

V2207

Report Number TRC-95-N09

New Car Assessment Program (NCAP)

Frontal Barrier Impact Test

Ford Motor Company

1995 Ford Ranger

Pickup Truck

NHTSA Number: MS0206

TRC Test Number: 950124

Prepared By:

Transportation Research Center Inc.

10820 State Route 347

East Liberty, Ohio 43319



February 21, 1995

Final Report

Prepared For:

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Office Of Market Incentives

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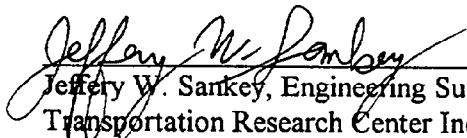
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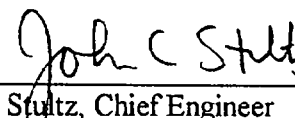
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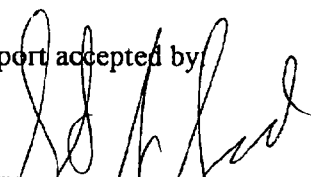
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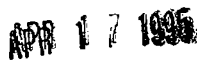
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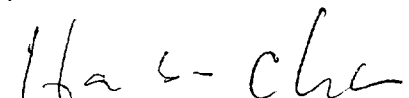

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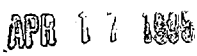
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16. Abstract A 56 kph (35 mph) frontal load cell barrier impact test was conducted on a 1995 Ford Ranger pickup truck, NHTSA No. MS0206, at Transportation Research Center Inc. on January 24, 1995. This test was conducted to obtain new car assessment and research data indicant of FMVSS 208, 212, 219 (partial), and 301 performance. The barrier impact velocity was 56.0 kph. The vehicle's maximum static crush was 536 millimeters. The ambient temperature was 22° C. The driver's Head Injury Criteria (HIC) was 508. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 50.4 g. The driver's chest maximum deflection was 34 millimeters. The driver's left and right femur maximum axial forces were 7067 N and 4704 N, respectively. The passenger's HIC was 537 (see Data Acquisition Explanations). The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 47.1 g. The passenger's left and right femur maximum axial forces were 5402 N and 4148 N, respectively.			
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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 (exact). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price \$2.25, SD Catalog No. C13.1-0286.

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	0.36	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

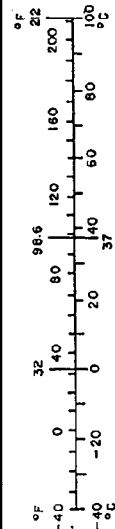


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Section 1.0

Purpose and Test Procedure

Purpose

This 56 kph (35 mph) frontal barrier impact test is part of the New Car Assessment Program (NCAP) conducted for the National Highway Traffic Safety Administration's (NHTSA) Office of Market Incentives by Transportation Research Center Inc. (TRC) under Contract Number DTNH22-90-D-22121.

The purpose of this test was to obtain new car assessment and research data for vehicle crashworthiness and occupant restraint system performance for the subject vehicle, a 1995 Ford Ranger pickup truck, NHTSA Number MS0206, at an impact speed in excess of the current 48 kph (30 mph) FMVSS 208 requirements.

Test Procedure

This test was conducted in accordance with NHTSA's Laboratory Indicant Test Procedure, New Car Assessment Program, dated January 1, 1990. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219 (partial), "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," performance.

The test vehicle was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations. The driver's and passenger's restraint systems were instrumented with load cells to measure lap and shoulder belt forces and potentiometers to measure shoulder belt stretch and spoolout. The vehicle impacted a frontal load cell barrier instrumented with thirty-six (36) barrier face load cells. The vehicle's specified impact velocity range was 55.5 to 57.1 kph.

The test vehicle contained one (1) Part 572B 50th percentile adult male and one (1) Part 572E 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to the dummy placement procedures specified in Appendices VII and VIII of the Laboratory Indicant Test Procedure. This test was the third use of the driver dummy and the second use of the passenger dummy.

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations, and with left and right femur load cells to measure axial forces. The Part 572E dummy's instrumentation also included a chest potentiometer to measure longitudinal deflection, a six-axis neck load cell to measure longitudinal, lateral, and vertical forces and moments, and pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations.

The seventy-nine (79) data channels were multiplexed and recorded on two (2) 14-track tape drives. The data was digitally sampled at 12,500 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The crash event was recorded by one (1) real-time panning motion picture camera and sixteen (16) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera.

The vehicle, occupant, and load cell barrier data are presented in Section 2.0. The occupant, camera, and vehicle measurements are presented in Section 3.0. Appendix A contains the still photographic prints. Appendix B contains the dummy, vehicle, and load cell barrier data plots. Appendix C contains the dummy certification data. Appendix D contains miscellaneous test information. Appendix E contains the restraint system instructions from the owner's manual.

Section 2.0

Frontal Barrier Impact Test Summary

Test Results Summary

This frontal load cell barrier test was conducted at TRC on January 24, 1995.

The test vehicle, a 1995 Ford Ranger pickup truck, NHTSA Number MS0206, was equipped with a 3.0-liter longitudinal engine, automatic transmission, power steering, and power brakes. The vehicle's test weight was 1755 kg. The vehicle's impact speed was 56.0 kph. The vehicle sustained 536 mm of static crush during the impact.

The driver's Head Injury Criteria (HIC) was 508. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 50.4 g. The driver's chest maximum deflection was 34 mm. The driver's left and right femur maximum axial forces were 7067 N and 4704 N, respectively.

The passenger's HIC was 537 (see Data Acquisition Explanations). The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 47.1 g. The passenger's left and right femur maximum axial forces were 5402 N and 4148 N, respectively.

There was no loss of windshield retention.

There was no penetration through the windshield.

Following the impact, no fluid spilled from the vehicle's fuel system prior to the static rollover test or during any portion of the static rollover test.

Data Acquisition Explanations

The driver's pelvis X-axis accelerometer, PEVXG1, did not return to zero following the impact event. The accelerometer not returning to zero affected the driver's pelvis resultant acceleration calculation.

The passenger's Head Injury Criteria, HIC, was calculated with the data spike removed.

Table 1 Crash Test Summary

NHTSA number:	MS0206	
Test type:	Frontal Load Cell Barrier	
Test date:	1/24/95	
Test time:	1420	
Ambient temperature:	22° C	
Vehicle year/make/ model/body style:	1995/Ford/Ranger/pickup truck	
Vehicle test weight:	1755 kg	
Impact angle ¹ :	0°	
Impact velocity ² :	Primary = 56.0 kph	Secondary = 56.0 kph
Maximum static crush:	536 mm	
Average rebound:	479 mm	
Dummies:	Driver #192	Passenger #713
Type:	Part 572 E	Part 572 B
Location:	Left front	Right front
Restraint:	Airbag and 3-point unbelt	3-point unbelt
Number of data channels:	79	
Number of cameras:	High-speed 16	Real-time 2

¹ With respect to tow track centerline.

² Speed trap measurement ($\pm .08$ kph accuracy)

Table 2 Test Vehicle Information

Vehicle year/make/
model/body style: 1995/Ford/Ranger/pickup truck

Color: White

VIN: 1FTCR10U5SUA05962

NHTSA number: MS0206

Engine data:

 Placement: Inline

 Cylinders: 6

 Displacement 3.0 liters

Transmission data: 4 speed, __manual, X automatic, __overdrive
 __FWD, XRWD, __4WD

Date vehicle received: 1/17/95

Odometer reading: 79

Dealer's name
and address: Graham Ford
 707 West Broad Street
 Columbus, OH 43216

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	No
Power seats	No	Tilting steering wheel	No
Power windows	No	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	No
Clock	Yes	Rear window defroster	No
Other	None		

Certification data from vehicle's label:

Vehicle manufactured by: Ford Motor Company

Date of manufacture: 12/94

VIN: 1FTCR10U5SUA05962

GVWR: 2131 kg

GAWR: Front: 1020 kg

 Rear: 1247 kg

Table 2. Test Vehicle Information, Cont'd.

Size of tires: 215/70R14

Tire pressure with maximum capacity vehicle load:
Front: 240 kPa
Rear: 240 kPa

Spare tire: Firestone P215/70R14

Type of front seats: Bench

Tire & capacity data from vehicle's label:

Recommended tire size: 215/70R14

Recommended cold tire pressure:
Front: 240 kPa
Rear: 240 kPa

Test vehicle attitude:

Delivered attitude: LF 769 mm; RF 777 mm; LR 833 mm; RR 848 mm

Pre-test attitude: LF 770 mm; RF 773 mm; LR 795 mm; RR 805 mm

Post-test attitude: LF 752 mm; RF 649 mm; LR 825 mm; RR 829 mm

Table 2 Test Vehicle Information Cont'd

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

Right front	424 kg	Right rear	284 kg
Left front	465 kg	Left rear	299 kg
Total front weight	889 kg	(60.4% of total vehicle weight)	
Total rear weight	583 kg	(39.6% of total vehicle weight)	
Total delivered weight	1472 kg		

Calculation of test vehicle's target test weight:

RCLW = Rated cargo and luggage weight

UDW = Unloaded delivered weight (1472 kg)

VCW¹ = Vehicle capacity weight (136 kg)

DSC = Designated seating capacity (3)

RCLW = VCW - 68 (DSC) = 136 kg

Target test weight = UDW + RCLW¹ + (Number of Hybrid II dummies x 74 kg/dummy +
(Number of Hybrid III dummies x 76 kg/dummy))

Target test weight = 1472 + 136 + 74 + 76

Target test weight = 1758 kg

Weight of test vehicle with required dummies and 134 kg of cargo weight:

Right front	452 kg	Right rear	406 kg
Left front	486 kg	Left rear	411 kg
Total front weight	938 kg	(53.5% of total vehicle weight)	
Total rear weight	817 kg	(46.5% of total vehicle weight)	
Total test weight	1755 kg	(0.1 % under target test weight)	

No ballast was added to the vehicle to meet target test weight.

Components removed to meet target test weight: Spare tire

CG rearward of front wheel centerline: 1354 mm

Vehicle wheelbase: 2910 mm

¹ Cargo weight for multi-purpose passenger vehicles, trucks, and buses is the vehicle's rated cargo and luggage weight from the vehicle's label or 136 kg, whichever is less.

Table 3 Post-Impact Data

Test number: 950124
NHTSA number: MS0206
Test date: 1/24/95
Test time: 1420
Test type: Frontal load cell barrier
Impact angle: 0°
Ambient temperature at impact area: 22° C
Temperature in occupant compartment: 21° C
Impact velocity:
 Primary 56.0 kph
 Secondary 56.0 kph
 Specified range 55.5 to 57.1 kph

Distance from vehicle to barrier:

 Entering velocity trap 356 mm
 Exiting velocity trap 51 mm

Test vehicle static crush:

Overall length of test vehicle:

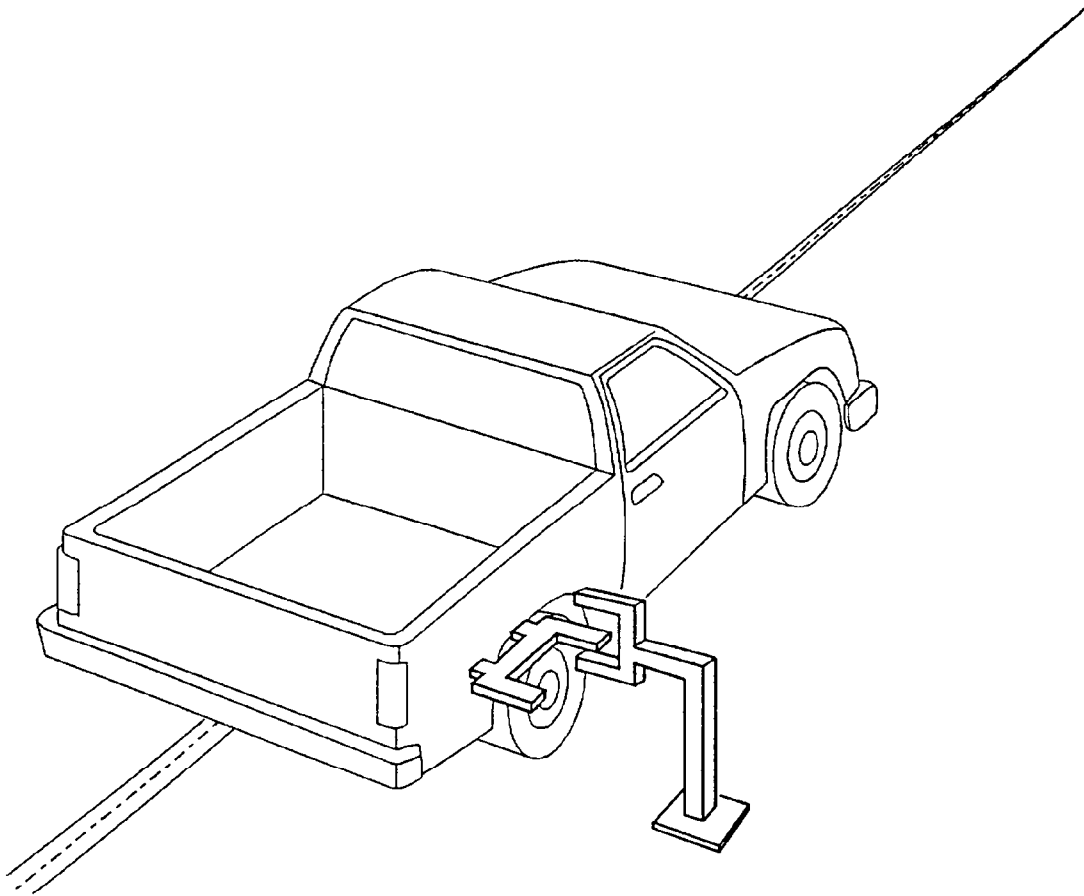
Pre-test: L 4874 mm; C 4976 mm; R 4889 mm
Post-test: L 4449 mm; C 4440 mm; R 4454 mm
Total crush: L 425 mm; C 536 mm; R 435 mm
Average crush: 465 mm

Test vehicle rebound from flat barrier:

Distance from test vehicle to barrier:

Post-test: L 486 mm; C 486 mm; R 466 mm
Average rebound 479 mm

Figure 1 Impact Velocity Measurement System



The final vane clears emitter/receiver pair 51 millimeters before impact.

The vanes have 305-millimeter spacing.

**Figure 2 Accident Investigation Division Data
for 56 kph (35 mph) Frontal Barrier Impact**

NHTSA number: MS0206
 Test date: 1/24/95
 Vehicle year/make/
 model/body style: 1995/Ford/Ranger/pickup truck
 Vehicle size category: Standard pickup
 VIN: 1FTCR10U5SUA05962
 Build date: 12/94
 Test weight: 1755 kg
 Vehicle wheelbase: 2910 mm
 Maximum width: 1766 mm
 Front overhang: 855 mm

Collision Deformation
 Classification (CDC) code: 12FDEW3

Crush depth
 measurements:

C1	=	425 mm
C2	=	475 mm
C3	=	521 mm
C4	=	529 mm
C5	=	511 mm
C6	=	435 mm

Midpoint of damage: D: Vehicle Longitudinal Centerline

Length of damaged region: L: 1524 mm

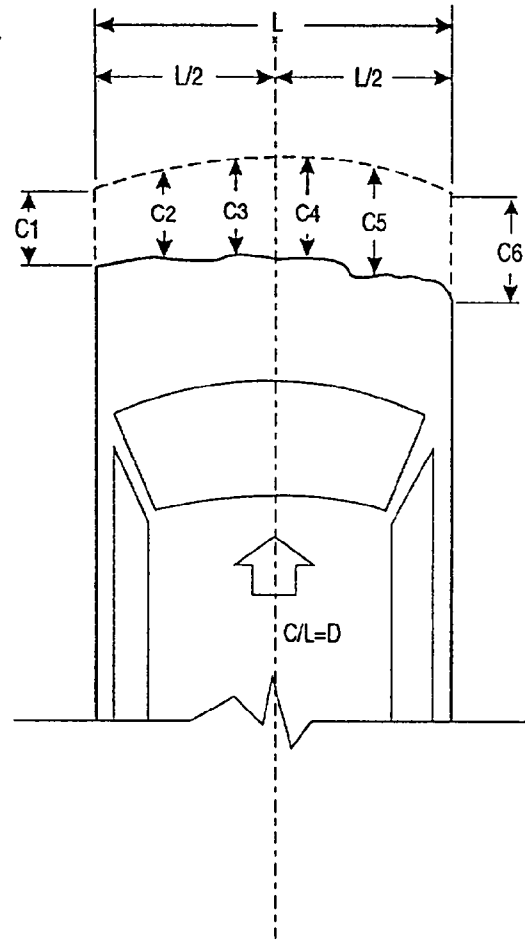
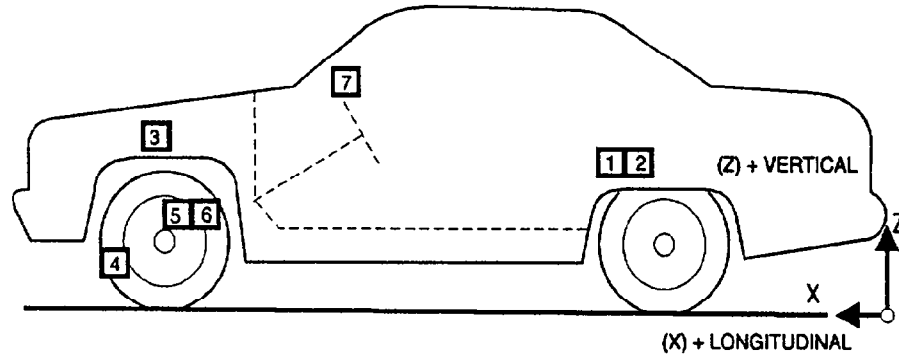
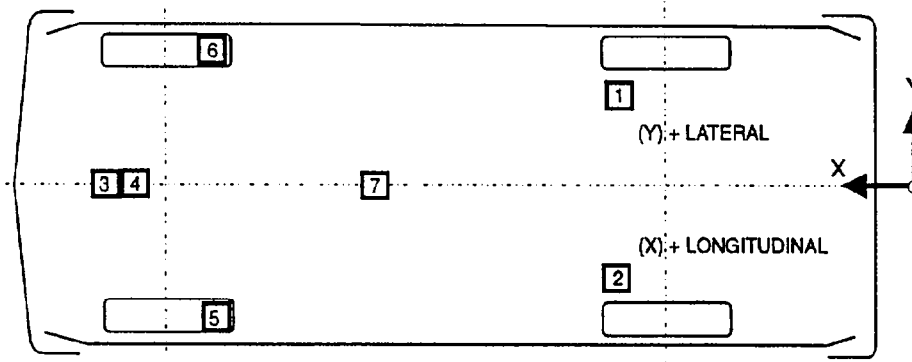


Figure 3 Vehicle Accelerometer Placement



SIDE VIEW



BOTTOM VIEW

Table 4 Vehicle Accelerometer Locations and Data Summary

TEST NUMBER: 950124 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
1 LEFT REAR SEAT CROSSMEMBER LONGITUDINAL REDUNDANT	2500 mm	501 mm	630 mm	17.1 g @ 53.4 ms 17.1 g @ 53.2 ms	56.4 g @ 15.9 ms 56.6 g @ 16.0 ms
2 RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL REDUNDANT	2481 mm	-422 mm	636 mm	3.6 g @ 137.0 ms 3.0 g @ 52.2 ms	54.7 g @ 15.4 ms 51.7 g @ 15.7 ms
3 ENGINE TOP LONGITUDINAL	936 mm	60 mm	998 mm	37.0 g @ 50.0 ms	102.9 g @ 33.5 ms
4 ENGINE BOTTOM LONGITUDINAL	1031 mm	-115 mm	370 mm	32.0 g @ 55.2 ms	104.5 g @ 38.8 ms
5 RIGHT BRAKE CALIPER LONGITUDINAL	934 mm	-576 mm	294 mm	35.9 g @ 59.1 ms	81.0 g @ 15.0 ms
6 LEFT BRAKE CALIPER LONGITUDINAL	932 mm	576 mm	294 mm	22.5 g @ 65.8 ms	67.3 g @ 17.6 ms
7 INSTRUMENT PANEL CENTER LONGITUDINAL	1435 mm	0 mm	1192 mm	31.1 g @ 43.4 ms	77.4 g @ 47.9 ms

* X-AXIS LOCATIONS ARE MEASURED REARWARD FROM THE FRONT BUMPER.

REFERENCE: X: + FORWARD ACCELERATION
Y: + LEFT FROM VEHICLE CENTERLINE
Z: + UP FROM GROUND LEVEL

Table 5 Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver #192</u>	<u>Passenger #713</u>
Head	Airbag	Chest, right knee
Chest	Airbag	None
Abdomen	None	None
Left knee	Instrument panel	Instrument panel
Right knee	Instrument panel	Instrument panel

Door Opening:

	<u>Left</u>	<u>Right</u>
Front	Easy	Easy
Rear	NA	NA

Seat Movement:

	<u>Seat Back Failure</u>	<u>Seat Shift</u>
Front	None	None
Rear	NA	NA

Glazing Damage:

A small portion of the left side of the windshield was cracked upon impact.

Other Notable Impact Effects:

None

Table 6 FMVSS 208 Data Summary

Vehicle year/make/
 model/body style: 1995/Ford/Ranger/pickup truck
 Vehicle NHTSA number: MS0206
 Test date: 1/24/95

	Driver Dummy #192		Passenger Dummy #713	
<u>Maximum Accelerations:</u>				
Head X-axis	-52.0	g	-208.3	g
Head Y-axis	20.0	g	17.3	g
Head Z-axis	-42.2	g	-244.9	g
Head resultant	61.3	g	321.8	g
Chest X-axis	-50.6	g	-46.9	g
Chest Y-axis	7.7	g	11.2	g
Chest Z-axis	16.9	g	-15.9	g
Chest resultant ²	50.4	g	47.1	g
Chest resultant time interval ²	.003	sec	.003	sec
<u>Head Injury Criteria (HIC) Values:</u>				
HIC ^{1,3}	508		537	
HIC starting time ¹	.047	sec	.052	sec
HIC ending time ¹	.081	sec	.088	sec
Avg. head resultant accel. during HIC time interval	47.1	g	247.3	g
<u>Maximum Chest Deflections:</u>				
Chest X-axis	34	mm	NA	
Maximum chest deflection time	.063	sec	NA	
<u>Maximum Compressive Femur Forces:</u>				
Left femur	7067	N	5402	N
Right femur	4704	N	4148	N
<u>Maximum Seat Belt Forces:</u>				
Lap belt	3002	N	4676	N
Shoulder belt	8920	N	8768	N

Note: All values listed must be occurring during primary impact event.
 (Head accelerations listed must be during HIC time interval.)

- ¹ See data acquisition explanations.
- ² 0.003 sec. minimum duration.
- ³ The maximum HIC time interval is 36 milliseconds.

Table 7 Hybrid III Neck and Pelvis Data Summary

Vehicle year/make/
model/body style: 1995/Ford/Ranger/pickup truck
Vehicle NHTSA number: MS0206
Test date: 1/24/95

	Driver Dummy #192	Passenger Dummy #713
<u>Maximum Values:</u>		
Neck X-axis force	728 N	NA
Neck Y-axis force	160 N	NA
Neck Z-axis force	2449 N	NA
Neck moment about X-axis	-10 N-m	NA
Neck moment about Y-axis	50 N-m	NA
Neck moment about Z-axis	10 N-m	NA
<u>Maximum Accelerations:</u>		
Pelvis X-axis ¹	-72.2 g	NA
Pelvis Y-axis	14.2 g	NA
Pelvis Z-axis	22.2 g	NA
Pelvis resultant	73.1 g	NA

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

¹ See data acquisition explanations.

Dummy Kinematic Summary

Driver Dummy

Upon impact, the driver dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head rotated forward as the dummy's head and chest were restrained by the driver's airbag and the dummy's torso was restrained by the three-point unbelt. The dummy's head rotated rearward into the head restraint as the dummy rebounded into the seat back. The dummy came to rest in the driver's seat, restrained by the three-point unbelt.

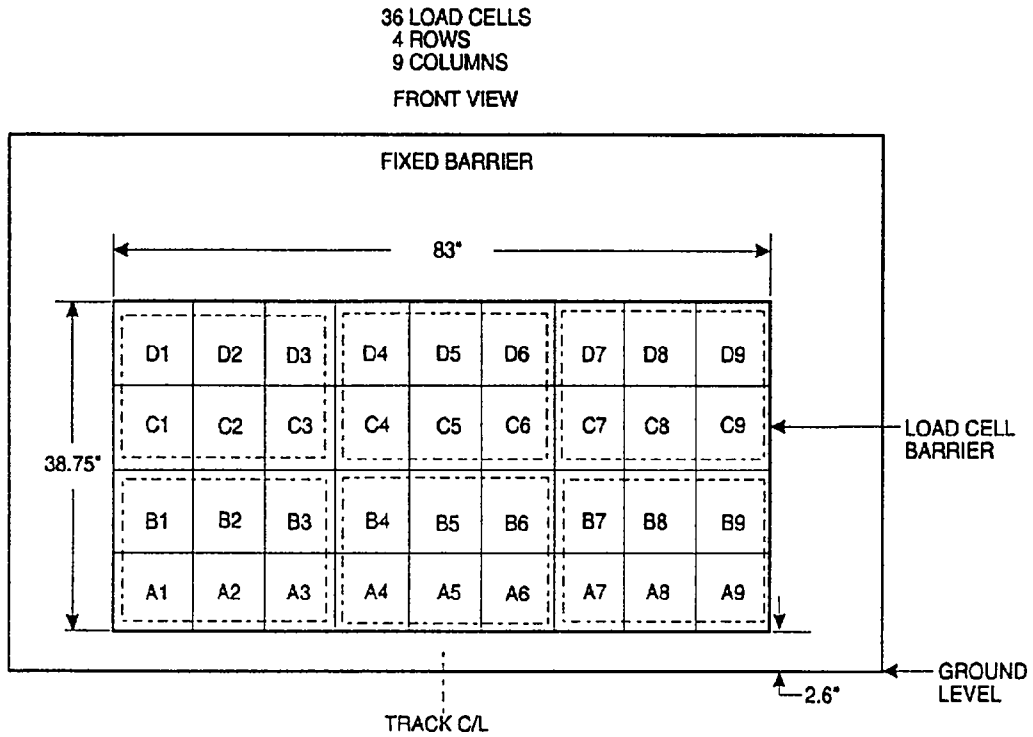
Right Front Passenger Dummy

Upon impact, the right front passenger dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head rotated forward impacting the dummy's chest and right knee as the dummy's torso was restrained by the three-point unbelt. The dummy rebounded into the seat back. The right front passenger dummy came to rest in the right front passenger's seat restrained by the three-point unbelt.

Table 8 Seat Belt Performance Assessment Test Data

	Driver	Passenger
<u>Belt length data:</u>		
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	2629 mm	2718 mm
Shoulder belt length as measured on Part 572 dummy.	876 mm	840 mm
Lap belt length as measured on Part 572 dummy.	826 mm	889 mm
<u>Shoulder belt spool-off length:</u>		
As determined by film analysis	50 mm	50 mm
As determined mechanically	45 mm	45 mm
As determined electronically	44 mm	69 mm
<u>Belt stretch length:</u>		
As measured mechanically	4 mm/m	19 mm/m
As measured electronically	0 mm/m	47 mm/m
<u>Retractor lock-up time:</u>		
As determined by shoulder belt spool-off	70 ms	66 ms

Figure 4 Load Cell Barrier Configuration



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

Table 9 Load Cell Barrier Data Summary

Location	Positive direction	Negative direction
Total group 1	2.1 kN @ 2.4 ms	125.5 kN @ 31.8 ms
Total group 2	2.2 kN @ 309.3 ms	142.6 kN @ 31.8 ms
Total group 3	0.9 kN @ 190.6 ms	69.8 kN @ 13.4 ms
Total group 4	1.4 kN @ 190.6 ms	96.0 kN @ 33.4 ms
Total group 5	1.2 kN @ 249.7 ms	220.6 kN @ 38.0 ms
Total group 6	1.6 kN @ 249.6 ms	54.6 kN @ 27.1 ms
Total load cell force	6.5 kN @ 249.2 ms	626.5 kN @ 34.8 ms

Tension is positive
Compression is negative

Section 3.0

FMVSS 212, 219 (partial), and 301 Data

Figure 5 FMVSS 212 Test Data

Details of windshield mounting such as retention method, trim type, etc.:

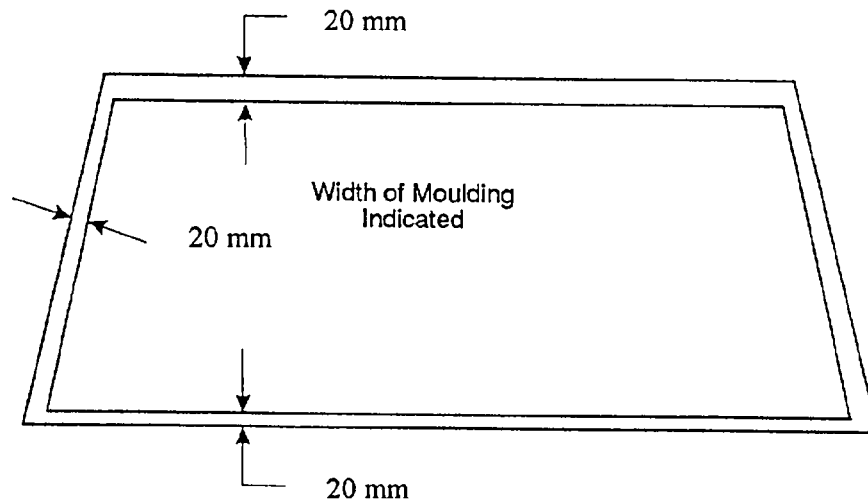
Plastic trim around outer perimeter, adhesive around inner perimeter.

FMVSS 212 requirements: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

Windshield periphery measurements:

	<u>Pre-test</u>	<u>Post-test</u>	<u>Percent retention</u>
Right side	1940 mm	1940 mm	100.0
Left side	1940 mm	1940 mm	100.0
Total	3880 mm	3880 mm	100.0

Pre-test windshield mounting material temperature: 22° C



Front view of windshield¹

Loss of windshield retention lengths: None

¹ Indicate areas of loss of retention, if any, on windshield diagram.

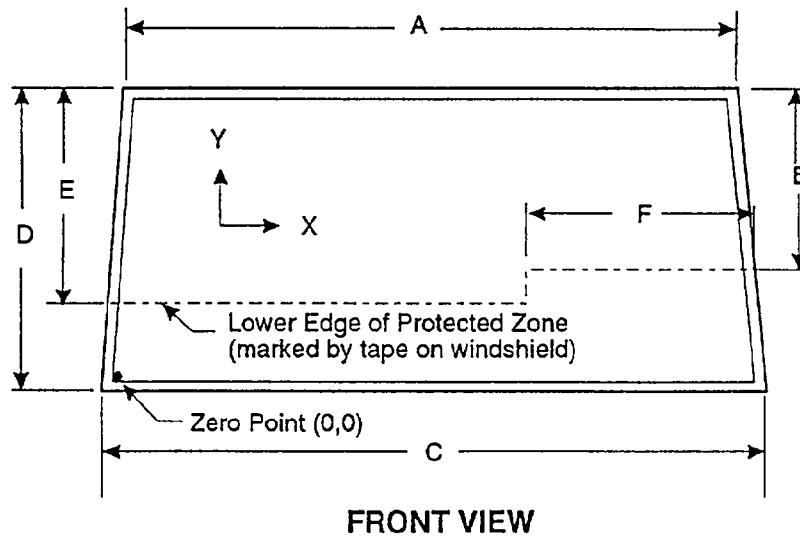
Figure 6 FMVSS 219 Test Data

Protected zone lower edge requirement:

The lower edge of the protected zone is determined by placing a 165-millimeter diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 13 millimeters from the locus line. The lower edge of the protected zone is the longitudinal projection onto the outer surface of the windshield of this line.

Windshield measurements:

- A = 1290 mm
- B = 325 mm
- C = 1545 mm
- D = 626 mm
- E = 399 mm
- F = 705 mm



Method of adhering protected zone template to windshield: NA

Areas of windshield template penetration greater than 6 mm: NA

Coordinates	
X	Y
1.	
2.	
3.	

Areas of windshield penetration, below the protected zone, through the inner surface of the windshield: None

- 1.
- 2.
- 3.

Table 10 Fuel System Data

Vehicle year/make/ model/body style:	1995/Ford/Ranger/pickup truck
NHTSA number:	MS0206
Fuel system capacity:	77.5 liters (from owner's manual)
Usable capacity:	77.5 liters (furnished by COTR)
Test volume range:	71.3 liters to 72.8 liters (92-94% of usable)
Actual test volume:	72.1 liters (with entire fuel system filled)
Test fluid type:	Stoddard solvent
Specific gravity:	0.764
Kinematic viscosity:	0.99 centistoke
Test fluid color:	Purple

The electric fuel pump does not operate with ignition switch "on" and the engine not operating.

Details of fuel system: The fuel tank is located on the left side in front of the rear axle.
 The fuel filler neck is located on the left side and enters the top of the
 fuel tank.
 The fuel lines run along the left side to the front.

Table 11 FMVSS 301 Post-Impact Test Data

NHTSA number: MS0206
Test date: 1/24/95
Vehicle year/make/
model/body style: 1995/Ford/Ranger/pickup truck

Test requirements:

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

Test vehicle impact type:

- Frontal (56 kph)
- Oblique (48 kph) with ___° barrier face first contacting ___ (driver/pass.) side
- Rear moving barrier (48 kph)
- Lateral moving barrier (32 kph)

Fuel system fluid spillage measurements:

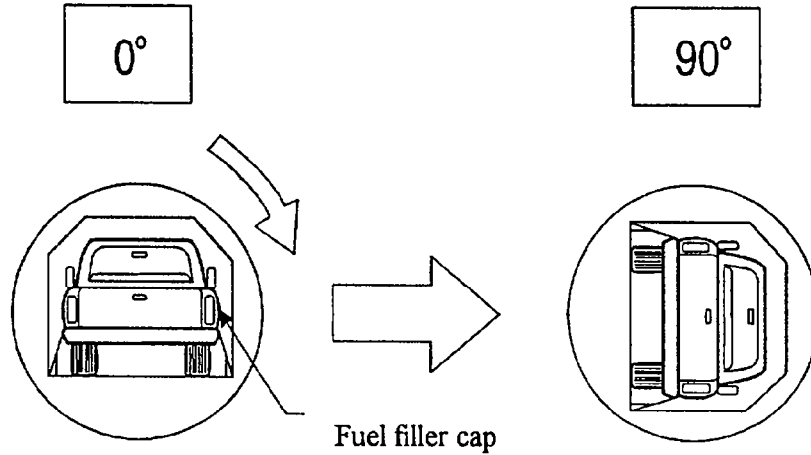
	<u>Test Results</u>	<u>Maximum Allowable</u>
1. From impact until vehicle motion ceases	0 g	28 g
2. 5-minute period after vehicle motion ceases	0 g	142 g
3. Next 25 minutes after 5-minute period	0 g	28 g/min

Fuel system fluid spillage location(s): None

Figure 7 FMVSS 301 Static Rollover Test Data

NHTSA number: MS0206

Test phase



Static rollover machine rotation time information: (specified range is 1-3 minutes)

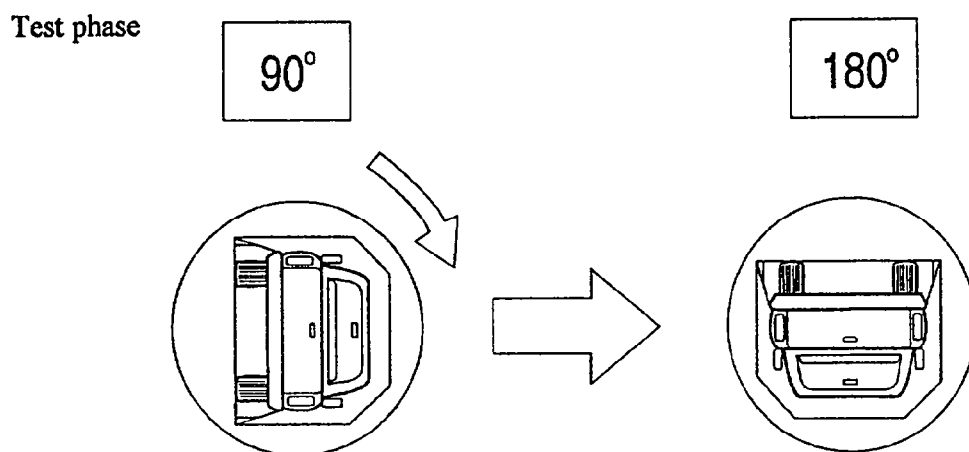
Time required for machine to rotate 90° = 2 minutes, 0 seconds
 FMVSS 301 position hold time = 5 minutes, 0 seconds
 Total = 7 minutes, 0 seconds
 Next whole minute interval = 7 minutes

Fuel system fluid spillage measurements:

	Test Results	Maximum Allowable
<u>0° to 90° rotation (fuel filler cap down)</u>		
1. First 5 minutes from onset of rotation	0 g	142 g
2. Sixth minute from onset of rotation	0 g	28 g
3. Seventh minute from onset of rotation	0 g	28 g

Fuel system fluid spillage location(s): None

Figure 7 FMVSS 301 Static Rollover Test Data, Cont'd.



Static rollover machine rotation time information: (specified range is 1-3 minutes)

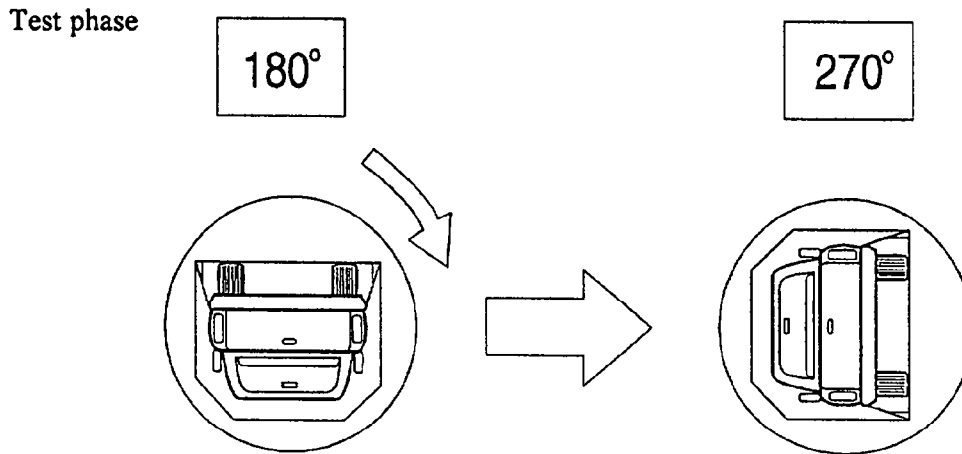
Time required for machine to rotate 90° = 2 minutes, 0 seconds
 FMVSS 301 position hold time = 5 minutes, 0 seconds
 Total = 7 minutes, 0 seconds
 Next whole minute interval = 14 minutes

Fuel system fluid spillage measurements:

	Test Results	Maximum Allowable
<u>90° to 180° rotation</u>		
1. First 5 minutes from onset of rotation	0 g	142 g
2. Sixth minute from onset of rotation	0 g	28 g
3. Seventh minute from onset of rotation	0 g	28 g

Fuel system fluid spillage location(s): None

Figure 7 FMVSS 301 Static Rollover Test Data, Cont'd.



Static rollover machine rotation time information: (specified range is 1-3 minutes)

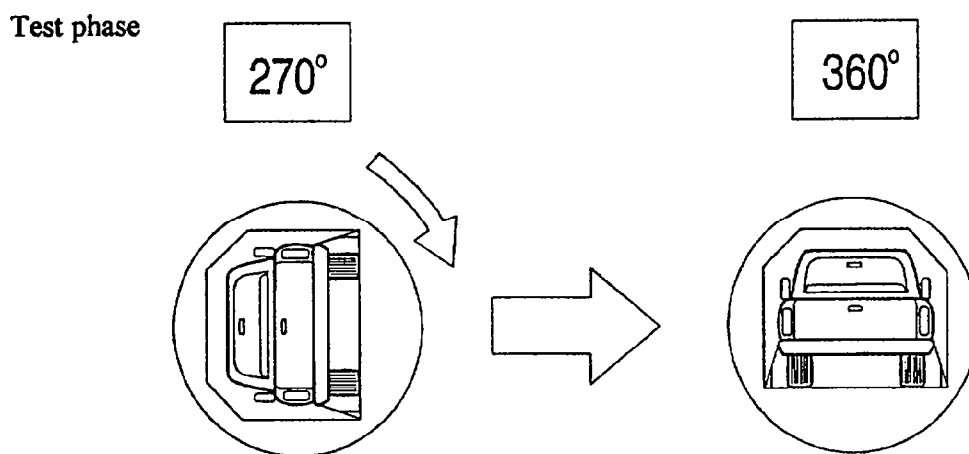
Time required for machine to rotate 90° = 2 minutes, 0 seconds
 FMVSS 301 position hold time = 5 minutes, 0 seconds
 Total = 7 minutes, 0 seconds
 Next whole minute interval = 21 minutes

Fuel system fluid spillage measurements:

<u>180° to 270° rotation</u>	<u>Test Results</u>	<u>Maximum Allowable</u>
1. First 5 minutes from onset of rotation	0 g	142 g
2. Sixth minute from onset of rotation	0 g	28 g
3. Seventh minute from onset of rotation	0 g	28 g

Fuel system fluid spillage location(s): None

Figure 7 FMVSS 301 Static Rollover Test Data, Cont'd.



Static rollover machine rotation time information: (specified range is 1-3 minutes)

Time required for machine to rotate 90°	=	2 minutes,	0 seconds
FMVSS 301 position hold time	=	5 minutes,	0 seconds
Total	=	7 minutes,	0 seconds
Next whole minute interval	=	28 minutes	

Fuel system fluid spillage measurements:

	Test Results	Maximum Allowable
<u>270° to 360° rotation</u>		
1. First 5 minutes from onset of rotation	0 g	142 g
2. Sixth minute from onset of rotation	0 g	28 g
3. Seventh minute from onset of rotation	0 g	28 g

Fuel system fluid spillage location(s): None

Section 4.0

Occupant, Camera, and Vehicle Information

Figure 8 Dummy Measurement Locations for Front Seat Occupants

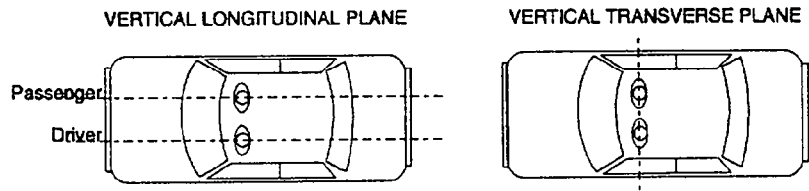
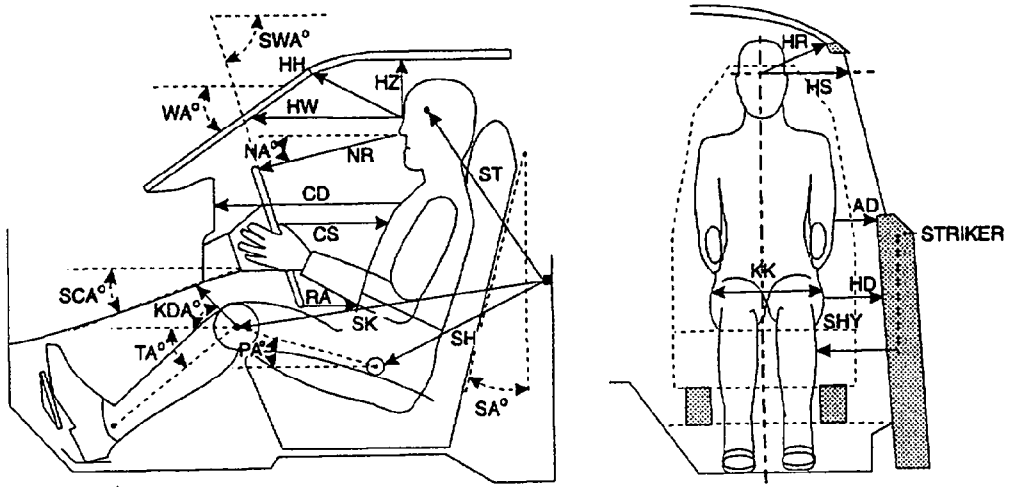


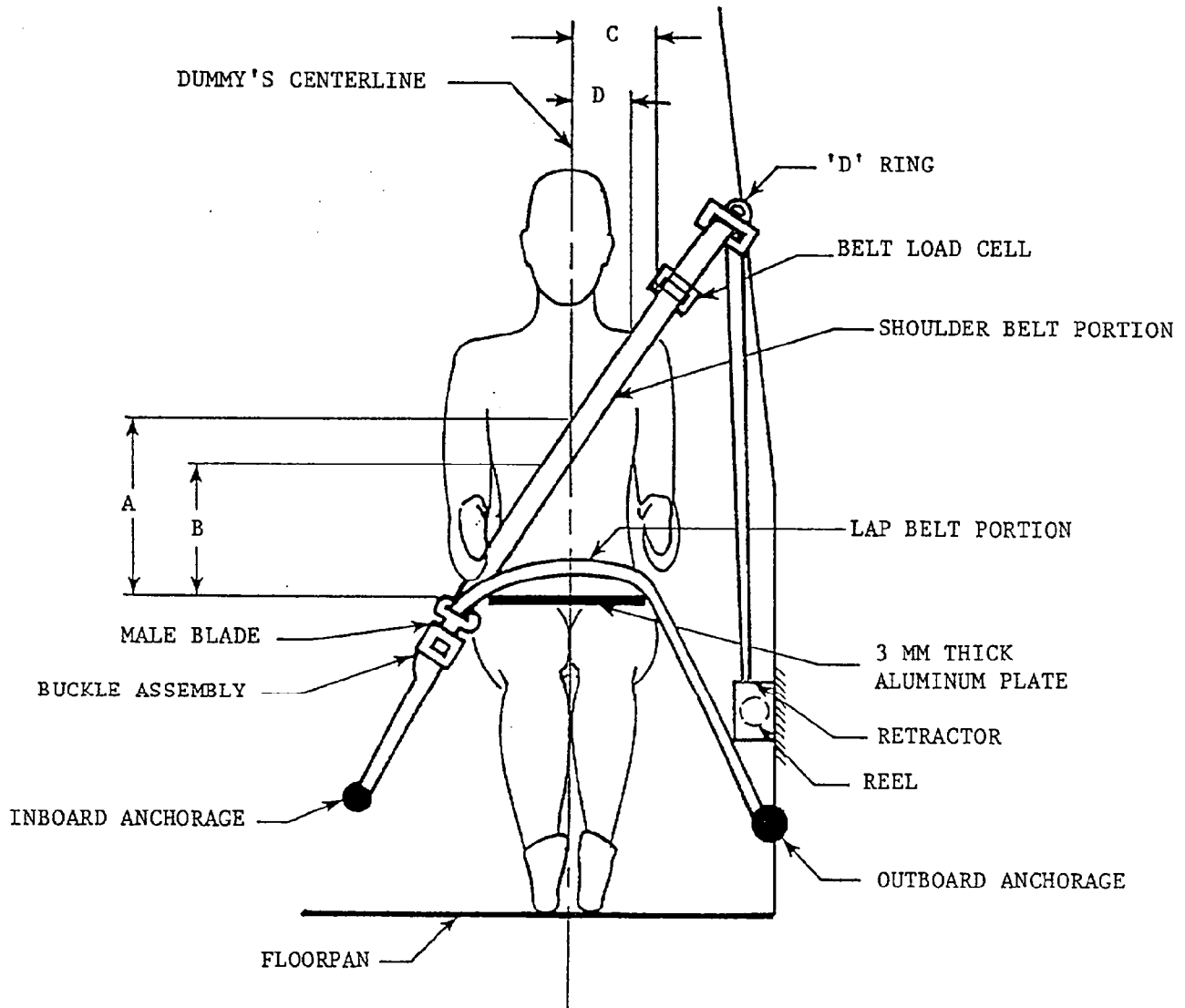
Table 12 Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial #192)	Passenger (Serial #713)
WA	Windshield angle	42°	NA
SWA	Steering wheel angle	68°	NA
SCA	Steering column angle	22°	NA
SA	Seat back angle	19°	19°
HZ	Head to roof	217 mm	181 mm
HH	Head to header	458 mm	525 mm
HW	Head to windshield	569 mm	634 mm
HR	Head to side header	255 mm	230 mm
NR	Nose to rim	345 mm	NA
NA	Nose to rim angle	12°	NA
CD	Chest to dash	510 mm	606 mm
CS	Steering wheel to chest	298 mm	NA
RA	Rim to abdomen	163 mm	NA
KDL	Left knee to dash	166 mm	170 mm
KDR	Right knee to dash	158 mm	195 mm
KDA	Outboard knee to dash angle	40°	31°
PA	Pelvic angle	23°	12°
TA	Tibial angle	33°	30°
KK	Knee to knee	310 mm	315 mm
ST ¹	Striker to head	577 mm	549 mm
	Striker to head angle	-69°	-82°
SK ¹	Striker to knee	681 mm	692 mm
	Striker to knee angle	2°	-2°
SH ¹	Striker to H-point	337 mm	305 mm
	Striker to H-point angle	20°	22°
SHY	Striker to H-point (Y dir.)	192 mm	195 mm
HS	Head to side window	325 mm	320 mm
HD	H-point to door	160 mm	132 mm
AD	Arm to door	92 mm	80 mm

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

¹ Angle measured from head restraint support.

Figure 9 Seat Belt Positioning Data



	Driver	Passenger
A - Top surface of aluminum plate to belt upper edge	355 mm	400 mm
B - Top surface of aluminum plate to belt lower edge	285 mm	325 mm
C - Dummy centerline to outer edge of belt at chest flesh top	85 mm	115 mm
D - Dummy centerline to inner edge of belt at chest flesh top	25 mm	80 mm
Lap belt tension	16 N	16 N
Shoulder belt tension	16 N	16 N
Adjustable seat belt anchorage position	Uppermost of four positions	Uppermost of four positions

Figure 10 Camera Positions

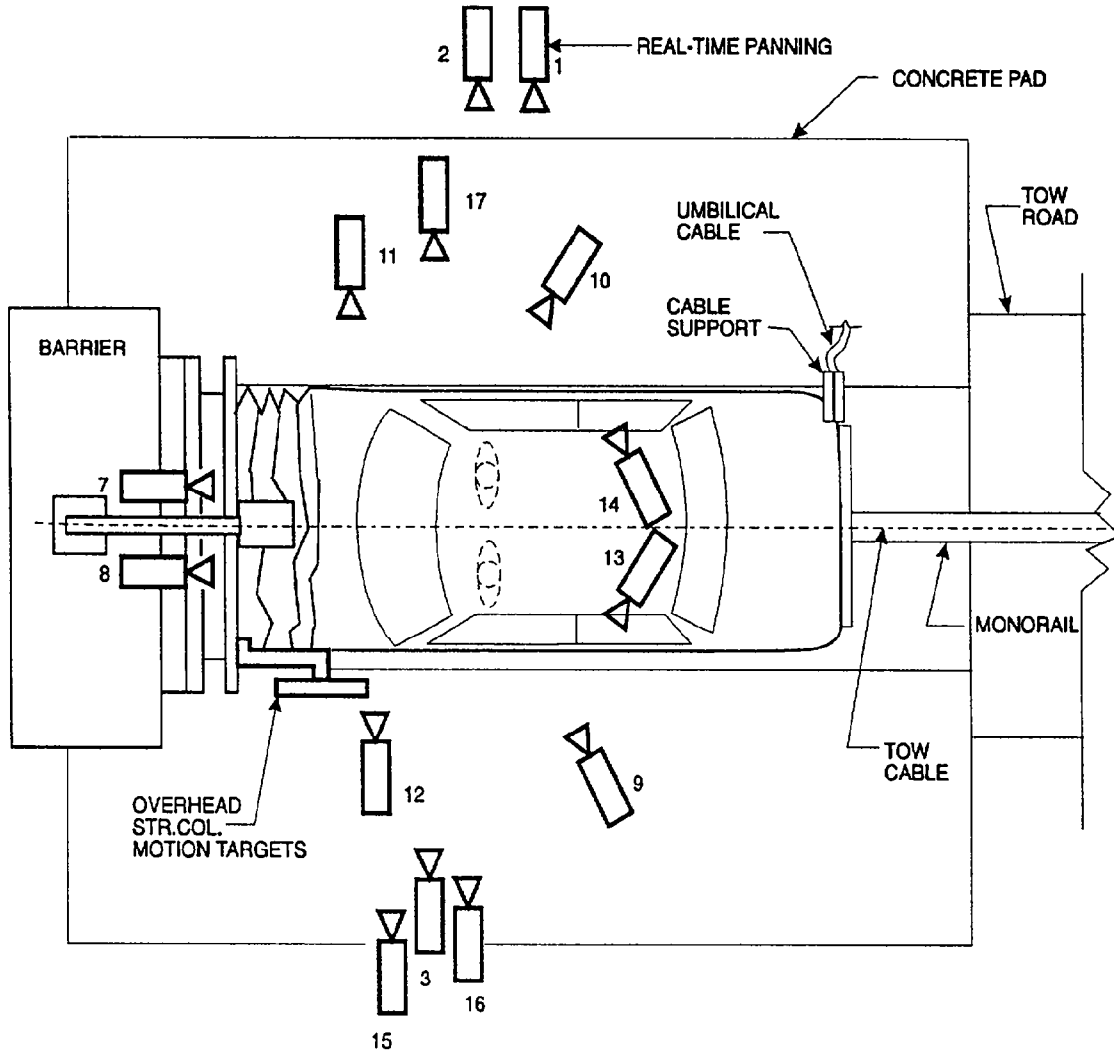


Figure 10 Camera Positions, Cont'd.

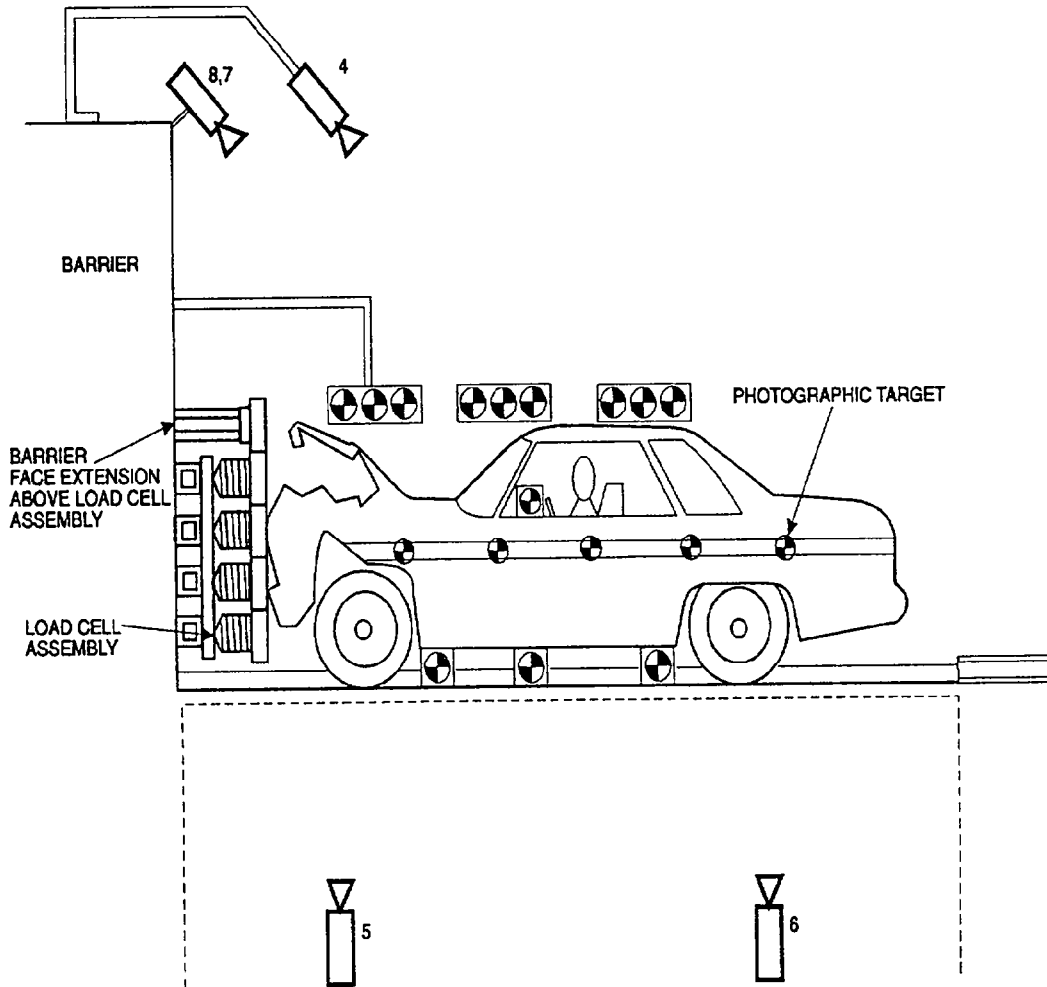


Table 13 Motion Picture Camera Locations

Test Number: 950124

Vehicle year/make/model/body style: 1995/Ford/Ranger/pickup truck

Camera Number	View	X	Y	Z	Angle ²	Film Plane to Head Target	Lens	Film Speed
1	Real-time panning	-3607 mm	-2802 mm	1549 mm	NA	NA mm	16 mm	24 frames/s
2	Vehicle crush	-2065 mm	-6767 mm	942 mm	-2°	NA mm	13 mm	512 frames/s
3	Dummy kinematics	-1054 mm	7493 mm	1118 mm	-12°	5791 mm	25 mm	482 frames/s
4	Windshield damage	-925 mm	0 mm	2489 mm	-40°	NA mm	13 mm	498 frames/s
5	Crush & fluid spillage	-1283 mm	0 mm	-2347 mm	90°	NA mm	13 mm	1000 frames/s
6	Fluid spillage	-2522 mm	0 mm	-2515 mm	90°	NA mm	13 mm	1000 frames/s
7	Passenger kinematics	-114 mm	-351 mm	2159 mm	-40°	NA mm	17 mm	500 frames/s
8	Driver kinematics	-173 mm	368 mm	2159 mm	-41°	NA mm	17 mm	508 frames/s
9	Driver kinematics	-4572 mm	1854 mm	2591 mm	-27°	1956 mm	25 mm	498 frames/s
10	Passenger kinematics	-4674 mm	-1880 mm	2540 mm	-26°	1600 mm	25 mm	492 frames/s
11	Windshield intrusion	-968 mm	-7775 mm	1118 mm	0°	NA mm	50 mm	495 frames/s
12	Windshield intrusion	-1346 mm	7859 mm	1074 mm	0°	NA mm	50 mm	502 frames/s
13	Driver seat belt movement	NA	NA	NA	NA	NA mm	NA mm	502 frames/s
14	Passenger seat belt movement	NA	NA	NA	NA	NA mm	NA mm	500 frames/s
15	Column movement	-2362 mm	7264 mm	2616 mm	-14°	NA mm	25 mm	520 frames/s
16	Column movement	-2362 mm	7264 mm	1908 mm	-9°	NA mm	25 mm	502 frames/s
17	Passenger kinematics	-986 mm	-5354 mm	1151 mm	7°	5715 mm	25 mm	995 frames/s

¹ +X = Film plane forward of barrier face

+Y = Film plane to left of monorail centerline

+Z = Film plane above ground level

² +Angle = Film plane angled upward from horizontal plane

Figure 11 Vehicle Target Locations

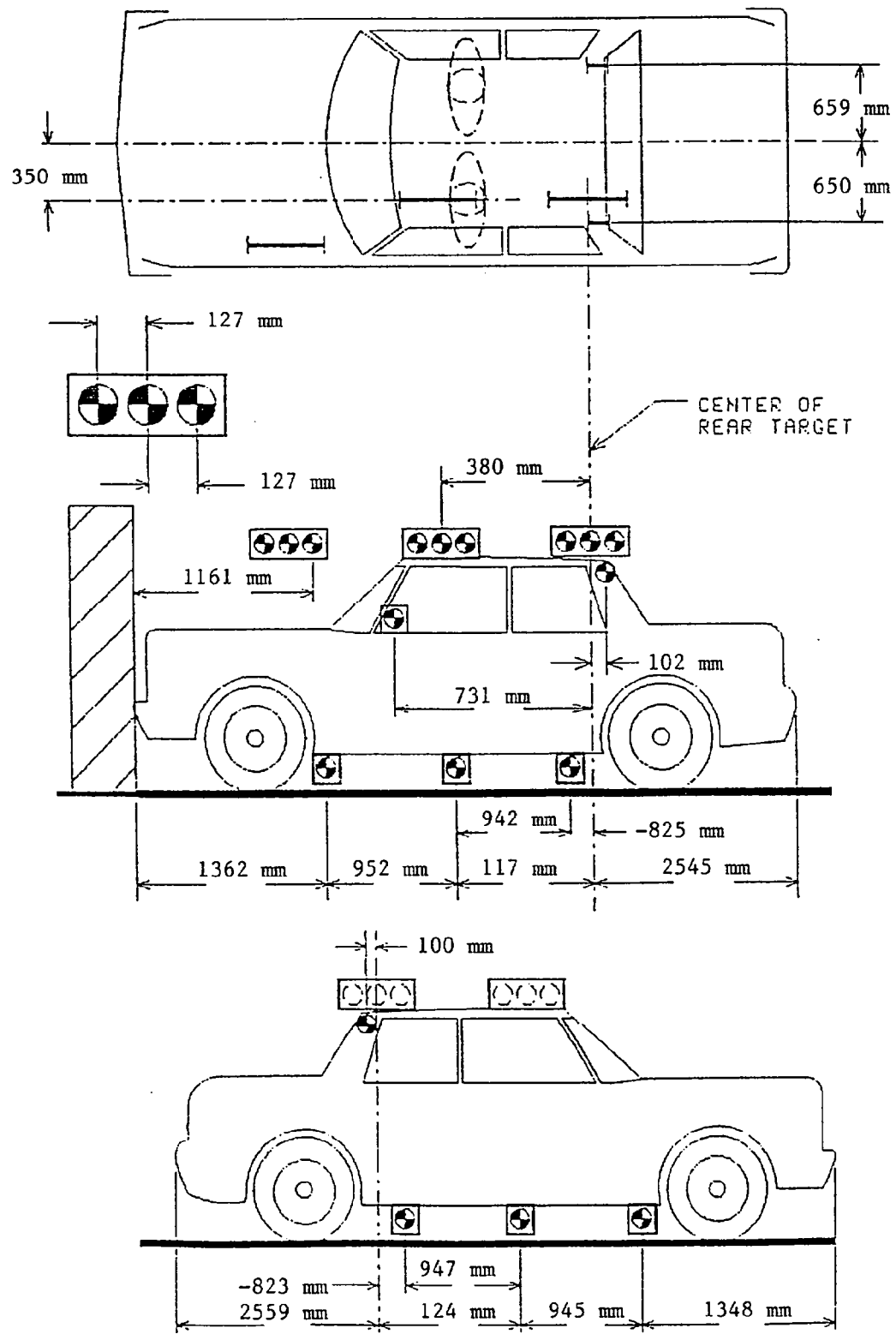


Figure 12 Pre-Test And Post-Test Measurement Points

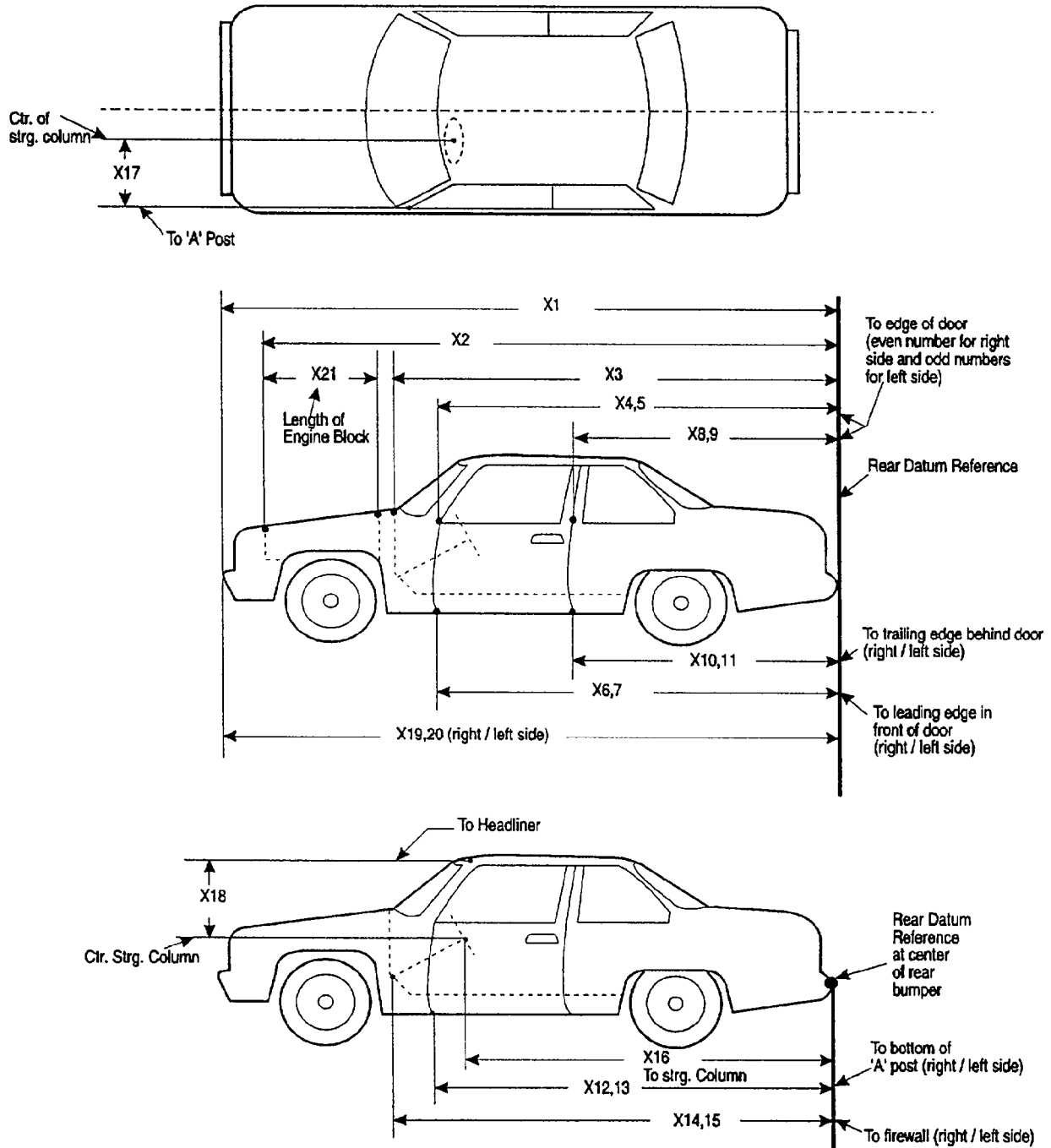


Table 14 Impacted Vehicle Measurements

Vehicle Make/Model: Ford/Ranger

Test Number: 950124

No.	Type of measurement	Pre-test	Post-test	Diff.
X1	Total length of vehicle at centerline	4976 mm	4440 mm	536 mm
X2	Rear surface of vehicle to front of engine block	4289 mm	4090 mm	199 mm
X3	Rear surface of vehicle to firewall	3834 mm	3645 mm	189 mm
X4	Rear surface of vehicle to upper leading edge of right door	3581 mm	3604 mm	-23 mm
X5	Rear surface of vehicle to upper leading edge of left door	3581 mm	3562 mm	19 mm
X6	Rear surface of vehicle to lower leading edge of right door	3495 mm	3474 mm	21 mm
X7	Rear surface of vehicle to lower leading edge of left door	3494 mm	3454 mm	40 mm
X8	Rear surface of vehicle to upper trailing edge of right door	2445 mm	2463 mm	-18 mm
X9	Rear surface of vehicle to upper trailing edge of left door	2445 mm	2436 mm	9 mm
X10	Rear surface of vehicle to lower trailing edge of right door	2434 mm	2411 mm	23 mm
X11	Rear surface of vehicle to lower trailing edge of left door	2434 mm	2395 mm	39 mm
X12	Rear surface of vehicle to bottom of "A" post on right side	3504 mm	3498 mm	6 mm
X13	Rear surface of vehicle to bottom of "A" post on left side	3503 mm	3469 mm	34 mm
X14	Rear surface of vehicle to firewall - right side	3709 mm	3774 mm	-65 mm
X15	Rear surface of vehicle to firewall - left side	3734 mm	3754 mm	-20 mm
X16	Rear surface of vehicle to steering wheel center	3085 mm	3142 mm	-57 mm
X17	Center of steering column to "A" post	293 mm	288 mm	-5 mm
X18	Center of steering column to headliner	450 mm	430 mm	20 mm
X19	Rear surface of vehicle to right side of front bumper	4889 mm	4454 mm	435 mm
X20	Rear surface of vehicle to left side of front bumper	4874 mm	4449 mm	425 mm
X21	Length of engine block	400 mm	400 mm	0 mm

Appendix A

Photographs

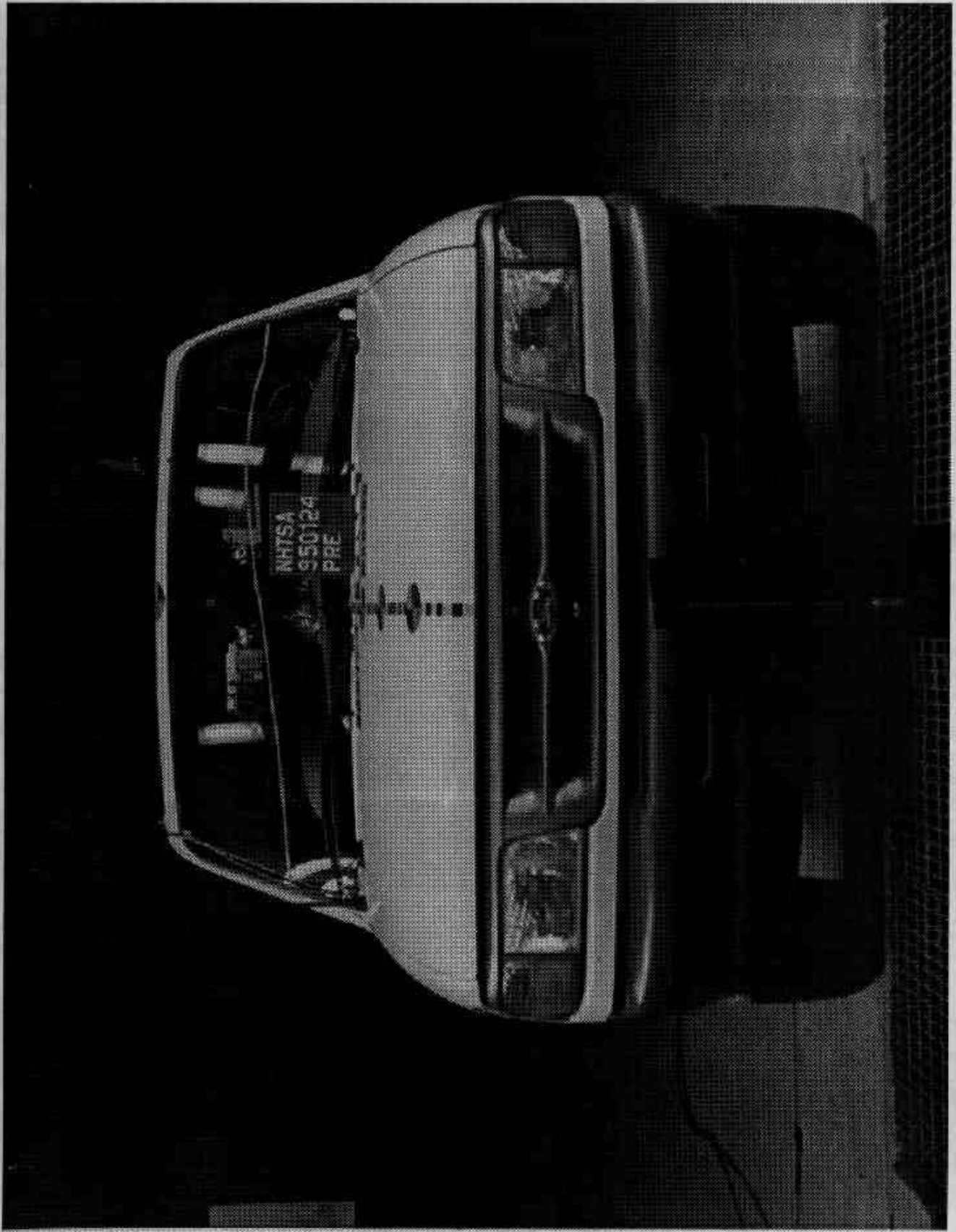


Figure A-1. Pre-Test Front View

A-2

950124

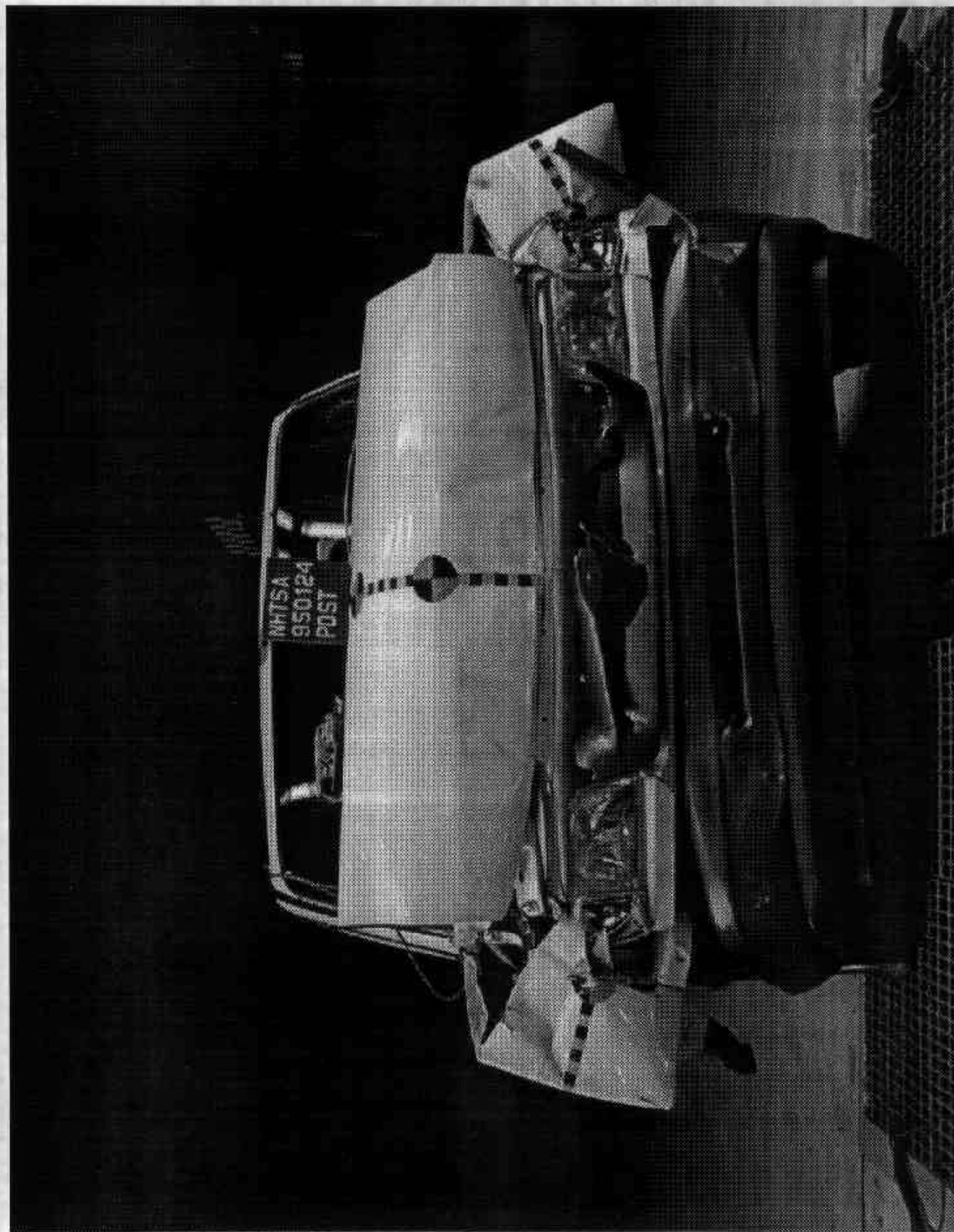


Figure A-2. Post-Test Front View
A-3

950124

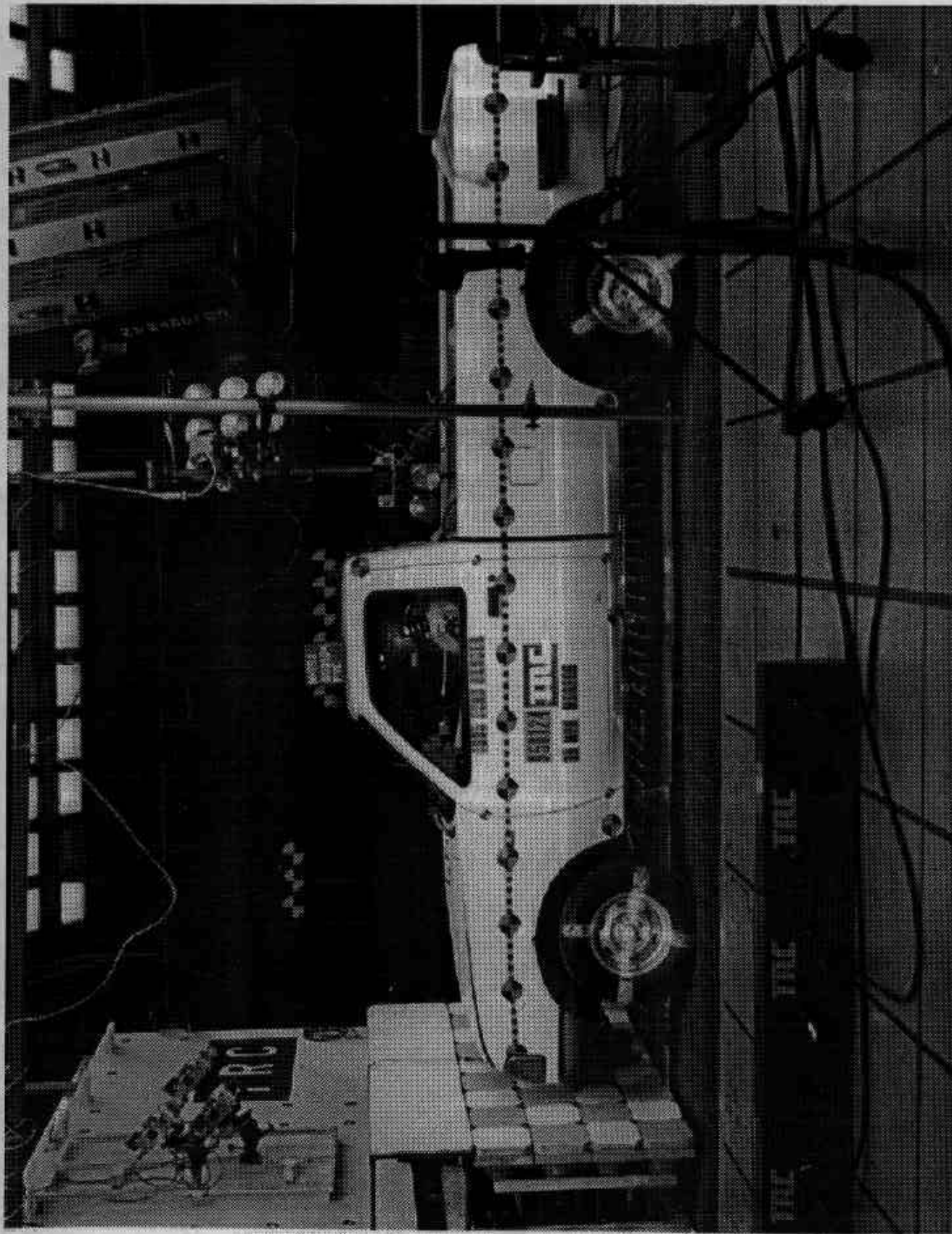


Figure A-3. Pre-Test Left Side View

A-4

950124

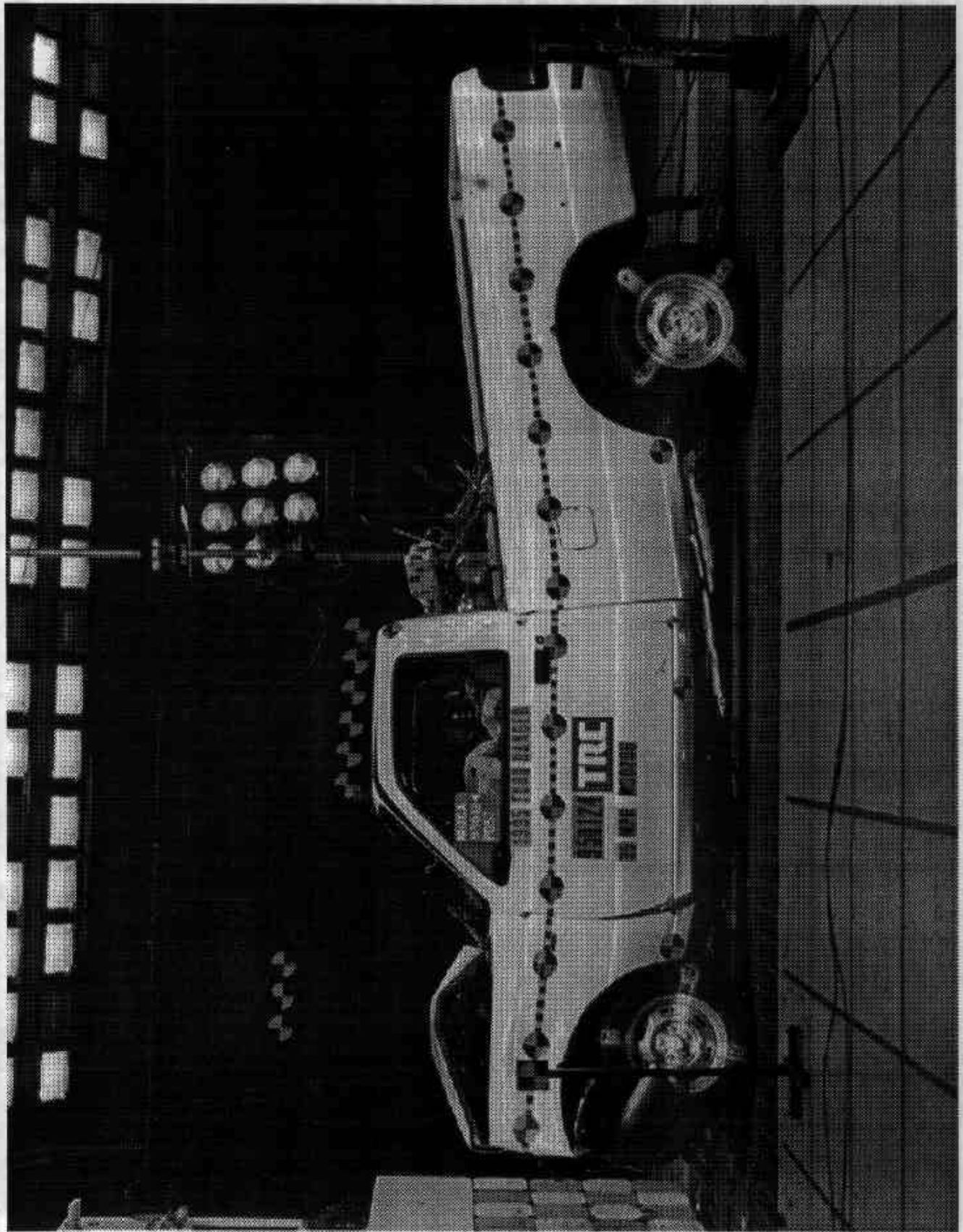


Figure A-4. Post-Test Left Side View
A-5

950124

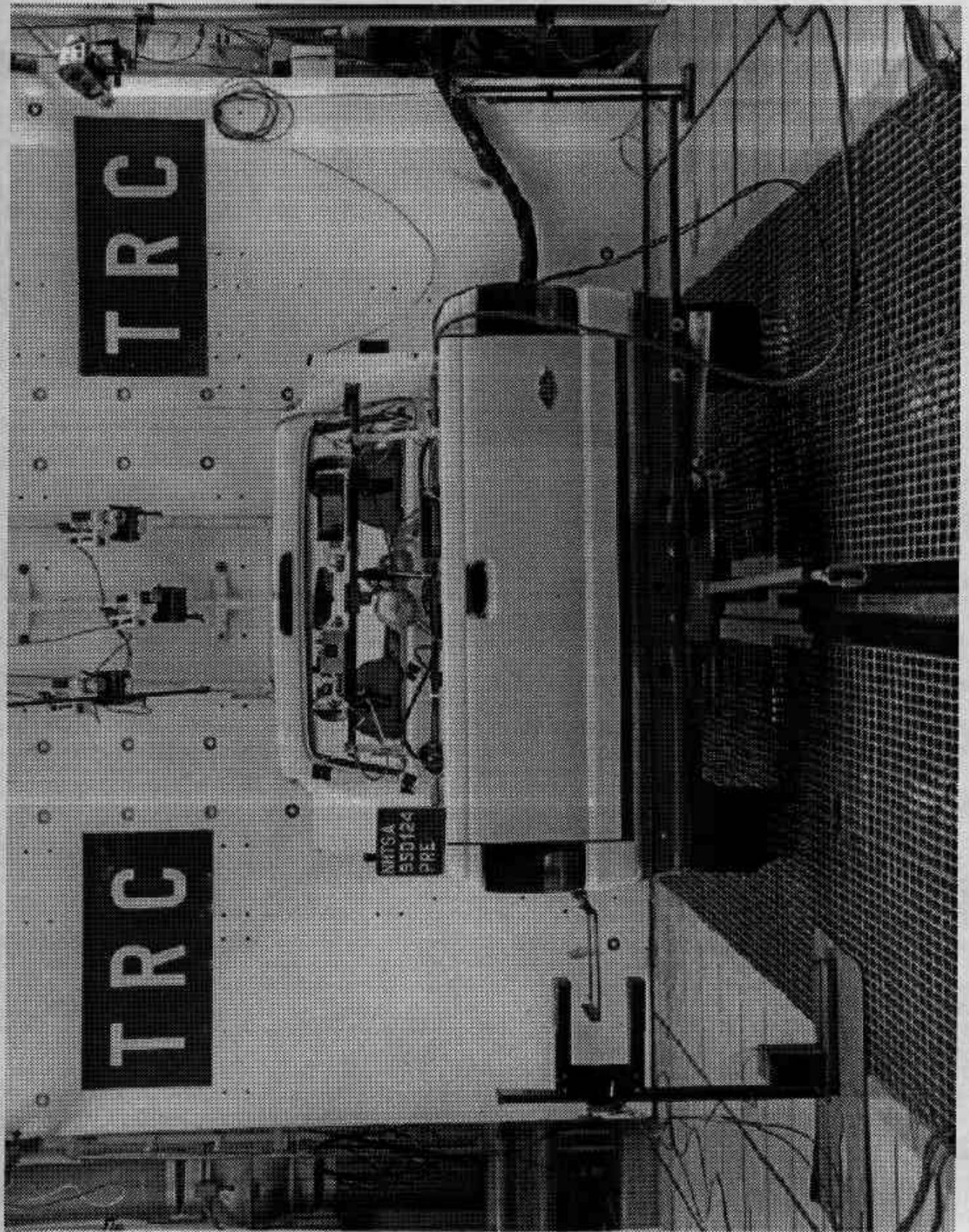


Figure A-5. Pre-Test Rear View

A-6

950124

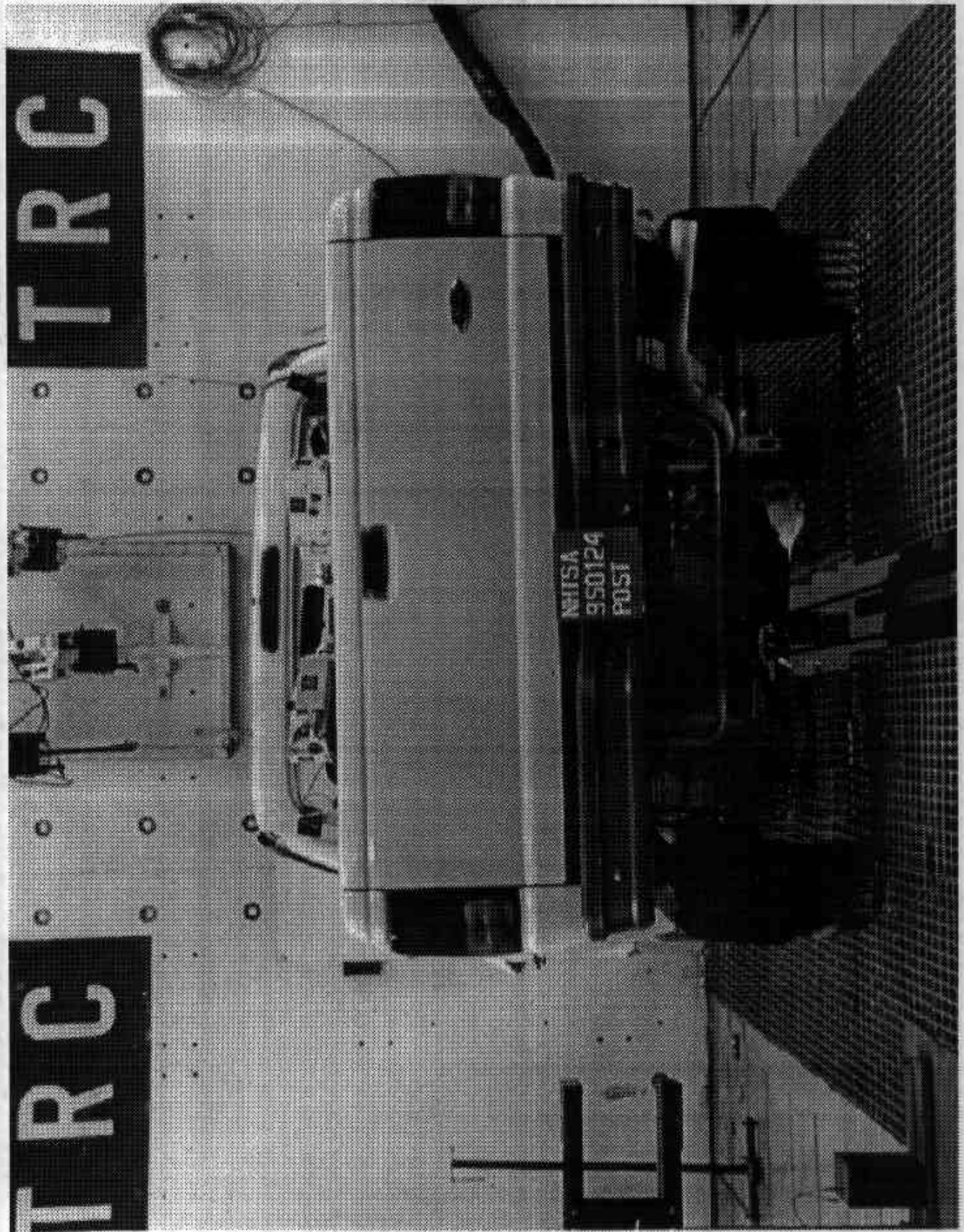


Figure A-6. Post-Test Rear View
A-7

950124

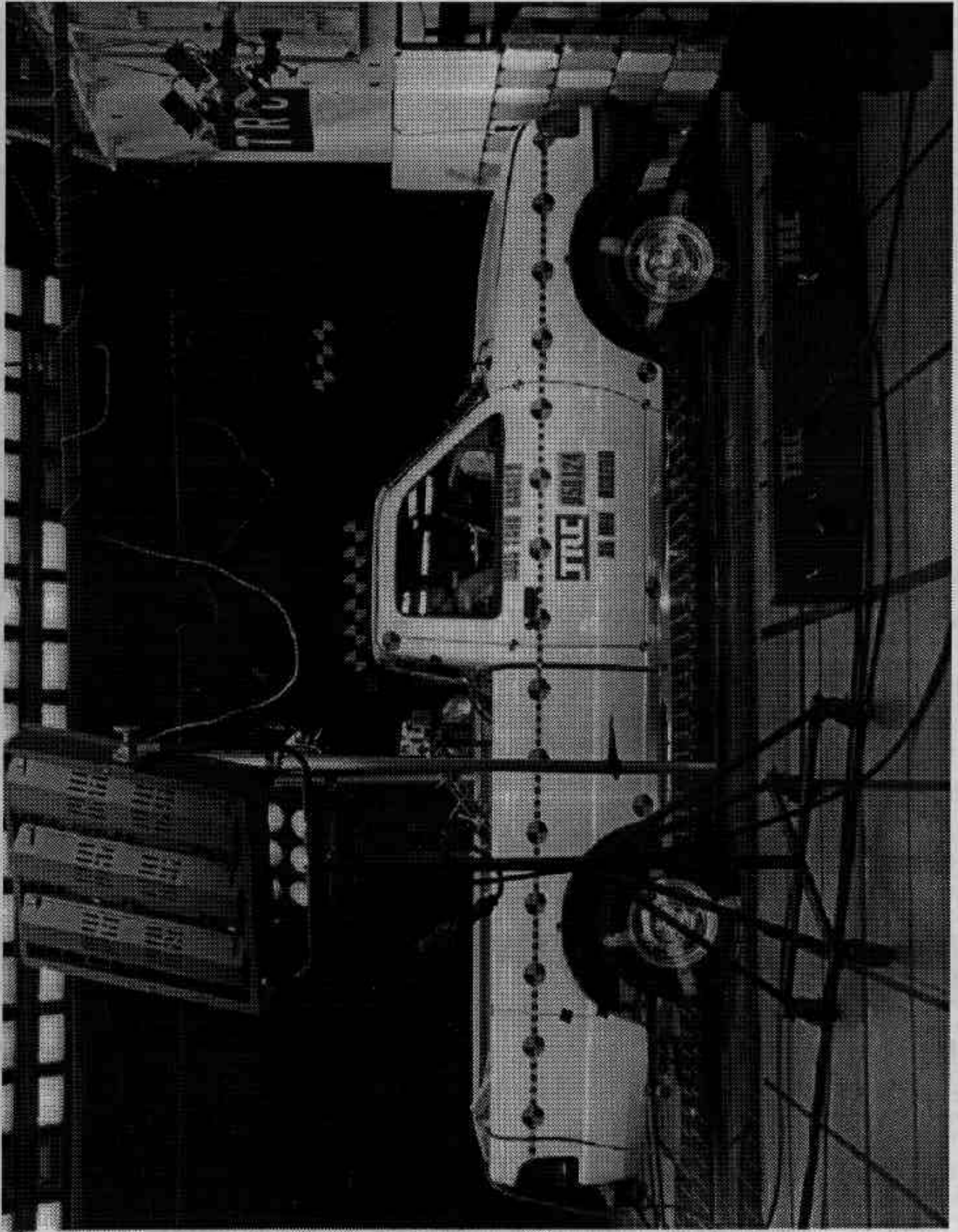


Figure A-7. Pre-Test Right Side View

A-8

950124

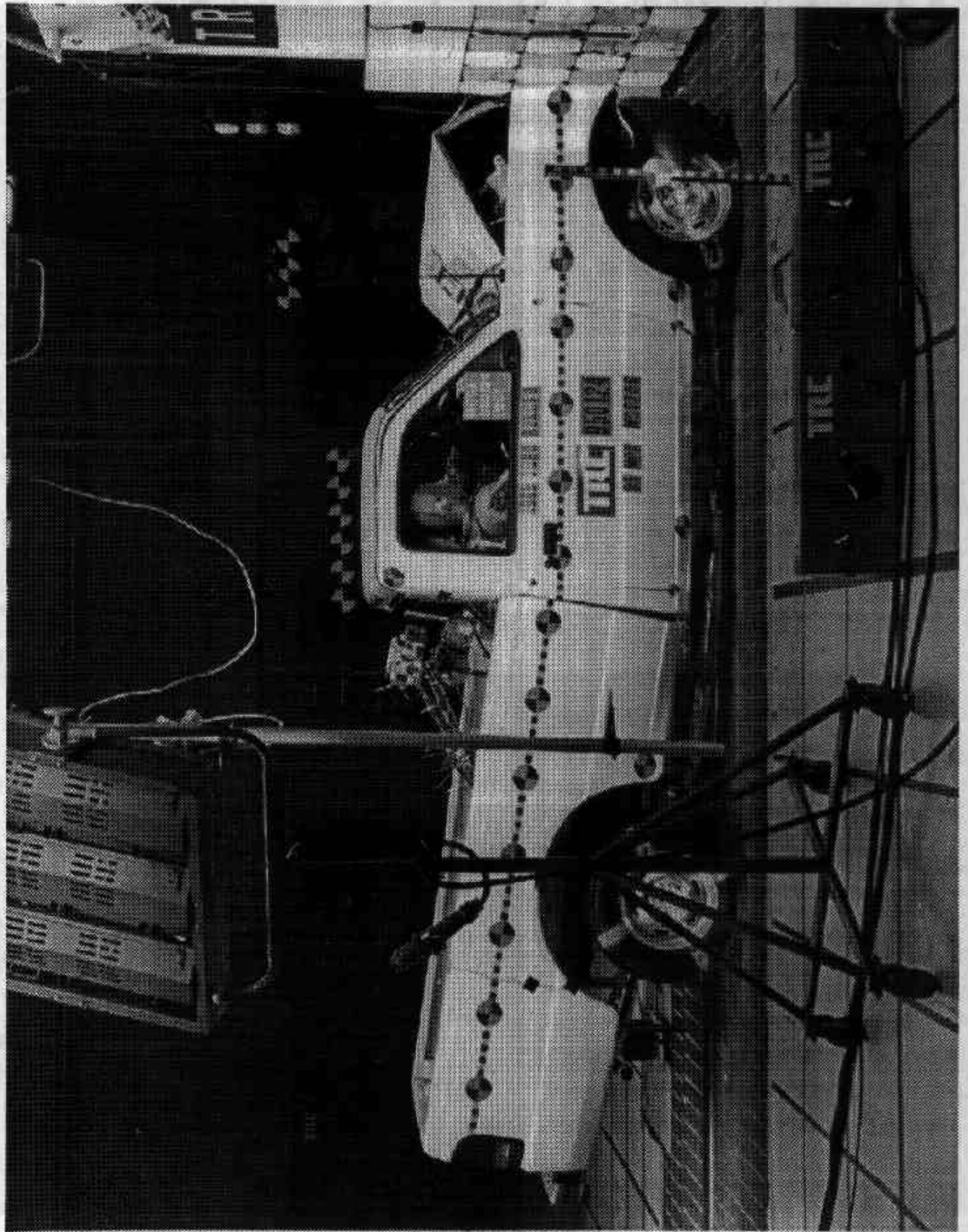


Figure A-8. Post-Test Right Side View
A-9

950124

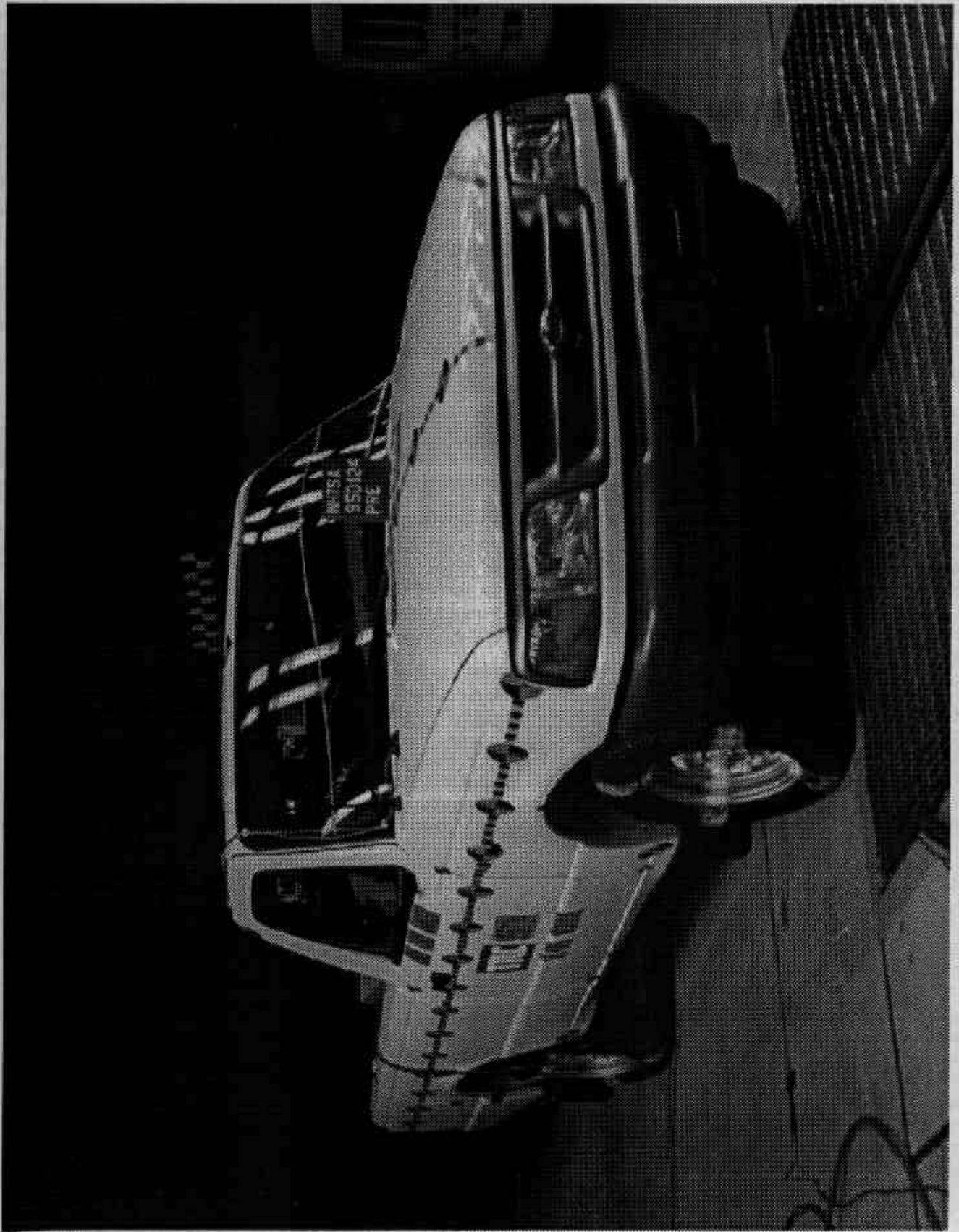


Figure A-9. Pre-Test Right Front Three-Quarter View

A-10

950124

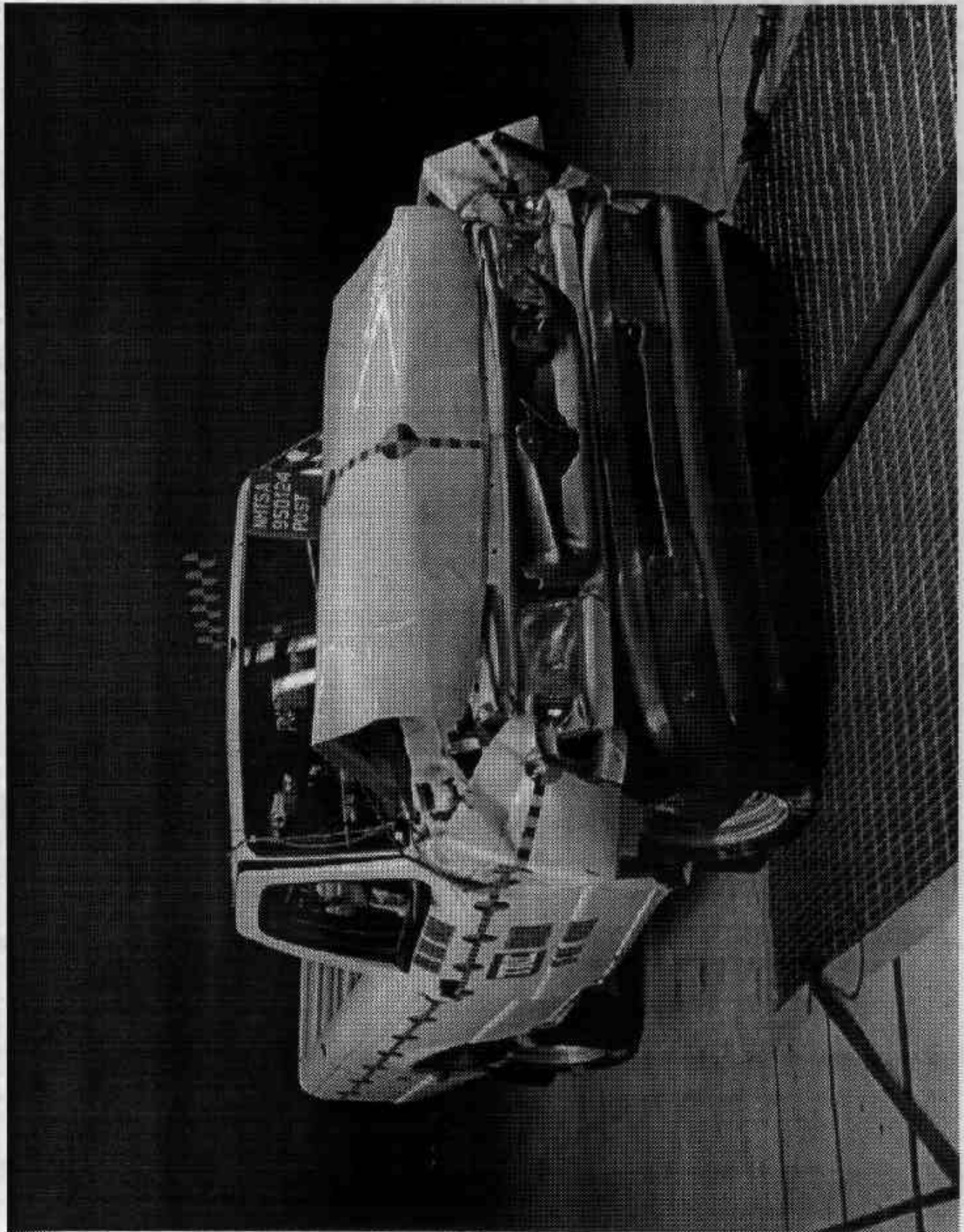


Figure A-10. Post-Test Right Front Three-Quarter View
A-11

950124

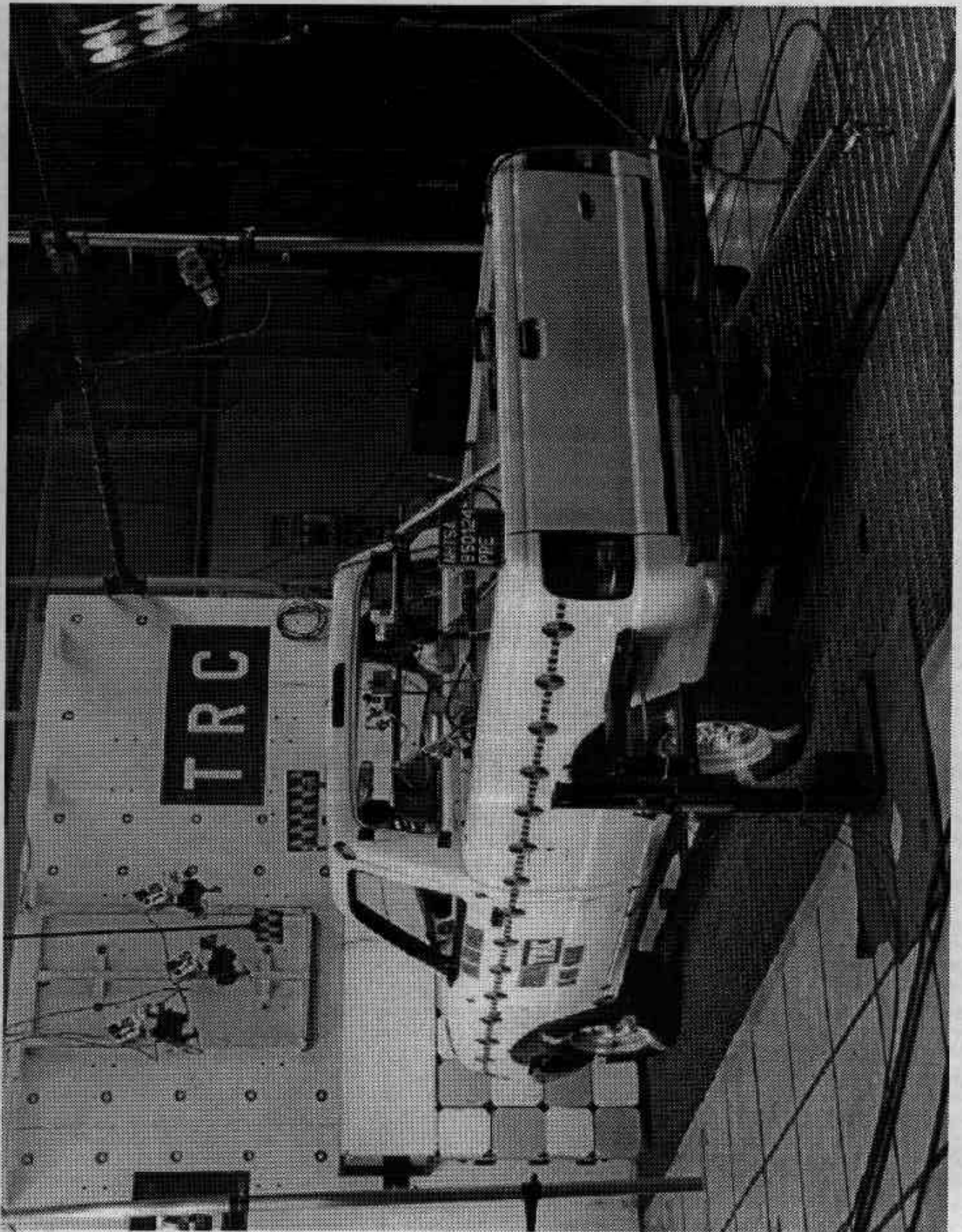


Figure A-11. Pre-Test Left Rear Three-Quarter View

A-12

950124

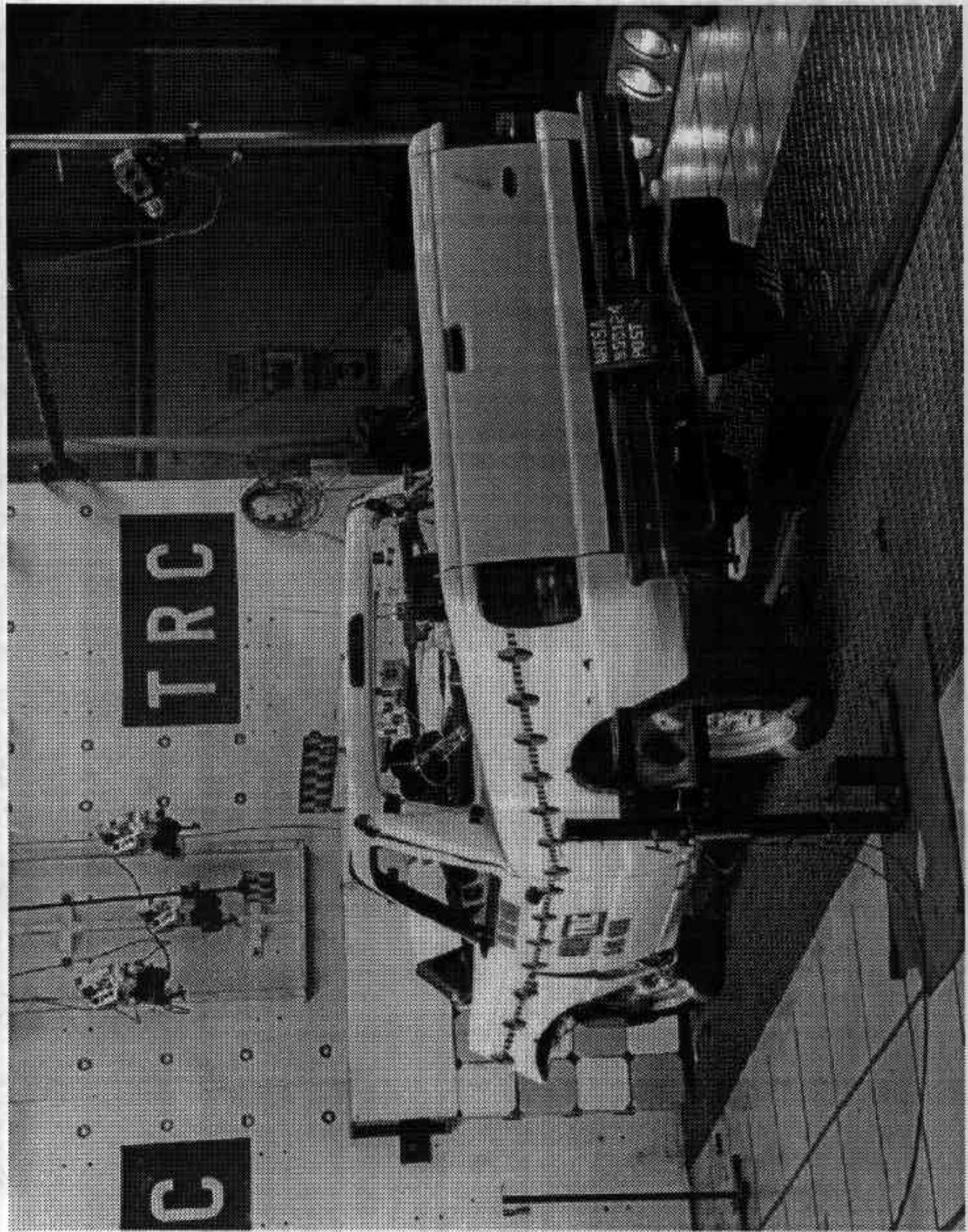


Figure A-12. Post-Test Left Rear Three-Quarter View

A-13

950124

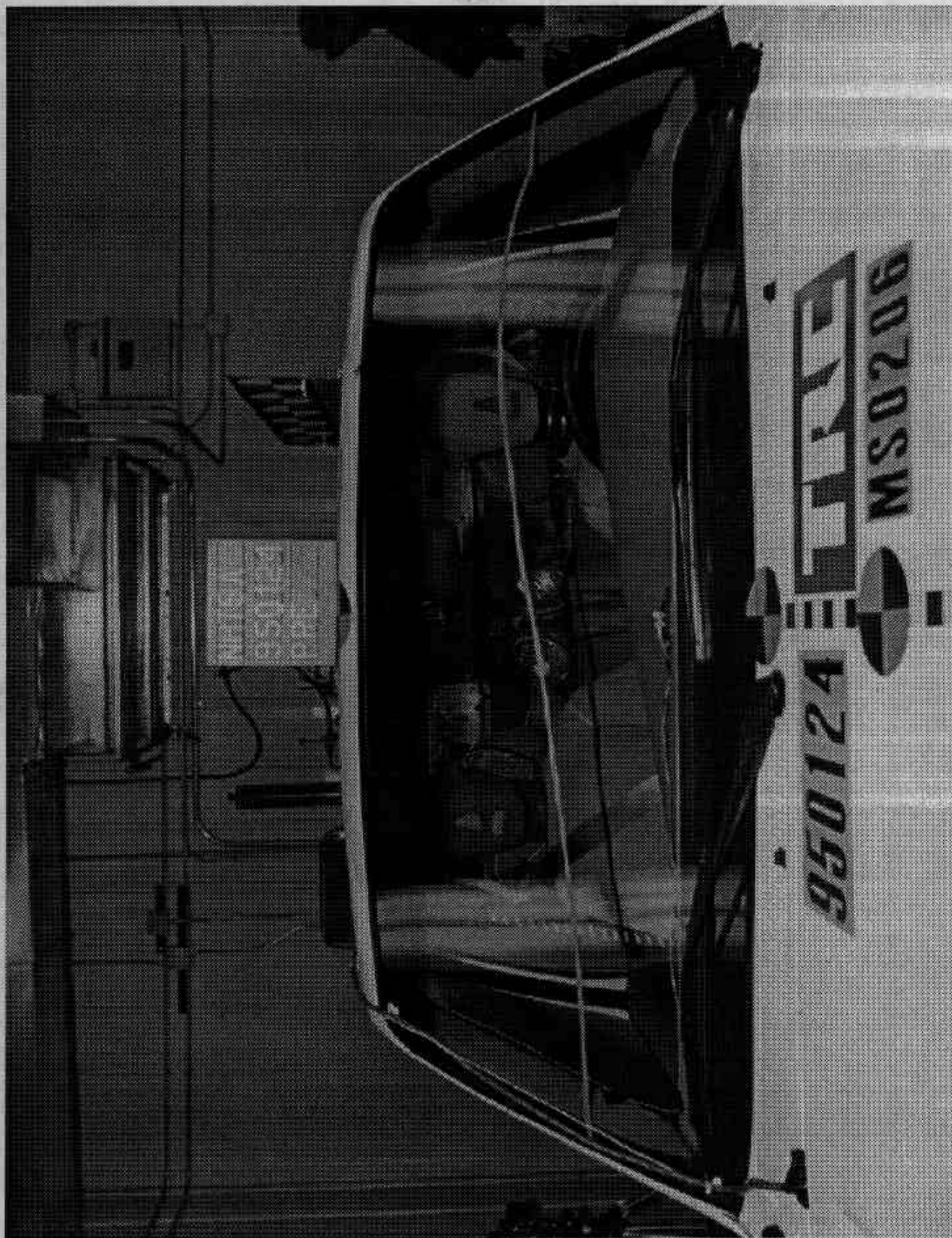


Figure A-13. Pre-Test Windshield View

A-14

950124

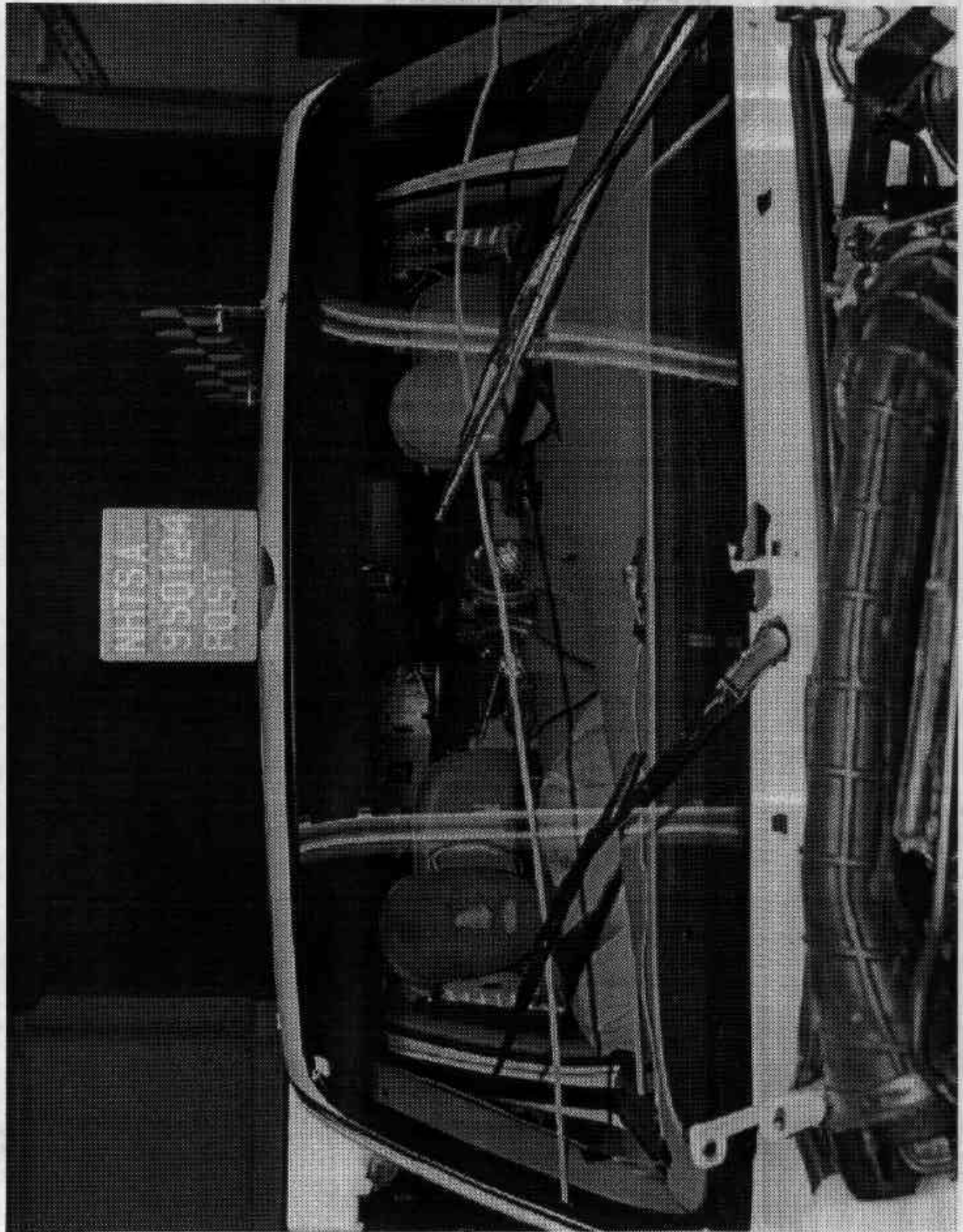


Figure A-14. Post-Test Windshield View
A-15

950124

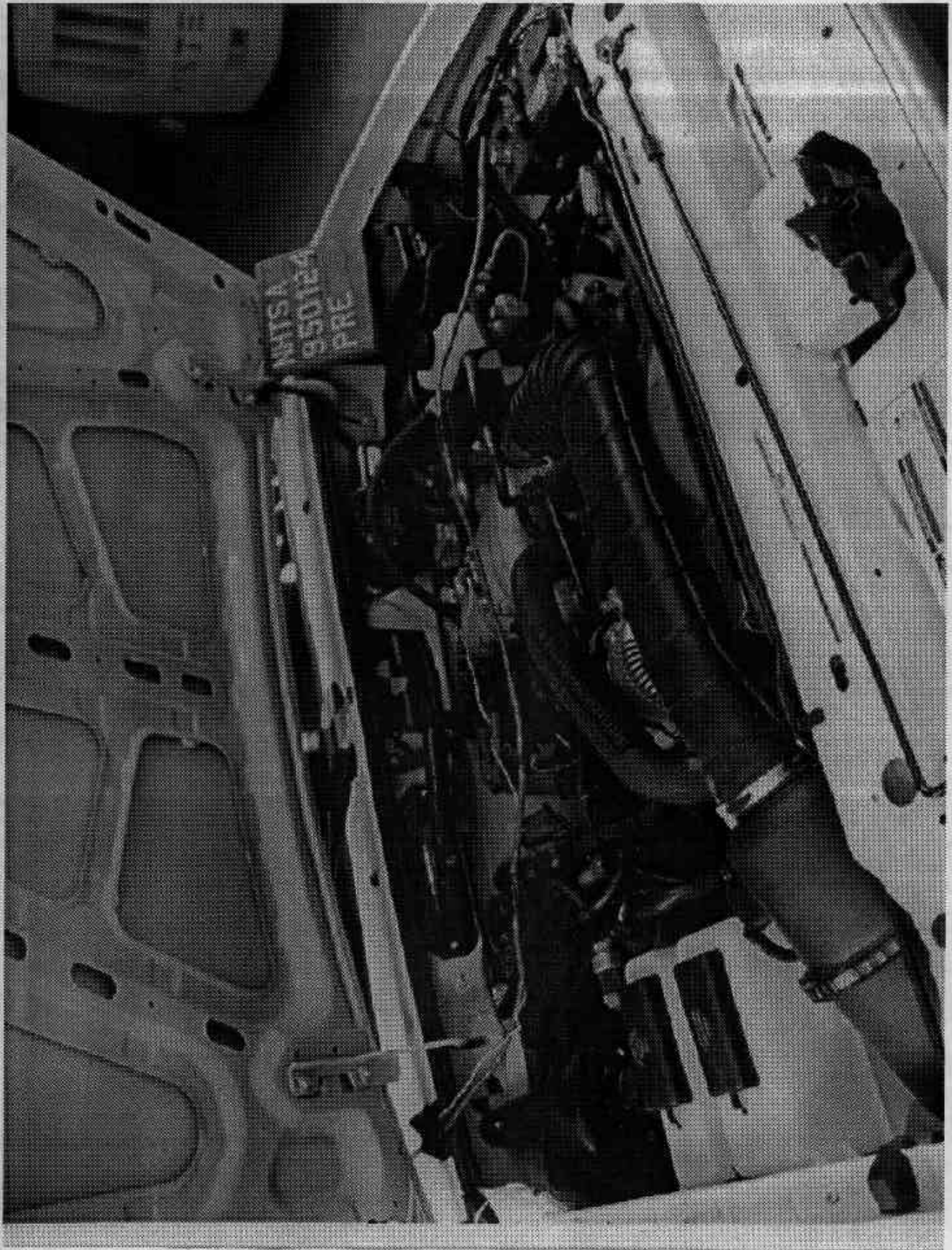


Figure A-15. Pre-Test Engine Compartment View
A-16

950124

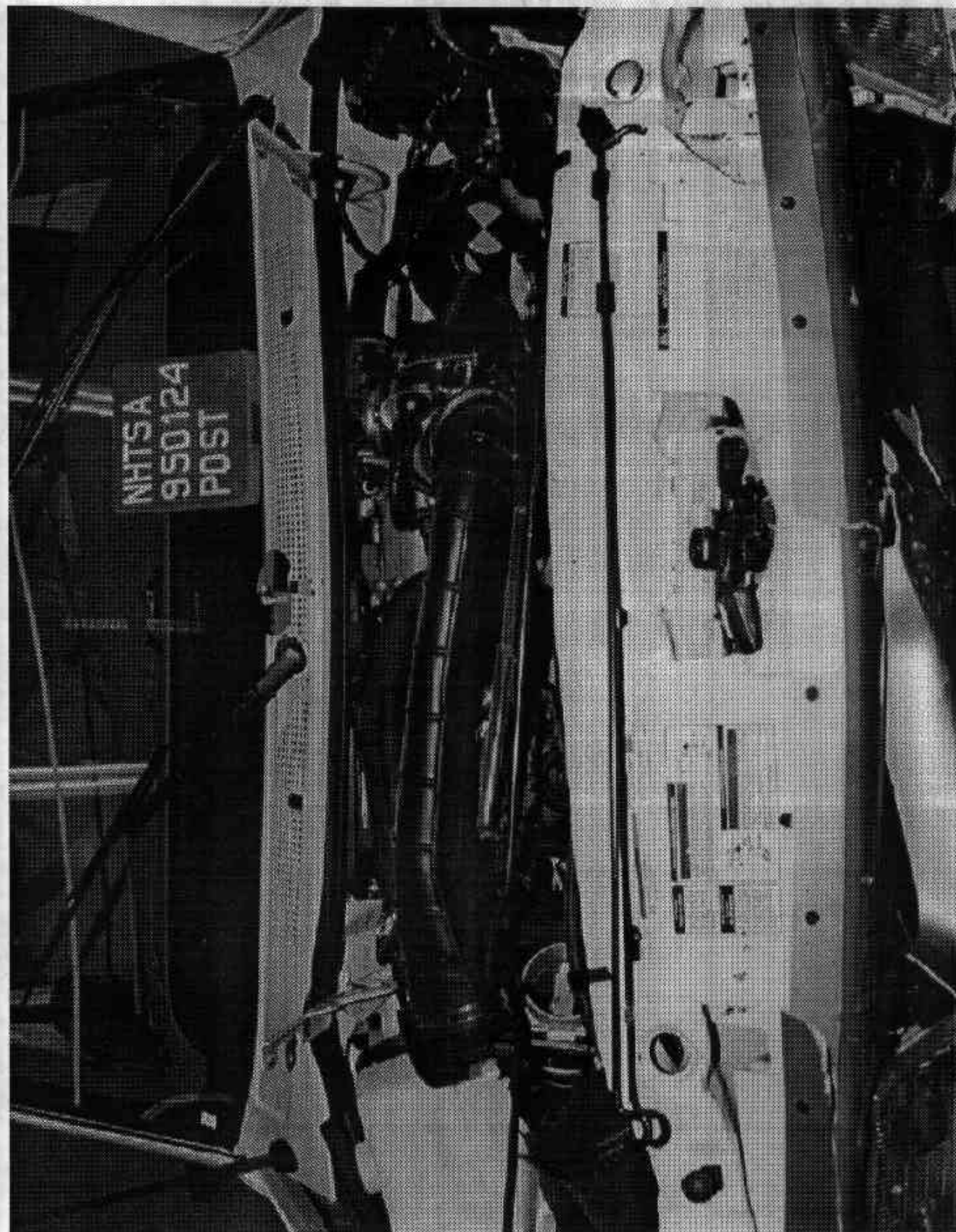


Figure A-16. Post-Test Engine Compartment View
A-17

950124

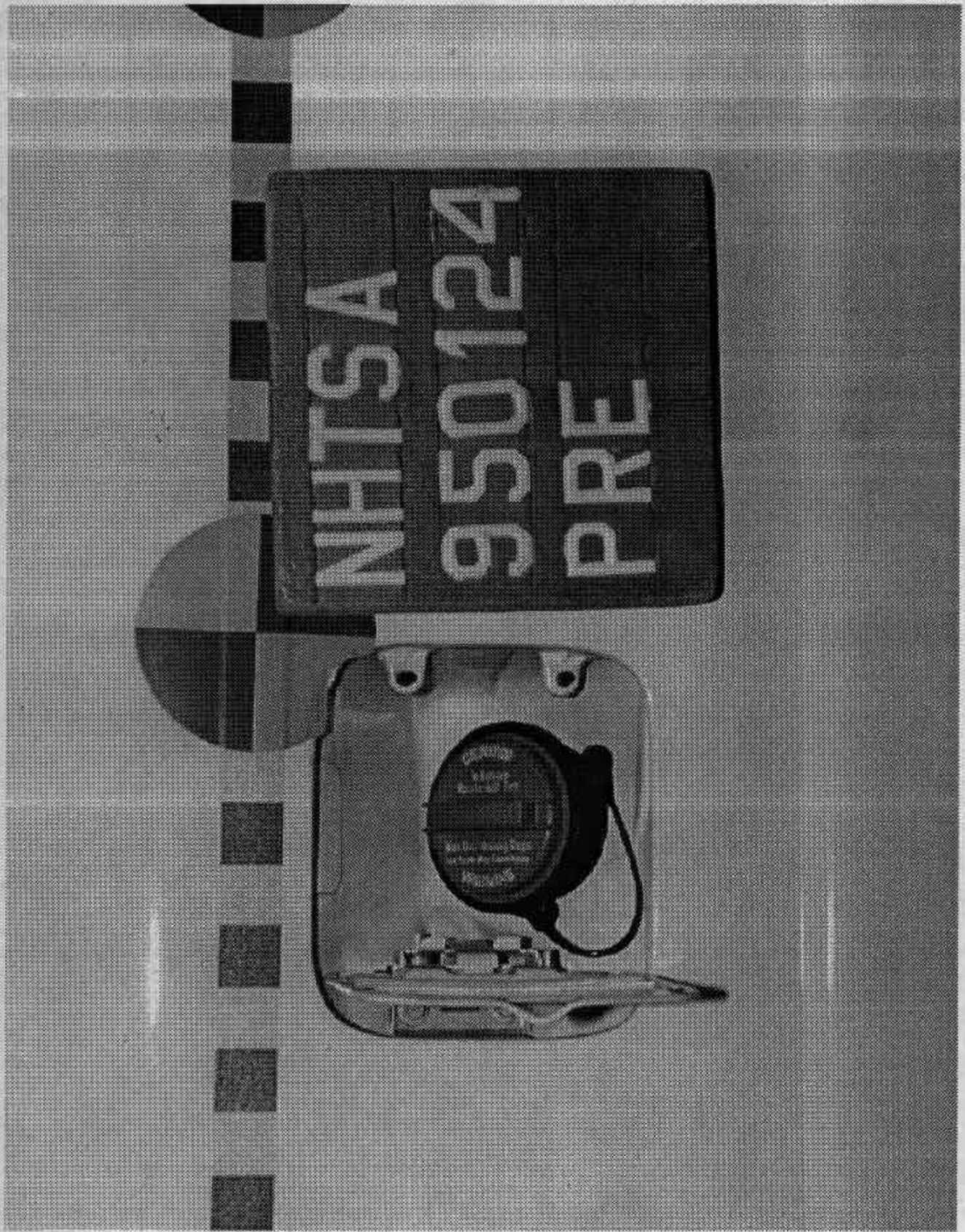


Figure A-17. Pre-Test Fuel Filler Cap View

A-18

950124

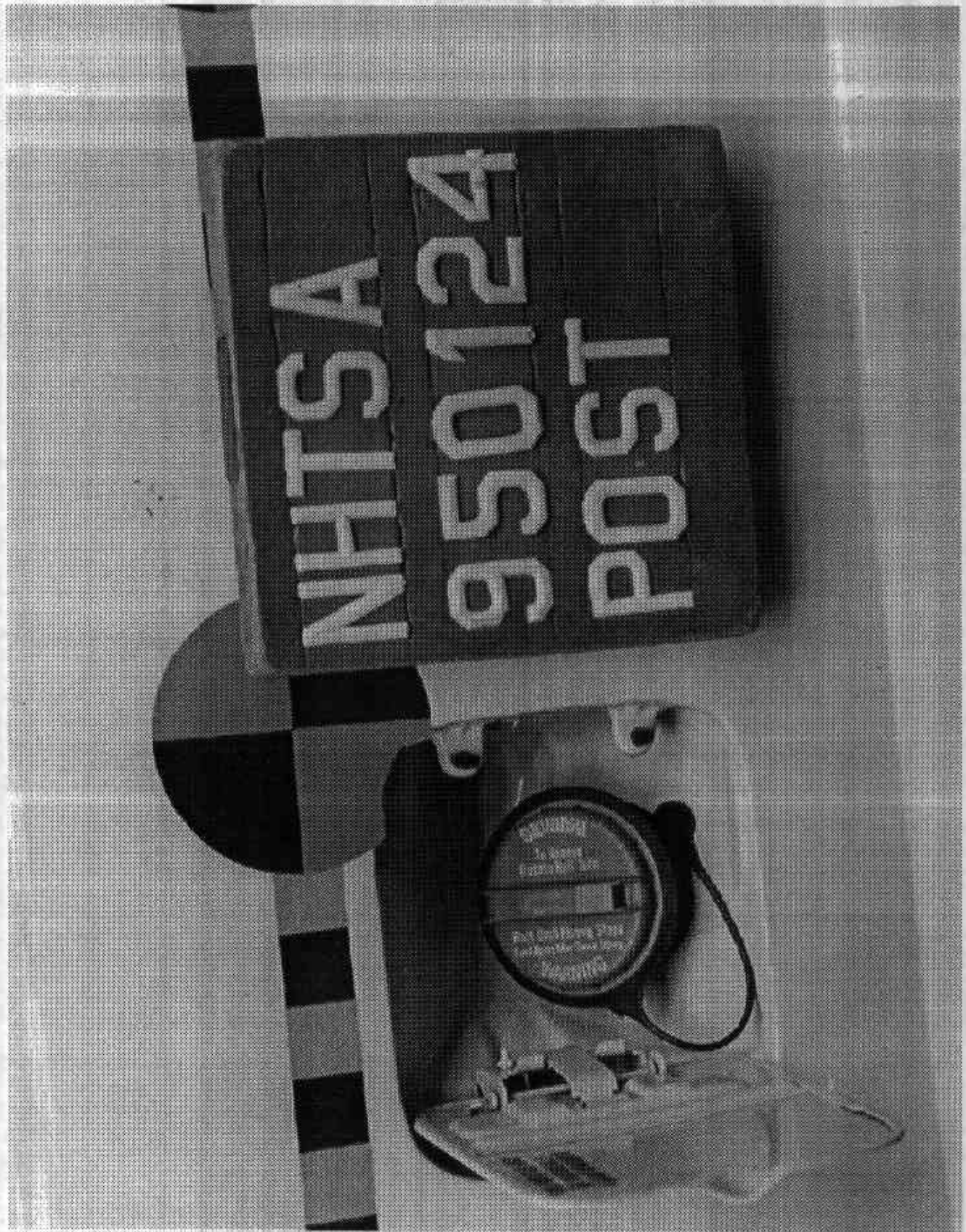


Figure A-18. Post-Test Fuel Filler Cap View

A-19

950124

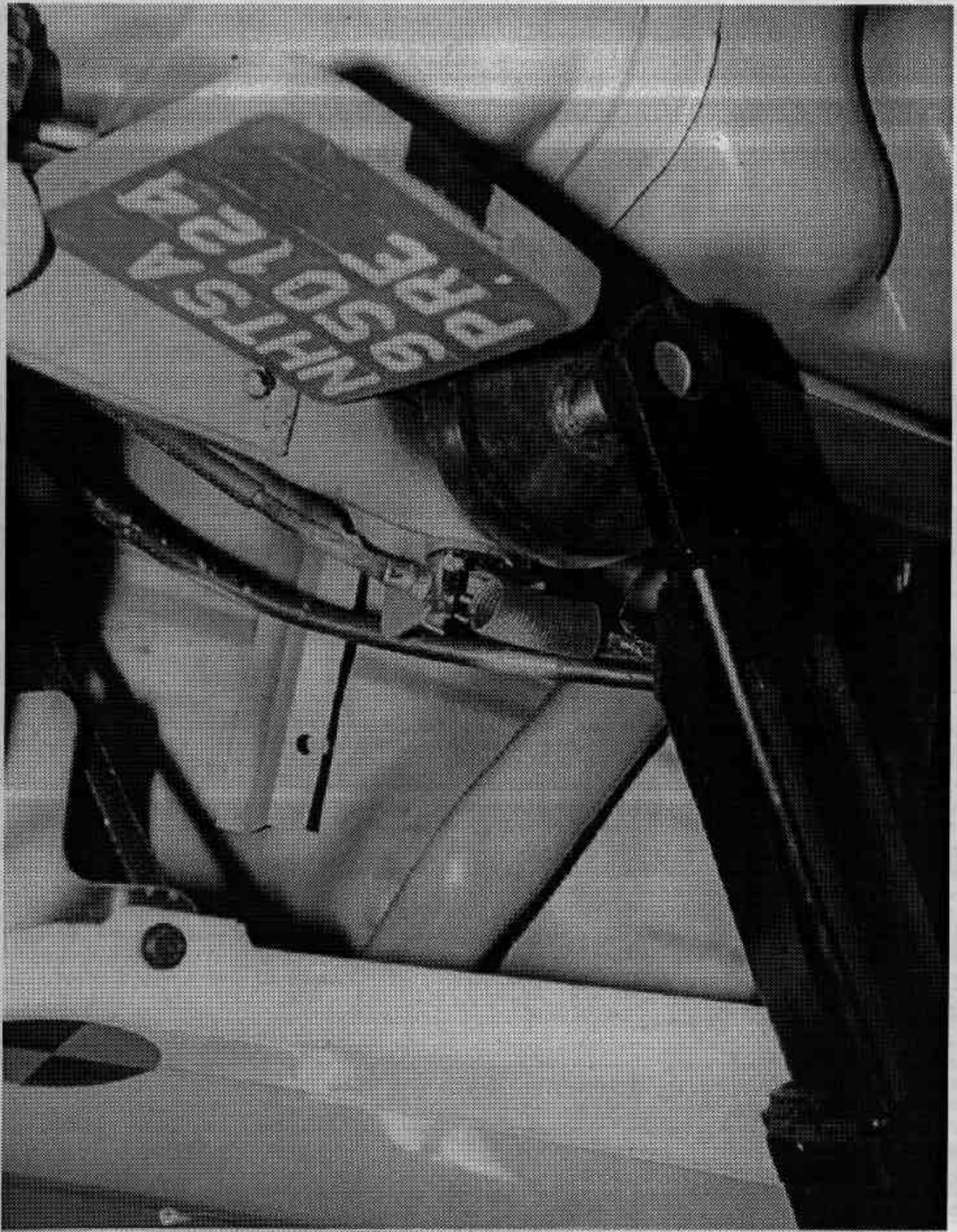


Figure A-19. Pre-Test Fuel Filler Neck View

A-20

950124



Figure A-20. Post-Test Fuel Filler Neck View

A-21

950124



Figure A-21. Pre-Test Fuel Tank View

A-22

950124

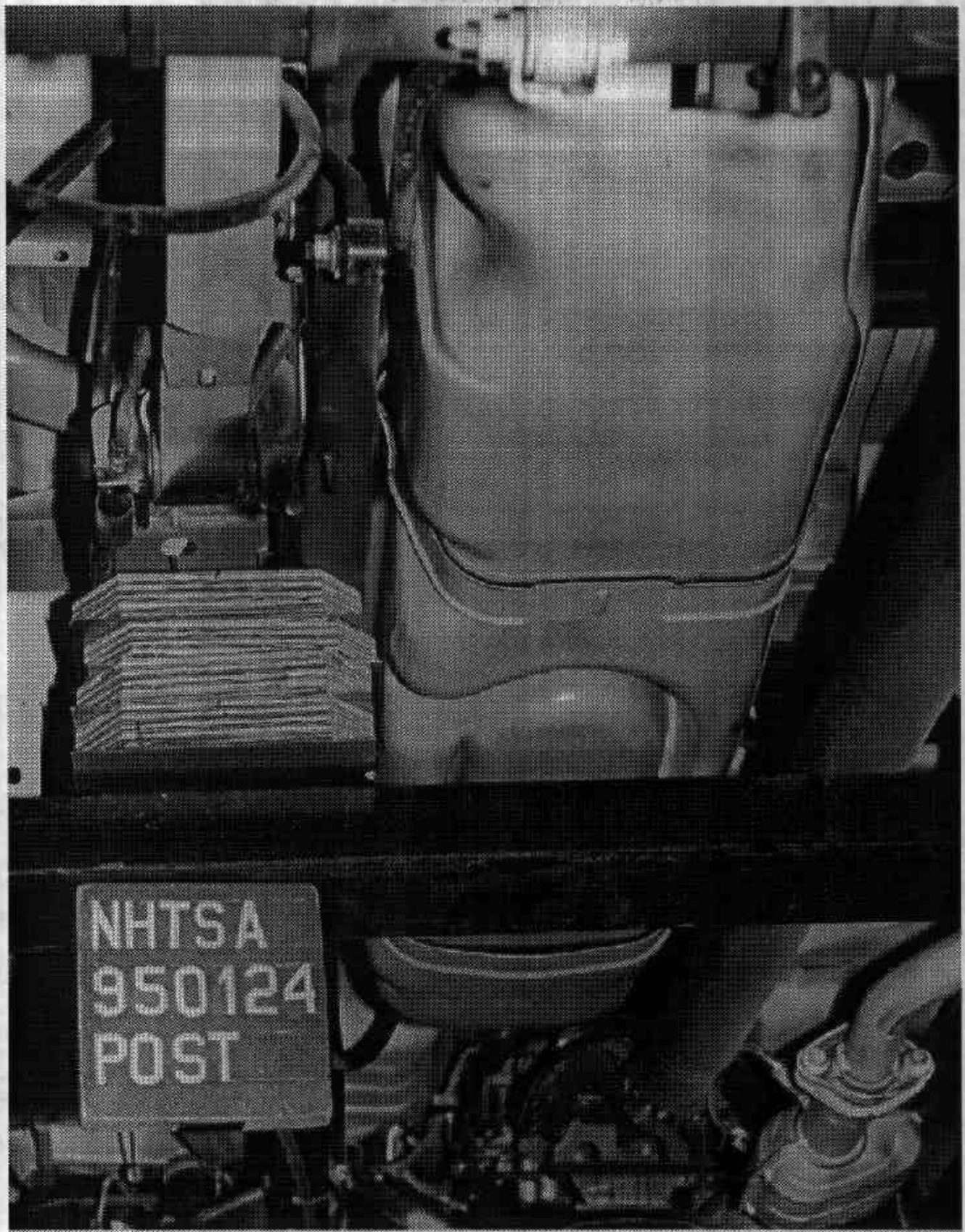


Figure A-22. Post-Test Fuel Tank View

A-23

950124

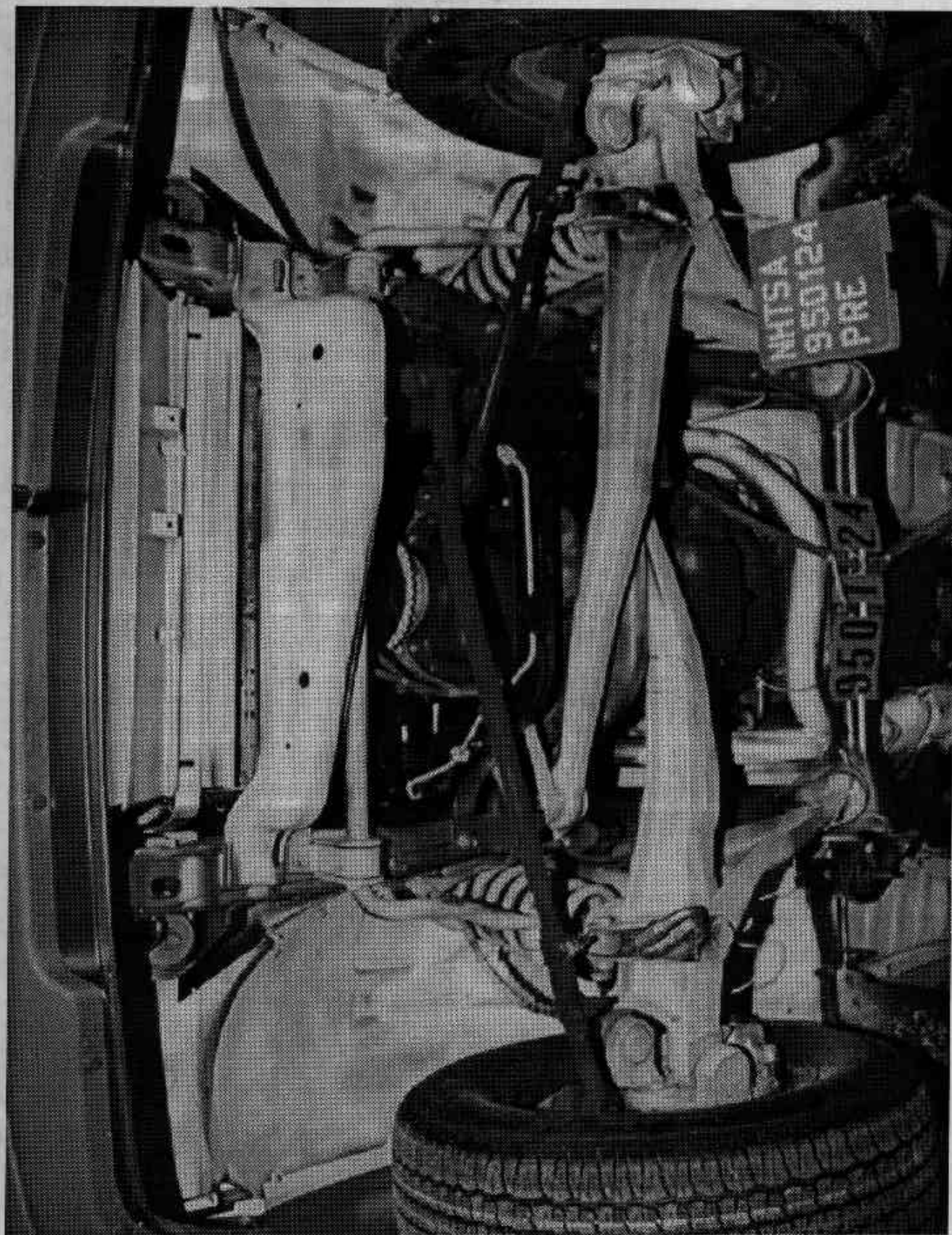


Figure A-23. Pre-Test Front Underbody View

A-24

950124

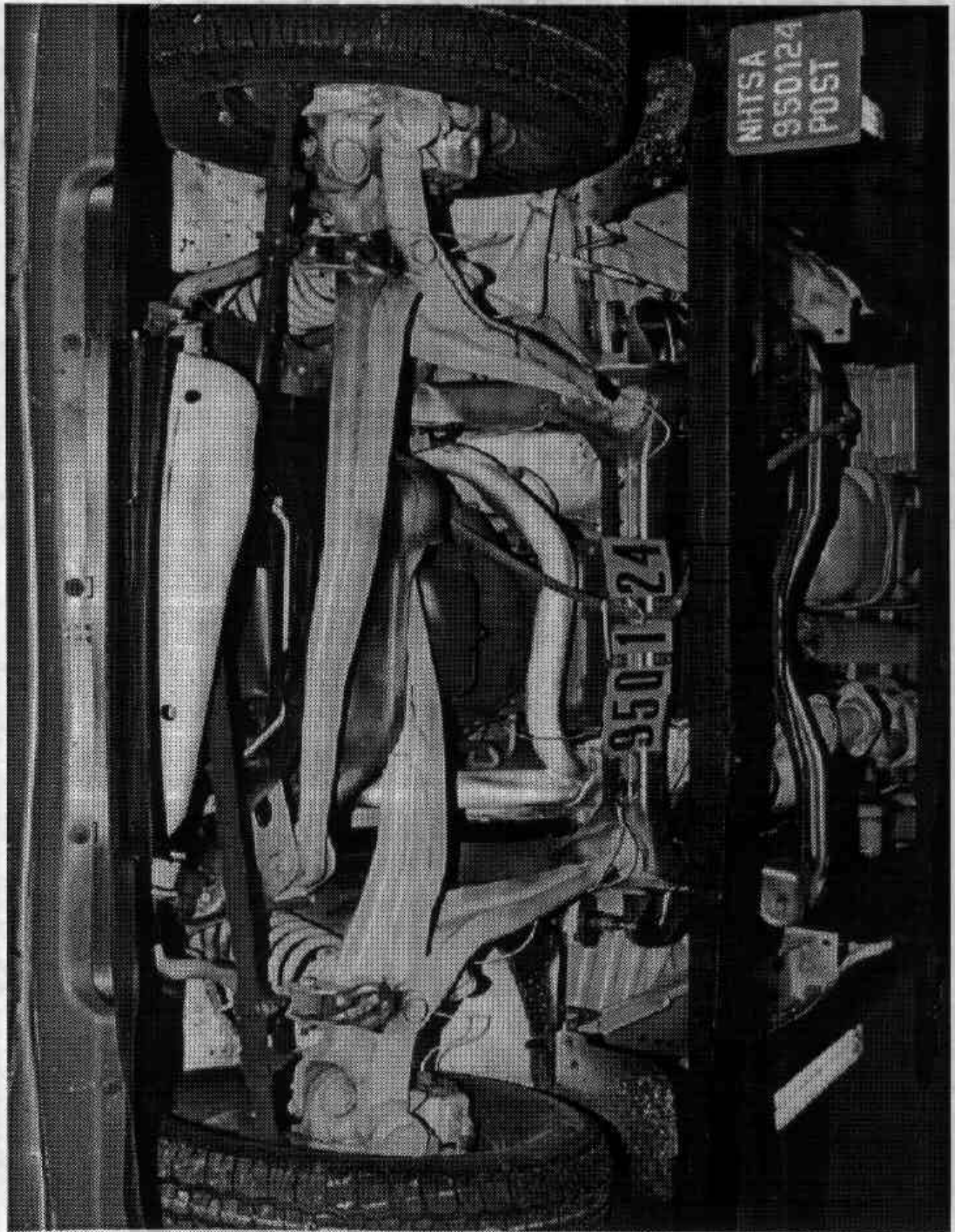


Figure A-24. Post-Test Front Underbody View
A-25

950124

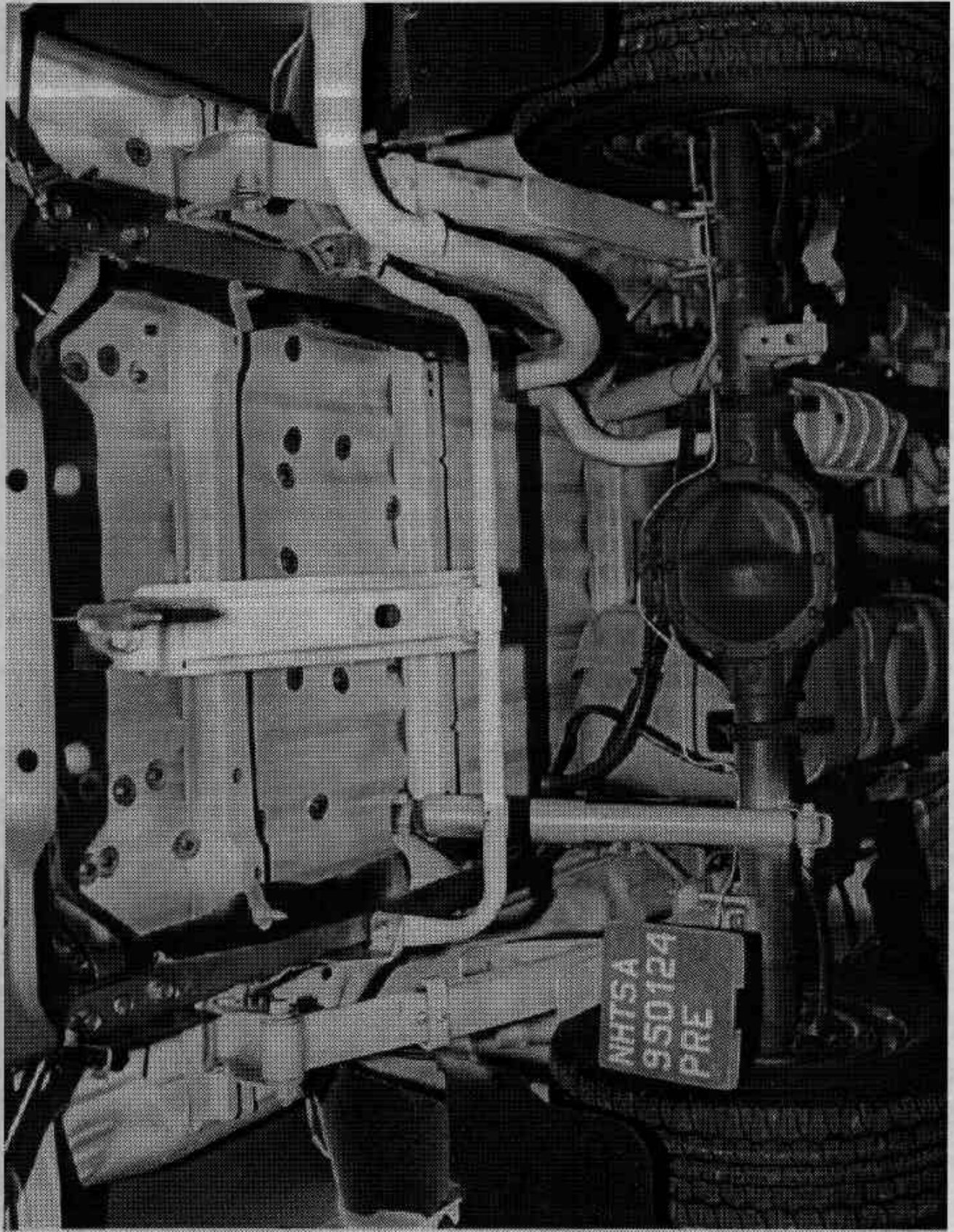


Figure A-25. Pre-Test Rear Underbody View

A-26

950124

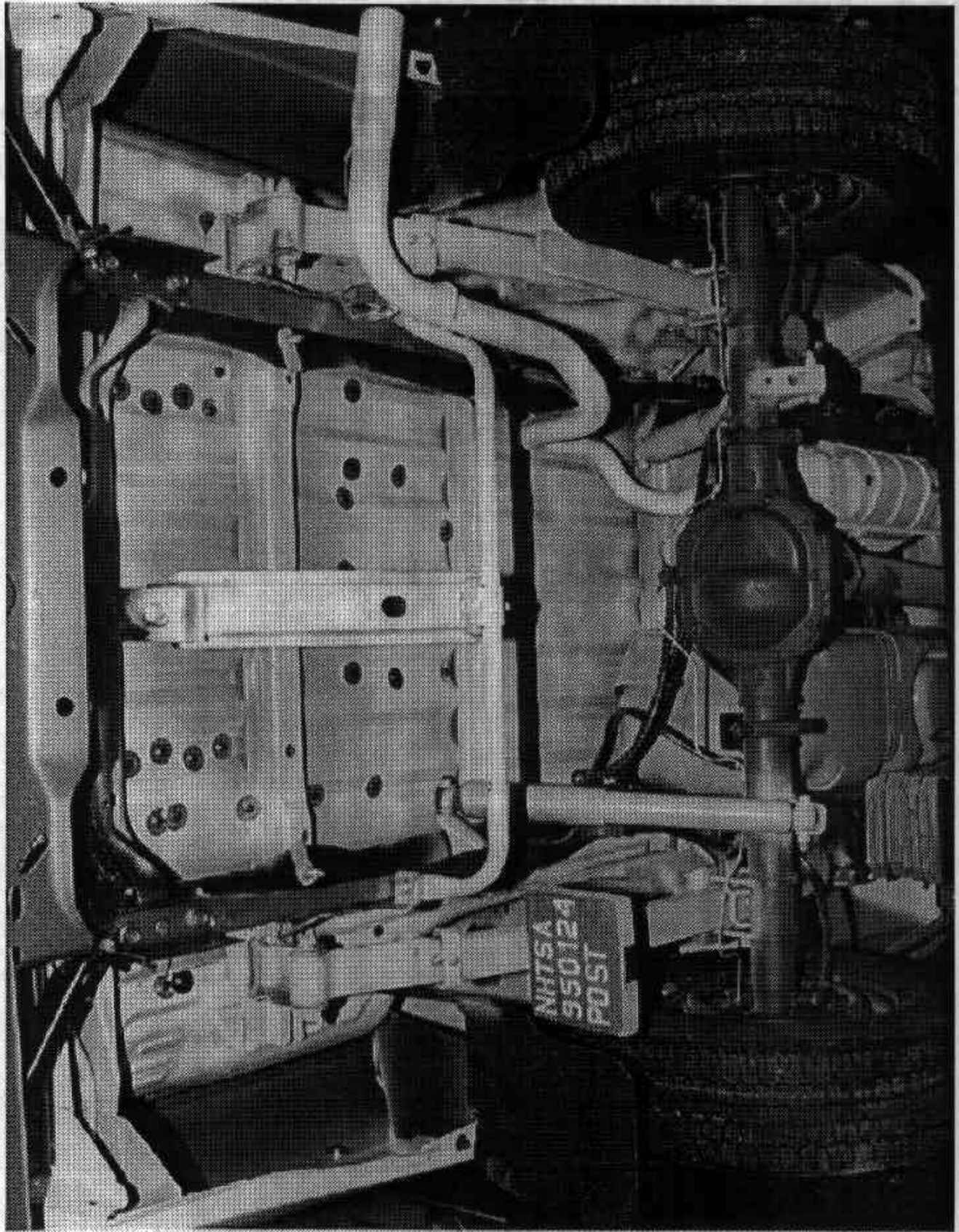


Figure A-26. Post-Test Rear Underbody View

A-27

950124

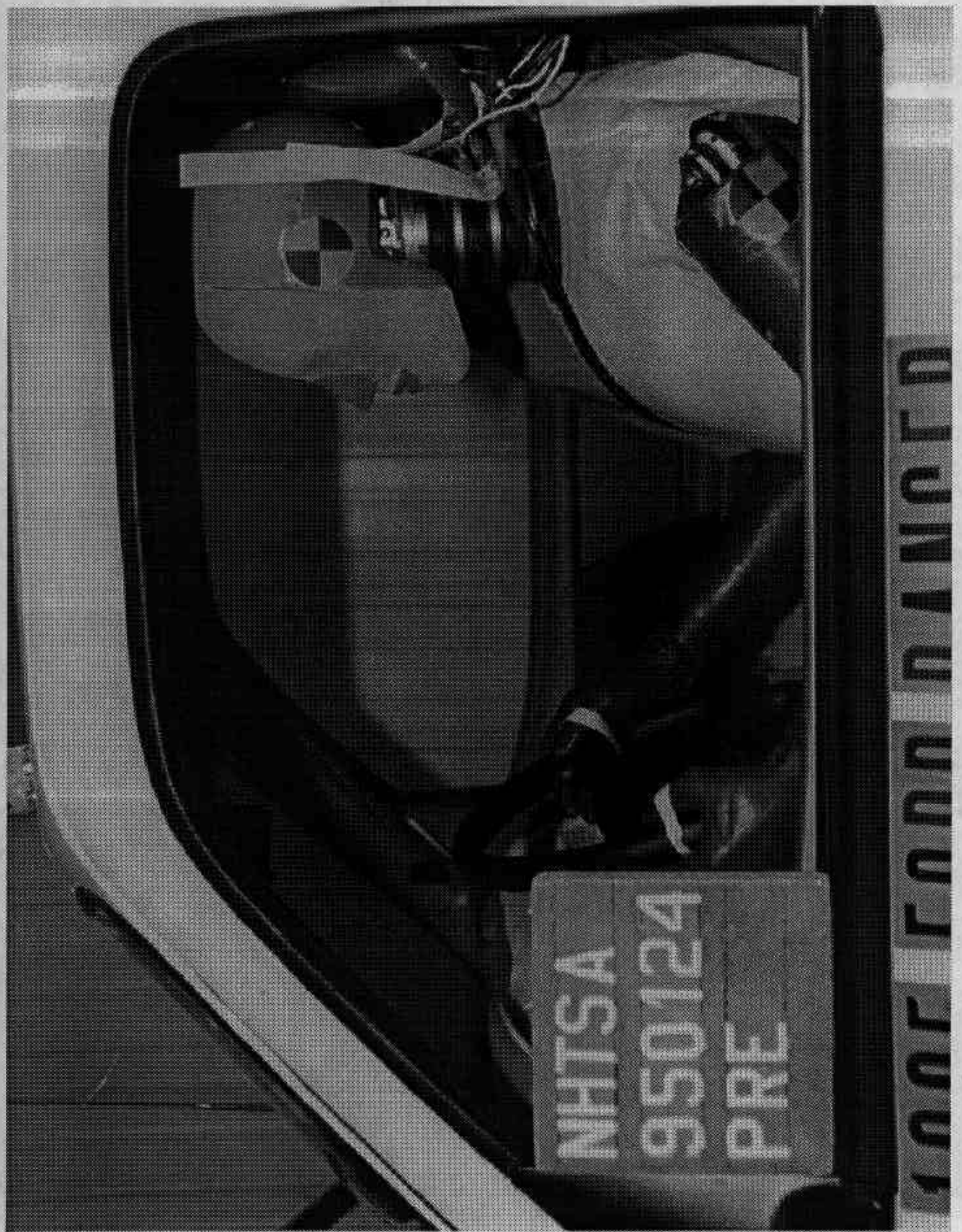


Figure A-27. Pre-Test Driver Dummy Position View

A-28

950124

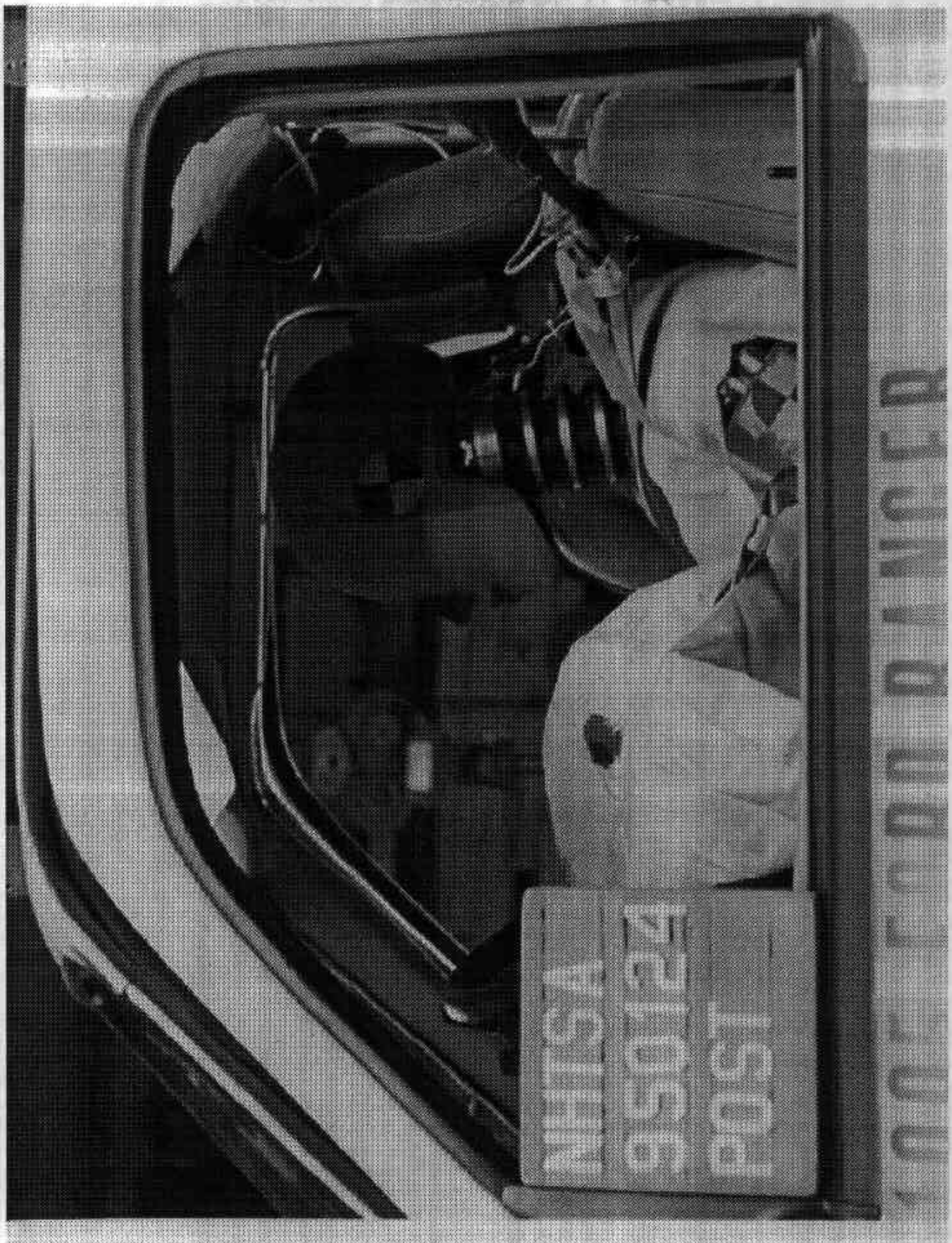


Figure A-28. Post-Test Driver Dummy Position View

A-29

950124

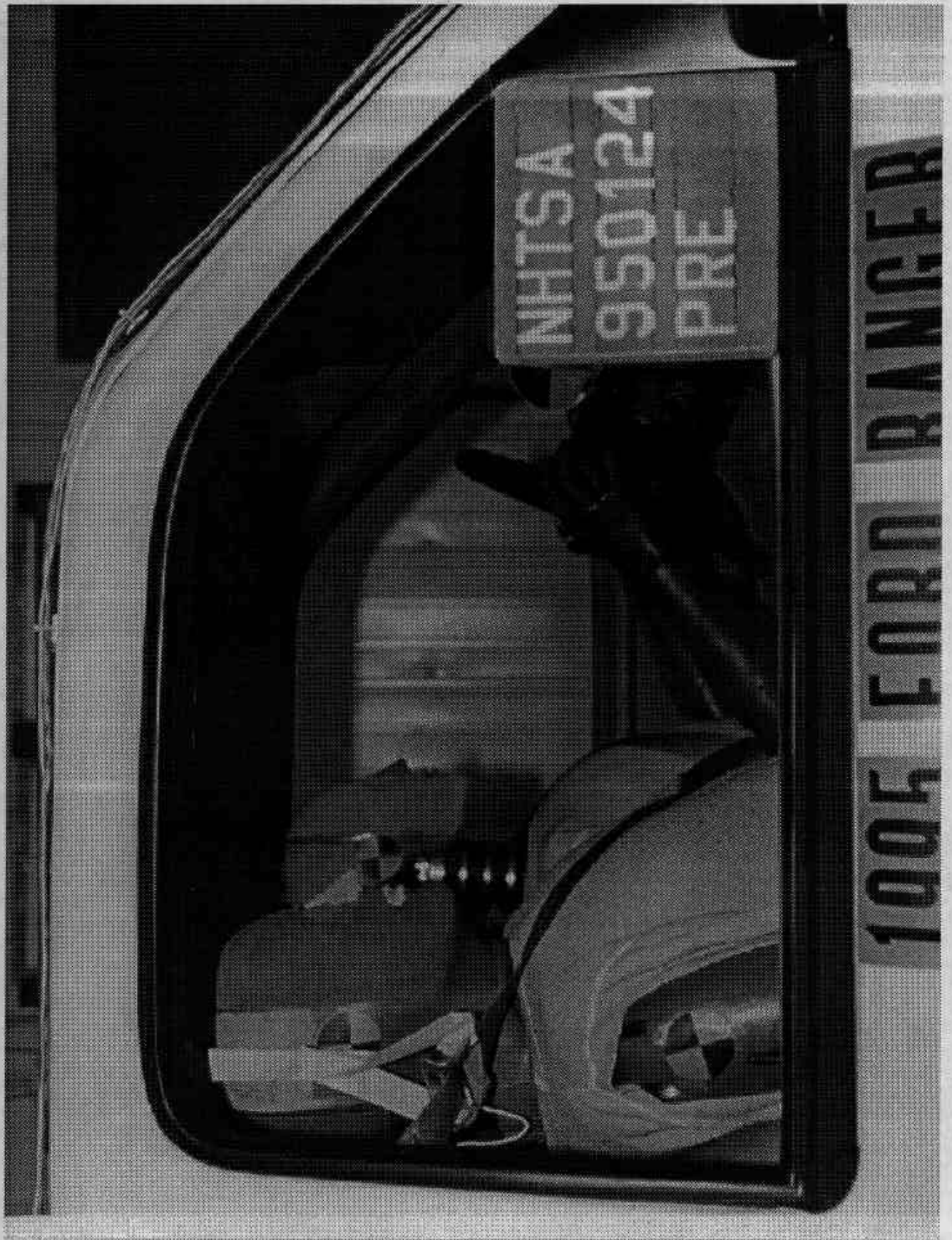


Figure A-29. Pre-Test Passenger Dummy Position View

A-30

950124

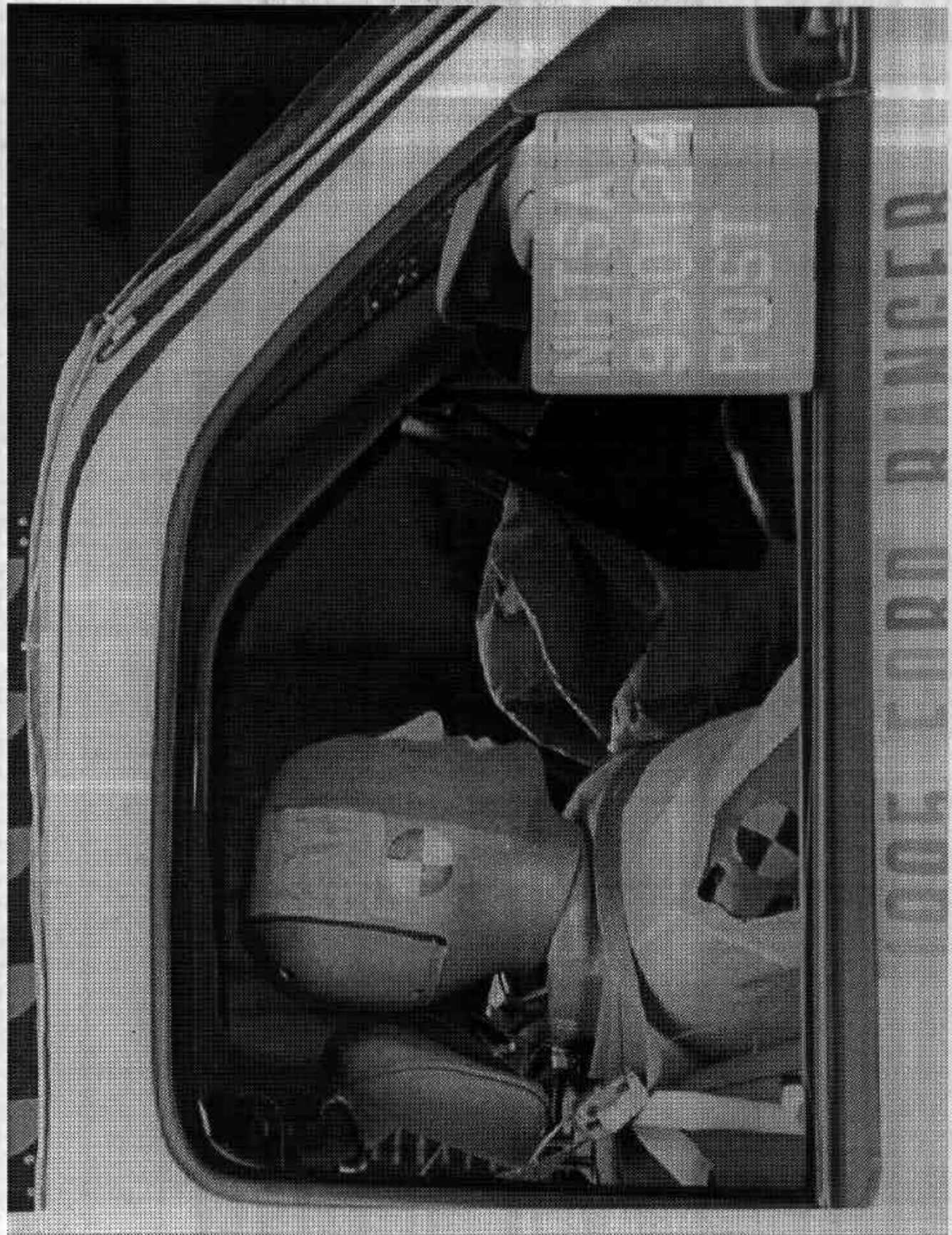


Figure A-30. Post-Test Passenger Dummy Position View
A-31

950124

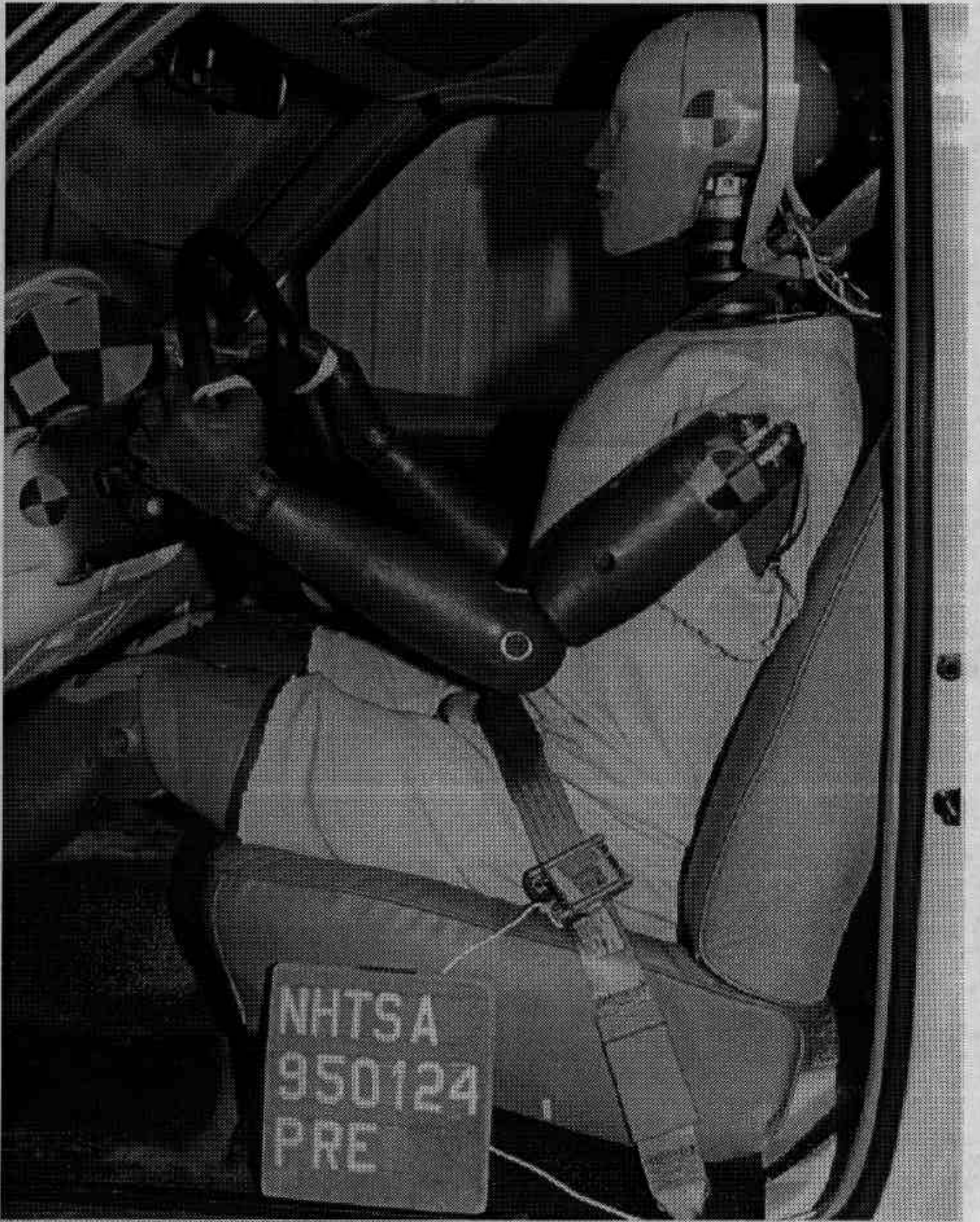


Figure A-31. Pre-Test Driver Dummy & Vehicle Interior - View 1

A-32

950124



Figure A-32. Post-Test Driver Dummy & Vehicle Interior - View 1

A-33

950124

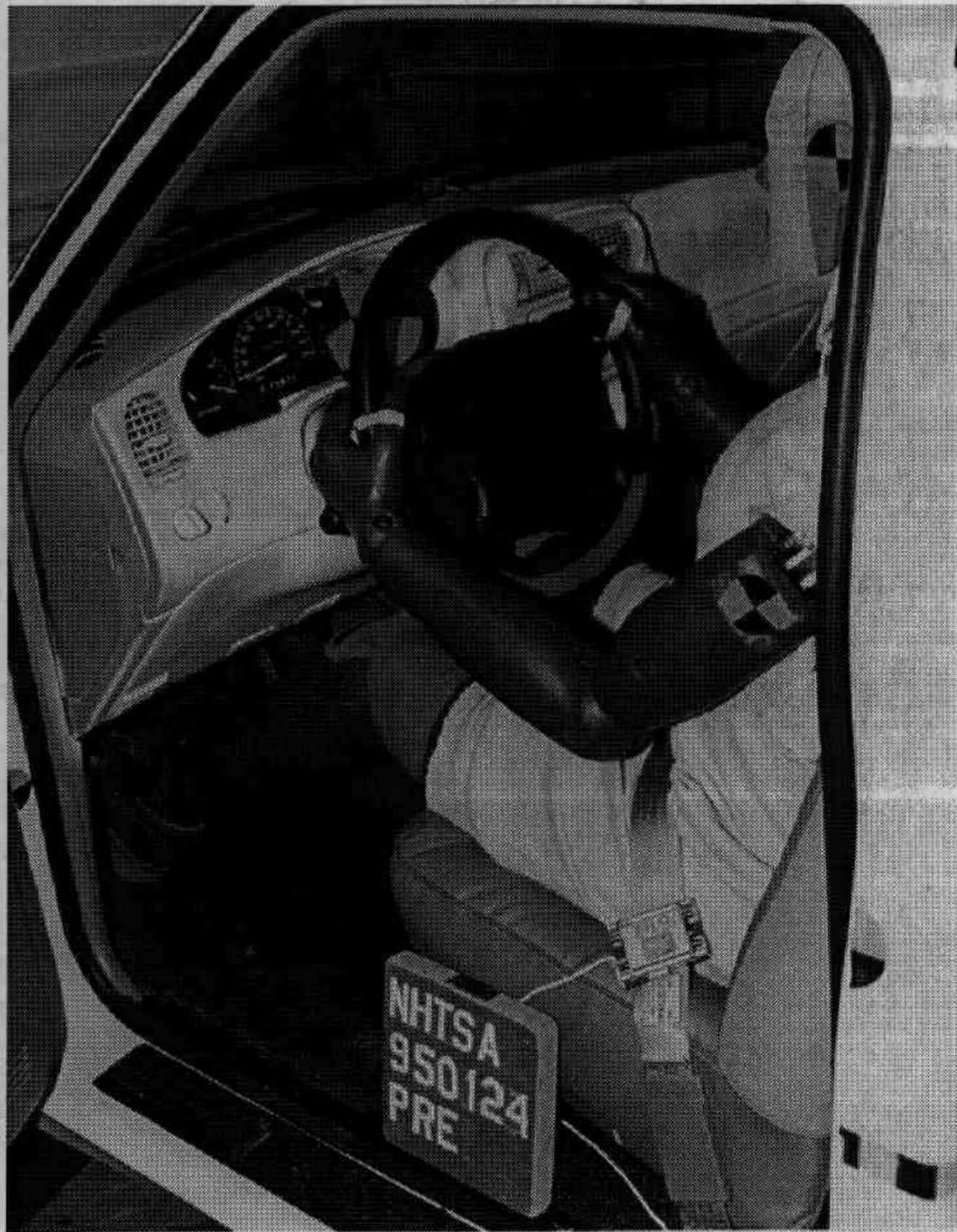


Figure A-33. Pre-Test Driver Dummy & Vehicle Interior - View 2

A-34

950124



Figure A-34. Post-Test Driver Dummy & Vehicle Interior - View 2

A-35

950124



Figure A-35. Pre-Test Passenger Dummy & Vehicle Interior - View 1

A-36

950124



Figure A-36. Post-Test Passenger Dummy & Vehicle Interior - View 1

A-37

950124

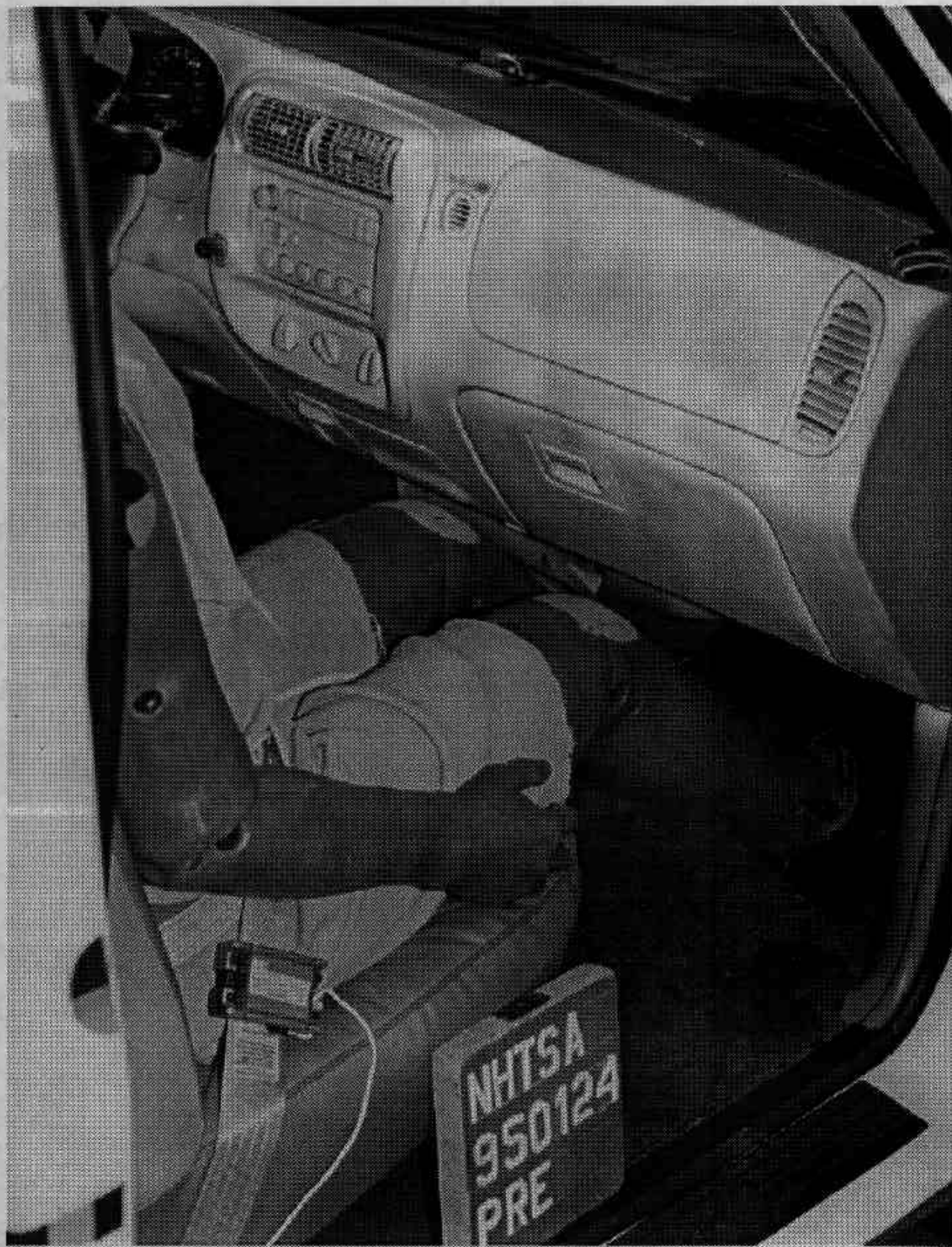


Figure A-37. Pre-Test Passenger Dummy & Vehicle Interior - View 2

A-38

950124

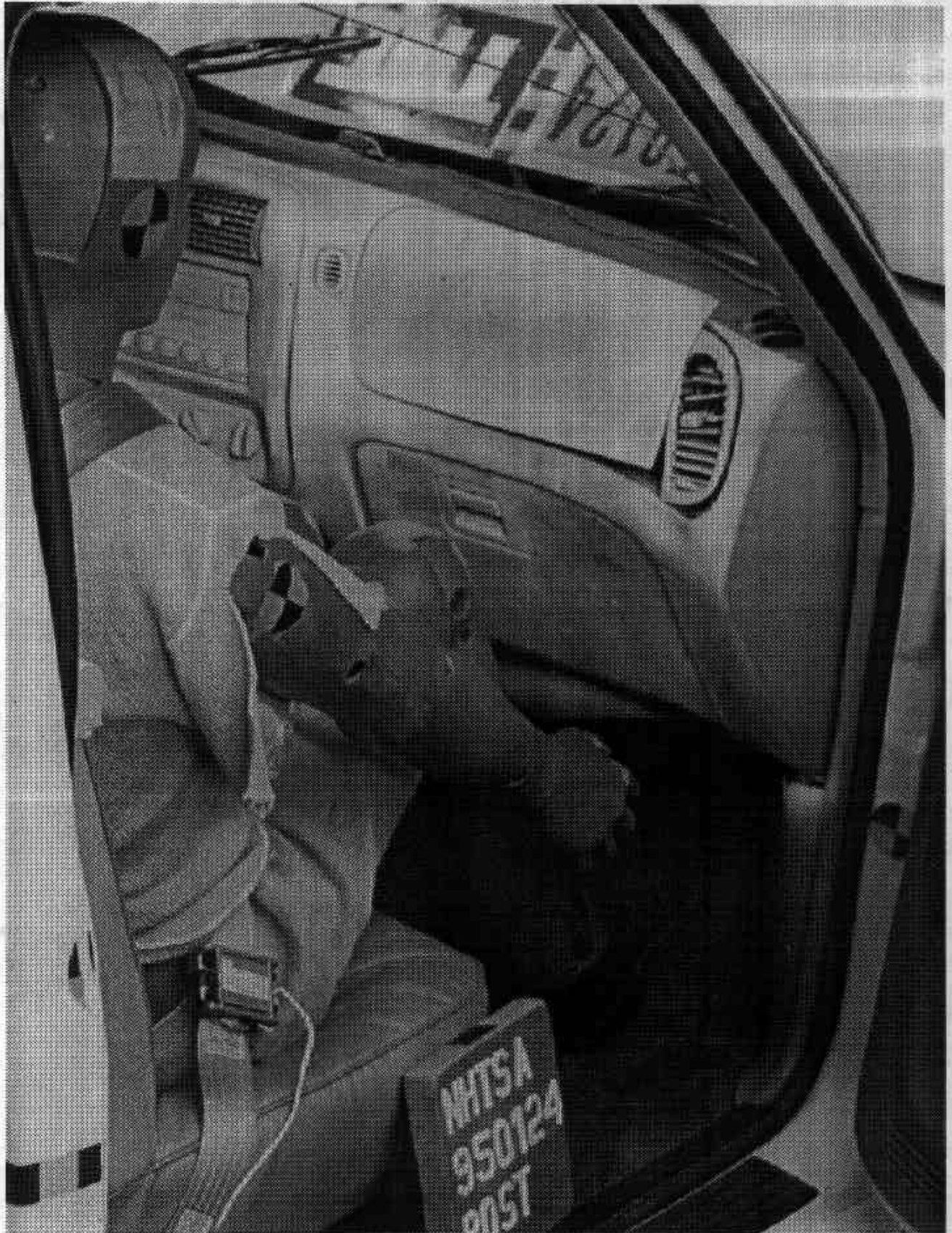


Figure A-38. Post-Test Passenger Dummy & Vehicle Interior - View 2

A-39

950124

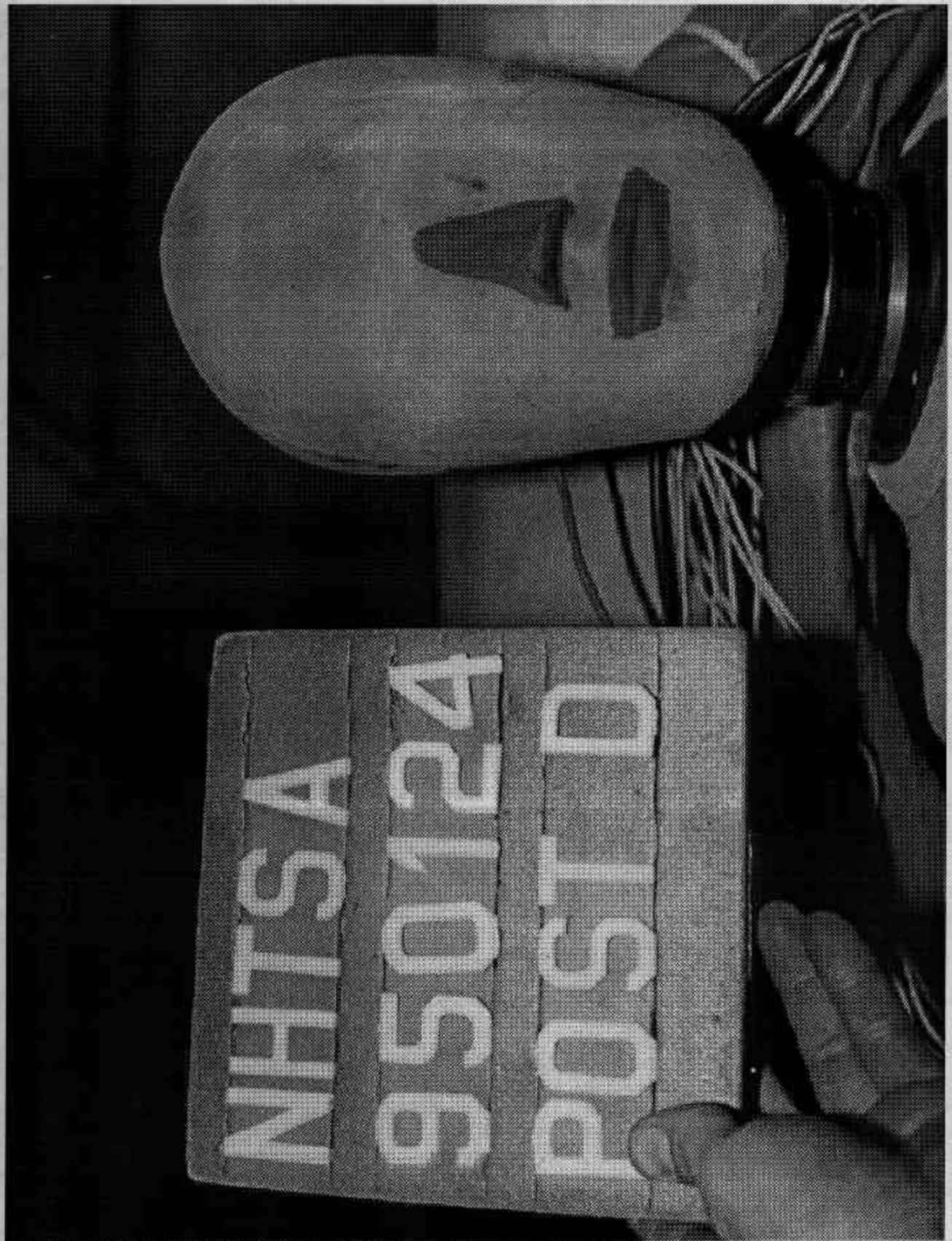


Figure A-39. Post-Test Driver Dummy Head Contact - View 1

A-40

950124



Figure A-40. Post-Test Driver Dummy Head Contact - View 2

A-41

950124



Figure A-41. Post-Test Driver Dummy Knee Contact - View I

A-42

950124

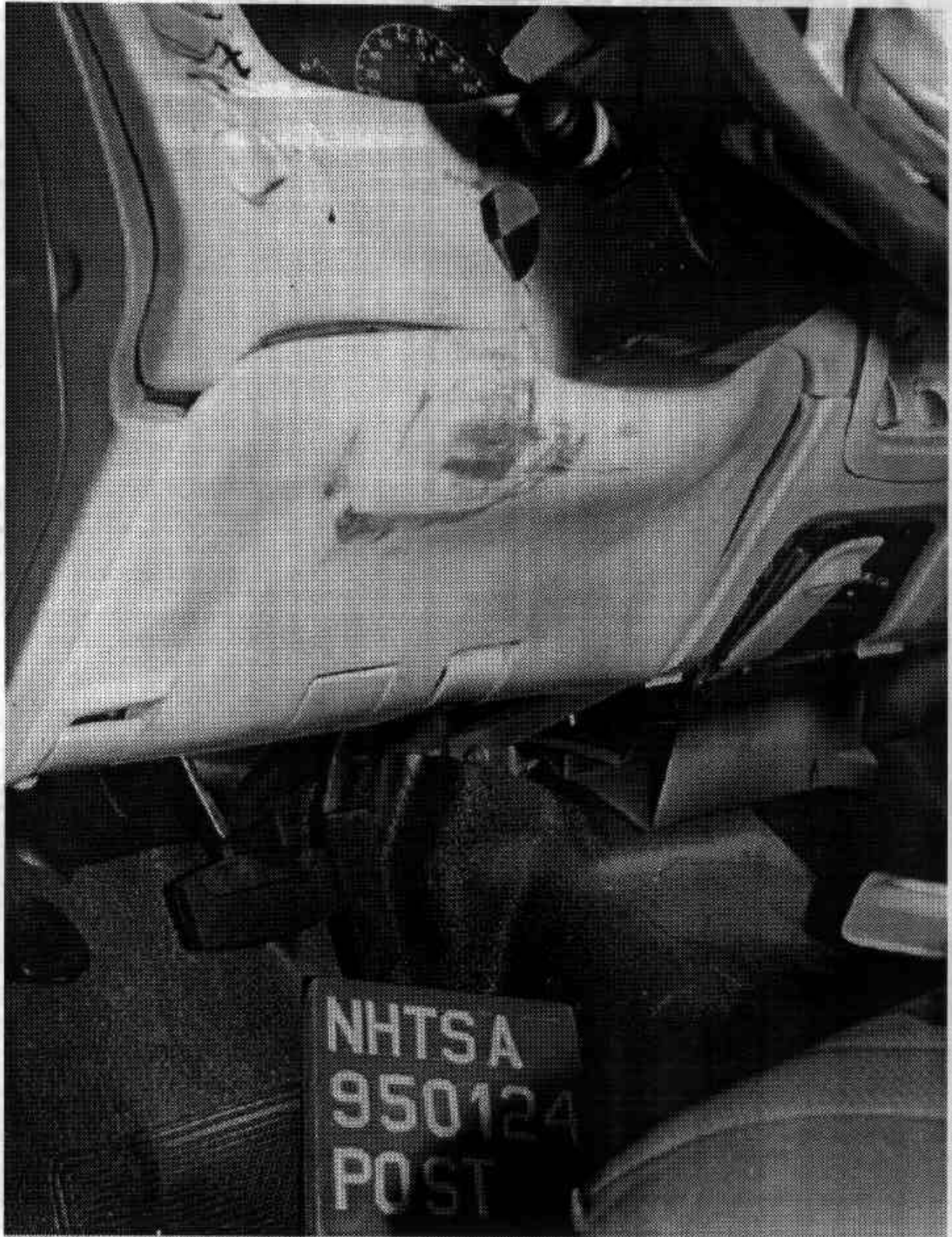


Figure A-42. Post-Test Driver Dummy Knee Contact - View 2

A-43

950124

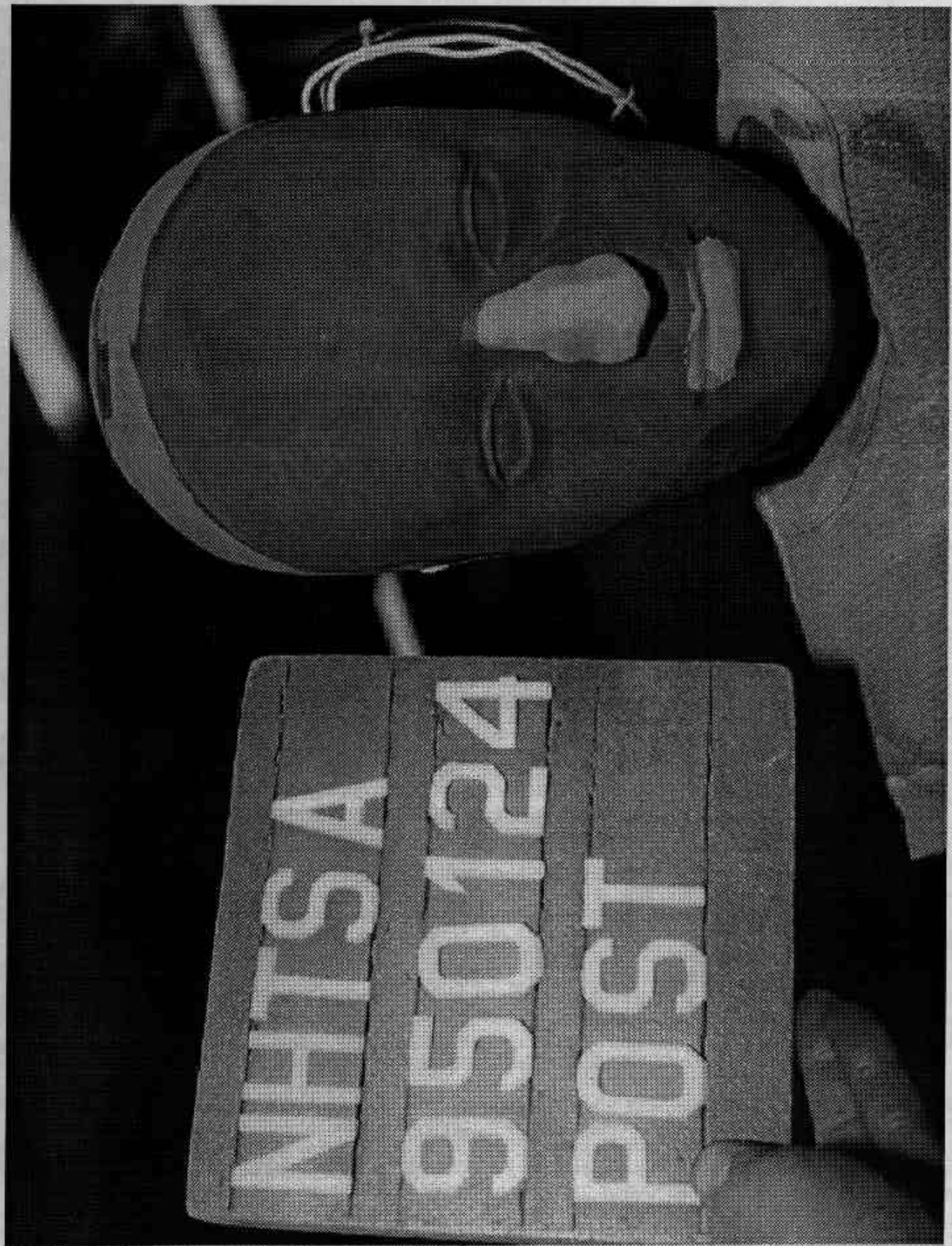


Figure A-43. Post-Test Passenger Dummy Head Contact View

A-44

950124



Figure A-44. Post-Test Passenger Dummy Knee Contact - View 1

A-45

950124

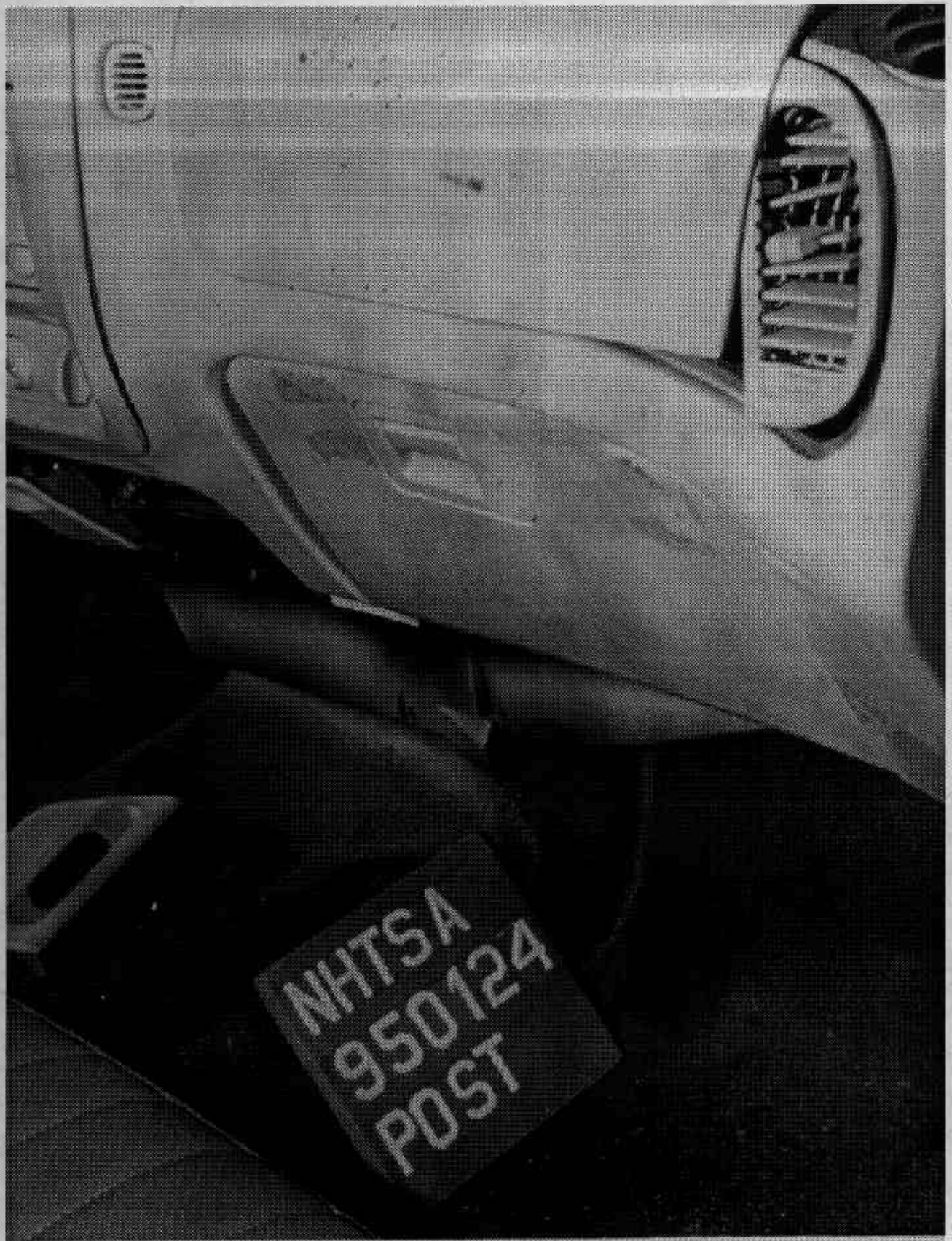


Figure A-45. Post-Test Passenger Dummy Knee Contact - View 2

A-46

950124

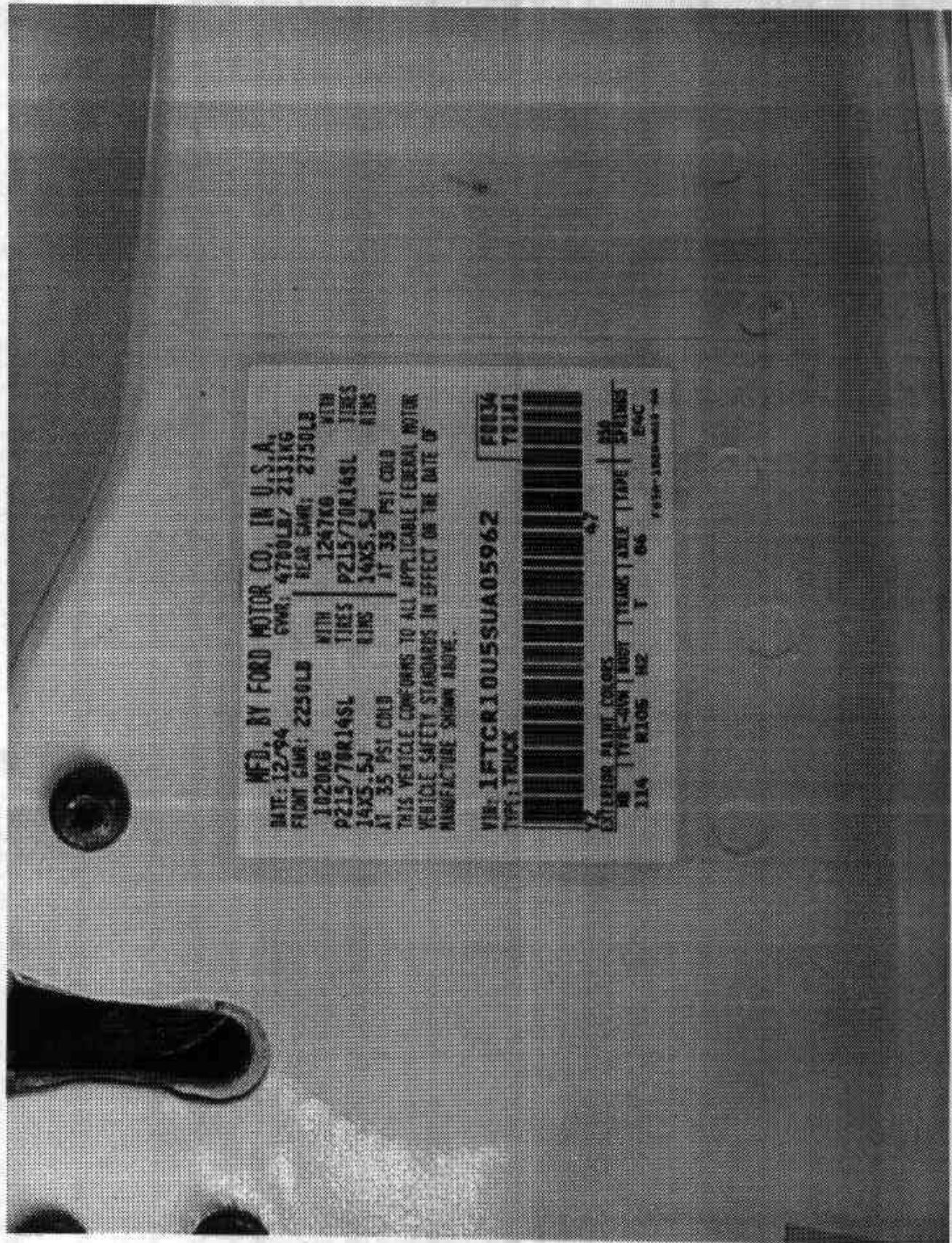


Figure A-46. Pre-Test Vehicle Certification & Recommended Tire Pressure Label

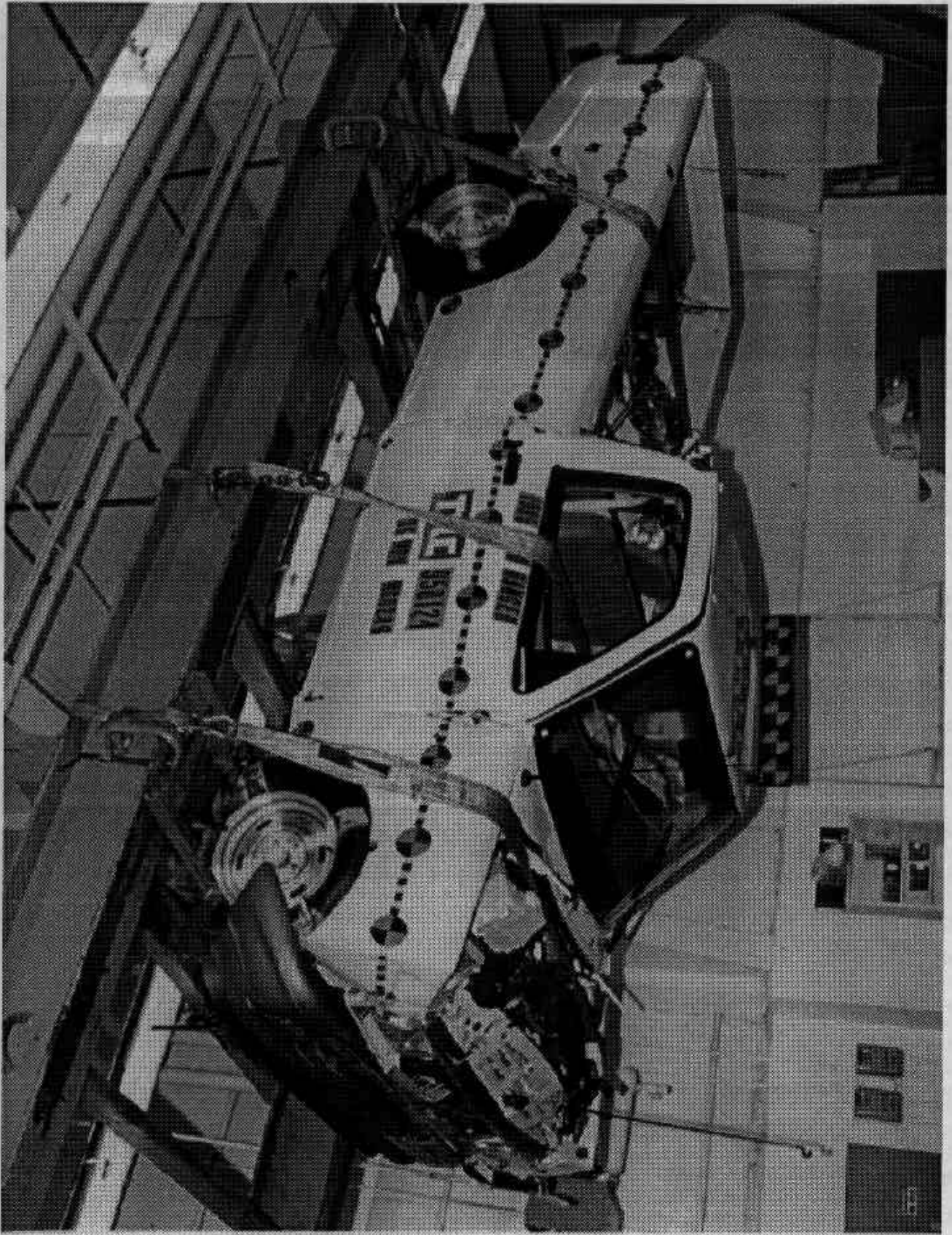


Figure A-47. Post-Test Vehicle on Static Rollover Machine View

A-48

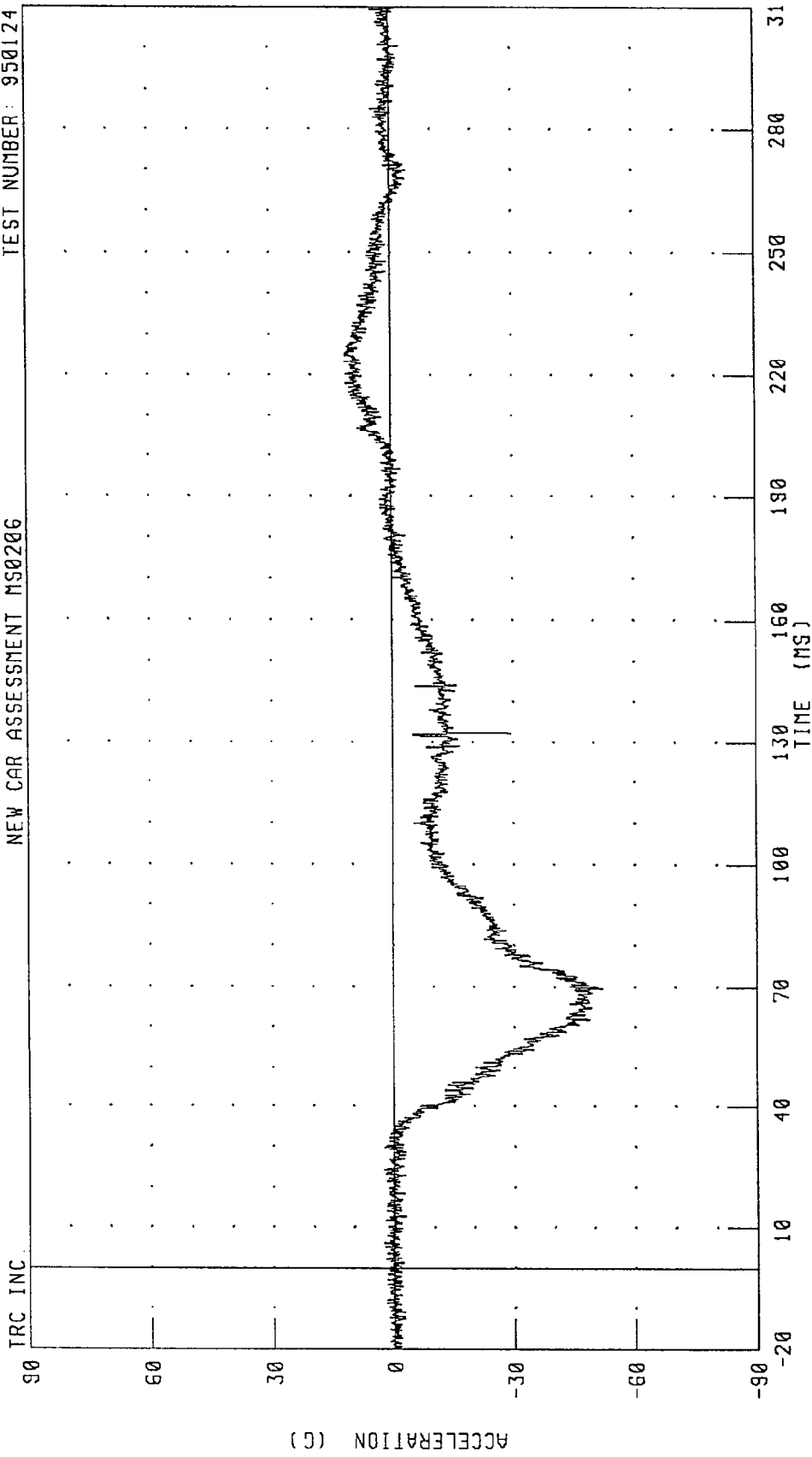
950124

Appendix B

Data Plots

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER HEAD X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

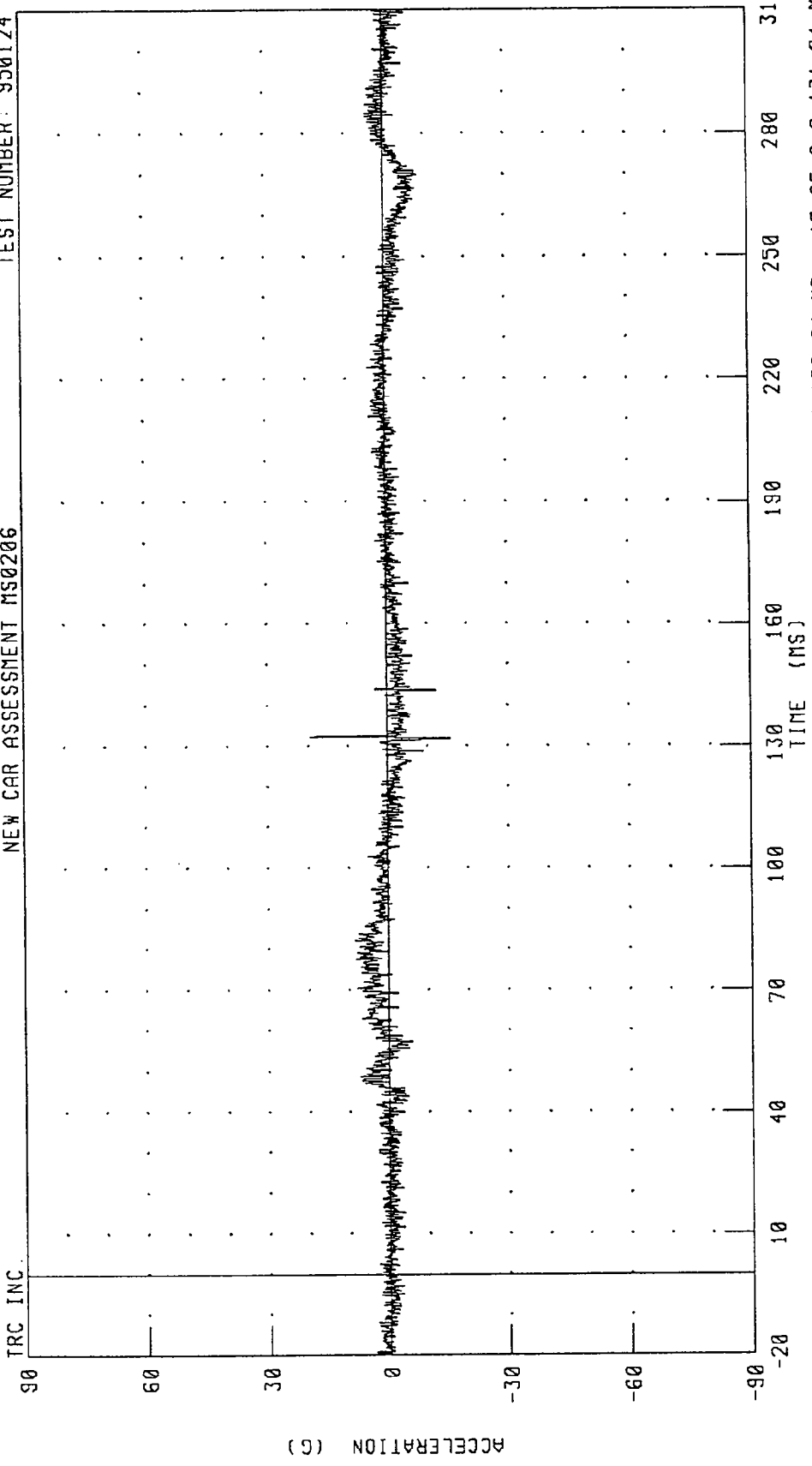


CHANNEL: HEDXG1 FILTER: CH. CLASS 1000

PEAK DATA: 11.57 G @ 223.44 MS; -51.97 G @ 69.76 MS

1985 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER HEAD Y-AXIS ACCELERATION
NEW CAR ASSESSMENT M50206

TEST NUMBER: 950124

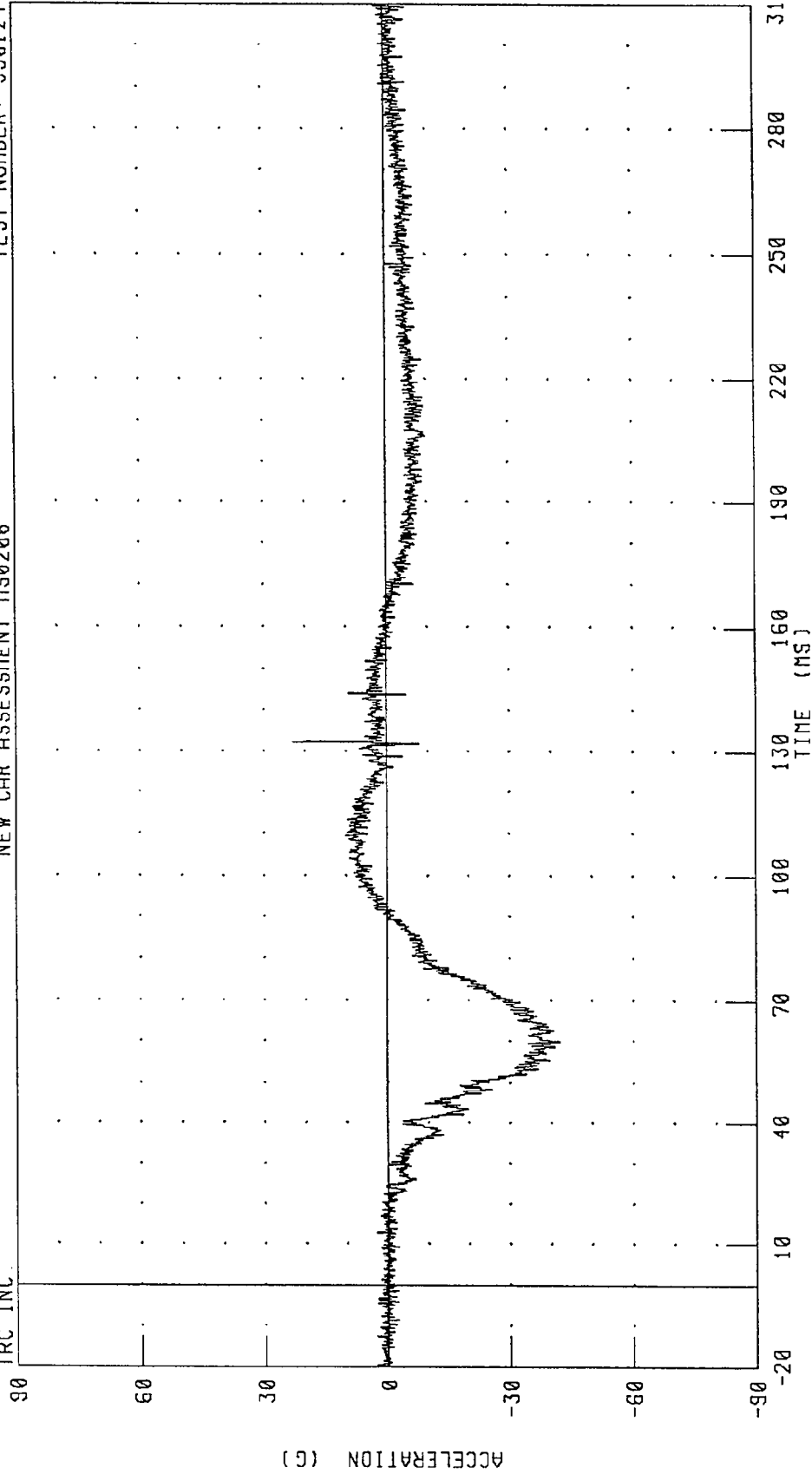


CHANNEL: HEDYGI FILTER: CH. CLASS 1000 PEAK DATA: 19.67 G @ 132.24 MS; -15.65 G @ 131.84 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER HEAD Z-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

TRC INC.

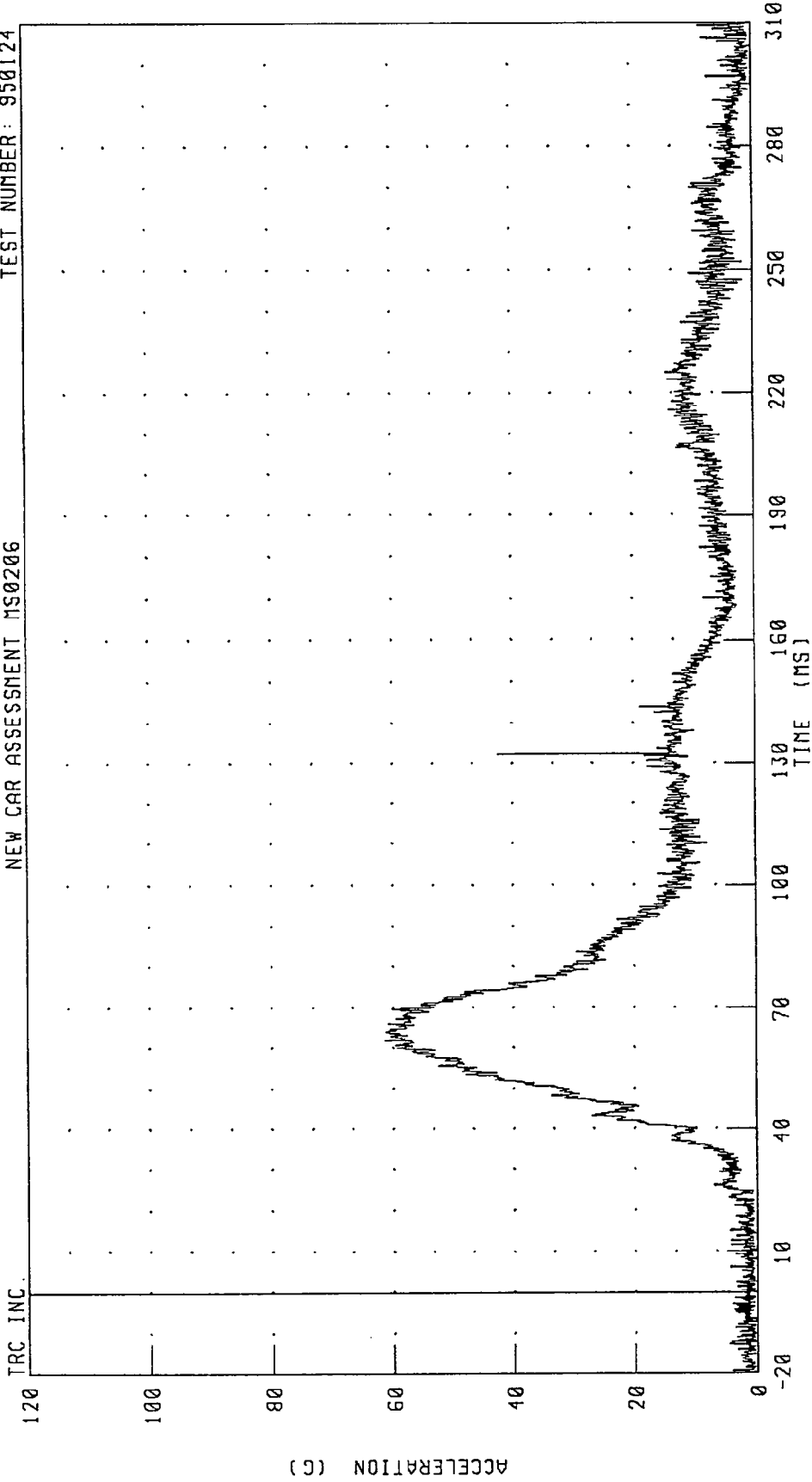


CHANNEL: HEDZG1 FILTER: CH. CLASS 1000 PEAK DATA: 23.25 G @ 132.24 MS; -42.22 G @ 59.92 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER HEAD RESULTANT ACCELERATION

TEST NUMBER: 950124

NEW CAR ASSESSMENT MS0206

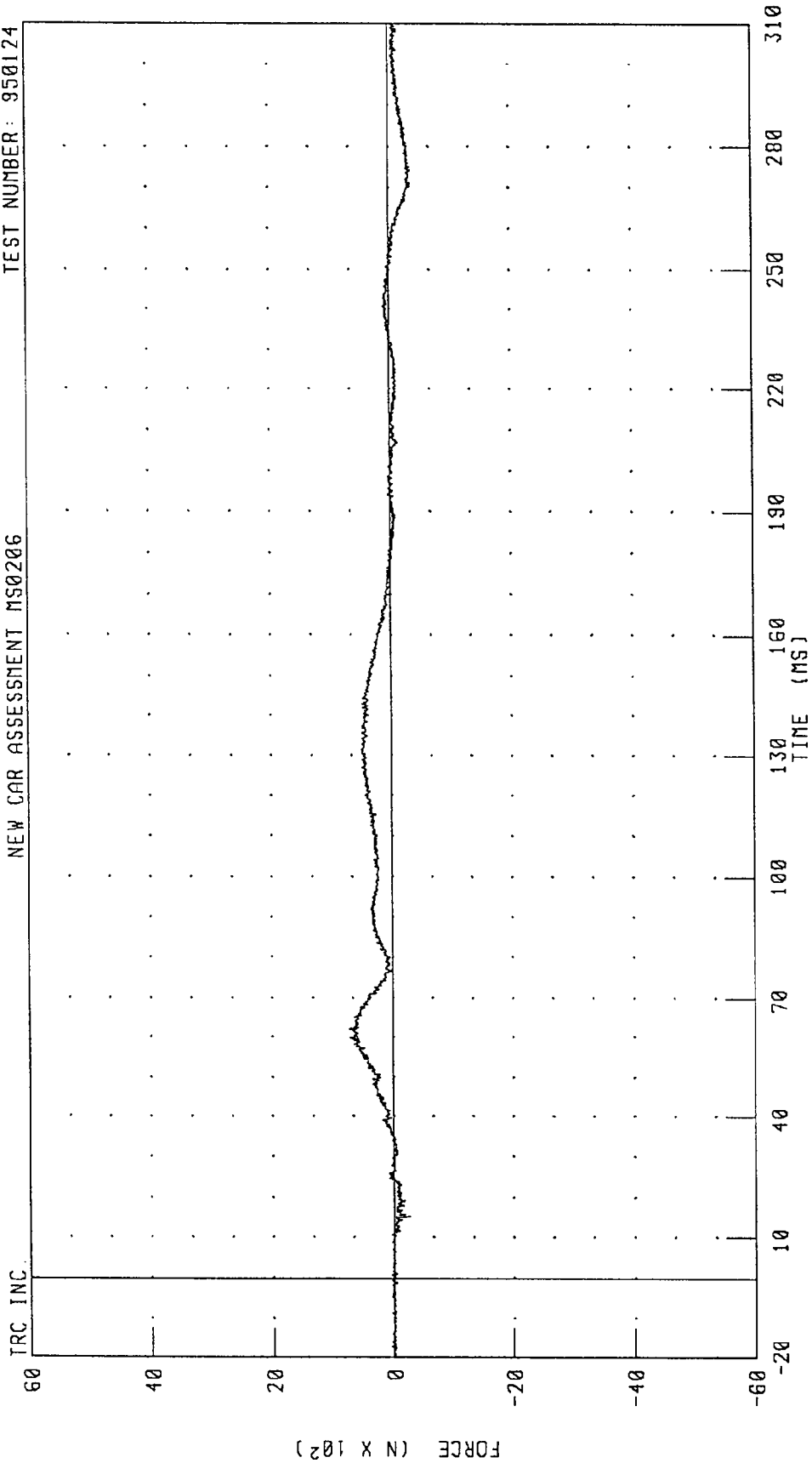


CHANNEL: HEDRG1 FILTER: CH. CLASS 1000

PEAK DATA: 61.30 G @ 61.92 MS; 0.28 G @ -7.36 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER NECK X-AXIS SHEAR FORCE
NEW CAR ASSESSMENT M50206

TEST NUMBER: 950124



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

PEAK DATA: 728.13 N @ 62.08 MS; -356.49 N @ 271.04 MS

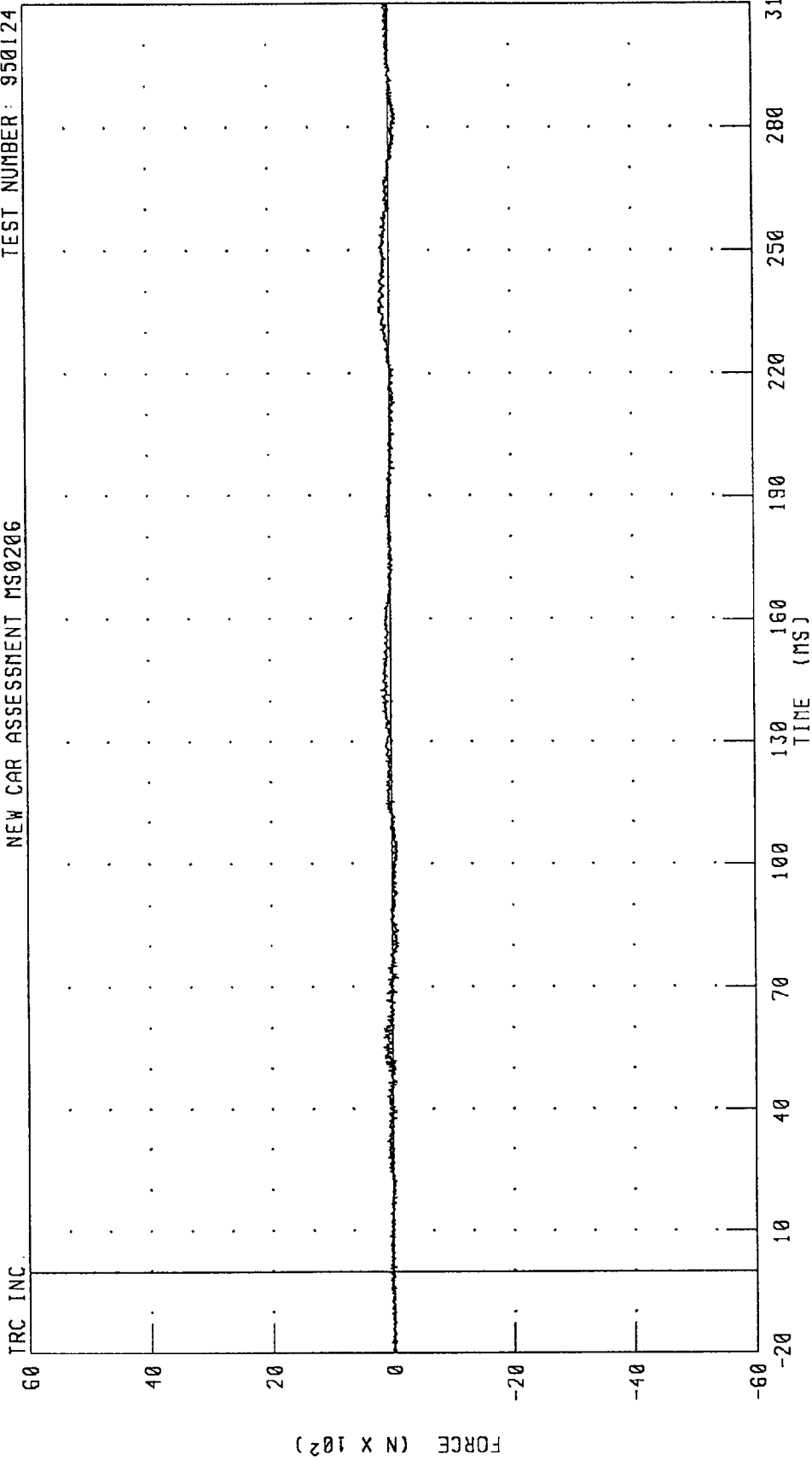
TRC INC.

FORCE ($N \times 10^2$)

TIME (MS)

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER NECK Y-AXIS SHEAR FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



PEAK DATA: 186.27 N @ 235.92 MS; -121.19 N @ 283.12 MS

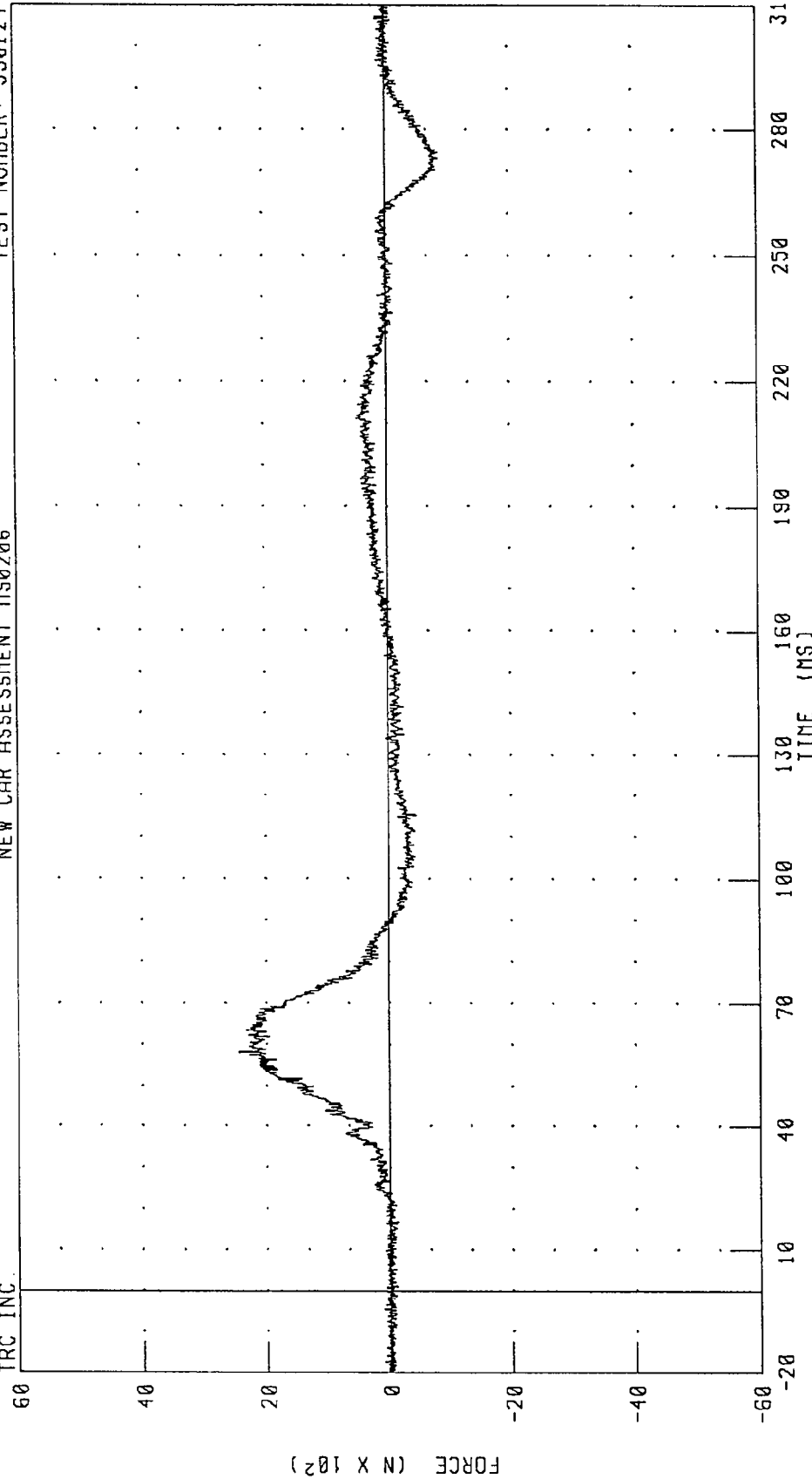
CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER NECK Z-AXIS AXIAL FORCE

TEST NUMBER: 950124

NEW CAR ASSESSMENT MS0206

TRC INC.

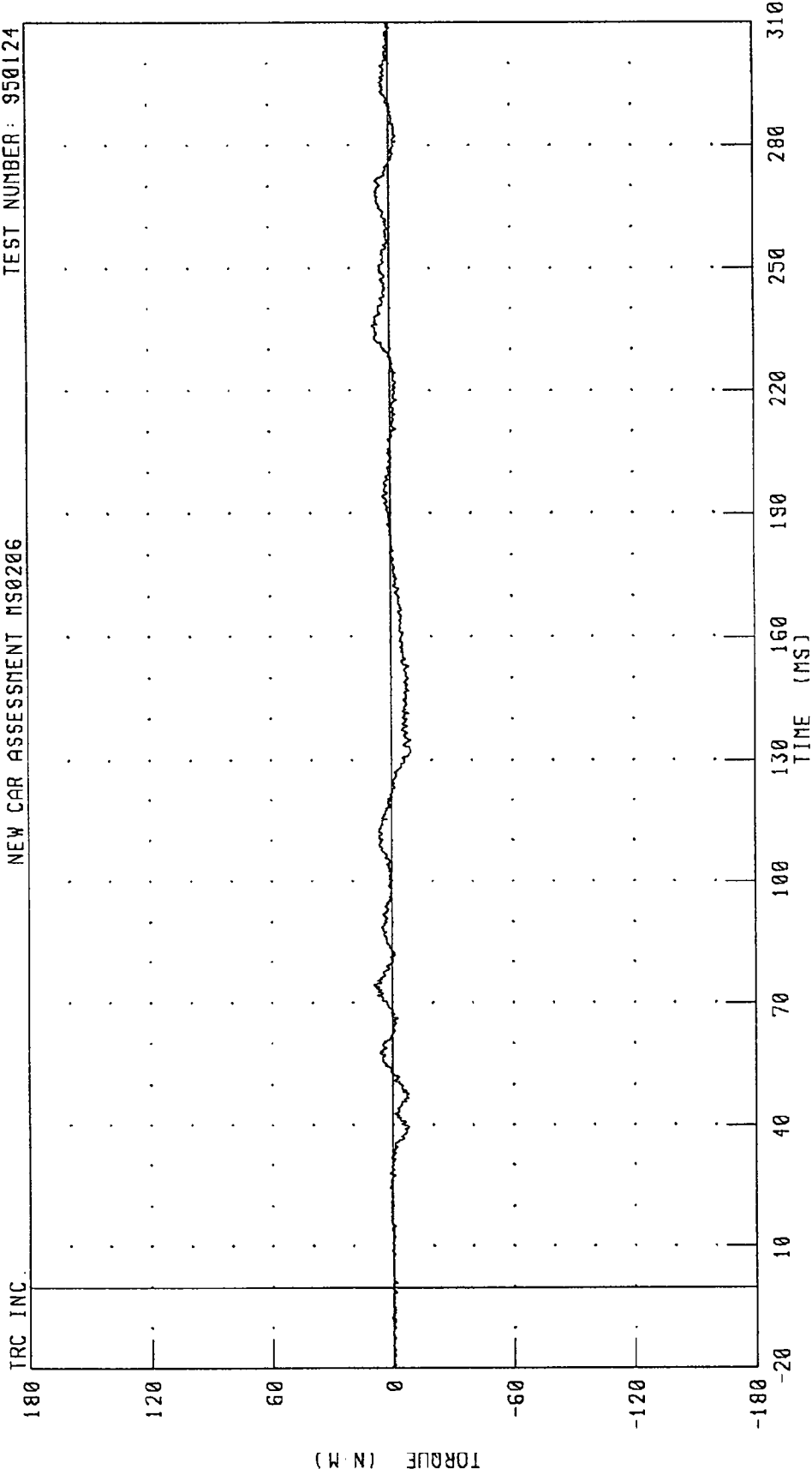


PEAK DATA: 2449.13 N @ 58.16 MS; -868.24 N @ 273.04 MS

CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER NECK MOMENT ABOUT X AXIS
NEW CAR ASSESSMENT MS0206

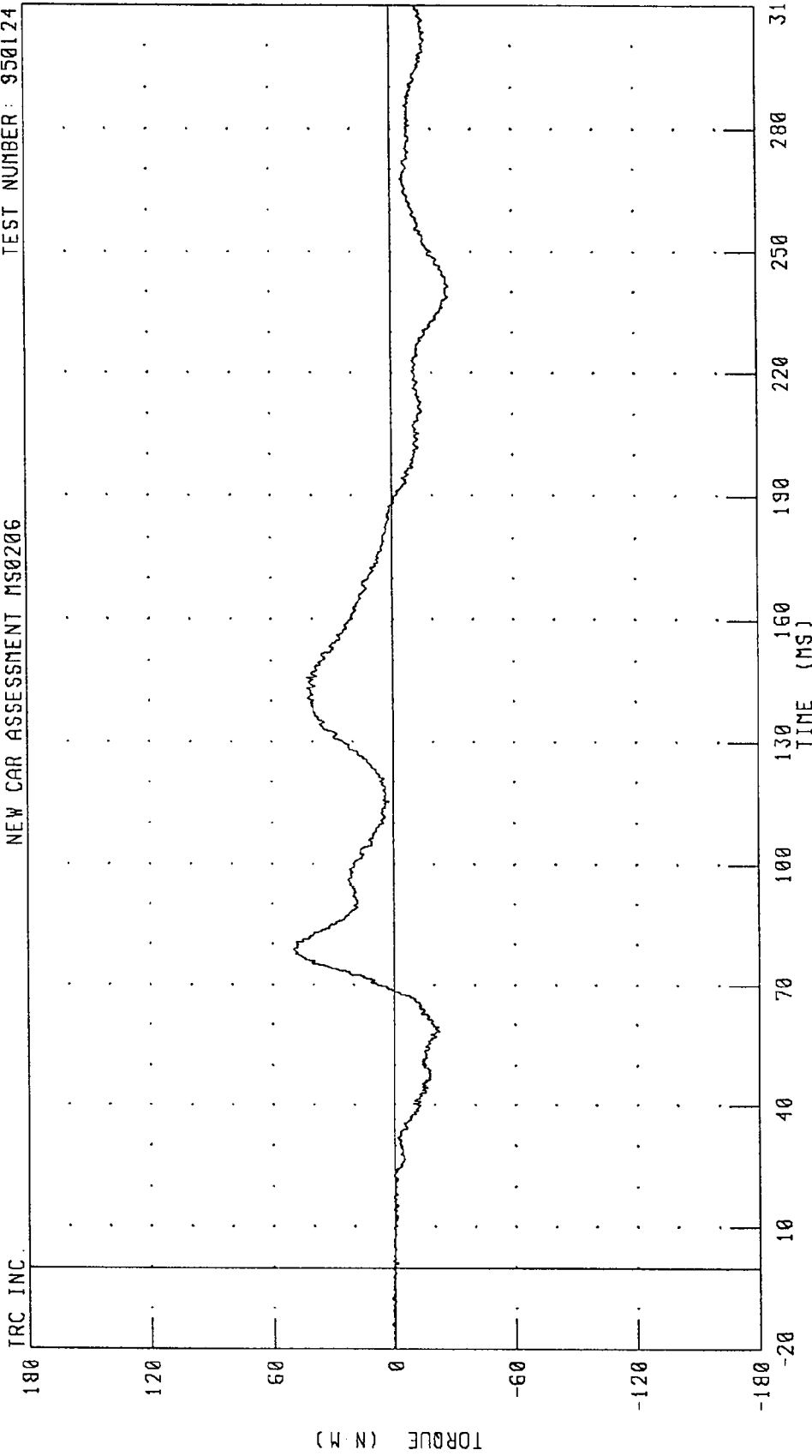
TEST NUMBER: 950124



CHANNEL: NEKXMI FILTER: CH. CLASS 600 PEAK DATA: 9.34 N.M @ 74.32 MS; -9.57 N.M @ 134.88 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER NECK MOMENT ABOUT Y AXIS
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

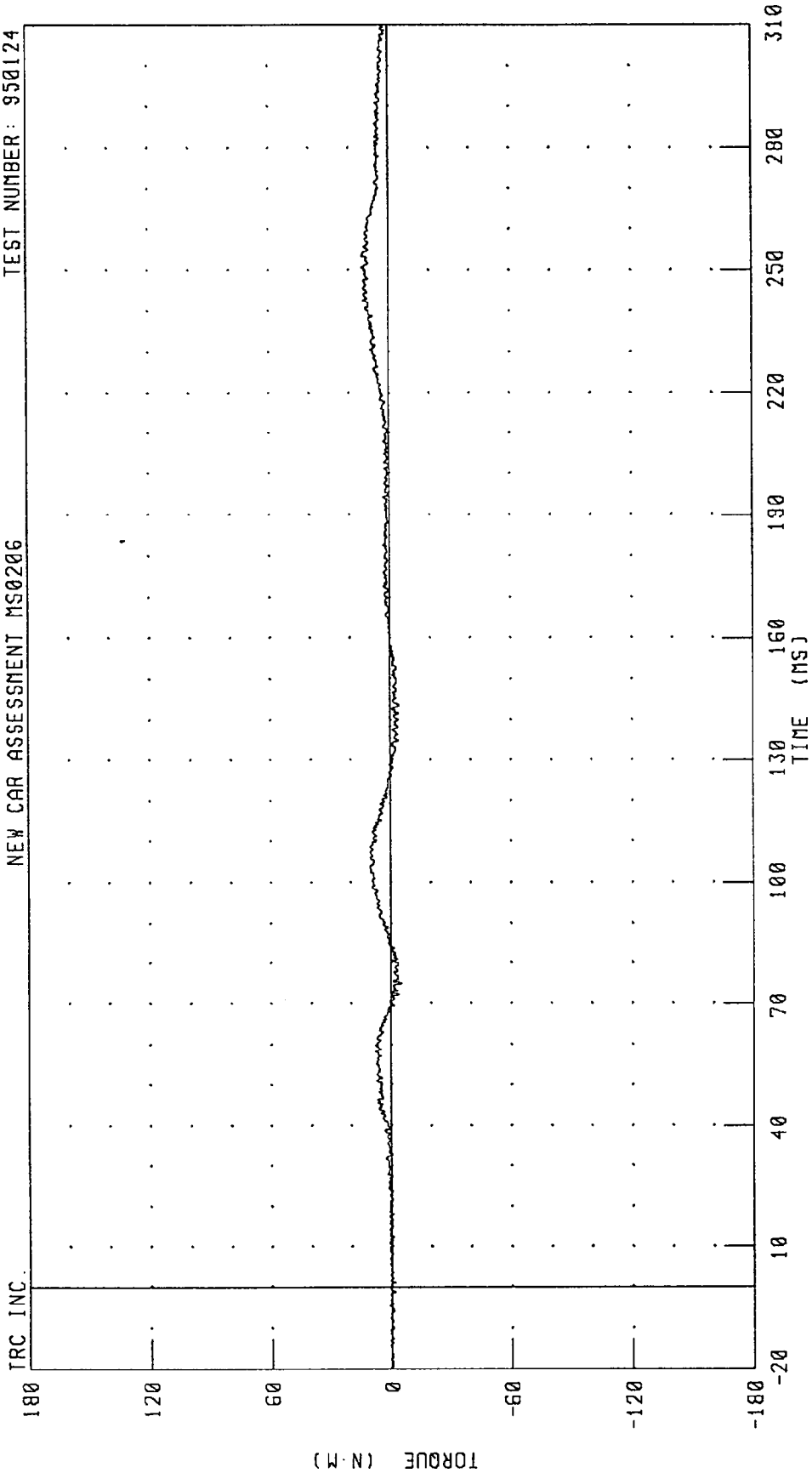


CHANNEL: NEYM1 FILTER: CH. CLASS 600

PEAK DATA: 49.94 N·M @ 78.88 MS; -28.64 N·M @ 241.36 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER NECK MOMENT ABOUT Z AXIS
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

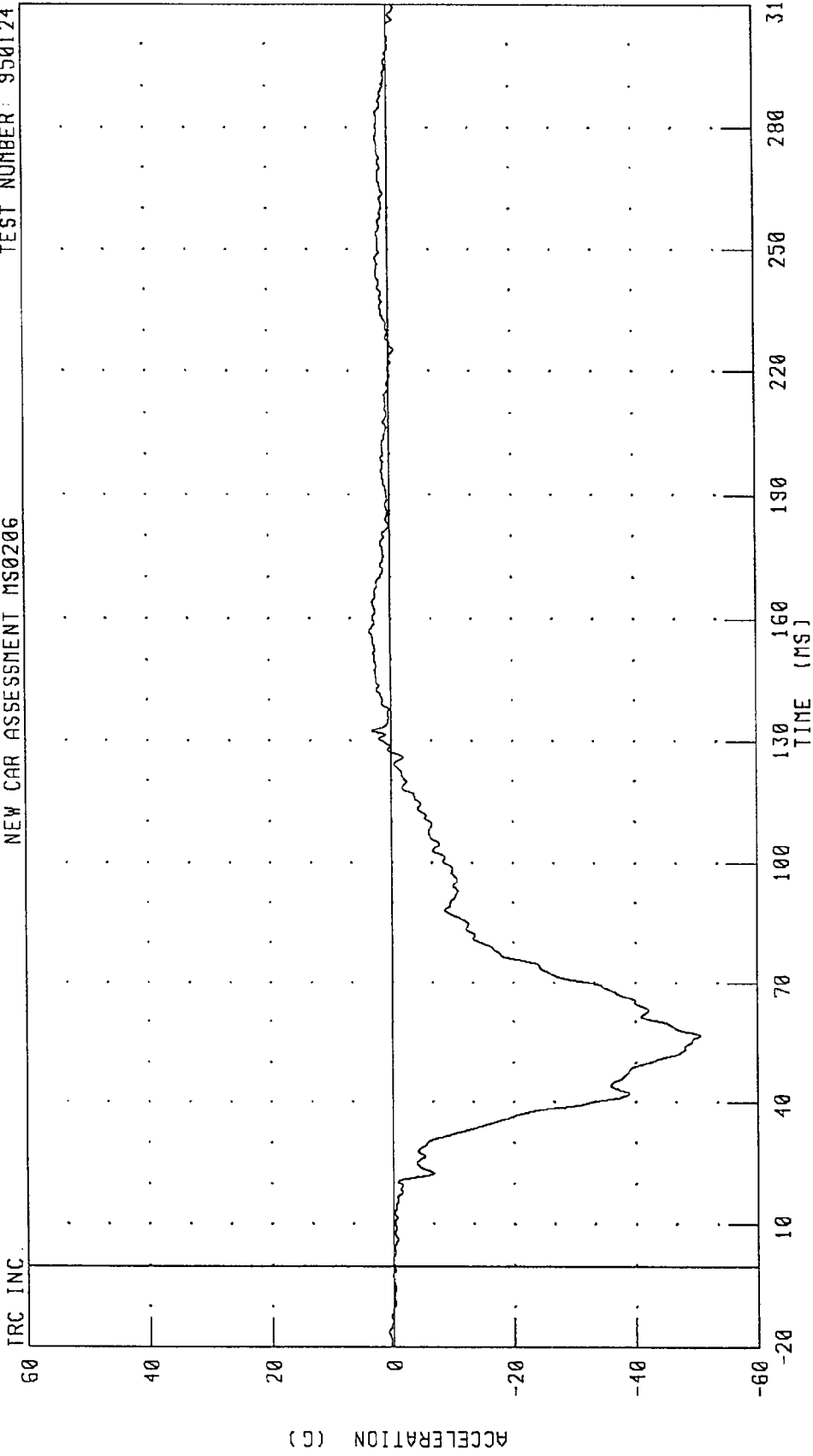


PEAK DATA: 13.49 N.M @ 250.64 MS; -5.41 N.M @ 74.96 MS

CHANNEL: NEKZM1 FILTER: CH. CLASS 600

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER CHEST X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



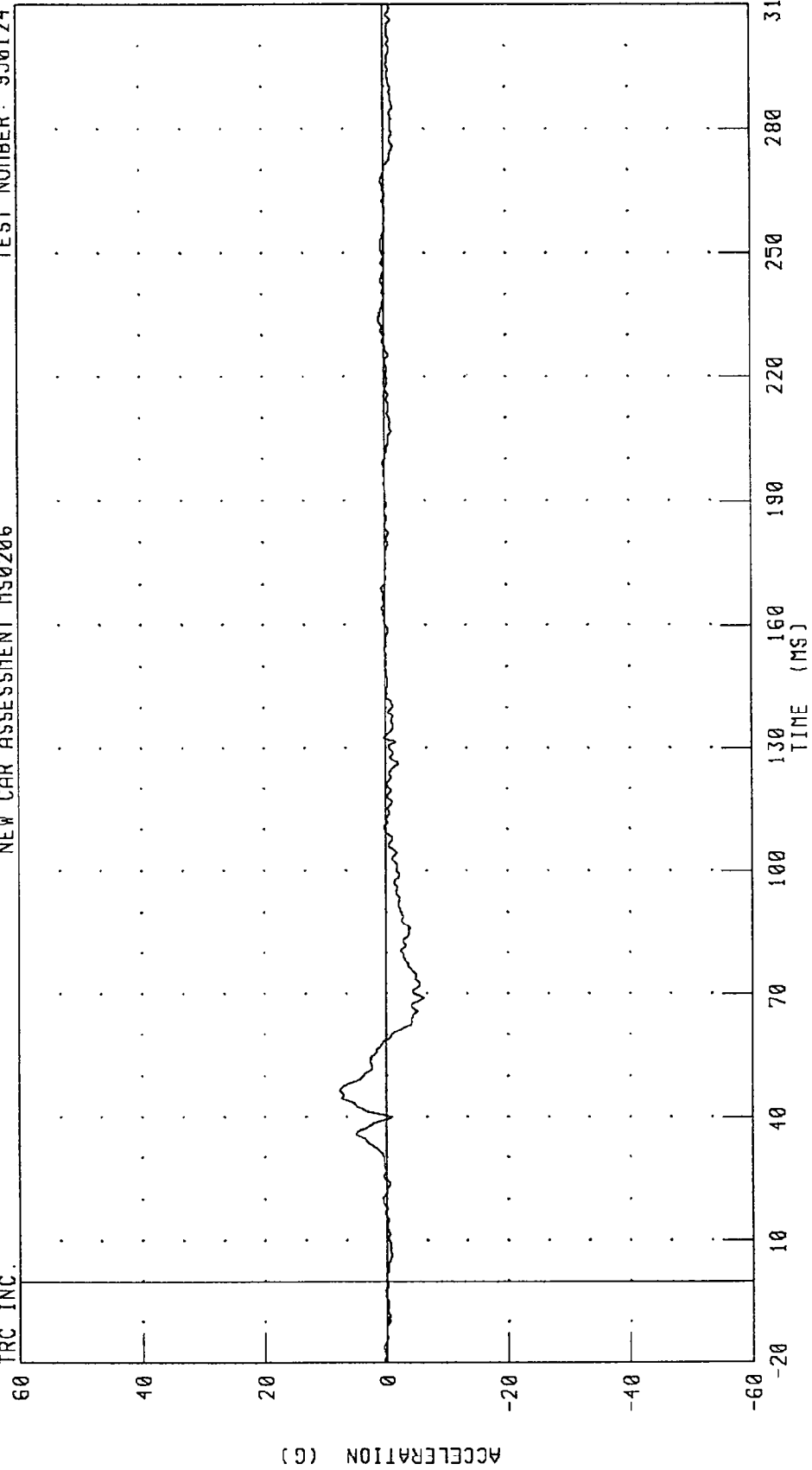
CHANNEL: CSTXG1 FILTER: CH. CLASS 180

PEAK DATA: 3.41 G @ 157.20 MS; -50.60 G @ 56.64 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER CHEST Y-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

TRC INC.

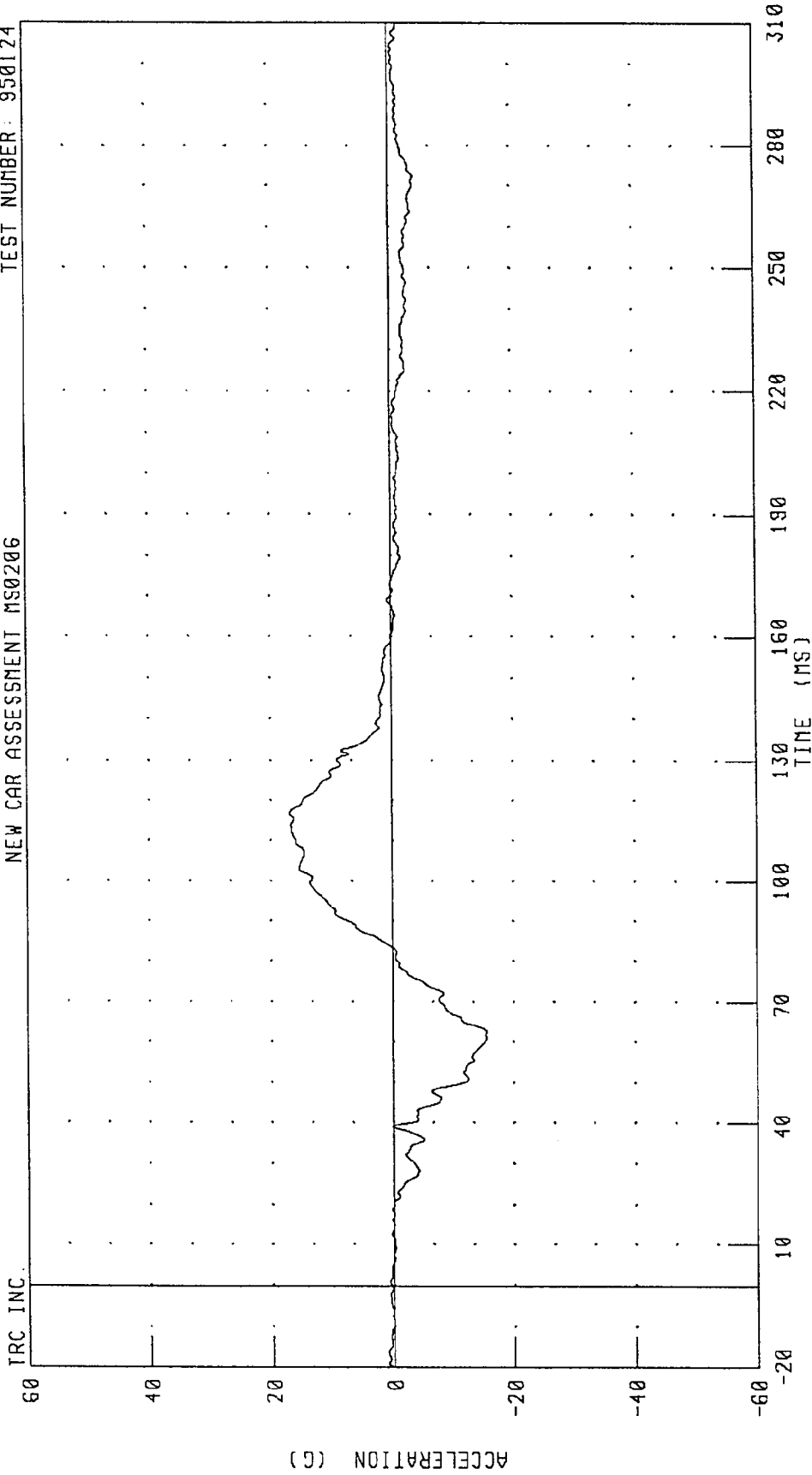


CHANNEL: CSTYG1 FILTER: CH. CLASS 180

PEAK DATA: 7.74 G @ 46.40 MS; -6.11 G @ 68.96 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER CHEST Z-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

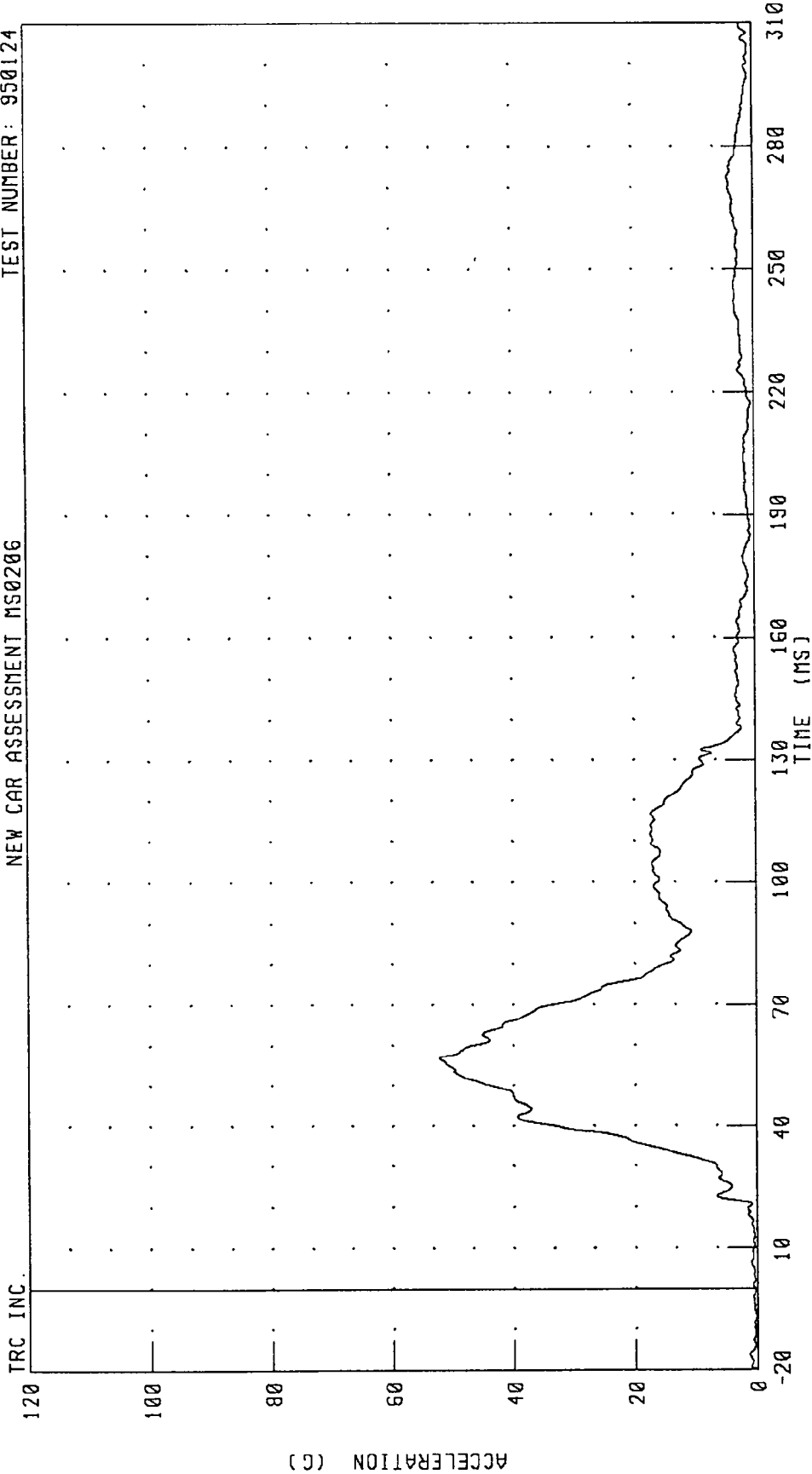


CHANNEL: CSTZG1 FILTER: CH. CLASS 180

950124

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER CHEST RESULTANT ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



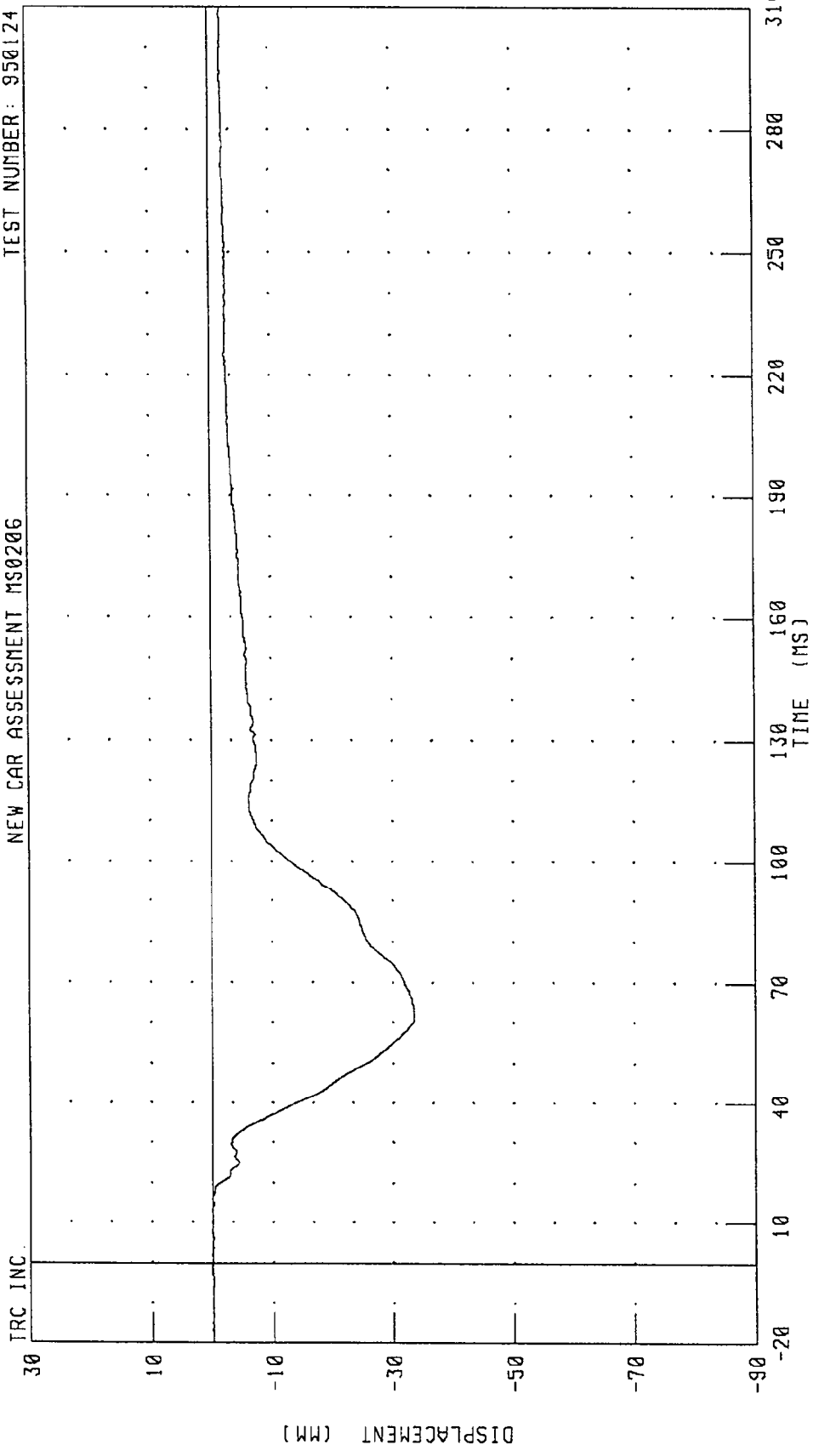
PEAK DATA: 52.30 G @ 56.72 MS; 0.09 G @ -20.00 MS

CHANNEL: CSTRG1 FILTER: CH. CLASS 180

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER CHEST DEFLECTION
NEW CAR ASSESSMENT MS0206

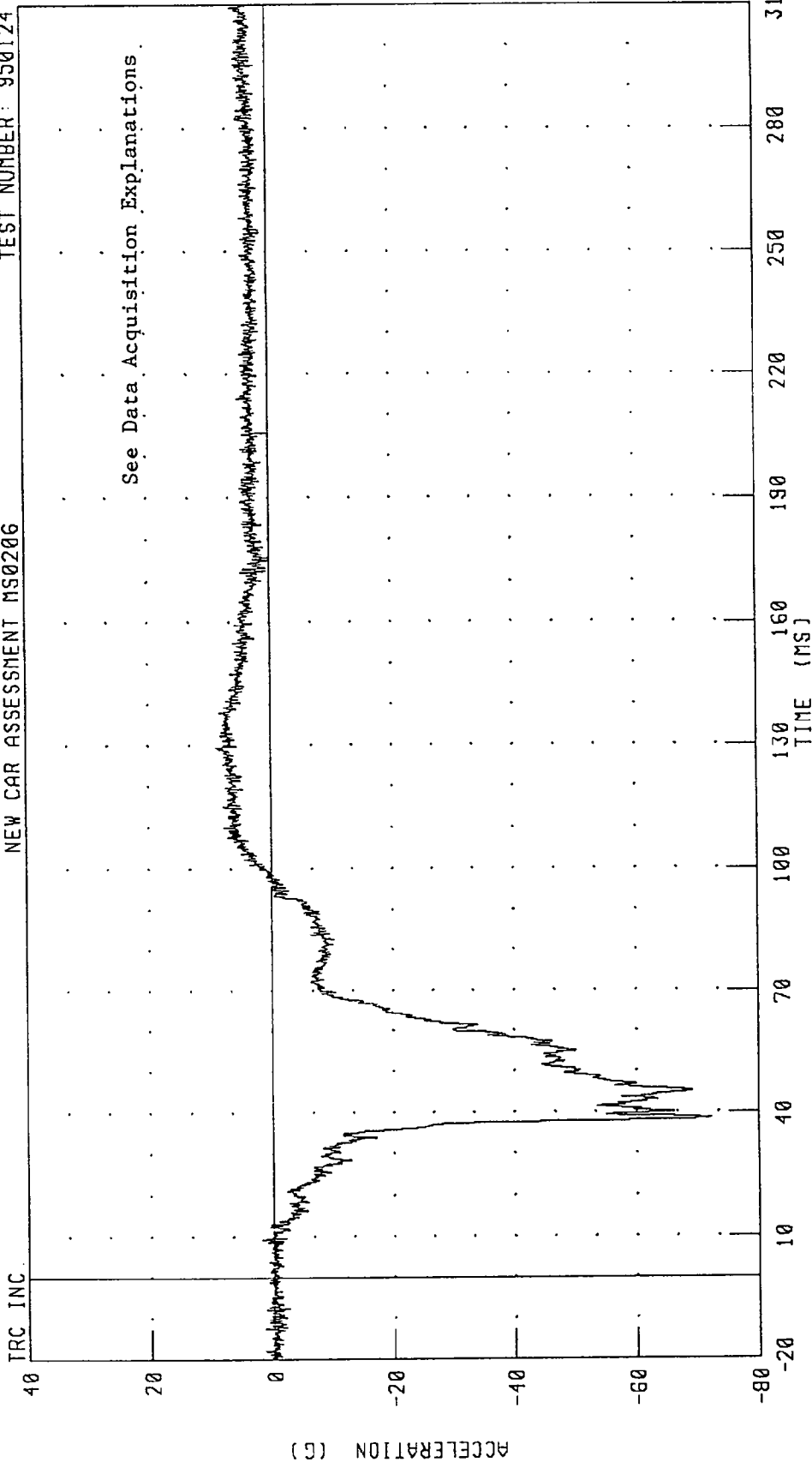
TEST NUMBER: 950124



CHANNEL: CSTXD1 FILTER: CH. CLASS 180 PEAK DATA: 0.11 MM @ -1.60 MS; -33.60 MM @ 62.64 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER PELVIS X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



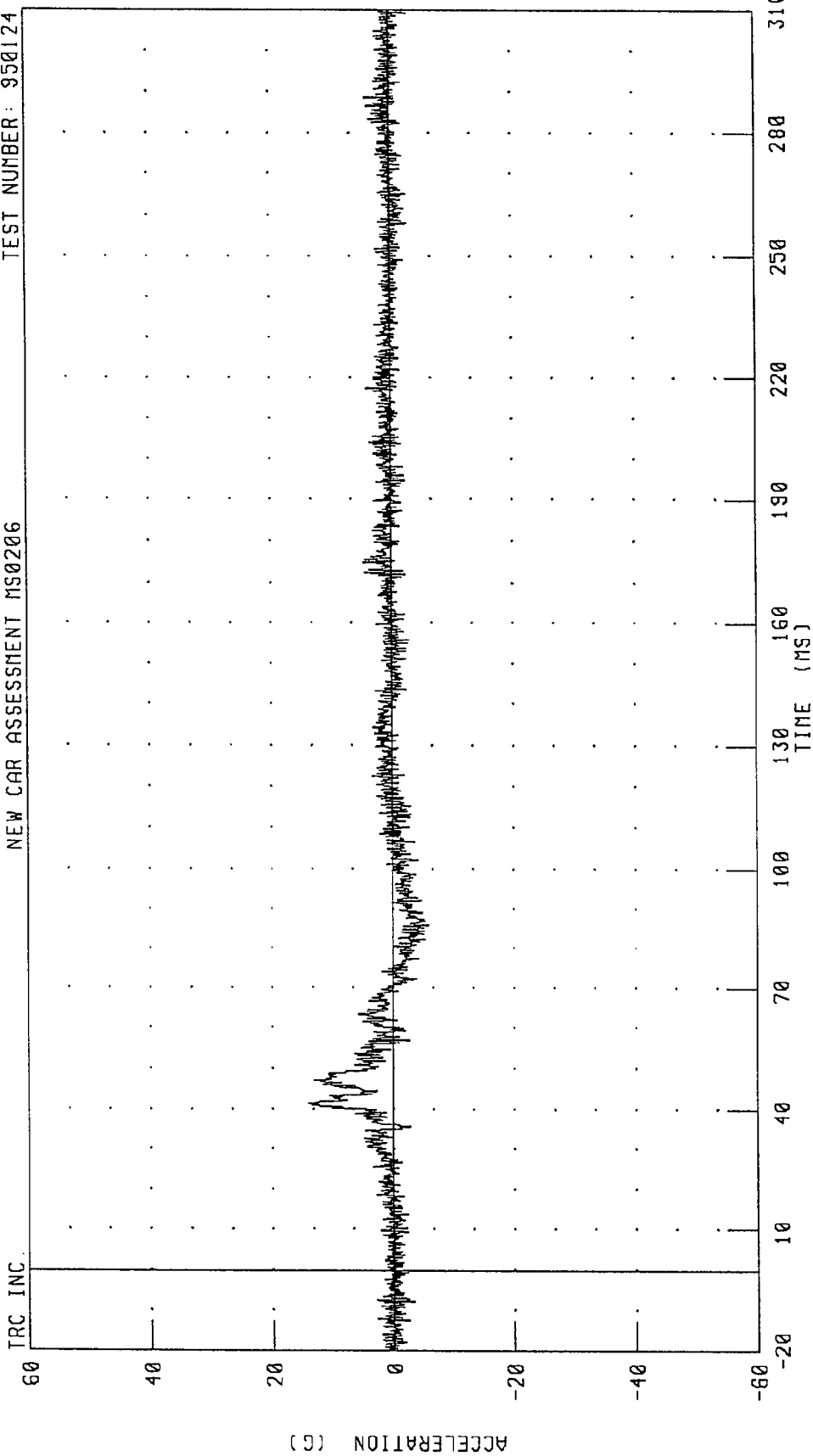
See Data Acquisition Explanations.

PEAK DATA: 9.00 G @ 129.36 MS, -72.23 G @ 38.64 MS

CHANNEL: PEVXG1 FILTER: CH. CLASS 1000

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER PELVIS Y-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

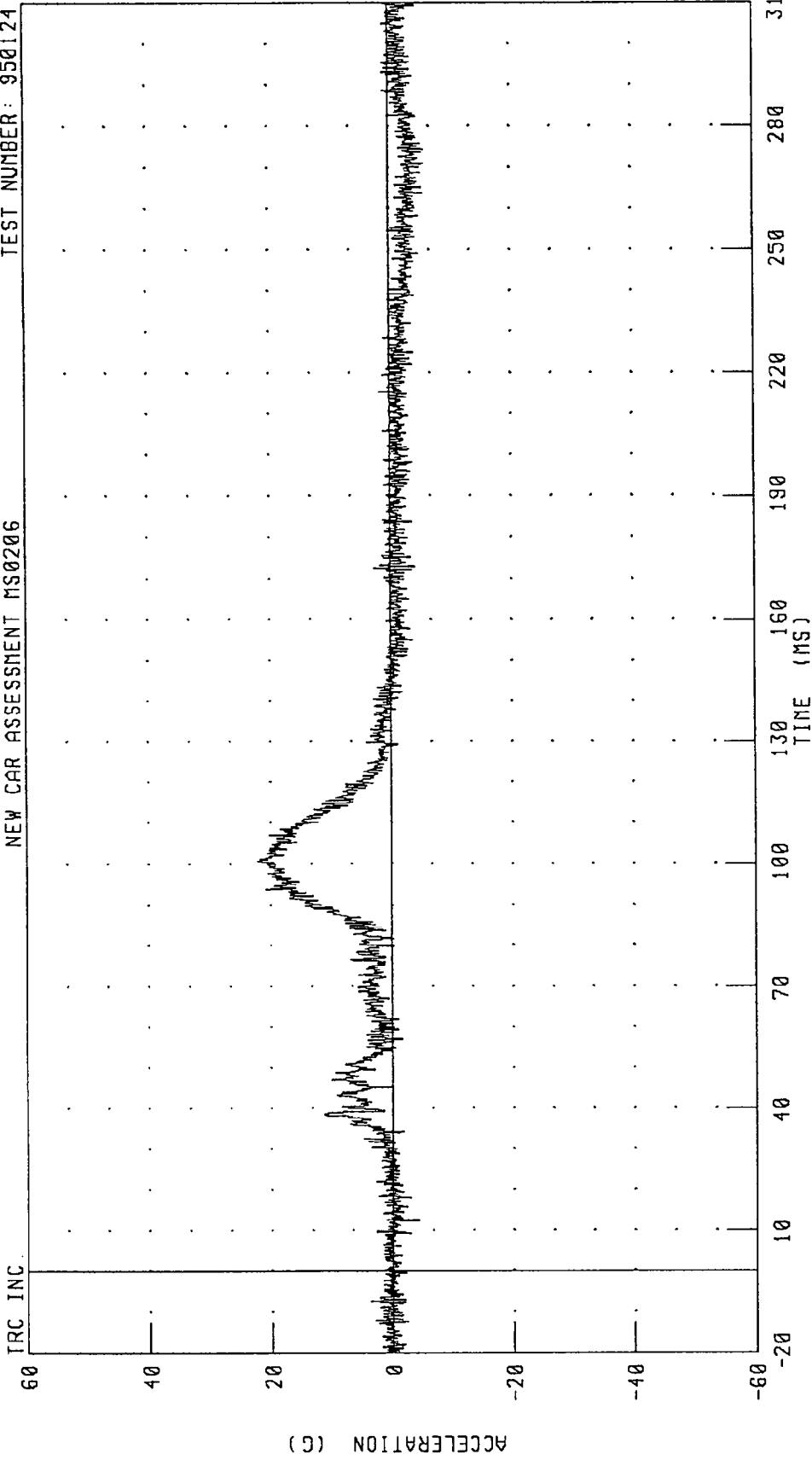
TEST NUMBER: 950124



CHANNEL: PEVYG1 FILTER: CH. CLASS 1000
PEAK DATA: 14.22 G @ 41.44 MS; -5.98 G @ 85.84 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER PELVIS Z-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



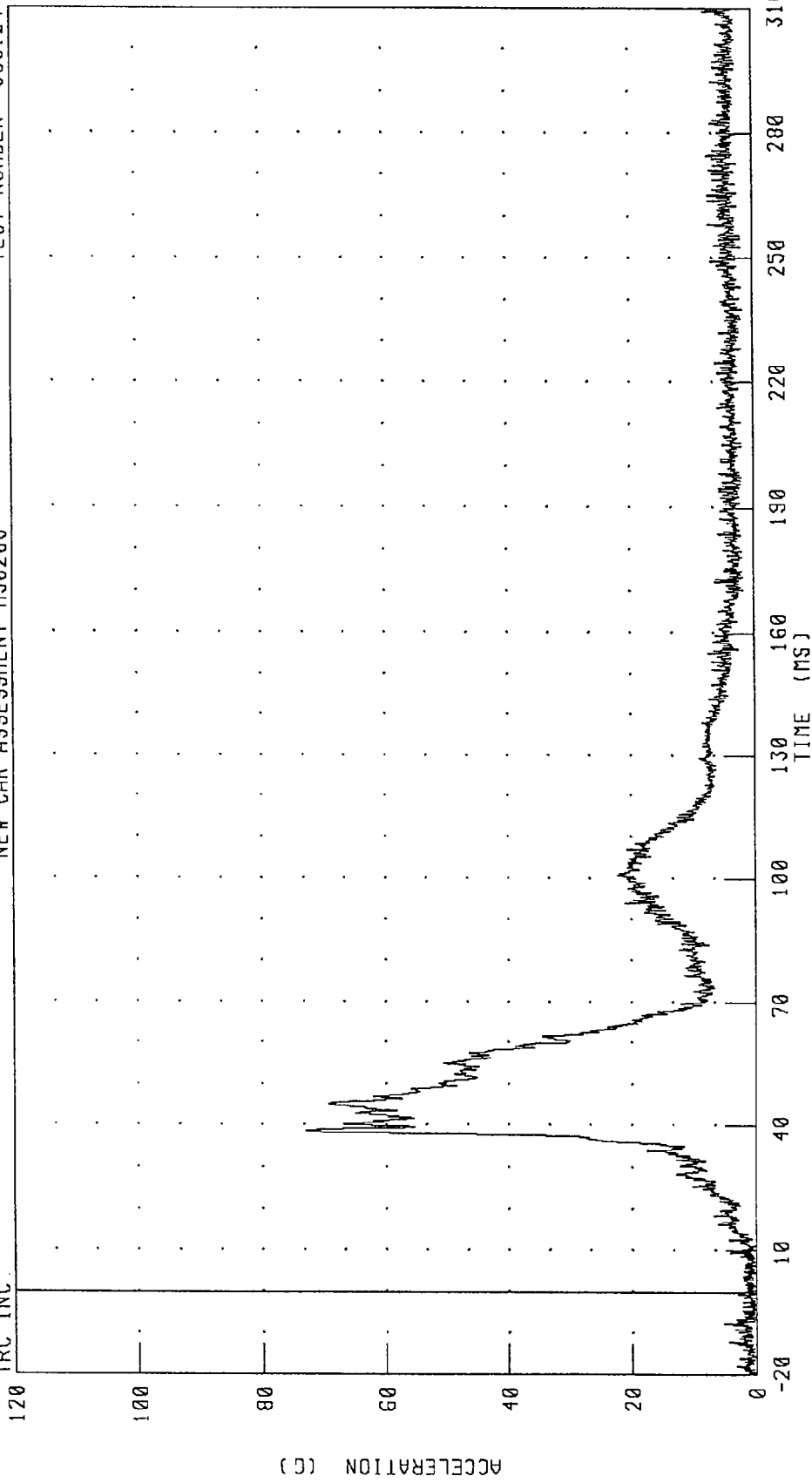
CHANNEL: PEVZG1 FILTER: CH. CLASS 1000

PEAK DATA: 22.18 G @ 100.72 MS; -5.80 G @ 271.12 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER PELVIS RESULTANT ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

TRC INC

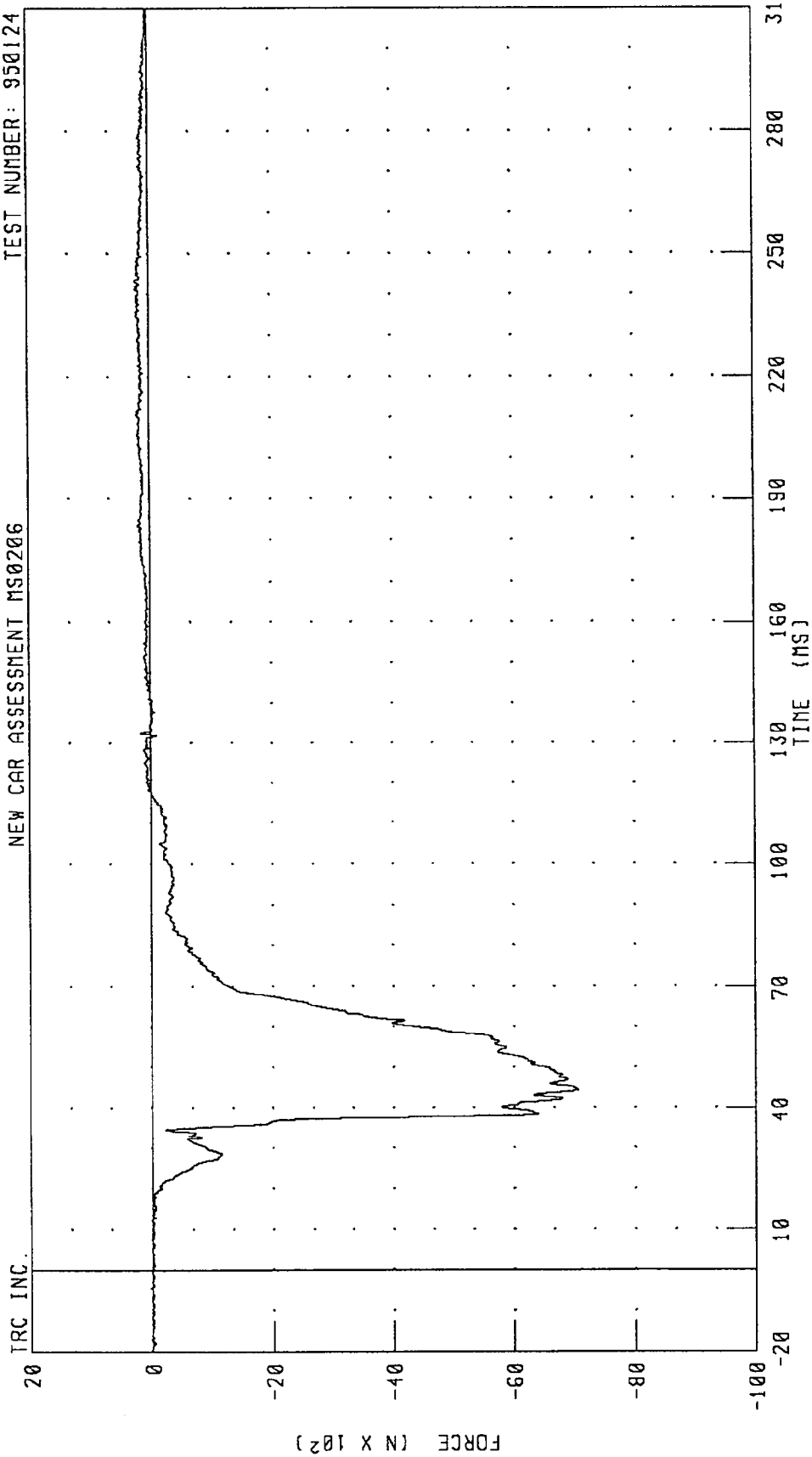


PEAK DATA: 73.13 G @ 38.64 MS; 0.14 G @ -1.44 MS

CHANNEL: PEVRG1 FILTER: CH. CLASS 1000

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER LEFT FEMUR FORCE
NEW CAR ASSESSMENT MS0206

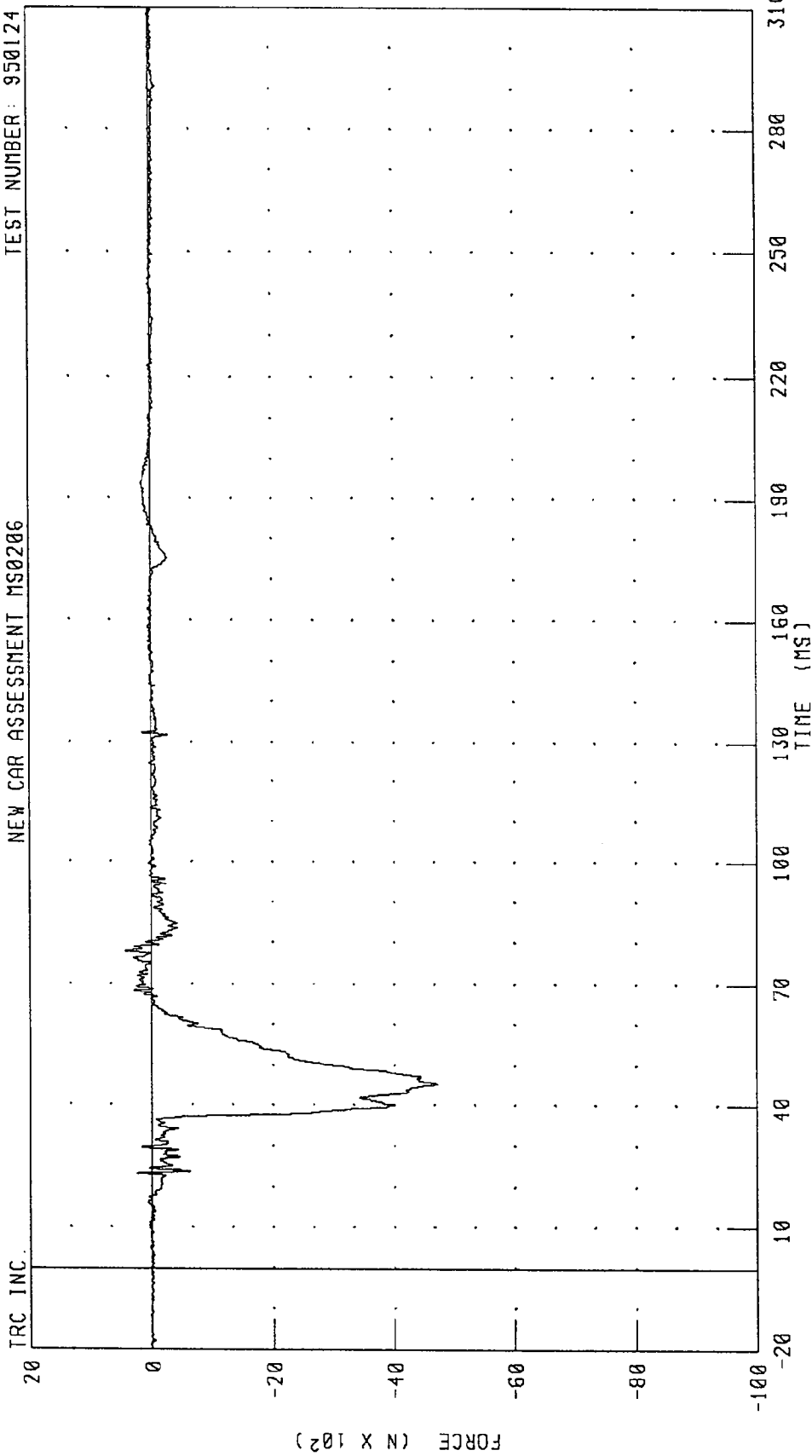
TEST NUMBER: 950124



CHANNEL: LFMF1 FILTER: CH. CLASS 600
PEAK DATA: 216.01 N @ 243.52 MS; -7067.20 N @ 44.48 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER RIGHT FEMUR FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

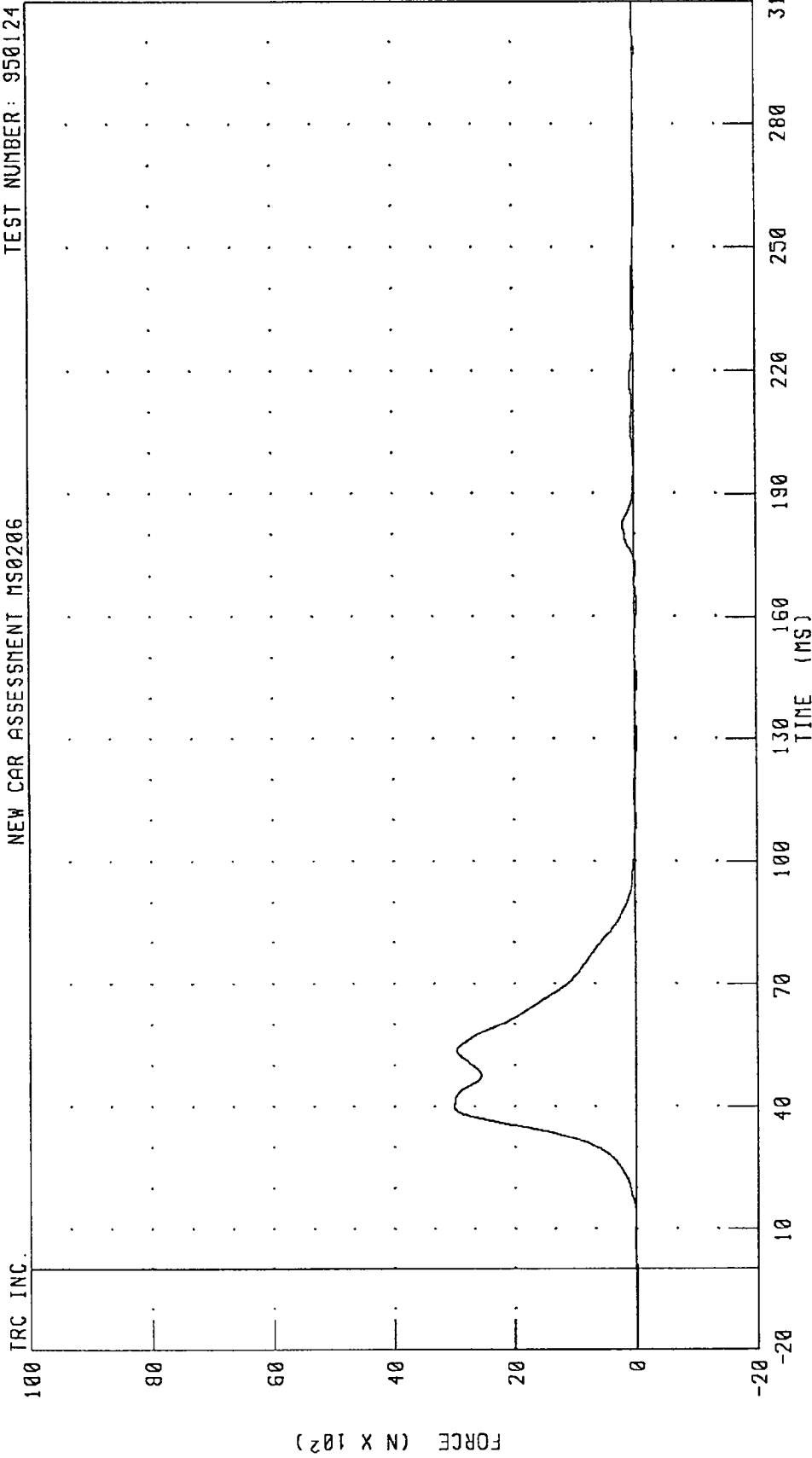


CHANNEL: RFMFI FILTER: CH. CLASS 600

PEAK DATA: 425.54 N @ 78.00 MS; -4703.54 N @ 45.36 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER LAP BELT OUTBOARD FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

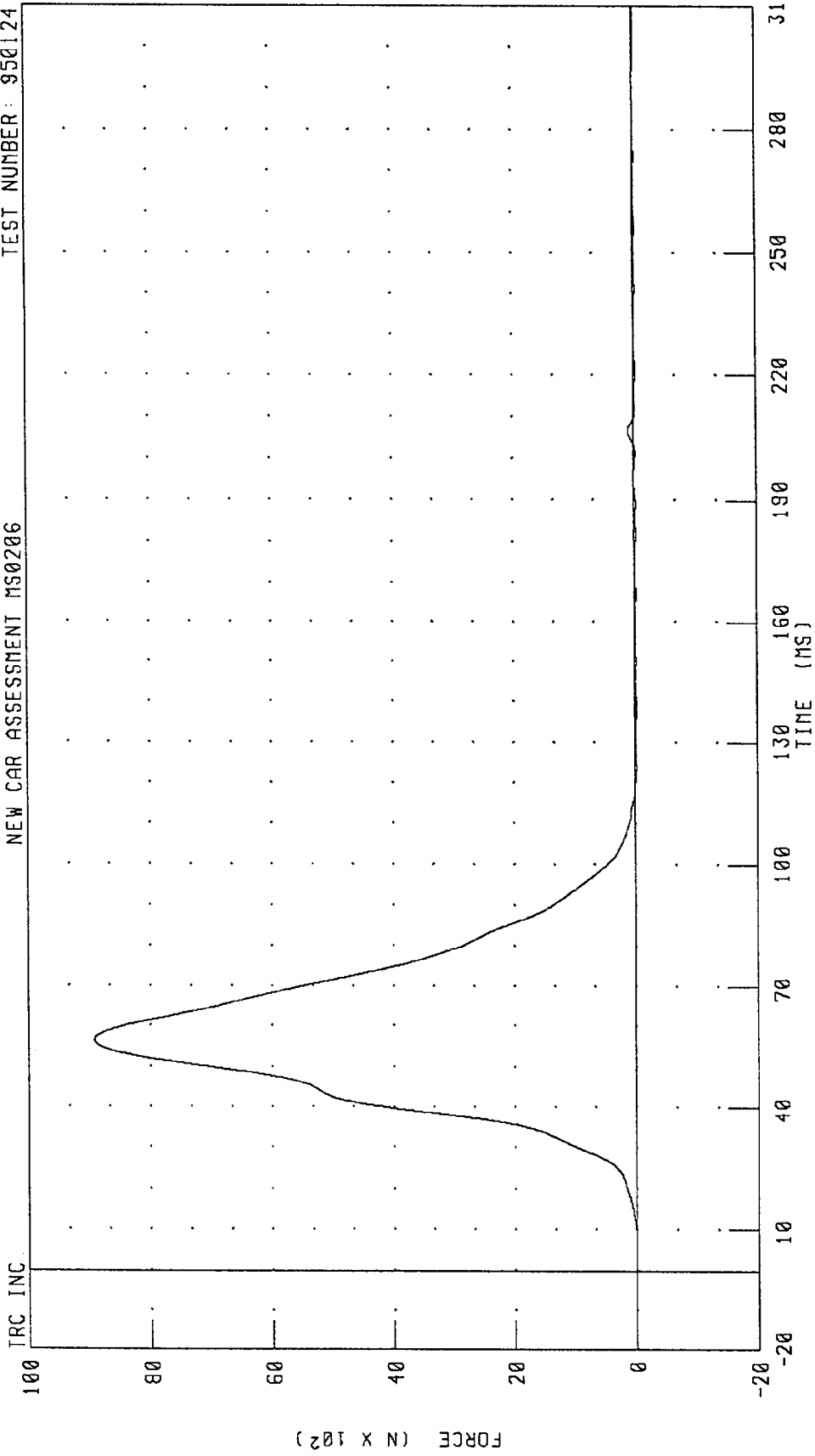


CHANNEL: LBOFI FILTER: CH. CLASS 60

PEAK DATA: 3002.02 N @ 39.92 MS; -28.66 N @ 162.72 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER SHOULDER BELT FORCE
NEW CAR ASSESSMENT MS0206

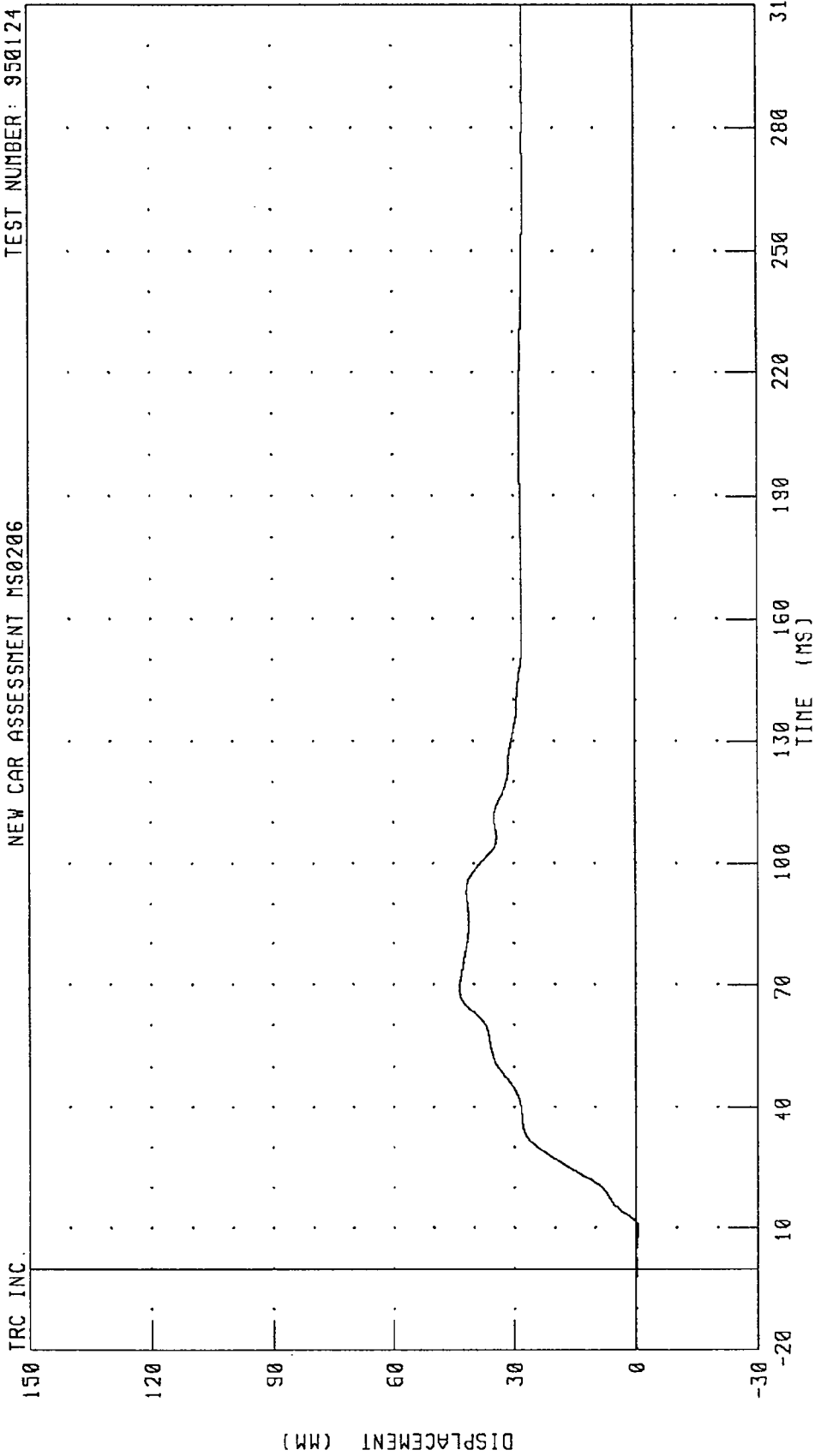
TEST NUMBER: 950124



CHANNEL: SHBF1 FILTER: CH. CLASS 60 PEAK DATA: 8920.21 N @ 56.32 MS; -27.61 N @ 256.32 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER SHOULDER BELT DISPLACEMENT
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

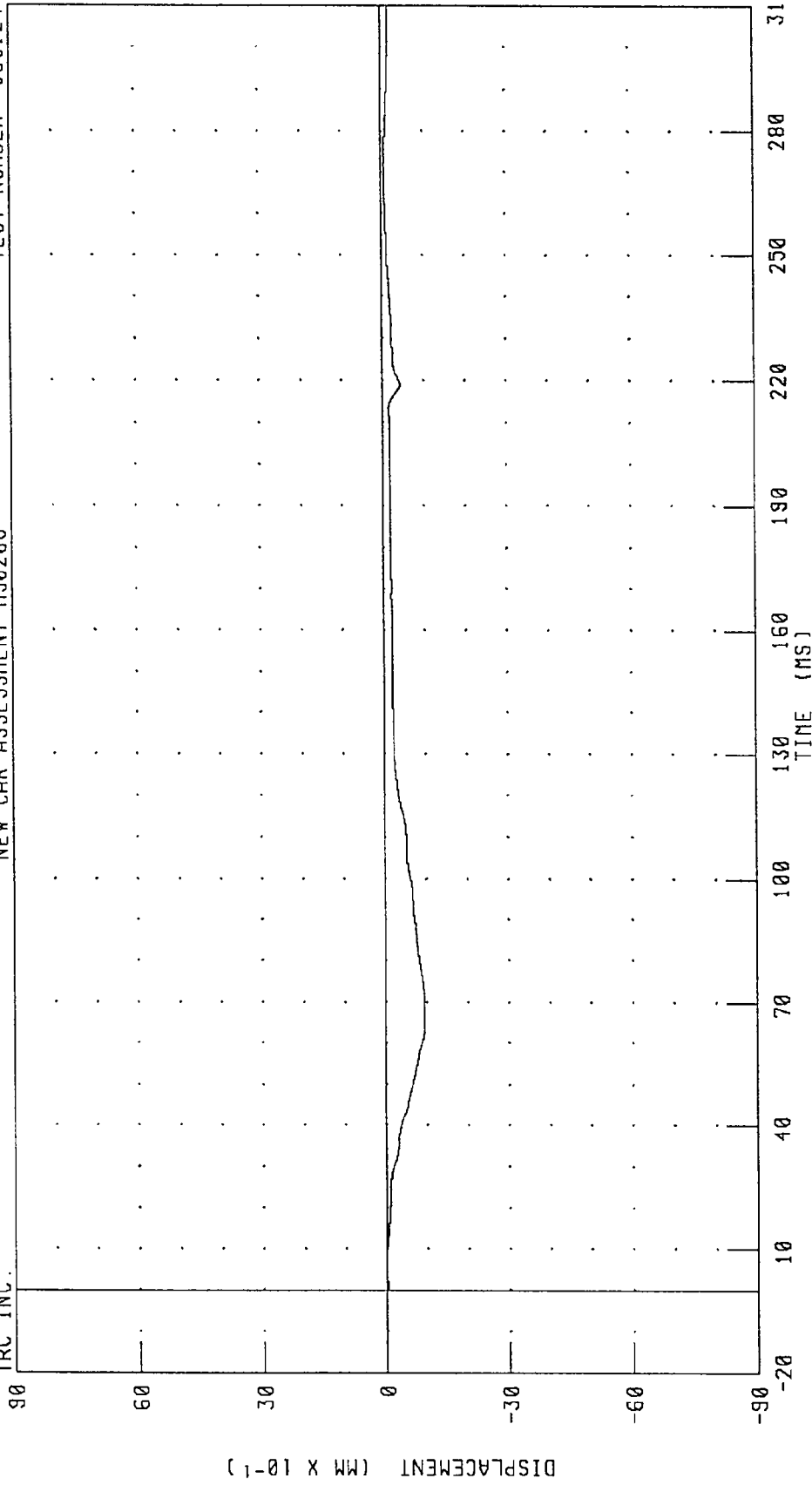


CHANNEL: SHBD1 FILTER: CH. CLASS 60 PEAK DATA: 43.51 MM @ 68.96 MS; -0.53 MM @ 9.76 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
DRIVER SEAT BELT EXTENSION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

TRC INC.

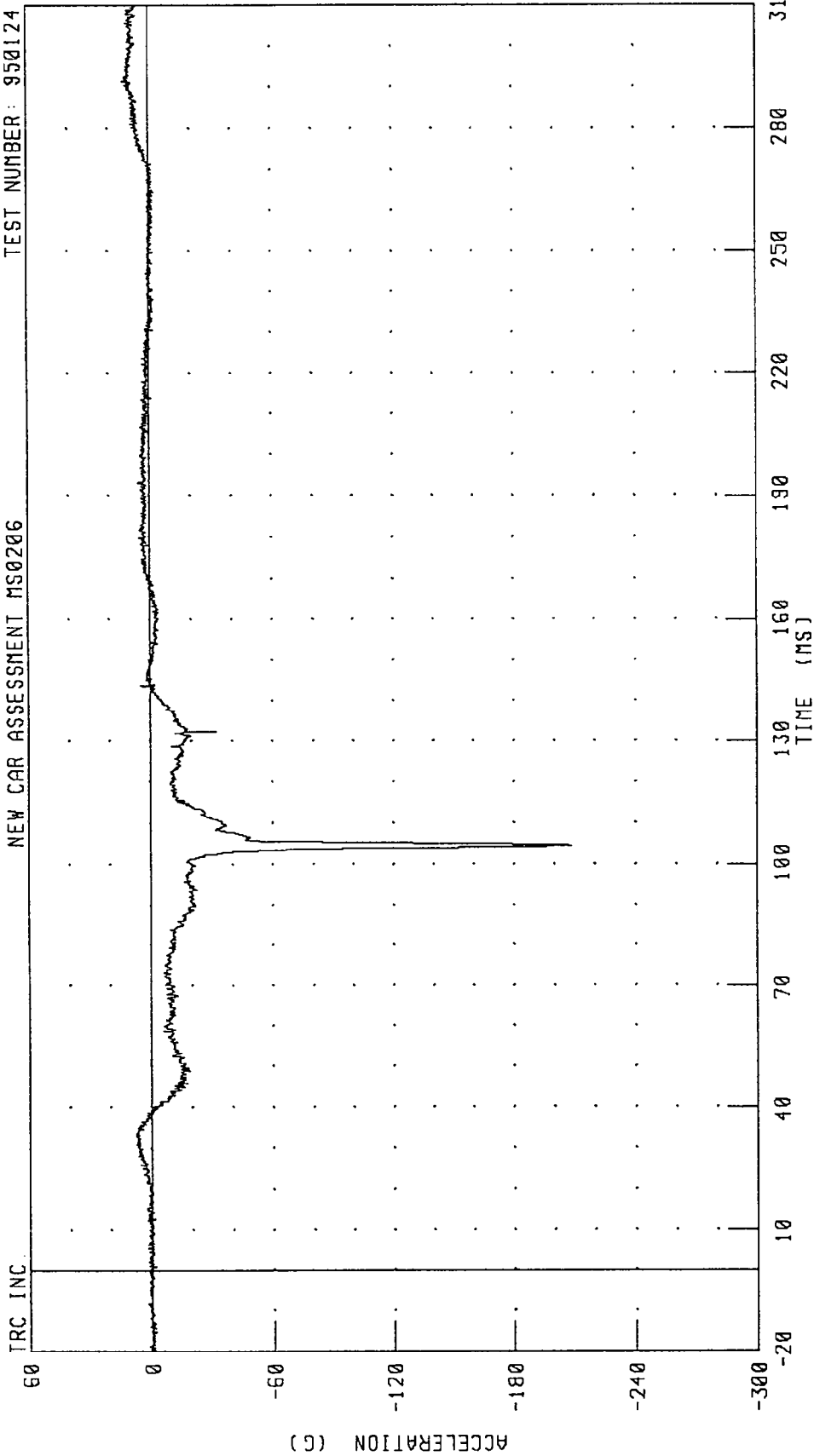


CHANNEL: SBEDI FILTER: CH. CLASS 60

PEAK DATA: 0.00 MM @ -19.68 MS; -0.94 MM @ 63.92 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER HEAD X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

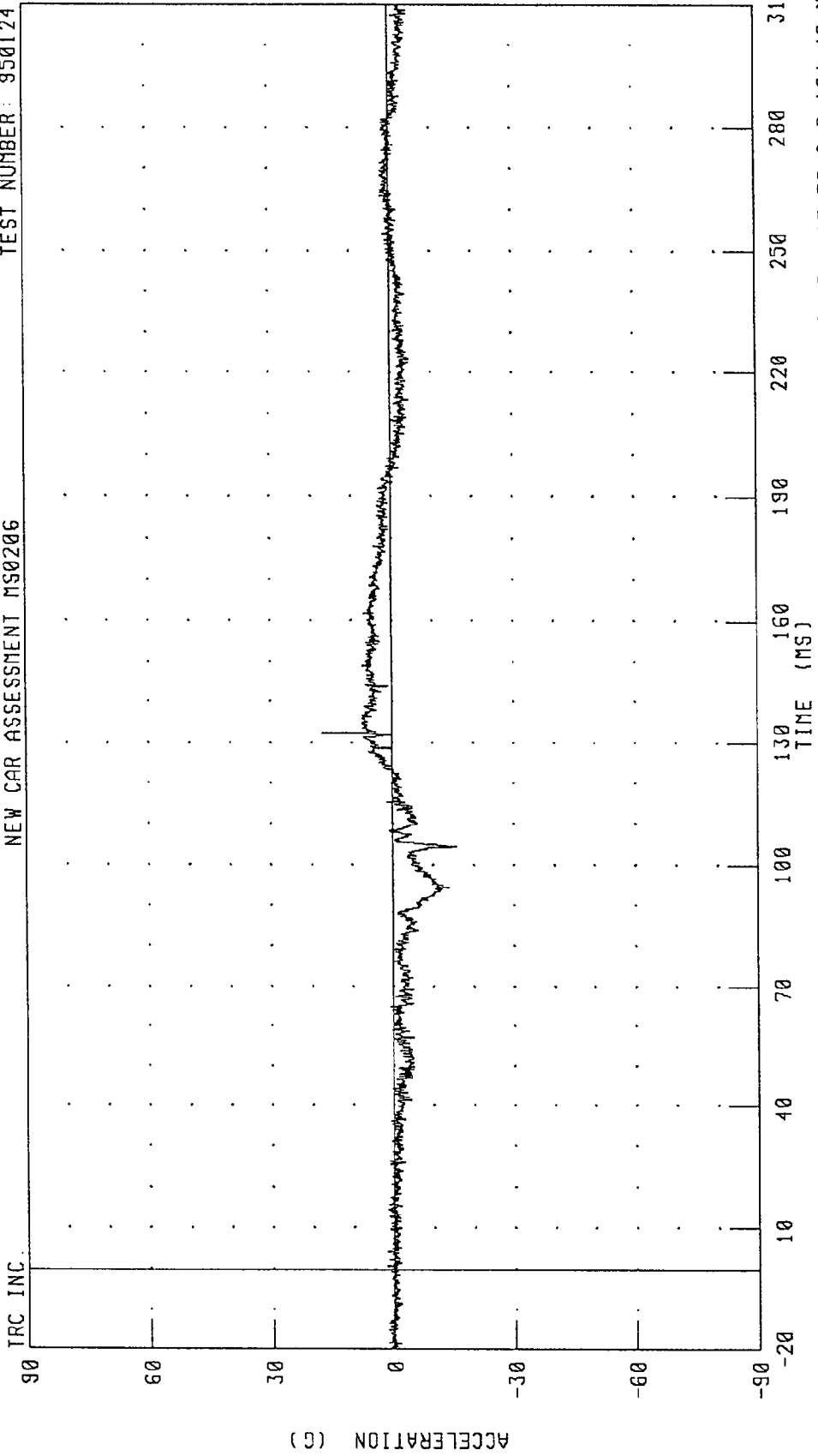
TEST NUMBER: 950124



CHANNEL: HEDXG2 FILTER: CH. CLASS 1000
PEAK DATA: 12.68 G @ 291.36 MS; -200.28 G @ 104.56 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER HEAD Y-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

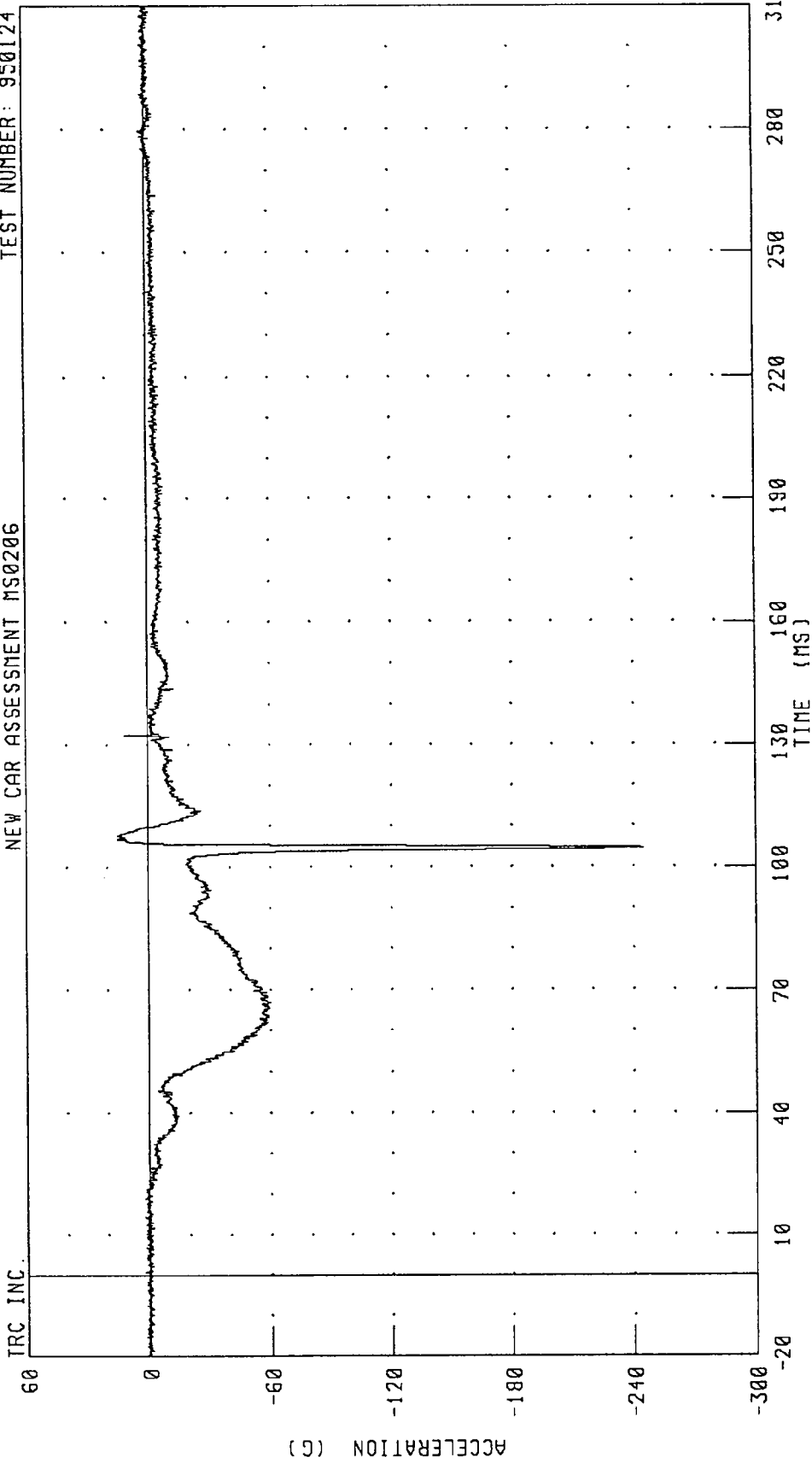


CHANNEL: HEDYG2 FILTER: CH. CLASS 1000
PEAK DATA: 17.31 G @ 132.32 MS; -15.72 G @ 104.48 MS

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER HEAD Z-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



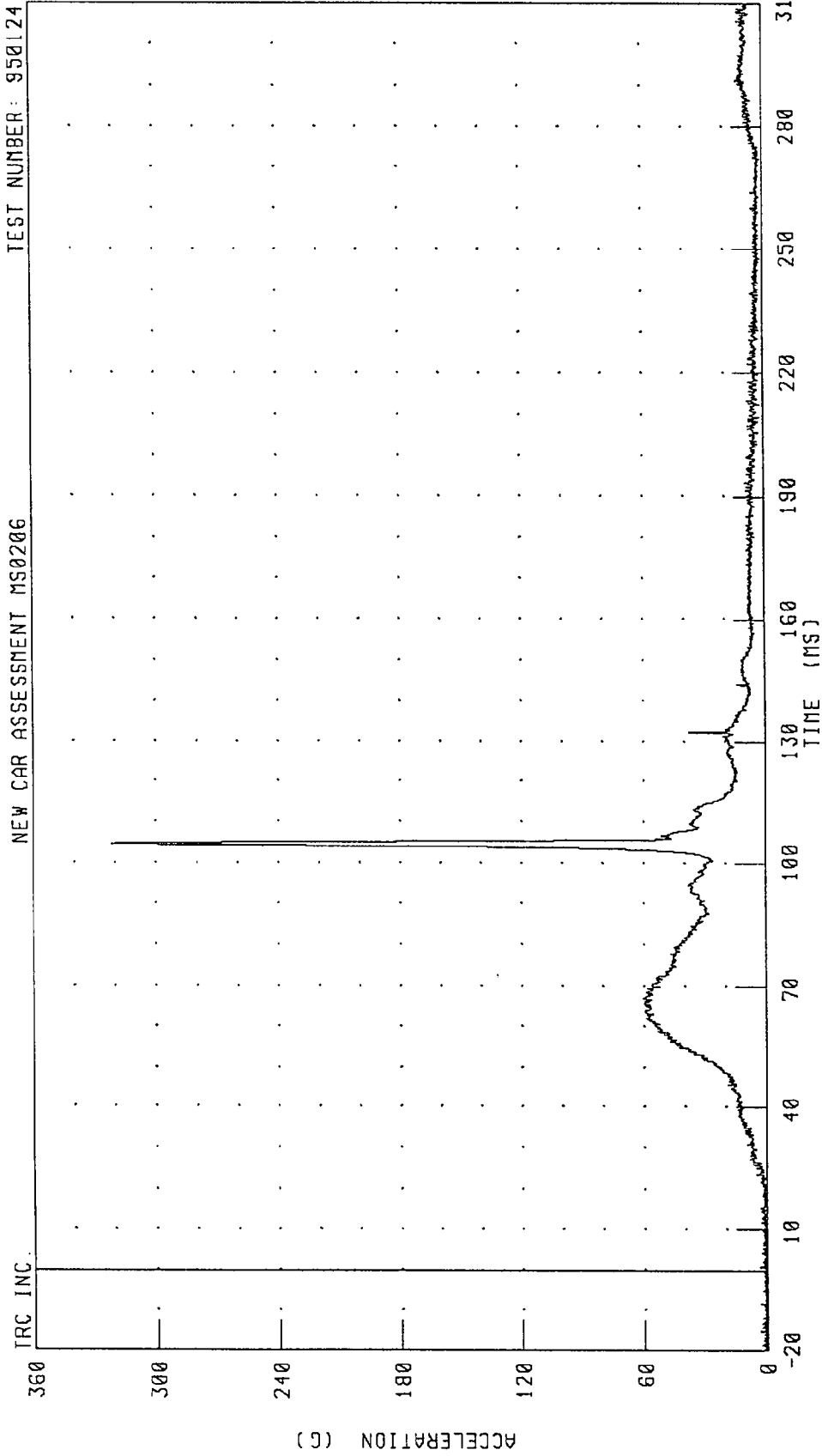
CHANNEL: HEDZG2 FILTER: CH. CLASS 1000

PEAK DATA: 15.13 G @ 106.64 MS; -244.86 G @ 104.56 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER HEAD RESULTANT ACCELERATION

TEST NUMBER: 950124

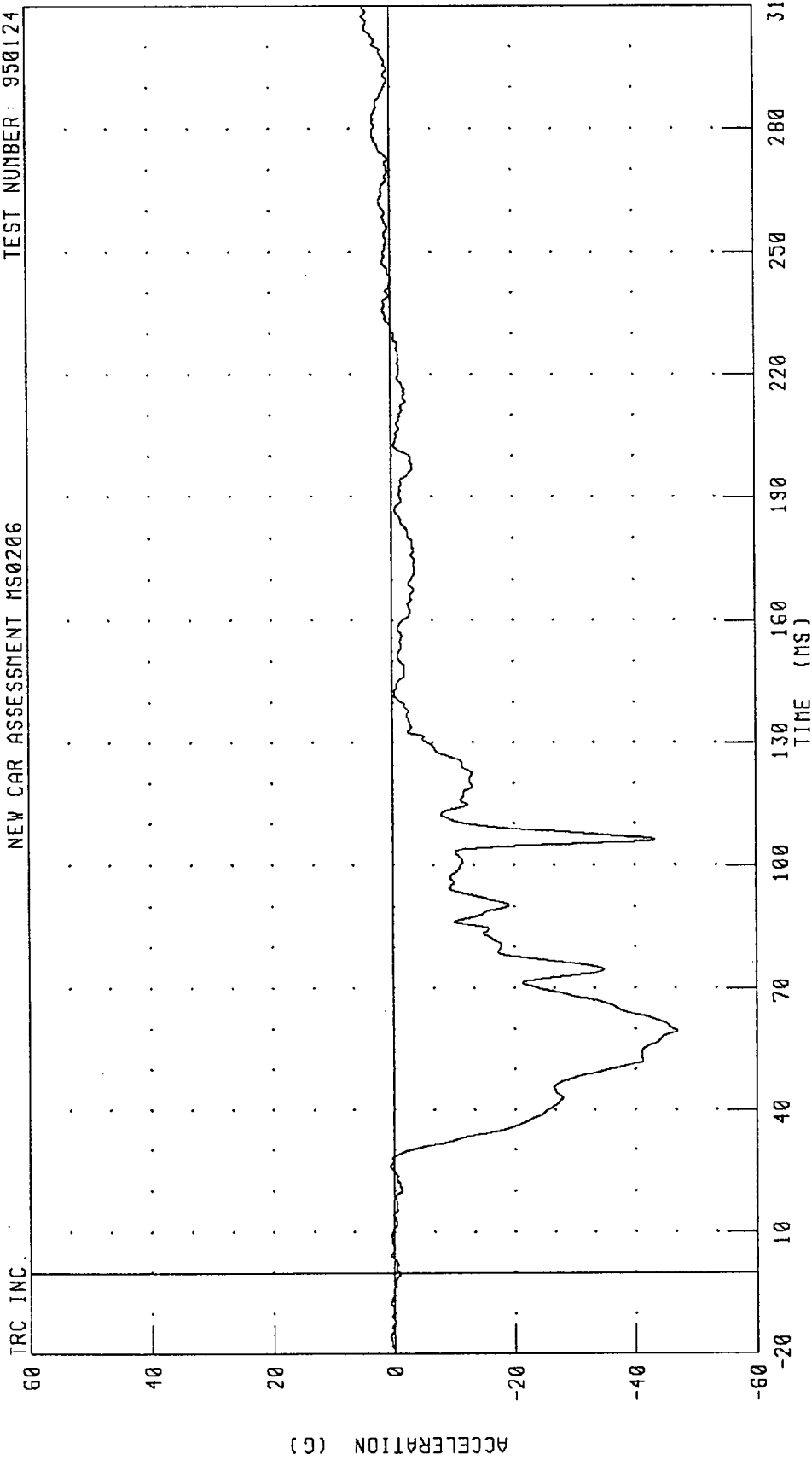
NEW CAR ASSESSMENT MS0206



CHANNEL: HEDRG2 FILTER: CH. CLASS 1000 PEAK DATA: 321.78 G @ 104.56 MS, 0.11 G @ 3.20 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER CHEST X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

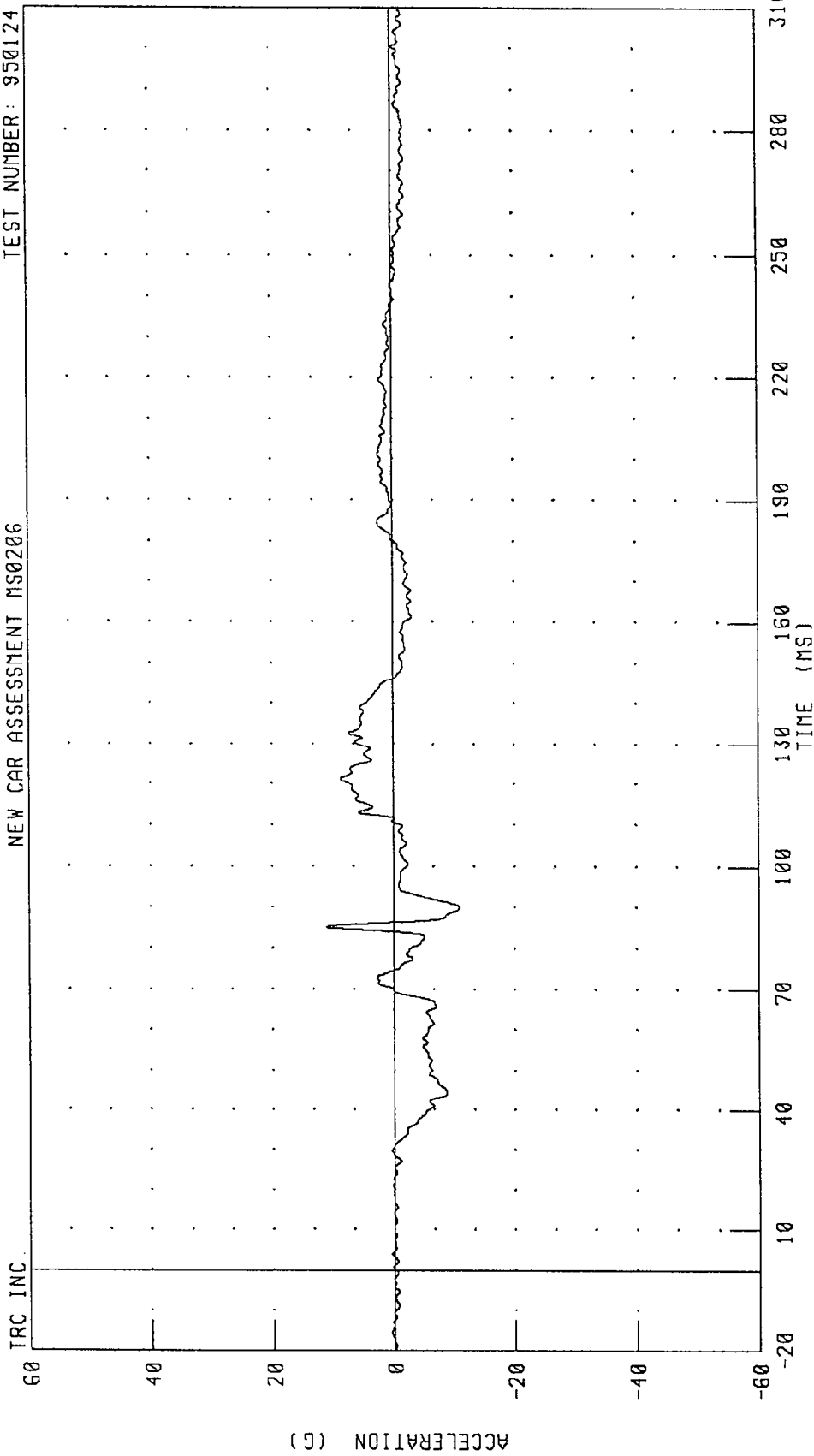


CHANNEL: CSTXG2 FILTER: CH. CLASS 180

PEAK DATA: 4.58 G @ 307.36 MS; -46.88 G @ 59.52 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER CHEST Y-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

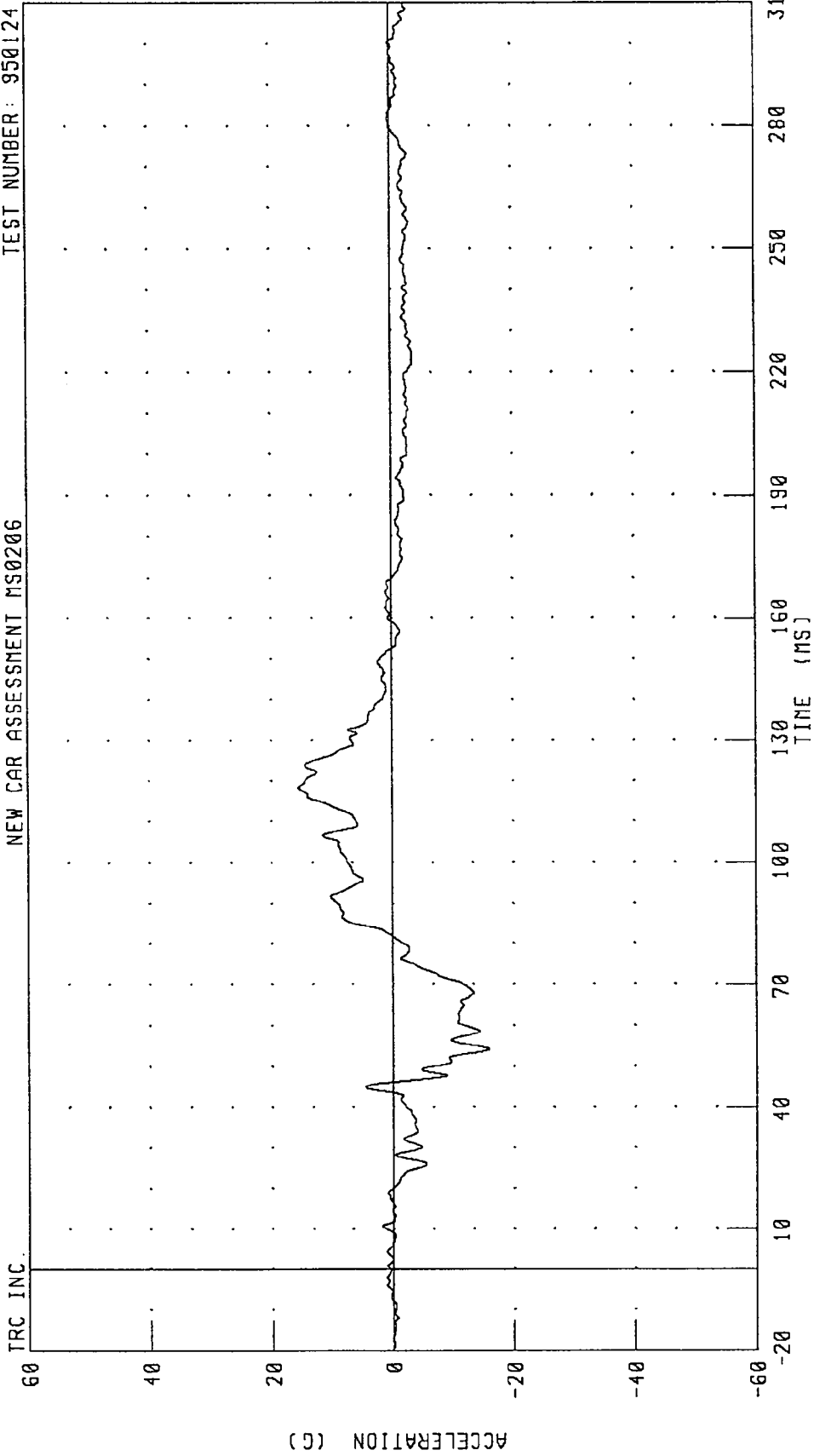


CHANNEL: CSTYG2 FILTER: CH. CLASS 180

PEAK DATA: 11.15 G @ 85.20 MS; -10.96 G @ 89.92 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER CHEST Z-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

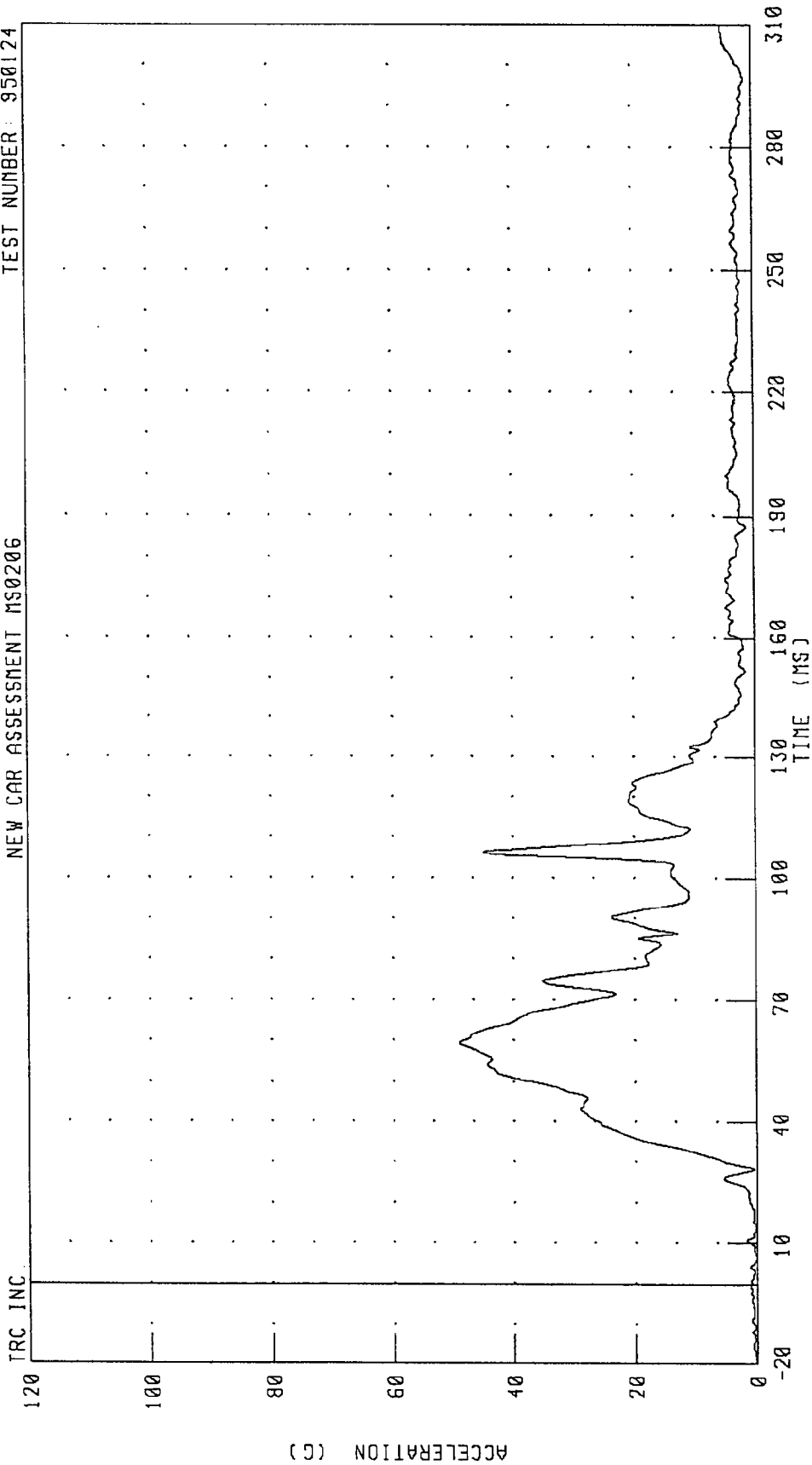
TEST NUMBER: 950124



CHANNEL: CSTZG2 FILTER: CH. CLASS 180

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER CHEST RESULTANT ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

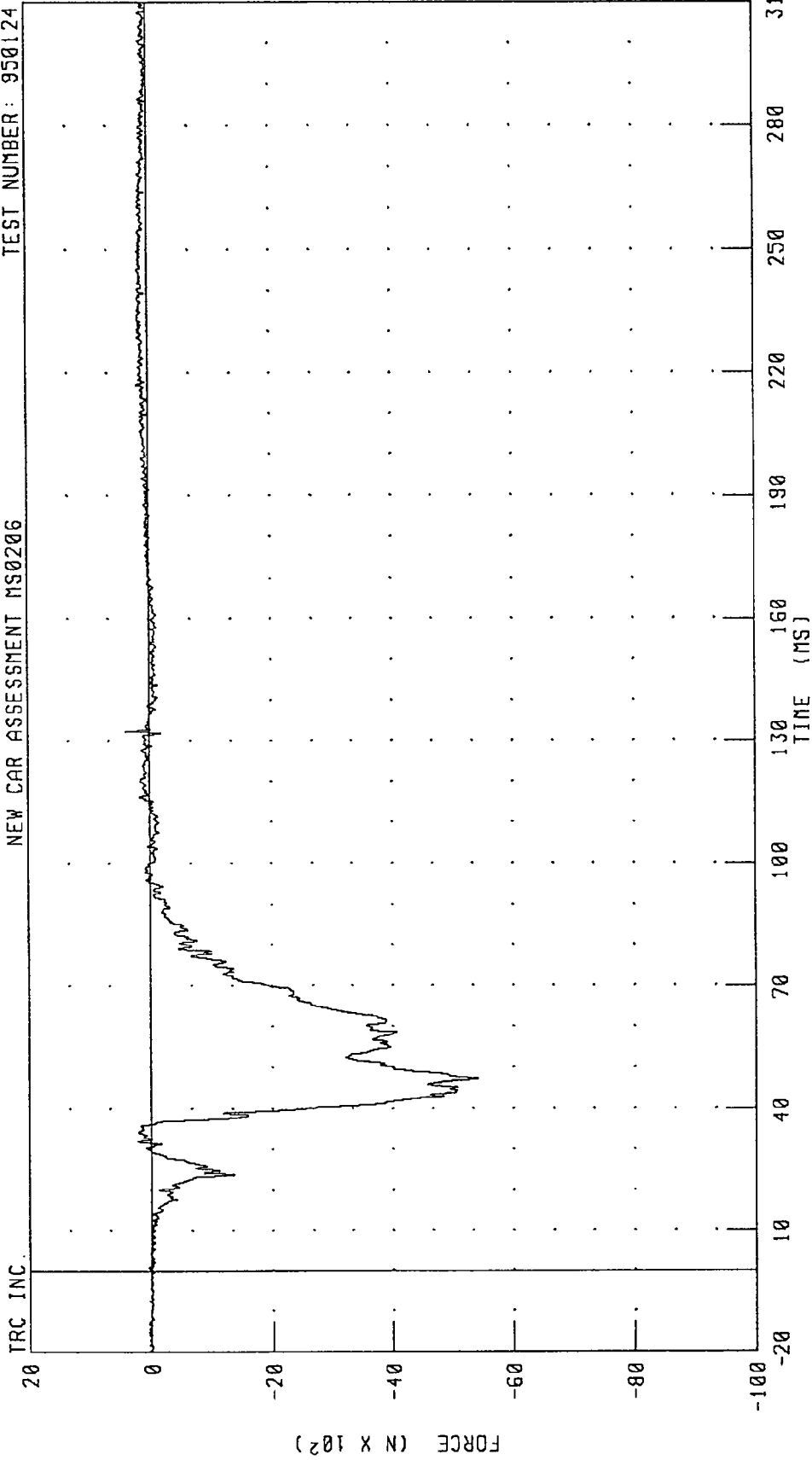


PEAK DATA: 49.00 G @ 59.36 MS; 0.04 G @ -20.00 MS

CHANNEL: CSTRG2 FILTER: CH. CLASS 180

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER LEFT FEMUR FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

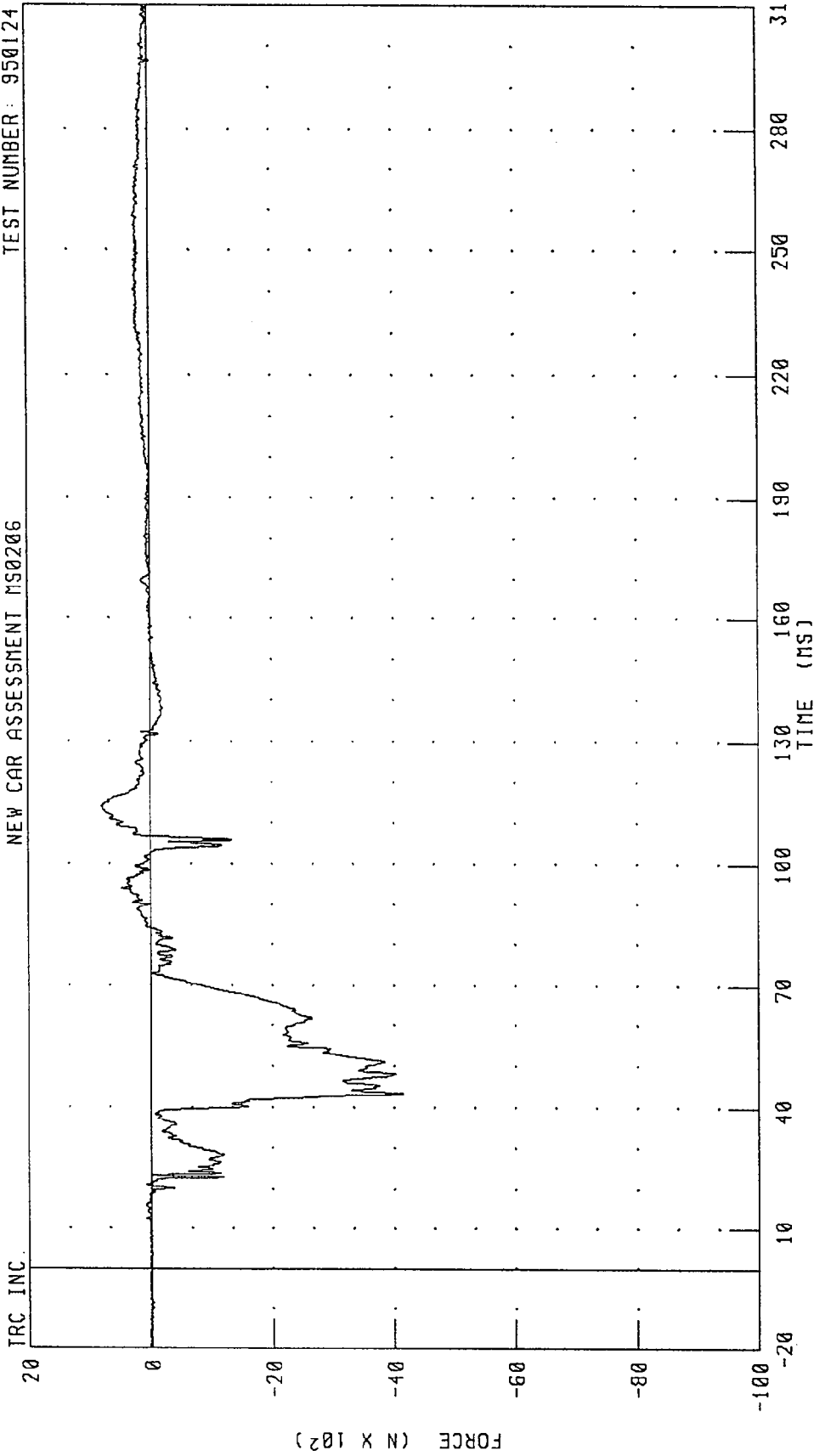


CHANNEL: LFMF2 FILTER: CH. CLASS 600

PEAK DATA: 379.34 N @ 132.32 MS; -5402.19 N @ 47.20 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER RIGHT FEMUR FORCE
NEW CAR ASSESSMENT MS0206

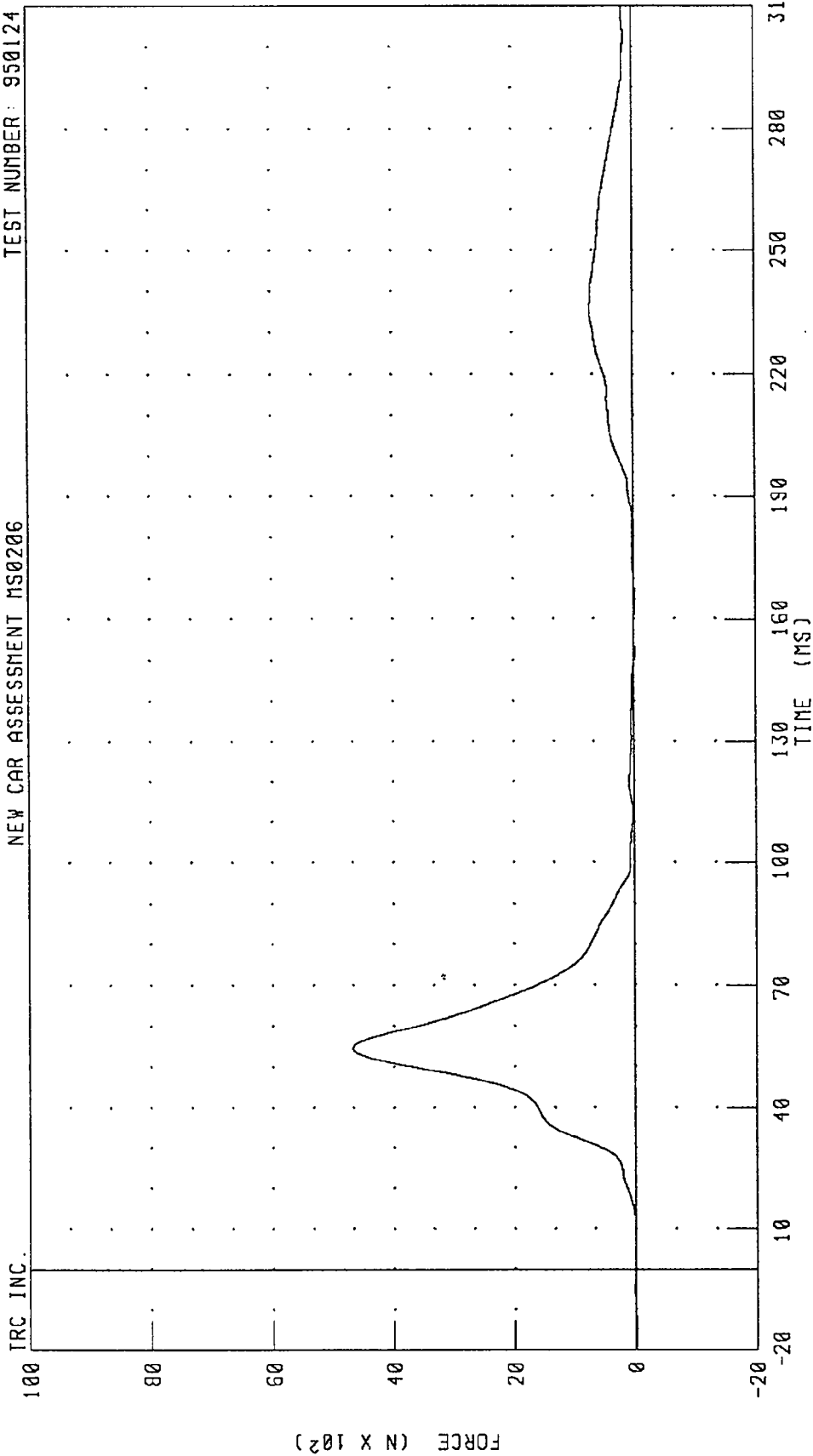
TEST NUMBER: 950124



CHANNEL: RFMF2 FILTER: CH. CLASS 600 PEAK DATA: 795.15 N @ 114.08 MS; -4147.70 N @ 43.44 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER LAP BELT OUTBOARD FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

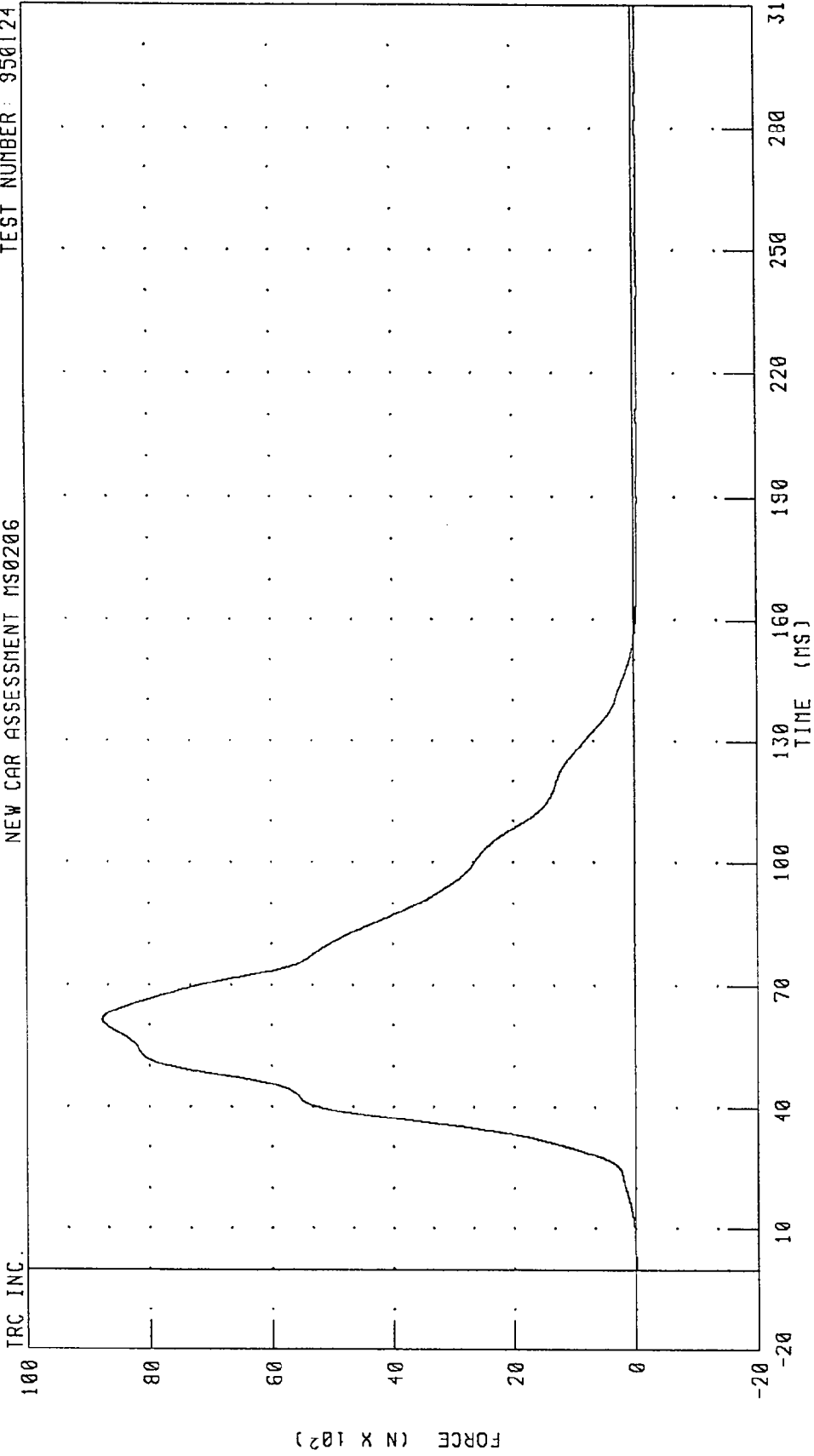


CHANNEL: LBOF2 FILTER: CH. CLASS 60

PEAK DATA: 4675.85 N @ 54.48 MS; -13.06 N @ -16.64 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER SHOULDER BELT FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



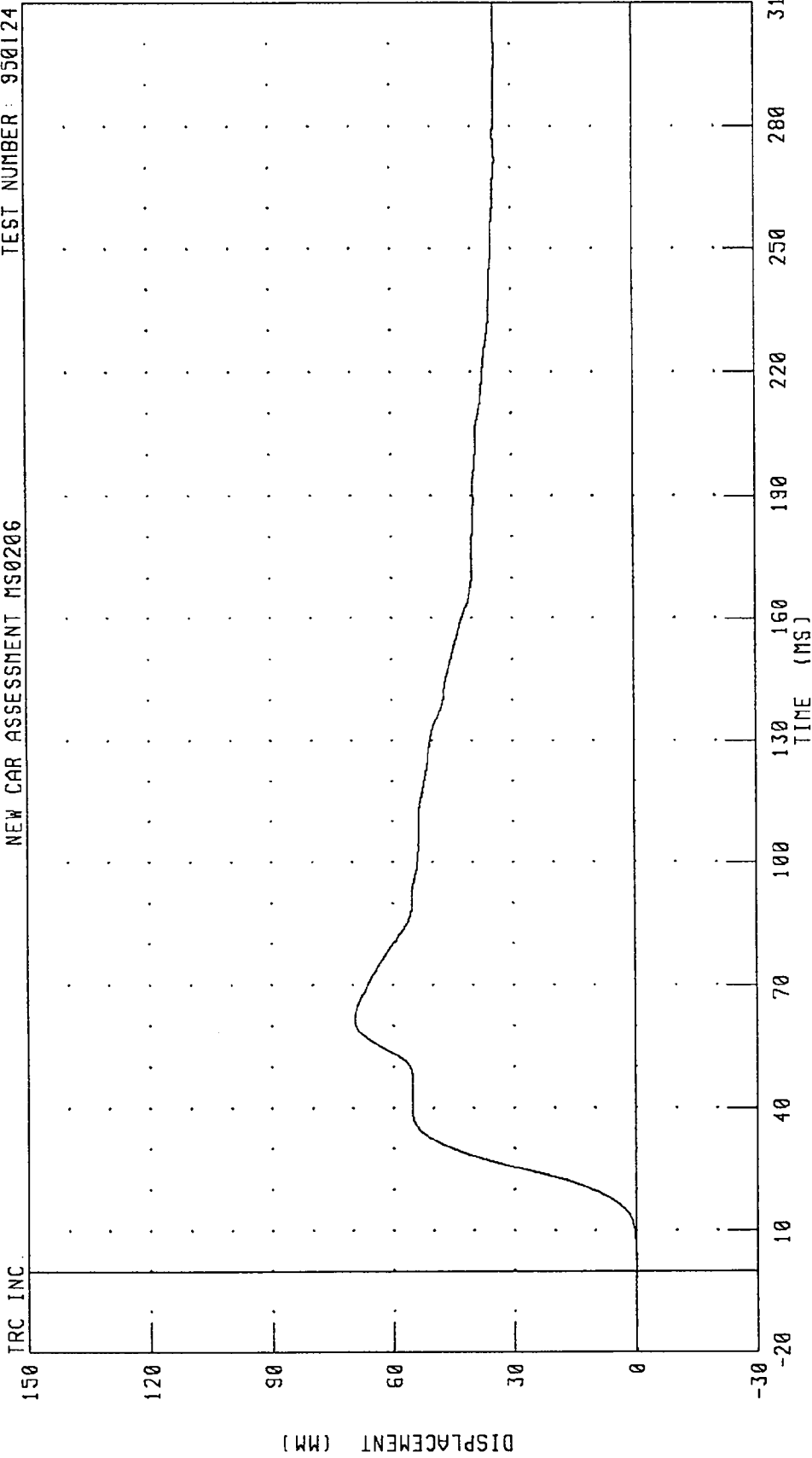
CHANNEL: SHBF2 FILTER: CH. CLASS 60

PEAK DATA: 8767.57 N @ 61.44 MS; -73.40 N @ 240.08 MS

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER SHOULDER BELT DISPLACEMENT
NEW CAR ASSESSMENT MS0206

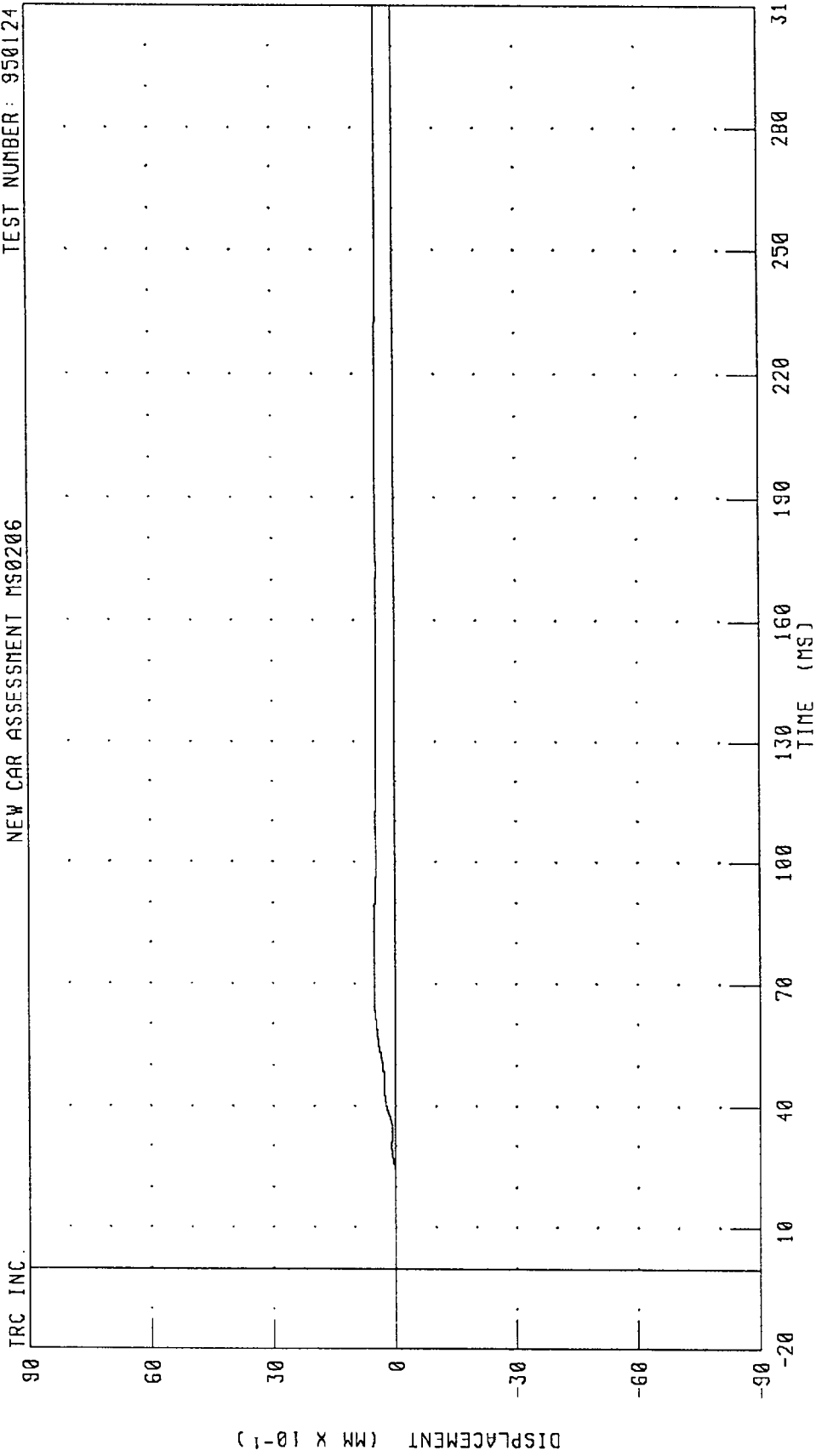
TEST NUMBER: 950124



CHANNEL: SHB02 FILTER: CH. CLASS 60
PEAK DATA: 69.44 MM @ 61.52 MS; -0.28 MM @ 1.52 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
PASSENGER SEAT BELT EXTENSION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

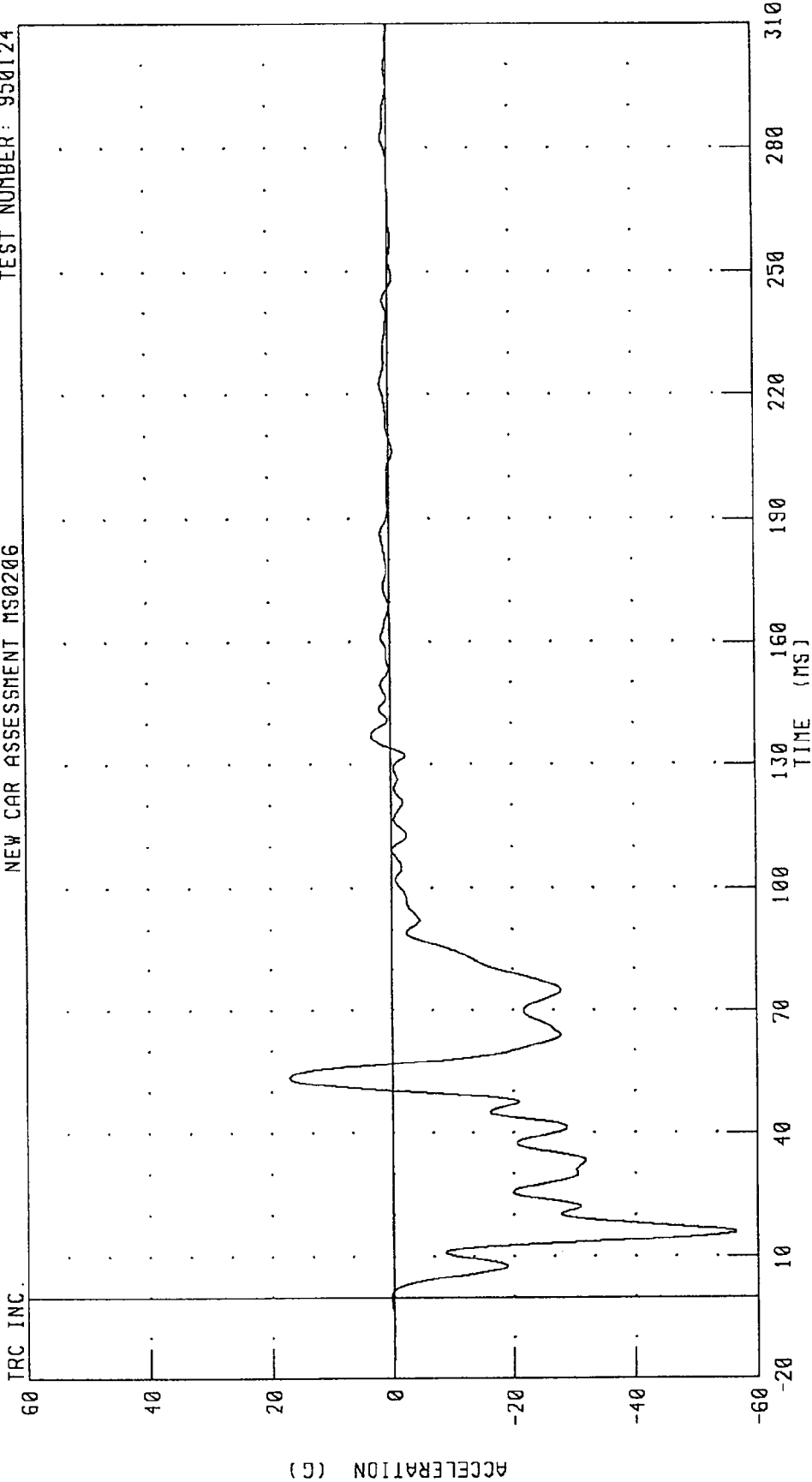


CHANNEL: SBED2 FILTER: CH. CLASS 60

PEAK DATA: 0.52 MM @ 77.36 MS; -0.01 MM @ 0.80 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LEFT REAR SEAT X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

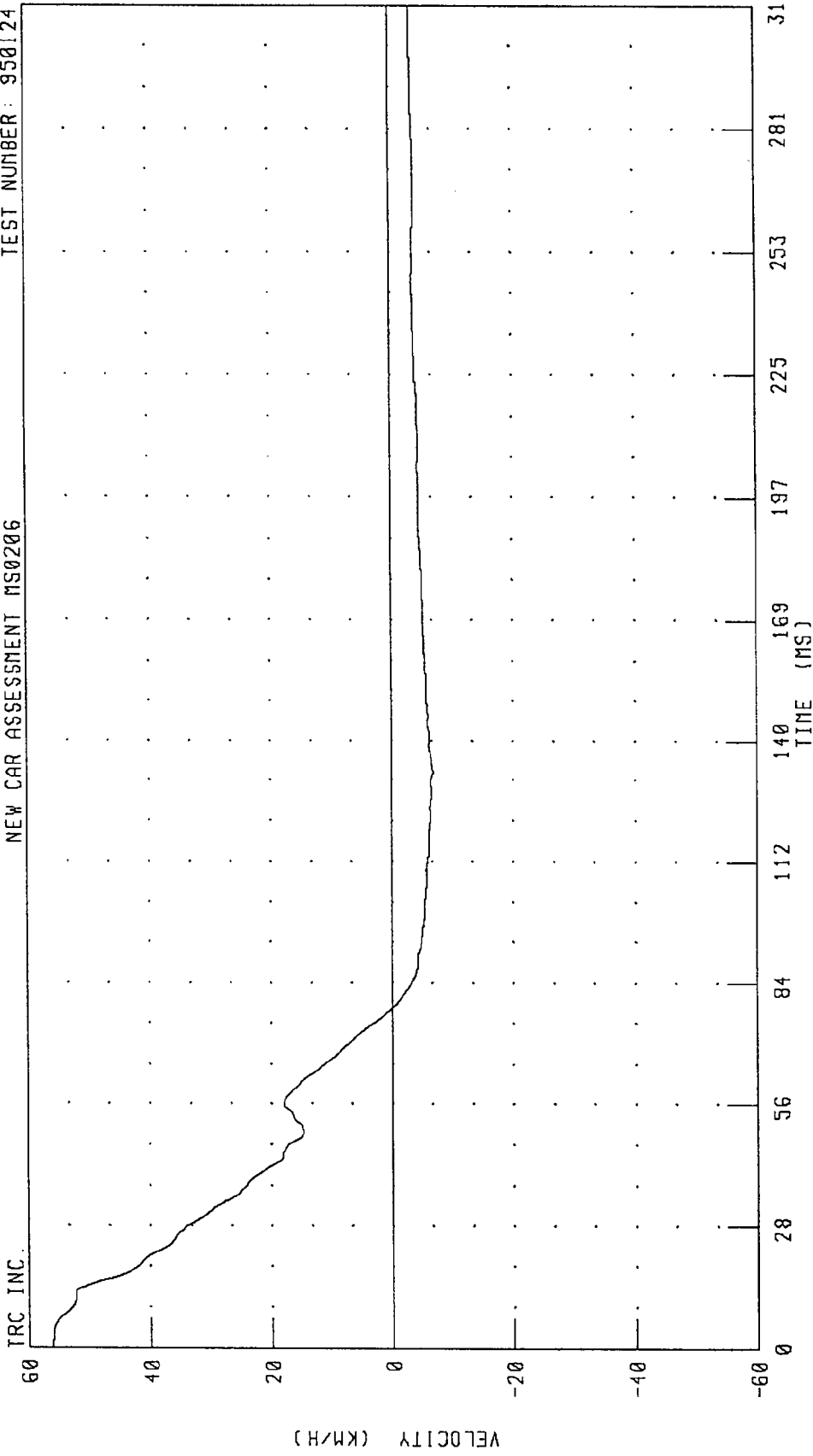


PEAK DATA: 17.05 G @ 53.36 MS; -56.45 G @ 15.92 MS

CHANNEL: TLRXG1 FILTER: CH. CLASS 60

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LEFT REAR SEAT X-AXIS VELOCITY
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

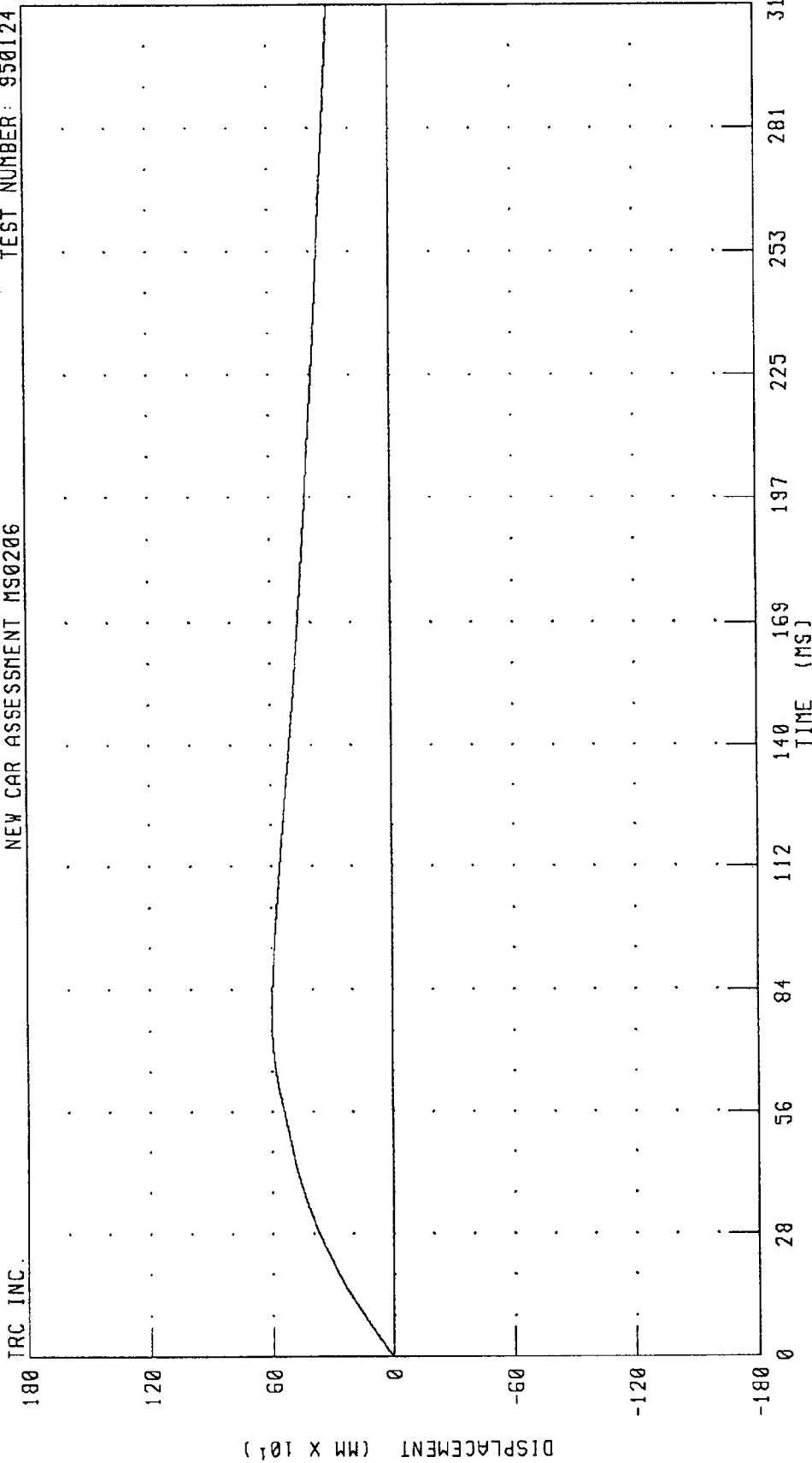


CHANNEL: TLRXV1 FILTER: CH. CLASS 180

PEAK DATA: 56.00 KM/H @ 0.00 MS; -6.86 KM/H @ 133.44 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LEFT REAR SEAT X-AXIS DISPLACEMENT
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

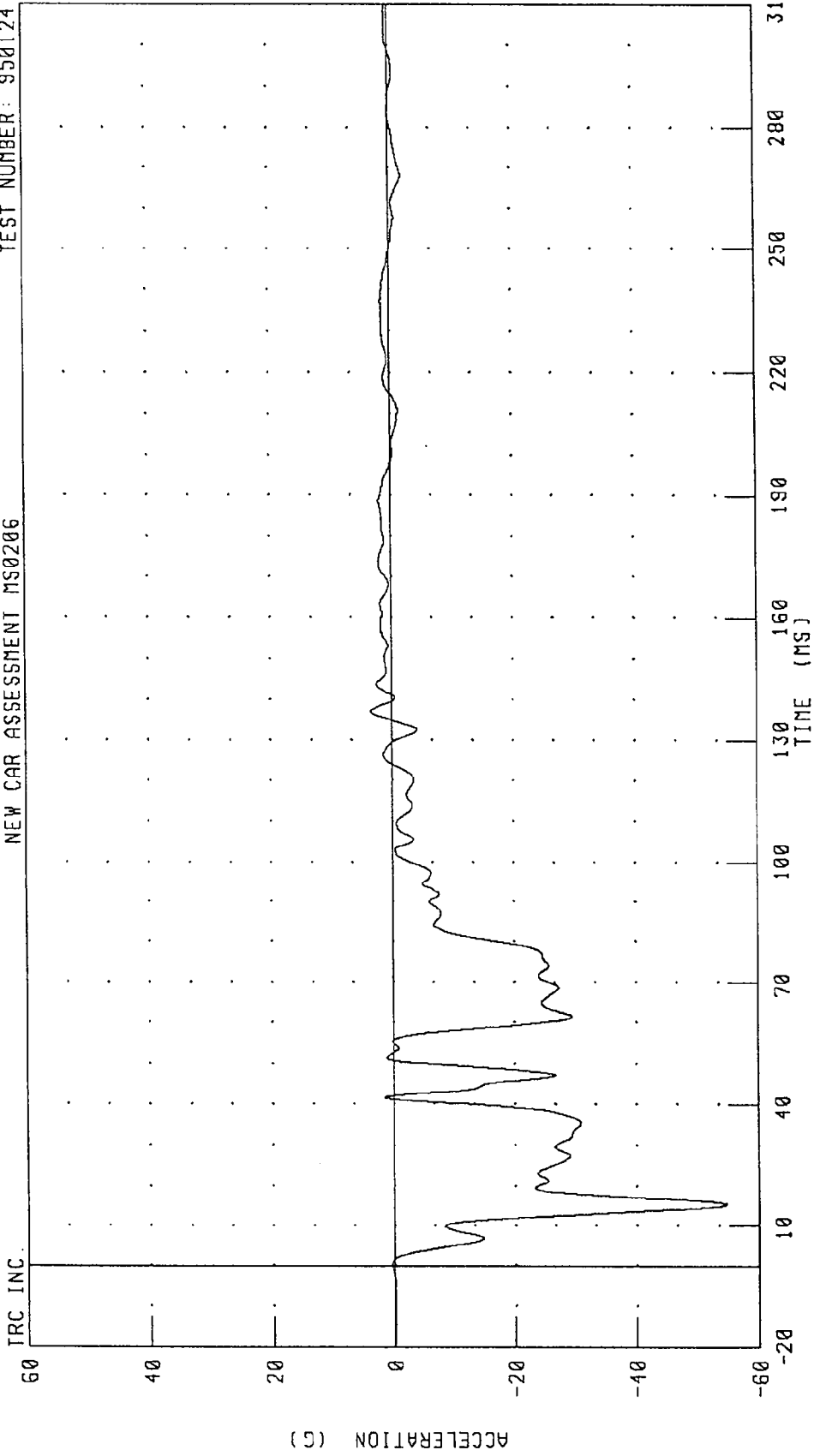


PEAK DATA: 600.74 MM @ 78.64 MS; 0.00 MM @ 0.00 MS

CHANNEL: TLRX01 FILTER: CH. CLASS 180

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
RIGHT REAR SEAT X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

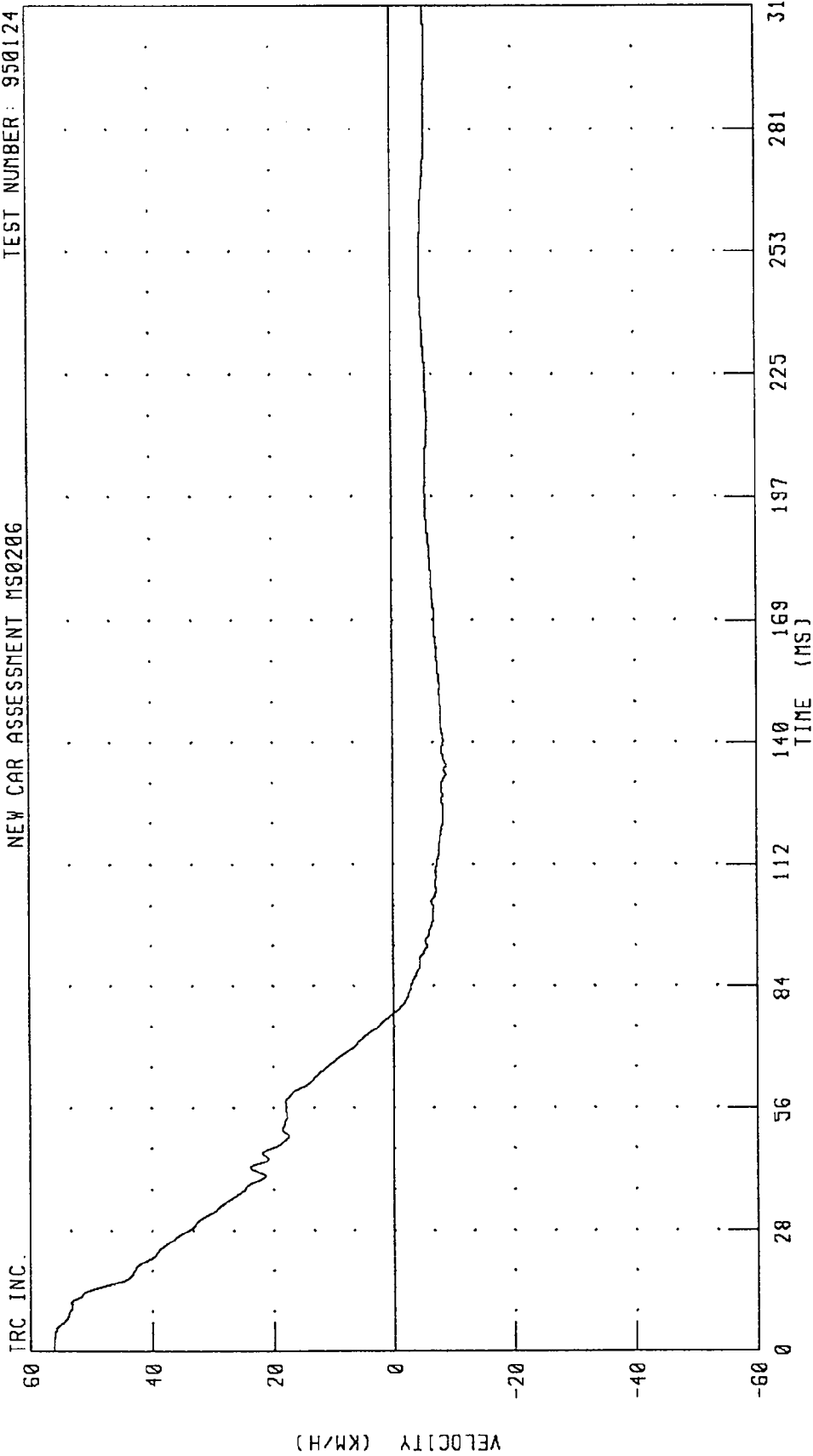


CHANNEL: TRRXG1 FILTER: CH. CLASS 60

PEAK DATA: 3.59 G @ 136.96 MS; -54.72 G @ 15.36 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
RIGHT REAR SEAT X-AXIS VELOCITY
NEW CAR ASSESSMENT MS0206

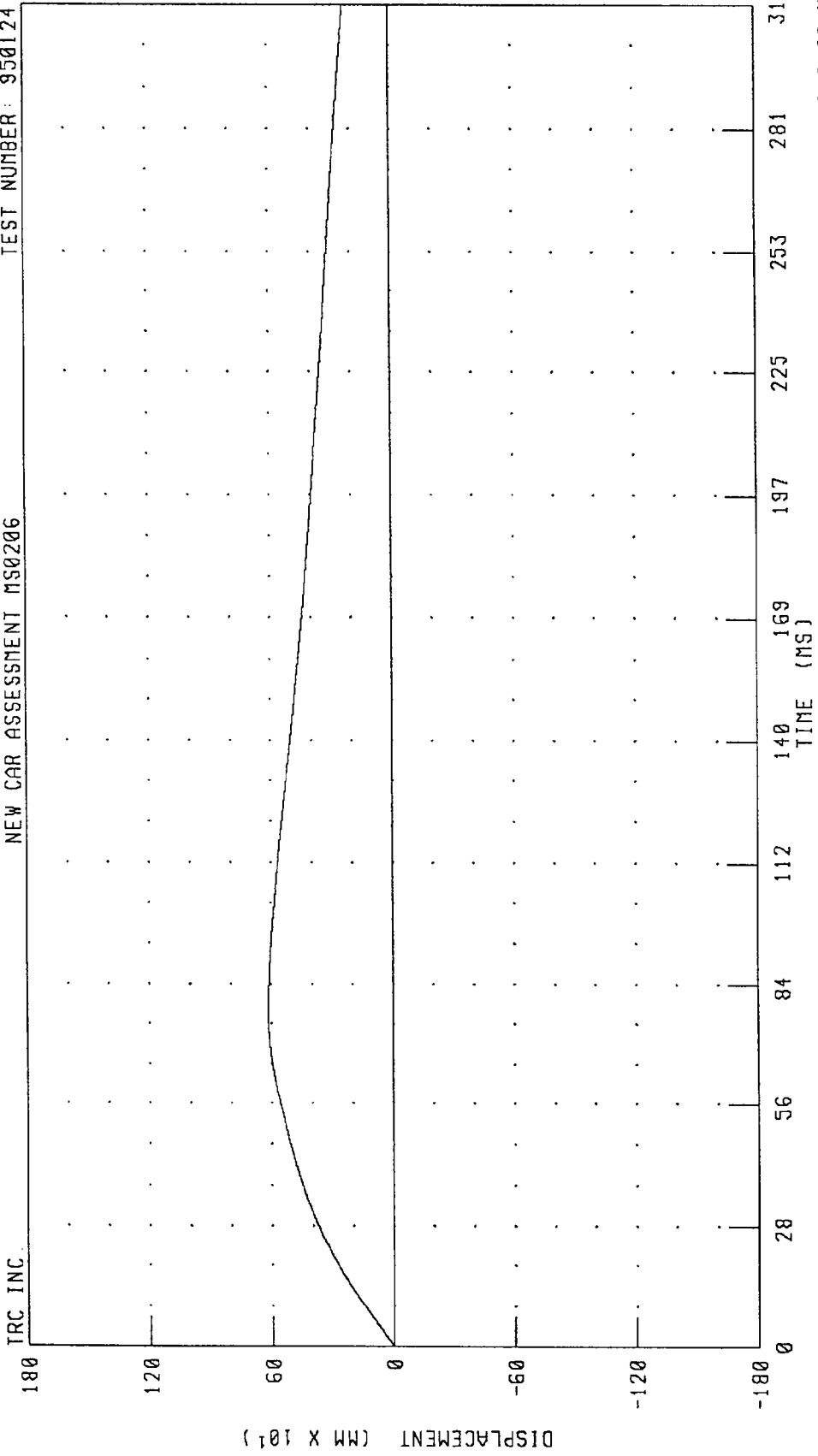
TEST NUMBER: 950124



CHANNEL: TRRXV1 FILTER: CH. CLASS 180

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
RIGHT REAR SEAT X-AXIS DISPLACEMENT
NEW CAR ASSESSMENT MS0206

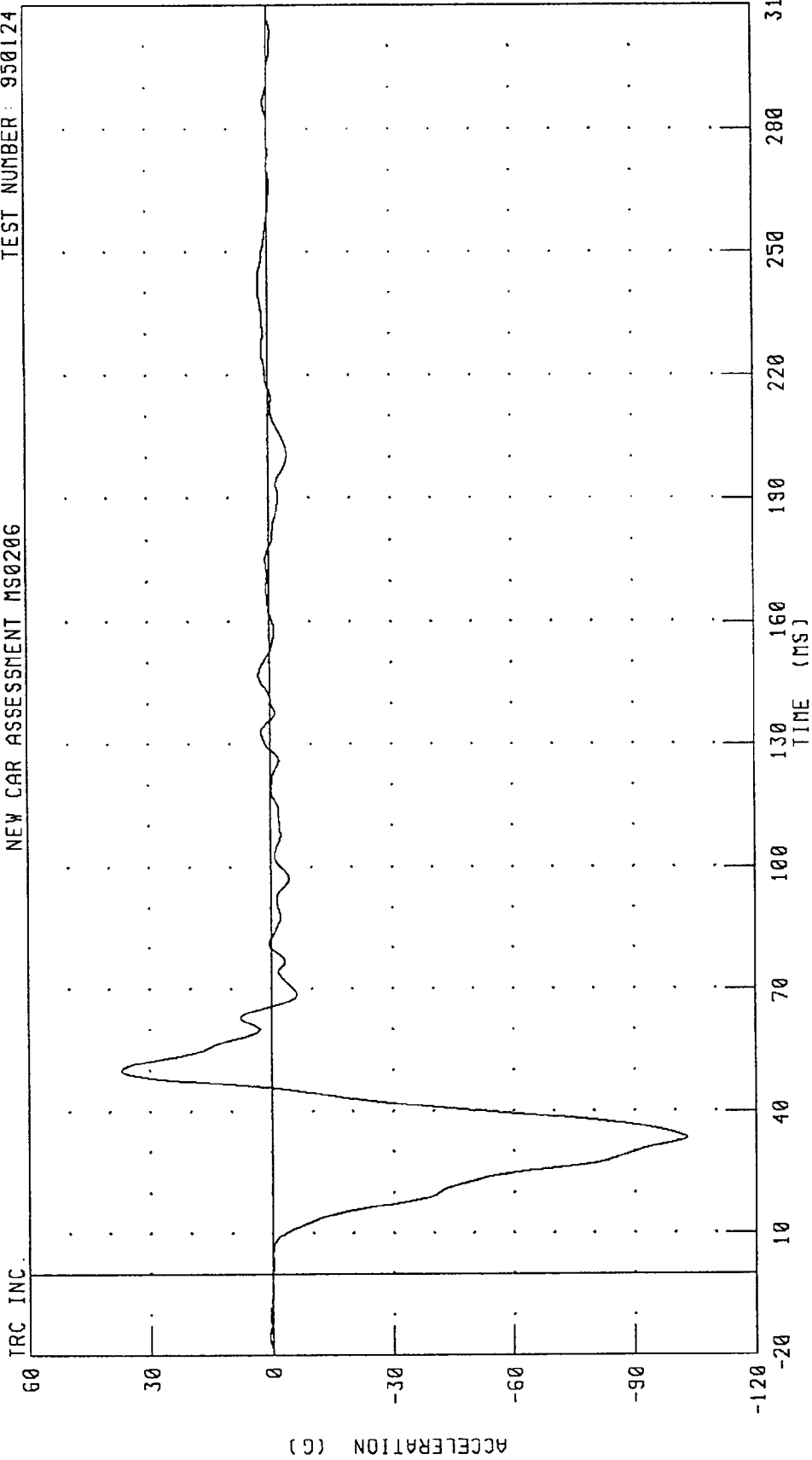
TEST NUMBER: 950124



CHANNEL: TRRXD1 FILTER: CH. CLASS 180
PEAK DATA: 615.78 MM @ 78.16 MS; 0.00 MM @ 0.00 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
ENGINE TOP X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

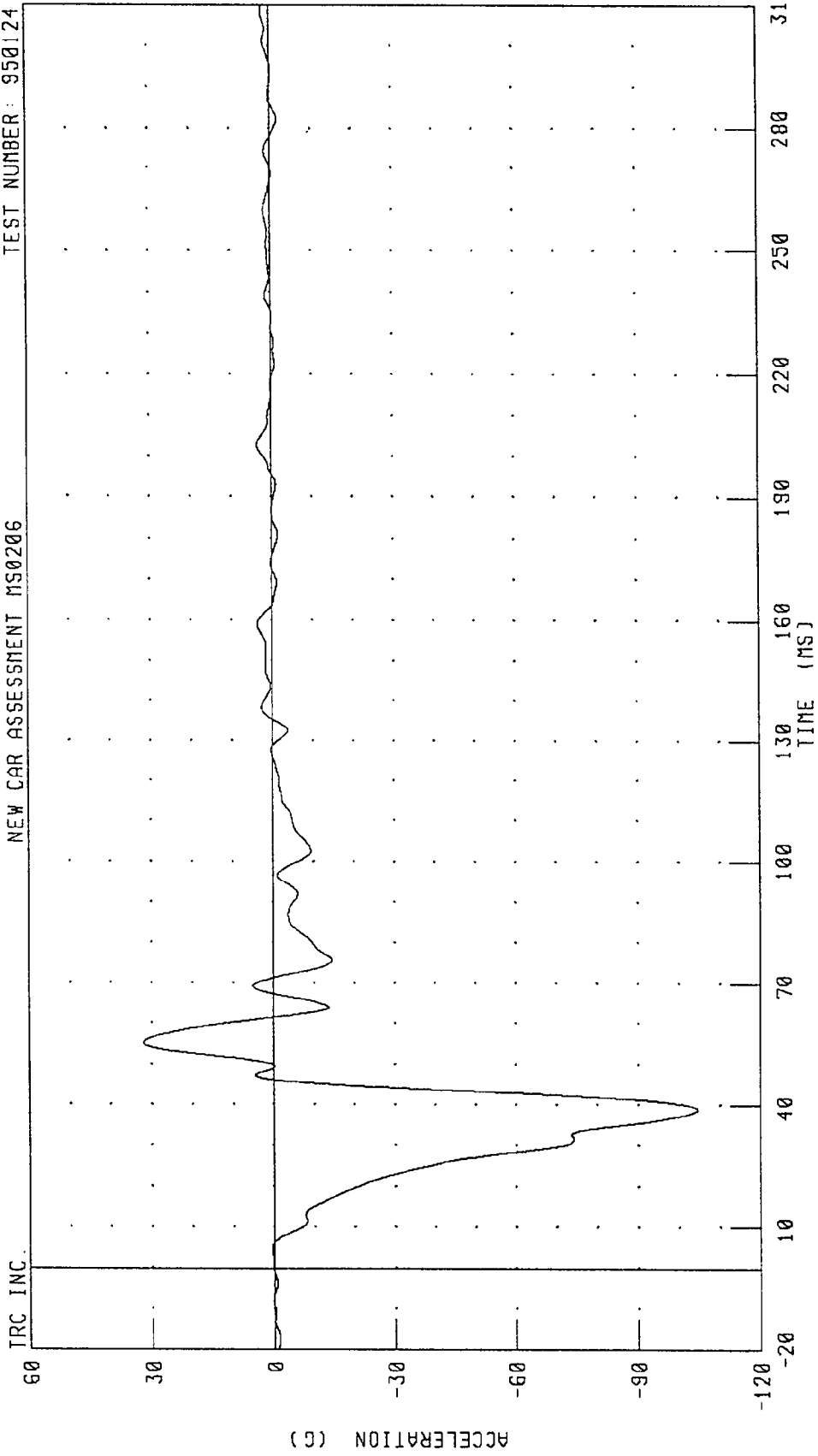


CHANNEL: ENGXG1 FILTER: CH. CLASS 60

PEAK DATA: 36.98 G @ 50.00 MS, -102.89 G @ 33.52 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
ENGINE BOTTOM X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



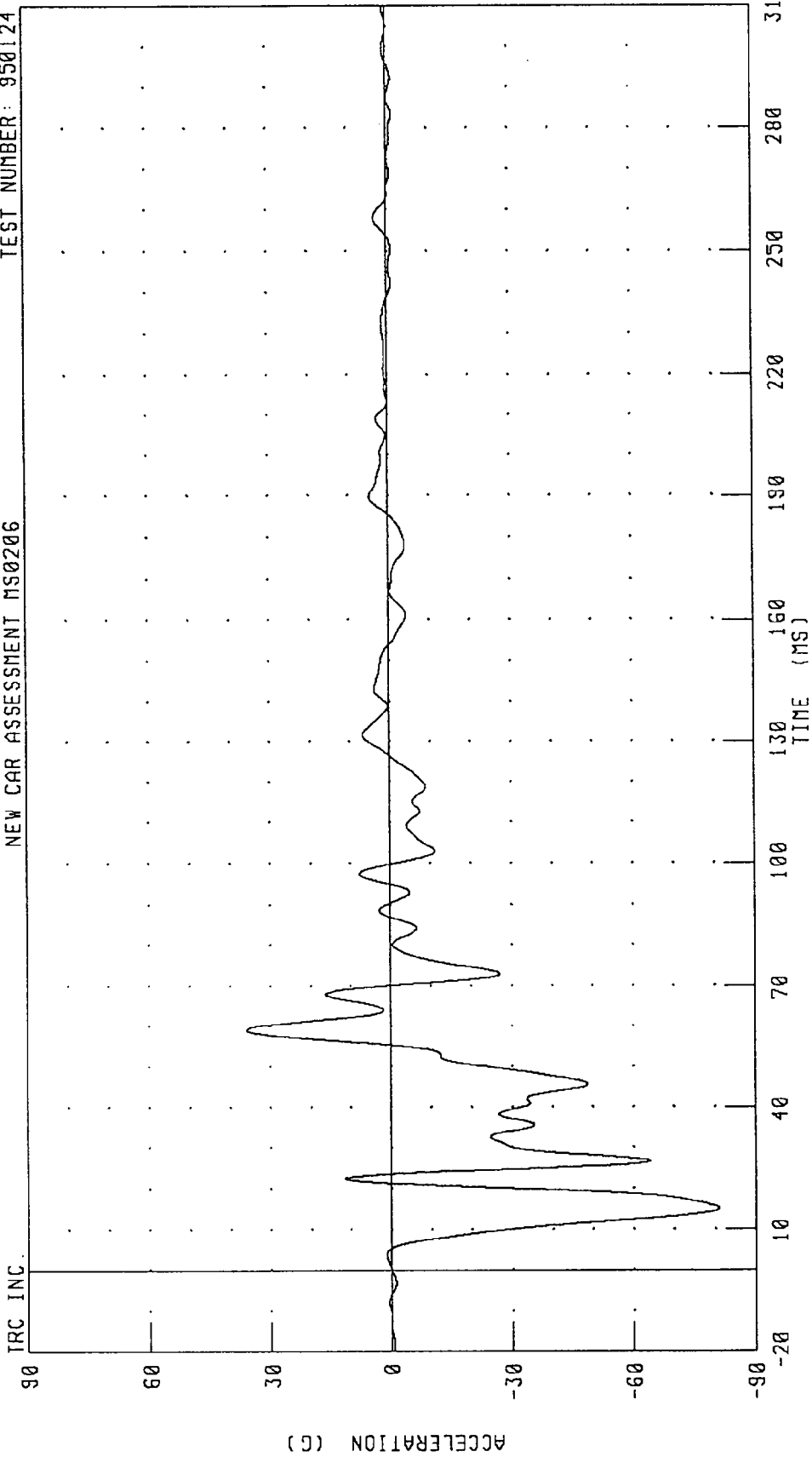
CHANNEL: ENGXC2 FILTER: CH. CLASS 60

PEAK DATA: 31.96 G @ 55.20 MS; -104.53 G @ 38.80 MS

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1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
RIGHT BRAKE CALIPER X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

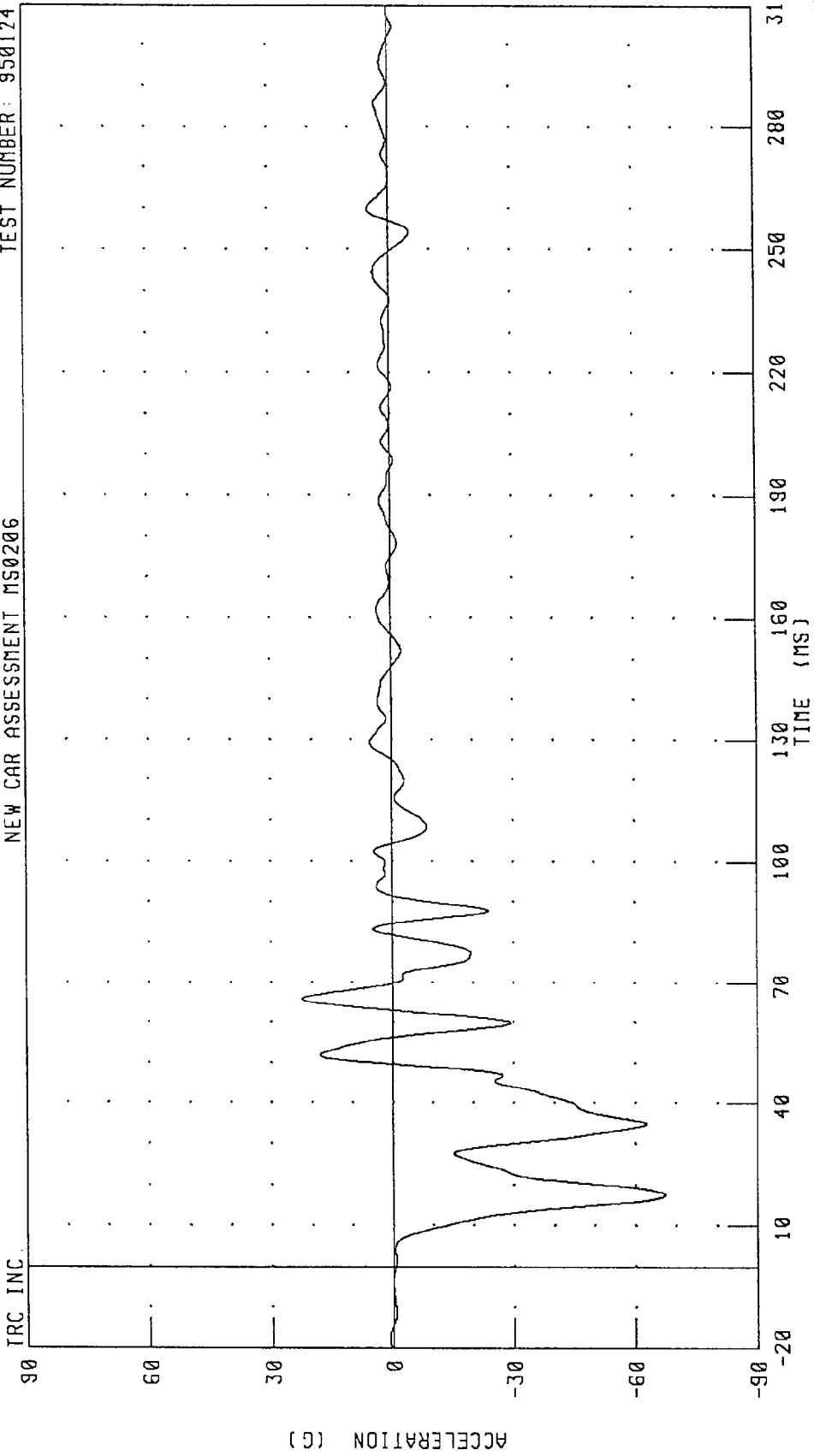


CHANNEL: BCRXG1 FILTER: CH. CLASS 60

PEAK DATA: 35.92 G @ 59.12 MS; -81.03 G @ 14.96 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LEFT BRAKE CALIPER X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

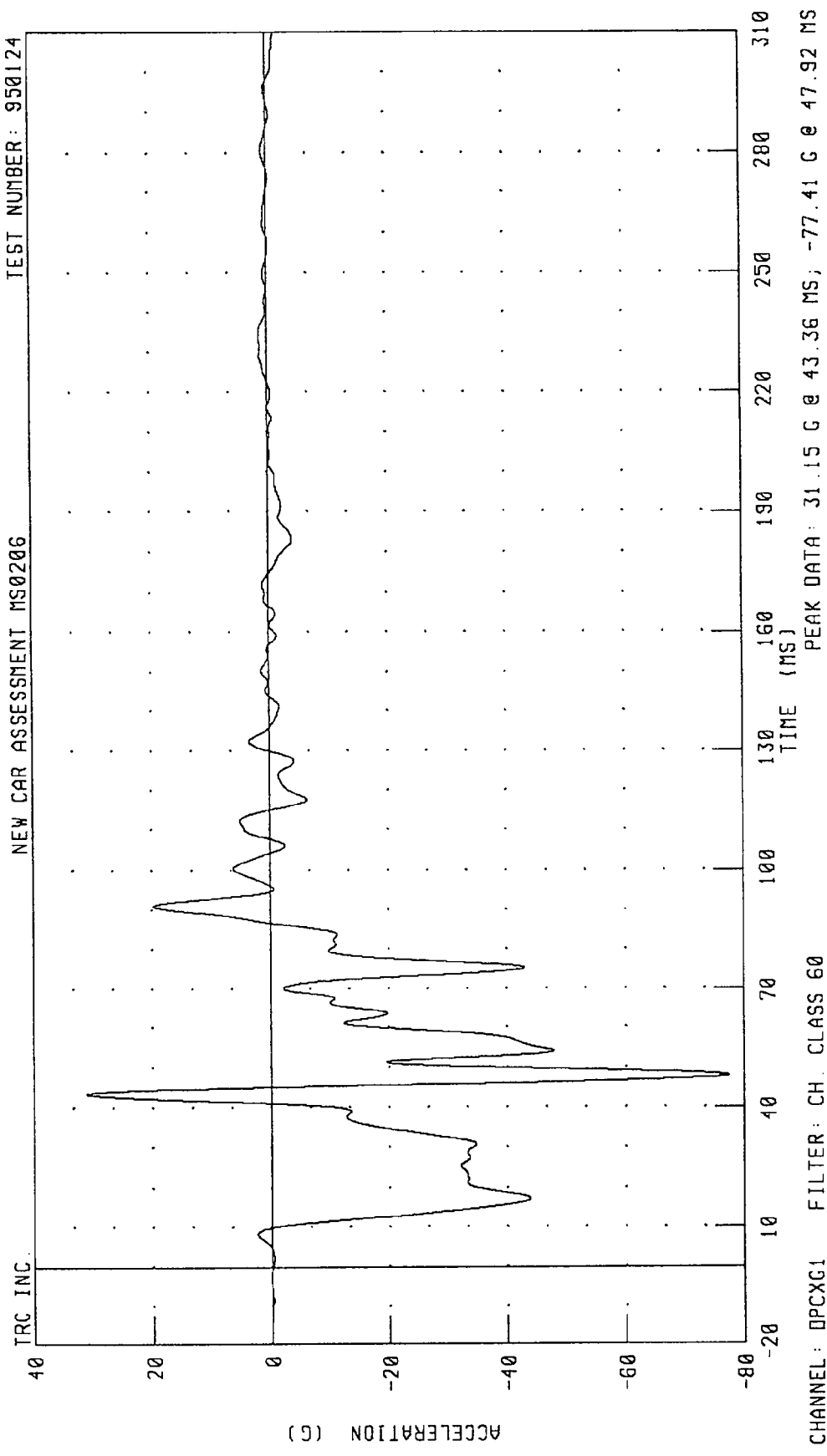


CHANNEL: BCLXG1 FILTER: CH. CLASS 60

PEAK DATA: 22.51 G @ 65.84 MS; -67.32 G @ 17.60 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
INSTRUMENT PANEL CENTER X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



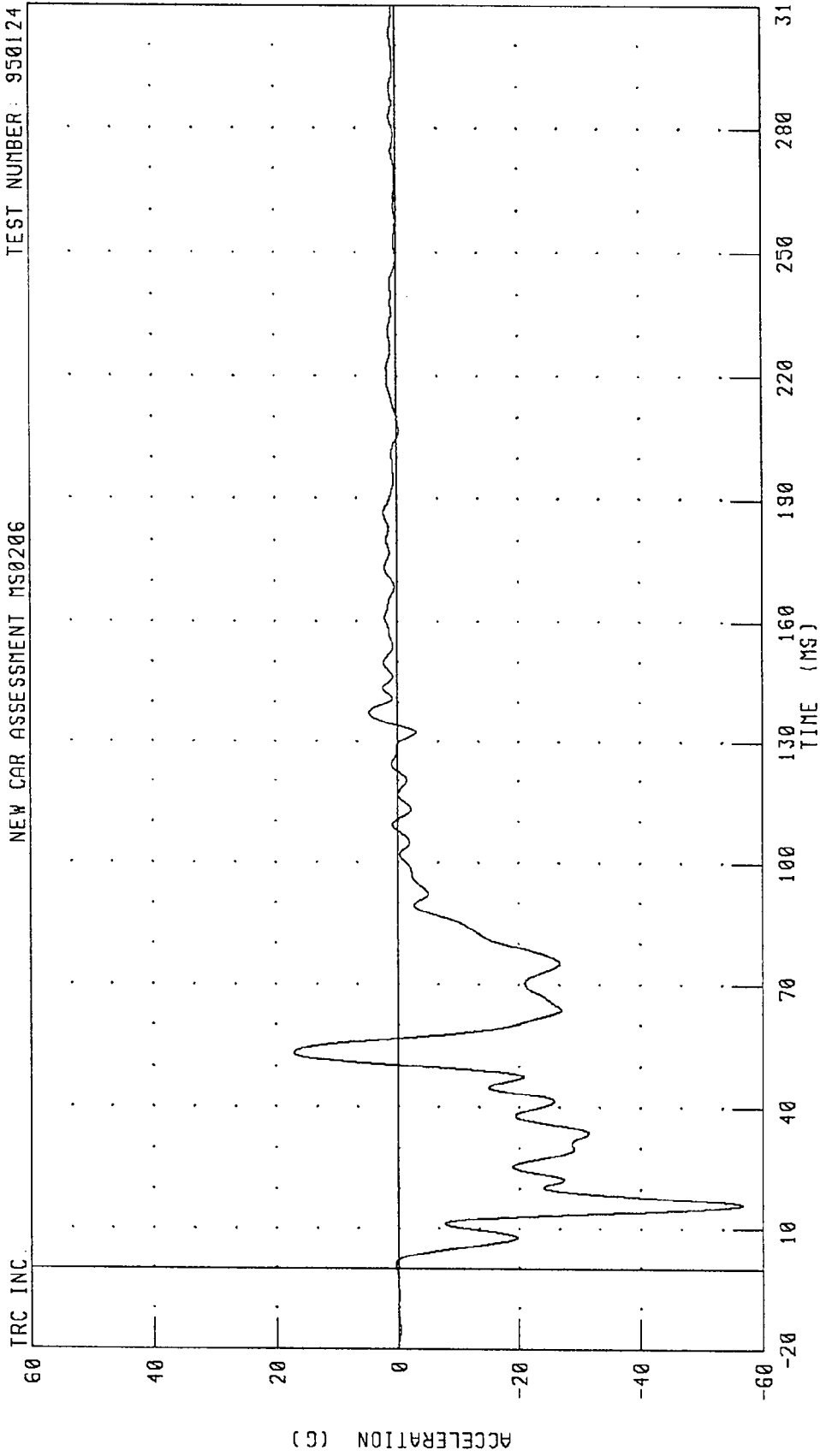
CHANNEL: DPCXG1 FILTER: CH. CLASS 60

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LEFT REAR SEAT REDUNDANT X-AXIS ACCELERATION

TEST NUMBER: 950124

NEW CAR ASSESSMENT MS0206

TRC INC.

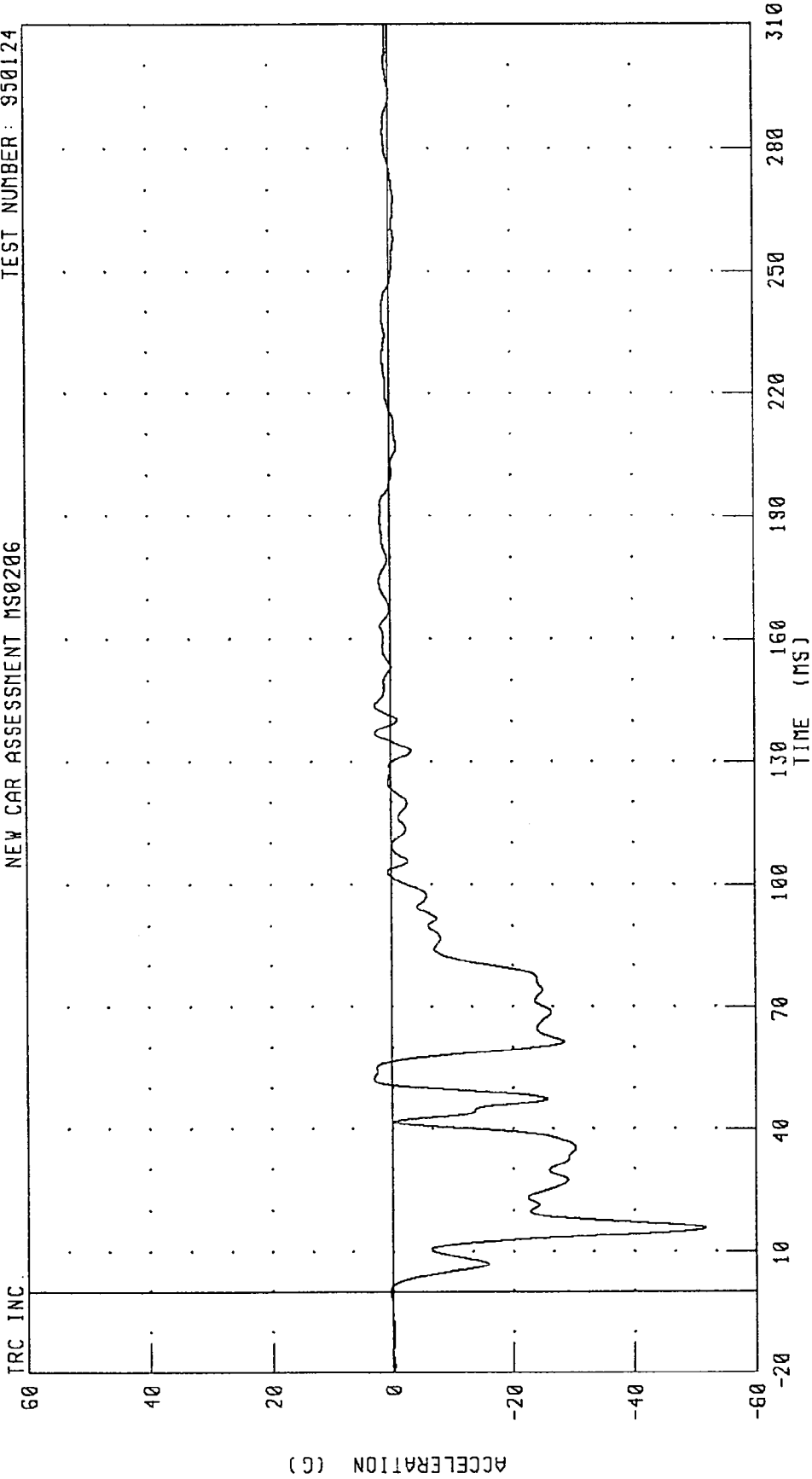


CHANNEL: TLRXGA FILTER: CH. CLASS 60

PEAK DATA: 17.14 G @ 53.20 MS; -56.59 G @ 16.00 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
RIGHT REAR SEAT REDUNDANT X-AXIS ACCELERATION
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

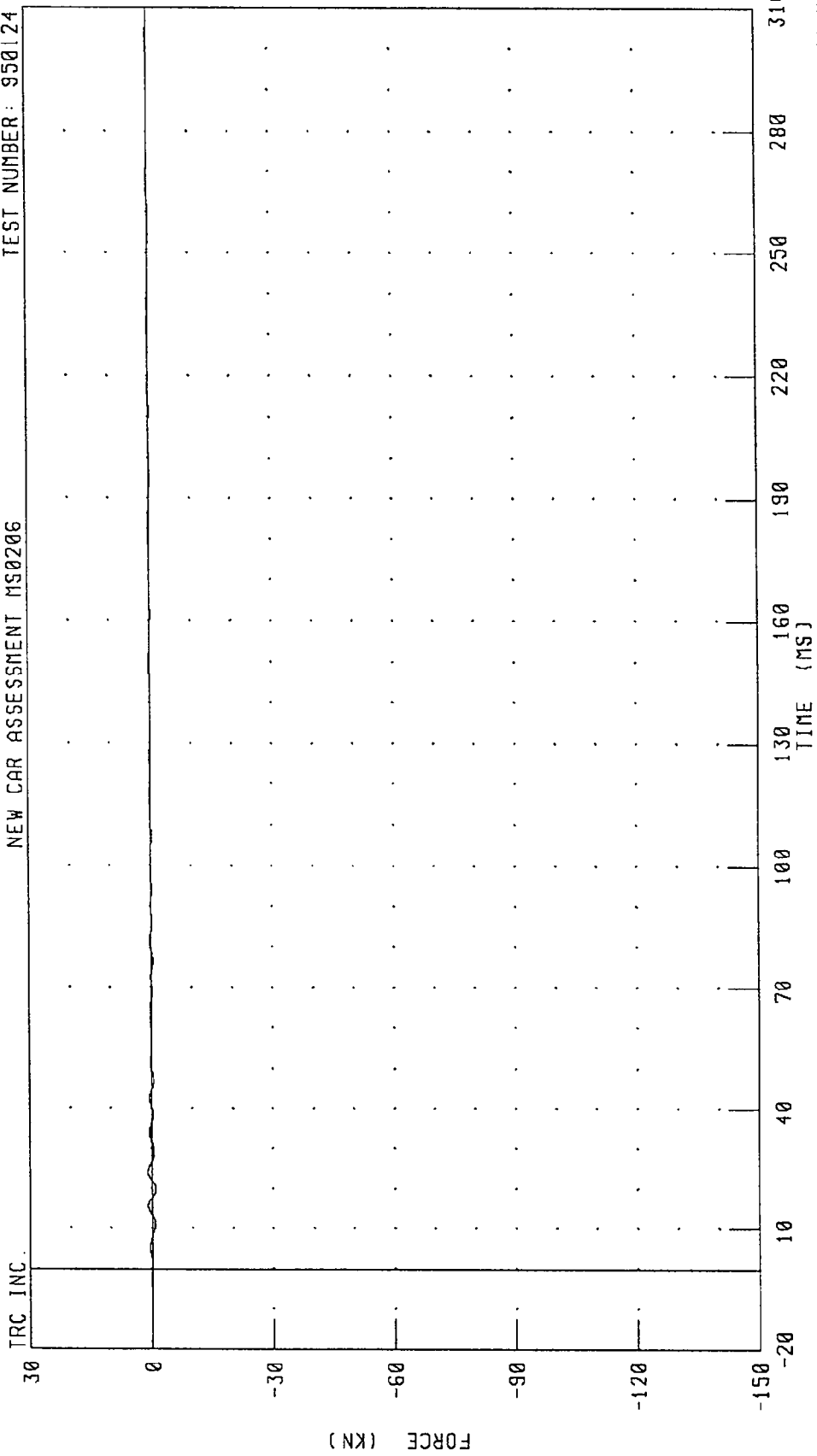


CHANNEL: TRRXGA FILTER: CH. CLASS 60

PEAK DATA: 2.98 G @ 52.24 MS, -51.69 G @ 15.68 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A1 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



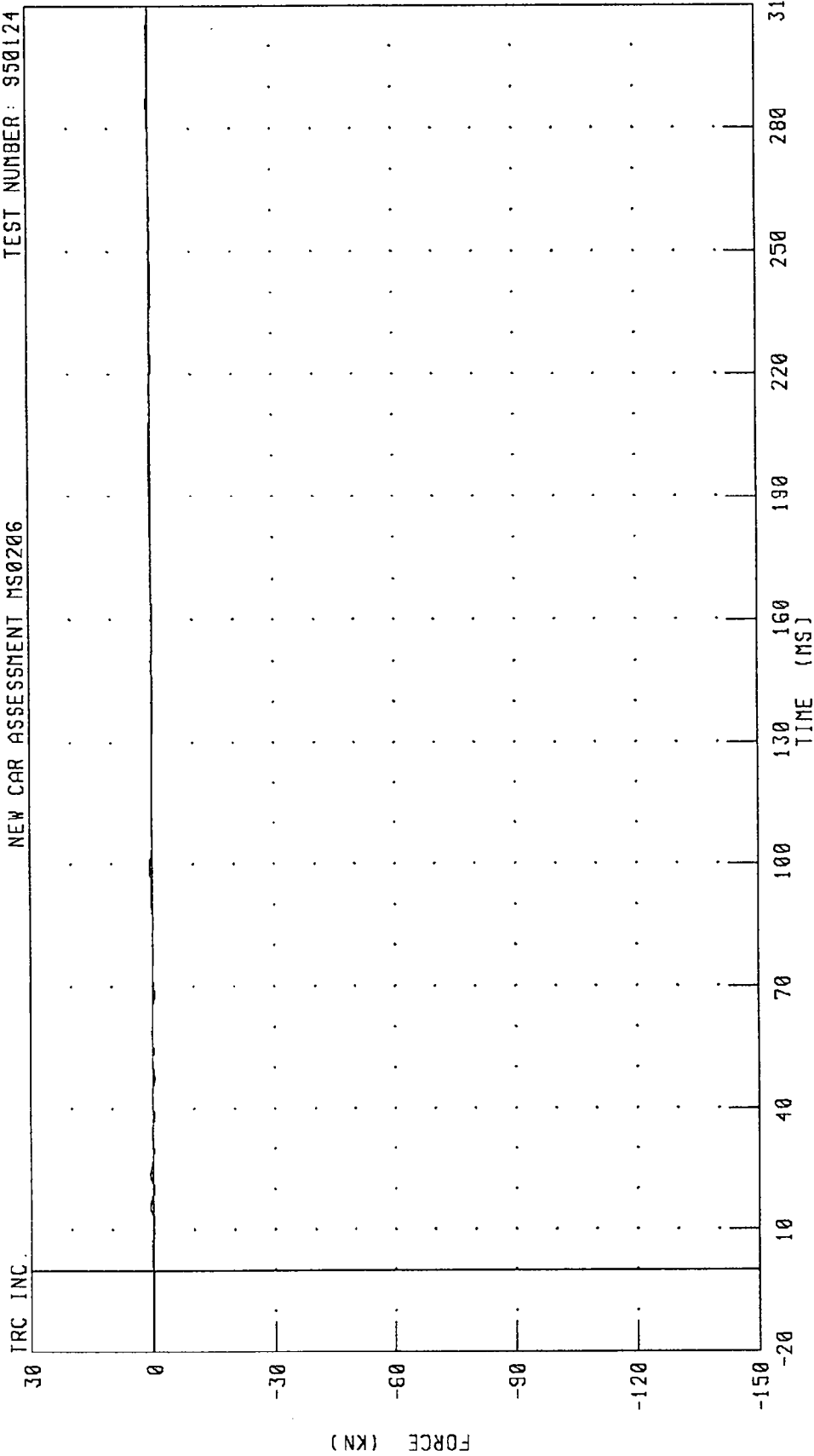
TRC INC.

CHANNEL: BAIF FILTER: CH. CLASS 60

950124

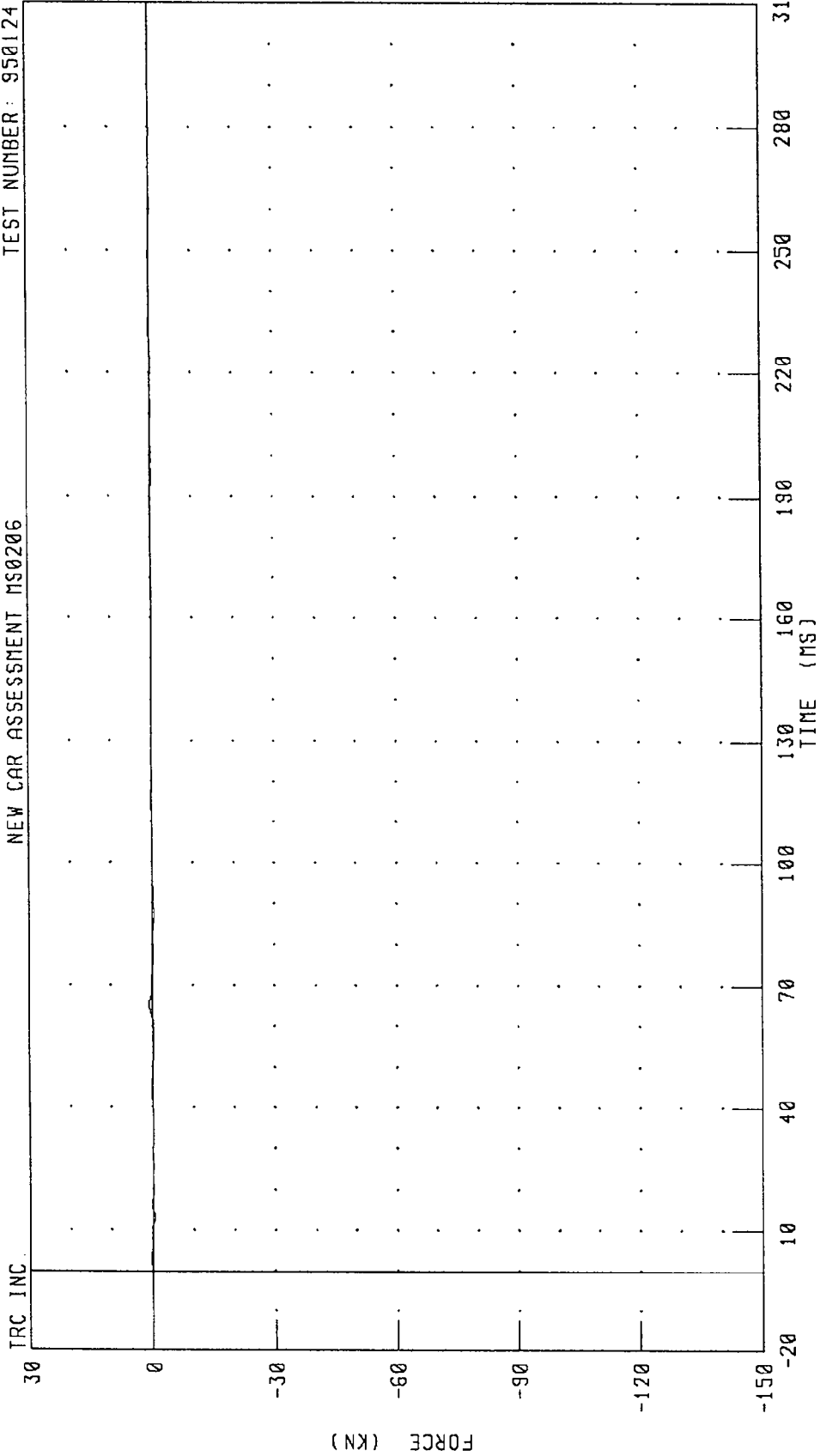
1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION A2 FORCE
 NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION A3 FORCE
 NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

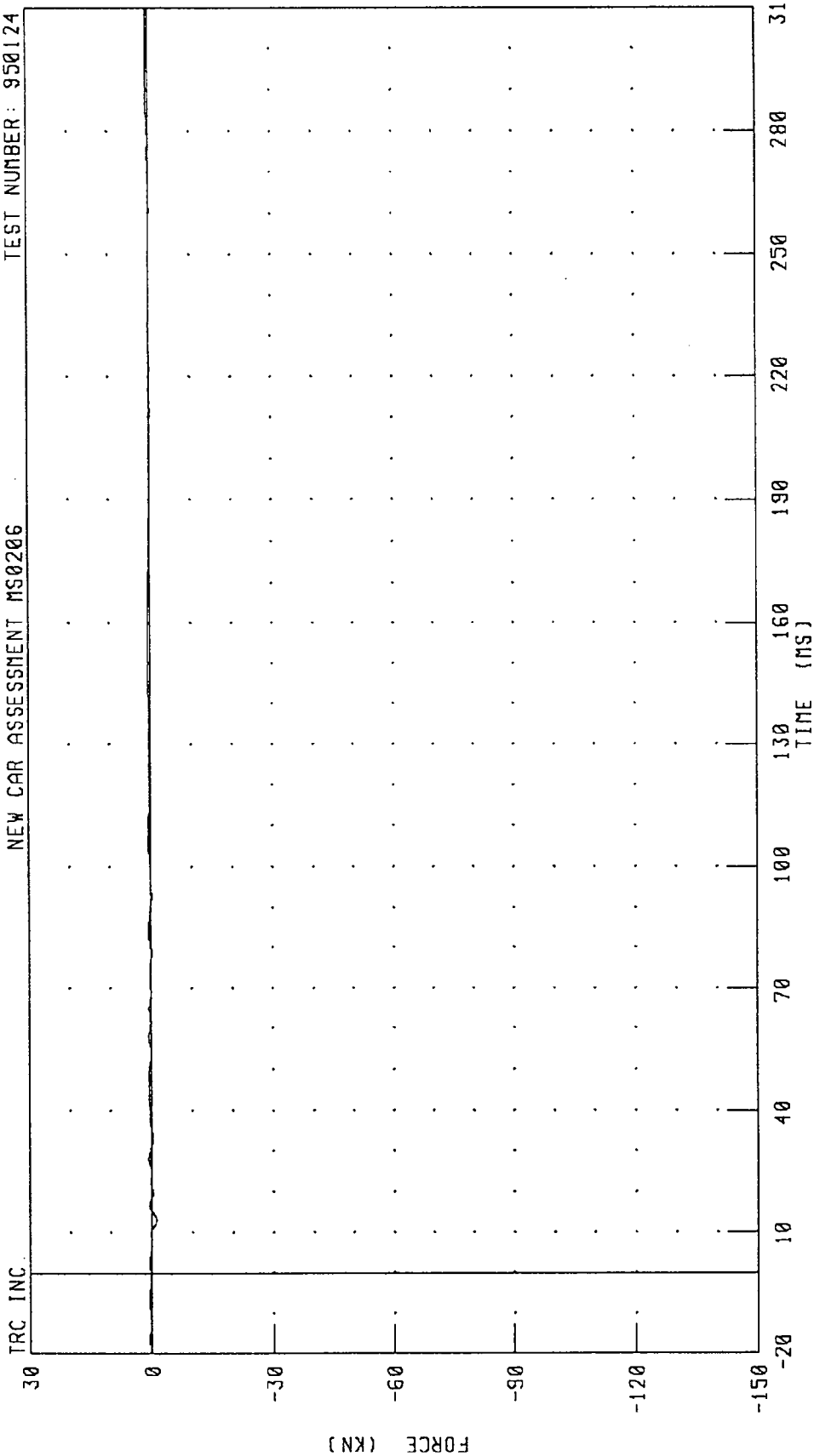


CHANNEL: BA3F FILTER: CH. CLASS 60

PEAK DATA: 0.69 KN @ 65.12 MS; -0.58 KN @ 12.96 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A4 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



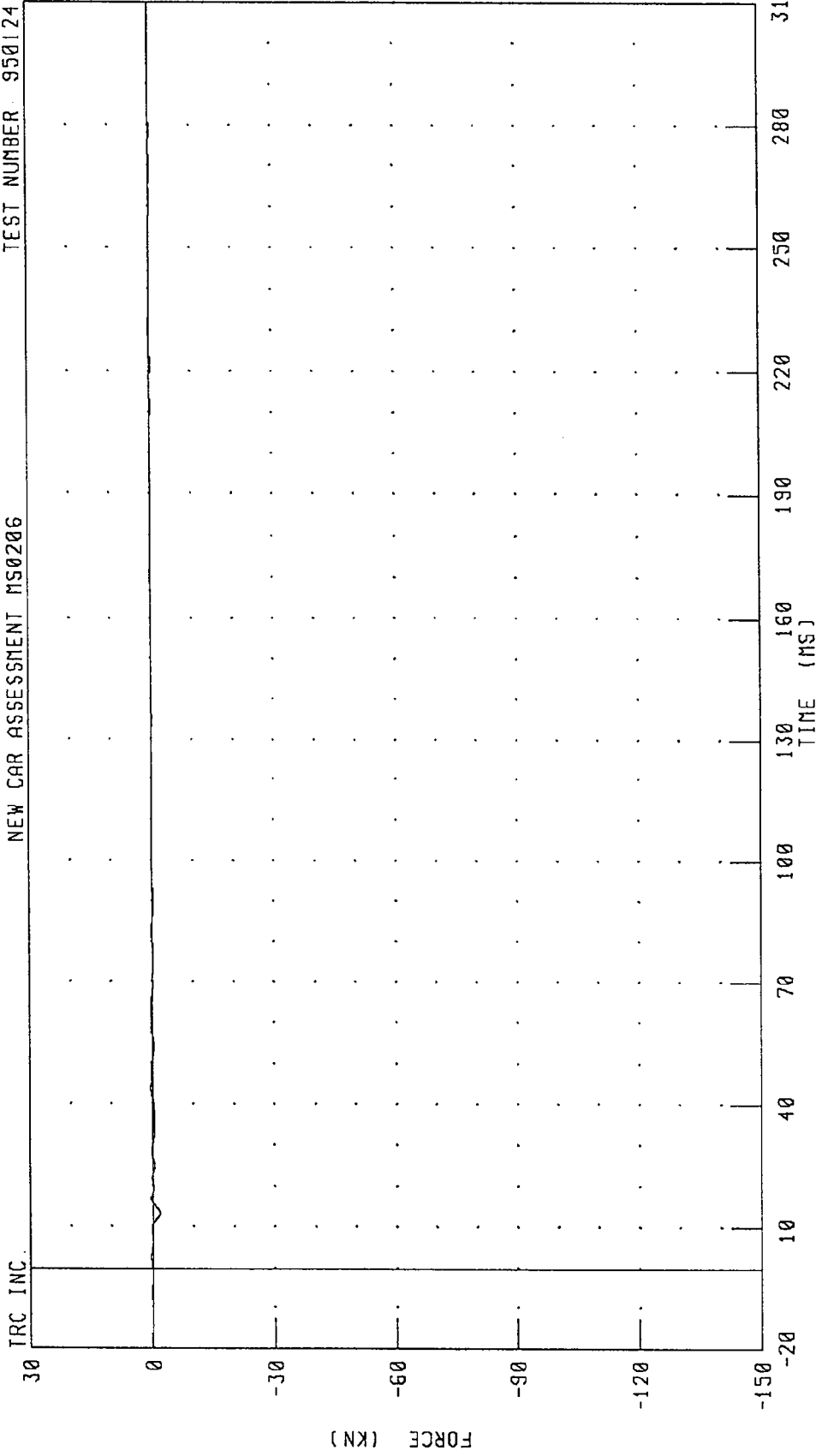
TRC INC.

CHANNEL: BA4F FILTER: CH. CLASS 60

950124

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A5 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER 950124

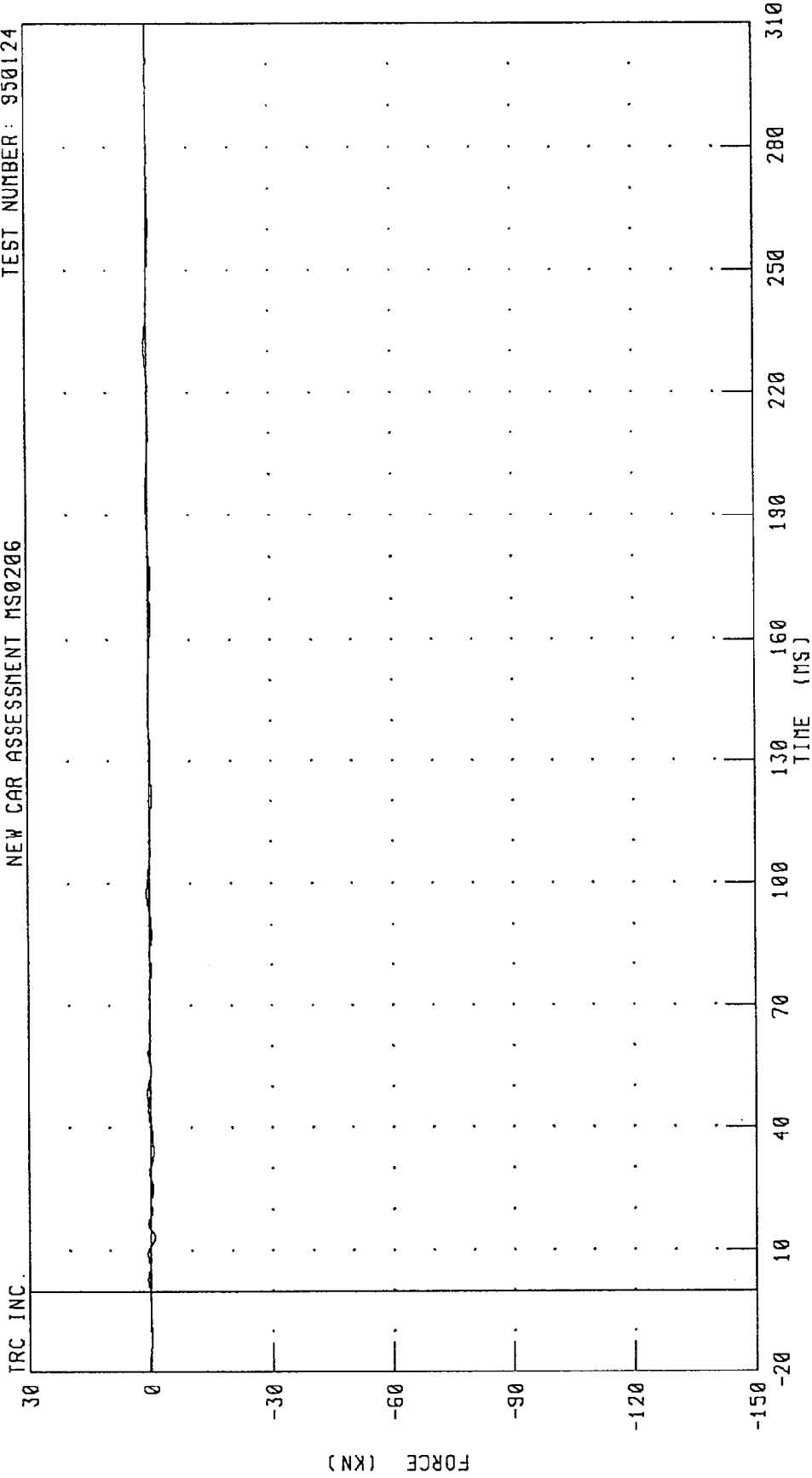


CHANNEL: BASF FILTER: CH. CLASS 60

PEAK DATA: 0.40 KN @ 2.56 MS; -1.78 KN @ 13.20 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION A6 FORCE
 NEW CAR ASSESSMENT MS0206

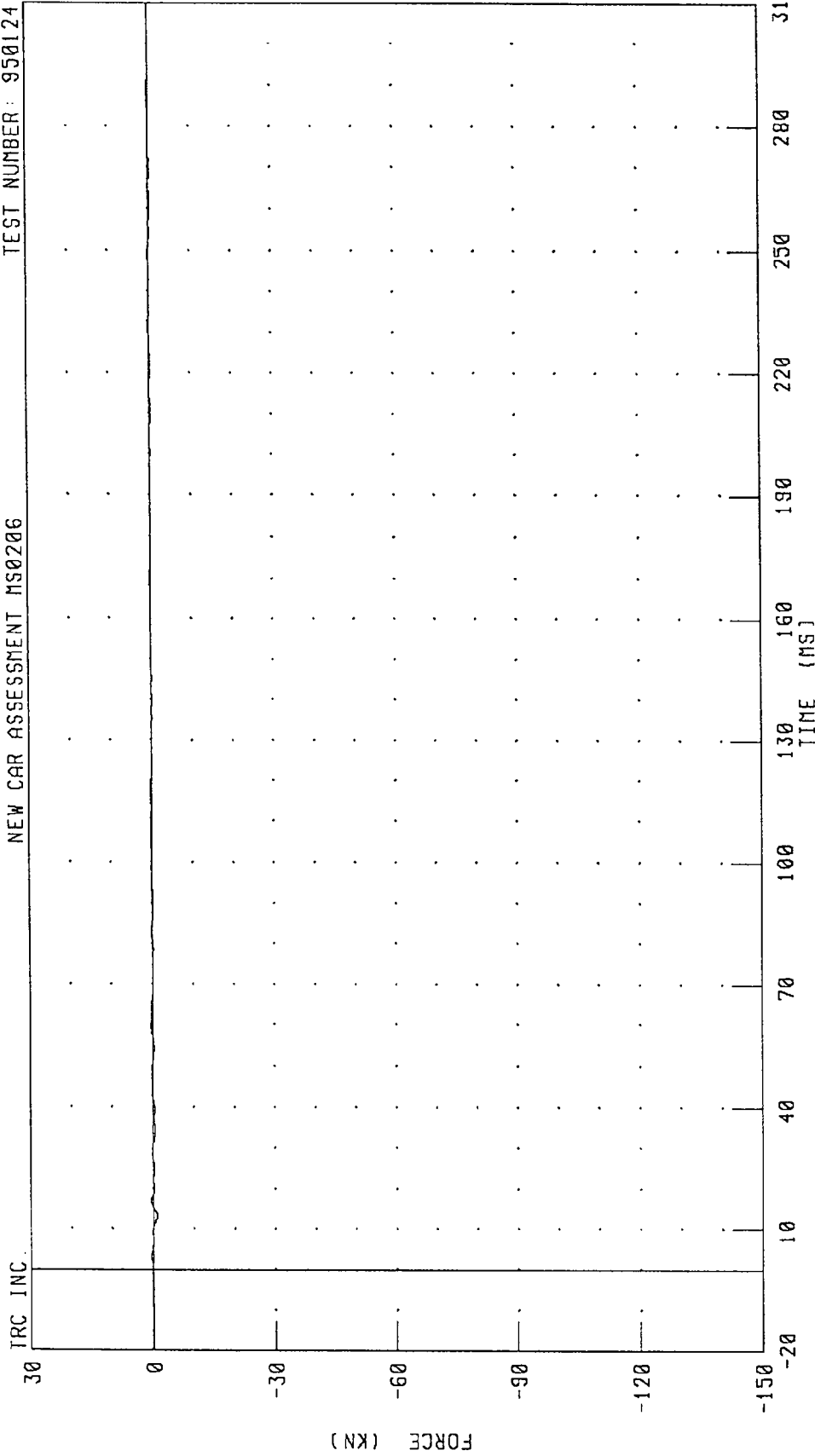
TEST NUMBER: 950124



CHANNEL: BA6F FILTER: CH. CLASS 60

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION A7 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

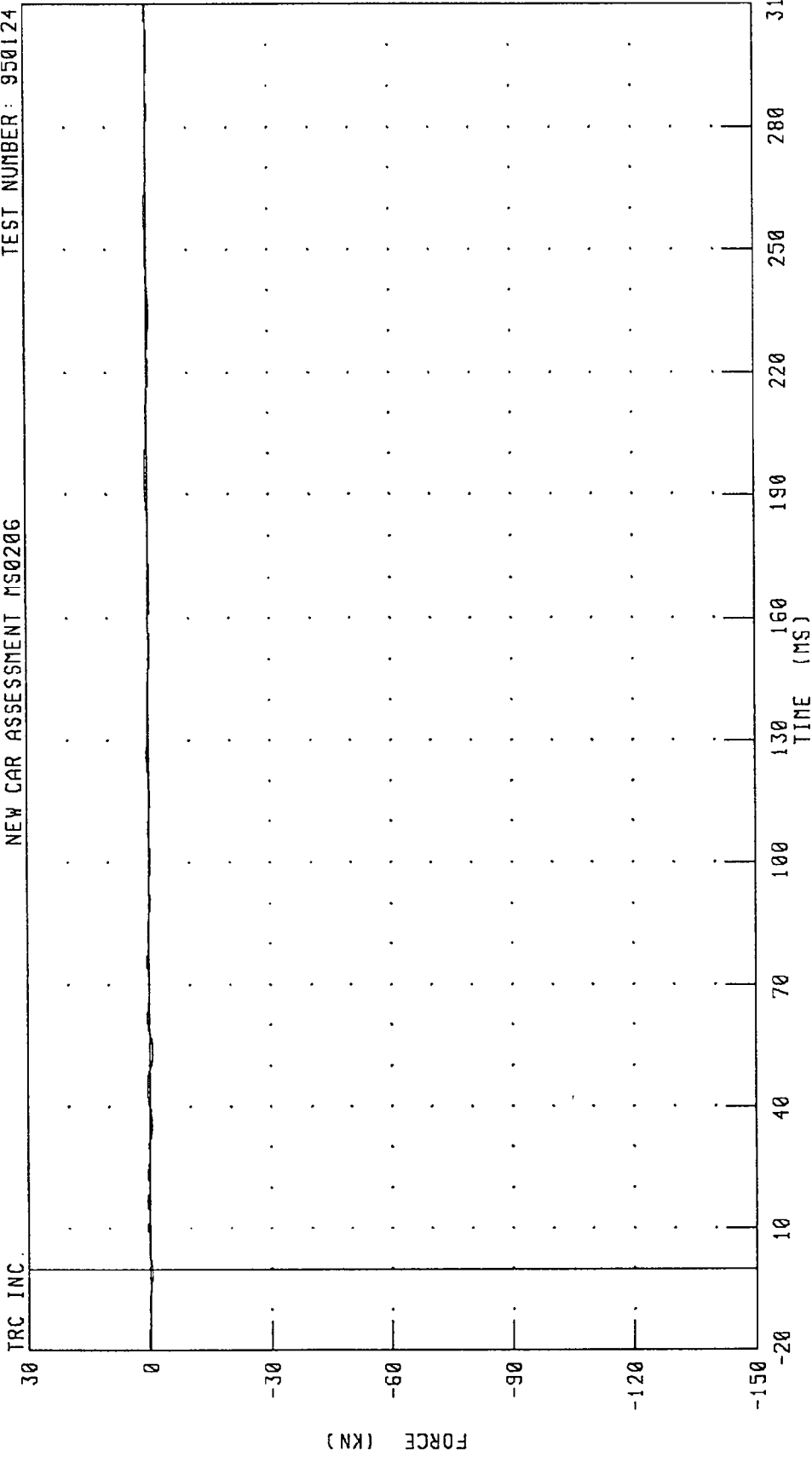


CHANNEL: BA7F FILTER: CH. CLASS 60

PEAK DATA: 0.48 KN @ 17.04 MS; -1.01 KN @ 13.20 MS

1985 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION A8 FORCE
 NEW CAR ASSESSMENT MS0206

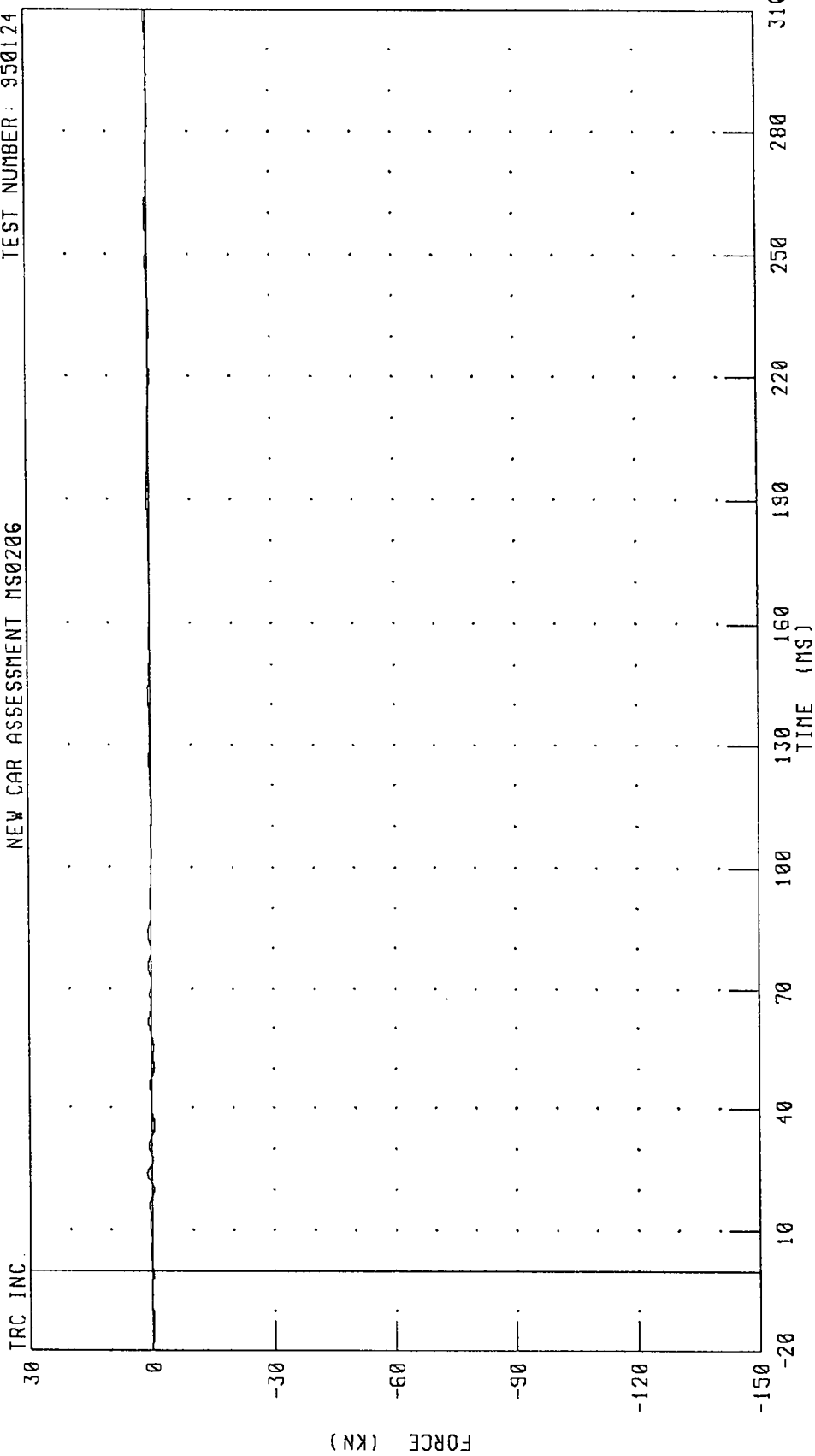
TEST NUMBER: 950124



CHANNEL: BA8F FILTER: CH. CLASS 60 PEAK DATA: 0.60 KN @ 16.80 MS; -0.83 KN @ 53.20 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION AS FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



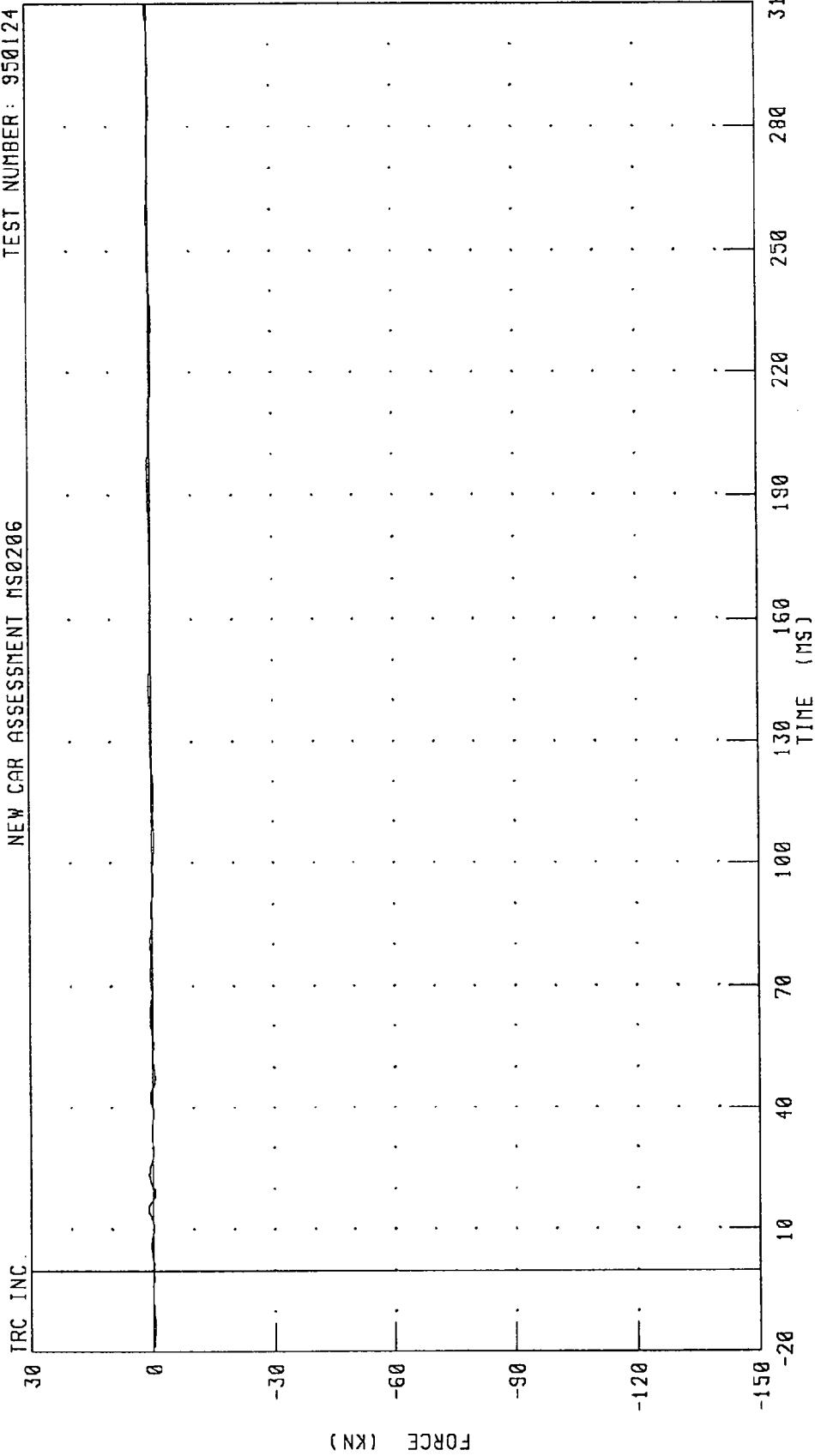
CHANNEL: BA9F FILTER: CH. CLASS 60

PEAK DATA: 1.17 KN @ 23.92 MS; -0.67 KN @ 35.76 MS

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION B1 FORCE
 NEW CAR ASSESSMENT NS0206

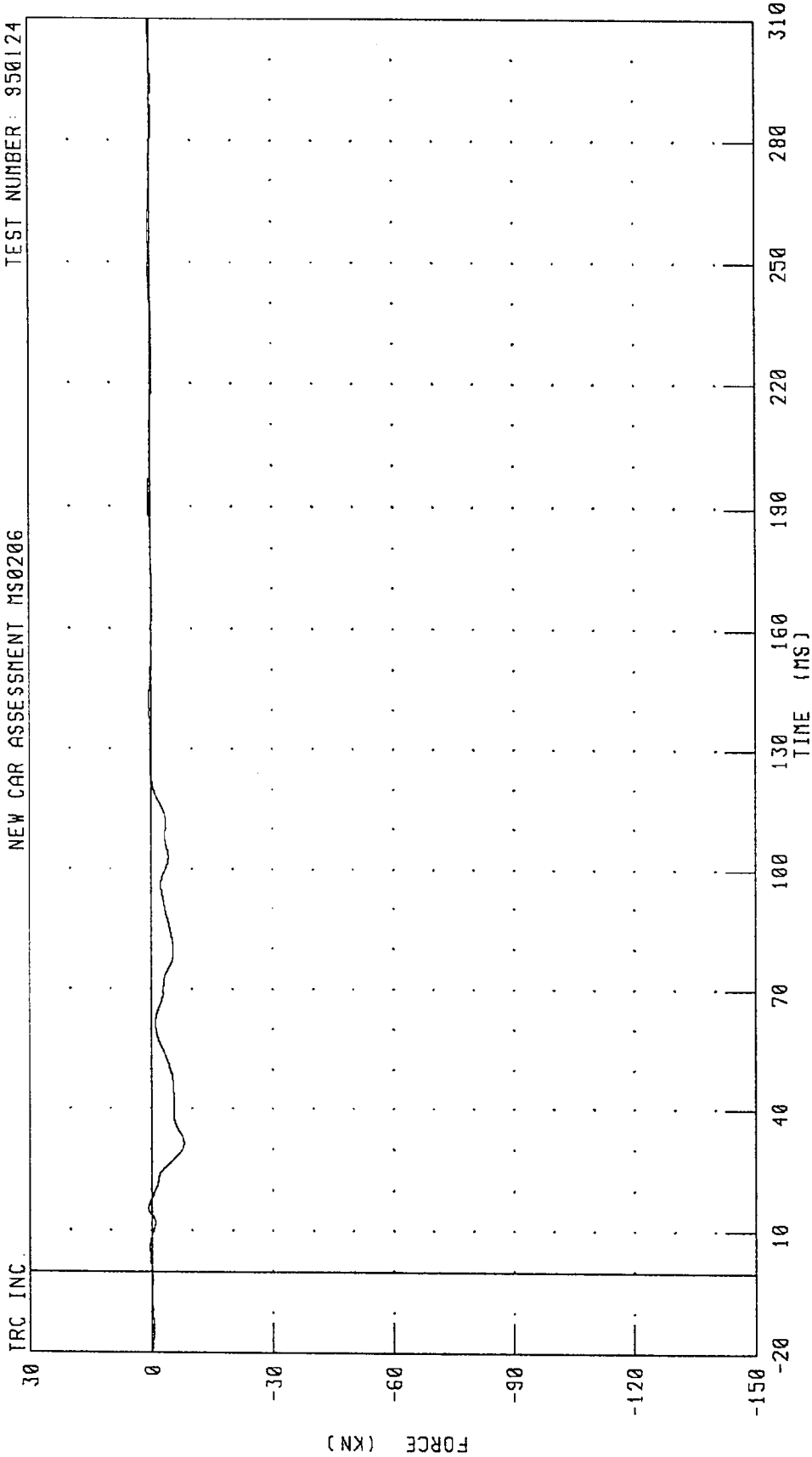
TEST NUMBER: 950124



CHANNEL: BBIF FILTER: CH. CLASS 60 PEAK DATA: 1.09 KN @ 15.12 MS; -0.69 KN @ 47.52 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B2 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

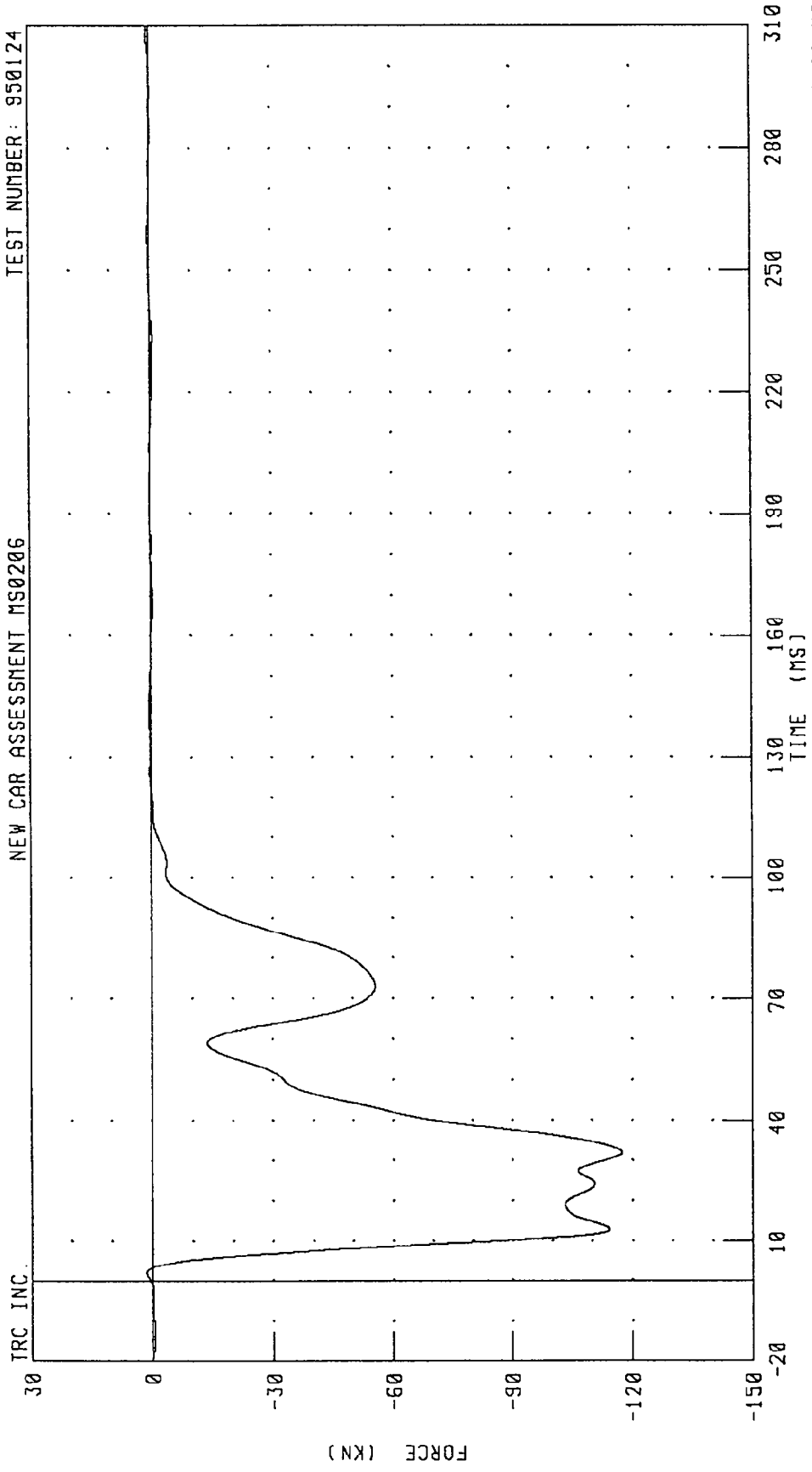


CHANNEL: BB2F FILTER: CH. CLASS 60 PEAK DATA: 0.72 KN @ 15.60 MS; -8.08 KN @ 31.52 MS

IRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B3 FORCE
NEW CAR ASSESSMENT MS0206

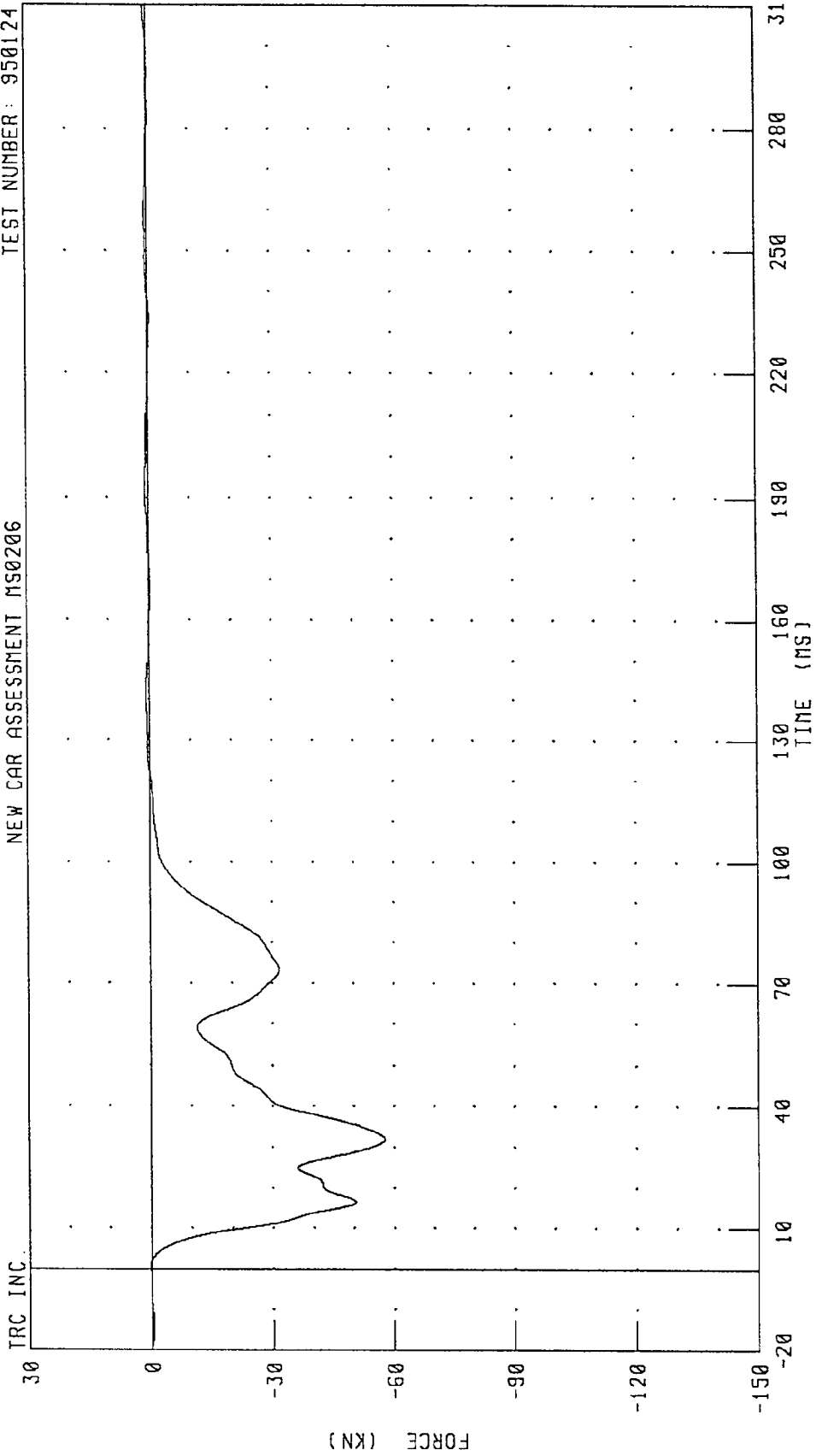
TEST NUMBER: 950124



CHANNEL: 9B3F FILTER: CH. CLASS 60 PEAK DATA: 1.42 KN @ 1.92 MS; -117.43 KN @ 32.08 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B4 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



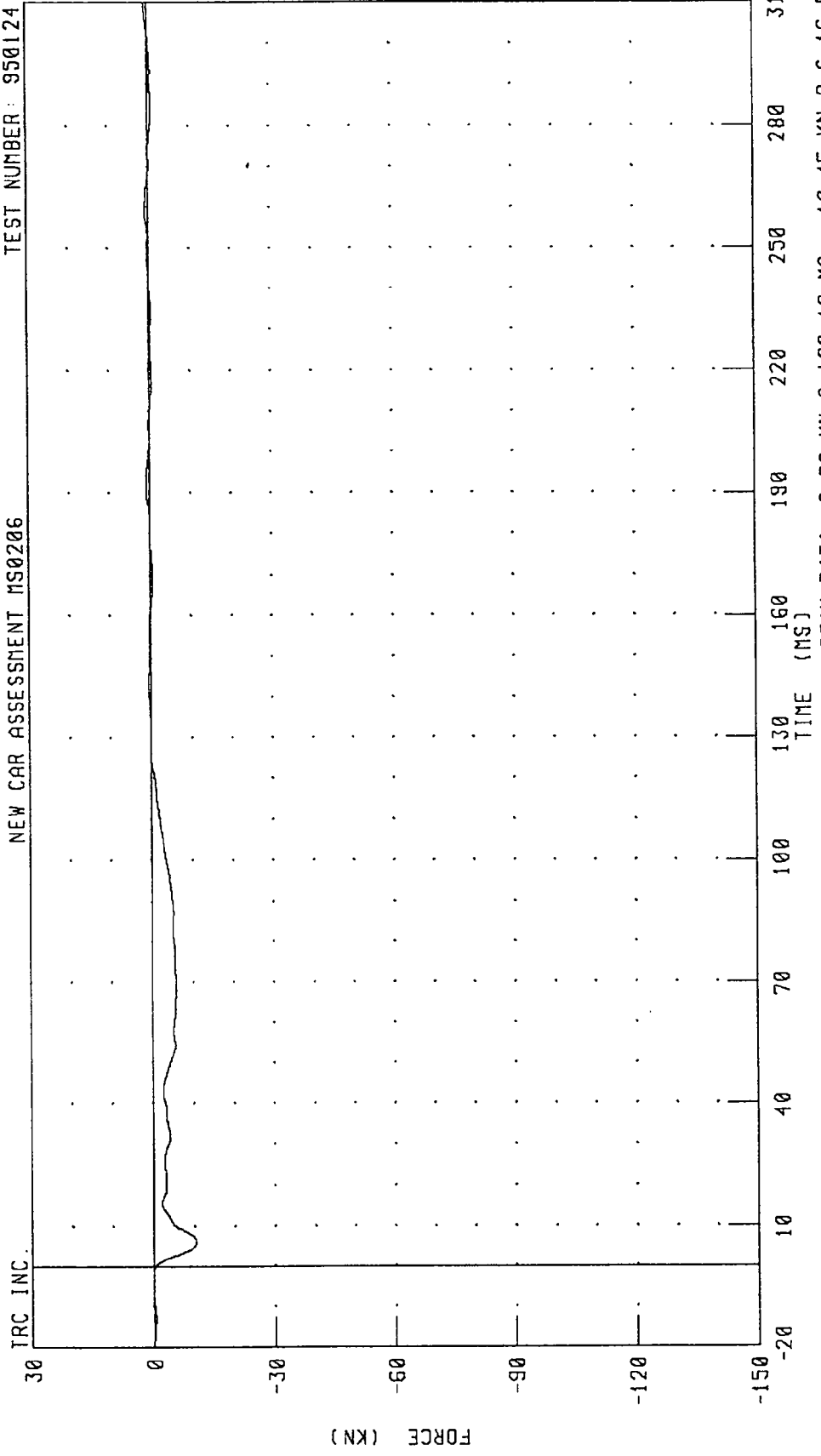
CHANNEL: BB4F FILTER: CH. CLASS 60

PEAK DATA: 0.83 KN @ 309.36 MS; -57.78 KN @ 32.08 MS

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B5 FORCE
NEW CAR ASSESSMENT MS0206

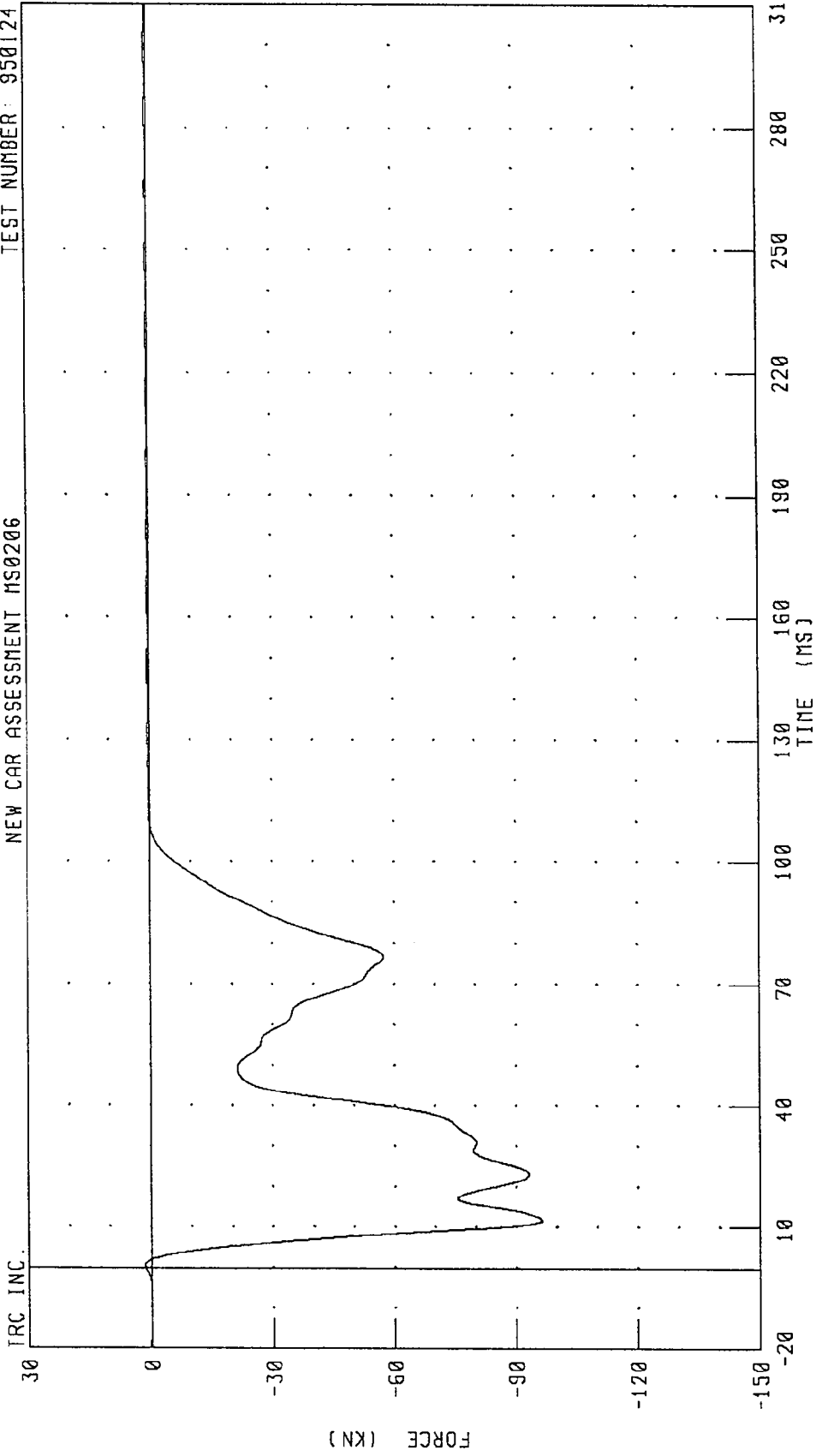
TEST NUMBER: 950124



CHANNEL: BB5F FILTER: CH. CLASS 60
PEAK DATA: 0.76 KN @ 192.16 MS; -10.45 KN @ 6.16 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B6 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

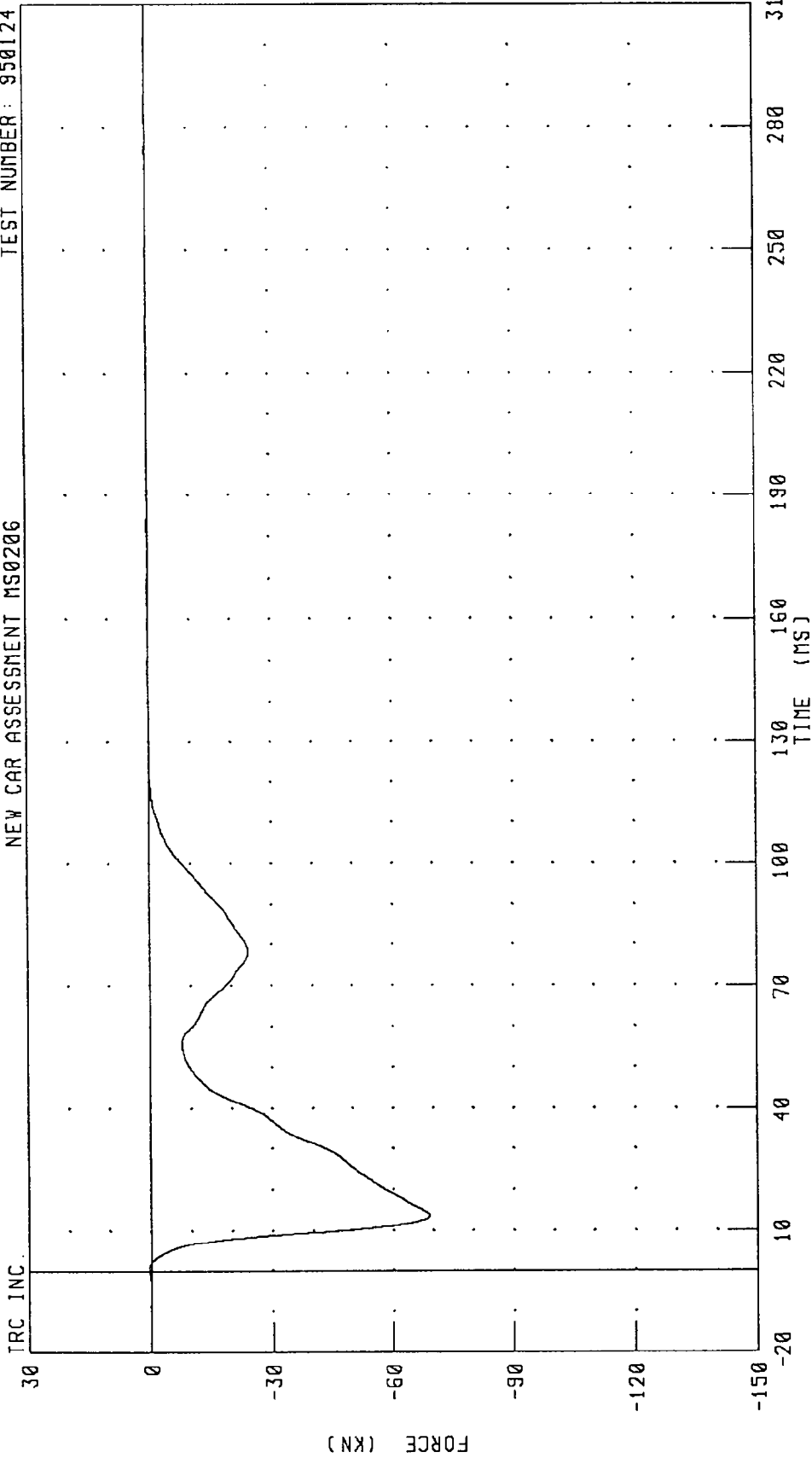


CHANNEL: BB6F FILTER: CH. CLASS 60

PEAK DATA: 1.40 KN @ 0.48 MS; -96.32 KN @ 11.60 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B7 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

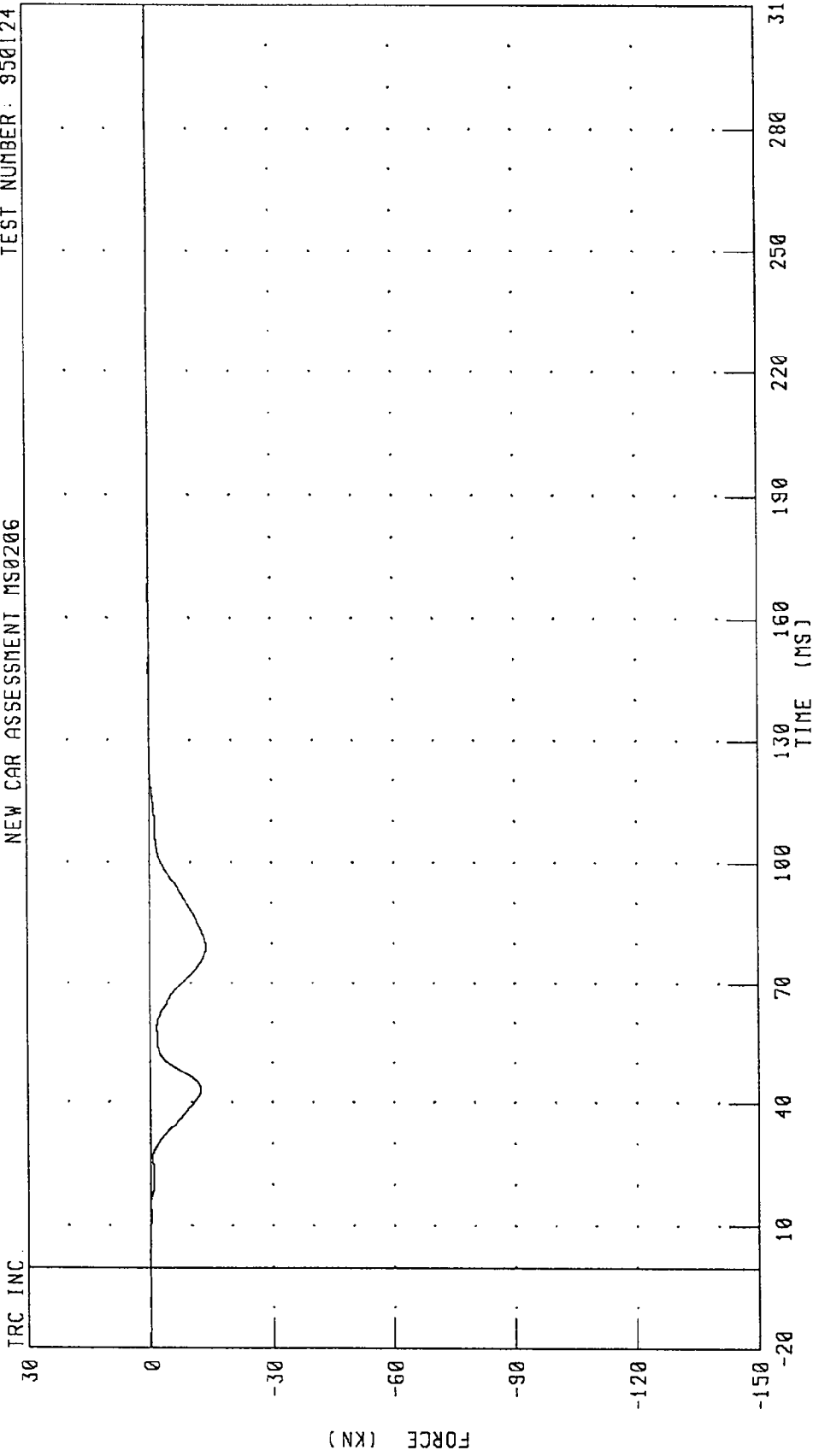


CHANNEL: 887F FILTER: CH. CLASS 60

PEAK DATA: 0.46 KN @ 0.16 MS; -69.16 KN @ 13.68 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B8 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

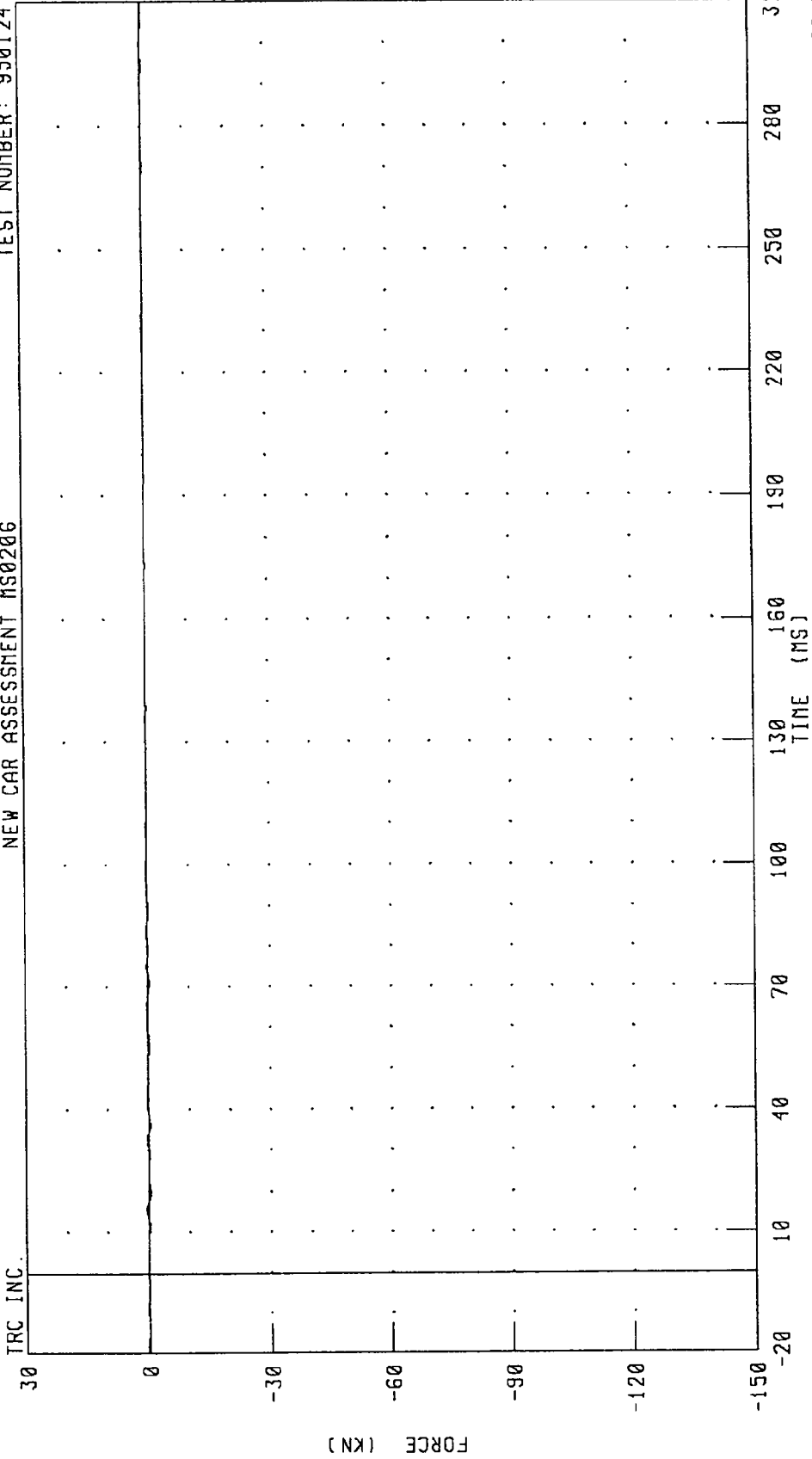


CHANNEL: BB8F FILTER: CH. CLASS 60

PEAK DATA: 0.30 KN @ 1.84 MS; -13.78 KN @ 79.28 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION B9 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



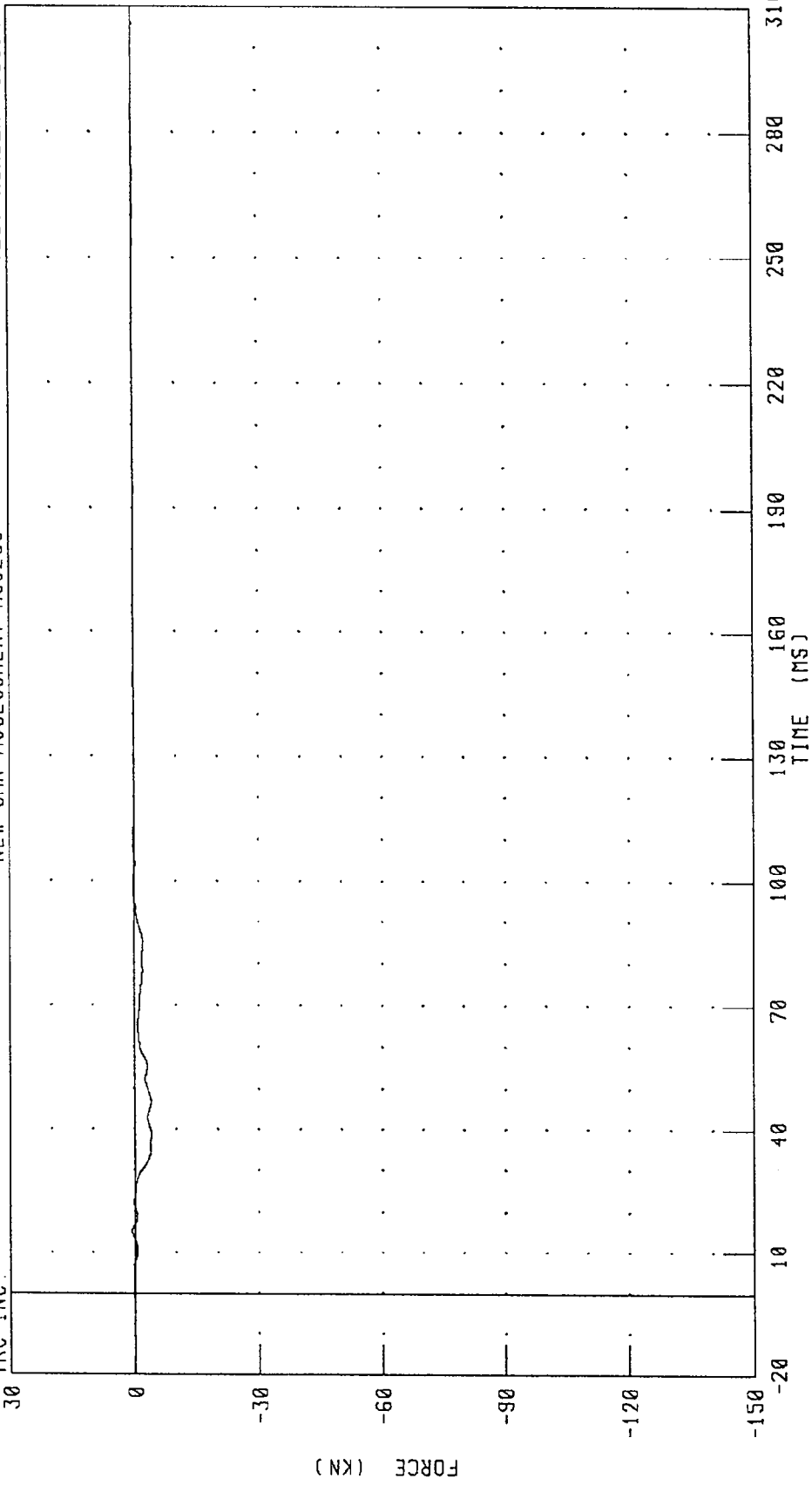
CHANNEL: BB9F FILTER: CH. CLASS 60

PEAK DATA: 0.44 KN @ 15.60 MS; -0.47 KN @ 70.96 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C1 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

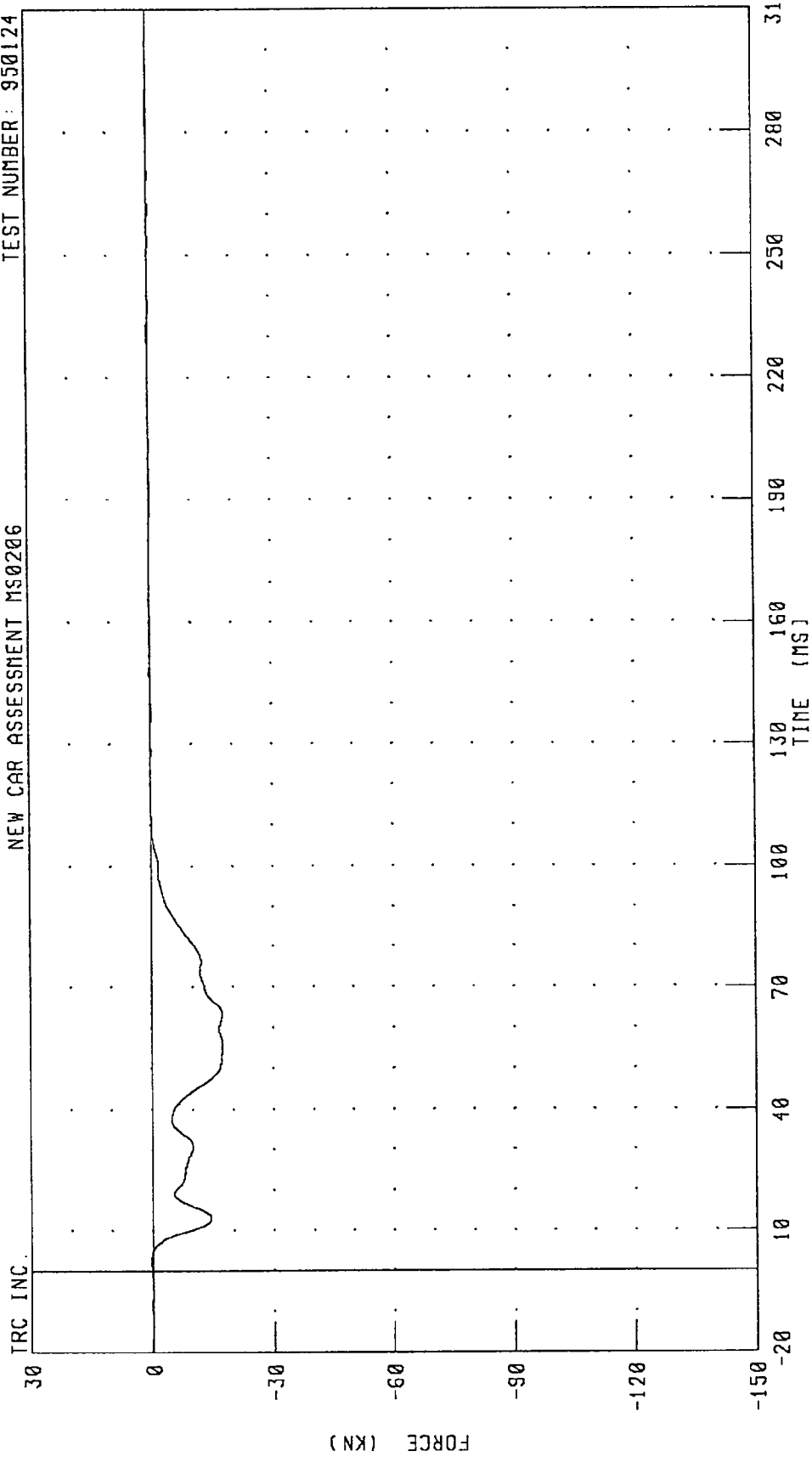
TRC INC.



CHANNEL: BC1F FILTER: CH. CLASS 60 PEAK DATA: 0.63 KN @ 15.20 MS; -4.08 KN @ 38.88 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C2 FORCE
NEW CAR ASSESSMENT MS0206

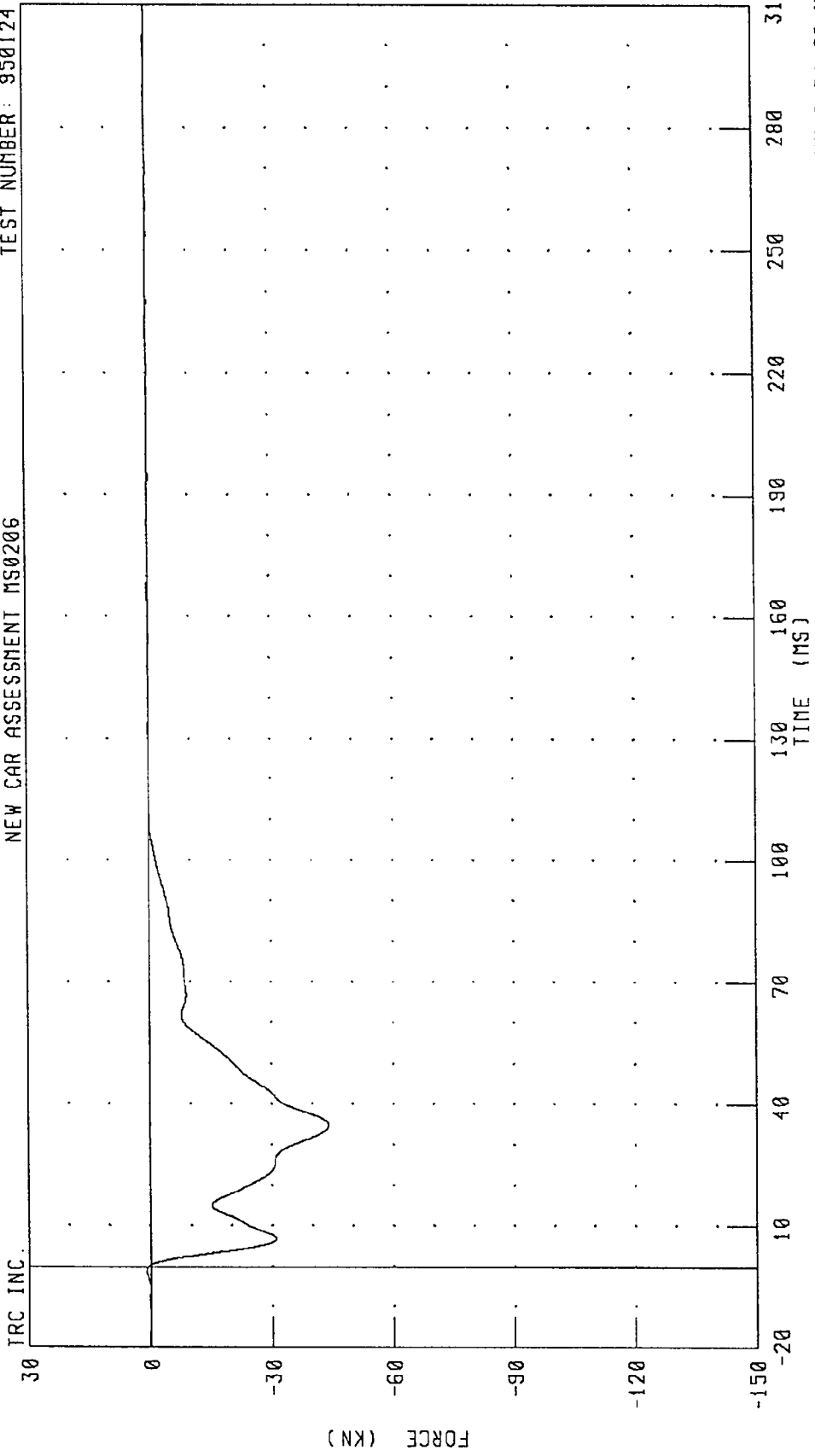
TEST NUMBER: 950124



CHANNEL: BC2F FILTER: CH. CLASS 60
PEAK DATA: 0.40 KN @ 2.40 MS; -17.41 KN @ 55.20 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C3 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



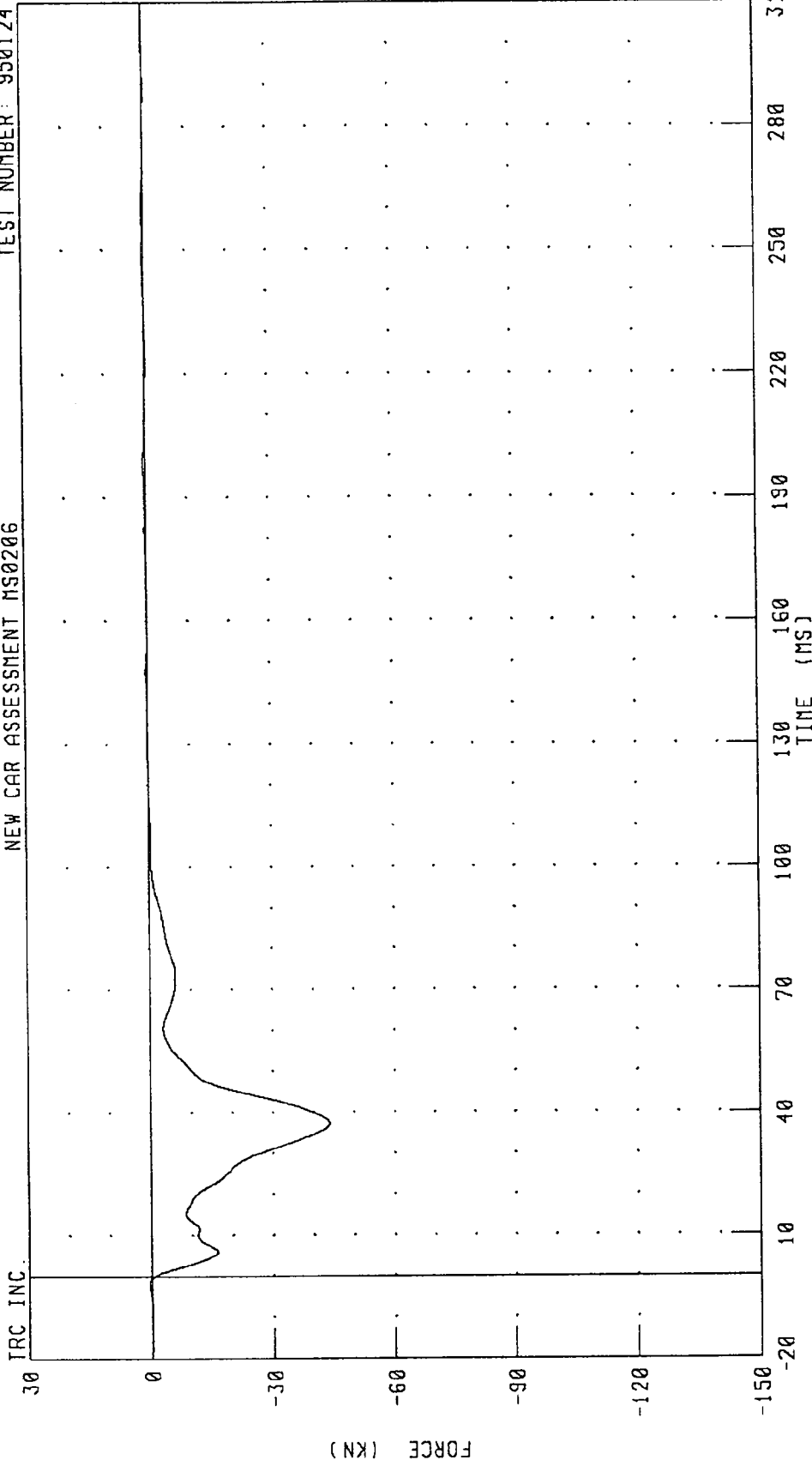
CHANNEL: BC3F FILTER: CH. CLASS 60

PEAK DATA: 1.09 KN @ -1.04 MS, -43.92 KN @ 34.80 MS

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C4 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



PEAK DATA: 0.49 KN @ -2.08 MS; -43.99 KN @ 37.36 MS

CHANNEL: BC4F FILTER: CH. CLASS 60

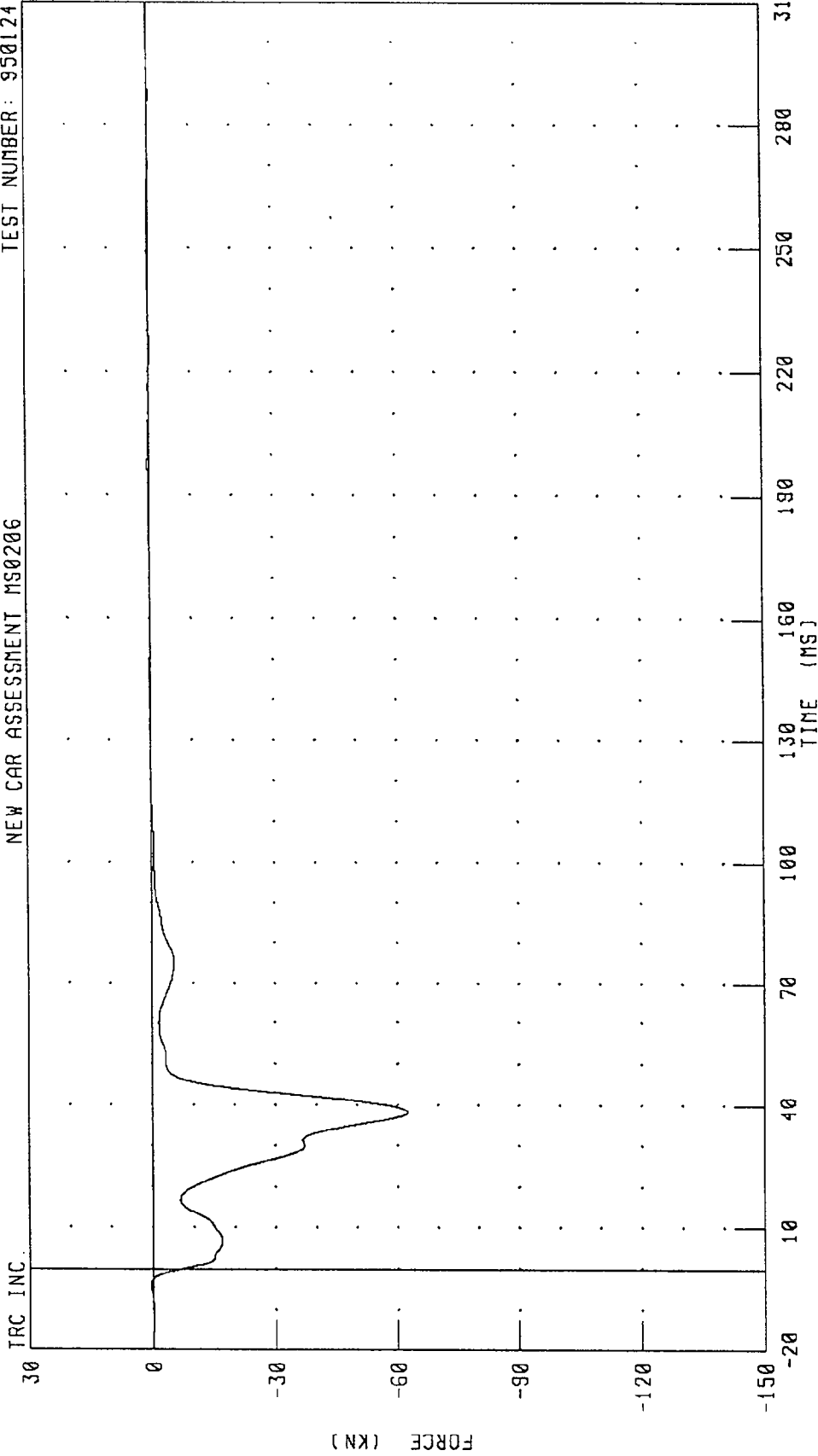
TRC INC.

FORCE (KN)

TIME (MS)

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C5 FORCE
NEW CAR ASSESSMENT MS0206

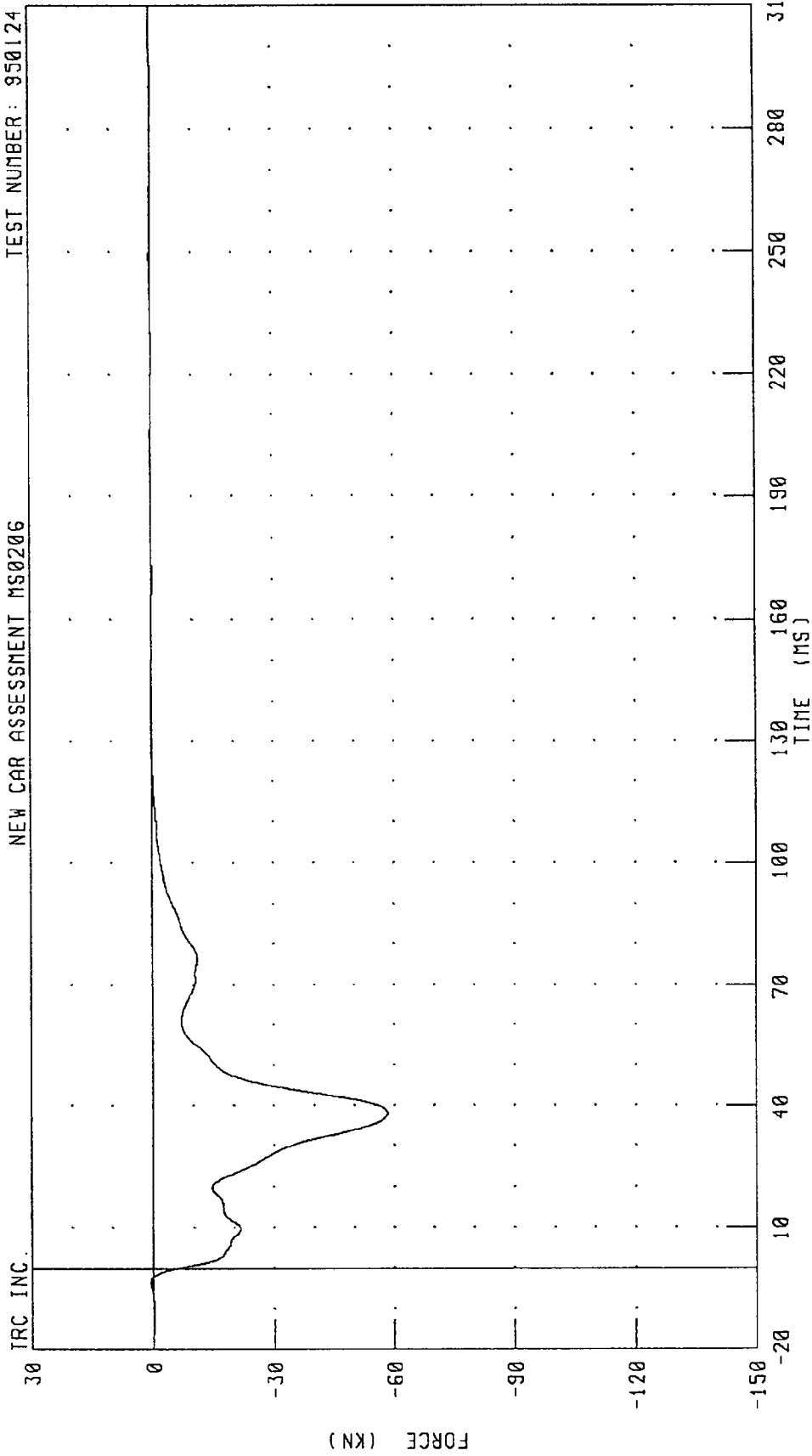
TEST NUMBER: 950124



CHANNEL: BC5F FILTER: CH. CLASS 60 PEAK DATA: 0.54 KN @ -3.84 MS; -62.64 KN @ 38.32 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C6 FORCE
NEW CAR ASSESSMENT MS0206

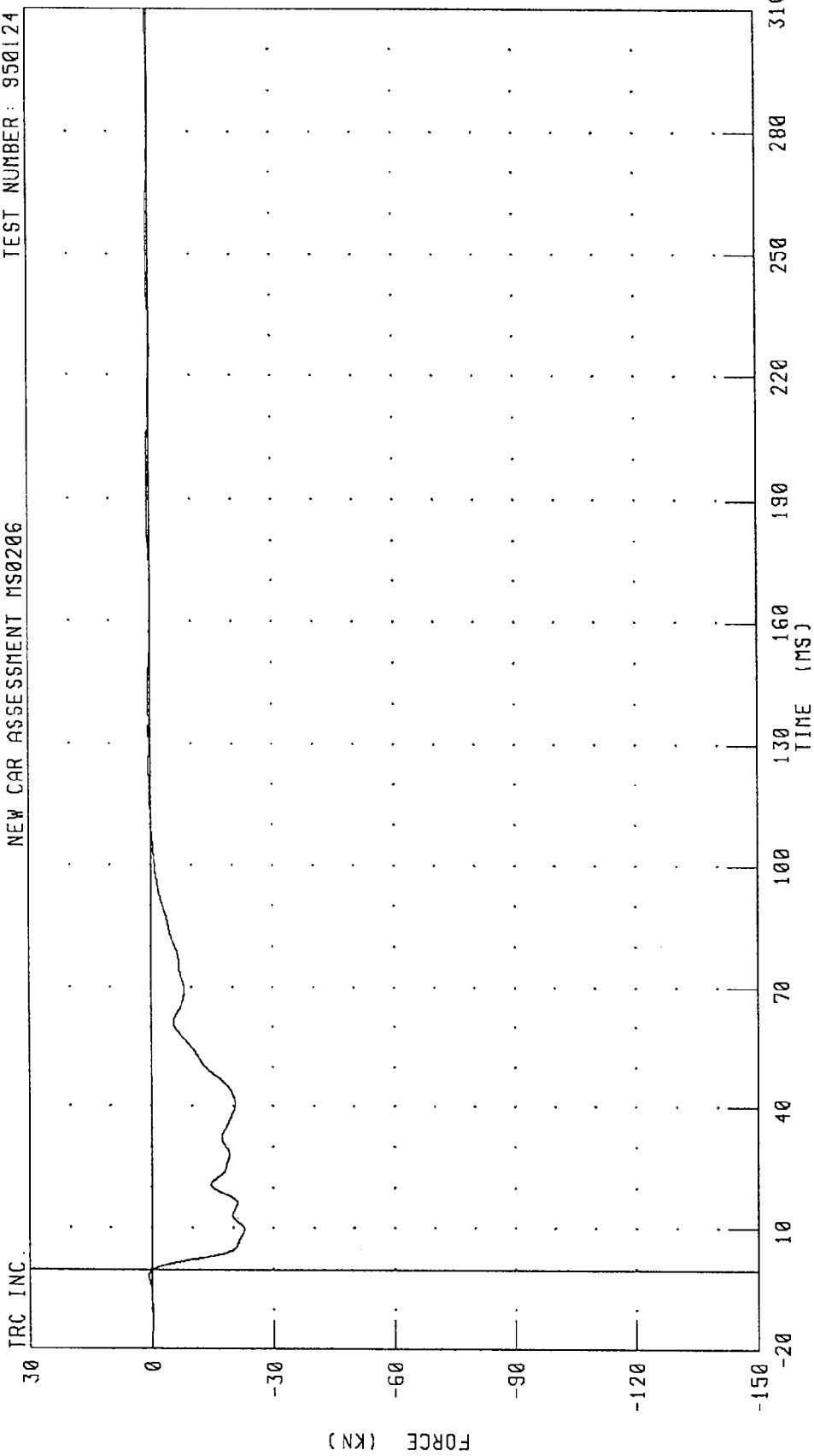
TEST NUMBER: 950124



CHANNEL: BCGF FILTER: CH. CLASS 60 PEAK DATA: 0.60 KN @ -3.52 MS; -58.35 KN @ 38.08 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C7 FORCE
NEW CAR ASSESSMENT MS0206

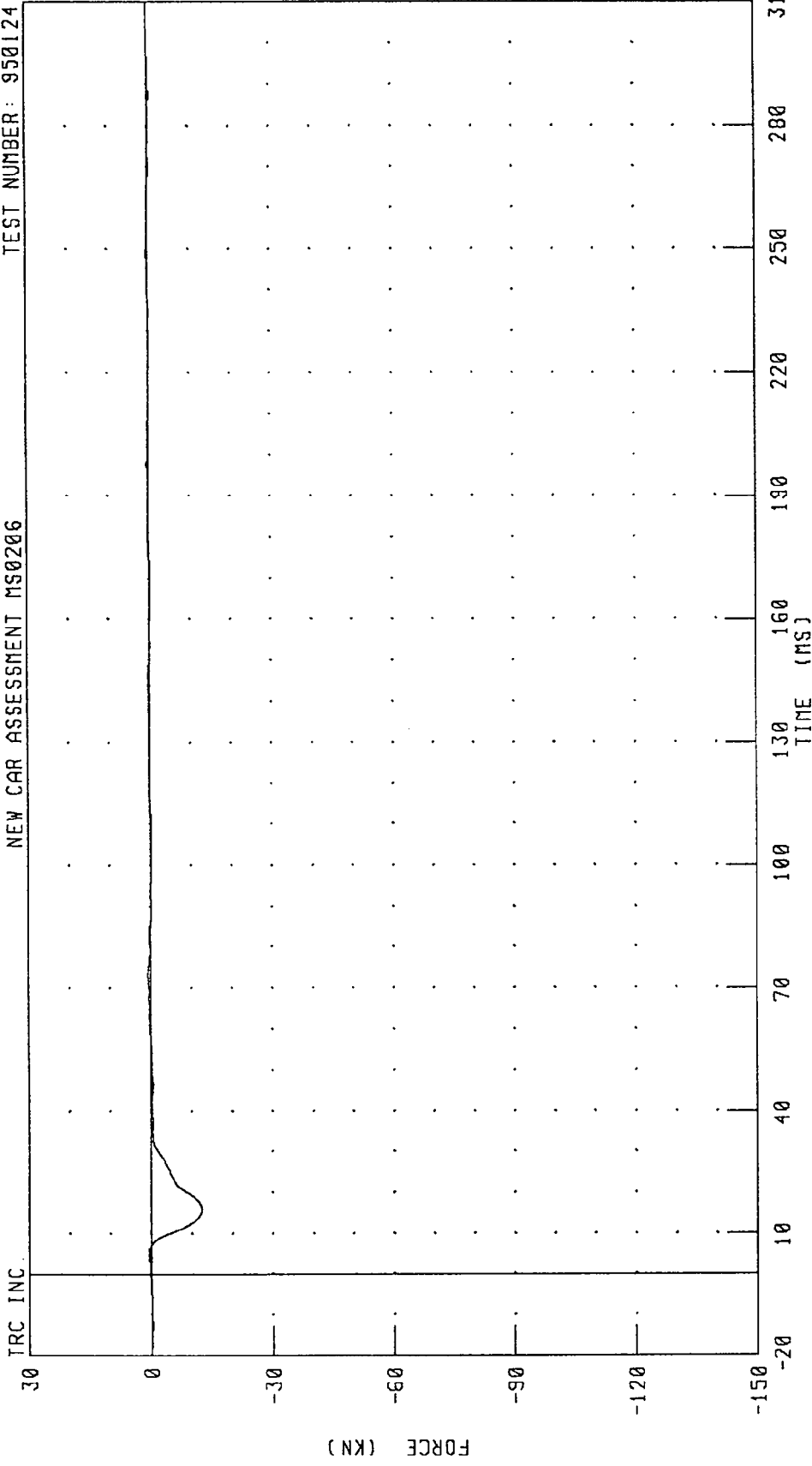
TEST NUMBER: 950124



TRC INC. CHANNEL: BC7F FILTER: CH. CLASS 60 PEAK DATA: 0.76 KN @ -1.68 MS; -22.85 KN @ 9.68 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION C8 FORCE
 NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

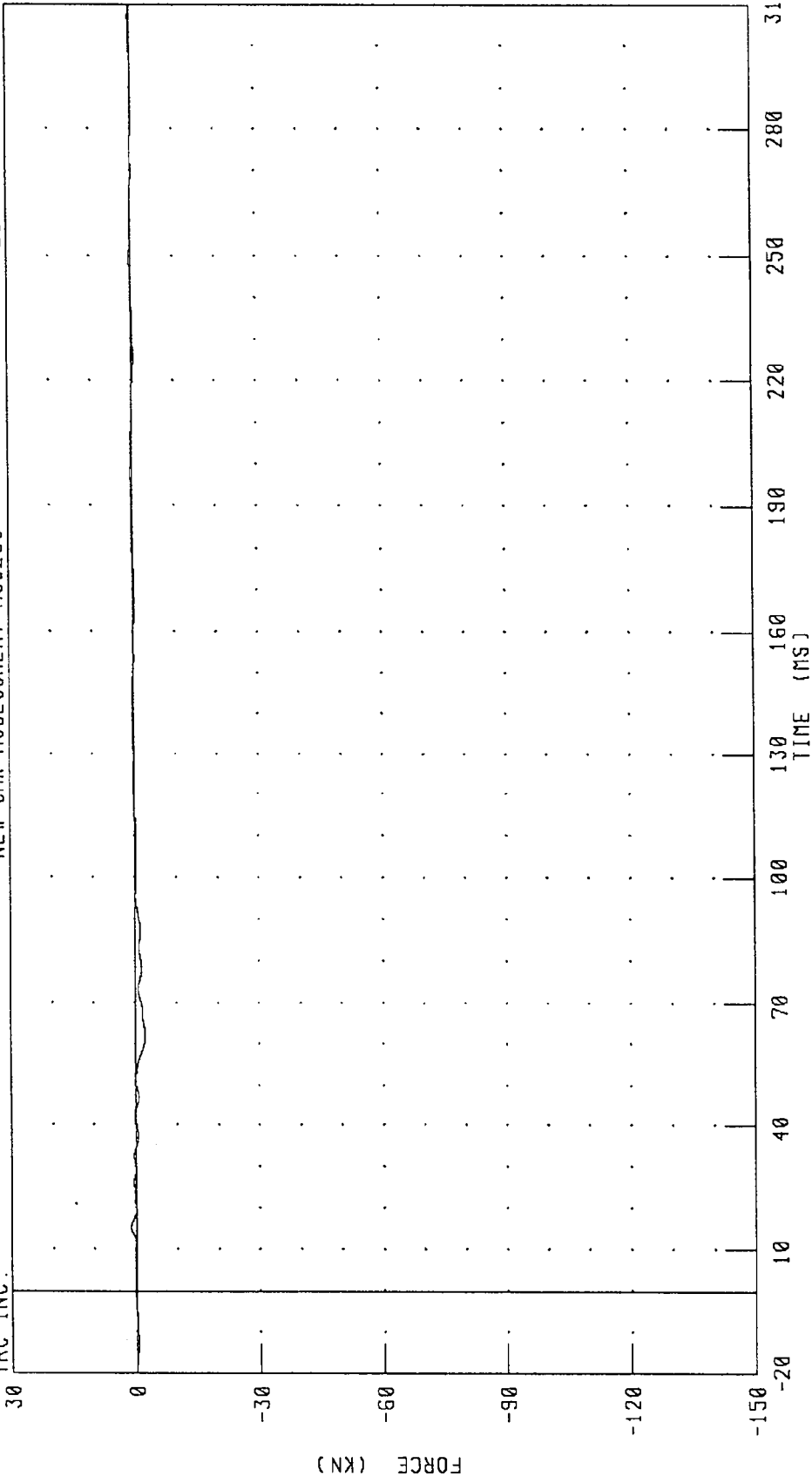


CHANNEL: BC8F FILTER: CH. CLASS 60
 PEAK DATA: 0.60 KN @ 73.12 MS; -12.47 KN @ 15.92 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION C9 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

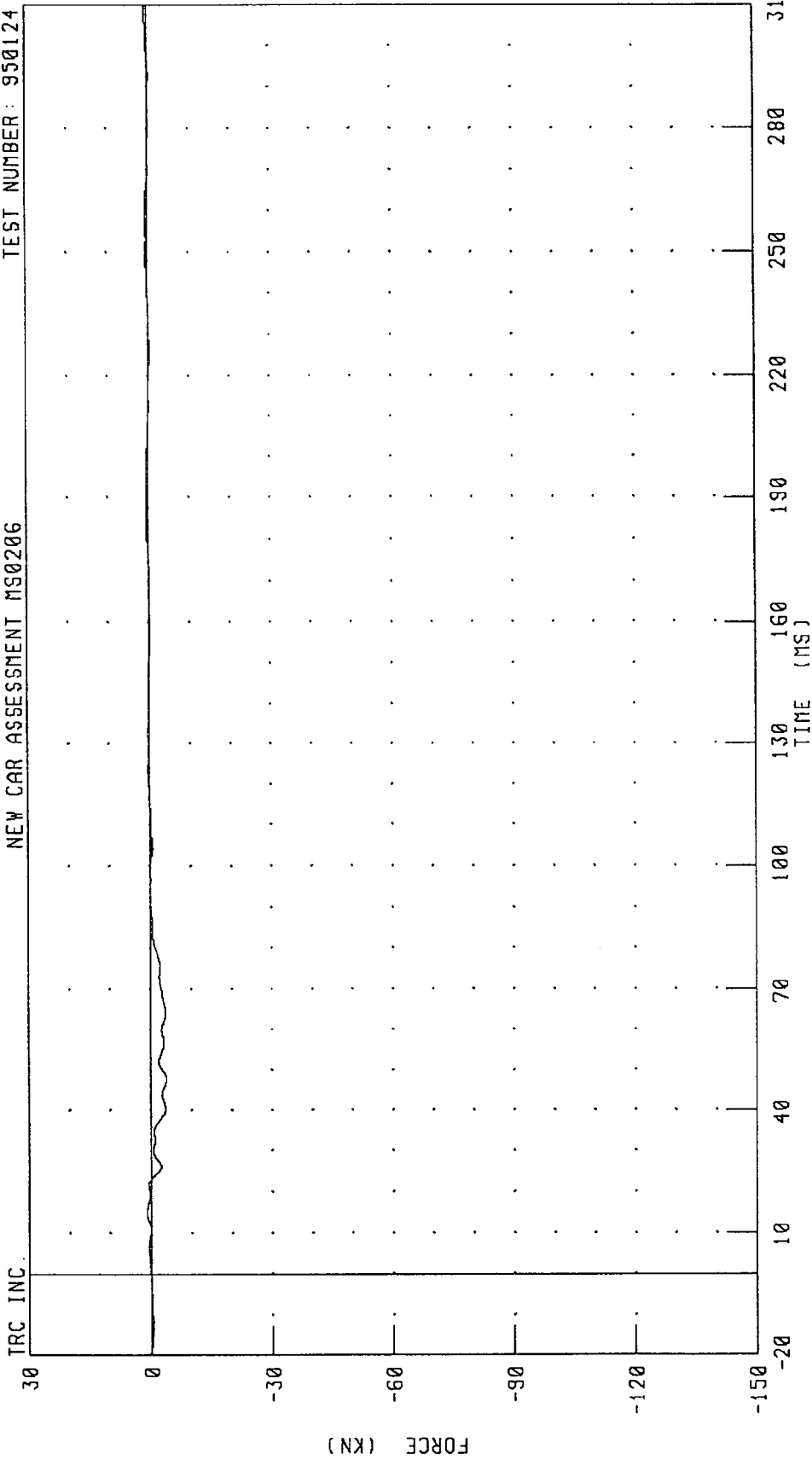
TRC INC.



CHANNEL: BC9F FILTER: CH. CLASS 60 PEAK DATA: 1.13 KN @ 15.12 MS; -2.34 KN @ 61.36 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER POSITION D1 FORCE
 NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

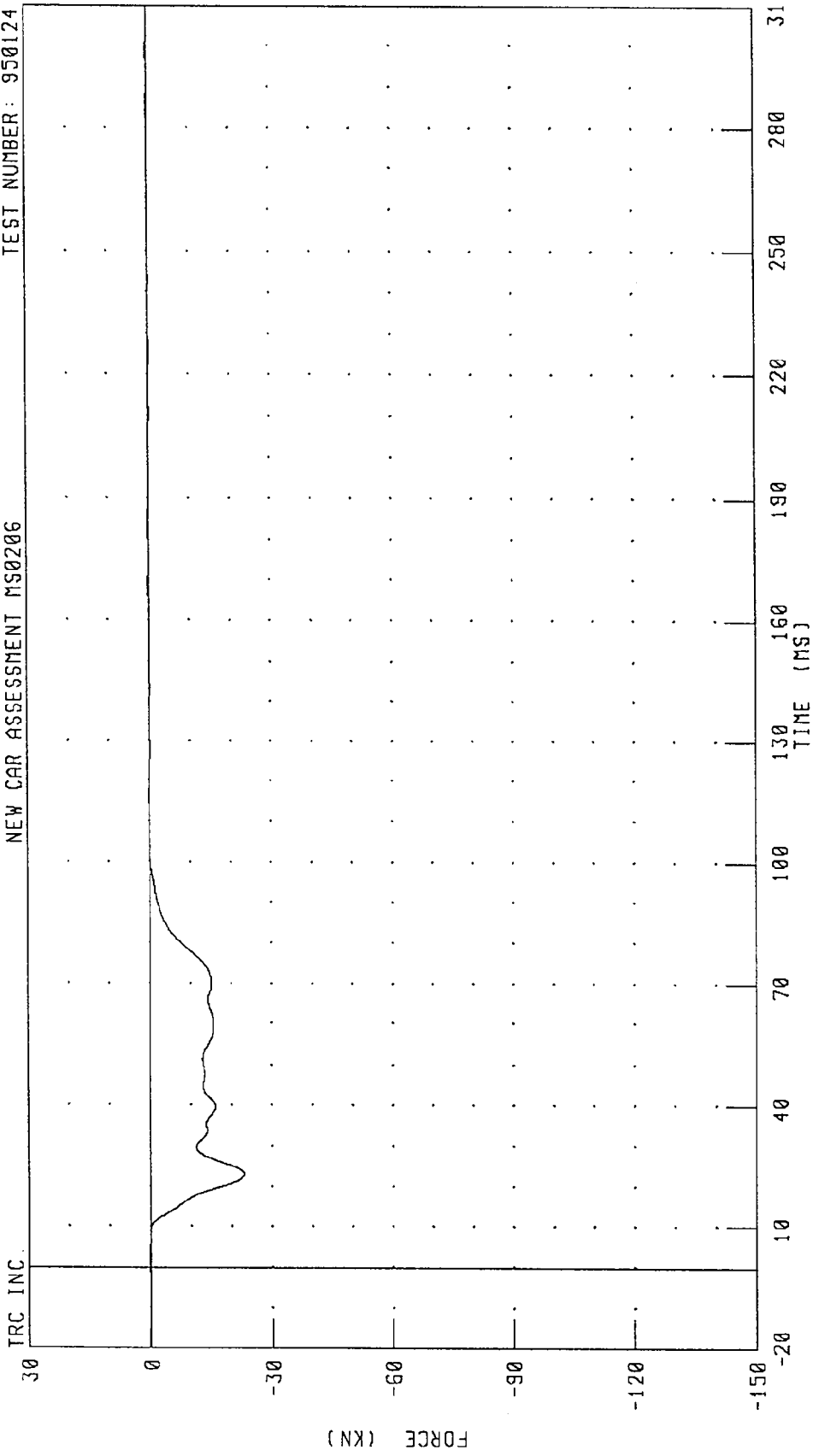


CHANNEL: BDIF FILTER: CH. CLASS 60

PEAK DATA: 0.97 KN @ 14.64 MS; -3.87 KN @ 47.60 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D2 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

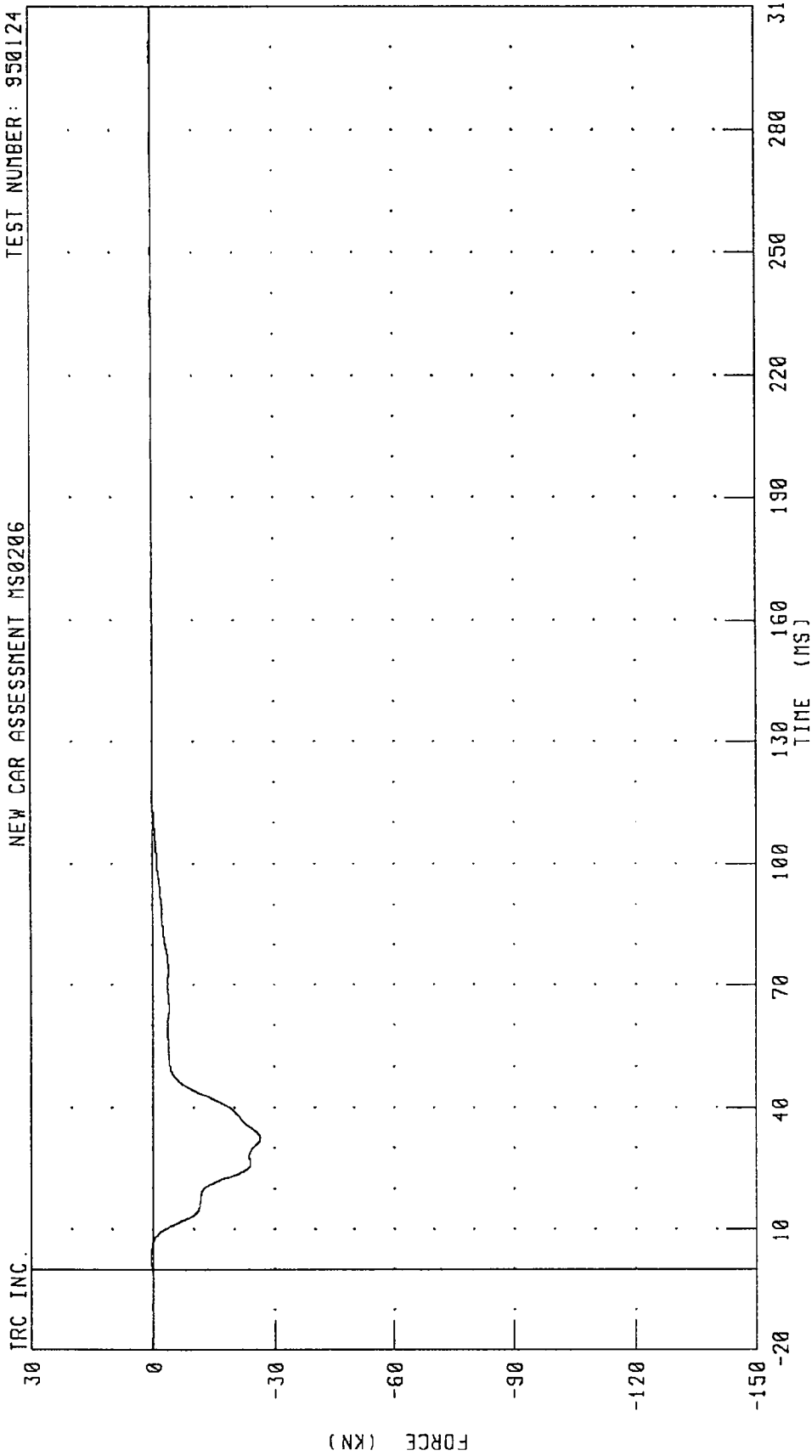


PEAK DATA: 0.25 KN @ 2.48 MS; -23.17 KN @ 23.12 MS

CHANNEL: BD2F FILTER: CH. CLASS 60

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D3 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

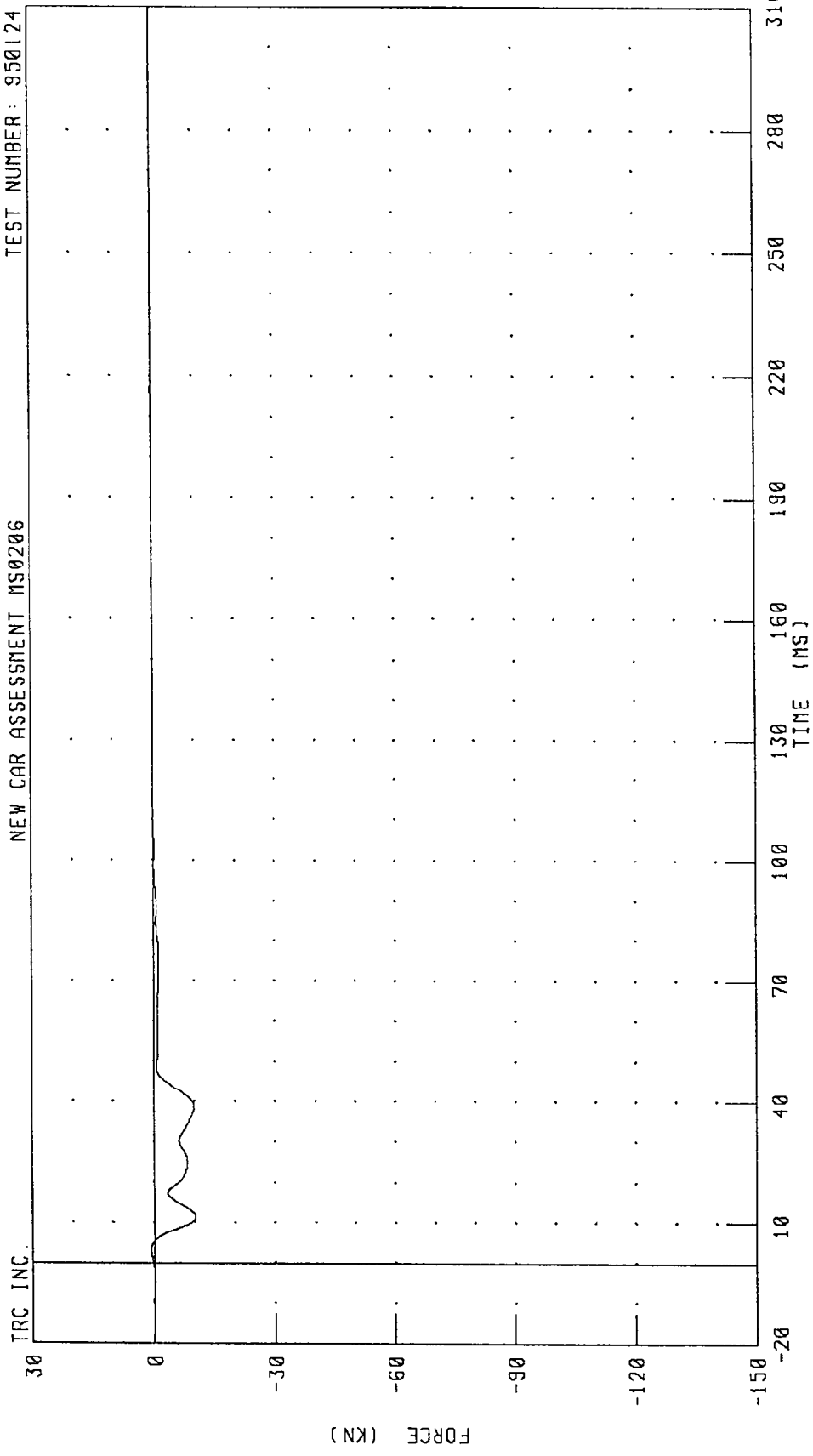


CHANNEL: BD3F FILTER: CH. CLASS 60

950124

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D4 FORCE
NEW CAR ASSESSMENT MS0206

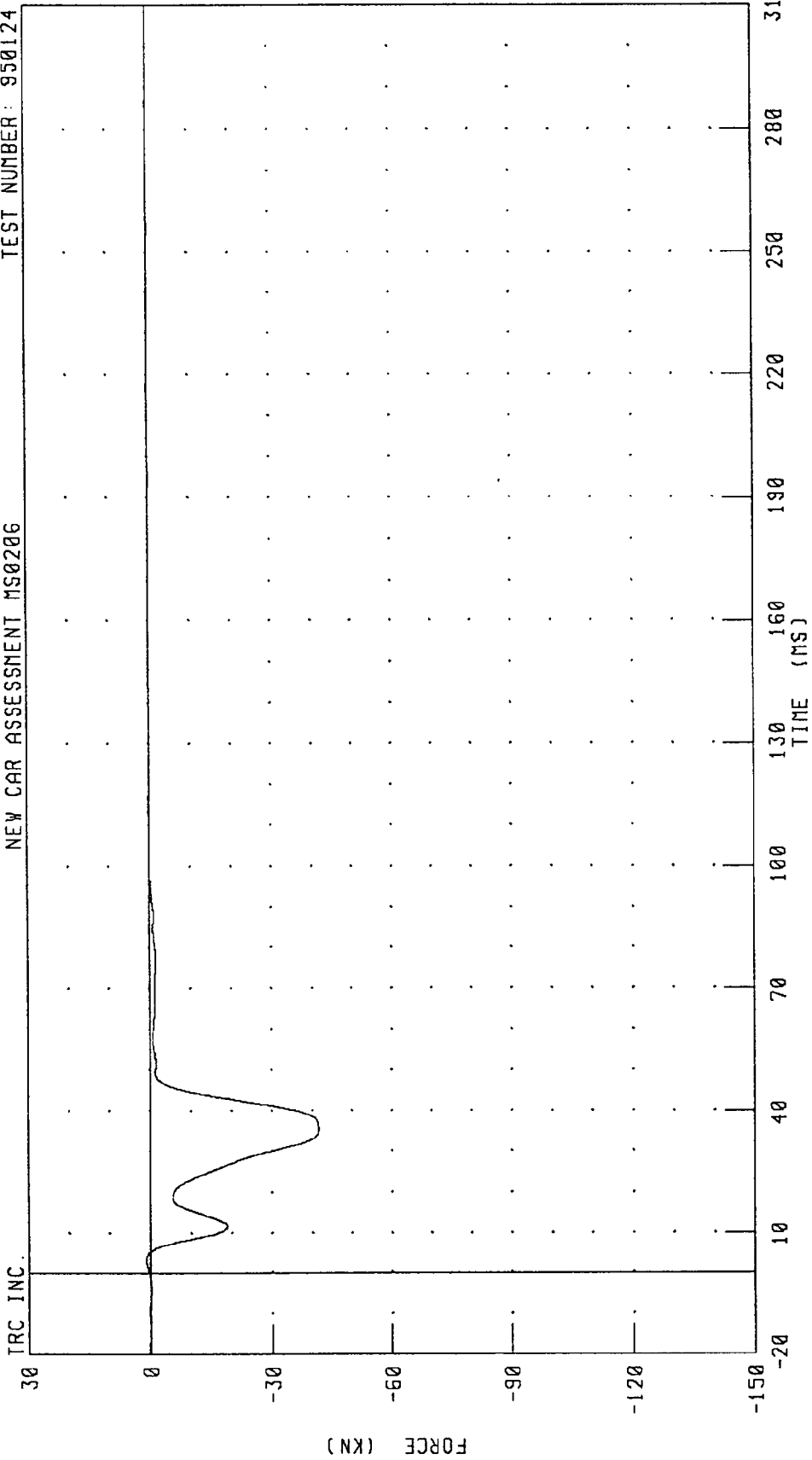
TEST NUMBER: 950124



CHANNEL: BD4F FILTER: CH. CLASS 60 PEAK DATA: 0.76 KN @ 3.04 MS; -10.31 KN @ 11.44 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D5 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

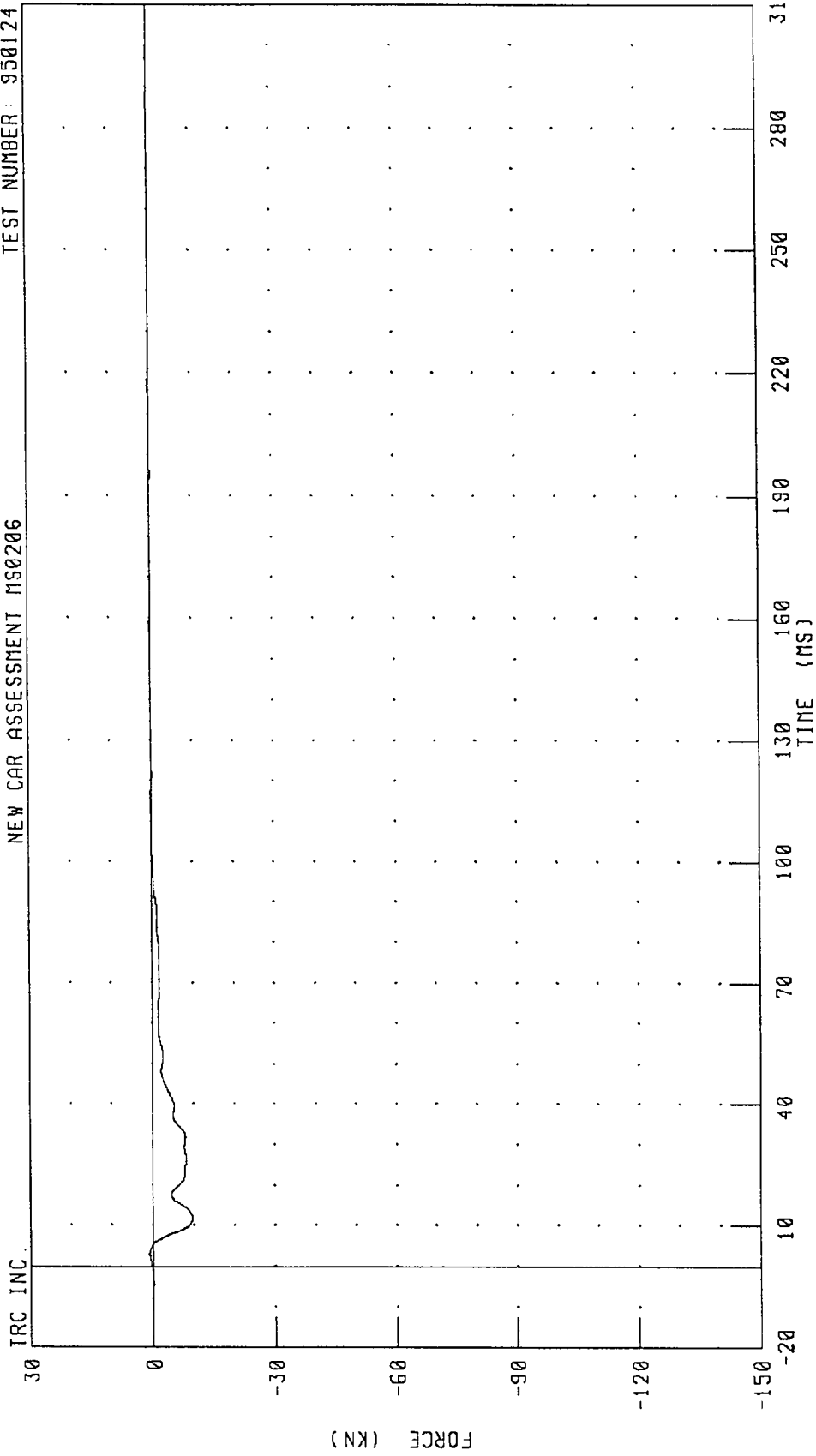


TRC INC. CHANNEL: BDSF FILTER: CH. CLASS 60

PEAK DATA: 0.99 KN @ 3.12 MS; -41.58 KN @ 35.60 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D6 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

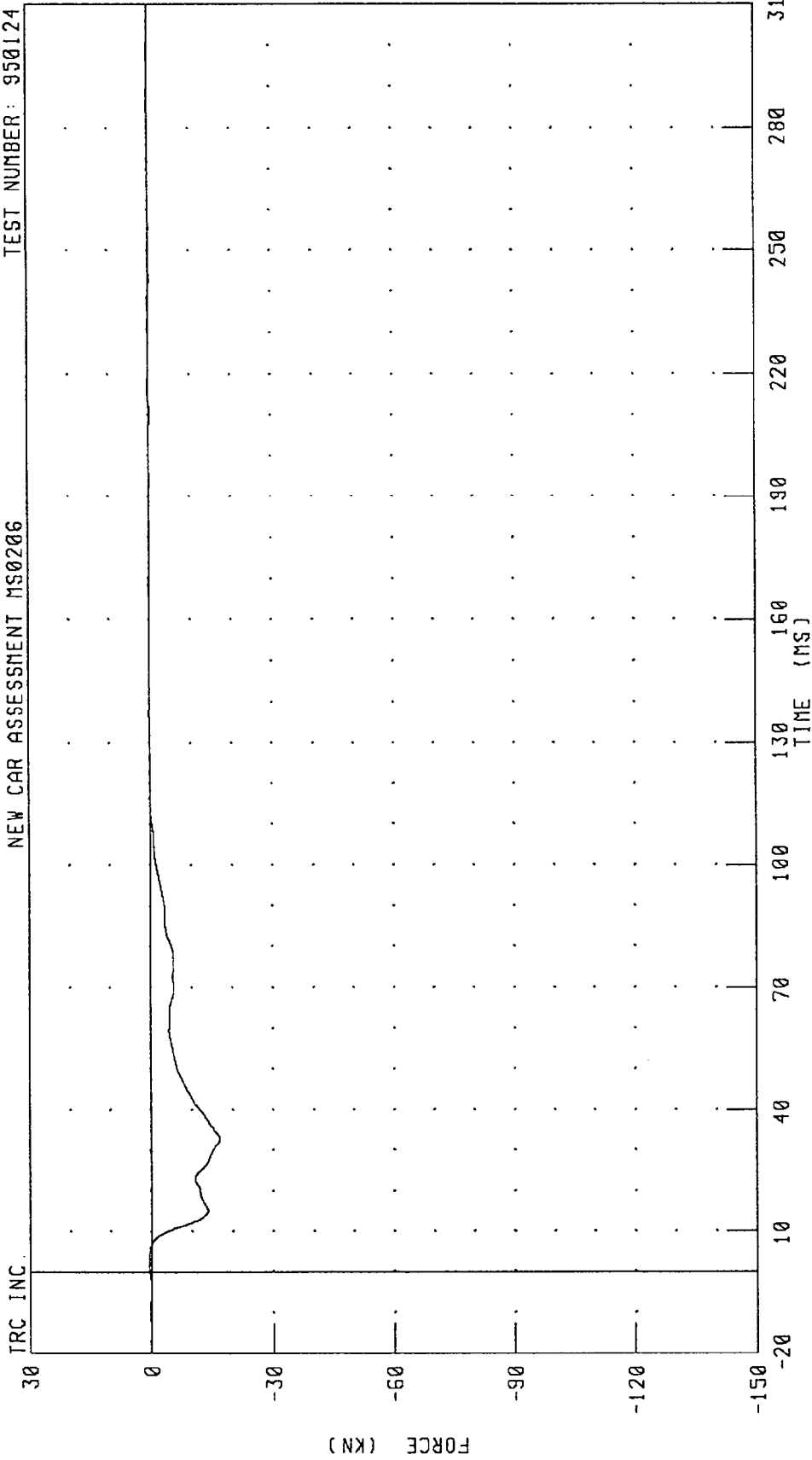


CHANNEL: BD6F FILTER: CH. CLASS 60 PEAK DATA: 0.86 KN @ 2.96 MS; -9.67 KN @ 11.52 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D7 FORCE

NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

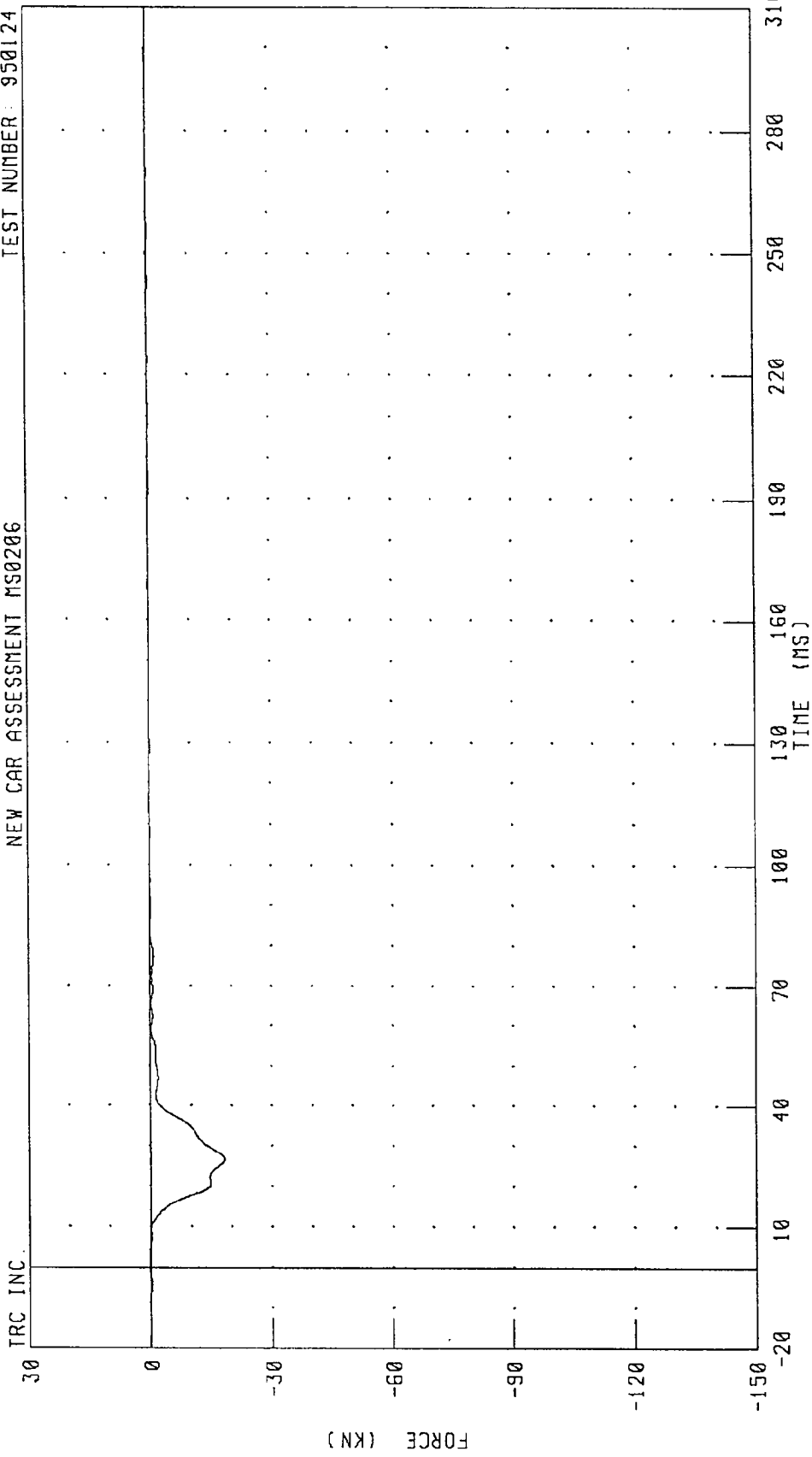


CHANNEL: B07F FILTER: CH. CLASS 60

PEAK DATA: 0.56 KN @ 2.80 MS; -16.86 KN @ 32.96 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D8 FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

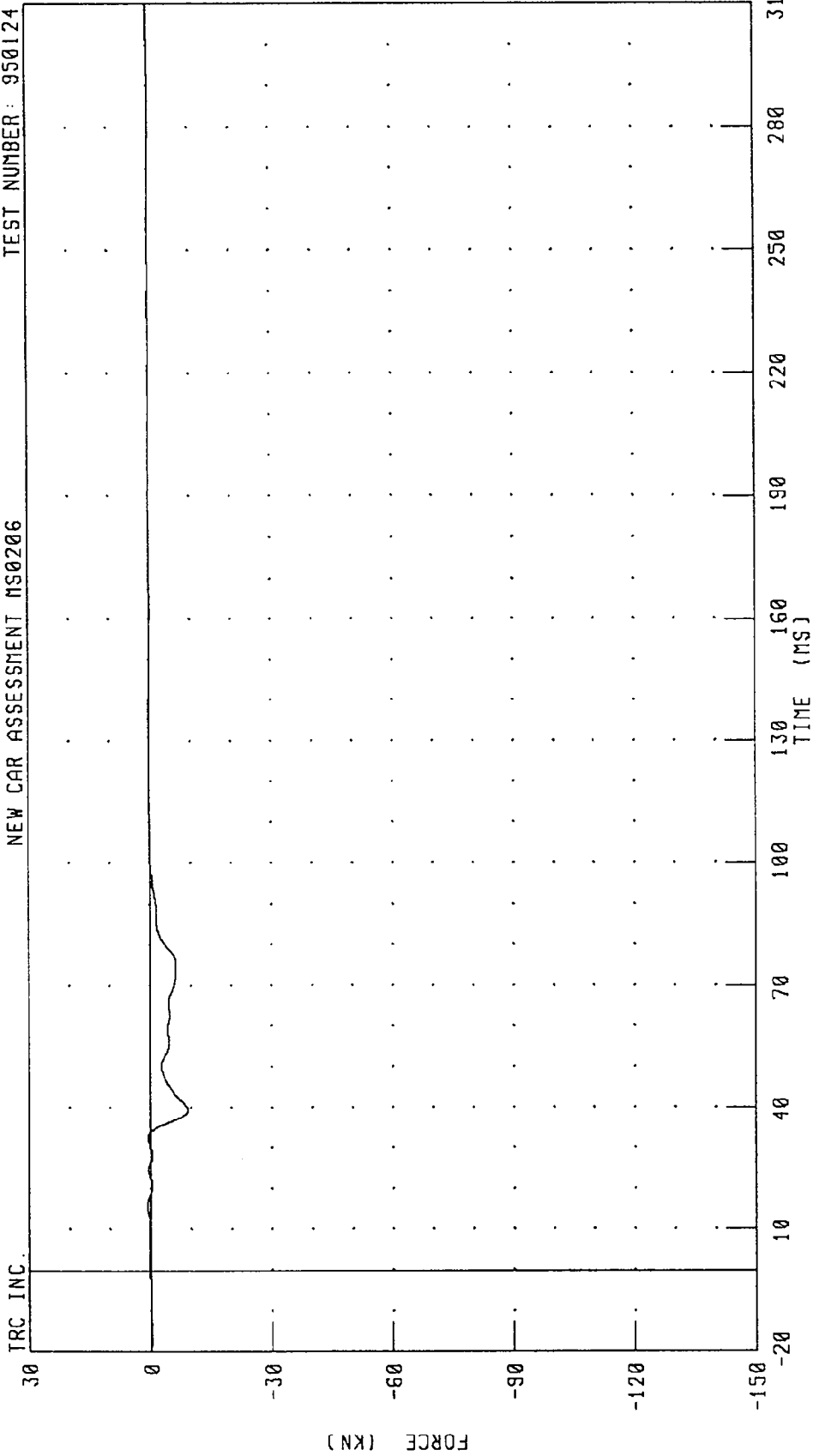


CHANNEL: B08F FILTER: CH. CLASS 60

PEAK DATA: 0.28 KN @ -20.00 MS; -18.22 KN @ 26.56 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER POSITION D9 FORCE
NEW CAR ASSESSMENT MS0206

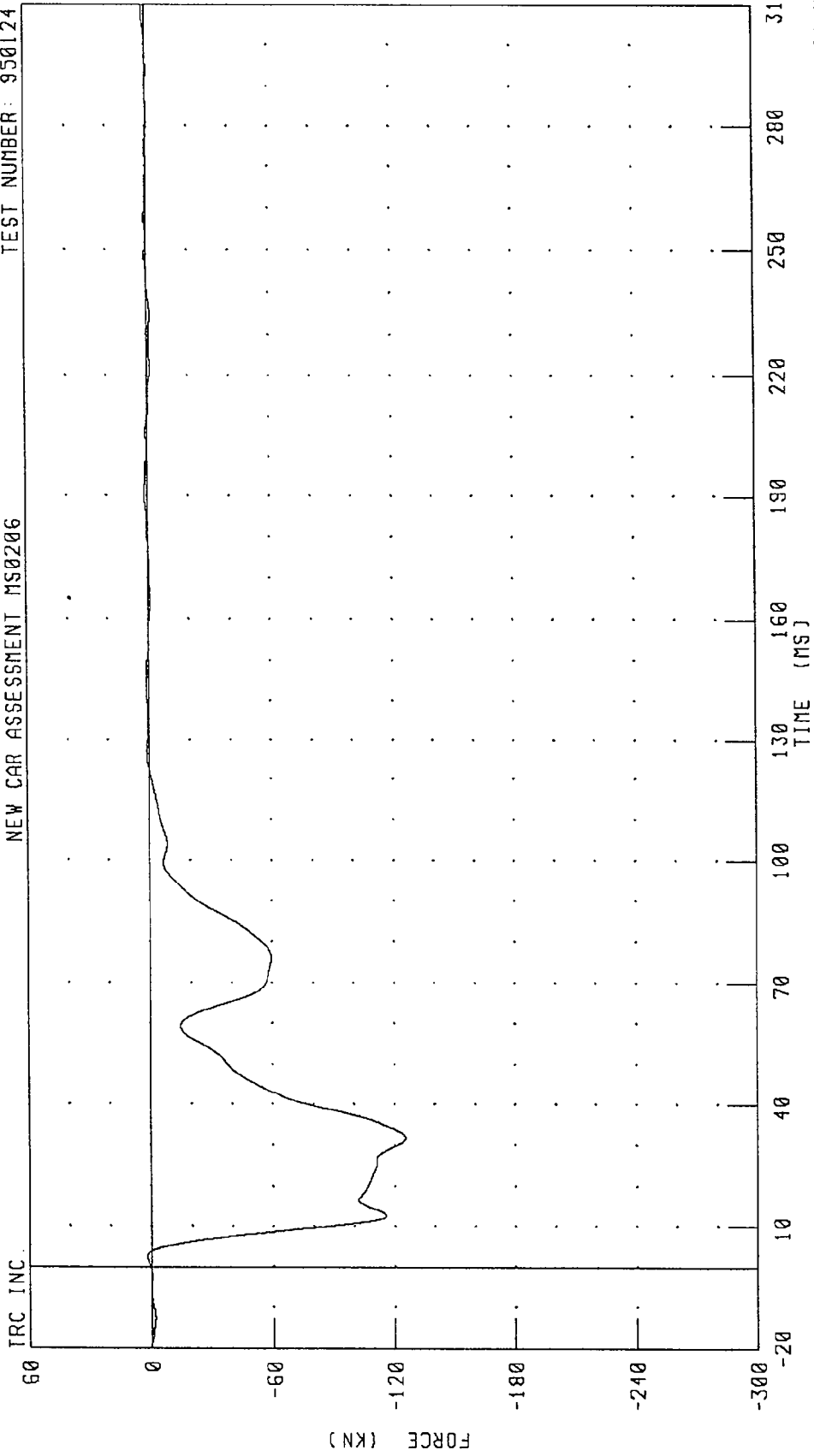
TEST NUMBER: 950124



CHANNEL: 809F FILTER: CH. CLASS 60 PEAK DATA: 0.84 KN @ 15.76 MS; -9.26 KN @ 39.52 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER GROUP # 1 FORCE TOTAL
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



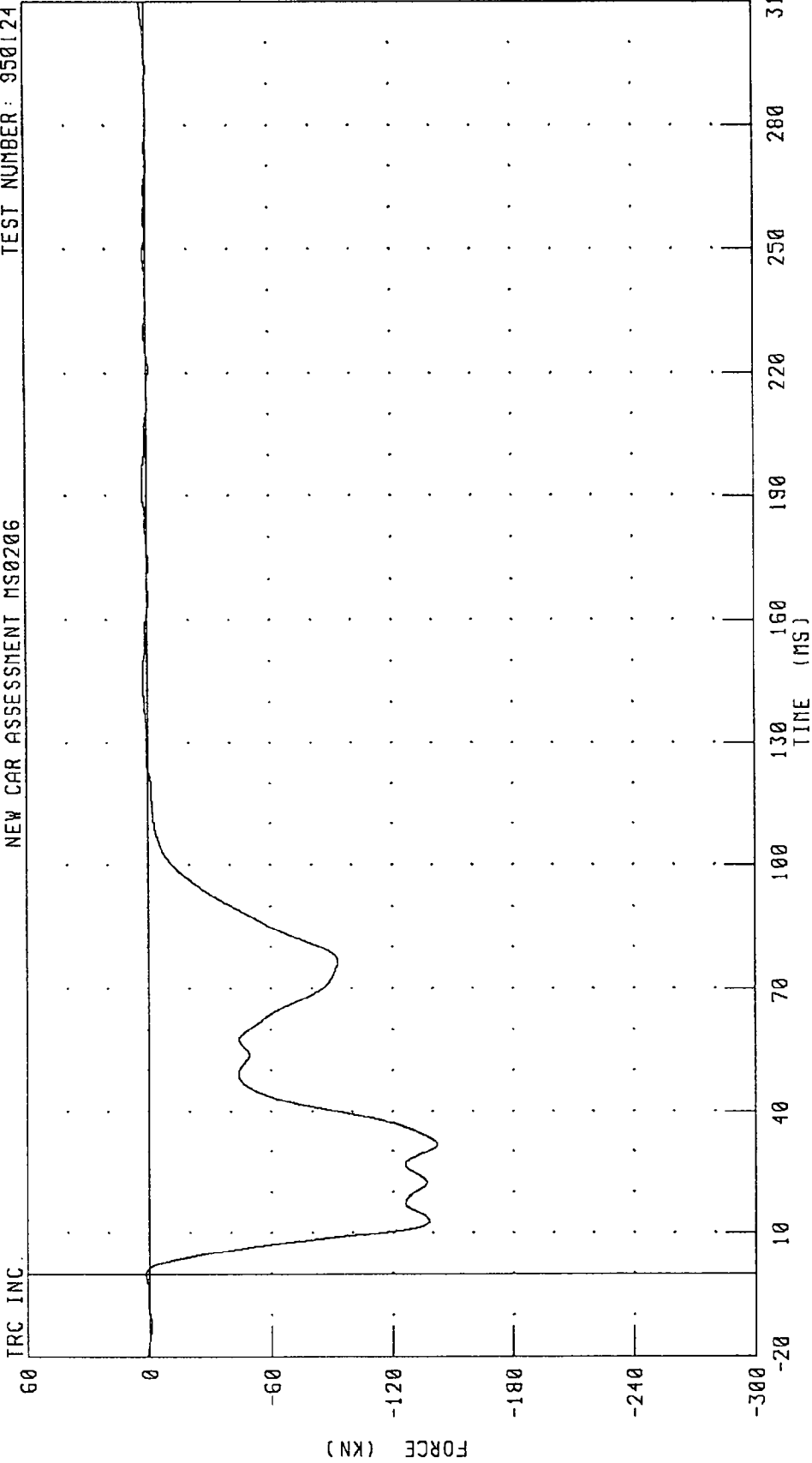
CHANNEL: LCBGIF FILTER: CH. CLASS 60

PEAK DATA: 2.10 KN @ 2.40 MS; -125.50 KN @ 31.84 MS

TRC INC.

1985 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER GROUP # 2 FORCE TOTAL
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

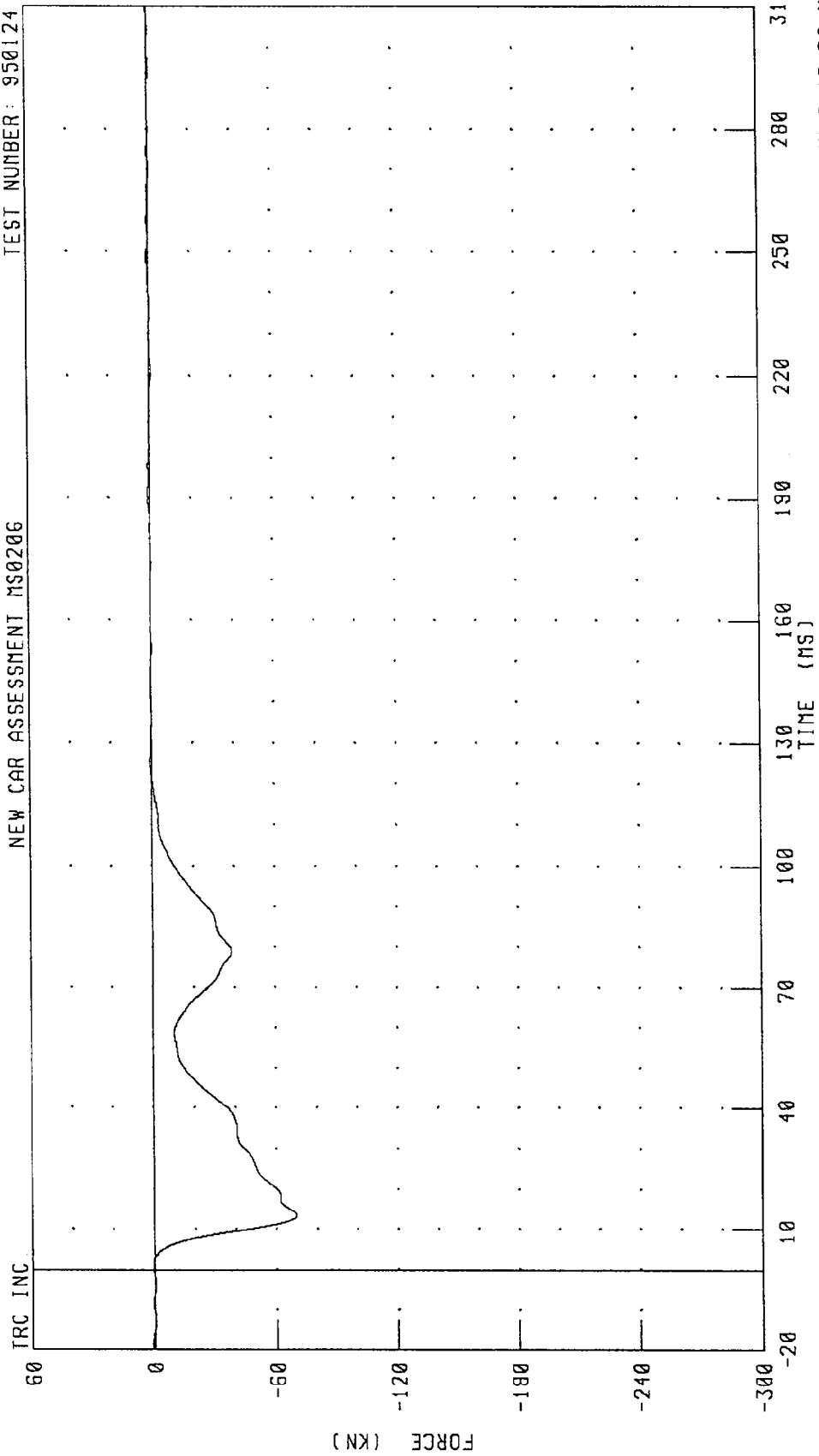


CHANNEL: LCBC2F FILTER: CH. CLASS 60

PEAK DATA: 2.20 KN @ 309.28 MS; -142.57 KN @ 31.84 MS

1985 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 LOAD CELL BARRIER GROUP # 3 FORCE TOTAL
 NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



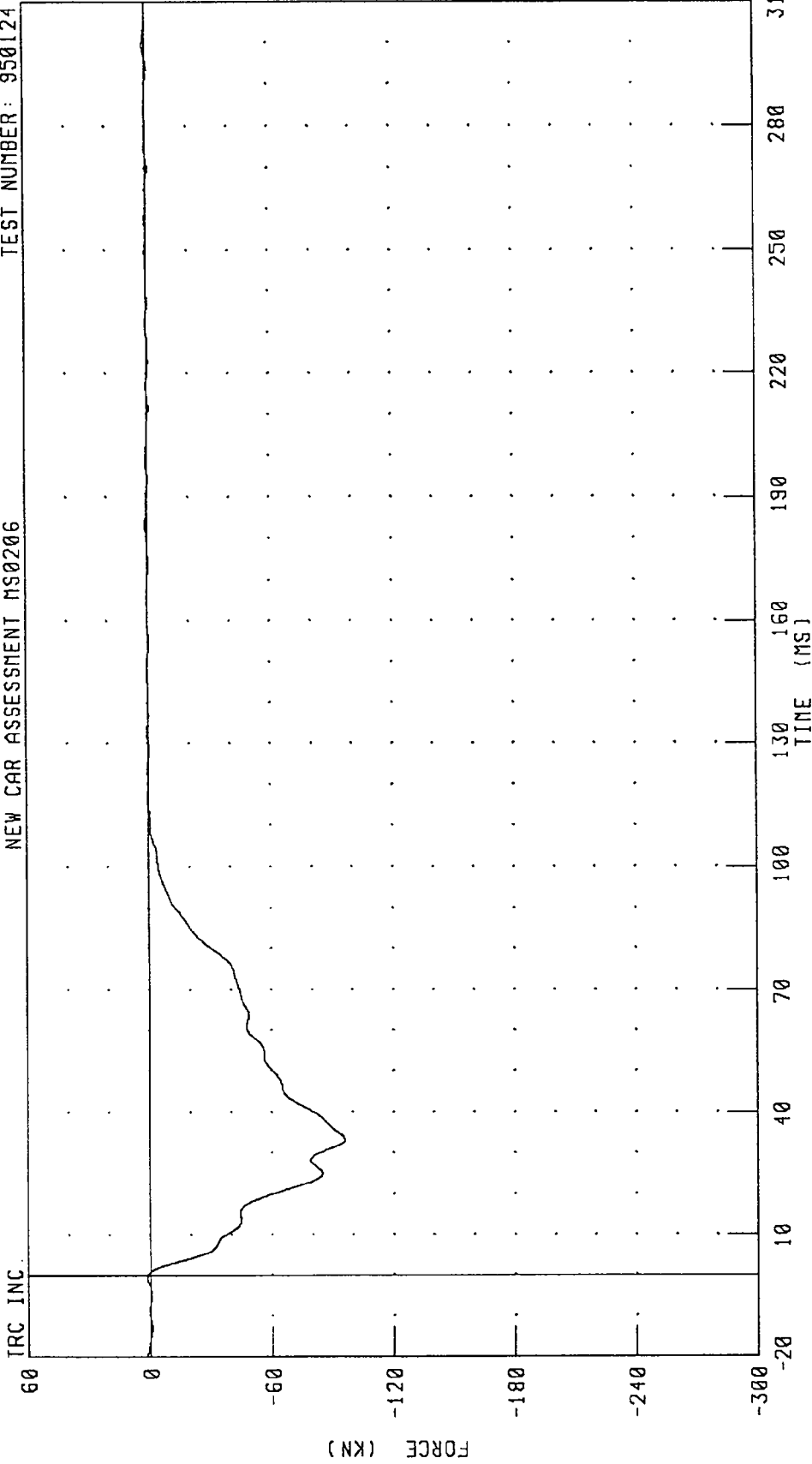
PEAK DATA: 1.04 KN @ -20.00 MS; -69.83 KN @ 13.36 MS

CHANNEL: LCBG3F FILTER: CH. CLASS 60

TRC INC

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER GROUP # 4 FORCE TOTAL
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

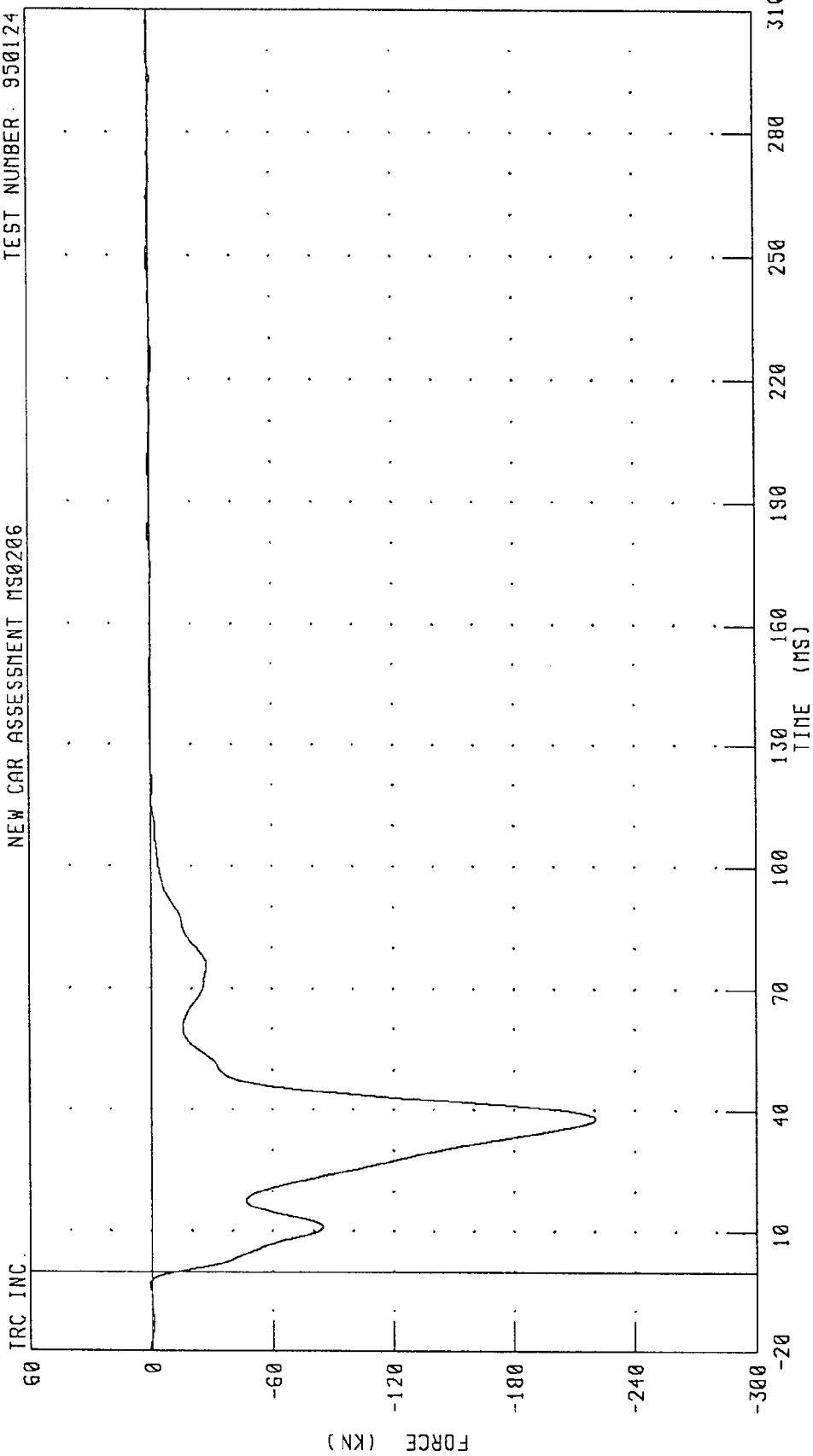


CHANNEL: LCBG4F FILTER: CH. CLASS 60

PEAK DATA: 1.66 KN @ -0.64 MS; -96.03 KN @ 33.36 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER GROUP # 5 FORCE TOTAL
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124

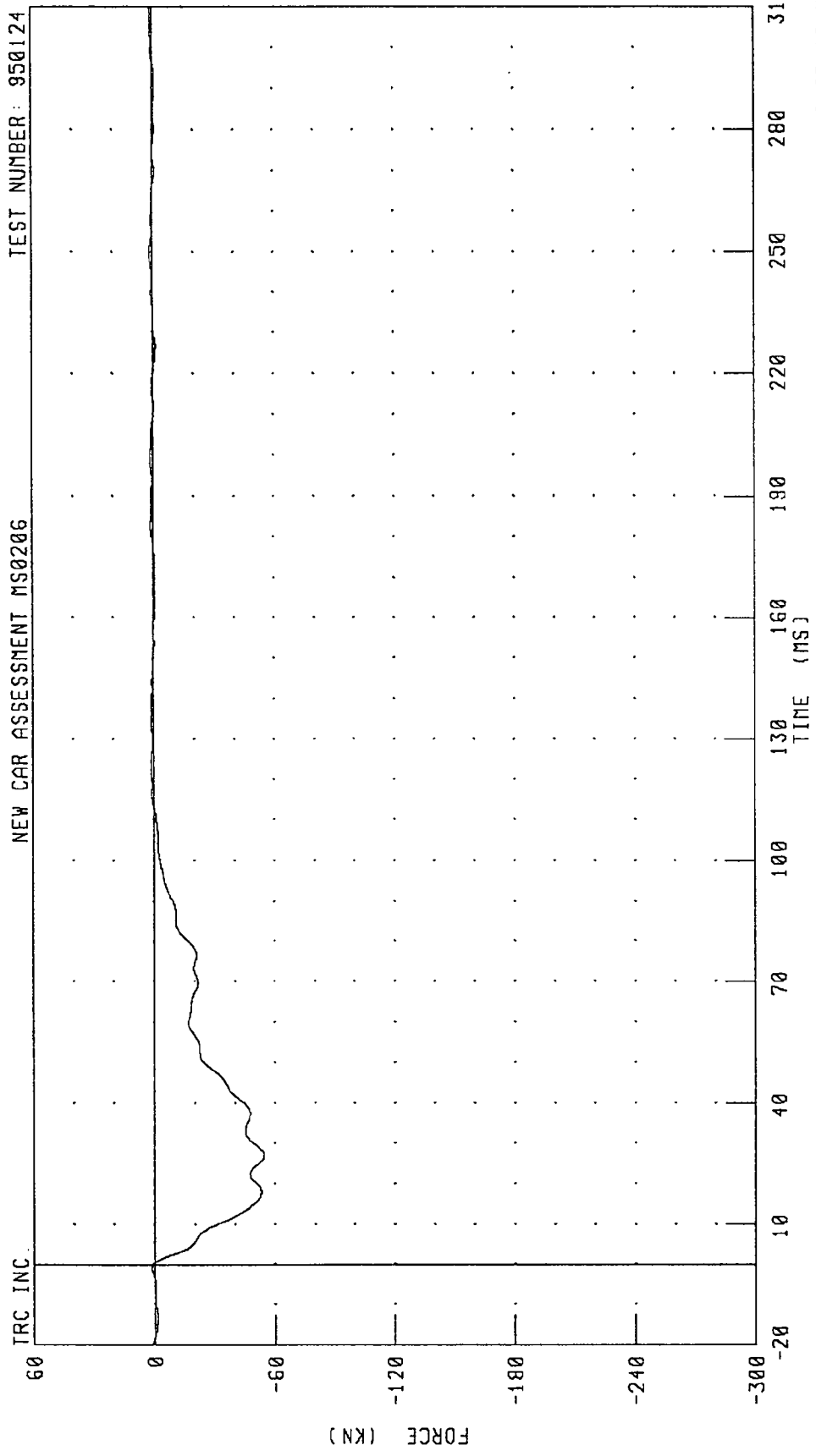


CHANNEL: LCBG5F FILTER: CH. CLASS 60 PEAK DATA: 1.17 KN @ 249.68 MS; -220.60 KN @ 38.00 MS

TRC INC.

1985 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
LOAD CELL BARRIER GROUP # 6 FORCE TOTAL
NEW CAR ASSESSMENT MS0206

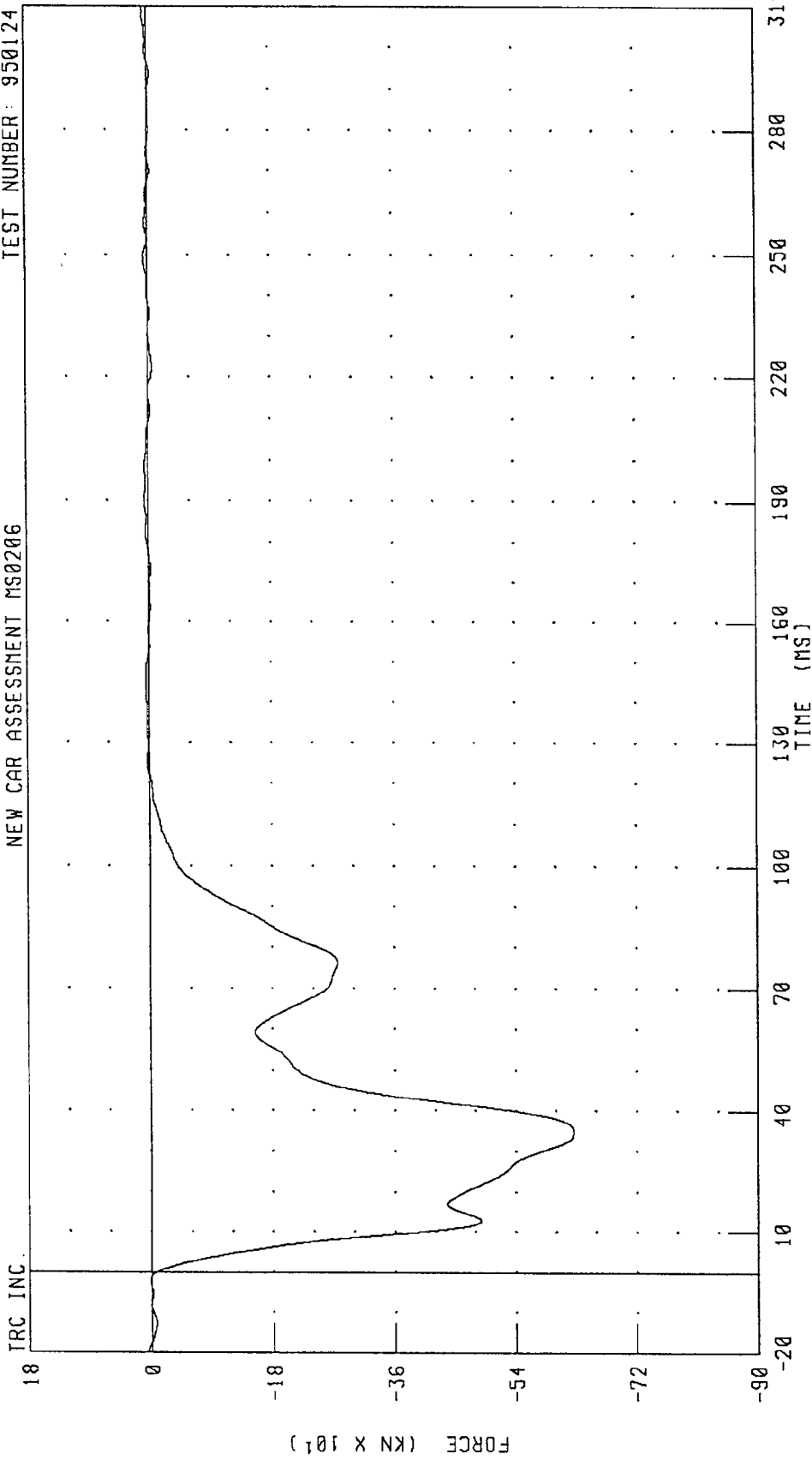
TEST NUMBER: 950124



CHANNEL: LCBG6F FILTER: CH. CLASS 60
PEAK DATA: 1.62 KN @ 249.60 MS; -54.64 KN @ 27.12 MS

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
TOTAL LOAD CELL BARRIER FORCE
NEW CAR ASSESSMENT MS0206

TEST NUMBER: 950124



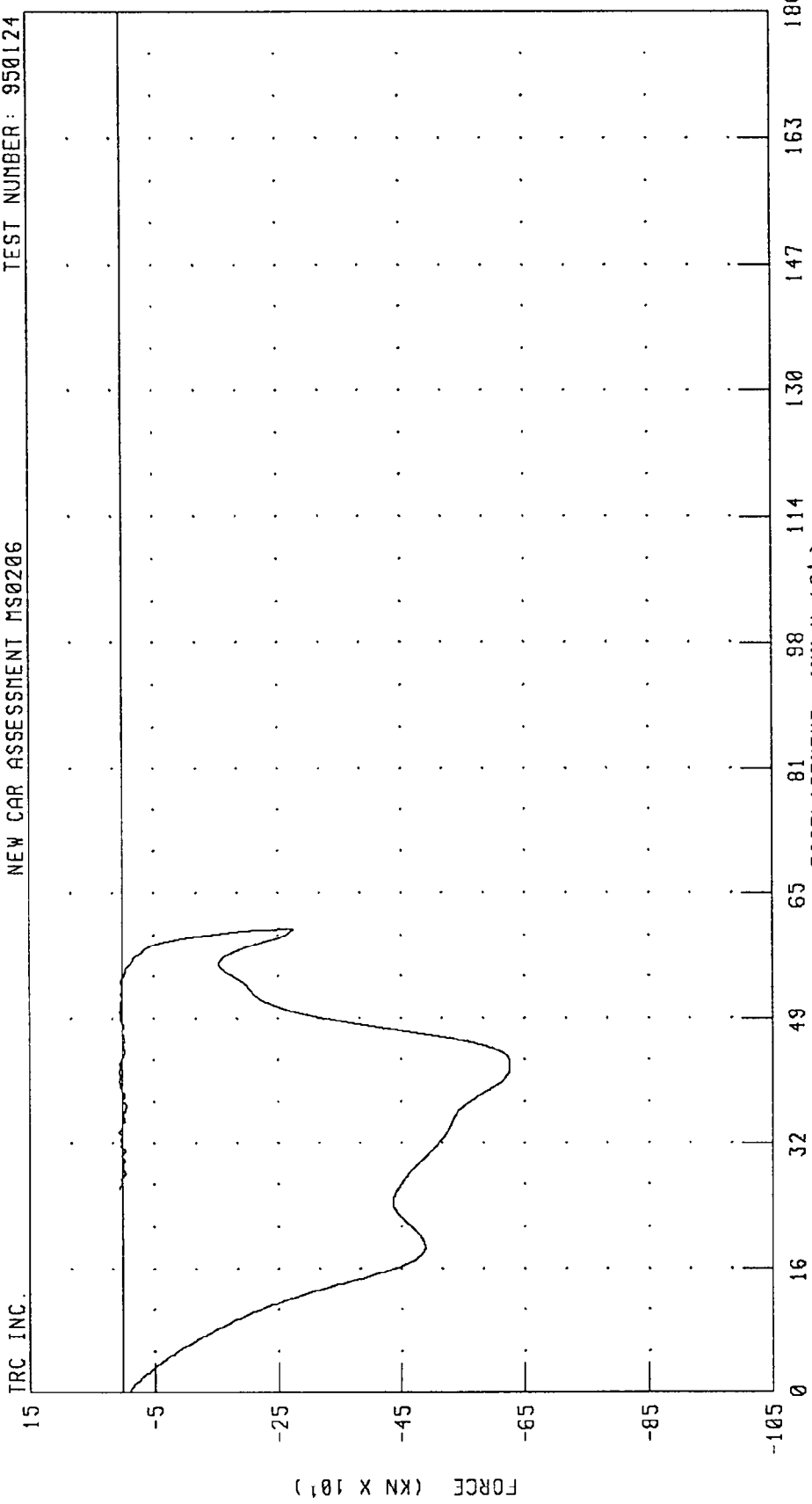
CHANNEL: LCBGT FILTER: CH. CLASS 60

PEAK DATA: 6.51 KN @ 249.20 MS; -626.50 KN @ 34.80 MS

TRC INC.

1995 FORD RANGER INTO FRONTAL LOAD CELL BARRIER
 TOTAL LOAD CELL BARRIER FORCE VS AVERAGE VEHICLE X-AXIS DISPLACEMENT
 NEW CAR ASSESSMENT MS0206

TRC INC.
 TEST NUMBER: 950124



CHANNEL: 0THXD FILTER: CH. CLASS 180
 LCBGT CH. CLASS 60
 DISPLACEMENT (MM X 10¹)
 PEAK DATA: 608.26 MM @ 78.40 MS;
 6.51 KN @ 249.20 MS; -626.50 KN @ 34.80 MS

Appendix C

Dummy Certification Data

Pre-test Certification Data

Driver Dummy S/N: 192

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III EXTERNAL DIMENSIONS

192 ALDERSON

26-DEC-94

TRC INC.

TEST NO: 192C24ED1

572E SN192 EXT.DIMENSION CAL24

TEST PARAMETER	(DIMEN.)	SPECIFICATION	TEST RESULTS
LOCATION FOR CHEST CIRCUMFERENCE (AA)		429 - 434 MM	432. MM
LOCATION FOR WAIST CIRCUMFERENCE (BB)		226 - 231 MM	229. MM
CHEST CIRCUMFERENCE	(Y)	970 -1001 MM	980. MM
WAIST CIRCUMFERENCE	(Z)	836 - 866 MM	851. MM
CHEST DEPTH	(O)	213 - 229 MM	218. MM
H-POINT HEIGHT	(C)	84 - 89 MM	84. MM
H-POINT FROM SEATBACK	(D)	135 - 140 MM	135. MM
SKULL CAP TO BACKLINE	(H)	41 - 46 MM	43. MM
TOTAL SITTING HEIGHT	(A)	879 - 889 MM	889. MM
THIGH CLEARANCE	(F)	140 - 155 MM	150. MM
BUTTOCK KNEE LENGTH	(K)	579 - 605 MM	597. MM
BUTTOCK POPLITEAL LENGTH	(N)	452 - 478 MM	470. MM
POPLITEAL HEIGHT	(L)	429 - 455 MM	447. MM
KNEE PIVOT HEIGHT	(M)	485 - 500 MM	493. MM
FOOT LENGTH	(P)	252 - 267 MM	259. MM
FOOT BREADTH	(W)	91 - 107 MM	102. MM
SHOULDER PIVOT FROM BACKLINE	(E)	84 - 94 MM	94. MM
SHOULDER BREADTH	(V)	422 - 437 MM	429. MM
SHOULDER PIVOT HEIGHT	(B)	506 - 521 MM	516. MM
ELBOW REST HEIGHT	(J)	191 - 211 MM	211. MM
SHOULDER-ELBOW LENGTH	(I)	330 - 345 MM	345. MM
BACK OF ELBOW TO WRIST PIVOT	(G)	290 - 305 MM	290. MM

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete Fox

RUN NUMBER: 122694.1303

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III

26-DEC-94

TRC INC.

TEST NO: 192C24HD1

572E SN192 HEAD DROP CAL 24

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	33.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	231.15 G
PEAK LATERAL ACCELERATION	15 G MAX	-4.09 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

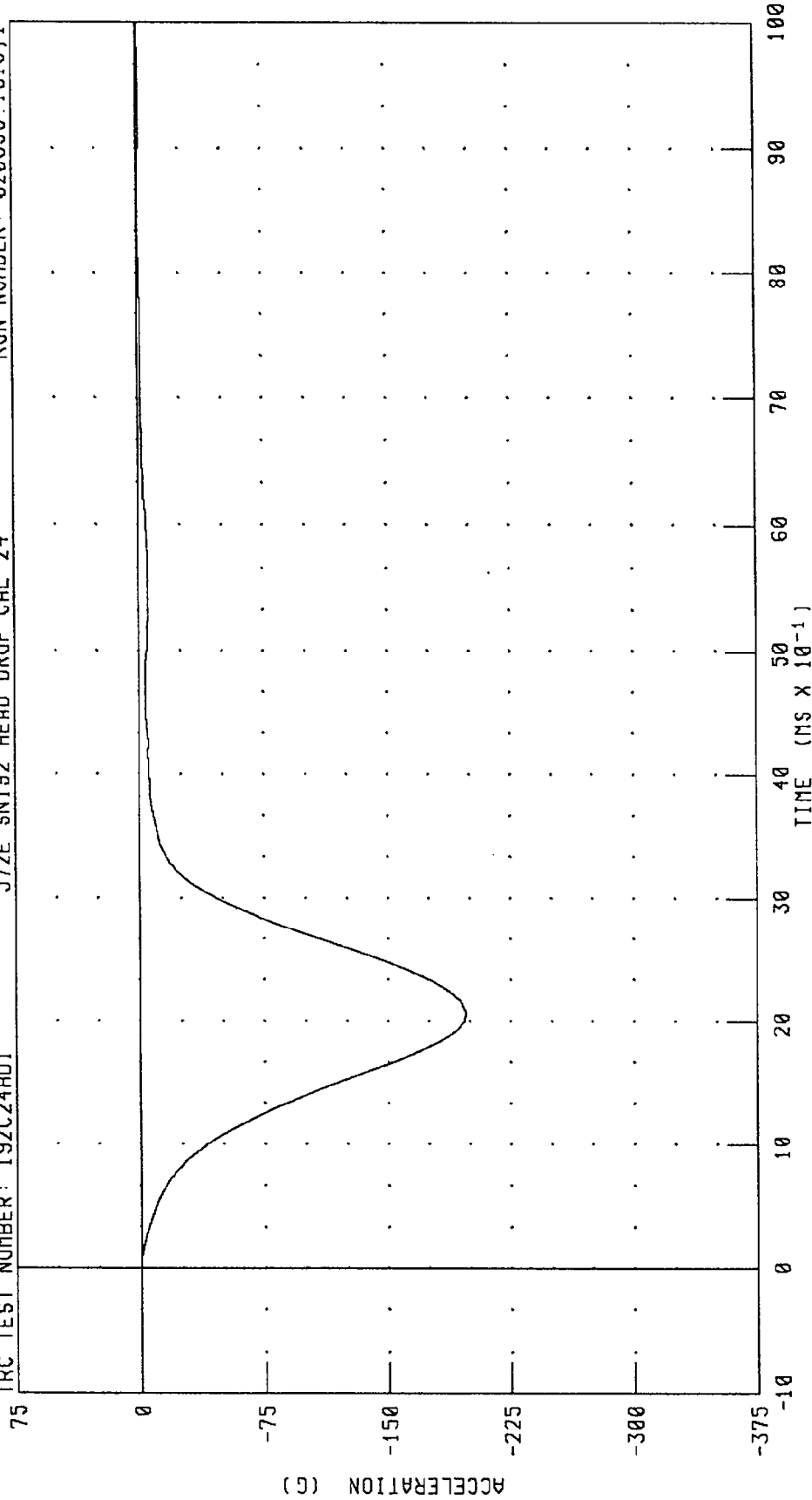
TECHNICIAN

Pete Foust

RUN NUMBER: 122694.0903;1

PART 572-E HYBRID III HEAD CALIBRATION
HEAD ACCELERATION X AXIS

TRC TEST NUMBER: 192C24HD1 572E SN192 HEAD DROP CAL 24 RUN NUMBER: 020895.1515;1



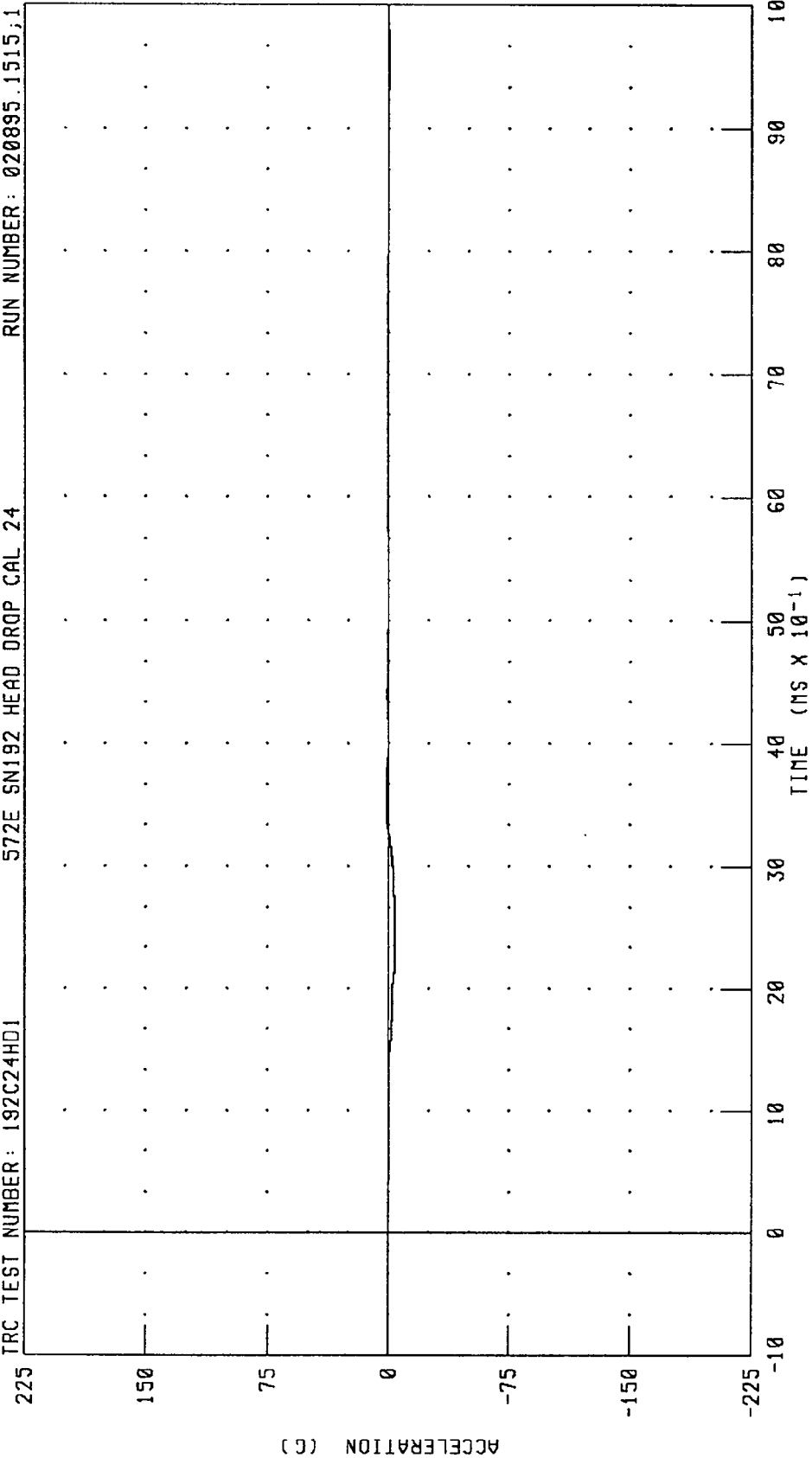
CHANNEL: HEDXG FILTER: CH. CLASS 1000 PEAK DATA: 0.02 G @ -0.08 MS; -197.85 G @ 2.08 MS

PART 572-E HYBRID III HEAD CALIBRATION
 HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: 192C24HD1

572E SN192 HEAD DROP CAL 24

RUN NUMBER: 020895.1515;1



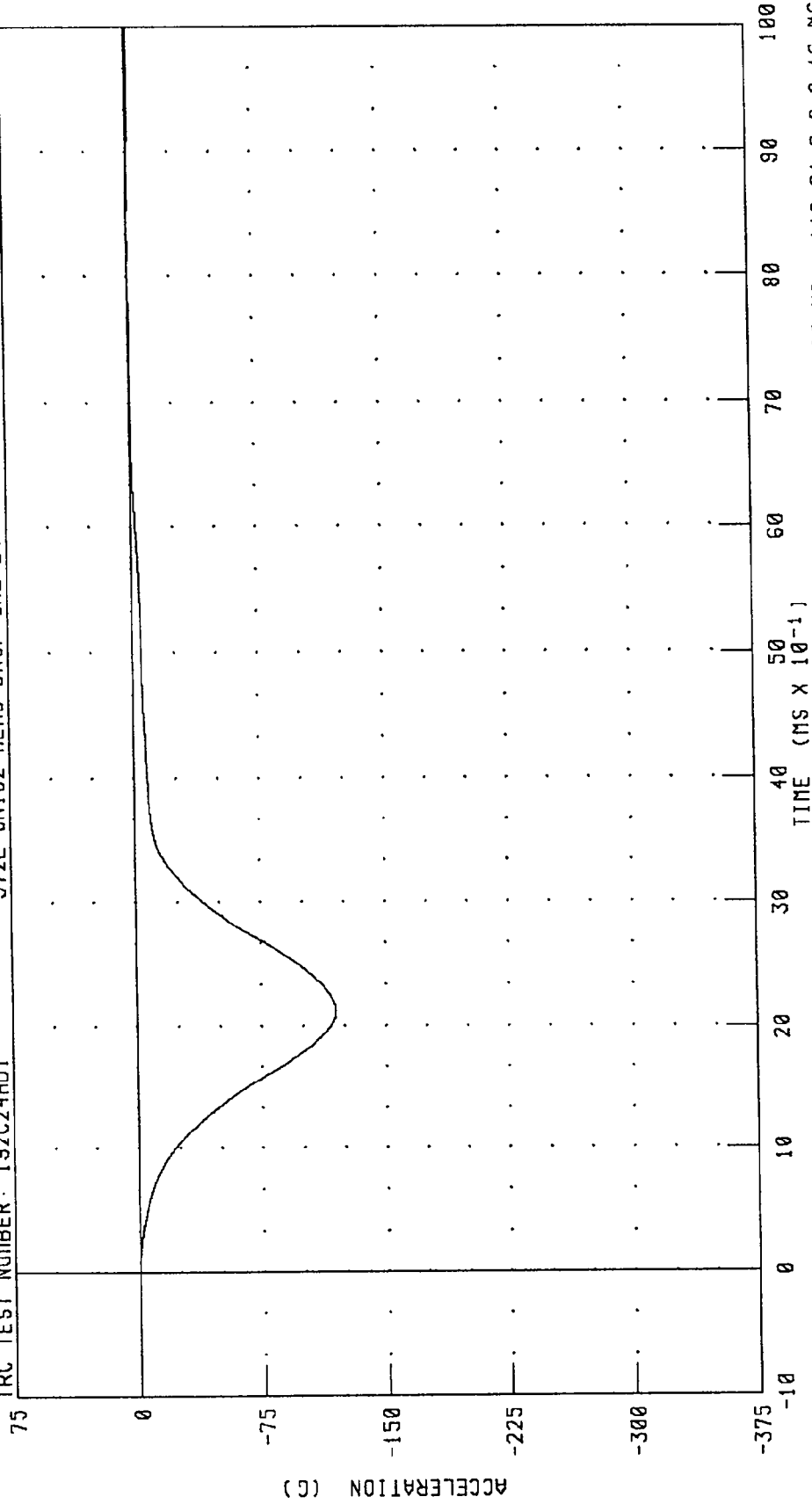
PEAK DATA: 1.38 G @ 3.52 MS; -4.09 G @ 2.32 MS

CHANNEL: HEDYG FILTER: CH. CLASS 1000

PART 572-E HYBRID III HEAD CALIBRATION
HEAD ACCELERATION Z AXIS
572E SN192 HEAD DROP CAL 24

TRC TEST NUMBER: 192C24HD1

RUN NUMBER: 020895.1515;1



CHANNEL: HEDZG FILTER: CH. CLASS 1000

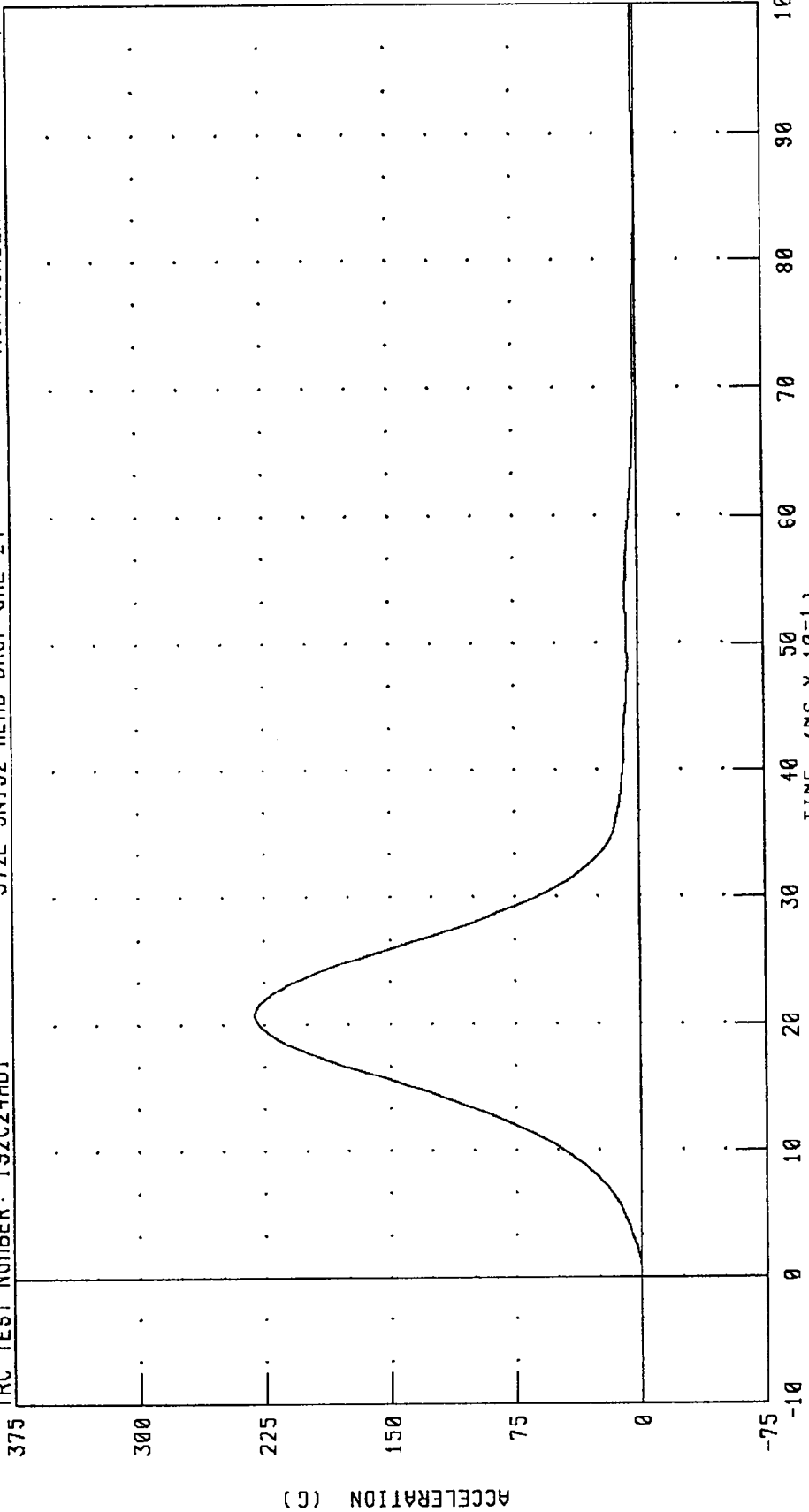
PEAK DATA: 0.05 G @ -0.96 MS; -119.64 G @ 2.16 MS

PART 572-E HYBRID III HEAD CALIBRATION
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: 192C24HD1

572E SN192 HEAD DROP CAL 24

RUN NUMBER: 020895.1515;1



PEAK DATA: 231.16 G @ 2.08 MS; 0.07 G @ -0.80 MS

CHANNEL: HEDRG FILTER: CH. CLASS 1000

TRANSPORTATION RESEARCH CENTER INC.

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

HYBRID III

26-DEC-94

TRC INC. TEST NO: 192C24NF1 572E SN192 NECK FLEXION CAL24

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	33.0 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
PENDULUM DECELERATION	10 MS 22.50 - 27.50 G	22.92 G
	20 MS 17.60 - 22.60 G	19.90 G
	30 MS 12.50 - 18.50 G	17.15 G
MAX PENDULUM G	29 G MAX	23.54 G
MAX PENDULUM G ABOVE 30 MS	29 G MAX	17.09 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G	34 - 42 MS	39.84 MS
D PLANE	MAX 64 - 78 DEG.	65.99 DEG.
ROTATION	TIME 57 - 64 MS	58.96 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX 88.2 - 108.5 NM	92.82 NM
	TIME 47 - 58 MS	52.40 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO	113 - 128 MS	113.68 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO	97 - 107 MS	103.68 MS

TEST MEETS SPECIFICATIONS

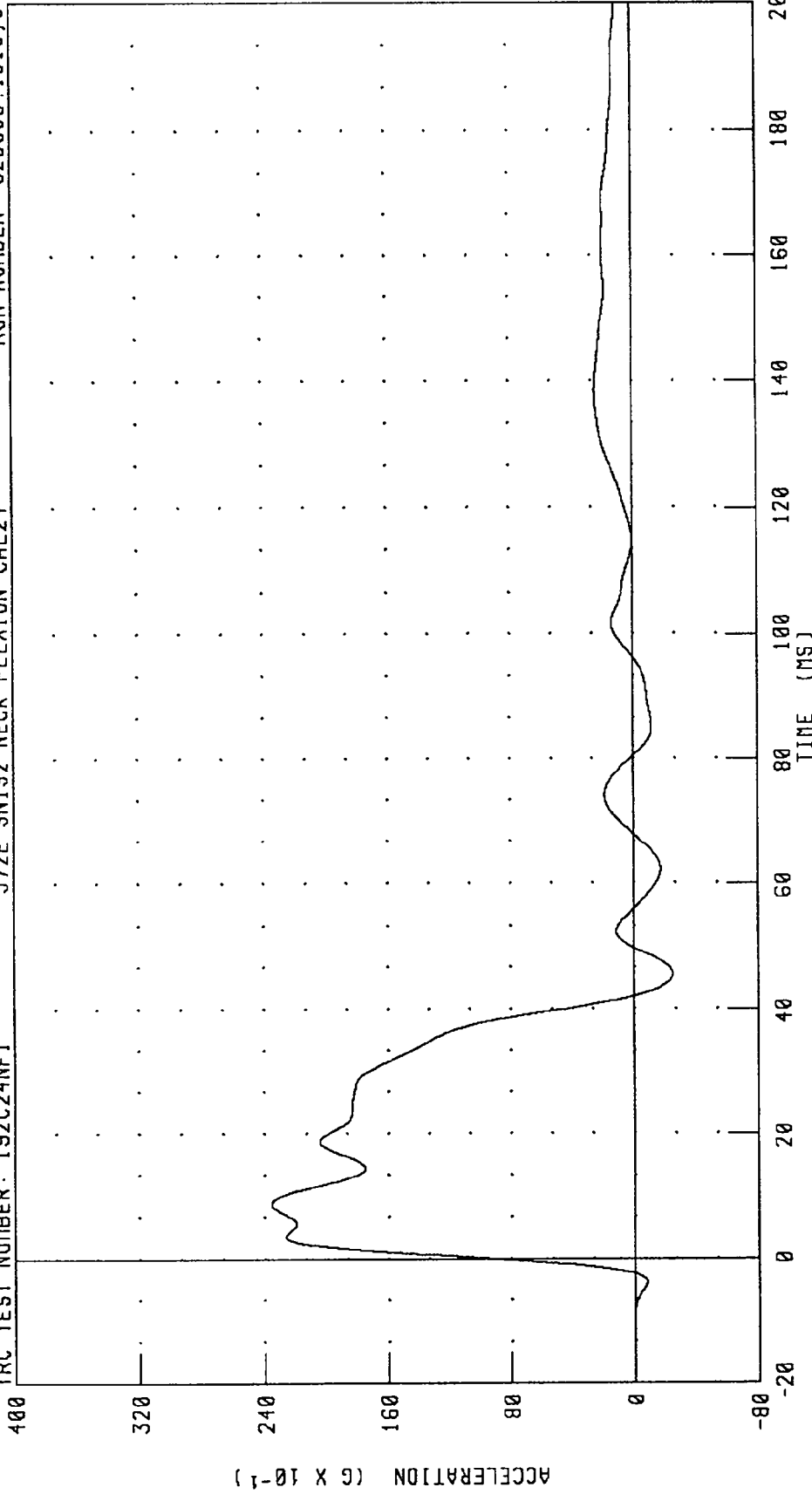
TECHNICIAN Peter Foster

RUN NUMBER: 122694.1313;5

PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 192C24NF1 572E SN192 NECK FLEXION CAL24 RUN NUMBER: 020895.1515.5



CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 23.54 G @ 8.80 MS; -2.47 G @ 45.60 MS

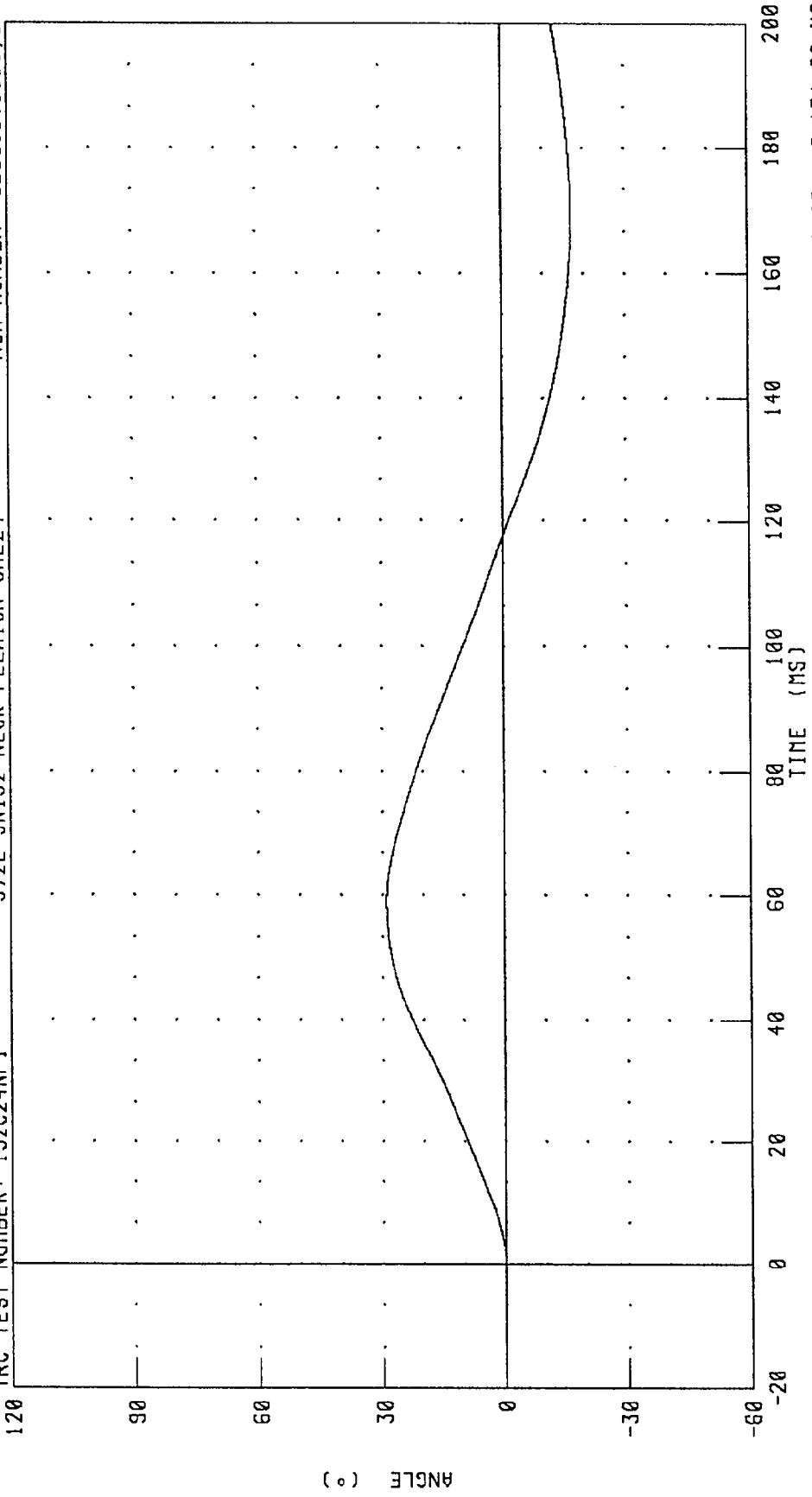
PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 192C24NF1

572E SN192 NECK FLEXION CAL24

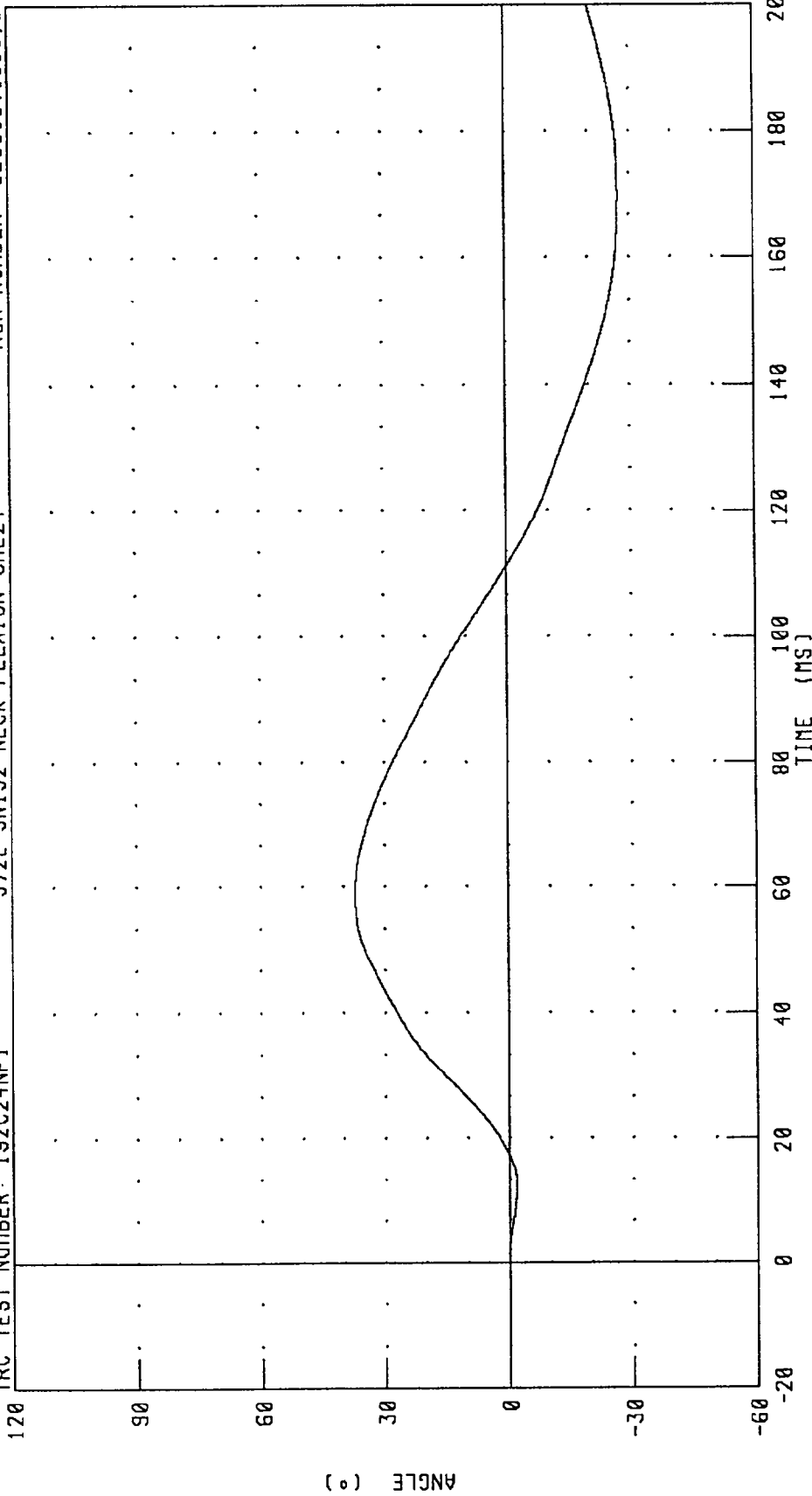
RUN NUMBER: 020895.1515,5



CHANNEL: BETA FILTER: CH. CLASS 60 PEAK DATA: 28.90 ° @ 58.96 MS; -16.96 ° @ 171.60 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 192C24NF1 572E SNI92 NECK FLEXION CAL24 RUN NUMBER: 020895.1515.5

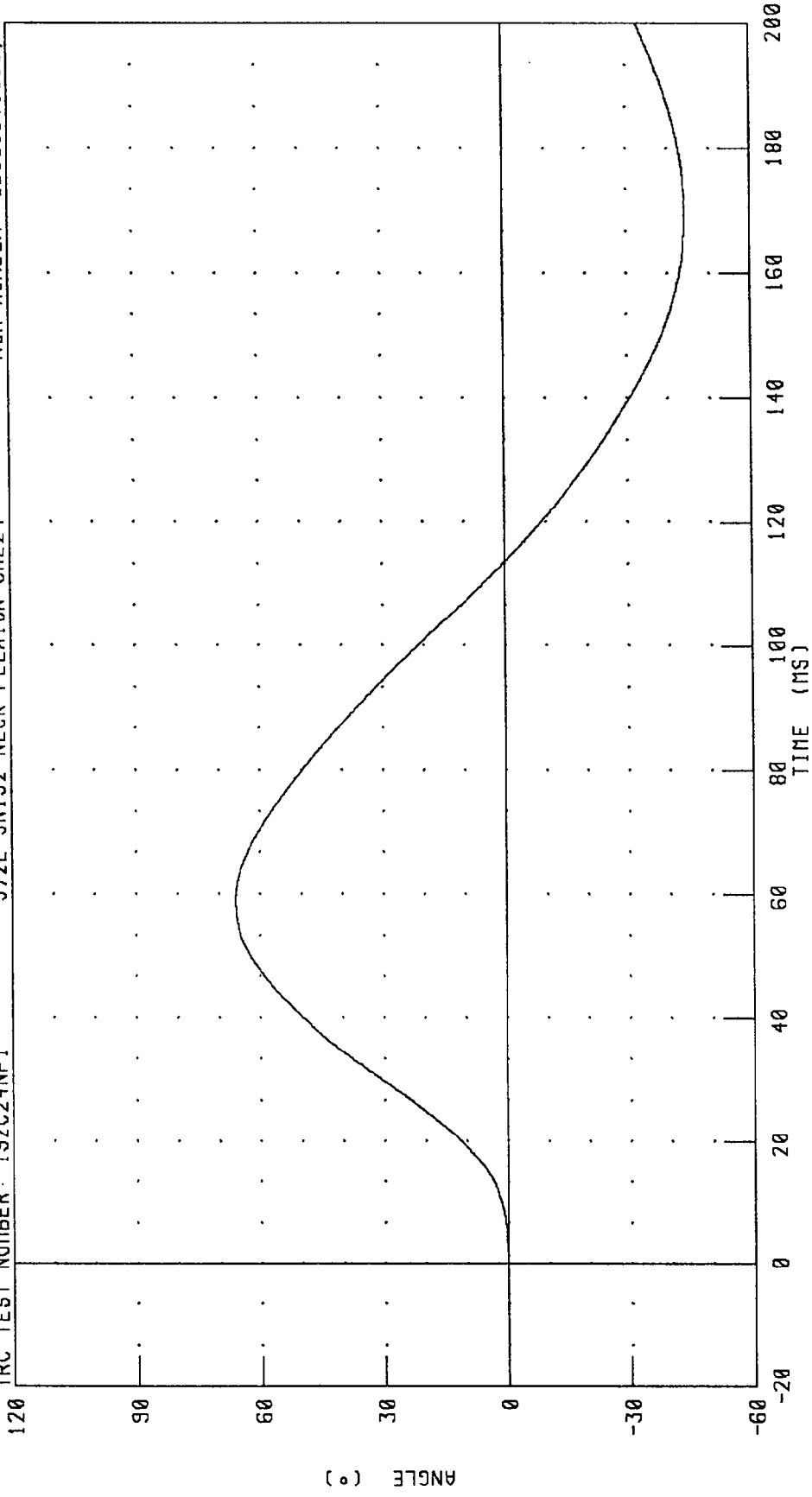


CHANNEL: THETA FILTER: CH. CLASS 60 PEAK DATA: 37.10 ° @ 58.88 MS; -27.27 ° @ 169.68 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

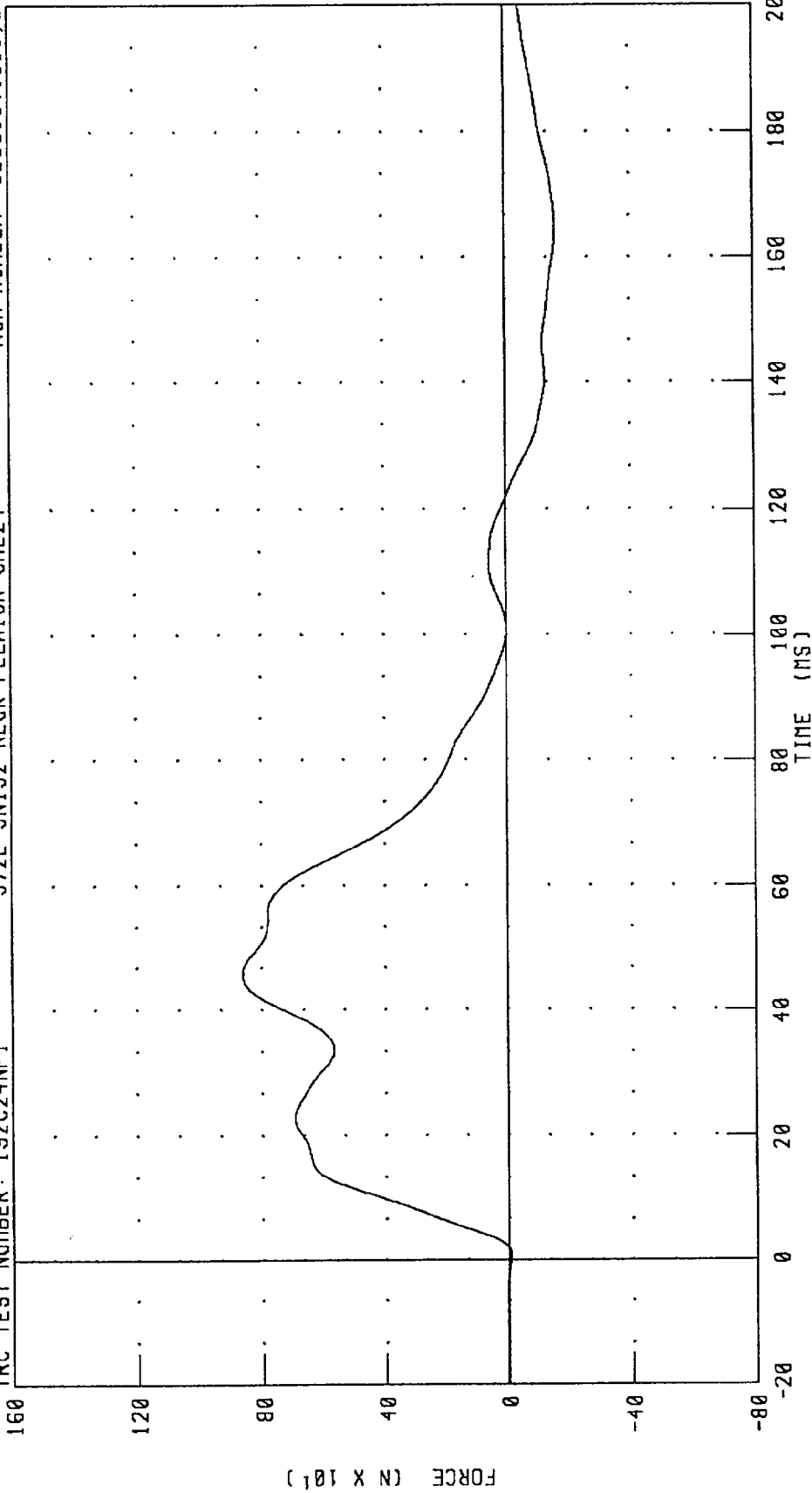
TRC TEST NUMBER: 192C24NF1 572E SN192 NECK FLEXION CAL24 RUN NUMBER: 020895.1515,5



CHANNEL: TOTAN FILTER: CH. CLASS 60 PEAK DATA: 66.00 ° @ 58.96 MS; -44.23 ° @ 169.68 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
NECK FORCE X AXIS

TRC TEST NUMBER: 192C24NF1 572E SN192 NECK FLEXION CAL24 RUN NUMBER: 020895.1515.5



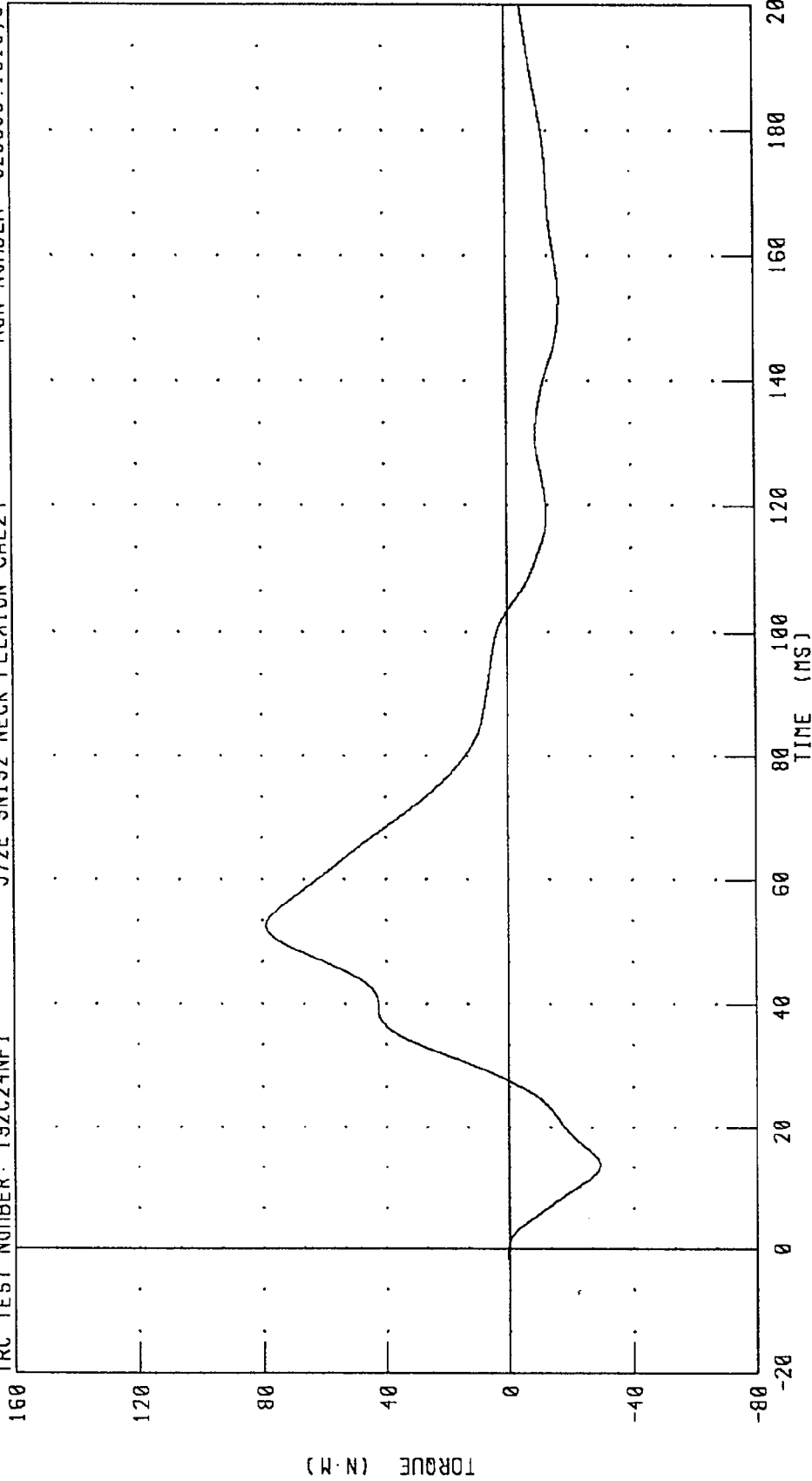
CHANNEL: NEKXF FILTER: CH. CLASS 60 PEAK DATA: 862.40 N @ 45.68 MS; -163.05 N @ 164.80 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
NECK MOMENT Y AXIS

TRC TEST NUMBER: 192C24NF1

572E SN192 NECK FLEXION CAL24

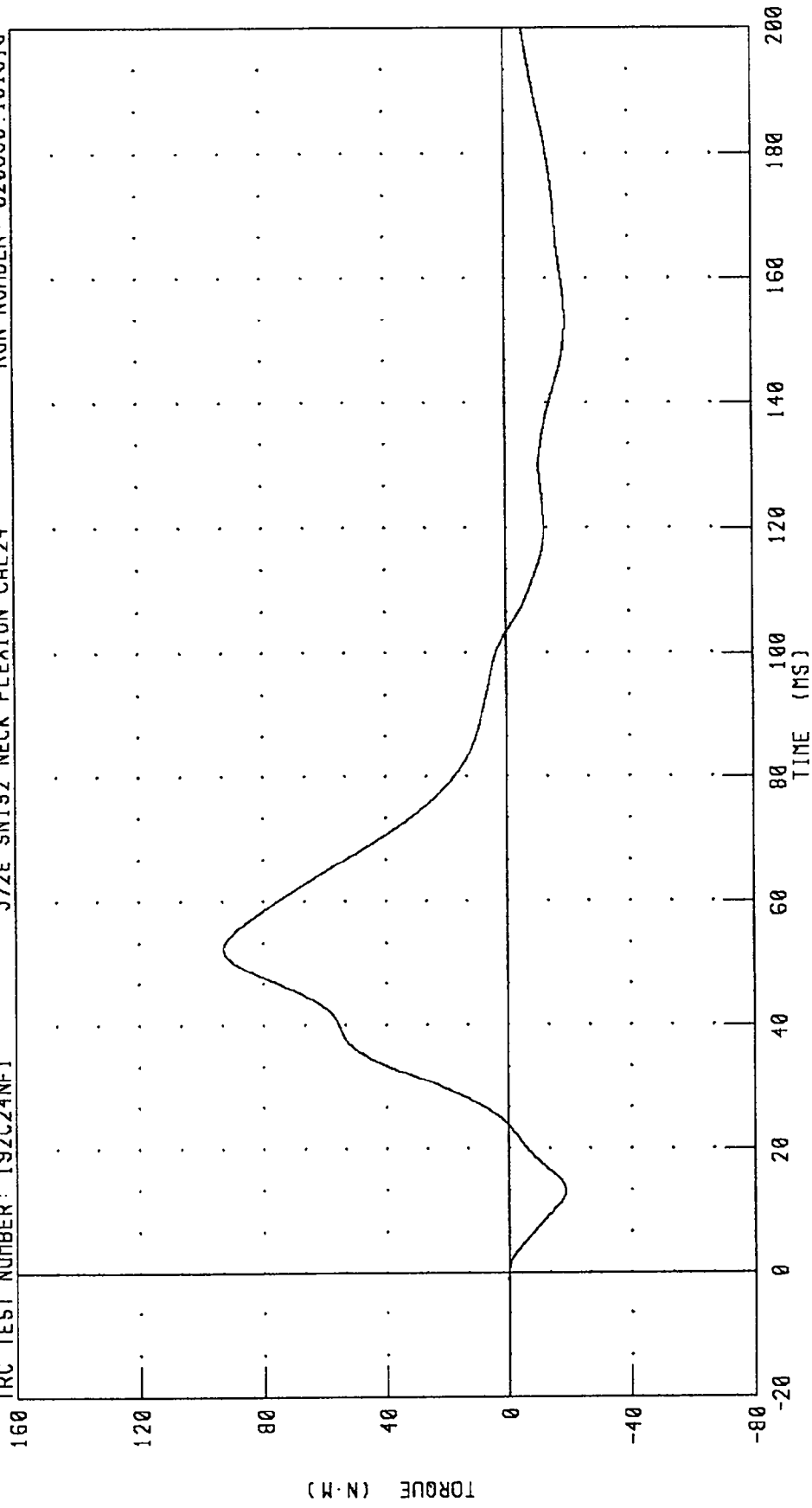
RUN NUMBER: 020895.1515;5



CHANNEL: NEKYM FILTER: CH. CLASS 60 PEAK DATA: 78.86 N.M @ 52.48 MS; -29.30 N.M @ 13.76 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 192C24NF1 572E SN192 NECK FLEXION CAL24 RUN NUMBER: 020895.1515.5



CHANNEL: NEKOM FILTER: CH. CLASS 60 PEAK DATA: 92.82 N·M @ 52.40 MS; -19.49 N·M @ 153.44 MS

TRANSPORTATION RESEARCH CENTER INC.

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

HYBRID III

26-DEC-94

TRC INC. TEST NO: 192C24NE1 572E SN192 NECK EXT. CAL24

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	33.0 %
IMPACT VELOCITY	5.95 - 6.19 M/S	6.02 M/S
PENDULUM DECELERATION	10 MS 17.20 - 21.20 G	18.31 G
	20 MS 14.00 - 19.00 G	15.40 G
	30 MS 11.00 - 16.00 G	13.01 G
MAX PENDULUM G	22 G MAX	18.81 G
MAX PENDULUM G ABOVE 30 MS	22 G MAX	12.99 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G	38 - 46 MS	42.64 MS
D PLANE	MAX 81 - 106 DEG.	92.51 DEG.
ROTATION	TIME 72 - 82 MS	75.44 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN -80.0/-52.9 NM	-56.14 NM
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO	65 - 79 MS	71.84 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO	147 - 174 MS	158.00 MS
	120 - 148 MS	139.44 MS

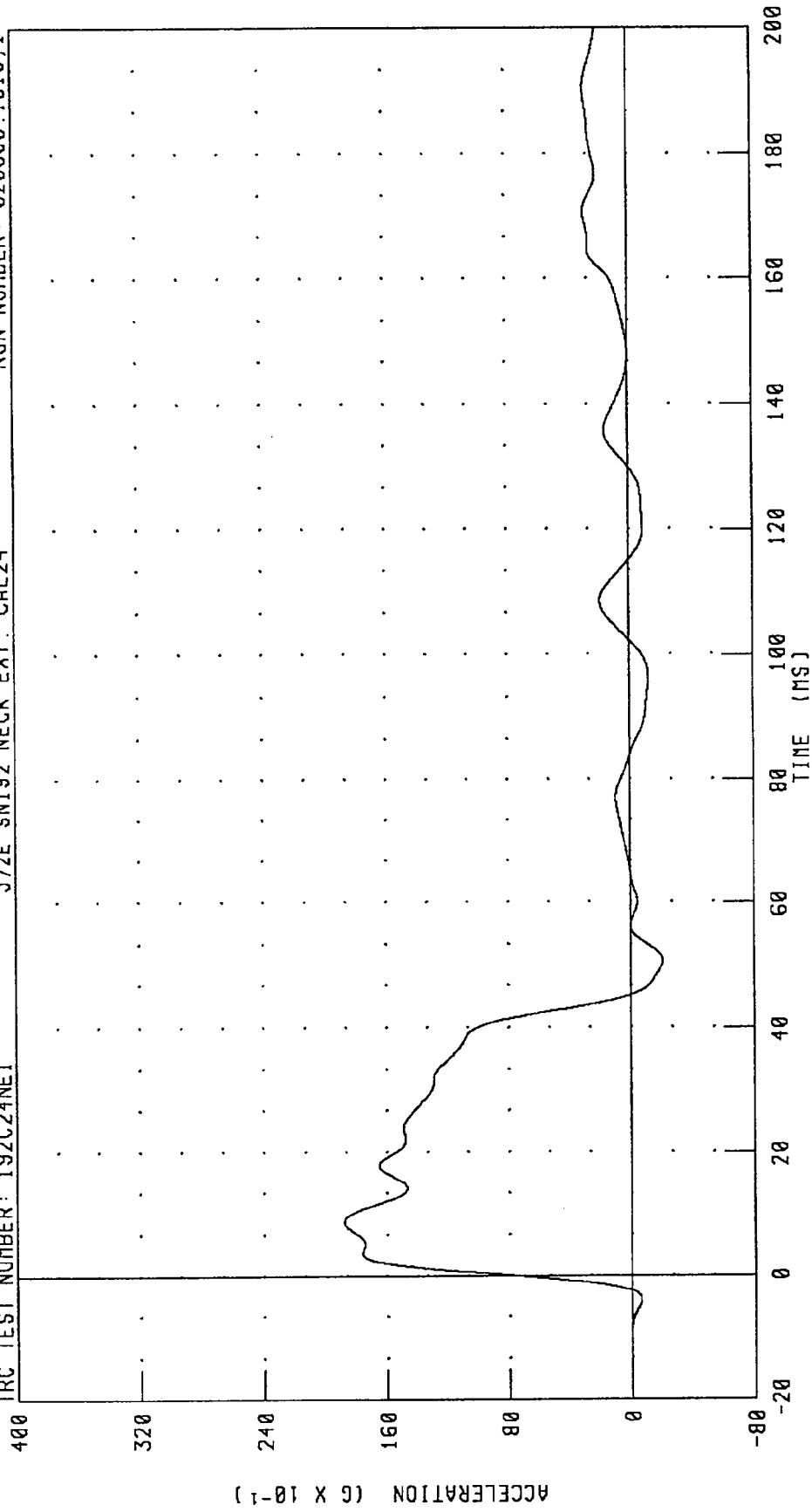
TEST MEETS SPECIFICATIONS

TECHNICIAN Pete Ford

RUN NUMBER: 122694.1323;1

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 192C24NE1 572E SN192 NECK EXT. CAL24 RUN NUMBER: 020895.1515.1



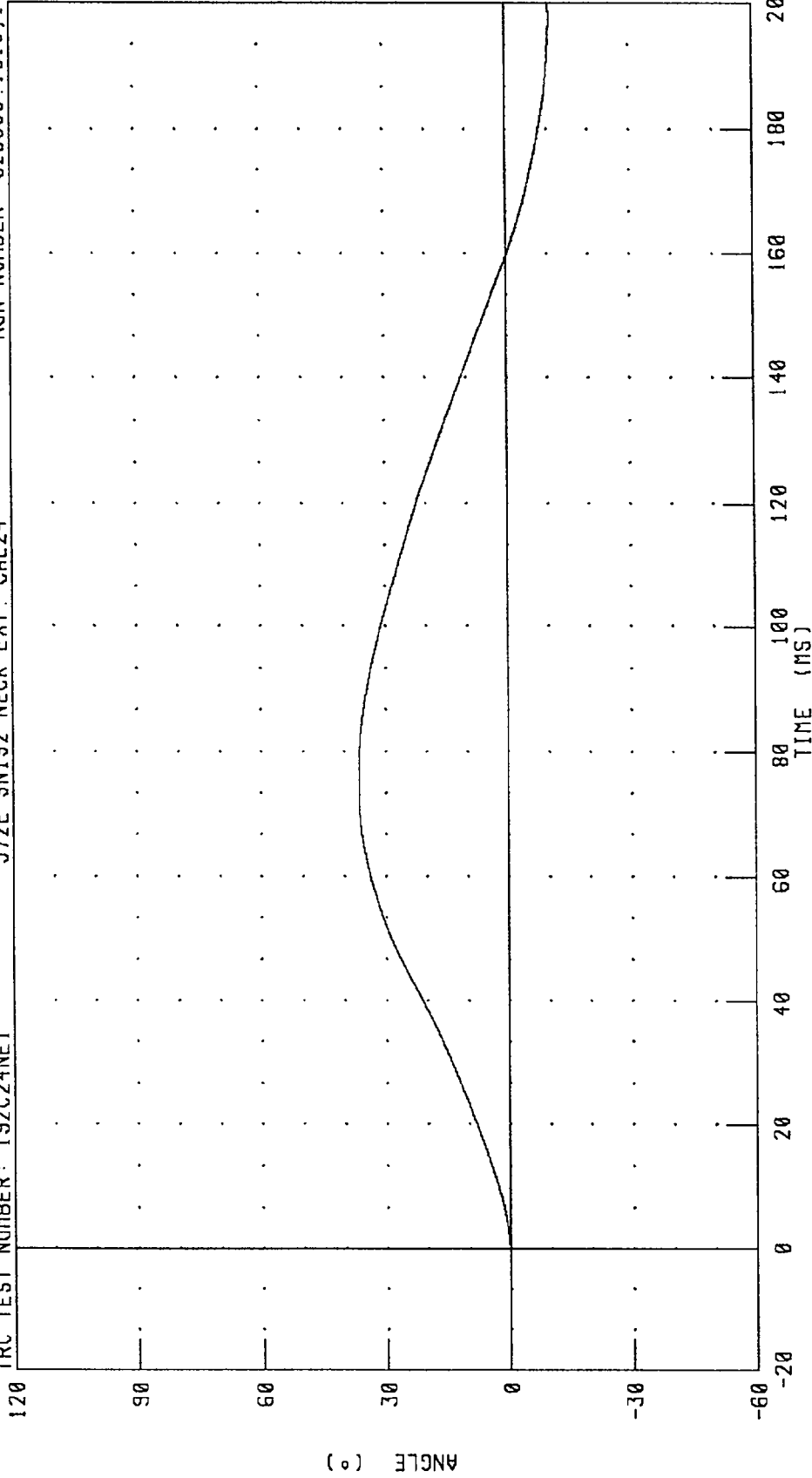
CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 18.82 G @ 8.72 MS; -2.08 G @ 50.64 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 192C24NE1

572E SN192 NECK EXT. CAL24

RUN NUMBER: 020895.1515;1



CHANNEL: BETA FILTER: CH. CLASS 60

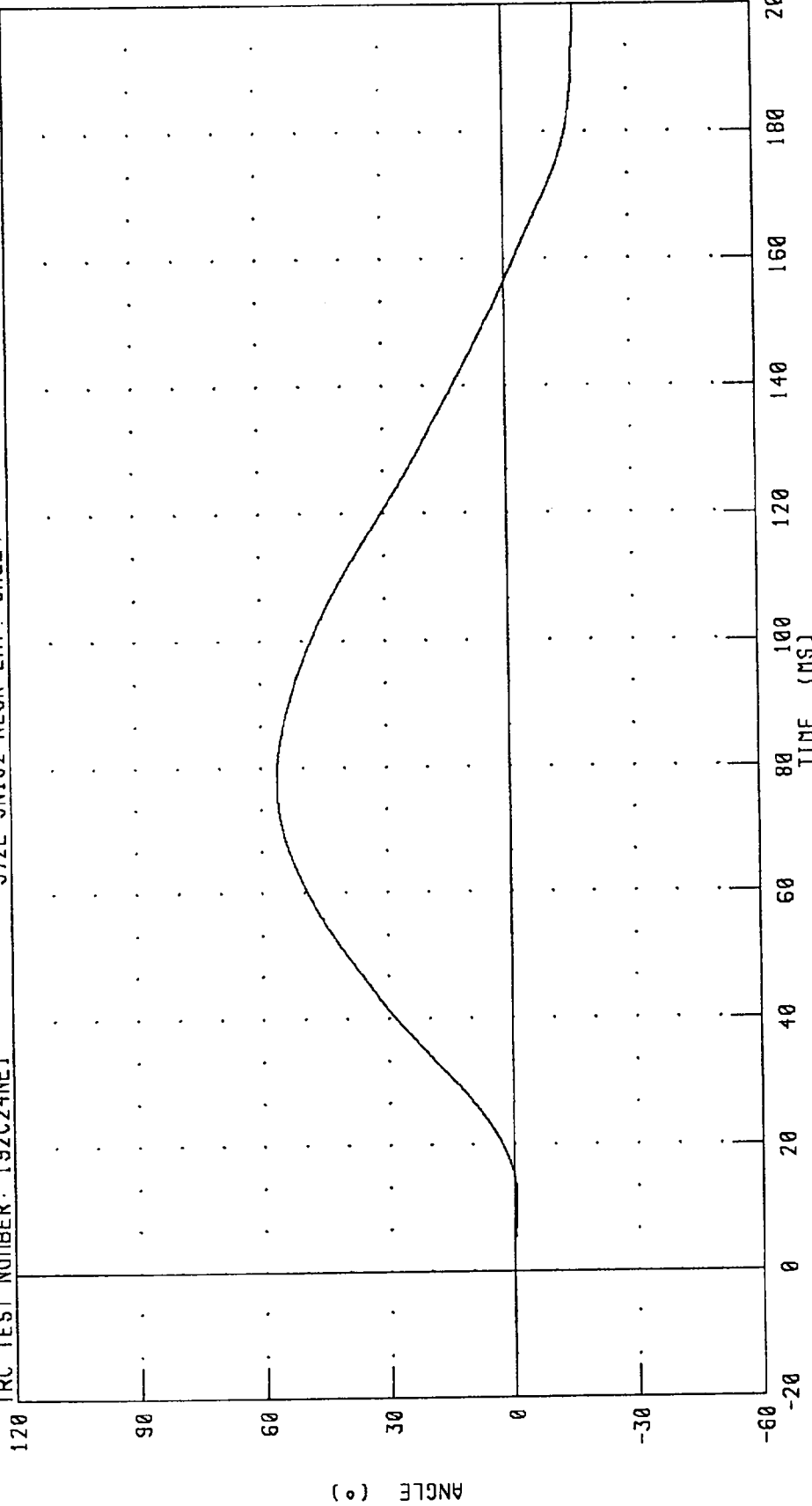
PEAK DATA: 36.44 ° @ 74.48 MS; -10.77 ° @ 197.36 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 020895.1515;1

572E SN192 NECK EXT. CAL24

TRC TEST NUMBER: 192C24NE1



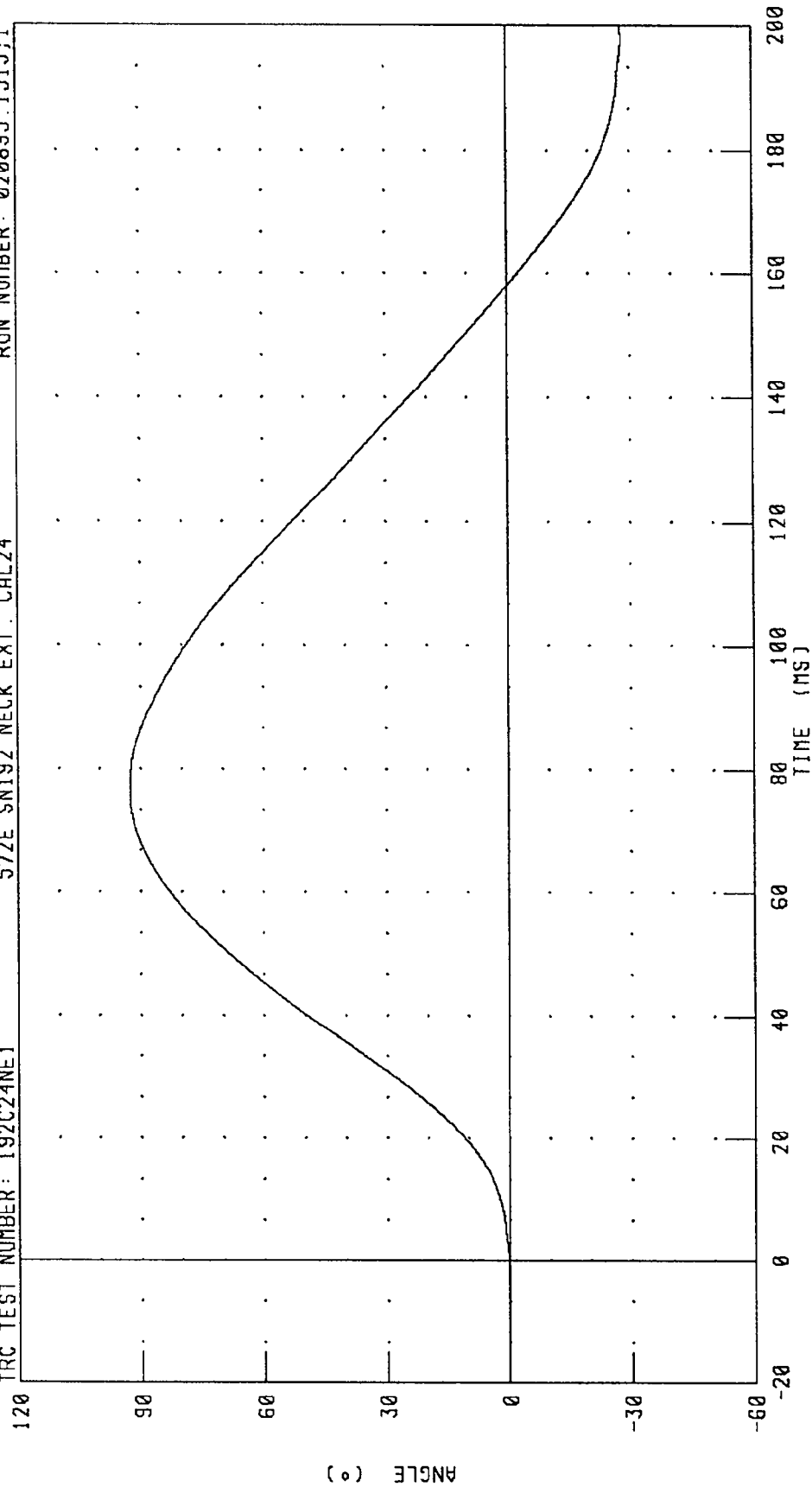
PEAK DATA: 56.11 ° @ 77.04 MS; -17.31 ° @ 197.76 MS

CHANNEL: THETA FILTER: CH. CLASS 60

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL ROTATION

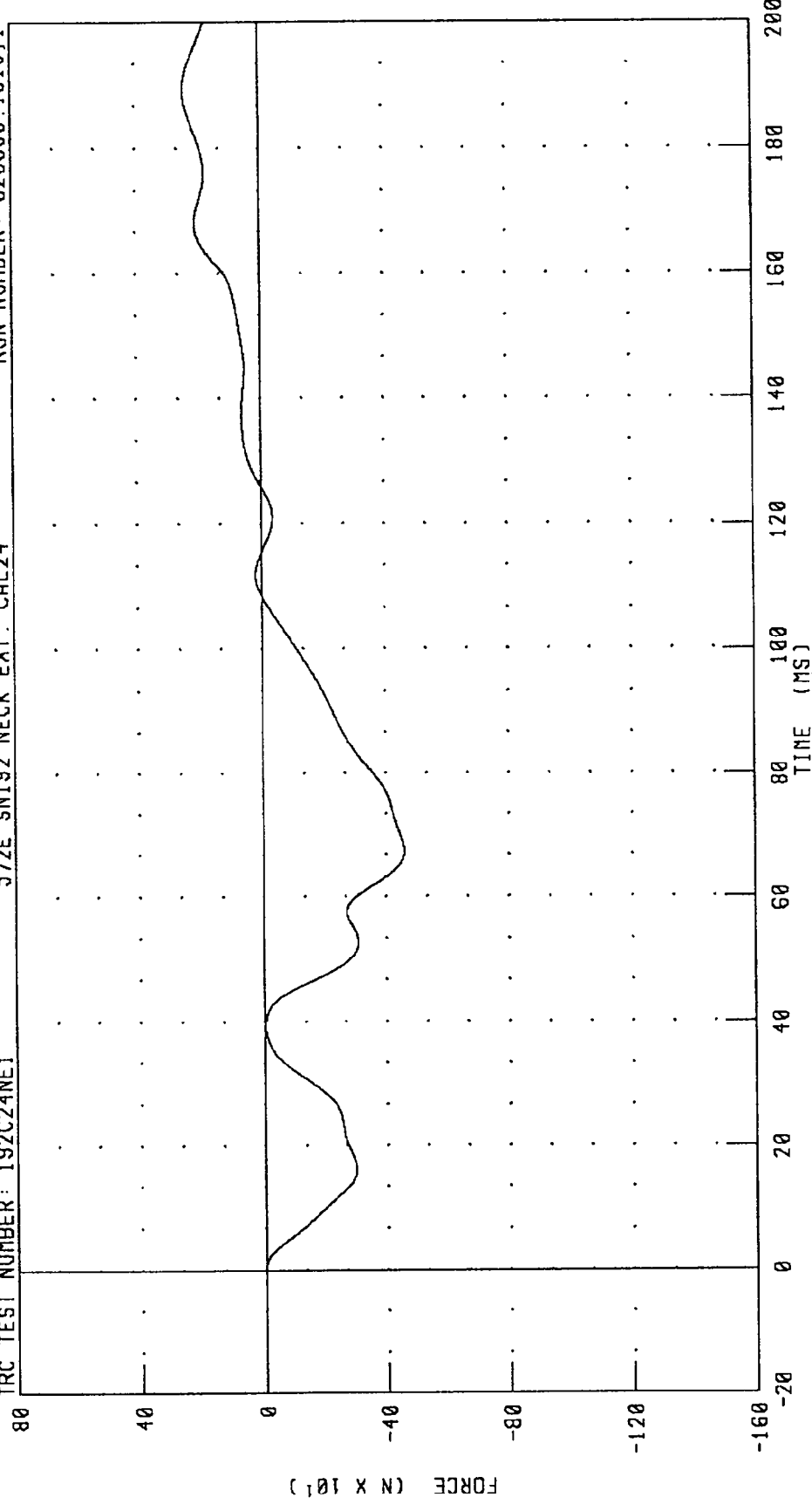
TRC TEST NUMBER: 192C24NE1 572E SN192 NECK EXT. CAL24 RUN NUMBER: 020895.1515;1



CHANNEL: TOTAN FILTER: CH. CLASS 60 PEAK DATA: 92.52 ° @ 75.44 MS; -28.08 ° @ 197.68 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
NECK FORCE X AXIS

TRC TEST NUMBER: 192C24NE1 572E SN192 NECK EXT. CAL24 RUN NUMBER: 020895.1515.1



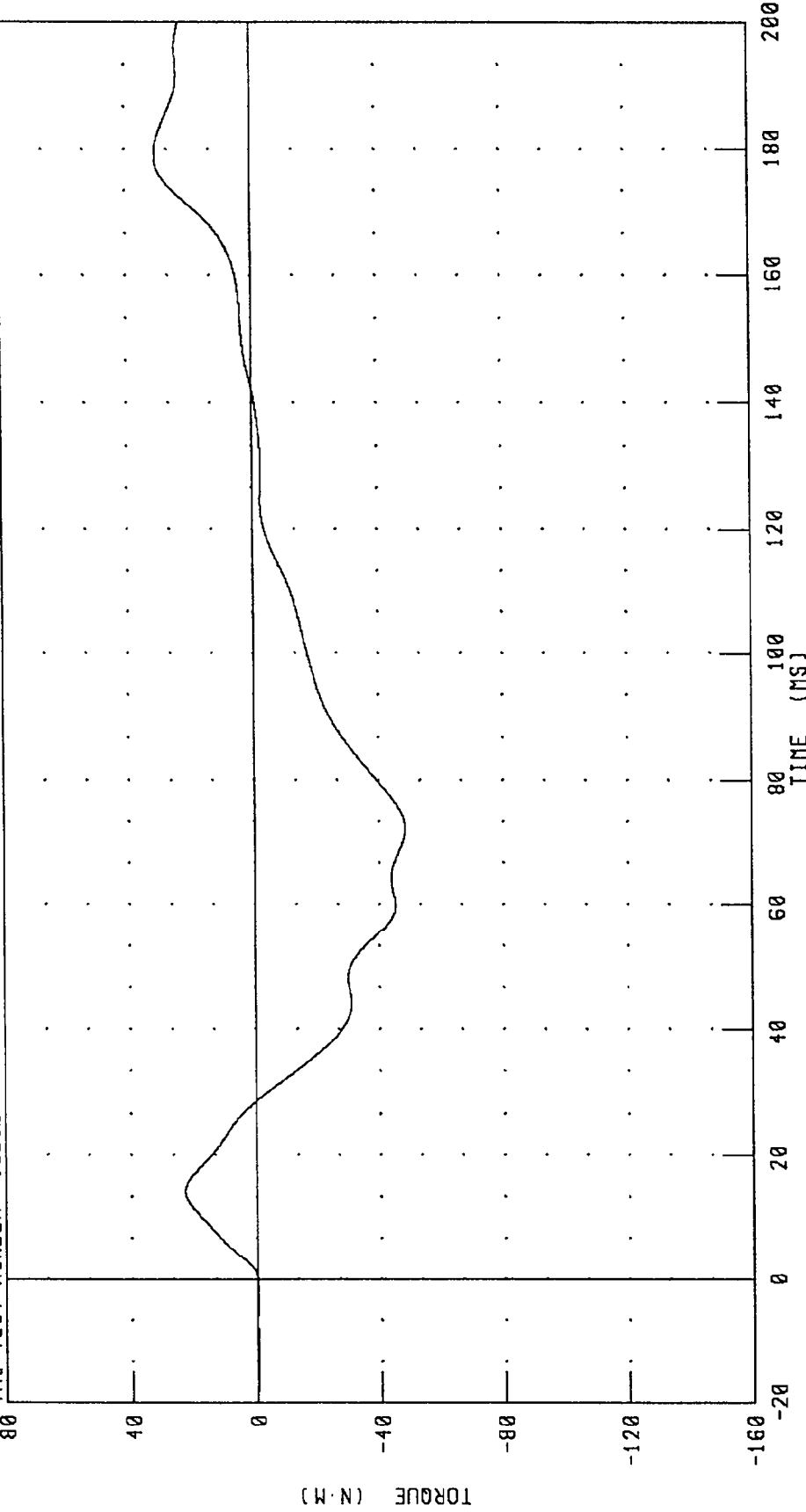
CHANNEL: NEKXF FILTER: CH. CLASS 60 PEAK DATA: 244.03 N @ 189.20 MS; -460.35 N @ 67.36 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
NECK MOMENT Y AXIS

TRC TEST NUMBER: 192C24NE1

572E SNI92 NECK EXT. CAL24

RUN NUMBER: 020895.1515.1



PEAK DATA: 30.61 N·M @ 179.04 MS; -48.45 N·M @ 72.24 MS

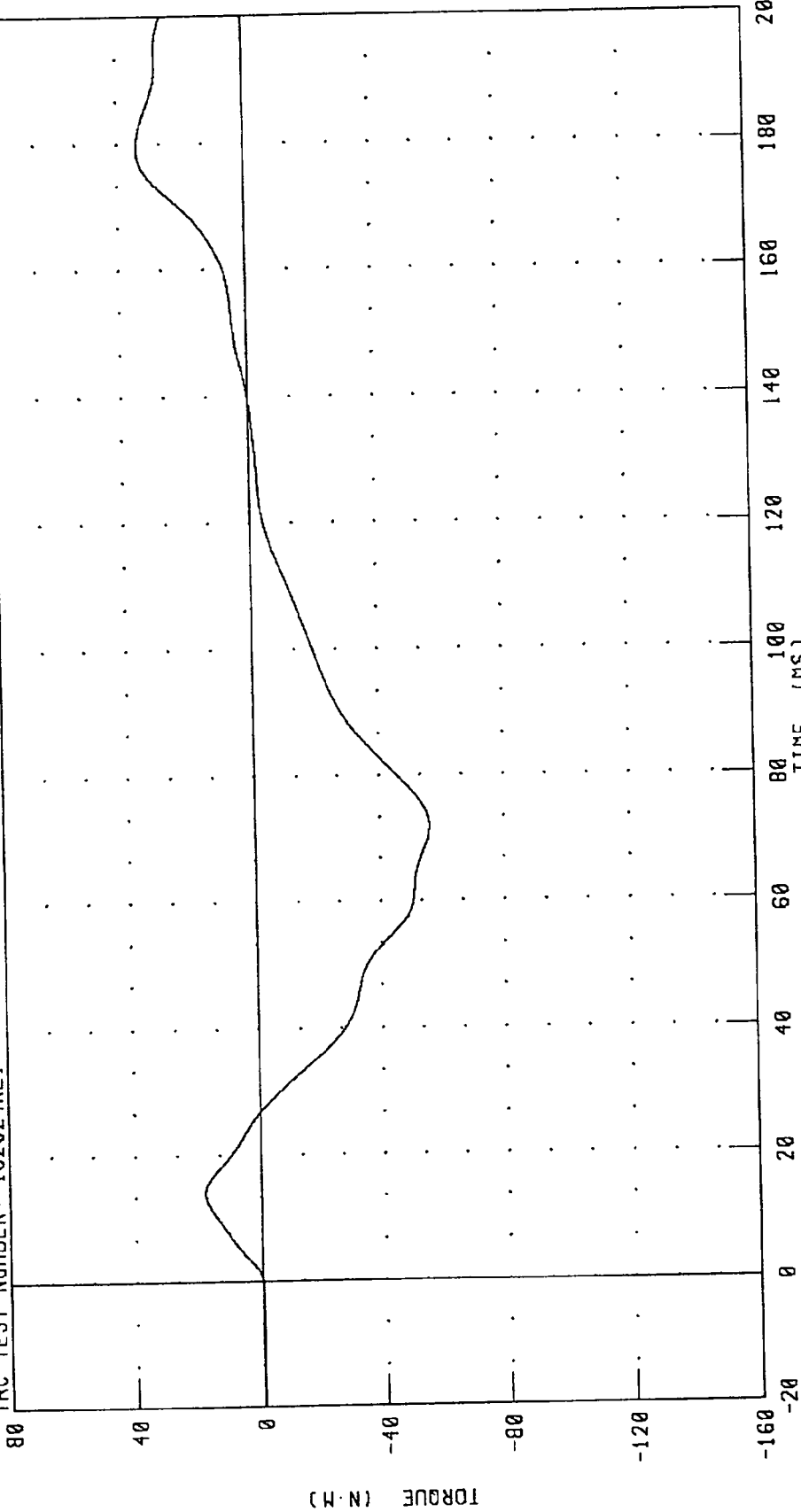
CHANNEL: NEKYM FILTER: CH. CLASS 60

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 192C24NE1

572E SN192 NECK EXT. CAL24

RUN NUMBER: 020895.1515;1



PEAK DATA: 33.95 N.M @ 179.44 MS; -56.14 N.M @ 71.84 MS

CHANNEL: NEKOM FILTER: CH. CLASS 60

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III

26-DEC-94

TRC INC.

TEST NO: 192C24TH1

572E SN192 H.S.THORAX CAL24

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	33.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.68 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	64.7 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5639. N
INTERNAL HYSTERESIS	69% - 85%	72.3%

TEST MEETS SPECIFICATIONS

TECHNICIAN

Peter F. A.

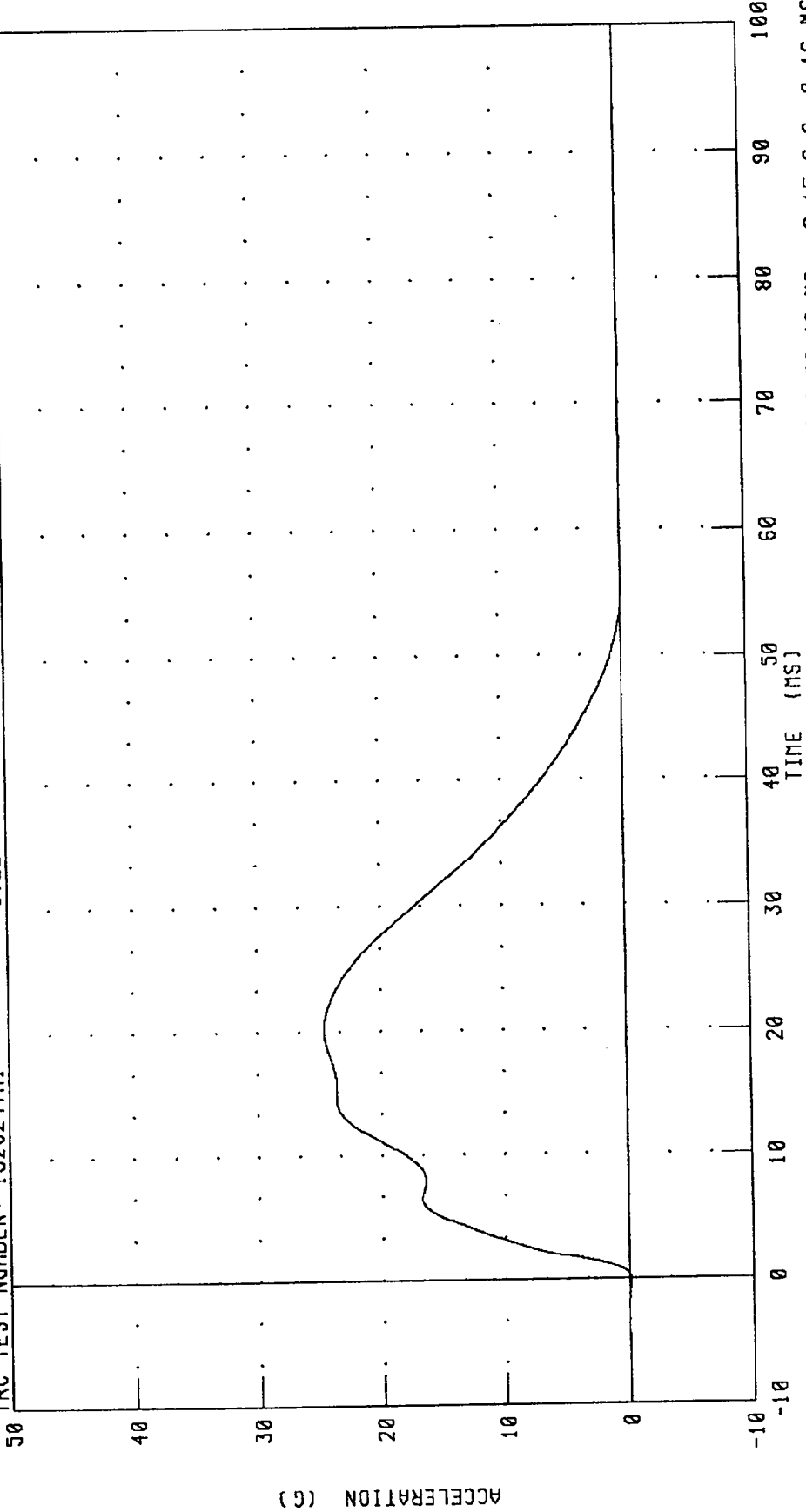
RUN NUMBER: 122694.1416;1

PART 572-E HYBRID III THORAX CALIBRATION
PENDULUM DECELERATION

RUN NUMBER: 020895.1515;1

572E SN192 H.S. THORAX CAL24

TRC TEST NUMBER: 192C24TH1



PEAK DATA: 24.62 G @ 20.16 MS; -0.15 G @ -0.16 MS

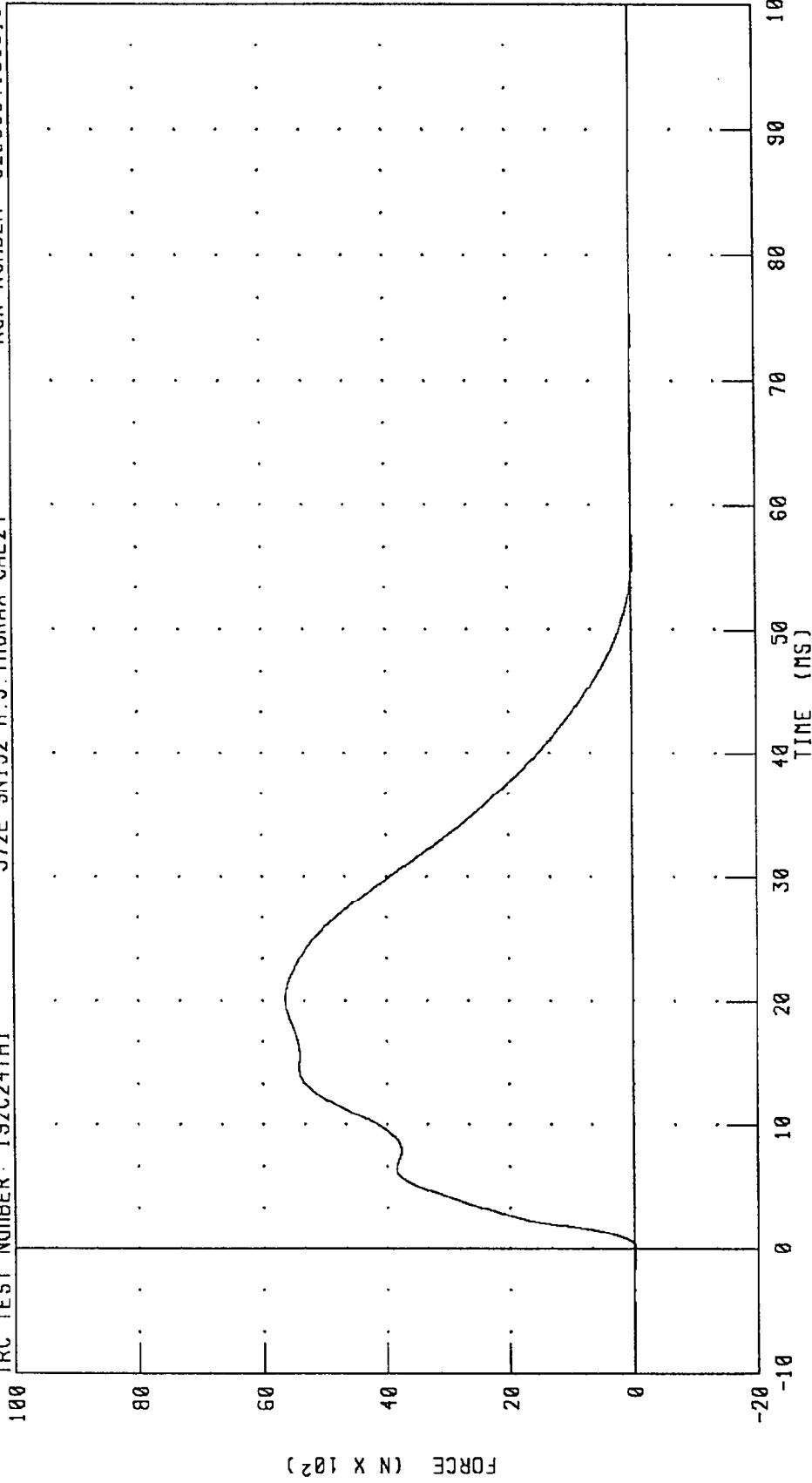
CHANNEL: PENXG FILTER: CH. CLASS 180

PART 572-E HYBRID III THORAX CALIBRATION
PENDULUM FORCE

TRC TEST NUMBER: 192C24TH1

572E SN192 H.S. THORAX CAL24

RUN NUMBER: 020895.1515,1



CHANNEL: PENXF FILTER: CH. CLASS 100

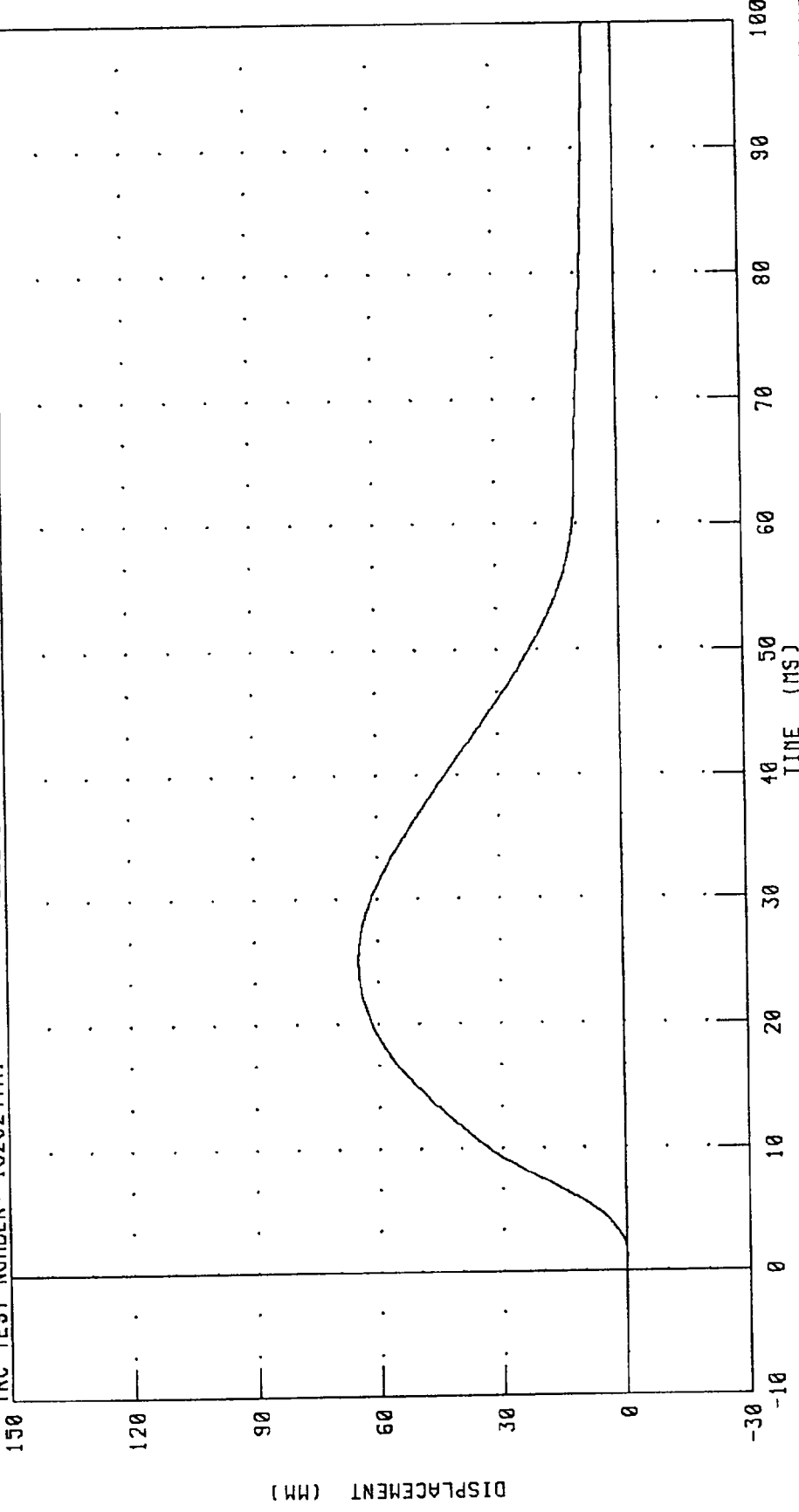
PEAK DATA: 5639.67 N @ 20.16 MS; -33.79 N @ -0.16 MS

PART 572-E HYBRID III THORAX CALIBRATION
STERNUM DISPLACEMENT

TRC TEST NUMBER: 192C24TH1

572E SN192 H.S.THORAX CAL24

RUN NUMBER: 020895.1515;1



CHANNEL: CSTXD FILTER: CH. CLASS 180

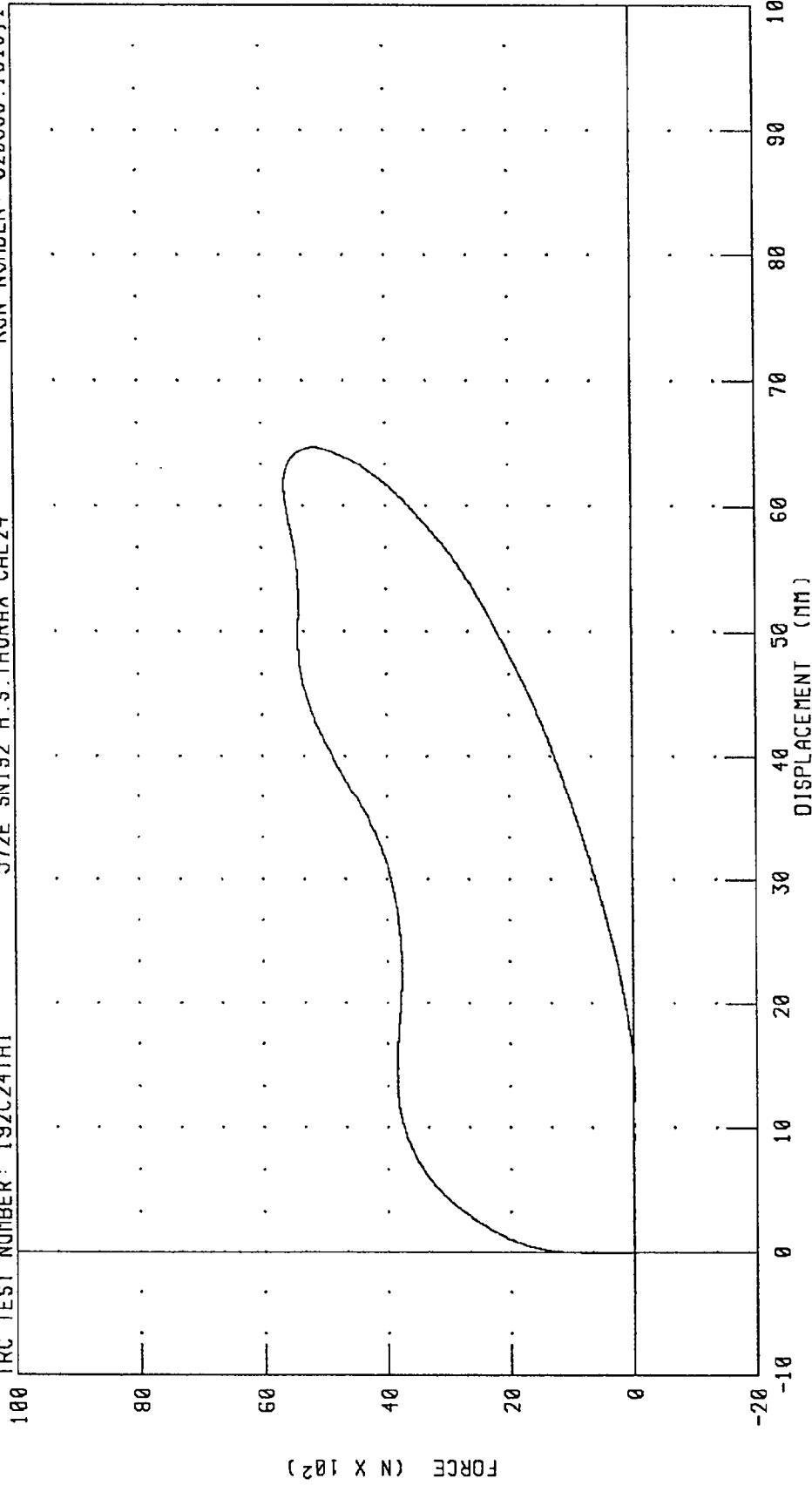
PEAK DATA: 64.77 MM @ 25.04 MS; -0.06 MM @ 1.20 MS

PART 572-E HYBRID III THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 192C24TH1

572E SN192 H.S. THORAX CAL24

RUN NUMBER: 020895.1515;1



CHANNEL: CSTXD FILTER: CH. CLASS 180
PENXF CH. CLASS 180
DISPLACEMENT (MM) PEAK DATA: 64.77 MM @ 25.04 MS; -0.06 MM @ 1.20 MS
5639.67 N @ 20.16 MS; -33.79 N @ -0.16 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III

26-DEC-94

TRC INC.

TEST NO: 192C24RK1

572E SN192 RIGHT KNEE CAL 24

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	33.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.12 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4714 - 5783 N	5373.4 N

TEST MEETS SPECIFICATIONS

TECHNICIAN

Pete Fox

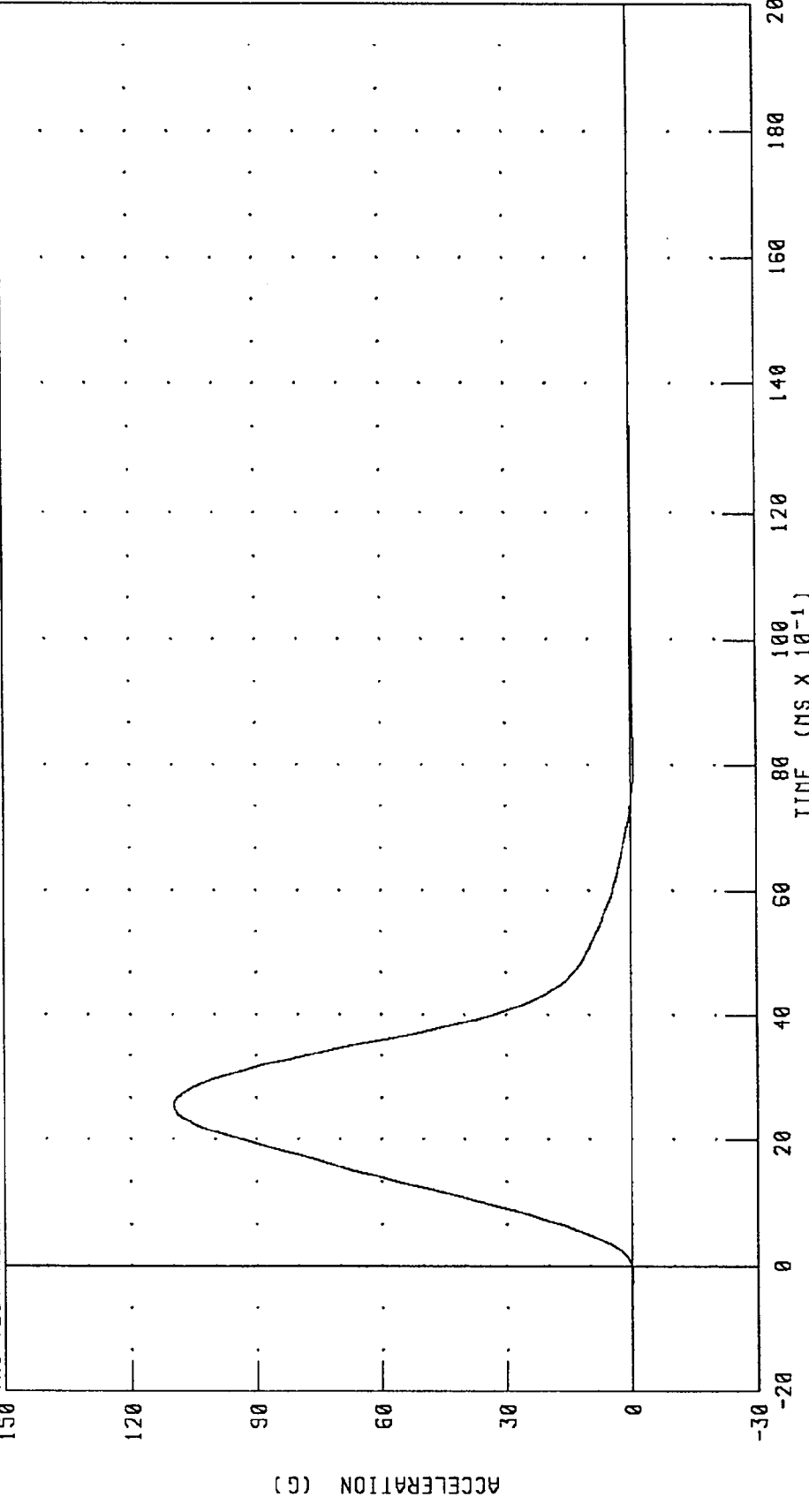
RUN NUMBER: 122694.1038;1

PART 572-E HYBRID III RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 192C24RK1

572E SN192 RIGHT KNEE CAL 24

RUN NUMBER: 020895.1515.1



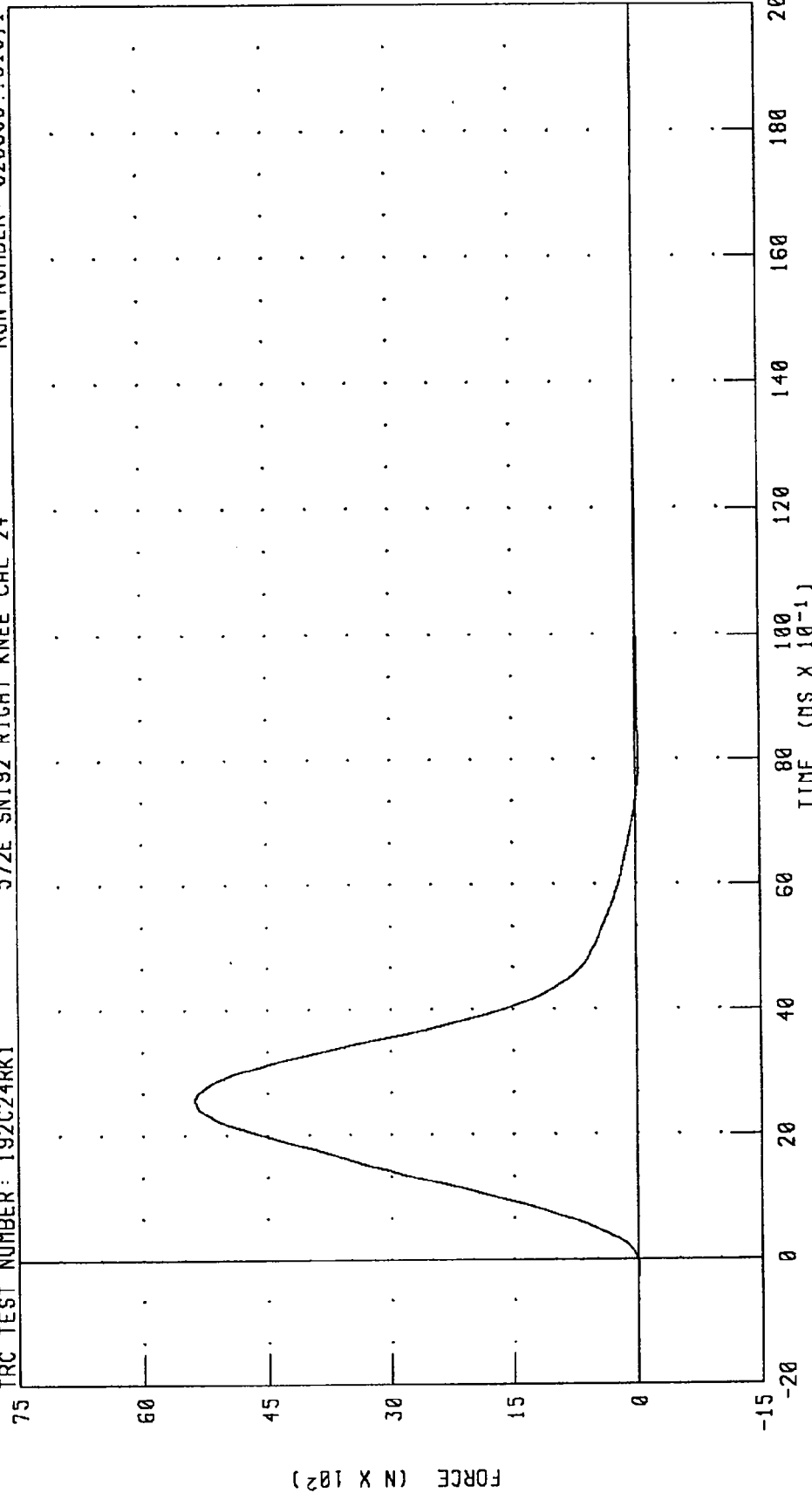
CHANNEL: PENXG FILTER: CH. CLASS 600 PEAK DATA: 109.82 G @ 2.56 MS; -0.71 G @ 8.00 MS

PART 572-E HYBRID III RIGHT KNEE CALIBRATION
PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 192C24RK1

572E SN192 RIGHT KNEE CAL 24

RUN NUMBER: 020895.1515.1



PEAK DATA: 5373.47 N @ 2.56 MS; -34.60 N @ 8.00 MS

CHANNEL: PENXF FILTER: CH. CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III

26-DEC-94

TRC INC.

TEST NO: 192C24LK1

572E SN192 LEFT KNEE CAL 24

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	33.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.11 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4714 - 5783 N	5124.3 N

TEST MEETS SPECIFICATIONS

TECHNICIAN Peter Ford

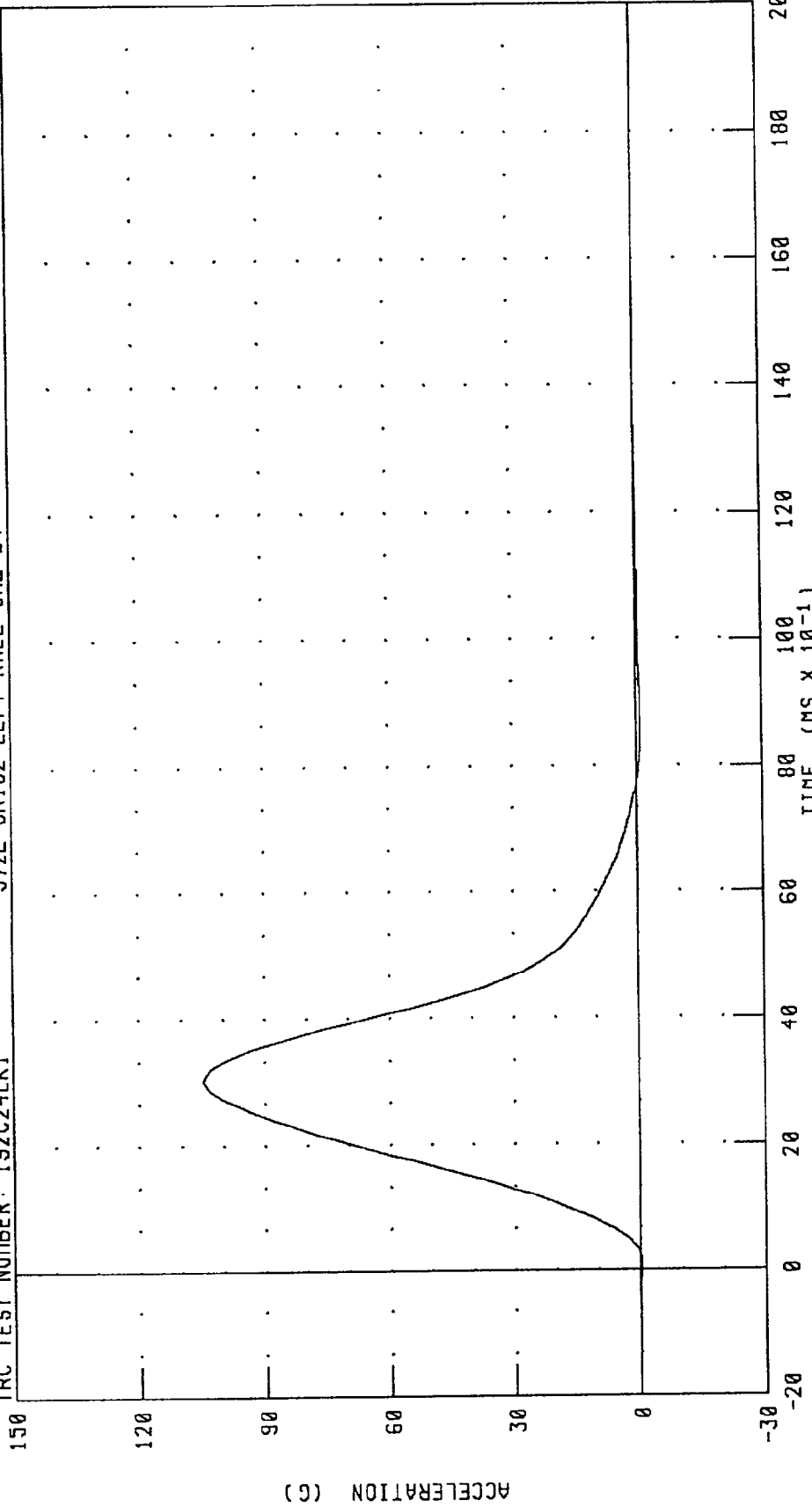
RUN NUMBER: 122694.0928;1

PART 572-E HYBRID III LEFT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 192C24LK1

572E SN192 LEFT KNEE CAL 24

RUN NUMBER: 020895.1515;1



PEAK DATA: 104.73 G @ 3.04 MS; -1.03 G @ 8.72 MS

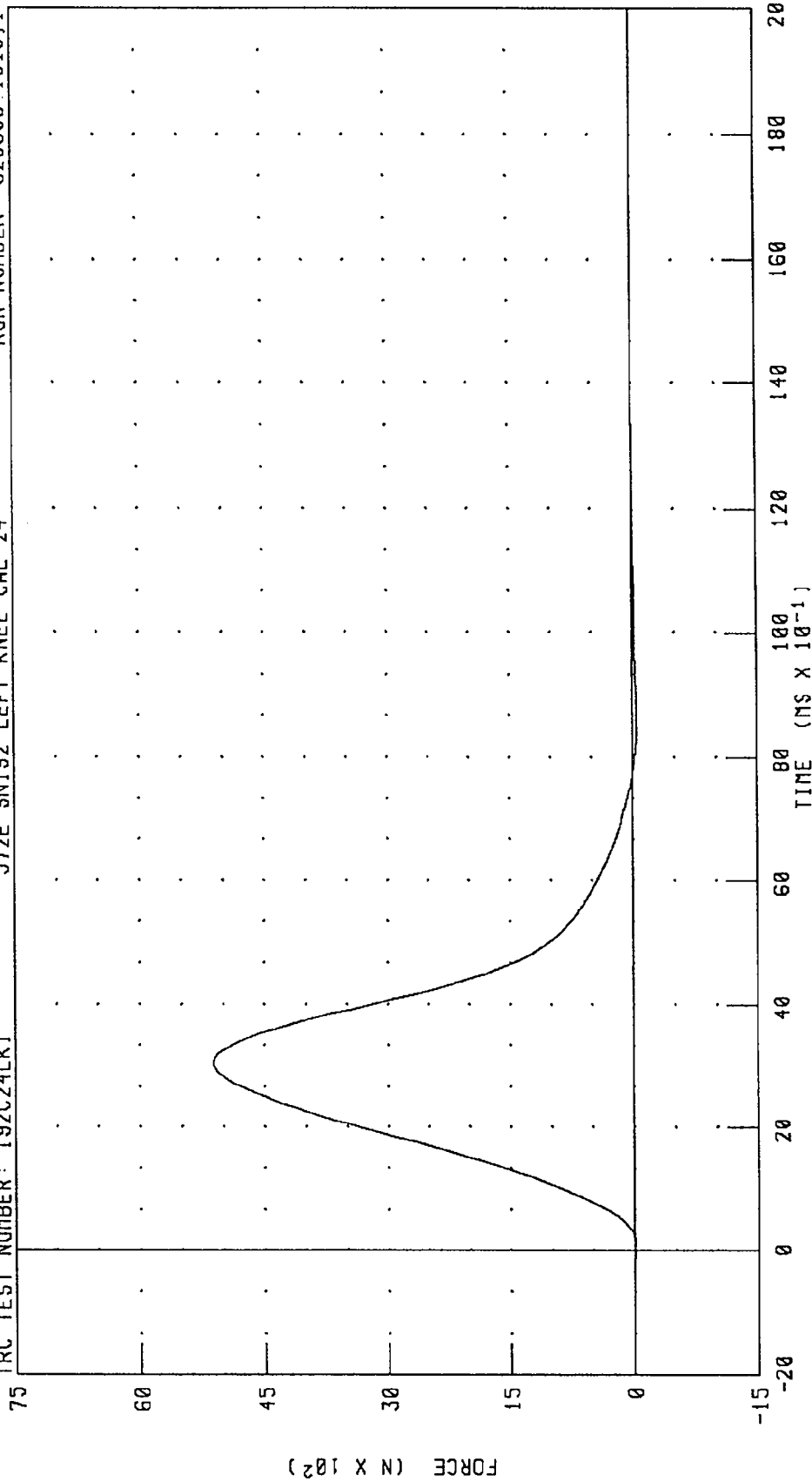
CHANNEL: PENXG FILTER: CH. CLASS 600

PART 572-E HYBRID III LEFT KNEE CALIBRATION
 PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 192C24LK1

572E SN192 LEFT KNEE CAL_24

RUN NUMBER: 020895.1515;1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 5124.36 N @ 3.04 MS; -50.41 N @ 8.72 MS

Pre-test Certification Data

Passenger Dummy S/N: 713

TRANSPORTATION RESEARCH CENTER INC.
 PART 572B EXTERNAL DIMENSIONS
 SN 713 HUMANOID

02-JAN-95

TRC INC. TEST NO: ED71310 572B SN713 EXT.DIMENSION CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	33 %
SITTING HEIGHT	904 - 909 MM	904. MM
SHOULDER PIVOT HEIGHT	553 - 569 MM	561. MM
HIP PIVOT HEIGHT	99 MM	REFERENCE
HIP PIVOT FROM BACKLINE	122 MM	REFERENCE
KNEE PIVOT FROM BACKLINE	511 - 526 MM	521. MM
REAR OF HEAD FROM BACKLINE	43 MM	REFERENCE
CHEST DEPTH	231 - 241 MM	239. MM
SHOULDER WIDTH	452 - 467 MM	455. MM
CHEST CIRCUMFERENCE OVER NIPPLES	935 - 965 MM	958. MM
WAIST CIRCUMFERENCE AT MIN. GIRTH	798 - 828 MM	818. MM
HIP WIDTH	356 - 391 MM	378. MM
KNEE PIVOT FROM FLOOR	490 - 506 MM	498. MM

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete F.S.

RUN NUMBER: 010395.0916

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

PART 572B

02-JAN-95

TRC INC.

TEST NO: HD71310

572B SN713 HEAD DROP CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	33 %
PEAK RESULTANT ACCELERATION	210 - 260 G	254.84 G
TIME ABOVE 100 G LEVEL	0.9 - 1.5 MS	1.25 MS
PEAK LATERAL ACCELERATION	10 G MAX	-2.37 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete Fout

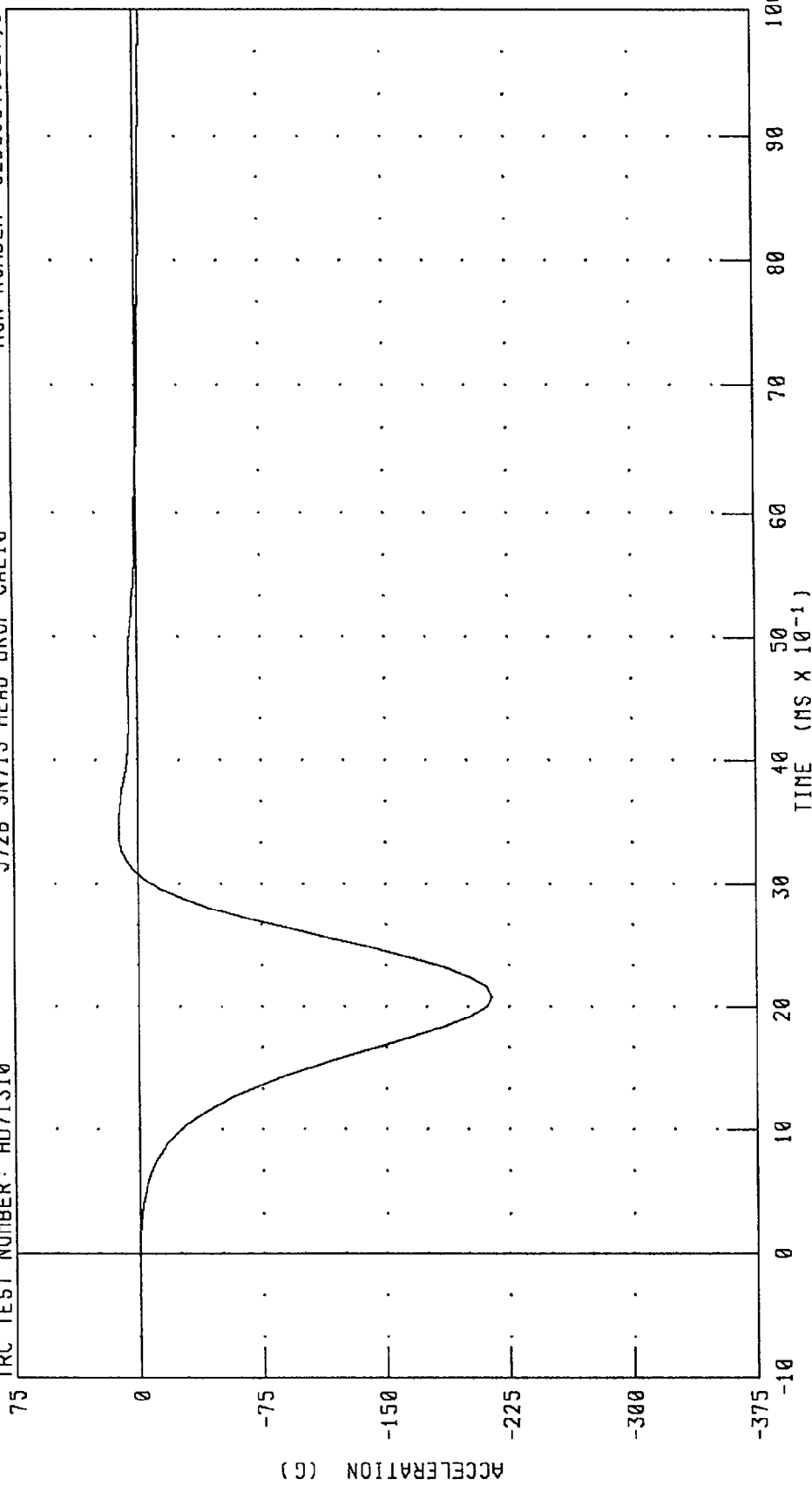
RUN NUMBER: 010295.1307;1

PART 572-B HYBRID II HEAD DROP CALIBRATION
HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HD71310

572B SN713 HEAD DROP CALI0

RUN NUMBER: 020895.1527;1

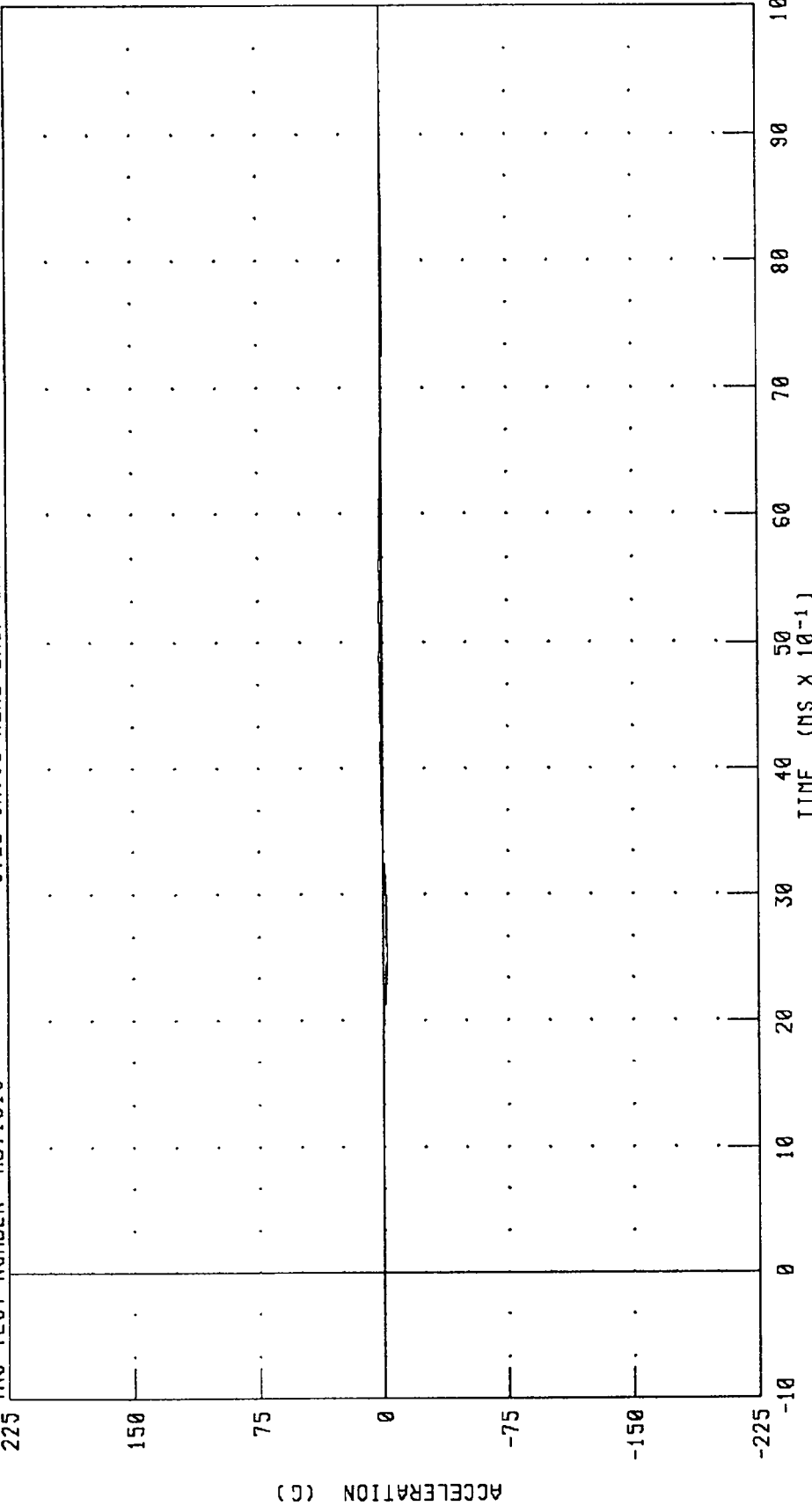


CHANNEL: HEDXG FILTER: CH. CLASS 1000

PEAK DATA: 11.34 G @ 3.44 MS; -214.99 G @ 2.08 MS

PART 572-B HYBRID II HEAD DROP CALIBRATION
 HEAD ACCELERATION Y AXIS

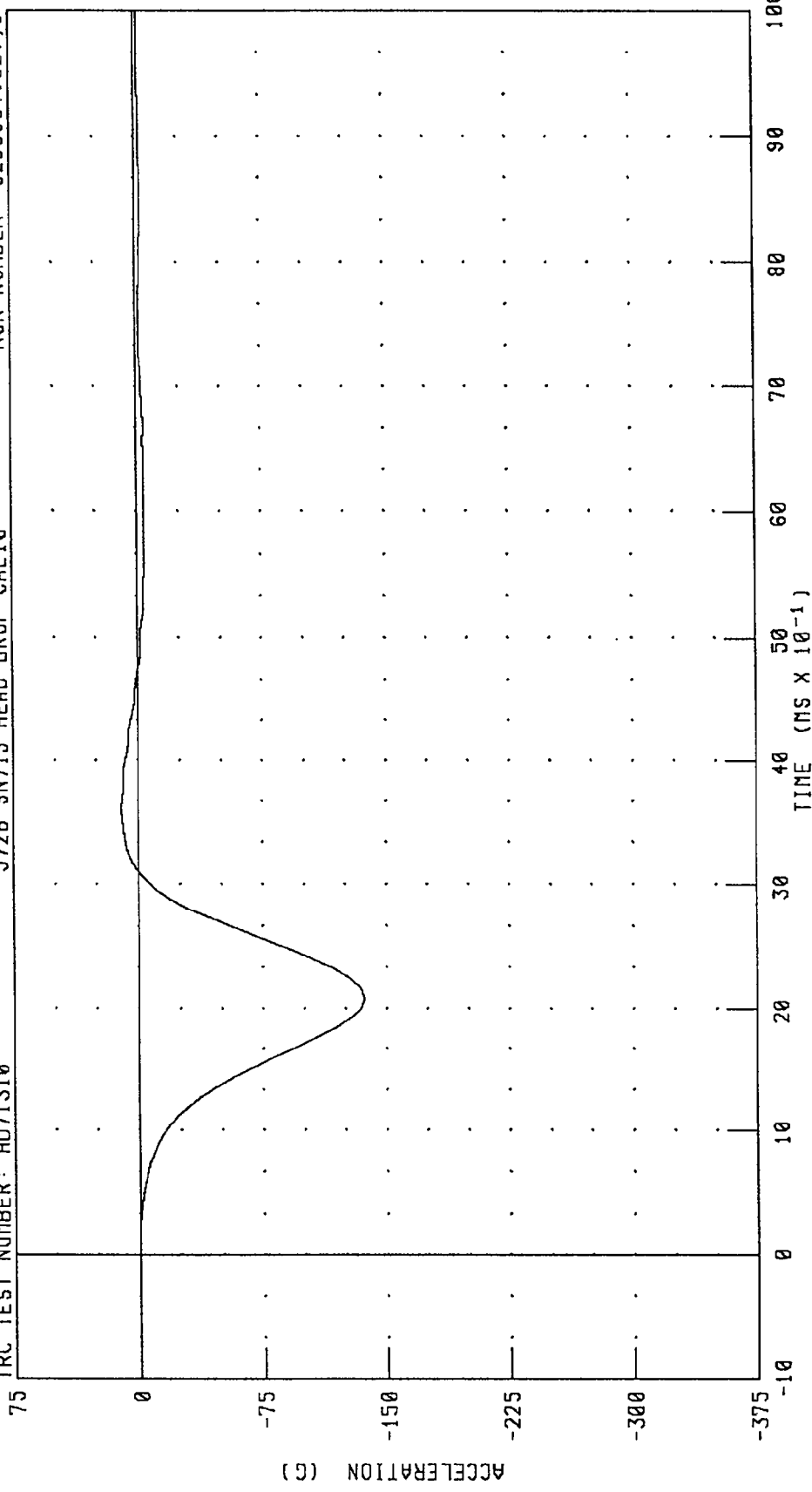
TRC TEST NUMBER: HD71310 572B SN713 HEAD DROP CAL10 RUN NUMBER: 020895.1527.1



CHANNEL: HEDYG FILTER: CH. CLASS 1000 PEAK DATA: 1.74 G @ 5.20 MS; -2.37 G @ 2.56 MS

PART 572-B HYBRID II HEAD DROP CALIBRATION
HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HD71310 572B SN713 HEAD DROP CAL10 RUN NUMBER: 020895.1527;1



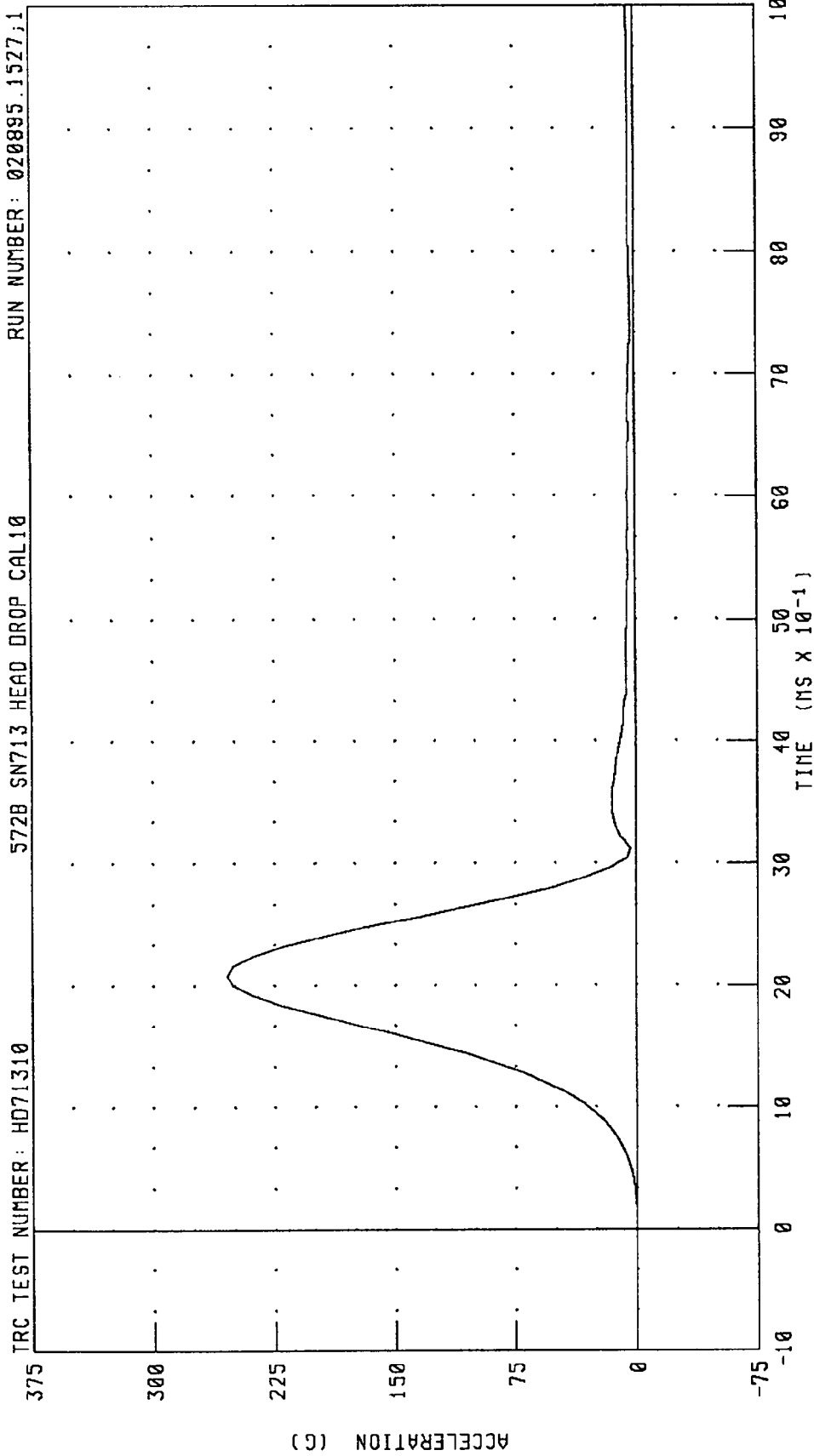
CHANNEL: HEDZG FILTER: CH. CLASS 1000 PEAK DATA: 9.99 G @ 3.60 MS; -136.83 G @ 2.08 MS

PART 572-B HYBRID II HEAD DROP CALIBRATION
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HD71310

572B SN713 HEAD DROP CAL10

RUN NUMBER: 020895.1527;1



CHANNEL: HEDRG FILTER: CH. CLASS 1000 PEAK DATA: 254.84 G @ 2.08 MS; 0.03 G @ 0.00 MS

TRANSPORTATION RESEARCH CENTER INC.
NECK PENDULUM TEST
PART 572B

02-JAN-95

TRC INC. TEST NO: HN71310 572B SN713 HEAD/NECK CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	33 %
PENDULUM VELOCITY	6.55 - 7.77 M/S	7.23 M/S
PENDULUM DECELERATION:		
T1 - T2 TIME (5 - 20 G)	3 MS MAX	1.85 MS
T2 - T3 TIME (20 - 20 G)	25 - 30 MS	28.10 MS
T3 - T4 TIME (20 - 5 G)	10 MS MAX	4.25 MS
AVG. G LEVEL T2 - T3	20 - 24 G	23.61 G
MAXIMUM ROTATION ANGLE	63 - 73 DEG.	66.66 DEG.
PEAK HEAD RESULTANT ACCEL	26 G MAX	22.88 G
PENDULUM REVERSAL TIME AFTER NECK RETURN TIME	> 0 MS	15.00 MS

TEST PARAMETER	SPECIFICATION		TEST RESULTS	
ROTATION ANGLE (DEGREES)	TIME (MS)	CHORDAL DISP. (MM)	TIME (MS)	CHORDAL DISP. (MM)
0	-2.0 - +2.0	-12.7 - +12.7	1.20	0.27
30	25.6 - 34.4	53.3 - 78.7	30.42	63.28
60	40.3 - 51.7	109.2 - 134.6	47.14	122.74
MAX	53.2 - 66.8	127.0 - 152.4	61.76	136.94
60	67.0 - 83.0	109.2 - 134.6	73.56	122.47
30	85.4 - 104.6	53.3 - 78.7	93.87	57.41
0	101.0 - 123.0	-12.7 - +12.7	107.99	2.21

DUMMY MEETS SPECIFICATIONS

SND: 151.13 MM

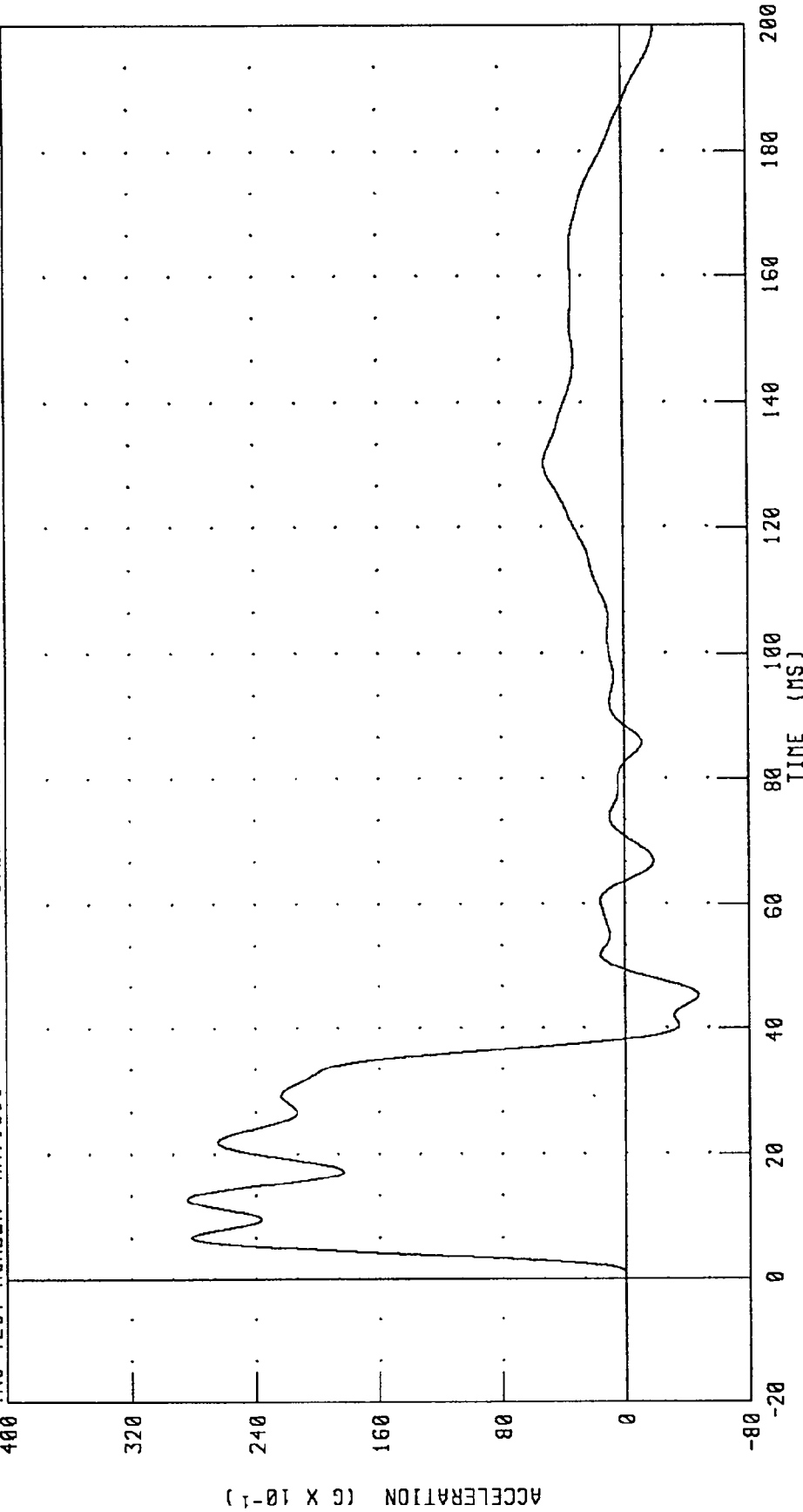
TECHNICIAN

Pete RST

RUN NUMBER: 010295.1510;3

PART 572-B HYBRID IJ HEAD/NECK CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: HN71310 572B SN713 HEAD/NECK CAL10 RUN NUMBER: 020895.1527;3



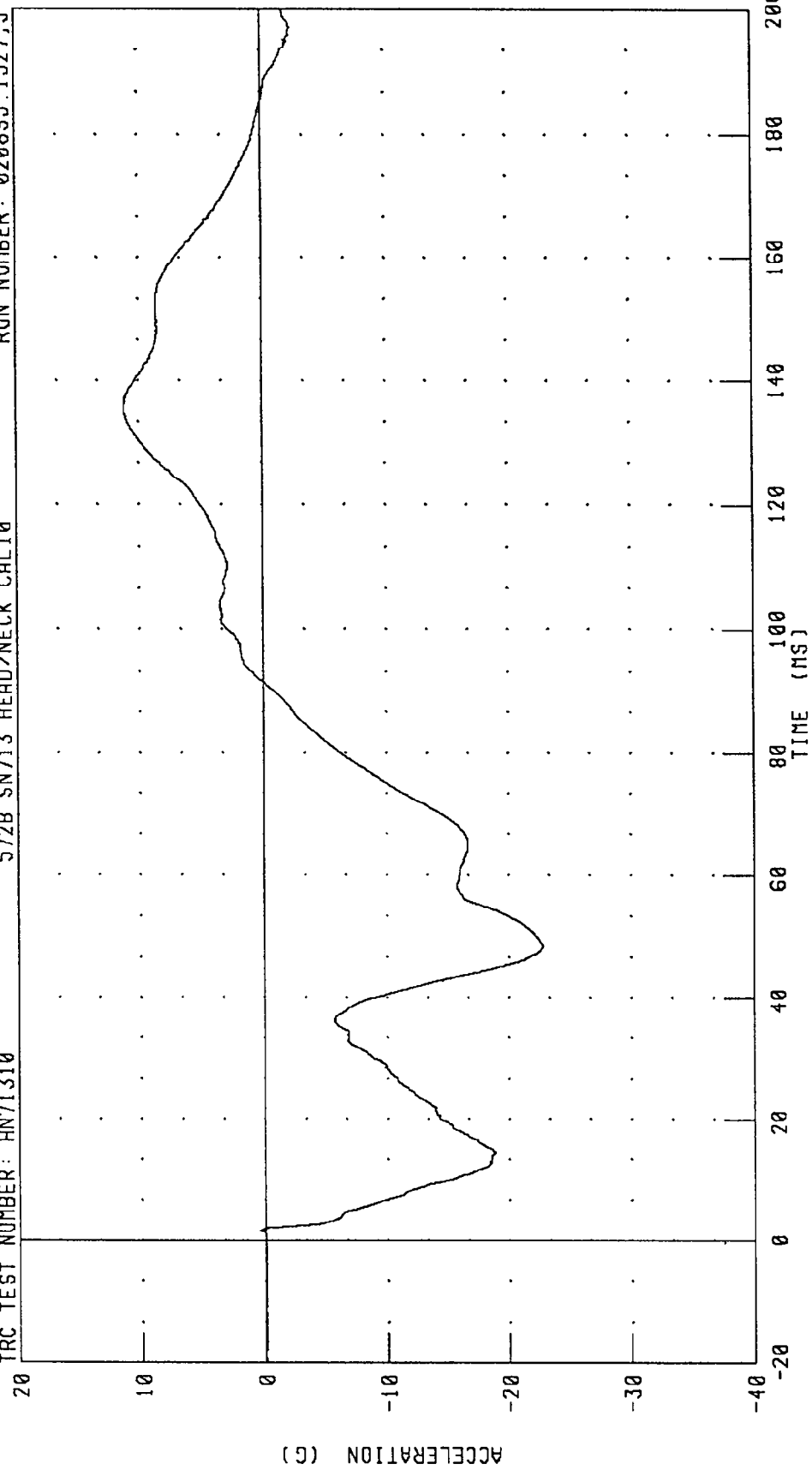
CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 28.42 G @ 12.88 MS; -4.71 G @ 45.20 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HN71310

572B SN713 HEAD/NECK CAL10

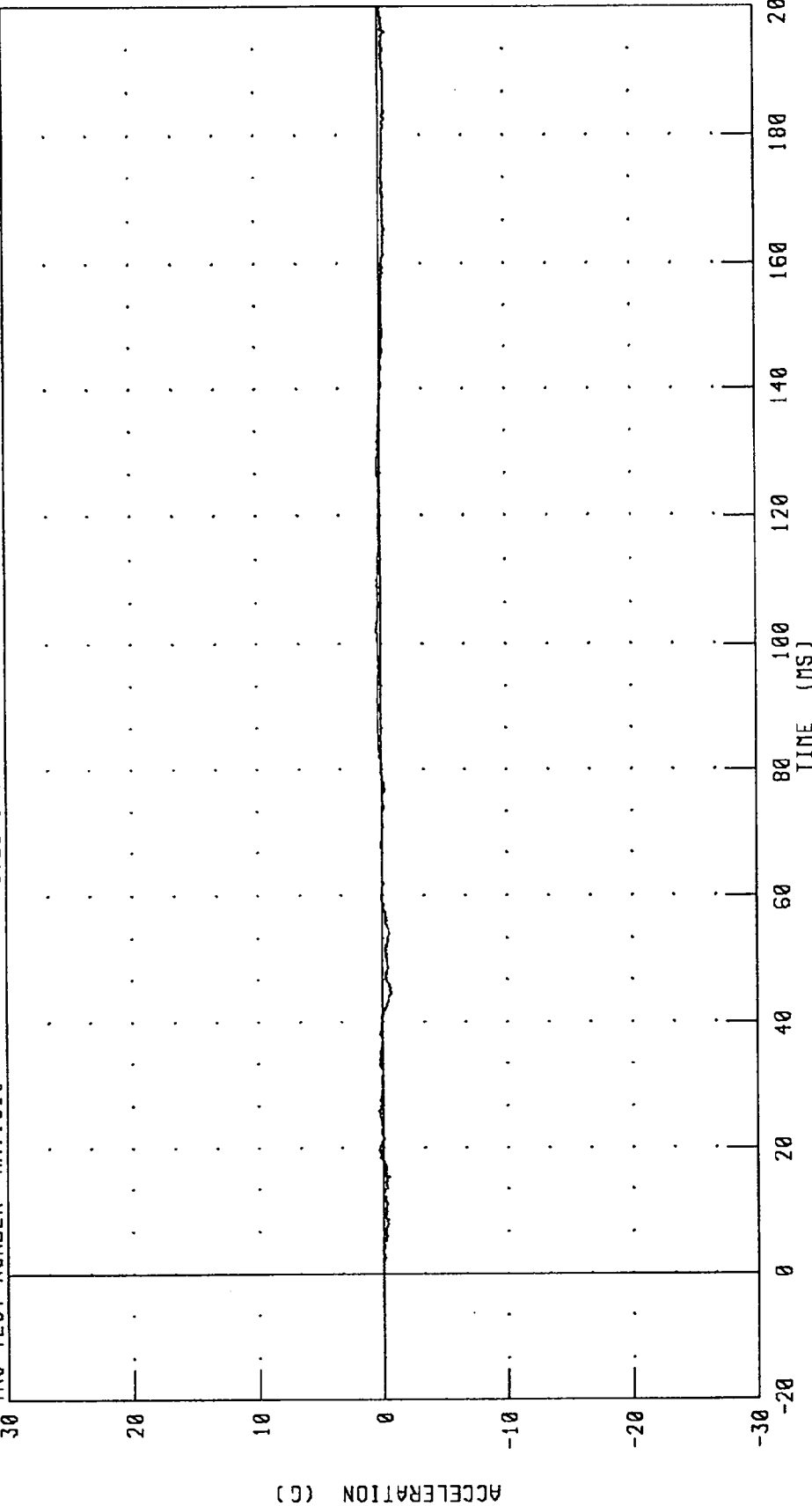
RUN NUMBER: 020895.1527,3



CHANNEL: HEDXG FILTER: CH. CLASS 1000 PEAK DATA: 11.17 G @ 136.16 MS; -22.87 G @ 48.48 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HN71310 5728 SN713 HEAD/NECK CAL10 RUN NUMBER: 020895.1527;3



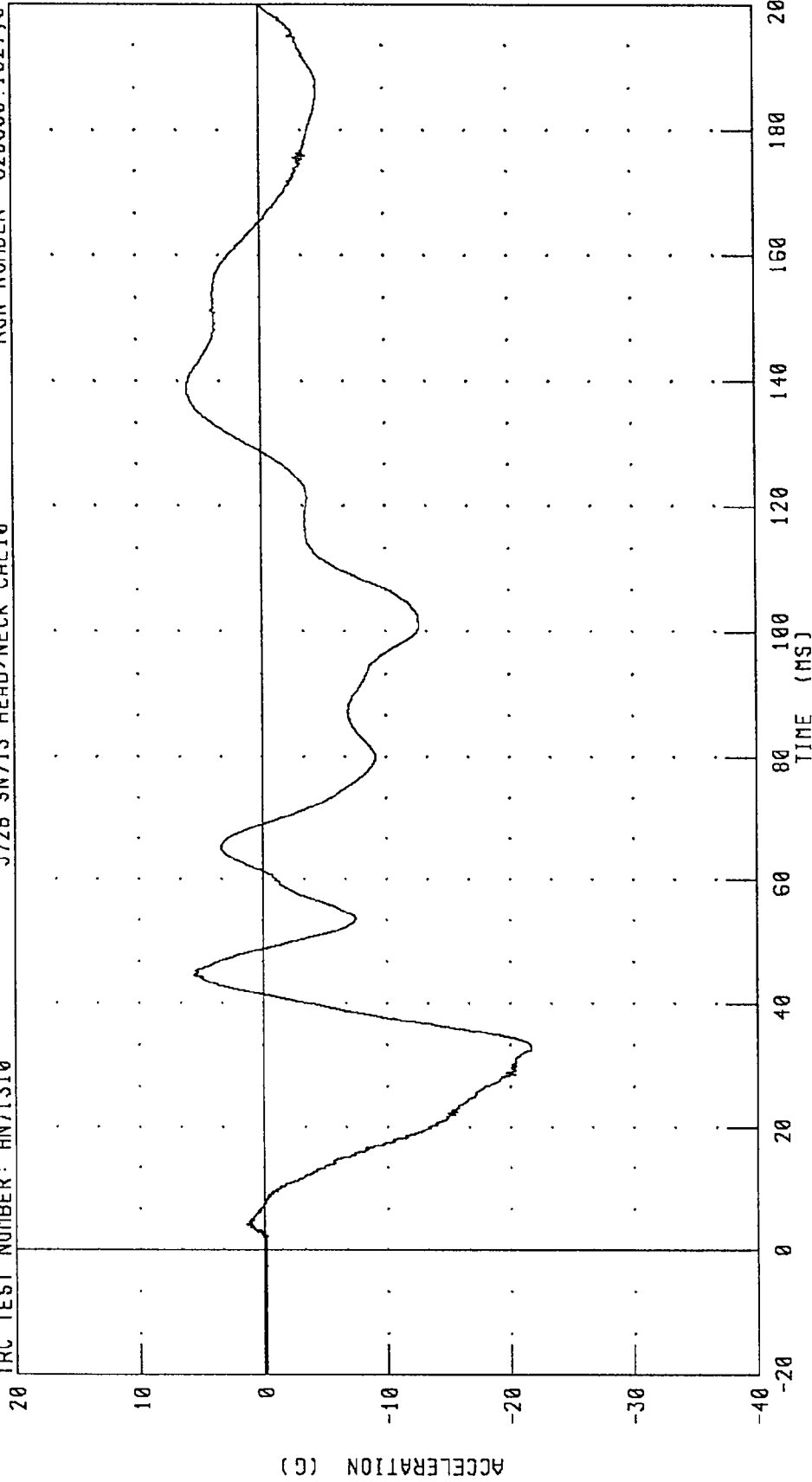
CHANNEL: HEDYG FILTER: CH. CLASS 1000 PEAK DATA: 0.40 G @ 102.08 MS; -0.73 G @ 44.72 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HN71310

572B SN713 HEAD/NECK CAL10

RUN NUMBER: 020895.1527,3

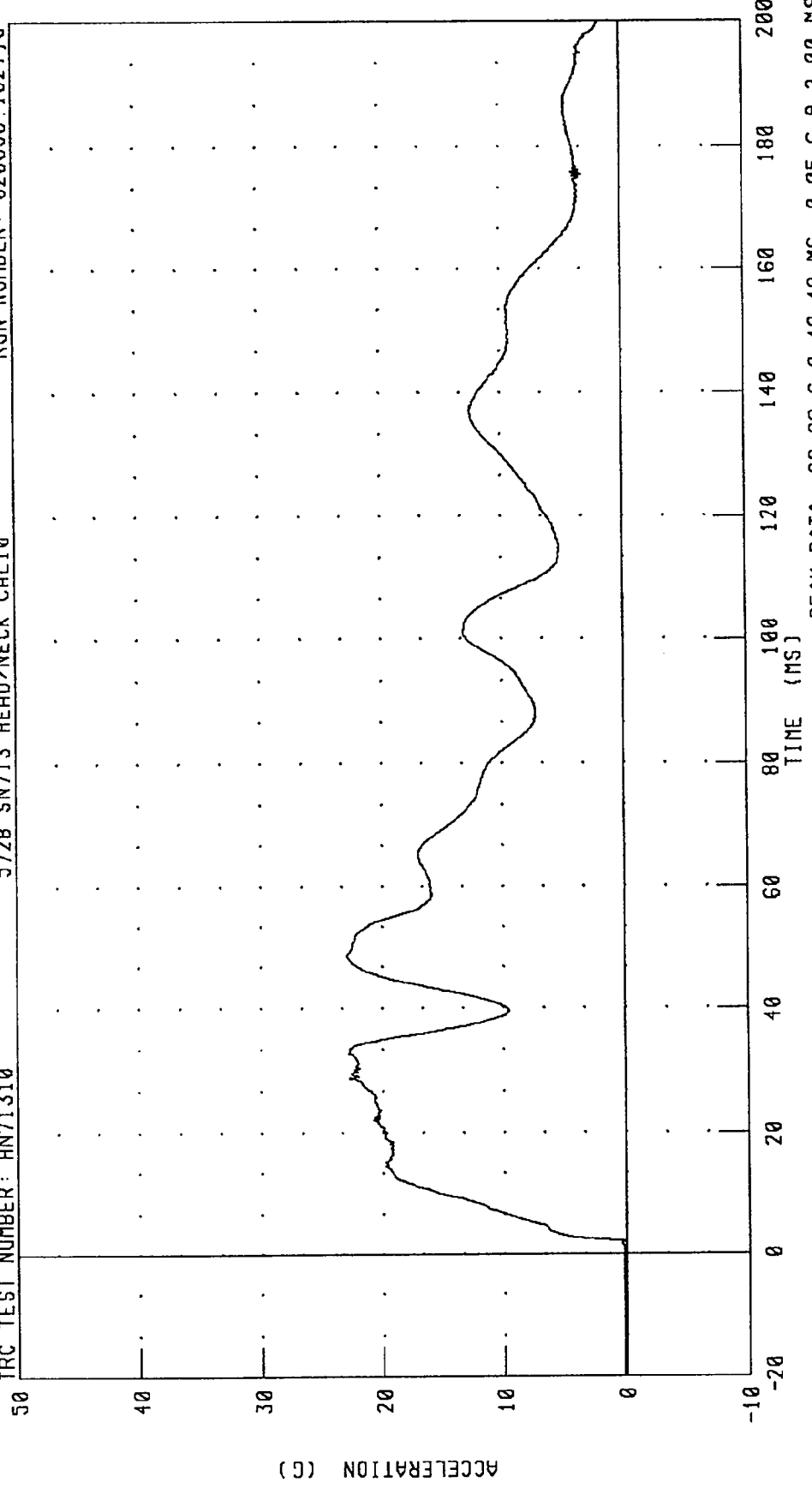


CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 5.95 G @ 139.04 MS; -21.73 G @ 32.72 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HN71310 RUN NUMBER: 020895.1527.3
5728 SN713 HEAD/NECK CAL10



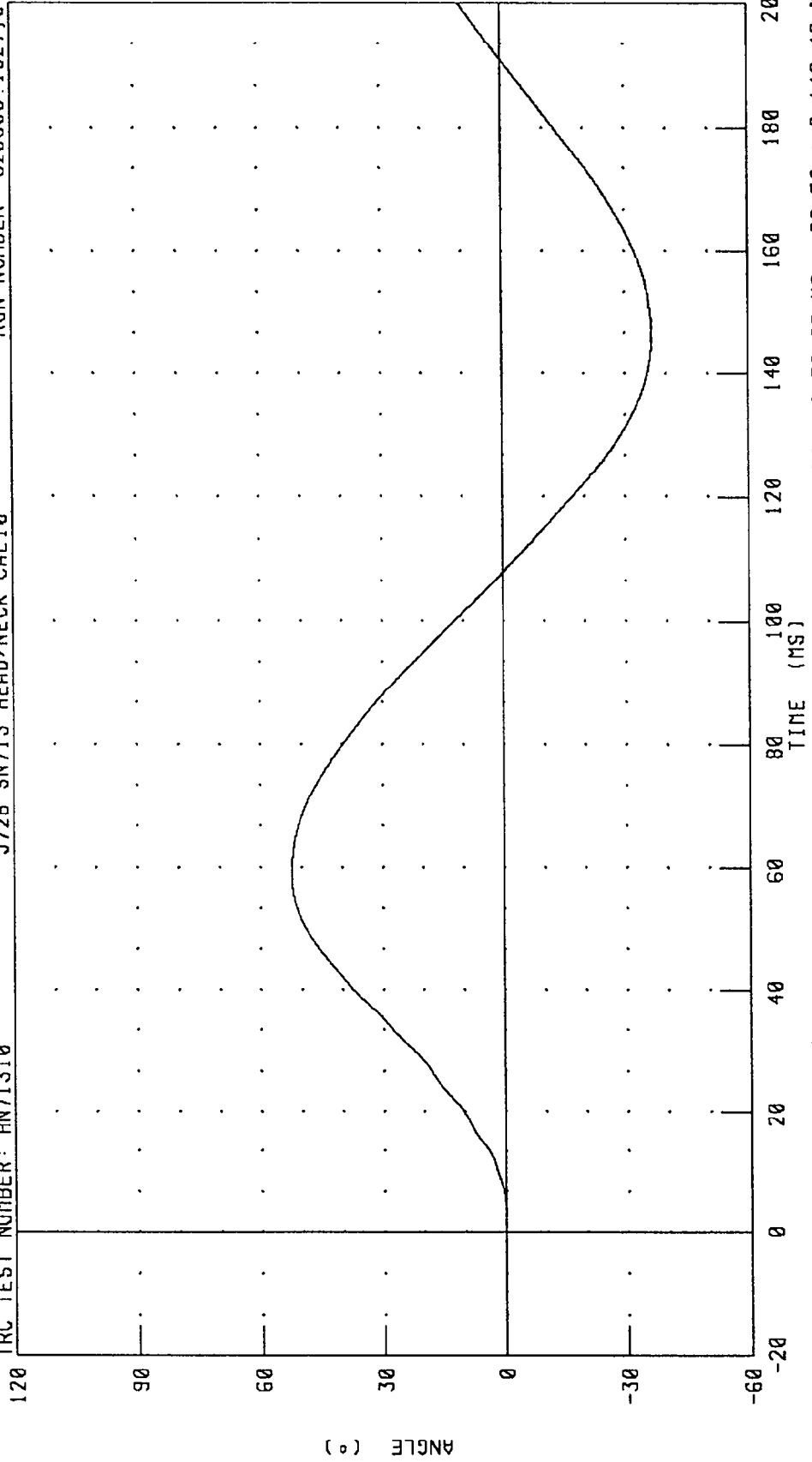
CHANNEL: HEDRG FILTER: CH. CLASS 1000

PEAK DATA: 22.88 G @ 48.48 MS; 0.05 G @ 2.00 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
ROTATION ABOUT THE BASE OF THE NECK

TRC TEST NUMBER: HN71310 RUN NUMBER: 020895.1527j3

572B SN713 HEAD/NECK CAL10



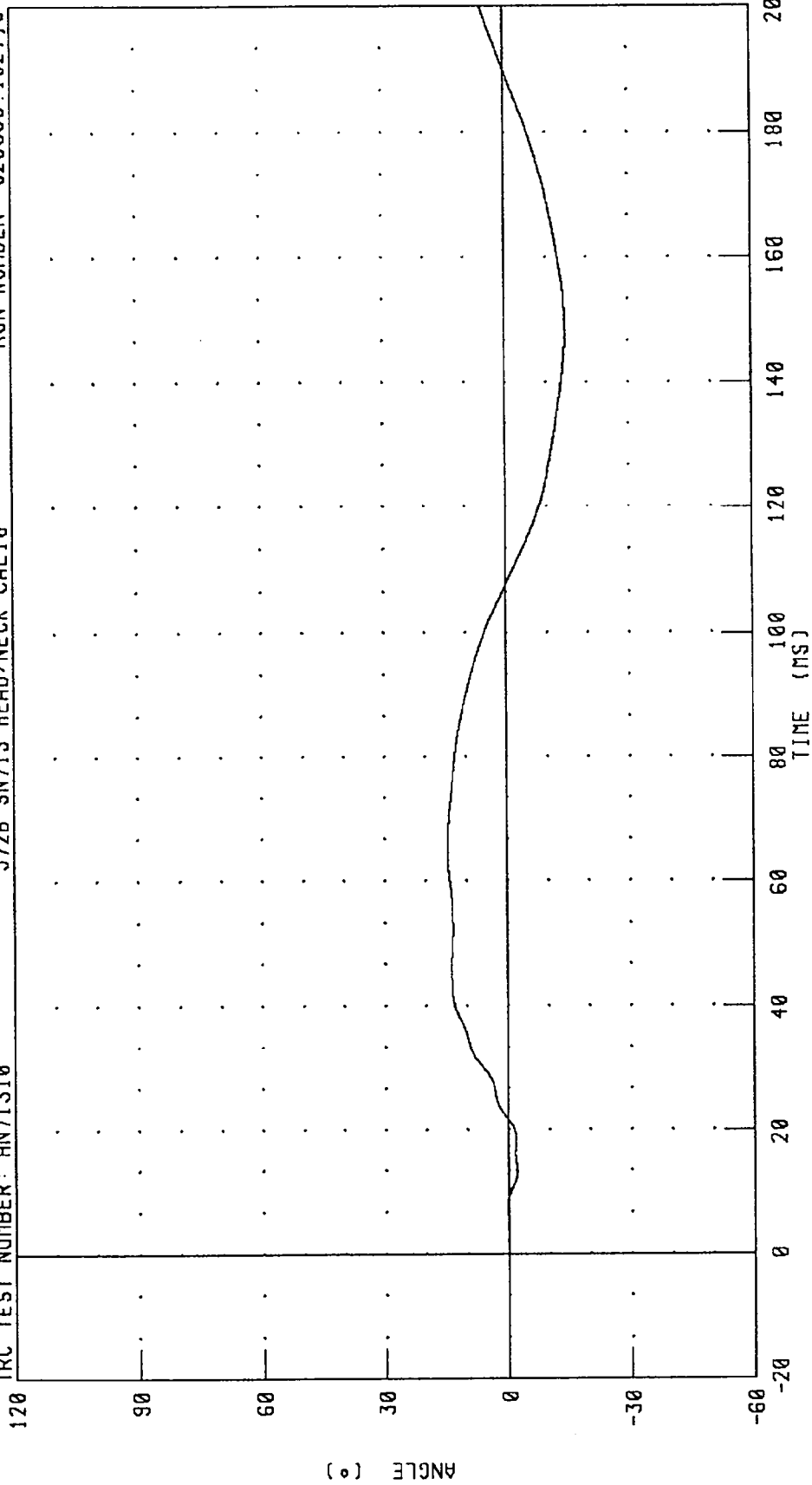
CHANNEL: BETA FILTER: CH. CLASS 60 PEAK DATA: 52.39 ° @ 58.96 MS; -36.58 ° @ 146.40 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
ROTATION ABOUT THE HEAD C.G.

TRC TEST NUMBER: HN71310

572B SN713 HEAD/NECK CAL10

RUN NUMBER: 020895.1527;3

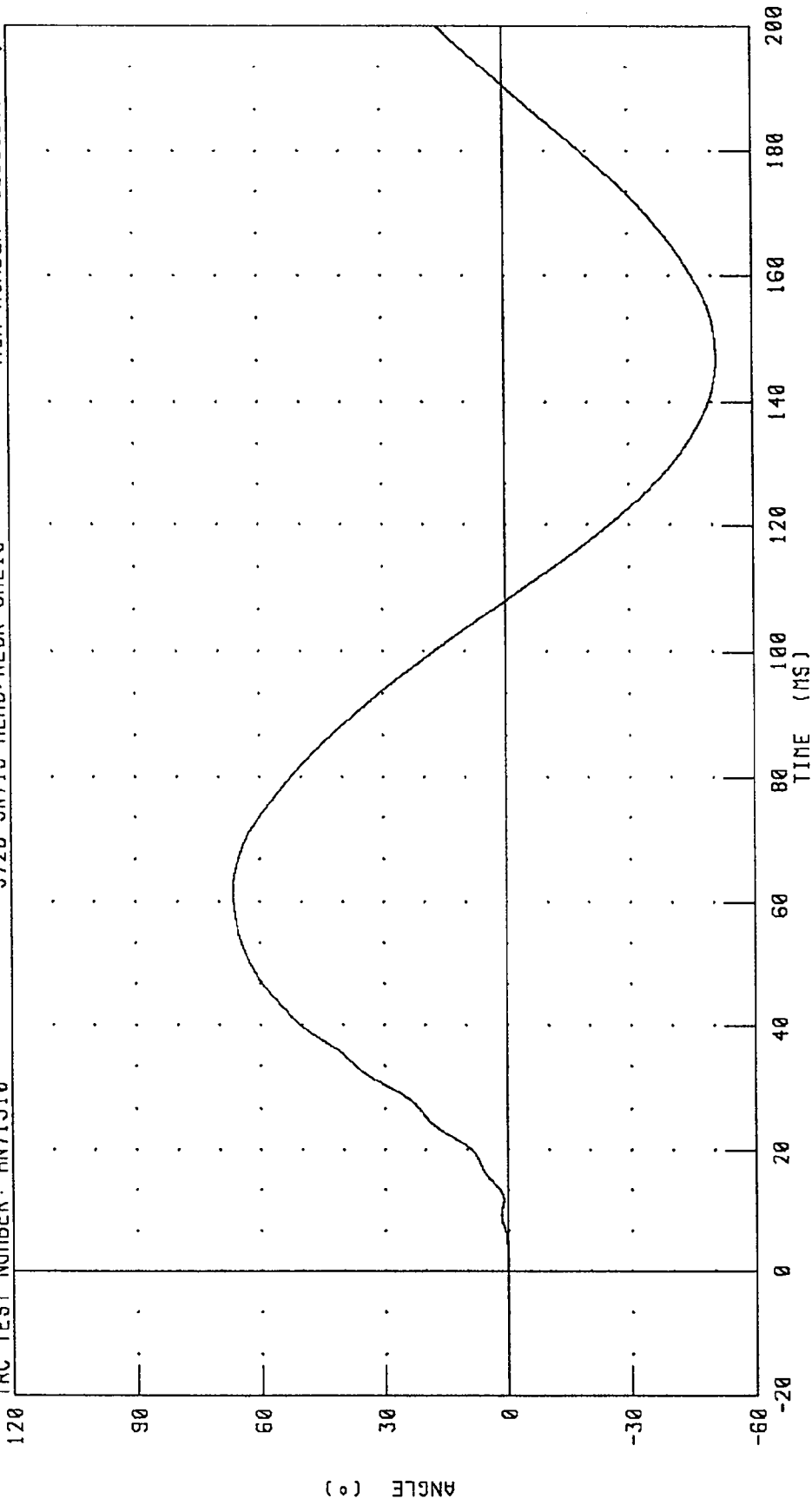


CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 14.59 ° @ 64.24 MS; -14.66 ° @ 148.40 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
TOTAL ROTATION

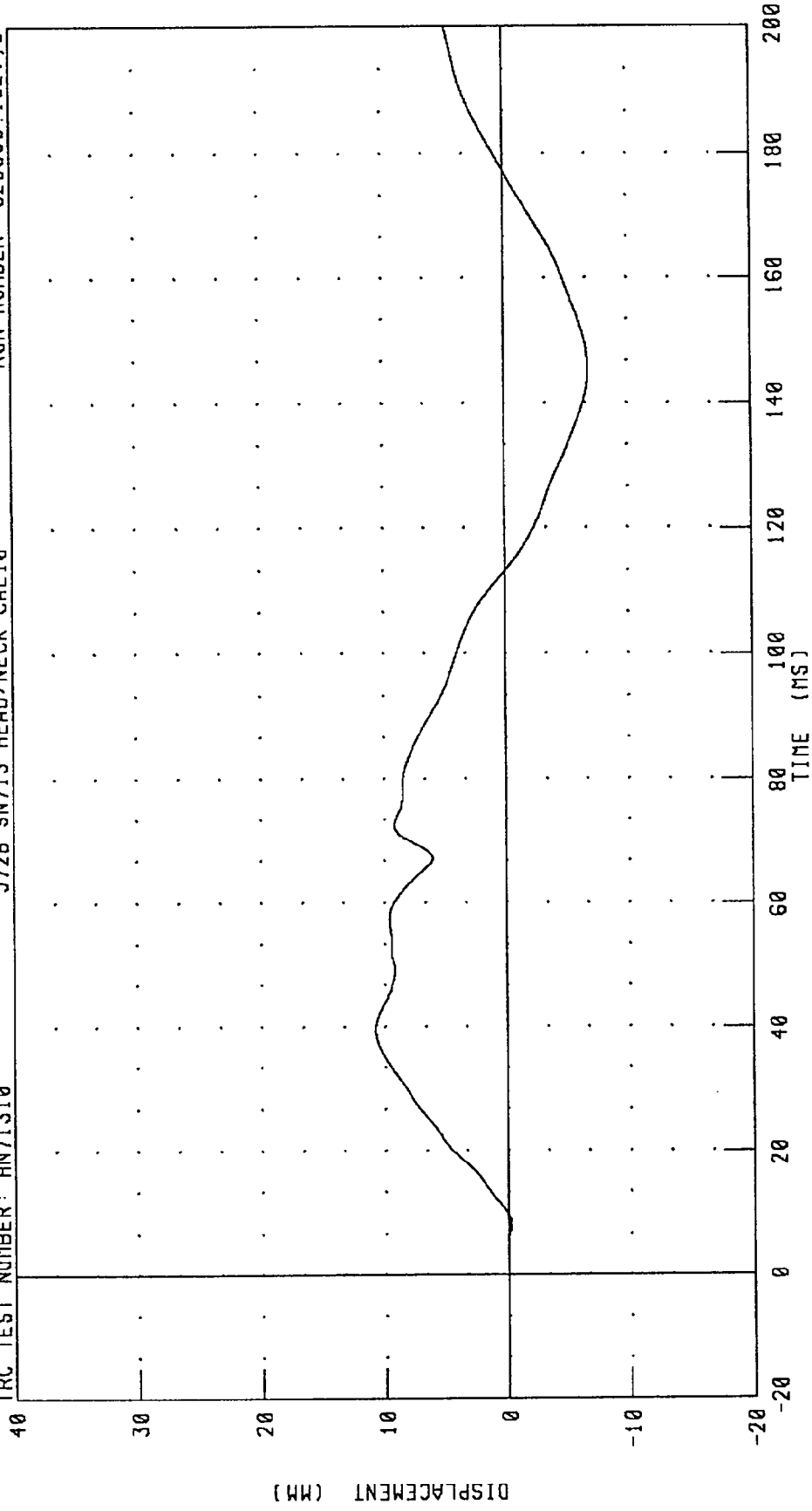
TRC TEST NUMBER: HN71310 572B SN713 HEAD/NECK CAL10 RUN NUMBER: 020895.1527.3



CHANNEL: TOTAN FILTER: CH. CLASS 60 PEAK DATA: 66.66 ° @ 61.76 MS; -51.21 ° @ 147.04 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
NECK DISPLACEMENT Z AXIS

TRC TEST NUMBER: HN71310 572B SN713 HEAD/NECK CAL10 RUN NUMBER: 020895.1527;3



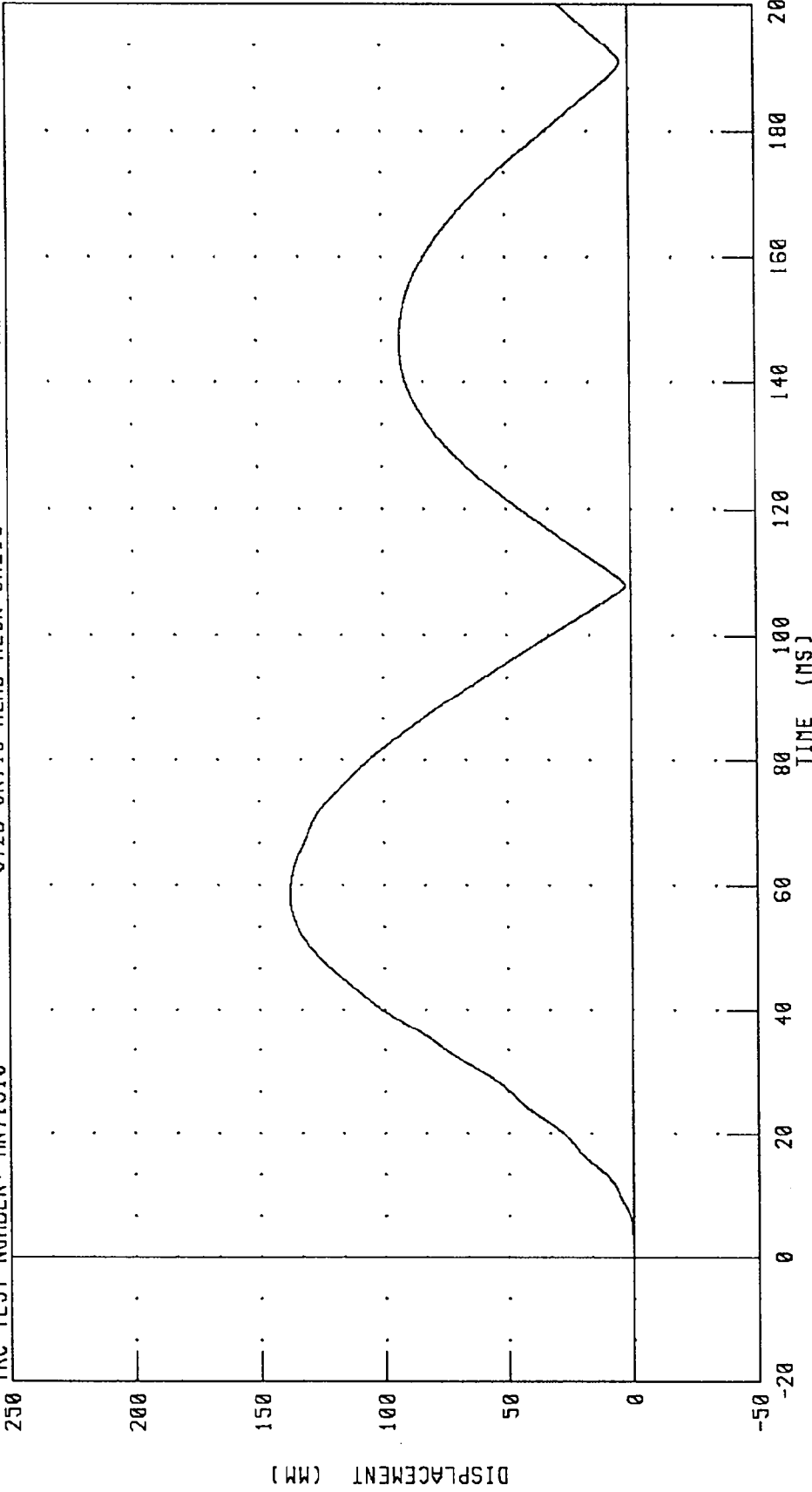
CHANNEL: NEKZD FILTER: CH. CLASS 60 PEAK DATA: 10.75 MM @ 39.52 MS; -6.85 MM @ 145.20 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
NECK CHOROAL DISPLACEMENT

TRC TEST NUMBER: HN71310

572B SN713 HEAD/NECK CAL10

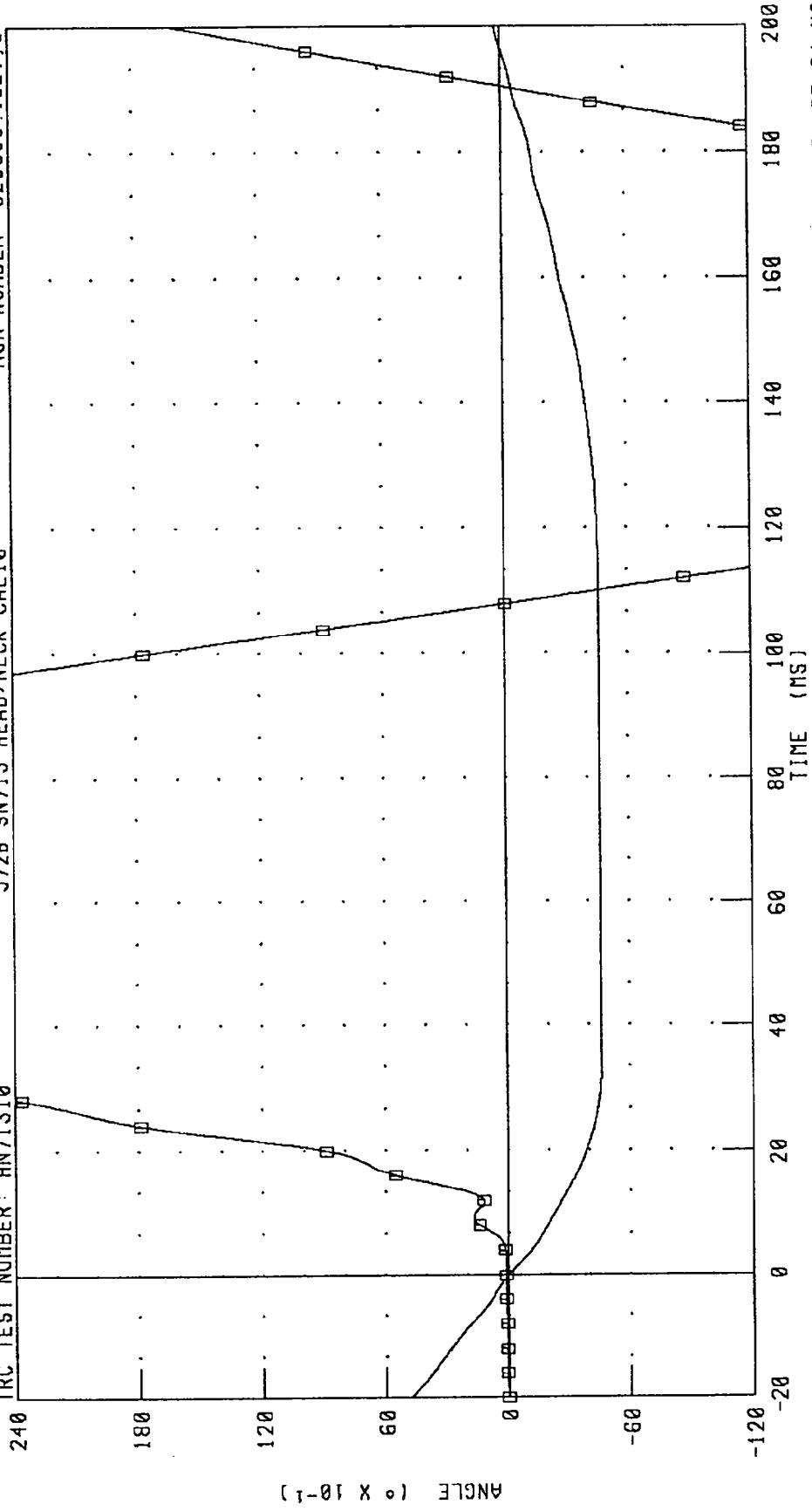
RUN NUMBER: 020895.1527.3



CHANNEL: NEKCD FILTER: CH. CLASS 60 PEAK DATA: 137.82 MM @ 58.48 MS; 0.06 MM @ -20.00 MS

PART 572-B HYBRID II HEAD/NECK CALIBRATION
 TOTAL HEAD C.G. ROTATION AND PENDULUM ANGULAR DISPLACEMENT

TRC TEST NUMBER: HN71310 572B SN713 HEAD/NECK CALIB RUN NUMBER: 020895.1527.3



PEAK DATA: 4.74 ° @ -20.00 MS; -4.62 ° @ 37.04 MS
 66.66 ° @ 61.76 MS; -51.21 ° @ 147.04 MS

CHANNEL: PENAD FILTER: CH. CLASS 60
 TOTAL □ CH. CLASS 60

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

PART 572B

03-JAN-95

TRC INC.

TEST NO: TL71310

572B SN713 L.S.THORAX CAL10

TEST PARAMETER	LOW SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	26 %
PENDULUM VELOCITY	4.22 - 4.31 M/S	4.30 M/S
PEAK STERNUM DEFLECTION	28 MM MAX.	21.97 MM
PEAK RESISTIVE FORCE	6450. N MAX.	6147. N
INTERNAL HYSTERESIS	50 - 70 %	57.7 %

SCD: 54.61 MM

DUMMY MEETS SPECIFICATIONS

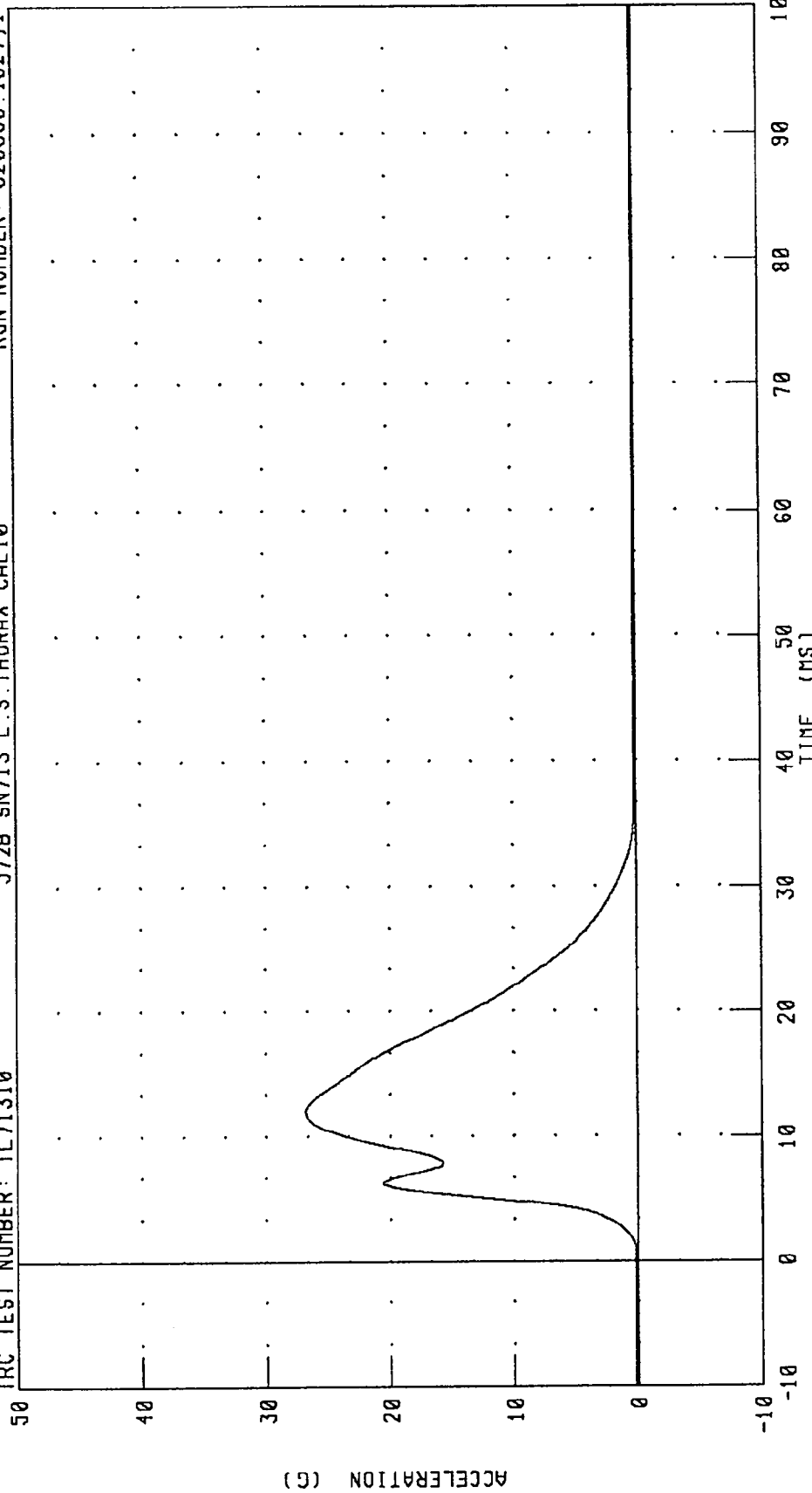
TECHNICIAN

Pete Fox

RUN NUMBER: 010395.0757;1

PART 572-B HYBRID II THORAX CALIBRATION (4.3 N/SEC)
PENDULUM DECELERATION

TRC TEST NUMBER: TL71310 572B SN713 L.S. THORAX CALI0 RUN NUMBER: 020895.1527j1



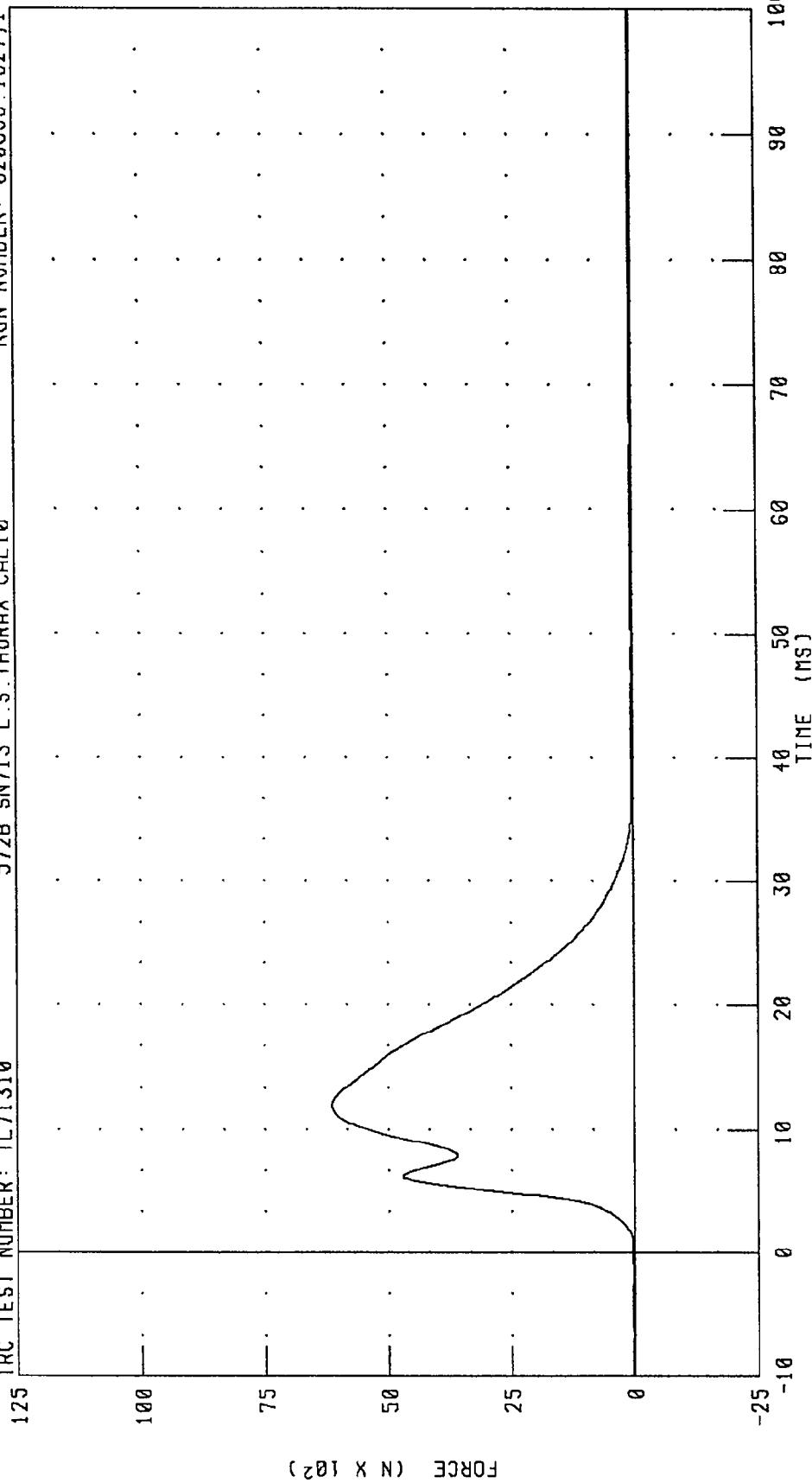
CHANNEL: PENXG FILTER: CH. CLASS 180 PEAK DATA: 26.83 G @ 11.92 MS; 0.15 G @ 46.48 MS

PART 572-B HYBRID II THORAX CALIBRATION (4.3 M/SEC)
PENDULUM FORCE

IRC TEST NUMBER: TL71310

572B SN713 L.S. THORAX CALIØ

RUN NUMBER: 020895.1527;1



CHANNEL: PENXF FILTER: CH. CLASS 180 PEAK DATA: 6147.33 N @ 11.92 MS; 34.09 N @ 46.48 MS

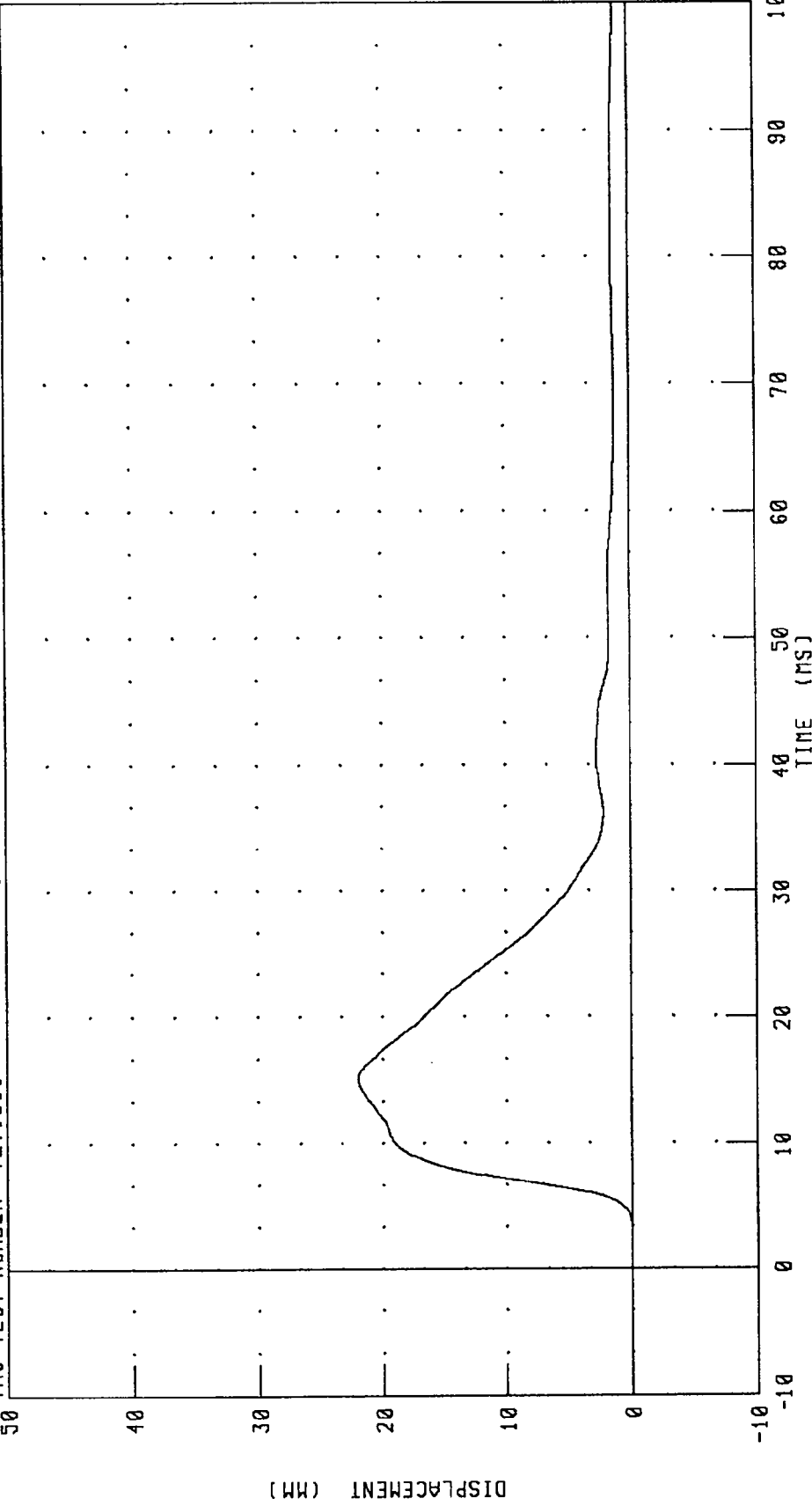
PART 572-B HYBRID II THORAX CALIBRATION (4.3 N/SEC)

STERNUM DISPLACEMENT

TRC TEST NUMBER: TL71310

572B SN713 L.S. THORAX CAL10

RUN NUMBER: 020895.1527;1

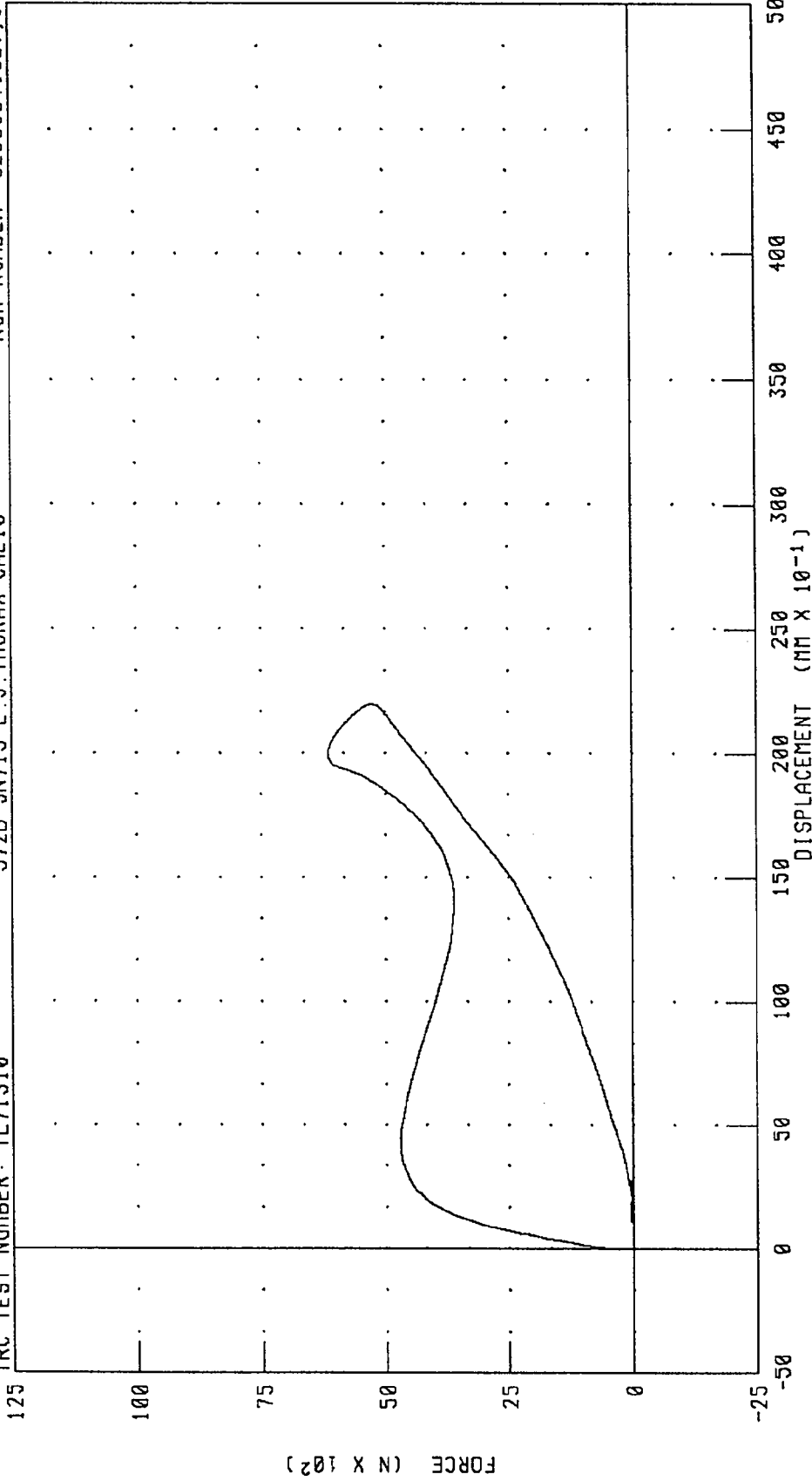


CHANNEL: CSTXD FILTER: CH. CLASS 180

PEAK DATA: 21.97 MM @ 15.04 MS; 0.00 MM @ -3.04 MS

PART 572-B HYBRID II THORAX CALIBRATION (4.3 N/SEC)
 CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: TL71310 572B SN713 L. S. THORAX CAL10 RUN NUMBER: 020895.1527,1



CHANNEL: CSTXD FILTER: CH. CLASS 180
 PENXF CH. CLASS 180
 PEAK DATA: 21.97 MM @ 15.04 MS; 0.00 MM @ -3.04 MS
 6147.33 N @ 11.92 MS; 34.09 N @ 46.48 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

PART 572B

03-JAN-95

TRC INC.

TEST NO: TH71310

572B SN713 H.S.THORAX CAL10

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	26 %
PENDULUM VELOCITY	6.64 - 6.77 M/S	6.68 M/S
PEAK STERNUM DEFLECTION	43 MM MAX.	37.14 MM
PEAK RESISTIVE FORCE	10009. N MAX.	9557. N
INTERNAL HYSTERESIS	50 - 70 %	59.7 %

SCD: 54.61 MM

DUMMY MEETS SPECIFICATIONS

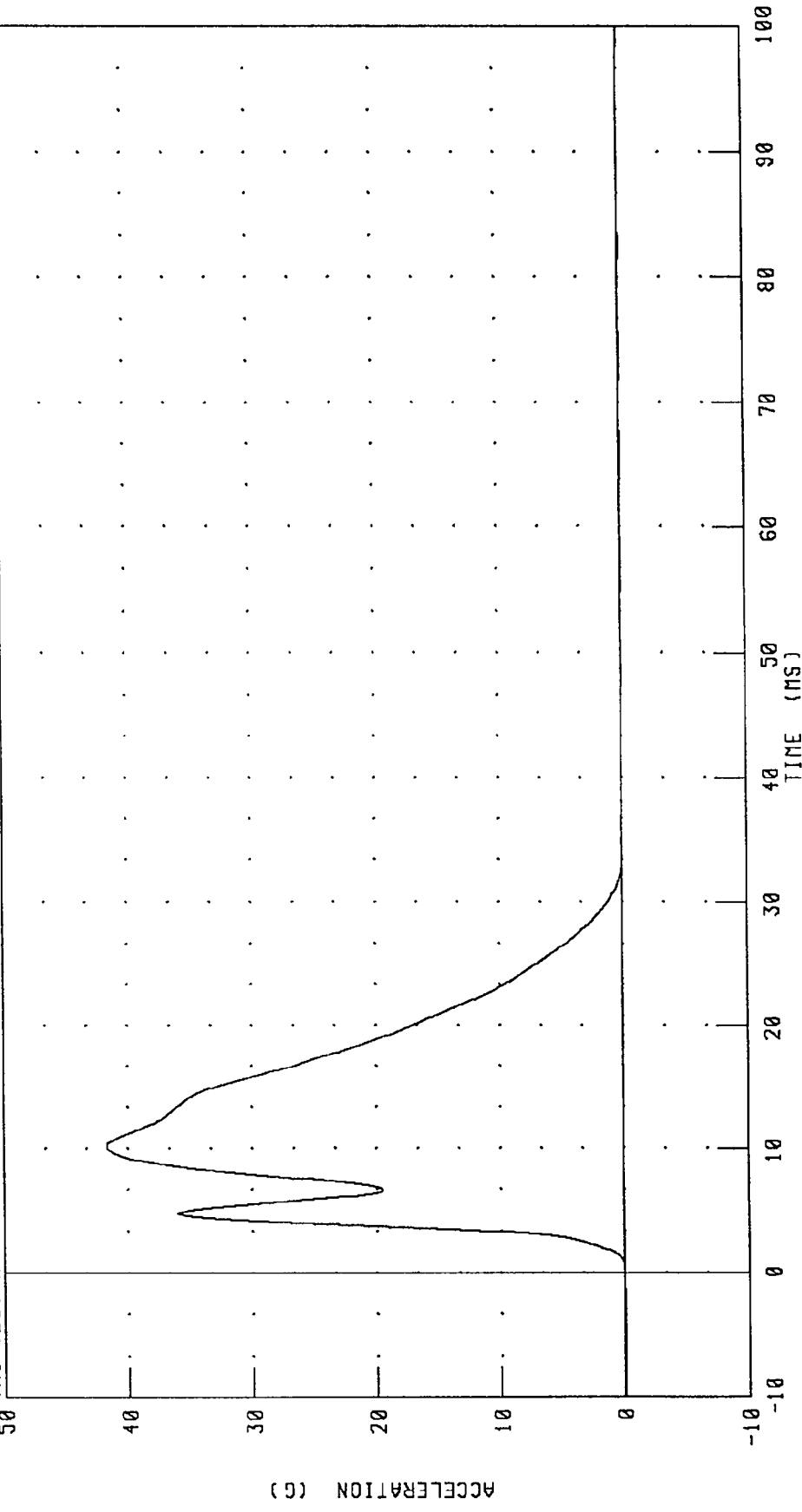
TECHNICIAN

Pete Fox

RUN NUMBER: 010395.0828;1

PART 572-B HYBRID II THORAX CALIBRATION (6.7 M/SEC)
PENDULUM DECELERATION

TRC TEST NUMBER: TH71310 572B SN713 H.S. THORAX CALI0 RUN NUMBER: 020895.1527.1



CHANNEL: PENXG FILTER: CH. CLASS 180 PEAK DATA: 41.72 G @ 10.16 MS; -0.05 G @ 65.84 MS

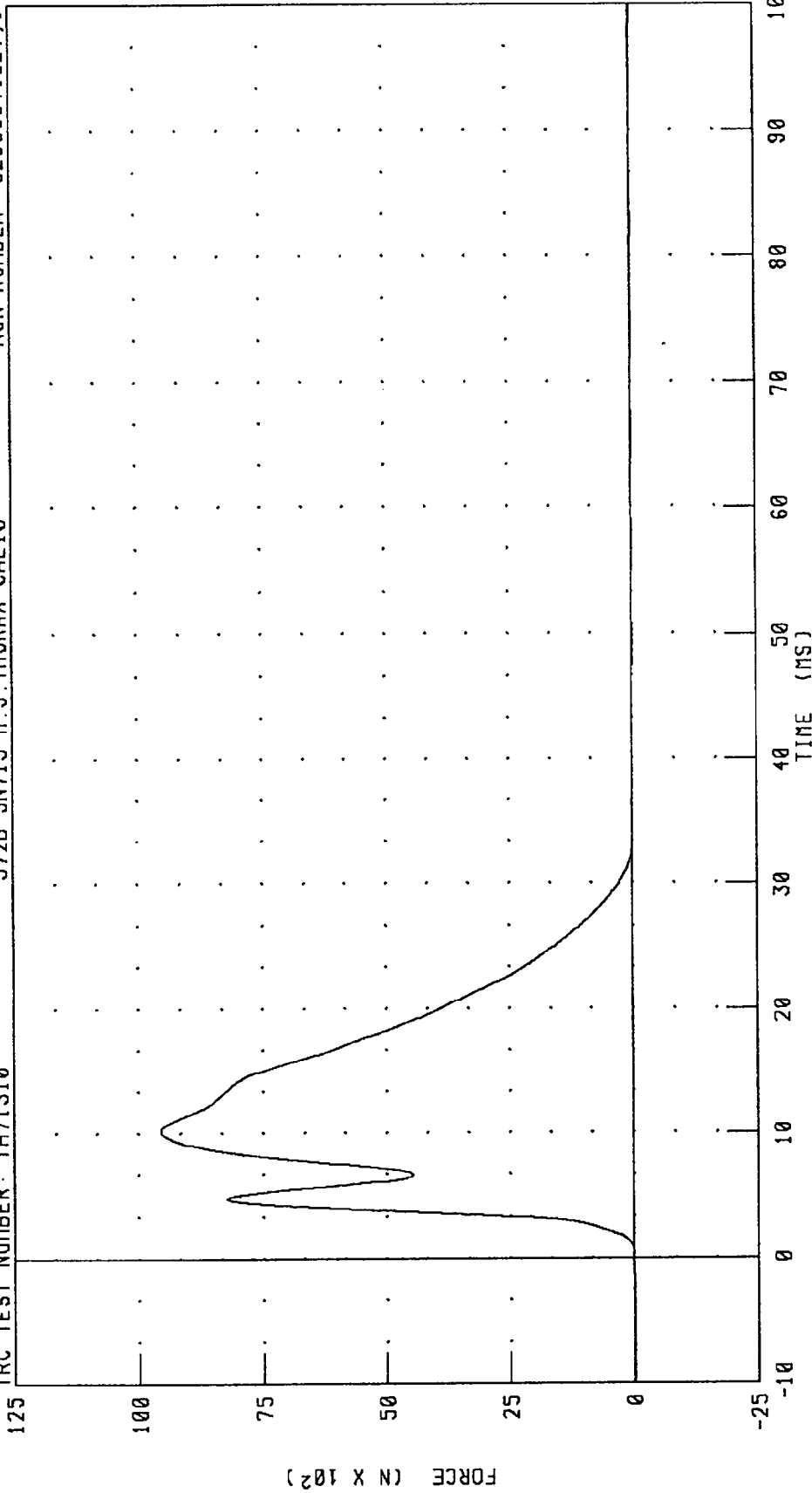
PART 572-B HYBRID II THORAX CALIBRATION (6.7 N/SEC)

PENDULUM FORCE

TRC TEST NUMBER: IH71310

572B SN713 H.S. THORAX CAL10

RUN NUMBER: 020895.1527;1

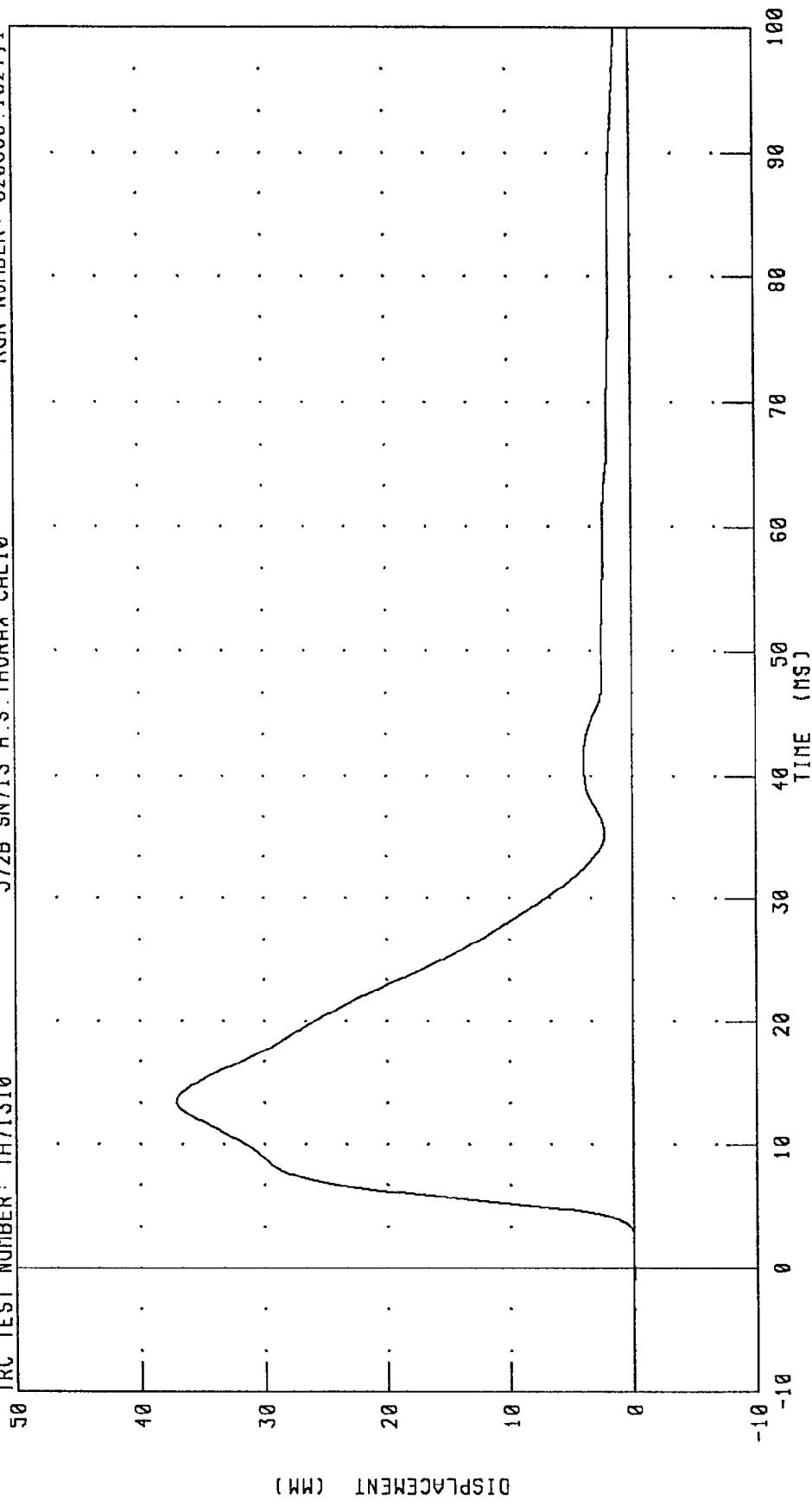


CHANNEL: PENXF FILTER: CH. CLASS 180

PEAK DATA: 9556.70 N @ 10.16 MS; -12.18 N @ 65.84 MS

PART 572-B HYBRID II THORAX CALIBRATION (6.7 M/SEC)
STERNUM DISPLACEMENT

TRC TEST NUMBER: TH71310 572B SN713 H.S. THORAX CAL10 RUN NUMBER: 020895.1527;1



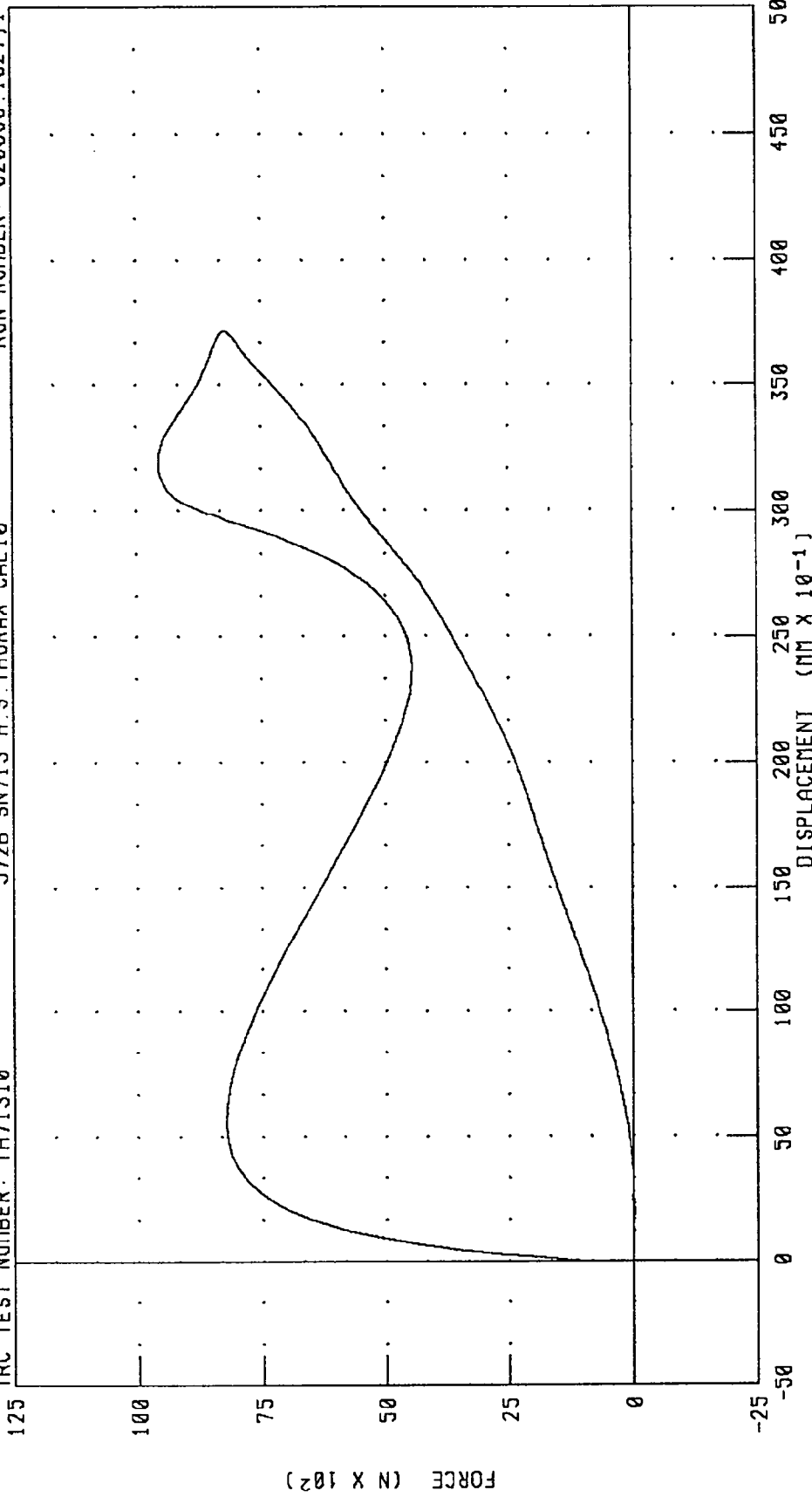
CHANNEL: CSTXD FILTER: CH. CLASS 180 PEAK DATA: 37.14 MM @ 13.44 MS; -0.03 MM @ -0.40 MS

PART 572-B HYBRID II THORAX CALIBRATION (6.7 N/SEC)
 CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: TH71310

572B SN713 H.S. THORAX CAL10

RUN NUMBER: 020895.1527.1



CHANNEL: CSTXD FILTER: CH. CLASS 180
 PENXF CH. CLASS 180
 PEAK DATA: 37.14 MM @ 13.44 MS; -0.03 NM @ -0.40 MS
 9556.70 N @ 10.16 MS; -12.18 N @ 65.84 MS

TRANSPORTATION RESEARCH CENTER INC.

ABDOMEN COMPRESSION TEST

PART 572B

02-JAN-95

TRC INC.

TEST NO: AB71310

572B SN713 ABDOM COMP CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	33 %
DEFLECTION RATE	6.4 - 8.9 MM/S	7.88 MM/S
FORCE AT 0.00 MM DISP.	44.48 N	44.48 N
FORCE AT 12.7 MM DISP.	102.30 - 160.13 N	123.93 N
FORCE AT 19.1 MM DISP.	160.13 - 222.40 N	179.26 N
FORCE AT 25.4 MM DISP.	222.40 - 280.22 N	250.34 N
FORCE AT 33.0 MM DISP.	324.70 - 391.42 N	360.40 N

DUMMY MEETS SPECIFICATIONS

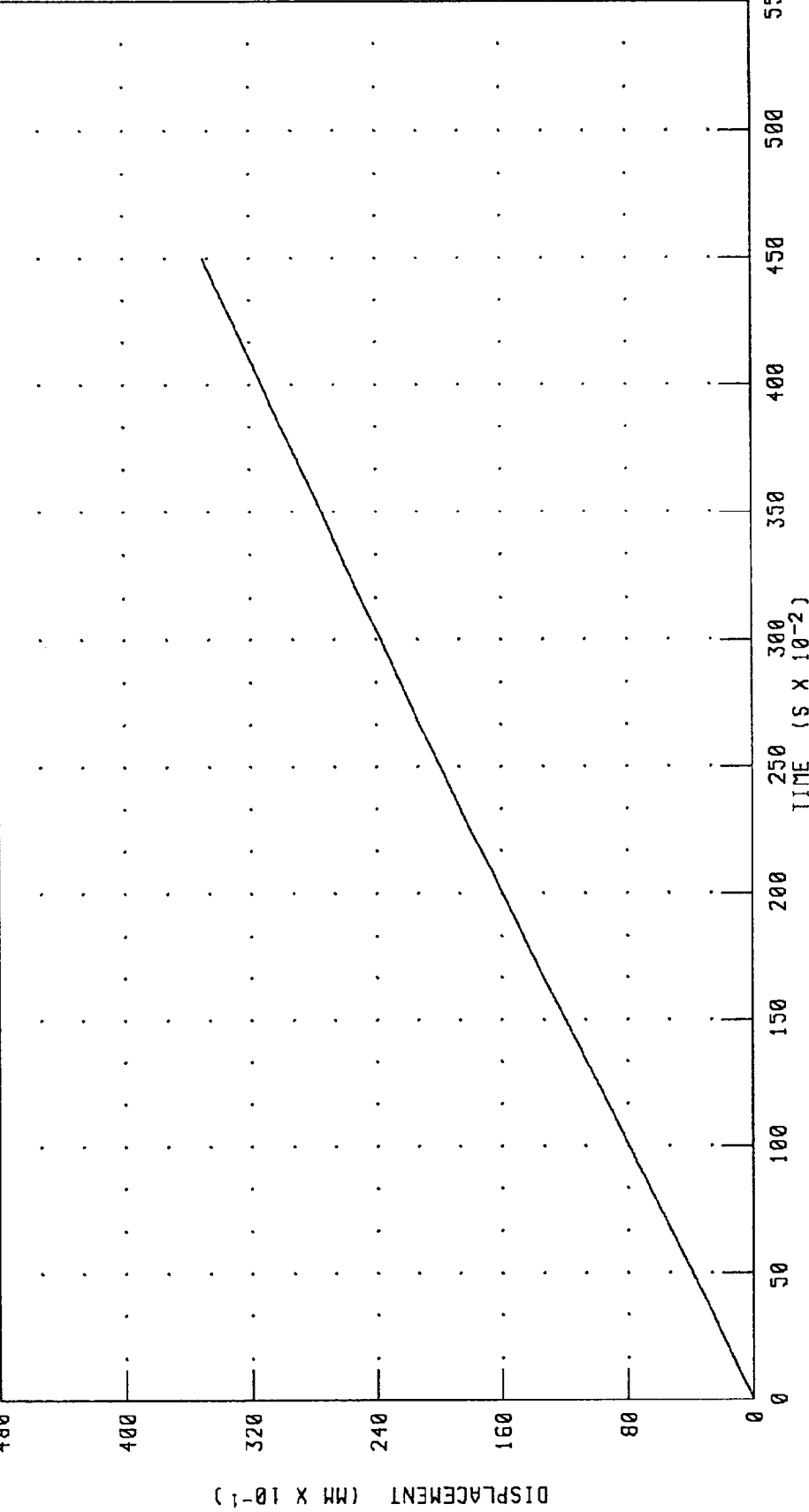
TECHNICIAN

Pete Fort

RUN NUMBER: 010295.1120;1

PART 572-B HYBRID II ABDOMEN CALIBRATION
ABDOMEN DISPLACEMENT

TRC TEST NUMBER: AB71310 572B SN713 ABDOM COMP CALI0 RUN NUMBER: 020895.1527.1

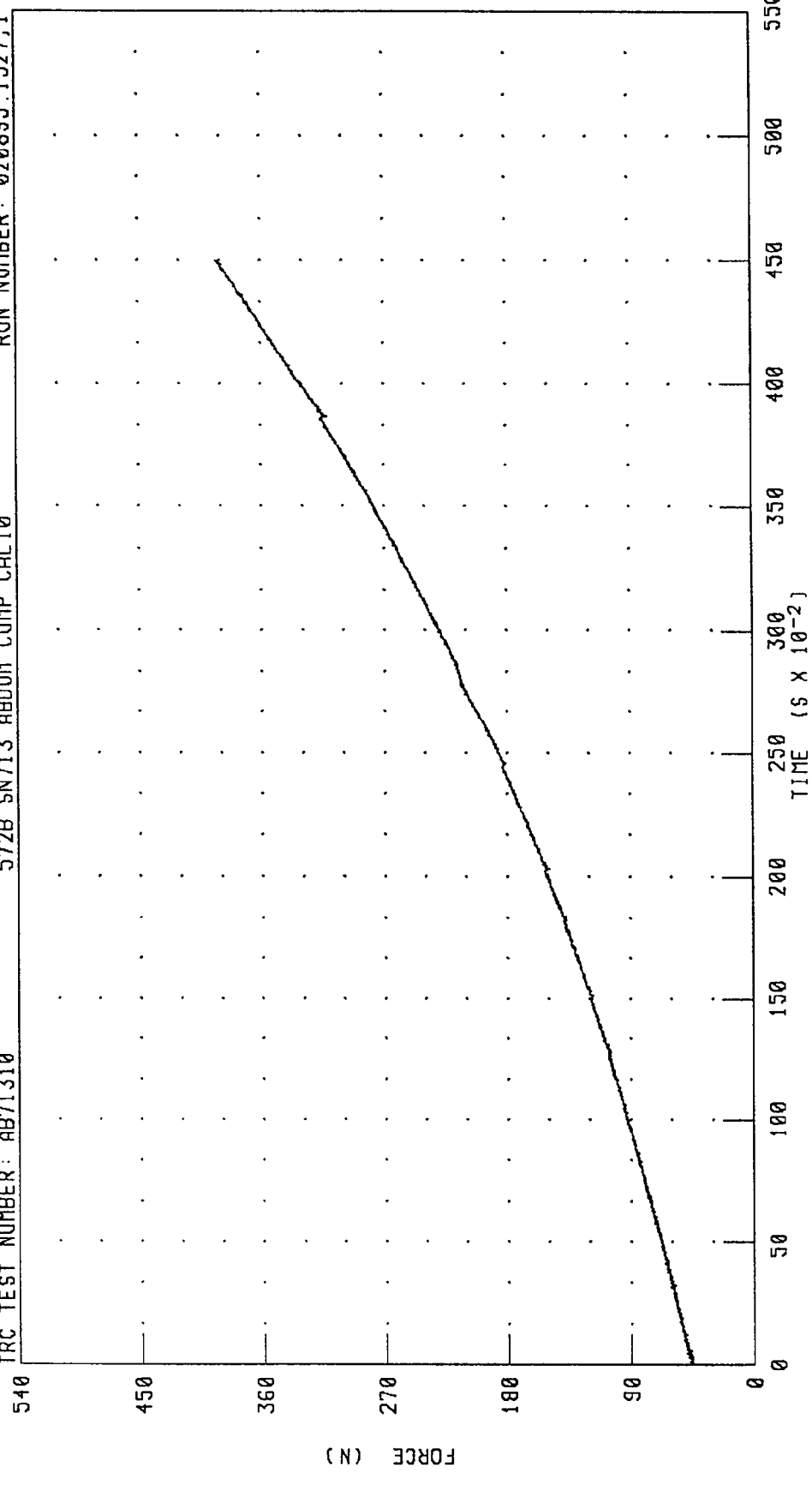


CHANNEL: ABXD FILTER: CH. CLASS 1000 PEAK DATA: 34.98 MM @ 4.50 S; 0.00 MM @ 0.00 S

PART 572-B HYBRID II ABDOMEN CALIBRATION
ABDOMEN FORCE

IRC TEST NUMBER: AB71310
572B SN713 ABDOM COMP CAL10

RUN NUMBER: 020895.1527,1

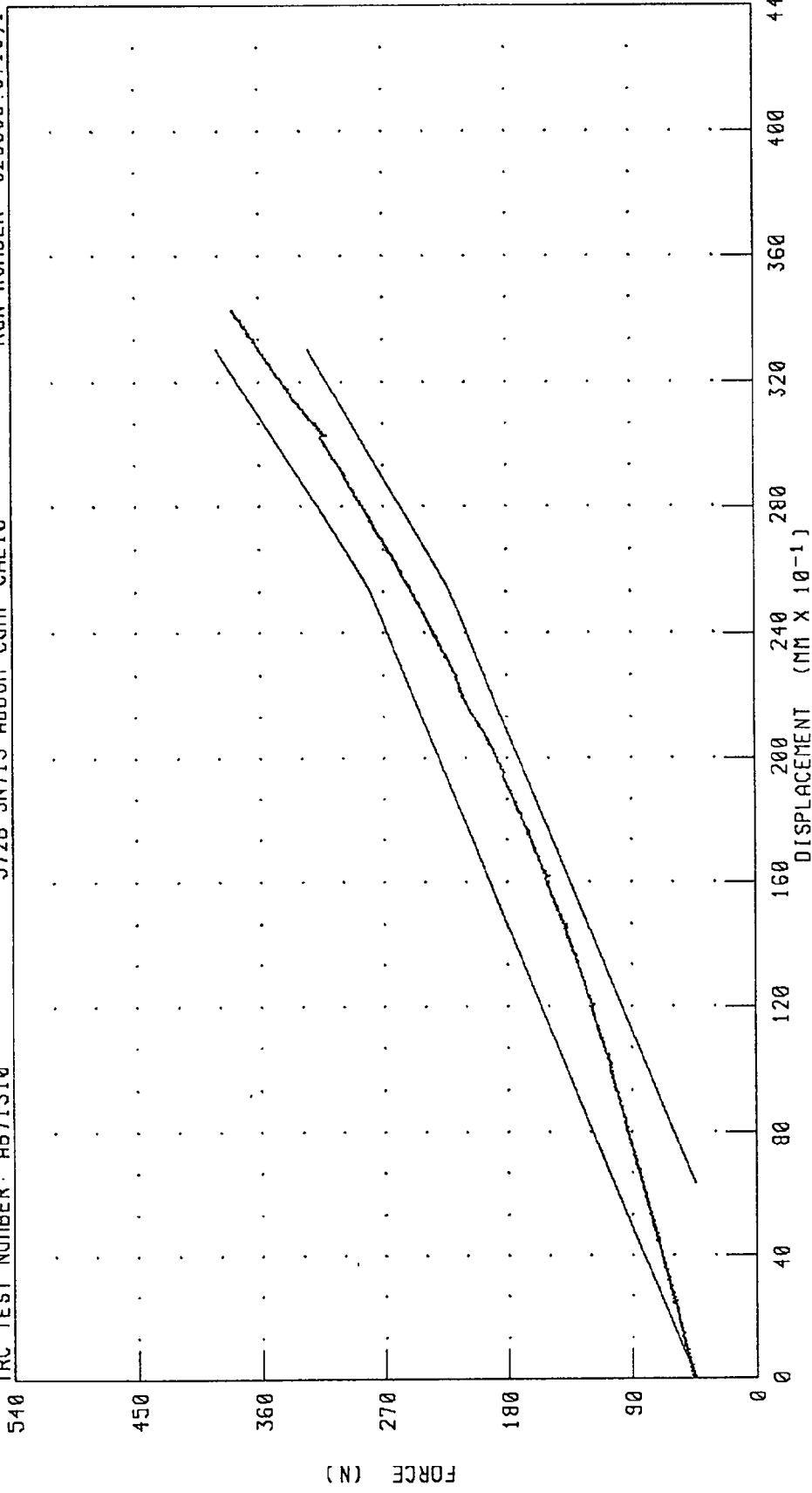


CHANNEL: ABXF FILTER: CH. CLASS 1000
PEAK DATA: 393.08 N @ 4.50 S; 44.39 N @ 0.00 S

PART 572-B HYBRID II ABDOMEN CALIBRATION
ABDOMEN FORCE VS DISPLACEMENT
572B SN713 ABDOM COMP CAL10

TRC TEST NUMBER: AB71310

RUN NUMBER: 020995.0719,1



CHANNEL: ABXD
ABXF

FILTER: CH. CLASS 1000
CH. CLASS 1000

PEAK DATA: 34.29 MM @ 4.41 S;
379.89 N @ 4.40 S; 0.00 MM @ 0.00 S;
44.39 N @ 0.00 S

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

PART 572B

02-JAN-95

TRC INC. TEST NO: LF71310

572B SN713 LUMBAR FLEX CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	33 %
FORCE AT 0 DEG. FLEXION	-26.69 - +26.69 N	0.00 N
FORCE AT 20 DEG. FLEXION	97.86 - 151.24 N	115.65 N
FORCE AT 30 DEG. FLEXION	151.24 - 204.62 N	160.13 N
FORCE AT 40 DEG. FLEXION	204.62 - 258.00 N	244.64 N
NET RETURN ANGLE	< 12 DEG.	6.72 DEG.

DUMMY MEETS SPECIFICATIONS

TECHNICIAN Pete F. S.

RUN NUMBER: 010395.0920

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

PART 572B

03-JAN-95

TRC INC.

TEST NO: RK71310

572B SN713 R.KNEE IMP CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	26 %
PENDULUM VELOCITY	2.06 - 2.15 M/S	2.14 M/S
PEAK KNEE IMPACT FORCE	8229 - 11121 N	9416.46 N
DURATION ABOVE 4448 N	>=1.7 MS	1.87 MS

DUMMY MEETS SPECIFICATIONS

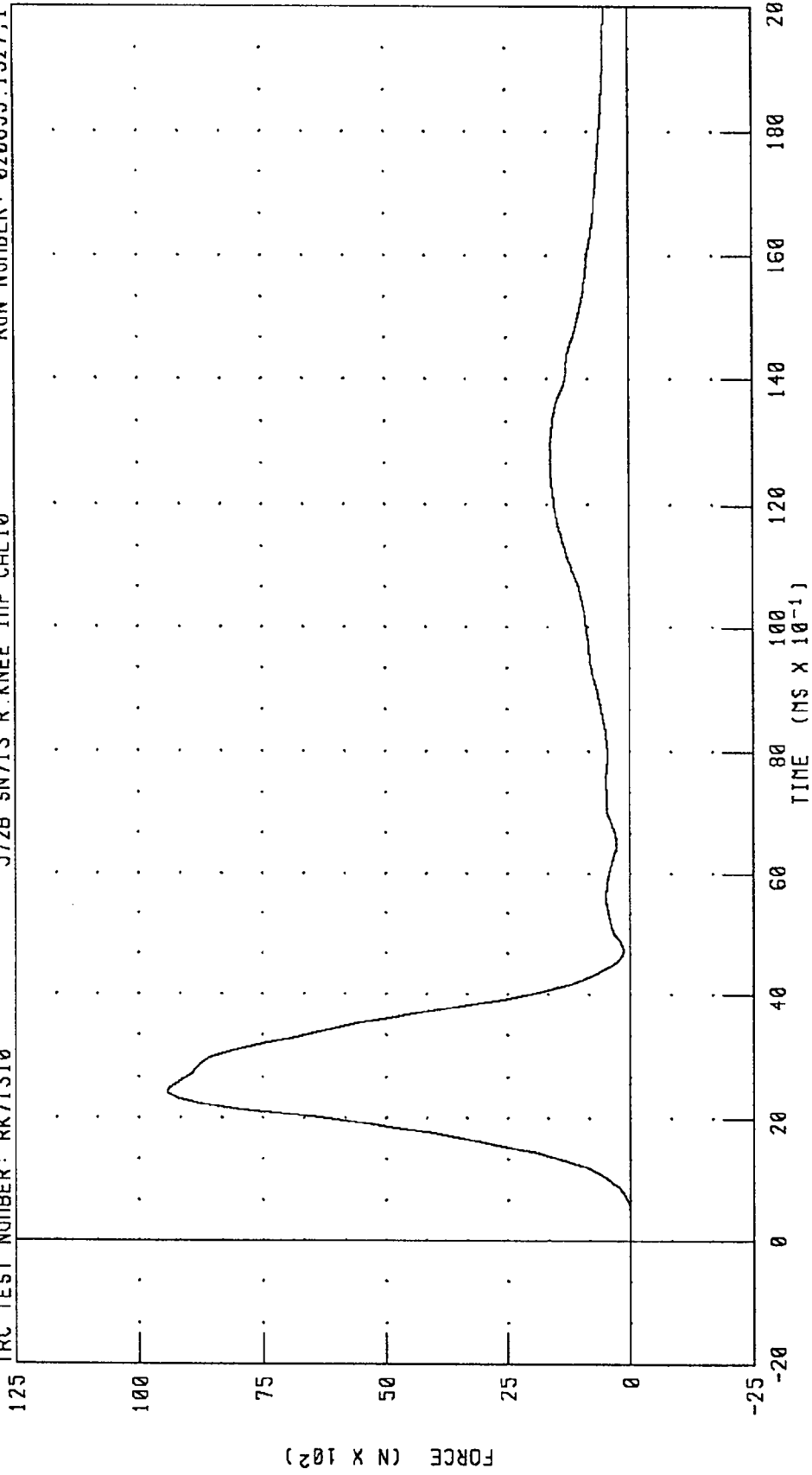
TECHNICIAN

Pete F. S.

RUN NUMBER: 010395.0841;1

PART 572-B HYBRID II RIGHT KNEE CALIBRATION
RIGHT FEMUR FORCE

TRC TEST NUMBER: RK71310 572B SN713 R.KNEE IMP CALI0 RUN NUMBER: 020895.1527;1



CHANNEL: RFMF FILTER: CH. CLASS 600 PEAK DATA: 9416.46 N @ 2.40 MS; -1.30 N @ -0.56 MS

TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

PART 572B

03-JAN-95

TRC INC.

TEST NO: LK71310

572B SN713 L.KNEE IMP CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.0 C
RELATIVE HUMIDITY	10 - 70 %	26 %
PENDULUM VELOCITY	2.06 - 2.15 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE	8229 - 11121 N	9082.35 N
DURATION ABOVE 4448 N	>=1.7 MS	1.71 MS

DUMMY MEETS SPECIFICATIONS

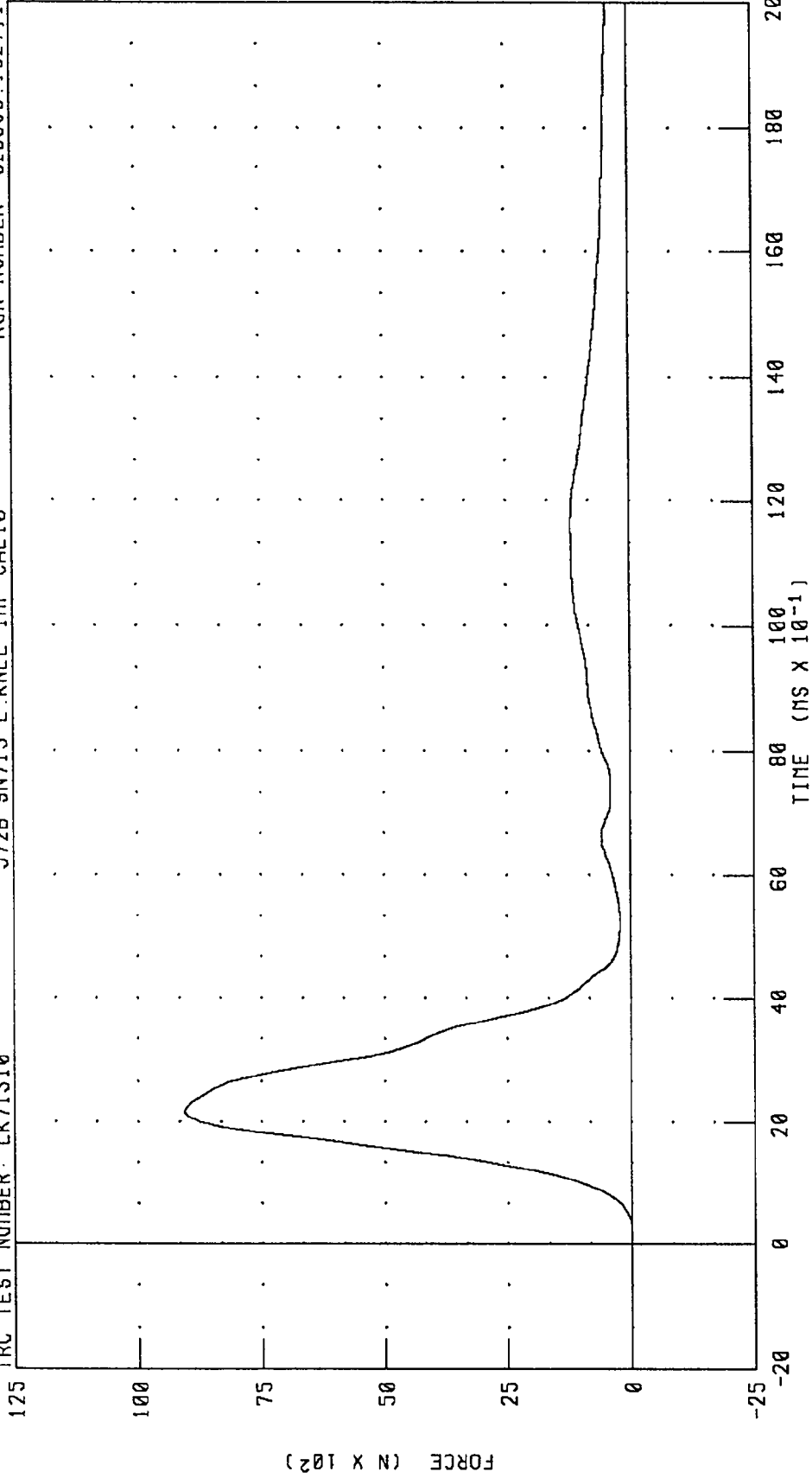
TECHNICIAN

Pete Faust

RUN NUMBER: 010395.0837;1

PART 572-B HYBRID II LEFT KNEE CALIBRATION
LEFT FEMUR FORCE

TRC TEST NUMBER: LK71310 572B SN713 L.KNEE IMP CAL10 RUN NUMBER: 020895.1527.1



CHANNEL: LFMF FILTER: CH. CLASS 600 PEAK DATA: 9082.35 N @ 2.16 MS; -3.40 N @ -0.16 MS

Appendix D

Miscellaneous Test Information

Dummy Instrument Calibrations

Driver Dummy #192

	Serial Number	Model Number	Manufacturer	Calibration Date	
				Last	Due
Head X-axis accelerometer	AAL82	7264	Endevco	08/30/94	03/01/95
Head Y-axis accelerometer	A84JJ	7264	Endevco	08/30/94	03/01/95
Head Z-axis accelerometer	DW04J	7264	Endevco	08/30/94	03/01/95
Chest X-axis accelerometer	CT22H	7264	Endevco	08/30/94	03/01/95
Chest Y-axis accelerometer	AC708	7264	Endevco	08/30/94	03/01/95
Chest Z-axis accelerometer	CW59H	7264	Endevco	08/30/94	03/01/95
Left femur force load cell	986	2430	GSE	08/30/94	03/01/95
Right femur force load cell	987	2430	GSE	08/30/94	03/01/95
Neck X-axis force load cell ¹	085	1716	Denton	08/30/94	03/01/95
Neck Y-axis force load cell ¹	085	1716	Denton	08/30/94	03/01/95
Neck Z-axis force load cell ¹	085	1716	Denton	08/30/94	03/01/95
Neck Moment about X-axis load cell ¹	085	1716	Denton	08/30/94	03/01/95
Neck Moment about Y-axis load cell ¹	085	1716	Denton	08/30/94	03/01/95
Neck Moment about Z-axis load cell ¹	085	1716	Denton	08/30/94	03/01/95
Pelvis X-axis accelerometer	AJ694	7264	Endevco	10/11/94	04/11/95
Pelvis Y-axis accelerometer	AJ656	7264	Endevco	10/11/94	04/11/95
Pelvis Z-axis accelerometer	AJ788	7264	Endevco	10/11/94	04/11/95
Chest deflection potentiometer ¹	87313-96	81422A	Vernitech	08/30/94	03/01/95
Lap belt force load cell	616	3419	Lebow	08/19/94	02/19/95
Shoulder belt force load cell	610	3419	Lebow	08/19/94	02/19/95

¹Hybrid III use only.

Dummy Instrument Calibrations

Right Front Passenger Dummy #713

	Serial Number	Model Number	Manufacturer	Calibration Date	
				Last	Due
Head X-axis accelerometer	AAL82	7264	Endevco	08/30/94	03/01/95
Head Y-axis accelerometer	A84JJ	7264	Endevco	08/30/94	03/01/95
Head Z-axis accelerometer	DW04J	7264	Endevco	08/30/94	03/01/95
Chest X-axis accelerometer	CT22H	7264	Endevco	08/30/94	03/01/95
Chest Y-axis accelerometer	AC708	7264	Endevco	08/30/94	03/01/95
Chest Z-axis accelerometer	CW59H	7264	Endevco	08/30/94	03/01/95
Left femur force load cell	986	2430	GSE	08/30/94	03/01/95
Right femur force load cell	987	2430	GSE	08/30/94	03/01/95
Neck X-axis force load cell ¹	NA	NA	NA	NA	NA
Neck Y-axis force load cell ¹	NA	NA	NA	NA	NA
Neck Z-axis force load cell ¹	NA	NA	NA	NA	NA
Neck Moment about X-axis load cell ¹	NA	NA	NA	NA	NA
Neck Moment about Y-axis load cell ¹	NA	NA	NA	NA	NA
Neck Moment about Z-axis load cell ¹	NA	NA	NA	NA	NA
Pelvis X-axis accelerometer ¹	NA	NA	NA	NA	NA
Pelvis Y-axis accelerometer ¹	NA	NA	NA	NA	NA
Pelvis Z-axis accelerometer ¹	NA	NA	NA	NA	NA
Chest deflection potentiometer ¹	NA	NA	NA	NA	NA
Lap belt force load cell	236	3419	Lebow	08/19/94	02/19/95
Shoulder belt force load cell	615	3419	Lebow	08/19/94	02/19/95

¹ Hybrid III use only.

Vehicle and Calibration Laboratory Instrument Calibrations

Vehicle Accelerometers

	Serial Number	Model Number	Manufacturer	Calibration Date	
				Last	Due
Left rear seat crossmember X-axis	AGR85	7264	Endevco	10/07/94	04/07/95
Left rear seat crossmember X-axis redundant	AGRG7	7264	Endevco	09/08/94	03/08/95
Right rear seat crossmember X-axis	DW34JC	7264	Endevco	10/27/94	04/27/95
Right rear seat crossmember X-axis redundant	DW19J	7264	Endevco	01/02/95	07/02/95
Engine bottom X-axis	DR10JT	7264	Endevco	09/08/94	03/08/95
Engine top X-axis	DW12J	7264	Endevco	12/13/94	06/13/95
Right brake caliper X-axis	AGR75	7264	Endevco	09/13/94	03/13/95
Left brake caliper X-axis	AGRJ1	7264	Endevco	08/24/94	02/24/95
Instrument panel center X-axis	CC71H	7264	Endevco	10/07/94	04/07/95

Calibration Laboratory Instruments

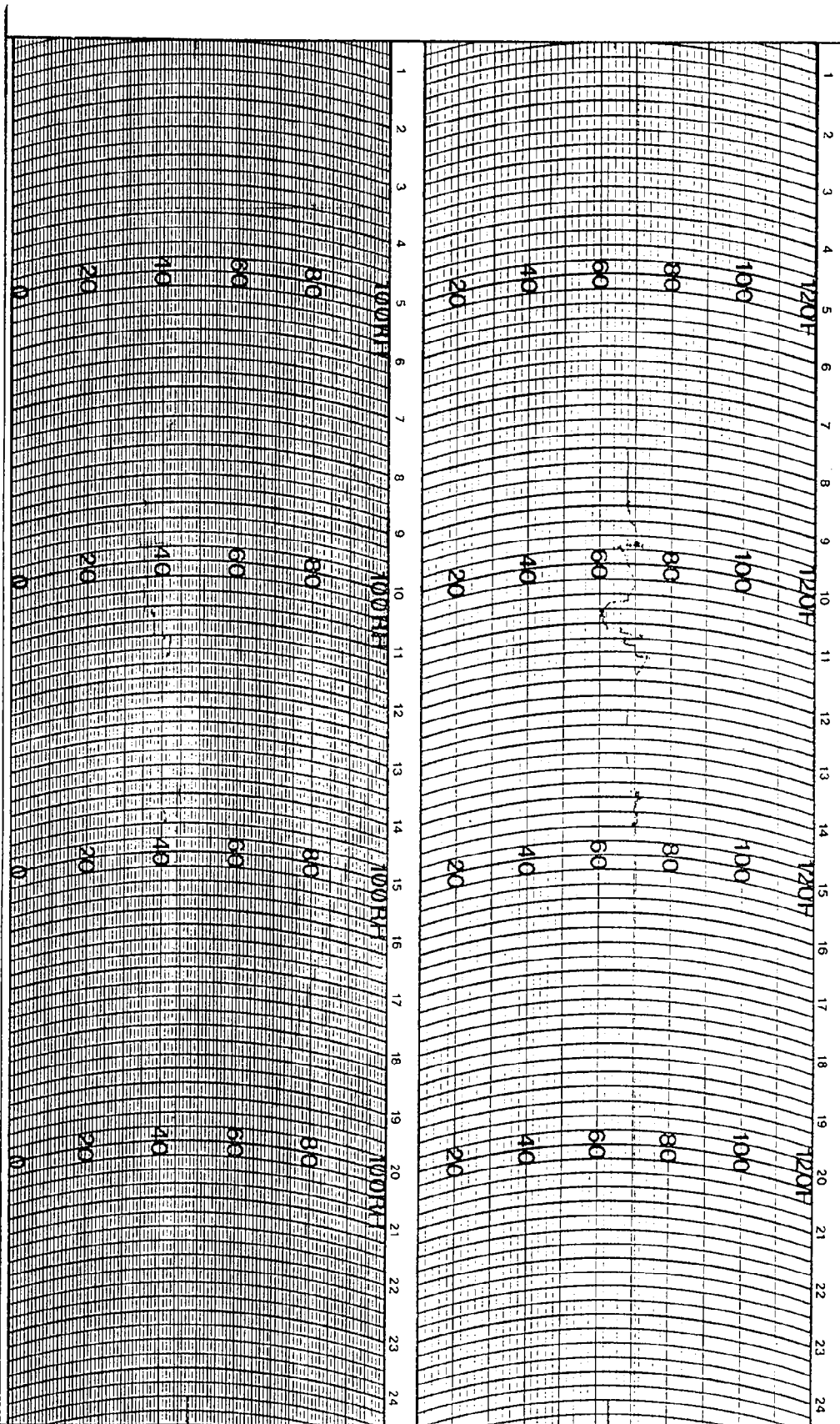
	Serial Number	Model Number	Manufacturer	Calibration Date	
				Last	Due
Neck bending pendulum accelerometer	CB27	7232	Endevco	09/26/94	03/26/95
Neck bending rotary potentiometer	NA	35435-1-102	Bournes	Mfr. Specification	
Neck bending linear potentiometer	NA	5184-2051846003	Bournes	09/26/94	03/26/95
Thorax/Hybrid II femur pendulum accelerometer	CC64	7232	Endevco	09/26/94	03/26/95
Lumbar flexion force gauge	NA	DPPH-50	Chatillon	05/03/89	repaired
Lumbar flexion rotation gauge	CP17-0601-1	7020	Humphrey	Mfr. Specification	
Abdomen compression displacement gauge	4075-175	80294-2051941504	Bournes	09/26/94	03/26/95
Abdomen compression force gauge	3443	3167	Lebow	09/26/94	03/26/95
Hybrid III femur pendulum accelerometer	CG83	7232	Endevco	09/26/94	03/26/95

Sign Convention
NHTSA Data Tape Reference Guide

<u>Accelerometers:</u>	+X: Forward
	+Y: Leftward
	+Z: Upward
<u>Potentiometers:</u>	+Chest longitudinal deflection: Outward
	+Chest lateral deflection: Leftward
	+Seat belt displacement: Outward
	+Seat belt extension: Elongation
	+Knee slider displacement: Distance between femur and tibia increased (in relation to a seated dummy)
<u>Load cells:</u>	+Femur force: Tension
	+Seat belt force: Tension
	+Barrier force: Tension
<u>Neck load cells:</u>	+X force: Head pushed forward
	+y force: Head pushed leftward
	+Z force: Head pulled upward (tension on neck)
	+X moment: Right ear rotating toward right shoulder
	+Y moment: Chin rotating toward chest
	+Z moment: Chin rotating toward left shoulder
<u>Tibia load cells:</u>	+X force: Tension
	+Y force: Tension
	+Z force: Tension
	+X moment: Bottom of tibia moving leftward
	+Y moment: Bottom of tibia moving rearward

Frequency Response Classes
SAE J211 OCT88

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	180
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head form Accelerations	1000



WEATHER MEASURE
 P.O. BOX 41257
 SACRAMENTO, CA. 95841
 PHONE (916) 481-7565

HYGROTHERMOGRAPH
 1 DAY

CHART # C311 D HF
 PART # 699123

STATION 1205, Sacramento DATE ON 1/22/85 DATE OFF 1/22/85

Appendix E

Restraint System Instructions from Owner's Manual

Safety Restraints

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Using Safety Restraints Properly

Safety Belts

The use of safety belts helps to restrain you and your passengers in case of a collision. In most states and in Canada, the law requires their use. We strongly recommend that you use them every time you travel in your vehicle.

Safety belts provide best restraint when:

- the seatback is upright
- the occupant is sitting upright (not slouched)
- the lap belt is snug and low on the hips
- the shoulder belt is snug against the chest
- the knees are straight forward

For your safety, your vehicle has different types of safety belts:

- Combination lap and shoulder belts
- Rear lap belts with retractors
- Front lap belt without retractor - if your vehicle has a center front seat

See the following sections in this chapter for directions on how to properly use these safety belts. Also see *Safety Restraints for Children* in this chapter for special instructions about using safety belts for children.

WARNING

Make sure that you and your passengers, including pregnant women, wear safety belts. Be sure that the lap belt portion of your safety belt fits snugly and as low as possible around the hips. If safety belts are not used properly, the risk of you or your passengers being injured in a collision greatly increases.

Safety Restraints

WARNING Always drive and ride with your seatback upright, and the lap belt portion of your safety belt snug and low across the hips. This will reduce the risk of serious injury to the abdomen or neck that could be caused by sliding under the safety belts in a collision.

Do not allow any people to ride in the cargo area of your vehicle. People who are not riding in seats with their safety belts fastened are much more likely to be injured in a collision.

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.

WARNING Children should always ride with the seatback in the fully upright position. When the seatback is not fully upright, there is a greater risk that the child will slide under the safety belt and be seriously injured in a collision.

Never use a single belt for more than one person or across more than one seating position. This greatly increases the risk that one or both of the people will be injured in a collision. Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair.

WARNING Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. Never swing it around the neck over the inside shoulder. Never use a single belt for more than one person. Failure to follow these precautions could increase the risk and/or severity of injury in a collision.

WARNING Lock the doors of your vehicle before driving to lessen the risk of the door coming open in a collision.

Combination Lap and Shoulder Belts

While your vehicle is in motion, the combination lap and shoulder belts adjust to your movement. However, if you brake hard, corner hard or if your vehicle receives an impact of 5 mph (8 km/h) or more, the lap and shoulder belt locks and helps reduce your forward movement. The front seat belt systems can also be made to lock by jerking on the belt.

After you get into your vehicle, close the door and lock it. Then adjust the seat to the position that suits you best.

To fasten the belt, pull the lap/shoulder belt from the retractor so that the shoulder portion of the belt crosses your shoulder and chest. Be sure the belt is not twisted. If it is, remove the twist. Insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Make sure the tongue is securely fastened to the buckle.

The driver and right front passenger shoulder belt height is adjustable to one of four (4) positions (Regular cab model) or five (5) positions (Super cab model). To adjust the belt down, push the release button on the adjuster down and slide the adjuster down. Then release the button and make sure the adjuster is firmly in one of the positions. To adjust the belt up, slide the adjuster up. (You do not have to push the release

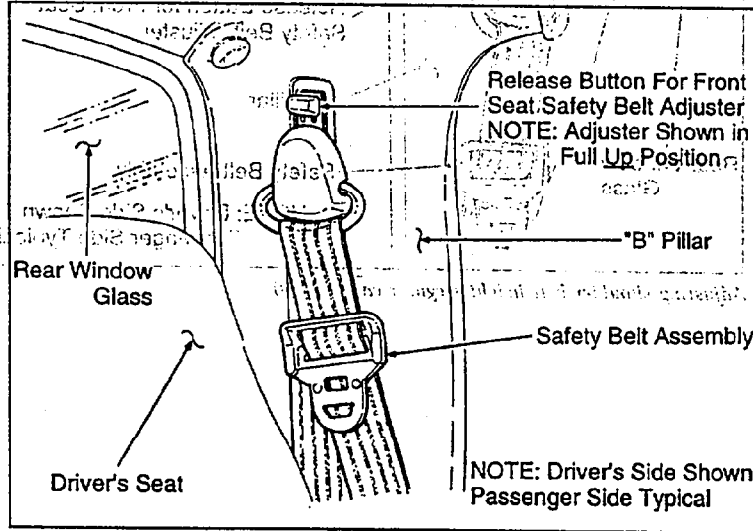
Safety Restraints

button.) Slide it up or down until the belt rests across the middle of your shoulder.

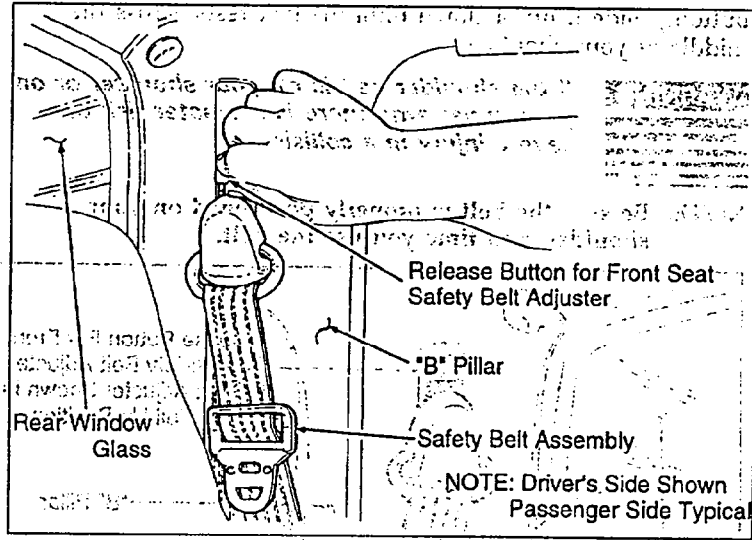
WARNING

If the shoulder belt is off your shoulder or on your upper arm, there is a greater risk of severe injury in a collision.

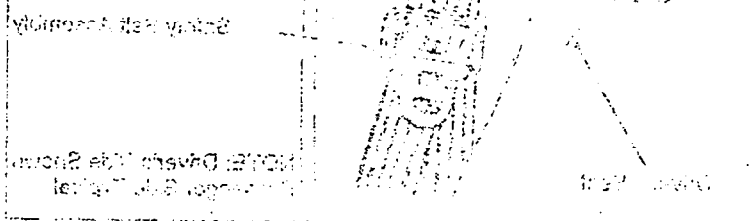
NOTE: Be sure the belt is properly positioned on your shoulder each time you use the belt.



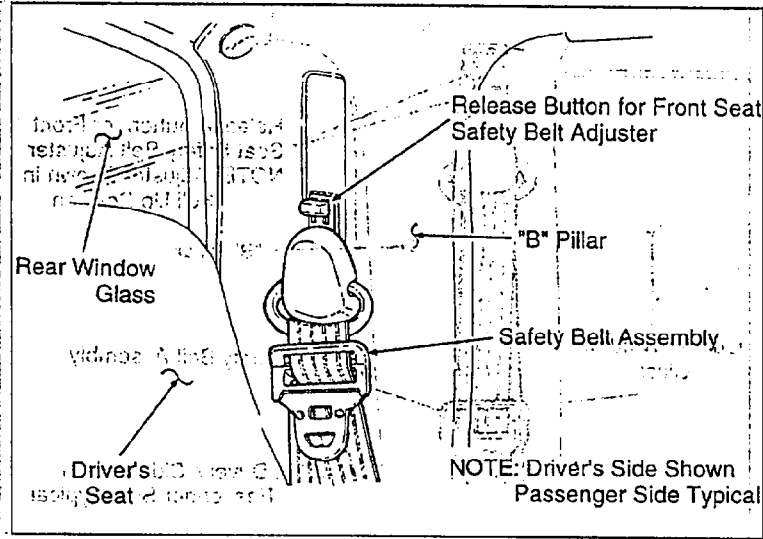
Shoulder belt height adjuster — full up position (regular cab models)



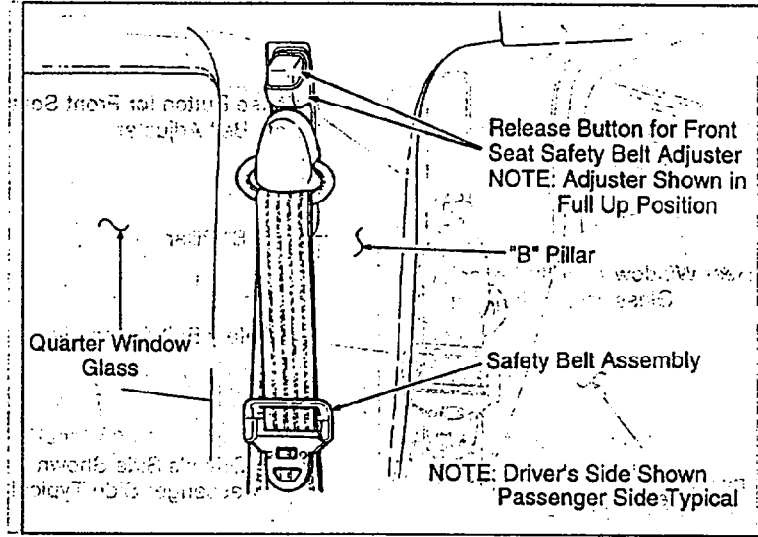
Adjusting shoulder belt height (regular cab models)



Safety Restraints

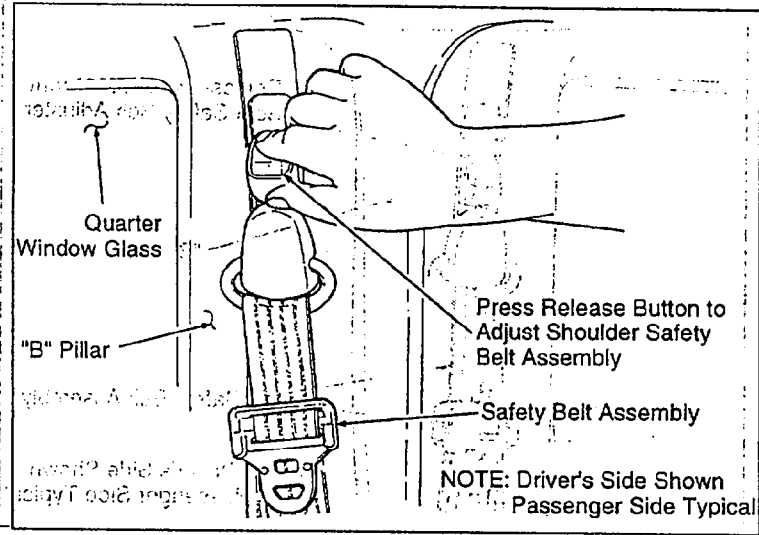


Shoulder belt height adjuster — full down position (regular cab models) shown.



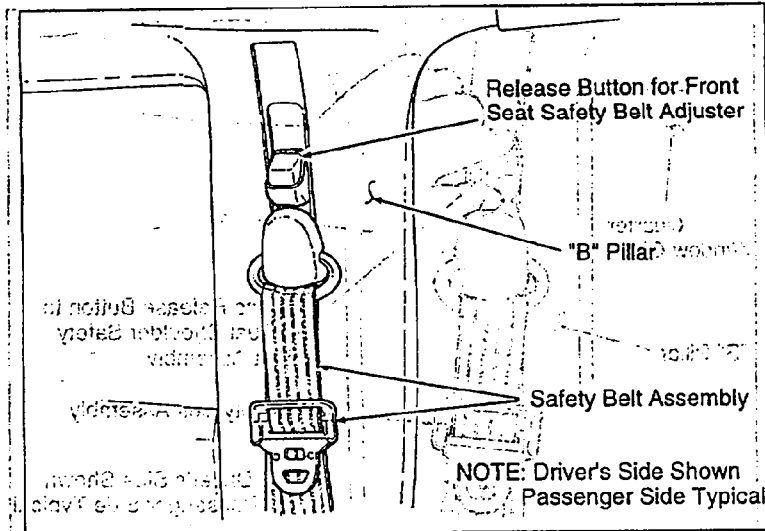
Shoulder belt height adjuster — full up position (SuperCab models)

Safety Restraints



Adjusting shoulder belt height (SuperCab models)

Adjusting the shoulder belt height is important for proper protection. The shoulder belt should be adjusted so that it is at the top of your shoulder when you are seated. To adjust the shoulder belt height, press the release button on the "B" pillar to move the shoulder belt up or down. The shoulder belt should be adjusted so that it is at the top of your shoulder when you are seated. The shoulder belt should be adjusted so that it is at the top of your shoulder when you are seated.



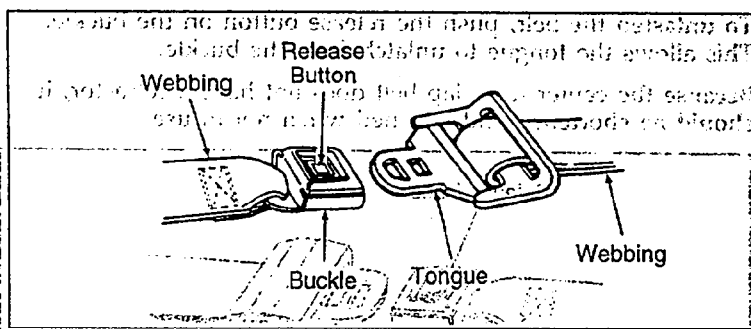
Shoulder belt height adjuster — full down position (SuperCab models)



Use the shoulder belt only on the shoulder that is closest to the side of the vehicle. Never wear the belt under your arm. Never swing it around your neck over the inside shoulder. If you do not use the shoulder belt properly, the chances of your being injured in a collision greatly increase.

To tighten the lap portion of the belt, pull up on the shoulder belt until it fits you snugly. The belt should rest as low on your hips as possible.

Safety Restraints



Unfastening the outboard lap/shoulder belts

Center Front Lap Belt (If equipped)

The lap belt in the center of the front seat does not adjust automatically. You must adjust it to fit snugly around your hips. Do not wear it around your waist.

Before you fasten your center position lap belt in the front seat, you may need to lengthen it.

To lengthen the belt, tip the belt tongue at a right angle to the belt. Pull the belt tongue over your lap until it reaches the base buckle.

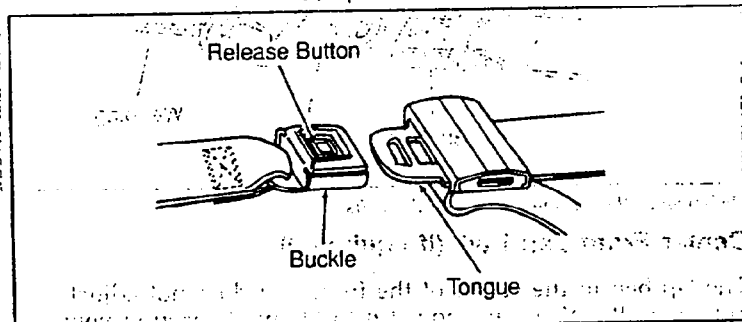
To fasten the belt, pull the belt across your hips and insert the tongue into the correct buckle on your seat, until you hear a snap and feel it lock. Make sure the buckle is securely fastened.

Adjust the belt so that it fits snugly around your hips.

- If you need to lengthen the belt, unfasten it and repeat the procedure above.
- If you need to shorten the belt, pull on the loose end of the webbing.

To unfasten the belt, push the release button on the buckle. This allows the tongue to unlatch from the buckle.

Because the center front lap belt does not have a retractor, it should be shortened and fastened when not in use.



Fastening and unfastening the front center safety belt

Rear Lap Belt with Retractor:

Pull the belt out of the retractor with a steady motion and insert the tongue into the proper buckle until you hear a snap and feel the latch engage.

To Unfasten the Safety Belts with Retractors:

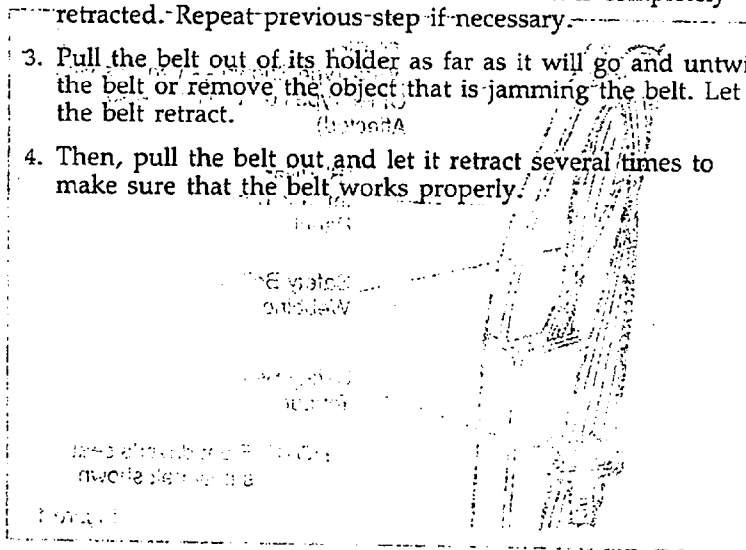
1. Push the release button on the buckle. This allows the tongue to unlatch from the buckle.
2. While the belt retracts, guide the tongue to its original position. If you do not guide the tongue, it may strike you or part of the vehicle.

Safety Restraints

How to Untwist or Unjam a Safety Belt Retractor

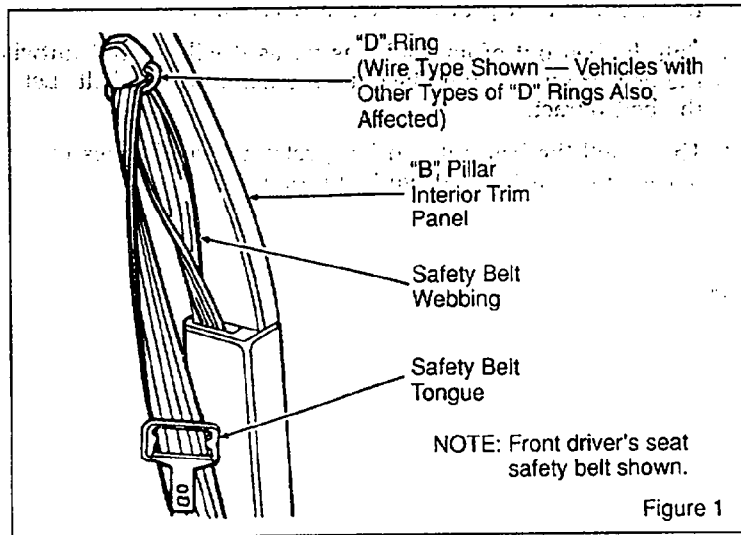
If you should jam the lap belt retractor by allowing the belt to retract when it is twisted, you can free the webbing with this procedure:

1. Pull on the belt with both hands to tighten it on the retractor spool.
2. Feed the belt back into the retractor until it is completely retracted. Repeat previous step if necessary.
3. Pull the belt out of its holder as far as it will go and untwist the belt or remove the object that is jamming the belt. Let the belt retract.
4. Then, pull the belt out and let it retract several times to make sure that the belt works properly.



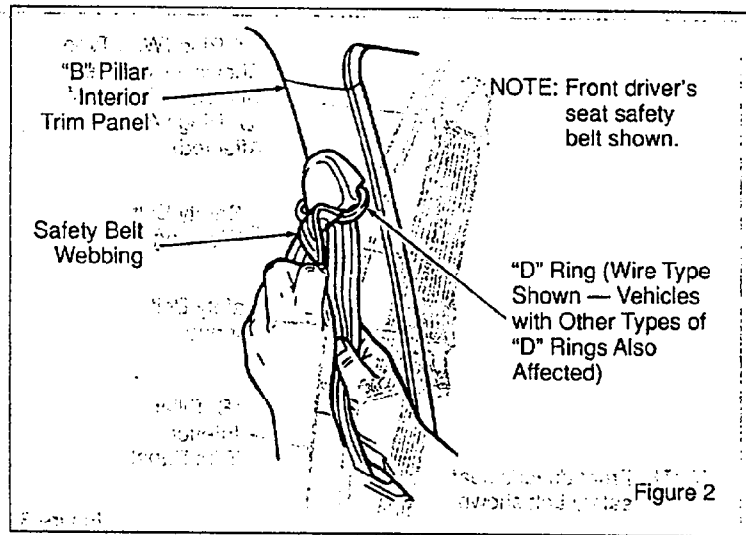
Procedure to Correct a Twisted Safety Belt at the "D" Ring (if so equipped) Front and/or Rear Outboard Seating Positions

NOTE: The restraint system shown in the following figures may be different than the restraint system in your vehicle. However, use these figures and this procedure to correct a twisted safety belt at any outboard seating position that has a "D" ring.



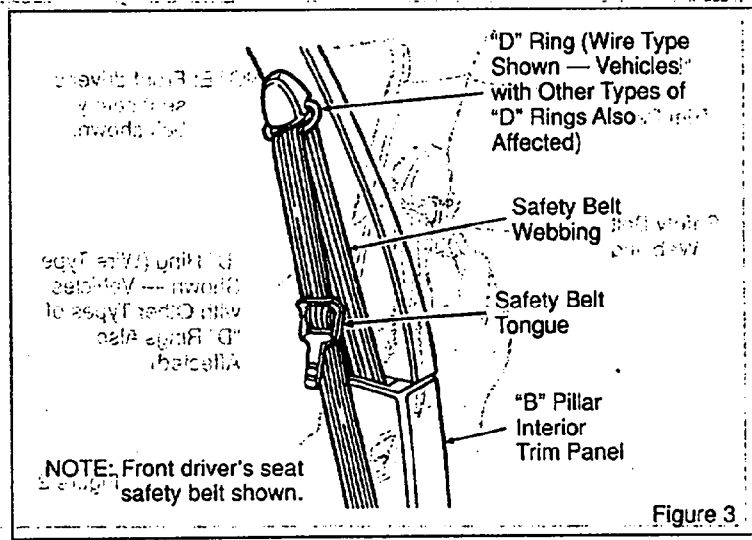
Safety Restraints

1. Grasp the belt webbing at the "D" ring. See Figure 2.



2. Rotate and fold the belt webbing over itself as required to remove the twist.
3. Feed the folded portion of the belt through the "D" ring.

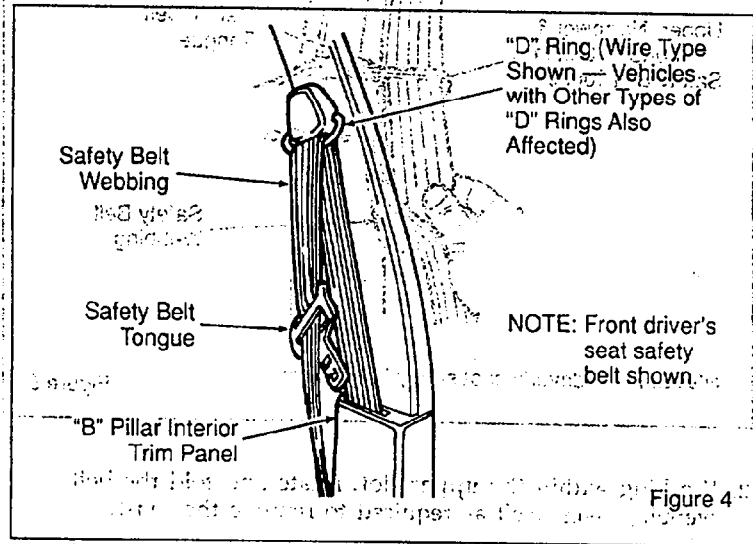
4. When completed, the safety belt should look like Figure 3.



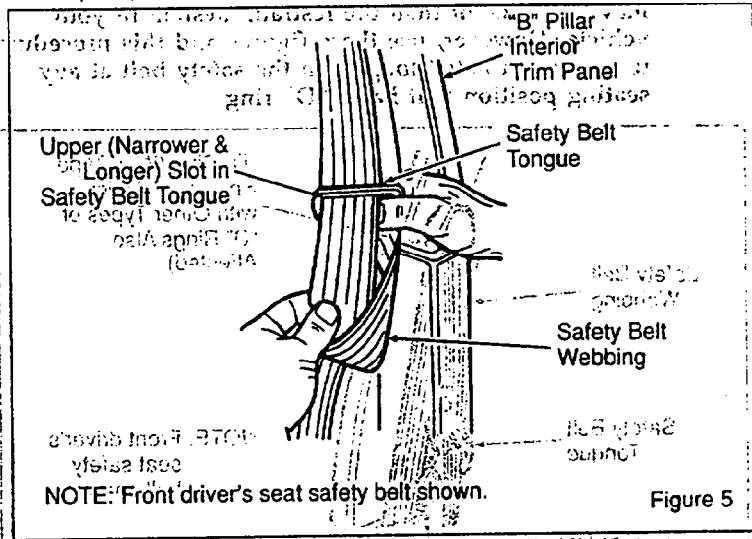
Safety Restraints

Procedure to Correct a Rotated Tongue on the Safety Belt (Front and/or Rear Outboard Seating Positions)

NOTE: The restraint system shown in the following figures may be different than the restraint system in your vehicle. However, use these figures and this procedure to correct a rotated tongue on the safety belt at any seating position that has a "D" ring.



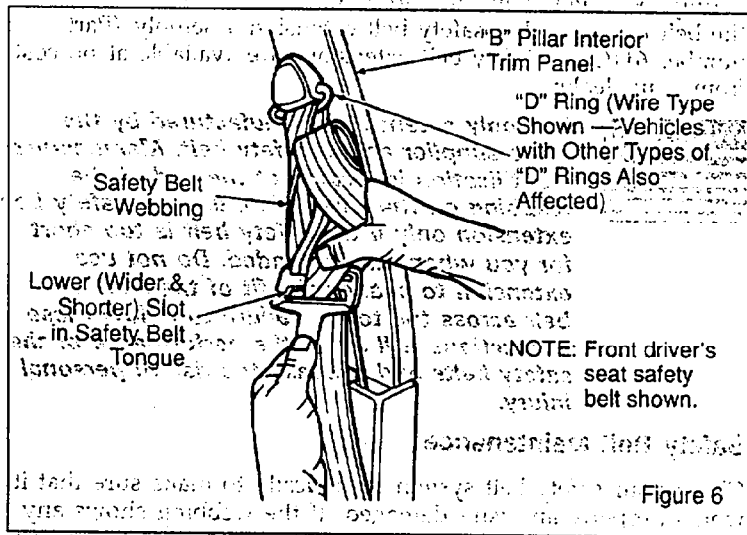
1. Grasp the belt tongue and pull down on the belt webbing closest to you to form a loop through the upper (narrow and longer) slot in the tongue. See Figure 5.



2. Working within the upper slot, rotate and fold the belt webbing over itself as required to remove the twist.
3. Pull the excess belt webbing back through the upper slot in the tongue.

Safety Restraints

4. Repeat the above steps to complete the removal of the twist at the lower (wider and shorter) slot in the tongue. See Figure 6.



5. When completed, the safety belt should look like Figure 3:

Safety Belt Extension Assembly

For some people, the safety belt may be too short even when it is fully extended. You can add about eight inches (20 cm) to the belt length with a safety belt extension assembly (Part number 611C22). Safety belt extensions are available at no cost from your dealer.

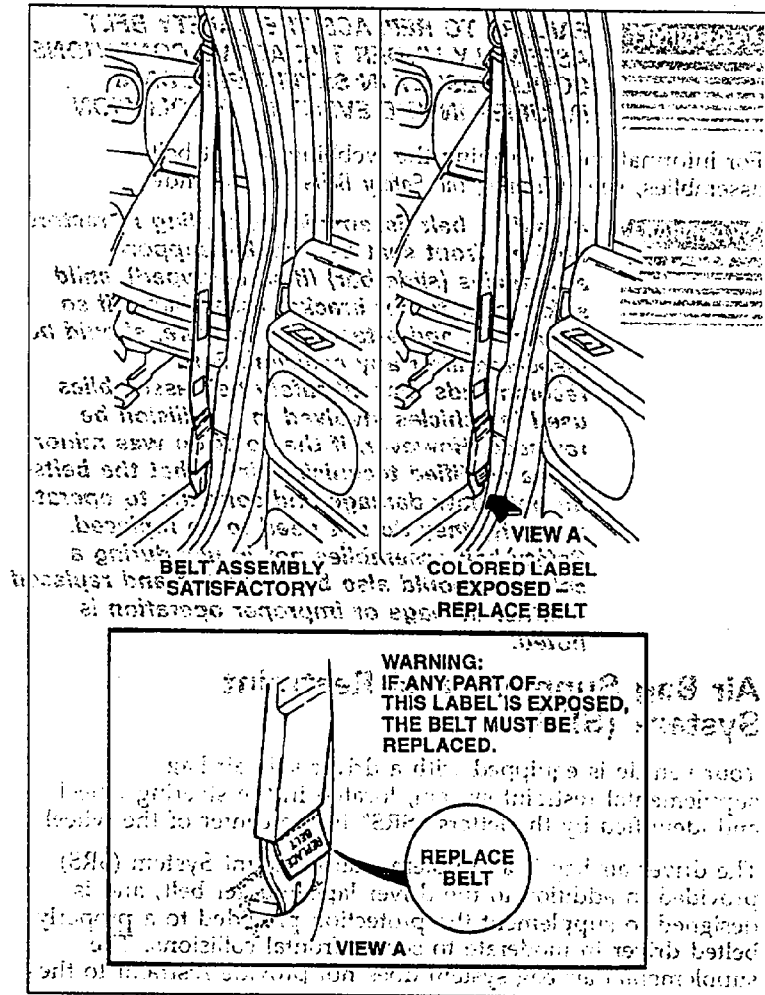
WARNING Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully extended. Do not use extension to change the fit of the shoulder belt across the torso. Failure to follow these instructions will affect the performance of the safety belts and increase the risk of personal injury.

Safety Belt Maintenance

Check your safety belt system periodically to make sure that it works properly and isn't damaged. If the webbing shows any wear, nicks or cuts, have it examined by a qualified technician to determine if replacement is necessary. Always have your safety belt system checked after a collision.

The short plastic boot on the front safety belt at the outboard anchor location (Regular Cab, driver; SuperCab, driver and passenger) covers an energy absorbing sew pattern on the safety belt. In the event of an accident, sew pattern may release, and the colored label (REPLACE BELT) may become visible. If this occurs, the safety belt must be replaced.

Safety Restraints



Energy absorbing sew pattern

WARNING

FAILURE TO REPLACE THE SAFETY BELT ASSEMBLY UNDER THE ABOVE CONDITIONS COULD RESULT IN SEVERE PERSONAL INJURIES IN THE EVENT OF A COLLISION.

For information on cleaning the webbing of seat belt assemblies, see "Cleaning the Safety Belts" in the Index.

WARNING

All safety belt assemblies, including retractors, buckles, front seat belt buckle support assemblies (slide bar) (if so equipped), child safety seat tether bracket assemblies (if so equipped), and attaching hardware, should be inspected after any collision. Ford recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Air Bag Supplemental Restraint System (SRS)

Your vehicle is equipped with a driver side air bag supplemental restraint system, located in the steering wheel and identified by the letters "SRS" in the center of the wheel.

The driver air bag is a Supplemental Restraint System (SRS) provided in addition to the driver lap/shoulder belt, and is designed to supplement the protection provided to a properly belted driver in moderate to severe frontal collisions. The supplemental air bag system does not provide restraint to the lower body.

Safety Restraints

The Importance of Wearing Safety Belts

WARNING ALWAYS WEAR YOUR SAFETY BELT!
Always wear your safety belt. It is the best way to protect yourself in a crash. Buckle up, America!

WARNING All occupants of the vehicle, including the driver, should always wear their safety belts, whether or not an air bag Supplemental Restraint System is also provided at their seating position. Failure to do so may increase the risk of severe injury or death in the event of a collision.

There are four very important reasons to use safety belts even with an air bag system. Use your safety belts to:

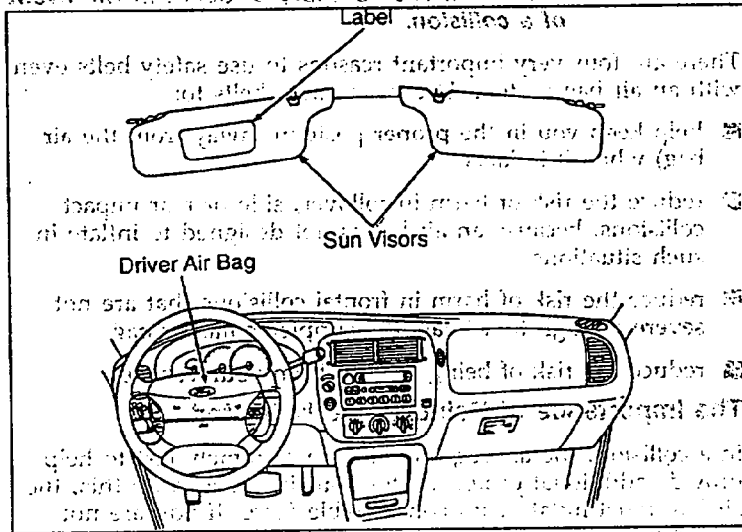
- help keep you in the proper position (away from the air bag) when it inflates
- reduce the risk of harm in rollover, side or rear impact collisions, because an air bag is not designed to inflate in such situations
- reduce the risk of harm in frontal collisions that are not severe enough to activate the supplemental air bag
- reduce the risk of being thrown from your vehicle.

The Importance of Being Properly Seated

In a collision, the air bag must inflate extremely fast to help provide additional protection for you. In order to do this, the air bag must inflate with considerable force. If you are not seated in a normal riding position with your back against the seatback, the air bag may not protect you properly and could possibly hurt you as it inflates.

How the Air Bag Supplemental Restraint System Operates

The air bag supplemental restraint system has two main parts. One part is the air bag system with the driver air bag and inflator located in the center of the steering wheel. The second part is the electrical system, which has impact sensors, and a diagnostic module, and backup power supply. The diagnostic module monitors its own internal circuits and the supplemental air bag electrical system readiness, including the impact sensors, the system wiring, the air bag system readiness light, air bag power, and the air bag ignitor.



The location of the air bag and warning label

The air bag system uses a readiness light and a tone to indicate the condition of the system. The readiness light is in the instrument cluster. When you turn the ignition key to ON, this light will illuminate for approximately six (6) seconds and then

Safety Restraints

turn off. This indicates that the system is operating normally.

NOTE: Maintenance of the air bag system is not required.

WARNING *A problem with the system is indicated by one or more of the following: the readiness light will either flash or stay lit, or it will not light, or a group of five beeps will be heard.*

If any of these things happen, even intermittently, have the air bag system serviced at your Ford or Lincoln-Mercury dealer immediately.

Tone generator

The air bag readiness light indicates the air bag system condition. However, a series of five sets of five beeps will be heard only if the readiness light does not work and there is a problem with the air bag system. This also means that the Air Bag Supplemental Restraint System (SRS) is in need of service. The tone pattern will repeat (five sets of five beeps) periodically until the problem and light are repaired. Unless serviced, the Air Bag Supplemental Restraint System may not function properly in the event of a collision.

WARNING *Do not attempt to service, repair, or modify the Air Bag Supplemental Restraint System; tampering could cause activation of the system and increase the risk of personal injury. DO NOT REPLACE OR OTHERWISE TAMPER WITH THE AIR BAG FUSES. For servicing of the Air Bag Supplemental Restraint System, see your Ford or Lincoln-Mercury dealer.*

The air bag system is designed to stay out of sight until it is activated. The air bag system is designed to deploy in frontal and front-angled collisions more severe than hitting a parked vehicle of similar size and weight head-on at about 28 mph.

(45 km/h). Because the system senses the crash severity, rather than vehicle speed, some frontal collisions at speeds above 28 mph (45 km/h) will not inflate the air bag.

The following four steps show how the air bag system works:

1. Sensors in the vehicle will detect the degree of severity of a frontal impact. When the sensor system is activated, electric current flows to the inflator and the system ignites the gas generant, and its air bag inflates.
2. The propellant then rapidly burns in the metal container. The rapid burning produces nitrogen gas and small amounts of dust. The nitrogen gas and dust are cooled and filtered during inflation of the air bag.
3. The inflating air bag splits open the trim cover. The air bag then rapidly unfolds and inflates in front of the driver.

NOTE: STEPS 1-3 TAKE PLACE IN A FRACTION OF A SECOND.

After inflation, the gas empties through holes in the air bag. The air bag deflates at once.

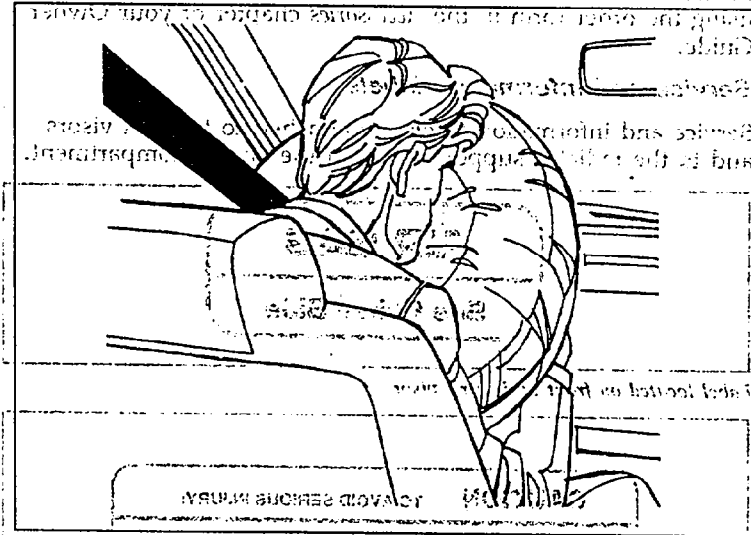
The surface of the air bags and the vehicle interior may be dusted with a powdery residue. The powder is cornstarch or talcum powder, which is used to lubricate the air bag as it inflates, and sodium compounds such as sodium carbonates (e.g., baking soda) and possibly a very small amount of sodium hydroxide that may be irritating to the skin and eyes, but is not toxic.

Right after air bag inflation, you may notice smoke (from the powder and dust) and smell the burnt propellant. This is normal.

WARNING Several air bag system components get hot after inflation. Do not try to touch them after inflation.

Safety Restraints

Air bags may not inflate in certain frontal collisions, even though the vehicle may be badly damaged. The fact that your air bag did not inflate in such a collision does not mean that something is wrong with the air bag system. Rather, it means the crash forces were not severe enough to need an air bag to prevent serious injury.



Inflated driver-side air bag

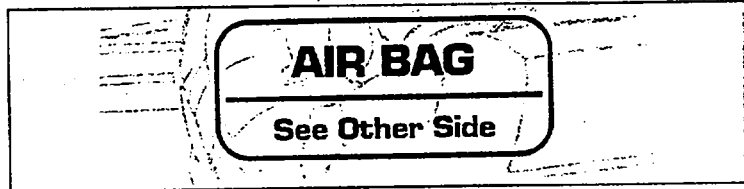
WARNING The air bag will inflate only once. The system is designed to function on a one-time-only basis. If the air bag is inflated, THE AIR BAG WILL NOT FUNCTION AGAIN AND MUST BE REPLACED IMMEDIATELY. If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

Disposal of supplemental air bag equipped vehicles

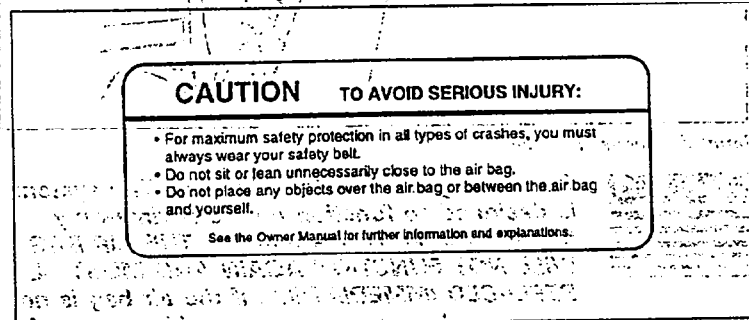
For disposal of air bags or air bag equipped vehicles, see your local Ford or Lincoln-Mercury dealer, or refer to the procedures in the 1995 Ford Service Manual. Information on how to order a service manual is available at an authorized Ford or Lincoln-Mercury dealer. You can also order a service manual using the order form in the *Accessories* chapter of your Owner Guide.

Service and information labels

Service and information labels are attached to the sun visors and to the radiator support shield in the engine compartment.

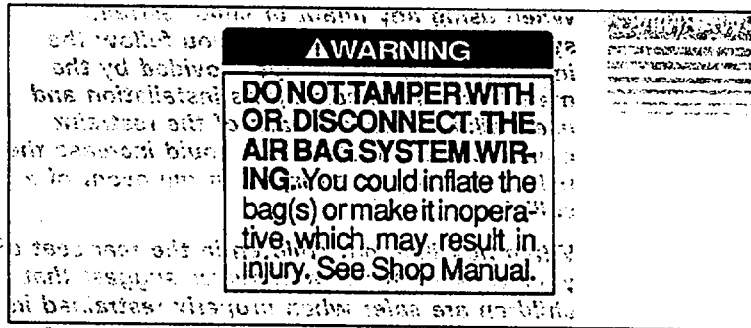


Label located on front of driver's visor



Label located on back of driver's visor

Safety Restraints



Air bag label on the radiator support in the engine compartment.

Safety Restraints for Children

In the U.S. and Canada, you are required by law to use safety restraints for children. If small children ride in your vehicle — this generally includes children who are four years old or younger and who weigh 40 pounds (18 kg) or less — you must put them in safety seats that are made specially for children. Safety belts alone do not provide maximum protection for these children. Check your local and state laws for specific requirements.

WARNING



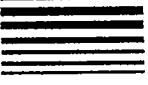
Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.

WARNING



Never let children or adults ride in the cargo area of your vehicle. Make sure that they sit where they can be properly restrained. If they are not restrained, the risk of their being injured in a collision greatly increases.

WARNING



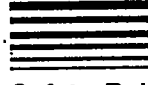
When using any infant or child restraint system, it is important that you follow the instructions and warnings provided by the manufacturer concerning its installation and use. Failure to follow each of the restraint manufacturer's instructions could increase the risk or severity of an injury in the event of a collision or sudden stop.

When possible, put children in the rear seat of your vehicle. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating positions.

Do not install a child seat in a center facing jump seat. Safety seats for children are not intended for use in center facing seats.

Safety belts and seats can become hot in a vehicle that has been closed up in sunny weather; they could burn a small child. Check seat covers and buckles before you place a child anywhere near them.

WARNING



Never leave a child unattended in your vehicle. Always remove the key from the ignition and take it with you.

Safety Belts for Children

Children who are too large for child safety seats should always wear safety belts. (See instructions with your child seat, or contact its manufacturer, to determine maximum size of child that will safely fit in the seat.)

Safety Restraints

WARNING If safety belts are not properly worn and adjusted, as described, the risk of serious injury to the child in a collision will be much greater.

WARNING If the shoulder belt portion of one of the lap and shoulder belts can be positioned so that it does not cross or rest in front of the child's face or neck, the child should wear the lap and shoulder belt. Moving the child closer to the center of the vehicle may help provide a good shoulder belt fit.

If the shoulder belt cannot be properly positioned, move the child to one of the seats with a lap belt only (preferably in a rear seat) and use the lap belt.

WARNING Lap belts and the lap belt portion of lap and shoulder belts should always be worn snugly and below the hips, touching the child's thighs.

WARNING Children should always ride with the seatback in the fully upright position. When the seatback is not fully upright, there is a greater risk that the child will slide under the safety belt and be seriously injured in a collision.

Safety Seats for Children

Use a safety seat that is recommended for the size and weight of the child. Always follow the safety seat manufacturer's instructions when installing and using the safety seat.

Ford recommends the use of a child safety seat having a top tether strap. Install the child safety seat in a seating position which is capable of providing a tether anchorage. For more information on top tether straps see *Attaching Safety Seats With Tether Straps* in this chapter.

When installing a child safety seat, be sure to use the correct safety belt buckle for that seating position, and make sure the tongue is securely fastened in the buckle.

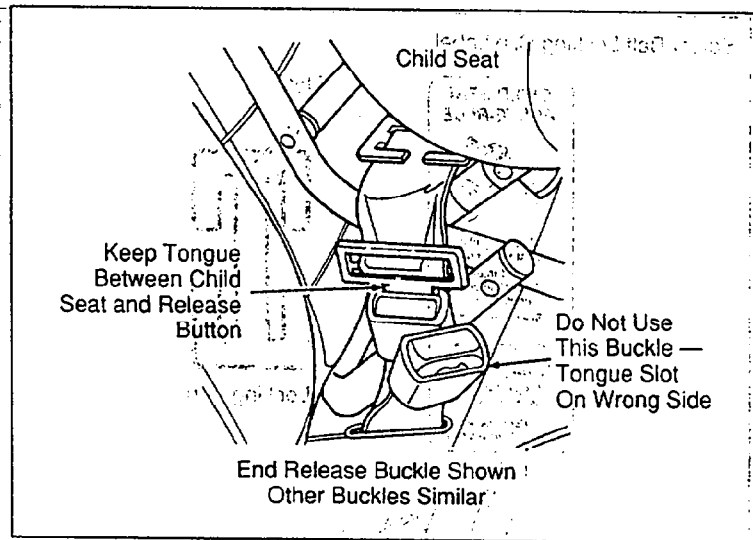
WARNING All child restraint systems are designed to be secured in vehicle seats by lap belts or by the lap portion of a lap-shoulder belt. If you do not properly secure the safety seat to the vehicle, the risk is greater that a child, occupying the seat during a collision or sudden stop, will be injured. An unsecured safety seat could also injure other passengers in the vehicle.

WARNING Carefully follow all of the manufacturer's instructions that come with the safety seat that you put in your vehicle. Make sure that the shoulder belt (if provided at the seating position where the safety seat is being used) does not cross or rest in front of the child's face or neck. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

Seatbacks should be upright for use with child safety seats.

WARNING Always keep the buckle-release button pointing upward and away from the child seat, with the tongue between the child seat and the release button as shown in the following illustration. Failure to follow these instructions could result in accidental unbuckling of the safety belt if the child safety seat hits the release button. Release of the safety belt could result in serious injuries.

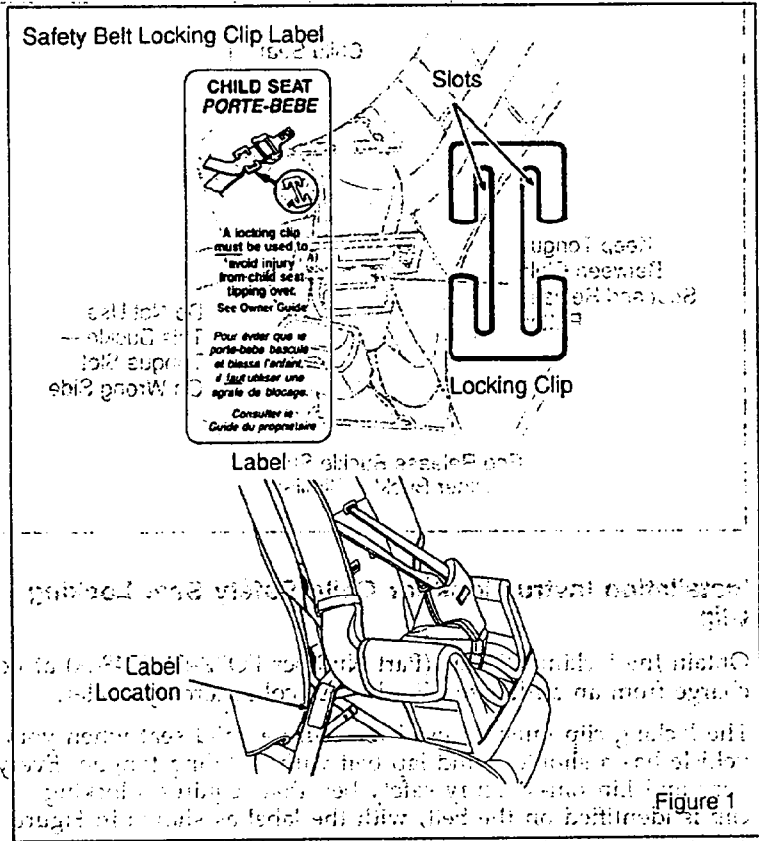
Safety Restraints



Installation Instructions for Child Safety Seat Locking Clip

Obtain the locking clip kit (Part Number FO3Z-5461248-A) at no charge from an authorized Ford or Lincoln-Mercury dealer.

The locking clip must be used to secure a child seat when your vehicle has a shoulder and lap belt with a sliding tongue. Every Ford and Lincoln-Mercury safety belt that requires a locking clip is identified on the belt, with the label as shown in Figure 1. The locking clip is installed on a sample piece of webbing to show proper installation.



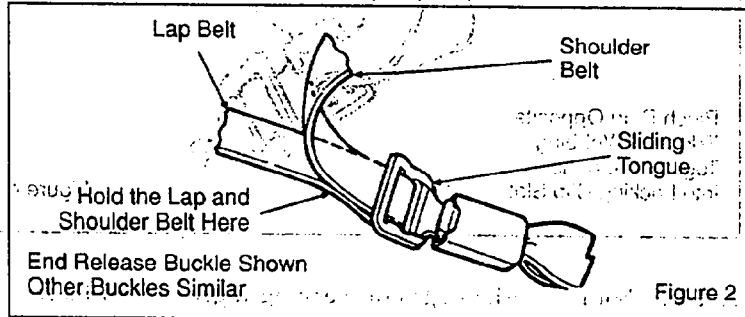
If you do not use a locking clip, injuries could result from the child seat tipping over during normal vehicle braking or cornering.

Safety Restraints

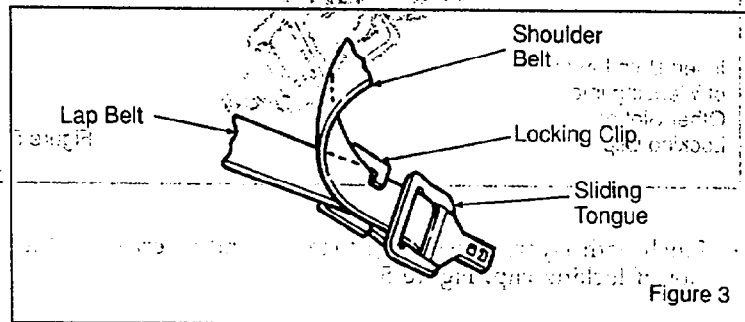
To install the locking clip

1. Thread the belt webbing through the child seat according to the child seat manufacturer's instructions.

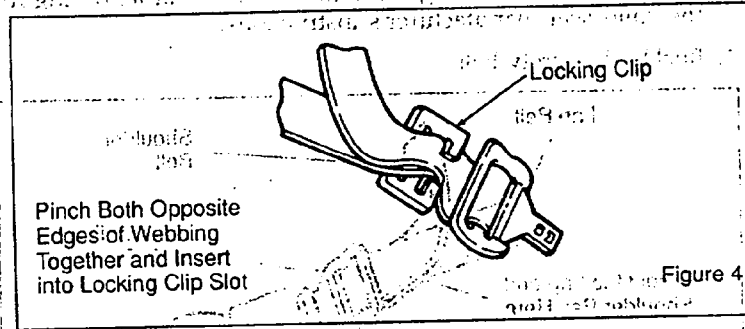
2. Buckle the safety belt.



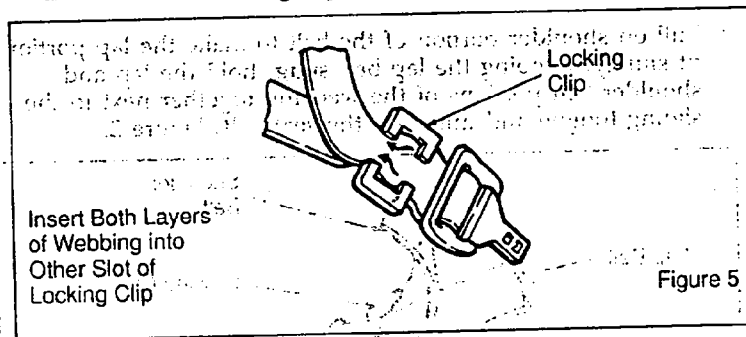
3. Pull on shoulder portion of the belt to make the lap portion fit snugly. Keeping the lap belt snug, hold the lap and shoulder belt portions of the webbing together next to the sliding tongue and unbuckle the seat belt, Figure 2.



- Slide either corner of the locking clip slot closest to the tongue over both layers of webbing as shown in Figure 3.

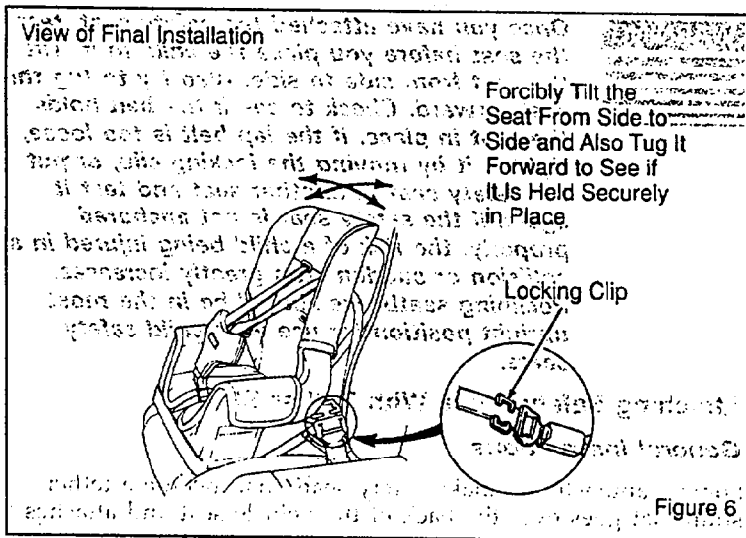


- Pinch both opposite edges of webbing together and insert them into the locking clip slot as shown in Figure 4.



- Pinch both layers of webbing together and insert into other slot of locking clip; Figure 5.

Safety Restraints



7. Re-buckle belt. Forcibly tilt the child seat from side to side and also tug it forward to see if it is held securely in place, Figure 6. If excessive movement occurs, repeat steps 2 through 7 or properly install child seat in a different seating position in the vehicle.

WARNING

Once you have attached the safety seat, test the seat before you place the child in it. Tilt the seat from side to side. Also try to tug the seat forward. Check to see if the belt holds the seat in place. If the lap belt is too loose, tighten it by moving the locking clip, or put the safety seat in another seat and test it again. If the safety seat is not anchored properly, the risk of a child being injured in a collision or sudden stop greatly increases. Reclining seatbacks should be in the most upright position for use with child safety seats.

Attaching Safety Seats With Tether Straps

General Instructions

Some manufacturers make safety seats that include a tether strap that goes over the back of the vehicle seat and attaches to an anchoring point. Other manufacturers offer the tether strap as an accessory. Contact the manufacturer of your child safety seat for information about ordering a tether strap.

You can attach a tether strap anchor bracket to the cab inner back panel by using a tether anchor kit (613D74) available at no charge from any Ford dealer.

Read and follow the instructions provided with the kit carefully for installation of the child tether strap anchor.

Follow the child seat manufacturer's instructions to attach the tether strap to the tether bracket.

WARNING

Use only the tether attachment hole locations shown in the instructions. The tether anchorage may not perform properly if the wrong mounting location is used.

Safety Restraints

WARNING

Failure to follow these precautions could increase the chance and/or severity of injury in an accident.

WARNING

In Super Cabs equipped with Center Facing Jump Seats, the tether strap anchor bracket should be installed only at the center of the cab's back panel with the child seat in the front center seating position. Installing an anchor bracket at the right rear of the cab may increase risk of injury to an occupant of the right rear center facing jump seat in the event of a collision or sudden stop. If a tethered child seat is installed in the right front seating position, secure the tether strap to the webbing of the buckled right rear lap belt. Do not install a child seat in a center facing jump seat. Safety seats for children are not intended for use in center facing seats.