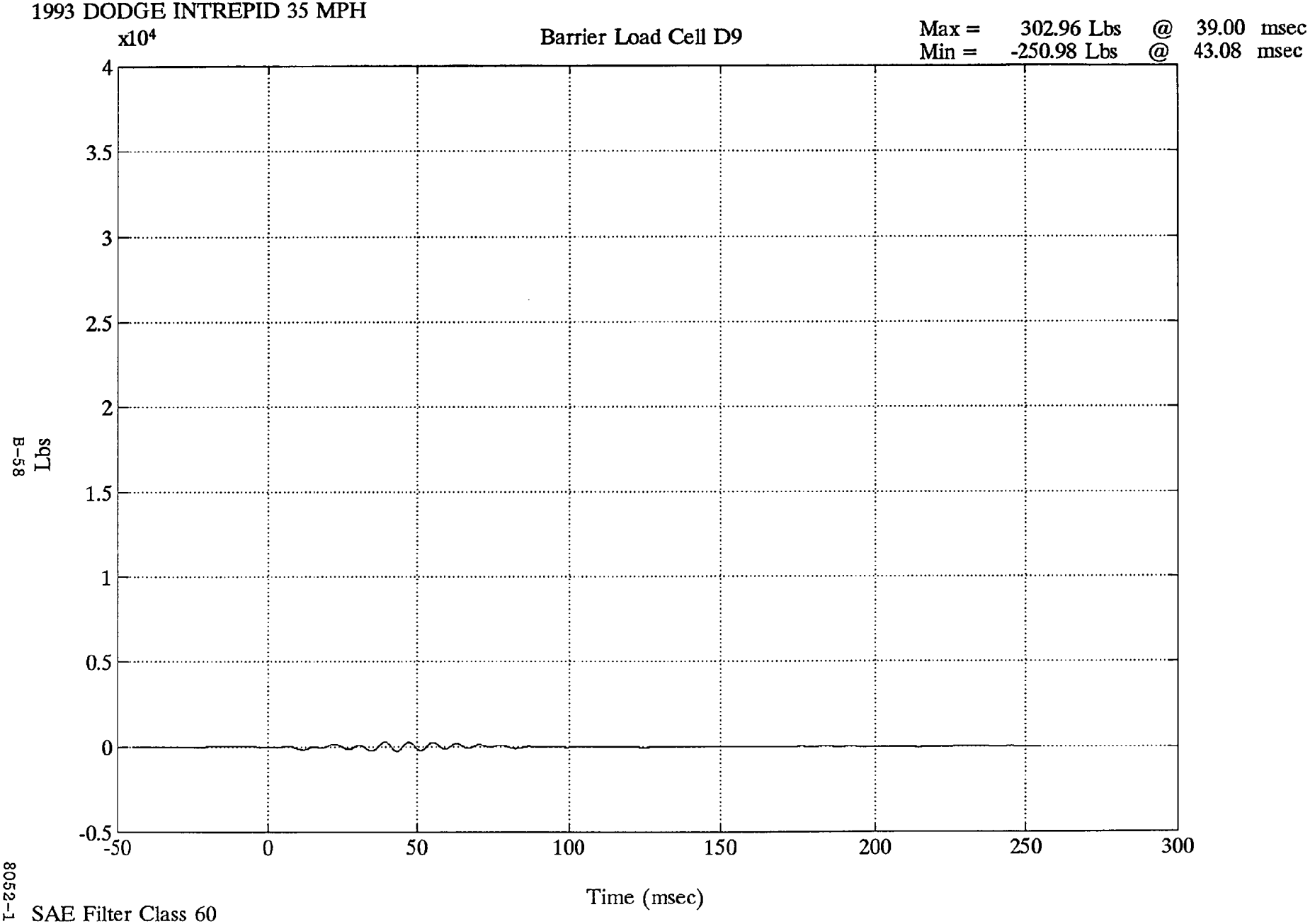


B-57

8052-1

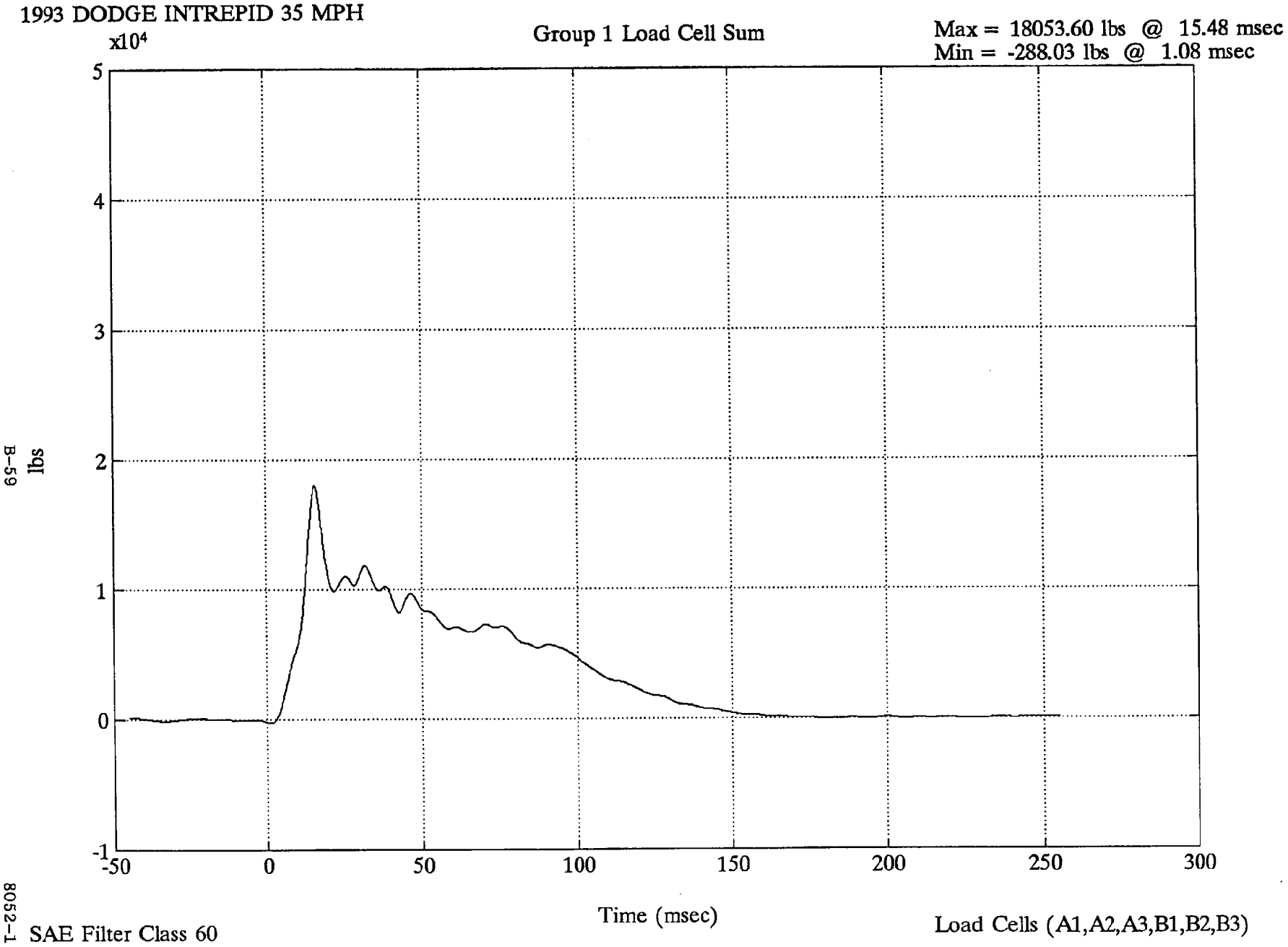
SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

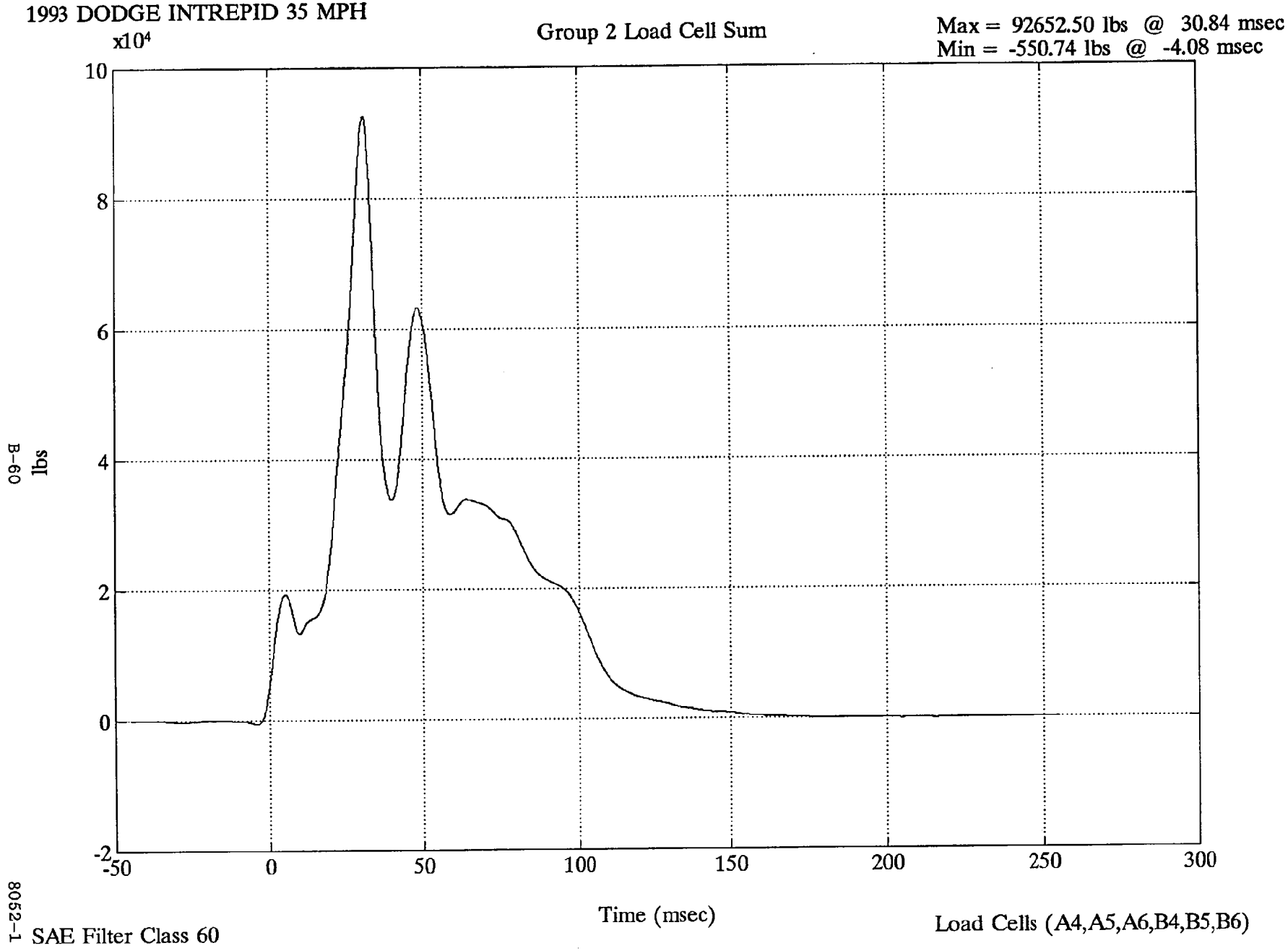


8052-1

SAE Filter Class 60


1993 DODGE INTREPID 35 MPH
x10^4
Group 1 Load Cell Sum
Max = 18053.60 lbs @ 15.48 msec
Min = -288.03 lbs @ 1.08 msec
5
4
3
2
1
0
-1
-50
0
50
100
150
200
250
300
lbs
Time (msec)
B-59
8052-1
SAE Filter Class 60
Load Cells (A1,A2,A3,B1,B2,B3)

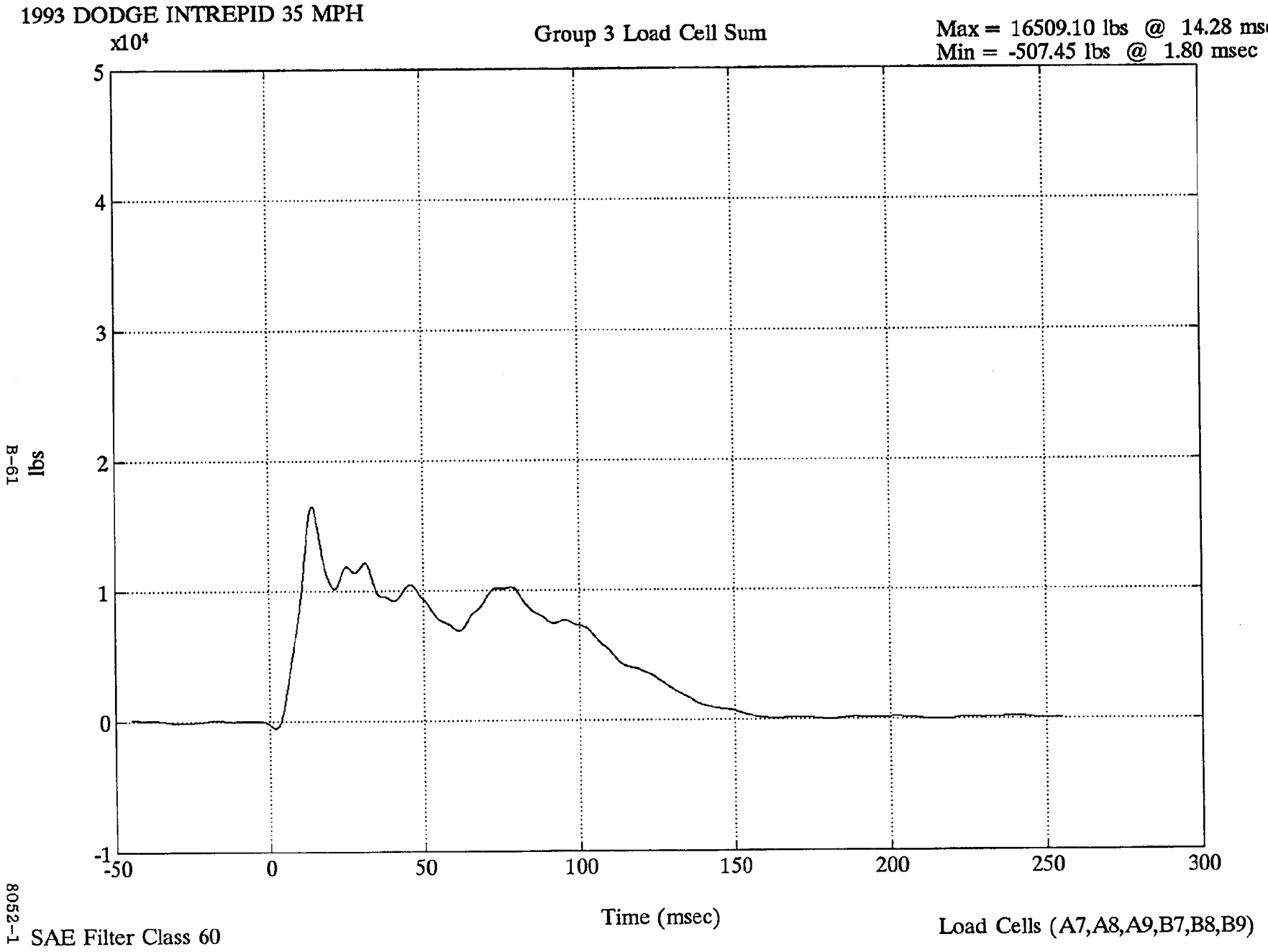
1993 DODGE INTREPID 35 MPH

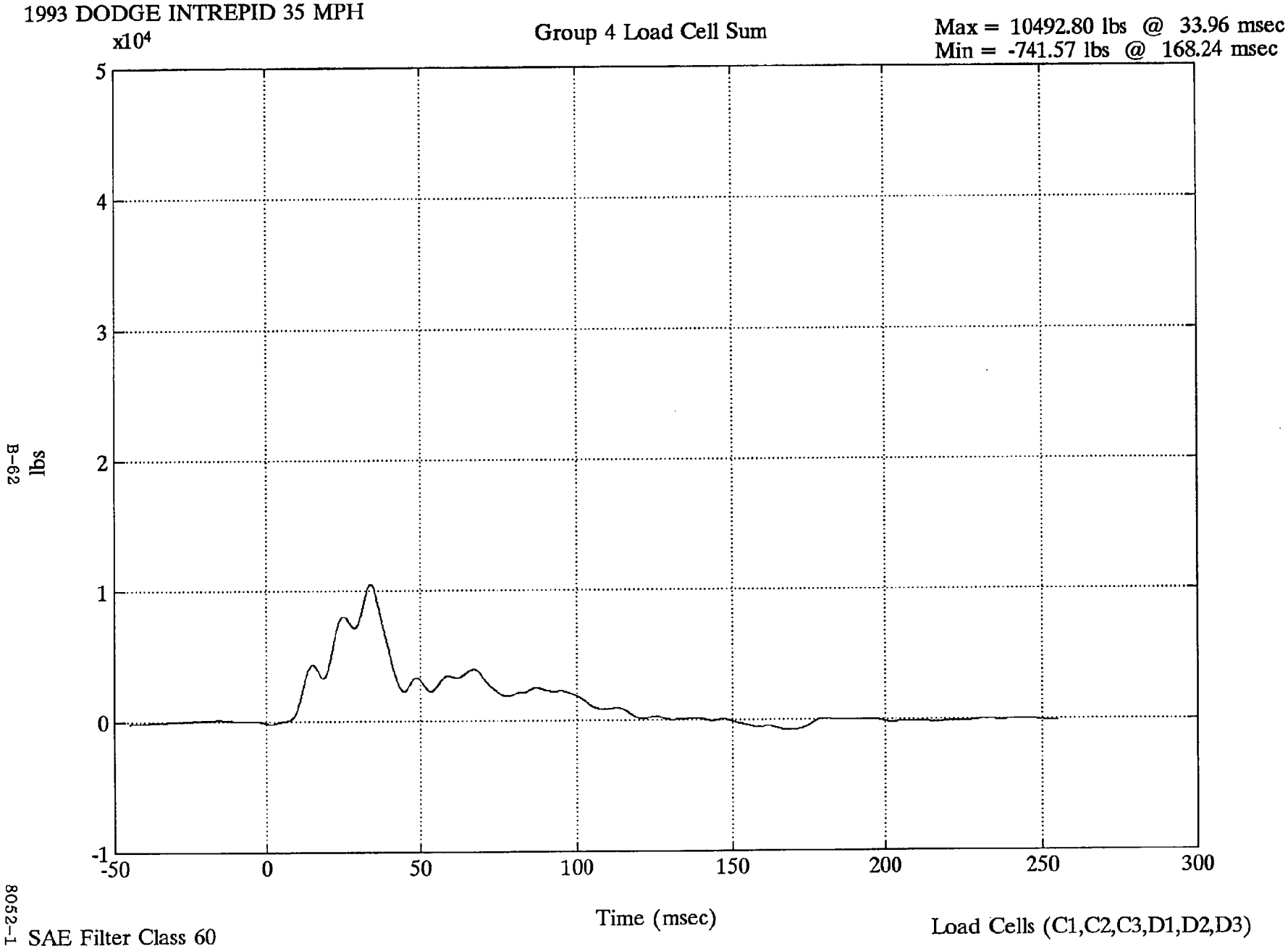


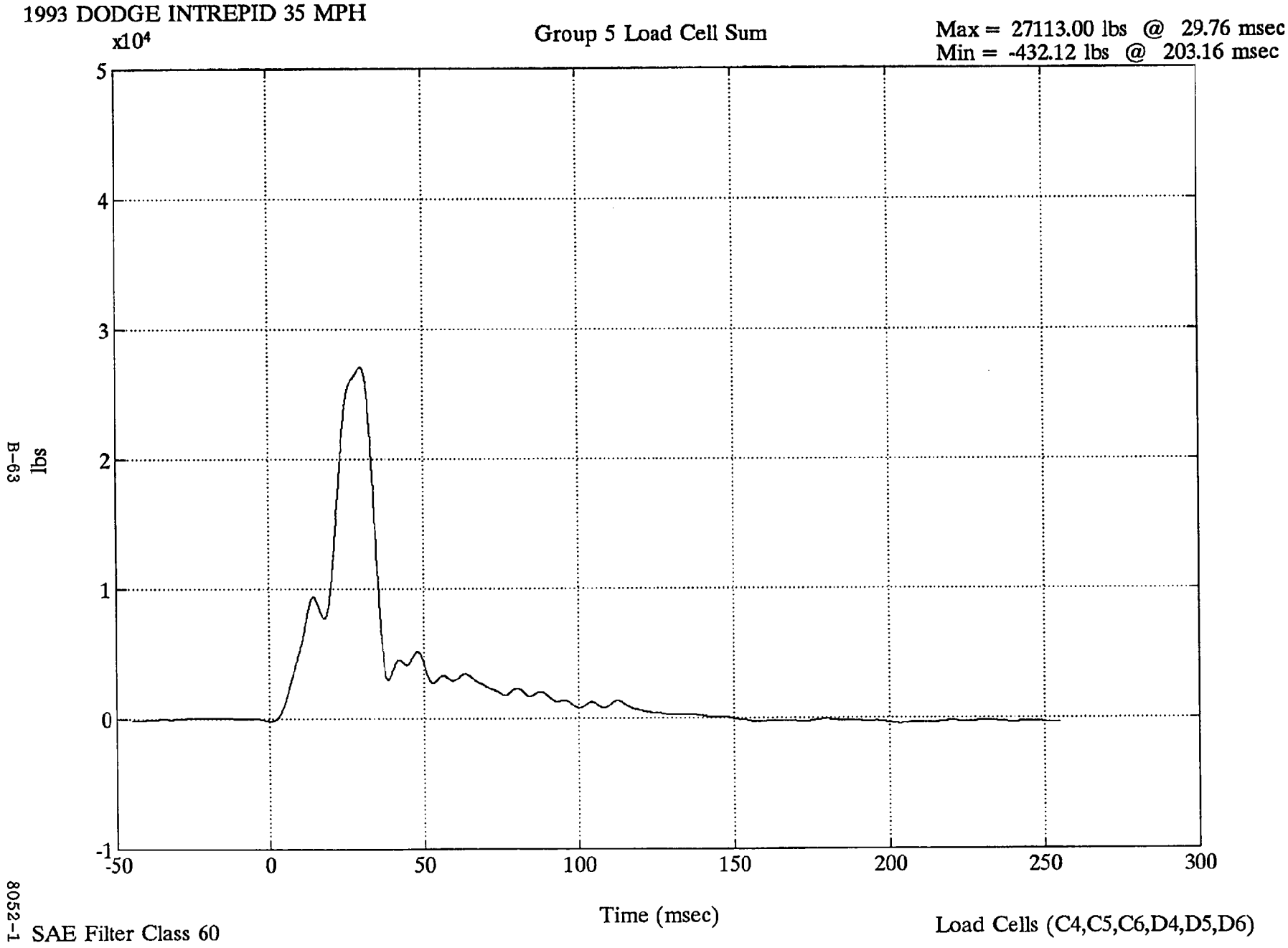
B-60

8052-1

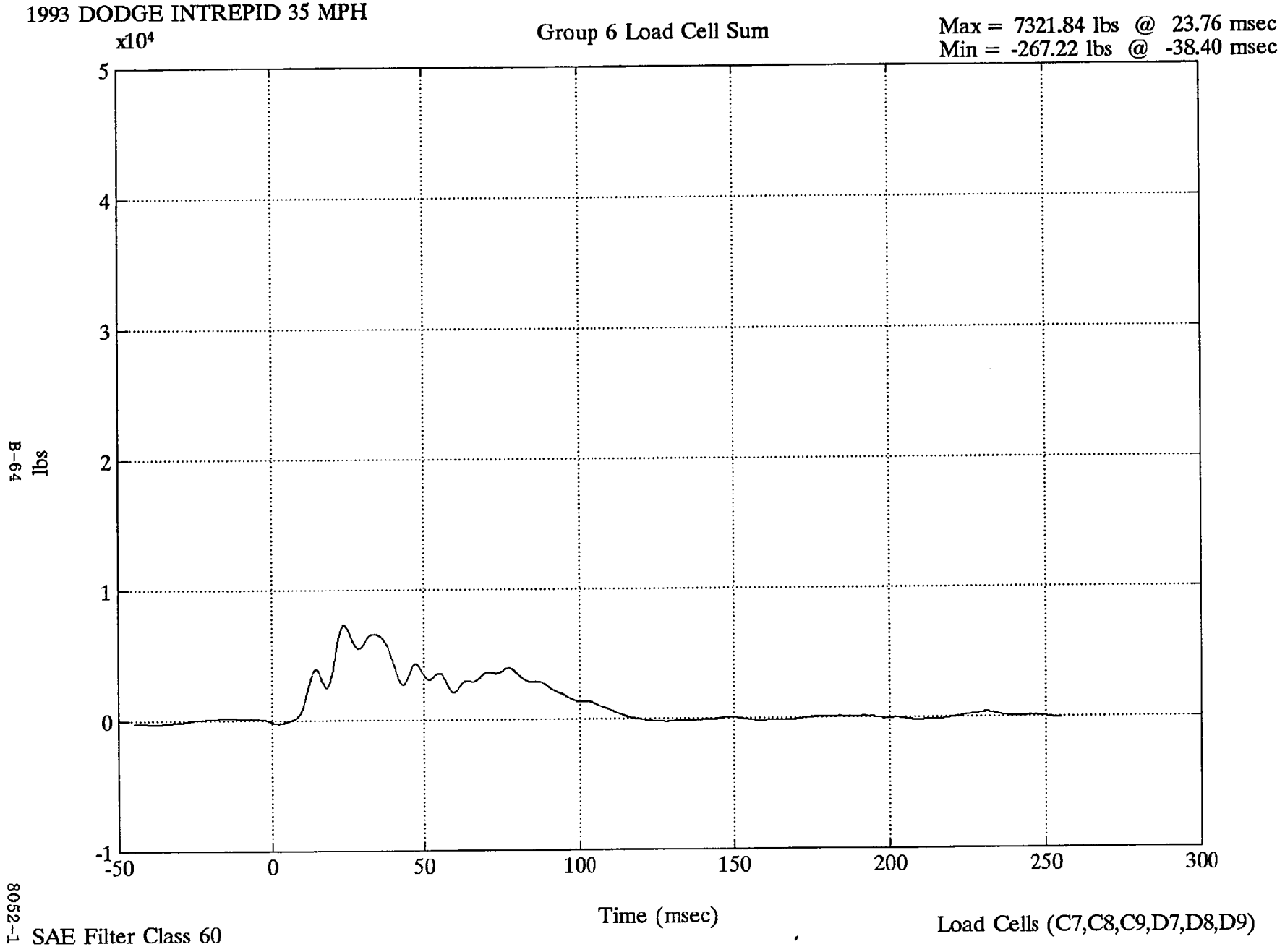
SAE Filter Class 60


1993 DODGE INTREPID 35 MPH
x10⁴
Group 3 Load Cell Sum
Max = 16509.10 lbs @ 14.28 msec
Min = -507.45 lbs @ 1.80 msec
5
4
3
2
1
0
-1
-50
0
50
100
150
200
250
300
lbs
Time (msec)
Load Cells (A7,A8,A9,B7,B8,B9)
SAE Filter Class 60
8052-1


1993 DODGE INTREPID 35 MPH
x10^4
Group 4 Load Cell Sum
Max = 10492.80 lbs @ 33.96 msec
Min = -741.57 lbs @ 168.24 msec
5
4
3
2
1
0
-1
-50
0
50
100
150
200
250
300
lbs
Time (msec)
Load Cells (C1,C2,C3,D1,D2,D3)
SAE Filter Class 60
B-62
8052-1


1993 DODGE INTREPID 35 MPH
x10^4
Group 5 Load Cell Sum
Max = 27113.00 lbs @ 29.76 msec
Min = -432.12 lbs @ 203.16 msec
5
4
3
2
1
0
-1
-50
0
50
100
150
200
250
300
lbs
Time (msec)
Load Cells (C4,C5,C6,D4,D5,D6)
SAE Filter Class 60
B-63
8052-1

1993 DODGE INTREPID 35 MPH



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8052-1

SAE Filter Class 60

TEST NO. 1219

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

FACILITY: TRACK
RUN #: 1219
SERIES #: 1

TEST DATE: 06 Oct 1992
TEST TIME: 11:42:13
BOARD: a

TITLE: 1993 DODGE INTREPID 35 MPH

CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM AMP	MAXIMUM msec	MINIMUM AMP	MINIMUM msec
1	Pos. 1 Head X	Gs	23.9	43.7	-52.0	70.0
2	Pos. 1 Head Y	Gs	16.7	43.7	-2.6	168.6
3	Pos. 1 Head Z	Gs	22.8	61.2	-12.0	79.9
4	Pos. 1 Left Femur	Lbs	164.8	47.8	-1420.1	57.0
5	Pos. 1 Chest X	Gs	42.5	59.2	-2.3	253.3
6	Pos. 1 Chest Y	Gs	7.5	64.3	-5.1	128.0
7	Pos. 1 Chest Z	Gs	10.0	78.0	-16.8	59.9
8	Pos. 1 Right Femur	Lbs	138.4	47.3	-1511.0	57.0
9	Pos. 2 Head X	Gs	20.8	231.0	-62.4	74.5
10	Pos. 2 Head Y	Gs	43.6	80.9	-5.2	254.8
11	Pos. 2 Head Z	Gs	18.5	61.0	-9.9	96.7
12	Pos. 2 Left Femur	Lbs	1058.1	198.0	-830.5	59.2
13	Pos. 2 Chest X	Gs	43.7	69.1	-5.8	190.6
14	Pos. 2 Chest Y	Gs	9.6	96.2	-5.9	46.3
15	Pos. 2 Chest Z	Gs	15.2	80.6	-8.2	53.5
16	Pos. 2 Right Femur	Lbs	121.0	39.7	-1416.2	52.1
17	Pos. 1 Head Resultant	Gs	52.5	70.0	.1	-5.4
18	Pos. 1 Chest Resultant	Gs	45.6	59.4	.0	-25.8
19	Pos. 2 Head Resultant	Gs	71.3	76.7	.0	-21.6
20	Pos. 2 Chest Resultant	Gs	44.1	69.1	.0	-24.5

36 ms Fixed Duration HIC SUMMARY: Pos. 1 Head Resultant

hic: 320.28
t1 = 54.000 msec
t2 = 87.000 msec
Average G's Over Hic Duration = 39.34

36 ms Fixed Duration HIC SUMMARY: Pos. 2 Head Resultant

hic: 657.40
t1 = 58.800 msec
t2 = 92.280 msec
Average G's Over Hic Duration = 52.15

CLIP SUMMARY: Pos. 1 Chest Resultant

Peak Resultant (3 ms CLIPPED DURATION) = 43.022 G's
Tstart = 58.0800 ms
Tend = 61.2000 ms
CSI = 337.199

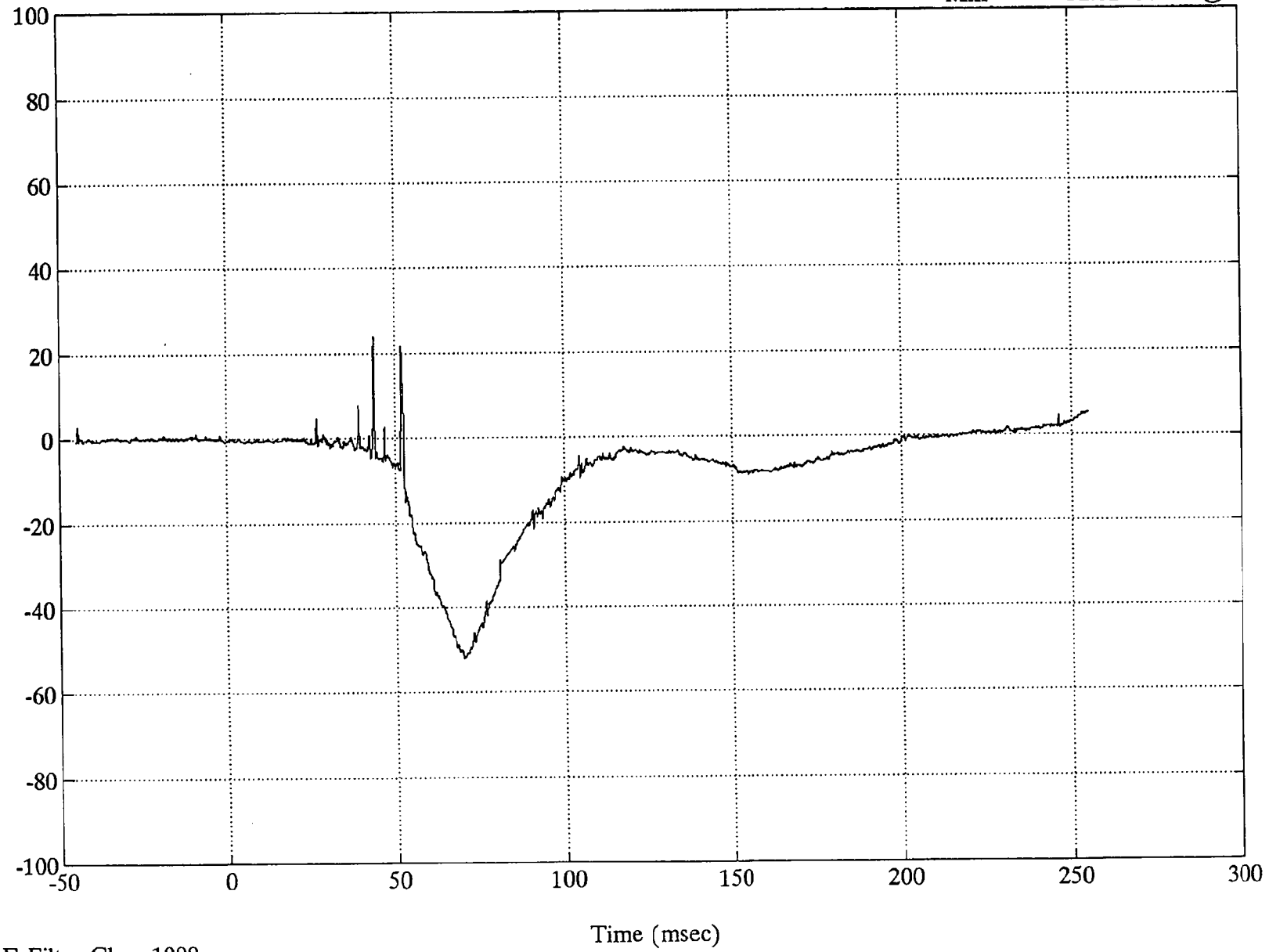
CLIP SUMMARY: Pos. 2 Chest Resultant

Peak Resultant (3 ms CLIPPED DURATION) = 42.420 G's
Tstart = 66.7200 ms
Tend = 69.7200 ms
CSI = 386.627

1993 DODGE INTREPID 35 MPH

Pos. 1 Head X

Max = 23.92 Gs @ 43.68 msec
Min = -52.01 Gs @ 69.95 msec



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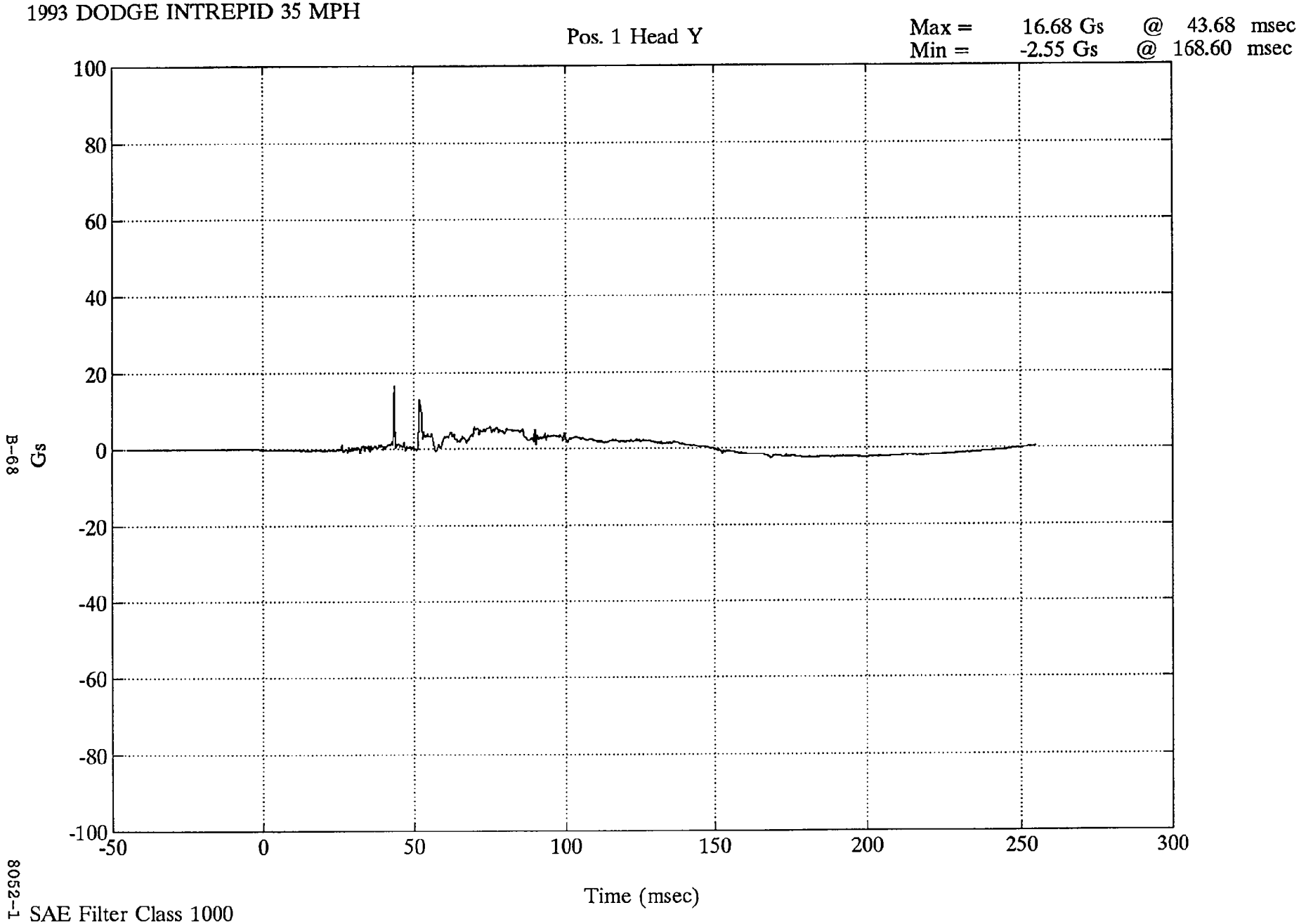
8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH



B-68

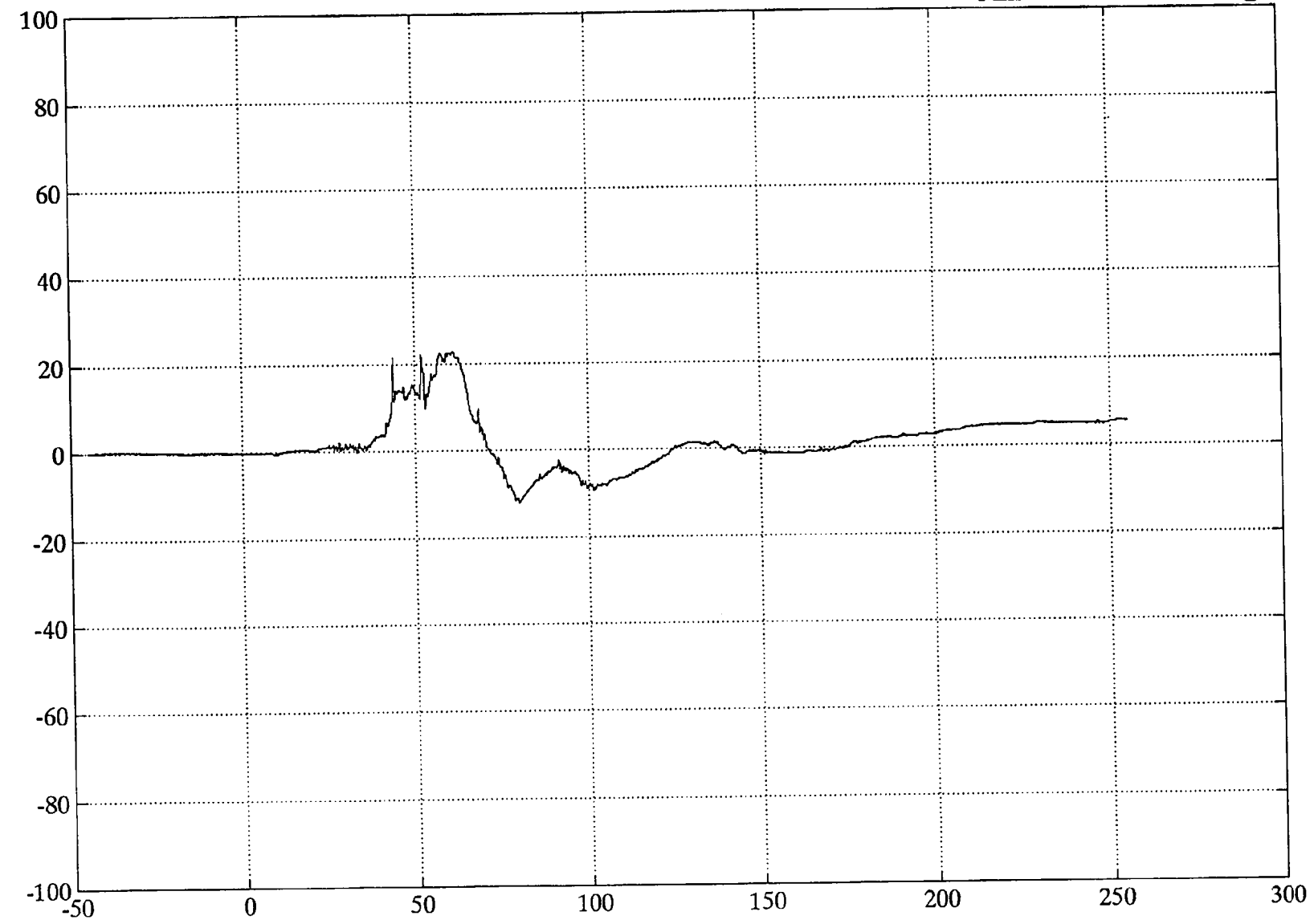
8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

Pos. 1 Head Z

Max = 22.80 Gs @ 61.20 msec
Min = -11.95 Gs @ 79.91 msec



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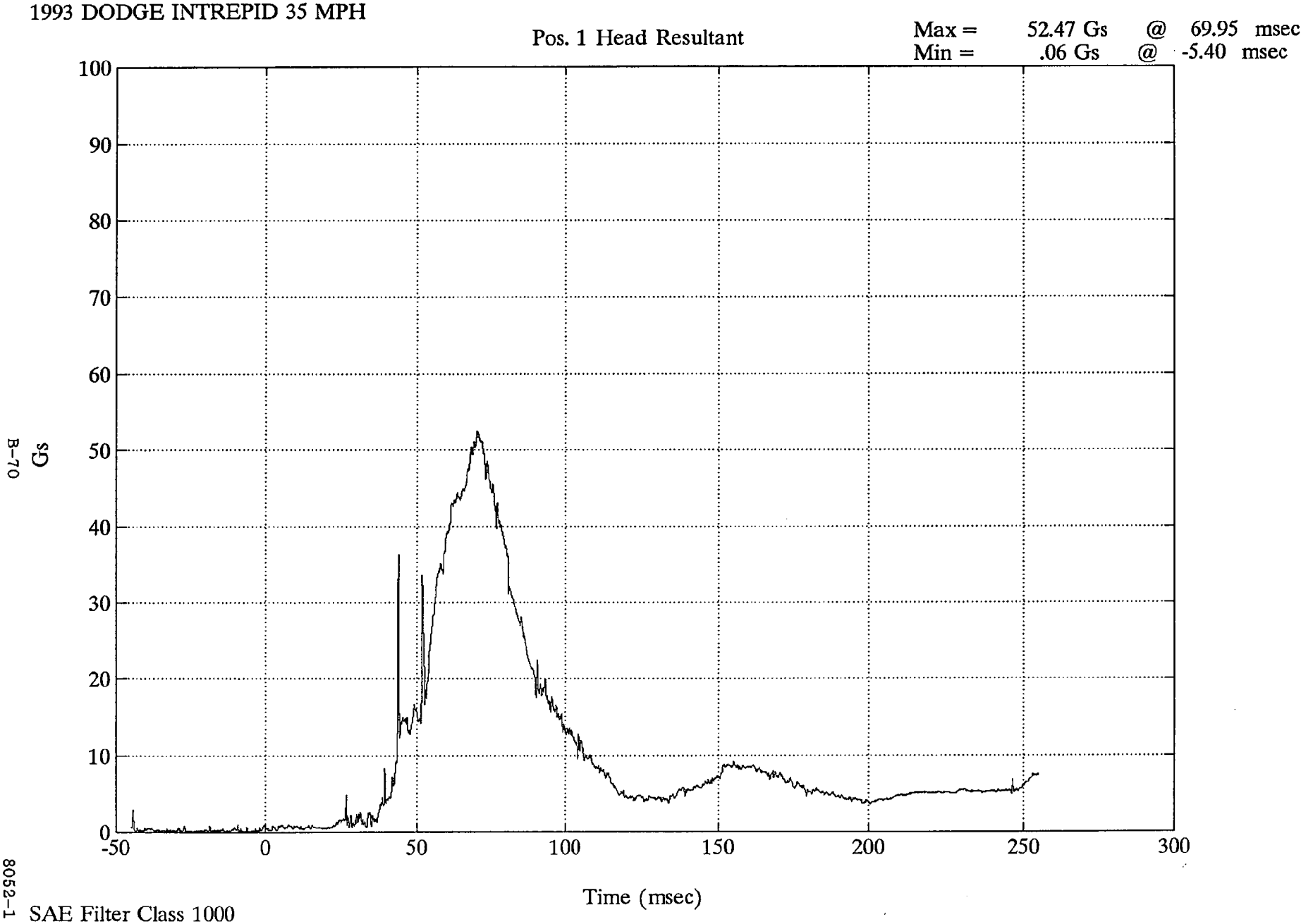
8052-1

SAE Filter Class 1000

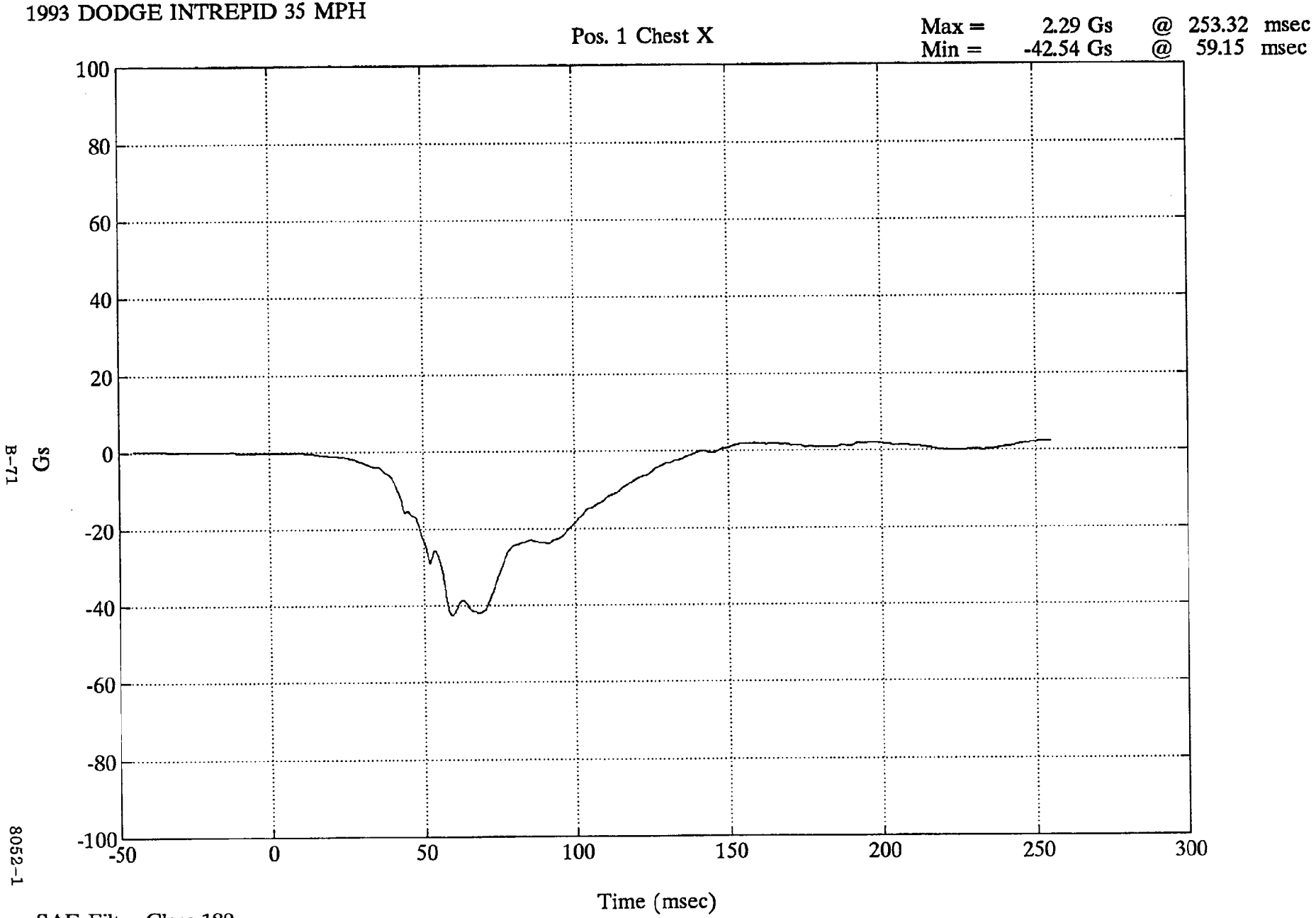
1993 DODGE INTREPID 35 MPH



8052-1

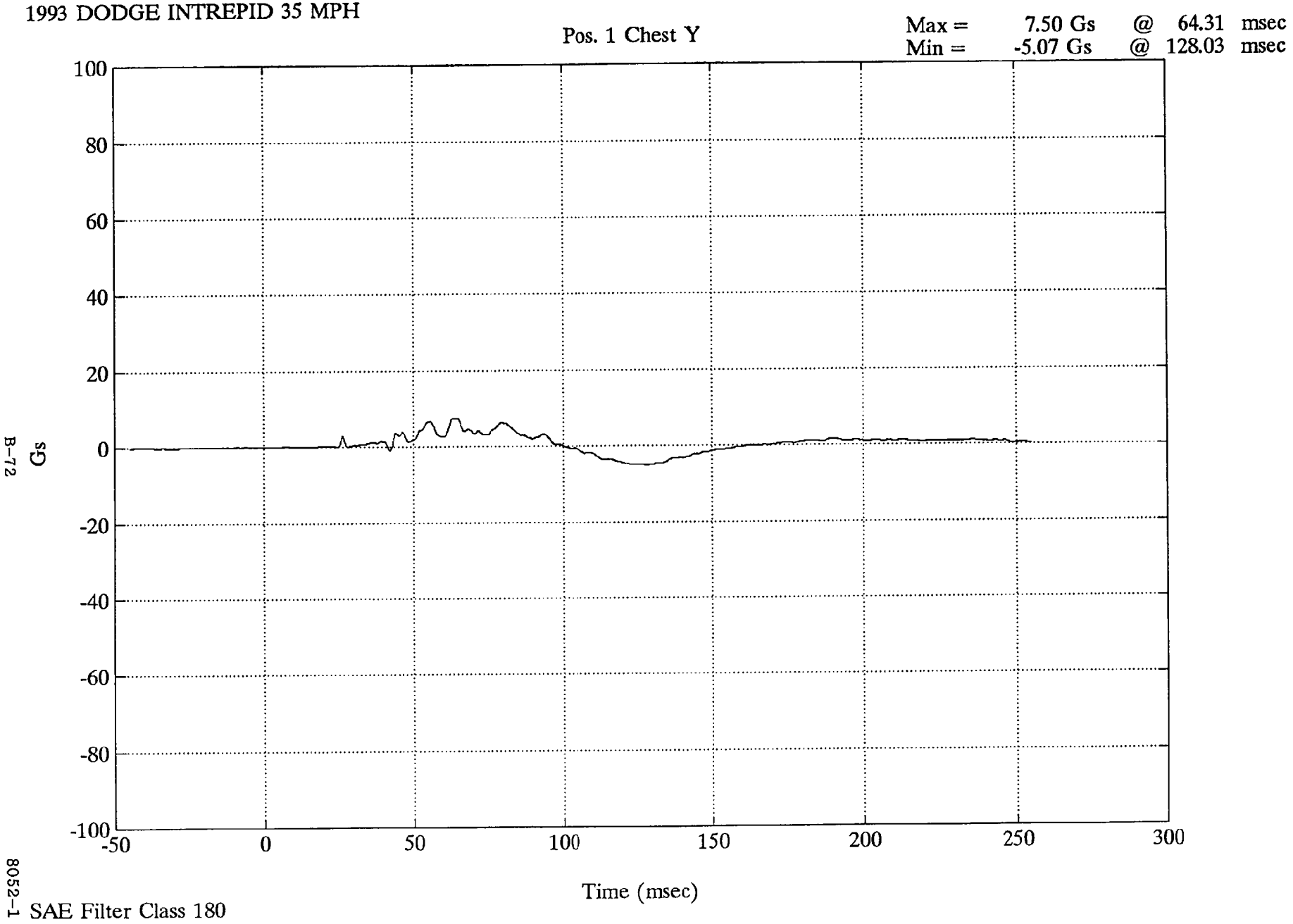
SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH



SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

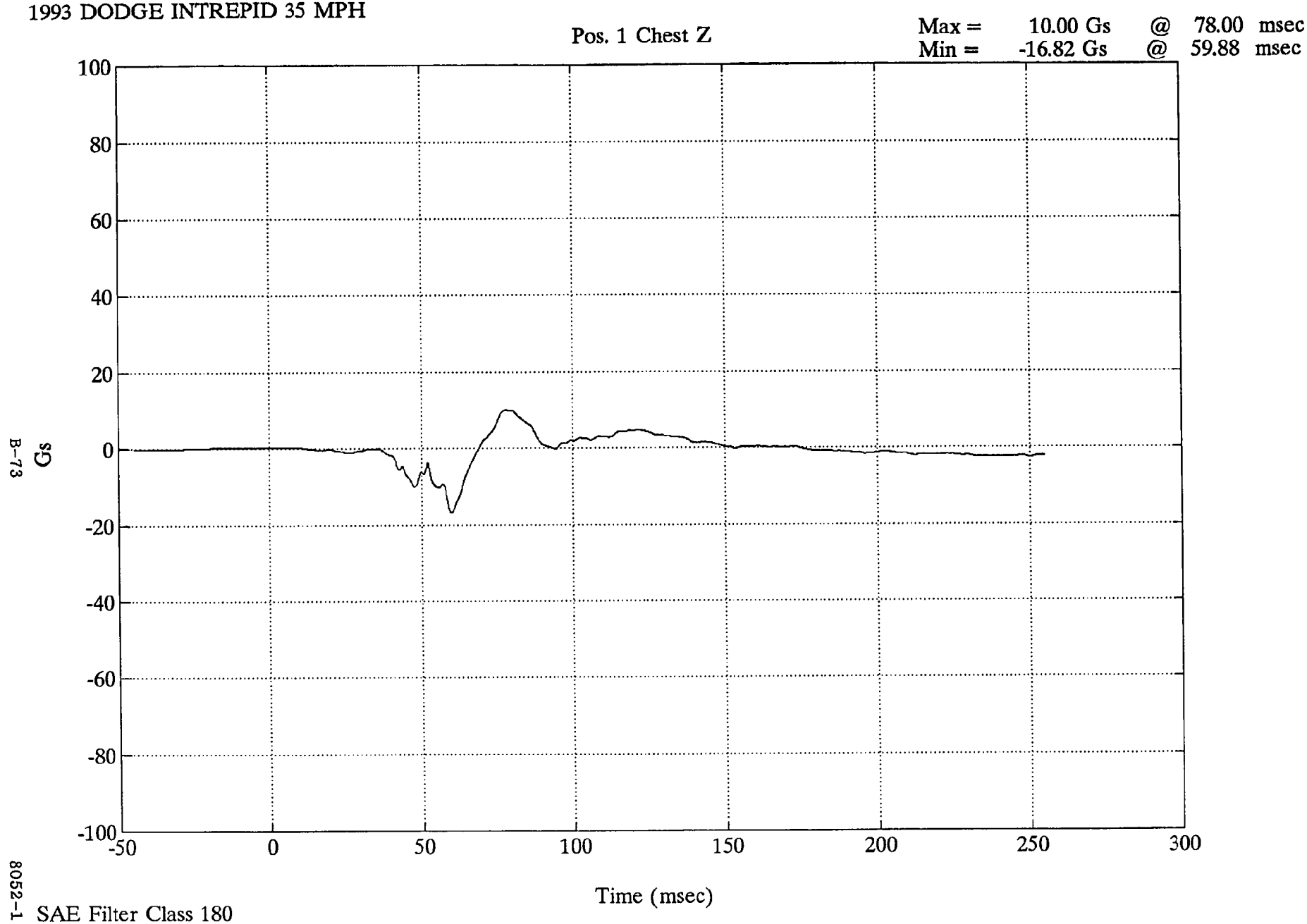


B-72

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

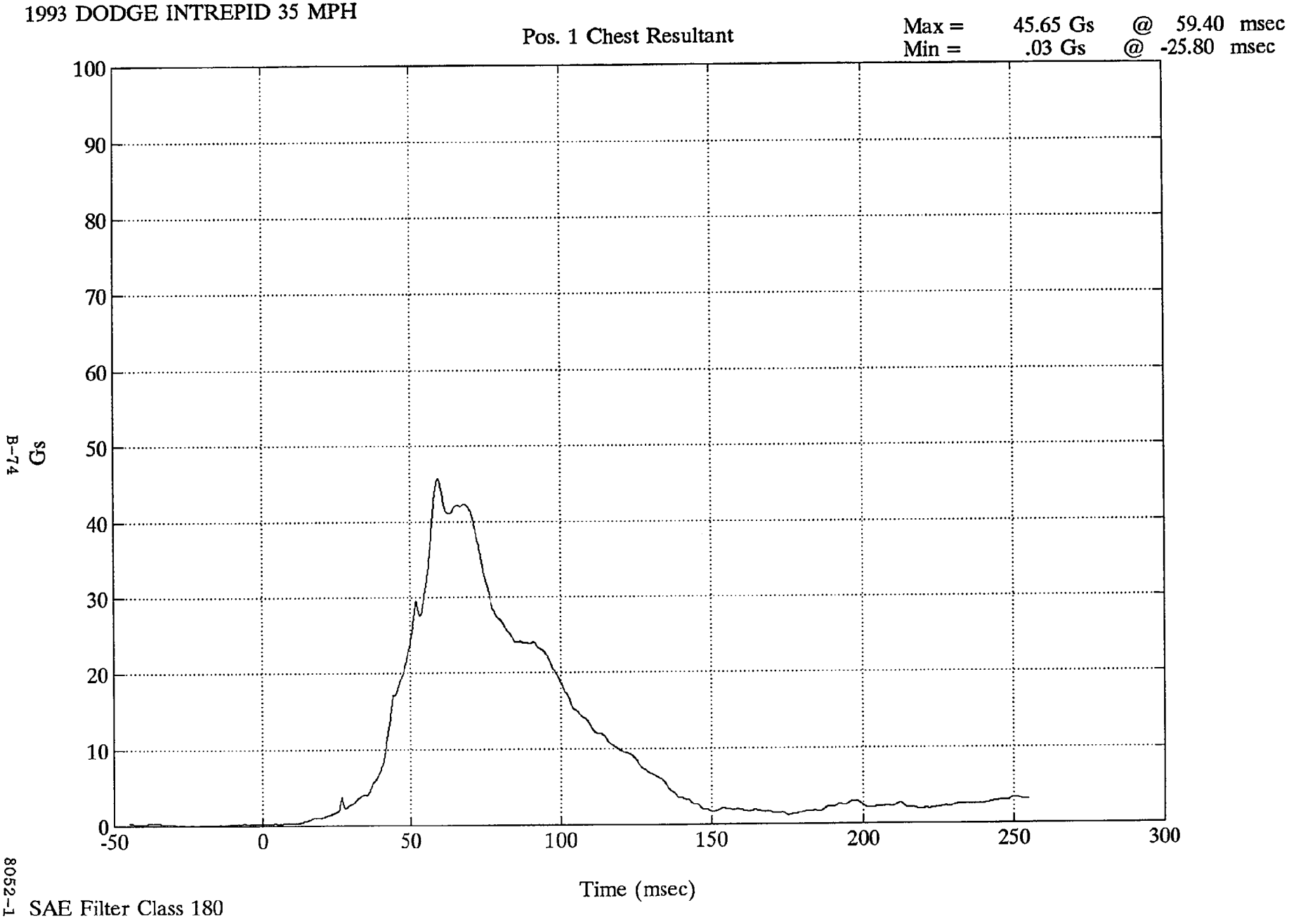


B-73

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

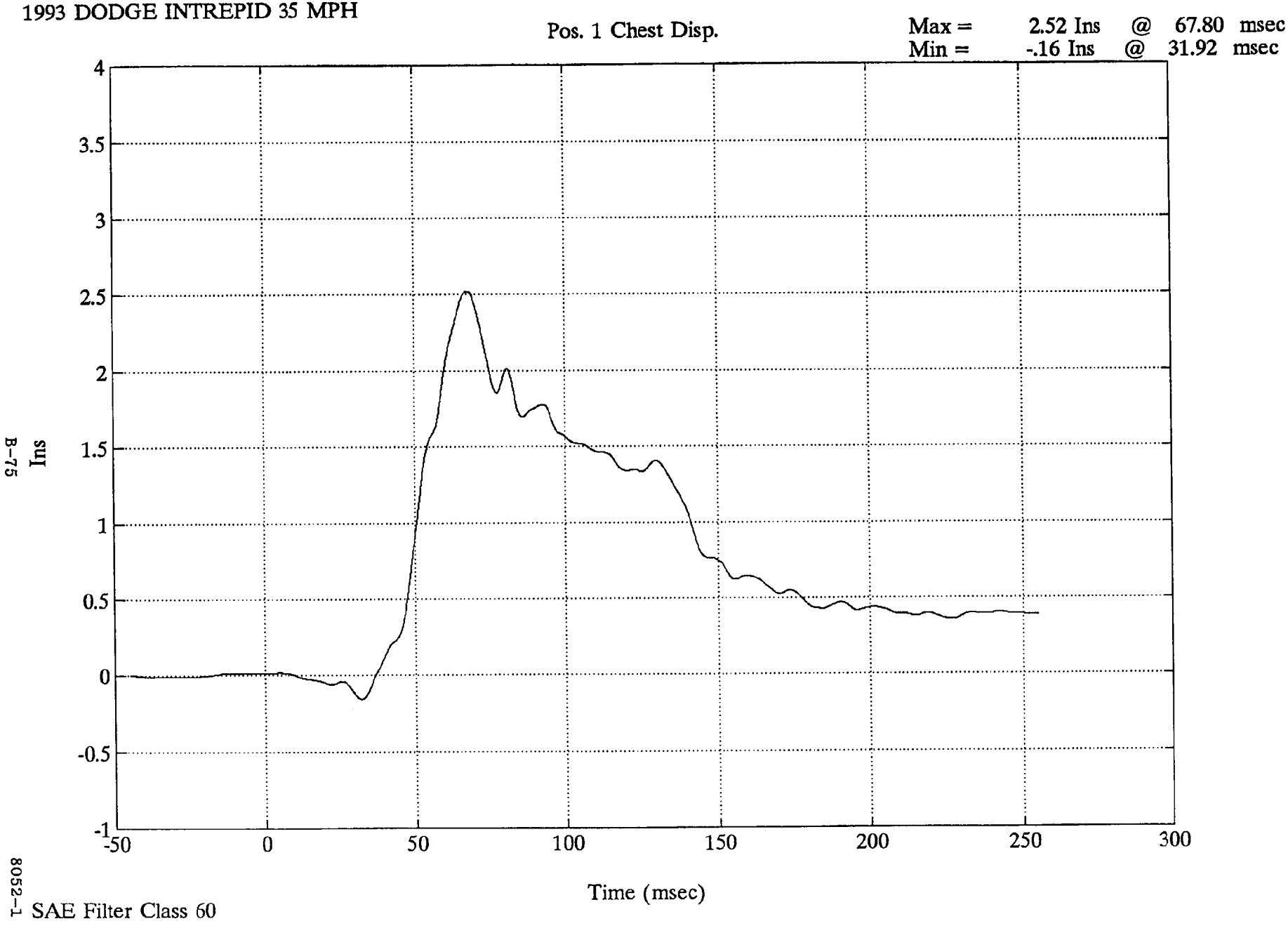


B-74

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH



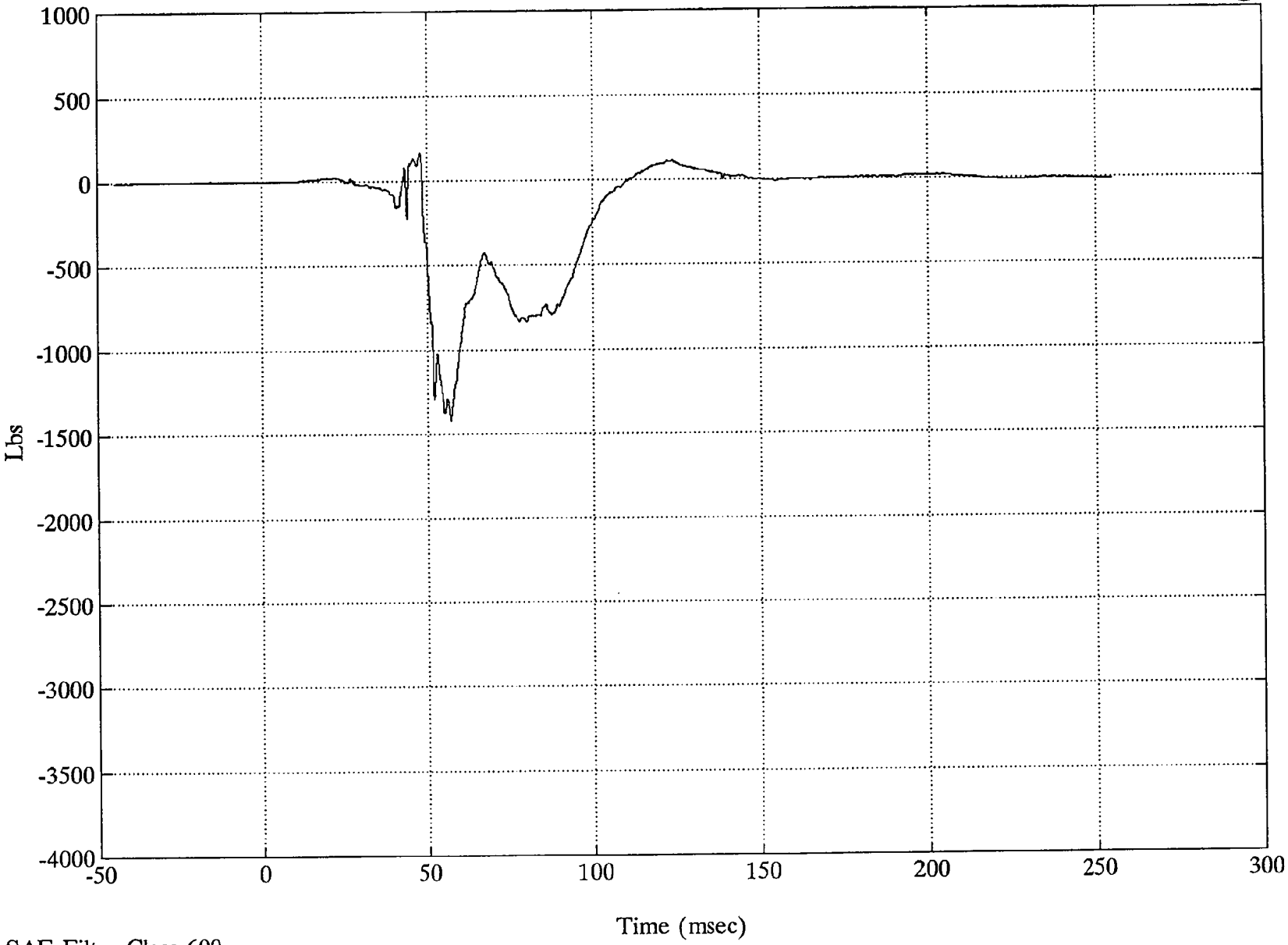
B-75

80521-1 SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

Pos. 1 Left Femur

Max = 164.81 Lbs @ 47.76 msec
Min = -1420.06 Lbs @ 57.00 msec



B-76

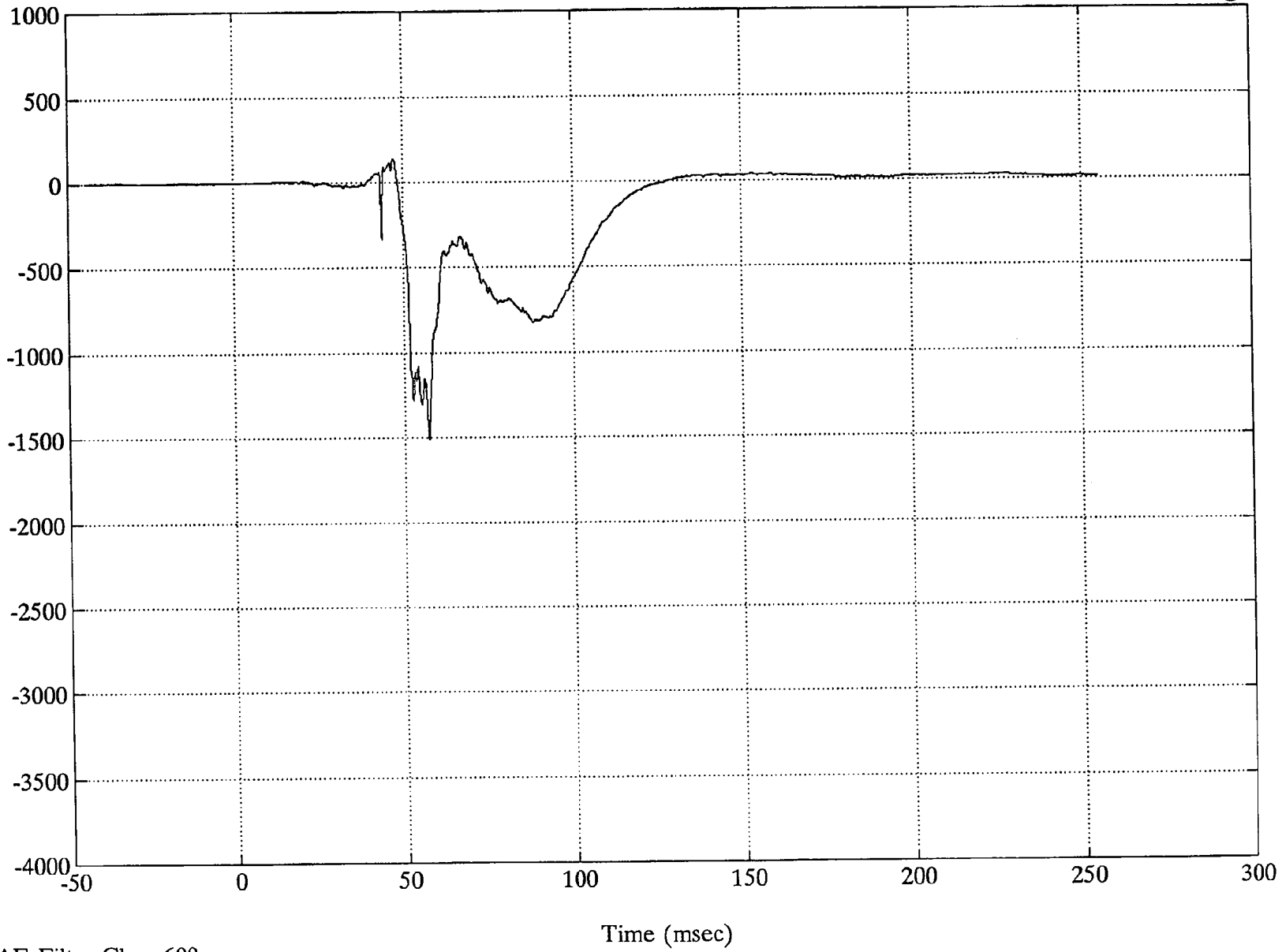
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 1 Right Femur

Max = 138.36 Lbs @ 47.27 msec
Min = -1510.99 Lbs @ 57.00 msec

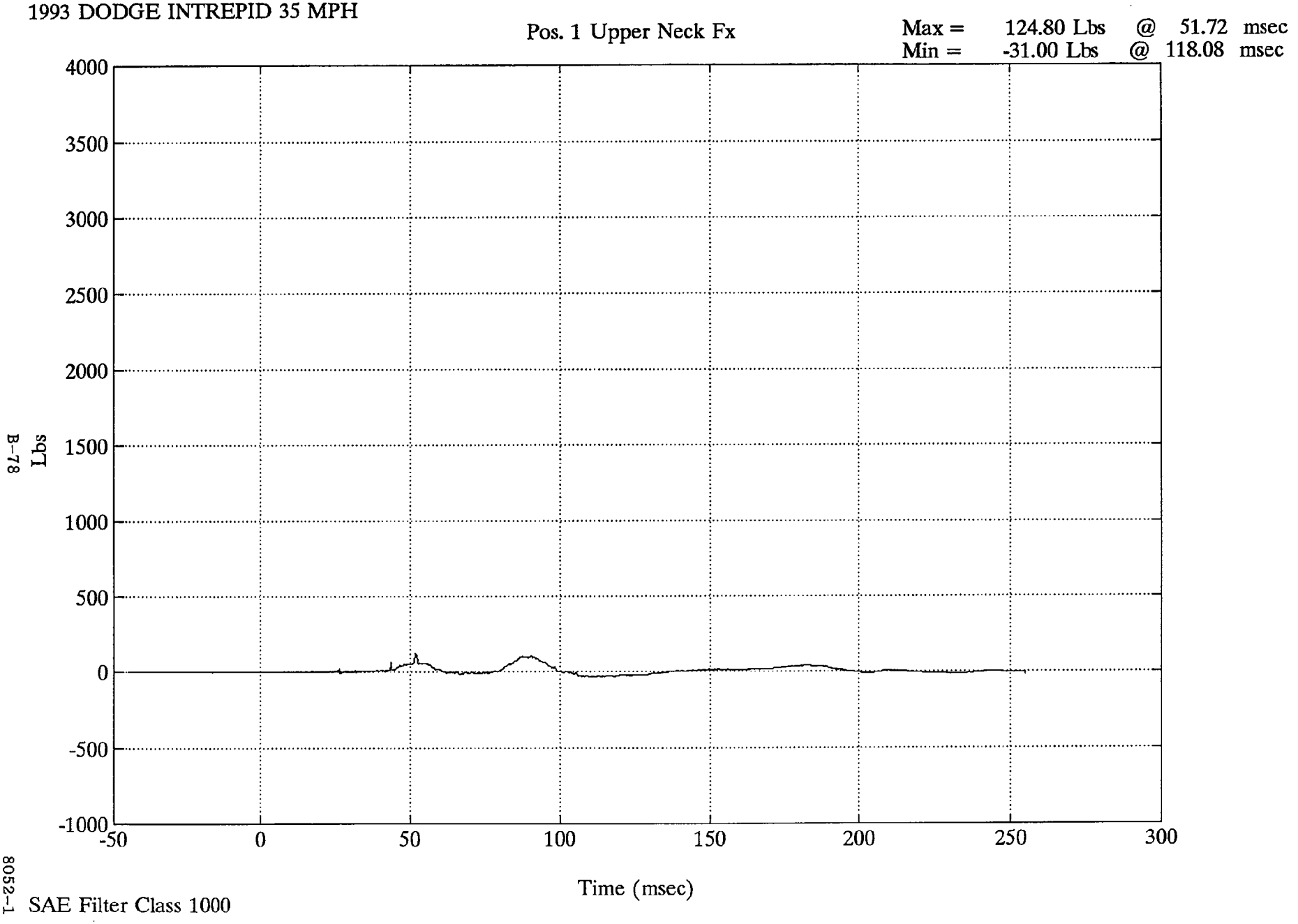


B-77

8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH



B-78

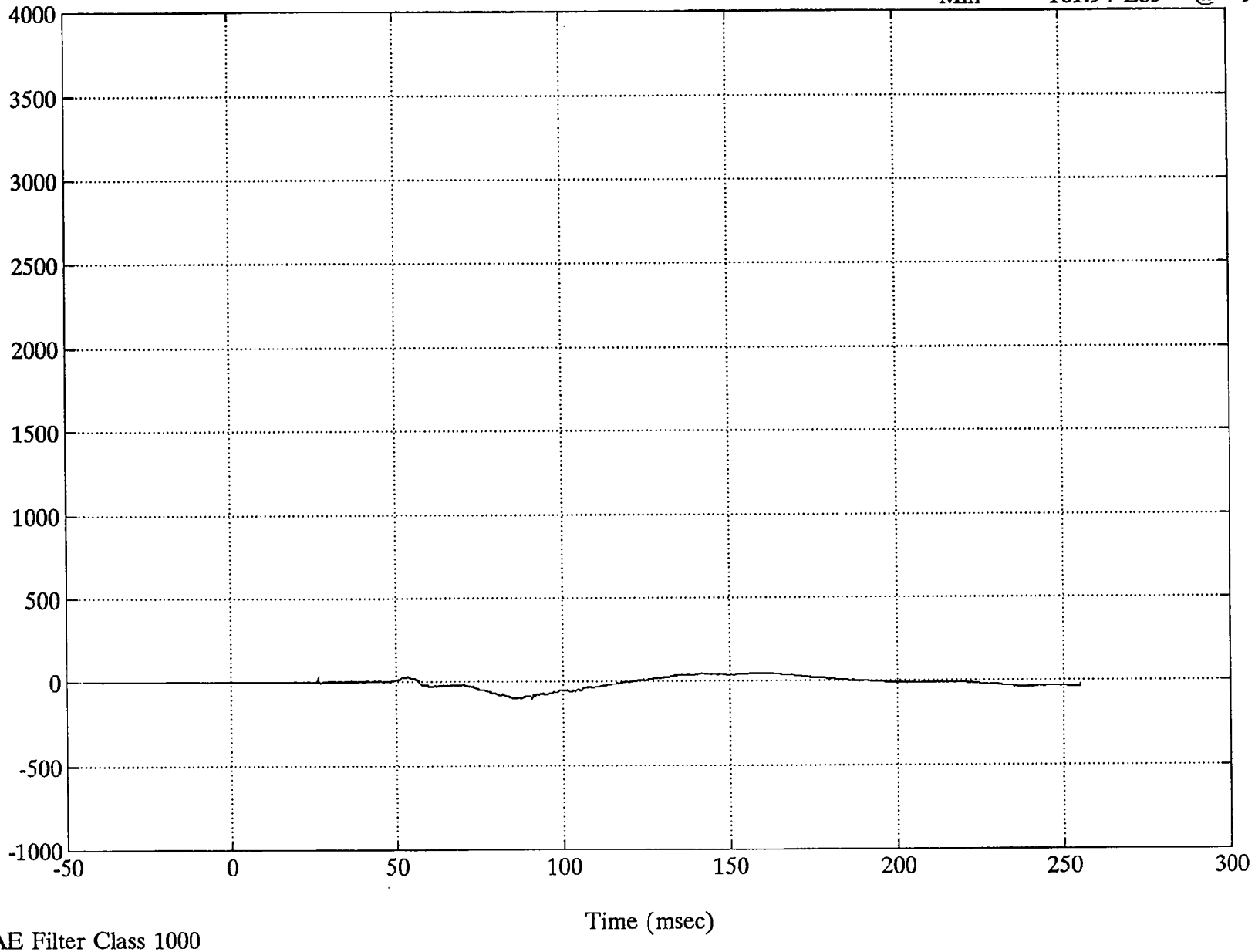
8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

Pos. 1 Upper Neck Fy

Max = 48.96 Lbs @ 159.36 msec
Min = -101.94 Lbs @ 90.59 msec



B-79

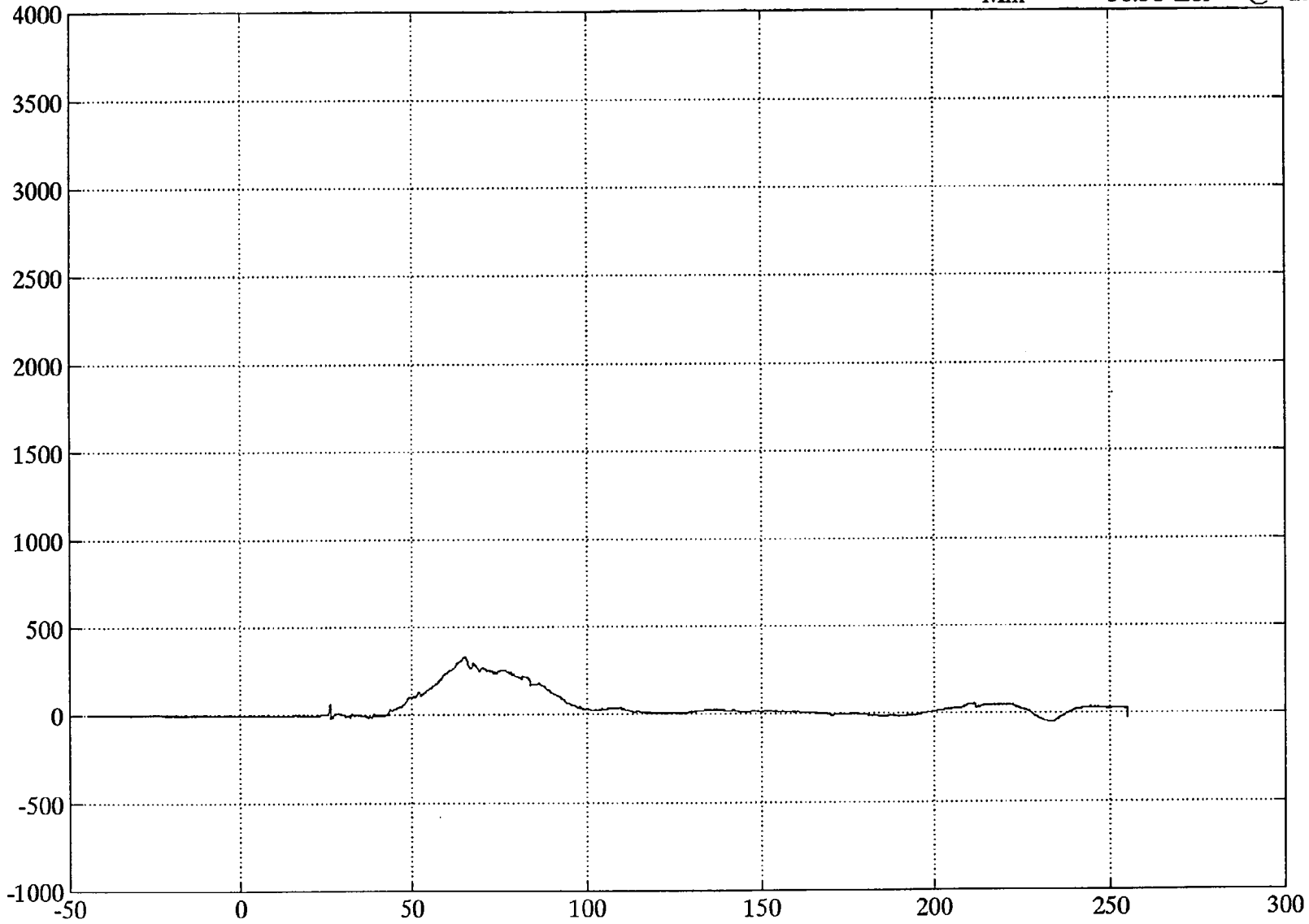
8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

Pos. 1 Upper Neck Fz

Max = 333.39 Lbs @ 65.27 msec
Min = -50.38 Lbs @ 233.88 msec

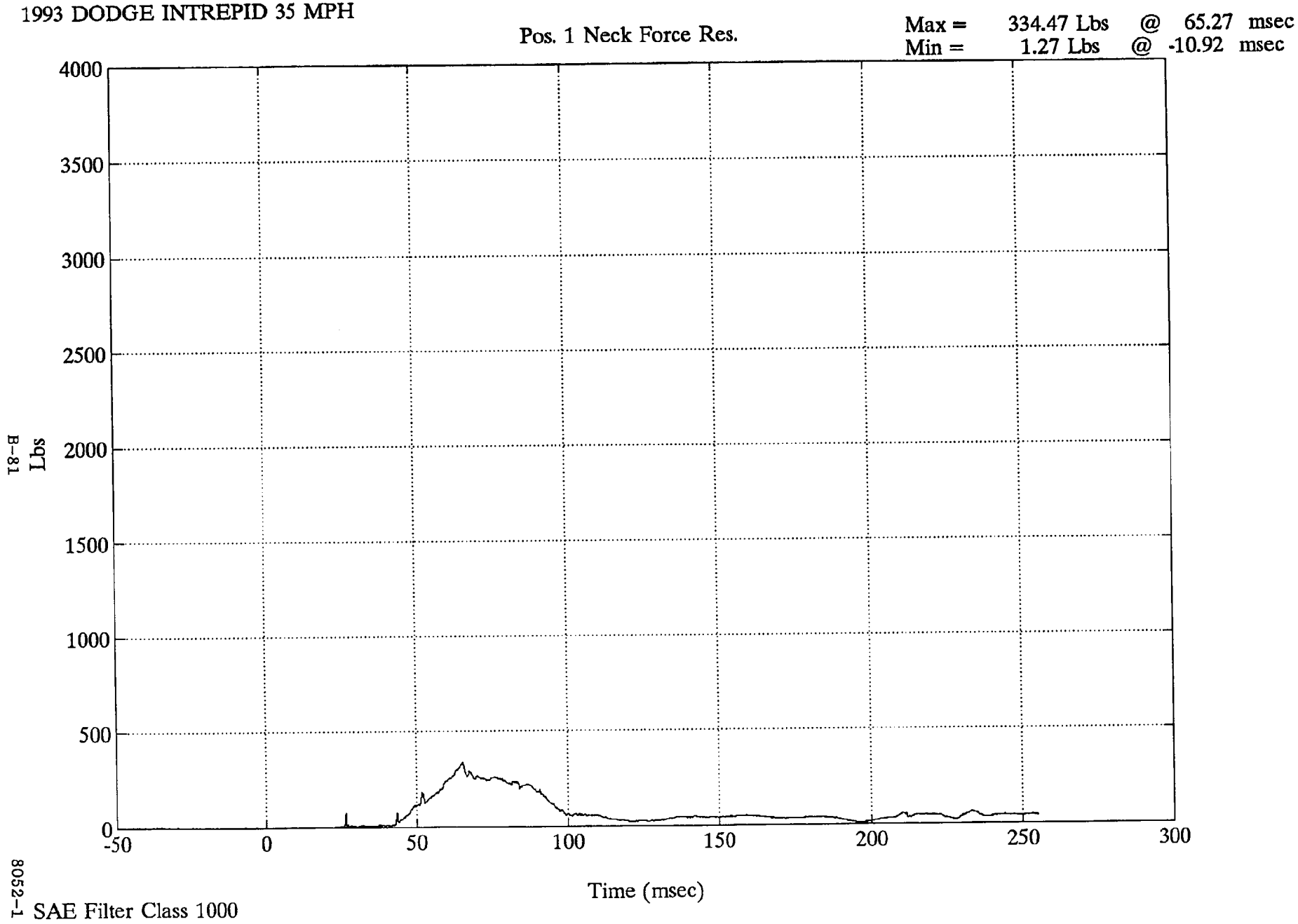


B-80

8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

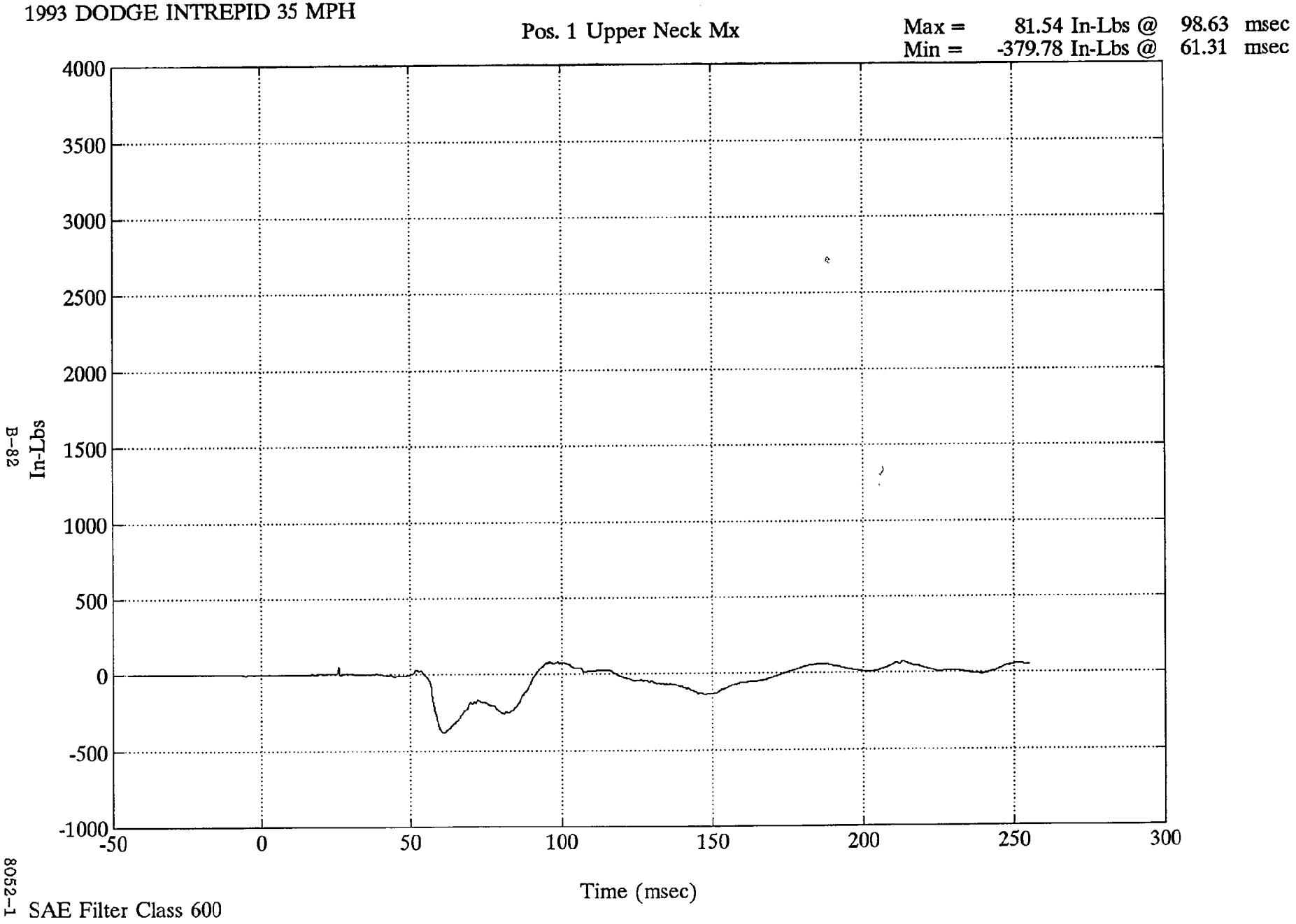


B-81

8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH



B-82

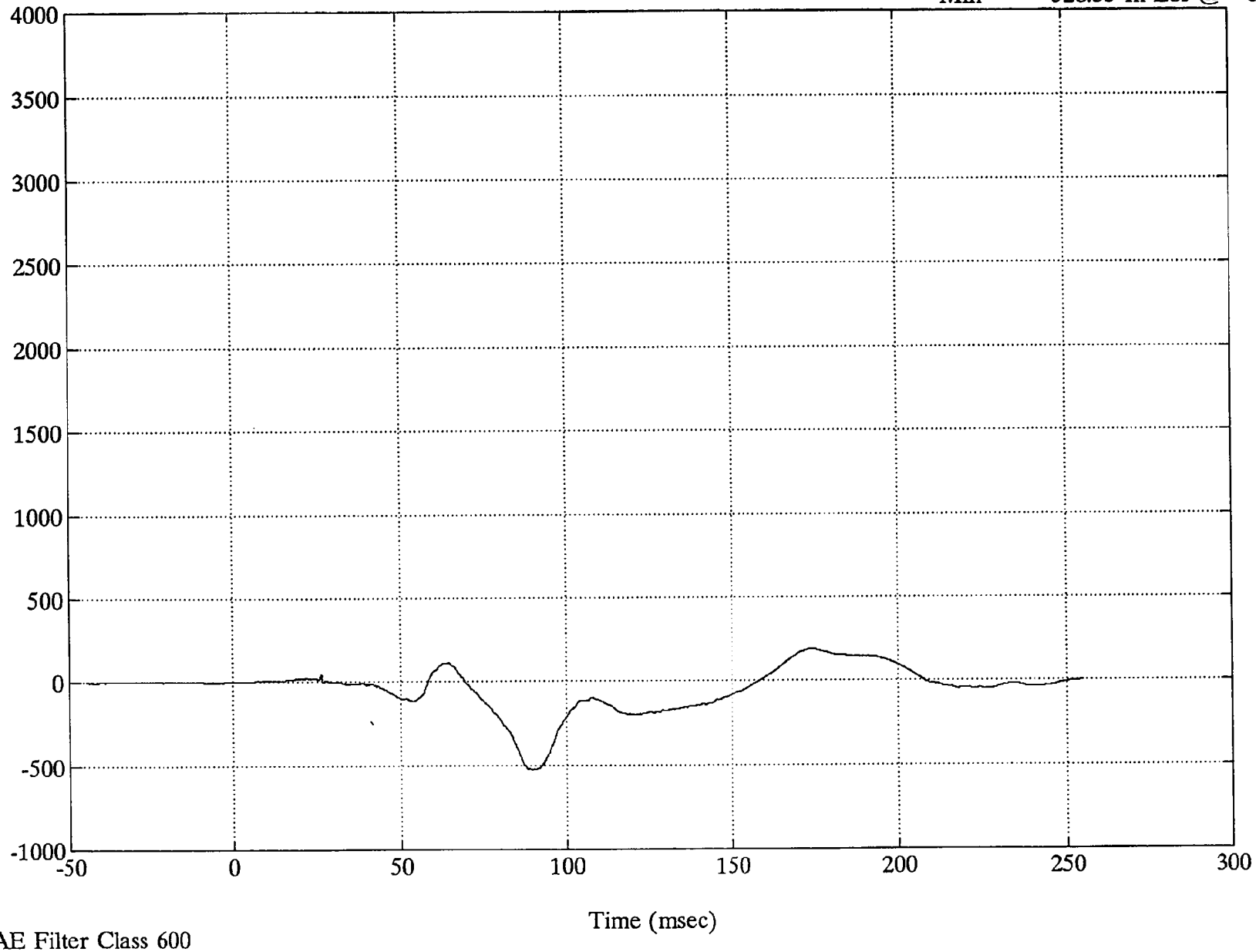
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 1 Upper Neck My

Max = 185.75 In-Lbs @ 173.39 msec
Min = -528.35 In-Lbs @ 89.40 msec



B-83

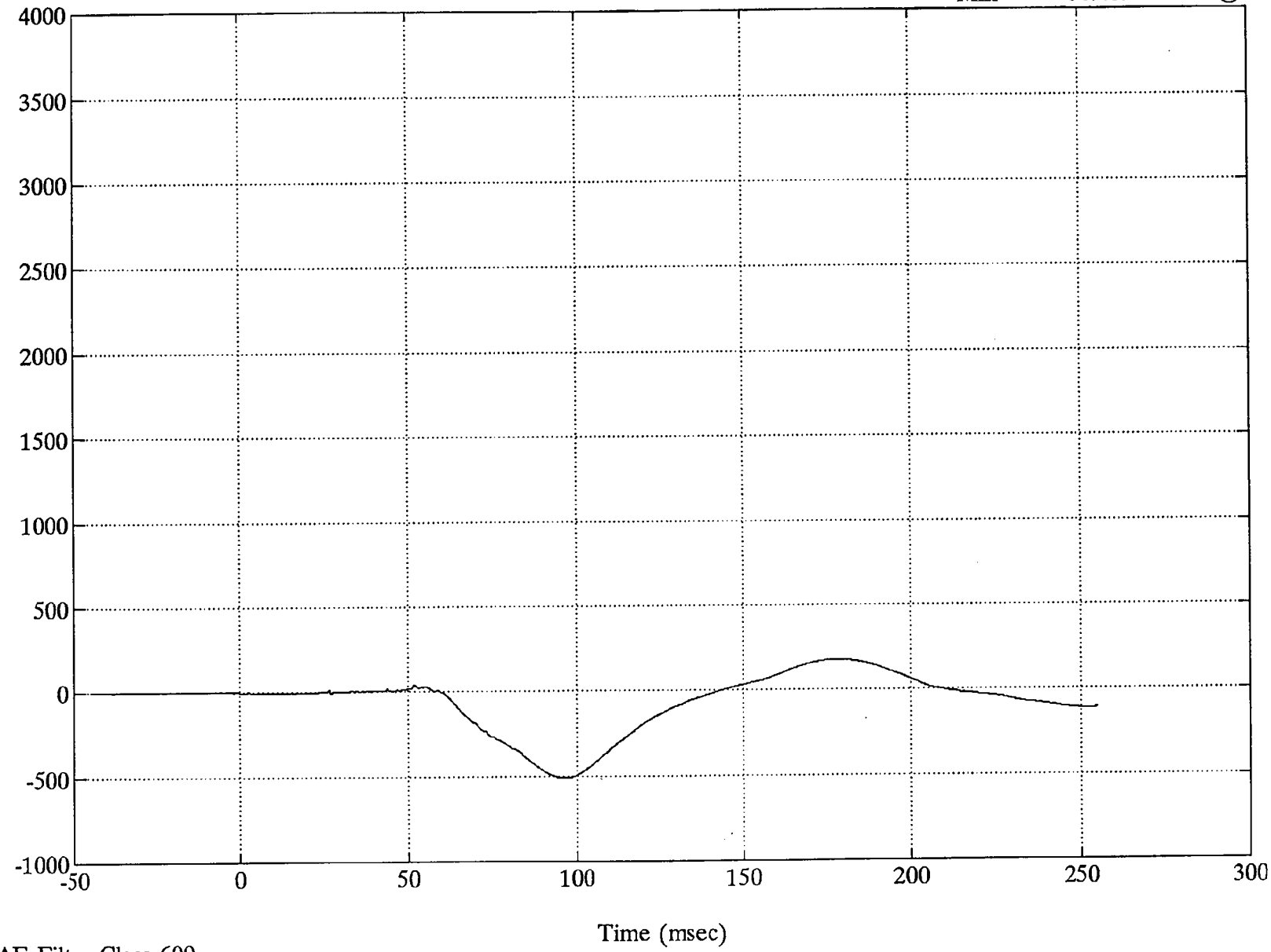
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 1 Upper Neck Mz

Max = 177.36 In-Lbs @ 179.03 msec
Min = -509.82 In-Lbs @ 96.48 msec



B-84

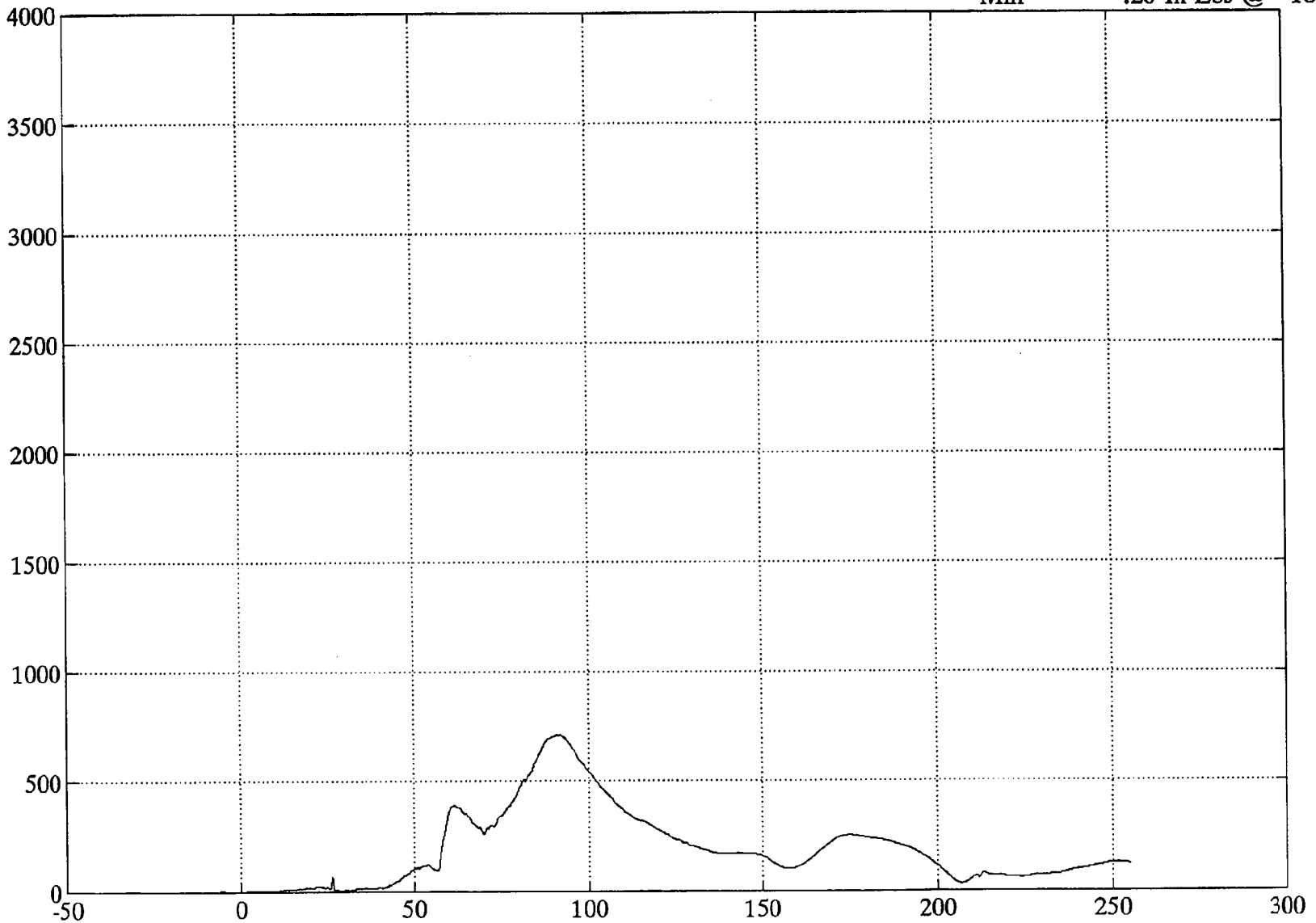
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 1 Neck Moment Res.

Max = 713.23 In-Lbs @ 91.68 msec
Min = .20 In-Lbs @ -18.84 msec



B-85

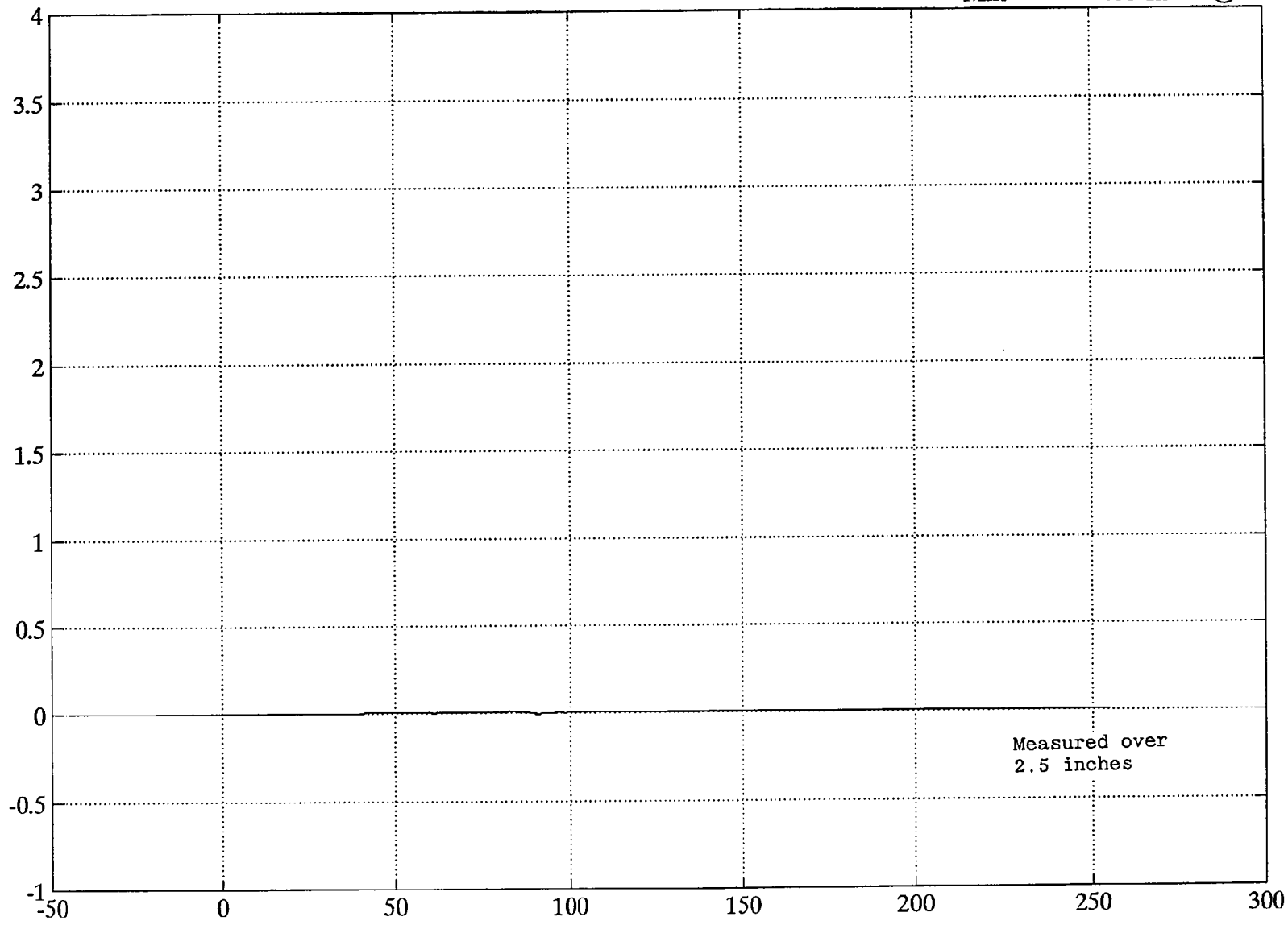
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 1 Belt Elongation

Max = .01 Ins @ 83.87 msec
Min = -.00 Ins @ 90.59 msec

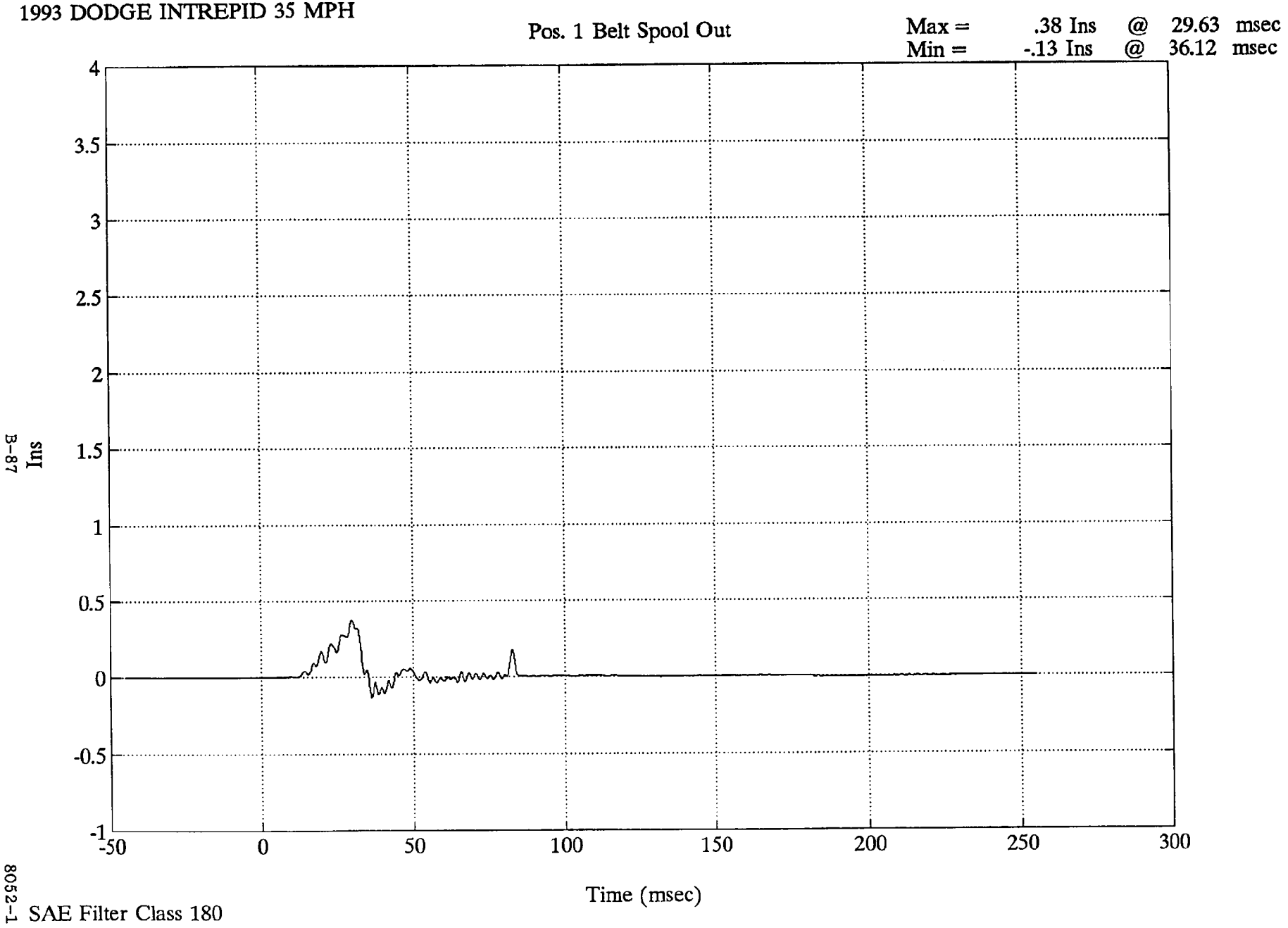


B-86

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH



B-87

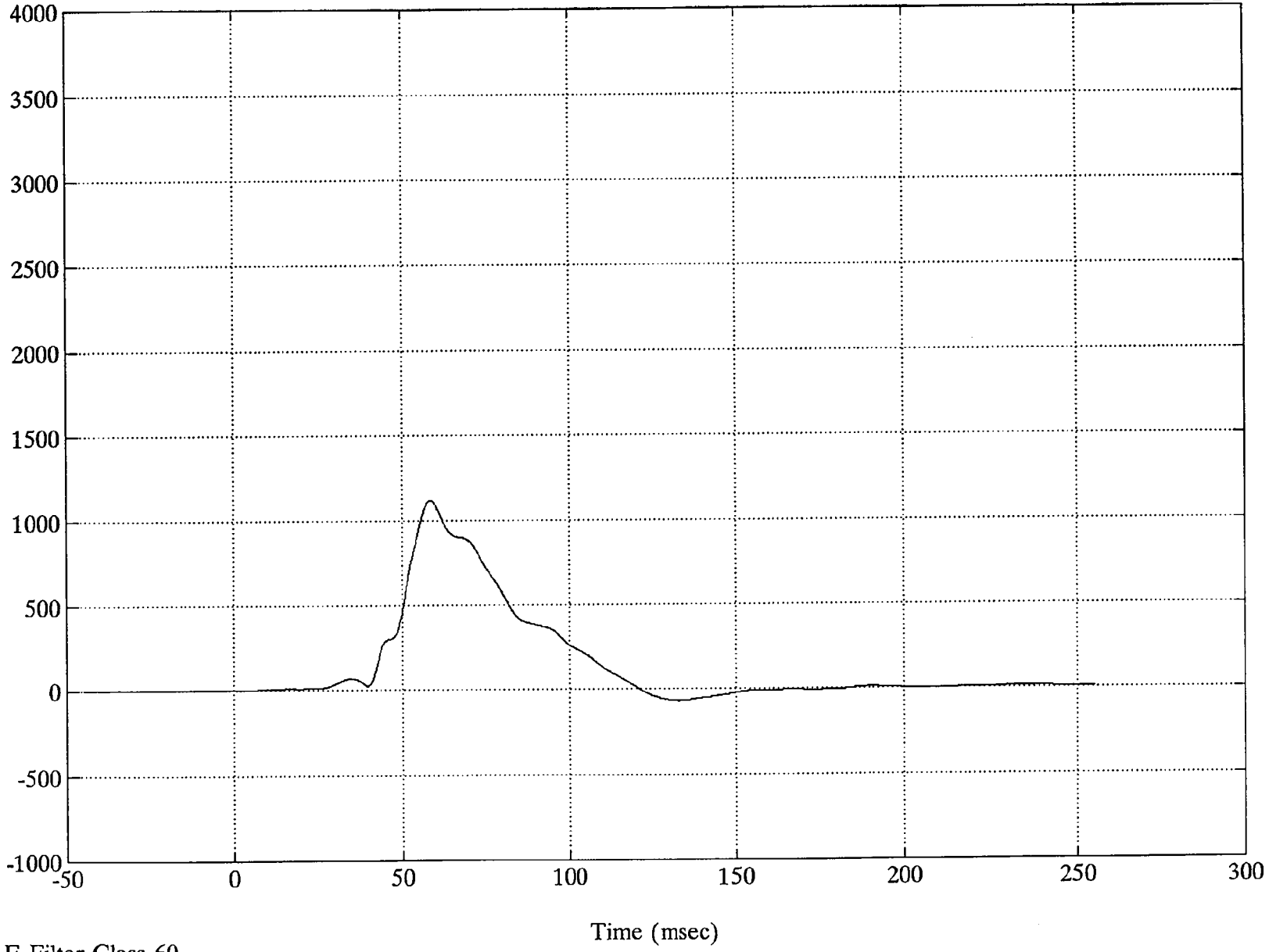
8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

Pos. 1 Left Belt Load

Max = 1117.17 Lbs @ 58.31 msec
Min = -68.25 Lbs @ 133.08 msec

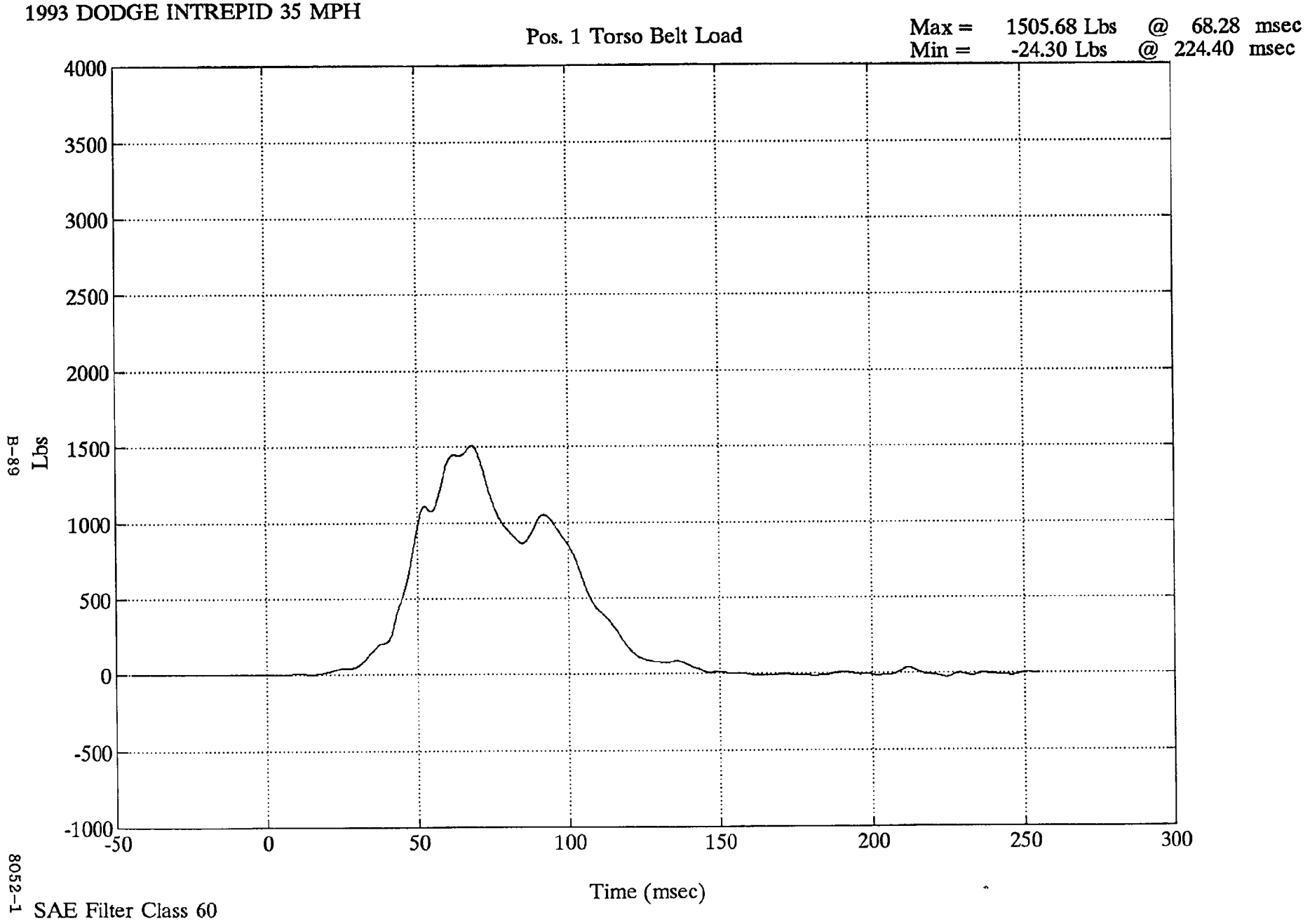


B-88

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH

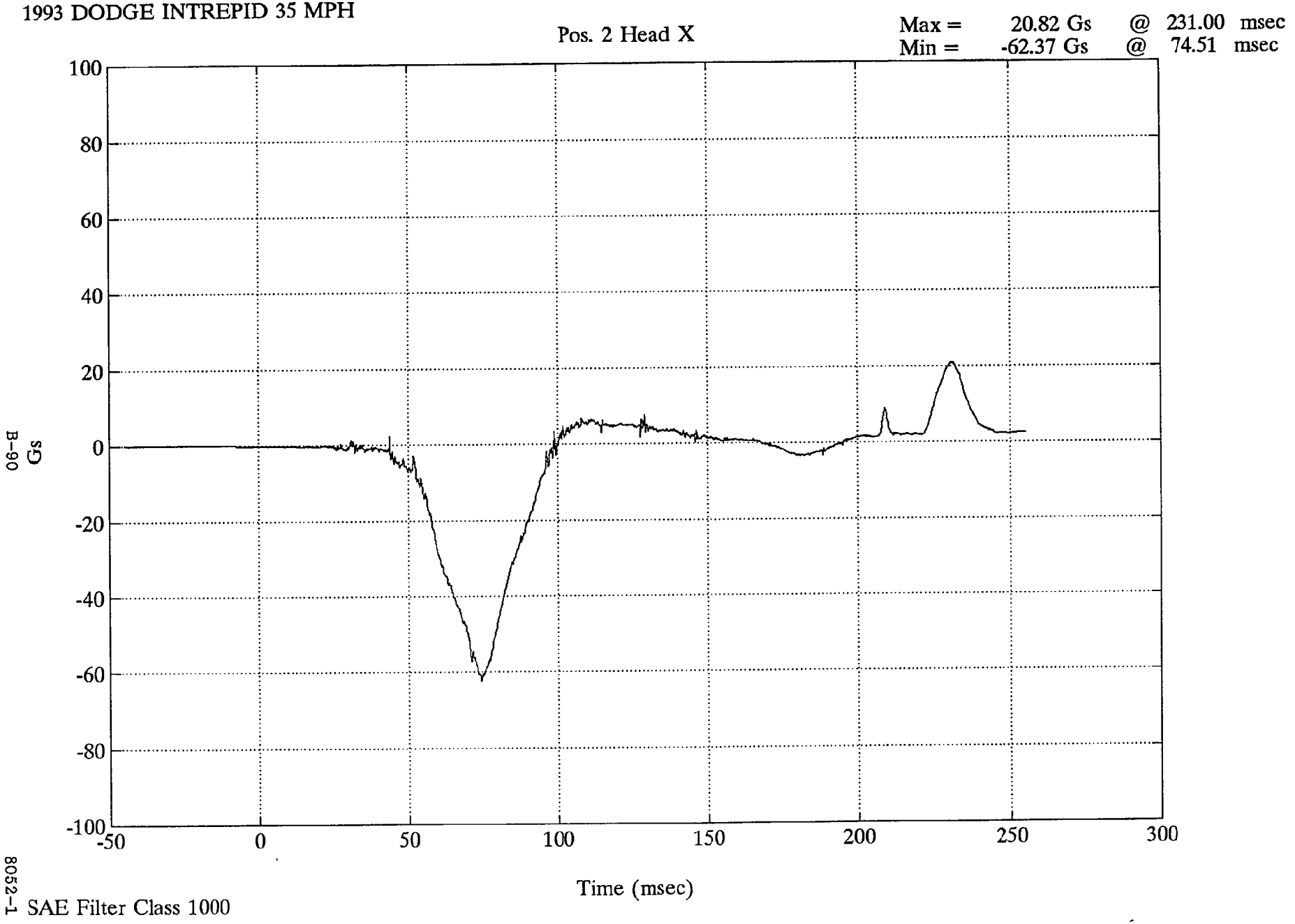


B-89

8052-1

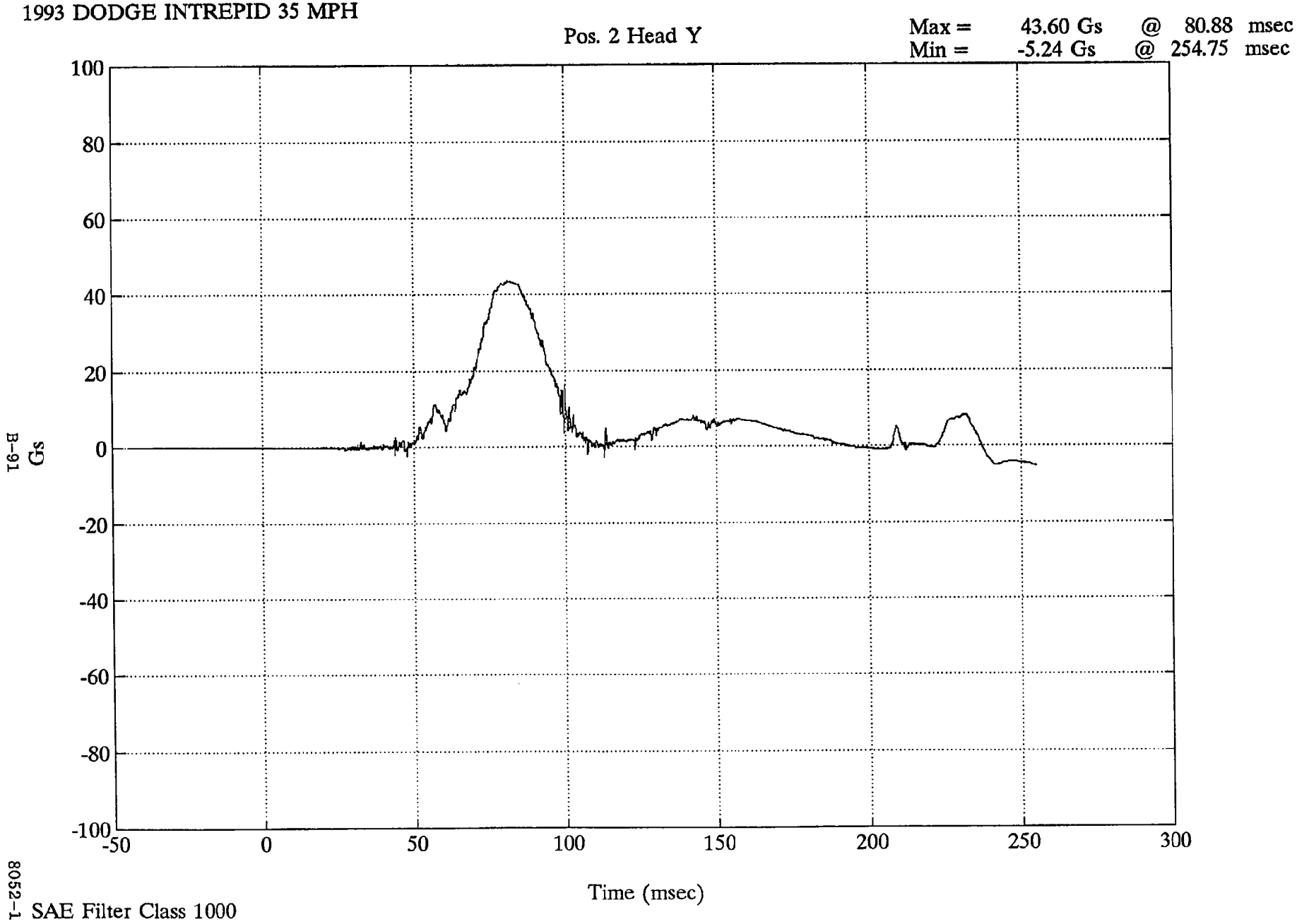
SAE Filter Class 60

1993 DODGE INTREPID 35 MPH



8052-1 SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

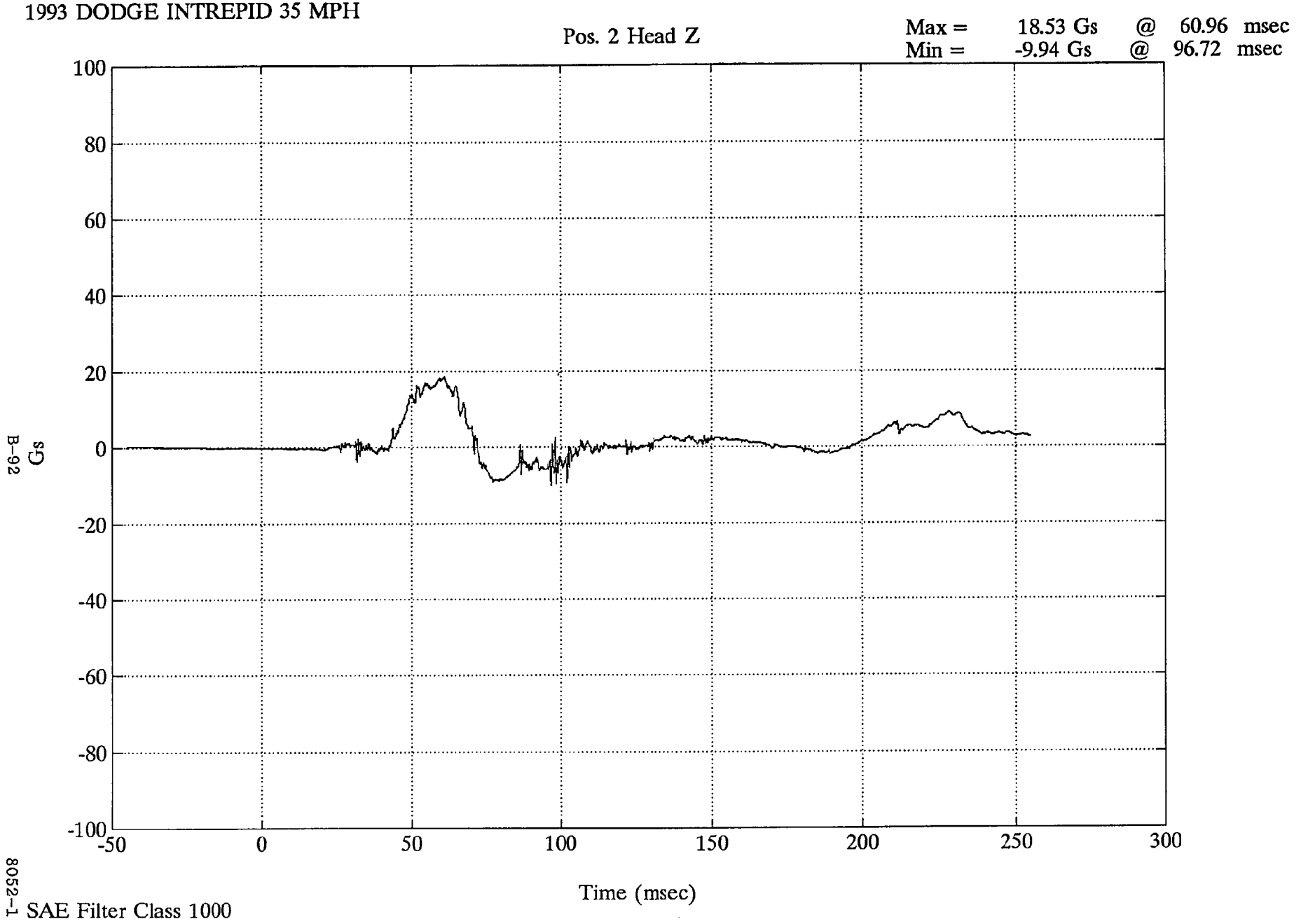


B-91

8052-1

SAE Filter Class 1000

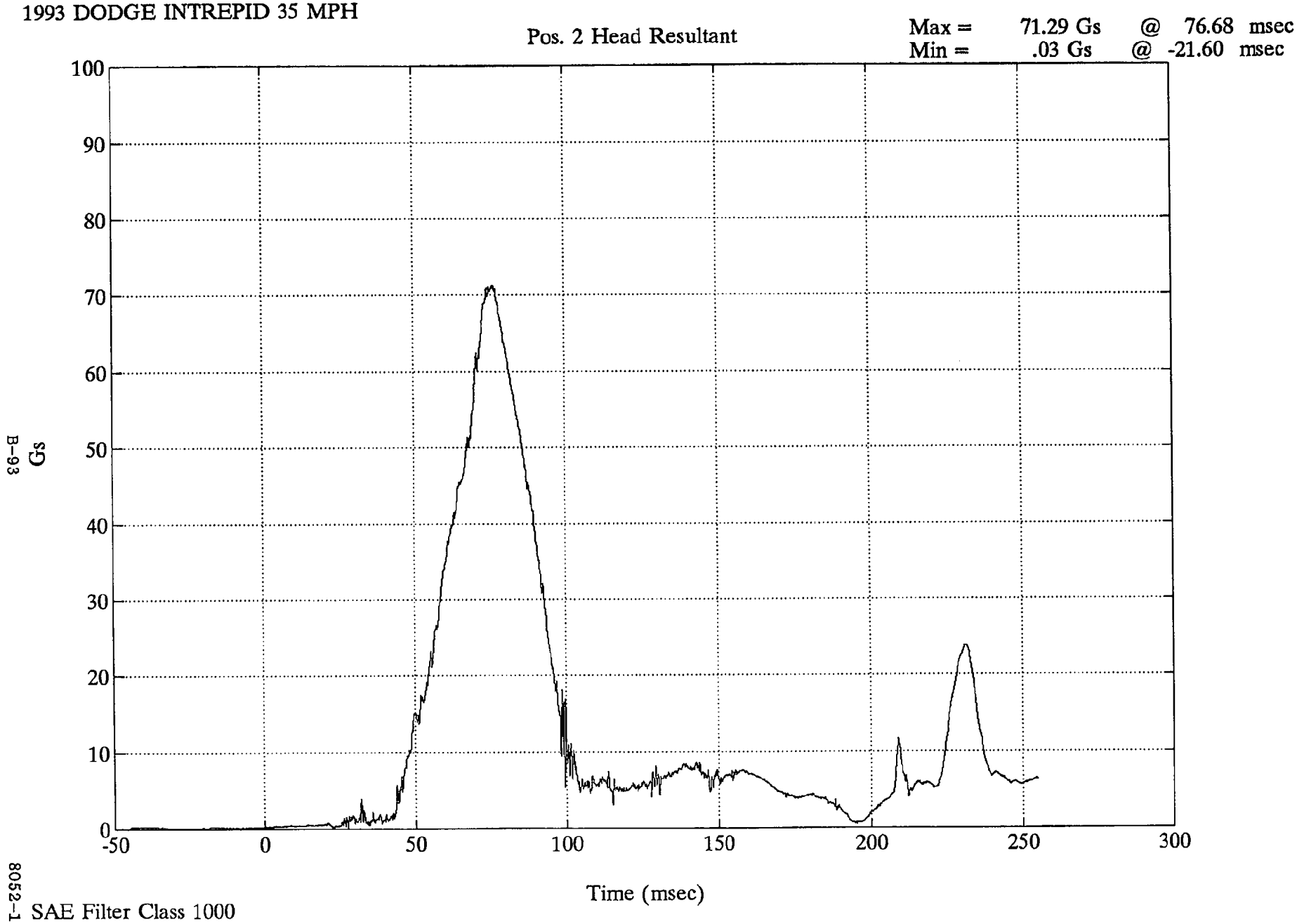
1993 DODGE INTREPID 35 MPH



B-92

8052-1 SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH



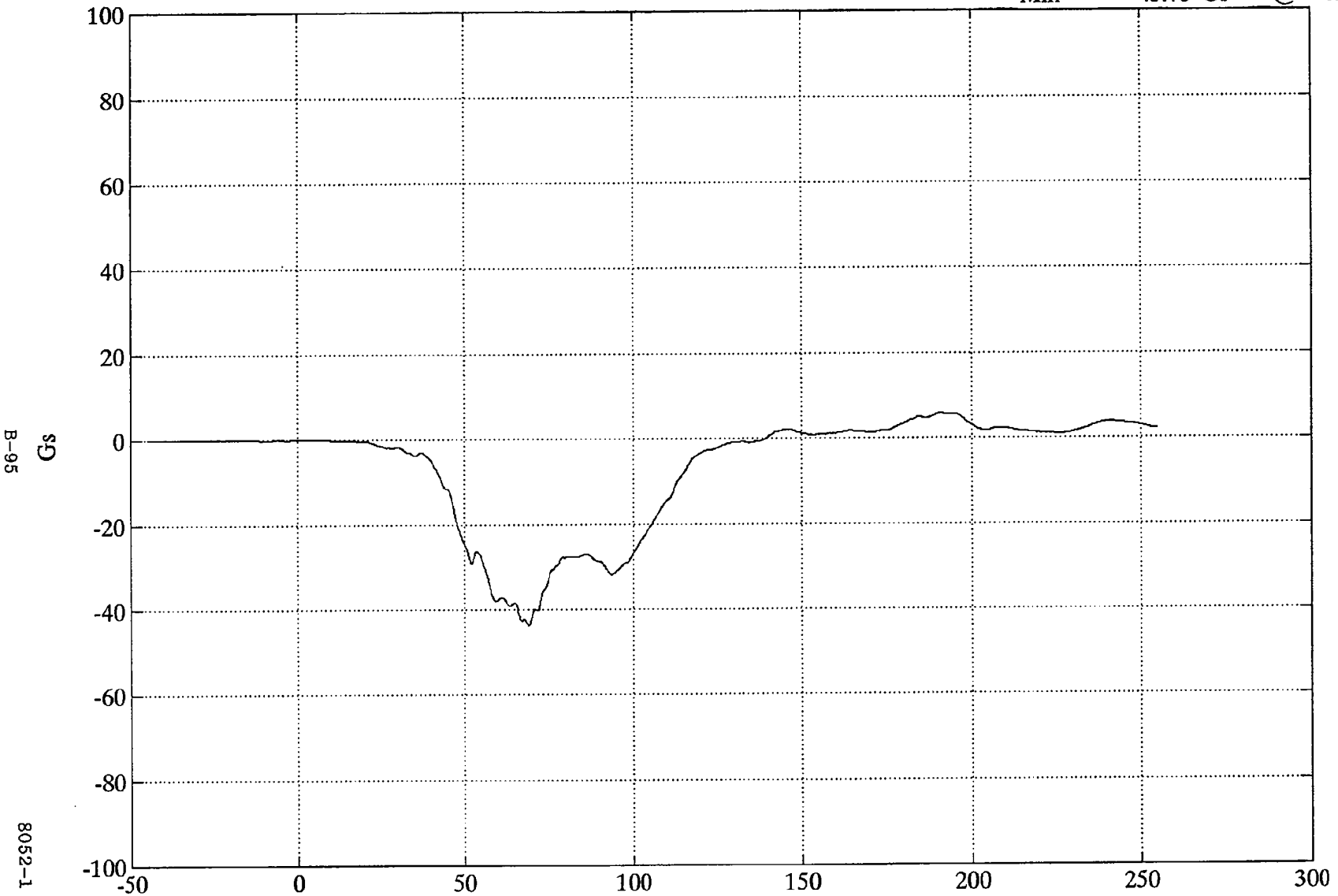
B-93

8052-1 SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

Pos. 2 Chest X

Max = 5.81 Gs @ 190.55 msec
Min = -43.73 Gs @ 69.12 msec

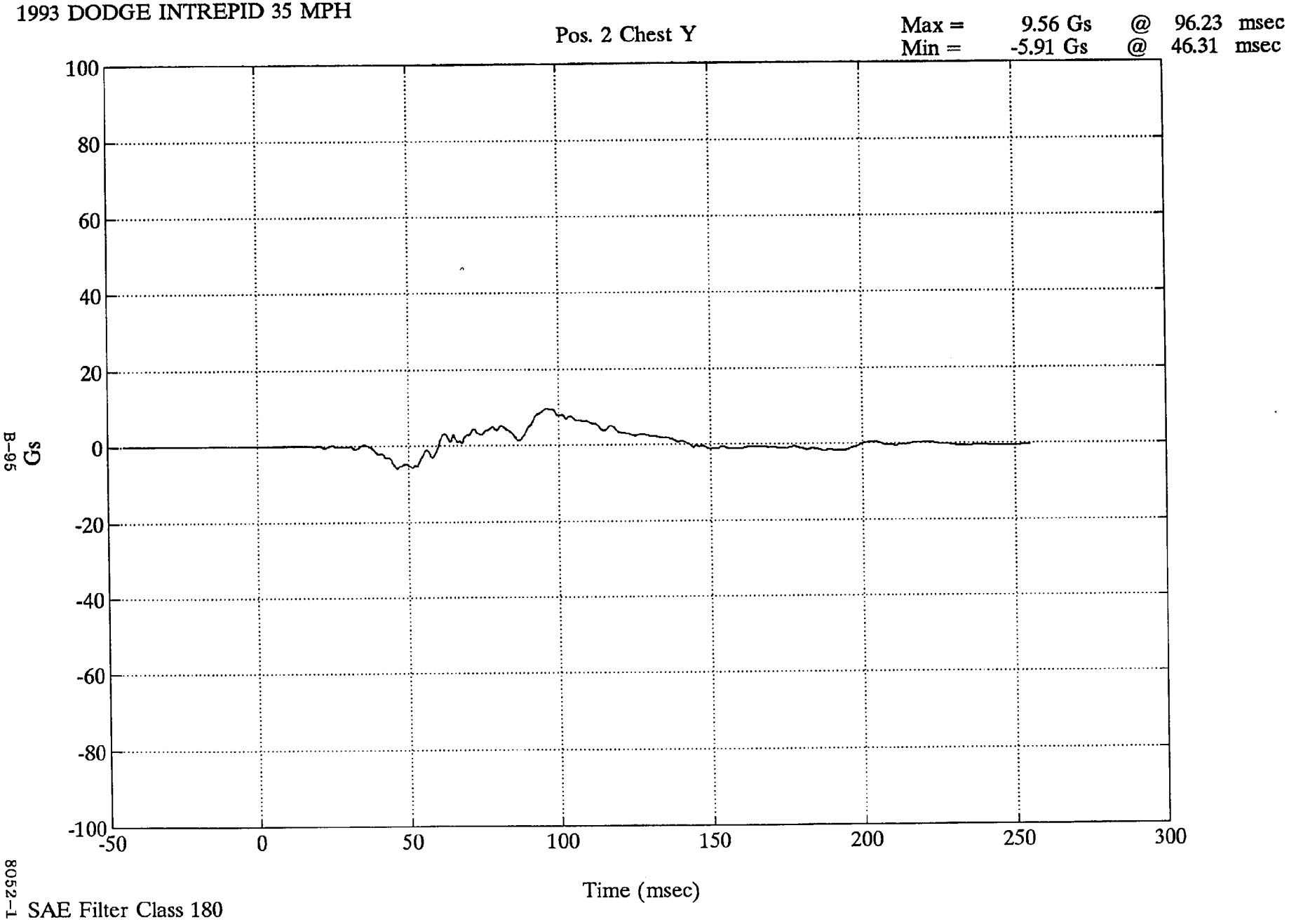


B-95

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

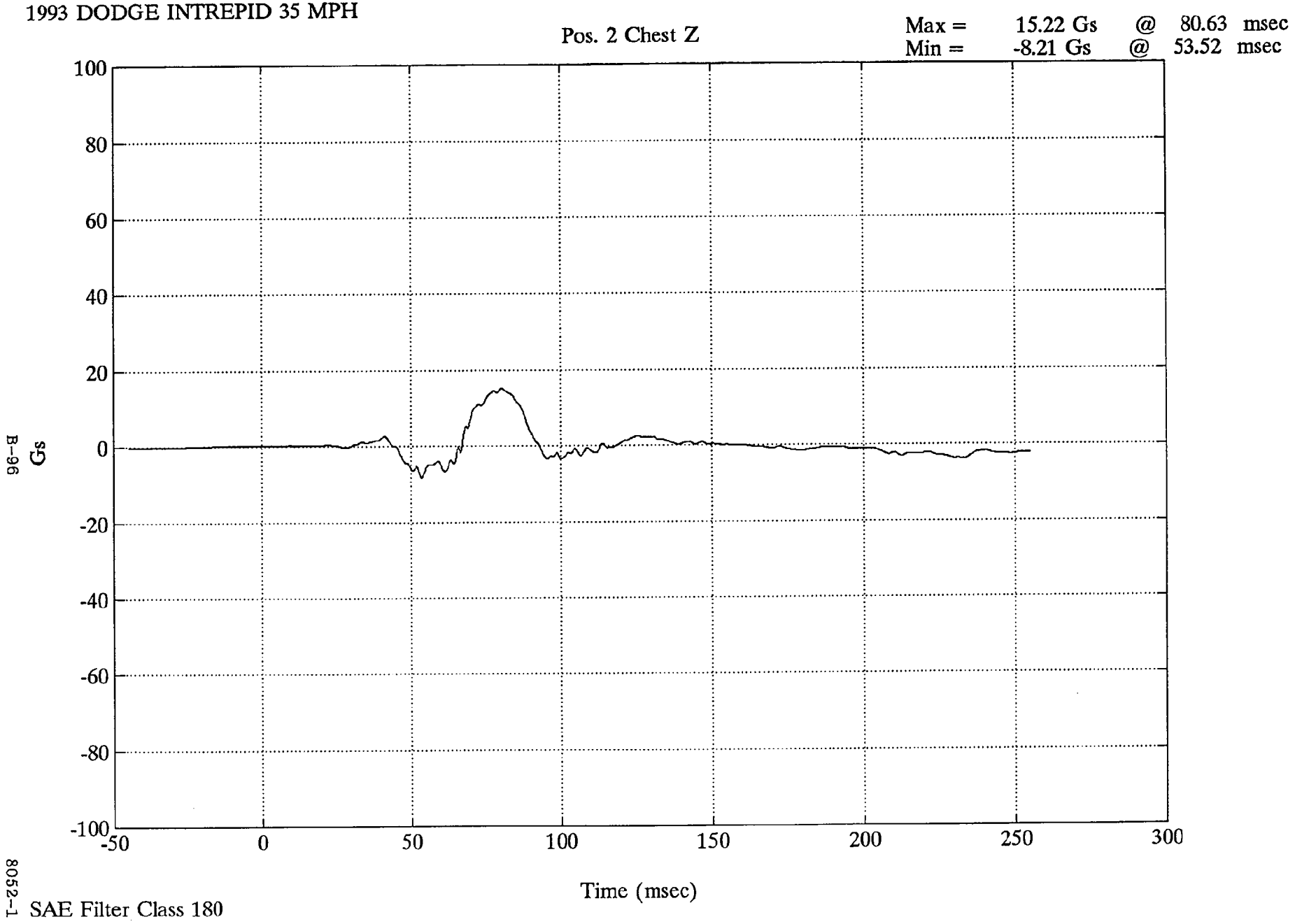


B-95

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

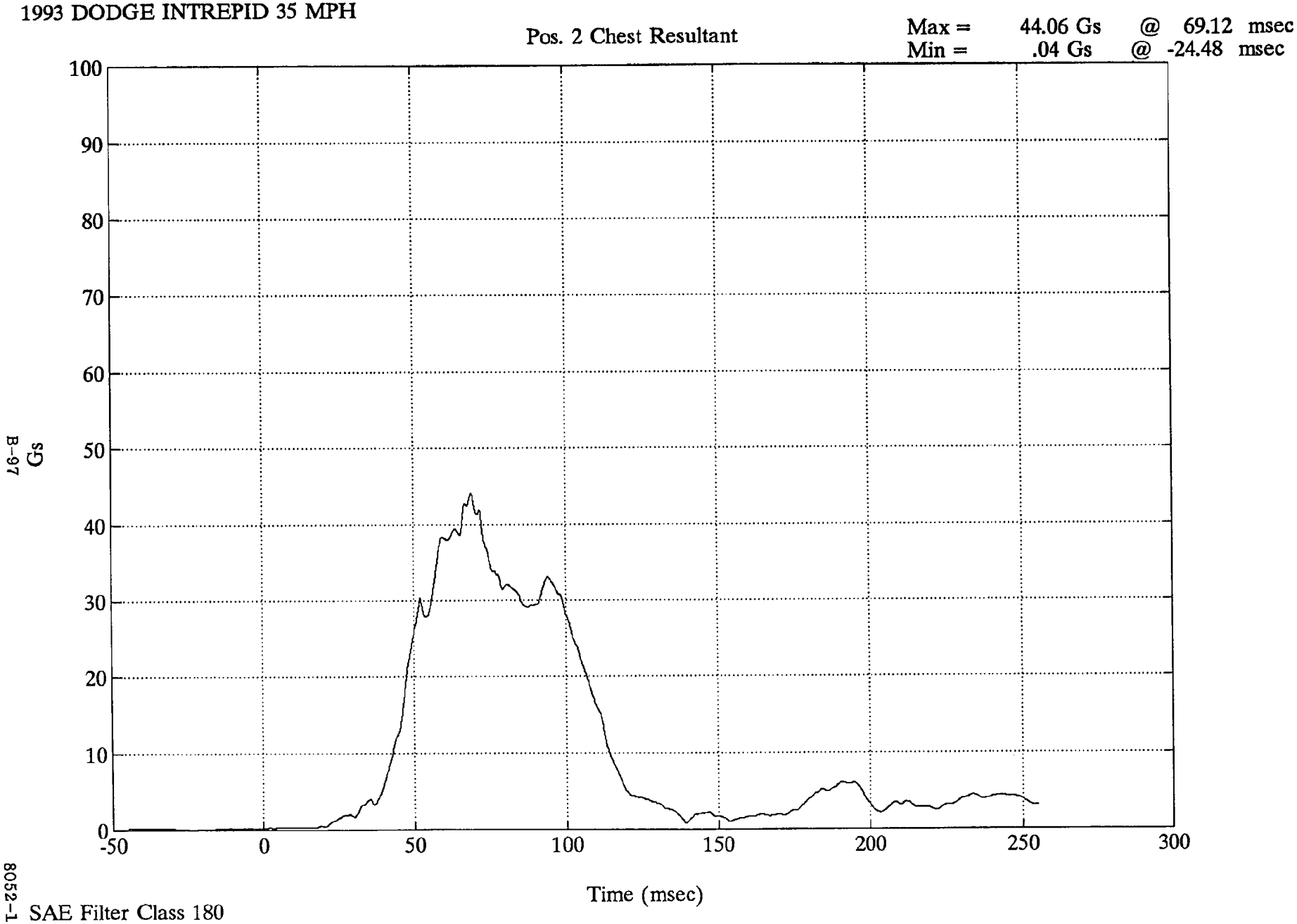


B-96

8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH



B-97

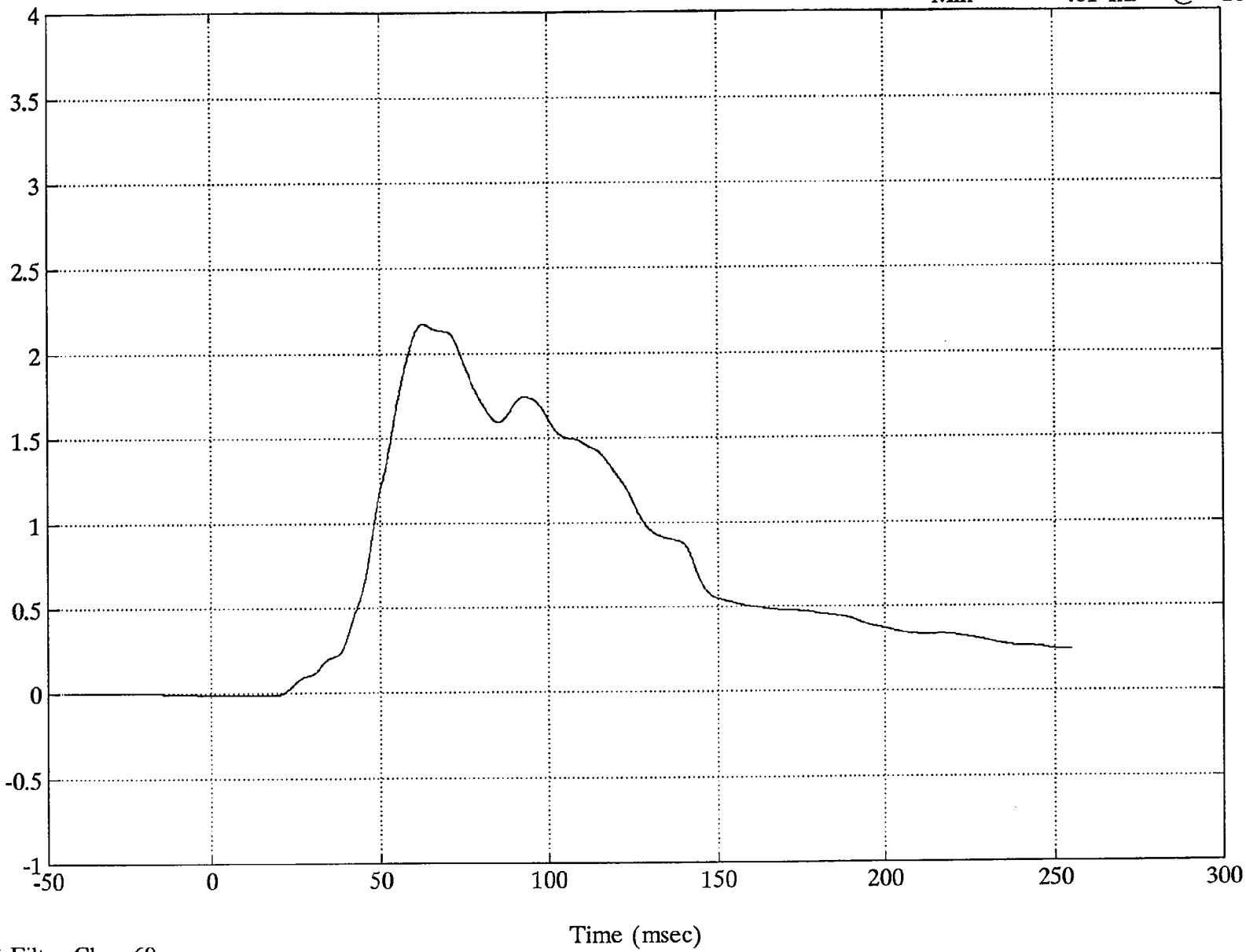
8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

Pos. 2 Chest Disp.

Max = 2.17 Ins @ 62.64 msec
Min = -.01 Ins @ 18.84 msec

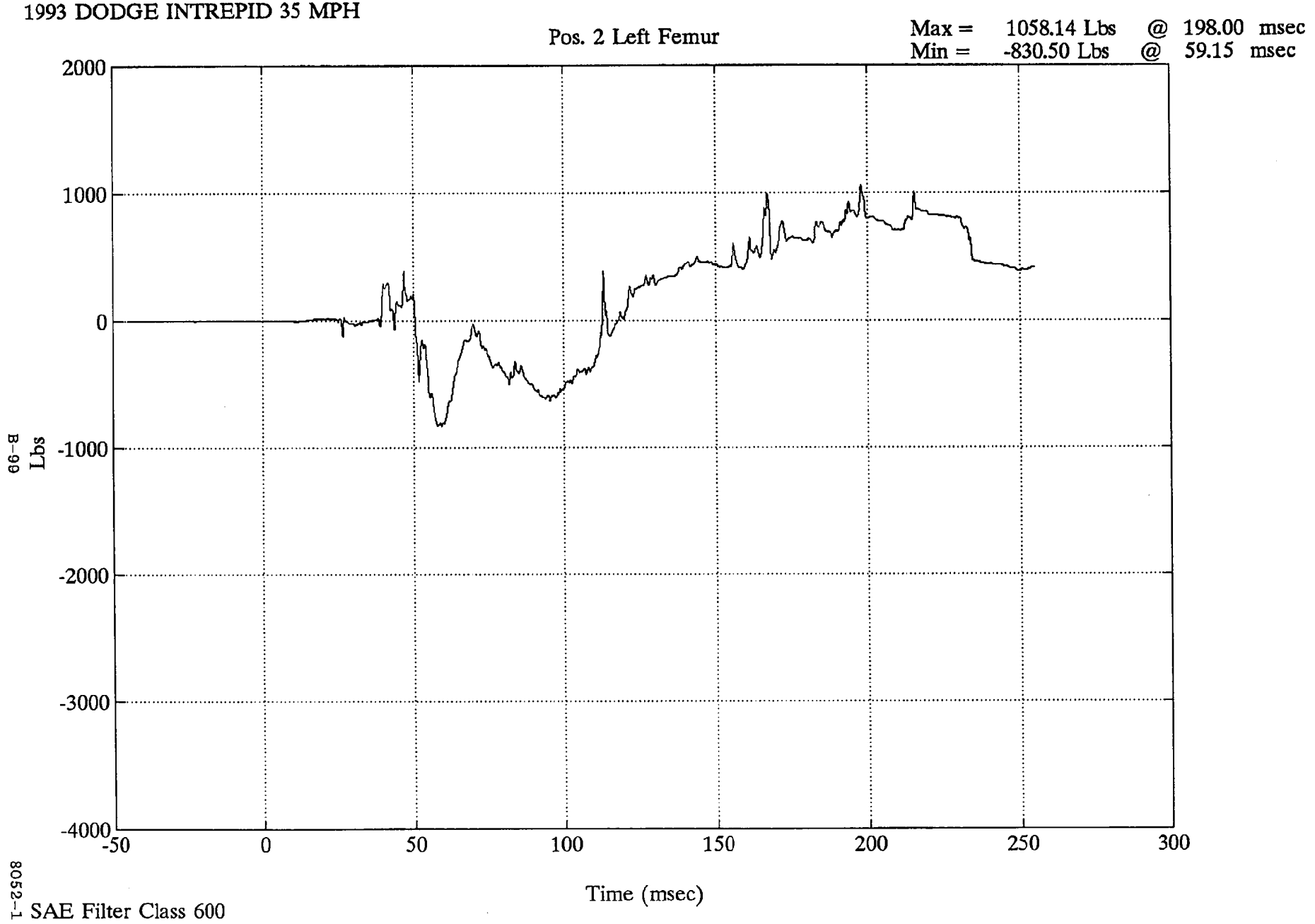


B-98

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH



B-99

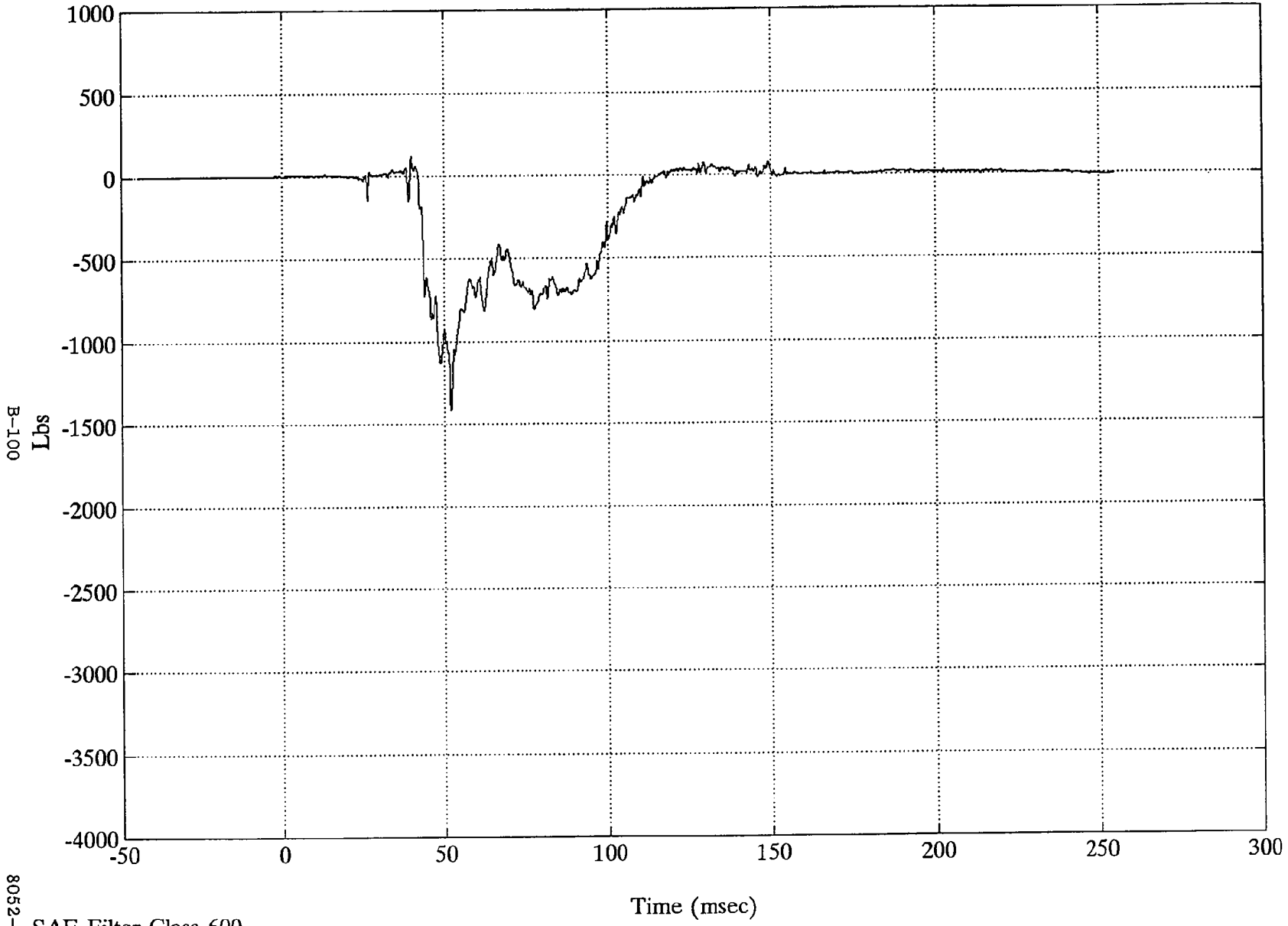
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 2 Right Femur

Max = 121.01 Lbs @ 39.71 msec
Min = -1416.25 Lbs @ 52.08 msec



B-100

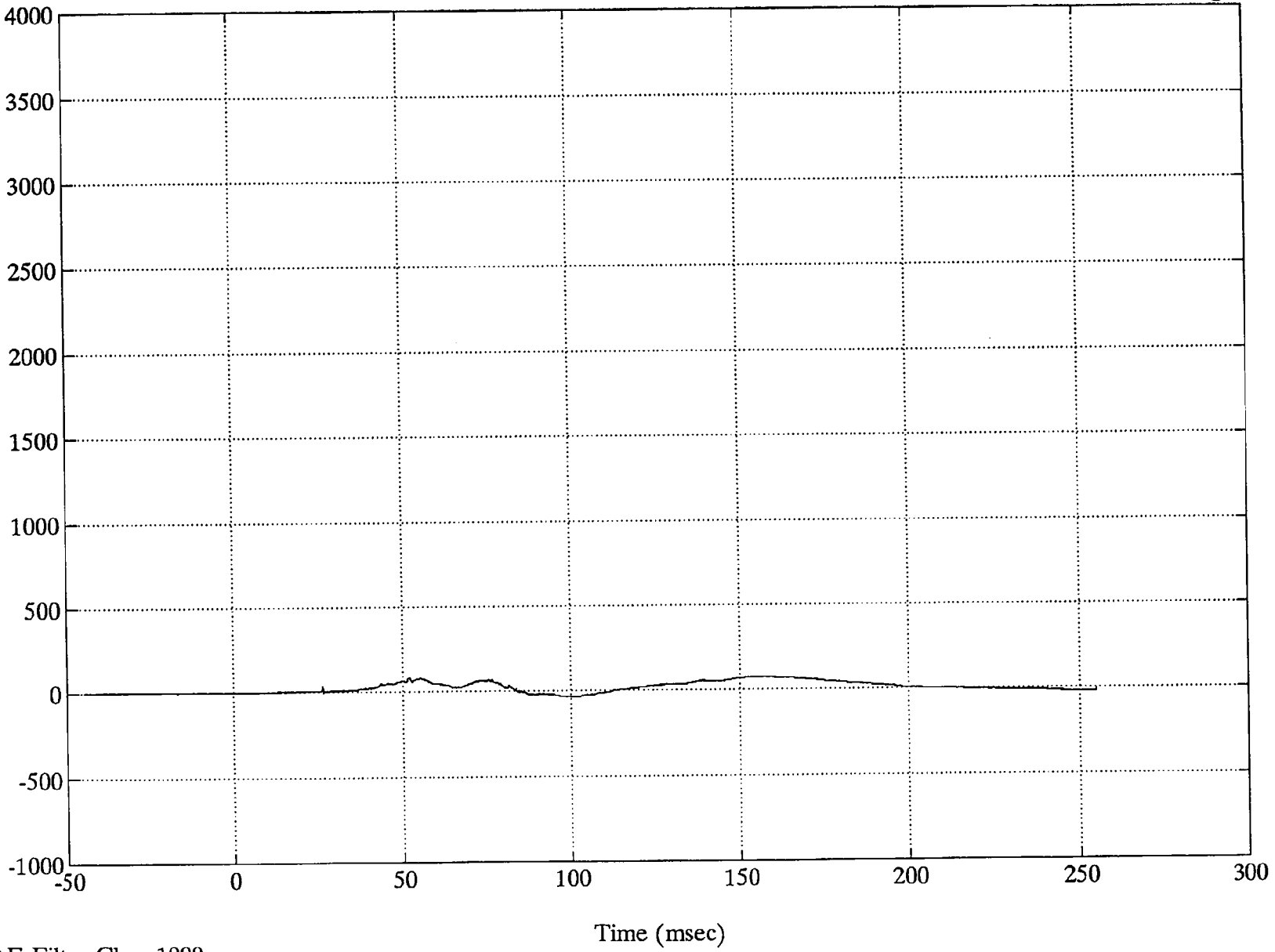
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 2 Upper Neck Fx

Max = 82.08 Lbs @ 51.72 msec
Min = -37.72 Lbs @ 101.52 msec

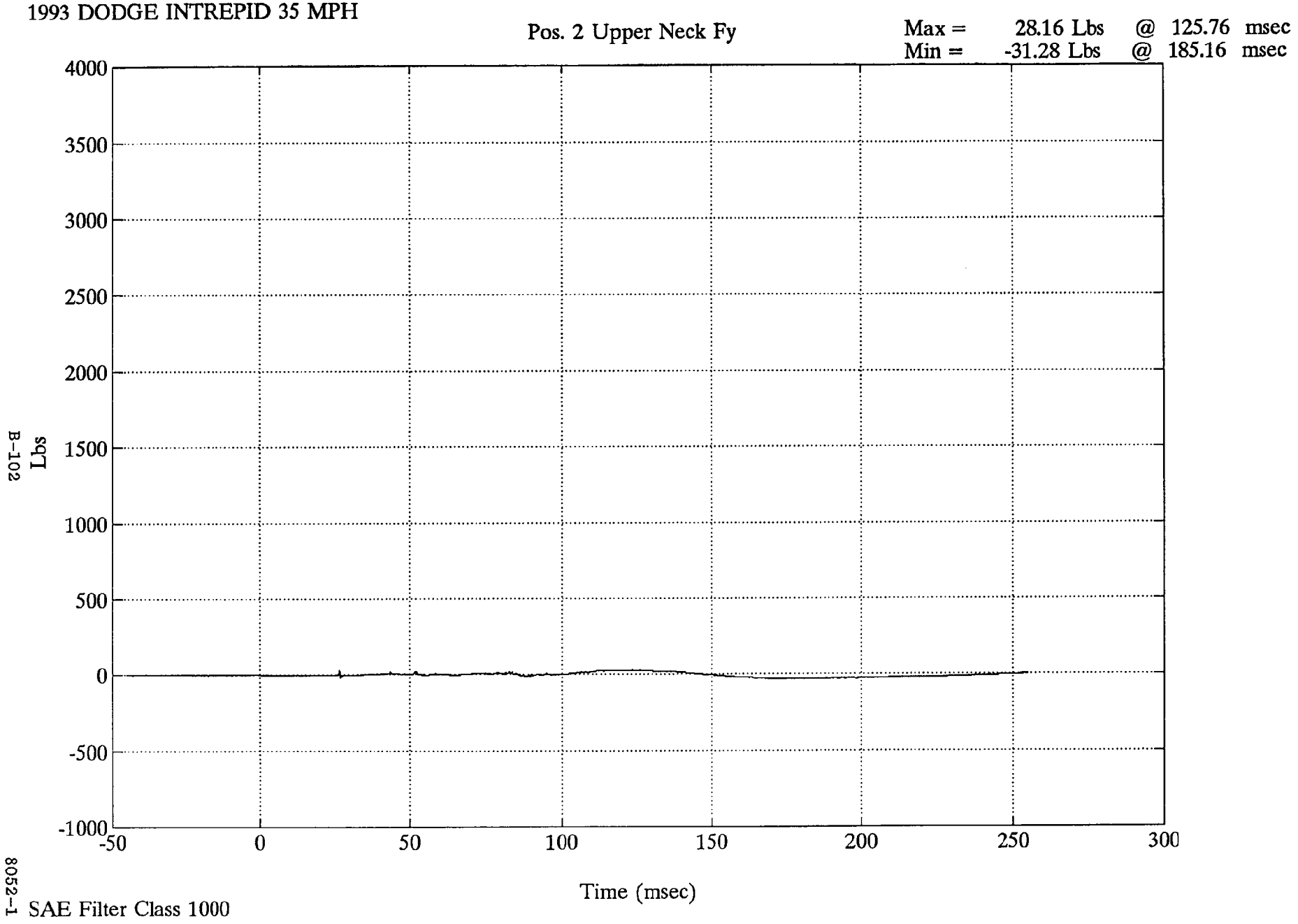


B-101

8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH



B-102

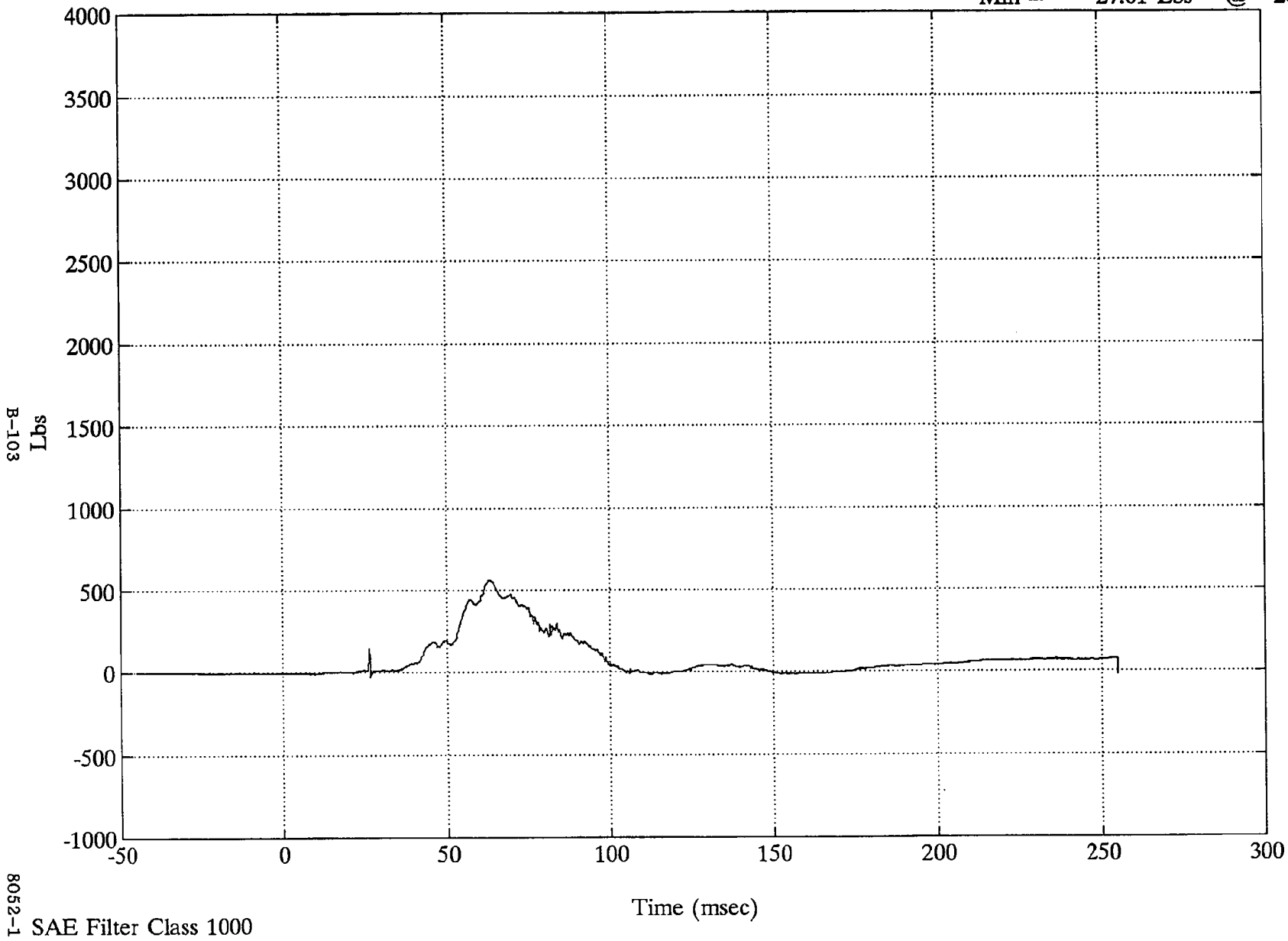
8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

Pos. 2 Upper Neck Fz

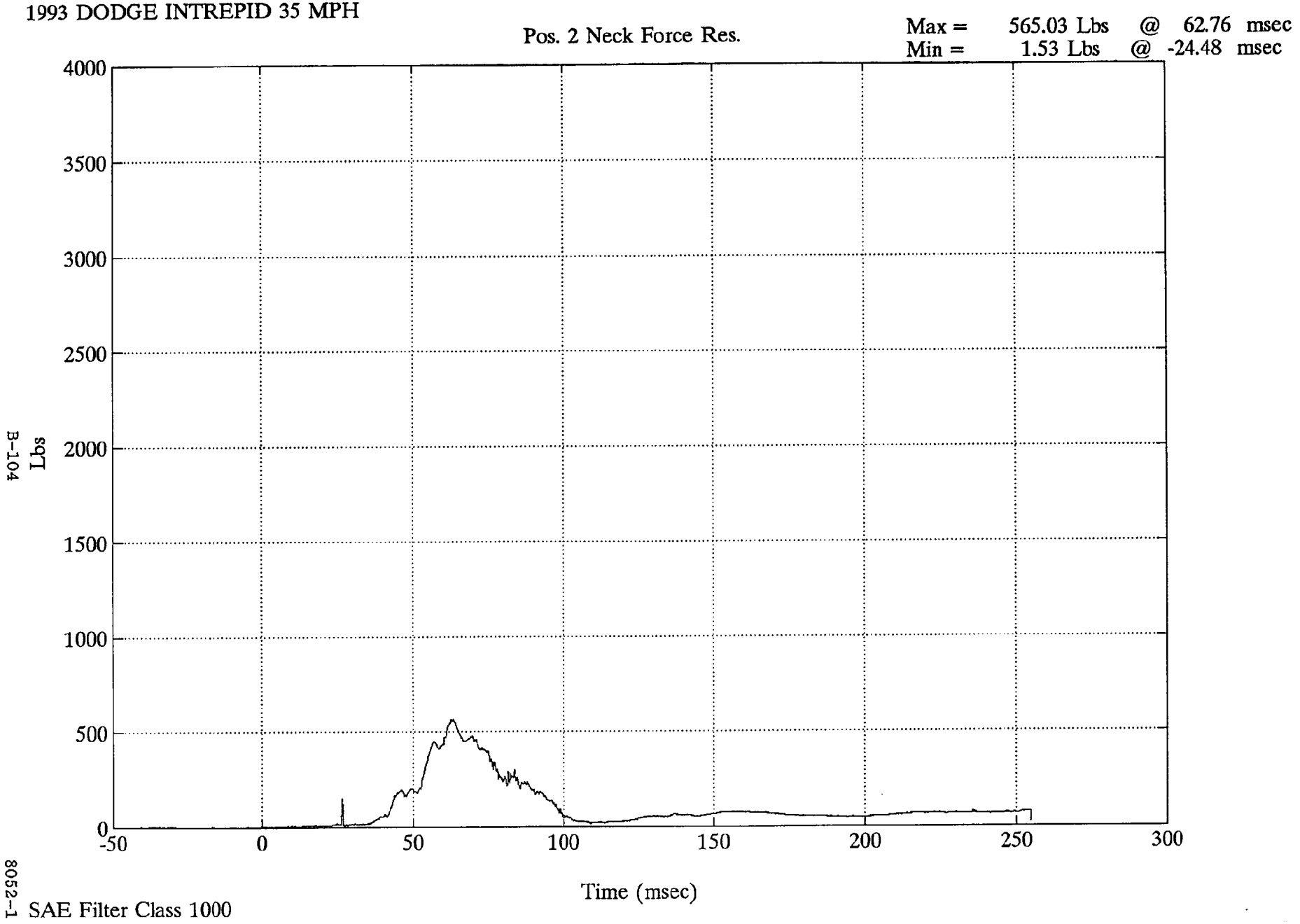
Max = 563.79 Lbs @ 63.35 msec
Min = -27.01 Lbs @ 26.63 msec



B-103

8052-1 SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH



B-104

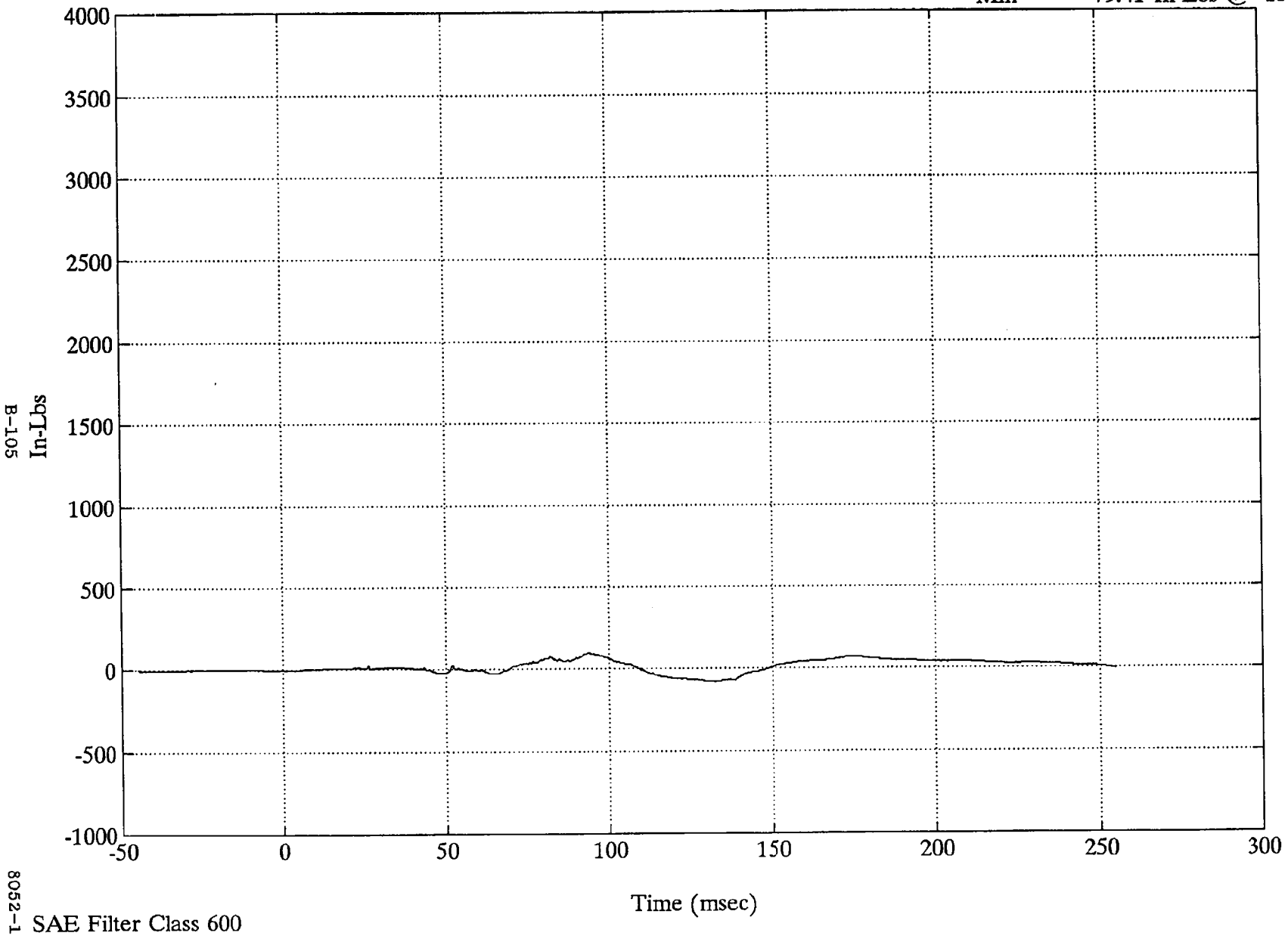
8052-1

SAE Filter Class 1000

1993 DODGE INTREPID 35 MPH

Pos. 2 Upper Neck Mx

Max = 95.36 In-Lbs @ 93.36 msec
Min = -79.41 In-Lbs @ 132.36 msec



B-105

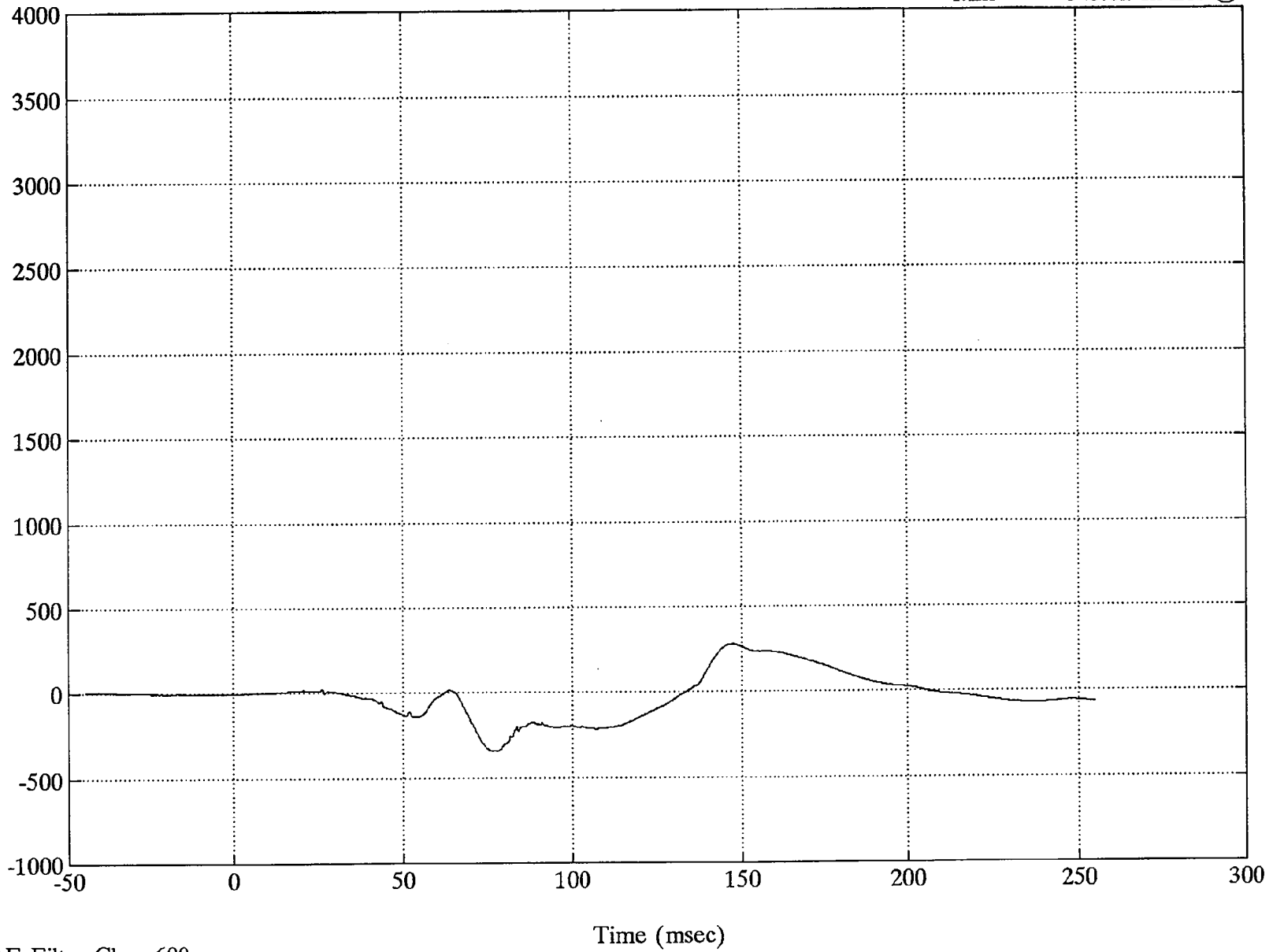
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 2 Upper Neck My

Max = 279.69 In-Lbs @ 147.48 msec
Min = -345.02 In-Lbs @ 76.55 msec



B-106

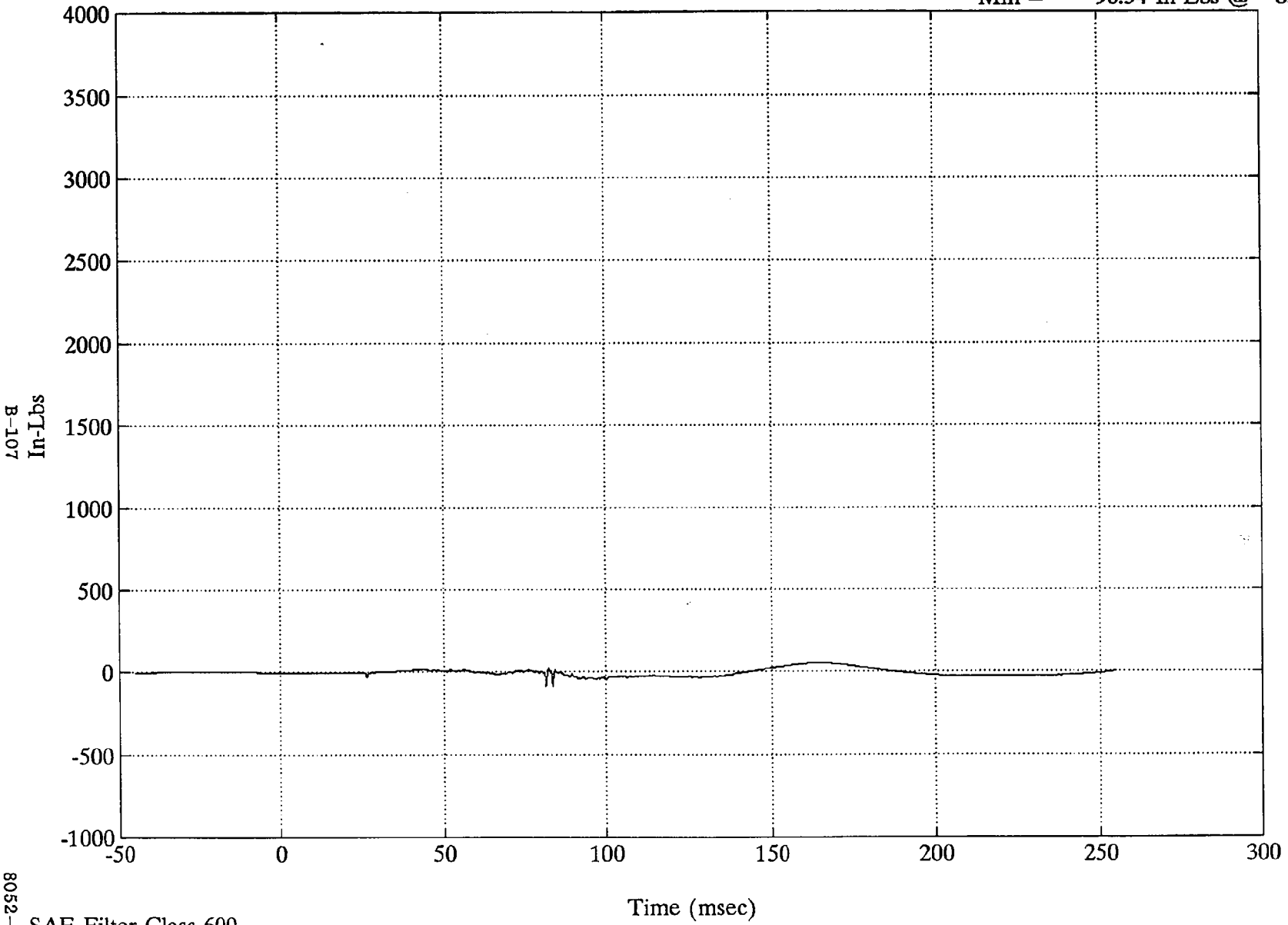
8052-1

SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 2 Upper Neck Mz

Max = 51.84 In-Lbs @ 163.80 msec
Min = -90.34 In-Lbs @ 83.76 msec

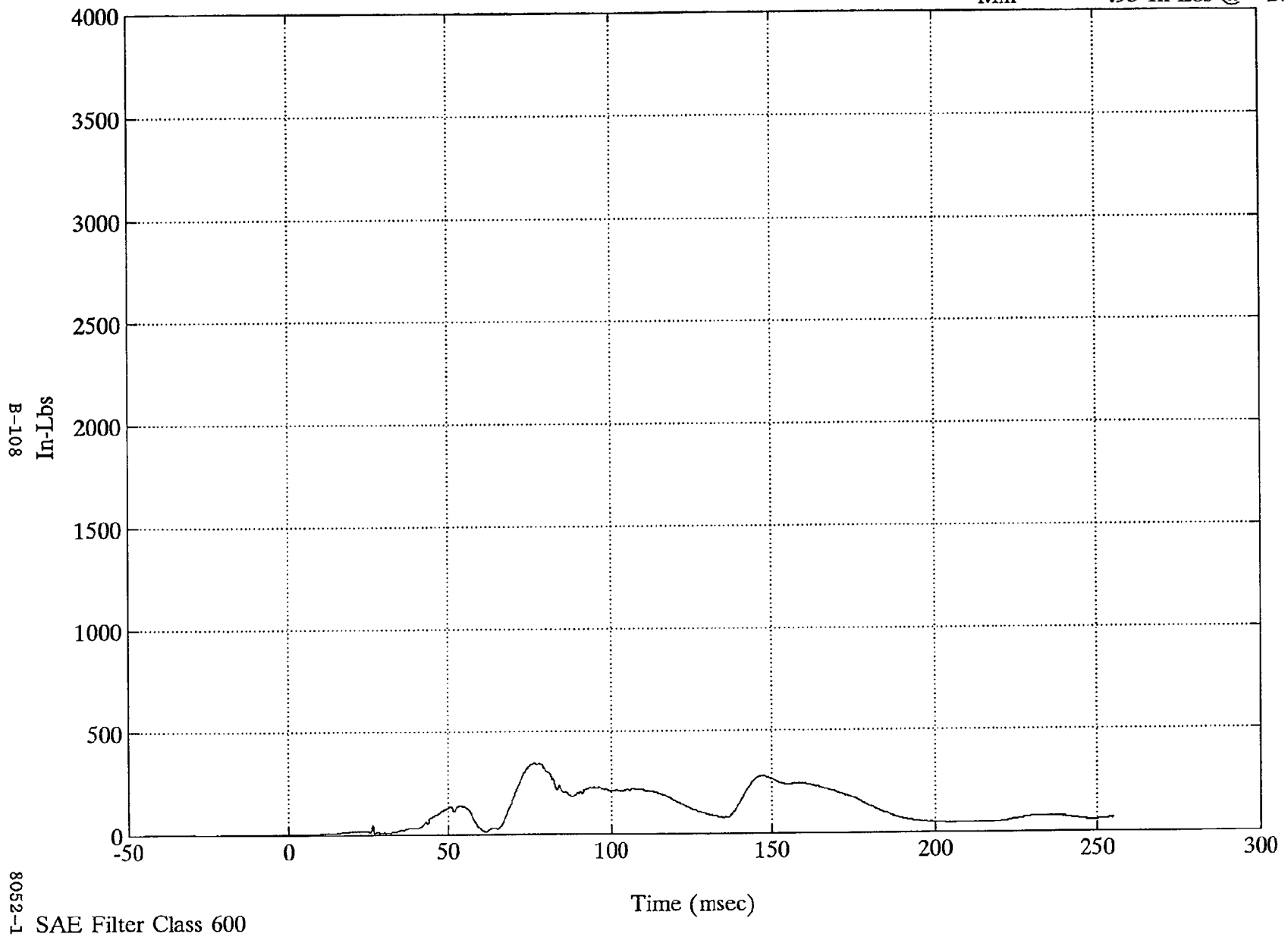


8052-1 SAE Filter Class 600

1993 DODGE INTREPID 35 MPH

Pos. 2 Neck Moment Res.

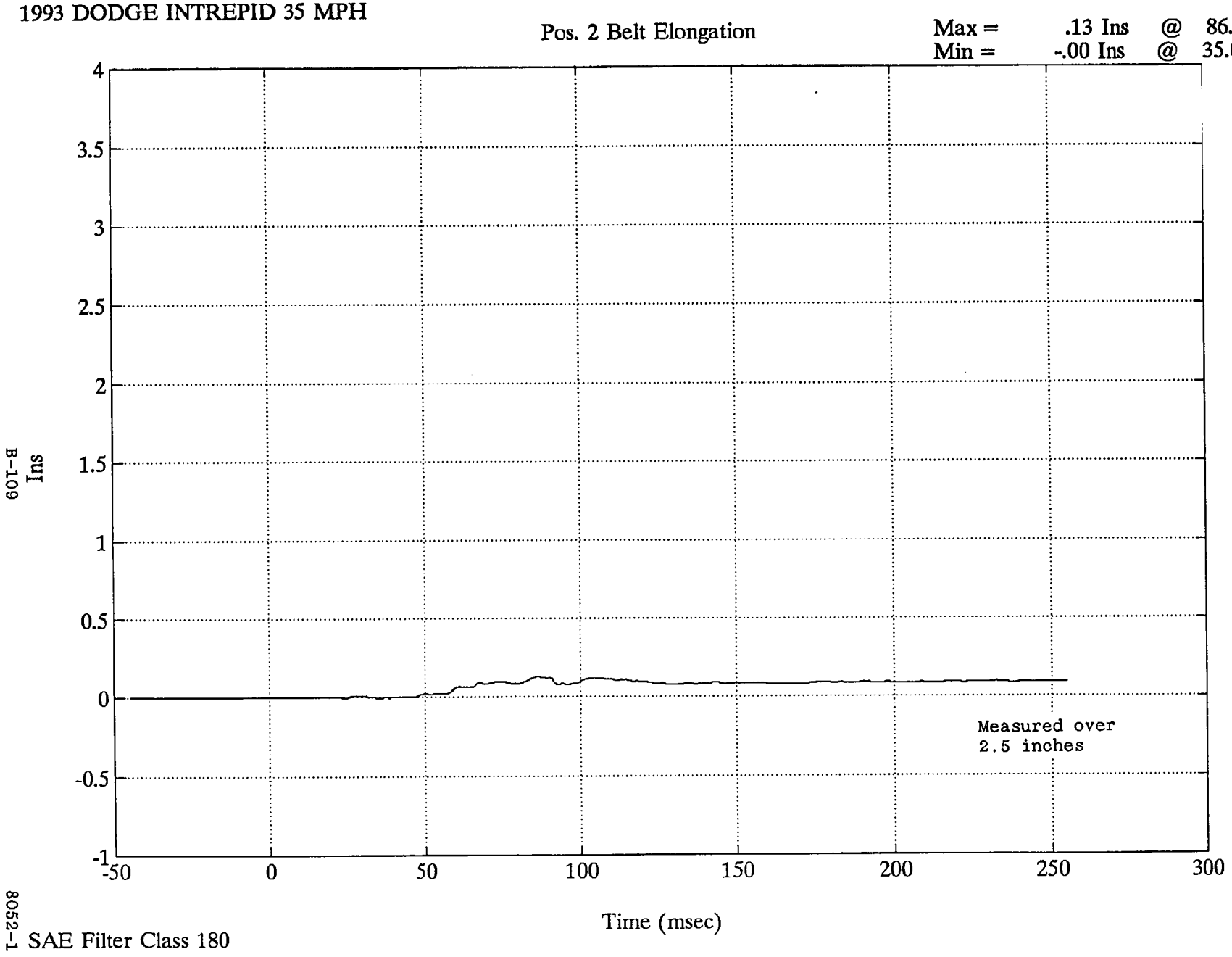
Max = 347.94 In-Lbs @ 76.55 msec
Min = .93 In-Lbs @ -27.48 msec



B-108

8052-1 SAE Filter Class 600

1993 DODGE INTREPID 35 MPH



B-109

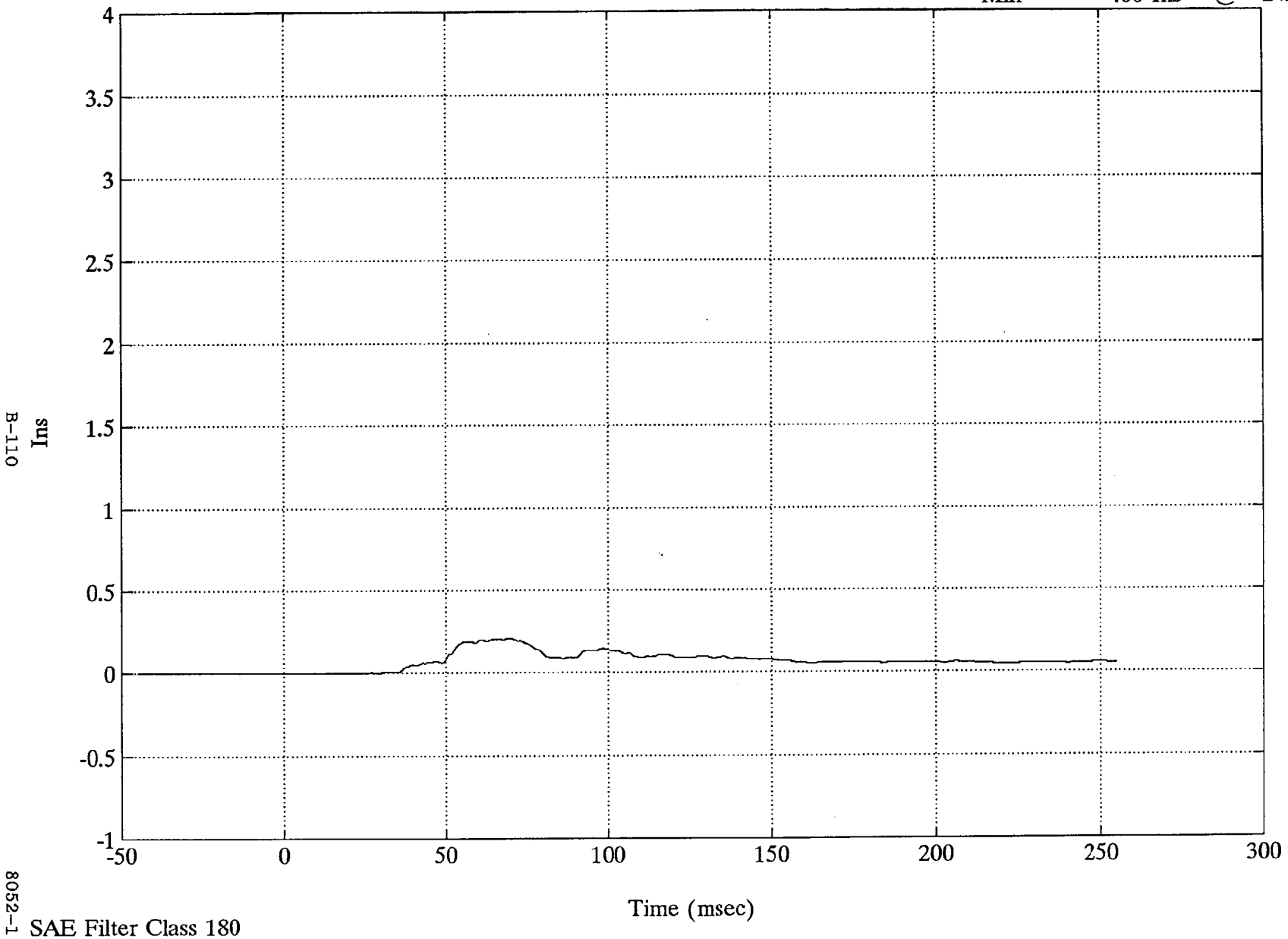
8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

Pos. 2 Belt Spool Out

Max = .21 Ins @ 69.48 msec
Min = -.00 Ins @ 24.11 msec



B-110

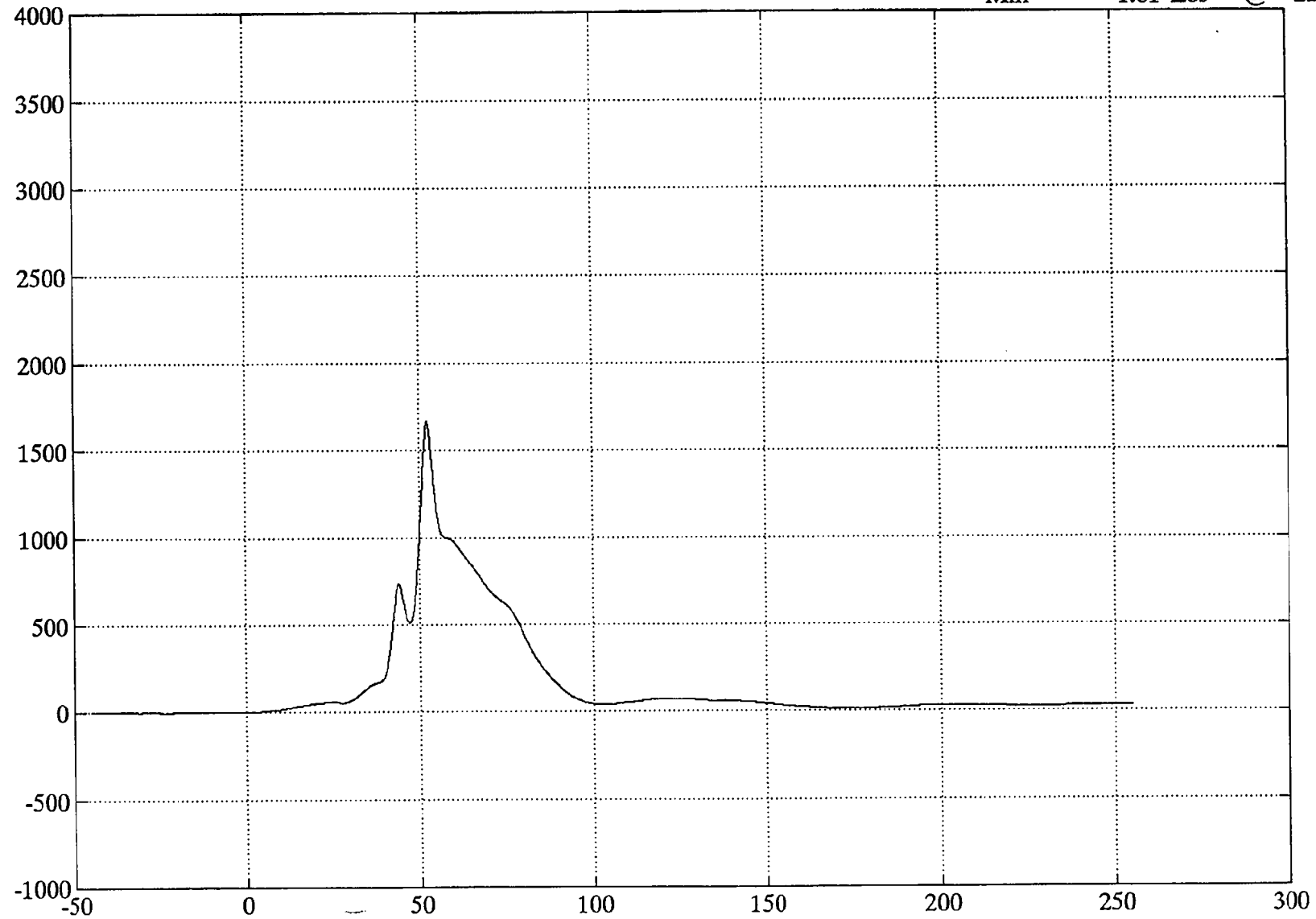
8052-1

SAE Filter Class 180

1993 DODGE INTREPID 35 MPH

Pos. 2 Right Belt Load

Max = 1669.02 Lbs @ 52.31 msec
Min = -1.81 Lbs @ -22.68 msec

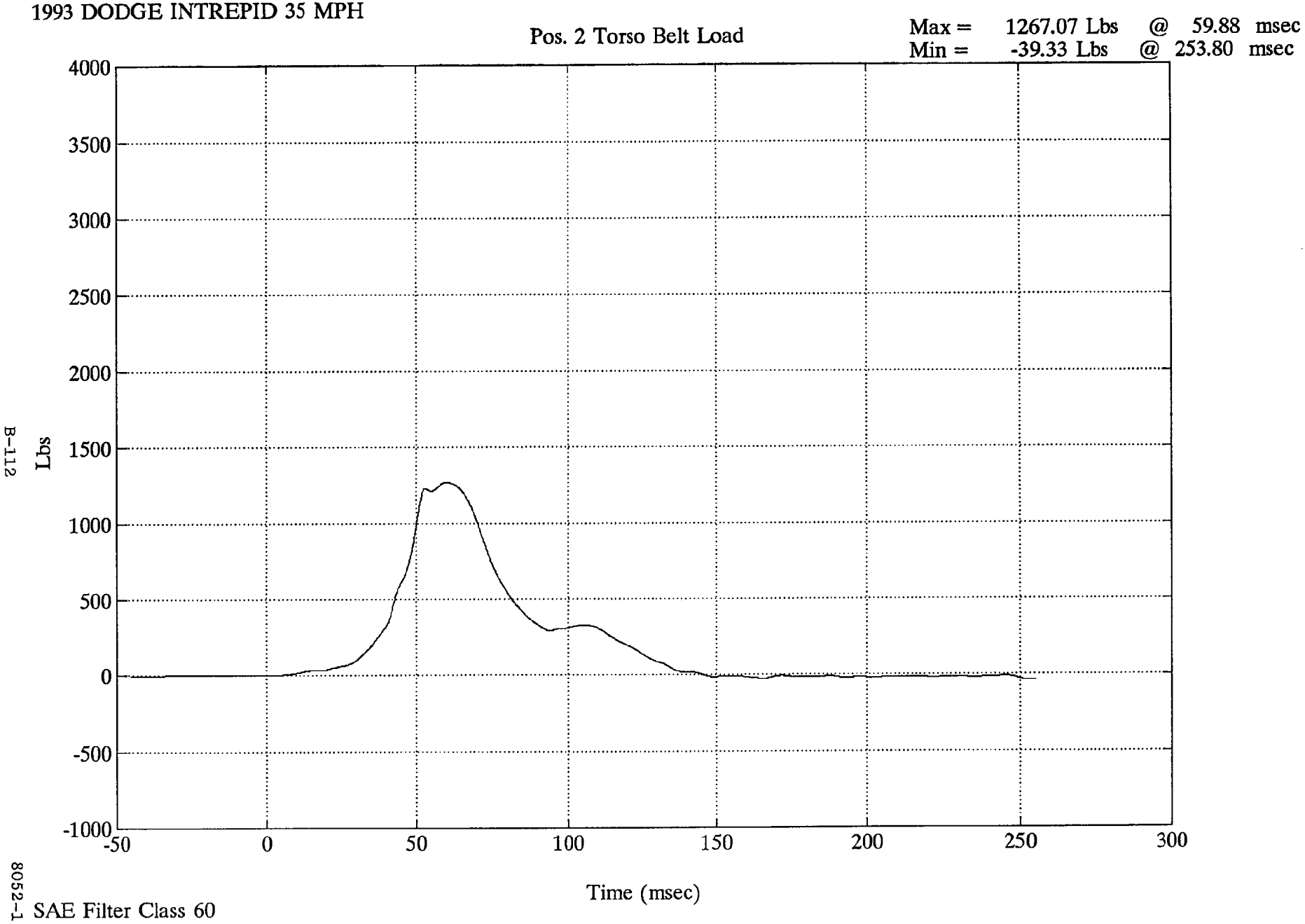


B-111

8052-1

SAE Filter Class 60

1993 DODGE INTREPID 35 MPH



B-112

8052-1

SAE Filter Class 60

Appendix C

PART 572E 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:

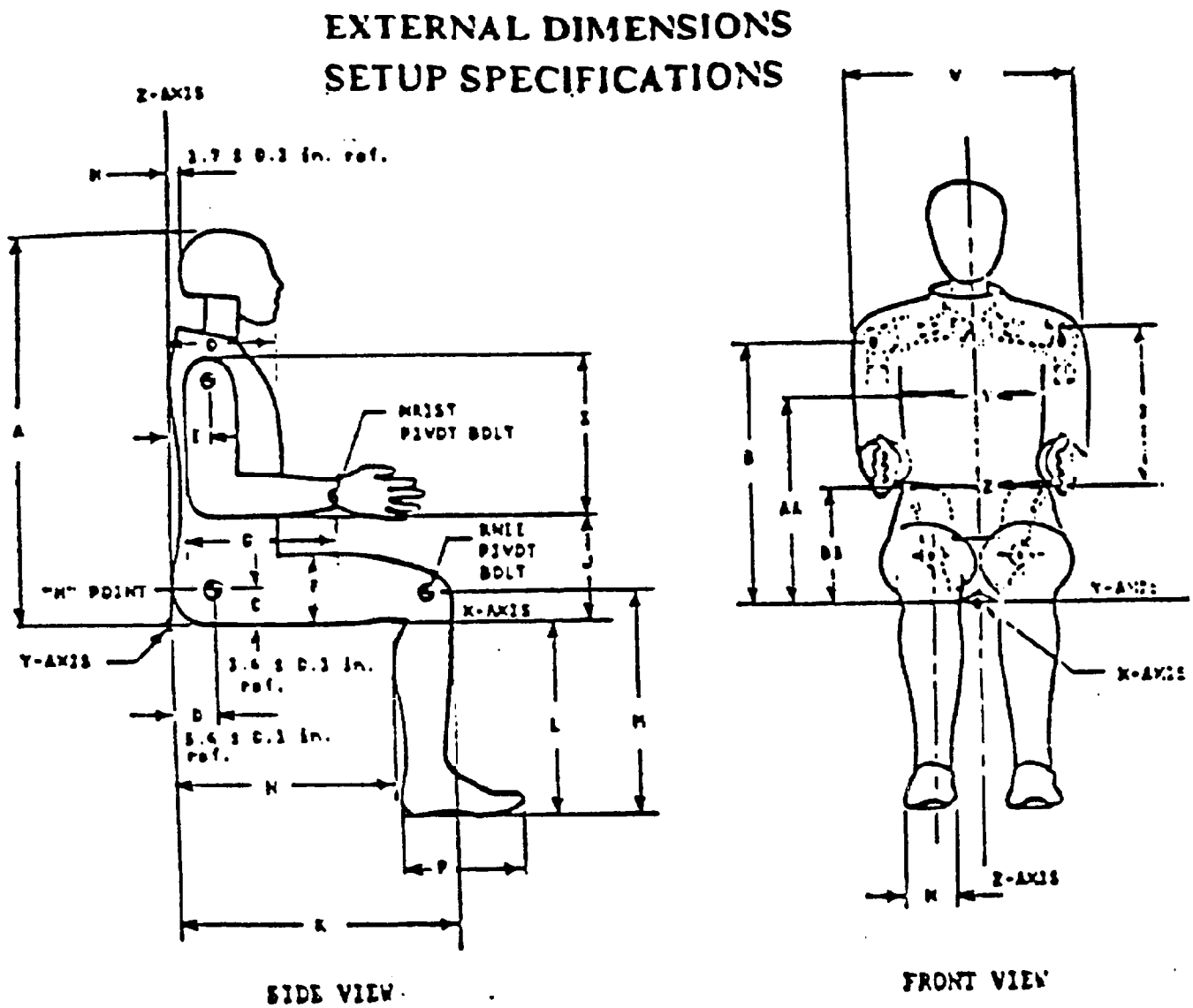
Serial No.	Completion Date
143	9/8/92
259	9/8/92

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



HYBRID III EXTERNAL DIMENSIONS

S/N 143 HUMANOID

DUMMY SERIAL NO. 143 DATE: 9/8/92

TEMPERATURE		72 DEG. F
RELATIVE HUMIDITY		46 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	16.9-17.1 IN	17.0 IN
LOCATION FOR WAIST CIRCUMFERENCE (BB)	8.9-9.1 IN	9.0 IN
CHEST CIRCUMFERENCE (Y)	38.2-39.4 IN	39.3 IN
WAIST CIRCUMFERENCE (Z)	32.1-34.1 IN	33.8 IN
CHEST DEPTH (O)	8.4-9.0 IN	8.6 IN
H-POINT HEIGHT (C)	3.3-3.5 IN	3.5 IN
H-POINT FROM SEAT BACK (D)	5.3-5.5 IN	5.4 IN
SKULL CAP TO BACKLINE (H)	1.6-1.8 IN	1.7 IN
TOTAL SITTING HEIGHT (A)	34.6-35.0 IN	34.8 IN
THIGH CLEARANCE (F)	5.5-6.1 IN	5.7 IN
BUTTOCK KNEE LENGTH (K)	22.8-23.8 IN	23.5 IN
BUTTOCK POPLITAL LENGTH (N)	17.8-18.8 IN	18.2 IN
POPLITEAL LENGTH (L)	16.9-17.9 IN	17.8 IN
KNEE PIVOT HEIGHT (M)	19.1-19.7 IN	19.5 IN
FOOT LENGTH (P)	9.9-10.5 IN	10.3 IN
FOOT BREADTH (W)	3.6-4.2 IN	3.8 IN
SHOULDER PIVOT FROM BACKLINE (E)	3.3-3.7 IN	3.7 IN
SHOULDER BREADTH (V)	16.6-17.2 IN	16.9 IN
SHOULDER PIVOT HEIGTH (B)	19.9-20.5 IN	20.2 IN
ELBOW REST HEIGHT (J)	7.5-8.3 IN	7.6 IN
SHOULDER-ELBOW LENGTH (I)	13.0-13.6 IN	13.2 IN
BACK OF ELBOW TO WRIST PIVOT (G)	11.4-12.0 IN	11.5 IN

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

HEAD DROP TEST

HYBRID III

DATE : 9/1/92

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN: 143 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	68 - 78 DEG. F	69 DEG. F
RELATIVE HUMIDITY	10% - 70%	45 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	231.7 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	10.5 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 : 9/2/92 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN:143 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		69 - 72 DEG. F	69 DEG. F
RELATIVE HUMIDITY		10% - 70%	45 %
IMPACT VELOCITY		22.60 - 23.40 FPS	23.0 FPS
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	23.13 G'S
	20 MS	17.60 - 22.60 G'S	22.21 G'S
	30 MS	12.50 - 18.50 G'S	18.34 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	18.34 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	41.38 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	68.78 DEG.
	TIME	57 - 64 MS	58.63 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	65 - 80 FT.-LBS.	71.62 FT.-LBS.
	TIME	47 - 58 MS	53.38 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	119.75 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	98.5 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

NECK EXTENSION TEST

HYBRID III

DATE : 9/2/92 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN:143 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		69 - 72 DEG. F	69 DEG. F
RELATIVE HUMIDITY		10% - 70%	45 %
IMPACT VELOCITY		19.50 - 20.30 FPS	20.1 FPS
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	19.2 G'S
	20 MS	14.00 - 19.00 G'S	17.91 G'S
	30 MS	11.00 - 16.00 G'S	14.58 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	14.58 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	42.5 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	90.73 DEG.
	TIME	72 - 82 MS	73.63 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-59.0/-39.0 FT.-LBS.	-41.95 FT.-LBS.
	TIME	65 - 79 MS	67 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	155.63 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	125.13 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

THORAX IMPACT TEST

HYBRID III

DATE : 9/4/92

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN 143 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	69 - 72 DEG. F	70 DEG. F
RELATIVE HUMIDITY	10% - 70%	44 %
PENDULUM VELOCITY	21.6 - 22.4 FT/SEC	21.6 FT/SEC
MAXIMUM DEFLECTION	2.50 - 2.86 INCHES	2.55 INCHES
MAXIMUM RESISTIVE FORCE	1080 - 1245 POUNDS	1241 POUNDS
INTERNAL HYSTERESIS	69% - 85%	74.5 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 9/3/92 KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN: 143 KNEE 11LB. CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	68 - 78 DEG. F	70 DEG. F
RELATIVE HUMIDITY	10% - 70%	51 %
PROBE VELOCITY	6.8 - 7.0 FT/SEC	7.0 FT/SEC
PEAK KNEE IMPACT FORCE	996 - 1566 LBS.	1164 LBS.
PROBE WEIGHT	11 LBS.	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 9/3/92 KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN: 143 KNEE 11LB. CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	68 - 78 DEG. F	70 DEG. F
RELATIVE HUMIDITY	10% - 70%	51 %
PROBE VELOCITY	6.8 - 7.0 FT/SEC	7.0 FT/SEC
PEAK KNEE IMPACT FORCE	996 - 1566 LBS.	1101 LBS.
PROBE WEIGHT	11 LBS.	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY I.D. NUMBER: 143

A. DUMMY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. HEAD ACCELEROMETER				
HX LONGITUDINAL	ENDEVCO	A39J	9/92	3/93
HY LATERAL	ENDEVCO	A33F	9/92	3/93
HZ VERTICAL	ENDEVCO	A27F	9/92	3/93
2. CHEST ACCELEROMETER				
CX LONGITUDINAL	ENDEVCO	A28F	8/92	2/93
CY LATERAL	ENDEVCO	EP58	7/92	1/93
CZ VERTICAL	ENDEVCO	A08A	7/92	1/93
3. FEMUR LOAD CELLS				
LEFT SIDE	GSE	951	5/92	11/92
RIGHT SIDE	GSE	952	5/92	11/92

B. CALIBRATION LABORATORY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. PENDULUM ACC.	CEC	A160	7/92	1/93
2. TEST PROBE ACCELEROMETER	CEC	A161	7/92	1/93
3. LUMBAR FLEXION TEST PUSH FORCE GAUGE	TRANS-DUCER INC	20051	7/92	1/93
4. ABDOMINAL COMPRESS. TEST FORCE GAUGE	BLH	72952	7/92	1/93
5. ABDOMINAL COMPRESS. TEST FORCE GAUGE	CIC	567-11	7/92	1/93

HYBRID III EXTERNAL DIMENSIONS

S/N 259 HUMANOID

DUMMY SERIAL NO. 259 DATE: 9/8/92

TEMPERATURE		72 DEG. F
RELATIVE HUMIDITY		46 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	16.9-17.1 IN	17.0 IN
LOCATION FOR WAIST CIRCUMFERENCE (BB)	8.9-9.1 IN	9.0 IN
CHEST CIRCUMFERENCE (Y)	38.2-39.4 IN	39.3 IN
WAIST CIRCUMFERENCE (Z)	32.1-34.1 IN	33.9 IN
CHEST DEPTH (O)	8.4-9.0 IN	8.5 IN
H-POINT HEIGHT (C)	3.3-3.5 IN	3.5 IN
H-POINT FROM SEAT BACK (D)	5.3-5.5 IN	5.5 IN
SKULL CAP TO BACKLINE (H)	1.6-1.8 IN	1.7 IN
TOTAL SITTING HEIGHT (A)	34.6-35.0 IN	34.8 IN
THIGH CLEARANCE (F)	5.5-6.1 IN	5.8 IN
BUTTOCK KNEE LENGTH (K)	22.8-23.8 IN	23.5 IN
BUTTOCK POPLITAL LENGTH (N)	17.8-18.8 IN	18.3 IN
POPLITEAL LENGTH (L)	16.9-17.9 IN	17.8 IN
KNEE PIVOT HEIGHT (M)	19.1-19.7 IN	19.3 IN
FOOT LENGTH (P)	9.9-10.5 IN	10.2 IN
FOOT BREADTH (W)	3.6-4.2 IN	3.9 IN
SHOULDER PIVOT FROM BACKLINE (E)	3.3-3.7 IN	3.7 IN
SHOULDER BREADTH (V)	16.6-17.2 IN	16.9 IN
SHOULDER PIVOT HEIGTH (B)	19.9-20.5 IN	20.2 IN
ELBOW REST HEIGHT (J)	7.5-8.3 IN	8.1 IN
SHOULDER-ELBOW LENGTH (I)	13.0-13.6 IN	13.2 IN
BACK OF ELBOW TO WRIST PIVOT (G)	11.4-12.0 IN	11.5 IN

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

HEAD DROP TEST

HYBRID III

DATE : 9/1/92

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN: 259 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	68 - 78 DEG. F	69 DEG. F
RELATIVE HUMIDITY	10% - 70%	45 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	245.3 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	13.6 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 : 9/3/92 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN:259 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		69 - 72 DEG. F	70 DEG. F
RELATIVE HUMIDITY		10% - 70%	51 %
IMPACT VELOCITY		22.60 - 23.40 FPS	22.7 FPS
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	24.3 G'S
	20 MS	17.60 - 22.60 G'S	22.56 G'S
	30 MS	12.50 - 18.50 G'S	17.91 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	17.91 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	37.0 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	67.8 DEG.
	TIME	57 - 64 MS	58.25 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	65 - 80 FT.-LBS.	78.08 FT.-LBS.
	TIME	47 - 58 MS	52.5 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	116.88 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	97.38 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

NECK EXTENSION TEST

HYBRID III

DATE : 9/3/92 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN:259 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		69 - 72 DEG. F	70 DEG. F
RELATIVE HUMIDITY		10% - 70%	51 %
IMPACT VELOCITY		19.50 - 20.30 FPS	20.1 FPS
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	18.06 G'S
	20 MS	14.00 - 19.00 G'S	17.3 G'S
	30 MS	11.00 - 16.00 G'S	14.73 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	14.73 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	44.5 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	90.17 DEG.
	TIME	72 - 82 MS	74.63 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-59.0/-39.0 FT.-LBS.	-54.38 FT.-LBS.
	TIME	65 - 79 MS	70.13 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	151.38 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	127.5 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

THORAX IMPACT TEST

HYBRID III

DATE : 9/4/92

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN 259 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	69 - 72 DEG. F	69 DEG. F
RELATIVE HUMIDITY	10% - 70%	45 %
PENDULUM VELOCITY	21.6 - 22.4 FT/SEC	21.6 FT/SEC
MAXIMUM DEFLECTION	2.50 - 2.86 INCHES	2.51 INCHES
MAXIMUM RESISTIVE FORCE	1080 - 1245 POUNDS	1236 POUNDS
INTERNAL HYSTERESIS	69% - 85%	72.2 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 9/3/92 KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN: 259 KNEE 11LB. CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	68 - 78 DEG. F	70 DEG. F
RELATIVE HUMIDITY	10% - 70%	51 %
PROBE VELOCITY	6.8 - 7.0 FT/SEC	7.0 FT/SEC
PEAK KNEE IMPACT FORCE	996 - 1566 LBS.	1115 LBS.
PROBE WEIGHT	11 LBS.	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 9/3/92 KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 1 HY3 SN: 259 KNEE 11LB. CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	68 - 78 DEG. F	70 DEG. F
RELATIVE HUMIDITY	10% - 70%	51 %
PROBE VELOCITY	6.8 - 7.0 FT/SEC	7.0 FT/SEC
PEAK KNEE IMPACT FORCE	996 - 1566 LBS.	1170 LBS.
PROBE WEIGHT	11 LBS.	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

INSTRUMENT CALIBRATION INFORMATION

NHTSA DUMMY I.D. NUMBER: 259

A. DUMMY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. HEAD ACCELEROMETER				
HX LONGITUDINAL	ENDEVCO	ER74	9/92	3/93
HY LATERAL	ENDEVCO	A57G	9/92	3/93
HZ VERTICAL	ENDEVCO	A84J	9/92	3/93
2. CHEST ACCELEROMETER				
CX LONGITUDINAL	ENDEVCO	A33A	7/92	1/93
CY LATERAL	ENDEVCO	A67A	7/92	1/93
CZ VERTICAL	ENDEVCO	FB32L	5/92	11/92
3. FEMUR LOAD CELLS				
LEFT SIDE	GSE	954	5/92	11/92
RIGHT SIDE	GSE	955	5/92	11/92

B. CALIBRATION LABORATORY INSTRUMENTS

	MFG	SERIAL NUMBER	DATE LAST CALIBRATED	DATE OF NEXT CALIBRATION
1. PENDULUM ACC.	CEC	A160	7/92	1/93
2. TEST PROBE ACCELEROMETER	CEC	A161	7/92	1/93
3. LUMBAR FLEXION TEST PUSH FORCE GAUGE	TRANS-DUCER INC	20051	7/92	1/93
4. ABDOMINAL COMPRESS. TEST FORCE GAUGE	BLH	72952	7/92	1/93
5. ABDOMINAL COMPRESS. TEST FORCE GAUGE	CIC	567-11	7/92	1/93

Appendix D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY S/N 143		Serial #	Manufacturer	Calibration	
				Last	Next
Head	X	A39J	ENDEVCO	9/92	3/93
	Y	A33F	ENDEVCO	9/92	3/93
	Z	A27F	ENDEVCO	9/92	3/93
Chest	X	A28F	ENDEVCO	8/92	2/93
	Y	EP58	ENDEVCO	7/92	1/93
	Z	A08A	ENDEVCO	7/92	1/93
Right Femur Load Cell		951	GSE	5/92	11/92
Left Femur Load Cell		952	GSE	5/92	11/93
Neck Load Cell	X	269	DENTON	8/91	2/92
	Y	269	DENTON	8/91	2/92
	Z	269	DENTON	8/91	2/92
Neck Moment	X	269	DENTON	8/91	2/92
	Y	269	DENTON	8/91	2/92
	Z	269	DENTON	8/91	2/92
Chest Deflection Gauge		143	HUMANOID	9/92	3/93
Hybrid III Use Only					
Lap Belt Load Cells		123	LEBOW	5/92	11/92
Shoulder Belt Load Cells		127	LEBOW	5/92	11/92
Spool-Out Potentiometer		22	SERVONIC INST.	8/92	2/93
Belt Stretch Transducer		E1	CALSPAN	8/92	2/93

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY S/N259		Serial #	Manufacturer	Calibration	
				Last	Next
Head	X	ER74	ENDEVCO	9/92	3/93
	Y	A57G	ENDEVCO	9/92	3/93
	Z	A84J	ENDEVCO	9/92	3/93
Chest	X	A33A	ENDEVCO	7/92	1/93
	Y	A67A	ENDEVCO	7/92	1/93
	Z	FB32L	ENDEVCO	5/92	11/92
Right Femur Load Cell		954	GSE	5/92	11/92
Left Femur Load Cell		955	GSE	5/92	11/92
Neck Load Cell	X	076	DENTON	7/91	1/92
	Y	076	DENTON	7/91	1/92
	Z	076	DENTON	7/91	1/92
Neck Moment	X	076	DENTON	7/91	1/92
	Y	076	DENTON	7/91	1/92
	Z	076	DENTON	7/91	1/92
Chest Deflection Gauge Hybrid III Use Only		259	HUMANOID	9/92	3/93
Lap Belt Load Cells		133	LEBOW	5/92	11/92
Shoulder Belt Load Cells		135	LEBOW	5/92	11/92
Spool-Out Potentiometer		32	SERVONIC INST.	8/92	2/93
Belt Stretch Transducer		E2	CALSPAN	8/92	2/93

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(6 Month Calibration Minimum)

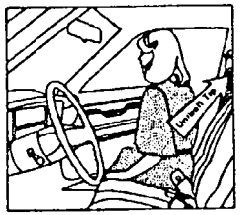
	Serial #	Manufacturer	Calibration	
			Last	Next
Left Seat Rear Crossmember	A178	CEC	4/92	10/92
Right Rear Seat Crossmember	A52	CEC	6/92	12/92
Top of Engine	A44	CEC	7/92	1/93
Bottom of Engine	A175	CEC	4/92	10/92
Left Disc Brake Caliper	A70	CEC	8/92	2/93
Right Disc Brake Caliper	A181	CEC	5/92	11/92
Instrument Panel	A183	CEC	4/92	10/92

Appendix E

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

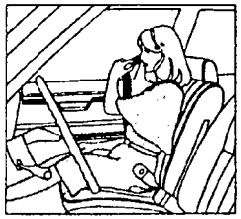
UNIBELT OPERATING INSTRUCTIONS

1. Enter the vehicle and close the door. Sit back and adjust the seat.



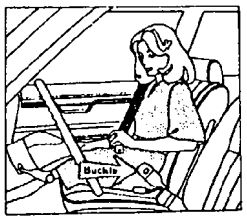
1

2. The seat belt latch plate is above the back of your seat. Grasp the latch plate and pull out the belt. Slide the latch plate up the webbing as far as necessary to make the belt go around your lap.



2

3. When the belt is long enough to fit, insert the latch plate into the buckle until you hear a "click."



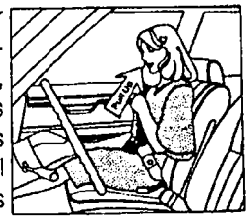
3

WARNING! A belt that is buckled into the wrong buckle will not protect you properly. The lap portion could ride too high on your body, possibly causing internal injuries. Always buckle your belt into the buckle nearest you.

A belt that is too loose will not protect you as well. In a sudden stop you could move too far forward, increasing the possibility of injury. Wear your seat belt snugly.

A belt that is worn under your arm is very dangerous. Your body could fall into the inside surfaces of the vehicle in a collision, increasing head and neck injury. And a belt worn under the arm can cause internal injuries. Ribs aren't as strong as shoulder bones. Wear the belt over your shoulder so that your strongest bones will take the force in a collision.

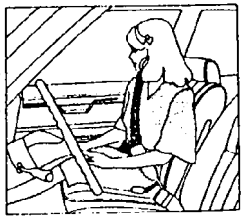
4. Position the lap belt across your thighs, below your abdomen. To remove slack in the lap belt portion, pull up a bit on the shoulder belt, as shown. To loosen the lap belt if it is too tight, tilt the latch plate and pull on the lap belt. A snug belt reduces the risk of sliding under the belt in a collision.



4

WARNING! A lap belt worn too high can increase the risk of internal injury in a collision. The belt forces won't be at the strong hip and pelvic bones, but across your abdomen. Always wear the lap belt as low as possible and keep it snug.

5. Position the shoulder belt on your chest so that it is comfortable and not resting on your neck. The retractor will withdraw any slack in the belt.

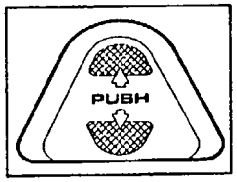


5

WARNING! A twisted belt can't do its job as well. In a collision it could even cut into you. Be sure the belt is straight. If you can't straighten a belt in your vehicle, take it to your dealer and have it fixed.

Adjustable Upper Shoulder Belt Anchorage

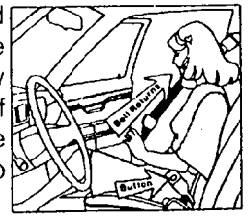
In the front seat, the shoulder belt can be adjusted upward or downward to position the belt away from your neck. Push on the anchorage cover to release the anchorage, and then move it up or down to the position that serves you best.



As a guide, if you are shorter than average, you will prefer a lower position, and if you are taller than average, you'll prefer a higher position. When you release the anchorage, try to move it up or down to make sure that it is locked in position.

In the rear seat, move toward the center of the seat to position the belt away from your neck.

6. To release the belt, push the red button marked PRESS on the buckle. The belt will automatically retract to its stowed position. If necessary, slide the latch plate down the webbing to allow it to retract fully.



6

SEAT BELTS AND PREGNANT WOMEN

We recommend that pregnant women use the seat belts throughout their pregnancy. Keeping the mother safe is the best way to keep the baby safe.

Pregnant women should wear the lap part of the belt across the thighs and as snug across the hips as possible. Keep the belt low so that it does not come across the abdomen. That way the strong bones of the hips will take the force if there is a collision.

FRONT CENTER AND REAR CENTER LAP BELTS

Center seating positions have a lap belt only. To fasten a lap belt, slip the latch plate into the buckle.

To lengthen a lap belt, tilt the latch plate and pull. To remove slack, pull the loose end of the webbing. Wear the belt snug against the hips. Sit back and erect in the seat, then adjust the belt as tightly as is comfortable.

WARNING! A lap belt worn too loose or too high is dangerous.

A belt worn too loose can allow you to slip down and under the belt in a collision.

A belt that is too high will apply crash forces to the abdomen, not to the stronger hip bones.

In either case, the risk of internal injuries is greater. Wear the lap belt low and snug.

WARNING! A frayed or torn belt could rip apart in a collision and leave you with no protection. Inspect the belt system periodically, checking for cuts, frays, or loose parts. Damaged parts must be replaced immediately. Do not disassemble or modify the system. Seat belt assemblies must be replaced after an accident if they have been damaged (bent retractor, torn webbing, etc).