

DOT 946

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

SUZUKI MOTOR COMPANY LTD JAPAN
1986 SUZUKI SAMURAI 2 DOOR

NHTSA NO. MG0601

MOBILITY SYSTEMS AND EQUIPMENT COMPANY
6151 West Century Boulevard Suite 912
Los Angeles, California 90045



MAY 1986

FINAL REPORT

Prepared For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE

400 Seventh Street, S. W.

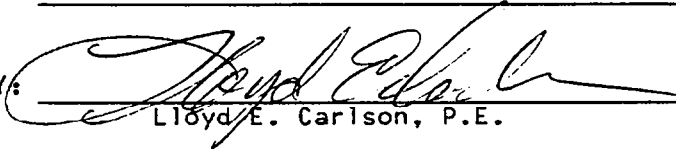
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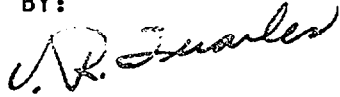
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FINAL REPORT ACCEPT BY:



MANAGER, New Car Assessment Program

Date of Report Acceptance

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16. Abstract A 35 mph frontal barrier impact test using a load cell barrier was conducted on a 1986 Suzuki Samurai at the Mobility Systems and Equipment Company (MSE) crash test facility in Mira Loma, CA on 15 May 1986. The barrier impact velocity was 35.08 mph and the ambient temperature at the barrier face at the time of impact was 74°F. The posttest vehicle crush maximum was 17.3 in. The test vehicle appears to comply with the indicant requirements of the following Federal Motor Vehicle Safety Standards: 1. FMVSS No. 212, "Windshield Mounting" 2. FMVSS No. 301-75 "Fuel System Integrity" The test vehicle appears to fail the indicant requirements of the following Federal Motor Vehicle Safety Standard: 1. FMVSS No. 219 (Partial), "Windshield Zone Intrusion" With regard to the FMVSS 208 "Occupant Crash Protection", injury criteria, the driver and passenger dummy appeared to satisfy the head injury criteria (HIC) maximum allowable index of 1,000, the chest G's of not more than 60 for a time interval greater than 3 milliseconds and the femur requirements of 2,250 lb or less. TYPE OF RESTRAINT SYSTEM: 3-point continuous webbing manual system at each front outboard seating position.			
17. Key Words 35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP) FMVSS 212 Inducant Testing FMVSS 219 (Partial) Inducant Testing FMVSS 301-75 Inducant Testing		18. Distribution Statement COPIES OF THIS REPORT ARE AVAILABLE FROM: DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Technical Reference Division, Room 5108 400 Seventh Street, SW Washington, DC 20590	
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SECTION I

PURPOSE AND TEST PROCEDURE

This 35 mph frontal barrier impact test is part of the Composite FY'86 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-84-D-21149. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph FMVSS 212/219/301-75 requirements.

This 35 mph frontal barrier impact test was conducted in accordance with the Office of Market Incentives (OMI) Laboratory Indicant Test Procedure. Standards Enforcement Indicant Test Program data for FMVSS No. 212, "Windshield Mounting", FMVSS No. 219 (Partial), "Windshield Zone Intrusion", FMVSS No. 301-75, "Fuel System Integrity", as well as occupant performance data are provided herein.

SECTION 2

SUMMARY OF FRONTAL BARRIER IMPACT TESTS

A load cell barrier consisting of 36 cell units was impacted by a 1986 Suzuki Samurai, 2 door. NHTSA No. MG0601, at a velocity of 35.08 mph. The frontal impact test was conducted by Mobility Systems and Equipment Company (MSE) on 15 May 1986. The general test and vehicle description information are presented in Tables 1 and 2. Pretest and posttest photographs of the test vehicle and dummies are shown in Appendix A.

Two (2) Part 572 50th percentile adult male Anthropomorphic Test Devices (ATD's) were placed in the driver and right front passenger designated seating positions (DSP's) according to the NHTSA test requirements.

The ATD's were instrumented with head and chest triaxial accelerometers and right/left femur load cells. In addition, load cells were placed on the driver's and passenger's lap and shoulder belts to measure dummy upper torso and pelvic section belt loading. A summary of dummy configuration and performance verification test data is presented in Appendix C.

The frontal impact event was documented by one (1) real time camera and sixteen (16) high-speed cameras. The camera location data are presented in Table 11.

Sixty-seven (67) channels of crash parameters were recorded using three (3) FM tape recorders and four (4) direct analog to digital acquisition units. Time history plots of all recorded channels are presented in Appendix B.

2.1 GENERAL COMMENTS

The 1986 Suzuki Samurai, 2 door truck was equipped with an 81 cubic inch 4 cylinder engine and 5 speed manual transmission. The test weight of the Suzuki Samurai with two (2) 50th percentile male dummies, instrumentation, and cameras was 2,666 pounds.

The Suzuki Samurai was involved in a frontal load cell barrier crash at a velocity of 35.08 mph. The vehicle appears to comply with FMVSS No. 301-75, "Fuel System Integrity" requirement. There was no solvent leakage from the fuel system after impact or during the subsequent rollover test.

The Suzuki Samurai appears to comply with FMVSS No. 212, "Windshield Mounting" requirement. The windshield periphery retention was 100 percent for the right half, 100 percent for the left half, and 100 percent overall.

The Suzuki Samurai appears to fail the FMVSS No. 219, "Windshield Zone Intrusion" requirement. The hood right rear section penetrated the windshield approximately 1 inch into the occupant compartment on the passenger side lower corner.

The maximum static crush for the vehicle of 17.3 inches occurred near the centerline of the front bumper. The windshield was cracked but all vehicle glazing remained intact. Both the driver's and passenger's doors were jammed and required tools to opened them.

The driver ATD's head hit the steering wheel rim and the center hub. The driver's left and right knees hit the dash panel. The driver ATD had a HIC value of 984; the maximum chest acceleration (resultant clipped) was 48.1 g; and the maximum femur loads were 1,230 (left) 110 (right) pounds.

The passenger ATD's head hit the dash panel handle and the dash panel. Both of his knees hit the dash panel. The HIC value for the passenger ATD was 865; the maximum chest acceleration (resultant clipped) was 33.6 g; and the maximum femur loads were 264 (left) and 1,116 (right) pounds.

Seat belt spoolout, measured by high speed film analysis was 3.2 inches for the driver and 2.0 inches for the passenger belts.

The driver's outboard seat track had no track latching device, thus during the impact the seat shifted forward 2.8 inches on the outboard side; the inboard track latching device remained latched and the seat did not shift forward on the inboard side. The passenger's outboard seat track had no track latching device, thus during the impact the seat shifted forward 2.0 inches on the outboard side; the inboard track latching device remained latched and the seat did not shift forward on the inboard side.

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1986/SUZUKI/SAMURAI/TRUCK, 2 DOOR

VEHICLE NHTSA NO.: M G 0 6 0 1 VIN: J S 4 J C 5 1 V 8 G 4 1 0 6 4 4

VEHICLE BODY COLOR: Silver; MONTH & YEAR OF MANUFACTURE: January 1986

ENGINE: 4 Cylinders; C.I.D.; LITERS; 1324 CC

X Gas; Diesel; Turbocharged

Placement— X Longitudinal; Transverse (Lateral)

TRANSMISSION: 5 speed; X Manual; Automatic; Overdrive

FINAL DRIVE: ☐ FRONT WHEEL DRIVE; ☐ REAR WHEEL DRIVE; ☒ Four Wheel Drive

DATE VEHICLE AVAILABLE FOR 35 MPH CRASH TESTING: 04/16/86

ODOMETER READING: 268 miles; OPTIONS: ☐ A/C; ☐ P/S; ☐ P/WDO.; ☐

☐ Tilt Whl.; ☐ Cruise Control

 TYPE OF OCCUPANT RESTRAINT SYSTEM FOR FRONT OUTBOARD SEATING POSITIONS: Three point continuous webbing manual system.

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): 35 psi Front; 35 psi Rear

Recommended Tire Size: P205/70R15

Tires On Vehicle: P205/70R15; Manufacturer: Bridgestone

Number Of Occupants: 2 Front; 2 Rear; 3rd Seat; ☒ 4 TOTAL

Type Of Front Seats: X Bucket; Bench; Split Bench

Type of Front Seat Back; Fixed; X Adjustable With ☒ Lever/ ☐ Rotating Knob

Vehicle Maximum Capacity Loading = 900 lbs. (A)

No. Of Occupants x 150 lbs. - - - = 600 lbs. (B)

Cargo Capacity (A - B) - - - - - = 300 (MVP) lbs.

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Right Front = 530 lbs.
Left Front = 521 lbs. } —TOTAL FRONT = 1,051 lbs. (49.8 % of TOTAL)

Right Rear = 540 lbs.
Left Rear = 521 lbs. } —TOTAL REAR = 1,061 lbs. (50.2 % of TOTAL)

TOTAL WEIGHT= 2,112 lbs.

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CALCULATION OF TEST VEHICLE TARGET WEIGHT:

Total test Vehicle Delivered Weight With Maximum Fluids = 2,112 lbs.
Maximum Cargo Carrying Capacity Of Test Vehicle - - - - - 300 lbs.
Weight Of Two P.572 Dummies (2 x 164 lbs.) - - - - - 328 lbs.
TEST VEHICLE TARGET WEIGHT - - - - - 2,740 lbs.

*300 lbs. for light trucks and MPVs

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 DUMMIES AND CARGO:

Right Front = 595 lbs. TOTAL FRONT = 1,171 lbs. (43.9% of TOTAL)
Left Front = 576 lbs.
Right Rear = 746 lbs. TOTAL REAR = 1,495 lbs. (56.1% of TOTAL)
Left Rear = 749 lbs.
TOTAL WEIGHT= 2,666 LBS. (which includes 0 lbs. of cargo ballast weight
placed in the cargo/luggage area)

VEHICLE COMPONENTS REMOVED TO MEET TARGET WEIGHT:

1. ☐ Spare Tire, Jack, Jack Stand 3. ☐ Tail lamp hsg. ☐ Rt. Side ☐ Left Side
2. ☐ Rear Bumper Assembly 4. _____

TEST VEHICLE ATTITUDE:

As Delivered—Right Front = 28.9 inches; Ready For Test—Right Front= 28.6 in.
Left Front = 29.0 inches; Left Front = 28.8 in.
Right Rear = 29.8 inches; Right Rear = 28.5 in.
Left Rear = 30.0 inches; Left Rear = 28.8 in.

Test Vehicle Wheelbase: 79.9 inches; C.g. = 44.8 inches rearward of front
wheel centerline

Total Vehicle Length:

Right Side = 128.5 inches;
Left Side = 128.5 inches;
Centerline = 129.1 inches;

Total Vehicle Width:

Across Front Fenders 59.8 in.
Across Center 56.8 in.
Across Rear Fender 60.6 in.
Maximum 60.6 in.

Data Table No. 2 Post Crash Test Data

DATE OF 35 MPH FRONTAL BARRIER IMPACT RATINGS TEST: 05/15/86

TIME OF TEST: 6:00 PM ; AMBIENT TEMPERATURE AT BARRIER FACE: 74 °F.

VEHICLE'S OCCUPANT COMPARTMENT TEMPERATURE: 72 °F. (Spec. Range + 66 to 78° F.)

VEHICLE'S WINDSHIELD MOLDING TEMPERATURE: 72 °F.

VEHICLE IMPACT VELOCITY: Primary Speed Trap = 35.08 mph

Secondary Speed Trap = 35.08 mph

(Specified Range = 34.5 to 35.5 mph)

Distance from vehicles's front bumper forwardmost surface to barrier face whe

(a) entering the speed trap = 5 ft

(b) existing the speed trap = 1 ft

VEHICLE STATIC CRUSH: (All measurements in inches)

Vehicle Pre-test Length— Right Side=128.5 ; C/Line=129.1 ; Left Side=128.5

Vehicle Post-test Length -Right Side=111.5 ; C/Line=112.1 ; Left Side=113.5

VEHICLE STATIC CRUSH ---- Right Side=17.0 ; C/Line=17.0 ; Left Side=15.0

VEHICLE REBOUND FROM BARRIER FACE:

Vehicle Right Side = 35.0 inches

Vehicle Centerline = 34.8 inches

Vehicle Left Side = 34.3 inches

VISIBLE DUMMY CONTACT POINTS:

DRIVER (I.D. No. 464)			
	Strg. Col. Hub	Strg. Wheel	Instru. Panel
HEAD - - - - -	Yes	Yes	No
RIGHT KNEE - - - - -			Yes
LEFT KNEE - - - - -			Yes

PASSENGER (I.D. No. 466)		
Instru. Panel	Knee Assv.	Glove Box Door
Yes	No	No
No		Yes
No		Yes

VEHICLE DOOR OPENING INFORMATION:

	RIGHT SIDE		LEFT SIDE	
	OPENED	JAMMED	OPENED	JAMMED
FRONT DOORS - - - - -	-	Yes	-	Yes
REAR DOORS - - - - -	N/A	N/A	N/A	N/A

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VEHICLE'S FRONT SEAT MOVEMENT DURING CRASH EVENT:

	RIGHT SIDE	LEFT SIDE
Seat Cushion Shift - - -	<u>2.0 in</u> forward;	<u>2.8 in</u> forward
Seat Adjuster Failure- -	<u>Yes</u> ;	<u>Yes</u>

Details Of Any Failure:

The driver's outboard track had no track latching device, thus during the impact the seat shifted forward 2.8 inches on the outboard side; the inboard track latching device remained latched and the seat did not shift forward on the inboard side. The passenger's outboard track had no track latching device, thus during the impact the seat shifted forward 2.0 inches on the outboard side; the inboard track latching device remained latched and the seat did not shift on the inboard side.

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SECTION 3

SUMMARY OF RESULTS FOR

FMVSS 212, "Windshield Mounting"

FMVSS 219, (Partial), "Windshield Zone Intrusion"

FMVSS 301-75, "Fuel System Integrity"

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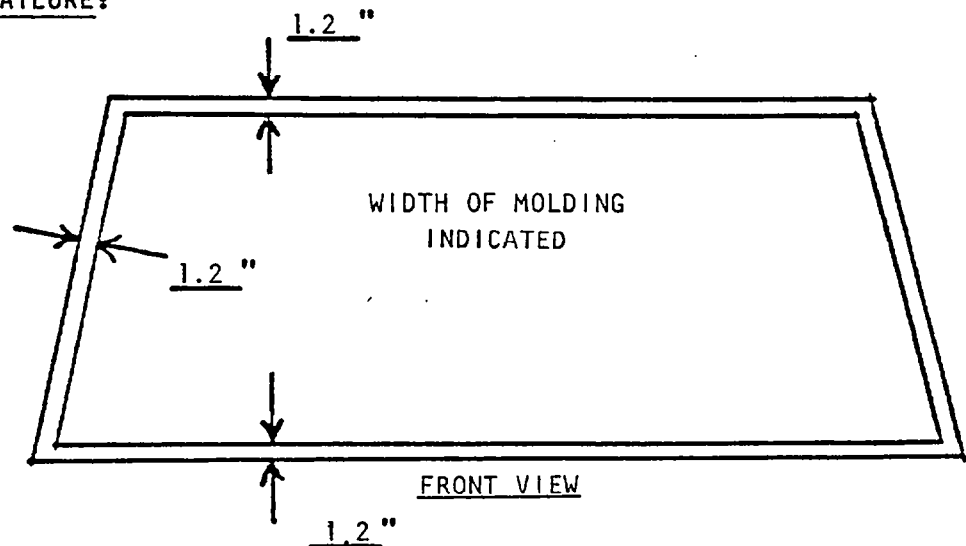
Data Table No. 3 FMVSS 212 Windshield Mounting Data

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 windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

	WINDSHIELD PERIPHERY'		
	PRE-TEST (in.)	POST-TEST (in.)	PERCENT RETENTION
RIGHT SIDE	57.8	57.8	100%
LEFT SIDE	57.8	57.8	100%
TOTAL	115.6	115.6	100%

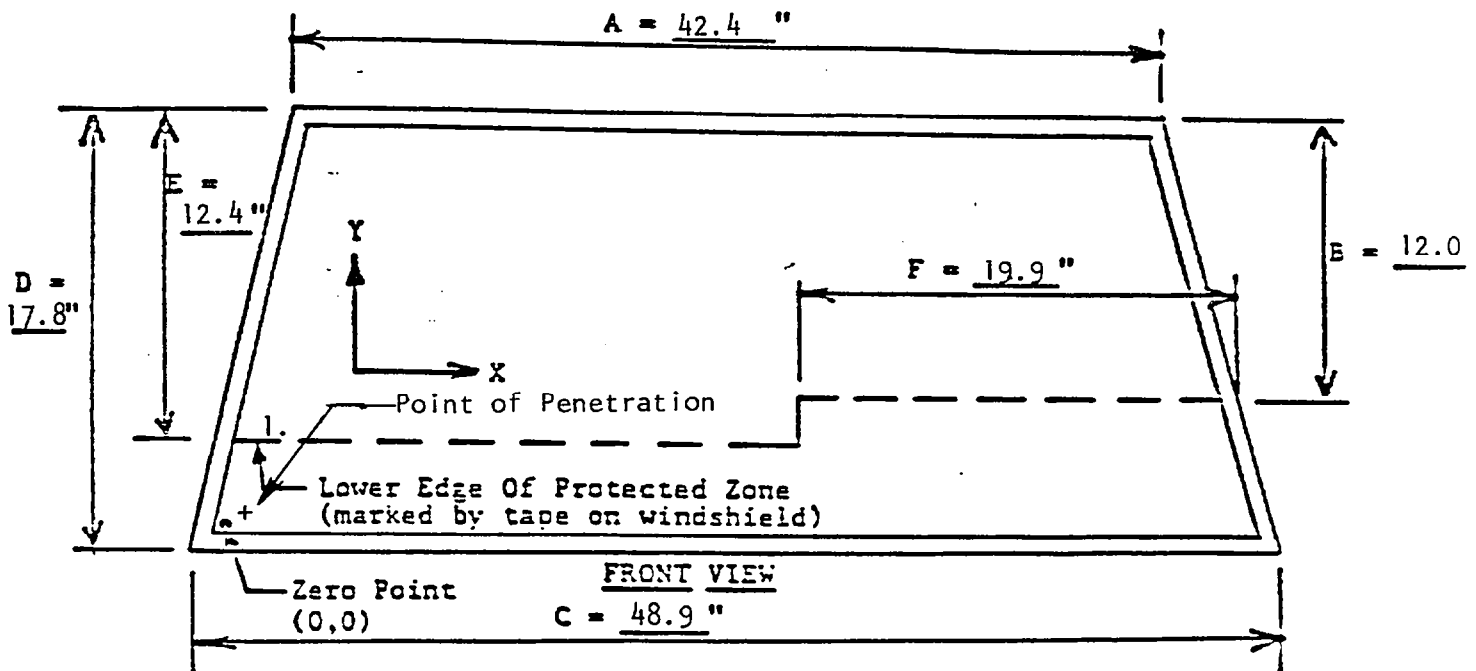
AREA OF RETENTION FAILURE:



FAILURE DETAILS: None

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. Draw the locus of points on the inner surface of the windshield contactable 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 PROTECT ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

FMVSS 219 TEST DATA:



DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":
(Show location of penetration on above sketch)

The hood right rear section penetrated the windshield approximately 1 inch at the location shown in the above sketch

COORDINATES	
X	Y
1. 2	4 1/2
2. N/A	N/A
3. N/A	N/A
4. N/A	N/A

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TEST VEHICLE NHTSA NO.: MG0601 ; TEST DATE: 05/15/86

VEHICLE MAKE/MODEL/BODY STYLE: 1986/SUZUKI/SAMURIA/TRUCK, 2 DOOR

USABLE CAPACITY OF VEHICLE'S FRONT FUEL TANK: 10.57 Gallons (figure furnished by
vehicle manufacturer)

USABLE CAPACITY OF VEHICLE'S REAR FUEL TANK: Gallons (N/A)

TEST REQUIREMENTS:

Test vehicle's engine operated to "run dry" condition, and then a small amount of Stoddard solvent which has been dyed RED shall be added to the vehicle's fuel tank. Operate the fuel pump enough to completely fill the fuel system ahead of the fuel tank, and add 92 to 94% of the stated USABLE CAPACITY to the fuel tank.

AMOUNT OF STOODARD SOLVENT ADDED TO VEHICLE'S FUEL TANK:

Front Tank 9.8 Gallons which is 92.7% of the Stated USABLE CAPACITY

Rear Tank Gallons which is % of the Stated USABLE CAPACITY

SOLVENT SPILLAGE MEASUREMENT AFTER 35 MPH FRONTAL BARRIER IMPACT TEST:

From impact until vehicle motion ceases - - - - None 1 oz.

For 5 min. period after vehicle motion ceases - None 5 oz.

For next 25 minutes at barrier face - - - - - None 1 oz./1 minute)

SOLVENT SPILLAGE DETAILS: None

STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1 to 3 minutes)

Time reqd. for machine to rotate 90° = 1 minutes, 20 seconds

FMVSS 301-75 Position Hold Time = 5 minutes, 0 seconds

TOTAL - - - - - = 6 minutes, 20 seconds

Next Whole Minute Interval - - - - - = 7 minutes

VEHICLE STATIC ROLLOVER DATA:

	First 5 Minutes FROM ONSET OF ROTATION	6th Minute	7th Minute	8th Minute
Maximum Allowable Solvent Spillage - -	5 oz.	1 oz.	1 oz.	1 oz.
0 to 90° (filler cap down) - - - - -	0.0	0.0	0.0	N/A
90 to 180° - - - - -	0.0	0.0	0.0	N/A
180 to 270° - - - - -	0.0	0.0	0.0	N/A
270 to 360° - - - - -	0.0	0.0	0.0	N/A

Solvent Spillage Location(s): None

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

I. OMI DATA

- Dummy Injury Criteria Data Summary
- Dummy Positioning Data
- Seat Belt Positioning Data
- Seat Belt Performance Assessment Data
- Driver Dummy to Steering Column Dimensions
- Camera Locations

II. OVR DATA

- Load Cell Barrier Data
- Vehicle Accelerometer Data

III. AID DATA

- Test Vehicle Measurements
- Accident Investigation Damage Data Summary

VEH. NHTSA NO.: MG0601; TEST DATE: 05/15/86

MAXIMUM ACCELERATION VALUES:

	DRIVER DUMMY # 464	PASSENGER DUMMY # 466
Head Channel X HEAD X	-117.45	-100.48
Head Channel Y Y	- 50.88	- 71.93
Head Channel Z Z	100.97	48.73
HEAD RESULTANT R	137.82	106.27
Chest Channel X CHEST X	- 57.05	- 33.48
Chest Channel Y Y	- 24.59	- 17.87
Chest Channel Z Z	16.86	24.24
CHEST RESULTANT (3msec Clip) R	48.16	33.57
TIME INTERVAL	72.0 - 75.0	46.5 - 49.5

HEAD INJURY CRITERIA (HIC) VALUES:

HIC HIC	984.45	865.01
t_1 (seconds)	63.00	27.25
t_2 (seconds)	83.75	88.88
Avg. Accel. t_1 to t_2	74.47	45.64

MAXIMUM FEMUR FORCES: (Compressive)

Right Side (lbs.) FR	110.02	1115.80
Left Side (lbs.) FL	1230.49	263.50

MAXIMUM SEAT BELT FORCES:

Lap Belt	LAP	1108.77	1031.66		
Shoulder Belt	SHLDR	1155.47	1315.16		
		PHOTOGRAPHIC	ELECTRONIC	PHOTOGRAPHIC	ELECTRONIC
MAXIMUM SEAT BELT WEBBING SPOOL-OUT:		3.2	4.4	2.0	3.1
Belt Stretch (inches per foot)		N/A	0.96	N/A	0.72

BARRIER LOAD CELLS:

Total Load CELLS	118,873	lb
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Data Table No. 7 Test Dummy Positioning Data

PRE-IMPACT DATA:

Make/Model: SUZUKI/SAMURAI

Body Style: TRUCK, 2 DOOR

Model Year: 86

NHTSA No.: MG0601

Color: Silver

DATA FROM CERTIFICATION LABEL:

Vehicle Manufacturer: SUZUKI MOTOR CO., LTD. JAPAN

Date of Manufacture: 01/86 ; VIN: JS4JC5IV8G4106442

GVWR: 2,935 lb; GAWR: Front = 1,260 lb; Rear = 1,675 lb

POST-IMPACT DATA:

Date of Test: 05/15/86 Time: 6:00 PM Temperature 74 °F

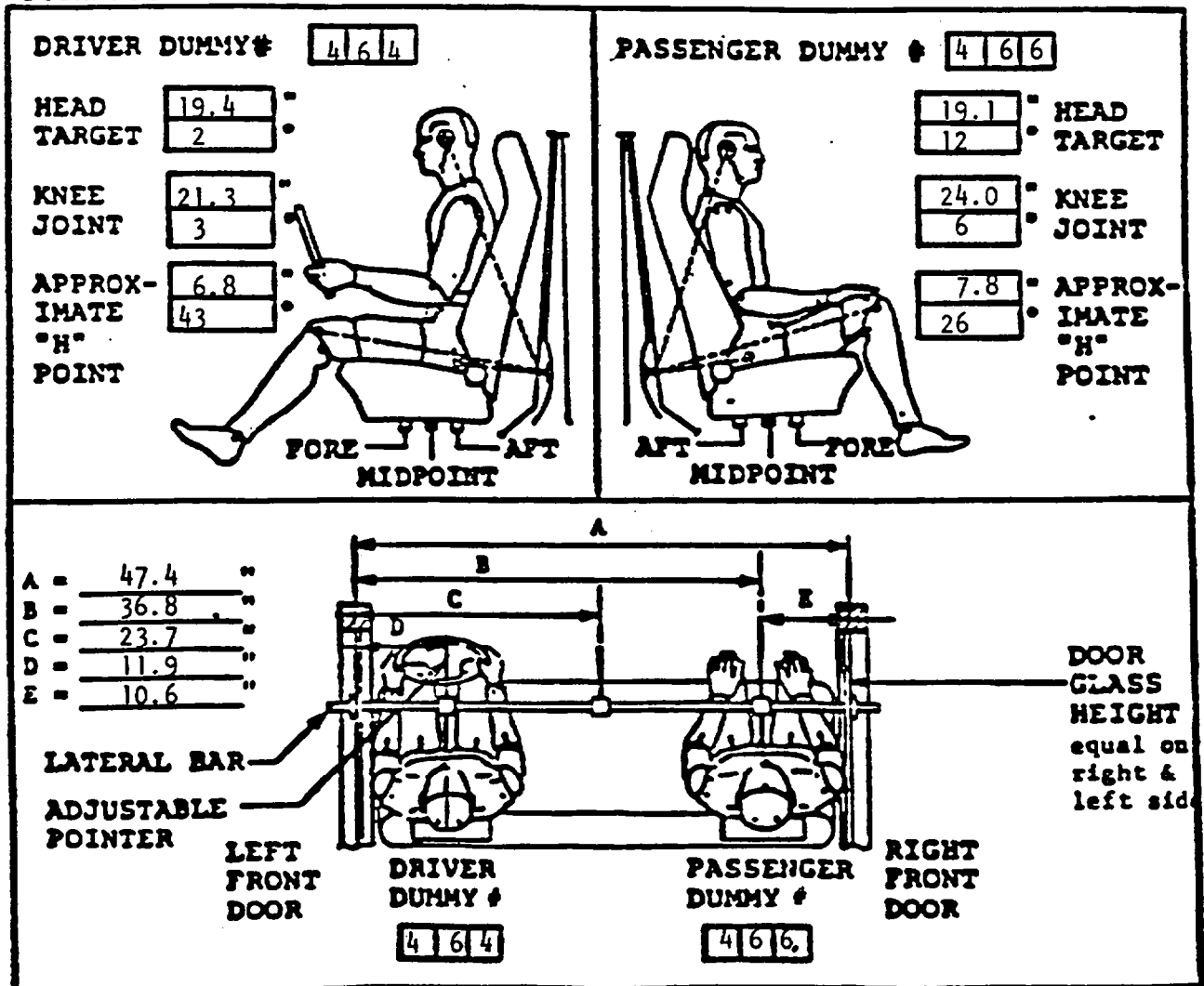
Required Impact Velocity Range: 34.5 to 35.5 mph

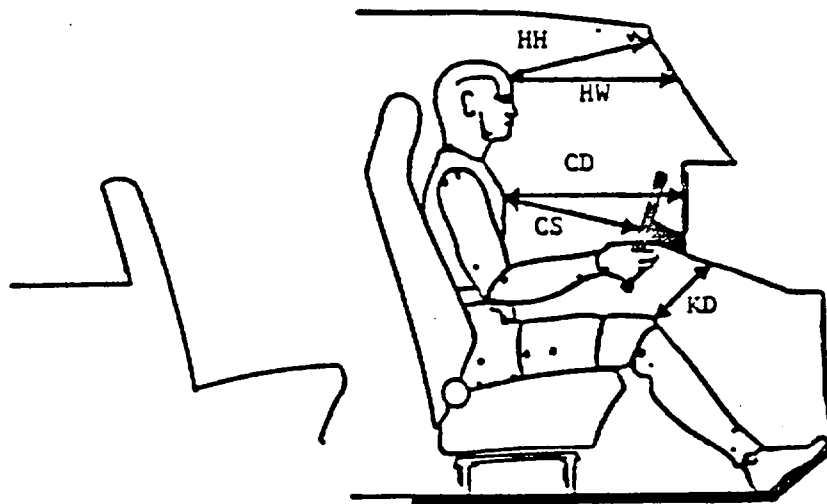
Impact Velocity: Primary = 35.08 mph Secondary = 35.08 mph

Seat Type: Bucket Adjuster Type: Manual

Bucket Seat Back Type: High back with head rest

Technicians:

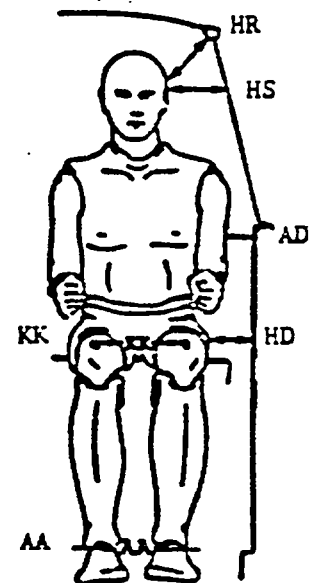




	Driver	Passenger
HH	20.5	17.5
HW	22.1	19.6
CD	20.8	17.5
CS	13.0	N/A
KD L-	6.0	L- 3.0
KD R-	5.8	R- 3.1
Torso Angle	21	Torso Angle 21
Seat Back Angle	18	Seat Back Angle 18
HSW	N/A	N/A

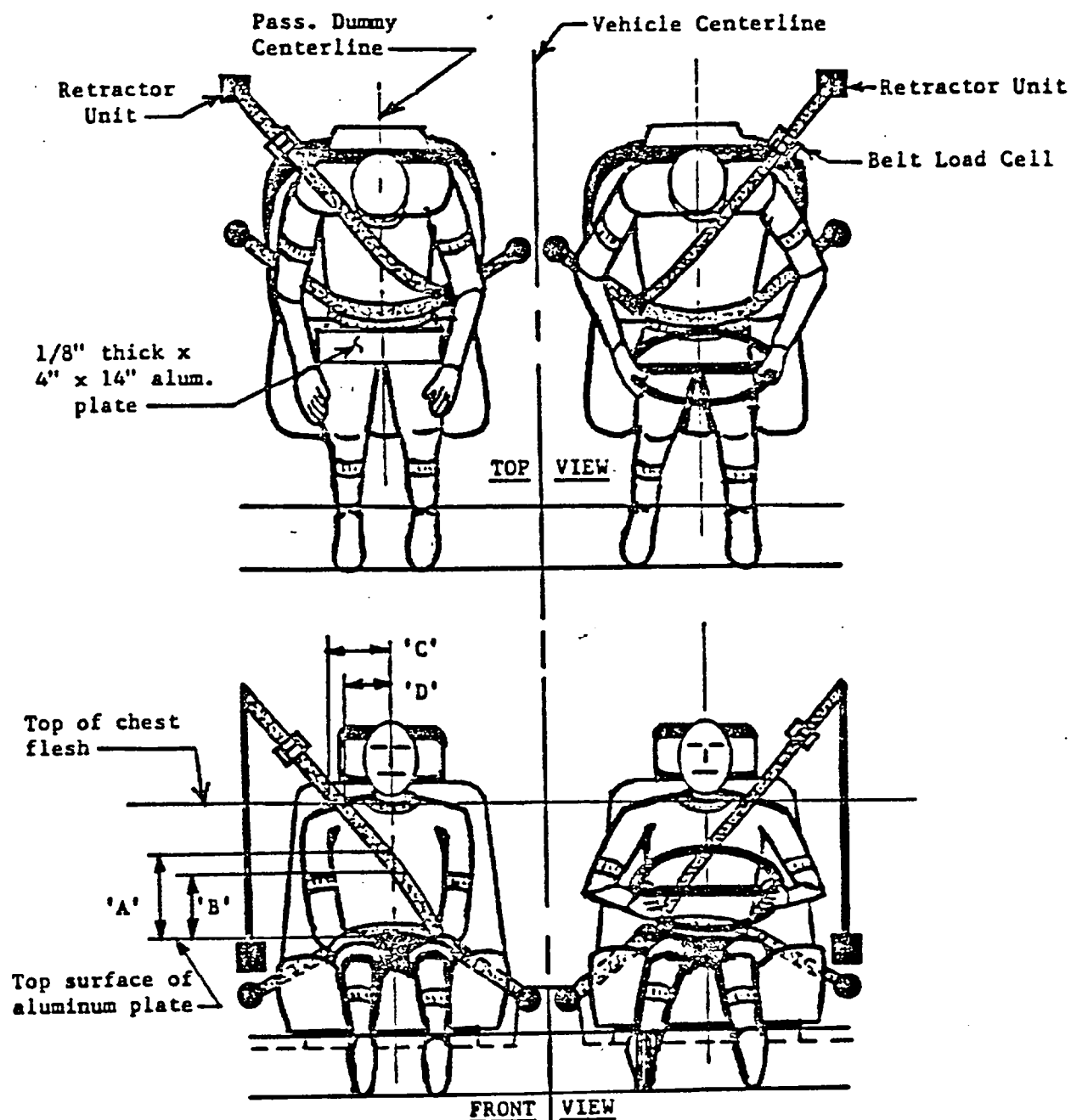
HH = Head to Windshield Header
 HW = Head to Windshield
 CD = Chest to Dash
 CS = Chest to Steering Wheel
 KD = Knees to Dash
 HR = Head to Side Roof
 HS = Head to Side Window
 AD = Arm to Door
 HD = Hip to Door
 KK = Knee to Knee
 Torso and seat back angles
 are relative to vertical.

REMARKS:



	Driver	Passenger
HR	7.0	8.0
HS	7.0	7.3
AD	1.5	1.5
HD	4.0	3.8
KK	14.5	14.5
AA	13.0	14.0

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	DRIVER DUMMY (in.)	PASS. DUMMY (in.)
1. Dimension 'A'--alum. plate to belt upper edge on dummy centerline	14.4	14.8
2. Dimension 'B'--alum. plate to belt lower edge on dummy centerline	10.8	11.5
3. Dimension 'C'--dummy centerline to outer edge at chest flesh top	5.3	4.1
4. Dimension 'D'--dummy centerline to inner edge at chest flesh top	2.8	1.5
5. Lap belt tension (lbs.)	3.0	3.0
6. Shoulder belt tension (lbs.)	3.0	3.0

BELT LENGTH DATA:

Total Belt Length from 'B' Post trim panel to "male blade"

Shoulder belt length measured from the 'D' ring to the male blade across the dummy

Lap belt length measured from the outboard side sill anchor bolt to the male blade across dummy

PRE-TEST	
DRIVER	PASSENGER
52.3	54.8
32.0	34.8
30.0	32.3

BELT SPOOL-OUT DATA:

As determined by film analysis

As determined electronically

As determined mechanically

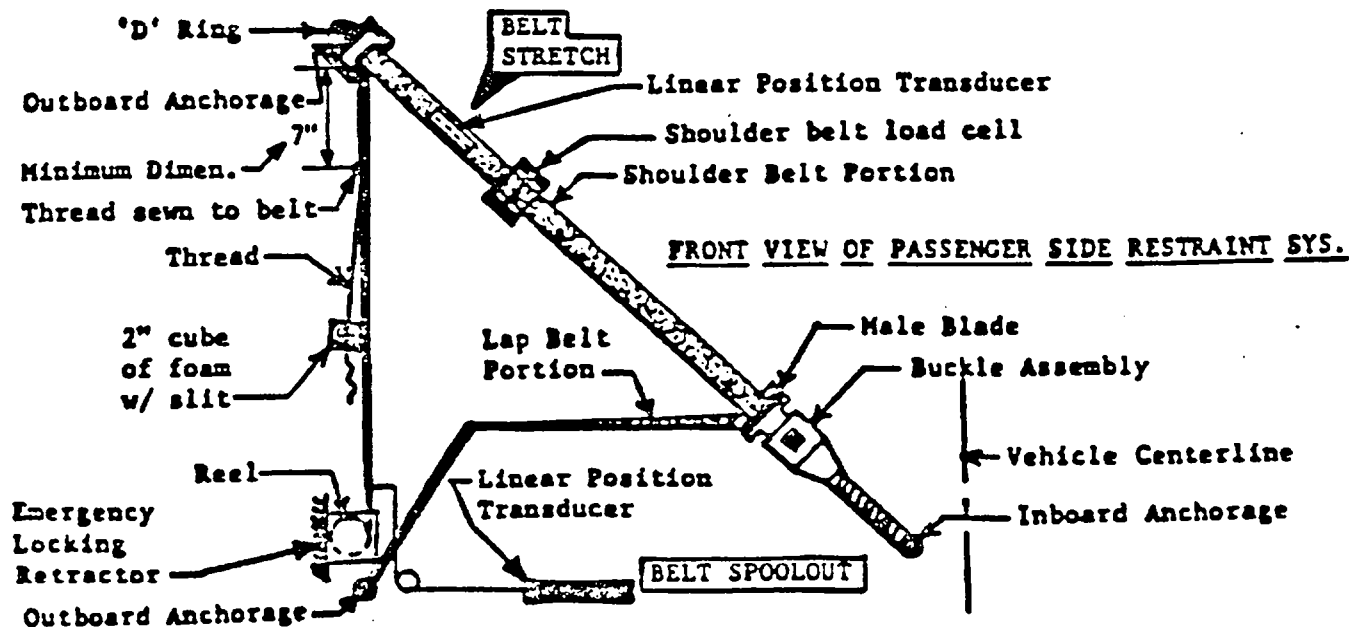
DRIVER SIDE	PASSENGER SIDE
3.2	2.0
4.4	3.1
2.0	2.8

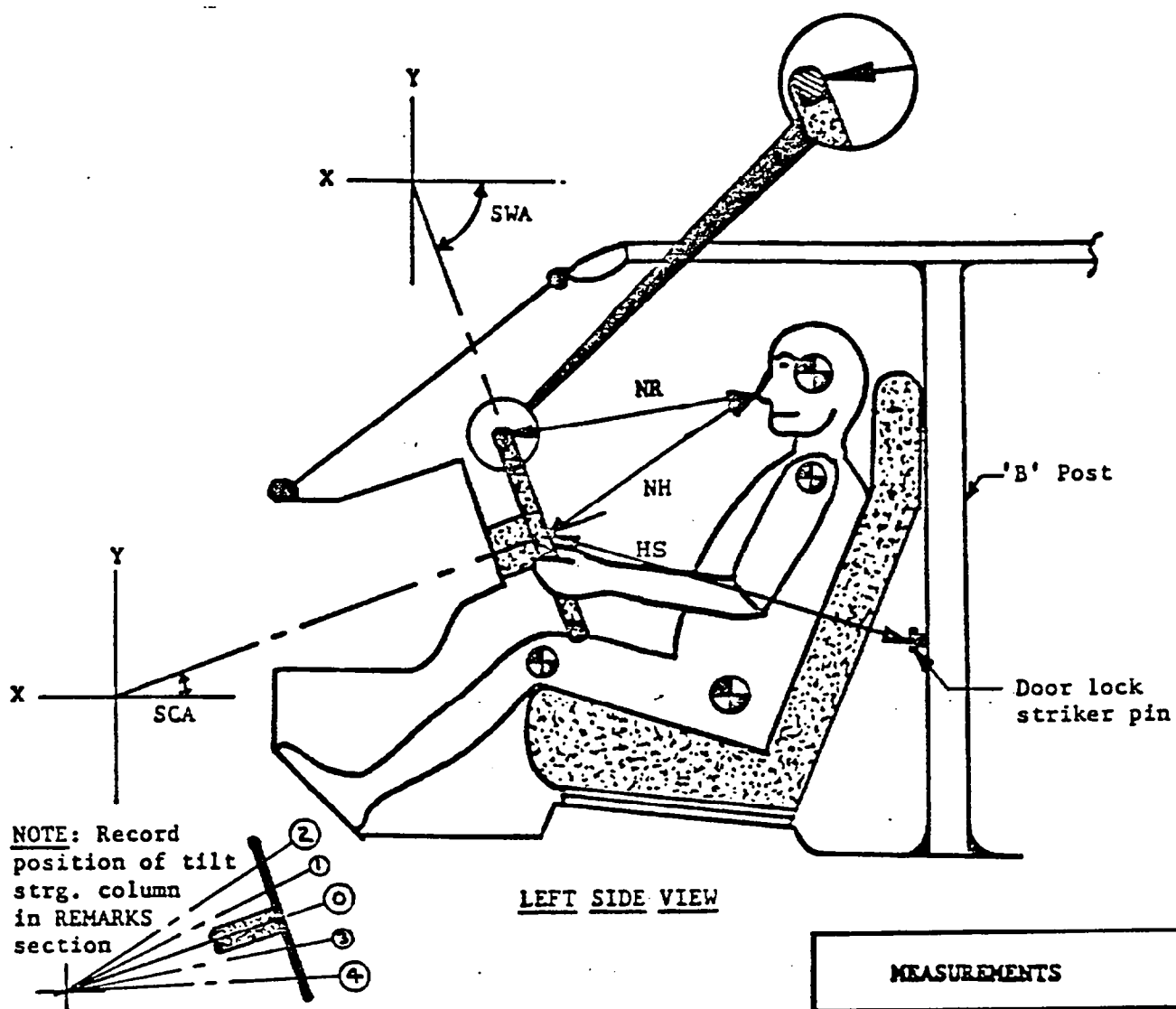
BELT STRETCH DATA:

(1) Determined electronically with linear position transducer in inches per foot.

(2) Determined with 2" marked section of belt across dummy's chest (inches per foot)

Maximum Load <u>1,155</u>		Maximum Load <u>1,315</u>	
Elong. <u>0.96</u>		Elong. <u>0.72</u>	
PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
2"	2" Elong <u>0</u>		2" Elong <u>0</u>





MEASUREMENTS		
<u>NR</u> --Distance from tip of dummy's nose to Top Rear surface of steering wheel rim	19.1	Inches
<u>NH</u> --Distance from tip of dummy's nose to center of steering column hub	18.3	Inches
<u>HS</u> --Distance from center of steering column hub to the forward surface of the door lock striker pin.	23.8	Inches
<u>SCA</u> --Angle of steering column relative to the horizontal X axis	30	Degrees
<u>SWA</u> --Angle of steering wheel relative to the horizontal X axis.	60	Degrees

REMARKS CONCERNING ADJUSTABLE OR TILT STEERING COLUMN IF VEHICLE IS SO EQUIPPED:

Data Table No. 11 Camera Location Data

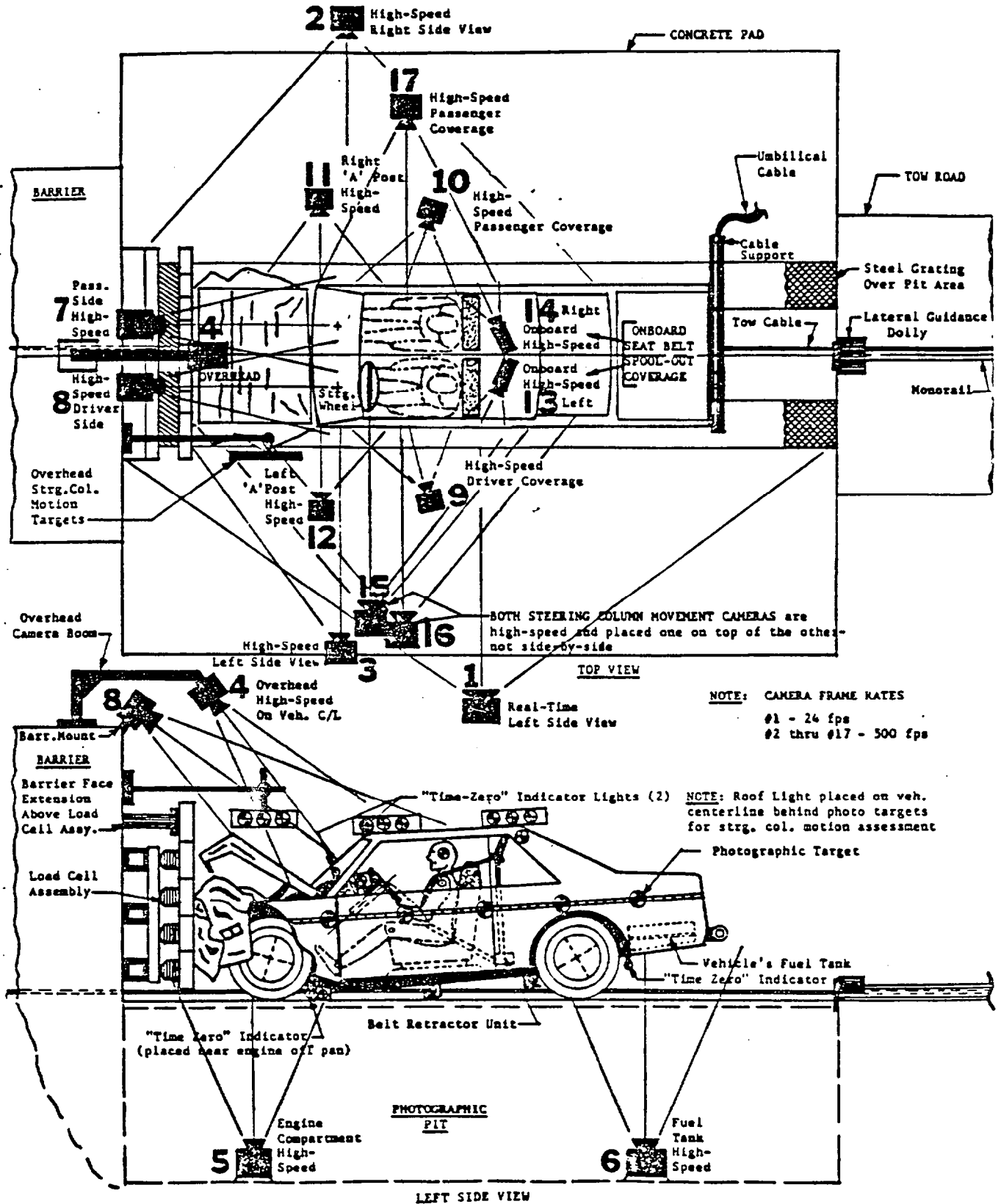
VEH. NHTSA NO.: MG0601; TEST DATE: 05/15/86; TIME: 6:00 PM
 VEH. YEAR/MAKE/MODEL/BODY STYLE: 1986/SUZUKI/SAMURAI/TRUCK, 2 DOOR

CAMERA NO.	VIEW	CAMERA POSITIONS (in.)*			ANGLE (deg)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side View	780.0	300.0	51.5	2	790.6	12/50	24
2	Right Side View	-253.2	75.1	54.1	5	233.3	16	*580
3	Left Side View	952.0	32.5	41.0	0	933.3	50	*540
4	Overhead	0.0	-25.0	128.2	80	123.7	13	*540
5	Pit-Engine	0.0	17.0	-57.0	90	N/A	13	*460
6	Pit-Fuel Tank	0.0	164.0	-52.0	50	N/A	13	*460
7	Front-Passenger	-12.0	16.0	104.1	50	83.2	16	600
8	Front-Driver	12.0	-16.0	104.1	53	83.2	16	600
9	Left Side-Driver	93.1	107.2	59.5	7	77.3	16	600
10	Right Side-Passenger	-91.2	108.4	58.0	5	75.9	16	600
11	Right Side-'A' Post	-146.2	36.0	54.0	0	134.3	28	*660
12	Left Side-'A' Post	362.0	8.5	48.0	2	349.8	50	*520
13	Onboard-Left Side	5.0	99.3	31.5	2	33.2	13	*460
14	Onboard-Right Side	-7.0	99.3	31.5	2	32.3	13	*580
15	Left Side-Steering Col.	27.3	56.0	107.8	16	59.5	28	600
16	Left Side-Steering Col.	27.0	56.2	89.0	12	51.5	28	600
17	Right Side-Passenger	-142.8	52.0	64.1	7	126	20	*600

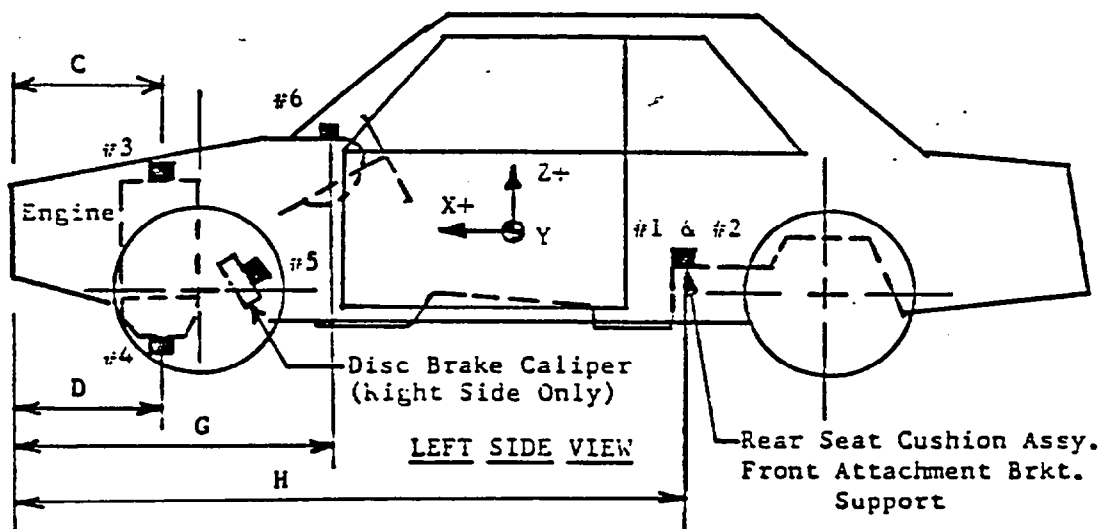
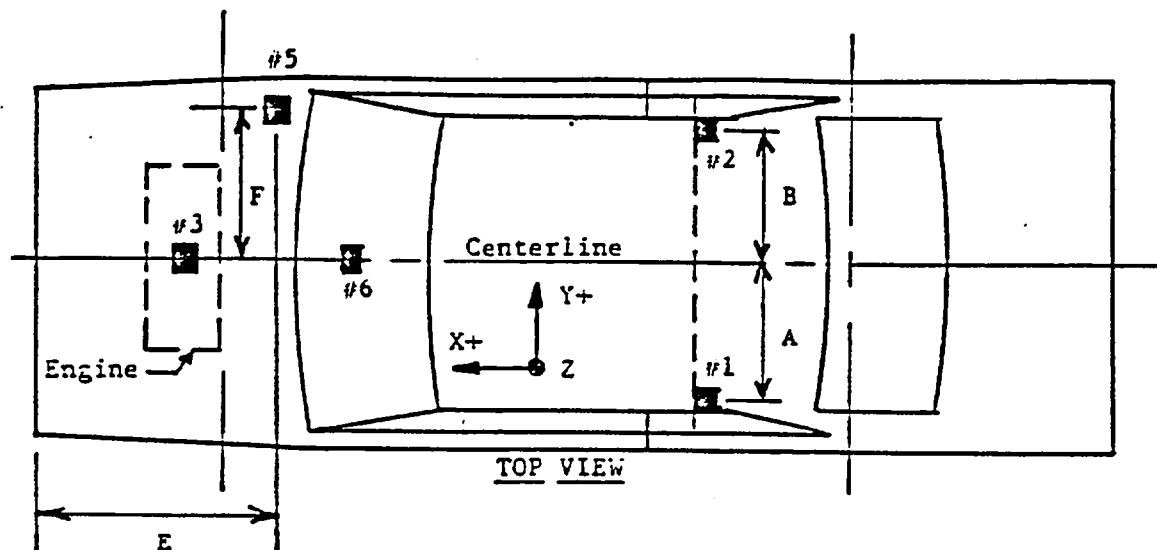
* - pproximate frame speeds, with in $\pm 5\%$

* X = film plane to monorail centerline
 Y = film plane to barrier face
 Z = film plane to ground

CAMERA REQUIREMENTS FOR 35 MPH FRONTAL BARRIER IMPACT ASSESSMENT PROGRAM TEST



Data Table No. 12 Vehicle Accelerometer Location and Data Summary



Dimension	Length (in.)
A	15.5
B	15.0
C	16.3
D	30.8
E	25.4
F	21.5
G	53.1
H	95.3

Loc. No.	Description	Maximum Value			
		X-	msec.	X+	msec.
1	Rear seat X-member @ Left Side	76.6	9.5	4.4	146.0
2	Rear seat X-member @ Right Side	60.0	8.5	3.6	145.0
3	Top of Engine Block	135.2	21.0	26.3	34.0
4	Bottom of Engine	151.8	26.0	27.9	34.0
5	Disc Brake Caliper @ Right Side	164.0	16.5	103.8	10.0
6	Instrument Panel	72.8	18.0	90.7	27.0
7	Vehicle c.g.	83.2	9.5	No Data	No Data

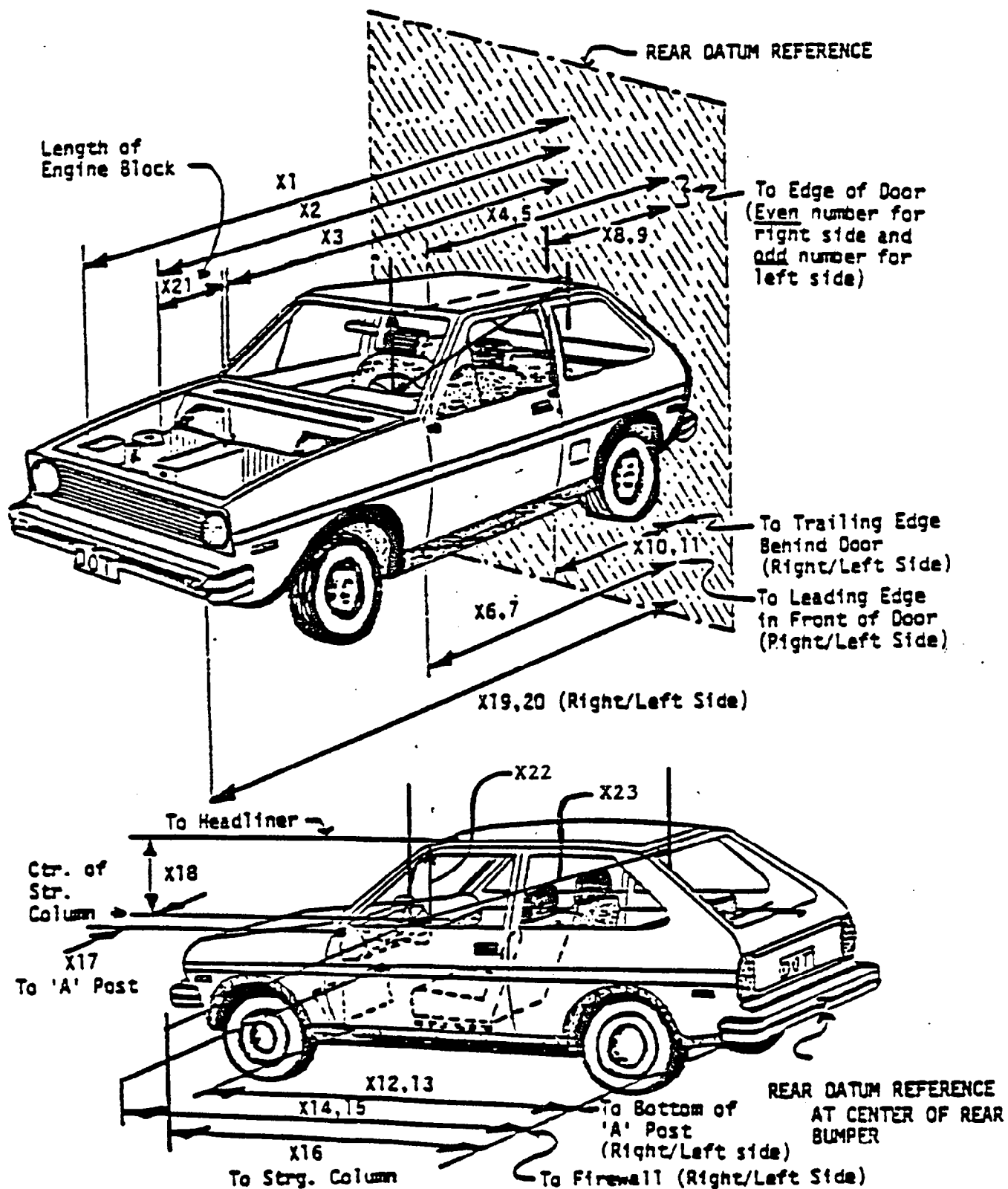
Data Table No. 13 Test Vehicle Measurements

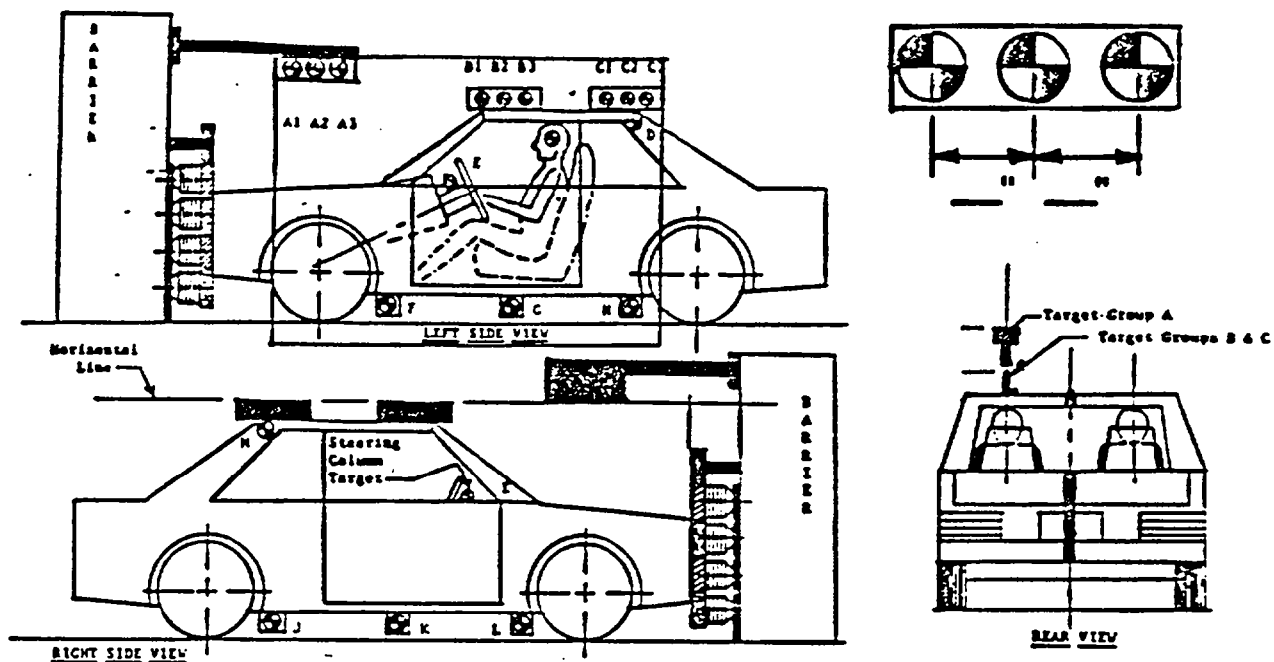
NO.	MEASUREMENT DESCRIPTION:	Pre-Test (in.)	Post-Test (in.)	Diff. (in.)
X1	Total Length of Test Vehicle at Centerline	129.1	112.1	17.0
X2	Rear Surface of Vehicle to Front of Engine	113.3	104.2	9.1
X3	Rear Surface of Vehicle to Firewall	92.8	87.5	5.3
X4	Rear Surface to Upr. Leading Edge of Right Door	82.3	77.6	4.7
X5	Rear Surface to Upr. Leading Edge of Left Door	82.3	82.5	-0.2
X6	Rear Surface to Lwr. Leading Edge of Right Door	83.0	79.6	3.4
X7	Rear Surface to Lwr. Leading Edge of Left Door	83.0	81.5	1.5
X8	Rear Surface to Upr. Trailing Edge of Right Door	45.3	50.0	-4.7
X9	Rear Surface to Upr. Trailing Edge of Left Door	45.3	48.3	-3.0
X10	Rear Surface to Lwr. Trailing Edge of Right Door	50.2	47.4	2.8
X11	Rear Surface to Lwr. Trailing Edge of Left Door	50.2	49.0	1.2
X12	Rear Surface to Bottom of 'A' Post on Right Side	82.3	79.3	3.0
X13	Rear Surface to Bottom of 'A' Post on Left Side	82.3	80.6	1.7
X14	Rear Surface to Firewall on Right Side	90.3	85.5	4.8
X15	Rear Surface to Firewall on Left Side	90.3	88.6	1.7
X16	Rear Surface to Steering Column	69.5	67.6	1.9
X17	Center of Steering Column to 'A' Post	12.1	11.4	0.7
X18	Center of Steering Column to Headlining	19.5	22.4	-2.9
X19	Rear Surface to Right Side of Front Bumper	128.5	111.5	17.0
X20	Rear Surface to Left Side of Front Bumper	128.5	113.5	15.0
X21	Length of Engine Block	17.8	17.8	0.0
X22	Strg. Whl. Hub C/L to W/Shld. Header Interior Trim Moulding	17.3	23.0	-5.7
X23	Strg. Whl. Hub C/L to Rr. Wdo. Upper Interior Trim Moulding	64.5	23.0	41.5

NOTE: Measurements are not done in the same location as Accident Investigation measurements. Therefore, measurements may not be equal.

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Data Table No. 13 (Cont'd) Test Vehicle Measurements





BARRIER TARGETS	'X' From Imag. Barrier Face Vertical Plane	'Y' From Monorail C/L	'Z' Above Ground
A1	15.5	20.8	66.5
A2	19.5	20.8	66.5
A3	23.5	20.8	66.5

VEHICLE TARGETS	'X' From Imag. Barrier Face Vertical Plane	'Y' From Vehicle C/L	'Z' Above Ground
B1	61.5	12.8	65.3
B2	65.5	12.6	65.4
B3	69.5	12.5	65.5
C1	110.8	11.6	66.1
C2	114.8	11.6	66.1
C3	118.8	11.6	66.0
D	119.5	23.3	58.0
E	54.5	11.9	44.9
F	40.8	26.0	12.9
G	62.3	26.4	12.8
H	84.0	26.1	13.4
J	85.0	26.1	12.9
K	63.3	26.4	12.5
L	41.0	26.0	12.6
M	119.6	23.1	57.3

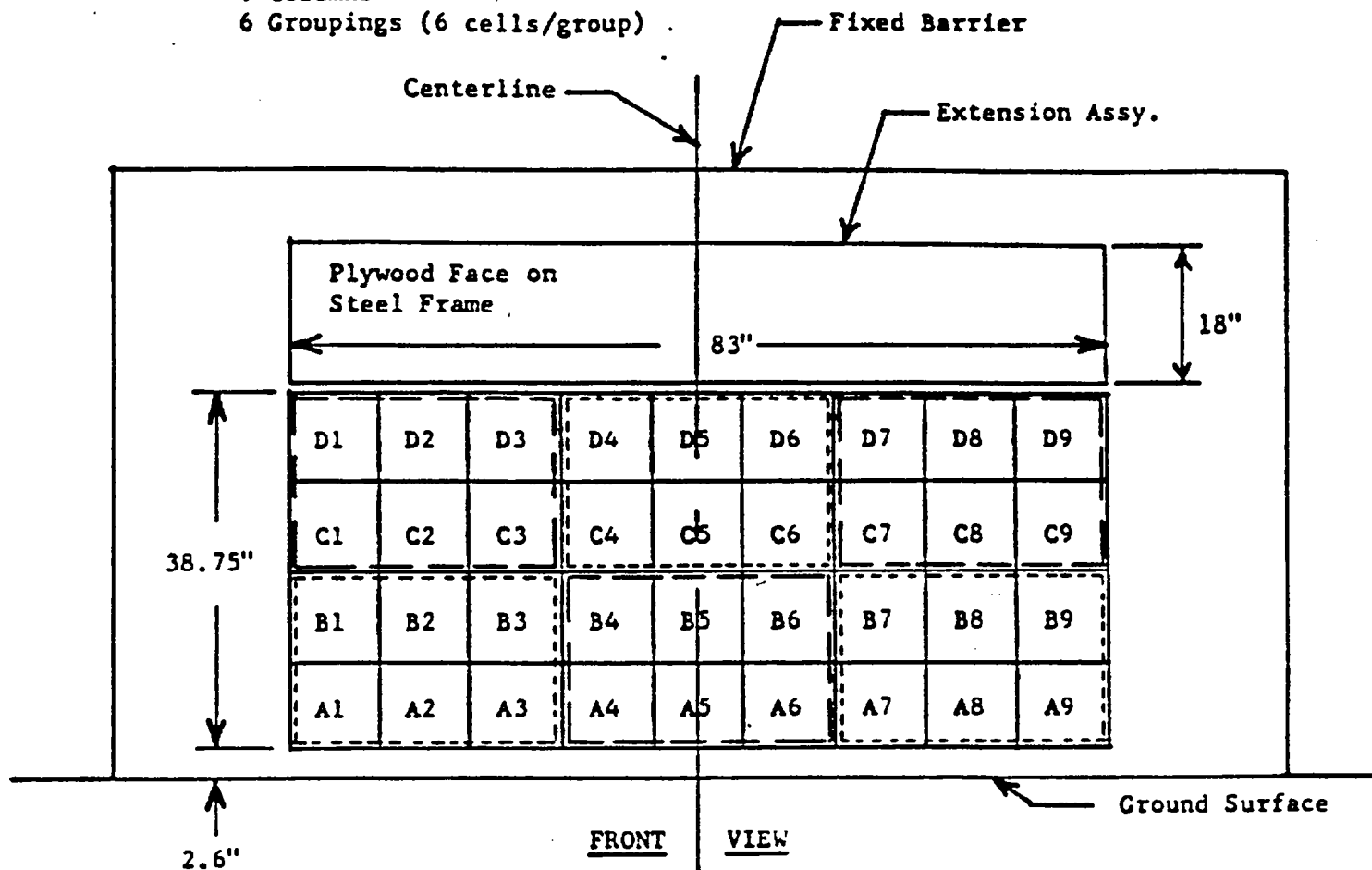
NOTE: Diameter of all photo targets is 4"

36 Load Cells

4 Rows

9 Columns

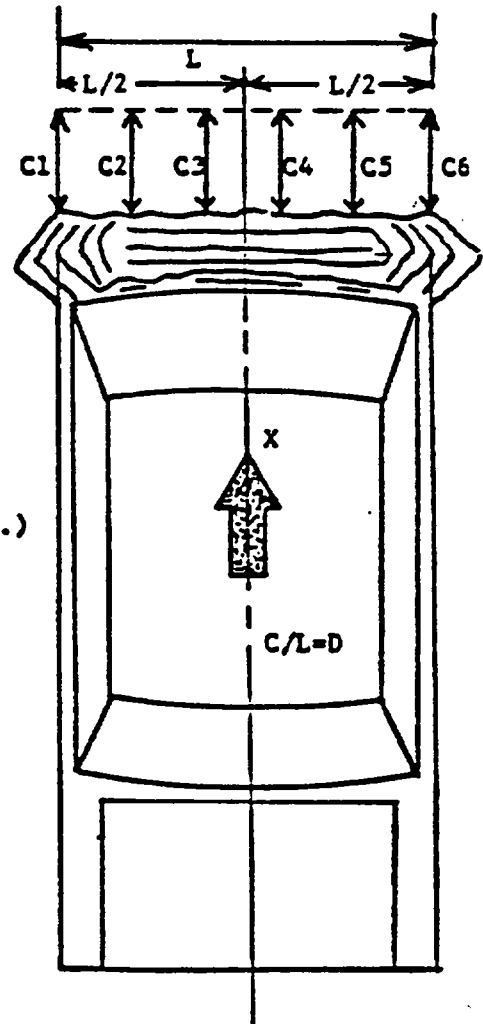
6 Groupings (6 cells/group)



6 GROUPINGS OF 6 LOAD CELLS EACH

C1 thru D3	C4 thru D6	C7 thru D9
A1 thru B3	A4 thru B6	A7 thru B9

- DATA REQUIREMENTS:
- (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)

VEHICLE MAKE/MODEL/BODY STYLE: SUZUKI/SAMURAI/TRUCK, 2 DOORVEH. NHTSA NO.: MGO601; VIN: JS4JC5IV8G4106442MODEL YEAR: 1986; BUILD DATE: January 1986; TEST DATE: 05/15/86VEH. SIZE CATEGORY: MPV (Truck); TEST WEIGHT: 2,666 lb.VEH. WHEELBASE: 79.9 in.; FRONT OVERHANG: 22.0 in.; OVERALL WIDTH: 60.6 in.ACCELEROMETER DATA:LOCATION: Left rear floor pan.CALIBRATION PROCEDURE: Voltage insertionLINEARITY: 3%; INTEGRATION ALGORITHM: Area SummationVEH. IMPACT SPEED: 35.08 mph; TIME OF SEPARATION: 116 msecVELOCITY CHANGE: 40.08 mph☒ COLLISION DEFORMATION CLASSIFICATION (CDC) CODE:F (Frontal) 12FDEW5CRUSH DEPTH
DIMENSIONS:C1= 15.0 inchesC2= 16.3 inchesC3= 17.0 inchesC4= 17.3 inchesC5= 17.0 inchesC6= 17.0 inchesMIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitud.)LENGTH OF DAMAGED
REGION:L = 48.8 inches

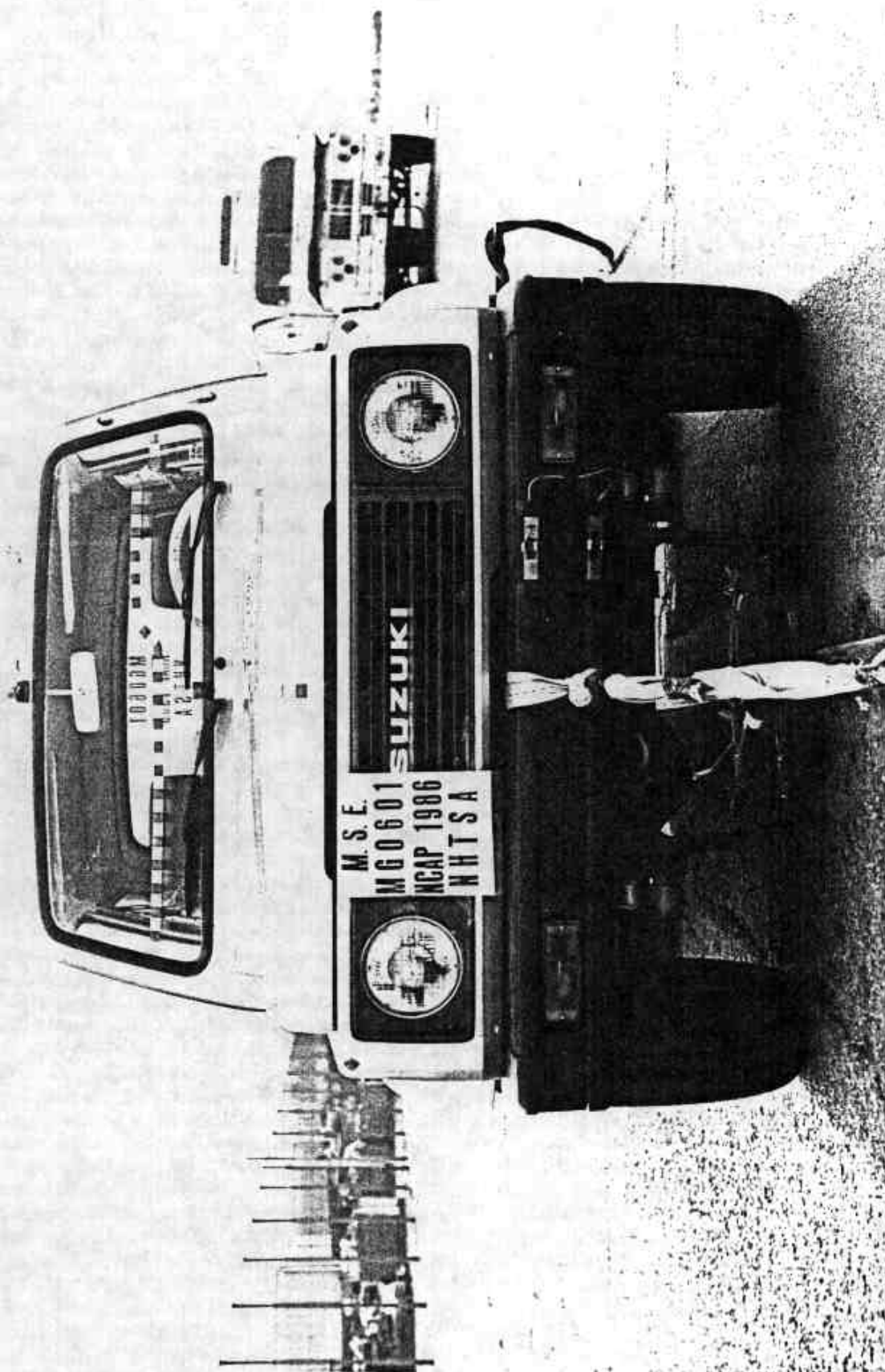
APPENDIX A

PHOTOGRAPHS

PRETEST FRONT VIEW
POSTTEST FRONT VIEW
PRETEST LEFT SIDE VIEW
POSTTEST LEFT SIDE VIEW
PRETEST RIGHT SIDE VIEW
POSTTEST RIGHT SIDE VIEW
PRETEST RIGHT FRONT 3/4 VIEW
POSTTEST RIGHT FRONT 3/4 VIEW
PRETEST LEFT REAR 3/4 VIEW
POSTTEST LEFT REAR 3/4 VIEW
POSTTEST TOP VIEW (Vehicle on Rollover Machine)
PRETEST WINDSHIELD VIEW
POSTTEST WINDSHIELD VIEW
POSTTEST WINDSHIELD VIEW AND HOOD PENETRATION
PRETEST ENGINE COMPARTMENT VIEW
POSTTEST ENGINE COMPARTMENT VIEW
PRETEST FUEL FILLER CAP VIEW
PRETEST FRONT UNDERBODY VIEW
POSTTEST FRONT UNDERBODY VIEW
PRETEST REAR UNDERBODY VIEW
POSTTEST REAR UNDERBODY VIEW
PRETEST DRIVER DUMMY POSITION VIEW
POSTTEST DRIVER DUMMY POSITION VIEW
PRETEST PASSENGER DUMMY POSITION VIEW
POSTTEST PASSENGER DUMMY POSITION VIEW
PRETEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
POSTTEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
PRETEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

POSTTEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)
POSTTEST DRIVER DUMMY HEAD/KNEE CONTACT AREA
POSTTEST STEERING COLUMN HUB/RIM CONTACT BY DUMMY DRIVER
POSTTEST PASSENGER DUMMY KNEE CONTACT

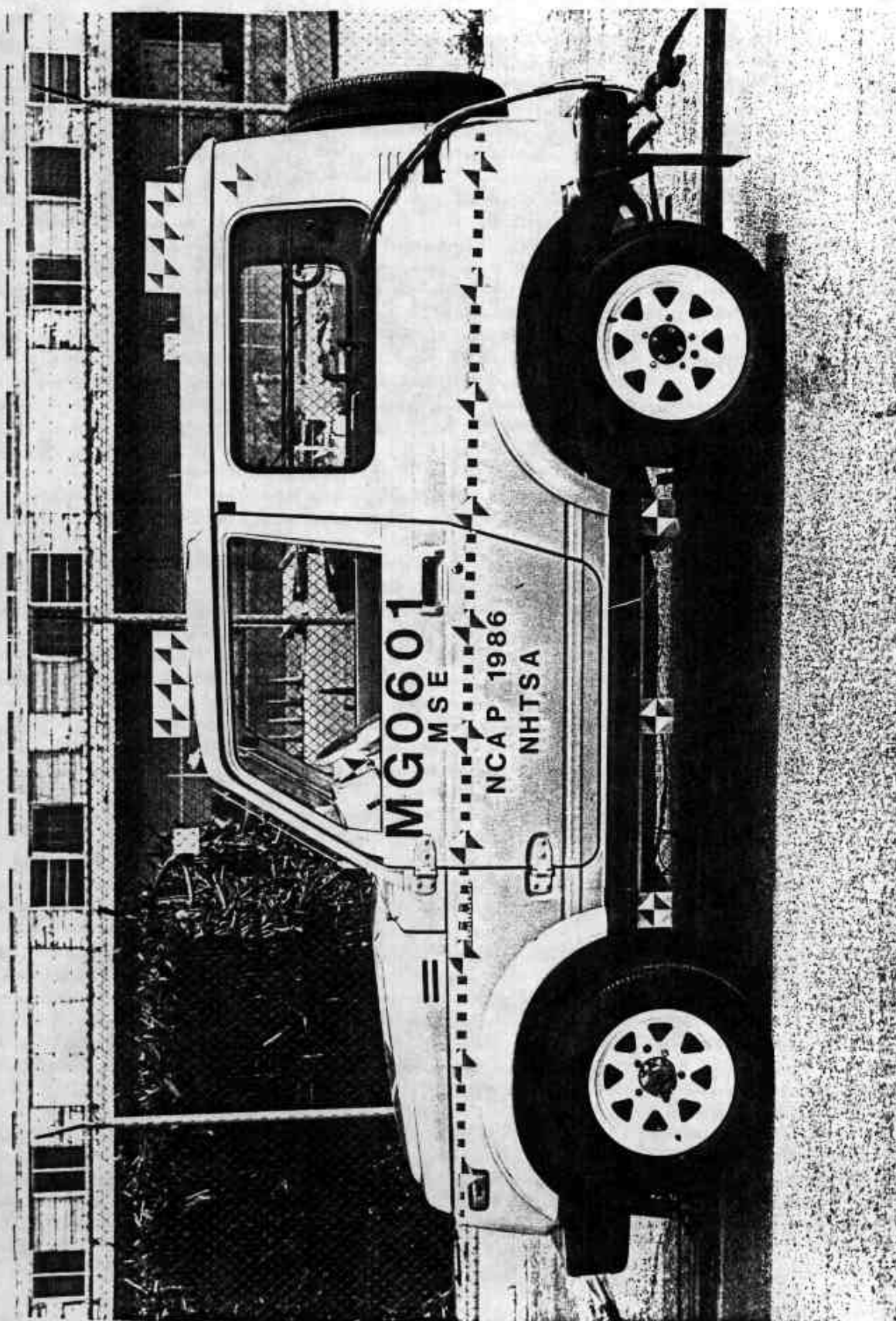
R5077-01



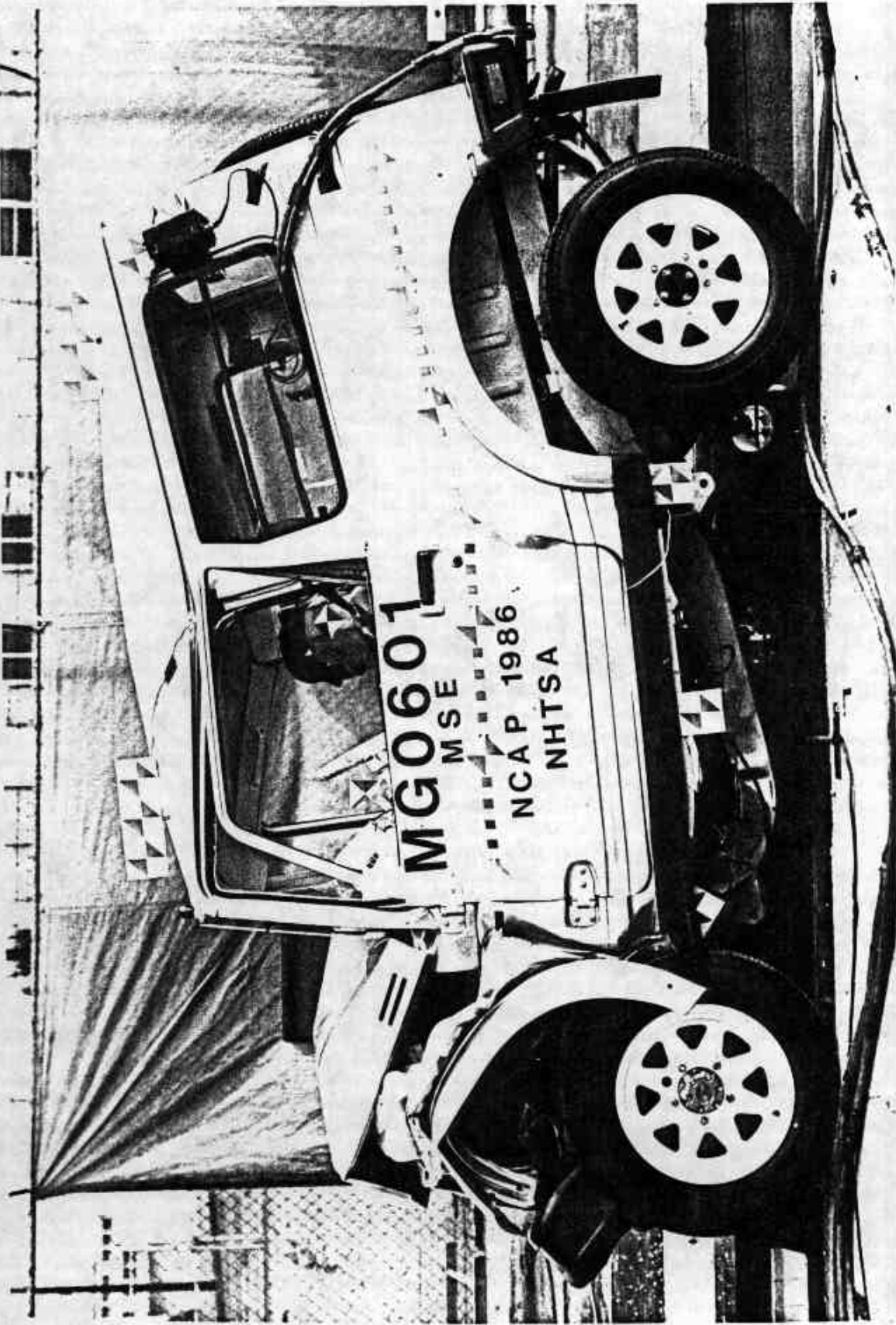
PRE TEST FRONT VIEW



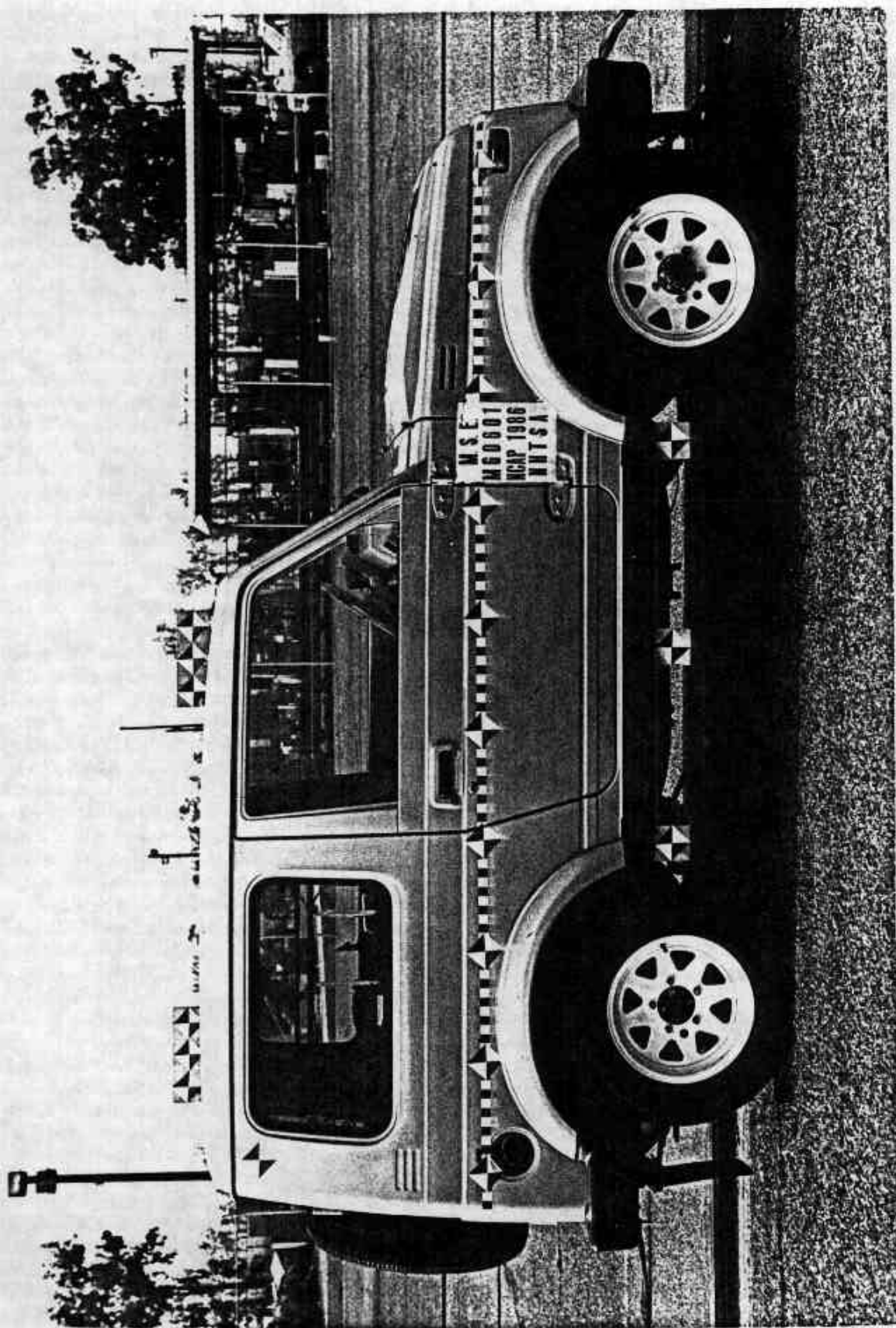
POST TEST FRONT VIEW



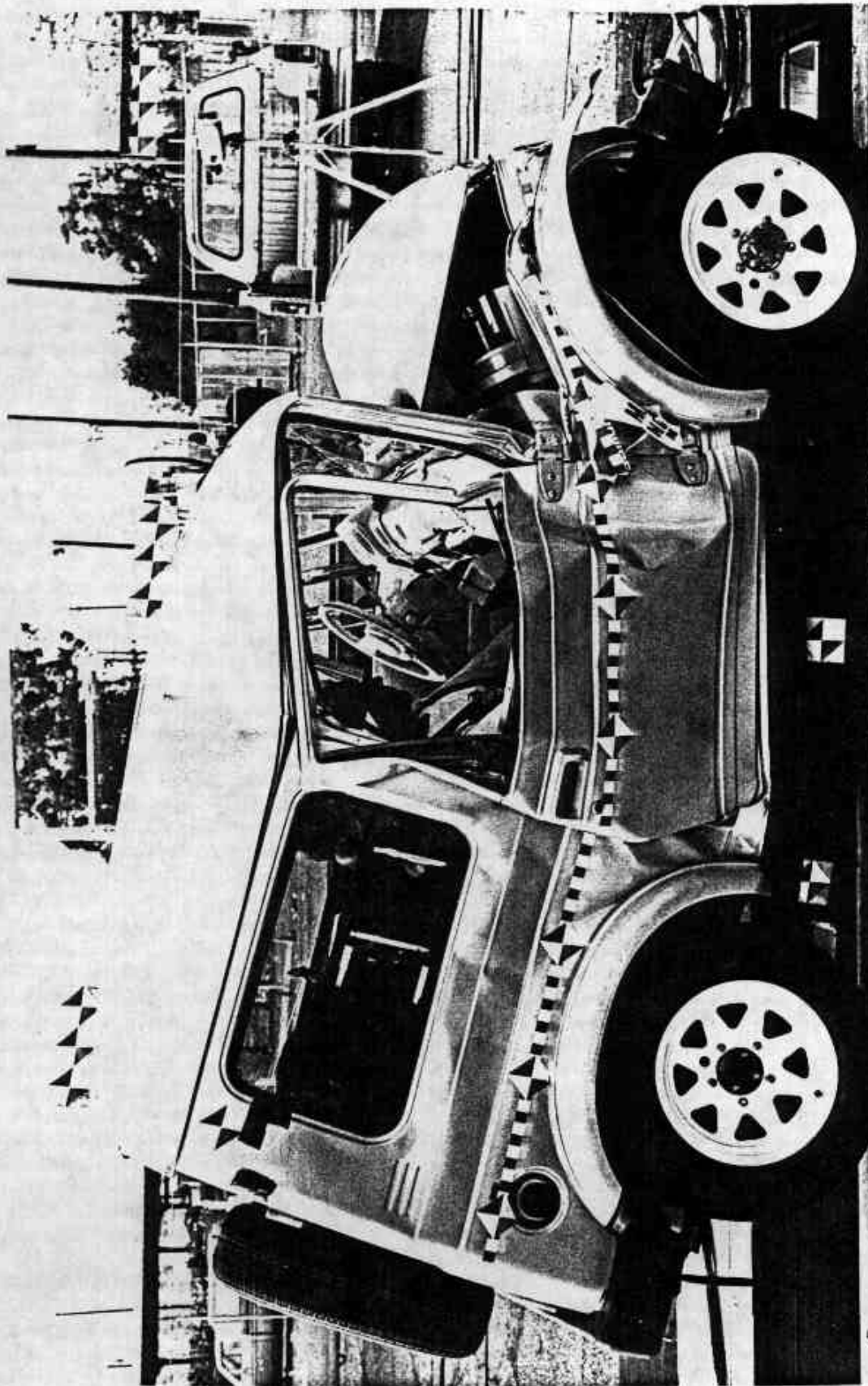
PRE TEST LEFT SIDE VIEW



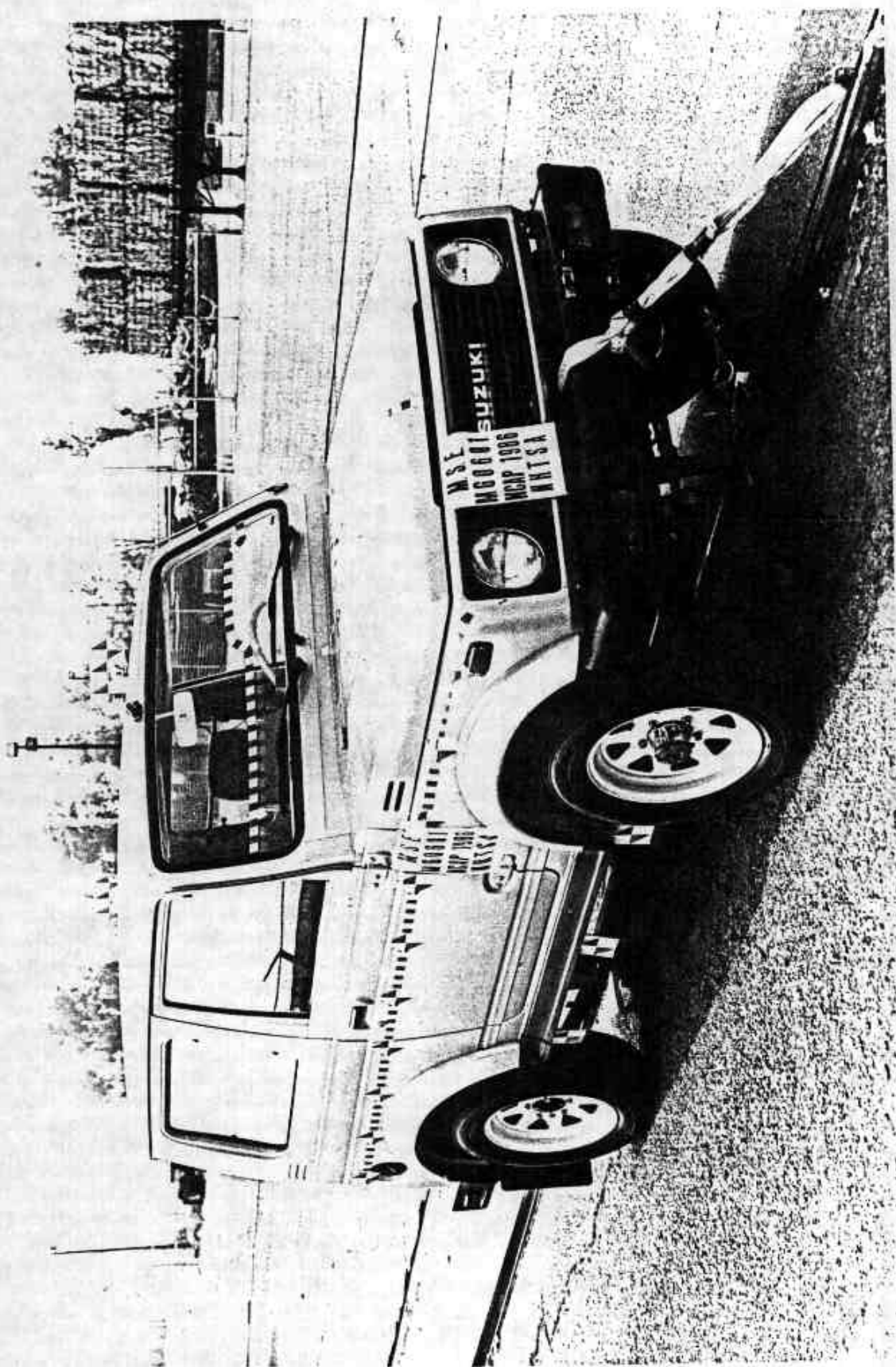
POST TEST LEFT SIDE VIEW



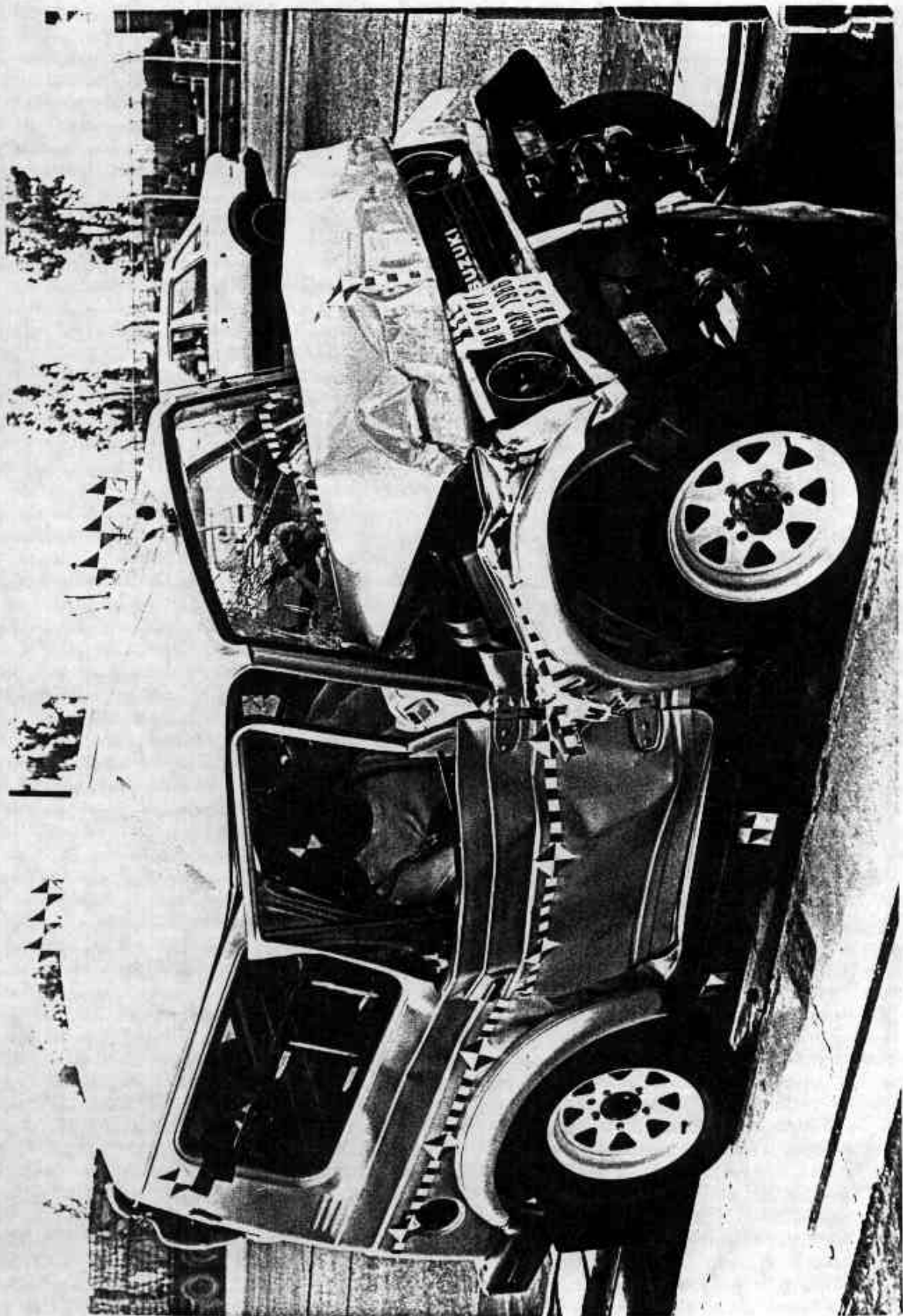
PRE TEST RIGHT SIDE VIEW



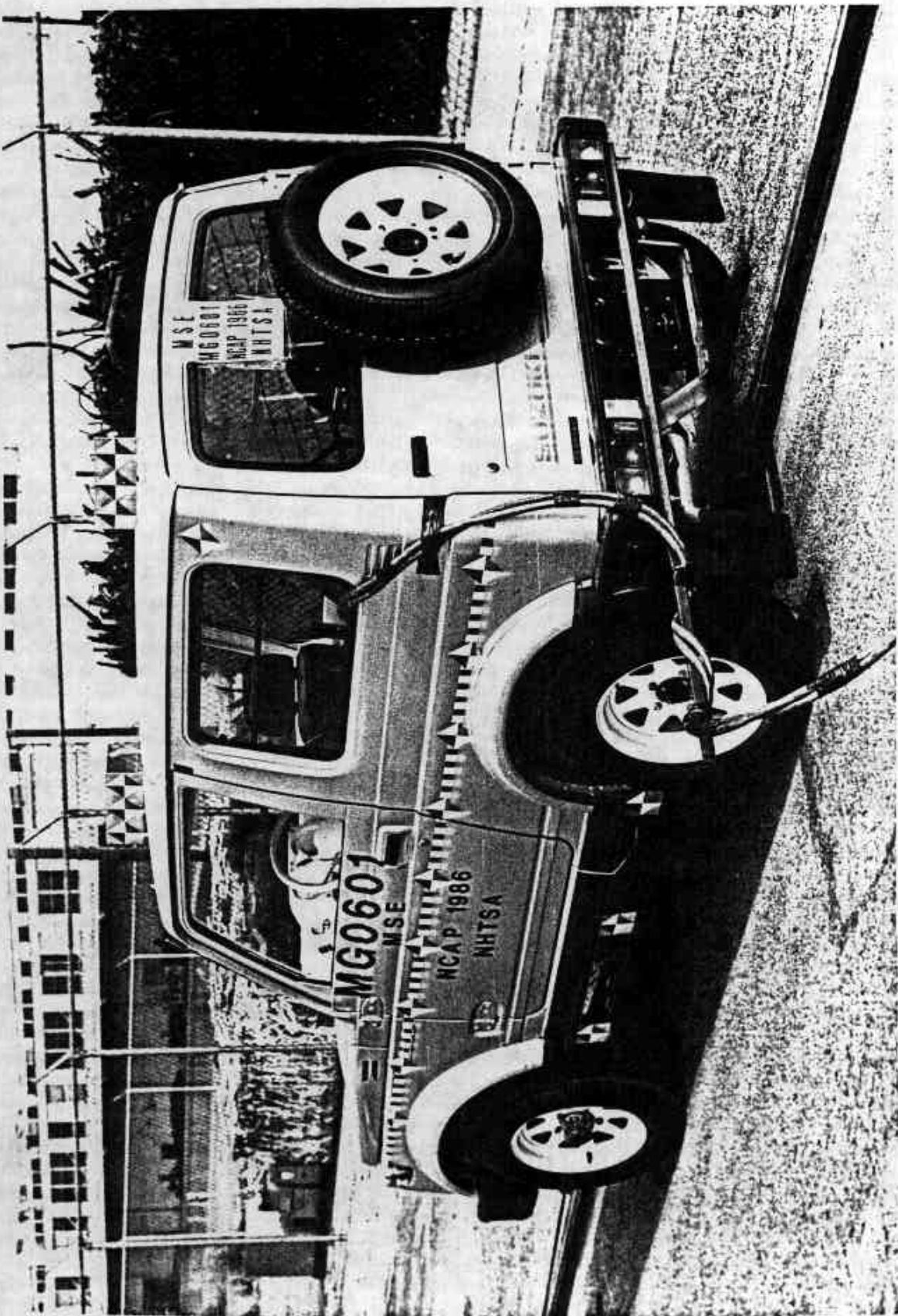
POST TEST RIGHT SIDE VIEW



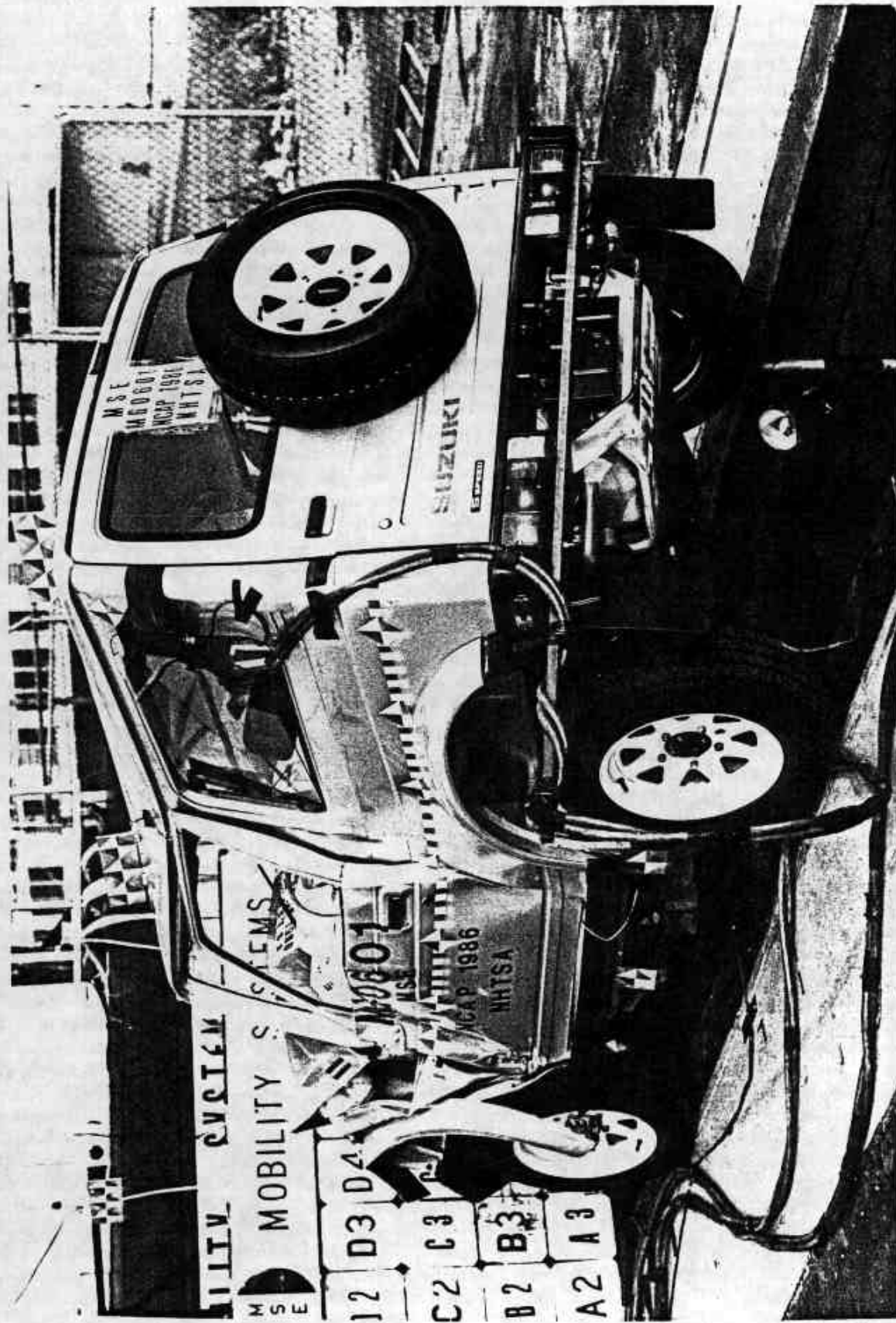
PRE TEST RIGHT FRONT THREE QUARTER VIEW



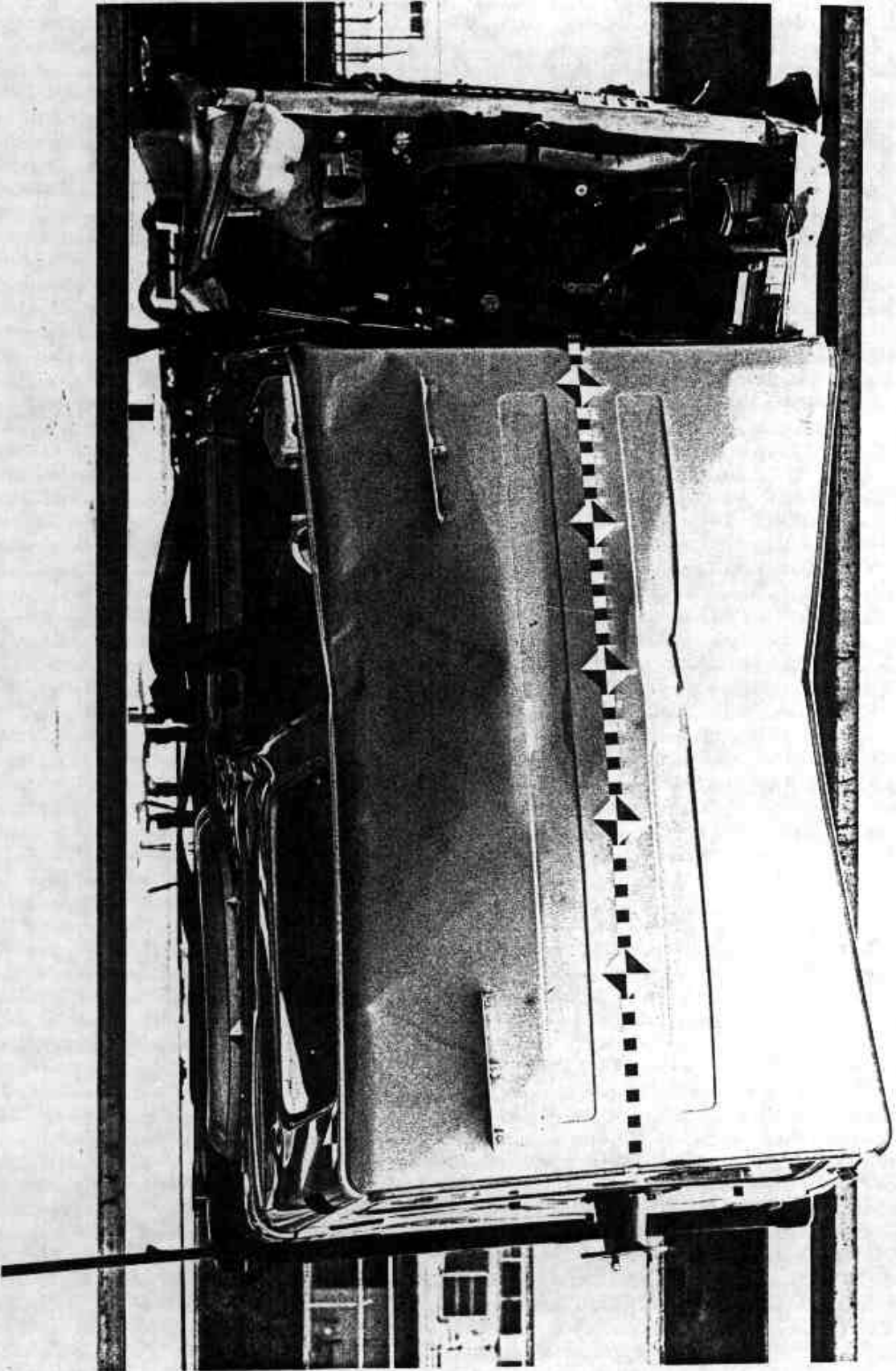
POST TEST RIGHT FRONT THREE QUARTER VIEW



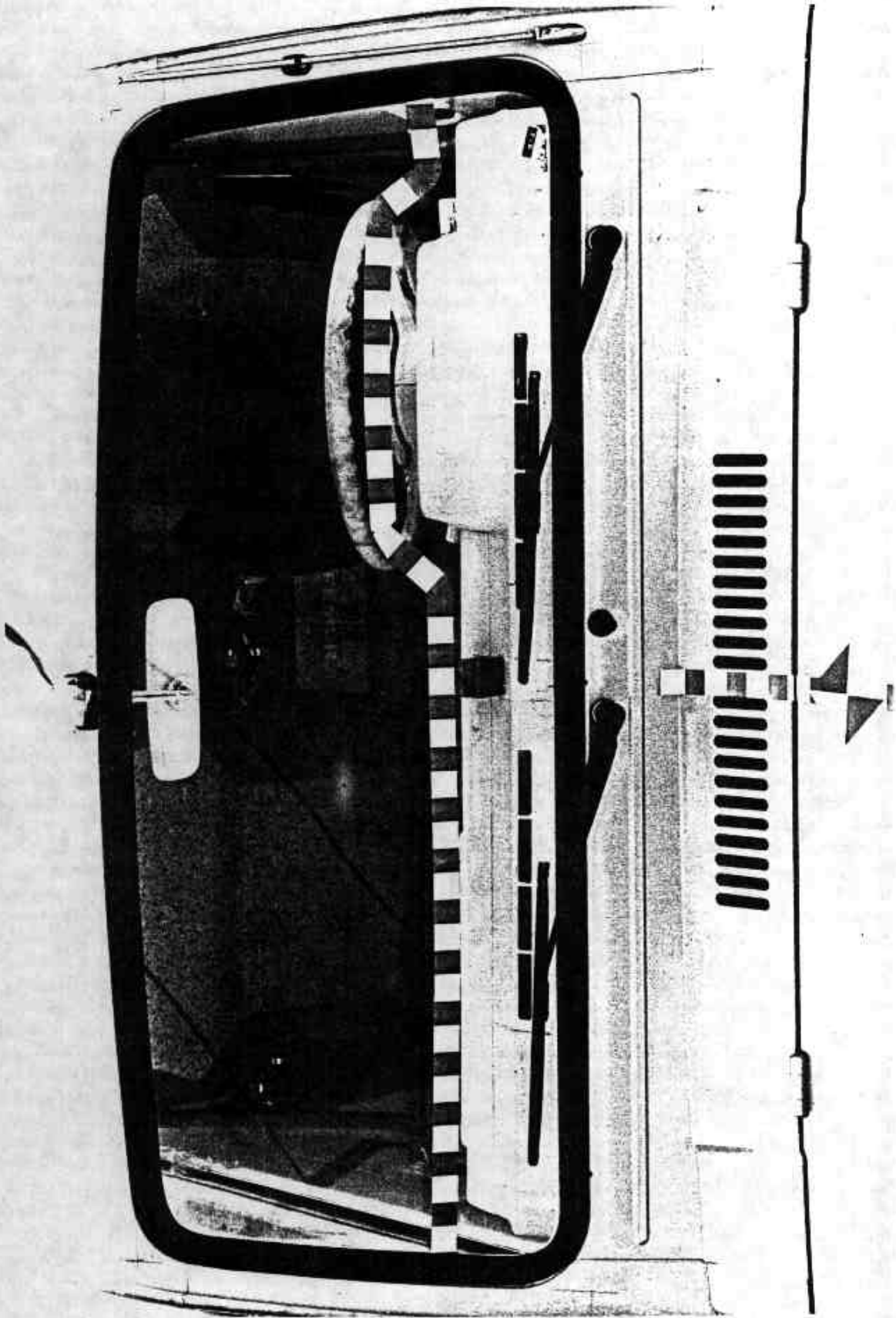
PRE TEST LEFT REAR THREE QUARTER VIEW



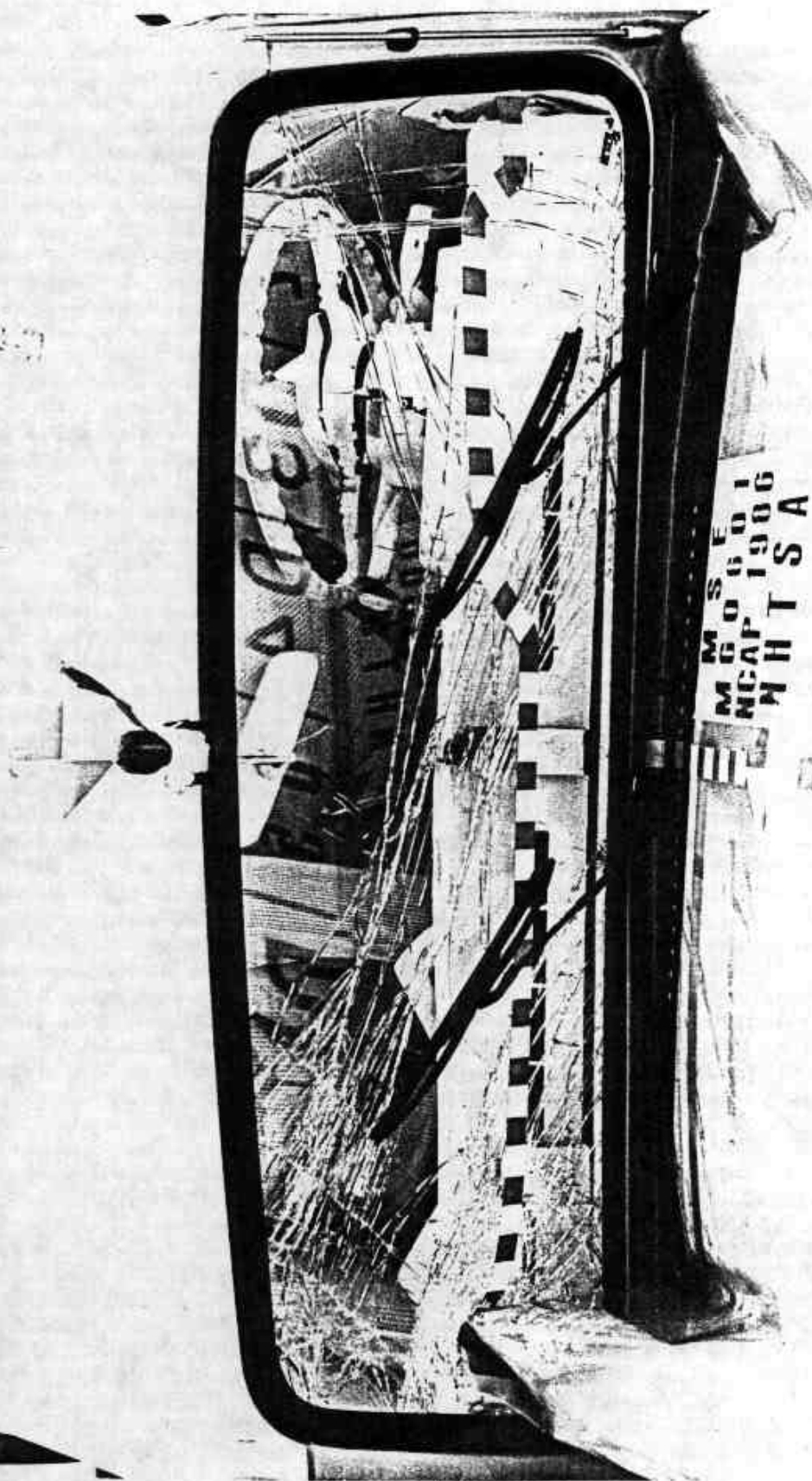
POST TEST LEFT REAR THREE QUARTER VIEW



POST TEST TOP VIEW (Vehicle on Rollover Machine)



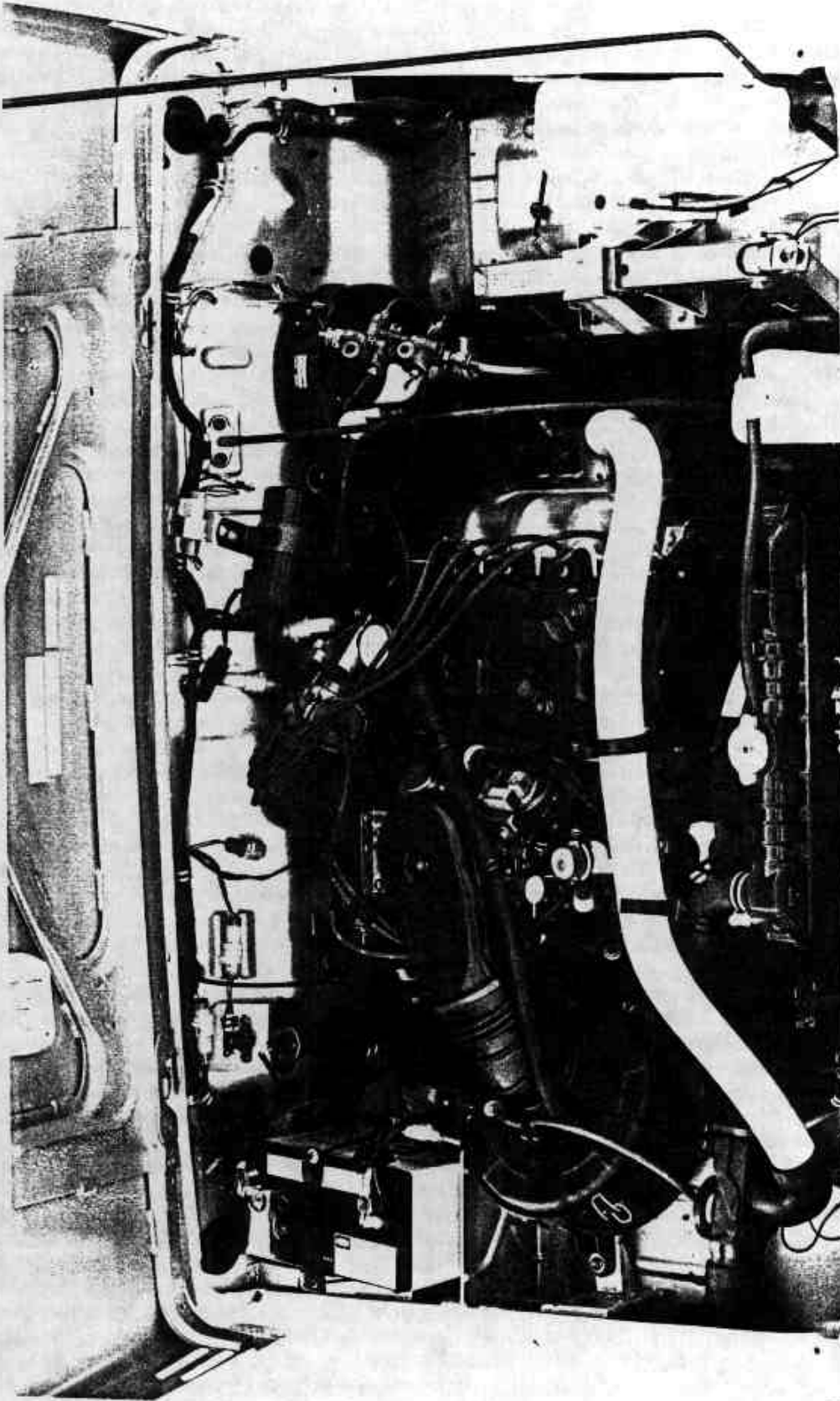
PRE TEST WINDSHIELD VIEW



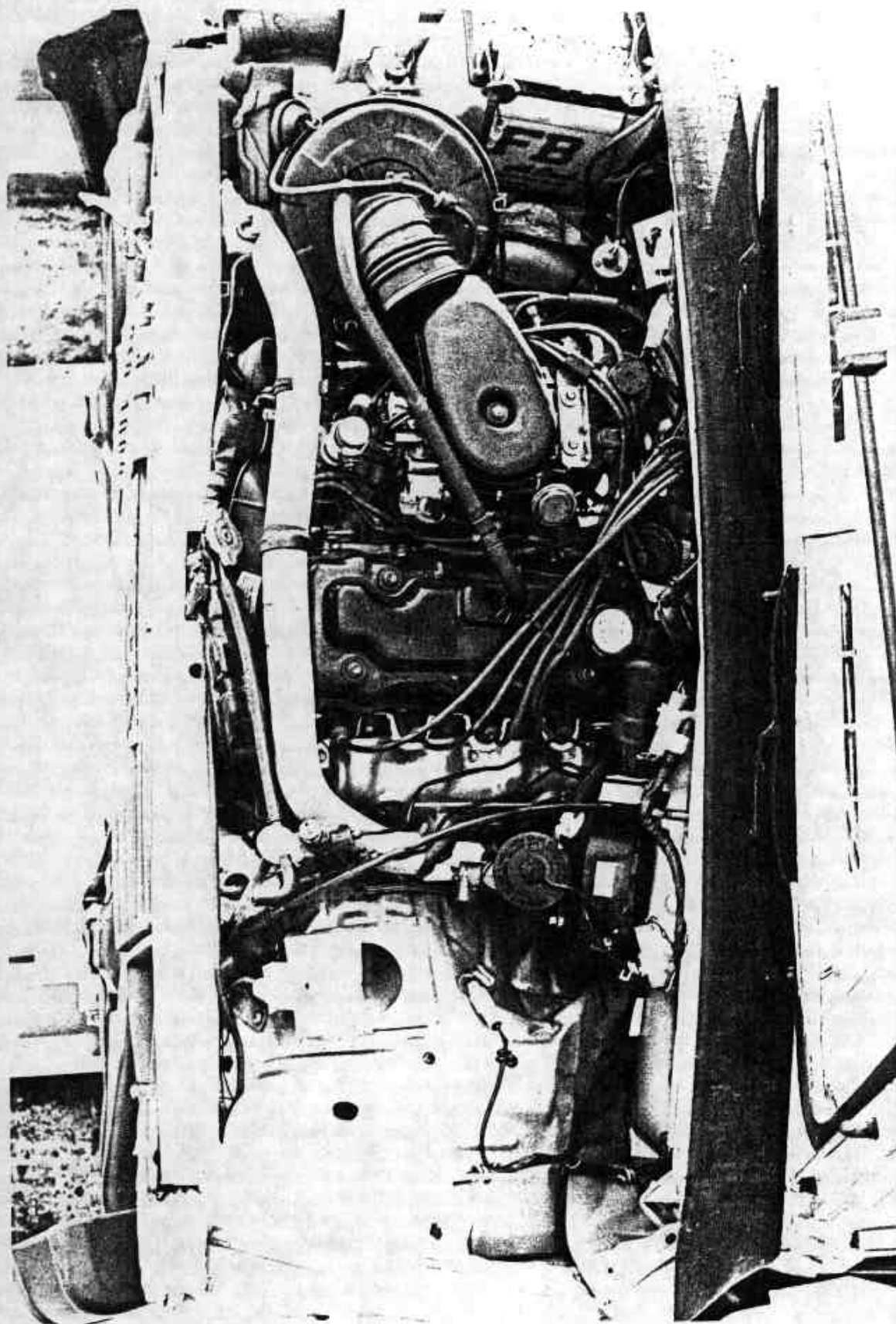
POST TEST WINDSHIELD VIEW



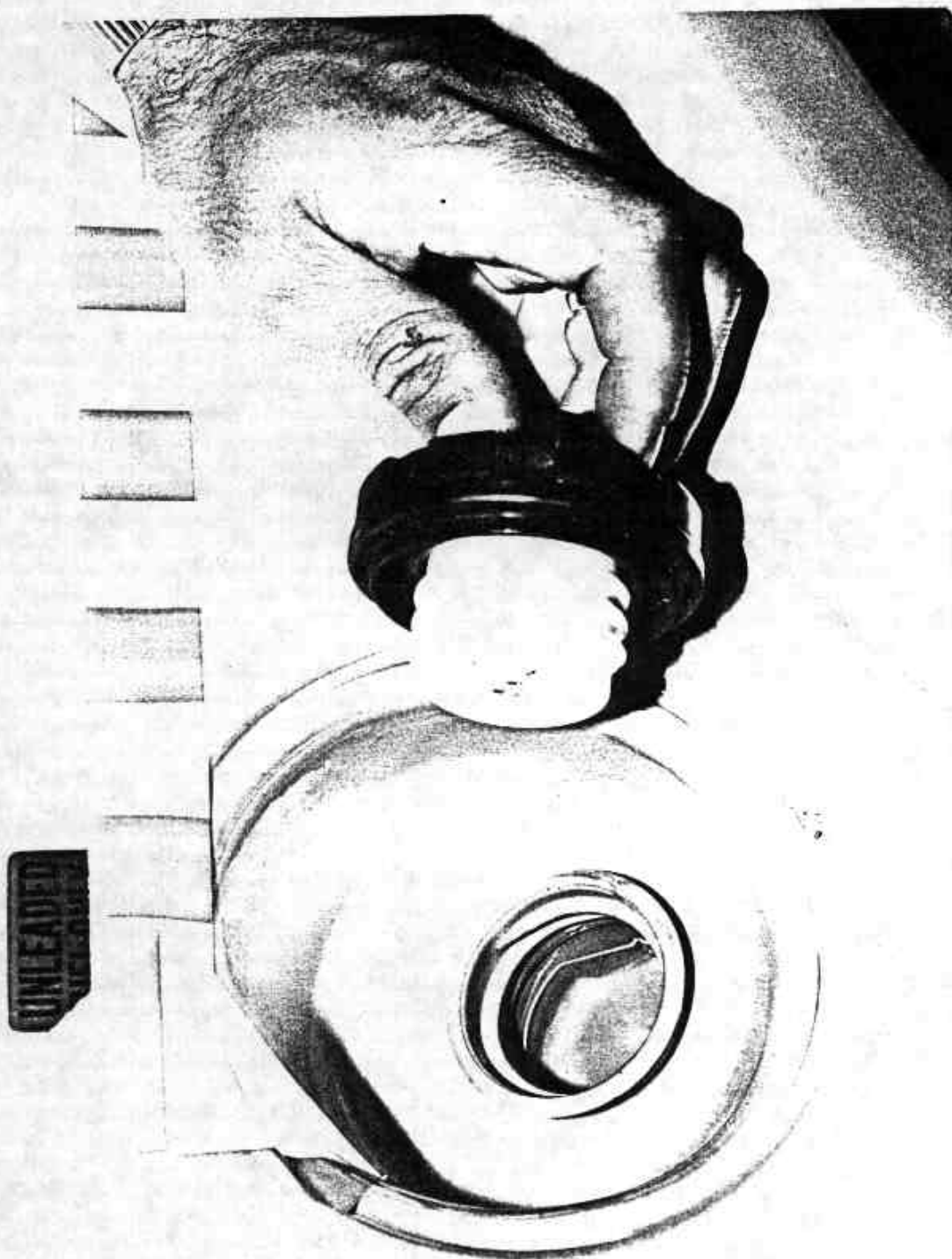
POST TEST (CONT'D) WINDSHIELD VIEW, AND HOOD PENETRATION



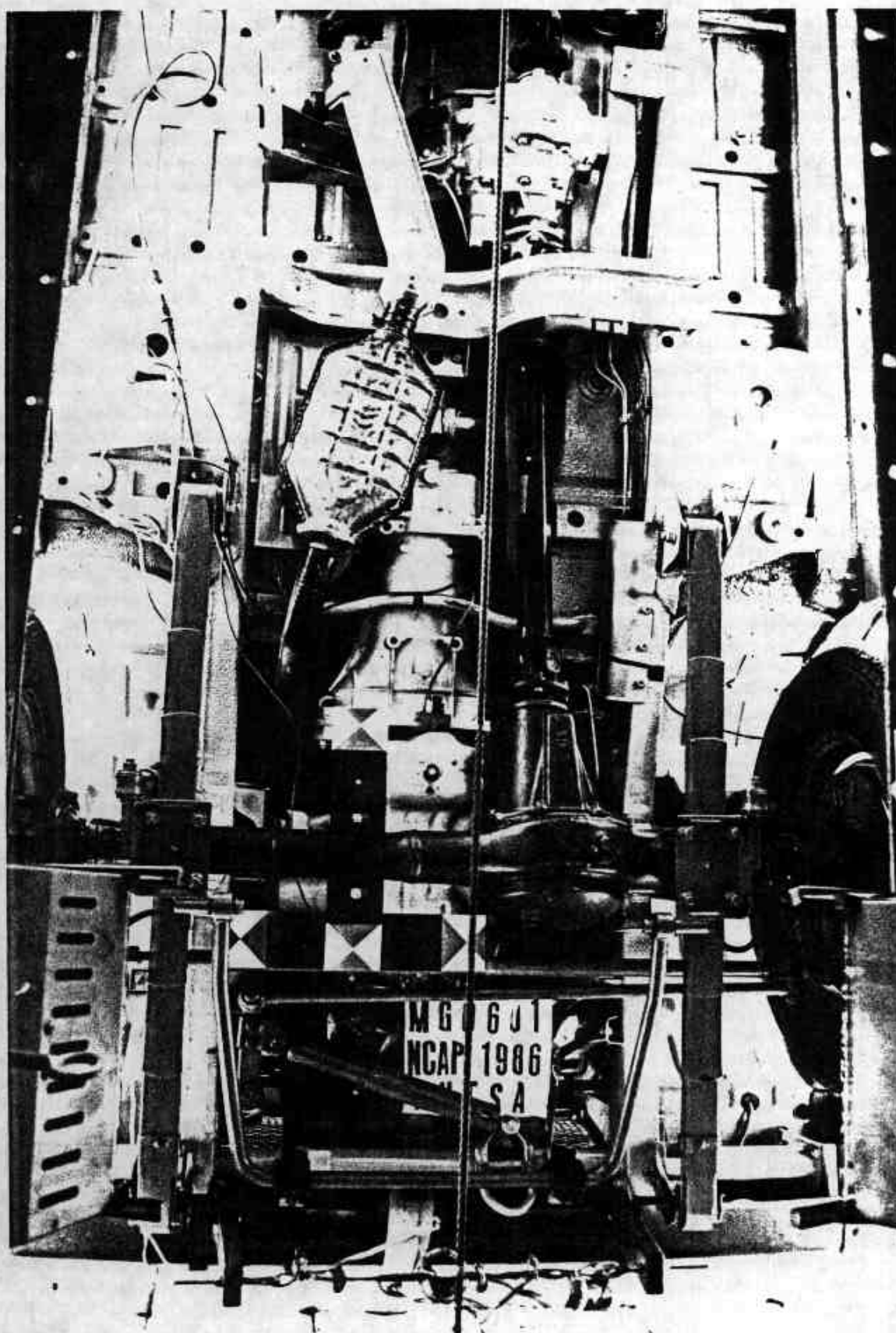
PRE TEST ENGINE COMPARTMENT VIEW



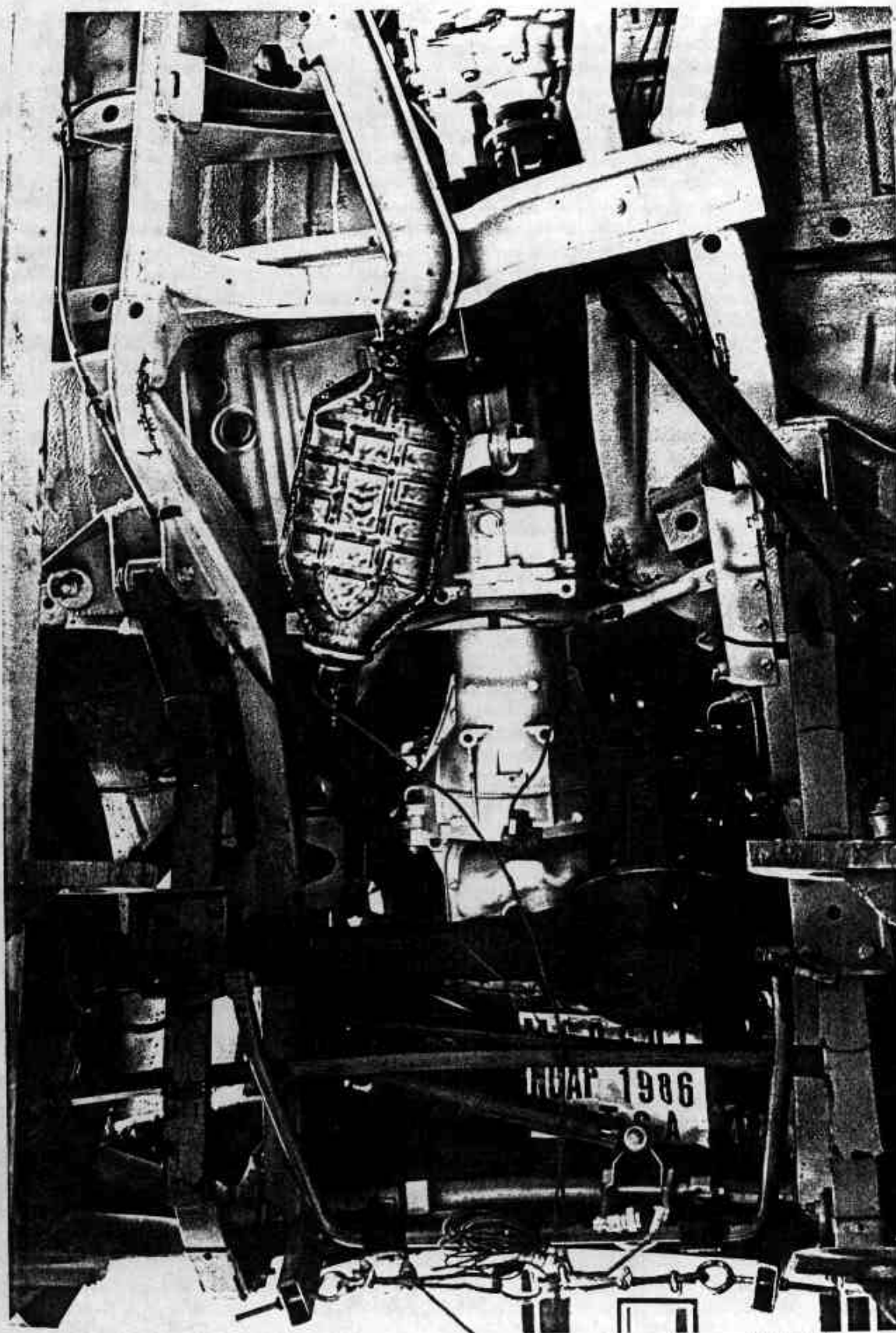
POST TEST ENGINE COMPARTMENT VIEW



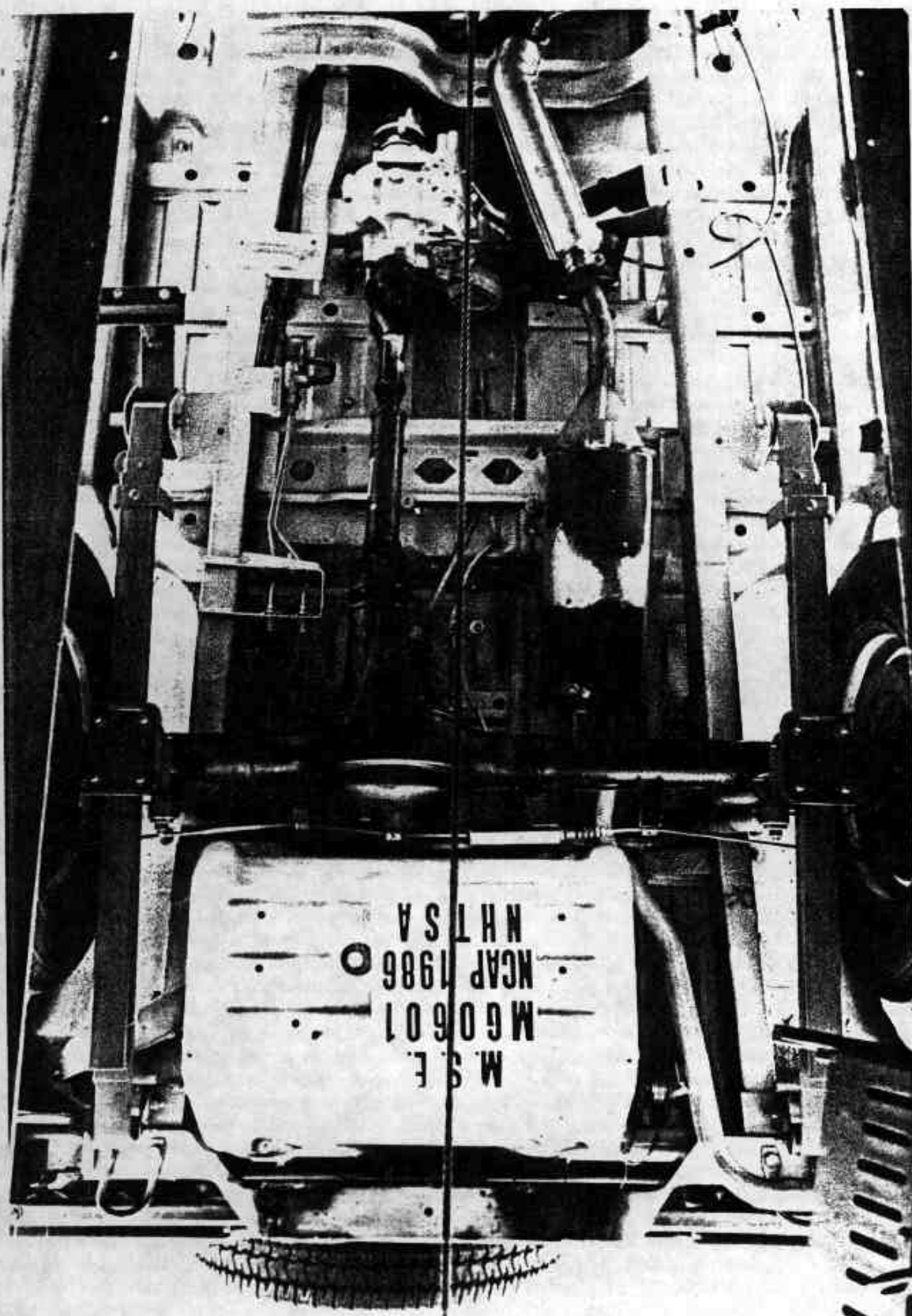
PRE TEST FUEL FILLER CAP - SIDE TANK



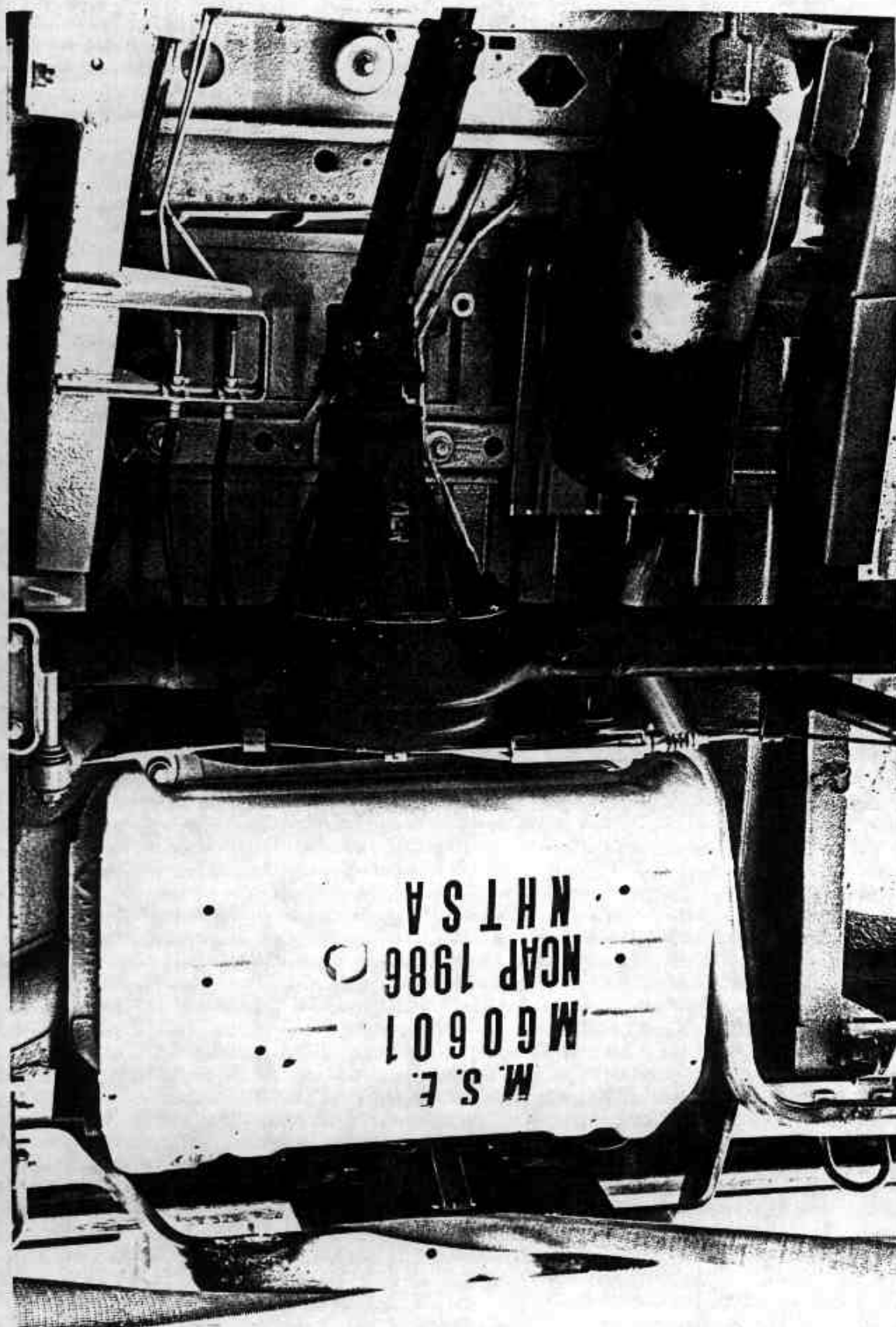
PRE TEST FRONT UNDERBODY VIEW



POST TEST FRONT UNDERBODY VIEW



PRE TEST REAR UNDERBODY VIEW



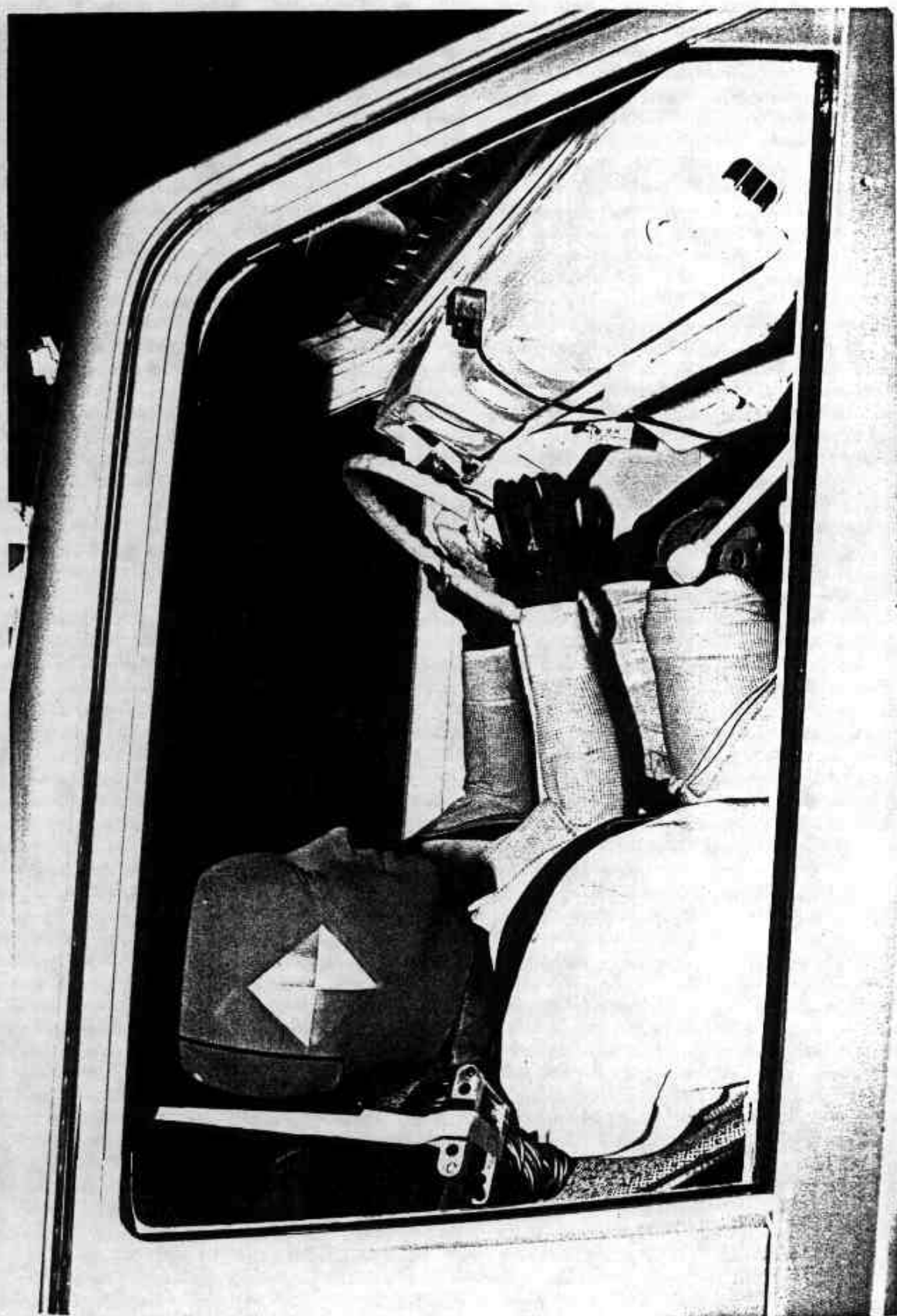
POST TEST REAR UNDERBODY VIEW



PRE TEST DRIVER DUMMY POSITION VIEW



POST TEST DRIVER DUMMY POSITION VIEW



PRE TEST PASSENGER DUMMY POSITION VIEW



POST TEST PASSENGER DUMMY POSITION VIEW



PRE TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)



POST TEST DRIVER DUMMY & VEHICLE INTERIOR VIEW (Door Open)



PRE TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

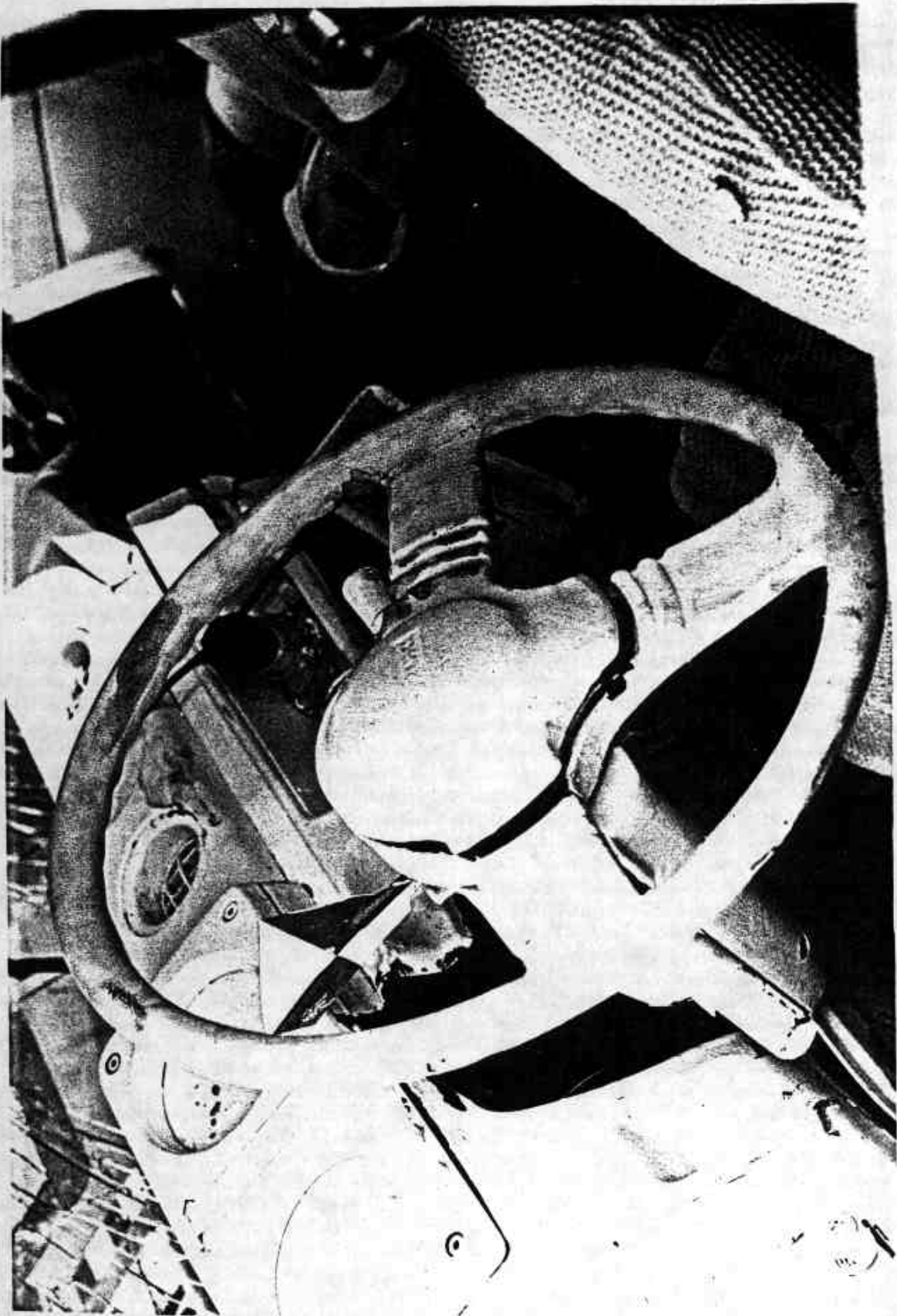


POST TEST PASSENGER DUMMY & VEHICLE INTERIOR VIEW (Door Open)

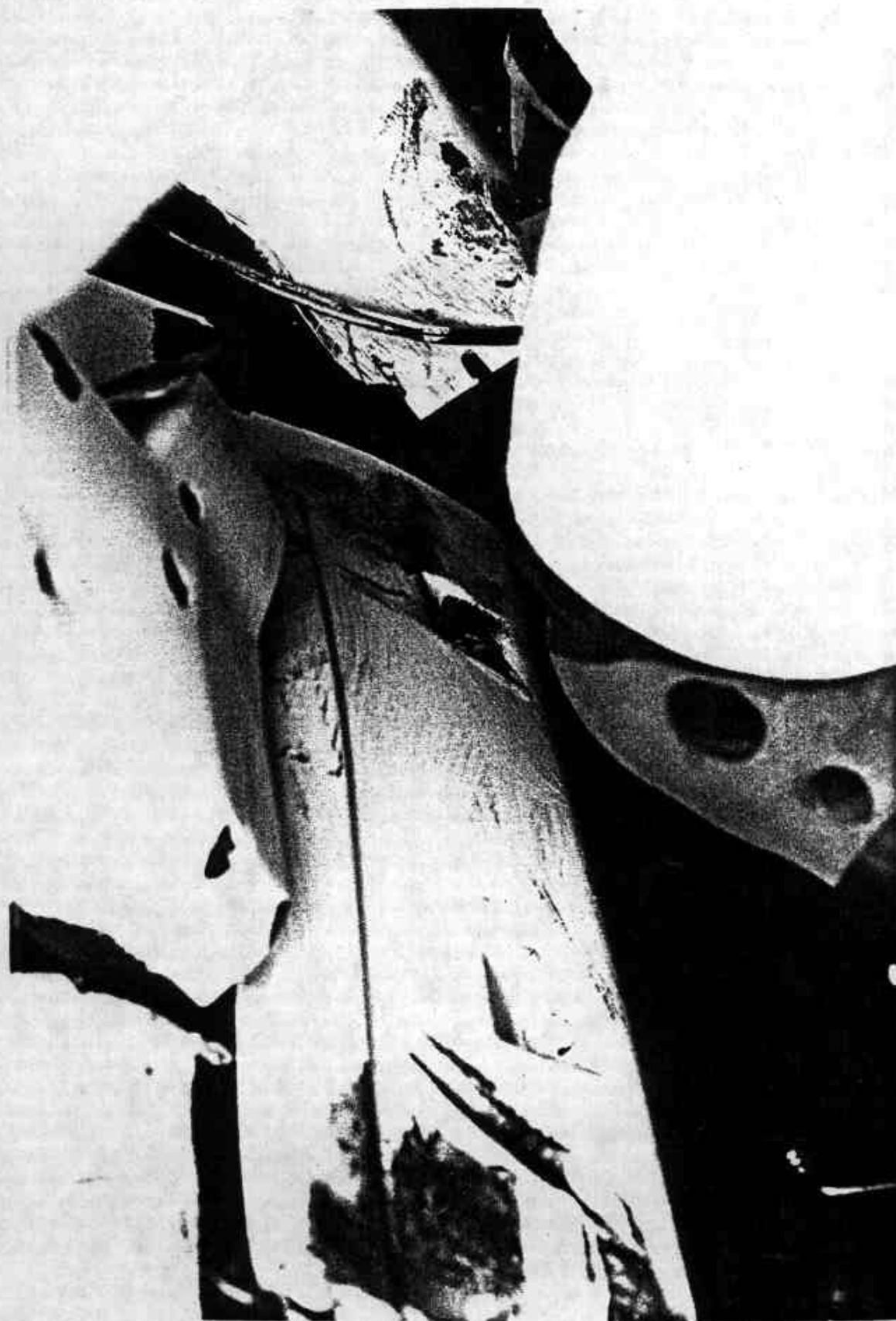
R5077-01



POST TEST PASSENGER DUMMY HEAD/KNEE CONTACT AREA



POST TEST STEERING COLUMN HUB/RIM CONTACT BY DUMMY DRIVER



POST TEST DRIVER DUMMY KNEE CONTACT

APPENDIX 8-1

VEHICLE AND DUMMY RESPONSE DATA

DATA FILTERING:

ATD Head Channels	- Class 1000
ATD Chest Channels	- Class 180
ATD Femur Channels	- Class 600
Vehicle Channels	- Class 60

NCAP TEST 05/15/86 - SUZUKI SAMURAI, N33016
 HEADER FILE - INPUT TO TAPE

1FY 86 35MPH NCAP FRONTAL 05/15/86MSEDTNH2284D21149N33016 ACQUIRE NCAP DATA PLUS EVALUATE COMPLIANCE TO FMVSS 212.219.
 301-75 & 208NCAUSE 35.1000000.0999.9CONDY 74FMTUMBENG
 213301864-ILF1324CC FWOT2666 79.9129.160.344.83CYLPNONE
 35.100000012FDEW5999 48.815.016.317.017.317.017.0 0.017.3
 3LCB 00 R

411RD 050M HUMANOID SYSTEMS 464 1ST IMP AFTER CAL20.522.1 7.0 7.020.813.0 1.5 4.0 5.93PTSTONASWNOOP
 412CD 050M HUMANOID SYSTEMS 466 1ST IMP AFTER CAL17.519.6 8.0 7.317.599.9 1.5 3.0 3.13PTSTONADPNOOP
 501AC011HED 6000 1650 0.72860 360000125G'SX35.16000
 502AC011HED 6000 1650 0.72860 360000125G'SY00.06000
 503AC011HED 6000 1650 0.72860 360000125G'SZ00.06000
 504AC011CST 6000 1650 0.72860 360000125G'SX35.16000
 505AC011CST 2800 1650 0.72860 360000125G'SY00.06000
 506AC011CST 6000 1650 0.72860 360000125G'SZ00.06000
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 509AC012HED 6000 1650 0.72860 360000125G'SZ00.06000
 510AC012CST 6000 1650 0.72860 360000125G'SX35.16000
 511AC012CST 2800 1650 0.72860 360000125G'SY00.06000
 512AC012CST 6000 1650 0.72860 360000125G'SZ00.06000
 513LC011LFM 9999 1650999.92860 360000125LBS0 GOOD
 514LC011RFM 9999 1650999.92860 360000125LBS0 GOOD
 515LC012LFM 9999 1650999.92860 360000125LBS0 GOOD
 516LC012RFM 9999 1650999.92860 360000125LBS0 GOOD
 517LC011LBO 9999 1650999.92860 360000125LBS0 GOOD
 518LC011SHB 9999 1650999.92860 360000125LBS0 GOOD
 519LC012LBO 9999 1650999.92860 360000125LBS0 GOOD
 520LC012SHB 9999 1650999.92860 360000125LBS0 GOOD
 521DT011SHB 9999 1650999.92860 360000125INCO GOOD
 522DT012SHB 9999 1650999.92860 360000125INCO GOOD
 523DT011SHB 9999 1650999.92860 360000125IP10 GOOD
 524DT012SHB 9999 1650999.92860 360000125IP10 GOOD
 525AC01NLR 2800 1650 0.72860 360000125G'SX35.16000
 526AC01NRR 2800 1650 0.72860 360000125G'SX35.16000
 527AC01NENG 2800 1650 0.72860 360000125G'SX35.16000
 528AC01NENG 2800 1650 0.72860 360000125G'SX35.16000
 529AC01NCR 2800 1650 0.72860 360000125G'SX35.16000
 530AC01NDPC 2800 1650 0.72860 360000125G'SX35.16000
 531AC01NVC 3600 1650 0.72860 360000125G'SX35.11INVALID DATA AFTER 26.75 ms
 532LCBANBA1 9999 1650999.92800 360000125LBS0 GOOD
 533LCBANBA2 9999 1650999.92800 360000125LBS0 GOOD
 534LCBANBA3 9999 1650999.92800 360000125LBS0 GOOD
 535LCBANBA4 9999 1650999.92800 360000125LBS0 GOOD
 536LCBANBA5 9999 1650999.92800 360000125LBS0 GOOD
 537LCBANBA6 9999 1650999.92800 360000125LBS0 GOOD

NCAP TEST 05/15/86 - SUZUKI SAMURAI, N33016
 HEADER FILE - INPUT TO TAPE

IFY 86 35MPH NCAP FRONTAL 05/15/86MSEDTH2284021149N33016 ACQUIRE NCAP DATA PLUS EVALUATE COMPLIANCE TO FMVSS 212.219.
 301-75 & 208NCAVSB 35.1000000.0999.9CONDY 74FMTUMBENG
 213301864-ILF1324CC FWT2666 79.9129.160.344.83CYLPNONE
 35.100000012FDEW5999 40.015.016.317.017.317.017.0 0.017.3

538LCBANBA7	9999	1650999.92800	360000125LBS0	GOOD
539LCBANBA8	9999	1650999.92800	360000125LBS0	GOOD
540LCBANBA9	9999	1650999.92800	360000125LBS0	GOOD
541LCBANBB1	9999	1650999.92800	360000125LBS0	GOOD
542LCBANBB2	9999	1650999.92800	360000125LBS0	GOOD
543LCBANBB3	9999	1650999.92800	360000125LBS0	GOOD
544LCBANBB4	9999	1650999.92800	360000125LBS0	GOOD
545LCBANBB5	9999	1650999.92800	360000125LBS0	GOOD
546LCBANBB6	9999	1650999.92800	360000125LBS0	GOOD
547LCBANBB7	9999	1650999.92800	360000125LBS0	GOOD
548LCBANBB8	9999	1650999.92800	360000125LBS0	GOOD
549LCBANBB9	9999	1650999.92800	360000125LBS0	GOOD
550LCBANBC1	9999	1650999.92800	360000125LBS0	GOOD
551LCBANBC2	9999	1650999.92800	360000125LBS0	GOOD
552LCBANBC3	9999	1650999.92800	360000125LBS0	GOOD
553LCBANBC4	9999	1650999.92800	360000125LBS0	GOOD
554LCBANBC5	9999	1650999.92800	360000125LBS0	GOOD
555LCBANBC6	9999	1650999.92800	360000125LBS0	GOOD
556LCBANBC7	9999	1650999.92800	360000125LBS0	GOOD
557LCBANBC8	9999	1650999.92800	360000125LBS0	GOOD
558LCBANBC9	9999	1650999.92800	360000125LBS0	GOOD
559LCBANBD1	9999	1650999.92800	360000125LBS0	GOOD
560LCBANBD2	9999	1650999.92800	360000125LBS0	GOOD
561LCBANBD3	9999	1650999.92800	360000125LBS0	GOOD
562LCBANBD4	9999	1650999.92800	360000125LBS0	GOOD
563LCBANBD5	9999	1650999.92800	360000125LBS0	GOOD
564LCBANBD6	9999	1650999.92800	360000125LBS0	GOOD
565LCBANBD7	9999	1650999.92800	360000125LBS0	GOOD
566LCBANBD8	9999	1650999.92800	360000125LBS0	GOOD
567LCBANBD9	9999	1650999.92800	360000125LBS0	GOOD

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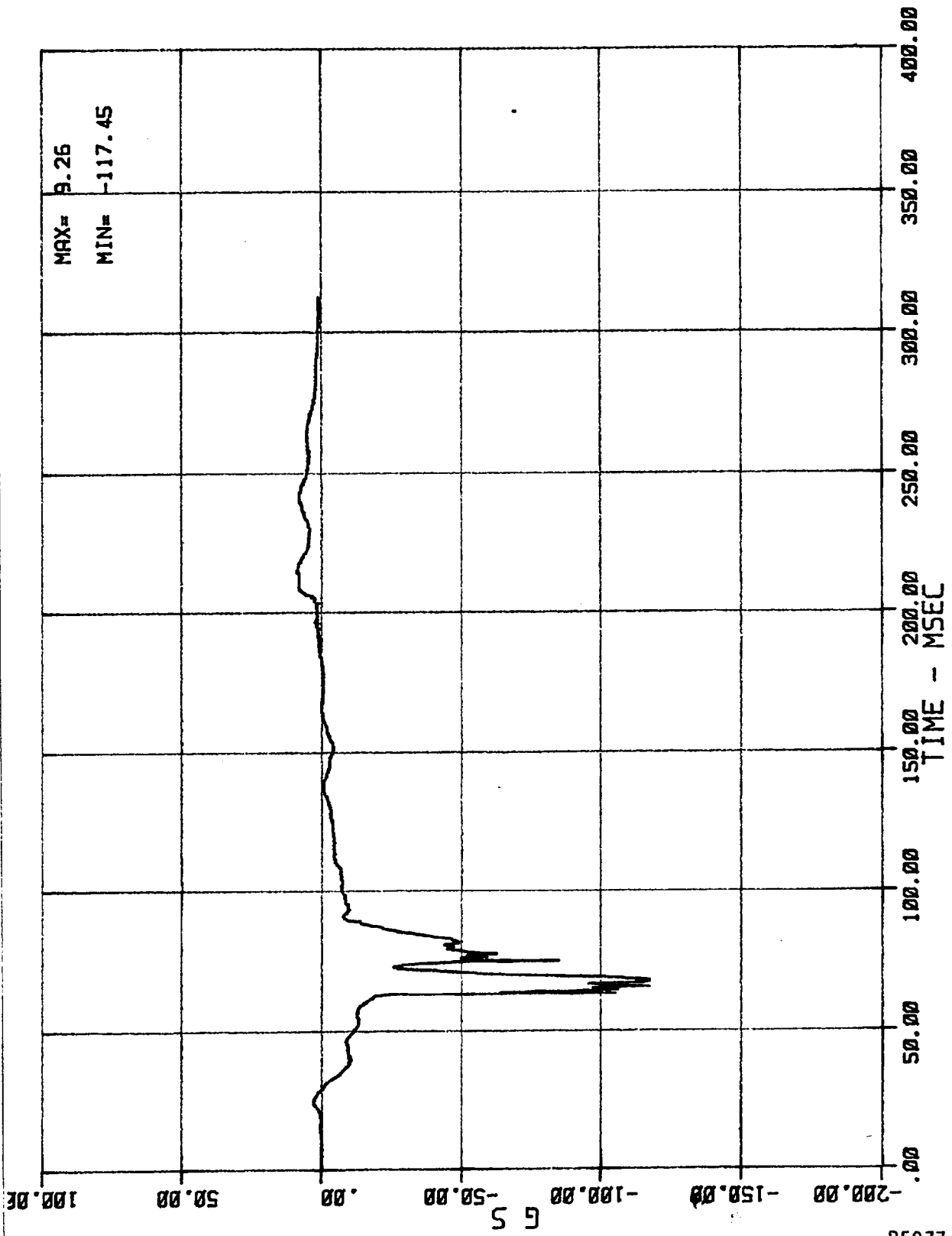
NCAP TEST 05/15/86 - SUZUKI SAMURAI, N33016
 HEADER FILE - OUTPUT FROM TAPE

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 OS EVALUATE COMPLIANCE TO FMVSS 212.219.301-75 & 208 NCAP 35.1000000.0799.9000
 RY 74FHTUMBENG 213301864-ILF1324CC FWOT2666 79.9129.160.
 344.83CYLPNONE 35.100
 000012FDEW5999 48.815.016.317.017.317.017.0 0.017.33LCB 00 R
 411RD
 050M HUMANOID SYSTEMS 464 1ST IMP AFTER CAL20.522.1 7.0 7.020.813.0 1.5 4.0 5
 .93PTSTONASWNOOP412CD 050M HUMANOID SYSTEMS 464 1ST IMP AFTER CAL17.519.6
 8.0 7.317.599.9 1.5 3.8 3.13PTSTONADPNODP501AC011HED 6000 1650 0.72860 36000012
 5G/SX35.10000 502AC011HED 6000 1650 0.72860 360000125G
 'SY00.06000 503AC011HED 6000 1650 0.72860 360000125G'S
 200.06000 504AC011CST 6000 1650 0.72860 360000125G'SX3
 5.10000 505AC011CST 2300 1650 0.72860 360000125G'SY00.
 06000 506AC011CST 6000 1650 0.72860 360000125G'SZ00.06
 000 507AC012HED 6000 1650 0.72860 360000125G'SX35.1000
 D 508AC012HED 6000 1650 0.72860 360000125G'SY00.06000
 509AC012HED 6000 1650 0.72860 360000125G'SZ00.06000
 510AC012CST 6000 1650 0.72860 360000125G'SX35.10000
 511AC012CST 2800 1650 0.72860 360000125G'SY00.06000
 512AC012CST 6000 1650 0.72860 360000125G'SZ00.06000
 513LC011LFM 9999 1650999.92860 360000125LBS0 GOOD
 514LC011RFM 9999 1650999.92860 360000125LBS0 GOOD
 515LC012LFM 9999 1650999.92860 360000125LBS0 GOOD
 516LC012RFM 9999 1650999.92860 360000125LBS0 GOOD
 517LC011LBO 9999 1650999.92860 360000125LBS0 GOOD
 518LC011SHB 9999 1650999.92860 360000125LBS0 GOOD
 519LC012LBO 9999 1650999.92860 360000125LBS0 GOOD
 520LC012SHB 9999 1650999.92860 360000125LBS0 GOOD
 521DT011SHB 9999 1650999.92860 360000125INCO GOOD 5
 22DT012SHB 9999 1650999.92860 360000125INCO GOOD 523
 DT011SHB 9999 1650999.92860 360000125IP10 GOOD 524DT
 012SHB 9999 1650999.92860 360000125IP10 GOOD 525AC01
 NLRF 2800 1650 0.72860 360000125G'SX35.10000 526AC01NR
 RF 2800 1650 0.72860 360000125G'SX35.10000 527AC01NENG
 2800 1650 0.72860 360000125G'SX35.10000 528AC01NENG 2
 800 1650 0.72860 360000125G'SX35.10000 529AC01NCR 280
 0 1650 0.72860 360000125G'SX35.10000 530AC01NDC 2300
 1650 0.72860 360000125G'SX35.10000 531AC01NVC6 3600 16
 50 0.72860 360000125G'SX35.11INVALID DATA AFTER 26.75 ms 532LCBANBA1 9999 1650
 999.92800 360000125LBS0 GOOD 533LCBANBA2 9999 165099
 9.92800 360000125LBS0 GOOD 534LCBANBA3 9999 1650999.
 92800 360000125LBS0 GOOD 535LCBANBA4 9999 1650999.92
 800 360000125LBS0 GOOD 536LCBANBA5 9999 1650999.9280
 0 360000125LBS0 GOOD 537LCBANBA6 9999 1650999.92800
 360000125LBS0 GOOD 538LCBANBA7 9999 1650999.92800 36
 0000125LBS0 GOOD 539LCBANBA8 9999 1650999.92800 36000
 00125LBS0 GOOD 540LCBANBA9 9999 1650999.92800 360000
 125LBS0 GOOD 541LCBANBB1 9999 1650999.92800 36000012
 5LBS0 GOOD 542LCBANBB2 9999 1650999.92800 360000125L
 BSO GOOD 543LCBANBB3 9999 1650999.92800 360000125LBS
 0 GOOD 544LCBANBB4 9999 1650999.92800 360000125LBS0
 0000 545LCBANBB5 9999 1650999.92800 360000125LBS0

NCAP TEST 05/15/86 - SUZUKI SAMURAI, N33016
 HEADER FILE - OUTPUT FROM TAPE

1EY 86 35MPH NCAP FRONTAL 05/15/86 SEDTNR2234021142N33016 ACQUIRE NCAP DATA PL
 05 EVALUATE COMPLIANCE TO FMVSS 212.219.201-75 & 205 NCAP 35.100000.0999.9000
 RY 74MTUNBENG 213301364-ILF1324CC FWOT2666 79.9129.150.
 344.83CYLPNONE 35.100
 000012FDEW5999 48.815.016.317.017.317.017.0 0.017.33LCB 00 R
 411RD
 050M HUMANOID SYSTEMS 464 1ST IMP AFTER CAL20.522.1 7.0 7.020.013.0 1.5 4.0 5
 .93PTSTDAWADNODP412CD 050M HUMANOID SYSTEMS 466 1ST IMP AFTER CAL17.519.6
 8.0 7.317.599.9 1.5 3.8 3.13PTSTDAWADNODP501AC011HED 0000 1650 0.72260 36000012
 GOOD 546LCBANB6 9999 1650999.92800 360000125LBS0 G
 000 547LCBANB7 9999 1650999.92800 360000125LBS0 GOOD
 D 548LCBANB8 9999 1650999.92800 360000125LBS0 GOOD
 549LCBANB9 9999 1650999.92800 360000125LBS0 GOOD
 550LCBANBC1 9999 1650999.92800 360000125LBS0 GOOD
 551LCBANBC2 9999 1650999.92800 360000125LBS0 GOOD
 552LCBANBC3 9999 1650999.92800 360000125LBS0 GOOD
 553LCBANBC4 9999 1650999.92800 360000125LBS0 GOOD
 554LCBANBC5 9999 1650999.92800 360000125LBS0 GOOD
 555LCBANBC6 9999 1650999.92800 360000125LBS0 GOOD
 556LCBANBC7 9999 1650999.92800 360000125LBS0 GOOD
 557LCBANBC8 9999 1650999.92800 360000125LBS0 GOOD
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 560LCBANBD2 9999 1650999.92800 360000125LBS0 GOOD
 561LCBANBD3 9999 1650999.92800 360000125LBS0 GOOD
 562LCBANBD4 9999 1650999.92800 360000125LBS0 GOOD
 LCBANBD5 9999 1650999.92800 360000125LBS0 GOOD
 BANBD6 9999 1650999.92800 360000125LBS0 GOOD
 NBD7 9999 1650999.92800 360000125LBS0 GOOD
 D8 9999 1650999.92800 360000125LBS0 GOOD
 9999 1650999.92800 360000125LBS0 GOOD

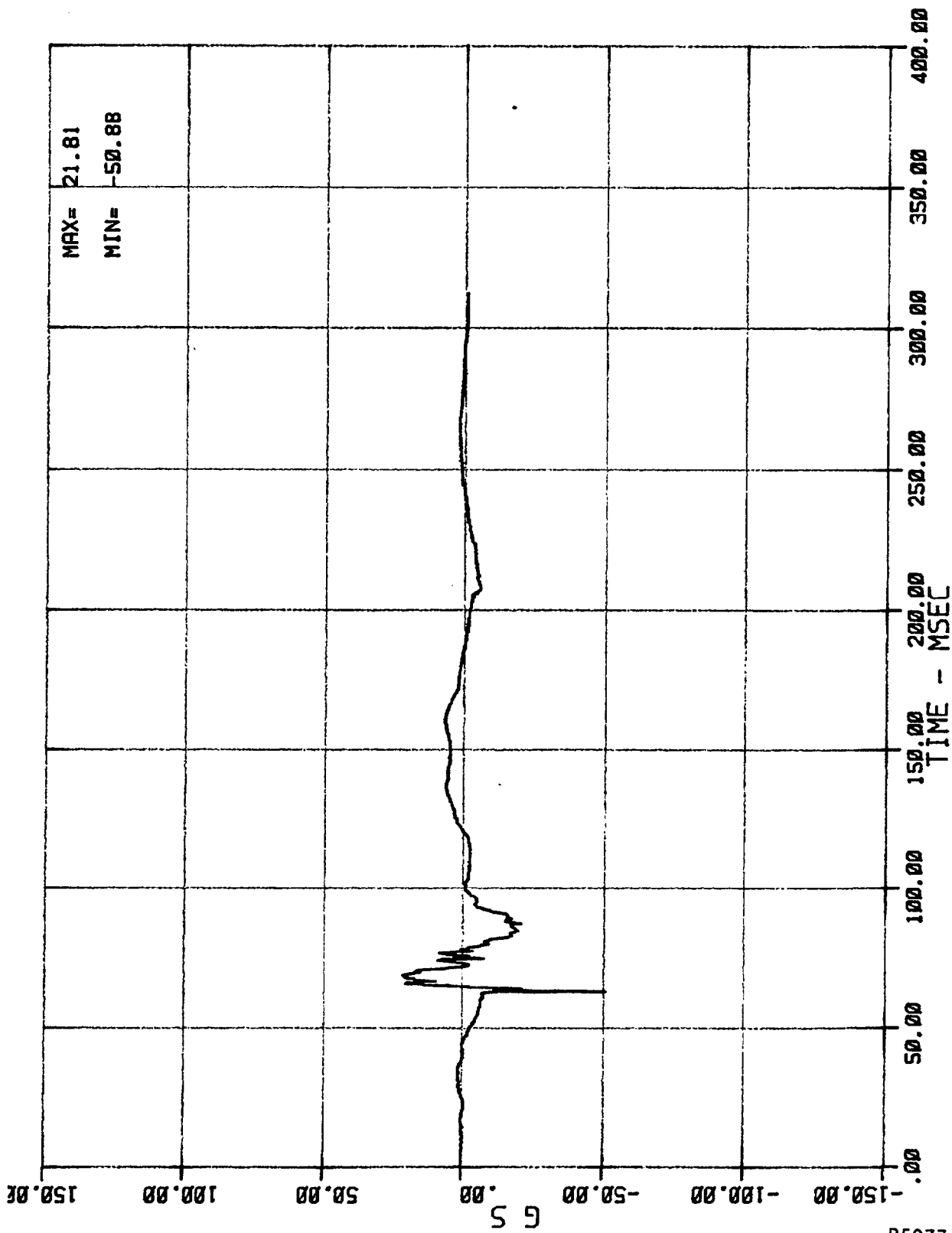
5
 563
 564LC
 565LCBA
 566LCBANB
 567LCBANBD9



01 AC 01 1 HED X (DRIVER HEAD ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

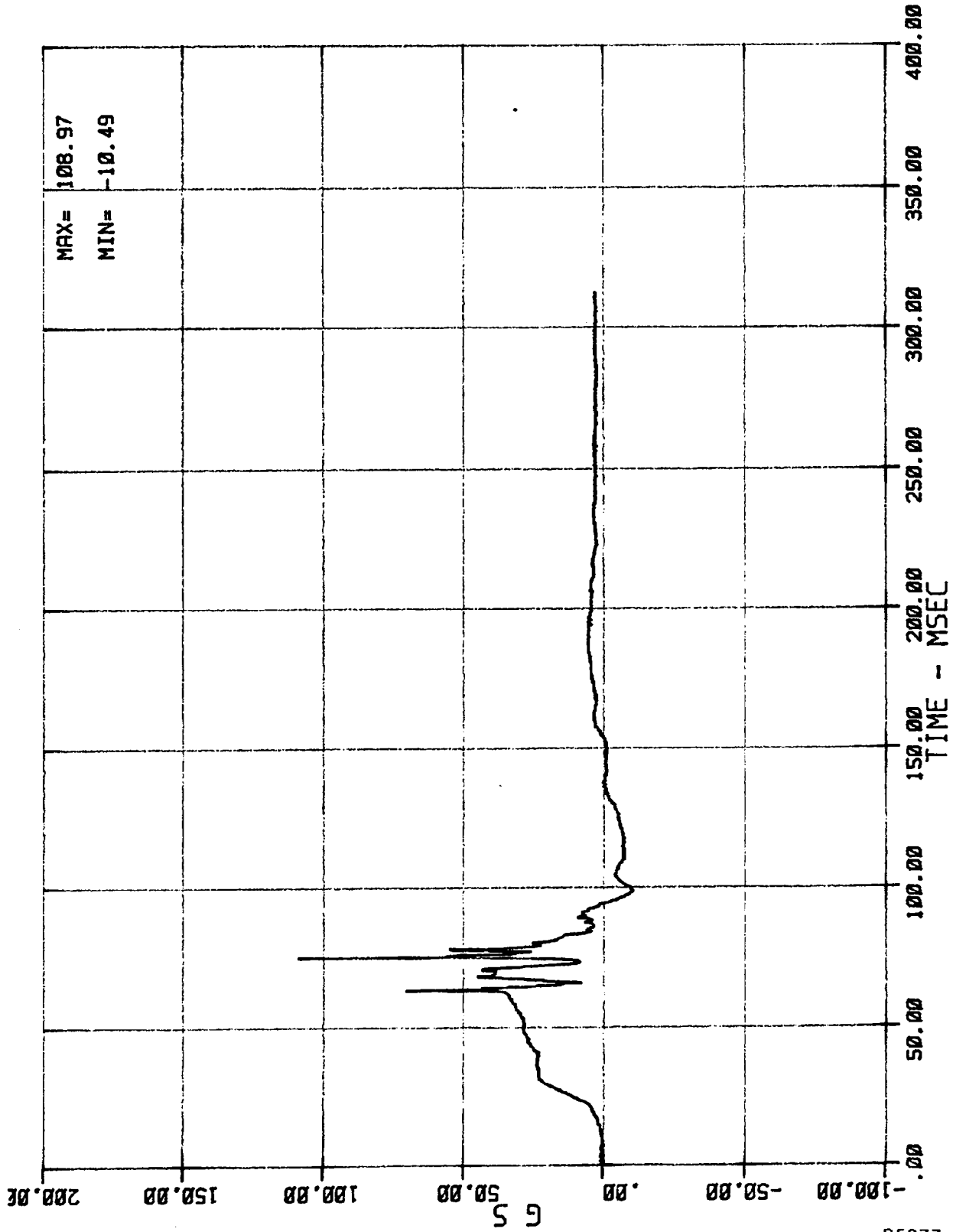
R5077-01



R5077-01

02 AC 01 1 HED Y (DRICER HEAD ACCEL. -- Y AXIS)
MSE N33016 1986 SUZUKI SAMURAI

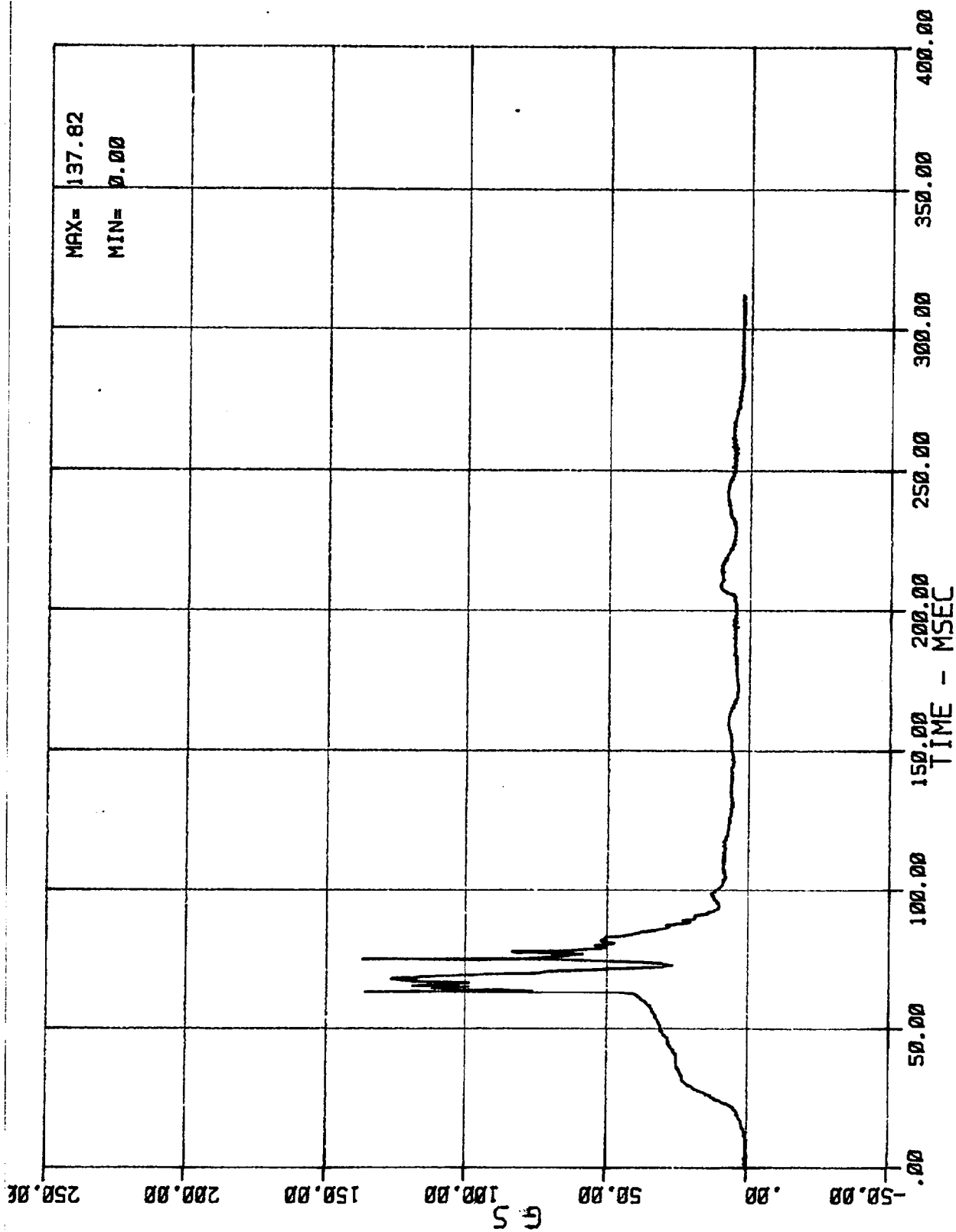
05/15/86



03 AC 01 1 HED Z (DRIVER HEAD ACCEL. -- Z AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

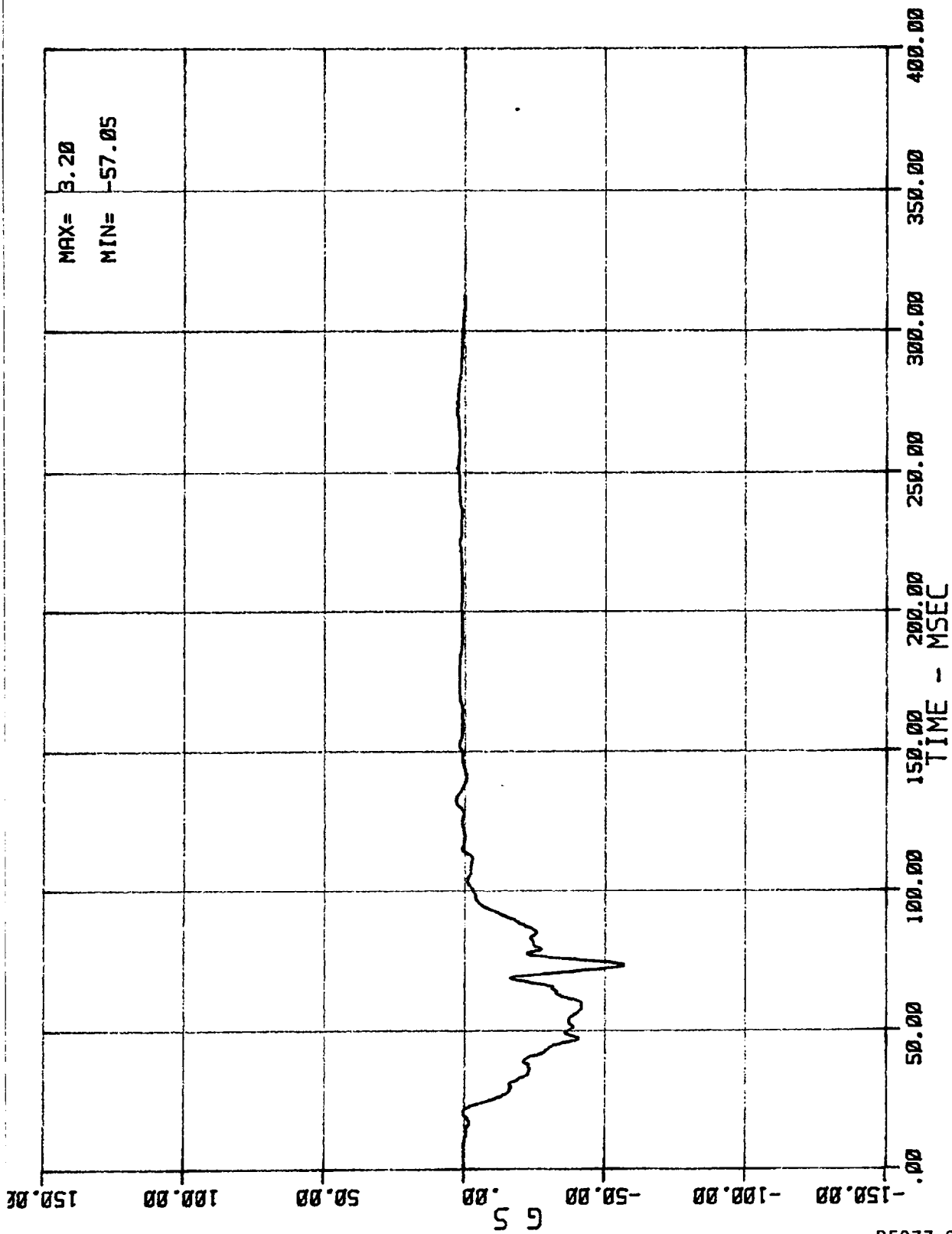
R5077-01



DRIVER HEAD RESULTANT ACCELERATION
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

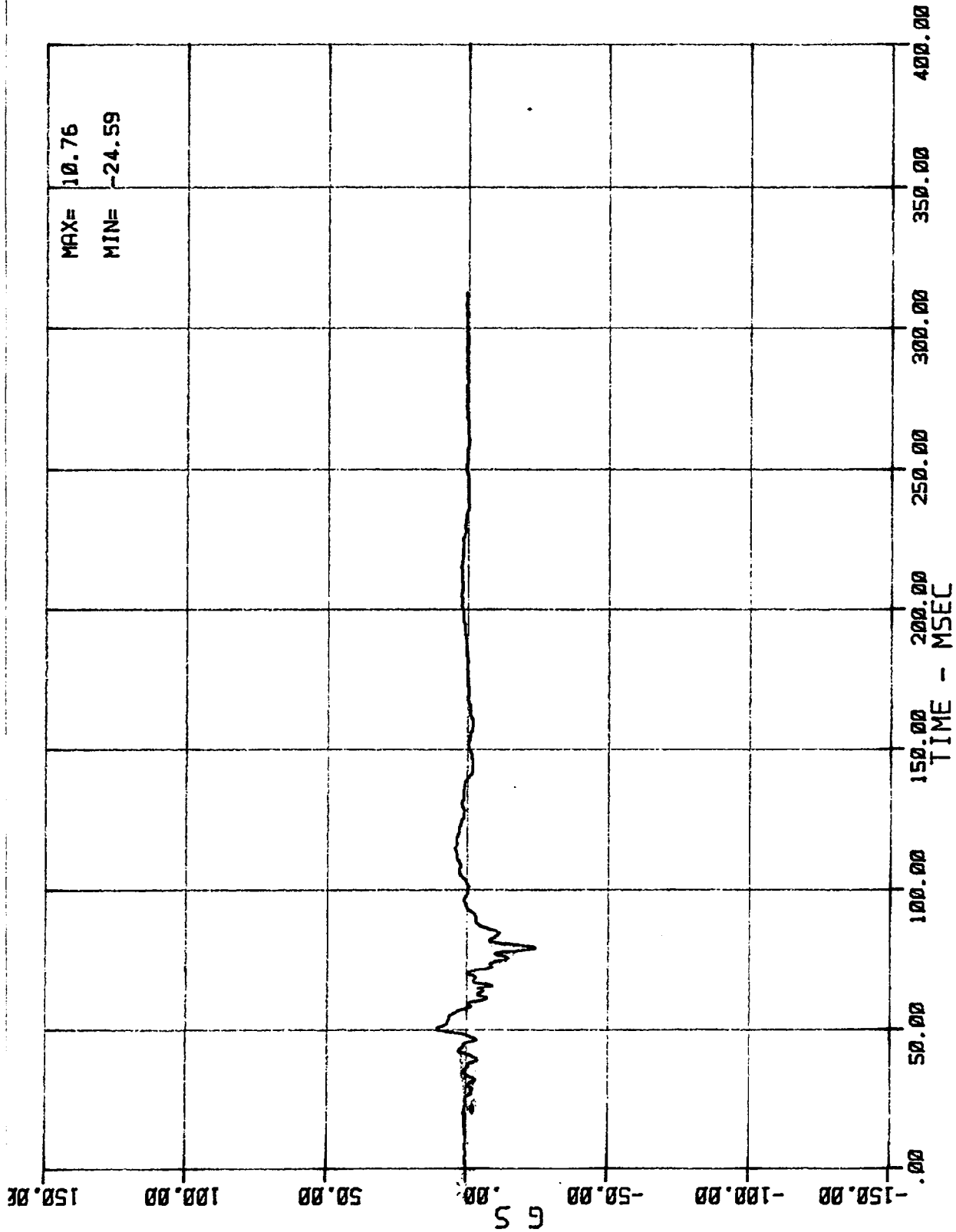
R5077-01



04 AC 01 CST X (DRIVER CHEST ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

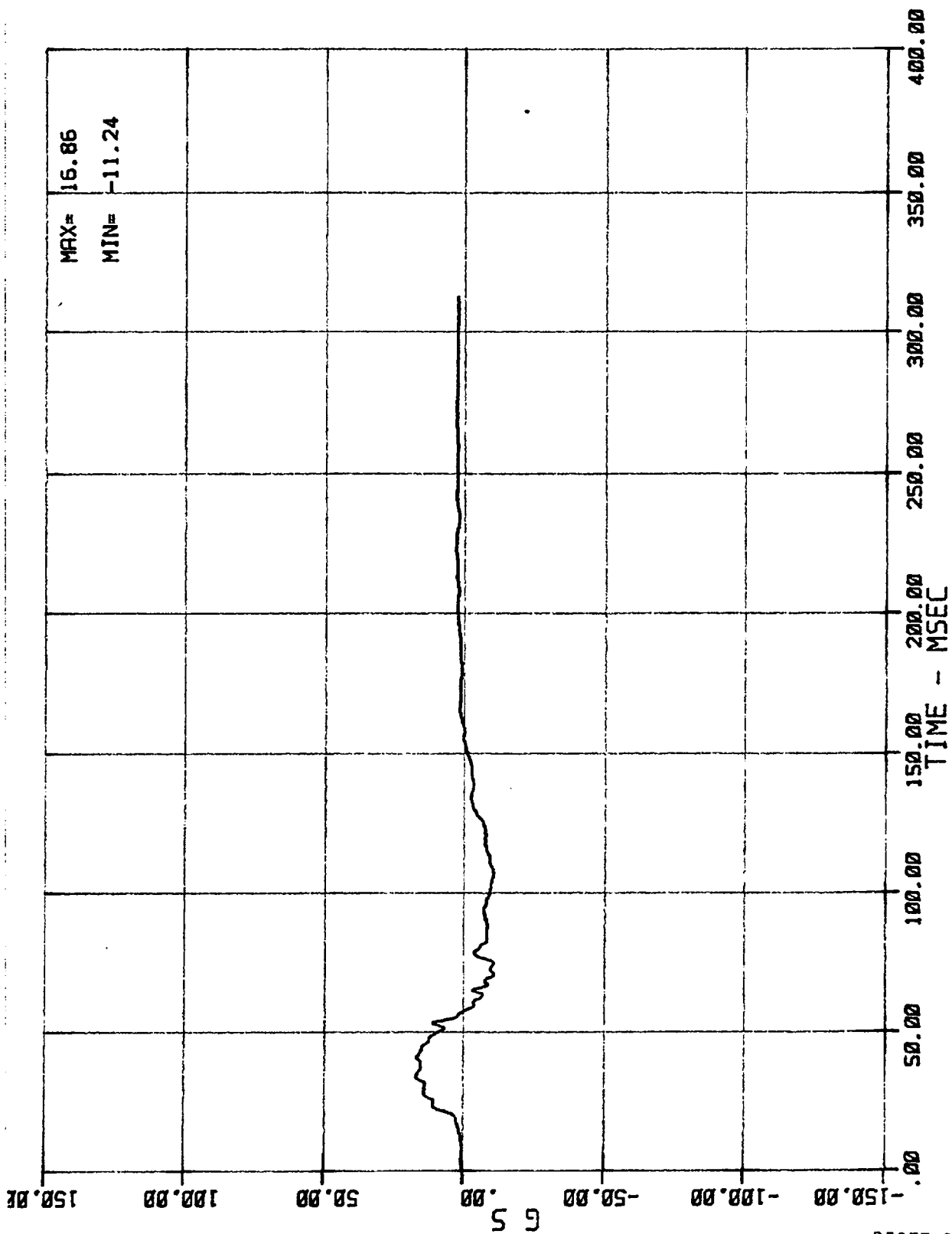
R5077-01



05 AC 01 1 CST Y (DRIVER CHEST ACCEL. Y AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

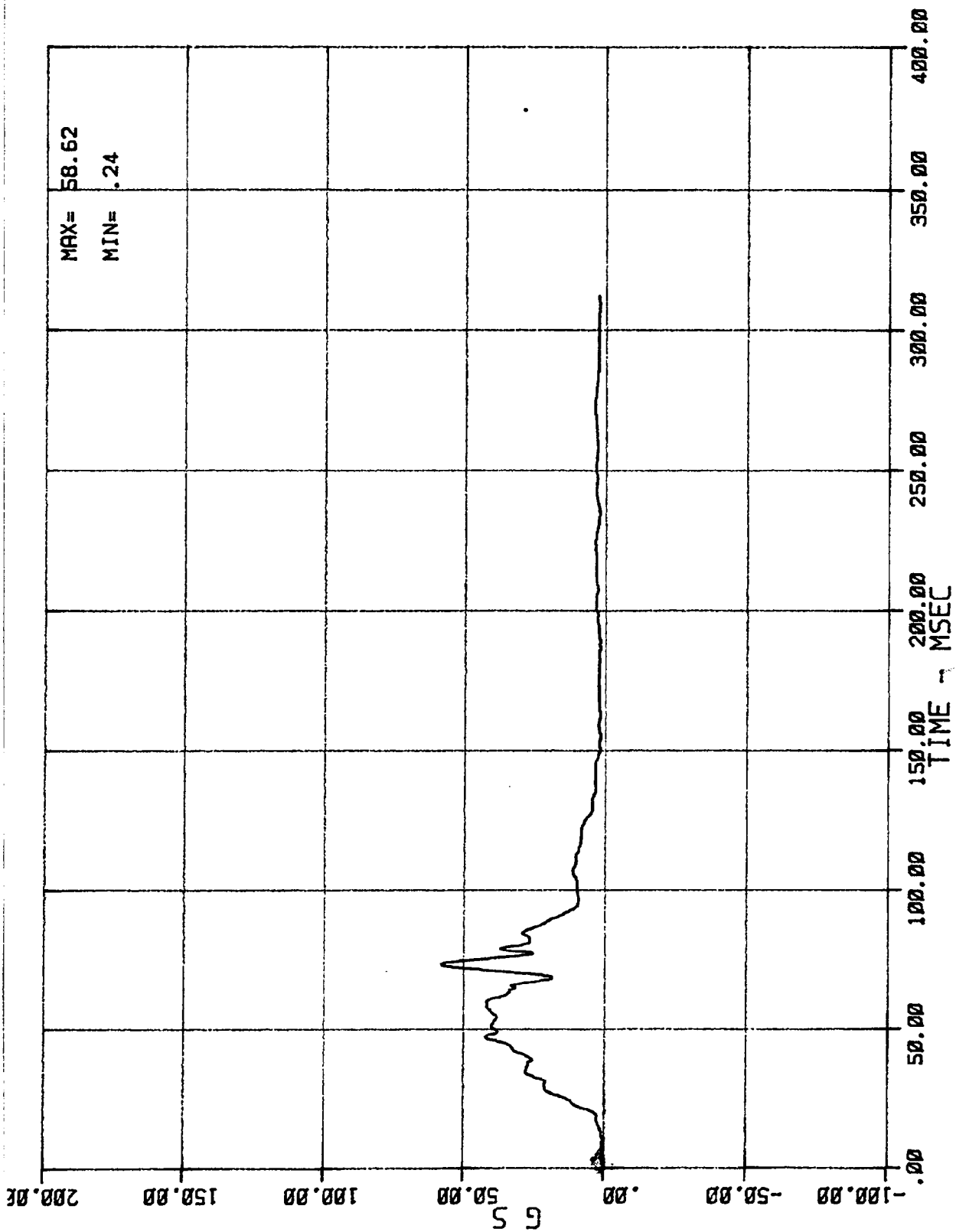
R5077-01



06 RC 01 1 CST Z (DRIVER CHEST ACCEL. --Z AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

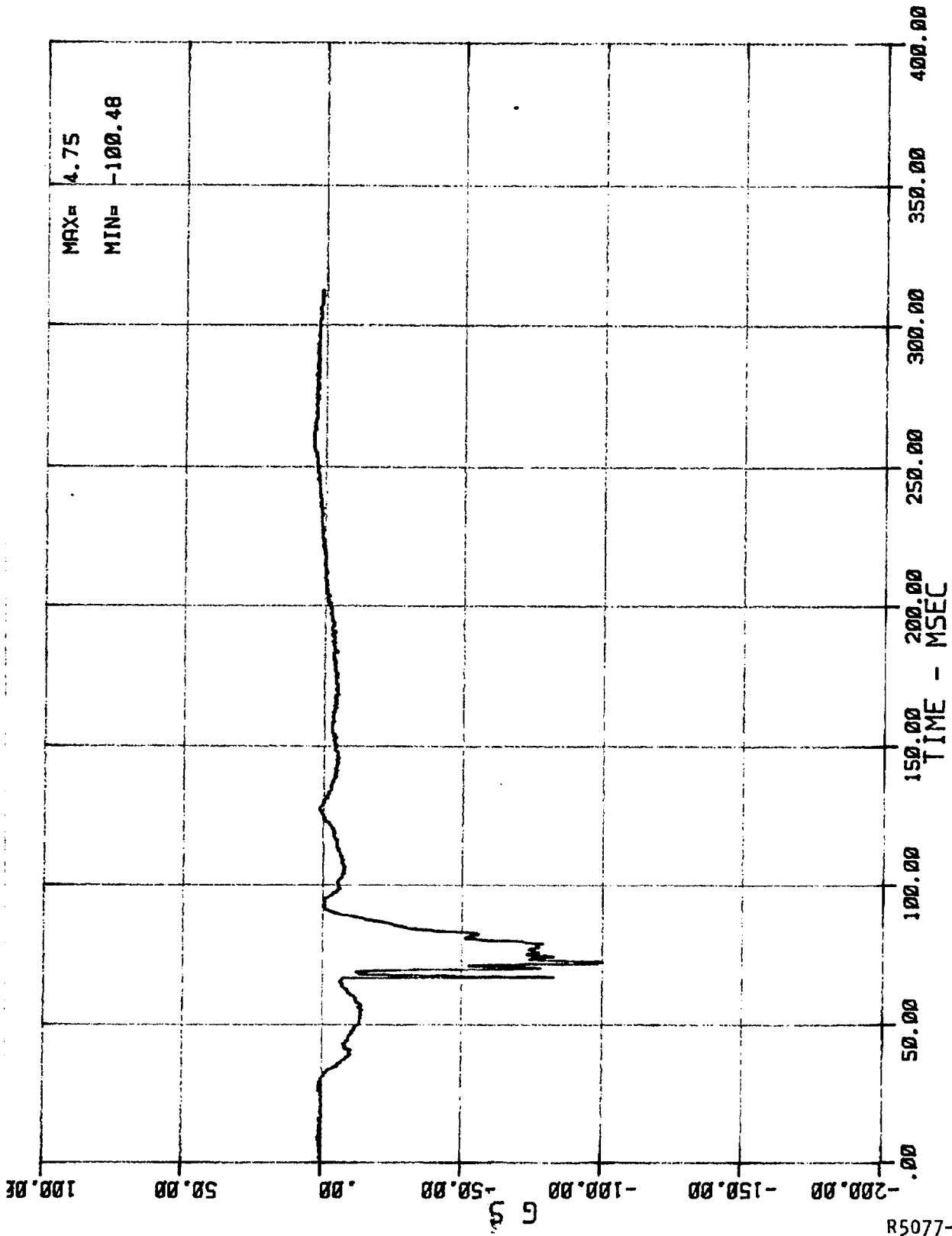
R5077-01



DRIVER CHEST RESULTANT ACCELERATION
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

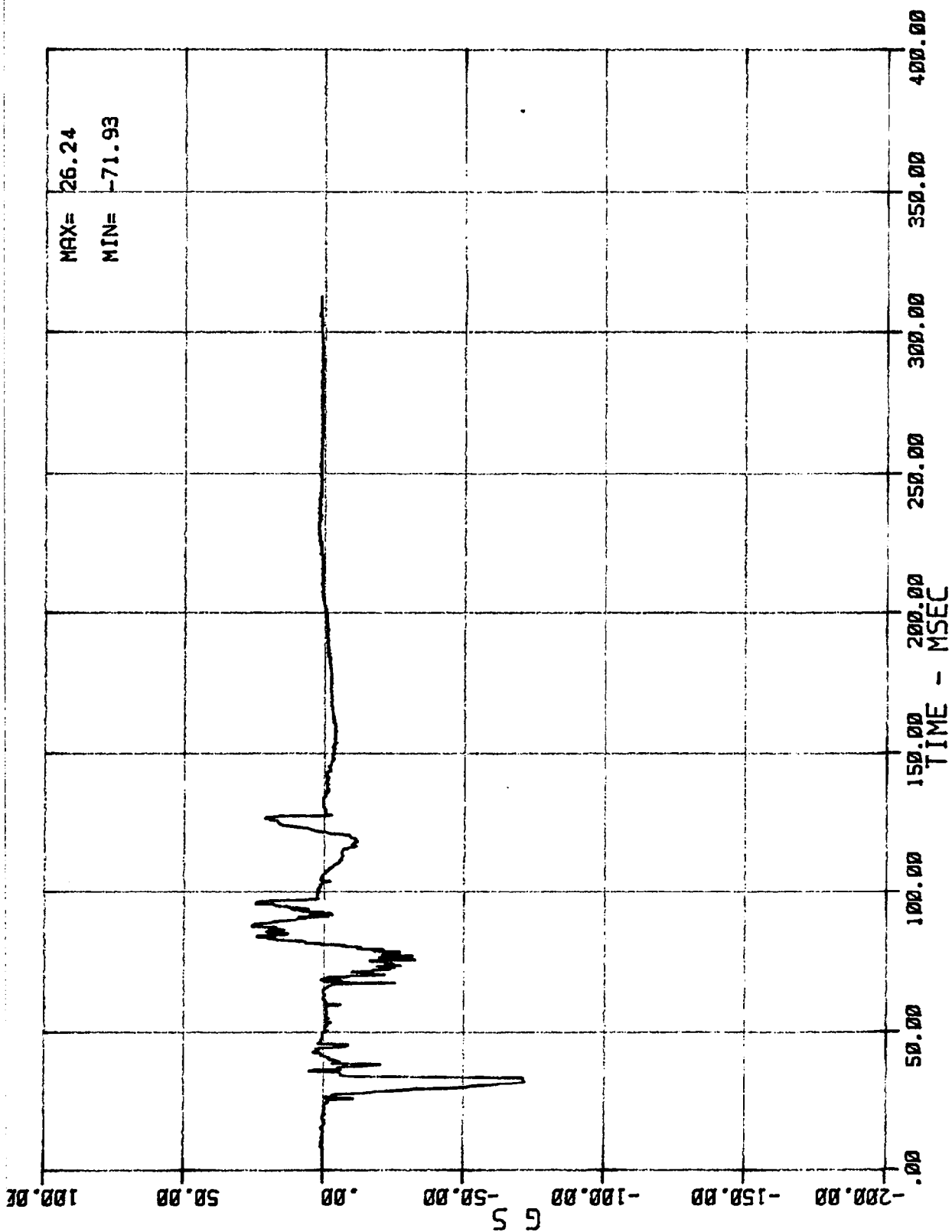
R5077-01



07 01 2 HED X (PASSENGER HEAD ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

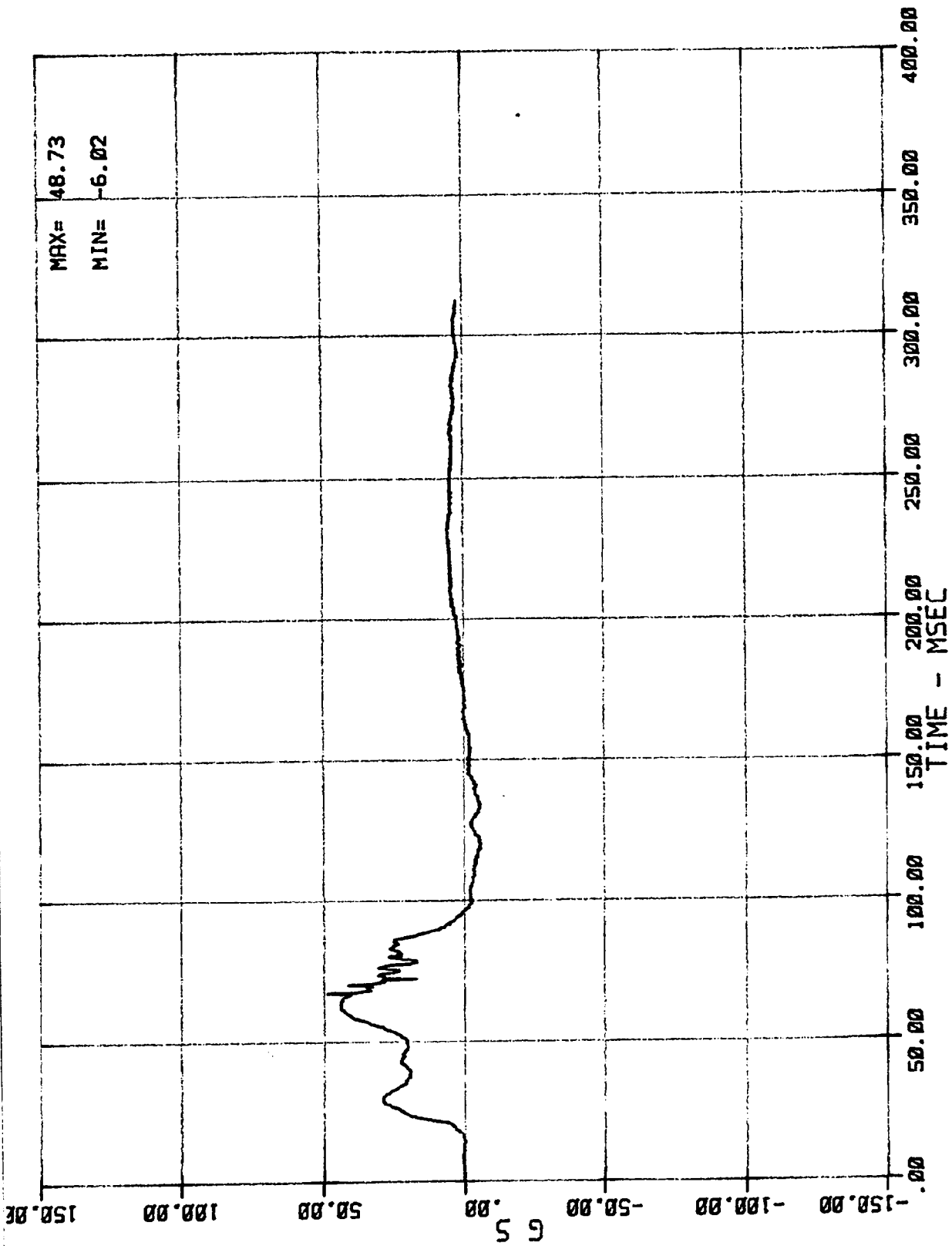
R5077-01



08 AC 01 2 HED Y (PASSENGER HEAD ACCEL. -- Y AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

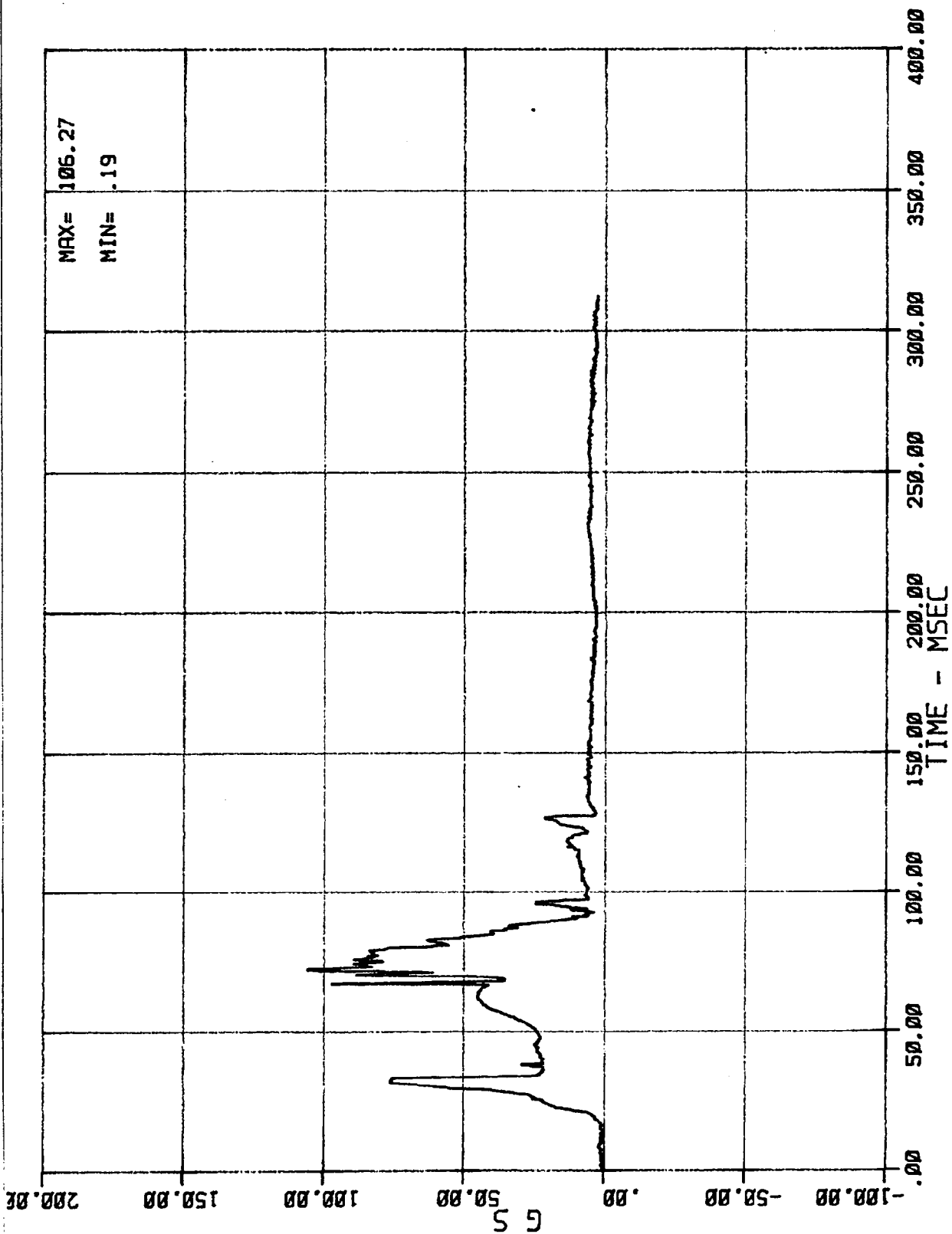
R5077-01



09 AC 01 2 HED Z (PASSENGER HEAD ACCEL. -- Z AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

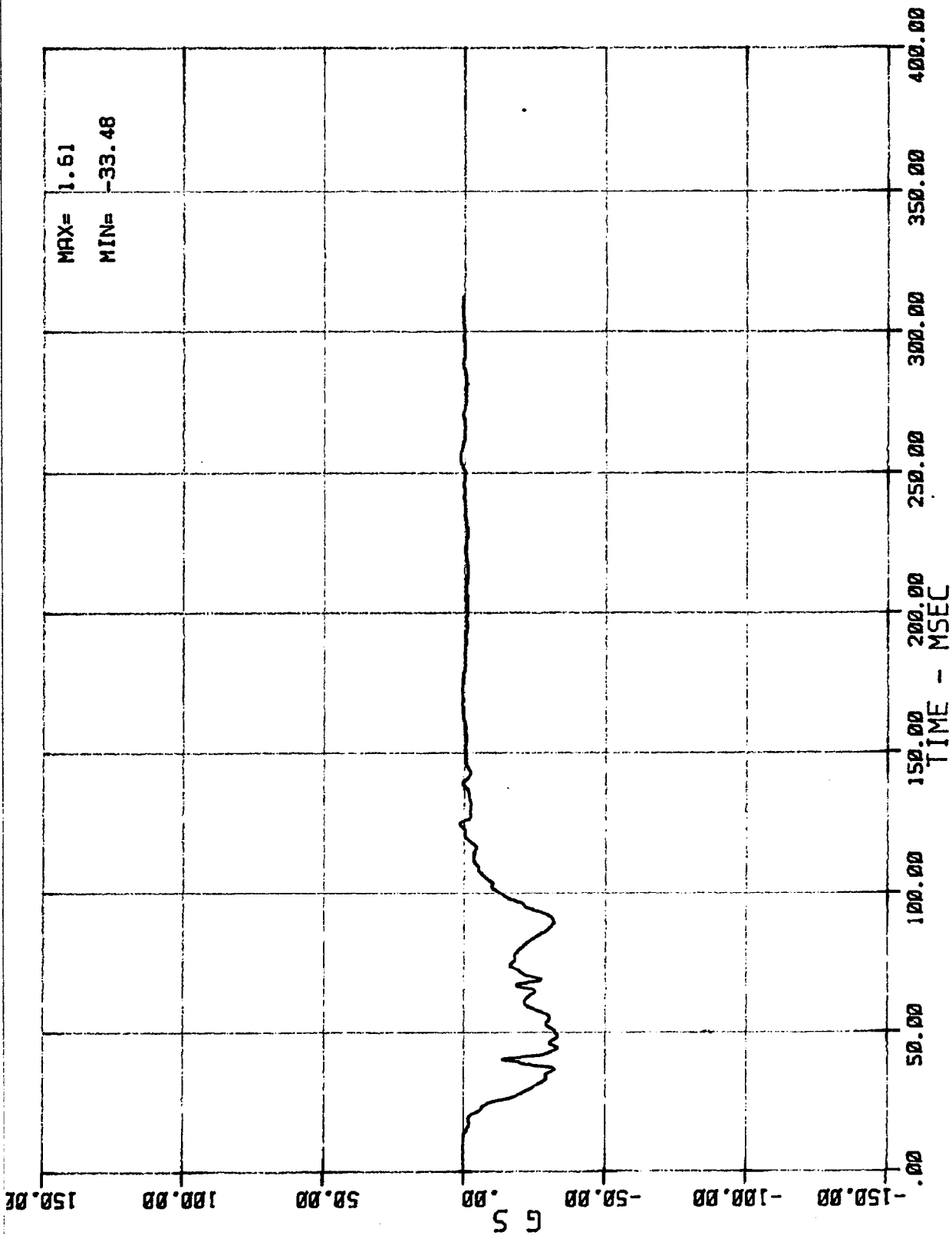
R5077-01



PASSENGER HEAD RESULTANT ACCELERATION
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

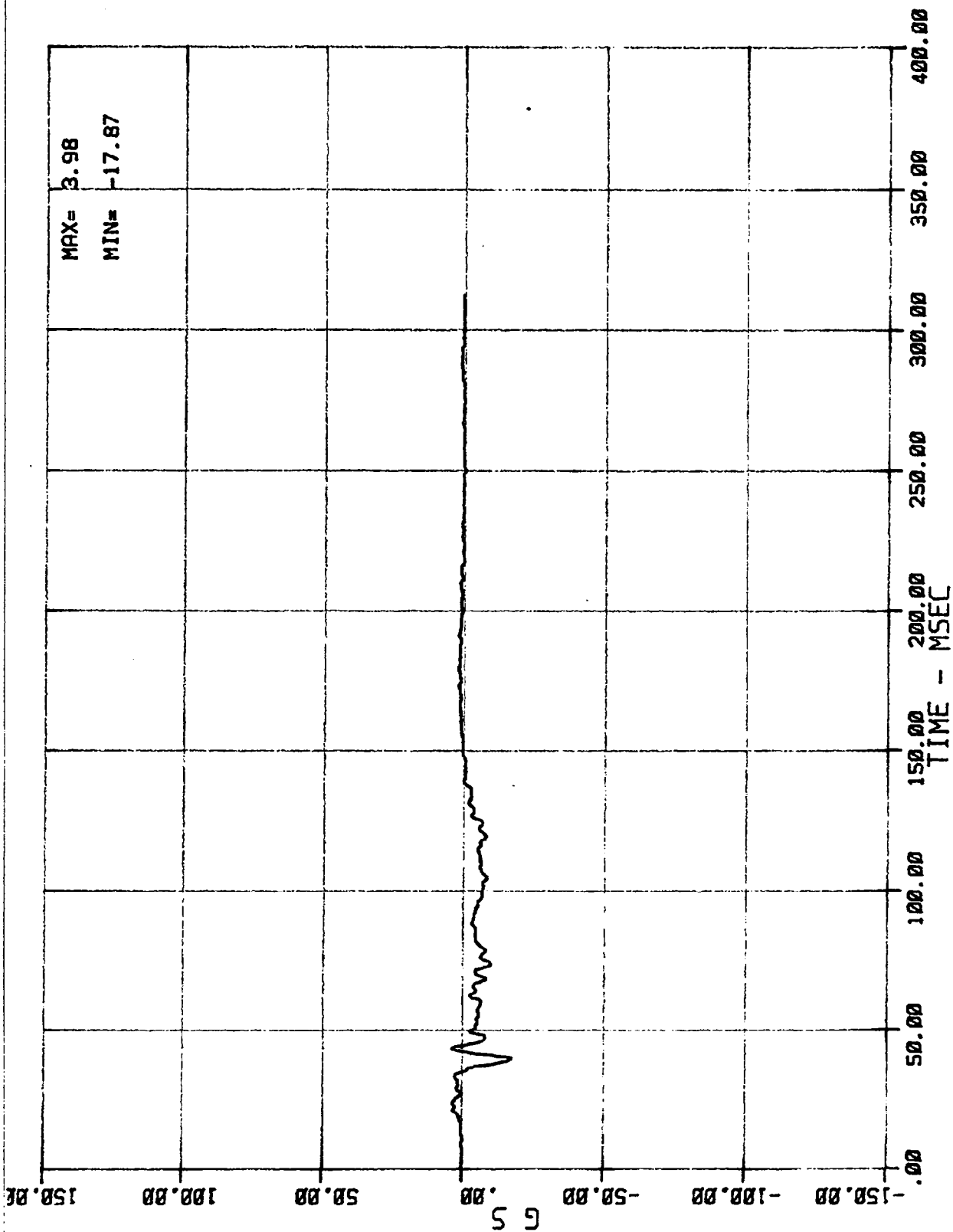
R5077-01



10 AC 01 2 CST X (PASSENGER CHEST ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

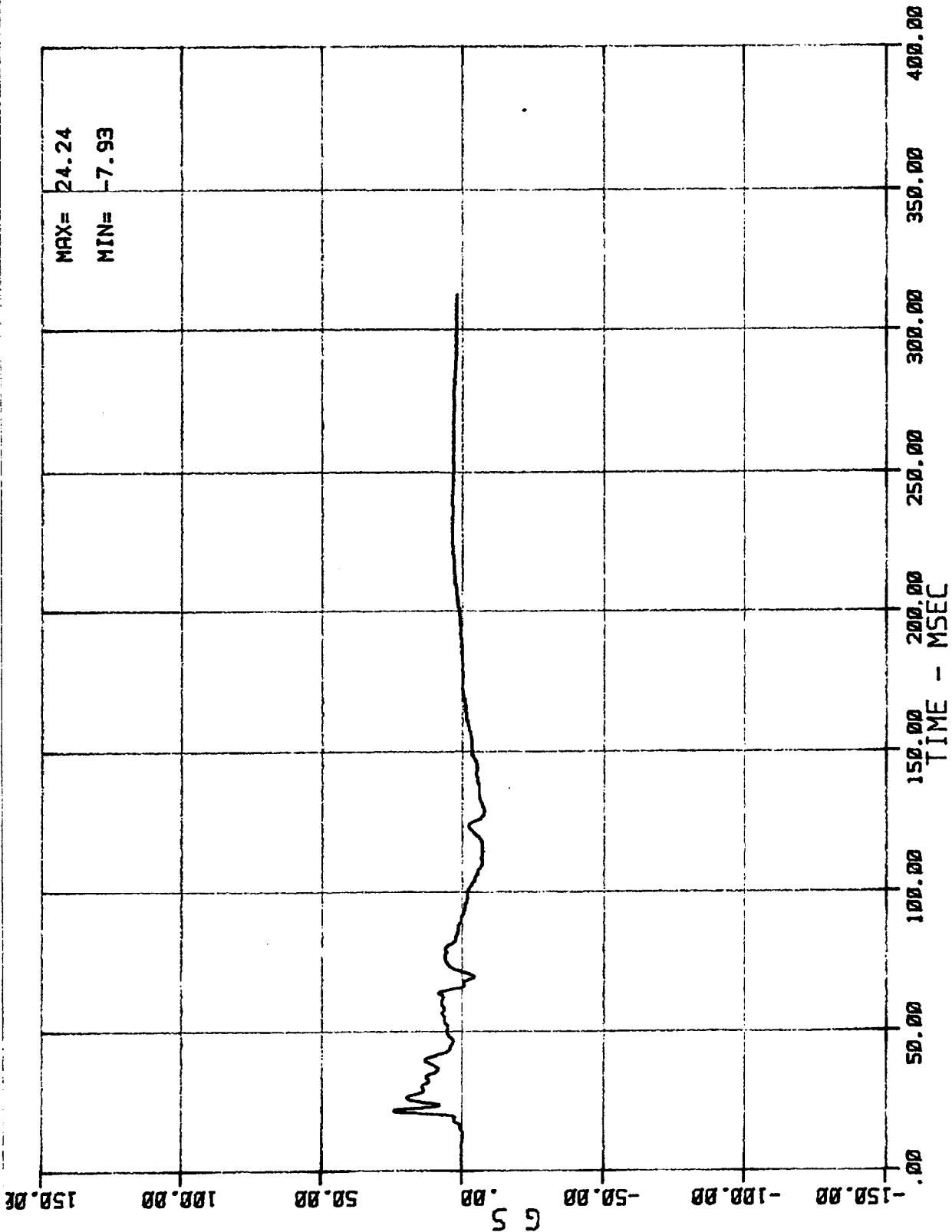
R5077-01



11 AC 01 2 CST Y (PASSENGER CHEST ACCEL. -- Y AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

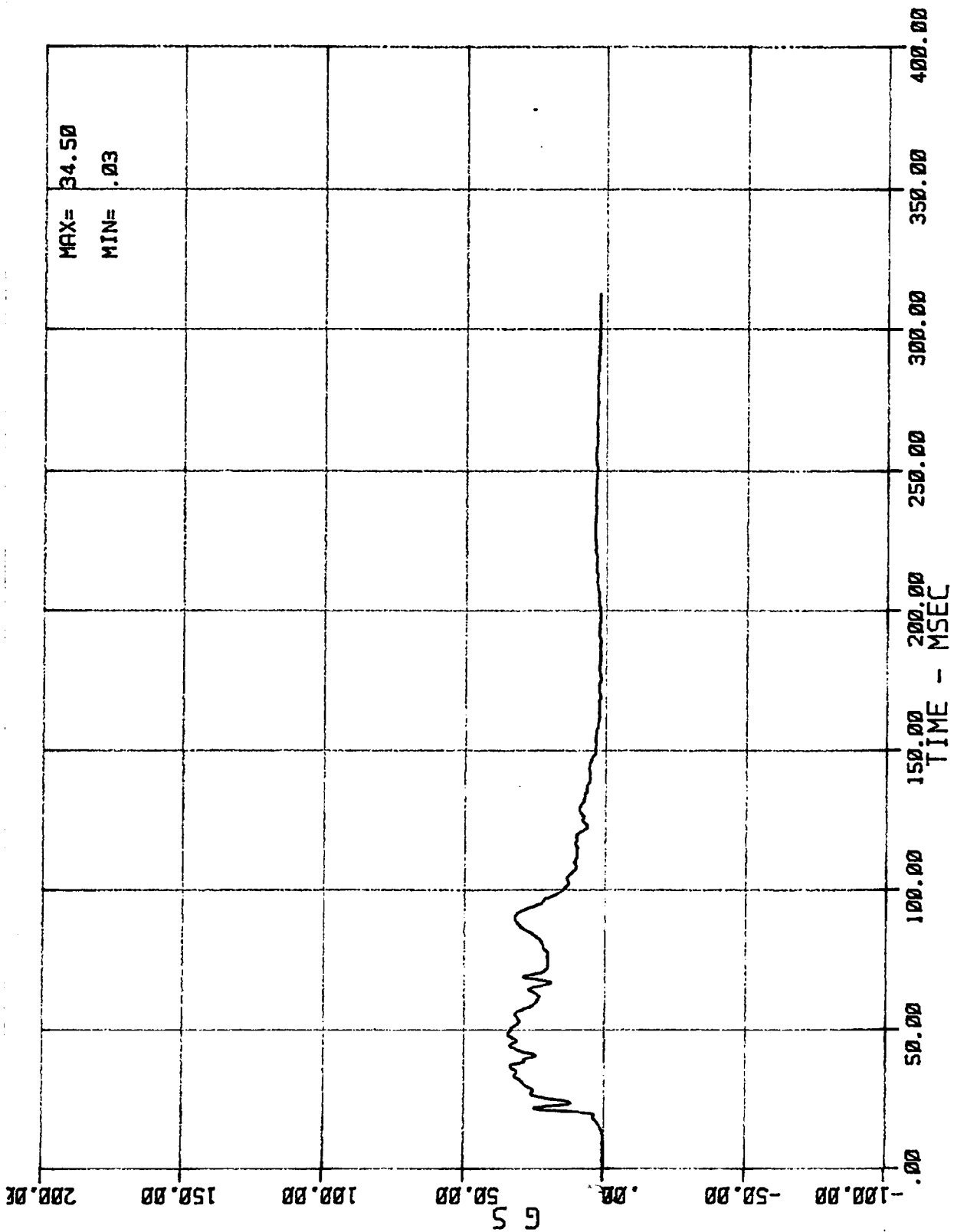
R5077-01



12 AC 01 2 CST Z (PASSENGER CHEST ACCEL. --- Z AXIS)
MSE N33016 1986 SUZUKI SAMURAI

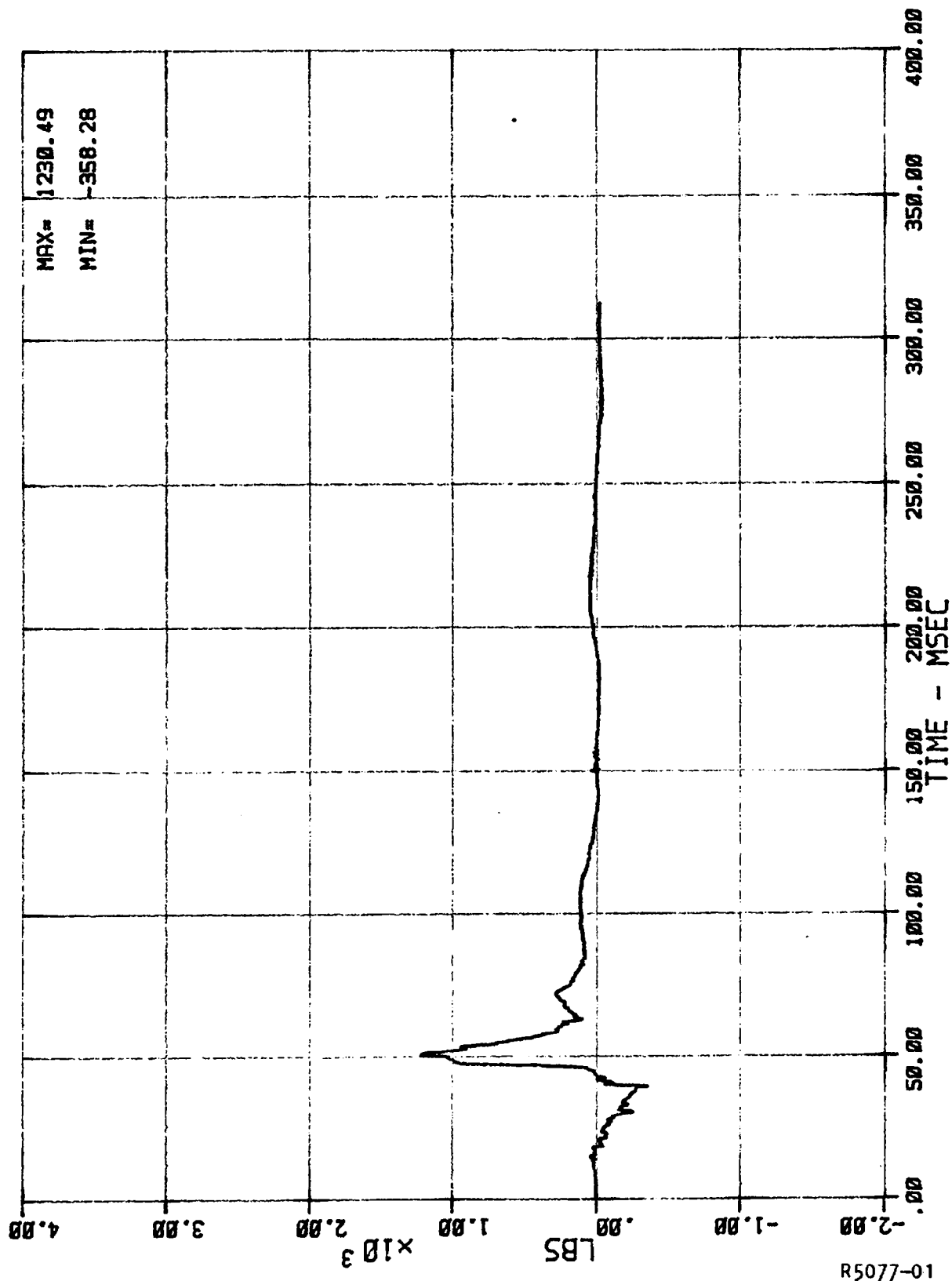
05/15/86

R5077-01



PASSENGER CHEST RESULTANT ACCELERATION
MSE N33016 1986 SUZUKI SAMURAI

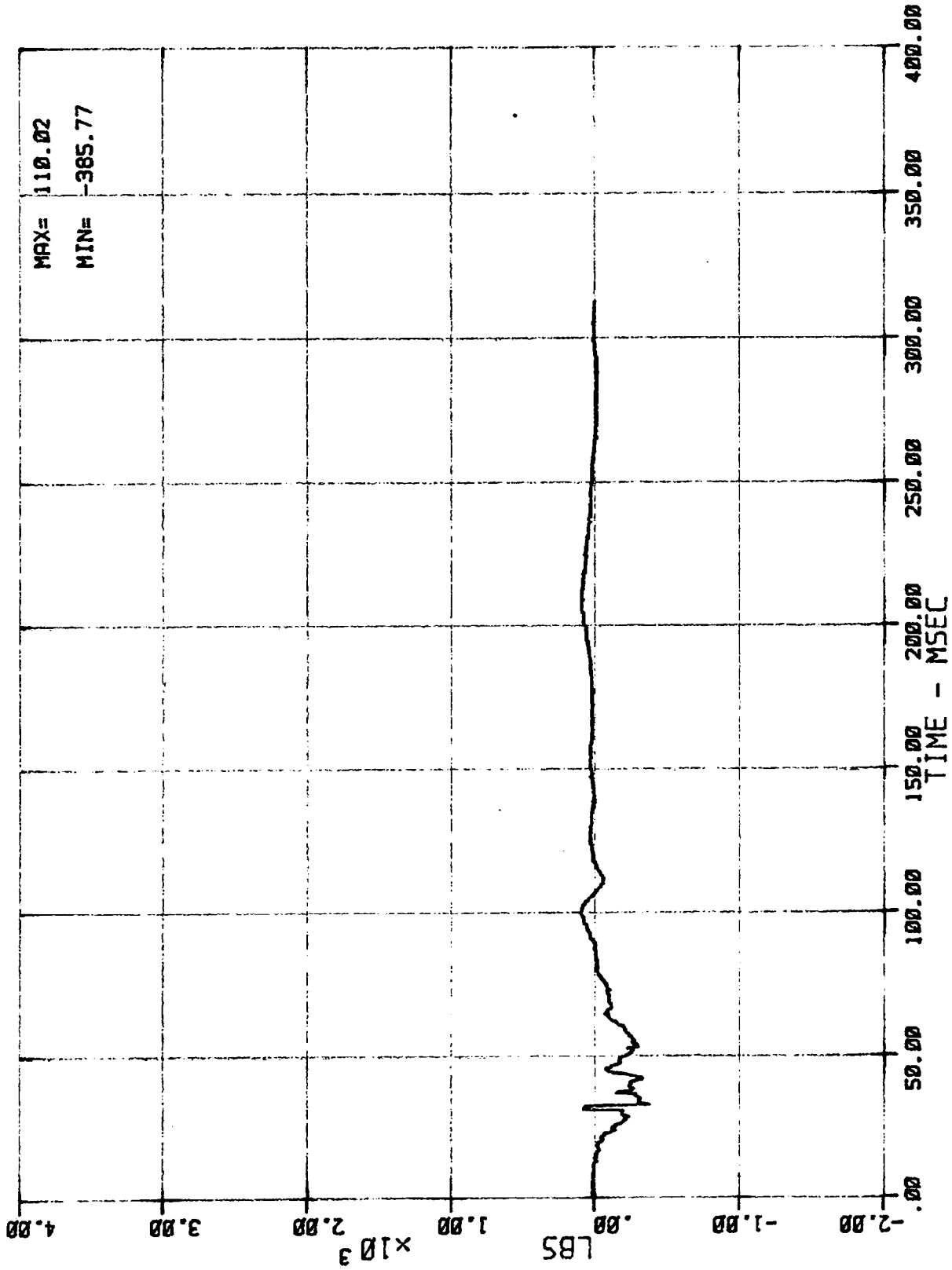
05/15/86



13 LC 01 1 LFM (DRIVER LEFT FEMUR FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

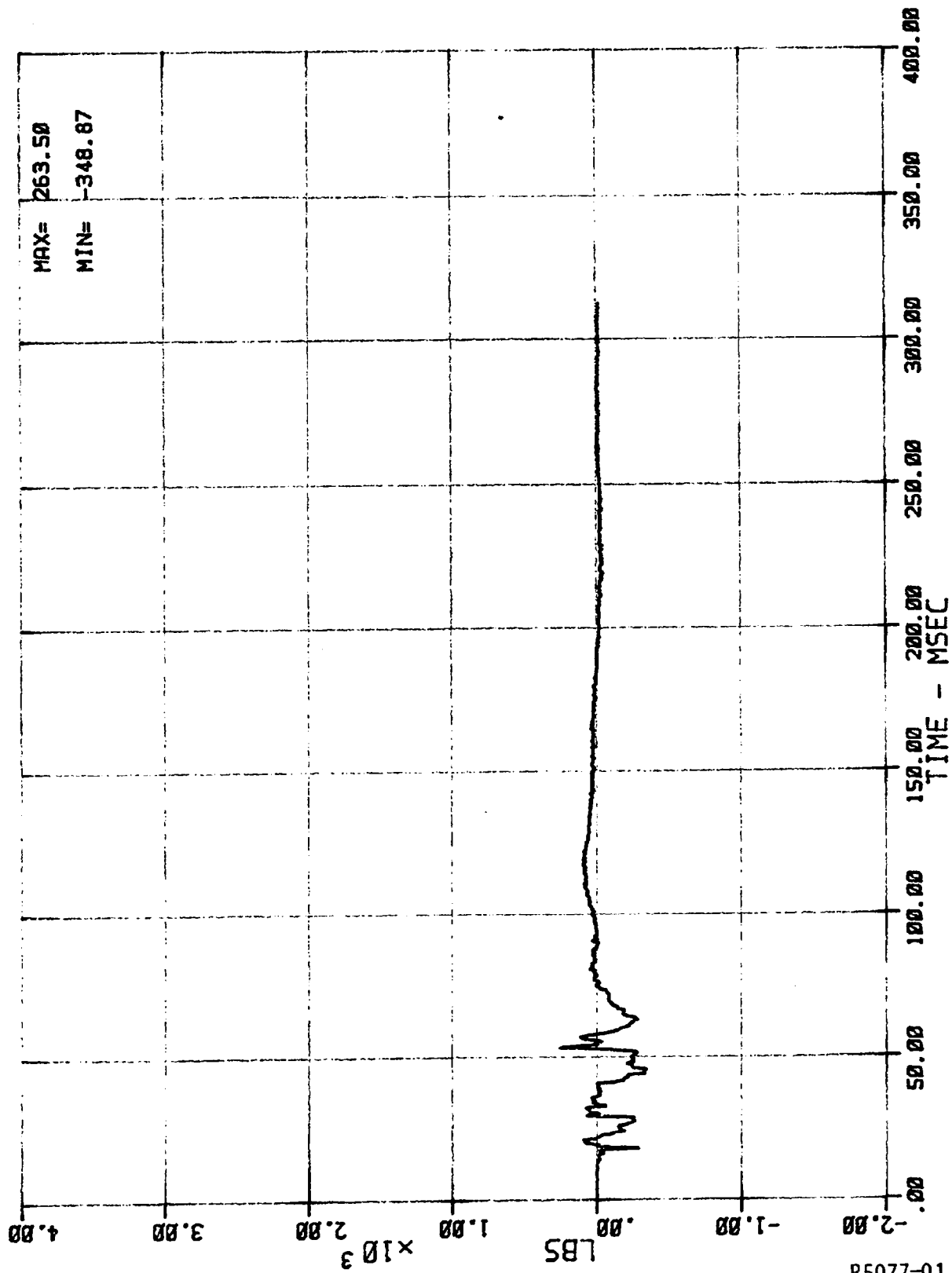
R5077-01



14 LC 01 1 RFM (DRIVER RIGHT FEMUR FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

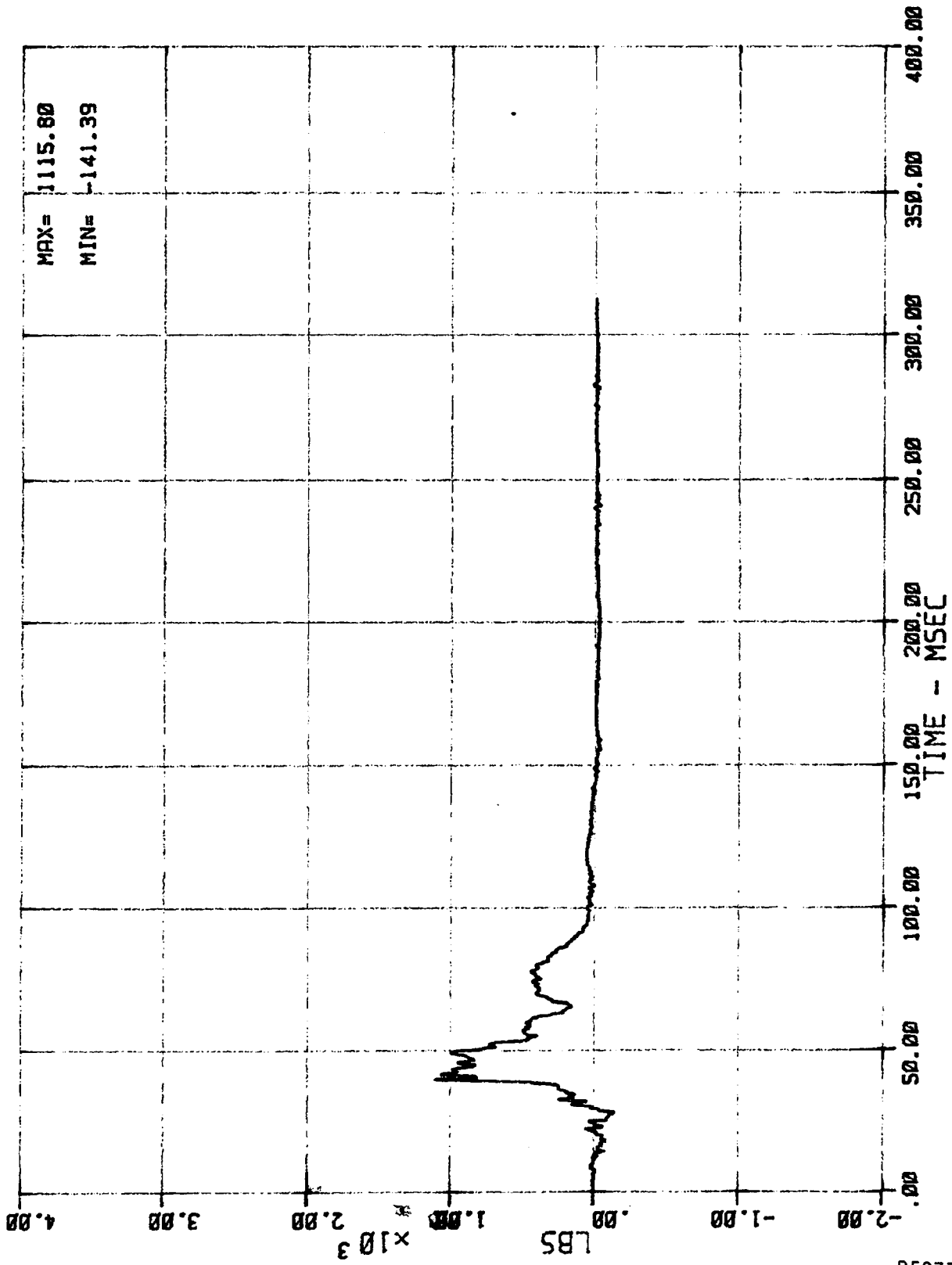
R5077-01



15 LC 01 2 LFM (PASSENGER LEFT FEMUR FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

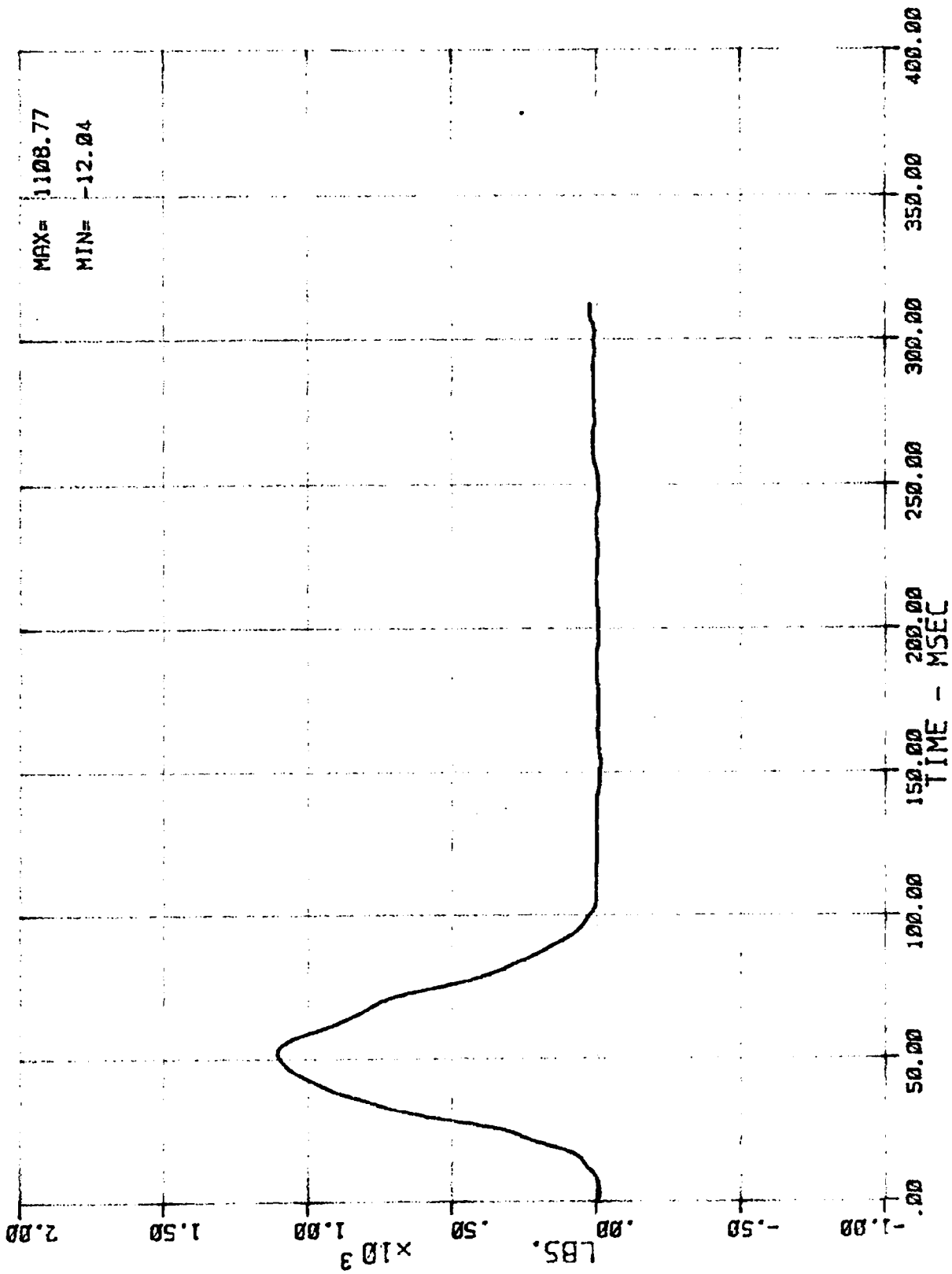
R5077-01



16 LC 01 2 RFM (PASSENGER RIGHT FEMUR FORCE)
MSE N33016 1986 SUZUKI SAMURAI

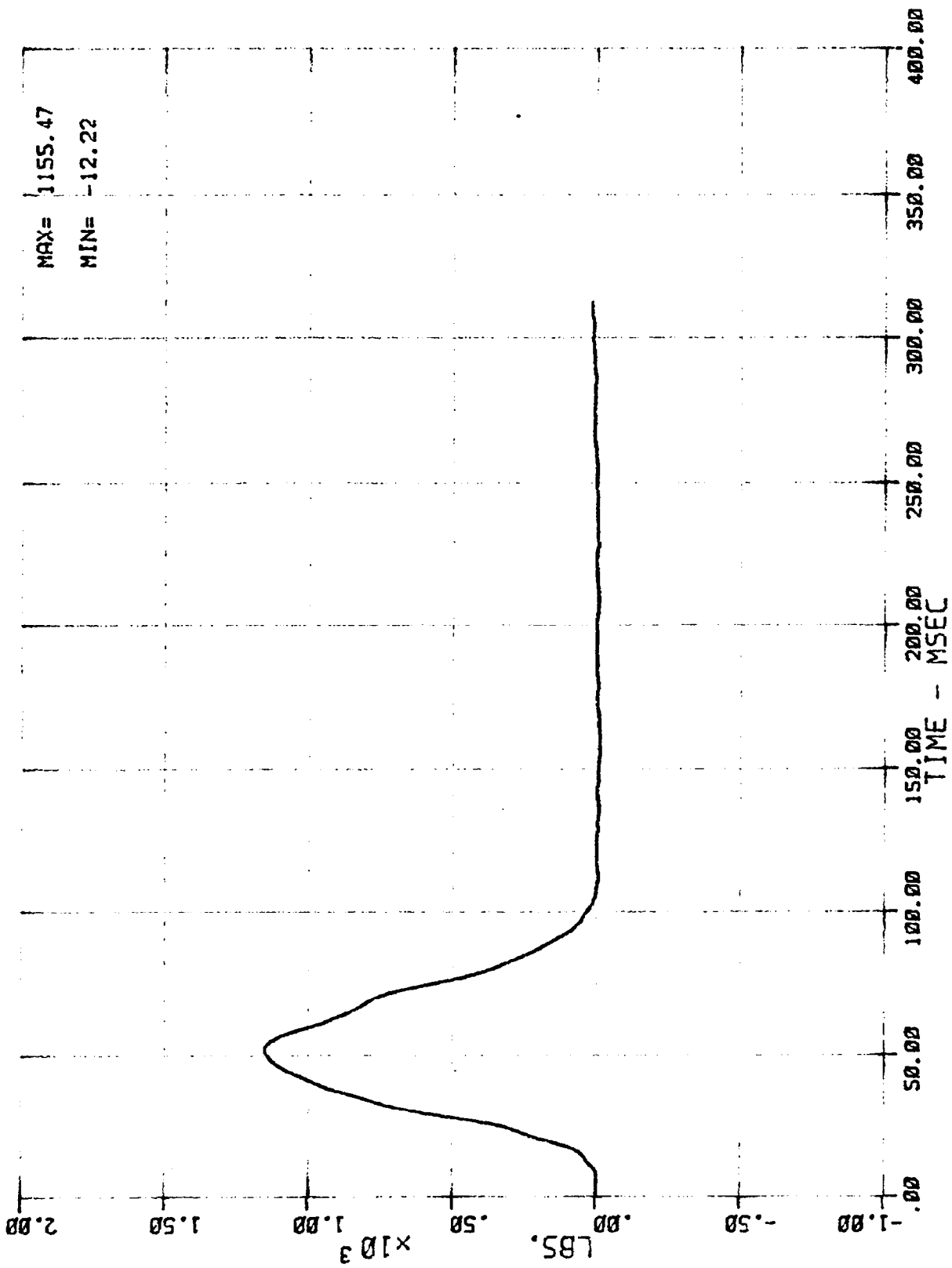
05/15/86

R5077-01



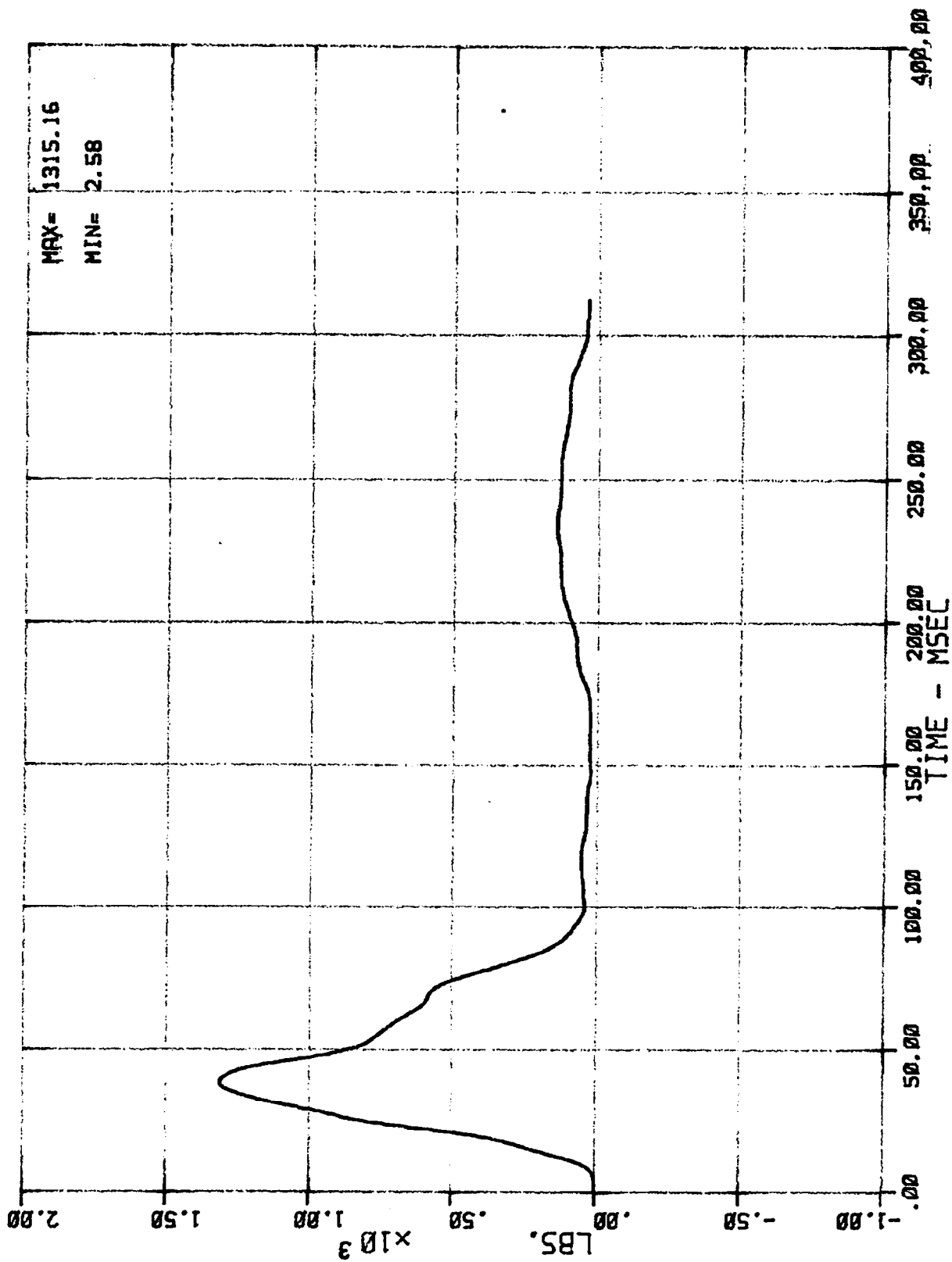
17 LC 01 1 L80 (DRIVER LAP BELT FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



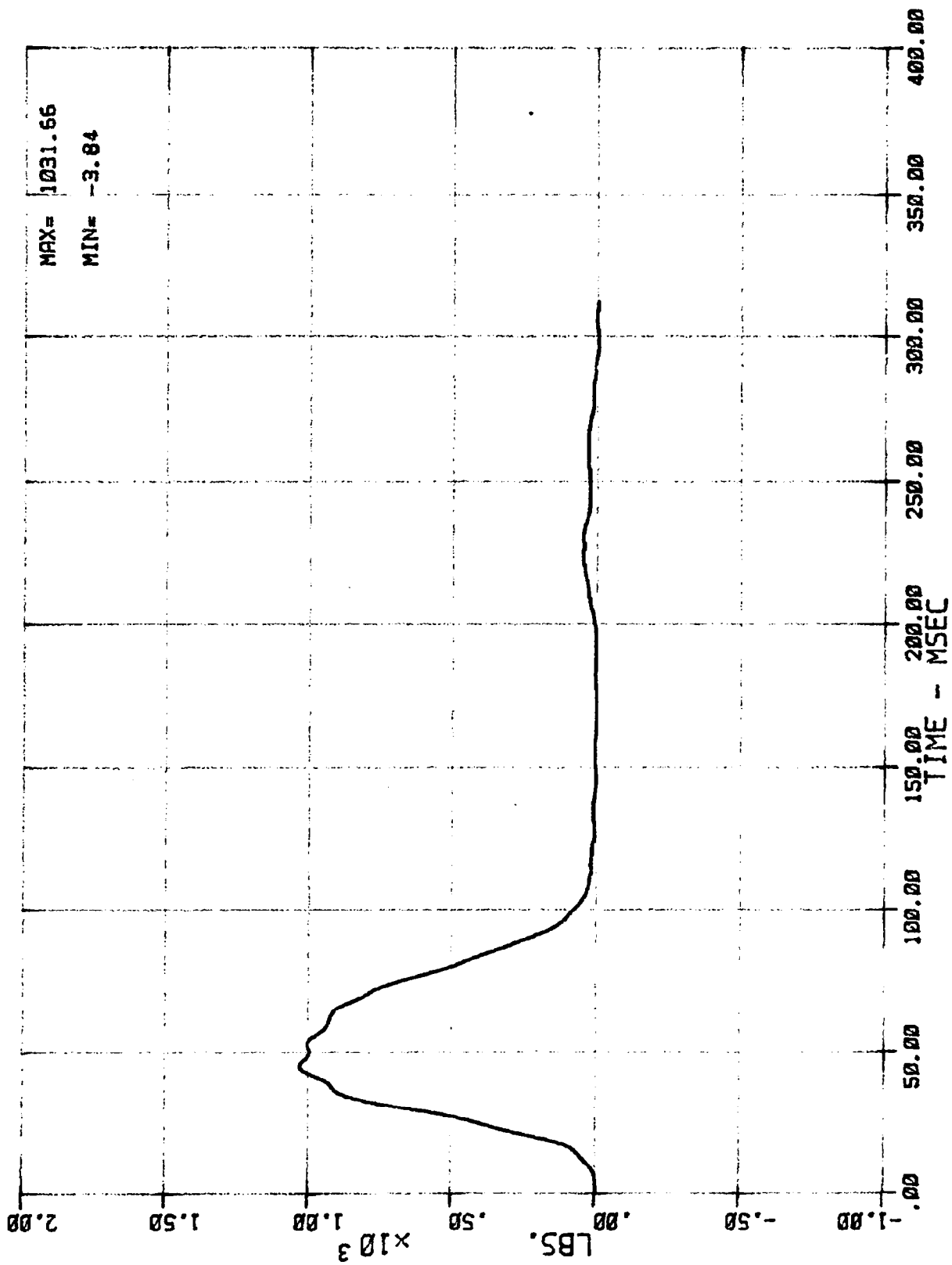
18 LC 01 1 SHB (DRIVER SHOULDER BELT FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



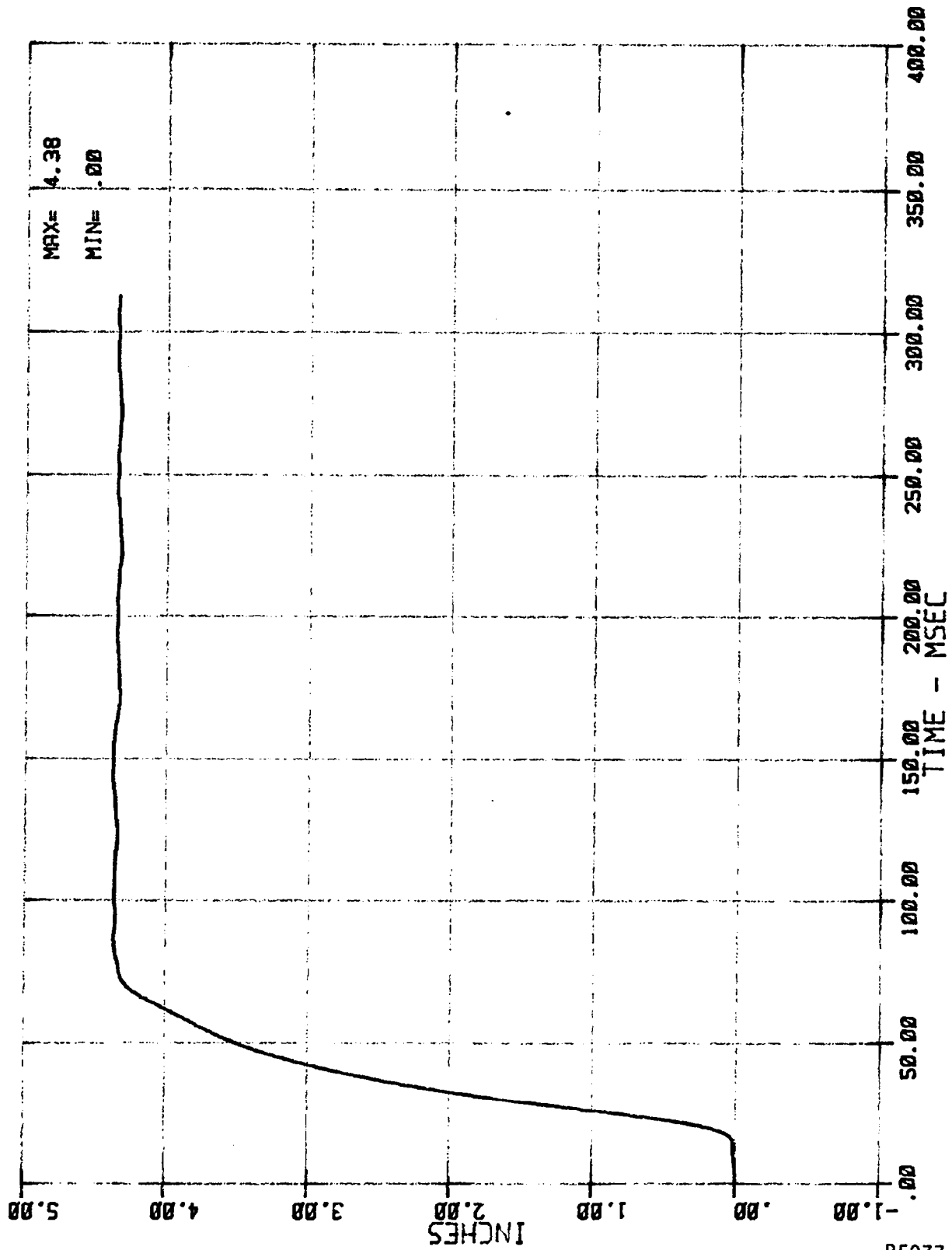
19 LC 01 2 LBO (PASSENGER LAP BELT FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



20 LC 01 2 SHB (PASSENGER SHOULDER BELT FORCE)
MSE N33016 1986 SUZUKI SAMURAI

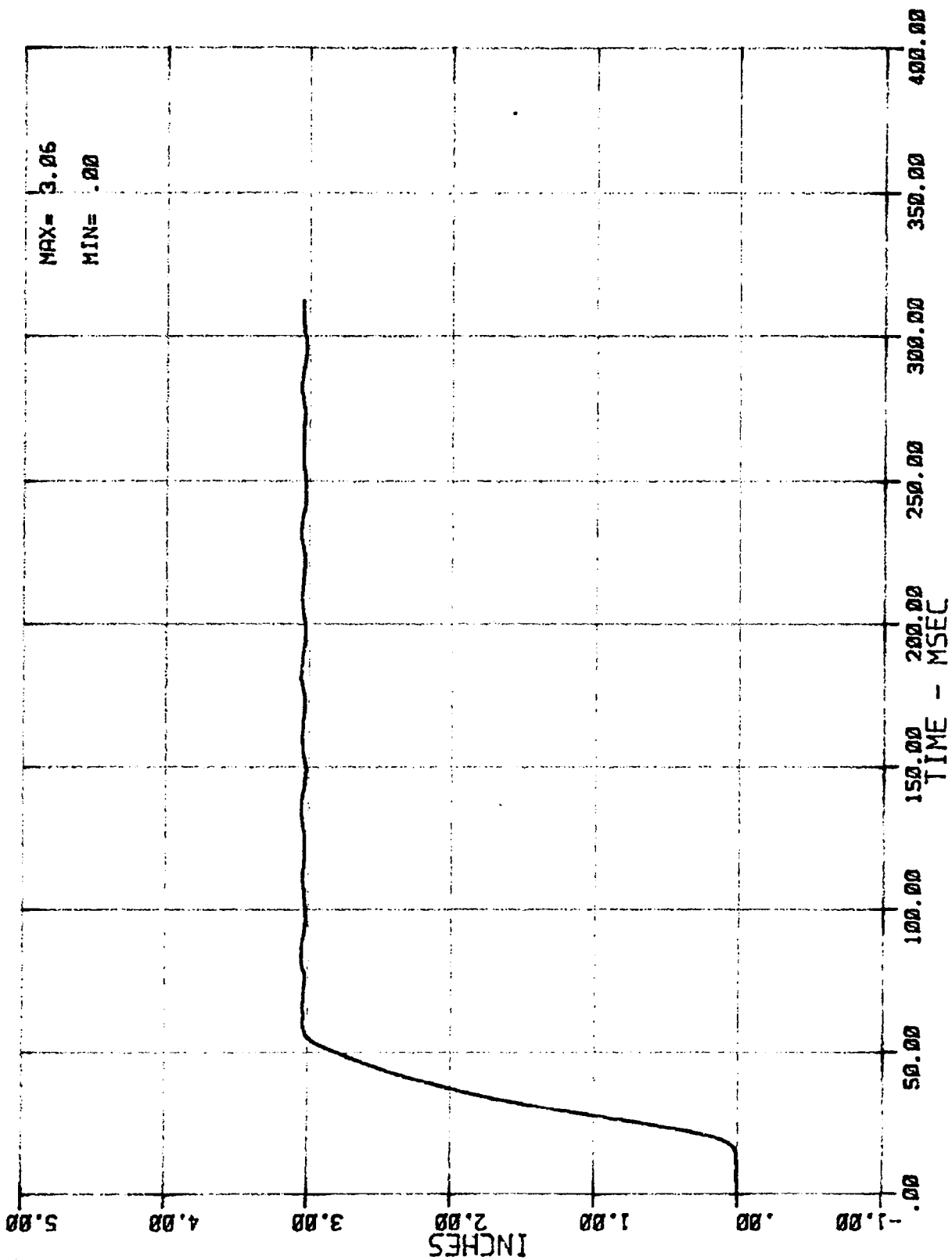
05/15/86



21 DT 01 1 SHB (DRIVER SHOULDER BELT PULLOUT)
MSE N33016 1986 SUZUKI SAMURAI

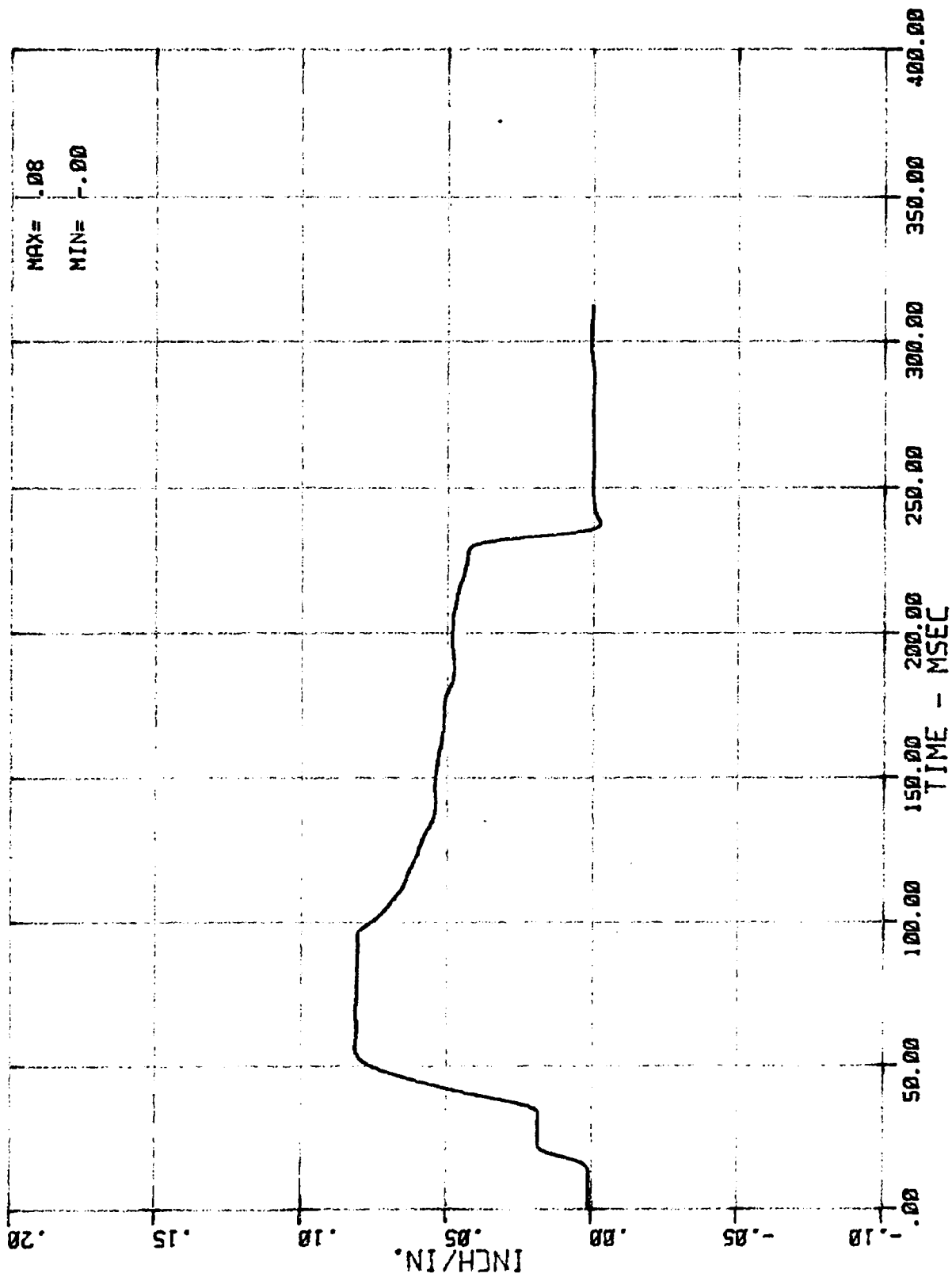
05/15/86

R5077-01



22 DT 01 2 SHB (PASSENGER SHOULDER BELT PULLOUT)
MSE N33016 1986 SUZUKI SAMURAI

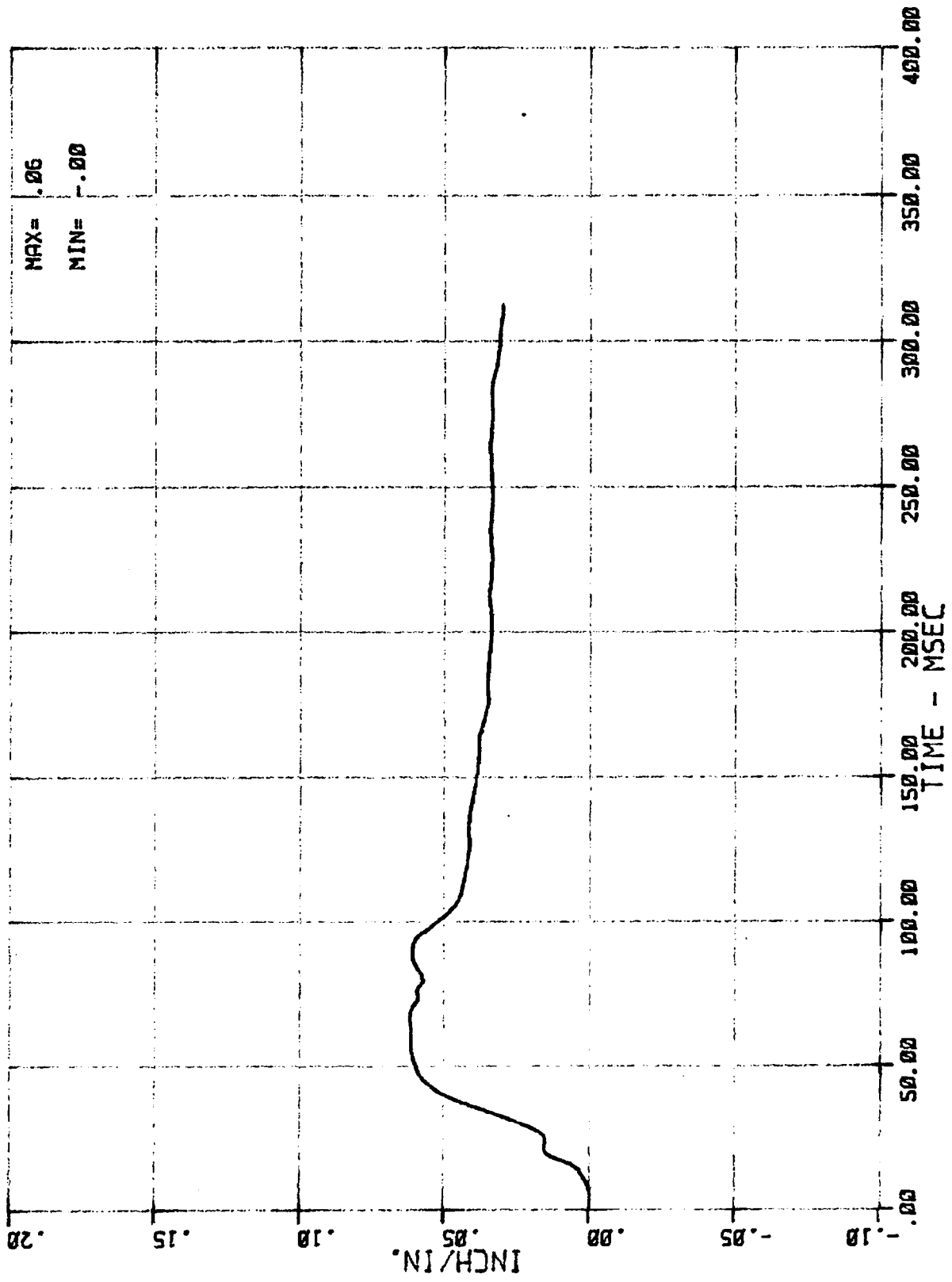
05/15/86



23 DT 01 1 SHB (DRIVER SHOULDER BELT STRETCH)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

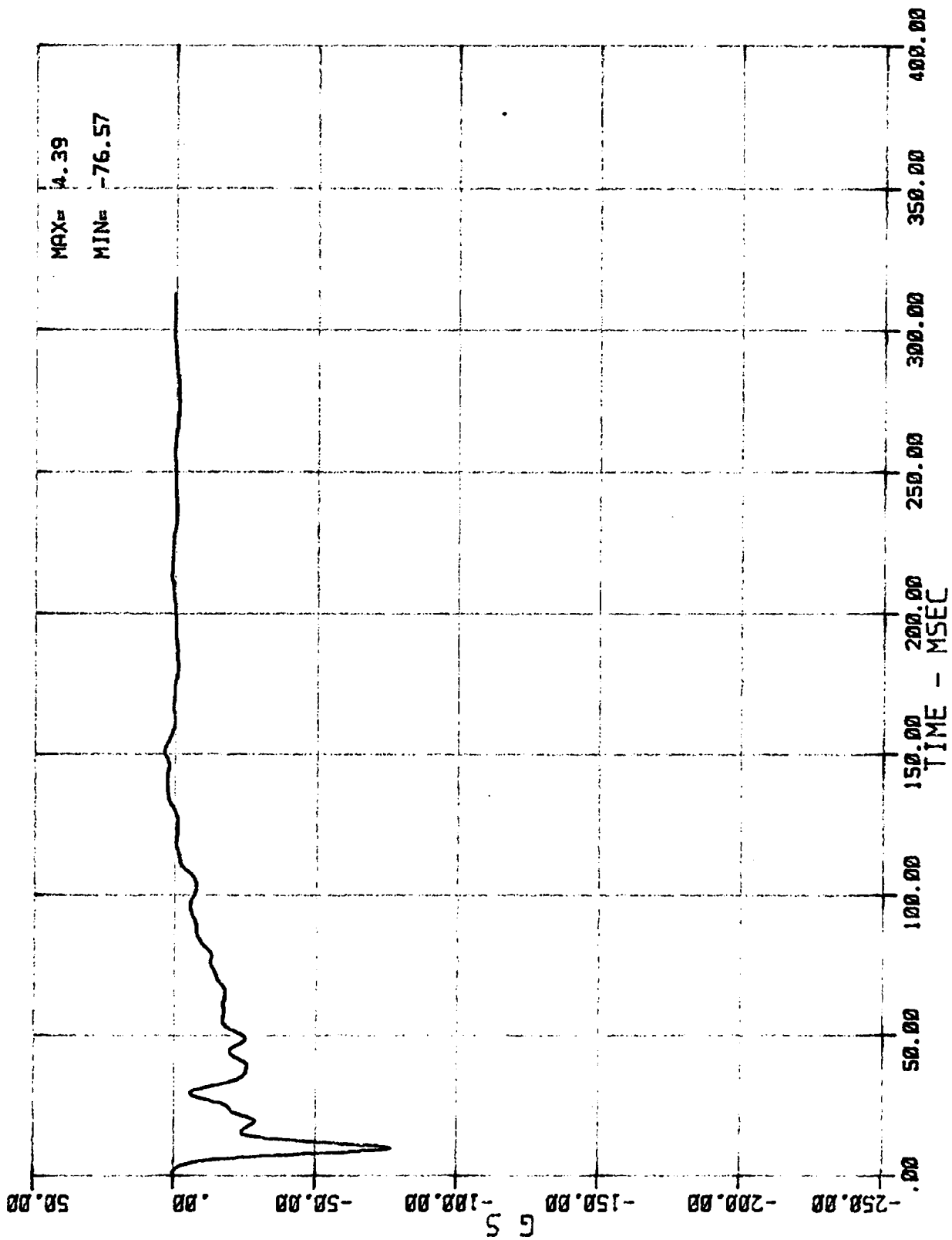
R5077-01



24 DT 01 2 SHB (PASSENGER SHOULDER BELT STRETCH)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

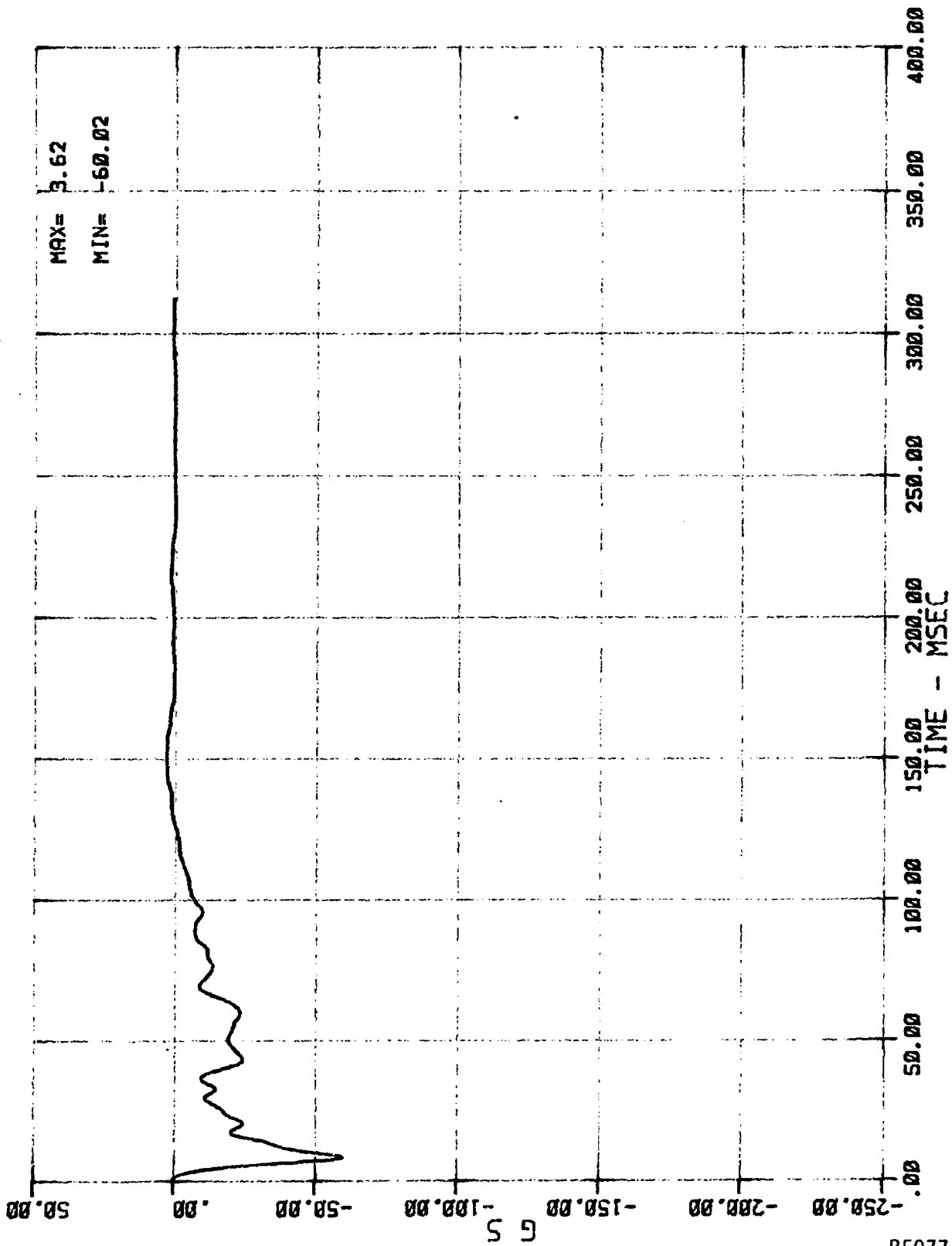
R5077-01



25 AC 01 N LRF X (LEFT REAR FLOOR ACCE. -- X AXIS
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

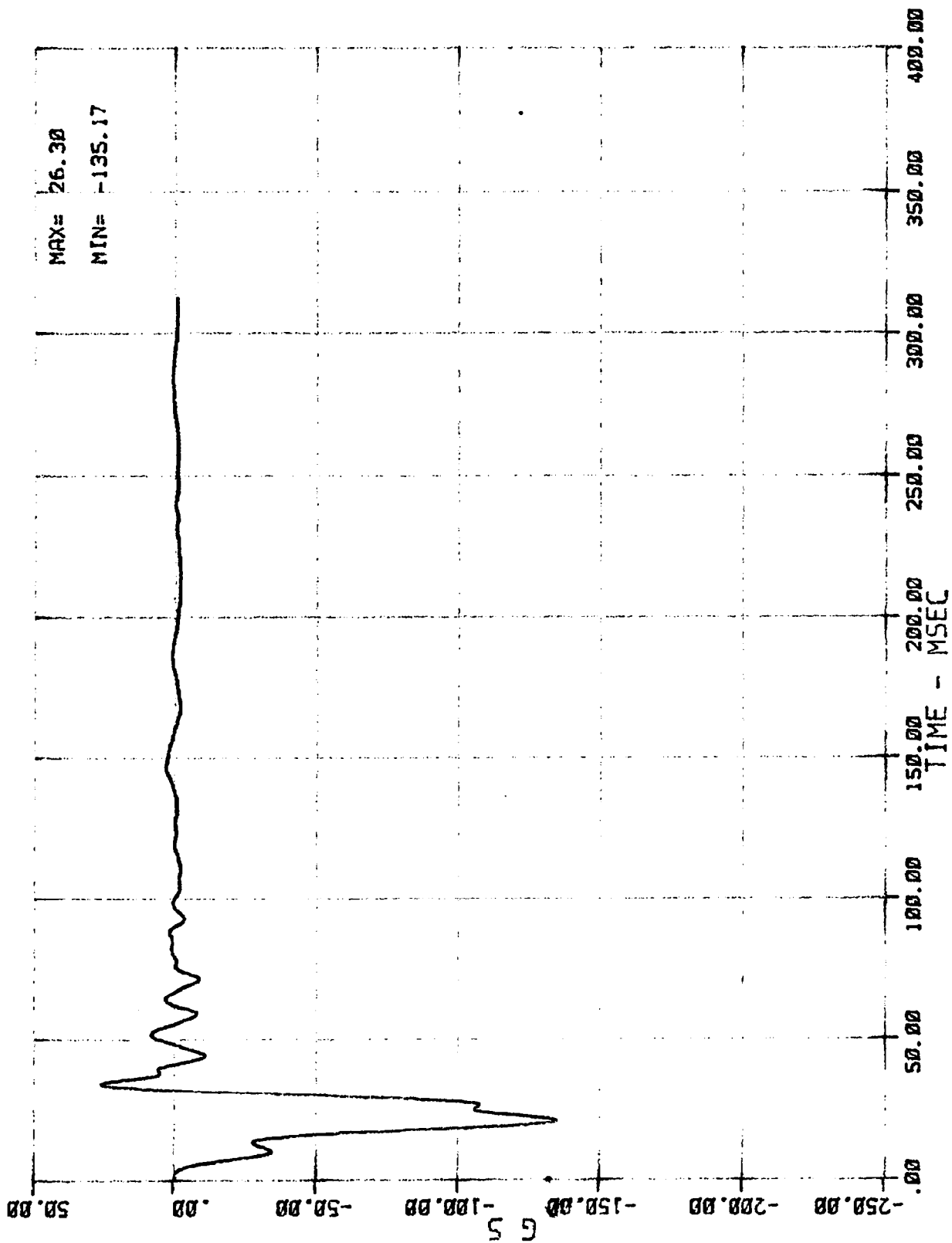
R5077-01



26 AC 01 N RRF X (RIGHT REAR FLOOR ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

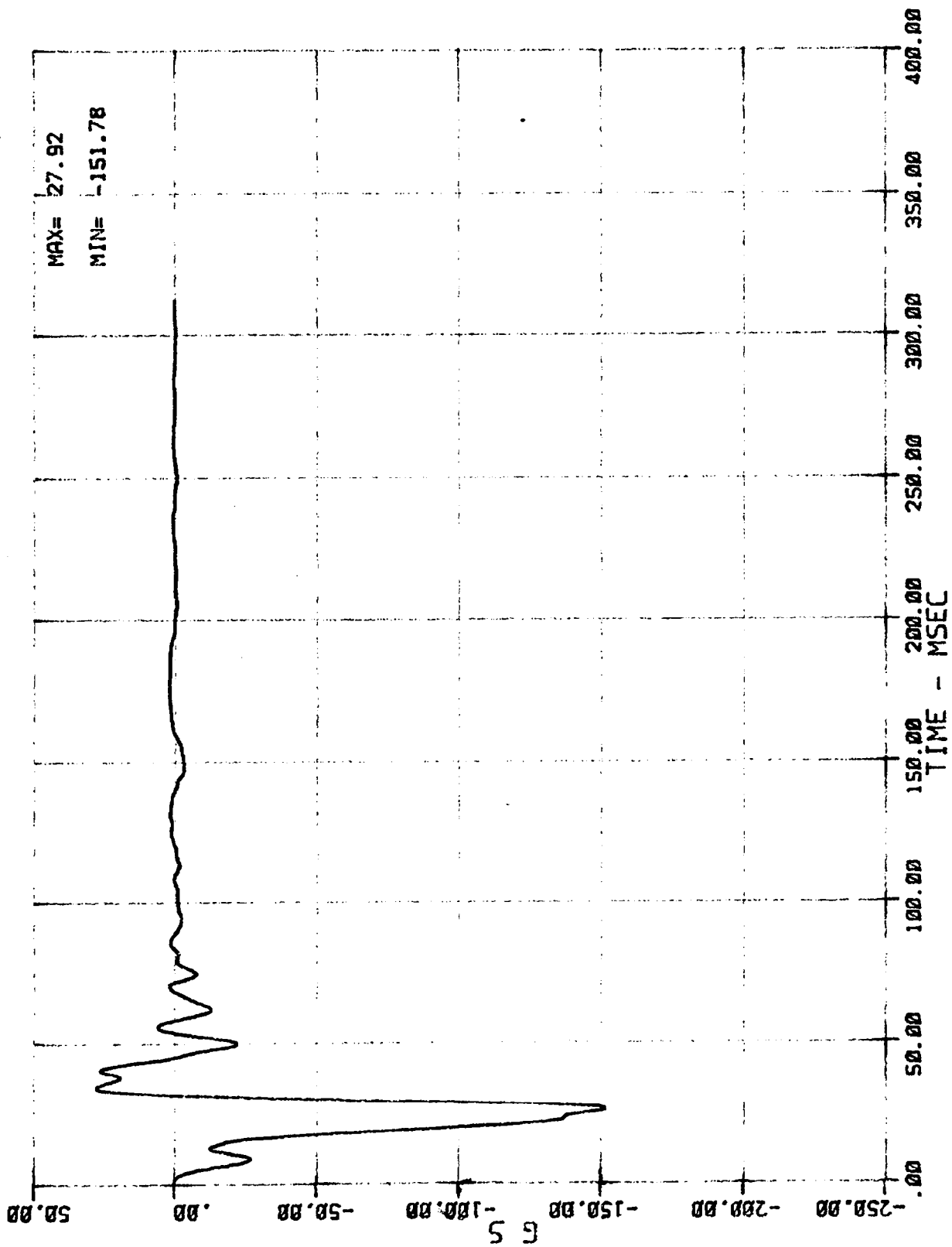
R5077-01



27 AC 01 N ENG X (TOP OF ENGINE ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

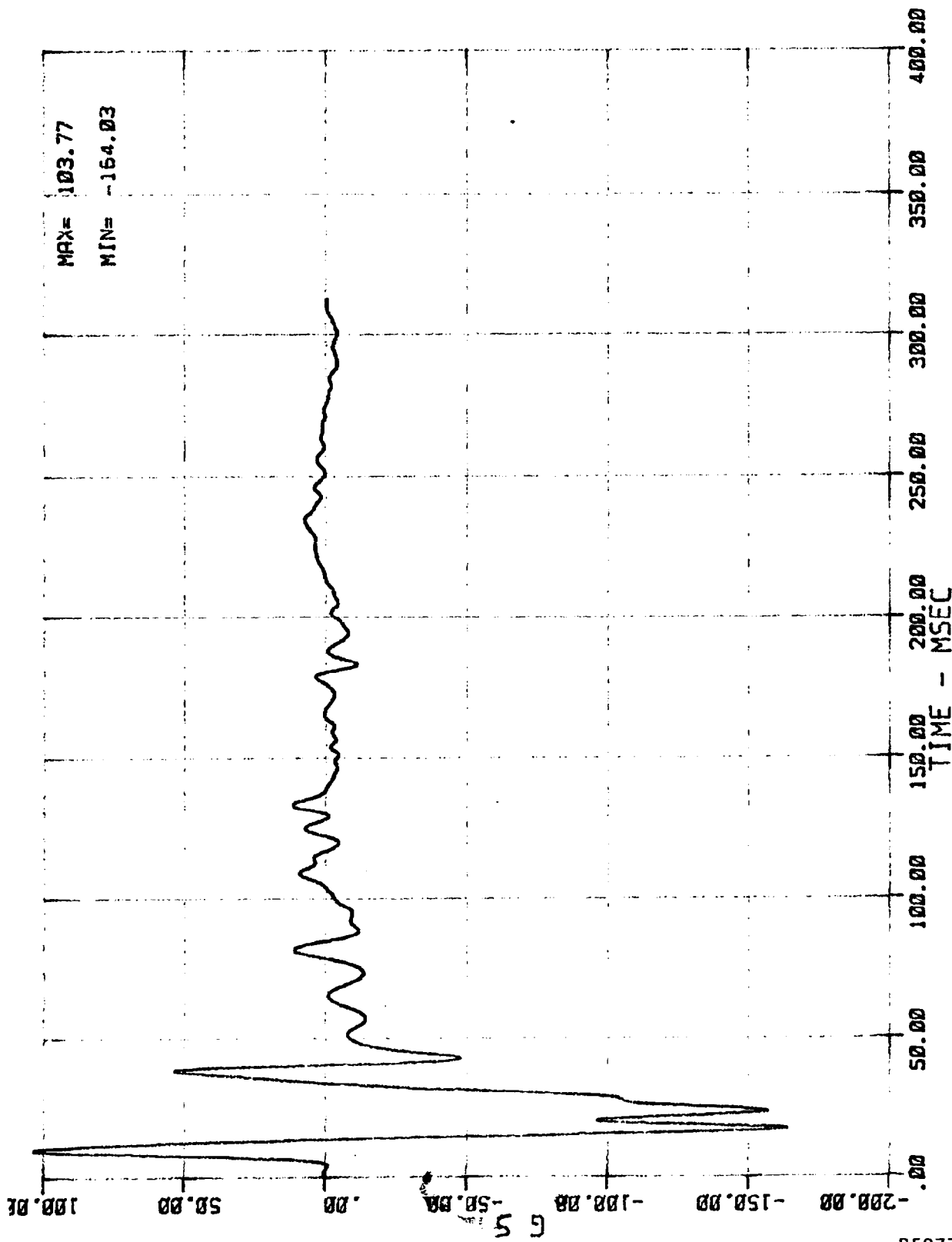
R5077-01



28 AC 01 N ENG X (BOTTOM OF ENGINE ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

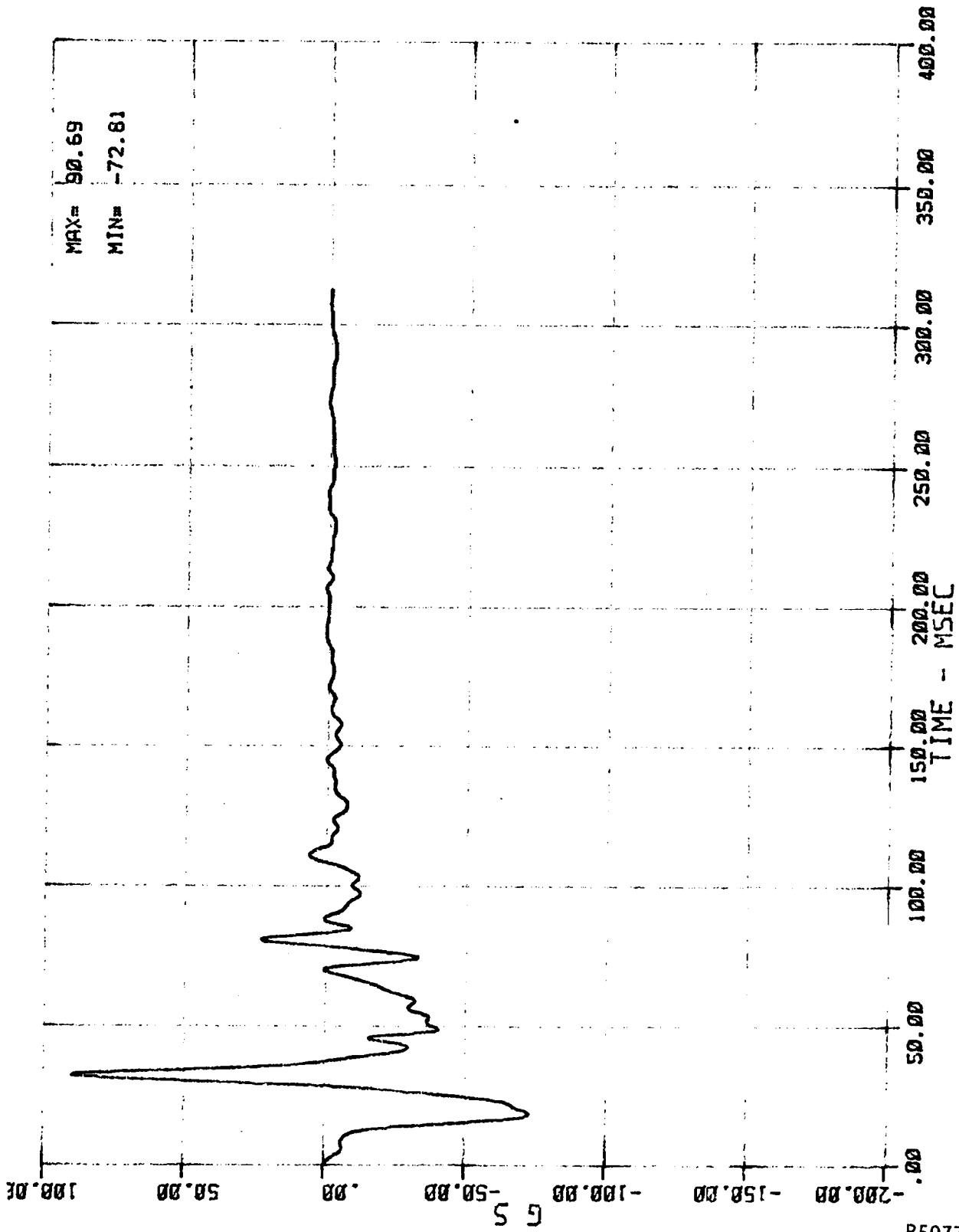
R5077-01



29 AC 01 N BCR X (RIGHT FRONT WHEEL ACCEL. -- X AX[IS])
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

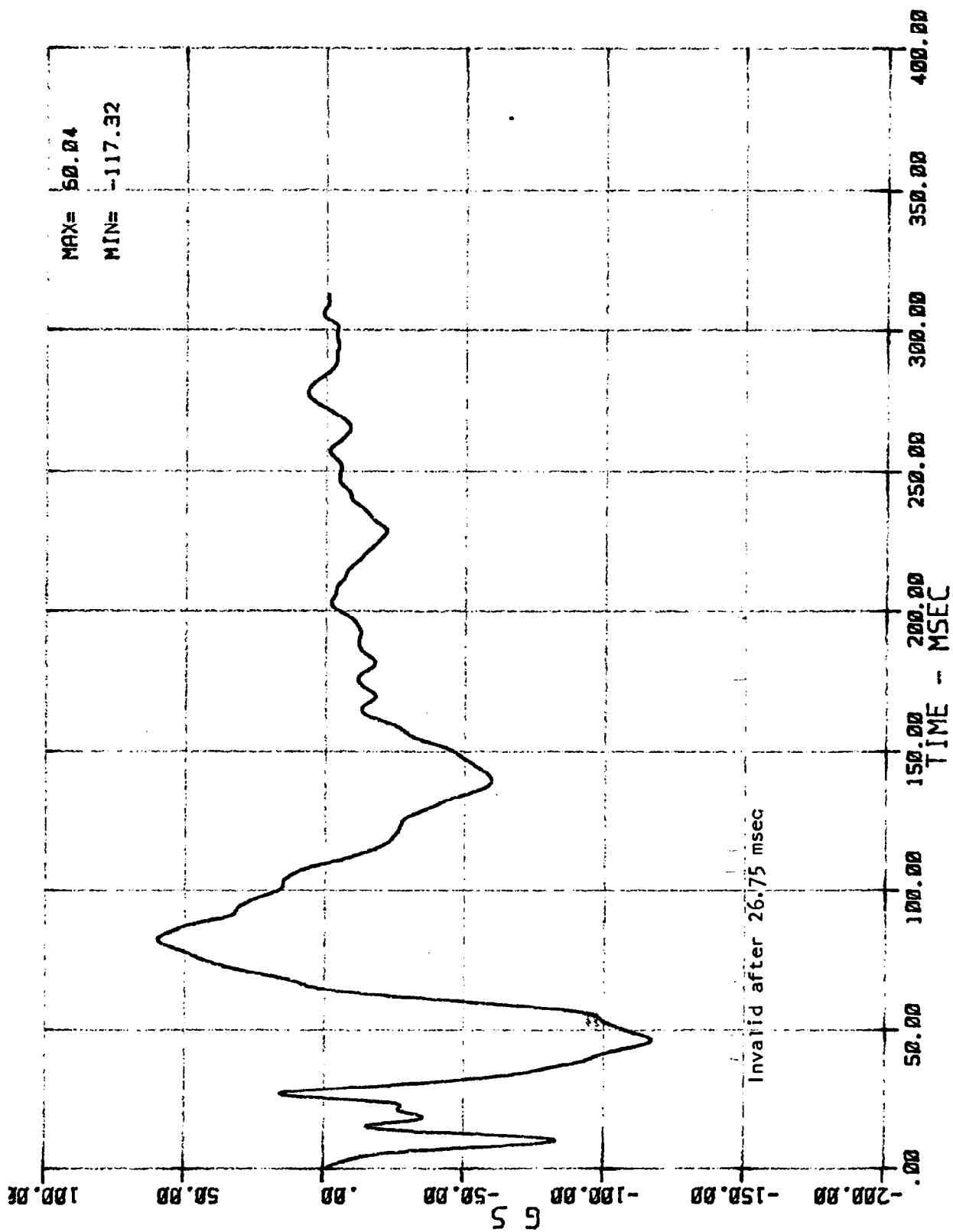
R5077-01



30 AC 01 N DPC (CENTER OF DASH ACCEL. -- AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

R5077-01



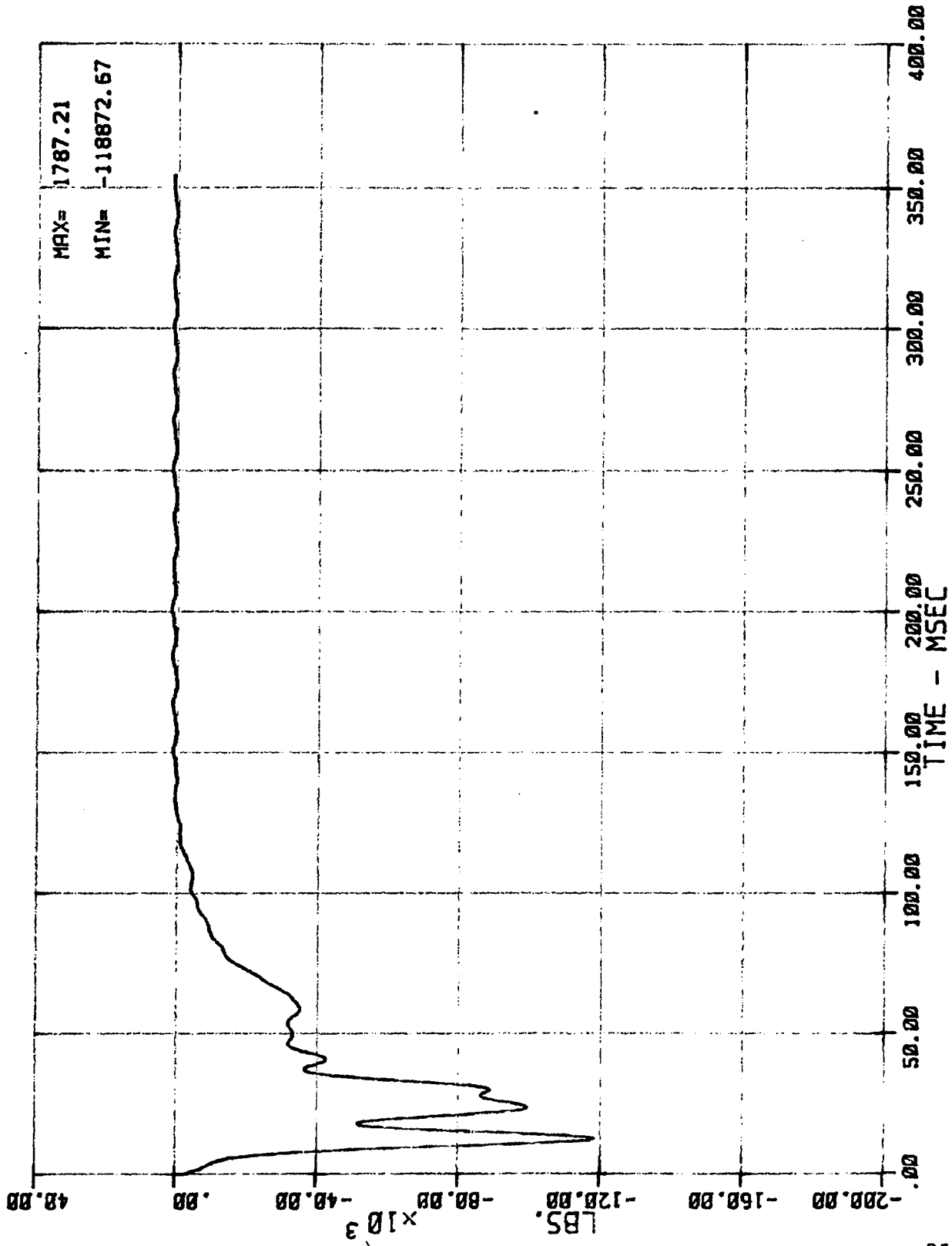
31 AC 01 N VCG (VEHICLE C.G. ACCEL. -- X AXIS)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

R5077-01

APPENDIX B-2

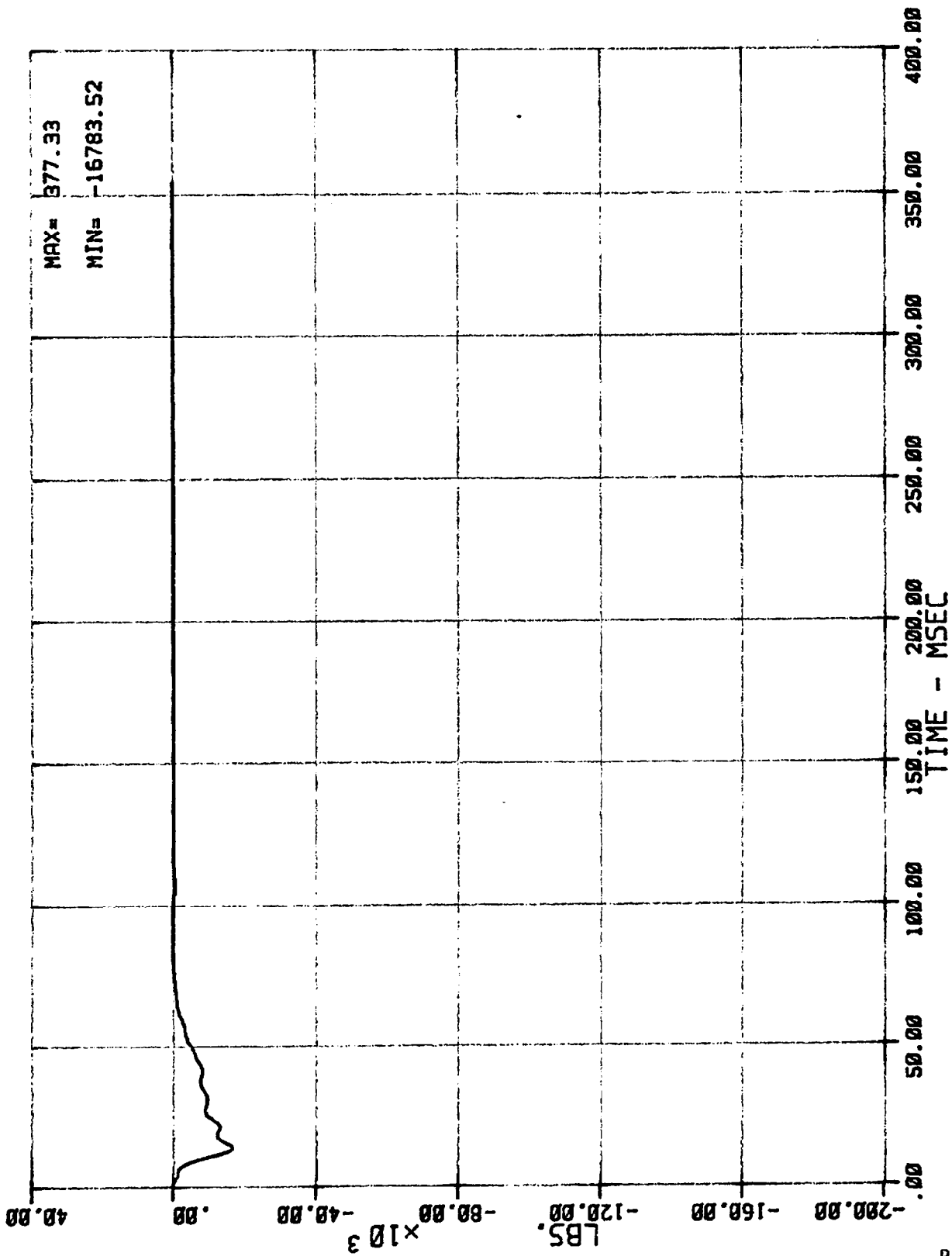
LOAD CELL BARRIER
DATA



TOTAL SUM LOAD CELL BARRIER FORCE
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

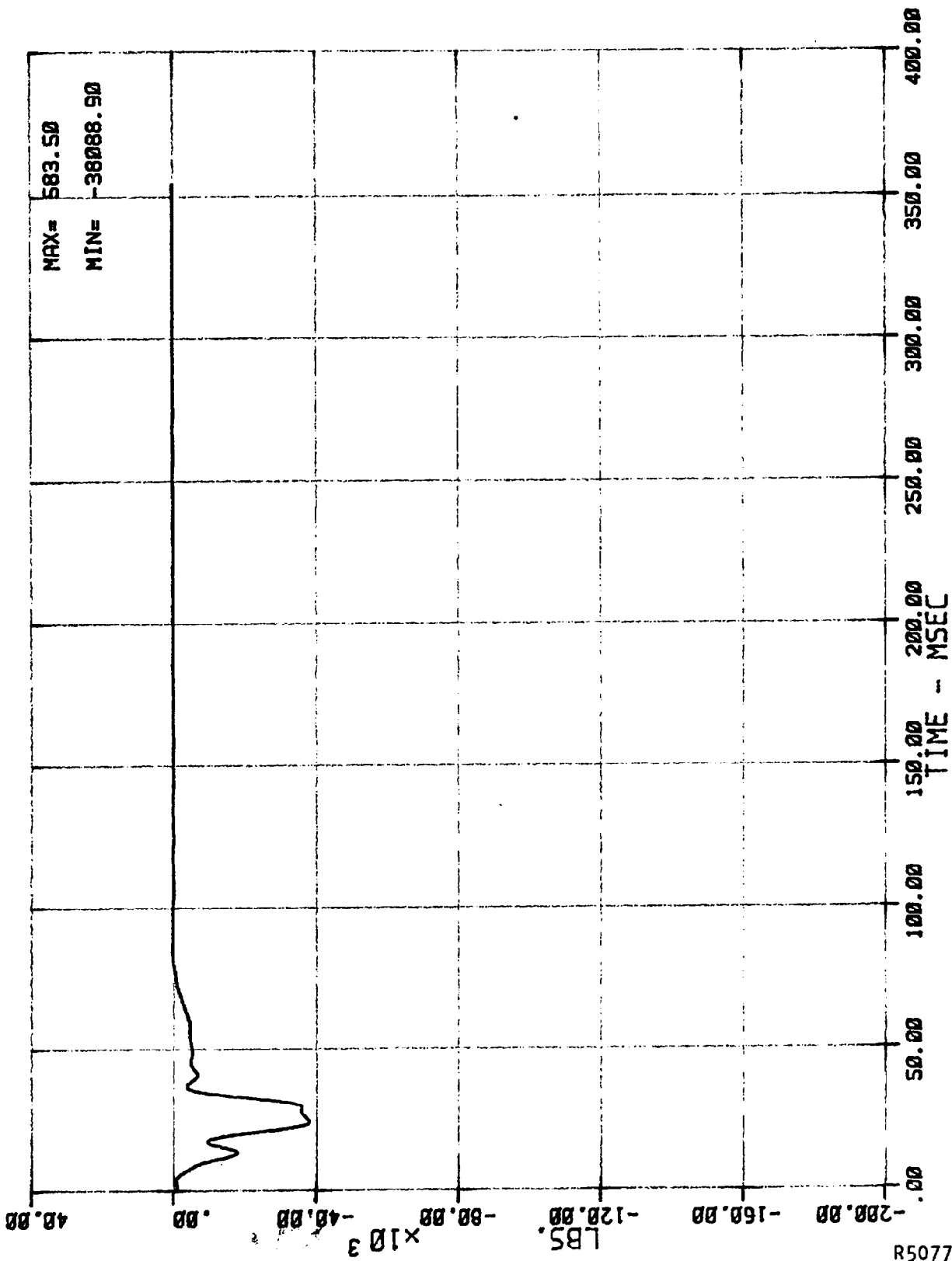
R5077-01



GROUP 1 SUM (C1.C2.C3.D1.D2.D3) LOAD CELL BARRIER FORCE
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

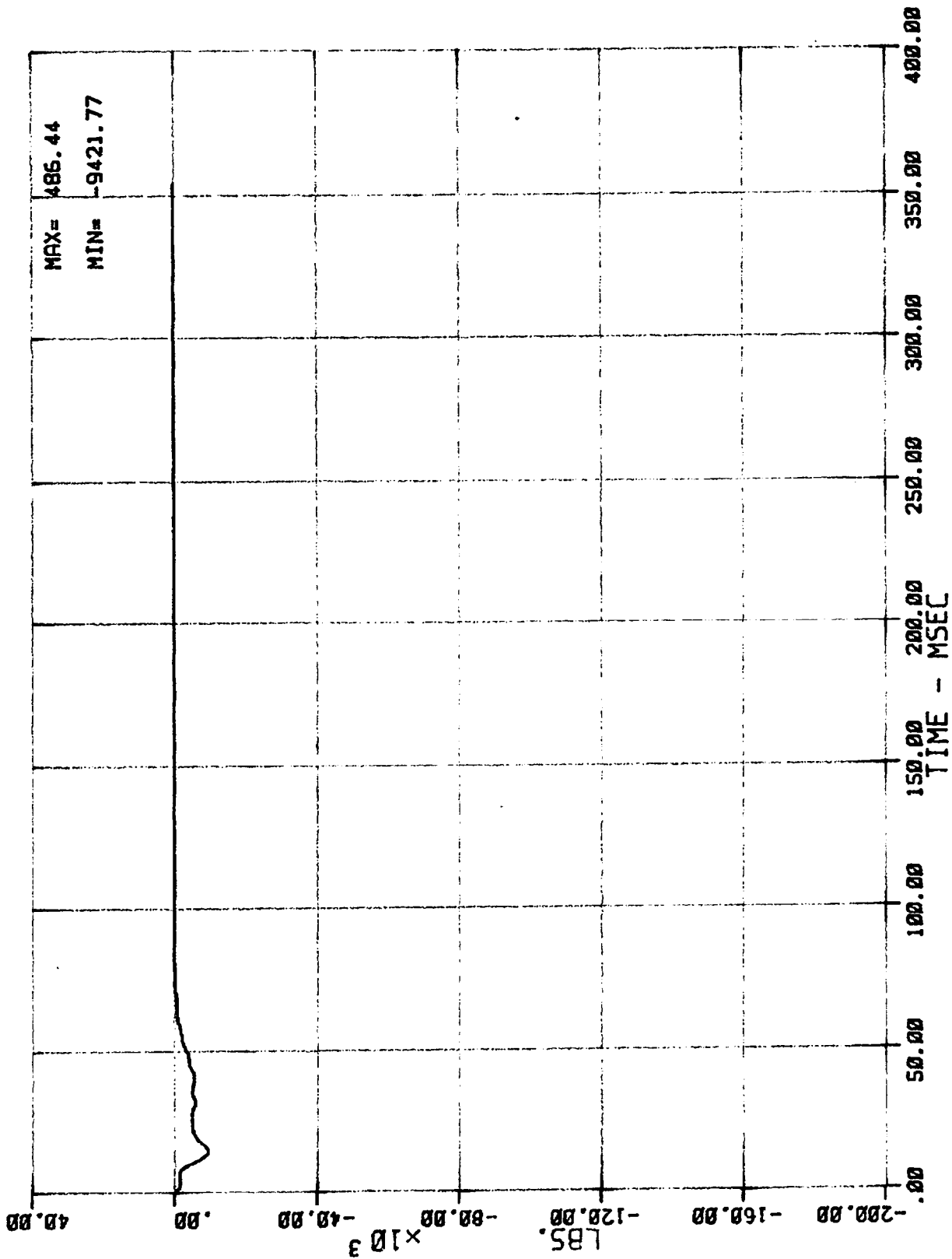
R5077-01



GROUP 2 SUM (C4.C5.C6.D4.D5.D6) LOAD CELL BARRIER FORCE
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

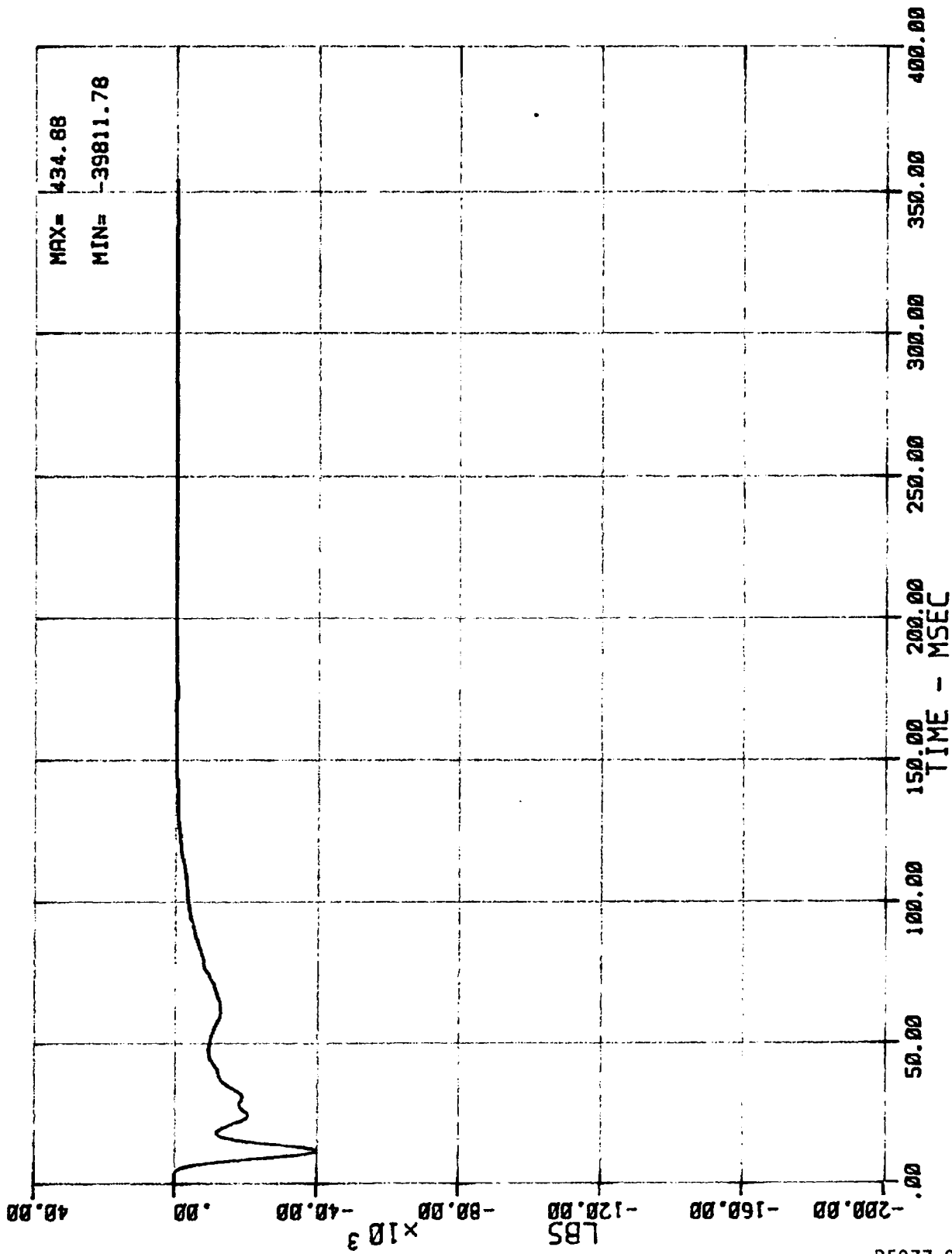
R5077-01



GROUP 3 (C7,C8,C9,D7,D8,D9) LOAD CELL BARRIER FORCE
NSE N33016 1986 SUZUKI SAMURAI

05/15/86

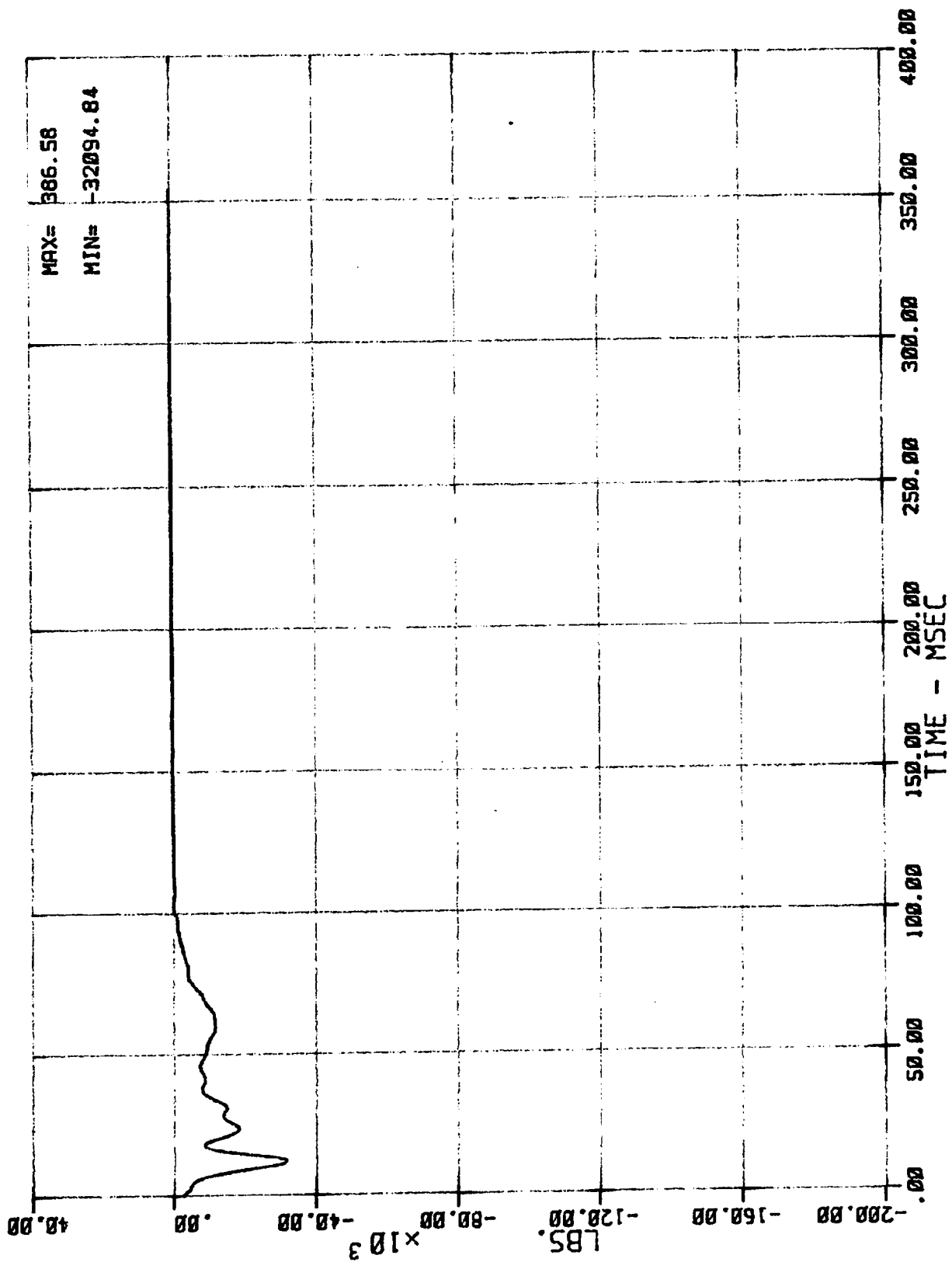
R5077-01



GROUP 4 (A1,A2,A3,B1,B2,B3) LOAD CELL BARRIER FORCE
HSE N33016 1986 SUZUKI SAMURAI

05/15/86

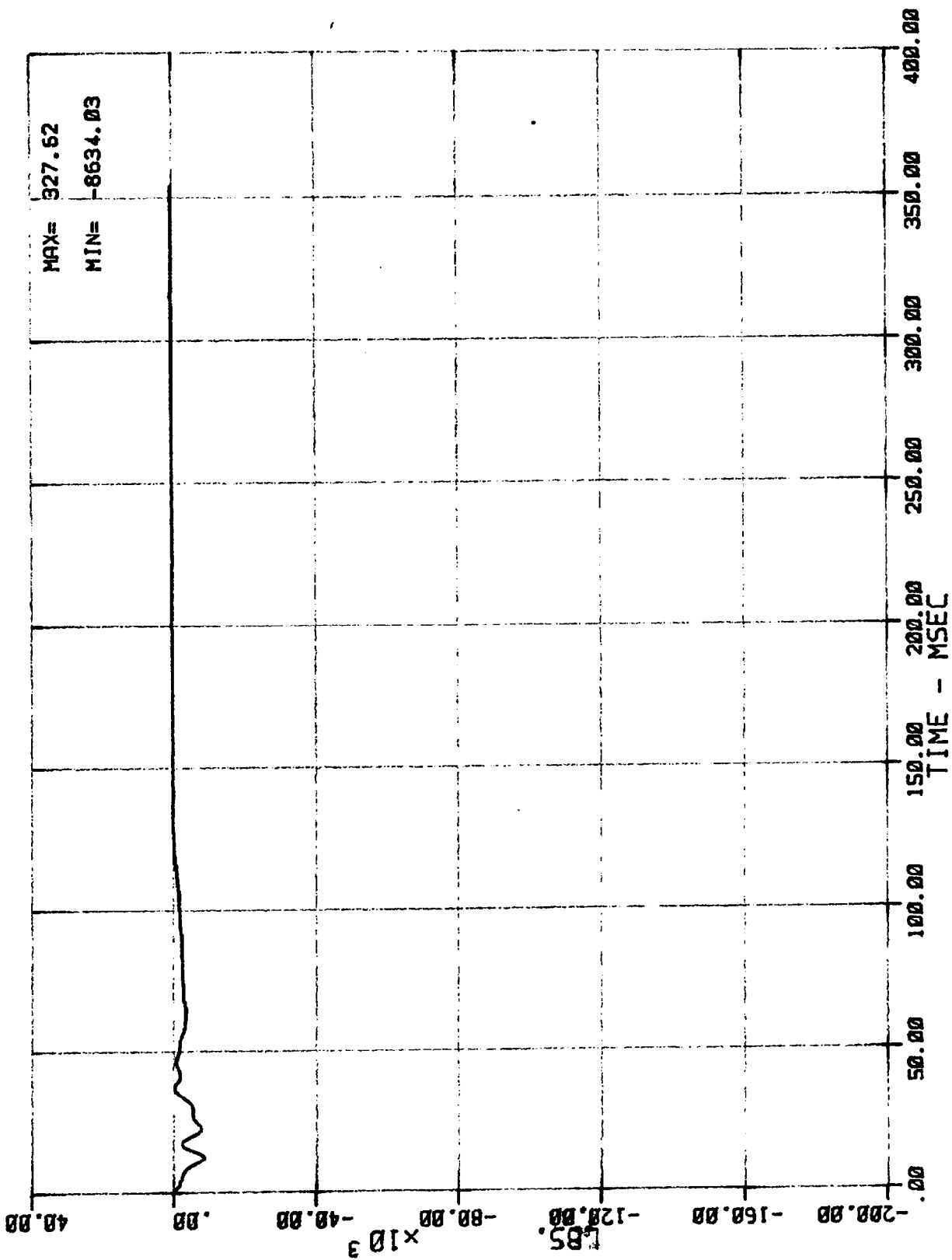
R5077-01



GROUP 5 SUM (A4.A5.A6.B4.B5.B6) LOAD CELL BARRIER FORCE
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

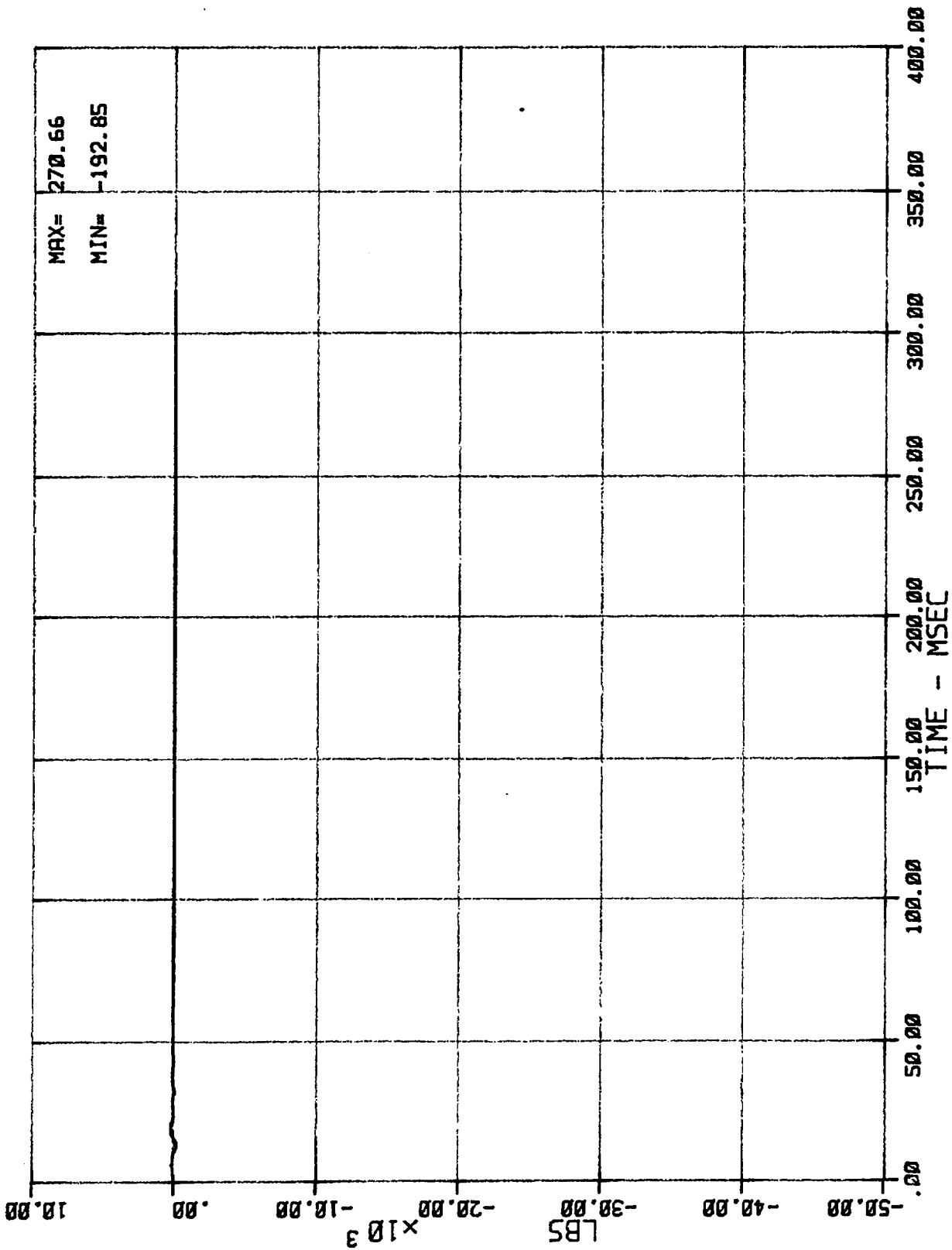
R5077-01



GROUP 6 SUM (A7,A8,A9,B7,B8,B9) LOAD CELL BARRIER FORCE
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

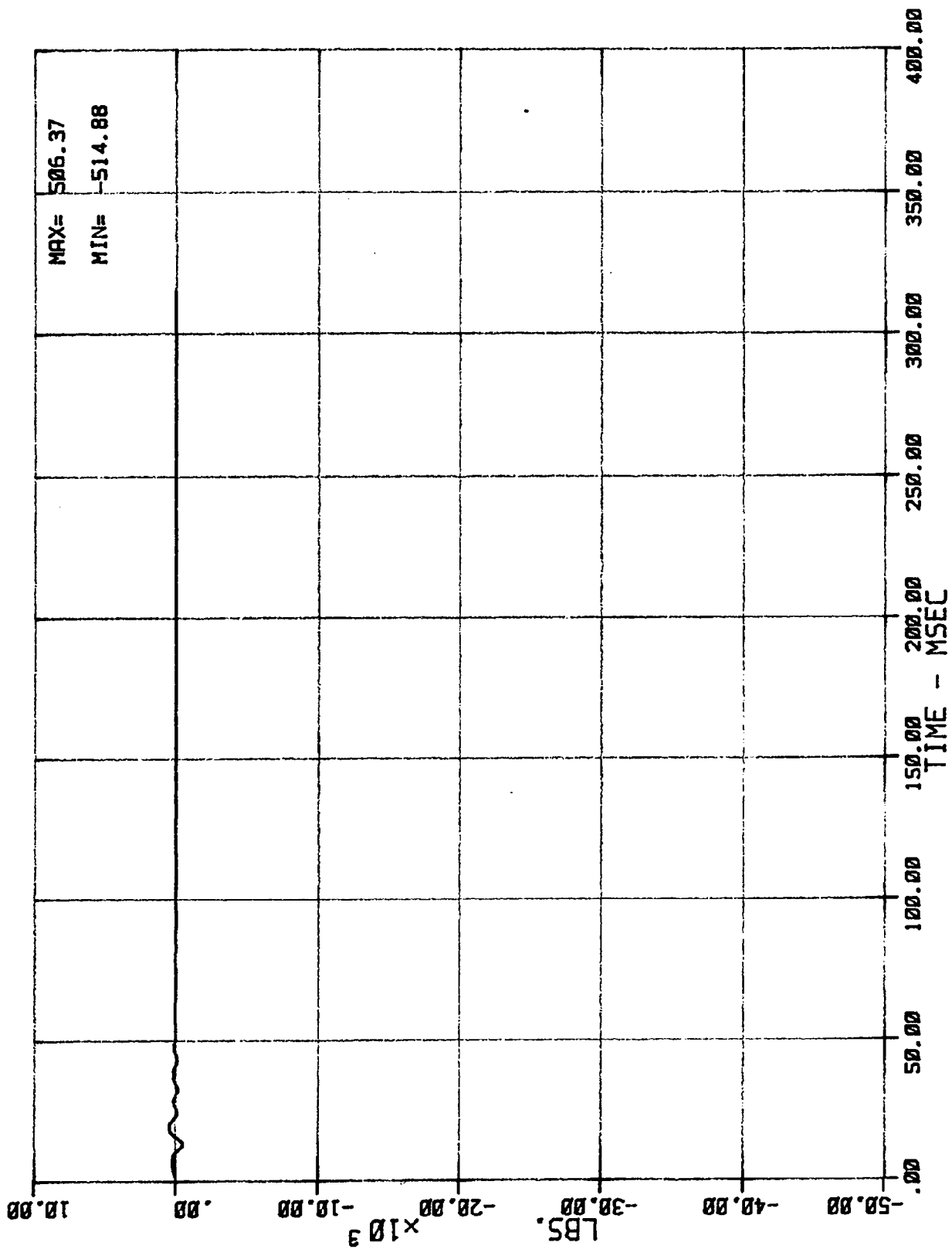
R5077-01



32 LC BA N BA1 (BARRIER LOAD CELL A1 FORCE NO L.C.)
MSE N33016 1986 SUZUKI SAMURAI

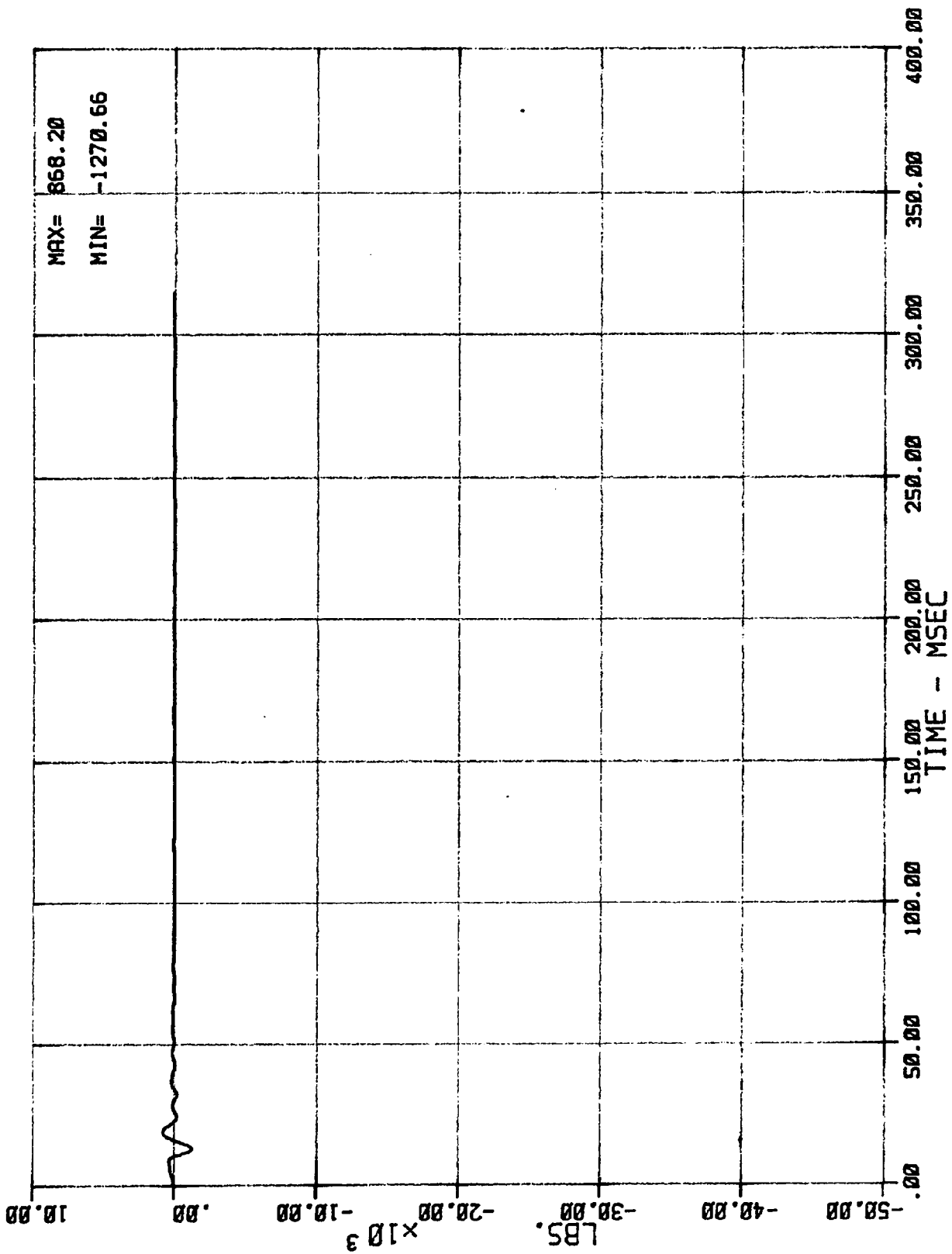
05/15/86

R5077-01



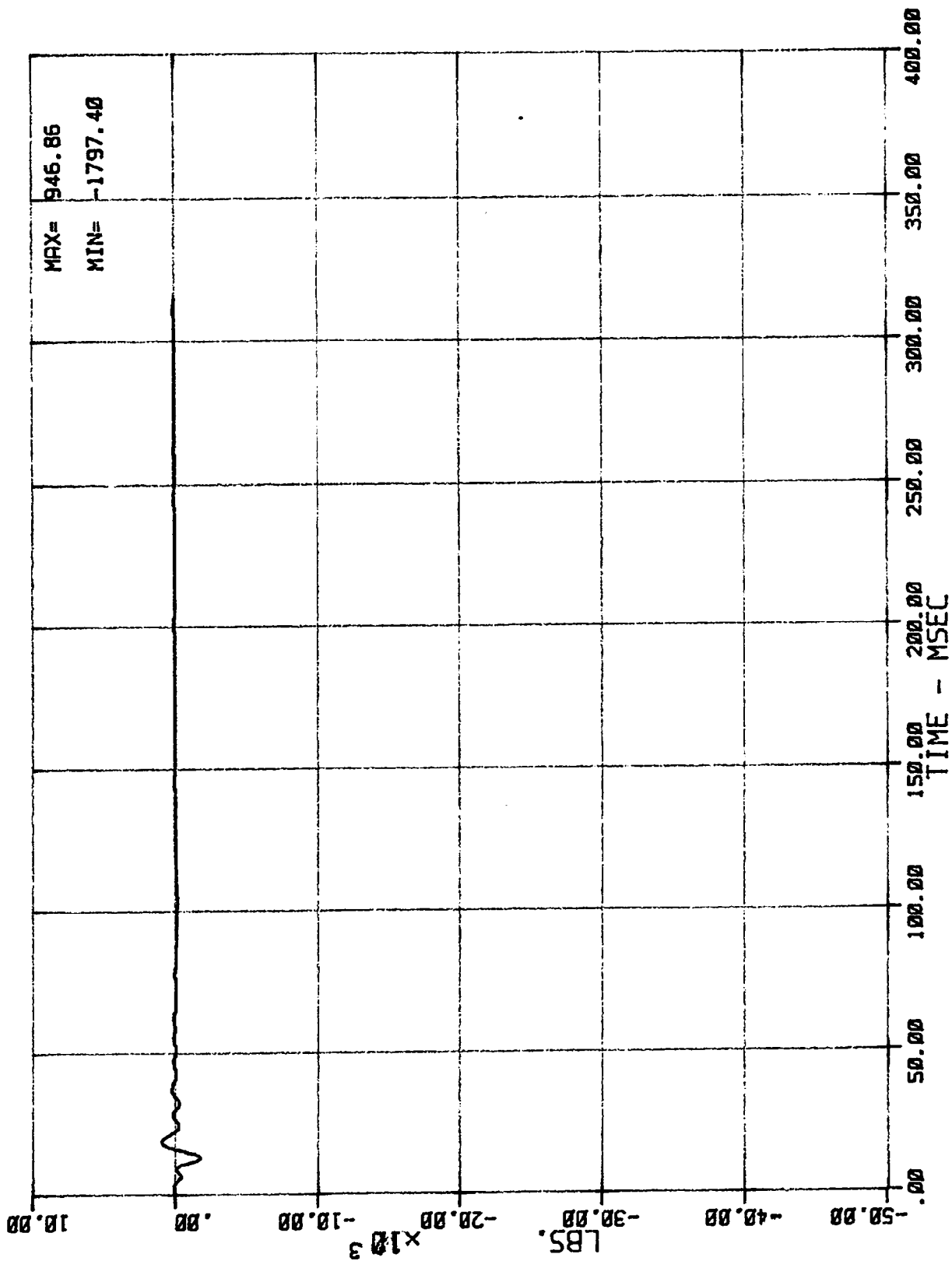
33 LC BA N BA2 (BARRIER LOAD CELL A2 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



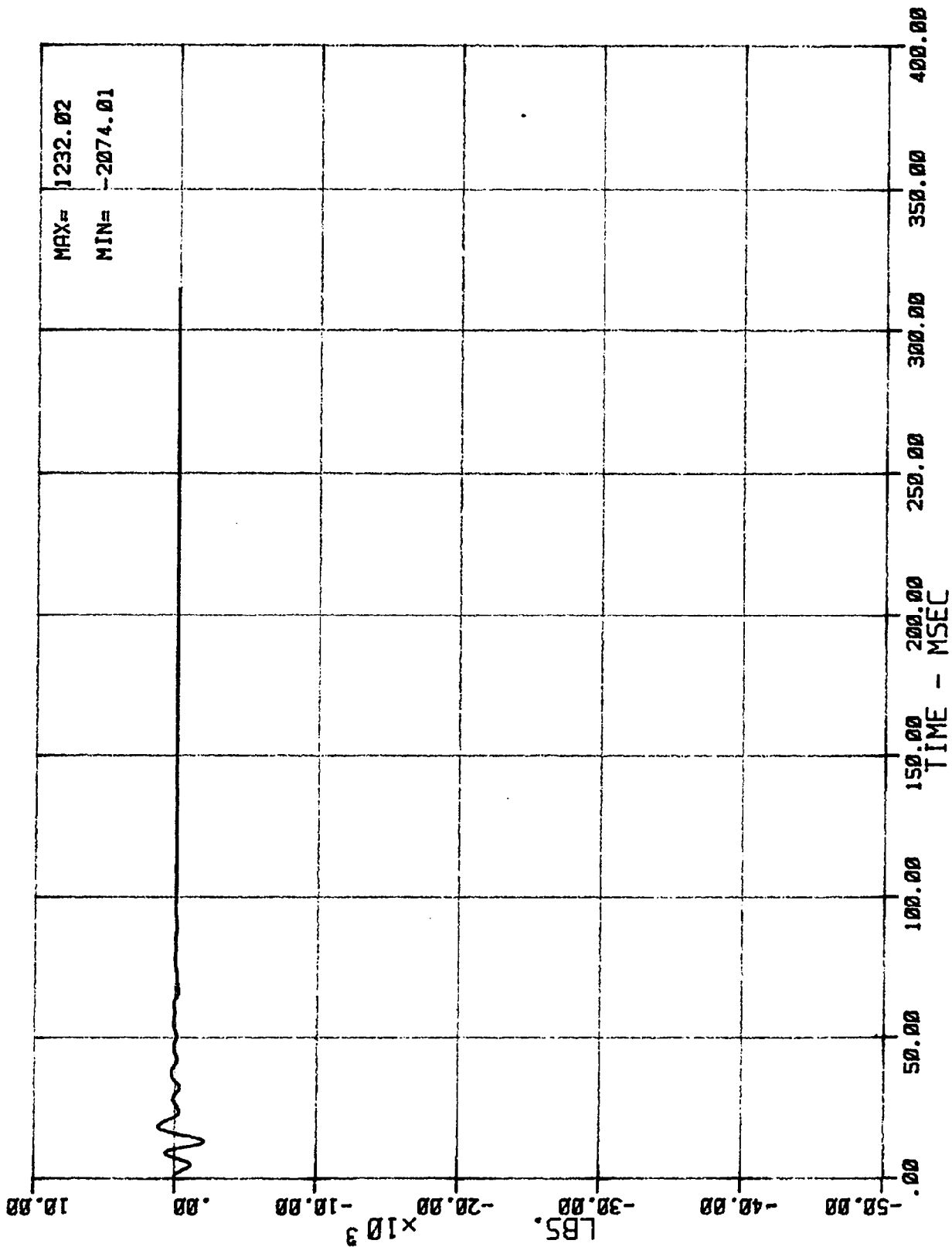
34 LC BA N BA3 (BARRIER LOAD CELL A3 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



35 LC BA BA4 (BARRIER LOAD CELL A4 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

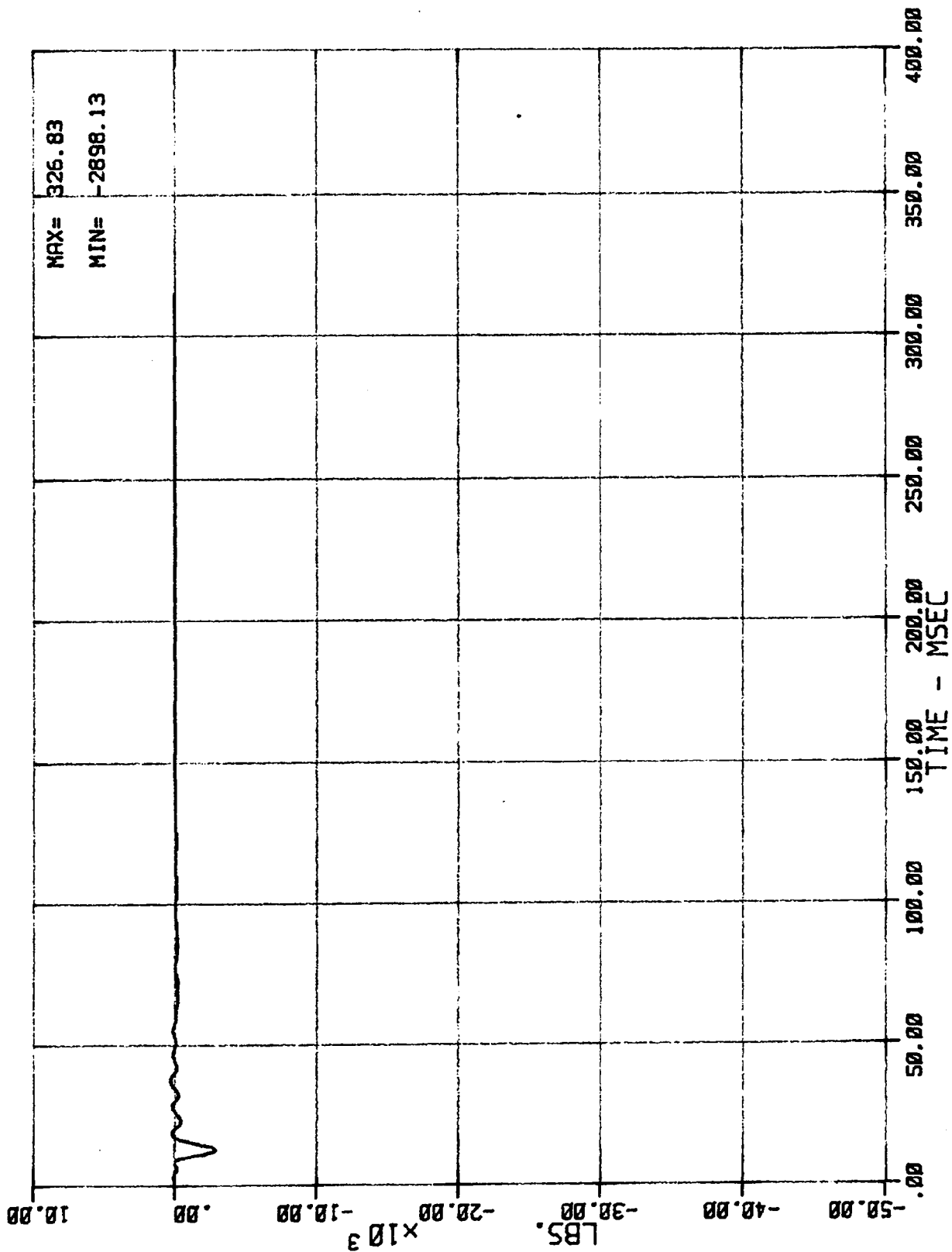
05/15/86



36 LC BA N BA5 (BARRIER LOAD CELL AS FORCE)
HSE N33016 1986 SUZUKI SAMURAI

05/15/86

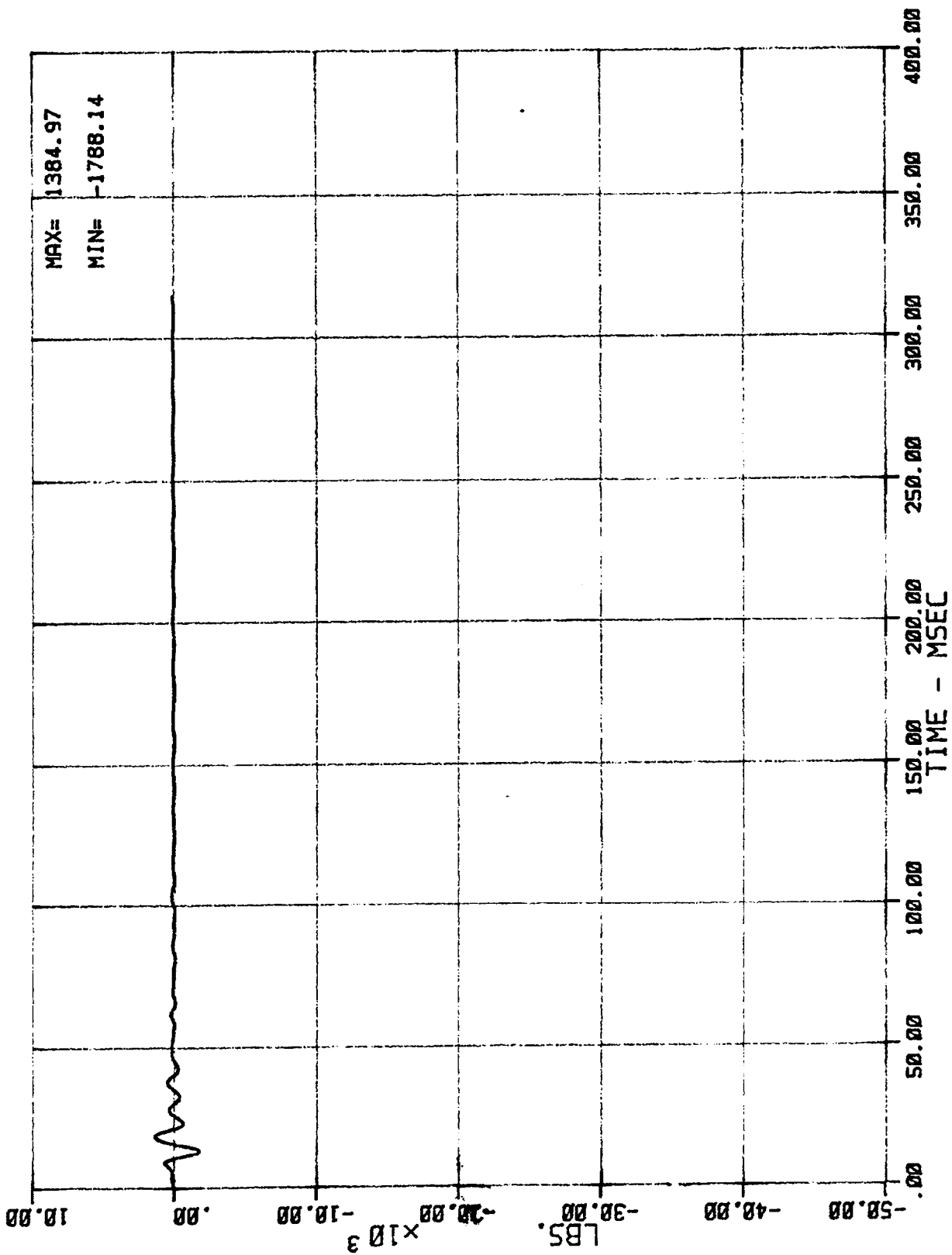
R5077-01



37 LC BA N BA6 (BARRIER LOAD CELL AS FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

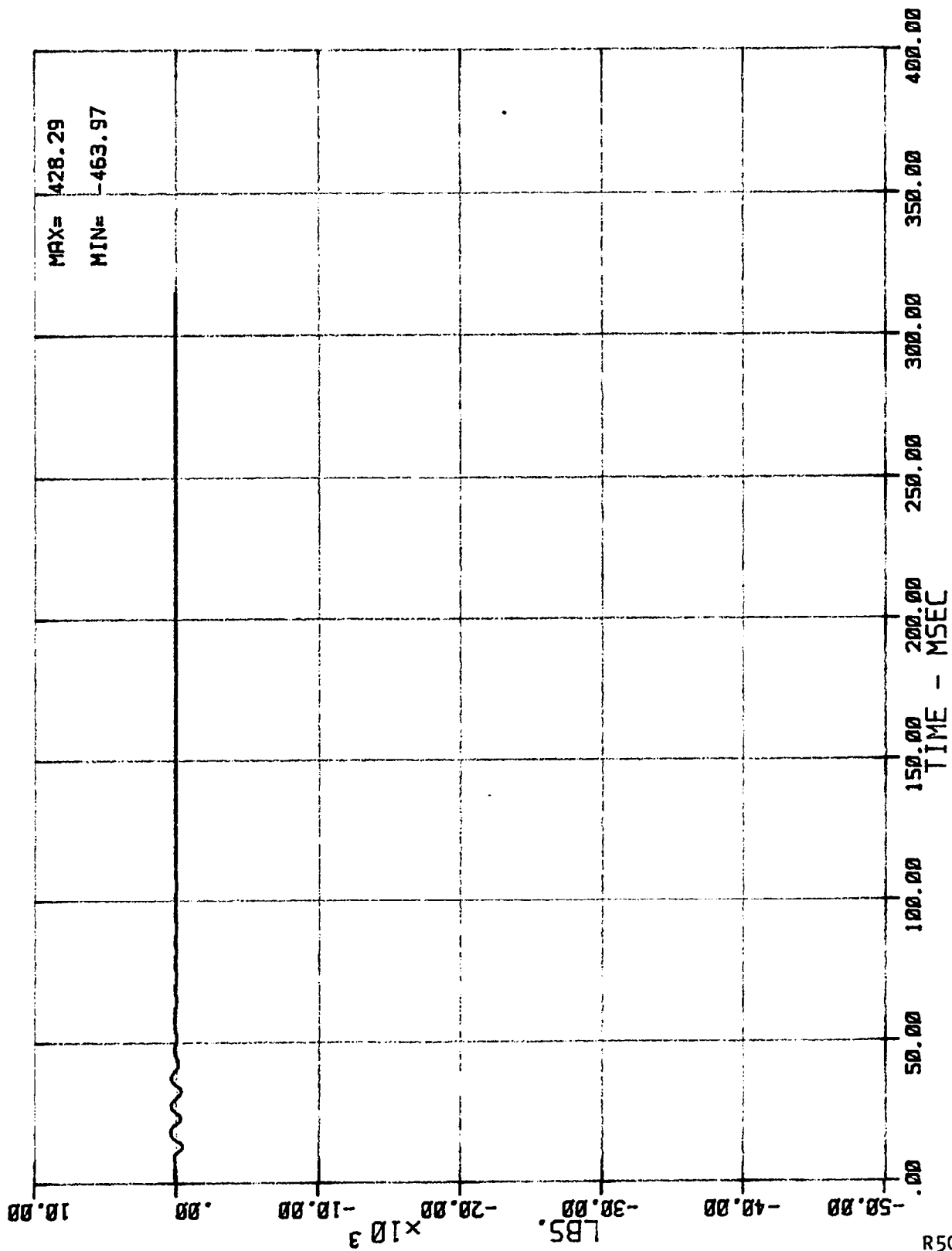
R5077-01



38 LC BA N BA7 (BARRIER LOAD CELL A7 FORCE)
HSE N33016 1986 SUZUKI SAMURAI

05/15/86

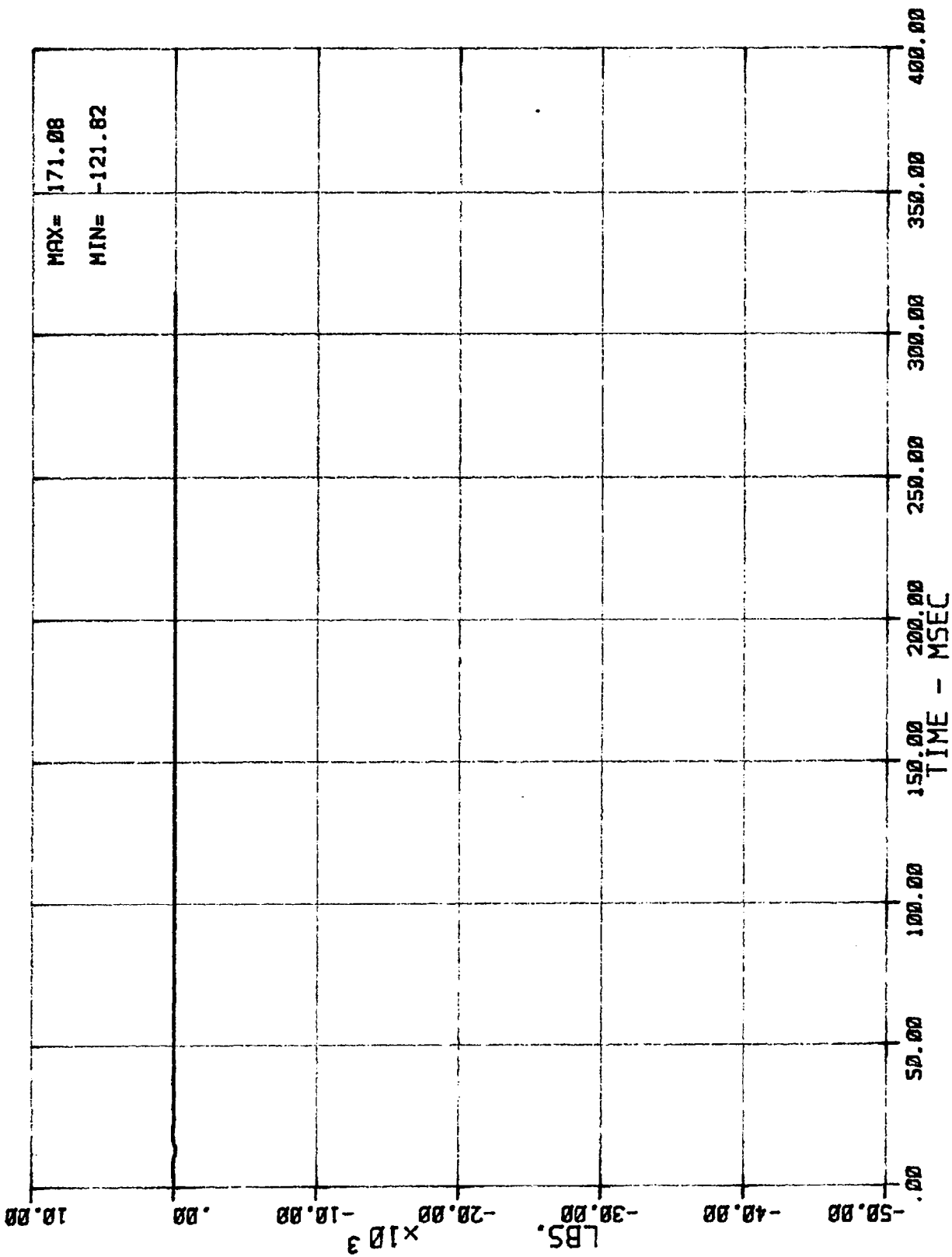
R5077-01



39 LC BA N BA8 (CARRIER LOAD CELL A8 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

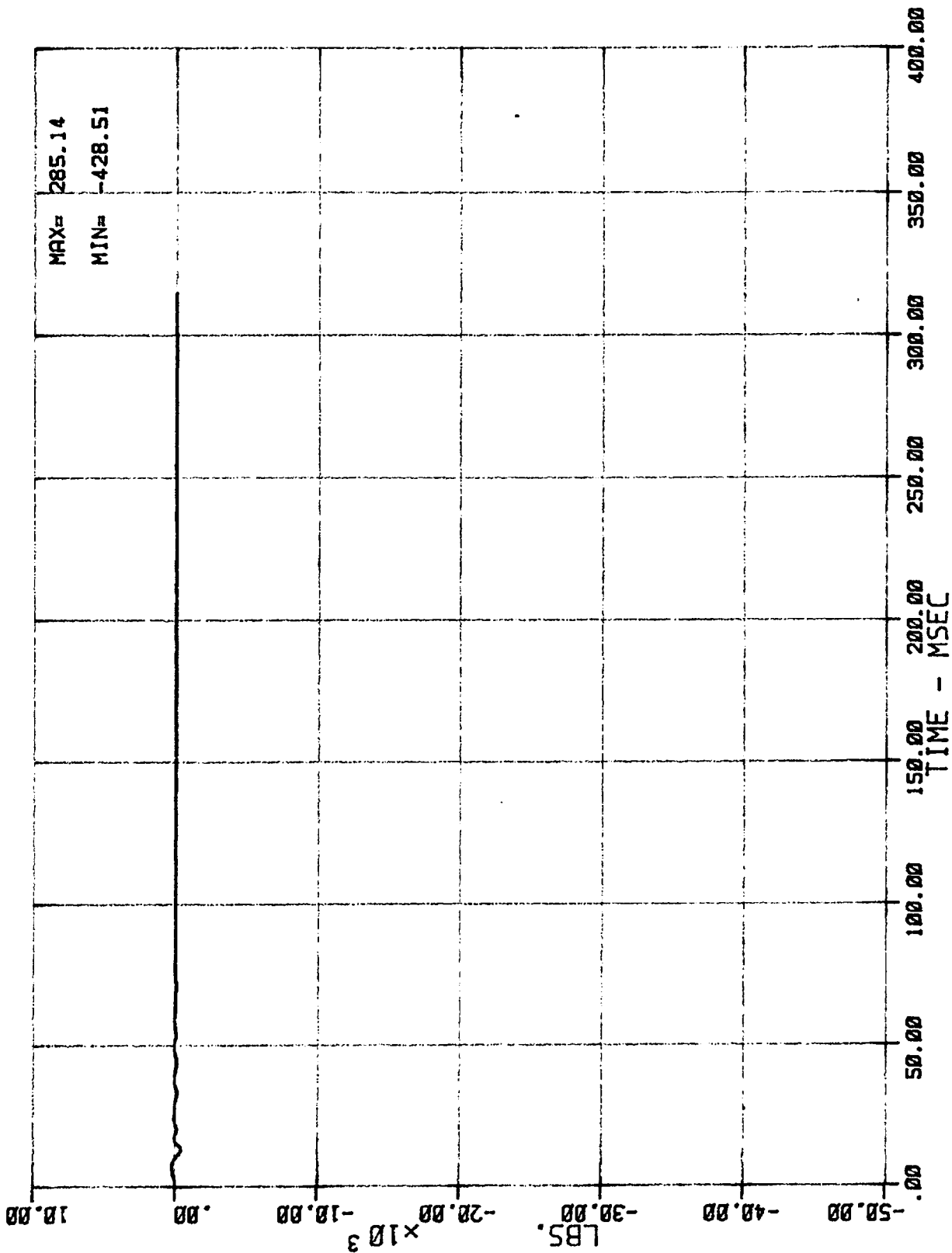
05/15/86

R5077-01



40 LC BA BA9 (BARRIER LOAD CELL A9 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

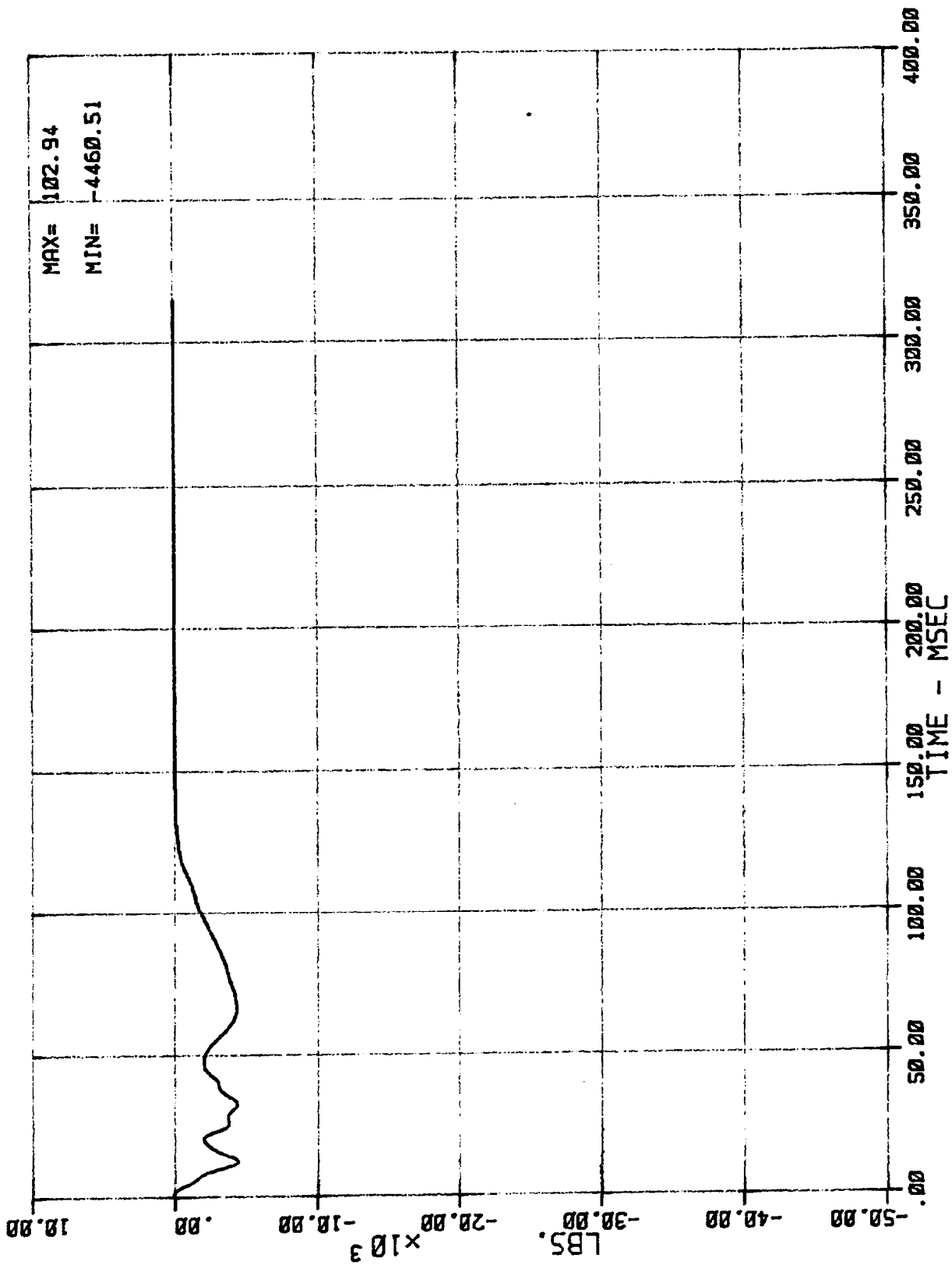
05/15/86



41 LC BA N BB1 (BARRIER LOAD CELL B1 FORCE)
NSE N33016 1986 SUZUKI SAMURAI

05/15/86

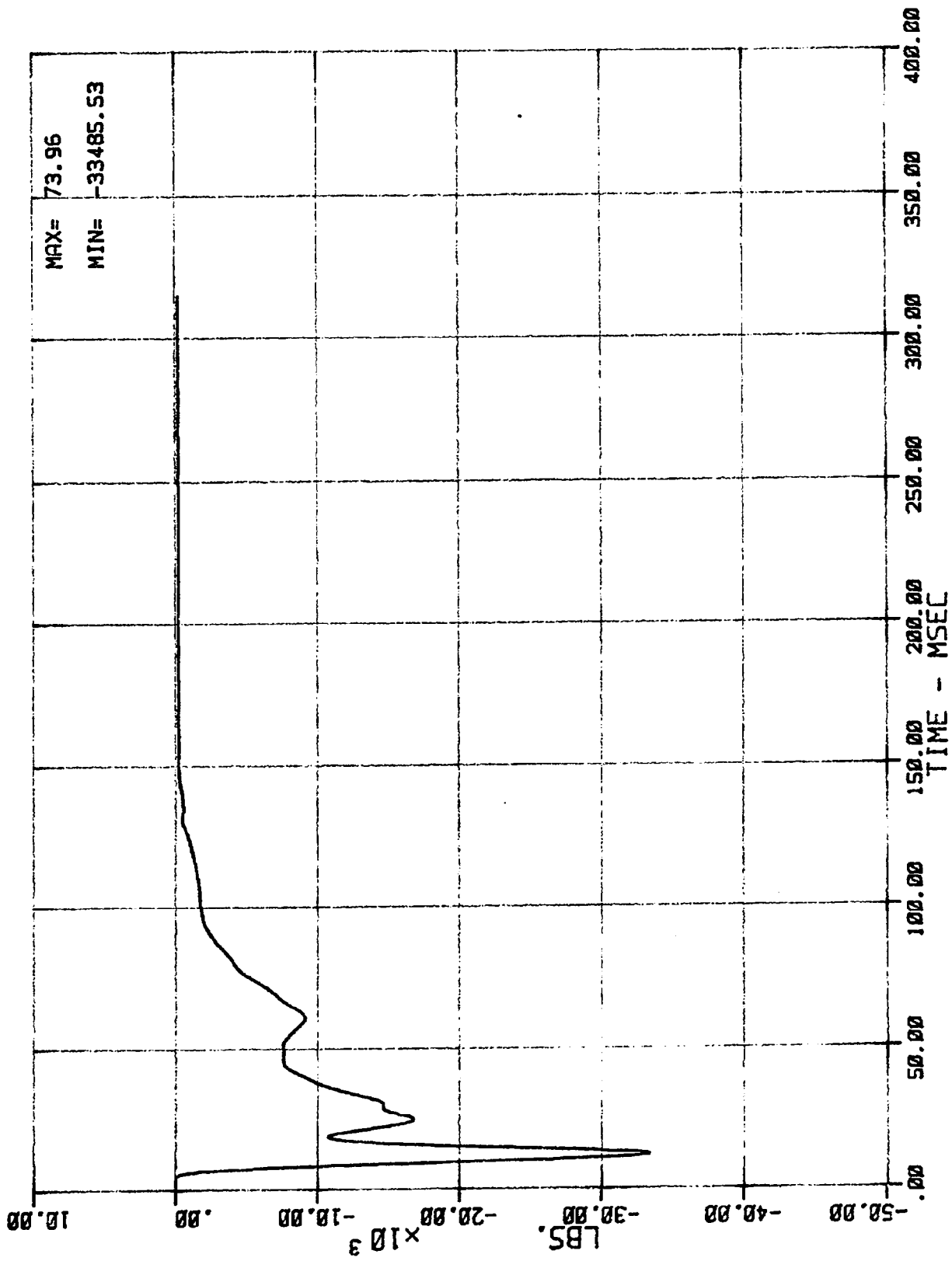
R5077-01



42 LC BB N BB2 (BARRIER LOAD CELL B2 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

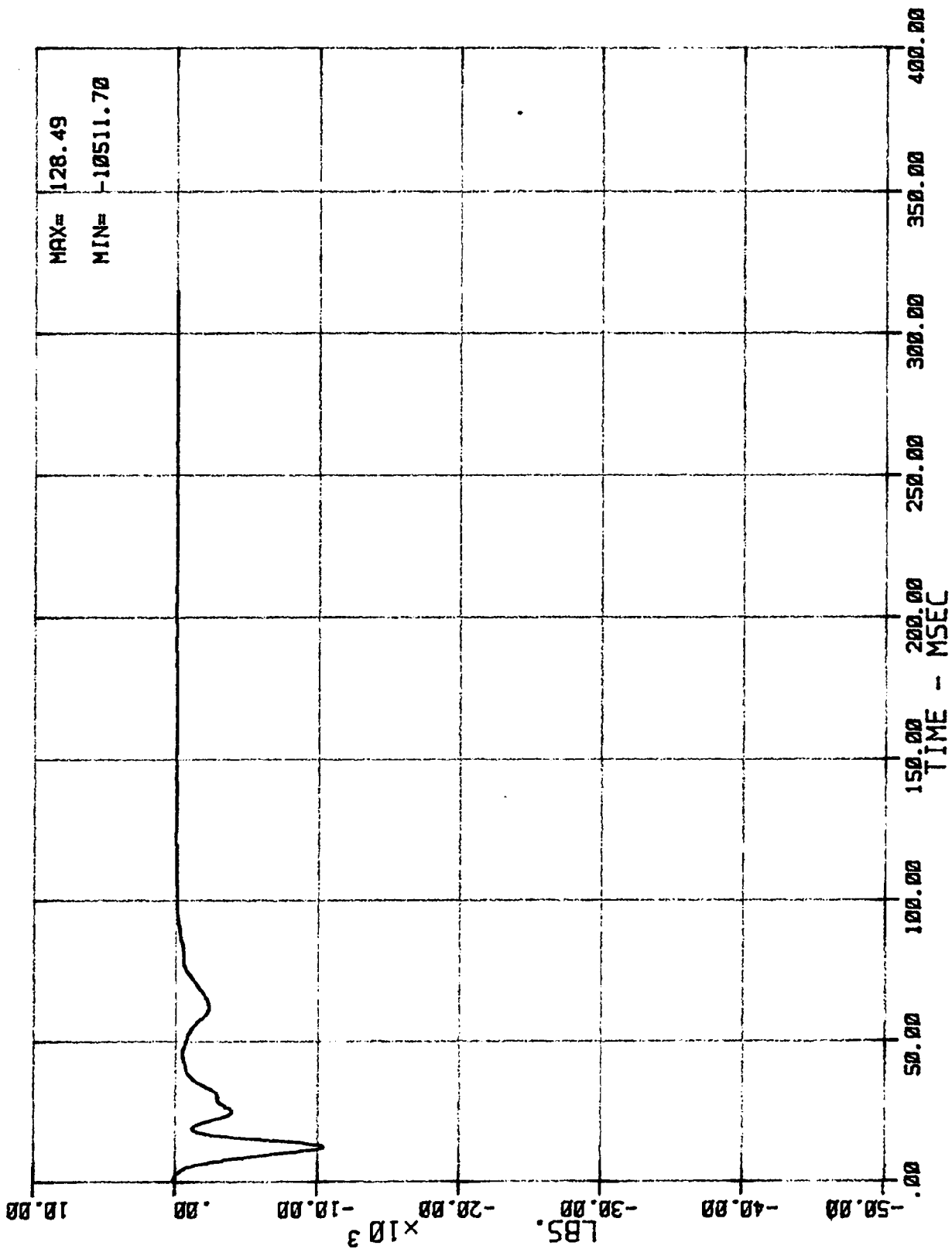
05/15/86

R5077-01



43 LC BB N BB3 (BARRIER LOAD CELL B3 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

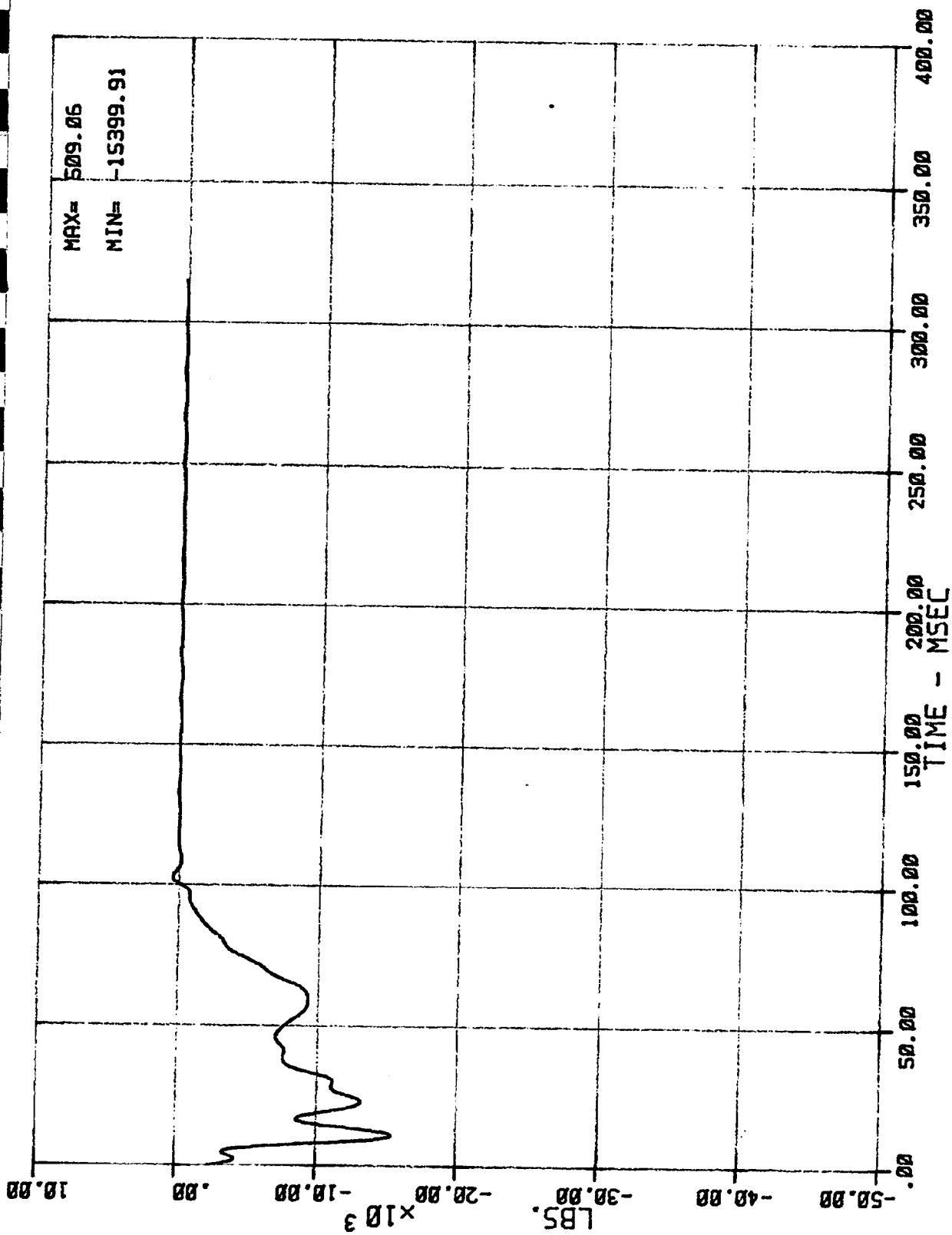
05/15/86



44 LC BB N BB4 (BARRIER LOAD CELL 84 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

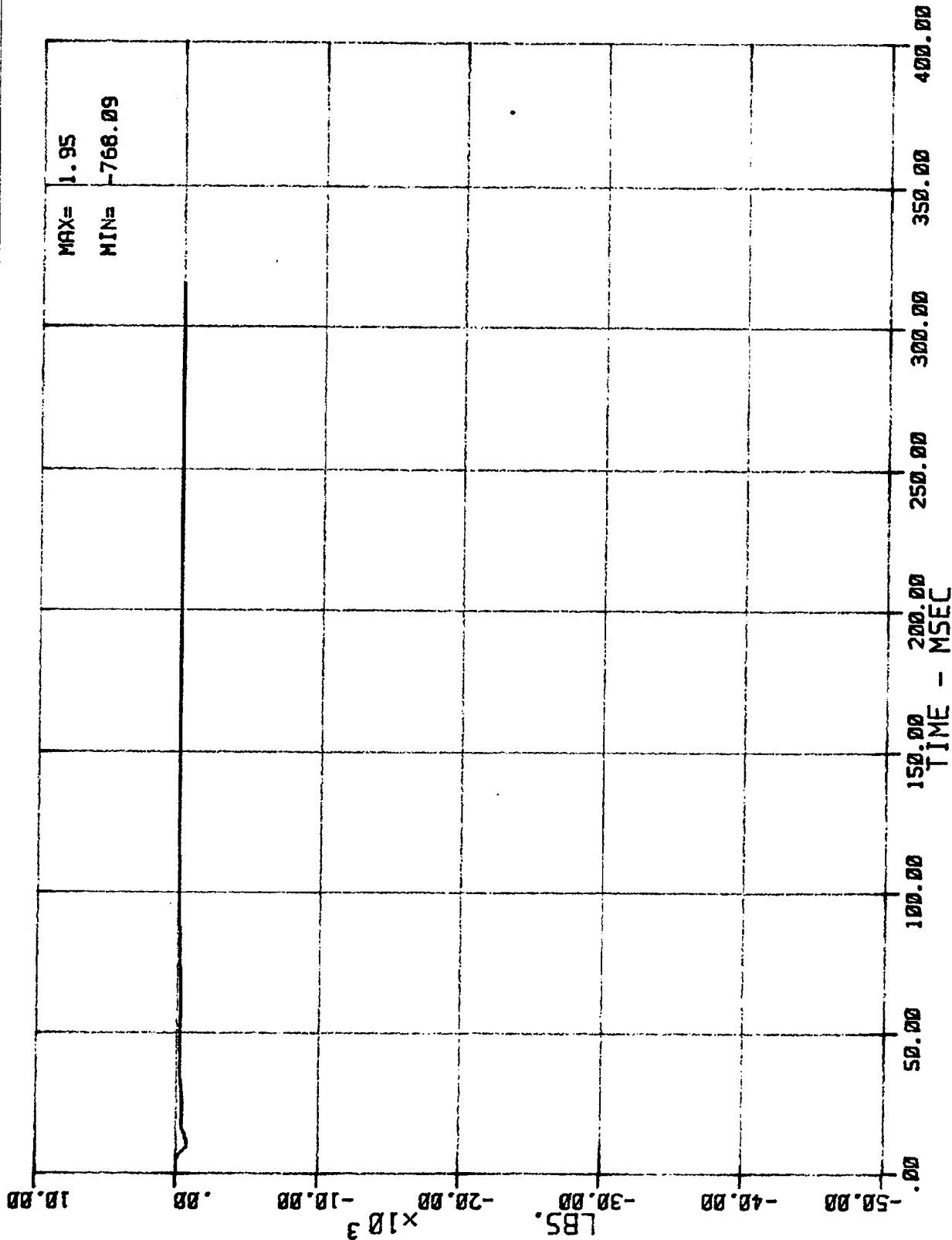
R5077-01



R5077-01

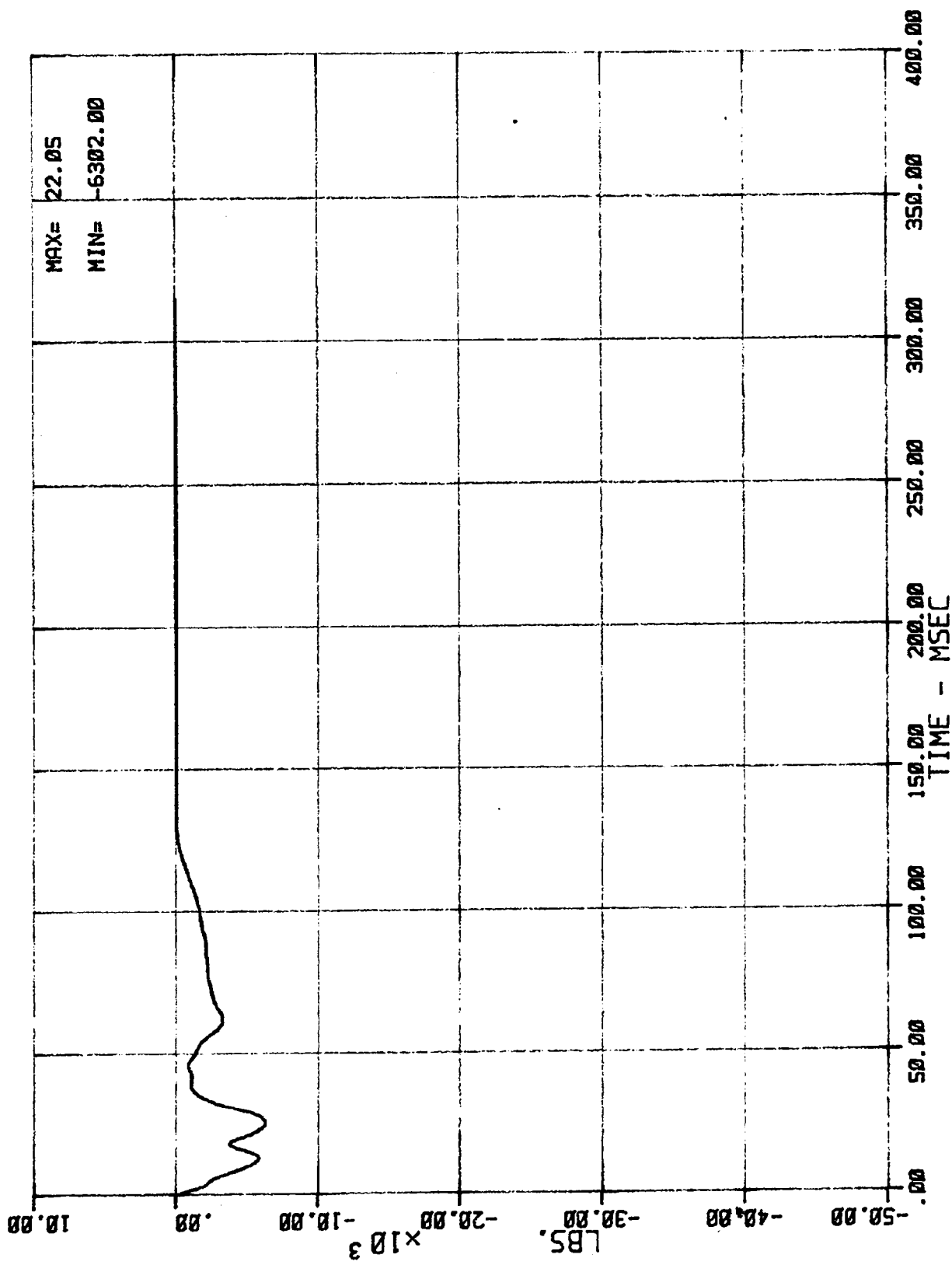
45 LC 88 N 885 (CARRIER LOAD CELL BS FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



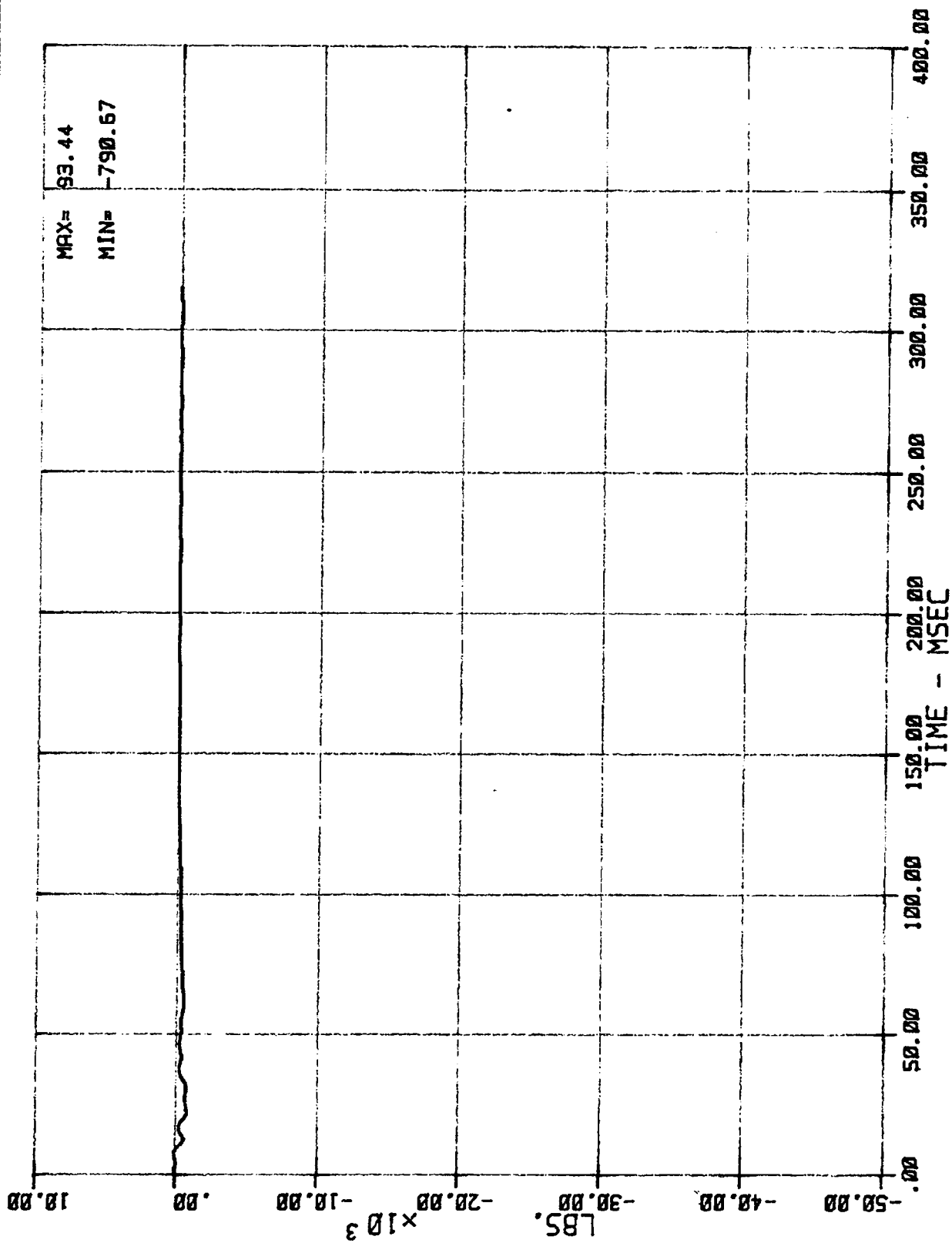
46 LC BA N BB6 (BARRIER LOAD CELL B6 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



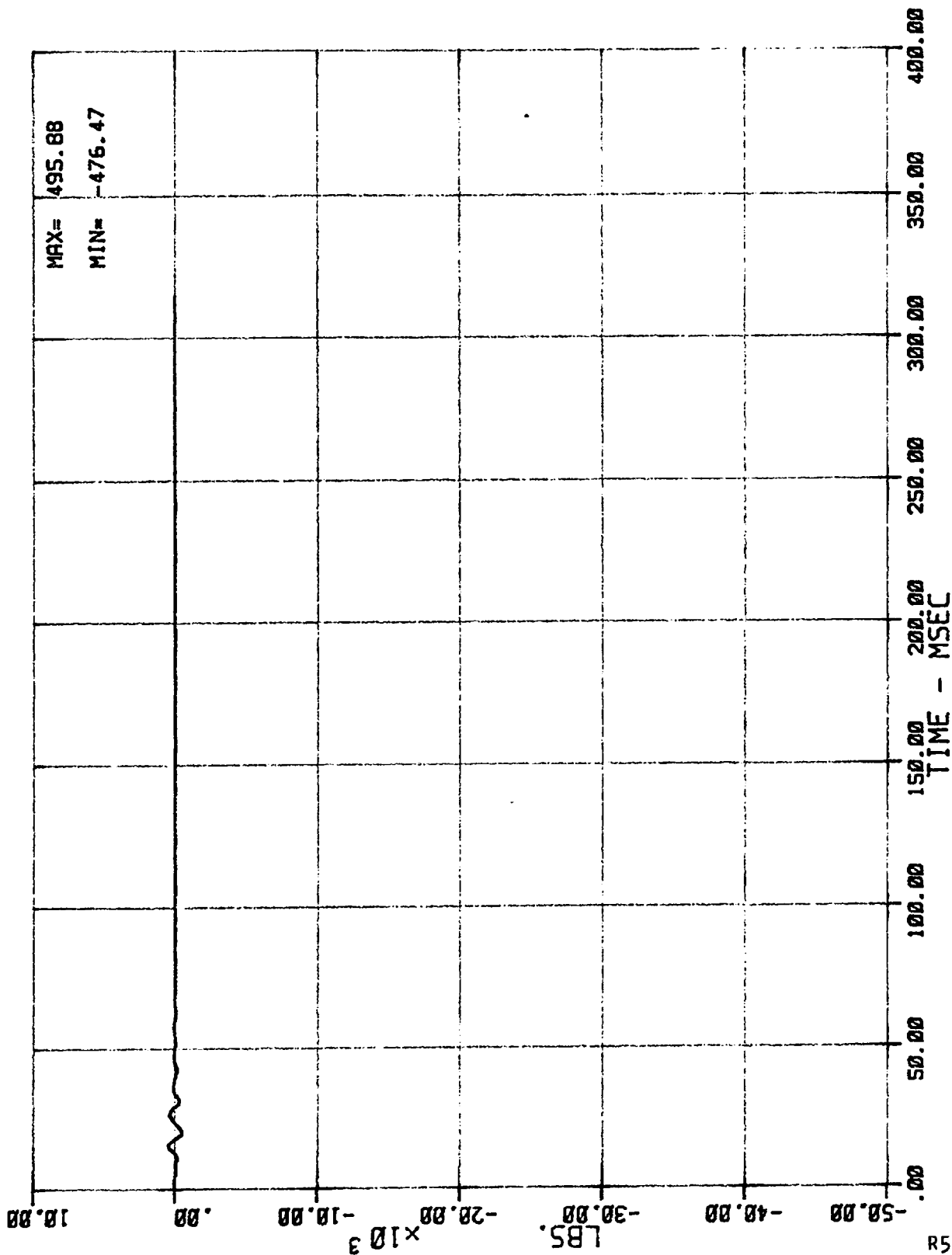
47 LC BA N BB7 (BARRIER LOAD CELL B7 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



48 LC BA N BB8 (BARRIER LOAD CELL BB FORCE)
MSE N33016 1986 SUZUKI SAMURAI

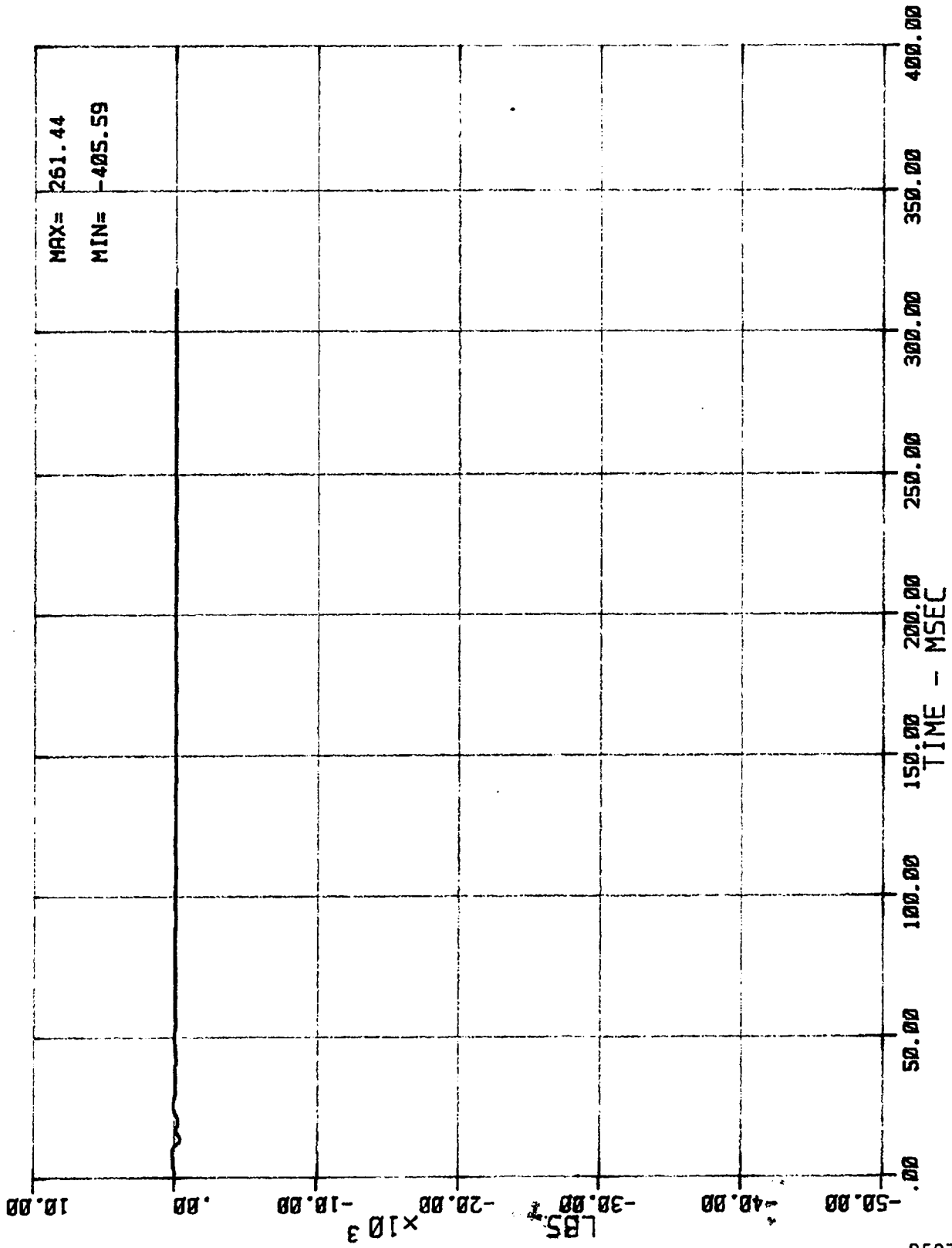
05/15/86



49 LC BA N BB9 (BARRIER LOAD CELL B9 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

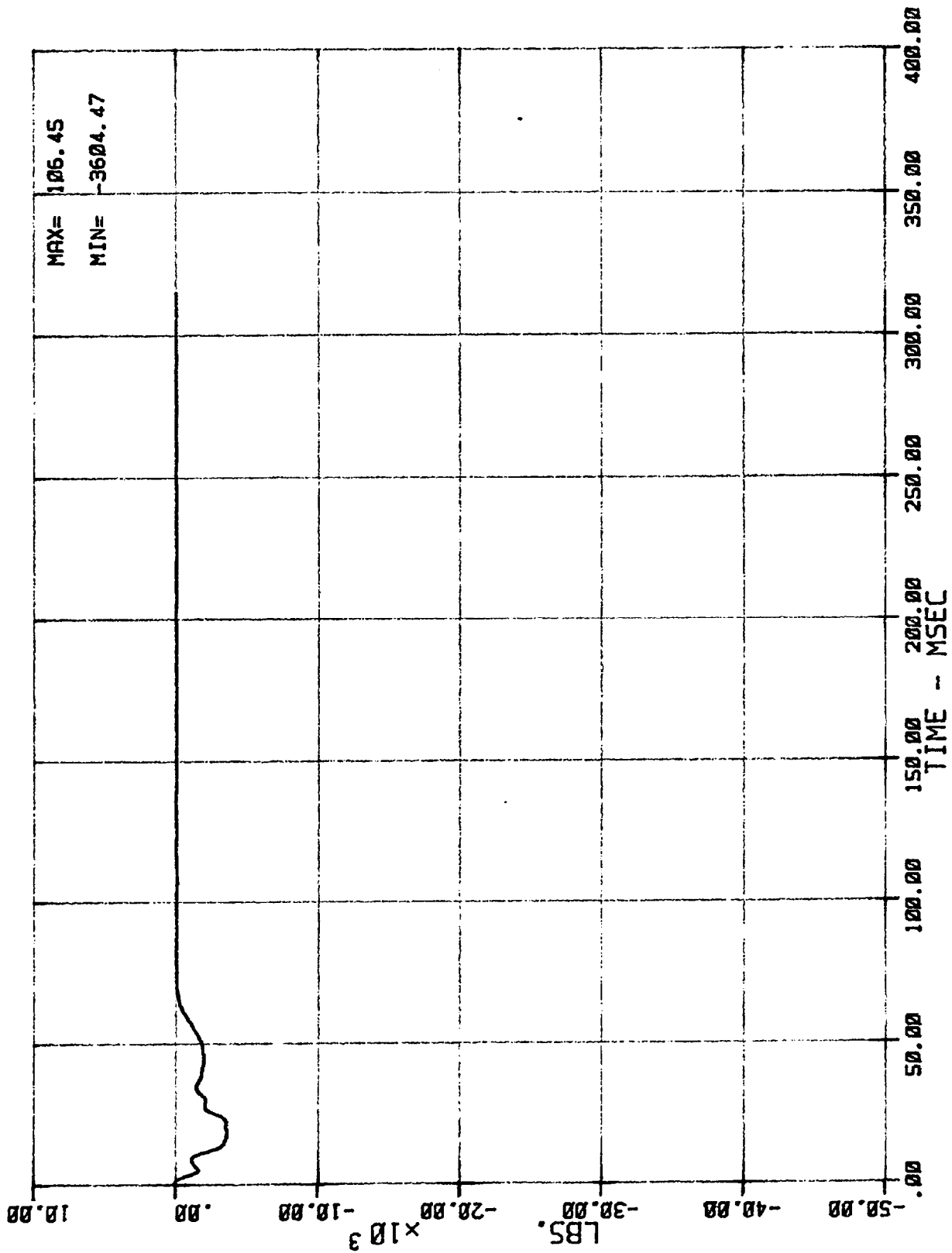
R5077-01



50 LC BA N BC1 (CARRIER LOAD CELL C1 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

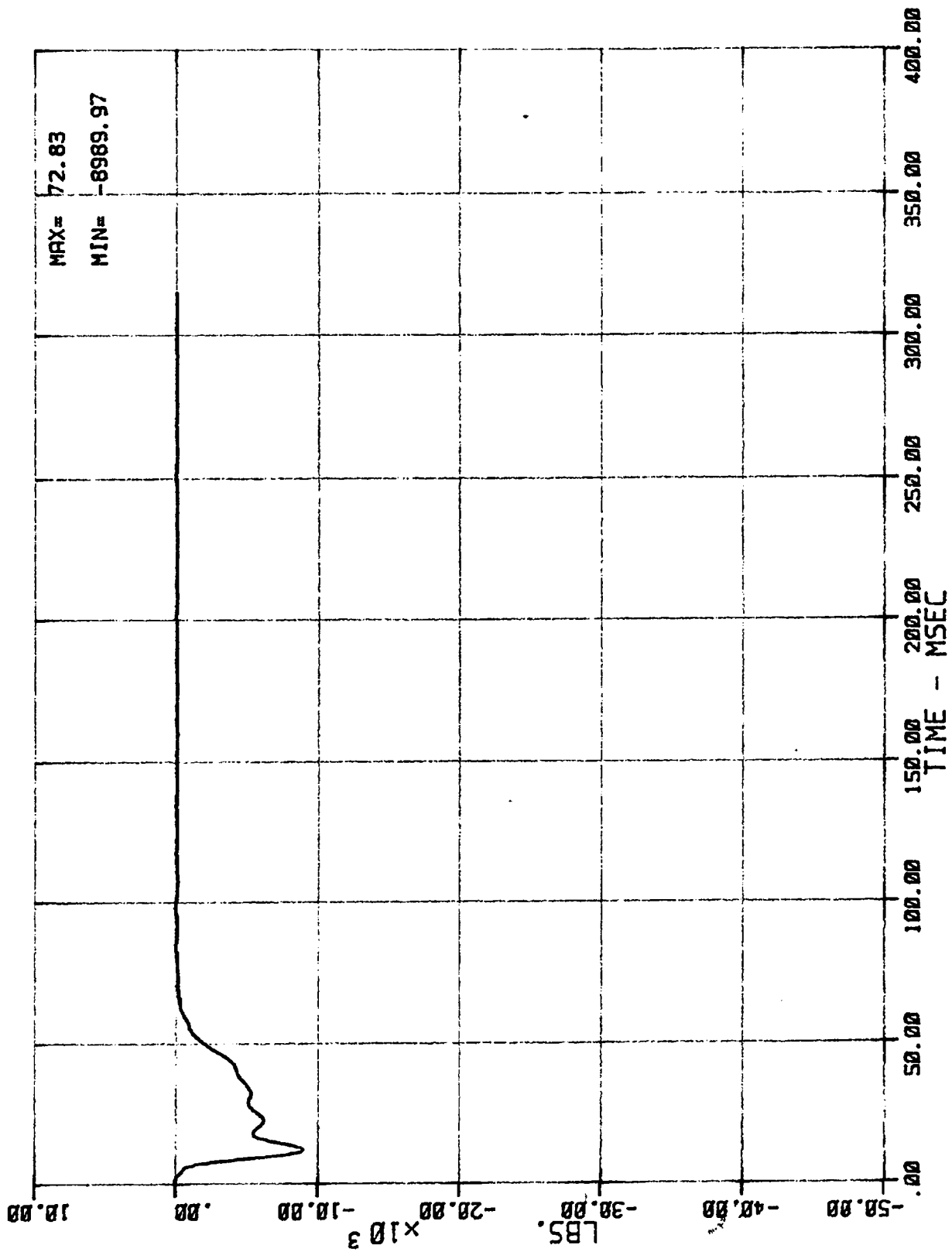
05/15/86

R5077-01



51 LC BA BC2 (BARRIER LOAD CELL C2 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

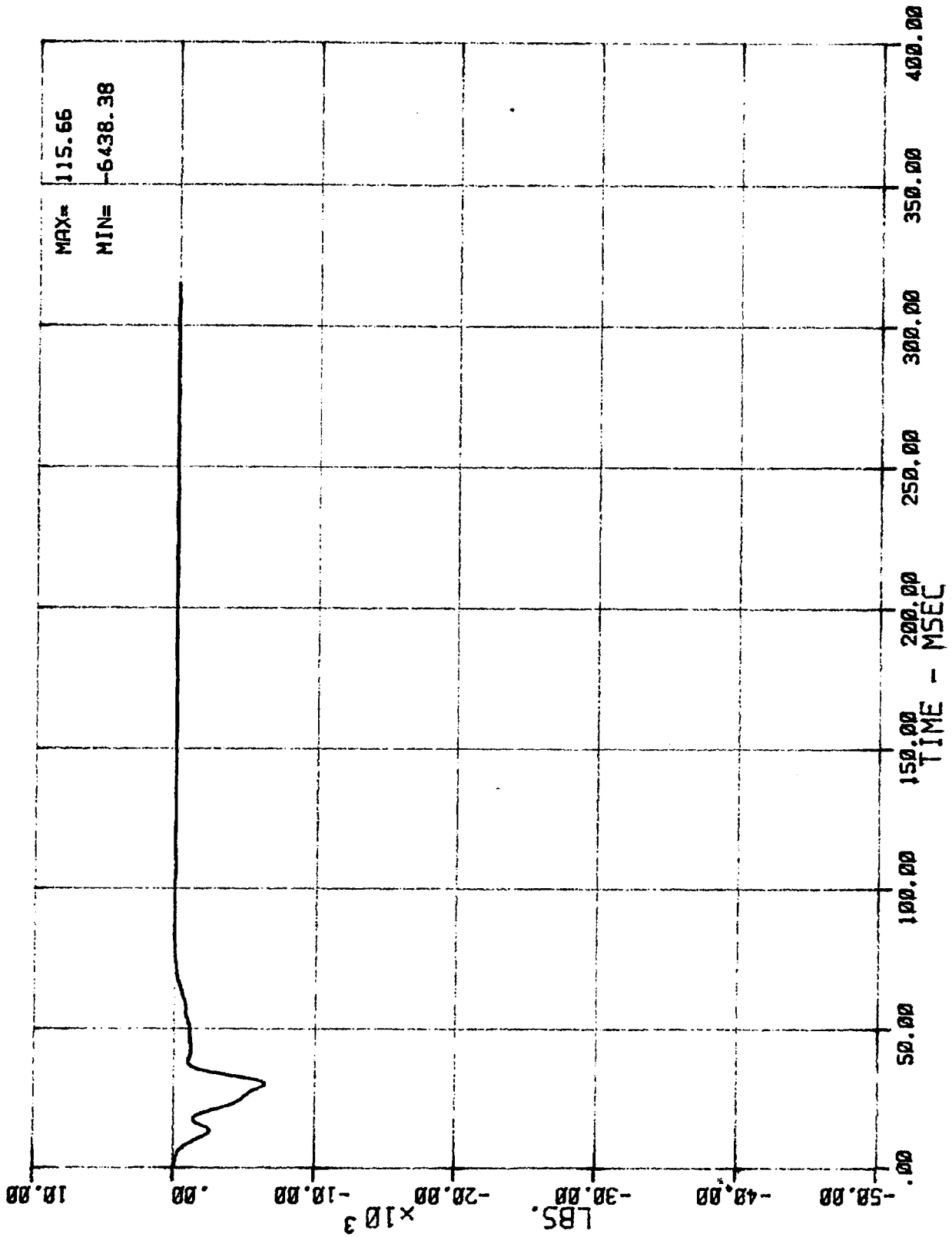
05/15/86



S2 LC BA N BC3 (BARRIER LOAD CELL C3 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

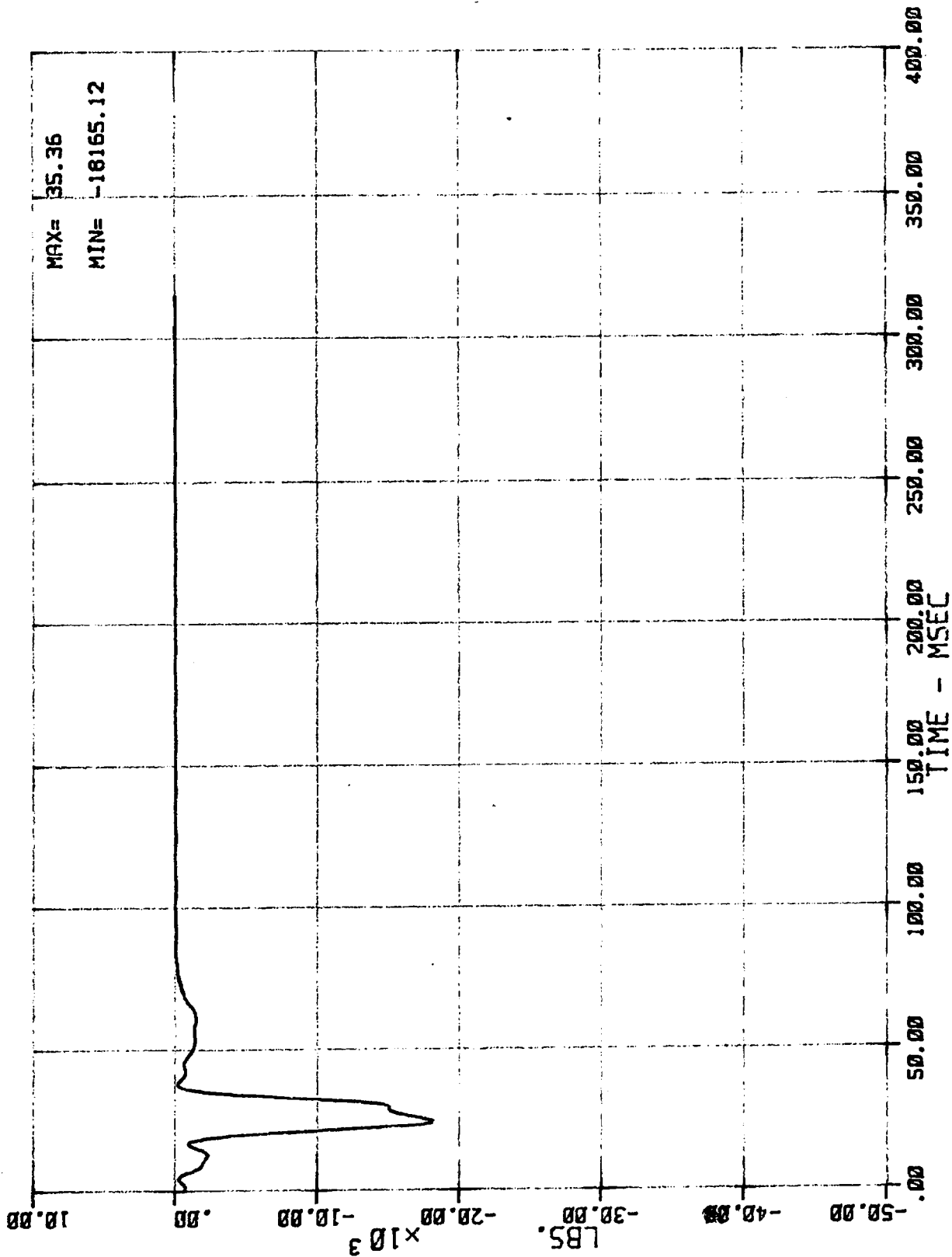
05/15/86

R5077-01



53 LC BA N BC4 (CARRIER LOAD CELL C4 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

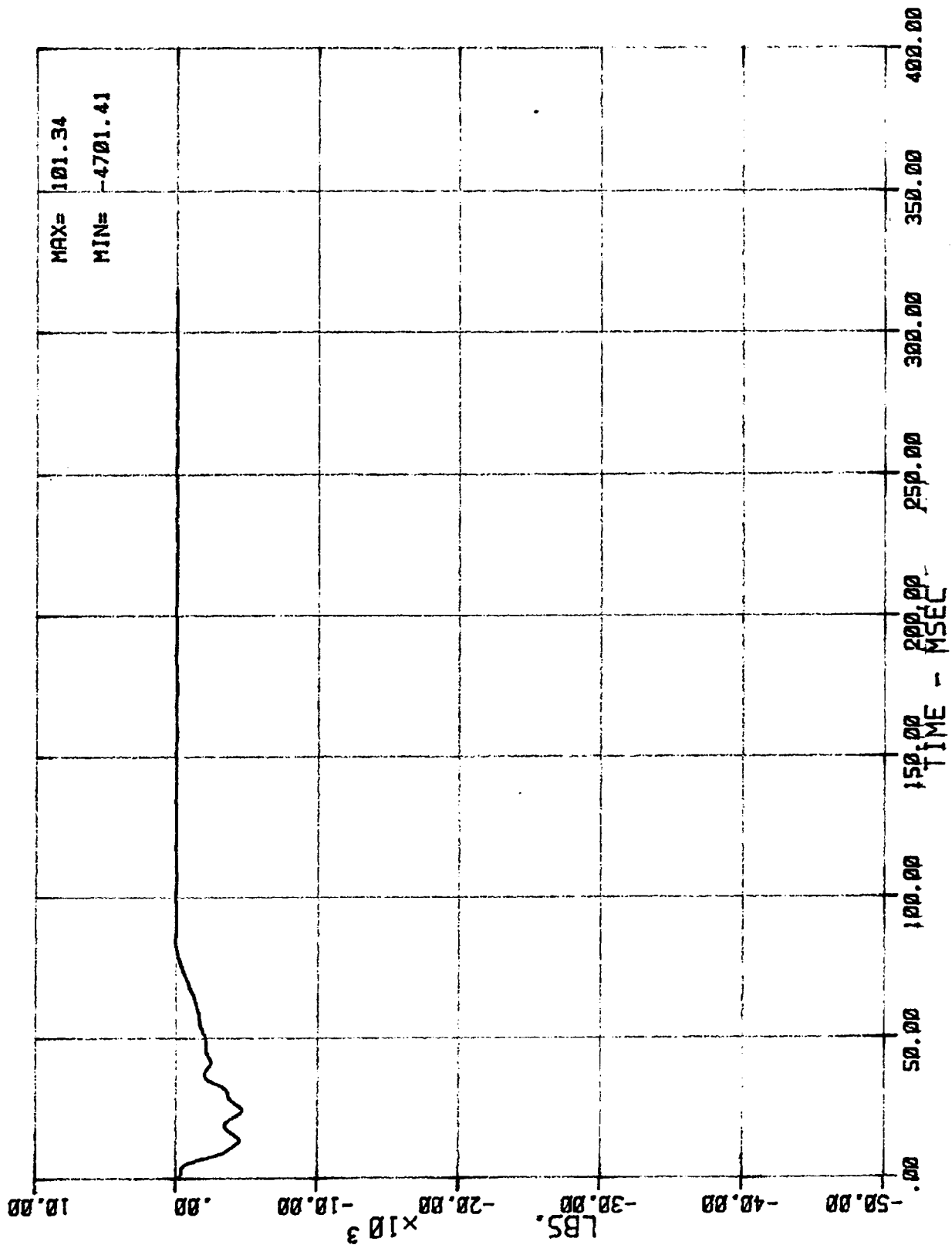
05/15/86



54 LC BA N BCS (BARRIER LOAD CELL CS FORCE)
 MSE N33016 1986 SUZUKI SAMURAI

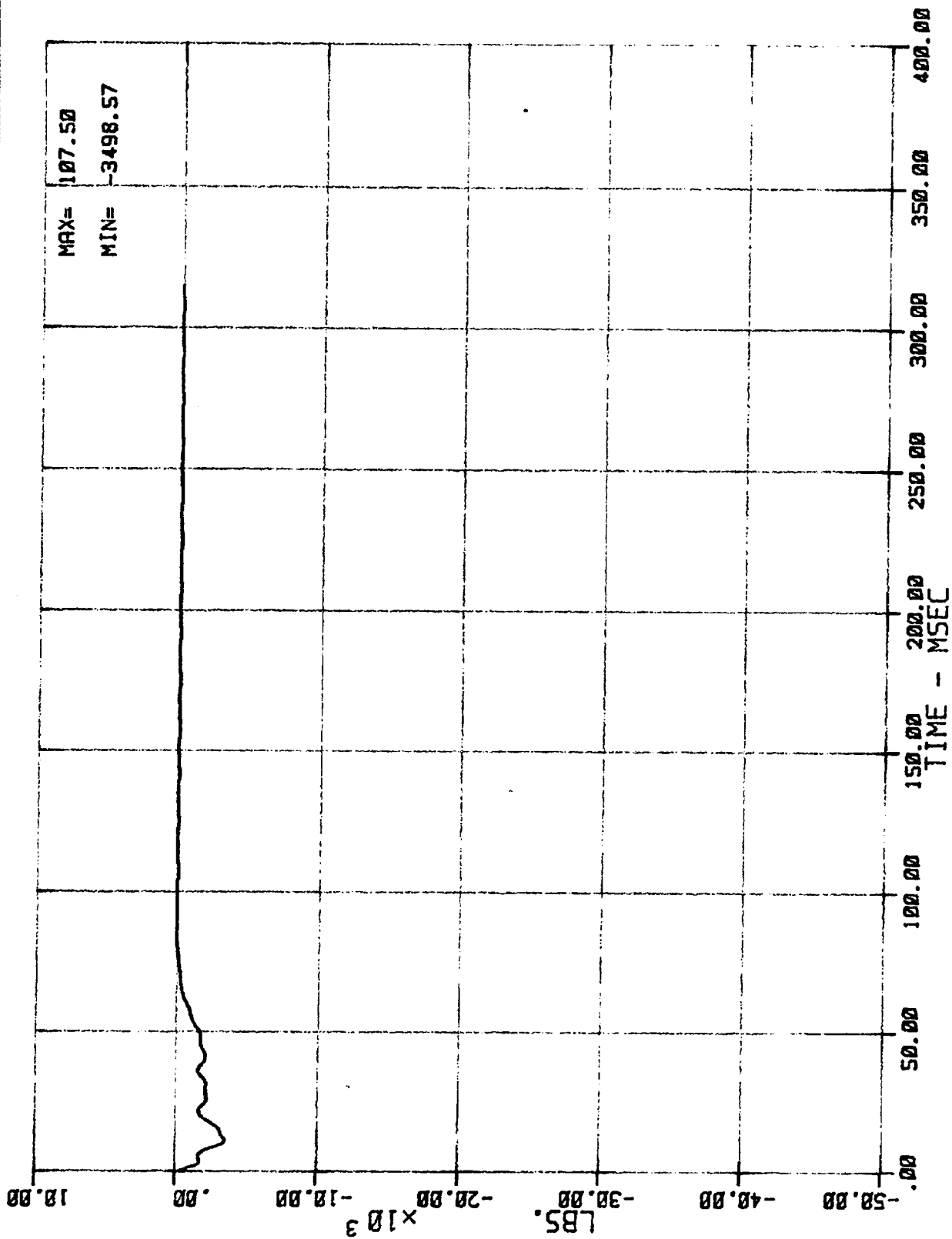
05/15/86

R5077-01



SS LC BA N BC6 (BARRIER LOAD CELL C6 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

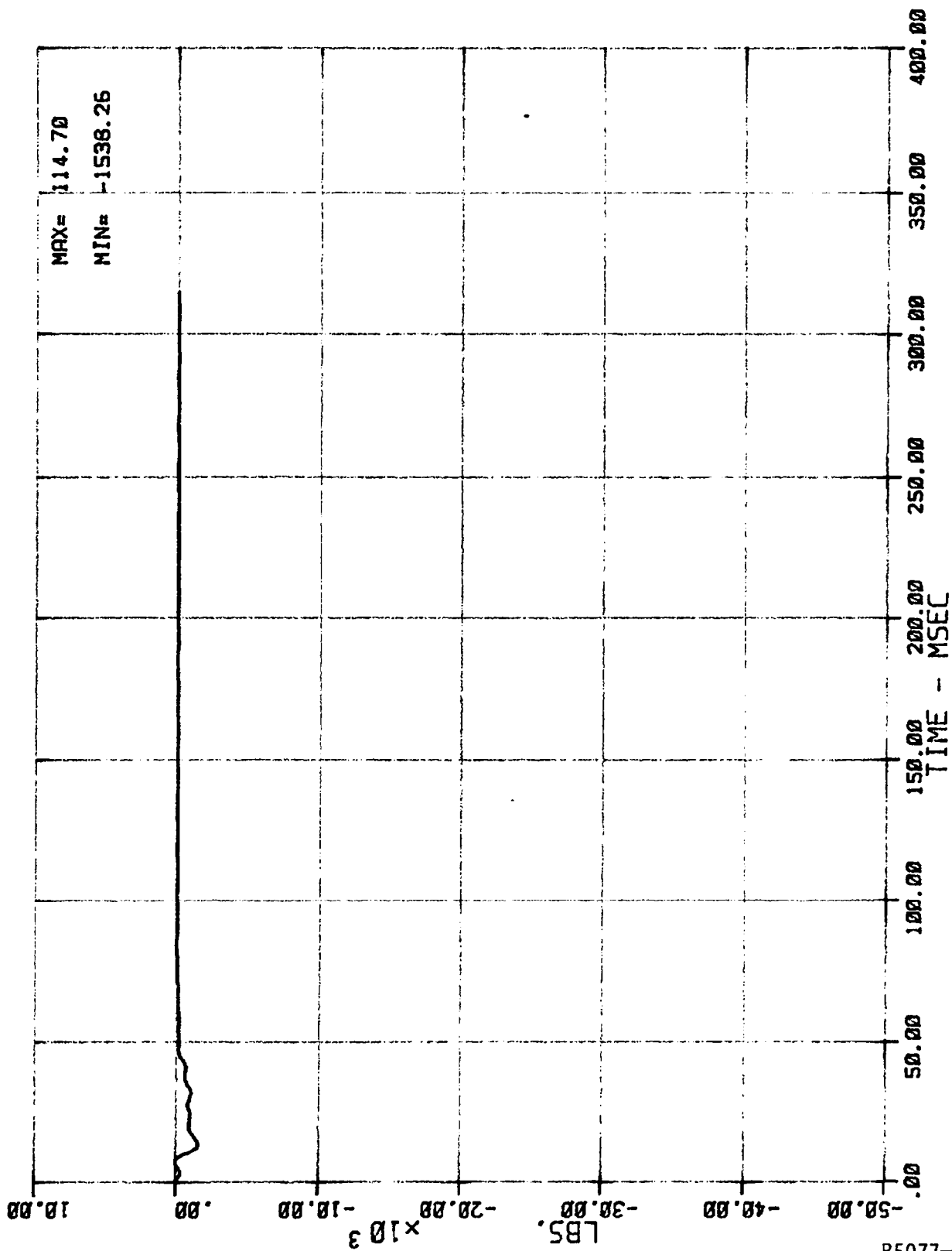
05/15/86



56 LC BA N BC7 (BARRIER LOAD CELL C7 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

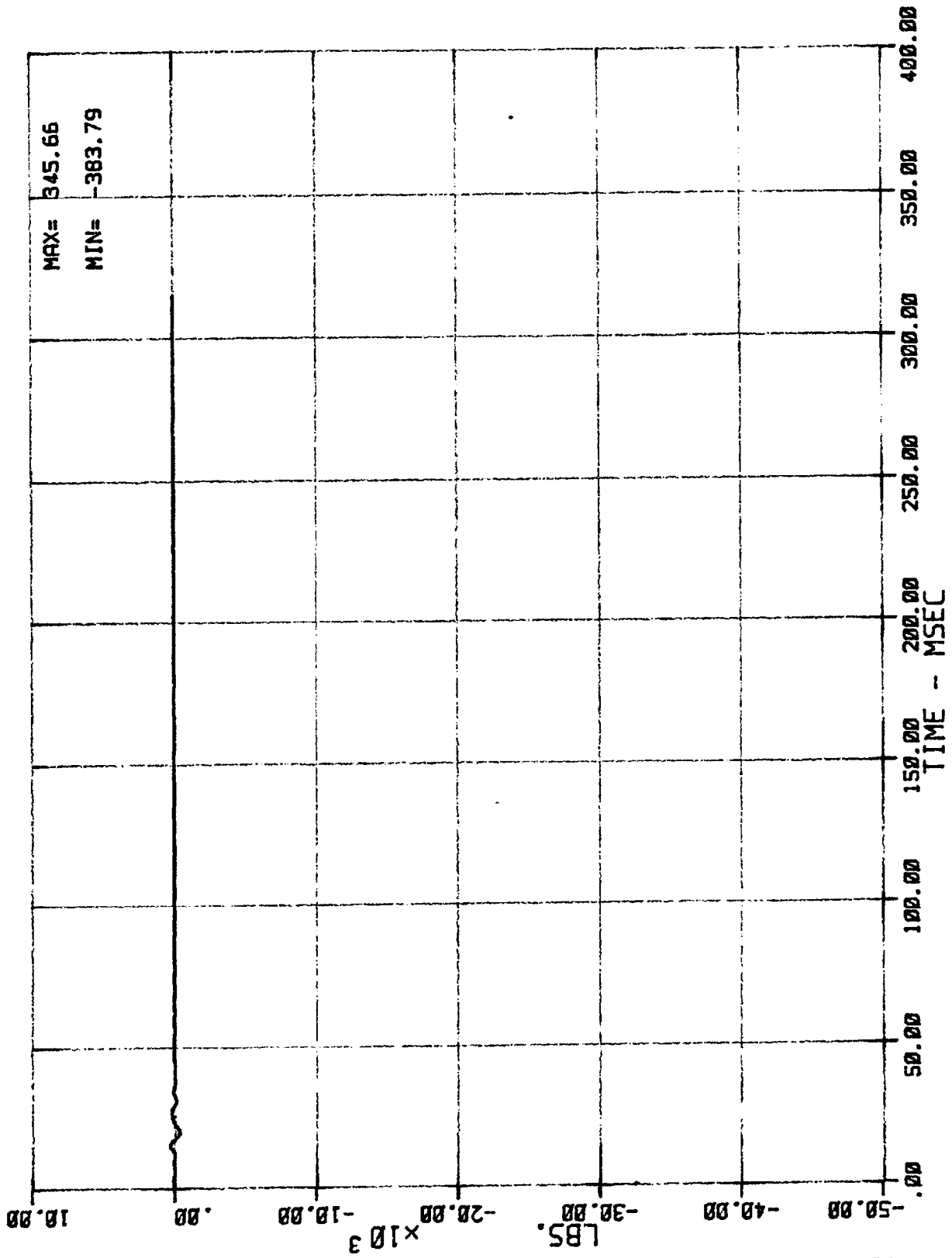
R5077-01



S7 LC BA N BC8 (BARRIER LOAD CELL C8 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

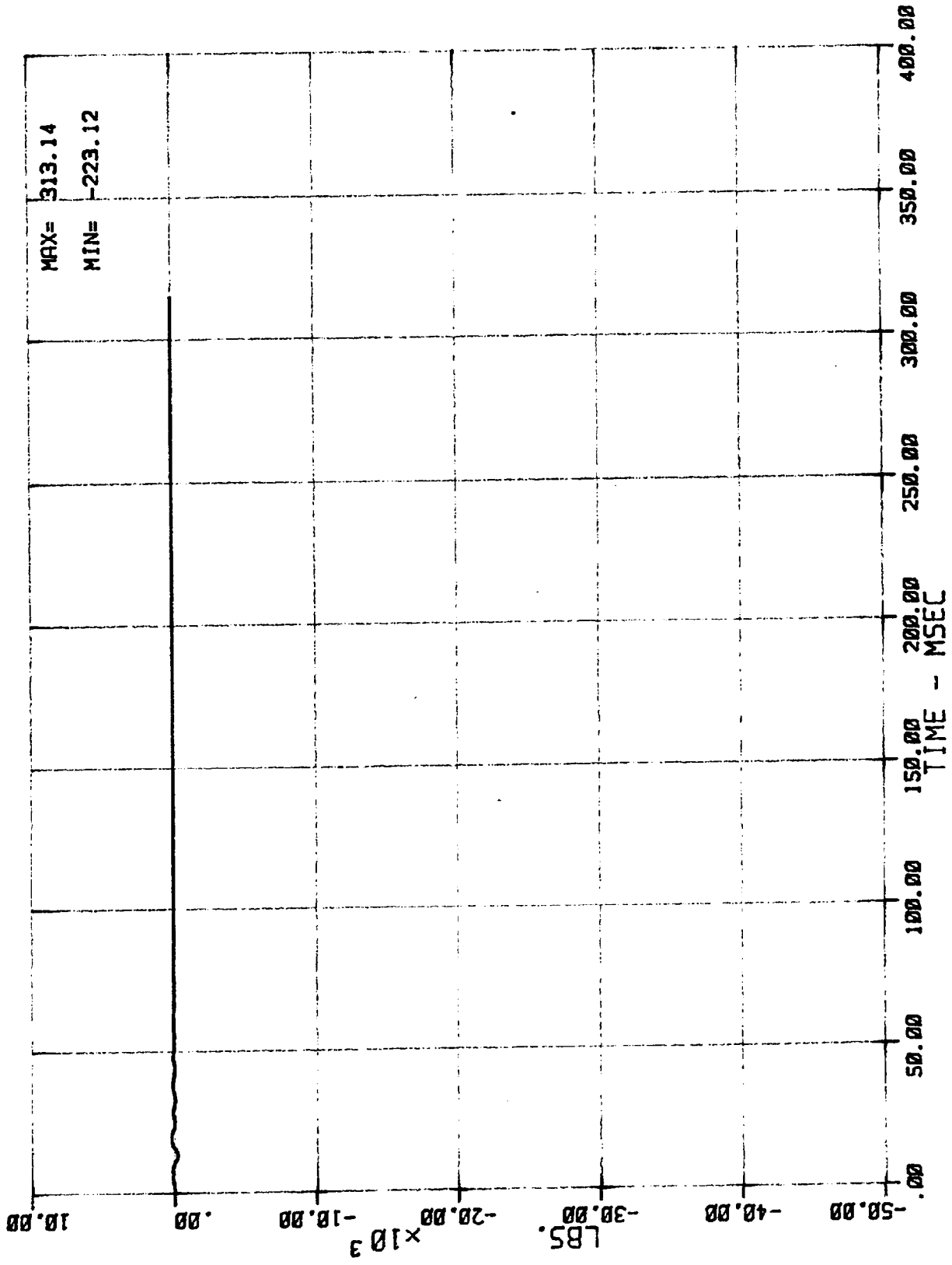
R5077-01



58 LC BA N BC9 (CARRIER LOAD CELL C9 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

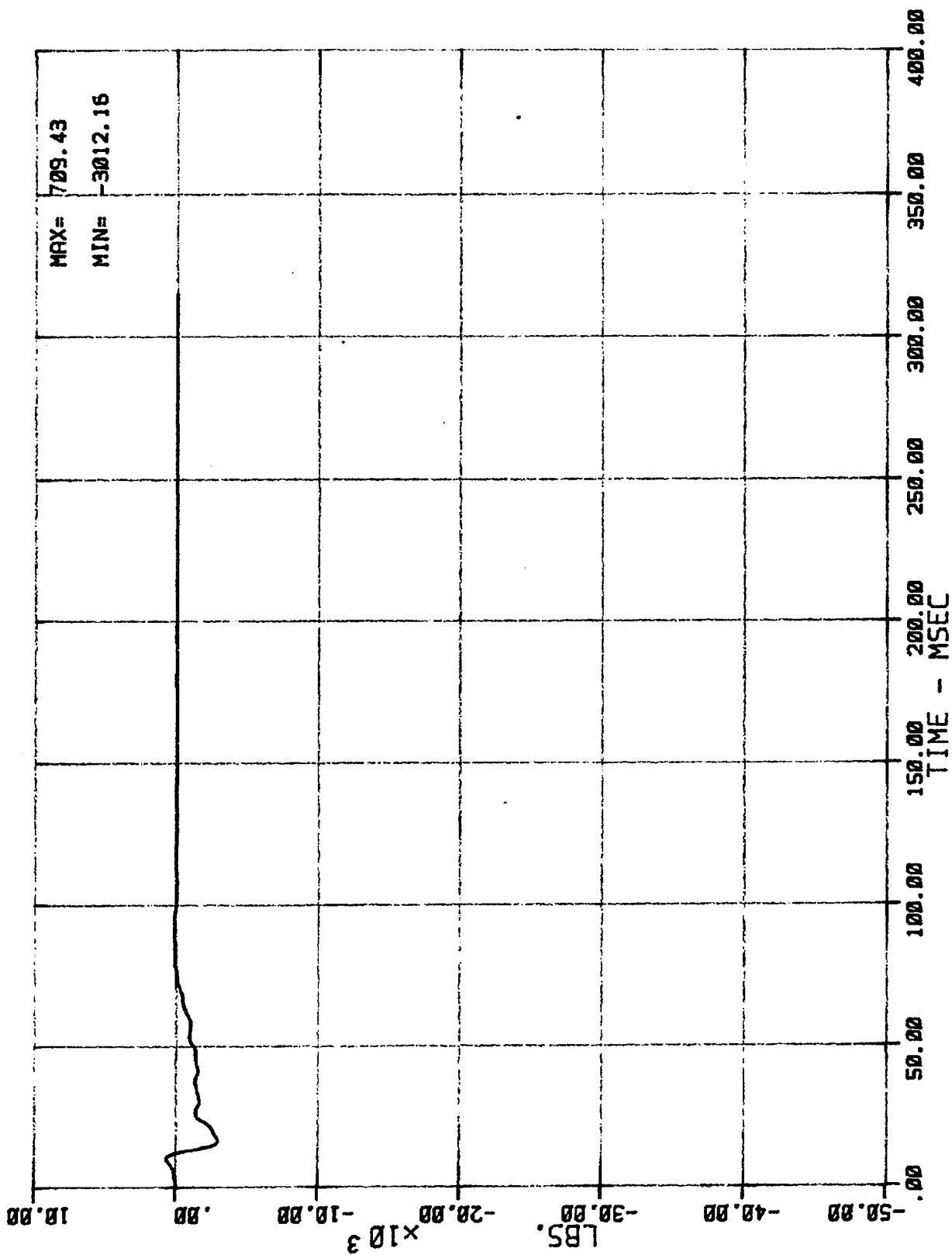
05/15/86

R5077-01



59 LC BA N B01 (BARRIER LOAD CELL D1 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

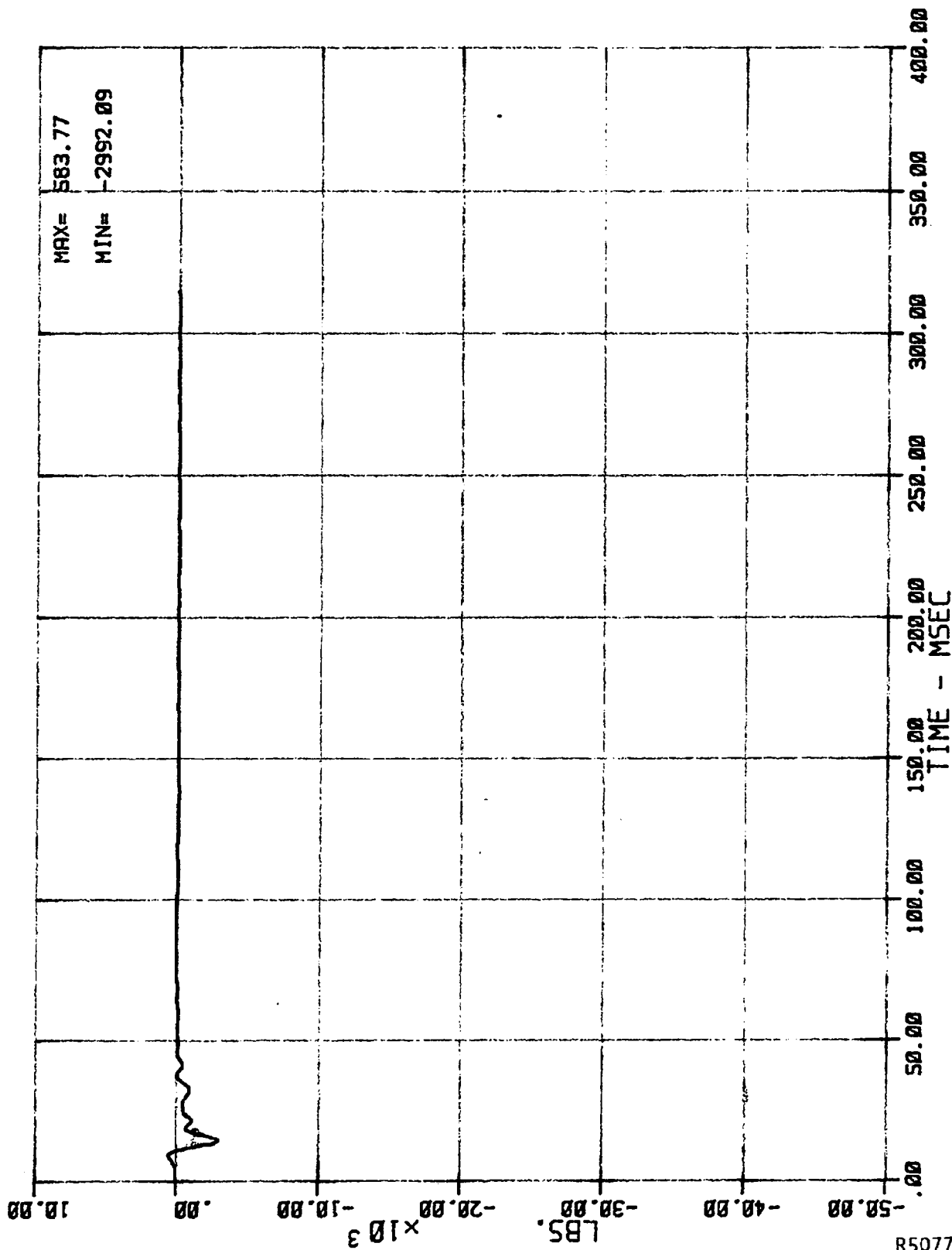
05/15/86



60 LC BA N BD2 (BARRIER LOAD CELL D2 FORCE)
 MSE N33016 1986 SUZUKI SAMURAI

05/15/86

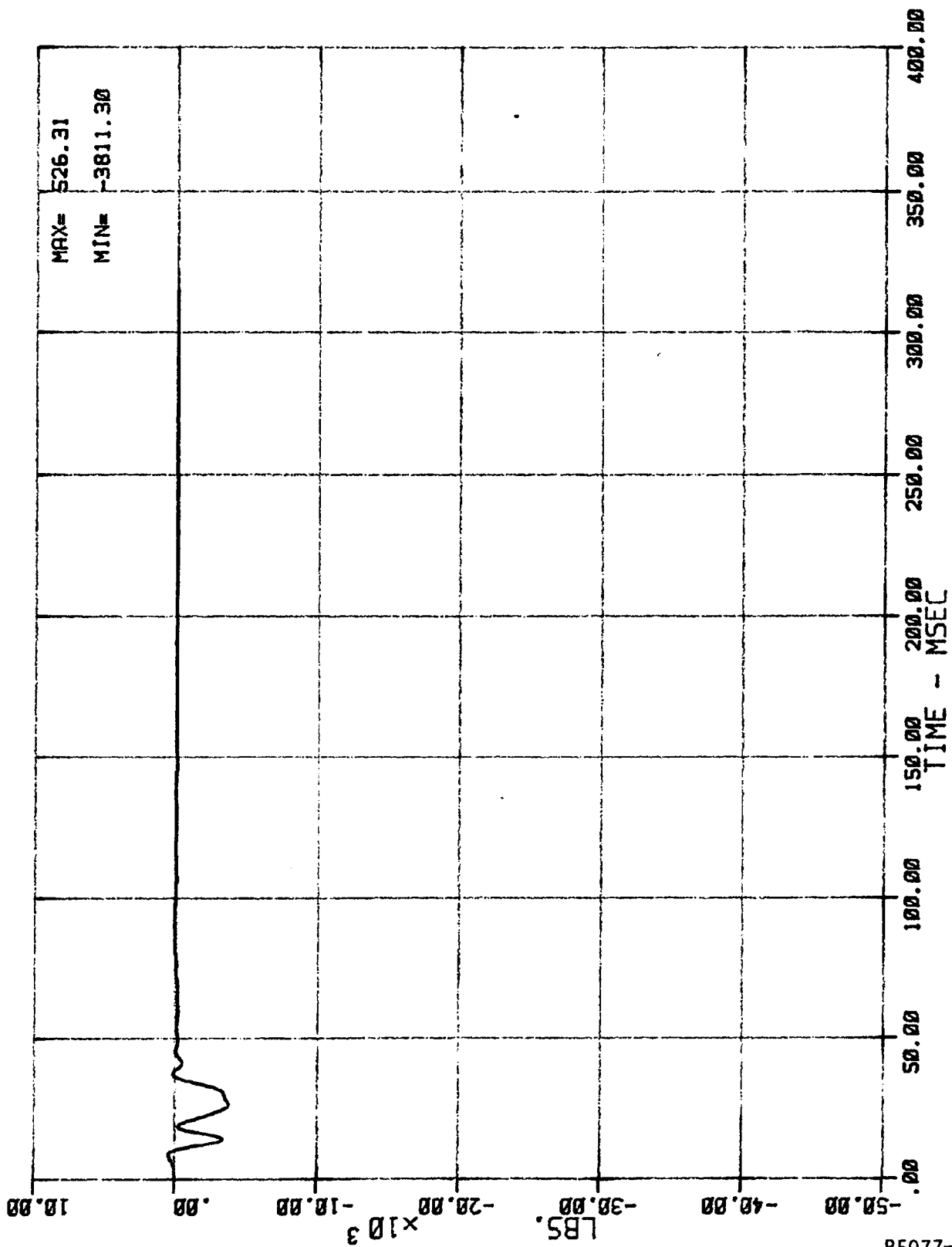
R5077-01



61 LC BA N 803 (BARRIER LOAD CELL 03 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

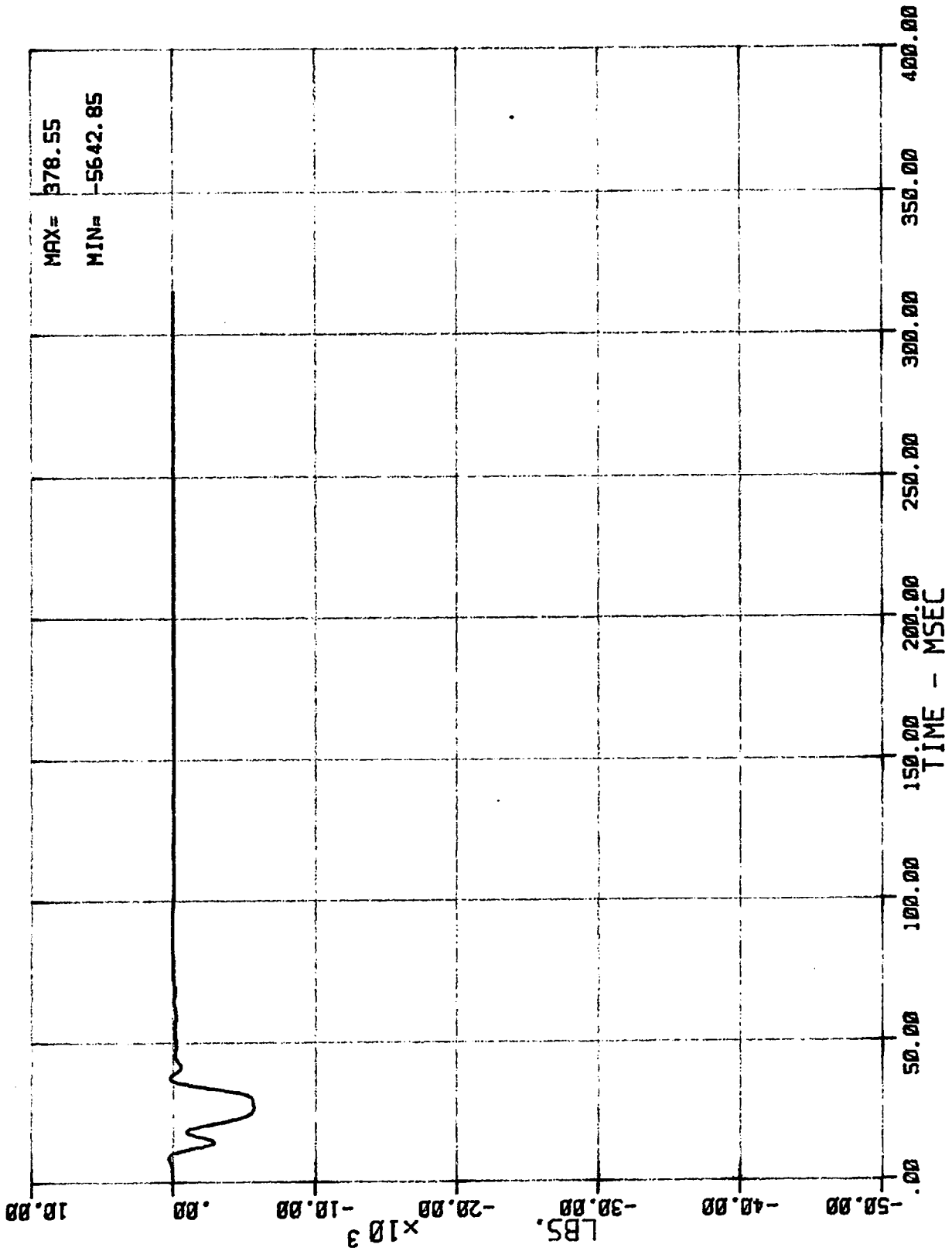
R5077-01



R5077-01

62 LC BA N BD4 (BARRIER LOAD CELL D4 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

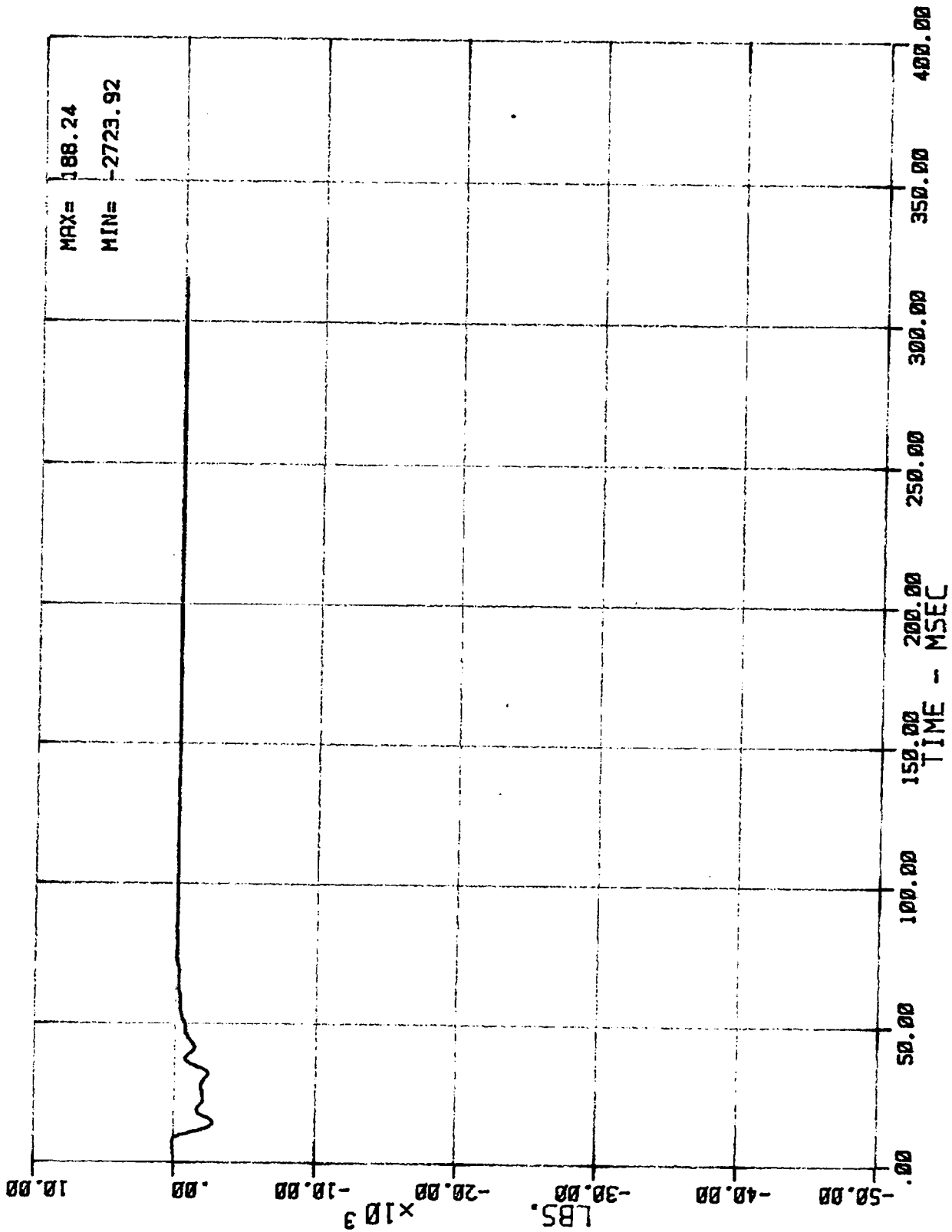
05/15/86



63 LC BA N 805 (BARRIER LOAD CELL DS FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

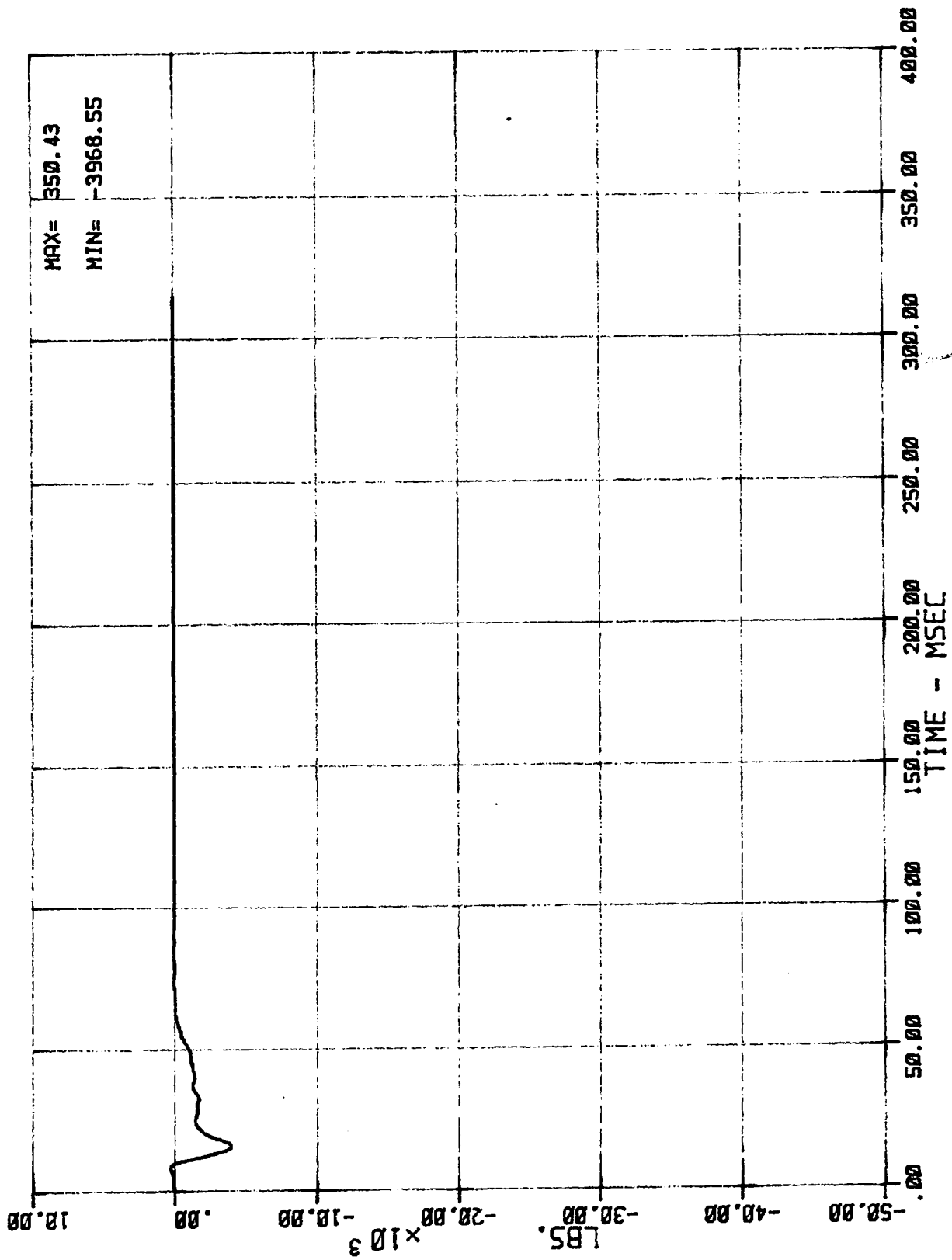
R5077-01



64 LC BR N B06 (BARRIER LOAD CELL 06 FIRCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

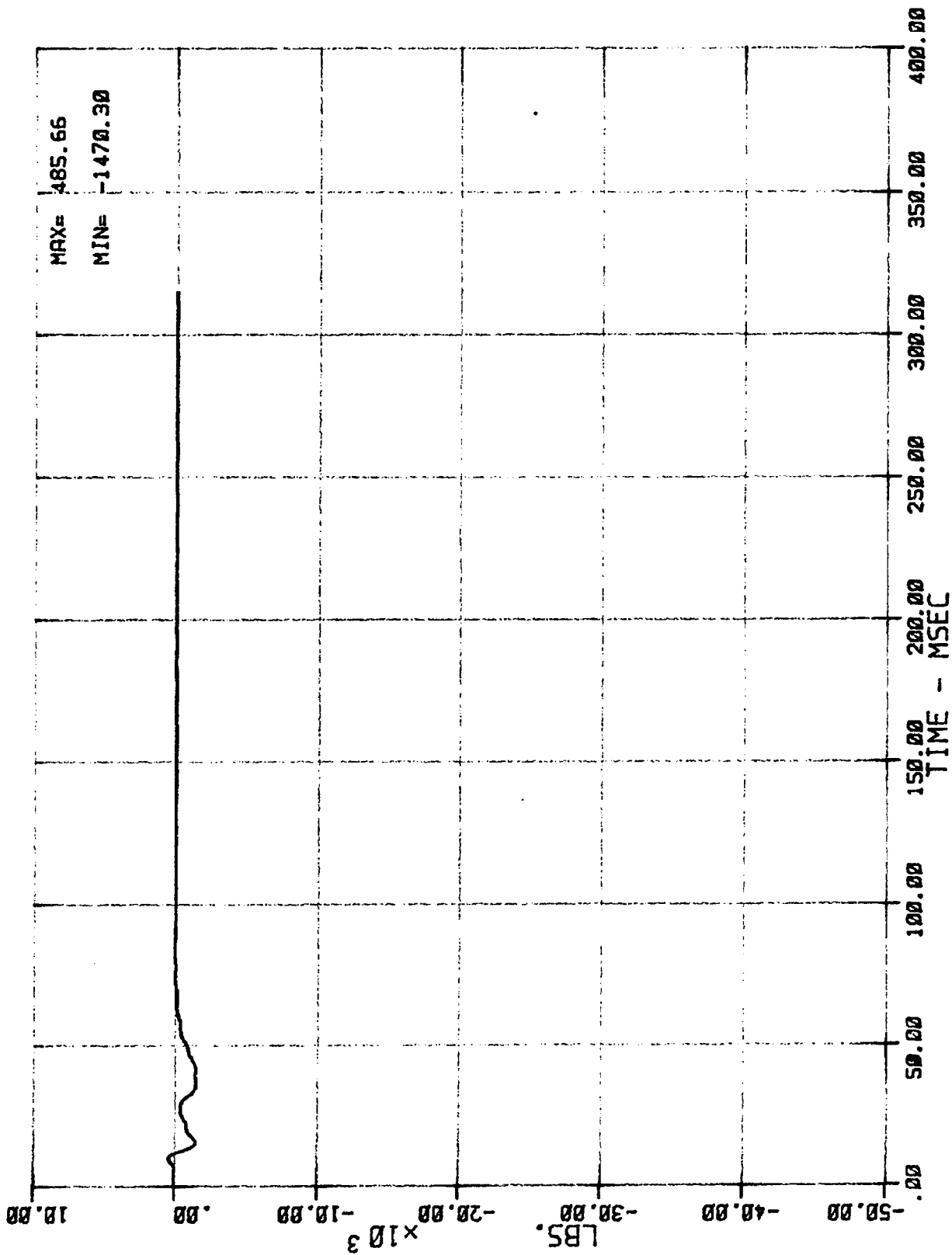
R5077-01



65 LC BA N BD7 (BARRIER LOAD CELL D7 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

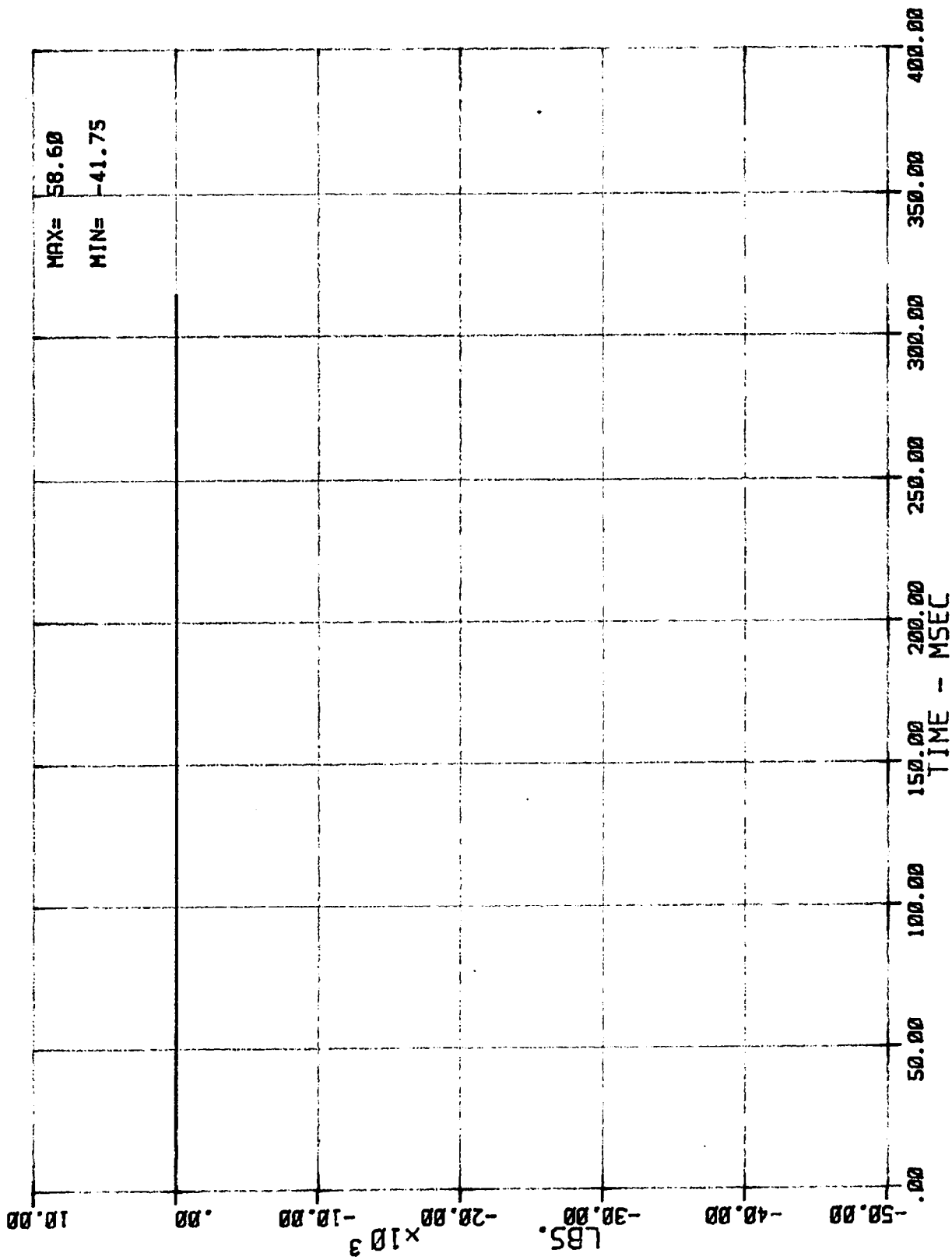
05/15/86

R5077-01



66 LC BA N BDB (BARRIER LOAD CELL DB FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86



67 LC BA N 809 (BARRIER LOAD CELL D9 FORCE)
MSE N33016 1986 SUZUKI SAMURAI

05/15/86

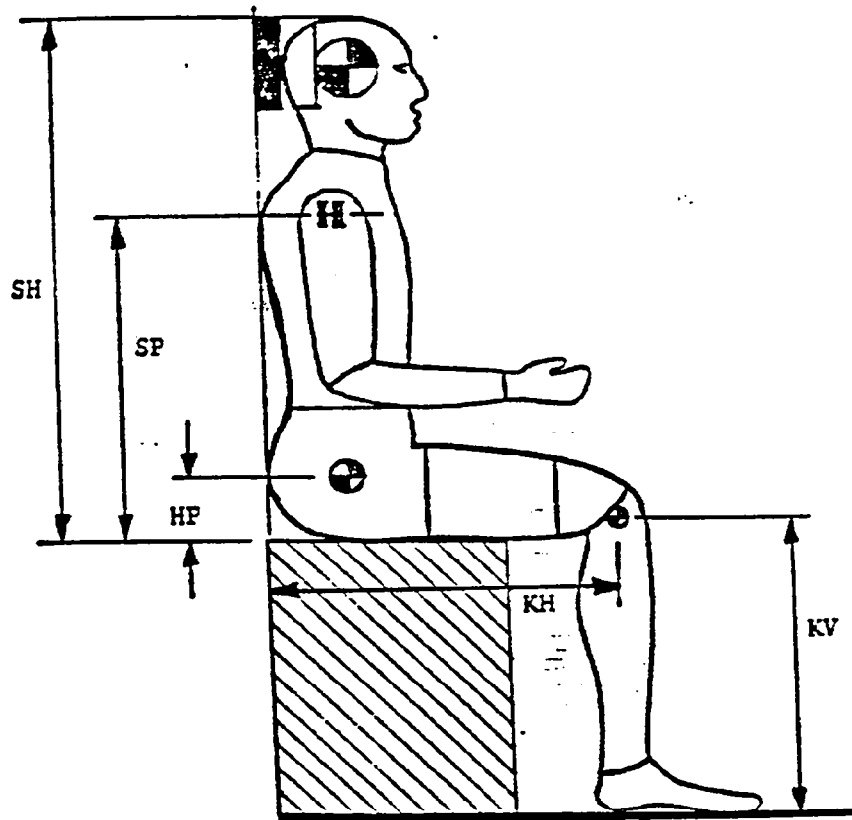
APPENDIX C

PART 572 DUMMY CONFIGURATION AND
PERFORMANCE VERIFICATION TESTS

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA DUMMY I.D. NO.: 4 6 4

I. CONFIGURATION VERIFICATION DATA:



	P. 572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION		05/14/86	
VERIFICATION NUMBER FOR DUMMY*		1	
SH - Seated Height- - - - -	35.6 to 35.8"	35.7	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	22.1	
HP - Hip Pivot Height - - - - -	3.9" ref.	3.9	
KH - Knee Pivot from back line- -	20.1 to 20.7"	20.6	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.4	
SW - Shoulder Width - - - - -	17.8 to 18.4"	18.0	
HW - Hip Width- - - - -	14.0 to 15.4"	14.8	

TECHNICIAN'S NAME: P. Leonard

* Sequential number beginning with "1" at the start of each fiscal year's crash test program

TABLE - PART 572 ATD CERTIFICATION TEST DATA, SUMMARY

NHTSA ATD I.D. NO.: 464

LABORATORY TECHNICIAN: Paul Leonard

Sheet 1 of 3		Pre-Test Calibration	Post-Test Calibration
Date of ATD Calibration - - - - -		02/27-05/14/86	
Calibration Sequential Number For Dummy - - -		1	
Temperature in Lab. (Spec. = 66 to 78° F) - -		70-74	
Relative Humidity in Lab. (Spec. = 10 to 70%)		30-55	
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST:			
a. Peak Resultant Accel. -	210 to 260G	233	
b. Peak Lateral Accel. -	≤10G	2.7	
c. Time above 100G - - -	0.9 to 1.5 ms	1.2	
2. NECK BENDING TEST:			
a. Pendulum Speed - - - -	21.5 to 25.5 fps	22.3	
b. Pendulum Avg. Decel. (over $t_3 - t_2$) - - - -	20 to 24G	24.0	
c. Peak Resultant Head Acceleration - - - - -	26G maximum	23.8	
d. Pendulum Decel. ($t_2 - t_1$)	≤3 ms	2.4	
e. Pendulum Decel. ($t_3 - t_2$)	25 to 30 ms	27.6	
f. Pendulum Decel. ($t_4 - t_3$)	≤10 ms	8.8	
g. Pendulum Direction Reversal Time - - - - -	≥123 ms	N/A	
h. Max. Head Rotation - -	63 to 73°	63.9	
i. Chordal Displacement: Head Rotation Angle - -			
0°	Time	-2 to 2 ms	0.0
	Displ.	-.5 to .5 in.	0.00
30°	Time	25.6 to 34.4 ms	32.0
	Displ.	2.1 to 3.1 in.	2.54
60°	Time	40.3 to 51.7 ms	49.0
	Displ.	4.3 to 5.3 in.	4.98
Maximum (63.9°)	Time	53.2 to 66.8 ms	57.6
	Displ.	5.0 to 6.0 in.	5.37

TABLE - PART 572 ATD CERTIFICATION TEST DATA, SUMMARY (CONT'D)

NHTSA ATD I.D. NO.: 464

Sheet 2 of 3		Pre-Test Calibration		Post-Test Calibration	
TEST PARAMETER		SPECIFICATION			
2. NECK BENDING TEST					
<u>Continued:</u>					
i. Chordal Displacement:					
Head Rotation Angle -					
60°	Time	67.0 to 83.0 ms	67.0		
	Disp.	4.3 to 5.3 in.	4.94		
30°	Time	85.4 to 104.6 ms	85.6		
	Displ.	2.1 to 3.1 in.	2.16		
0°	Time	101.0 to 123.0 ms	101.0		
	Displ.	-.5 to 0.5 in.	0.15		
3. ABDOMINAL COMPRESSION TEST:					
(Preload = 10 pounds)					
a. Force @ .5" - - - - -		23 - 36 lbs.	29.0		
b. Force @ .75" - - - - -		36 - 50 lbs.	41.5		
c. Force @ 1.0" - - - - -		50 - 63 lbs.	58.0		
d. Force @ 1.3" - - - - -		73 - 88 lbs.	84.0		
4. LUMBAR FLEXION TEST:					
a. Force @ 20° - - - - -		22 to 34 lbs.	31.3		
b. Force @ 30° - - - - -		34 to 46 lbs.	43.0		
d. Force @ 40° - - - - -		46 to 58 lbs.	53.6		
e. Return Angle - - - - -		12° maximum	12°		
5. CHEST IMPACT TESTS:					
a. High Speed					
(1) Probe Speed - - -		21.78-22.22 fps	21.89		
(2) Peak Deflection -		1.7" maximum	1.40		
(3) Peak Resistive Force - - - - -		2250 lbs. maximum	2160		
(4) Internal Hysteresis - - -		50 to 70%	68.4		

TABLE - PART 572 ATD CERTIFICATION TEST DATA, SUMMARY (CONT'D)

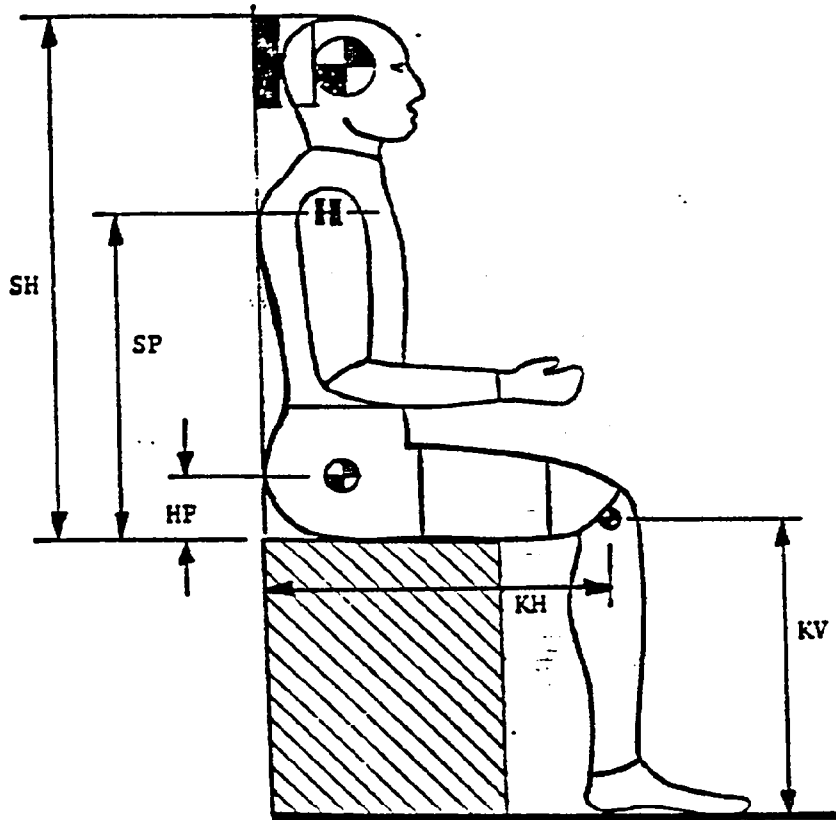
NHTSA ATD I.D. NO.: 464

Sheet 3 of 3		Pre-Test Calibration	Post-Test Calibration
TEST PARAMETER	SPEGIFICATION		
5. <u>CHEST IMPACT TESTS:</u> <u>Continued:</u>			
b. Low Speed			
(1) Probe Speed - - -	113.86-14.14 fps	113.86	
(2) Peak Deflection -	1.1" maximum	1.03	
(3) Peak Resistive. Force - - - - -	1450 lbs. maximum	1318	
(4) Internal Hysteresis - - -	50 to 70%	57.0	
6. <u>KNEE IMPACT TESTS:</u>			
a. Right Side			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.93	
(2) Maximum Force - -	1850 to 2500 lbs.	2375	
(3) Time Above 1000#-	1.7 ms minimum	1.8	
b. Left Side			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.98	
(2) Maximum Force - -	1850 to 2500 lbs.	2374	
(3) Time Above 1000#-	1.7 ms. minimum	1.9	

PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

NHTSA DUMMY I.D. NO.: 4 6 6

I. CONFIGURATION VERIFICATION DATA:



	P.572 SPECIFICATION	PRE-TEST (if required)	POST-TEST (if required)
DATE OF CONFIGURATION VERIFICATION		05/14/86	
VERIFICATION NUMBER FOR DUMMY*		1	
SH - Seated Height- - - - -	35.6 to 35.8"	35.6	
SP - Shoulder Pivot Height- - - -	21.8 to 22.4"	21.9	
HP - Hip Pivot Height - - - - -	3.9" ref.	3.9	
KH - Knee Pivot from back line- -	20.1 to 20.7"	20.5	
KV - Knee Pivot from floor- - - -	19.3 to 19.9"	19.3	
SW - Shoulder Width - - - - -	17.8 to 18.4"	18.3	
HW - Hip Width- - - - -	14.0 to 15.4"	14.1	

TECHNICIAN'S NAME: P. Leonard

* Sequential number beginning with "1" at the start of each fiscal year's crash test program

TABLE - PART 572 ATD CERTIFICATION TEST DATA, SUMMARY

NHTSA ATD I.D. NO.: 466

LABORATORY TECHNICIAN: Paul Leonard

Sheet 1 of 3		Pre-Test Calibration	Post-Test Calibration
Date of ATD Calibration - - - - -		02/28-05/14/86	
Calibration Sequential Number For Dummy - - -		1	
Temperature in Lab. (Spec. = 66 to 78° F) - -		70-74	
Relative Humidity in Lab. (Spec. = 10 to 70%)		33-56	
TEST PARAMETER	SPECIFICATION		
1. HEAD DROP TEST:			
a. Peak Resultant Accel. -	210 to 260G	249	
b. Peak Lateral Accel. -	≤10G	9.7	
c. Time above 100G - - -	0.9 to 1.5 ms	1.2	
2. NECK BENDING TEST:			
a. Pendulum Speed - - - -	21.5 to 25.5 fps	22.2	
b. Pendulum Avg. Decel. (over $t_3 - t_2$) - - - -	20 to 24G	22.2	
c. Peak Resultant Head Acceleration - - - -	26G maximum	20.4	
d. Pendulum Decel. ($t_2 - t_1$)	≤3 ms	2.8	
e. Pendulum Decel. ($t_3 - t_2$)	25 to 30 ms	28.6	
f. Pendulum Decel. ($t_4 - t_3$)	≤10 ms	10.0	
g. Pendulum Direction Reversal Time - - - -	≥123 ms	N/A	
h. Max. Head Rotation - -	63 to 73°	63.0	
i. Chordal Displacement: Head Rotation Angle - -			
0°	Time	-2 to 2 ms	0.0
	Displ.	-.5 to .5 in.	0.00
30°	Time	25.6 to 34.4 ms	32.8
	Displ.	2.1 to 3.1 in.	2.58
60°	Time	40.3 to 51.7 ms	51.6
	Displ.	4.3 to 5.3 in.	4.91
Maximum (63°)	Time	53.2 to 66.8 ms	60.8
	Displ.	5.0 to 6.0 in.	5.22

TABLE - PART 572 ATD CERTIFICATION TEST DATA, SUMMARY (CONT'D)

NHTSA ATD I.D. NO.: 466

Sheet 2 of 3		Pre-Test Calibration		Post-Test Calibration	
TEST PARAMETER		SPECIFICATION			
2. <u>NECK BENDING TEST</u> <u>Continued:</u>					
i. Chordal Displacement:					
Head Rotation Angle -					
60°	Time	67.0 to 83.0 ms	70.4		
	Disp.	4.3 to 5.3 in.	4.88		
30°	Time	85.4 to 104.6 ms	89.2		
	Displ.	2.1 to 3.1 in.	2.21		
0°	Time	101.0 to 123.0 ms	101.2		
	Displ.	-.5 to 0.5 in.	0.15		
3. <u>ABDOMINAL COMPRESSION TEST:</u> (Preload = 10 pounds)					
a. Force @ .5" - - - - -		23 - 36 lbs.	28.0		
b. Force @ .75" - - - - -		36 - 50 lbs.	43.0		
c. Force @ 1.0" - - - - -		50 - 63 lbs.	59.0		
d. Force @ 1.3" - - - - -		73 - 88 lbs.	87.0		
4. <u>LUMBAR FLEXION TEST:</u>					
a. Force @ 20° - - - - -		22 to 34 lbs.	32.0		
b. Force @ 30° - - - - -		34 to 46 lbs.	42.5		
d. Force @ 40° - - - - -		46 to 58 lbs.	56.6		
e. Return Angle - - - - -		12° maximum	11°		
5. <u>CHEST IMPACT TESTS:</u>					
a. High Speed					
(1) Probe Speed - - -		21.78-22.22 fps	22.11		
(2) Peak Deflection -		1.7" maximum	1.59		
(3) Peak Resistive Force - - - - -		2250 lbs. maximum	2192		
(4) Internal Hysteresis - - -		50 to 70%	61.4		

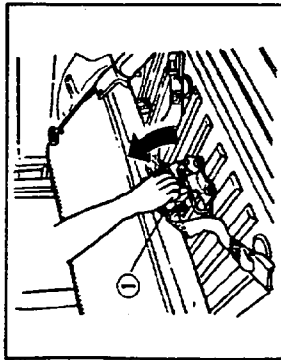
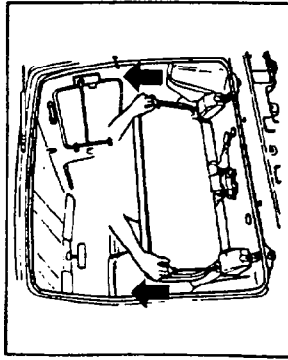
TABLE - PART 572 ATD CERTIFICATION TEST DATA, SUMMARY (CONT'D)

NHTSA ATD I.D. NO.: 466

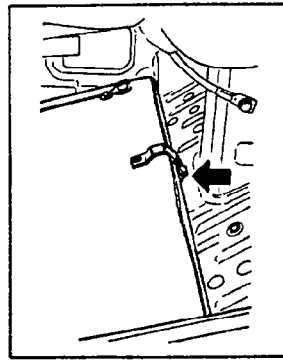
Sheet 3 of 3		Pre-Test Calibration	Post-Test Calibration
TEST PARAMETER	SPECIFICATION		
5. CHEST IMPACT TESTS:			
<u>Continued:</u>			
b. Low Speed			
(1) Probe Speed - - -	113.86-14.14 fps	113.86	
(2) Peak Deflection -	1.1" maximum	1.00	
(3) Peak Resistive Force - - - - -	1450 lbs. maximum	1312	
(4) Internal Hysteresis - - -	50 to 70%	66.2	
6. KNEE IMPACT TESTS:			
a. Right Side			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.92	
(2) Maximum Force - -	1850 to 2500 lbs.	2113	
(3) Time Above 1000#-	1.7 ms minimum	1.8	
b. Left Side			
(1) Probe Speed - - -	6.76 to 7.04 fps	6.96	
(2) Maximum Force - -	1850 to 2500 lbs.	2480	
(3) Time Above 1000#-	1.7 ms. minimum	1.8	

APPENDIX D
VEHICLE'S OWNER MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

REAR SEAT (JME/MMK)

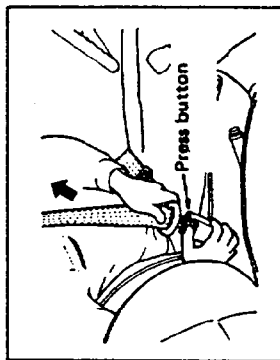
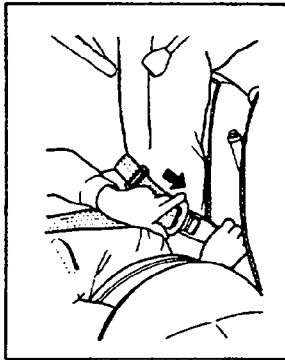


To fold the rear seat forward, pull up the rings on both sides of the seat and fold the seat back ahead. Next, pull up the hook ① as shown in the illustration and fold the entire rear seat forward.



If you intend to drive the vehicle with the rear seat folded forward, be sure to hook the retaining strap as shown in the illustration.

FRONT SEAT BELTS (Automatic retracting belts)



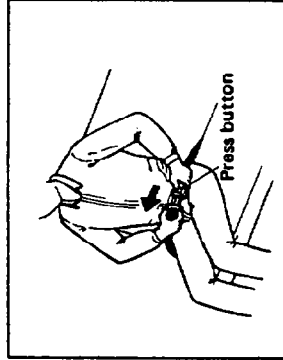
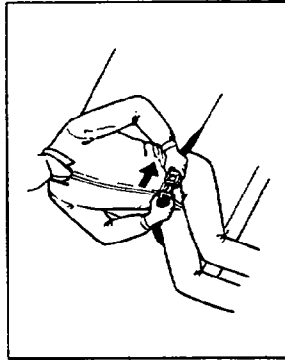
Draw the buckle tongue attached to the seat belt across the body and press it into the buckle catch until a "click" is heard. The buckle catch unit is located on a stalk between the seat and the hand brake.

Adjustment of the belt length is very important. To adjust the lap belt and at the same time check that the buckle has locked correctly, pull upwards on the shoulder strap as if attempting to pull the buckle apart, until the lap belt fits tightly.

The length of the diagonal shoulder strap adjusts itself to allow freedom of movement. To unfasten the belt, press the release button on the buckle catch unit.

No modifications or additions should be made by the user which will either prevent the seat belt adjusting devices from operating to remove slack, or prevent the seat belt assembly from being adjusted to remove slack.

REAR SEAT BELTS (2-point, automatic retracting type) ... 4-seater



To fasten the seat belt, insert the buckle tongue into the buckle catch and make sure that the connection is secure and the belt is not twisted. The belt length is automatically adjusted and the retractor locks the belt only in event of sudden stop or impact.

To adjust belt position, set the lap belt as low as possible on the hip — never on the waist — so as to reduce the risk of sliding under the belt in case of accident.

To release the belt, press the release button and allow the belt to retract. Make sure that belt is not twisted to ensure good retraction.

WARNING:

- Never allow persons to ride in the cargo area of a vehicle. In the event of an accident, there is a much greater risk of injury for persons who are not riding in a seat with their seat belt securely fastened.
- Seat belts should always be adjusted so the lap portion of the belt is

worn low across the pelvis, not across the waist. Shoulder straps should be worn on the outside shoulder only, and never under the arm. Seat belts should never be worn with the straps twisted and should be adjusted as tightly as is comfortable to provide the protection for which they have been designed. A slack belt will provide less protection than one which is snug.

- Make sure that each seat belt buckle is inserted into the proper buckle catch. It is possible to cross the buckle catches in the rear seat.
- Never use the same seat belt on more than one occupant and never attach a seat belt over an infant or child being held on occupant's lap. Such seat belt use could cause serious injury in the event of an accident.
- Avoid contamination of seat belt webbing by polishes, oils and chemicals and particularly battery acid. Cleaning may safely be carried out using mild soap and water.
- Seat belt assemblies should be inspected periodically for excessive wear and/or damage. Seat belts should be replaced if webbing becomes frayed, contaminated, or damaged in any way. It is essential to replace the entire seat belt assembly after it has been worn in a severe impact, even if damage to the assembly is not obvious.
- Pregnant women should use seat belts, although specific recommendations about restraint use should be made by the woman's physician.
- Infants and small children should never be transported unless they are properly restrained. Restraint systems for infants and small children can be purchased commercially and should be used. Make sure that the system you purchase meets Federal Motor Vehicle Safety Standards. Read and follow all the directions provided by the manufacturer. Children who are too big for child restraint