V2212

REPORT NUMBER: CAL-95-N06

NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

HONDA MOTOR COMPANY LIMITED
1995 ACURA INTEGRA LS
4-DOOR SEDAN

NHTSA NUMBER: MS5301

CALSPAN TEST NUMBER: 8227-6

December 20, 1994

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FINAL REPORT

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15. *Supplementary Notes*		

16. *Abstract*

A frontal load cell barrier test of a 1995 Acura Integra LS 4-Door Sedan was performed at Calspan Advanced Technology Center crash test facility in Buffalo, New York on December 20, 1994.

The impact velocity was 56.6 kph and the temperature at the barrier face was 4°C. The maximum post-test vehicle crash was 530 mm. The test vehicle was equipped with a 3-point continuous belt system at each of the front outboard seating positions. The test vehicle was also equipped with supplemental airbags at each of the front outboard seating position.

With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger complied with head, chest and femur requirements.

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Section 1

PURPOSE AND TEST PROCEDURE

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

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

Section 2

SUMMARY OF TEST MS5301

A load cell barrier consisting of 36 load cells was impacted by a 1995 Acura Integra LS 4-Door Sedan at a velocity of 56.6 kph. The test was performed at the Calspan Corporation Advanced Technology Center on December 20, 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 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. 150) and the right-front passenger ATD (Serial No. 045) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 103 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. Vehicle accelerometer #4-Engine Bottom sustained a cut wire during impact. Load Cell C3 did not record accurately. This load cell was not used in the load cell sum calculation.

The driver's HIC was 674.5. The maximum chest deceleration over 3 milliseconds was 49.1 g's and maximum chest deflection was 38.9 mm. Femur loads were -7481.4 newtons on the left femur and -5487.3 newtons on the right femur.

The right front passenger's HIC was 663.5. Maximum chest deceleration over 3 milliseconds was 56.2 g's and maximum chest deflection was 40.1 mm. Femur loads were -2797.8 newtons on the left and -5089.4 newtons on the right.

Table 1

GENERAL TEST AND VEHICLE DATA

Vehicle Year/Make/Model/Body Style: 1995 Acura Integra LS 4-Door Sedan

NHTSA Test No.: MS5301 VIN.: JH4DB7650SS001954

Body Color: Red Date of Manufacture: 7/94

Date Received: 11/3/94

Odometer Reading: 00027

Engine:	4	Cylinders;	-	C.I.D.;	1.8	Liters;	-	CC
	X	Gas;	-	Diesel;	-	Turbocharged		
	-	Longitudinal;			X	Transverse		
Transmission:	4	Speed;	-	Manual;	X	Automatic;	-	Overdrive
Final Drive:	X	Front Wheel;	-	Rear Wheel;	-	Four Wheel		
Accessories:	X	A/C;	X	P/S;	X	P/B;	X	P/wdo
	X	Tilt Wheel;	-	P/seats;	X	Cruise Control	-	Other

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

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

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

Recommended Tire Size: P195/60 R14

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

Tires on Vehicle: P195/60 R14 Manufacturer: Michelin

Number of Occupants:	2	Front;	3	Rear;	-	3rd Seat;	5	TOTAL
Type of Front Seats:	X	Bucket;	-	Bench;	-	Split Bench		
Type of Front Seat Back:	-	Fixed;	X	Adj. with	X	Lever	-	Rot. Knob

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

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

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

GVWR 1669 kgs. GAWR: Front 900 kgs. Rear 789 kgs.

Table 1

GENERAL TEST AND VEHICLE DATA (cont'd)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids) = UDW:

Right Front	= 384 kgs.		Right Rear	= 233	kgs.
Left Front	= 385 kgs.		Left Rear	= 227	kgs.
TOTAL FRONT WEIGHT	= 769 kgs.	(62 % of Total Vehicle Weight)			
TOTAL REAR WEIGHT	= 460 kgs.	(38 % of Total Vehicle Weight)			
TOTAL DELIVERED WEIGHT	= 1,229 kgs.				

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight	1230	kgs.
VCW = Vehicle Capacity Weight	386	kgs.
DSC = Designated Seating Capacity	340	
RCLW = VCW - 68 (DSC) =	46	kgs.

Target Test Weight = UDW + RCLW + (2 dummies x 74.4 kgs./ dummy)

Target Test Weight = 1424

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

Right Front	= 400 kgs.		Right Rear	= 310	kgs.
Left Front	= 400 kgs.		Left Rear	= 310	kgs.
TOTAL FRONT WEIGHT	= 800 kgs.	(56 % of Total Vehicle Weight)			
TOTAL REAR WEIGHT	= 620 kgs.	(44 % of Total Vehicle Weight)			
TOTAL TEST WEIGHT	= 1,420 kgs.				

Weight of ballast secured in vehicle trunk area = 0.0 kgs.

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude:	RF	648	LF	658	RR	655	LR	658
Test Attitude:	RF	638	LF	641	RR	605	LR	606

Wheel Base: 2624 mm.; C.G. = 1155 mm. rearward of front wheel C/L

Remarks: 46.5 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:	December 20, 1994	Time of Test:	12:15

Ambient Temperature: 4 ° C at impact area

Temperature in Occupant Compartment: 21 ° C

Windshield Molding Temperature: 21 ° C

Required Impact Velocity Range: 55.5 to 57.1 kph

Impact Velocity: primary = 56.6 kph, secondary = 56.6 kph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 1321 mm

Exiting Speed Trap: 305 mm

VEHICLE REBOUND AND CRUSH (mm):

Vehicle Length:	Pre-test = R	4416	C_L	4522	L	4415
	Post-test = R	3960	C_L	4017	L	4005
	Crush = R	456	C_L	505	L	410

Distance from front of test vehicle to point of impact:

R	377	C_L	439	L	510

VISIBLE DUMMY CONTACT POINTS:

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

Table 1

GENERAL TEST AND VEHICLE 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 (mm.)	0.0	0.0	-	-

Glazing Damage

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

Other Notable Impact Effects: None

Section 3

OCCUPANT AND VEHICLE INFORMATION

I. DATA

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

Table 2

DUMMY INJURY CRITERIA VALUES

NHTSA No.: MS5301 Vehicle: 1995 Acura Integra LS 4-Door Sedan

	MAXIMUM HEAD ACCELERATION (g's)			
	X	Y	Z	R
Position #1 - Driver	-53.5	-7.6	42.7	65.1
Position #2 - Passenger	59.5	10.0	50.5	72.2

	MAXIMUM CHEST ACCELERATION (g's)			
	X	Y	Z	R*
Position #1 - Driver	-50.6	-4.5	10.5	49.1
Position #2 - Passenger	-58.8	7.5	-13.5	56.2

* 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	-7481.4	-5487.3
Position #2 - Passenger	-2797.8	-5089.4

	MAXIMUM FORCE - SEAT BELT LOADS (nwt)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
Position #1 - Driver	7377.1	-	4922.9
Position #2 - Passenger	8402.4	4208.5	-

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t_1 (mSec)	t_2 (mSec)	Average Acceleration t_1 to t_2
Position #1 - Driver	674.5	56.16	92.04	51.24
Position #2 - Passenger	663.5	58.2	88.68	54.34

** 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: 1995 Acura Integra LS 4-Door Sedan

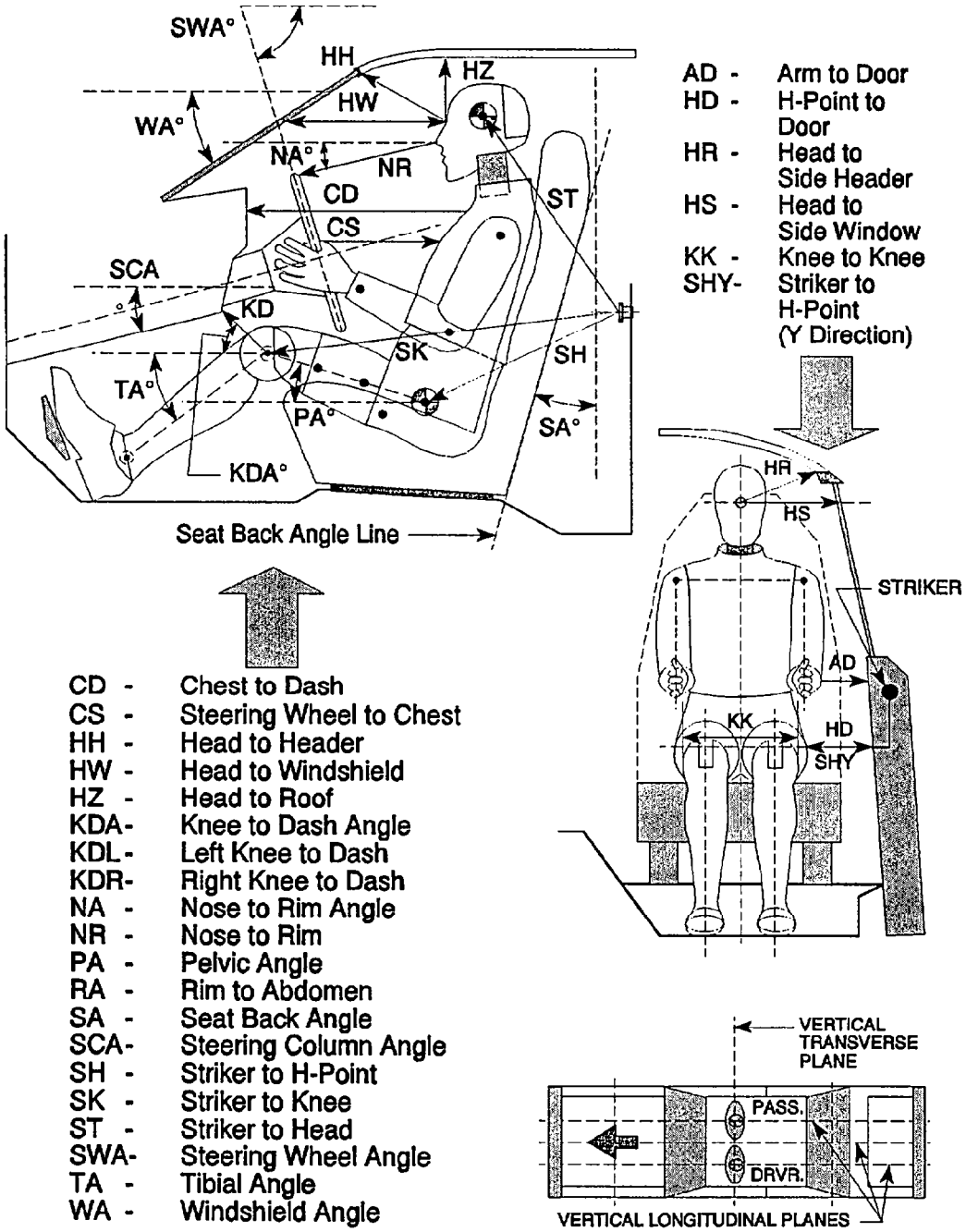
Vehicle NHTSA No.: MS5301 Test Date: December 20, 1994

MAXIMUM VALUES	DRIVER DUMMY ID #150:	PASSENGER DUMMY ID #045:
Neck Load X (nwt)	743.6	751.3
Neck Load Y (nwt)	161.4	-188.2
Neck Load Z (nwt)	2401.9	1237.4
Neck Moment X (nwt-m)	13.8	15.0
Neck Moment Y (nwt-m)	46.9	65.7
Neck Moment Z (nwt-m)	12.2	-9.6
Chest Deflection X (mm.)	38.9	40.1
Time of Max. Occurrence (msec)	73.8	74.9

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

Figure 1

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



CD - Chest to Dash
CS - Steering Wheel to Chest
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
KDA- Knee to Dash Angle
KDL- Left Knee to Dash
KDR- Right Knee to Dash
NA - Nose to Rim Angle
NR - Nose to Rim
PA - Pelvic Angle
RA - Rim to Abdomen
SA - Seat Back Angle
SCA- Steering Column Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
SWA- Steering Wheel Angle
TA - Tibial Angle
WA - Windshield Angle

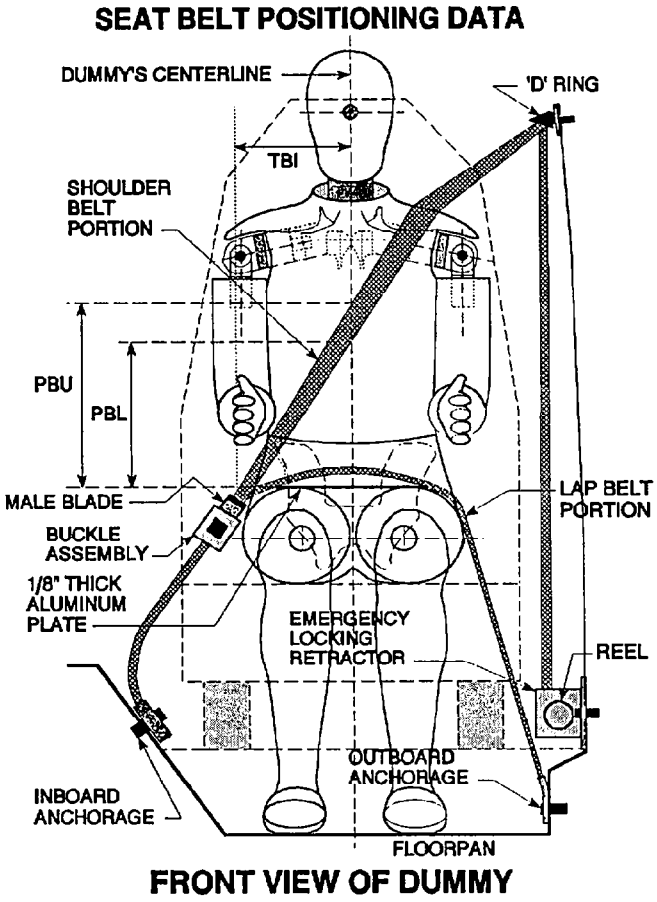
Table 4

FRONT SEAT OCCUPANT MEASUREMENTS

	DRIVER (Serial #150)			PASS. (Serial # 045)		
WA°	28 deg.			N/A		
SWA°	67 deg.			N/A		
SCA°	23 deg.			N/A		
SA°	5th notch as specified			5th notch as specified		
HZ	165			175		
HH	293			310		
HW	524			560		
HR	210			224		
NR	430	Angle	15 deg.	N/A		
CD	603			532		
CS	295			N/A		
RA	195			N/A		
KDL	165	Angle (KDA)	26 deg.	160		
KDR	175			160	Angle (KDA)	26 deg.
PA°	24 deg.			22 deg.		
TA°	35 deg.			40 deg.		
KK	265			175		
ST	480	Angle	12 deg.	467	Angle	8 deg.
SK	589	Angle	98 deg.	574	Angle	98 deg.
SH	249	Angle	135 deg.	236	Angle	135 deg.
SHY	220			245		
HS	230			240		
HD	120			125		
AD	75			110		

Figure 2

SEAT BELT POSITIONING DATA



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	353	330
PBL-- Top surface of alum. plate to belt lower edge	275	248
LAP BELT TENSION	-	-
SHOULDER BELT TENSION	Retractor	Retractor

Table 5

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.	2210 mm	2140 mm
Shoulder belt length as measured on Part 572 Dummy.	890 mm	820 mm
Lap belt length as measured on Part 572 Dummy.	840 mm	840 mm
SHOULDER BELT SPOOL-OFF DATA:		
As determined by film analysis.	50 mm	38 mm
As determined mechanically.	30 mm	40 mm
As determined electronically.	46 mm	50 mm
BELT STRETCH DATA:		
Measured electronically between shoulder belt load cell and the "D" ring.	89 mm/M	168 mm/M
Measured mechanically.	0.0 mm/M	59 mm/M

Figure 3

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information Shown on Table 6.

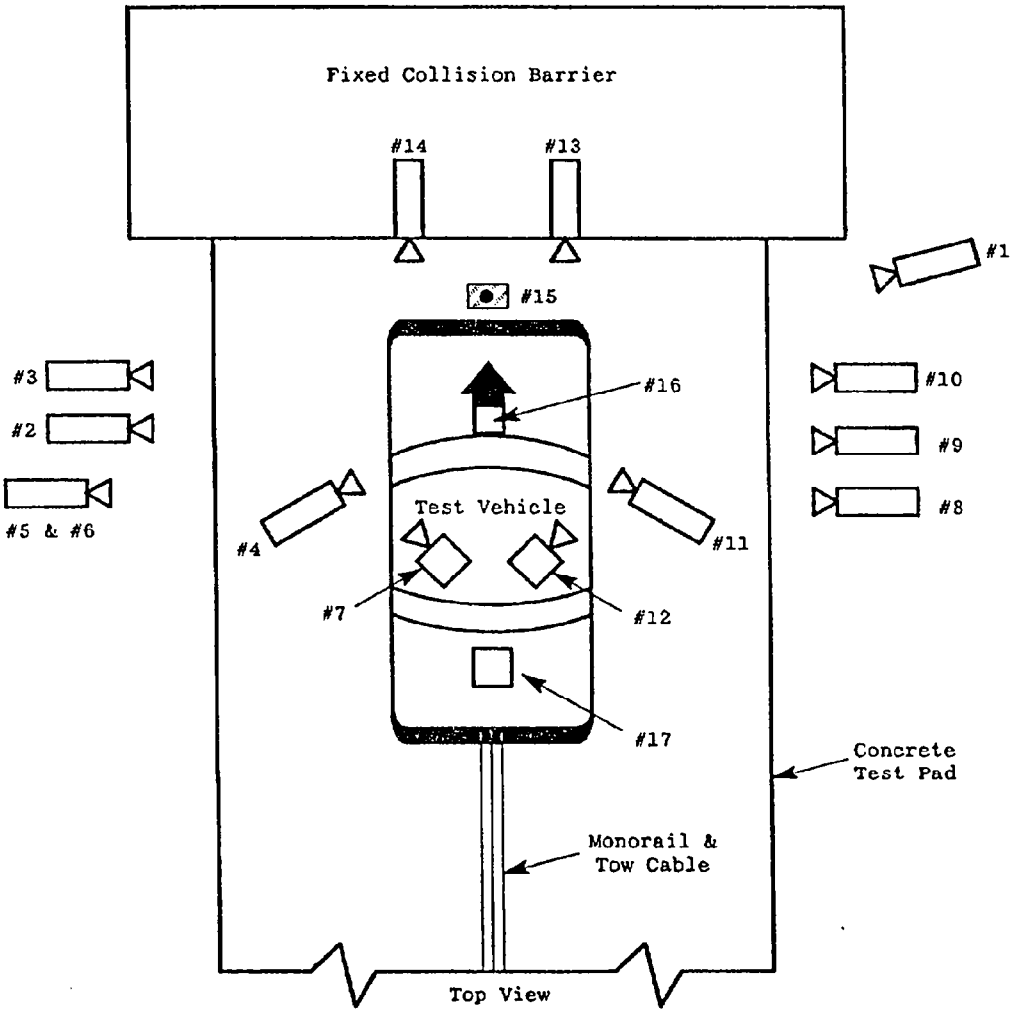


Table 6
HIGH-SPEED CAMERA LOCATIONS

Test No. MS5301 Vehicle: 1995 Acura Integra LS 4-Door Sedan

CAMERA NO.	VIEW	CAMERA POSITIONS (MM.)* X	Y	Z	ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	6071	1752	1041	-2	5565	13	1010
3	Left Side View	7798	1117	1041	-4	7292	25	1000
4	Driver and Interior View	2819	2769	1778	-18	-	13	1040
5	Steering Column (Bottom)	7112	2057	1168	-3	2313	25	1100
6	Steering Column (Top)	7112	2057	1778	-10	2313	25	1120
7	Left Belt	-	-	-	-	-	8	680
8	Overall Right Side	5994	2007	1067	-5	5488	13	1060
9	Right Side View	7823	1422	1016	-4	7317	25	1060
10	Right Passenger View	7493	2667	1422	-5	6987	35	1110
11	Passenger and Interior View	2769	1854	1803	-22	-	13	1160
12	Right Belt	-	-	-	-	-	8	N.T.
13	Passenger Front View	560	127	1778	-35	-	13	1000
14	Driver Front View	560	127	1778	-35	-	13	1010
15	Windshield View	0	0	3048	-45	-	13	1090
16	Pit View of Engine	0	505	-3048	90	-	13	880
17	Pit View of Fuel Tank	0	3432	-3048	90	-	13	930

*X = film plane to monorail centerline

Y = film plane to impact location

Z = film plane to ground

** = referenced to horizontal plane

N.T. indicates No Timing

Figure 4

VEHICLE TARGET LOCATIONS

(Dimensions in millimeters)

A	430
B	490
C	890
D	2348
E	180
F	1509
G	893
H	890
I	125
J	1330
K	1015
L	1284
M	180
N	125
O	890
P	890
Q	1284
R	1015
S	1333

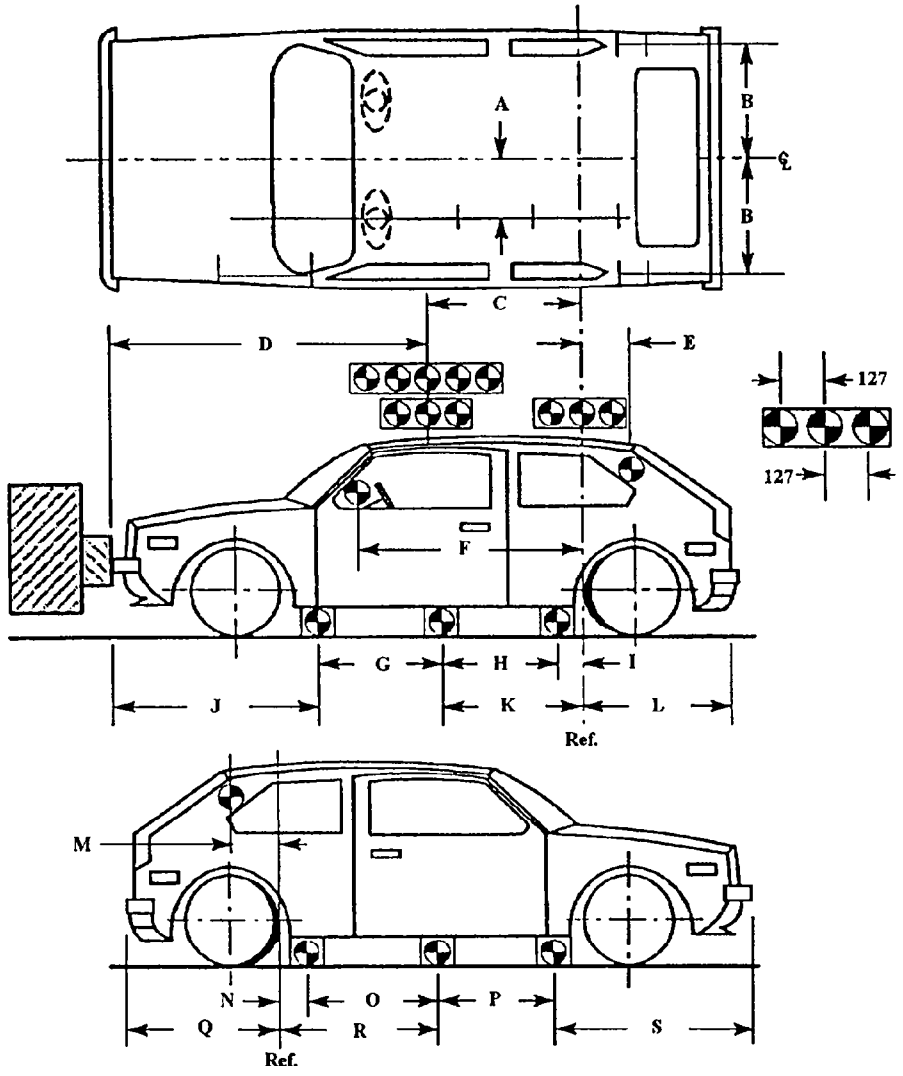


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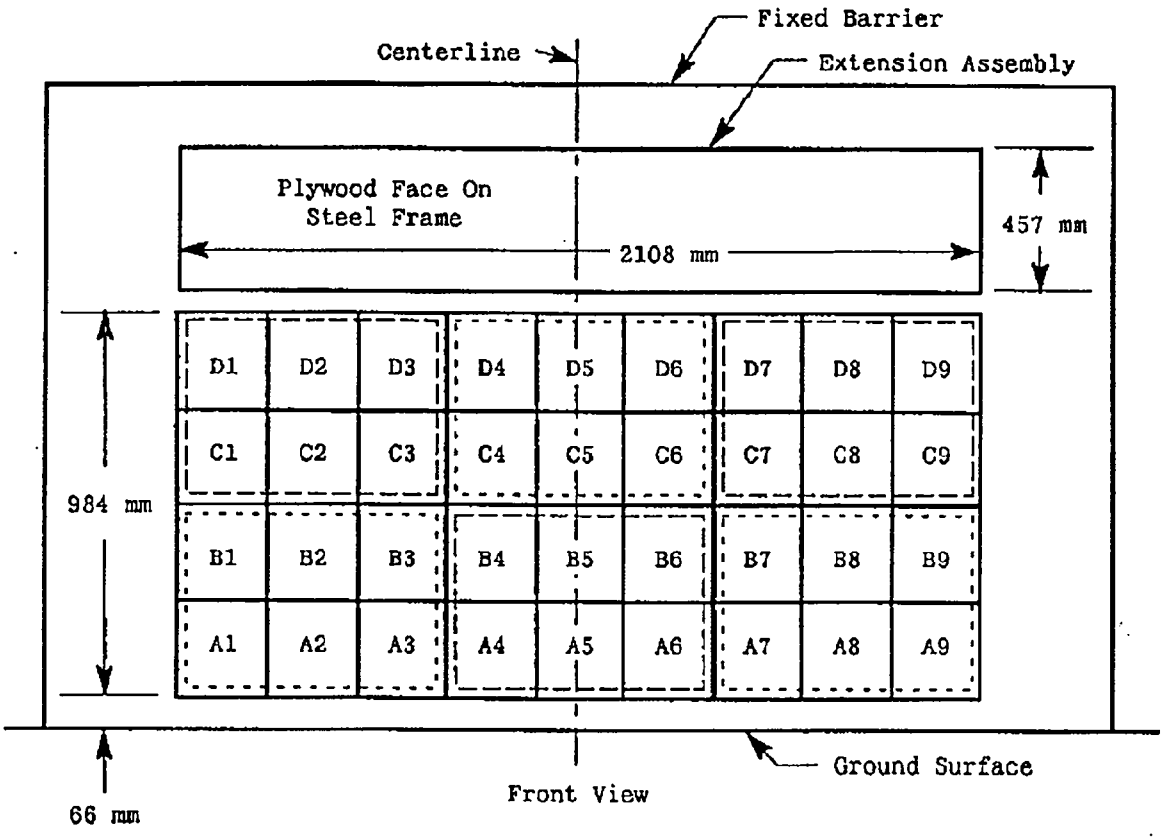
Figure 5

LOAD CELL LOCATIONS ON FIXED BARRIER

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



6 GROUPS OF 6 LOAD CELLS EACH

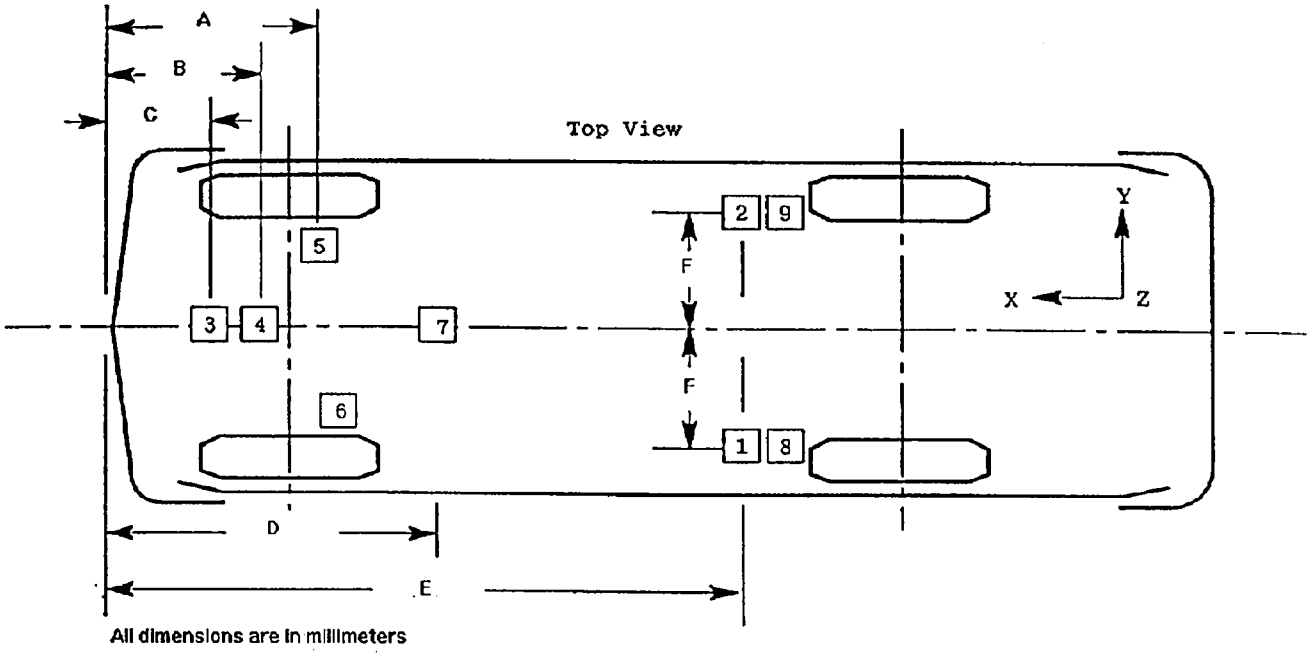
Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

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

Figure 6

VEHICLE ACCELEROMETER LOCATIONS



ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	Distances From Vehicle Front All dimensions in millimeters	
1	Left Rear Seat Crossmember [E/F]	X = 2850	Y = 465
2	Right Rear Seat Crossmember [E/F]	X = 2850	Y = 465
3	Top of engine [C]	775	
4	Bottom of engine [B]	848	
5	Right Disc Brake Caliper [A]	978	
6	Left Disc Brake Caliper [A]	978	
7	Instrument Panel [D]	1737	
8	Left Rear Seat Crossmember [E/F]	X = 2850	Y = 465
9	Right Rear Seat Crossmember [E/F]	X = 2850	Y = 465

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

Figure 7

TEST VEHICLE MEASUREMENTS

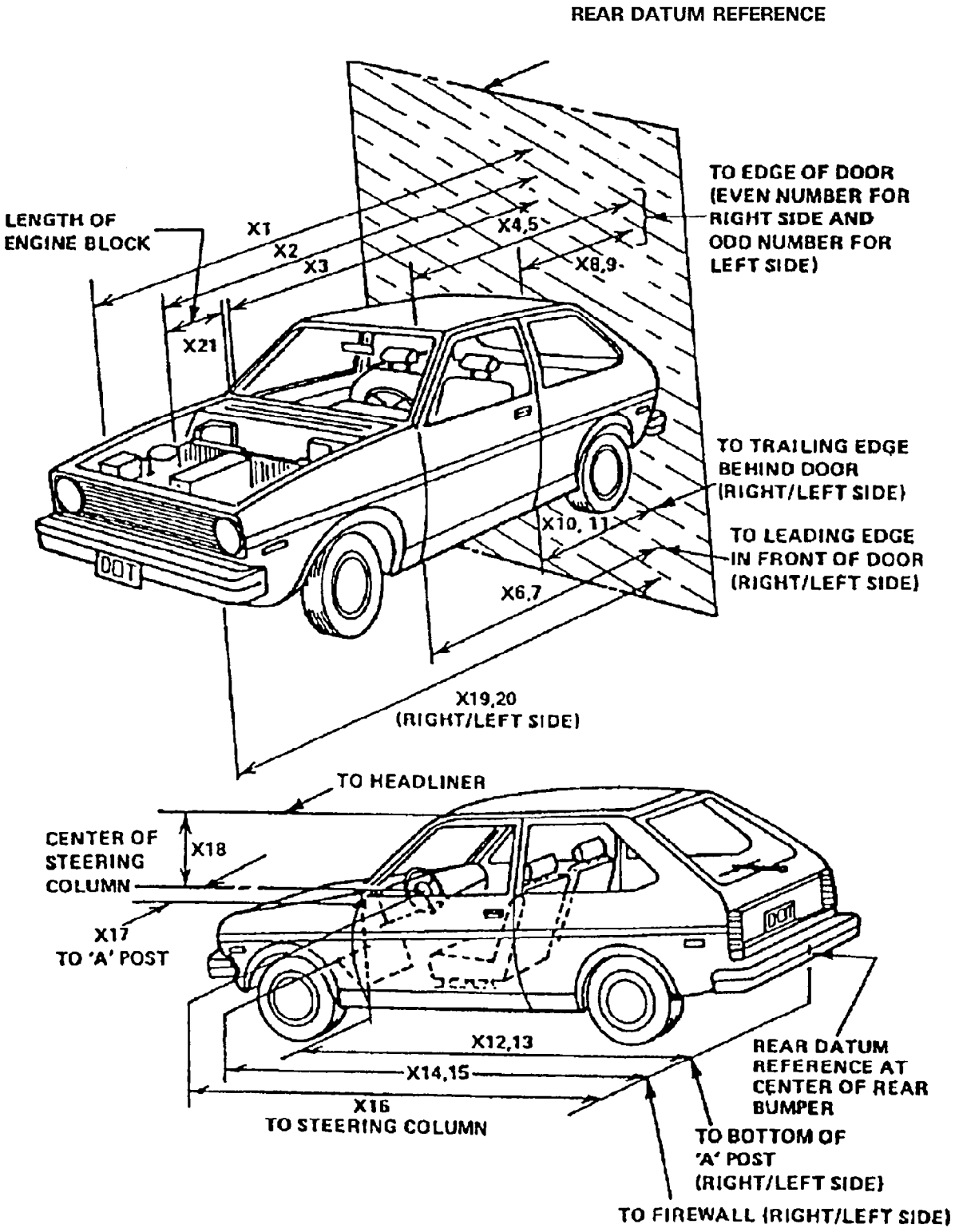


Table 7

VEHICLE MEASUREMENTS

		All Dimensions in mm		
No.		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	4522	4017	505
X2	Rear Surface of Vehicle to Front of Engine	3958	3730	228
X3	Rear Surface of Vehicle to Firewall	3378	3205	173
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3045	3040	5
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3044	3039	5
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3084	3071	13
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3093	3072	21
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	1994	1990	4
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2000	1995	5
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2010	2020	-10
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2015	2000	15
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3060	3045	15
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3060	3046	14
X14	Rear Surface of Vehicle to Firewall, Right Side	3300	3240	60
X15	Rear Surface of Vehicle to Firewall, Left Side	3305	3160	145
X16	Rear Surface of Vehicle to Steering Column	2620	2580	40
X17	Center of Steering Column to "A" Post	400	425	-25
X18	Center of Steering Column to Headliner	425	445	-20
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4416	3960	456
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4415	4005	410
X21	Length of Engine Block	460	460	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2760	2730	30
CD	Rear Surface of Vehicle to Center of Dash Panel	2768	2730	38
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2765	2730	35

Table 8

ACCIDENT INVESTIGATION DIVISION DATA

FOR 56.3 KPH FRONTAL BARRIER IMPACT

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

Vehicle NHTSA No.: MS5301 VIN: JH4DB7650SS001954

Model Year: 1995 Build Date: 7/94 Test Date: December 20, 1994

Vehicle Size Category: Mid Size Test Weight: 1420 Kgs

Vehicle Wheelbase: 2624 mm; Front Overhang: 1330 mm; Overall Width: 1410 mm

Collision Deformation Classification (CDC) Code: 12FDEW2

Crush Depth Dimensions;

C1 = 412 mm

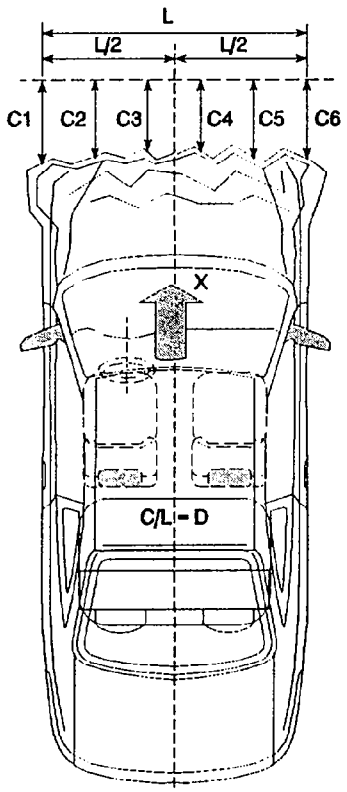
C2 = 500 mm

C3 = 501 mm

C4 = 501 mm

C5 = 530 mm

C6 = 289 mm



Midpoint of Damage: D = Vehicle Centerline (Longitud.)

Longitude Length of Damaged Region: L= 1410 mm

Section 4

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

"Windshield Mounting" FMVSS No. 212 Data

"Windshield Zone Intrusion" FMVSS No. 219 Data

"Fuel System Integrity" FMVSS No. 301

Figure 8

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

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

Windshield is bonded in place and covered with 18 mm. molding.

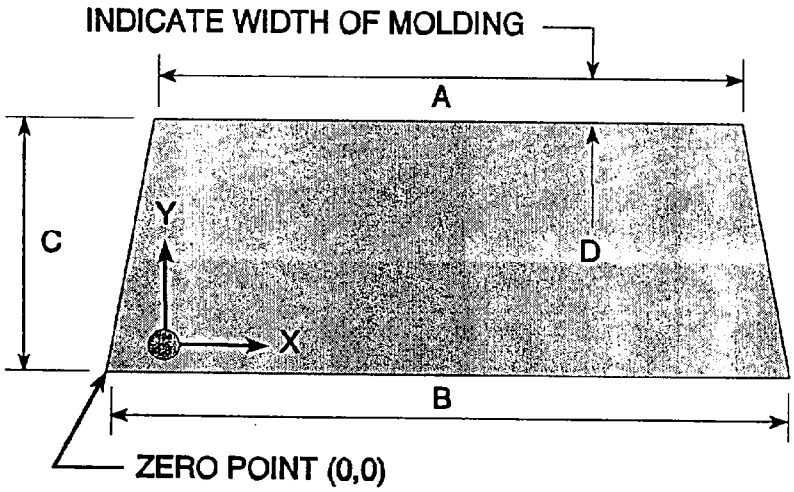
FMVSS 212 REQUIREMENTS:

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		
	PRE-TEST (mm)	POST-TEST(mm)	% OF RETENTION
RIGHT SIDE	2032.5	2032.5	100
LEFT SIDE	2032.5	2032.5	100
TOTAL	4,065	4,065	100

AREA OF RETENTION FAILURE:



FRONT VIEW OF WINDSHIELD

DIMENSIONS	
A	1041
B	1450
C	787
D	18

FAILURE DETAILS: None

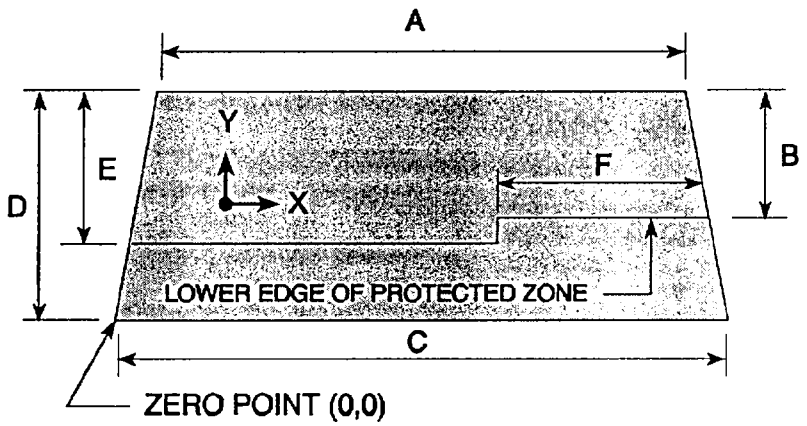
Figure 9

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)



FRONT VIEW OF WINDSHIELD

DIMENSIONS	
A	1041
B	475
C	1450
D	787
E	530
F	595

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

(Show location of penetration on the above sketch)

	COORDINATES	
	X	Y
1.		
2.		
3.		
4.		

Table 9

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

TEST VEHICLE NHTSA No.: MS5301 TEST DATE: December 20, 1994

VEHICLE MAKE/MODEL: 1995 Acura Integra LS

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

= =

TEST VEHICLE IMPACT TYPE:

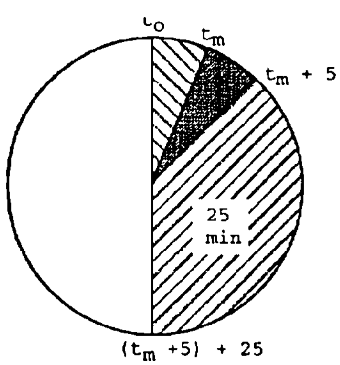
X Frontal (35 mph)

____ Oblique (30 mph) with ____ deg. barrier face first contacting ____ (driver/passenger) side

____ Rear Moving Barrier (30 mph)

____ Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT:



	ACTUAL	MAX ALLOWED
1. From impact until vehicle motion ceases	0	1 oz.
2. For 5 minute period after vehicle motion ceases	0	5 oz.
3. For next 25 minutes	0	1 oz./min.

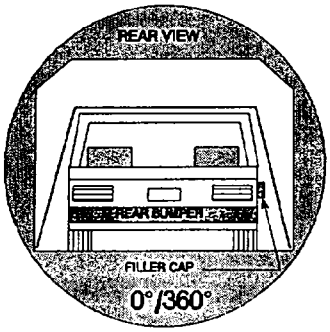
SOLVENT SPILLAGE DETAILS: None

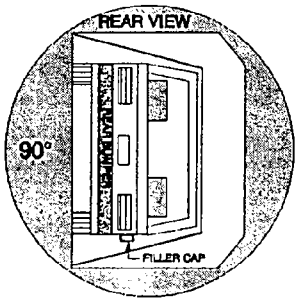
Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.
MS5301





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	20	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	7	minutes	20	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.

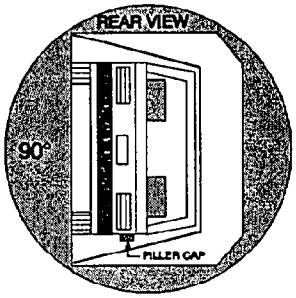
IV. SOLVENT SPILLAGE LOCATION(S): None

Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.
MS5301



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	30	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	7	minutes	30	seconds
Next whole minute interval	8	minutes	00	seconds

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

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

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0

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

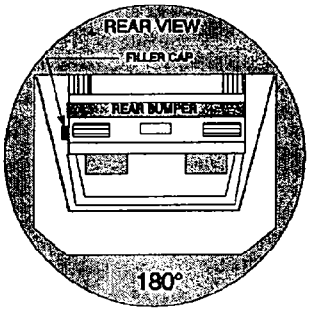
IV. SOLVENT SPILLAGE LOCATION(S): None

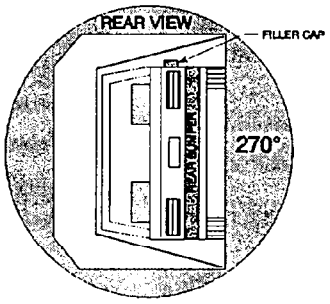
Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.
MS5301





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	40	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	7	minutes	40	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.

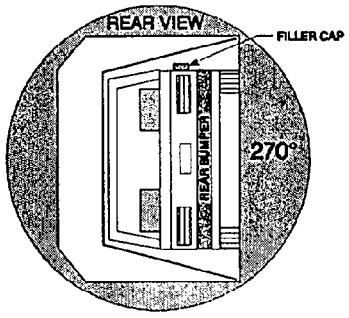
IV. SOLVENT SPILLAGE LOCATION(S): None

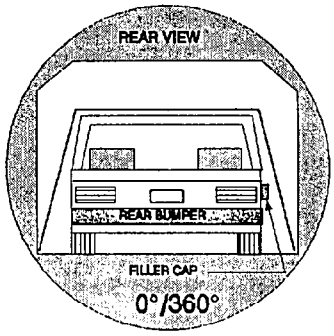
Table 10

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE:

Vehicle NHTSA ID No.
MS5301





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90 deg. Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	10	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	7	minutes	10	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

Appendix A

PHOTOGRAPHS

PHOTOGRAPHS

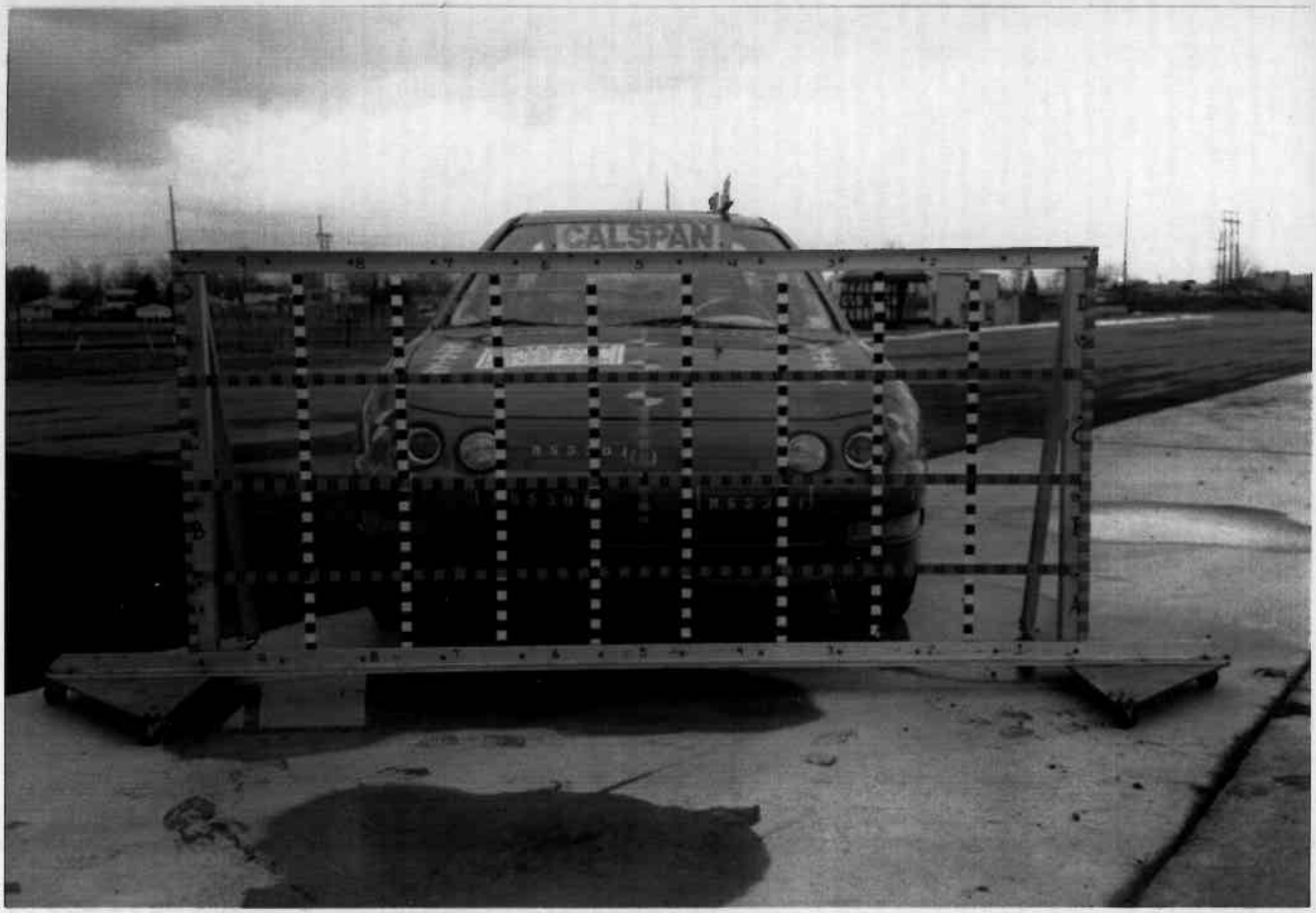


Figure A-1 LOAD CELL LOCATIONS

8227-6

Figure A-2 PRE-TEST FRONT VIEW

Figure A-3 POST-TEST FRONT VIEW

8227-6

Figure A-4 PRE-TEST LEFT SIDE VIEW

Figure A-5 POST-TEST LEFT SIDE VIEW

8227-6

Figure A-6 PRE-TEST RIGHT SIDE VIEW

8227-6

Figure A-7 POST-TEST RIGHT SIDE VIEW

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

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8227-6

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

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

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

Figure A-12 PRE-TEST WINDSHIELD VIEW

Figure A-13 POST-TEST WINDSHIELD VIEW

Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

8227-6

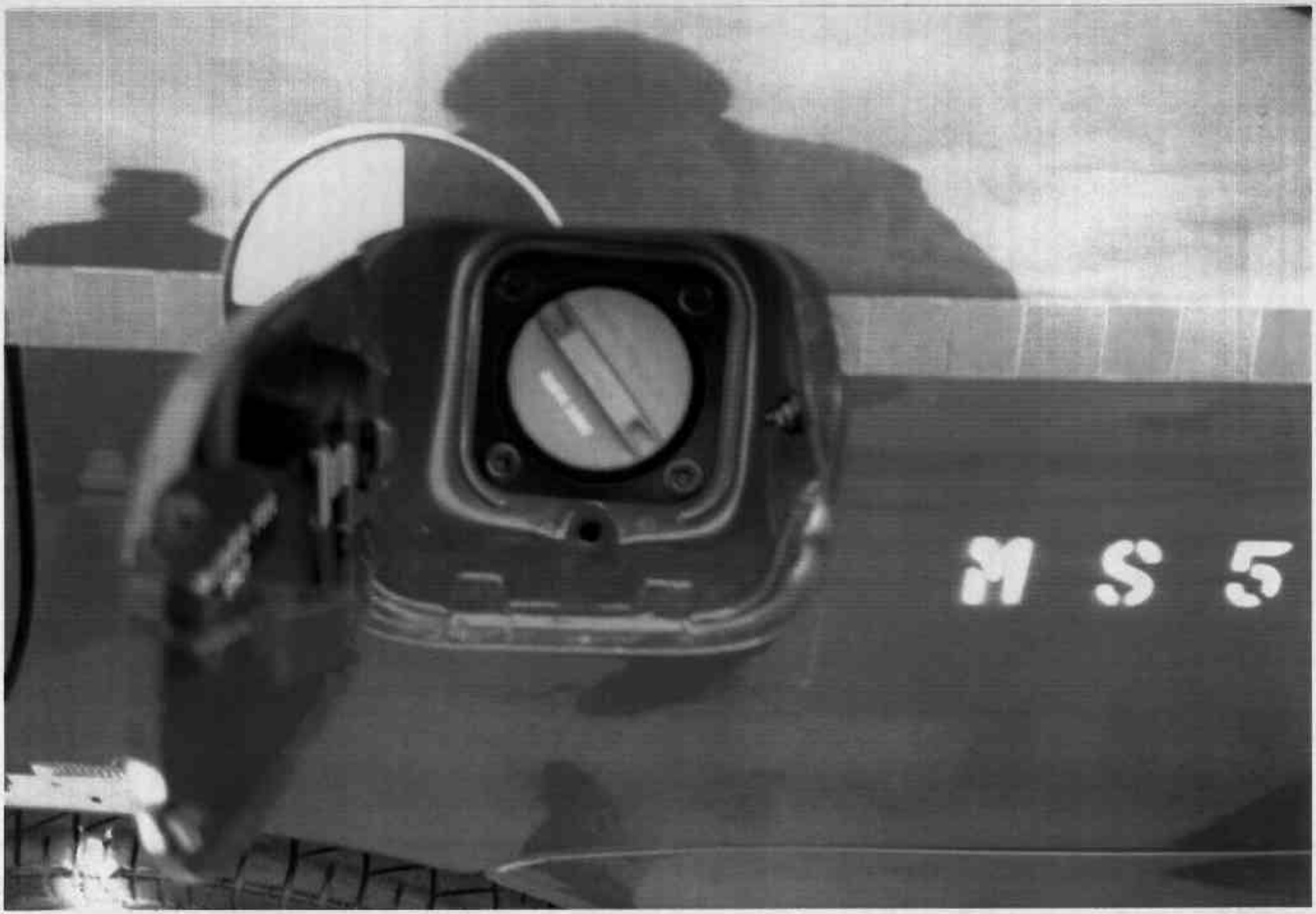


Figure A-15 FUEL FILLER CAP

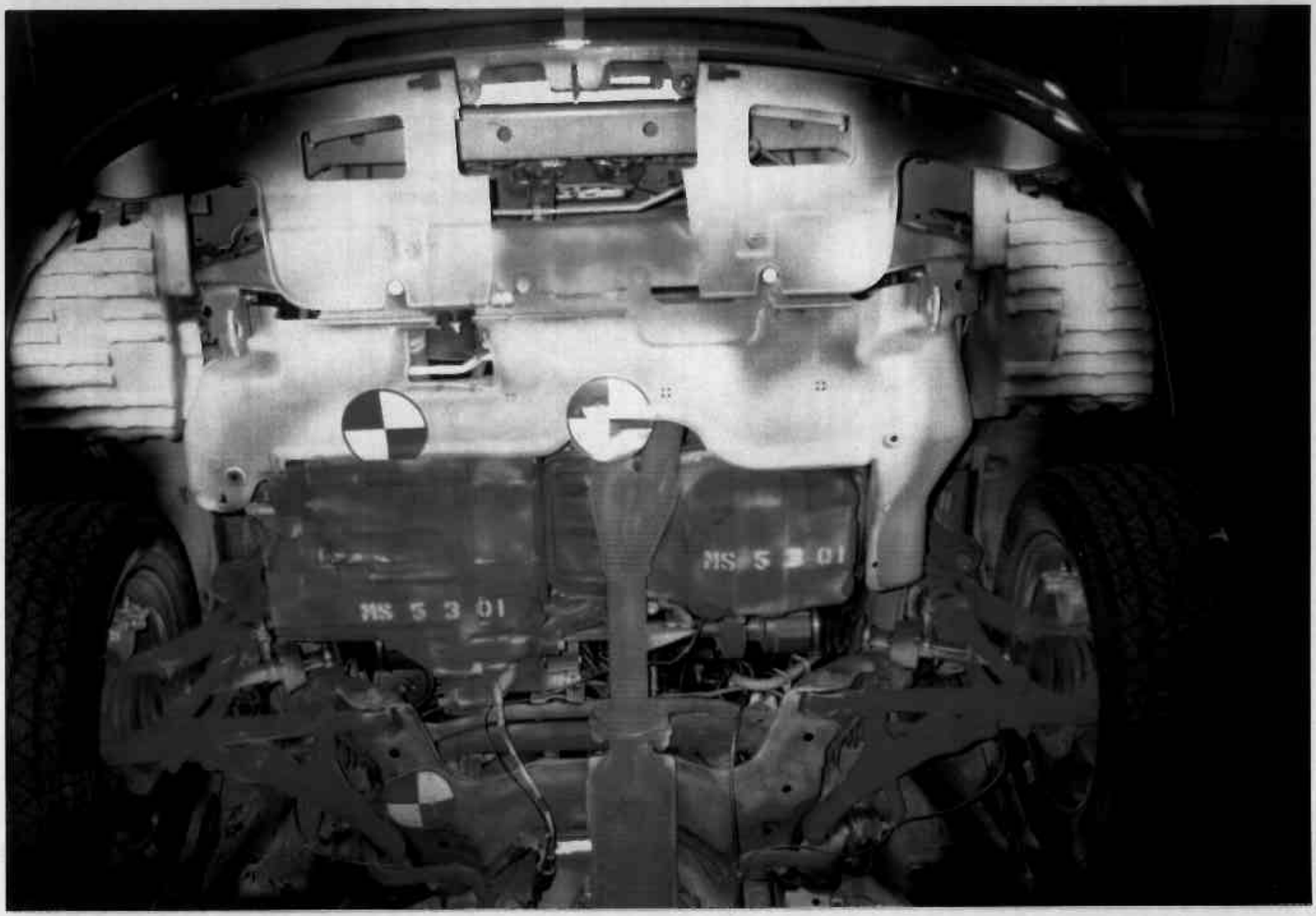


Figure A-16 PRE-TEST FRONT UNDERBODY VIEW

8227-6

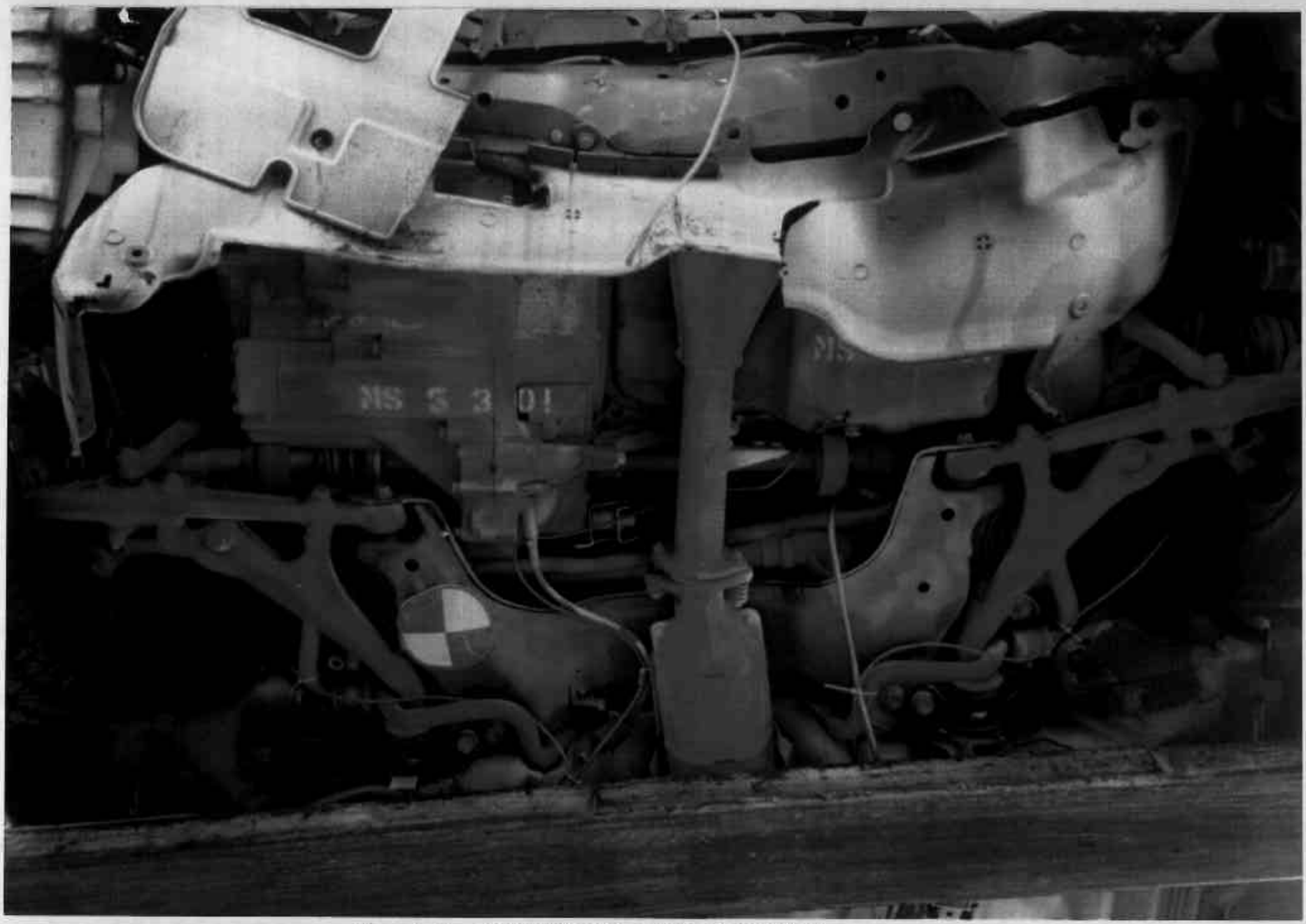
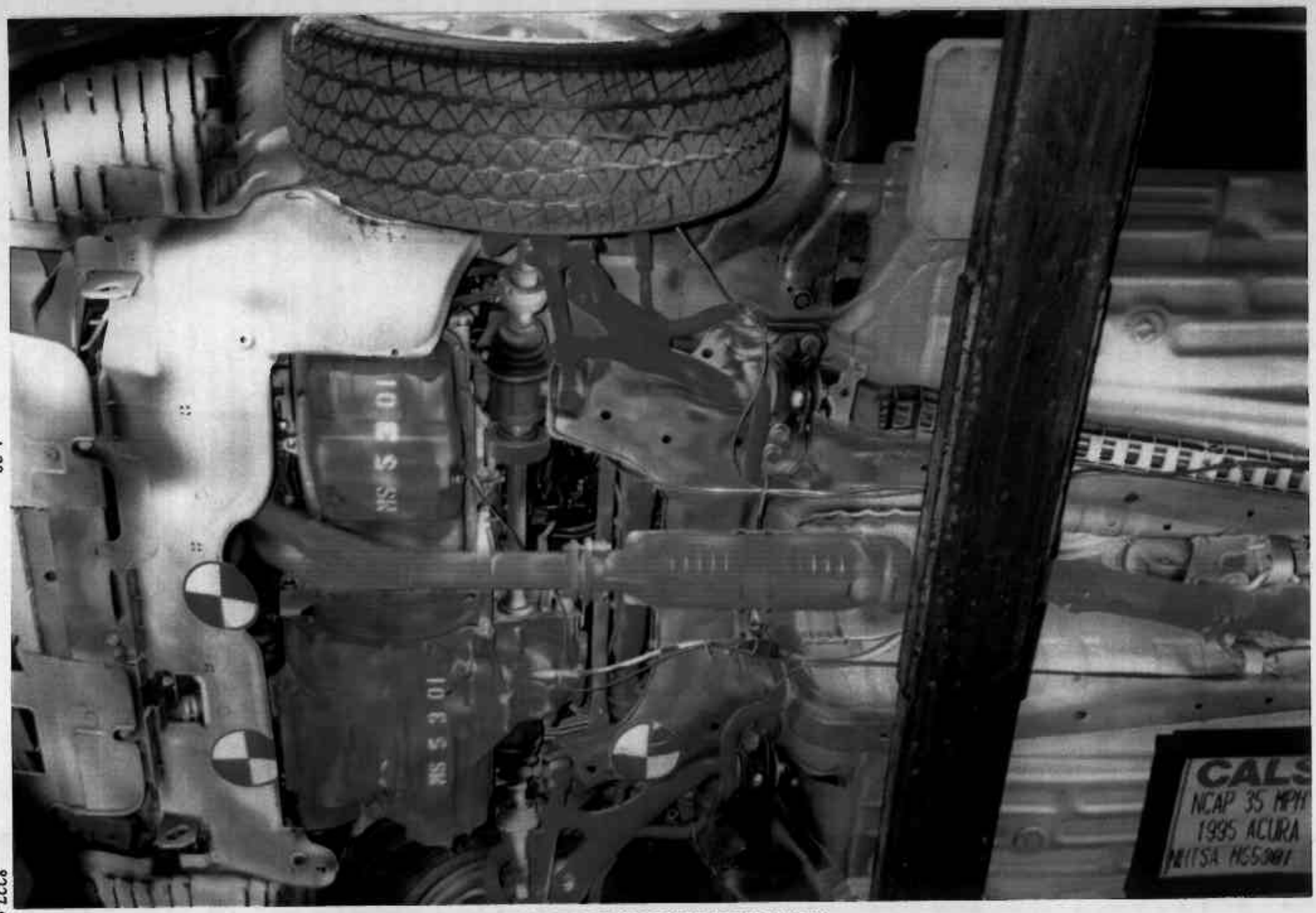


Figure A-17 POST-TEST FRONT UNDERBODY VIEW



A-20

8227-6

Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW

Figure A-19 POST-TEST FRONT SIDE UNDERBODY VIEW

8227-6

Figure A-20 PRE-TEST REAR UNDERBODY VIEW

PHOTOGRAPH NOT AVAILABLE

Figure A-21 POST-TEST REAR UNDERBODY VIEW

8227-6

Figure A-22 PRE-TEST DRIVER POSITION VIEW

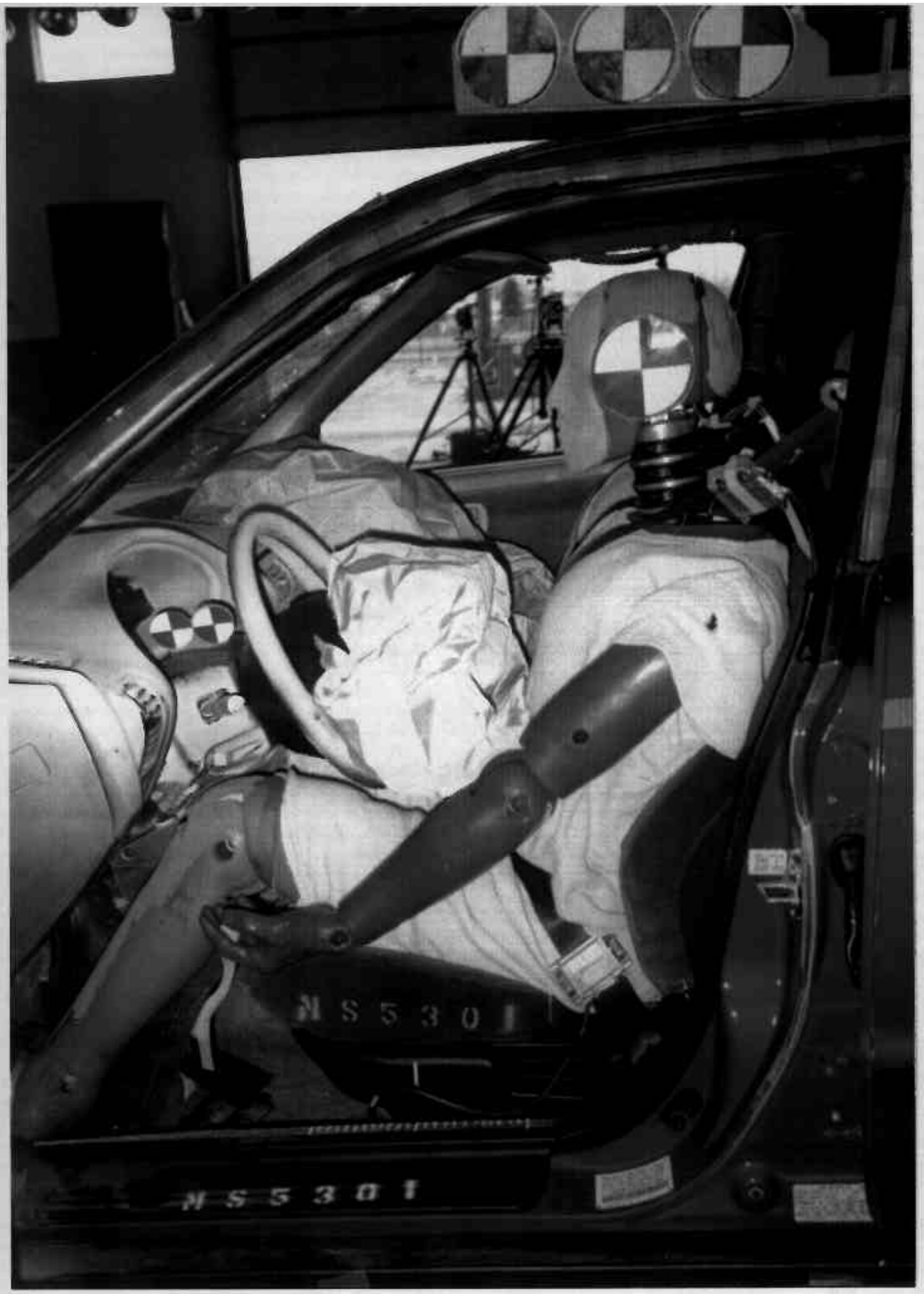


Figure A-23 POST-TEST DRIVER POSITION VIEW

Figure A-24 PRE-TEST PASSENGER POSITION VIEW

Figure A-25 POST-TEST PASSENGER POSITION VIEW

Figure A-26 PRE-TEST DRIVER DUMMY AND INTERIOR VIEW

Figure A-27 POST-TEST DRIVER DUMMY AND INTERIOR VIEW

8227-6

Figure A-28 PRE-TEST PASSENGER DUMMY AND INTERIOR VIEW

8227-6

Figure A-29 POST-TEST PASSENGER DUMMY AND INTERIOR VIEW

8227-6

Figure A-30 PRE-TEST DRIVER HEAD LOCATION

Figure A-31 PRE-TEST PASSENGER HEAD LOCATION

8227-6

Figure A-32 VEHICLE IMPACT

8227-6

Appendix B

VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA

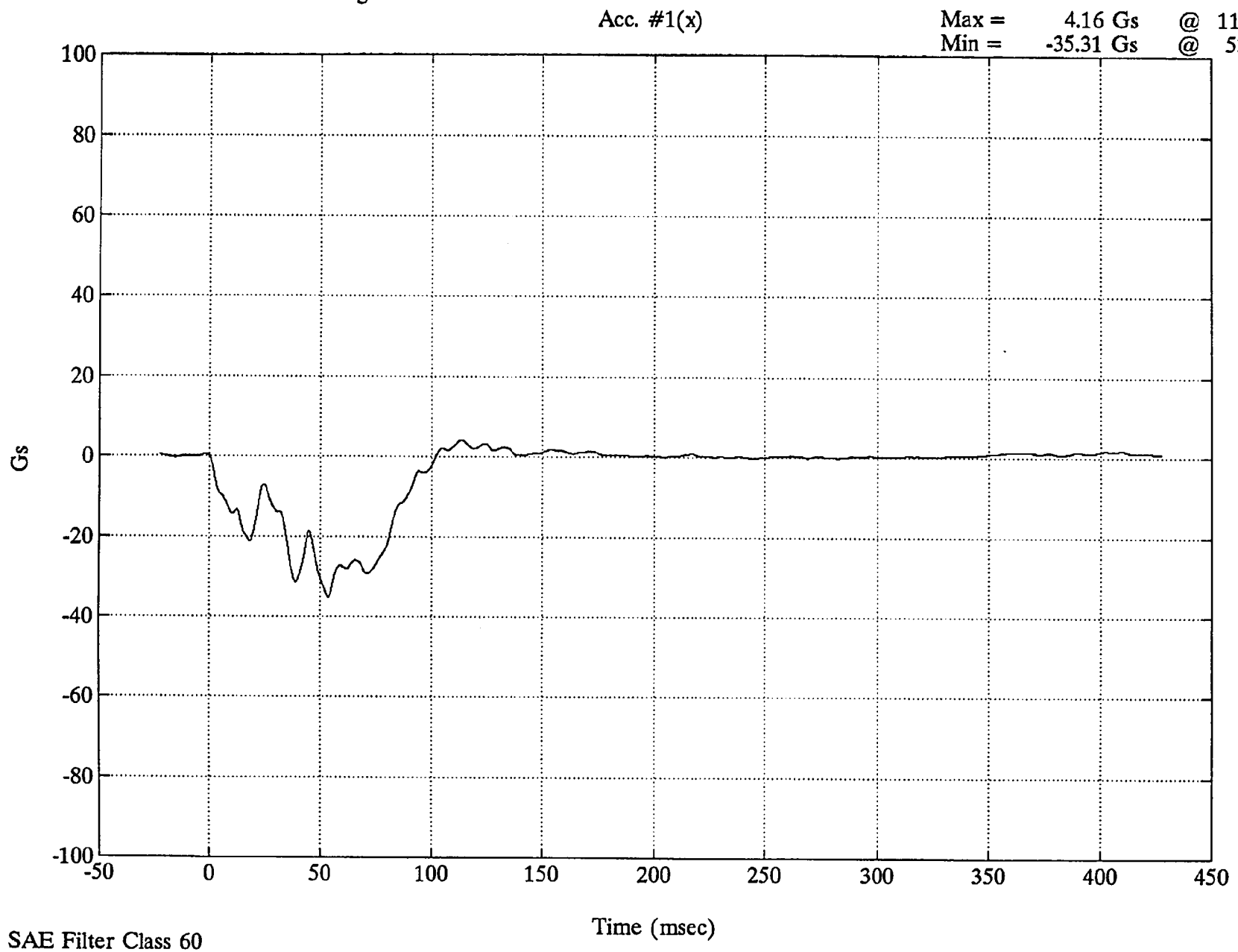
TEST NO. MS5301

VEHICLE DATA

FILTER CHANNEL CLASS

60

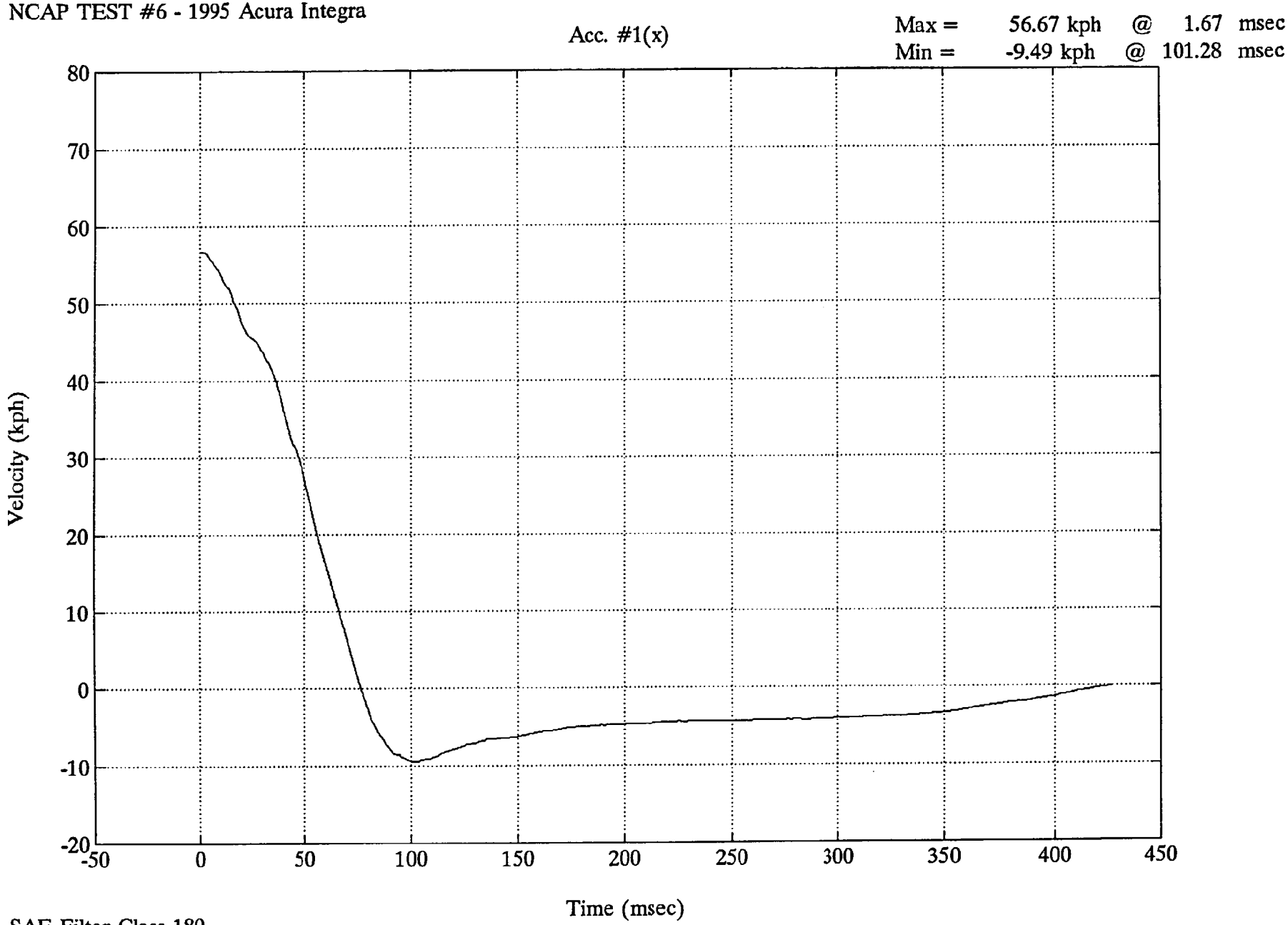
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

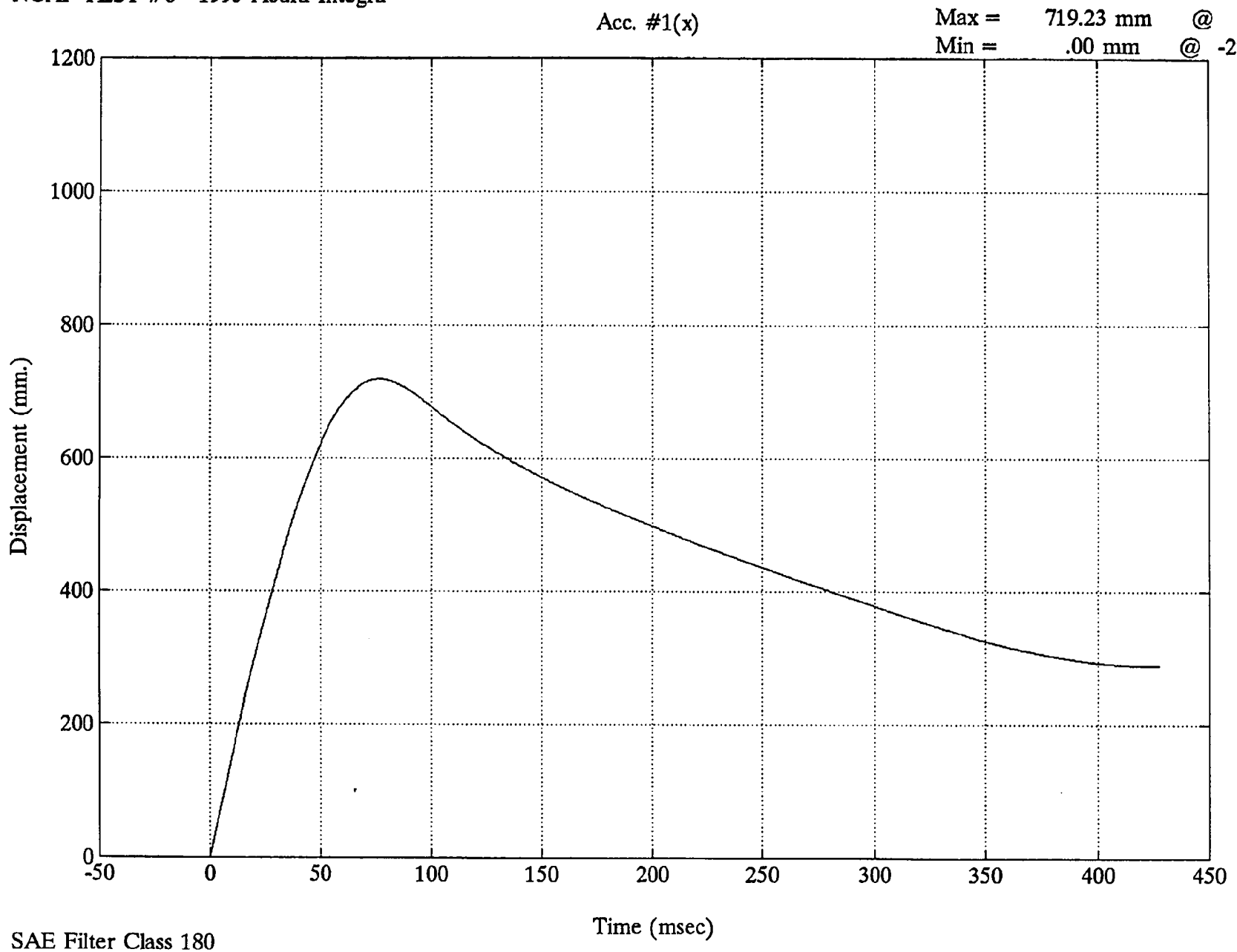
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

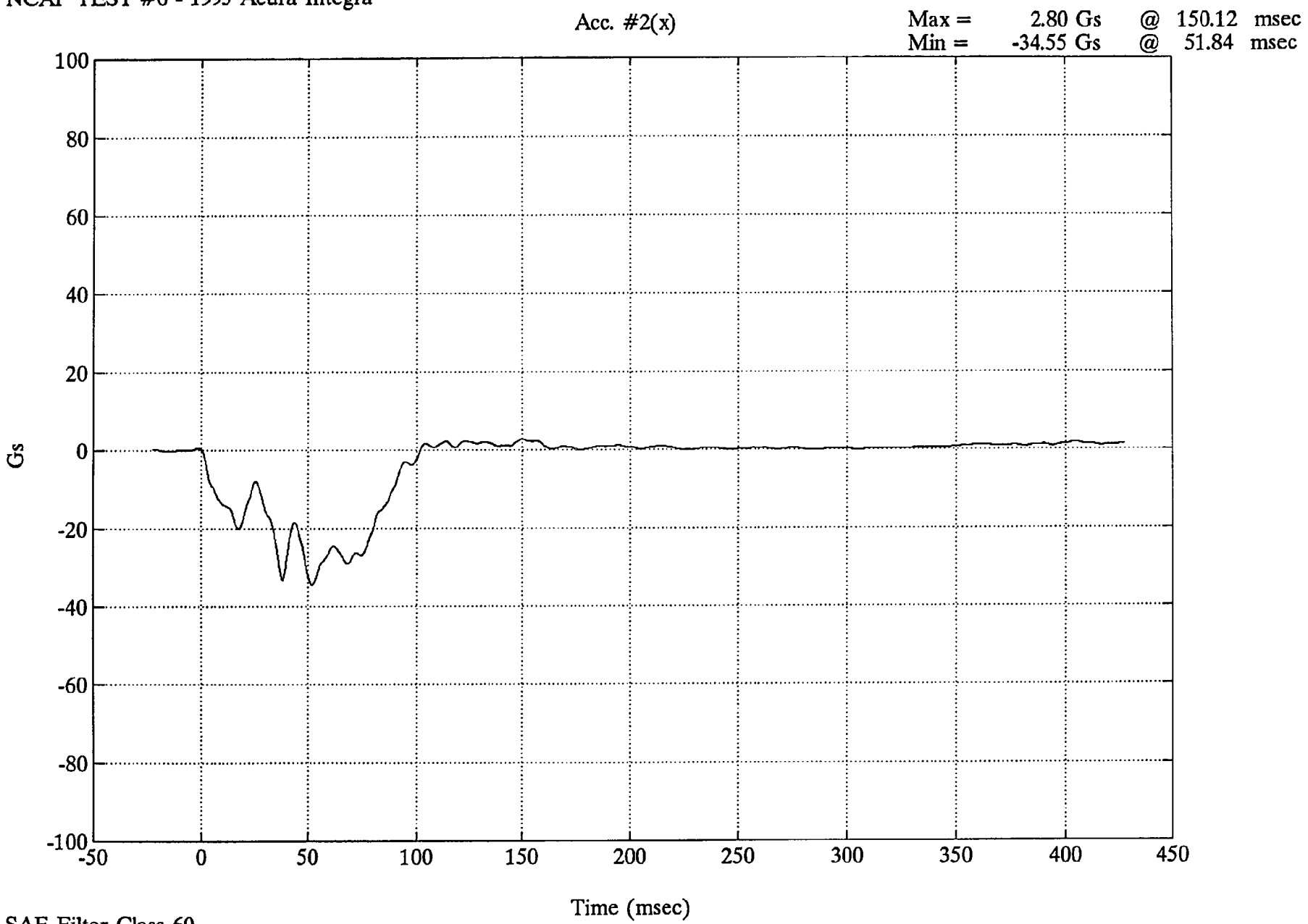
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

NCAP TEST #6 - 1995 Acura Integra

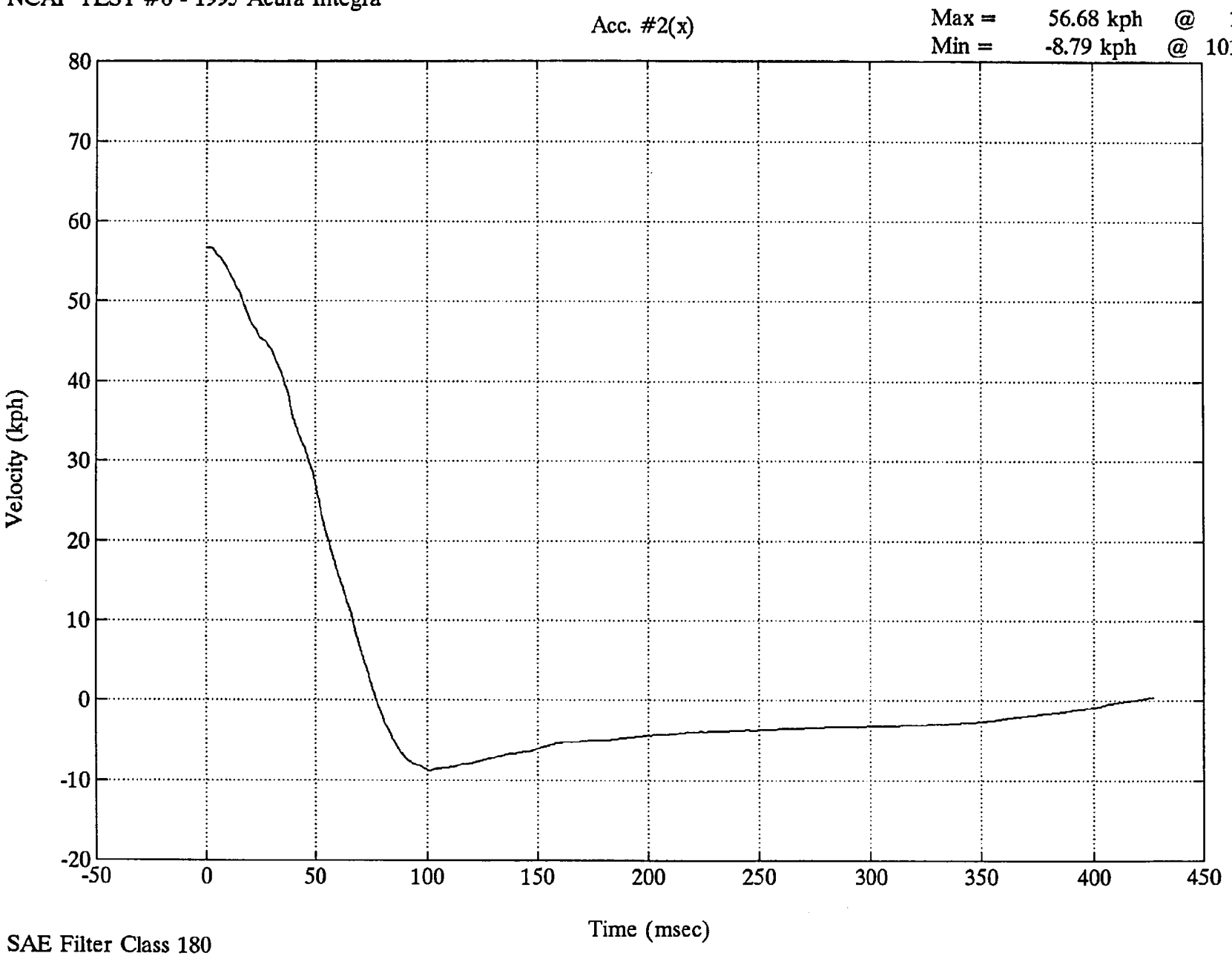


B-6

8227-6

SAE Filter Class 60

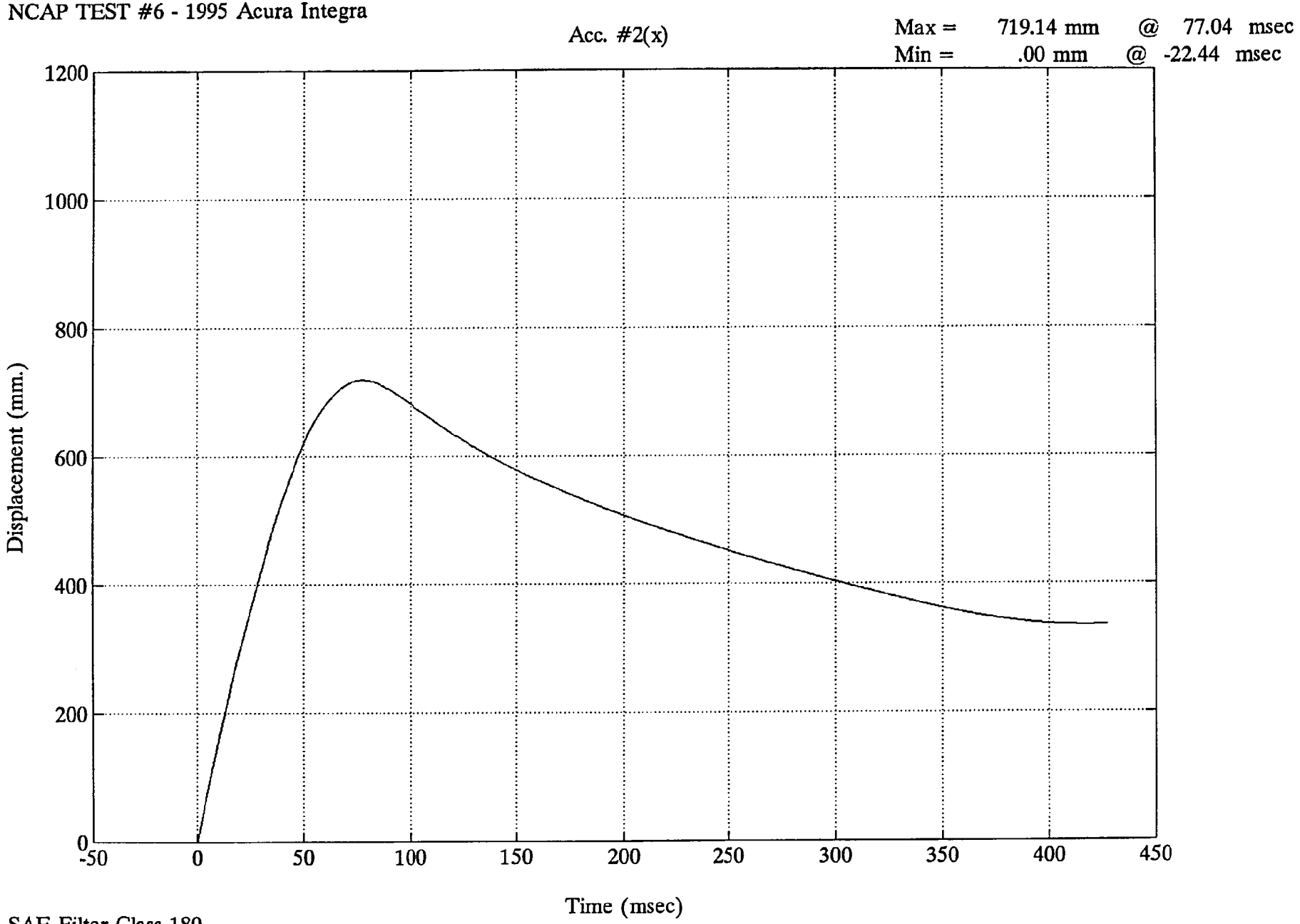
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

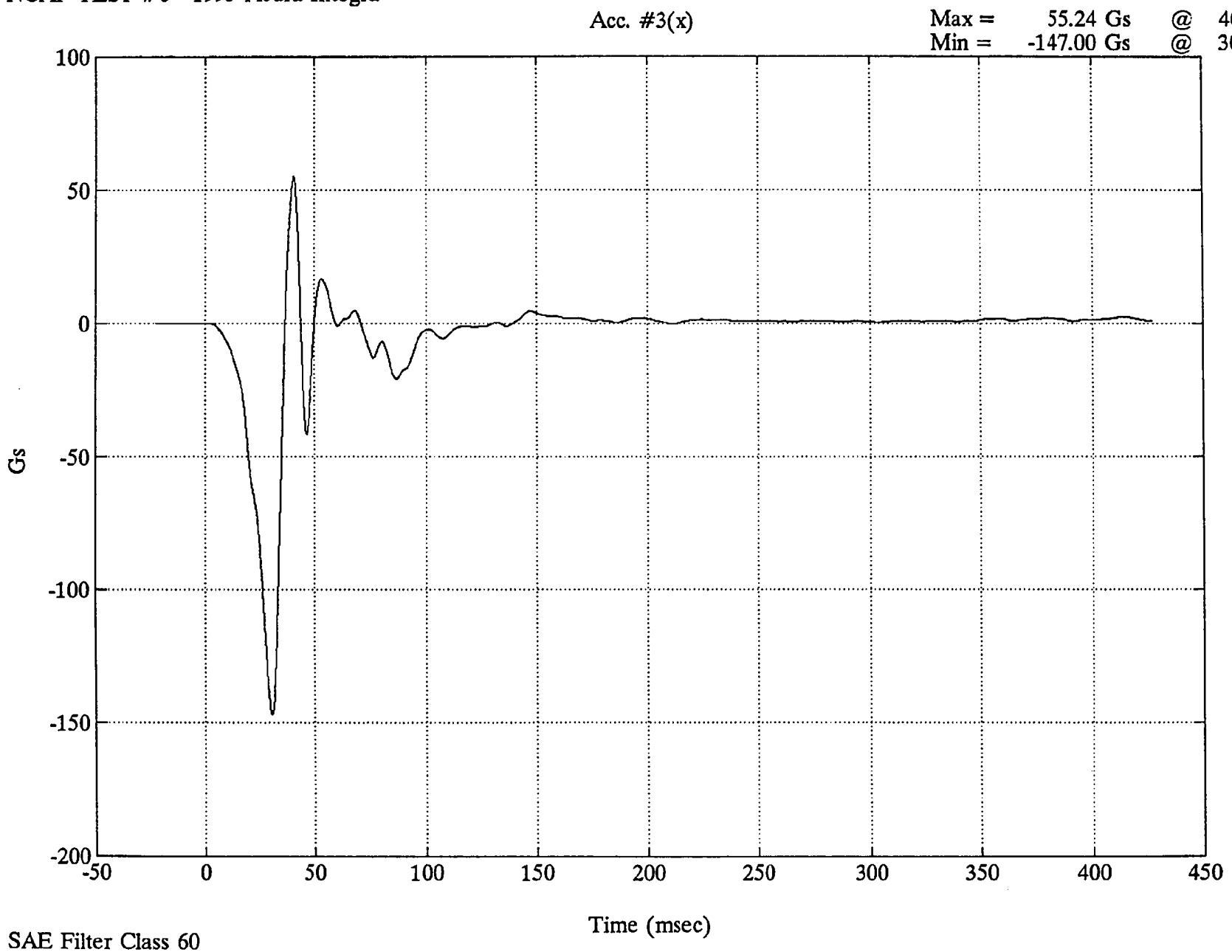
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra



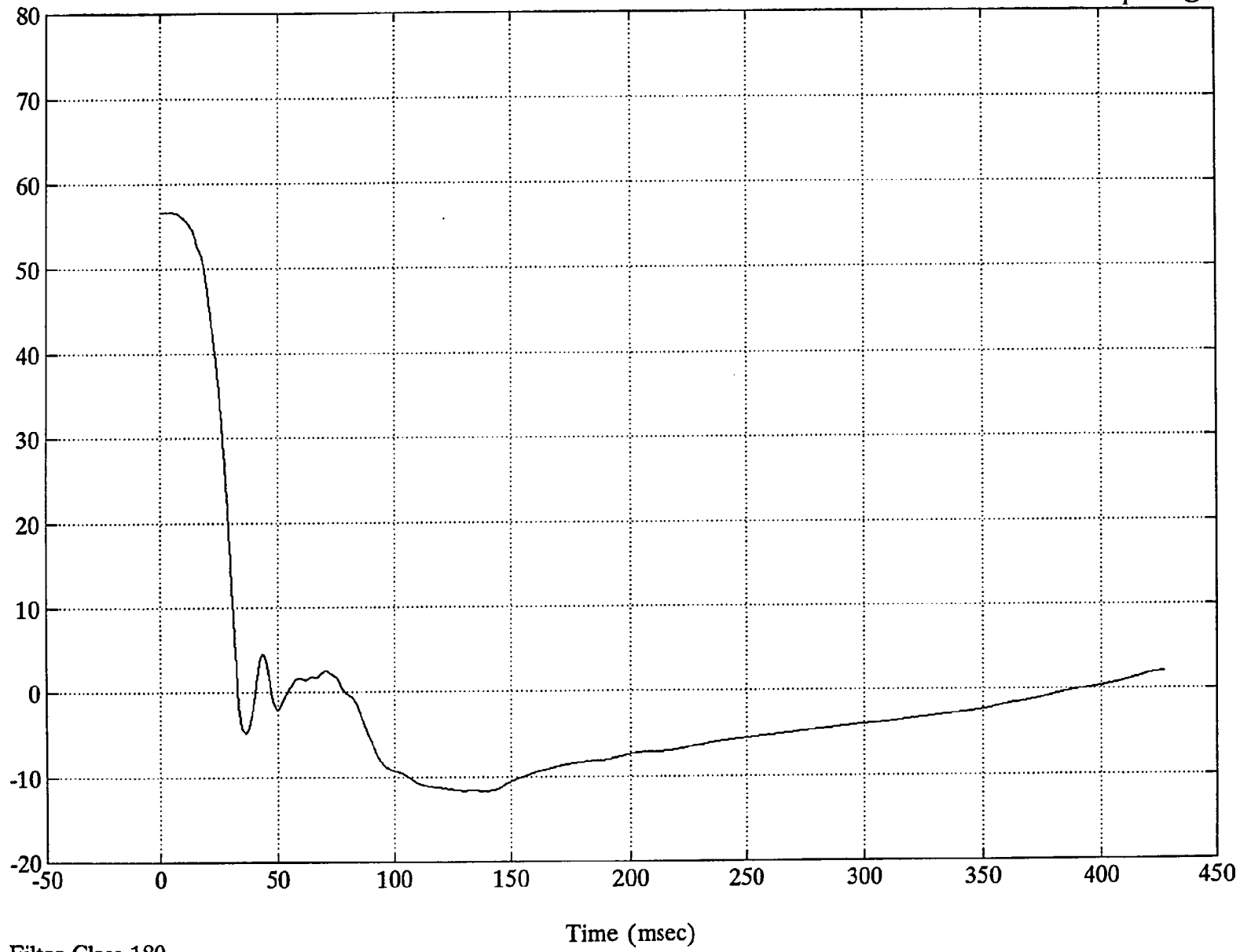
SAE Filter Class 60

8227-6

NCAP TEST #6 - 1995 Acura Integra

Acc. #3(x)

Max = 56.65 kph @ 2.39 msec
Min = -11.72 kph @ 138.48 msec

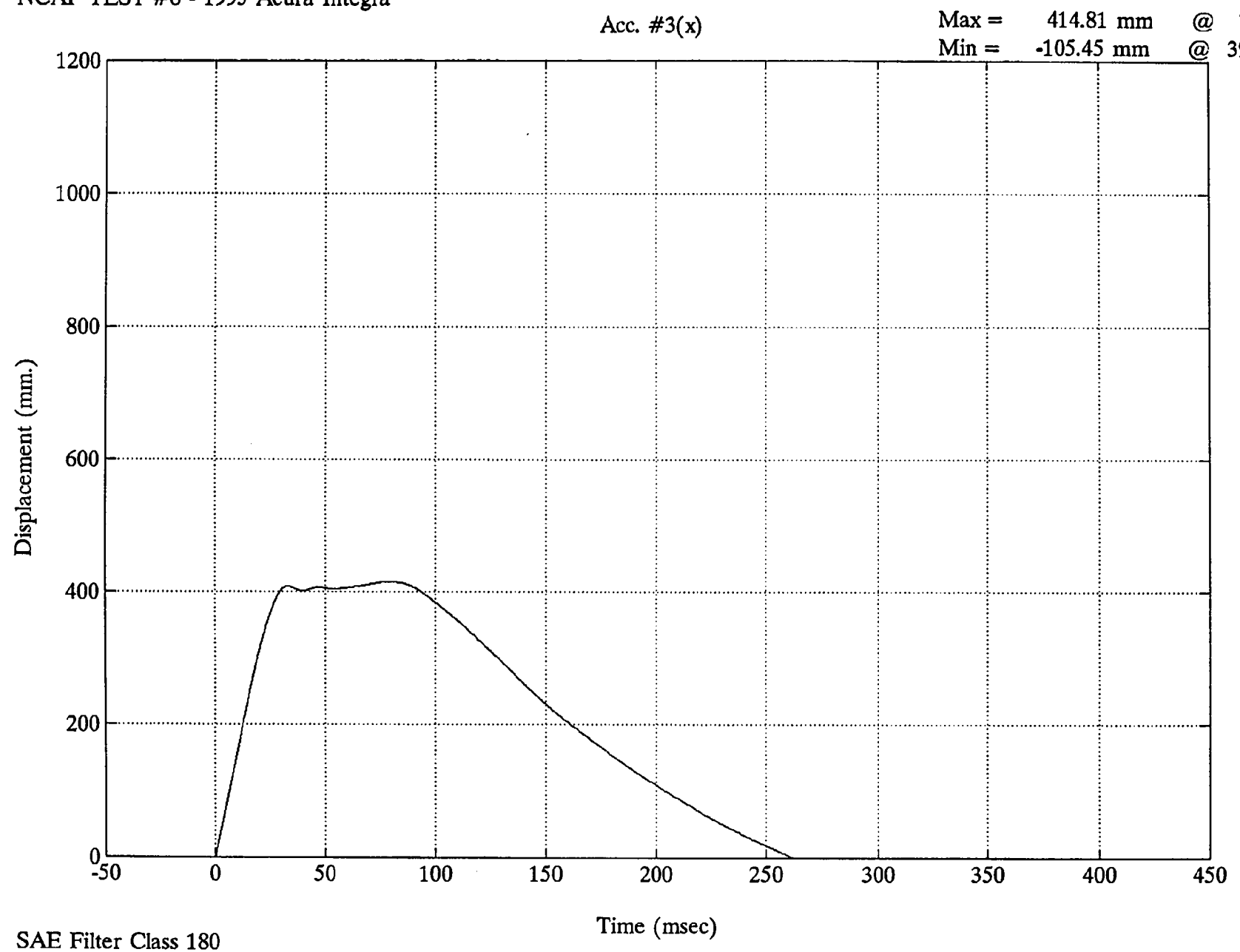


B-10

8227-6

SAE Filter Class 180

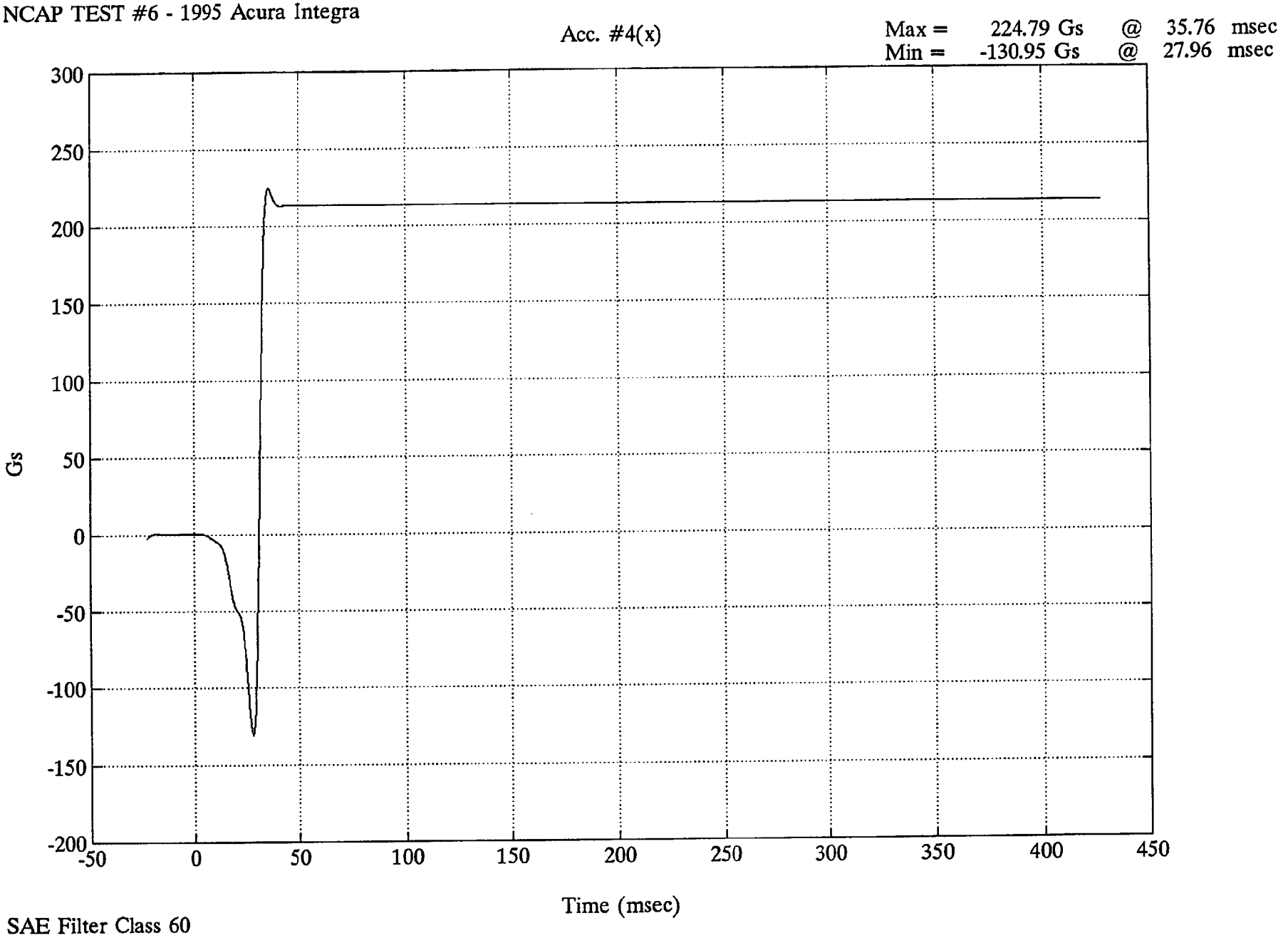
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

NCAP TEST #6 - 1995 Acura Integra

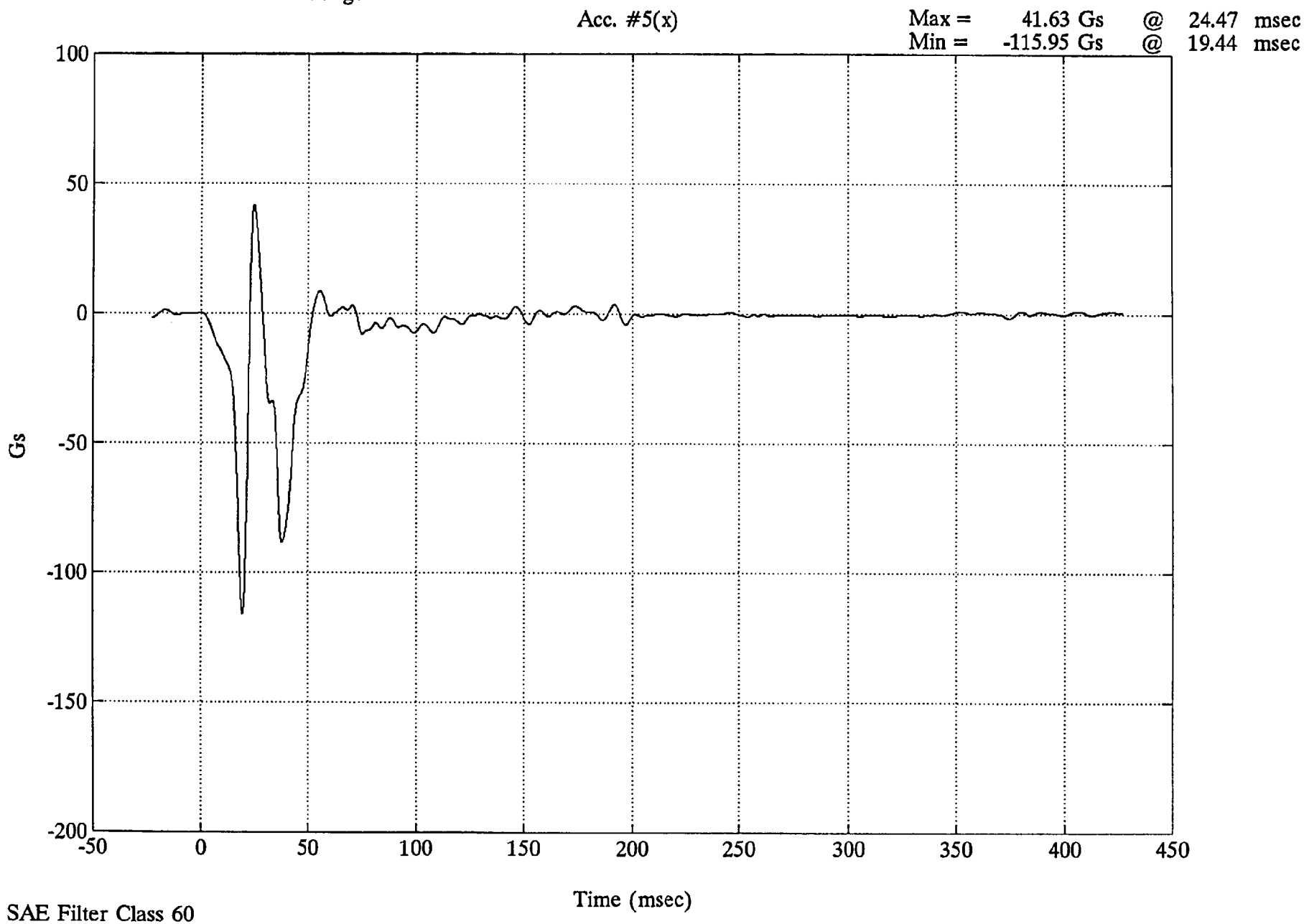


B-12

8227-6

SAE Filter Class 60

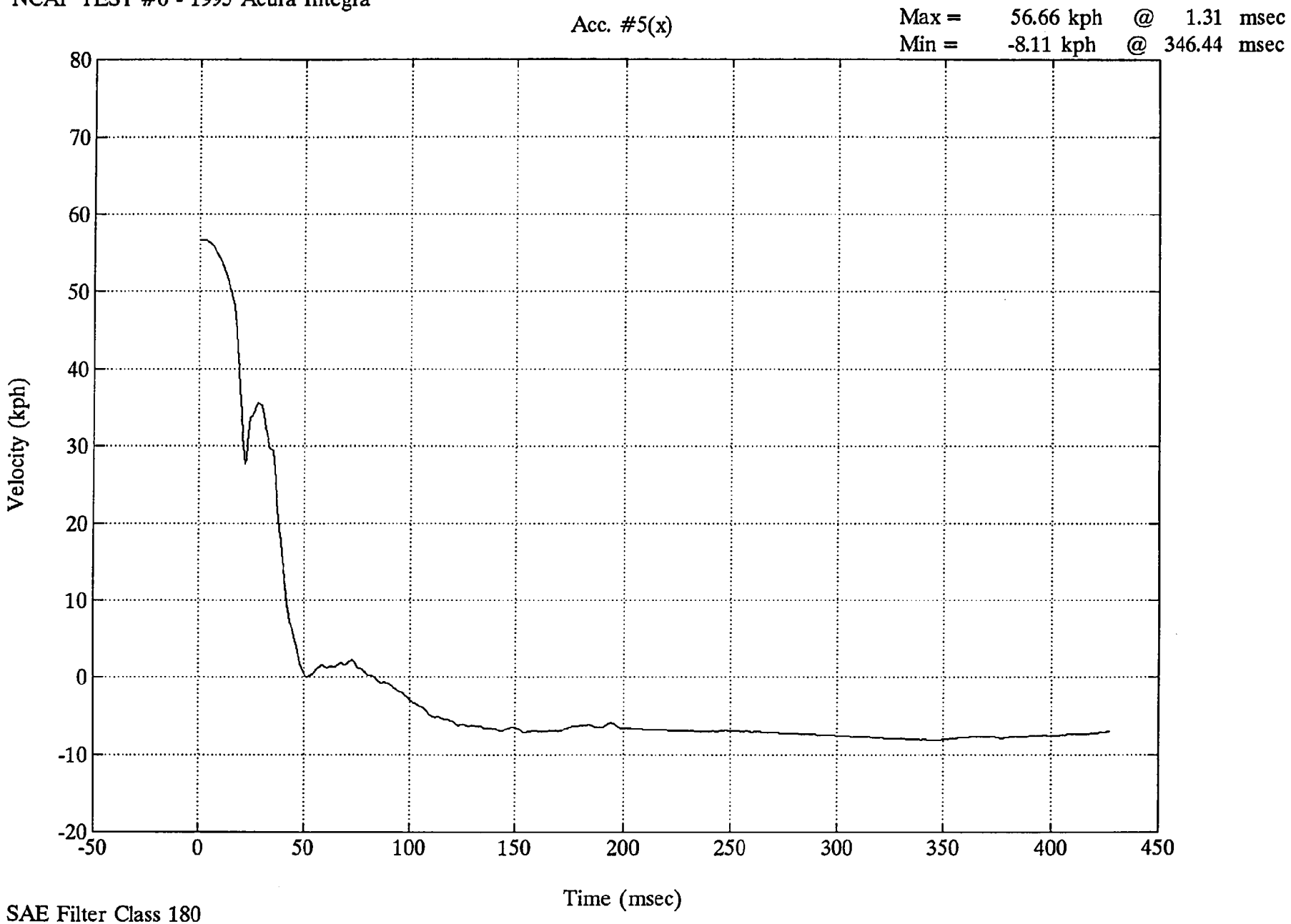
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

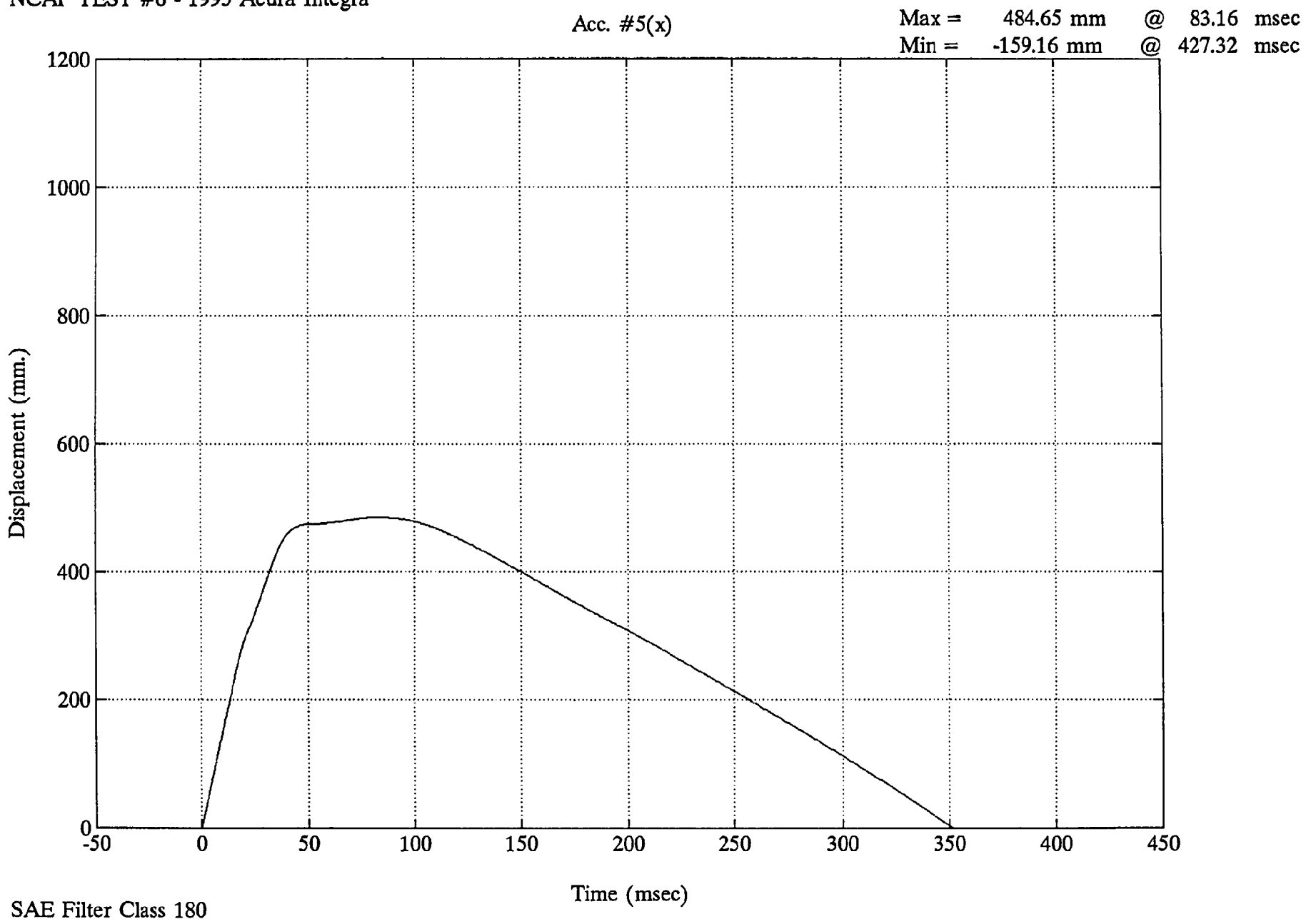
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

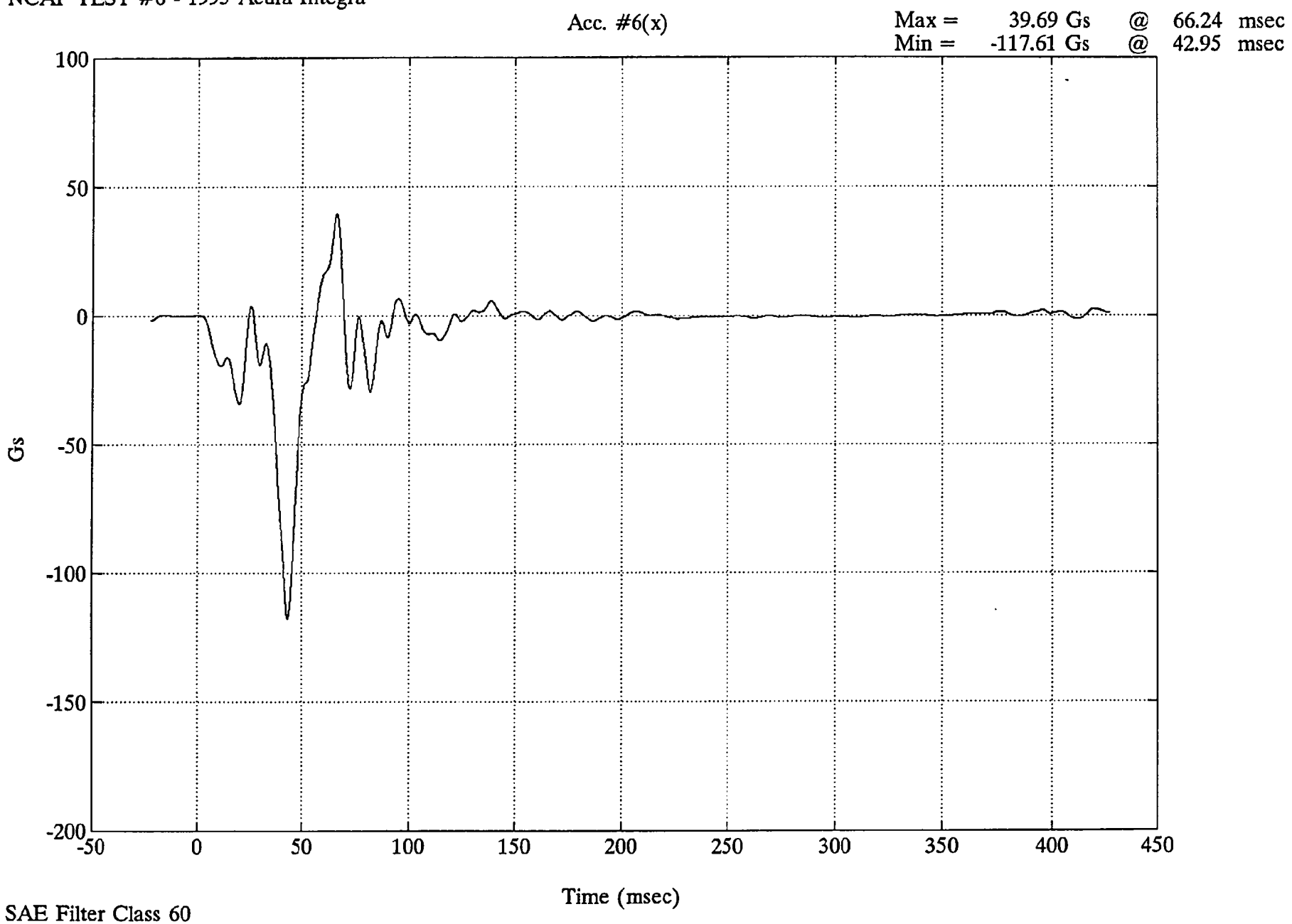
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

NCAP TEST #6 - 1995 Acura Integra

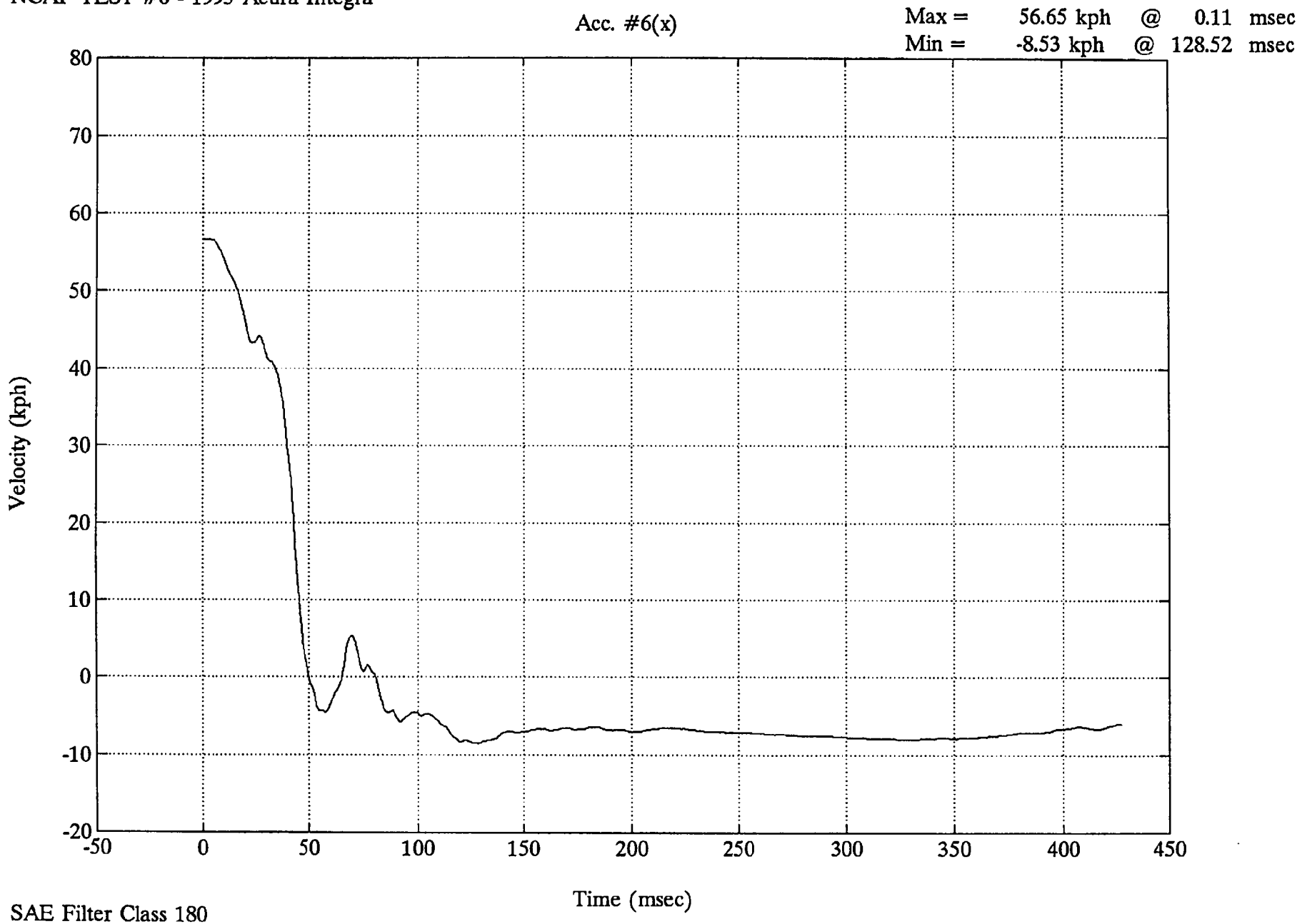


SAE Filter Class 60

B-16

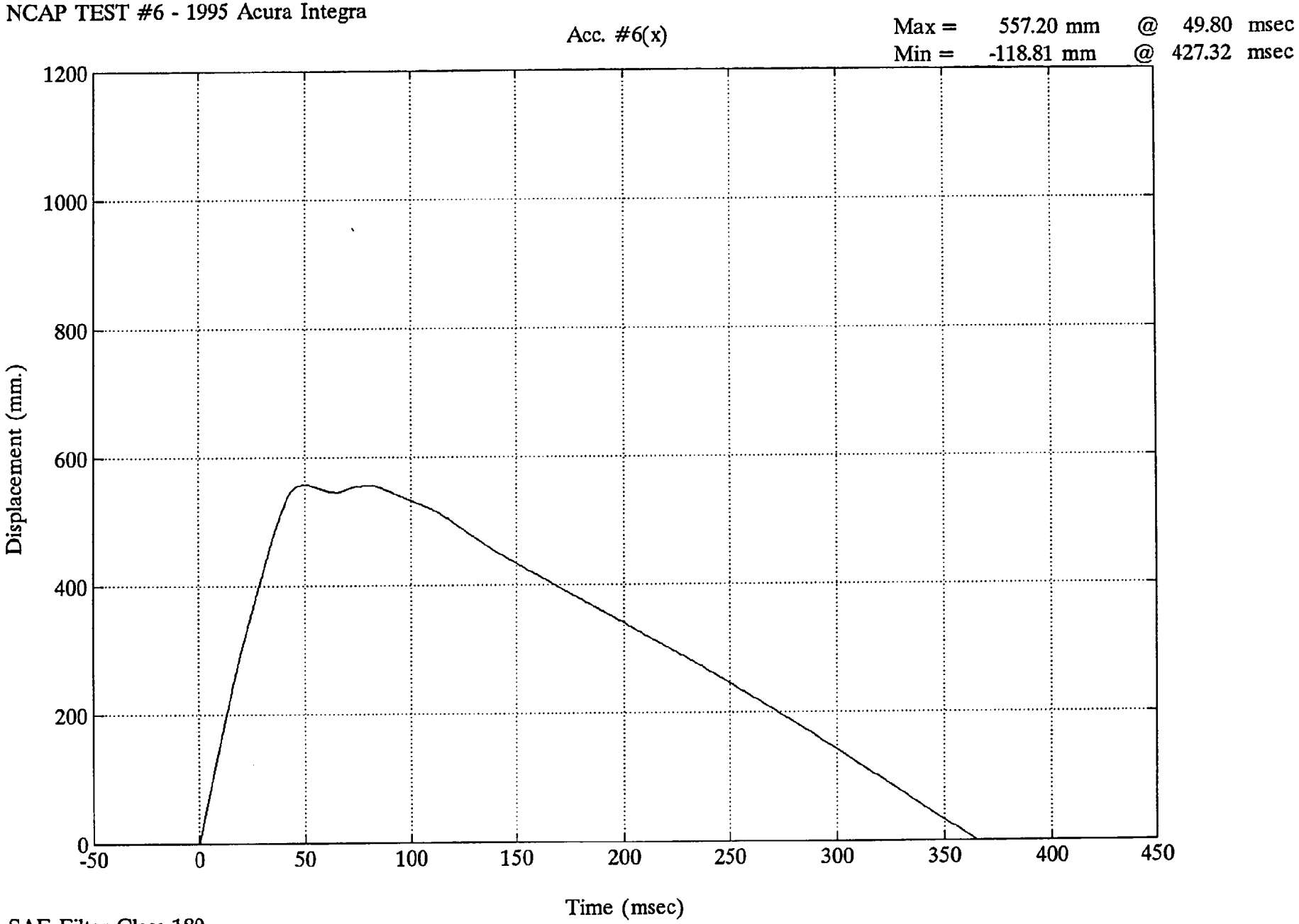
8227-6

NCAP TEST #6 - 1995 Acura Integra



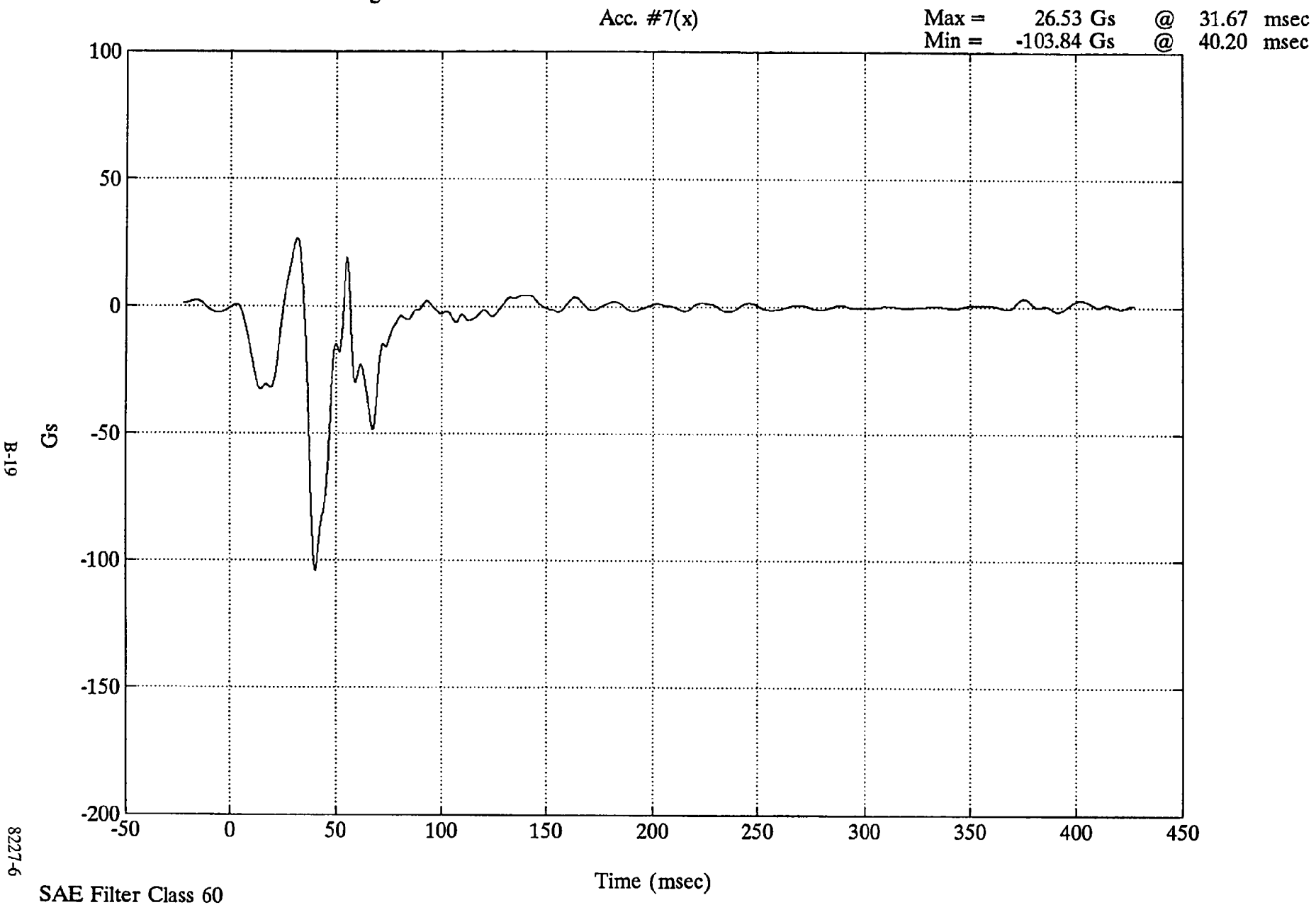
SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

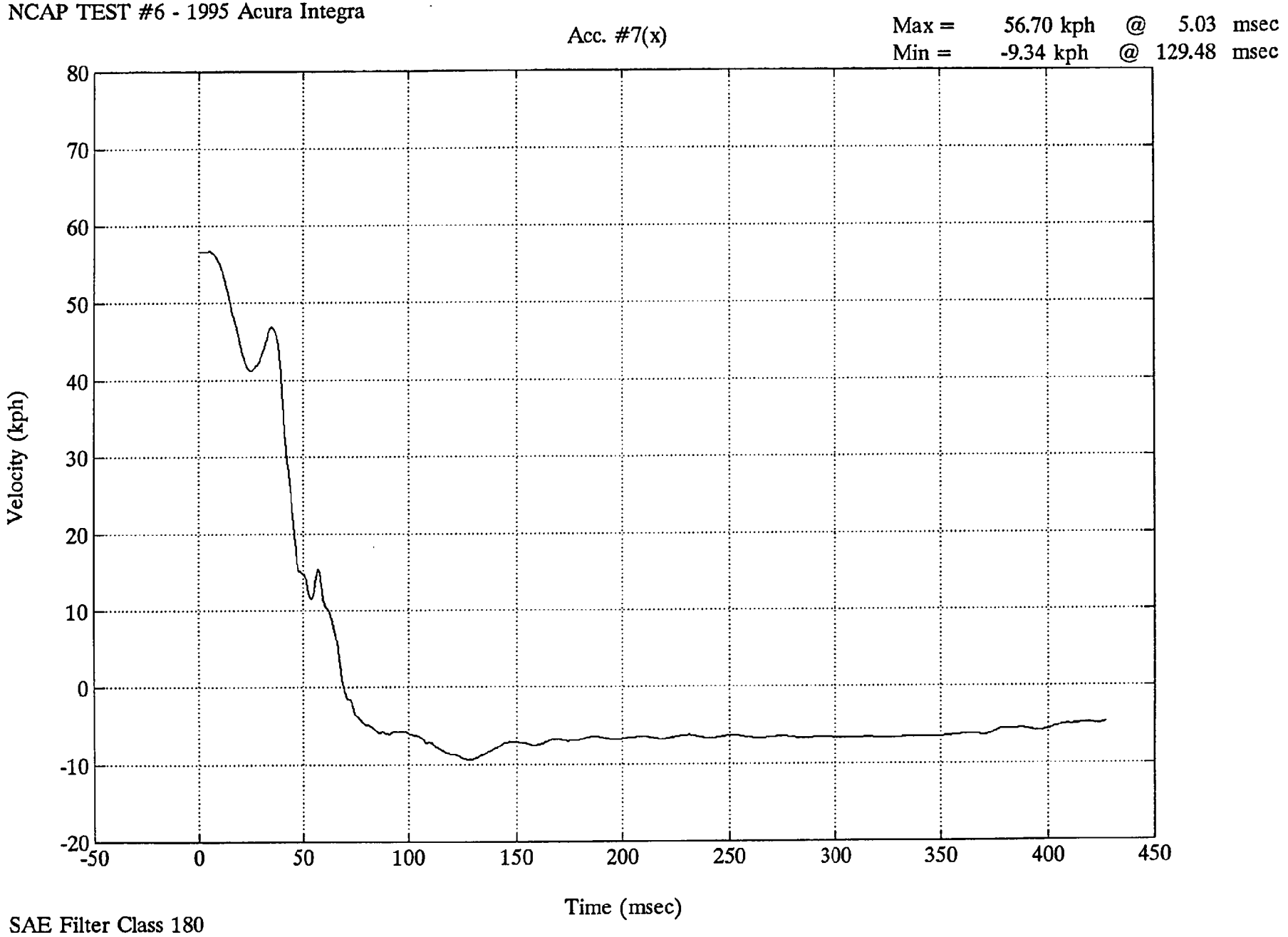
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

NCAP TEST #6 - 1995 Acura Integra

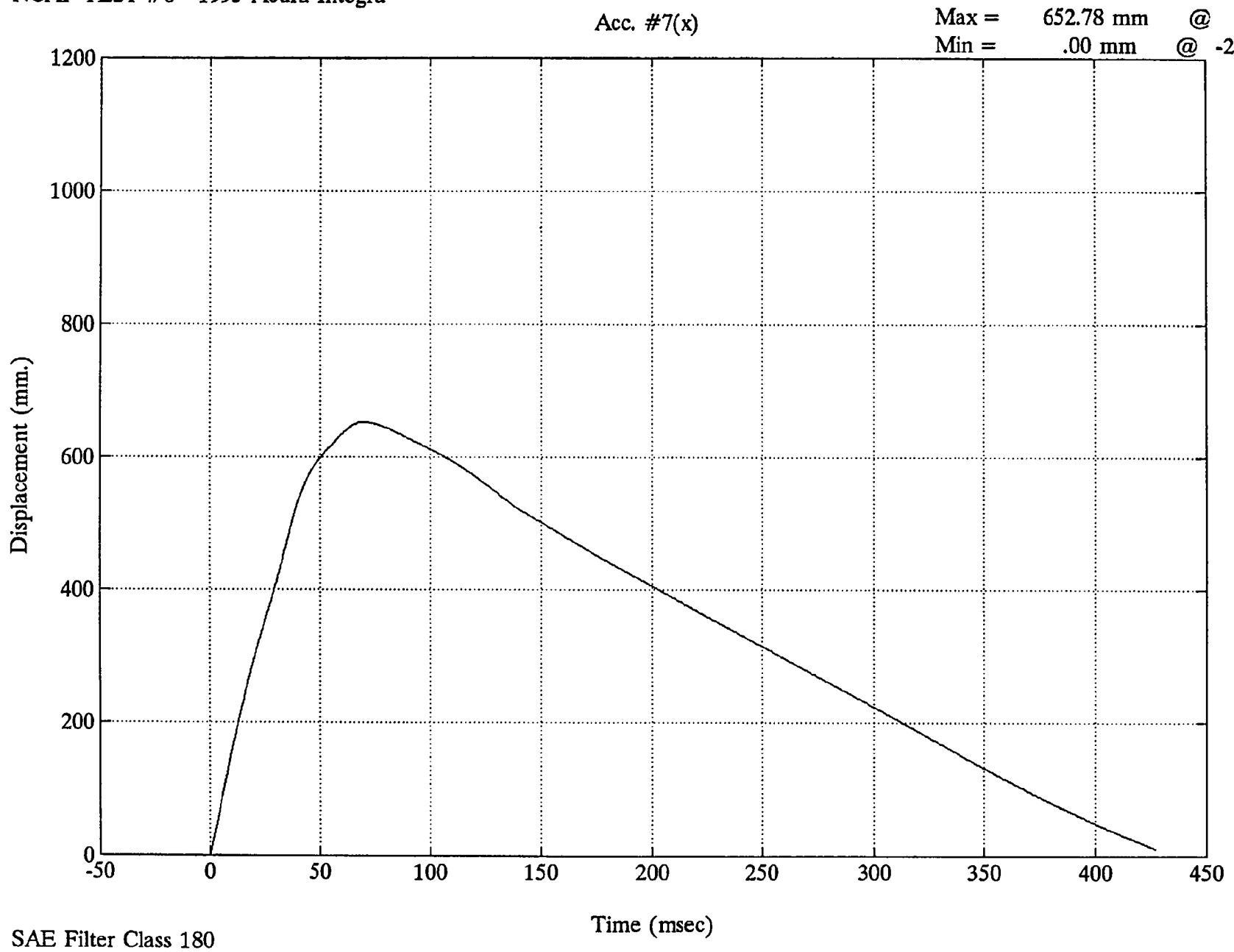


B-20

8227-6

SAE Filter Class 180

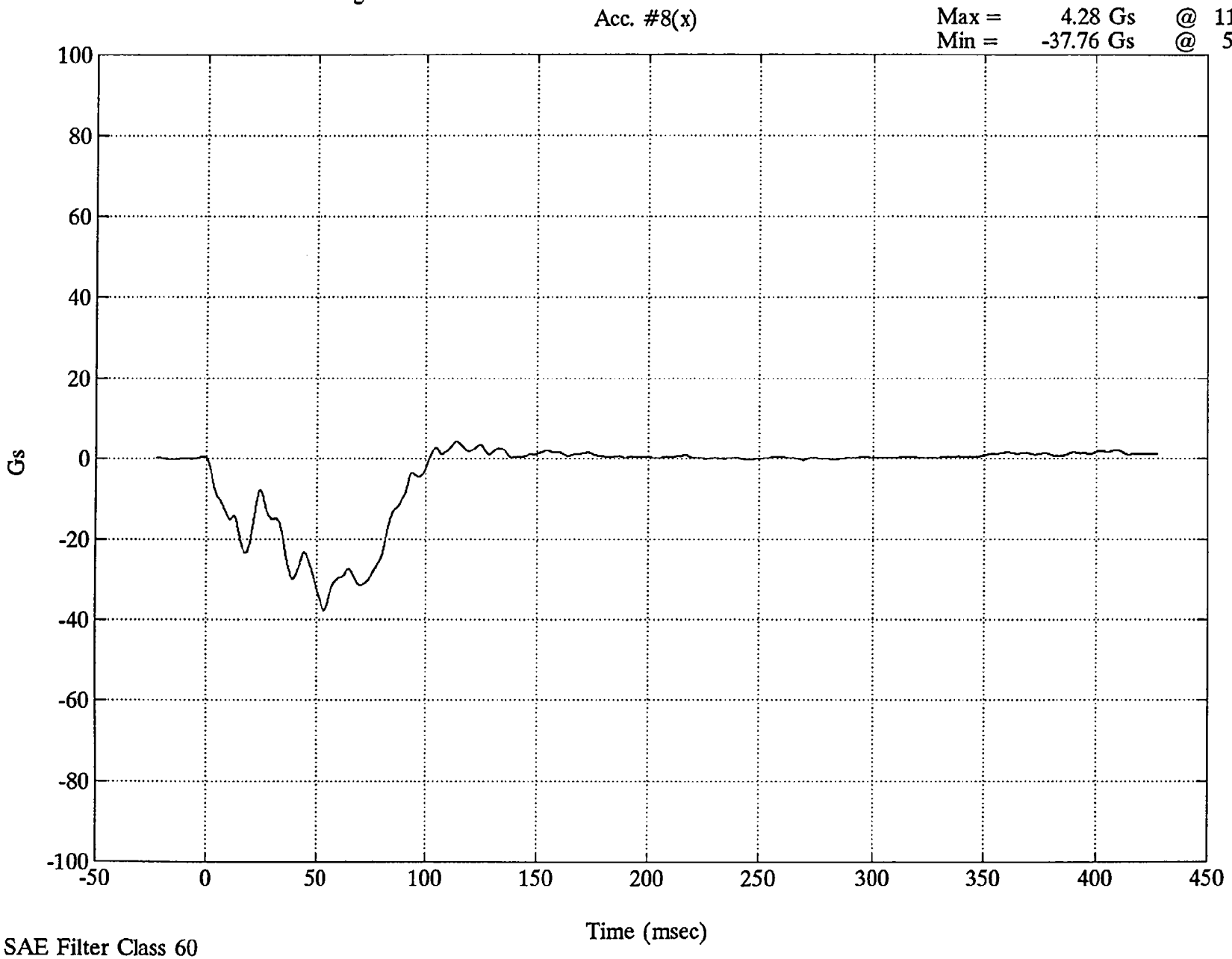
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

NCAP TEST #6 - 1995 Acura Integra

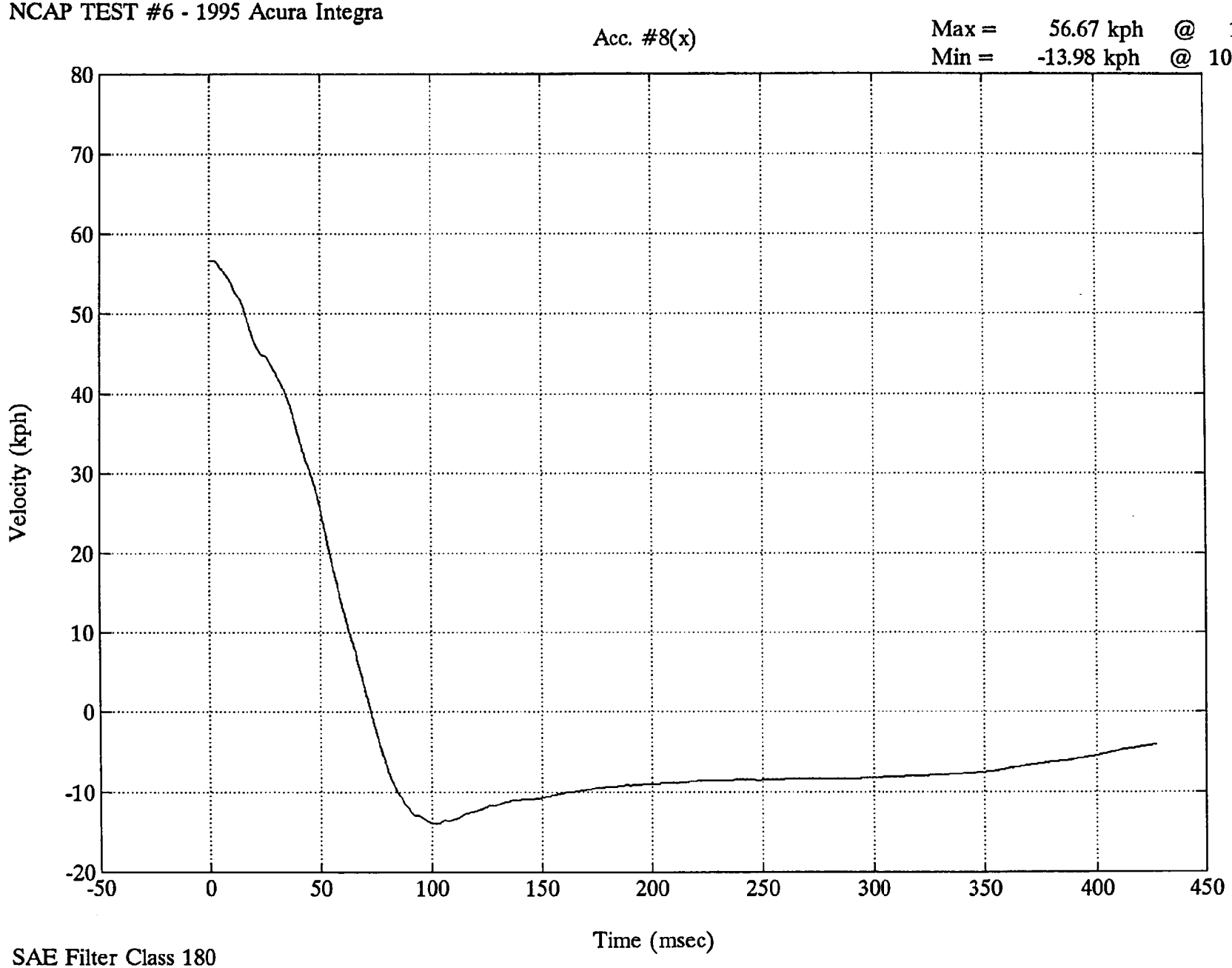


B-22

8227-6

SAE Filter Class 60

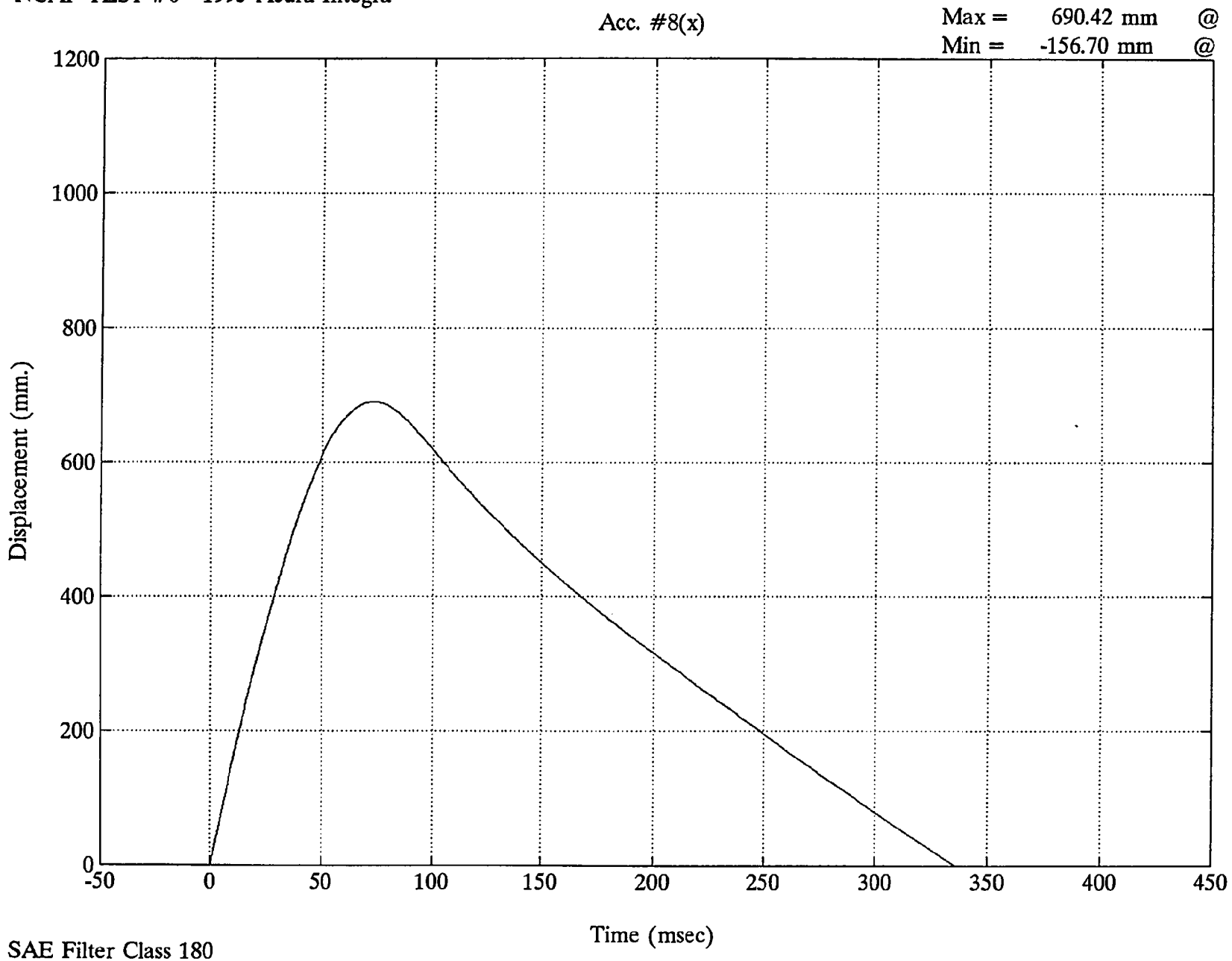
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

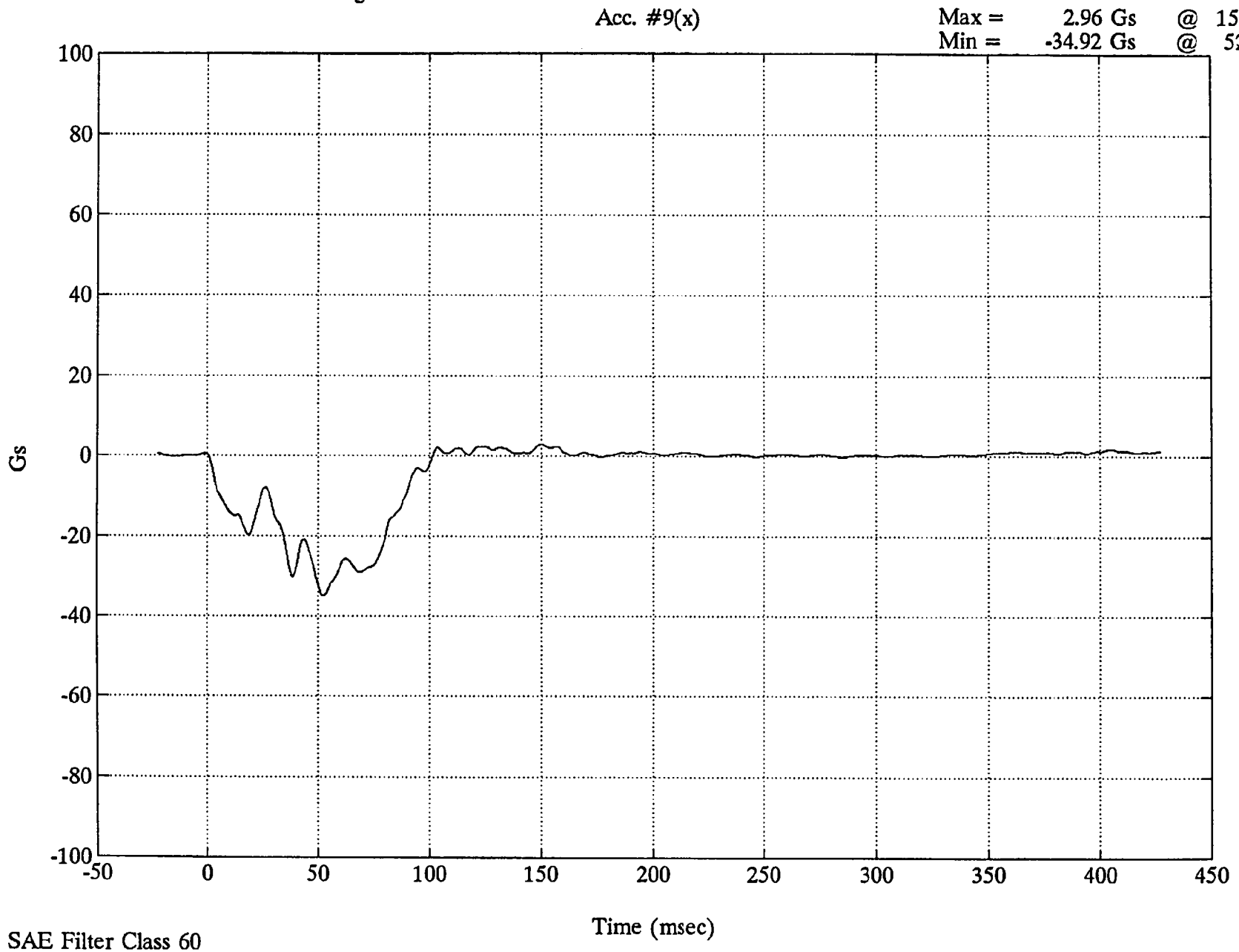
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

NCAP TEST #6 - 1995 Acura Integra



B-25

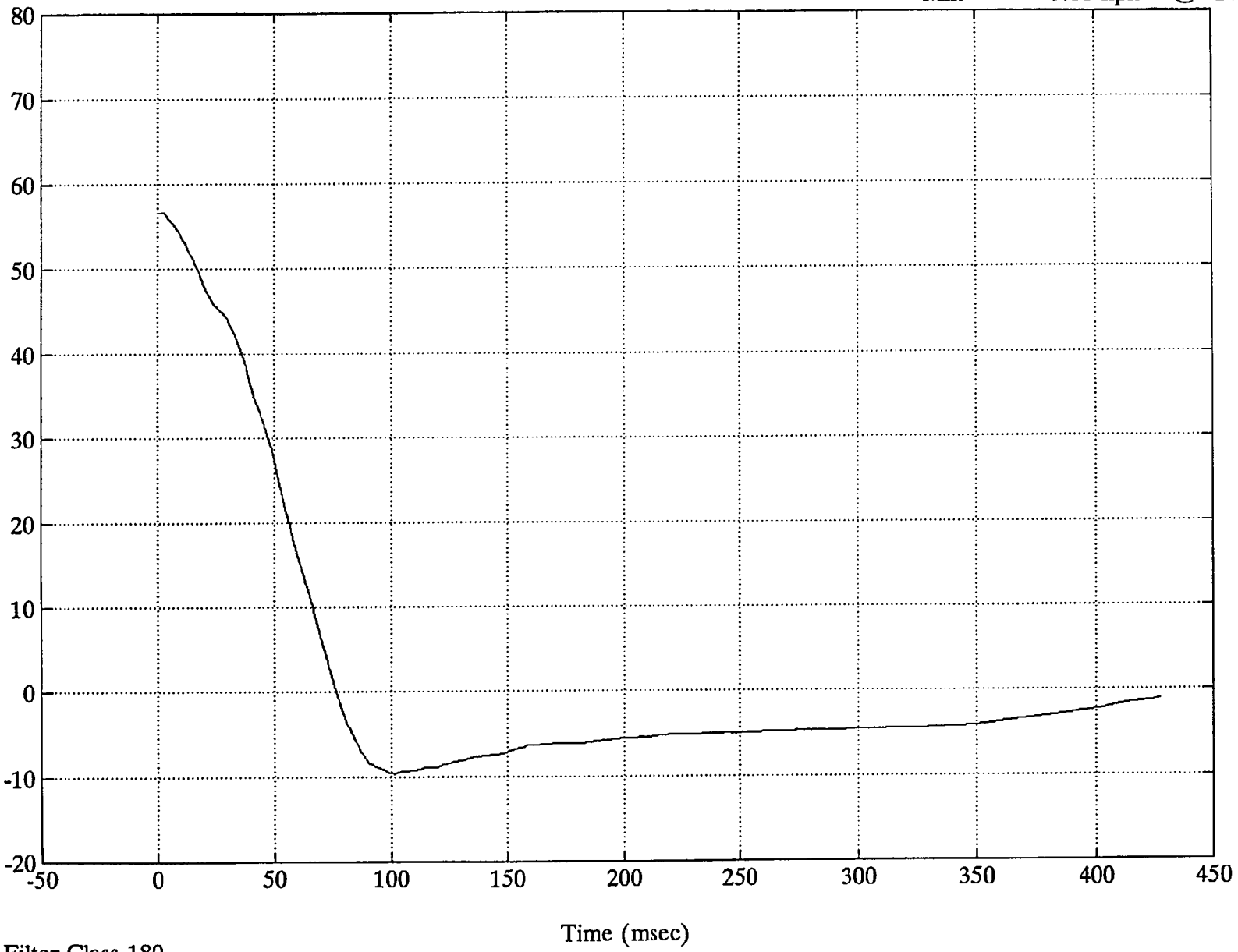
8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

Acc. #9(x)

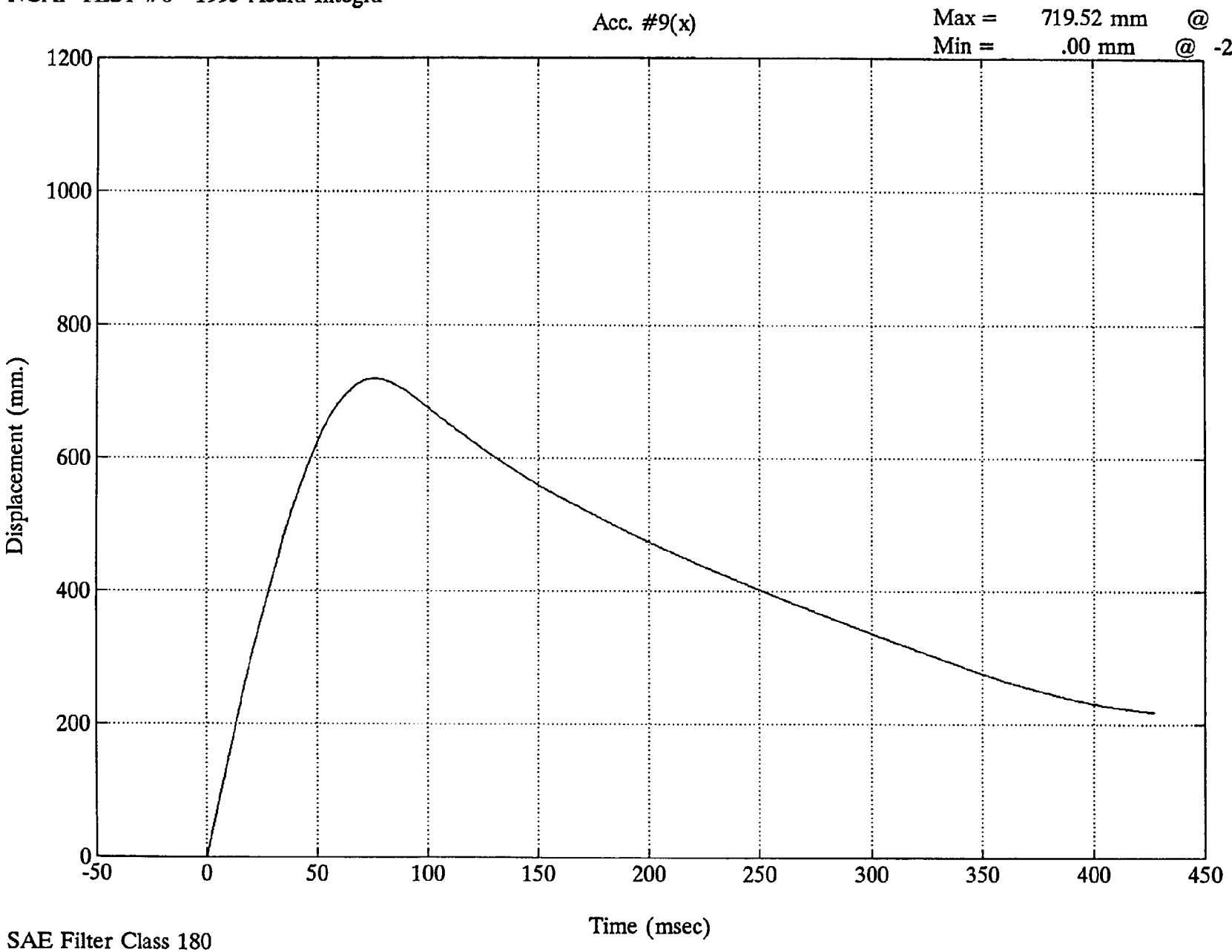
Max = 56.68 kph @ 2.03 msec
Min = -9.66 kph @ 101.75 msec



SAE Filter Class 180

8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

8227-6

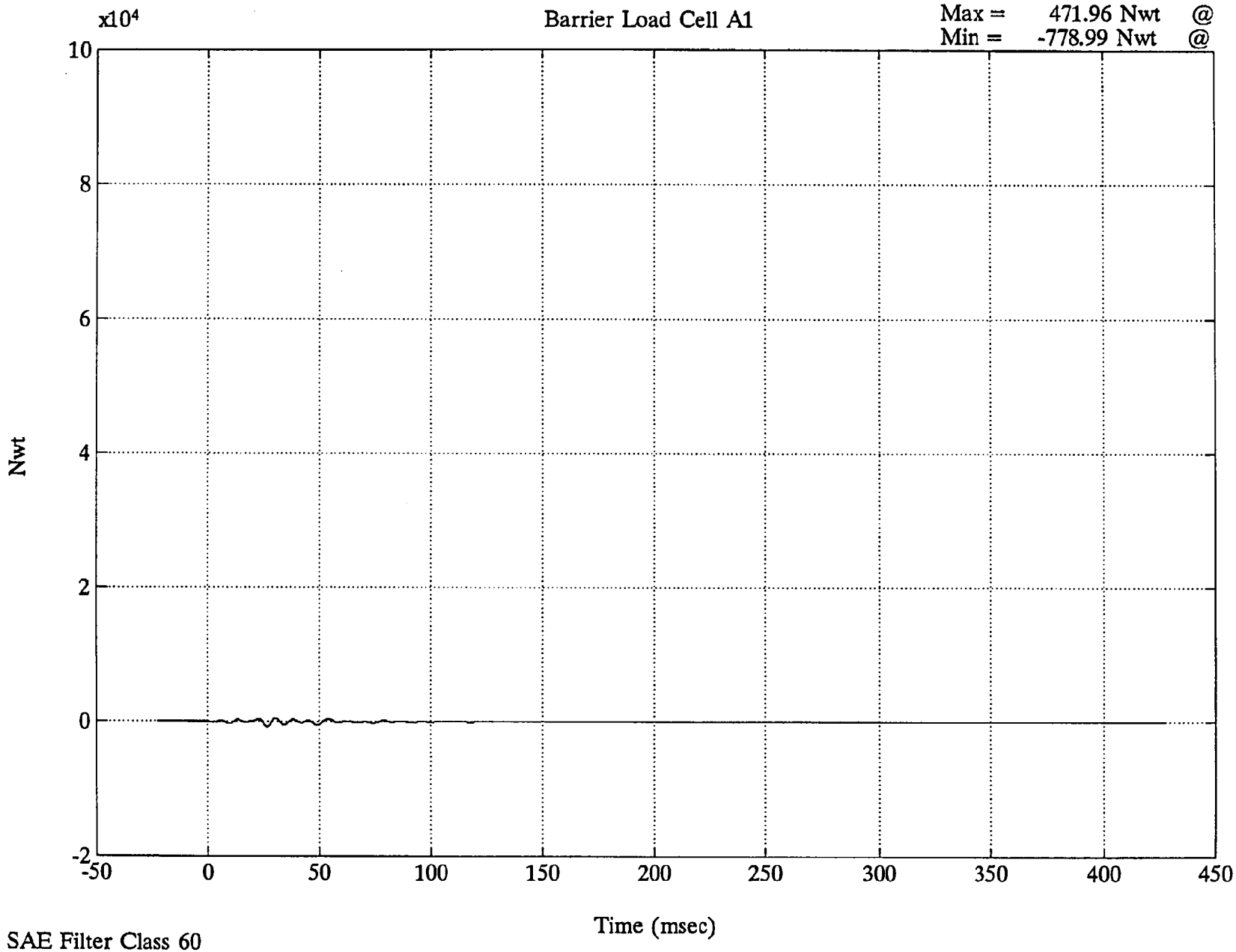
TEST NO. MS5301

LOAD CELL BARRIER DATA

FILTER CHANNEL CLASS

60

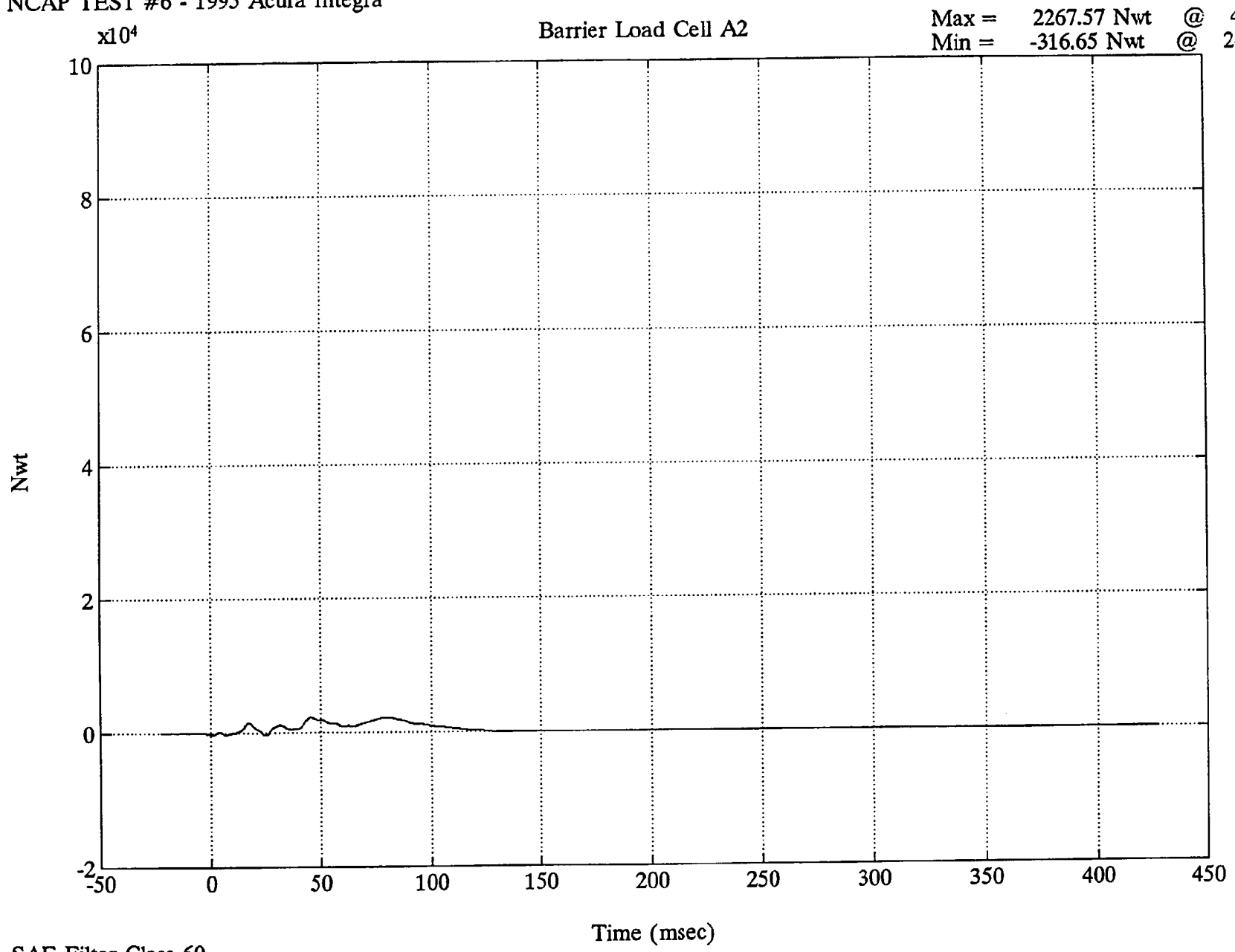
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

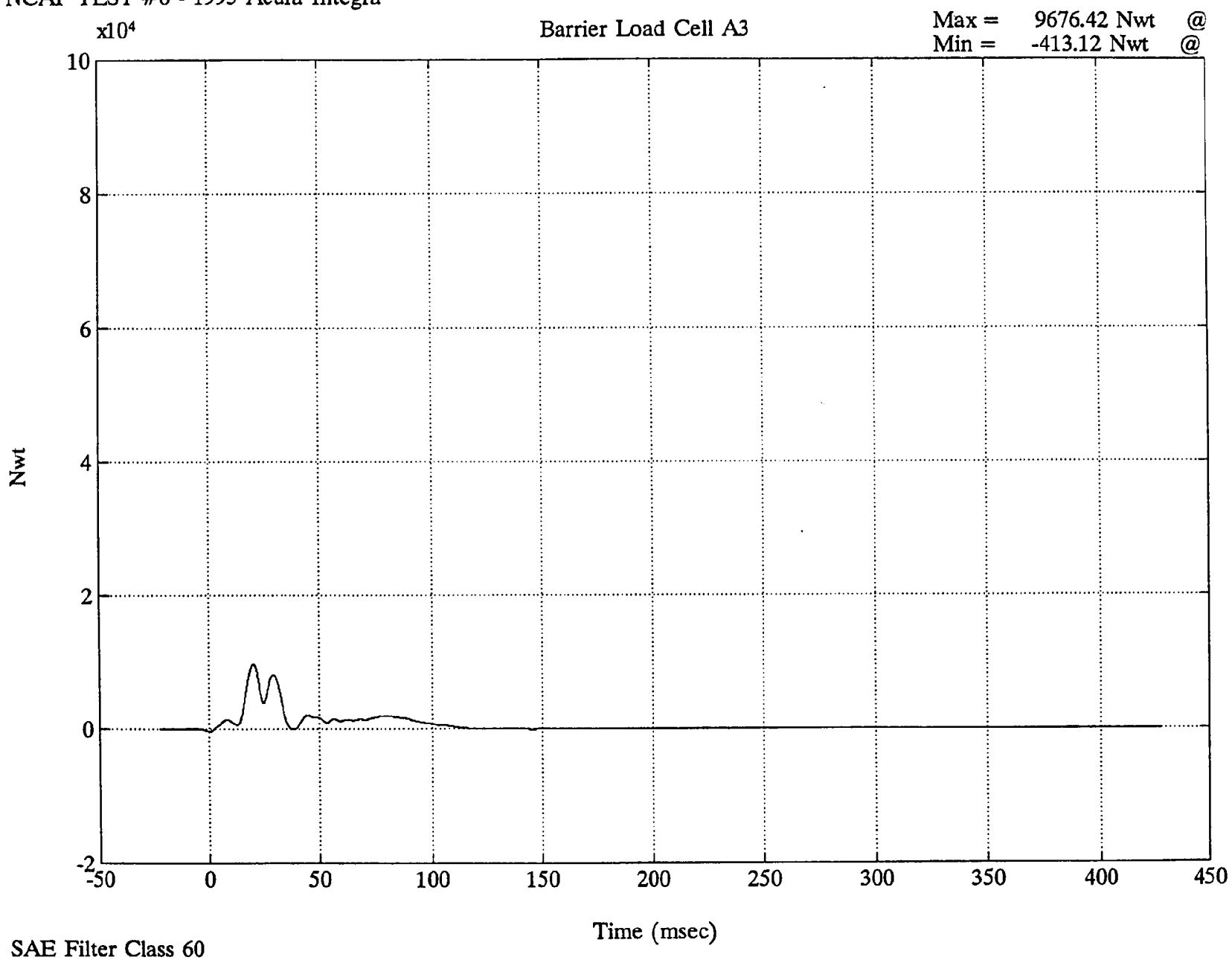
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

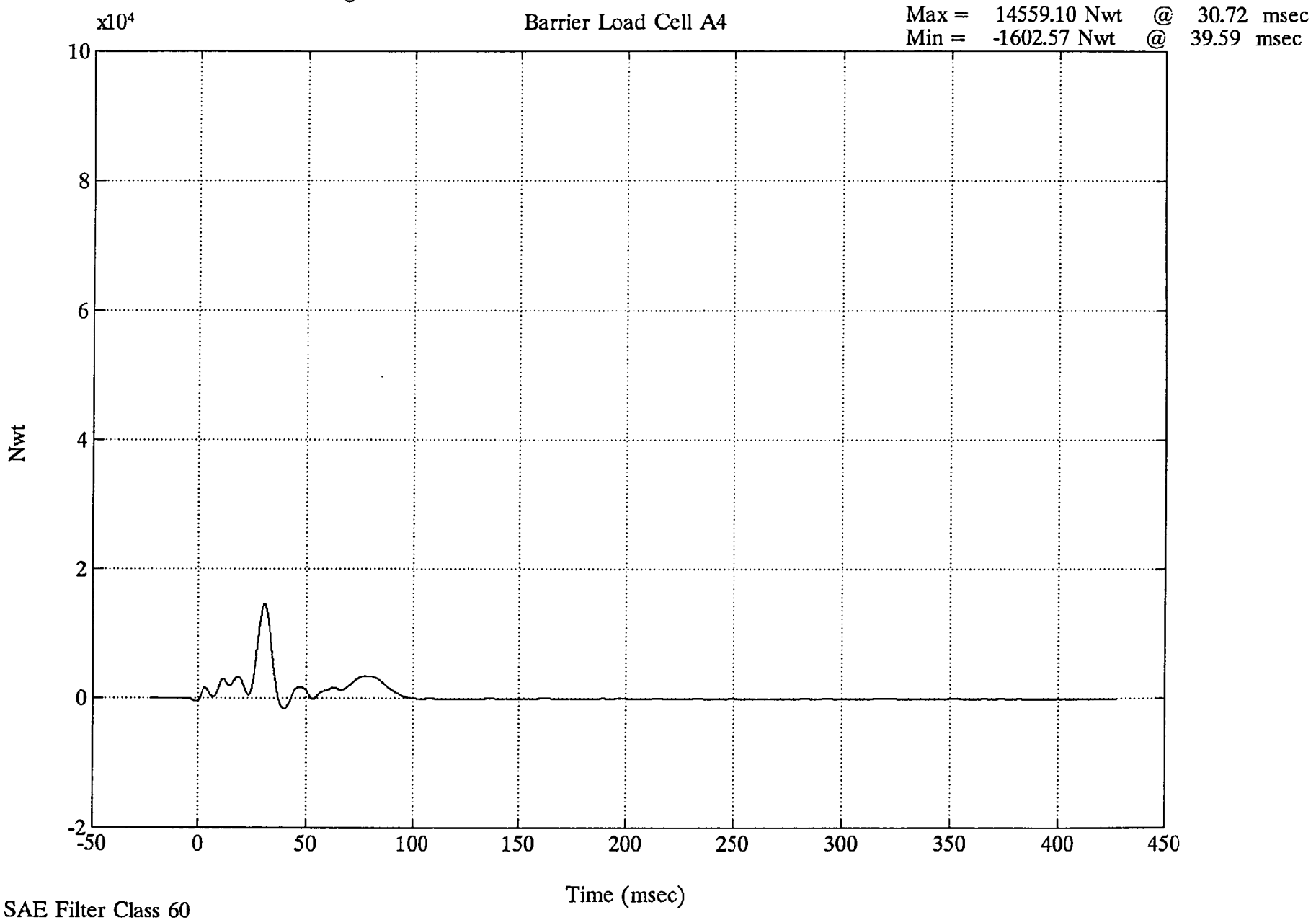
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

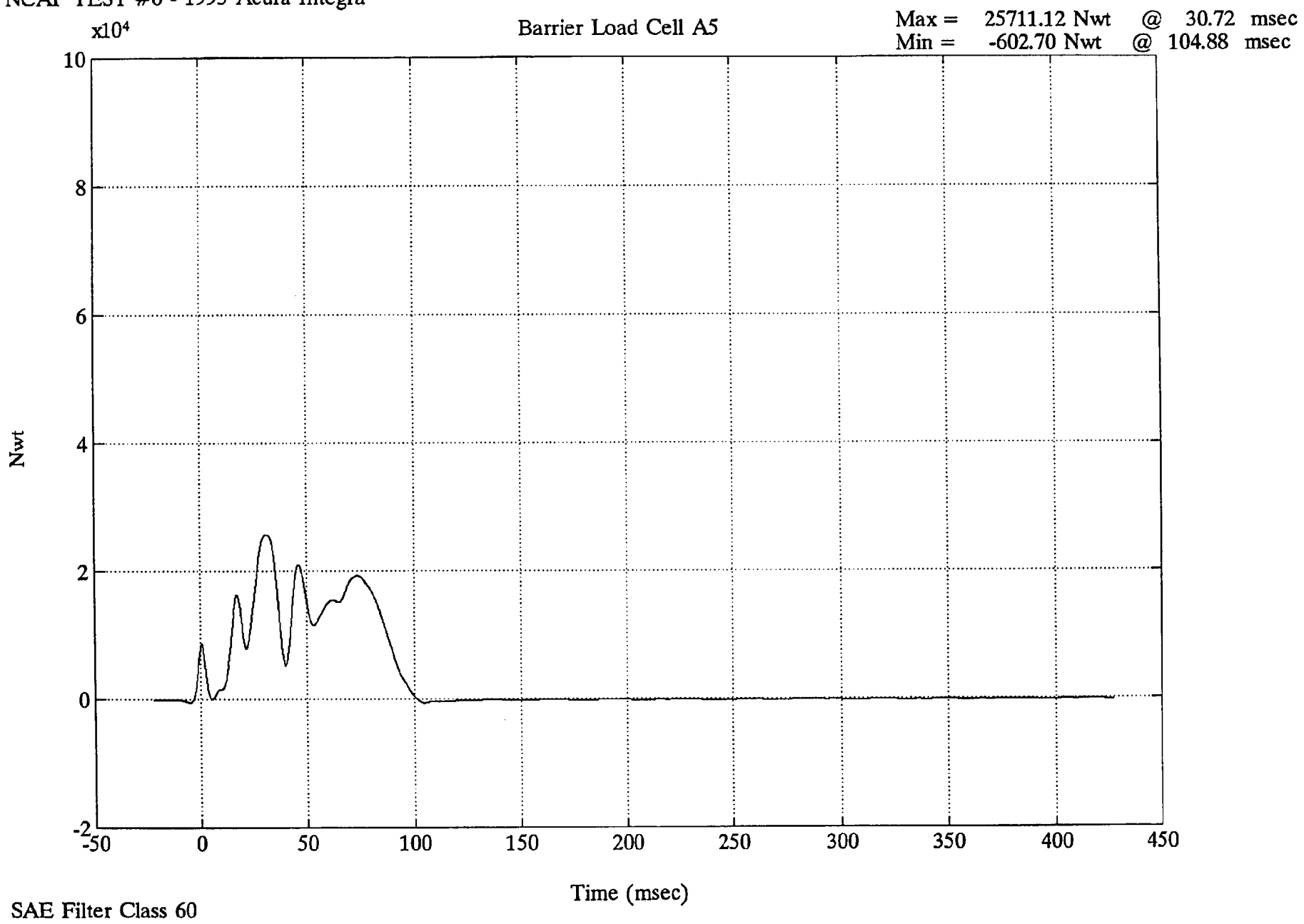
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

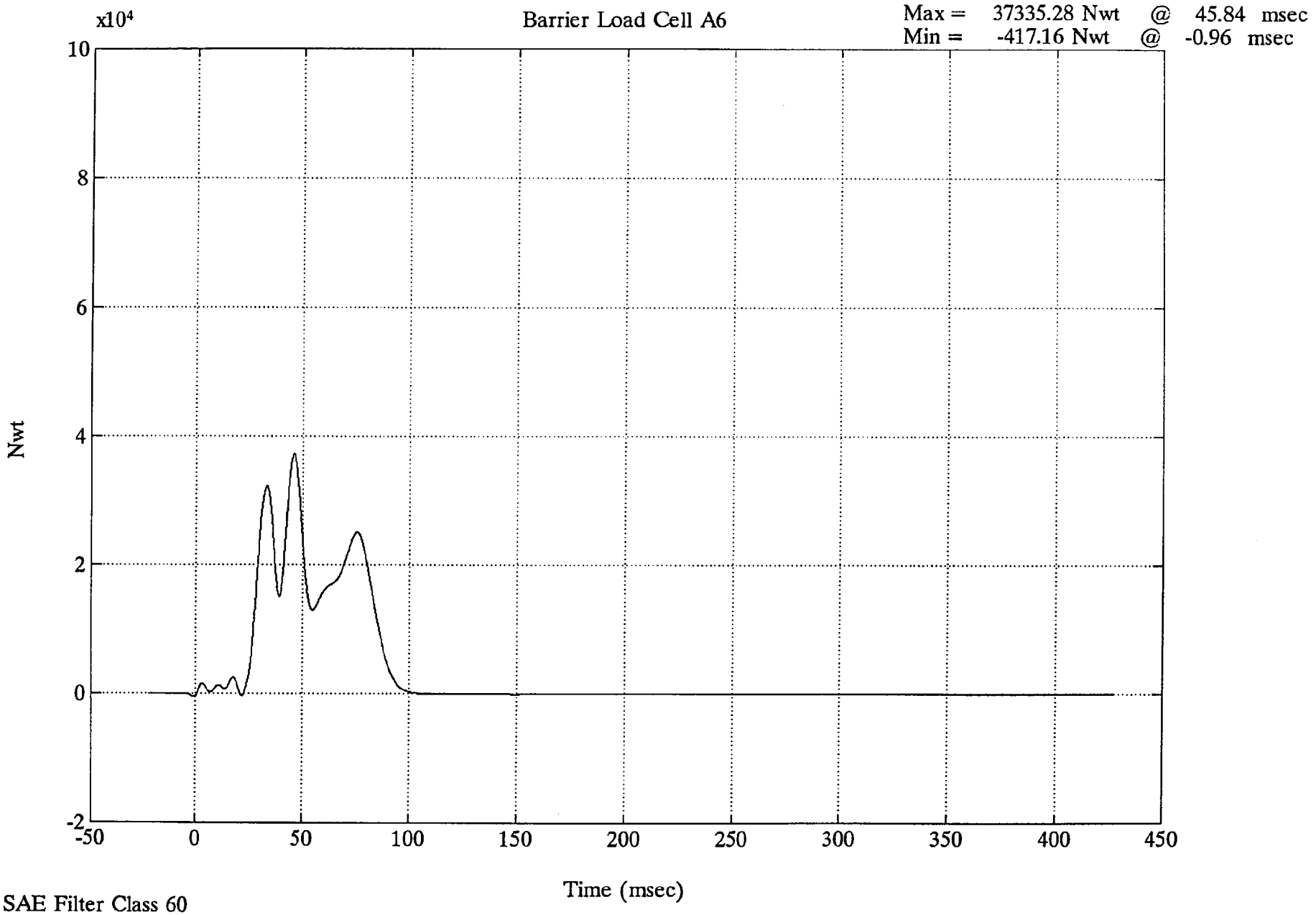


SAE Filter Class 60

B-33

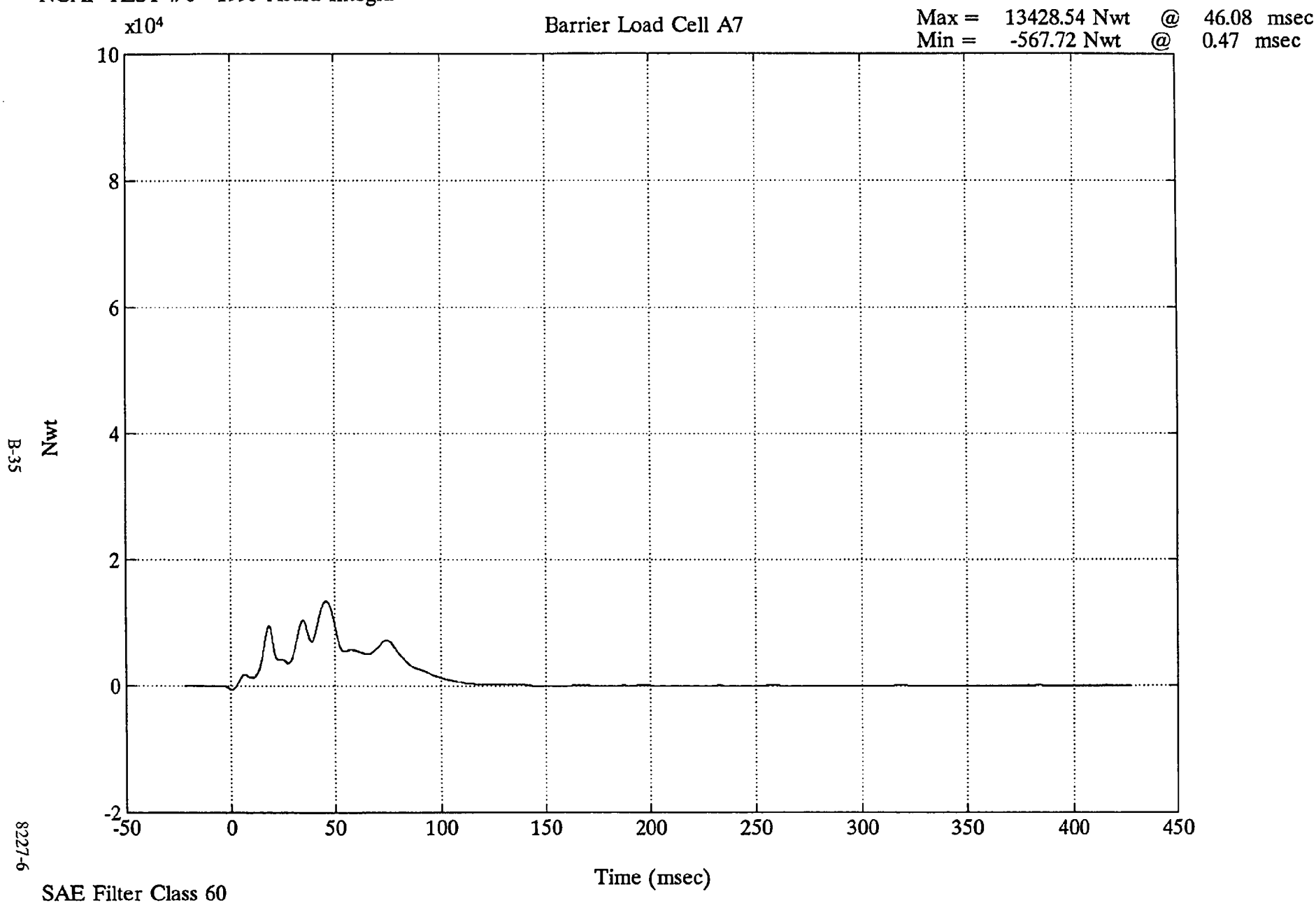
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

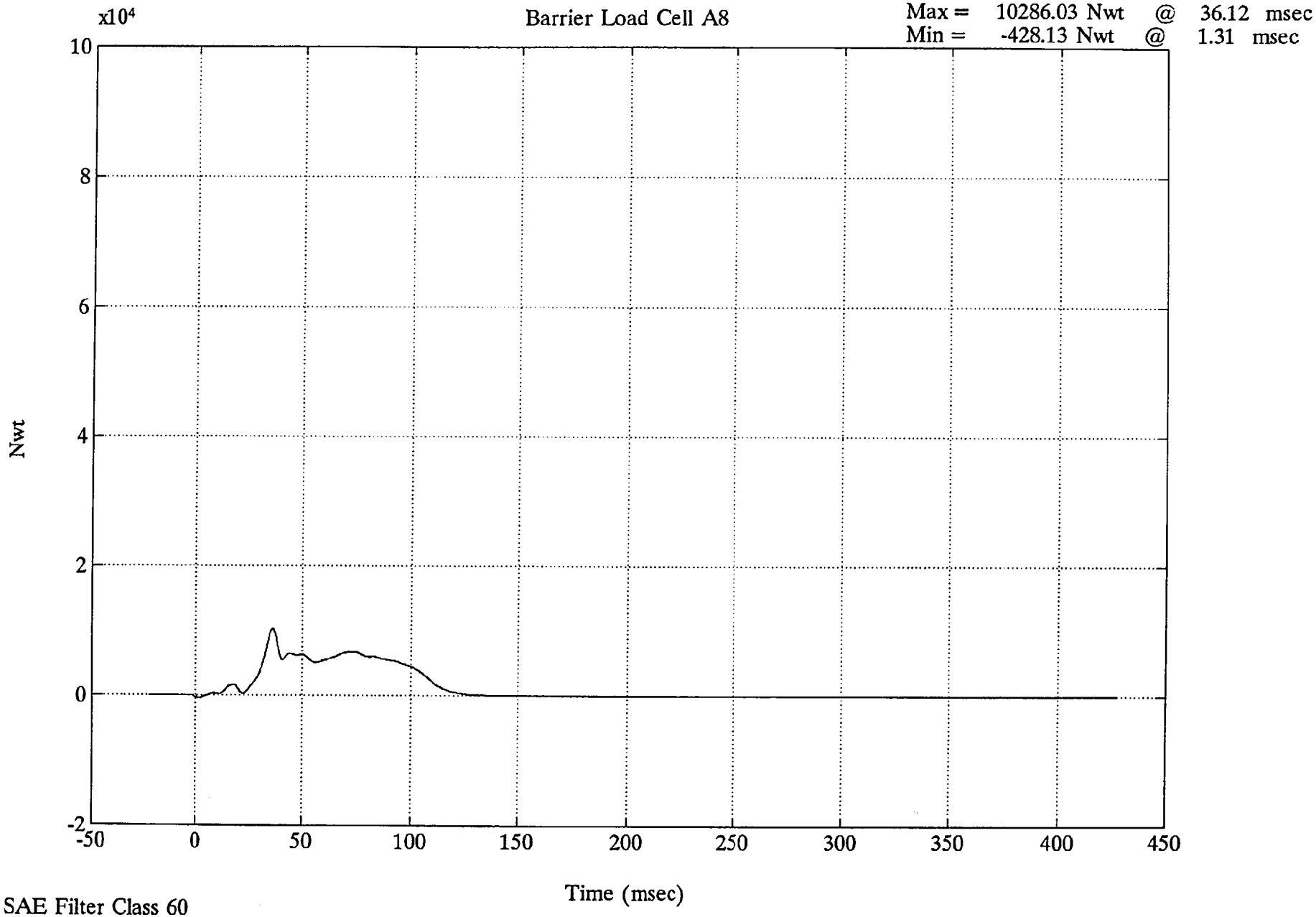
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

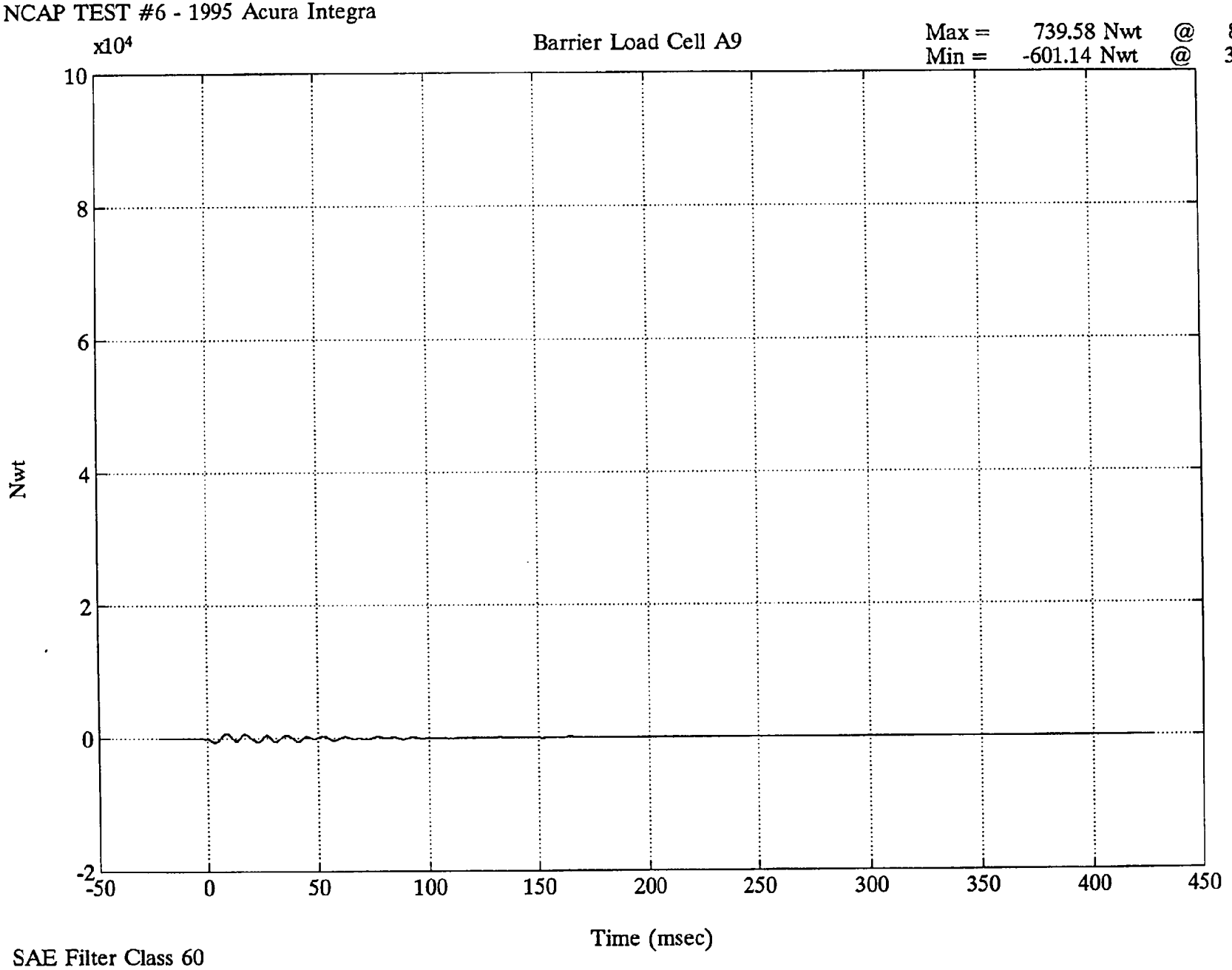
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

NCAP TEST #6 - 1995 Acura Integra

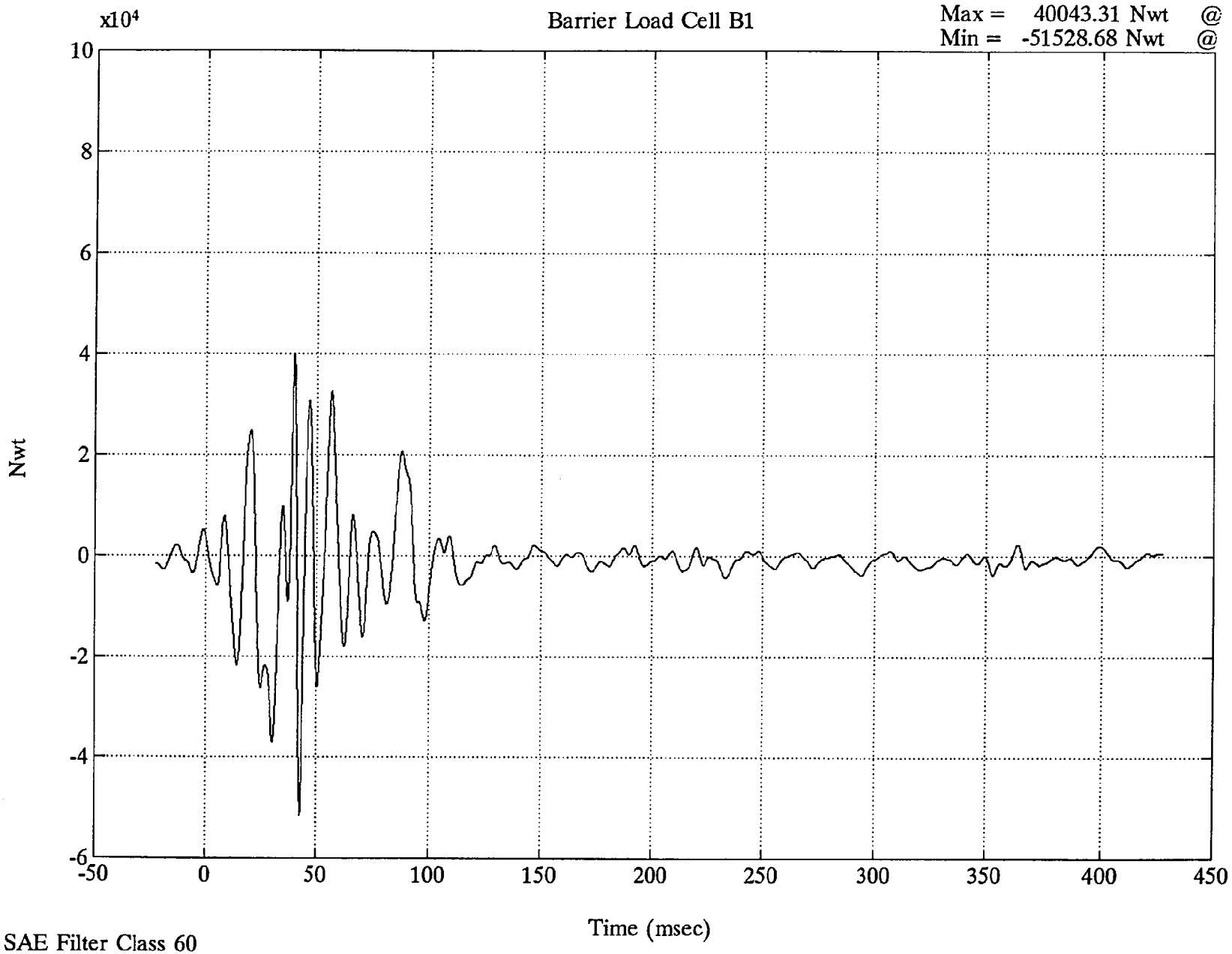


SAE Filter Class 60

B-37

8227-6

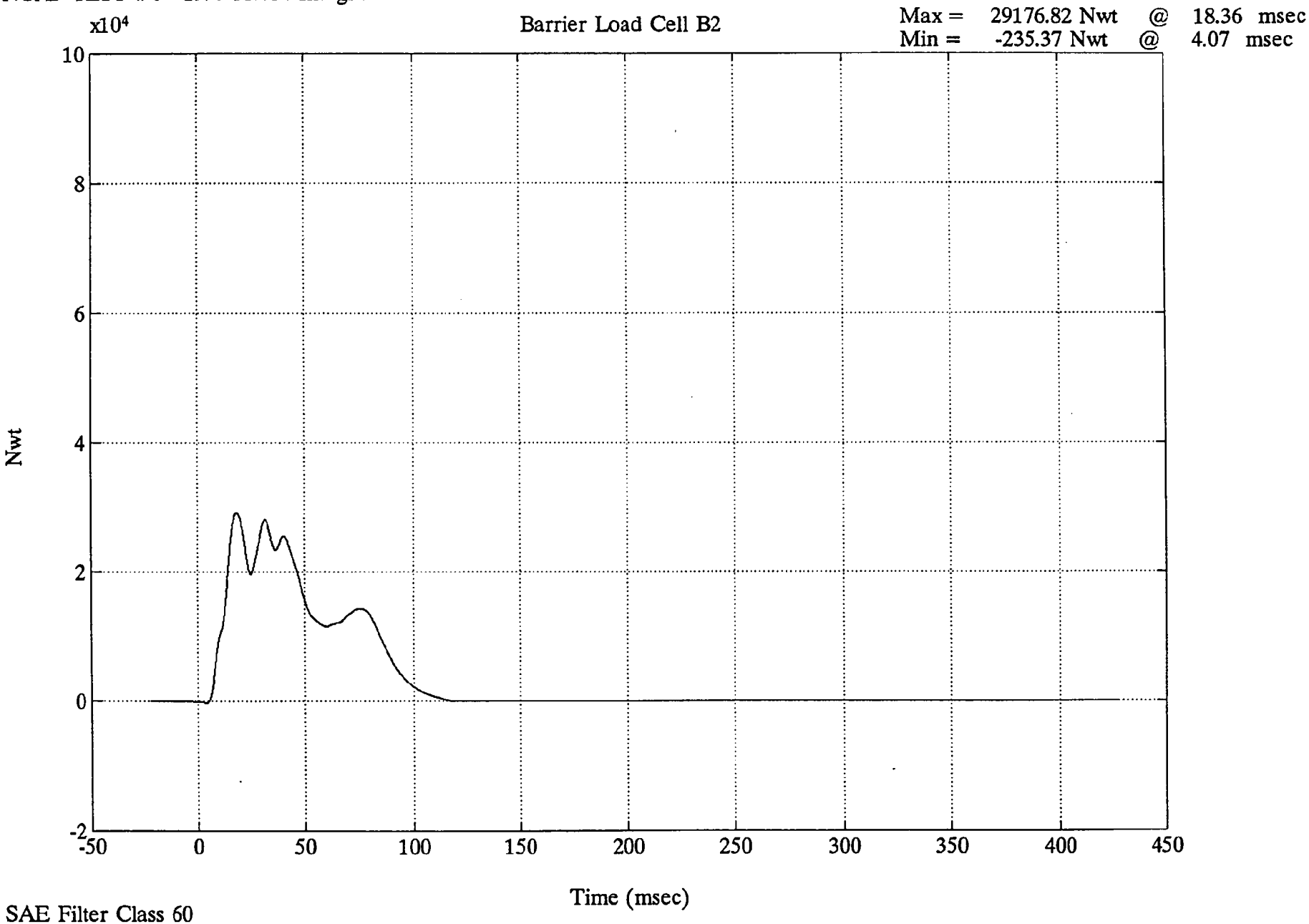
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

NCAP TEST #6 - 1995 Acura Integra

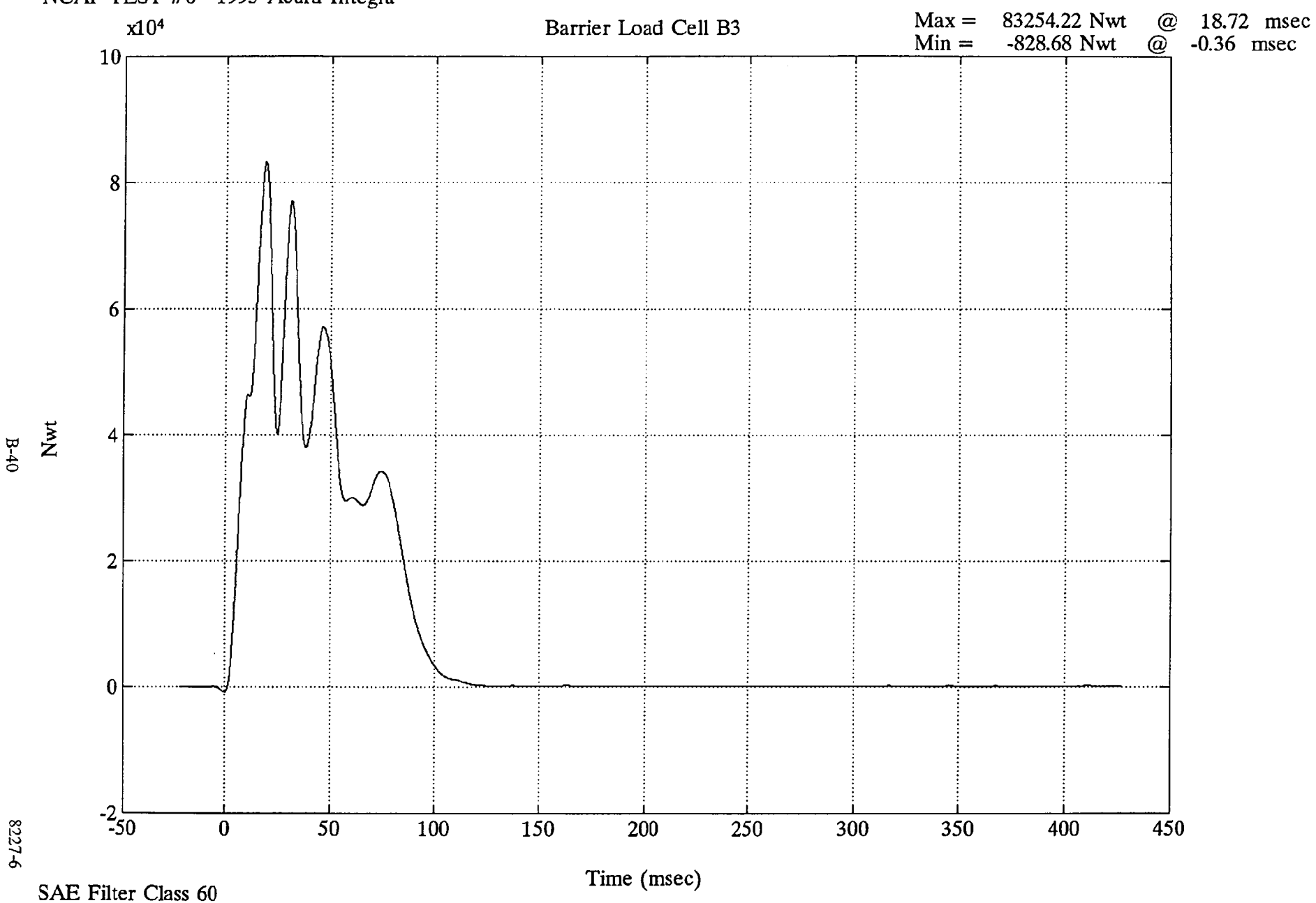


B-39

8227-6

SAE Filter Class 60

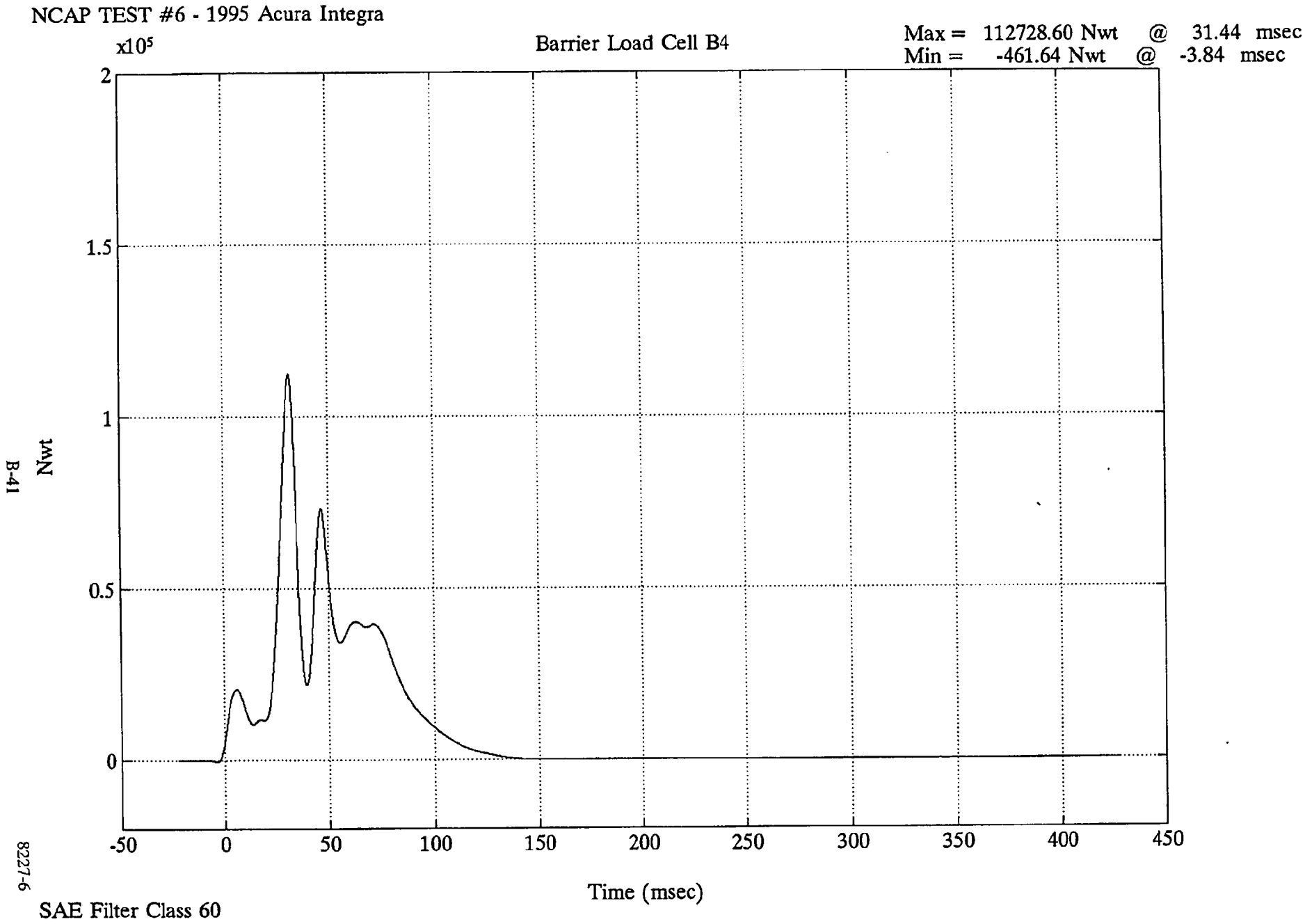
NCAP TEST #6 - 1995 Acura Integra



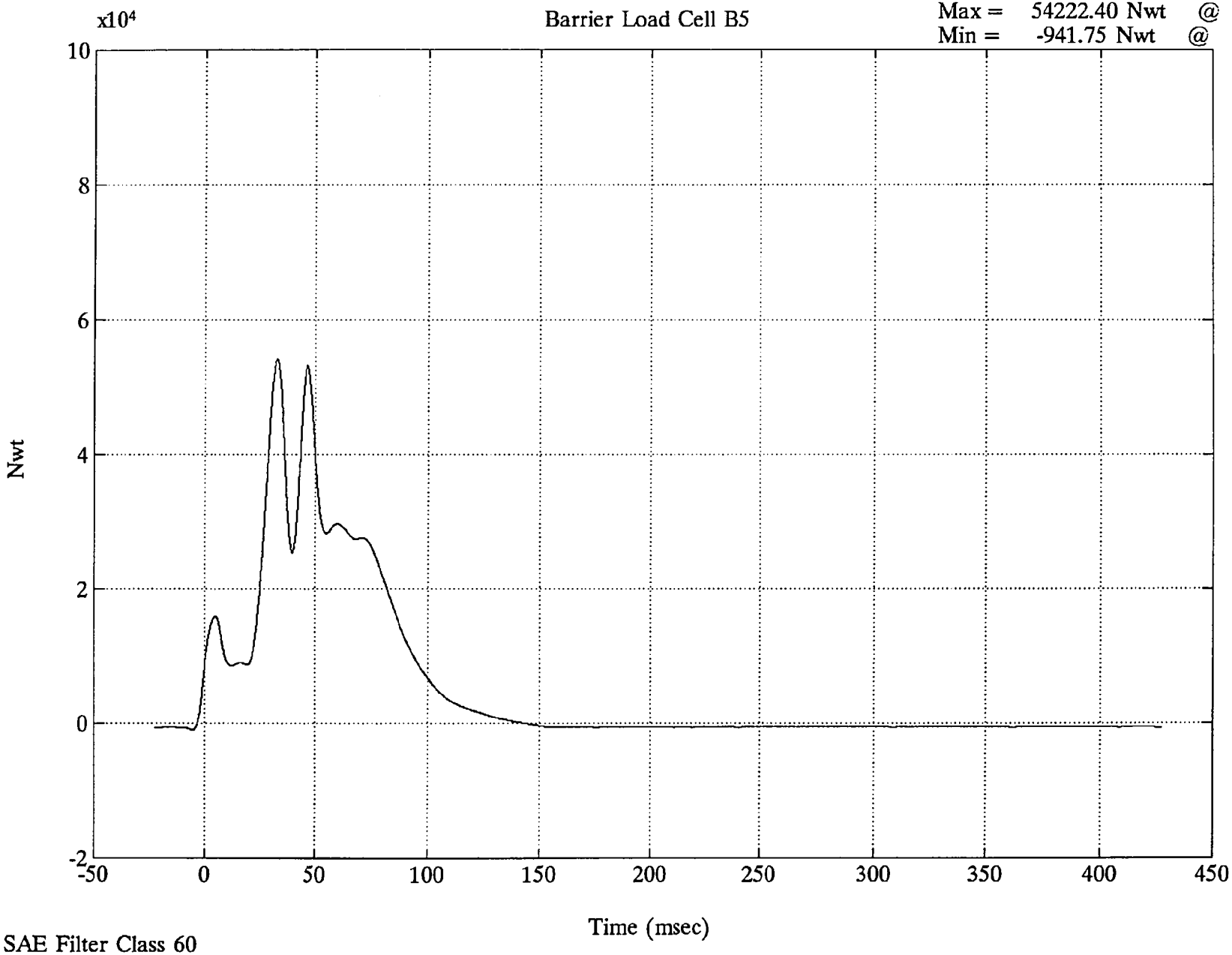
SAE Filter Class 60

B-40

8227-6


NCAP TEST #6 - 1995 Acura Integra
Barrier Load Cell B4
Max = 112728.60 Nwt @ 31.44 msec
Min = -461.64 Nwt @ -3.84 msec
x10^5
2
1.5
1
0.5
0
Nwt
-50
0
50
100
150
200
250
300
350
400
450
Time (msec)
B-41
8227-6
SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

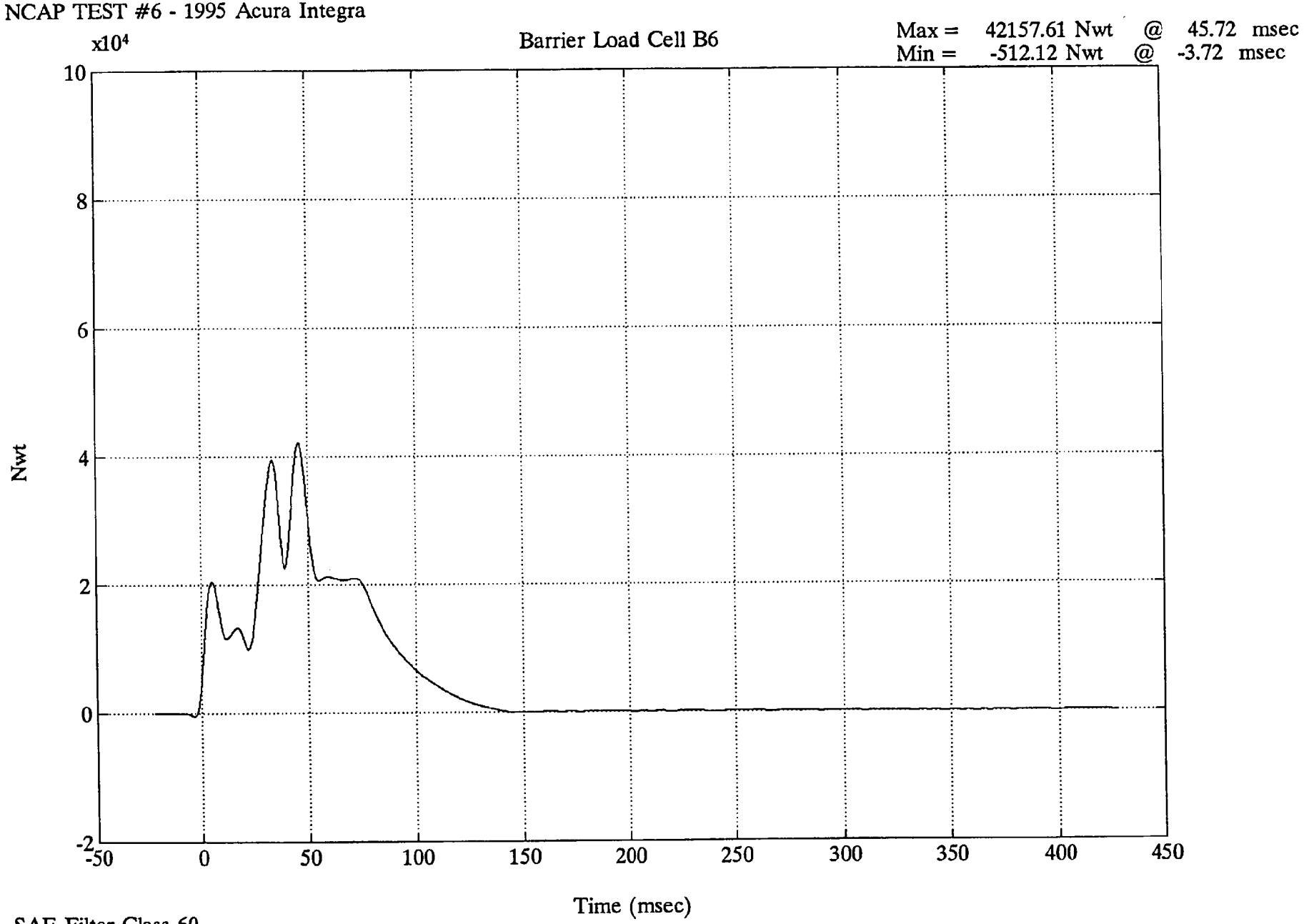


B-42

8227-6

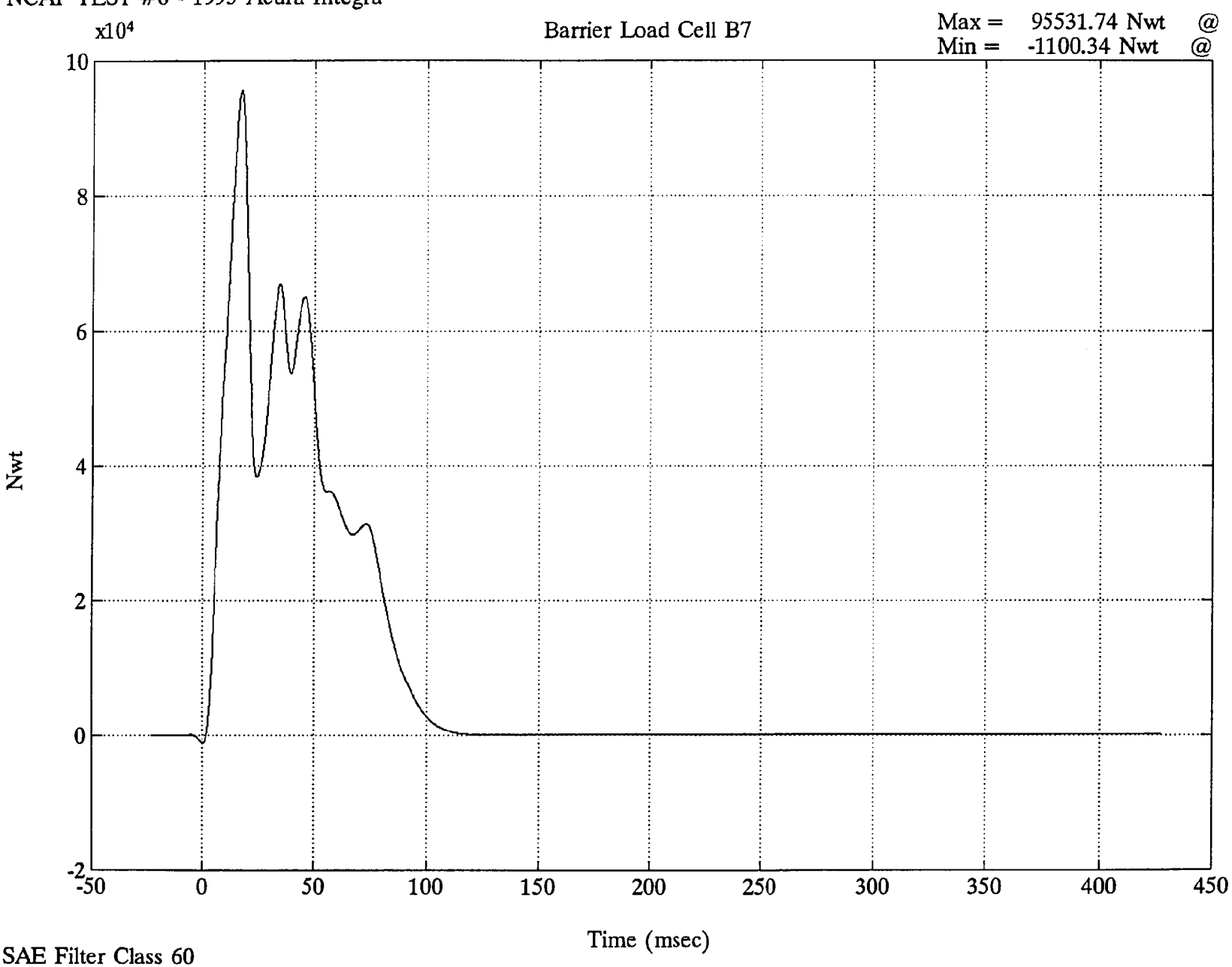
SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

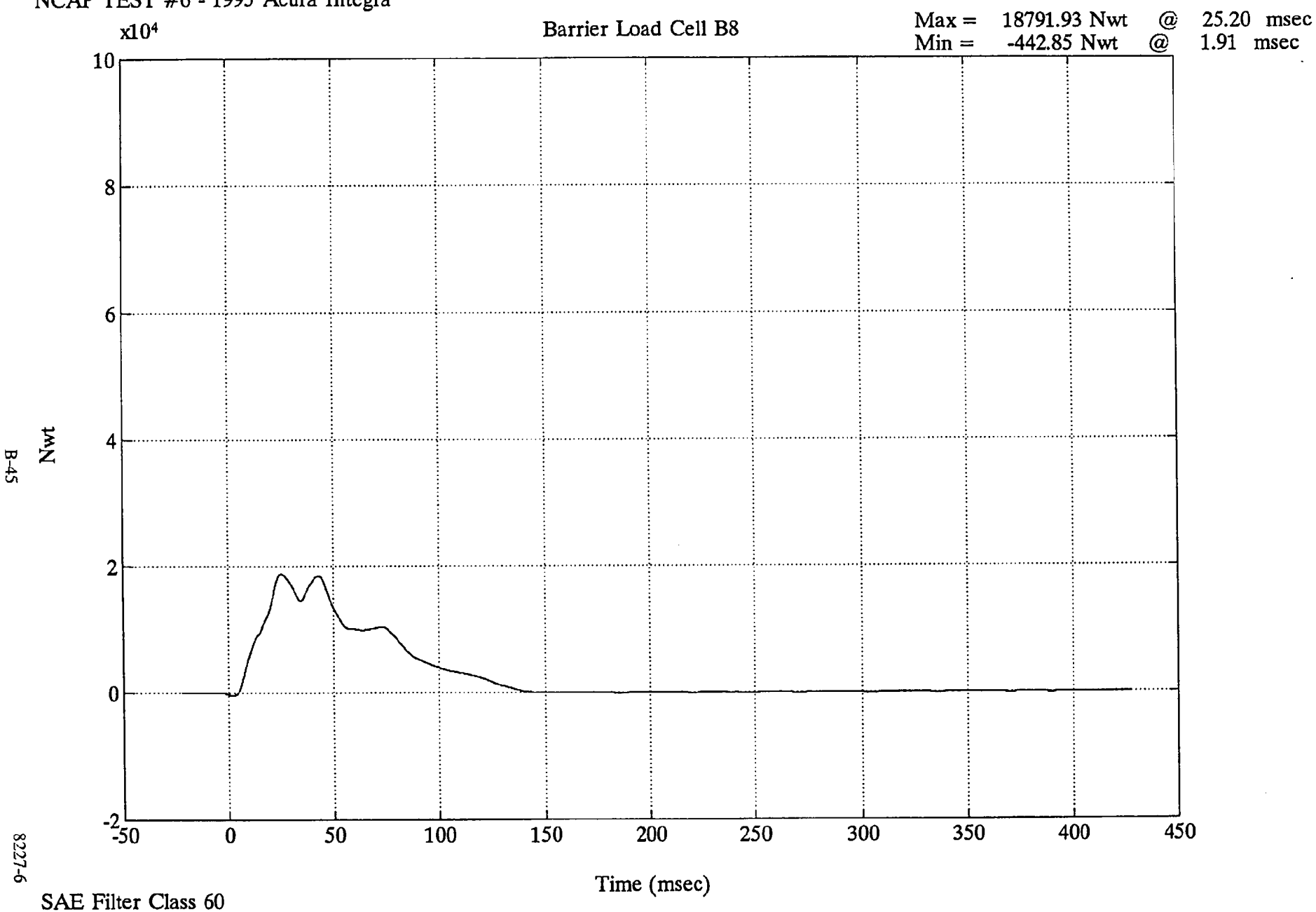
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

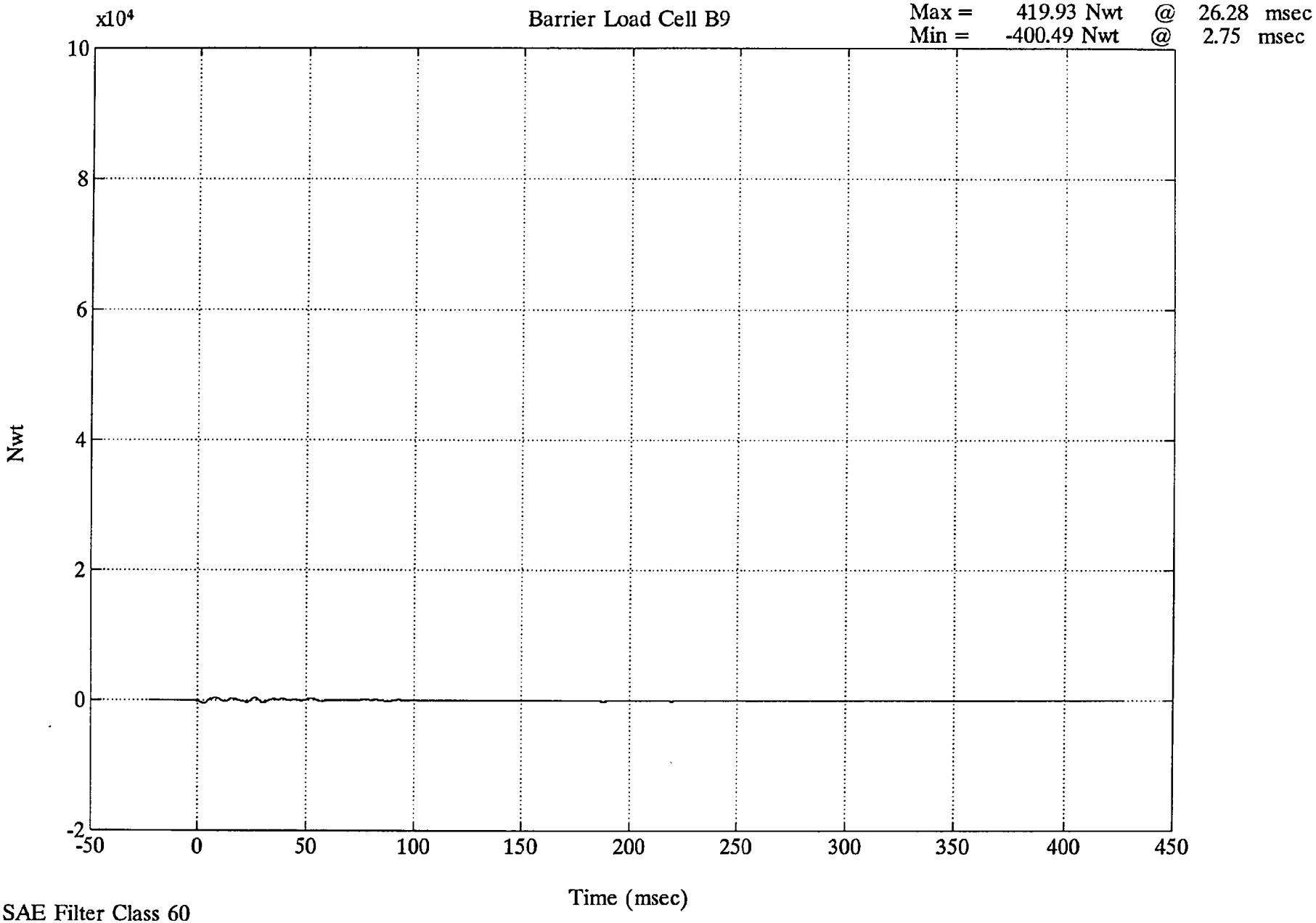
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

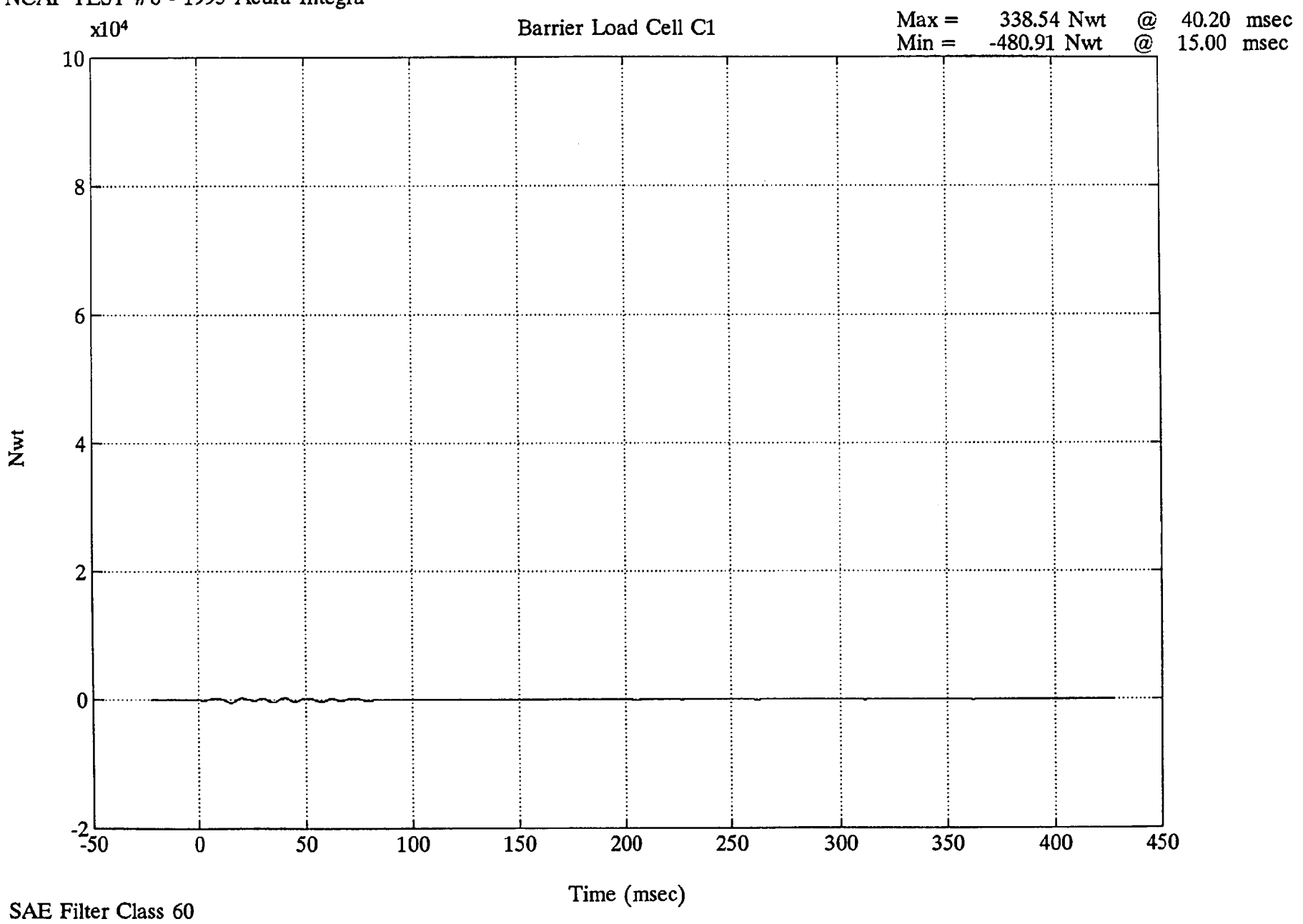
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

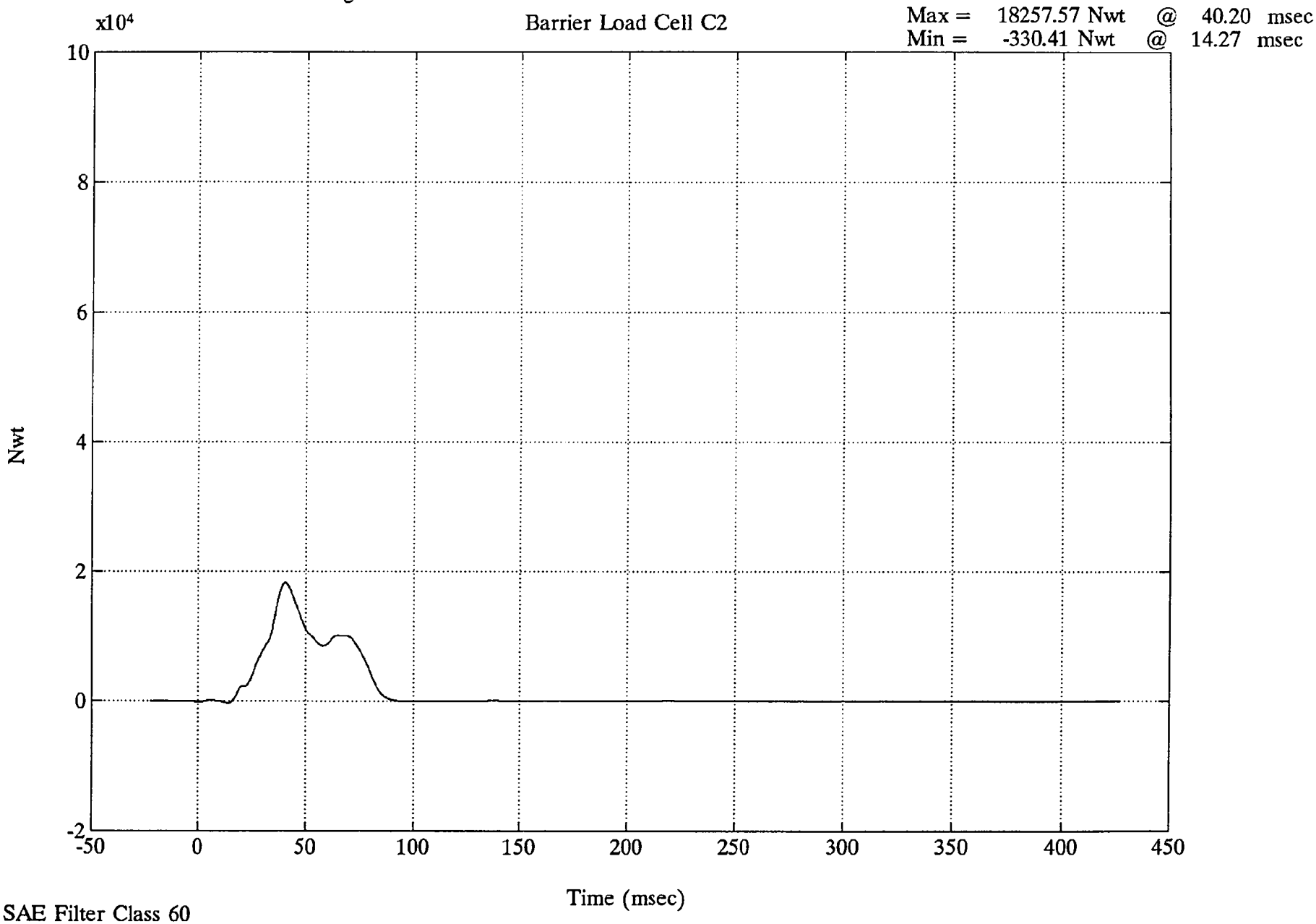
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

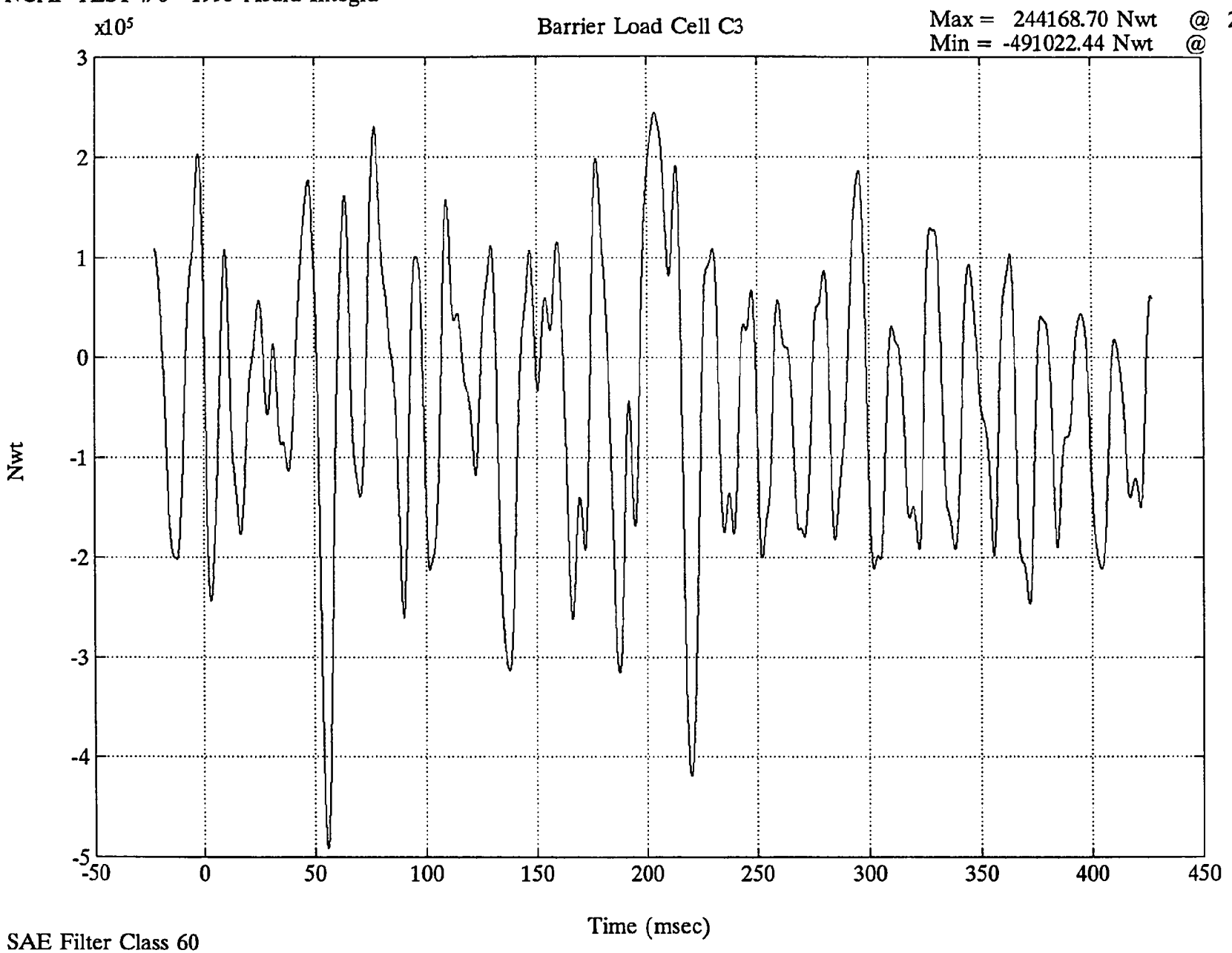
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

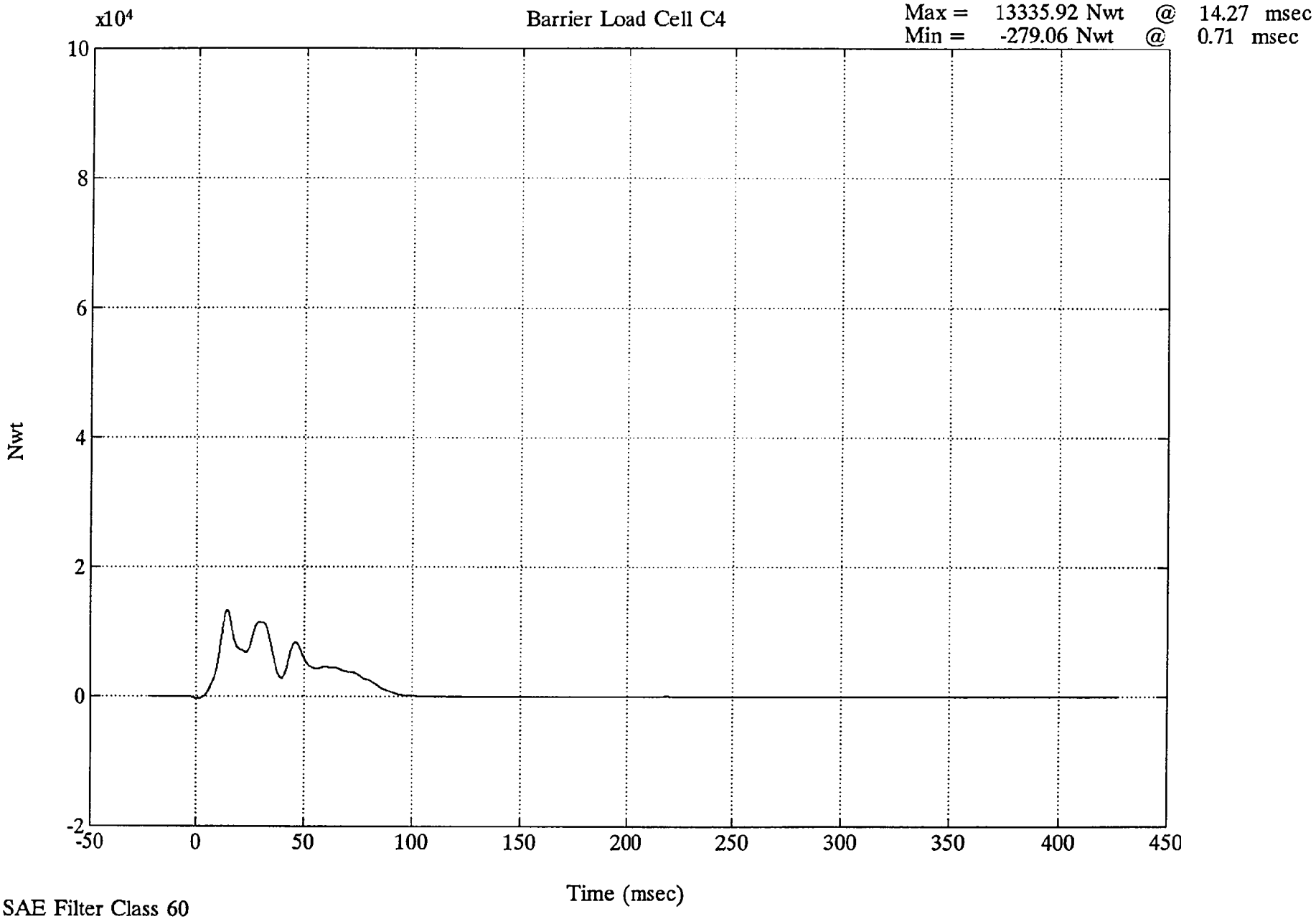


SAE Filter Class 60

DATA IS NOT ACCURATE

8227-6

NCAP TEST #6 - 1995 Acura Integra

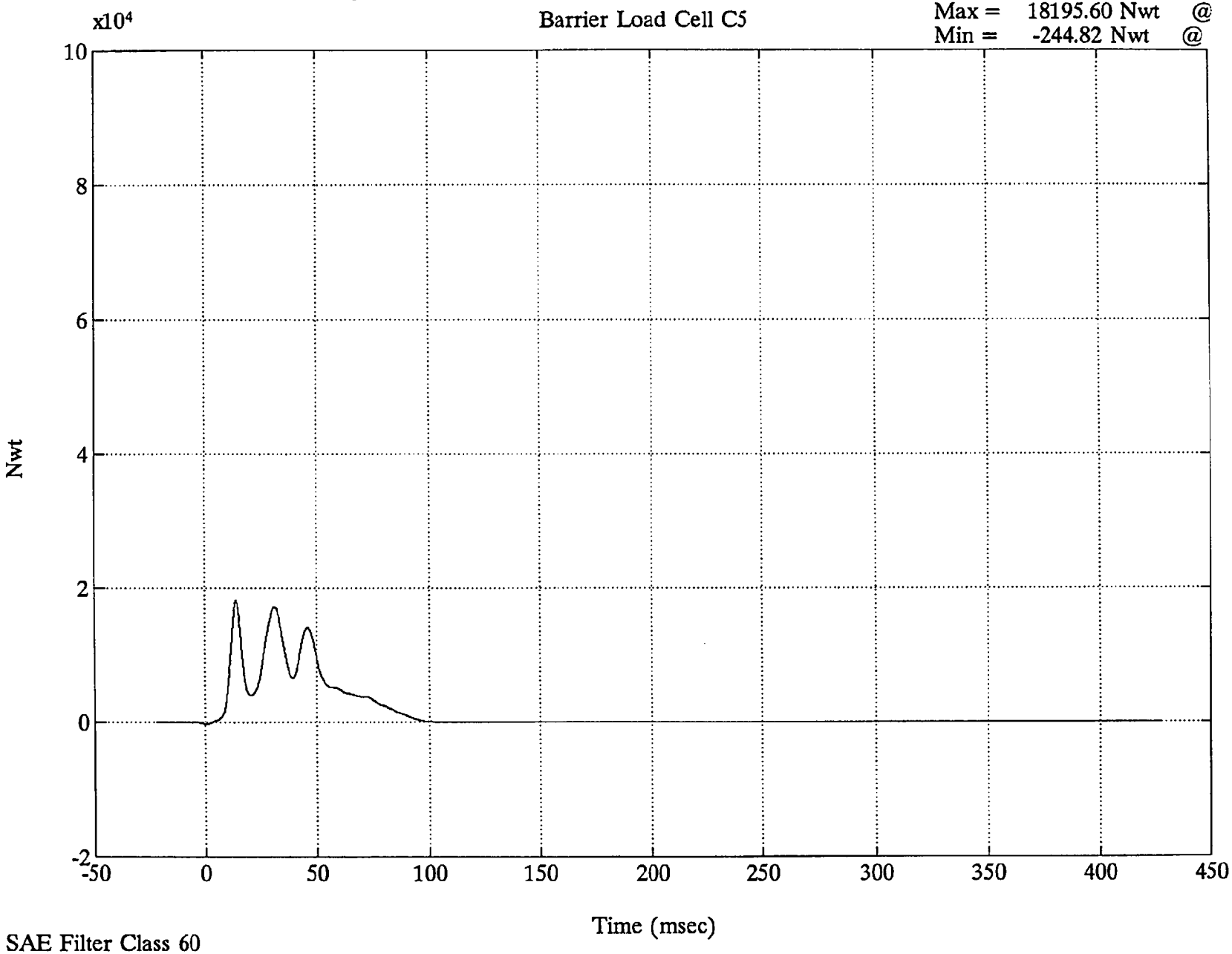


B-50

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

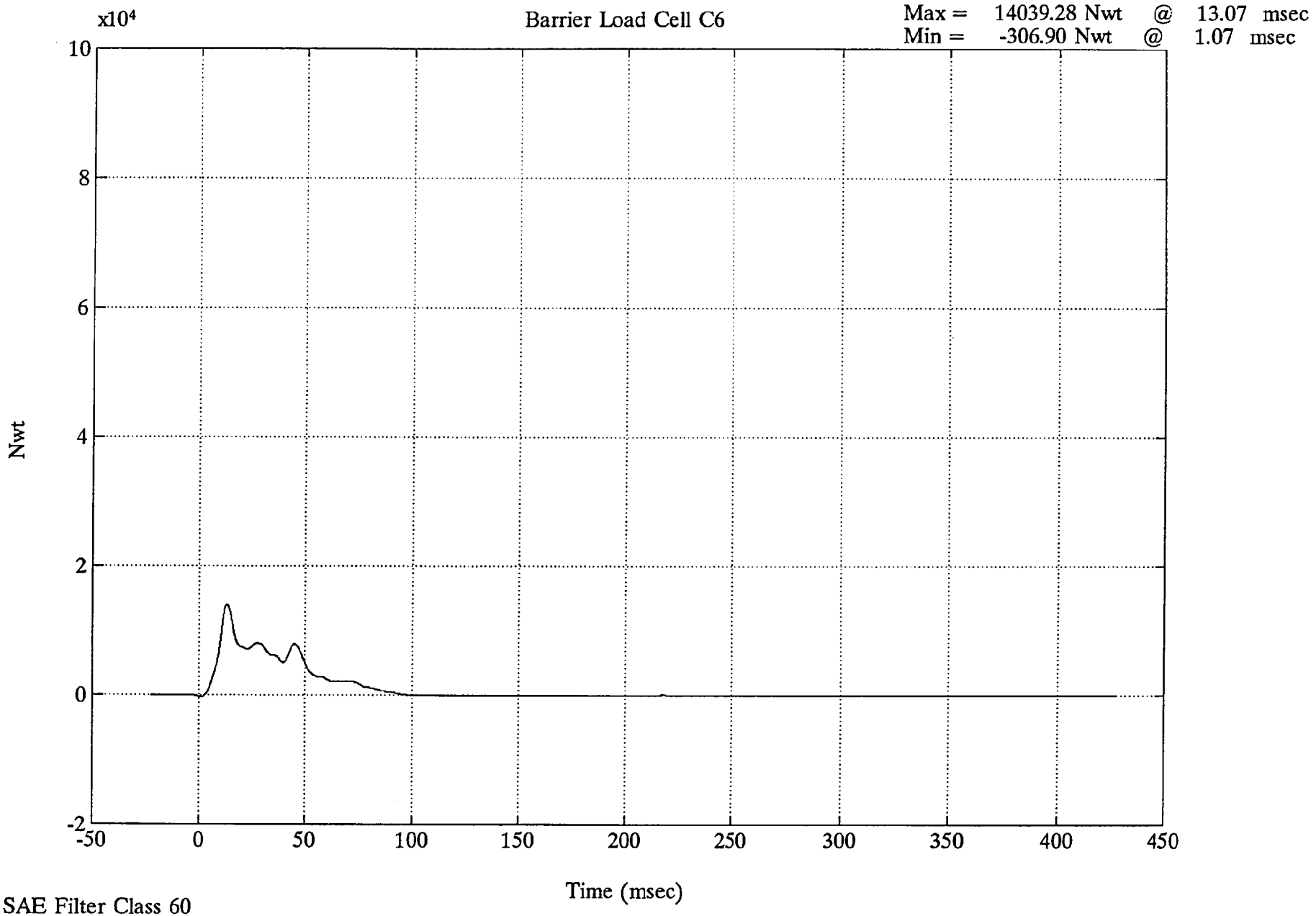


B-51

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

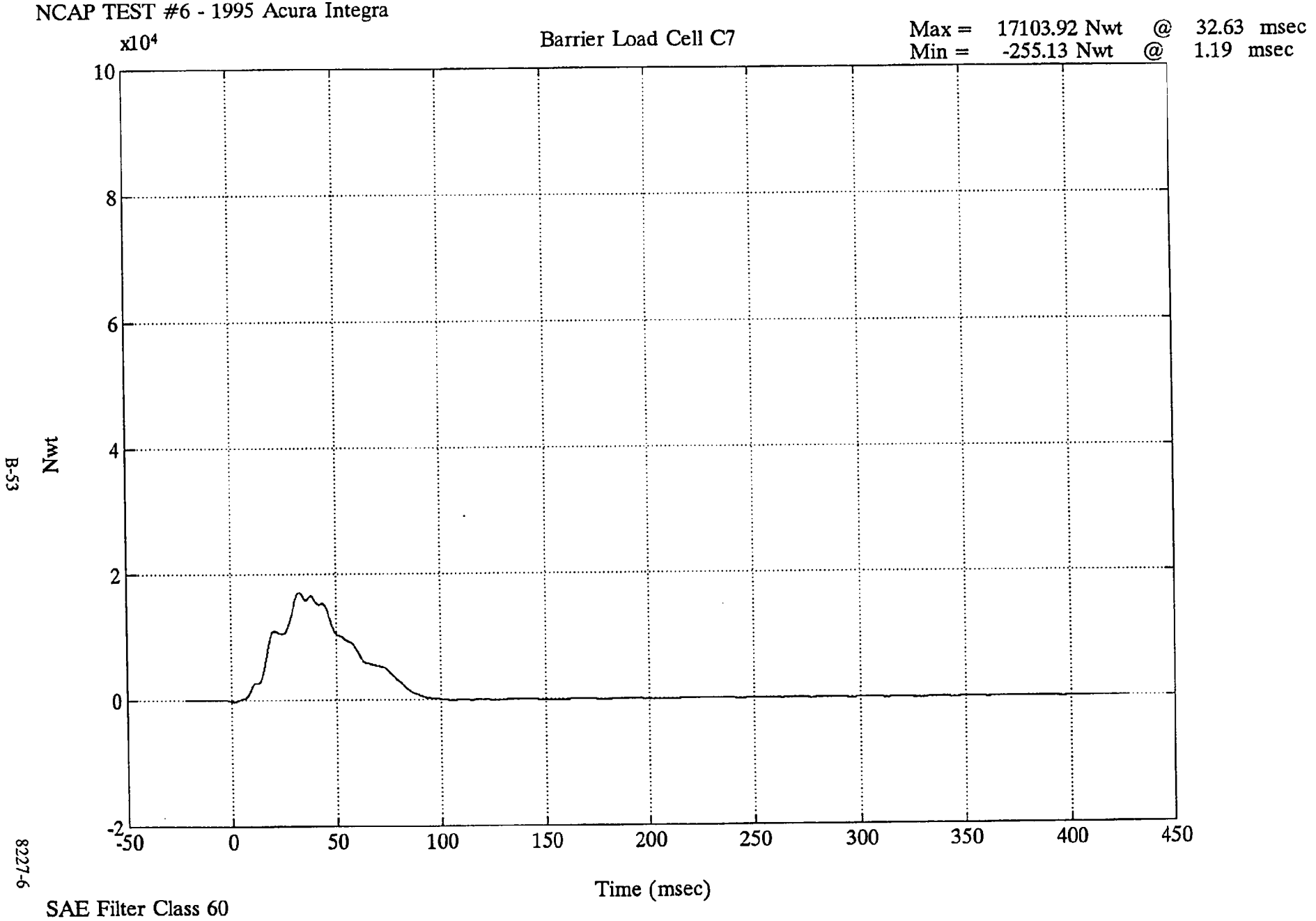


B-52

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

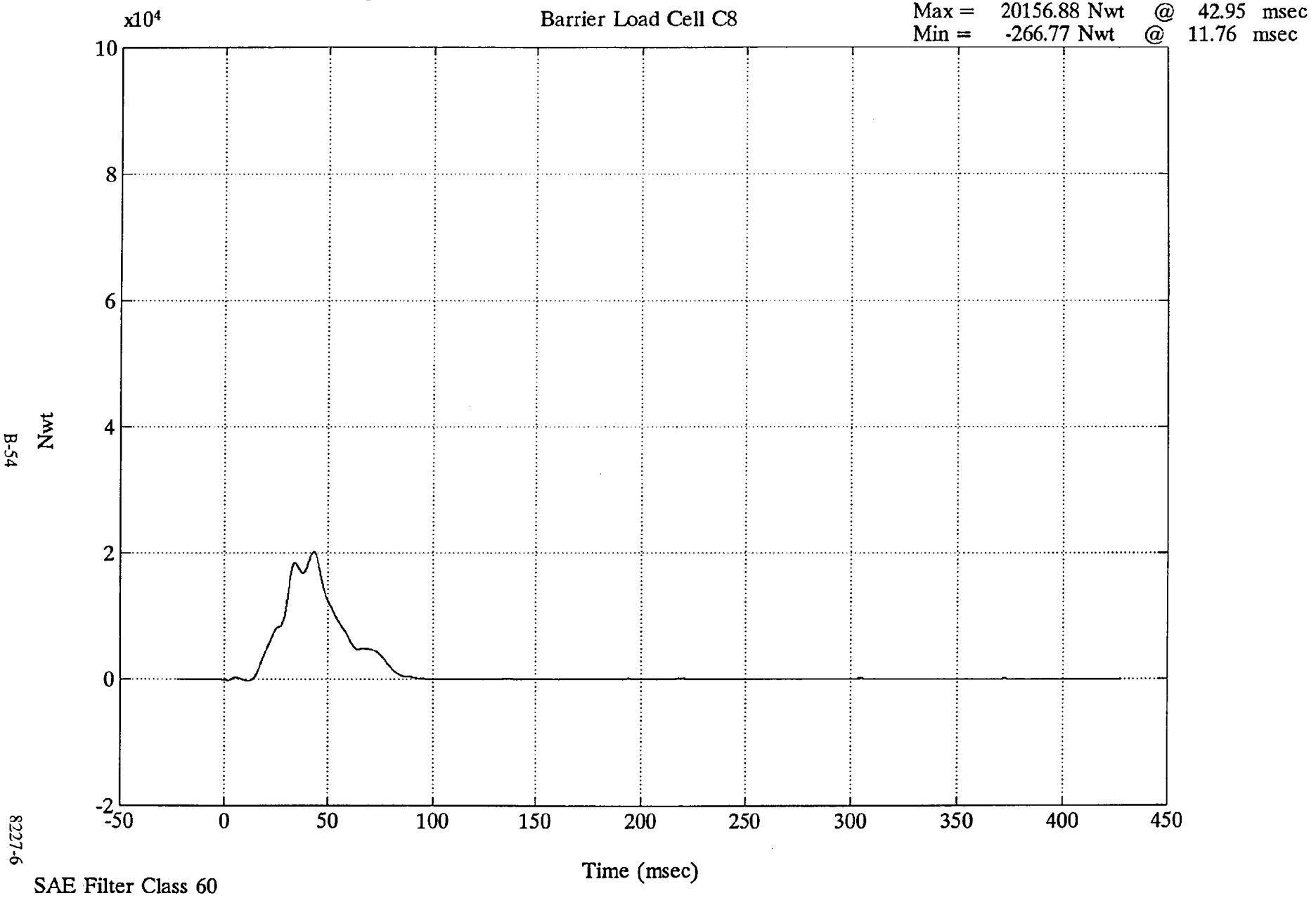


B-53

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

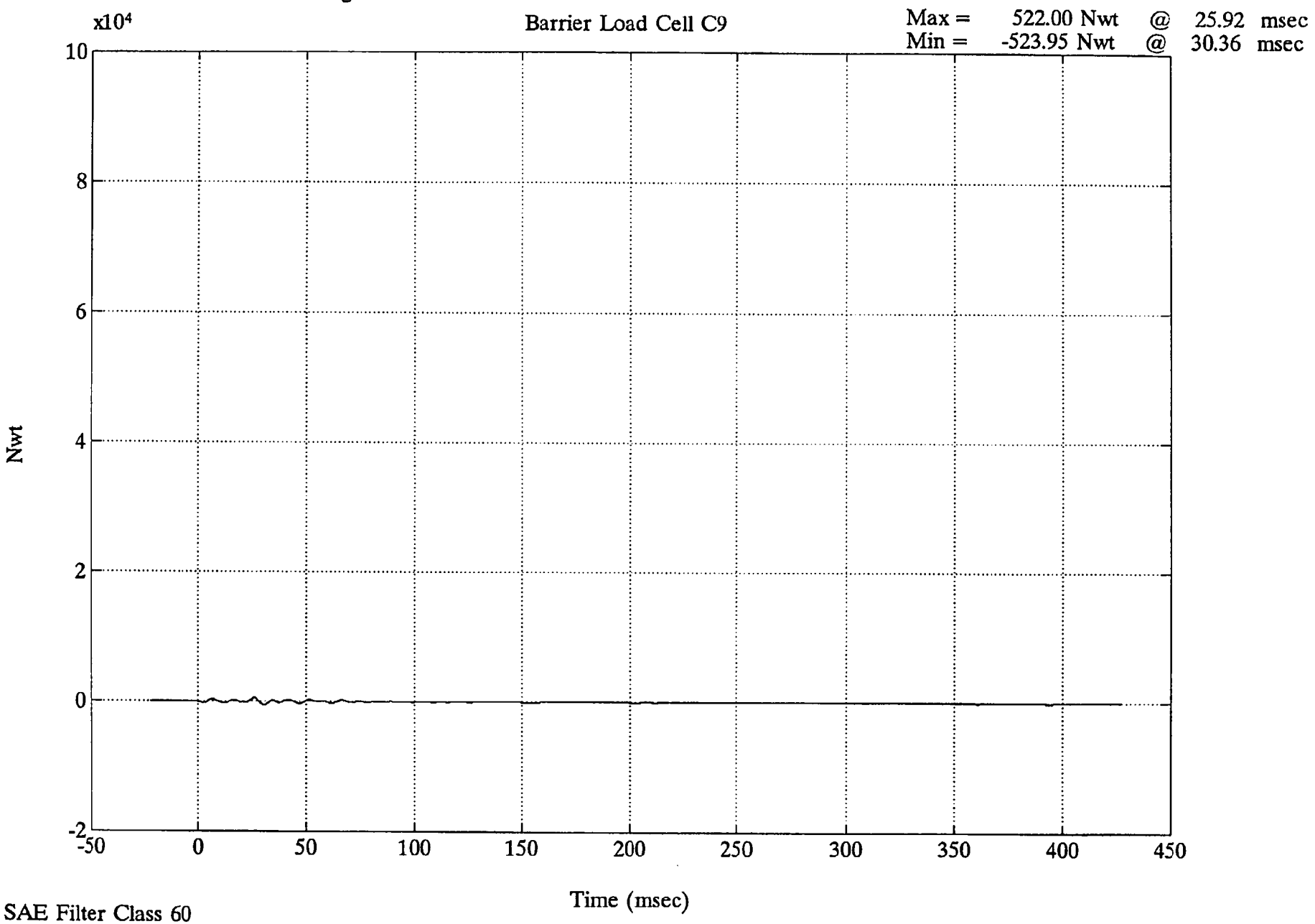


B-54

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

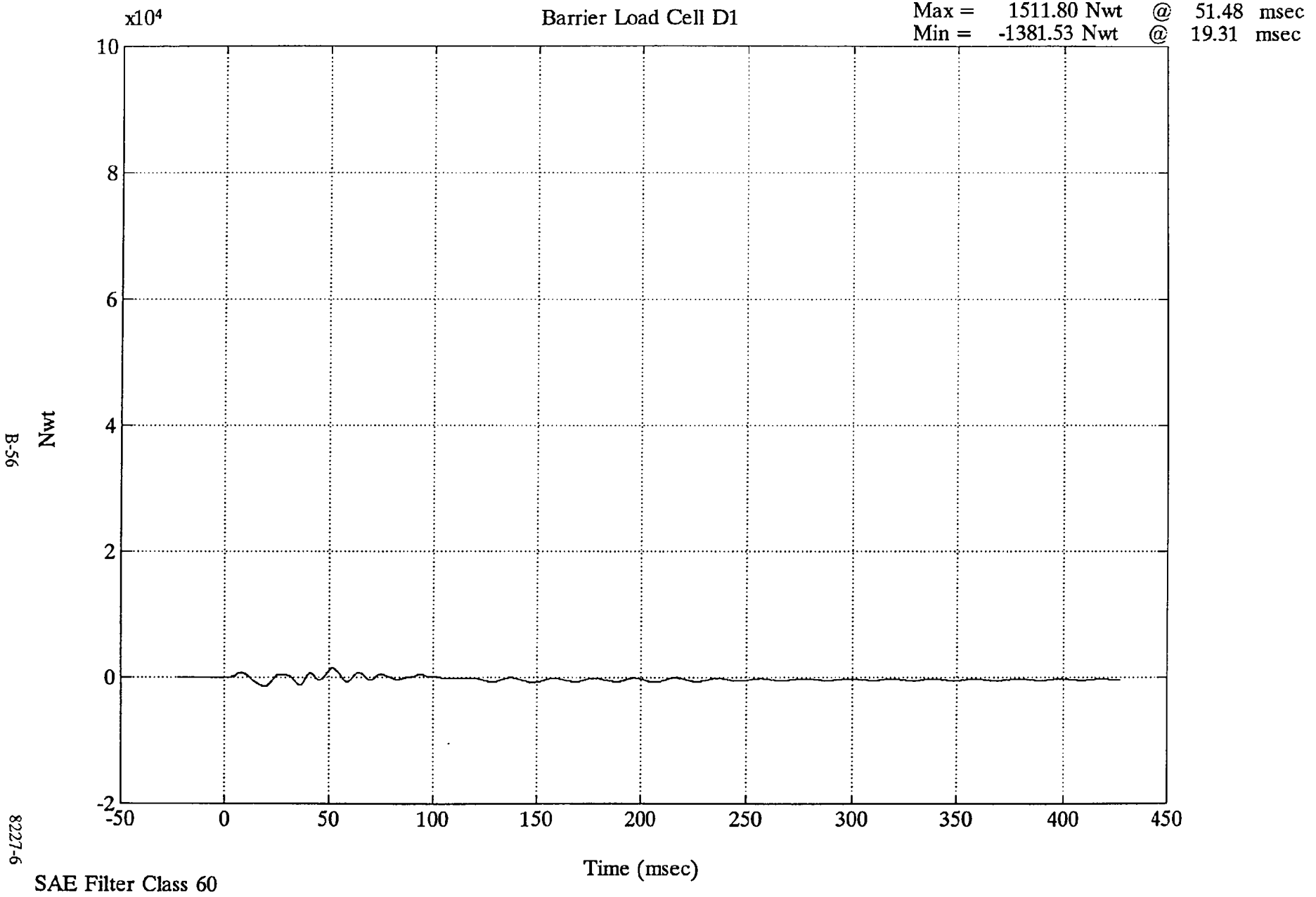


B-55

8227-6

SAE Filter Class 60

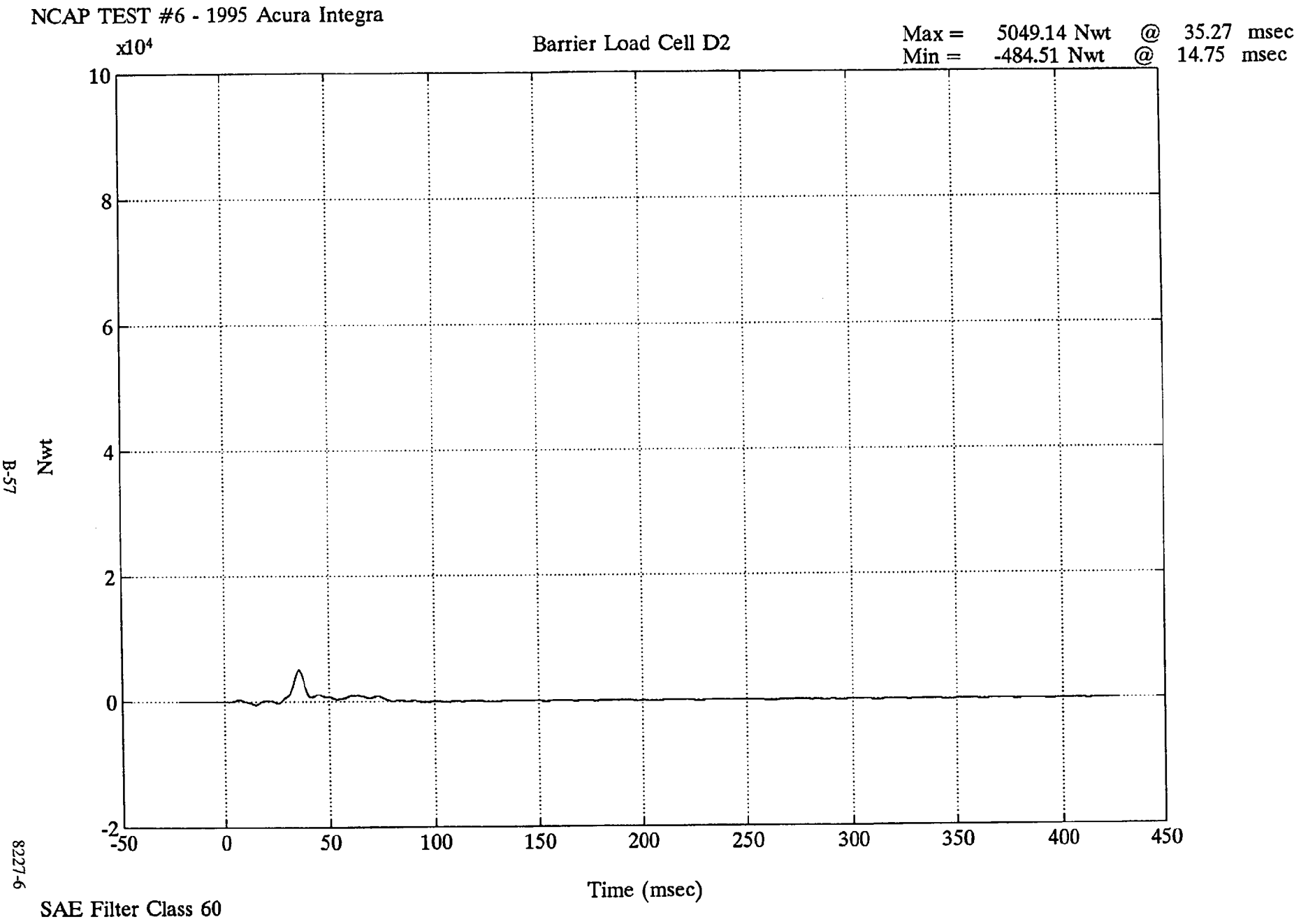
NCAP TEST #6 - 1995 Acura Integra



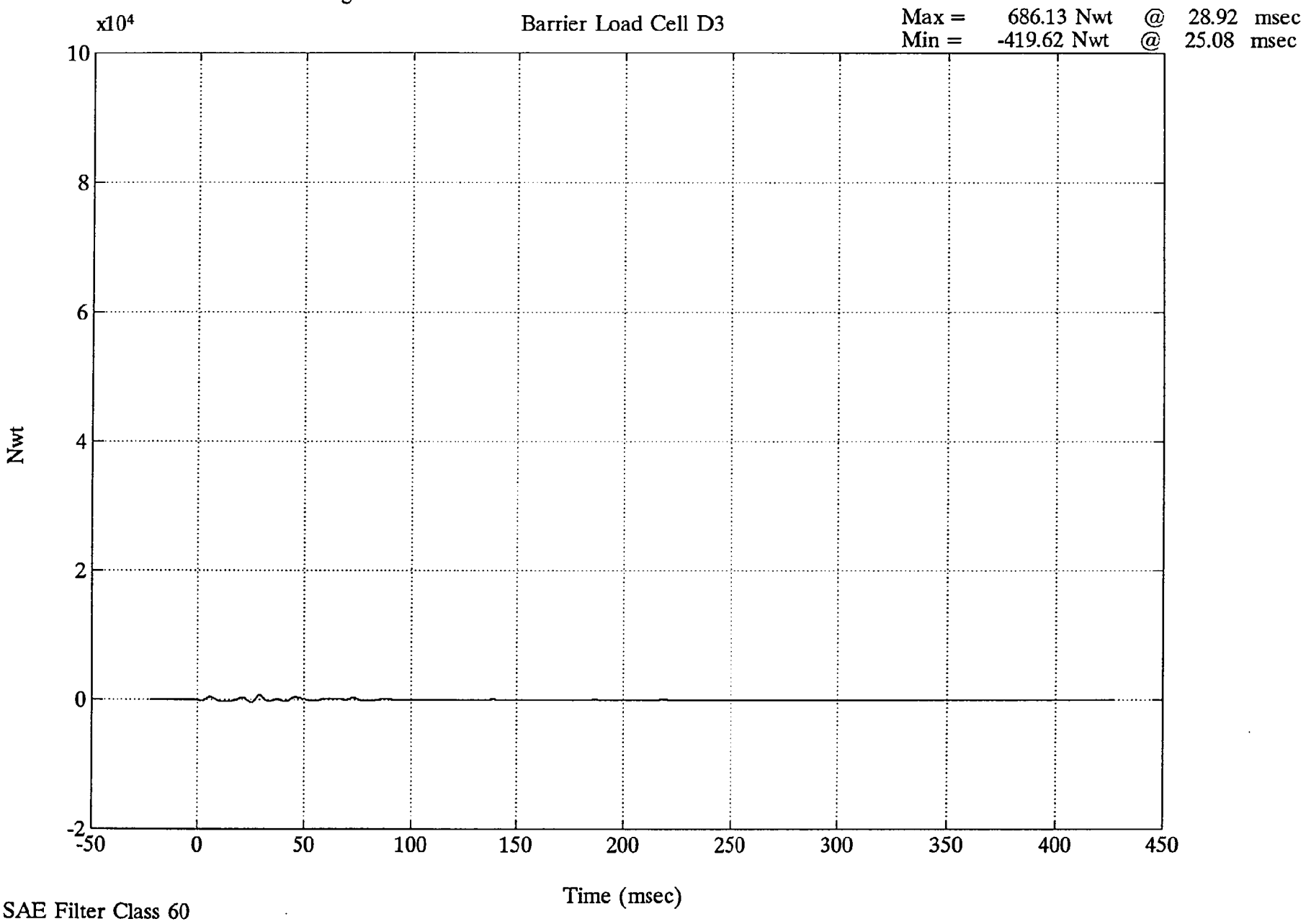
SAE Filter Class 60

B-56

8227-6


NCAP TEST #6 - 1995 Acura Integra
x10^4
Barrier Load Cell D2
Max = 5049.14 Nwt @ 35.27 msec
Min = -484.51 Nwt @ 14.75 msec
10
8
6
4
2
0
-2
Nwt
-50
0
50
100
150
200
250
300
350
400
450
Time (msec)
SAE Filter Class 60
B-57
82276

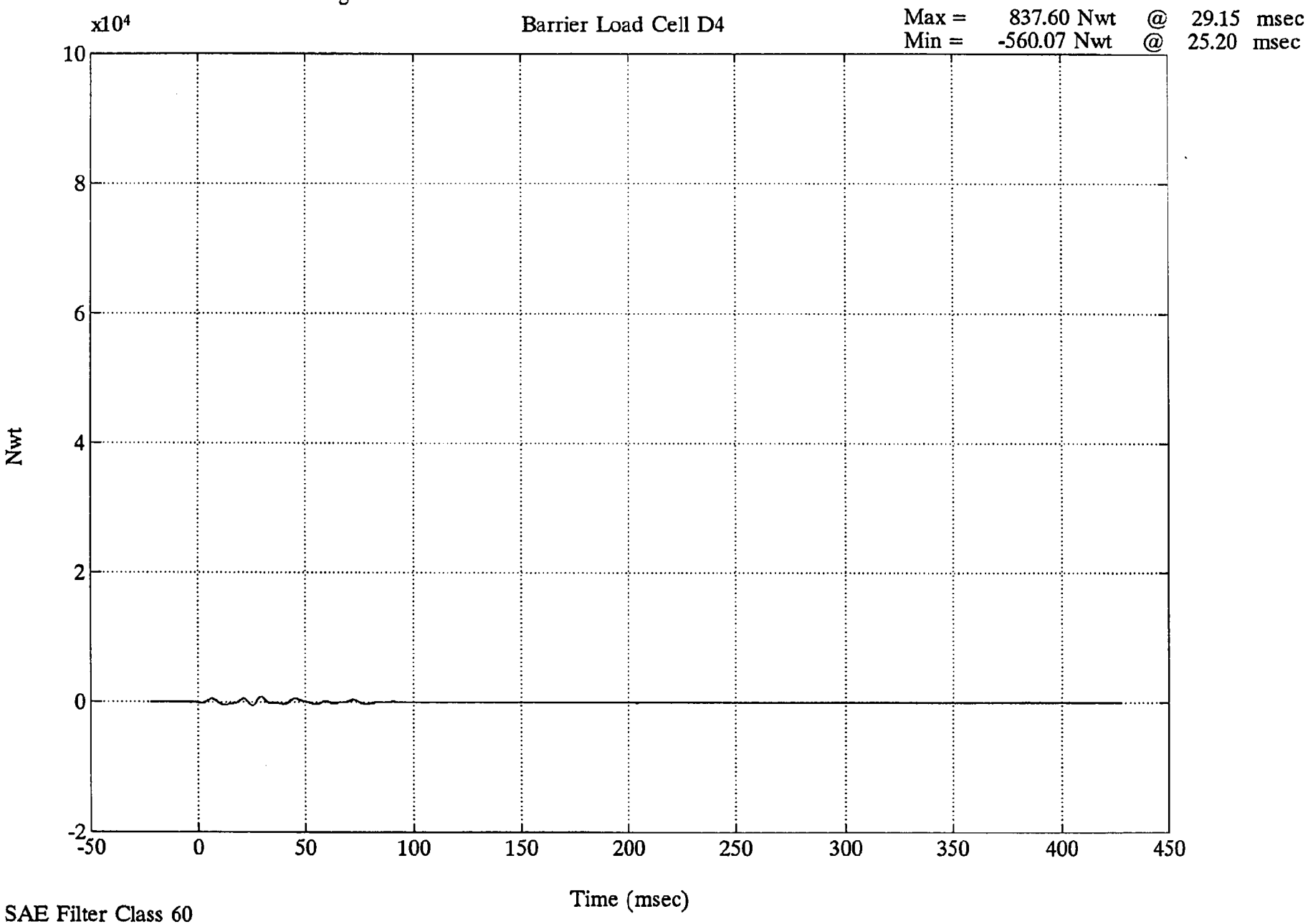
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

NCAP TEST #6 - 1995 Acura Integra

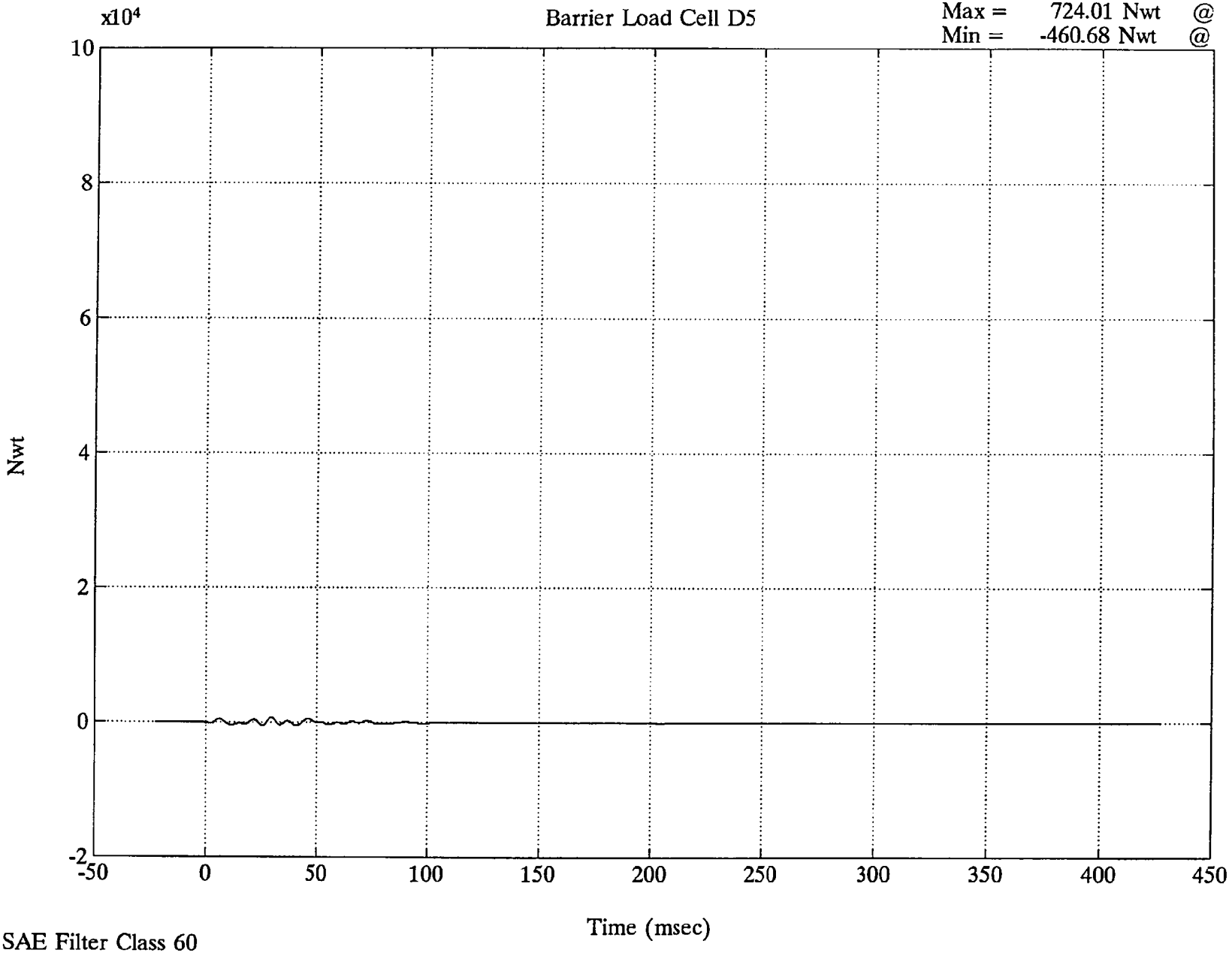


SAE Filter Class 60

B-59

8227-6

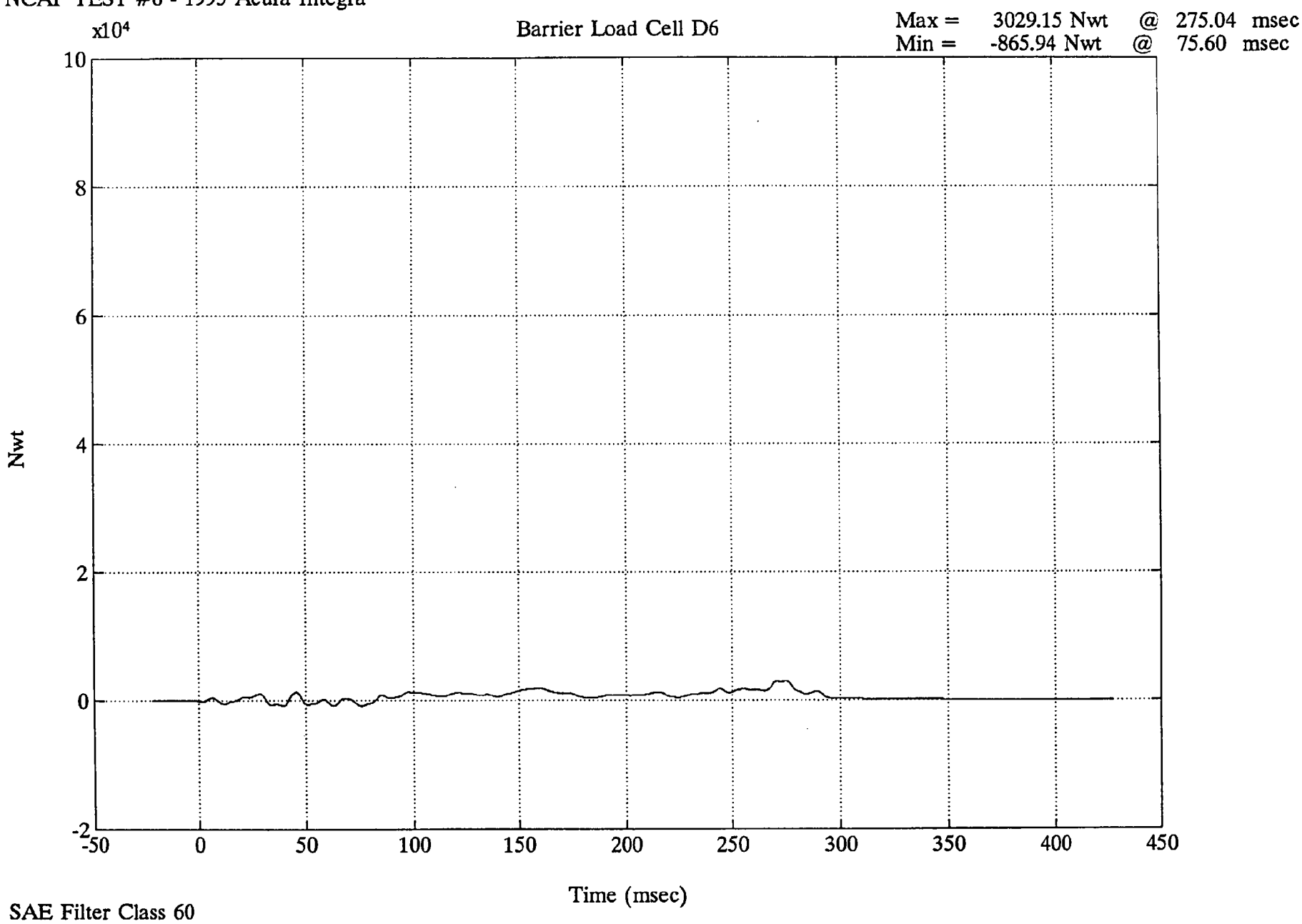
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

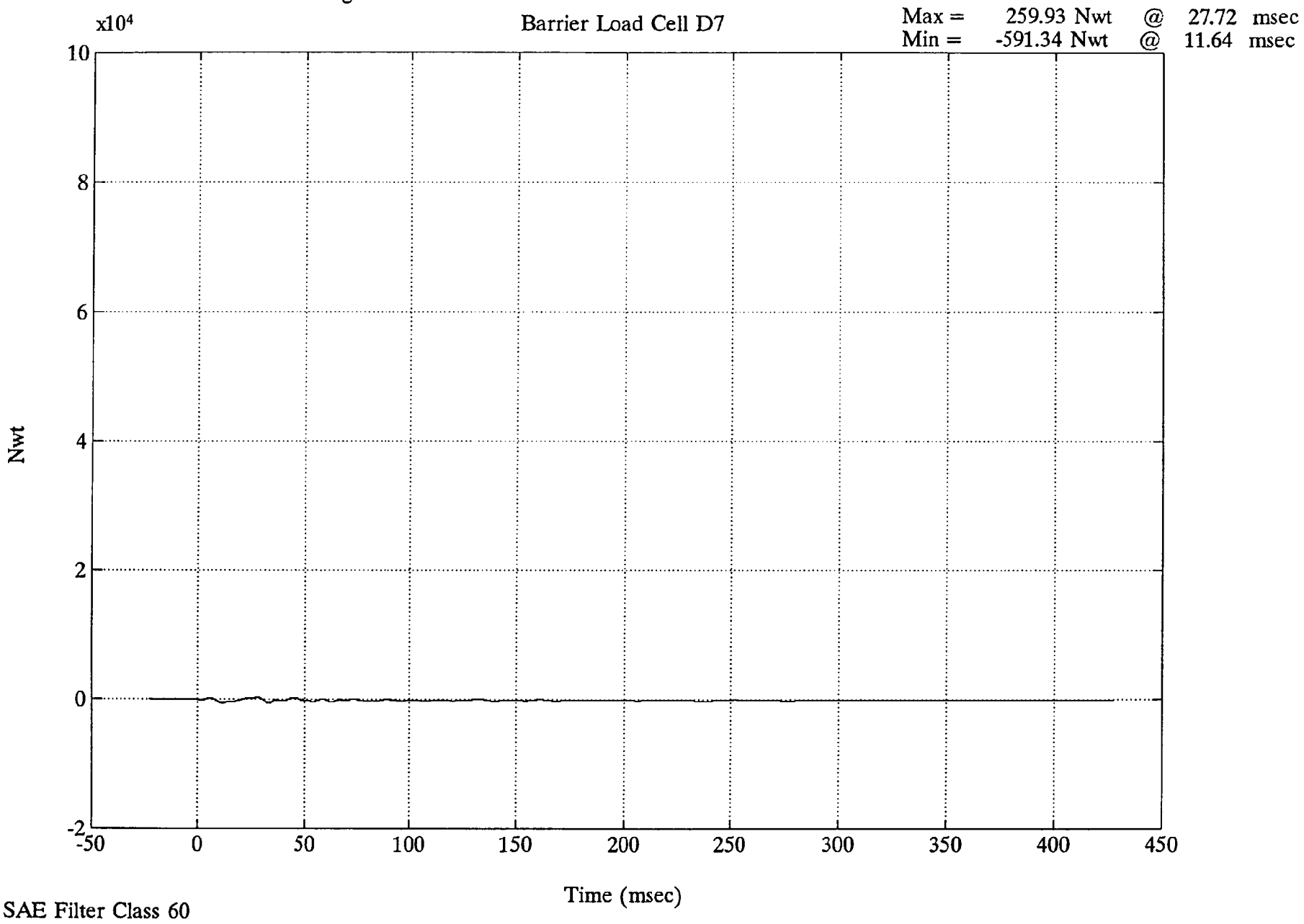
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 60

8227-6

NCAP TEST #6 - 1995 Acura Integra

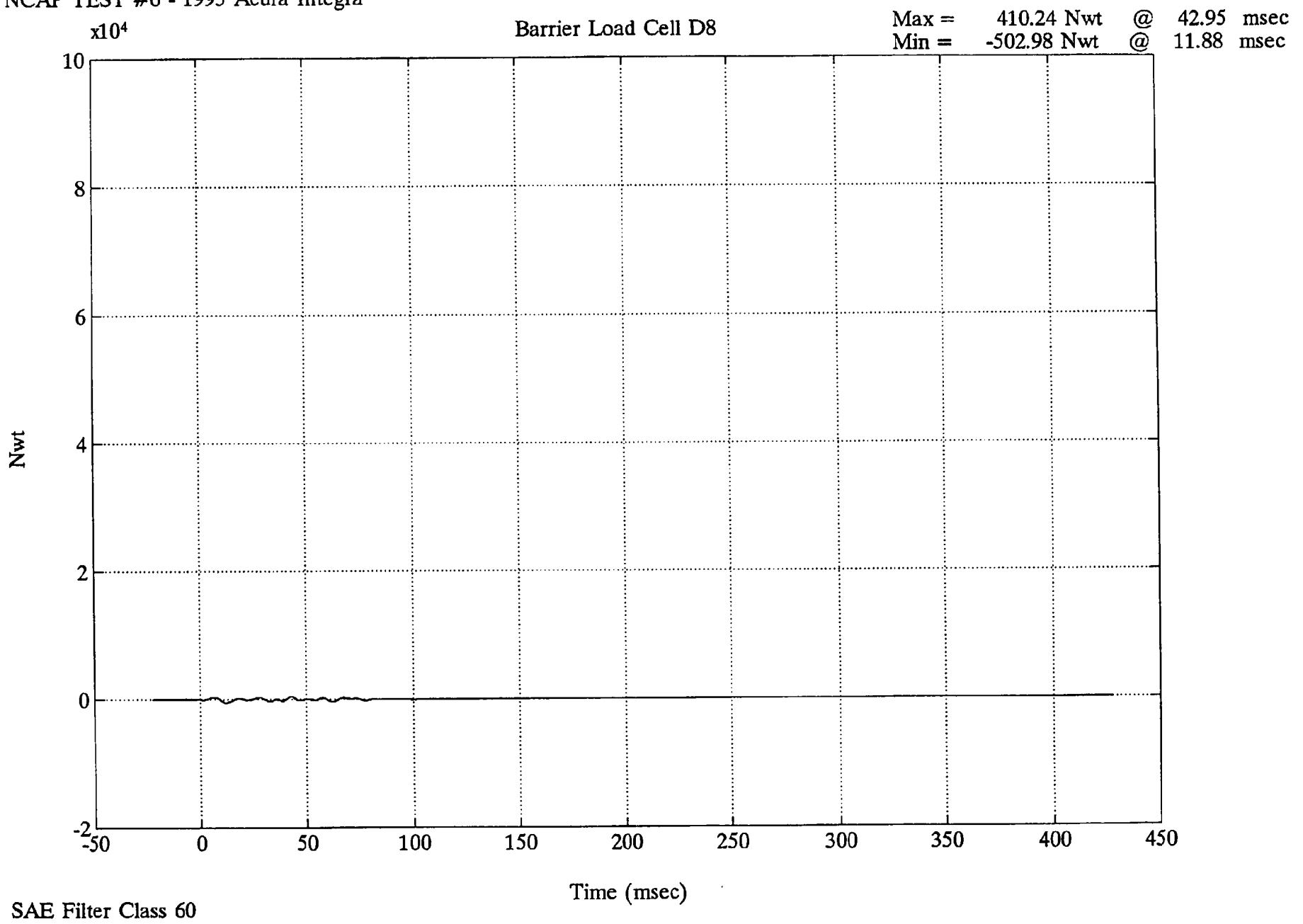


SAE Filter Class 60

B-62

8227-6

NCAP TEST #6 - 1995 Acura Integra

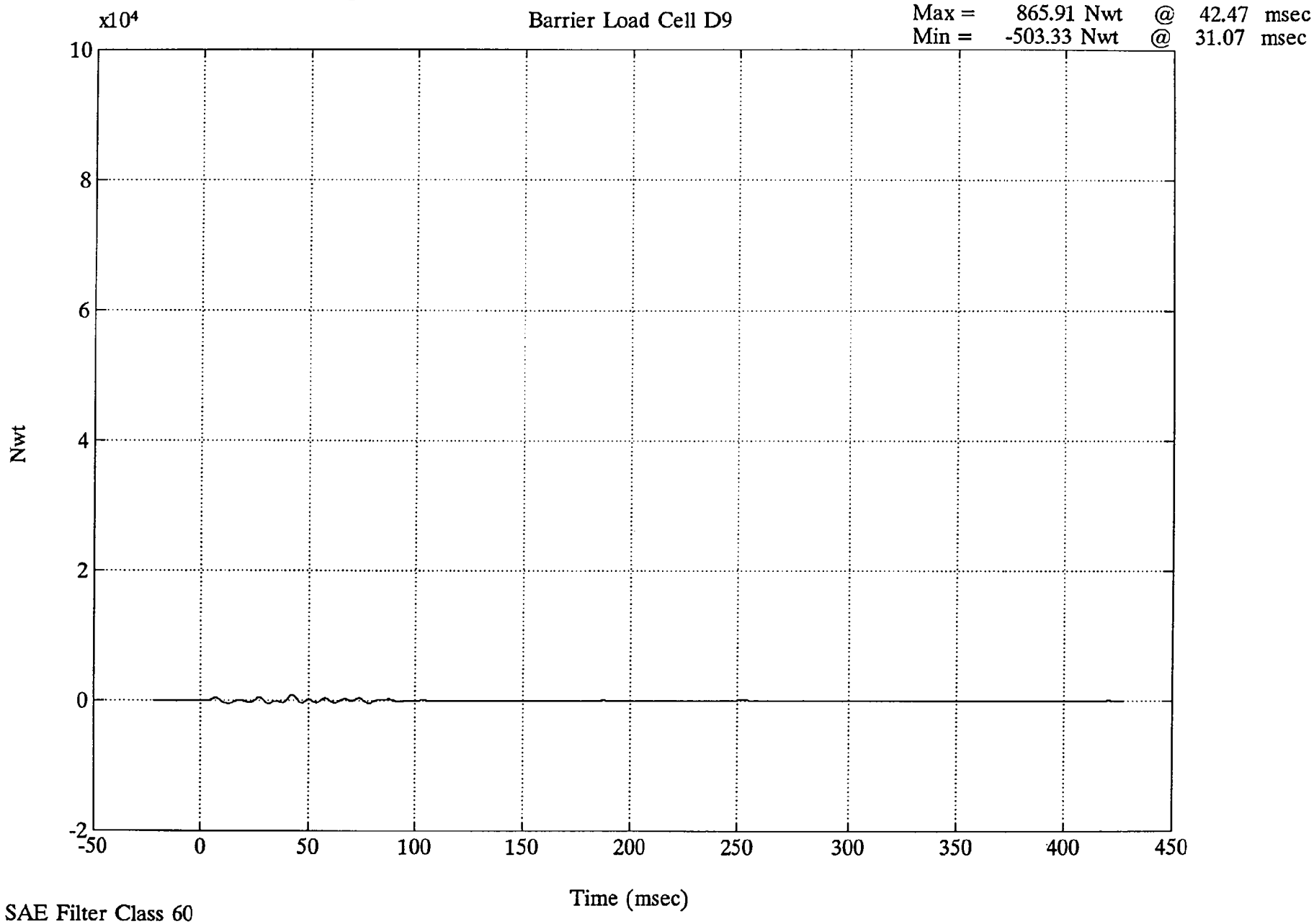


B-63

8227-6

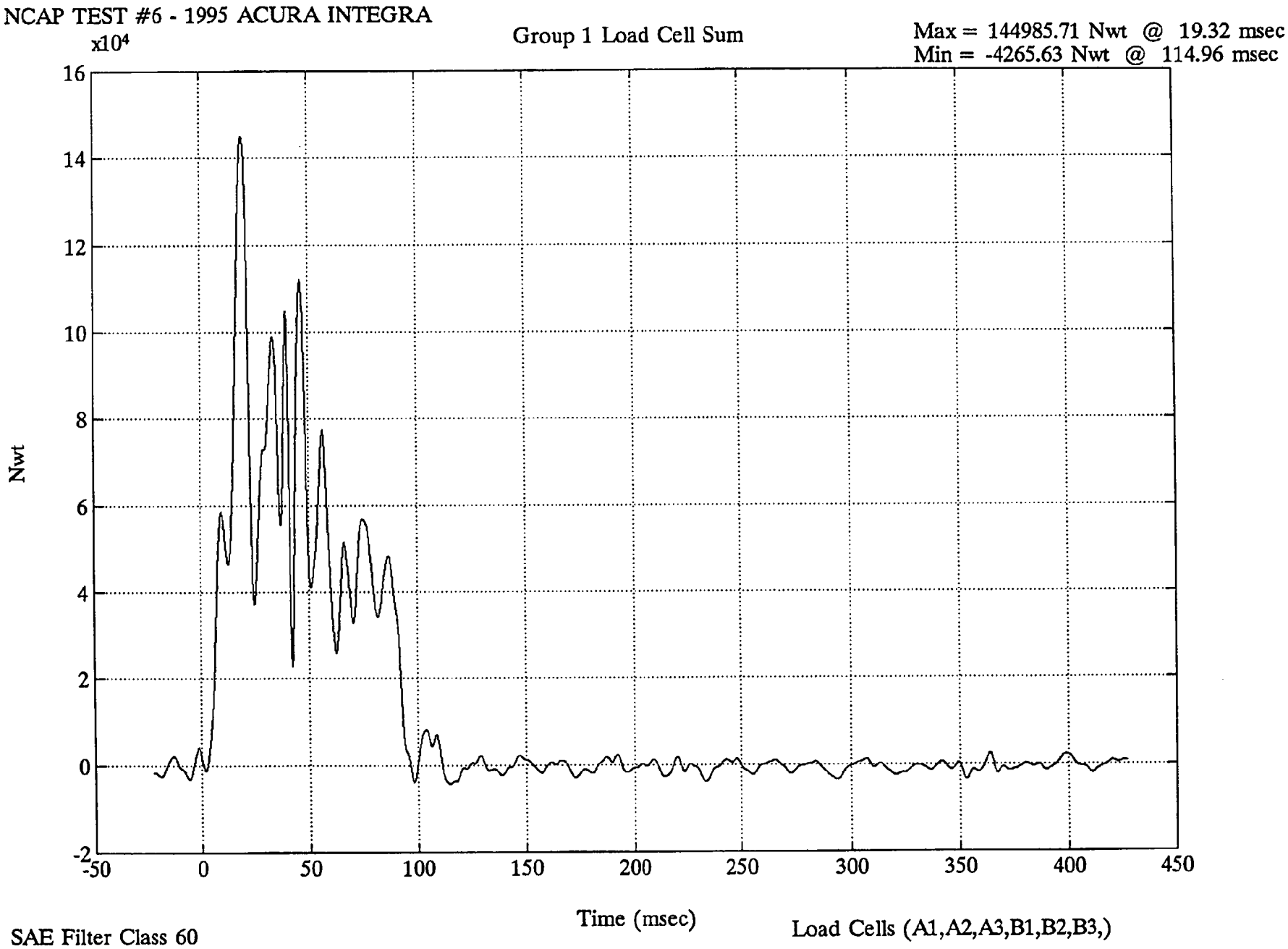
SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

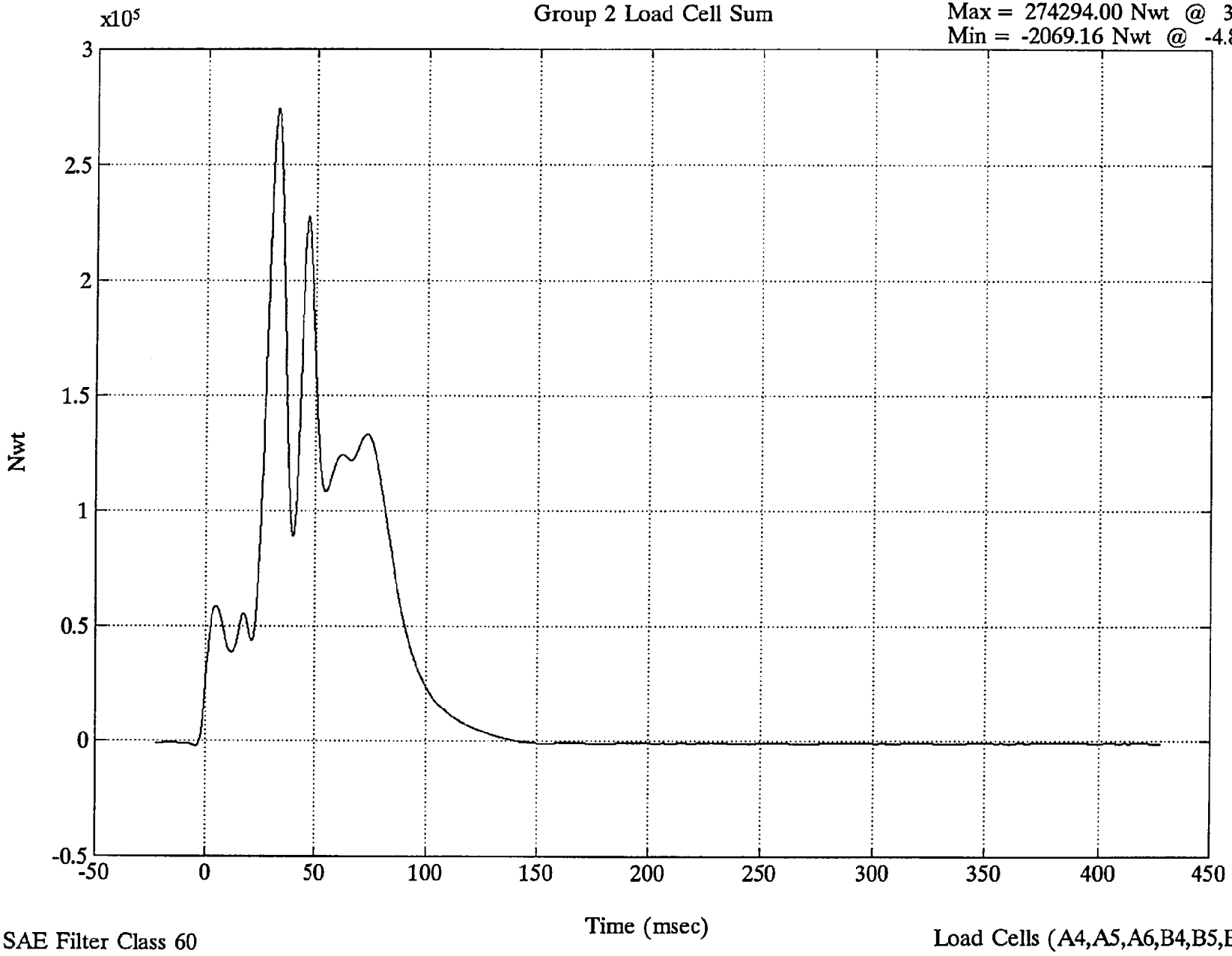


SAE Filter Class 60

8227-6

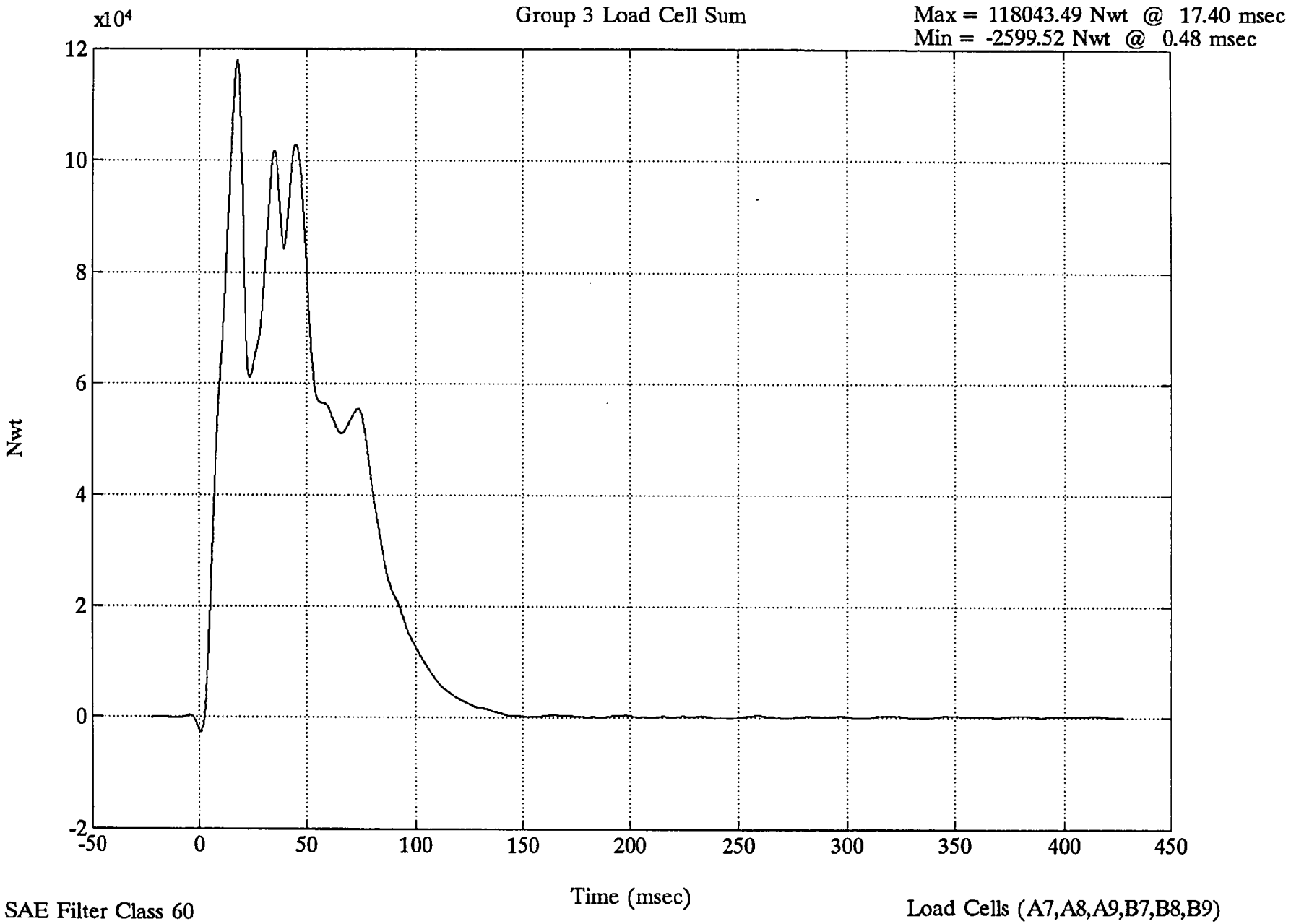

NCAP TEST #6 - 1995 ACURA INTEGRA
x10⁴
Group 1 Load Cell Sum
Max = 144985.71 Nwt @ 19.32 msec
Min = -4265.63 Nwt @ 114.96 msec
16
14
12
10
8
6
4
2
0
-2
Nwt
-50
0
50
100
150
200
250
300
350
400
450
Time (msec)
SAE Filter Class 60
Load Cells (A1,A2,A3,B1,B2,B3,)
B-65
8227-6

NCAP TEST #6 - 1995 ACURA INTEGRA



8227-6

NCAP TEST #6 - 1995 ACURA INTEGRA

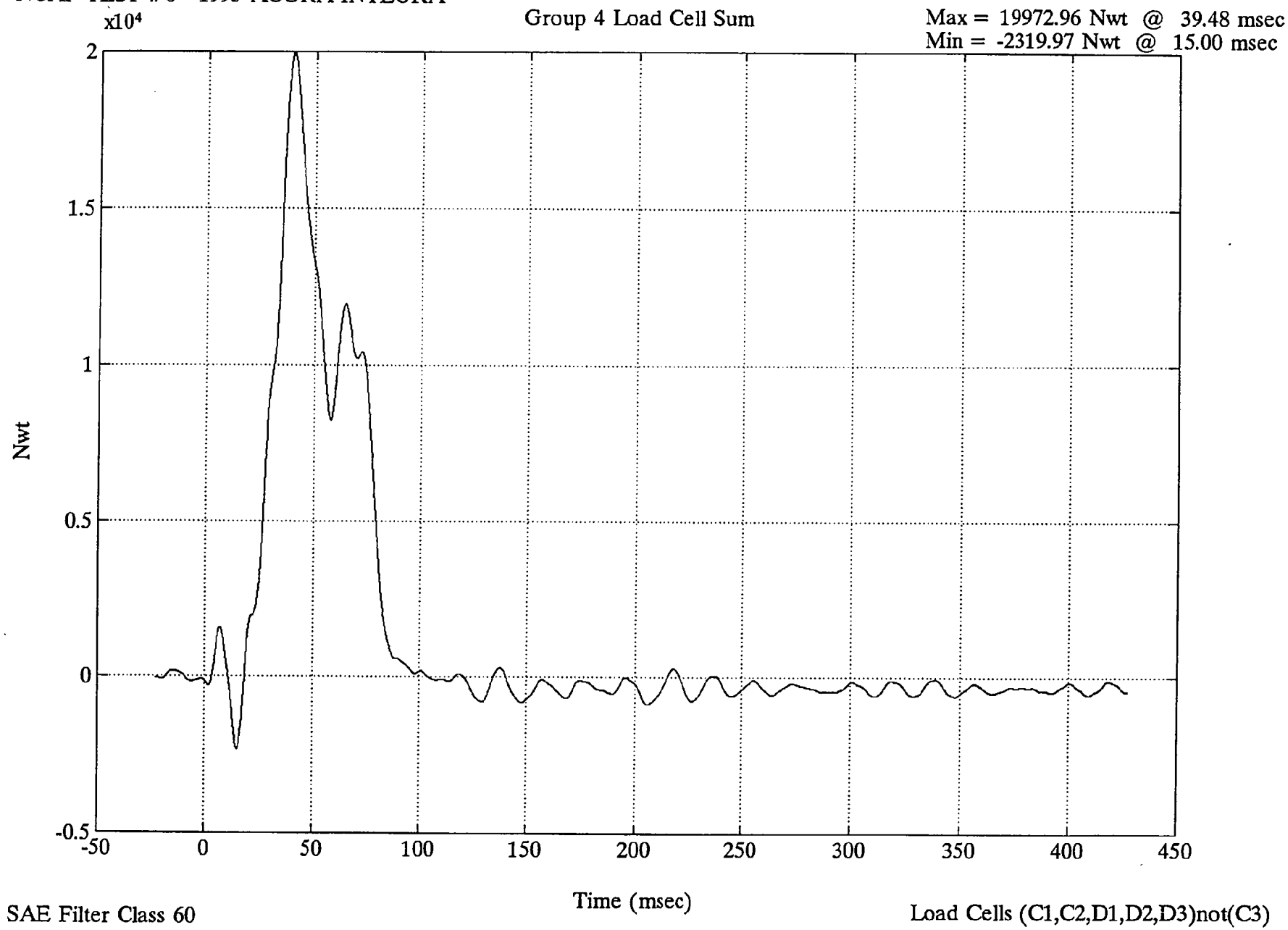


SAE Filter Class 60

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

8227-6

NCAP TEST #6 - 1995 ACURA INTEGRA



SAE Filter Class 60

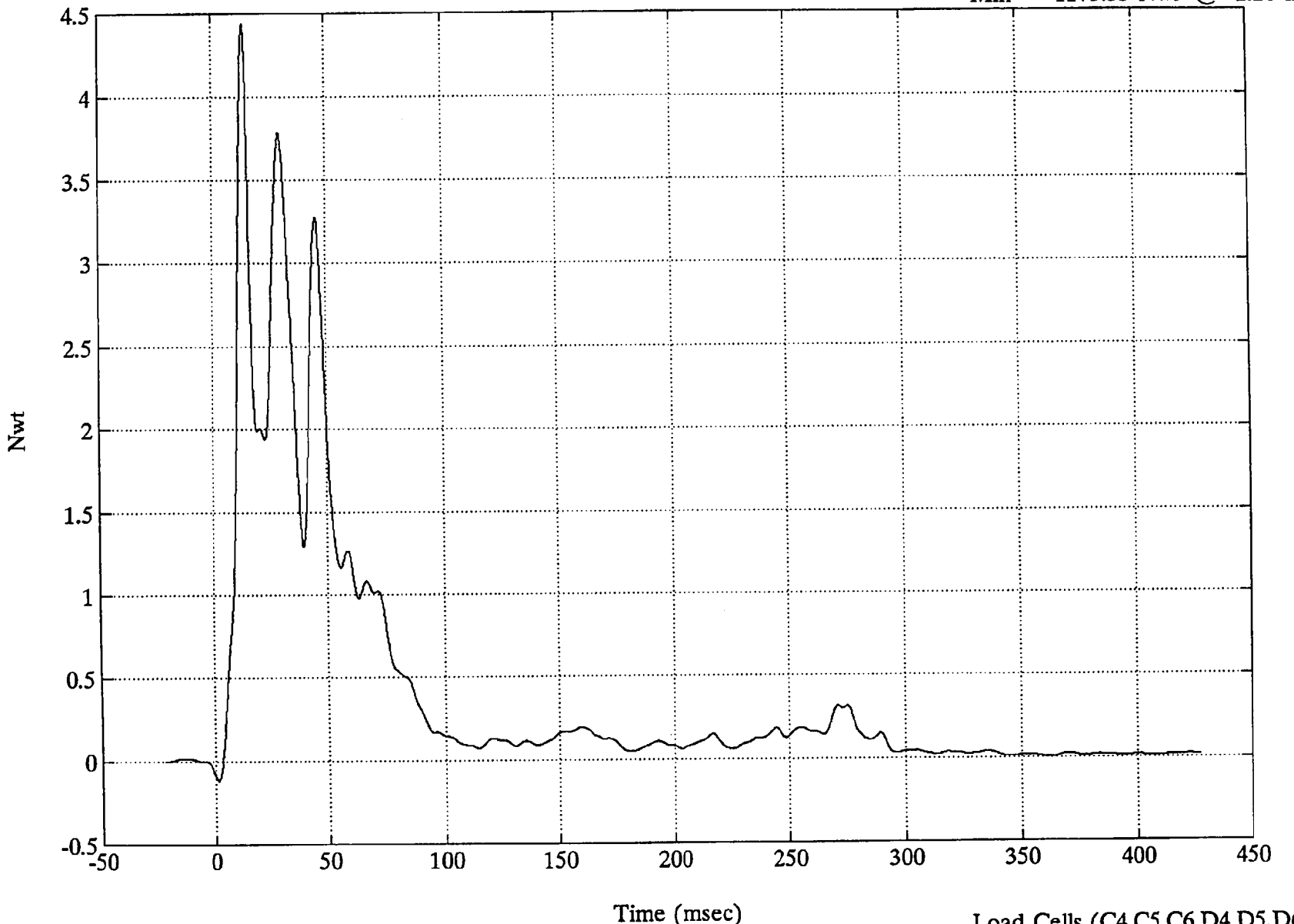
Load Cells (C1,C2,D1,D2,D3)not(C3)

8227-6

NCAP TEST #6 - 1995 ACURA INTEGRA

Group 5 Load Cell Sum

Max = 44367.25 Nwt @ 13.80 msec
Min = -1175.53 Nwt @ 1.20 msec



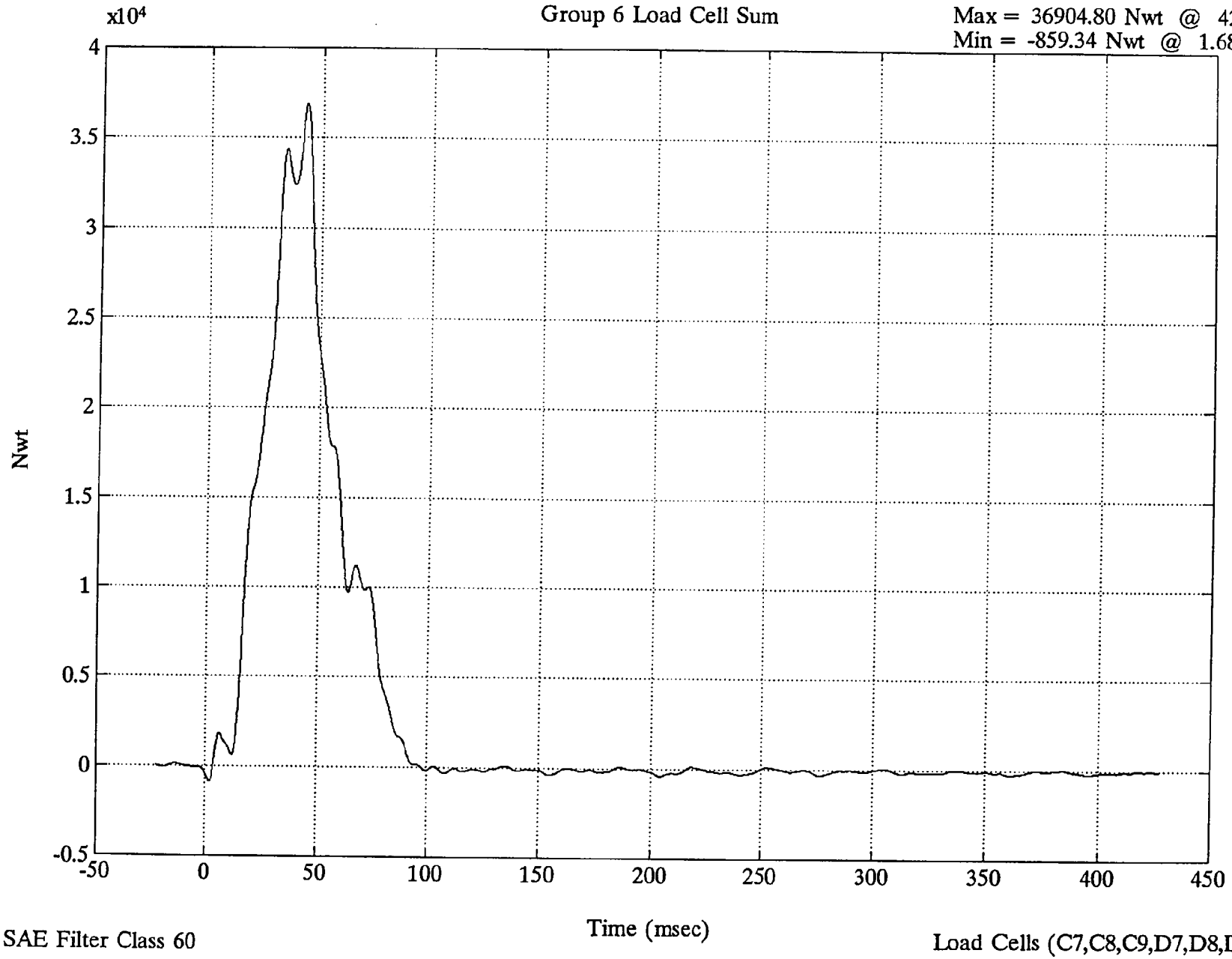
SAE Filter Class 60

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

B-69

8227-6

NCAP TEST #6 - 1995 ACURA INTEGRA



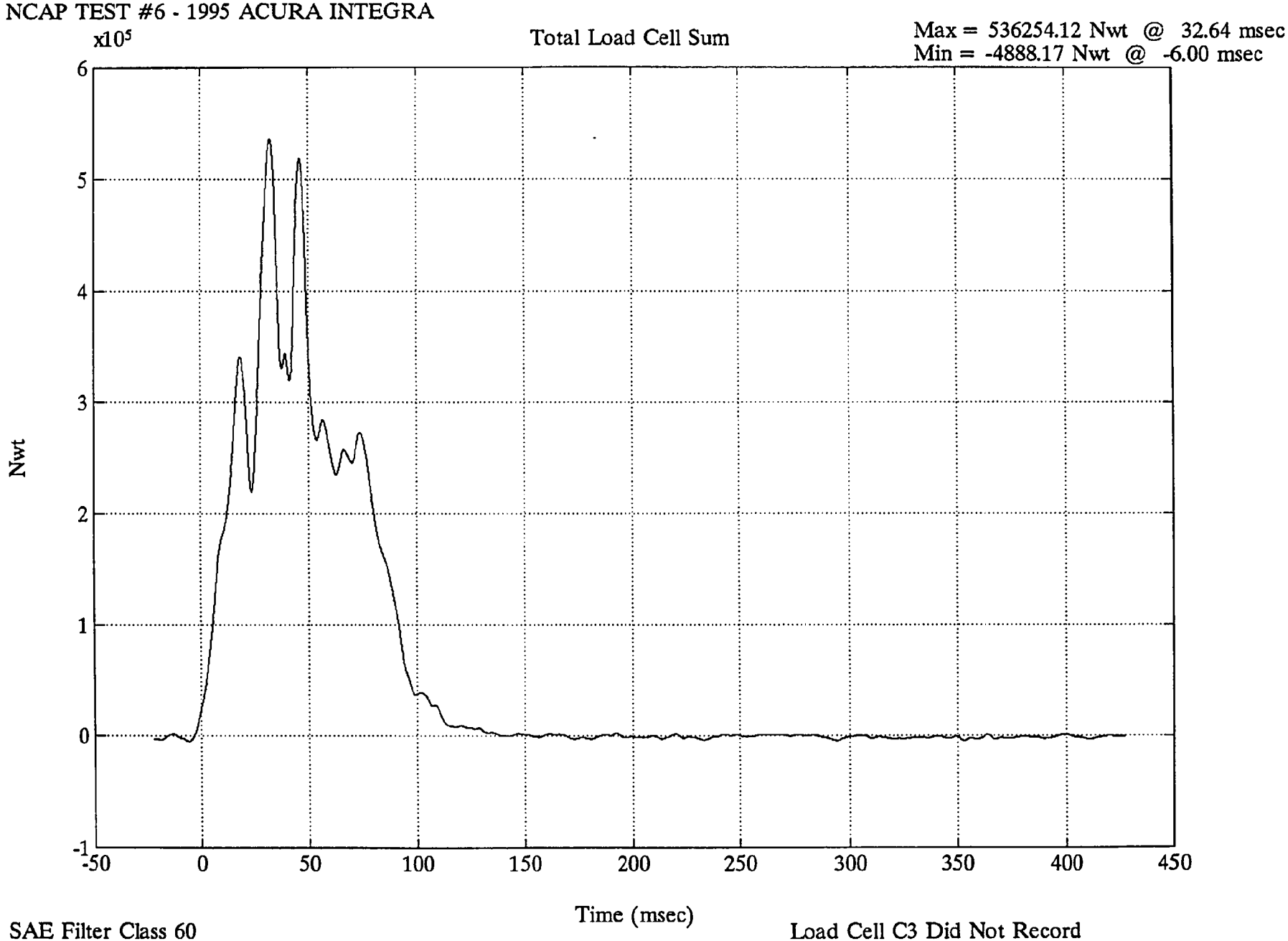
SAE Filter Class 60

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

B-70

8227-6

NCAP TEST #6 - 1995 ACURA INTEGRA



SAE Filter Class 60

Load Cell C3 Did Not Record

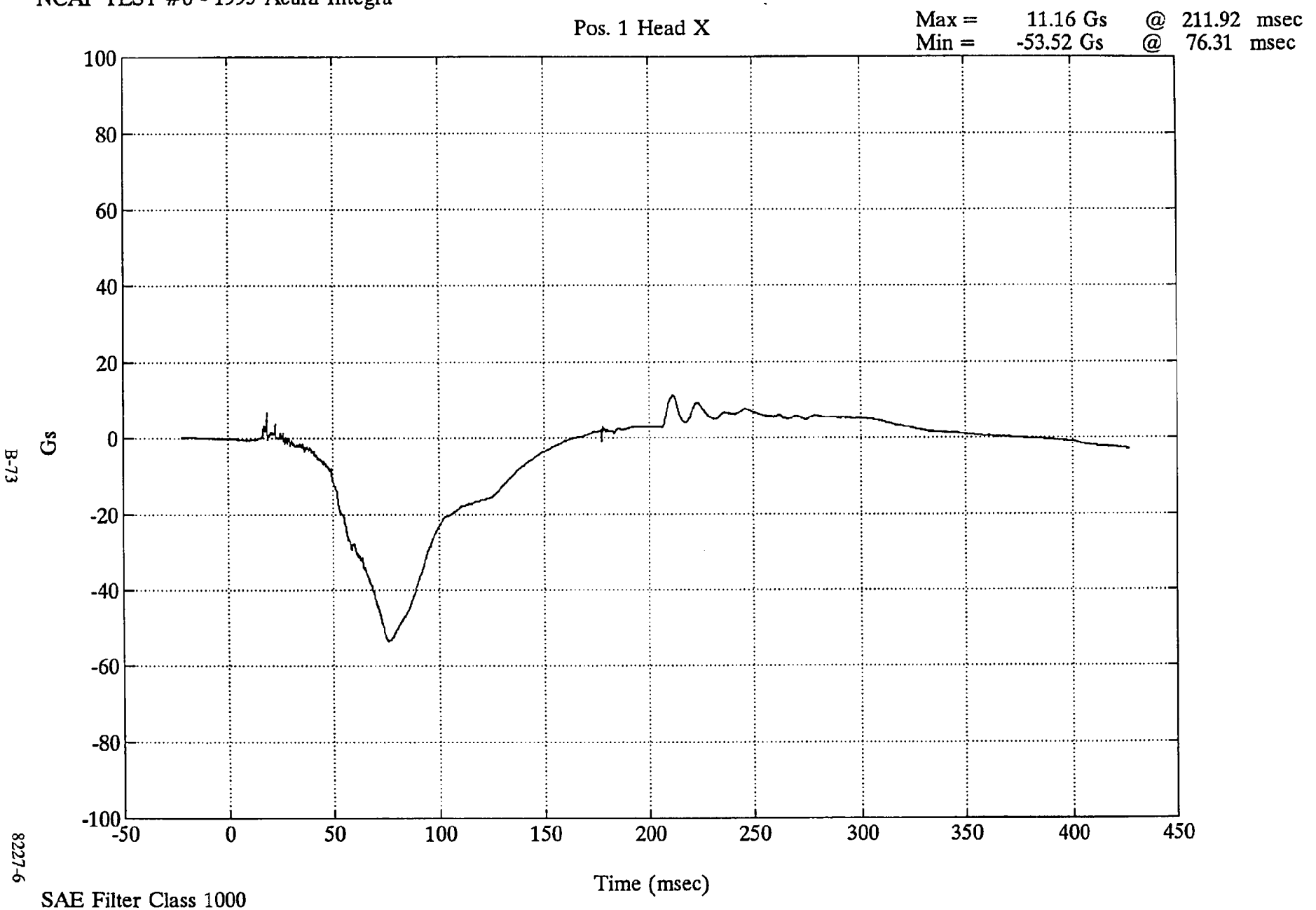
8227-6

TEST NO. MS5301

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 #6 - 1995 Acura Integra

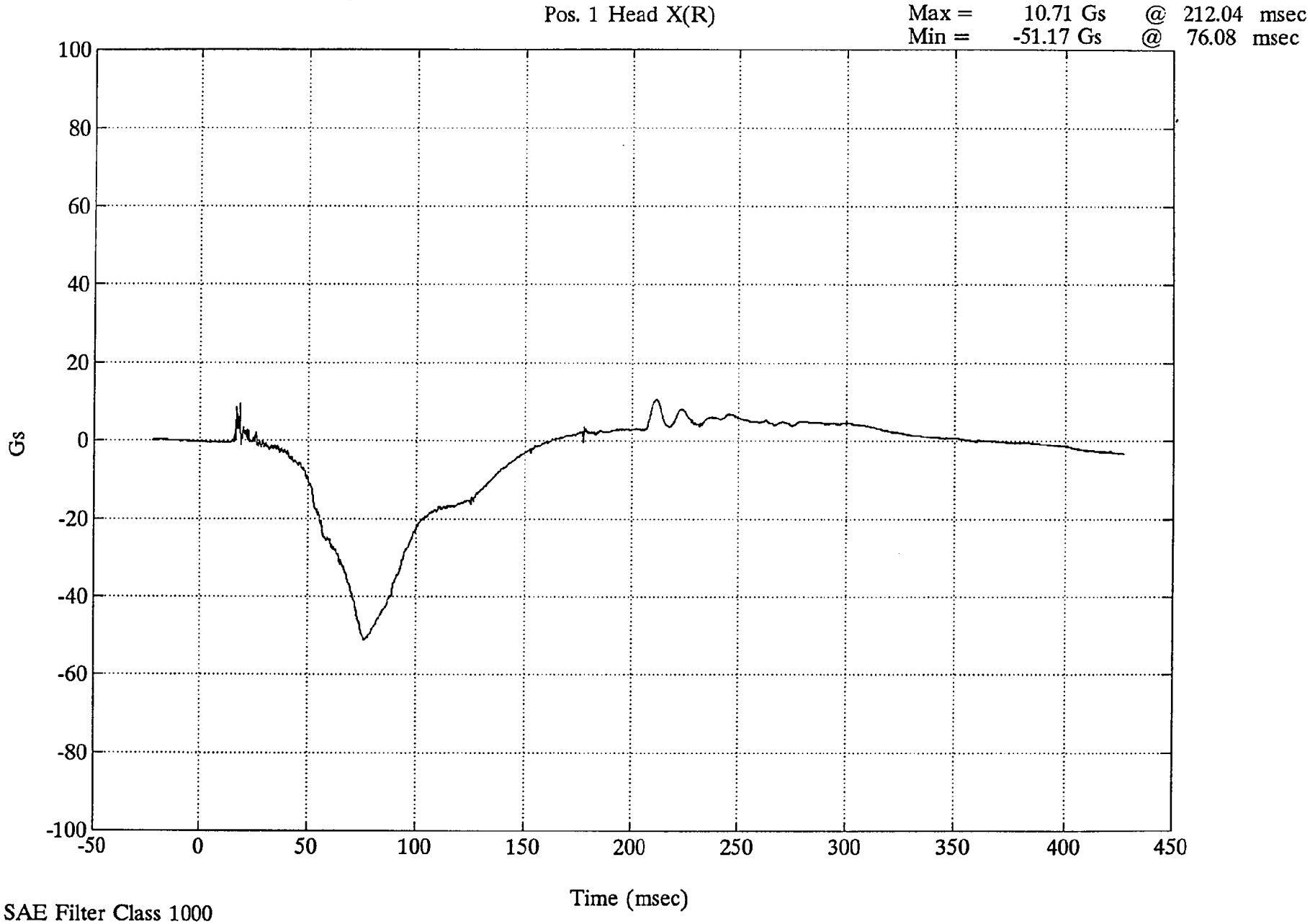


B-73

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

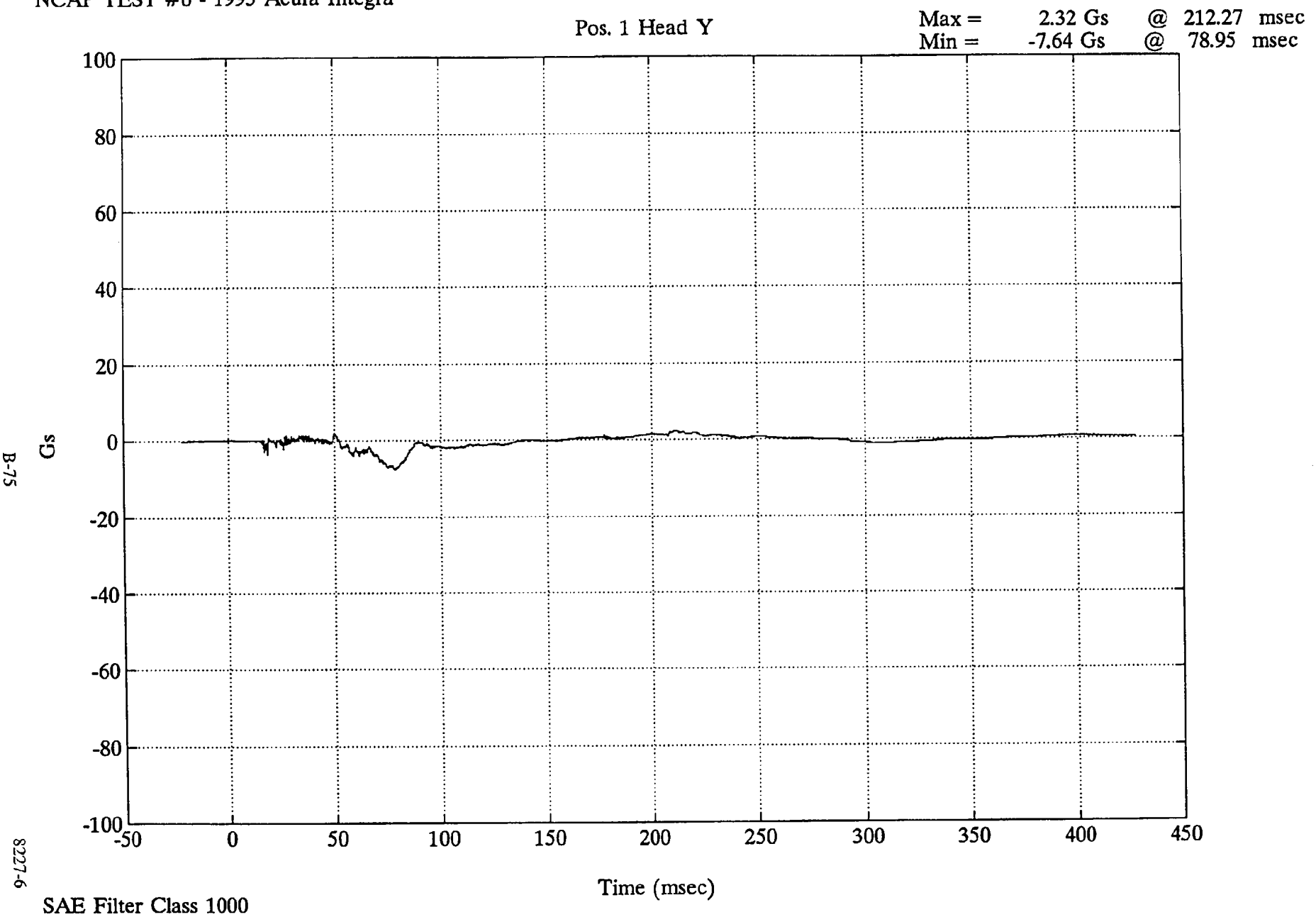


B-74

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

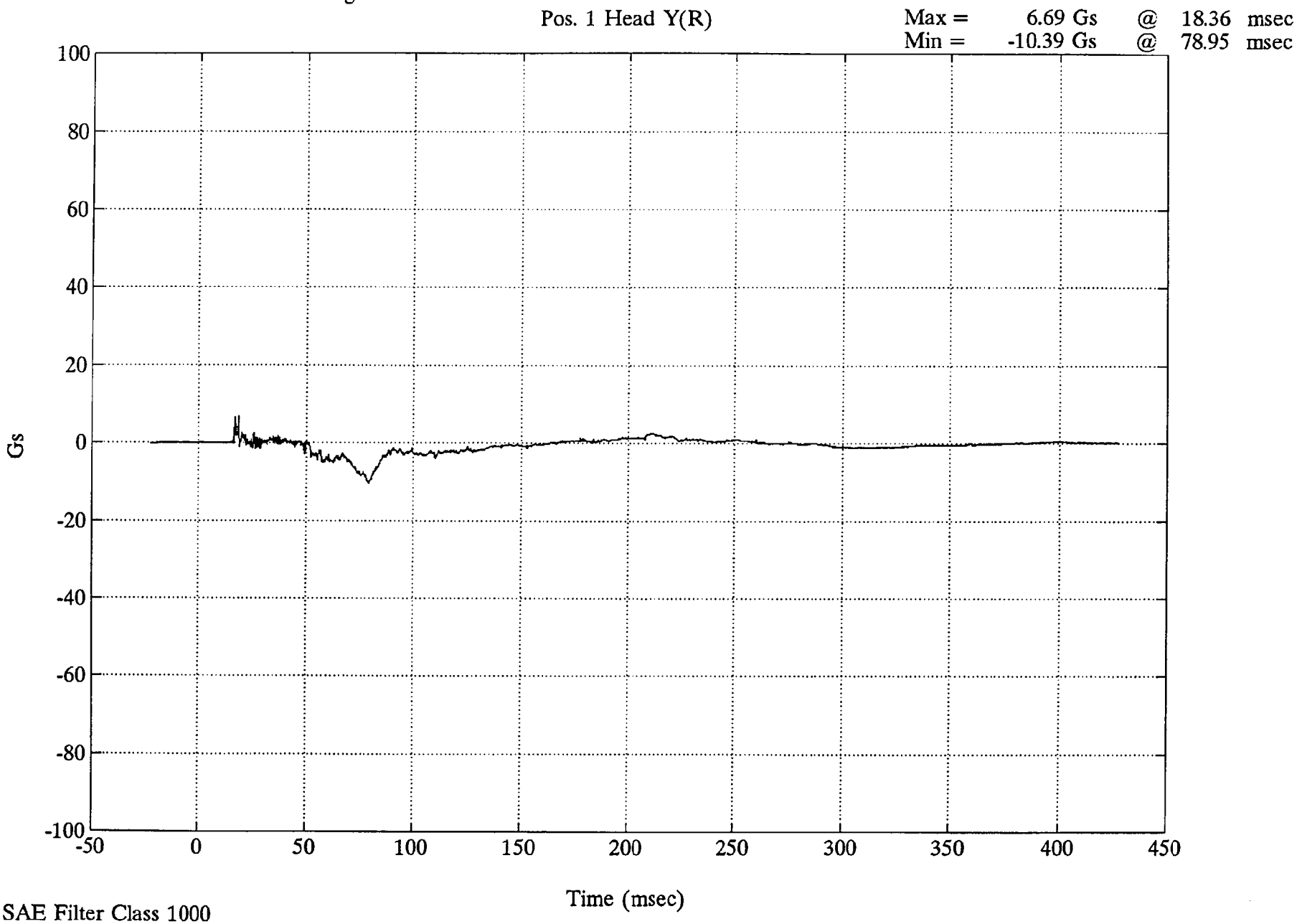


B-75

8227-6

SAE Filter Class 1000

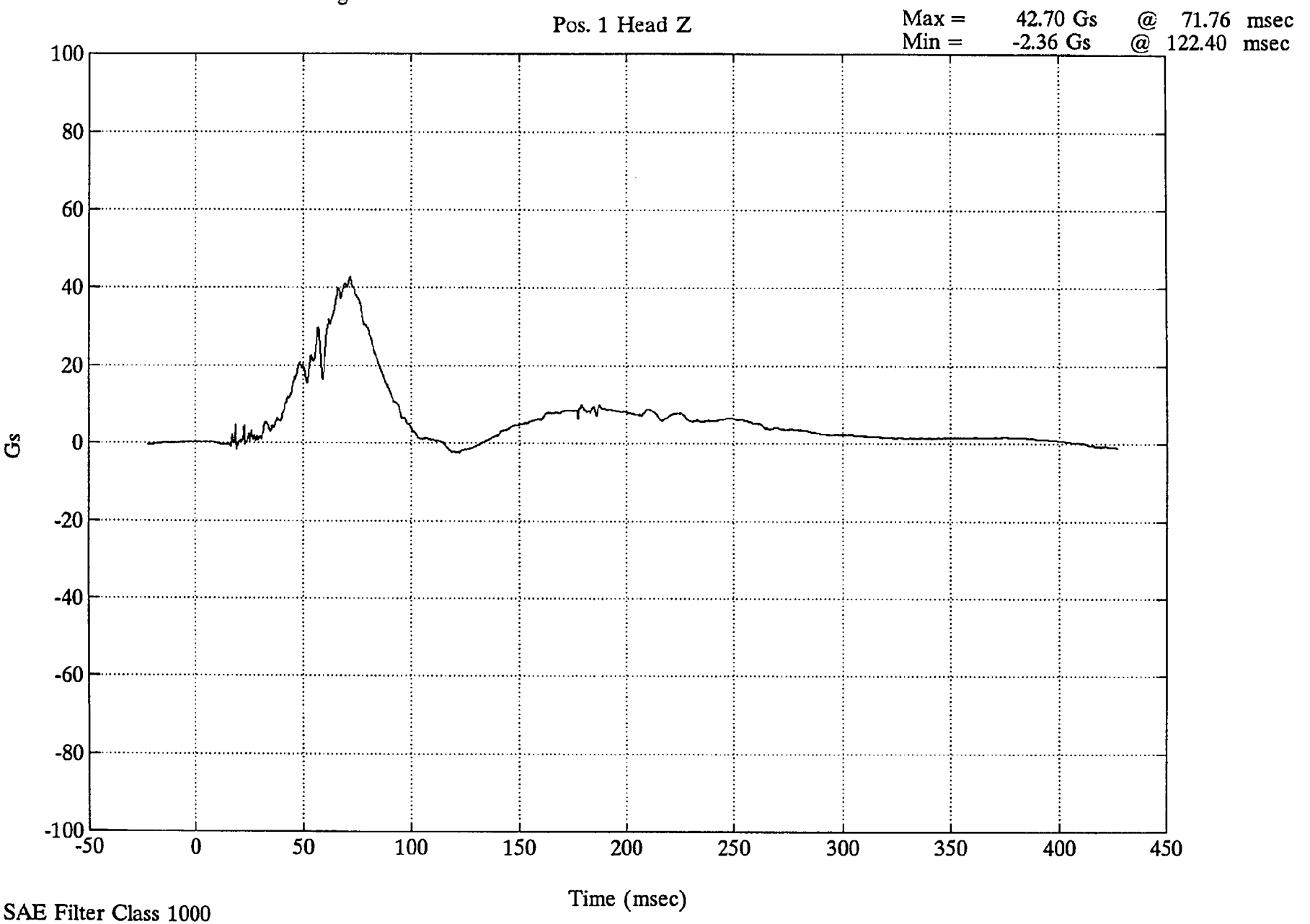
NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 1000

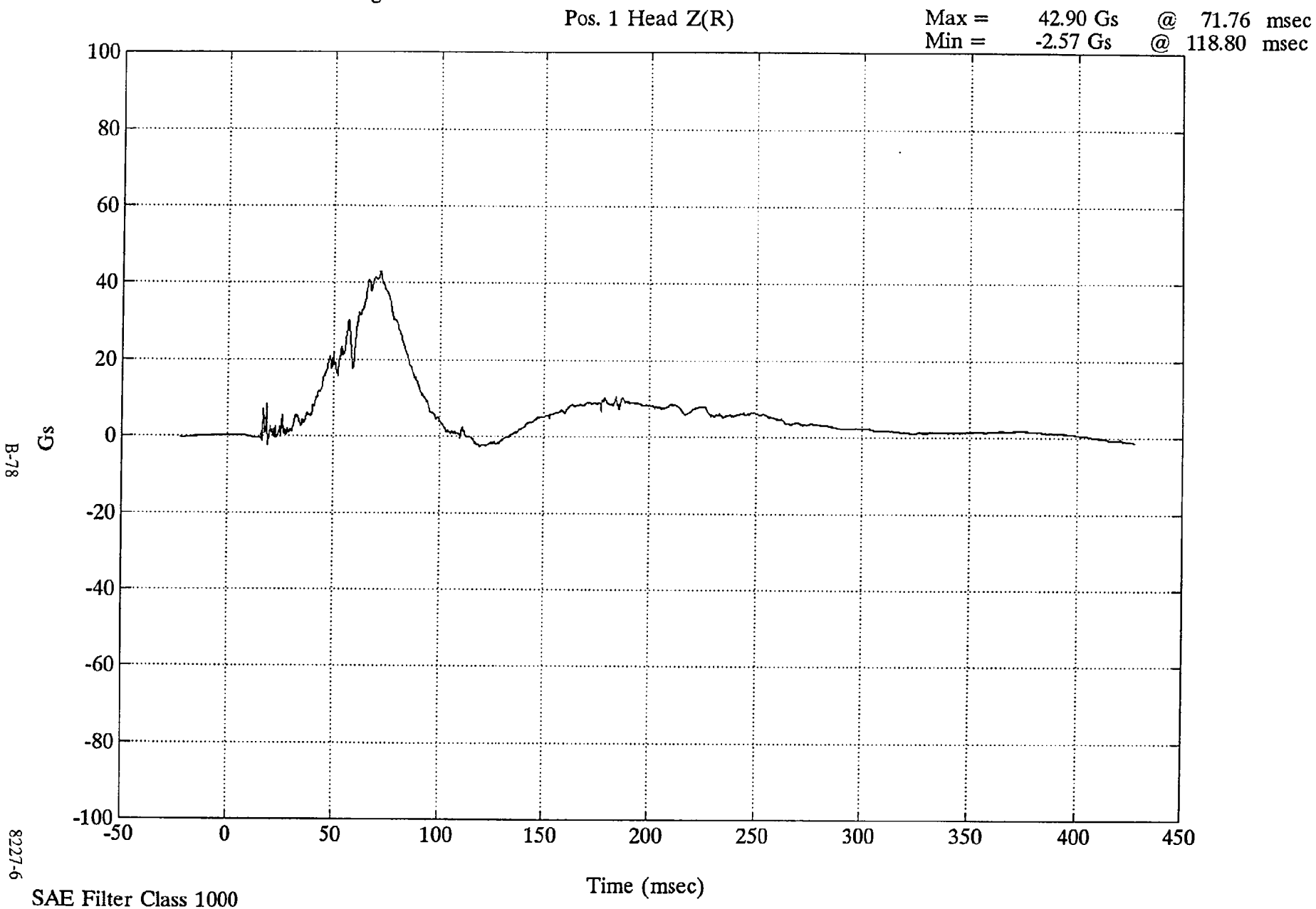
8227-6

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

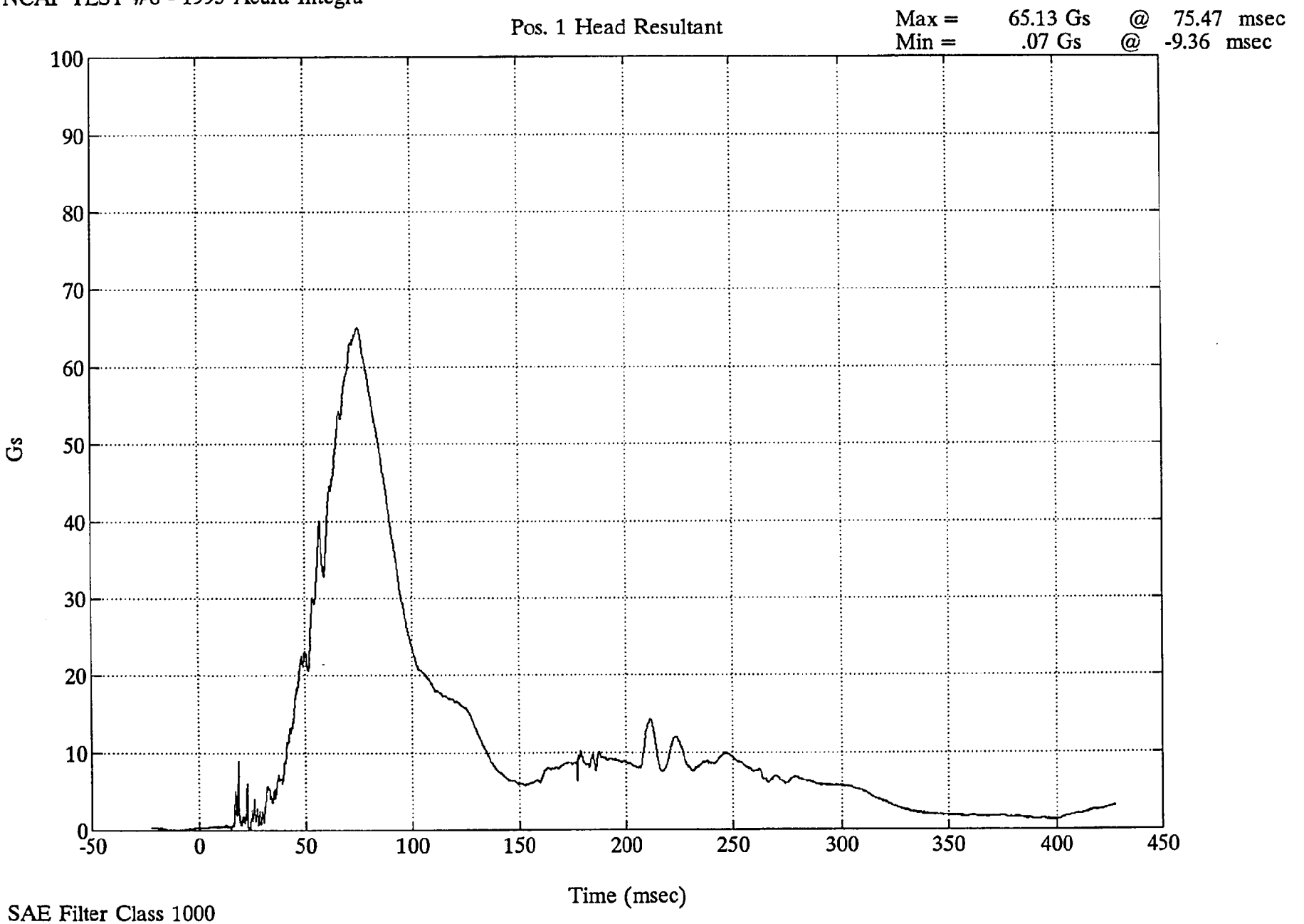


B-78

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

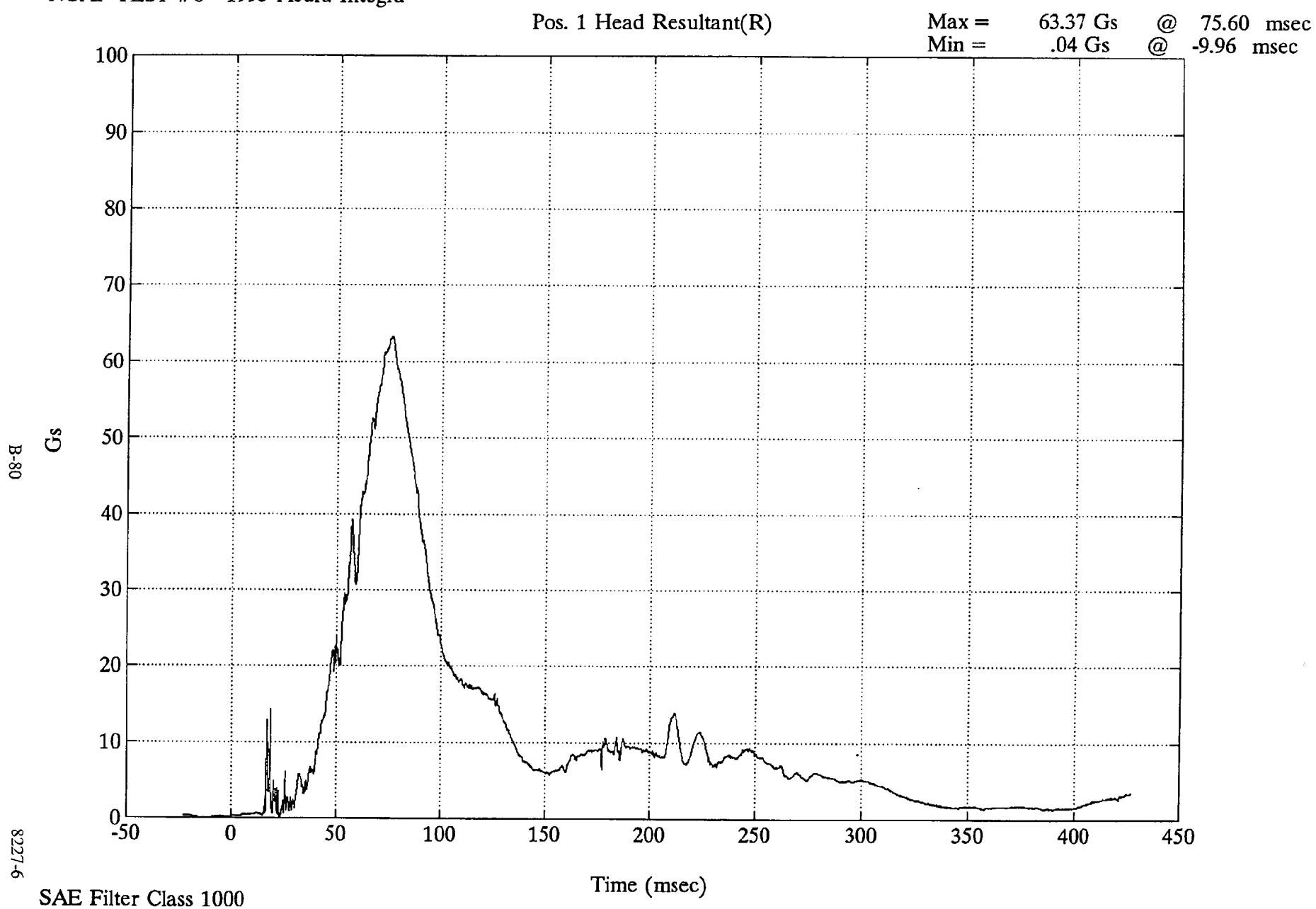


B-79

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

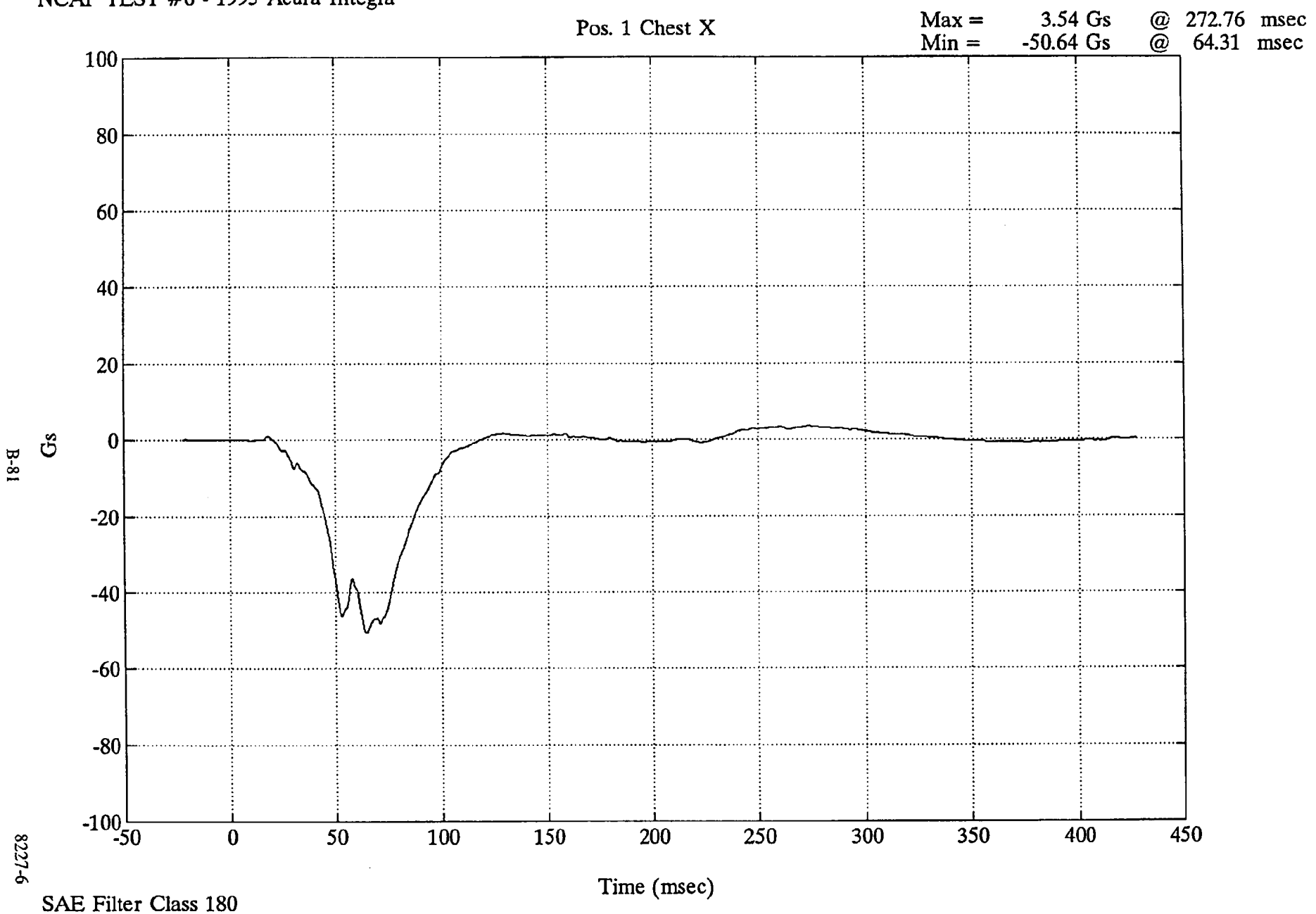


B-80

82276

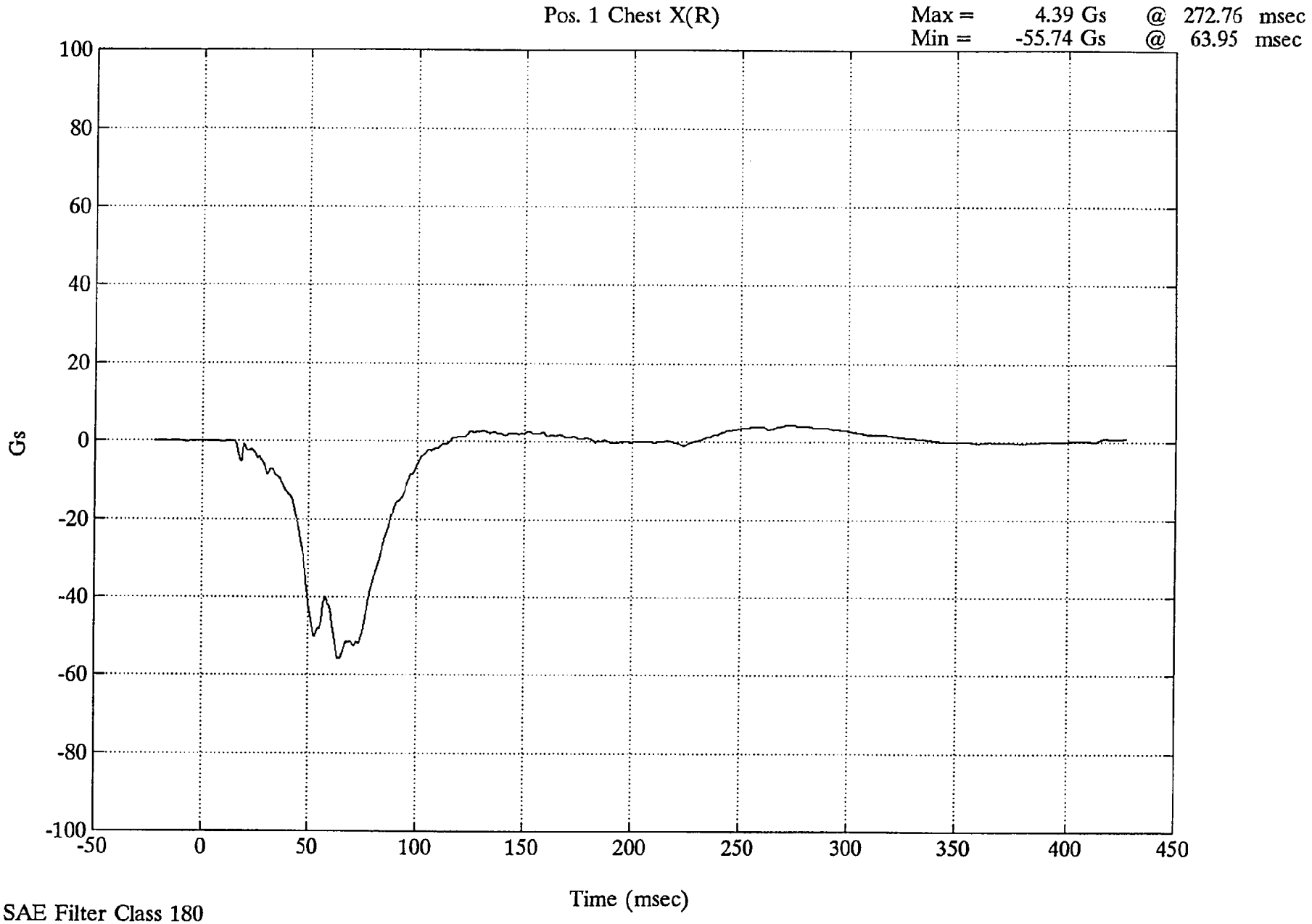
SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

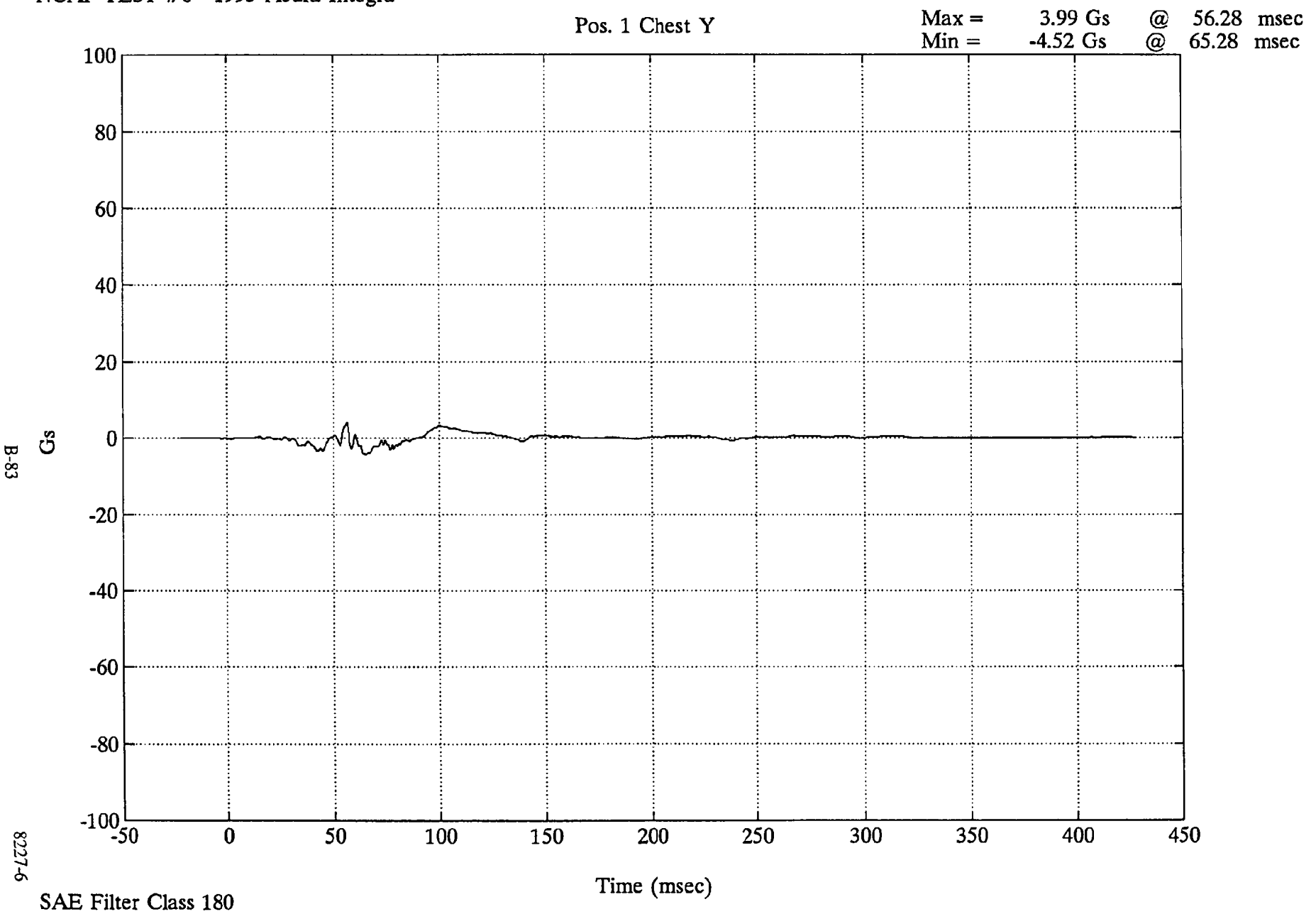


B-82

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

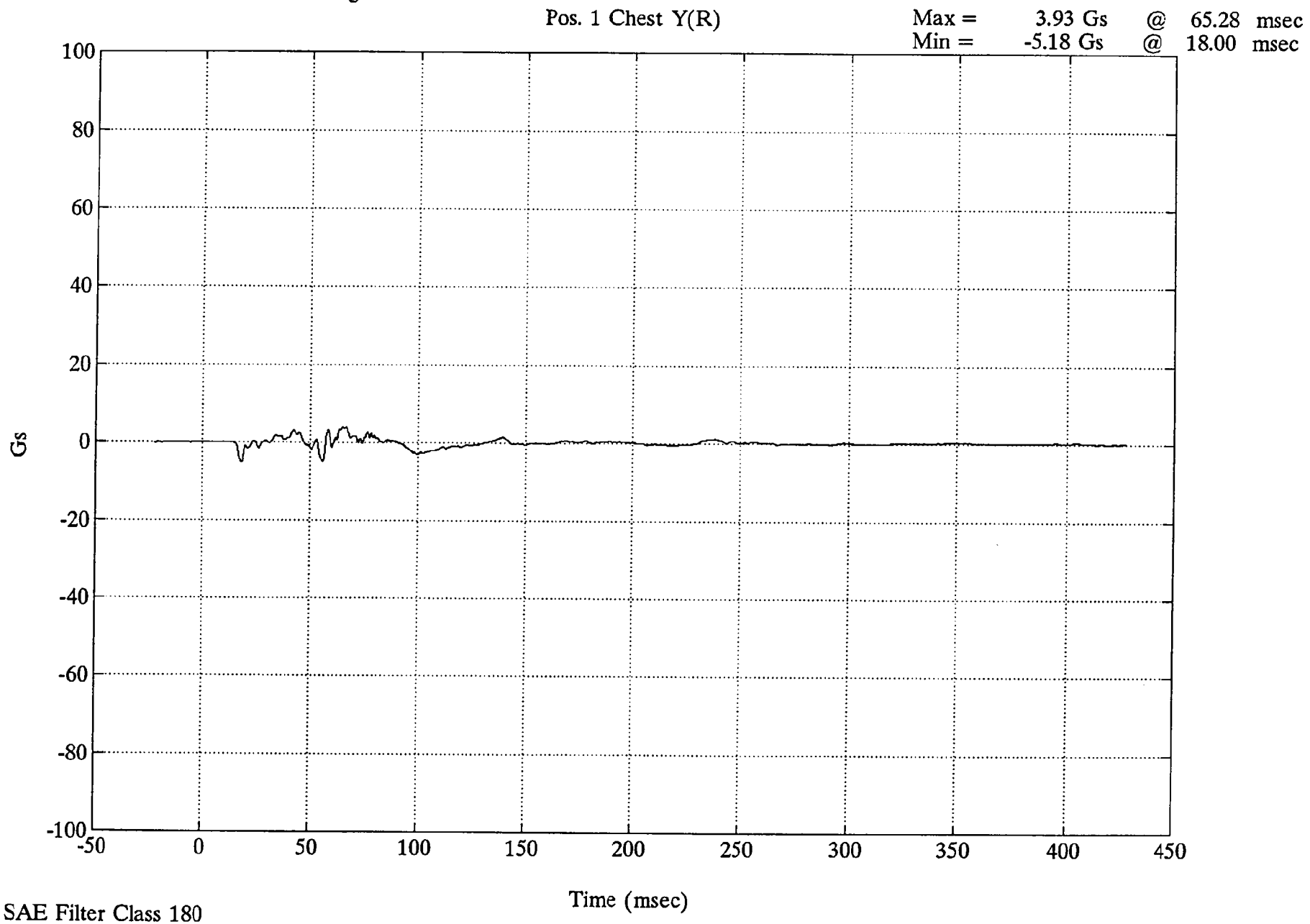


B-83

82276

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

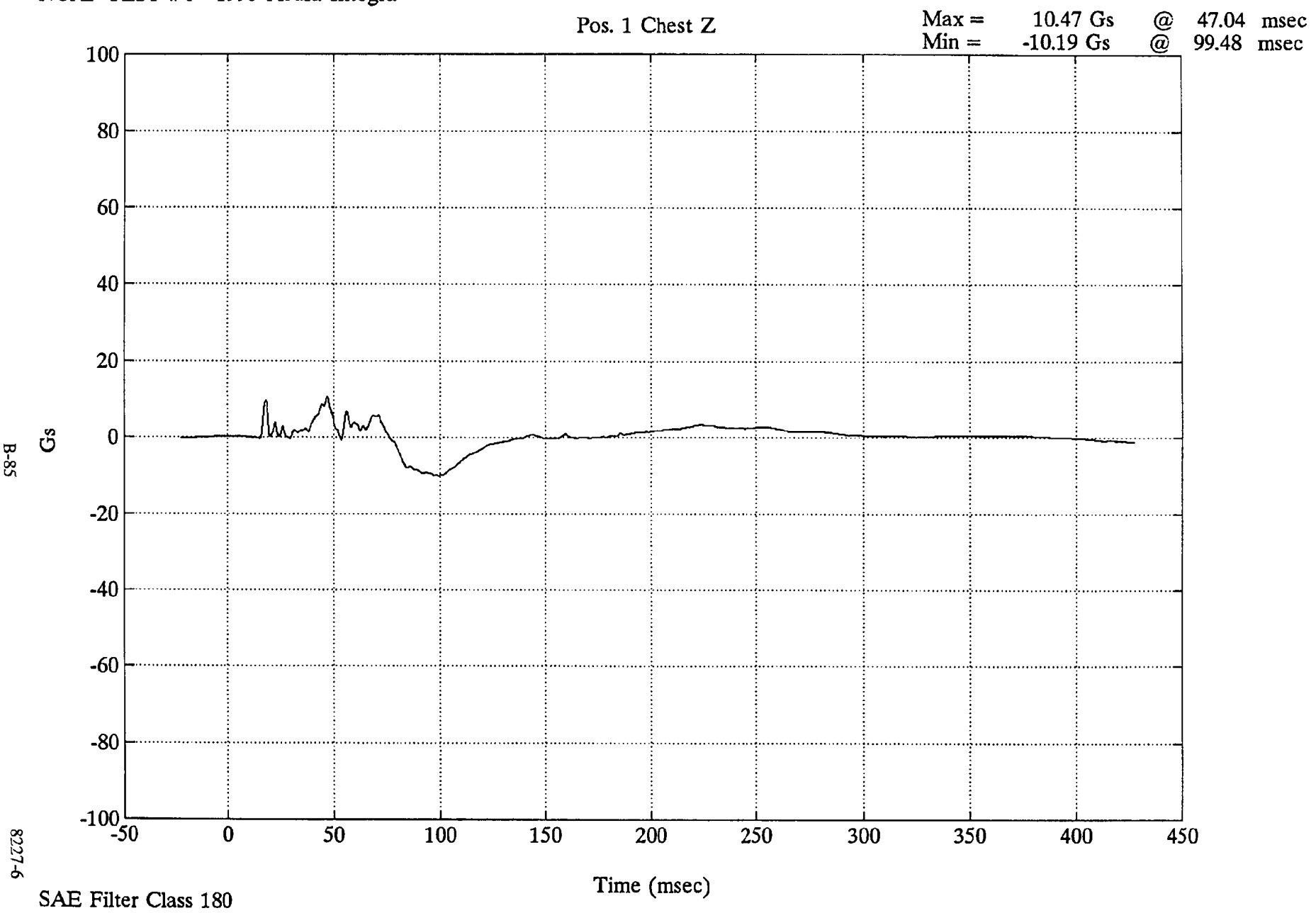


B-84

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

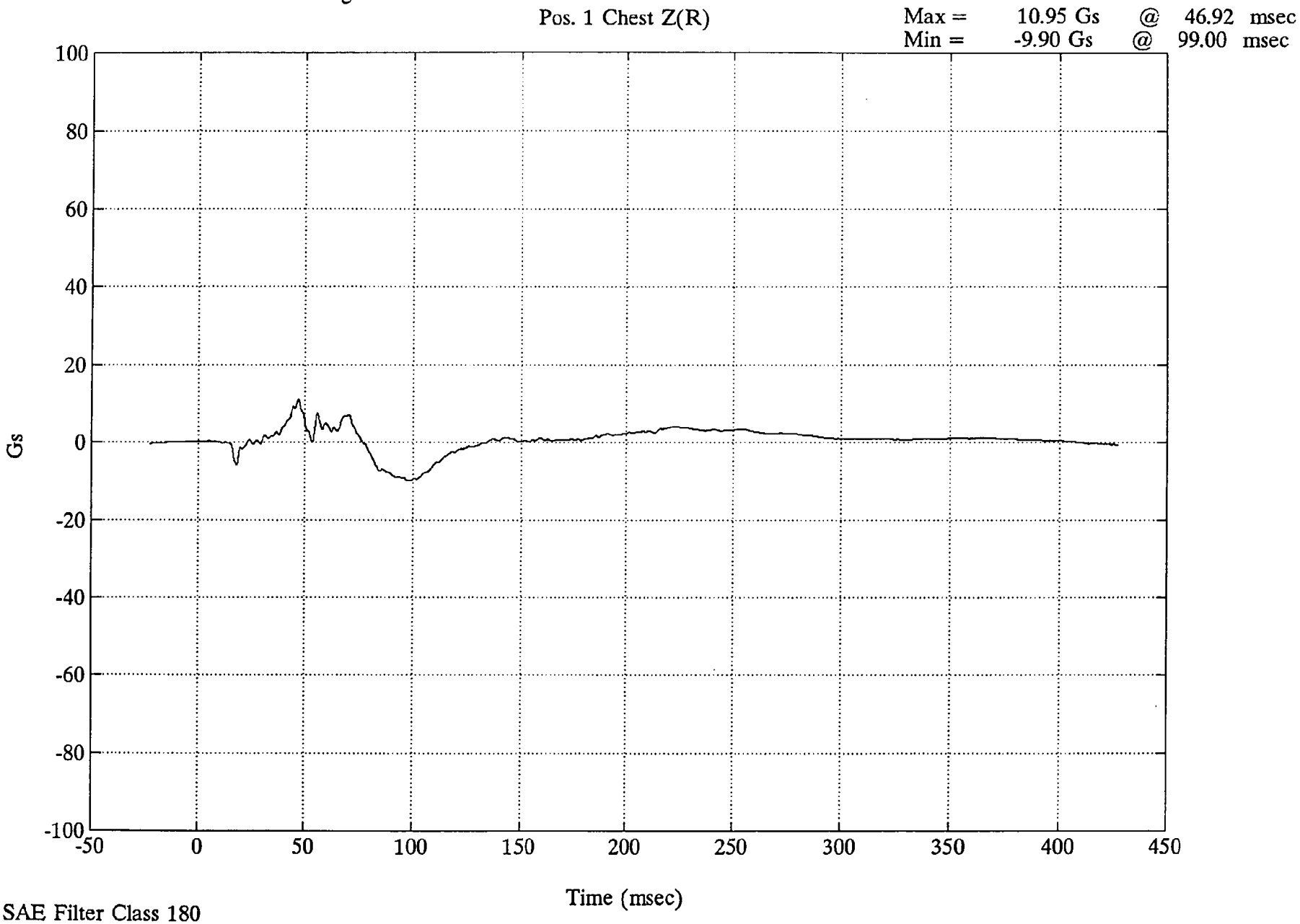


B-85

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

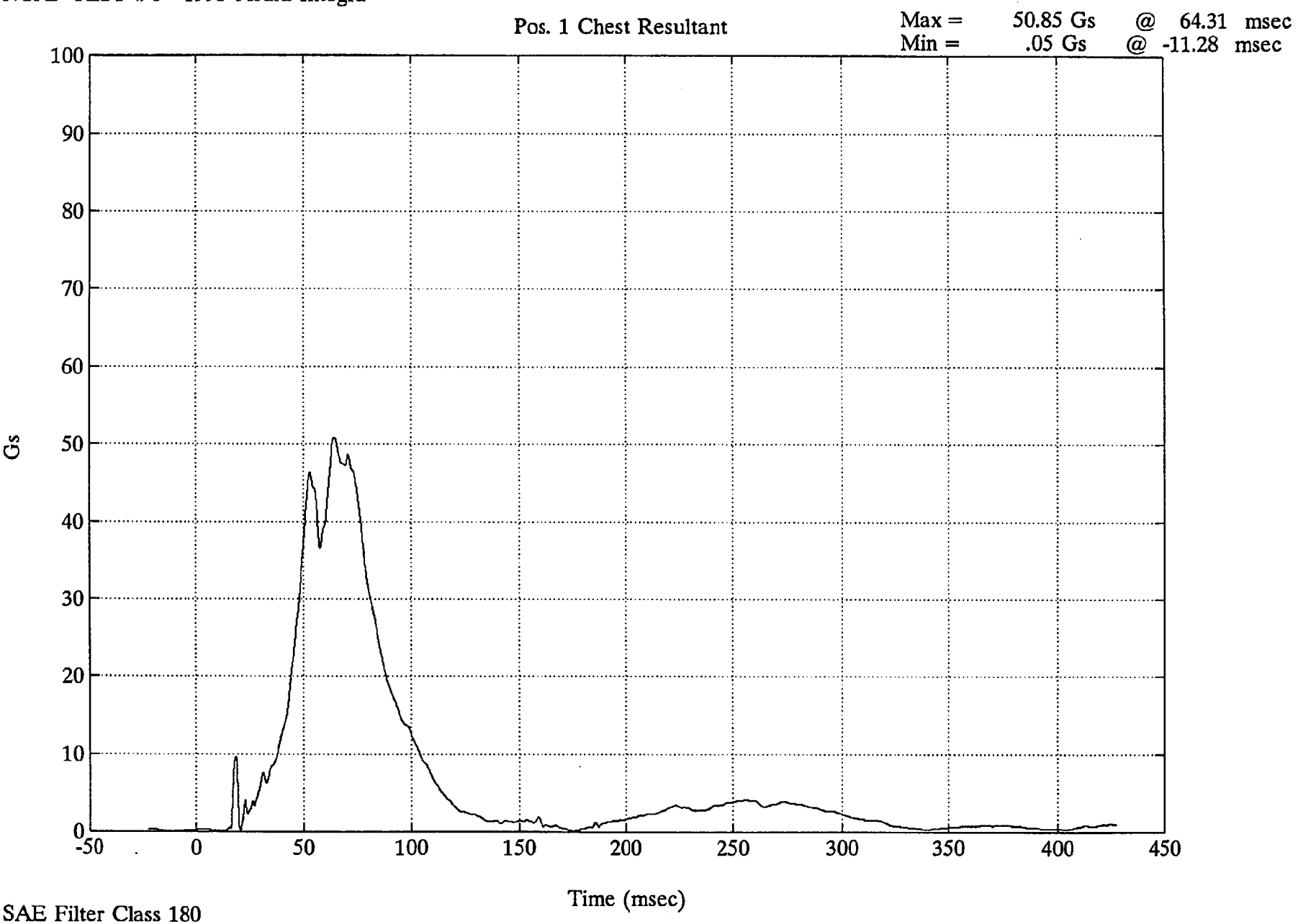


B-86

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

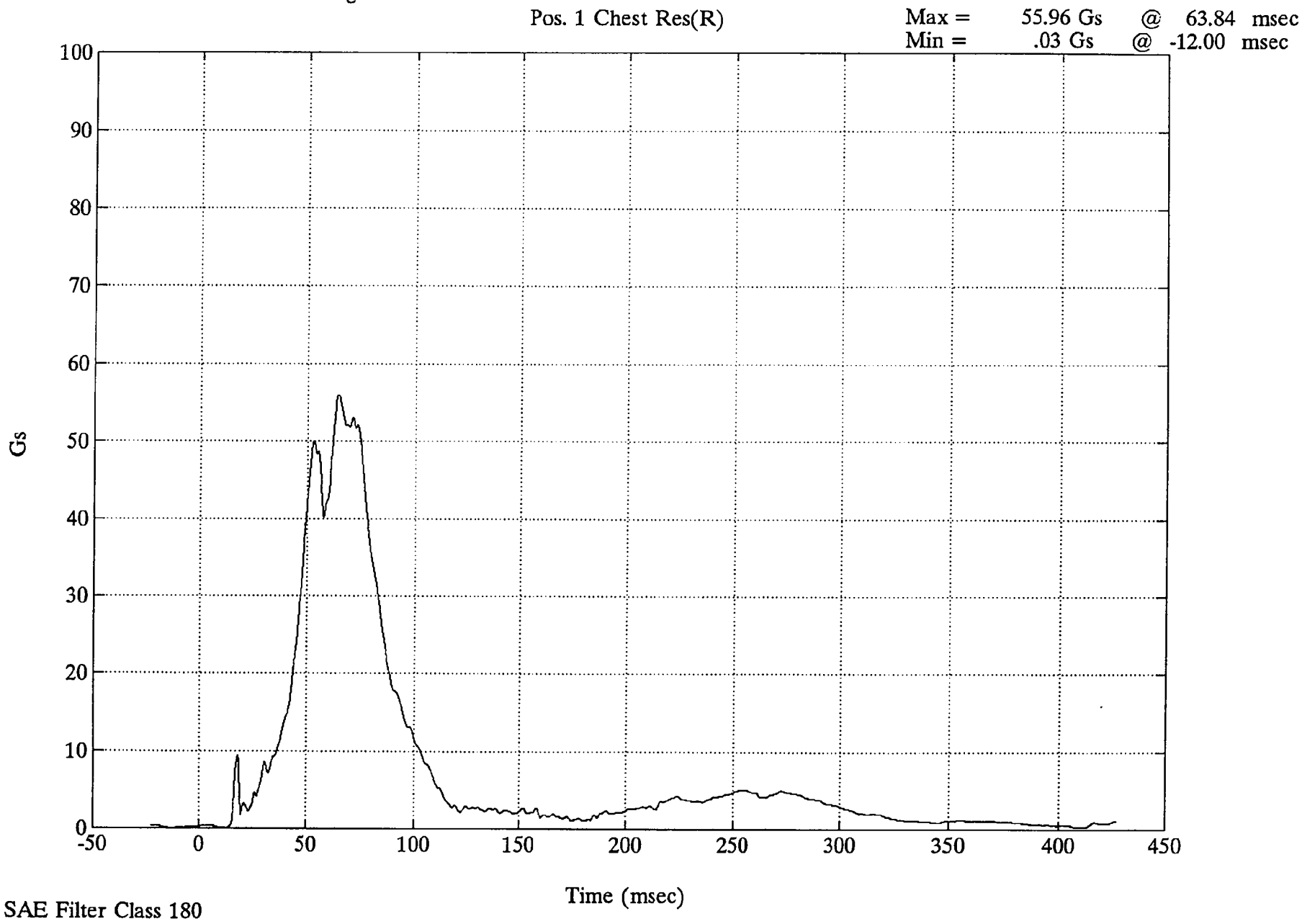


B-87

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

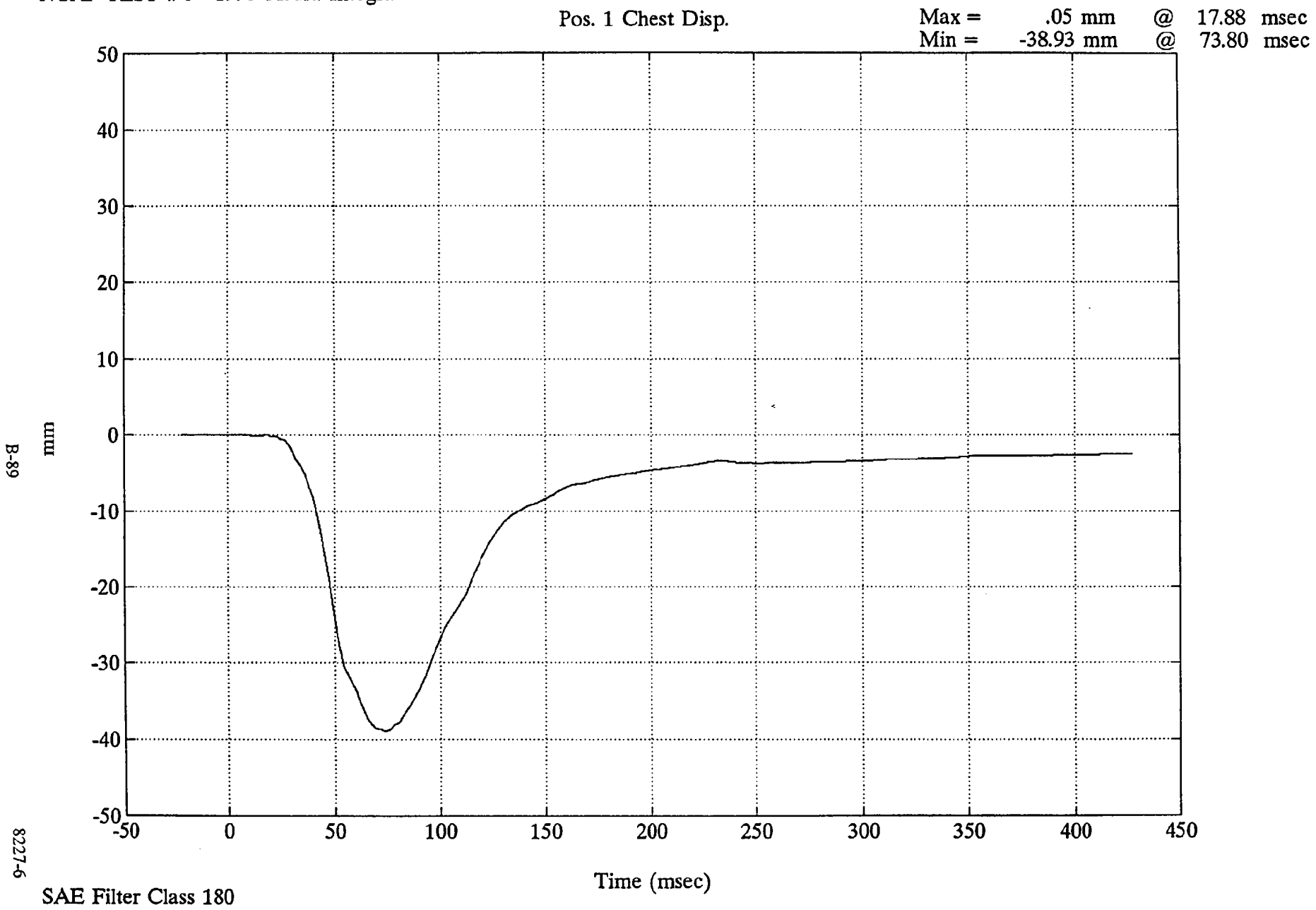


B-88

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

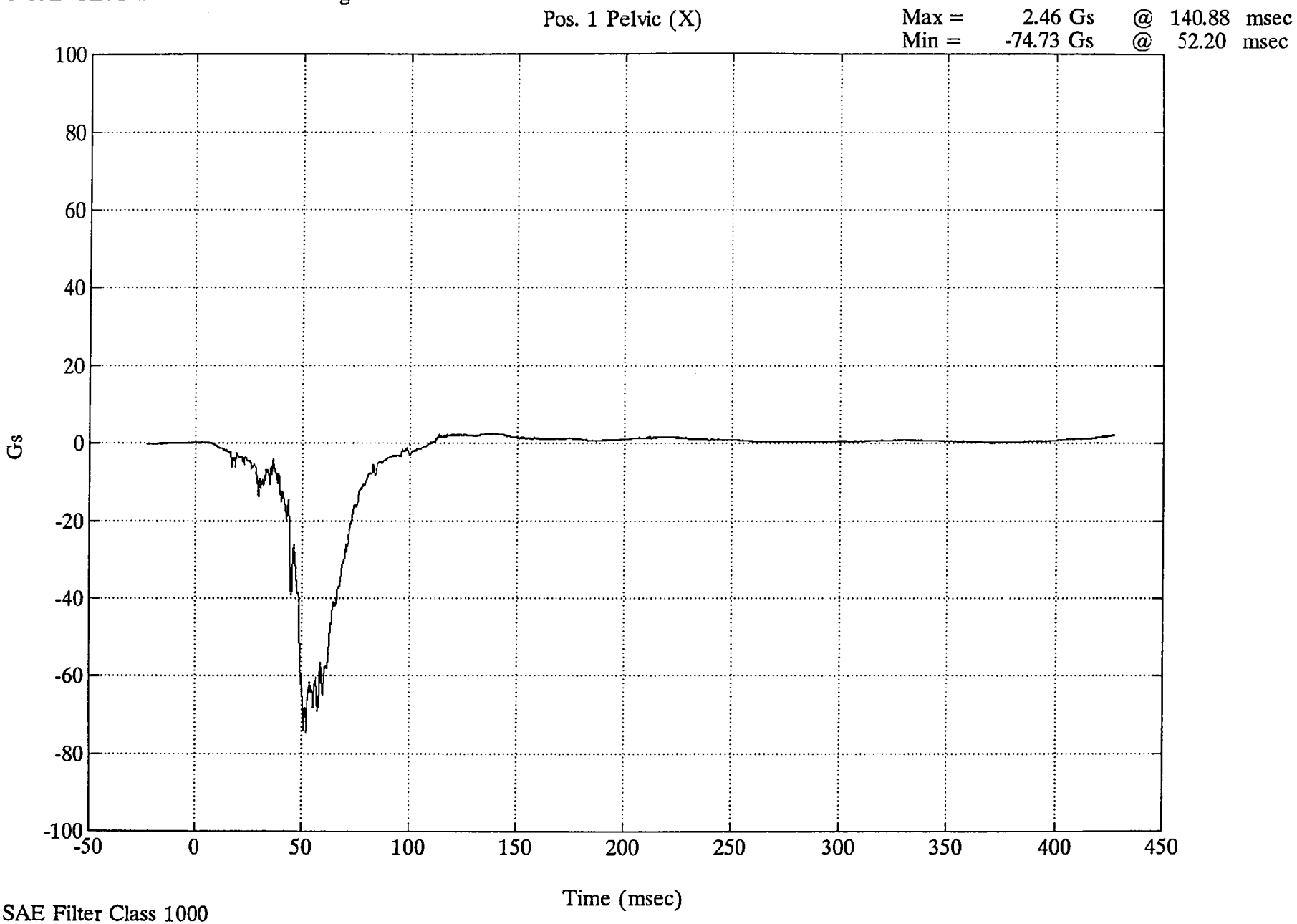


B-89

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

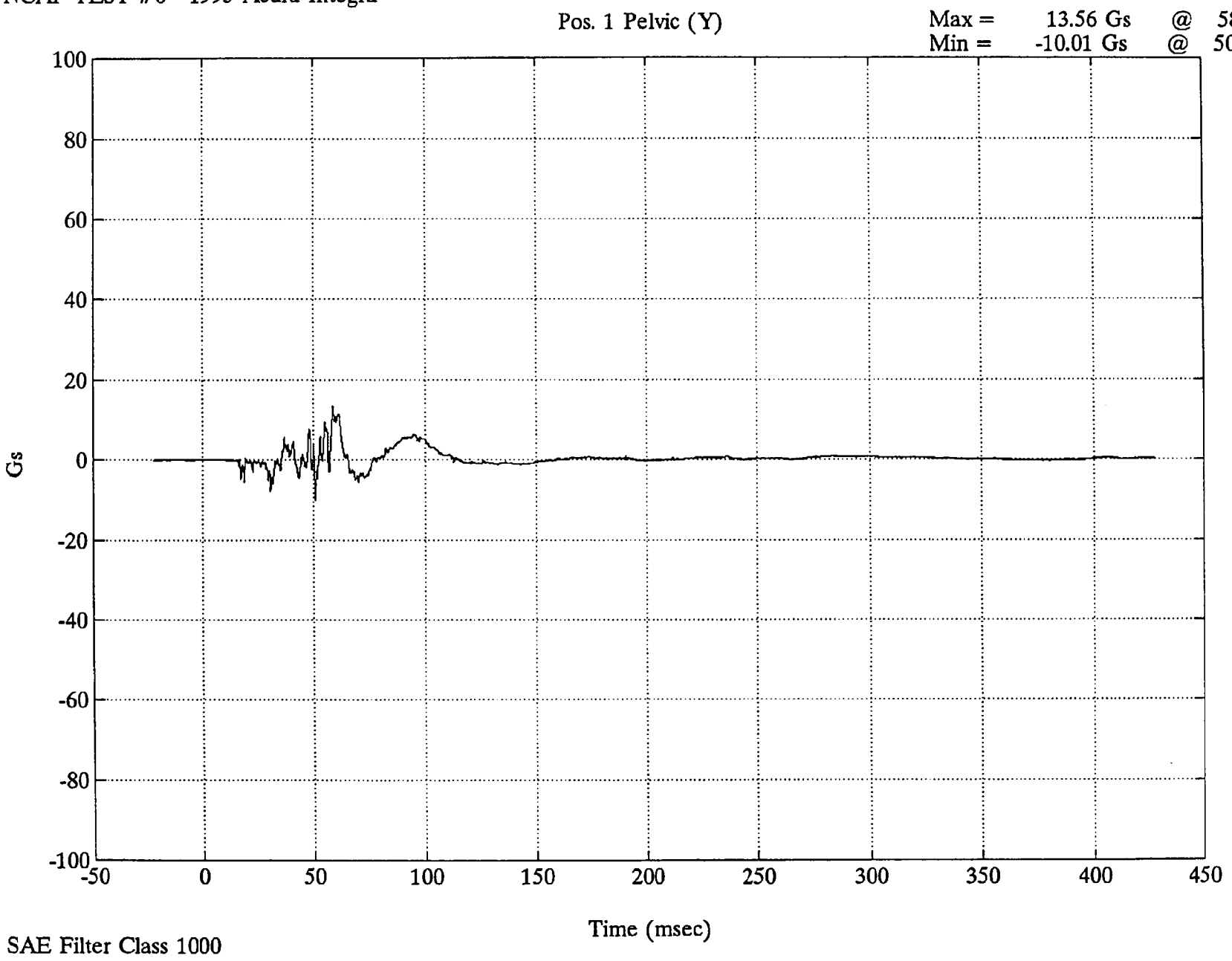


B-90

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

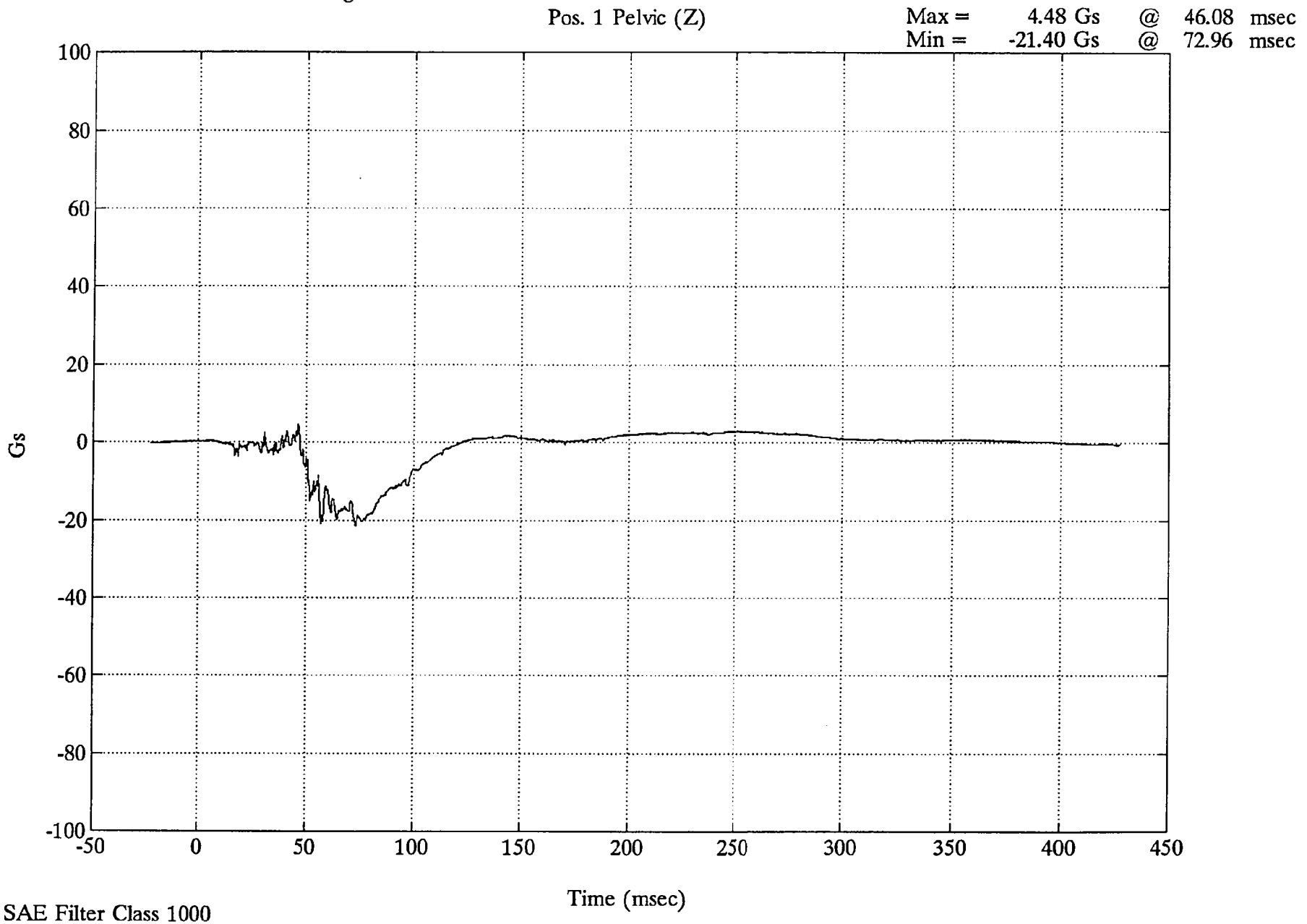


B-91

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

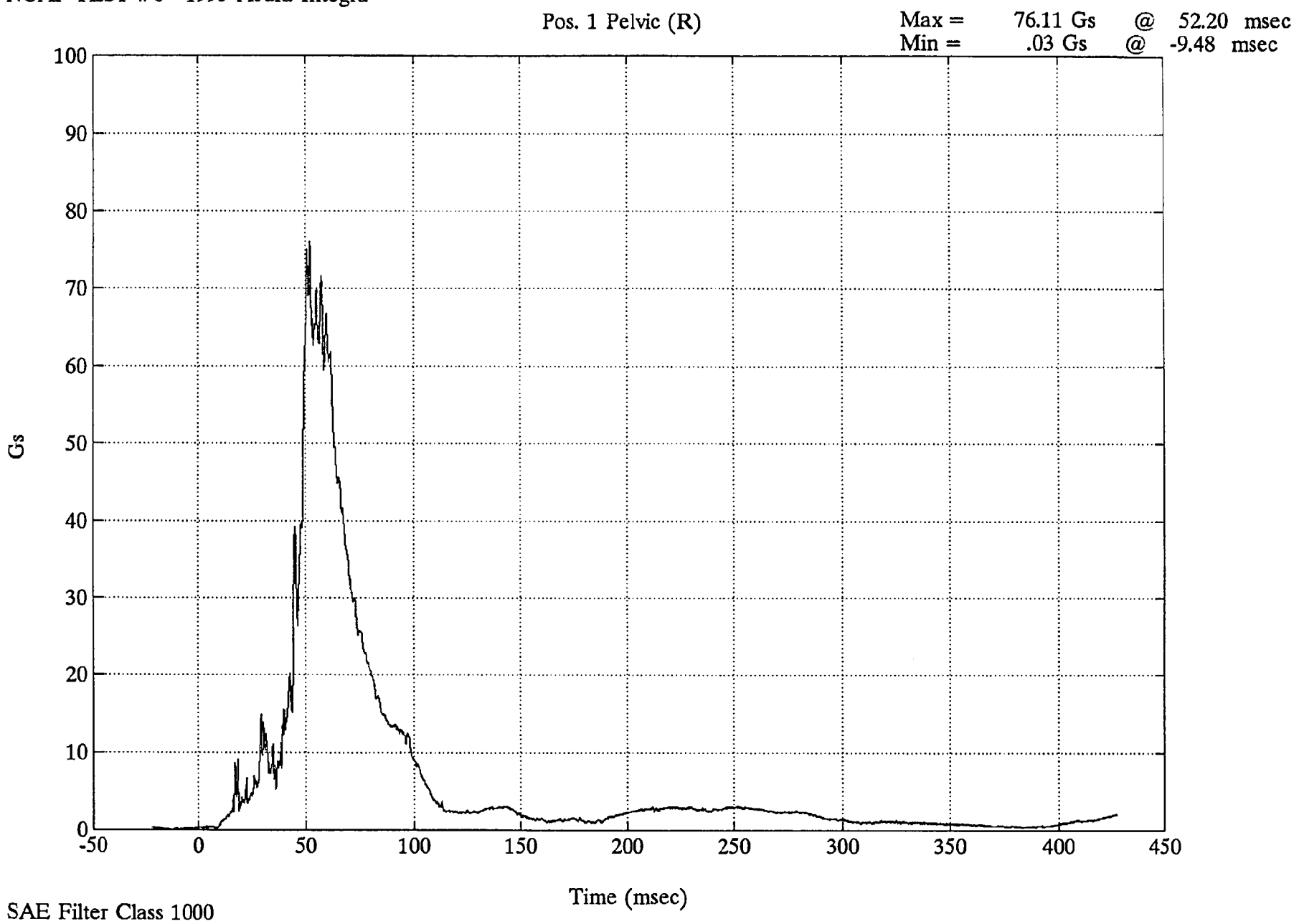


B-92

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

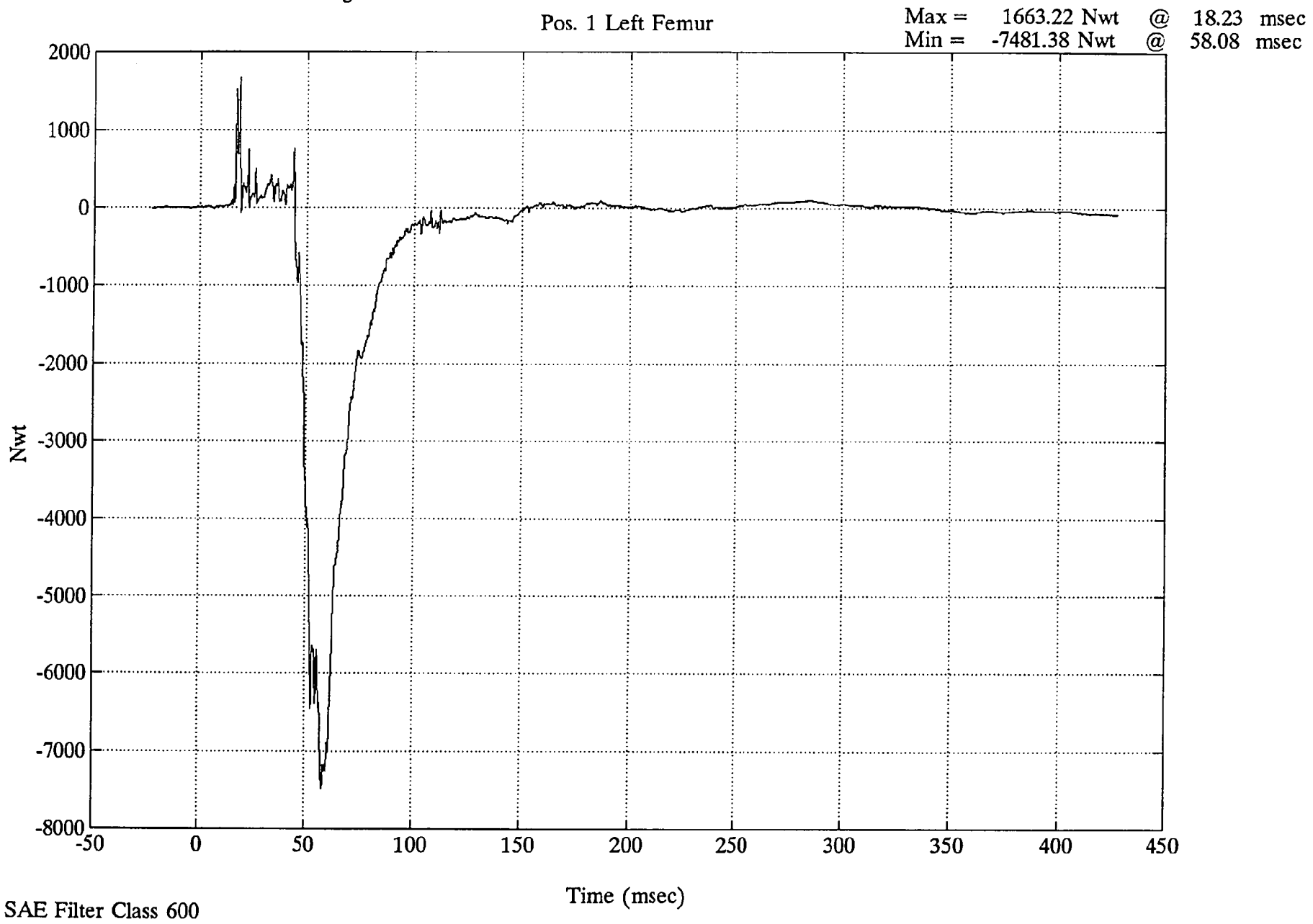


SAE Filter Class 1000

B-93

82276

NCAP TEST #6 - 1995 Acura Integra



B-94

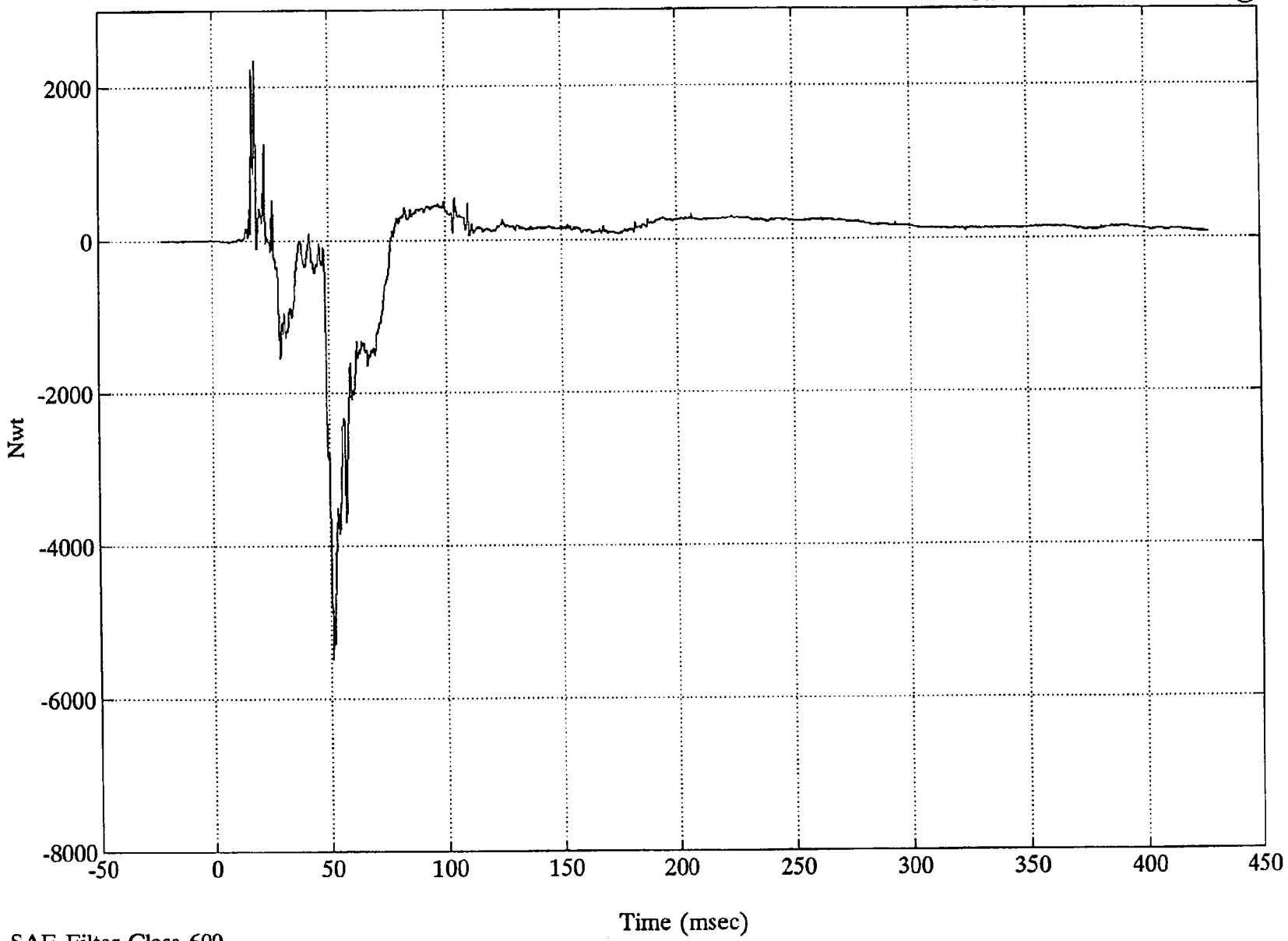
8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

Pos. 1 Right Femur

Max = 2348.30 Nwt @ 18.36 msec
Min = -5487.34 Nwt @ 50.88 msec

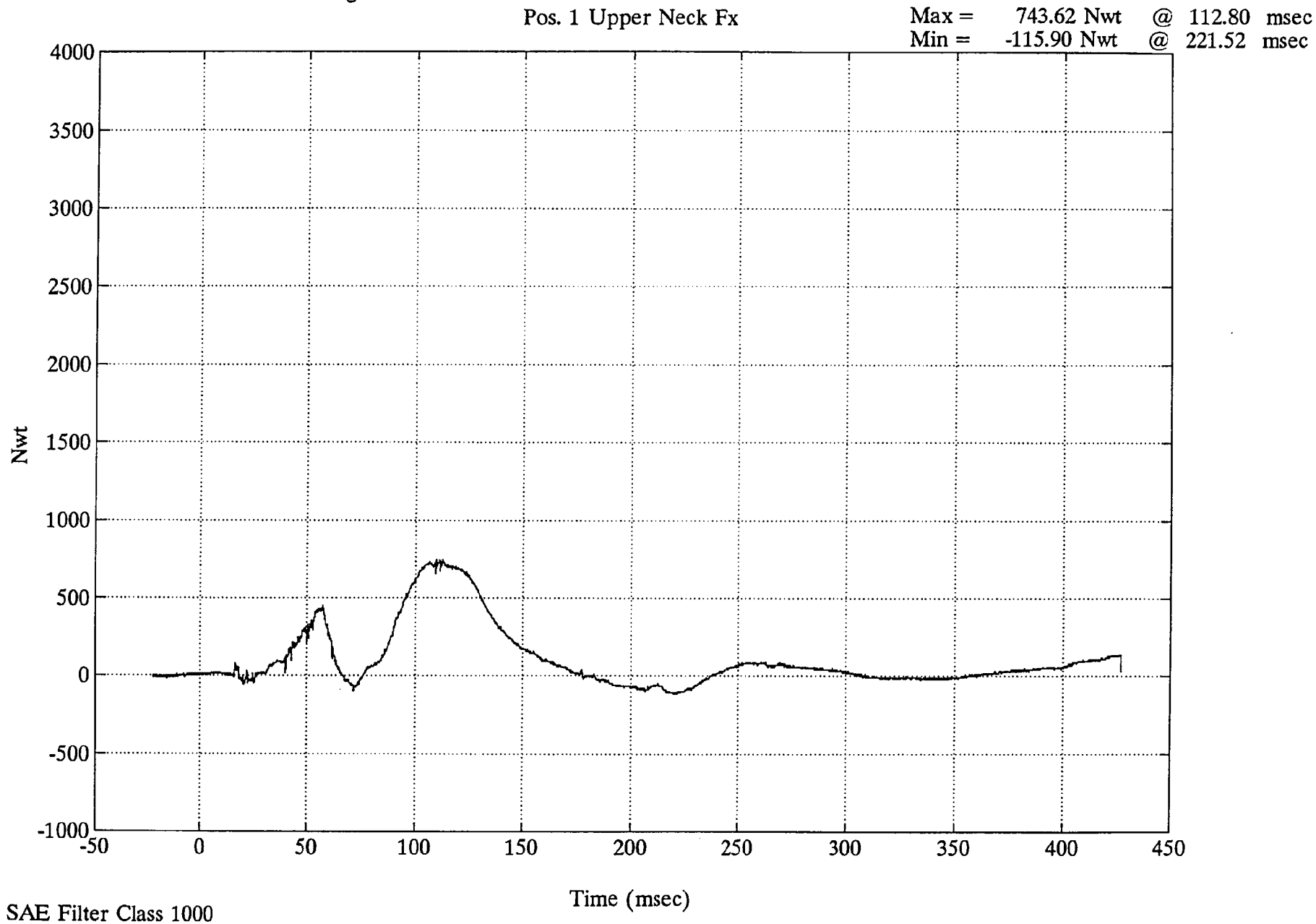


B-95

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra



B-96

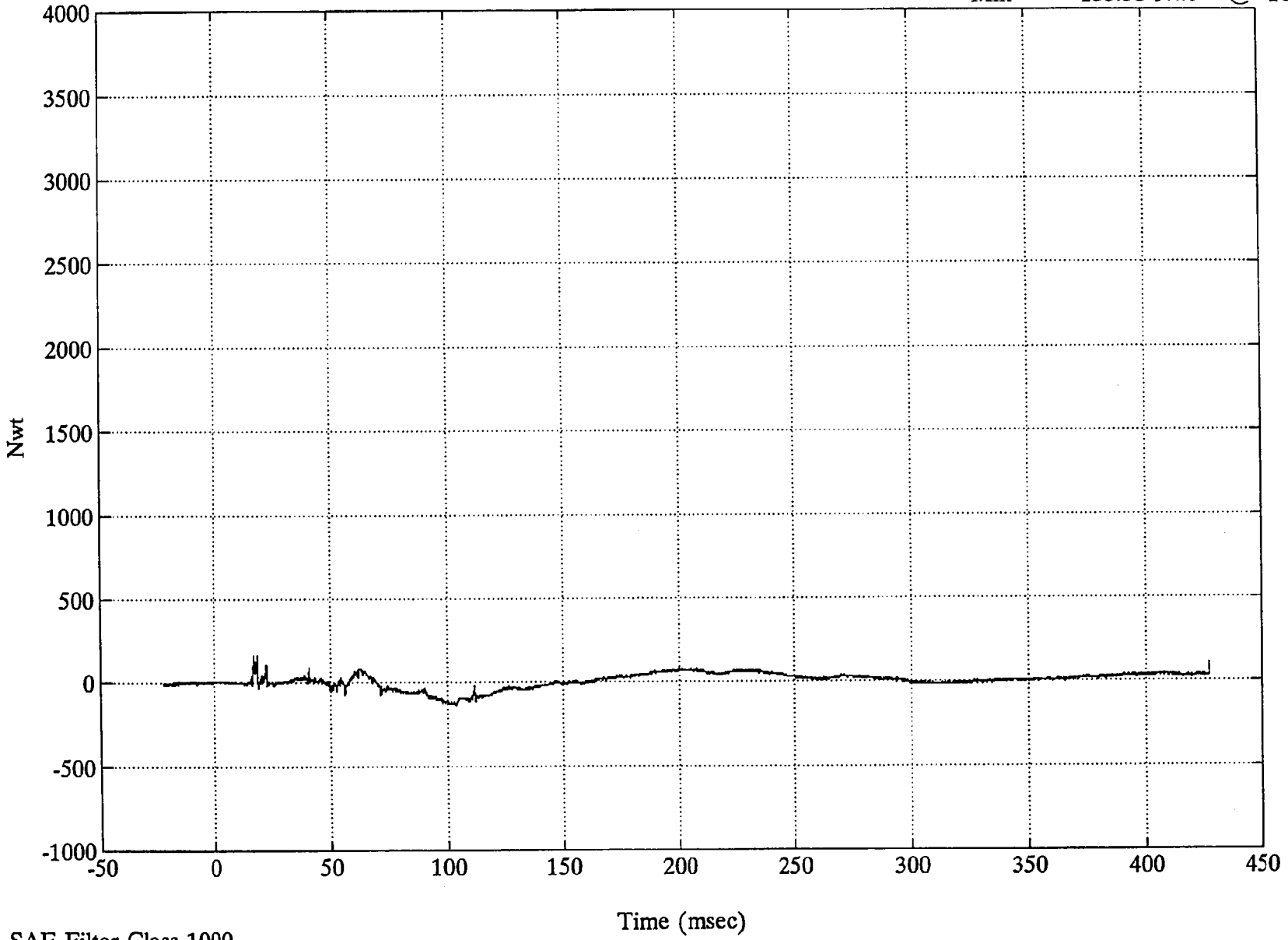
8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

Pos. 1 Upper Neck Fy

Max = 161.37 Nwt @ 18.36 msec
Min = -135.38 Nwt @ 103.68 msec



B-97

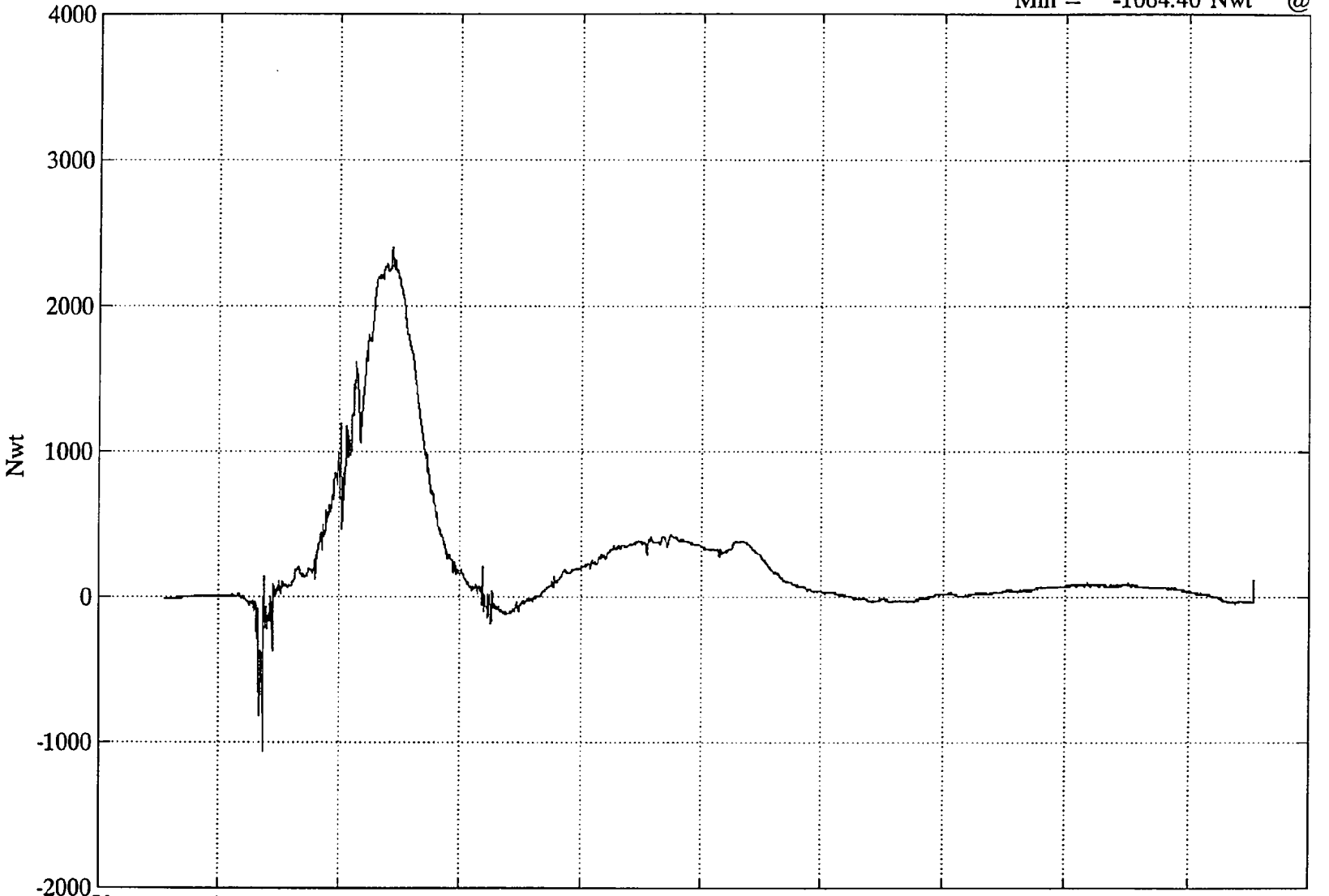
8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

Pos. 1 Upper Neck Fz

Max = 2401.93 Nwt @ 71.76 msec
Min = -1064.40 Nwt @ 18.36 msec

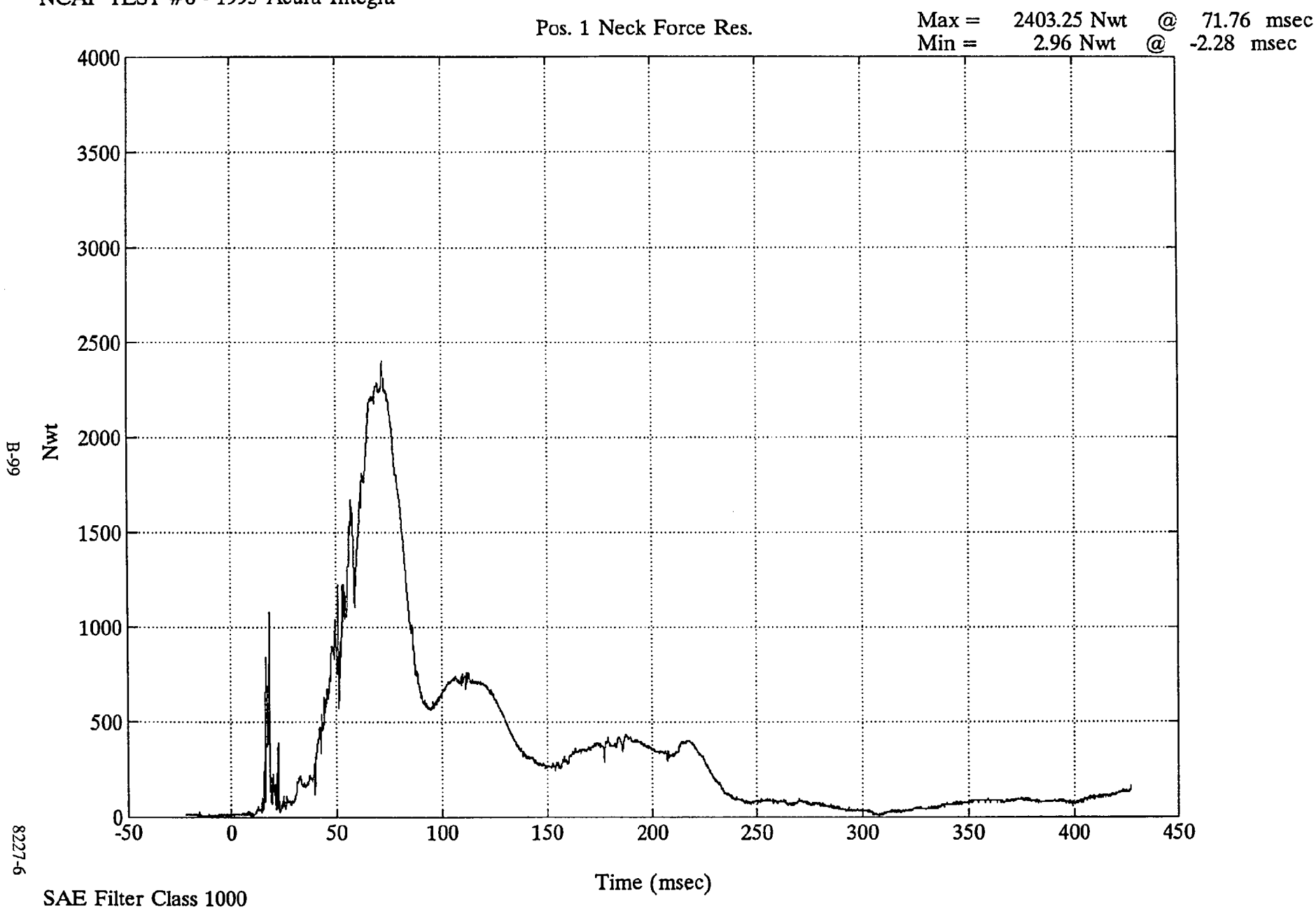


B-98

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra



B-99

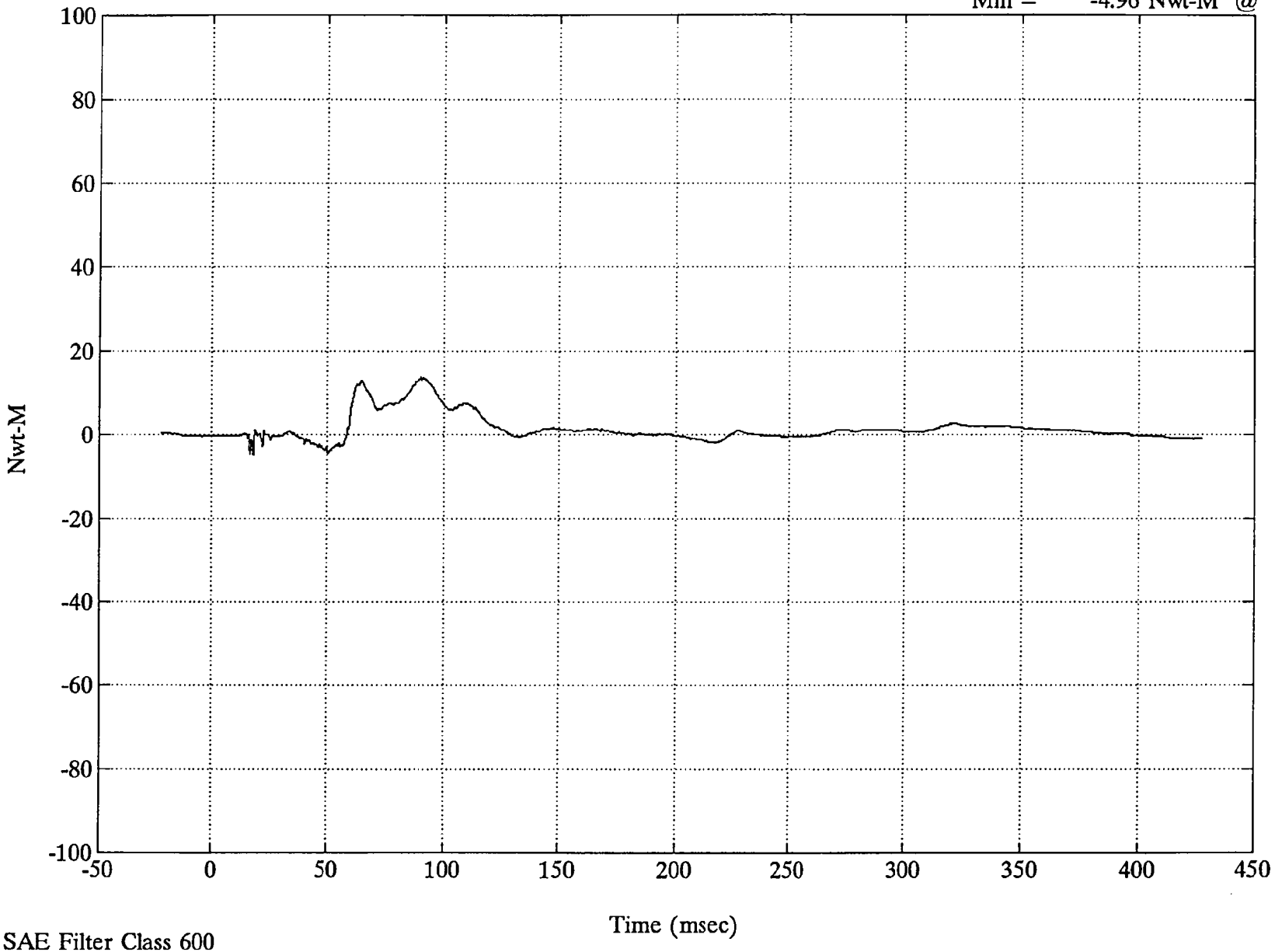
82276

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

Pos. 1 Upper Neck Mx

Max = 13.80 Nwt-M @ 90.12 msec
Min = -4.96 Nwt-M @ 18.23 msec

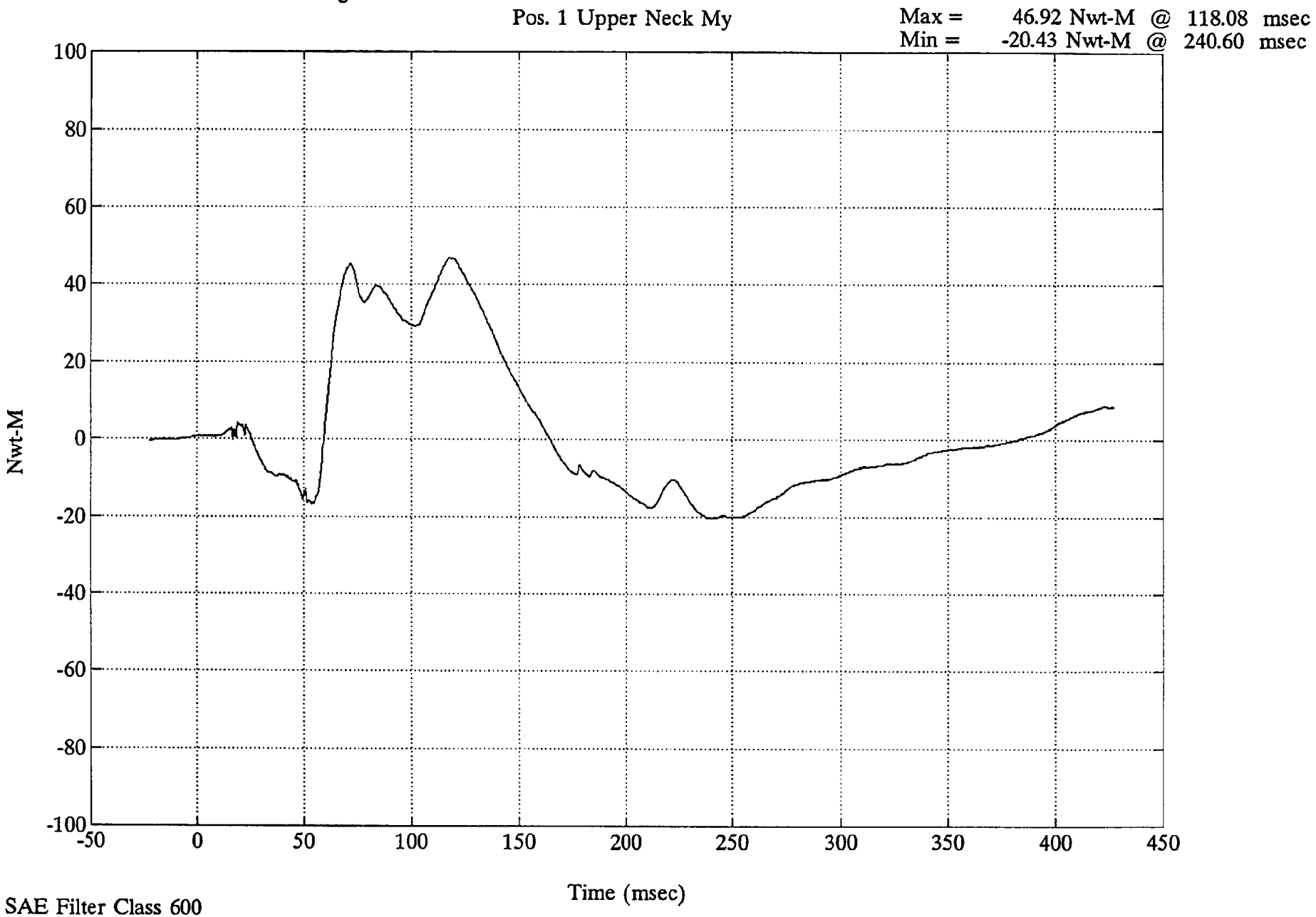


B-100

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra



B-101

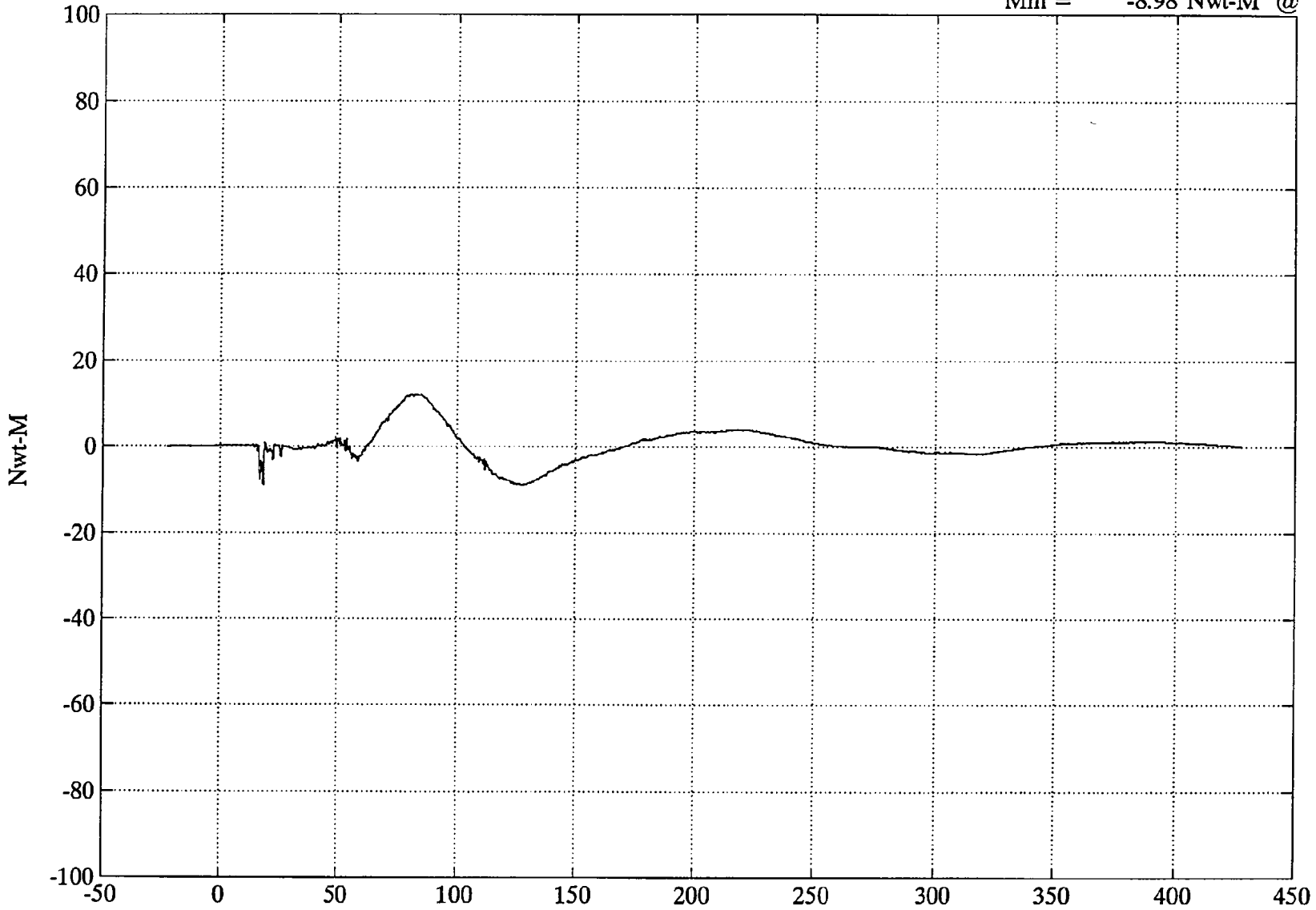
8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

Pos. 1 Upper Neck Mz

Max = 12.17 Nwt-M @ 81.48 msec
Min = -8.98 Nwt-M @ 127.80 msec

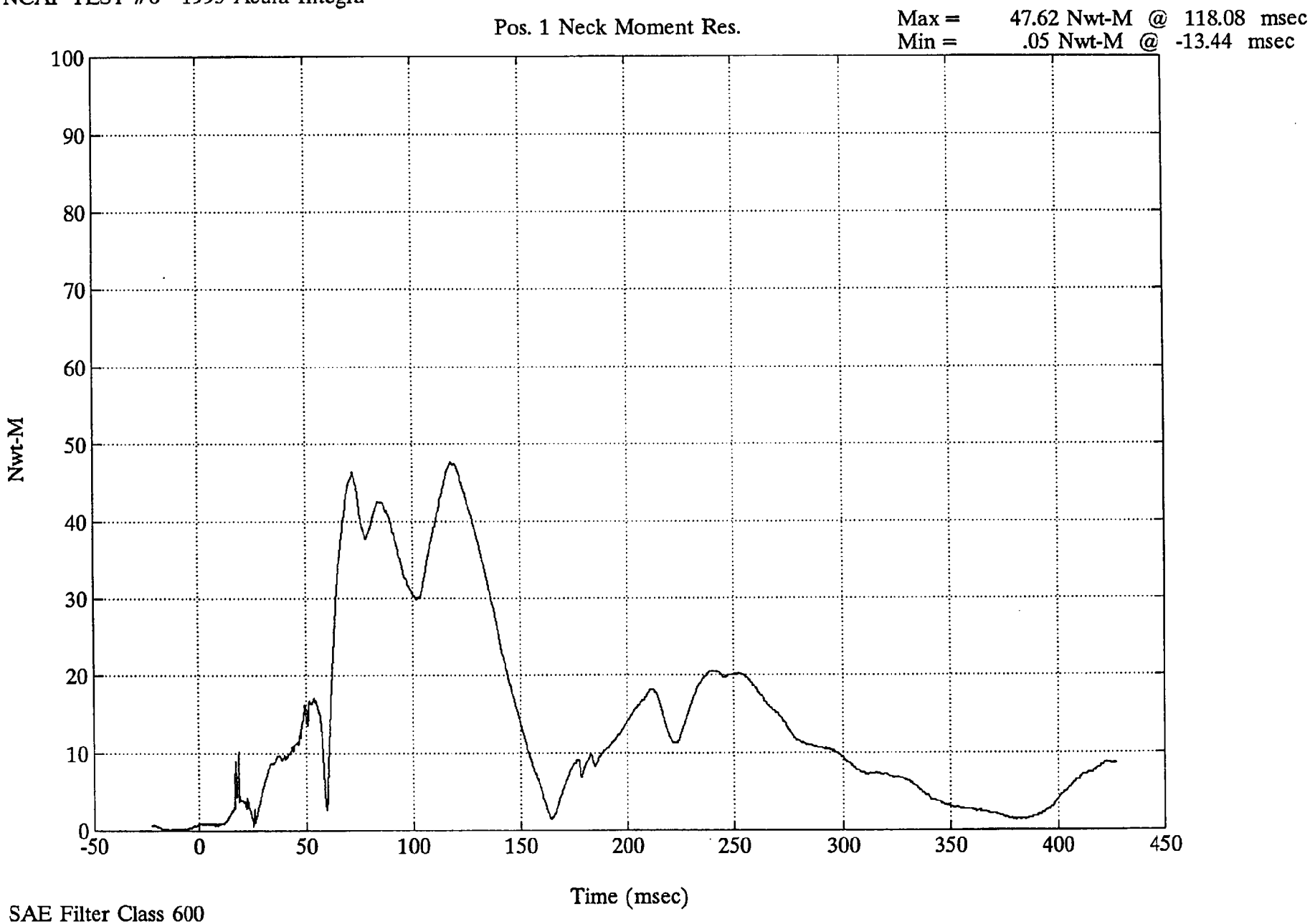


SAE Filter Class 600

B-102

8227-6

NCAP TEST #6 - 1995 Acura Integra

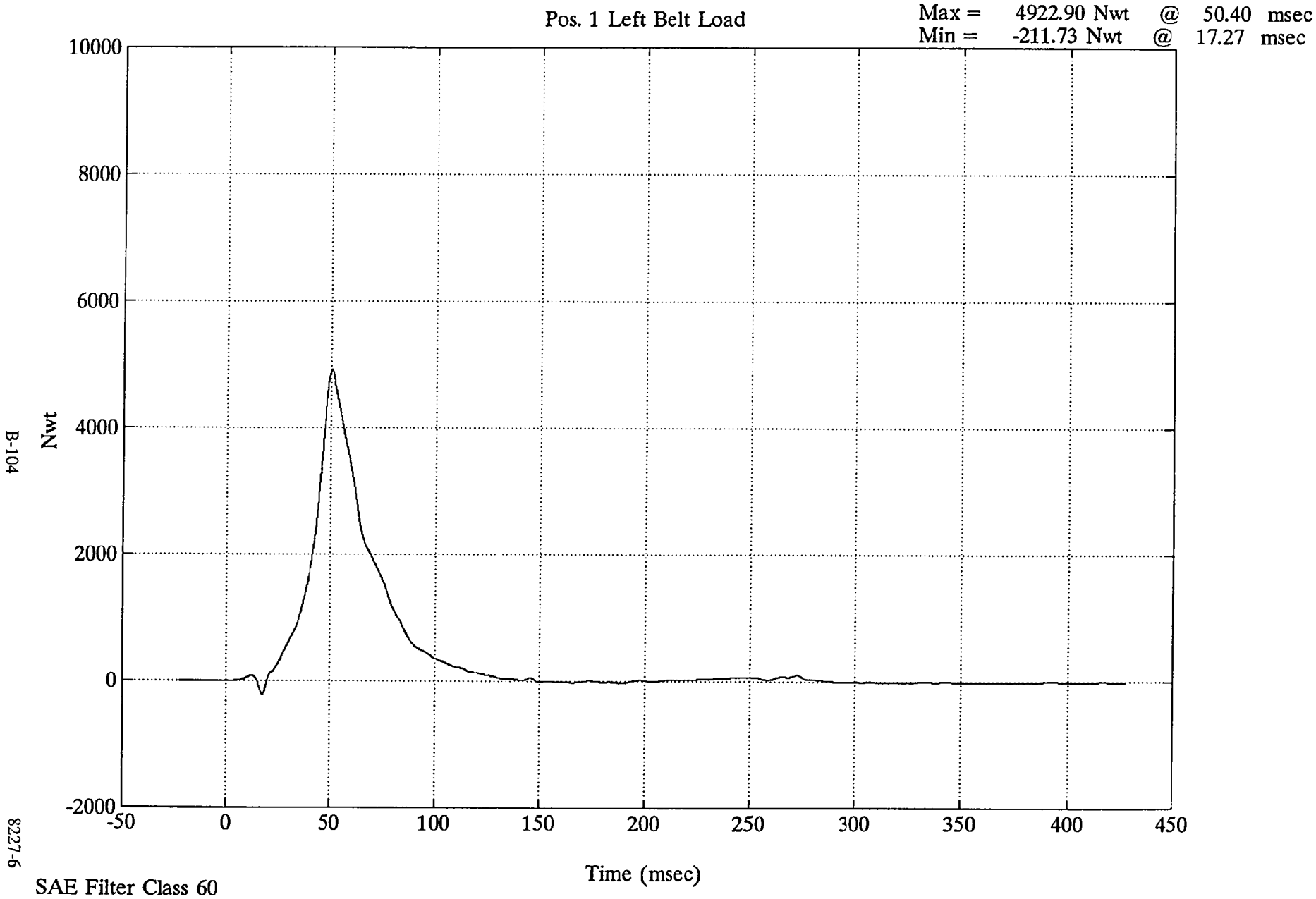


B-103

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

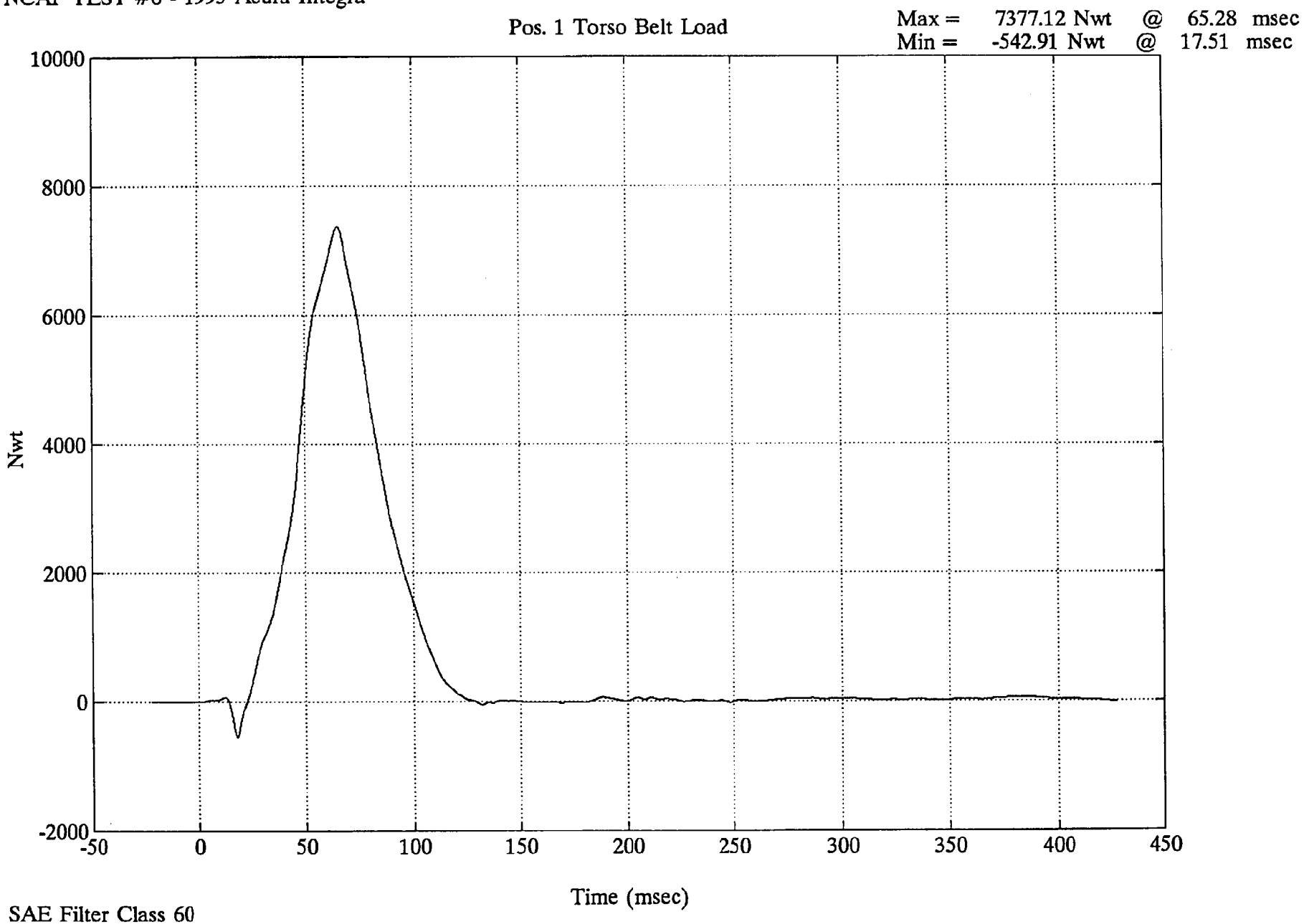


B-104

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra



B-105

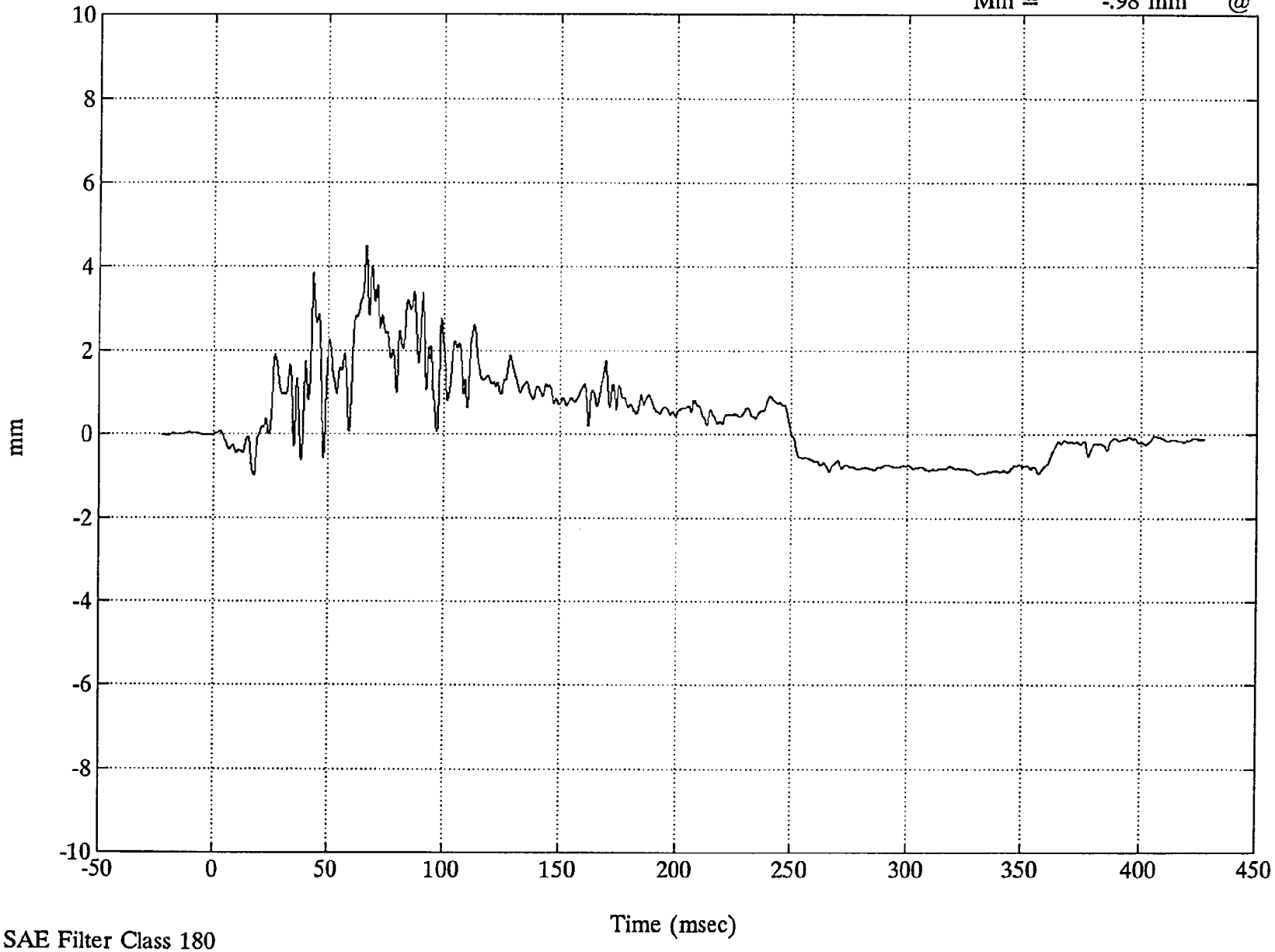
8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

Pos. 1 Belt Elongation

Max = 4.48 mm @ 66.36 msec
Min = -.98 mm @ 17.75 msec



B-106

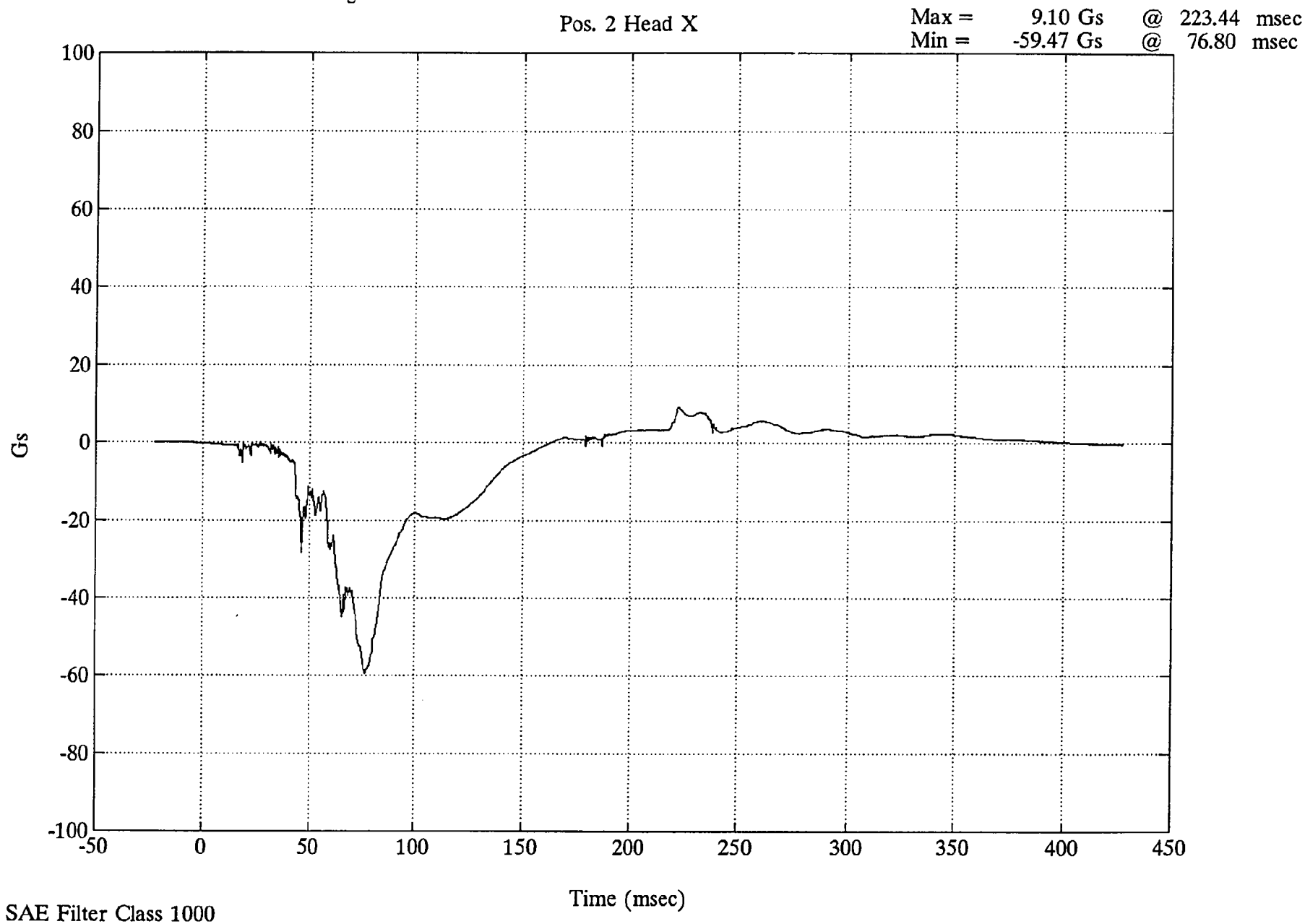
8227-6

SAE Filter Class 180

Measured over 63.5 mm

NCAP TEST #6 - 1995 Acura Integra

NCAP TEST #6 - 1995 Acura Integra

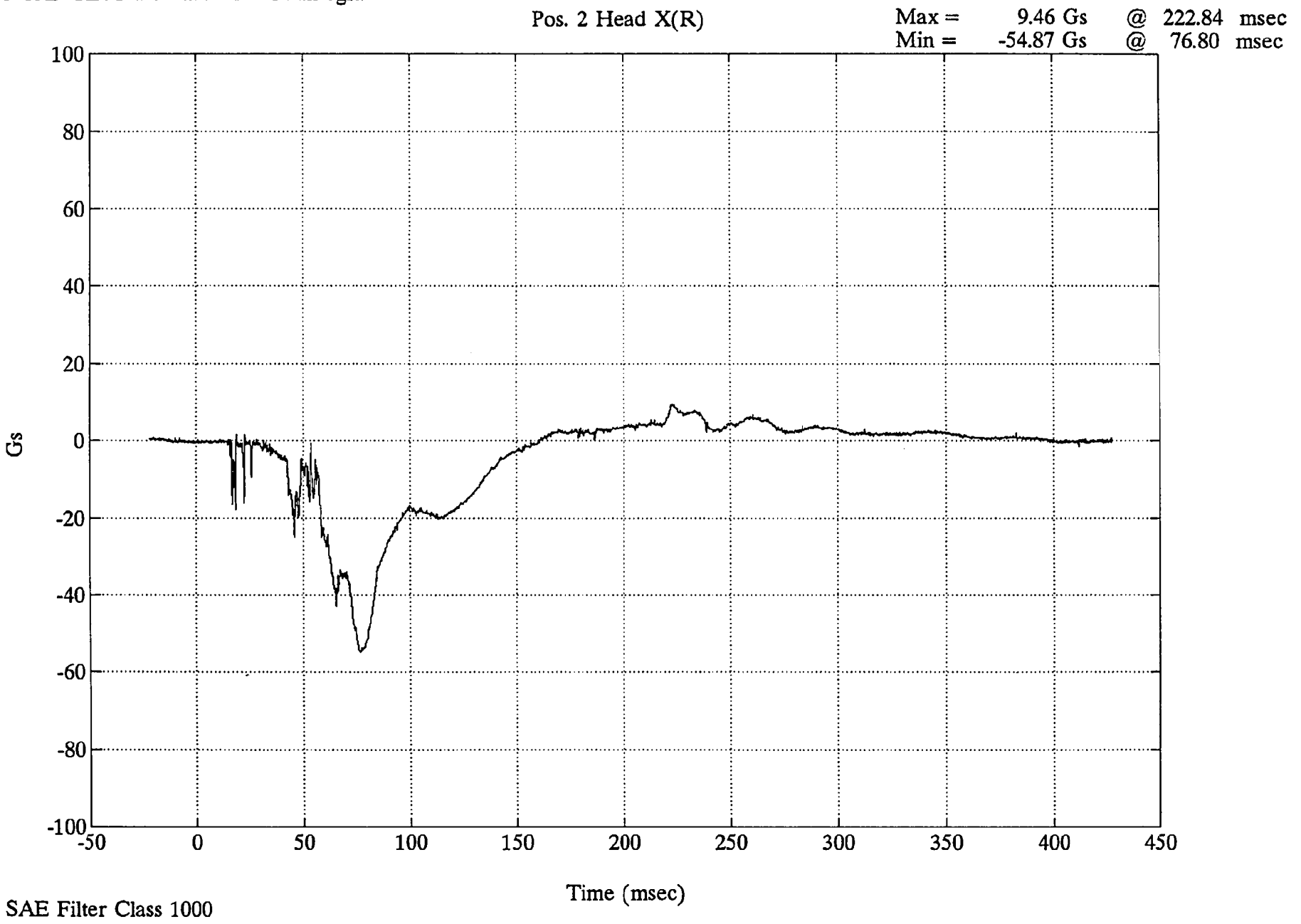


B-108

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra



B-109

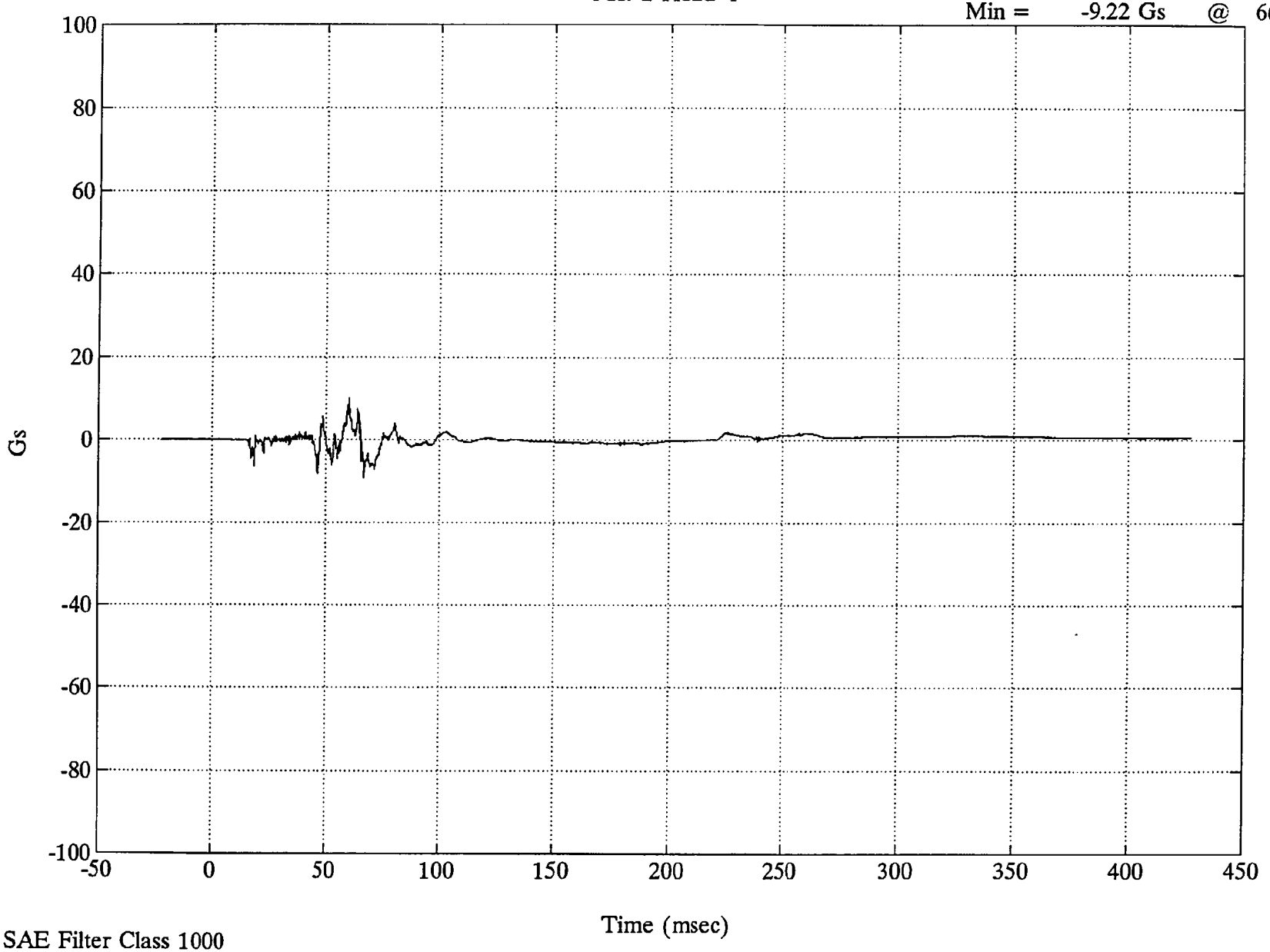
8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

Pos. 2 Head Y

Max = 10.03 Gs @ 60.12 msec
Min = -9.22 Gs @ 66.72 msec

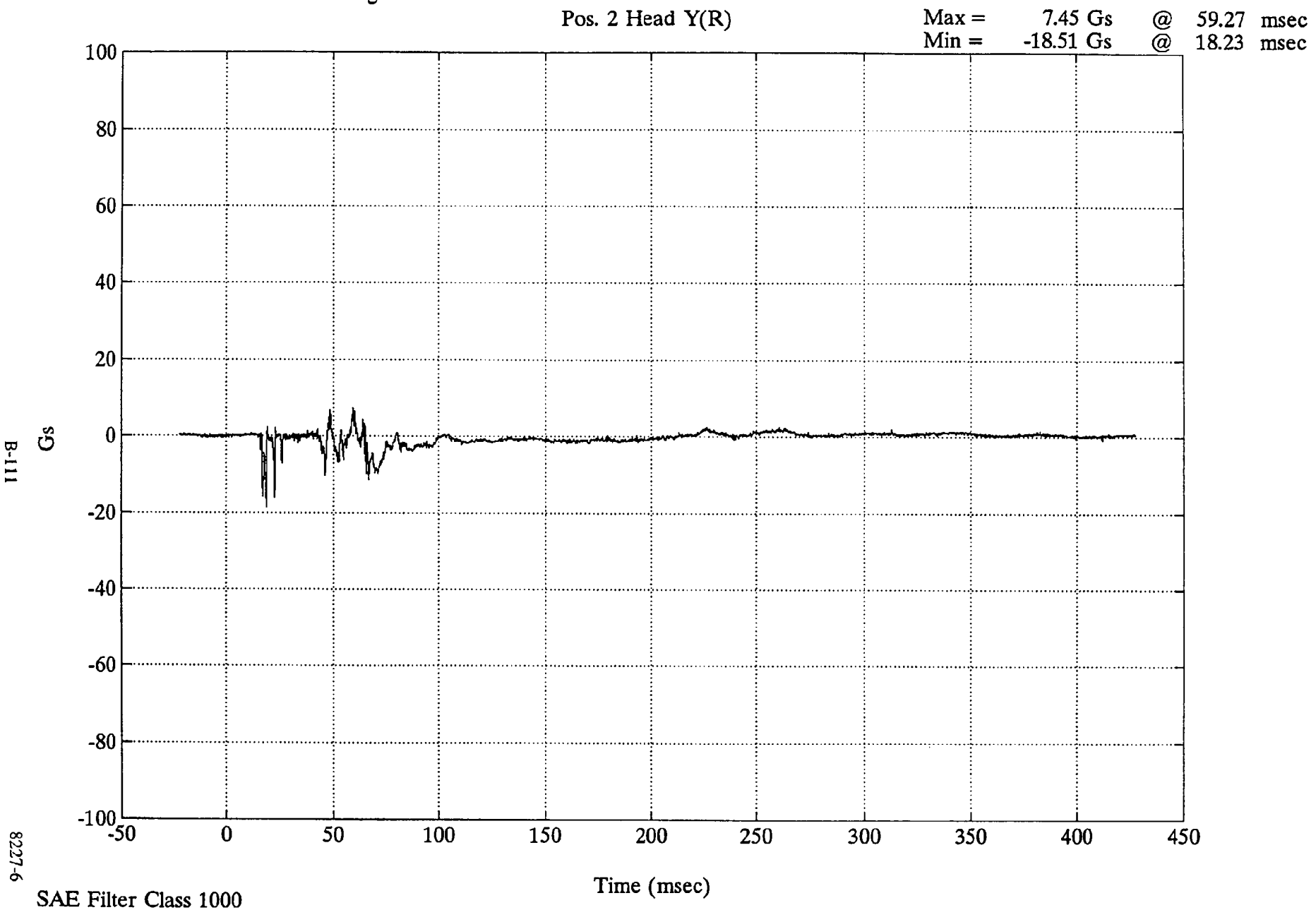


B-110

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

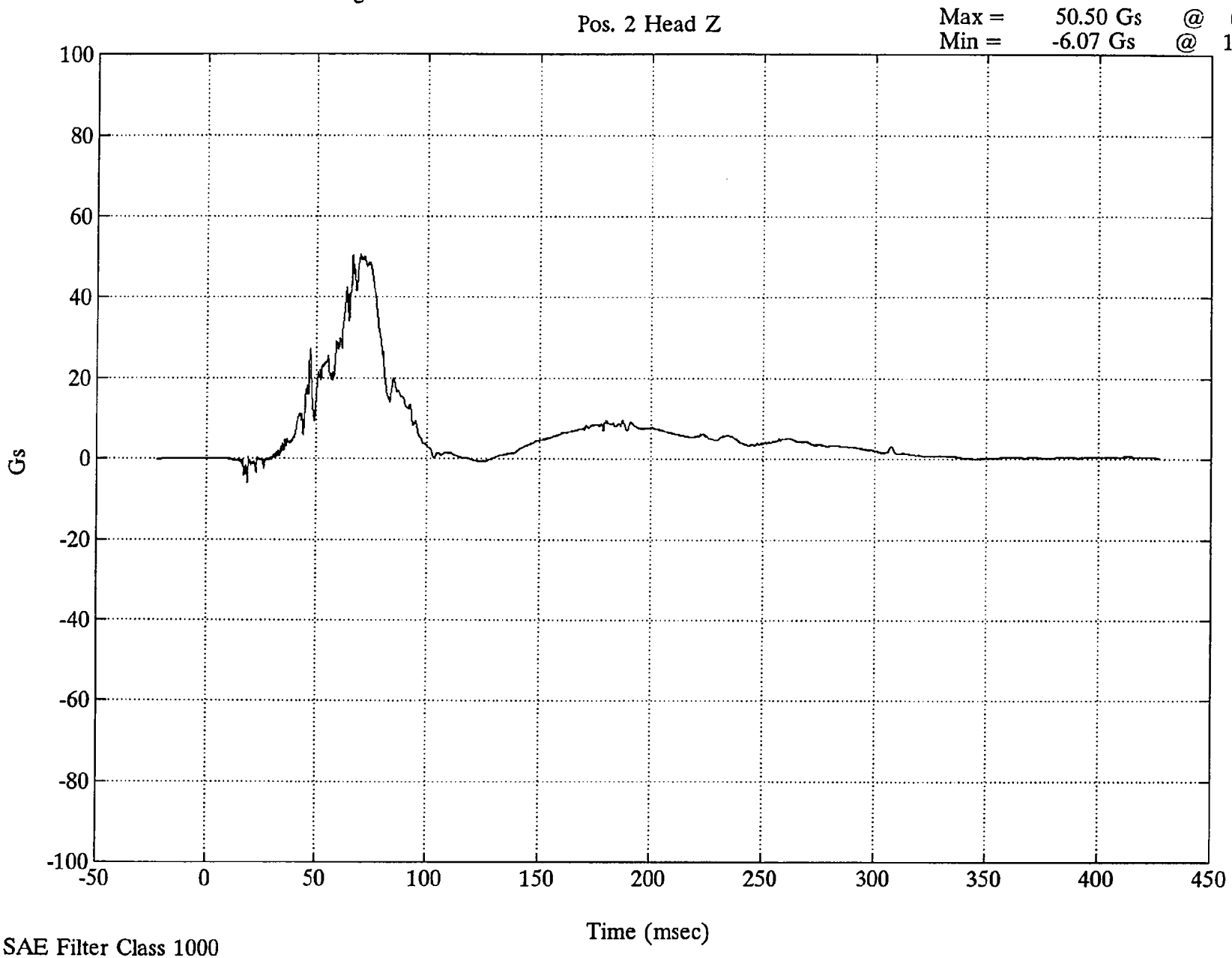


B-111

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

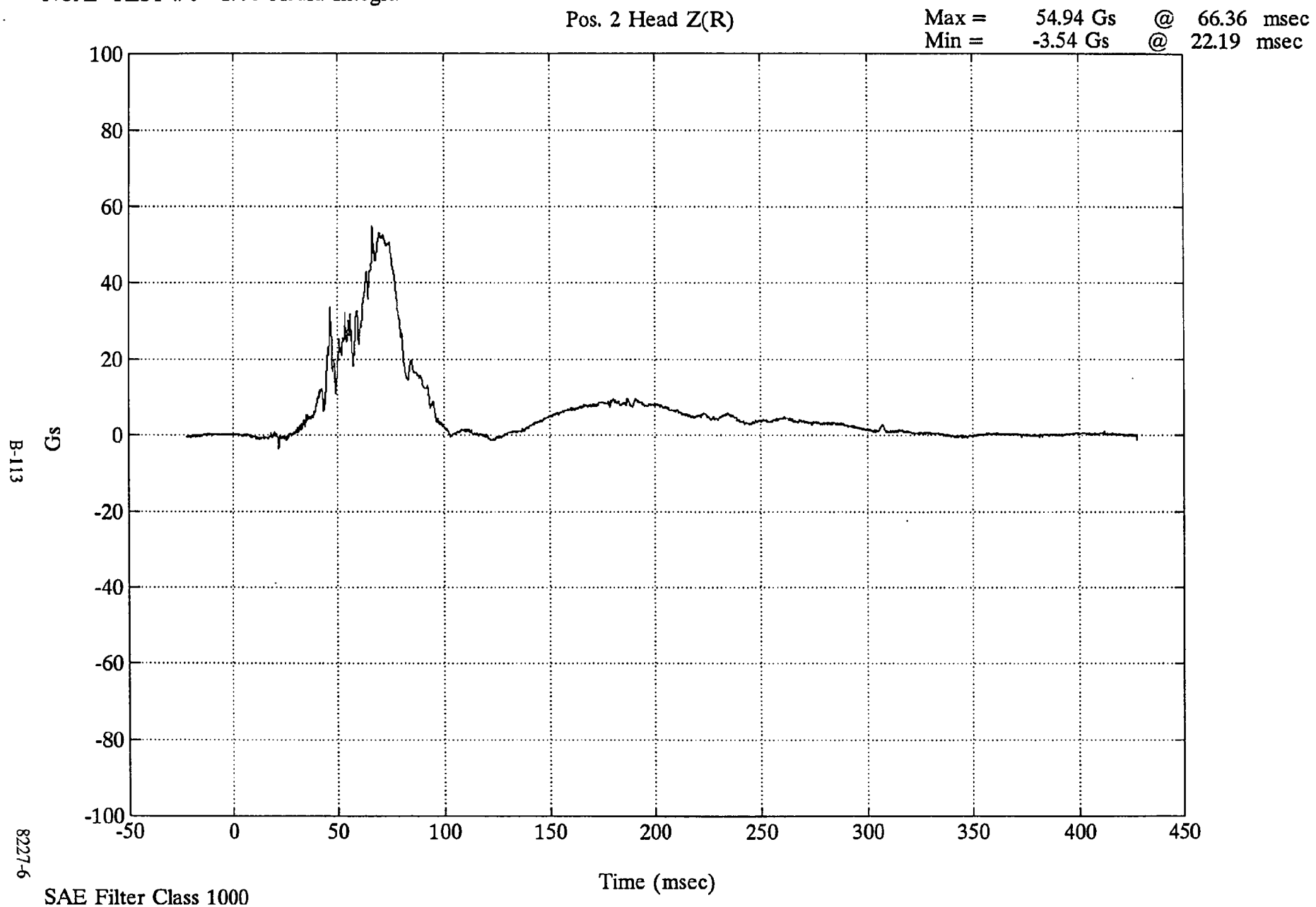


B-112

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

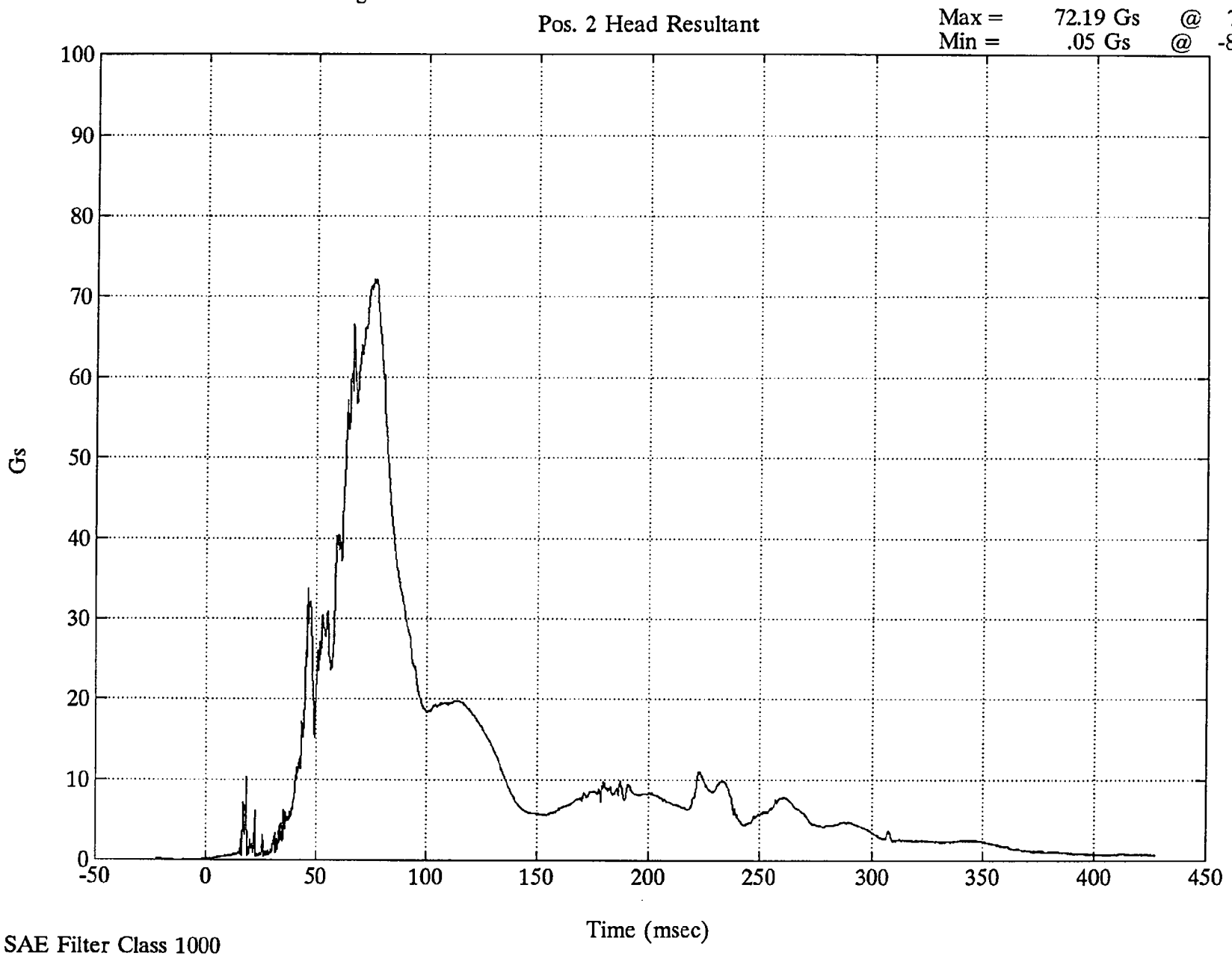


B-113

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

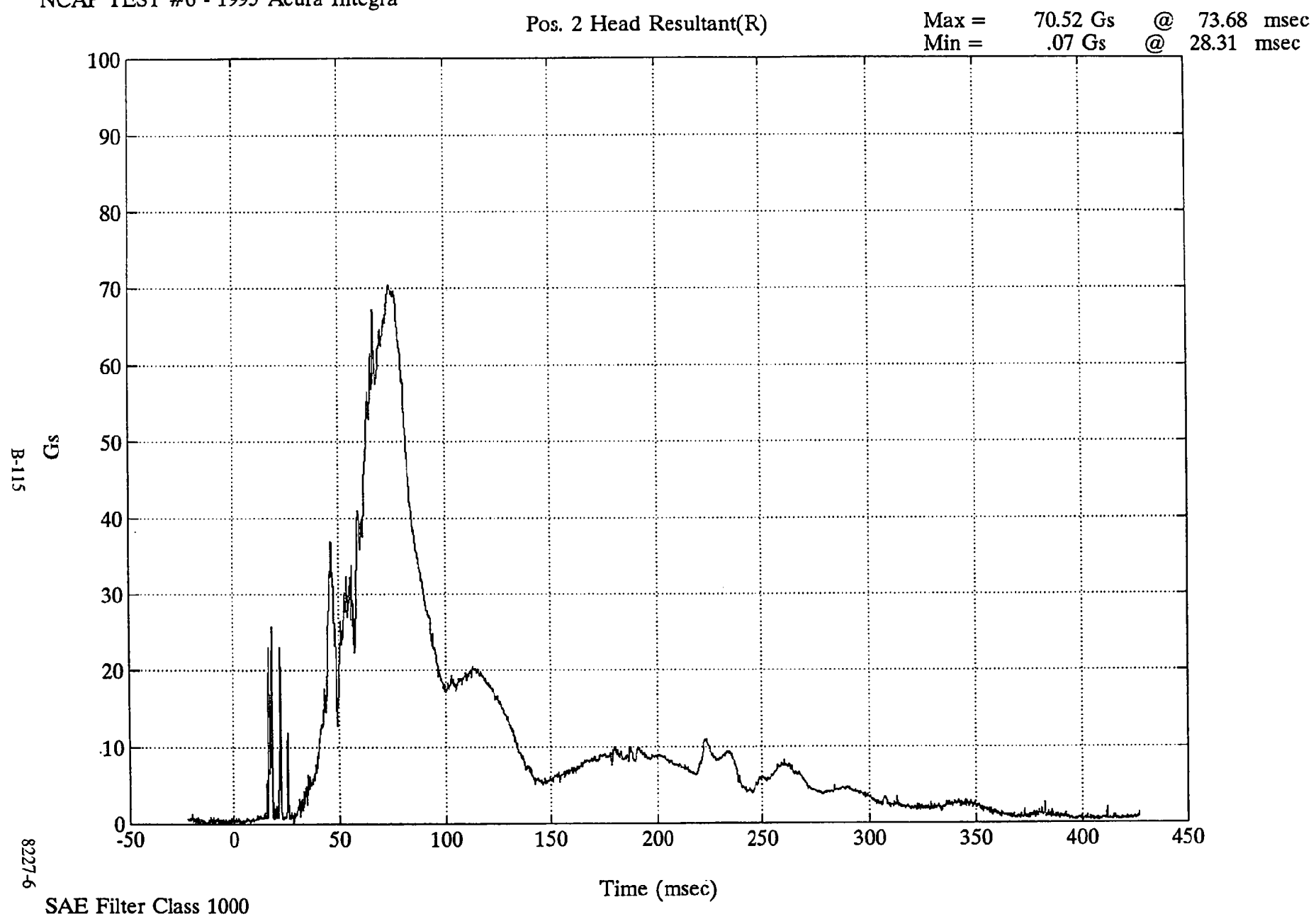


B-114

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

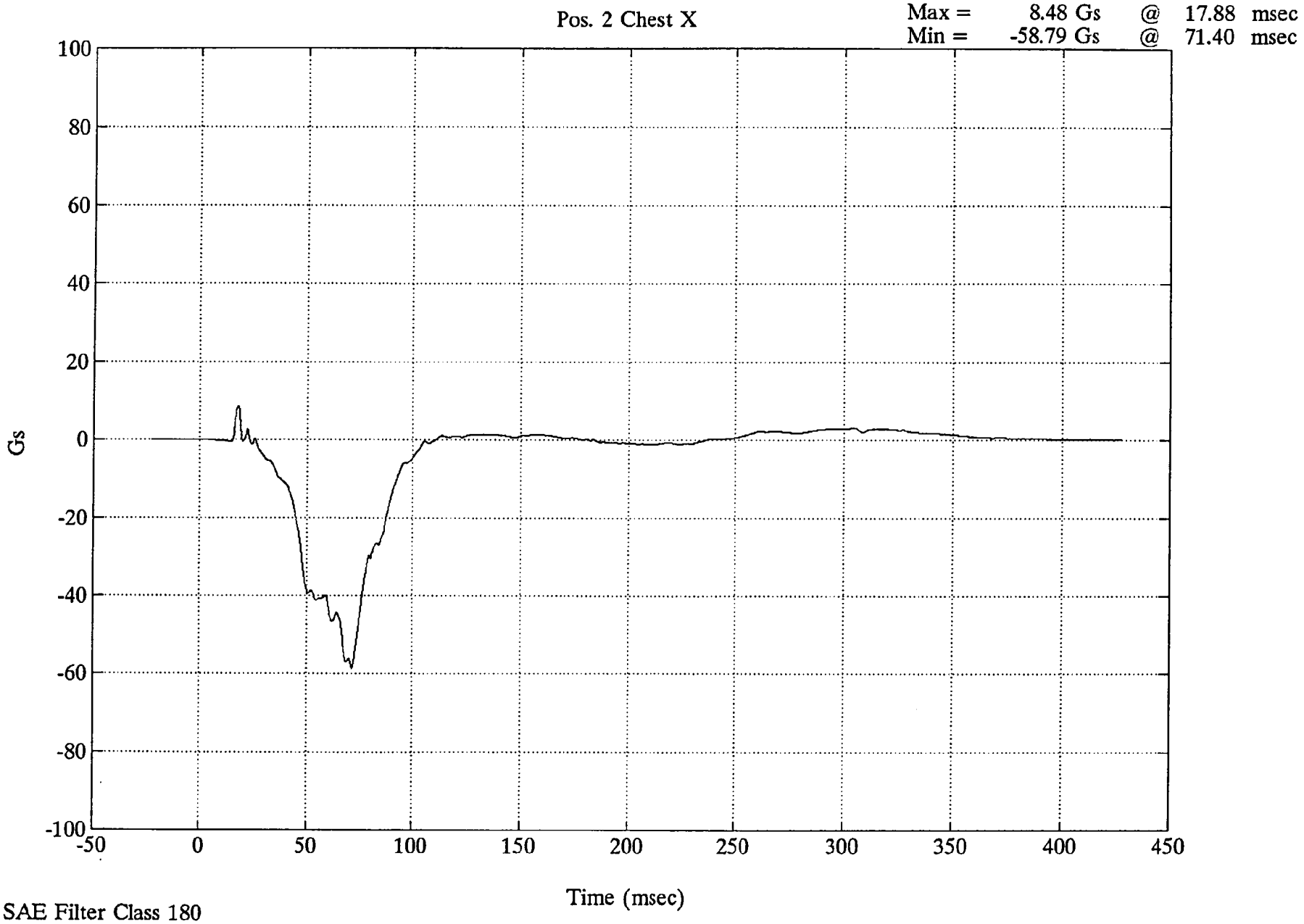


B-115

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

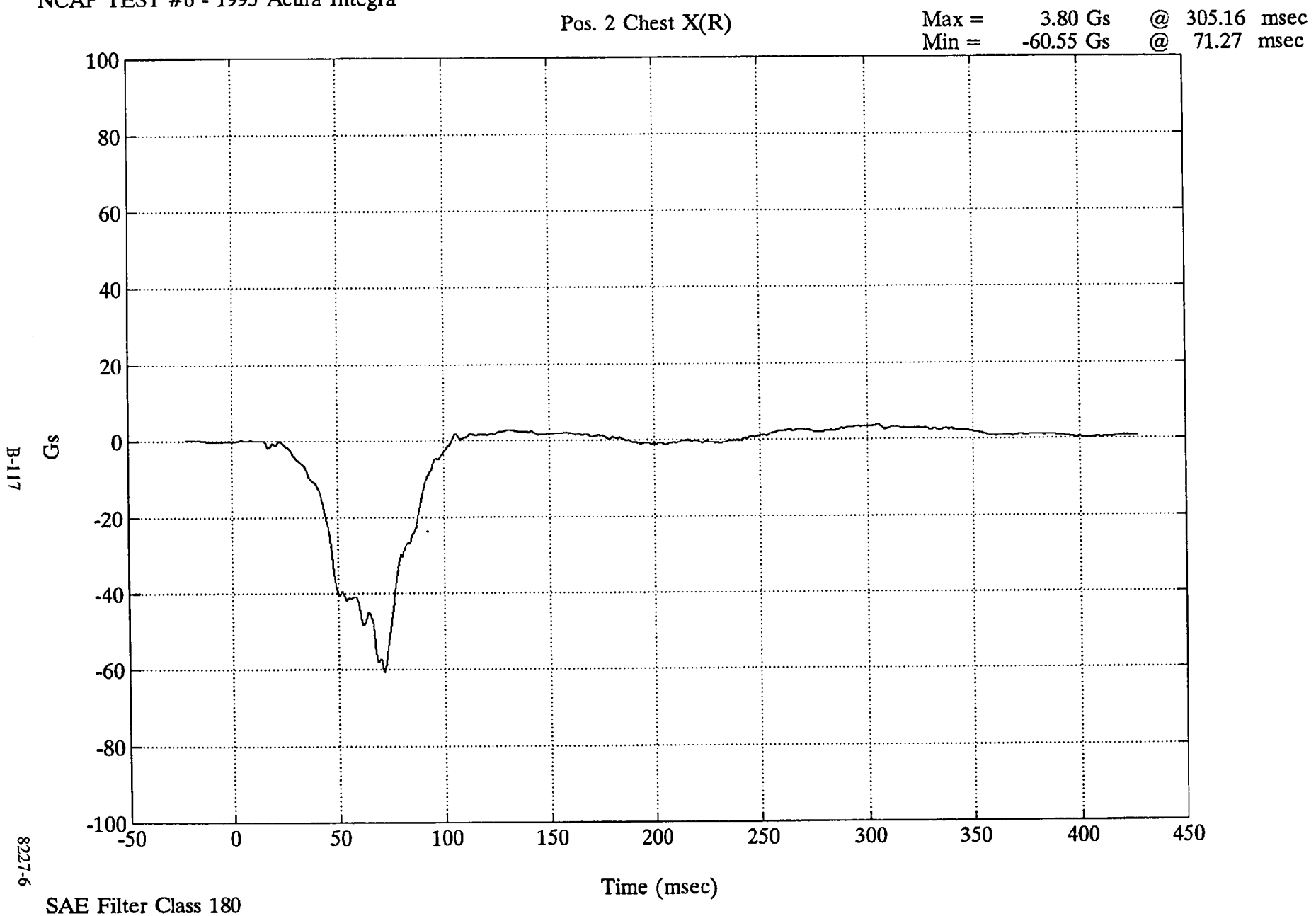


B-116

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

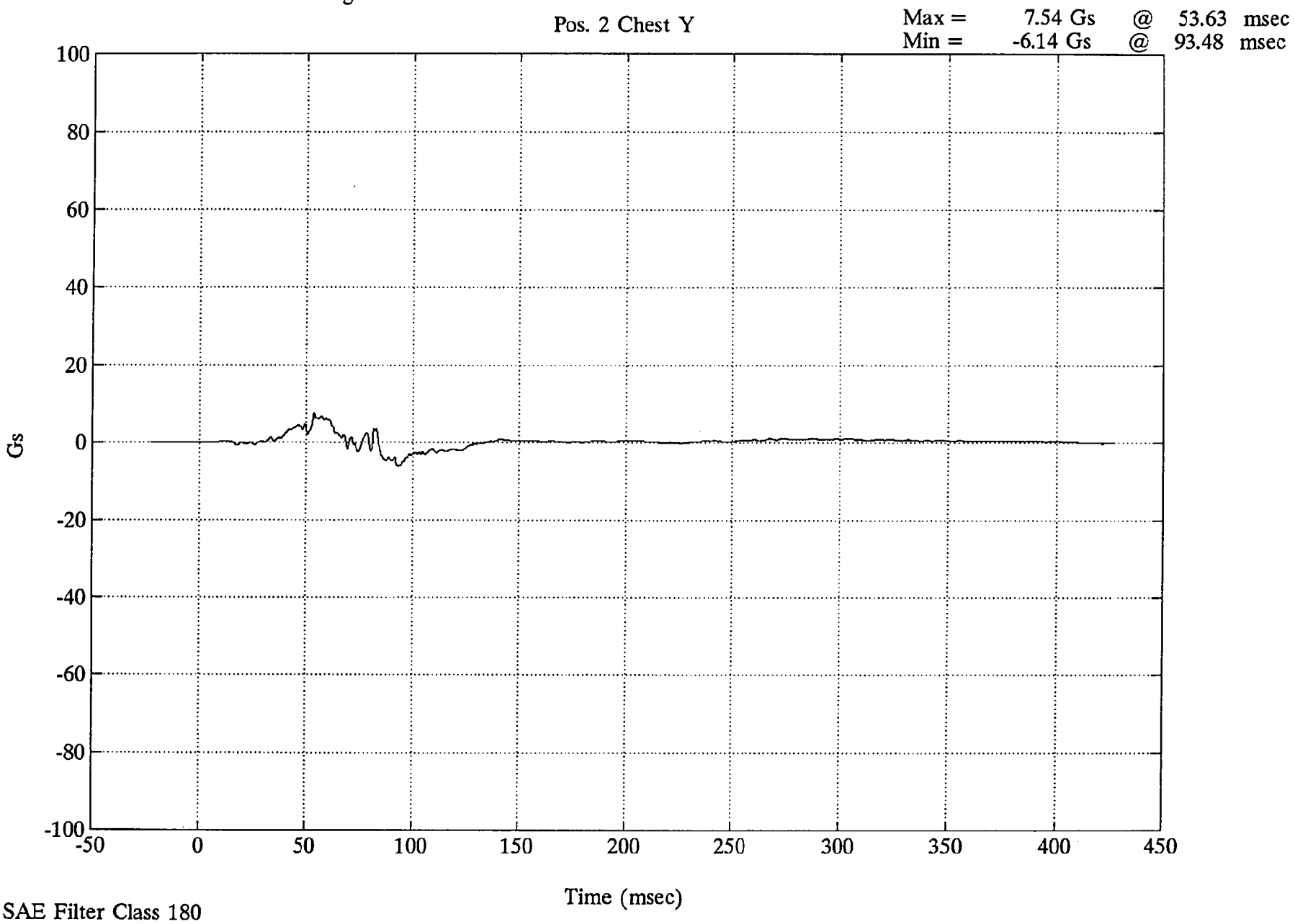


B-117

82276

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

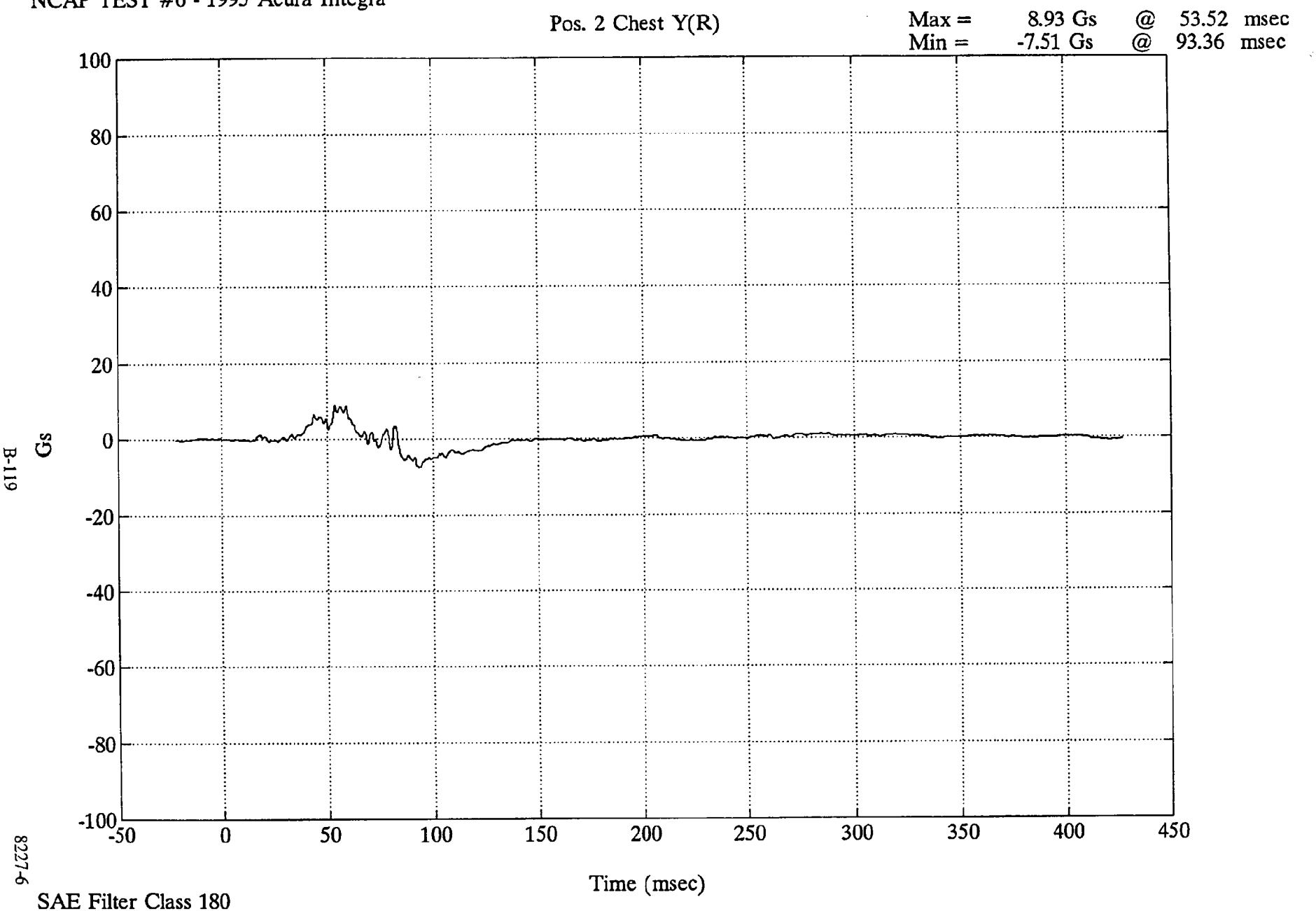


B-118

8227-6

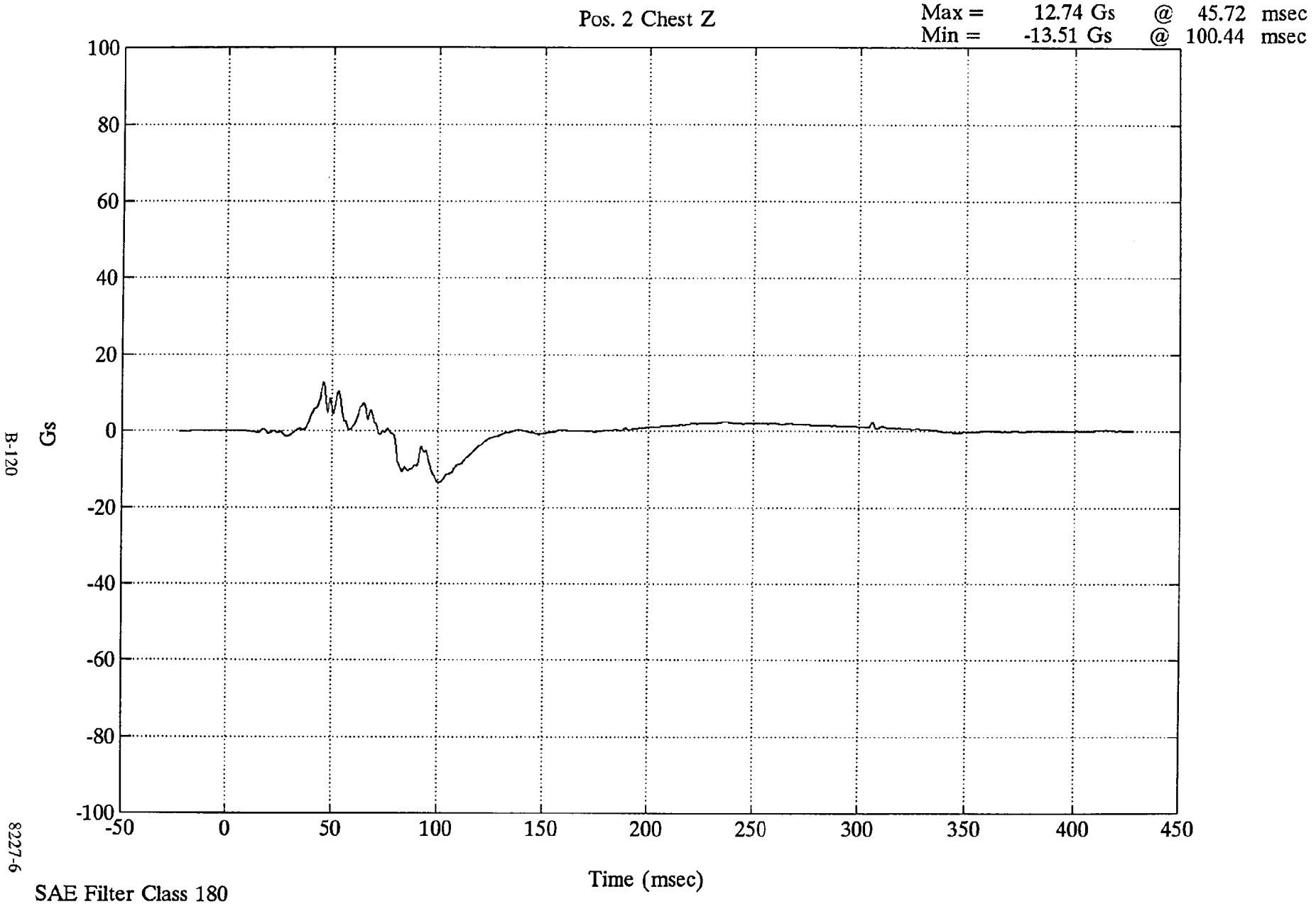
SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

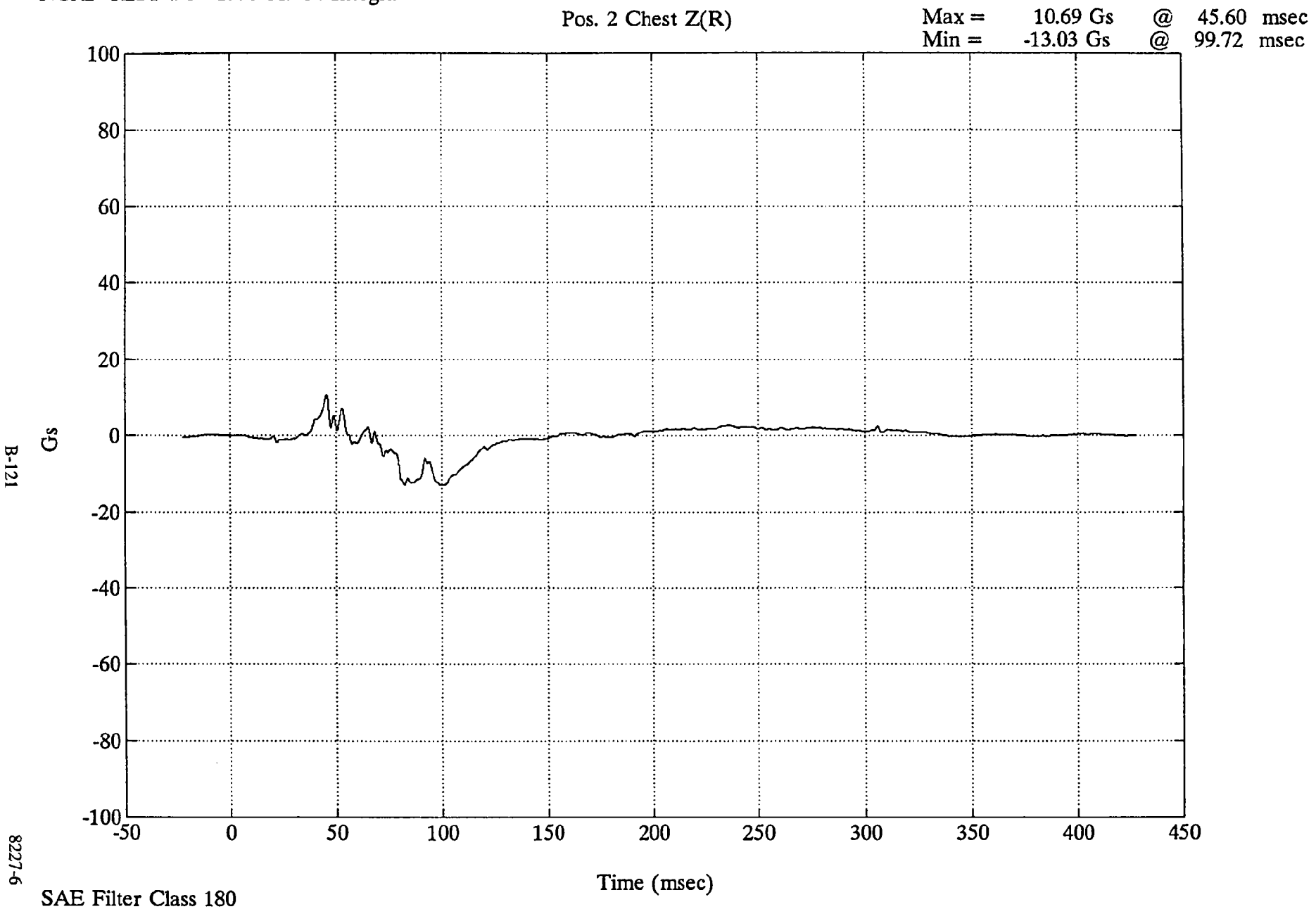


B-120

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

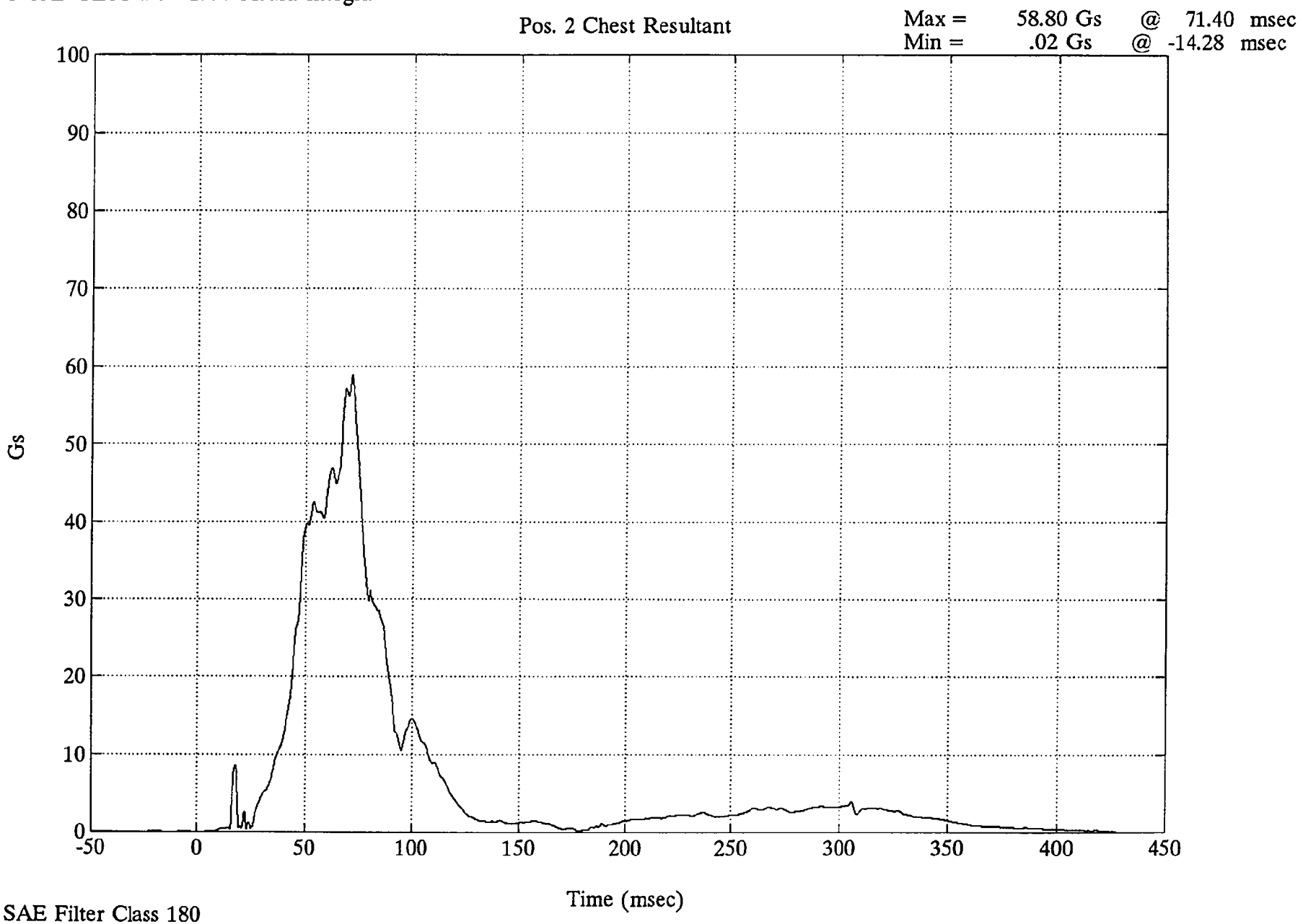


B-121

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

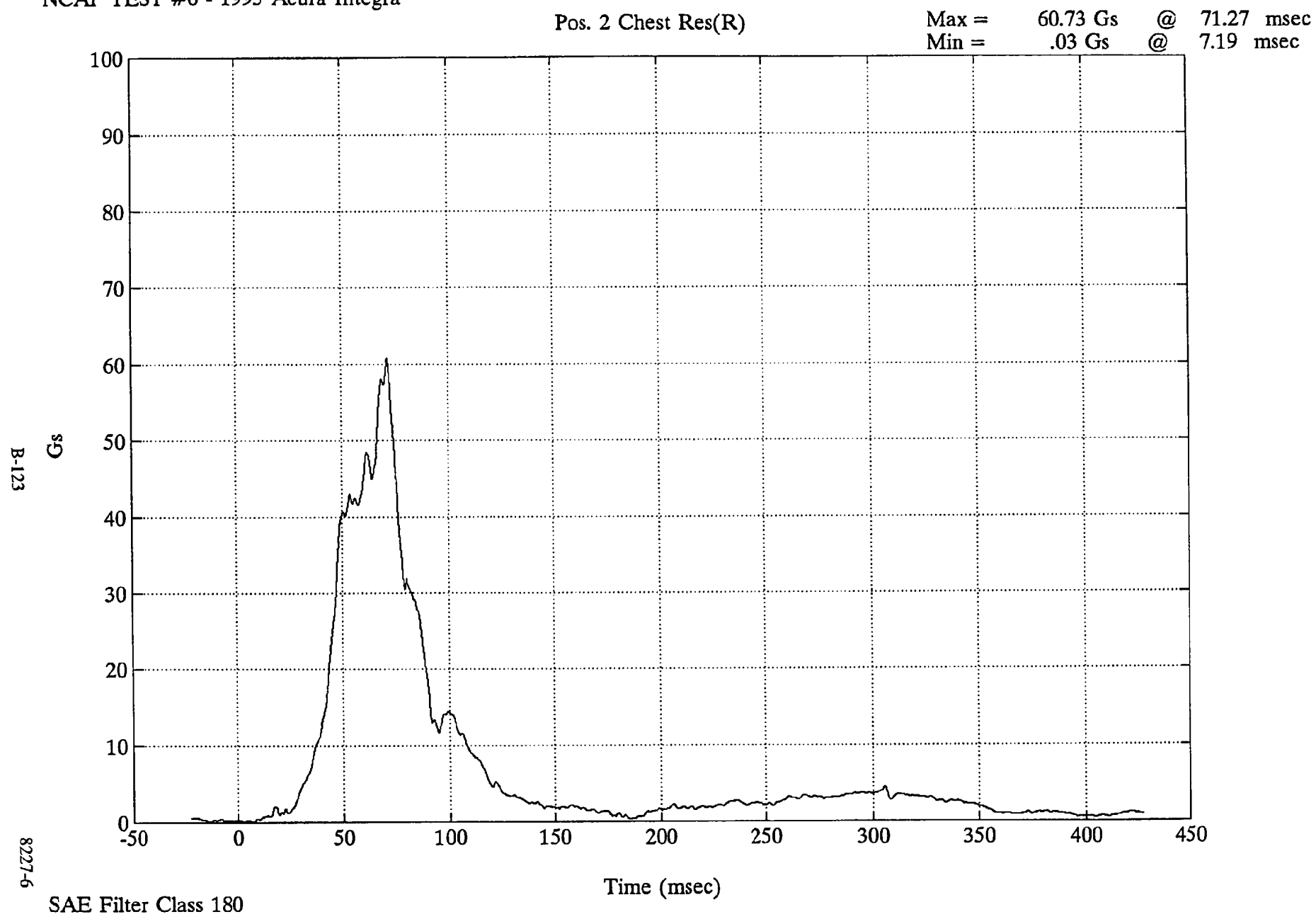


B-122

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

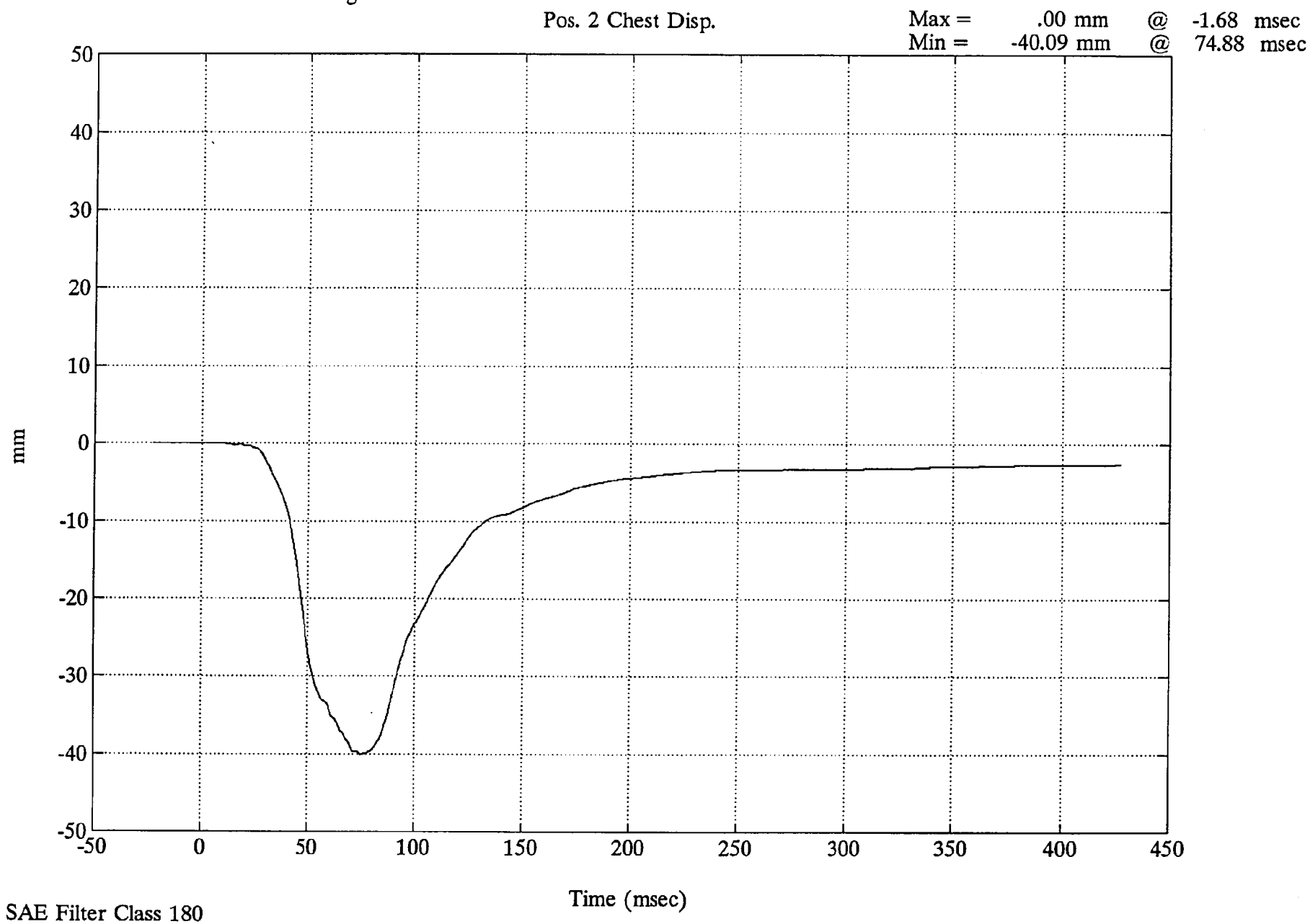


B-123

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

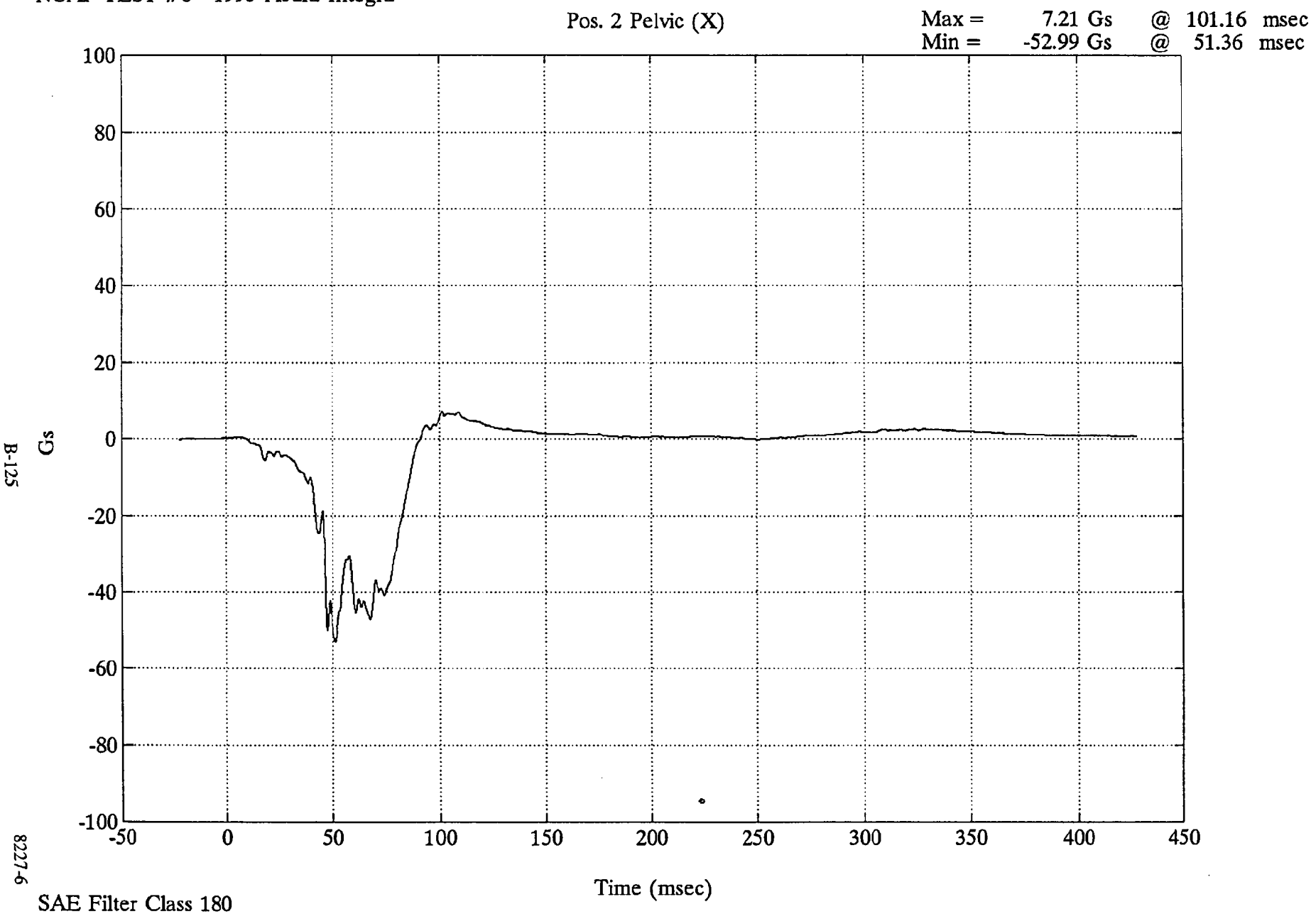


B-124

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

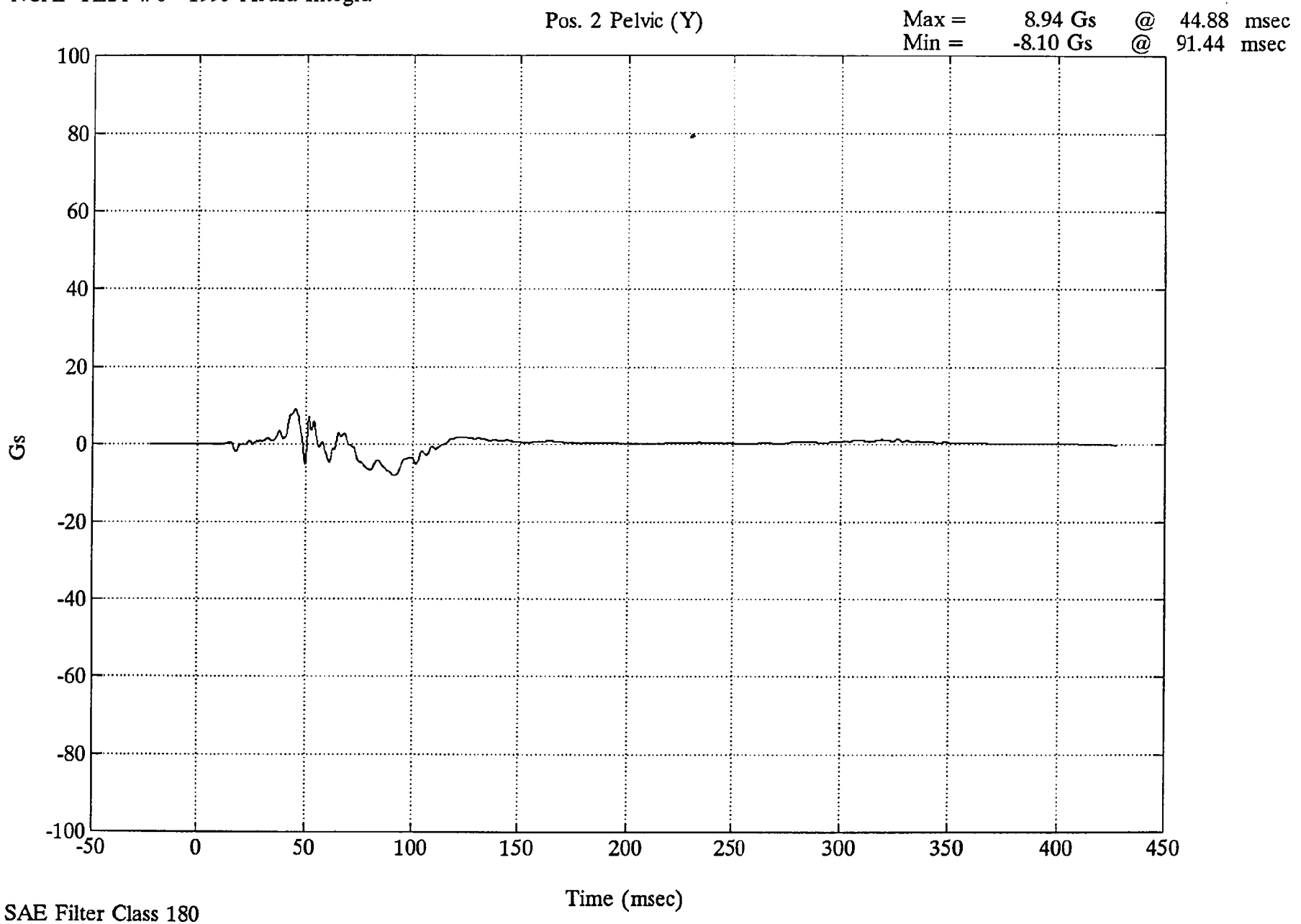


B-125

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

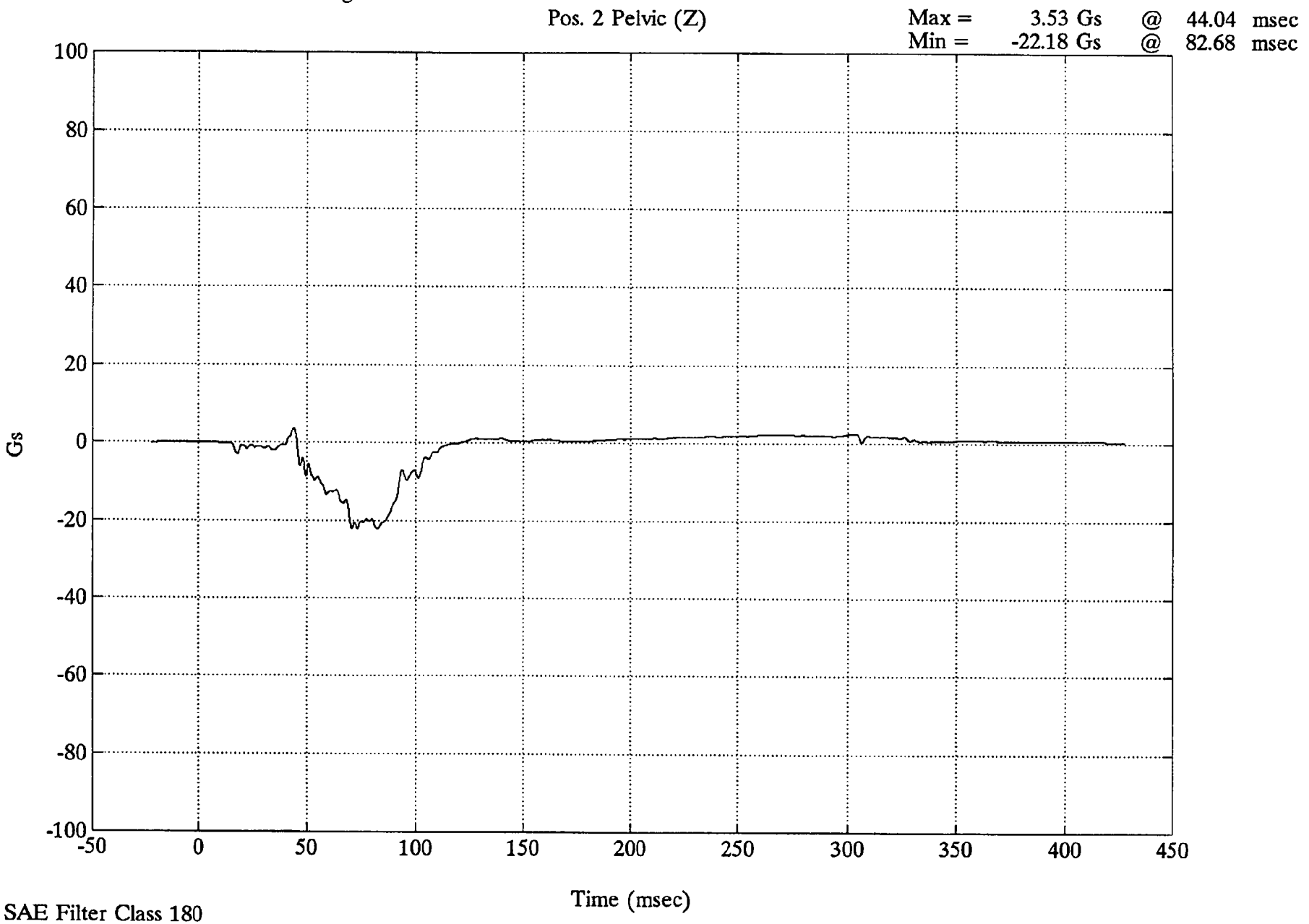


B-126

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

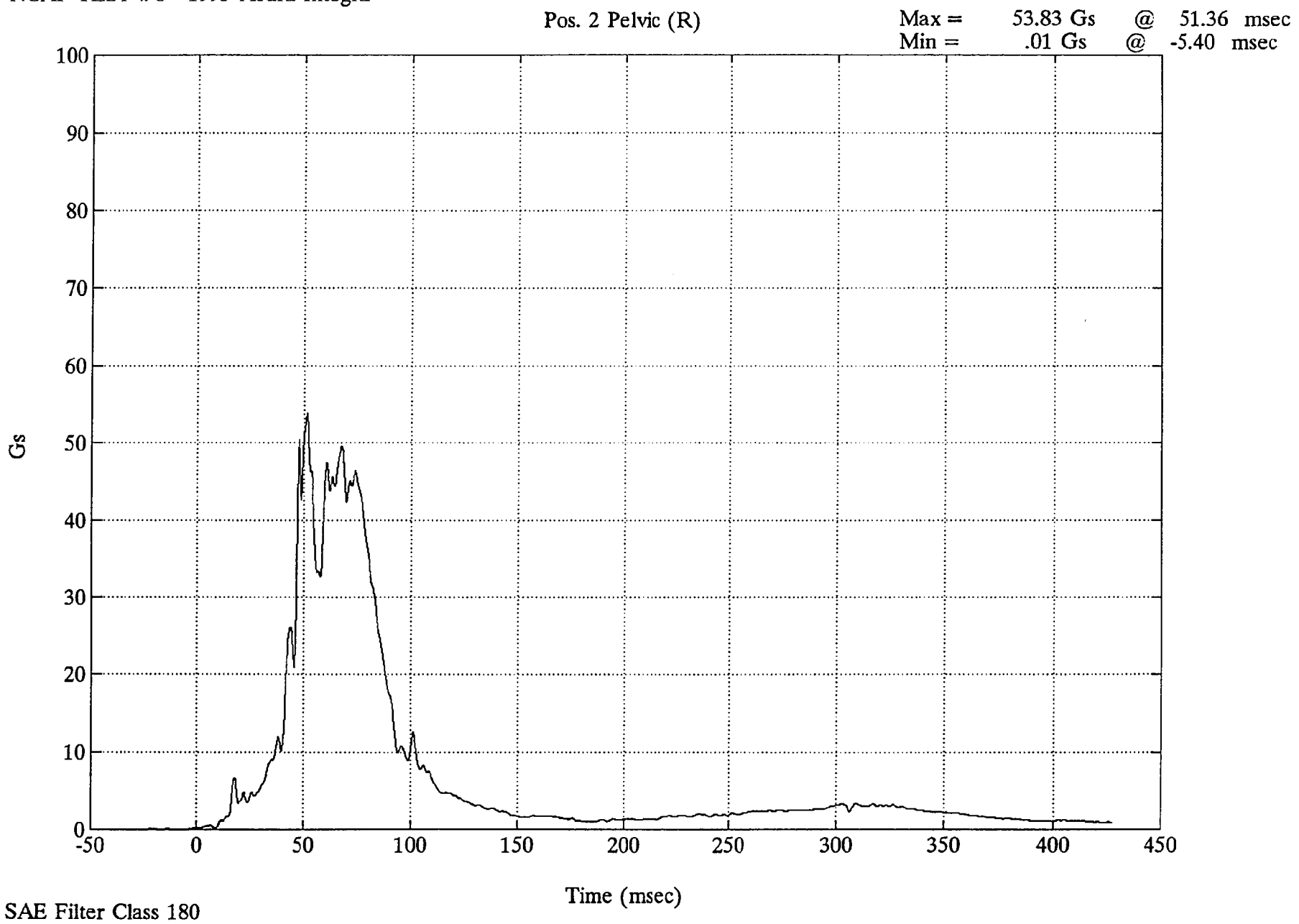


B-127

82276

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra

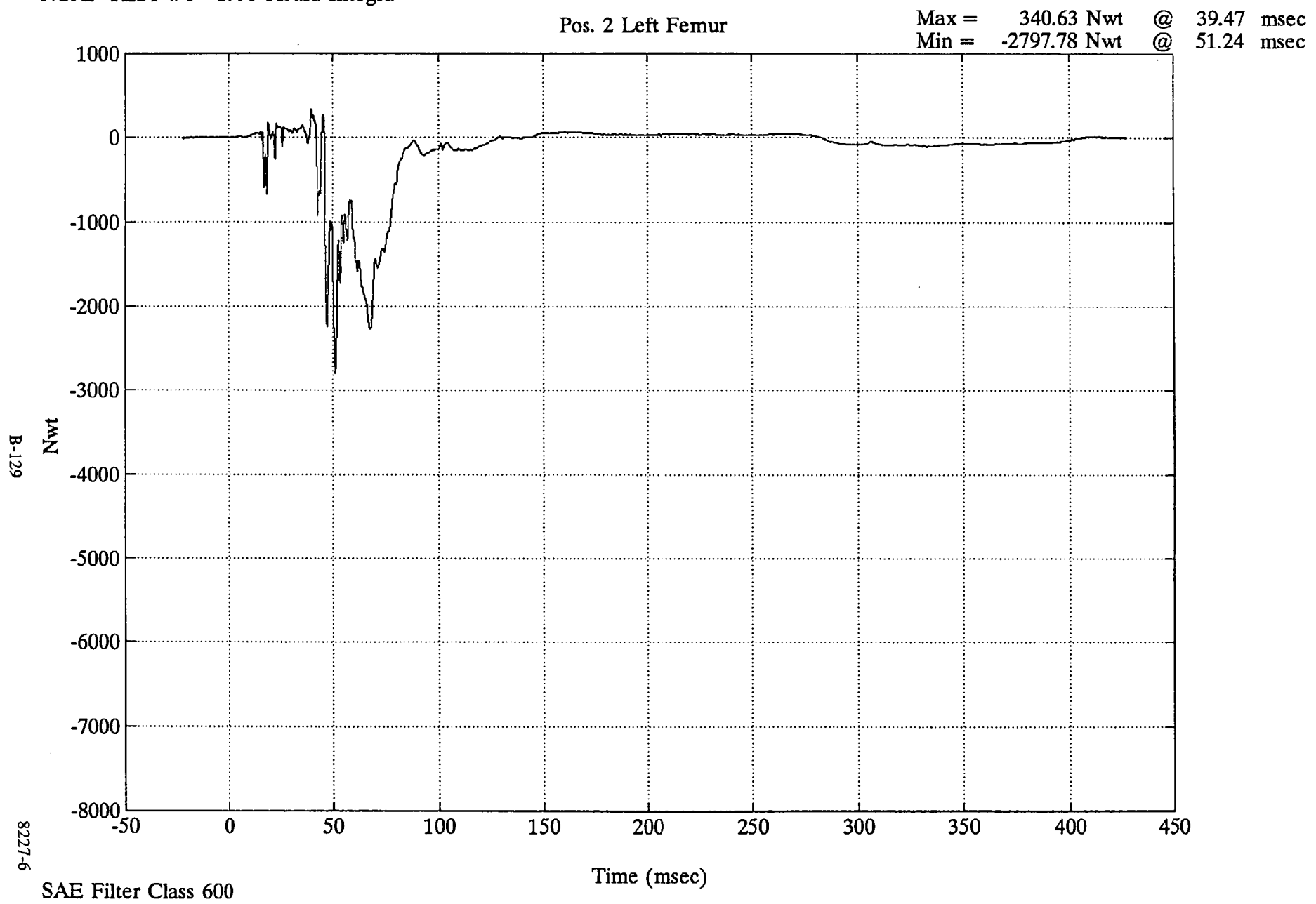


B-128

8227-6

SAE Filter Class 180

NCAP TEST #6 - 1995 Acura Integra



B-129

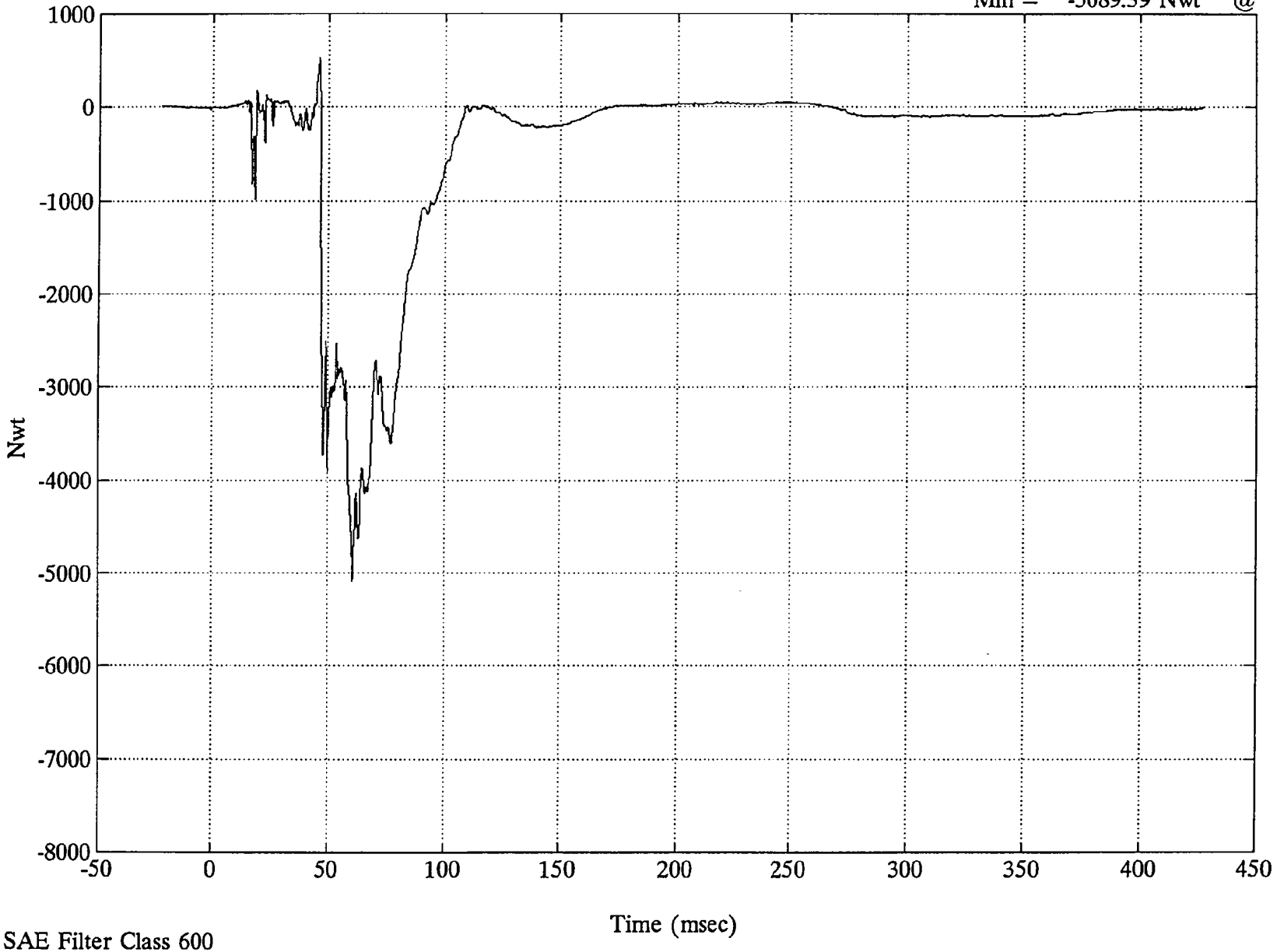
8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

Pos. 2 Right Femur

Max = 527.00 Nwt @ 45.60 msec
Min = -5089.39 Nwt @ 60.72 msec

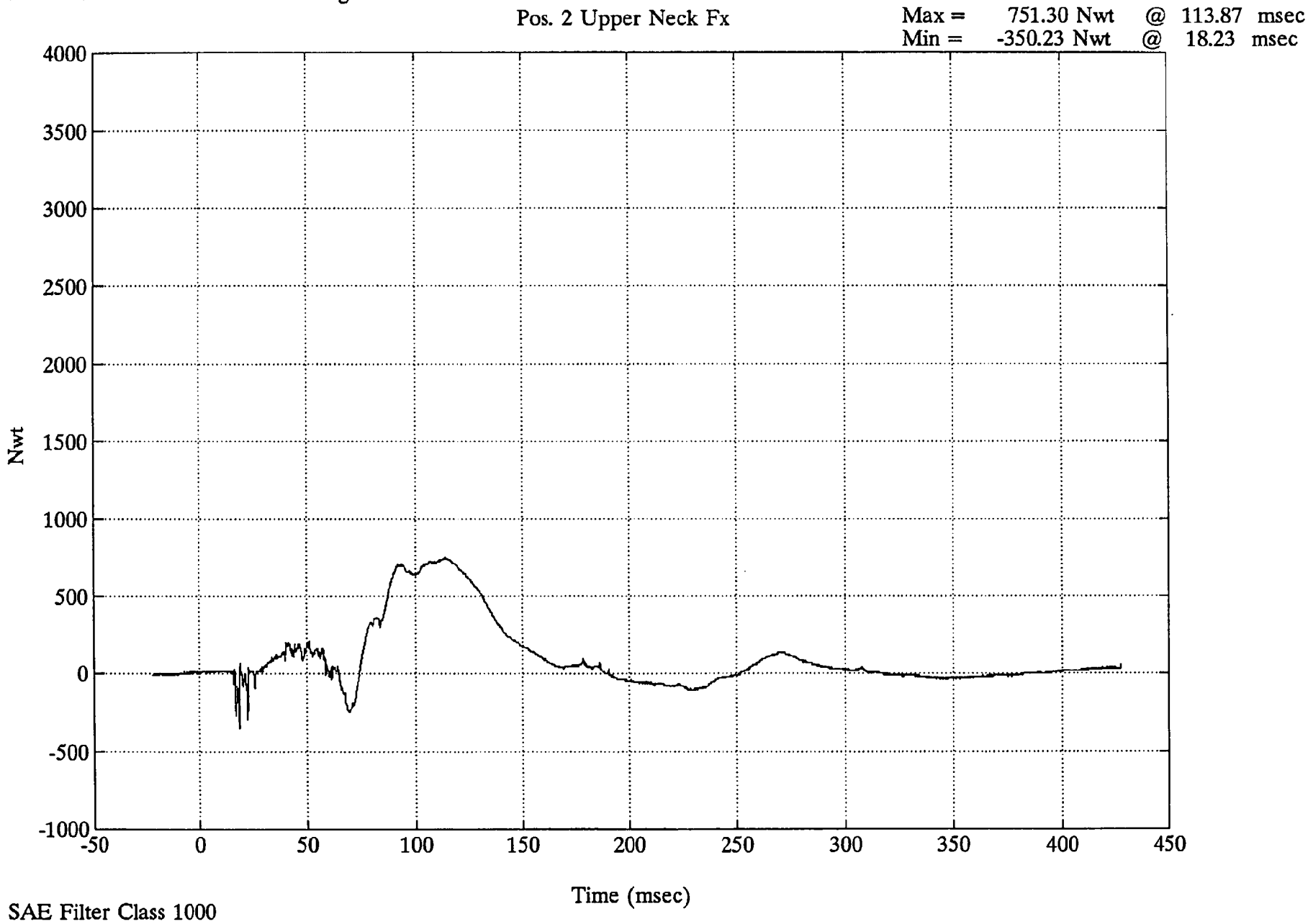


B-130

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra



B-131

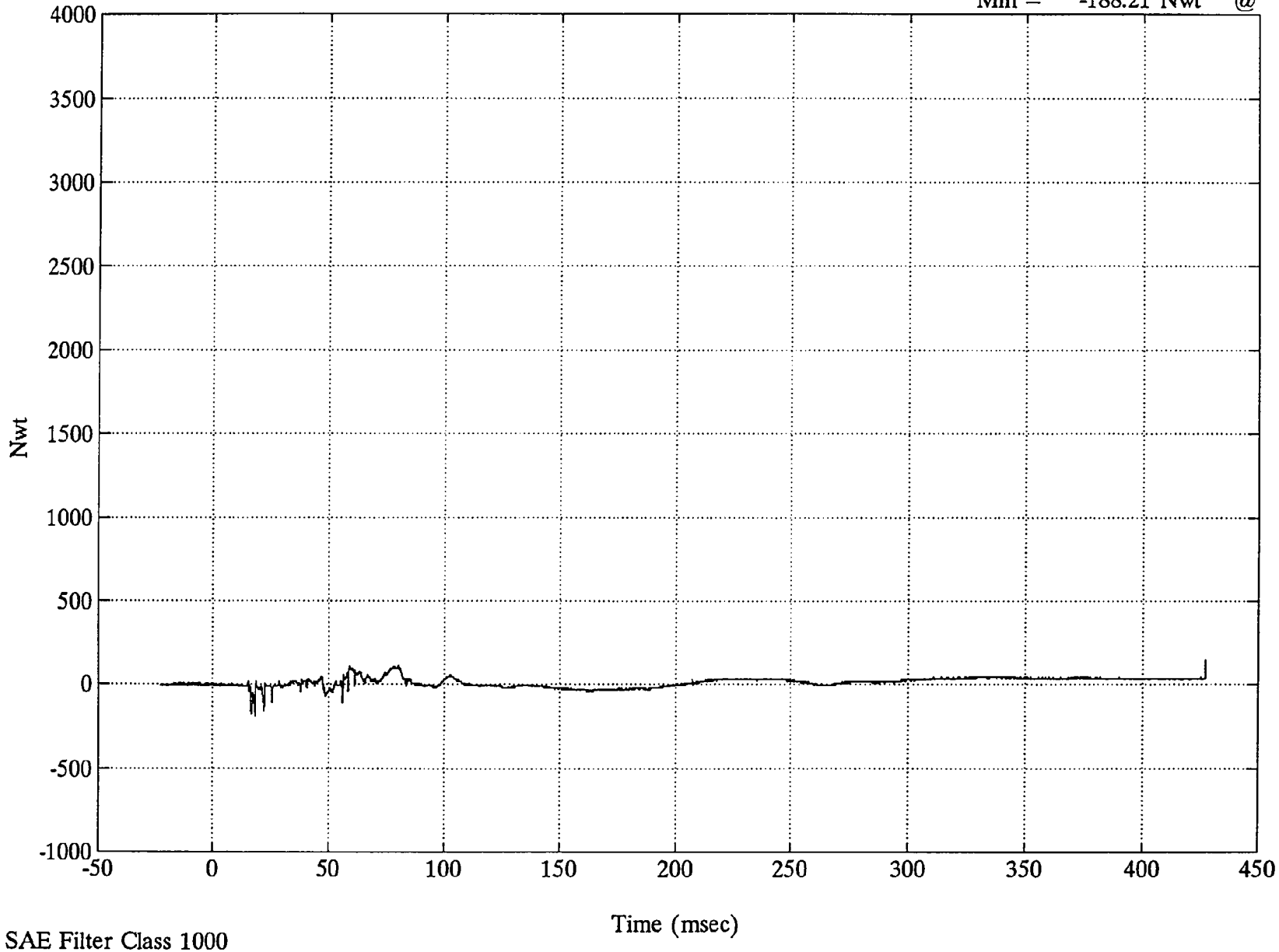
8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

Pos. 2 Upper Neck Fy

Max = 145.58 Nwt @ 427.32 msec
Min = -188.21 Nwt @ 18.23 msec

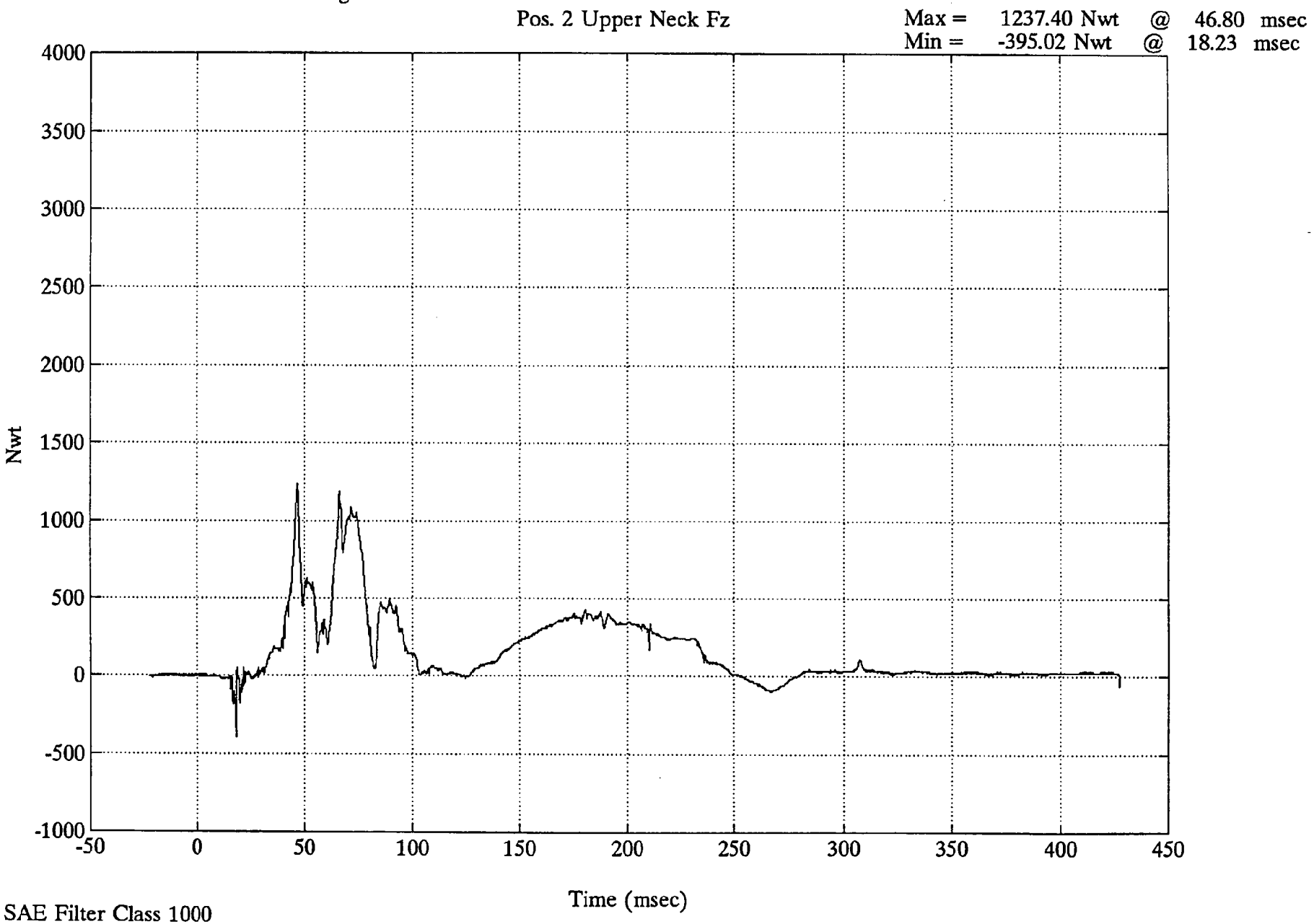


B-132

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra

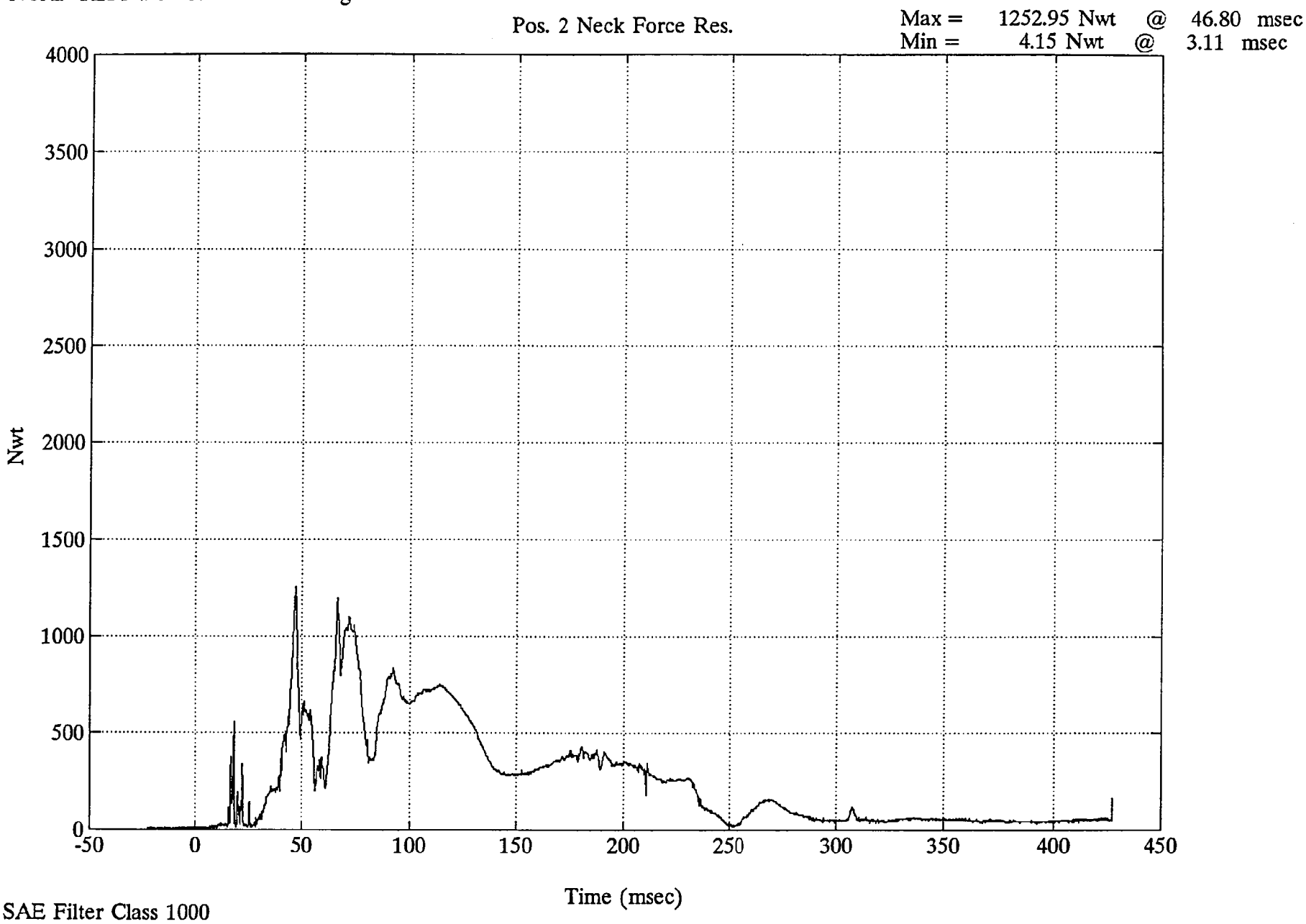


B-133

8227-6

SAE Filter Class 1000

NCAP TEST #6 - 1995 Acura Integra



SAE Filter Class 1000

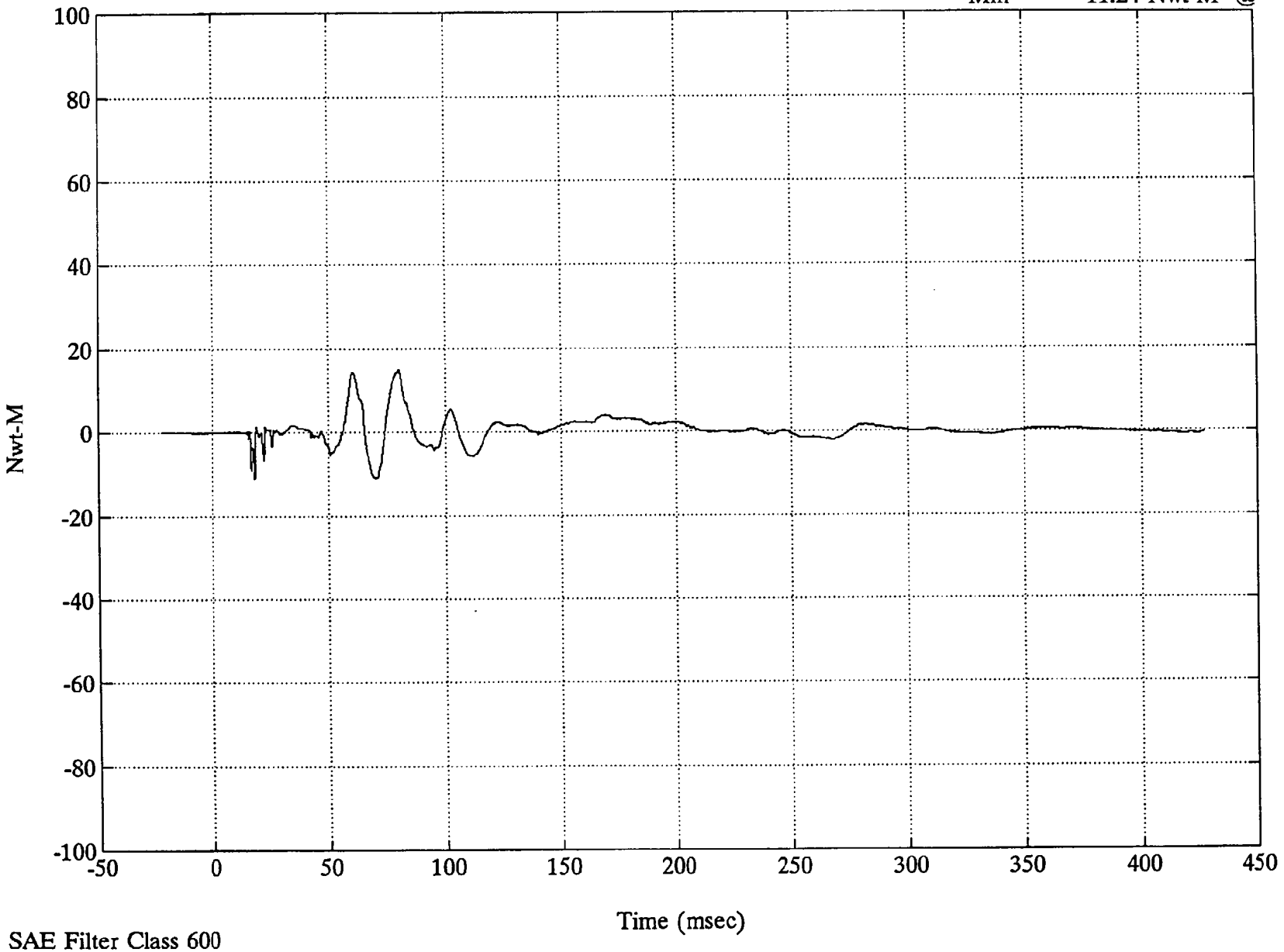
B-134

8227-6

NCAP TEST #6 - 1995 Acura Integra

Pos. 2 Upper Neck Mx

Max = 14.98 Nwt-M @ 80.15 msec
Min = -11.24 Nwt-M @ 70.08 msec

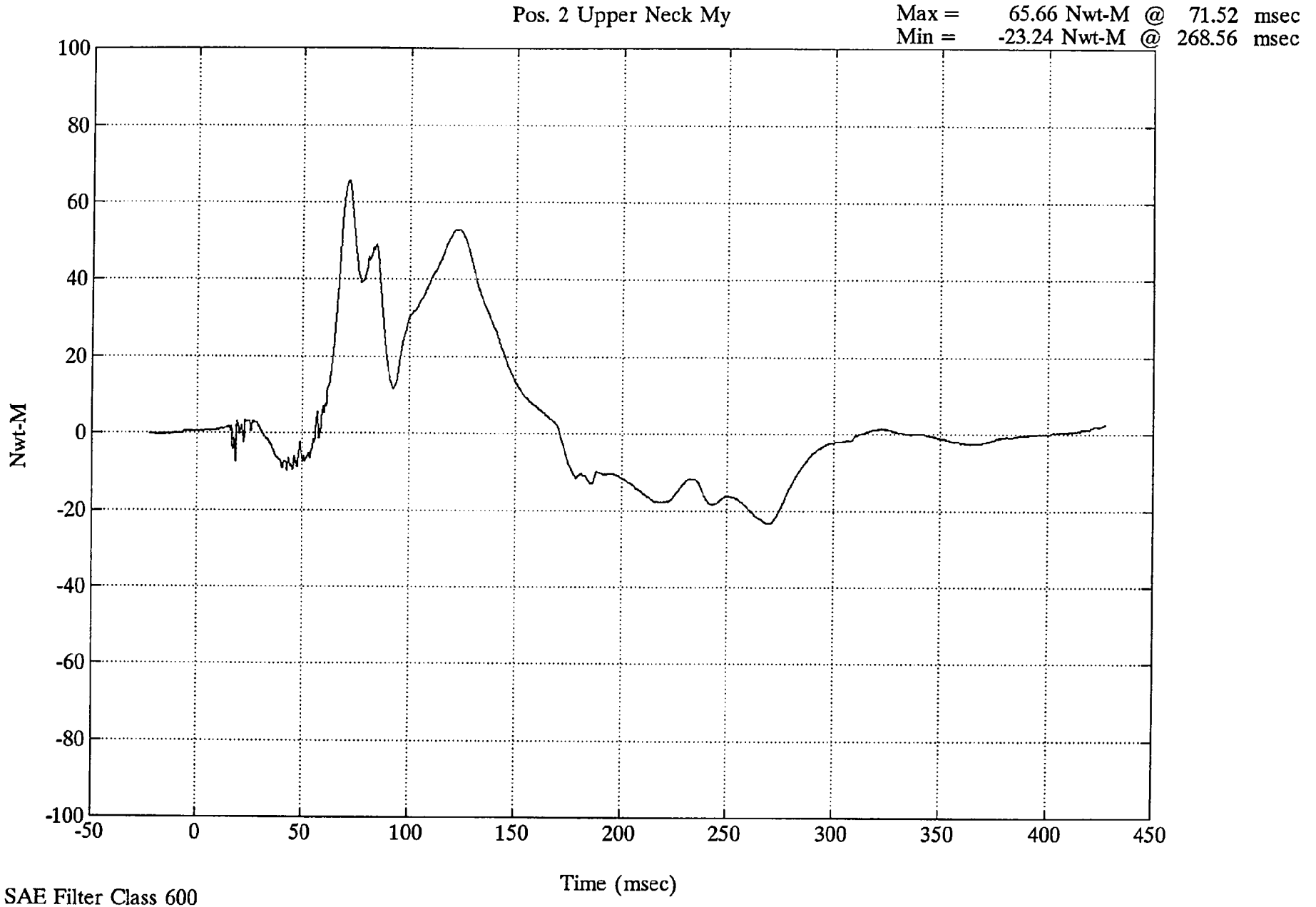


B-135

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra



B-136

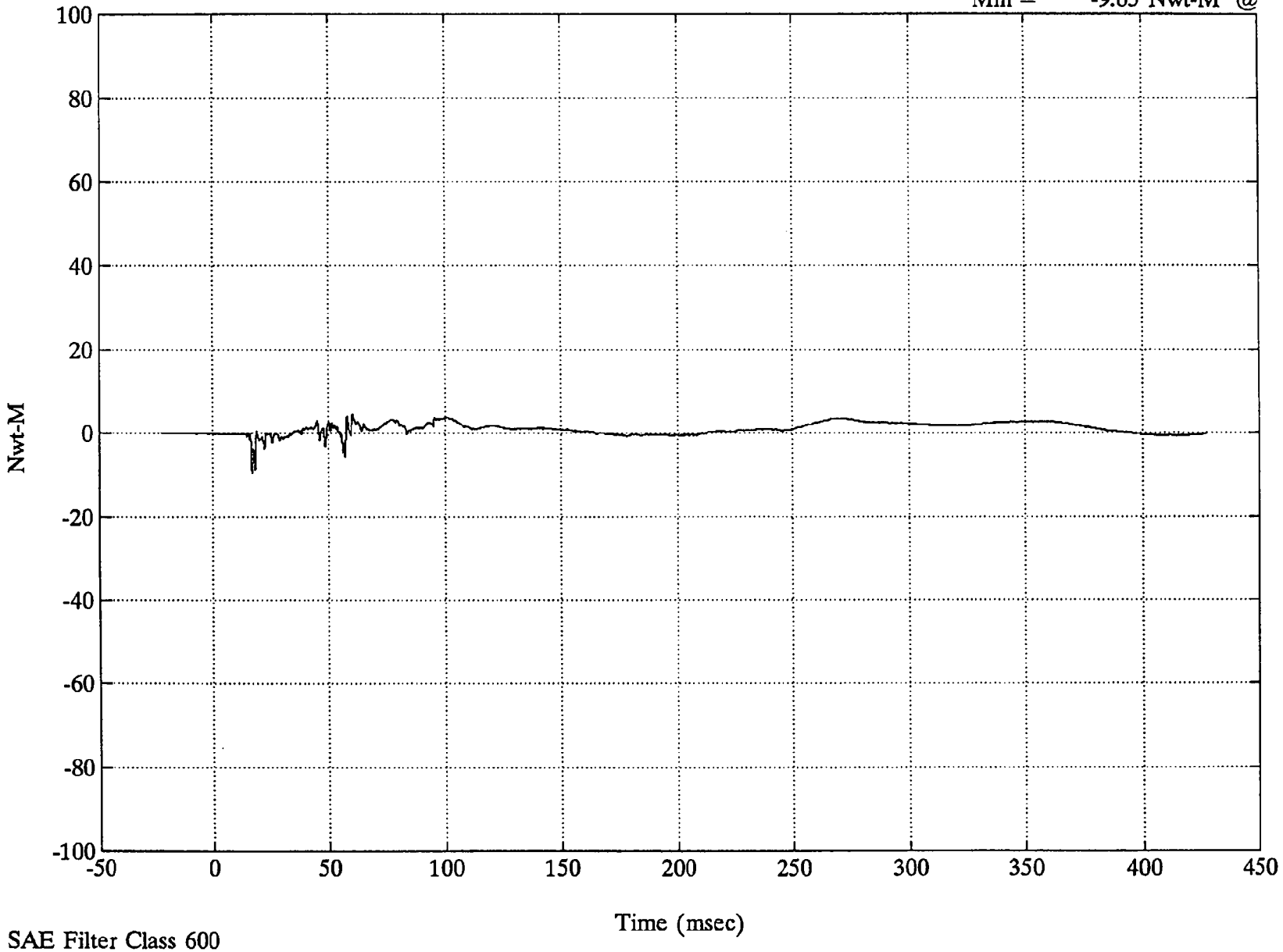
8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

Pos. 2 Upper Neck Mz

Max = 4.60 Nwt-M @ 60.24 msec
Min = -9.65 Nwt-M @ 16.68 msec

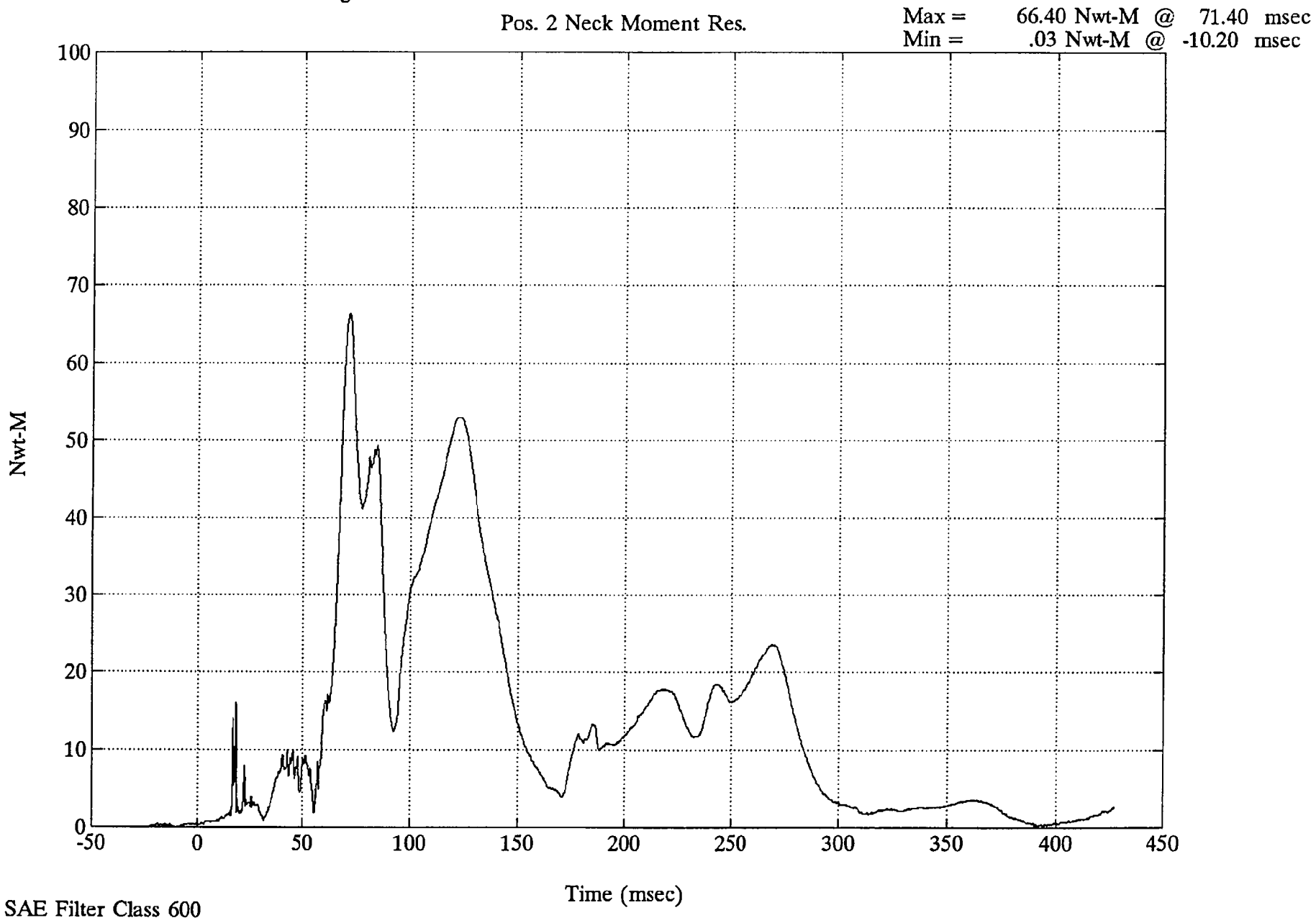


B-137

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

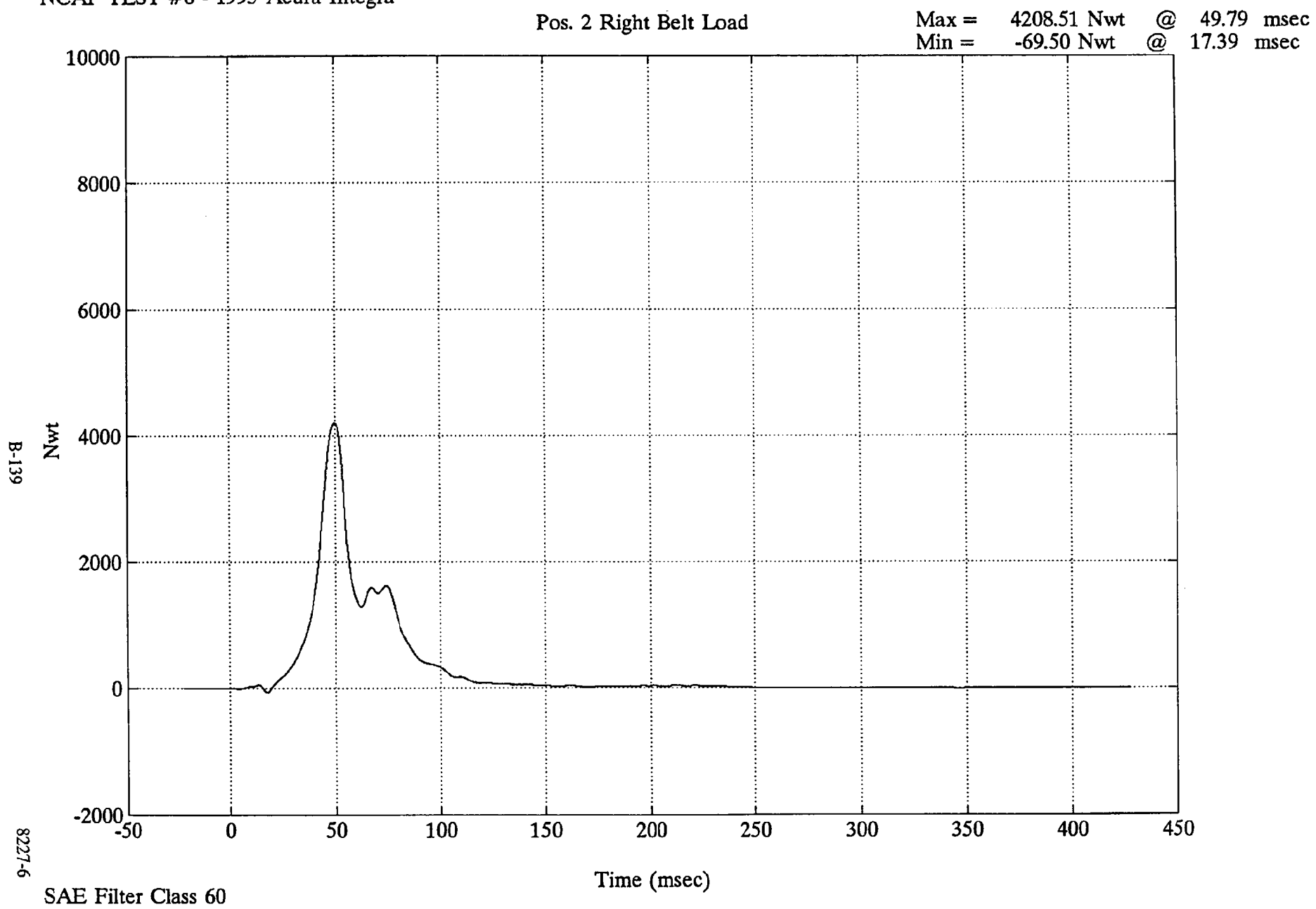


B-138

8227-6

SAE Filter Class 600

NCAP TEST #6 - 1995 Acura Integra

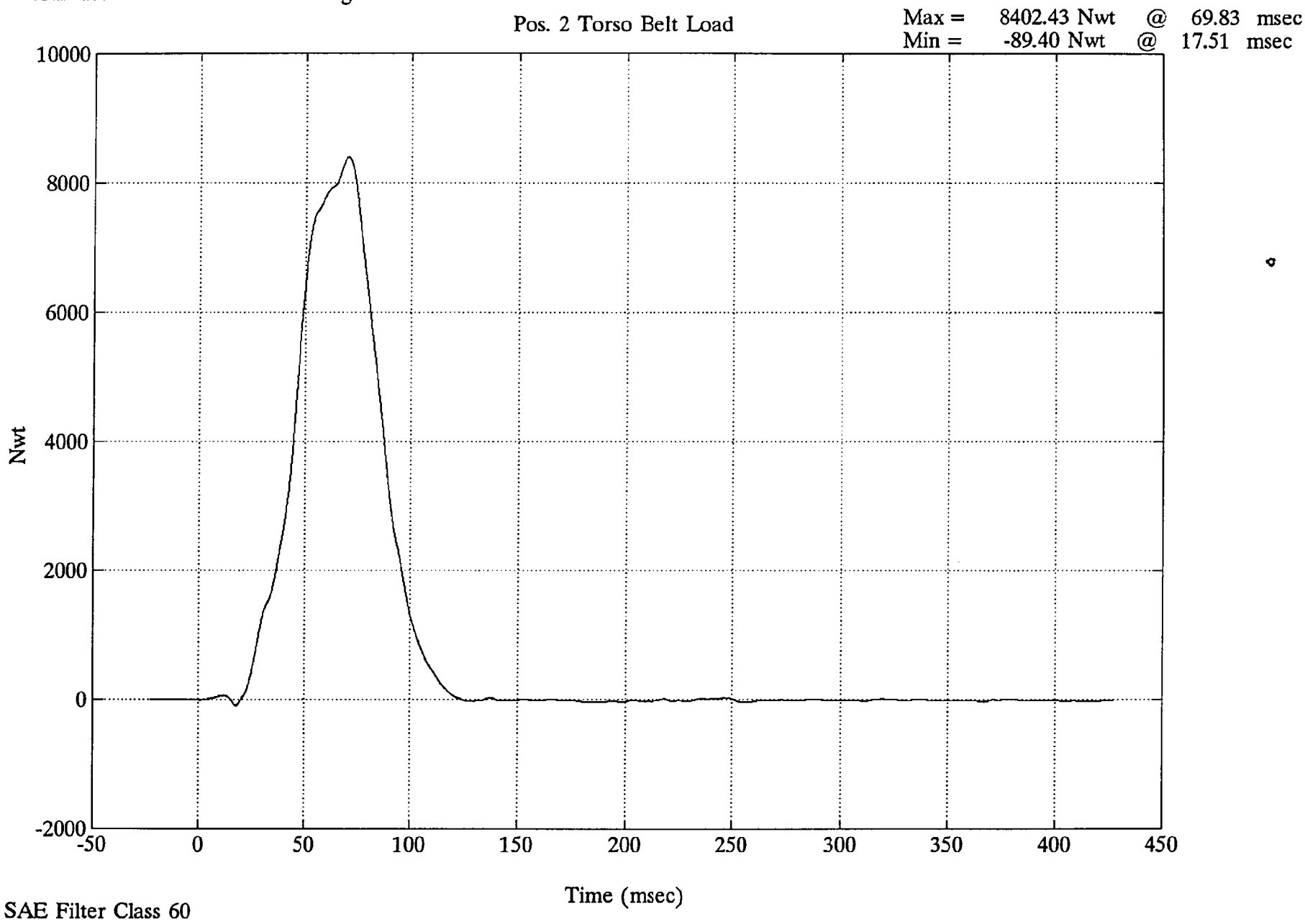


B-139

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra

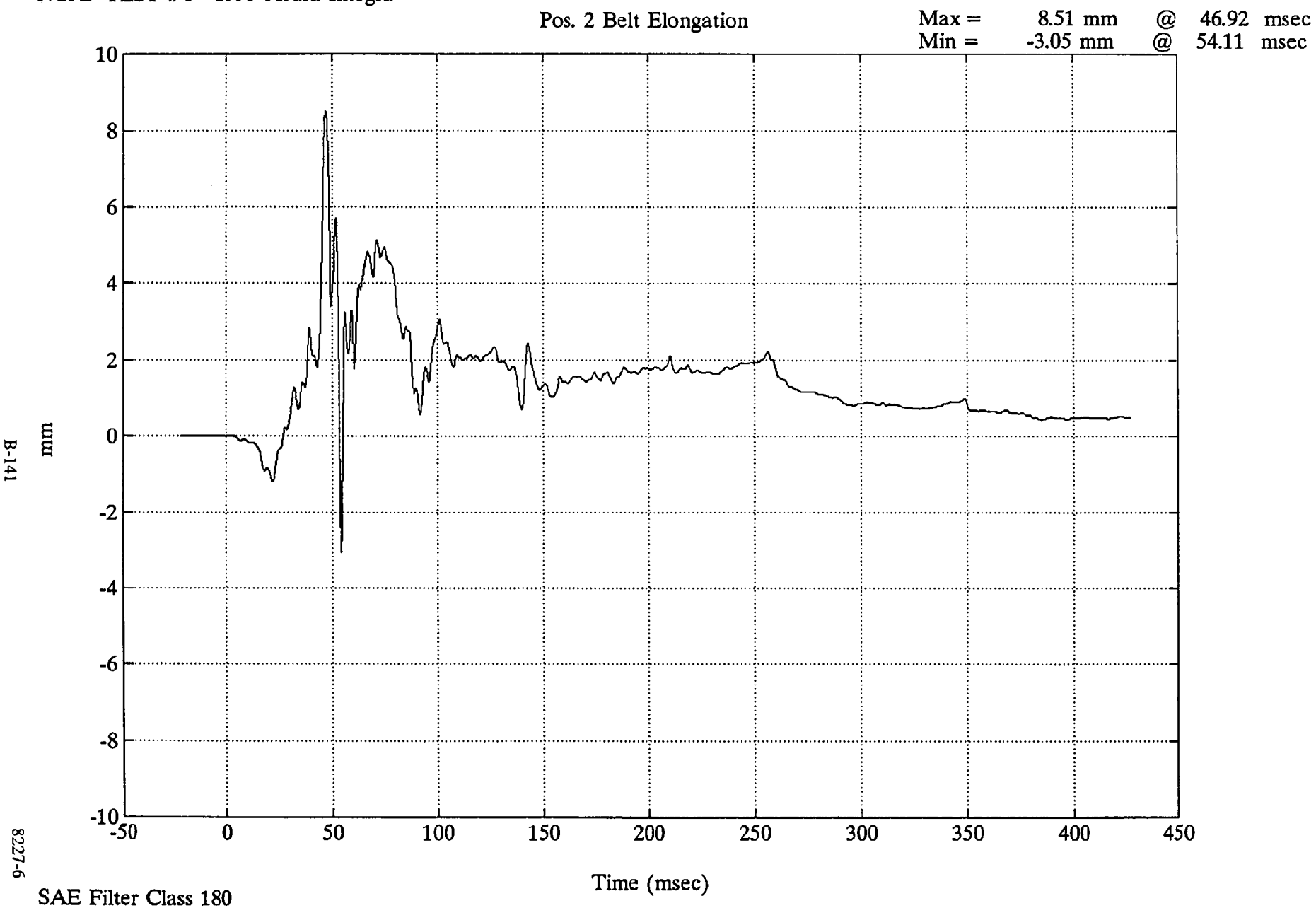


B-140

8227-6

SAE Filter Class 60

NCAP TEST #6 - 1995 Acura Integra



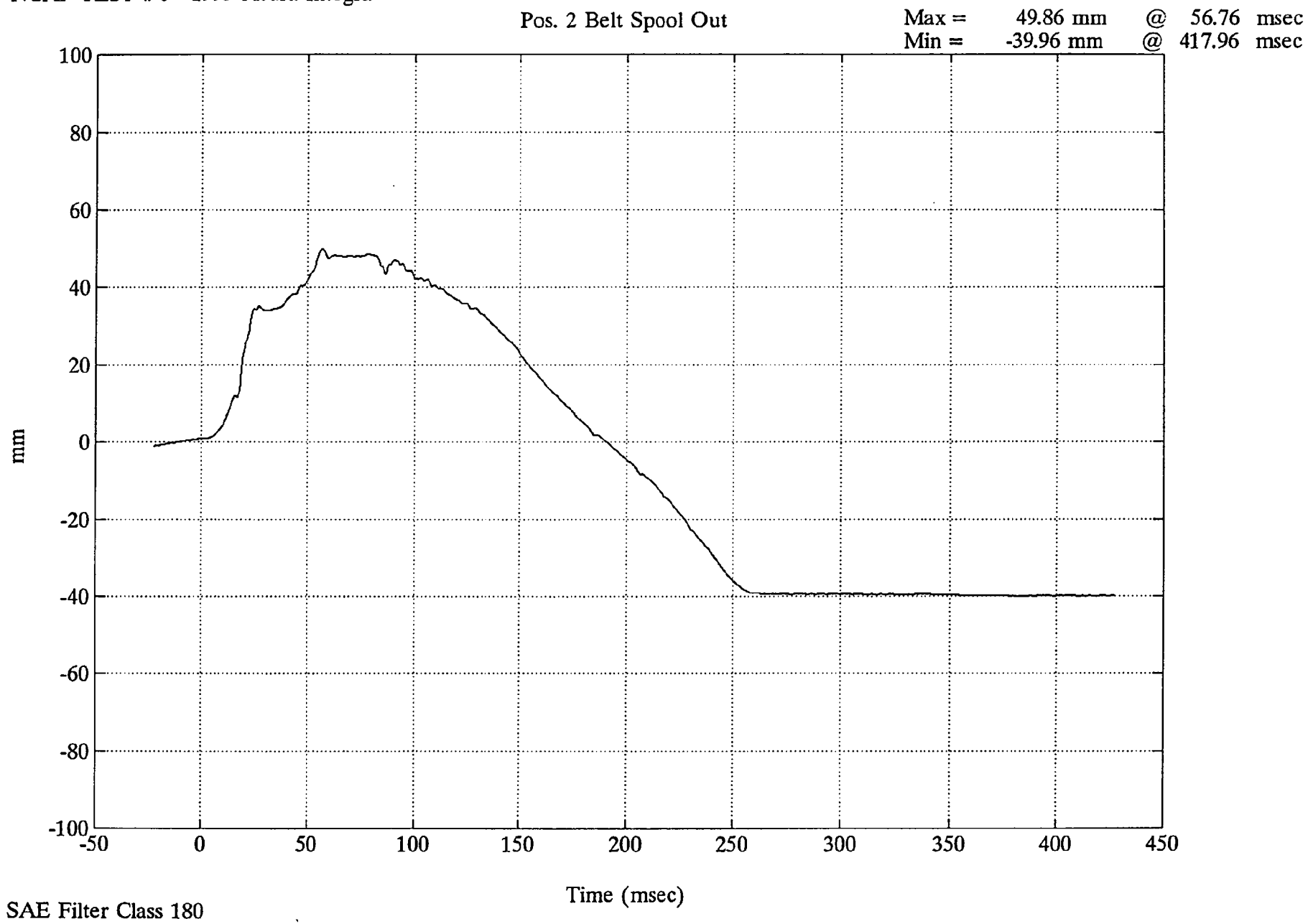
B-141

8227-6

SAE Filter Class 180

Measured over 63.5 mm

NCAP TEST #6 - 1995 Acura Integra



B-142

8227-6

SAE Filter Class 180

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:

Serial No.	Completion Date
150	12-5-94
045	12-1-94

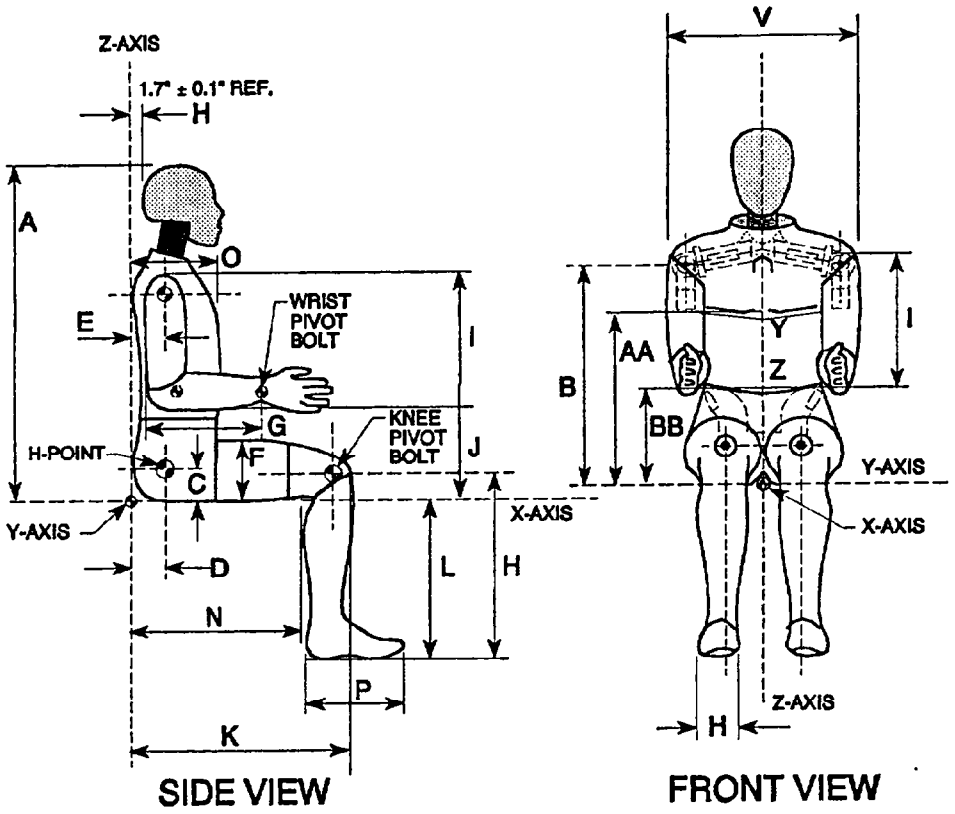
Electronic Test Equipment

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 7

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



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

HYBRID III EXTERNAL DIMENSIONS

S/N 150 HUMANOID

DUMMY SERIAL NO. 150 DATE: 12/5/94

TEMPERATURE		20.5 DEG. C
RELATIVE HUMIDITY		45 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	429-434 mm	431 mm
LOCATION FOR WAIST CIRCUMFERENCE (BB)	226-231 mm	228 mm
CHEST CIRCUMFERENCE (Y)	970-1001 mm	998 mm
WAIST CIRCUMFERENCE (Z)	815-866 mm	863 mm
CHEST DEPTH (O)	213-229 mm	213 mm
H-POINT HEIGHT (C)	84-89 mm	88 mm
H-POINT FROM SEAT BACK (D)	135-140 mm	137 mm
SKULL CAP TO BACKLINE (H)	41-46 mm	43 mm
TOTAL SITTING HEIGHT (A)	879-889 mm	881 mm
THIGH CLEARANCE (F)	140-155 mm	142 mm
BUTTOCK KNEE LENGTH (K)	580-605 mm	591 mm
BUTTOCK POPLITAL LENGTH (N)	452-477 mm	470 mm
POPLITEAL LENGTH (L)	430-455 mm	452 mm
KNEE PIVOT HEIGHT (M)	485-501 mm	500 mm
FOOT LENGTH (P)	252-267 mm	259 mm
FOOT BREADTH (W)	91-107 mm	96 mm
SHOULDER PIVOT FROM BACKLINE (E)	84-94 mm	94 mm
SHOULDER BREADTH (V)	422-437 mm	429 mm
SHOULDER PIVOT HEIGTH (B)	505-521 mm	513 mm
ELBOW REST HEIGHT (J)	190-211 mm	208 mm
SHOULDER-ELBOW LENGTH (I)	330-345 mm	337 mm
BACK OF ELBOW TO WRIST PIVOT (G)	290-305 mm	292 mm

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

HEAD DROP TEST

HYBRID III

DATE : 11/17/94

CALSPAN SEQUENTIAL NUMBER 3 HY3 SN: 150 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	34 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	233.8 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	6.5 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 : 12/5/94 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 3 HY3 SN:150 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5-22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	46 %
IMPACT VELOCITY		24.8 - 25.7 KPH	25.1 KPH
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	24.68 G'S
	20 MS	17.60 - 22.60 G'S	20.87 G'S
	30 MS	12.50 - 18.50 G'S	17.84 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	17.84 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	40.38 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	74.54 DEG.
	TIME	57 - 64 MS	58.38 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88 - 108 N-M	100.8 N-M
	TIME	47 - 58 MS	53.63 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	119.25 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 : 12/5/94 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 3 HY3 SN:150 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	46 %
IMPACT VELOCITY		21.4 - 22.3 KPH	22.16 KPH
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	19.83 G'S
	20 MS	14.00 - 19.00 G'S	18.07 G'S
	30 MS	11.00 - 16.00 G'S	14.27 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	14.27 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	45.25 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	94.53 DEG.
	TIME	72 - 82 MS	73.38 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-80.0/-52.9 N-M	-77.9 N-M
	TIME	65 - 79 MS	66.63 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	147 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	126 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

THORAX IMPACT TEST

HYBRID III

DATE : 11/29/94

CALSPAN SEQUENTIAL NUMBER 3 HY3 SN 150 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	34 %
PENDULUM VELOCITY	23.7 - 24.6 KPH	23.8 KPH
MAXIMUM DEFLECTION	64 - 73 mm	65.8 mm
MAXIMUM RESISTIVE FORCE	5160 - 5894 NEWTONS	5818 NEWTONS
INTERNAL HYSTERESIS	69% - 85%	69.3 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 11/15/94 KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 3 HY3 SN: 150 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	41 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	5053 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 11/15/94 KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 3 HY3 SN: 150 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	41 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	5084 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

HYBRID III EXTERNAL DIMENSIONS

S/N 45 HUMANOID

DUMMY SERIAL NO. 45 DATE: 12/1/94

TEMPERATURE		20.5 DEG. C
RELATIVE HUMIDITY		31 %
LOCATION FOR CHEST CIRCUMFERENCE (AA)	429-434 mm	432 mm
LOCATION FOR WAIST CIRCUMFERENCE (BB)	226-231 mm	228 mm
CHEST CIRCUMFERENCE (Y)	970-1001 mm	1000 mm
WAIST CIRCUMFERENCE (Z)	815-866 mm	866 mm
CHEST DEPTH (O)	213-229 mm	213 mm
H-POINT HEIGHT (C)	84-89 mm	89 mm
H-POINT FROM SEAT BACK (D)	135-140 mm	137 mm
SKULL CAP TO BACKLINE (H)	41-46 mm	43 mm
TOTAL SITTING HEIGHT (A)	879-889 mm	879 mm
THIGH CLEARANCE (F)	140-155 mm	147 mm
BUTTOCK KNEE LENGTH (K)	580-605 mm	602 mm
BUTTOCK POPLITAL LENGTH (N)	452-477 mm	475 mm
POPLITEAL LENGTH (L)	430-455 mm	447 mm
KNEE PIVOT HEIGHT (M)	485-501 mm	487 mm
FOOT LENGTH (P)	252-267 mm	259 mm
FOOT BREADTH (W)	91-107 mm	101 mm
SHOULDER PIVOT FROM BACKLINE (E)	84-94 mm	94 mm
SHOULDER BREADTH (V)	422-437 mm	426 mm
SHOULDER PIVOT HEIGTH (B)	505-521 mm	510 mm
ELBOW REST HEIGHT (J)	190-211 mm	195 mm
SHOULDER-ELBOW LENGTH (I)	330-345 mm	337 mm
BACK OF ELBOW TO WRIST PIVOT (G)	290-305 mm	292 mm

DUMMY MEETS SPECIFICATIONS

TECHNICIAN: IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

HEAD DROP TEST

HYBRID III

DATE : 11/17/94

CALSPAN SEQUENTIAL NUMBER 5 HY3 SN: 045 HEAD DROP CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	43 %
PEAK RESULTANT ACCELERATION	225 - 275 G'S	234 G'S
PEAK LATERAL ACCELERATION	15 G'S MAX	13 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 : 12/1/94 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 5 HY3 SN:045 CAL NECK FLEXION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5-22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	31 %
IMPACT VELOCITY		24.8 - 25.7 KPH	25.3 KPH
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G'S	24.93 G'S
	20 MS	17.60 - 22.60 G'S	21.37 G'S
	30 MS	12.50 - 18.50 G'S	17.11 G'S
MAX PENDULUM G'S ABOVE 30 MS		29 G'S MAX	17.11 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		34 - 42 MS	41.4 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	75.89 DEG.
	TIME	57 - 64 MS	58.5 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88 - 108 N-M	97 N-M
	TIME	47 - 58 MS	53.5 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	114.63 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	100.63 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

NECK EXTENSION TEST

HYBRID III

DATE : 12/1/94 6 AXIS NECK TRANSDUCER

CALSPAN SEQUENTIAL NUMBER 5 HY3 SN:045 CAL NECK EXTENSION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY		10% - 70%	31 %
IMPACT VELOCITY		21.4 - 22.3 KPH	22 KPH
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G'S	20.24 G'S
	20 MS	14.00 - 19.00 G'S	17.39 G'S
	30 MS	11.00 - 16.00 G'S	14.71 G'S
MAX PENDULUM G'S ABOVE 30 MS		22 G'S MAX	14.71 G'S
DECELERATION -TIME CURVE DECAY TIME TO 5 G'S		38 - 46 MS	43.63 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	87.84 DEG.
	TIME	72 - 82 MS	75.63 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	-80.0/-52.9 N-M	-70.46 N-M
	TIME	65 - 79 MS	68.63 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	149.88 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	127.25 MS

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

THORAX IMPACT TEST

HYBRID III

DATE : 11/29/94

CALSPAN SEQUENTIAL NUMBER 5 HY3 SN 045 H.S. THORAX CAL

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	20.5 - 22.2 DEG. C	20.5 DEG. C
RELATIVE HUMIDITY	10% - 70%	33 %
PENDULUM VELOCITY	23.7 - 24.6 KPH	23.7 KPH
MAXIMUM DEFLECTION	64 - 73 mm	64.8 mm
MAXIMUM RESISTIVE FORCE	5160 - 5894 NEWTONS	5778 NEWTONS
INTERNAL HYSTERESIS	69% - 85%	69.5 %

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 11/15/94 KNEE: LEFT

CALSPAN SEQUENTIAL NUMBER 5 HY3 SN: 045 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	41 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4928 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

CALSPAN CORPORATION

TRANSPORTATION RESEARCH DEPARTMENT

KNEE IMPACT TEST

HYBRID III

DATE : 11/15/94 KNEE: RIGHT

CALSPAN SEQUENTIAL NUMBER 5 HY3 SN: 045 KNEE 4.9 KGS CAL

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19 - 25 DEG. C	21 DEG. C
RELATIVE HUMIDITY	10% - 70%	41 %
PROBE VELOCITY	7.5 - 7.7 KPH	7.68 KPH
PEAK KNEE IMPACT FORCE	4715 - 5782 N	4884 N
PROBE WEIGHT	4.9 KGS	

DUMMY COMPONENT MEETS SPECIFICATIONS

TECHNICIAN IVAN MINKEWICZ

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	AF5B3	ENDEVCO	10/94	4/95
	Y	AF5F7	ENDEVCO	10/94	4/95
	Z	AF5E1	ENDEVCO	10/94	4/95
Chest	X	AF5C1	ENDEVCO	10/94	4/95
	Y	AF480	ENDEVCO	10/94	4/95
	Z	AF5H9	ENDEVCO	10/94	4/95
Right Femur Load Cell		312	GSE	7/94	1/95
Left Femur Load Cell		311	GSE	7/94	1/95
Neck Load Cell	X	269	DENTON	9/94	3/95
	Y	269	DENTON	9/94	3/95
	Z	269	DENTON	9/94	3/95
Neck Moment	X	269	DENTON	9/94	3/95
	Y	269	DENTON	9/94	3/95
	Z	269	DENTON	9/94	3/95
Chest Deflection Gauge		CP150	HUMANOID	8/94	2/95
Hybrid III Use Only					
Lap Belt Load Cells		706	LEBOW	7/94	1/95
Shoulder Belt Load Cells		707	LEBOW	7/94	1/95
Spool-Out Potentiometer		7	MAGNETEK	10/94	4/95
Belt Stretch Transduer		E6	CALSPAN	8/94	2/95

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY		Serial #	Manufacturer	Calibration	
				Last	Next
Head	X (R)	AER75	ENDEVCO	11/94	5/95
	Y (R)	AKEB3	ENDEVCO	11/94	5/95
	Z (R)	AEW71	ENDEVCO	11/94	5/95
Chest	X (R)	AA5G8	ENDEVCO	11/94	5/95
	Y (R)	AEWJ5	ENDEVCO	11/94	5/95
	Z (R)	AEWK1	ENDEVCO	11/94	5/95
Pelvic	X	AH5F3	ENDEVCO	12/94	6/95
	Y	AL6H7	ENDEVCO	12/94	6/95
	Z	AL6C8	ENDEVCO	12/94	6/95

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY		Serial #	Manufacturer	Calibration	
				Last	Next
Head	X	AC2M6	ENDEVCO	8/94	2/95
	Y	AF5C9	ENDEVCO	8/94	2/95
	Z	ACT12	ENDEVCO	10/94	4/95
Chest	X	AF5P8	ENDEVCO	8/94	2/95
	Y	AF5C4	ENDEVCO	10/94	4/95
	Z	AE8K1	ENDEVCO	8/94	2/95
Right Femur Load Cell		F232	GSE	12/94	6/95
Left Femur Load Cell		F231	GSE	12/94	6/95
Neck Load Cell	X	076	DENTON	9/94	3/95
	Y	076	DENTON	9/94	3/95
	Z	076	DENTON	9/94	3/95
Neck Moment	X	076	DENTON	9/94	3/95
	Y	076	DENTON	9/94	3/95
	Z	076	DENTON	9/94	3/95
Chest Deflection Gauge		CP45	HUMANOID	8/94	2/95
Hybrid III Use Only					
Lap Belt Load Cells		710	LEBOW	7/94	1/95
Shoulder Belt Load Cells		711	LEBOW	7/94	1/95
Spool-Out Potentiometer		8	MAGNETEK	10/94	4/95
Belt Stretch Transduer		E7	CALSPAN	8/94	2/95

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY		Serial #	Manufacturer	Calibration	
				Last	Next
Head	X (R)	AEW70	ENDEVCO	11/94	5/95
	Y (R)	AET34	ENDEVCO	11/94	5/95
	Z (R)	AKD93	ENDEVCO	11/94	5/95
Chest	X (R)	AKD92	ENDEVCO	11/94	5/95
	Y (R)	AFPJ7	ENDEVCO	11/94	5/95
	Z (R)	AJP62	ENDEVCO	11/94	5/95
Pelvic	X	AGHM9	ENDEVCO	11/94	5/95
	Y	AE8R7	ENDEVCO	11/94	5/95
	Z	AH5L8	ENDEVCO	12/94	6/95

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Serial #	Manufacturer	Calibration	
			Last	Next
Left Seat Rear Crossmember	A70	CEC	8/94	2/95
Right Rear Seat Crossmember	A73	CEC	11/94	5/95
Top of Engine	AZ69	CEC	8/94	2/95
Bottom of Engine	AZ53	CEC	8/94	2/95
Left Disc Brake Caliper	A69	CEC	11/94	5/95
Right Disc Brake Caliper	A89	CEC	7/94	1/95
Instrument Panel	A148	CEC	7/94	1/95
Left Seat Rear Crossmember (R)	A147	CEC	7/94	1/95
Right Seat Rear Crossmember (R)	A183	CEC	11/94	5/95

Appendix E

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

Why Wear Seat Belts

Wearing seat belts, and wearing them properly, is fundamental to your safety and the safety of your passengers.

During a crash or emergency stop, seat belts can help keep you from being thrown against the inside of the car, against other occupants, or out of the car.

Of course, seat belts cannot completely protect you in every crash. But, in most cases, seat belts reduce your chance of serious injury. They can even save your life. That is why many states and all Canadian provinces require you to wear seat belts.

⚠WARNING

Not wearing a seat belt increases the chance of being killed or seriously hurt in a crash.

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

Important Safety Reminders

Seat belts are designed for adults and larger children. All infants and small children must be properly restrained in child safety seats (see page 20).

A pregnant woman needs to wear a seat belt to protect herself and her unborn child (see page 10).

Two people should never use the same seat belt. If they do, they could be very seriously injured in a crash.

Do not place the shoulder portion of a lap/shoulder belt under your arm or behind your back. This could increase the chance of serious injuries in a crash.

Do not put shoulder belt pads or other accessories on seat belts. They can reduce the effectiveness of the belts and increase the chance of injury.

The Seat Belt System and How It Works

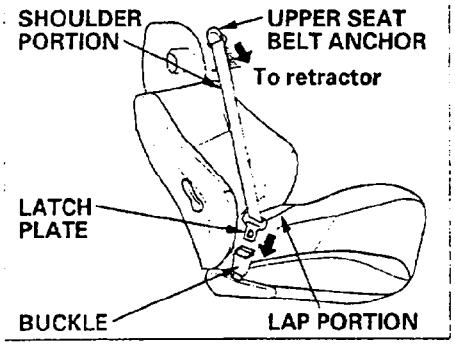
Seat Belt System Components

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

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

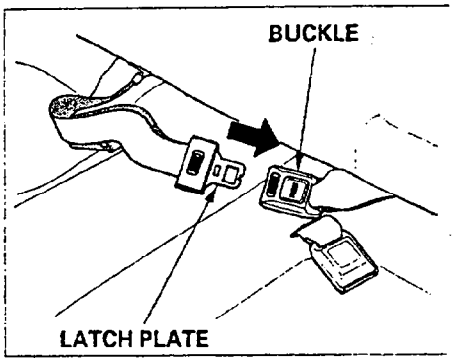
The following pages cover more about the seat belt components and how they work.

Lap/Shoulder Belt



This style of seat belt has a single belt that goes over your shoulder, across your chest, and across your hips.
Each lap/shoulder belt has an emergency locking retractor. In normal driving, the retractor lets you move freely in your seat while it keeps some tension on the belt. During a collision or sudden stop, the retractor automatically locks the belt to help restrain your body.

Lap Belt



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

Wearing Seat Belts Properly

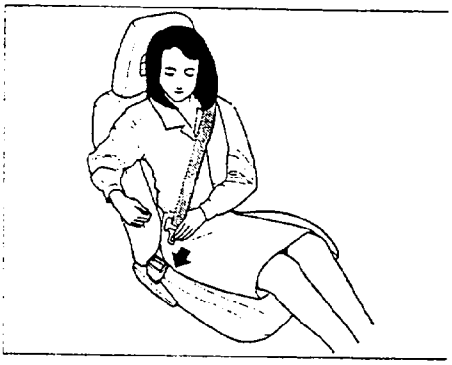
You can increase the effectiveness of your seat belts if you take a little time to read the following pages and make sure you know how to wear seat belts properly.

⚠WARNING

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

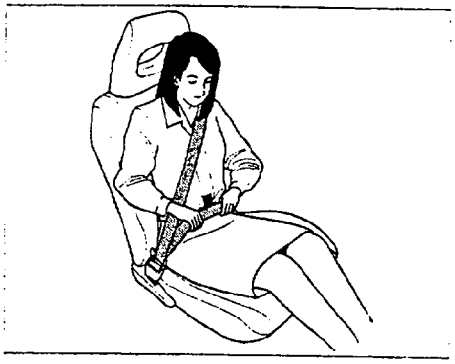
Be sure you and your passengers always wear seat belts and wear them properly.

Wearing a Lap/Shoulder Belt



Before putting on the seat belt, move the driver's seat back as far as is practical while still allowing full use of the controls. Make sure the seatback is upright (see page 54). The front seat passenger should move the seat as far back as possible.

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

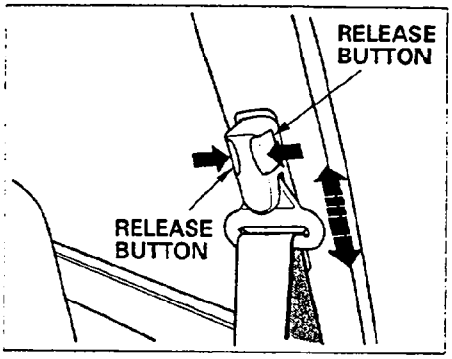


2. Check that the belt is not twisted.
3. Position the lap portion of the belt as low as possible across your hips, not across your stomach. This lets your strong pelvic bones take the force of a crash.

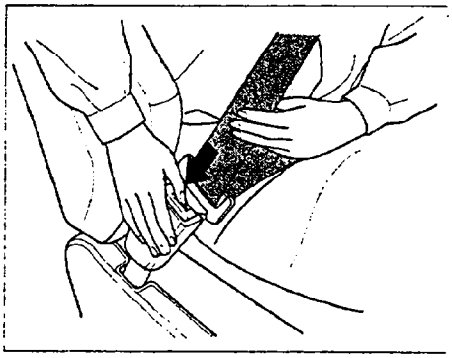
CONTINUED

The Seat Belt System and How It Works

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

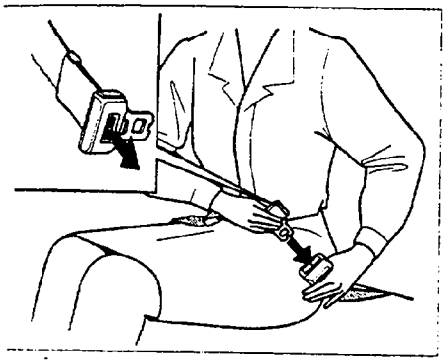


5. If the belt crosses your neck, you need to adjust the belt anchor height or your seating position.
   Front seats:
   Adjust the belt anchor by squeezing the two buttons and sliding the anchor downward (it has four positions).
   Rear seat:
   Move toward the center of the seat until the belt fits over your collarbone.



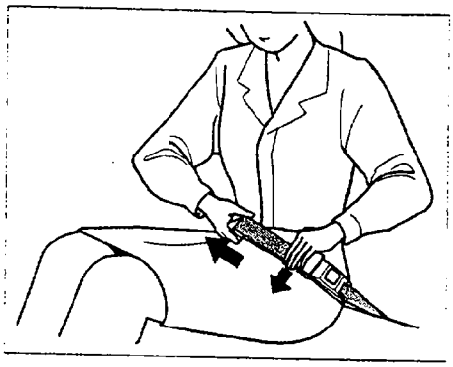
To unlatch the seat belt, push the red PRESS button on the buckle. Guide the belt across your body to the door pillar. If the belt doesn't retract easily, pull it out and check for twists or kinks.

Wearing the Lap Belt

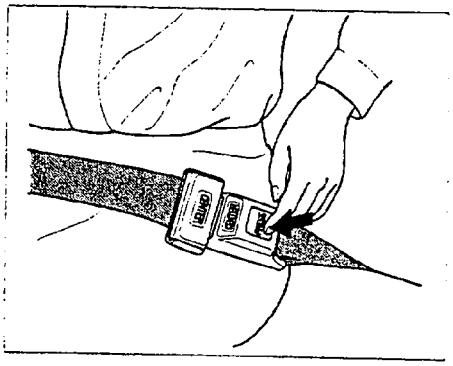


1. Pull the latch plate across your hips and insert it into the buckle marked CENTER.

   If the belt is too short, hold the latch plate at a right angle and pull it to extend the belt while sliding the tail toward the latch. Insert the latch plate into the buckle.



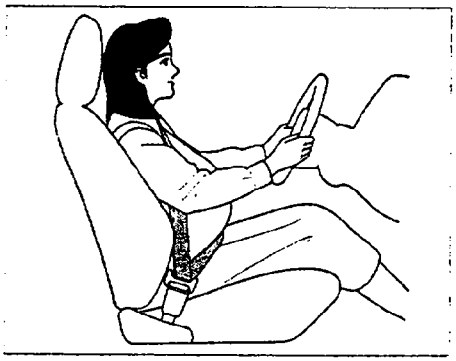
2. Position the belt as low as possible across your hips and pelvic bones, not across your stomach. Pull the loose end of the belt to adjust for a snug but comfortable fit.



To unlatch the belt, push the red PRESS button on the buckle.

The Seat Belt System and How It Works

Advice for Pregnant Women



Protecting the mother is the best way to protect her unborn child. Therefore, a pregnant woman should wear a properly-positioned seat belt whenever she drives or rides in a car.

If possible, use the lap/shoulder seat belt, remembering to keep the lap portion as low as possible (see page 7).

Each time you have a check-up, ask your doctor if it's okay for you to drive and how you should position a lap/shoulder seat belt.

Seat Belt Maintenance

For safety, you should check the condition of your seat belts regularly.

Pull out each belt fully and look for frays, cuts, burns, and wear. Check that the latches work smoothly and the lap/shoulder belts retract easily. Any belt not in good condition or not working properly should be replaced.

If a seat belt is worn during a crash, have your dealer replace the belt and inspect the anchors for damage.

For information on how to clean your seat belts, see page 181.

Supplemental Restraint System

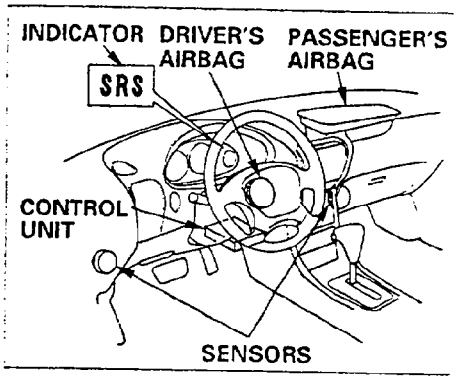
Your car is equipped with a Supplemental Restraint System (SRS) to help protect the head and chest of the driver and front seat passenger during a severe frontal collision.

This system does not replace your seat belts. It supplements, or adds to, the protection offered by seat belts and other occupant protection features.

⚠WARNING

Not wearing a seat belt increases the chance of serious injury or death in a crash, even if you have an airbag.

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



The main components in your SRS are:

- One airbag in the steering wheel for the driver and another in the dashboard for the front passenger.
- Sensors that can detect a severe frontal collision.

CONTINUED

Supplemental Restraint System

- A sophisticated electronic system that continually monitors the sensors, control unit, airbag activators, and all related wiring when the ignition is ON (II).
- An indicator light on the inslrument Panel to alert you to a possible problem with the system.
- Emergency backup power in case your car's electrical system is disconnected in a crash.

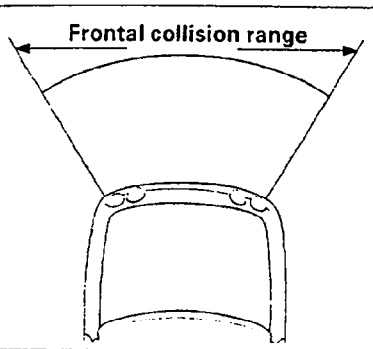
What Happens In a Crash
If you ever have a severe frontal collision, the sensors will detect rapid deceleration and signal the control unit to instantly inflate the airbags.

During a crash, your seat belts will help to restrain your lower body and torso. This airbags will provide a cushion to absorb crash energy and help keep the driver's and front passenger's head and chest from striking the interior of the car.

After inflating, the airbags will immediately deflate. The entire process, from detection to deflation, takes a fraction of a second. So fast that you may not hear the loud noise created by the airbag inflators, or realize what has happened.

After the crash, you may see what looks like smoke. This is actually powder from the airbag's surface. People with respiratory problems may experience some temporary discomfort from the chemicals used by the airbag's activators.

Important Facts About Airbags



Airbags inflate only when needed; in a severe frontal collision. A severe collision would be similar to a crash into a parked car at 40 km/h (25 mph). Airbags will not inflate in a moderate frontal collision, or during a rear impact, side impact, or rollover – even if the impact is severe.

Airbags inflate and deflate only once. They cannot protect you during any additional impacts that can occur during a crash sequence.

Injuries, including fatal injuries, can occur in a severe collision, even if seat belts are worn properly and the airbags inflate. No safety system can provide complete protection in a severe crash.

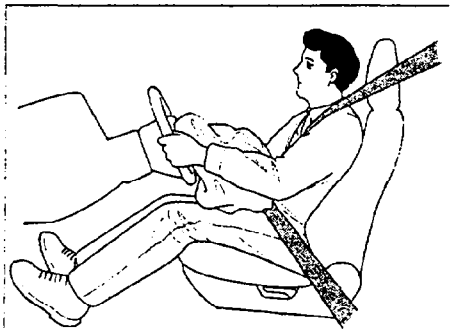
Just from viewing the vehicle damage after a crash, it is very difficult to accurately determine if the airbags should or should not have inflated. In some cases where the airbag did not inflate, extensive visible damage indicated that the car absorbed much of the crash energy, and the airbags were not needed. In other cases, a severe jolt, such as an impact to the undercarriage, may not cause extensive body damage but cause the airbags to inflate.

Supplemental Restraint System

How the Driver's Airbag Works

If you ever have a severe frontal collision, your airbag will instantly inflate to help protect your head and chest.

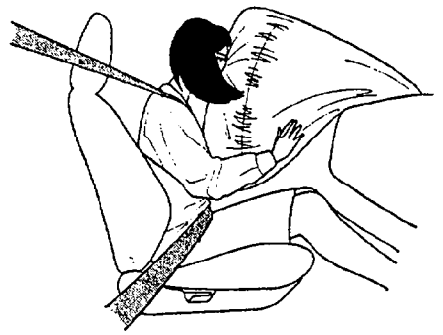
To do its job, the airbag inflates with considerable force. So, while it can reduce serious injuries and even save your life, the airbag might cause some facial abrasions or other injuries. To reduce the possibility of injury, you should always sit back as far from the steering wheel as is practical while still maintaining full vehicle control.



After the bag completely inflates, it immediately starts deflating so it won't interfere with your visibility, ability to steer, or ability to operate other controls. The total time for inflation and deflation takes a fraction of a second. You may not even be aware that the airbag has been fully inflated.

The driver's airbag is stored in the center of the steering wheel. For your safety, do not attach any items to the steering wheel. They could interfere with the proper operation of the airbag. Or, if the airbag inflates, they could be propelled inside the car and hurt someone.

How the Passenger's Airbag Works



If you ever have a severe frontal collision, the passenger's airbag will inflate at the same time as the driver's airbag.

This airbag is quite large and inflates with considerable force. It can seriously hurt a front seat passenger who is not in the proper position and wearing the seat belt properly. Front seat passengers should move the seat as far back as practical and sit well back in the seat.

If your car has a passenger's airbag, we strongly recommend that you do not put an infant seat in the front passenger's seat. If the airbag inflates, it can hit the infant seat with great force. The infant seat can be dislodged or struck with enough force to cause very serious injury to the infant.

CONTINUED

Supplemental Restraint System

If a toddler seat is used in the front passenger's seat, the vehicle seat should be moved as far back as possible. If the passenger's bag inflates, it could seriously hurt a toddler who is not in the proper position or properly restrained.

The passenger's airbag is stored near the top of the dashboard, under a lid marked SRS. Do not place any objects on top of this lid. If the airbag inflates, those objects can be propelled inside the car and possibly hurt someone.

SRS How the SRS Indicator Light Works

The purpose of the SRS light on your instrument panel is to alert you of a potential problem with your supplemental restraint system.

Have the system checked if:

- The light does not come on when you turn the ignition ON (II).
- The light stays on after the engine starts.
- The light comes on or flashes while you are driving.

System Service

Your supplemental restraint system is virtually maintenance-free. There are no parts you can safely service. You must have the system serviced by an authorized Acura dealer:

- If your airbag ever inflates, the airbag must be replaced. Do not try to remove or discard the airbag by yourself. This must be done by an Acura dealer.
- If the SRS indicator light alerts you of a problem. Have the supplemental restraint system checked as soon as possible. Otherwise, your airbag might not inflate when you need it.
- When the car is ten years old. Have the dealer inspect the system. The production date is on the driver's door jamb for your convenience.

System Service Precautions

Do not modify your steering wheel or any other part of the supplemental restraint system. Modifications could make the system ineffective.

Do not tamper with the system's components or wiring. This could cause the airbag to inflate inadvertently, possibly injuring someone very seriously.

Tell anyone who works on your car that you have a supplemental restraint system. Failure to follow the procedures and precautions in the official Acura service manual could result in personal injury or damage to the system.

Scrapping an entire car that has an uninflated airbag can be dangerous. Get assistance from an Acura dealer if your car must be scrapped.

If you sell your car, please be sure to tell the new owner that the car has a supplemental restraint system. Alert them to the information and precautions in this part of the owner's manual.