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Report Number: 208S-TRC-01-005

Vehicle Safety Compliance Testing for FMVSS 208
for Occupant Crash Protection
Sled Test

Fuji Heavy Industries, Ltd.
2001 Subaru Legacy
NHTSA Number: C15500
TRC Test Number: S010119

Transportation Research Center Inc.
10820 State Route 347
East Liberty, OH 43319



Test Date: January 19, 2001
Report Date: February 9, 2001

Final Report

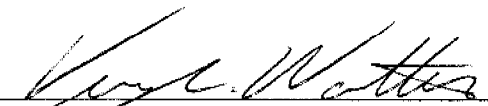
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Technical Report Documentation Page

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16. Abstract An FMVSS 208 Section 13 compliance sled test was conducted on a 2001 Subaru Legacy Sedan, NHTSA No.C15500, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208S-01 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows: None			
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³
TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

* 1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price \$2.25, SD Catalog No. C13.10-286.

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares (10,000 m ²)	2.5	acres	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

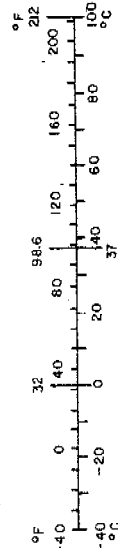


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Purpose

This Federal Motor Vehicle safety Standard (FMVSS) 208 compliance sled test is part of the FMVSS compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by the Transportation Research Center Inc. (TRC) under Contract No. DTNH22-98-D-01055. The purpose of this test was to determine if the subject vehicle, a 2001 Subaru Legacy Sedan, NHTSA No.C15500, meets the performance requirements of FMVSS 208, "Occupant Crash Protection," in the impact simulation sled test mode.

Test Procedure

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208S-01, dated January 15, 1998. Data was obtained relative to FMVSS 208, "Occupant Crash Protection," performance.

The sled test vehicle was instrumented with six (6) accelerometers to measure longitudinal axis accelerations. The sled was instrumented with one (1) longitudinal accelerometer which is prefiltered with an analog filter to 200 Hz as an integral part of the sled firing circuit (this data is not recorded by the TRC data acquisition system), and two (2) additional longitudinal accelerometers: the primary accelerometer for pulse and integrated velocity determination and a backup accelerometer. In addition the sled was instrumented with one (1) light trap to measure velocity, and two (2) airbag firing timing circuits.

The sled test vehicle contained two (2) Part 572 E 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to the dummy placement procedure specified in Appendix B of the Laboratory Test Procedure. The dummies were not restrained by seat belts.

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations; chest deflection potentiometers; left and right femur load cells to measure axial forces; and upper neck load cells to measure longitudinal, lateral, and vertical forces and moments.

The forty-two (42) data channels were digitally sampled at 12,500 samples per second and processed per Sections 11.7 through 11.9 of the Laboratory Test Procedure.

The sled test event was recorded by one (1) real-time motion picture camera and six (6) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

Test Results Summary

This FMVSS 208 compliance sled test was conducted at TRC on January 19, 2001.

The test vehicle, a 2001 Subaru Legacy Sedan, NHTSA No.C15500, does appear to comply with the performance requirements of FMVSS 208 in the impact simulation sled test mode as measured by Hybrid III 50th percentile male dummies.

	FMVSS 208 Max. Allowable Injury Assessment Values	Driver	Passenger
HIC	1000	232	257
Chest g	60 g	37.7	35.8
Chest Displacement	3 inches	1.1	0.9
Left Femur	2250 lb	984	1437
Right Femur	2250 lb	1132	1546
Neck Extension	57 Nm	9.5	26.3
Neck Flexion	190 Nm	32.3	54.4
Neck Tension	3300 N	1232	1261
Neck Compression	4000 N	1975	439
Neck Shear	3100 N	932	858

The subject vehicle, a 2001 Subaru Legacy, NHTSA No. C15500, appears to meet the other FMVSS 208 requirements for which it was tested. These results are shown in the data sheets that are included in this report.

The sled test vehicle was equipped with air bags at the driver and passenger seating positions. The dummies were not restrained by seat belts. The sled carriage was accelerated to 17.8 g with an integrated velocity change of 29.6 mph. The air bags, including second stage of passenger airbag, were triggered at 20.2 milliseconds after 0.5 g acceleration was measured by the firing circuit. Following subsequent digital data processing and filtering the primary sled acceleration signal to Channel Class 60, the air bag event trigger signal was 21.7 ms after the 0.5 g acceleration level was indicated.

Data Acquisition Explanations

The measured velocity data channel, SLDXV, from the light trap vane attached to the sled, recorded an anomalous spike at approximately 235 milliseconds.

Sled Test Summary

NHTSA number: C15500
Test type: Alternate FMVSS 208 Sled Test
Test date: 01/19/01
Test time: 1453
Ambient temperature at impact area: 70° F
Vehicle year/make/ model/body style: 2001/Subaru /Legacy /Sedan

<u>Dummy Info:</u>	<u>Driver #314</u>	<u>Passenger #339</u>
Type:	III	III
Location:	Left Front	Right Front
Restraint:	Airbag, supplemental	Airbag, supplemental, dual stage
Number of data channels:	15	15

Number of Cameras:
Real-time: 1
High-speed: 6

Door Opening Data:
Left Front: Easy
Right Front: Easy

Front Seat Data:
Seat track failure: None
Seat back failure: None

Visible Dummy Contact Points:

Head:	Airbag, windshield, headrest	Airbag, sun visor
Chest:	Airbag	Airbag
Left knee:	Knee bolster	Glove box
Right knee:	Knee bolster	Glove box

General Test and Vehicle Parameter Data for the Sled Test Vehicle

Test Vehicle Information:

Vehicle year/make/
model/body style: 2001/Subaru/Legacy/Sedan
Color: Green
VIN: 4S3BE635X17206004
NHTSA number: C15500
Engine data:
Placement: Inline
Cylinders: 4
Displacement: 2.5 liters
Transmission data: 4 speed, manual, X automatic, overdrive
Final drive: fwd, rwd, X 4wd
Date vehicle received: 12/04/2000
Odometer reading: 76
Dealer's name
and address: Byers Imports
401 N. Hamilton Rd.
Columbus, OH 43213

Major Options:

Power steering	Yes	Other: Anti-lock brakes, front seatbelt
Power brakes	Yes	pretensioners and force limiters, child restraint
Power windows	Yes	anchorage system, rear door child safety locks
Air conditioning	Yes	
Power door locks	Yes	

Remarks: None

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Data from Vehicle's Certification Label:

Vehicle manufactured by: Fuji Heavy Industries, Ltd.
Date of manufacture: October-00
VIN: 4S3BE635X17206004
GVWR: 4400 lbs
GAWR: Front: 2220 lbs
Rear: 2180 lbs

Data from Vehicle's Tire Placard:

Tire pressure with maximum capacity vehicle load:

Front: 32 psi

Rear: 30 psi

Recommended tire size: P205/60R15

Load range: 1301 lbs

Recommended cold tire pressure:

Front: 32 psi

Rear: 30 psi

Size of tires on vehicle: P205/60R15

Spare tire: T135/70R16

Vehicle capacity data:

Type of front seats: Bucket

Number of occupants:

Front 2

Rear 3

Total 5

Remarks: None

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Weight of test vehicle as received (with maximum fluids):

Right front	903.9 lbs	Right rear	718.7 lbs
Left front	961.2 lbs	Left rear	709.9 lbs
Total front weight	1865.1 lbs	(56.6% of total vehicle weight)	
Total rear weight	1428.6 lbs	(43.4% of total vehicle weight)	
Total delivered weight	3293.7 lbs		

Calculation of test vehicle's target test weight:

RCLW = Rated Cargo and Luggage Weight

UDW = Unloaded Delivered Weight (3294 lbs)

DSC = Designated Seating Capacity (5)

$RCLW = VCW - DSC (150 \text{ lbs}) = 850 - 5(150) = 100 \text{ lbs}$

Target test weight = $UDW + RCLW + (\text{Number of Hybrid III dummies} \times 167 \text{ lbs per dummy})$

Target test weight = $3294 + 100 + 334 = 3728 \text{ lbs}$

Weight of test vehicle with two dummies and 300.5 lbs of cargo weight:

Right front	983.2 lbs	Right rear	965.6 lbs
Left front	1025.1 lbs	Left rear	954.6 lbs
Total front weight	2008.3 lbs	(51.1% of total vehicle weight)	
Total rear weight	1920.2 lbs	(48.9% of total vehicle weight)	
Total test weight ¹	3928.5 lbs		

Remarks:

Weight of ballast secured in vehicle cargo area: None

Components removed to meet target test weight: None

¹ The total test weight is high because the target weight had originally been incorrectly calculated by using the NHTSA formula for vehicles with no vehicle capacity weight on the label.

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Test Vehicle Attitude:

As delivered door sill angle: 0.6° Nose Down

As tested door sill angle: 0.2° Nose Down

Fully loaded door sill angle: 0°

Vehicle Wheelbase: 104.3 inches

Fuel System Data:

Fuel system capacity from owner's manual: 16.9 gallons

Useable capacity figure furnished by COTR: 16.9 gallons

Remarks: The roll angle measurement was within 1 inch. The left and right side measurements were 29.9 inches.

Post-Impact Data

Test number: S010119
NHTSA number: C15500
Test date: 01/19/01
Test time: 1453
Test type: Alternate FMVSS 208 Sled Test
Impact angle: 0°
Ambient temperature
at impact area: 70° F
Temperature in
occupant compartment: 70° F

Sled carriage velocity:

Integrated velocity from the integration of the entire sled acceleration: 29.6 mph
Measured velocity from the light trap device attached to the sled (backup): 28.7 mph
Specified integrated velocity range: 28 to 30 mph

Sled carriage acceleration:

Acceleration: 17.8 g
Specified acceleration range: 16.0 g - 18.2 g

Sled carriage acceleration duration:

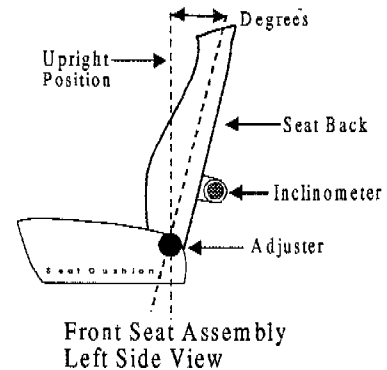
Time from T-0(-0.5 g) to 0.0 g: 126.1 msec
Specified acceleration duration: 120 - 130 msec

The sled acceleration curve was within the specified corridor.

Seat and Steering Column Positioning Data

Vehicle: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500



Nominal Design Riding Position:

- Driver Seat: Seat Back Angle = 9.6° measured on headrest post. Manually adjustable seat back was set in the fourth locking position.
- Passenger Seat: Seat Back Angle = 9.8° measured on headrest post. Manually adjustable seat back was set in the fourth locking position.

Seat Fore and Aft Positions:

- Driver Seat: Closest adjustment to the rear of the mid point position. The seat was positioned in the tenth latch position with the forward most latch counted as the first latch position.
- Passenger: Closest adjustment to the rear of the mid point position. The seat was positioned in the tenth latch position with the forward most latch counted as the first latch position.

Steering Column Adjustments:

The steering column tilt was set in mid position.

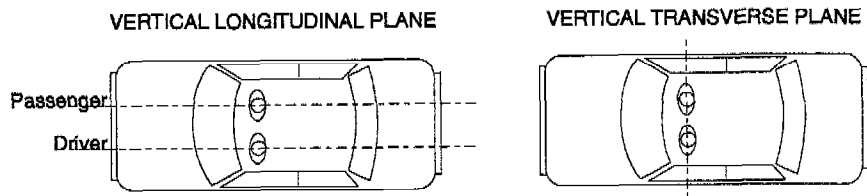
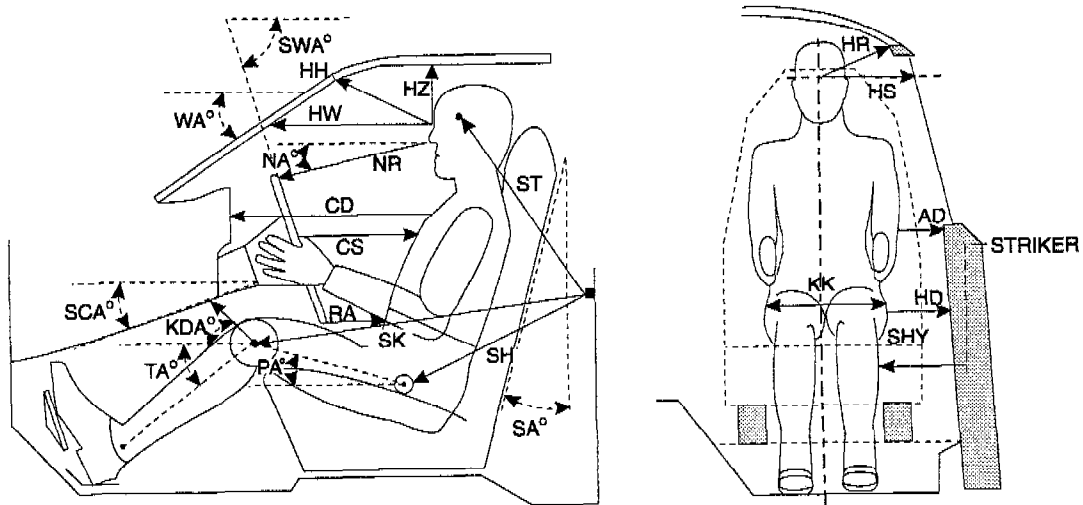
Dummy Measurement Data for Front Seat Occupants

Designation	Type of Measurement	Driver (Serial #314)	Passenger (Serial #339)
WA	Windshield angle	29.8°	N/A
SWA	Steering wheel angle	22.6°	N/A
SCA	Steering column angle	22.0°	N/A
SA	Seat back angle (measured on headrest post)	9.6°	9.8°
HZ	Head to roof	7.7 in	7.2 in
HH	Head to header	12.6 in	12.8 in
HW	Head to windshield	21.6 in	19.8 in
HR	Head to side header	8.5 in	8.2 in
NR	Nose to rim	15.8 in	N/A
NA	Nose to rim angle	13°	N/A
CD	Chest to dash	20.5 in	22.5 in
CS	Steering wheel to chest	12.6 in	N/A
RA	Rim to abdomen	7.9 in	N/A
KDL	Left knee to dash	7.1 in	6.9 in
KDR	Right knee to dash	6.8 in	6.7 in
KDA	Outboard knee to dash angle	18°	18°
PA	Pelvic angle	22.3°	23.5°
TA	Tibial angle	38.7°	37°
KK	Knee to knee	12.2 in	12.2 in
ST ¹	Striker to head	21.0 in	21.5 in
	Striker to head angle	-87.9°	-86.8°
SK ¹	Striker to knee	22.0 in	22.2 in
	Striker to knee angle	-3.3°	-3.5°
SH ¹	Striker to H-point	9.1 in	8.7 in
	Striker to H-point angle	26.5°	23.8°
SHY	Striker to H-point (Y dir.)	9.3 in	8.5 in
HS	Head to side window	12.2 in	11.4 in
HD	H-point to door	5.2 in	5.0 in
AD	Arm to door	4.5 in	4.6 in

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

¹ A negative angle indicates the measurement point was located below the striker.

Dummy Measurement Locations for Front Seat Occupants



Descriptions of Dummy Measurements

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

- * HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- * HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- * CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- * CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Then measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See diagram.
- RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).
- *¹ KDL, Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's
KDR outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See diagram.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

Descriptions of Dummy Measurements, Cont'd.

SH, Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z
SK, plane measured from the forward most center point on the striker to the center of
ST the H-point, outer knee bolt, and head target. When taking this measurement a
firm device that can be rigidly connected to the striker should be used. Use a
level. The angles of these measurements with respect to the horizontal should
also be recorded. The measurement in the Y (transverse) direction from the
striker to the H-point should also be taken (SHY). See diagram.

The following measurements are to be made within a vertical transverse plane.

- HS Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height which allows a level measurement. Use a level. See diagram.
- * AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.
- * HD H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.
- * HR Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.
- SHY Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See diagram.
- KK Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse.)

Angles

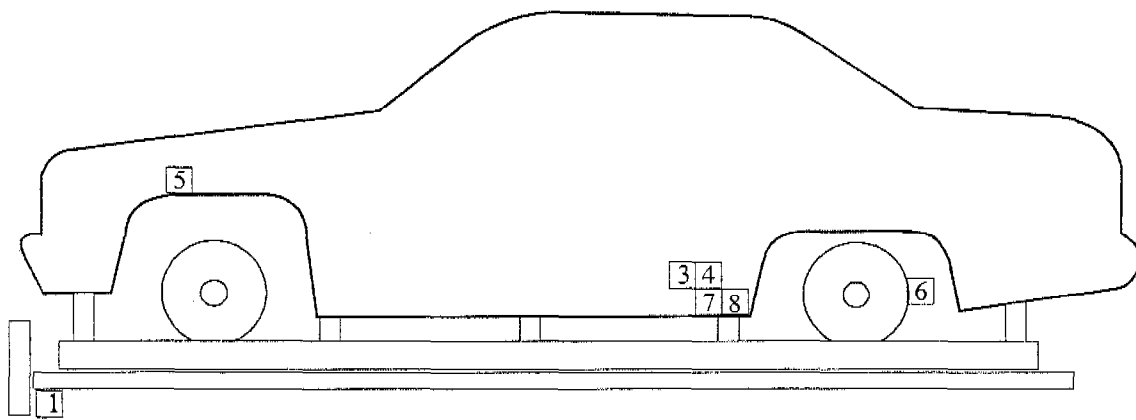
- SA Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.

* Measurement used in Data Tape Reference Guide

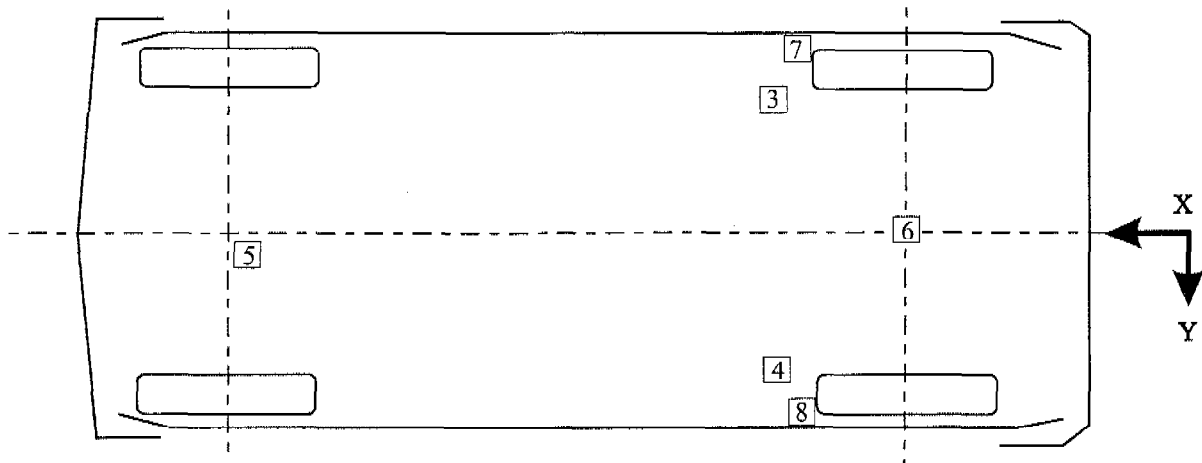
Descriptions of Dummy Measurements, Cont'd.

- PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
- SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.
- SCA Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
- NA Measure the angle made when taking the measurement NR with respect to the horizontal.
- KDA Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See diagram.
- WA Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
- TA Tibial Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

Vehicle Accelerometer Placement



Side View



Bottom View

Vehicle Data Summary and Accelerometer Locations

TEST NUMBER: S010119				POSITIVE		NEGATIVE	
No.	LOCATION	X	Y	DIRECTION		DIRECTION	
1	SLED ACCELERATION	165.6 in	-1.0 in				
	PRIMARY	0.7 g		@ 177.9 ms	17.8 g	@ 56.6 ms	
	BACKUP	2.2 g		@ 215.1 ms	18.5 g	@ 58.5 ms	
2	SLED VELOCITY						
	MEASURED	0.1 mph		@ 11.5 ms	28.7 mph	@ 136.2 ms	
	INTEGRATED ¹	---		--	29.6 mph	@ 140.4 ms	
3	LEFT REAR SEAT	47.4 in	-27.2 in				
	CROSSMEMBER						
	LONGITUDINAL	1.7 g		@ 129.8 ms	18.4 g	@ 56.5 ms	
4	RIGHT REAR SEAT	47.5 in	27.4 in				
	CROSSMEMBER						
	LONGITUDINAL	1.5 g		@ 129.3 ms	18.2 g	@ 61.4 ms	
5	TOP ENGINE	165.2 in	0.5 in				
	LONGITUDINAL	5.9 g		@ 136.6 ms	22.6 g	@ 59.4 ms	
6	REAR AXLE	24.2 in	0.0 in				
	LONGITUDINAL	1.2 g		@ 129.0 ms	18.4 g	@ 62.2 ms	
7	LEFT VEHICLE FRAME	50.0 in	-22.8 in				
	LONGITUDINAL	1.7 g		@ 129.8 ms	18.6 g	@ 56.4 ms	

Vehicle Data Summary and Accelerometer Locations, Cont'd.

TEST NUMBER: S010119							
No. LOCATION		X	Y	POSITIVE DIRECTION		NEGATIVE DIRECTION	
8	RIGHT VEHICLE FRAME LONGITUDINAL	50.4 in	23.5 in	1.5 g	@ 129.3 ms	18.0 g	@ 61.4 ms
9	DRIVER AIRBAG EVENT				21.7 ms		
10	PASSENGER PRIMARY AIRBAG EVENT				21.7 ms		
11	PASSENGER SECONDARY AIRBAG EVENT				21.7 ms		

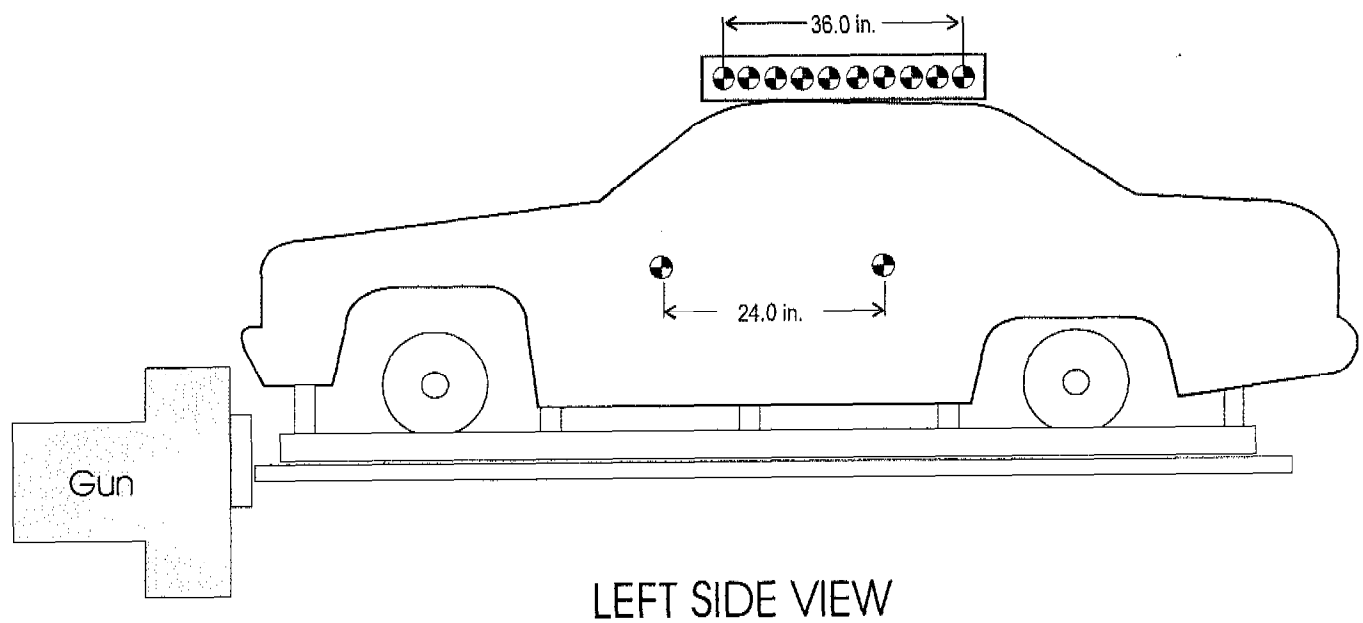
REFERENCE: X: + FORWARD FROM VEHICLE REAR SURFACE
Y: + RIGHTWARD FROM SLED CARRIAGE CENTERLINE

No positive data in time frame of interest.

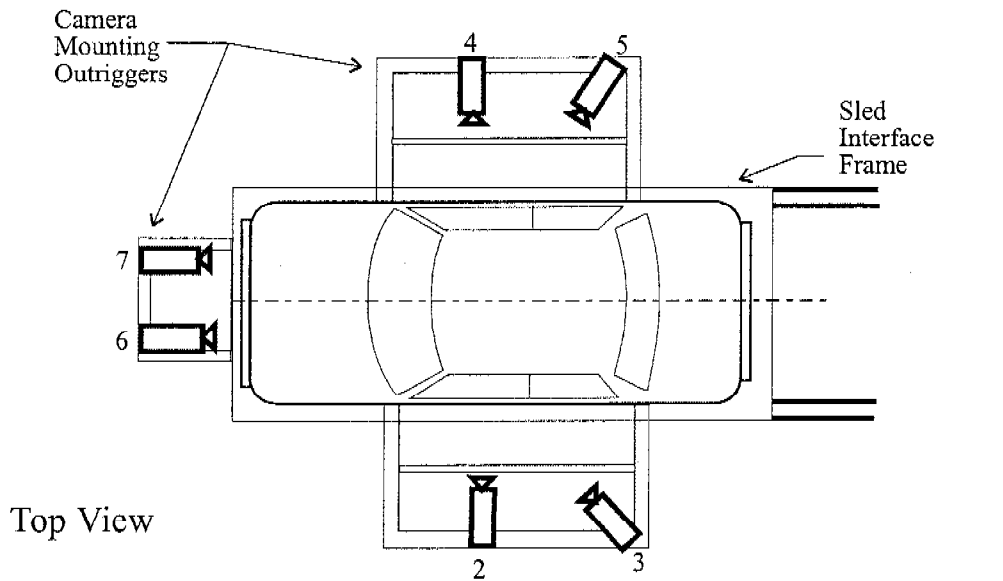
For a channel sign convention list see Report Sign Convention in Appendix D.

Vehicle Targeting Measurements

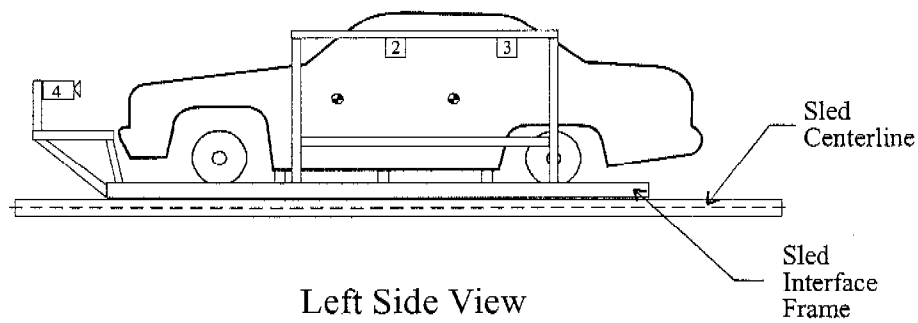
REFERENCE PHOTO TARGETS



Camera Positions



Camera Frame Rates:
 #1 = 24 fps
 All Others = 1,000 fps



Motion Picture Camera Locations

Vehicle year/make/model/body style: 2001/Subaru/Legacy/Sedan

NHTSA No. C15500

Test Number: S010119

Camera Number	View	Camera Positions ¹			Camera Angle ²	Film Plane to Head Target	Camera Lens	Film Speed
		X	Y	Z				
1	Left side view offboard	93.0 in	306.9 in	52.3 in	3°	290.0 in	Zoom	24 frames/s
2	Left side view wide	71.6 in	72.5 in	50.9 in	6.7°	56.2 in	8 mm	1022 frames/s
3	Left side view over shoulder	98.5 in	47.7 in	54.7 in	13.2°	36.6 in	8 mm	992 frames/s
4	Right side view wide	74.3 in	91.3 in	51.3 in	4.6°	75.7 in	13 mm	997 frames/s
5	Right side view over shoulder	101.2 in	48.9 in	54.0 in	11.5°	37.7 in	8 mm	1007 frames/s
6	Front view - driver	26.5 in	12.7 in	49.8 in	5.7°	58.2 in	8 mm	1007 frames/s
7	Front view - passenger	27.0 in	16.1 in	49.8 in	6.5°	57.6 in	8 mm	925 frames/s

¹ X: Film plane to front of sled

Y: Film plane to sled centerline

Z: Film plane to top of sled

² Angle: Film plane of camera downward from horizontal plane

FMVSS 208 Occupant Injury Data

Vehicle: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Date: 01/19/01

Maximum Acceleration Values: (g's) ¹	Driver Dummy #314	Passenger Dummy #339
Head Channel X	-44.4	-50.3
Head Channel Y	6.2	-27.2
Head Channel Z	22.7	31.0
HEAD RESULTANT	45.5	57.2
Chest Channel X	-36.2	-34.1
Chest Channel Y	3.8	-2.8
Chest Channel Z	14.9	17.3
CHEST RESULTANT	39.3	36.4

Head Injury Criteria (HIC) Values:

HIC	232	257
t ₁ = (msec)	91.20	131.04
t ₂ = (msec)	127.20	162.64

[The maximum time interval from t₁ to t₂ is 36 milliseconds.]

Chest Injury Criteria (Clip) Values: (g's)

CLIP	37.7	35.8
t ¹ = (msec)	96.80	94.48
t ² = (msec)	99.84	97.52
Chest Deflection (in)	1.1	0.9

¹ Sign Convention per SAE J211, March 1995.

FMVSS 208 Occupant Injury Data, Cont'd.

Vehicle: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Date: 01/19/01

Units (lbs)		
Max. Compressive Femur Forces:	Driver Dummy #314	Passenger Dummy #339
Left Side (lbs)	984	1437
Right Side (lbs)	1132	1546

Neck Injury Criteria:	Driver Dummy #314	Passenger Dummy #339
Peak Flexion Bending Moment (N-m)	32.3	54.4
Peak Extension Bending Moment (N-m)	9.5	26.3
Peak Axial Tension (N)	1232	1261
Peak Axial Compression (N)	1975	439
Peak Positive X-Axis Shear (N)	932	858
Peak Negative X-Axis Shear (N)	192	557

FMVSS 208 SEAT BELT WARNING SYSTEM CHECK

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/08/01

Complete the following to determine which seat belt warning system option (S7.3(a)(1)) or (S7.3(a)(2)) is used. (Manufacturers may use either option.)

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

A.1 S7.3(a)(1)

Time duration of audible warning signal = N/A seconds
(4 to 8 seconds)

Time duration of reminder light operation = stays on
(no less than 60 seconds)

A.2 S7.3(a)(2)

Time duration of audible warning signal = 6 seconds
(4 to 8 seconds) (see 49 USCS @ 30124)

Time duration of reminder light operation = 6 seconds
(4 to 8 seconds)

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

B.1 S7.3(a)(1)

Time duration of audible warning signal = N/A seconds
(audible warning should not operate)

Time duration of reminder light operation = N/A seconds
(reminder light does not operate)

B.2 S7.3(a)(2)

Time duration of audible warning signal = 0 seconds
(audible warning should not operate)

Time duration of reminder light operation = 6 seconds
(4 to 8 seconds)

C. Note wording of visual warning:

Fasten Seat Belt ☐

Fasten Belt ☐

Symbol 101 ☒

FMVSS 208 READINESS INDICATOR

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/08/01

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.

(11/8/94 legal interpretation)

Is the system totally mechanical?

Yes-☐; No-☒

Describe the location of the readiness indicator: upper left corner of instrument cluster, above fuel gauge

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-☐

FMVSS 208 Air Bag Labels

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/08/01

1. Air Bag Maintenance Label and Owner's Manual Instructions:

1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?

☒ Yes (Go to 1.2)

☐ No (Go to 2)

1.2 Does the Vehicle have a maintenance or replacement label?

☒ Yes-Pass ☐ No-Fail

1.3 Does the label contain one of the following?

☐ Yes-Pass ☐ No-Fail

☐ Schedule on label specifies month and year

☐ Schedule on label specifies vehicle mileage

☒ Schedule on label specifies interval measured from date on certification label

1.4 Is the label permanently affixed within the passenger compartment?

☒ Yes-Pass ☐ No-Fail

1.5 Is the label lettered in English?

☒ Yes-Pass ☐ No-Fail

1.6 Is the label in block capitals and numerals?

☒ Yes-Pass ☐ No-Fail

1.7 Are the letters and numerals at least 3/32 inch high?

☒ Yes-Pass ☐ No-Fail

1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement?

☒ Yes-Pass ☐ No-Fail

2. Does the owner's manual: (S4.5.1 (f))

2.1 Include a description of the vehicle's air bag system in an easily understandable format?

☒ Yes ☐ No

2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?

☒ Yes ☐ No

Air Bag Labels, Cont'd.

- 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions? ☒ Yes ☐ No
- 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash? ☒ Yes ☐ No
- 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to insure maximum safety protection for those occupants? ☒ Yes ☐ No
- 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate? ☒ Yes ☐ No
3. Does the Vehicle:
- 3.1 Provide an automatic means to ensure that the air bag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard seat? ☐ Yes ☒ No
- 3.2 Incorporate sensors, other than or in addition to weight sensors, which automatically prevent the passenger air bag from deploying in situations in which it might have an adverse effect on infants in rear-facing child seat, and unbelted or improperly belted children? ☐ Yes ☒ No
- 3.3 Have a passenger air bag designed to deploy in a manner that does not create a risk of serious injury to infants in rear-facing child seats, and unbelted or improperly belted children? ☐ Yes ☒ No

If yes to 3.1, or 3.2, or 3.3, the vehicle is not required to have a Sun Visor Warning Label (S4.5.1(b)), an air bag alert label (S4.5.1(c)) or a label on the dash (S4.5.1(e)) and this check sheet is complete. (S4.5.1) If no to 3.1, 3.2, and 3.3, go to 4.

Air Bag Labels, Cont'd.

4. Sun Visor Warning Label

- 4.1 Is the label permanently affixed (may be permanent marking or molding) to either side of the sun visor at each front outboard seating position with an air bag?

Driver side	☒ Yes-Pass	☐ No-Fail
Passenger side	☒ Yes-Pass	☐ No-Fail

- 4.2 Does the label conform in content (vehicles without back seats may omit the statement: **"The BACK SEAT is the SAFEST place for children."**) (S4.5.1(b)(2)(v)) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position with an air bag? (S4.5.1(b)(2))

4.2.1 Dual air bags

Driver side	☒ Yes-Pass	☐ No-Fail
Passenger side	☒ Yes-Pass	☐ No-Fail

- 4.2.2 Vehicles with driver air bag ONLY - either 4.2.1 or 4.2.2 is applicable, not both. (S4.5.1(b)(2)(iv))

- 4.2.2.1 Does the label conform on content to the label shown in either Figure 6a or 6b as appropriate?

	☒ N/A
Driver side	☐ Yes-Pass ☐ No-Fail

- 4.2.2.2 Does the label conform in content to the label shown in Figure 6a where the label can be modified to omit the pictogram and the message may read:

DEATH or SERIOUS INJURY can occur.

- . Sit as far back as possible from the air bag.
- . ALWAYS use SEAT BELTS and CHILD RESTRAINTS.
- . The BACK SEAT is the SAFEST place for children.

	☒ N/A
Driver side	☐ Yes-Pass ☐ No-Fail

Air Bag Labels, Cont'd.

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

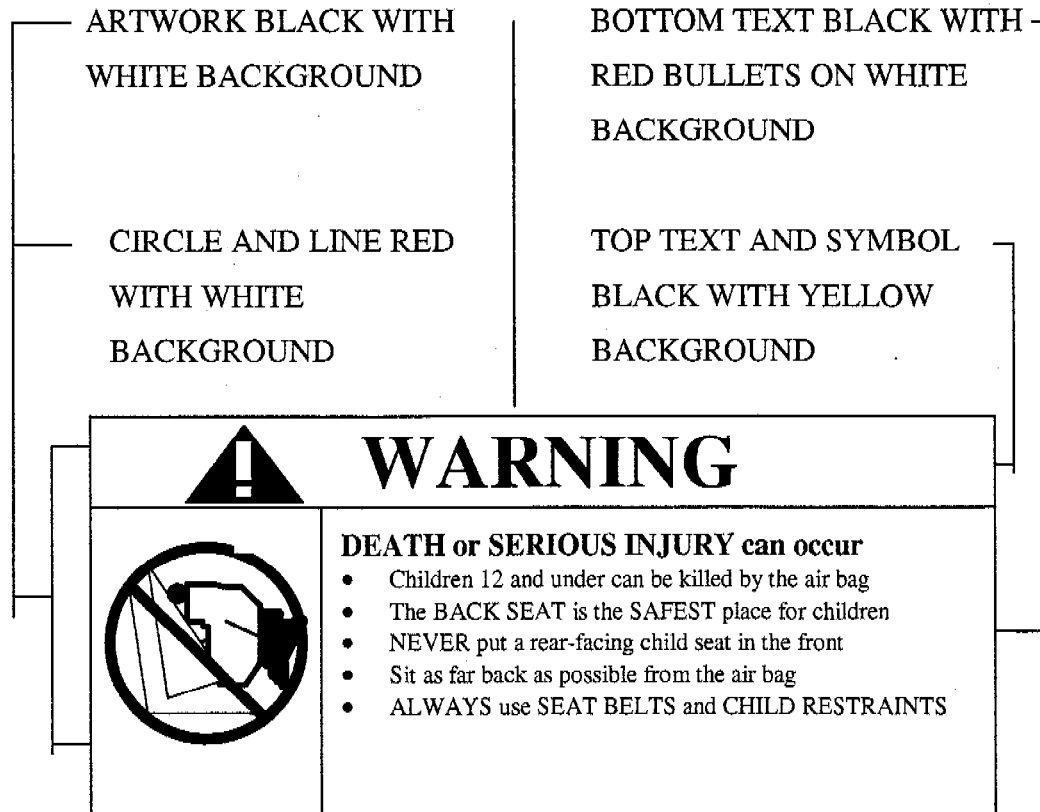


Figure 6a
(S4.5.1(b)(2))

Air Bag Labels, Cont'd.

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

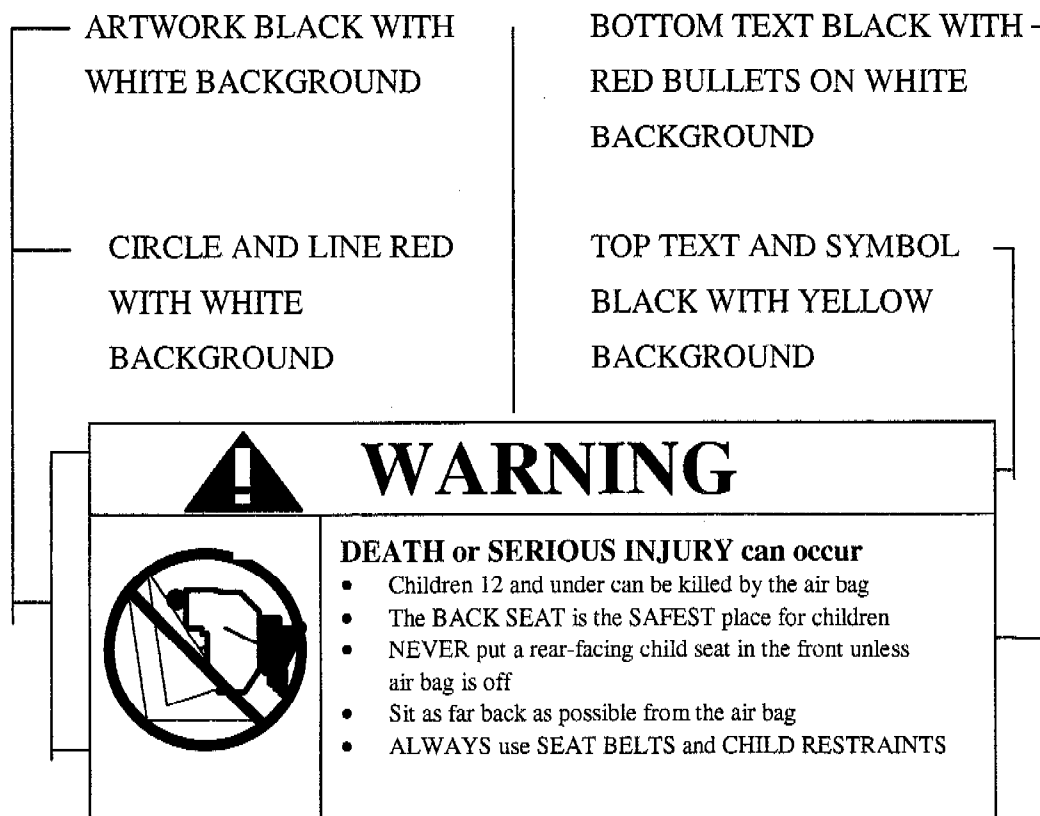


Figure 6b
(S4.5.1(b)(2))

- 4.3 Is the driver side label heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1.(b)(2)(i))

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☒ Yes-Pass ☐ No-Fail

- 4.4 Is the message white with black text? (S4.5.1 (b)(2)(ii))

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☐ No air bag ☒ Yes-Pass ☐ No-Fail

- 4.5 Is the message area at least 30 cm²? (S4.5.1(b)(2)(ii))

Actual message area, driver side 30.3 cm²

Actual message area, passenger side 30.3 cm²

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☐ No air bag ☒ Yes-Pass ☐ No-Fail

Air Bag Labels, Cont'd.

- 4.6 Is the pictogram black with a red circle and slash on a white background?
(S4.5.1(b)(2)(iii)) & (S4.5.1(b)(2)(iv))

For vehicles with driver side air bag ONLY ☐ N/A

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☐ No air bag ☒ Yes-Pass ☐ No-Fail

- 4.7 Is the pictogram at least 30 mm in diameter? (S4.5.1(b)(2)(iii))

Actual diameter, driver side 30 mm

Actual diameter, passenger side 30 mm

For vehicles with driver side air bag ONLY ☐ N/A

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☐ No air bag ☒ Yes-Pass ☐ No-Fail

- 4.8 Is the same side of the sun visor to which the sun visor label is affixed free of other information with the exception of an air bag maintenance label?
(S4.5.1(b)(3))

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☐ No air bag ☒ Yes-Pass ☐ No-Fail

- 4.9 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label or the utility vehicle label?

Driver side ☒ Yes-Pass ☐ No-Fail

Passenger side ☐ No air bag ☒ Yes-Pass ☐ No-Fail

5. Air Bag Alert Label

- 5.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?

Driver ☒ Yes ☐ No

Passenger ☒ Yes ☐ No

If yes, go to 6

- 5.2 Does the label conform in content to the label shown in Figure 6c?
(S4.5.1(c)(2))

☐ Yes-Pass

☐ No-Fail

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN UP POSITION

Circle and Line Red
with White
Background

Artwork Black with
White Background

Text Yellow with
Black Background



Figure 6c
(S4.5.1(c)(2))

Air Bag Labels, Cont'd.

5.3 Is the message area black with yellow text? (S4.5.1(c)(2)(i))
☐ Yes-Pass ☐ No-Fail

5.4 Is the message area at least 20 cm²? (S4.5.1(c)(2)(i))
Actual message area ____ cm² ☐ Yes-Pass ☐ No-Fail

5.5 Is the pictogram black with a red circle and slash on a white background?
(S4.5.1(c)(2)(ii))

For vehicles with driver side air bag ONLY ☐ N/A

☐ Yes-Pass ☐ No-Fail

5.6 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2)(ii))
Actual diameter is ____ mm

For vehicles with driver side air bag ONLY ☐ N/A

☐ Yes-Pass ☐ No-Fail

6. Label On the Dash

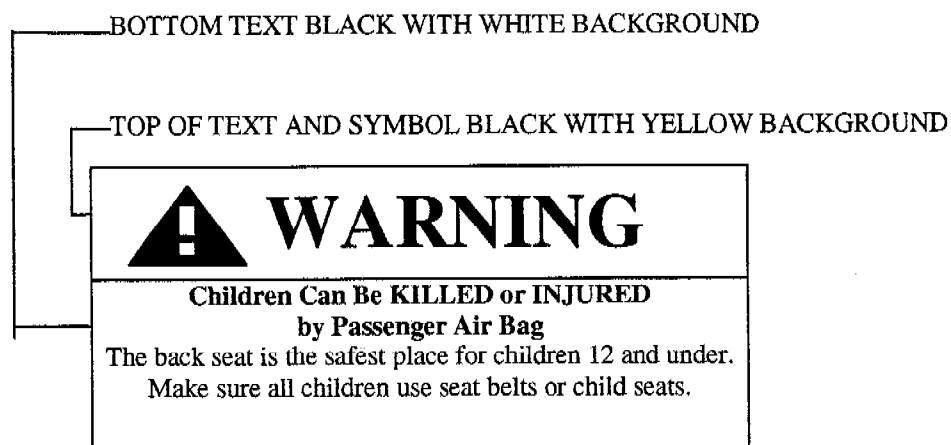
6.1 Does the vehicle have a passenger air bag?
☒ Yes ☐ No

If no, this check list is complete.

6.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e))
☒ Yes-Pass ☐ No-Fail

6.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." (S4.5.1(e)(iii)) to the label shown in Figure 7? (S4.5.1(e))
☒ Yes-Pass ☐ No-Fail

Figure 7
(S4.5.1(e))



Air Bag Labels, Cont'd.

6.4 Is the heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1(e)(i))

☒ Yes-Pass ☐ No-Fail

6.5 Is the message white with black text? (S4.5.1(e)(ii))

☒ Yes-Pass ☐ No-Fail

6.6 Is the message area at least 30 cm²? (S4.5.1(e)(ii))
Actual message area 30.0 cm²

☒ Yes-Pass ☐ No-

Fail

FMVSS 208 REAR OUTBOARD SEATING POSITION SEAT BELTS

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/08/01

Do all rear outboard seating positions have type 2 seat belts?

Yes-☒;

No-☐;

N/A ☐ (No Back Seat)

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 belt was not installed.

FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Right front passenger

- ☒ 1. Record test seat position. Mid
(S7.1.1.5(c)(1)) (Any position is acceptable.)
- ☒ 2. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))
- ☒ 4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle?
(S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No
- 6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒ Yes-Pass ☐ No-Fail

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Right front passenger

- ☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))
- ☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B 55.5 inches.
- ☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))
- ☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle 10 degrees. (Spec. 5~15 degrees)
- ☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B 28.0 inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Front right passenger

- ☒ 14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 25 lbs/sec (spec. 10 ~50 lb/sec)

The measured distance between A and B is 28.2 inches (S7.1.1.5(c)(6))

- ☒ 15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

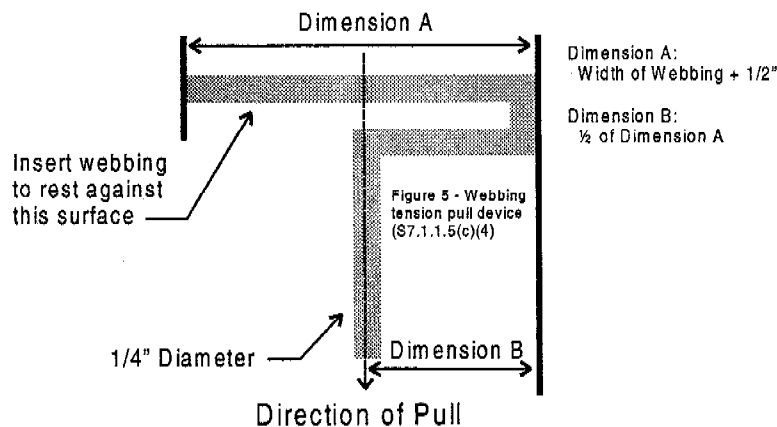
14-13= 0.2 inches

☒ Yes-Pass ☐ No-Fail

- ☒ 16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= 27.3 inches.

☒ Yes-Pass ☐ No-Fail



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats,
other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt
retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Right rear passenger

- ☒ 1. Record test seat position. N/A, Not Adjustable
(S7.1.1.5(c)(1)) (Any position is acceptable.)
- ☒ 2. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 3. Complete any procedures recommended in the vehicle owner's manual to activate any
locking feature. (S7.1.1.5(c)(1))
- ☒ 4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be
adjusted to forward-facing consist of a locking device that does NOT have to be attached
by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle?
(S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be
adjusted to forward-facing consist of a locking device that does NOT require inverting,
twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 6. Does the vehicle user need to take some action to activate the locking feature on the lap
belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to
forward-facing?
If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No
- 6.1 Does the vehicle owner's manual include a description in words and/or diagrams
describing how to activate the locking feature so that the seat belt assembly can
tightly secure a child restraint system and how to deactivate the locking feature to
remove the child restraint system. (S7.1.1.5(b)) ☒ Yes-Pass ☐ No-Fail

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Right rear passenger

- ☒ 7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))
- ☒ 10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B 64.0 inches.
- ☒ 11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))
- ☒ 12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle 10 degrees. (Spec. 5~15 degrees)
- ☒ 13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B 31.1 inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Right rear passenger

- ☒ 14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 25 lbs/sec (spec. 10 ~50 lb/sec)

The measured distance between A and B is 32.0 inches (S7.1.1.5(c)(6))

- ☒ 15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= 0.9 inches

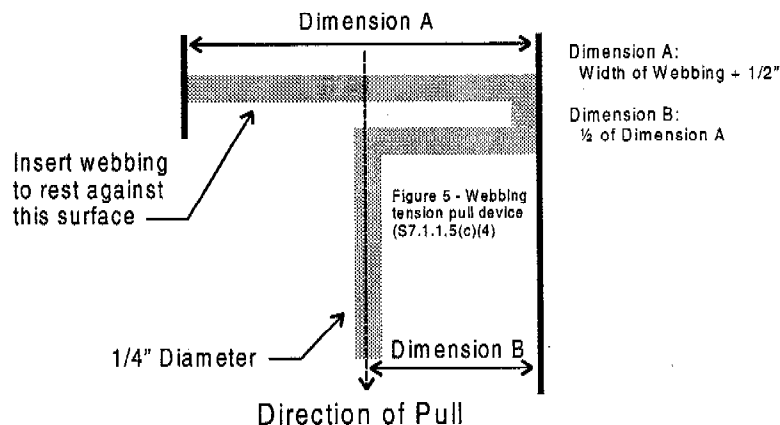
☒ Yes-Pass ☐ No-Fail

- ☒ 16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= 32.0

inches.

☒ Yes-Pass ☐ No-Fail



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Center rear passenger

- ☒ 1. Record test seat position. N/A, Not Adjustable
(S7.1.1.5(c)(1)) (Any position is acceptable.)
- ☒ 2. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))
- ☒ 4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle?
(S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No
- 6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒ Yes-Pass ☐ No-Fail

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Center rear passenger

- ☒7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))
- ☒10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B 67.4 inches.
- ☒11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))
- ☒12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle 10 degrees. (Spec. 5~15 degrees)
- ☒13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B 30.0 inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Center rear passenger

- ☒ 14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 25 lbs/sec (spec. 10 ~50 lb/sec)

The measured distance between A and B is 30.8 inches (S7.1.1.5(c)(6))

- ☒ 15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

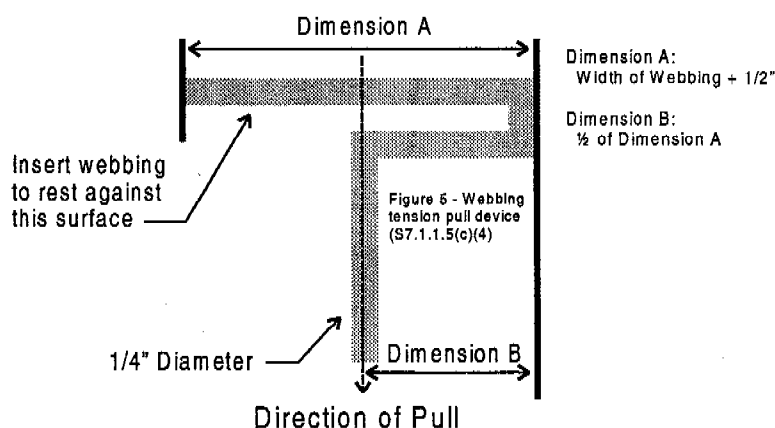
14-13= 0.8 inches

☒ Yes-Pass ☐ No-Fail

- ☒ 16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= 36.6 inches.

☒ Yes-Pass ☐ No-Fail



FMVSS 208 Lap Belt Lockability

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Left rear passenger

- ☒ 1. Record test seat position. N/A, Not Adjustable
(S7.1.1.5(c)(1)) (Any position is acceptable.)
- ☒ 2. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))
- ☒ 4. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part to the vehicle?
(S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 5. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing? (S7.1.1.5(a)) ☒ Yes-Pass ☐ No-Fail
- ☒ 6. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No
- 6.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b)) ☒ Yes-Pass ☐ No-Fail

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Left rear passenger

- ☒ 7. Locate a reference point a on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 8. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 9. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2))
- ☒ 10. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2)) Measured distance between A and B 67.1 inches.
- ☒ 11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))
- ☒ 12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4)) Measured force application angle 10 degrees. (Spec. 5~15 degrees)
- ☒ 13. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4)) Measured distance between A and B 37.4 inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

NHTSA No.: C15500

Technician: R. Waldeck

Date: 01/10/01

DESIGNATED SEATING POSITION: Left rear passenger

- ☒ 14. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 25 lbs/sec (spec. 10 ~50 lb/sec)

The measured distance between A and B is 37.9 inches (S7.1.1.5(c)(6))

- ☒ 15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

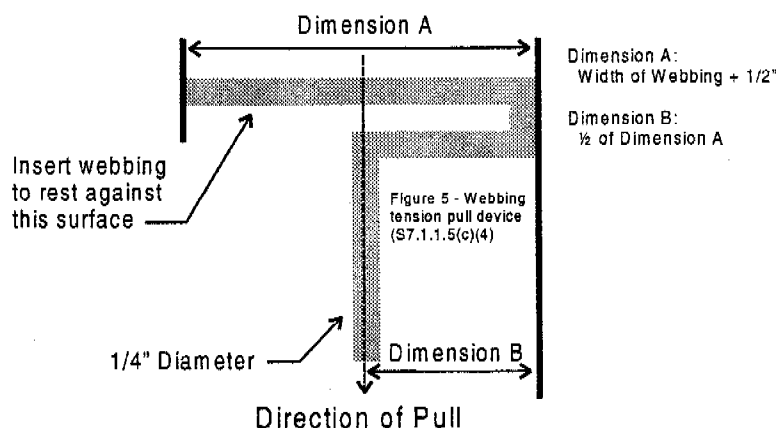
14-13= 0.5 inches

☒ Yes-Pass ☐ No-Fail

- ☒ 16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= 29.2 inches.

☒ Yes-Pass ☐ No-Fail



FMVSS 208 Seat Belt Comfort And Convenience Test
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Right rear passenger

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

☐ Yes-go to latchplate access
☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

☐ Check
☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

☐ Check
☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

☐ Check
☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

☐ Check
☒ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. 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. 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. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.65** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ greater than 0.7 pounds - FAIL*

FMVSS 208 Seat Belt Comfort And Convenience Test
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Center rear passenger

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

☐ Yes-go to latchplate access
☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

☐ Check
☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

☐ Check
☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

☐ Check
☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

☐ Check
☒ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. 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. 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. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is 0.52 pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ greater than 0.7 pounds - FAIL*

FMVSS 208 Seat Belt Comfort And Convenience Test
Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Left rear passenger

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Does the vehicle incorporate a webbing tension-relieving device?

☐ Yes-go to latchplate access
☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

☐ Check
☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

☐ Check
☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

☐ Check
☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

☐ Check
☒ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummies according to dummy position placement instructions in Appendix B.

☒ Check

9. Fasten the seat belt latch. 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. 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. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is 0.52 pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ greater than 0.7 pounds - FAIL*

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Latchplate Access (S7.4.4)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Does not apply

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Position the seat in its forward most adjustment position. ☐ Check
2. Position the test dummy using the procedures in Appendix B. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.) ☐ Check
3. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant. ☐ Check
4. Attach the inboard and outboard reach string following the instructions on Figure 1C. ☐ Check
5. Place the latch plate in the stowed position. ☐ Check
6. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. Is the latchplate within the reach envelope?
Yes- ☐ Pass; No- ☐ Fail
7. Using the clearance test block, specified in Figure 2C of the test procedure, determine if there is sufficient clearance between the vehicle seat and the side of vehicle to allow the test block to move unhindered to the latchplate or buckle.
Yes- ☐ Pass; No- ☐ Fail

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Retraction (S7.4.5)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Does not apply

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

1. Is the vehicle a passenger car or walk-in van-type vehicle?

☒ Yes
☐ No

If yes, go to seat belt guides and hardware.

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

☐ Check

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

☐ Check

4. Place any adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

☐ Check

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

☐ Check

6. Place each adjustable head restraint in its highest adjustment position.

☐ Check

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check

8. 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.

☐ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Retraction (S7.4.5)

9. Restrain the dummies using the belt systems for the position being tested. ☐ Check
10. Stow outboard armrests that are capable of being stowed. ☐ Check
11. Check the statement that applies to this test vehicle:
- (A) The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latchplate is released. ☐ Pass
- (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latchplate is released. ☐ Pass
- (C) Neither A or B apply. ☐ **FAIL**
12. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
Yes- ☐ Pass; No- ☐ **Fail**
13. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated? ☐ N/A
Yes- ☐ Pass; No- ☐ **Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Right rear passenger

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to:

- A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).
- B. Seats which are removable.
- C. Seats that 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, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?

☒ Yes: go to 2.
☐ No: this form is complete.
2. Does one of the following three parts, the seat belt latchplate, the buckle, or the seat belt webbing, stay 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-☒ Pass; No- ☐ Fail
3. Are the remaining two seat belt parts accessible under normal conditions?

Yes-☒ Pass; No- ☐ Fail
4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:
 - (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

(B) The seat is moved to any position to which it is designed to be adjusted. ☒ Check

(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☒ Check

Yes-☒ Pass; No- ☐ Fail

5. Is the inboard receptacle end of the seat belt assembly, 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-☒ Pass; No- ☐ Fail

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Center rear passenger

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to:

- A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).
- B. Seats which are removable.
- C. Seats that 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, determine the following:

- 1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?

☒ Yes: go to 2.
☐ No: this form is complete.
- 2. Does one of the following three parts, the seat belt latchplate, the buckle, or the seat belt webbing, stay 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-☒ Pass; No- ☐ Fail
- 3. Are the remaining two seat belt parts accessible under normal conditions?

Yes-☒ Pass; No- ☐ Fail
- 4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:
 - (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

(B) The seat is moved to any position to which it is designed to be adjusted. ☒ Check

(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☒ Check

Yes- ☒ Pass; No- ☐ Fail

5. Is the inboard receptacle end of the seat belt assembly, 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- ☒ Pass; No- ☐ Fail

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C15500

Vehicle Model Year/Make/Model/Body Style: 2001/Subaru/Legacy/Sedan

Designated Seating Position Tested: Left rear passenger

Date of Comfort and Convenience Check: 01/08/01

Technician Performing Check: Rick Waldeck

GVWR: 4400 pounds

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

The requirements for accessibility **DO NOT APPLY** to:

- A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).
- B. Seats which are removable.
- C. Seats that 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, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?

☒ Yes: go to 2.
☐ No: this form is complete.
2. Does one of the following three parts, the seat belt latchplate, the buckle, or the seat belt webbing, stay 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-☒ Pass; No- ☐ Fail
3. Are the remaining two seat belt parts accessible under normal conditions?

Yes-☒ Pass; No- ☐ Fail
4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

(A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.
Seat Belt Guides And Hardware (S7.4.6)

(B) The seat is moved to any position to which it is designed to be adjusted. ☒ Check

(C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☒ Check

Yes- ☒ Pass; No- ☐ Fail

5. Is the inboard receptacle end of the seat belt assembly, 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- ☒ Pass; No- ☐ Fail

LOCATION OF ANCHORING POINTS FOR LATCHPLATE REACH LIMITING CHAINS OR STRINGS TO TEST FOR LATCHPLATE ACCESSIBILITY

PART 572E DUMMY

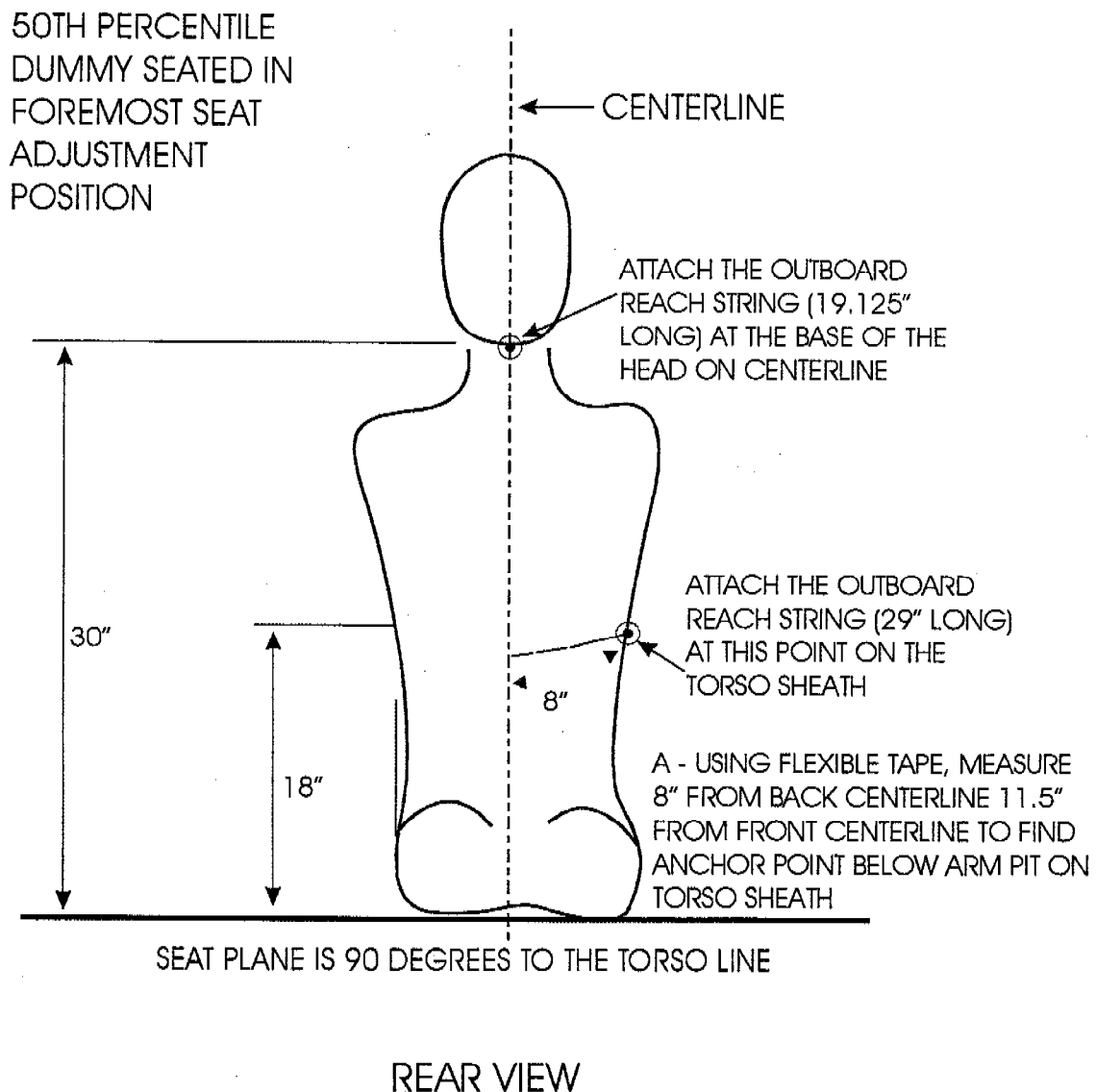


Figure 1C

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

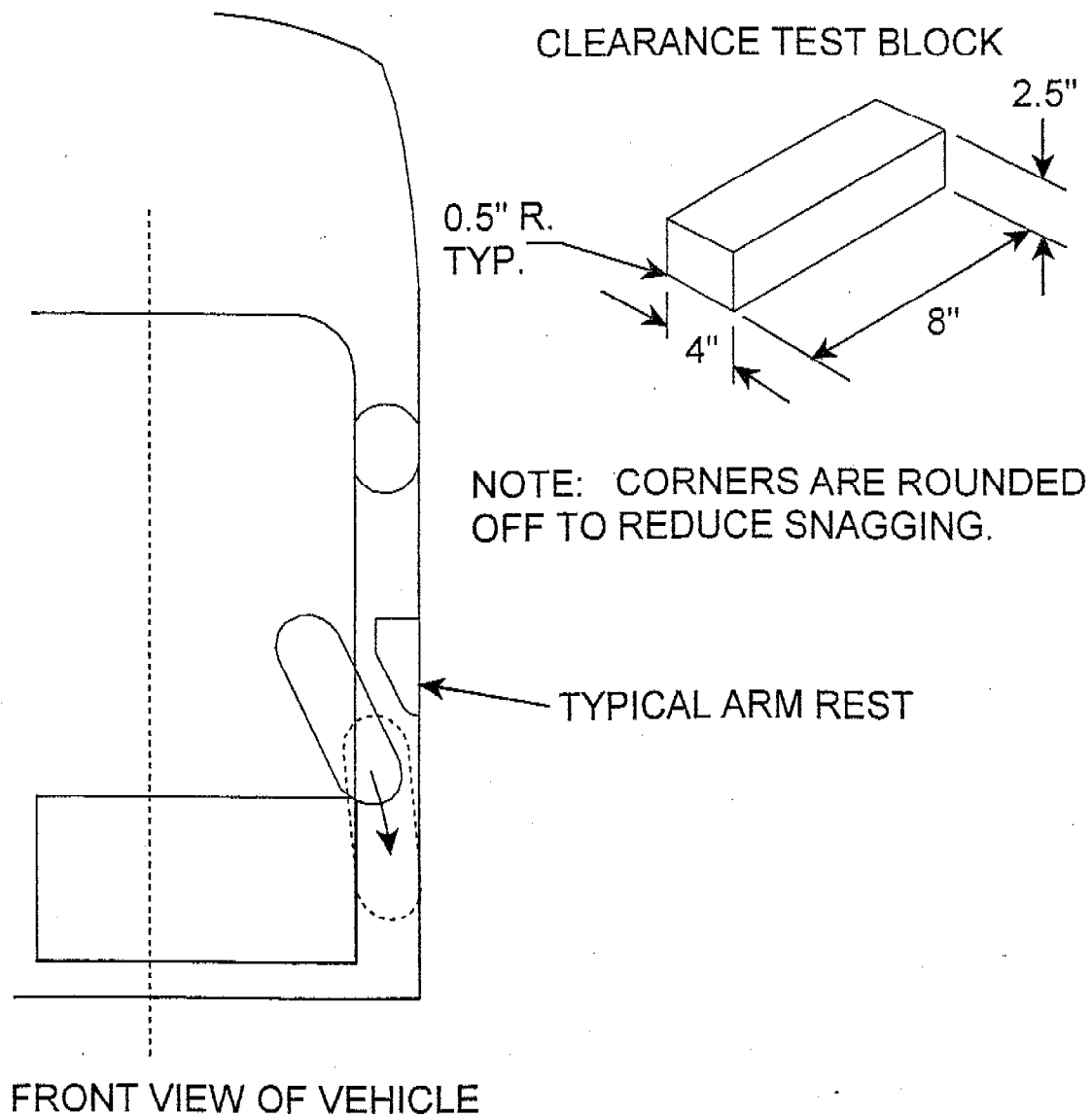


Figure 2C

Appendix A

Photographs

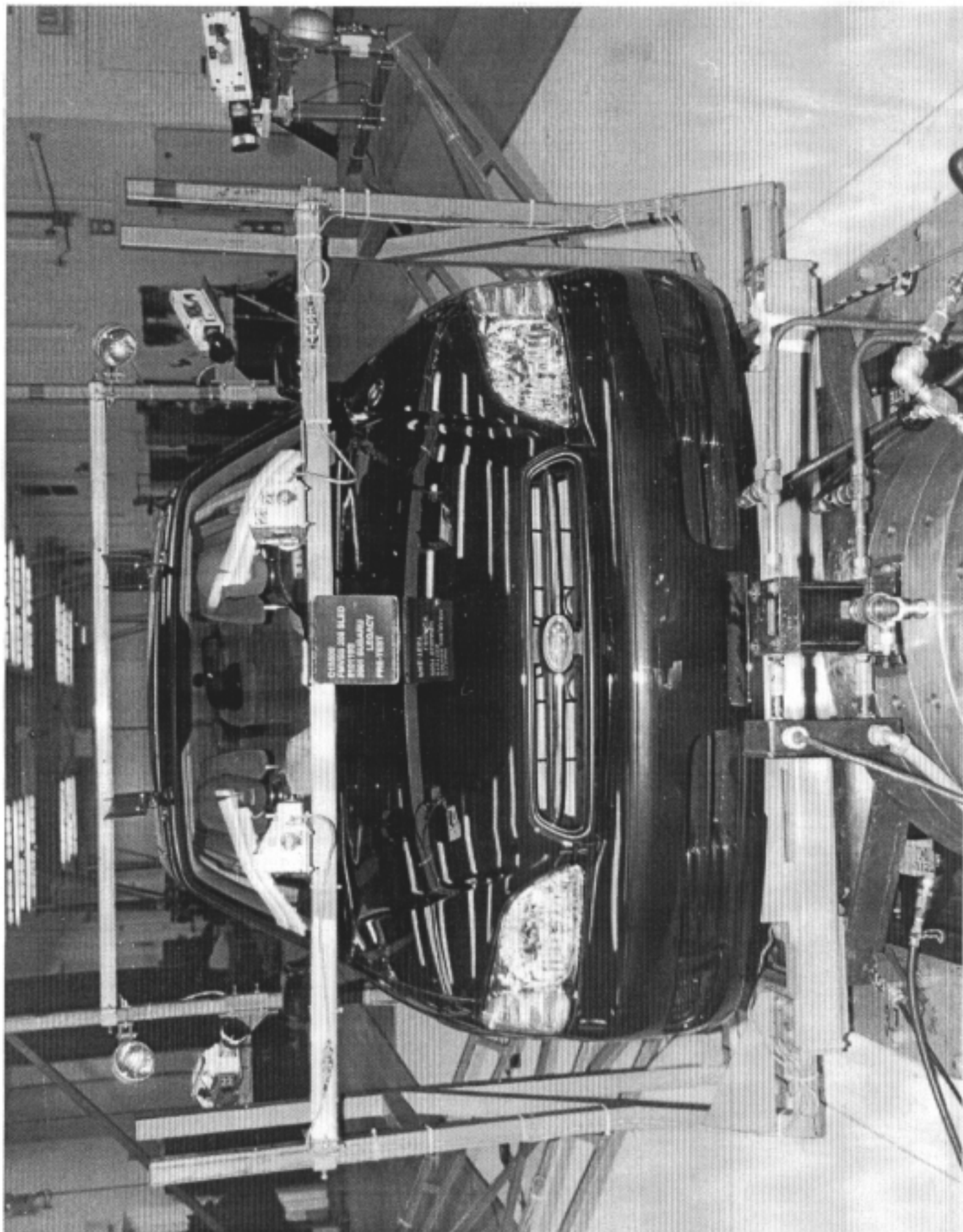


Figure A-1 Pre-Test Front View of Test Vehicle Mounted to Sled

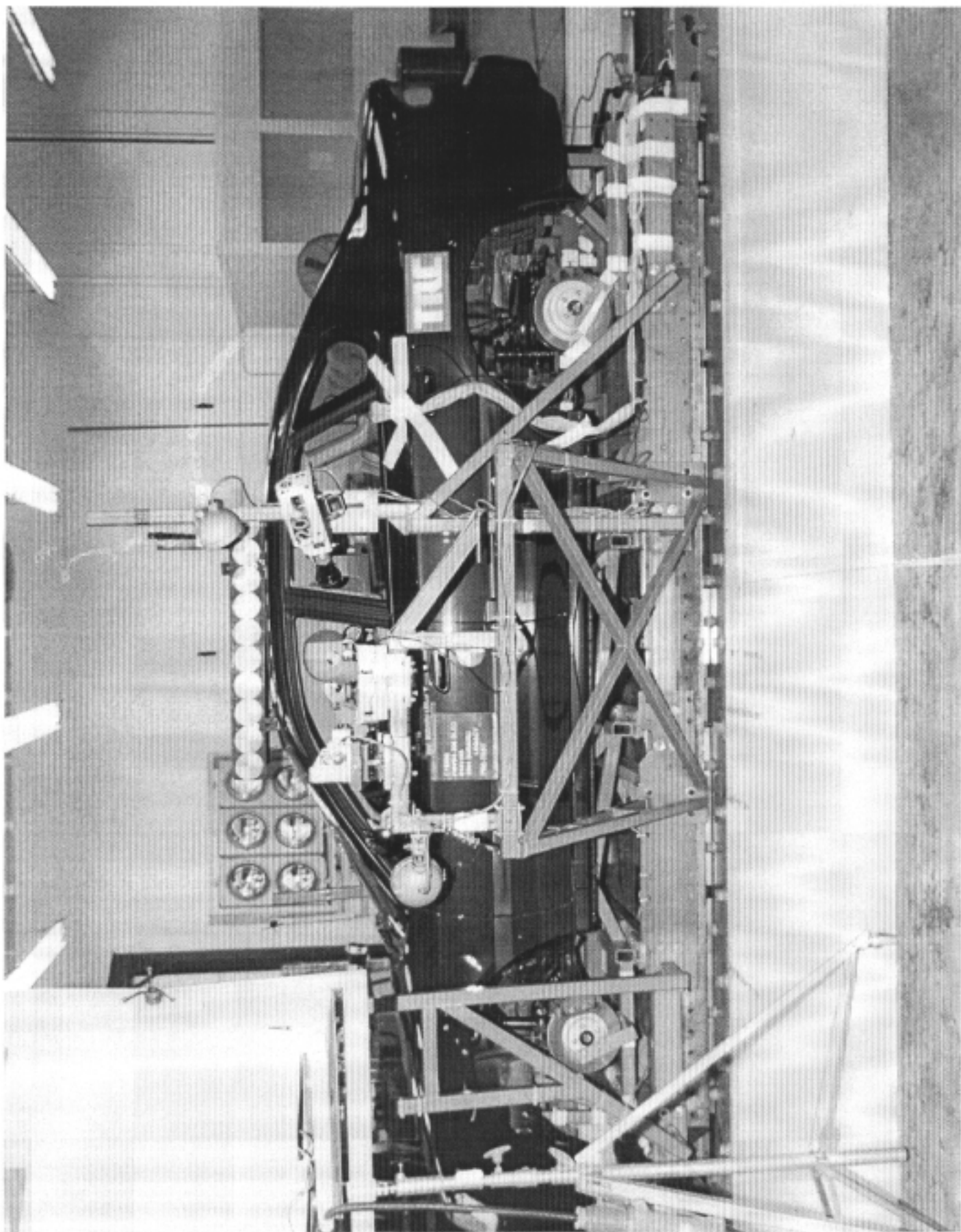


Figure A-2 Pre-Test Left Side View of Test Vehicle Mounted to Sled

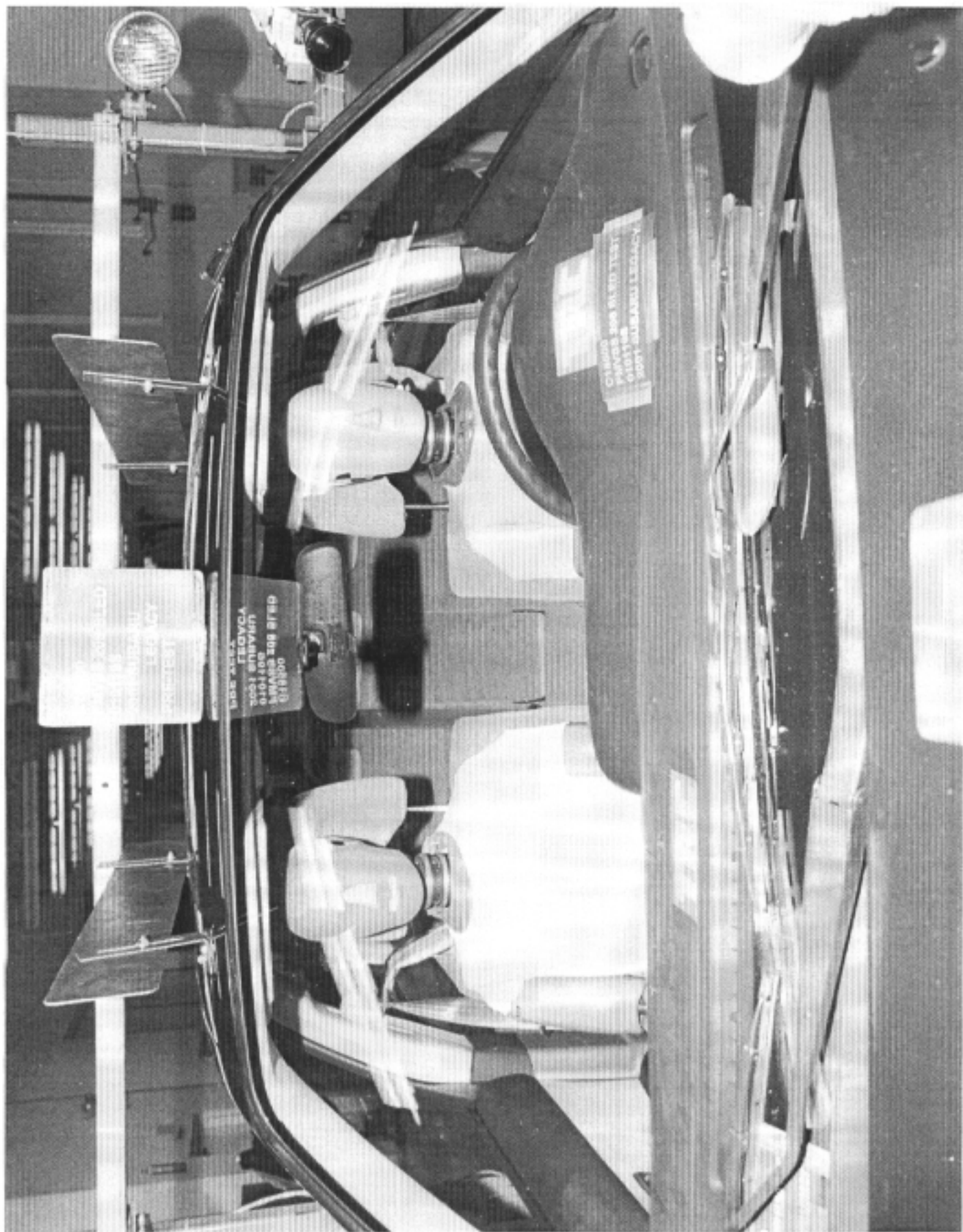


Figure A-4 Pre-Test Windshield View
A-5

S010119



Figure A-5 Post-Test Windshield View
A-6

S010119

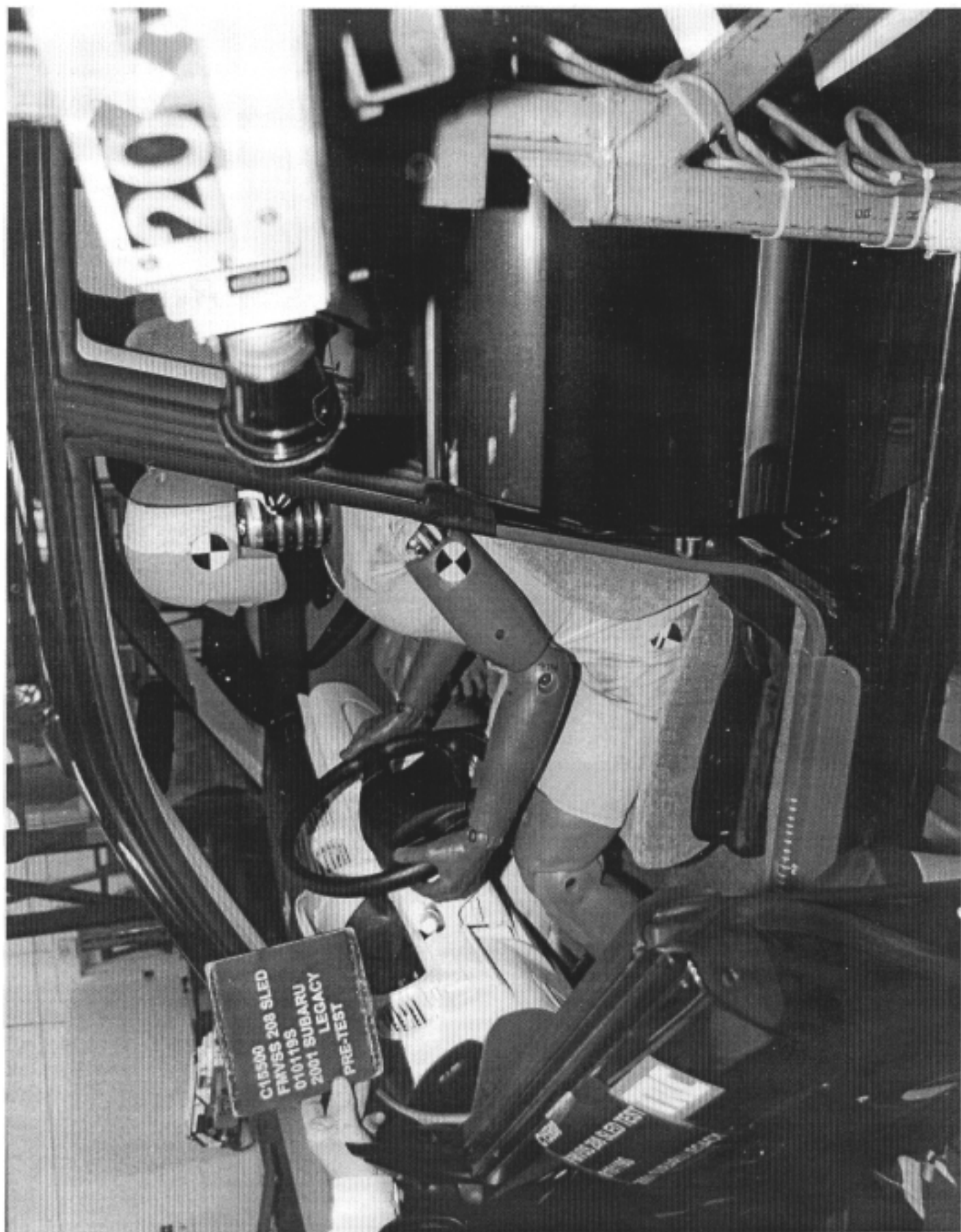


Figure A-6 Pre-Test Driver Dummy Position View with Door Open



Figure A-7 Post-Test Driver Dummy Position View with Door Open

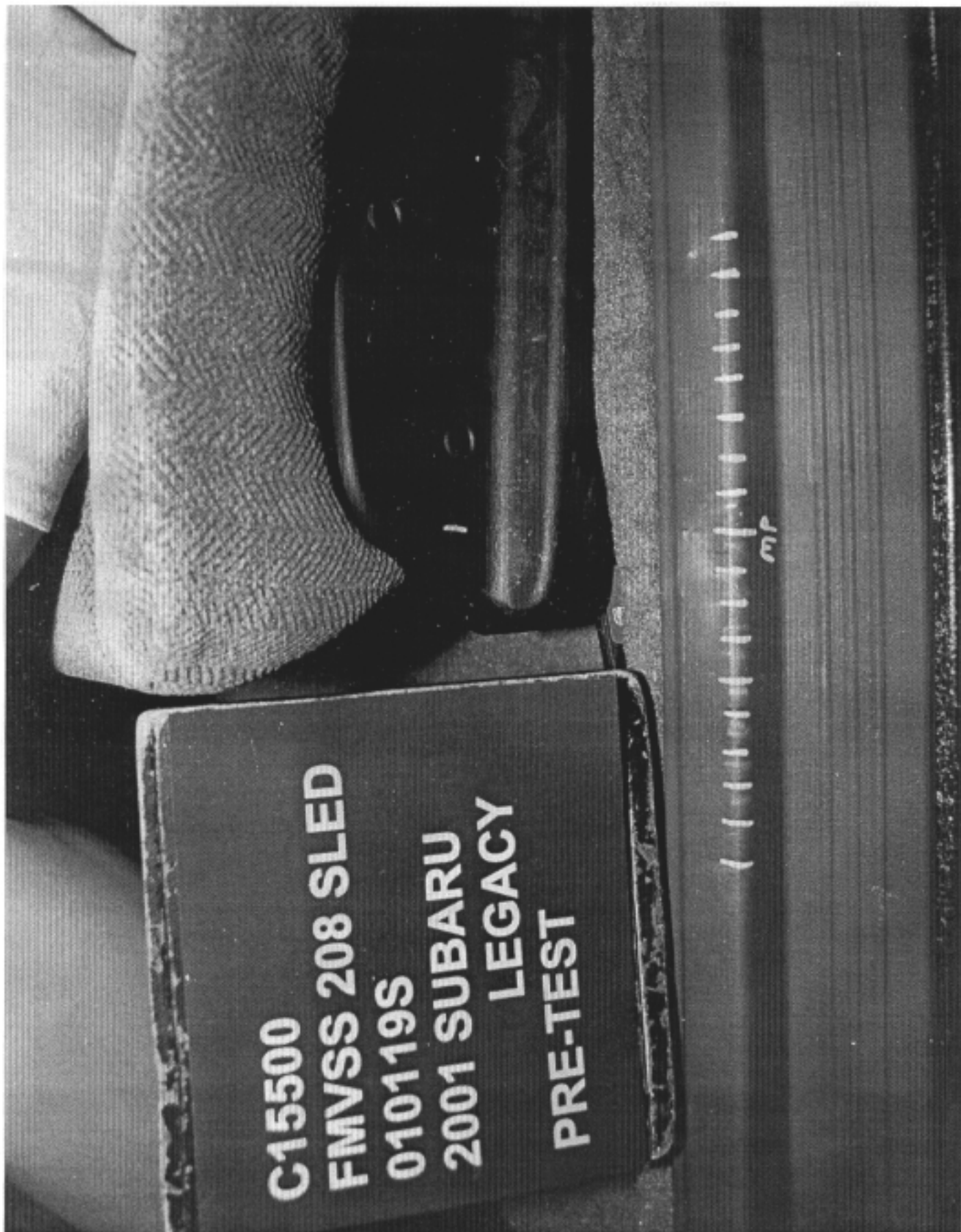


Figure A-8 Pre-Test Driver Seat Track Position View

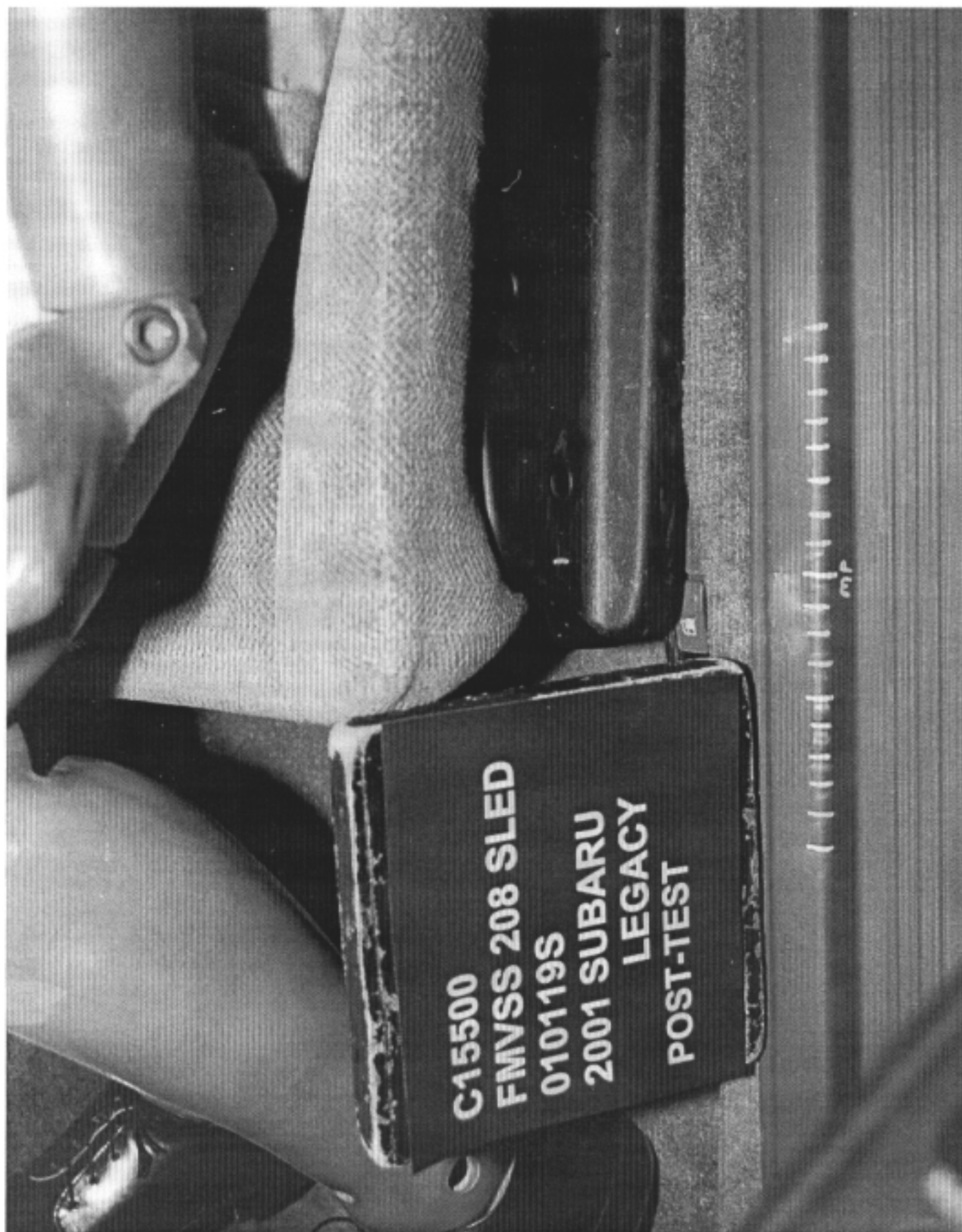


Figure A-9 Post-Test Driver Seat Track Position View
A-10

S010119

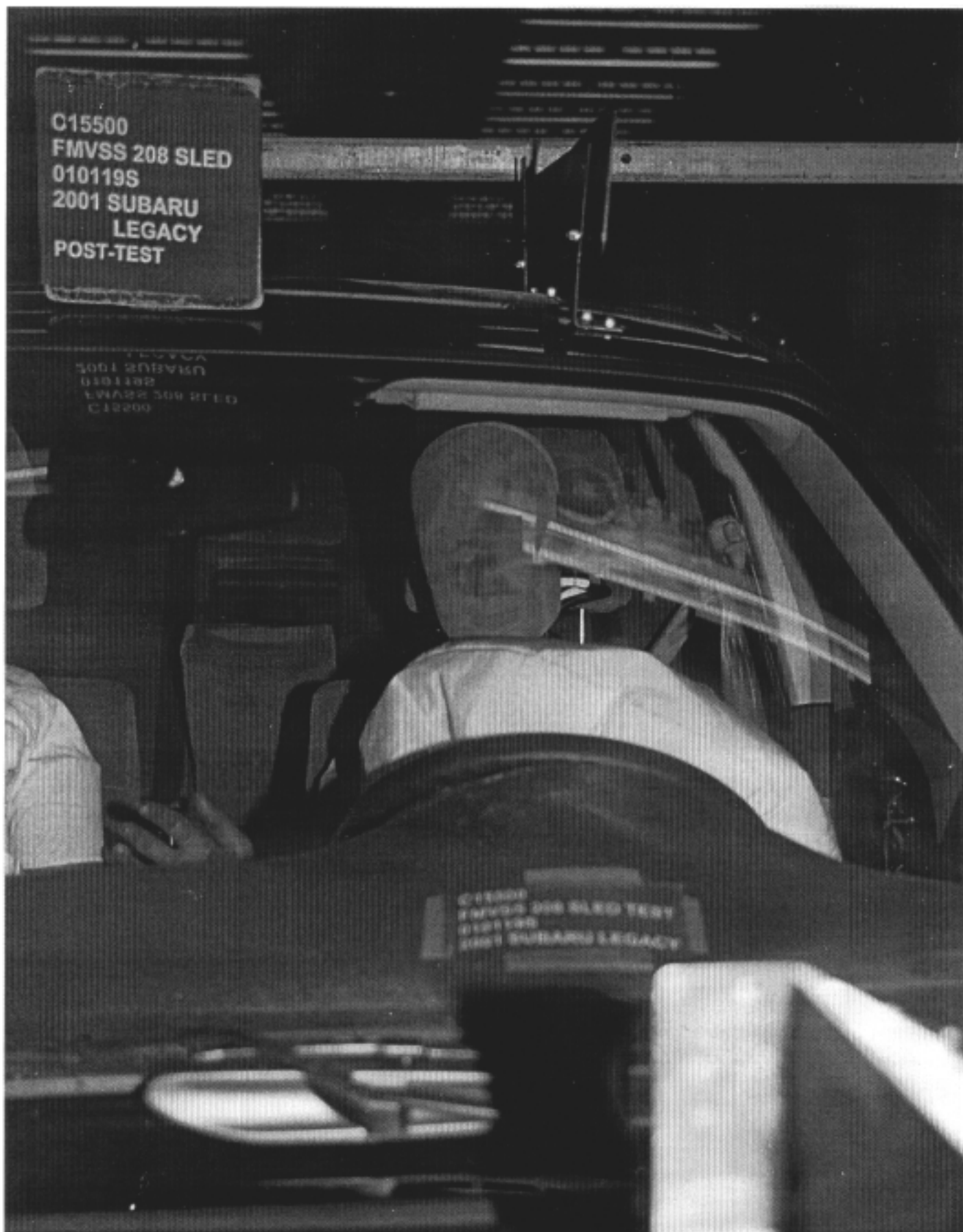


Figure A-10 Post-Test Driver Dummy Position Front View
A-11

S010119



Figure A-11 Pre-Test Passenger Dummy Position View with Door Open

A-12

S010119



Figure A-12 Post-Test Passenger Dummy Position View with Door Open

A-13

S010119



C15500
FMVSS 208 SLED
010119S
2001 SUBARU
LEGACY
PRE-TEST

Figure A-13 Pre-Test Passenger Seat Track Position View



Figure A-14 Post-Test Passenger Seat Track Position View



Figure A-15 Pre-Test Passenger Dummy Position Front View

A-16

S010119

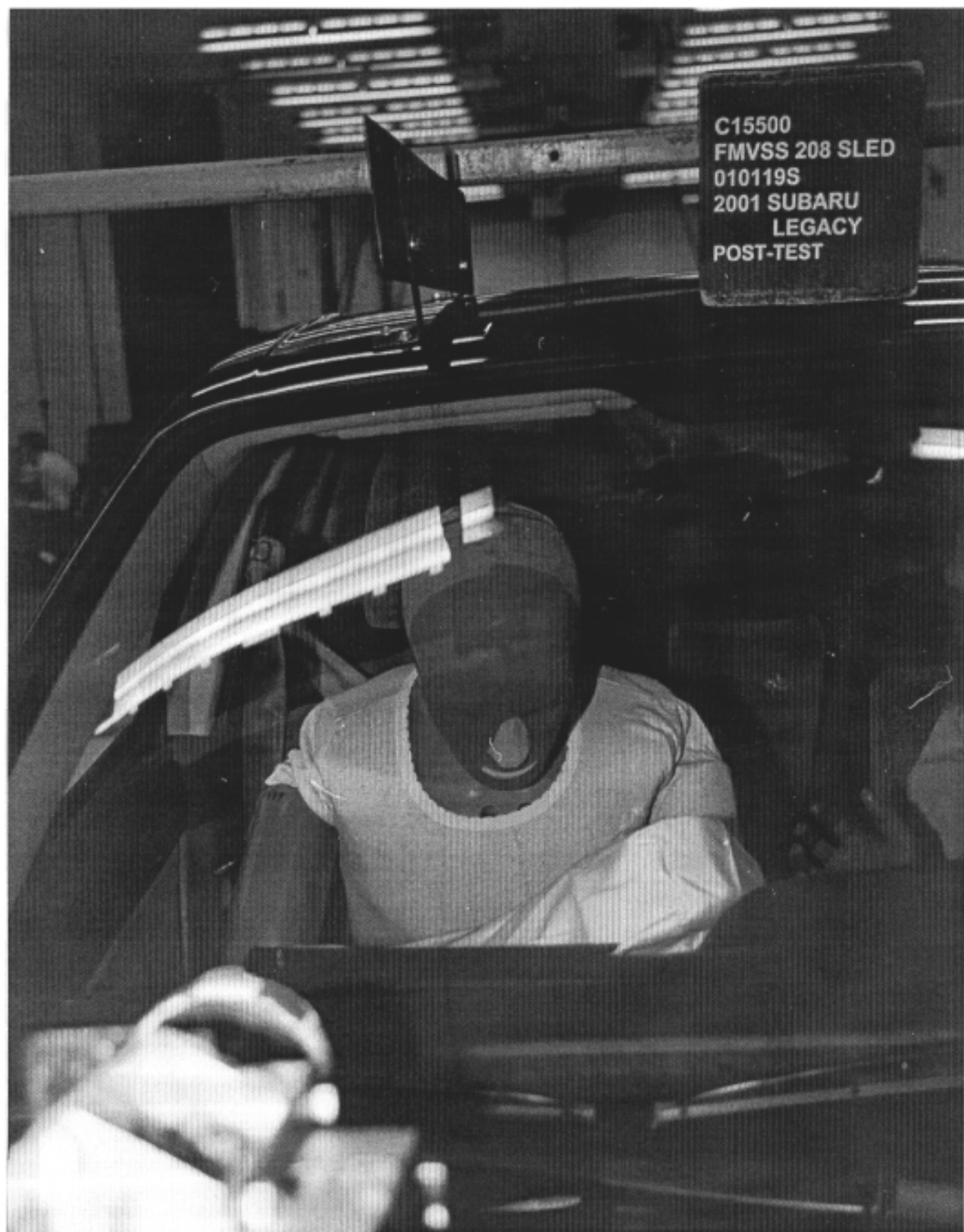


Figure A-16 Post-Test Passenger Dummy Position Front View

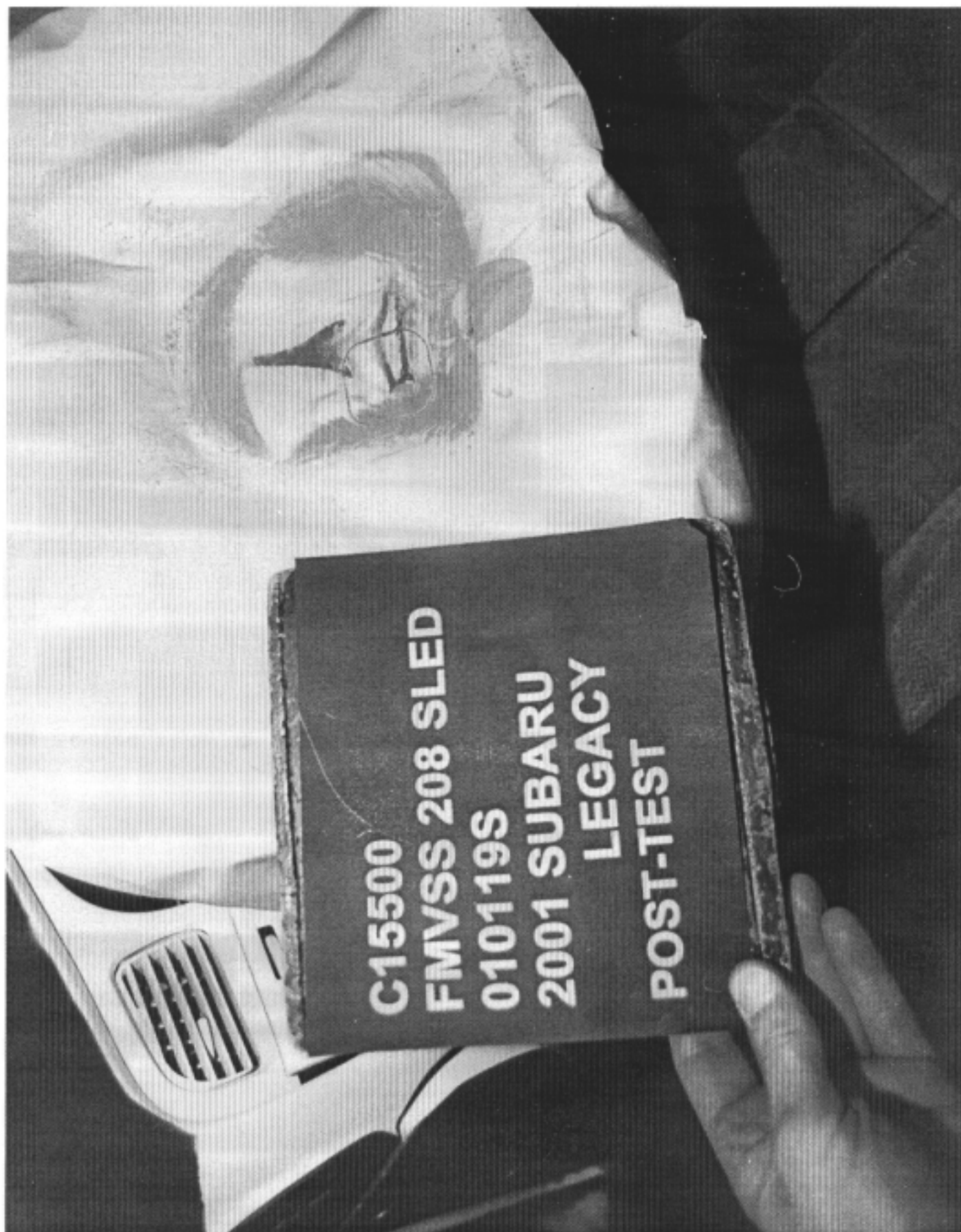


Figure A-17 Post-Test Driver Airbag View
A-18

S010119

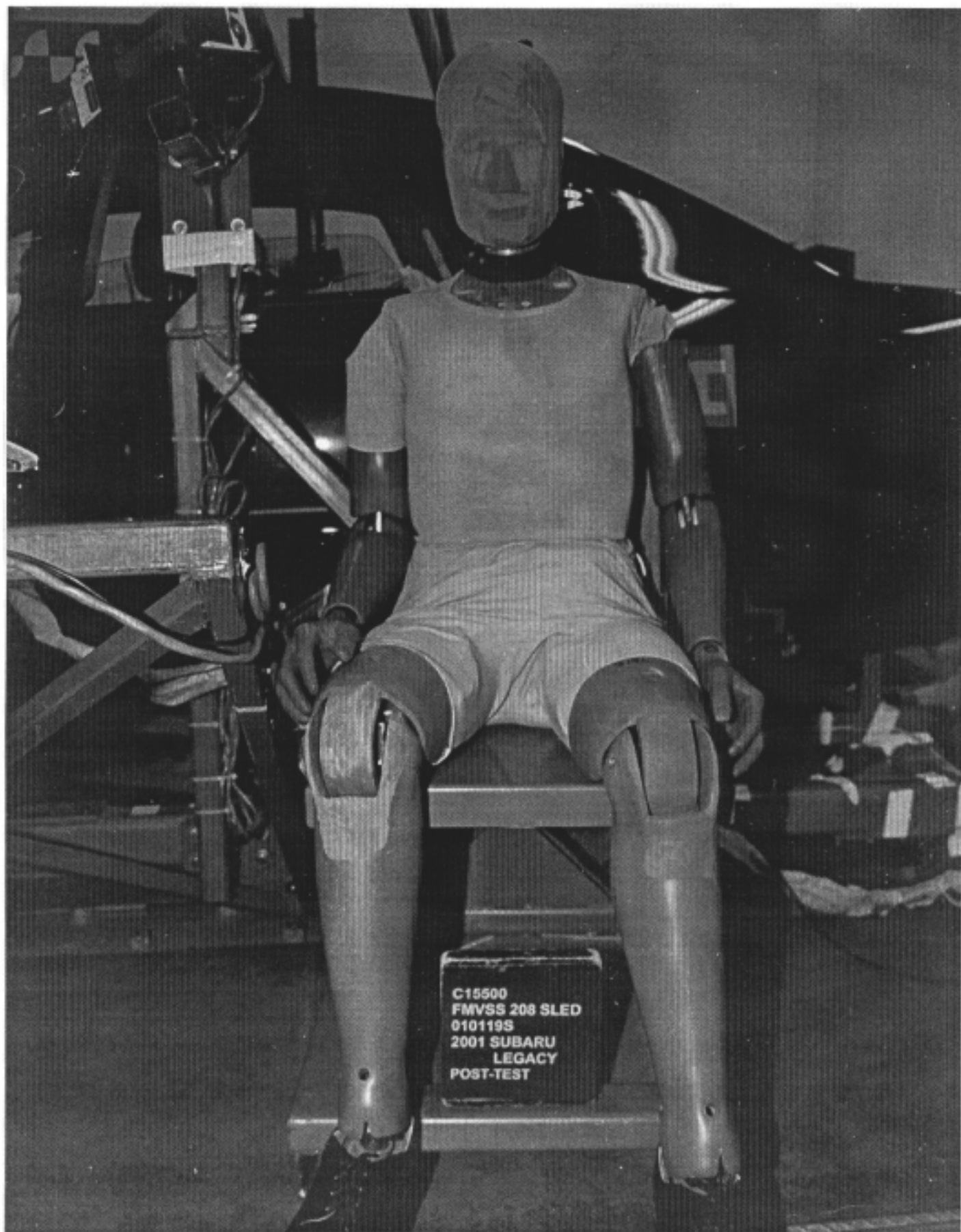


Figure A-18 Post-Test Driver Dummy Removed from Vehicle Overall View
A-19 S010119



Figure A-19 Post-Test Driver Head Contact - View 1
A-20

S010119



Figure A-20 Post-Test Driver Head Contact - View 2
A-21

S010119



Figure A-21 Post-Test Passenger Airbag View
A-22

S010119

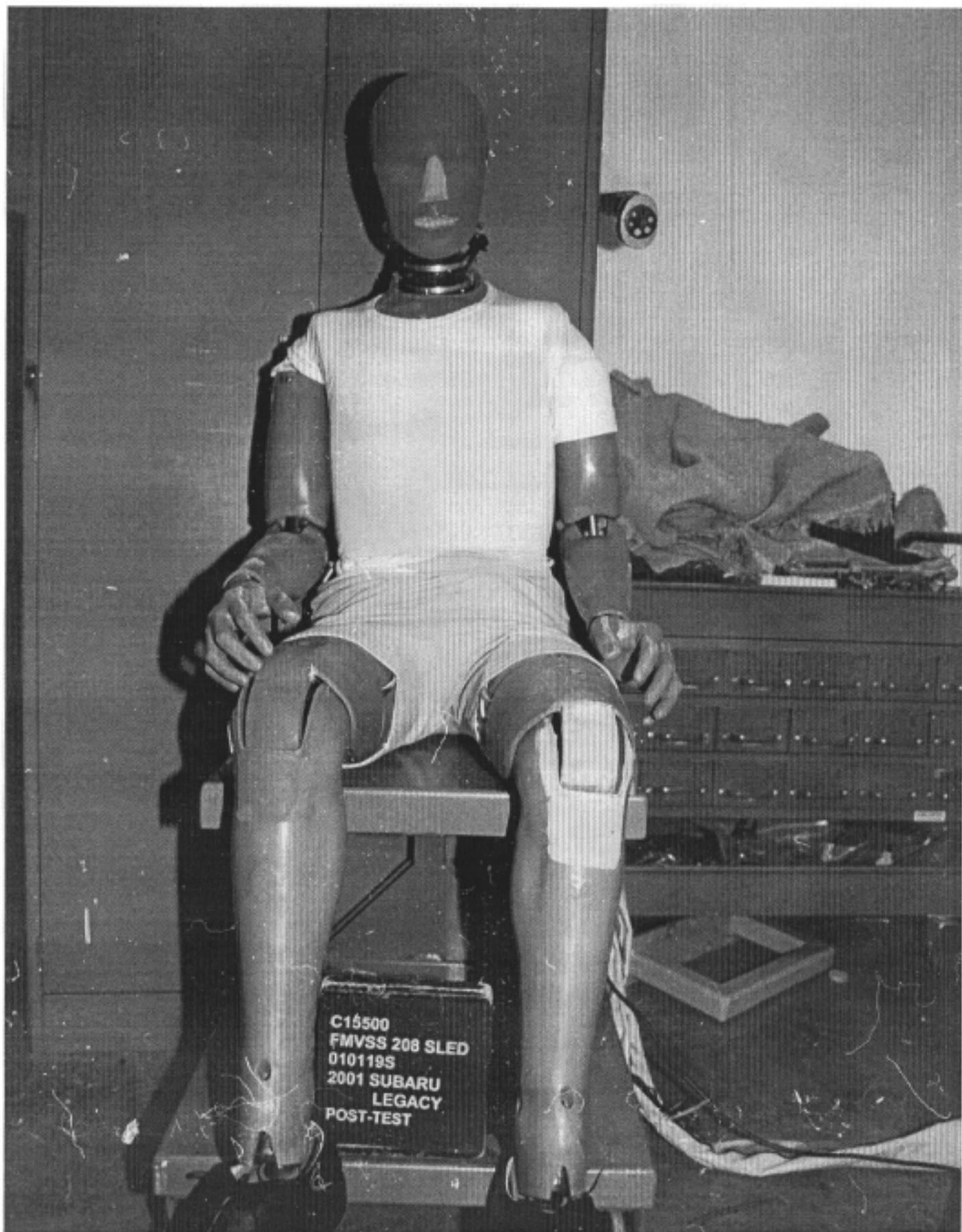


Figure A-22 Post-Test Passenger Dummy Removed from Vehicle Overall View
A-23 S010119



Figure A-23 Post-Test Passenger Head Contact View
A-24

S010119

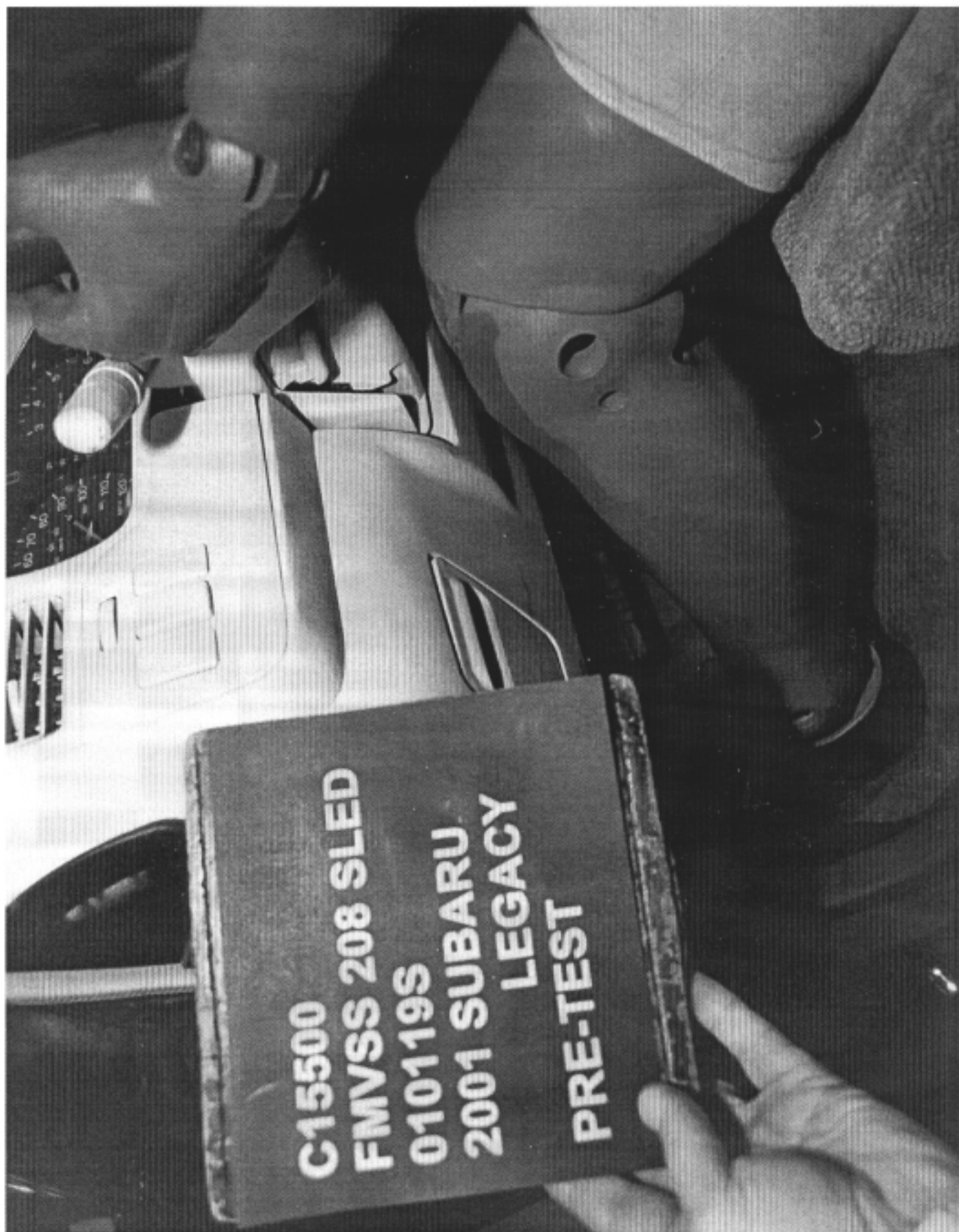


Figure A-24 Pre-Test Driver Knee Bolster - View 1



Figure A-25 Pre-Test Driver Knee Bolster - View 2



Figure A-26 Post-Test Driver Knee Bolster View
A-27

S010119

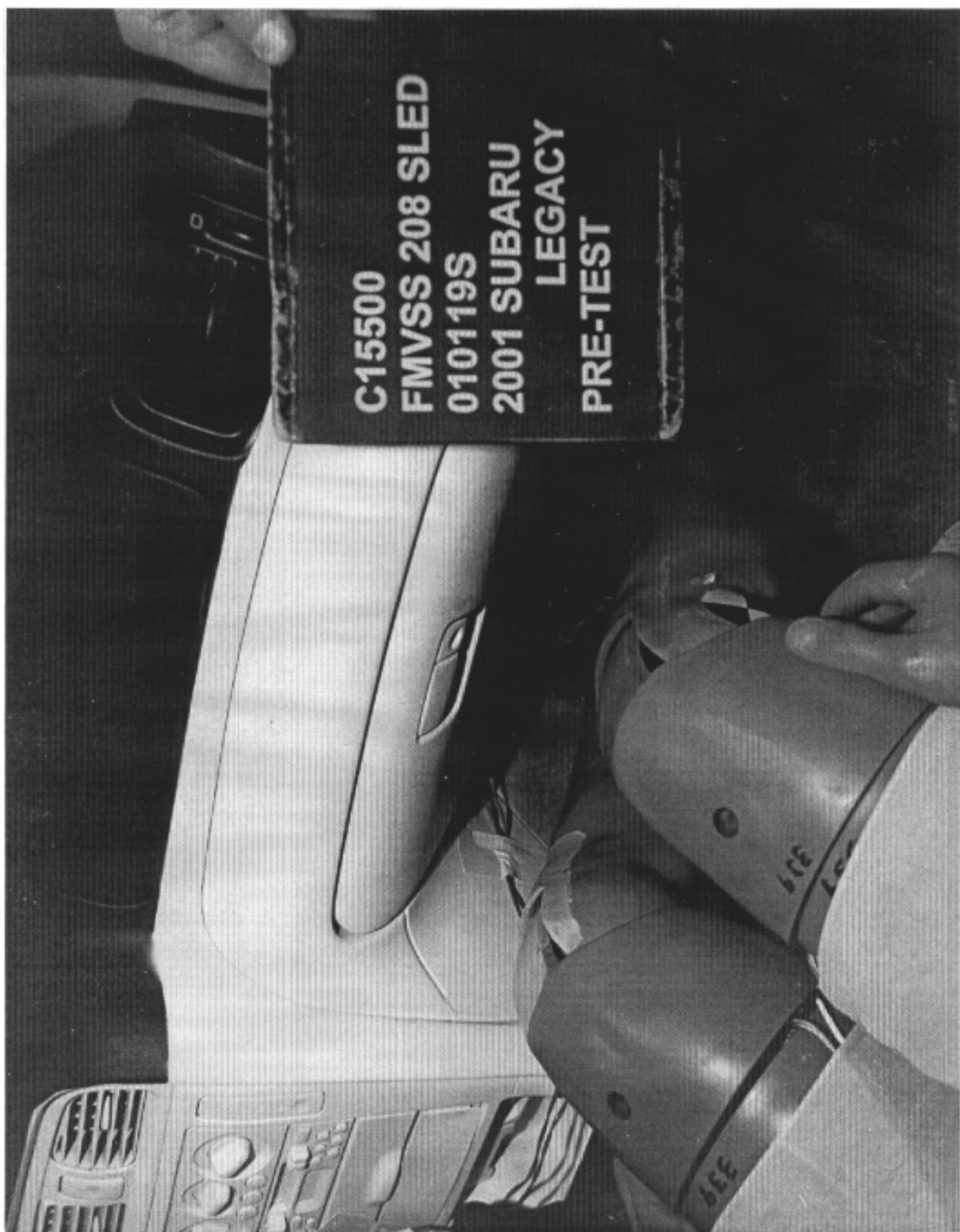


Figure A-27 Pre-Test Passenger Glove Box View



Figure A-28 Post-Test Passenger Glove Box View
A-29

S010119

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FMVSS 208 SLED
010119S
2001 SUBARU
LEGACY
PRE-TEST

SUBARU			
VEHICLE CAPACITY WEIGHT:			
SEDAN 850LB(386kg)			
WAGON 900LB(408kg)			
NUMBER OF OCCUPANTS:			
TOTAL 5 (FRONT 2 REAR 3)			
RECOMMENDED TIRE INFLATION PRESSURE			
PSI (kg/cm ²)			
TIRE SIZE	FRONT	REAR	
P225/65R15 90H	220(12)	210(20)	
TEMPORARY SPARE TIRE			
T135 70D16 100M			42(360)
			HT

Figure A-30 Pre-Test Vehicle Tire Pressure Label View

Appendix B

Data Plots

C15500 / 2001 SUBARU LEGACY

SLED ACCELERATION

FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F

60

0

ACCELERATION (G X 10⁻¹)

-60

-120

-180

-240

-300

150

TIME (MS)

135

120

105

90

75

60

45

30

15

0

-15

CHANNEL: SLDXG

FILTER: CH. CLASS 60

PEAK DATA: 0.56 G @ 150.00 MS, -17.76 G @ 56.64 MS

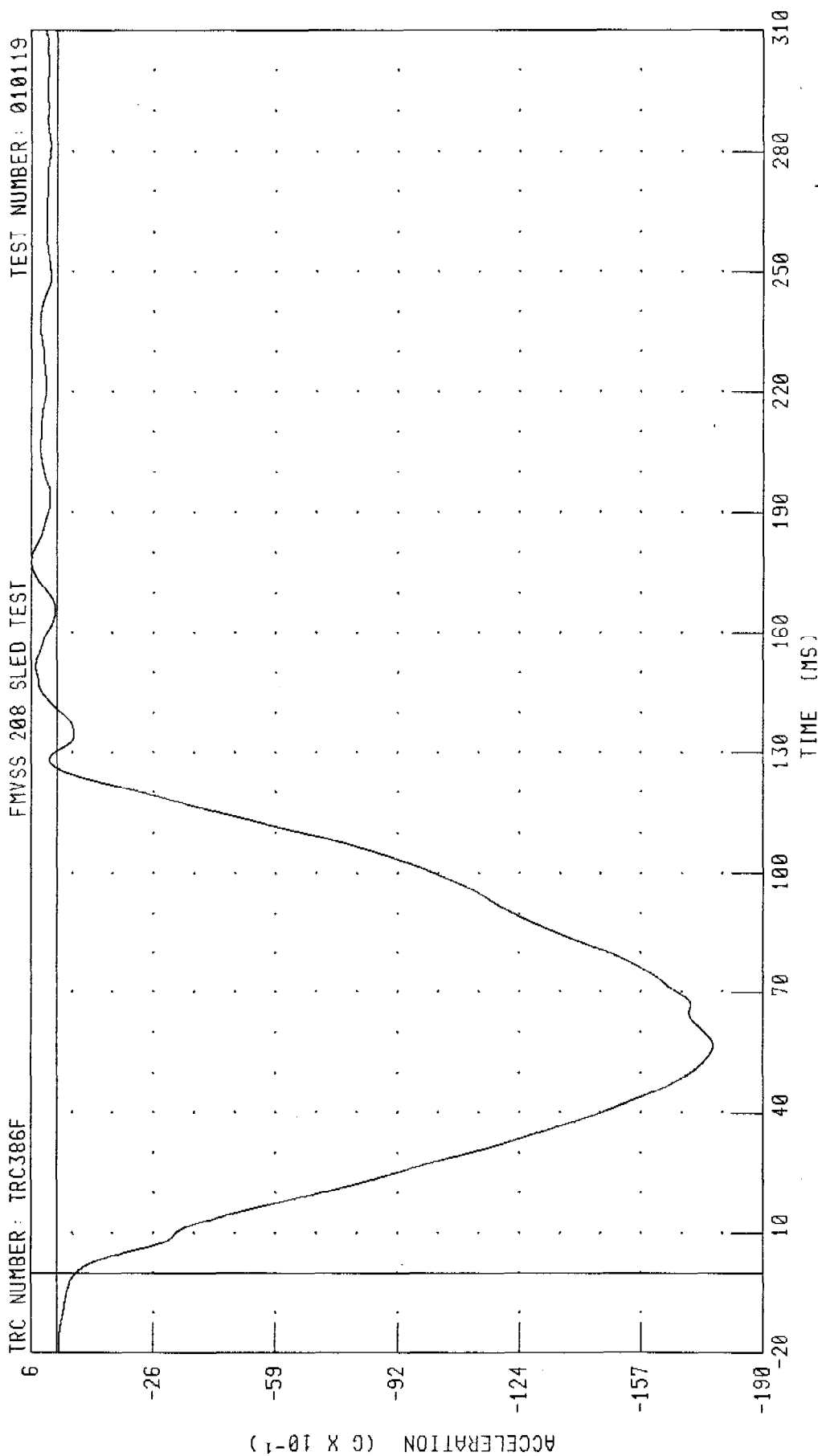
C15500 / 2001 SUBARU LEGACY

SLED ACCELERATION

FMVSS 208 SLED TEST

TRC NUMBER: TRC386F

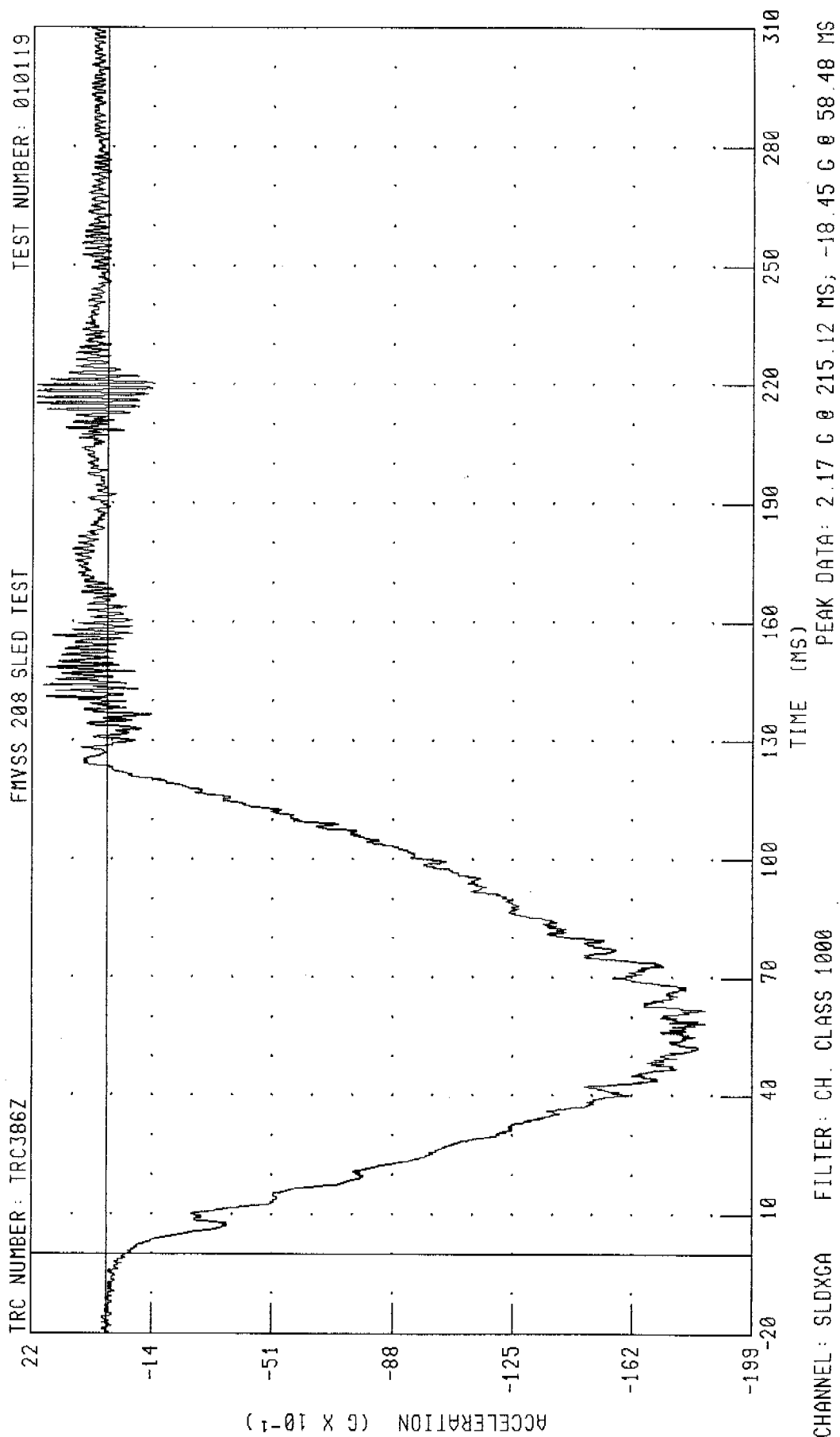
TEST NUMBER: 010119



PEAK DATA: 0.71 G @ 177.92 MS, -17.76 G @ 56.64 MS

CHANNEL: SLDXG FILTER: CH. CLASS 60

C15500 / 2001 SUBARU LEGACY
SLED ACCELERATION - BACKUP



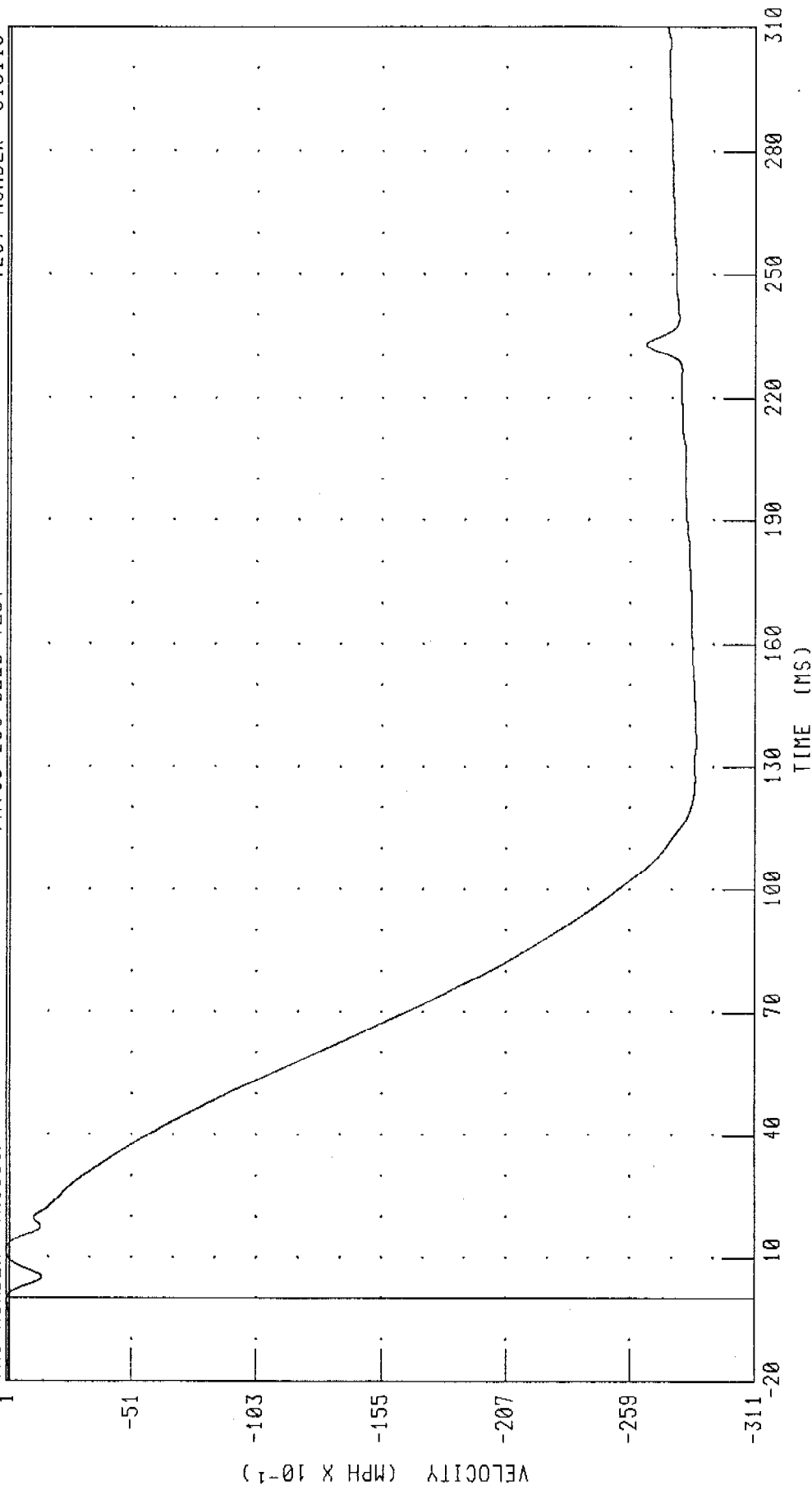
C15500 / 2001 SUBARU LEGACY

MEASURED VELOCITY TRAP

TRC NUMBER: TRC386F

FMVSS 208 SLED TEST

TEST NUMBER: 010119



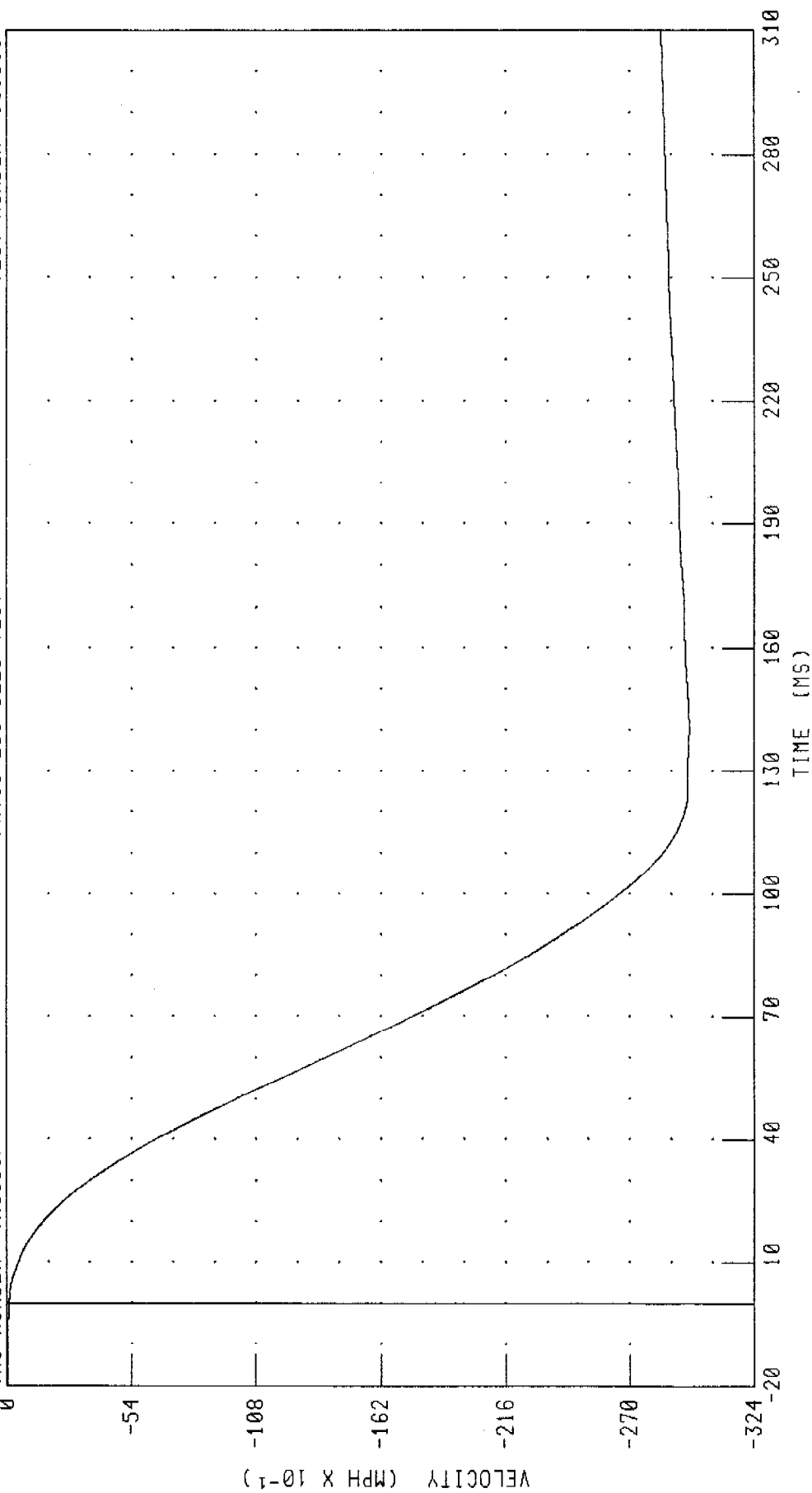
PEAK DATA: 0.13 MPH @ 11.52 MS, -28.70 MPH @ 136.16 MS

CHANNEL: SLDXV FILTER: CH. CLASS 60

C15500 / 2001 SUBARU LEGACY
SLED VELOCITY (INTEGRATED)
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



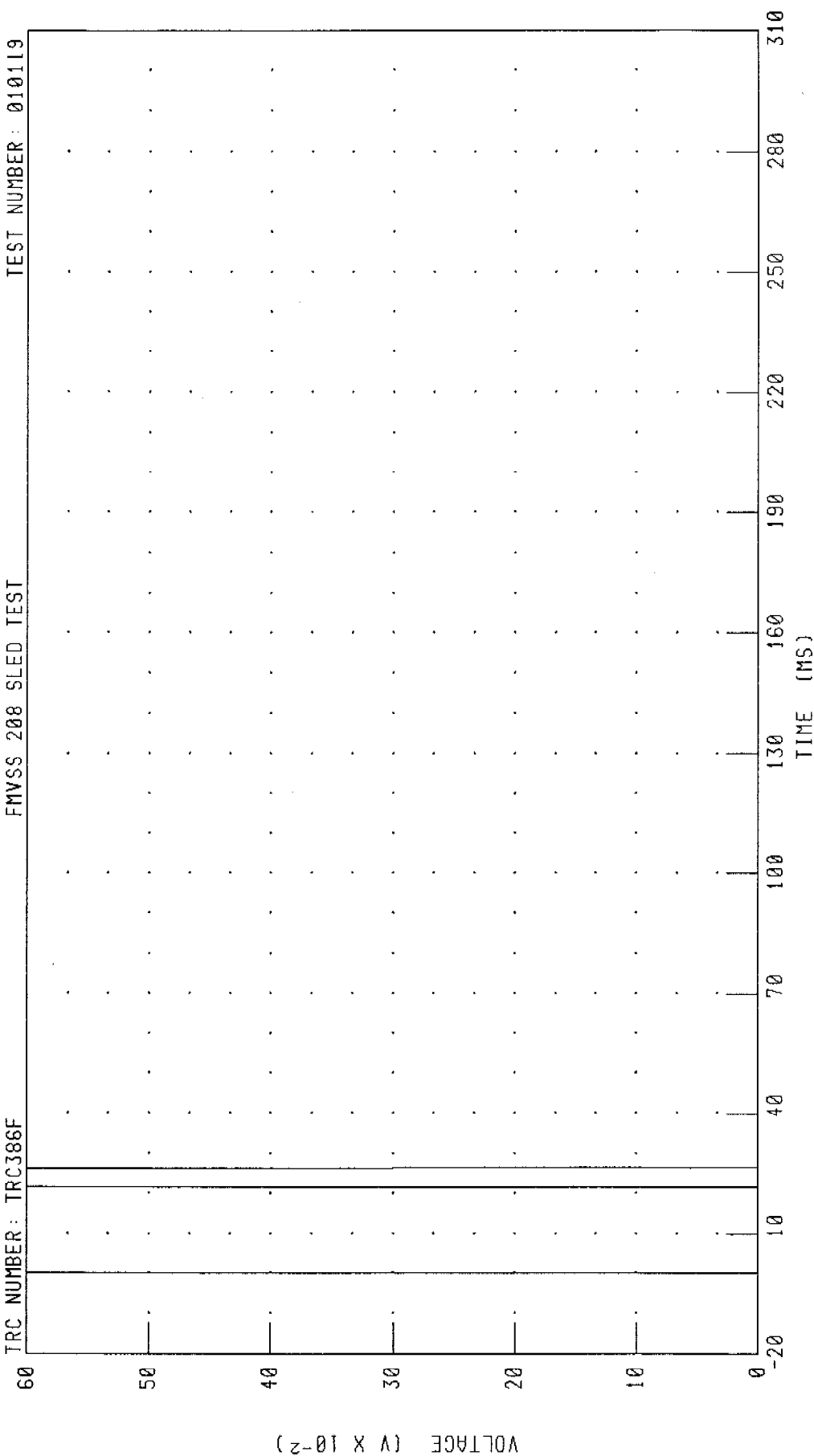
PEAK DATA: -0.01 MPH @ -20.00 MS, -29.60 MPH @ 140.40 MS

CHANNEL: SLDXVI FILTER: CH. CLASS 180

C15500 / 2001 SUBARU LEGACY
DRIVER AIRBAG EVENT
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



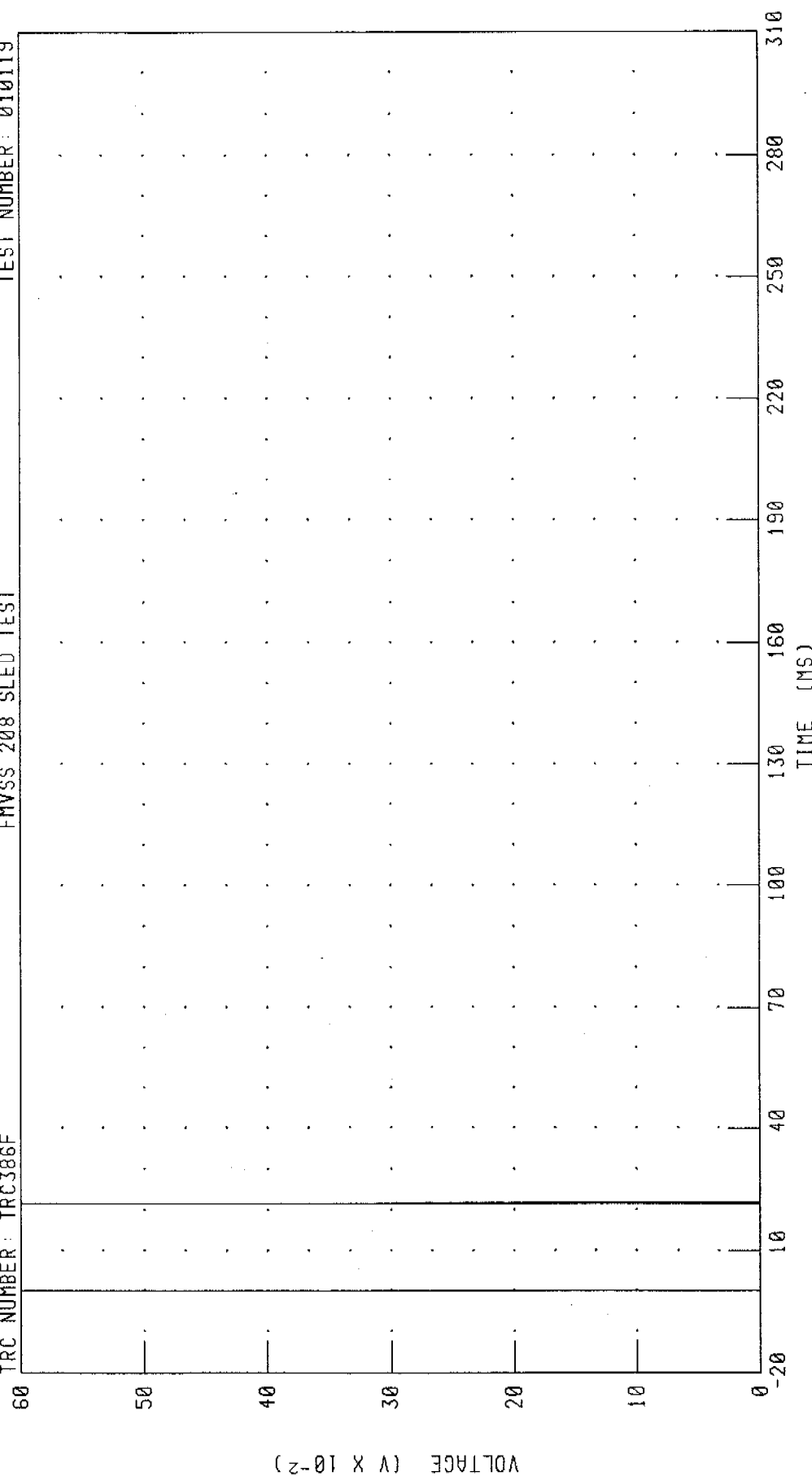
CHANNEL: ABEVT1 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 21.68 MS; 0.00 V @ -20.00 MS

C15500 / 2001 SUBARU LEGACY
PASSENGER PRIMARY AIRBAG EVENT
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



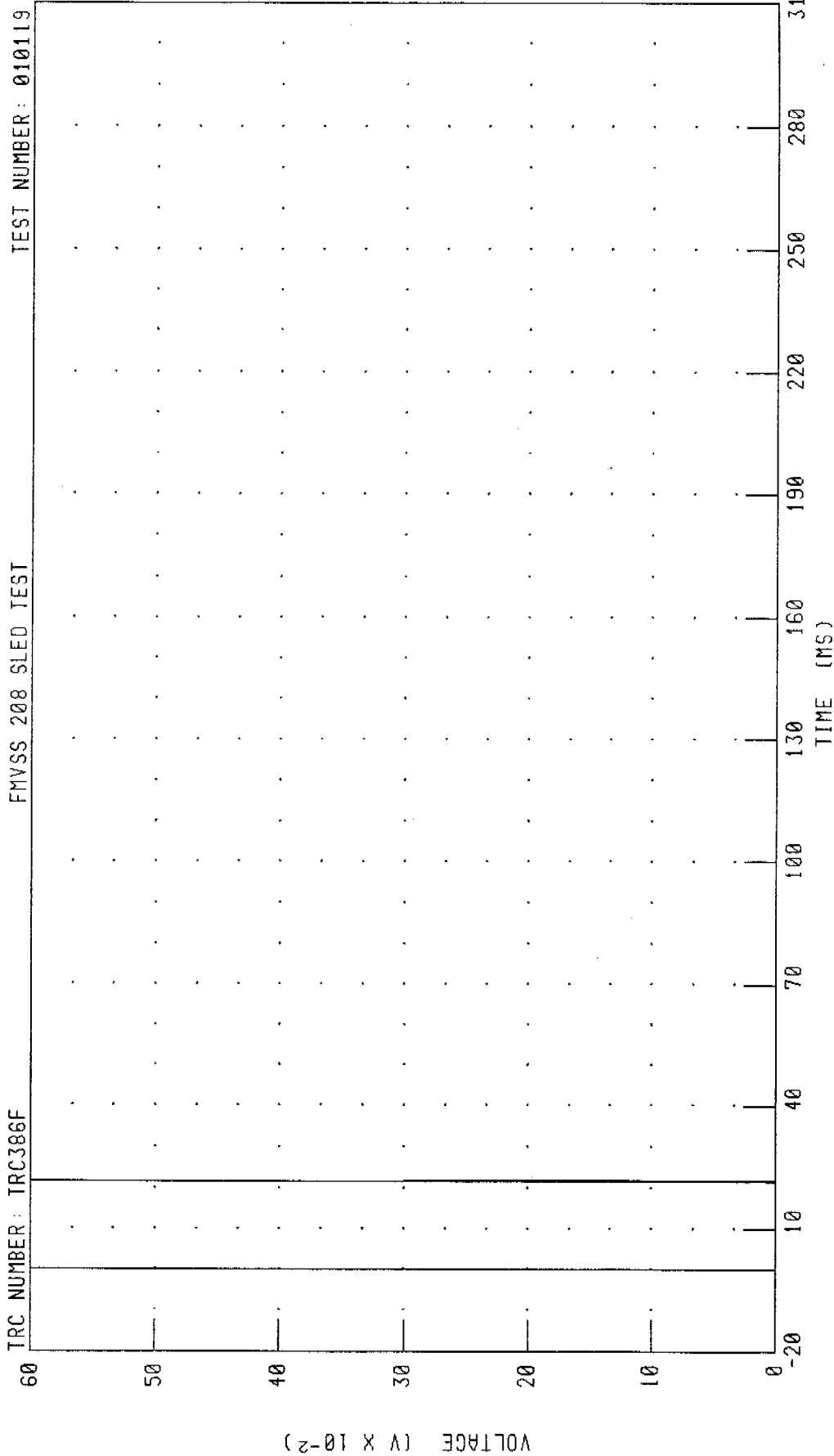
CHANNEL: ABEVT2 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 21.68 MS; 0.00 V @ -20.00 MS

C15500 / 2001 SUBARU LEGACY
PASSENGER SECONDARY AIRBAG EVENT
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



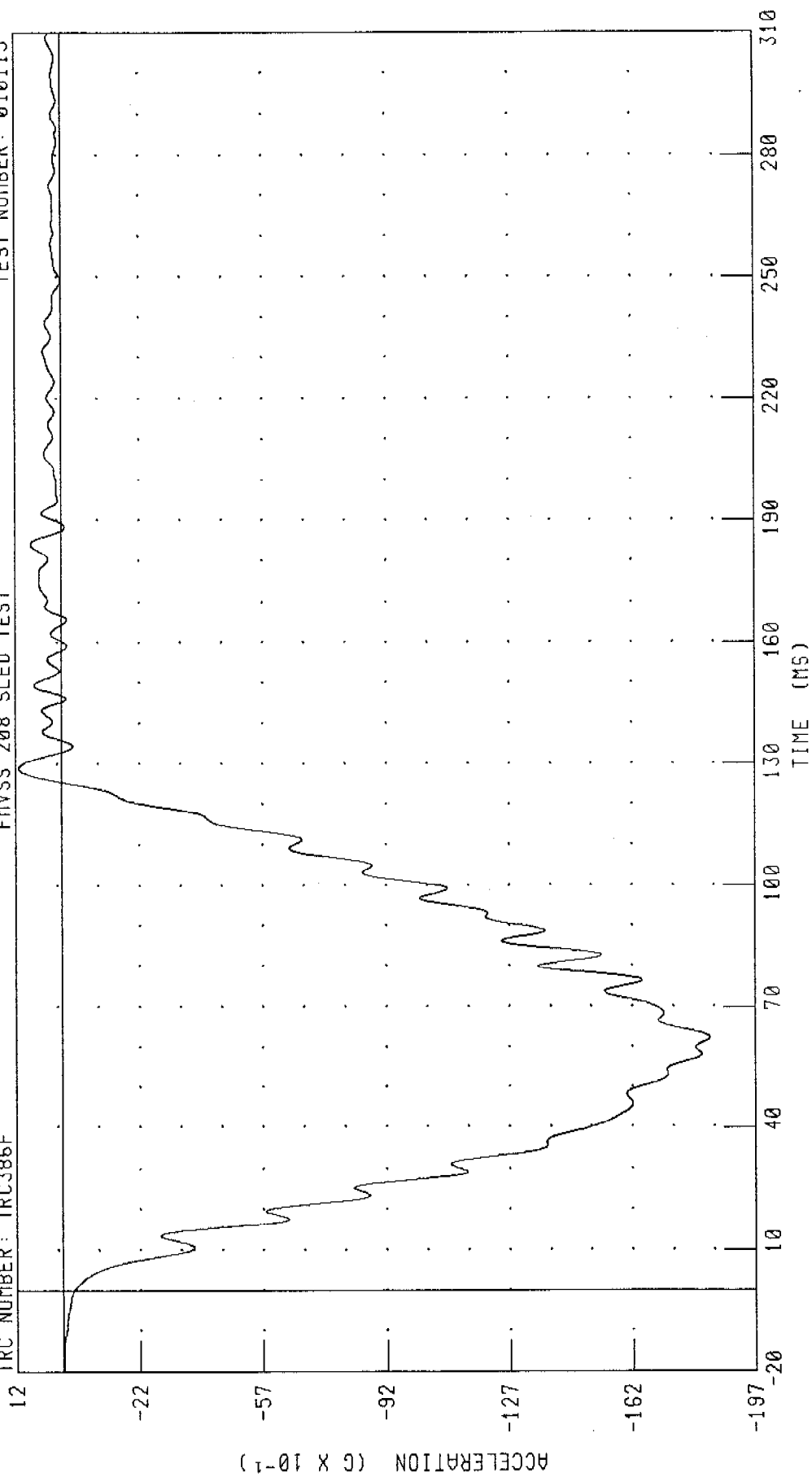
CHANNEL: ABEVT3 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 21.68 MS; 0.00 V @ -20.00 MS

C15500 / 2001 SUBARU LEGACY
REAR AXLE X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



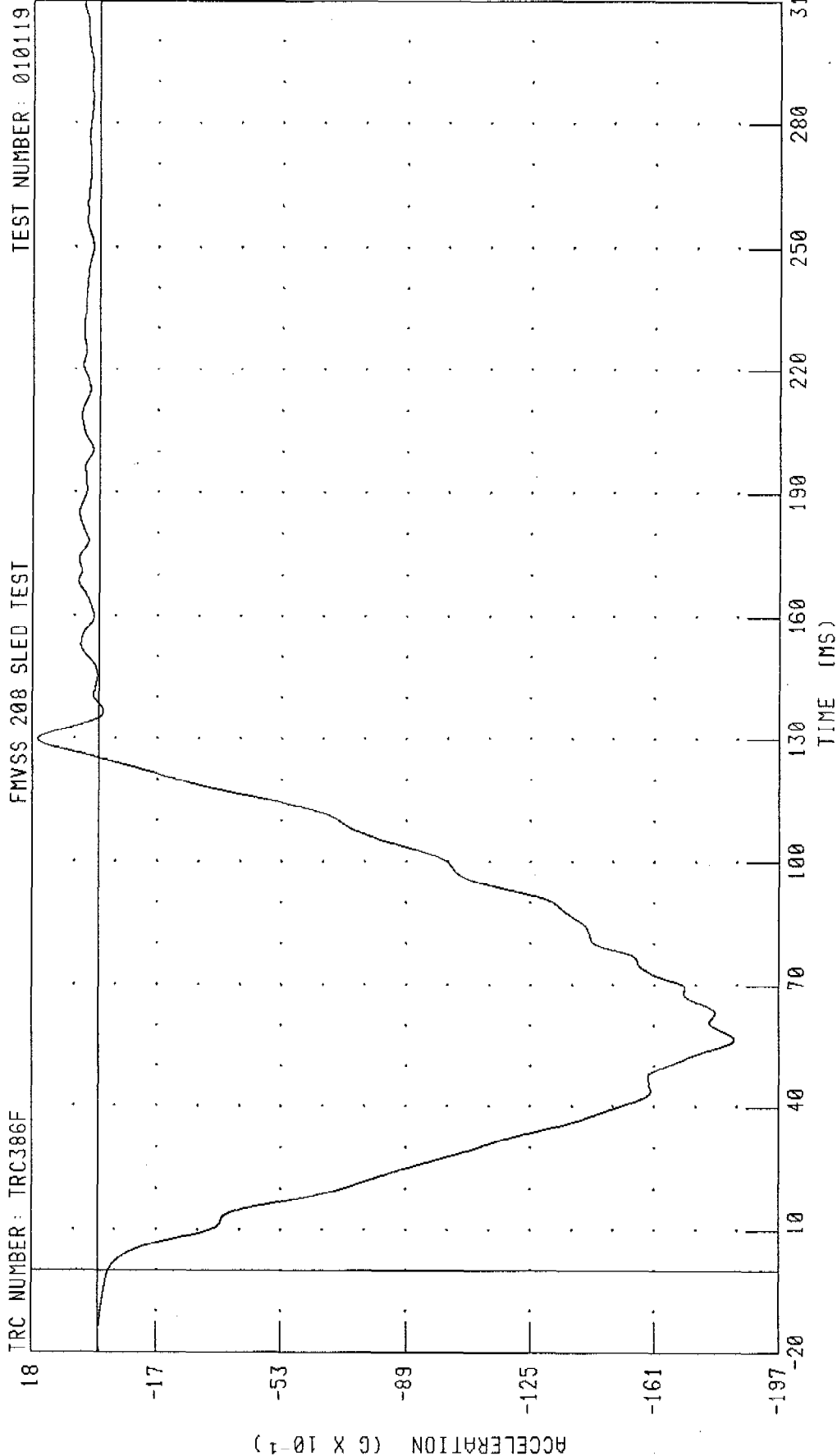
PEAK DATA: 1.22 G @ 128.96 MS, -18.41 G @ 62.24 MS

CHANNEL: RAXG FILTER: CH. CLASS 60

C15500 / 2001 SUBARU LEGACY
LEFT BODY X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



PEAK DATA: 1.75 G @ 129.84 MS, -18.42 G @ 56.48 MS

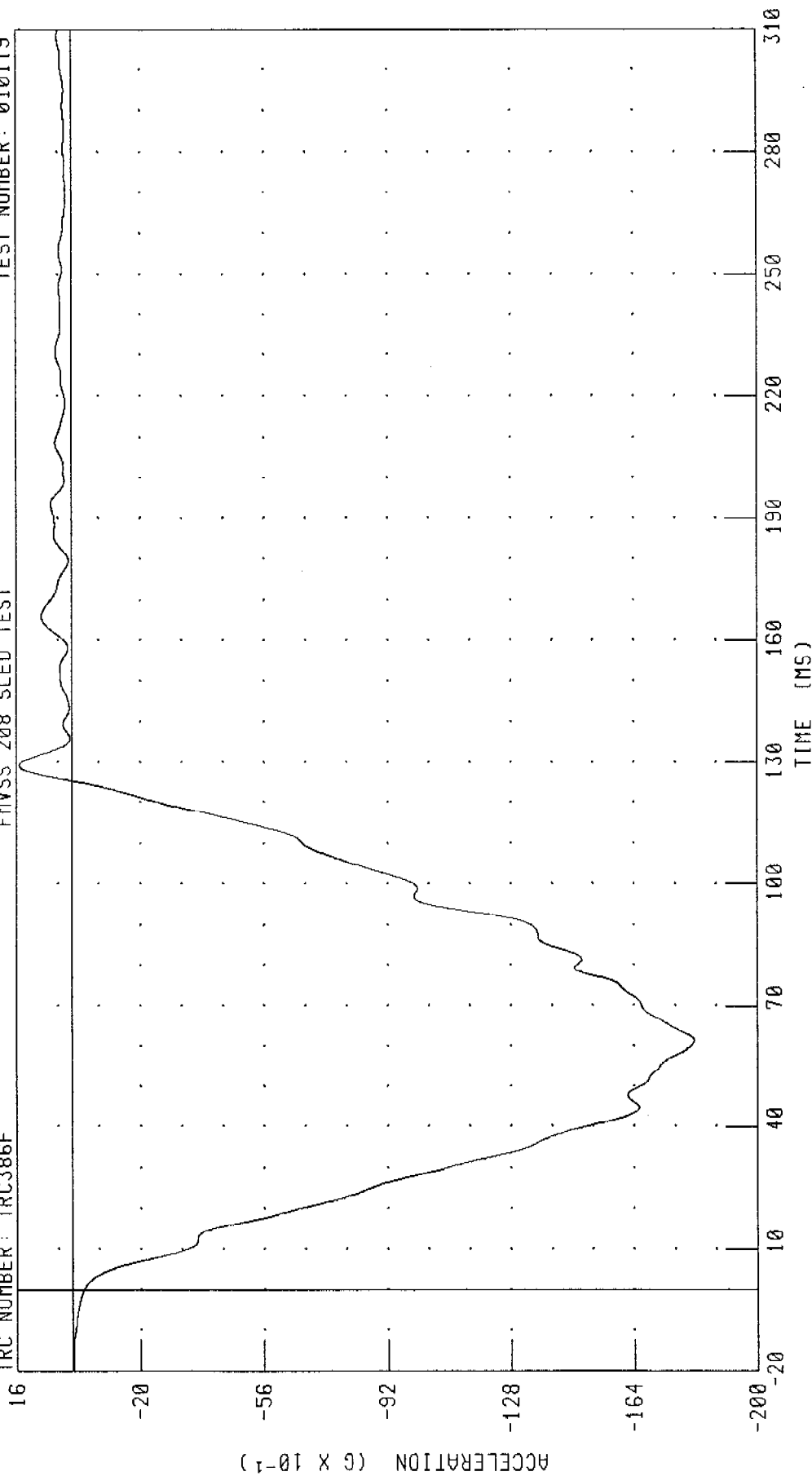
FILTER: CH. CLASS 60

CHANNEL: LBXC

C15500 / 2001 SUBARU LEGACY
RIGHT BODY X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: 010119

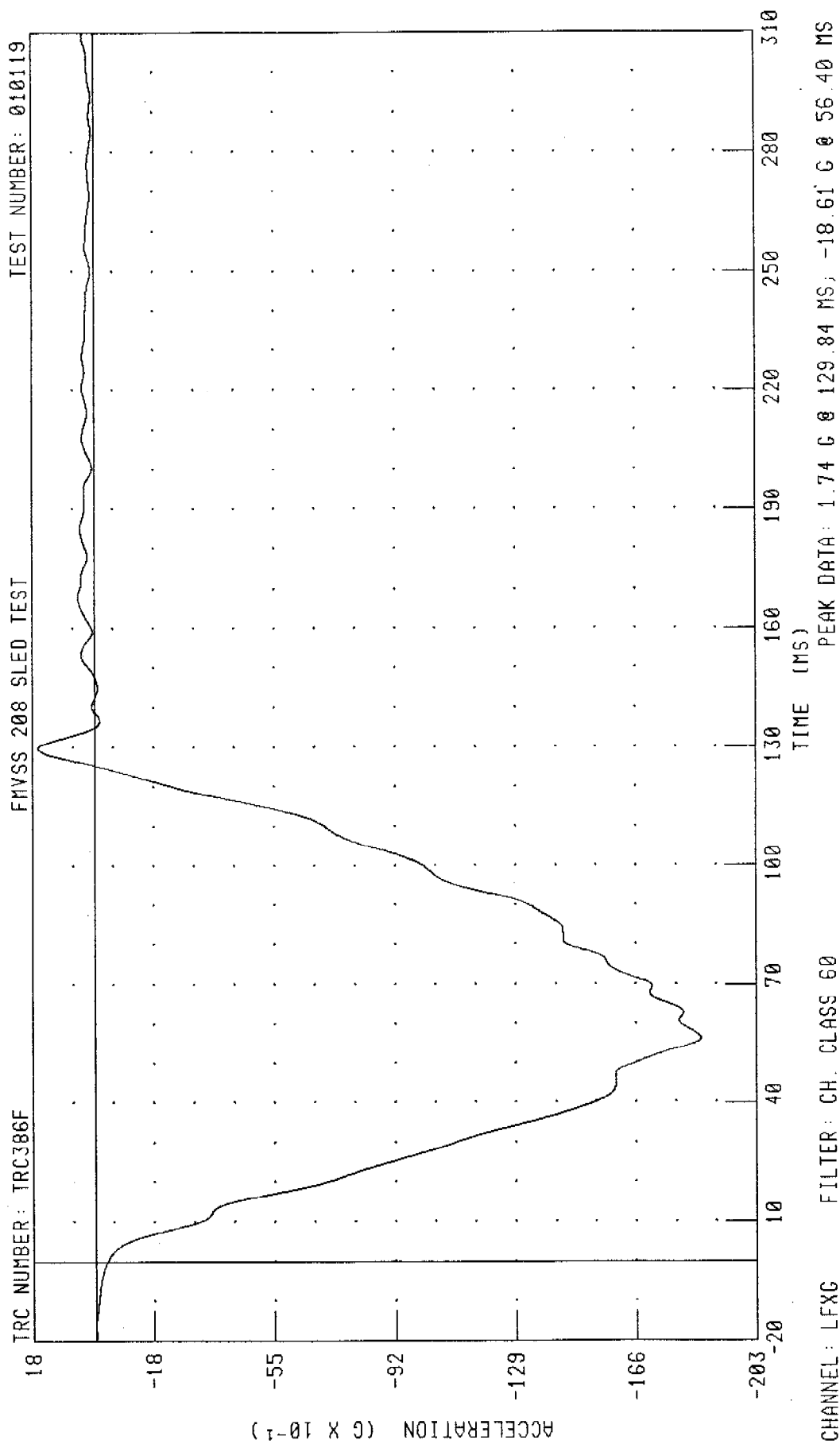
TRC NUMBER: TRC386F



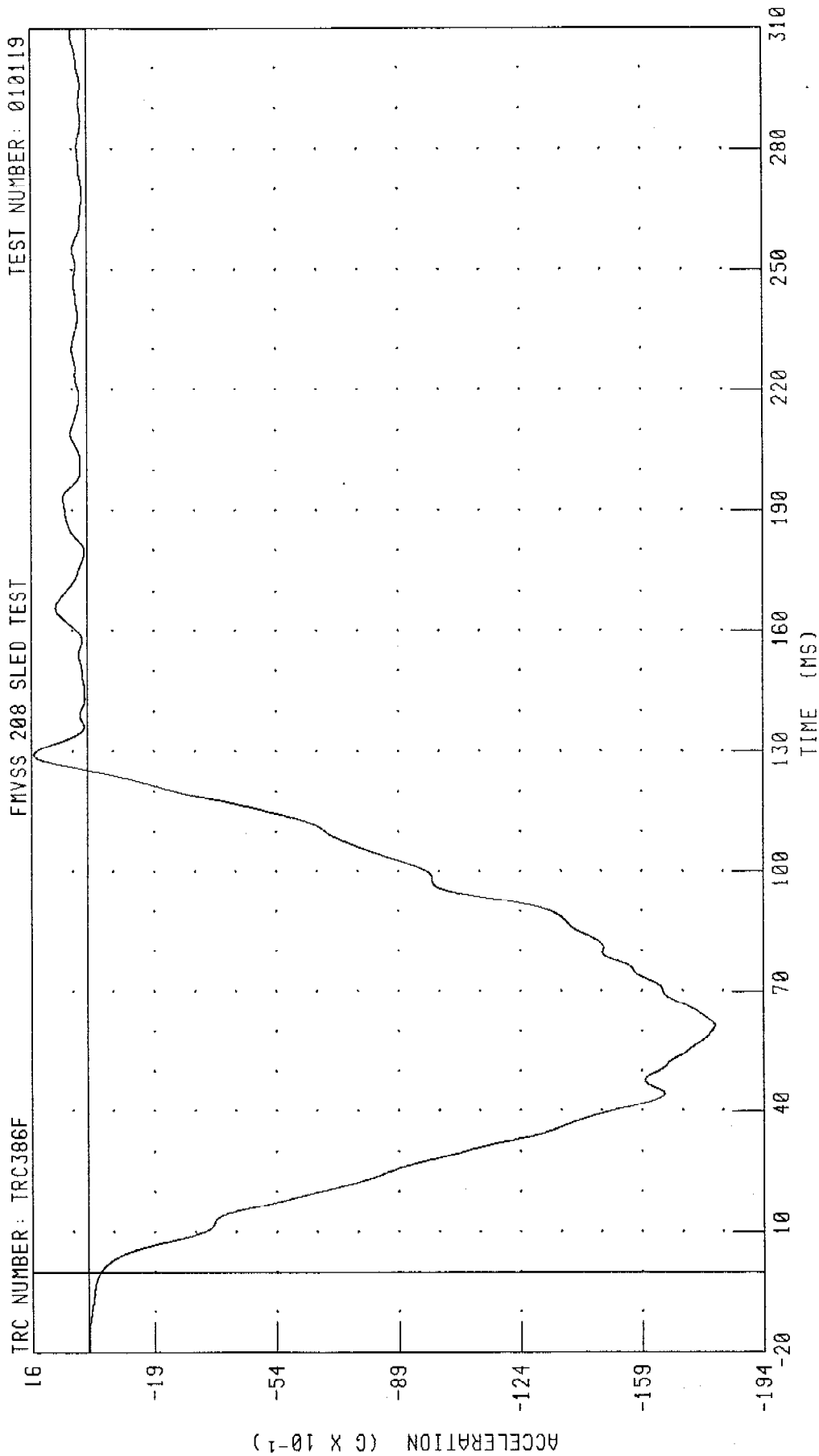
CHANNEL: RBXC FILTER: CH. CLASS 60

PEAK DATA: 1.53 G @ 129.28 MS, -18.17 G @ 61.36 MS

C15500 / 2001 SUBARU LEGACY
LEFT FRAME X-AXIS ACCELERATION
FMVSS 208 SLED TEST



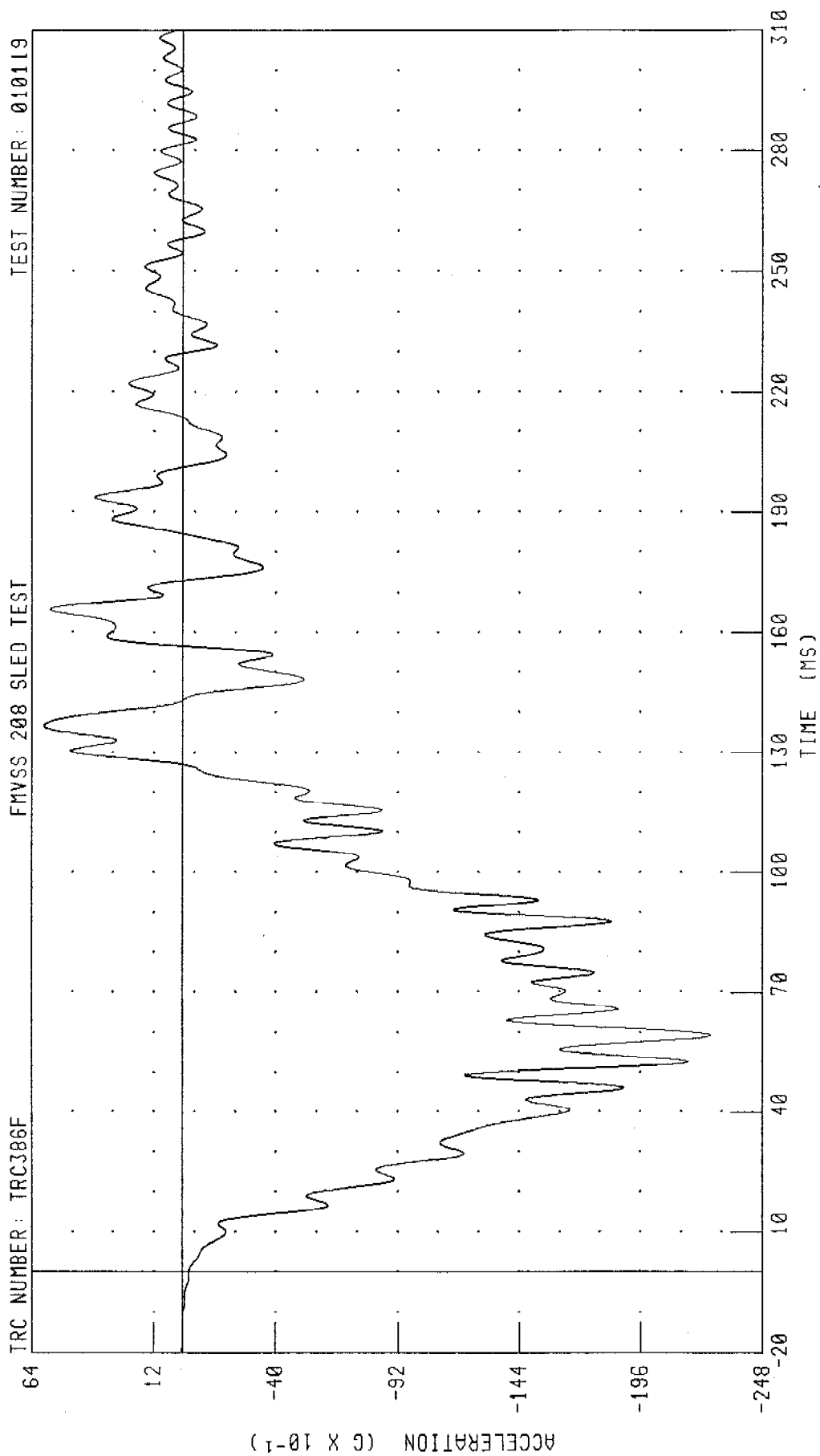
C15500 / 2001 SUBARU LEGACY
RIGHT FRAME X-AXIS ACCELERATION
FMVSS 208 SLED TEST



CHANNEL: RFXG FILTER: CH. CLASS 60

PEAK DATA: 1.54 G @ 129.28 MS, -18.00 G @ 61.44 MS

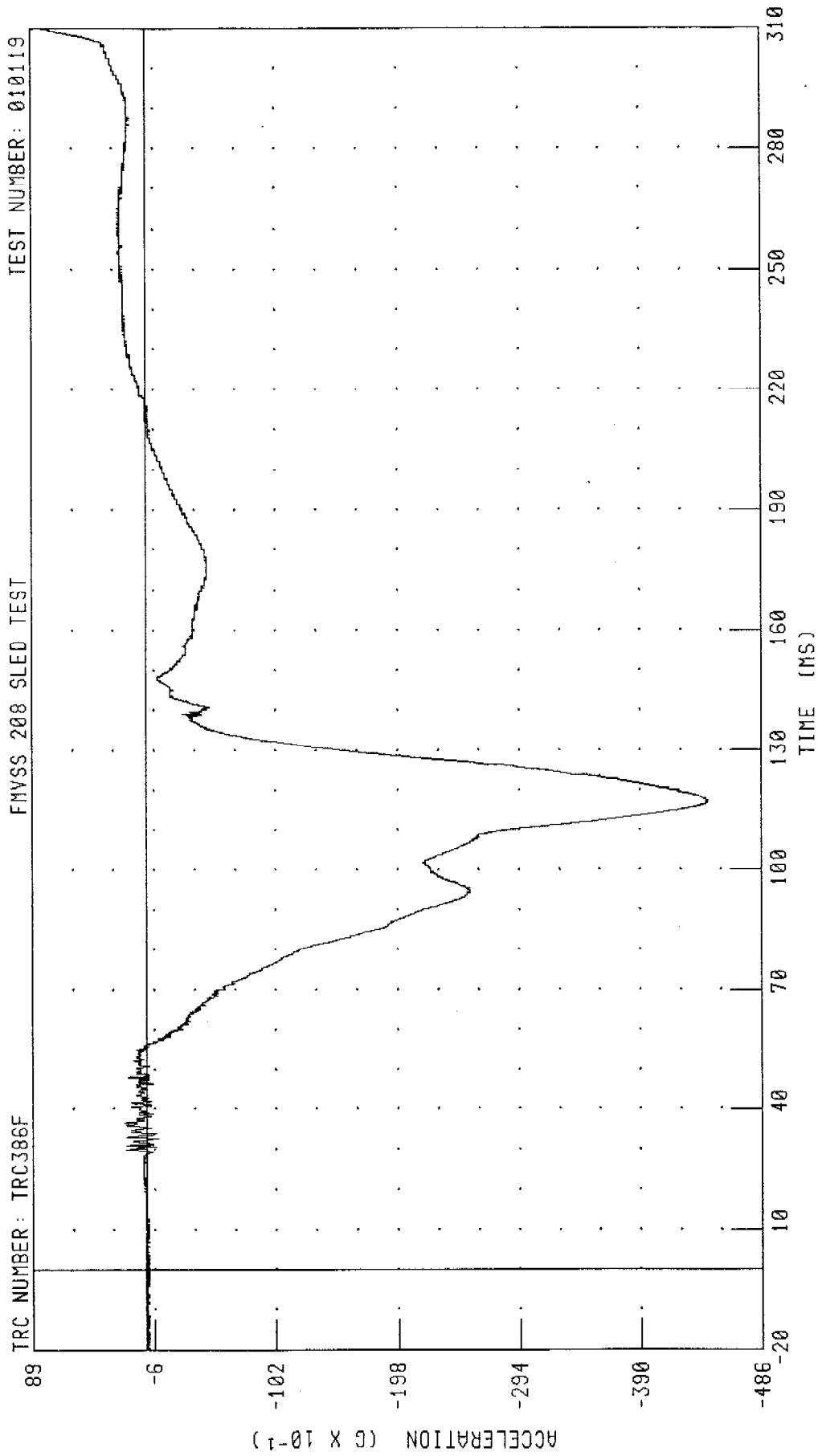
C15500 / 2001 SUBARU LEGACY
TOP ENGINE X-AXIS ACCELERATION
FMVSS 208 SLED TEST



CHANNEL: TEXTC FILTER: CH. CLASS 60

PEAK DATA: 5.88 G @ 136.64 MS; -22.60 G @ 59.36 MS

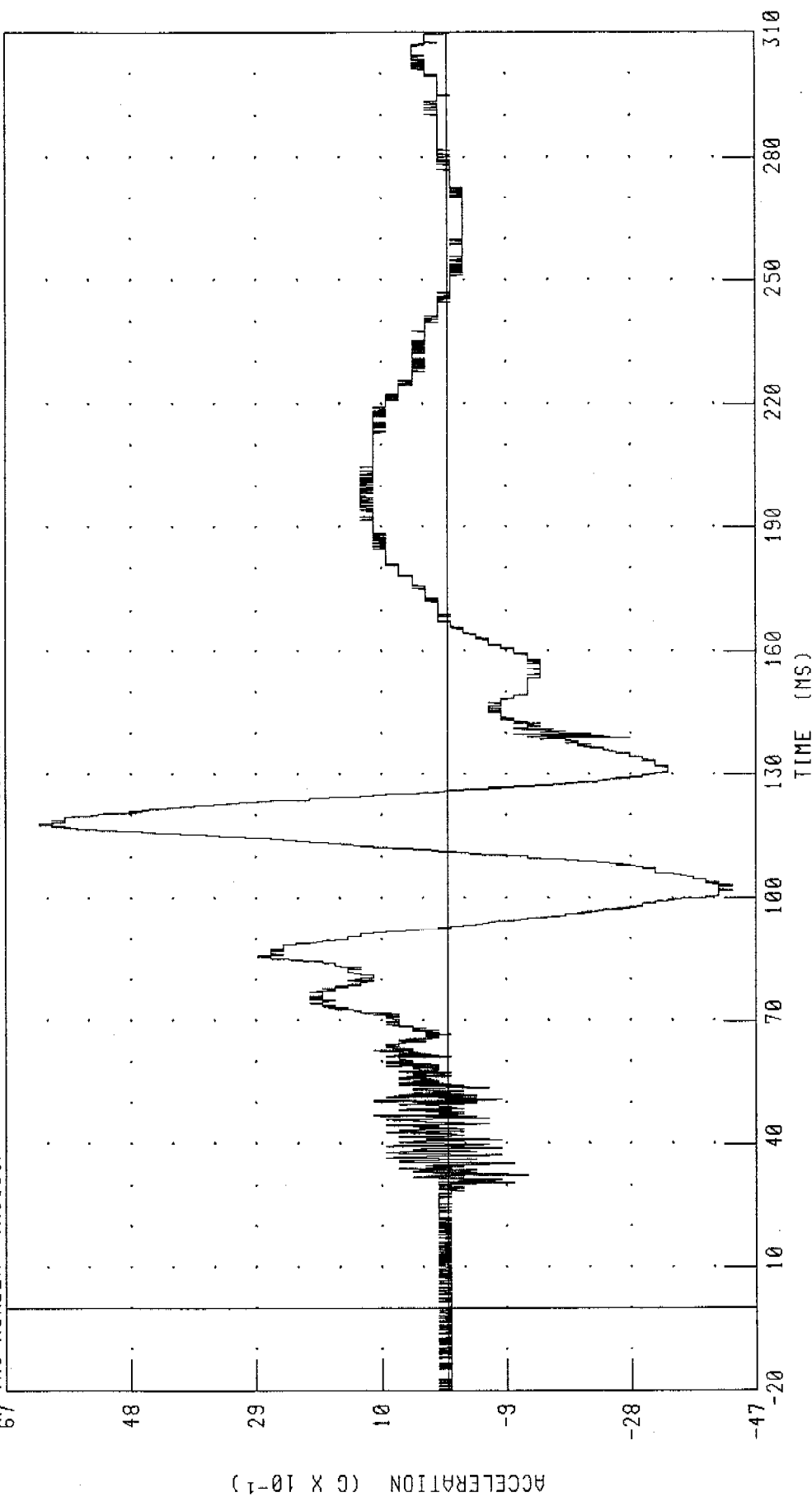
C15500 / 2001 SUBARU LEGACY
 DRIVER HEAD X-AXIS ACCELERATION
 FMVSS 208 SLED TEST



C15500 / 2001 SUBARU LEGACY
 DRIVER HEAD Y-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



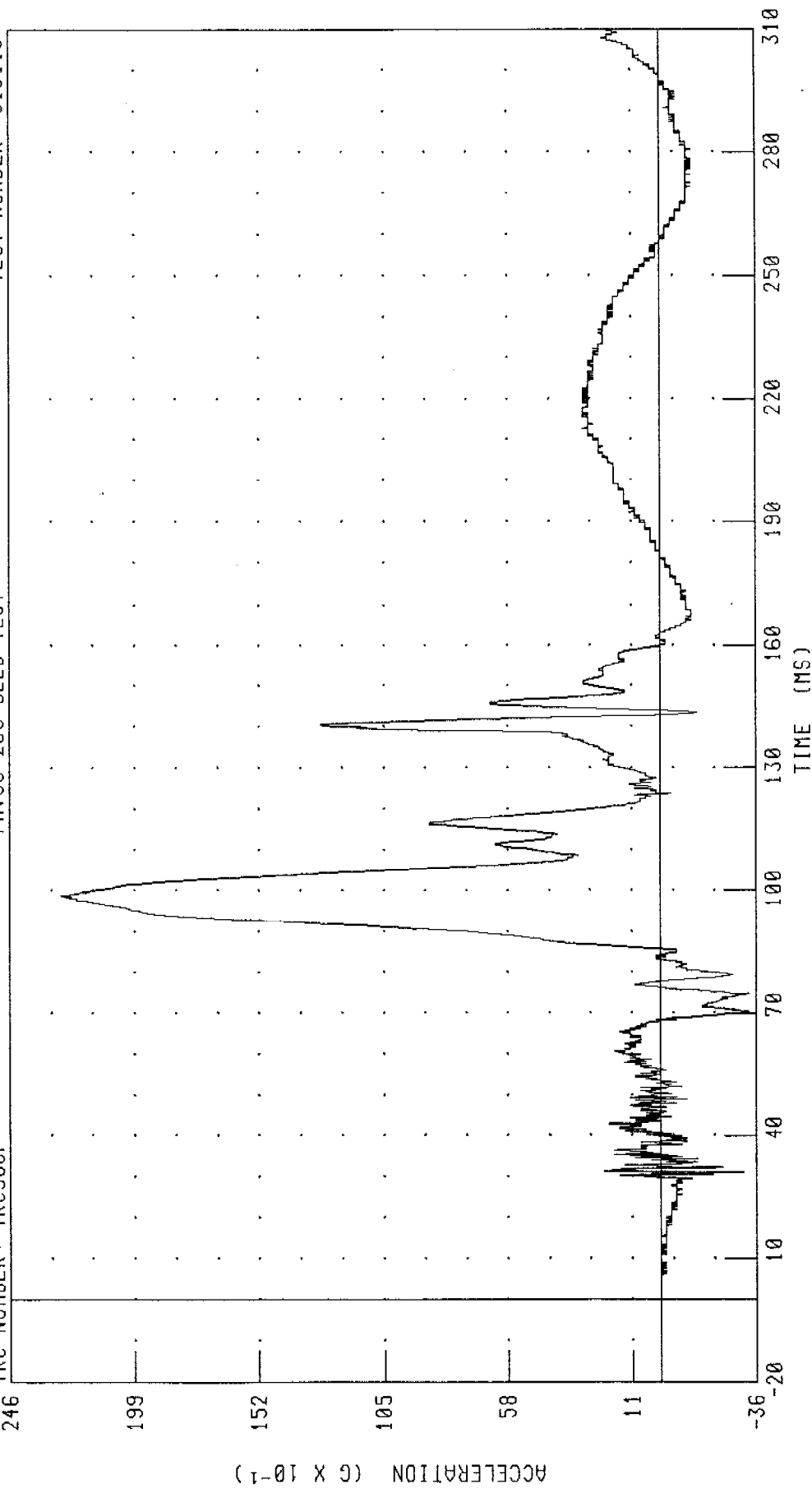
CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 6.19 G @ 117.60 MS, -4.34 G @ 102.00 MS

C15500 / 2001 SUBARU LEGACY
DRIVER HEAD Z-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



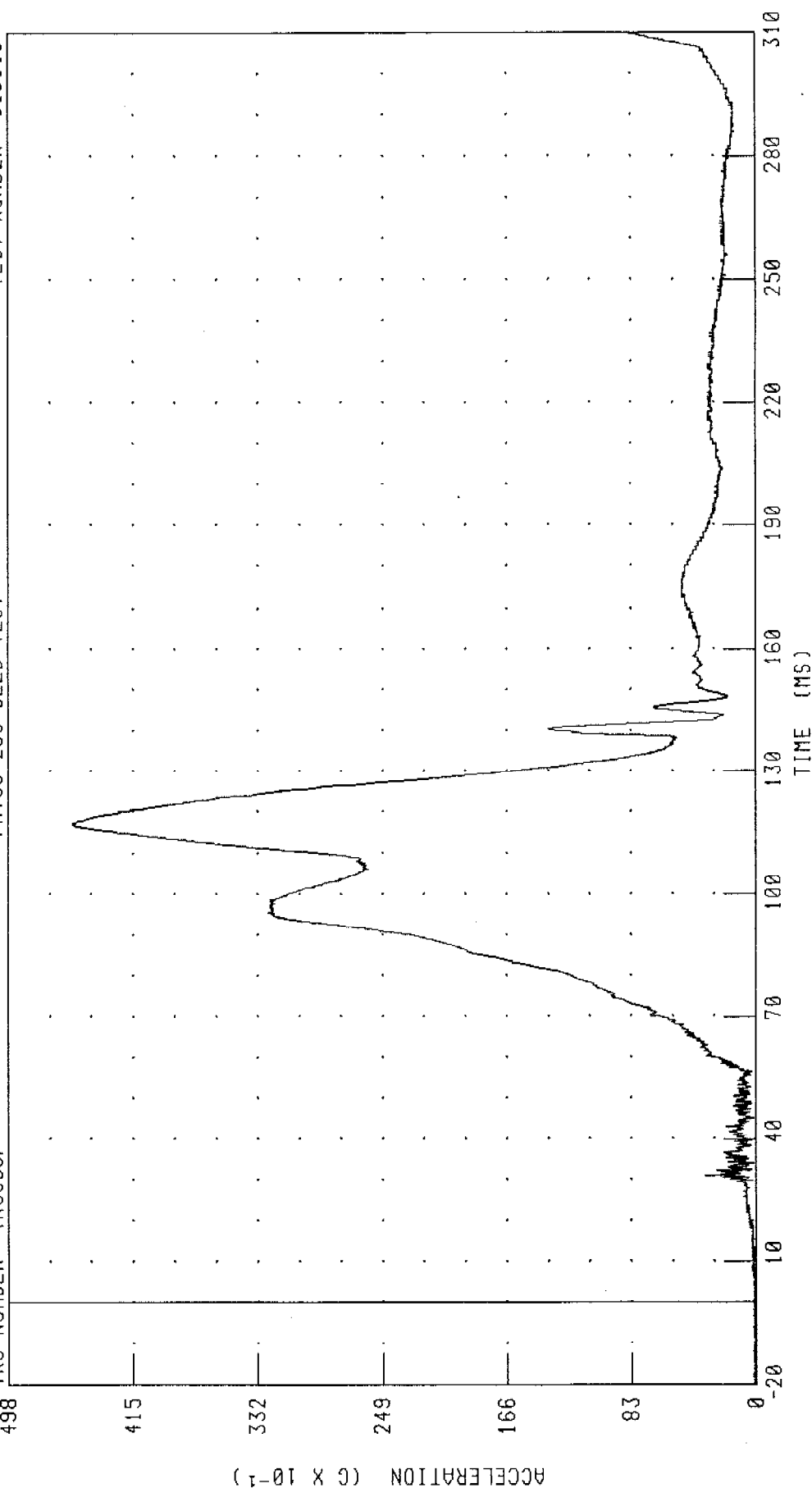
CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

PEAK DATA: 22.66 G @ 98.72 MS, -3.32 G @ 70.16 MS

C15500 / 2001 SUBARU LEGACY
 DRIVER HEAD RESULTANT ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



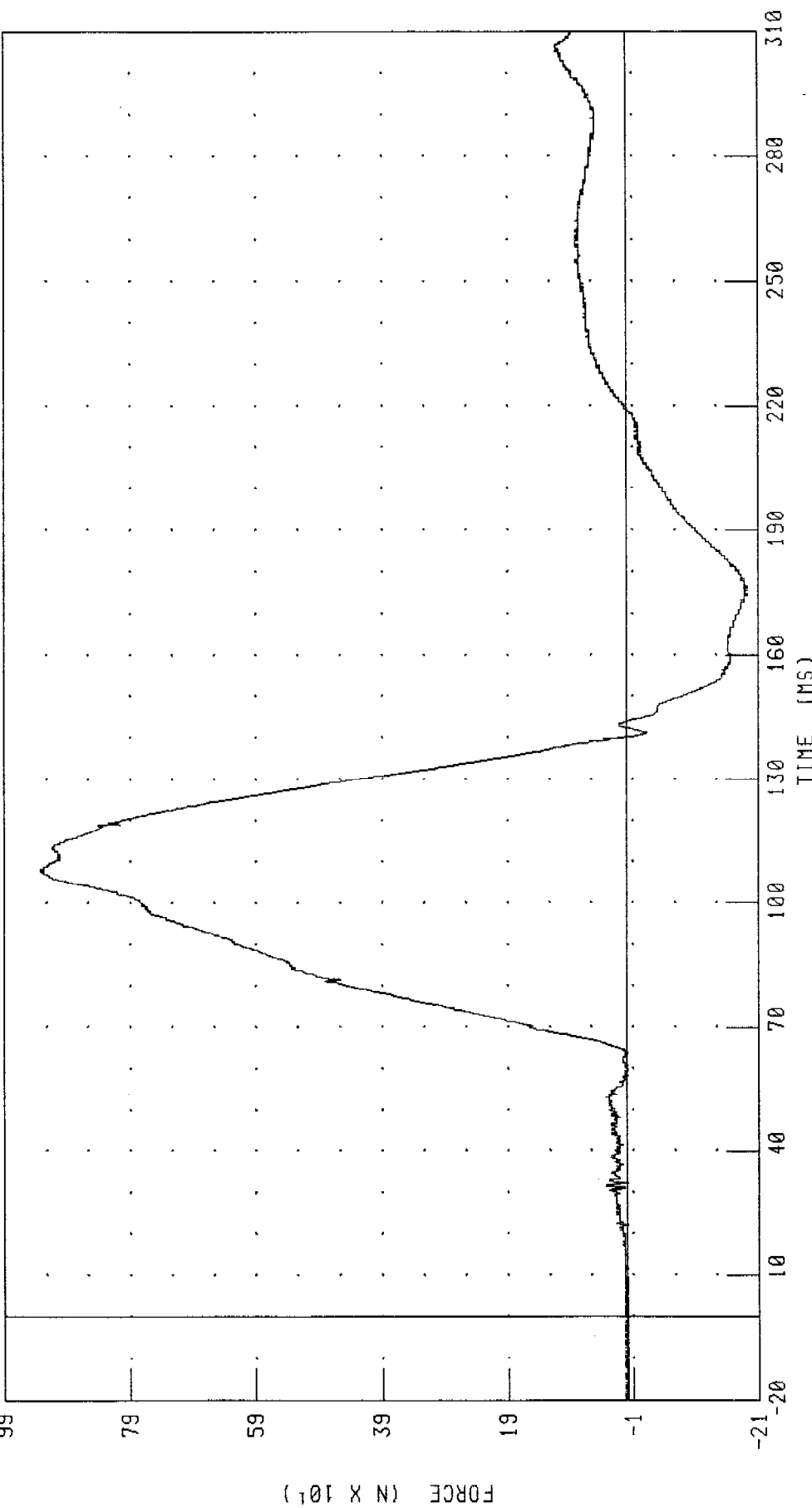
CHANNEL: HEDRC1 FILTER: CH. CLASS 1000

PEAK DATA: 45.53 G @ 117.20 MS, 0.08 G @ -19.92 MS

C15500 / 2001 SUBARU LEGACY
DRIVER NECK X-AXIS SHEAR FORCE
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

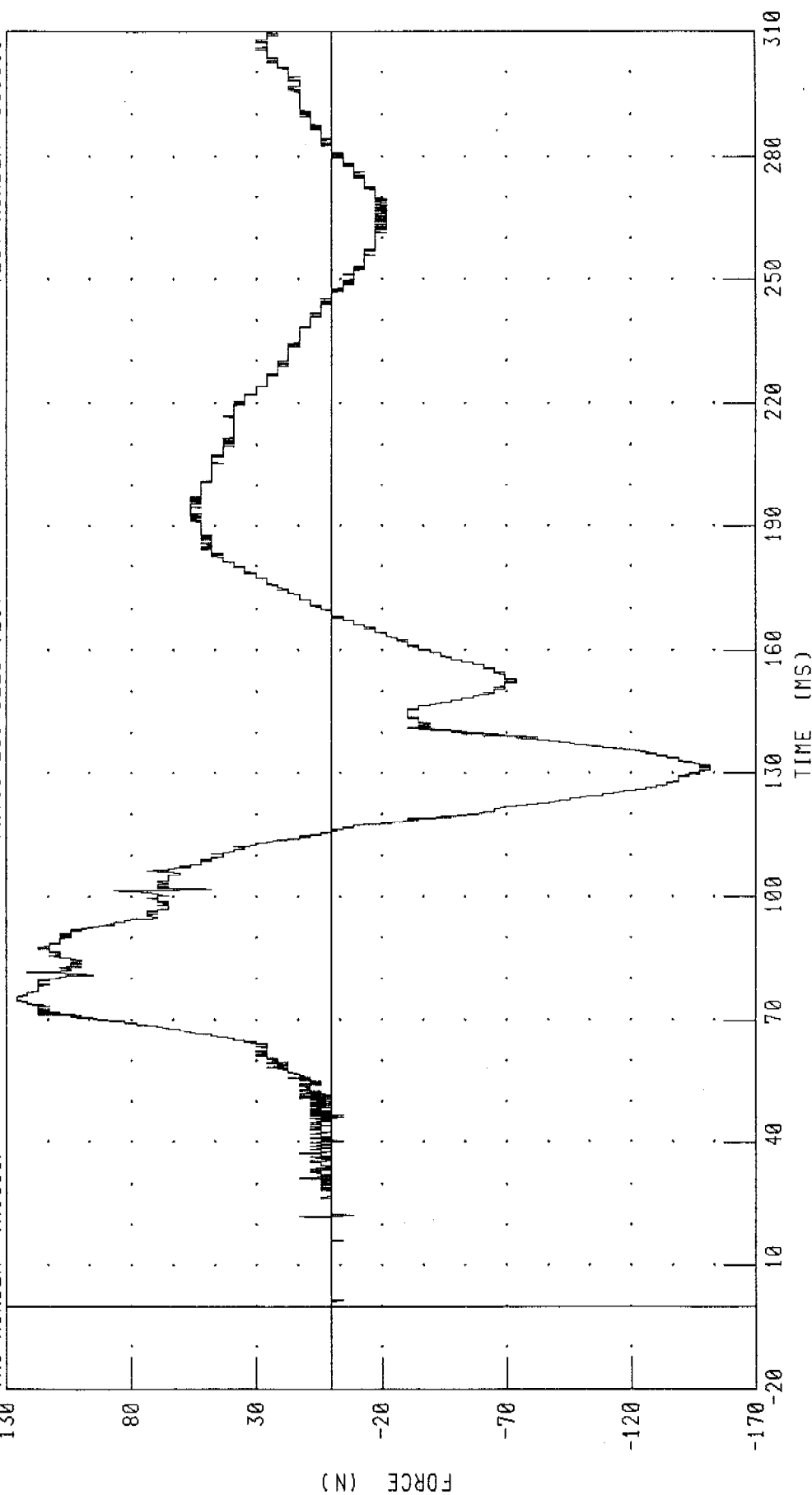
PEAK DATA: 932.16 N @ 107.36 MS; -192.40 N @ 174.40 MS

C15500 / 2001 SUBARU LEGACY
DRIVER NECK Y-AXIS SHEAR FORCE

TRC NUMBER: TRC386F

FMVSS 208 SLED TEST

TEST NUMBER: 010119



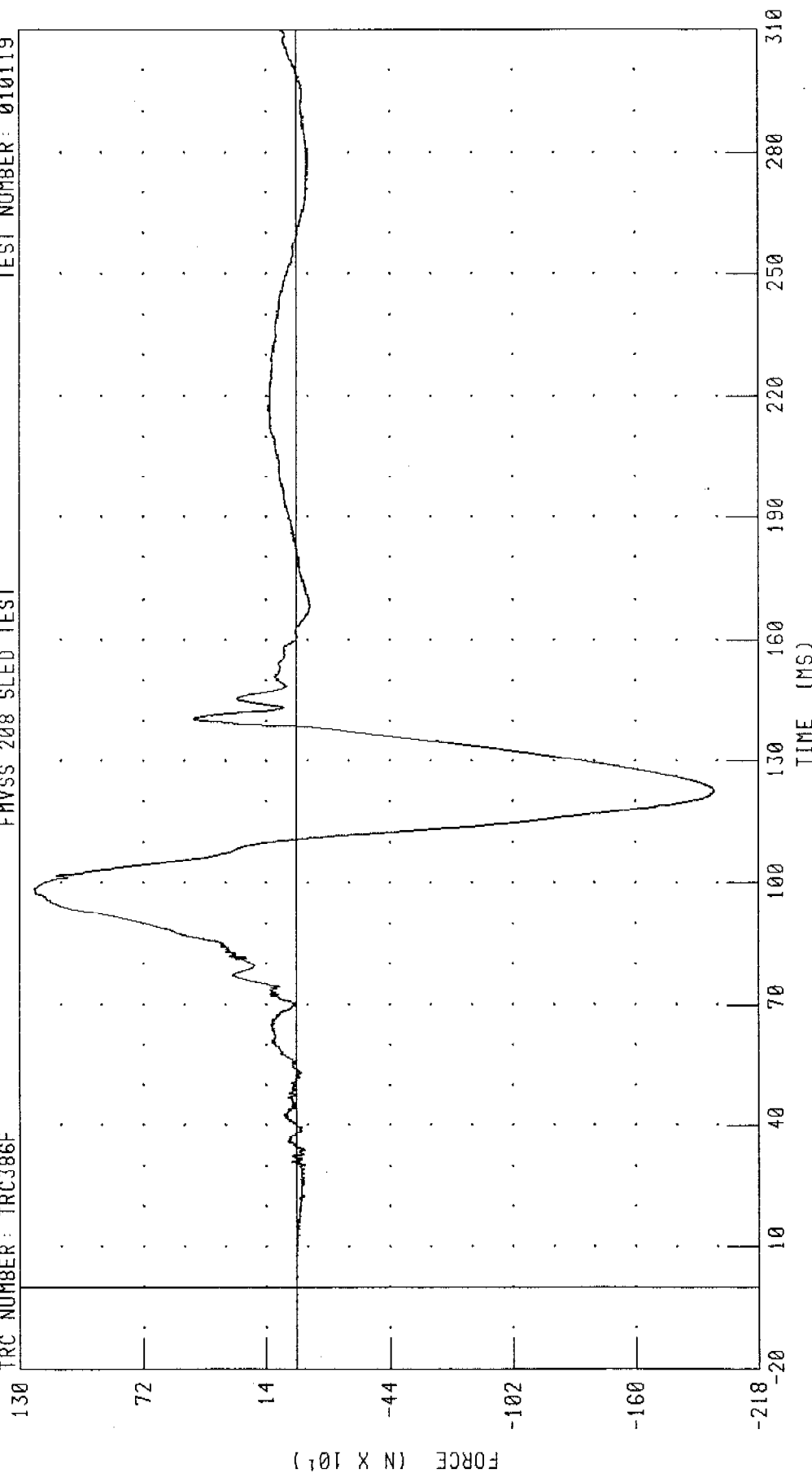
PEAK DATA: 125.97 N @ 74.64 MS, -152.03 N @ 130.72 MS

CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

C15500 / 2001 SUBARU LEGACY
 DRIVER NECK Z-AXIS AXIAL FORCE
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



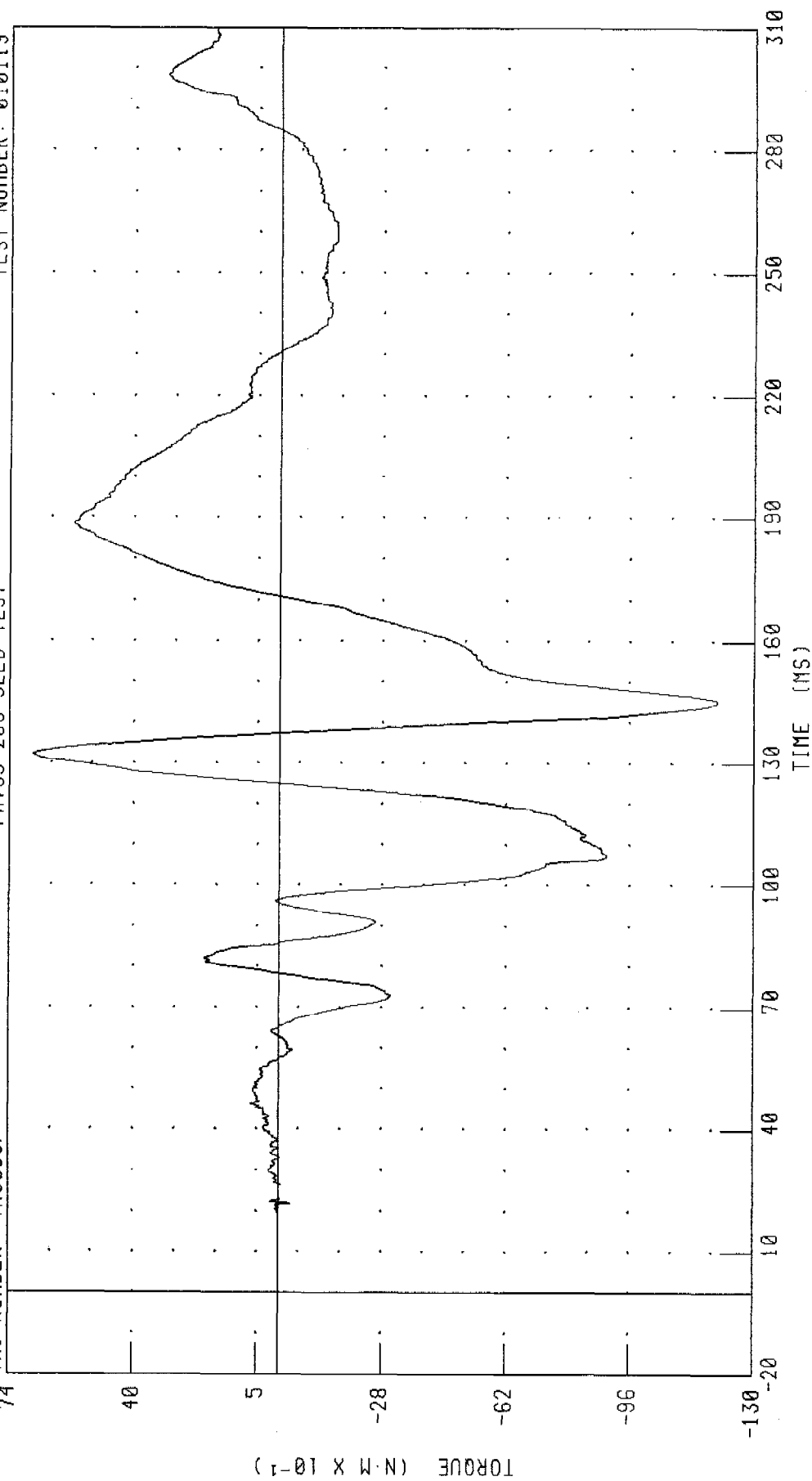
PEAK DATA: 1231.99 N @ 98.32 MS, -1975.11 N @ 122.48 MS

CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

C15500 / 2001 SUBARU LEGACY
 DRIVER NECK MOMENT ABOUT X AXIS
 FMVSS 208 SLED TEST

TRC NUMBER: TRC386F

TEST NUMBER: 010119



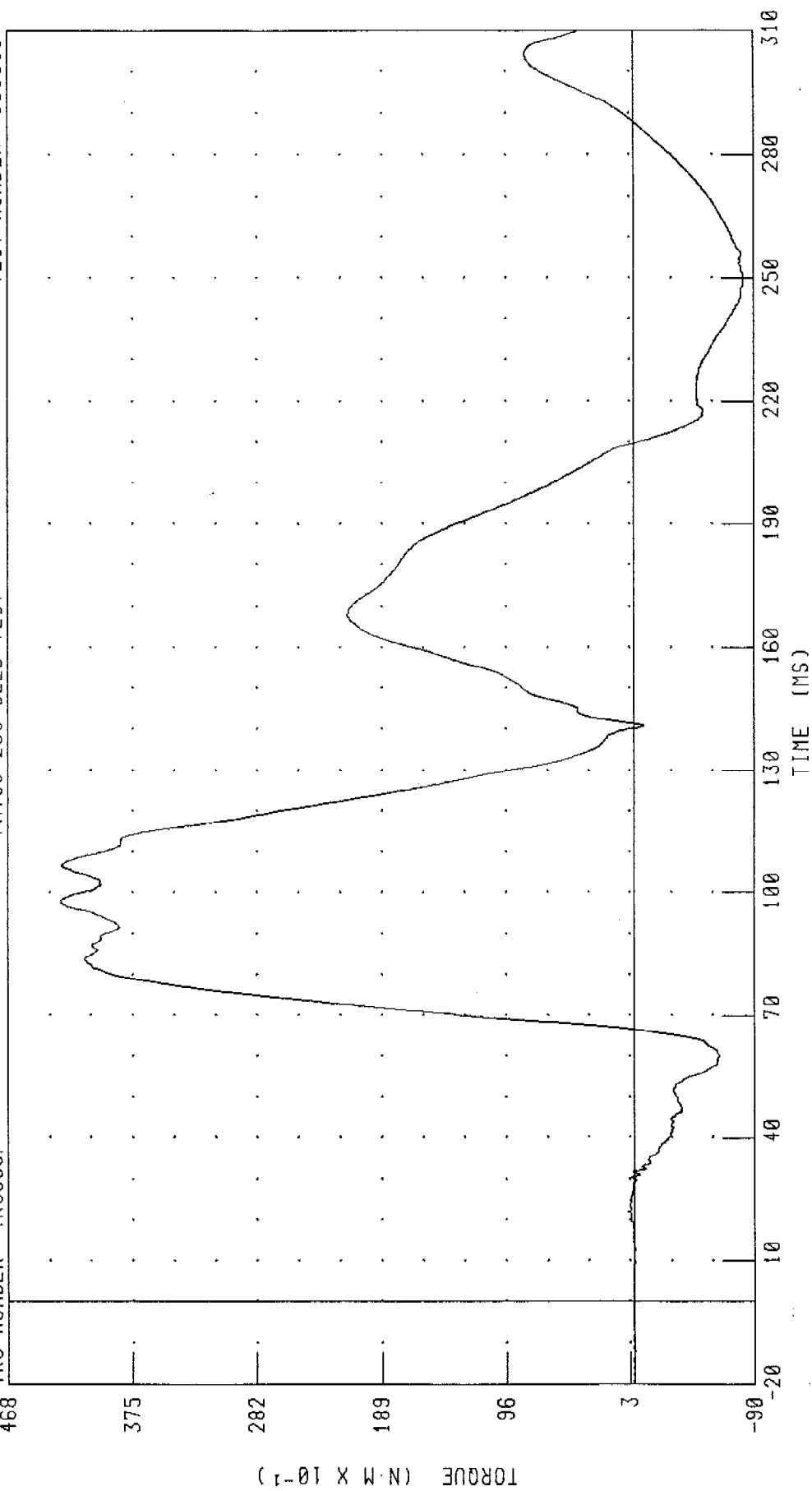
CHANNEL: NEKXMI FILTER: CH. CLASS 600

PEAK DATA: 6.76 N-M @ 132.16 MS, -12.00 N-M @ 145.52 MS

C15500 / 2001 SUBARU LEGACY
DRIVER NECK MOMENT ABOUT Y AXIS
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



TIME (MS)

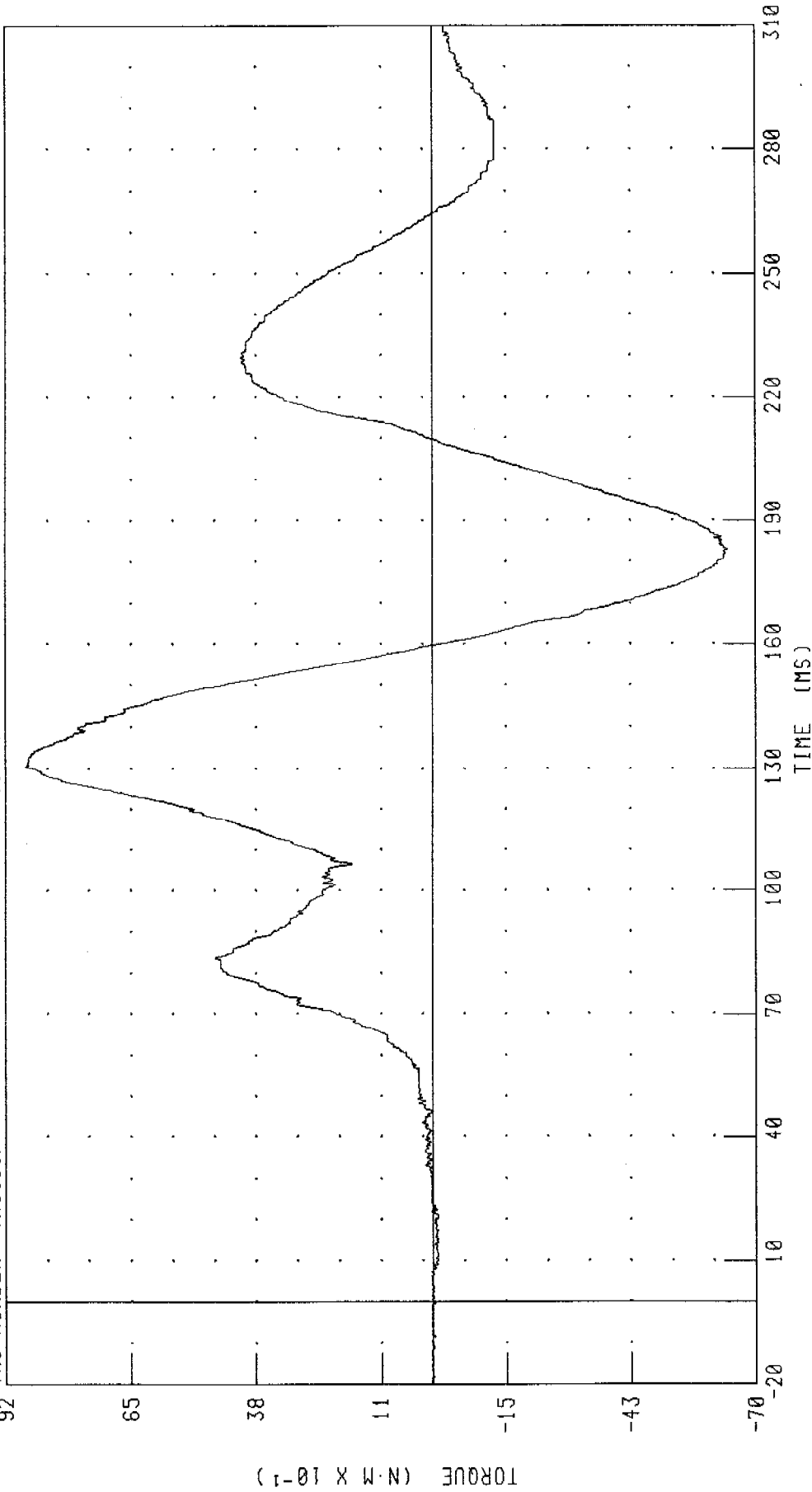
PEAK DATA: 42.85 N·M @ 98.08 MS; -8.22 N·M @ 249.12 MS

CHANNEL: NEKYM1 FILTER: CH. CLASS 600

C15500 / 2001 SUBARU LEGACY
 DRIVER NECK MOMENT ABOUT Z AXIS
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

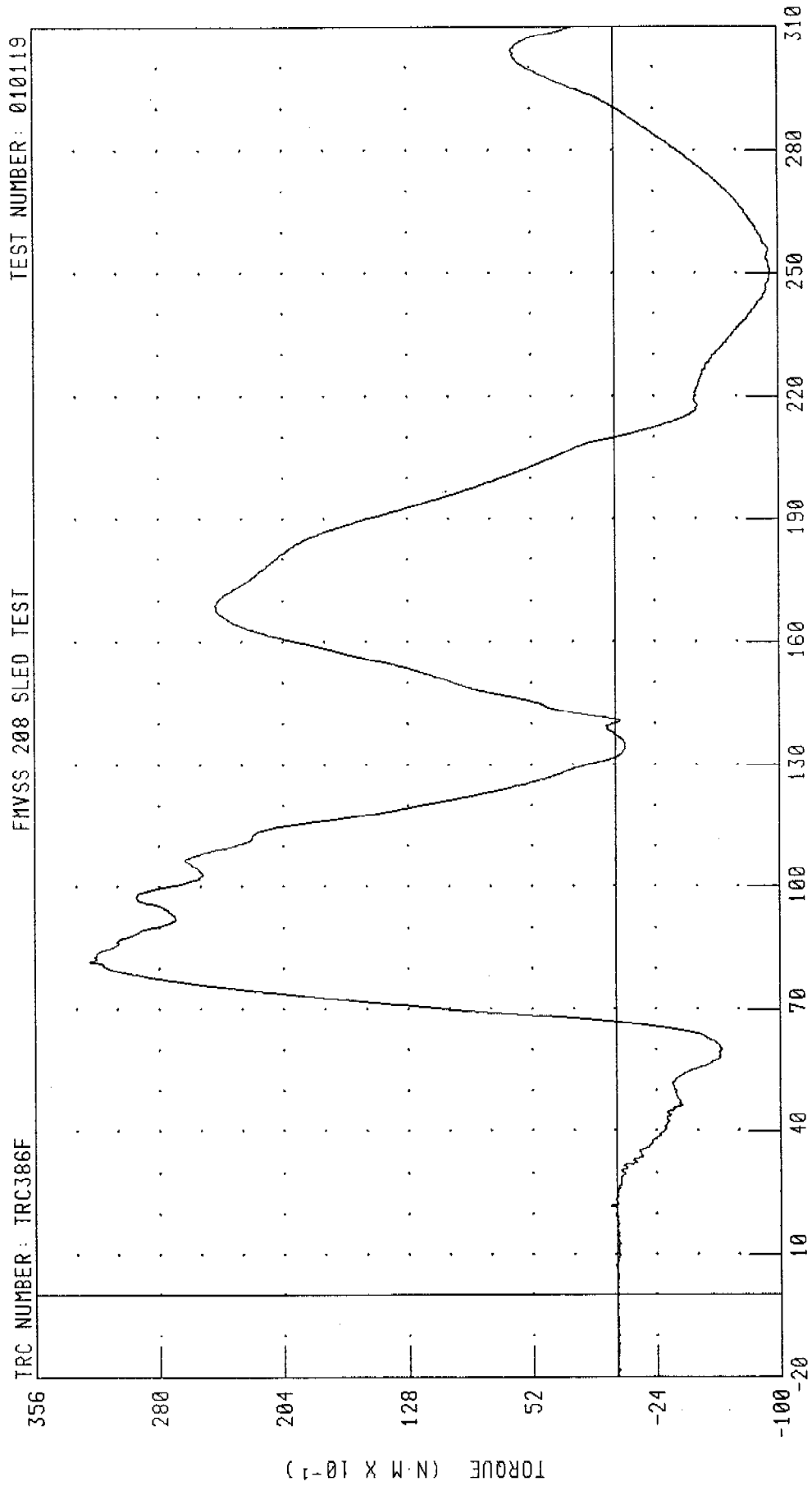
TRC NUMBER: TRC306F



PEAK DATA: 8.76 N·m @ 130.64 MS; -6.40 N·m @ 183.12 MS

CHANNEL: NEKZM1 FILTER: CH. CLASS 600

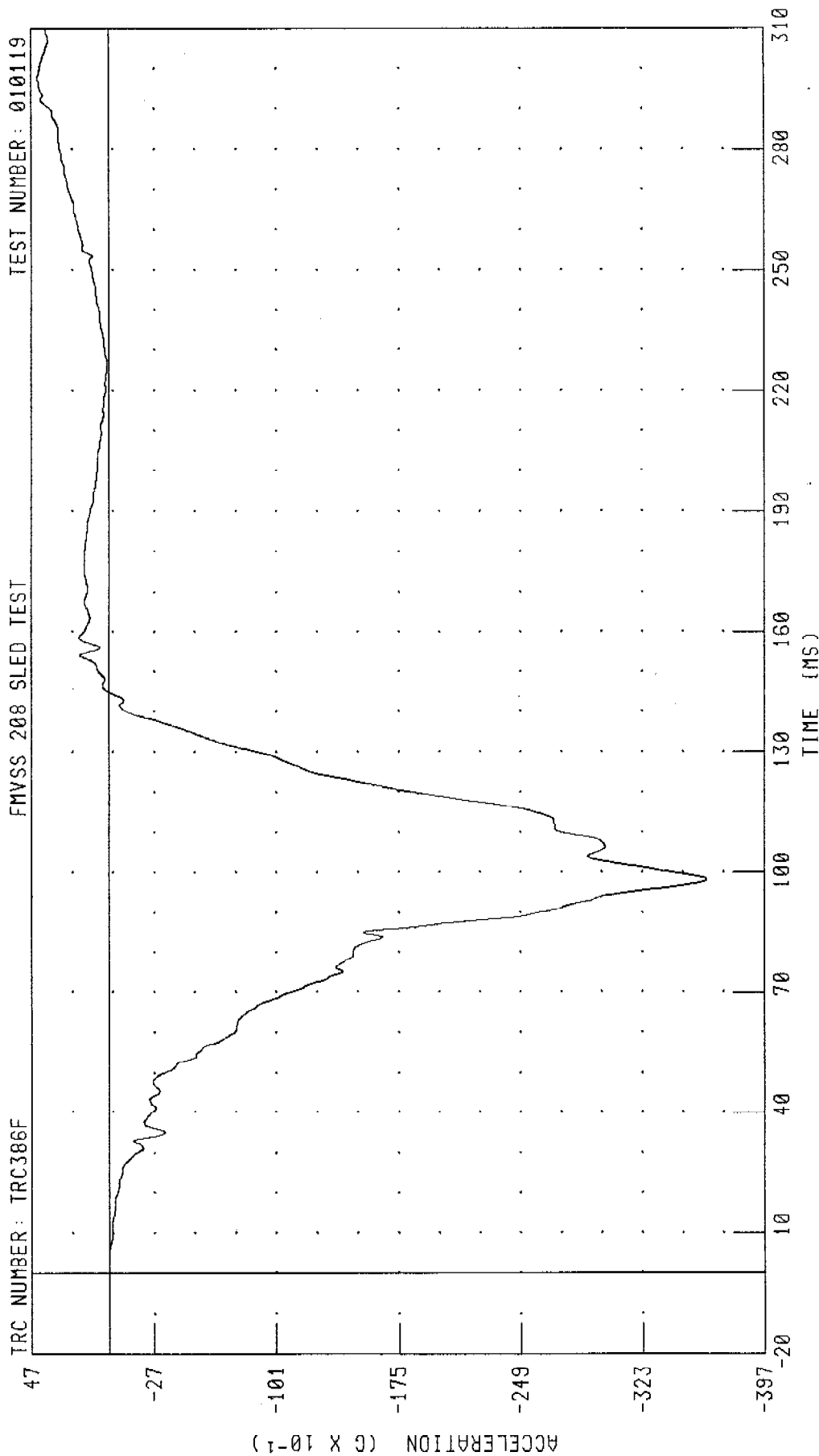
C15500 / 2001 SUBARU LEGACY
 DRIVER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE



PEAK DATA: 32.26 N·m @ 81.76 MS; -9.54 N·m @ 250.72 MS

CHANNEL: NEKOM1 FILTER: CH. CLASS 600

C15500 / 2001 SUBARU LEGACY
 DRIVER CHEST X-AXIS ACCELERATION
 FMVSS 208 SLED TEST



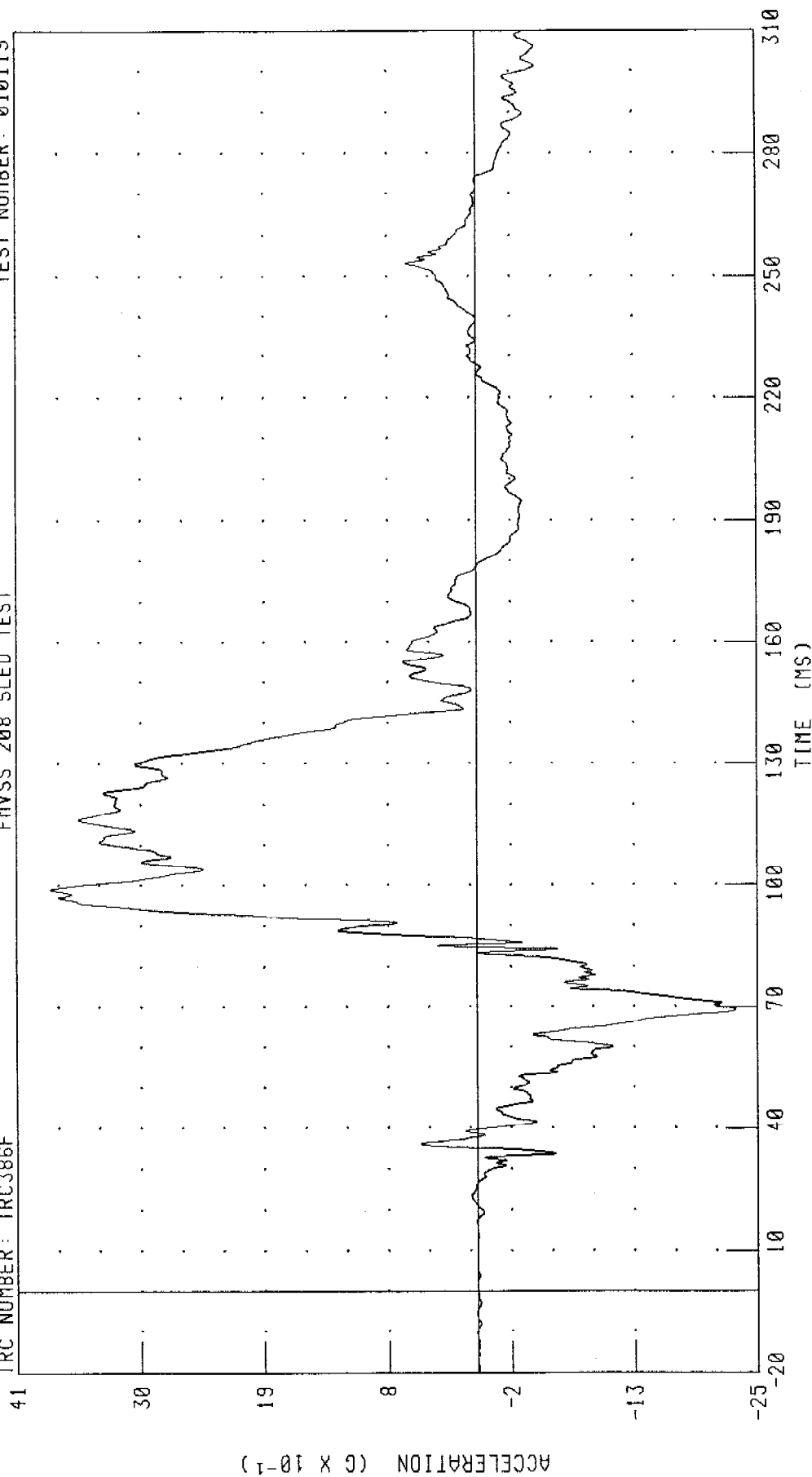
PEAK DATA: 4.35 G @ 297.68 MS; -36.22 G @ 98.24 MS

CHANNEL: CSTXC1 FILTER: CH. CLASS 180

C15500 / 2001 SUBARU LEGACY
DRIVER CHEST Y-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



CHANNEL: CSTY01 FILTER: CH. CLASS 180

PEAK DATA: 3.80 G @ 99.04 MS; -2.31 G @ 69.20 MS

C15500 / 2001 SUBARU LEGACY
DRIVER CHEST Z-AXIS ACCELERATION

TEST NUMBER: 010119

FMVSS 208 SLED TEST

TRC NUMBER: TRC386F

161

124

87

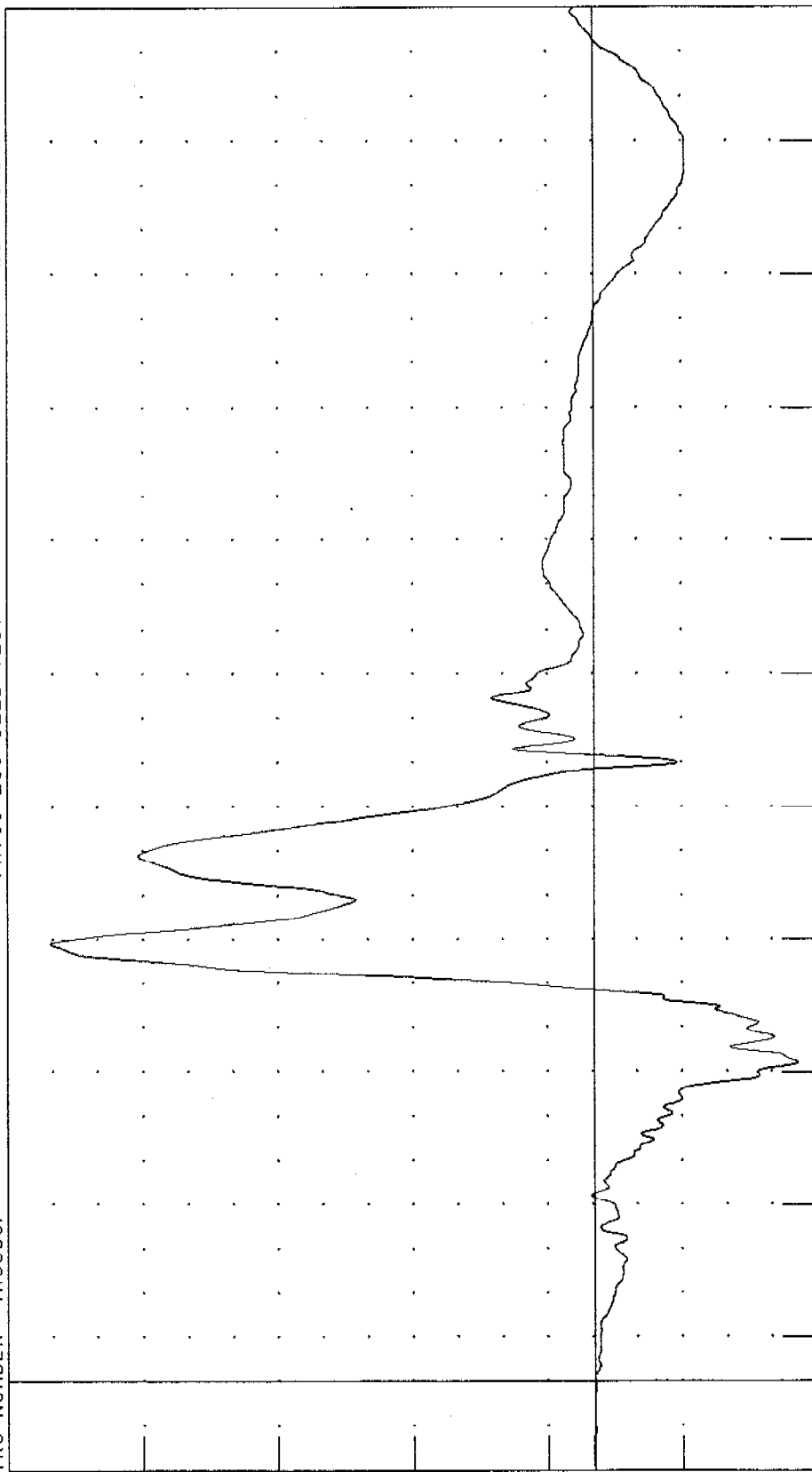
50

13

-24

-61

ACCELERATION (G X 10⁻¹)



TIME (MS)

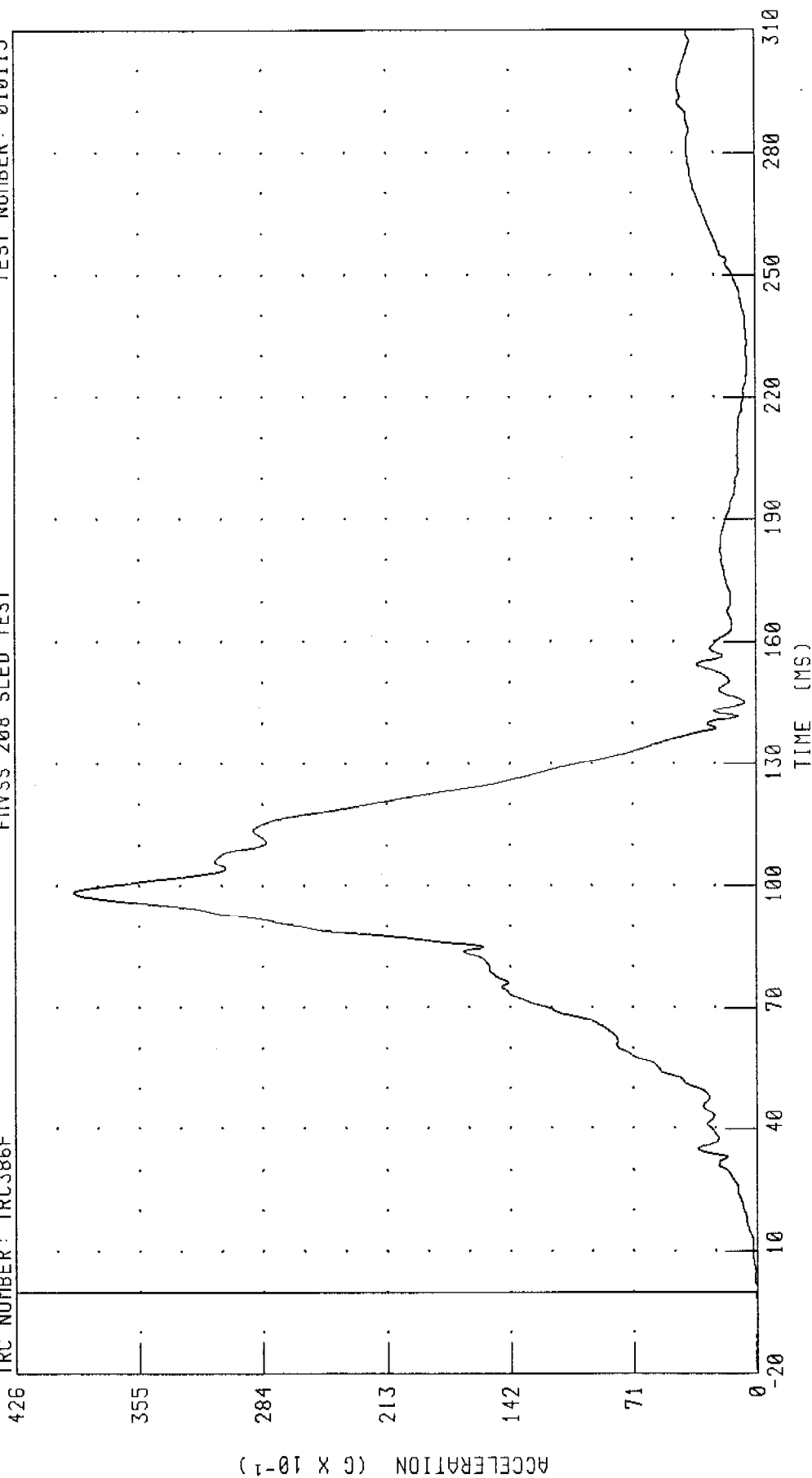
PEAK DATA: 14.94 G @ 99.04 MS; -5.60 G @ 72.16 MS

CHANNEL: CSTZC1 FILTER: CH. CLASS 180

C15500 / 2001 SUBARU LEGACY
 DRIVER CHEST RESULTANT ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

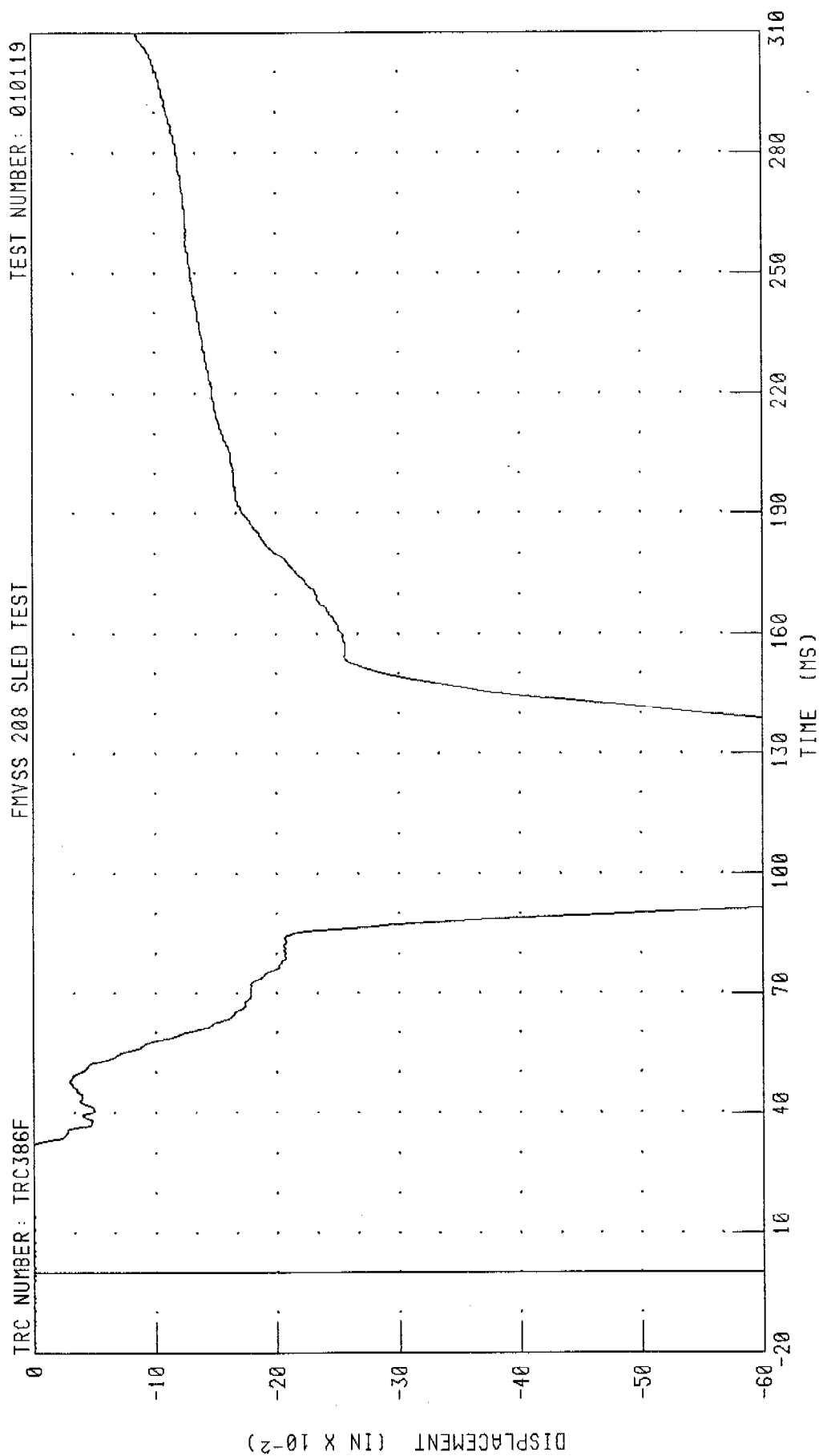
TRC NUMBER: TRC386F



PEAK DATA: 39.25 G @ 98.40 MS; 0.00 G @ -4.16 MS

CHANNEL: CSTRG1 FILTER: CH. CLASS 180

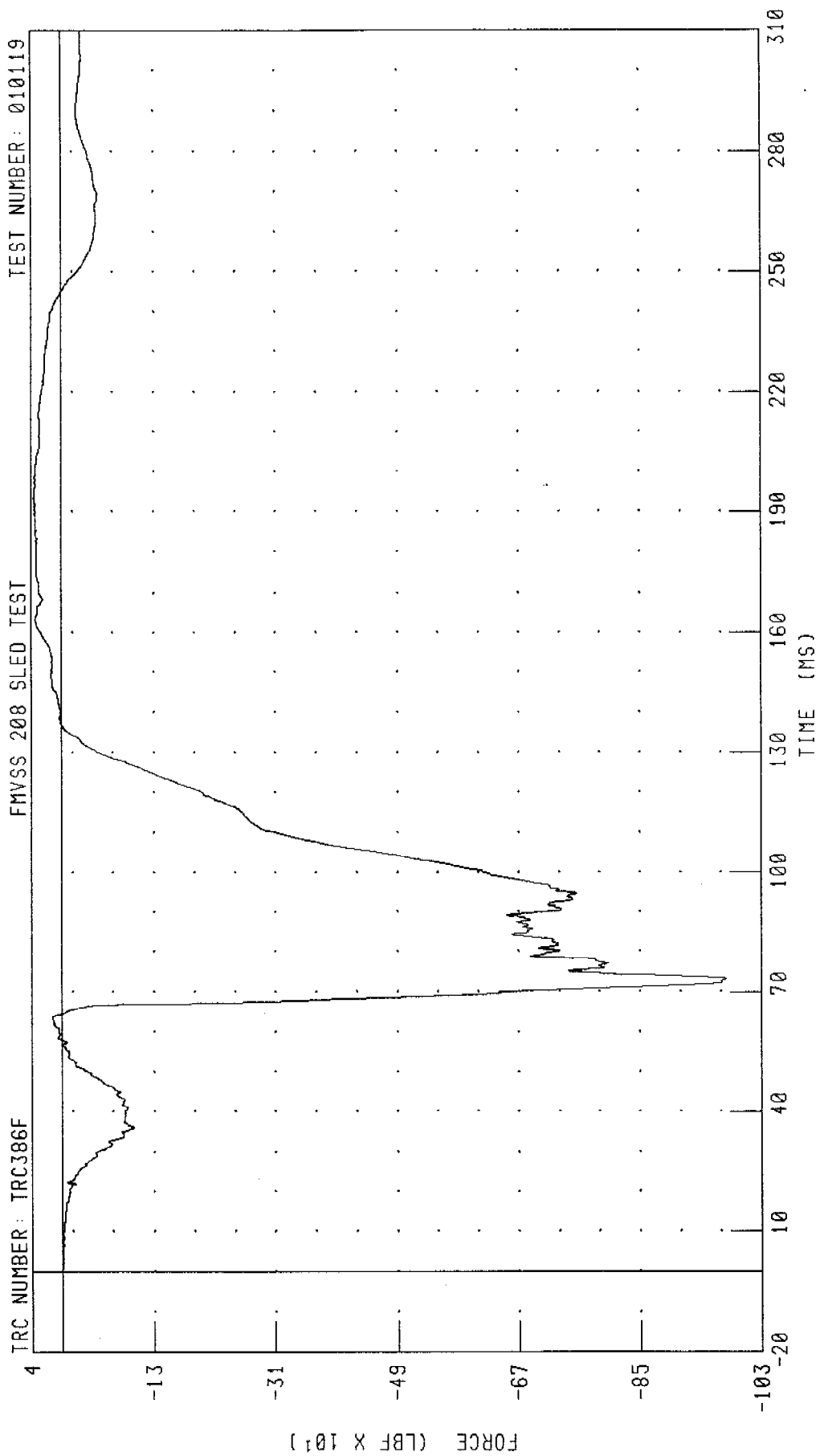
C15500 / 2001 SUBARU LEGACY
 DRIVER CHEST DEFLECTION
 FMVSS 208 SLED TEST



CHANNEL: CSTXD1 FILTER: CH. CLASS 600

PEAK DATA: 0.00 IN @ 30.88 MS, -1.09 IN @ 116.64 MS

C15500 / 2001 SUBARU LEGACY
 DRIVER LEFT FEMUR FORCE
 FMVSS 208 SLED TEST



CHANNEL: LFMZF1 FILTER: CH. CLASS 600 PEAK DATA: 40.59 LBF @ 193.44 MS; -984.13 LBF @ 73.20 MS

C15500 / 2001 SUBARU LEGACY

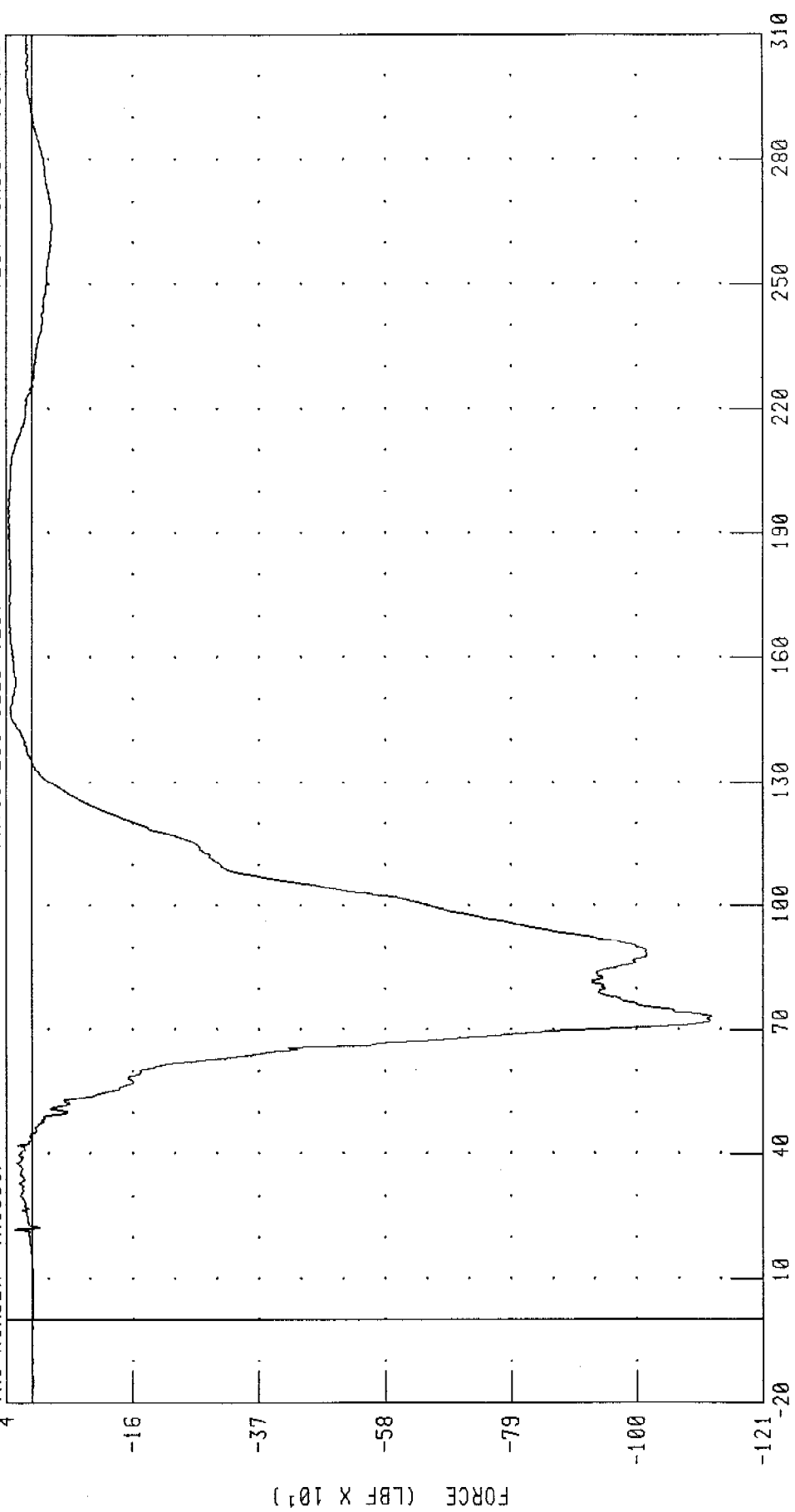
DRIVER RIGHT FEMUR FORCE

FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F

4



TIME (MS)

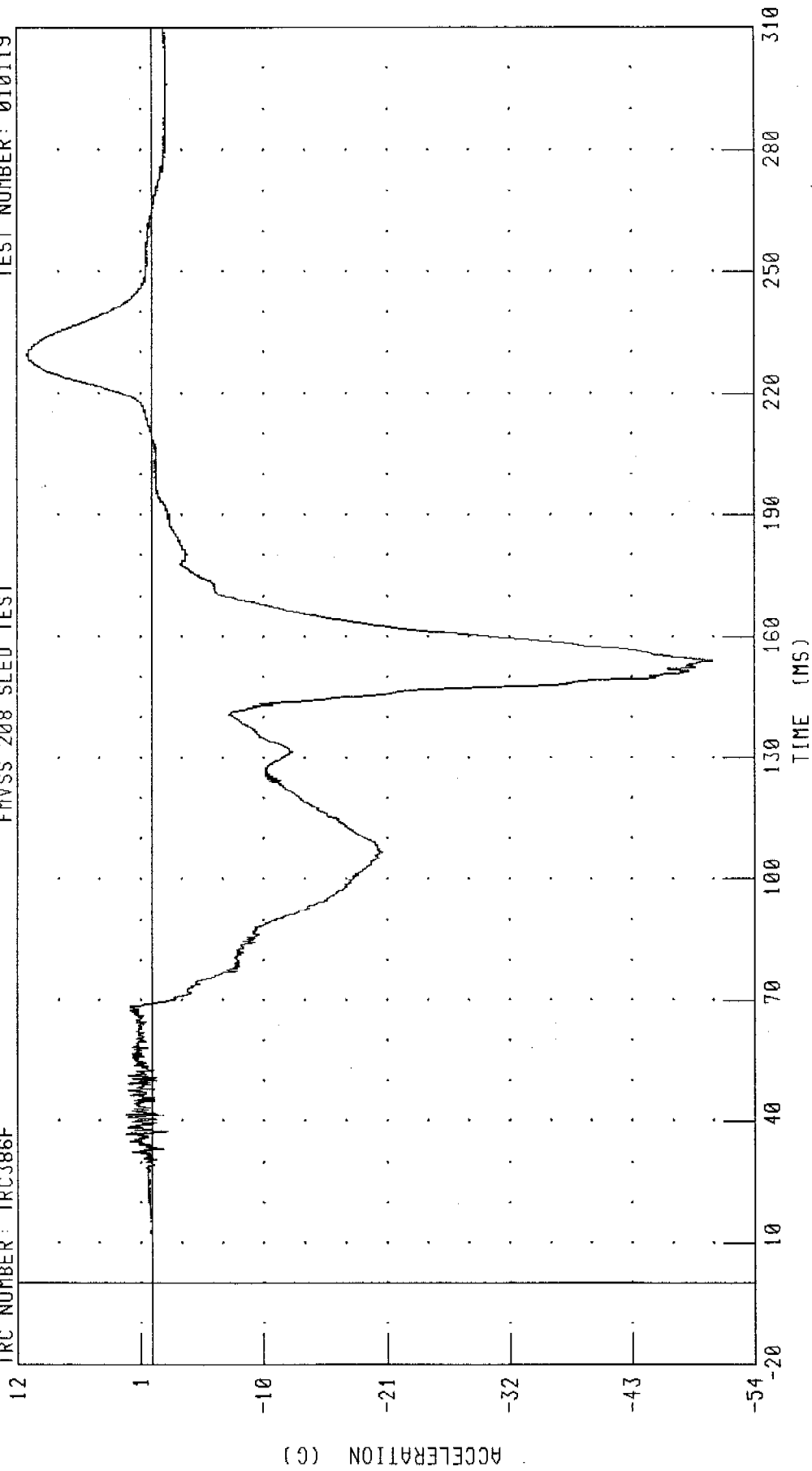
PEAK DATA: 39.91 LBF @ 192.88 MS; -1131.71 LBF @ 73.28 MS

CHANNEL: RFMZFI FILTER: CH. CLASS 600

C15500 / 2001 SUBARU LEGACY
RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION
FMVSS 208 SLED TEST

TRC NUMBER: TRC386F

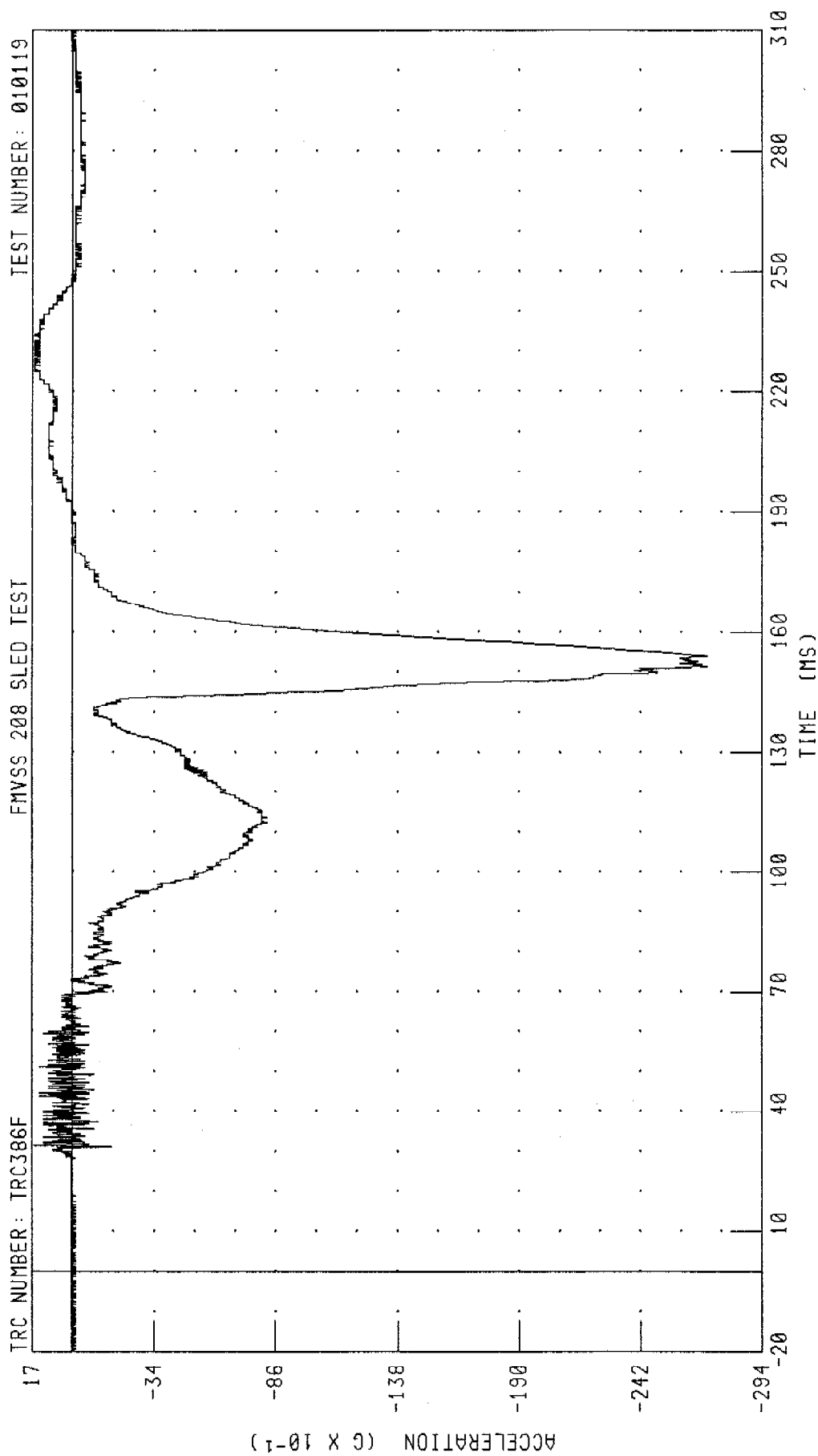
TEST NUMBER: 010119



CHANNEL: HEDXC2 FILTER: CH. CLASS 1000

PEAK DATA: 11.15 G @ 229.20 MS; -50.27 G @ 154.08 MS

C15500 / 2001 SUBARU LEGACY
RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION
FMVSS 208 SLED TEST



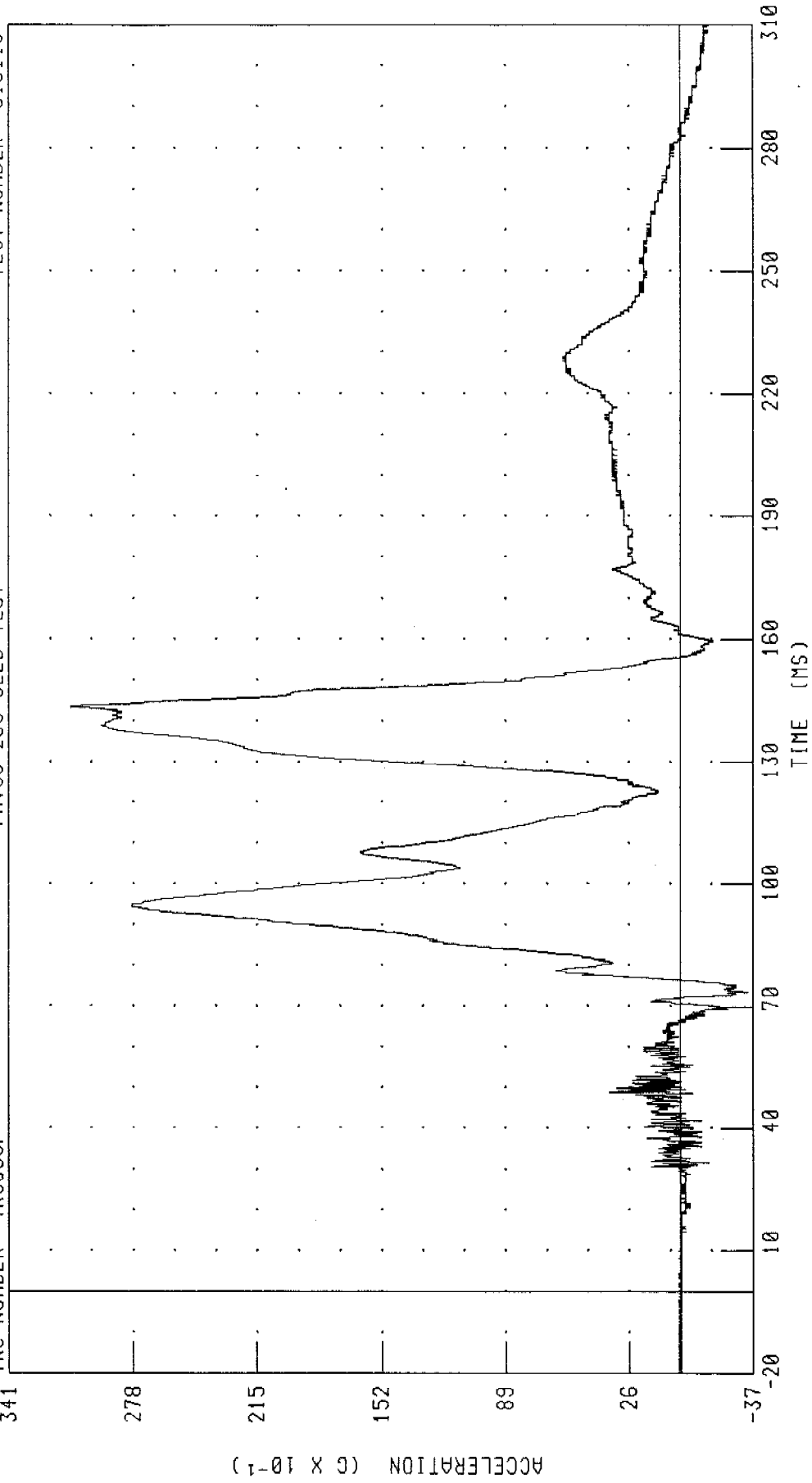
CHANNEL: HEDYC2 FILTER: CH. CLASS 1000

PEAK DATA: 1.60 G @ 31.52 MS; -27.16 G @ 151.44 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



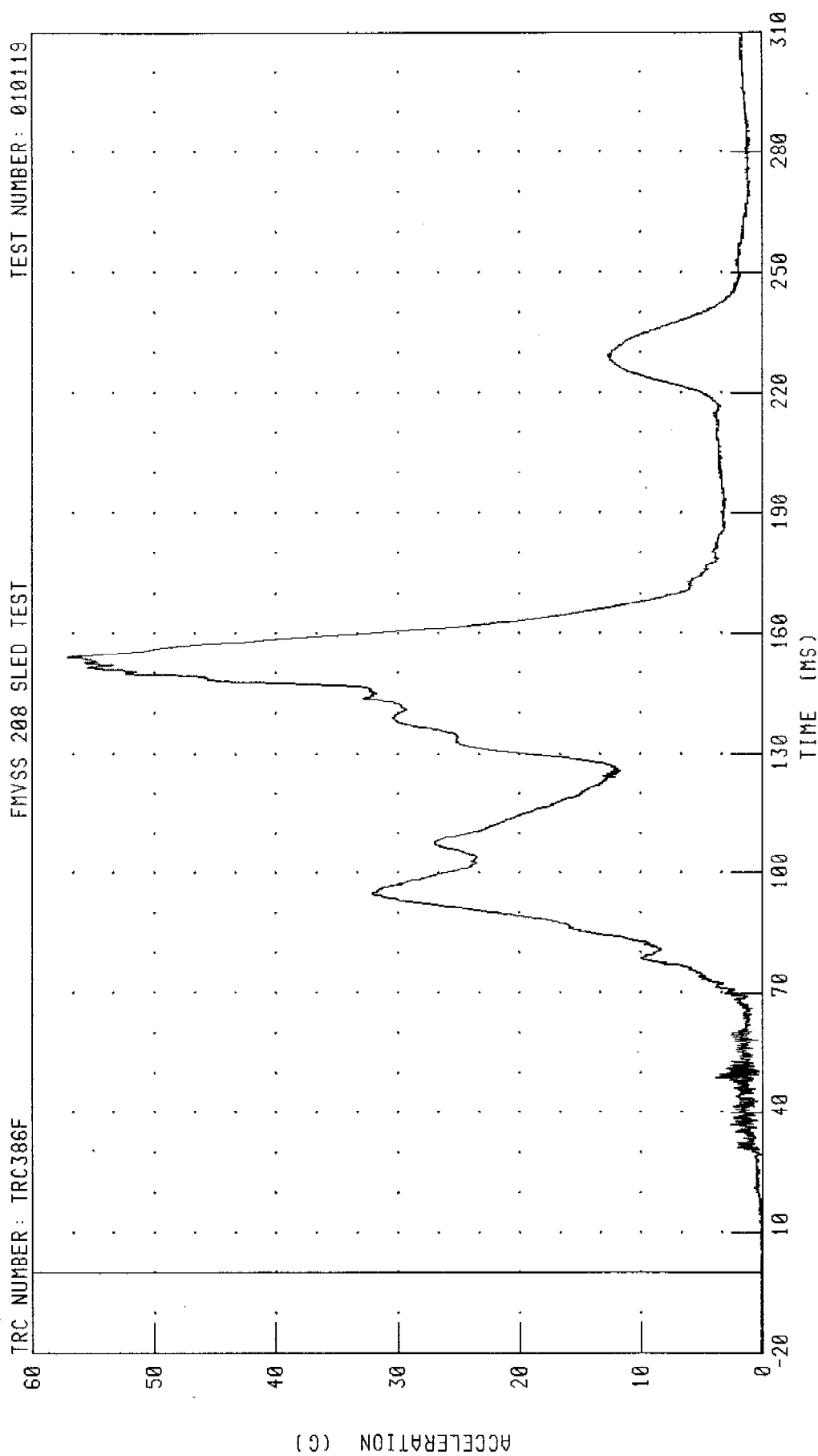
PEAK DATA: 30.97 G @ 143.60 MS; -3.42 G @ 73.44 MS

CHANNEL: HEADZG2 FILTER: CH. CLASS 1000

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



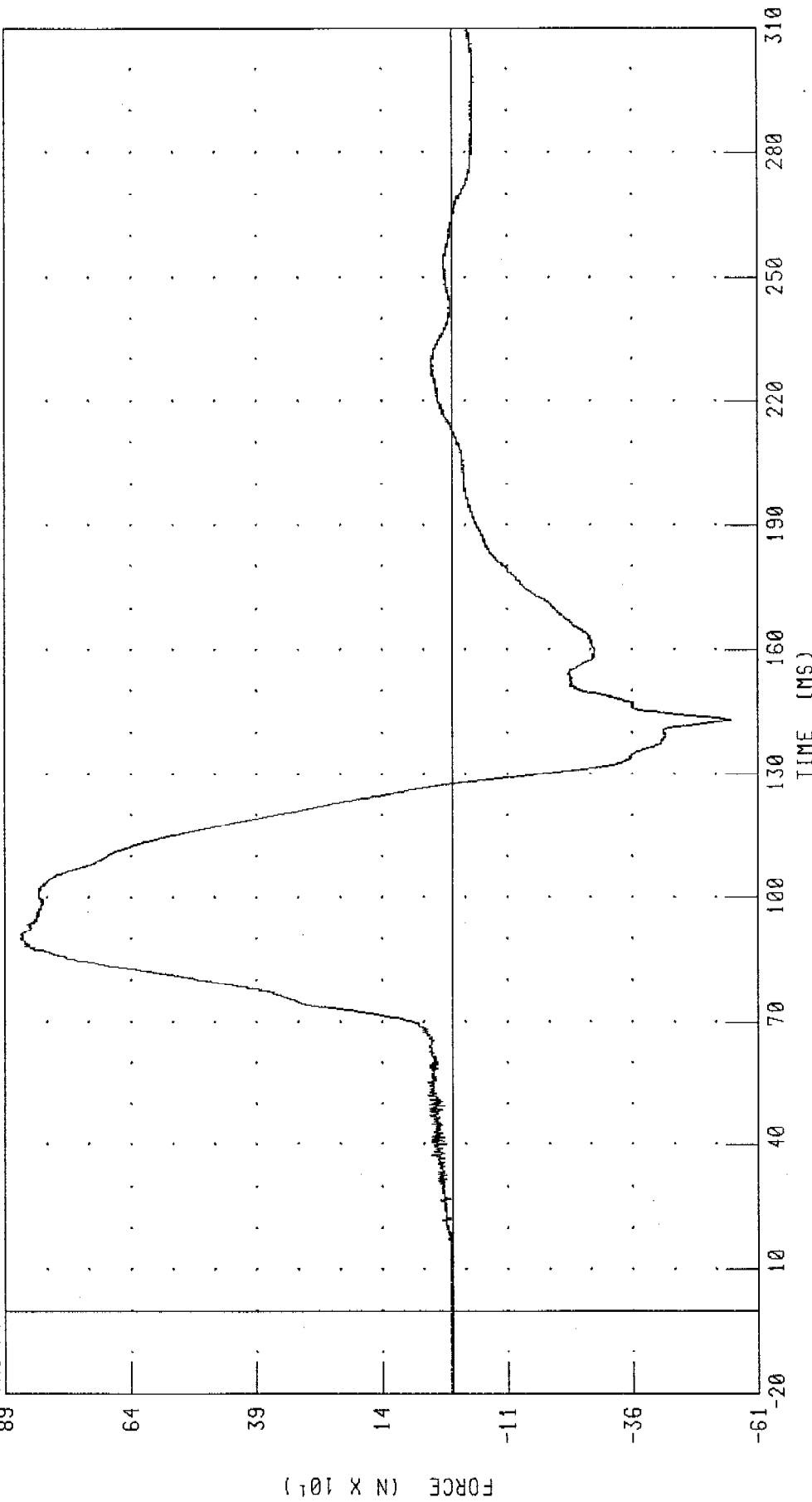
CHANNEL: HEDRC2 FILTER: CH. CLASS 1000

PEAK DATA: 57.17 G @ 154.08 MS; 0.11 G @ -20.00 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



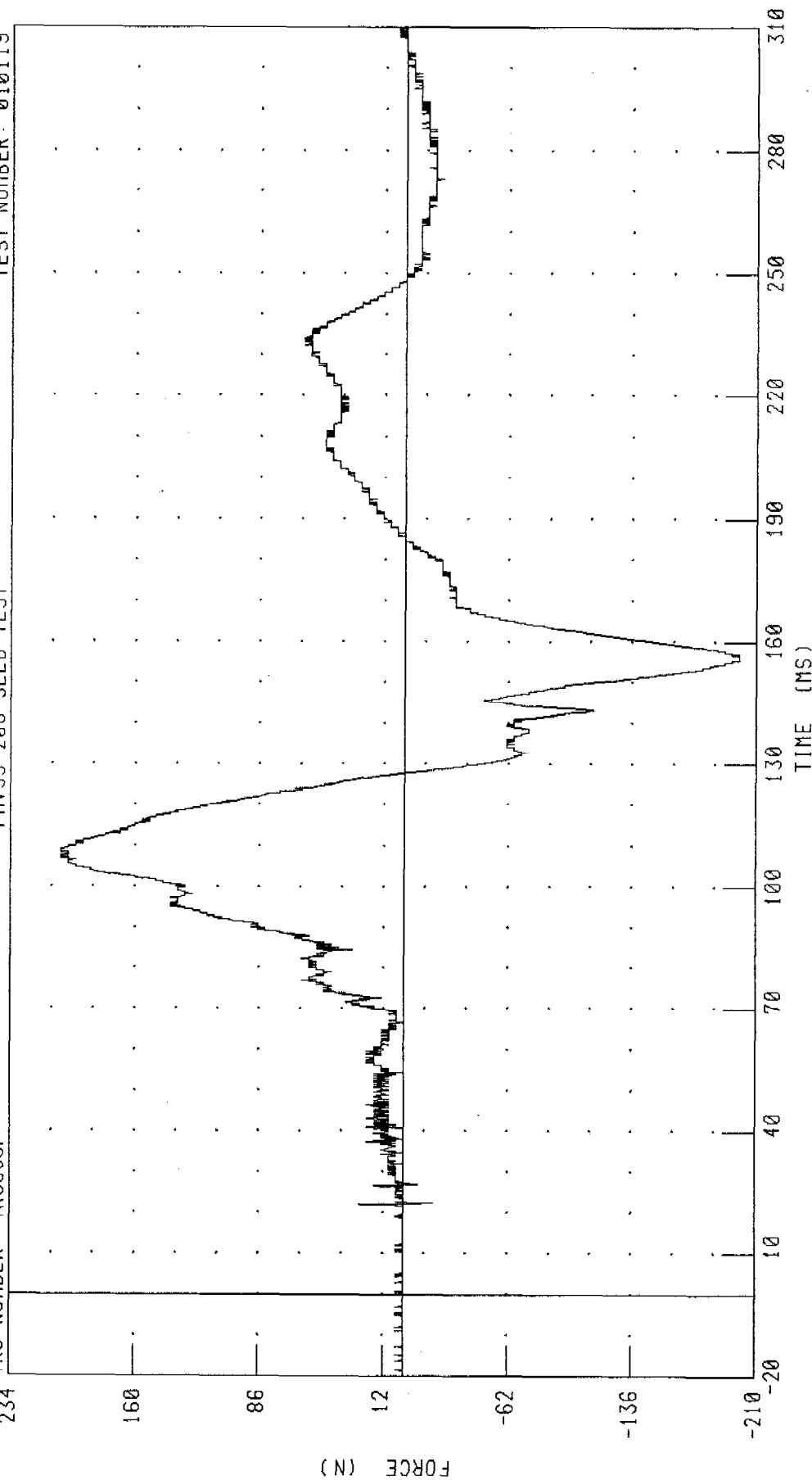
CHANNEL: NEKXF2 FILTER: CH. CLASS 1000

PEAK DATA: 858.22 N @ 89.68 MS; -557.14 N @ 143.12 MS

C15500 / 2001 SUBARU LEGACY
RIGHT FRONT PASSENGER NECK Y-AXIS SHEAR FORCE
FMVSS 208 SLED TEST

TRC NUMBER: TRC386F

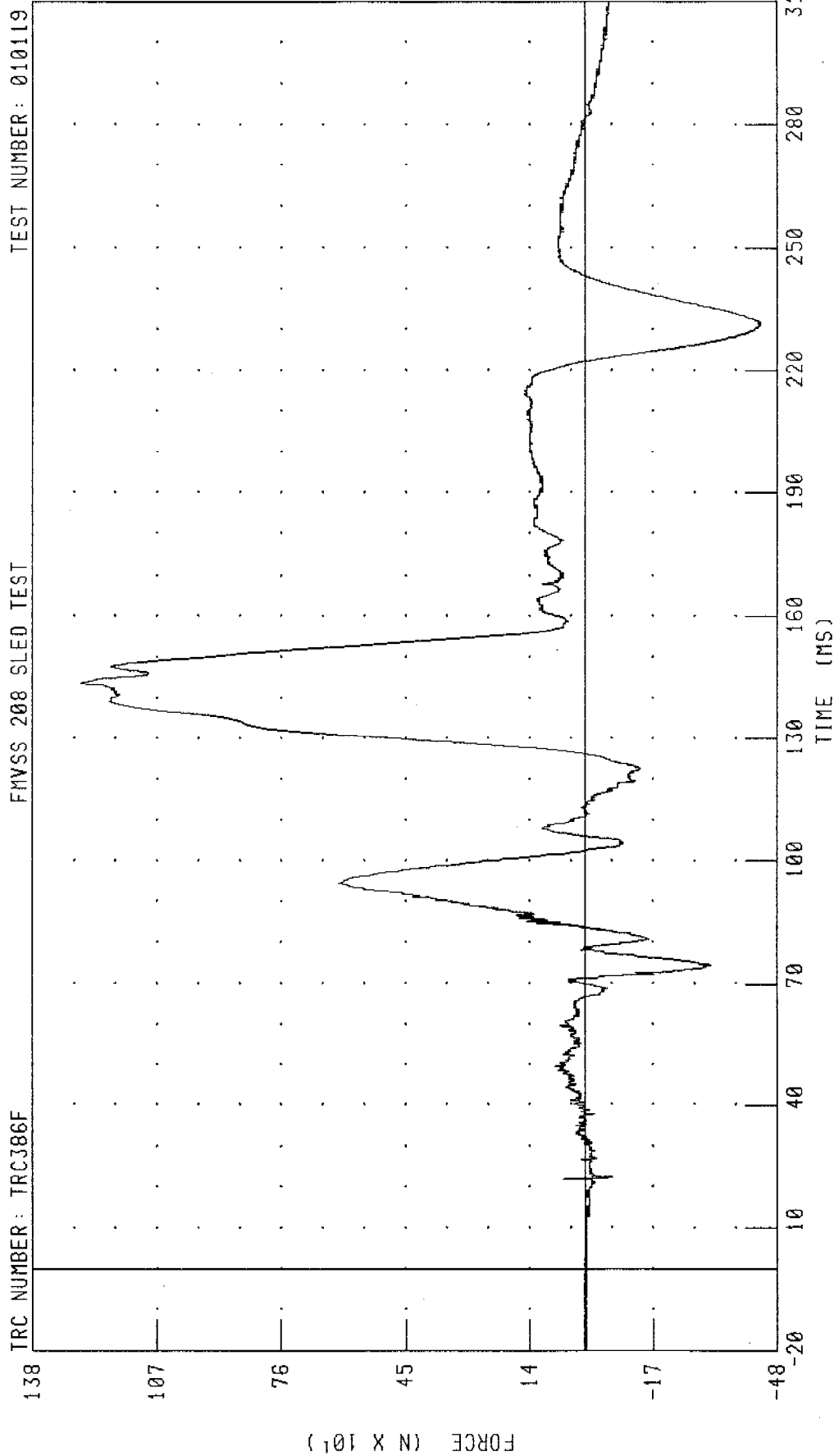
TEST NUMBER: 010119



CHANNEL: NEKYF2 FILTER: CH. CLASS 1000

PEAK DATA: 203.84 N @ 106.80 MS; -199.84 N @ 155.60 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE
 FMVSS 208 SLED TEST

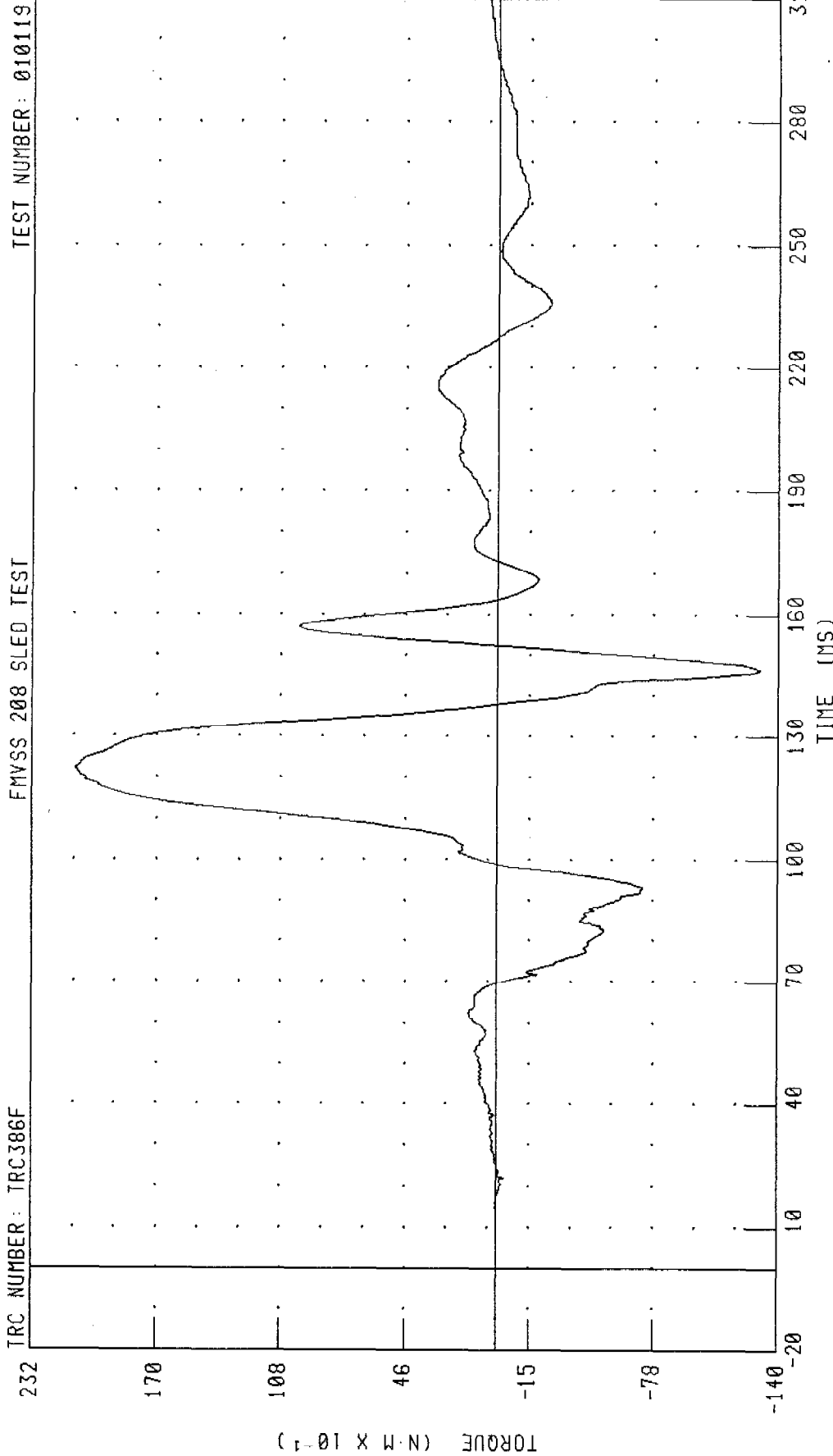


CHANNEL: NEKZF2 FILTER: CH. CLASS 1000 PEAK DATA: 1260.84 N @ 143.52 MS, -439.35 N @ 230.96 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



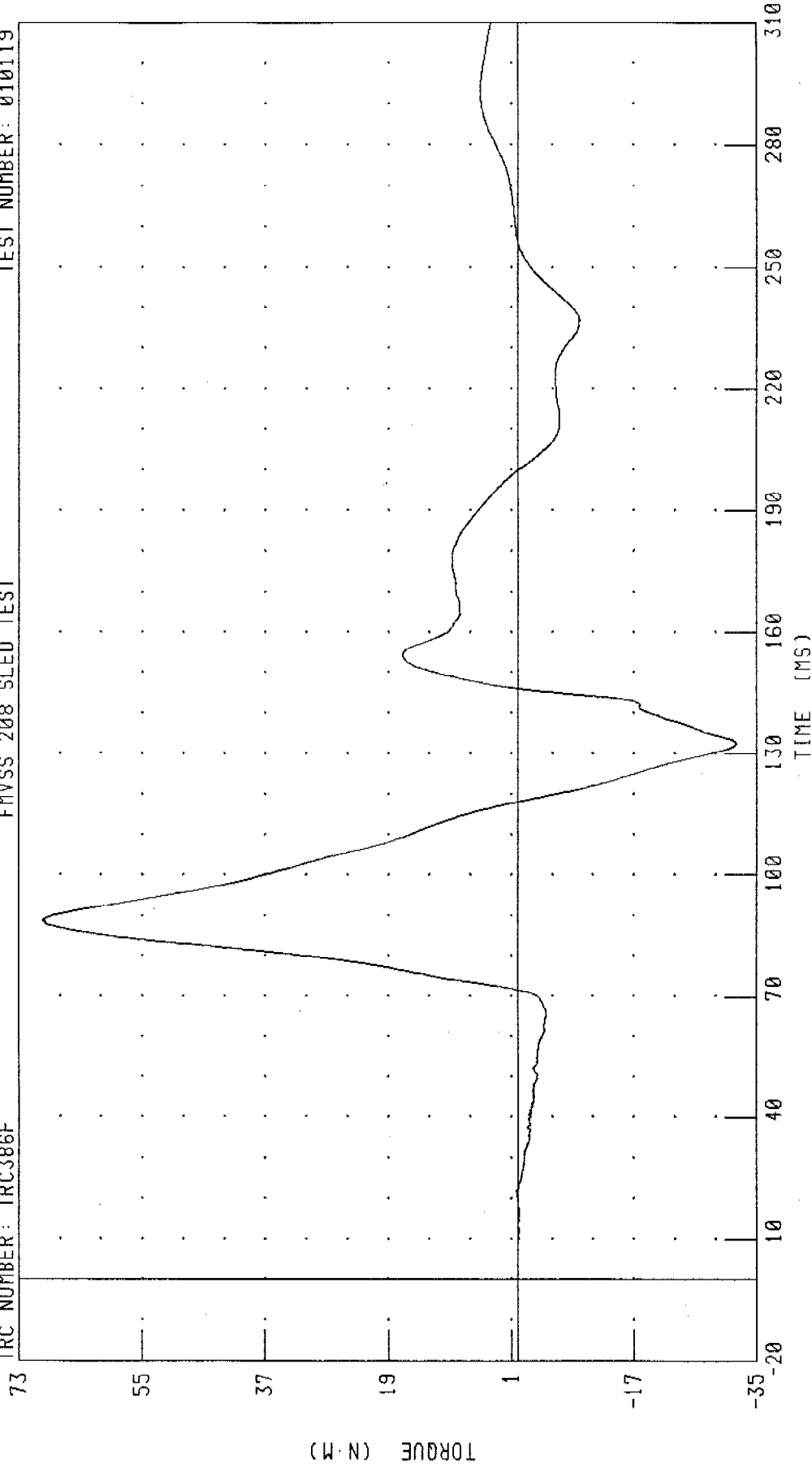
CHANNEL: NEKX12 FILTER: CH. CLASS 600

PEAK DATA: 21.05 N·m @ 122.32 ms; -13.09 N·m @ 146.56 ms

C15500 / 2001 SUBARU LEGACY
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS
FMVSS 208 SLED TEST

TRC NUMBER: TRC386F

TEST NUMBER: 010119



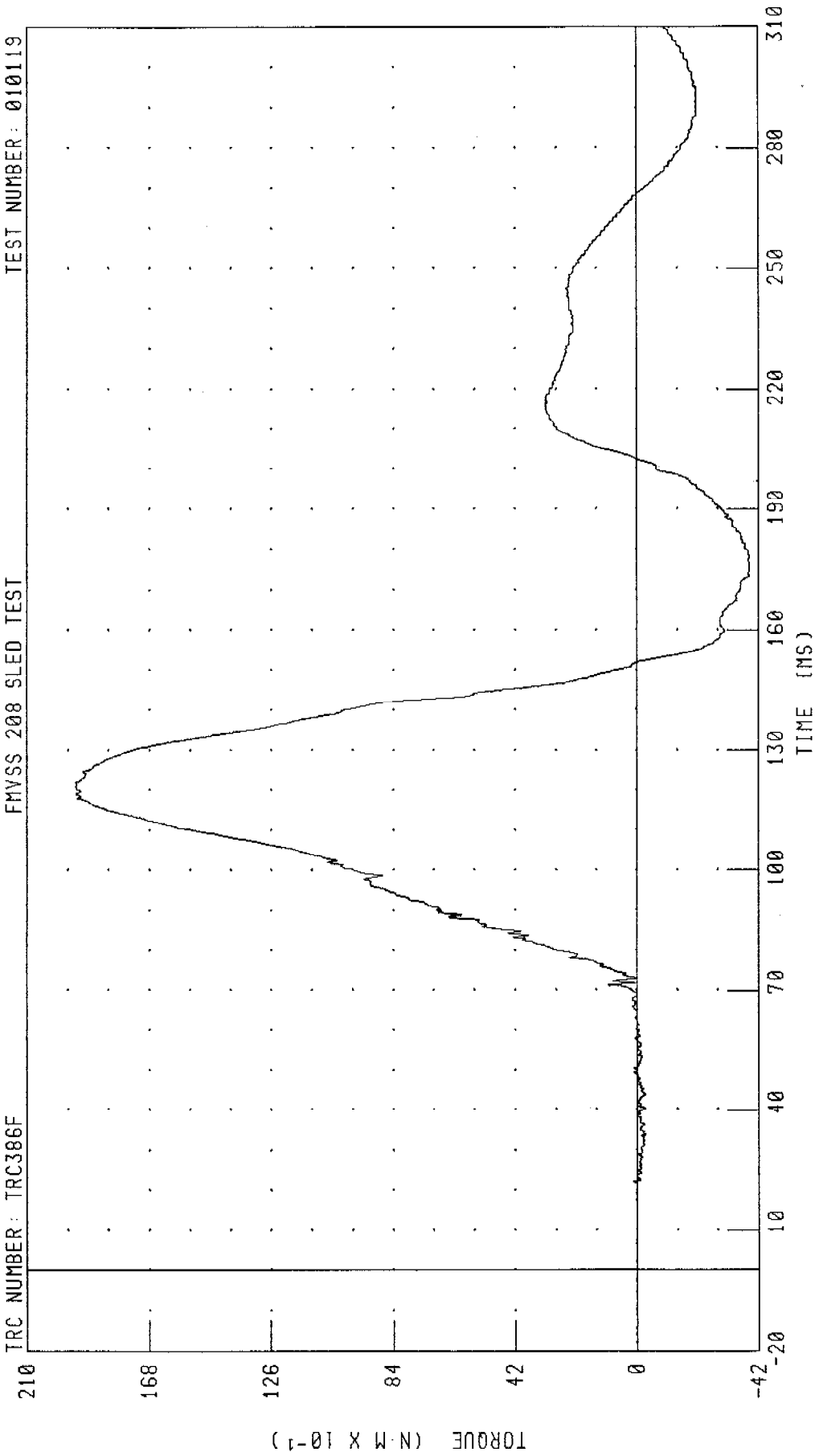
CHANNEL: NEKYM2 FILTER: CH. CLASS 600

PEAK DATA: 69.52 N·M @ 88.88 MS; -32.05 N·M @ 132.64 MS

C15500 / 2001 SUBARU LEGACY
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



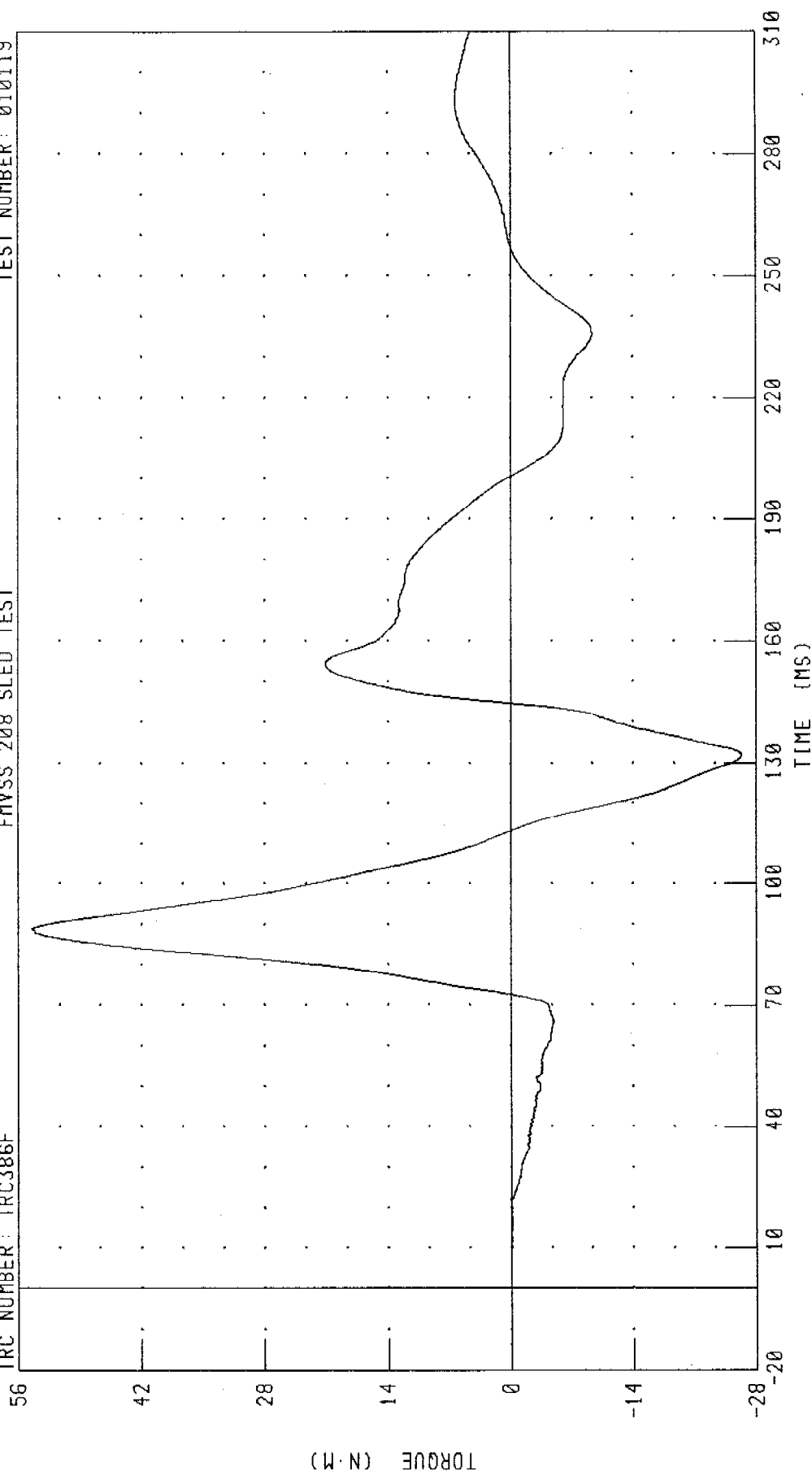
CHANNEL: NEKZM2 FILTER: CH. CLASS 600

PEAK DATA: 19.33 N-M @ 121.92 MS; -3.87 N-M @ 173.52 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

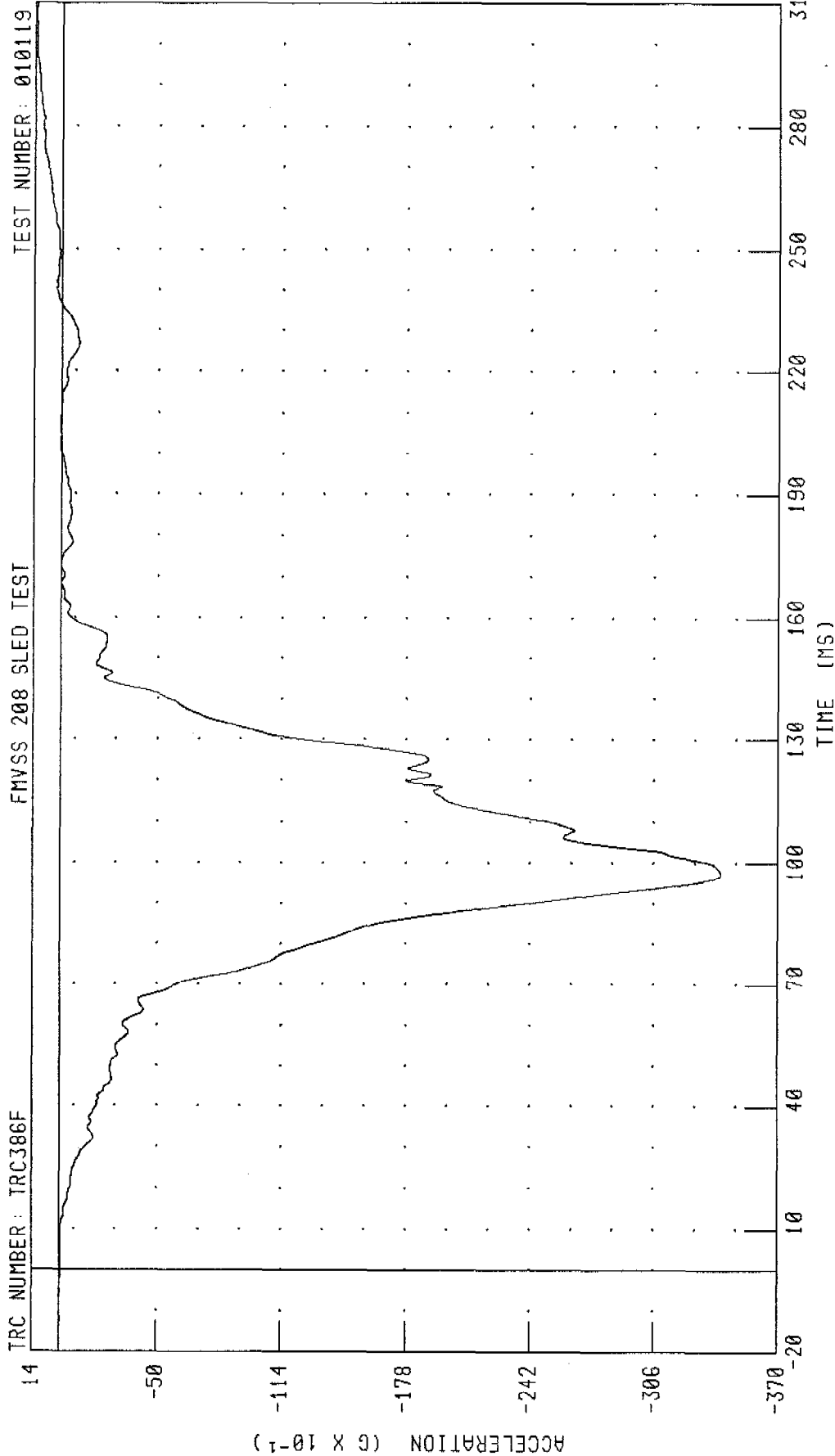
TRC NUMBER: TRC386F



PEAK DATA: 54.43 N·M @ 88.88 MS, -26.34 N·M @ 132.00 MS

CHANNEL: NEKOM2 FILTER: CH. CLASS 600

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION
 FMVSS 208 SLED TEST



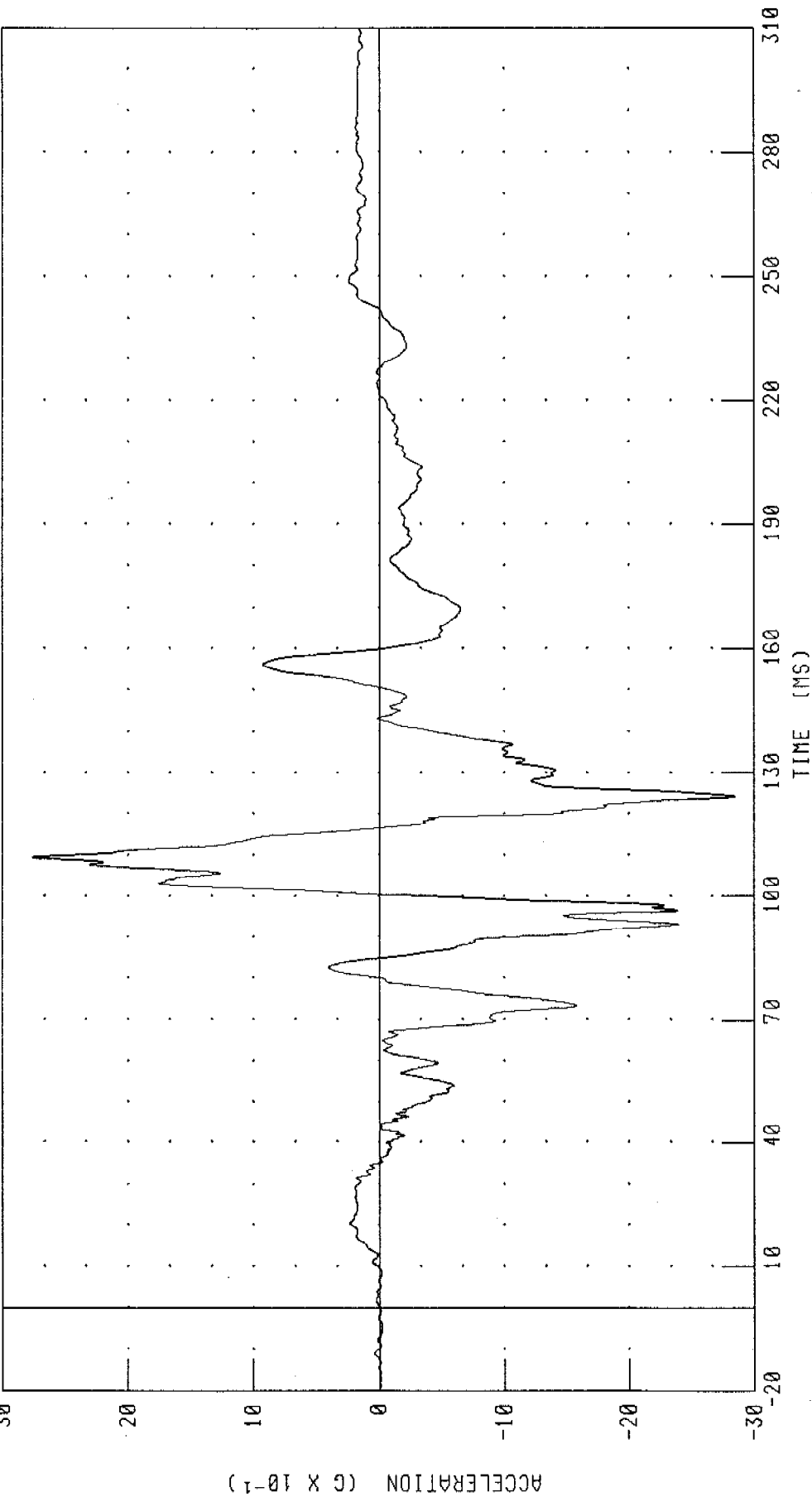
CHANNEL: CSTXG2 FILTER: CH. CLASS 180

PEAK DATA: 1.35 G @ 306.08 MS, -34.10 G @ 97.36 MS

C15500 / 2001 SUBARU LEGACY
RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



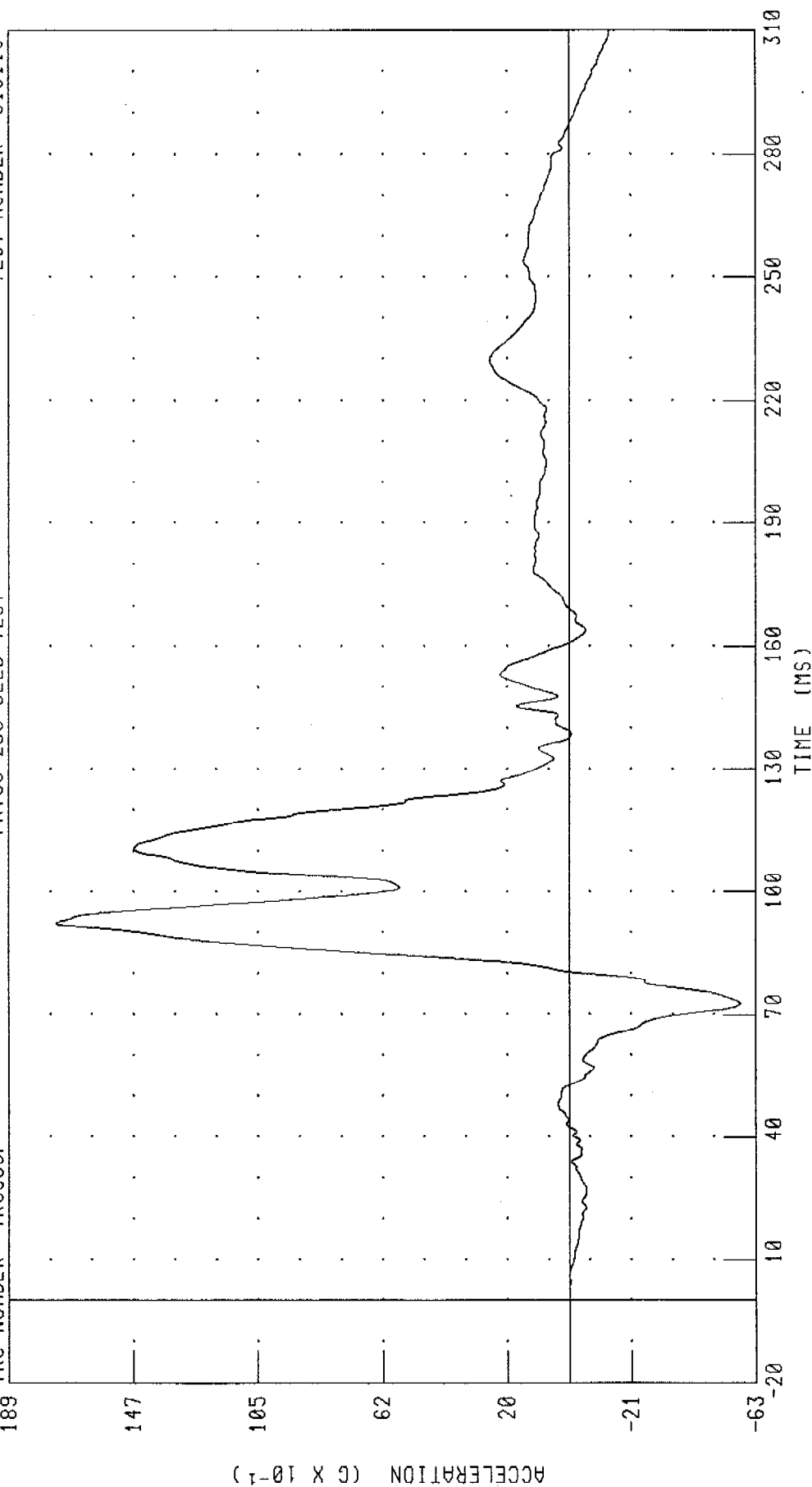
CHANNEL: CSTYG2 FILTER: CH. CLASS 180

PEAK DATA: 2.77 G @ 109.52 MS, -2.85 G @ 124.32 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



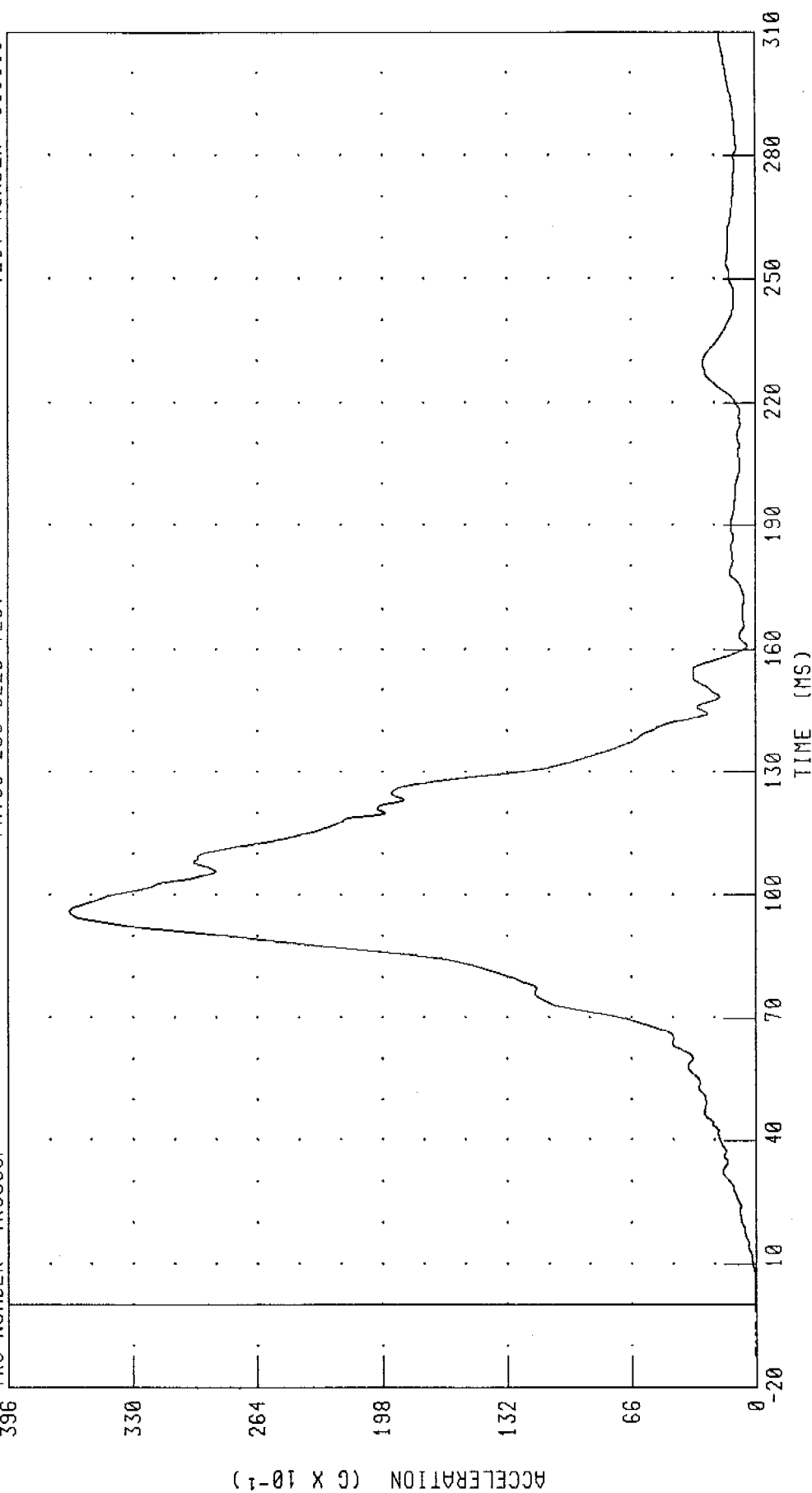
PEAK DATA: 17.30 G @ 92.40 MS, -5.79 G @ 72.72 MS

CHANNEL: CSTZC2 FILTER: CH. CLASS 180

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



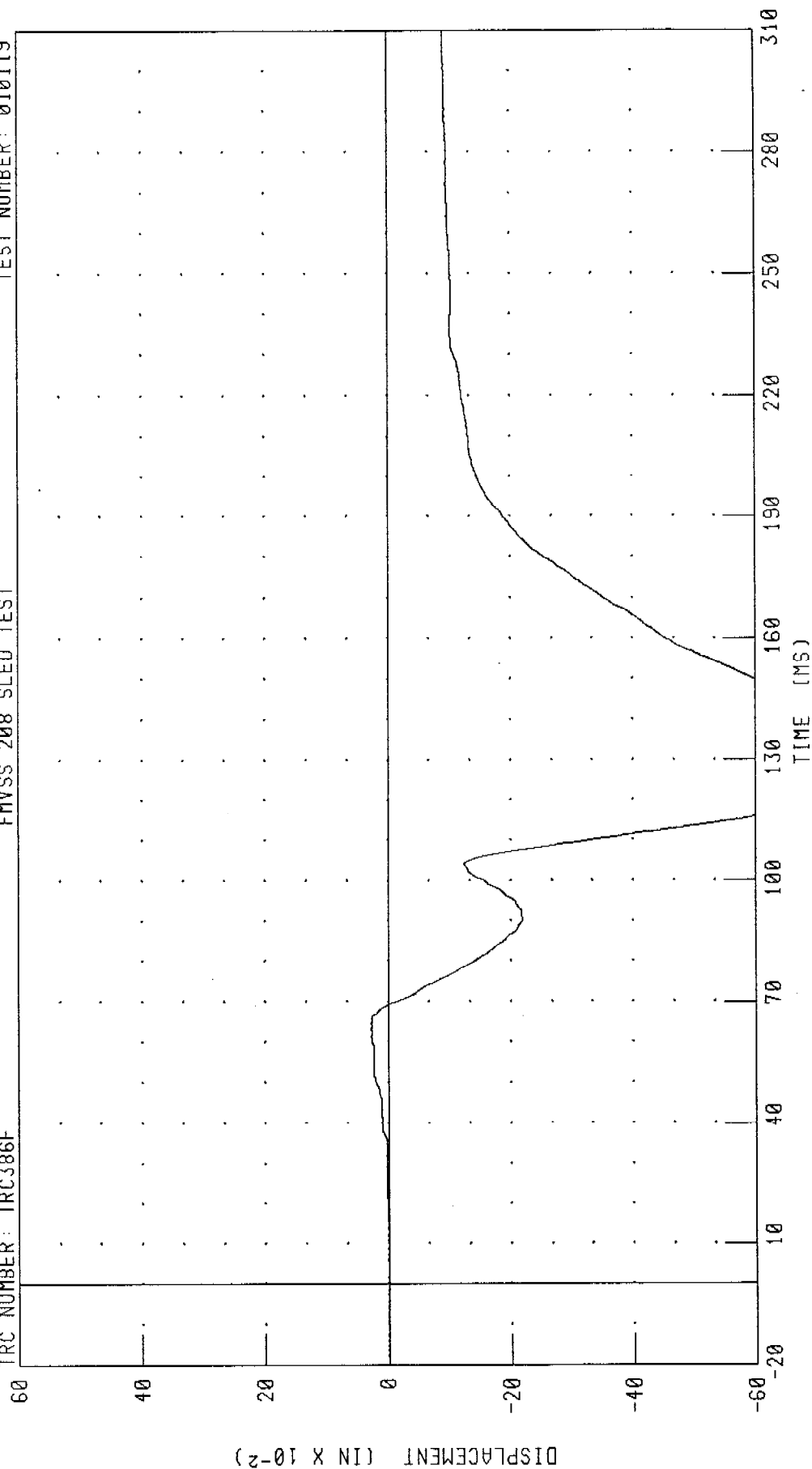
PEAK DATA: 36.36 G @ 96.08 MS; 0.00 G @ -2.72 MS

CHANNEL: CSTRG2 FILTER: CH. CLASS 180

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER CHEST DEFLECTION
 FMVSS 208 SLED TEST

TEST NUMBER: 010119

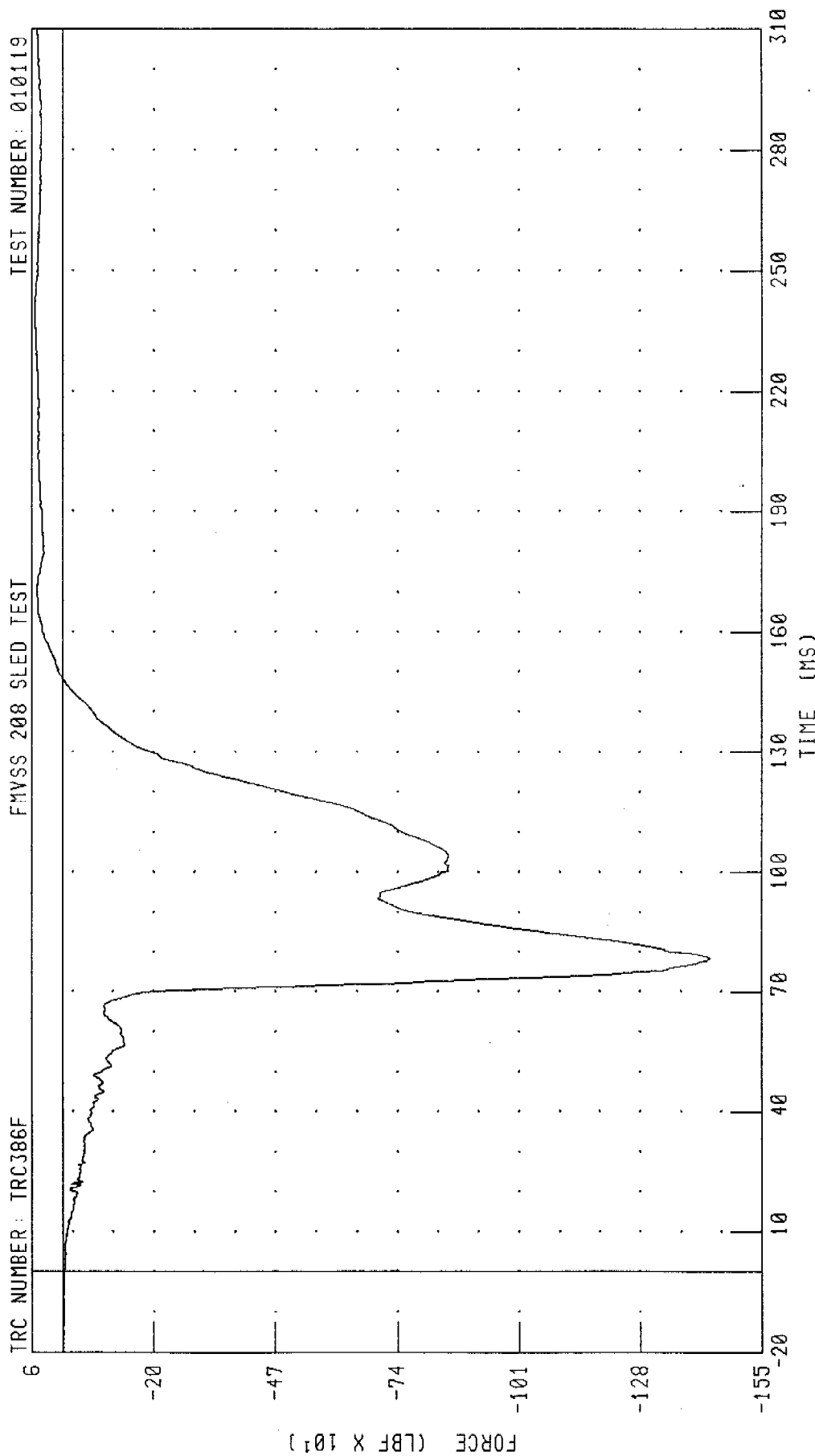
TRC NUMBER: TRC386F



CHANNEL: CSTXD2 FILTER: CH. CLASS 600

PEAK DATA: 0.03 IN @ 61.28 MS; -0.90 IN @ 128.80 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER LEFT FEMUR FORCE
 FMVSS 208 SLED TEST

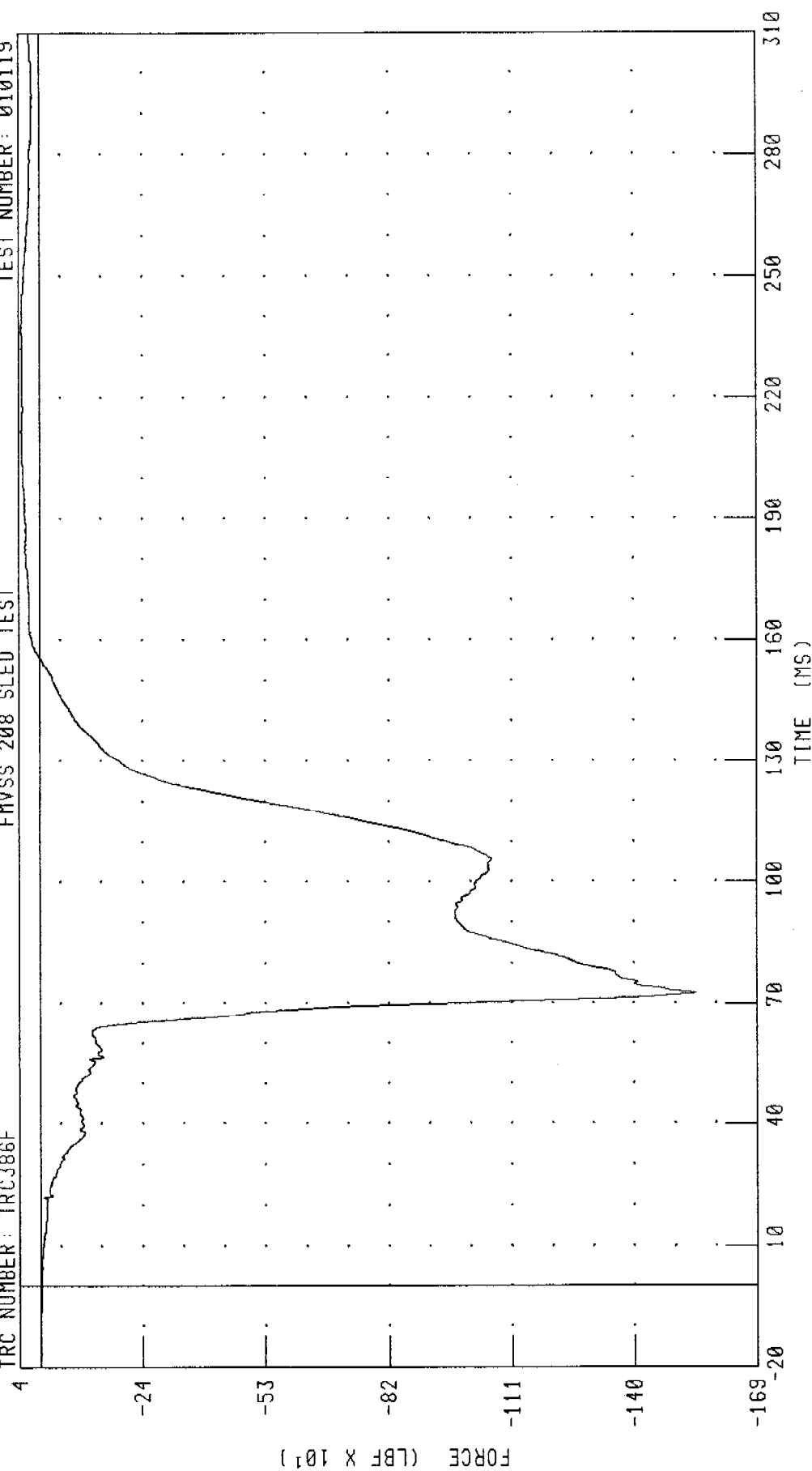


CHANNEL: LFMZF2 FILTER: CH. CLASS 600
 PEAK DATA: 63.01 LBF @ 237.84 MS, -1436.57 LBF @ 78.24 MS

C15500 / 2001 SUBARU LEGACY
 RIGHT FRONT PASSENGER RIGHT FEMUR FORCE
 FHVSS 208 SLED TEST

TEST NUMBER: 010119

TRC NUMBER: TRC386F



CHANNEL: RFMZ2 FILTER: CH. CLASS 600

PEAK DATA: 44.92 LBF @ 236.96 MS, -1546.08 LBF @ 72.64 MS

Appendix C

Manufacturer's Vehicle Information

**Information for the compliance test of
FMVSS 208 "Occupant Crash Protection"
The 2001MY SUBARU LEGACY
[NSA-31CCa / OA-208-001019C]**

1. Please inform OVSC if the air bag restraint system is certified to meet the requirements of S4.1.5. 1(a)(1) or S13.

If the air bags were installed to meet the requirements of S4.1.5.1 (a)(1) please provide a copy of the certification test reports for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts unfastened and fastened.

Not Applicable

If the air bags were installed to meet the requirements of S13 please provide a copy of the certification test reports for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts fastened and the certification test reports for the sled test using only the automatic restraint system.

Following five (5) test reports are enclosed.

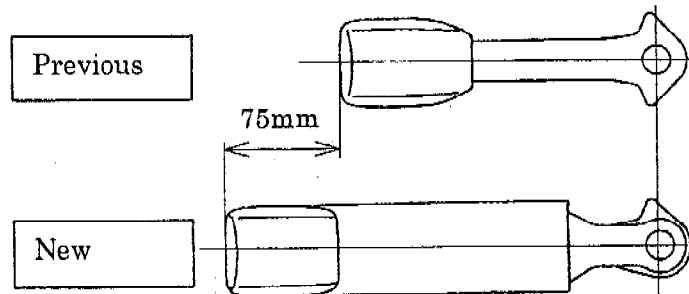
1. Frontal barrier crash
(Report. No.: SJ23-00-104)
2. Frontal barrier crash
(Report. No.: SJ23-00-105)
3. 30° angular (Left) frontal barrier crash
(Report. No.: SJ23-00-106)
4. 30° angular (Right) frontal barrier crash
(Report. No.: SJ23-00-107)
5. Sled tests
(Report. No.: SJ23-00-108)

2. Provide the following: (1) describe the difference between the MY 2001 air bag system and the MY 2000 air bag system, (2) explain what other restraint changes have been made, (3) explain what other vehicle changes have been made that might have affected FMVSS 208 performance, and (4) describe any features that might affect performance with respect to children and out of position occupants.

1) The dual stage inflator was installed in the passenger's air bag module of the 2001 MY. The control module and the related electrical harness were changed for the dual stage inflator.

There is no modification for the driver's airbag system.

2) There is no modification between 2000MY and 2001MY. From the end of October production, the inner buckle for the front seat belt assembly was changed as shown in the drawing. However, it does not affect to FMVSS 208 performance.



3) 6-cylinder engine model is added. Accordingly, the maximum curb weight in LEGACY series was increased.

(3565lbs → 3715lbs)

4) As described in 1), the dual stage inflator was installed in the passenger's air bag module.

3. *If the vehicle was certified with unrestrained dummies to meet the requirements of S 13, describe how to disconnect the air bags from the vehicle sensors and connect them to the triggering mechanism used in the sled test. Describe the method used in certification to determine when to trigger the air bag and the system used to trigger the air bag.*

See Appendix 1.

Note: We have conducted the in-house sled test with battery removed. So, the pretensioner system of front seat belt does not activate during this test. It does not affect to the sled test results under the unbelted condition.

For air bags with dual stage or multistage inflators describe when the stages are triggered and provide data to show that this is similar to what would occur in a crash of similar severity. (see enclosure 1)

We measured the triggering timing of both 1st stage inflator and 2nd stage inflator in the 30mph frontal barrier crash test and confirmed that both inflators were fired at the same time. We use the same triggering timing for the sled test also. Please refer to the page 7 to 9 of the test report (No. SJ23-00-108) for more information.

4. *State for any safety belt system in this vehicle whether or not it is equipped with a tension-relieving device. Provide a copy of the information furnished in accordance with S7.4.2 if the tension-relieving device is used.*

2001MY LEGACY is not equipped with a tension-relieving device.

5. *FMVSS No. 208, S8.1.5 allows the manufacturer the option of having movable vehicle windows and vents placed in the closed position. State whether the vehicle's movable windows and vents were opened or closed for the certification tests.*

In frontal test, all windows were opened. In angular test, only front door windows were closed.

Please refer to each test report in details.

6. *Submit dummy placement measurements, including diagrams or photographs which show exactly where each measurement was taken. Enclosed is a diagram of some of OVSC's dummy measurements. Where possible, use each dimension shown in the diagram to provide the individual dummy placement measurements.*

See Appendix 2.

State whether the vehicle has a foot rest for the driver.

Yes

7. *Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form. If more than one front seating, steering column or fuel tank configuration are available on this vehicle, provide separate information for each.*

See Appendix 3.

In addition, provide the seating reference point for each seat for the lockable seat belt requirement in S7.1.1.5.

See Appendix 4.

8. *If the vehicle is equipped with adjustable seat belt anchorages, provide the manufacturer's nominal design position for a 50th percentile adult male occupant.*

See Page 2 of Appendix 3.

9. *For barrier tests provide the speed at impact, vehicle test weight, and resulting injury criteria (i.e., HIC, chest acceleration, chest compression, and femur loads) recorded for all certification tests conducted to meet the requirements of S4.1.5.1(a)(1). For sled tests, provide the resulting injury criteria (i.e., HIC, chest acceleration, chest compression, femur loads, and neck moments and forces) recorded for all certification tests conducted to meet the requirements of S 13.*

See Appendix 5.

10. *When vehicle components must be removed to obtain the proper test weight for the barrier test, what components do you recommend for removal and in what priority order do you recommend removal?*

1. Tonneau cover
2. Jack
3. Rear floor mat
4. Rear floor & quarter insulator
5. Rear seat back & cushion
6. Rear quarter trim
7. Rear bumper
8. Sub trunk box

11. *If the vehicle uses a pressure vessel to inflate the air bag, provide a copy of the test reports or engineering analysis to demonstrate that it meets all the requirements of S9.1.*

Not applicable

12. *If the vehicle uses an explosive device to inflate the air bag, provide a copy of the test report or engineering analysis to demonstrate that it meets all the requirements of S9.2.*

See Appendix 6.

List of Appendixes

- Appendix 1 Disconnecting method of the airbags from the vehicle sensors and connecting method to the triggering mechanism used in the sled test and
Method used in certification to determine when to trigger the airbag and the system used to trigger the airbag.
- Appendix 2 Dummy placement measurements
- Appendix 3 Seat positioning, steering column positioning, and fuel tank data
- Appendix 4 Seating reference points for all seats
- Appendix 5 Test result (injury criteria) for all test
- Appendix 6 Test reports to demonstrate that it meets all the requirements of S9.2

List of test reports

Certification test reports for the frontal/angular barrier test, and the certification test reports for the sled tests

1. Frontal barrier crash
(Report. No.: SJ23-00-104)
2. Frontal barrier crash
(Report. No.: SJ23-00-105)
3. 30° angular (Left) frontal barrier crash
(Report. No.: SJ23-00-106)
4. 30° angular (Right) frontal barrier crash
(Report. No.: SJ23-00-107)
5. Sled tests
(Report. No.: SJ23-00-108)

Disconnecting method of the airbags from the vehicle sensors and connecting method to the triggering mechanism used in the sled test

and

Method used in certification to determine when to trigger the airbag and the system used to trigger the airbag

How to disconnect the connector of airbag modules and connect them to the triggering mechanism.

1. Driver's airbag module

- (1) Turn ignition switch OFF.
- (2) Disconnect the ground cable from the battery and wait for at least 20 seconds before starting work.
- (3) Remove instrument panel lower cover (Fig1).
- (4) Disconnect airbag connector (yellow : below steering column, Fig2).

⇒ See "How to disconnect the airbag module connector"

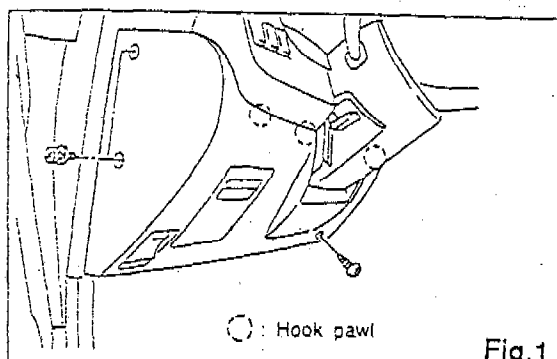


Fig.1

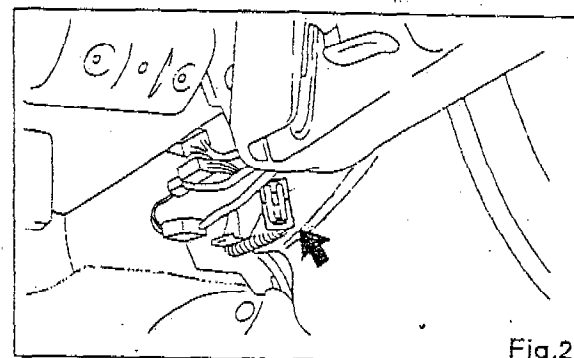


Fig.2

- (5) Connect the connector (male) to the triggering mechanism.

2. Passenger's airbag module

- (1) Turn ignition switch OFF.
- (2) Disconnect the ground cable from the battery and wait for at least 20 seconds before starting work.
- (3) Pull out two stopper pins (Fig.3) and lower the glove box (Fig.4).

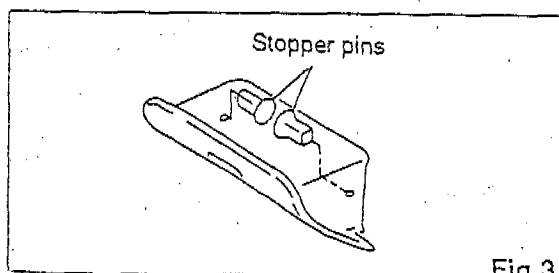


Fig.3

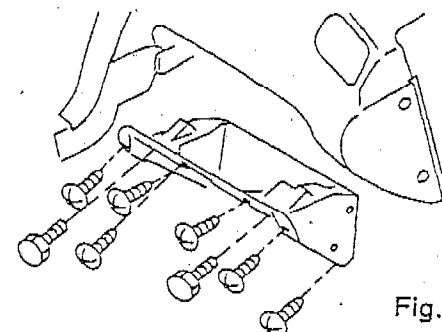


Fig.4

- (4) Disconnect airbag connector (yellow : attach support beam bracket Fig.5).

⇒ See "How to disconnect the airbag module connector"

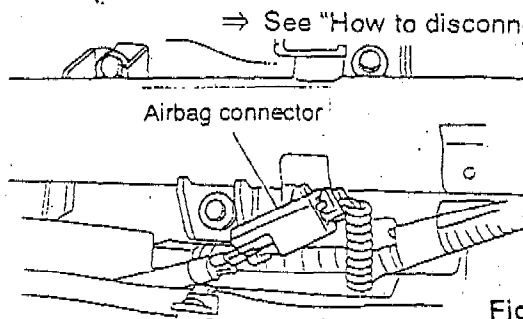
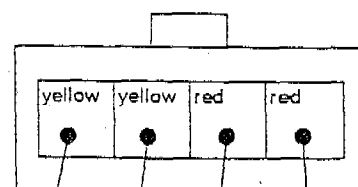


Fig.5

- (5) Connect the connector (male) to the triggering mechanism.

⇒ Terminal layout of the connector is shown in Fig 6.



1st stage(-)

1st stage(+)

2nd stage(-)

S010119

Fig. 6

2nd stage(+)

How to disconnect the airbag module connector

1.Driver's airbag module connector

- (1) Push lock arm (A)(Fig.7).
- (2) With lock arm (A) pushed in, move slide lock (B) in the direction of the arrow(Fig.7).

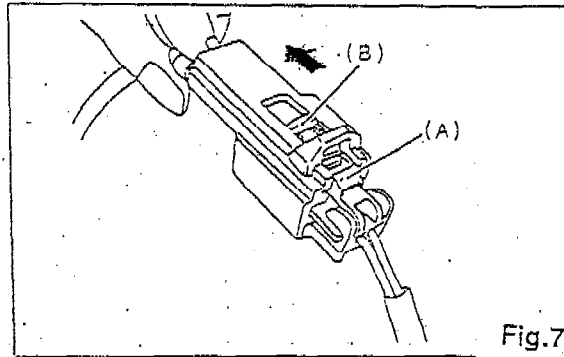


Fig.7

- (3) With slide lock (B) pulled, remove lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector (Fig.8).

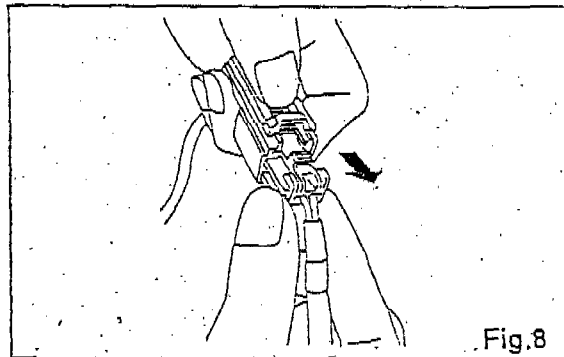


Fig.8

2.Passenger airbag module connector

Holding female connector (B) in one hand, use your other hand to pull slide lock (A) in the direction of the arrow(Fig.9).

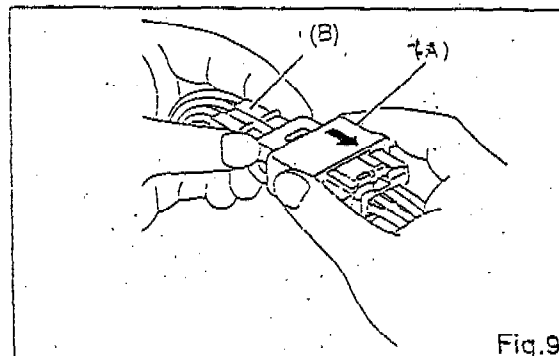
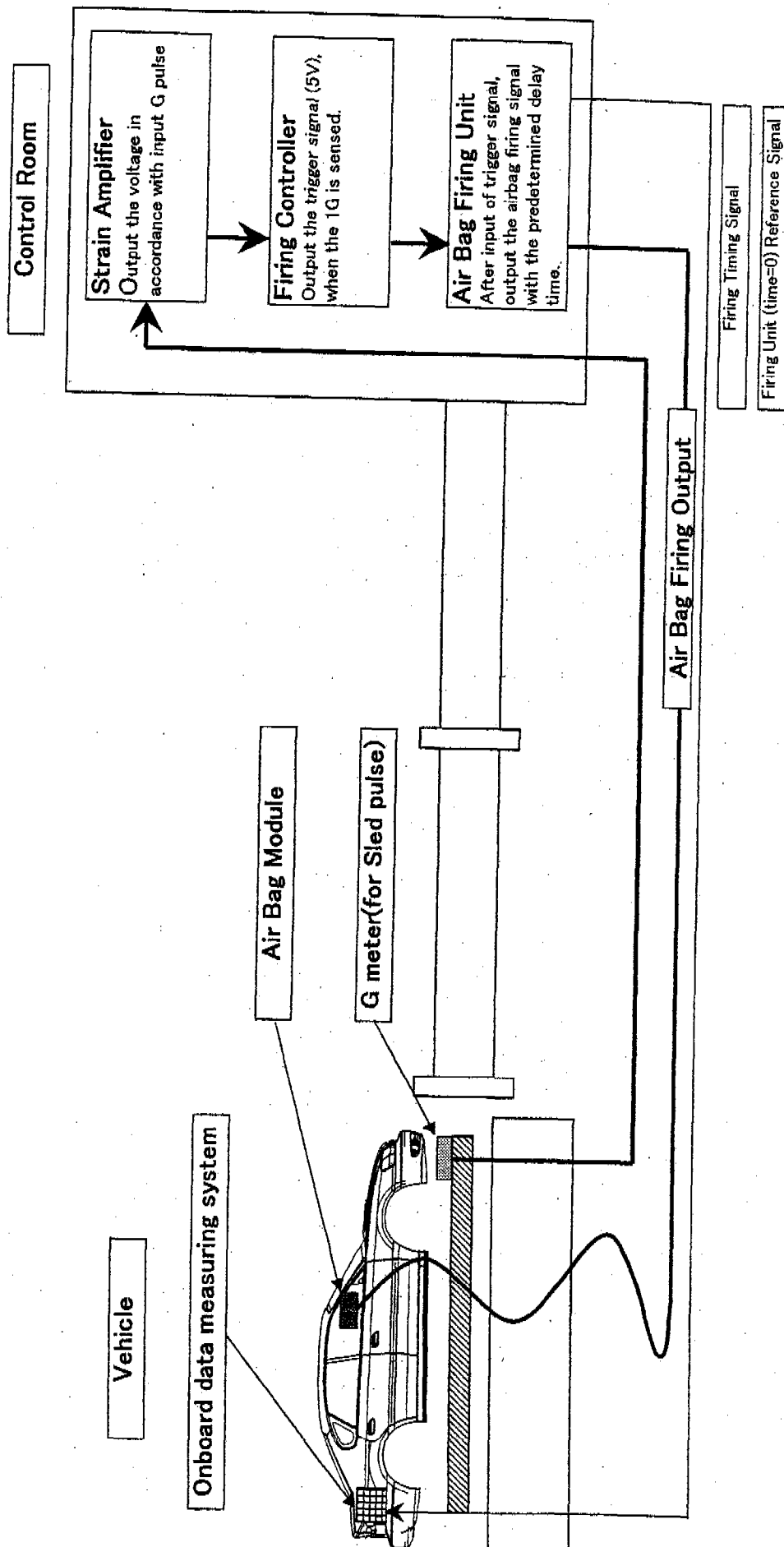


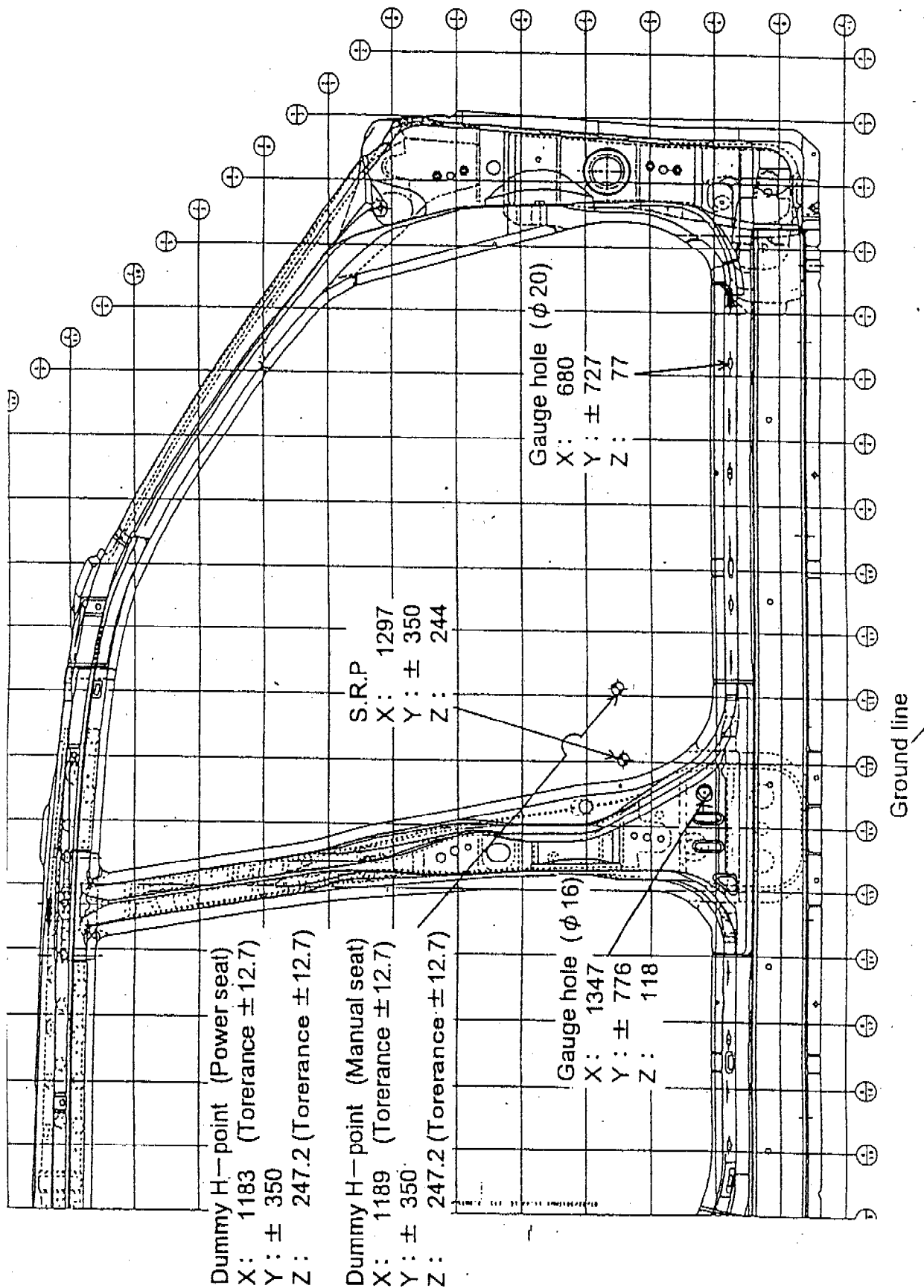
Fig.9



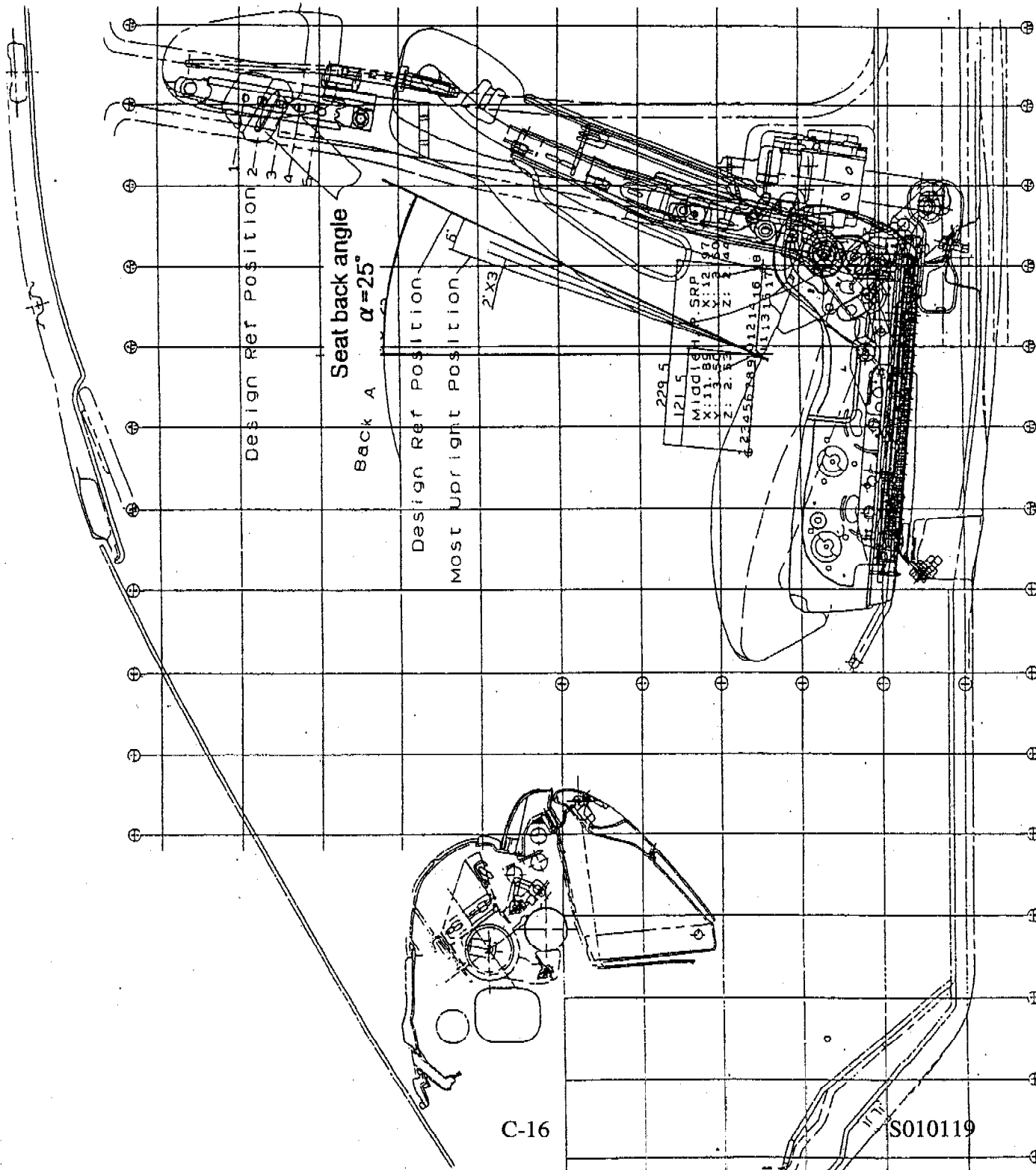
Dummy H - point coordinates and Dummy positioning measurements

Enclosure B

Dummy H—Point coordinates



The body standard coordinate for
H-point measurement



Dummy H-point (Manual seat)
 X: 1189 (Tolerance ± 12.7)
 Y: ± 350
 Z: 247.2 (Tolerance ± 12.7)
 Torso angle
 22.5° (Tolerance $\pm 2.5^\circ$)

Dummy positioning measurements (Hybrid III Dummy Set Position Data)

Hybrid III Dummy Set Position Data
(Driver'S Side : Power Seat Condition)

Part	Item	Reference mm	Tolerance mm
Head	*1 HH : Head to Header	315	±30
	*2 HW : Head to Windshield	575	±30
	*3 HZ : Head to Roof	210	±10
	*3 NR : Nose to Rim	395	±30
	*3 HR : Head to Side Header	245	±10
Chest	*4 CS : Chest to Steering Wheel Center	295	±15
	*4 RA : Rim to Abdomen	195	±15
	*4 AD : Arm to Door	185	±20
	*5 BD : Body to Door	400	±20
Knee	*5 KDL : Knee to Dash (LH)	180	±10
	*5 KDR : Knee to Dash (RH)	185	±10
	*6 KK : Knee to Knee	310	±10
	*6 ZK : Knee to Sidesill	330	±15
	*6 HD : H-Point to Door	125	±10
	*7 KDO : Knee to Door (Outside)	232	±0
etc	*8 SH : Striker to H-Point	295	±10
	*7 SK : Striker to Knee	560	±15
	*7 ST : Striker to Head	630	±15
	*8 HS : Head Restraint to Striker	870	±10
	*8 CL : Checker Pin to Seatback Lever	775	±10
Belt	*9 PBU : Position of Belt Upper	290	±10
	*9 PBL : Position of Belt Lower	220	±10
	*9 a : Chin to Center of Belt	155	±10
	*10 b : Roof Trim to Upper Edge of Belt	440	±10
	*10 c : Roof Trim to Lower Edge of Belt	510	±10
Steering	*11 SWA : Steering Wheel Angle	67°	±2°

- *1 : C-6
- *2 : C-7
- *3 : C-8
- *4 : C-9
- *5 : C-10
- *6 : C-11
- *7 : C-12
- *8 : C-13
- *9 : C-14
- *10 : C-15
- *11 : C-16

Hybrid III Dummy Set Position Data
(Driver'S Side : Manual Seat Condition)

Part	Item	Reference mm	Tolerance mm
Head	*1 HH : Head to Header	320	±30
	*2 HW : Head to Windshield	580	±30
	*3 HZ : Head to Roof	210	±10
	*3 NR : Nose to Rim	400	±30
	*3 HR : Head to Side Header	245	±10
Chest	*4 CS : Chest to Steering Wheel Center	300	±15
	*4 RA : Rim to Abdomen	200	±15
	*4 AD : Arm to Door	185	±20
	*5 BD : Body to Door	400	±20
Knee	*5 KDL : Knee to Dash (LH)	185	±10
	*5 KDR : Knee to Dash (RH)	190	±10
	*6 KK : Knee to Knee	310	±10
	*6 ZK : Knee to Sidesill	330	±15
	*6 HD : H-Point to Door	125	±10
	*7 KDO : Knee to Door (Outside)	232	±0
etc	*8 SH : Striker to H-Point	295	±10
	*7 SK : Striker to Knee	555	±15
	*7 ST : Striker to Head	630	±15
	*8 HS : Head Restraint to Striker	865	±10
	*8 CL : Checker Pin to Seatback Lever	790	±10
Belt	*9 PBU : Position of Belt Upper	290	±10
	*9 PBL : Position of Belt Lower	220	±10
	*10 a : Chin to Center of Belt	155	±10
	*10 b : Roof Trim to Upper Edge of Belt	440	±10
	*10 c : Roof Trim to Lower Edge of Belt	510	±10
Steering	*11 SWA : Steering Wheel Angle	67°	±2°

- *1 : C-6
- *2 : C-7
- *3 : C-8
- *4 : C-9
- *5 : C-10
- *6 : C-11
- *7 : C-12
- *8 : C-13
- *9 : C-14
- *10 : C-15
- *11 : C-16

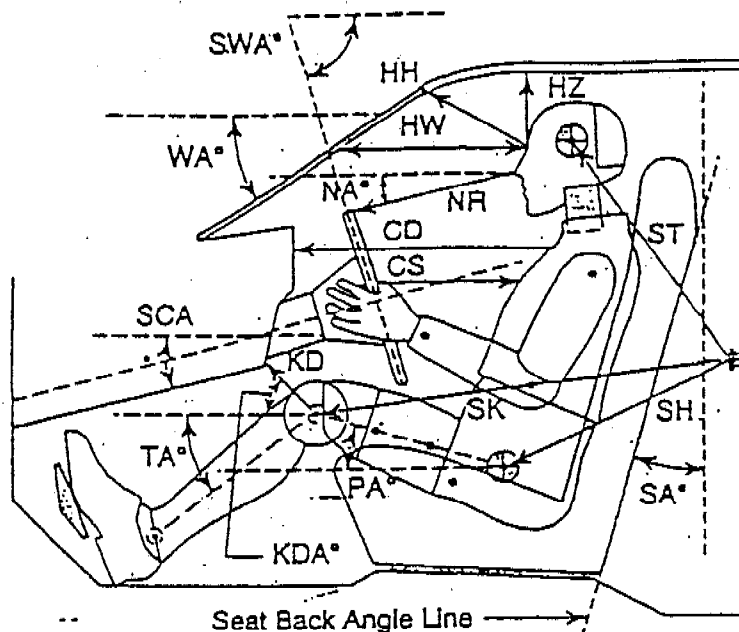
Hybrid III Dummy Set Position Data (Passenger's Side)

Part	Item	Reference mm	Tolerance mm
Head	*1 HH : Head to Header	320	±30
	*2 HW : Head to Windshield	580	±30
	*3 HZ : Head to Roof	210	±10
	*10 NBC : Nose to Airbag Tear Line Center	650	±30
	*3 HR : Head to Side Header	245	±10
Chest	*11 CBC : Chest to Airbag Tear Line Center	620	±20
	*4 AD : Arm to Door	185	±20
	*5 BD : Body to Door	400	±20
Knee	*5 KDL : Knee to Dash (LH)	185	±10
	*5 KDR : Knee to Dash (RH)	185	±10
	*6 KK : Knee to Knee	270	±10
	*6 ZK : Knee to Sidesill	330	±15
	*6 HD : H-Point to Door	125	±10
	*7 KDO : Knee to Door (Outside)	255	±0
etc	*8 SH : Striker to H-Point	295	±10
	*7 SK : Striker to Knee	555	±15
	*7 ST : Striker to Head	630	±15
	*8 HS : Head Restraint to Striker	865	±10
	*8 CL : Checker Pin to Seatback Lever	790	±10
Belt	*9 PBU : Position of Belt Upper	290	±10
	*9 PBL : Position of Belt Lower	220	±10
	*10 a : Chin to Center of Belt	155	±10
	*10 b : Roof Trim to Upper Edge of Belt	440	±10
	*10 c : Roof Trim to Lower Edge of Belt	510	±10

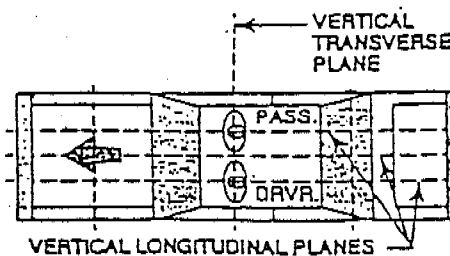
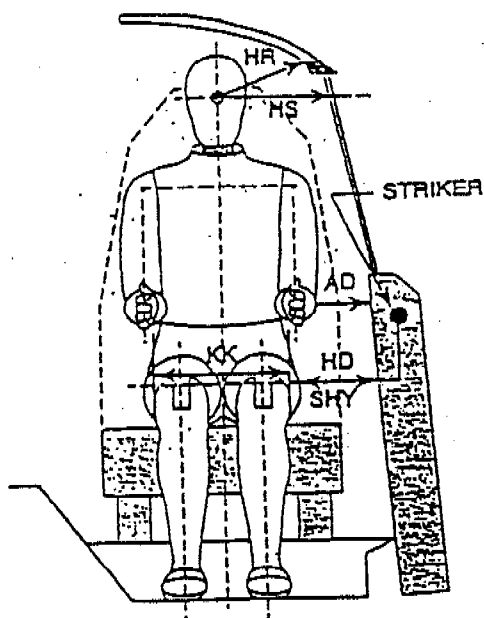
- *1 : C-6
- *2 : C-7
- *3 : C-8
- *4 : C-9
- *5 : C-10
- *6 : C-11
- *7 : C-12
- *8 : C-13
- *9 : C-14
- *10 : C-15
- *11 : C-16

OCCUPANT AND VEHICLE INFORMATION

1. PART 572 DUMMY IN-VEHICLE POSITION (1) This data was measured
in accordance with TP-208-09



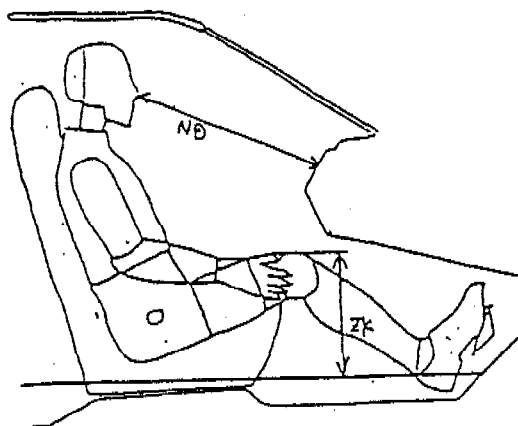
- | | |
|-------------------------------------|---|
| HH - Head to Header | SK - Striker to Knee |
| HW - Head to windshield | ST - Striker to Head |
| HZ - Head to Roof | NA° - Nose to Rim Angle |
| NR - Nose to Rim | TA° - Tibial Angle |
| CS - Steering Wheel to Chest | PA° - Pelvic Angle |
| CD -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



- | |
|---|
| HR - Head to Side Header |
| HS - Head to Side window |
| AD - Arm to Door |
| HD - H-point to Door |
| SHY - Striker to H-point (Y Dir) |
| KK - Knee to Knee |

PART 572 DUMMY IN-VEHICLE POSITION (2)

This data was measured in accordance with FHI procedure

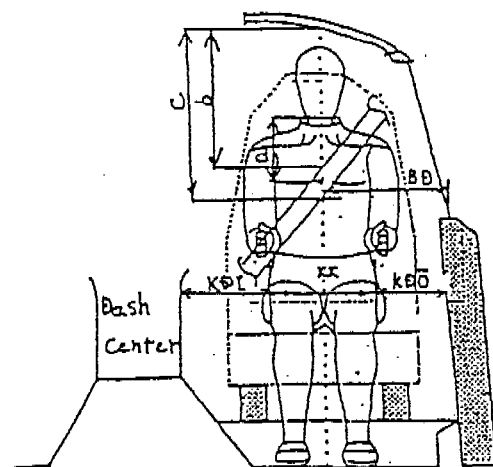


~~ND : Nose to Dashboard~~
(Passenger)

ZK : Knee to Sidesill

NBC : Nose to Lid Center
(Passenger)

CBC : Chest to Lid Center
(Passenger)



BD : Body to Door

~~KBI : Knee to Dash(inside)~~

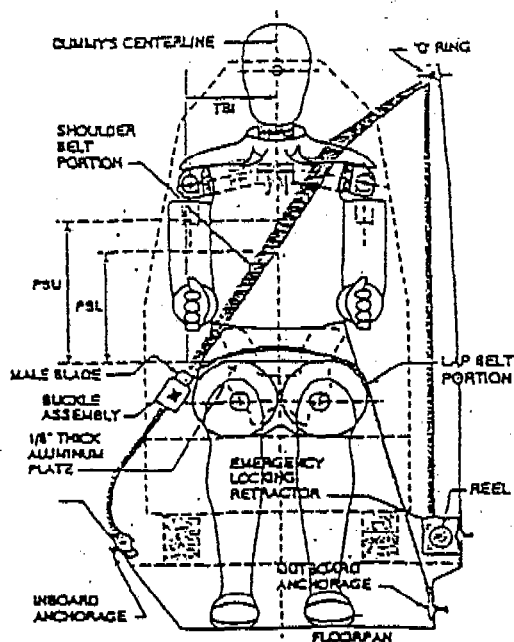
KBO : Knee to Door(outside)

a : Chin to Belt Center

b : Roof Trim to Belt Upper Edge

c : Roof Trim to Belt Lower Edge

Seat belt positioning data



C-22 FRONT VIEW OF DUMMY

S010119

Details of FHI's Dummy Positioning Measurement Procedure

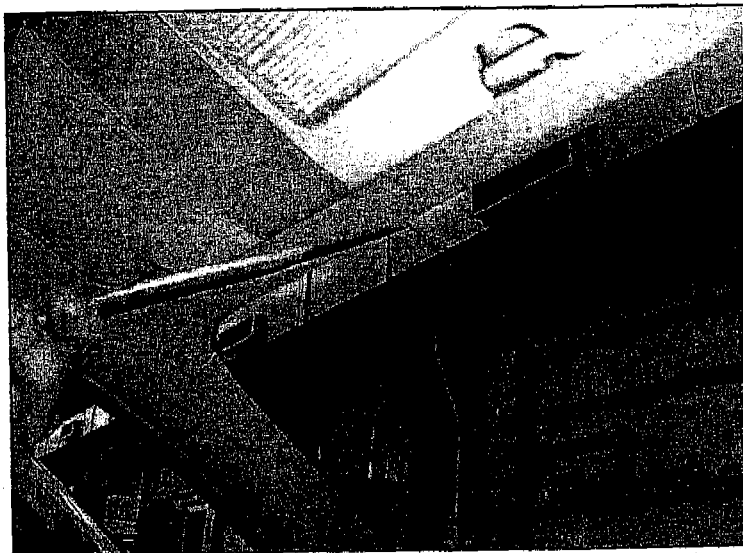
1. HH

(TP-208-09)

From point where dummy's nose meets
his forehead. (between his eyes)to the
forward most point of header
(Edge of roof trim)



Forward most point of header
(Edge of roof trim)



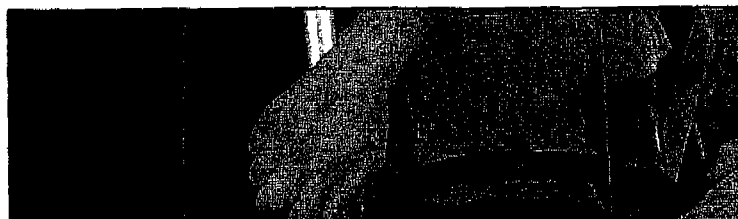
2. HW

(FHI)

From point where dummy's nose meets
his forehead to front windshield.



Front windshield (350mm apart from
center of the vehicle)



3. HZ

(TP-208-09)

From the point where the dummy's nose meets his forehead (between his eyes) to the roof trim directly above it.



4. NR

(TP-208-09)

From the tip of the dummy's nose to the closest point on the top of the steering wheel rim.



6. CS

(TP-208-09)

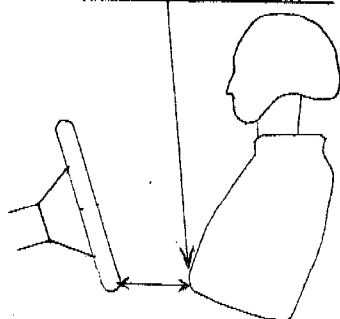
From the center of the steering wheel hub to the dummy's chest.



7. RA

(TP-208-09)

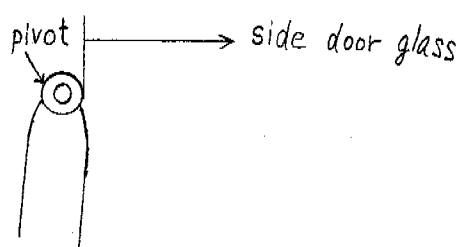
From the lowermost point of the steering wheel rim to lowermost of the dummy's abdomen.



8. AD

(FHI)

Lateral distance between upper arm pivot and side door glass.



Dummy upper arm

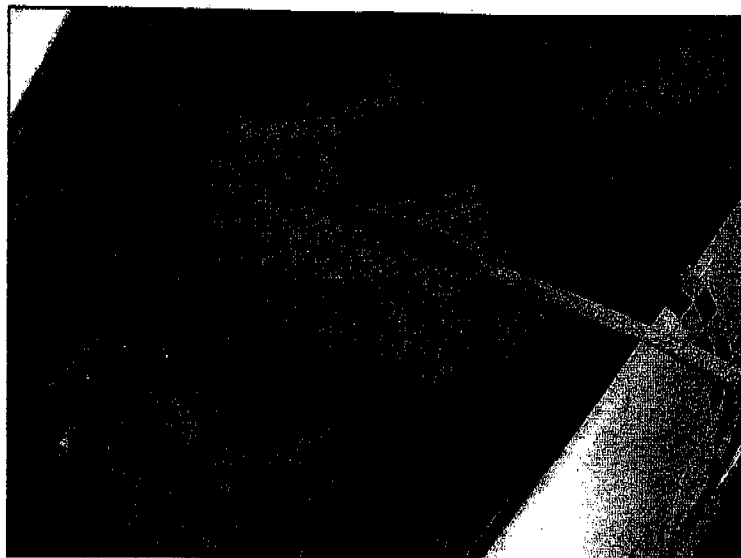
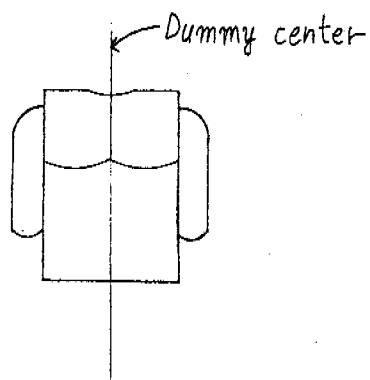
Y ← → Y
(inside) (outside)



9. BD

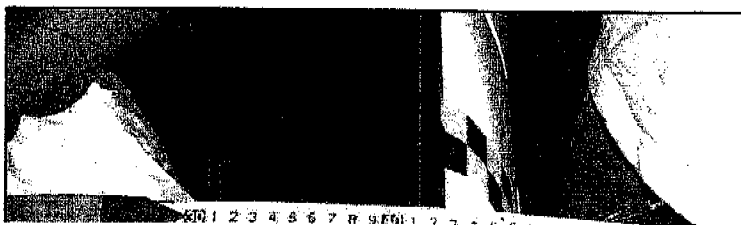
(FHI)

Lateral distance between Center of the
dummy and side door glass.

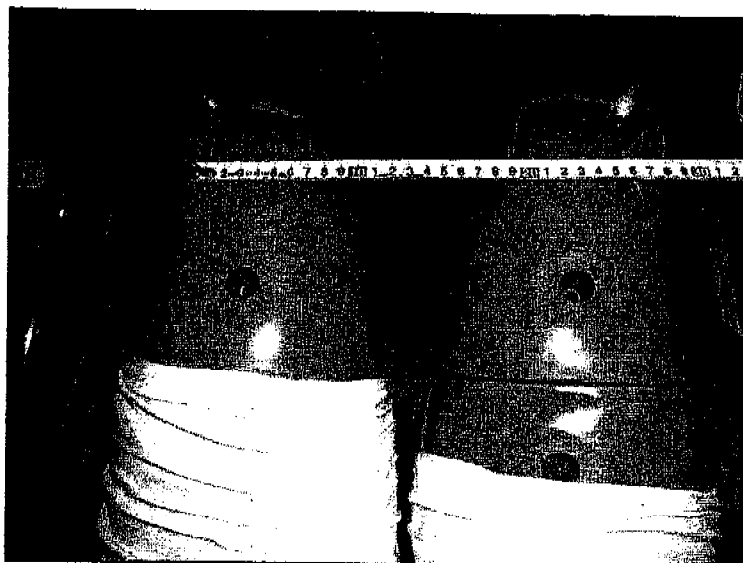
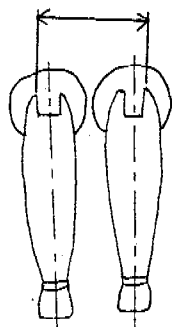


side door glass

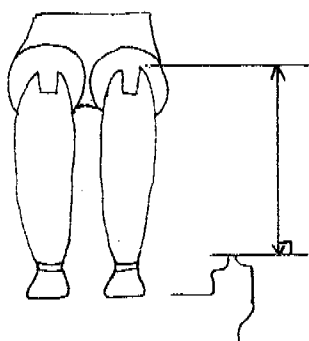
Details of door



11. KK
(TP-208-09)
Between knee pivot bolt head
outer surfaces.



12. ZK
(FHI)
From uncovered side sill
to top of the knee.



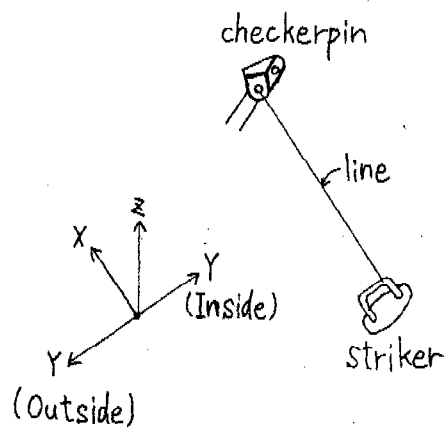
13. HD
(TP-208-09)
Lateral distance between
H-point surface and door trim.



14. KDO

(FHI)

Distance between checkerpin - striker line
and knee pivot bolt head.



15. SK

(TP-208-09)

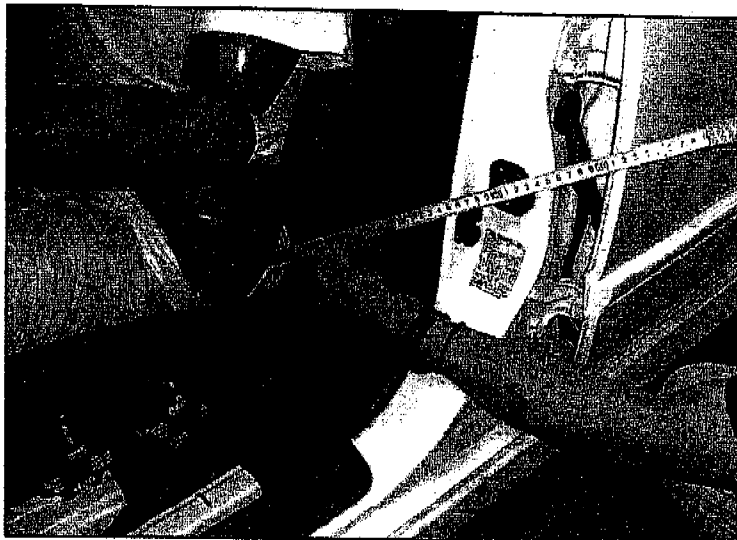
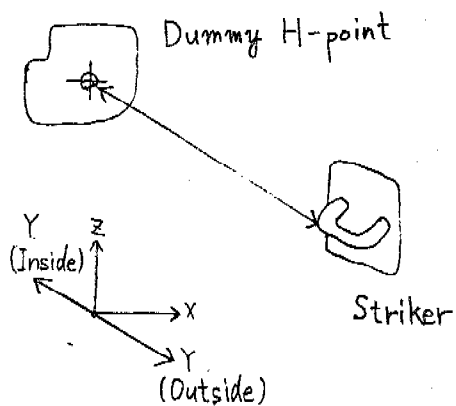
From the forwardmost center point
on the striker to the center of knee
pivot bolt.



17. SH

(FHI)

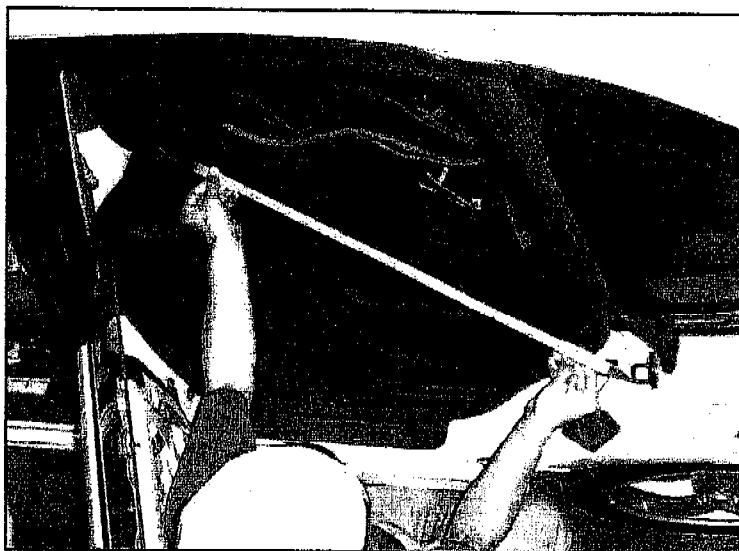
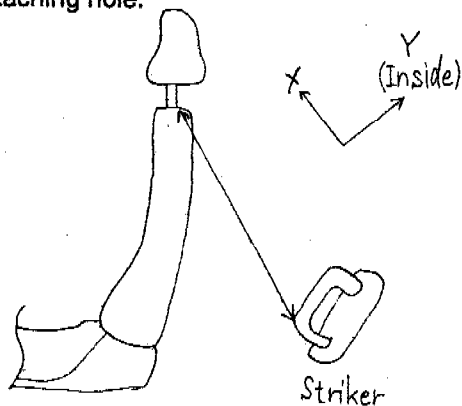
From the corner of rear door striker
to the H-Point surface.



18. HS

(FHI)

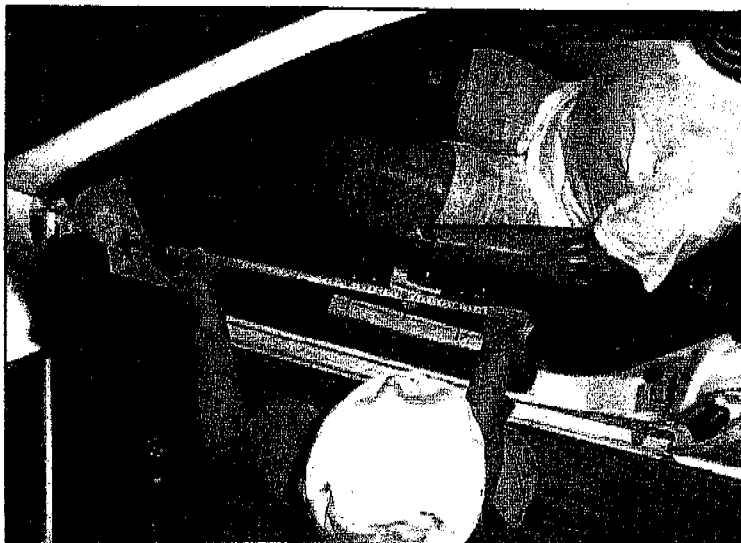
From nearest point of head restraint stay
to outside corner of rear door striker,
attaching hole.



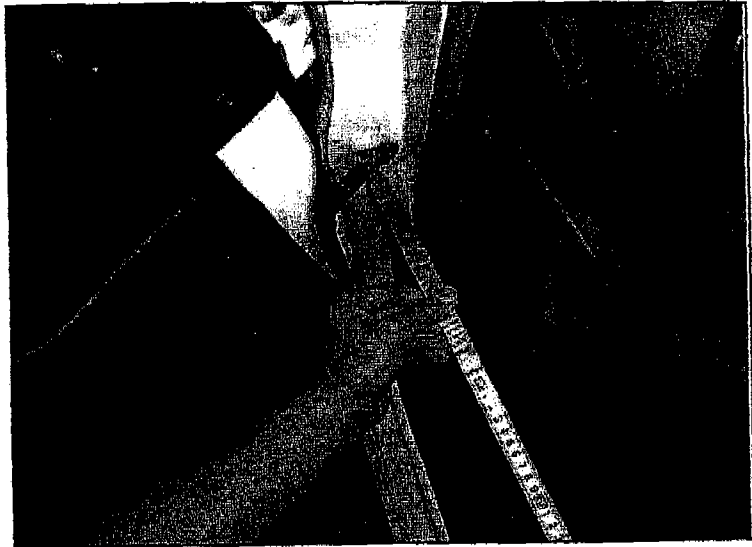
19. CL

(FHI)

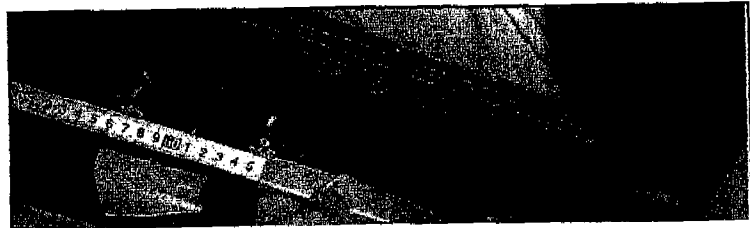
From center of checker pin attaching bolt
to center of seat back adjustment lever
attaching hole.



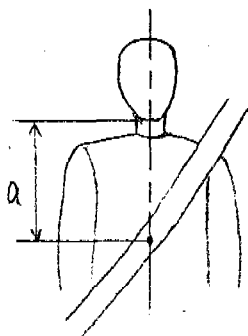
Center of checker pin
attaching bolt.



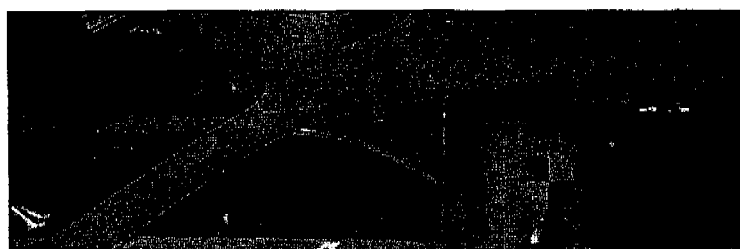
Center of seat back adjustment
lever attaching hole.



21. a
(FHI)
Belt position (From chin to
center of the belt)



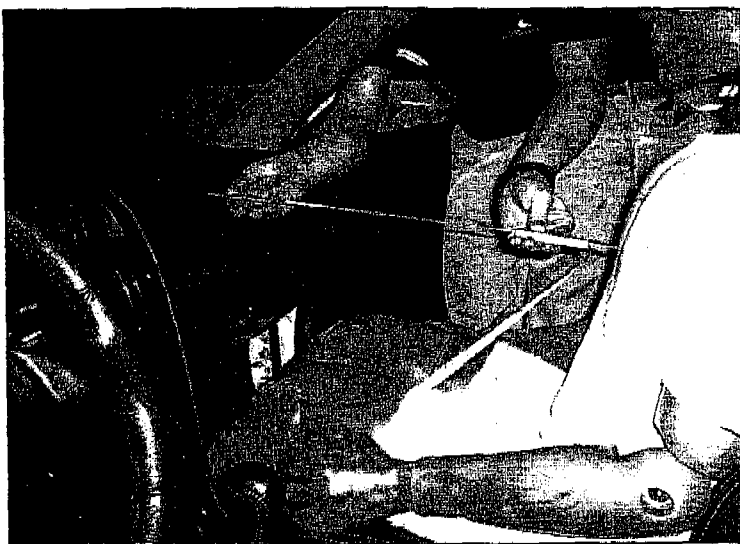
22. b, c
(FHI)
b: Belt position
(From roof trim to upper most
of the belt)
c: Belt position



24. CBC

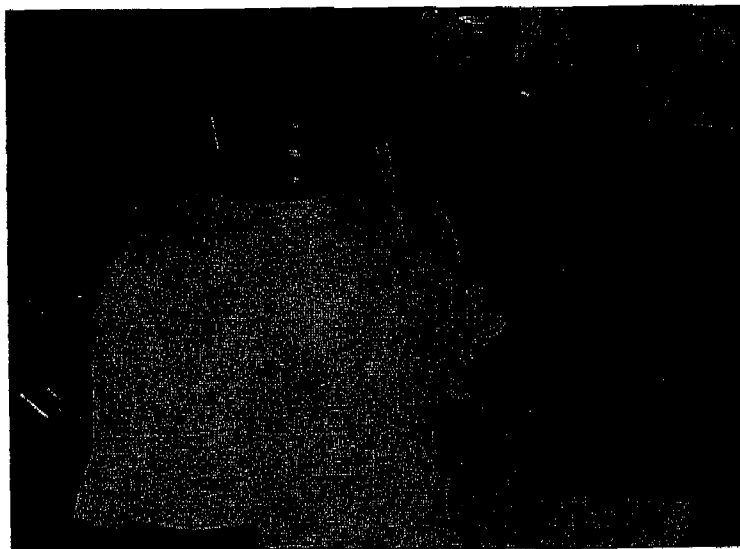
(FHI)

From the point on the chest 5 inch
to airbag tear line center.



Dummy's chest

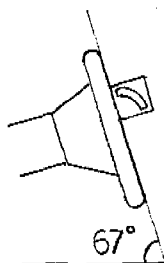
(5 inches lower from chin)



25. SWA

(TP-208-09)

Steering wheel angle



Seat positioning, steering column positioning, and fuel tank data

Form for General Vehicle Information

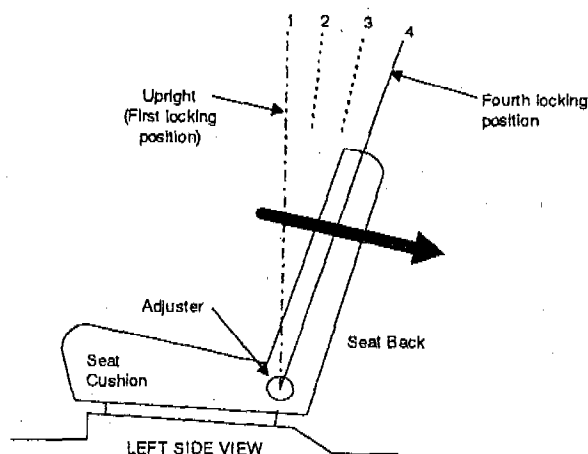
COMPARTMENT ADJUSTMENTS

1. SEAT POSITION**1.1 SEAT BACK POSITION**

Driver side: Seat back can be located by positioning seat back to the 4th locking position from upright as illustrated.

Passenger side: Same as driver data

See Page A-4

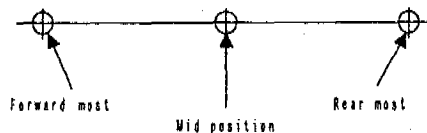
**1.2 SEAT FORE & AFT POSITIONS**

Driver side : (Power seat) : Set the seat slide to mid position between front most position and rear most position.

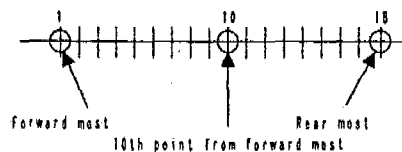
(Manual seat) : Position seat track to the 10th latch position from the front most position.

Passenger side : Same as driver manual seat data.

See Page A-5
See Page A-6



Power seat

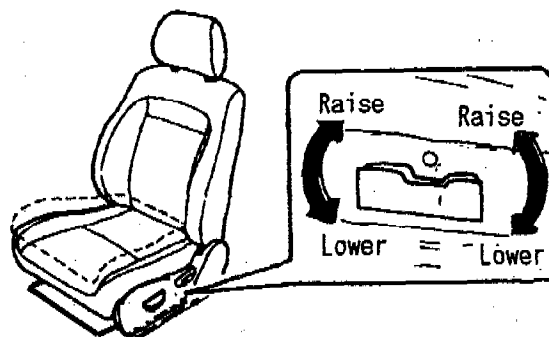


Manual seat

1.3 SEAT CUSHION ANGLE AND HEIGHT ADJUSTMENT POSITION (Driver's seat only)

Seat cushion angle and height adjustment to the lowest position.

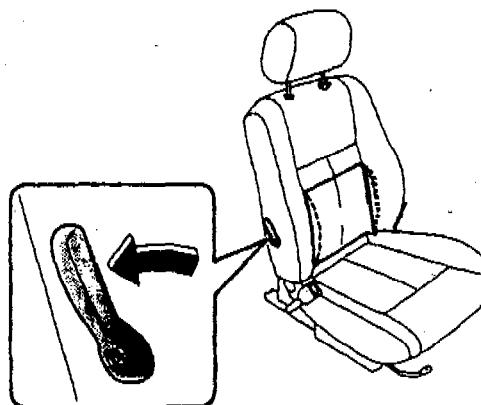
See Page A-7



1.4 LUMBER SUPPORT POSITION (if equipped - driver's seat only)

Pull the lever fully backward.

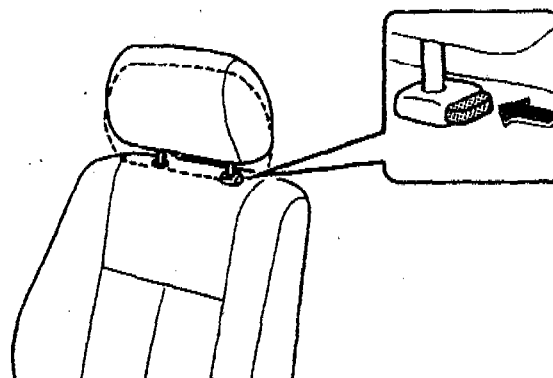
See Page A-7



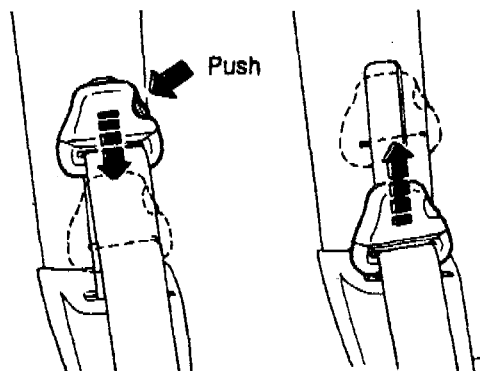
1.5 HEAD RESTRAINT POSITION

Place the head restraint to the uppermost position.

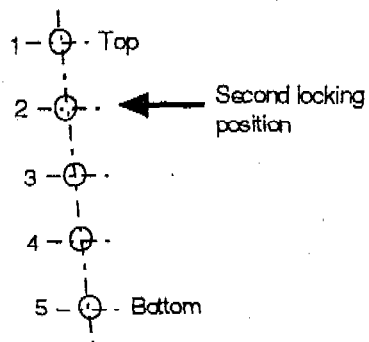
See Page A-8



2. ADJUSTABLE UPPER ANCHORAGE POSITION

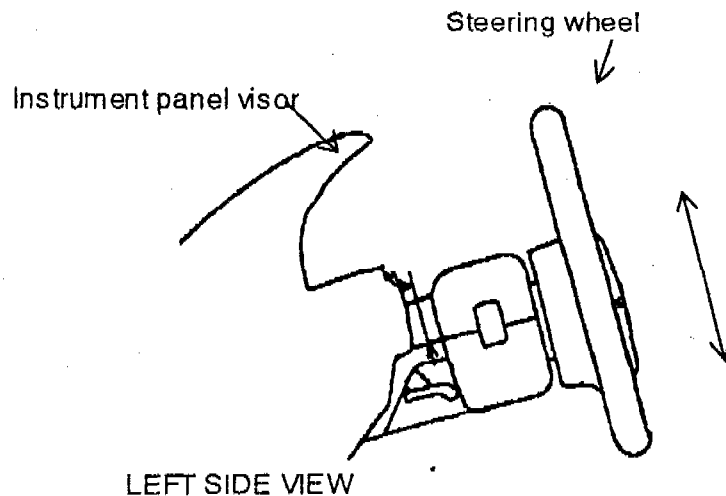


Locate adjustable upper anchorage to the 2nd locking position from the top.



See Page A-9

3. STEERING COLUMN ADJUSTMENTS



Check the highest and lowest position of steering column to find mid position. Set the mid position of steering column.

See Page A-10

4. FUEL TANK CAPACITY DATA

4.1

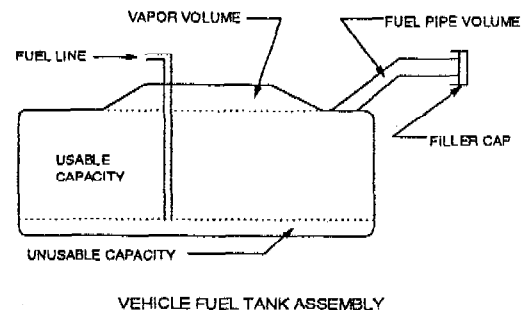
A. "Usable Capacity" of standard equipment fuel tank

= 16.9 gallons (64 L)

B: "Usable Capacity" of optional equipment fuel tank = (N.A.) gallons.

C: "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301

= 16.9 gallons (64 L)



4.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s)

= 15.9 gallons (60 L)

4.3 Is vehicle equipped with electric fuel pump?

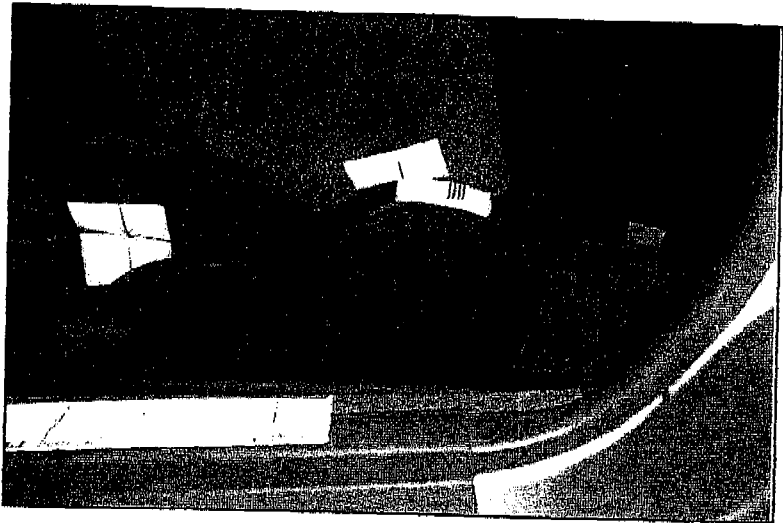
Yes - X No -

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

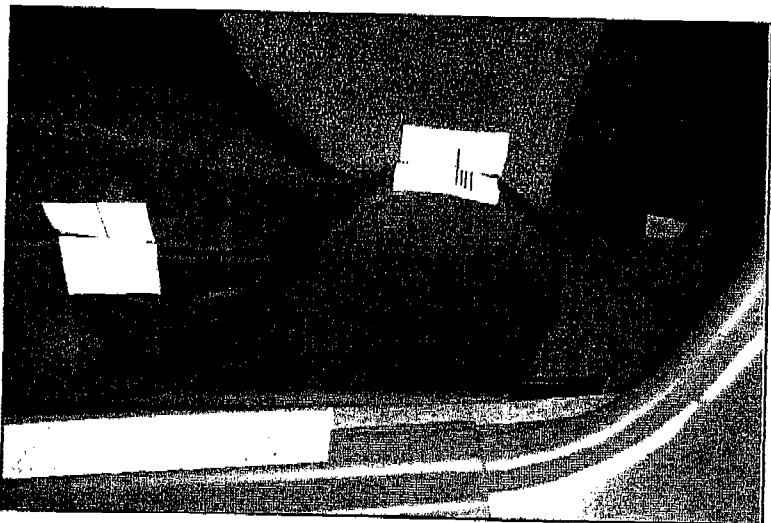
Pump operates a few seconds after an ignition switch is turned ON.

After that, pump operates only while engine is running.

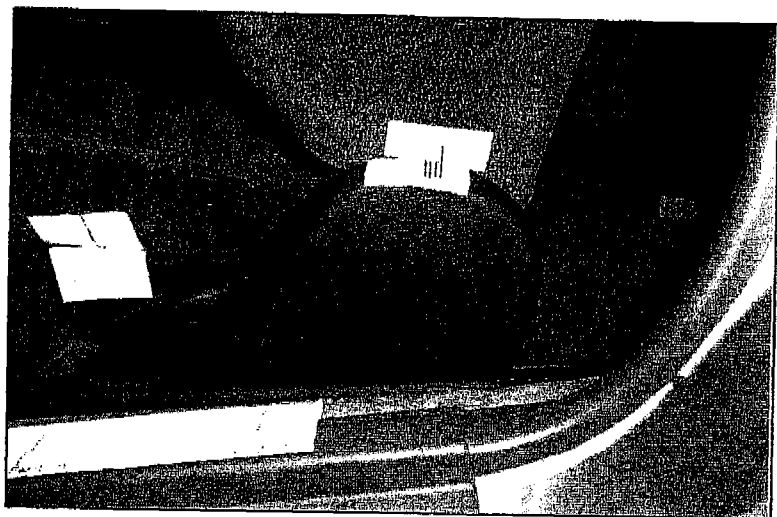
Seat back is not locked.



Raise seat back from
this condition until
it is first locked and set as
first locking position.



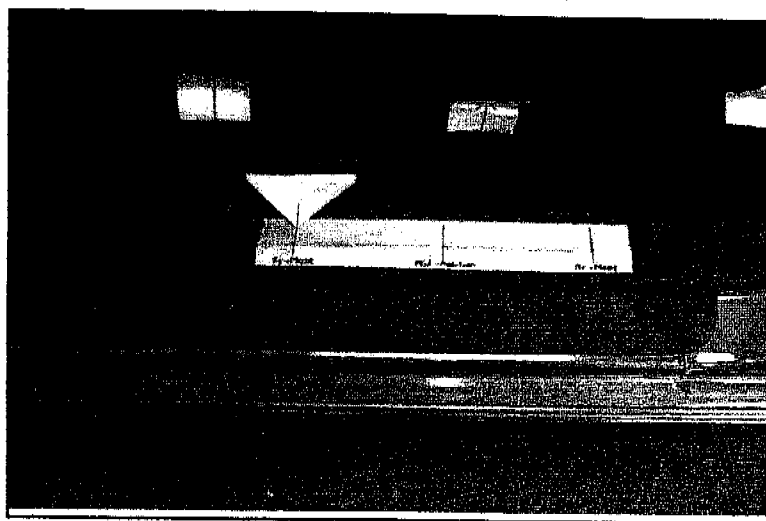
Adjust to the
4th locking position.



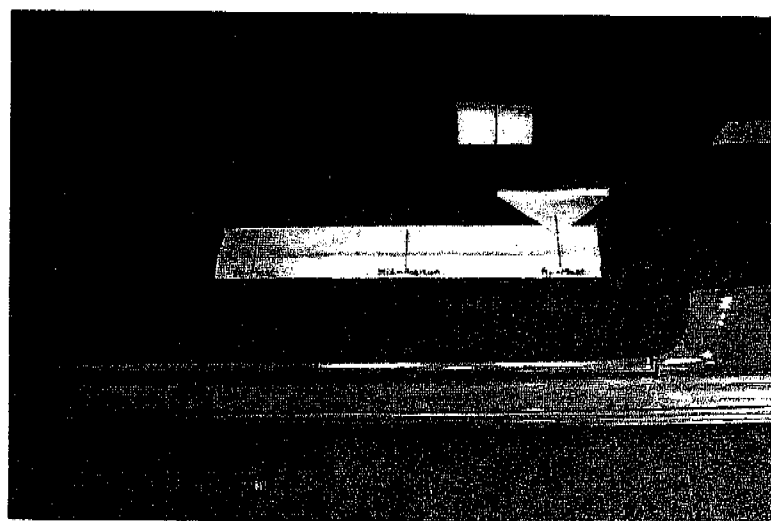
Seat Fore and Aft positioning procedure (Power seat)

A-5

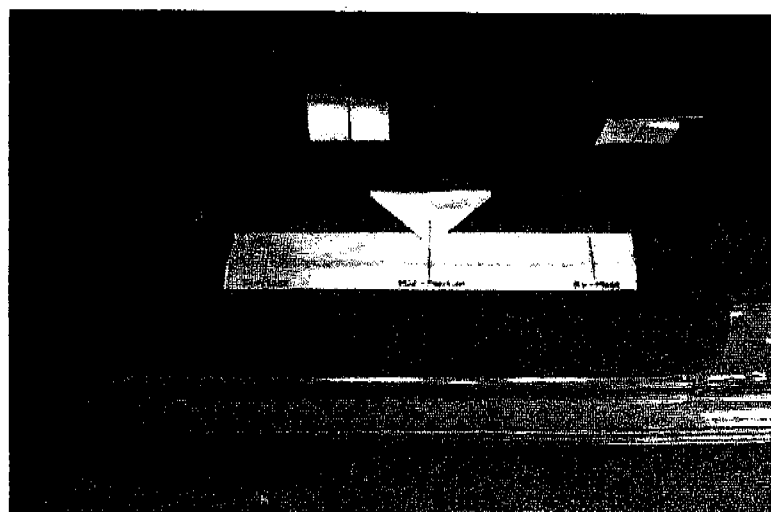
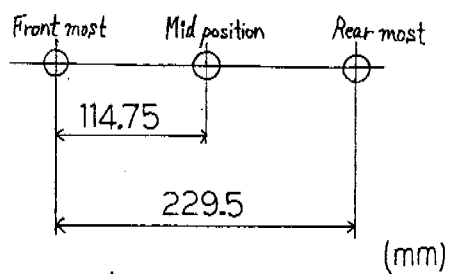
Front most



Rear most

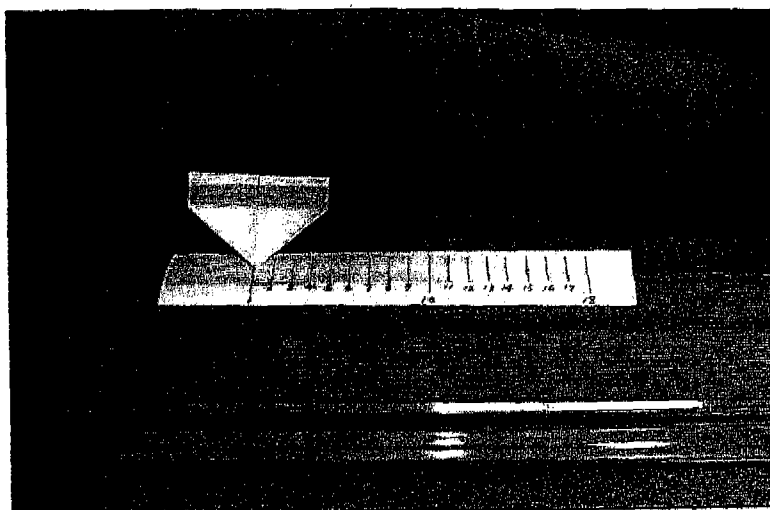


Set the seat slide to mid position between the front most and rear most position.



Seat Fore and Aft positioning procedure (Manual seat)

Front most

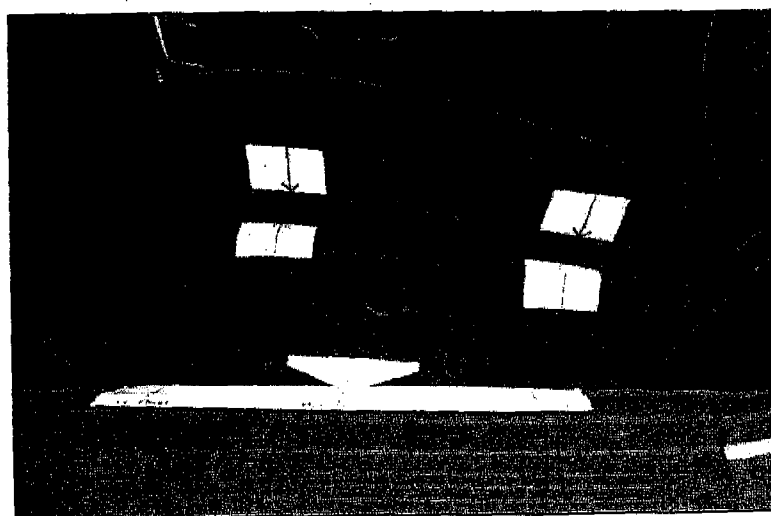


Rear most



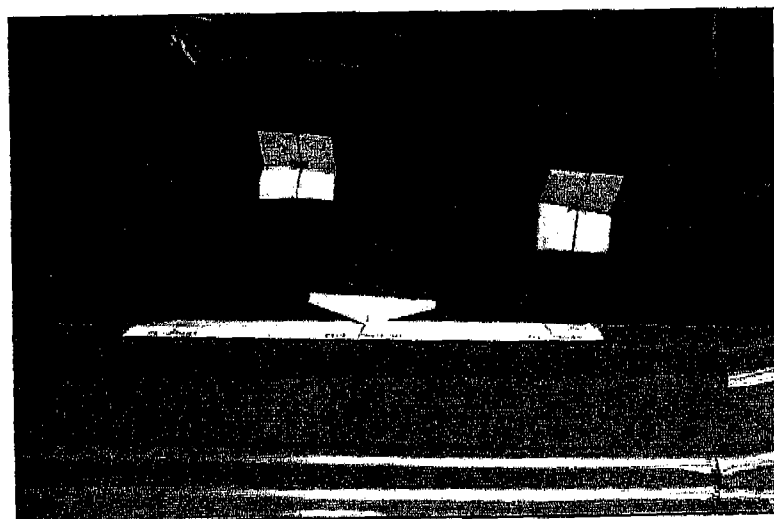
Seat cushion angle and height adjustment positioning procedure

Highest



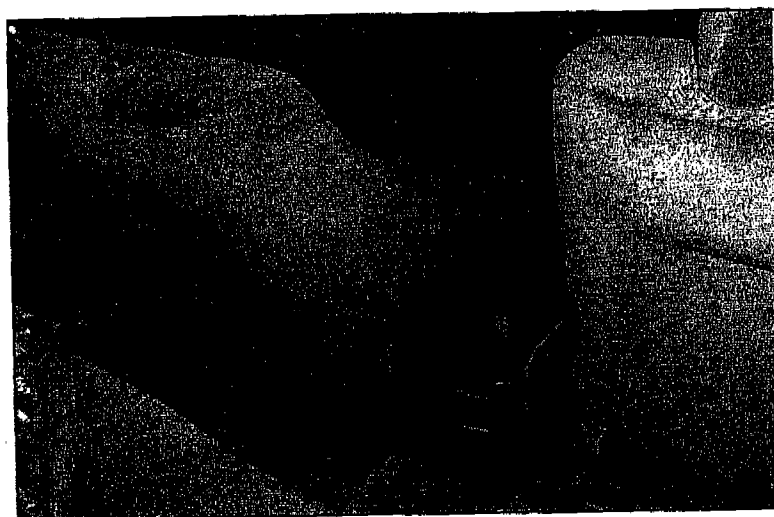
Lowest

Set the seat cushion angle and height adjustment to Lowest position.



Lumber support positioning procedure

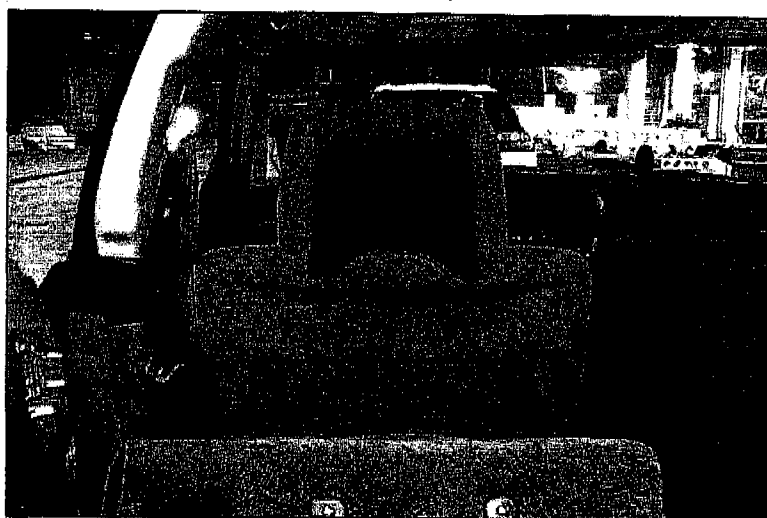
Pull the lever fully backward.



Head restraint positioning procedure

A-8

Lower most



Upper most

Set the head restraint to uppermost position.



Adjustable upper anchorage positioning procedure

A-9

Upper most
(first)



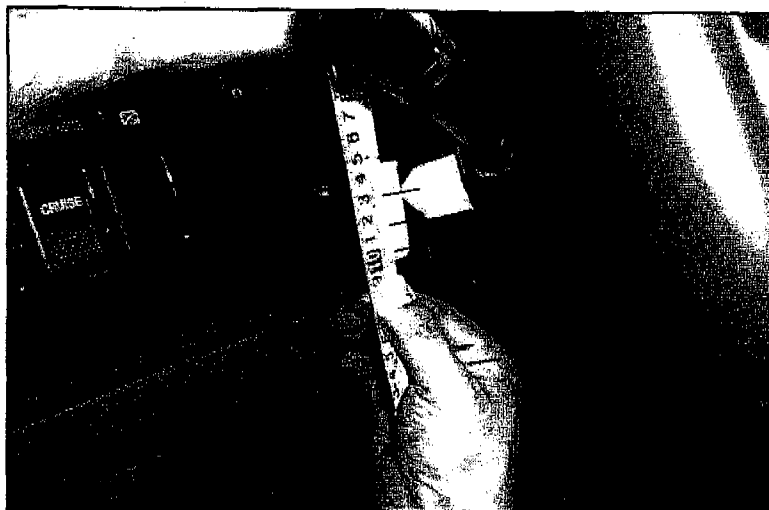
Lower most
(5th from upper most)



Set the second locking
position from the top.



Upper most



Lower most

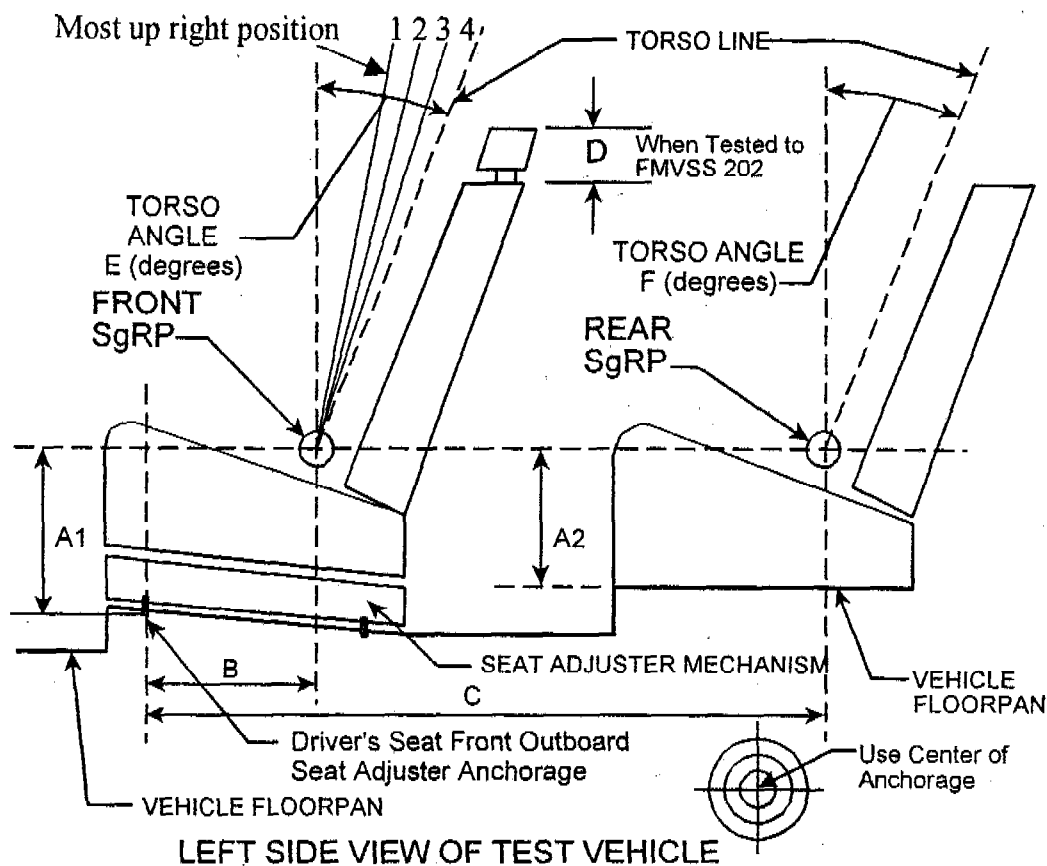


Seating reference points for all seats for all seats

- page 1 and 2 --- for sedan model
- page 3 and 4 --- for wagon model

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 201, 202, 203, 207 & 210
(All dimensions in inches)

Model Year: 2001 ; Make: SUBARU ; Model: LEGACY
Body Style: SEDAN ; Seat Style: Ft Individual Rr Bench



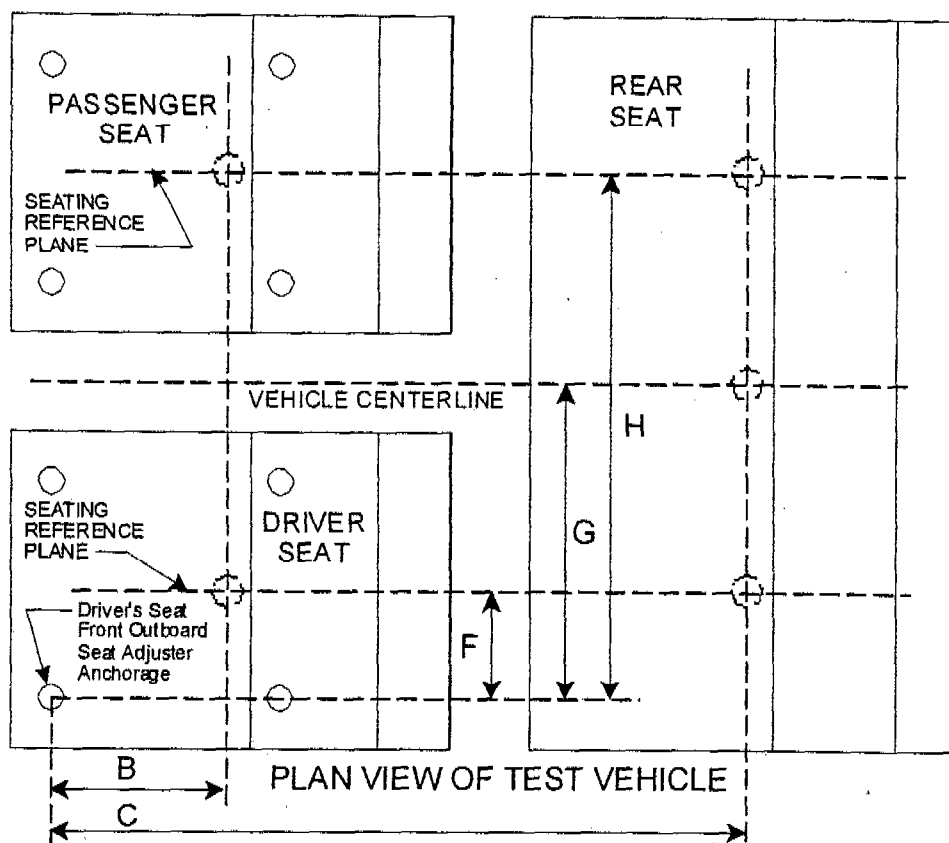
DIMENSION	FRONT, A1	REAR, A2
A	7.8	OUT : 9.3 CTR : 9.6
B	14.7	
C	OUT : 46.1 CTR : 45.4	
D	11.5	
E	25° °	
F	26° °	

**SEATING REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 201, 202, 203, 207 & 210**

(All dimensions in inches)

Model Year: 2001 ; Make: SUBARU ; Model: LEGACY

Body Style: SEDAN ; Seat Style: Ft Individual Rr Bench

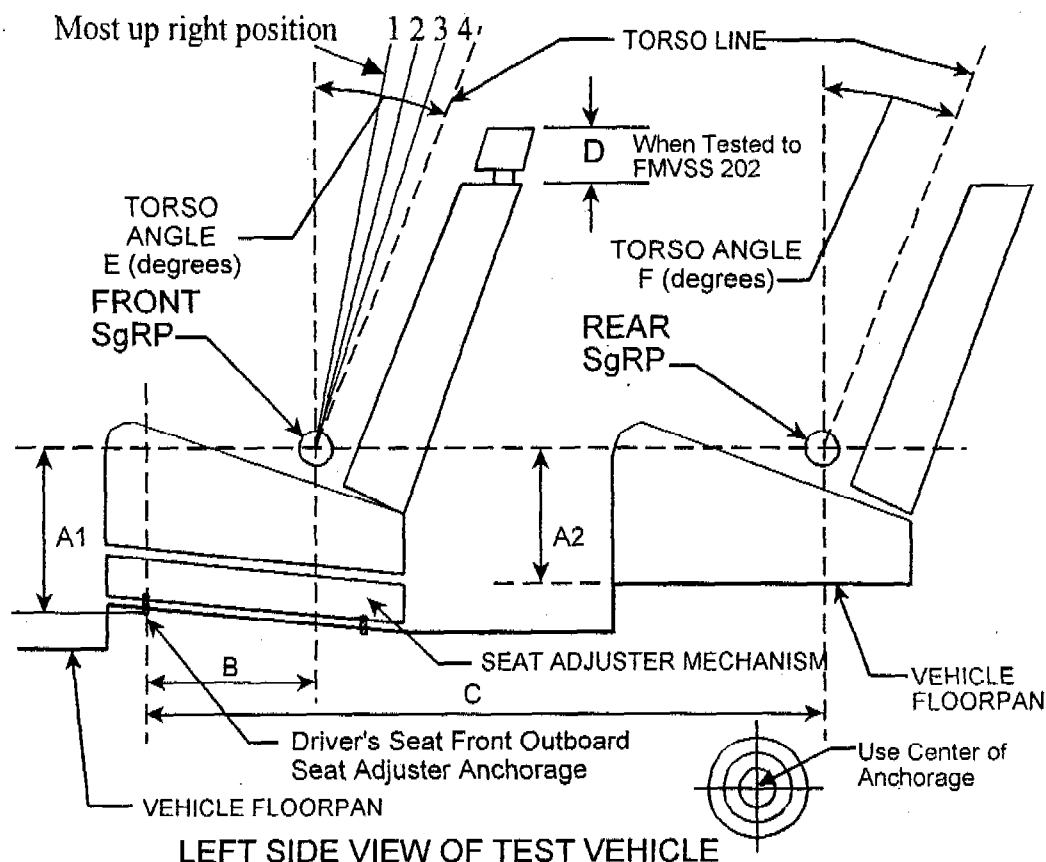


B	14.7
C	OUT : 46.1 CTR : 45.4
F*	Ft : 8.6 Rr : 8.0
G	22.4
H*	Ft : 36.2 Rr : 36.8

* Provide all dimensions needed to locate SRP.

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 201, 202, 203, 207 & 210
 (All dimensions in inches)

Model Year: 2000 ; Make: SUBARU ; Model: LEGACY
 Body Style: WAGON ; Seat Style: Ft Individual Rr Bench

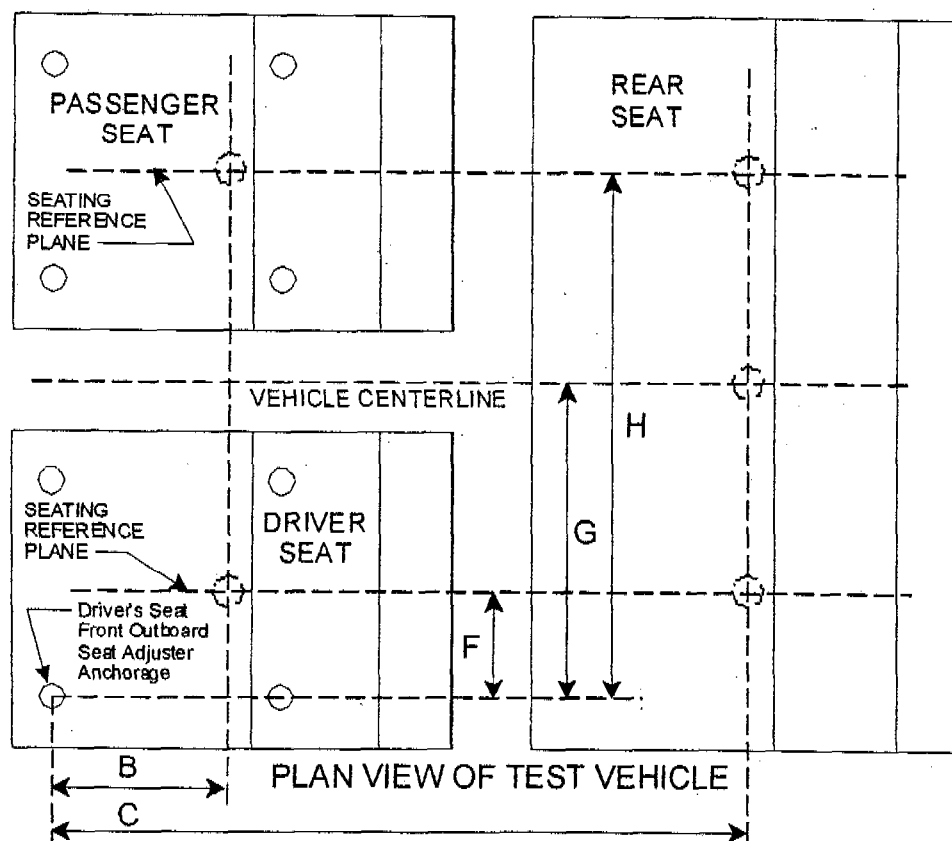


DIMENSION	FRONT, A1	REAR, A2
A	7.8	OUT : 9.6 CTR : 10.0
B	14.7	
C	OUT : 46.1 CTR : 45.4	
D	11.5	
E	25° °	
F	26° °	

SEATING REFERENCE POINT (SRP) AND TORSO ANGLE DATA FOR FMVSS 201, 202, 203, 207 & 210

(All dimensions in inches)

Model Year: 2000 ; Make: SUBARU ; Model: LEGACY
 Body Style: WAGON ; Seat Style: Ft Individual Rr Bench



B	14.7
C	OUT : 46.1 CTR : 45.4
F*	Ft : 8.6 Rr : 8.0
G	22.4
H*	Ft : 36.2 Rr : 36.8

* Provide all dimensions needed to locate SRP.

Appendix D

Miscellaneous Test Information

Front seats

WARNING

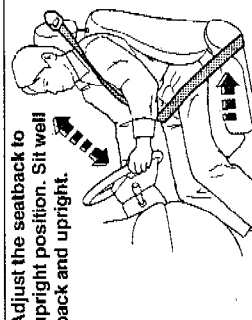
- Never adjust the seat while driving to avoid the possibility of loss of vehicle control and of personal injury.
- Never drive the vehicle with the head restraints removed because they are designed to reduce the risk of serious neck injury in the event that the vehicle is struck from the rear.
- Before adjusting the seat, make sure the hands and feet of rear seat passengers are clear of the adjusting mechanism.
- Seatbelts provide maximum restraint when the occupant sits well back and upright in the seat. To reduce the risk of sliding under the seatbelt in a collision, the front seatbacks should be always used in the upright position while the vehicle is running. If the front seatbacks are not used in the upright position in a collision, the risk of sliding under the lap belt and of the lap belt sliding up over the abdomen will increase, and both can result in serious internal injury or death.
- Do not put cushions or any other materials between occupants and seatbacks or seat cushions. If you do so, the risk of sliding under the lap belt and of the lap belt sliding up over the abdomen will increase, and both can result in serious internal injury or death.
- The SRS airbags deploy with considerable speed and force. Occupants who are out of proper position when the SRS airbag deploys could suffer very serious injuries. Because the SRS airbag needs enough space for deployment, the driver should always sit upright and well back in the seat as far from the steering wheel as practical while still maintaining full vehicle control and the front passenger should move the seat as far back as possible and sit upright and well back in the seat.
- Put children aged 12 and under in the rear seat properly restrained at all times. The SRS airbag deploys with considerable speed and force and can injure or even kill children, especially if they are 12 years of age and under and are not restrained or improperly restrained. Because children are lighter and weaker than

adults, their risk of being injured from deployment is greater. For that reason, we strongly recommend that ALL children (including those in child seats and those that have outgrown child restraint devices) sit in the REAR seat properly restrained at all times in a child restraint device or in a seatbelt, whichever is appropriate for the child's age, height and weight.

Secure ALL types of child restraint devices (including forward facing child seat) in the REAR seats at all times.

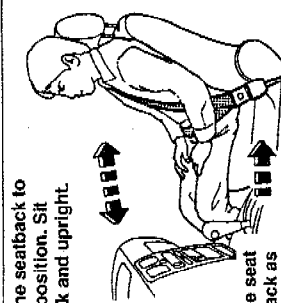
NEVER INSTALL A REARWARD FACING CHILD SEAT IN THE FRONT SEAT. DOING SO RISKS SERIOUS INJURY OR DEATH TO THE CHILD BY PLACING THE CHILD'S HEAD TOO CLOSE TO THE SRS AIRBAG.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions. For instructions and precautions concerning child restraint systems, see the "Child restraint systems" section in this chapter.



Move the seat as far from the steering wheel as practical.

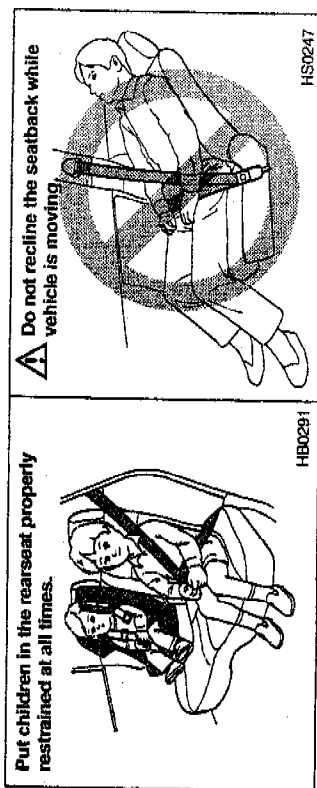
HS0233



HB0290

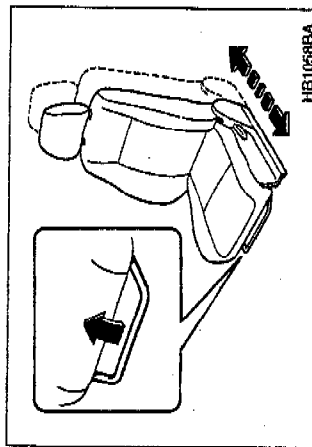
Adjust the seatback to upright position. Sit well back and upright.

Move the seat as far back as possible.



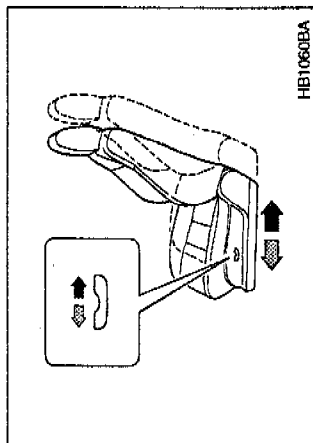
▼ Fore and aft adjustment

▼ Manual type



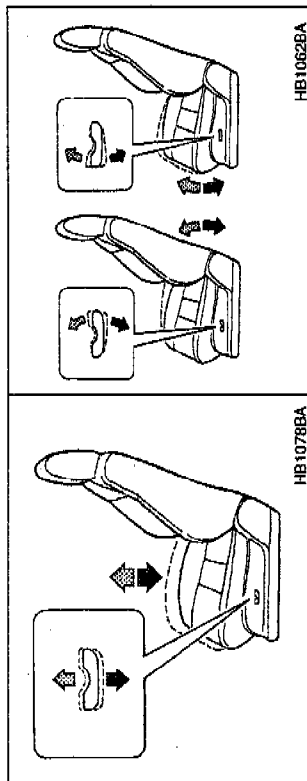
Pull the lever upward and slide the seat to the desired position. Then release the lever and move the seatback and forth to make sure that it is securely locked into place.

▼ Power seat (if equipped)



To adjust the seat forward or backward, move the control switch forward or backward.

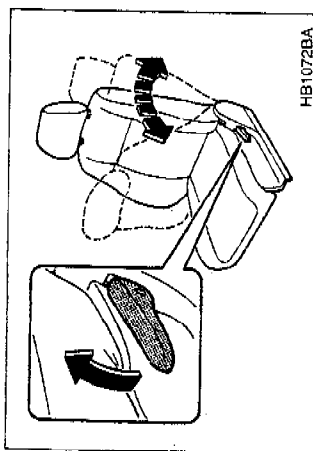
▼ Seat cushion angle and height adjustment (Power seat only)



To adjust the angle and height of the seat cushion, move the control switch in the corresponding direction.

▼ Reclining the seatback

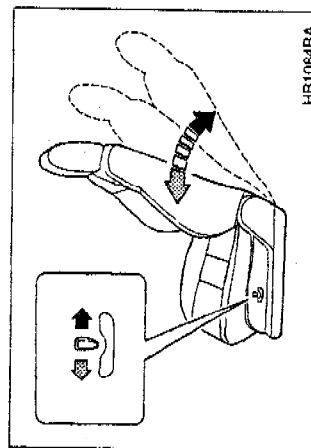
▽ Manual type



Pull the reclining lever up and adjust the seatback to the desired position. Then release the lever and make sure the seat is securely locked into place.

The seatback placed in a reclined position can spring back upward with force when released. When operating the reclining lever to return the seatback, hold it lightly so that it may be raised back gradually.

▽ Power seat (if equipped)

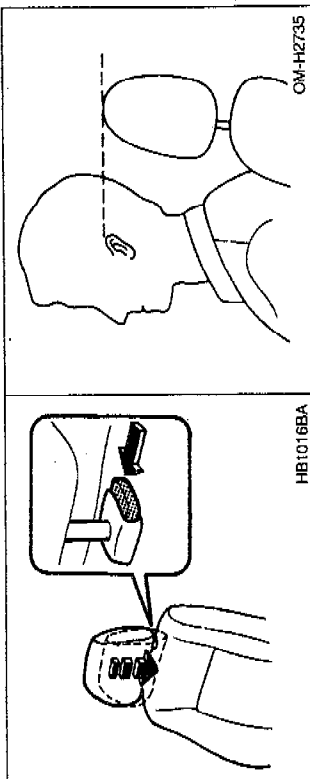


To adjust the angle of the seatback, move the control switch.

NOTE

While adjusting the seatback, you can not at the same time adjust the seat position or the seat cushion angle and height.

▼ Head restraint adjustment



To raise the head restraint, pull it up. To lower it, push the head restraint down while pressing the release button on the top of the seatback.

The best position for the head restraint is just above or level with the top of the ears.

NOTE

If the seatback is reclined rearward to the same level as the rear seat cushion with the head restraint removed, a wide flat bed is made available.

⚠ WARNING

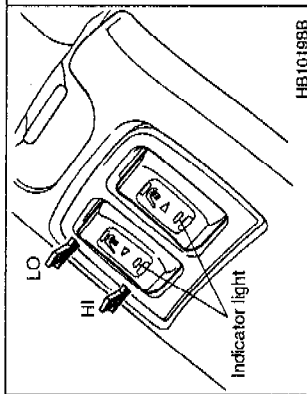
- Never drive your car with the seats converted in a flat bed position. If you do so, occupants will have a greater chance of being injured even during simple deceleration, acceleration and cornering since no firm restraint will be available for them.
- Before you lie on the flat bed to take a rest, read the description "Parking your vehicle" in Chapter 7 carefully and follow the instructions.

Seat heater (if equipped)

CAUTION

- Use of the seat heater for a long period of time while the engine is not running can cause battery discharge.
- Do not put anything on the seat which insulates against heat, such as a blanket, cushion, or similar items. This may cause the seat heater to overheat.
- When cleaning the seat, do not use benzine, paint thinner, or any similar materials.

The seat heater operates when the ignition switch is either in the "ACC" or "ON" position.

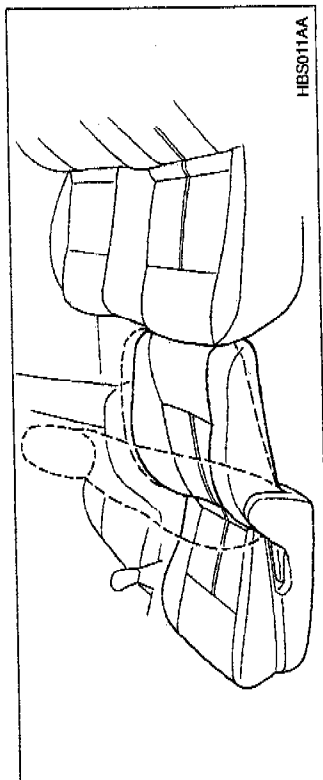


To turn on the seat heater, push the "LO" or "HI" position on the switch, as desired, depending on the temperature.

LO: Normal heating

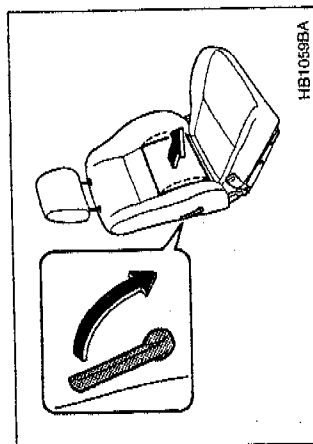
HI: Rapid heating

The indicator located on the switch comes on when the seat heater is in operation. When the vehicle's interior is warmed enough or before you leave the vehicle, be sure to turn the switch off.



1. Slide the front seat forward as far as possible.
2. Pull off the head restraint while pressing the release button.
3. Recline the seatback rearward up to the lowest position. Remember to reinstall the head restraint whenever the seatback is raised back.

▼ Lumbar support (if equipped)



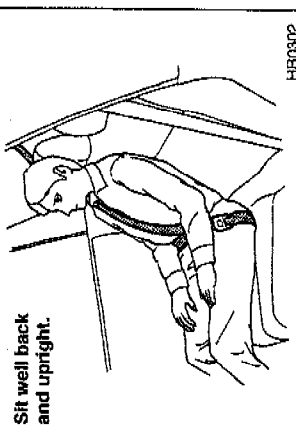
Pull the lever forward or backward.

Pulling the lever forward will increase the amount of support for your lower back.

Rear seats

⚠ WARNING

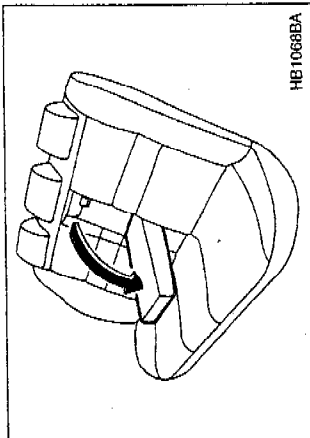
- Seatbelts provide maximum restraint when the occupant sits well back and upright in the seat. Do not put cushions or any other materials between occupants and seatbacks or seat cushions. If you do so, the risk of sliding under the lap belt and of the lap belt sliding up over the abdomen will increase, and both can result in serious internal injury or death.
- Never allow passengers to ride on the folded rear seatback, in the cargo area. Doing so may result in serious injury or death.
- Never stack luggage or other cargo higher than the top of the seatback because it could tumble forward and injure passengers in the event of a sudden stop or accident.
- Secure skis and other lengthy items properly to prevent them from being thrown around inside the vehicle and causing serious injury during a sudden stop, a sudden steering or a rapid acceleration.



■ Armrest (if equipped)

⚠ WARNING

To avoid the possibility of serious injury, passengers must never be allowed to sit on the center armrest while the vehicle is in motion.

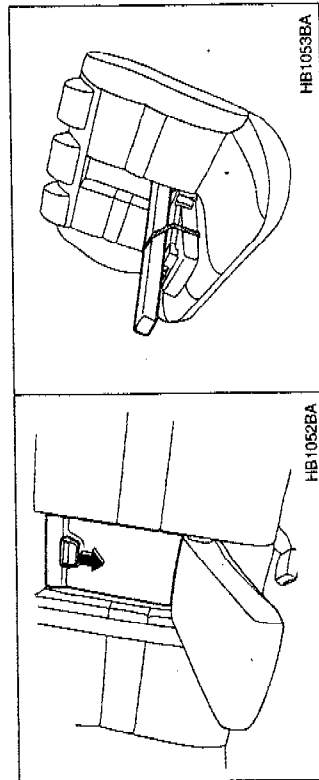


To lower the armrest, pull on the top edge of the armrest.

▼ Loading long objects

⚠ WARNING

- Secure long objects properly to prevent them from shooting forward and causing serious injury during a sudden stop or sharp cornering. Tie long objects down with a rope or something equivalent.
- Avoid loading objects longer than 6.6 ft (2 m) and heavier than 55 lb (25 kg). Such objects can interfere with the driver's proper operation of the car, possibly causing an accident and serious injury.



- CONTINUED -

1-11

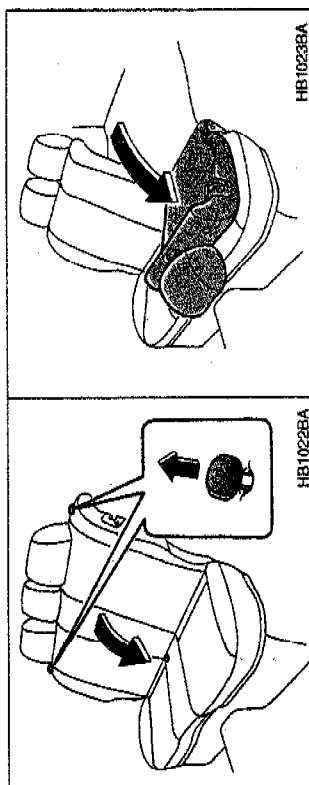
Folding down the armrest and opening the seatback panel affords a loading space for long objects.
To open the seatback panel, pull the panel down while pressing the release tab down.

■ Folding down the rear seat — Station wagon

⚠ WARNING

- After returning the rear seat to its original position, be certain to place all of the seatbelts and the tab attached to the seat cushion above the seat cushion. And make certain that the shoulder belts are fully visible.
- Never permit anyone to ride in the cargo area.

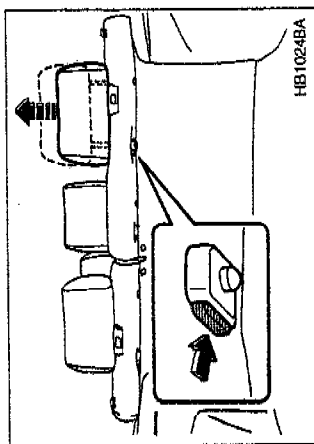
▼ Folding down the seatback



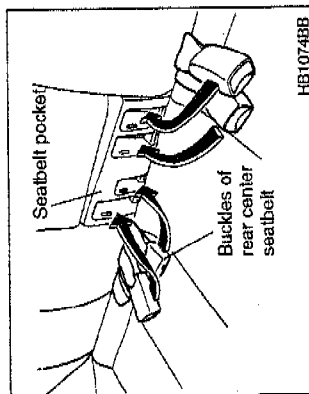
Unlock the seatback by pulling the release knob and then fold the seatback down.

▼ Folding down the seat cushion and seatback

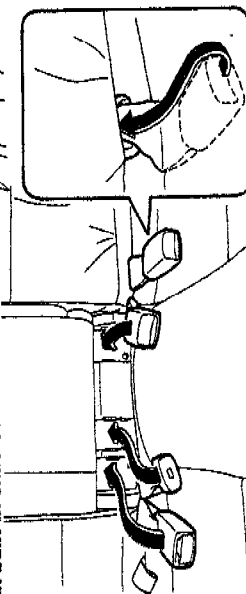
1. Move the front seat forward.
2. Close the rear passengers' cup holder and ashtray.
3. To remove the headrest (if so equipped), pull the headrest up while pressing the release button located on the backside of the seatback.



4. Store the seatbelts in the seatbelt pocket to prevent them from falling below the cushion.



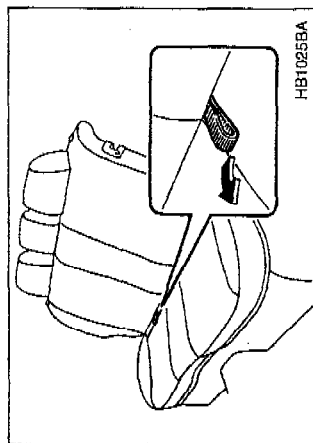
With built-in child seat



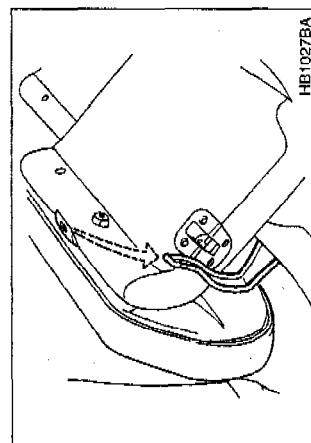
5. Raise the seat cushion by pulling up the tab.
Make certain that the rear passenger's cup holder is fully retracted.

— CONTINUED —

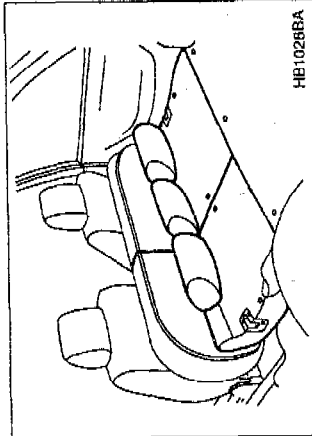
before raising the seat cushion.



6. Unlock the seatback by pulling the release knob and fold the seat back down. Confirm that the pin located at the bottom of the seat cushion is inserted into the slot at the top of the seatback.



7. Install the headrest (if so equipped) onto the backside of the seat back.



To return the rear seat to its original position, raise the seatback and seat cushion until they lock into place and make sure that they are securely locked.

Make sure that the rear seatbelts are not under the seat cushion or seat back.

Place the headrests (if so equipped) back in their normal position.

Seatbelts

■ Seatbelt safety tips

⚠ WARNING

- All persons in the vehicle should fasten their seatbelts BEFORE the vehicle starts to move. Otherwise, the possibility of serious injury becomes greater in the event of a sudden stop or accident.
- All belts should fit snugly in order to provide full restraint. Loose fitting belts are not as effective in preventing or reducing injury.
- Each seatbelt is designed to support only one person. Never use a single belt for two or more persons — even children. Otherwise, in an accident, serious injury or death could result.
- Replace all seatbelt assemblies including retractors and attaching hardware worn by occupants of a vehicle that has been in

— CONTINUED —

a serious accident. The entire assembly should be replaced even if damage is not obvious.

- Put children aged 12 and under in the rear seat properly restrained at all times. The SRS airbag deploys with considerable speed and force and can injure or even kill children, especially if they are 12 years of age and under and are not restrained or improperly restrained. Because children are lighter and weaker than adults, their risk of being injured from deployment is greater. For that reason, we strongly recommend that ALL children (including those in child seats and those that have outgrown child restraint devices) sit in the REAR seat properly restrained at all times in a child restraint device or in a seatbelt, whichever is appropriate for the child's height and weight.

Secure ALL types of child restraint devices (including forward facing child seats) in the REAR seats at all times.

NEVER INSTALL A REARWARD FACING CHILD SEAT IN THE FRONT SEAT. DOING SO RISKS SERIOUS INJURY OR DEATH TO THE CHILD BY PLACING THE CHILD'S HEAD TOO CLOSE TO THE SRS AIRBAG.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions. For instructions and precautions concerning the child restraint system, see the "Child restraint systems" section in this chapter.

▼ Infants or small children

Use a child restraint system that is suitable for your vehicle. See information on "Child restraint systems" in this chapter.

▼ Children

If a child is too big for a child restraint system, the child should sit in the rear seat and be restrained using the seatbelts. According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions. Never allow a child to stand up or kneel on the seat.

If the shoulder portion of the belt crosses the face or neck, move the

child closer to the belt buckle to help provide a good shoulder belt fit. Care must be taken to securely place the lap belt as low as possible on the hips and not on the child's waist. If the shoulder portion of the belt cannot be properly positioned, a child restraint system should be used. Never place the shoulder belt under the child's arm or behind the child's back.

▼ Expectant mothers

Expectant mothers also need to use the seatbelts. They should consult their doctor for specific recommendations. The lap belt should be worn securely and as low as possible over the hips, not over the waist.

■ Emergency Locking Retractor (ELR)

The driver's seatbelt has an Emergency Locking Retractor (ELR).

The emergency locking retractor allows normal body movement but the retractor locks automatically during a sudden stop, impact or if you pull the belt very quickly out of the retractor.

■ Automatic/Emergency Locking Retractor (A/ELR)

Each passenger's seatbelt has an Automatic/Emergency Locking Retractor (A/ELR). The Automatic/Emergency Locking Retractor normally functions as an Emergency Locking Retractor (ELR). The A/ELR has an additional locking mode "Automatic Locking Retractor (ALR) mode" intended to secure a child restraint system. When the seatbelt is once drawn out completely and is then retracted even slightly, the retractor locks the seatbelt in that position and the seatbelt cannot be extended. As the belt is rewinding, clicks will be heard which indicate the retractor functions as ALR. When the seatbelt is retracted fully, ALR mode is released.

When securing a child restraint system on the passengers' seats, the seatbelt must be changed over to the Automatic Locking Retractor (ALR) mode.

When the child restraint system is removed, make sure that the retractor is restored to the Emergency Locking Retractor (ELR) function by allowing the seatbelt to retract fully.

- CONTINUED -

For instructions on how to convert the retractor to the ALR mode and restore it to the ELR mode, see the "Child restraint systems" section in this chapter.

■ Seatbelt warning light and chime

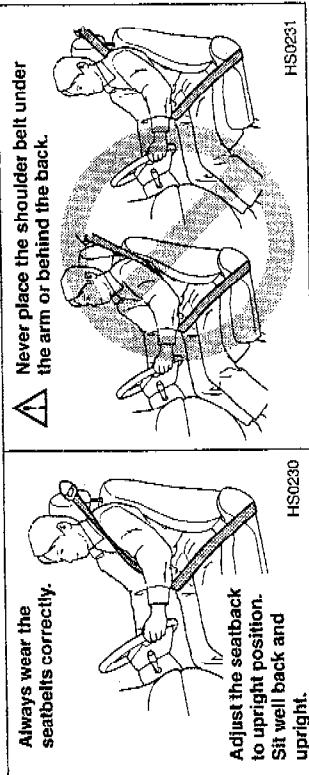
Your vehicle is equipped with a seatbelt warning device at the driver's seat.

This device causes the seatbelt warning light on the instrument panel to light up for about six seconds when the ignition switch is turned to the "ON" position to remind the driver to wear the seatbelt. If the driver's seatbelt is not fastened, a warning chime sounds at the same time.

■ Fastening the seatbelt

⚠ WARNING

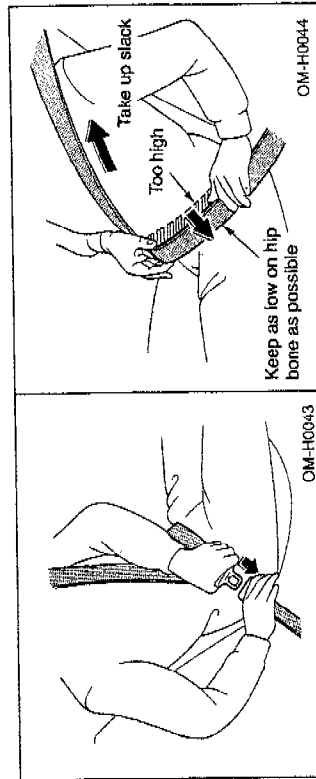
- Never use a belt that is twisted or reversed. In an accident, this can increase the risk or severity of injury.
- Never place the shoulder belt under the arm or behind the back. If an accident occurs, this can increase the risk or severity of injury.
- Keep the lap belt as low as possible on your hips. In a collision, this spreads the force of the lap belt over stronger hip bones instead of across the weaker abdomen.
- Seatbelts provide maximum restraint when the occupant sits well back and upright in the seat. To reduce the risk of sliding under the seatbelt in a collision, the front seatbacks should be always used in the upright position while the vehicle is running. If the front seatbacks are not used in the upright position in a collision, the risk of sliding under the lap belt and of the lap belt sliding up over the abdomen will increase, and both can result in serious internal injury or death.
- Do not put cushions or any other materials between occupants and seatbacks or seat cushions. If you do so, the risk of sliding under the lap belt and of the lap belt sliding up over the abdomen will increase, and both can result in serious internal injury or death.



⚠ CAUTION

Metallic parts of the seatbelt can become very hot in a vehicle that has been closed up in sunny weather; they could burn an occupant. Do not touch such hot parts until they cool.

▼ Front seatbelts



1. Adjust the seat position:

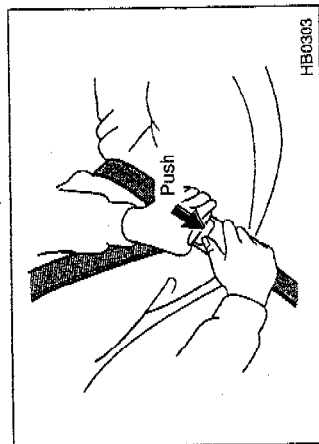
Driver's seat: Adjust the seatback to the upright position. Move the seatback as far from the steering wheel as practical while still maintaining full vehicle control.

Front passenger's seat: Adjust the seatback to the upright position. Move the seat as far back as possible.

- CONTINUED -

Always adjust the anchor height so that the shoulder belt passes over the middle of the shoulder without touching the neck.

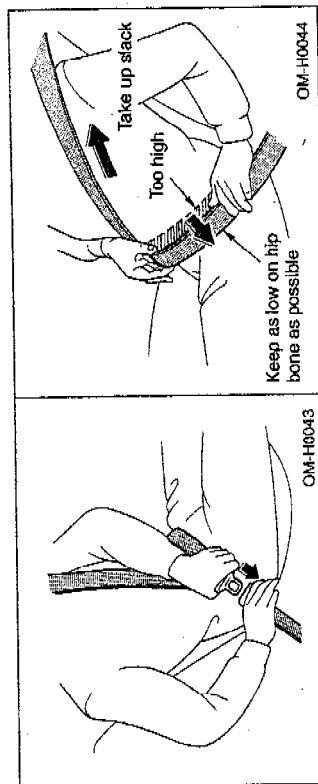
▽ Unfastening the seatbelt



Push the button on the buckle.

Before closing the door, make sure that the belts are retracted properly to avoid catching the belt webbing in the door.

▽ Rear seatbelts (except rear center seatbelt on wagon)



1. Sit well back in the seat.
2. Pick up the tongue plate and pull the belt out slowly. Do not let it get twisted. If the belt stops before reaching the buckle, return the belt slightly and pull it out more slowly. If the belt still cannot be unlocked, let the belt retract slightly after giving a strong pull on it, then pull it out slowly again.

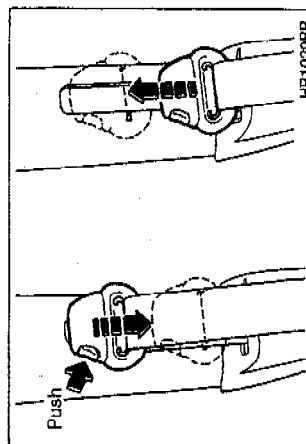
- CONTINUED -
1-21

2. Sit well back in the seat.
3. Pick up the tongue plate and pull the belt out slowly. Do not let it get twisted. If the belt stops before reaching the buckle, return the belt slightly and pull it out more slowly. If the belt still cannot be unlocked, let the belt retract slightly after giving it a strong pull, then pull it out slowly again.
4. Insert the tongue plate into the buckle until you hear a click.
5. To make the lap part tight, pull up on the shoulder belt. And place the lap belt as low as possible on your hips, not on your waist.

▽ Adjusting the front seat shoulder belt anchor height

⚠ WARNING

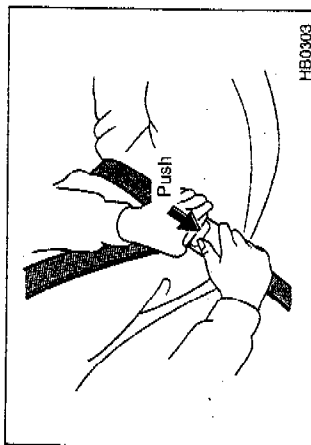
When wearing the seatbelts, make sure the shoulder portion of the webbing does not pass over your neck. If it does, adjust the seatbelt anchor to a lower position. Placing the shoulder belt over the neck may result in neck injury during sudden braking or in a collision.



The shoulder belt anchor height should be adjusted to the position best suited for you. To lower the anchor height, push the release button and slide the anchor down. To raise the anchor height, slide the anchor up. Pull down on the anchor to make sure that it is locked in place.

3. Insert the tongue plate into the buckle until you hear a click.
4. To make the lap part tight, pull up on the shoulder belt. And place the lap belt as low as possible on your hips, not on your waist.

▽ Unfastening the seatbelt



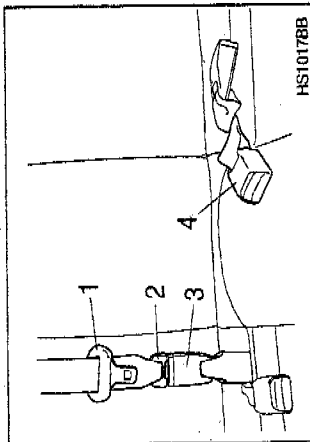
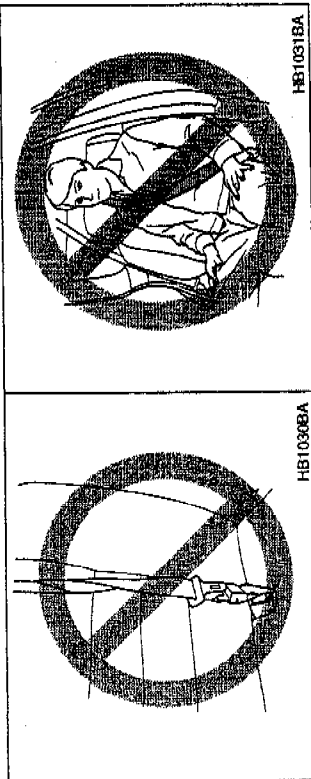
Push the button on the buckle.

Before closing the door, make sure that the belts are retracted properly to avoid catching the belt webbing in the door.

▼ Rear center seatbelt on wagon model

WARNING

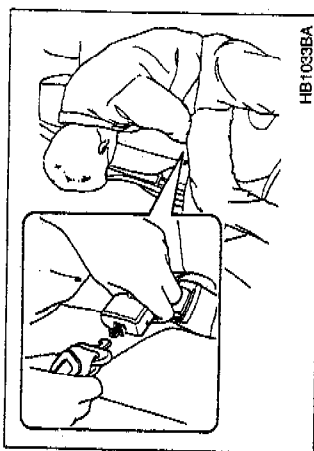
- Fastening the seatbelt with the webbing twisted can increase the risk or severity of injury in an accident. When fastening the belt after it is pulled out from the retractor, especially when inserting the connector's tongue plate into the mating buckle (on right-hand side), always check that the webbing is not twisted.
- Be sure to fasten both tongue plates to the respective buckles. If the seatbelt is used only as a shoulder belt (with the connector's tongue plate not fastened to the connector's buckle on the right-hand side), it cannot properly restrain the wearer in position in an accident, possibly resulting in serious injury or death.



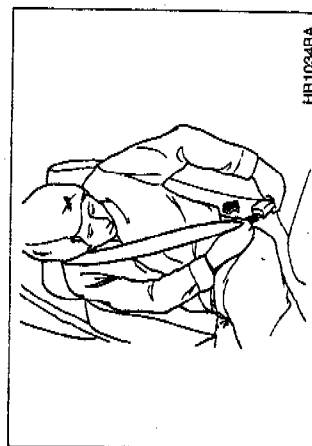
1. Center seatbelt tongue plate
2. Connector (tongue)
3. Connector (buckle)
4. Center seatbelt buckle



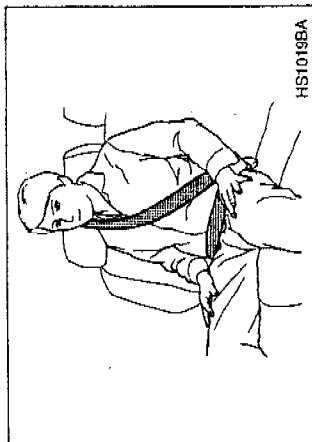
1. Pull out the seatbelt slowly from the overhead retractor.



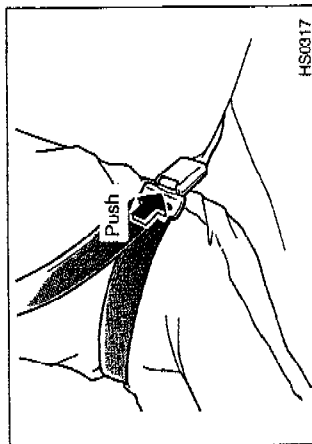
2. After confirming that the webbing is not twisted, insert the connector (tongue) attached at the webbing end into the buckle on the right-hand side until a click is heard. If the belt stops before reaching the buckle, return the belt slightly and pull it out more slowly. If the belt still cannot be unlocked, let the belt retract slightly after giving it a strong pull, then pull it out slowly again.



3. Insert the center seatbelt tongue plate in the center seatbelt buckle marked "CENTER" on the left-hand side until it clicks. To make the lap part tight, pull up on the shoulder belt. And place the lap belt as low as possible on your hips, not on your waist.



▽ Unfastening the seatbelt



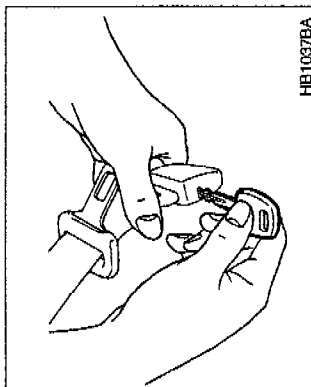
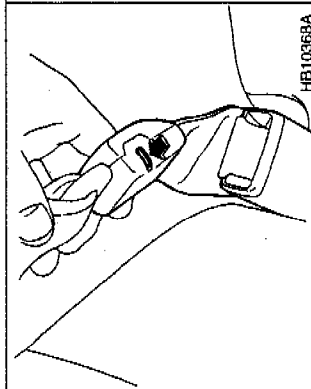
Push the release button of the center seatbelt buckle (on the left-hand side) to unfasten the seatbelt.

NOTE

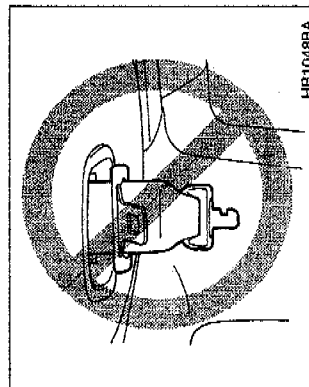
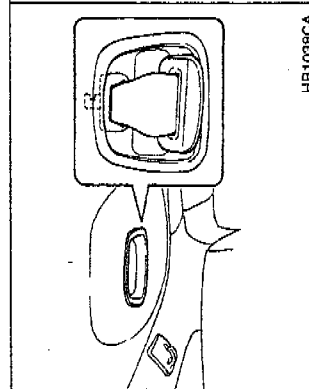
When the seatback is folded down for greater luggage space, it is necessary to disconnect the connector.

CAUTION

- Do not allow the retractor to roll up the seatbelt too quickly. Otherwise, the metal tongue plates may hit against the trim, resulting in damaged trim.
- Have the seatbelt fully rolled up so that the tongue plates are neatly stored. A hanging tongue plate can swing and hit against the trim during driving, causing damage to the trim.



1. Insert a key or other hard pointed object into the slot in the connector (buckle) on the right-hand side and push it in, and the connector (tongue) plate will disconnect from the buckle.

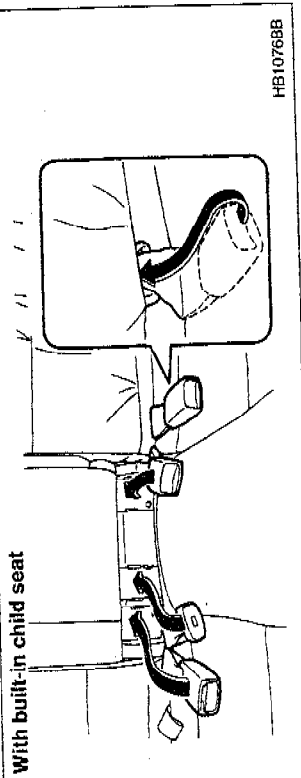
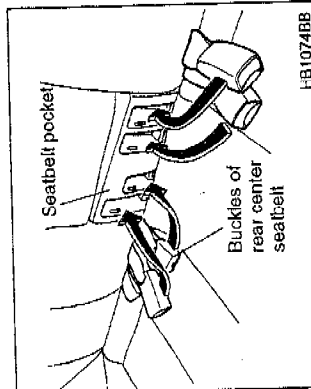


2. Allow the retractor to roll up the belt. You should hold the webbing end and guide it back into the retractor while it is rolling up. Neatly

store the tongue plates in the recess in the retractor and then insert the connector (tongue) plate into the slot located at the front of the recess.

NOTE

When folding down the rear seat cushion, store the seatbelts in the seatbelt pocket to prevent them falling below the cushion.



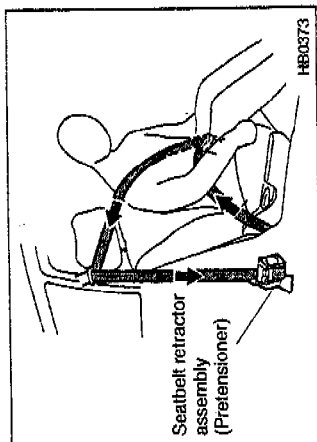
■ Seatbelt maintenance

⚠ CAUTION

- Keep the belts free of polishes, oils, chemicals and particularly battery acid.
- Never attempt to make modifications or changes that will prevent the seatbelt from operating properly.

To clean the seatbelts, use a mild soap and lukewarm water. Never bleach or dye the belts because this could seriously affect their strength. Inspect the seatbelts and attachments including the webbing and all hardware periodically for cracks, cuts, gashes, tears, damage, loose bolts or worn areas. Replace the seatbelts even if only minor damage is found.

Front seatbelt pretensioners



The driver's and front passenger's seatbelts have a seatbelt pretensioner. The seatbelt pretensioners are designed to be activated in the event of an accident involving a moderate to severe frontal collision.

The pretensioner sensor also serves as a SRS frontal airbag sensor. If the sensor detects a certain predetermined amount of force during a frontal collision, the front seatbelt is quickly drawn back in by the retractor to take up the slack so that the belt more effectively restrains the front seat occupant.

When a seatbelt pretensioner is activated, an operating noise will be heard and a small amount of smoke will be released. These occurrences are normal and not harmful. This smoke does not indicate a fire in the vehicle.

Once the seatbelt pretensioner has been activated, the seatbelt retractor remains locked. Consequently, the seatbelt can not be pulled out and retracted.

NOTE

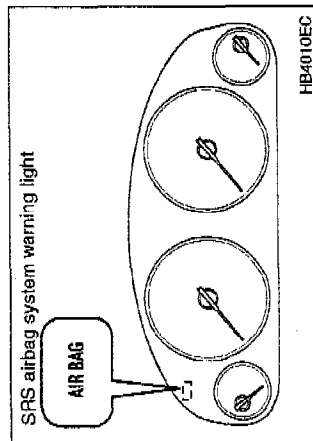
- Seatbelt pretensioners are not designed to activate in minor frontal impacts, in side or rear impacts or in roll-over accidents.
- The driver's seat and passenger's seat pretensioners and frontal airbag operate simultaneously.
- Pretensioners are designed to function on a one-time-only basis. In the event that a pretensioner is activated, both the driver's and front passenger's seatbelt retractor assemblies must be re-

- CONTINUED -

placed and only by an authorized SUBARU dealer. When replacing seatbelt retractor assemblies, use only genuine SUBARU parts.

- If either front seatbelt does not retract or cannot be pulled out due to a malfunction or activation of the pretensioner, contact your SUBARU dealer as soon as possible.
- If the front seatbelt retractor assembly or surrounding area has been damaged, contact your SUBARU dealer as soon as possible.
- When you sell your vehicle, we urge you to explain to the buyer that it has seatbelt pretensioners by alerting him to the contents of this section.

▼ System monitors



A diagnostic system continually monitors the readiness of the seatbelt pretensioner while the vehicle is being driven. The seatbelt pretensioners share the control module with the airbag system. Therefore, if any malfunction occurs in a seatbelt pretensioner, the SRS airbag system warning light will illuminate. The SRS airbag system warning light will show normal system operation by lighting for about 6 seconds when the ignition key is turned to the "ON" position.

The following components are monitored by the indicator:

- Front sub sensor (Right hand side)
- Front sub sensor (Left hand side)
- Airbag control module (including impact sensors)

- Seatbelt pretensioner (Driver's side)
- Seatbelt pretensioner (Passenger's side)
- All related wiring

In the event of a malfunction indicated by any of following, the vehicle should be taken promptly to your nearest SUBARU dealer to have the system checked. Unless checked and repaired, the seatbelt pretensioners and airbags will not function reliably:

- Flashing or flickering of the indicator light.
- No illumination of the warning light when the ignition switch is first turned to the "ON" position.
- Continuous illumination of the warning light.
- Illumination of the warning light while driving.

▼ System servicing

⚠ WARNING

- When discarding a seatbelt retractor assembly or scrapping the entire car damaged by a collision, consult your SUBARU dealer.
- Tampering with or disconnecting the system's wiring could result in accidental activation of the seatbelt pretensioner and/or airbag or could make the system inoperative, which may result in serious injury. The wiring harnesses of the seatbelt pretensioner and SRS airbag systems are covered with yellow insulation and the connectors of the system are yellow for easy identification. Do not use electrical test equipment on any circuit related to the seatbelt pretensioner and airbag systems. For required servicing of the seatbelt pretensioner, see your nearest SUBARU dealer.

⚠ CAUTION

The front sub sensors are located in both front fenders and the airbag control module including the impact sensors is located under the center console. If you need service or repair in those areas or near the front seatbelt retractors, we recommend that you have an authorized SUBARU dealer perform the work.

- CONTINUED -

NOTE

If the front part of the vehicle is damaged in an accident to the extent that the seatbelt pretensioner does not operate, contact your SUBARU dealer as soon as possible.

▼ Precautions against vehicle modification

CAUTION

Do not perform any of the following modifications. Such modifications can interfere with proper operation of the seatbelt pretensioners.

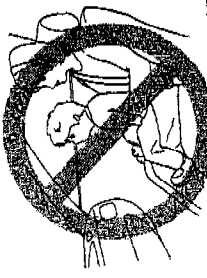
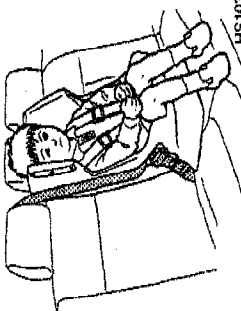
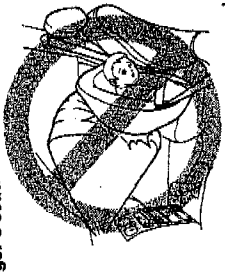
- Attachment of any equipment (bush bar, winches, snow plow, skid plate, etc.) other than SUBARU genuine accessory parts to the front end.
- Modification of the suspension system or front end structure.
- Installation of a tire of different size and construction from the tires specified on the tire placard attached to the door jamb.

Always consult your SUBARU dealer if you want to install any accessory parts to your vehicle.

Child restraint systems

WARNING

- Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision, because the child will be caught between the passenger and objects inside the vehicle. Additionally, holding a child in your lap or arms in the front seat exposes that child to another serious danger. Since the SRS airbag deploys with considerable speed and force, the child could be injured or even killed.
 - Put children aged 12 and under in the rear seat properly restrained at all times. The SRS airbag deploys with considerable speed and force and can injure or even kill children, especially if they are 12 years of age and under and are not restrained or properly restrained. Because children are lighter and weaker than adults, their risk of being injured from deployment is greater.
- For that reason, be sure to secure ALL types of child restraint devices (including forward-facing child seats) in the REAR seats at all times. You should choose a restraint device which is appropriate for the child's age, height and weight. According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.
- **SINCE YOUR VEHICLE IS EQUIPPED WITH A PASSENGER'S SRS AIRBAG, DO NOT INSTALL A REARWARD FACING CHILD SAFETY SEAT IN THE FRONT PASSENGER'S SEAT. DOING SO RISKS SERIOUS INJURY OR DEATH TO THE CHILD BY PLACING THE CHILD'S HEAD TOO CLOSE TO THE SRS AIRBAG.**
 - Children should be properly restrained in the rear seat at all times. Never allow a child to stand up, or to kneel on the front passenger's seat. The SRS airbag deploys with considerable force and can injure or even kill the child.

⚠ Never hold a child on your lap or in your arms in the front passenger's seat or any other seat.  HB03008	Secure child restraint devices in the REAR seat at all times.  HS1031BB
⚠ Never install rearward facing child safety seat in the front passenger's seat.  HB03006	⚠ Never allow a child to stand up, or to kneel on the front passenger's seat or any other seat.  HB03007

⚠ WARNING

- Child restraint systems and seatbelts can become hot in a vehicle that has been closed up in sunny weather; they could burn a small child. Check the child restraint system before you place a child in it.
- Do not leave an unsecured child restraint system in your vehicle. Unsecured child restraint systems can be thrown around inside of the vehicle in a sudden stop, turn or accident; it can strike and injure vehicle occupants as well as result in serious injuries or death to the child.

Infants and small children should always be placed in an infant or child restraint system in the rear seat while riding in the vehicle. You should use an infant or child restraint system that meets Federal Motor Vehicle

Safety Standards or Canada Motor Vehicle Safety Standards, is compatible with your vehicle and is appropriate for the child's age and size. All child restraint systems are designed to be secured in vehicle seats by lap belts or the lap belt portion of a lap/shoulder belt (except those covered under the section in this manual, entitled "Instruction of child restraint systems by use of lower and tether anchorages").

Children could be endangered in an accident if their child restraints are not properly secured in the vehicle. When installing the child restraint system, carefully follow the manufacturer's instructions.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

All U.S. states and Canadian provinces require that infants and small children be restrained in an approved child restraint system at all times while the vehicle is moving.

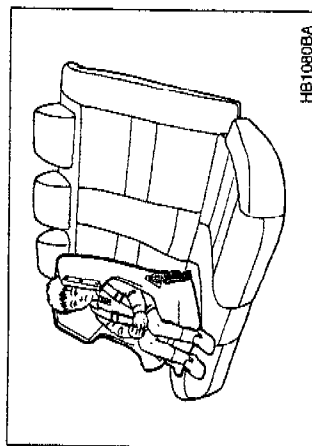
▼ Installing child restraint systems with seatbelt

NOTE

When the child restraint system is no longer in use, remove it and restore the ELR function of the retractor. That function is restored by allowing the seatbelt to retract fully.

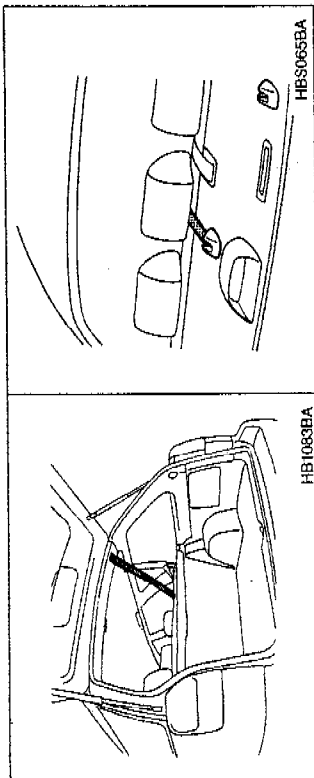
⚠ CAUTION

When you install a child restraint system, follow the manufacturer's instructions supplied with it. After installing the child restraint system, check to ensure that it is held securely in position. If it is not held tight and secure, the danger of your child suffering personal injury in the event of an accident may be increased.



1. Set the child restraint system in the seating position.
2. Run the lap and shoulder belt through or around the child restraint system following the instructions provided by its manufacturer. If the shoulder belt goes in front of the child's face or neck, put it behind the child restraint system.
3. Insert the tongue plate into the buckle.
4. Take up the slack in the lap belt.
5. Pull out the seatbelt fully from the retractor to change the retractor over from the Emergency Locking Retractor (ELR) to the Automatic Locking Retractor (ALR) function. Then, allow the belt to rewind into the retractor. As the belt is rewinding, clicks will be heard which indicate the retractor functions as ALR.
6. Before having a child sit in the child restraint system, move it back and forth to check if it is firmly secured. Sometimes a child restraint can be more firmly secured by pushing it down into the seat cushion and then tightening the seatbelt.
7. Pull at the shoulder portion of the belt to confirm that it cannot be pulled out (ALR properly functioning).

If the child restraint system requires a top tether, latch the hook onto the top tether anchor and tighten the top tether. See the "Top tether anchorages" for additional instructions.

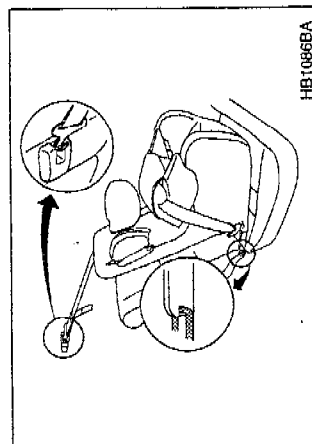


8. To remove the child restraint system, press the release button on the seatbelt buckle and allow the belt to retract completely. The belt will return to the ELR mode.

If you have any question concerning this type of child restraint system, ask your SUBARU dealer.

▼ Installation of child restraint systems by use of lower and tether anchorages

Some types of child restraint systems can be installed on the rear seat of your vehicle without use of the seatbelts. Such child restraint systems are secured to the dedicated anchorages provided on the vehicle body.



Your vehicle is equipped with four lower anchorages (bars) and three upper anchorages (tether anchorages) for accommodating such child restraint systems.

- CONTINUED -

CAUTION

When you install a child restraint system, follow the manufacturer's instructions supplied with it. After installing the child restraint system, check to ensure that it is held securely in position. If it is not held tight and secure, the danger of your child suffering personal injury in the event of an accident may be increased.

1. Use the "Child" marks to locate the two lower anchorages (bars) for the position where you want to install the child restraint system.

NOTE

On a vehicle with a built-in child restraint, if you are required to use a child restraint system and the built-in child restraint at the same time, it is recommended that you install the child restraint system on the rear left side (behind the driver's seat). The built-in child restraint is located toward the right side. For this reason, certain child restraint systems will be tilted if installed on the right side and they cannot be properly secured.

2. While following the instructions supplied by the child restraint system manufacturer, connect the connectors of the child restraint system to the lower anchorages.

When the connectors are fastened, make sure that the adjacent seatbelts are not caught.

If your child restraint system is of a flexible attachment type (which uses tether straps to connect the child restraint system proper to the lower anchorages), firmly tighten the straps after connecting the connectors.

3. Connect the top tether hook to the tether anchorage and firmly tighten the tether.

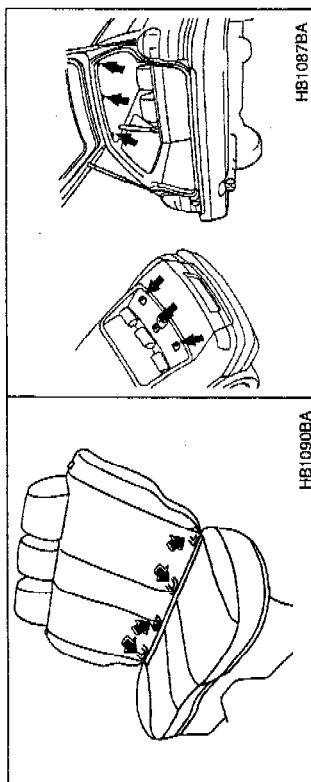
For information on how to set the top tether, read the following "Top tether anchorages".

4. Before seating a child in the child restraint system, try to move seat back and forth to verify that it is held securely in position.

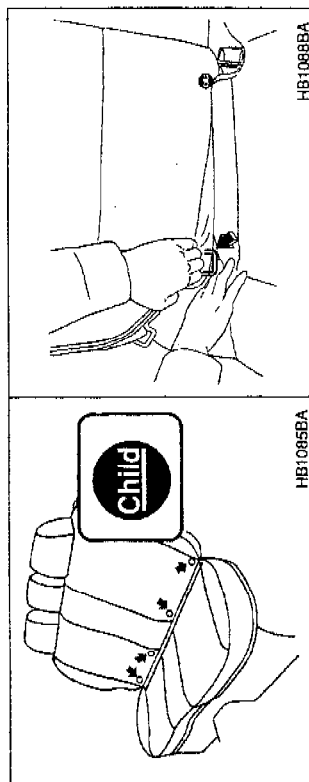
If you have any question concerning this type of child restraint system, ask your SUBARU dealer.

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1-39



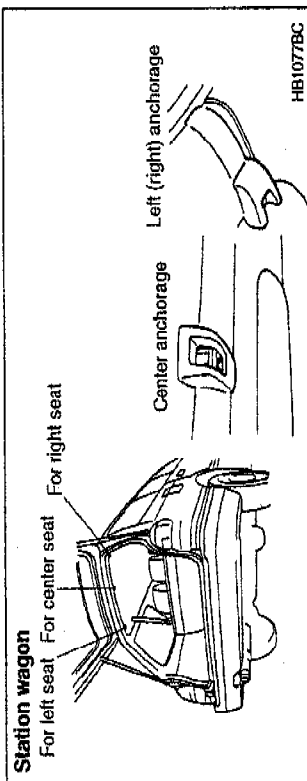
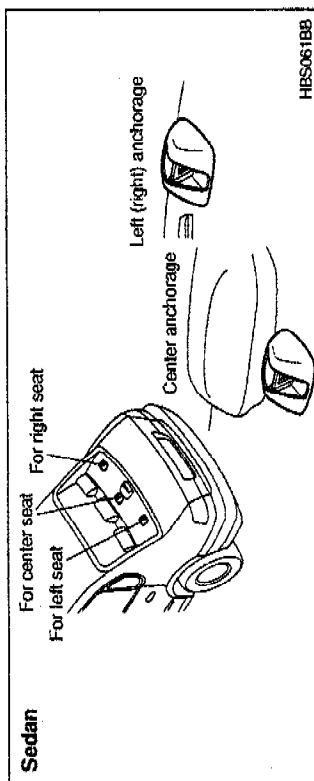
The lower anchorages (bars) are used for installing a child restraint system only on the rear seat window-side seating positions. For each window-side seating position, two lower anchorages are provided. The tether anchorages (upper anchorages) are provided for all the seating positions (middle and both window-side ones) of the rear seat.



You will find marks "Child" at the bottom of the rear seat seatbacks. These marks indicate the positions of the lower anchorages (bars). Each lower anchorage is located where the seat cushion meets the seatback.

Top tether anchorages

Anchorages location



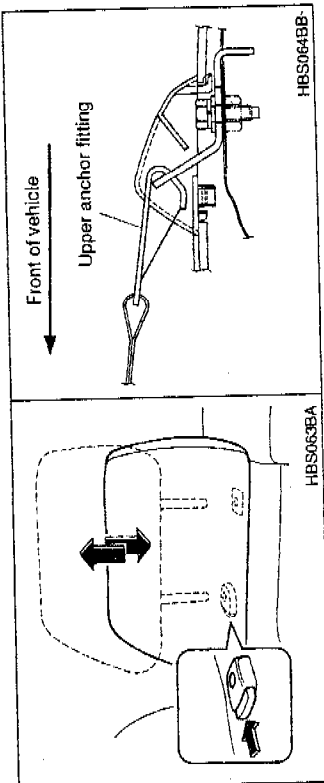
Three anchorages, i.e., ones for the right, center and left positions, are already installed on the rear parcel shelf (on Sedan) or on the rear edge of the roof (on Station wagon).

To hook the top tether

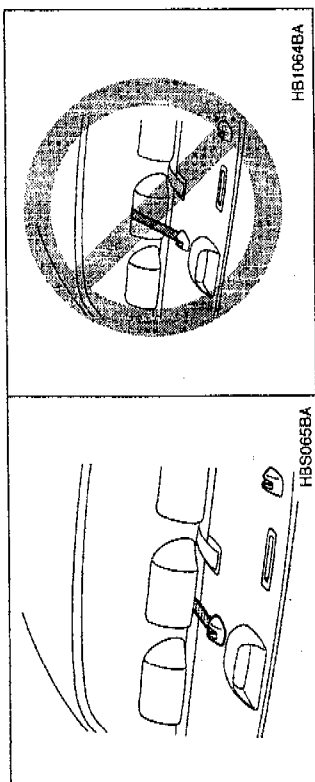
Sedan

CAUTION

When the child restraint system is to be secured using the top tether, always pass the top tether under the headrest between the headrest stay posts. If the top tether is routed over the headrest, it may not be properly tensioned, resulting in an unsteady child restraint system.



1. Remove the headrest at the seating position where the child seat has been installed with the seatbelt or lower anchorages; lift up the headrest while pressing the release button.
2. Fasten the top tether hook of the child safety to the appropriate upper anchorage.

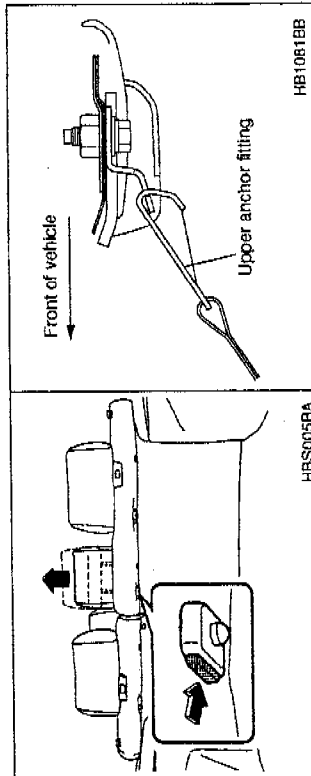


3. Tighten the top tether securely.
4. Reinstall the headrest in such a way that the top tether is routed between the headrest stay posts.

▽ Station wagon

CAUTION

Always remove the headrest when mounting a child restraint system with a top tether. Otherwise, it may happen that the top tether cannot be fastened tightly.

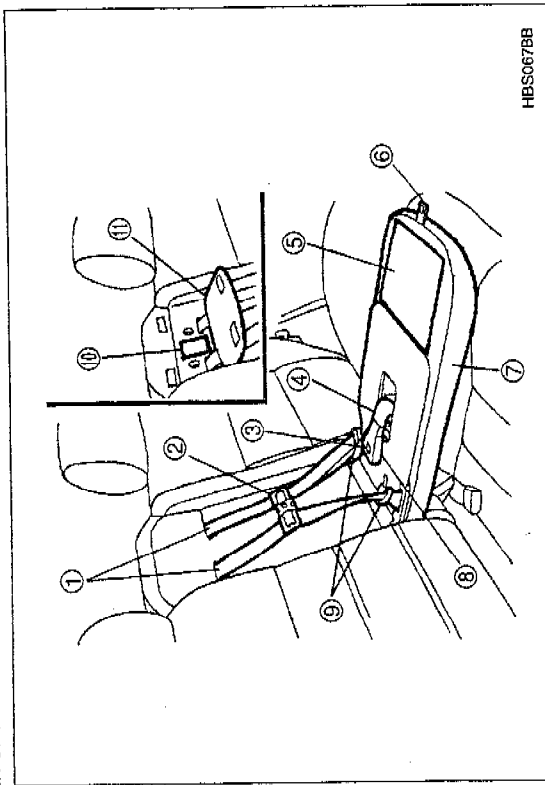


1. Remove the headrest (if so equipped) at the seating position where the child restraint system has been installed with the seatbelt or lower anchorages; lift up the headrest while pressing the release but-

- ton. Store the headrest in the cargo area. Avoid placing the headrest in the passenger compartment to prevent it from being thrown around in the passenger compartment in a sudden stop or a sharp turn.
2. Fasten the top tether hook of the child restraint system to the appropriate upper anchorage.
3. Tighten the top tether securely.

Built-in child restraint (if equipped)

Refer to the diagram below to become familiar with the parts of this built-in child restraint.



- | | |
|---------------------|---|
| ① Lap-shoulder belt | ⑦ Child restraint cushion |
| ② Chest clip | ⑧ Belt buckle |
| ③ Release button | ⑨ Tongue plates |
| ④ Crotch belt | ⑩ Maximum shoulder height indicator label |
| ⑤ Warning label | ⑪ Removable pad |
| ⑥ Fastening strap | |

- CONTINUED -

The child restraint is designed for use only by children who weigh between 9.05 kg (20 lb.) and 18.09 kg (40 lb.), whose height is 110 cm (44.3 in.) or less, who are capable of sitting upright alone and whose shoulder height is below the shoulder belt slot.

The child should also be at least one year old. It is important to use a rear-facing child restraint until the child is about a year old. A rear-facing restraint gives the child's head, neck and body the support they would need in a collision. See the "Child restraint systems" section in this manual.

⚠ WARNING

Do not use the built-in child restraint for infants who require a rear-facing child restraint. In an accident, serious crippling injury or death could result if the built-in restraint is used for the infant.

If the child exceeds the maximum weight and height capacities of the built-in child restraint (maximum weight of 18.09 kg (40 lb.) and maximum height of 110 cm (44.3 in.)), do not use the built-in child restraint. The child should use either the vehicle's seatbelts or an approved aftermarket booster seat, if necessary.

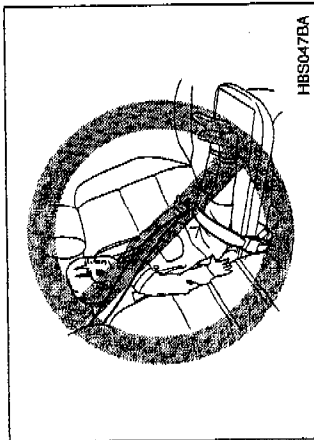
The built-in child restraint system conforms to Federal Motor Vehicle Safety Standard No. 213 and Canada Motor Vehicle Safety Standard No. 213.4.

According to accident statistics, children are safer when properly restrained in the rear seating position than in the front seating position. Children aged 12 and under should not sit in the front seat of a car equipped with a passenger's SRS airbag.

⚠ WARNING

- Make sure the child is securely restrained with the built-in child restraint.
- Failure to follow the manufacturer's instructions on the use of this child restraint system can result in your child striking the vehicle's interior during a sudden stop or crash.

- Snugly adjust the belts provided with this child restraint around your child.
- The built-in child restraint should be used for only one child at a time. Using it for two or more children at the same time could result in serious injury or death in an accident.
- Do not use the center lap and shoulder belt with the child restraint. A child using the center seatbelt could slide forward and out from under the seatbelt in a sudden stop or an accident, resulting in serious injury to the child.



HBS047DA

⚠ WARNING

- Do not use another child restraint system over the opened built-in child restraint. Because a child restraint system cannot be secured on the built-in restraint cushion, the restraint could fall down during sudden braking, a sharp turn or in an accident, causing serious injury to the child in it.
- Always keep the child restraint equipped rear seatback locked securely in place when the child restraint is in use. Otherwise, in an accident, serious injury or death to a child could result if the seatback falls down.
- The built-in child restraint, especially metallic parts, can become hot in a vehicle that has been closed up in sunny weather; they could burn a small child. Check the child restraint before you place a child in it.

- CONTINUED -

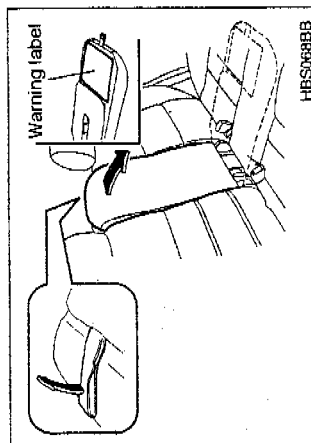
CAUTION

Be careful not to damage the belt webbing or hardware. Take care that they do not get caught or pinched in the seatback.

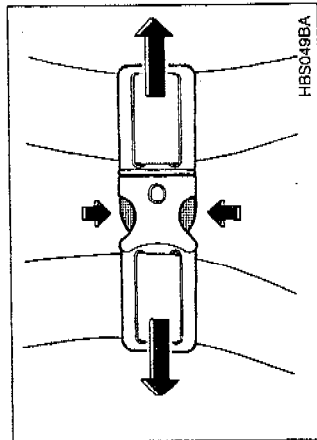
The lap-shoulder belts of the built-in child restraint are equipped with an automatic locking retractor (ALR) that automatically locks when both tongue plates are latched into the belt buckle and the belts retract.

▼ Placing a child in the built-in child restraint

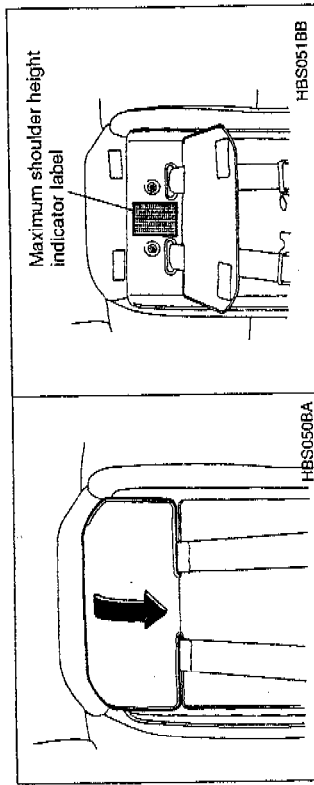
1. Before using the built-in child restraint, make sure the vehicle's rear seatback is locked securely in place.



2. Unfasten the fastening strap and lower the child restraint cushion.
3. Read the information and warnings on the child restraint cushion. Check the child's size and weight to be sure the child is not too small or too large for the child restraint.



4. If the left and right halves of the chest clip are fastened together, separate them by squeezing the release tabs.



5. Pull down the seatback part of the removable pad. Make sure the child's shoulders are at or below the maximum shoulder height indicated on the label attached to the seatback.

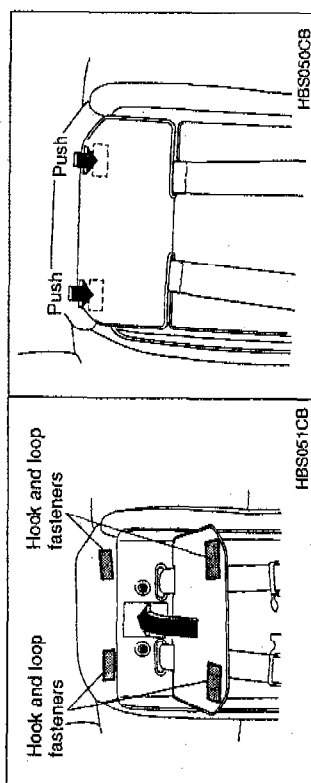
The child restraint pad is attached by hook and loop fasteners (Velcro®).

WARNING

If the child's shoulders are above the maximum shoulder height indicated on the label, do not use the built-in child restraint. If used, the built-in restraint cannot restrain the child properly, which may result in serious injury to the child in an accident.

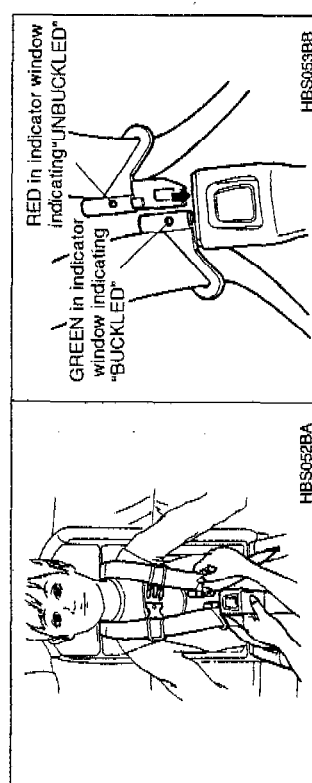
- CONTINUED -

The child should use either the vehicle's seatbelts or an approved aftermarket booster seat, if necessary.



6. Press the removable pad against the hook and loop fasteners (Velcro®) and install the pad to the seatback. Make sure the belts go through the slots in the pad.

WARNING
If you remove the removable pad for cleaning or other purposes, do not use the built-in child restraint. If an accident occurs, the absence of the pad can increase the risk or severity of injury to the child.



7. Sit the child on the child restraint.

8. Pull out one side of the lap-shoulder belt and place it over the child's shoulder. Insert the tongue plate into the buckle until it clicks. If both sides of the belt are pulled out, the belts will lock. If the belts lock, allow them to fully retract to unlock the retractor. Then pull out only one side of the belt.
9. Pull out the other side of lap-shoulder belt and place it over the child's shoulder in a single motion. Insert the tongue plate into the buckle until it clicks. Once the belt retracts even slightly, the ALR will be activated and both belts will lock.
10. If the belt stops before the tongue reaches the buckle, allow both belts to fully retract to unlock the retractor and then separately pull out the belts and buckle them again.
10. Allow both belts to tighten snugly against the child's shoulders.

Because of the ALR function, the belts cannot be pulled out simultaneously from the retractor.

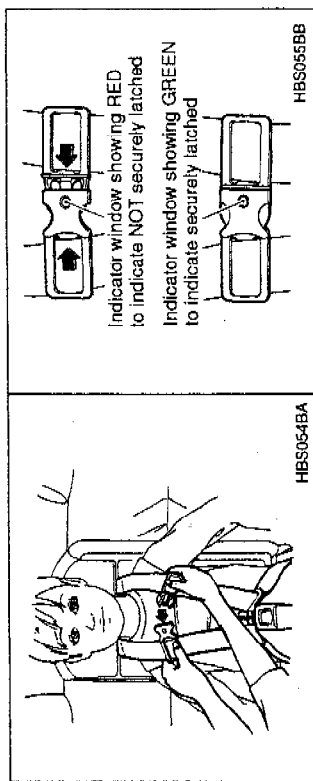
The color green must appear in the indicator window on each tongue when buckled. If the color red appears in the window, the tongue is not buckled.

WARNING

After inserting the tongue plates, make sure the tongue plates and buckle are locked and that the lap-shoulder belts and crotch belt are not twisted. If the restraint is used with the tongues and buckle not locked and/or with the belts twisted, the risk or severity of injury to the child could increase in an accident.

CAUTION

If the child restraint belts do not function normally, contact your authorized SUBARU dealer immediately.



11. Fasten the right and left halves of the chest clip at the level of the child's armpits. The color green must appear in the indicator window when fastened. If the color red appears in the window, the clip is not securely latched.

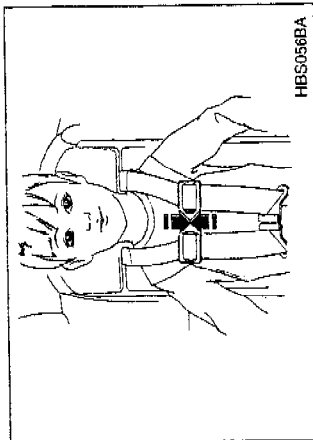
The purpose of the clip is to keep the shoulder belts positioned correctly on the shoulders.

WARNING
An unfastened chest clip will not help keep the belts on the child's shoulders. In a sudden stop or in an accident, the child may go too far forward and be seriously injured. Make sure the chest clip is fastened at all times.

12. If the belts are loose, pull down on lap parts of the belts to take in the slack of the lap and shoulder belts.

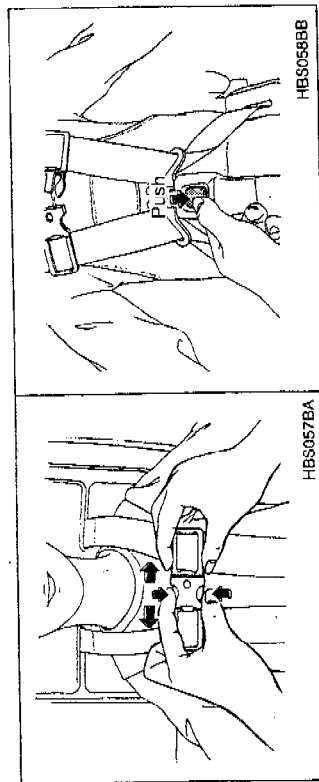
13. Pull the belts toward you to make sure the belt buckle is properly fastened and the retractor is locked.

14. If the belts become too tight, unbuckle the buckle and allow both belts to fully retract to unlock the retractor, then reinsert both tongue plates.



15. Move the chest clip to the middle of the child's chest so that the position of the shoulder portion of each belt is centered on the child's shoulder. The belts should be away from the child's face and neck, but not falling off the child's shoulders.

▼ Removing the child from the built-in child restraint

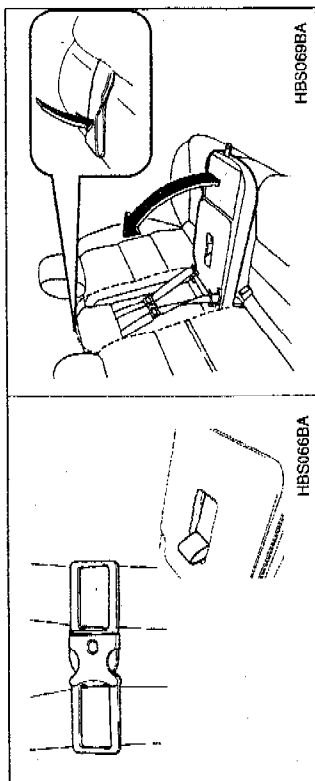


1. Disconnect the chest clip by squeezing the release tabs together and pulling the two sides apart.
2. Press the release button on the buckle.
3. Move both belts off the child's shoulders.
Because the ALR is activated, hold either the left or right shoulder belt out fully while helping slide the child's arms out of the belts.
4. Allow the belts to fully retract.

– CONTINUED –
1-51

▼ Storing the built-in child restraint

Always properly store the built-in child restraint before using the regular lap-shoulder belt for the rear-center seating position.



1. Fasten the chest clip.
2. Stow the belt buckle into the recess of the child restraint cushion.
3. Fold the child restraint cushion up into the seatback.
4. Fasten the fastening strap on to the seatback by pressing it against the hook and loop fasteners (Velcro®).

▼ Replacing restraint system parts after a collision

⚠ WARNING

Replace the built-in child restraint equipped vehicle seatback assembly if the child restraint was in use during a serious collision. The built-in restraint may be severely weakened. In a subsequent accident, it might not be able to provide adequate protection. The entire assembly should be replaced even if damage is not obvious.

▼ Maintenance

⚠ CAUTION

- Keep the belts free of polishes, oils, chemicals and particularly battery acid as they may weaken the belts.
- Never attempt to make modifications or changes that will prevent the built-in child restraint from operating properly.

The built-in child restraint may be cleaned with mild soap and lukewarm water. Do not use household cleaners. They may weaken the belts or damage plastic parts.

Keep the built-in child restraint belts clean and dry. Clean the belts with only a mild soap and lukewarm water. Never bleach or dye the belts because this could seriously affect their strength.

The removable pad is attached to the child restraint cushion and seat back with hook and loop fasteners (Velcro®). It is possible to remove the pad, hand wash it in cold water and dry it in the shade. Never bleach or iron the pad.

Periodically inspect the belts, tongue plates, buckle, clip, retractor and anchorages of the built-in child restraint. If these parts are damaged and/or do not function properly, contact your authorized SUBARU dealer for replacement parts.

*SRS airbag (Supplemental Restraint System airbag)

*SRS: This stands for supplemental restraint system. This name is used because the airbag system supplements the vehicle's seatbelts.

■ Vehicle with driver's and front passenger's SRS airbags and lap/shoulder restraints

⚠ WARNING

• To obtain maximum protection in the event of an accident, the driver and all passengers in the vehicle should always wear seatbelts when the vehicle is moving. The SRS airbag is designed only as a supplement to the primary protection provided by the seatbelt. It does not do away with the need to fasten seatbelts. In combination with the seatbelts, it offers the best combined protection in case of a serious accident.

Not wearing a seatbelt increases the chance of severe injury or death in a crash even when the car has the SRS airbag.

For instructions and precautions concerning the seatbelt system, see the "Seatbelts" sections in this chapter.

• Do not sit or lean unnecessarily close to the SRS airbag. Because the SRS airbag deploys with considerable speed – faster than the blink of an eye – and force to protect in high speed collisions, the force of an airbag can injure an occupant whose body is too close to SRS airbag.

It is also important to wear your seatbelt to help avoid injuries that can result when the SRS airbag contacts an occupant not in proper position such as one thrown forward during pre-accident braking.

Even when properly positioned, there remains a possibility that an occupant may suffer minor injury such as abrasions and bruises to the face or arms because of the SRS airbag deployment force.

• The SRS airbags deploy with considerable speed and force. Occupants who are out of proper position when the SRS airbag deploys could suffer very serious injuries. Because the SRS airbag needs enough space for deployment, the driver should always sit upright and well back in the seat as far from the steering wheel as practical while still maintaining full vehicle control and the front passenger should move the seat as far back as possible and sit upright and well back in the seat.

• Do not place any objects over or near the SRS airbag cover or between you and the SRS airbag. If the SRS airbag deploys, those objects could interfere with its proper operation and could be propelled inside the car and cause injury.

• Put children aged 12 and under in the rear seat properly restrained at all times. The SRS airbag deploys with considerable speed and force and can injure or even kill children, especially if they are 12 years of age and under and are not restrained or improperly restrained. Because children are lighter and weaker than adults, their risk of being injured from deployment is greater.

For that reason, we strongly recommend that ALL children (including those in child seats and those that have outgrown child restraint devices) sit in the REAR seat properly restrained at all times in a child restraint device or in a seatbelt, whichever is appropriate for the child's age, height and weight.

Secure ALL types of child restraint devices (including forward facing child seats) in the REAR seats at all times.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

For instructions and precautions concerning the child restraint system, see the "Child restraint systems" section in this chapter.

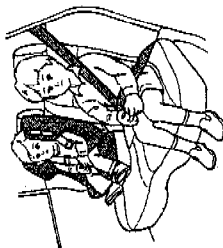
• NEVER INSTALL A REARWARD FACING CHILD SEAT IN THE FRONT SEAT. DOING SO RISKS SERIOUS INJURY OR DEATH TO THE CHILD BY PLACING THE CHILD'S HEAD TOO CLOSE TO THE SRS AIRBAG.

• Never allow a child to stand up, or to kneel on the front passenger's seat, or never hold a child on your lap or in your arms.

– CONTINUED –

The SRS airbag deploys with considerable force and can injure or even kill the child.

Put children in the REAR seat properly restrained at all times.



HB0291

CAUTION

- When the SRS airbag deploys, some smoke will be released. This smoke could cause breathing problems for people with a history of asthma or other breathing trouble. If you or your passengers have breathing problems after SRS airbag deploys, get fresh air promptly.
- A deploying SRS airbag releases hot gas. Occupants could get burnt if they come into direct contact with the hot gas.

The supplemental restraint system (SRS) consists of two airbags (driver's and front passenger's **frontal** airbags) or four airbags (driver's and front passenger's **frontal** airbags and driver's and front passenger's **side** airbags).

These SRS airbags are designed only as a supplement to the primary protection provided by the seatbelt.

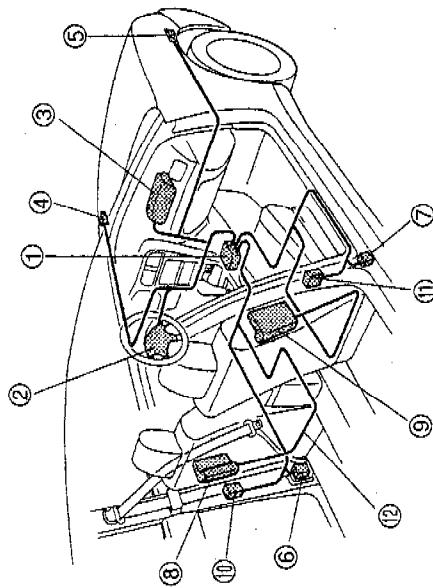
The system also controls front seatbelt pretensioners. For operation, instructions are precautions concerning the seatbelt pretensioner, see the "Front seatbelt pretensioner" section in this chapter.

Seat, seatbelt and SRS airbags

NOTE

When you sell your vehicle, we urge you to explain to the buyer that it is equipped with SRS airbags by alerting him to the applicable section in this owner's manual.

Components



HB1079DB

- | | |
|--|---|
| ① Airbag control module (including impact sensors) | ⑦ Seatbelt pretensioner (passenger's side) |
| ② Airbag module (driver's side) | ⑧ Side airbag module (driver's side — if equipped) |
| ③ Airbag module (passenger's side) | ⑨ Side airbag module (passenger's side — if equipped) |
| ④ Front sub sensor (left hand side) | ⑩ Side airbag sensor (driver's side) |
| ⑤ Front sub sensor (right hand side) | ⑪ Side airbag sensor (passenger's side) |
| ⑥ Seatbelt pretensioner (driver's side) | ⑫ Airbag wiring (yellow) |

— CONTINUED —
1-57

■ SRS frontal airbag

⚠ WARNING

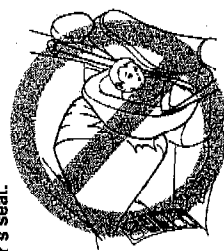
• NEVER INSTALL A REARWARD FACING CHILD SAFETY SEAT IN THE FRONT SEAT. DOING SO RISKS SERIOUS INJURY OR DEATH TO THE CHILD BY PLACING THE CHILD'S HEAD TOO CLOSE TO THE SRS AIRBAG.

• Never allow a child to stand up, or to kneel on the front passenger's seat, or never hold a child on your lap or in your arms. The SRS airbag deploys with considerable force and can injure or even kill the child.

• The SRS airbag deploys with considerable speed and force. Occupants who are out of proper position when the SRS airbag deploys could suffer very serious injuries. Because the SRS airbag needs enough space for deployment, the driver should always sit upright and well back in the seat as far from the steering wheel as practical while still maintaining full vehicle control and the front passenger should move the seat as far back as possible and sit upright and well back in the seat.

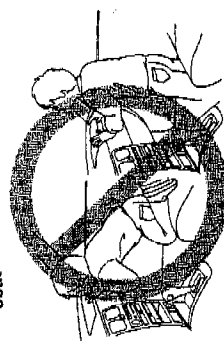
It is also important to wear your seatbelt to help avoid injuries that can result when the SRS airbag contacts an occupant not in proper position such as one thrown toward the front of the car during pre-accident braking.

⚠ Never install rearward facing child restraint system in the front passenger's seat.

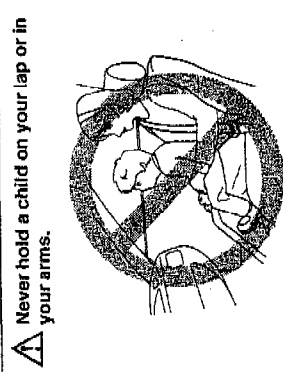


HB0306

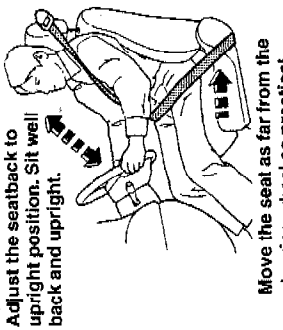
⚠ Never allow a child to stand up, or to kneel on the front passenger's seat.



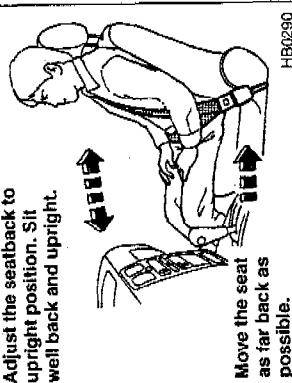
HB0307



HB0308



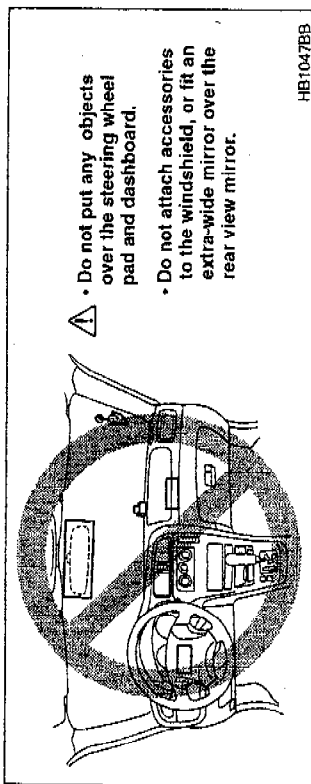
HS0293



HB0290

⚠ WARNING

- Do not put any objects over the steering wheel pad and dashboard. If the SRS frontal airbag deploys, those objects could interfere with its proper operation and could be propelled inside the vehicle and cause injury.
- Do not attach accessories to the windshield, or fit an extra-wide mirror over the rear view mirror. If the SRS airbag deploys, those objects could become projectiles that could seriously injure vehicle occupants.



- Do not put any objects over the steering wheel pad and dashboard.
- Do not attach accessories to the windshield, or fit an extra-wide mirror over the rear view mirror.

HB1047BB

The driver's SRS frontal airbag is stowed in the center portion of the steering wheel. The passenger's SRS frontal airbag is stowed near the top of the dashboard under an "SRS AIRBAG" mark.

In a moderate to severe frontal collision, the driver's and front passenger's SRS frontal airbags deploy and supplement the seatbelts by reducing the impact on the driver's and front passenger's head and chest.

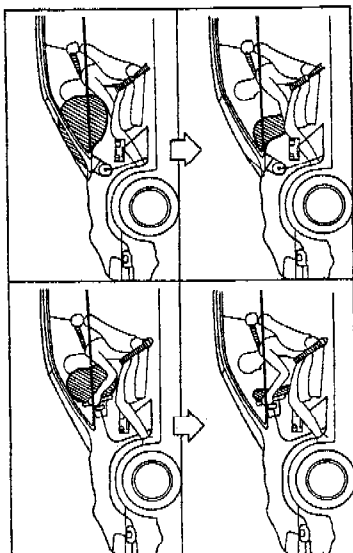
▼ Operation

⚠ CAUTION

Do not touch the SRS airbag system components around the steering wheel and dashboard with bare hands right after deployment. Doing so can cause burns because the components can be very hot as a result of deployment.

Seat, seatbelt and SRS airbags

Driver's side Passenger's side



SRS airbags deploy as soon as a collision occurs.

After deployment, SRS airbags start to deflate immediately so that the driver's vision is not obstructed.

OM-H0384

The SRS airbag can function only when the ignition switch is in the "ON" position.

If the front sub sensors inside the both front fenders and the impact sensors in the airbag control module detect a certain predetermined amount of force during a frontal collision, the control module sends signals to the frontal airbag modules instructing them to inflate the SRS frontal airbags. Then both airbag modules produce gas, which instantly inflates driver's and passenger's SRS frontal airbags. After the deployment, the SRS airbags immediately start to deflate so that the driver's vision is not obstructed. The time required from detecting impact to the deflating SRS airbag after deployment is shorter than the blink of an eye.

The front passenger's SRS frontal airbag deploys together with driver's SRS frontal airbag even when no one occupies the front passenger's seat.

When the SRS frontal airbags deploy, the driver's and front passenger's seatbelt pretensioners operate at the same time.

Although it is highly unlikely that the SRS airbag would activate in a non-accident situation, should it occur, the SRS airbag will deflate quickly, not obscuring vision and will not interfere with the driver's ability to maintain control of the vehicle.

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1-61

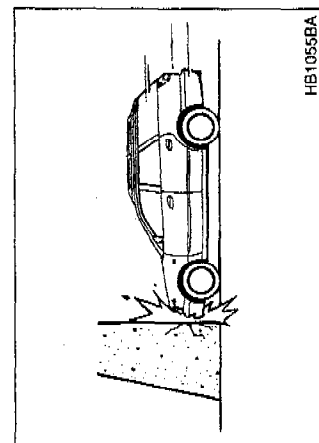
When the SRS airbag deploys, a sudden, fairly loud inflation noise will be heard and some smoke will be released. These occurrences are normal result of the deployment. This smoke does not indicate a fire in the vehicle.

The SRS frontal airbag is designed to deploy in the event of an accident involving a moderate to severe frontal collision. It is basically not designed to deploy in lesser frontal impacts because the necessary protection can be achieved by the seatbelt alone. Also, it is basically not designed to deploy in side or rear impacts or in roll-over accidents because deployment of the SRS frontal airbag would not help the occupant in those situations. The SRS airbag is designed to function on a one-time-only basis.

SRS airbag deployment depends on the level of force experienced in the passenger compartment during a collision. That level differs from one type of collision to another, and it may have no bearing on the visible damage done to the vehicle itself.

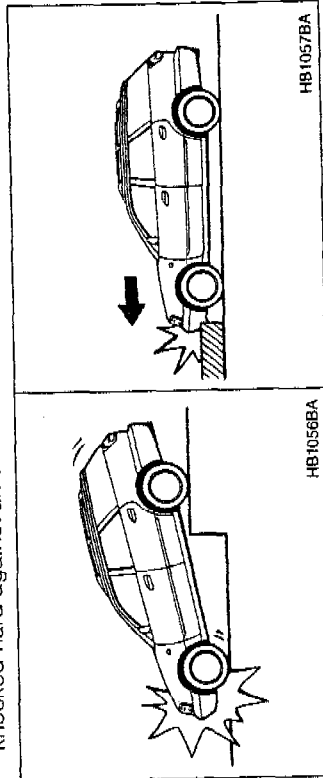
▽ Examples of accident in which the SRS frontal airbag will most likely deploy.

A head-on collision against a thick concrete wall at a vehicle speed of 12 to 19 mph (20 to 30 km/h) activates the SRS frontal airbag. The SRS frontal airbag will also be activated when the vehicle is exposed to a frontal impact similar in fashion and magnitude to the above-mentioned collision.



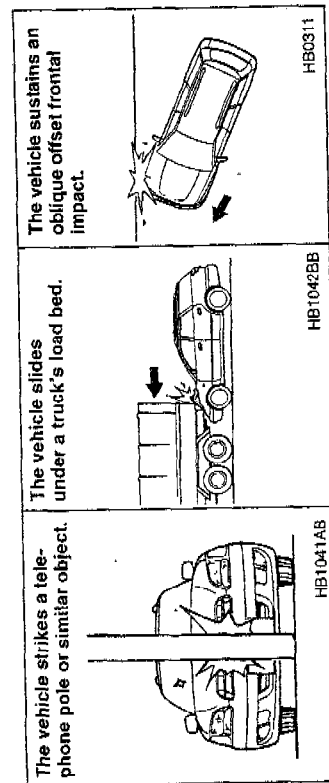
▽ Examples of the types of accidents in which it is possible that the SRS frontal airbag will deploy.

The SRS frontal airbag may be activated when the vehicle sustains a hard impact in the undercarriage area from the road surface (such as when the vehicle plunges into a deep ditch, is severely bumped or knocked hard against an obstacle on the road such as a curb).



▽ Examples of the types of accidents in which the SRS frontal airbag is unlikely to deploy.

There are many types of collisions which might not necessarily require SRS frontal airbag deployment. If the vehicle strikes an object, such as a telephone pole or sign pole, or if it slides under a truck's load bed, or if it sustains an oblique offset frontal impact, the SRS frontal airbag may not deploy depending on the level of accident forces involved.



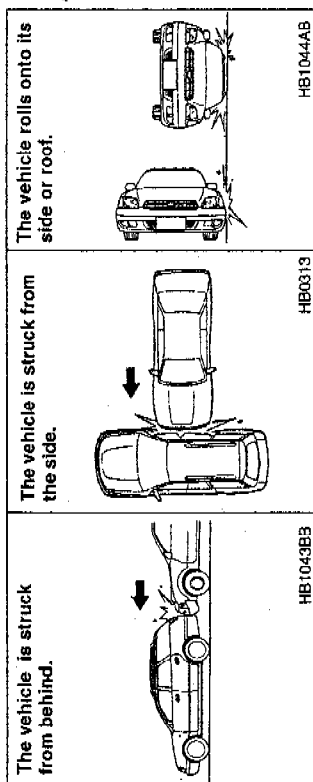
SRS side airbag (if equipped)

WARNING

- The SRS side airbag is designed as only a supplement to the primary protection provided by the seatbelt. It does not do away with the need to fasten seatbelts. It is also important to wear your seatbelt to help avoid injuries that can result when an occupant is not seated in a proper upright position.
- Do not sit or lean unnecessarily close to either front door. The SRS side airbag is stored in both front seat seatbacks next to the door, and it provides protection by deploying rapidly (faster than the blink of an eye) in the event of a side impact collision. However, the force of SRS side airbag deployment may cause injuries if your head or other body parts are too close to the SRS side airbag.
- Do not rest your arm on either front door or its internal trim. It could be injured in the event of SRS side airbag deployment.
- Never allow a child to kneel on the front passenger's seat facing the side window or to wrap his/her arms around the front seat seatback. In the event of an accident, the force of SRS side airbag deployment could seriously injure or even kill the child because his/her head or arms or other body parts are close to the side airbag. Since your vehicle is also equipped with a passenger's SRS frontal airbag, children aged 12 and under should be placed in the rear seat anyway and should be properly restrained at all times.

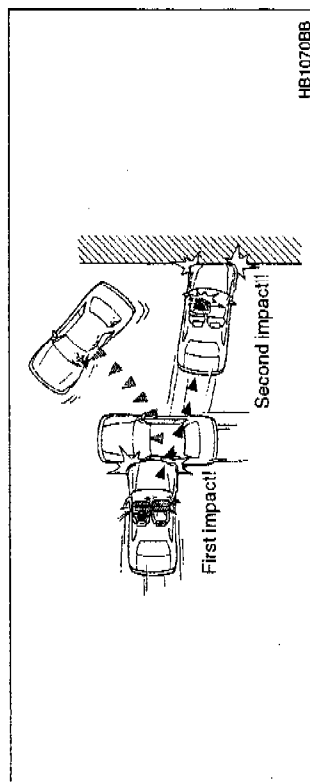
Examples of the types of accidents in which the SRS frontal airbag will basically not deploy.

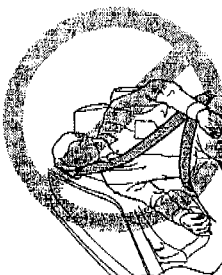
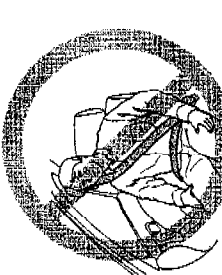
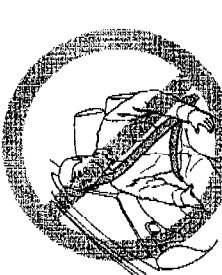
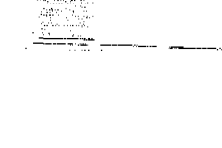
The SRS frontal airbag is basically not designed to deploy if the vehicle is struck from side or from behind, or if it rolls onto its side or roof, or if it is involved in a low-speed frontal collision.



In an accident where the vehicle is impacted more than once, the SRS frontal airbag deploys only once on the first impact.

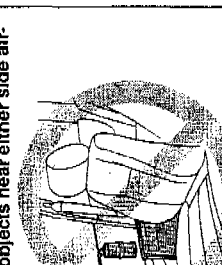
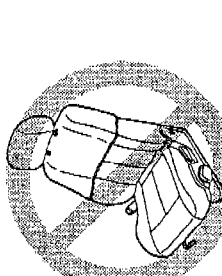
Example: In the case of a double collision, first with another vehicle, then against a concrete wall in immediate succession, the SRS frontal airbag is activated on the first impact but not on the second.



 Do not sit or lean unnecessary close to the front door.	 HB0352	 Do not rest your arm on either front door or its internal trim.	 HB0353
 Never allow a child to kneel on the front passenger's seat facing the side window.	 HB0354	 Never allow a child to wrap his/her arms around the front seatback.	 HB0355

WARNING

- Do not attach accessories to the door trim or near either SRS side airbags and do not place objects near the SRS side airbags. In the event of the SRS side airbag deployment, they could be propelled dangerously toward the vehicle's occupants and cause injuries.
- Do not put any kind of cover or clothes or other objects over either front seatback and do not attach labels or stickers to the front seat surface on or near the SRS side airbag. They could prevent proper deployment of the SRS side airbag, reducing protection available to the front seat's occupant.

 Do not put any kind of cover over either seatback.	 HB0366	 Do not attach accessories to the door trim or near either side airbag and do not place objects near either side airbag.	 HS0353
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The SRS side airbag is stored in the door side of each front seatback, which bears an "SRS AIRBAG" label. In a moderate to severe side impact collision, the SRS side airbag on the impacted side of the vehicle deploys between the occupant and the door panel and supplements the seatbelt by reducing the impact on the occupant's chest.

Operation

CAUTION

Do not touch the SRS side airbag system components around the front seatback with bare hands right after deployment. Doing so can cause burns because the components can be very hot as a result of deployment.

When the SRS side airbag deploys, a sudden, fairly loud inflation noise will be heard and some smoke will be released. These occurrences are normal result of the deployment. This smoke does not indicate a fire in the vehicle.

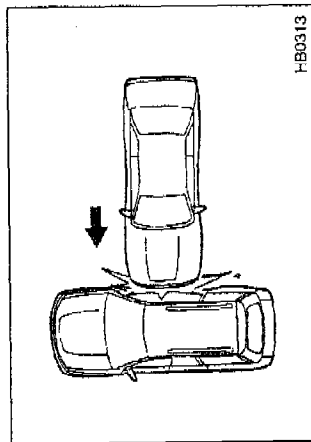
The SRS side airbag is designed to deploy in the event of an accident involving a moderate to severe side impact collision. It is basically not designed to deploy in lesser side impact. Also, it is basically not designed to deploy in frontal or rear impacts because SRS side airbag deployment would not help the occupant in those situations.

Each SRS side airbag is designed to function on a one-time-only basis.

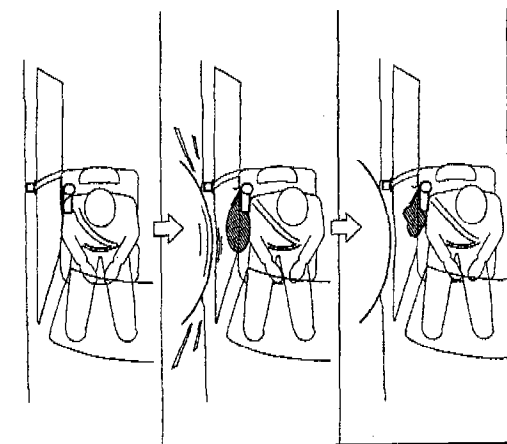
SRS side airbag deployment depends on the level of force experienced in the passenger compartment during a side impact collision. That level differs from one type of collision to another, and it may have no bearing on the visible damage done to the vehicle itself.

Example of the type of accident in which the SRS side airbag will most likely deploy.

A severe side impact near the front seat activates the SRS side airbag.



H-B0313



H-B0359

SRS side airbag deploys as soon as a collision occurs.

After deployment, SRS side airbag starts to deflate immediately.

The SRS side airbag can function only when the ignition switch is in the "ON" position.

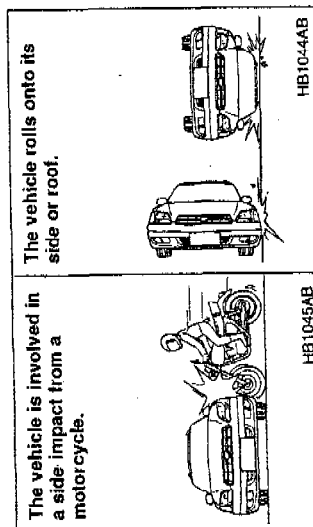
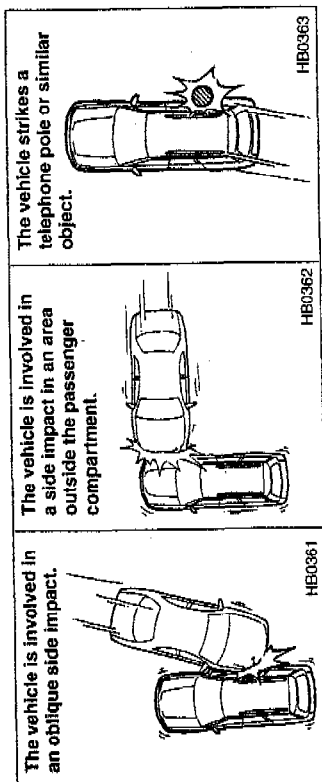
The driver's and front passenger's SRS side airbags deploy independently of each other since each has its own impact sensor. Also, the SRS side airbag deploys independently of the frontal airbags in the steering wheel and instrument panel.

An impact sensor is incorporated into each of the vehicle's center pillars. If either sensor detects a certain predetermined amount of force during a side impact collision, the control module sends a signal to the side airbag module on the impacted side of the vehicle, instructing it to inflate the SRS side airbag. Then the side airbag module produces gas, which instantly inflates the SRS side airbag. After the deployment, the SRS side airbag immediately starts to deflate. The time required from detecting impact to deflating of the SRS side airbag after deployment is shorter than the blink of an eye.

The SRS side airbag deploys even when no one occupies the seat on the side of which an impact is applied.

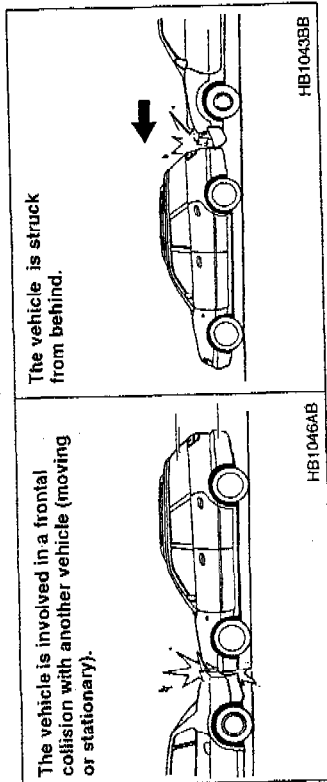
▽ Examples of the types of accidents in which the SRS side airbag is unlikely to deploy.

There are many types of collisions which might not necessarily require SRS side airbag deployment. In the event of accidents like those illustrated below, the SRS side airbag may not deploy depending on the level of accident forces involved.

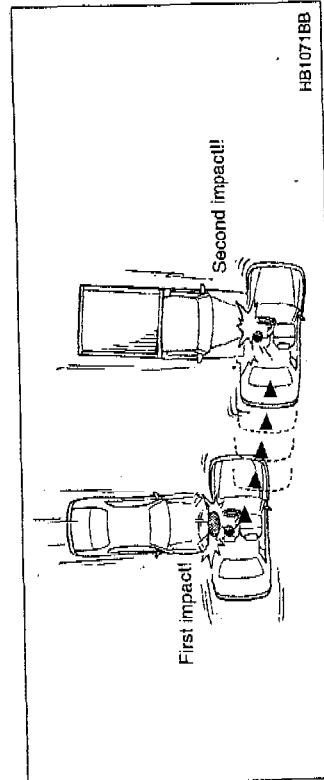


▽ Examples of the types of accidents in which the SRS side airbag will basically not deploy.

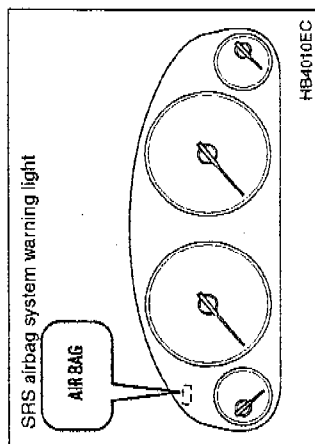
The SRS side airbag is basically not designed to deploy if the vehicle is involved in a frontal collision or is struck from behind. Examples of such accidents are illustrated below.



In an accident where the vehicle is struck from the side more than once, the SRS side airbag deploys only once on the first impact. Example: In the case of a double side impact collision, first with one vehicle and immediately followed by another from the same direction, the SRS side airbag is activated on the first impact but not on the second.



■ SRS airbag system monitors



A diagnostic system continually monitors the readiness of the SRS airbag system (including front seatbelt pretensioners) while the vehicle is being driven. The SRS airbag system warning light "AIRBAG" will show normal system operation by lighting for about 6 seconds when the ignition key is turned to the "ON" position.

The following components are monitored by the indicator:

- Front sub sensor (Right hand side)
- Front sub sensor (Left hand side)
- Airbag control module (including impact sensors)
- Frontal airbag module (Driver's side)
- Frontal airbag module (Passenger's side)
- Side airbag sensor (Driver's side — if equipped)
- Side airbag sensor (Passenger's side — if equipped)
- Side airbag module (Driver's side — if equipped)
- Side airbag module (Passenger's side — if equipped)
- Seatbelt pretensioner (Driver's side)
- Seatbelt pretensioner (Passenger's side)
- All related wiring

In the event of a malfunction indicated by any of following, the vehicle should be taken promptly to your nearest SUBARU dealer to have the system checked. Unless checked and repaired, the SRS airbags will not function reliably:

- Flashing or flickering of the indicator light.
- No illumination of the warning light when the ignition switch is first turned to the "ON" position.
- Continuous illumination of the warning light.
- Illumination of the warning light while driving.

■ SRS airbag system servicing

⚠ WARNING

- When discarding an airbag module or scrapping the entire car damaged by a collision, consult your SUBARU dealer.
- The SRS airbag has no user-serviceable parts. Do not use electrical test equipment on any circuit related to the SRS airbag system. For required servicing of the SRS airbag, see your nearest SUBARU dealer. Tampering with or disconnecting the system's wiring could result in accidental inflation of the SRS airbag or could make the system inoperative, which may result in serious injury. The wiring harnesses of the SRS airbag system are covered with yellow insulation and system connectors are yellow for easy identification.

⚠ CAUTION

If you need service or repair in areas listed below, we recommend that you have an authorized SUBARU dealer perform the work. The SRS airbag control module, impact sensors and airbag modules are stored in these areas.

- Under the center console
- Inside each front fender
- Steering wheel and column and nearby areas
- Top of the dashboard on front passenger's side and nearby areas
- Each front seat and nearby area (only for vehicle with SRS side airbags)
- Inside each center pillar

— CONTINUED —

In the event that the SRS airbag is deployed, replacement of the system should be performed only by an authorized SUBARU dealer. When the components of the SRS airbag system are replaced, use only genuine SUBARU parts.

To ensure their long-term reliability, the SRS airbags must be inspected by a SUBARU dealer ten years after the date of manufacture, which is shown on the certification label attached to the driver's door.

NOTE

In the following cases, contact your SUBARU dealer as soon as possible.

- The front part of the vehicle was involved in an accident in which the SRS frontal airbags did not deploy.
- The pad section of the steering wheel or front passenger's frontal airbag cover is scratched, cracked, or otherwise damaged.

In addition, if your vehicle is equipped with SRS side airbags, contact your SUBARU dealer as soon as possible in the following cases.

- Either center pillar or a nearby area of the vehicle was involved in an accident in which the SRS side airbag did not deploy.
- The fabric or leather of either front seatback is cut, frayed, or otherwise damaged.

■ Precautions against vehicle modification

⚠ WARNING

- To avoid accidental activation of the system or rendering the system inoperative, which may result in serious injury, no modifications should be made to any components or wiring of the SRS airbag system.

This includes following modifications:

- Installation of custom steering wheels
- Attachment of additional trim materials to the dashboard
- Installation of custom seats (only for vehicles with SRS side airbags)

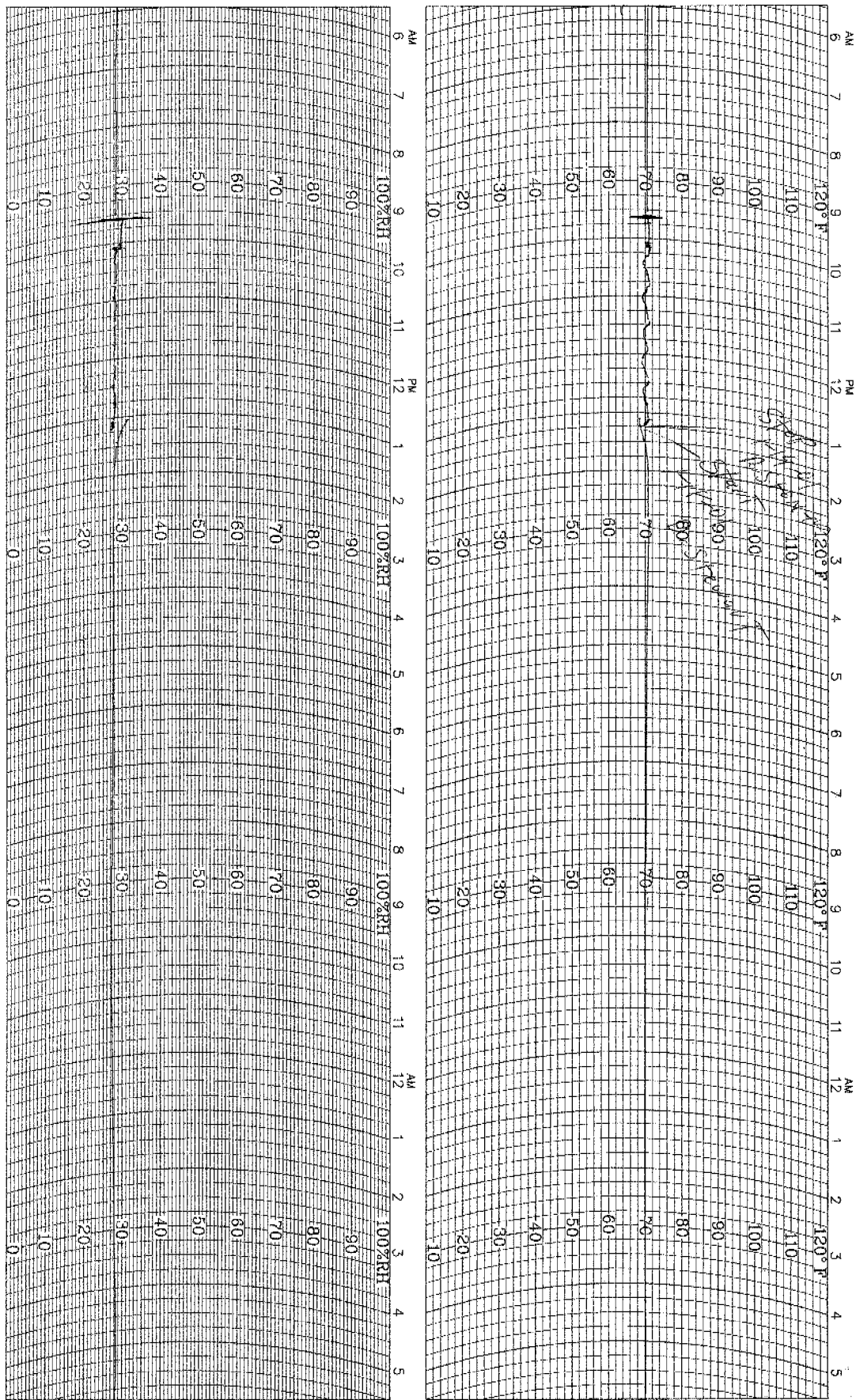
- Replacement of seat fabric or leather (only for vehicles with SRS side airbags)
- Installation of additional fabric or leather on the front seat (only for vehicles with SRS side airbags)
- Installation of additional electrical/electronic equipment such as a mobile two-way radio on or near the SRS airbag system components and/or wiring is not advisable. This could interfere with proper operation of the SRS airbag system.

⚠ CAUTION

Do not perform any of the following modifications. Such modifications can interfere with proper operation of the SRS airbag system.

- Attachment of any equipment (brush bar, winches, snow plow, skid plate, etc.) other than SUBARU genuine accessory parts to the front end.
- Modification of the suspension system or front end structure.
- Installation of a tire of different size and construction from the tires specified on the tire placard attached to the door jamb.
- Attachment of any equipment (side steps or side sill protectors, etc.) other than SUBARU genuine accessory parts to the side body (only for vehicles with side airbags).

Always consult your SUBARU dealer if you want to install any accessory parts to your vehicle.



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STATION DCh DATE ON 1-18-01 DATE OFF 1-17-01