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**VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT CRASH PROTECTION
WINDSHIELD MOUNTING, WINDSHIELD ZONE INTRUSION (PARTIAL)
AND FUEL SYSTEM INTEGRITY**

TOYOTA MOTOR CORPORATION
1995 Toyota Tercel
2-door coupe

NHTSA NUMBER: CS5107

CALSPAN TEST NUMBER: 8221-10

January 10, 1995

CALSPAN CORPORATION
ADVANCED TECHNOLOGY CENTER
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FINAL REPORT

PREPARED FOR:

U. S. Department of Transportation
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ENFORCEMENT
Office of Vehicle Safety Compliance
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16. Abstract A 30 mph vehicle safety compliance test was conducted on a 1995 Toyota Tercel 2-door coupe. This test was performed at the Calspan Advanced Technology Center in Buffalo, New York on January 10, 1995. The purpose of this test was to determine compliance with the performance requirements of the following Federal Motor Vehicle Safety Standards: 1. FMVSS No. 208, "Occupant Crash Protection" 2. FMVSS No. 212, "Windshield Mounting" 3. FMVSS No. 219 (partial), "Windshield Zone Intrusion" 4. FMVSS No. 301, "Fuel System Integrity" The test mode was perpendicular (0°) and the impact velocity was 29.8 mph. The ambient temperature at the impact face was 70 °F. The subject test vehicle appears to comply with the requirements of FMVSS Nos. 208, 212, 219 (partial) and 301. <u>Type of Restraint System:</u> The test vehicle was equipped with a driver air bag and a passenger air bag restraint system. The manual seat belts were not used for this test.					
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Section 1

PURPOSE AND TEST PROCEDURE

This 30 mph frontal barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208, 212, 219 (partial) and 301 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by Calspan Advanced Technology Center under Contract No. DTNH22-93-D-11089. The purpose of this test was to determine if the subject vehicle, a 1995 Toyota Tercel 2-door coupe, meets the performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS No. 212, "Windshield Mounting"; FMVSS No. 219 (partial), "Windshield Zone Intrusion"; and FMVSS No. 301, "Fuel System Integrity". This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-208-09, dated March 15, 1993.

Section 2

SUMMARY OF TEST NUMBER CS5107

A frontal barrier was impacted by a 1995 Toyota Tercel 2-door coupe at a velocity of 29.8 mph. The test was performed at the Calspan Corporation Advanced Technology Center on January 10, 1995. Pre- and Post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 14 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

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

Both ATDs were fully instrumented with head and chest three axis (x, y, and z) accelerometers, chest displacement potentiometers and left/right femur load cells. These ATDs had been certified prior to the test.

The 26 channels of data were recorded on a P.C. based data acquisition system. Appendix B contains the vehicle and dummy response data traces.

The driver's HIC was 469.45. The maximum chest deceleration over 3 milliseconds was 43.916 g's with 0.8 inches of deflection. The maximum force on the driver's left femur was -785.0 pounds and -1081.5 pounds on the right femur.

The right front passenger's HIC was 120.02. The maximum chest deceleration over 3 milliseconds was 35.931 g's with 0.7 inches of deflection. Loads of -1060.8 and -774.8 pounds were recorded on the left and right femurs respectively.

Table 1

CRASH TEST SUMMARY

Vehicle NHTSA No. :	<u>CS5107</u>	Test Mode :	<u>30 mph Frontal Barrier</u>
Test Date :	<u>January 10, 1995</u>	Time:	<u>12:05</u> Temperature : <u>69-70 °F</u>
Vehicle Make/Model/Body Style :	<u>1995 Toyota Tercel 2-door coupe</u>		
Vehicle Test Weight :	<u>2399</u>	lbs	
Vehicle/Barrier Impact Angle :	<u>0</u>	°	
Impact Velocity :	<u>29.8</u>	mph	
Maximum Static Crush :	<u>14.9</u>	inches	
Vehicle Rebound :	<u>6.0</u>	inches	
<u>DUMMIES:</u>	<u>DRIVER</u>	<u>PASSENGER</u>	
Type :	<u>Part 572 E</u>	<u>Part 572 E</u>	
Restraint System :	<u>Air bag</u>	<u>Air bag</u>	
Number of Data Channels :	<u>26</u>		
Number of Cameras :	<u>1</u>	<u>Real Time</u>	
	<u>14</u>	<u>High Speed</u>	
<u>DOOR OPENING DATA :</u>	<u>Operable</u>	<u>- Left Front</u>	
	<u>Operable</u>	<u>- Right Front</u>	
Front Seat(s) Data :	<u>DRIVER</u>	<u>PASSENGER</u>	
Seat Track Failure :	<u>0.0</u>	<u>0.0</u>	
	<u>Inches of shift</u>		
Seat Back Failure :	<u>None</u>	<u>None</u>	
<u>VISIBLE DUMMY CONTACT POINTS :</u>	<u>DRIVER</u>	<u>PASSENGER</u>	
Head :	<u>Face with air bag, rear of head with head rest</u>	<u>Face with air bag</u>	
Abdomen :	<u>Air bag</u>	<u>Air bag</u>	
Chest	<u>Air bag</u>	<u>Air bag</u>	
Knees	<u>Lower dash panel</u>	<u>Glove box door</u>	

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATATEST VEHICLE INFORMATION :

Year/Make/Model/Body Style : 1995 Toyota Tercel 2-door coupe
 NHTSA No. : CS5107 ; VIN: JT2EL55D2S0004598 ; Color : Green
 Engine Data: 4 cylinders; - CID; 1.5 Liters; - cc
 Placement : - Longitudinal or In-Line; √ Transverse of Lateral
 Transmission Data : 3 speeds; - Manual; √ Automatic; - Overdrive
 Final Drive : - Rear Wheel Drive; √ Front Wheel Drive; - Four Wheel Drive
 Major Options : - A/C; - Pwr.Strg.; √ Pwr. Brakes
- Pwr. Windows; - Pwr. Door Locks; - Tilt Wheel
 Date Received : 1-3-95 ; Odometer Reading 53.0 miles
 Selling Dealer : HALL'S TOYOTA, INC.
 & Address: 6179 Transit Road, Lockport, N.Y. 14094

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by : TOYOTA MOTOR CORPORATION
 Date of Manufacture 9/94
 GVWR : 2925 lbs.; GAWR: 1620 lbs. FRONT; 1355 lbs. REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load : 34 psi FRONT
32 psi REAR
 Recommended Tire Size : 155/SR13
 * Recommended Cold Tire Pressure : 34 psi FRONT; 32 psi REAR
 Size of Tires on Test Vehicle: 155/SR13 ; Manufacturer: MICHELIN
 Vehicle Capacity Data :
 Type of Front Seats: - Bench; √ Bucket; - Split Bench
 Number of Occupants: 2 Front; 3 Rear; 5 Total
 Vehicle Capacity Weight (VCW) = 775 lbs.
 No. of Occupants x 150 lbs. = 750 lbs.
 Rated Cargo/Luggage Weight (RCLW) = 25 lbs.

*Tire pressure used for test

Table 2

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

Right Front	=	610	lbs.	Right Rear	=	374	lbs.
Left Front	=	635	lbs.	Left Rear	=	401	lbs.
TOTAL FRONT	=	1,245	lbs.	TOTAL REAR	=	775	lbs.
TOTAL DELIVERED WEIGHT =				2,020 lbs.			

% of Total Front of Vehicle Weight = 61.6 % of Total Rear Weight = 38.4 %

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight	=	2,020	lbs.
Rated Cargo/Luggage Weight (RCLW)	=	25	lbs.
Weight of 2 p.572 Dummies @ 167 each	=	334	lbs.
TARGET TEST WEIGHT	=	2,379	lbs.

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 45 POUNDS OF CARGO WEIGHT:

Right Front	=	672	lbs.	Right Rear	=	521	lbs.
Left Front	=	686	lbs.	Left Rear	=	520	lbs.
TOTAL FRONT	=	1,358	lbs.	TOTAL REAR	=	1,041	lbs.
TOTAL TEST WEIGHT =				2,399 lbs.			

% of Total Front Weight = 56.6 % % of Total Rear Weight = 43.4 %

Weight of Ballast Secured in Vehicle Trunk Area = 0.0 lbs.

Vehicle Components Removed for Weight Reduction: Rear tail lights, spare tire, trunk lid.

VEHICLE ATTITUDE (all dimension in inches) :

AS DELIVERED :	RF	<u>25.9</u>	LF	<u>25.7</u>	RR	<u>25.8</u>	LR	<u>25.4</u>
FULLY LOADED :	RF	<u>25.1</u>	LF	<u>25.0</u>	RR	<u>24.8</u>	LR	<u>24.8</u>
AS TESTED :	RF	<u>25.3</u>	LF	<u>25.3</u>	RR	<u>24.8</u>	LR	<u>24.8</u>
Vehicle's Wheel Base : <u>93.8</u> in.								

Location of Vehicle's C.G. : 40.7 inches rearward of front wheel center.

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual	=	11.9	gallons
Usable Capacity Figure Furnished by COTR	=	11.9	gallons
Test Volume Range (92 to 94% of Usable Capacity)	=	10.9	to 11.2 gallons
ACTUAL TEST VOLUME	=	11.1	gallons (with entire fuel system filled)

Table 3

POST IMPACT DATATYPE OF TEST:

Type of Test : Frontal Barrier Impact Angle : 0°
 Test Date : January 10, 1995 Time: 12:05 Temperature: 69-70 °F
 Vehicle NHTSA No. : CS5107
 Required Impact Velocity Range : 28.9 to 29.9 mph

BARRIER IMPACT VELOCITY: (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 29.8 mph; Trap No. 2 = 29.8 mph
 Distance from vehicle to barrier : (1) entering trap = 52 inches
 (2) exiting trap = 12 inches

VEHICLE STATIC CRUSH: (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test Right = 159.7 ; C/L = 162.4 ; Left = 159.5
 Post-Test Right = 145.2 ; C/L = 146.1 ; Left = 145.6
 Crush Right = 14.5 ; C/L = 16.3 ; Left = 13.9
 AVERAGE = 14.9 inches

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point :

Right = 5.5 ; C/L = 5.8 ; Left = 6.7
 AVERAGE = 6.0 inches

DOOR OPENING :

	Left	Right
Front	<u>Operable</u>	<u>Operable</u>
Rear	<u>N/A</u>	<u>N/A</u>

SEAT MOVEMENT :

	Seat Back Failure	Seat Shift
Front	<u>None</u>	<u>0.0</u>
Rear	<u>N/A</u>	<u>N/A</u>

Table 3
POST IMPACT (cont.)

GLAZING DAMAGE :

Windshield cracked throughout.

OTHER NOTABLE IMPACT FEATURES :

Steering column stroked upward, passenger floor-pan intrusion.

Section 3

OCCUPANT AND VEHICLE DATA

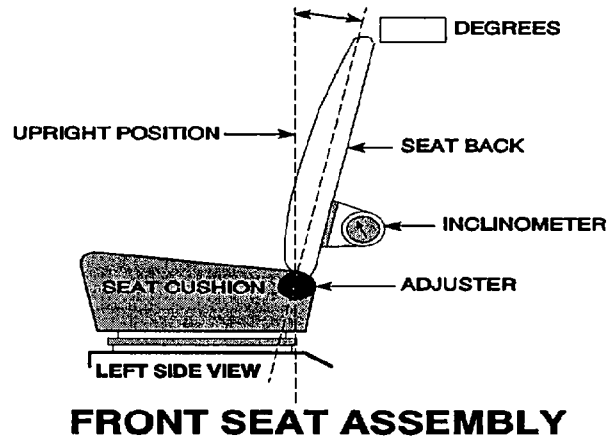
Figure 1

TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 1995 Vehicle Model: Toyota Tercel Body Style : 2-door coupe

1. Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Seat back angle for driver's seat : -

Measurement instructions : Recline seat back four notches rearward from most upright position 1

Seat set at fifth position.

Seat back angle for passenger's seat : -

Measurement instructions : Same as driver seating position.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat : Seat set at 8th notch rearward of fore-most position 1.

There are 15 detents total.

Positioning of the passenger's seat (if applicable) : Same as driver seating position.

3. Fuel Tank Capacity Data

A. "Usable Capacity" of the standard equipment fuel tank is 11.9 gallons

B. "Usable Capacity" of the optional equipment fuel tank is - gallons

4. Steering Column Position :

Non-adjustable.

5. Other:

None

Figure 2

PART 572 DUMMY IN-VEHICLE POSITION

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

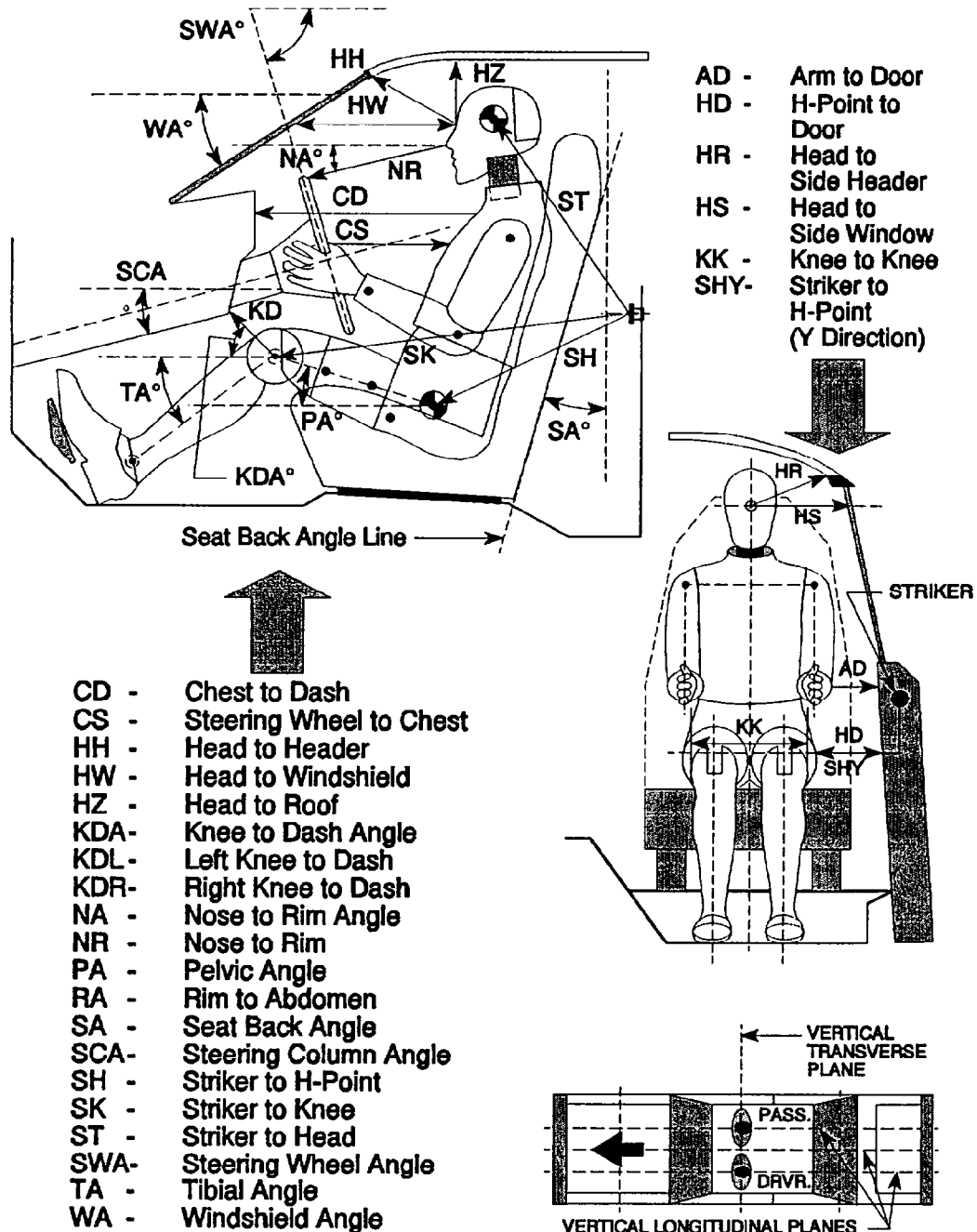


Table 4

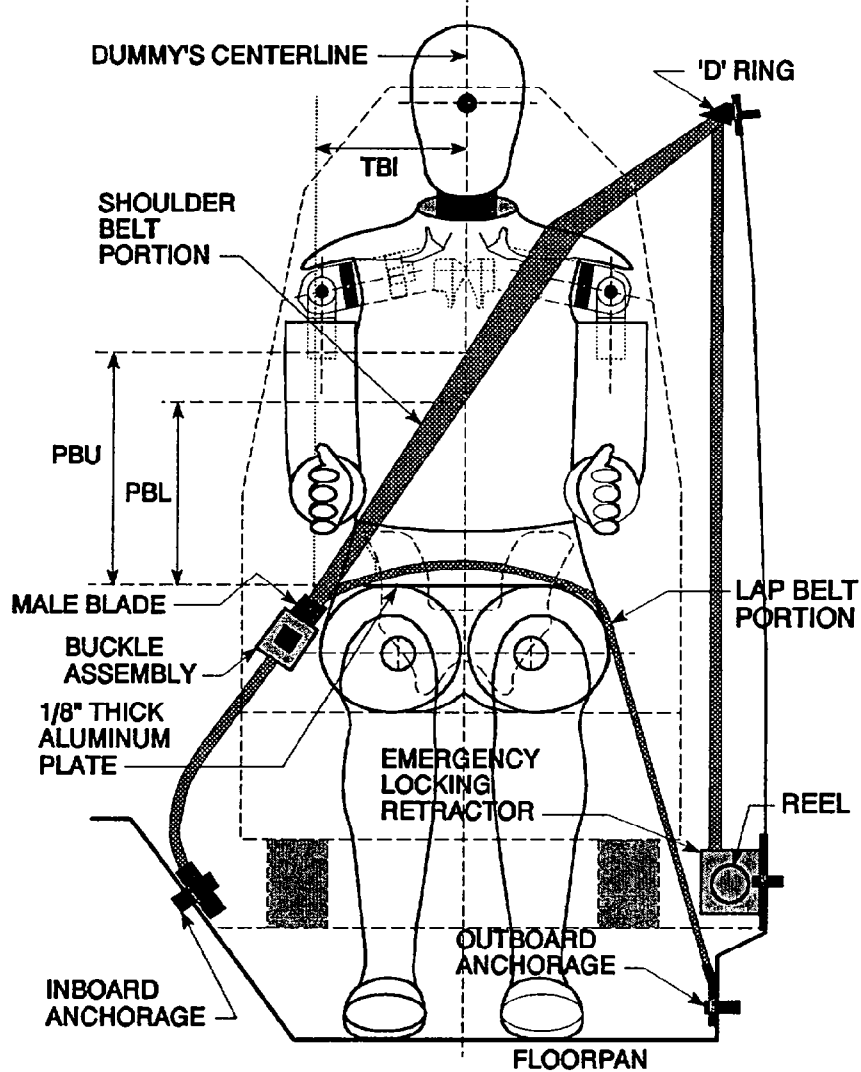
FRONT SEAT OCCUPANT MEASUREMENTS

	DRIVER (Serial #313)	PASS. (Serial #290)
WA°	30 deg.	-
SWA°	65.5 deg.	-
SCA°	24.5 deg.	-
SA°	*	*
HZ	6.3 in.	6.4 in.
HH	11.3 in.	12.2 in.
HW	18.3 in.	19.5 in.
HR	7.3 in.	7.0 in.
NR	14.7 in. Angle 17 deg.	-
CD	20.0 in.	20.8 in.
CS	15.1 in.	-
RA	7.0 in.	-
KDL	5.4 in. Angle (KDA) 28 deg.	5.6 in.
KDR	6.3 in.	5.9 in. Angle (KDA) 25 deg.
PA°	21 deg.	22 deg.
TA°	46 deg.	43 deg.
KK	14.3 in.	12.7 in.
ST	21.8 in. Angle 40 deg.	21.0 in. Angle 36 deg.
SK	32.3 in. Angle 109 deg.	32.5 in. Angle 100 deg.
SH	19.4 in. Angle 119 deg.	20.2 in. Angle 119 deg.
SHY	8.7 in.	8.3 in.
HS	11.8 in.	11.5 in.
HD	4.3 in. (to door pocket)	4.4 in. (to door pocket)
AD	3.4 in.	3.9 in.

* Driver and passenger seat back set at 5th notch rearward of 1st locking position.

Figure 3

SEAT BELT POSITIONING DATA



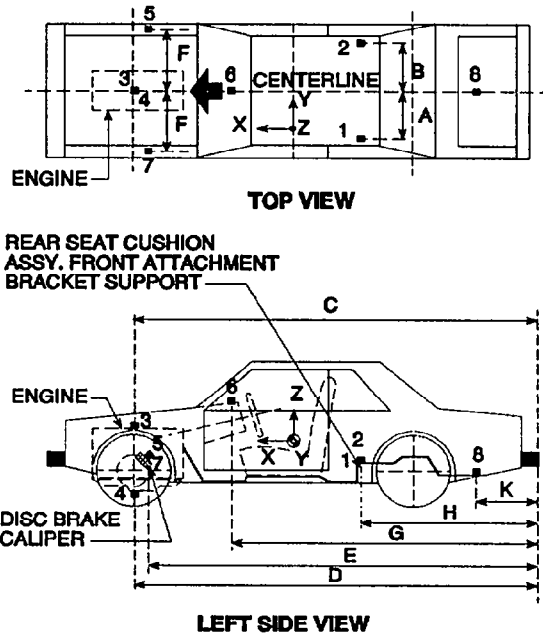
FRONT VIEW OF DUMMY

	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
<u>PBU</u> -- Top surface of alum. plate to upper edge	*	*
<u>PBL</u> -- Top surface of alum. plate to belt lower edge	*	*
<u>TBI</u> -- Distance from torso centerline to buckle	*	*

* Vehicle equipped with air bag, manual seat belt not used for this position.

Figure 4

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



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

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

Table 5

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

DIMENSION	LENGTH (Inches)	
	PRE-TEST VALUES	POST-TEST VALUES
A Left Rear Seat Crossmember Y	17.0	17.0
B Right Rear Seat Crossmember Y	17.0	17.0
C Top of Engine X	139.4	132.7
D Bottom of Engine X	138.2	131.5
E Disc Brake Calipers X	131.6	Left = 130.6 Right = 131.8
F Disc Brake Calipers Y	22.2	21.9
G Instrument Panel X	103.0	103.5
H Rear Seat Crossmembers X	61.7	61.7
K Trunk X	12.5	12.5

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side	2.9	190.2	-37.0	42.4
2	Rear Seat X-Member @ Right Side	2.6	94.6	-31.5	42.1
3	Top of Engine Block	35.8	40.4	-107.5	31.6
4	Bottom of Engine	58.2	45.5	-75.6	25.9
5	Disc Brake Caliper @ Right Side	16.1	16.8	-73.4	47.5
6	Instrument Panel	77.7	71.9	-91.5	76.8
7	Disc Brake Caliper @ Left Side	28.6	66.2	-133.9	48.1
8	Trunk	20.7	62.4	-14.3	85.2

Figure 5

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information shown on Table 5.

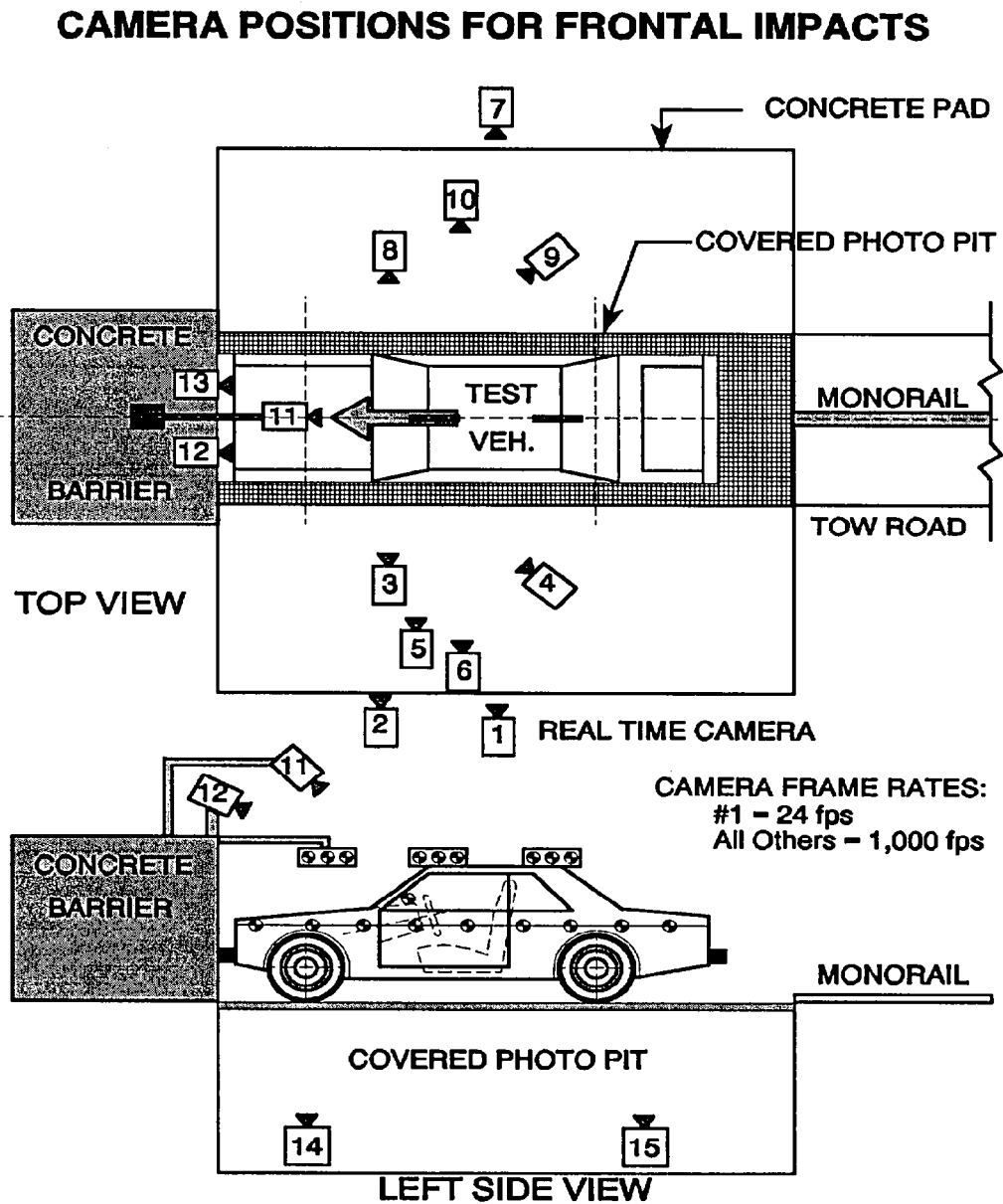


Table 6

HIGH-SPEED CAMERA LOCATIONS

Test No.		CS5107		Vehicle:		1995 Toyota Tercel 2-door coupe			
Camera No.	VIEW	CAMERA POSITIONS (In.)*			ANGLE** (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)	
		X	Y	Z					
1	Real-Time Camera	-	-	-	-	-	-	24	
2	Overall Left Side	219	63	41	-2	195.1 in.	13	1020	
3	Left Side View	285	45	41	-3	261.1 in.	25	1020	
4	Driver and Interior View	103	111	70	-22	-	13	1045	
5	Steering Column (Bottom)	261	78	46	-3	237.1 in.	25	1175	
6	Steering Column (Top)	261	78	70	-9	237.1 in.	25	1140	
7	Overall Right Side	219	72	43	-3	195.1 in.	13	1055	
8	Right Side View	294	55	41	-3	270.1 in.	25	1090	
9	Passenger and Interior View	284	74	55	-4	260.1 in.	35	1095	
10	Right Passenger View	100	107	69	-24	-	13	1155	
11	Windshield View	22	21.5	71	-50	-	8	1020	
12	Driver Front View	22	21.5	70	-46	-	8	1020	
13	Passenger Front View	9	0	127	-65	-	13	1050	
14	Pit View of Engine	44	0	-86	90	-	13	900	
15	Pit View of Fuel Tank	114	0	-86	90	-	13	965	

*X = film plane to monorail centerline

Y = film plane to impact location

Z = film plane to ground

** = referenced to horizontal plane

Figure 6

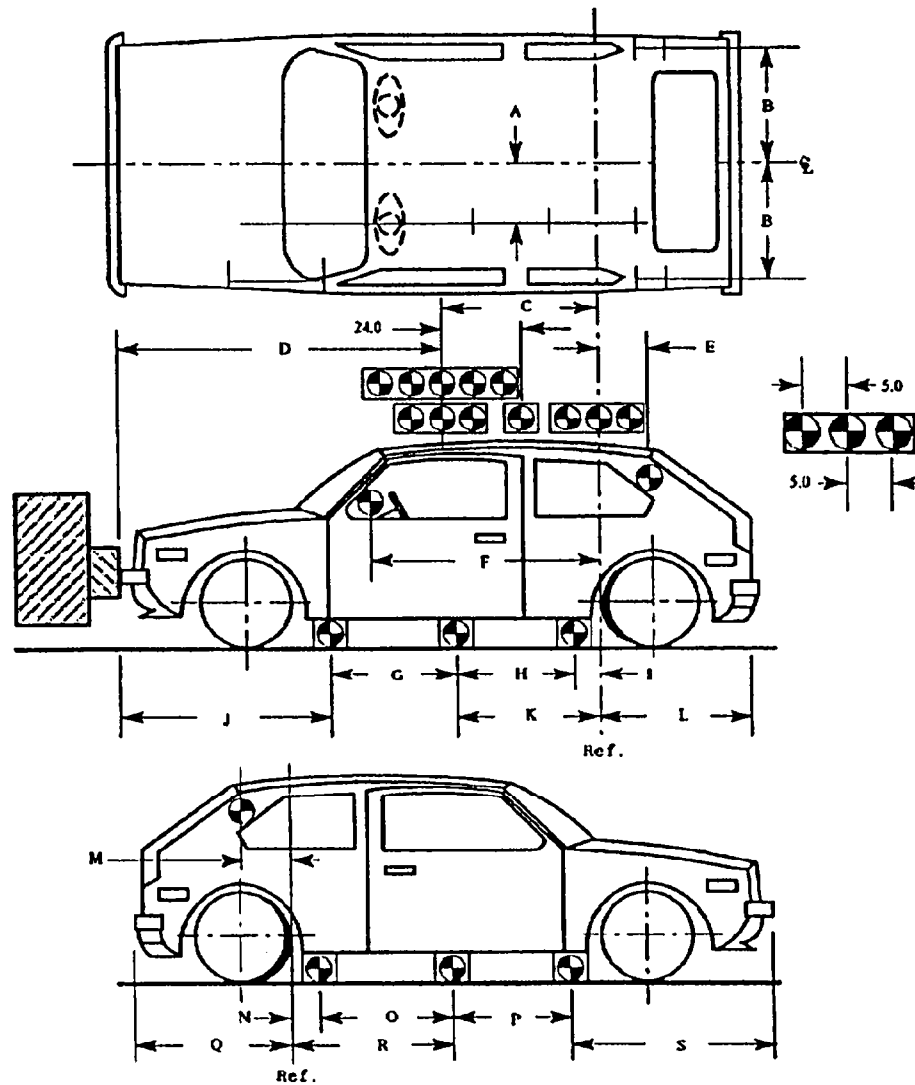
VEHICLE TARGET LOCATIONS
(All dimensions in inches)

Key (Inches)

A = 12.5
B = 20.9

C = 48.0
D = 66.2
E = 0.0
F = 53.6
G = 30.9
H = 30.9
I = 3.9
J = 48.4
K = 34.8
L = 48.3

M = 0.0
N = 4.1
O = 30.8
P = 30.8
Q = 48.5
R = 34.9
S = 48.2



Note: Targets on front fender are 12.0 inches apart.
Targets rearward of front fender are 24.0 inches apart.

Figure 7

TEST VEHICLE MEASUREMENTS

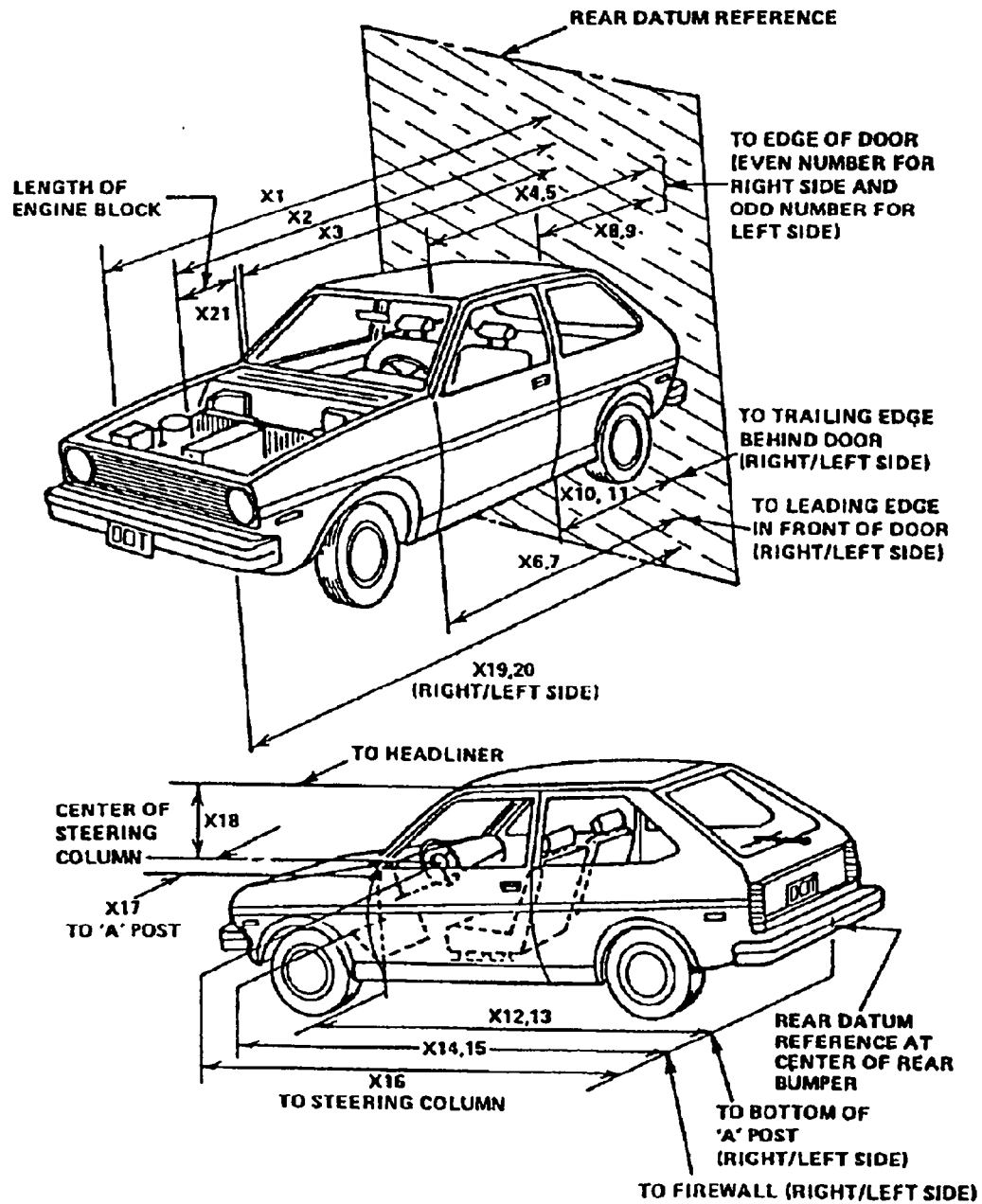


Table 7

VEHICLE MEASUREMENTS

No.		All Dimensions in inches		
		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	162.4	146.1	16.3
X2	Rear Surface of Vehicle to Front of Engine	142.8	136.6	6.2
X3	Rear Surface of Vehicle to Firewall	124.5	121.4	3.1
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	112.5	112.4	0.1
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	112.3	111.9	0.4
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	112.5	112.2	0.3
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	112.4	111.7	0.7
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	65.9	65.8	0.1
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	65.9	65.4	0.5
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	65.4	65.2	0.2
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	65.2	64.4	0.8
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	109.4	109.4	0.0
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	109.7	108.7	1.0
X14	Rear Surface of Vehicle to Firewall, Right Side	123.5	121.4	2.1
X15	Rear Surface of Vehicle to Firewall, Left Side	123.0	121.2	1.8
X16	Rear Surface of Vehicle to Steering Column	95.5	99.1	-3.6
X17	Center of Steering Column to "A" Post	16.8	17.2	-0.4
X18	Center of Steering Column to Headliner	16.2	10.6	5.6
X19	Rear Surface of Vehicle to Right Side of Front Bumper	159.7	145.2	14.5
X20	Rear Surface of Vehicle to Left Side of Front Bumper	159.5	145.6	13.9
X21	Length of Engine Block	13.8	13.8	0.0

Section 4

SUMMARY OF RESULTS OF FMVSS NOS. 208, 212, 219 AND 301-75

- "Occupant Crash Protection," FMVSS No. 208 Data
- "Windshield Mounting," FMVSS No. 212 Data
- "Windshield Zone Intrusion," FMVSS No. 219 (Partial) Data
- "Fuel System Integrity," FMVSS No. 301-75

Table 8

DUMMY INJURY CRITERIA VALUESNHTSA No. : CS5107 Vehicle : 1995 Toyota Tercel 2-door coupe

	MAXIMUM ACCELERATION (g's)								
	HEAD				CHEST				
	X	Y	Z	R	X	Y	Z	R*	Displacement
Dummy (1)	-57.4	-8.8	19.4	60.4	-42.9	4.5	11.4	43.916	-0.8
Dummy (2)	-24.7	-16.8	18.8	31.8	-34.6	3.3	14.4	35.931	-0.7

	MAXIMUM FORCE - FEMUR LOAD (lbs.)	
	LEFT FEMUR	RIGHT FEMUR
Dummy (1)	-785.0	-1081.5
Dummy (2)	-1060.8	-774.8

	HEAD INJURY CRITERIA**			
	HIC	36 millisecond Maximum		Avg. Acc (g)
		t ₁ (msec)	t ₂ (msec)	t ₁ TO t ₂
Dummy (1)	469.45	58.440	92.400	45.32
Dummy (2)	120.02	56.640	92.520	25.69

* Defined as exceeding 0.003 sec. duration

**As defined in FMVSS No. 208

Table 9

FMVSS NO. 208 - SEAT BELT WARNING SYSTEM CHECK

With occupant in driver's position, the lap belt in stowed position, and ignition switch placed in "Start/On" position:

Log time duration of audible warning signal = 6.0 sec.

Log time duration of reminder light operation = Continuous sec.

With occupant in driver's position, lap belt in use, and the ignition switch placed in "Start/On" position :

Log time duration of audible warning signal
(audible warning should not operate) = 0.0 sec.

Log time duration of reminder light operation = 0.0 sec.

Note wording of visual warning :

Fasten Seat Belt -

Fasten Belt -

Symbol 101 ✓

Table 10

FMVSS NO. 208 - LABELING AND DRIVER'S MANUAL INFORMATION

Locate label which describes manufacturers maintenance or replacement schedule for crash-deployed occupant protection system.

Describe location :

Label located on outside panel of driver and passenger sunvisors.

The label states, "The air bag system requires maintenance 10 years from the manufacture date located on the certification label and every 2 years thereafter.

Were appropriate instructions concerning maintenance and/or replacement of this system provided ?

YES √ NO -

Was a description of the functional operation of the system provided ?

YES √ NO -

Is there a reference to the instructions and description of the system on the label ?

YES √ NO -

Was an owner's manual provided ?

YES √ NO -

Did the owner's manual contain appropriate information concerning maintenance and/or replacement and a description of the functional operation of the system ?

YES √ NO -

Table 11

FMVSS NO. 208 - READINESS INDICATOR

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement.

Is the system totally mechanical ?

YES - NO ✓

Describe the location of the readiness indicator :

Readiness indicator located at bottom right of instrument cluster.

Is the readiness indicator clearly visible to the driver ?

YES ✓ NO -

Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided ?

YES ✓ NO -

Table 12

FMVSS NO. 208 - COMFORT AND CONVENIENCE TEST SUMMARY

Test Vehicle NHTSA No. :	CS5107
Make/Model :	1995 Toyota Tercel 2-door coupe
Date of Comfort/Convenience Check :	1-6-95
Technician Performing Check :	R.E.
GVWR :	2925

Seat belt comfort and convenience requirements cover vehicles manufactured on or after September 1, 1986, which have a gross vehicle weight rating of 10,000 pounds or less. Exemptions to this rule are belts installed in a walk-in, van-type vehicle and manual Type 2 belt systems installed in the front outboard seating positions of passenger automobiles. On or after September 1, 1989, the exemption of the type 2 manual seat belts installed in the front outboard seating positions of passenger automobiles will change depending on the states' enactment of mandatory usage laws.

Was vehicle built after or on September 1, 1986, and is it equipped with :

1. Automatic seat belts YES - NO ✓

If yes, go to requirements D1, D2, and D3

2. Manual seat belts* YES ✓ NO -

a. The seat belts, other than Type 2 lap/shoulder belts, are located in the front outboard seating positions of a passenger automobile.

YES - NO ✓

(Go to requirements D3, D4, D5, and D6)

b. The seat belt system is Type 2 lap/shoulder belt in the front outboard seating positions or the seat belts are located in a walk-in van.

STOP

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

Table 12 (cont.)

D1
CONVENIENCE HOOKS

A convenience hook or other device is provided to stow seat belt webbing to facilitate entering or exiting the vehicle.

YES - NO ✓

Check the option which applies to this test vehicle:

1. A convenience hook or other device automatically releases the webbing when the automatic belt system is operational and remains in the released mode as long as the vehicle's ignition switch is moved to the "on" or "start" position and the vehicle's drivetrain is engaged.
YES N/A NO N/A
2. A convenience hook or other device automatically releases the webbing when the automatic belt system is operational and remains in the released mode as long as the vehicle's ignition switch is moved to the "on" or "start" position and the vehicle's parking brake is in the released mode (non-engaged)
YES N/A NO N/A

D2
WEBBING TENSION - RELIEVING DEVICE

The seat belt assembly installed in the outboard designated seating position has either manual or automatic tension relieving devices permitting the introduction of slack in the webbing of the shoulder belt ("comfort clips" or "window shade" devices).

YES - NO ✓

Check the owner's manual and determine the maximum amount of slack recommended by the manufacturer in inches. The recommended slack is N/A inches. Introduce this slack into the shoulder belt before testing the vehicle to comply with the requirements of FMVSS 208 S5.1. A warning is included in the owner's manual that introducing slack beyond the amount specified can significantly reduce the effectiveness of the shoulder belt.

YES N/A NO N/A

(If NO, provide explanation.)

Check the option which applies to this test vehicle:

1. This vehicle is equipped with automatic seat belts and the tension relieving device is cancelled each time the adjacent door is opened.

YES N/A NO N/A

(If NO, provide explanation.)

Table 12 (cont.)

2. This vehicle is equipped with manual belts, required to meet FMVSS 208 S4.6, and the tension relieving device is cancelled each time one of the following options occurs:
- | | | | | |
|---|-----|------------|----|------------|
| a. The adjacent door is opened. | YES | <u>N/A</u> | NO | <u>N/A</u> |
| b. The latch plate is released from the buckle. | YES | <u>N/A</u> | NO | <u>N/A</u> |
3. This is an open-body vehicle, without doors. Does the manual mean to cancel any shoulder belt slack introduced by a tension relieving device to operate properly ?
- | | | | | |
|--|-----|------------|----|------------|
| | YES | <u>N/A</u> | NO | <u>N/A</u> |
|--|-----|------------|----|------------|

(If NO, provide explanation.)

D3

BELT CONTACT FORCE

1. Do not measure the belt contact force if the manual or automatic seat belt assemblies in this vehicle incorporate a webbing tension relieving device. Does the vehicle incorporate a tension relieving device?
- | | | | | |
|--|-----|----------|----|----------|
| | YES | <u>-</u> | NO | <u>✓</u> |
|--|-----|----------|----|----------|
2. Seat are adjusted according to instructions in Appendix B.
- | | | | | |
|--|-----|----------|----|----------|
| | YES | <u>✓</u> | NO | <u>-</u> |
|--|-----|----------|----|----------|
3. The test dummies are positioned according to dummy position placement instructions in Appendix B and Appendix C.
- | | | | | |
|--|-----|----------|----|----------|
| | YES | <u>✓</u> | NO | <u>-</u> |
|--|-----|----------|----|----------|
4. Close the vehicle's adjacent door, pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest, then fasten the latch. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. Measure the contact force exerted by the belt webbing on the dummy's chest. The contact force is 0.3 pounds. Contact the COTR if the contact force exceeds 0.7 pounds.

Table 12 (cont.)

D4
LATCHPLATE ACCESSIBILITY

1. Position the test dummy in the driver's seat or passenger's seat in its forward most adjustment position.
YES ✓ NO -
2. Attach the inboard and outboard reach string.
YES ✓ NO -
3. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. With the latchplate in the normal stowed position, check to assure that the latchplates are within the reach envelope.
YES ✓ NO -
4. Using the clearance test block, determine if there is sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latchplate or buckle.
YES ✓ NO -

D5
RETRACTION

1. Seats and seat backs are adjusted according to instructions in Appendix B "General Test Conditions" in TP-208-09, dated March 15, 1993.
YES ✓ NO -
2. Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B and restrain the dummies, using the belt systems for the positions being tested.
YES ✓ NO -
3. Outboard armrests which are capable of being stowed on vehicle seats shall be placed in their stowed positions.
YES N/A NO N/A
4. Check the option which applies to this test vehicle:
 - a. The torso and lap belt webbing of the seat belt system automatically retract to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released.
YES ✓ NO -

Table 12 (cont.)

- b. The torso and lap belt webbing of the seat belt system automatically retract when the seat belt latchplate is released.
- YES √ NO -
5. With the webbing and hardware in the stowed position, close the door to assure that the webbing and hardware are prevented from being pinched.
- YES √ NO -
6. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, check to assure that the belt system fully retracts when the tension-relief device is manually deactivated.
- YES N/A NO N/A

D6
ACCESSIBILITY

The requirements for accessibility do not apply to:

1. Seats whose seat cushions are removable so that the seat back serves a function other than seating;
2. Seats which are removable;
3. Seats which are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, then determine if:

1. Each manual seat belt assembly whose webbing is designed to pass through the seat cushion or between the seat cushion and seat back has one of the following three parts (the seat belt latchplate, the buckle, or the seat belt webbing) on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant).

YES N/A NO N/A

2. The remaining two seat belt parts are accessible under normal conditions.

YES N/A NO N/A

Table 12 (cont.)

- | | | | | | |
|----|--|-----|------------|----|------------|
| 3. | The buckle and latchplate pass through the guides or conduits provided and do not fall behind the seat when the following events occur in order: | | | | |
| | a. The belt is completely retracted or, if the belt is non-retractable, the belt is unattached. | YES | <u>N/A</u> | NO | <u>N/A</u> |
| | b. The seat is moved to any position to which it is designed to be adjusted. | YES | <u>N/A</u> | NO | <u>N/A</u> |
| | c. The seat back, if foldable, is folded forward as far as possible and then moved backward into positions. | YES | <u>N/A</u> | NO | <u>N/A</u> |
| 4. | Is the inboard receptacle end of the seat belt assembly which is installed in the outboard designated seating position accessible with the center arm rest in any position to which it can be adjusted without moving the armrest? | YES | <u>N/A</u> | NO | <u>N/A</u> |

D7
LATCH MECHANISM

A seat belt assembly installed in a passenger car, except an automatic belt assembly, shall have a latch mechanism:

- | | | | | | |
|----|--|-----|----------|----|----------|
| 1. | Whose components are accessible to a seated occupant in both the stowed and operational positions. | YES | <u>✓</u> | NO | <u>-</u> |
| 2. | That releases both the upper torso restraint and the lap belt simultaneously, if the assembly has a lap belt and an upper torso restraint that require unlatching for release of the occupant. | YES | <u>✓</u> | NO | <u>-</u> |
| 3. | That releases at a single point by a push button action. | YES | <u>✓</u> | NO | <u>-</u> |

Figure 8

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA SHEET

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

The windshield is bonded in place with 0.7 inch rubber molding along top, sides and bottom. Bottom of windshield also covered with a plastic shroud.

FMVSS 212 REQUIREMENTS :

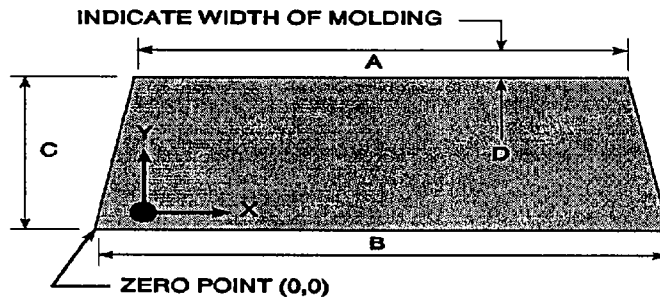
The Post - Test periphery retention amount must be at least 75% of the Pre - Test periphery measurement for vehicle NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA :

	WINDSHIELD PERIPHERY		PERCENT RETENTION
	PRE - TEST (in.)	POST - TEST (in.)	
RIGHT SIDE	80.5	80.5	100.0
LEFT SIDE	80.5	79.5 *	98.8
TOTAL	161.0	160.0	99.4

* Windshield glazing tear 6 inches from left side approximately 1 inch wide.

AREA OF RETENTION FAILURE:



FRONT VIEW OF WINDSHIELD

FAILURE DETAILS : None

Figure 9

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

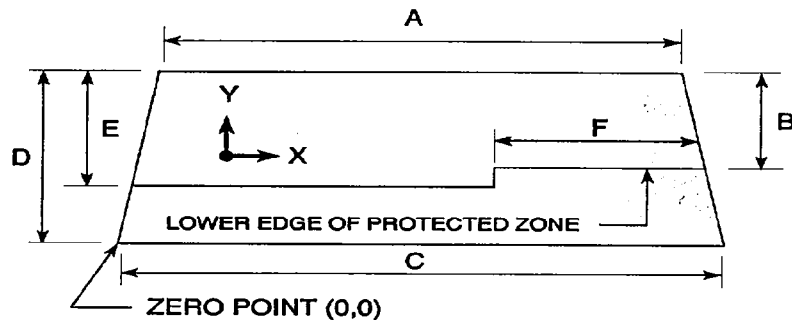
PROTECTED ZONE LOWER EDGE REQUIREMENT :

The lower edge of the protected zone is determined by placing a 6.5" dia. 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, and 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 inches.)

KEY:

A= 42.9
B= 22.5
C= 58.7
D= 29.7
E= 20.5
F= 26.6



FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4" :

(Show location of penetration on above sketch)

None

COORDINATES		
	X	Y
1		
2		
3		
4		

Table 13

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

FMVSS NO. 301

TEST VEHICLE NHTSA NO. : CS5107 TEST DATE : January 10, 1995Vehicle Mfgr./Make/Model : 1995 Toyota Tercel 2-door coupe

Test vehicle fuel tank filled to 92% to 94% of manufacturer's "usable" capacity and with electric fuel pump operating (if it will operate without engine operation). Part 572 test dummies located at each front designated seating position.

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

FUEL SPILLAGE MEASUREMENT:

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

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

SOLVENT SPILLAGE DETAILS :

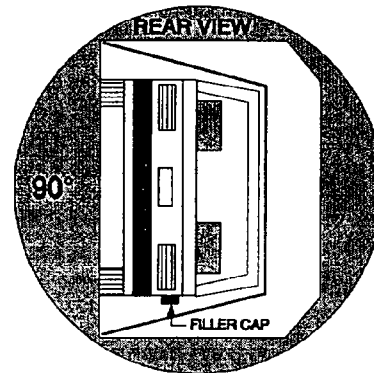
None

Table 14

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE :
0-90 Deg.

Vehicle NHTSA ID No. :
CS5107

I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time 1 minutes 46 seconds
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 00 seconds

TOTAL 6 minutes 46 seconds

Next whole minute interval 7 minutes

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes 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	N/A
---	---	---	-----

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

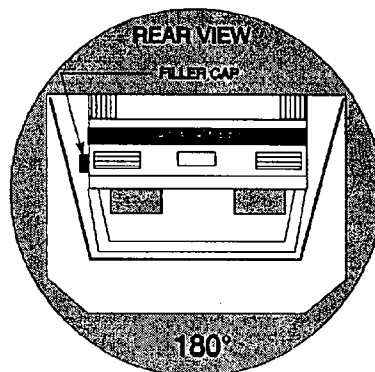
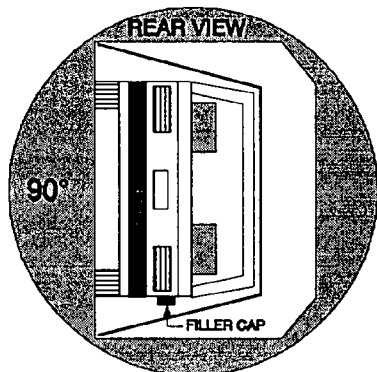
IV. SOLVENT SPILLAGE LOCATION(S) :

None

Table 14
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
90-180 Deg.

Vehicle NHTSA ID No. :
CS5107



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	<u>1</u>	minutes	<u>58</u>	seconds
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>00</u>	seconds
TOTAL	<u>6</u>	minutes	<u>58</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes 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	N/A
---	---	---	-----

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

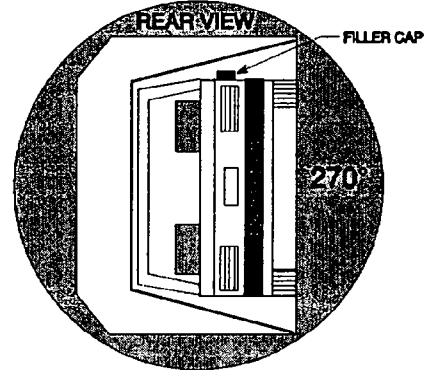
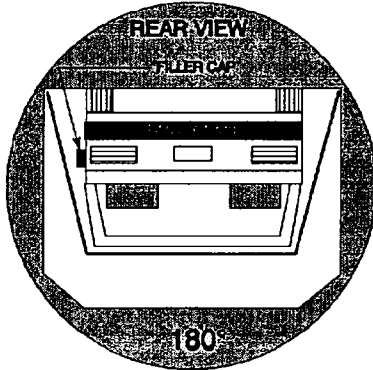
IV. SOLVENT SPILLAGE LOCATION(S) :

None

Table 14
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
180-270 Deg.

Vehicle NHTSA ID No. :
CS5107



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	03	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	7	minutes	3	seconds
Next whole minute interval	8	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes 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.

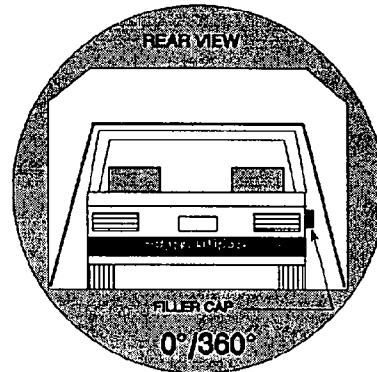
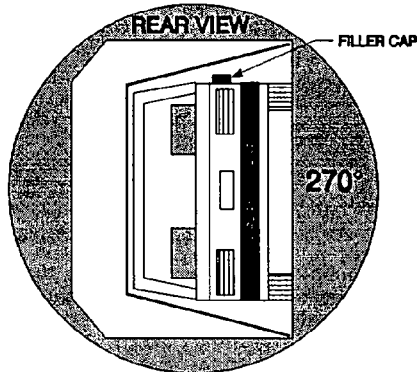
IV. SOLVENT SPILLAGE LOCATION(S) :

None

Table 14
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
270-360 Deg.

Vehicle NHTSA ID No. :
CS5107



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	1	minutes	56	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	6	minutes	56	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes 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	N/A
---	---	---	-----

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

Table 15

POST TEST AIR BAG DATA

NHTSA No. : CS5107; Test Date: January 10, 1995; Technician: R. E.

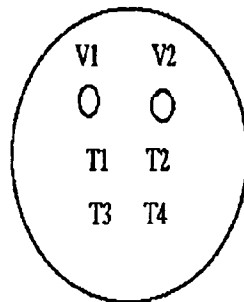
Vehicle Model Year/Make/Model: 1995 Toyota Tercel

A.	No. of vent holes:	<u>2</u>	-Driver	<u>2</u>	-Passenger
B.	Size of vent holes: (In. ²)	<u>1.13</u>	-Driver	<u>6.16</u>	-Passenger
C.	Total vent area: (In. ²)	<u>2.26</u>	-Driver	<u>12.32</u>	-Passenger
D.	Deflated air bag length and width dimensions or, if round, diameter. (In inches)				
	Driver:	<u>-</u>	-Length;	<u>-</u>	-Width;
		<u>27.3</u>	-Diameter		
	Passenger:	<u>28.0</u>	-Height;	<u>27.0</u>	-Width;
		<u>22.5</u>	-Depth		
E.	Is the air bag tethered?				
	Driver:	<u>X</u>	-Yes;	<u>-</u>	-No; If yes, record length of tether-
					<u>7.8</u>
	Passenger:	<u>-</u>	-Yes;	<u>X</u>	-No; If yes, record length of tether-
					<u>N/A</u>

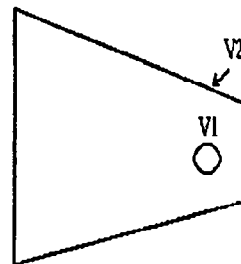
Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.

(Note: Not to scale; V_n = Vent hole_n, T_n = Tether_n).

Driver air bag (front view)



Passenger air bag (right side view)



F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver:	Air bag: <u>NHL05579</u>
	Generator: <u>TDBE853TAFH / F01-000647894E07</u>
Passenger:	Air bag: <u>B50001194F98</u>
	Generator: <u>AL000D994N9K / 73960-16020</u>

G. Cut out a 6 inch by 6 inch swatch of the bag material and at least one tether from each bag, mark the vehicle's NHTSA number on the swatch, and send these parts to the COTR with the test report.

Table 16

ACCIDENT INVESTIGATION DIVISION DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1995 Toyota Tercel 2-door coupe

VEHICLE NHTSA NO. : CS5107 VIN NO. : JT2EL55D2S0004598

WHEELBASE: 93.8 in. BUILD DATE: 9/94 TEST DATE: January 10, 1995

VEH SIZE CATEGORY: Compact TEST WEIGHT: 2399 lbs.

FRONT OVERHANG: - OVERALL WIDTH: 64.3 in.

COLLISION DEFORMATION (CDC) CODE: 12FDEW2

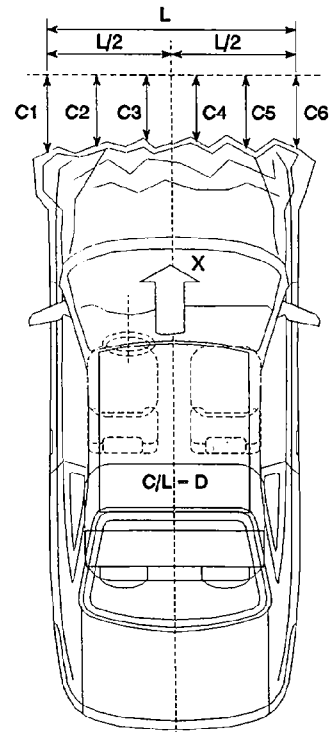
IMPACT MODE: Zero degree 30 mph frontal barrier.

CRUSH DEPTH DIMENSIONS: (Inches)

C1 = <u>13.3</u>	C4 = <u>16.6</u>
C2 = <u>15.0</u>	C5 = <u>15.5</u>
C3 = <u>16.0</u>	C6 = <u>13.7</u>

MIDPOINT OF DAMAGE: D=
(Vehicle Longitudinal Centerline) 26.9 in.

LENGTH OF DAMAGE
REGION: L= 53.8 in.



Remarks: None

Table 17
TEST VEHICLE NONCOMPLIANCE NOTICE

NHTSA Contract Lab : Calspan Advanced Technology Center
Lab Project Manager & Telephone No. : David J. Travale (716) 632 - 7500
Date of Test : January 10, 1995 Vehicle NHTSA No. : CS5107
Vehicle Manufacturer : TOYOTA MOTOR CORPORATION
Model Year : 1995 VIN : JT2EL55D2S0004598
Model : Tercel Body Style: 2-door coupe Build Date : 9/94
Dummy Stabilized Temperature at Time of Test : 69-70 °F (Spec. = 69 - 72 °F)
Impact Velocity : 29.8 mph; Time of Test : 12:05
Type of Automatic Restraint System :
Driver : Air bag
Passenger : Air bag

Failure Details :

The vehicle, as tested, appears to comply with the requirements of FMVSS Nos. 208, 212, 219 (partial), and 301.

Appendix A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

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A-4	POST-TEST LEFT SIDE VIEW	A-6
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Figure A-1 PRE-TEST FRONT VIEW



Figure A-2 POST-TEST FRONT VIEW

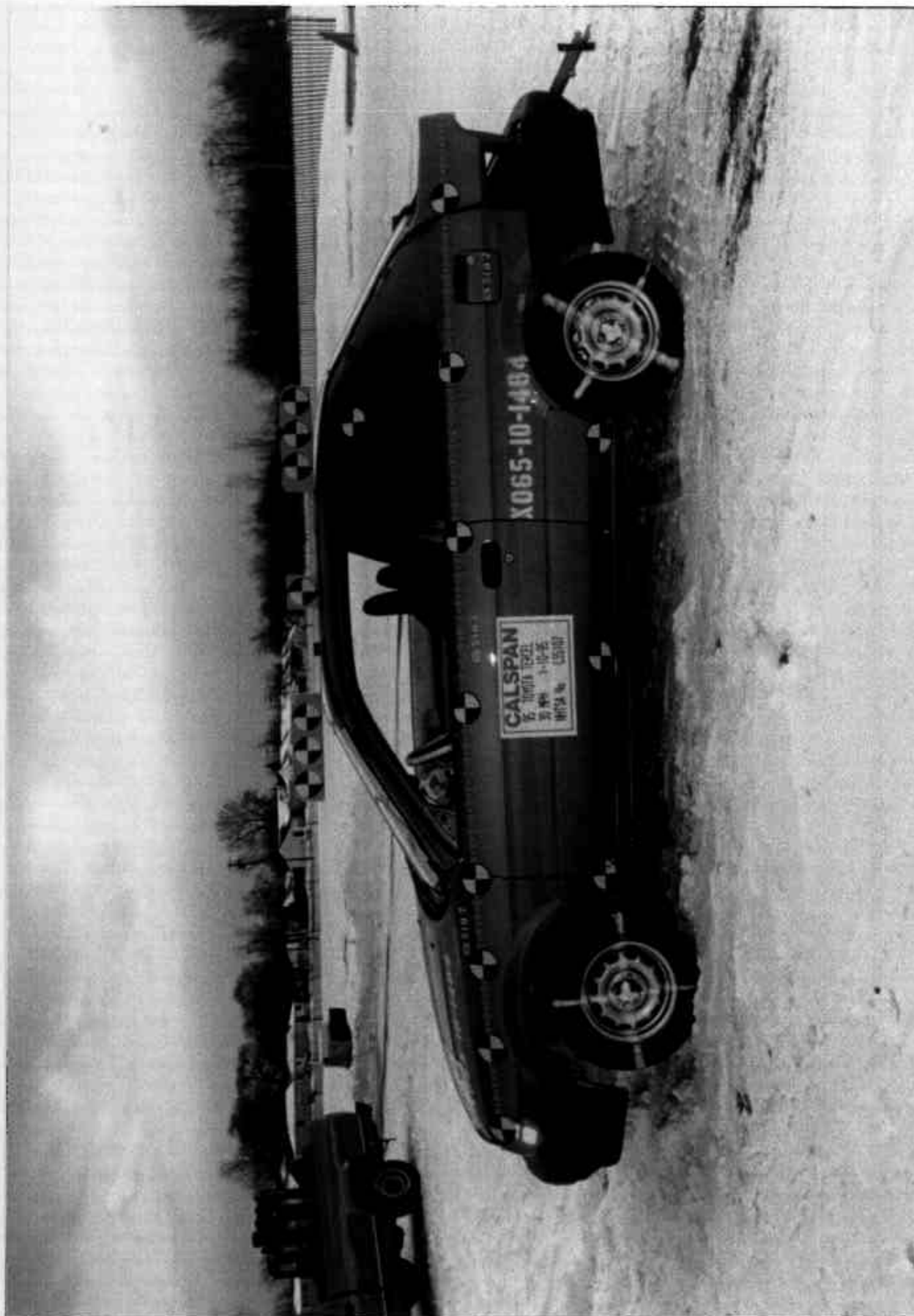


Figure A-3 PRE-TEST LEFT SIDE VIEW



Figure A-4 POST-TEST LEFT SIDE VIEW

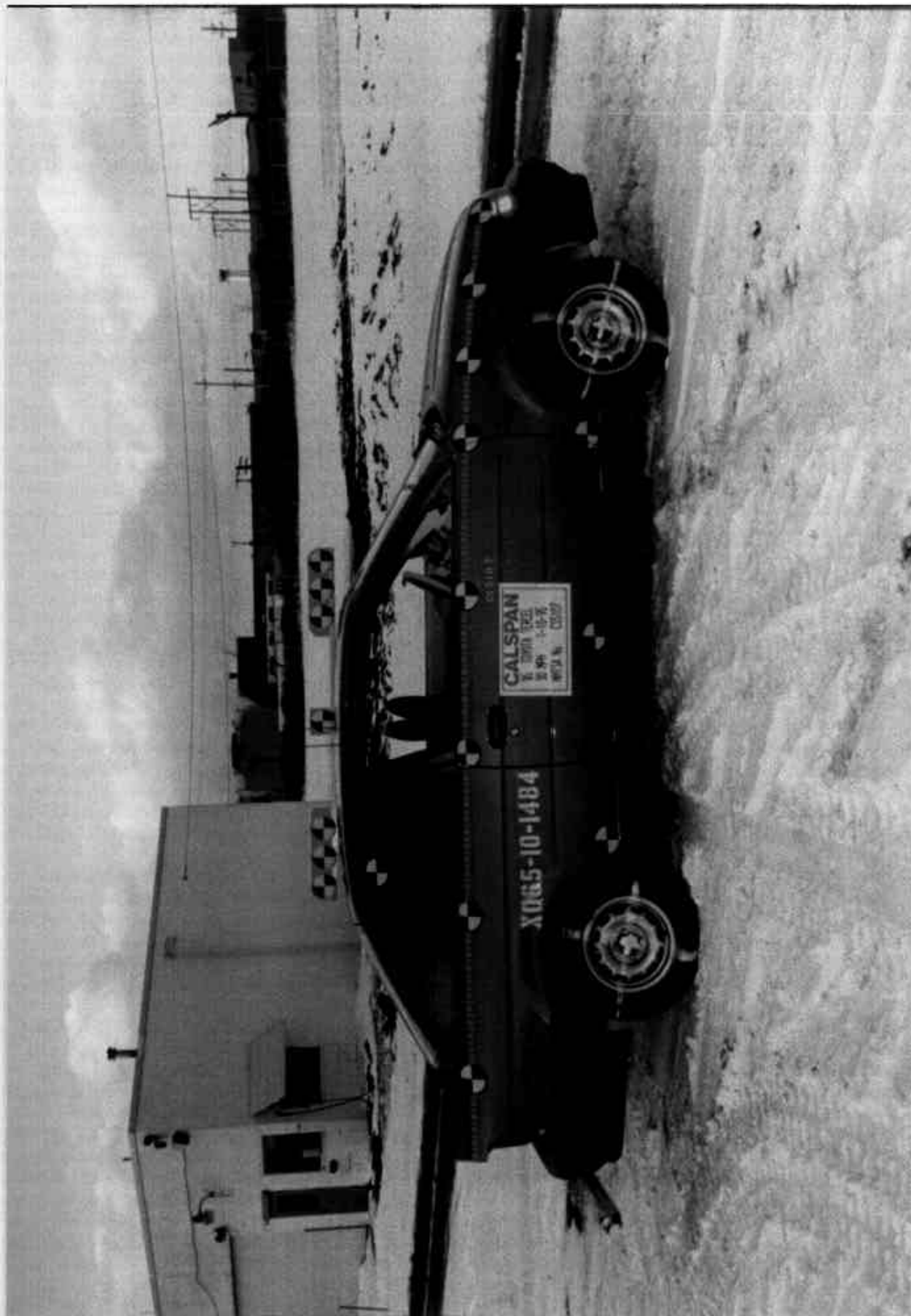


Figure A-5 PRE-TEST RIGHT SIDE VIEW

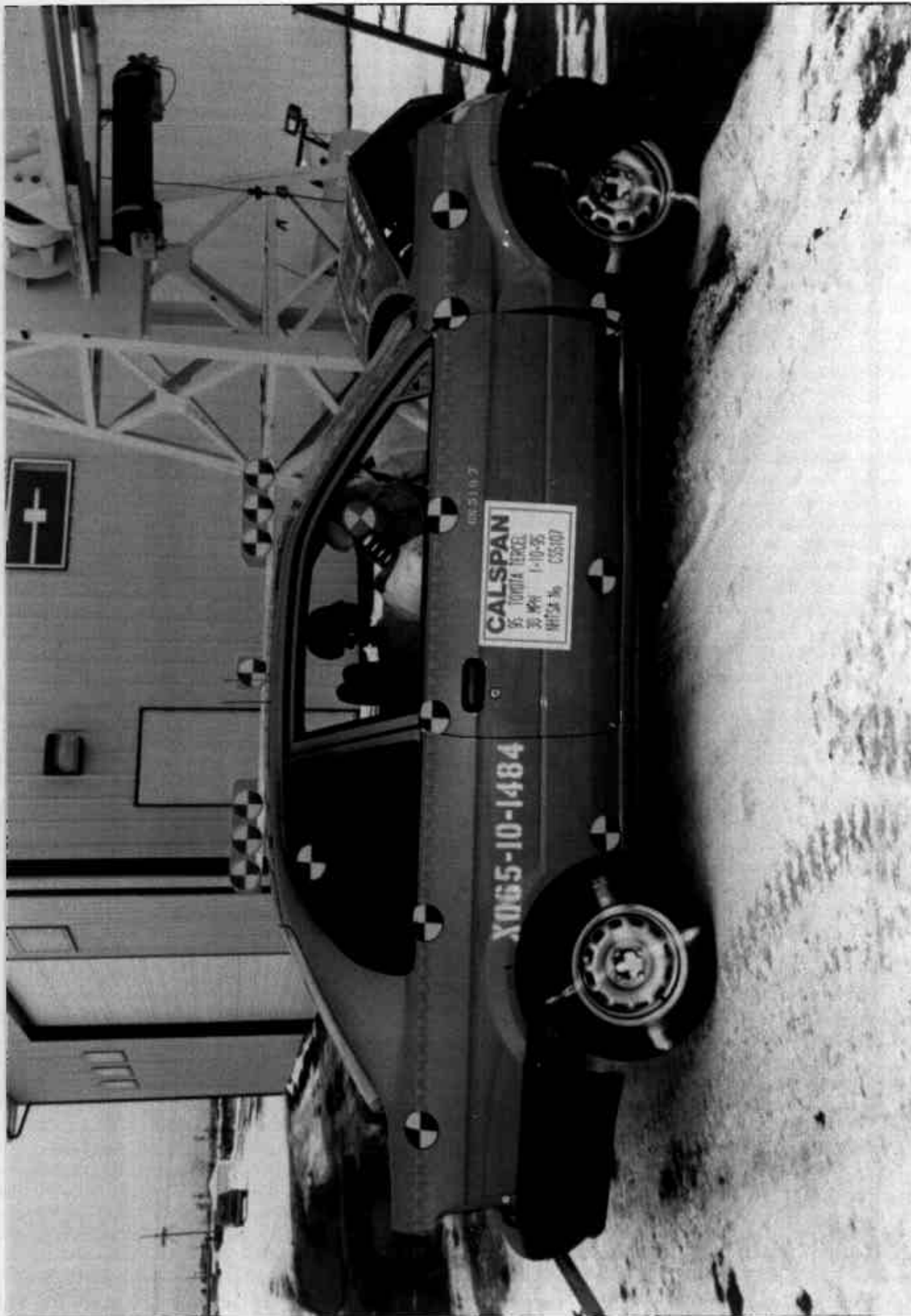


Figure A-6 POST-TEST RIGHT SIDE VIEW

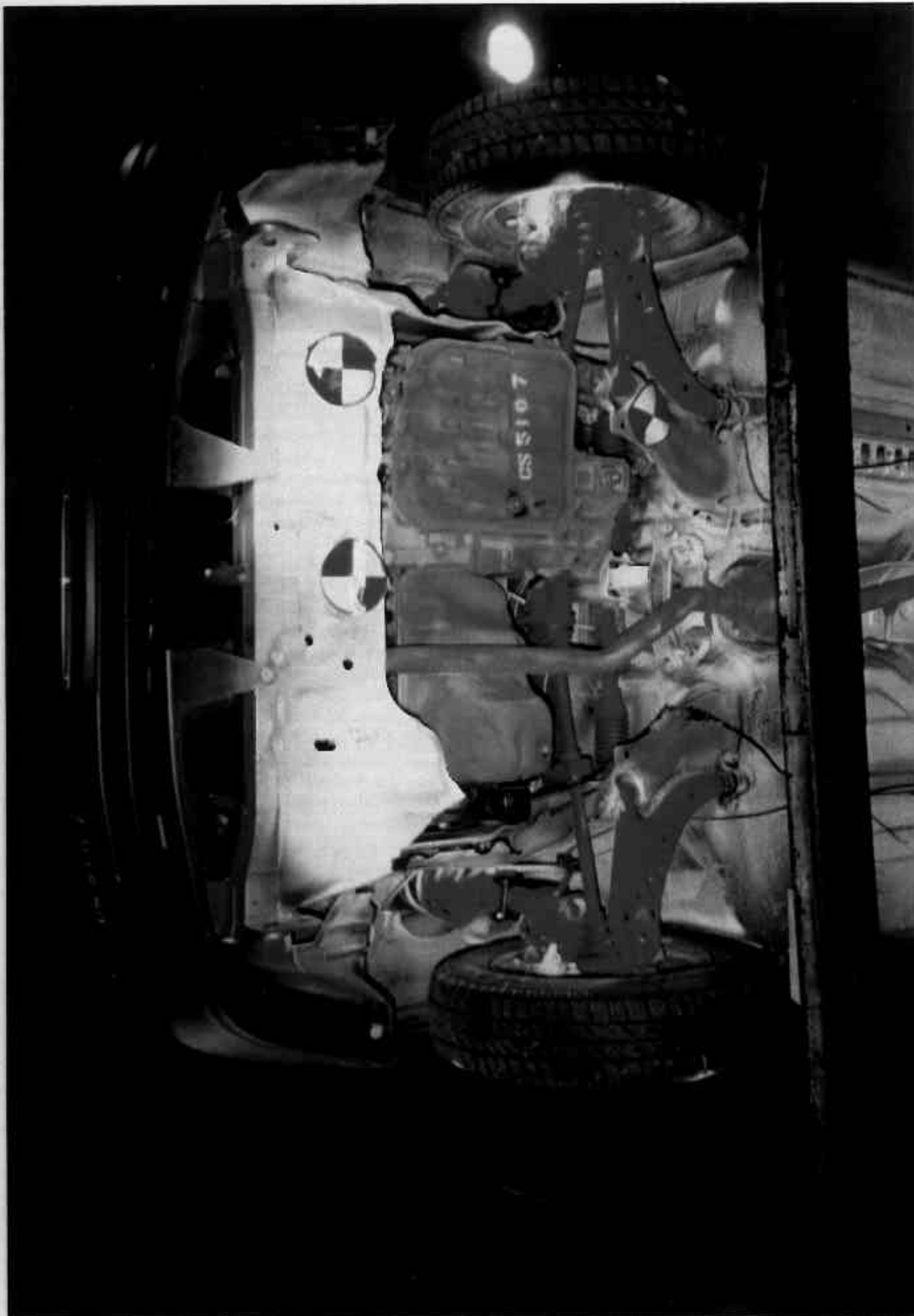


Figure A-7 PRE-TEST FRONT UNDERBODY VIEW

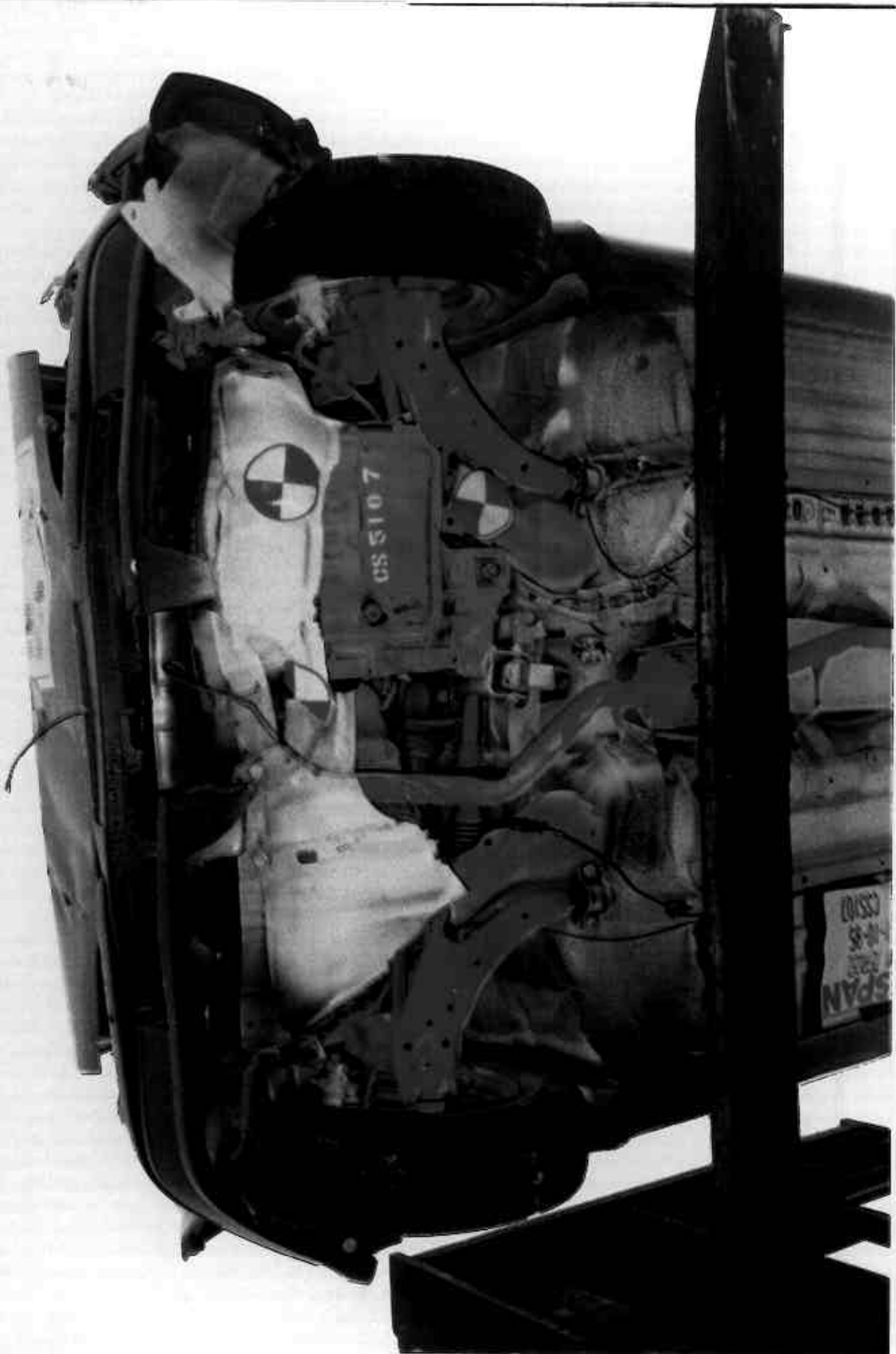


Figure A-8 POST-TEST FRONT UNDERBODY VIEW

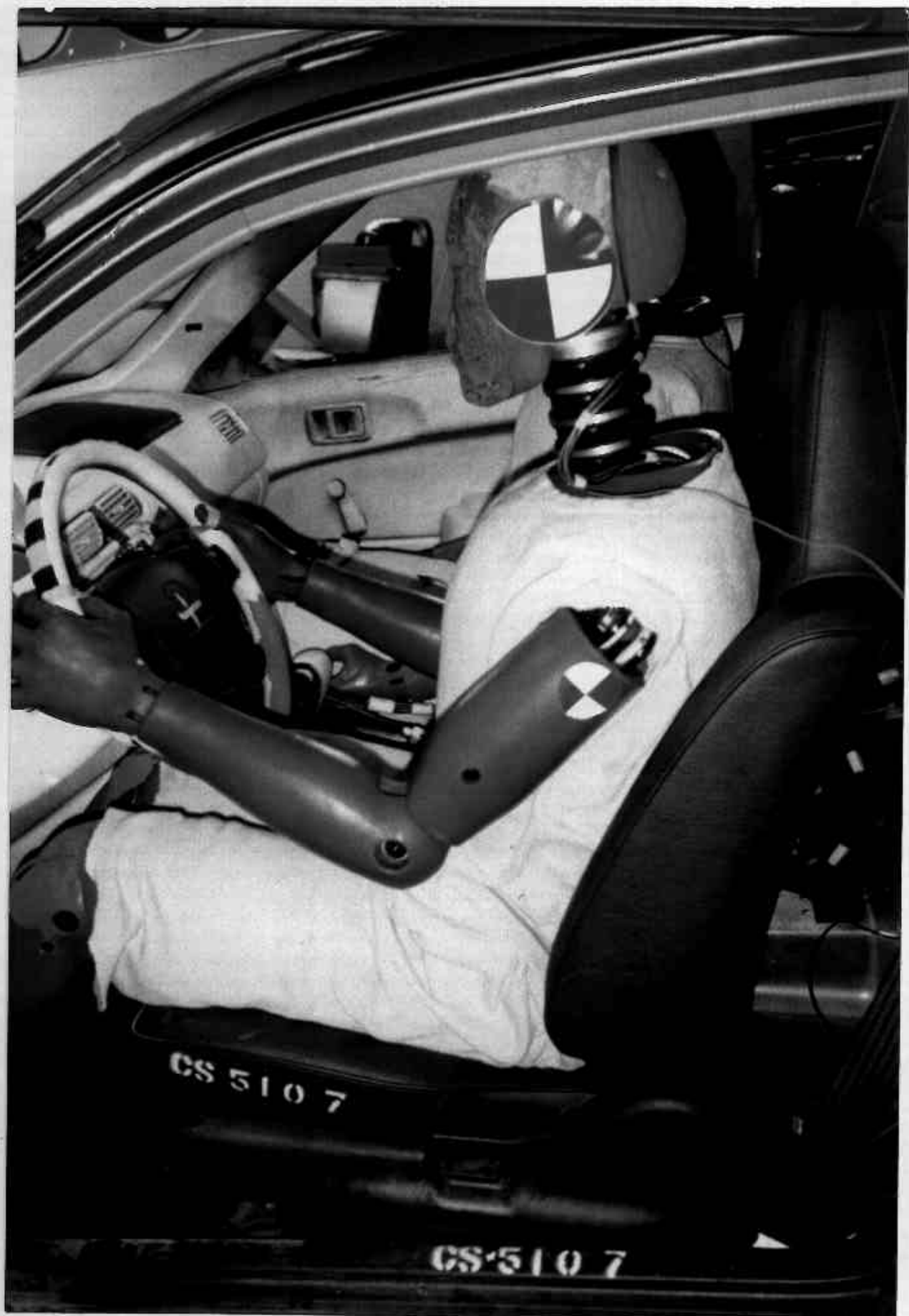


Figure A-9 PRE-TEST DRIVER SIDE VIEW



Figure A-10 POST-TEST DRIVER SIDE VIEW



Figure A-11 PRE-TEST PASSENGER SIDE VIEW



Figure A-12 POST-TEST PASSENGER SIDE VIEW

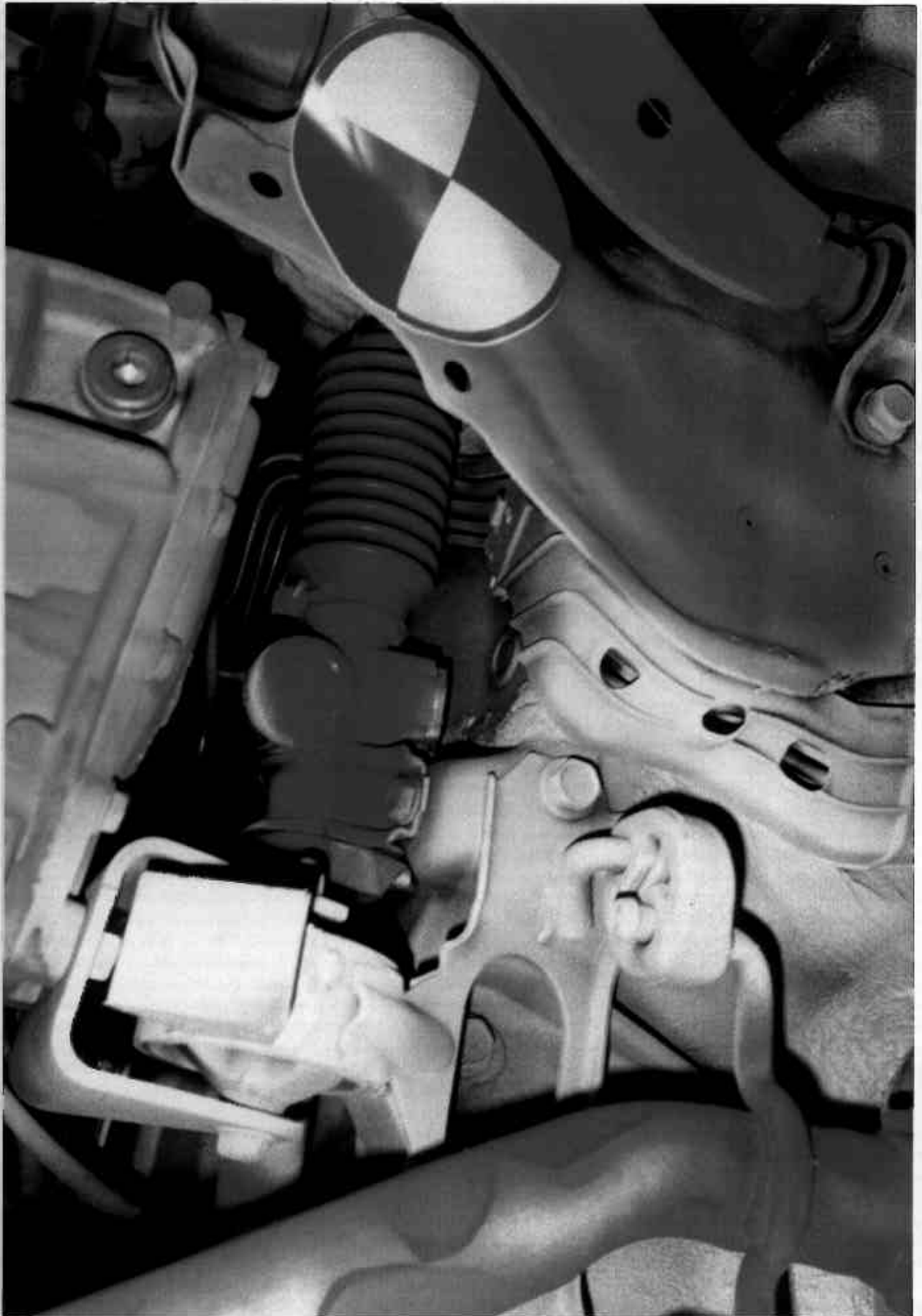


Figure A-13 PRE-TEST UNDERBODY STEERING SHAFT



Figure A-14 POST-TEST UNDERBODY STEERING SHAFT

PHOTOGRAPH NOT AVAILABLE

PHOTOGRAPH NOT AVAILABLE



Figure A-17 POST-TEST DRIVER KNEE BOLSTER

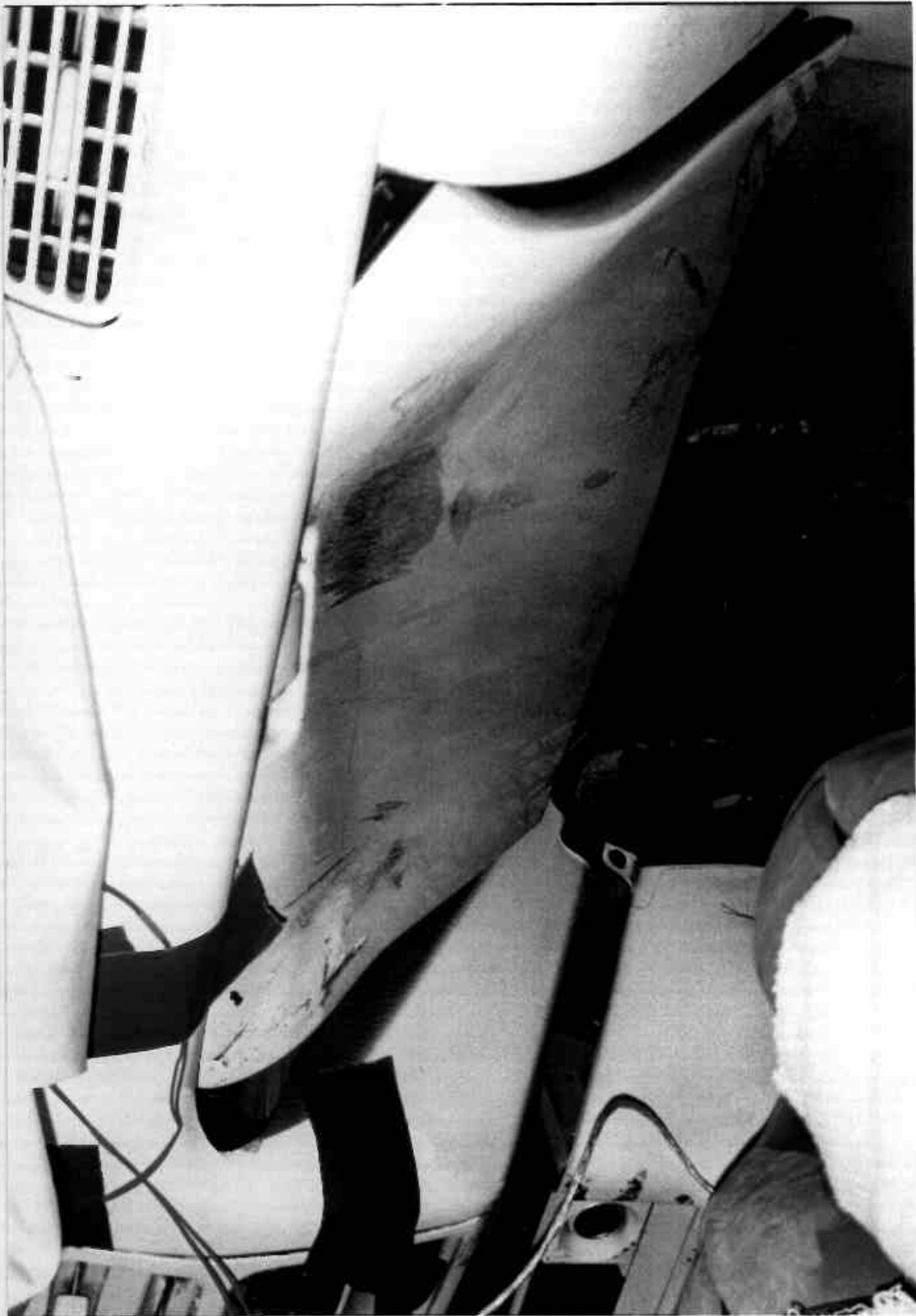


Figure A-18 POST-TEST PASSENGER KNEE BOLSTER

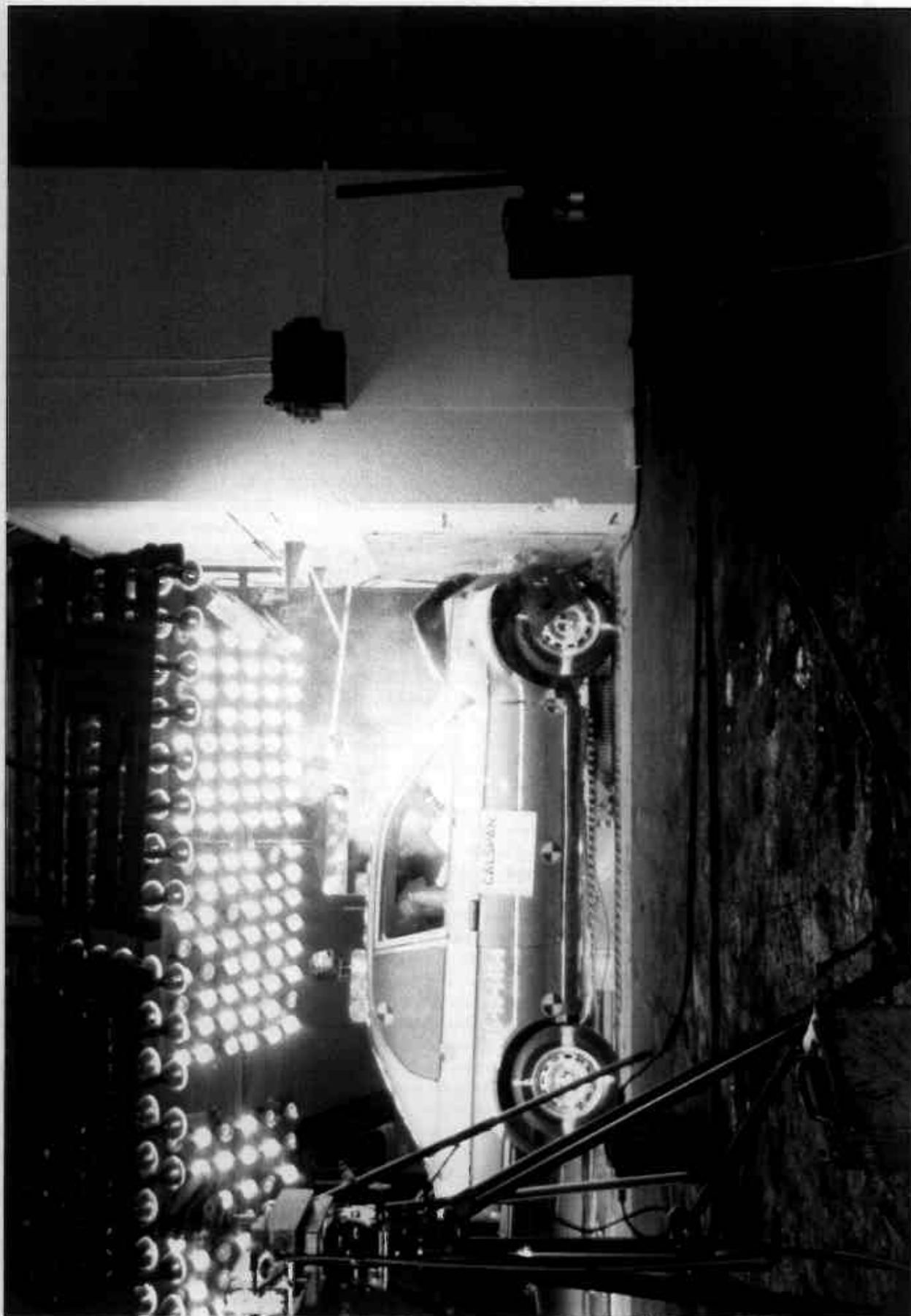


Figure A-19 VEHICLE IMPACT

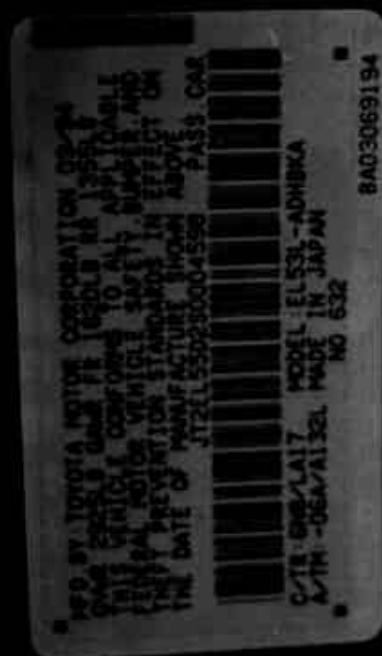


Figure A-20 CERTIFICATION PLACARD

VEHICLE	CAPACITY	WEIGHT (lbs)	775
DESIGNATED SEATING	CAPACITY TOTAL	5 (DRIVER SEAT)	
RECOMMENDED	TIRE SIZE	155SR13	
RECOMMENDED COLD TIRE INFLATION PRESSURES (psi)			
VEHICLE LOAD			
UP TO VEHICLE CAPACITY	WEIGHT	FRONT 34	REAR 32
COMPACT	SPARE	TIRE	
RECOMMENDED TIRE SIZE (WITH OUT ABS)			T105/70D14
RECOMMENDED TIRE SIZE (WITH ABS)			T105/70D10
RECOMMENDED COLD TIRE INFLATION PRESSURE (psi) OR			
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION			
16550			73

Figure A-21 TIRE PLACARD

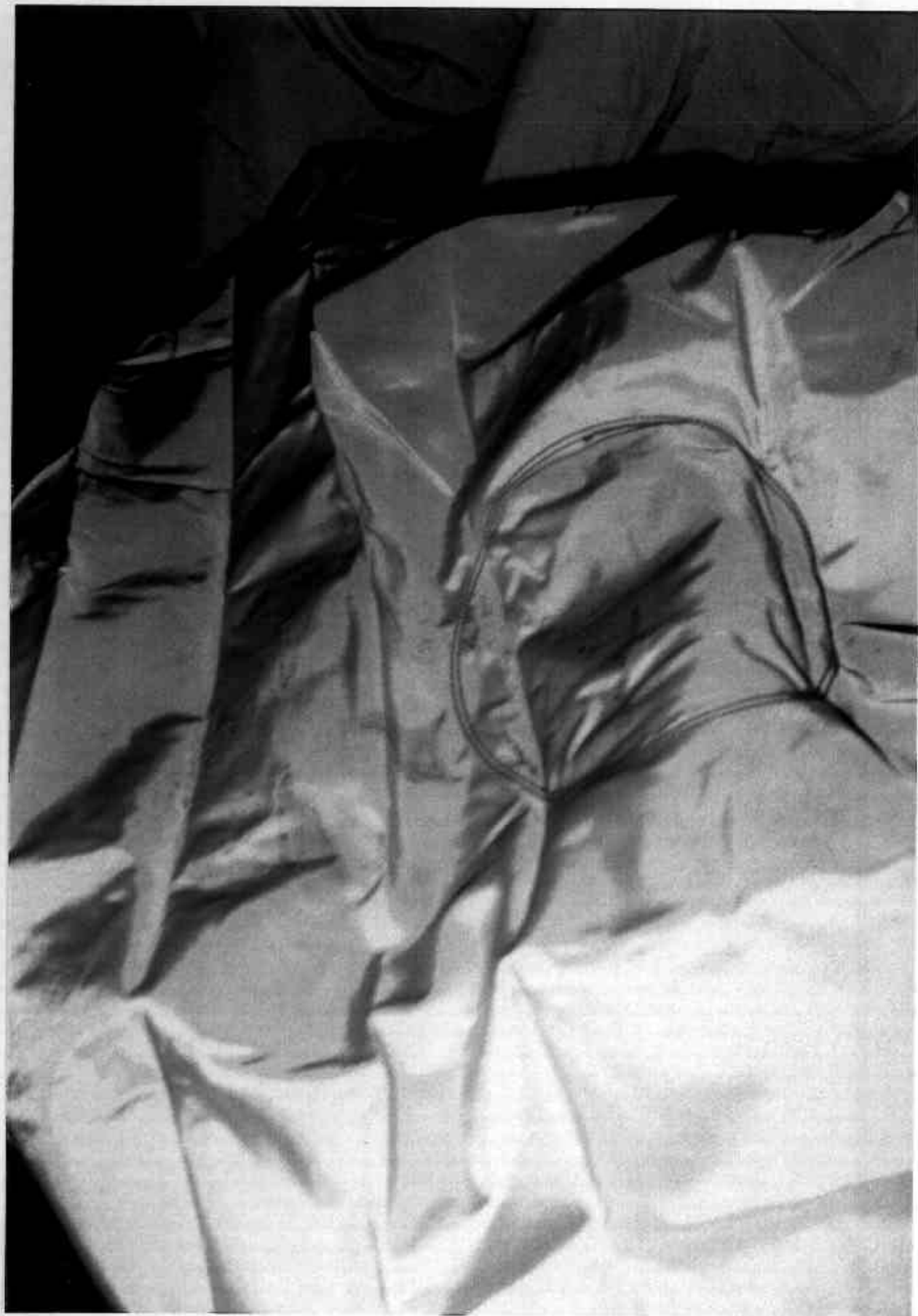


Figure A-22 POST-TEST DRIVER AIRBAG VIEW



Figure A-23 POST-TEST PASSENGER AIRBAG VIEW

Appendix B

VEHICLE AND DUMMY RESPONSE DATA

NOTE : Data trace scales are automatically scaled at the
request of the COTR. Use caution when
reviewing data.

TEST NO. CS5107

VEHICLE

SAE FILTER CHANNEL CLASS

60

FACILITY: TRACK TEST DATE: 10 Jan 1995
RUN #: 1483 TEST TIME: 12:49:22
SERIES #: 16 BOARD: b

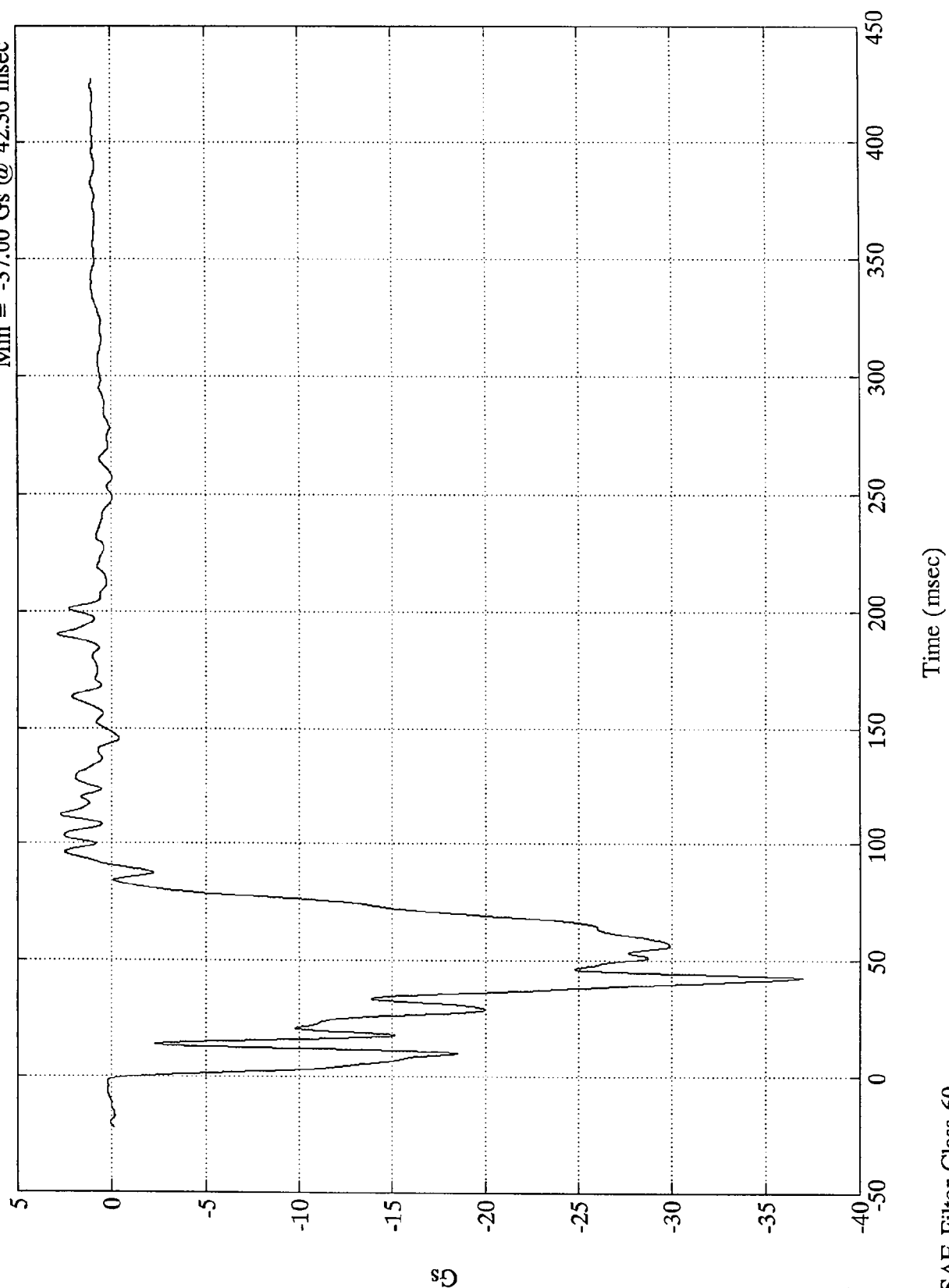
TITLE: 208 TEST #10 - 1995 TOYOTA TERCEL

CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM		MINIMUM		FILTER CLASS
			AMP	msec	AMP	msec	
1	Left Rear X-member X	Gs	2.9	190.2	-37.0	42.4	60.0
2	Right Rear X-member X	Gs	2.6	94.6	-31.5	42.1	60.0
3	Engine Top X	Gs	35.8	40.4	-107.5	31.6	60.0
4	Engine Bottom X	Gs	58.2	45.5	-75.6	25.9	60.0
5	Right Brake Caliper X	Gs	16.1	16.8	-73.4	47.5	60.0
6	Left Brake Caliper X	Gs	28.6	66.2	-133.9	48.1	60.0
7	Instrument Panel X	Gs	77.7	71.9	-91.5	76.8	60.0
8	Pos. 1 Chest Disp.	in	.0	8.0	-.8	70.3	180.0
9	Pos. 2 Chest Disp.	in	.0	33.6	-.7	73.6	180.0
10	Trunk Z	Gs	20.7	62.4	-14.3	85.2	60.0

FMVSS 208 - 95 Toyota Tercel

Max = 2.89 Gs @ 190.20 msec
Min = -37.00 Gs @ 42.36 msec

L. Rear X-member X



SAE Filter Class 60

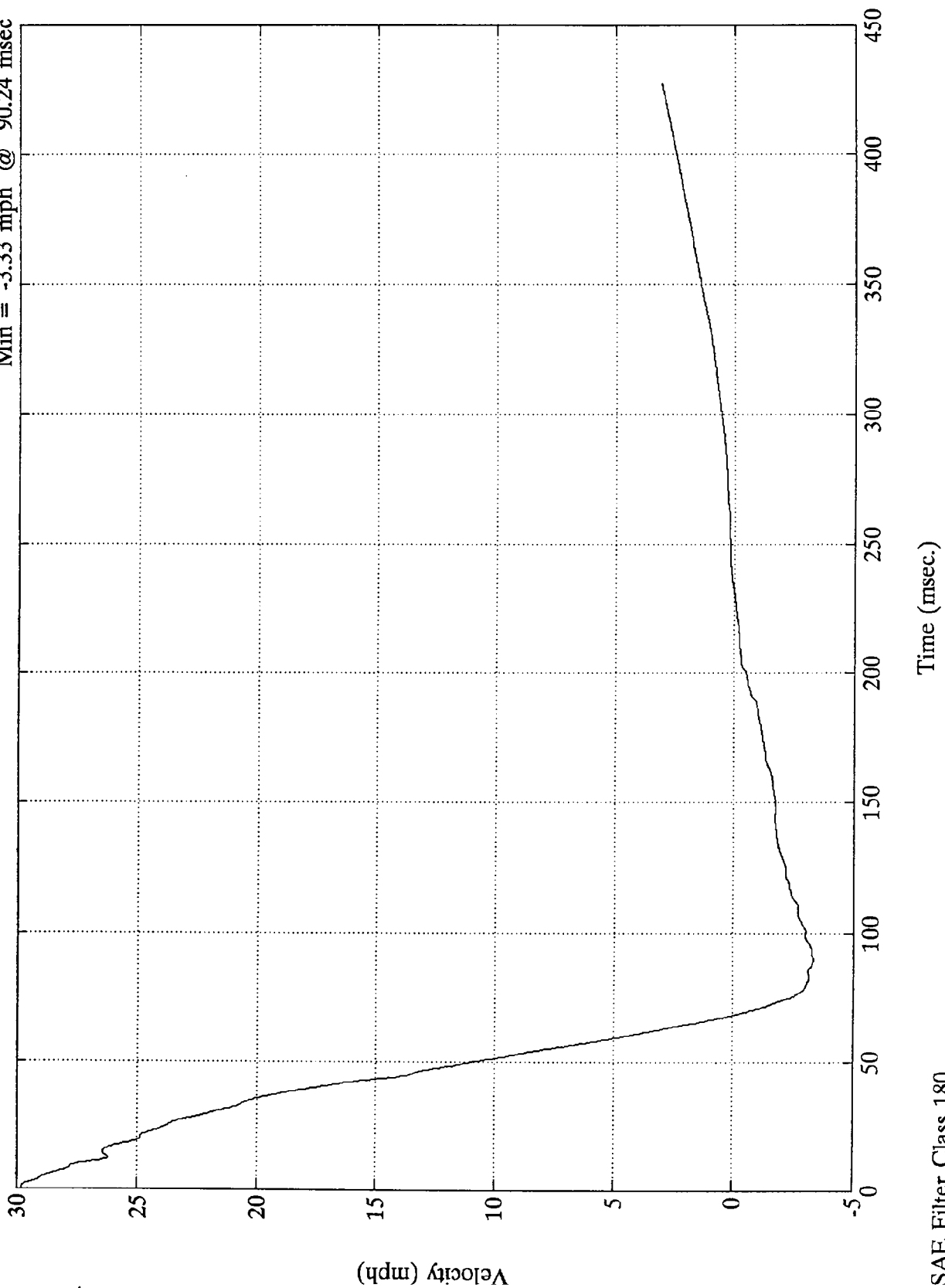
Gs

Time (msec)

FMVSS 208 - 95 Toyota Tercel

L. Rear X-member X

Max = 29.80 mph @ 0.96 msec
Min = -3.33 mph @ 90.24 msec

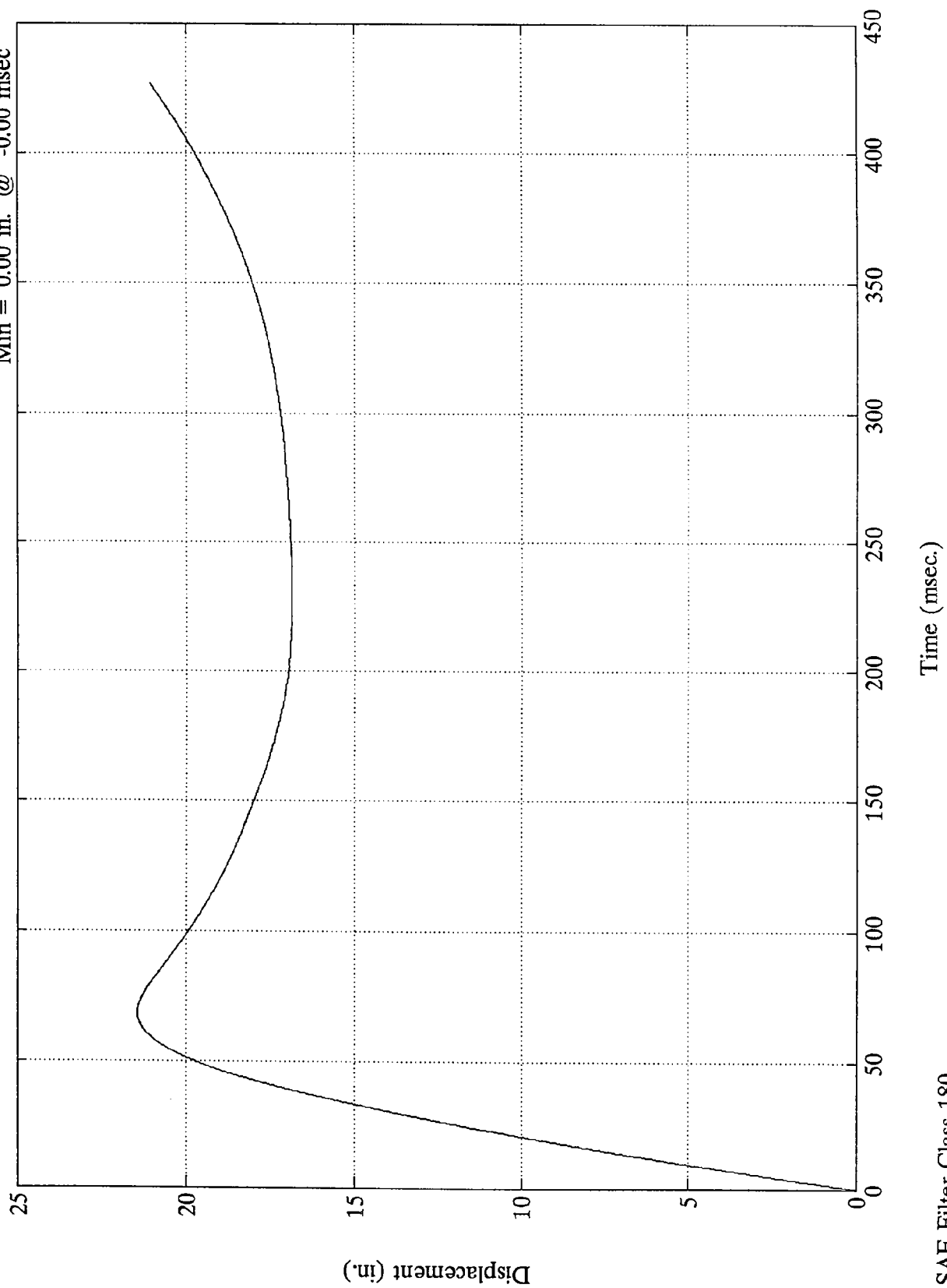


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 21.45 in. @ 69.12 msec
Min = 0.00 in. @ -0.00 msec

L. Rear X-member X

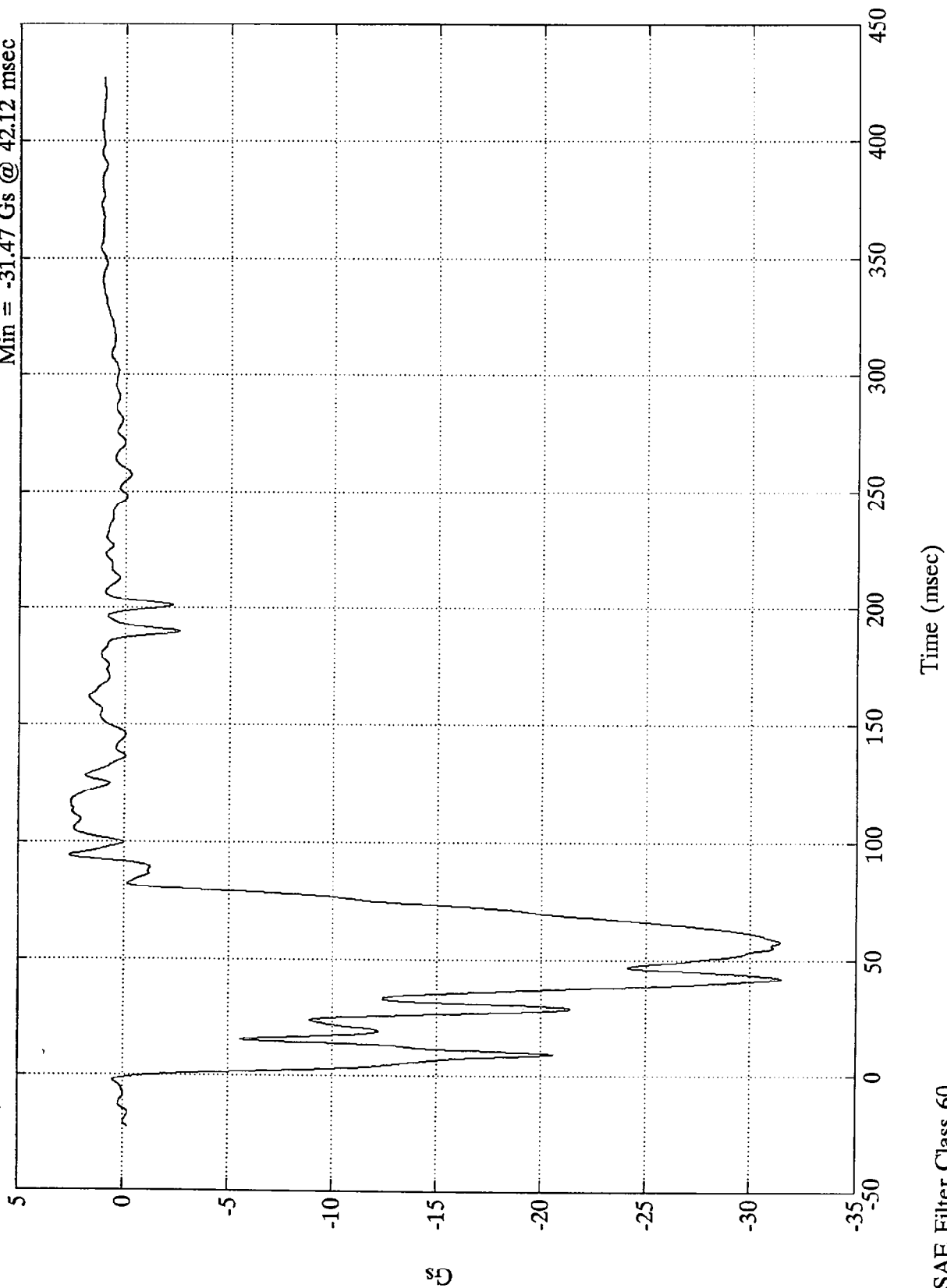


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 2.58 Gs @ 94.56 msec
Min = -31.47 Gs @ 42.12 msec

R. Rear X-member X

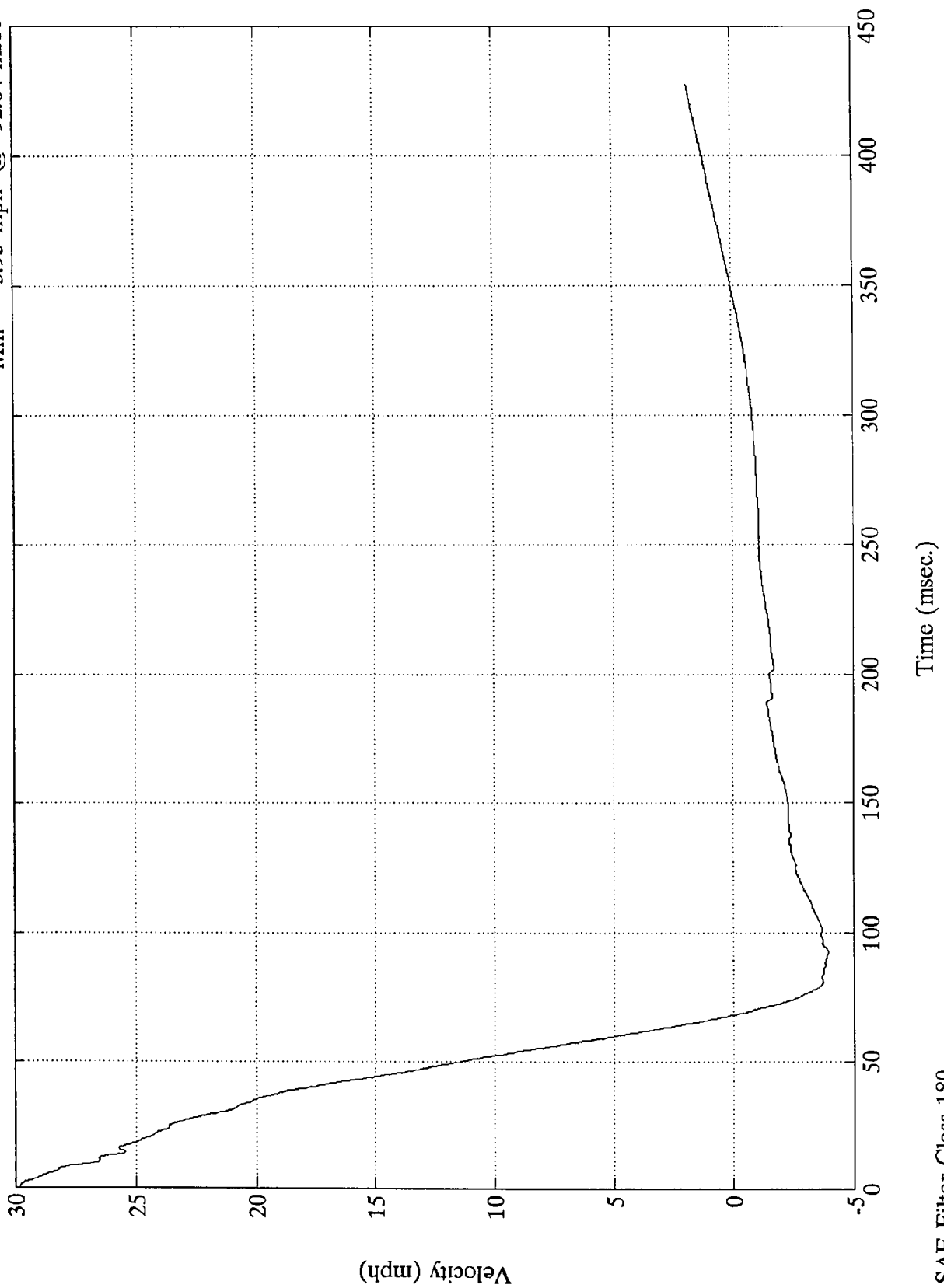


SAE Filter Class 60

FMVSS 208 - 95 Toyota Tercel

R. Rear X-member X

Max = 29.80 mph @ 0.96 msec
Min = -3.95 mph @ 92.64 msec

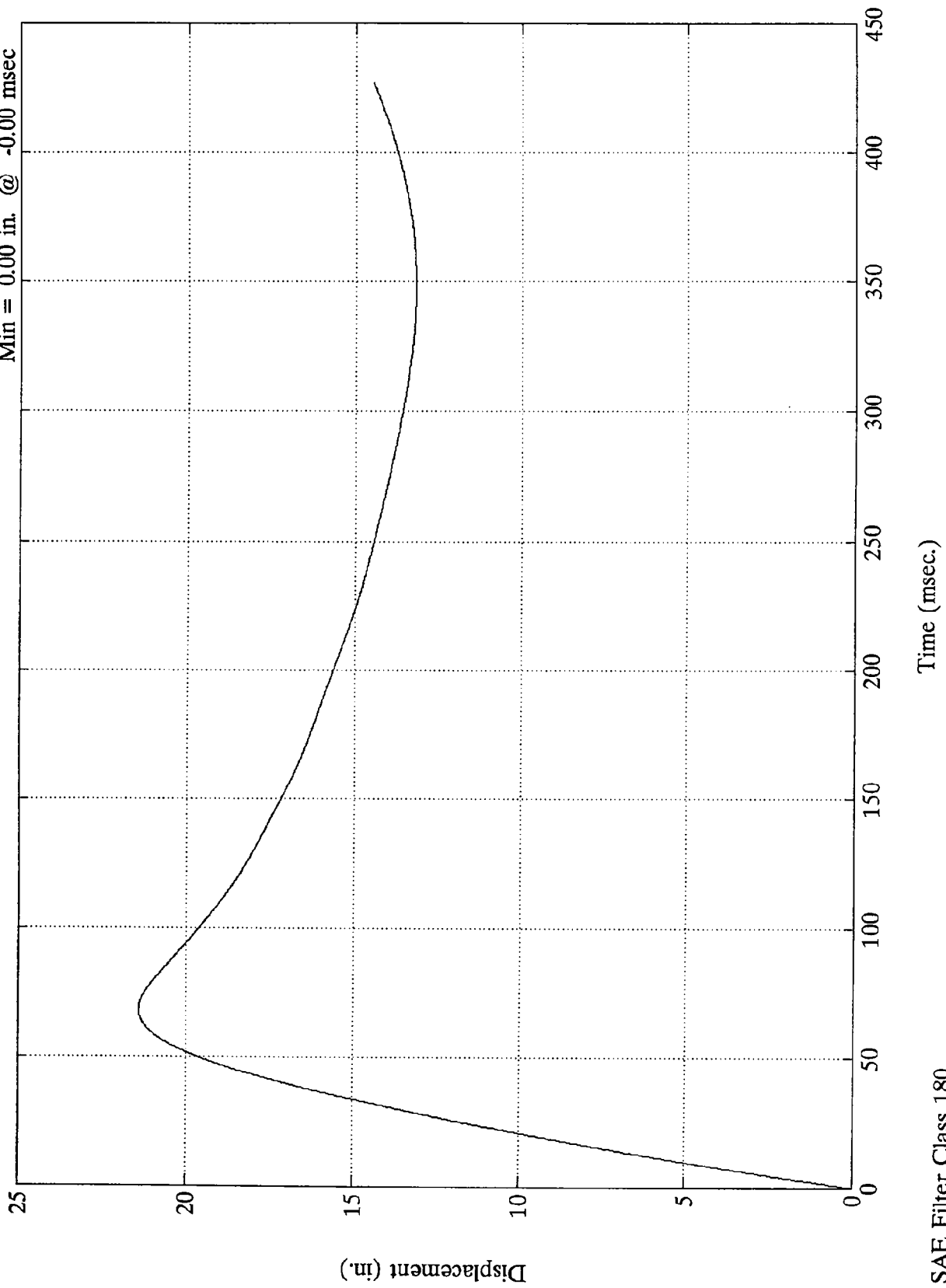


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

R. Rear X-member X

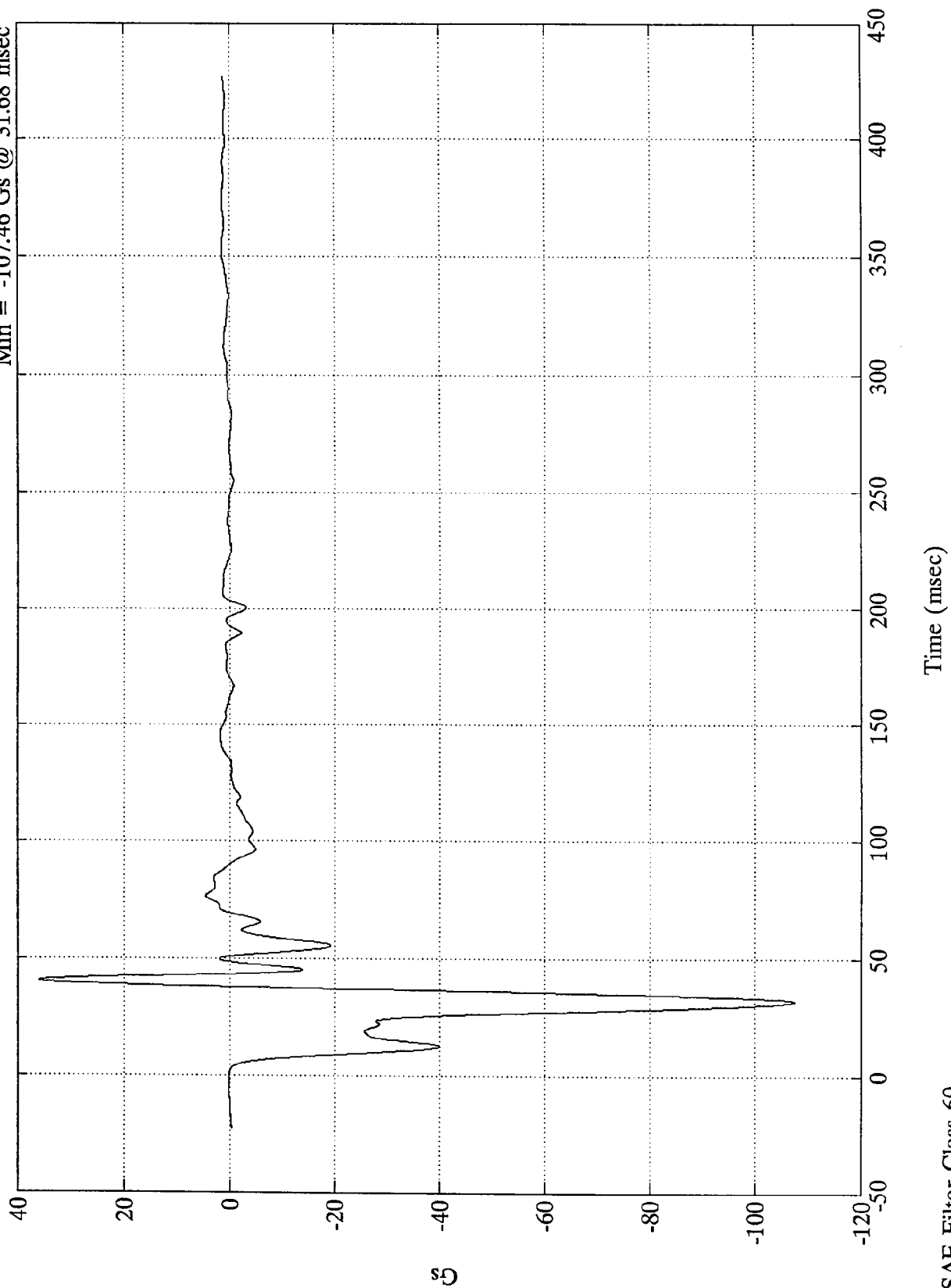
Max = 21.41 in. @ 68.88 msec
Min = 0.00 in. @ -0.00 msec



FMVSS 208 - 95 Toyota Tercel

Engine Top X

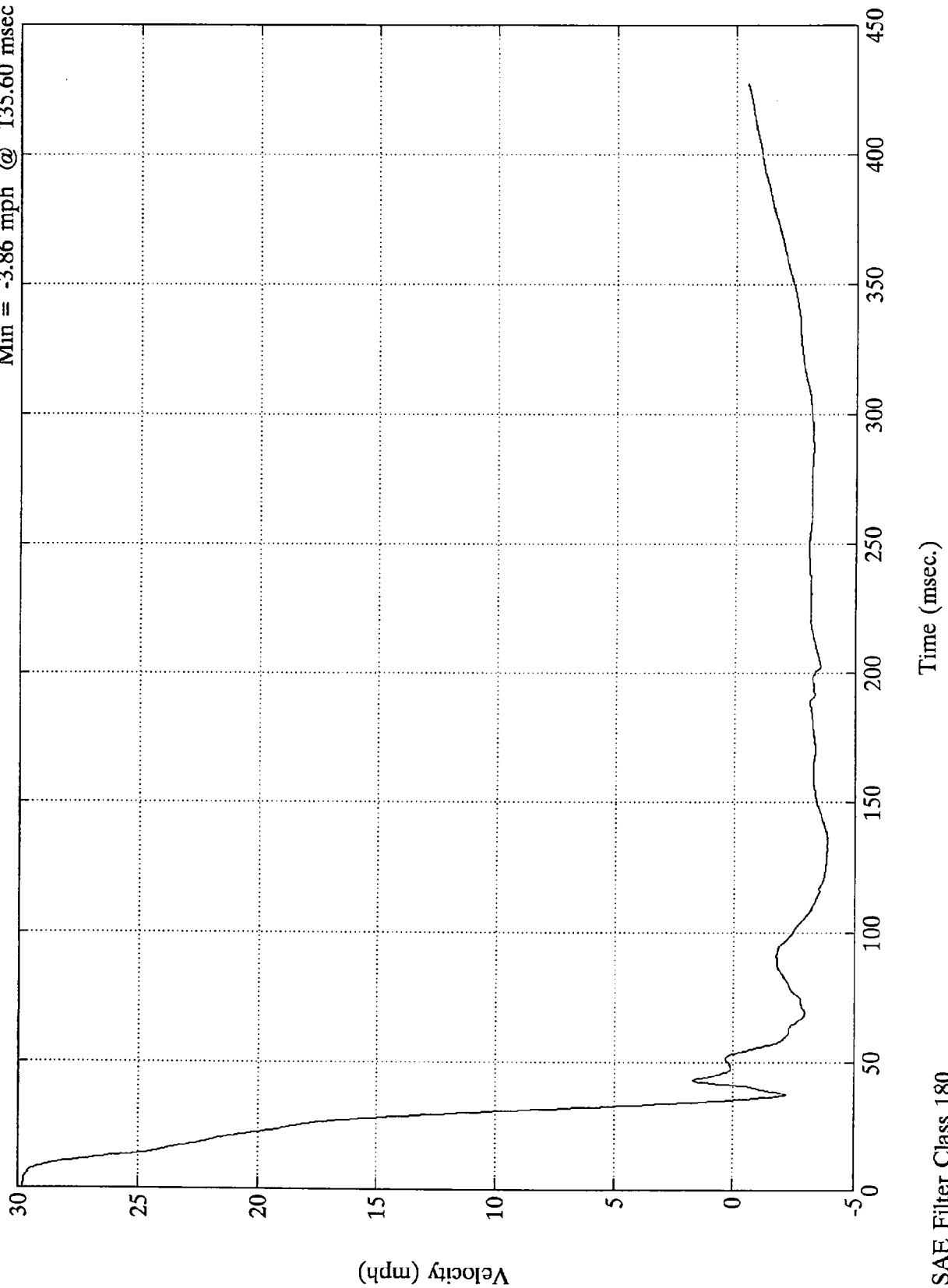
Max = 35.83 Gs @ 40.44 msec
Min = -107.46 Gs @ 31.68 msec



FMVSS 208 - 95 Toyota Tercel

Engine Top X

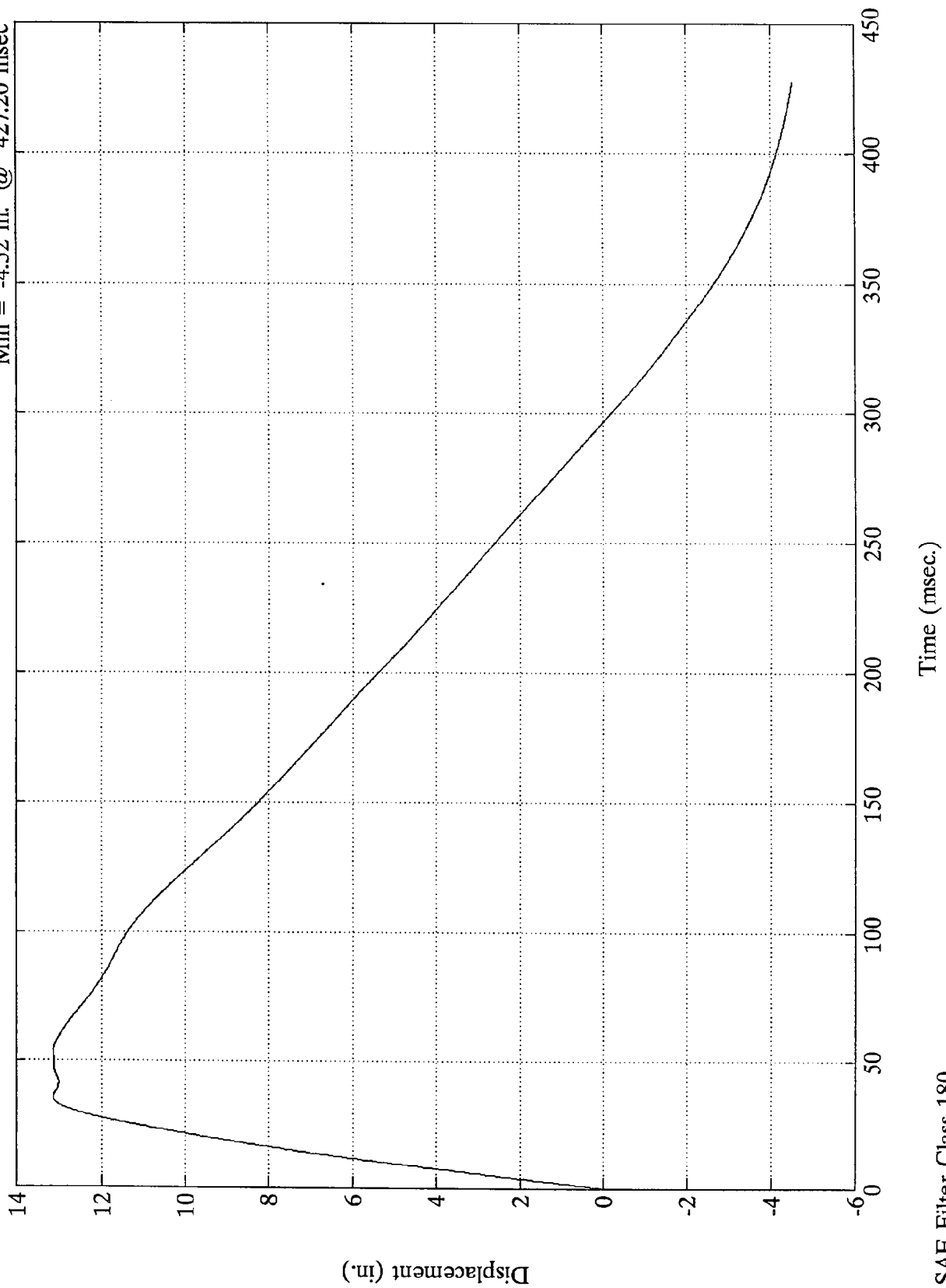
Max = 29.80 mph @ 1.44 msec
Min = -3.86 mph @ 135.60 msec



FMVSS 208 - 95 Toyota Tercel

Engine Top X

Max = 13.13 in. @ 35.28 msec
Min = -4.52 in. @ 427.20 msec

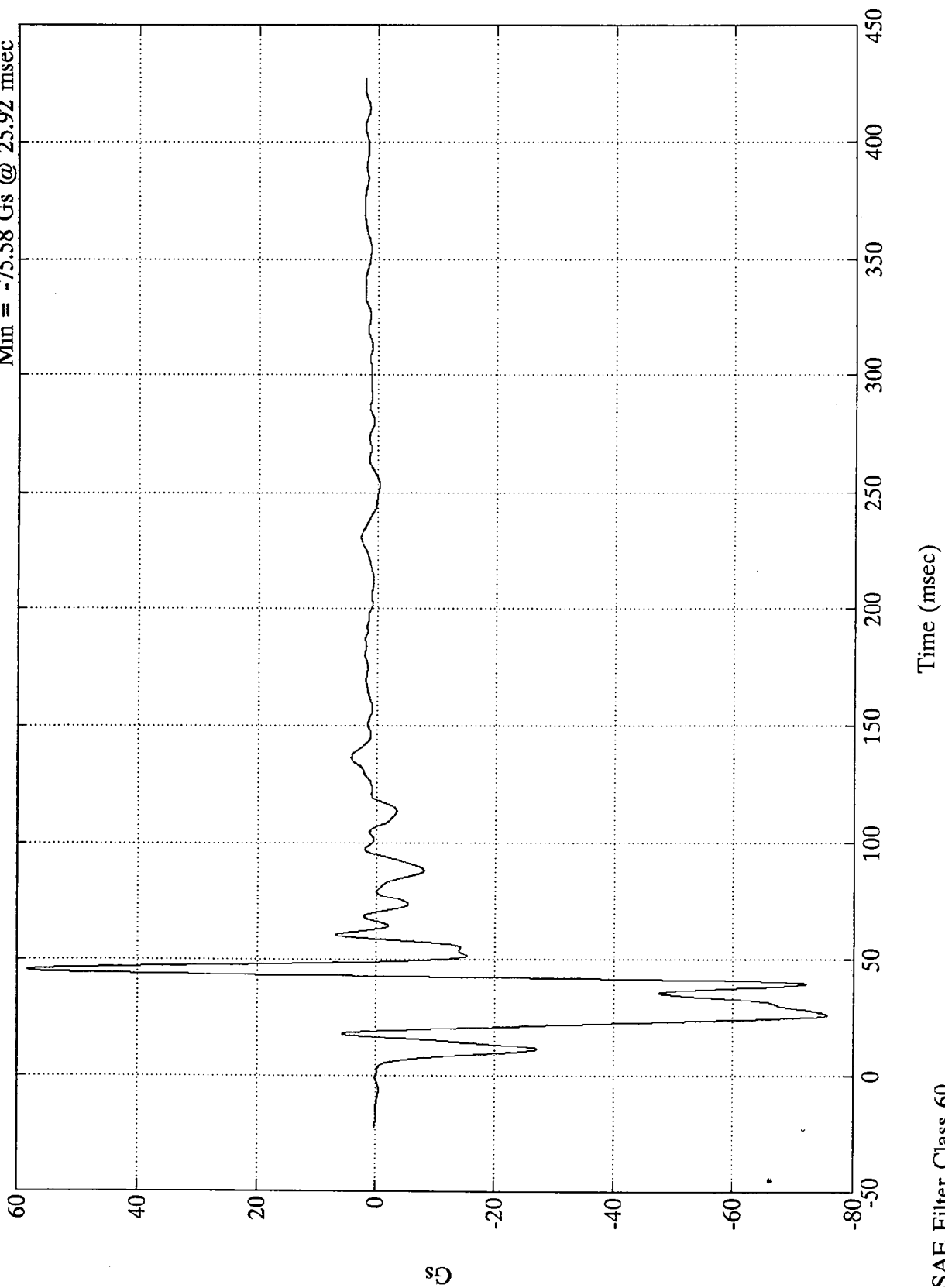


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Engine Bottom X

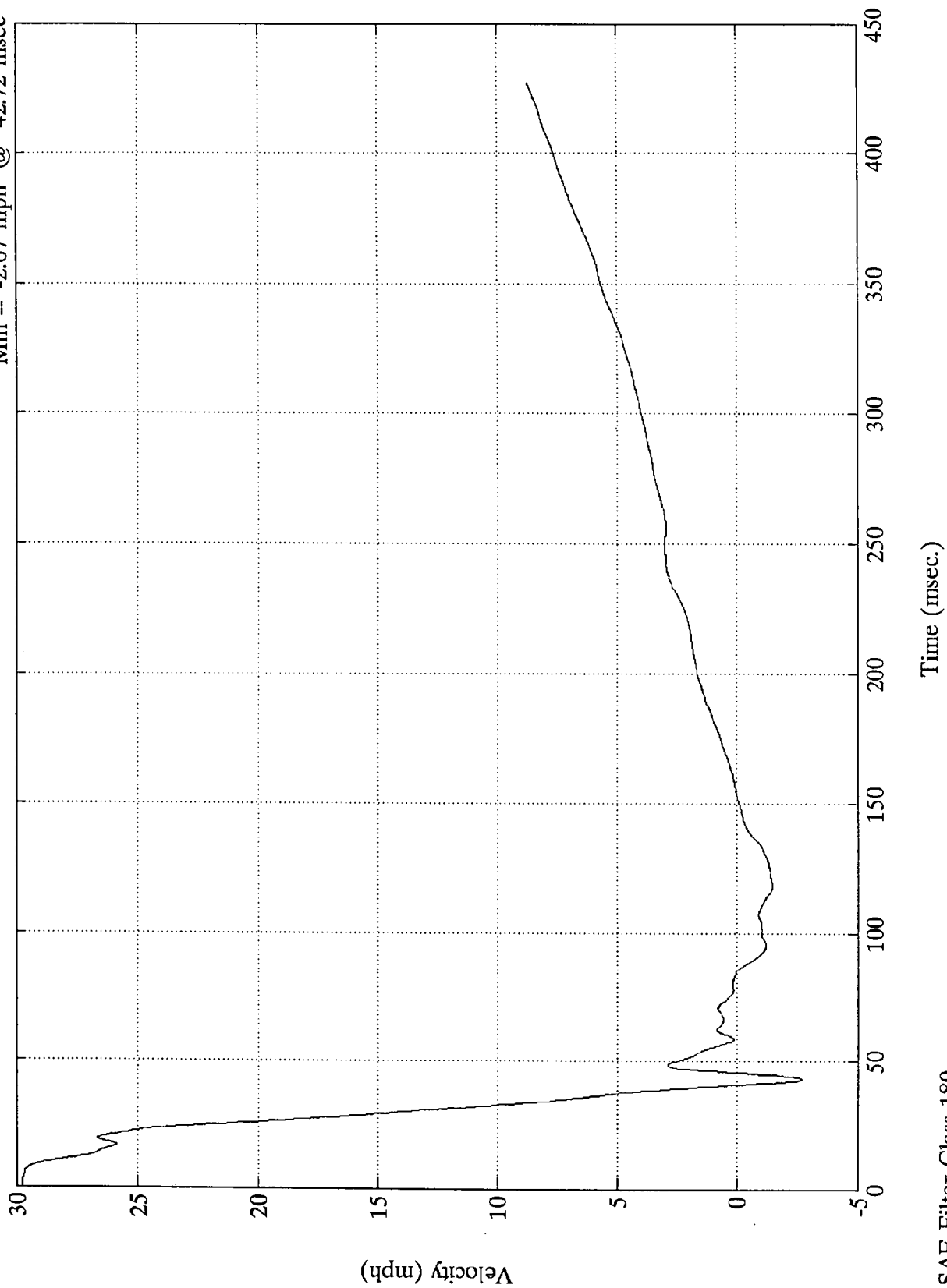
Max = 58.23 Gs @ 45.48 msec
Min = -75.58 Gs @ 25.92 msec



SAE Filter Class 60

FMVSS 208 - 95 Toyota Tercel

Engine Bottom X
Max = 29.80 mph @ -0.00 msec
Min = -2.67 mph @ 42.72 msec

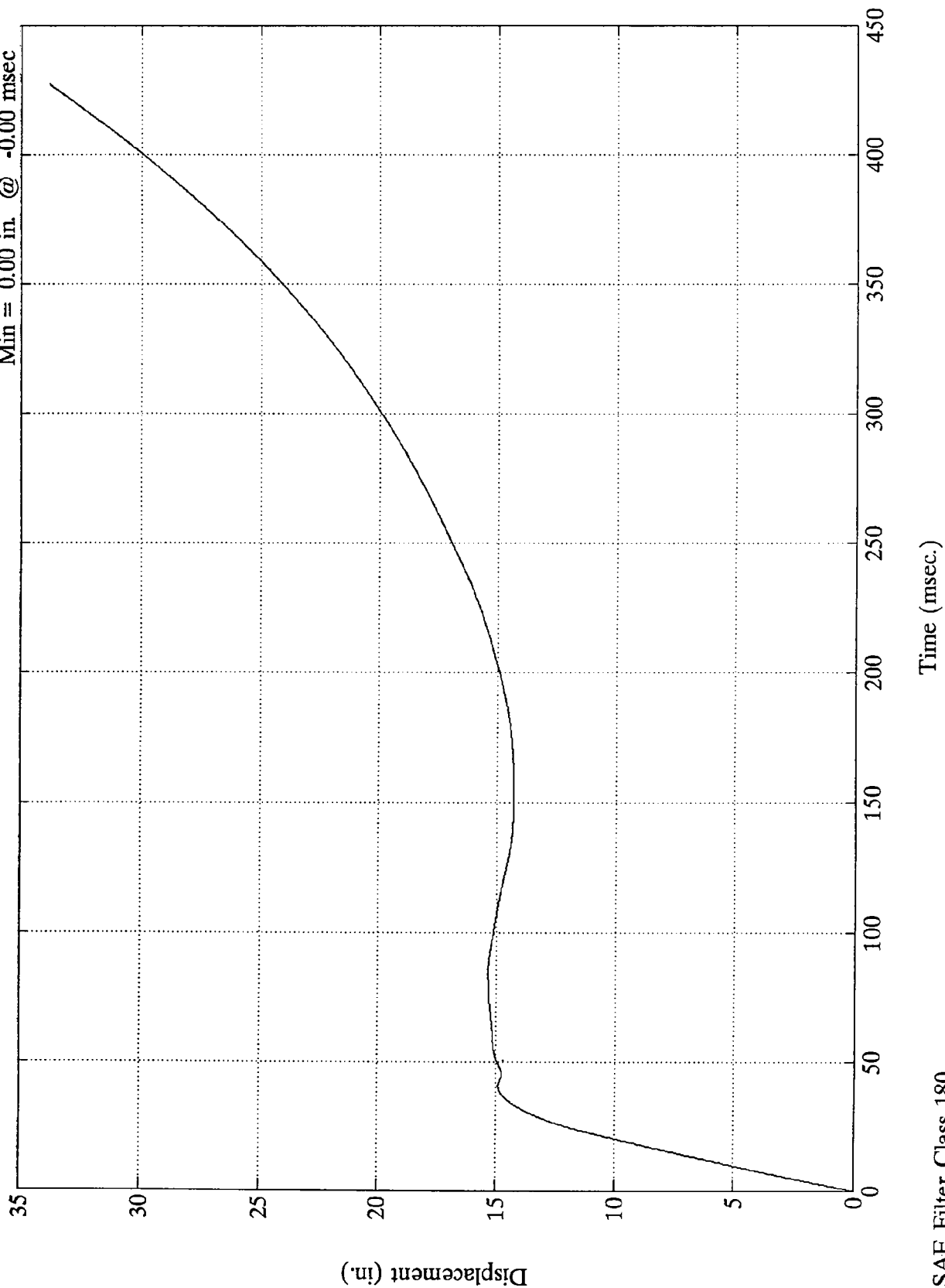


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Engine Bottom X

Max = 33.85 in. @ 427.20 msec
Min = 0.00 in. @ -0.00 msec

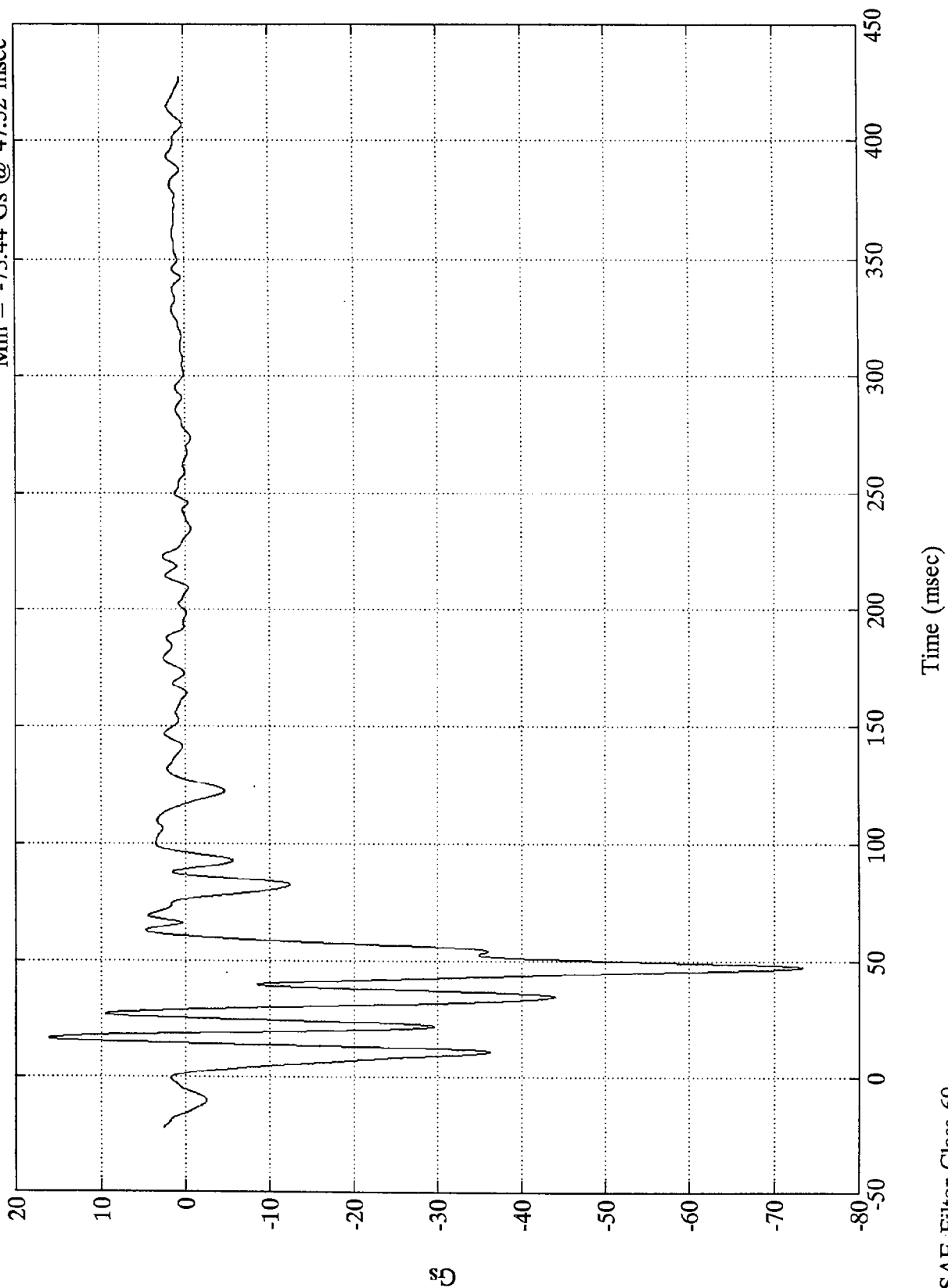


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

R. Brake Caliper X

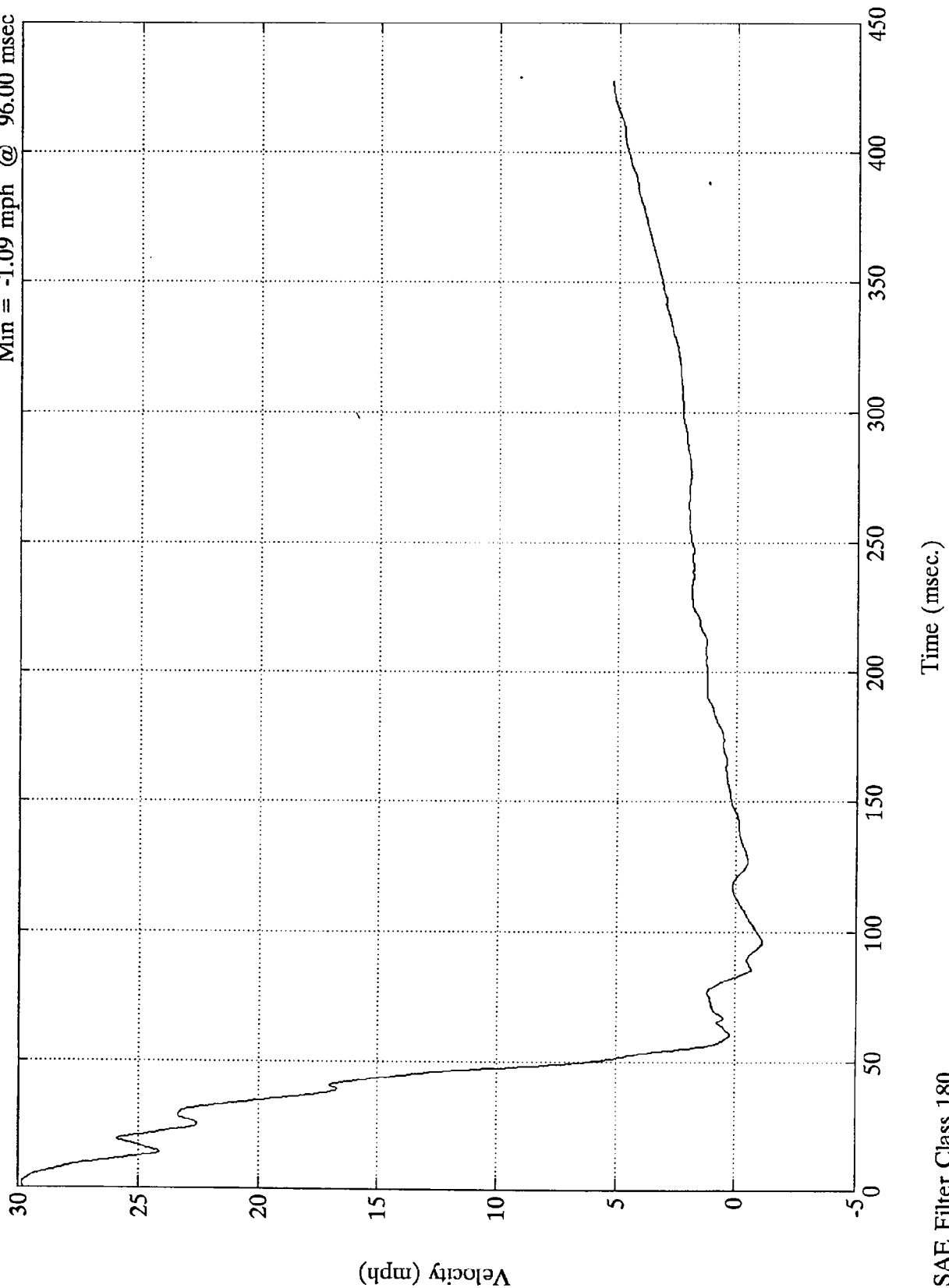
Max = 16.14 Gs @ 16.80 msec
Min = -73.44 Gs @ 47.52 msec



FMVSS 208 - 95 Toyota Tercel

R. Brake Caliper X

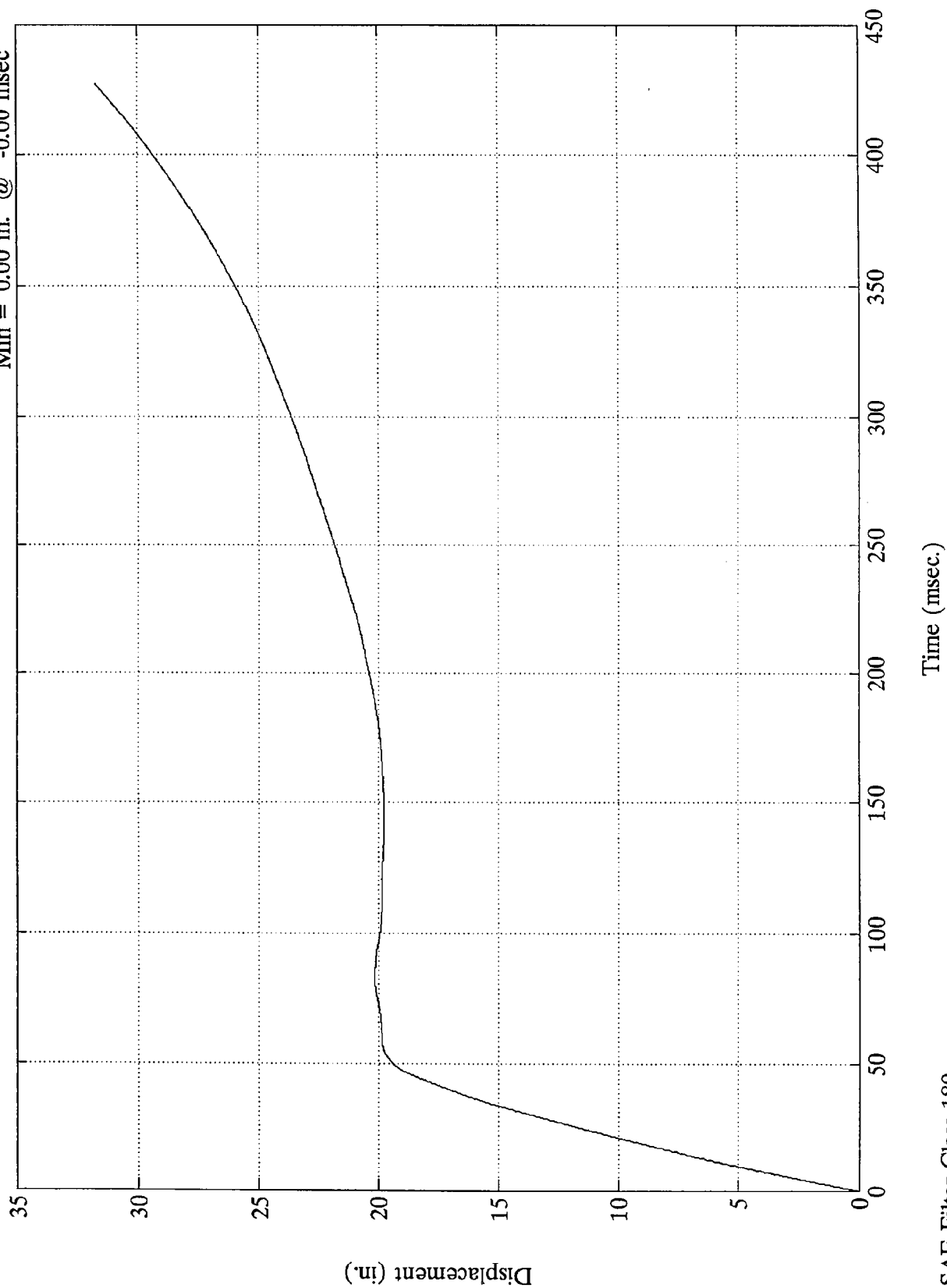
Max = 29.86 mph @ 2.16 msec
Min = -1.09 mph @ 96.00 msec



FMVSS 208 - 95 Toyota Tercel

R. Brake Caliper X

Max = 31.72 in. @ 427.20 msec
Min = 0.00 in. @ -0.00 msec

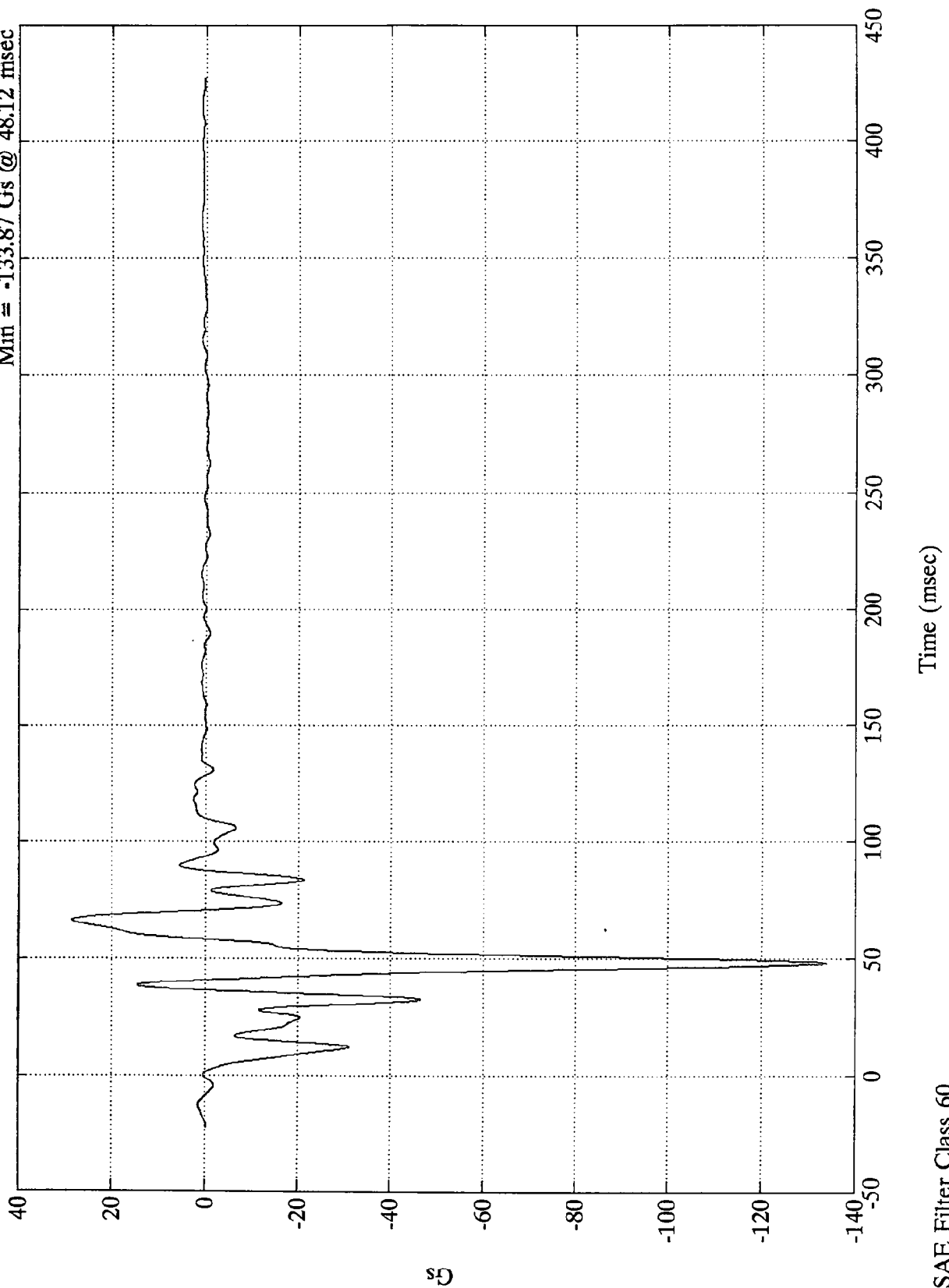


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

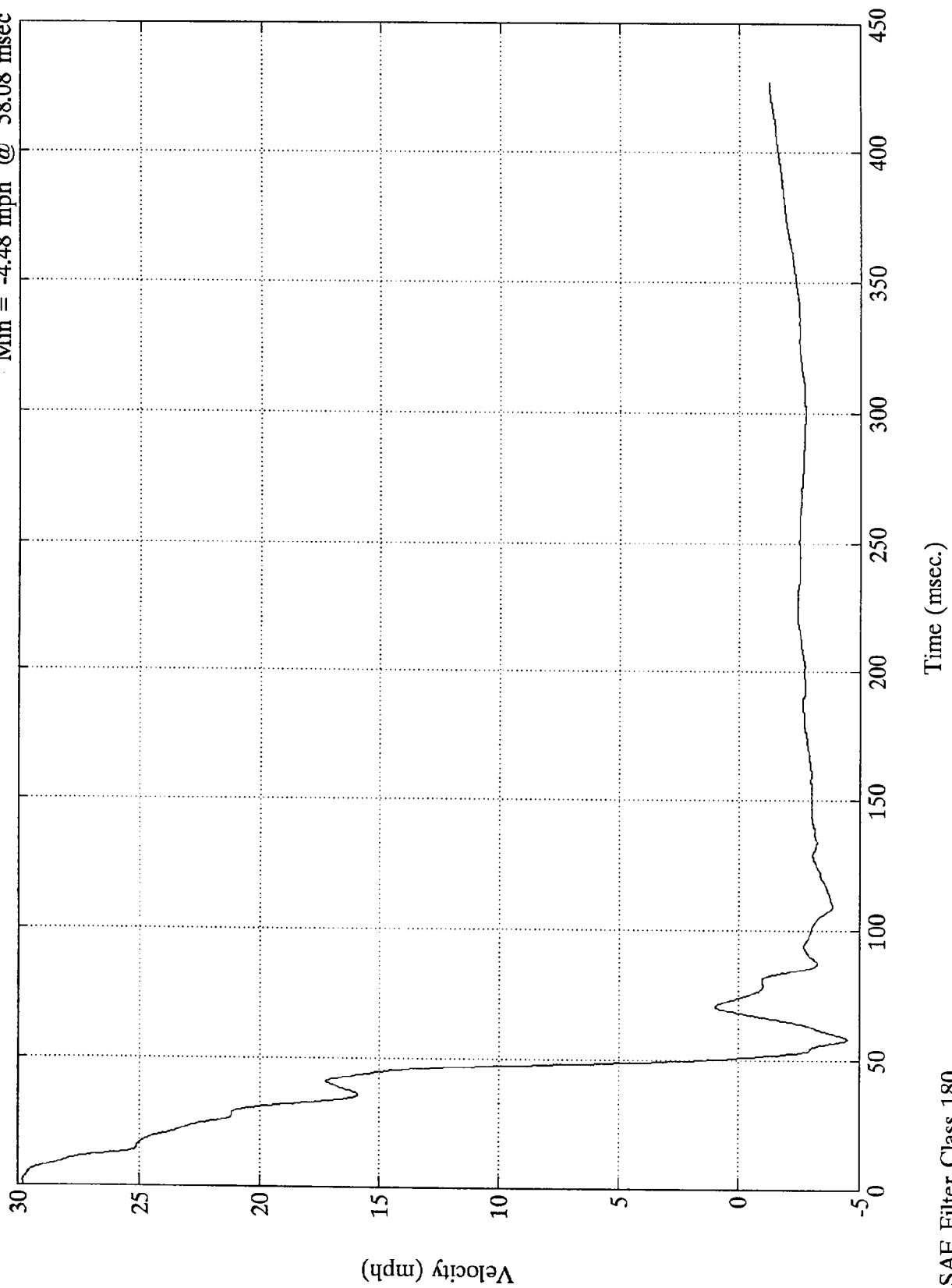
L. Brake Caliper X

Max = 28.56 Gs @ 66.24 msec
Min = -133.87 Gs @ 48.12 msec



FMVSS 208 - 95 Toyota Tercel

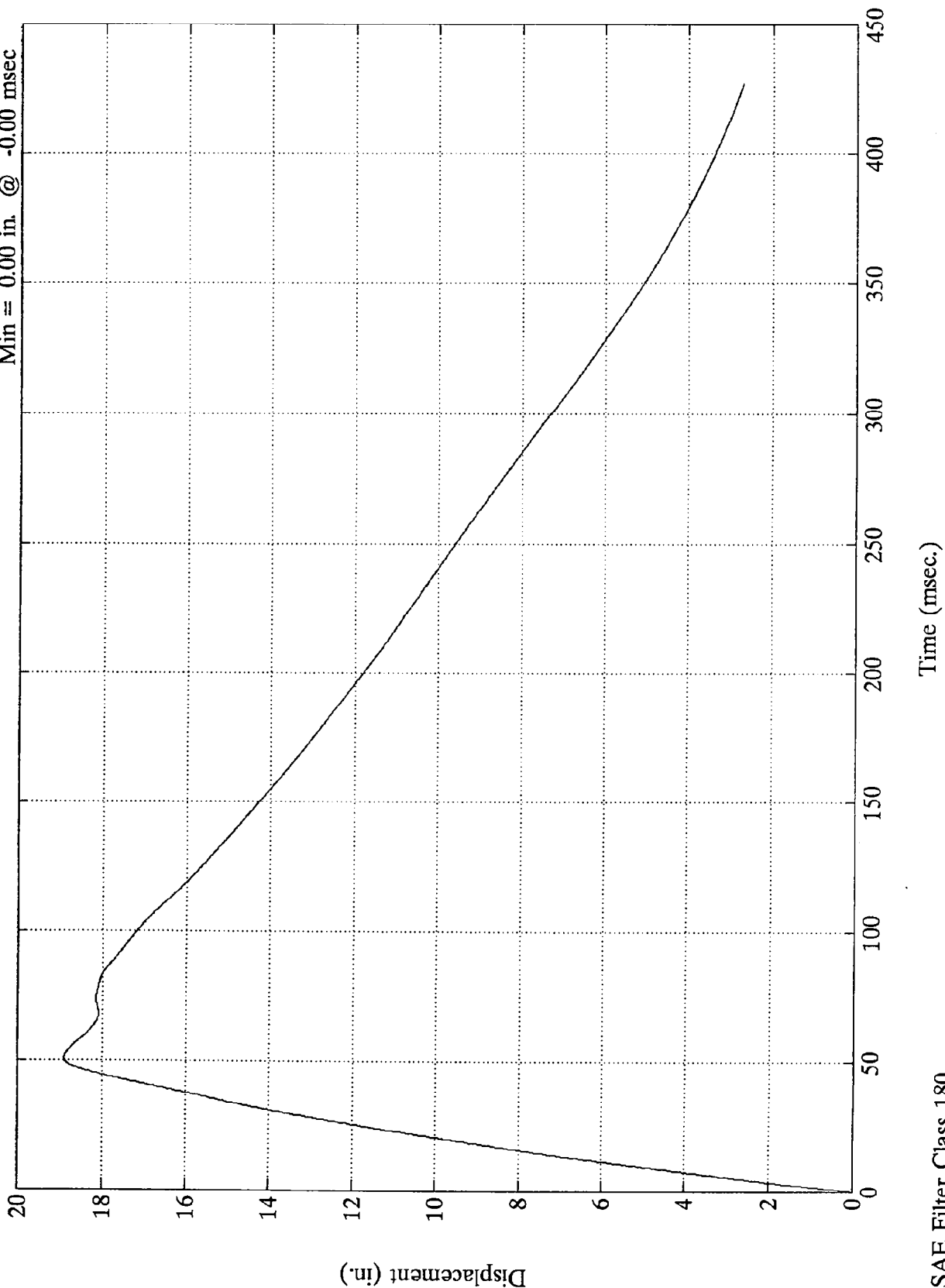
L. Brake Caliper X
Max = 29.84 mph @ 1.92 msec
Min = -4.48 mph @ 58.08 msec



FMVSS 208 - 95 Toyota Tercel

L. Brake Caliper X

Max = 18.90 in. @ 51.12 msec
Min = 0.00 in. @ -0.00 msec

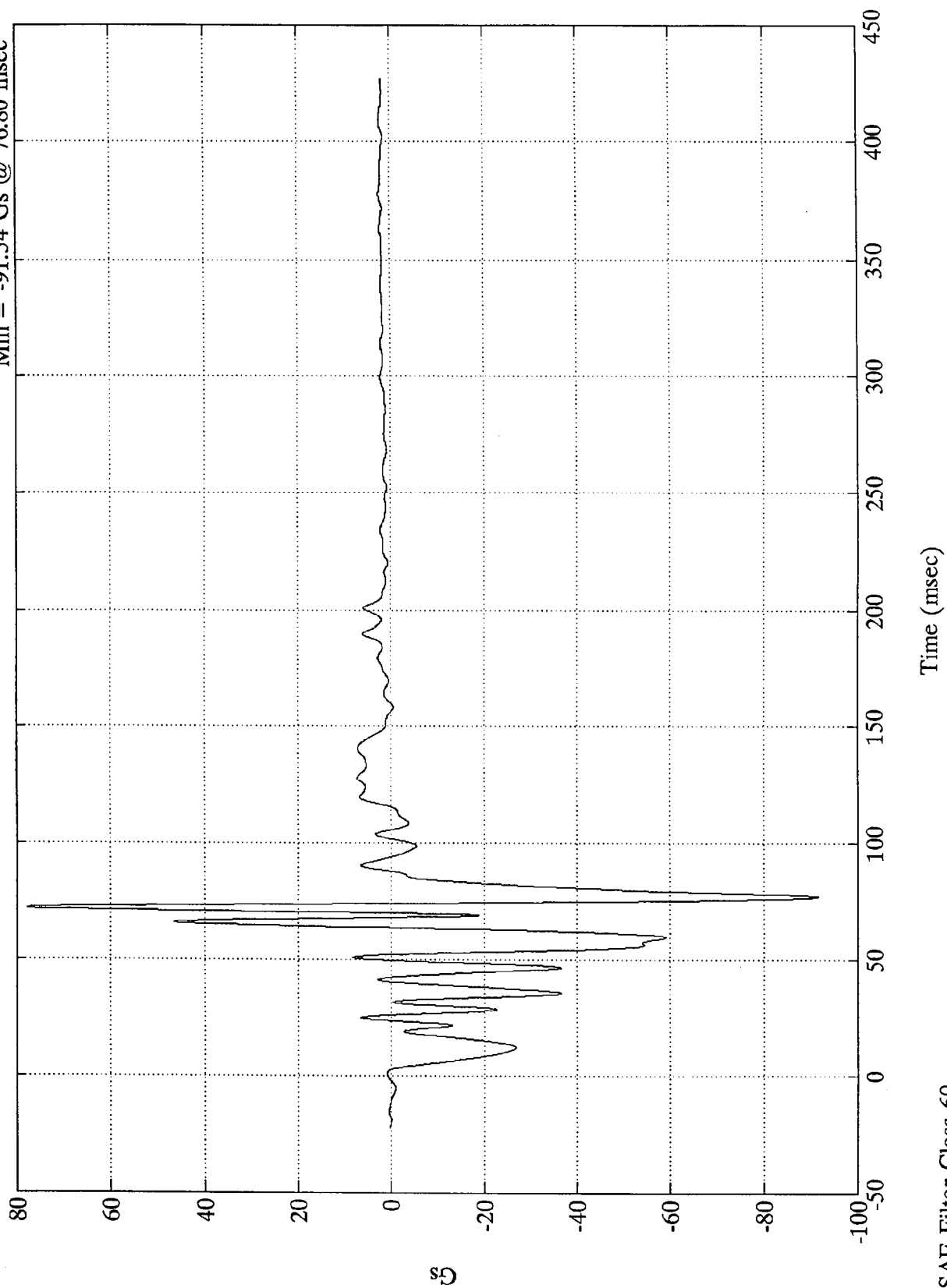


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 77.75 Gs @ 71.88 msec
Min = -91.54 Gs @ 76.80 msec

Instrument Panel X

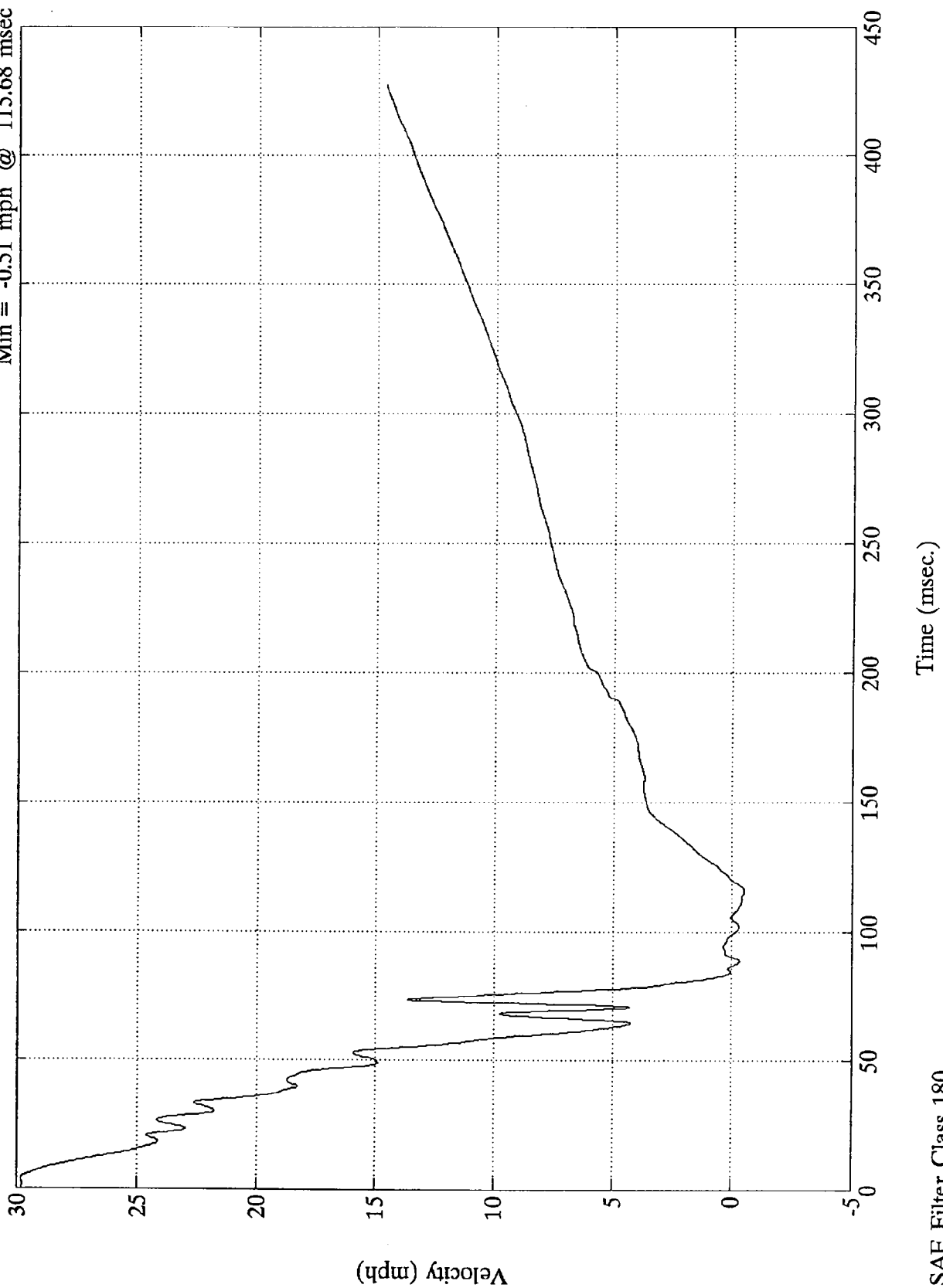


SAE Filter Class 60

FMVSS 208 - 95 Toyota Tercel

Instrument Panel X

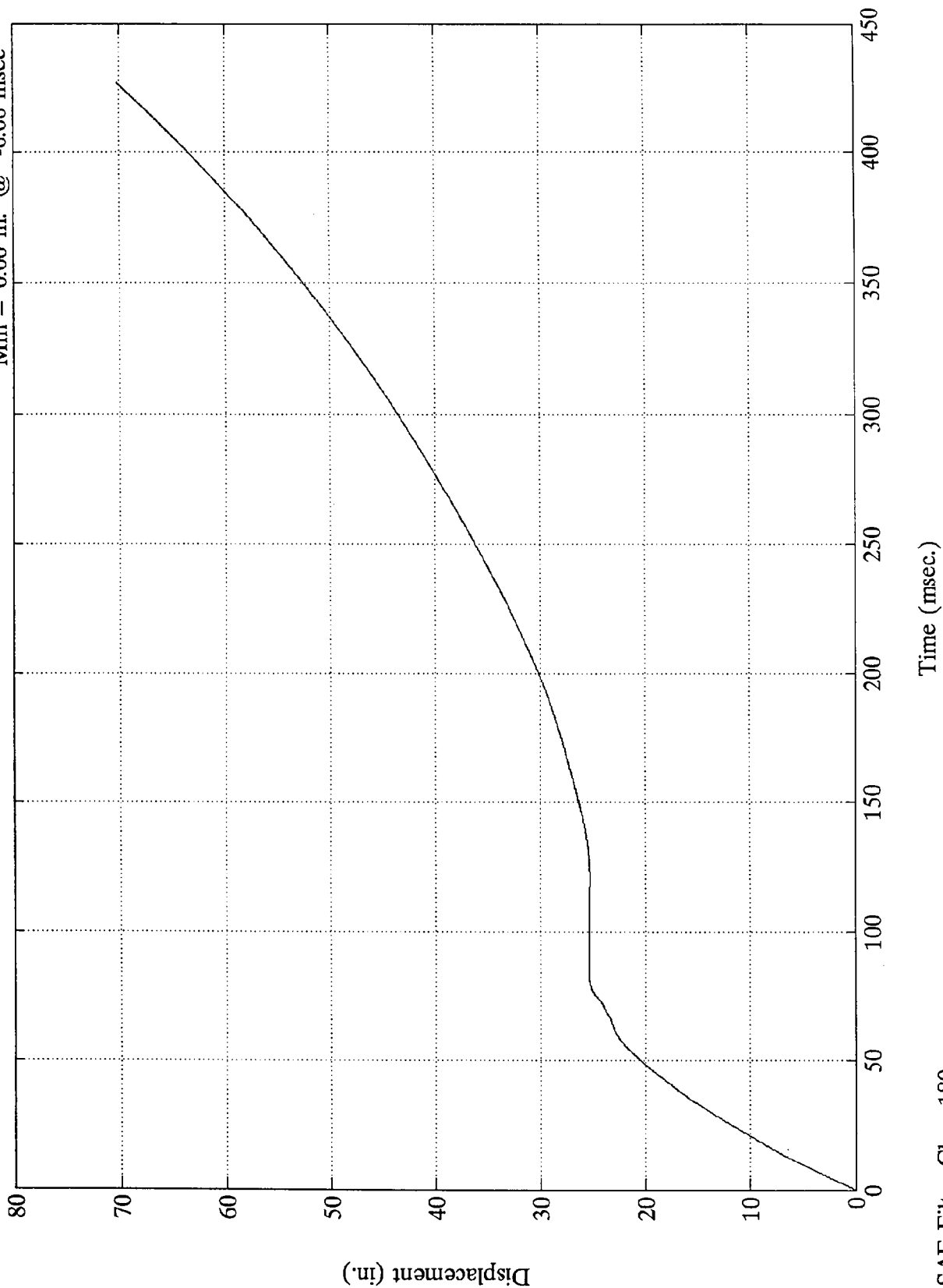
Max = 29.84 mph @ 4.08 msec
Min = -0.51 mph @ 115.68 msec



SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Instrument Panel X
Max = 70.19 in. @ 427.20 msec
Min = 0.00 in. @ -0.00 msec

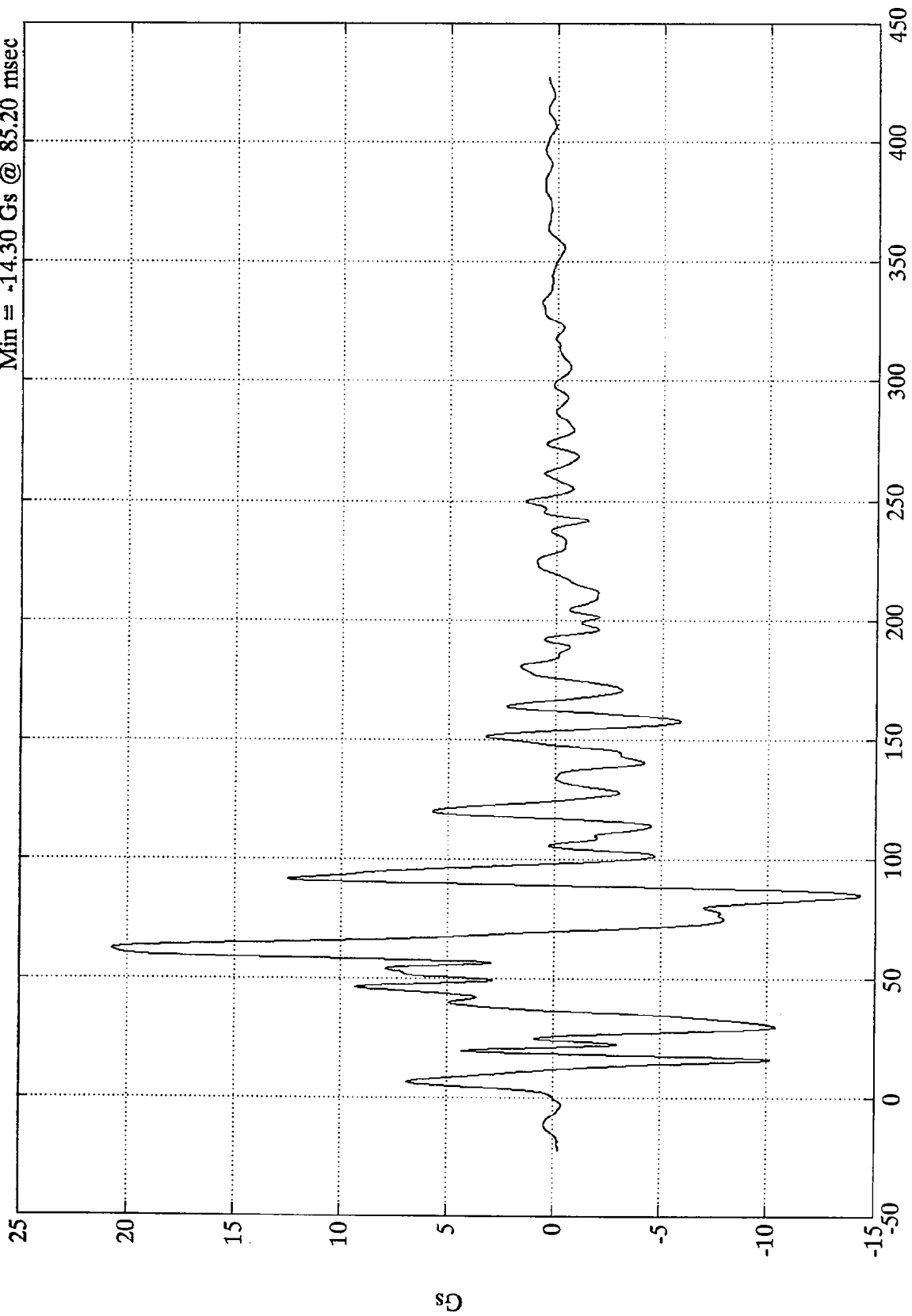


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 20.72 Gs @ 62.40 msec
Min = -14.30 Gs @ 85.20 msec

Trunk Z



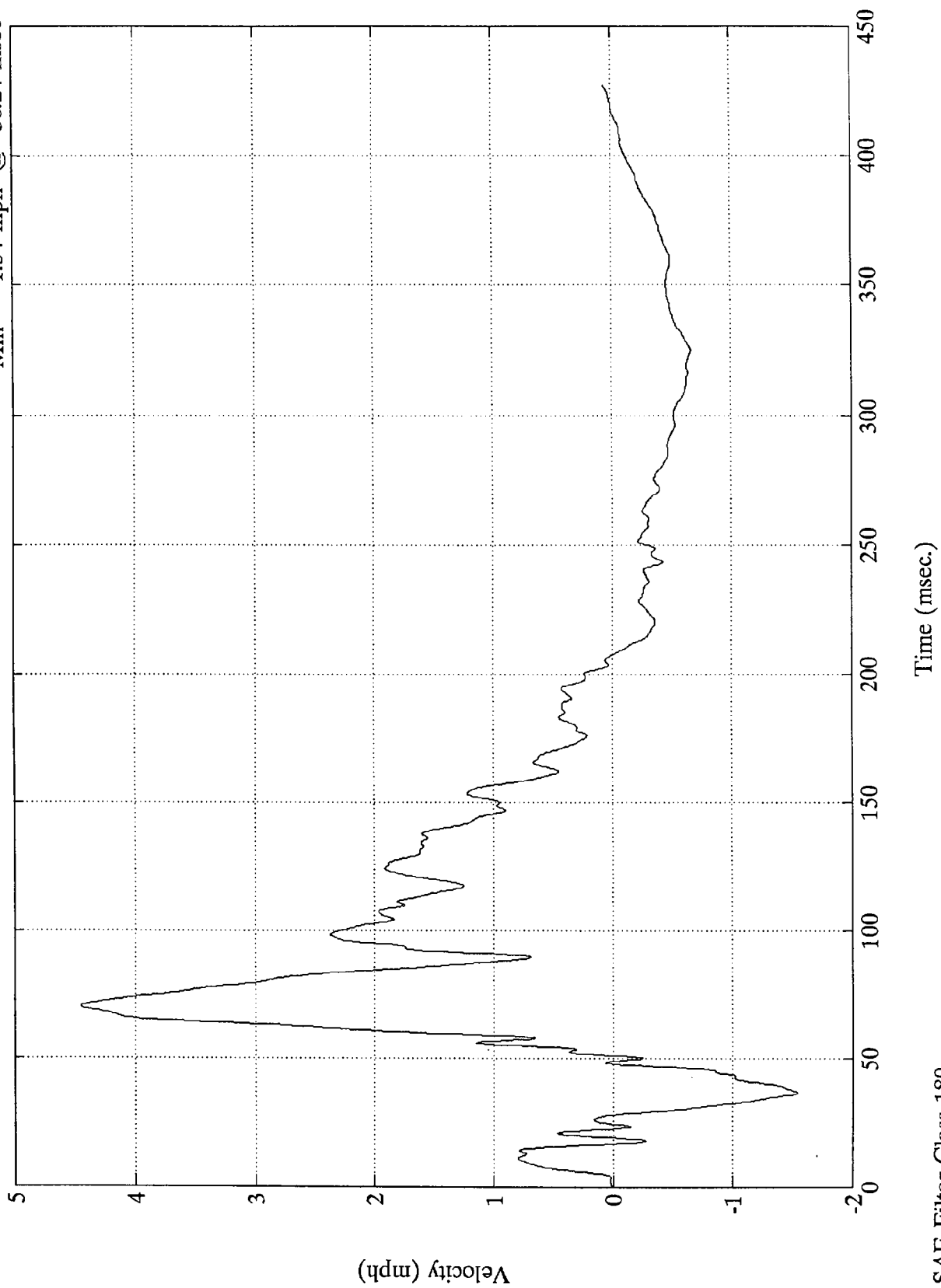
Time (msec)

SAE Filter Class 60

FMVSS 208 - 95 Toyota Tercel

Max = 4.46 mph @ 70.08 msec
Min = -1.54 mph @ 36.24 msec

Trunk Z

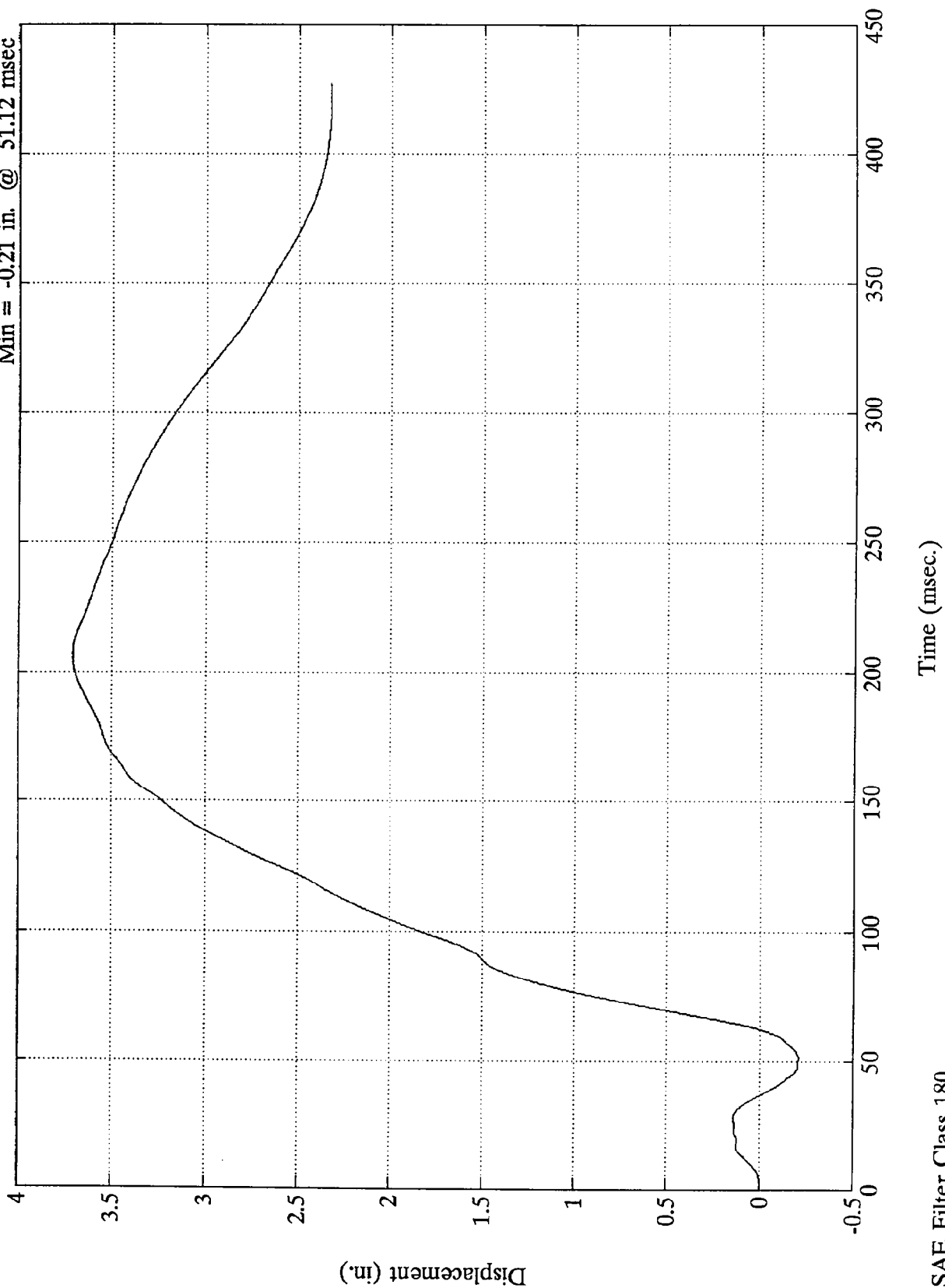


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 3.71 in. @ 208.56 msec
Min = -0.21 in. @ 51.12 msec

Trunk Z



SAE Filter Class 180

TEST NO. CS5107

DUMMY	SAE FILTER CHANNEL CLASS
Head Accelerations	1000
Chest Accelerations	180
Femur Forces	600
Chest Displacement	180

FACILITY: TRACK TEST DATE: 10 Jan 1995
 RUN #: 1483 TEST TIME: 12:49:22
 SERIES #: 16 BOARD: a

TITLE: 208 TEST #10 - 1995 TOYOTA TERCEL

CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM		MINIMUM		FILTER CLASS
			AMP	msec	AMP	msec	
1	Pos. 1 Head X	Gs	10.5	261.7	-57.4	73.3	1000.0
2	Pos. 1 Head Y	Gs	6.7	95.4	-8.8	63.7	1000.0
3	Pos. 1 Head Z	Gs	19.4	69.6	-7.0	103.1	1000.0
4	Pos. 1 Left Femur	lbs	70.8	201.1	-785.0	65.9	600.0
5	Pos. 1 Chest X	Gs	5.7	229.9	-42.9	69.1	180.0
6	Pos. 1 Chest Y	Gs	4.5	85.7	-3.9	41.2	180.0
7	Pos. 1 Chest Z	Gs	11.4	71.5	-2.9	55.4	180.0
8	Pos. 1 Right Femur	lbs	128.0	201.1	-1081.5	53.0	600.0
9	Pos. 2 Head X	Gs	17.7	349.3	-24.7	70.6	1000.0
10	Pos. 2 Head Y	Gs	4.1	137.3	-16.8	85.6	1000.0
11	Pos. 2 Head Z	Gs	18.8	76.8	-4.8	112.1	1000.0
12	Pos. 2 Left Femur	lbs	70.2	201.0	-1060.8	74.9	600.0
13	Pos. 2 Chest X	Gs	2.2	140.4	-34.6	71.4	180.0
14	Pos. 2 Chest Y	Gs	3.3	63.1	-2.8	90.2	180.0
15	Pos. 2 Chest Z	Gs	14.4	71.6	-4.3	46.2	180.0
16	Pos. 2 Right Femur	lbs	191.0	201.0	-774.8	81.1	600.0
17	Pos. 1 Head Resultant	Gs	60.4	73.3	.0	-5.8	1000.0
18	Pos. 1 Chest Resultant	Gs	44.2	70.6	.0	-10.0	180.0
19	Pos. 2 Head Resultant	Gs	31.8	78.8	.1	-9.7	1000.0
20	Pos. 2 Chest Resultant	Gs	37.5	71.4	.0	-22.4	180.0

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

hic: 469.45
 t1 = 58.440 msec
 t2 = 92.400 msec
 Average G's Over Hic Duration = 45.32

CLIP SUMMARY: Pos. 1 Chest Resultant

Peak Resultant (3 ms CLIPPED DURATION) = 43.916 G's
 Tstart = 69.0000 ms
 Tend = 72.0000 ms
 CSI = 320.503

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

hic: 120.02
 t1 = 56.640 msec
 t2 = 92.520 msec
 Average G's Over Hic Duration = 25.69

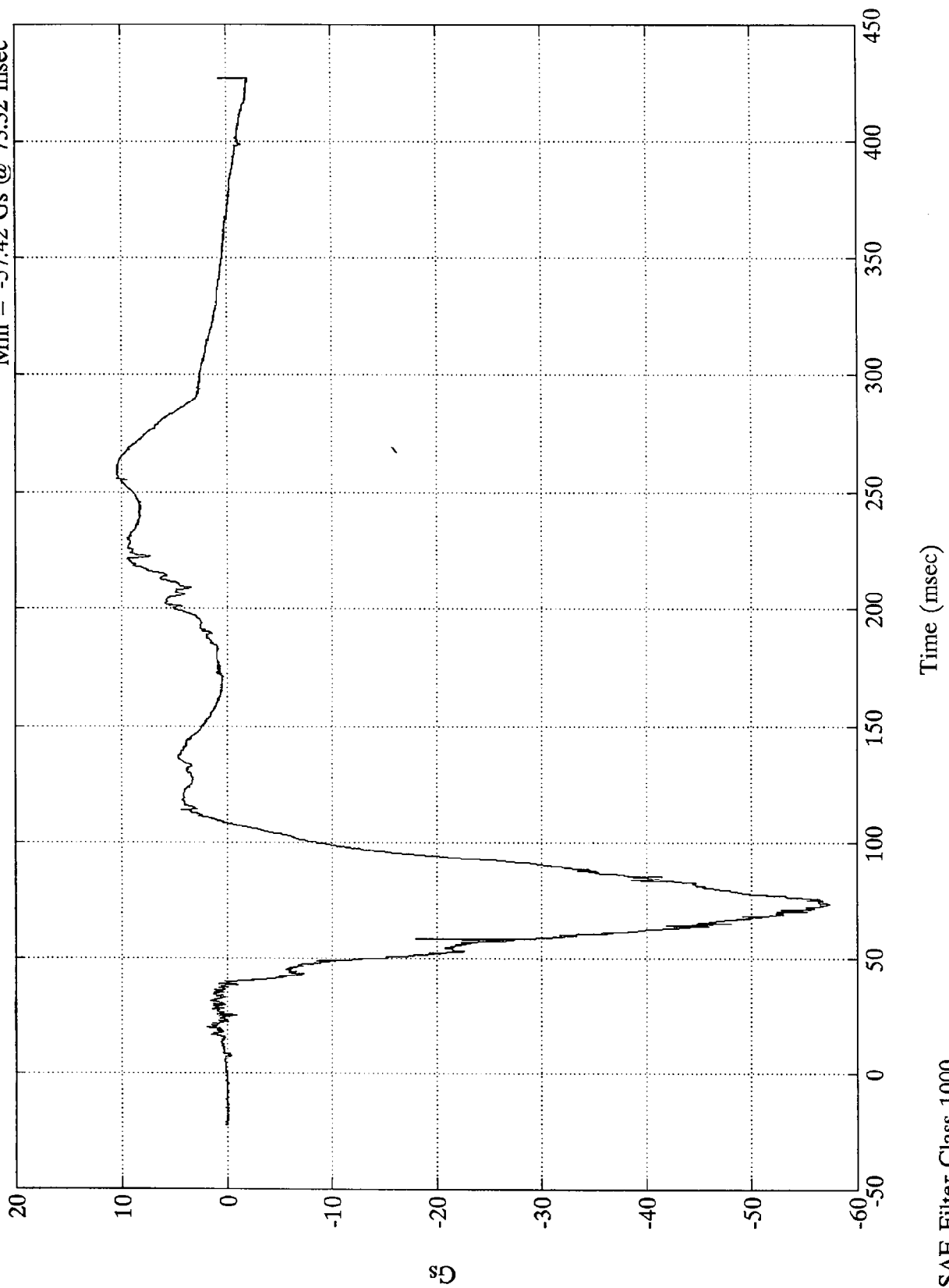
CLIP SUMMARY: Pos. 2 Chest Resultant

Peak Resultant (3 ms CLIPPED DURATION) = 35.931 G's
 Tstart = 70.5600 ms
 Tend = 73.6800 ms
 CSI = 227.526

FMVSS 208 - 95 Toyota Tercel

Pos. 1 Head X

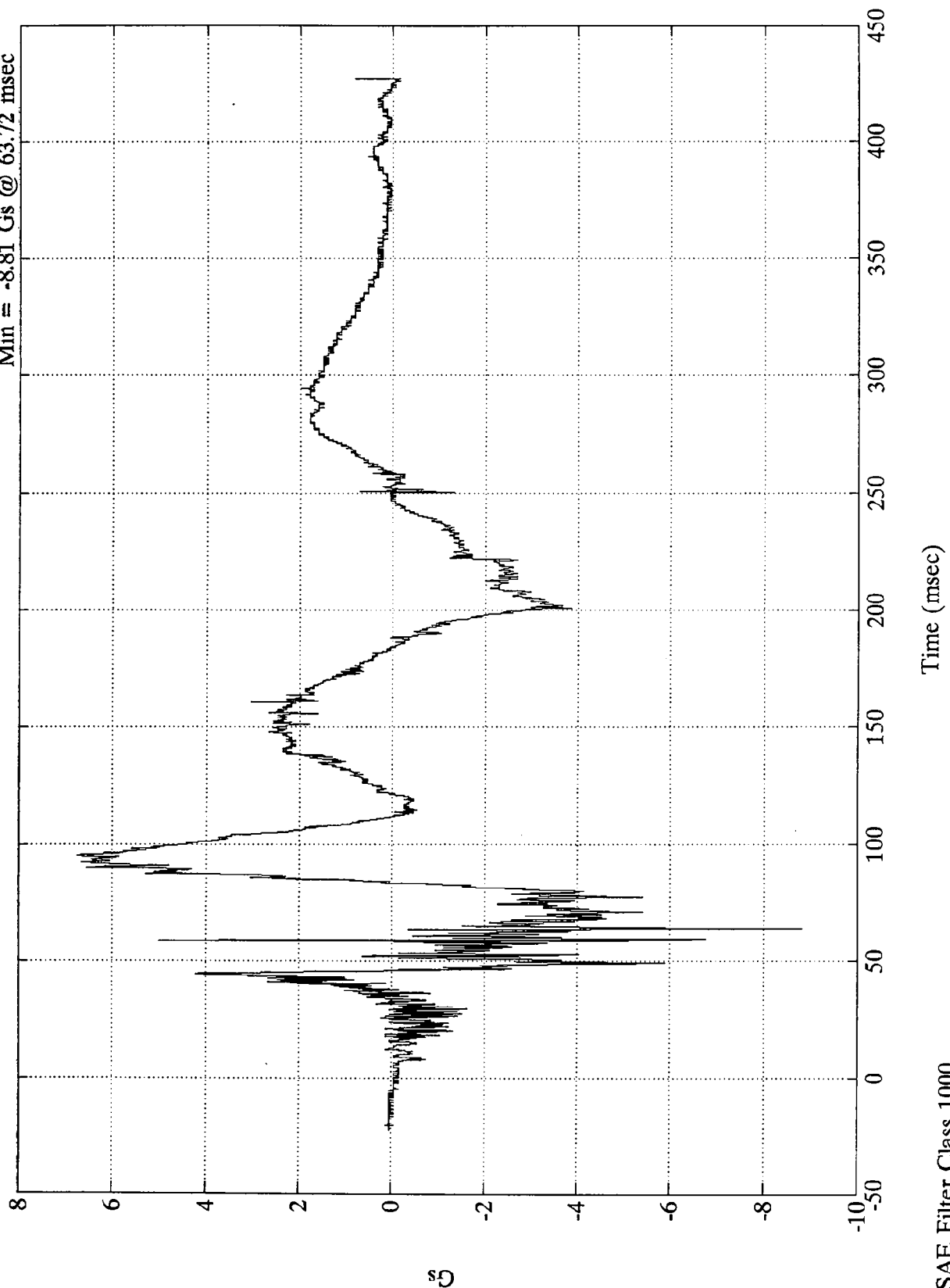
Max = 10.48 Gs @ 261.72 msec
Min = -57.42 Gs @ 73.32 msec



FMVSS 208 - 95 Toyota Tercel

Pos. 1 Head Y

Max = 6.75 Gs @ 95.40 msec
Min = -8.81 Gs @ 63.72 msec

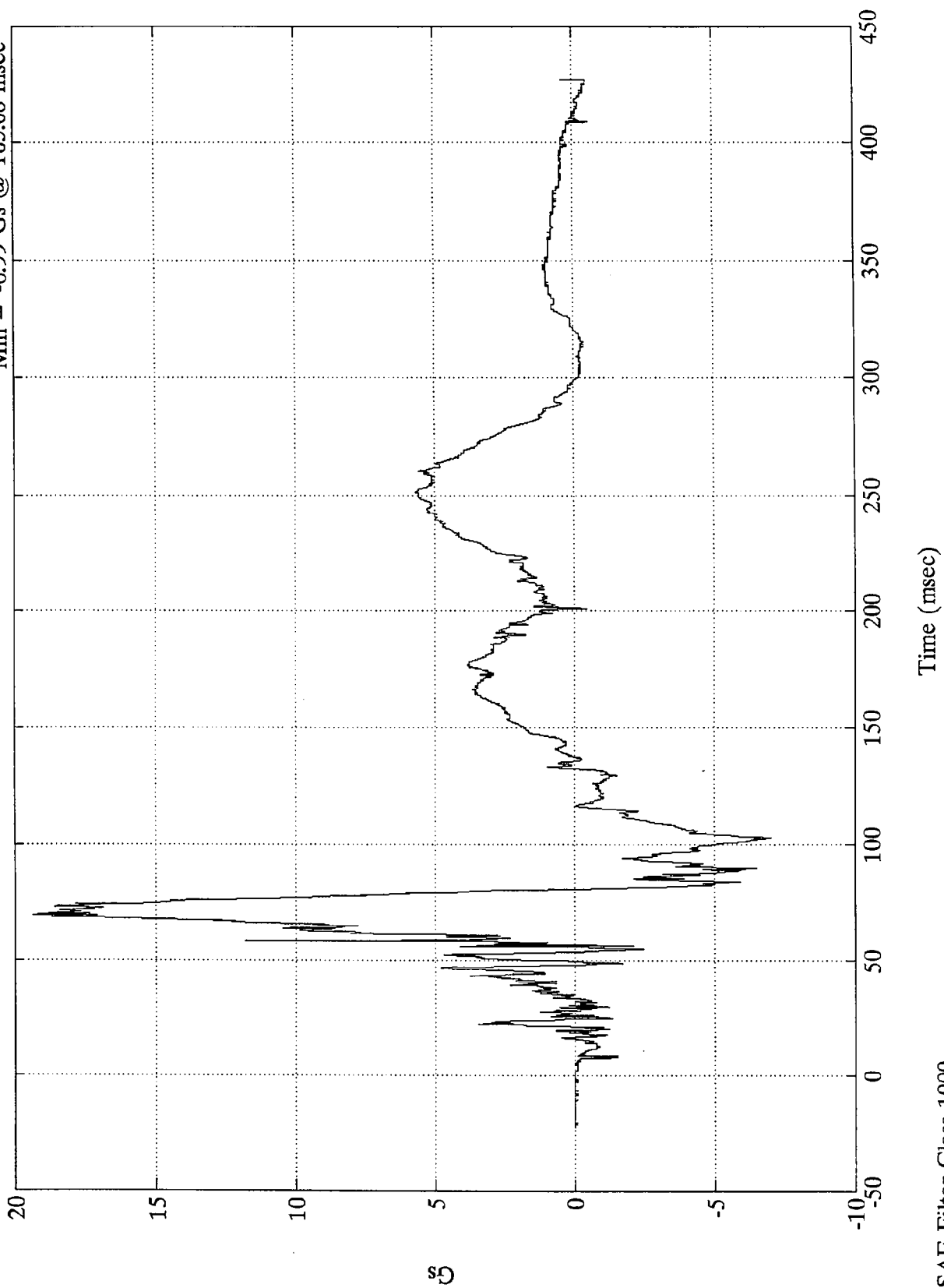


SAE Filter Class 1000

FMVSS 208 - 95 Toyota Tercel

Max = 19.38 Gs @ 69.60 msec
Min = -6.99 Gs @ 103.08 msec

Pos. 1 Head Z

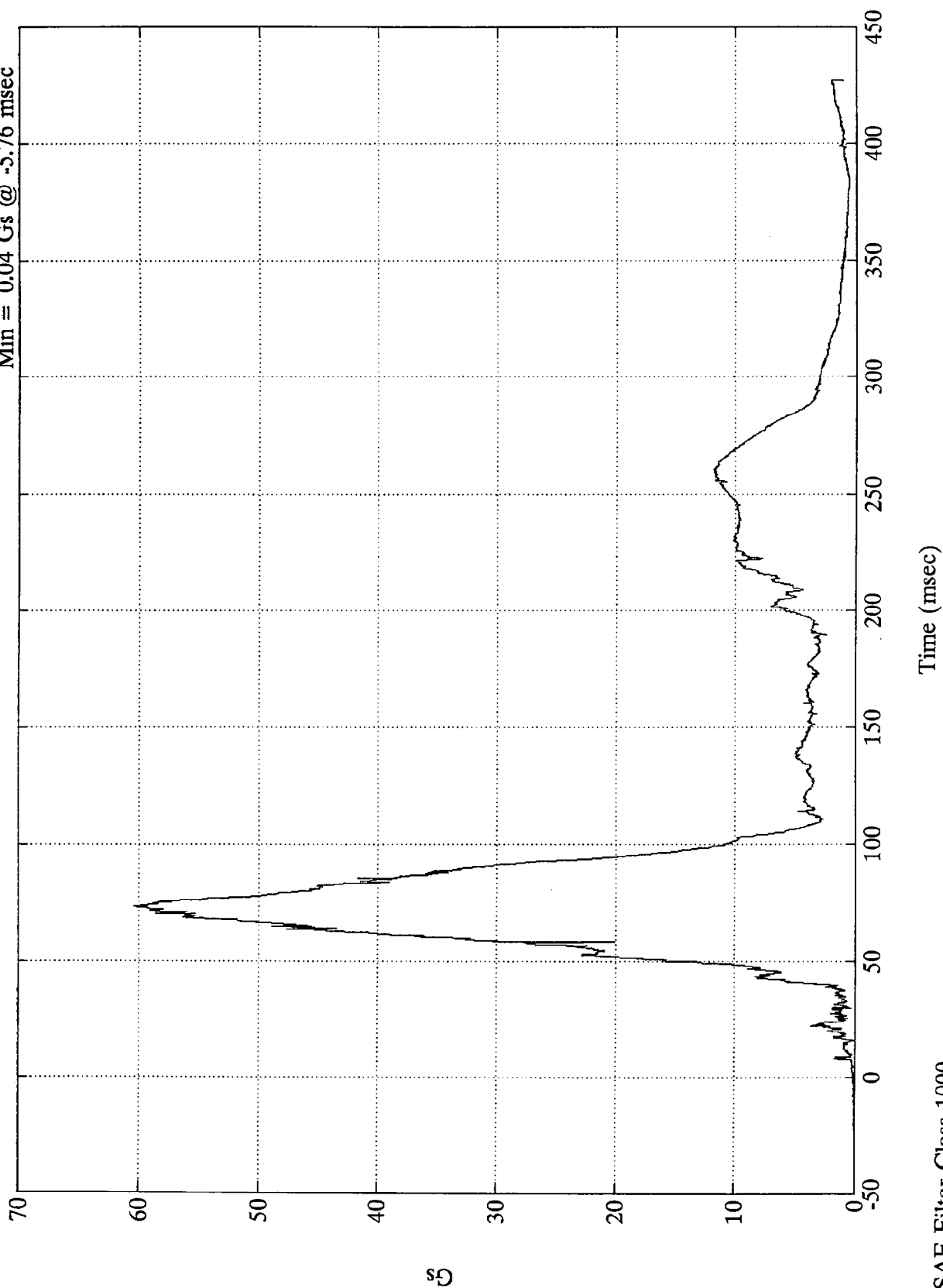


SAE Filter Class 1000

FMVSS 208 - 95 Toyota Tercel

Max = 60.39 Gs @ 73.32 msec
Min = 0.04 Gs @ -5.76 msec

Pos. 1 Head Resultant



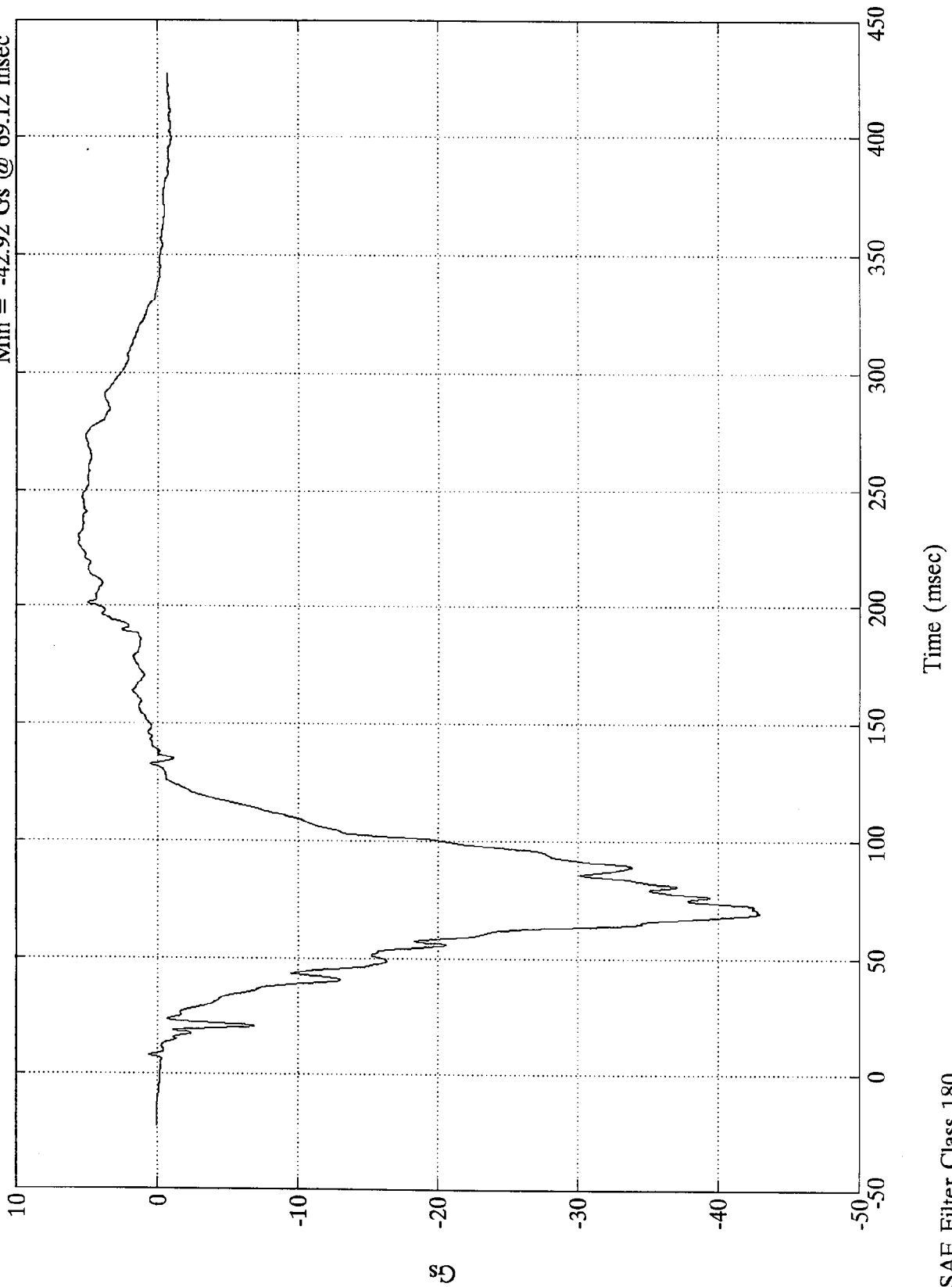
SAE Filter Class 1000

Gs

Time (msec)

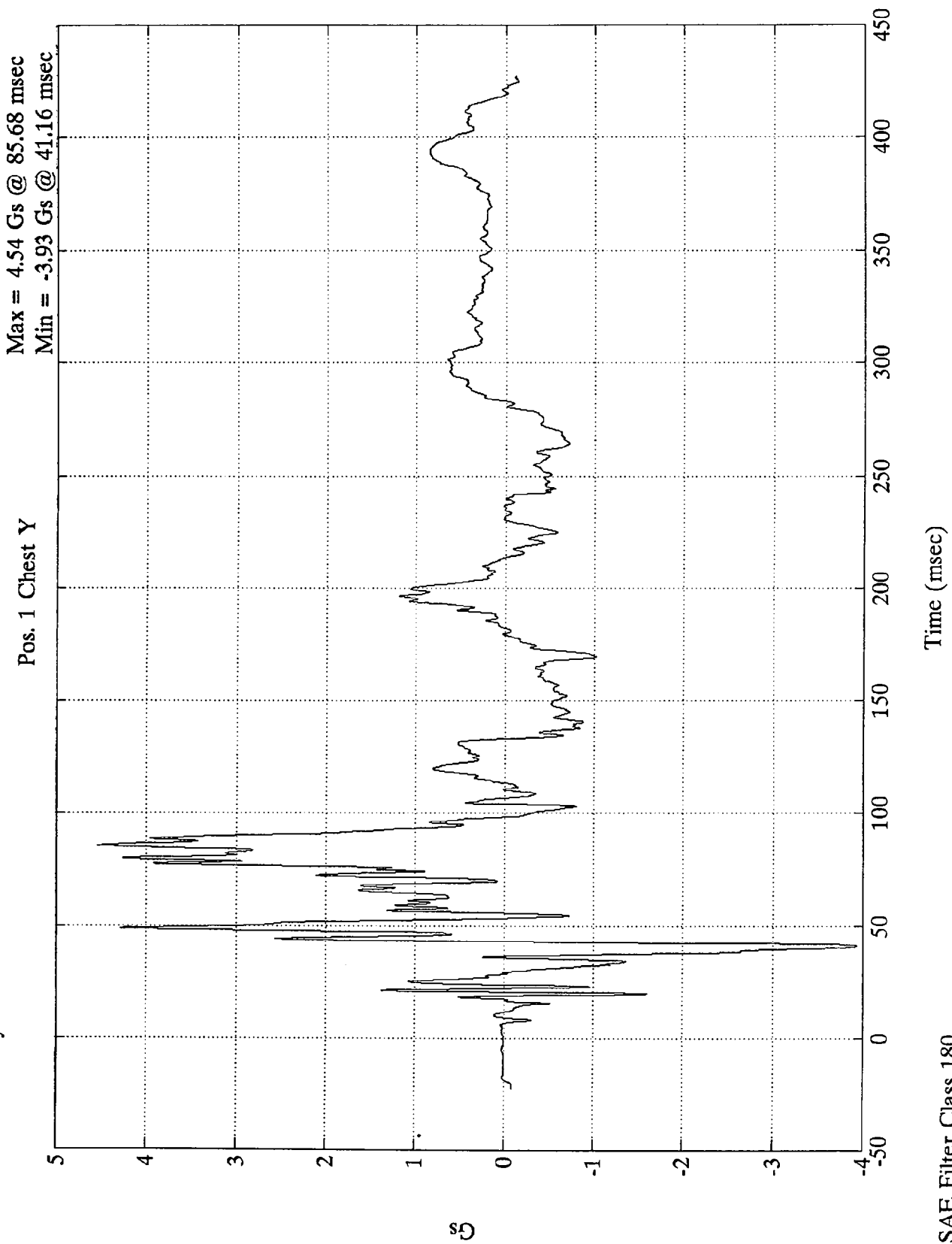
FMVSS 208 - 95 Toyota Tercel

Pos. 1 Chest X
Max = 5.67 Gs @ 229.92 msec
Min = -42.92 Gs @ 69.12 msec



SAE Filter Class 180

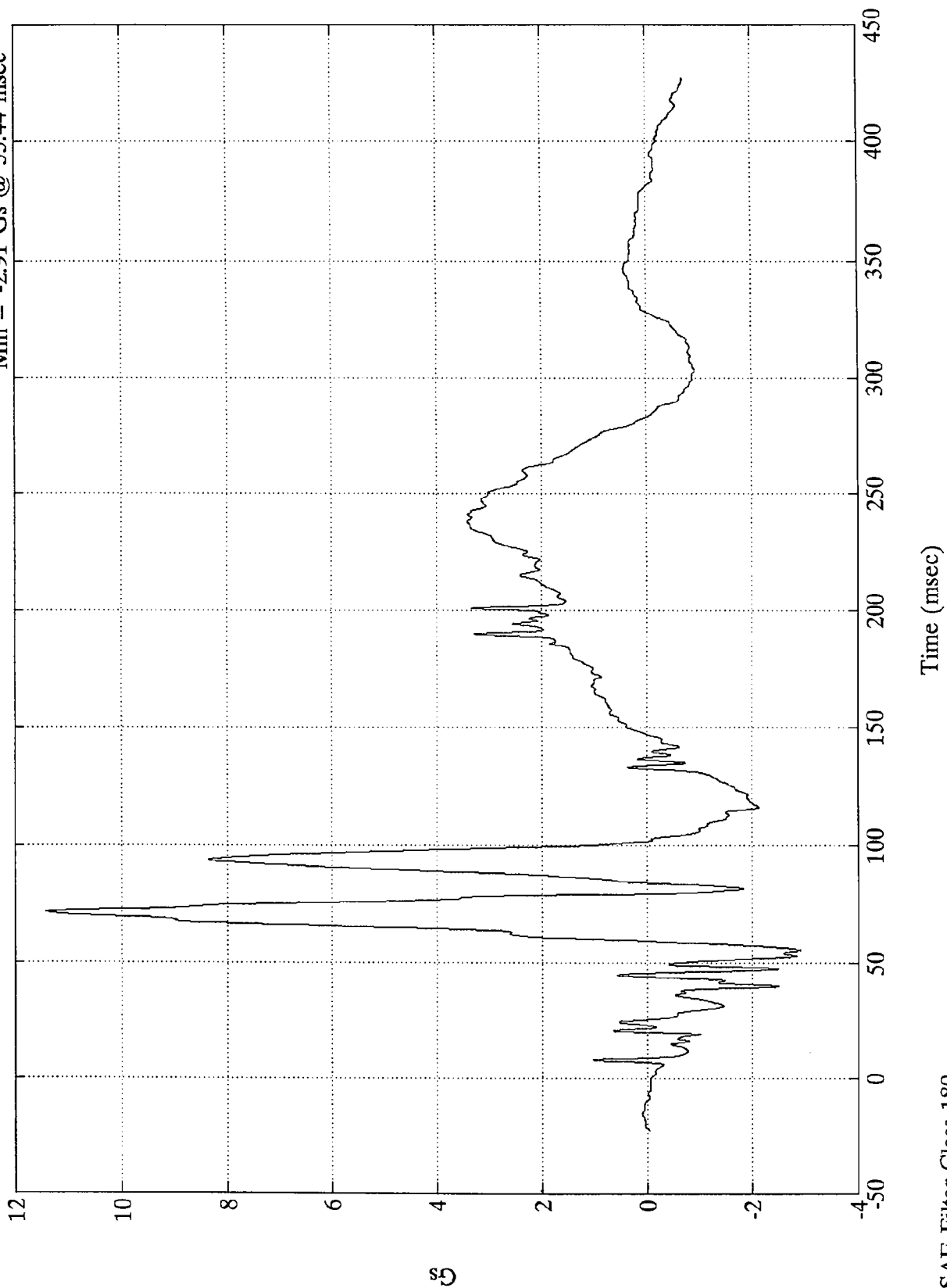
FMVSS 208 - 95 Toyota Tercel



FMVSS 208 - 95 Toyota Tercel

Pos. 1 Chest Z

Max = 11.43 Gs @ 71.52 msec
Min = -2.91 Gs @ 55.44 msec

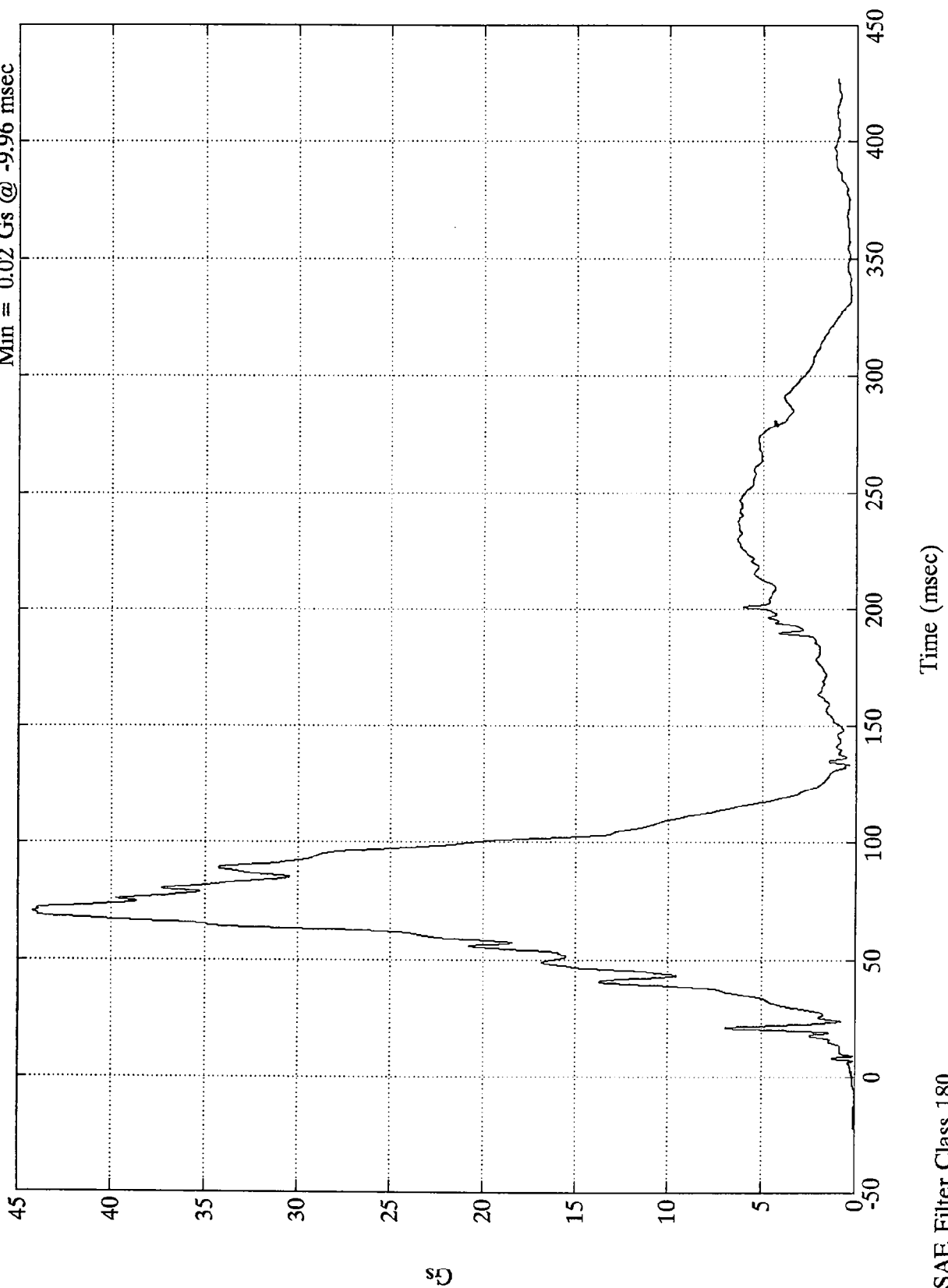


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 44.18 Gs @ 70.56 msec
Min = 0.02 Gs @ -9.96 msec

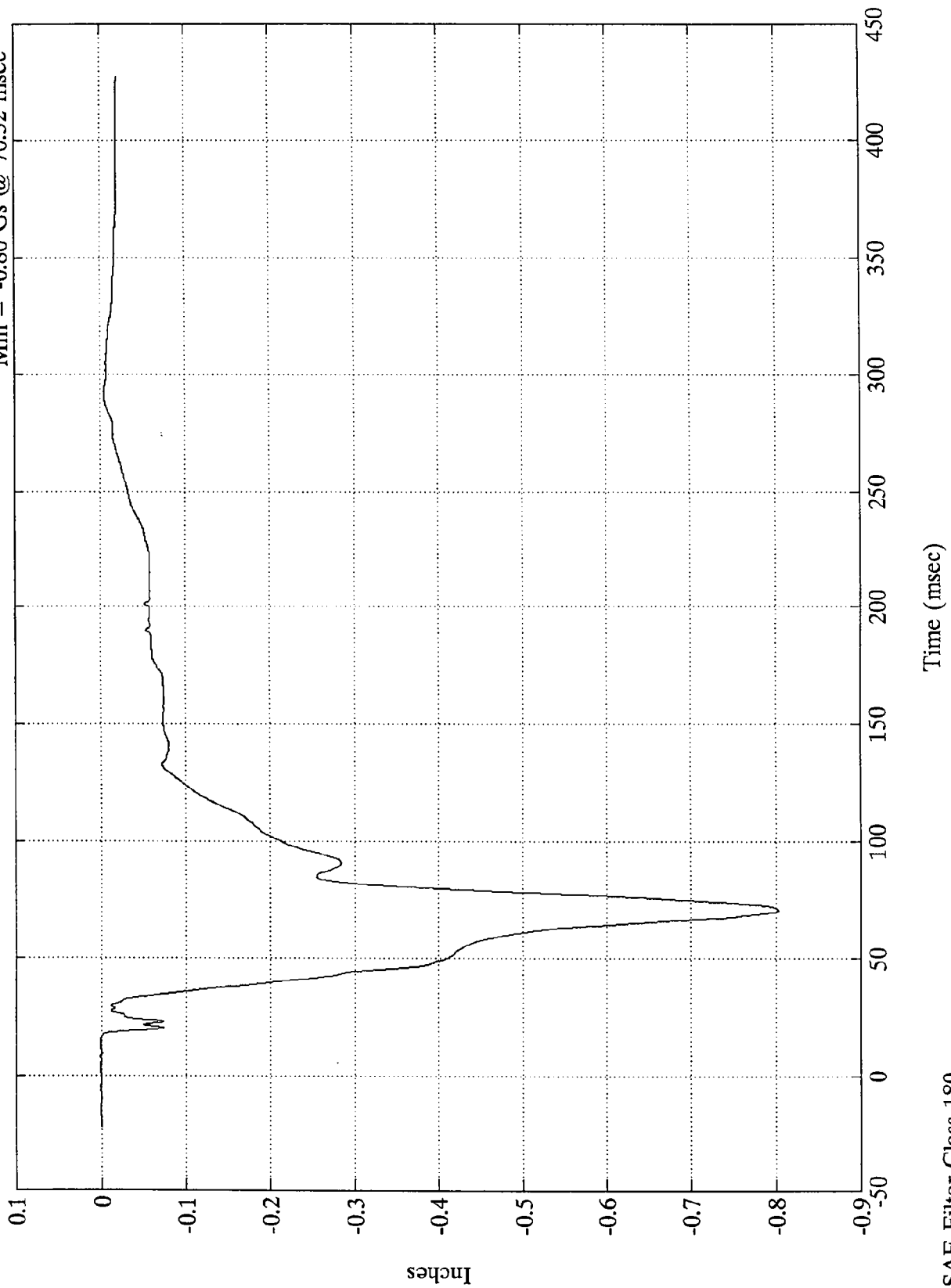
Pos. 1 Chest Resultant



SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Pos. 1 Chest displacement
Max = 0.00 Gs @ 8.04 msec
Min = -0.80 Gs @ 70.32 msec

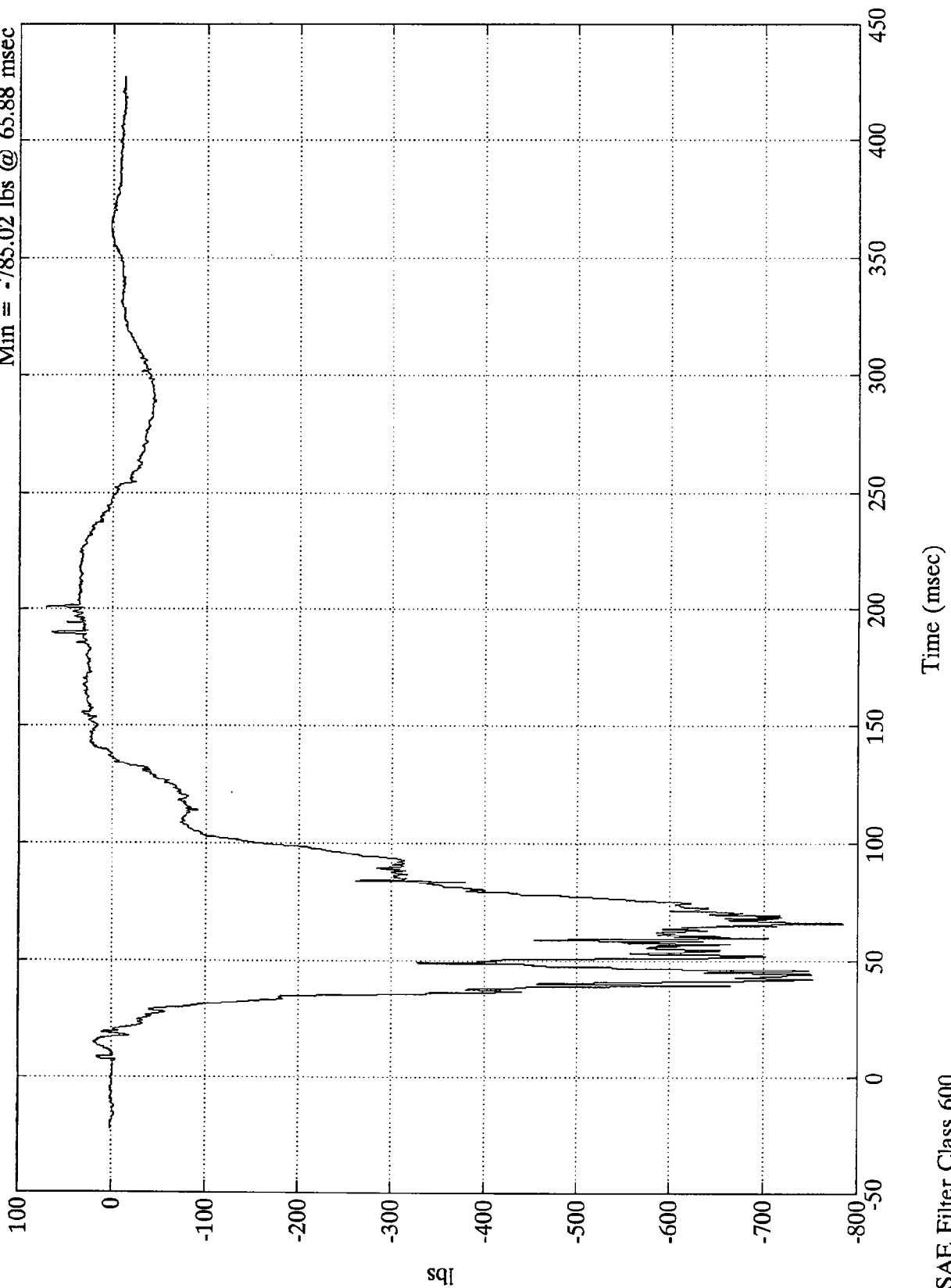


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Pos. 1 Left Femur

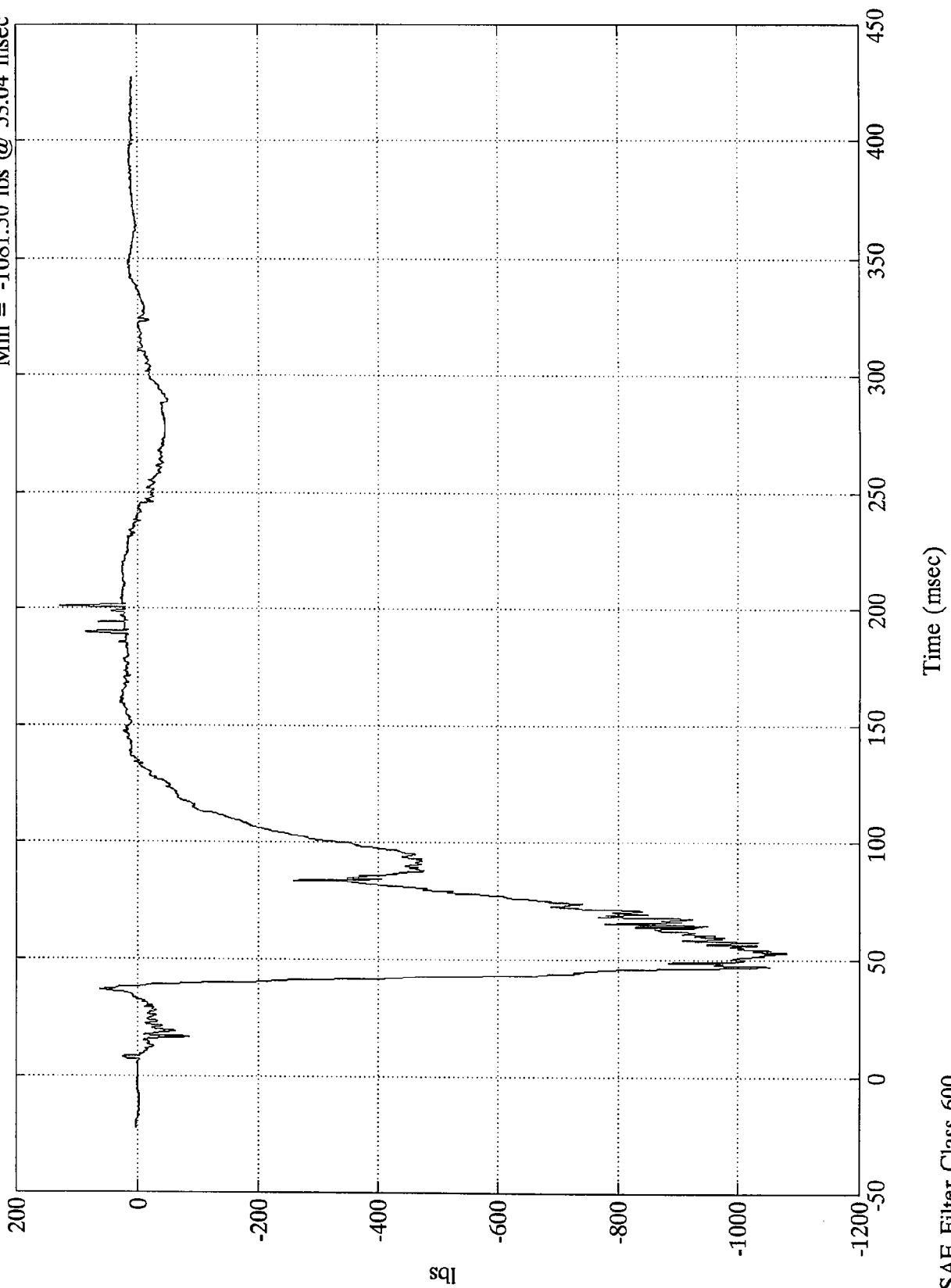
Max = 70.84 lbs @ 201.12 msec
Min = -785.02 lbs @ 65.88 msec



FMVSS 208 - 95 Toyota Tercel

Pos. 1 Right Femur

Max = 127.99 lbs @ 201.12 msec
Min = -1081.50 lbs @ 53.04 msec

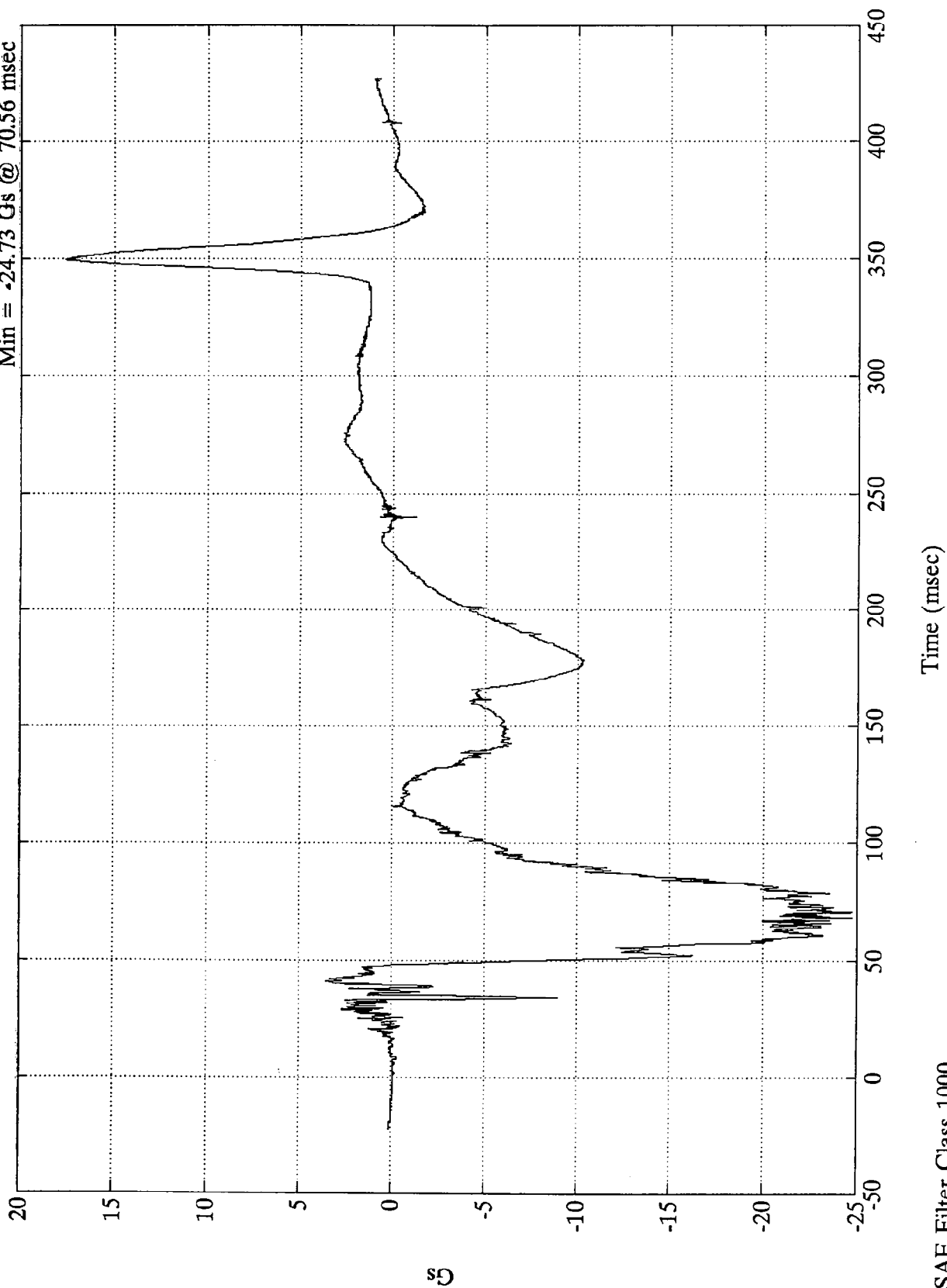


SAE Filter Class 600

FMVSS 208 - 95 Toyota Tercel

Pos. 2 Head X

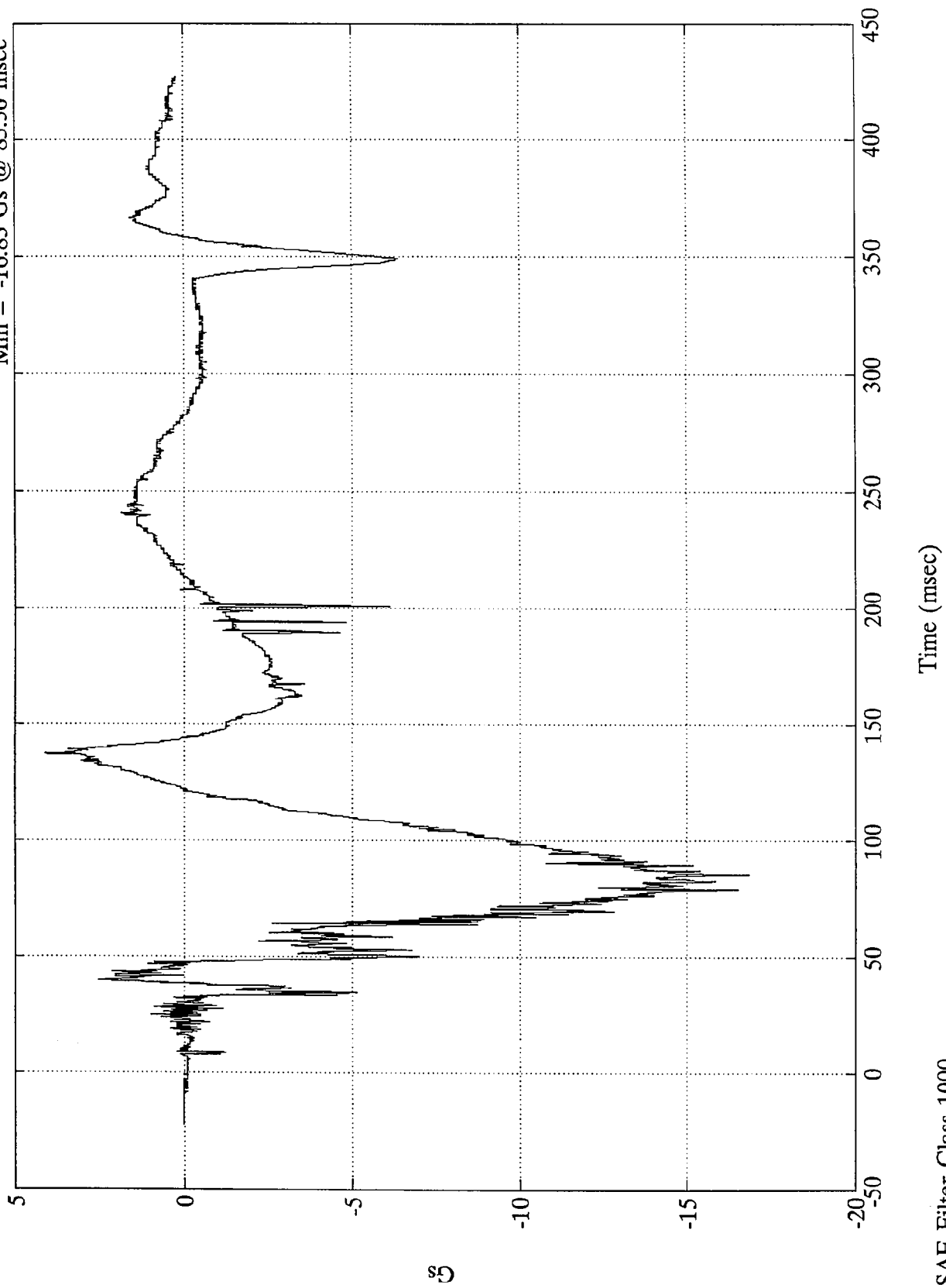
Max = 17.65 Gs @ 349.32 msec
Min = -24.73 Gs @ 70.56 msec



FMVSS 208 - 95 Toyota Tercel

Max = 4.11 Gs @ 137.28 msec
Min = -16.83 Gs @ 85.56 msec

Pos. 2 Head Y

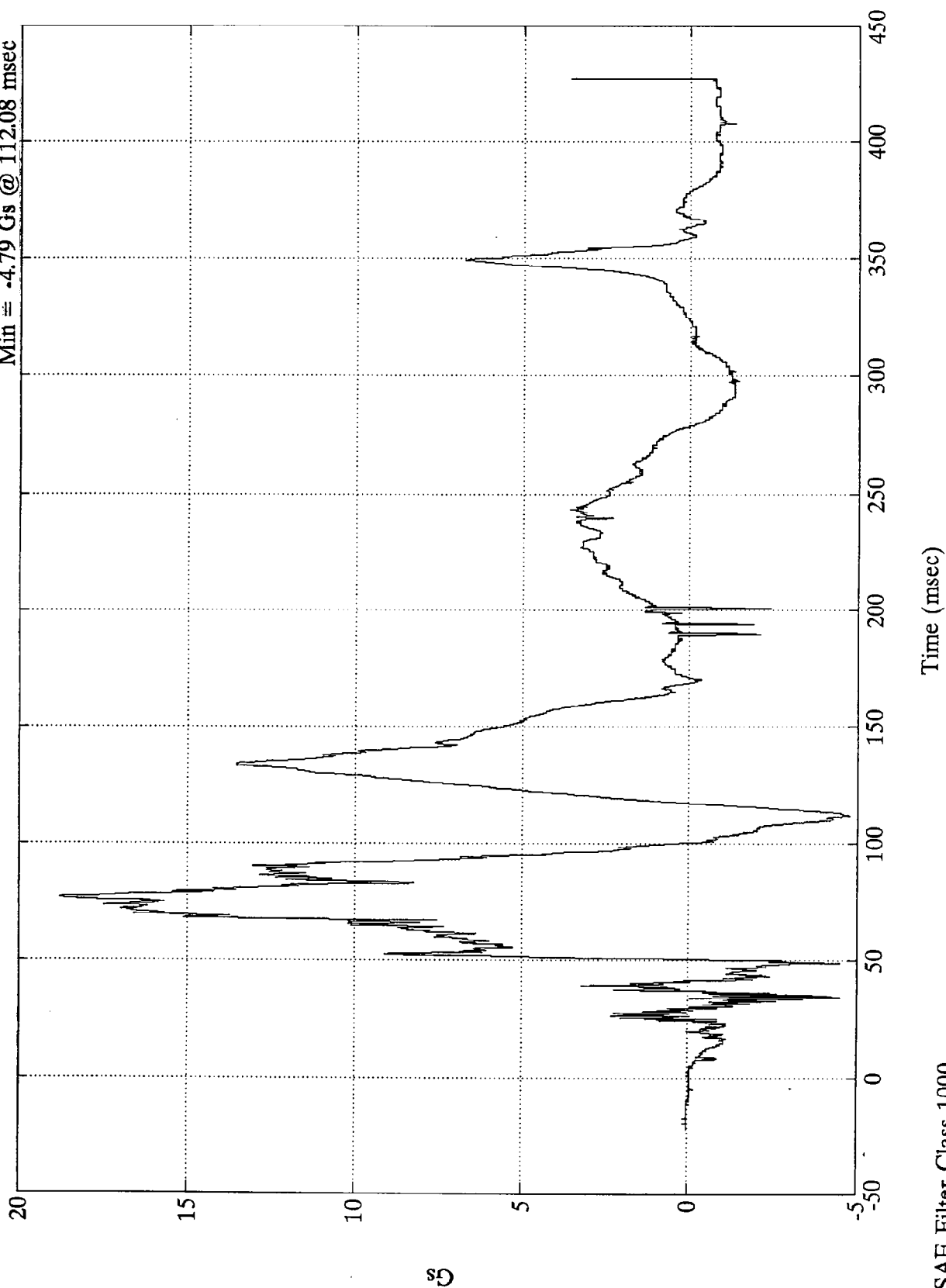


Gs

FMVSS 208 - 95 Toyota Tercel

Max = 18.76 Gs @ 76.80 msec
Min = -4.79 Gs @ 112.08 msec

Pos. 2 Head Z

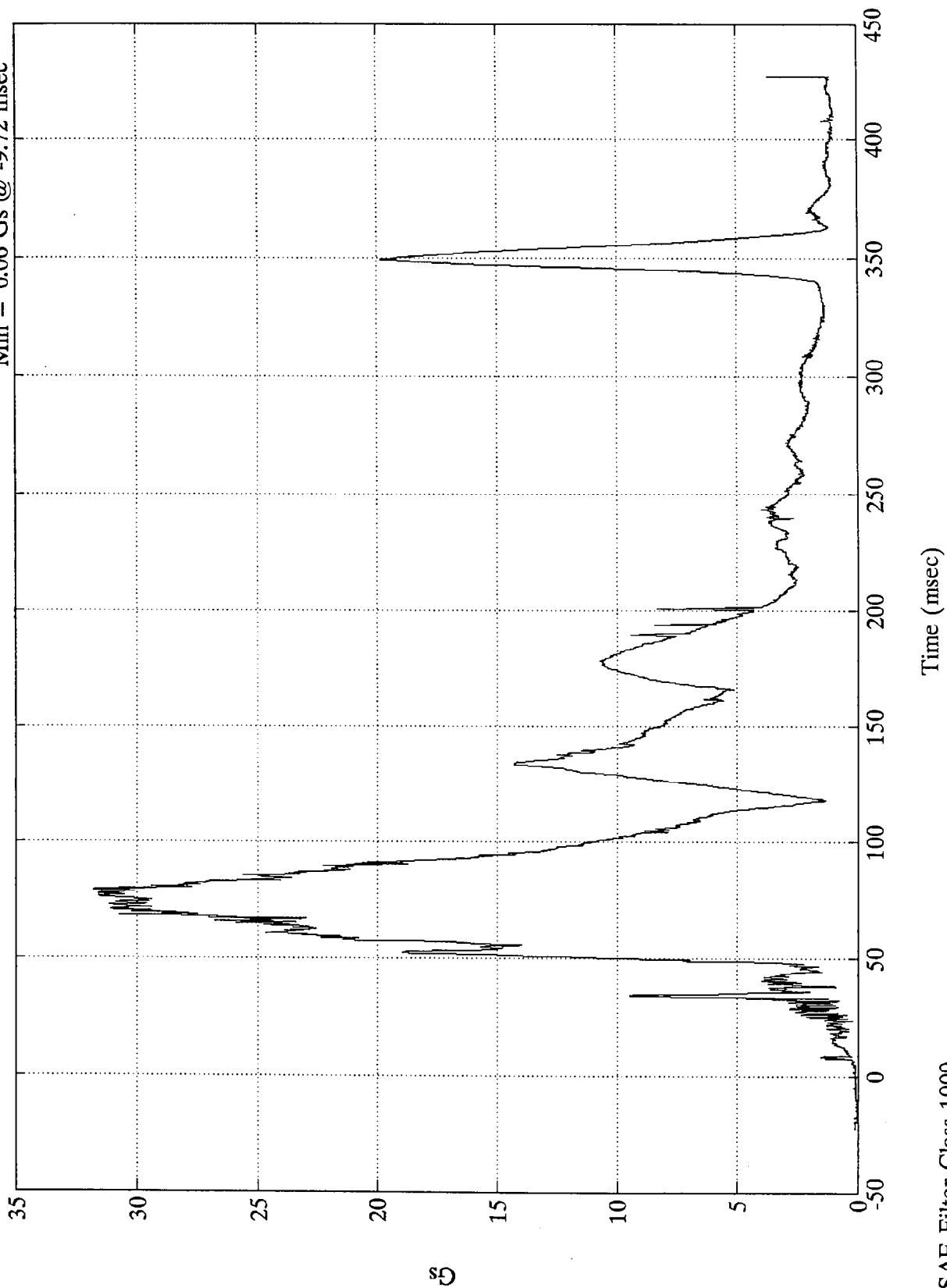


Gs

FMVSS 208 - 95 Toyota Tercel

Pos. 2 Head Resultant

Max = 31.80 Gs @ 78.84 msec
Min = 0.06 Gs @ -9.72 msec

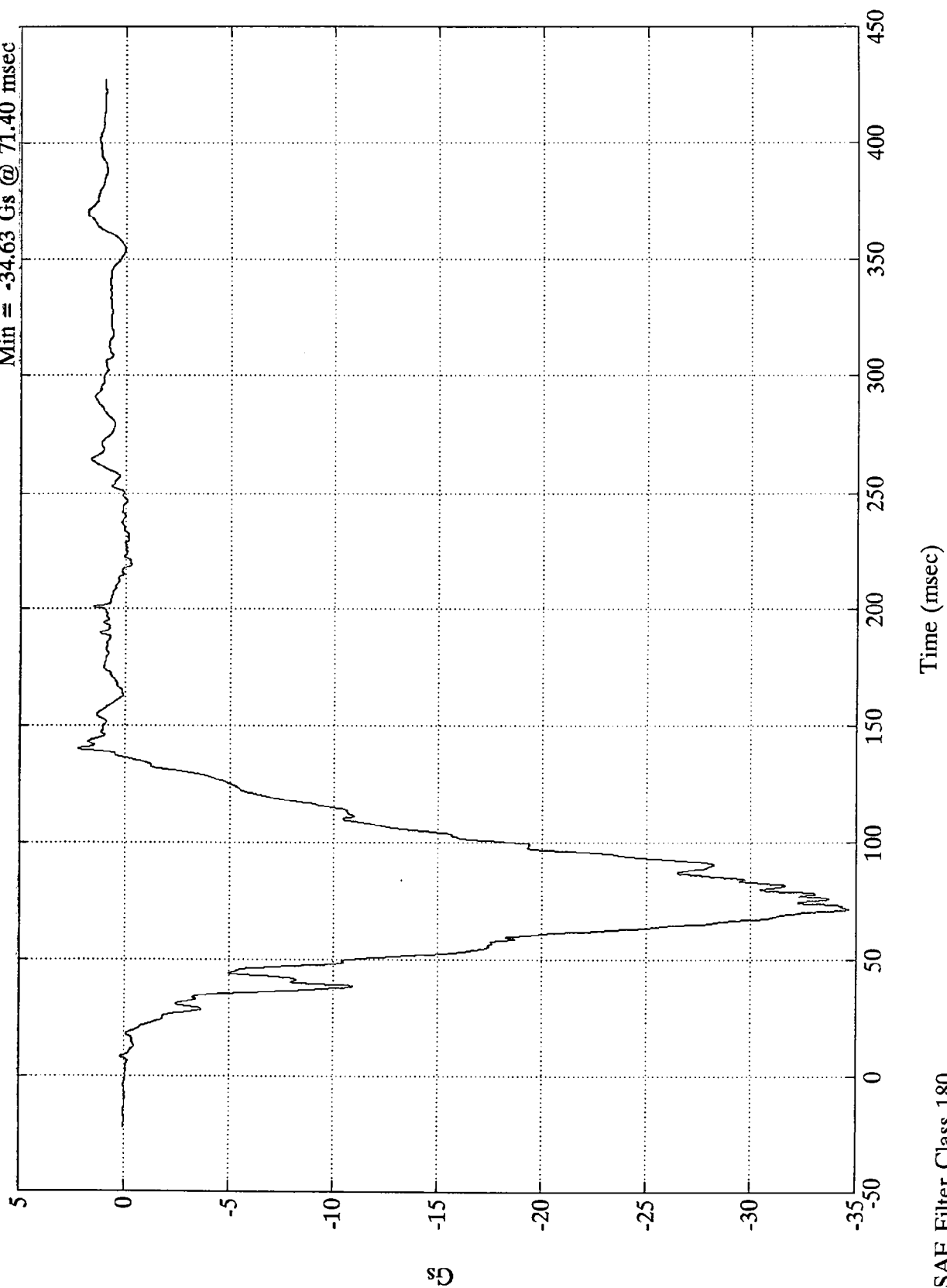


SAE Filter Class 1000

FMVSS 208 - 95 Toyota Tercel

Max = 2.25 Gs @ 140.40 msec
Min = -34.63 Gs @ 71.40 msec

Pos. 2 Chest X

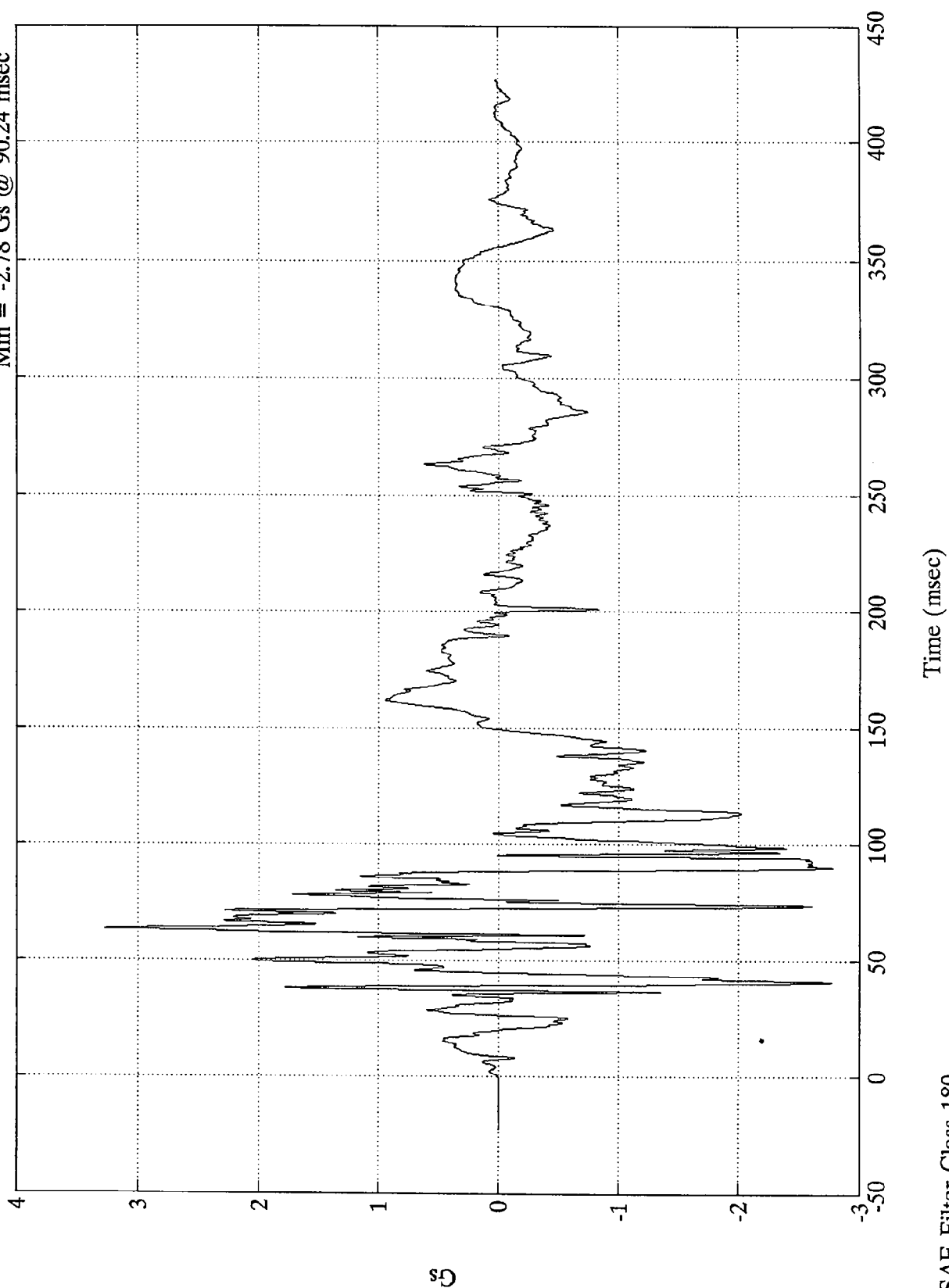


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 3.28 Gs @ 63.12 msec
Min = -2.78 Gs @ 90.24 msec

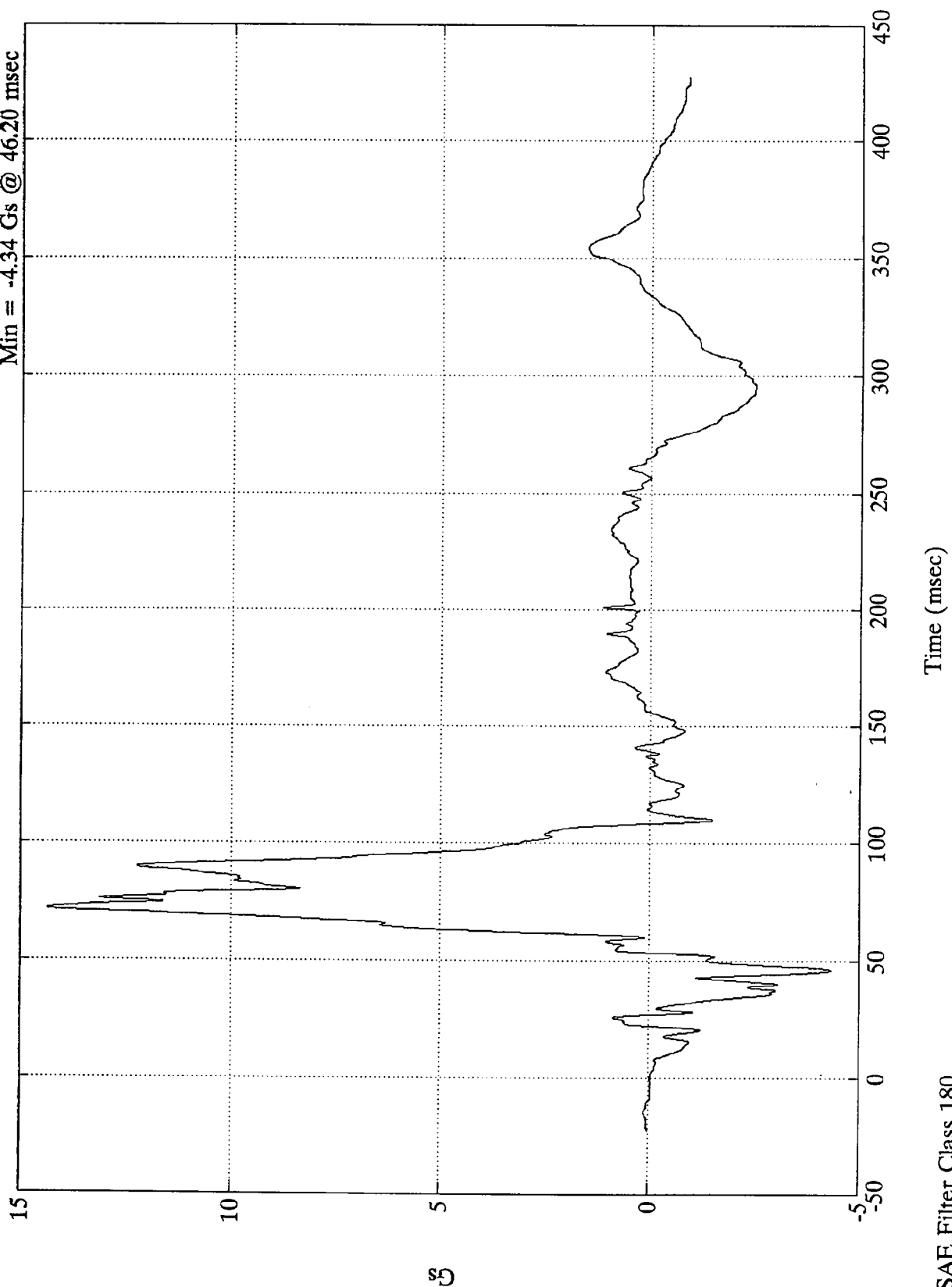
Pos. 2 Chest Y



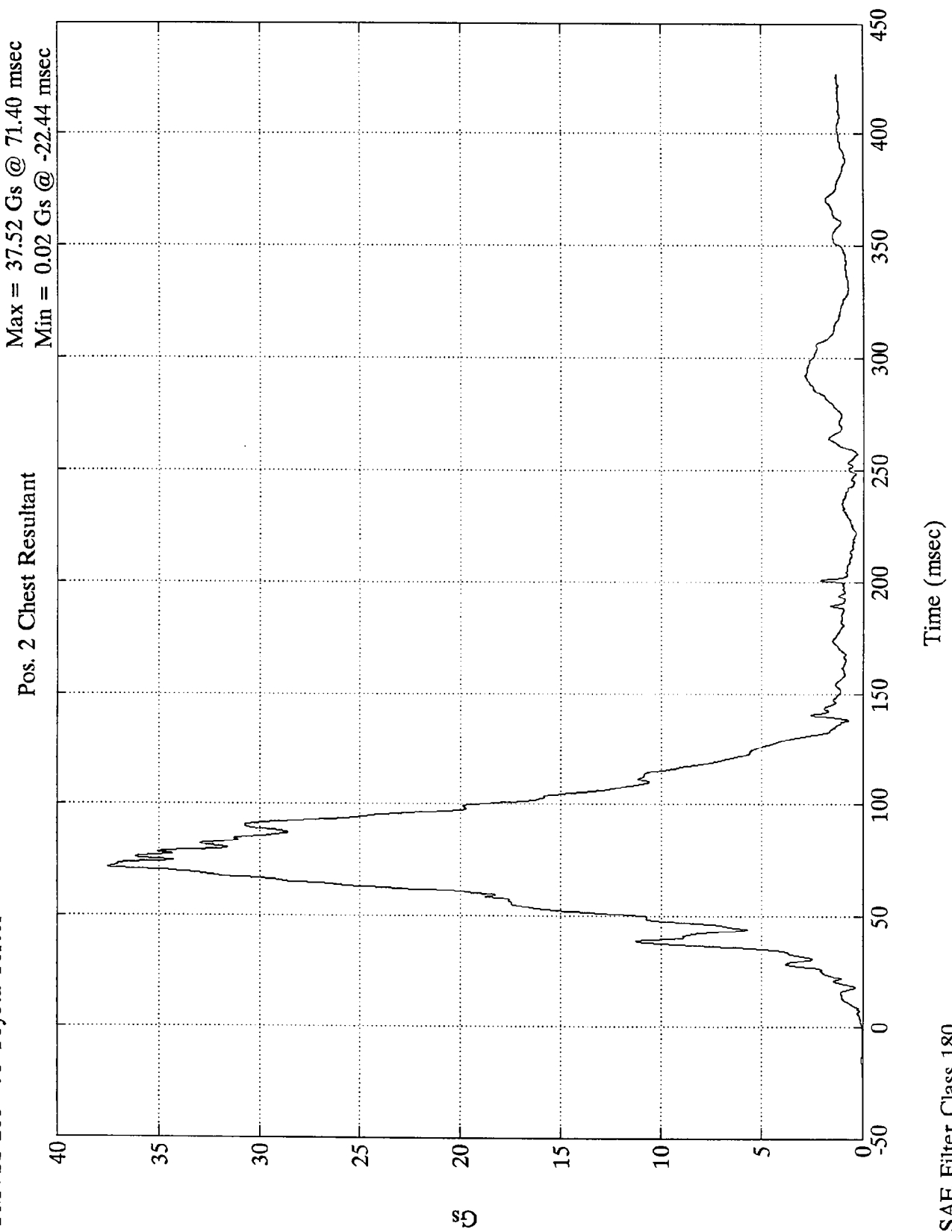
SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Pos. 2 Chest Z
Max = 14.35 Gs @ 71.64 msec
Min = -4.34 Gs @ 46.20 msec



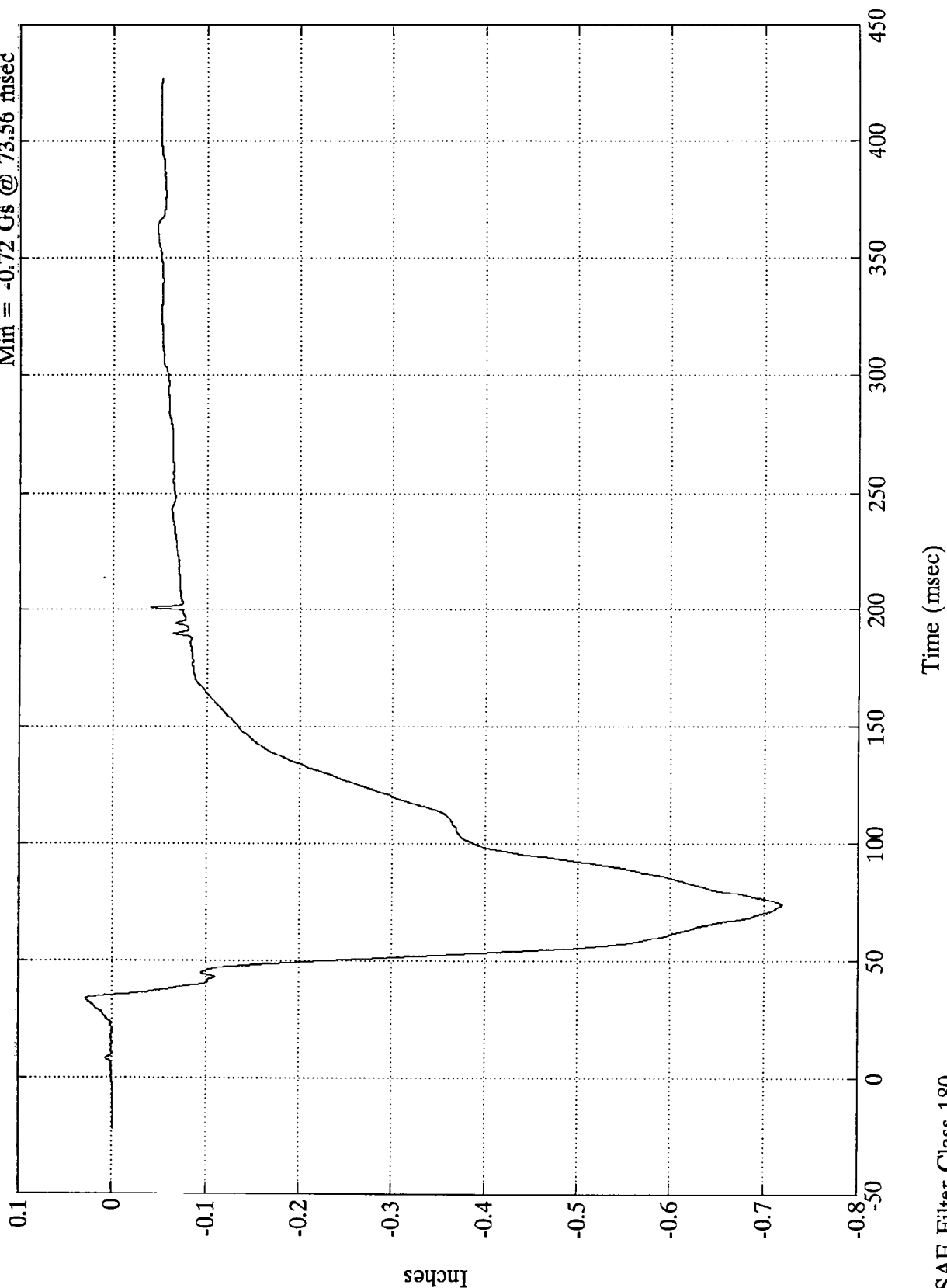
FMVSS 208 - 95 Toyota Tercel



FMVSS 208 - 95 Toyota Tercel

Pos. 2 Chest displacement

Max = 0.03 Gs @ 33.60 msec
Min = -0.72 Gs @ 73.56 msec

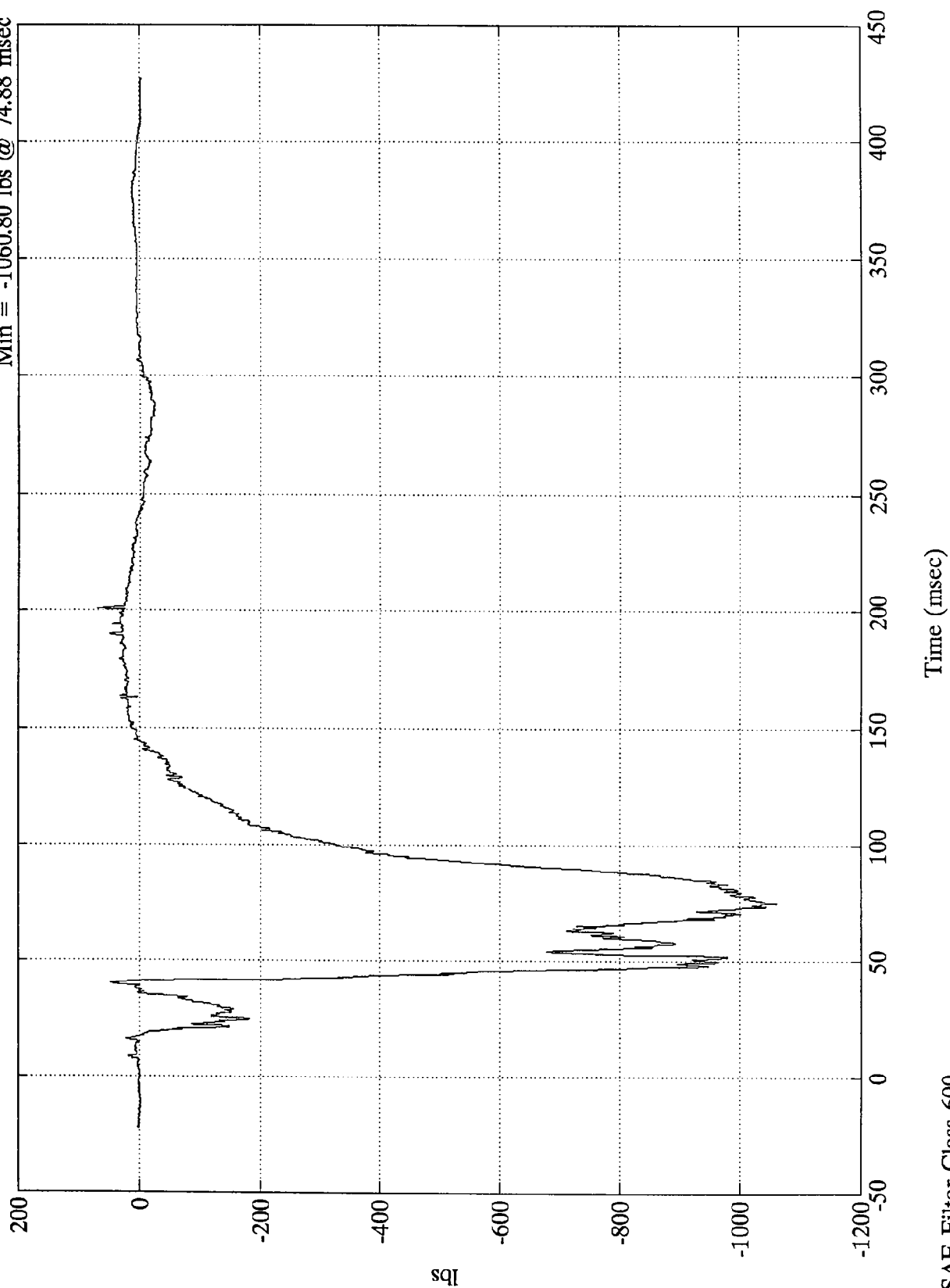


SAE Filter Class 180

FMVSS 208 - 95 Toyota Tercel

Max = 70.23 lbs @ 201.00 msec
Min = -1060.80 lbs @ 74.88 msec

Pos. 2 Left Femur



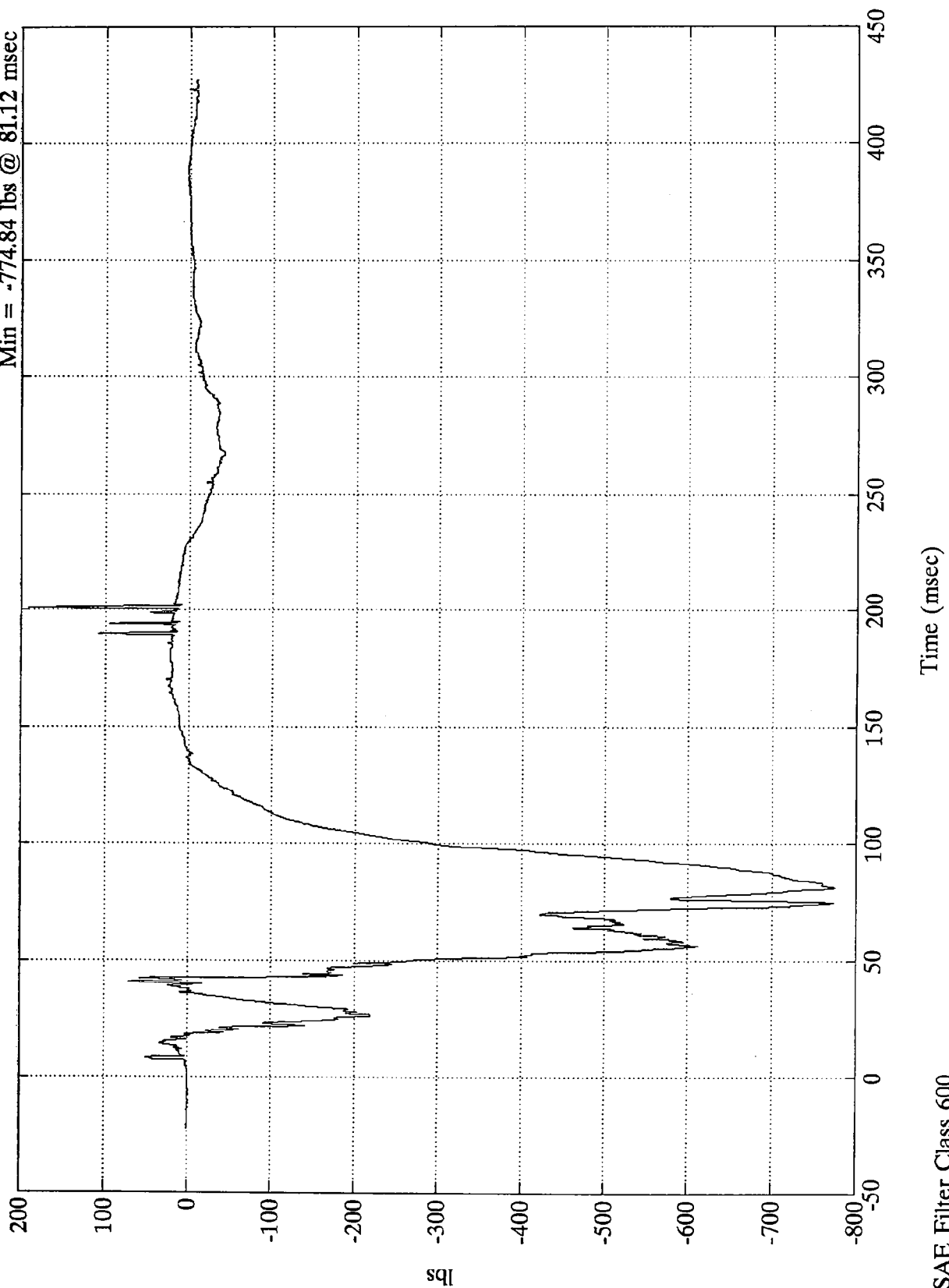
SAE Filter Class 600

FMVSS 208 - 95 Toyota Tercel

Pos. 2 Right Femur

Max = 191.04 lbs @ 201.00 msec

Min = -774.84 lbs @ 81.12 msec



Appendix C

VEHICLE OWNERS MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

Seat belts— —Seat belt precautions

CAUTION: When returning the seatback to the upright position:

- Make sure the seat belts are not twisted or caught in the seatback and are arranged in their proper position for ready use.
- Make sure the seatback is securely locked by pushing forward and rearward on the top of the seatback.

Toyota recommends that the driver and passengers in the vehicle be properly restrained at all times with the seat belts provided. Failure to do so could increase the chance of injury and/or the severity of injury in accidents.

Baby or small child. Use a child restraint system which fits your vehicle. See "Child restraint" for details.

Child. If a child is too large for a child restraint system, the child should sit in the rear seat and must be restrained using the vehicle's seat belt. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat. Do not allow the child to stand up or kneel both on rear and front seats. If the shoulder belt falls across the child's neck or face, move the child to the center position and use the center lap belt.

Pregnant woman. Toyota recommends the use of a seat belt. Ask your doctor for specific recommendations. The lap belt should be worn securely and as low as possible over the hips and not on the waist.

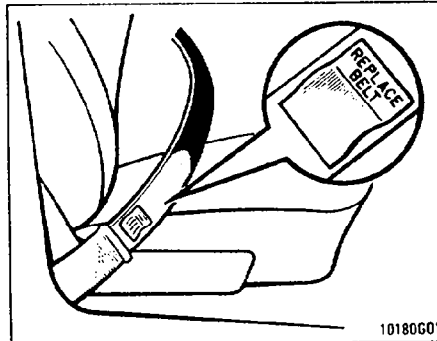
Injured person. Toyota recommends the use of a seat belt. Depending on the injury, however, first check with your doctor.

CAUTION: Persons should ride in their seats properly wearing their seat belts whenever the vehicle is moving. Otherwise, they are much more likely to suffer serious bodily injury in the event of sudden braking or a collision.

When using the seat belts, observe the following:

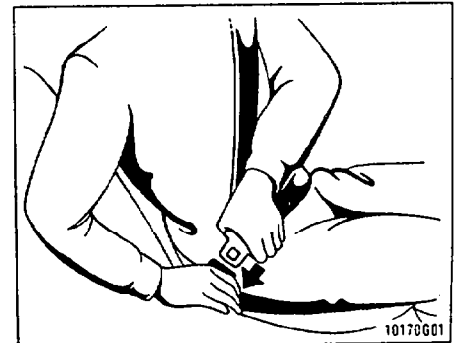
- Use the belt for only one person at a time. Do not use a single belt for two or more people—even children.
- Avoid reclining the seatbacks too much. The seat belts provide maximum protection when the seatbacks are in the upright position. (See the seat adjustment instructions.)
- Be careful not to damage the belt webbing or hardware. Take care that they do not get caught or pinched in the seat or side doors.
- Inspect the belt system periodically. Check for cuts, fraying, and loose parts. Damaged parts should be replaced. Do not disassemble or modify the system.

- Keep the belts clean and dry. If they need cleaning, use a mild soap solution or lukewarm water. Never use bleach, dye, or abrasive cleaners—they may severely weaken the belts.
- Replace the belt assembly if it has been used in a severe impact. The entire assembly should be replaced even if damage is not obvious.



- **Front passenger's seat only—Replace the belt if the warning label under the sleeve can be seen. The warning label, "REPLACE BELT", will appear if the belt receives a severe impact or other force.**

—Front seat belts and rear outside seat belts



Adjust the seat as needed (front seats only) and sit up straight and well back in the seat. To fasten your belt, pull it out of the retractor and insert the tab into the buckle.

You will hear a click when the tab locks into the buckle.

The seat belt length automatically adjusts to your size and the seat position.

The retractor will lock the belt during a sudden stop or on impact. It also may lock if you lean forward too quickly. A slow, easy motion will allow the belt to extend, and you can move around freely.

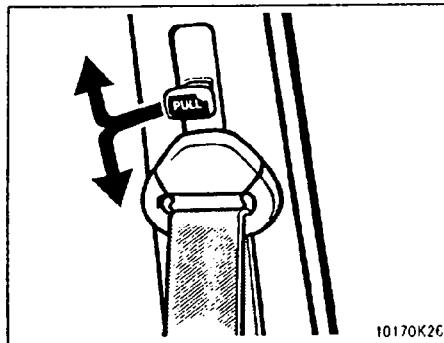
If the seat belt cannot be pulled out of the retractor, firmly pull the belt and release it. You will then be able to smoothly pull the belt out of the retractor.

When a passenger's shoulder belt is completely extended and is then retracted even slightly, the belt is locked in that position and cannot be extended. This feature is used to hold the child restraint system securely. (For details, see "Child restraint" in this chapter.) To free the belt again, fully retract the belt and then pull the belt out once more.

CAUTION:

After inserting the tab, make sure the tab and buckle are locked and that the belt is not twisted.

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Seat belts with an adjustable shoulder anchor—

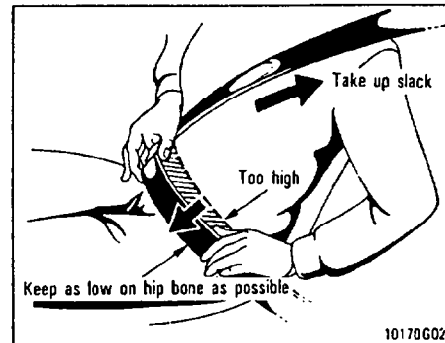
Adjust the shoulder anchor position to your size.

To adjust the anchor position, pull the knob out and slide it up or down. Release the knob and make sure the anchor is locked in position.

CAUTION:

Always be sure that the belt is positioned across your shoulder, as close to your neck as possible; not on your upper arm or on your neck. Failure to do so could reduce the amount of protection in an accident and increase the chance of injury.

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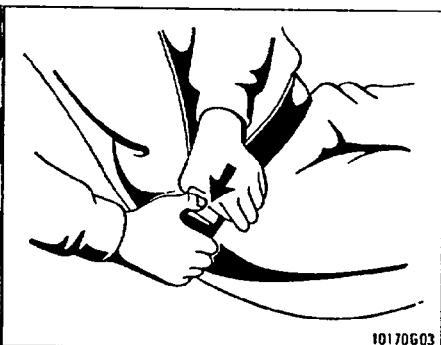
Adjust the position of the lap and shoulder belts.

Position the lap belt as low as possible on your hips—not on your waist, then adjust it to a snug fit by pulling the shoulder portion upward through the latch plate.

CAUTION:

- High-positioned lap belts and loose-fitting shoulder belts both could increase the chance of injury due to sliding under the lap belt during an accident.
- For your safety, do not place the shoulder belt under your arm.

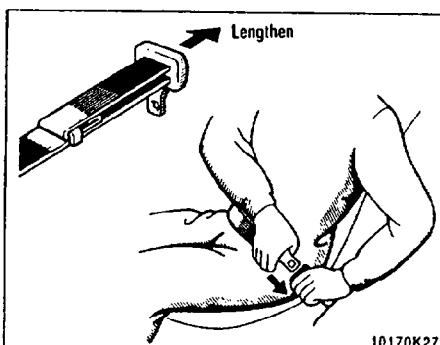
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To release the belt, press the buckle-release button and allow the belt to retract.

If the belt does not retract smoothly, pull it out and check for kinks or twists. Then make sure it remains untwisted as it retracts.

—Rear center seat belt



Sit up straight and well back in the seat. To fasten your belt, insert the tab into the buckle.

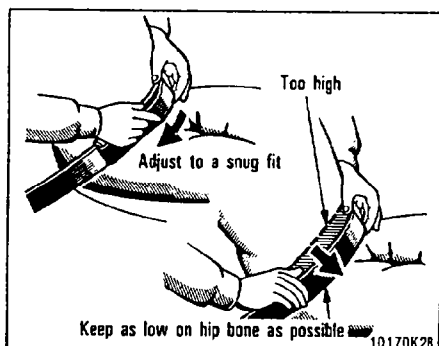
You will hear a click when the tab locks into the buckle.

If the belt is not long enough for you, hold the tab at a right angle to the belt and pull on the tab.

CAUTION:

After inserting the tab, make sure the tab and buckle are locked and that the belt is not twisted.

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Remove excess length of the belt and adjust the belt position.

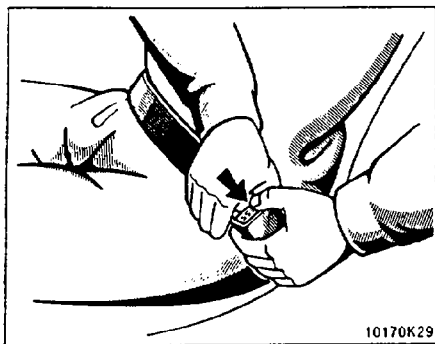
To shorten the belt, pull the free end of the belt.

Position the lap belt as low as possible on your hips—not on your waist, then adjust it to a snug fit.

CAUTION:

High-positioned lap belt could increase the chance of injury due to sliding under the lap belt during an accident.

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To release the belt, press the buckle-release button.

—Seat belt extender

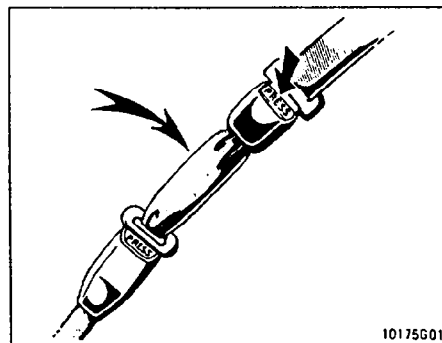
If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Toyota dealer free of charge.

Please contact your local Toyota dealer so that the dealer can order the proper required length for the extender. Bring the heaviest coat you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Toyota dealer.

CAUTION:

When using the seat belt extender, observe the following. Failure to follow these instructions could result in less effectiveness of the seat belt restraint system in case of vehicle accident, increasing the chance of personal injury.

- Never use the seat belt extender if you can fasten the seat belt without it.
- Remember that the extender provided for you may not be safe when used on a different vehicle, or for another person or at a different seating position than the one originally intended for.



To connect the extender to the seat belt, insert the tab into the seat belt buckle so that the "PRESS" signs on the buckle-release buttons of the extender and the seat belt are both facing outward as shown.

You will hear a click when the tab locks into the buckle.

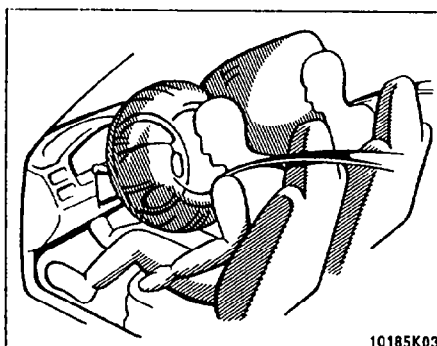
When releasing the seat belt, press on the buckle-release button on the extender, not on the seat belt. This helps prevent damage to the vehicle interior and extender itself.

When not in use, remove the extender and store in the vehicle for future use.

CAUTION:

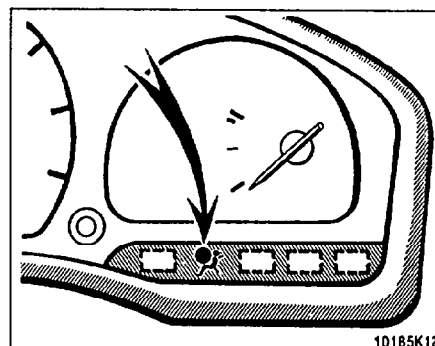
After inserting the tab, make sure the tab and buckle are locked and that the seat belt extender is not twisted.

SRS airbags (for U.S.A.)



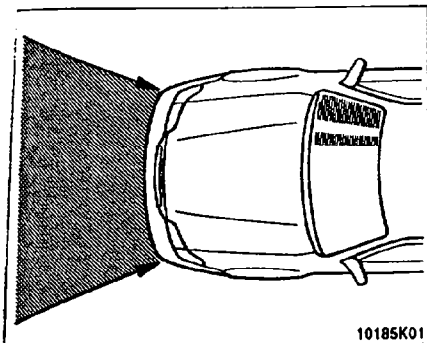
The SRS (Supplemental Restraint System) airbags are designed to provide further protection to the driver and front passenger when added to the primary protection provided by the seat belts.

In response to a severe frontal impact, the SRS airbags work together with the seat belts to prevent or reduce injury by inflating, in order to decrease the likelihood of the driver's or front passenger's head or face directly hitting the steering wheel or dashboard. The passenger airbag is activated even with no passenger in the front seat.



This indicator comes on when the ignition key is turned to the "ACC" or "ON" position. It goes off after about 6 seconds. This means the SRS airbags are operating properly.

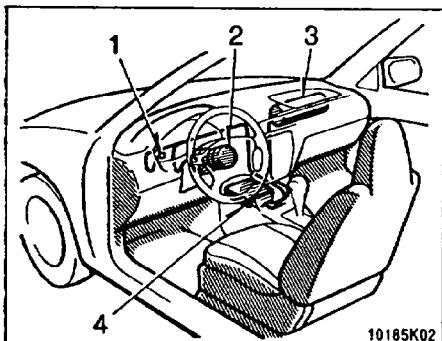
The SRS airbag warning light system monitors the airbag sensor assembly, inflators, warning light, interconnecting wiring and power sources.



The SRS airbag system is designed to activate in response to a severe frontal impact within the shaded area between the arrows in the illustration.

The SRS airbags will deploy if the severity of the impact is above the designed threshold level, comparable to an approximate 20 km/h (14 mph) collision when impacting straight into a fixed barrier that does not move or deform.

If the severity of the impact is below the above threshold level, the SRS airbags may not deploy.



The SRS airbag system mainly consists of the following components and their locations are shown in the illustration.

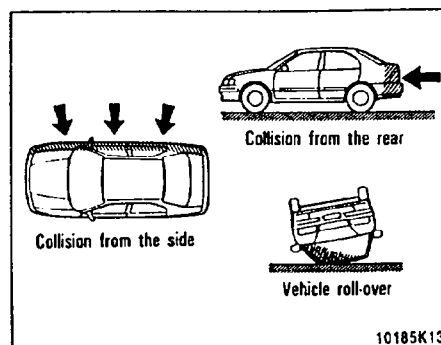
- 1 SRS airbag warning light
- 2 Steering wheel pad (airbag and inflator)
- 3 Passenger airbag module (airbag and inflator)
- 4 Airbag sensor assembly

The airbag sensor assembly consists of a safing sensor and airbag sensor.

However, this threshold velocity will be considerably higher if the vehicle strikes an object, such as a parked vehicle or sign pole, which can move or deform on impact, or if it is involved in an underride collision (a collision in which the nose of the vehicle "under-rides", or goes under, the bed of a truck).

It is possible with collision severity at the marginal level of airbag sensor detection and activation that only one of your vehicle's two airbags will deploy.

For your safety, be sure to always wear your seat belts.



The SRS airbags are not designed to inflate if the vehicle is subjected to a side or rear impact, if it rolls over, or if it is involved in a low-speed frontal collision.

In a severe frontal impact, sensors detect deceleration and the system triggers the airbag inflators. Then a chemical reaction in the inflators momentarily fills the airbags with non-toxic nitrogen gas to help restrain the forward motion of the occupants.

When the airbags inflate, they produce a fairly loud noise and release some smoke along with the nitrogen gas. This is not harmful and does not indicate a fire. Be sure to wash off any residue as soon as possible to prevent minor skin irritation.

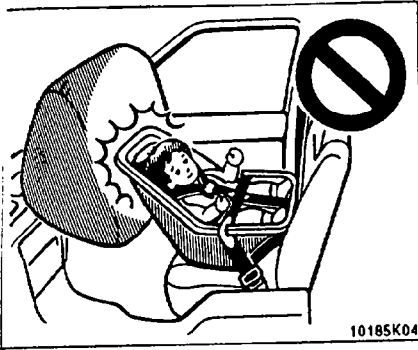
Deployment of the airbags happen in a fraction of a second, so the airbags must inflate with considerable force. While the system is designed to reduce serious injuries, it may also cause minor burns or abrasions and swellings.

Parts of the airbag module (steering wheel hub, dashboard) may be hot for several minutes, but the airbags themselves will not be hot. The airbags are designed to inflate only once.

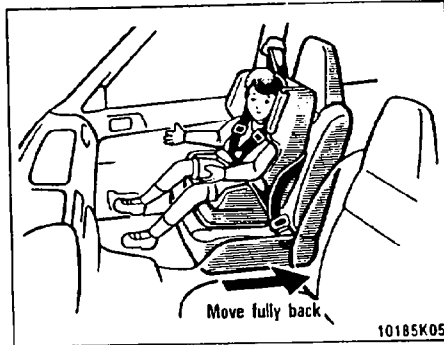
A crash severe enough to inflate the airbags may break the windshield as the vehicle buckles. In vehicles with a passenger airbag the windshield may also be damaged by absorbing some of the force of the inflating airbag.

CAUTION: ~~~~~

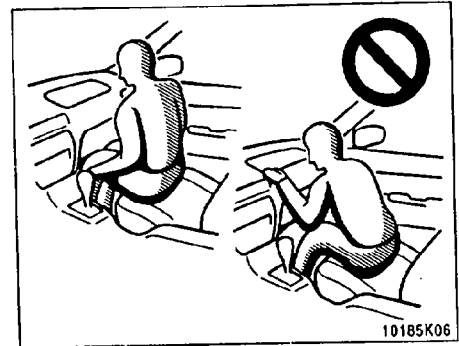
- The SRS airbag system is designed only as a supplement to the primary protection of the seat belt systems of the driver and front passenger. The front seat occupants are particularly susceptible to injury if they do not wear their seat belts; when sudden braking or a collision occurs, they may be thrown forward. To obtain further protection in an accident, the driver and all passengers in the vehicle should always wear their seat belts when driving. For instructions and precautions concerning the seat belt system, see "Seat belts" in this chapter.
- A baby or small child who is too small to use a seat belt should be properly secured in a rear seat using a child restraint system.



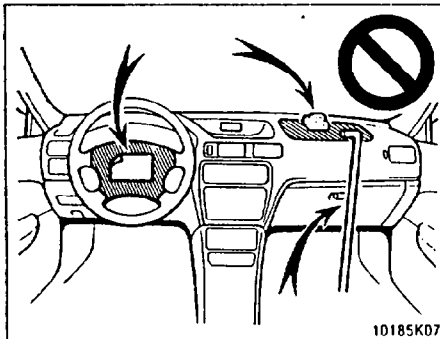
- Do not use a rear-facing child restraint system in the front seat because the force of the rapid inflation of the passenger airbag may cause severe injury to the child.



- When using a forward-facing child restraint system in the front seat, the seat must be moved as far back as possible. For instructions concerning the installation of a child restraint system, see "Child restraint" in this chapter.



- Do not sit on the edge of the seat or lean over the dashboard when the vehicle is in use. The airbags inflate with considerable speed and force; you may be severely injured. Sit up straight and well back in the seat, and always use your seat belt.



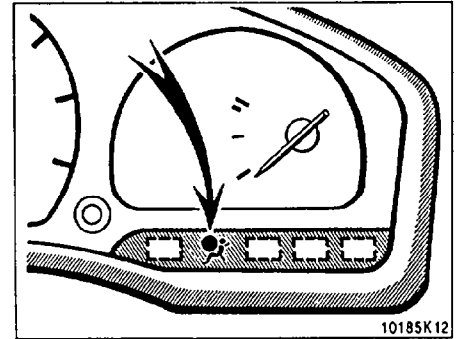
- Do not put objects on or in front of the dashboard or steering wheel pad that houses the airbag system. They might restrict inflation or cause personal injury as they are projected rearward.
- Do not modify, remove or open any component or wiring, such as the steering wheel, column cover, front passenger airbag cover, front passenger airbag, airbag sensor assembly. Doing any of these may cause sudden SRS airbag inflation or disable the system, which could result in personal injury.

Failure to follow these instructions can result in severe injuries.

NOTICE:

Do not perform any of the following changes without consulting your Toyota dealer. Such changes can interfere with proper operation of the SRS airbag system in some cases.

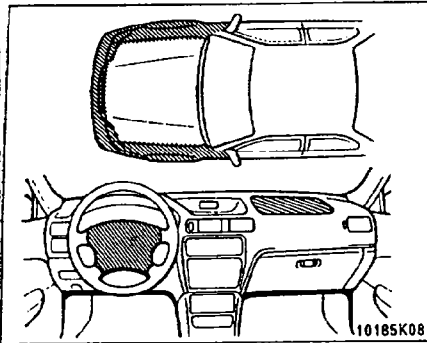
- ◆ Installation of electronic items such as a mobile two-way radio, cassette tape player or compact disc player.
- ◆ Modification of the suspension system.
- ◆ Repairs made on or front console, steering column, steering wheel or dashboard near the front passenger airbag.



This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbags. Contact your Toyota dealer as soon as possible to service the vehicle.

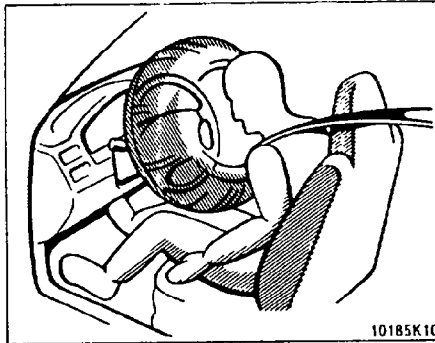
- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.

SRS airbag (for Canada)



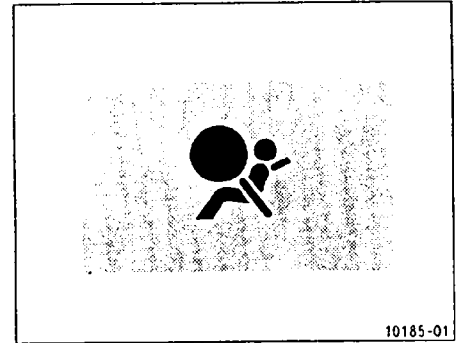
In the following cases, contact your Toyota dealer as soon as possible:

- The SRS airbags have been inflated.
- The front part of the vehicle (shaded in the illustration) was involved in an accident not of the extent to cause the SRS airbags to inflate.
- The pad section of the steering wheel or front passenger airbag cover (shaded in the illustration) is scratched, cracked, or otherwise damaged.



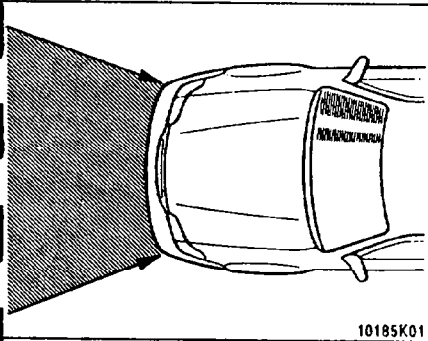
The SRS (Supplemental Restraint System) airbag is designed to provide further protection to the driver when added to the primary protection provided by the seat belt.

In response to a severe frontal impact, the SRS airbag works together with the seat belt to prevent or reduce injury by inflating, in order to decrease the likelihood of the driver's head or face directly hitting the steering wheel.



This indicator comes on when the ignition key is turned to the "ACC" or "ON" position. It goes off after about 6 seconds. This means the SRS airbag is operating properly.

The SRS airbag warning light system monitors the airbag sensor assembly, inflator, warning light, interconnecting wiring and power sources.



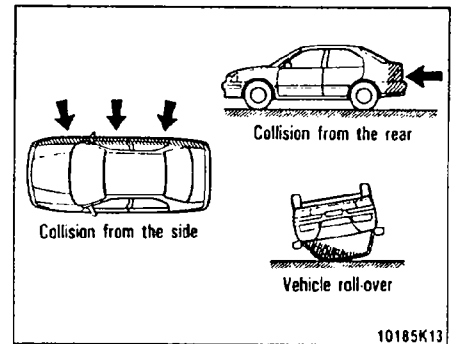
The SRS airbag system is designed to activate in response to a severe frontal impact within the shaded area between the arrows in the illustration.

The SRS airbag will deploy if the severity of the impact is above the designed threshold level, comparable to an approximate 20 km/h (14 mph) collision when impacting straight into a fixed barrier that does not move or deform.

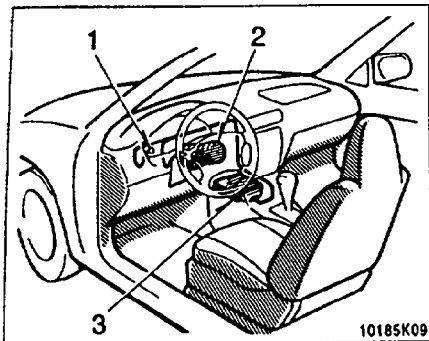
If the severity of the impact is below the above threshold level, the SRS airbag may not deploy.

However, this threshold velocity will be considerably higher if the vehicle strikes an object, such as a parked vehicle or sign pole, which can move or deform on impact, or if it is involved in an underride collision (a collision in which the nose of the vehicle "under-rides", or goes under, the bed of a truck).

For your safety, be sure to always wear your seat belt.



The SRS airbag is not designed to inflate if the vehicle is subjected to a side or rear impact, if it rolls over, or if it is involved in a low-speed frontal collision.



The SRS airbag system mainly consists of the following components and their locations are shown in the illustration.

- 1 SRS airbag warning light
- 2 Steering wheel pad (airbag and inflator)
- 3 Airbag sensor assembly

The airbag sensor assembly consists of a safing sensor and airbag sensor.

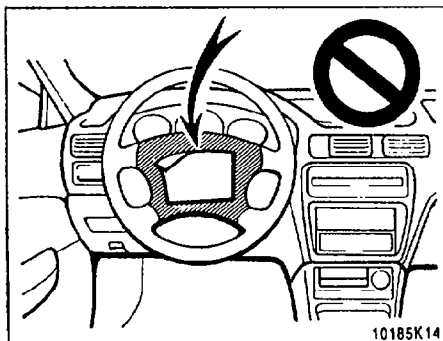
In a severe frontal impact, the sensor detects deceleration and the system triggers the airbag inflator. Then a chemical reaction in the inflator momentarily fills the airbag with non-toxic nitrogen gas to help restrain the forward motion of the driver.

When the airbag inflates, it produces a fairly loud noise and releases some smoke along with the nitrogen gas. This is not harmful and does not indicate a fire. Be sure to wash off any residue as soon as possible to prevent minor skin irritation.

Deployment of the airbag happens in a fraction of a second, so the airbag must inflate with considerable force. While the system is designed to reduce serious injuries, it may also cause minor burns or abrasions and swellings.

The steering wheel hub may be hot for several minutes, but the airbag itself will not be hot. The airbag is designed to inflate only once.

CAUTION: The SRS airbag system is designed only as a supplement to the primary protection of the seat belt system of the driver. The driver is particularly susceptible to injury if he/she does not wear his/her seat belt; when sudden braking or a collision occurs, he/she may be thrown forward. To obtain further protection in an accident, the driver and all passengers in the vehicle should always wear their seat belts when driving. For instructions and precautions concerning the seat belt system, see "Seat belts" in this chapter.



CAUTION:

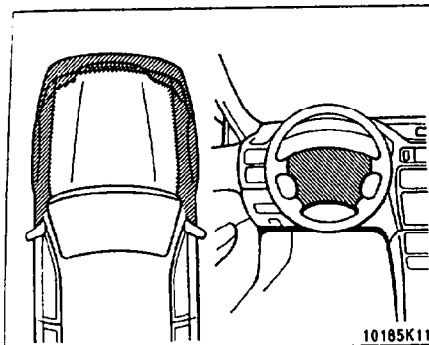
- Do not put objects on the steering wheel pad. They might restrict inflation or cause personal injury as they are projected rearward.
- Do not modify, remove or open any component or wiring, such as the steering wheel, column cover, airbag sensor assembly. Doing any of these may cause sudden SRS airbag inflation or disable the system, which could result in personal injury.

Failure to follow these instructions can result in severe injuries.

NOTICE:

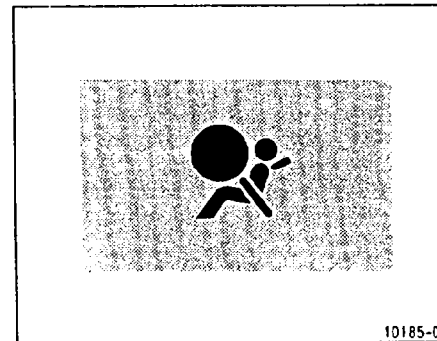
Do not perform any of the following changes without consulting your Toyota dealer. Such changes can interfere with proper operation of the SRS airbag system in some cases.

- ◆ Installation of electronic items such as a mobile two-way radio, cassette tape player or compact disc player.
- ◆ Modification of the suspension system.
- ◆ Repairs made on or front console, steering column or steering wheel.



In the following cases, contact your Toyota dealer as soon as possible:

- The SRS airbag has been inflated.
- The front part of the vehicle (shaded in the illustration) was involved in an accident not of the extent to cause the SRS airbag to inflate.
- The pad section of the steering wheel (shaded in the illustration) is scratched, cracked, or otherwise damaged.



This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbag. Contact your Toyota dealer as soon as possible to service the vehicle.

- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.