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212-TRC-03-001
301-TRC-03-001

Safety Compliance Testing for FMVSS 208
Occupant Crash Protection

General Motors Corporation
2003 Chevrolet Silverado
NHTSA Number: C30102
TRC Inc. Test Number: 021119-1

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



Report Date: Dec. 23, 2002

Final Report

Prepared For:

U. S. Department of Transportation
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance (NVS-221)
400 Seventh Street, S.W., Room No. 6115
Washington, DC 20590

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Test Performed By: Jason D. Jenkins, Senior Project Engineer

Report Approved By:

Virginia L. Watters Date 12/23/02
Virginia L. Watters, Project Manager
Transportation Research Center Inc.

Final Report Acceptance By OVSC:

_____ Date _____
Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance

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Section 1

Purpose of Compliance Test

PURPOSE

This Federal Motor Vehicle Safety Standard 208 compliance test is part of a program conducted for the National Highway Traffic Safety Administration by Transportation research Center (TRC Inc.) under contract DTNH22-02-D-08062, Task Order VRTC-DCF2525. The purpose of the test was to determine whether the subject vehicle, a 2003 Chevrolet Silverado, NHTSA No. C30102, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; indicant FMVSS 219, "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity". The compliance test was conducted in accordance with OVSC Laboratory Test Procedure No. TP-208-11 dated August 22, 2002.

Section 2

Tests Performed

TESTS PERFORMED

The following checked items indicate the tests that were performed:

- 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
- 2. Air bag labels (S4.5.1)
- 3. Readiness indicator (S4.5.2)
- 4. Passenger Air Bag Manual Cut-Off Device (S4.5.4)
- 5. Lap belt lockability (S7.1.1.5)
- 6. Seat belt warning system (S7.3)
- 7. Seat belt contact force (S7.4.3)
- 8. Seat belt latch plate access (S7.4.4)
- 9. Seat belt retraction (S7.4.5)
- 10. Seat belt guides and hardware (S7.4.6)
- 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart N)
- 12. Suppression tests with Newborn infant Subpart K dummy (Part 572, Subpart N)
- 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P)
- 14. Suppression tests with 6-year-old dummy (Part 572, Subpart R)
- 15. Test of Reactivation of the passenger Air Bag system with an Unbelted 5th Percentile female dummy
- 16. Low risk deployment test with 12-month-old dummy (Part 572, Subpart N)
- 17. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P)
- 18. Low risk deployment test with 6-year-old dummy (Part 572, Subpart R)
- 19. Low risk deployment test with 5th female dummy (Part 572, Subpart O)
- 20. Impact tests
 - Frontal Oblique
 - Belted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.1.(a))
 - Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - Unbelted 50th male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))
 - Frontal 0°
 - Belted 50th male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - Belted 50th male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - Belted 5th female dummy driver (0 to 48 km/h) (S16.1(a))
 - Belted 5th female dummy passenger (0 to 48 km/h) (S16.1(a))
 - Belted 50th male dummy driver and passenger (0 to 56 km/h) (S5.1.1(b)(2))
 - Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))

- _____ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
- _____ 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- _____ 21. Sled test: Unbelted 50th male dummy driver and passenger (S13)
- _____ 22. FMVSS 204 indicant test
- X 23. FMVSS 212 test
- X 24. FMVSS 219 indicant test
- X 25. FMVSS 301 frontal test

For the crash tests, the vehicle was instrumented with 8 accelerometers. The accelerometer data from the vehicle and dummies were sampled at 12,500 samples per second and processed as specified in SAE J211/1 MAR95 and FMVSS 208, S4.13.

The dynamic tests were recorded using high speed film and digital motion picture cameras.

The vehicle appears to meet the performance requirements to which it was tested.

Section 3

Injury Result Summary

**INJURY RESULT SUMMARY FOR CRASH TESTS AND/OR
LOW RISK DEPLOYMENT TESTS**

NHTSA No.: C30102

Test Date: 11/19/02

VIN: 1GCEC14X13Z131545

Frontal Crash Offset Crash Low Risk Deployment

Impact Angle: 0

Belted Dummies: Yes No

Speed Range: 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Test Speed: 39.2 km/h

Driver Dummy: 5th female 50th male

Passenger Dummy: 5th female 50th male

Test weight: 2295.7 kg

**50th Percentile Male Frontal Crash Test
Vehicles certified to S5.1.1(b)(1), S5.1.1(b)(2), S5.1.2(a)(2), or S5.1.2(b)**

Injury Criteria	Max. Allowable Injury Assessment Values	Driver	Passenger
HIC15	700	132	94
N _{te}	1.0	0.40	0.34
N _{tf}	1.0	0.35	0.32
N _{ce}	1.0	0.12	0.06
N _{cf}	1.0	0.06	0.11
Neck tension	4170 N	2068	1495
Neck compression	4000 N	282	318
Chest g	60 g	47.3	41.1
Chest displacement	63 mm	33	14
Left femur	10,000 N	6433	6773
Right femur	10,000 N	7643	6915

Section 4

Discussion of Test

DISCUSSION OF TEST

The engine top X-axis acceleration data channel exceeded the data channel's full scale at 61 milliseconds and did not record valid data after 61 milliseconds.

The vehicle's pre-test attitudes did not fall between the measured attitudes for the delivered and fully-loaded conditions. Deviations were 6 mm or less.

The left side (B-post view and rear pit fuel tank view) cameras ran too slowly to determine the actual film speed.

The left side (barrier to front seat back, front door, B-post, and steering wheel views) and front pit (engine view) cameras ran at less than 1000 frames per second.

TRC Inc. used the method of topping off the fuel (gasoline) for determining the fully loaded weight and then drained all the fuel and filled the fuel tank to 94% capacity with Stoddard solvent.

The test dummies were not maintained in the required temperature soak of 20.6 to 22.2 C for the full sixteen hours. See temperature data on page 6-56.

Section 5

Test Data Sheets

DATA SHEET 1
COTR Vehicle Work Order

Vehicle model year, make, and model: 2003 Chevrolet Silverado

NHTSA No.: C30102 Test Date: 11/14/02

COTR signature: Charles R. Case

Tests to be performed for this vehicle are checked below.

- 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4))
- 2. Air bag labels (S4.5.1)
- 3. Readiness indicator (S4.5.2)
- 4. Passenger air bag manual cut-off device (S4.5.4)
- 5. Lap belt lockability (S7.1.1.5)
- 6. Seat belt warning system (S7.3)
- 7. Seat belt contact force (S7.4.3)
- 8. Seat belt latch plate access (S7.4.4)
- 9. Seat belt retraction (S7.4.5)
- 10. Seat belt guides and hardware (S7.4.6)
- 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart R) using the following indicated child restraints.

Section A

Cosco Dream Ride 02-719 Full rearward Midposition Full forward

Section B

- Britax Handle with Care 191 Full rearward Midposition Full forward
- Century Assura 4553 Full rearward Midposition Full forward
- Century Avanta SE 41530 Full rearward Midposition Full forward
- Century Smart Fit 4543 Full rearward Midposition Full forward
- Cosco Arriva 02727 Full rearward Midposition Full forward
- Cosco Opus 35 02603 Full rearward Midposition Full forward
- Evenflo Discovery Adjust Right 212 Full rearward Midposition Full forward
- Evenflo First Choice 204 Full rearward Midposition Full forward
- Evenflo On My Way Position Right V 282 Full rearward Mid position Full forward
- Grace Infant 8457 Full rearward Midposition Full forward

Section C

- Britax Roundabout 161 Full rearward Midposition Full forward
- Century Encore 4612 Full rearward Midposition Full forward
- Century STE 1000 4416 Full rearward Midposition Full forward
- Cosco Olympian 02803 Full rearward Midposition Full forward
- Cosco Touriva 02519 Full rearward Midposition Full forward
- Evenflo Horizon V 425 Full rearward Midposition Full forward
- Evenflo Medallion 254 Full rearward Midposition Full forward

- 12. Suppression tests with 3-year-old dummy (Part 572, Subpart P) using the following indicated child restraints where a child restraint is required.

Section C

- Britax Roundabout 161 Full rearward Midposition Full forward
- Century Encore 4612 Full rearward Midposition Full forward
- Century STE 1000 4416 Full rearward Midposition Full forward
- Cosco Olympian 02803 Full rearward Midposition Full forward
- Cosco Touriva 02519 Full rearward Midposition Full forward
- Evenflo Horizon V 425 Full rearward Midposition Full forward
- Evenflo Medallion 254 Full rearward Midposition Full forward

Section D

- Britax Roadster 9004 Full rearward Midposition Full forward
- Century Next Step 4920 Full rearward Midposition Full forward

- | | | | | | | | |
|--------------------------|--------------------------------|--------------------------|---------------|--------------------------|-------------|--------------------------|--------------|
| <input type="checkbox"/> | Casco High Back Booster 02-442 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Evenflo Right Fit 245 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
13. Suppression tests with Representative 3-year-old child using the following indicated child restraints where a child restraint is required. (Laboratory Test Procedure Appendix H, Data Sheet 16H and 17H)
- Section C
- | | | | | | | | |
|--------------------------|-----------------------|--------------------------|---------------|--------------------------|-------------|--------------------------|--------------|
| <input type="checkbox"/> | Britax Roundabout 161 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Century Encore 4612 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Century STE 1000 4416 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Casco Olympian 02803 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Casco Touriva 02519 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Evenflo Horizon V 425 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Evenflo Medallion 254 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
- Section D
- | | | | | | | | |
|--------------------------|--------------------------------|--------------------------|---------------|--------------------------|-------------|--------------------------|--------------|
| <input type="checkbox"/> | Britax Roadster 9004 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Century Next Step 4920 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Casco High Back Booster 02-442 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Evenflo Right Fit 245 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
14. Suppression tests with 3-year-old dummy (Part 572, Subpart P) in the following positions
- Sitting on seat with back against seat back (S22.2.2.1)
 - Sitting on seat with back against reclined seat back (S22.2.2.2)
 - Sitting on seat with back not against seat back (S22.2.2.3)
 - Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
 - Standing on seat, facing forward (S22.2.2.5)
 - Kneeling on seat facing forward (S22.2.2.6)
 - Kneeling on seat facing rearward (S22.2.2.7)
 - Lying on seat (S22.2.2.8)
15. Suppression tests with representative 3-year-old child in the following positions
- Sitting on seat with back against seat back (S22.2.2.1)
 - Sitting on seat with back against reclined seat back (S22.2.2.2)
 - Sitting on seat with back not against seat back (S22.2.2.3)
 - Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
 - Standing on seat, facing forward (S22.2.2.5)
 - Kneeling on seat facing forward (S22.2.2.6)
 - Kneeling on seat facing rearward (S22.2.2.7)
 - Lying on seat (S22.2.2.8)
16. Suppression tests with 6-year-old dummy (Part 572, Subpart N) using the following indicated child restraints where a child restraint is required.
- Section D
- | | | | | | | | |
|--------------------------|--------------------------------|--------------------------|---------------|--------------------------|-------------|--------------------------|--------------|
| <input type="checkbox"/> | Britax Roadster 9004 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Century Next Step 4920 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Casco High Back Booster 02-442 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Evenflo Right Fit 245 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
17. Suppression tests with representative 6-year-old child using the following indicated child restraints where a child restraint is required.
- Section D
- | | | | | | | | |
|--------------------------|--------------------------------|--------------------------|---------------|--------------------------|-------------|--------------------------|--------------|
| <input type="checkbox"/> | Britax Roadster 9004 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Century Next Step 4920 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Casco High Back Booster 02-442 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
| <input type="checkbox"/> | Evenflo Right Fit 245 | <input type="checkbox"/> | Full rearward | <input type="checkbox"/> | Midposition | <input type="checkbox"/> | Full forward |
18. Suppression tests with 6-year-old dummy (Part 572, Subpart N) in the following positions
- Sitting on seat with back against seat back (S22.2.2.1)
 - Sitting on seat with back against reclined seat back (S22.2.2.2)
 - Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
 - Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

19. Suppression tests with representative 6-year-old child in the following positions
 Sitting on seat with back against seat back (S22.2.2.1)
 Sitting on seat with back against reclined seat back (S22.2.2.2)
 Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
 Sitting back in the seat and leaning on the right front passenger door (S24.2.3)
20. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints.

Section B

<input type="checkbox"/> Britax Handle with Cars 191	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Century Assura 4553	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Century Avanta SE 41530	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Century Smart Fit 4543	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Cosco Arriva 02727	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Cosco Opus 35 02603	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Evenflo Discovery Adjust Right 212	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Evenflo First Choice 204	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Evenflo On My Way Position Right V 282	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Mid position	<input type="checkbox"/> Full forward
<input type="checkbox"/> Grace Infant 8457	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward

Section C

<input type="checkbox"/> Britax Roundabout 161	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Century Encore 4612	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Century STE 1000 4416	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Cosco Olympian 02803	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Cosco Touriva 02519	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Evenflo Horizon V 425	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward
<input type="checkbox"/> Evenflo Medallion 254	<input type="checkbox"/> Full rearward	<input type="checkbox"/> Midposition	<input type="checkbox"/> Full forward

21. Test of Reactivation of the Passenger Air Bag System with an Unbelted 5th Percentile Female Dummy (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____
- _____
- _____

22. Test of Reactivation of the Passenger Air Bag System with a representative 5th Percentile Female (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____
- _____
- _____

23. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P) in the following positions
 Position 1
 Position 2

24. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N) in the following positions
 Position 1
 Position 2

25. Low risk deployment test with 5th female dummy (Part 572, Subpart O) in the following positions
 Position 1
 Position 2

X 26. Impact tests

- Frontal Oblique Test Speed _____
 Belted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.1.(a))
 Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1))
 Unbelted 50th male dummy driver and passenger ((32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))

- X Frontal 0° Test Speed 40 km/h see test procedure for speed tolerance
 Belted 50th male dummy driver ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 Belted 50th male dummy passenger ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 Belted 5th female dummy driver ((0 to 48 km/h) (S16.1(a))
 Belted 5th female dummy passenger ((0 to 48 km/h) (S16.1(a))
 Belted 50th male dummy driver and passenger ((0 to 56 km/h) (S5.1.1(b)(2))
 Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1))

- Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
 - Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
 - 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- Test Speed _____
- 27. Sled test: Unbelted 50th male dummy driver and passenger (S13)
 - 28. FMVSS 204 indicant test
 - 29. FMVSS 212 test
 - 30. FMVSS 219 indicant test
 - 31. FMVSS 301 frontal test

DATA SHEET 2

REPORT OF VEHICLE CONDITION

CONTRACT NO. DTNH22-02-D-08062 Date: 11/19/02

FROM: Transportation Research Center, Virginia L. Watters

Lab & rep name

TO: Charles R. Case OVSC, NSA-31

COTR Name

PURPOSE: () Initial Receipt () Received via Transfer (X) Present vehicle condition

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/pickup truck

MANUFACTURE DATE: 08/02 NHTSA NO.: C30102 BODY COLOR: Gray

VIN: 1GC8C14X13Z131545 GVWR 2904 GAWR (Fr) 1429 GAWR (Rr) 1672

ODOMETER READINGS: ARRIVAL 71 miles DATE 11/14/02

COMPLETION 71 miles DATE 11/19/02

PURCHASE PRICE: \$ 20,271 DEALER'S NAME: Byers Downtown Chevrolet

- A. All options listed on "window sticker" are present on the test vehicle.
 Yes No
- B. Tires and wheel rims are new and the same as listed.
 Yes No
- C. There are no dents or other interior or exterior flaws.
 Yes No See remarks
- D. The vehicle has been properly prepared and is in running condition.
 Yes No See remarks
- E. Keyless remote is available and working.
 Yes No
- F. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.
 Yes No
- G. Proper fuel filler cap is supplied on the test vehicle.
 Yes No
- H. Using permanent marker, identify vehicle with NHTSA number and FMVSS test type(s) on roof line above driver door or for school buses, place a placard with NHTSA number inside the windshield and to the exterior front and rear side of bus.
 Yes No
- I. Place vehicle in storage area.
 Yes No
- J. Inspect the vehicle's interior and exterior, including all windows, seats, doors, etc., To confirm that each system is complete and functional per the manufacturer's specifications. Any damage, misadjustment, or other unusual condition that could influence the test program or test results shall be recorded. Report any abnormal condition to the NHTSA COTR before beginning any test.
 Vehicle OK Conditions reported below in comment section
 N/A Post-Test Condition

Identify the letter above to which any of the following comments apply.

Comments: In a frontal impact the vehicle sustained significant front end and unknown structural damage.

DATA SHEET 2

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

LIST OF FMVSS TESTS PERFORMED BY THIS LAB:

208, 212, 219 Indicant, 301

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/pickup truck

NHTSA NO. C30102

REMARKS: None

Equipment that is no longer on the test vehicle as noted on previous page: None

Explanation for equipment removal: The owner's manual and extra keys are stored with the project file.

Test Vehicle Condition: In a frontal impact the vehicle sustained significant front end and unknown structural damage.

RECORDED BY: R. Benavides
DATE: 11/14/02

APPROVED BY: V. Watters
DATE: 12/9/02

#####

RELEASE OF TEST VEHICLE

The vehicle described above is released from TRC Inc. to be delivered to _____
(Laboratory) (Laboratory)

Date: _____ Time: _____ Odometer: _____

Lab Representative: _____
Signature Title

Carrier/Customer Representative: _____
Signature Date

DATA SHEET 3
Certification Label and Tire Placard Information

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

1. Certification Label

Manufacturer General Motors Corporation

Date of Manufacture 08/02

VIN 1GCEC14X13Z131545

Vehicle certified as: Passenger car MPV Truck Bus

Front axle GVWR 1429 kg/3150 lbs.

Rear axle GVWR 1672 kg/3686 lbs.

Total GVWR 2903 kg/6400 lbs.

2. Tire Placard

N/A – Vehicle is not a passenger car and does not have a tire placard.

This is not a passenger car (see the item 1 above), but all or part of this information is still contained on a vehicle label and is reported here.

Vehicle Capacity Weight NA¹

Designated seating capacity front NA¹

Designated seating capacity rear NA¹

Total Designated seating capacity NA¹

Recommended cold tire inflation pressure front 240 kPa/35 psi

Recommended cold tire inflation pressure rear 240 kPa/35 psi

Recommended tire size P235/75R16

¹ Label did not contain this information.

DATA SHEET 4
REAR OUTBOARD SEATING POSITION SEAT BELTS

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

Do all rear outboard seating positions have type 2 seat belts? Yes ; No

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

No rear seats.

REMARKS:

DATA SHEET 5
AIR BAG LABELS (S4.5.1)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

1. **Air Bag Maintenance Label and Owner's Manual Instructions: (S4.5.1(a))**
- 1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?
 Yes (Go to 1.2); No (Go to 2)
- 1.2 Does the vehicle have a label specifying air bag maintenance or replacement?
 Yes-Pass; No-FAIL
- 1.3 Does the label contain one of the following?
 Yes-Pass; No-FAIL
Check applicable schedule
 Schedule on label specifies month and year (Record date _____)
 Schedule on label specifies vehicle mileage (Record mileage _____)
 Schedule on label specifies interval measured from date on certification label
(Record interval _____)
- 1.4 Is the label permanently affixed within the passenger compartment such that it cannot be removed without destroying or defacing the label or the sunvisor?
 Yes-Pass; No-FAIL
- 1.5 Is the label lettered in English?
 Yes-Pass; No-FAIL
- 1.6 Is the label in block capitals and numerals?
 Yes-Pass; No-FAIL
- 1.7 Are the letters and numerals at least 3/32 inches high?
 height of letters and numerals
 Yes-Pass; No-FAIL
- 1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement? Yes-Pass; No-FAIL

2. **Does the owner's manual: (S4.5.1(f))**
- 2.1 Include a description of the vehicle's air bag system in an easily understandable format?
 Yes-Pass; No-FAIL
- 2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?
 Yes-Pass; No-FAIL
- 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
 Yes-Pass; No-FAIL
- 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
 Yes-Pass; No-FAIL
- 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to ensure maximum safety protection for those occupants?
 Yes-Pass; No-FAIL
- 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?

- Yes-Pass; No-FAIL
- 2.7 Is the vehicle certified to meet the requirements of S14.5, S15, S17, S19, S21, S23, and S25? (Obtain the answer to this question from the COTR.) (S4.5.1(f)(2))
 Yes (go to 2.7.1); No (go to 3)
- 2.7.1 Explain the proper functioning of the advanced air bag system? (S4.5.1(f)(2))
 Yes-Pass; No-FAIL
- 2.7.2 Provide a summary of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2))
 Yes-Pass; No-FAIL
- 2.7.3 Present and explain the main components of the advanced passenger air bag system? (S4.5.1(f)(2)(i))
 Yes-Pass; No-FAIL
- 2.7.4 Explain how the components function together as part of the advanced passenger air bag system? (S4.5.1 (f)(2)(ii))
 Yes-Pass; No-FAIL
- 2.7.5 Contain the basic requirements for proper operation, including an explanation of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2)(iii))
 Yes-Pass; No-FAIL
- 2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2?
 Yes, continue with 2.7.6
 No, go to 2.7.7
- 2.7.6.1 Contain a complete description of the passenger air bag suppression system installed in the vehicle, including a discussion of any suppression zone? (S4.5.1(f)(2)(iv))
 Yes-Pass; No-FAIL
- 2.7.6.2 Discuss the telltale light, specifying its location in the vehicle and explaining when the light is illuminated?
 Yes-Pass; No-FAIL
- 2.7.7 Explain the interaction of the advanced passenger air bag system with other vehicle components, such as seat belts, seats or other components? (S4.5.1(f)(2)(v))
 Yes-Pass; No-FAIL
- 2.7.8 Summarize the expected outcomes when child restraint systems, children and small teenagers or adults are both properly and improperly positioned in the passenger seat, including cautionary advice against improper placement of child restraint systems? (S4.5.1(f)(2)(vi))
 Yes-Pass; No-FAIL
- 2.7.9 Provide information on how to contact the vehicle manufacturer concerning modifications for persons with disabilities that may affect the advanced air bag system? (S4.5.1(f)(2)(vii))
 Yes-Pass; No-FAIL
3. Sun Visor Air Bag Warning Label (S4.5.1 (b))
- 3.1 Is the vehicle certified to meet the requirements of S19, S21, and S23,? (Obtain the answer to this question from the COTR.) (S4.5.1(b)(2))
 Yes (go to 3.1.1 and skip 3.2; No (go to 3.2, skipping 3.1.1 through 3.1.6)
- 3.1.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (b)(2))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.1.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in Figure 8 at each front outboard seating position? (S4.5.1(b)(2))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL

- 3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(2)(i))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.1.4 Is the message area white with black text? (S4.5.1(b)(2)(ii))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.1.5 Is the message area at least 30 cm²? (S4.5.1(b)(2)(ii))
 Driver side: Length 12.5 cm, Width 7.8 cm
 Passenger side: Length 12.5 cm, Width 7.8 cm
 Driver actual message area 97.5 cm²
 Passenger actual message area 97.5 cm²
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.1.6 Is the pictogram black on a white background? (S4.5.1(b)(2)(iii))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.1.7 Is the pictogram at least 30 mm (1.2 in) in length? (S4.5.1(b)(2)(iii))
 Driver side: Length 31 mm
 Passenger side: Length 31 mm
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2 Vehicles not certified to meet the requirements of S19, S21, and S23.
- 3.2.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing it? (S4.5.1 (b)(1))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position? (S4.5.1 (b)(1))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(1)(i))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.4 Is the message area white with black text? (S4.5.1 (b)(1)(ii))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.5 Is the message area at least 30 cm²? (S4.5.1 (b)(1)(ii))
 Driver side: Length _____, Width _____
 Passenger side: Length _____, Width _____
 Actual message area _____ cm²
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 3.2.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL

- 3.2.7 Is the pictogram at least 30 mm in diameter? (S4.5.1 (b)(2)(iii))
 Actual diameter _____ mm
 Driver side ____ Yes-Pass ____ No-FAIL
 Passenger side ____ Yes-Pass ____ No-FAIL
- 3.3 Is the same side of the sun visor that contains the air bag warning label free of other information with the exception of the air bag maintenance label and/or the rollover-warning label? (S4.5.1 (b)(3))
 Driver side Yes-Pass ____ No-FAIL
 Passenger side Yes-Pass ____ No-FAIL
- 3.4 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label and/or the rollover-warning label? (S4.5.1 (b)(3))
 Driver side Yes-Pass ____ No-FAIL
 Passenger side Yes-Pass ____ No-FAIL
- 3.5 Does the driver side visor contain a rollover-warning label on the same side of the visor as the air bag warning label?
 ____ Yes (go to 3.5.1; No (go to 4.1, skipping 3.5.1 through 3.5.)
- 3.5.1 Are both the rollover-warning label and the air bag warning label surrounded by a continuous solid-lined border?
 ____ Yes (go to 3.5.2 and skip 3.5.3); ____ No (go to 3.5.3 and skip 3.5.2.)
- 3.5.2 Is the shortest distance from the border of the rollover label to the border of the air bag warning label at least 1 cm? (575.105 (d)(1)(iv)(B))
 _____ actual distance
 ____ Yes-Pass; ____ No-FAIL
- 3.5.3 Is the shortest distance from any of the lettering or graphics on the rollover-warning label to any of the lettering or graphics of the air bag warning label at least 3 cm? (575.105 (d)(1)(iv)(A)) _____ actual distance
 ____ Yes-Pass; ____ No-FAIL
4. Air Bag Alert Label (A "Rollover Warning Label" or "Rollover Alert Label" may be on the same side of the driver's sun visor as the "Air Bag Alert Label." 575.105(d))
- 4.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?
 Driver side Yes ____ No If yes, for driver and passenger go to 5.
 Passenger side ____ No air bag Yes ____ No
- 4.2 Is the air bag alert label permanently affixed (including permanent marking on the visor material or molding into the visor material) to the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (c))
 Driver side ____ Yes-Pass ____ No-FAIL
 Passenger side ____ Yes-Pass ____ No-FAIL
- 4.3 Is the air bag alert label visible when the visor is in the stowed position? (S4.5.1(c))
 Driver side ____ Yes-Pass ____ No-FAIL
 Passenger side ____ Yes-Pass ____ No-FAIL
- 4.4 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c))
 Driver side ____ Yes-Pass ____ No-FAIL
 Passenger side ____ Yes-Pass ____ No-FAIL
- 4.5 Is the message area black with yellow text? (S4.5.1(c)(1))
 Driver side ____ Yes-Pass ____ No-FAIL
 Passenger side ____ Yes-Pass ____ No-FAIL

- 4.6 Is the message area at least 20 cm²? (S4.5.1(c)(1))
 Driver side: Length _____, Width _____
 Passenger side: Length _____, Width _____
 Actual message area _____ cm²
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 4.7 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2))
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
- 4.8 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2))
 Driver side: diameter _____ mm
 Passenger side: diameter _____ mm
 Driver side Yes-Pass No-FAIL
 Passenger side Yes-Pass No-FAIL
5. Label On the Dashboard
- 5.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(e)(2))
 Yes (go to 5.1.1 and skip 5.2 through 5.2.5)
 No (go to 5.2, skipping 5.1.1 through 5.1.6)
- 5.1.1 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(2))
 Yes-Pass; No-FAIL
- 5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(e)(2))
 Yes-Pass; No-FAIL
- 5.1.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children." (S4.5.1(e)(2)(iii))) to the label shown in Figure 9? (S4.5.1(e)(2))
 Yes-Pass; No-FAIL
- 5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i))
 Yes-Pass; No-FAIL
- 5.1.5 Is the message white with black text? (S4.5.1(e)(2)(ii))
 Yes-Pass; No-FAIL
- 5.1.6 Is the message area at least 30 cm²? (S4.5.1(e)(2)(ii))
 Length 105 mm, Width 49 mm
 Actual message area 51.5 cm²
 Yes-Pass; No-FAIL
- 5.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(1))
 Yes-Pass; No-FAIL
- 5.2.1 Is the label clearly visible from all front seating positions? (S4.5.1(e)(1))
 Yes-Pass; No-FAIL
- 5.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." to the label shown in Figure 7? (S4.5.1 (e)(1)(iii))
 Yes-Pass; No-FAIL
- 5.2.3 Is the heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (e)(1)(i))
 Yes-Pass; No-FAIL
- 5.2.4 Is the message white with black text? (S4.5.1(e)(1)(ii))
 Yes-Pass; No-FAIL
- 5.2.5 Is the message area at least 30 cm²? (S4.5.1(e)(1)(ii))
 Length _____, Width _____
 Actual message area _____ cm²
 Yes-Pass; No-FAIL

Label Outline, Vertical and Horizontal Line Dash

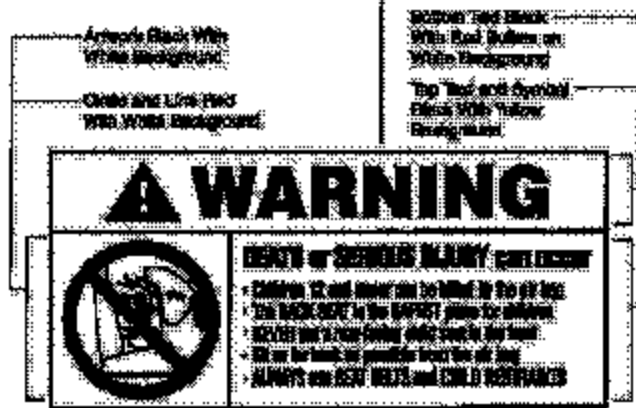


Figure 6a. Down View Label Visible When Viewed in Down Position.

Label Outline, Vertical and Horizontal Line Dash

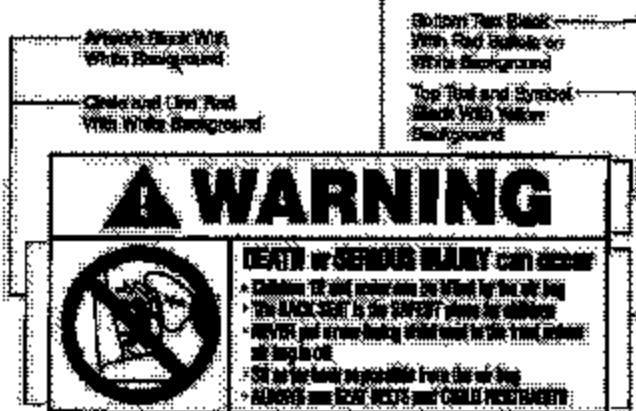


Figure 6b. Down View Label Visible When Viewed in Upright Position.

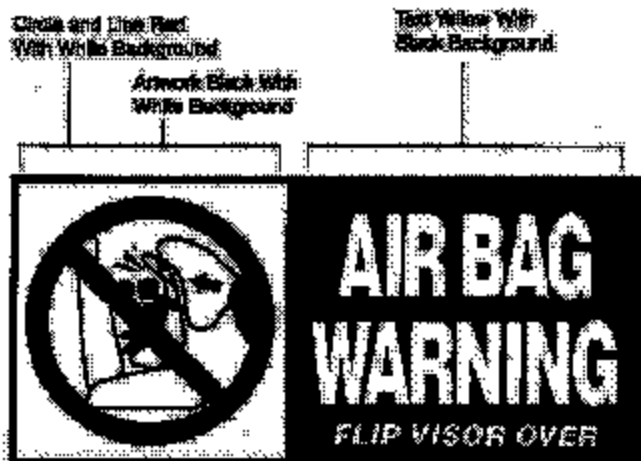


Figure 6c. Sun Visor Label Visible When Visor is in Up Position.

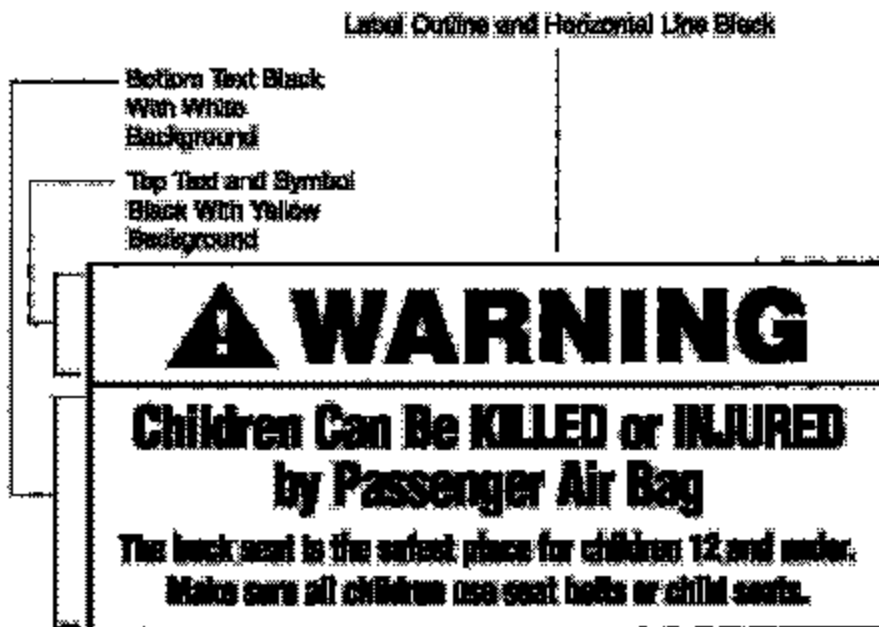


Figure 7. Removable Label on Dash.

Label Outline, Vertical and Horizontal Lines Black



Figure 8. Sun Visor Label Visible when Visor is in Down Position.

Label Outline, Vertical and Horizontal Lines Black

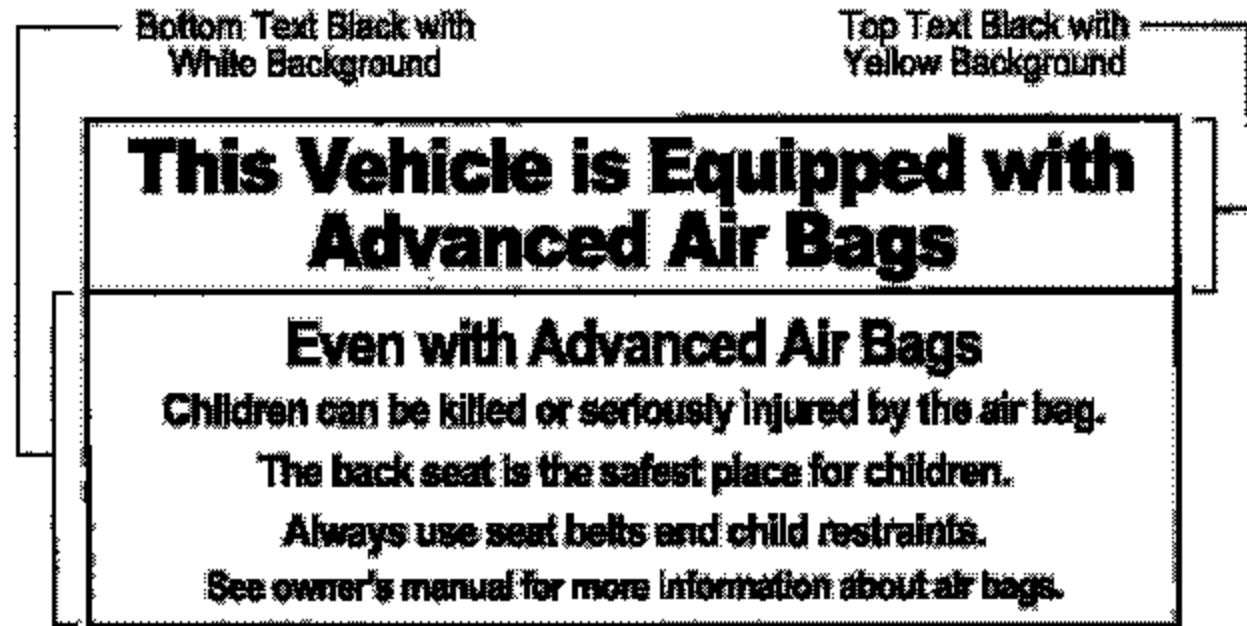


Figure 9. Removable Label on Dash.

DATA SHEET 6
FMVSS 208 READINESS INDICATOR (S4.5.2)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation to Lawrence F. Henneberger on behalf of Breed)

- 1. Is the system totally mechanical? Yes ; No
(If YES this Data Sheet is complete.)
- 2. Describe the location of the readiness indicator: Left side of instrument cluster

- 3. Is the readiness indicator clearly visible to the driver?
 Yes-Pass; No-FAIL
- 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided on a label or in the owner's manual?
 Yes-Pass; No-FAIL
- 5. Does the vehicle have an on-off switch for the passenger air bag?
 Yes (go to 6) No (this form is complete)
- 6. Is the air bag readiness indicator off when the passenger air bag switch is in the off position?
 Yes-Pass; No-FAIL

REMARKS:

DATA SHEET 7
Passenger Air Bag Manual Cut-Off Device (S4.5.4)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

1. Is the vehicle equipped with an on-off switch that deactivates the air bag installed at the right front outboard seating position?
 Yes, go to 2
 No, this sheet is complete
2. Does the vehicle have any forward-facing rear designated seating positions? (S4.5.4(a))
 Yes, go to 3
 No, go to 4
3. Verification of the lack of room for a child restraint in the rear seat behind the driver's seat. (S4.5.4(b))
- 3.1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 N/A - No lumbar adjustment
- 3.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A - No additional support adjustment
- 3.3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A - No independent fore-aft seat cushion adjustment
- 3.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A - No independent seat cushion height adjustment.
- 3.5. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
- 3.6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A - No seat height adjustment
- 3.7. Draw a horizontal reference line on the side of the seat cushion.
- 3.8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- 3.9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position. (S8.1.2)
 N/A - The seat does not have fore-aft adjustment.
 Mid position
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- 3.10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
 N/A - No adjustments

- Angle of reference line as tested _____
- 3.11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 N/A – No seat back angle adjustment
 Manufacturer's design seat back angle _____
 Tested seat back angle _____
- 3.12 Is the driver seat a bucket seat?
 Yes, go to 3.12.1 and skip 3.12.2.
 No, go to 3.12.2 and skip 3.12.1.
- 3.12.1 Bucket seats:
- 3.12.1.1 Locate and mark a vertical Plane B through the longitudinal centerline of the seat driver's seat cushion. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. _____
 Record the distance from the edge of the seat to Plane B. _____
- 3.12.1.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion behind the driver's seat. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the driver's seat.
 _____ mm distance
 less than 720 mm – Pass
 more than 720 mm – FAIL
 Go to 4
- 3.12.2 Bench seats (including split bench seats):
- 3.12.2.1 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
- 3.12.2.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the front seat.
 _____ mm distance
 less than 720 mm – Pass
 more than 720 mm – FAIL
 Go to 4
4. Does the device turn the air bag on and off using the vehicle's ignition key? (S4.5.4.2)
 Yes-Pass; No-FAIL
5. Is the on-off device separate from the ignition switch? (S4.5.4.2)
 Yes-Pass; No-FAIL
6. Is there a telltale light that comes on when the passenger air bag is turned off? (S4.5.4.2)
 Yes-Pass; No-FAIL This check was not performed
7. Telltale light (S4.5.4.3) This check was not performed
- 7.1 Is the light yellow? S4.5.4.3(a)
 Yes-Pass; No-FAIL
- 7.2 Are the words "PASSENGER AIR BAG OFF" (S4.5.4.3(b))
- 7.2.1 on the telltale?
 Yes – Pass, go to 7.3
 No – go to 7.2.2
- 7.2.2 within 25 mm of the telltale? _____ mm from the edge of the telltale light
 Yes-Pass; No-FAIL

- 7.3 Does the telltale remain illuminated while the air bag is turned off? (S4.5.4.3c) (Leave the air bag off for 5 minutes.)
 Yes-Pass; No-FAIL
- 7.4 Is the telltale illuminated while the air bag is turned on? (S4.5.4.3(d))
 Yes-Pass; No-FAIL
- 7.5 Is the telltale combined with the air bag readiness indicator? (S4.5.3(e))
 Yes-Pass; No-FAIL
8. Owner's manual
- 8.1 Does the owner's manual contain complete instructions on the operation of the on-off switch? (S4.5.4.4(a))
 Yes-Pass; No-FAIL
- 8.2 Does the owner's manual contain a statement that the on-off switch should only be used when a member of one of the following risk groups is occupying the right front passenger seating position? (S4.5.4.4(b))
- Infants: there is no back seat
 the rear seat is too small to accommodate a child restraint
 there is a medical condition that must be monitored constantly
- Children aged 1 to 12: there is no back seat
 space is not always available in the rear seat
 there is a medical condition that must be monitored constantly
- Medical condition: medical risk causes special risk for passenger
 greater risk for harm than with the air bag on
- Yes-Pass; No-FAIL
- 8.3 Does the owner's manual contain a warning about the safety consequences of using the on-off switch at other times?
 Yes-Pass; No-FAIL

DATA SHEET 8
LAP BELT LOCKABILITY
Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

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

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center – Not Type 2

- N/A – No retractor is at this position
 N/A – The retractor is an automatic locking retractor ONLY

1. Record test fore-aft seat position. _____ (S7.1.1.5 (c)(1))
(Any position is acceptable.)
2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL
3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL
4. Buckle the seat belt. (S7.1.1.5(c)(1))
5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 Yes; No (If yes, go to 7.1. If no, go to 8.)
- 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 Yes-Pass; No-FAIL
8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B _____ inches
10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- ___ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
 Measured force application angle _____ (spec. 5 - 15 degrees)
- ___ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
 Measured distance between A and B _____ inches
- ___ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
 Record onset rate _____ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
 Measured distance between A and B _____ inches (S7.1.1.5(c)(6))
- ___ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= _____ inches;
 ___ Yes-Pass; ___ No-FAIL
- ___ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= _____ inches;
 ___ Yes-Pass; ___ No-FAIL

REMARKS:

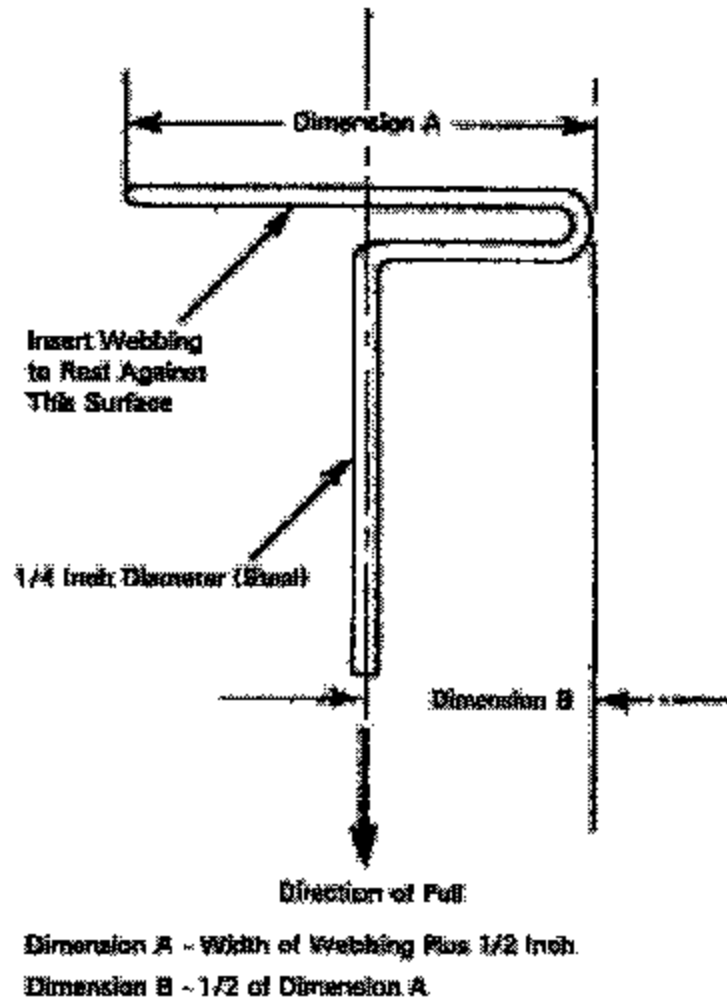


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY
Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

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

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

- N/A – No retractor is at this position
 N/A – The retractor is an automatic locking retractor ONLY

1. Record test fore-aft seat position. 23 marks (S7.1.1.5 (c)(1))
(Any position is acceptable.)
2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL
3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL
4. Buckle the seat belt. (S7.1.1.5(c)(1))
5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 Yes; No (If yes, go to 7.1. If no, go to 8.)
- 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 Yes-Pass; No-FAIL
8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 53.8 inches
10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
 Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
 Measured distance between A and B 30.4 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
 Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
 Measured distance between A and B 31.0 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.6 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 22.8 inches;
X Yes-Pass; No-FAIL

REMARKS:

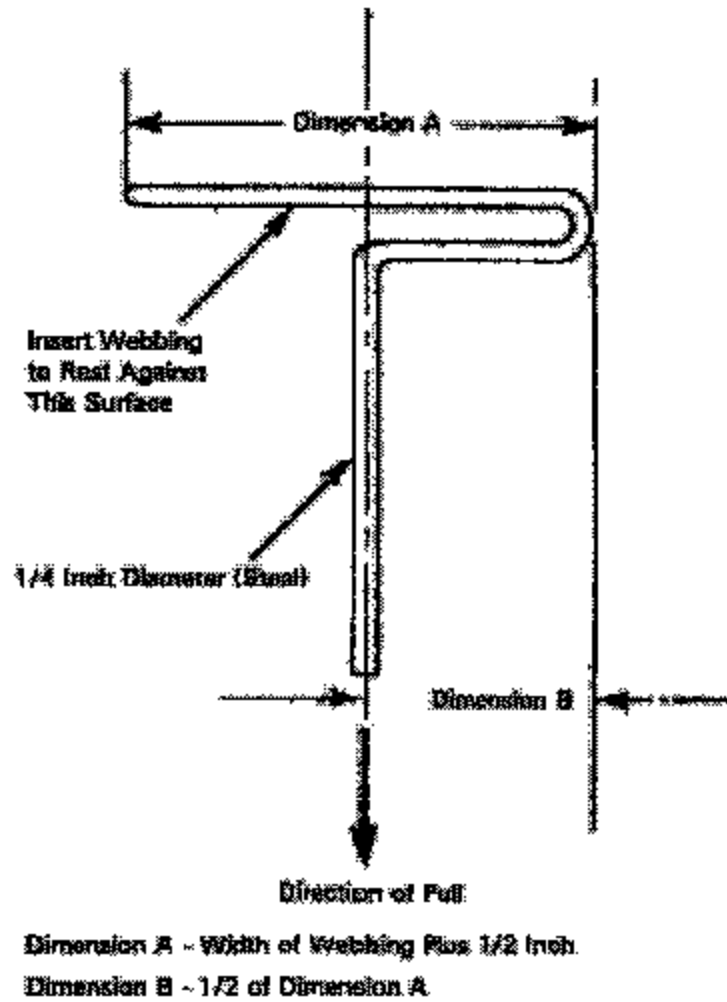


Figure 5. - Webbing Tension Pull Device

DATA SHEET 9
FMVSS 208 SEAT BELT WARNING SYSTEM CHECK (S7.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

- 1. The occupant is in the driver's seat.
- 2. The seat belt is in the stowed position.
- 3. The key is in the "on" or "start" position.
- 4. The time duration of the audible signal beginning with key "on" or "start" is 6 seconds.
- 5. The occupant is in the driver's seat.
- 6. The seat belt is in the stowed position.
- 7. The key is in the "on" or "start" position.
- 8. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
- 9. The occupant is in the driver's seat.
- 10. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
- 11. The key is in the "on" or "start" position.
- 12. The time duration of the audible signal beginning with key "on" or "start" is 0 seconds.
- 13. The occupant is in the driver's seat.
- 14. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
- 15. The key is in the "on" or "start" position.
- 16. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
- 17. Complete the following table with the data from 4, 8, 12 and 16 to determine which option is used

		Warning light	Warning light specification	Audible signal	Audible signal specification*
S7.3 (a)(1)	Belt latched & Key on or start	Item 16 <u> </u>	0 seconds*	Item 12 <u> </u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u> </u>	60 seconds minimum	Item 4 <u> </u>	4 to 8 seconds
S7.3 (a)(2)	Belt latched & Key on or start	Item 16 <u>7</u>	4 to 8 seconds	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>7</u>	4 to 8 seconds	Item 4 <u>6</u>	4 to 8 seconds

* 49 USCS @ 30124 does NOT allow an audible signal to operate for more than 8 seconds.

** 0 seconds means the light or audible signal are NOT permitted to operate under these conditions. See 7/12/00 interpretation to Patrick Raheer of Hogan and Hartson

18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)
- S7.3 (a)(1)
 - S7.3 (a)(2)
 - FAIL - Does NOT meet the requirements of either option
19. Note wording of visual warning: (S7.3(a)(1) and S7.3(a)(2))
- Fasten Seat Belts
 - Fasten Belts
 - Symbol 101
 - FAIL – Does not use any of the above wording or symbol

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Left

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

1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
 No (continue with this check sheet)
2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 N/A - No lumbar adjustment
3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A - No additional support adjustment
4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A - No independent fore-aft seat cushion adjustment
5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A - No independent seat cushion height adjustment.
6. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A - No seat height adjustment
- 8 Draw a horizontal reference line on the side of the seat cushion.
9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 N/A - No adjustments
Reference line angle as tested 0°

12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 N/A – No adjustments
Manufacturer's design seat back angle 15.5°
Tested seat back angle 15.5°
13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
14. Fasten the seat belt latch.
15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.60 lb.
 0.0 to 0.7 pounds - Pass
 greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

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

1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
 No (continue with this check sheet)
2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 N/A - No lumbar adjustment
3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A - No additional support adjustment
4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A - No independent fore-aft seat cushion adjustment
5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A - No independent seat cushion height adjustment.
6. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A - No seat height adjustment
- 8 Draw a horizontal reference line on the side of the seat cushion.
9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 N/A - No adjustments
Reference line angle as tested 0°

12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 N/A – No adjustments
Manufacturer's design seat back angle 15.5°
Tested seat back angle 15.5°
13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
14. Fasten the seat belt latch.
15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.56 lb.
 0.0 to 0.7 pounds - Pass
 greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center – Not Type 2

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

- 1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
 No (continue with this check sheet)
- 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 N/A – No lumbar adjustment
- 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A – No additional support adjustment
- 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A – No independent fore-aft seat cushion adjustment
- 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A – No independent seat cushion height adjustment.
- 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
- 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A – No seat height adjustment
- 8 Draw a horizontal reference line on the side of the seat cushion.
- 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 N/A – No adjustments
Reference line angle as tested _____

- ___ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- ___ N/A – No adjustments
- Manufacturer's design seat back angle _____
- Tested seat back angle _____
- ___ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ___ 14. Fasten the seat belt latch.
- ___ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ___ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force _____ lb.
- ___ 0.0 to 0.7 pounds - Pass
- ___ greater than 0.7 pounds - **FAIL**

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

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

1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
 N/A – No lumbar adjustment
2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A – No additional support adjustment
3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A – No independent fore-aft seat cushion adjustment
4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A – No independent seat cushion height adjustment.
5. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A – No seat height adjustment
- 7 Draw a horizontal reference line on the side of the seat cushion
8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
 N/A – No adjustments
Reference line angle as tested 0°

11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A – No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
16. Place the latch plate in the stowed position.
17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 Yes-Pass; ___ No
18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 Yes-Pass; ___ No
19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?
 Yes-Pass; ___ No-FAIL
20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
 Yes-Pass; ___ No-FAIL

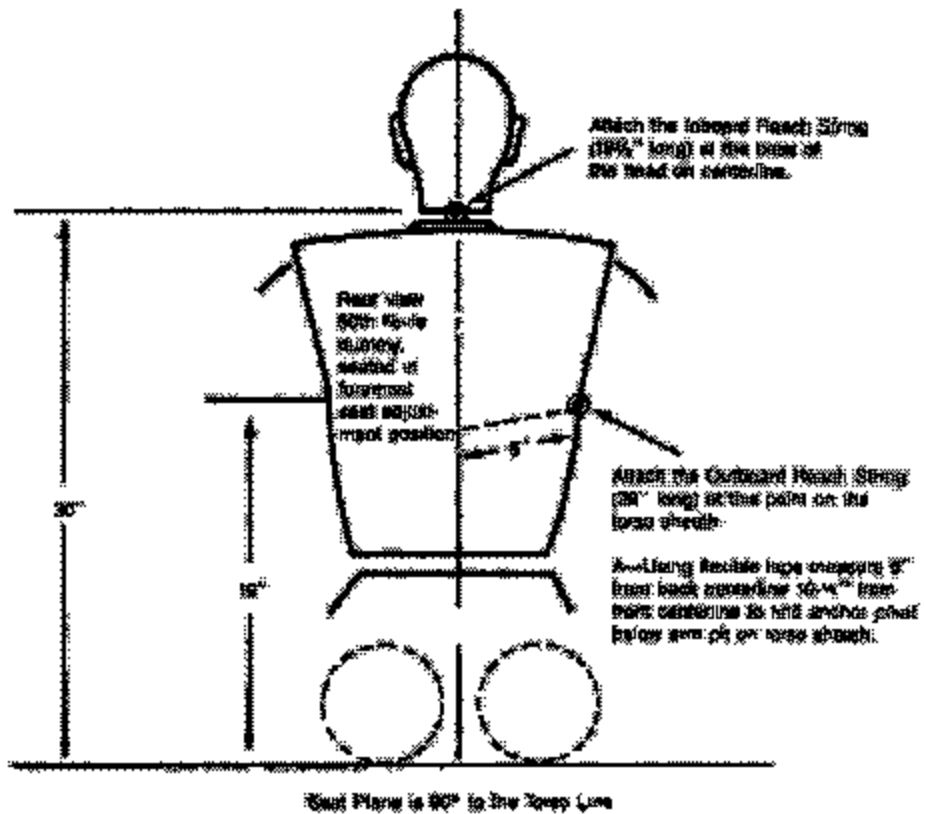


Figure 3. Location of Anchoring Points for Substrate Hesch Leading Straps or Hitches to Test for Substrate Accessibility Using Support II Test Device

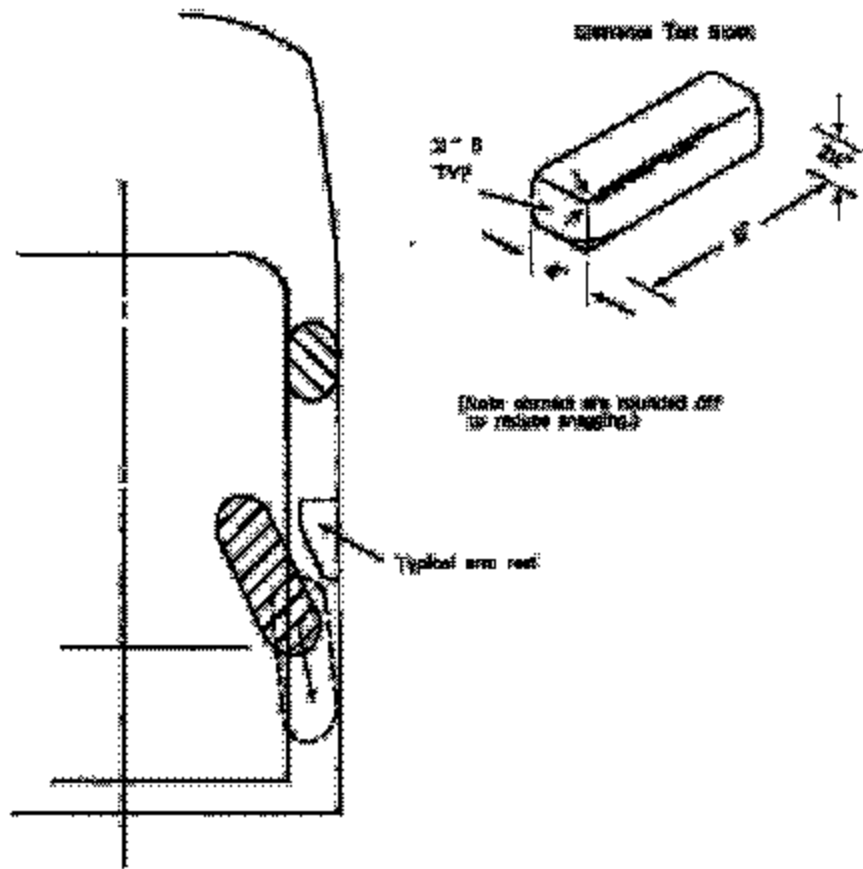


Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavidesw

DESIGNATED SEATING POSITION: Right Front

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

1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
 N/A – No lumbar adjustment
2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A – No additional support adjustment
3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A – No independent fore-aft seat cushion adjustment
4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A – No independent seat cushion height adjustment.
5. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A – No seat height adjustment
- 7 Draw a horizontal reference line on the side of the seat cushion
8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
 N/A – No adjustments
Reference line angle as tested 0°

11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
___ N/A – No seat back angle adjustment
Manufacturer's design seat back angle 15.5°
Tested seat back angle 15.5°
12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
16. Place the latch plate in the stowed position.
17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 Yes-Pass; ___ No
18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 Yes-Pass; ___ No
19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?
 Yes-Pass; ___ No-FAIL
20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
 Yes-Pass; ___ No-FAIL

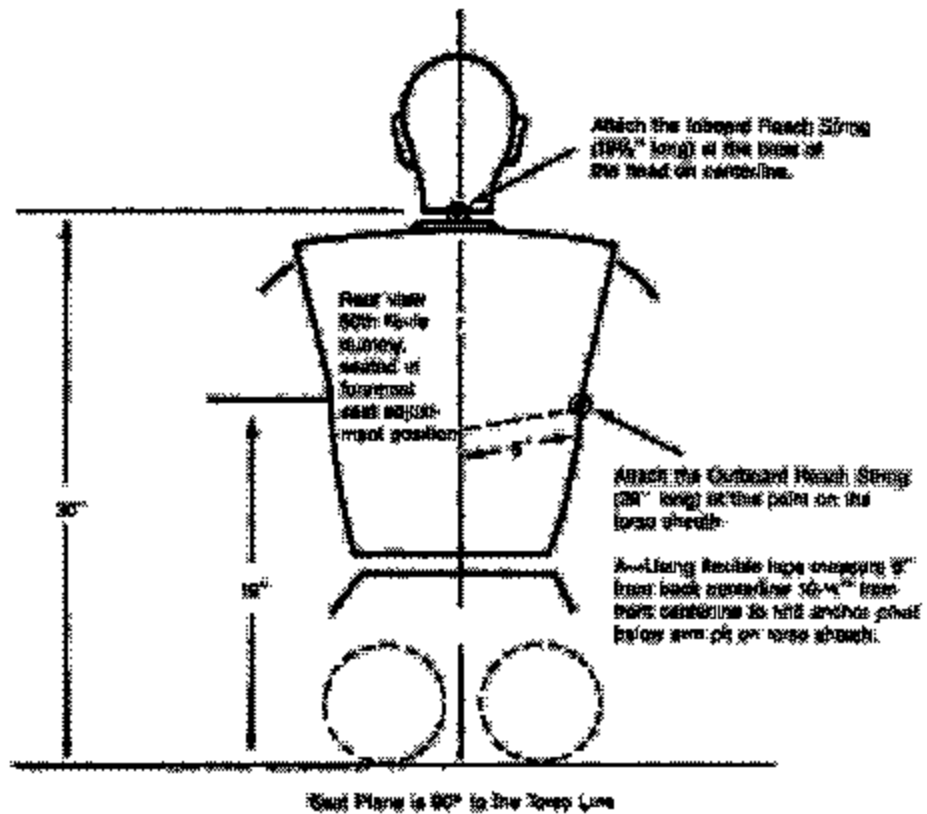


Figure 3. Location of Anchoring Points for Substrate Reach Leading Straps or Hinges to Test for Substrate Accessibility Using Support II Test Device

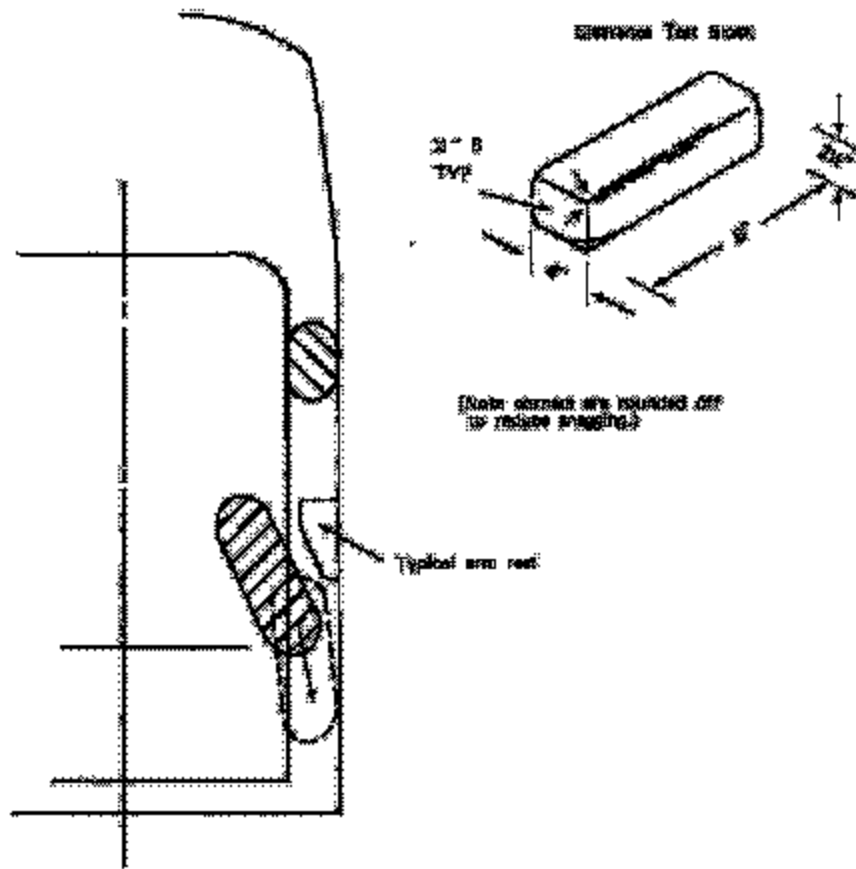


FIGURE 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

GVWR: 2903 kg/6400 lbs.

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

1. Is the vehicle a passenger car or walk-in van-type vehicle?
 Yes, this form is complete
 No
2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 N/A - No lumbar adjustment
3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A - No additional support adjustment
4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 N/A - No independent fore-aft seat cushion adjustment
5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A - No independent seat cushion height adjustment.
6. Put the seat in its full rearward position.
 N/A - the seat does not have a fore-aft adjustment
7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
 N/A - No seat height adjustment
- 7 Draw a horizontal line on the side of the seat cushion.
8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
 N/A - No seat adjustments
Reference angle as tested 0°

11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 N/A – No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 N/A – No head restraint adjustment
13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
 N/A – No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. _____
 Tested anchorage position _____
14. Is the driver seat a bucket seat?
 Yes, go to 14.1 and skip 14.2.
 No, go to 14.2 and skip 14.1.
- 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 565 mm
 Record the distance from the edge of the seat to Plane B. 267 mm
- 14.2 Bench seats (including split bench seats):
 Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
16. Remove the arms of a Subpart B dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
17. Rest the thighs on the seat cushion.
18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAB J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2) Measurement not recorded
 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded
 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) _____
 pelvic angle (20° to 25°) (S10.4.2.2) Measurement not recorded
19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 measured distance (10.6 inches) (S10.5)

20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
21. Fasten the seat belt around the dummy.
22. Remove all slack from the lap belt portion. (S10.9)
23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
3 pound load applied
25. Is the belt system equipped with a tension relieving device?
 Yes, continue
 No, go to 26
- 25.1 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
26. Check the statement that applies to this test vehicle:
- 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. Pass
- 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. Pass
- 26.3 Neither A or B apply. FAIL
27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 Yes-Pass; No-FAIL
28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 N/A
 Yes-Pass; No-FAIL

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

GVWR: 2903 kg/6400 lbs.

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

1. Is the vehicle a passenger car or walk-in van-type vehicle?
 Yes, this form is complete
 No
2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 N/A - No lumbar adjustment
3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 N/A - No additional support adjustment
4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position.) (S16.2.10.3.1)
 N/A - No independent fore-aft seat cushion adjustment
5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A - No independent seat cushion height adjustment.
6. Put the seat in its full rearward position.
 N/A - the seat does not have a fore-aft adjustment
7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
 N/A - No seat height adjustment
- 7 Draw a horizontal line on the side of the seat cushion.
8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Mid
10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
 N/A - No seat adjustments
Reference angle as tested 0°

11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 N/A – No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 N/A – No head restraint adjustment
13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
 N/A – No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. _____
 Tested anchorage position _____
14. Is the driver seat a bucket seat?
 Yes, go to 14.1 and skip 14.2.
 No, go to 14.2 and skip 14.1.
- 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 559 mm
 Record the distance from the edge of the seat to Plane B. 274 mm
- 14.2 Bench seats (including split bench seats):
 Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
16. Remove the arms of a Subpart B dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
17. Rest the thighs on the seat cushion.
18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAB J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2) Measurement not recorded
 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded
 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 pelvic angle (20° to 25°) (S10.4.2.2) Measurement not recorded
19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 measured distance (10.6 inches) (S10.5)

20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
21. Fasten the seat belt around the dummy.
22. Remove all slack from the lap belt portion. (S10.9)
23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
3 pound load applied
25. Is the belt system equipped with a tension relieving device?
 Yes, continue
 No, go to 26
- 25.1 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
26. Check the statement that applies to this test vehicle:
- 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. Pass
- 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. Pass
- 26.3 Neither A or B apply. FAIL
27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 Yes-Pass; No-FAIL
28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 N/A
 Yes-Pass; No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

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

1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 Yes; this form is complete
 No; got to 2
2. Is the seat removable? (S7.4.6.1(b))
 Yes; this form is complete
 No; got to 3
3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 Yes; this form is complete
 No; got to 4
4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 Yes: go to 5.
 No: this form is complete.
5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 Yes-Pass; No-FAIL
Identify the part(s) on top or above the seat.
 seat belt latch plate; buckle; seat belt webbing
6. Are the remaining two seat belt parts accessible under normal conditions?
 Yes-Pass; No-FAIL
7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 Yes-Pass; No-FAIL
8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 Yes-Pass; No-FAIL
9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 Yes-Pass; No-FAIL
10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 Yes-Pass; No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Center Front

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

1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 Yes; this form is complete
 No; got to 2
2. Is the seat removable? (S7.4.6.1(b))
 Yes; this form is complete
 No; got to 3
3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 Yes; this form is complete
 No; got to 4
4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 Yes: go to 5.
 No: this form is complete.
5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 Yes-Pass; No-FAIL
Identify the part(s) on top or above the seat.
 seat belt latch plate; buckle; seat belt webbing
6. Are the remaining two seat belt parts accessible under normal conditions?
 Yes-Pass; No-FAIL
7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 Yes-Pass; No-FAIL
8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 Yes-Pass; No-FAIL
9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 Yes-Pass; No-FAIL
10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 Yes-Pass; No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

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

1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 Yes; this form is complete
 No; got to 2
2. Is the seat removable? (S7.4.6.1(b))
 Yes; this form is complete
 No; got to 3
3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 Yes; this form is complete
 No; got to 4
4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 Yes: go to 5.
 No: this form is complete.
5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 Yes-Pass; No-FAIL
Identify the part(s) on top or above the seat.
 seat belt latch plate; buckle; seat belt webbing
6. Are the remaining two seat belt parts accessible under normal conditions?
 Yes-Pass; No-FAIL
7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 Yes-Pass; No-FAIL
8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 Yes-Pass; No-FAIL
9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 Yes-Pass; No-FAIL
10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 Yes-Pass; No-FAIL

DATA SHEET 26

VEHICLE WEIGHT, FUEL TANK, AND ATTITUDE DATA

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): B. Miller, N. Echeverria, D. Summers, J. Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Fill the transmission with transmission fluid to the satisfactory range.
- X 2. Drain fuel from vehicle
- X 3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.
- X 4. Record the useable fuel tank capacity supplied by the COTR. 34 gallons (128.7 L)
- X 5. Record the fuel tank capacity supplied in the owner's manual. 34 gallons (128.7 L)
- 6.¹ Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," fill the fuel tank with an amount equal to the useable capacity provided by the COTR.
Amount added
- X 7. Crank the engine to fill the fuel delivery system with Stoddard solvent.
- X 8. Fill the coolant system to capacity.
- X 9. Fill the engine with motor oil to the max. mark on the dip stick.
- X 10. Fill the brake reservoir with brake fluid to its normal level.
- X 11. Fill the windshield washer reservoir to capacity.
- X 12. Inflate the tires to the tire pressure on the tire placard. If no tire placard is available, inflate the tires to the recommended pressure in the owner's manual.
Tire placard pressure RF 35; LF 35; RR 35; LR 35
Owner's manual pressure² RF N/A; LF N/A; RR N/A; LR N/A
Actual inflated pressure RF 35; LF 35; RR 35; LR 35
- X 13. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight).
Right Front = 556.0 kg Right Rear = 409.5 kg

Left Front = 611.0 kg Left Rear = 414.5 kg

TOTAL FRONT = 1167.0 kg TOTAL REAR = 824.0 kg

% Total Weight = 58.6 % % Total Weight = 41.4 %

UVW = TOTAL FRONT PLUS TOTAL REAR = 1991.0 kg
- X 14. UVW Test Vehicle Attitude: (all dimensions in millimeters)
 - X 14.1 Mark a point on the vehicle above the center of each wheel.
 - X 14.2 Place the vehicle on a level surface.
 - X 14.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements
RF 845; LF 835; RR 918; LR 909

- X 15. Calculate the Rated Cargo and Luggage Weight (RCLW).
- X 15.1 Does the vehicle have the vehicle capacity weight (VCW) on the certification label or tire placard?
 ___ Yes, go to 15.3.
X No, go to 15.2.
- X 15.2 VCW = Gross Vehicle Weight – UVW
 VCW = 2903.0 - 1991.0 = 912.0
- X 15.3 VCW = 912.0
- X 15.4 Does the certification or tire placard contain the Designated Seating Capacity (DSC)?
 ___ Yes, go to 15.6.
X No, go to 15.5
- X 15.5 DSC = Total number of seat belt assemblies = 3
- X 15.6 DSC = 3
- X 15.7 RCLW = VCW – (68 kg x DSC) = 912.0 - (68 kg x 3) = 708.0
- X 15.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?
X Yes, the maximum RCLW is 136 kg.
 ___ No, use the RCLW calculated in 15.7.
- X 16. Fully Loaded Weight (100% fuel fill)
- X 16.1 Place the appropriate test dummy in both front outboard seating positions.
 Driver: ___ 5th female X 50th male
 Passenger: ___ 5th female X 50th male
- X 16.2 Load the vehicle with the RCLW from 15.7 or 15.8 whichever is applicable.
- X 16.3 Place the RCLW in the cargo area. Center the load over the longitudinal centerline of the vehicle. (S8.1.1 (d))
- X 16.4 Record the vehicle weight at each wheel to determine the Fully Loaded Weight.
- | | | | | | | |
|----------------|---|------------------|--|----------------|---|------------------|
| Right Front | = | <u>609.0</u> kg | | Right Rear | = | <u>519.5</u> kg |
| Left Front | = | <u>659.5</u> kg | | Left Rear | = | <u>519.0</u> kg |
| TOTAL FRONT | = | <u>1268.5</u> kg | | TOTAL REAR | = | <u>1038.5</u> kg |
| % Total Weight | = | <u>55.0</u> % | | % Total Weight | = | <u>45.0</u> % |
| % GVW | = | <u>43.7</u> % | | % GVW | = | <u>35.8</u> % |
- FULLY LOADED WEIGHT = TOTAL FRONT + TOTAL REAR = 2307.0 kg
- X 17. Fully Loaded Test Vehicle Attitude: (all dimensions in millimeters)
- X 17.1 Place the vehicle on a level surface.
- X 17.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 14.1 above) and record the measurements
 RF 832; LF 827; RR 882; LR 873
- X 18. Calculate the test weight range (94% fuel fill).
- X 18.1 Calculated Test Weight = Fully Loaded Condition (See 16.4 above) – ((.06 x useable fuel tank capacity) x 0.79kg/liter)
 Calculated Test Weight = 2307.0 - (.06 x 128.7 l x 0.79 kg/l) = 2300.9 kg
- X 18.2 Test Weight Range = Calculated Test Weight (- 4.5 kg, - 9 kg.)
 Max. Weight = Calculated Test Weight – 4.5 kg = 2296.4
 Min. Weight = Calculated Test Weight – 9 kg = 2291.9
- X 19. Remove the RCLW from the cargo area.

- 20.³ Remove Stoddard solvent from the gas tank in the amount of 6% of the useable capacity as supplied by the COTR. .06 x _____ (useable capacity) = _____
Amount removed _____
- X 21. Drain transmission fluid, engine coolant, motor oil, and windshield washer fluid from the test vehicle so that Stoddard solvent leakage from the fuel system will be evident.
- X 22. Vehicle Components Removed For Weight Reduction:
None
-
-
-
- X 23. Secure the equipment and ballast in the load carrying area and distribute it, as nearly as possible, to obtain the proportion of axle weight indicated by the gross axle weight ratings and center it over the longitudinal centerline of the vehicle.
- X 24. If necessary, add ballast to achieve the actual test weight.
 N/A
Weight of ballast 68.0 kg
- X 25. Ballast, including test equipment, must be contained so that it will not shift during the impact event or interfere with data collection or interfere with high-speed film recordings or affect the structural integrity of the vehicle or do anything else to affect test results. Care must be taken to assure that any attachment hardware added to the vehicle is not in the vicinity of the fuel tank or lines.
- X 26. Record the vehicle weight at each wheel to determine the actual test weight.

Right Front	=	<u>624.8</u> kg	Right Rear	=	<u>519.6</u> kg
Left Front	=	<u>636.8</u> kg	Left Rear	=	<u>514.5</u> kg
TOTAL FRONT	=	<u>1261.6</u> kg	TOTAL REAR	=	<u>1034.1</u> kg
% Total Weight	=	<u>48.7</u> %	% Total Weight	=	<u>51.3</u> %
% GVW	=	<u>43.5</u> %	% GVW	=	<u>35.6</u> %

(%GVW = Axle GVW ÷ Vehicle GVW)

TOTAL FRONT PLUS TOTAL REAR = 2295.7 kg

- X 27. Is the test weight between the Max. Weight and the Min. Weight (See 18.2)?
X Yes
 No, explain why not. _____
-
- X 28. Test Weight Vehicle Attitude: (all dimensions in millimeters)
- X 28.1 Place the vehicle on a level surface.
- X 28.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 3 above) and record the measurements
RF 830 ; LF 822 ; RR 878 ; LR 871

X 29. Summary of test attitude

X 29.1

AS DELIVERED: RF 845 ; LF 835 ; RR 918 ; LR 909

AS TESTED: RF 830 ; LF 822 ; RR 878 ; LR 871

FULLY LOADED: RF 832 ; LF 827 ; RR 882 ; LR 873

X 29.2 Is the "as tested" test attitude equal to or between the "fully loaded" and "as delivered" attitude?

 Yes

X No, explain why not. Approved by COTR.

¹ At this step the gasoline in the fuel tank was topped off (Stoddard was not introduced until after fully loaded weight and attitudes were obtained). The exact amount of fuel in the tank was unknown.

² The Owner's Manual said to see Certification/Tire Label for tire pressure.

³ At this step Stoddard solvent was introduced into the drained fuel tank: 0.94 x 128.7 liters, a total of 121.0 liters was added.

DATA SHEET 27
Vehicle Accelerometer Location

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): D. Summers

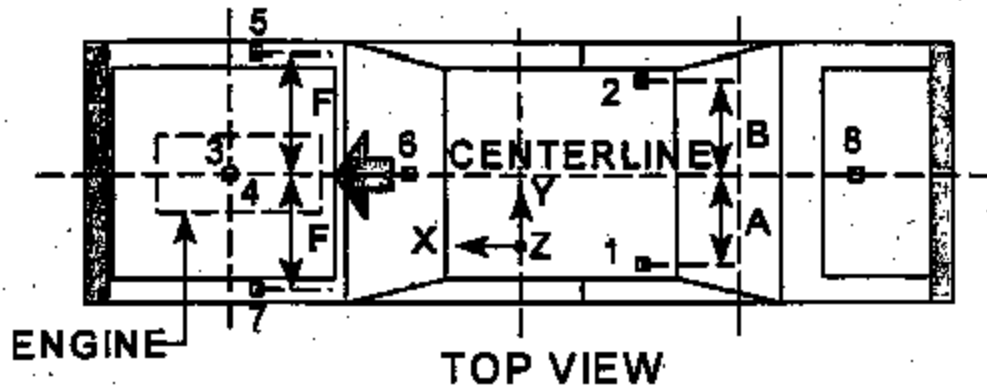
Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

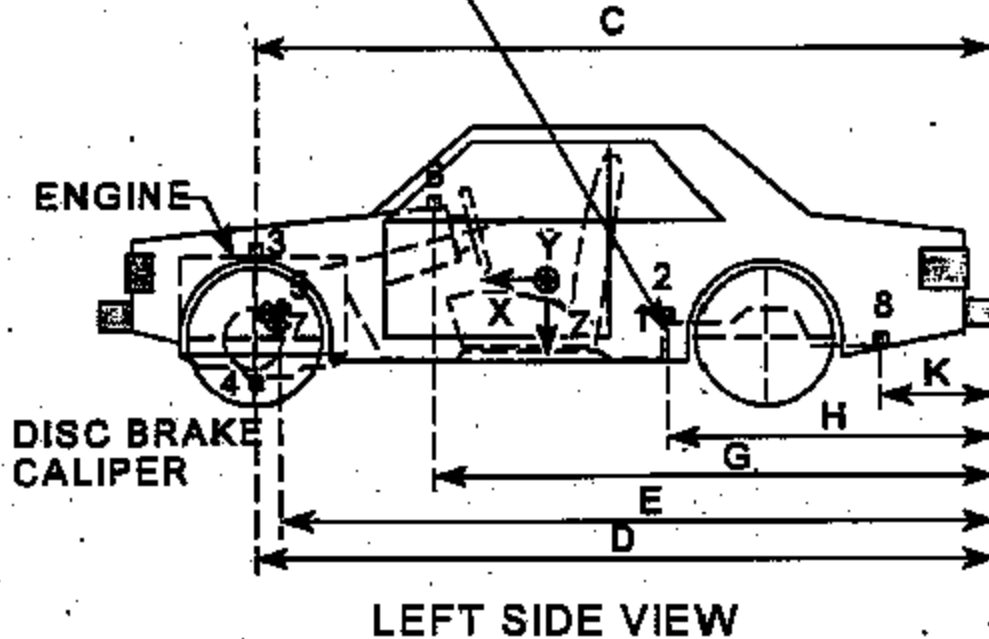
Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the left front outboard seating position intersects the left rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 2. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the right front outboard seating position intersects the right rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 3. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect at the top of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 4. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect the bottom of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 5. Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 6. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the top of the instrument panel. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 7. Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 8. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the floor of the trunk. Install an accelerometer on the trunk floor at this intersection to record z-direction accelerations. Record the location on the following chart.

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



DATA SHEET 27
VEHICLE ACCELEROMETER LOCATION MEASUREMENTS

<u>DIMENSION</u>	<u>LENGTH (mm)</u>
<u>A</u>	711
<u>B</u>	673
<u>C</u>	4757
<u>D</u>	4452
<u>E</u>	5067
<u>F</u>	693 left; 706 right
<u>G</u>	4343
<u>H</u>	3068
<u>K</u>	314
<u>A</u>	712
<u>B</u>	673
<u>C</u>	4697
<u>D</u>	4457
<u>E</u>	4497 left; 4517 right
<u>F</u>	691 left; 691 right
<u>G</u>	3813
<u>H</u>	2988
<u>K</u>	307

REMARKS:

DATA SHEET 28
Photographic Targets

NHTSA No.: C30102

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): D. Summers, N. Echeverria

Impact Angle: 0° Offset percentage: 0 Belted Dummies:
 Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

1. FMVSS 208 vehicle targeting requirements (See Figures 28A and 28B)
- X 1.1 Targets A1 and A2 are on flat rectangular panels.
- X 1.2 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the front on the outboard sides of A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 100 mm
- X 1.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the back on the outboard sides of on A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 100 mm
- X 1.4 The distance between the first circular target at the front of A1 and A2 and the last circular target at the back of A1 and A2 is at least 915 mm.
Distance between the first and last circular targets 403 mm
- X 1.5 Firmly fix target A1 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy.
- X 1.6 Firmly fix target A2 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
- X 1.7 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the driver door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
- X 1.8 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the passenger door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
- 1.9 Place tape with squares having alternating colors on the top portion of the steering wheel.
- 1.10 Chalk the bottom portion of the steering wheel.
- X 1.11 Is this an offset test?
X Yes, continue with this section
 No, go to 2.
- X 1.12 Measure the width of the vehicle. Vehicle width 1967 mm
- X 1.13 Find the centerline of the vehicle. ($\frac{1}{2}$ of the vehicle width)
- X 1.14 Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.
- X 1.15 Apply 25 mm wide tape with alternating black and yellow squares parallel to and on each side of the line found in 1.14. The edge of each tape shall be 50 mm from the line found in 1.14. The tape shall extend from the bottom of the bumper to the front edge of the windshield. (Figure 28D)

2. Barrier targeting
- 2.1 Fix two stationary targets D1 and D2 to the barrier as shown in the Figure 28A. One target is in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy. The other is in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy. Only one target over driver dummy
- 2.2 Targets D1 and D2 are on a rectangular panel. No D2 target
- 2.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted on the sides of the rectangular panel away from the longitudinal centerline of the vehicle. The center of each circular target is 100 mm from the one next to it.
 Distance between circular targets on D1 127 mm
 Distance between circular targets on D2 N/A mm
3. FMVSS 208 dummy targeting requirements
- 3.1 Place a circular target with black and yellow quadrants on both sides of the driver dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
- 3.2 Place a circular target with black and yellow quadrants on both sides of the passenger dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
- 3.3 Place a circular target with black and yellow quadrants on the outboard shoulder of the driver dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
- 3.4 Place a circular target with black and yellow quadrants on the outboard shoulder of the passenger dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
4. FMVSS 204 targeting requirements
- 4.1 Is an FMVSS 204 indicant test ordered on the "COTR Vehicle Work Order?"
 Yes, continue with this form.
 No, this form is complete
- 4.2 Resection panel (Figure 28C)
- 4.2.1 The panel deviates no more than 6 mm from perfect flatness when suspended vertically.
- 4.2.2 The 8 targets on the panel are circular targets at least 90 mm in diameter and with black and yellow quadrants.
- 4.2.3 The center of each of the 4 outer targets are placed within 1 mm of the corners of a square measuring 914 mm on each side.
- 4.2.4 Locate another square with 228 mm sides and with the center of this square coincident with the center of the 914 mm square.
- 4.2.5 The center of the 4 inner targets are placed at the midpoints of each of the 228 mm sides.
- 4.3 Place a circular target at least 90 mm in diameter and with black and yellow quadrants on a material (cardboard, metal, etc.) that can be taped to the top of the steering column.
- 4.4 Tape the target from 4.3 to the top of the steering column in a manner that does not interfere with the movement of the steering column in a crash.

REFERENCE PHOTO TARGETS

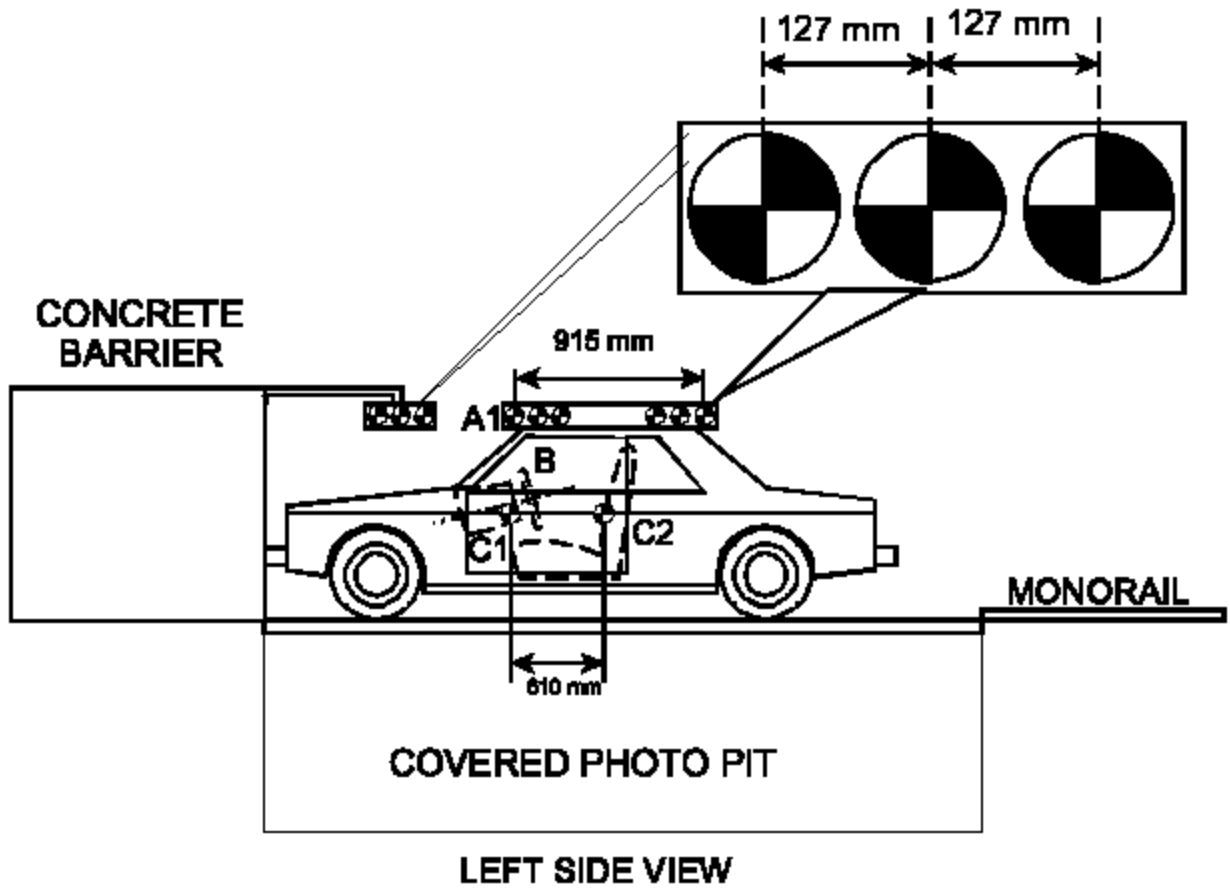
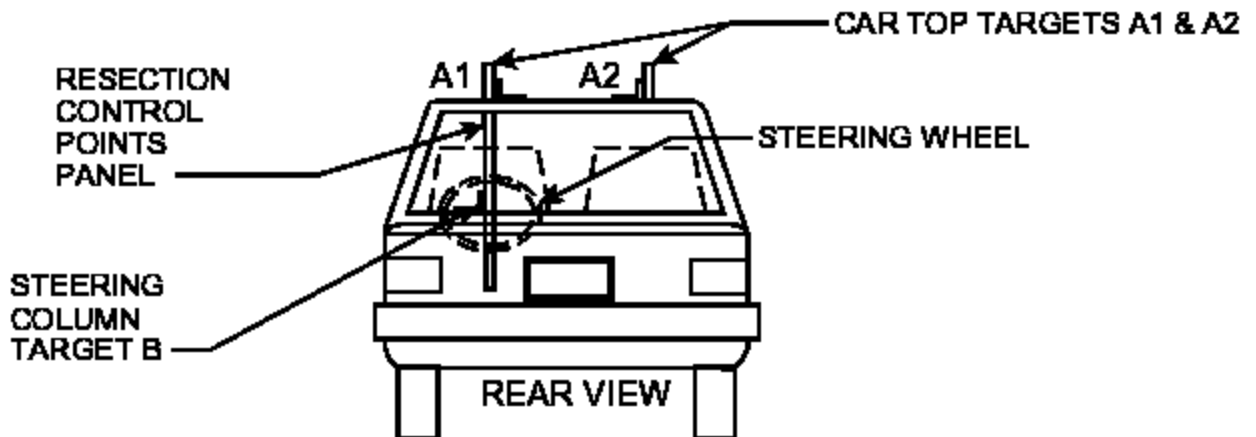


FIGURE 28A

RESECTION PANEL TARGETING ALIGNMENT



TEST RUN STEERING COLUMN CAMERA VIEW OF TYPICAL TIME ZERO VEHICLE POSITION

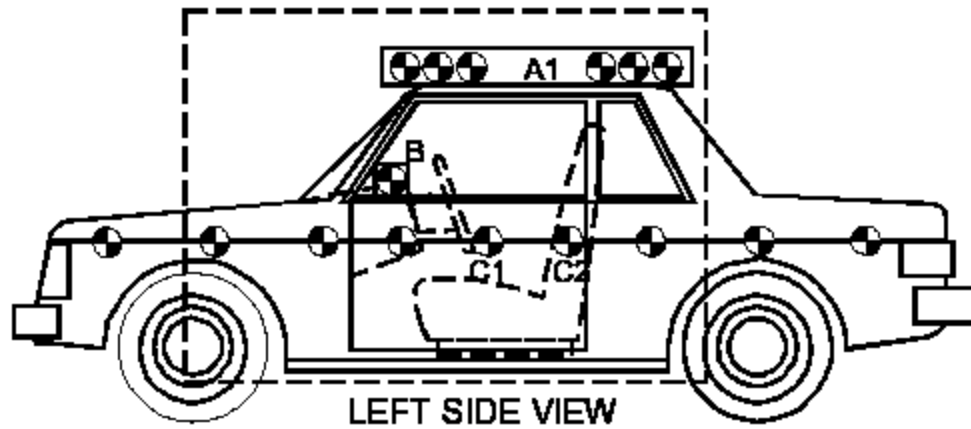
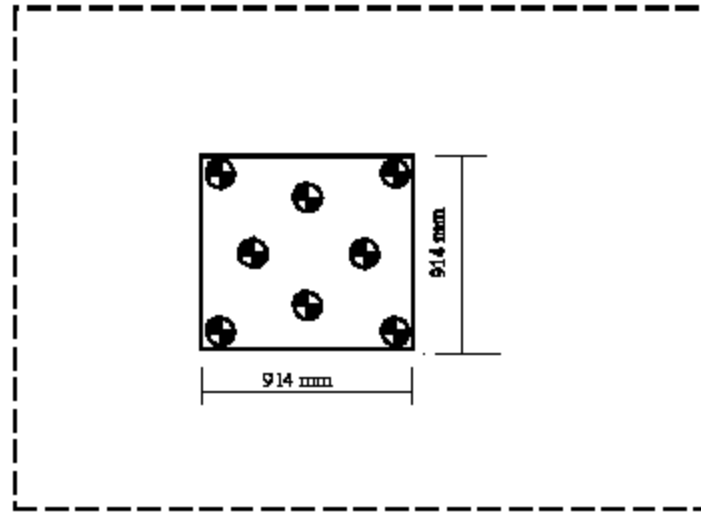


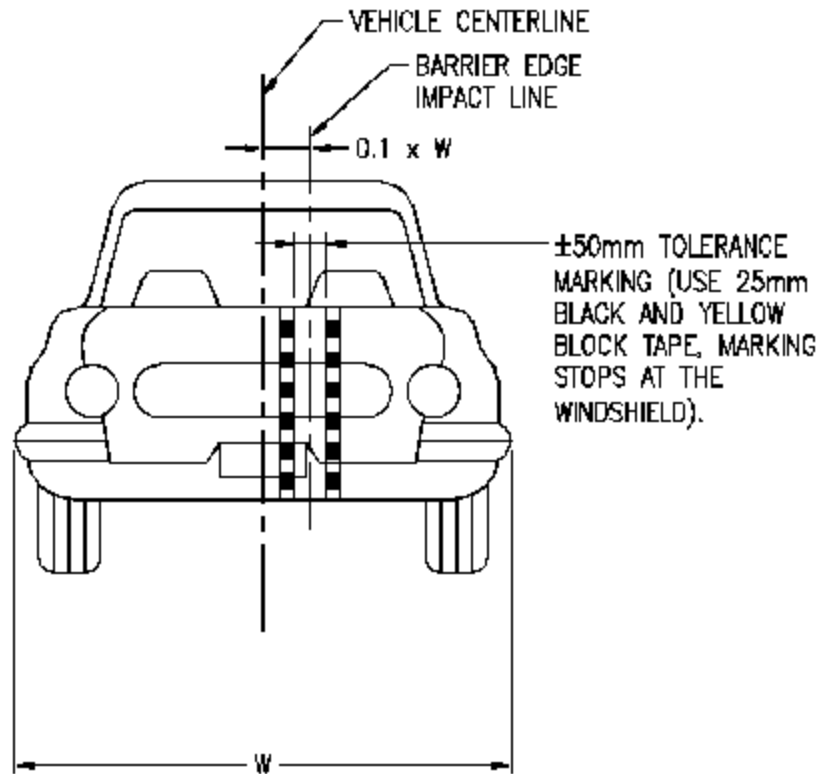
FIGURE 28B

PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW



LEFT SIDE VIEW

FIGURE 28C



OFFSET DEFORMABLE BARRIER
ADDITIONAL VEHICLE TARGETING

FIGURE 28D

**DATA SHEET 29
CAMERA LOCATIONS**

VEH. NHTSA No.: C30102 ; TEST DATE: 11/19/02 ; TIME: 1617

VEH. YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/Pickup Truck

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (deg.)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fpe)
		X	Y	Z				
1	Left Side View							24
2	Left Side View (barrier face to front seat backs)	NA ¹	NA ¹	NA ¹	NA ₁	NA ¹	Z _{xxx}	430
3	Left Side View (A-post)	-1230	-7660	-1380	0	7200	35	705
4	Left Side View (B-post aimed toward center of steering wheel)	-5000	-5000	-2150	-9	4230	25	250
5	Left Side View (B-post)	-1640	-7220	-1300	-3.5	7200	25	NA ²
6	Left Side View (front door under camera 5)	-1600	-7310	-950	0	6820	25	585
7 ³	Right Side View (overall)	-2770	9060	-1300	-1	8480	13	1000
8	Right Side View (A-post)	-900	5850	-1300	0	5350	25	1000
9	Right Side View (B-post)	-5210	5510	-1940	-7	4670	25	1000
10	Right Side View (front door)	-1300	7880	-1300	0	7370	25	1002
11 ³	Front View Windshield	470	0	-2500	-66	2150	8.5	1000
12 ³	Front View Driver	470	-270	-2500	-62	2200	17	1000
13 ³	Front View Passenger	560	230	-2500	-62	2180	17	1000
14 ³	Overhead Barrier Impact View	0	0	-5600	-90	NA ¹	13	1000
15	Pit Camera Engine View	-900	0	830	90	NA ¹	17	685
16	Pit Camera Fuel Tank View	-2650	130	1000	90	NA ¹	13	NA ²

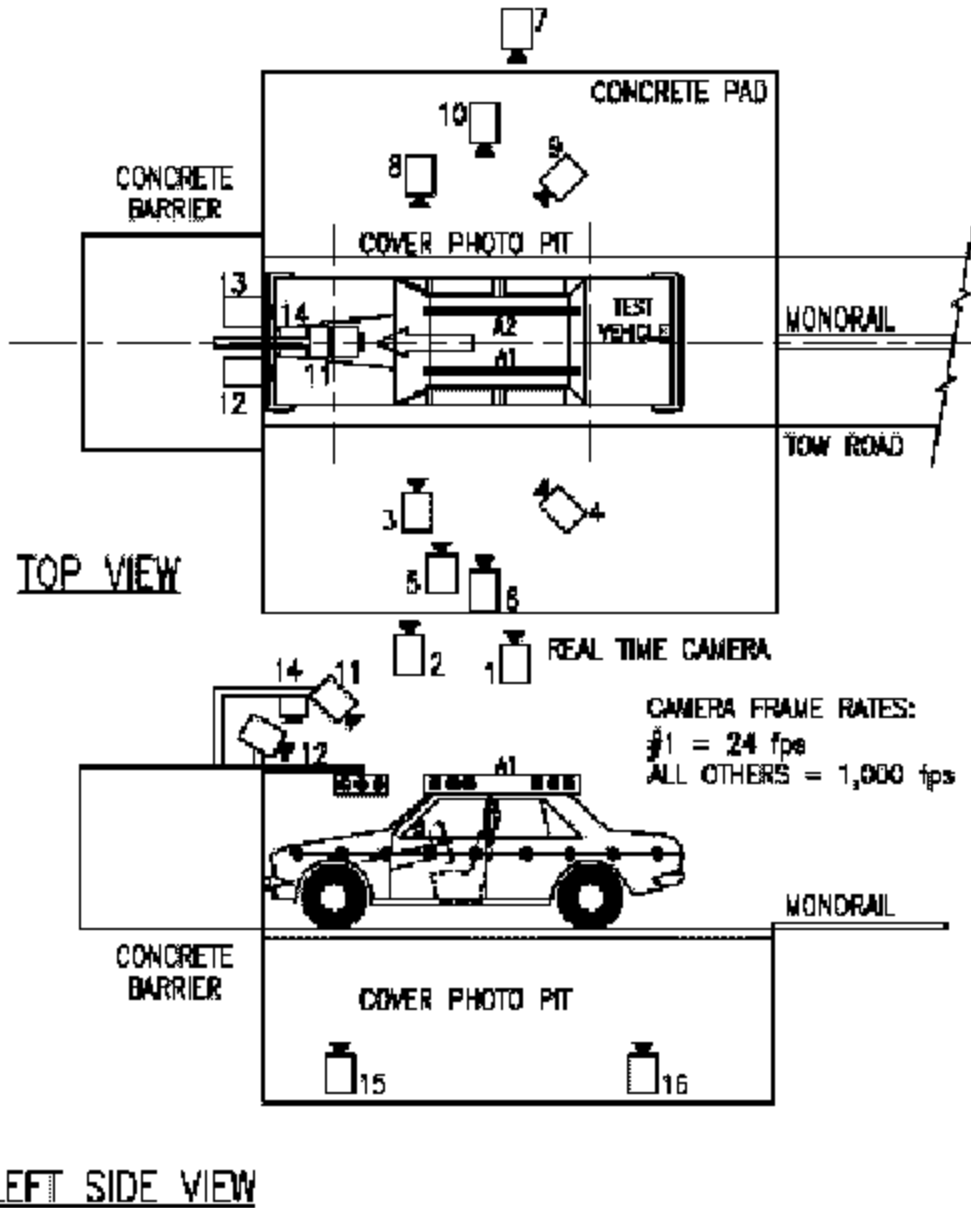
* +X - film plane forward (downstream) from barrier impact surface
+Y - film plane to right of monorail centerline from driver's perspective
+Z - film plane below ground level

¹ Not applicable

² Unable to determine speed, camera ran too slow to time.

³ Digital camera

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET 30
DUMMY POSITIONING PROCEDURES
FOR DRIVER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): J. Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S20.1.8.1)
 X N/A – No lumbar adjustment
- X 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S20.1.8.2)
 X N/A – No additional support adjustment
- X 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S20.1.8.3)
 X N/A – No independent fore-aft seat cushion adjustment
- X 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position.
 X N/A – No independent seat cushion height adjustment.
- X 5. Put the seat in its full rearward position.
 N/A - the seat does not have a fore-aft adjustment
- X 6. If the seat height is adjustable, put it in the full down position
 X N/A – No seat height adjustment
- X 7. Draw a horizontal line on the side of the seat cushion. Record the angle of this line, with respect to the horizontal, as the seat cushion reference angle. 0°
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position.
- X 10. If seat adjustments, other than fore-aft, are present and the seat cushion reference angle changes from that measured in 7, use those adjustments to maintain as closely as possible the angle recorded in 7.
 X N/A – No adjustments
Reference angle
Reference angle as tested
- X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 N/A – No seat back angle adjustment

Manufacturer's design seat back angle 15.5 °

Tested seat back angle 15.4 °

12. If adjustable, set the head restraint at the full up and full forward position. Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 N/A – No head restraint adjustment
13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S22.2.1.6.1)
 N/A – No adjustable upper seat belt anchorage
Manufacturer's specified anchorage position. Fixed
Tested anchorage position Fixed
14. Place the adjustable accelerator pedal in the full forward position.
 N/A – the accelerator pedal is not adjustable.
15. Is the driver seat a bucket seat?
 Yes, go to 15.1 and skip 15.2.
 No, go to 15.2 and skip 15.1.
 15.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 525 mm
 Record the distance from the edge of the seat to Plane B. 263 mm
 Go to 16
 15.2 Bench seats (including split bench seats):
 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 Go to 16
16. Place the dummy in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
17. Rest the thighs on the seat cushion. (S10.5)
18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded
 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) Measurement not recorded
 pelvic angle (20° to 25°) Measurement not recorded
19. Is the head level within ± 0.5°? (S10.1)
 Yes, go to 20
 No, go to 19.1
- 19.1 Adjust the position of the H-point. (S10.1)
- 19.2 Is the head level within ± 0.5°? (S10.1)
 Yes, record the following, then go to 20. No, go to 19.3
8 mm forward horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
10 mm vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
24.8 ° pelvic angle (20° to 25°) (S10.4.2.2)

- 19.3 Adjust the pelvic angle. (S10.1)
- 19.4 Is the head level within $\pm 0.5^\circ$? (S10.1)
 - Yes, record the following, then go to 20. No, go to 19.3
 - horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - pelvic angle (20° to 25°) (S10.4.2.2)
- 19.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within $\pm 0.5^\circ$. (S10.1)
 - Record the following, then go to 20
 - horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 - pelvic angle (20° to 25°) (S10.4.2.2)
- 20. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 - 270 mm measured distance (10.6 inches) (S10.5)
- 21. Can the right foot be placed on the accelerator?
 - Yes, go to 21.1 and skip 21.2
 - No, go to 21.2
 - 21.1 To the extent practicable keep the right thigh and the leg in a vertical plane (S10.5) while resting the foot on the undepressed accelerator pedal with the rearmost point of the heel on the floor pan in the plane of the pedal. (S10.6.1.1)
 - 21.2 Initially set the foot perpendicular to the leg and then place it as far forward as possible in the direction of the pedal centerline with the rearmost point of the heel resting on the floor pan. (S10.6.1.1)
 - 21.2.1 Move the adjustable pedal to its most rearward position or until the right foot is flat on the pedal, whichever occurs first. (S10.6.1.1)
 - N/A – the accelerator pedal is not adjustable
- 22. Does the vehicle have a foot rest?
 - Yes, go to 22.1
 - No, go to 22.1.2
 - 22.1 With the left thigh and leg in a vertical plane, place the foot on the foot rest. (S10.6.1.2)
 - 22.1.1 Is the left foot elevated above the right foot?
 - Yes, go to 22.1.2 and position the foot off the foot rest
 - No, go to 23
 - 22.1.2 Check the ONLY one of the following that applies
 - The foot reaches the toeboard without adjusting the foot or leg. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard, skip 22.1.3 (S10.6.1.2)
 - The foot reaches the toeboard but contacts the brake or clutch pedal and must be rotated to avoid pedal contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard. The foot was rotated about the leg to avoid pedal contact, skip 22.1.3 (S10.6.1.2)
 - The foot reaches the toeboard but contacts the brake or clutch pedal and the foot and leg must be rotated to avoid pedal contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard. The foot was rotated about the leg and the leg was rotated outboard about the hip the minimum distance necessary to avoid pedal contact, skip 22.1.3 (S10.6.1.2)

- N/A - the foot does not reach the toeboard, go to 22.1.3
- 22.1.3 Check the ONLY one of the following that applies
- The foot did not contact the brake or clutch pedal. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5). Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan. (S10.6.1.2)
- The foot did contact the brake or clutch pedal and the foot was rotated to avoid contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5). Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan and rotate the foot the minimum amount to avoid pedal contact. (S10.6.1.2)
- The foot did contact the brake or clutch pedal and the foot was rotated about the leg and the leg was rotated outboard about the hip the minimum distance necessary to avoid pedal contact. Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan and rotate the foot about the leg and the thigh and leg outboard about the hip the minimum distance necessary to avoid pedal contact. (S10.6.1.2)
- 23. Place the right upper arm adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)
- 24. Is the driver seat belt used for this test?
 - Yes, continue
 - No, go to 25
 - 24.1 Fasten the seat belt around the dummy.
 - 24.2 Remove all slack from the lap belt portion. (S10.9)
 - 24.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
 - 24.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 - pound load applied
 - 24.5 Is the belt system equipped with a tension relieving device?
 - Yes, continue
 - No, go to 25
 - 24.6 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25.
- 25. Place the left upper arm adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)
- 26. Place the right hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- 27. Place the left hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- 28. Tape the thumb of each hand to the steering wheel by using masking tape with a width of 0.25 inch. The length of the tape shall only be enough to go around the thumb and steering wheel one time.

DATA SHEET 30
DUMMY POSITIONING PROCEDURES FOR PASSENGER TEST DUMMY
CONFORMING TO SUBPART E OF PART 572

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): J. Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. The seat is a bench seat for which the adjustments have already been made for the driver and there are no independent adjustments that can be made for the passenger. Go to 14
 X N/A - the passenger seat adjusts independently of the driver seat.
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S20.1.8.1)
 X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S20.1.8.2)
 X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S20.1.8.3)
 N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position.
 X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position.
 N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position
 X N/A - No seat height adjustment
- X 8. Draw a horizontal line on the side of the seat cushion. Record the angle of this line, with respect to the horizontal, as the seat cushion reference angle. 0°
- X 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position.
- X 11. If seat adjustments, other than fore-aft, are present and the seat cushion reference angle changes from that measured in 8, use those adjustments to maintain as closely as possible the angle recorded in 8.
 X N/A - No adjustments
Reference angle
Reference angle as tested

12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A – No seat back angle adjustment
 Manufacturer's design seat back angle 15.5 °
 Tested seat back angle _____
13. If adjustable, set the head restraint at the full up and full forward position. Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ___ N/A – No head restraint adjustment
14. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S22.2.1.6.1)
 N/A – No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. Fixed
 Tested anchorage position Fixed
15. Is the passenger seat a bucket seat?
 Yes, go to 15.1 and skip 15.2.
 ___ No, go to 15.2 and skip 15.1.
- 15.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 520 mm
 Record the distance from the edge of the seat to Plane B. 262 mm
 Go to 16
- ___ 15.2 Bench seats (including split bench seats):
 Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
 Go to 16
16. Place the dummy in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
17. Rest the thighs on the seat cushion. (S10.5)
18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
7 mm forward horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
3 mm high vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
22.6 ° pelvic angle (20° to 25°) (S10.4.2.2)
19. Is the head level within $\pm 0.5^\circ$? (S10.1)
 Yes, go to 20
 ___ No, go to 19.1
 ___ 19.1 Adjust the position of the H-point. (S10.1)

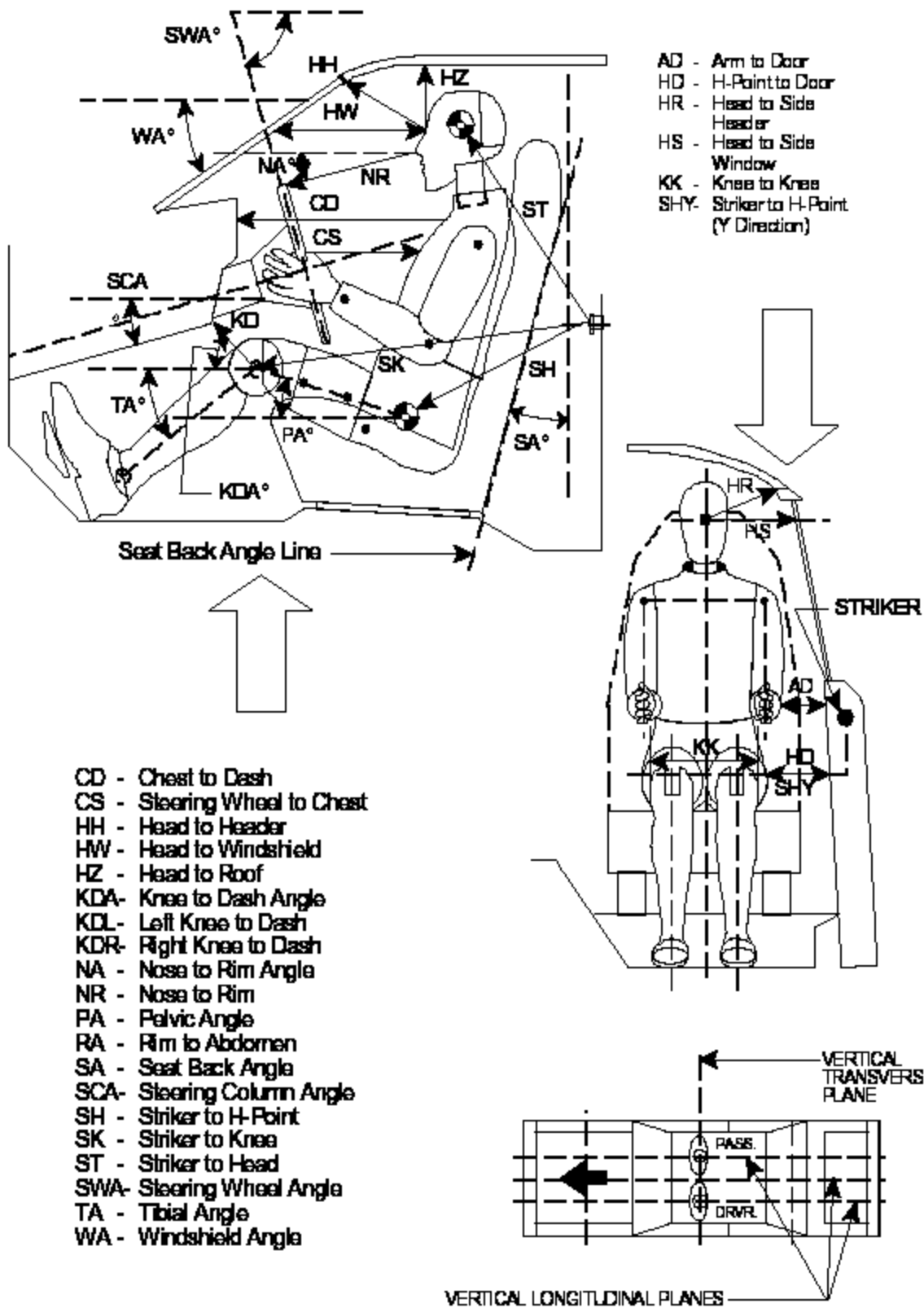
- ___ 19.2 Is the head level within $\pm 0.5^\circ$? (S10.1)
 ___ Yes, record the following, then go to 20. ___ No, go to 19.3
 ___ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ pelvic angle (20° to 25°) (S10.4.2.2)
- ___ 19.3 Adjust the pelvic angle. (S10.1)
- ___ 19.4 Is the head level within $\pm 0.5^\circ$? (S10.1)
 ___ Yes, record the following, then go to 20. ___ No, go to 19.5
 ___ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ pelvic angle (20° to 25°) (S10.4.2.2)
- ___ 19.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within $\pm 0.5^\circ$. (S10.1)
 Record the following, then go to 20
 ___ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ___ pelvic angle (20° to 25°) (S10.4.2.2)
- X 20. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
270 mm measured distance (10.6 inches) (S10.5)
- X 21. Check the only one of the following that applies:
X To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, place the feet on the toeboard with the heels resting on the floor pan as close as possible to the intersection of the floor pan and toeboard. The feet cannot be placed flat on the toeboard. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heels resting on the floor pan.
 ___ The vehicle has a wheelhouse projection. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heels resting on the floor pan. Do not set the feet on the wheelhouse projection.
 ___ The vehicle has a wheelhouse projection and the feet cannot be placed on the toeboard. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heel resting on the floor pan. Do not set the feet on the wheelhouse projection.
- X 22. Place the left upper arm in contact with the seat back and side of the torso. (S10.2.2)
- X 23. Is the passenger seat belt used for this test?
 ___ Yes, continue
X No, go to 24
 ___ 23.1 Fasten the seat belt around the dummy.
 ___ 23.2 Remove all slack from the lap belt portion. (S10.9)
 ___ 23.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
 ___ 23.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 ___ pound load applied

- 23.5 Is the belt system equipped with a tension relieving device?
 - Yes, continue
 - No, go to 24
- 23.6 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
Go to 24.
- 24. Place the right upper arm in contact with the seat back and side of the torso. (S10.2.2)
- 25. Place the left hand palm in contact with the outside of the left thigh and the little finger in contact with the seat cushion. (S10.3.2)
- 26. Place the right hand palm in contact with the outside of the right thigh and the little finger in contact with the seat cushion. (S10.3.2)

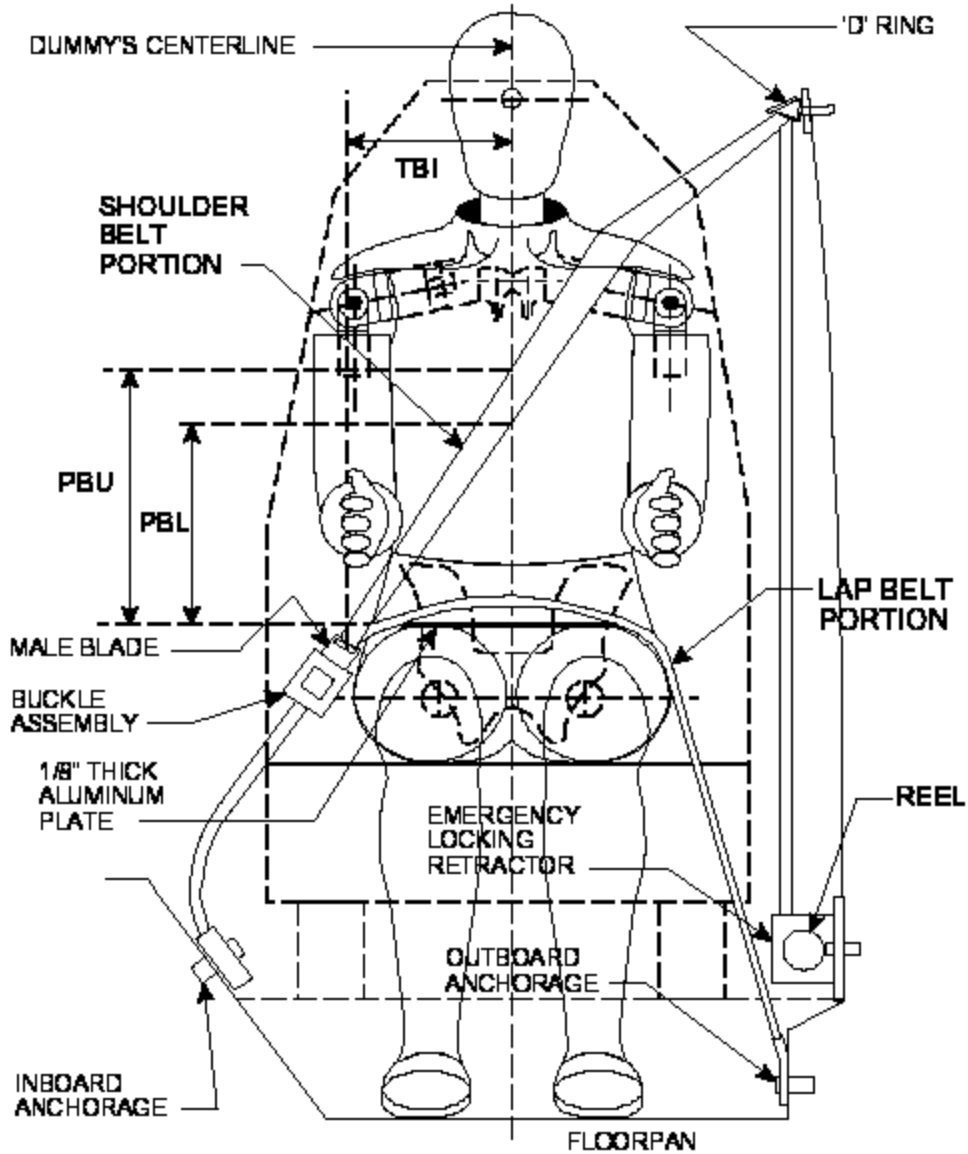
DATA SHEET 31
DUMMY POSITIONING MEASUREMENTS

	DRIVER (Serial No. 230)	PASSENGER (Serial No. 229)
WA°	40	
SWA°	69.1	NA
SCA°	20.9	NA
SA°	15.4	15.5
HZ	270	260
HH	527	496
HW	697	663
HR	250	245
NR	391 ANGLE 9.3°	NA
CD	550	486
CS	314	NA
RA	178	NA
KDL	135 ANGLE 33.5°	130
KDR	148	135 ANGLE 20.7°
PA°	24.8	22.4
TA°	54.9	50.2
KK	320	270
ST	634 ANGLE -74.6°	640 ANGLE -67.0°
SK	720 ANGLE -3.2°	727 ANGLE -0.5°
SH	355 ANGLE 12.4°	335 ANGLE 12.9°
SHY	260	245
HS	278	260
HD	162	163
AD	134	141

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

DESCRIPTIONS OF DUMMY MEASUREMENTS

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

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

- * HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- * HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- * CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- * CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See photograph.
- RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).
- *¹ KDL, KDR Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See photograph.
- SH, SK, ST Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See photograph.

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

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

ANGLES

- SA Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.
- PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
- SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

- SCA Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
- NA Measure the angle made when taking the measurement NR with respect to the horizontal.
- KDA Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph.
- WA Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
- TA Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

DATA SHEET 32
CRASH TEST

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): J. Jenkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Vehicle underbody painted
- X 2. The speed measuring devices are in place and functioning.
- X 3. The speed measuring devices are 1.5 m from the barrier (spec. 1.5m) and 30 cm from the barrier (spec. is 30 cm)
- X 4. Convertible top is in the closed position.
 X N/A – Not a convertible
- X 5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected.
- X 6. Tires inflated to pressure on tire placard or if it does not have a tire placard because it is not a passenger car, then inflated to the tire pressure specified in the owner information.
 240 kPa front left tire 240 kPa specified on tire placard or in owner information
 240 kPa front right tire 240 kPa specified on tire placard or in owner information
 240 kPa rear left tire 240 kPa specified on tire placard or in owner information
 240 kPa rear right tire 240 kPa specified on tire placard or in owner information
- X 7. Time zero markers and switches in-place.
- X 8. Pre test zero and shunt calibration adjustments performed and recorded
- X 9. Dummy temperature meets requirements of section 12.2 of the test procedure.
- X 10. Vehicle hood closed and latched
- X 11. Transmission placed in neutral
- X 12. Parking brake off
- X 13. Ignition in the ON position
- X 14. Doors closed and latched but not locked.
- X 15. Posttest zero and shunt calibration checks performed and recorded
- X 16. Actual test speed 39.2 km/h
- X 17. Vehicle rebound from the barrier 56.4 cm
- X 18. Describe whether the doors open after the test and what method is used to open the doors.
Left front door Easy
Right front door Easy
Left rear door NA
Right rear door NA
- X 19. Describe the contact points of the dummy with the interior of the vehicle.
Driver dummy Head contacted airbag, sun visor and side header. Chest contacted airbag. Both knees contacted knee bolster.
Passenger dummy Head contacted airbag and sun visor. Chest contacted airbag. Both knees contacted the glove box.

DATA SHEET 34
ACCIDENT INVESTIGATION MEASUREMENTS

NHTSA No.: C30102 Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): J. Jenkins

Impact Angle: 0° Belted Dummies: Yes No

Test Speed: 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female 50th male Passenger Dummy: 5th female 50th male

Vehicle Year/Make/Model/Body Style: 2003/Chevrolet/Silverado/Pickup Truck

VIN: 1GCEC14X13Z131545

Wheelbase: 3387; Build Date: 08/02

Veh. Size Category: Pickup; Test Weight: 2295.7

Front Overhang: 1004; Overall Width: 1967

Veh. Impact Speed: 39.2; Vel. Change¹: 44.0 km/h

Collision Deformation Classification (CDC) Code: 12FDEW2

¹ From integration of right rear seat crossmember X-axis acceleration.

Impact Mode: 0° Front

Crush Depth Dimensions¹:

C1 = 340 mm

C2 = 407 mm

C3 = 442 mm

C4 = 444 mm

C5 = 399 mm

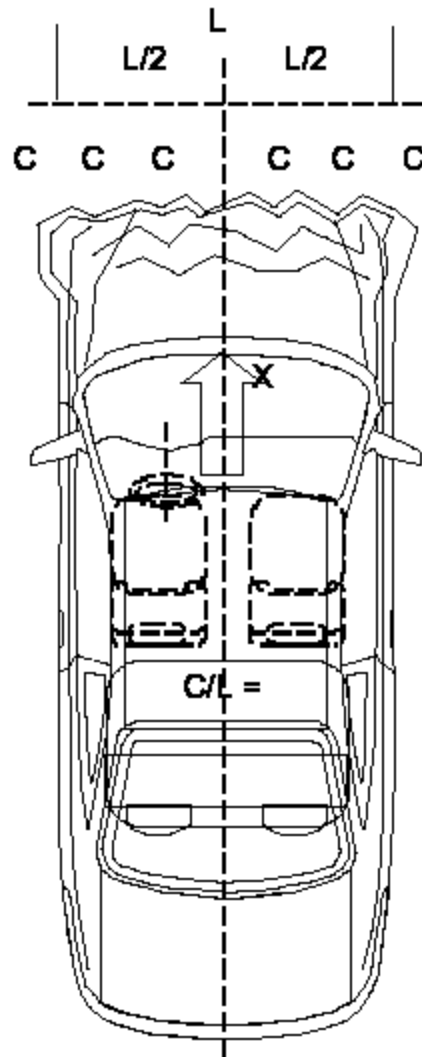
C6 = 354 mm

Midpoint of Damage: D= 0 mm
(Left of Vehicle Longitudinal
Centerline)

Length of Damage Region:

L = 1829 mm

REMARKS:



¹ Numbered from left to right of vehicle.

DATA SHEET 35
WINDSHIELD MOUNTING (FMVSS 212)

NHTSA No.: C30102

Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): D. Summers

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

Most vehicle windshields are either bonded in place and covered with chrome or plastic strips or they are held to the body by a rubber retainer. It is difficult to determine the exact periphery of the windshield because the glazing edge is hidden from view. The test engineer will measure the perimeter inside the retainer or molding at several locations. After the impact test the covering over the glazing edge may be removed for exact measurement of the windshield periphery. Do not disturb the molding or retainer in the event of a noncompliance.

- X 1. Describe from visual inspection how the windshield is mounted and describe any trim material.

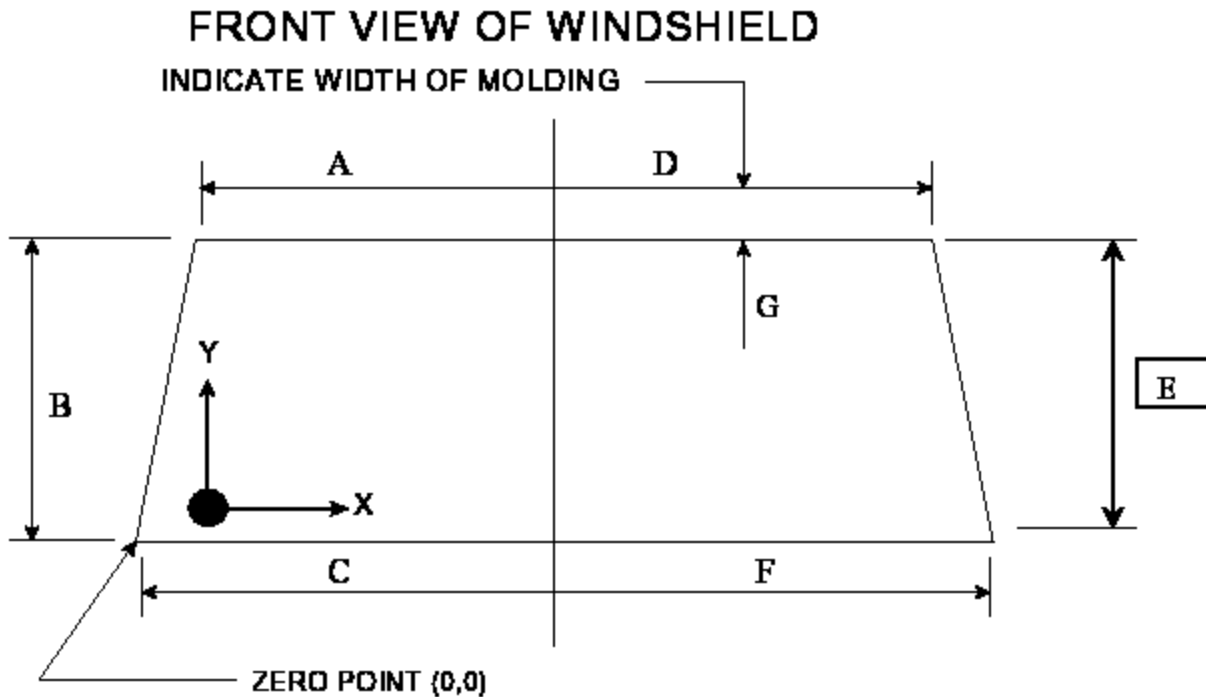
Plastic trim around perimeter, held by adhesive around inner perimeter.

- X 2. Mark the longitudinal centerline of the windshield.
- X 3. Measure pre-crash A, B, and C for the left side and record in the chart below.
- X 4. Measure pre-crash C, D, and E for the right side and record in the chart below.
- X 5. Measure from the edge of the retainer or molding to the edge of the windshield.
Dimension G: 20 mm
- X 6. Can a single thickness of copier type paper (as small a piece as necessary) slide between the windshield and the vehicle body?
 X No, pass.
 Yes, go to 7.
7. Visibly mark the beginning and end of the portions of the periphery where the paper slides between the windshield and the vehicle body.
8. Measure and record post-crash A, B, C, D, E, and F such that the measurements do not include any of the parts of the windshield where the paper slides between the windshield and the vehicle body.
9. Calculate and record the percent retention for the right and left side of the windshield.
10. Is total right side percent retention less than 75%?
 Yes, **FAIL**
 No, Pass
11. Is total left side percent retention less than 75%?
 Yes, **FAIL**
 No, Pass

WINDSHIELD PERIPHERY MEASUREMENT

	Dimension	Pre-crash mm	Post-crash mm	Percent Retention (Post-crash ÷ Pre-crash)
Left side	A	700	700	
	B	665	665	
	C	880	880	
	Total	2245	2245	
Right side	D	700	700	
	E	665	665	
	F	880	880	
	Total	2245	2245	
Width of Molding	G	18		

Indicate area of mounting failure.



DATA SHEET 36
WINDSHIELD ZONE INTRUSION (FMVSS 219)

NHTSA No.: C30102 Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): N. Echeverria, D. Summers, K. Watkins

Impact Angle: 0° Belted Dummies: Yes X No

Test Speed: X 32 to 40 km/h 0 to 48 km/h 0 to 56 km/h

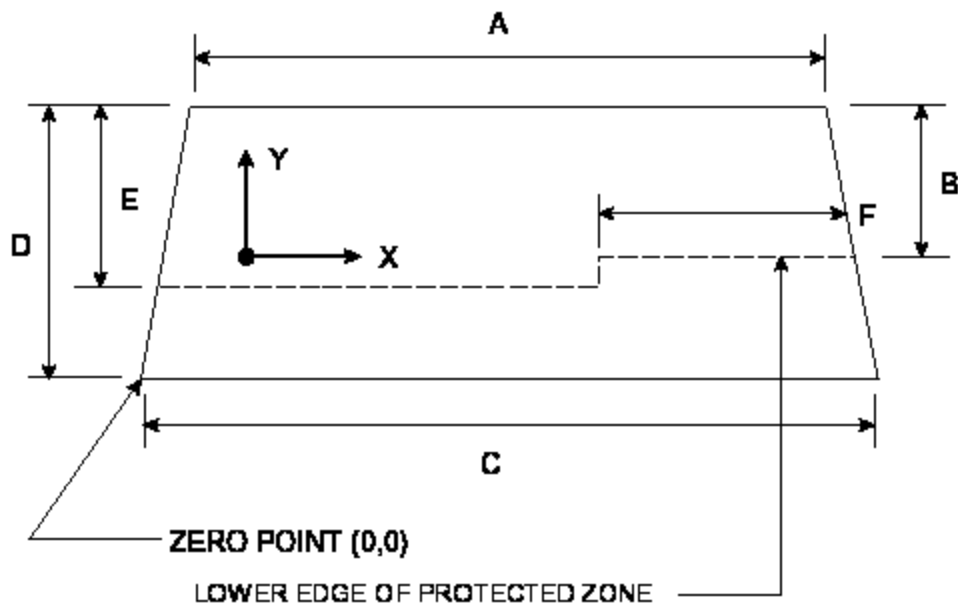
Driver Dummy: 5th female X 50th male Passenger Dummy: 5th female X 50th male

- X 1. Place a 165 mm diameter rigid sphere, with a mass of 6.8 kg on the instrument panel so that it is simultaneously touching the instrument panel and the windshield. (571.219 S6.1(a))
- X 2. Roll the sphere from one side of the windshield to the other while marking on the windshield where the sphere contacts the windshield. (571.219 S6.1(b))
- X 3. From the outermost contactable points on the windshield draw a horizontal line to the edges of the windshield. (571.219 S6.1(b))
- X 4. Draw a line on the inner surface of the windshield that is 13 mm below the line determined in items 2 and 3.
- X 5. After the crash test, record any points where a part of the exterior of the vehicle has marked, penetrated, or broken the windshield.

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.

FRONT VIEW OF WINDSHIELD



A. Windshield Dimensions

A	B	C	D	E	F
1400	350	1760	665	447	915

AREA OF PROTECTED ZONE FAILURES:

- B. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one which is normally in contact with the windshield.

X	Y

- C. Provide coordinates of the area beneath the protected zone template that the inner surface of the windshield was penetrated by a vehicle component

X	Y

REMARKS:

No penetration into or beneath the protected zone.

DATA SHEET 37
FUEL SYSTEM INTEGRITY (FMVSS 301)

TEST VEHICLE NHTSA NO.: C30102; TEST DATE: 11/19/02

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Silverado/Pickup Truck

TYPE OF IMPACT: 0° Front

STODDARD SOLVENT SPILLAGE MEASUREMENT:

A. From impact until vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 28 grams)

B. For 5 minute period after vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 142 grams)

C. For next 25 minutes —

Actual = 0 grams. (Maximum Allowable = 28 grams/minute)

D. Provide Spillage Details: None

REMARKS:

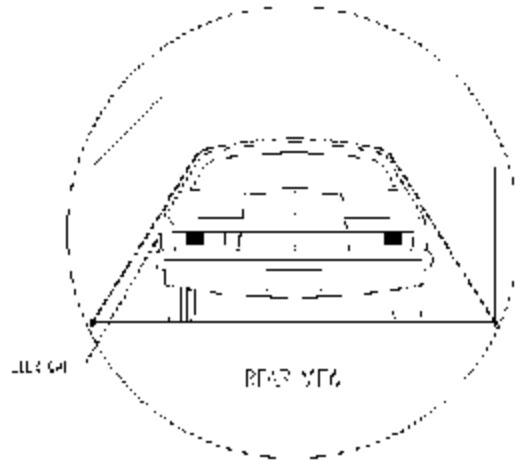
No spillage occurred during the interval between test time and the start of the rollover.

FMVSS 301 STATIC ROLLOVER DATA SHEET

A. TEST PHASE = 0° TO 90°

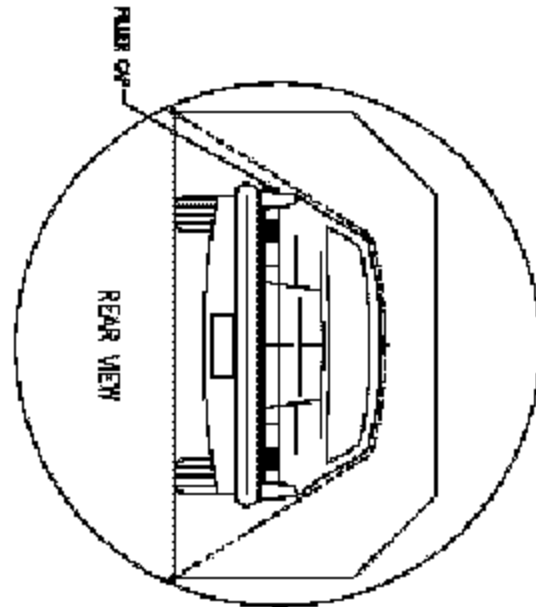
Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =
7 minutes



Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

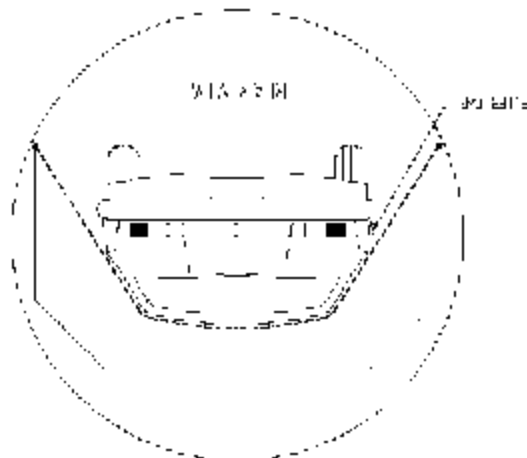
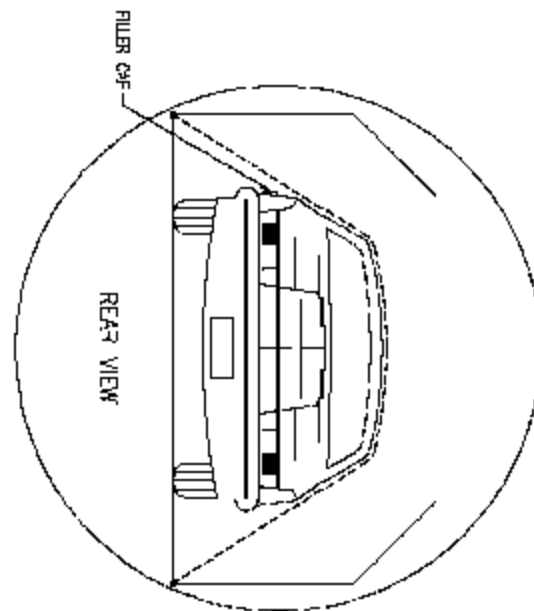
B. TEST PHASE = 90° TO 180°

**Determination of Stoddard
Solvent Collection Time Period:**

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =
7 minutes

**Actual Test Vehicle Stoddard
Solvent Spillage:**

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

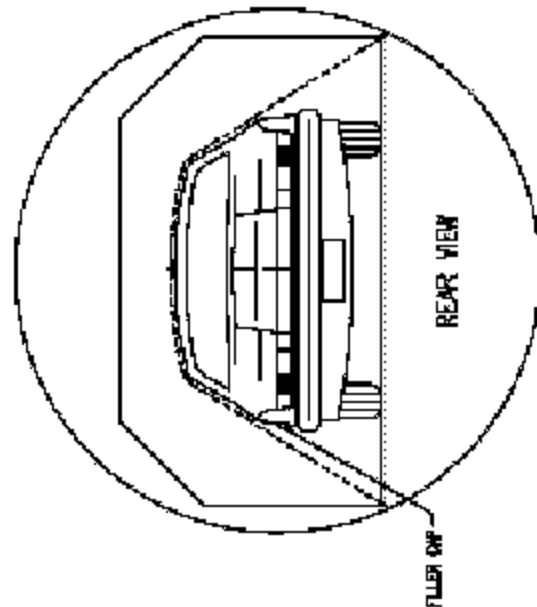
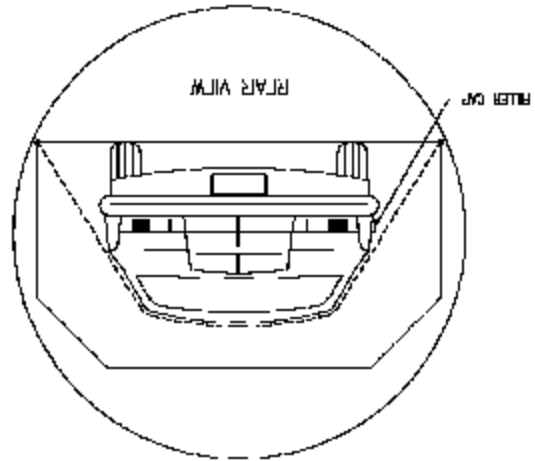
C. TEST PHASE = 180° TO 270°

Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

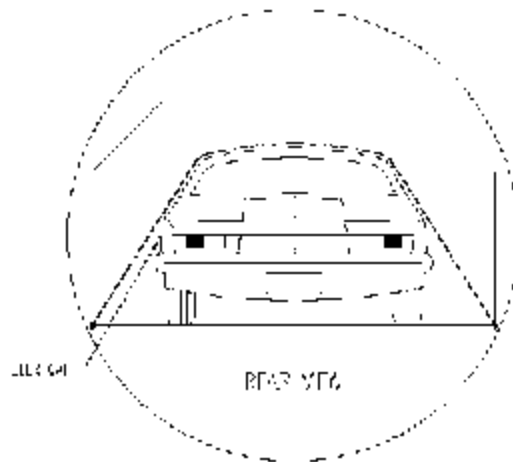
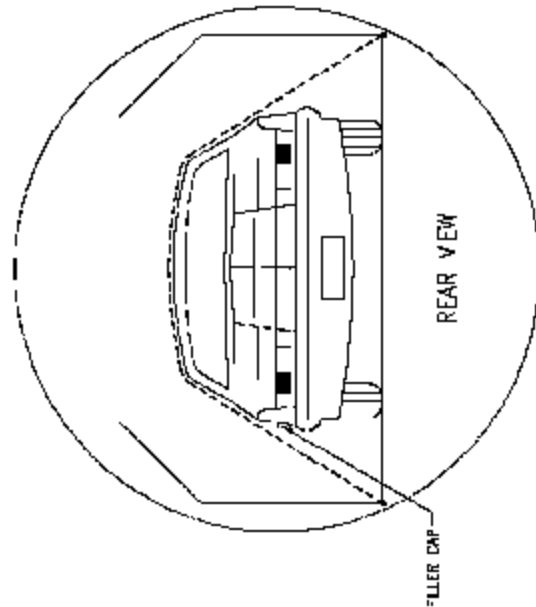
D. TEST PHASE = 270° TO 360°

Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

Section 6

Test Data

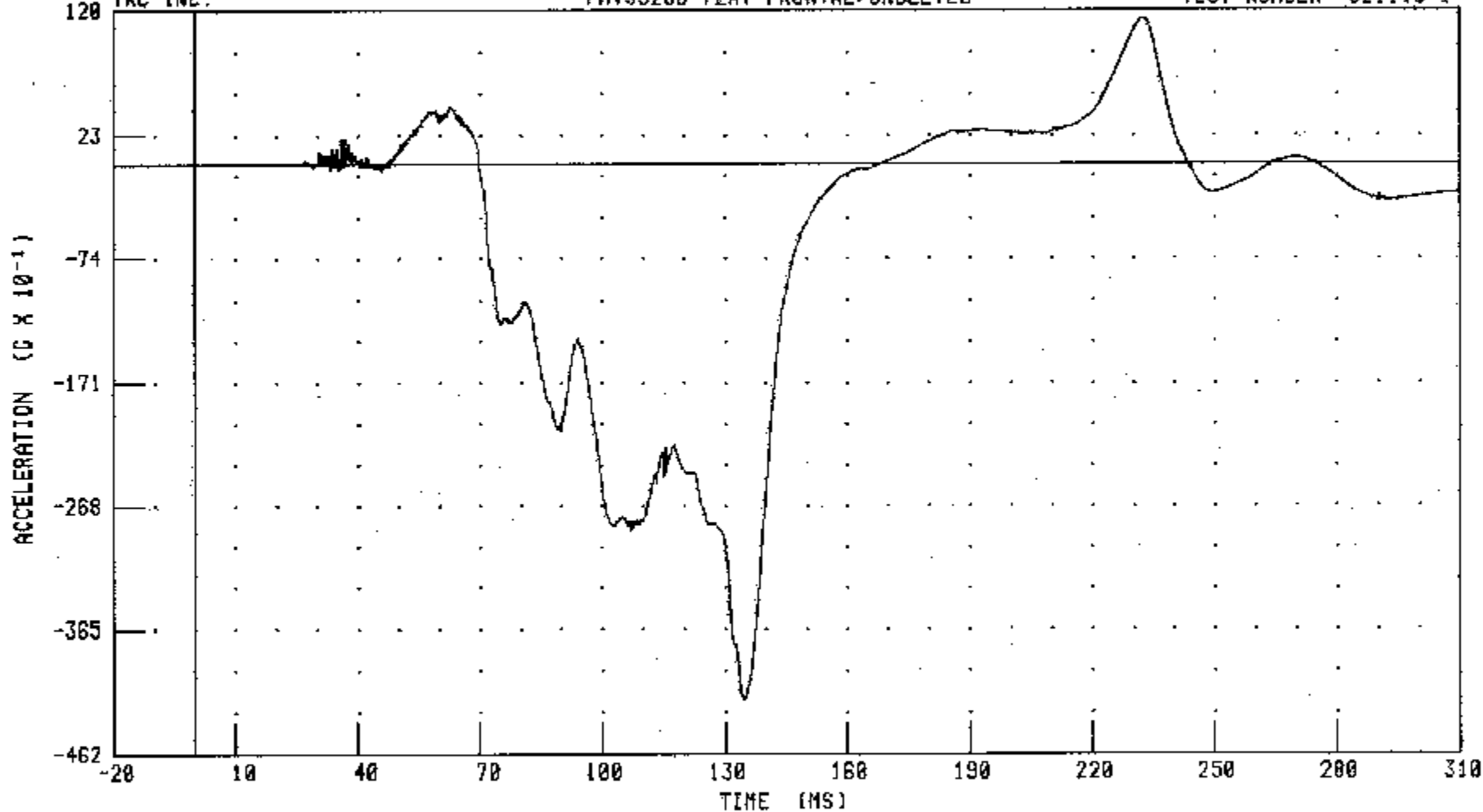
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER HEAD X-AXIS ACCELERATION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: HEDXC1 FILTER: CH. CLASS 1000

PEAK DATA: 11.32 G @ 232.24 MS; -41.98 G @ 134.88 MS

6-2

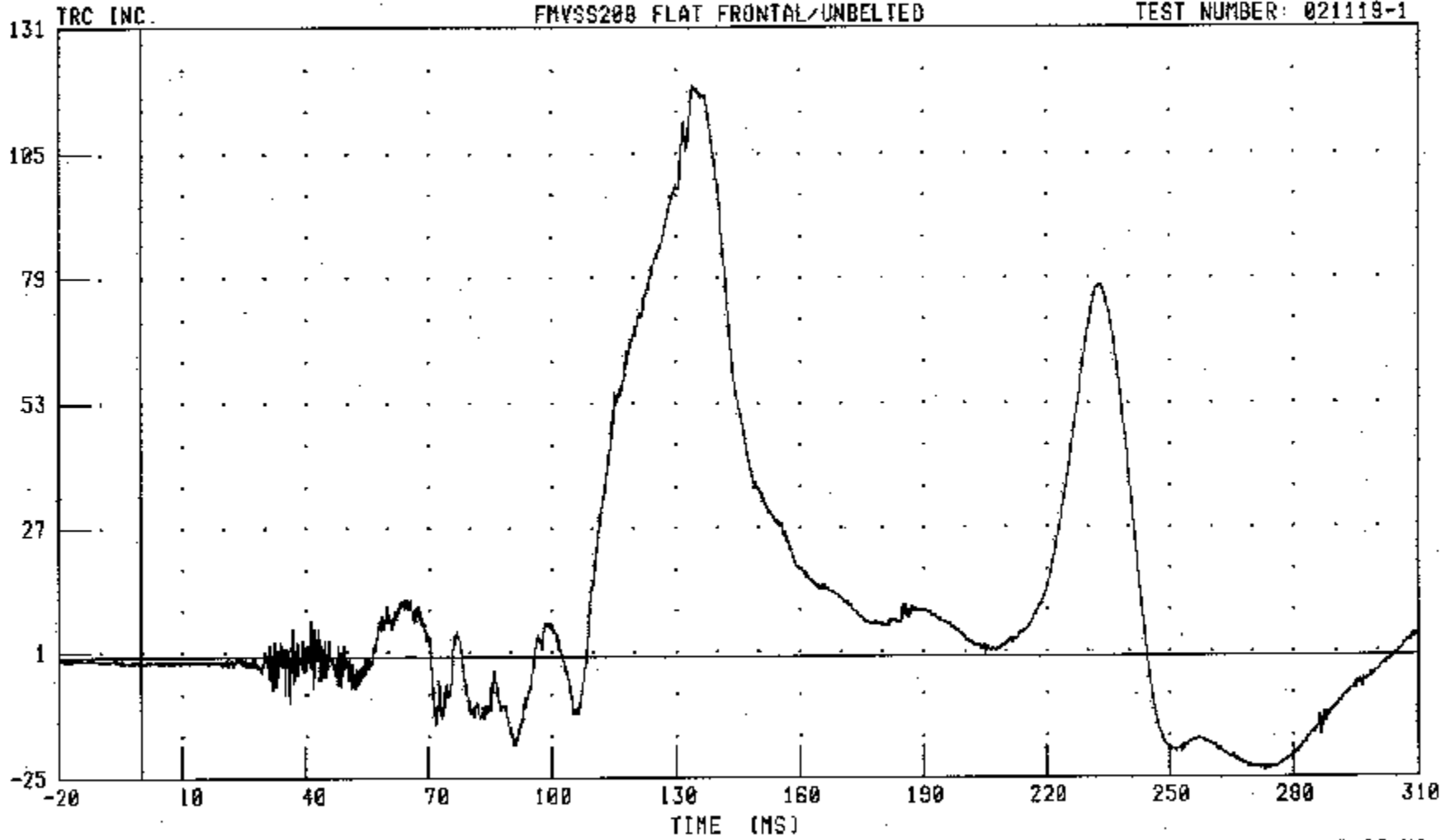
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER HEAD Y-AXIS ACCELERATION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 11.95 G @ 134.16 MS, -2.36 G @ 273.20 MS

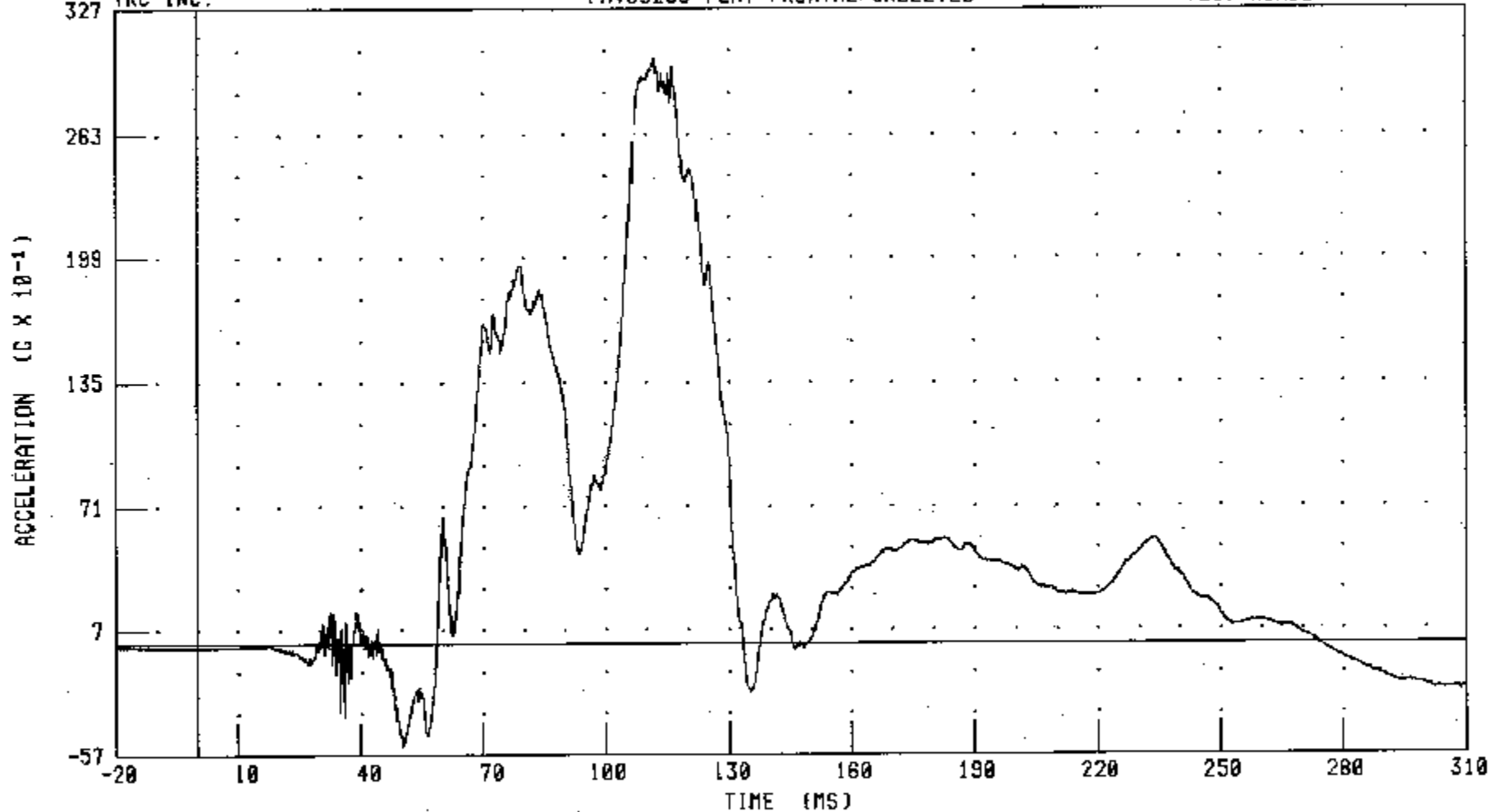
6-3

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER HEAD Z-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.
327



CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

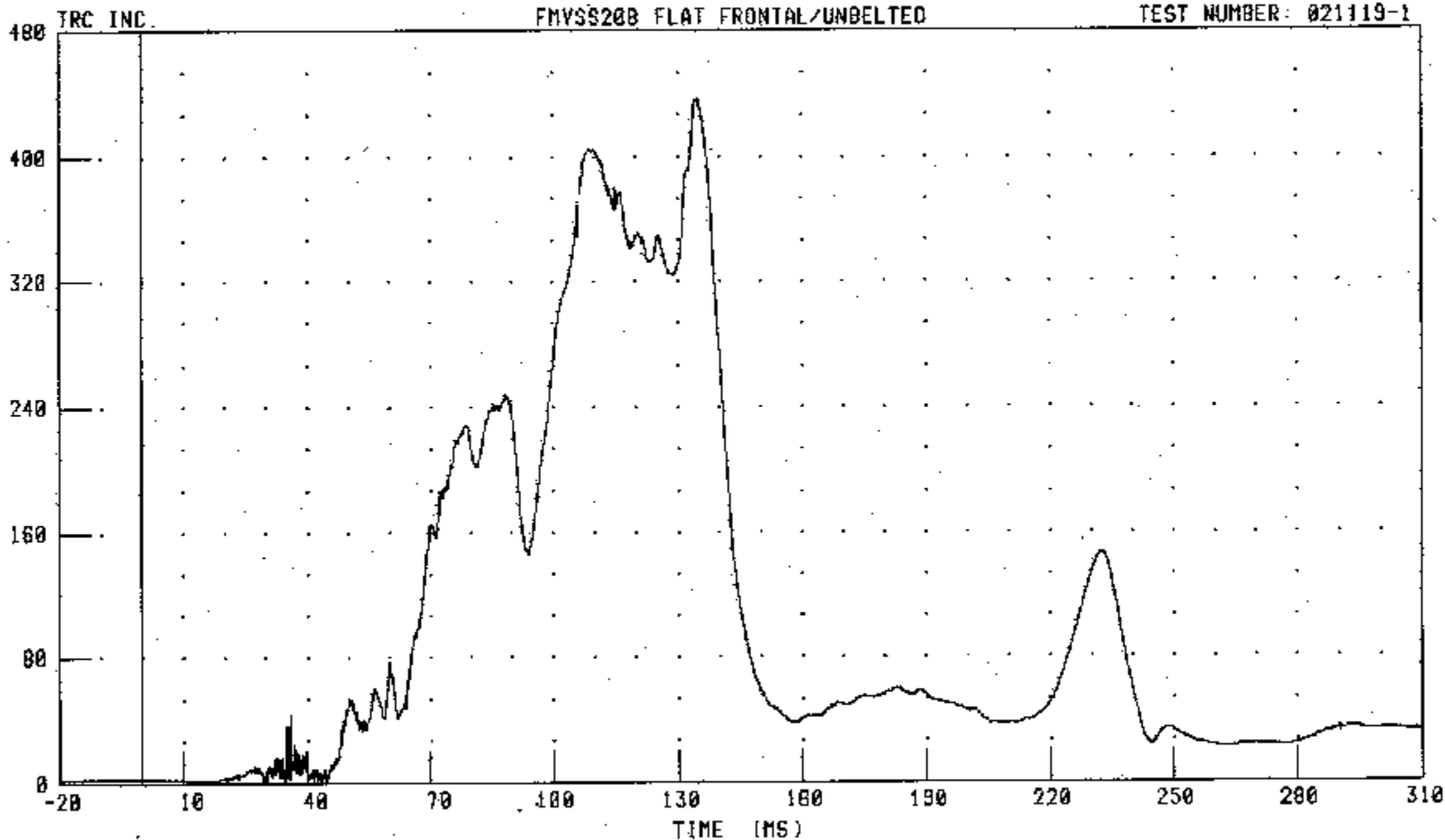
PEAK DATA: 30.19 G @ 112.24 MS; -5.21 G @ 50.32 MS

64

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER HEAD RESULTANT ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: HEDRG1 FILTER: CH. CLASS 1000

PEAK DATA: 43.68 G @ 134.88 MS; 0.05 G @ 30.08 MS

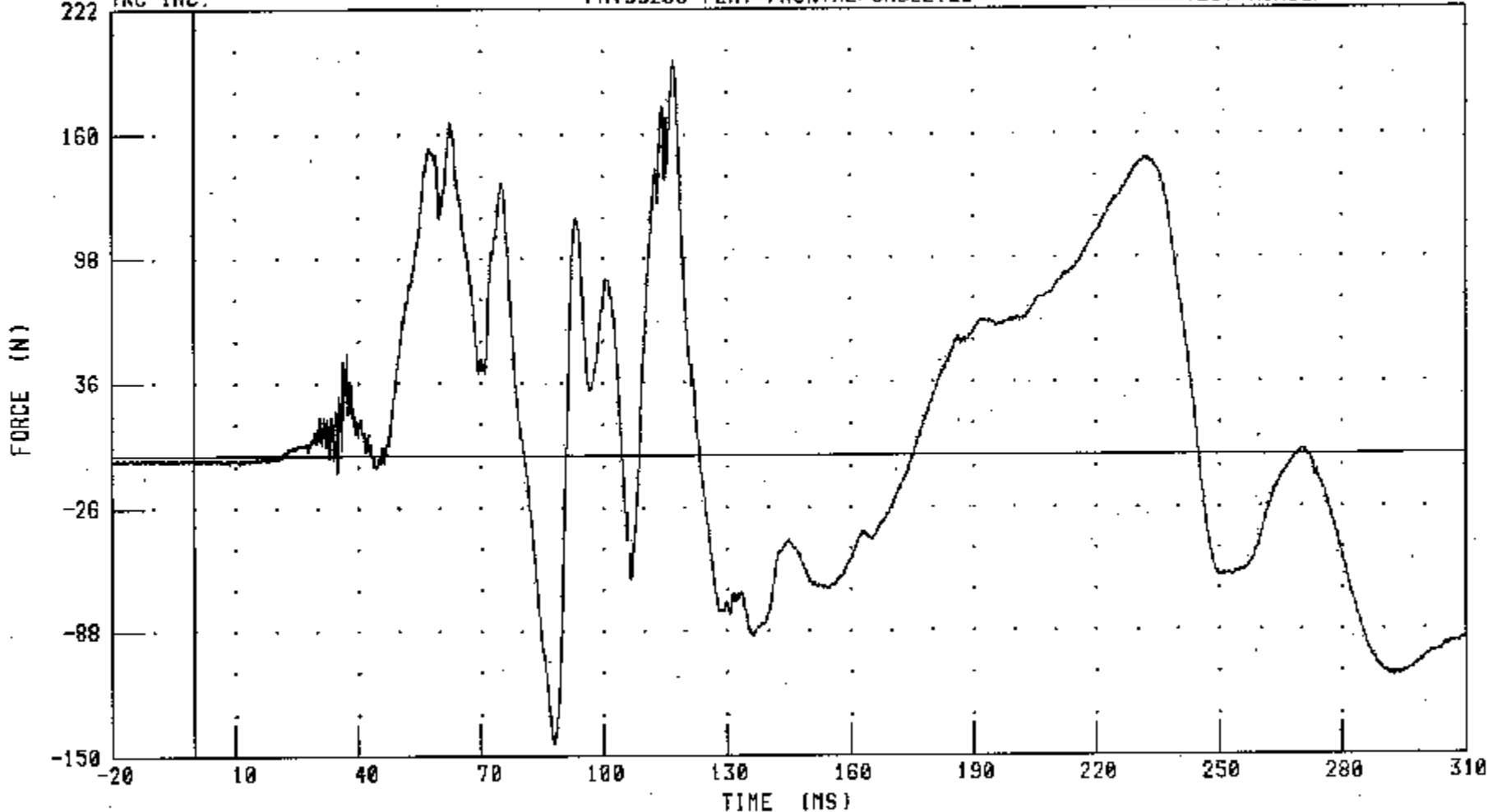
6-5

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NECK X-AXIS SHEAR FORCE
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.
222



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

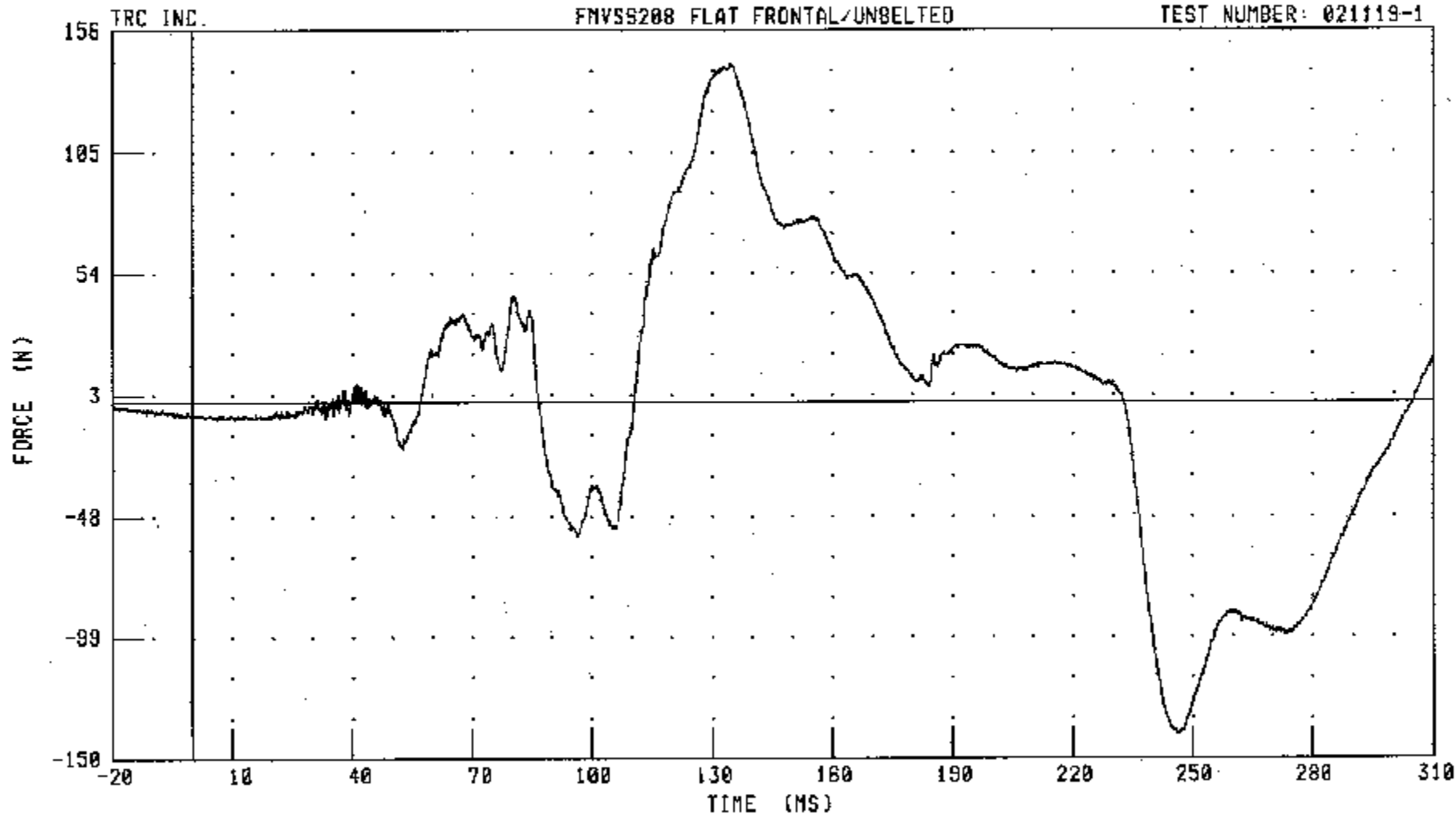
PEAK DATA: 196.15 N @ 117.36 MS; -144.02 N @ 87.92 MS

6-6

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NECK Y-AXIS SHEAR FORCE
FNVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 141.68 N @ 134.72 MS, -139.87 N @ 246.24 MS

6-7

021119-1

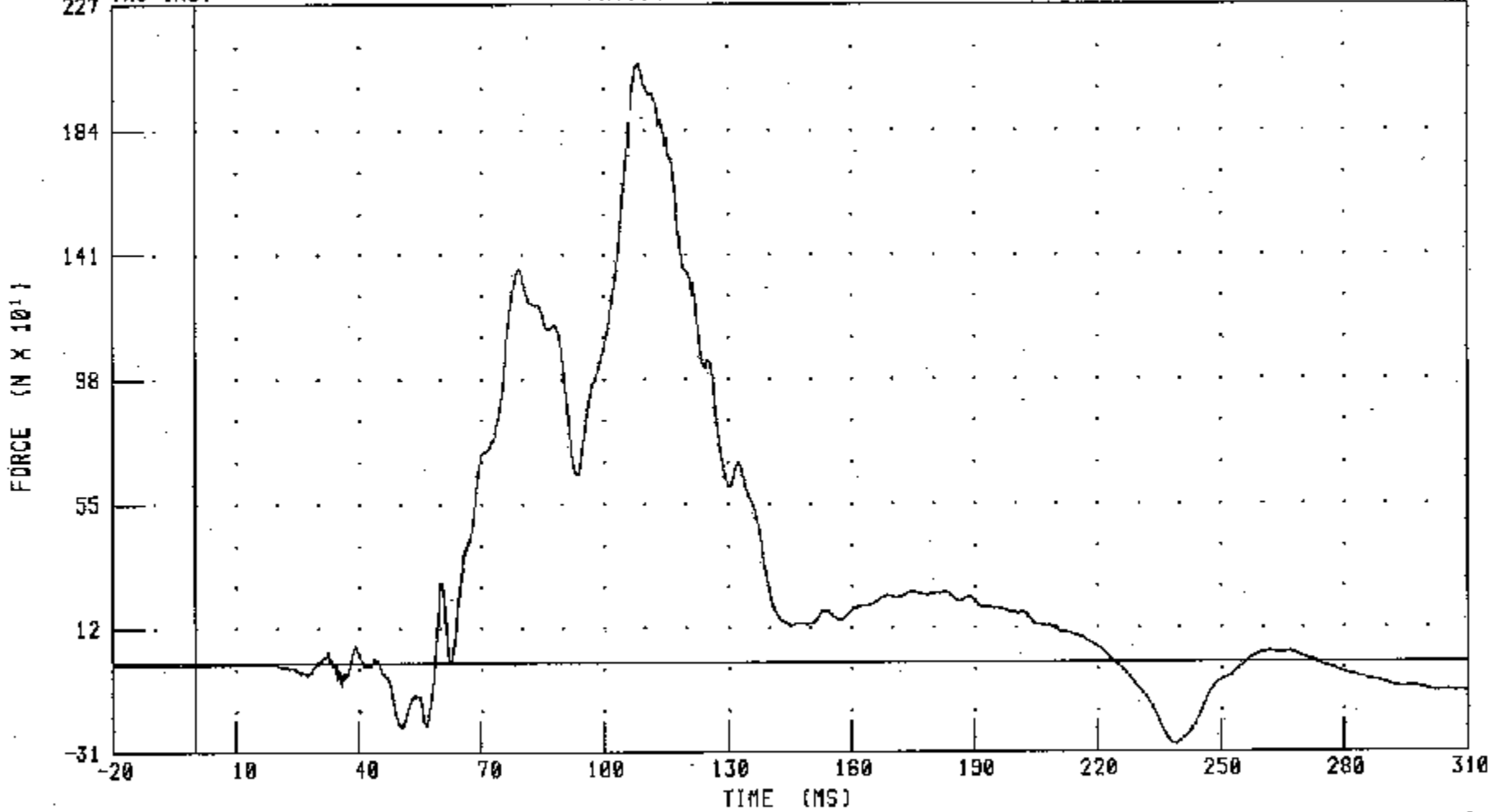
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER NECK Z-AXIS AXIAL FORCE

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 2068.09 N @ 108.48 MS; -281.89 N @ 238.64 MS

8-9

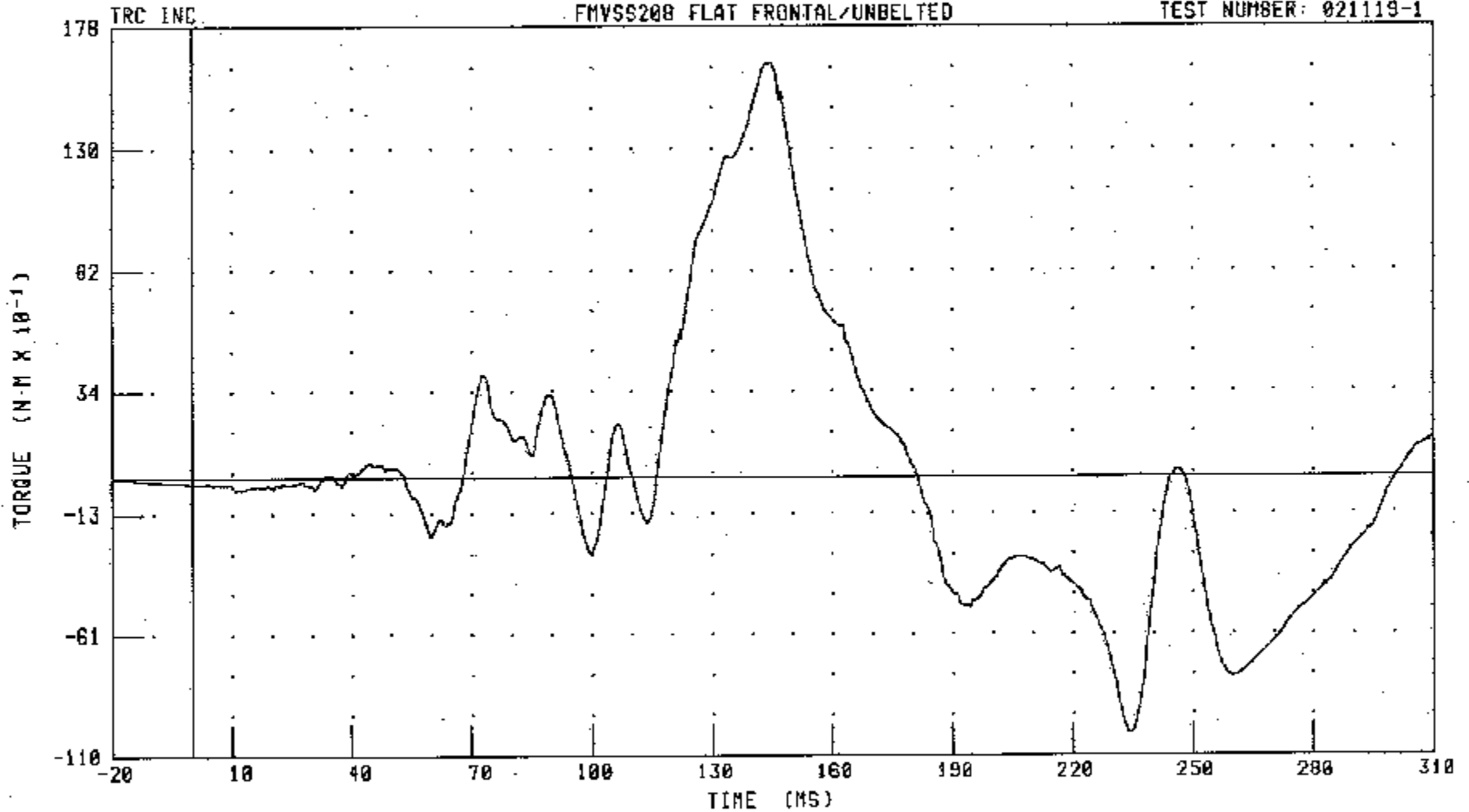
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2ND REGULAR CAB

DRIVER NECK MOMENT ABOUT X AXIS

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKXMI FILTER: CH. CLASS 600

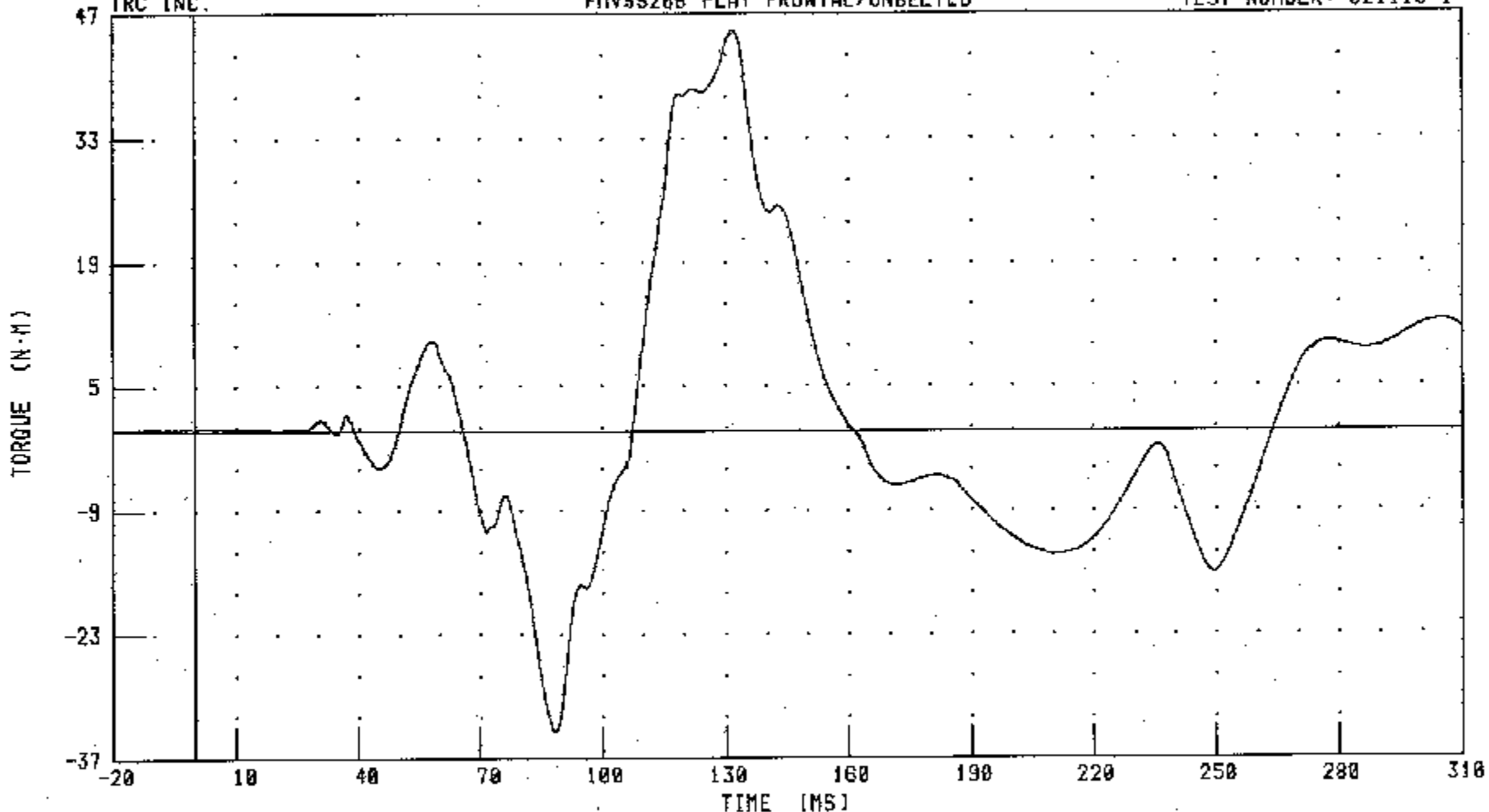
PEAK DATA: 16.35 N·M @ 144.88 MS; -10.16 N·M @ 234.32 MS

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NECK MOMENT ABOUT Y AXIS
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: NEKYM1 FILTER: CH: CLASS 600

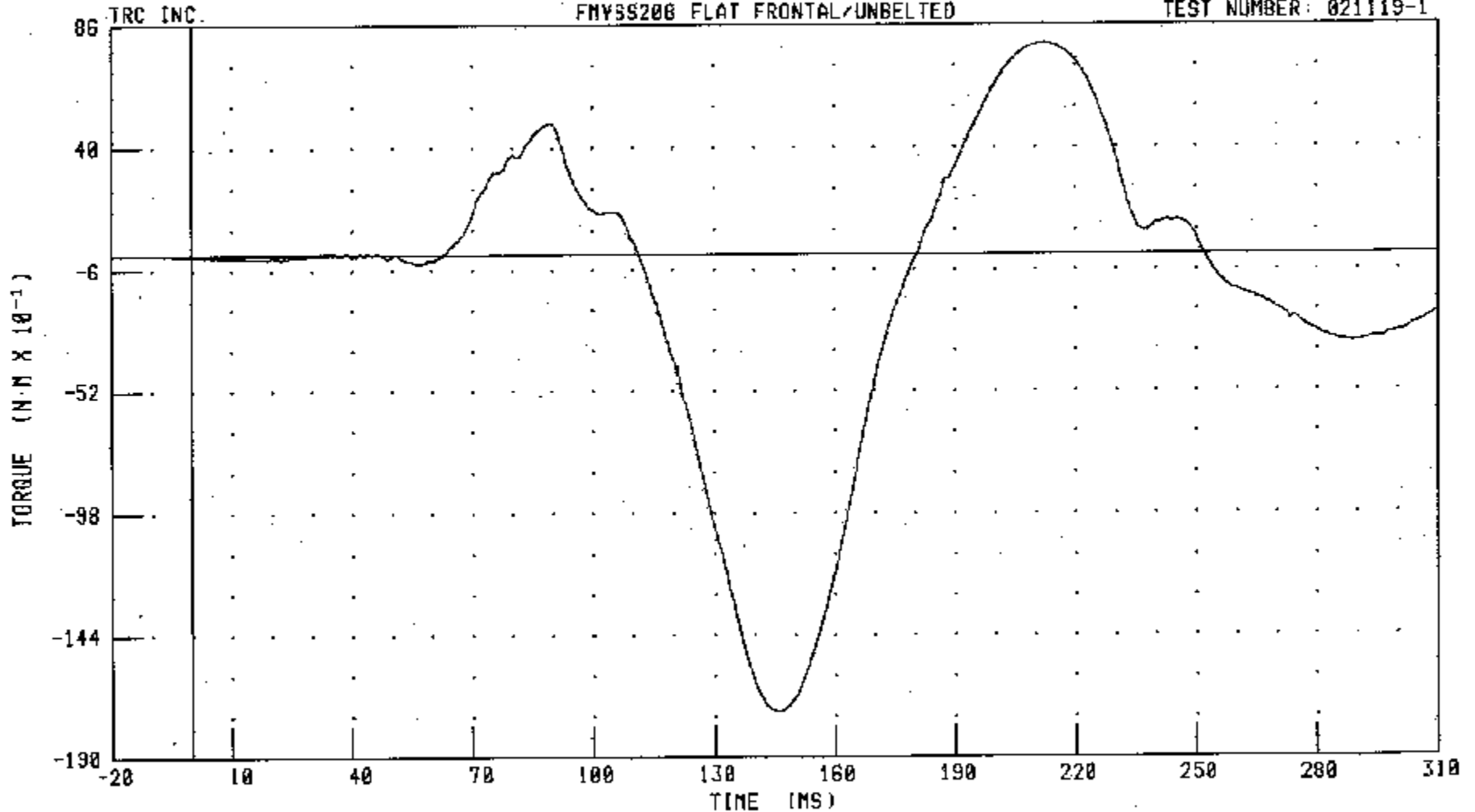
PEAK DATA: 45.09 N·M @ 131.92 MS; -33.96 N·M @ 88.48 MS

6-10

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NECK MOMENT ABOUT Z AXIS
FMYSS206 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKZM1 FILTER: CH. CLASS 600

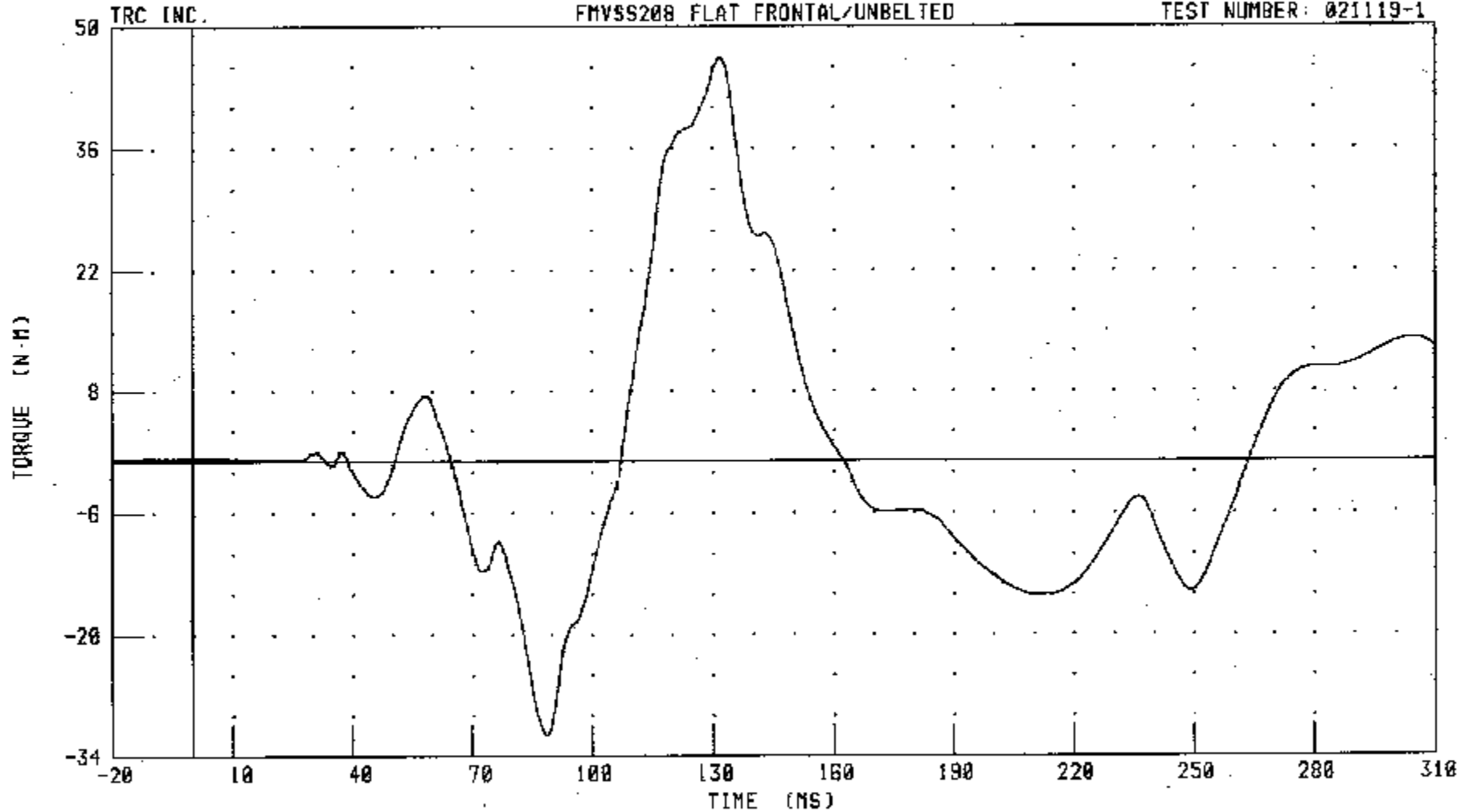
PEAK DATA: 7.90 N·M @ 212.80 MS, -17.29 N·M @ 146.00 MS

6-11

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2VD REGULAR CAB
DRIVER NECK MOMENT OCCIPITAL CONDOYLE ABOUT Y AXIS
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NKOYM1 FILTER: CH. CLASS 600

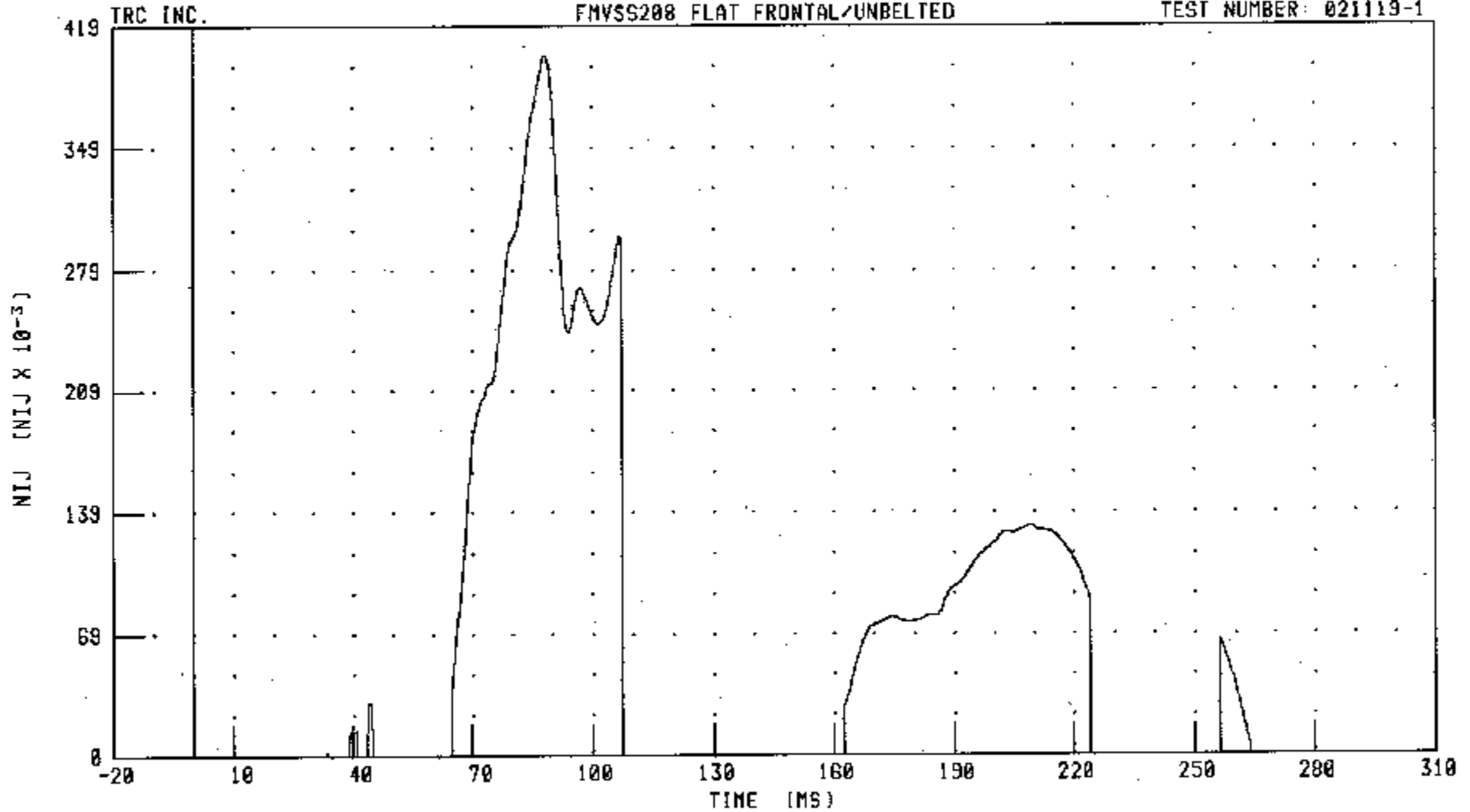
PEAK DATA: 46.34 N·M @ 131.92 MS; -31.53 N·M @ 88.72 MS

6-12

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NIJ TENSION/EXTENSION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NTE1

FILTER: CH. CLASS 600

PEAK DATA: 0.40 NIJ @ 88.32 MS; 0.00 NIJ @ -20.00 MS

6-13

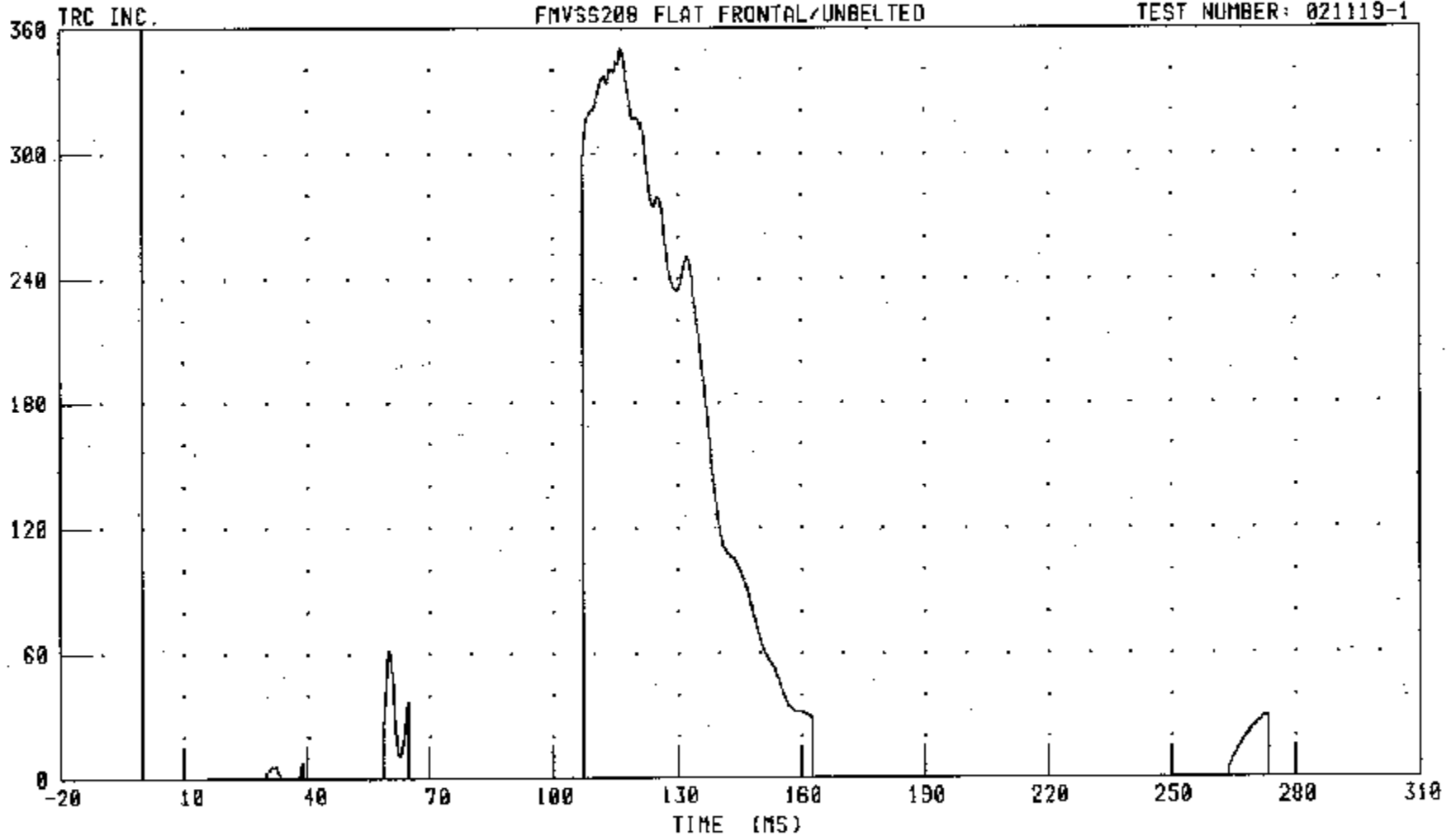
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER NIJ TENSION/FLEXION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NTF1

FILTER: CH. CLASS 600

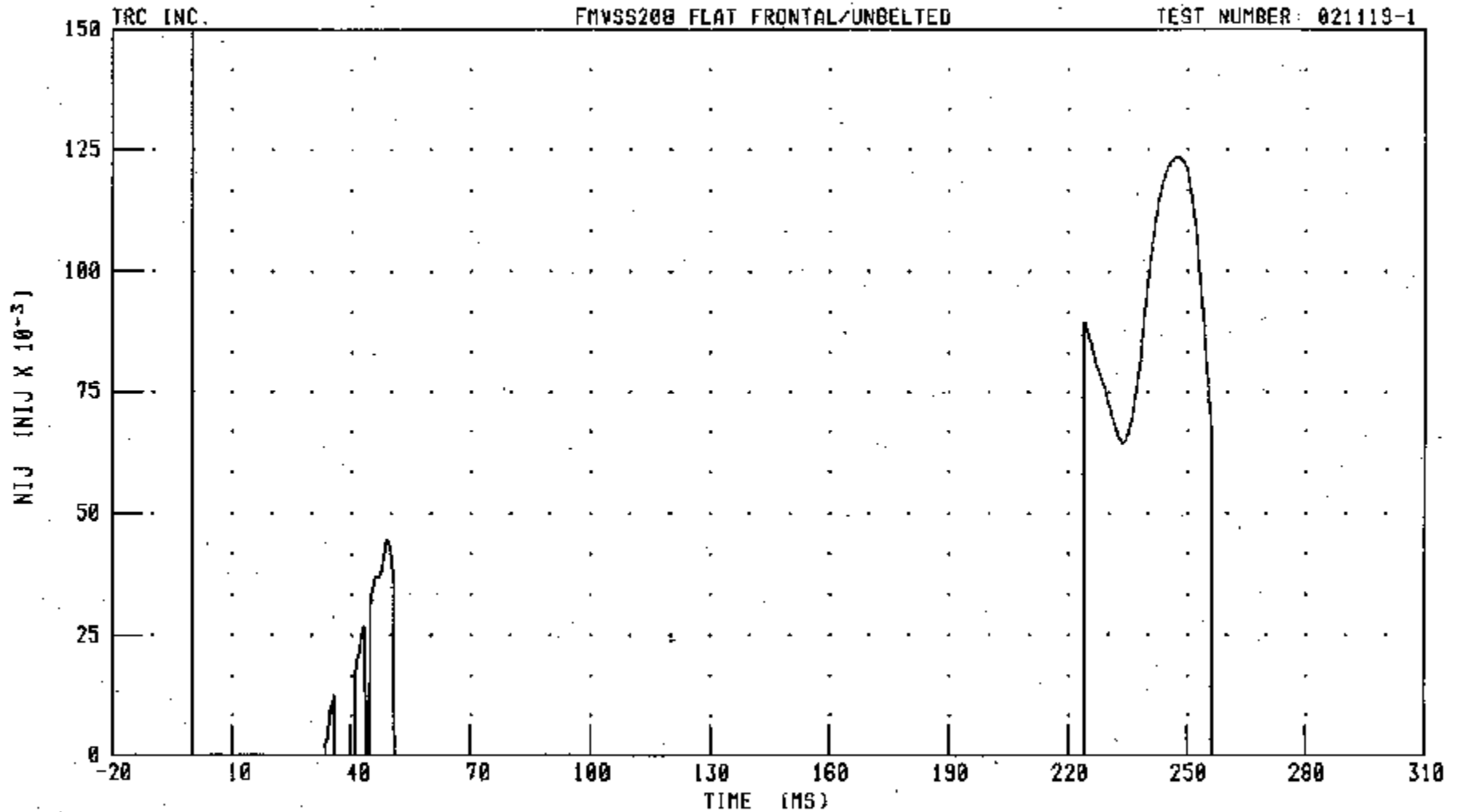
PEAK DATA: 0.35 NIJ @ 116.72 MS, 0.00 NIJ @ -20.00 MS

6-14

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NIJ COMPRESSION/EXTENSION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NCE1

FILTER: CH. CLASS 600

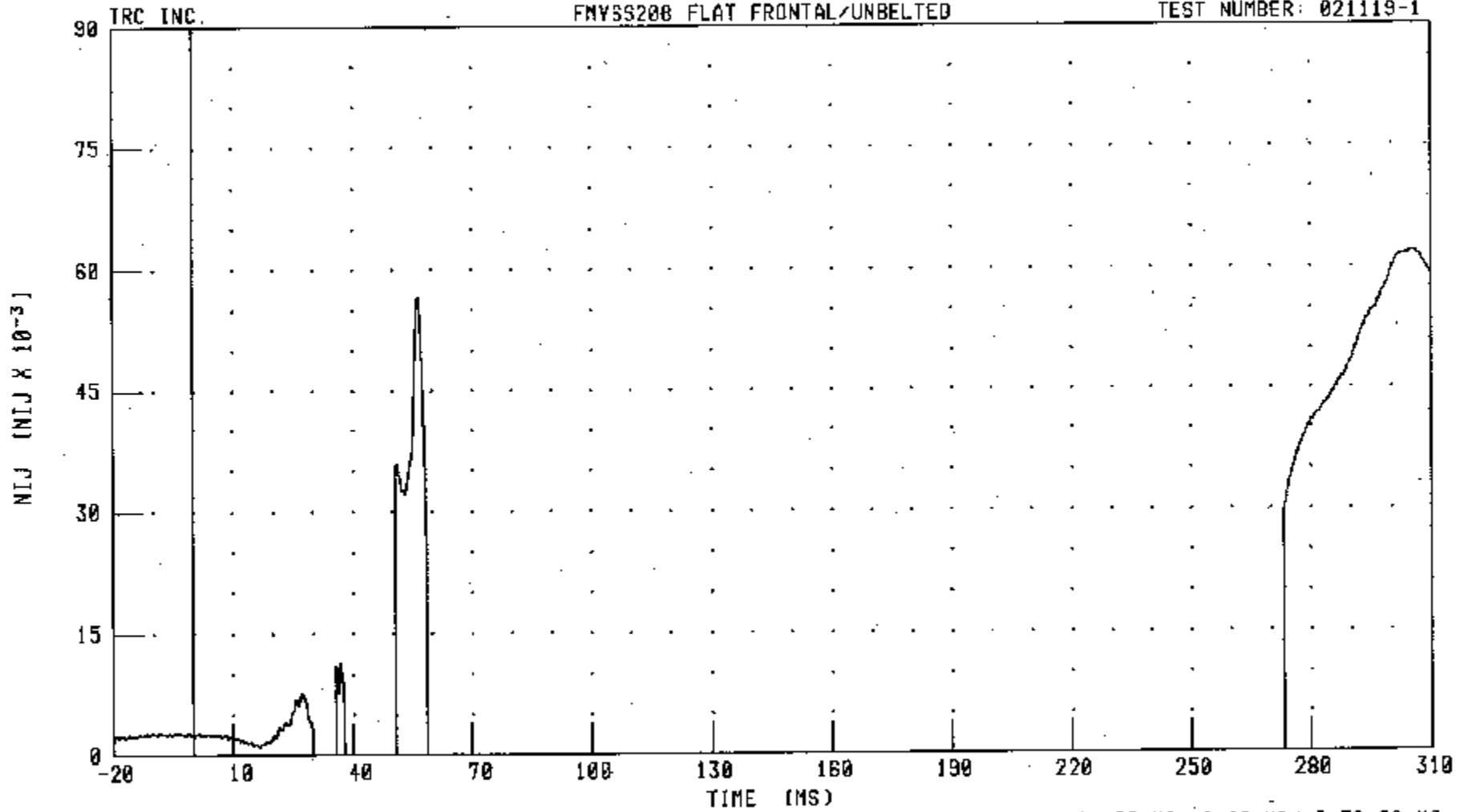
PEAK DATA: 0.12 NIJ @ 240.00 MS; 0.00 NIJ @ -20.00 MS

6-15

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER NIJ COMPRESSION/FLEXION
FMYSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NCF1

FILTER: CH. CLASS 600

PEAK DATA: 0.06 NIJ @ 304.88 MS; 0.00 NIJ @ 30.00 MS

6-16

021119-1

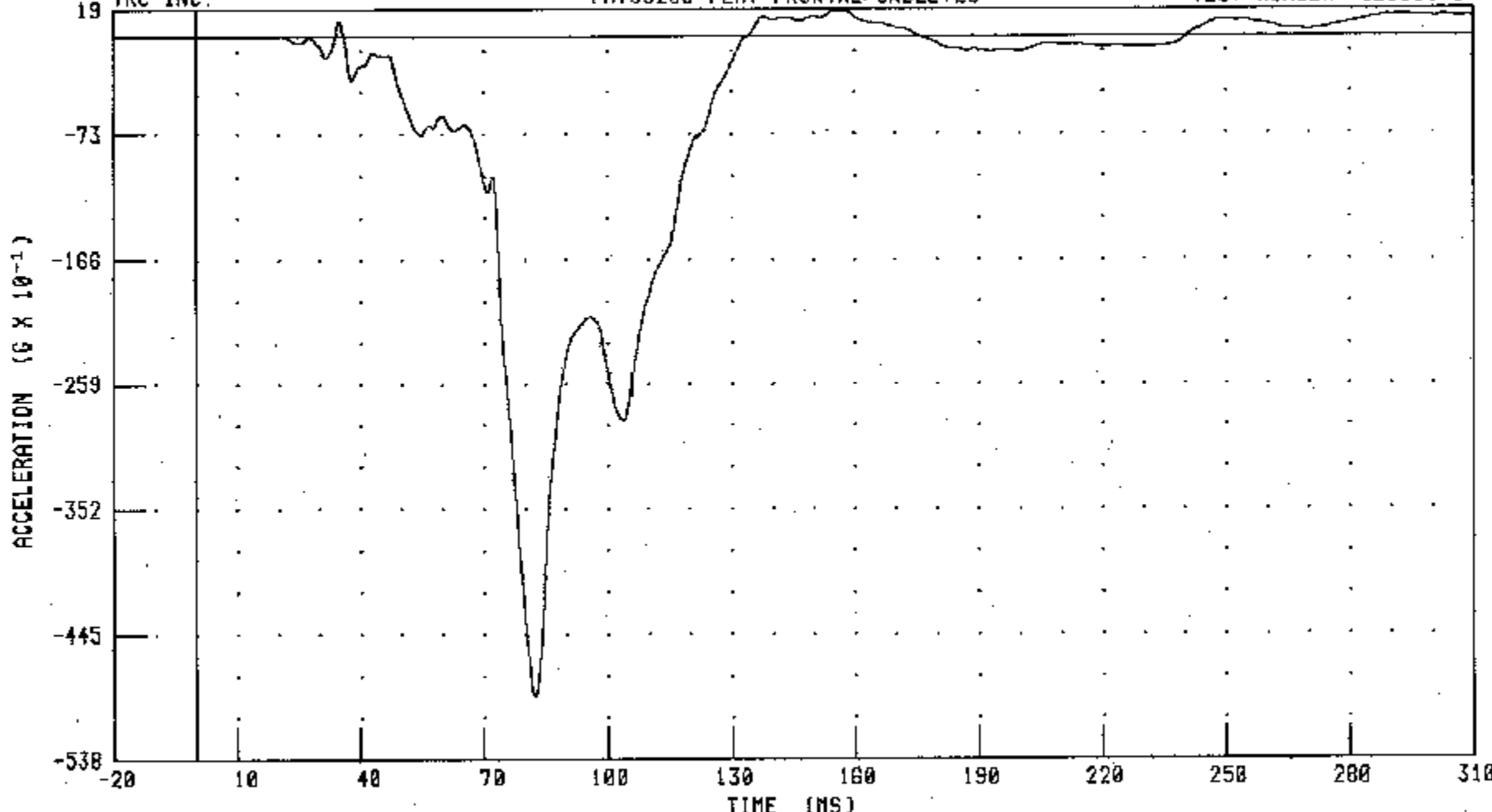
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER CHEST X-AXIS ACCELERATION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



6-17

021119-1

CHANNEL: CSTXG1 FILTER: CH. CLASS 100

PEAK DATA: 1.89 G @ 156.32 MS, -49.09 G @ 82.40 MS

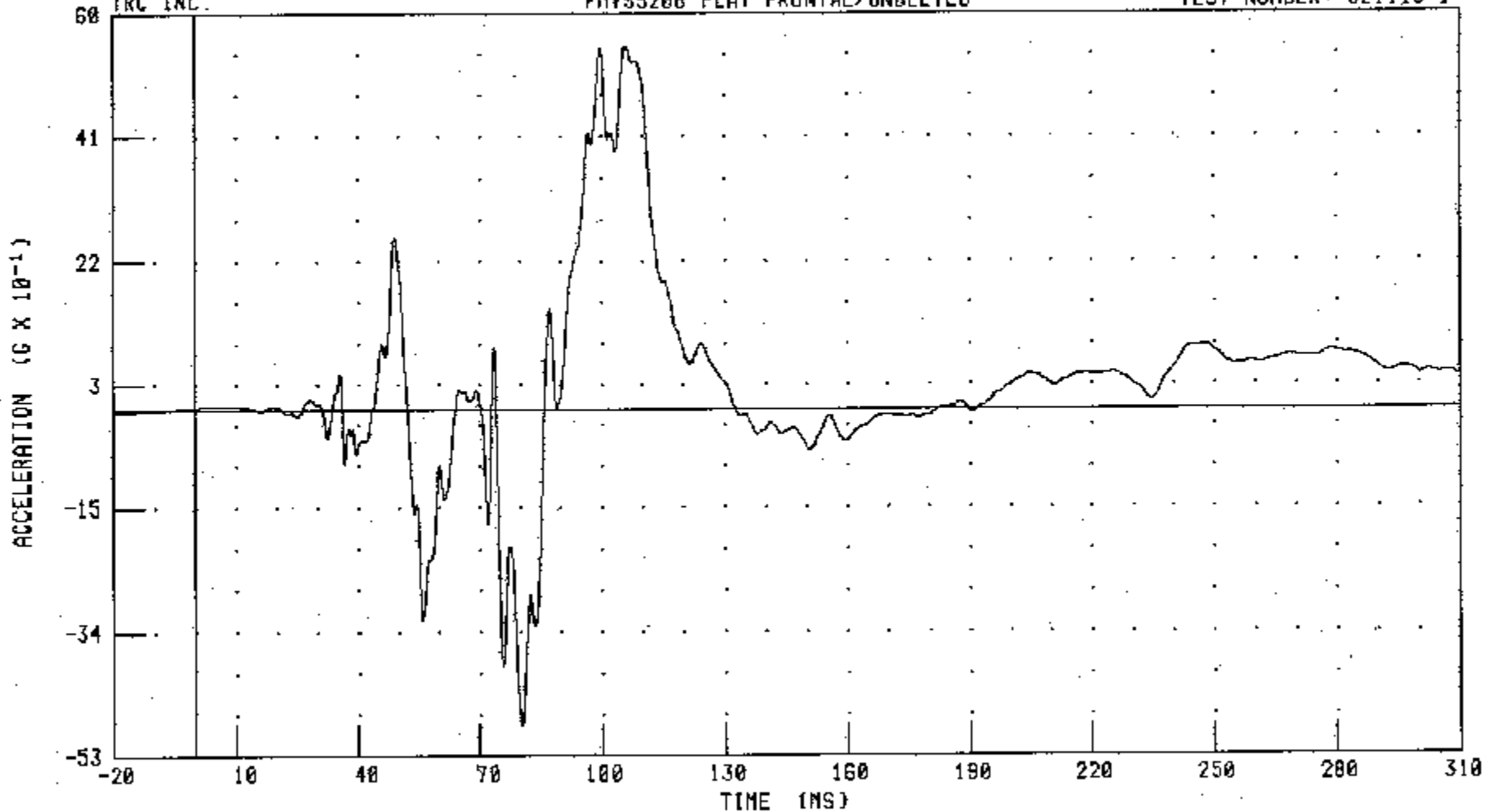
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER CHEST Y-AXIS ACCELERATION

FMYSS200 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: CSTYGL

FILTER: CH. CLASS 100

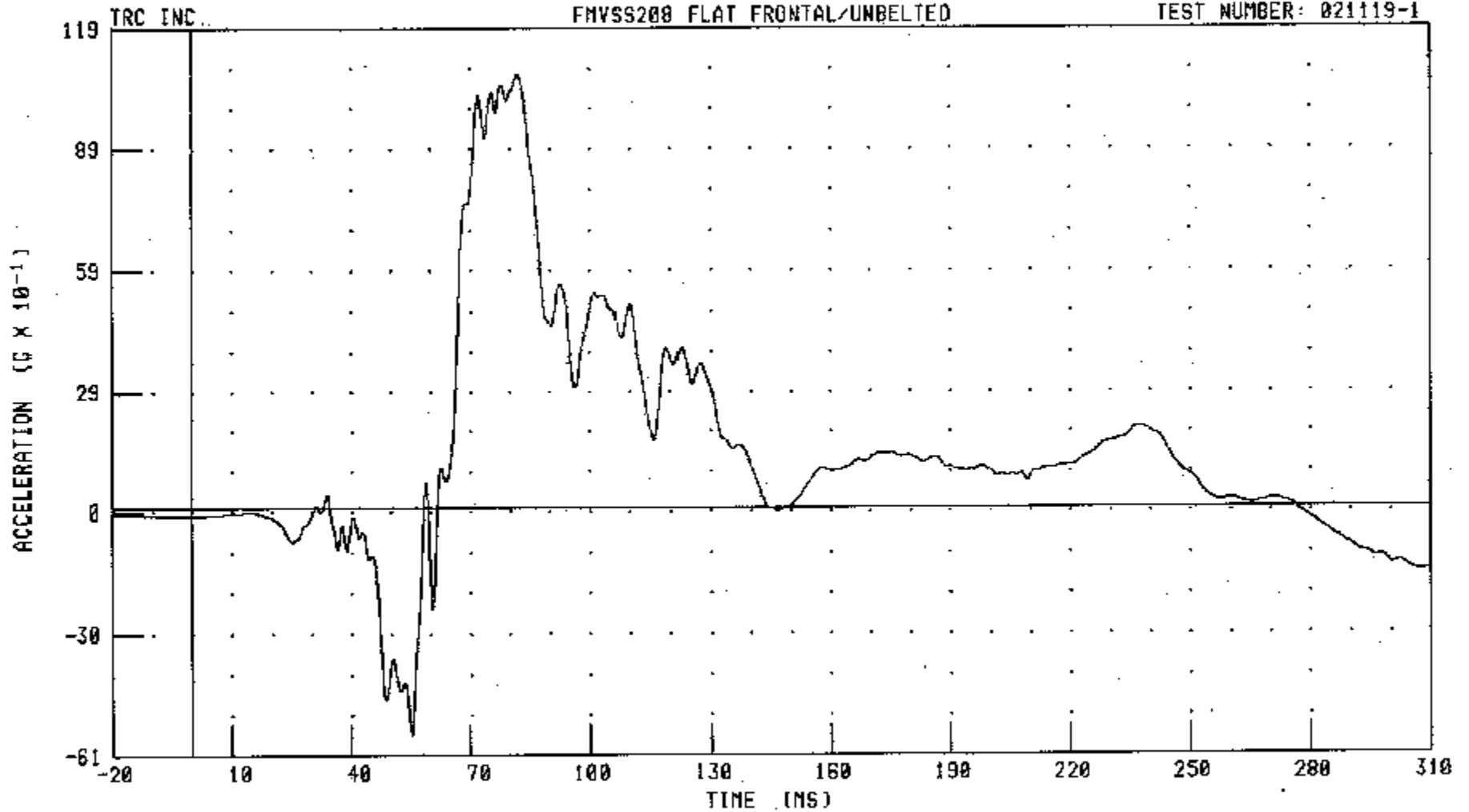
PEAK DATA: 5.59 G @ 105.76 MS, -4.84 G @ 80.48 MS

6-18

021119-1

C38102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER CHEST Z-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTZG1 FILTER: CH. CLASS 100

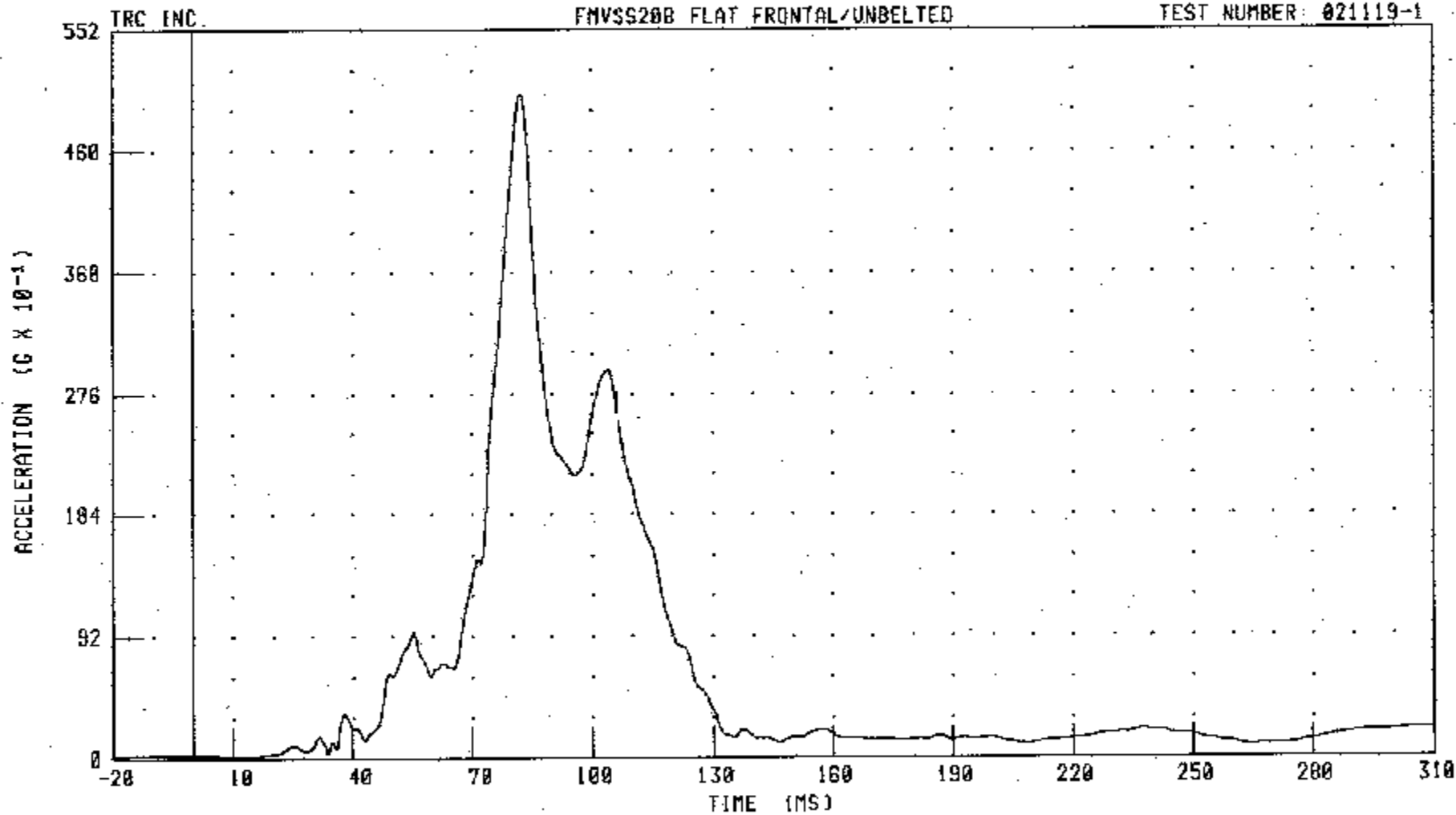
PEAK DATA: 10.77 G @ 81.92 MS; -5.62 G @ 55.28 MS

61-9

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
DRIVER CHEST RESULTANT ACCELERATION
FMVSS208B FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTRG1 FILTER: CH. CLASS 100

PEAK DATA: 50.33 G @ 82.32 MS, 0.01 G @ -20.00 MS

6-20

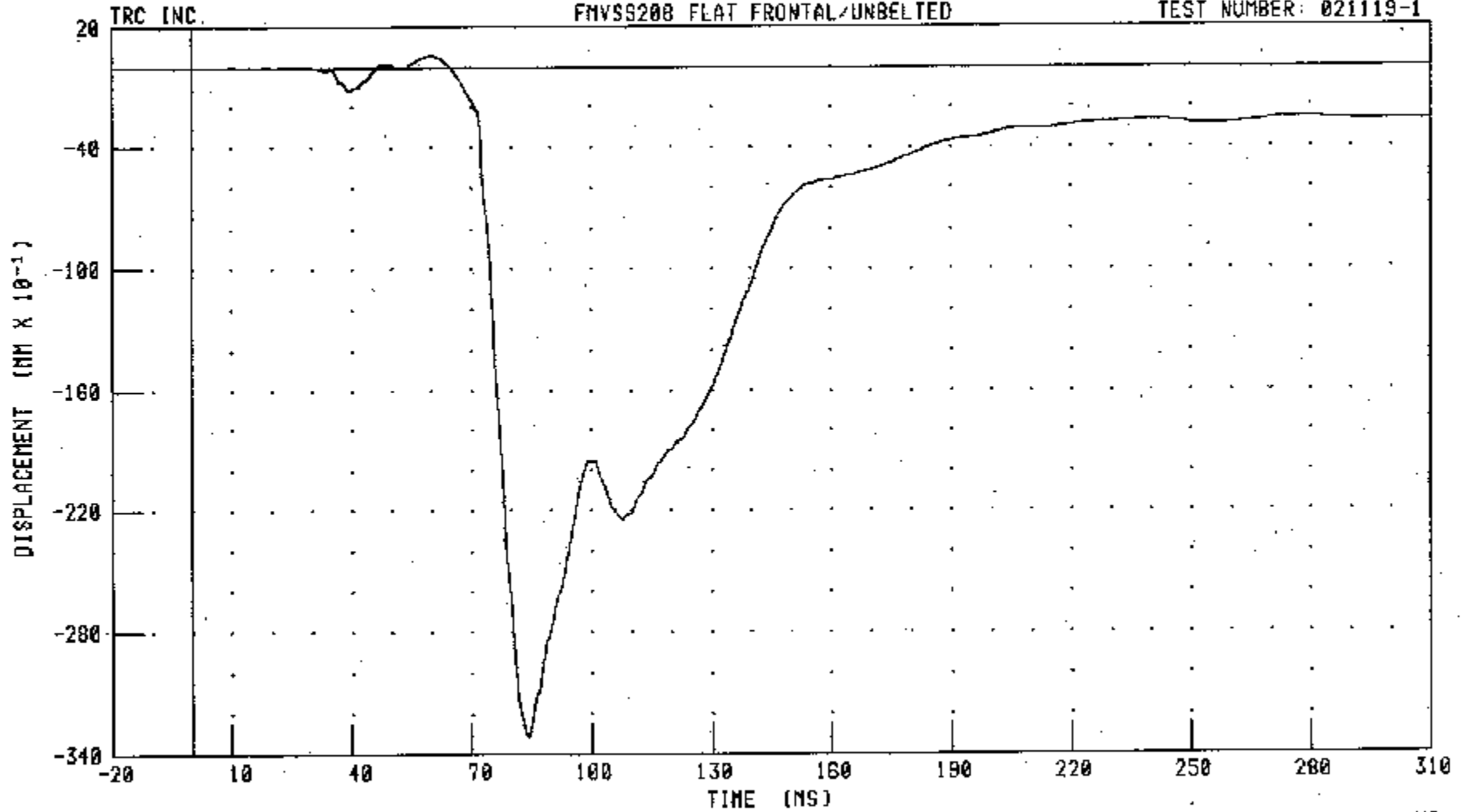
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2VD REGULAR CAB

DRIVER CHEST DEFLECTION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTXD1 FILTER: CH. CLASS 600

PEAK DATA: 0.59 MM @ 60.24 MS; -33.17 MM @ 84.24 MS

6-21

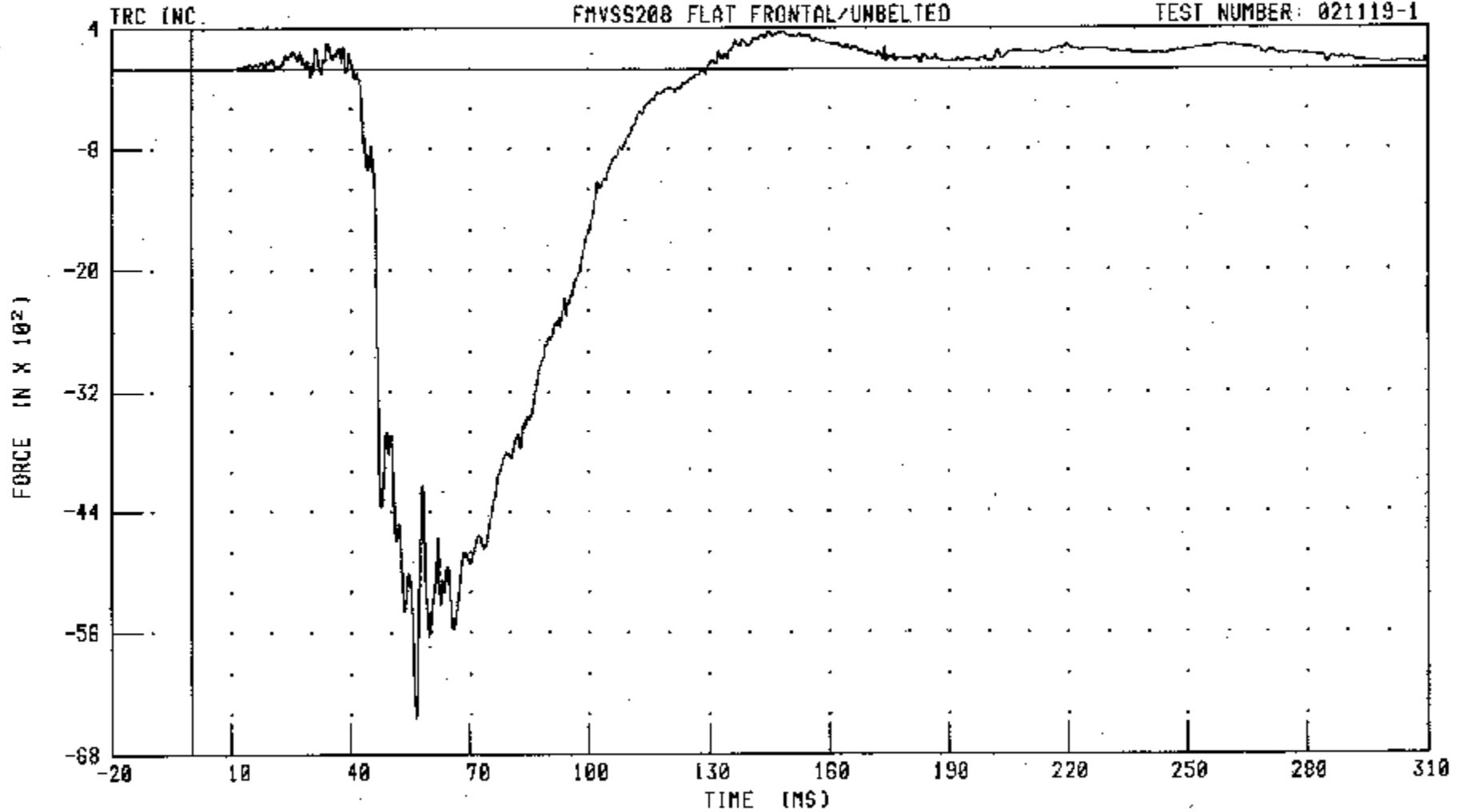
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER LEFT FEMUR FORCE

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: LFMZF1 FILTER: CH. CLASS 600

PEAK DATA: 364.49 N @ 145.12 MS; -6433.01 N @ 56.48 MS

6-22

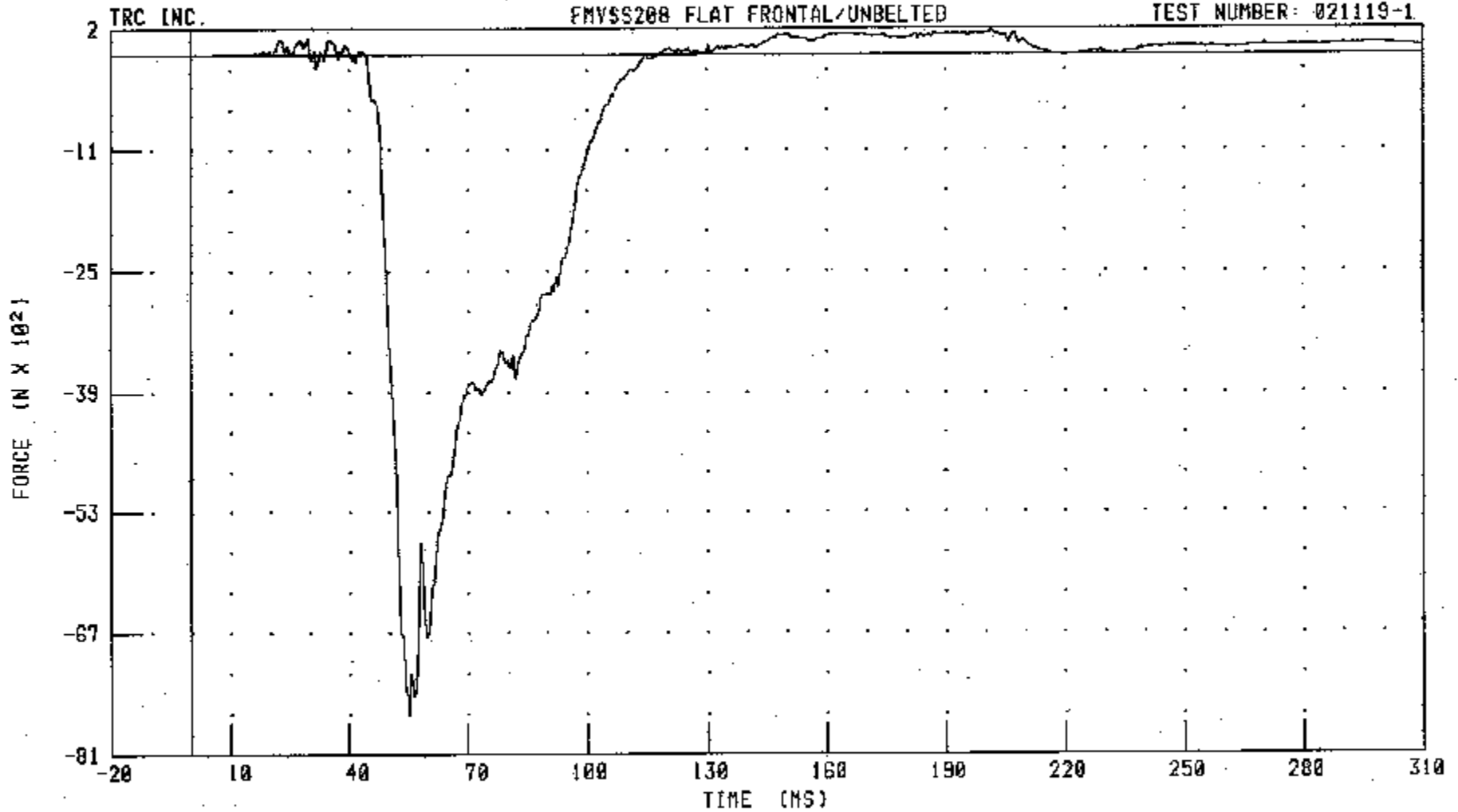
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

DRIVER RIGHT FEMUR FORCE

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: RFMZFI FILTER: CH. CLASS 600

PEAK DATA: 270.52 N @ 201.68 MS; -7643.04 N @ 55.12 MS

6-23

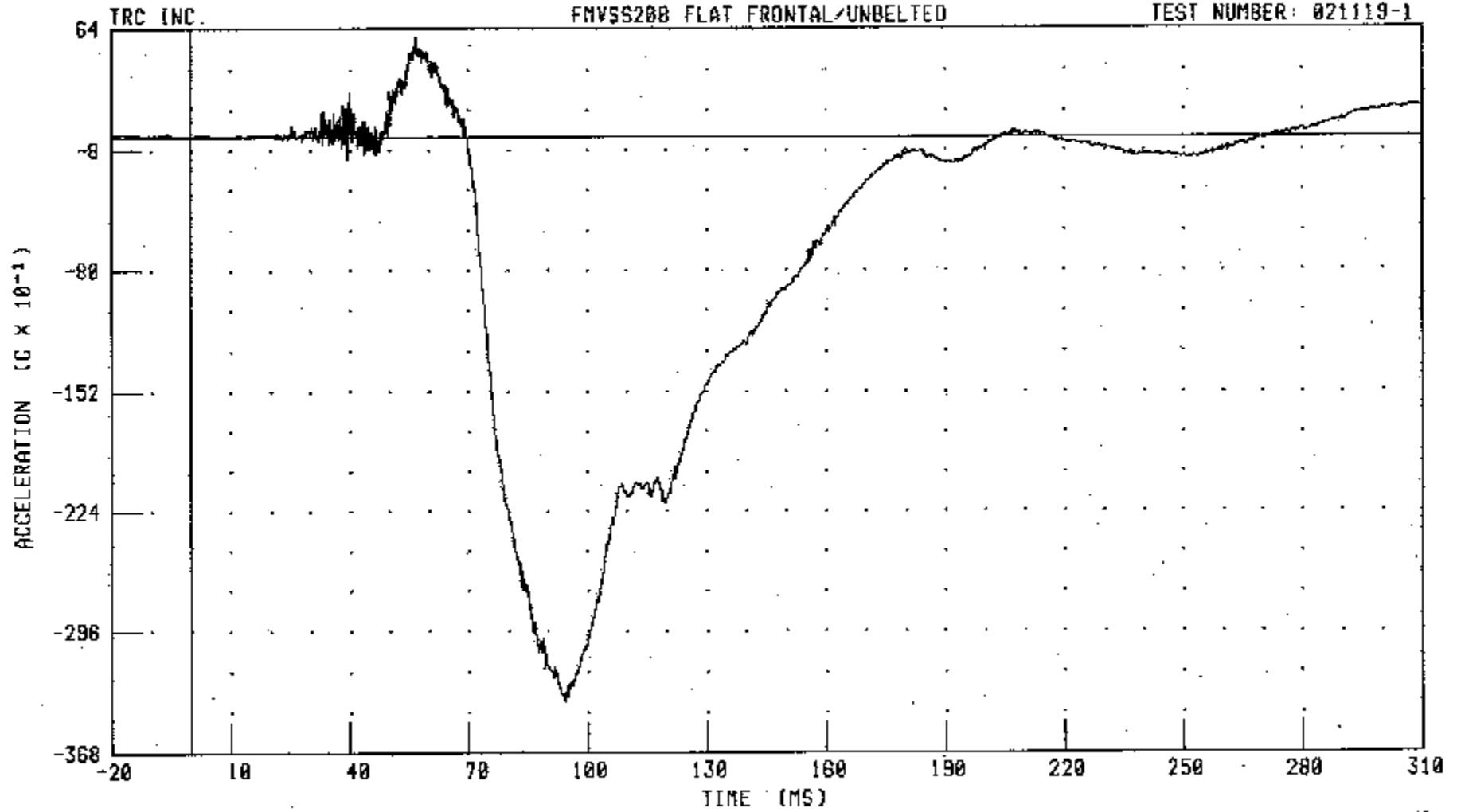
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: HEDXG2 FILTER: CH. CLASS 1000

PEAK DATA: 5.89 G @ 56.00 MS; -33.67 G @ 94.24 MS

6-24

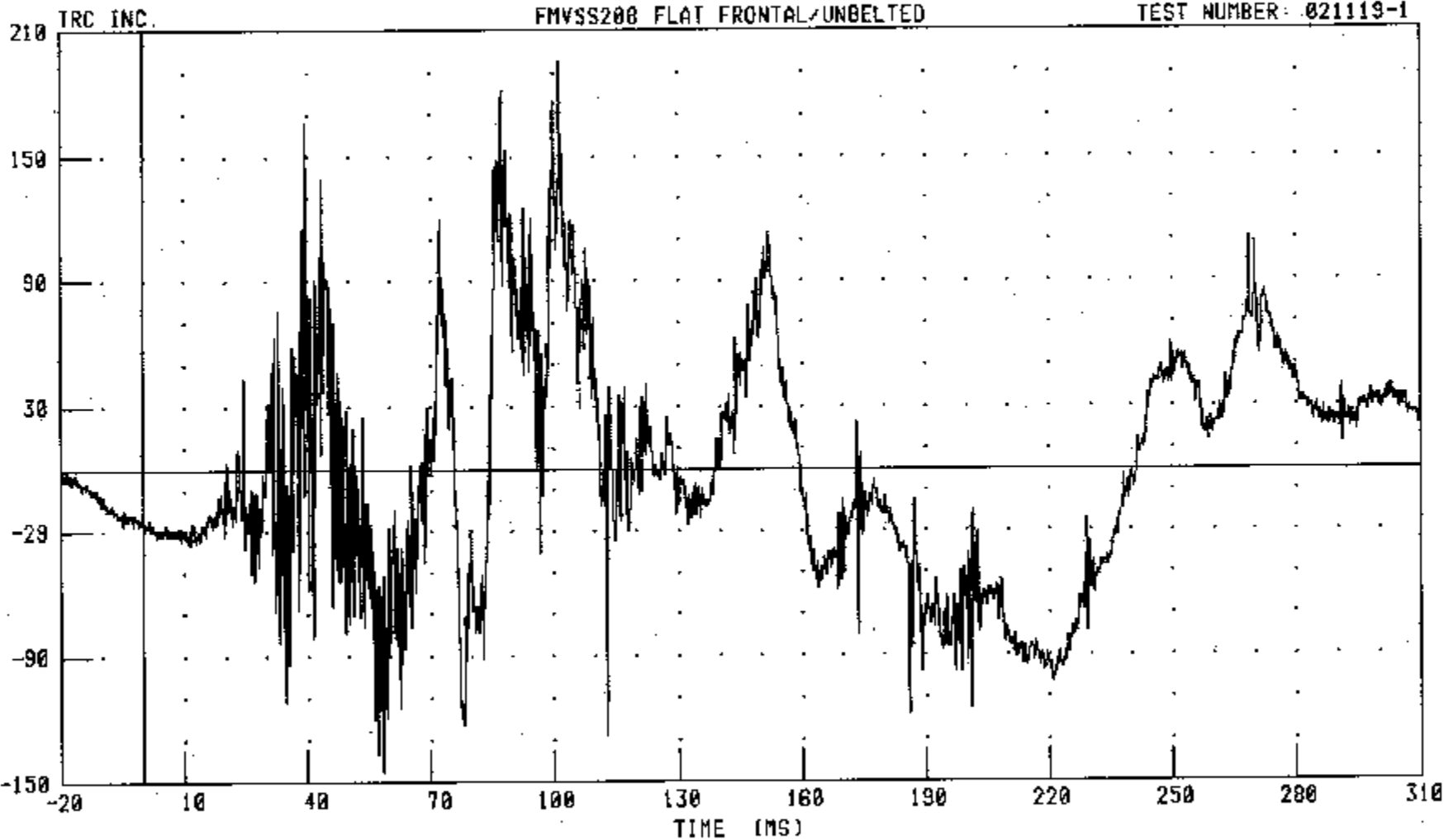
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: HEDYG2 FILTER: CH. CLASS 1000

PEAK DATA: 1.95 G @ 101.68 MS; -1.45 G @ 58.40 MS

6-25

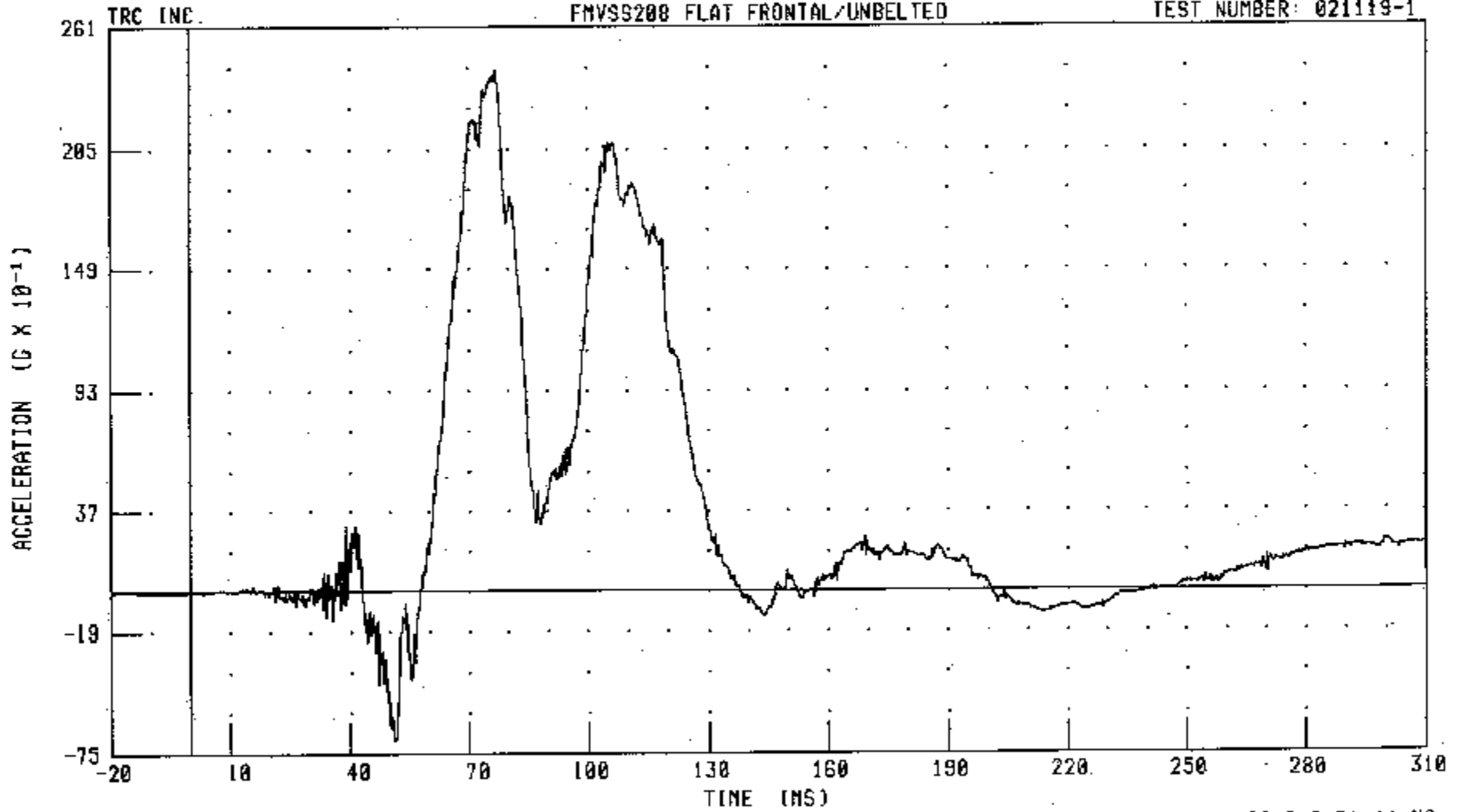
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION

FMVSS200 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: HEDZG2

FILTER: CH. CLASS 1000

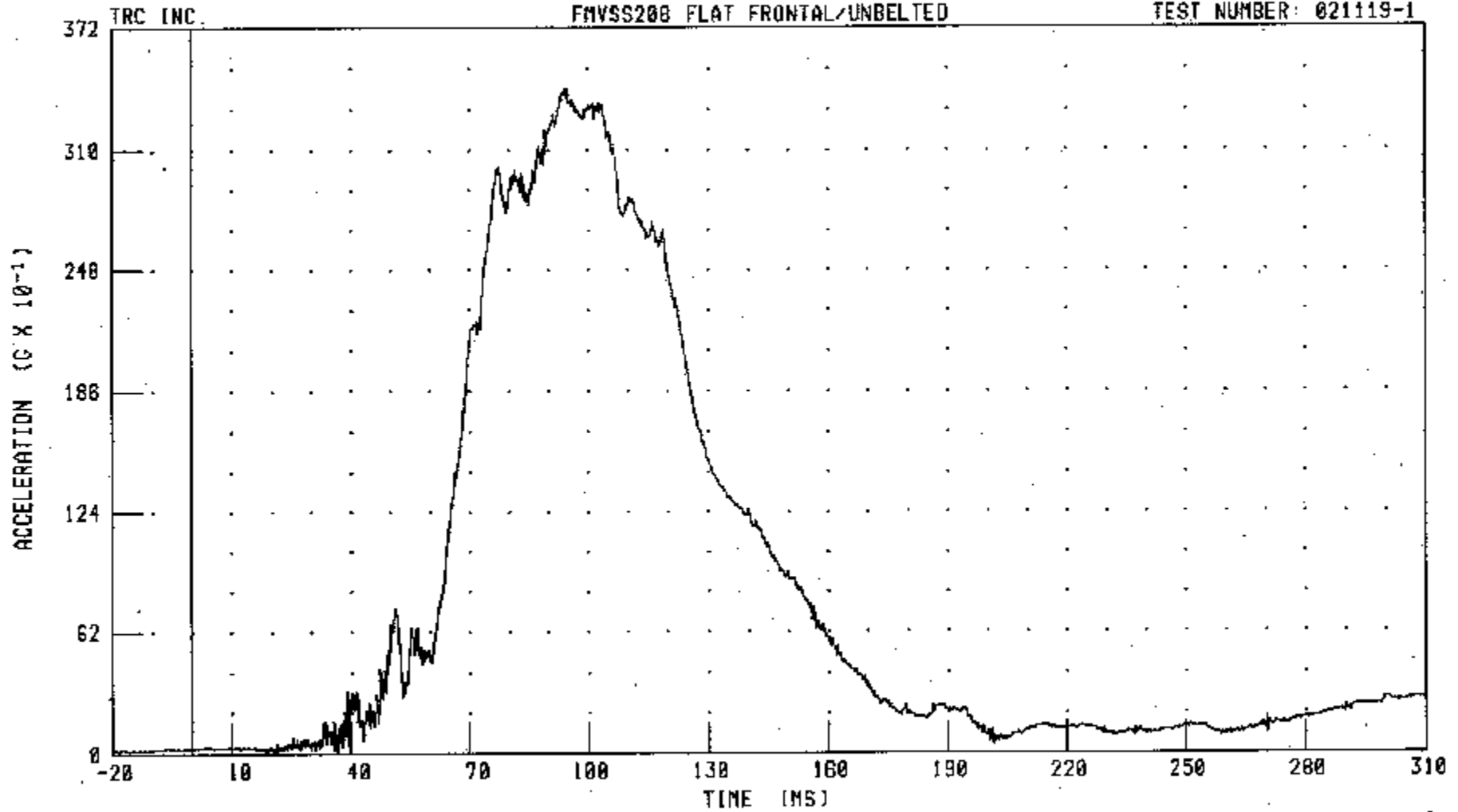
PEAK DATA: 24.14 G @ 76.88 MS; -6.86 G @ 51.44 MS

6-26

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: HEDRG2 . FILTER: CH. CLASS 1000

6-27

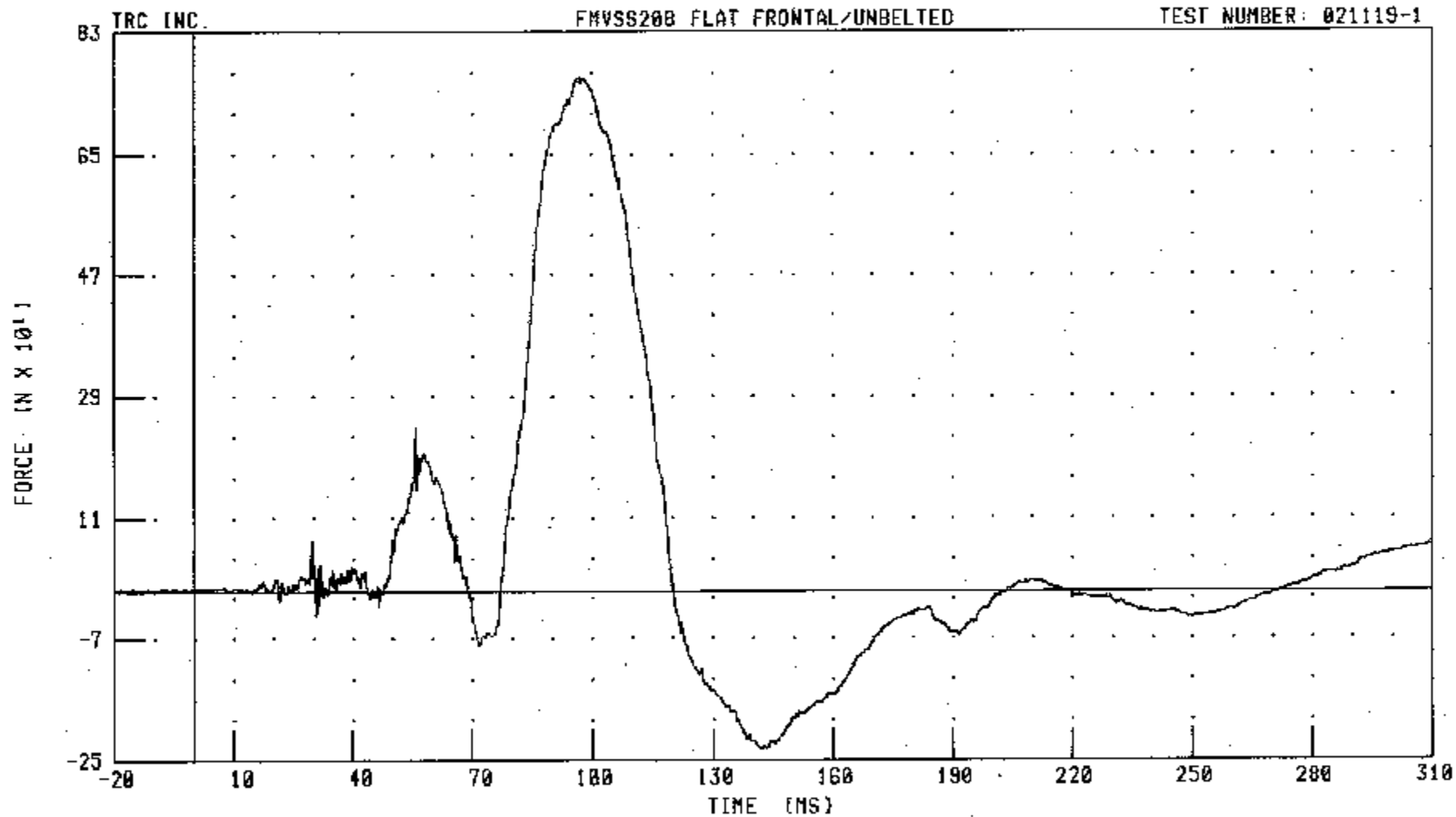
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKXF2 FILTER: CH. CLASS 1000

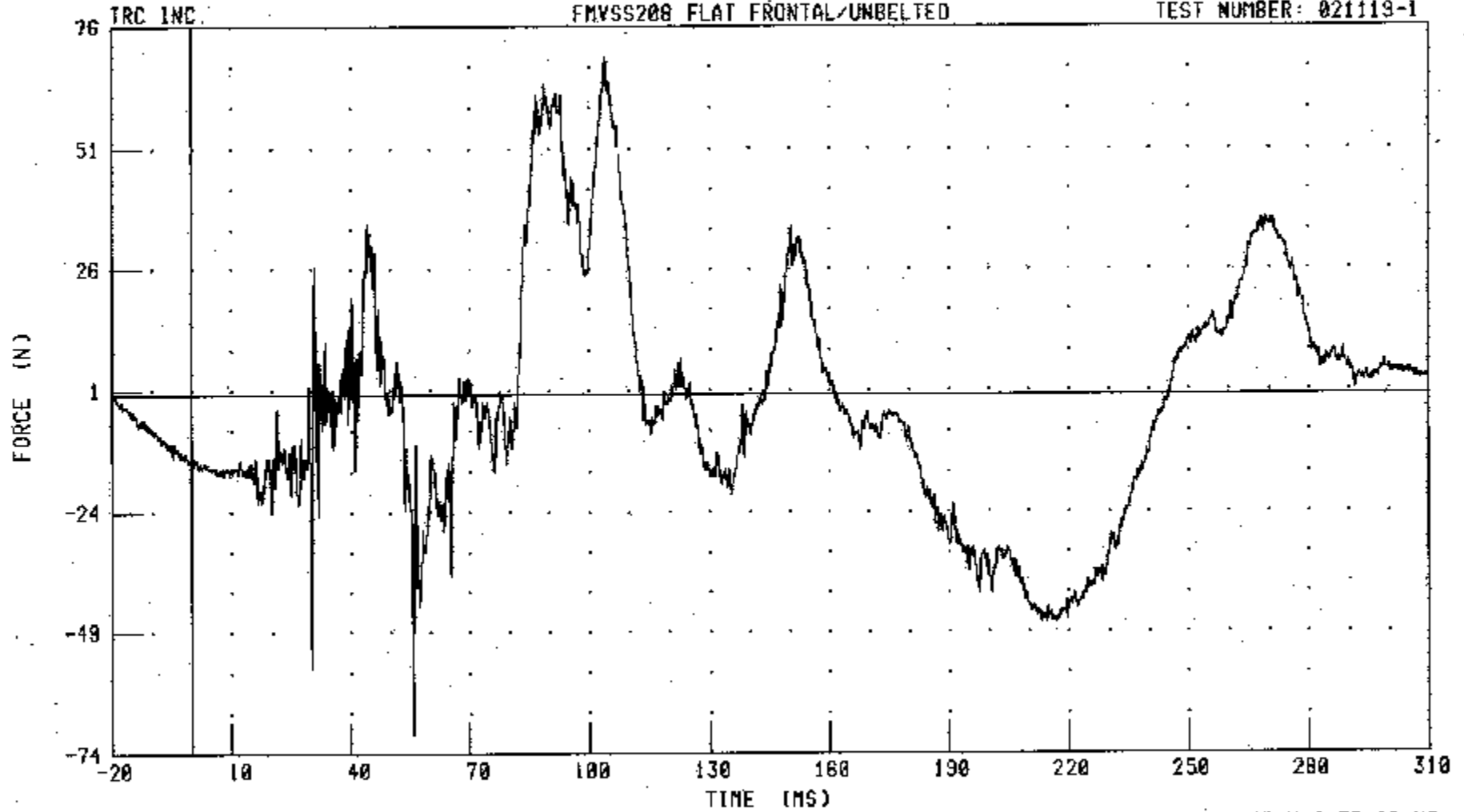
PEAK DATA: 763.98 N @ 97.04 MS; -233.78 N @ 142.16 MS

6-28

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2ND REGULAR CAB
RIGHT FRONT PASSENGER NECK Y-AXIS SHEAR FORCE
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKYF2 FILTER: CH. CLASS 1000

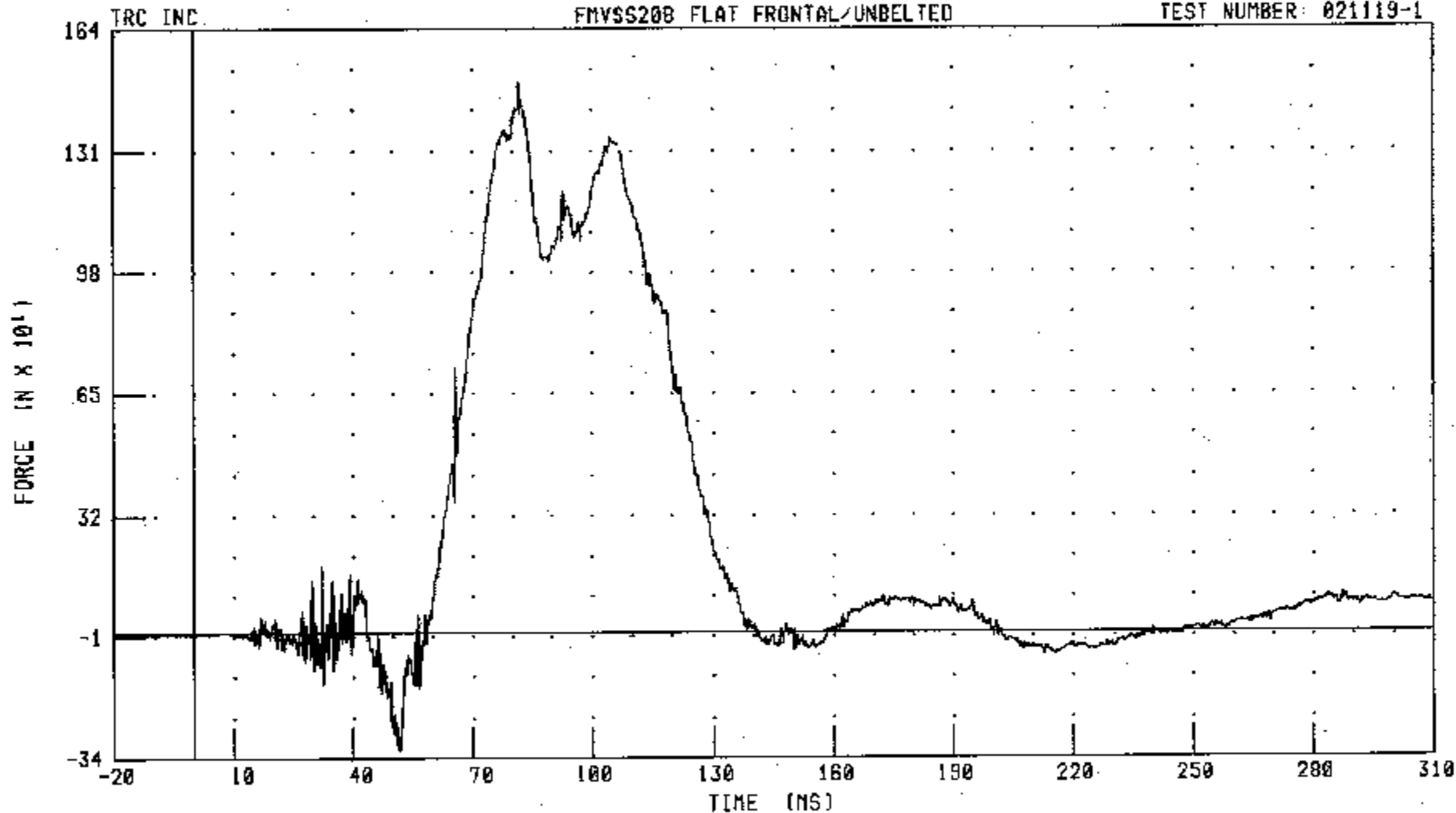
PEAK DATA: 69.62 N @ 104.16 MS; -70.07 N @ 55.92 MS

6-29

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2VD REGULAR CAB
RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKZF2 FILTER: CH. CLASS 1000

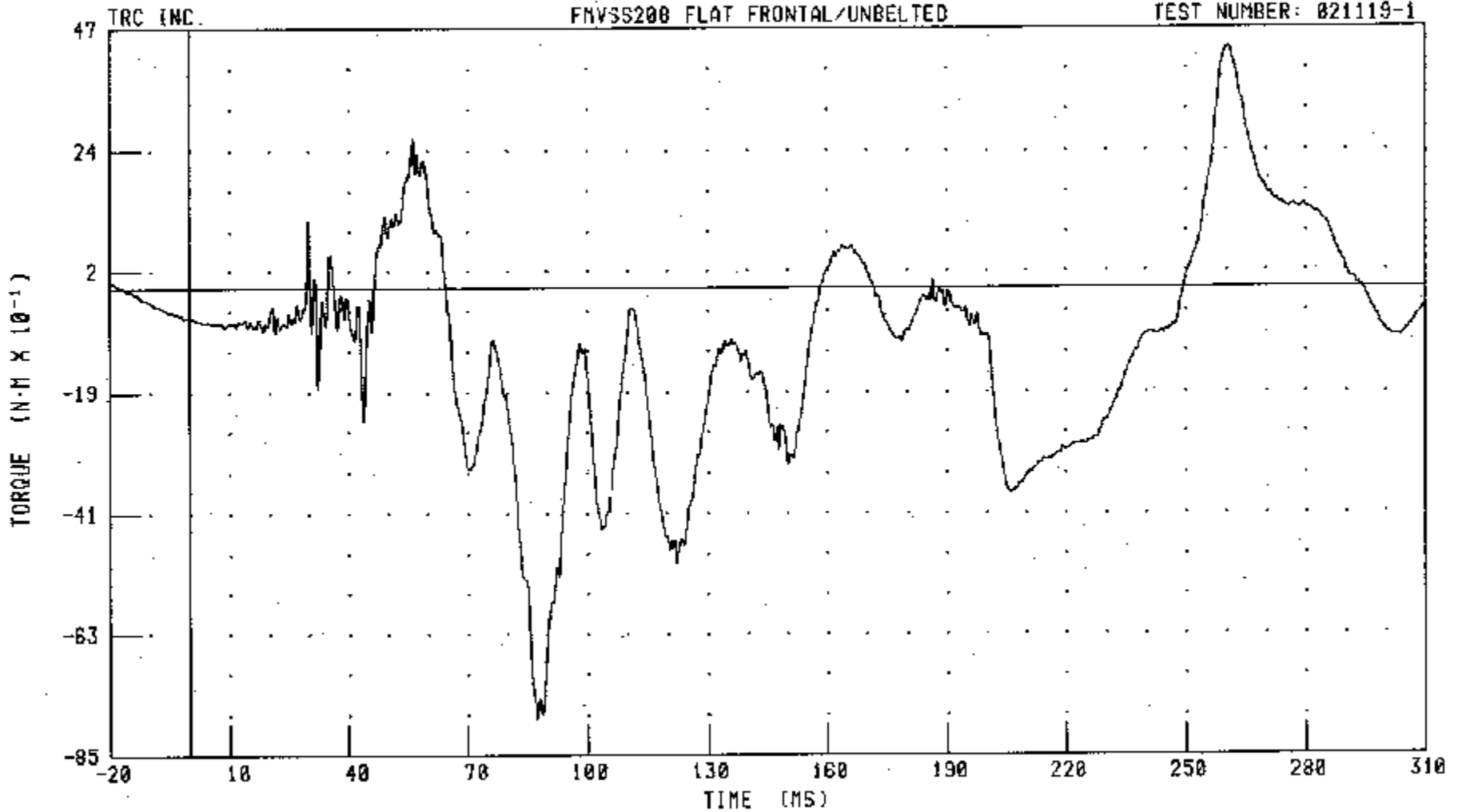
PEAK DATA: 1495.05 N @ 81.76 MS, -317.92 N @ 51.68 MS

6-30

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS
FNVSS2008 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NEKX12 FILTER: CH. CLASS 600

PEAK DATA: 4.36 N·M @ 260.72 MS; -7.84 N·M @ 87.44 MS

6-31

021119-1

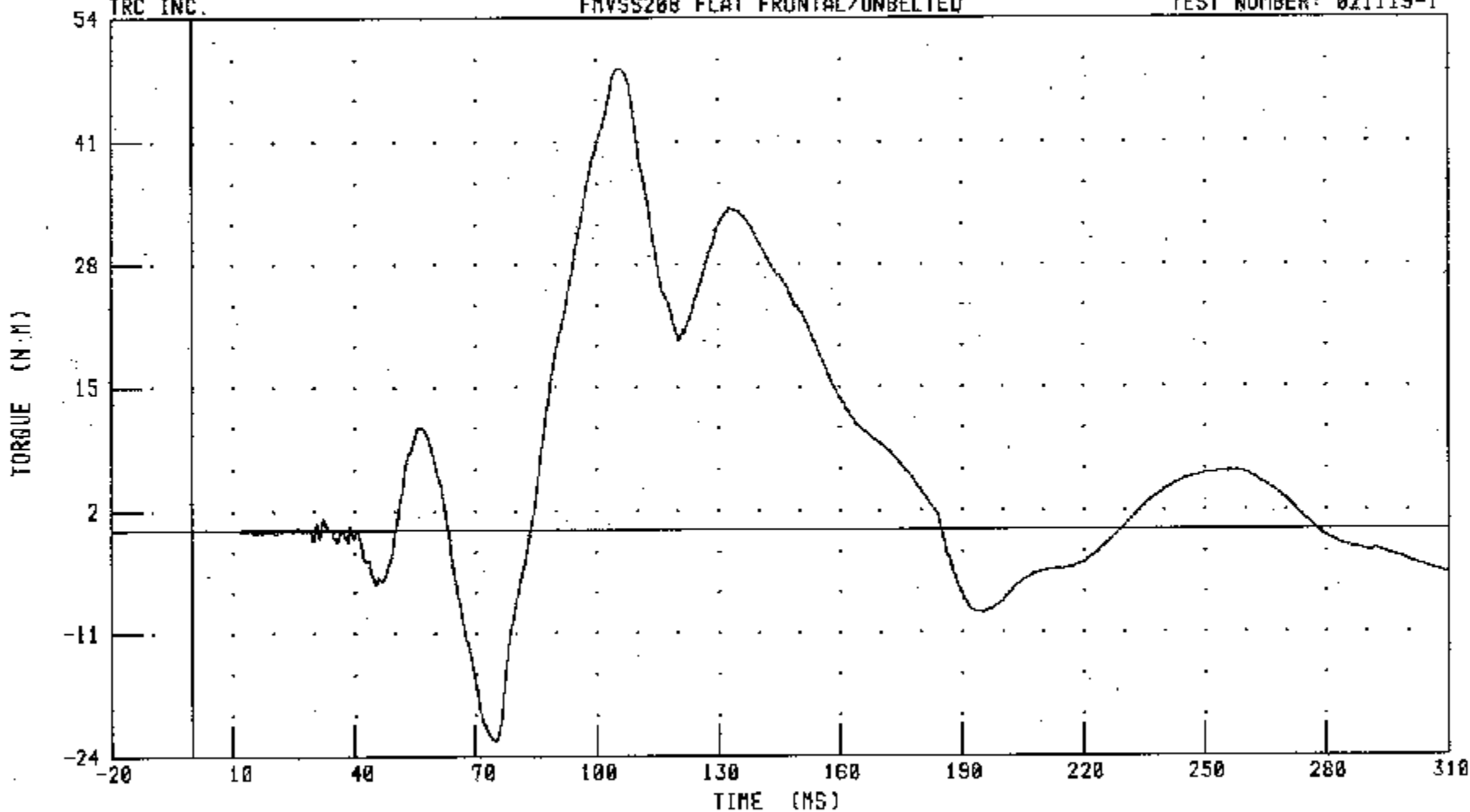
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS

FNVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: NEKYM2

FILTER: CH. CLASS 600

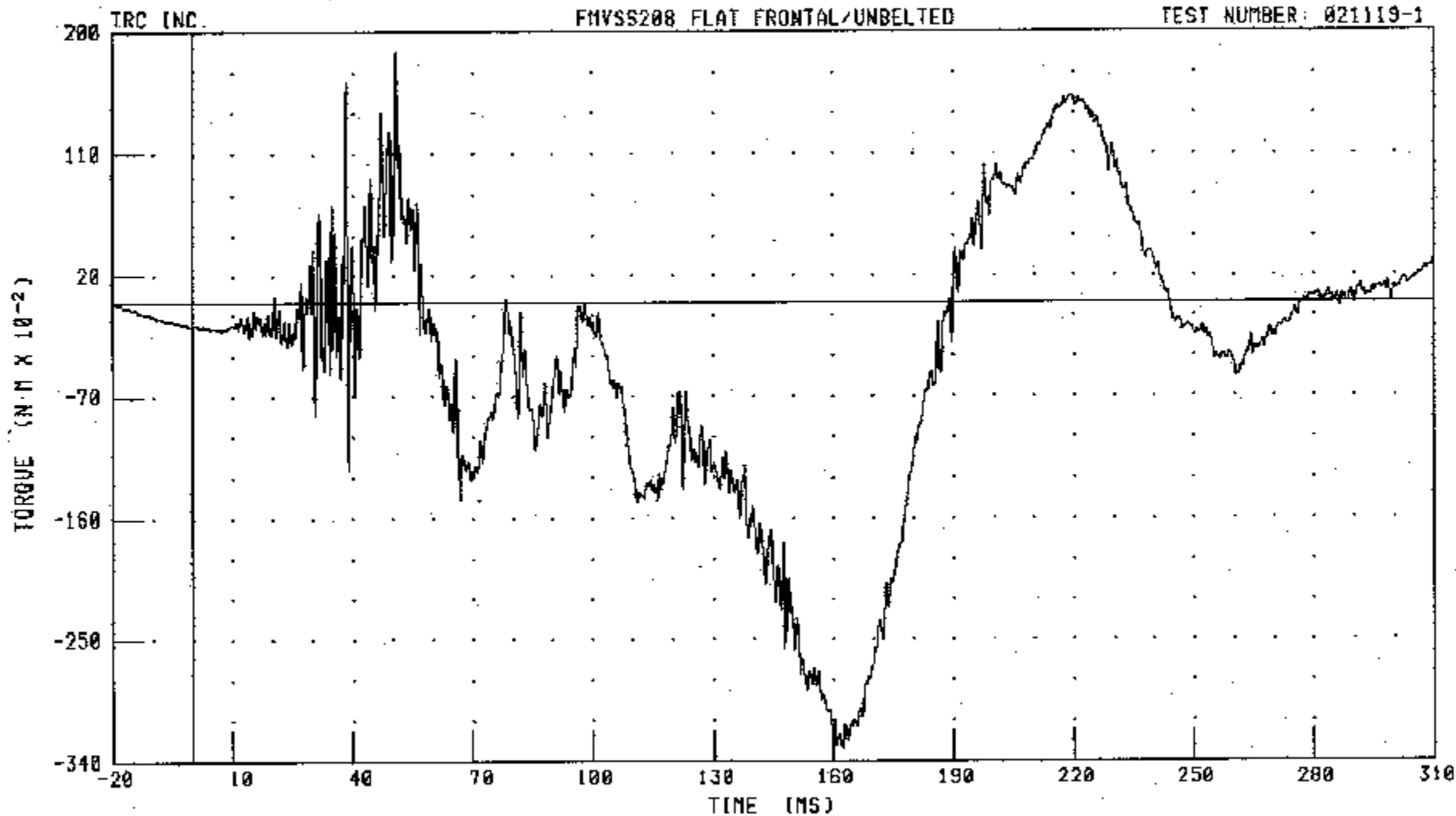
PEAK DATA: 48.76 N·M @ 105.84 MS, -22.33 N·M @ 75.04 MS

6-32

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



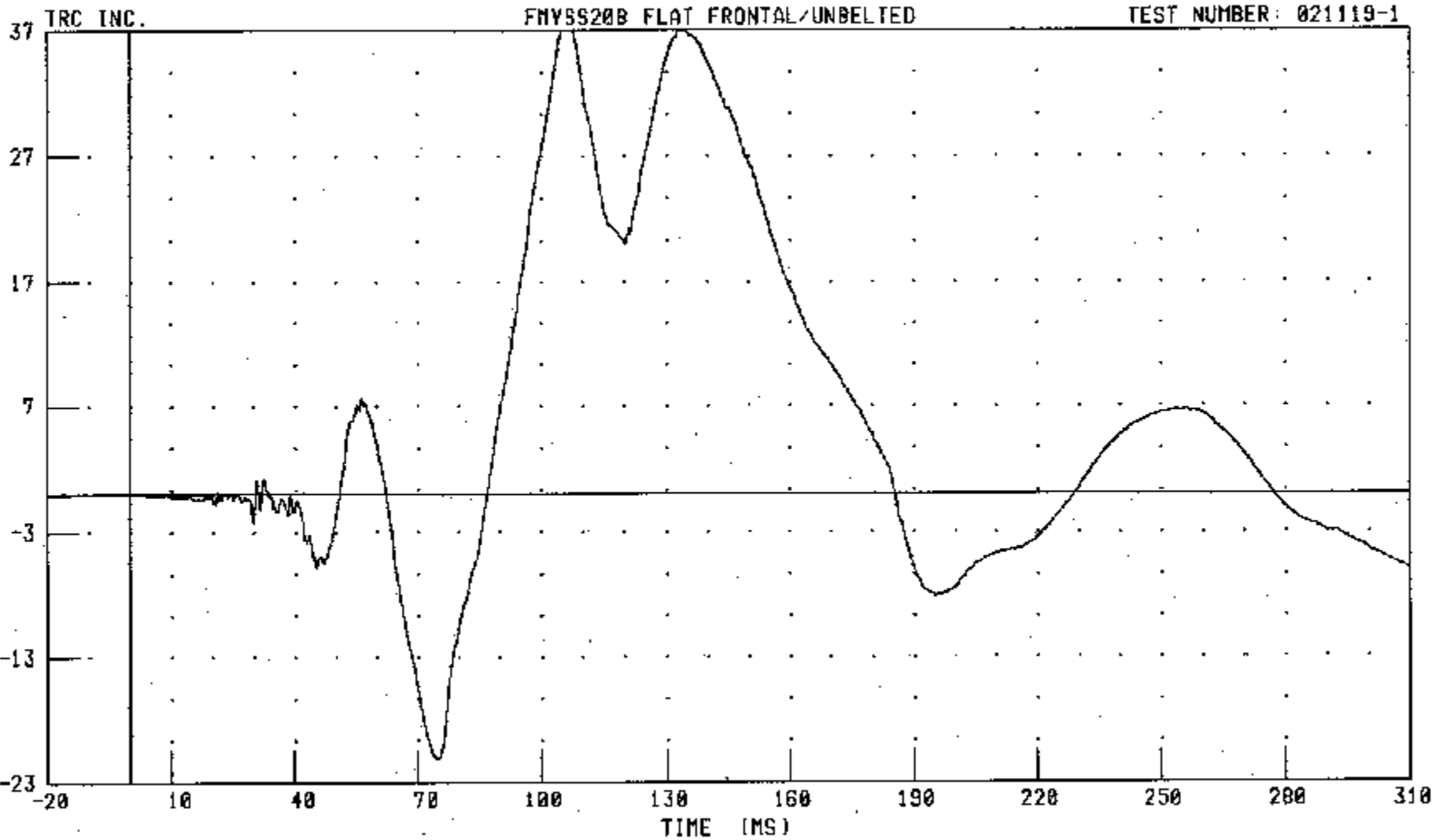
CHANNEL: NEKZM2 FILTER: CH. CLASS 600

PEAK DATA: 1.86 N·M @ 50.96 MS, -3.31 N·M @ 162.40 MS

6-33

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER NECK MOMENT OCCIPITAL CONDYLE ABOUT Y AXIS



CHANNEL: NKOYM2 FILTER: CH. CLASS 600

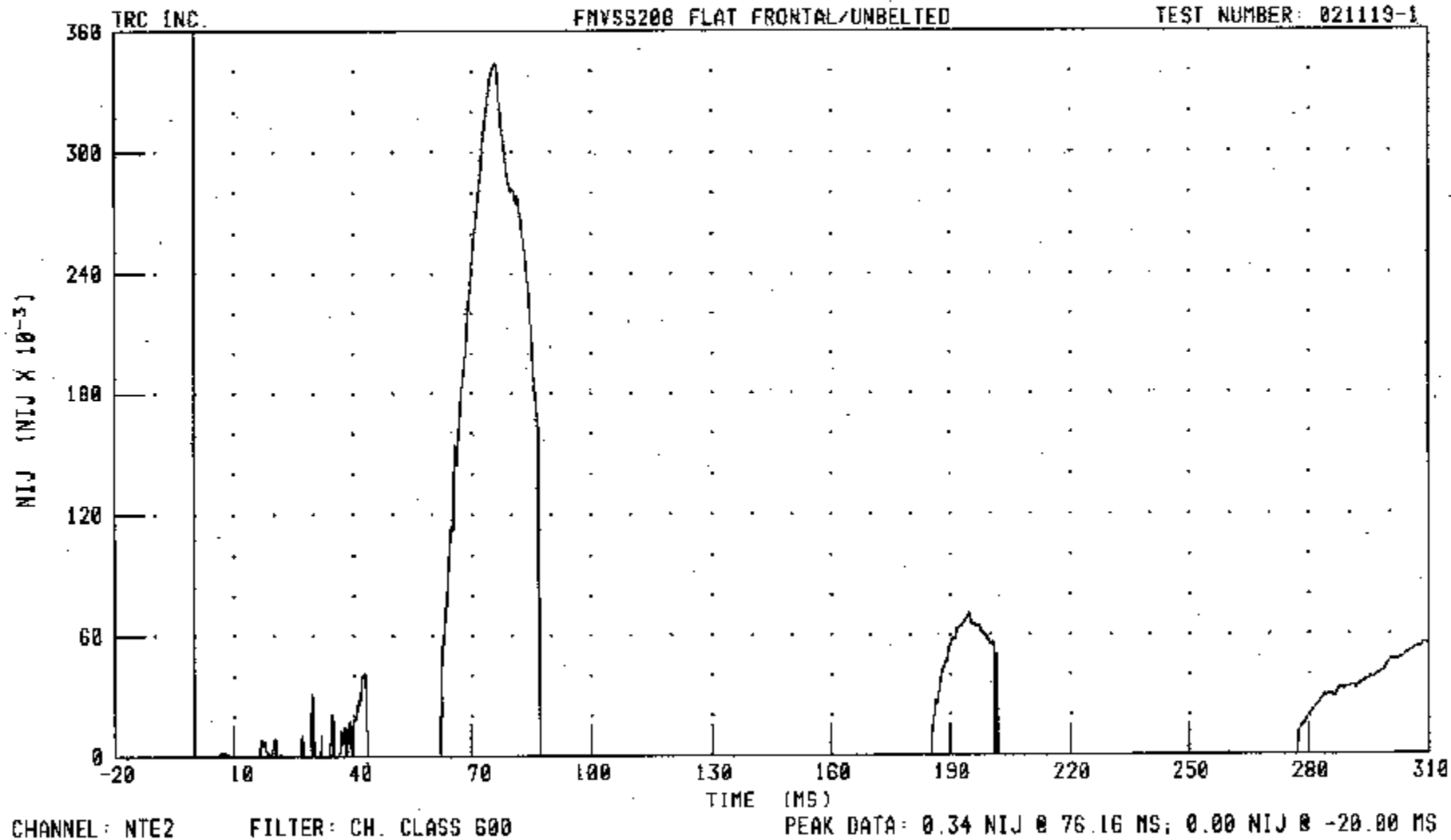
PEAK DATA: 37.66 N·M @ 106.48 MS; -21.16 N·M @ 75.04 MS

6-34

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER NIJ TENSION/EXTENSION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

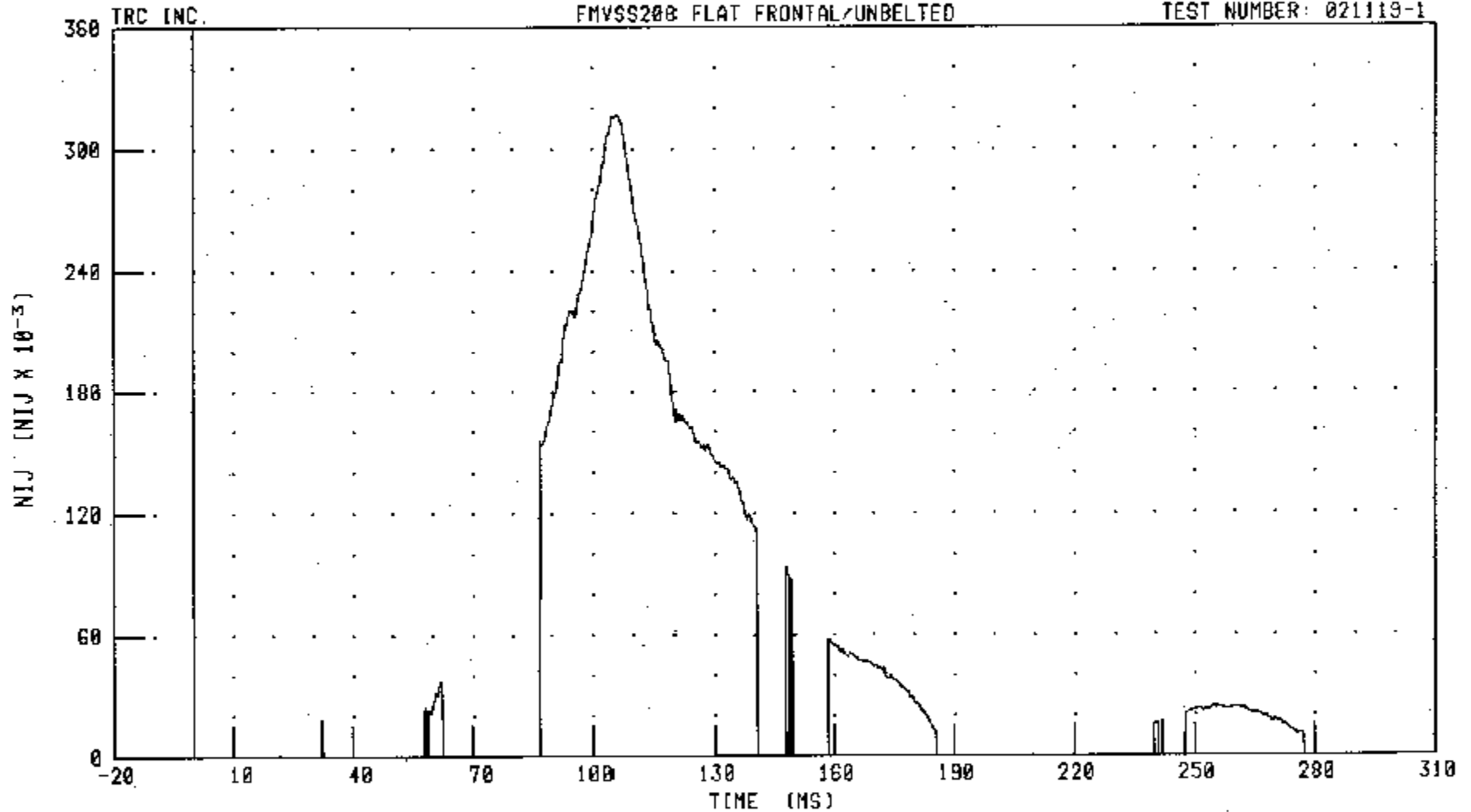


6-35

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER NIJ TENSION/FLEXION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NTF2

FILTER: CH. CLASS 500

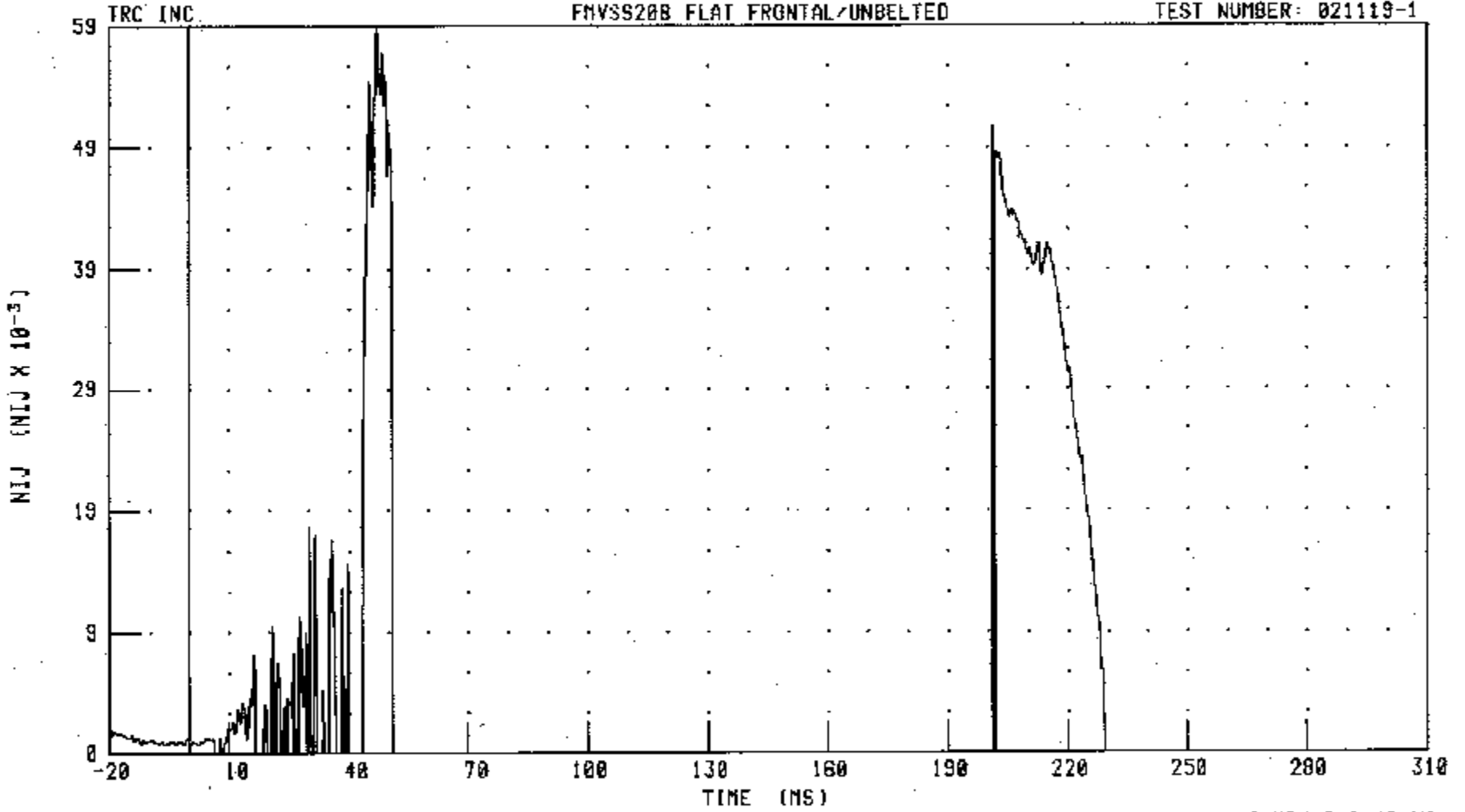
PEAK DATA: 0.32 NIJ @ 105.92 MS; 0.00 NIJ @ -20.00 MS

6-36

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2VD REGULAR CAB
RIGHT FRONT PASSENGER NIJ COMPRESSION/EXTENSION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



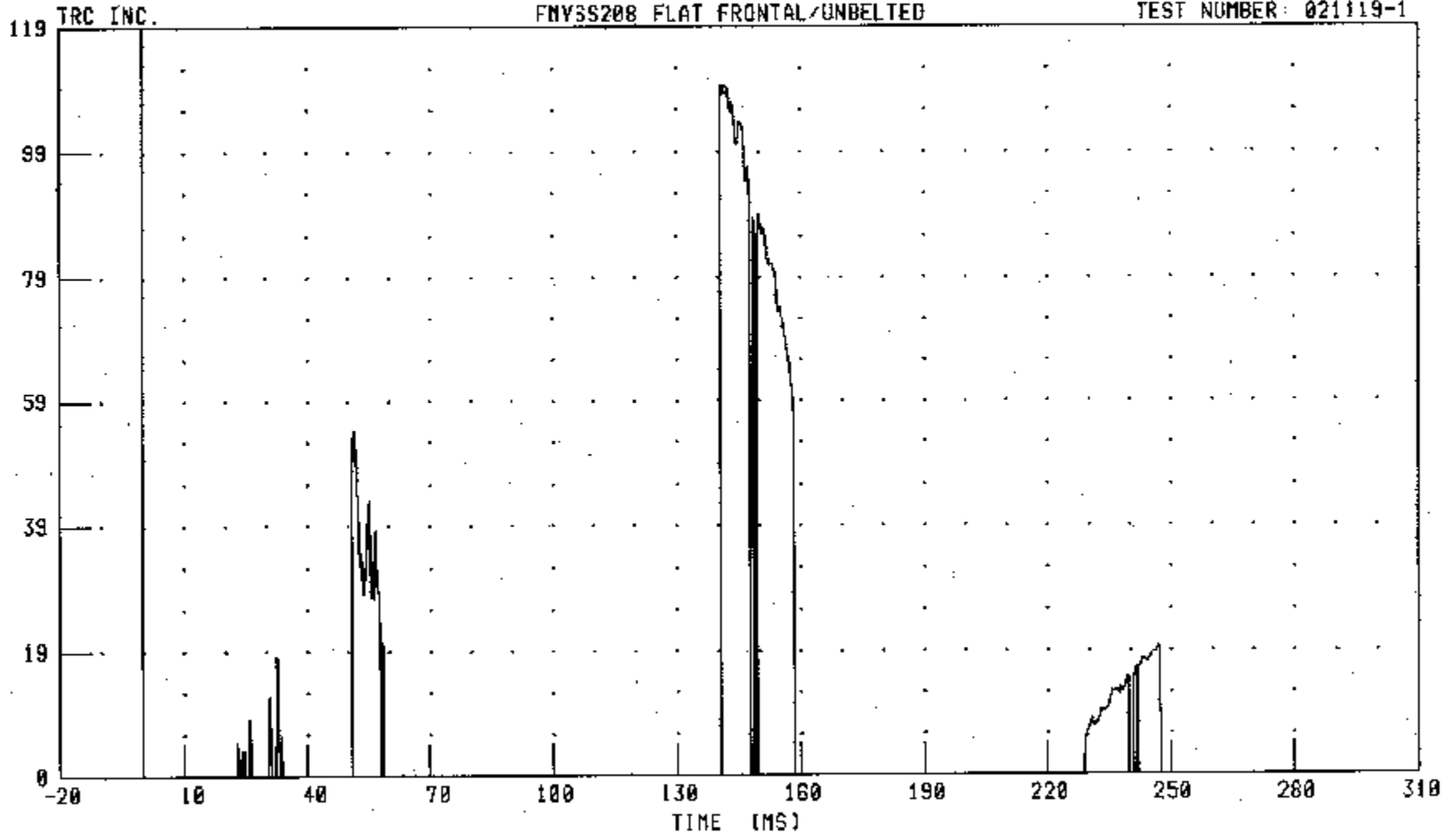
CHANNEL: NCE2

FILTER: CH. CLASS 600

PEAK DATA: 0.06 NIJ @ 47.28 MS, 0.00 NIJ @ 6.40 MS

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER NIJ COMPRESSION/FLEXION
FNV3S208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: NCF2

FILTER: CH. CLASS 600

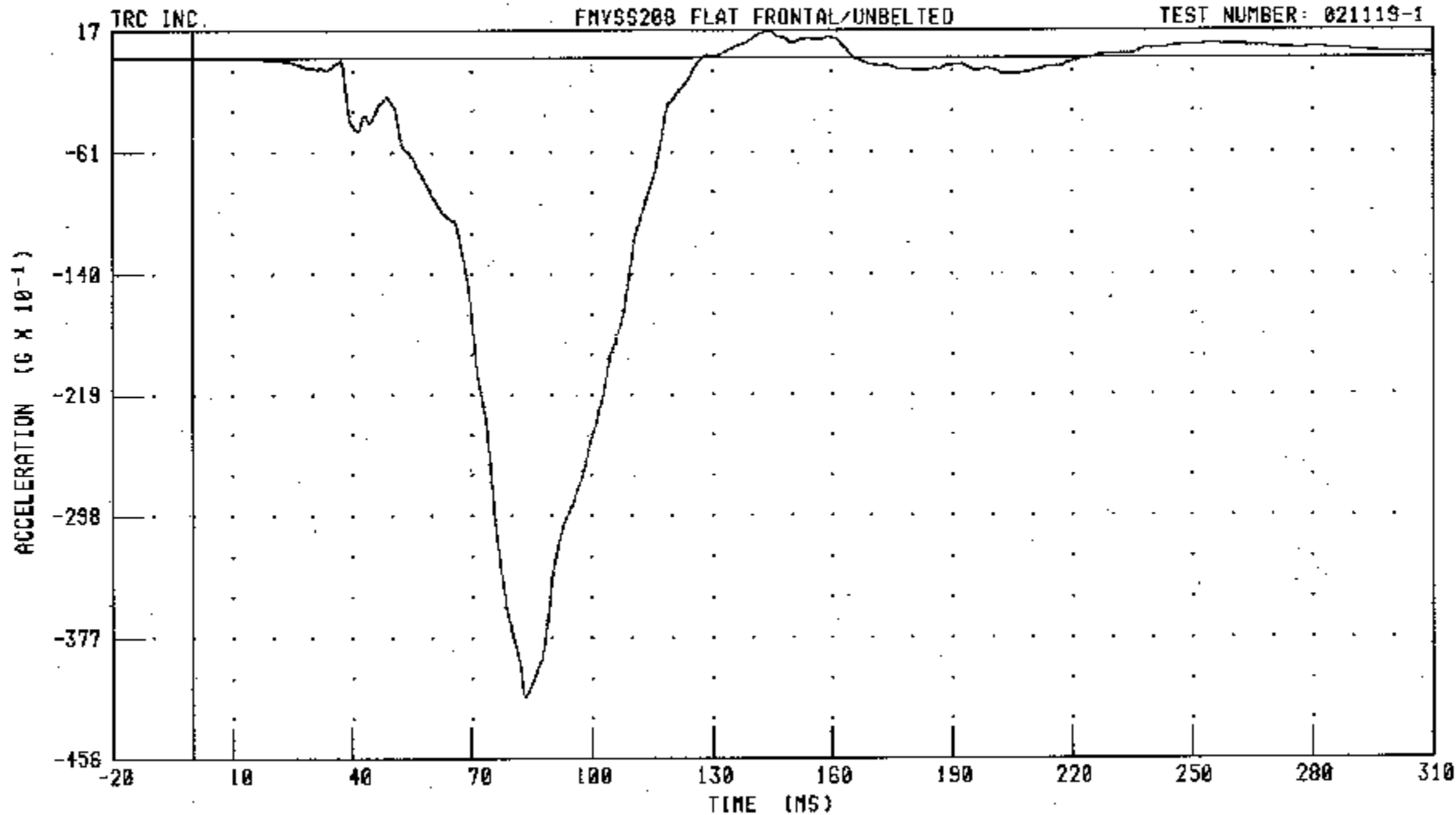
PEAK DATA: 0.11 NIJ @ 140.88 MS; 0.00 NIJ @ -20.00 MS

6-38

021119-1

C38102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION
FMY55208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTXG2 FILTER: CH. CLASS 180

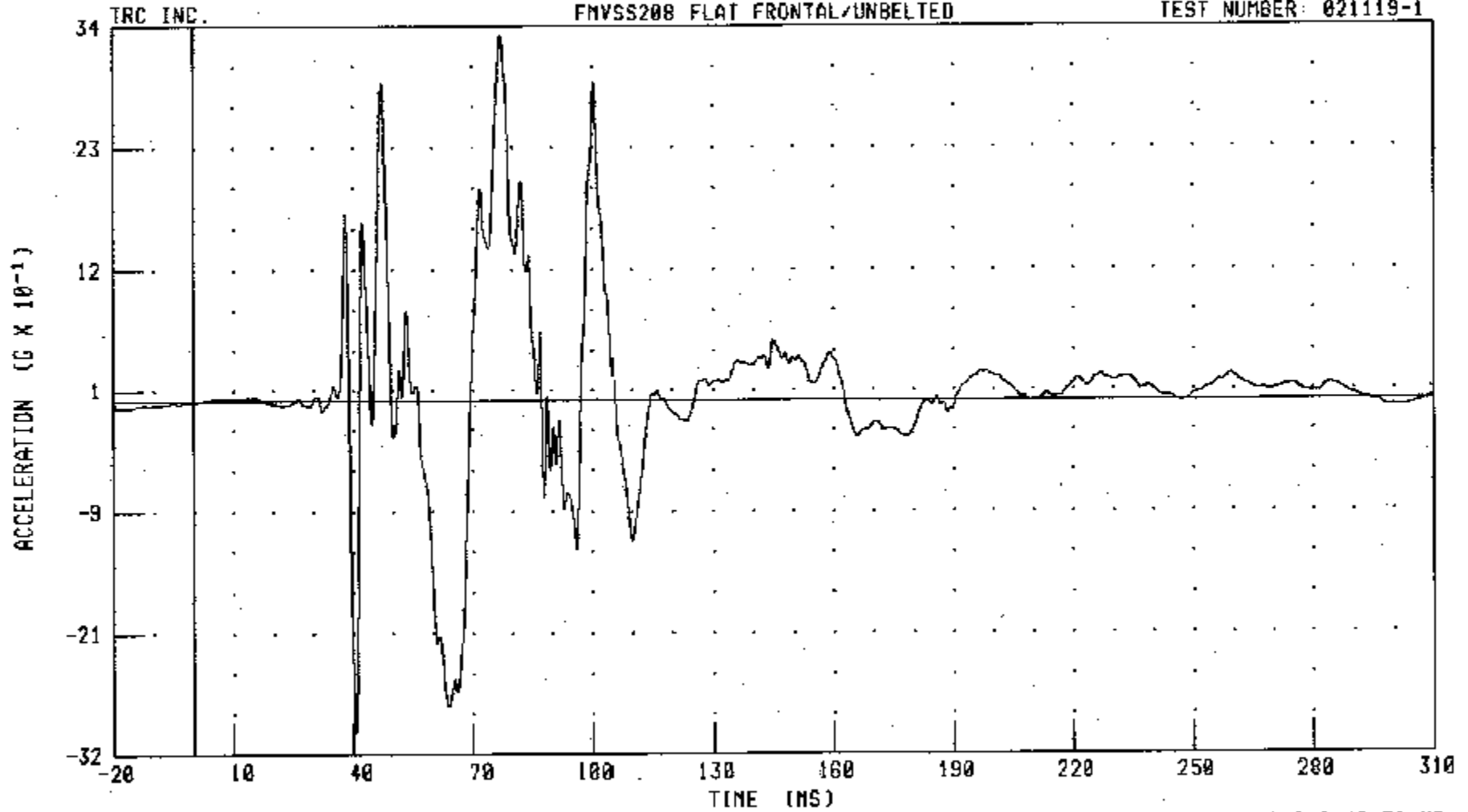
PEAK DATA: 1.68 G @ 143.68 MS; -41.57 G @ 83.60 MS

6-39

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTYG2 FILTER: CH. CLASS 100

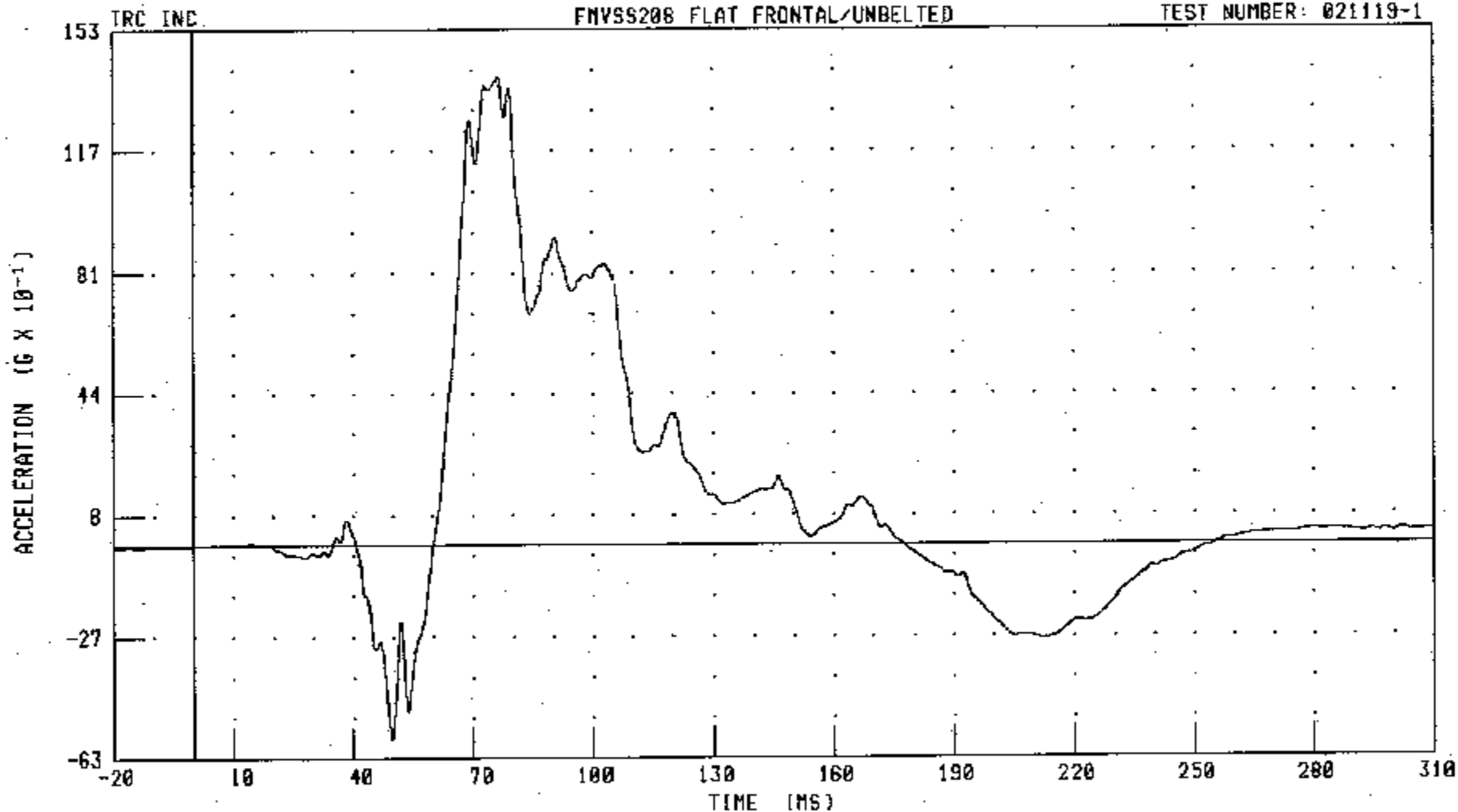
PEAK DATA: 3.32 G @ 77.36 MS; -3.00 G @ 40.72 MS

6-40

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION
FNVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTZ62

FILTER: CH. CLASS 100

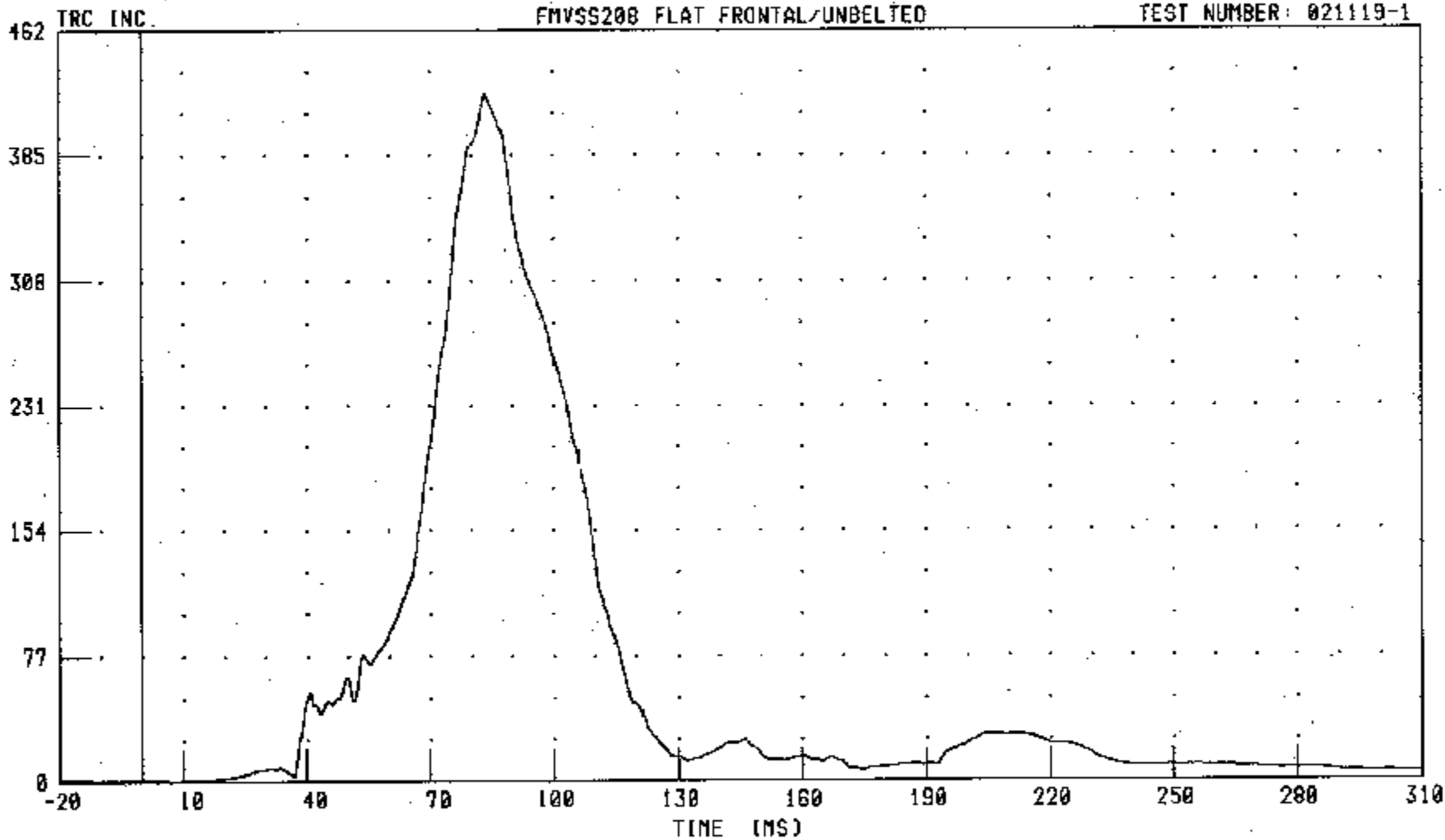
PEAK DATA: 13.89 G @ 76.64 MS; -5.75 G @ 49.76 MS

641

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTRG2 FILTER: CH. CLASS 100

PEAK DATA: 42.21 G @ 83.52 MS, 0.01 G @ -20.00 MS

642

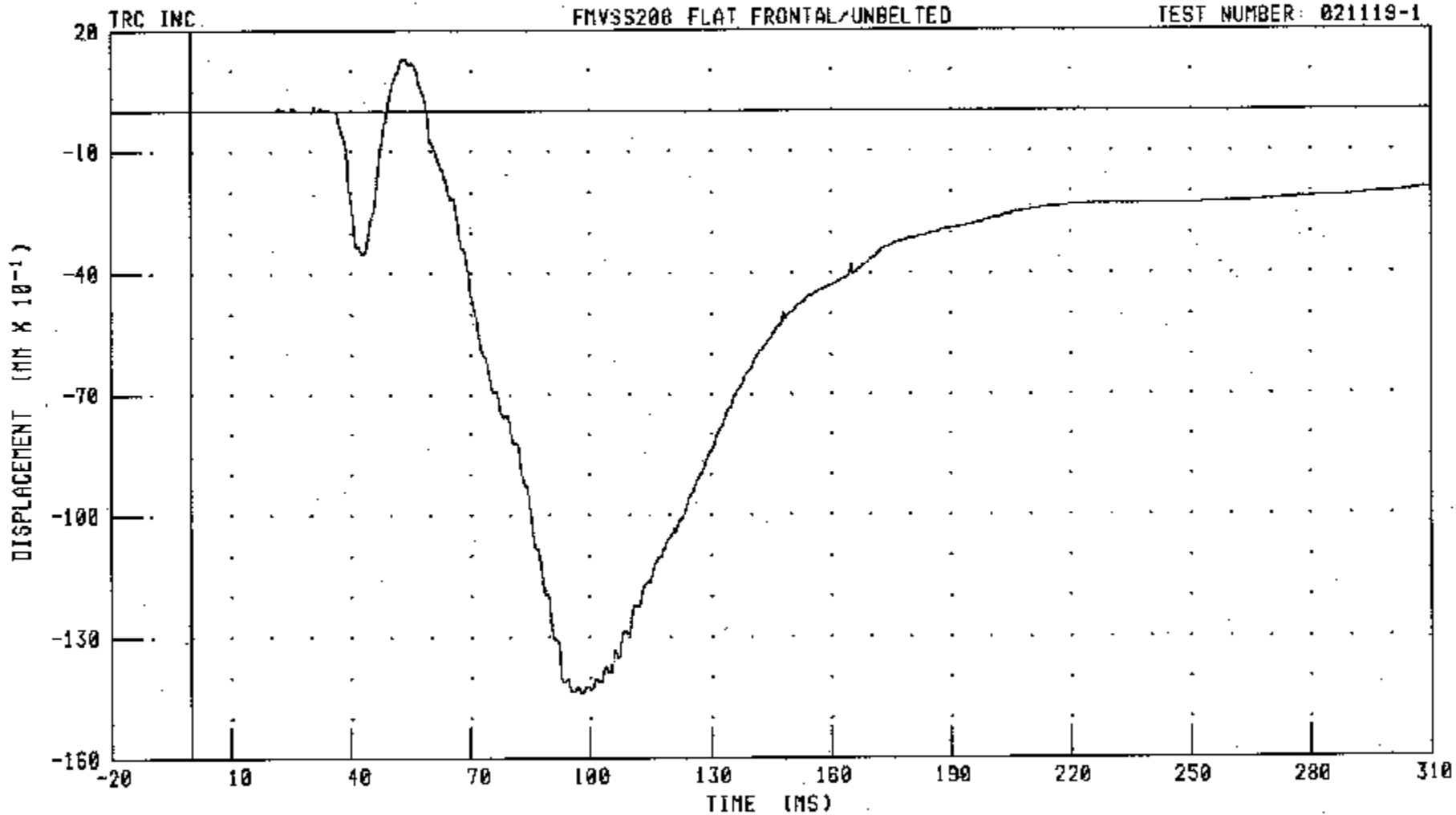
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

RIGHT FRONT PASSENGER CHEST DEFLECTION

FMVSS200 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: CSTX02 FILTER: CH. CLASS 600

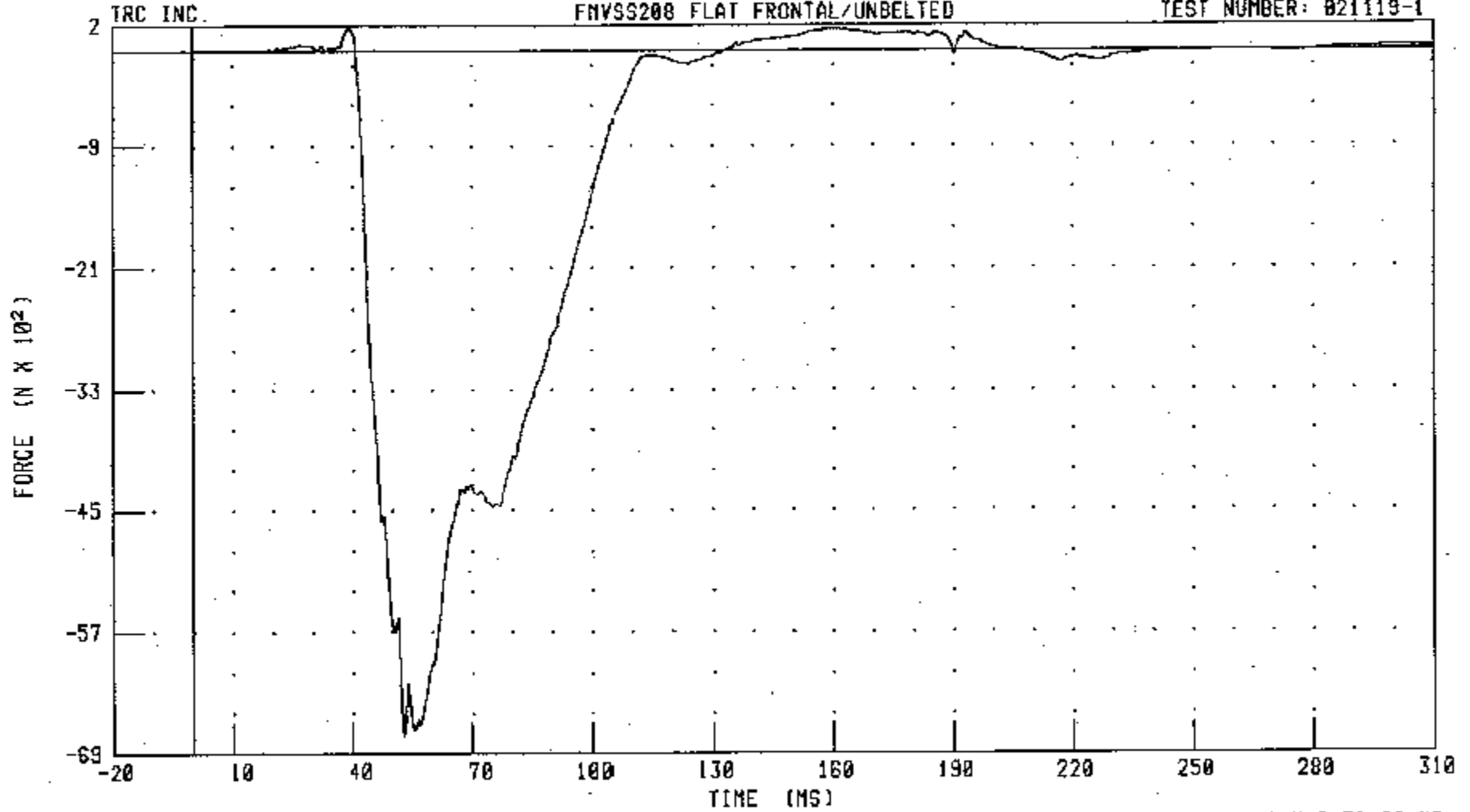
PEAK DATA: 1.28 MM @ 53.60 MS; -14.39 MM @ 98.24 MS

643

021119-1

C301B2 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT PASSENGER LEFT FEMUR FORCE
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: LFMZF2 FILTER: CH. CLASS 600

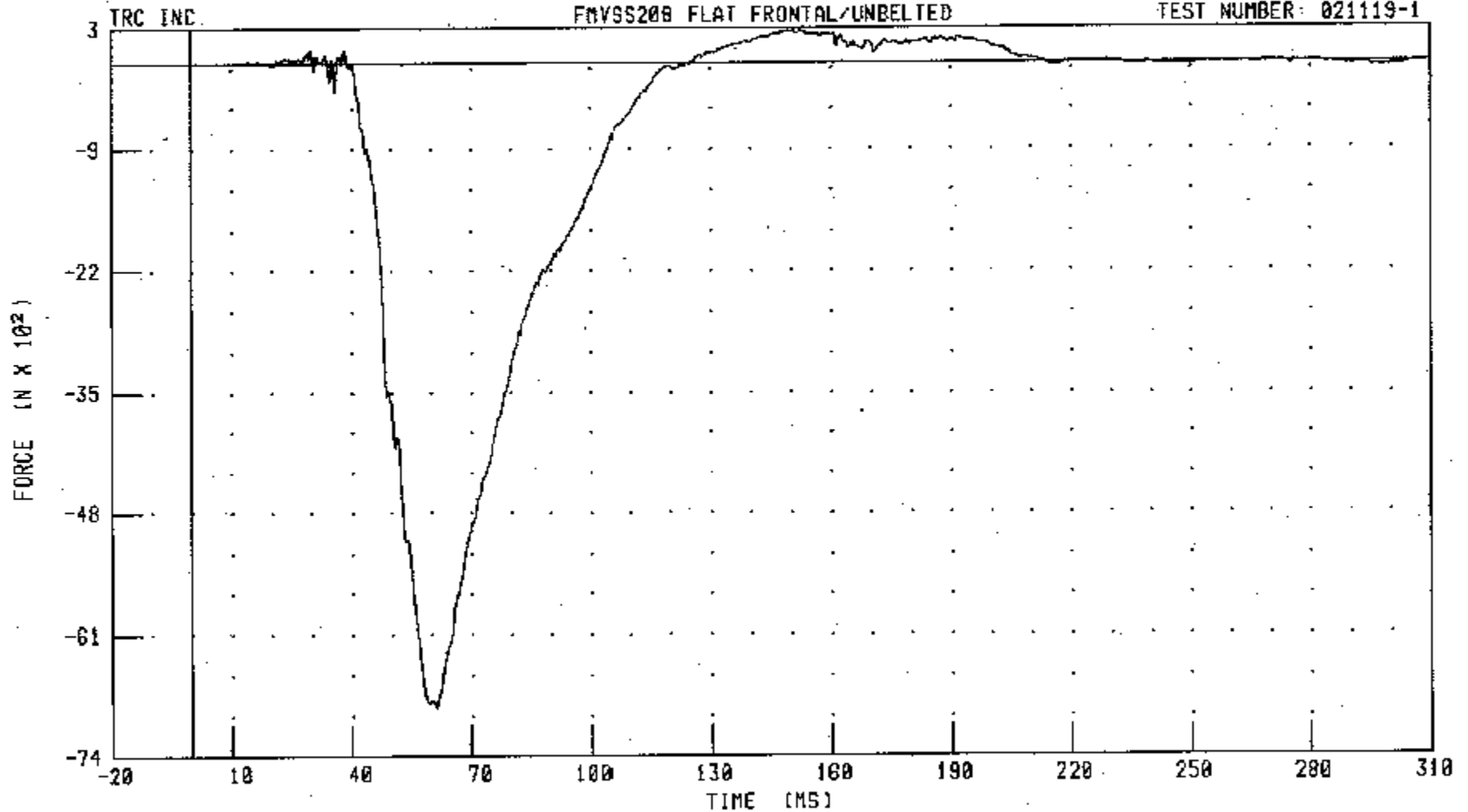
PEAK DATA: 230.68 N @ 39.36 MS; -6773.20 N @ 52.98 MS

6-44

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2VD REGULAR CAB
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: RFMZF2 FILTER: CH. CLASS 600

PEAK DATA: 343.42 N @ 152.48 MS, -6914.74 N @ 61.20 MS

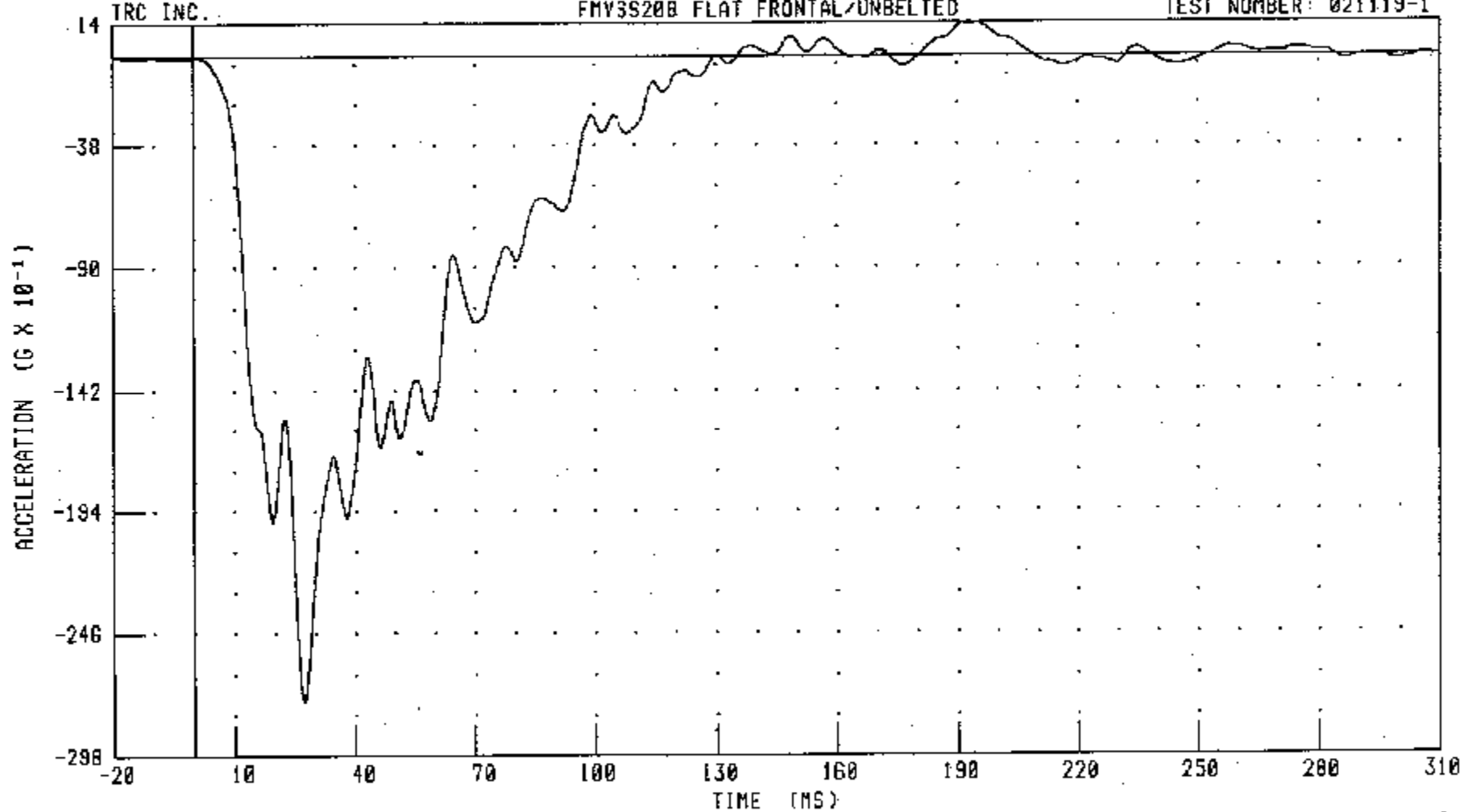
6-45

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
LEFT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

FMY3S20B FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: LSXXG

FILTER: CH. CLASS 60

PEAK DATA: 1.35 G @ 195.12 MS; -27.48 G @ 27.36 MS

646

021119-1

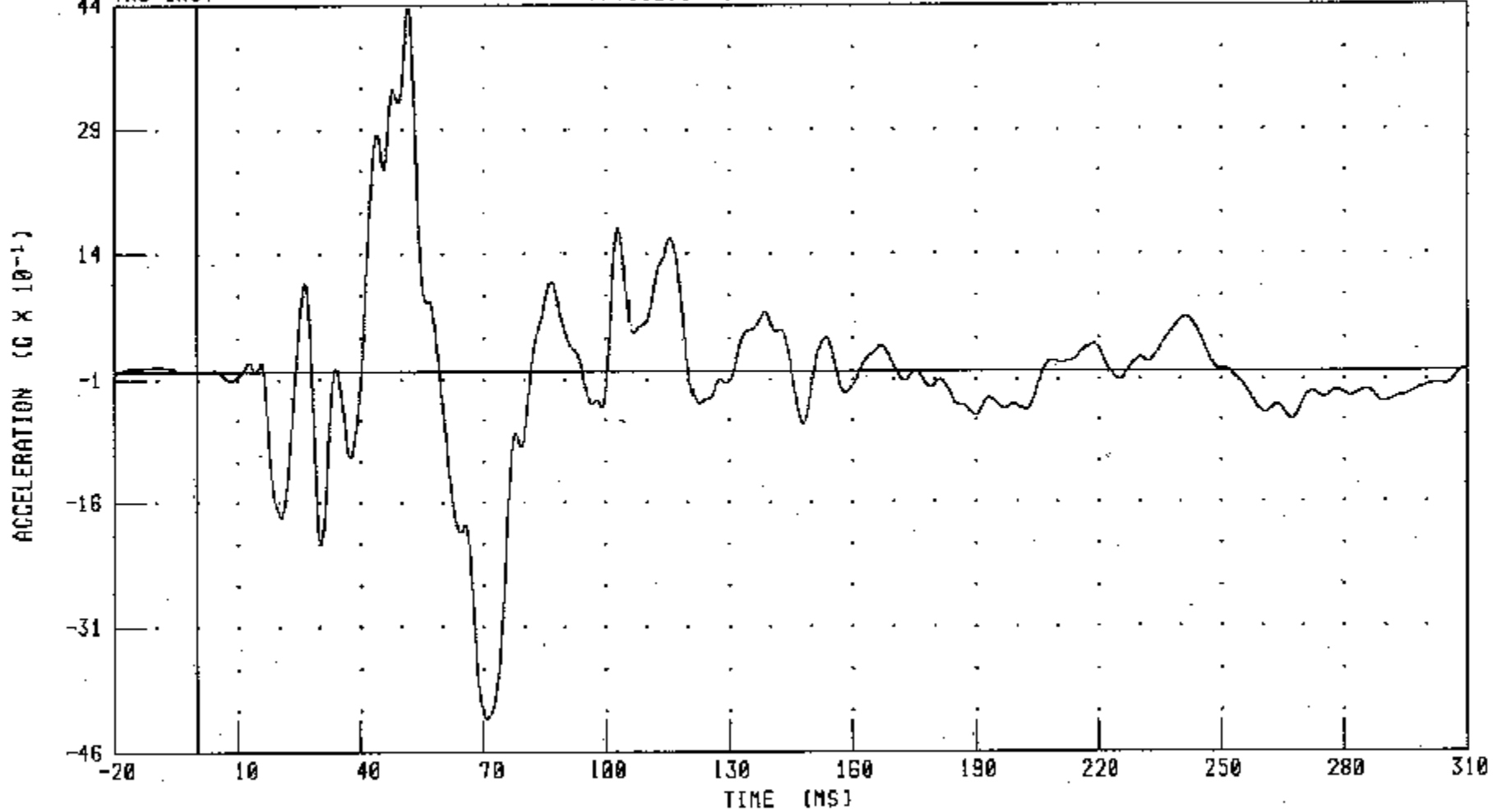
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

LEFT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

FHVSS206 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: LSXYG

FILTER: CH. CLASS 60

PEAK DATA: 4.37 G @ 51.76 MS; -4.20 G @ 70.80 MS

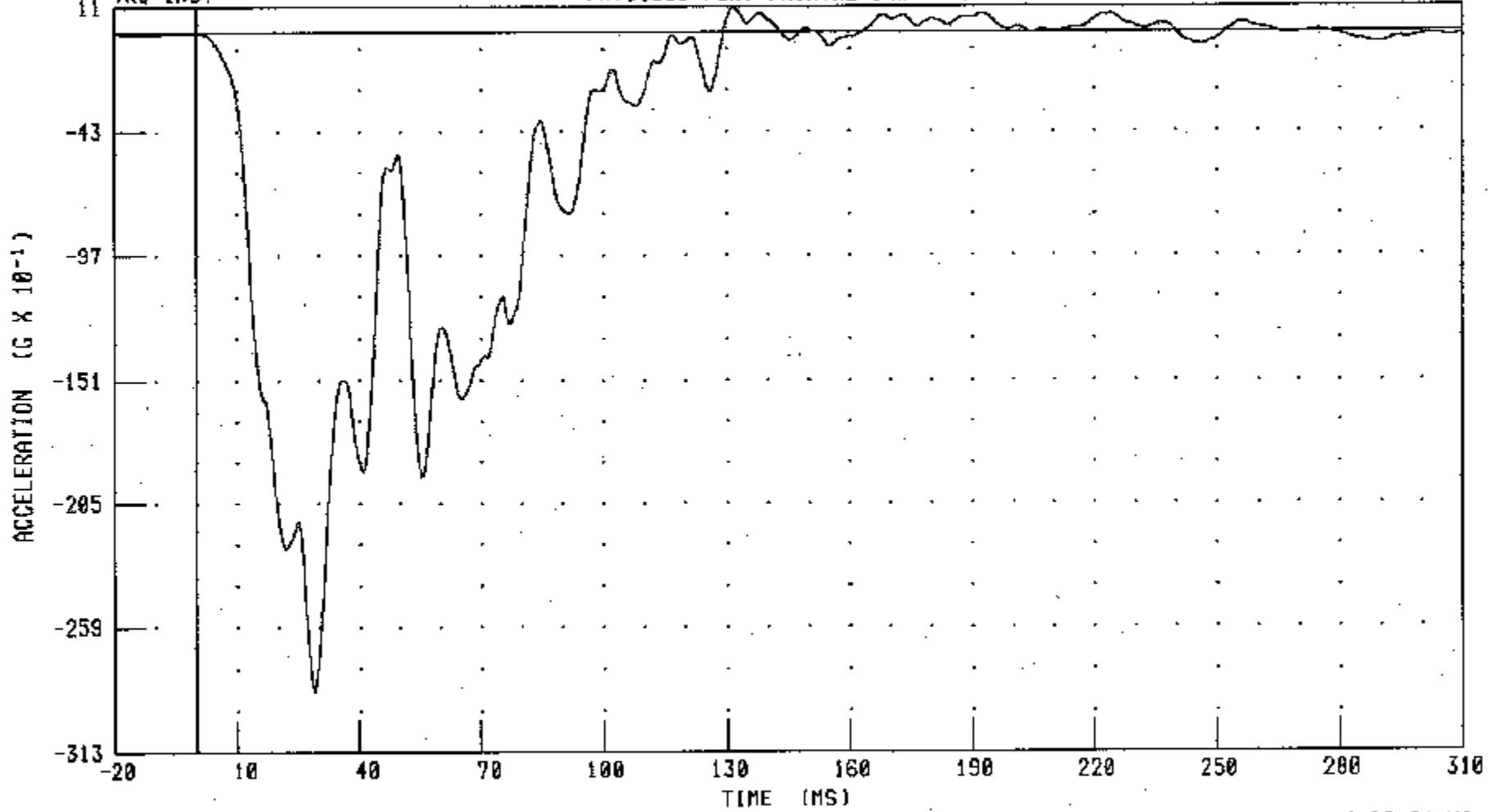
647

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: RSXXG

FILTER: CH. CLASS 60

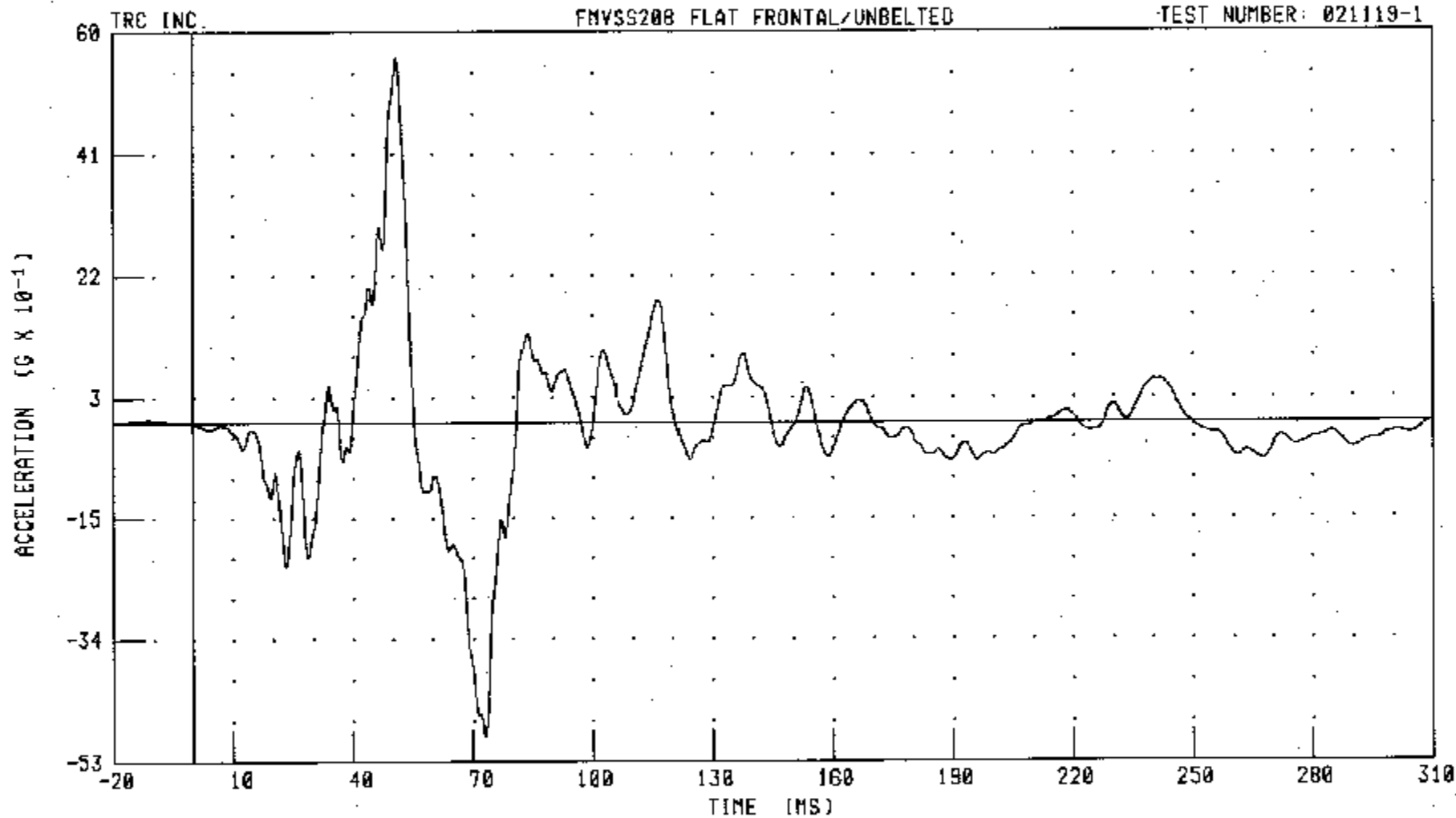
PEAK DATA: 1.06 G @ 131.68 MS; -28.64 G @ 29.04 MS

648

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: RSXYC

FILTER: CH. CLASS 00

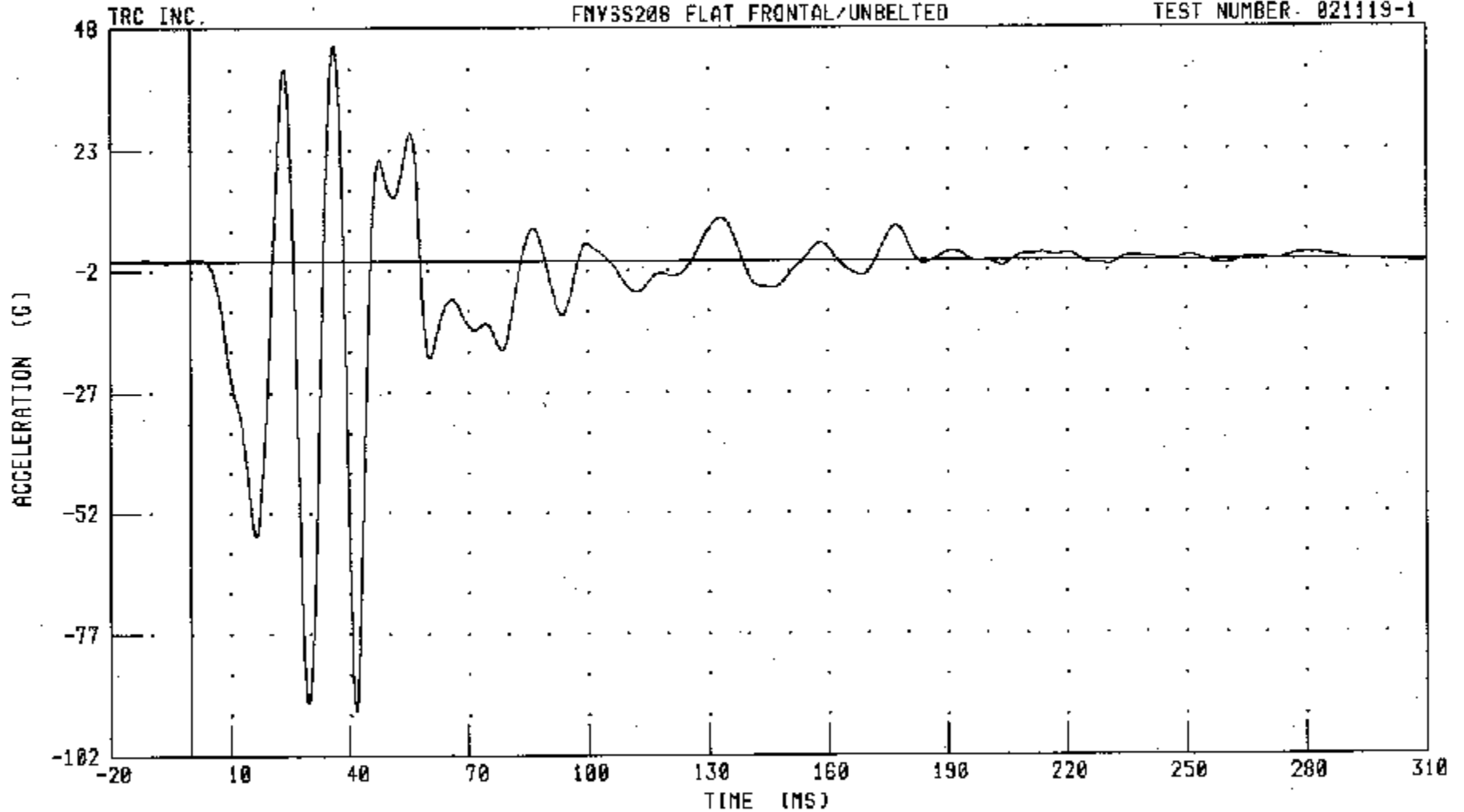
PEAK DATA: 5.72 G @ 51.04 MS; -4.91 G @ 73.12 MS

649

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
LEFT FRONT BRAKE CALIPER X-AXIS ACCELERATION
FNY3S208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: LFCXG

FILTER: CH. CLASS 60

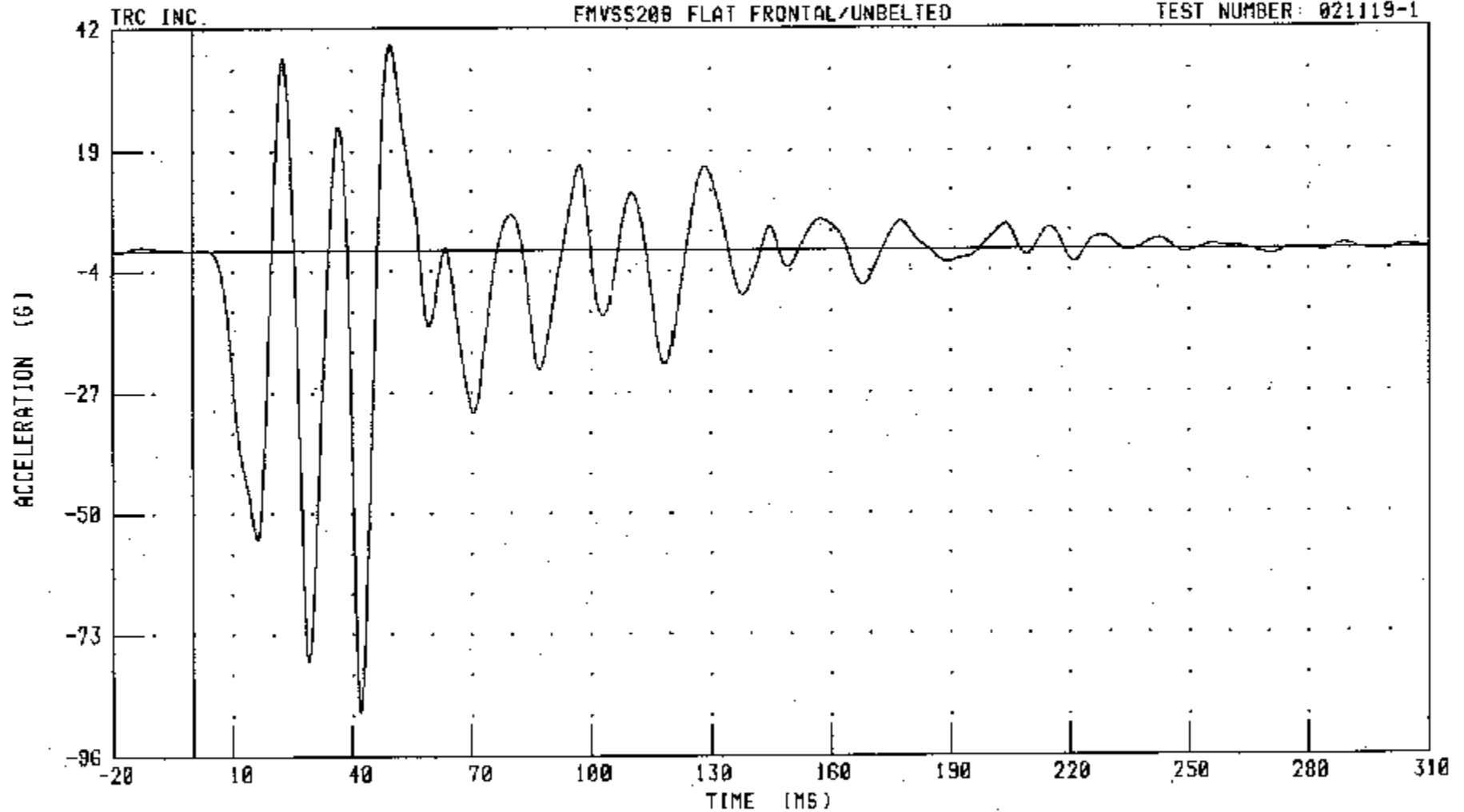
PEAK DATA: 44.44 G @ 36.16 MS; -92.98 G @ 41.68 MS

6-50

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
RIGHT FRONT BRAKE CALIPER X-AXIS ACCELERATION
FMVSS200 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: RFCXG

FILTER: CH. CLASS 60

PEAK DATA: 39.02 G @ 49.84 MS; -87.81 G @ 42.16 MS

651

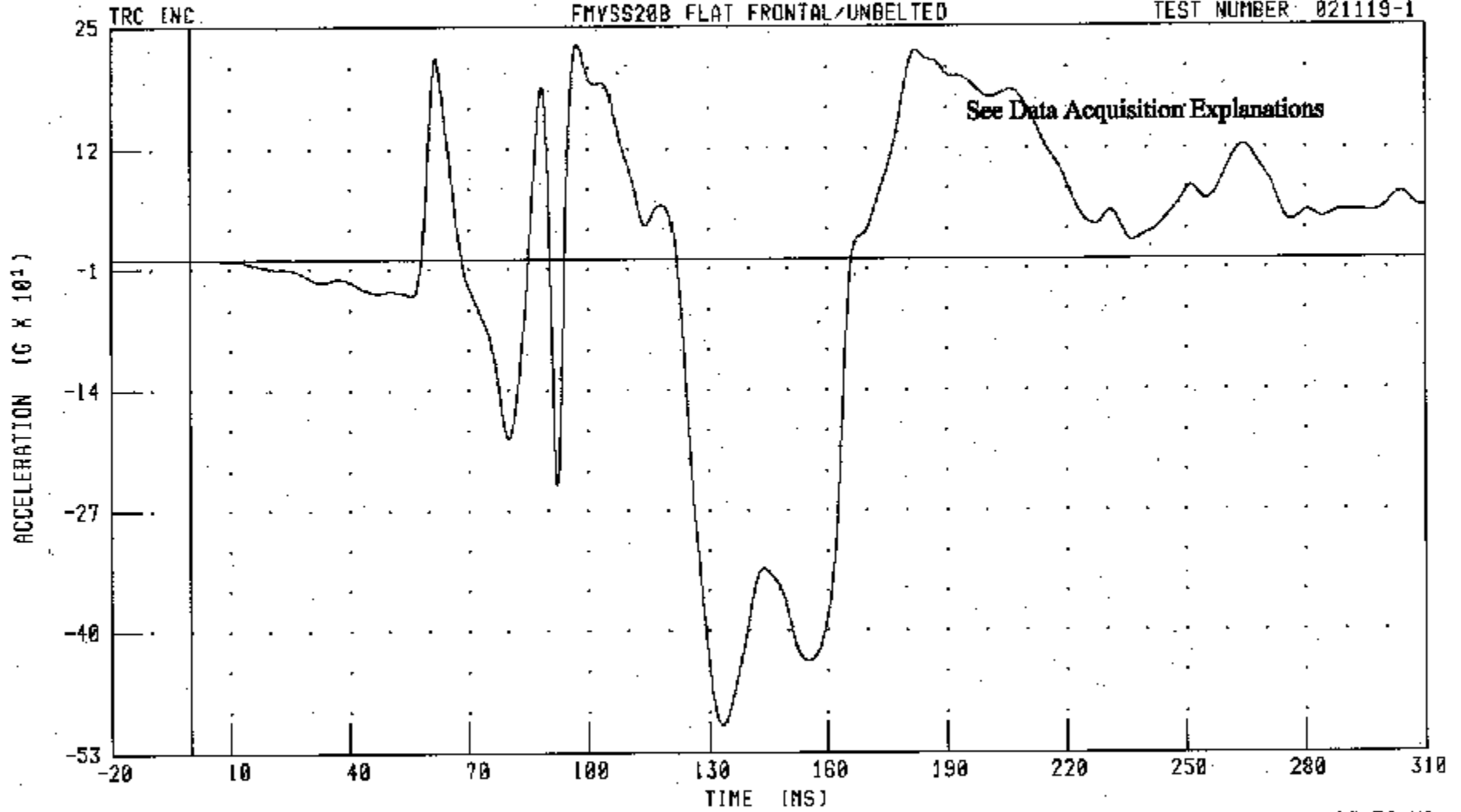
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

ENGINE TOP X-AXIS ACCELERATION

FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: TENXC

FILTER: CH. CLASS 60

PEAK DATA: 230.52 G @ 97.44 MS; -501.12 G @ 133.36 MS

6-52

021119-1

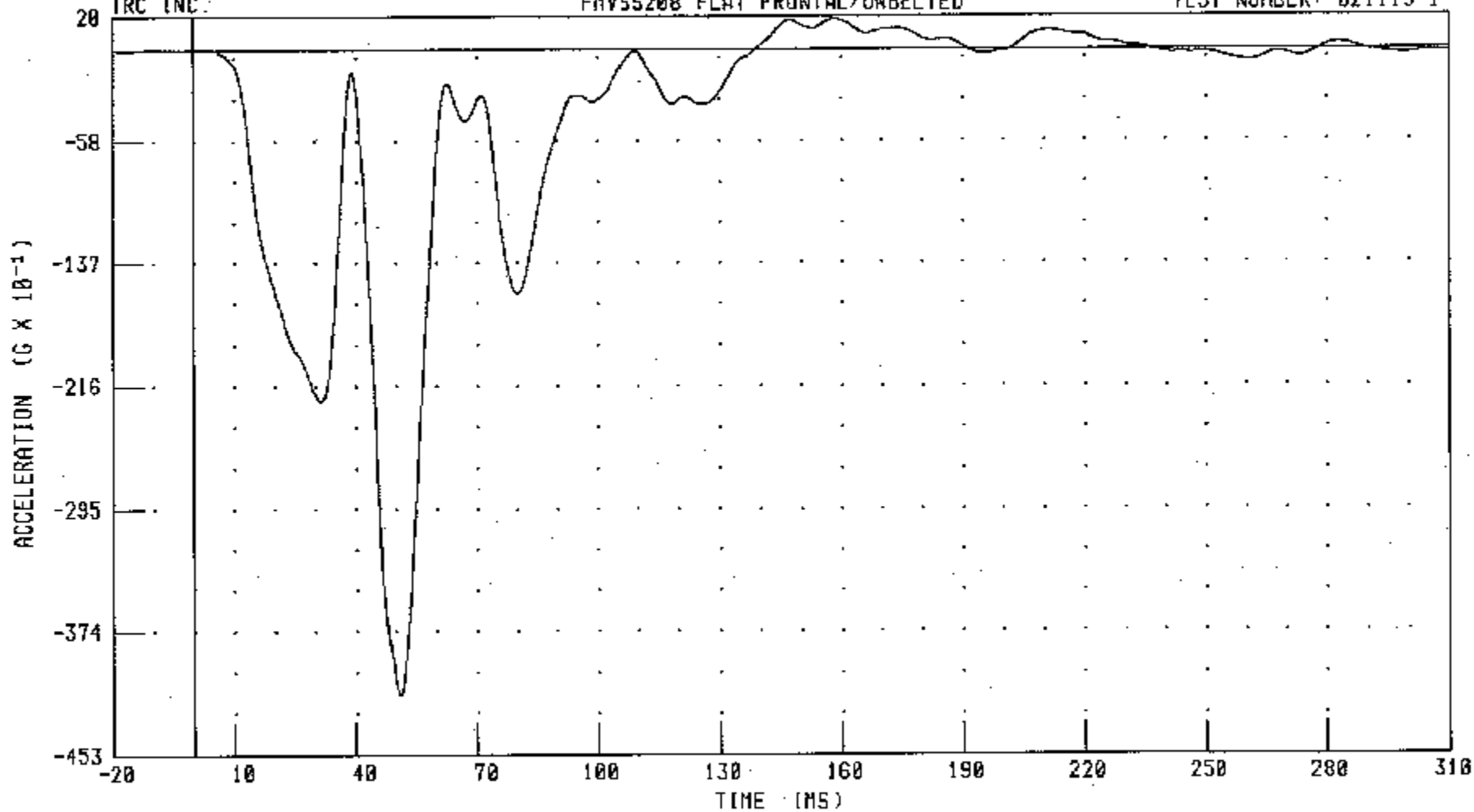
C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

ENGINE BOTTOM X-AXIS ACCELERATION

FMYSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1

TRC INC.



CHANNEL: BENXG

FILTER: CH. CLASS 60

PEAK DATA: 1.92 G @ 158.32 MS, -41.49 G @ 51.12 MS

6-53

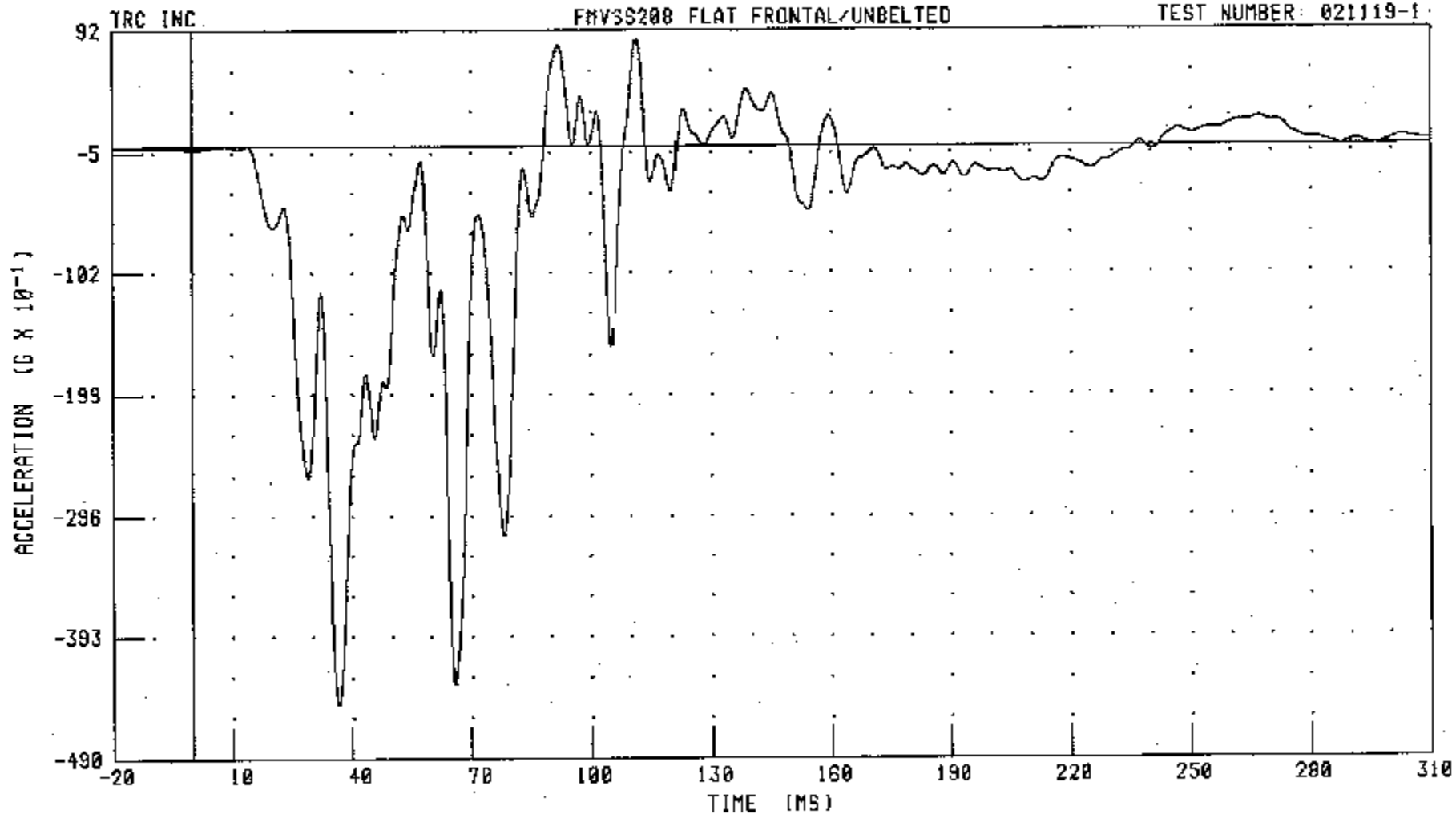
021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB

INSTRUMENT PANEL CENTERLINE X-AXIS ACCELERATION

FMY3S200 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: DPCXG

FILTER: CH. CLASS 60

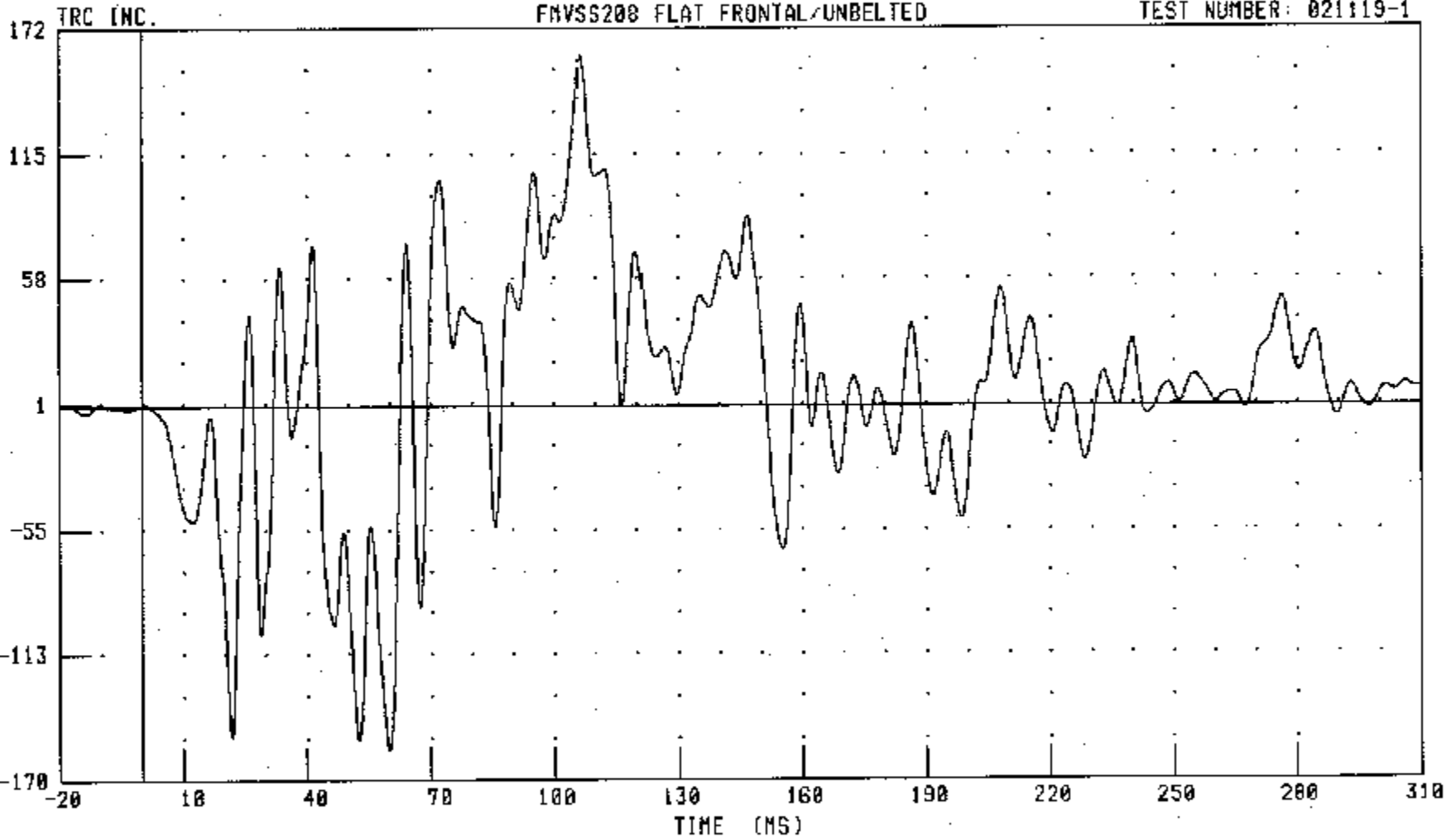
PEAK DATA: 8.43 G @ 111.68 MS, -44.63 G @ 36.00 MS

6-54

021119-1

C30102 / 2003 CHEVROLET SILVERADO 1500 2WD REGULAR CAB
REAR DECK Z-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-1



CHANNEL: RDKZC

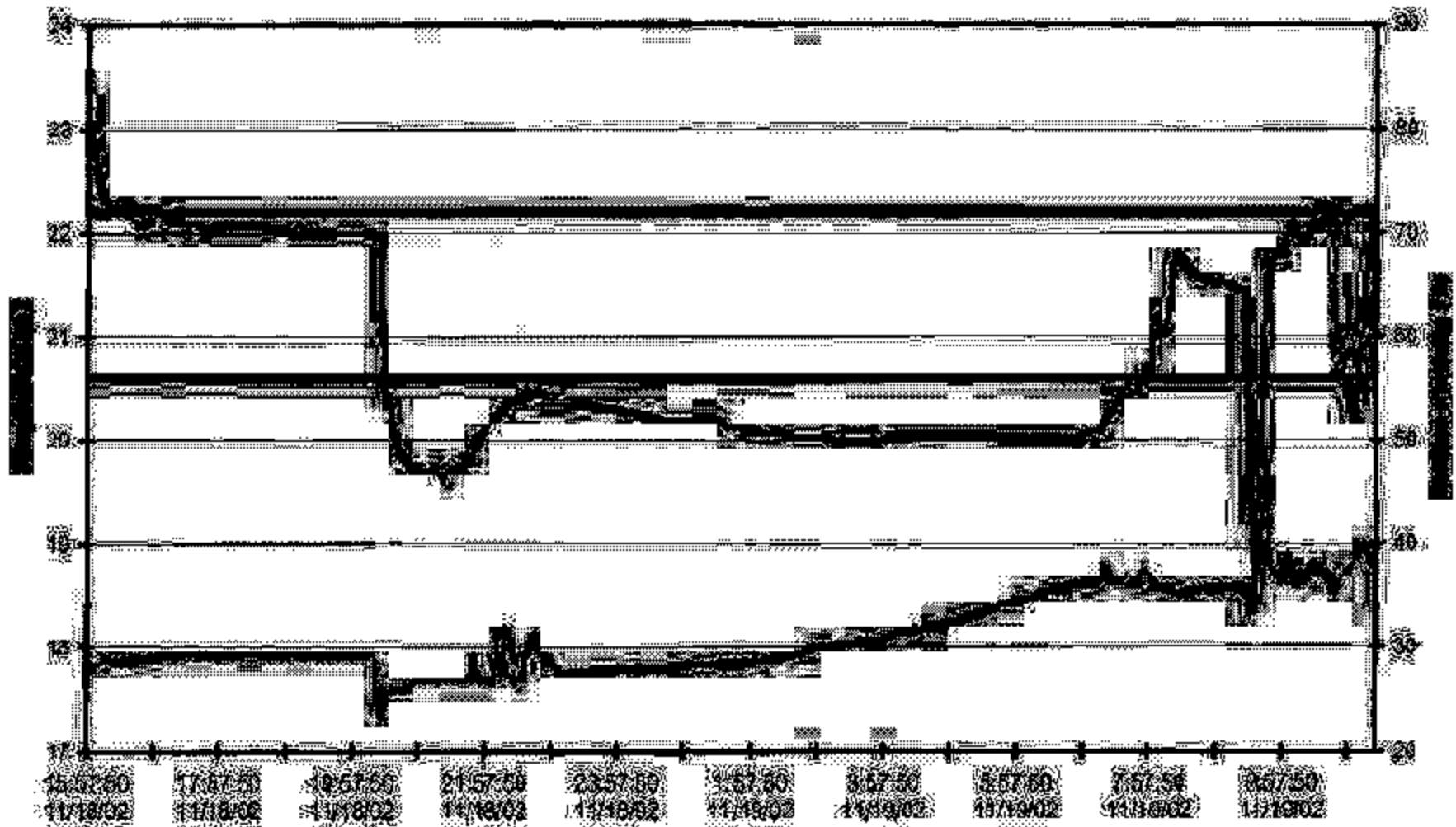
FILTER: CH. CLASS 60

PEAK DATA: 15.93 G @ 106.72 MS; -15.67 G @ 60.00 MS

6-55

021119-1

630102, 2013 Chevrolet Silverado Regular Cab 121113-1



Pre-Test Dummy Soak Time (Test Time: 11:23)

Lower and Upper Temperature Bounds Indicated with Bold Lines at 20.0°C and 23.0°C

Section 7

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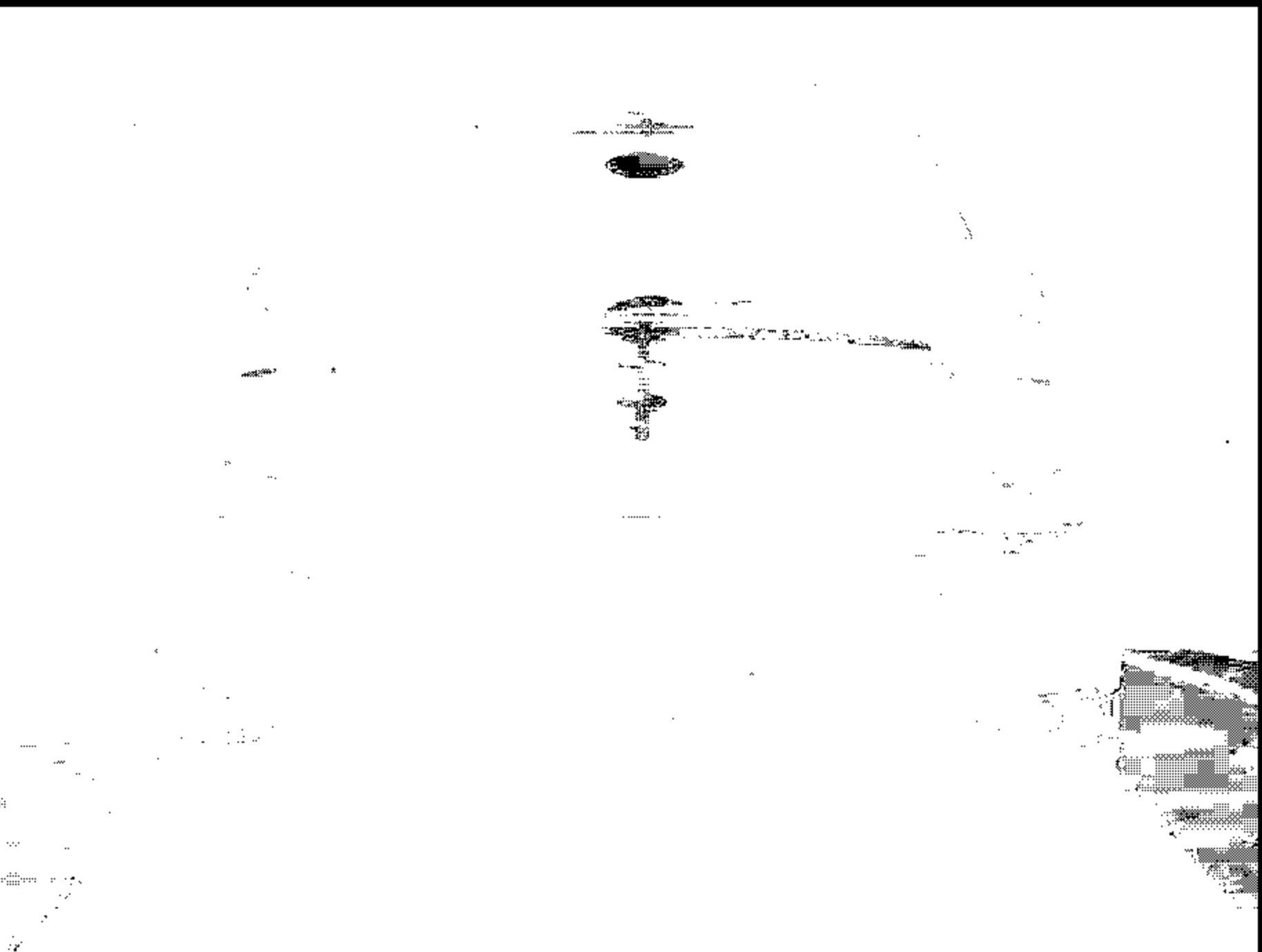


Image 1 Pre-Test Front View

7-5

021119-1

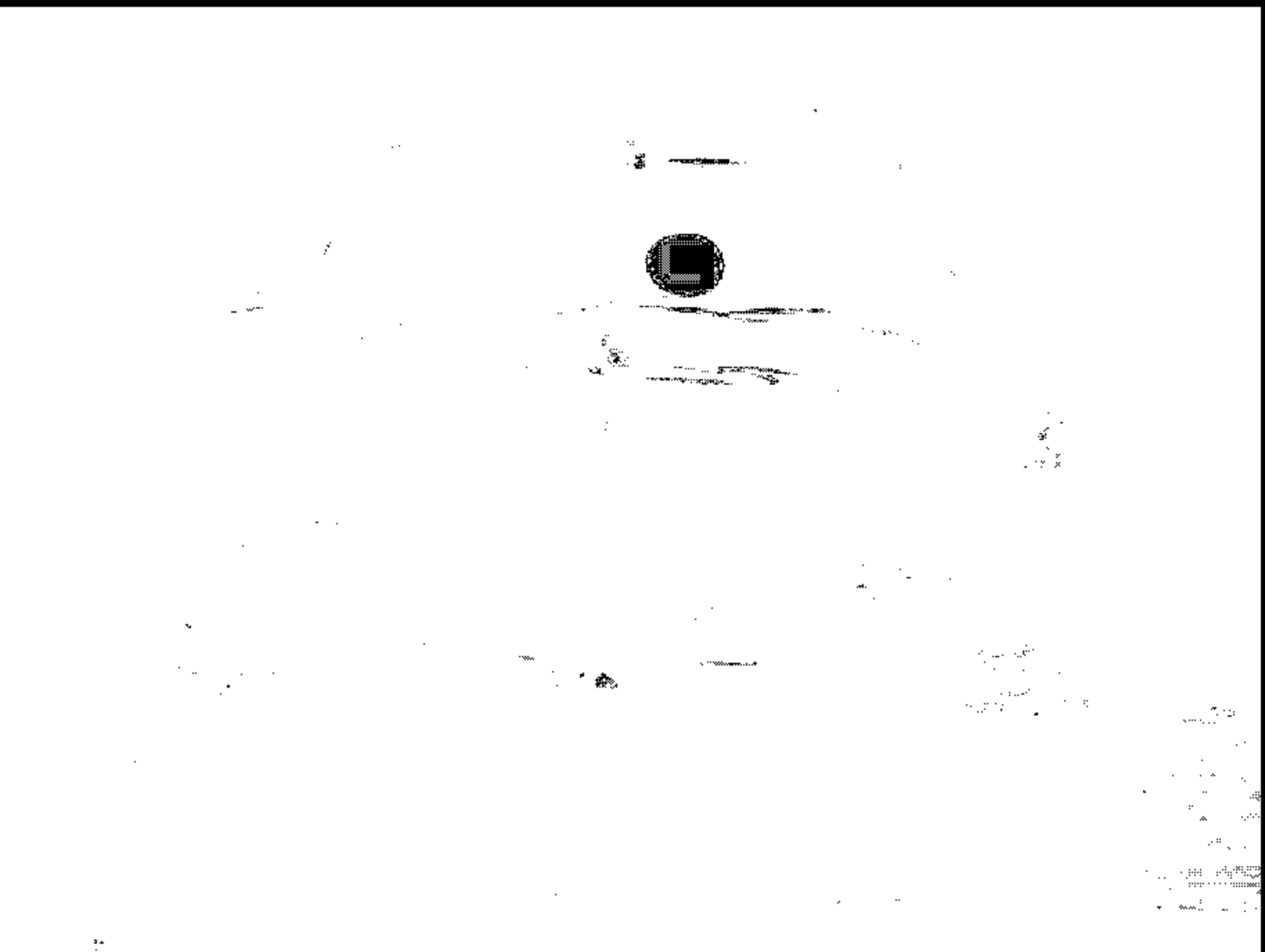


Image 2 Post-Test Front View

7-6

021119-1

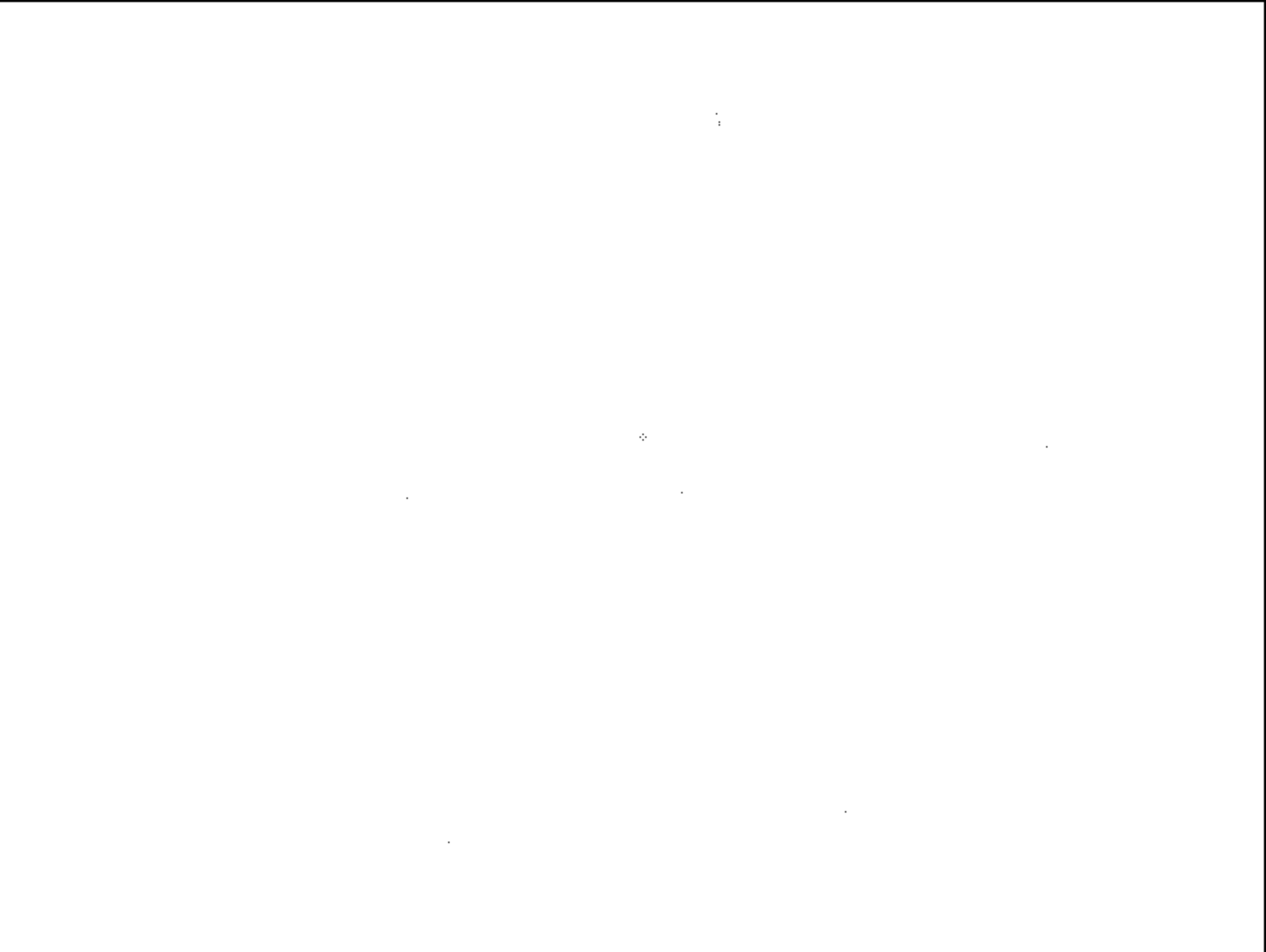


Image 3 Pre-Test Left Side View

7-7

021119-1

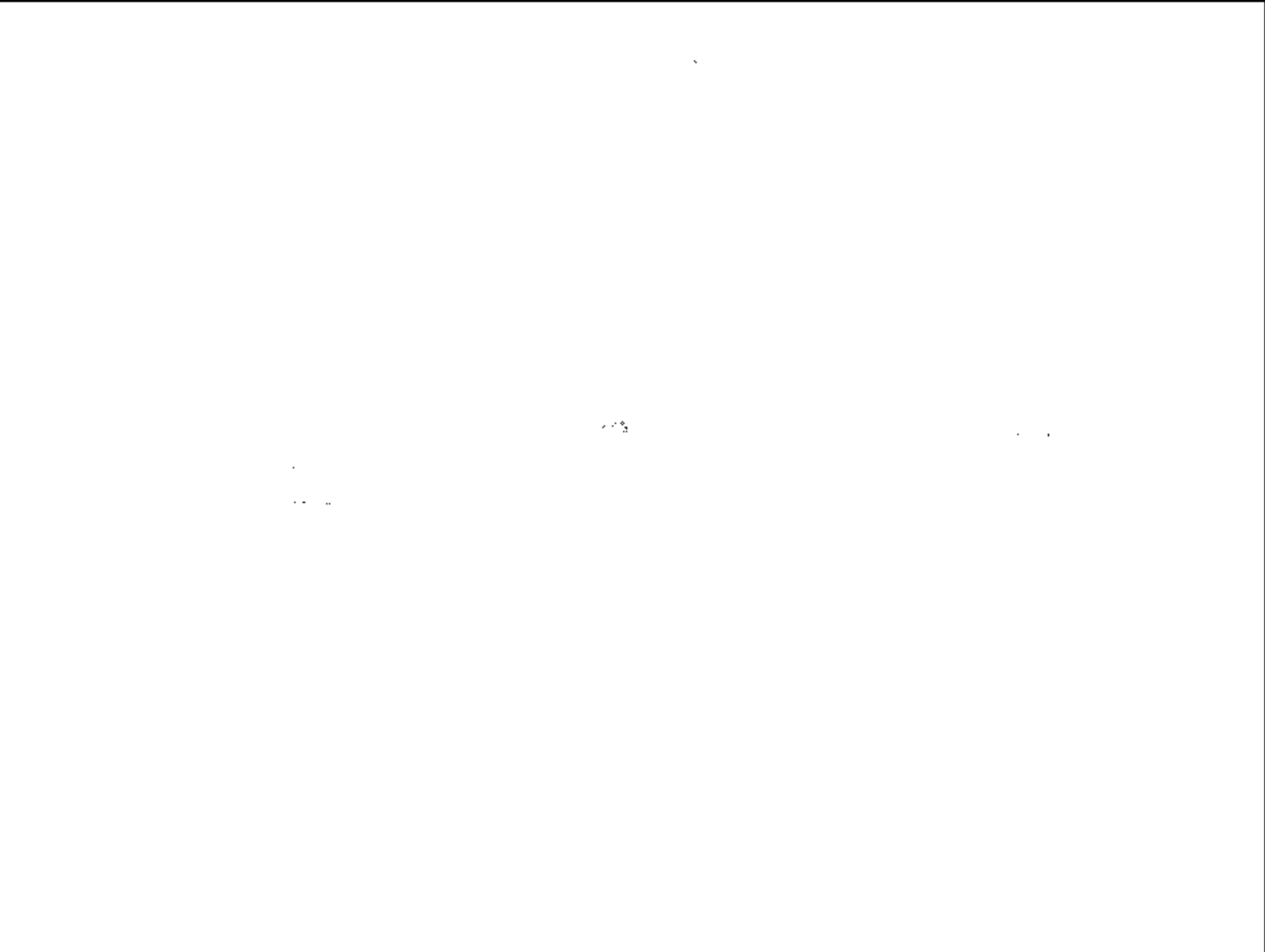


Image 4 Post-Test Left Side View

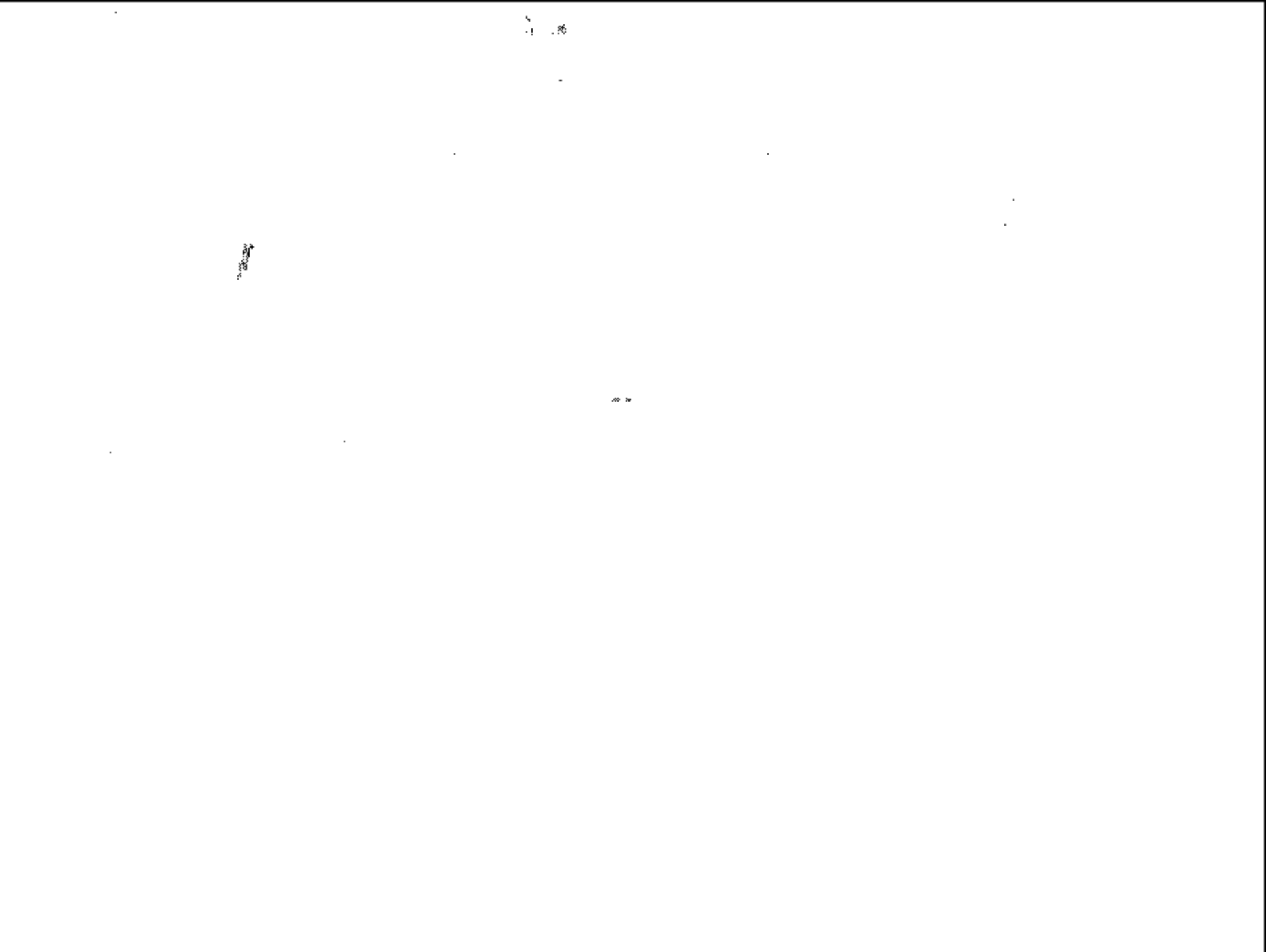


Image 5 Pre-Test Right Side View

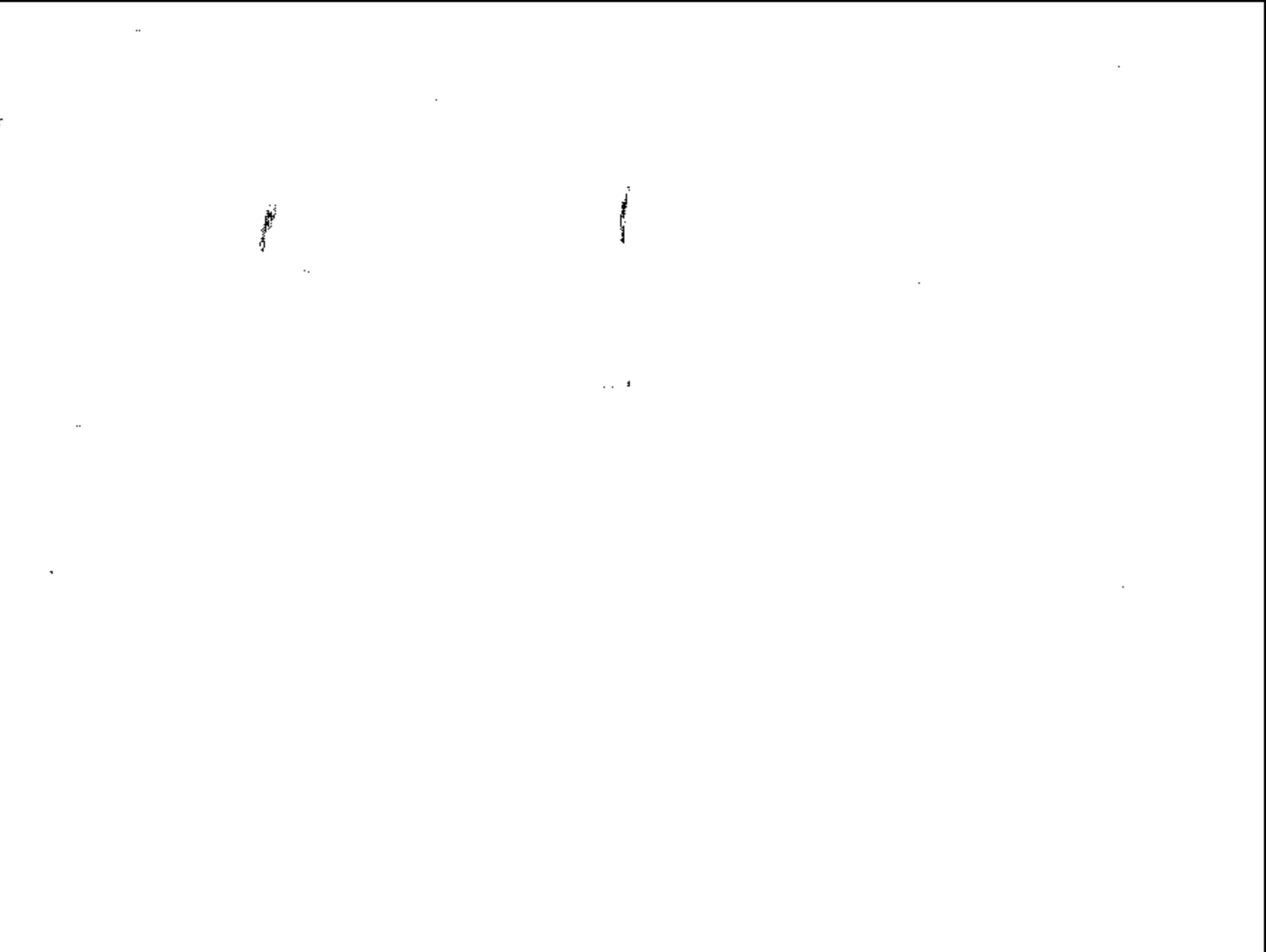


Image 6 Post-Test Right Side View

7-10

021119-1

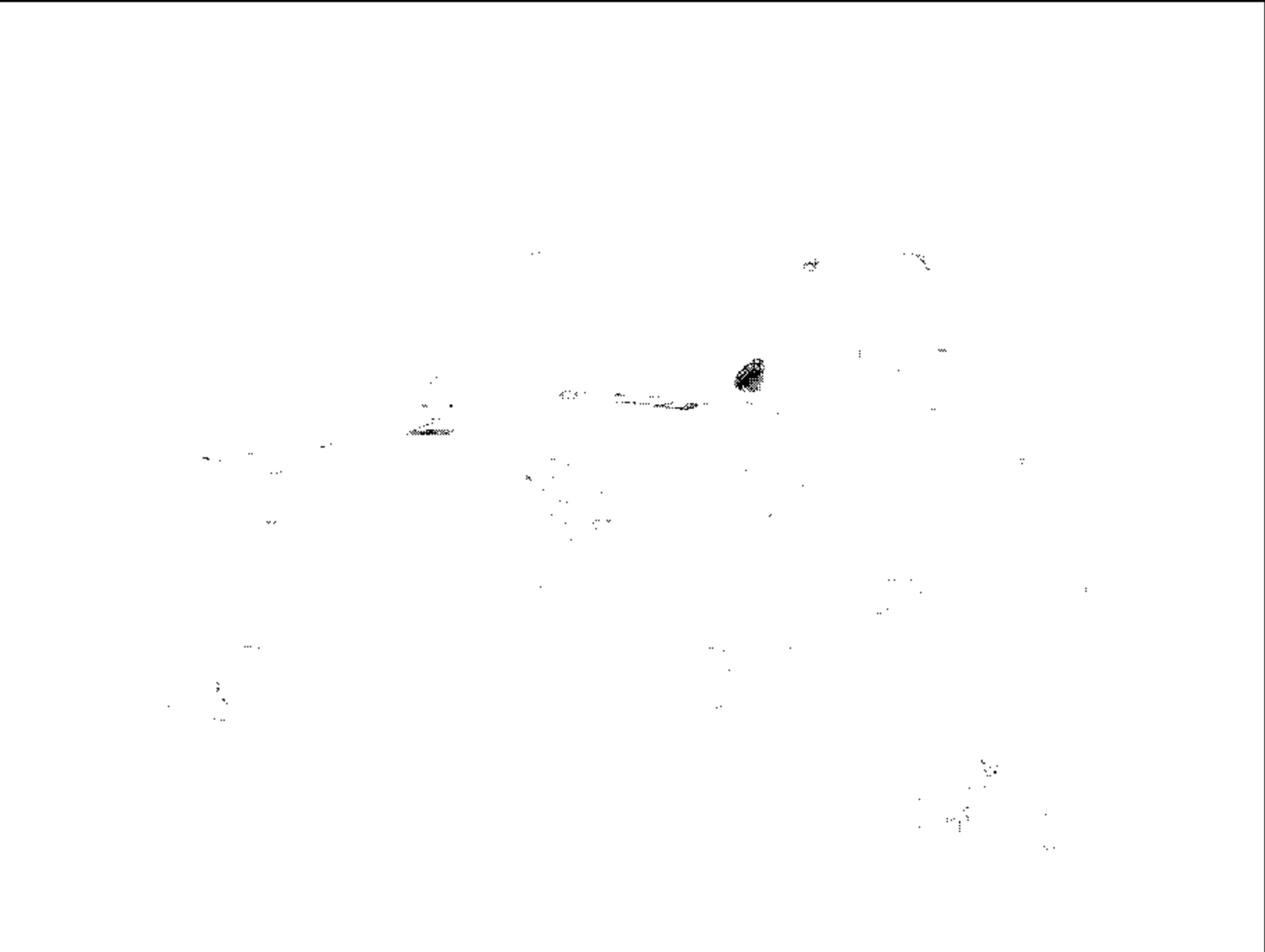


Image 7 Pre-Test Left Front Three-Quarter View



Image 8 Post-Test Left Front Three-Quarter View



Image 9 Pre-Test Right Rear Three-Quarter View

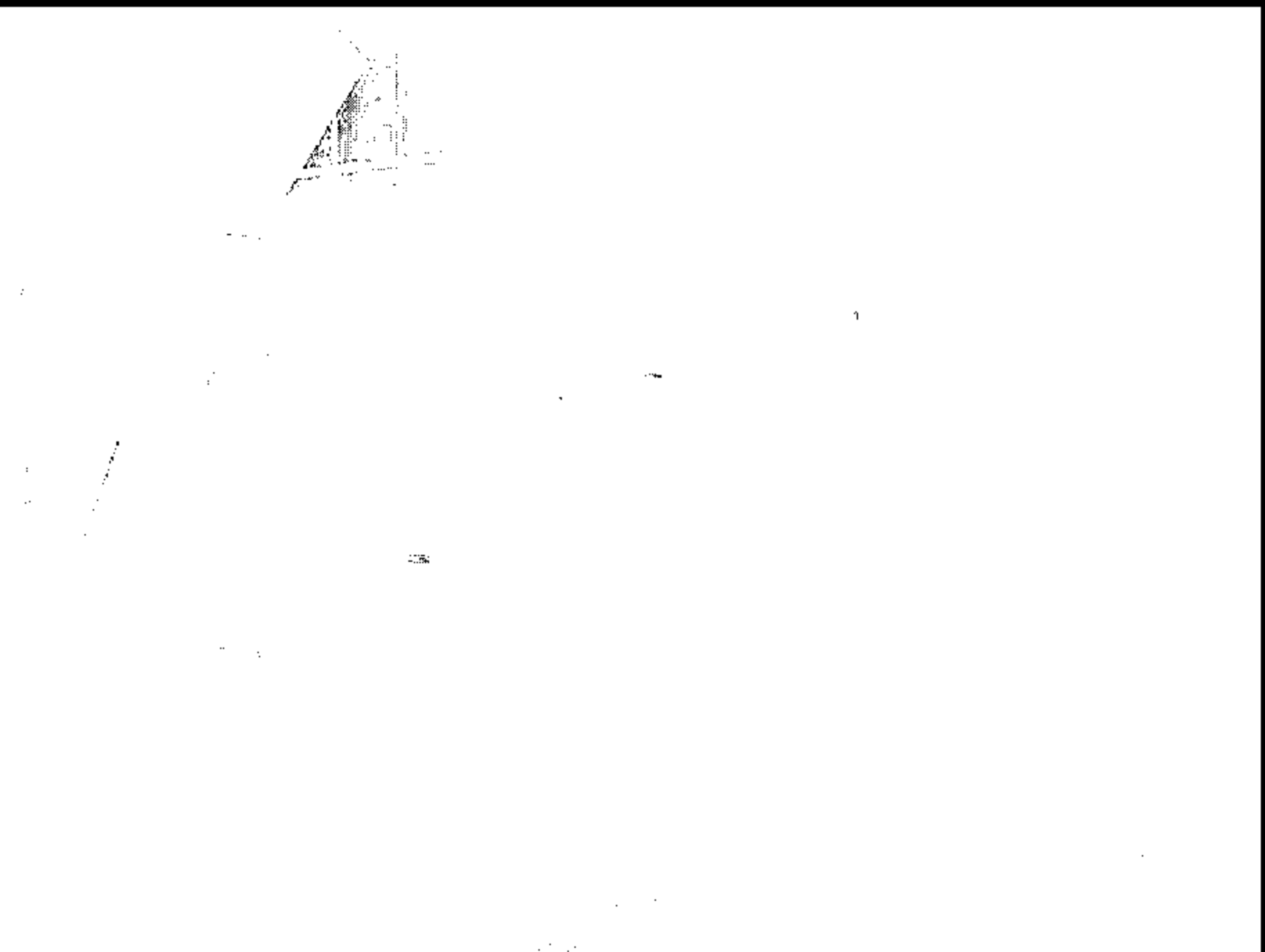


Image 10 Post-Test Right Rear Three-Quarter View



Image 11 Pre-Test Windshield View

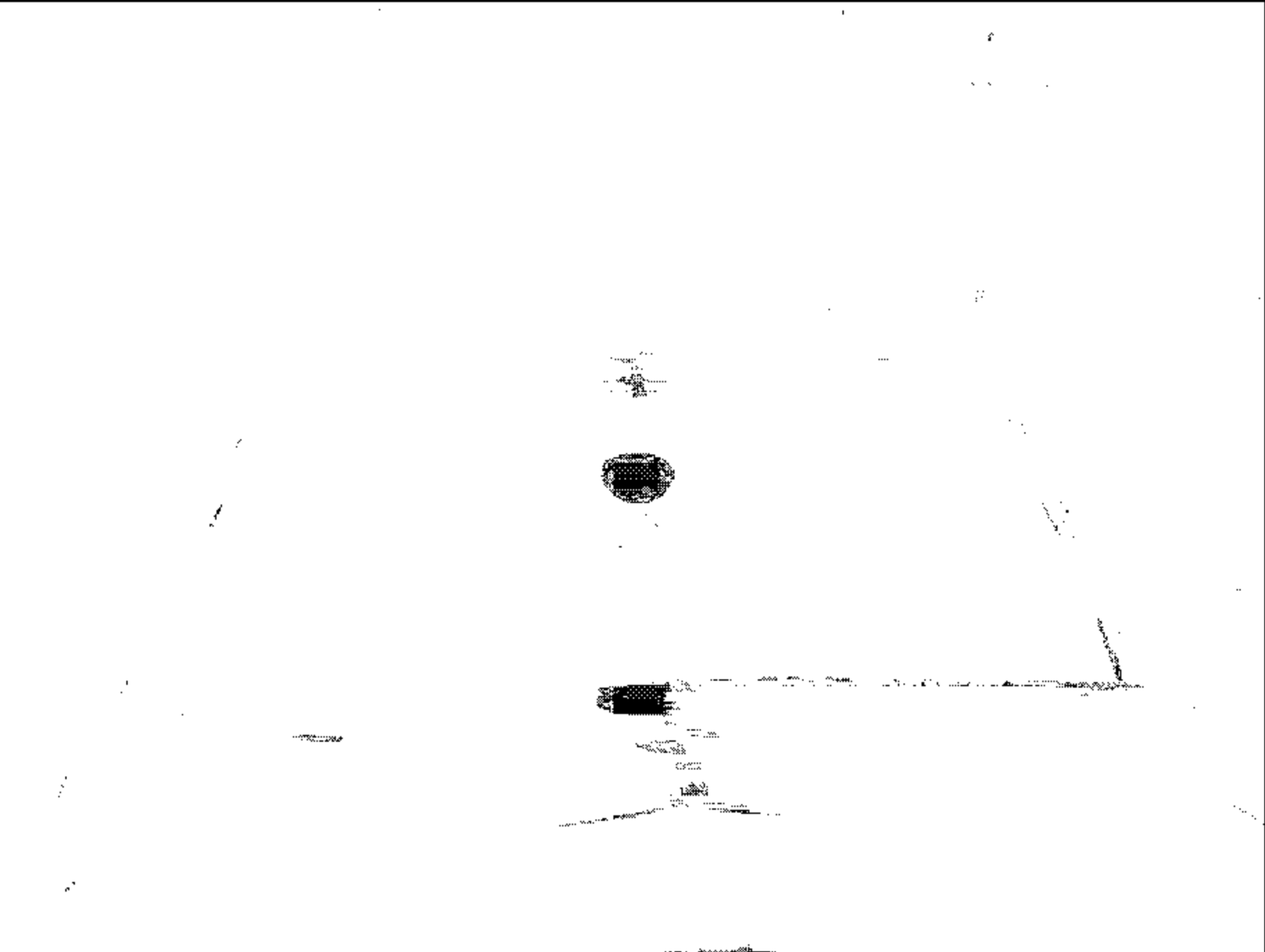


Image 12 Post-Test Windshield View



Image 13 Pre-Test Engine Compartment View



Image 14 Post-Test Engine Compartment View

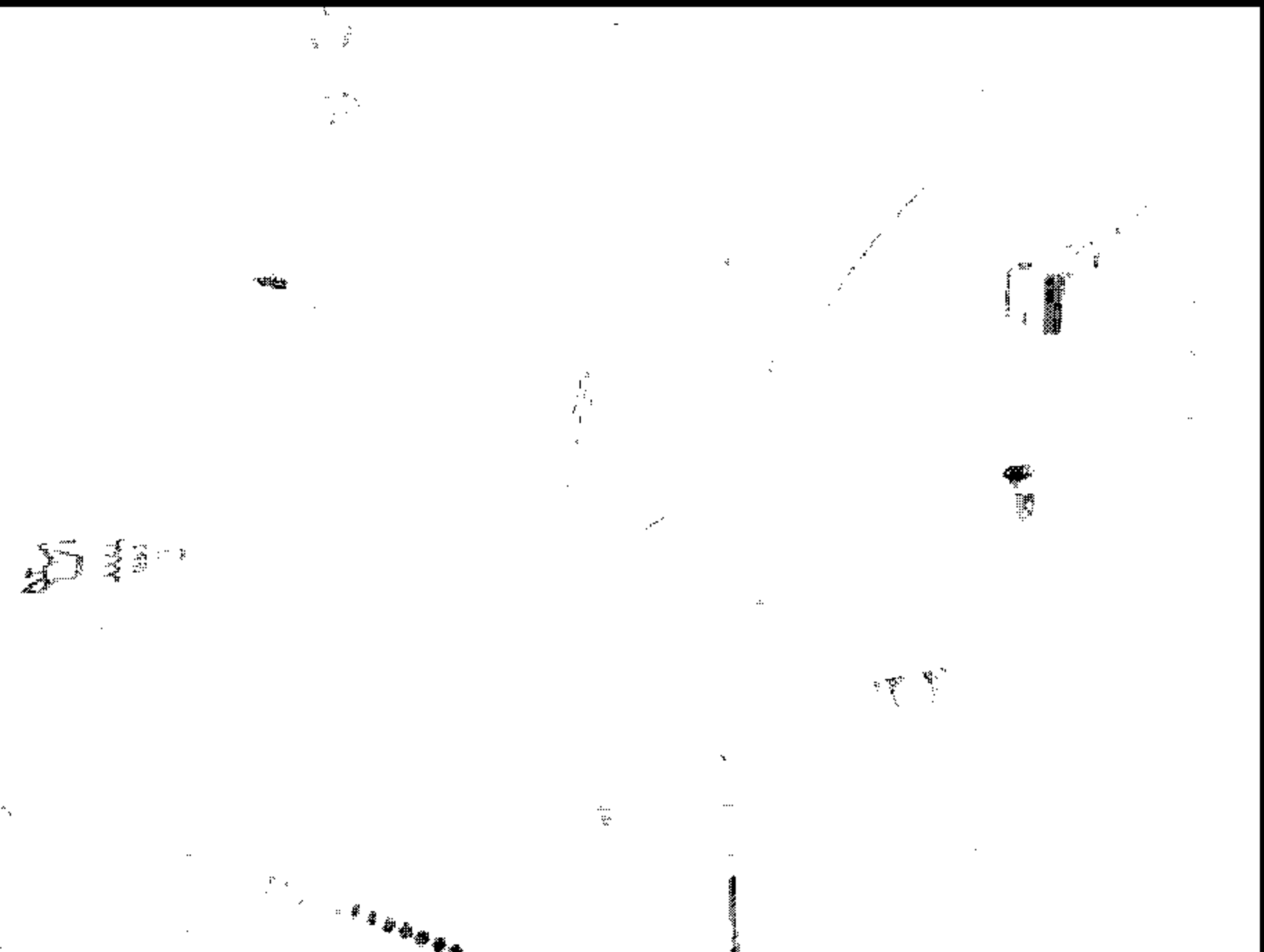


Image 15 Pre-Test Steering Column and Firewall - Under Hood View

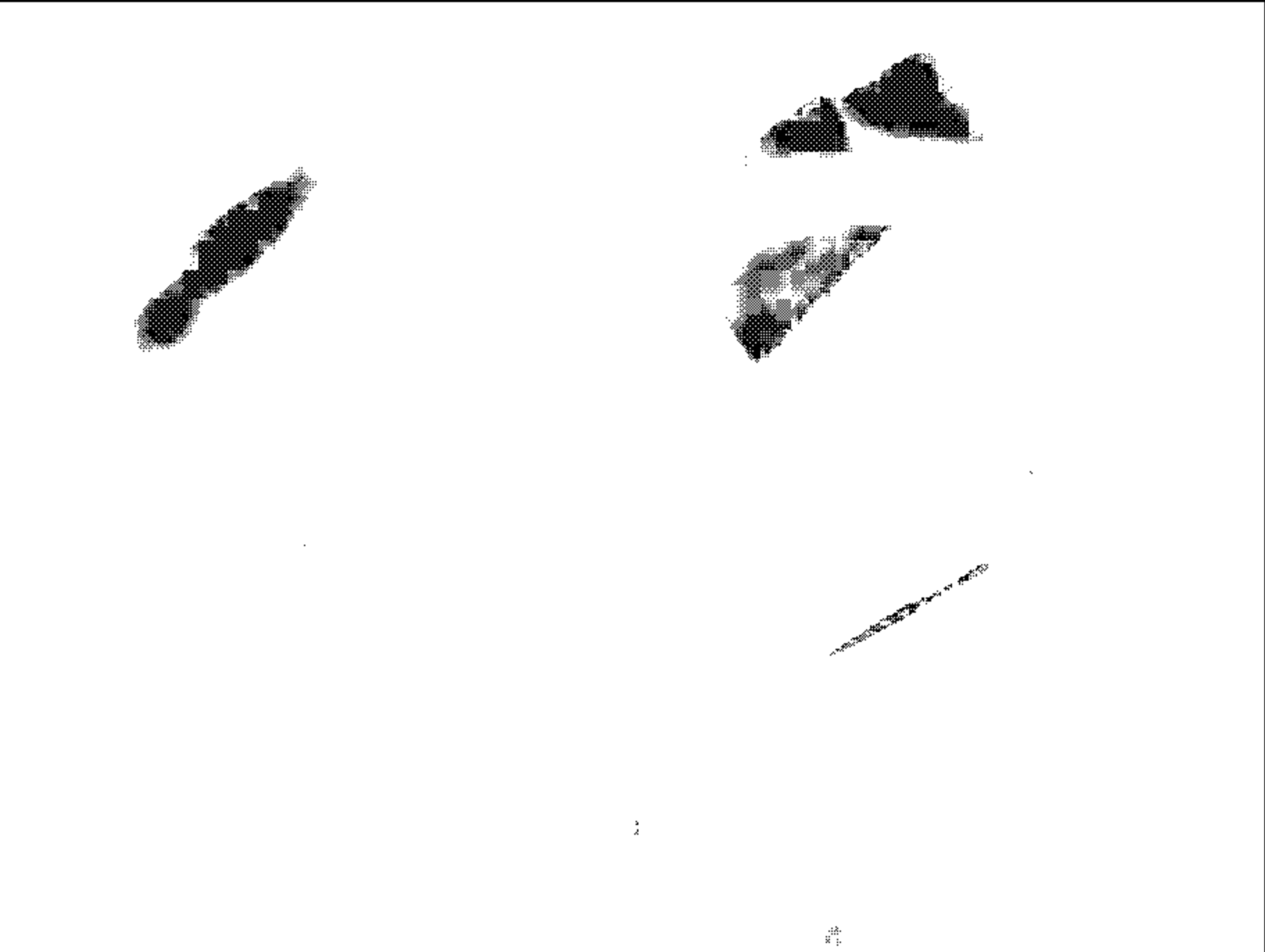


Image 16 Post-Test Steering Column and Firewall - Under Hood View

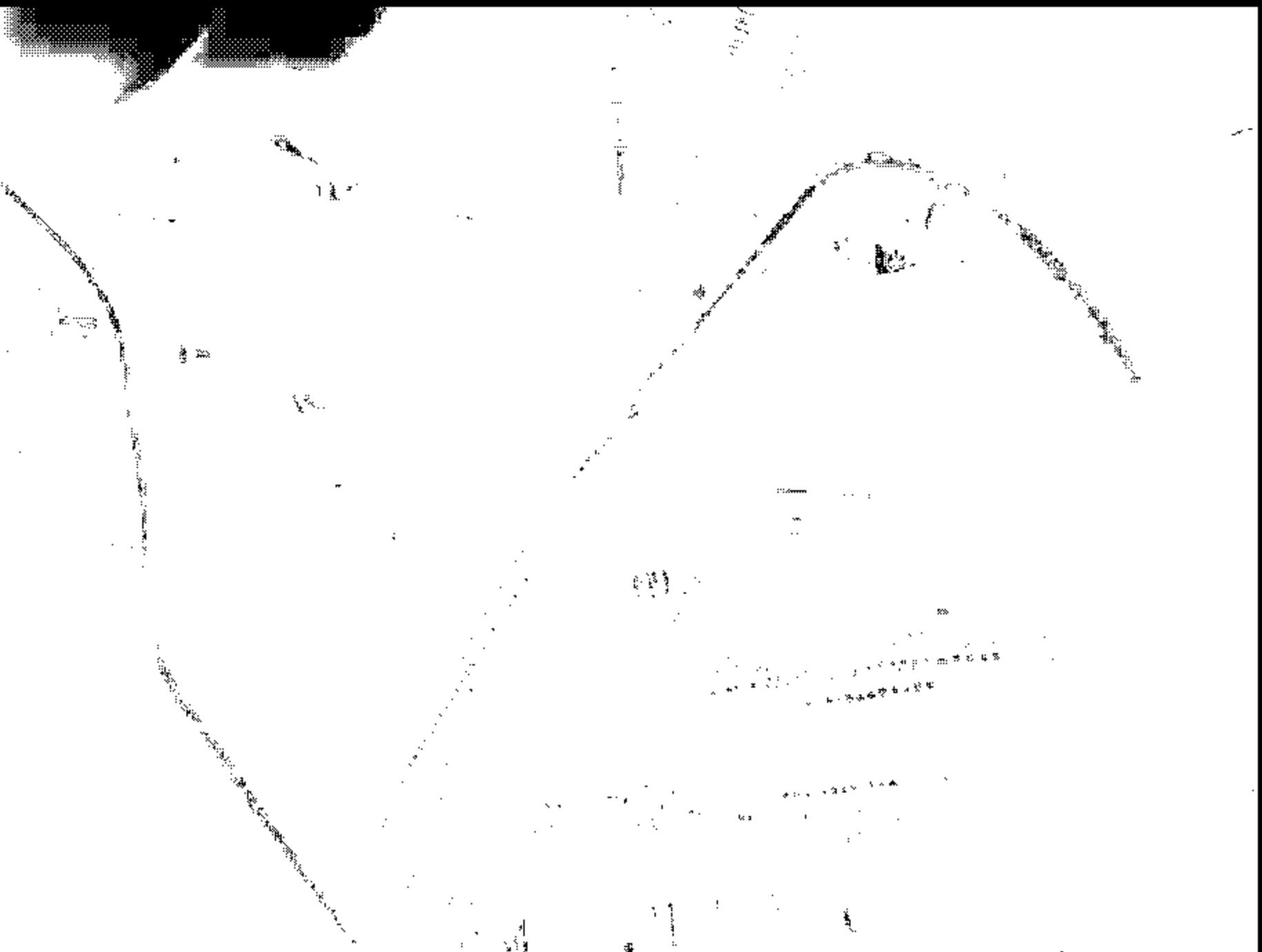


Image 17 Pre-Test Steering Column and Steering Box View



Image 18 Post-Test Steering Column and Steering Box View



Image 19 Pre-Test Steering Column and Firewall - Interior View



Image 20 Post-Test Steering Column and Firewall - Interior View

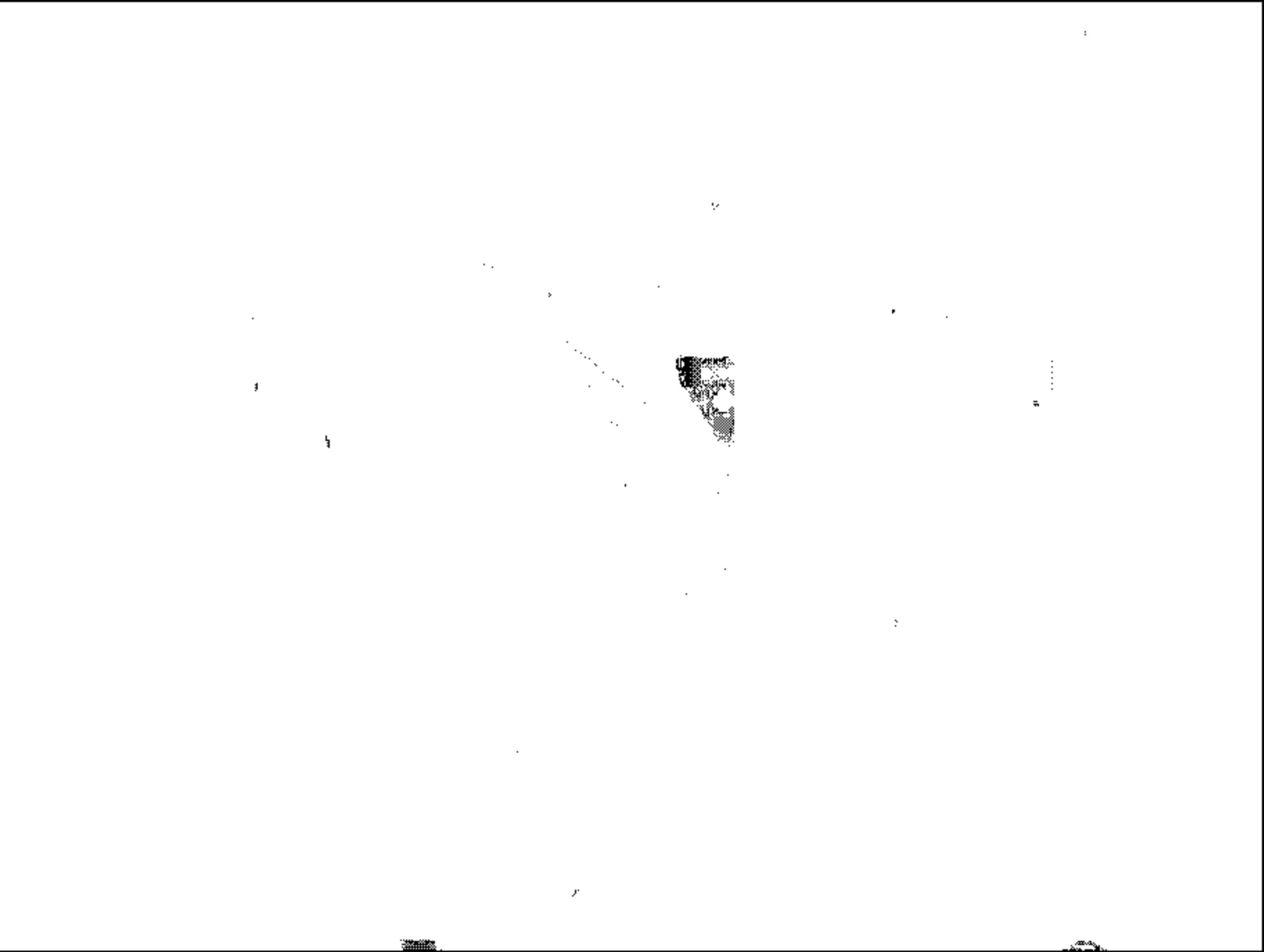


Image 21 Pre-Test Front Underbody View

7-25

021119-1

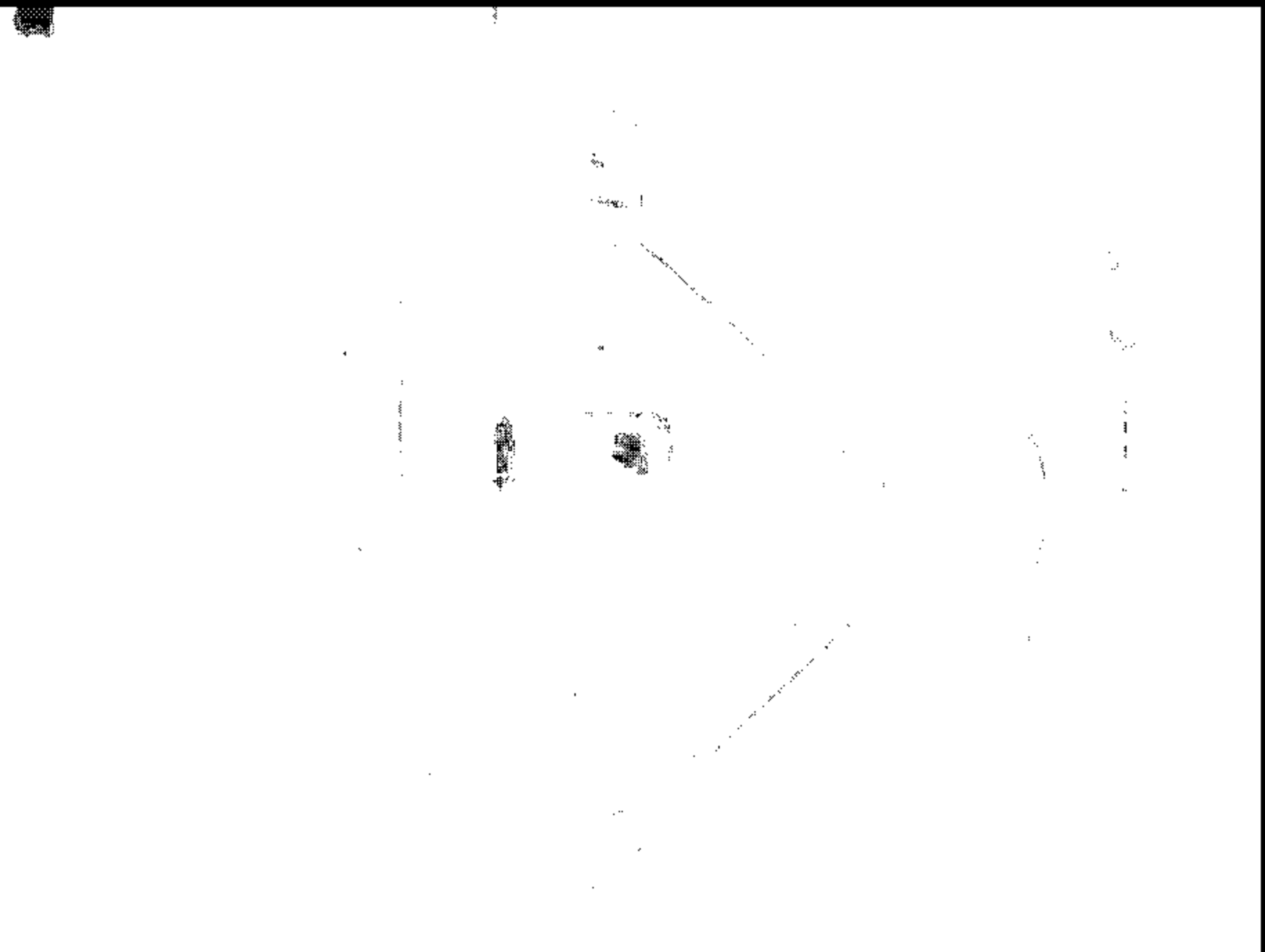


Image 22 Post-Test Front Underbody View

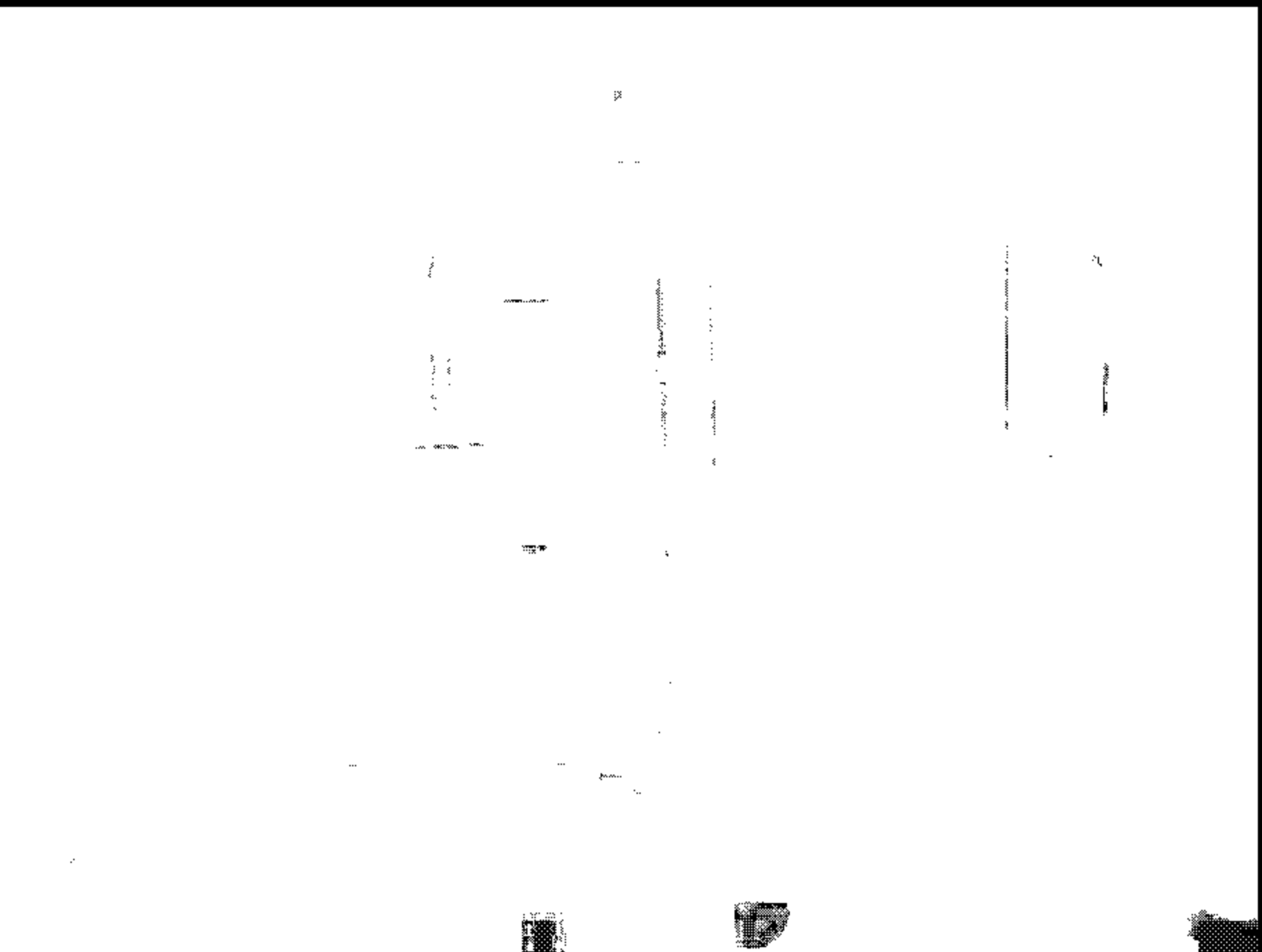


Image 23 Pre-Test Mid Underbody View

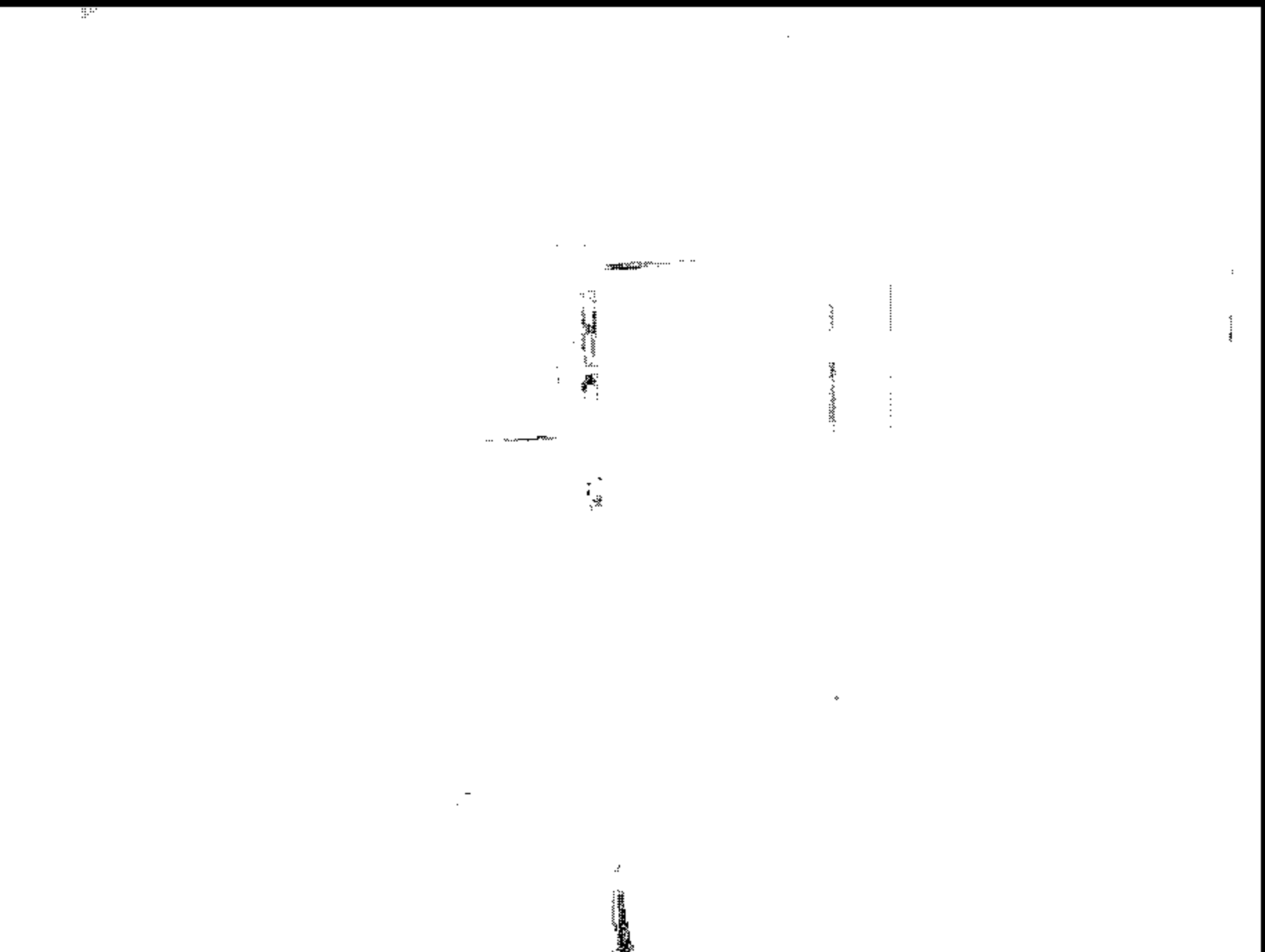


Image 24 Post-Test Mid Underbody View

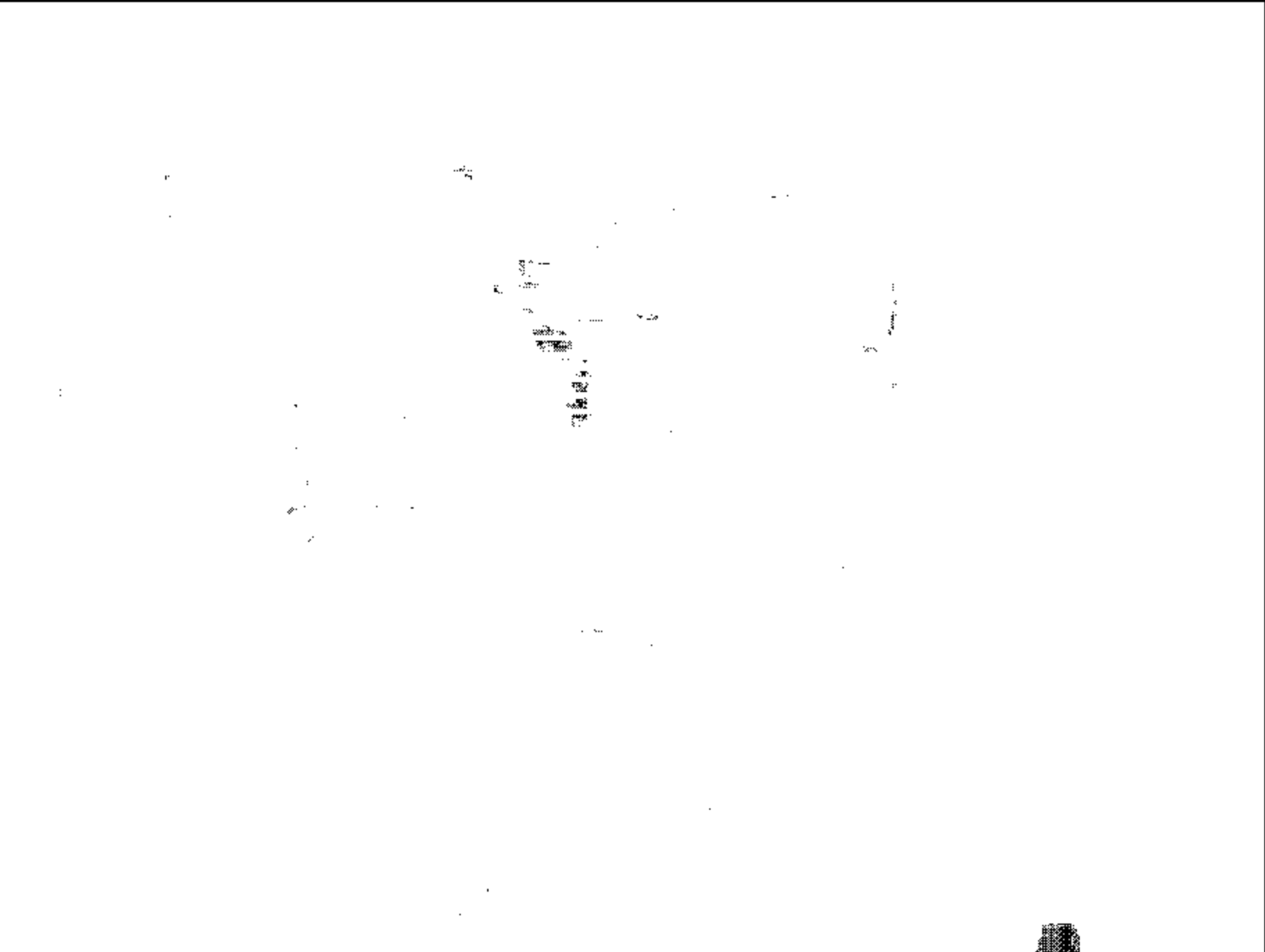


Image 25 Pre-Test Rear Underbody View



Image 26 Post-Test Rear Underbody View

7-30

021119-1

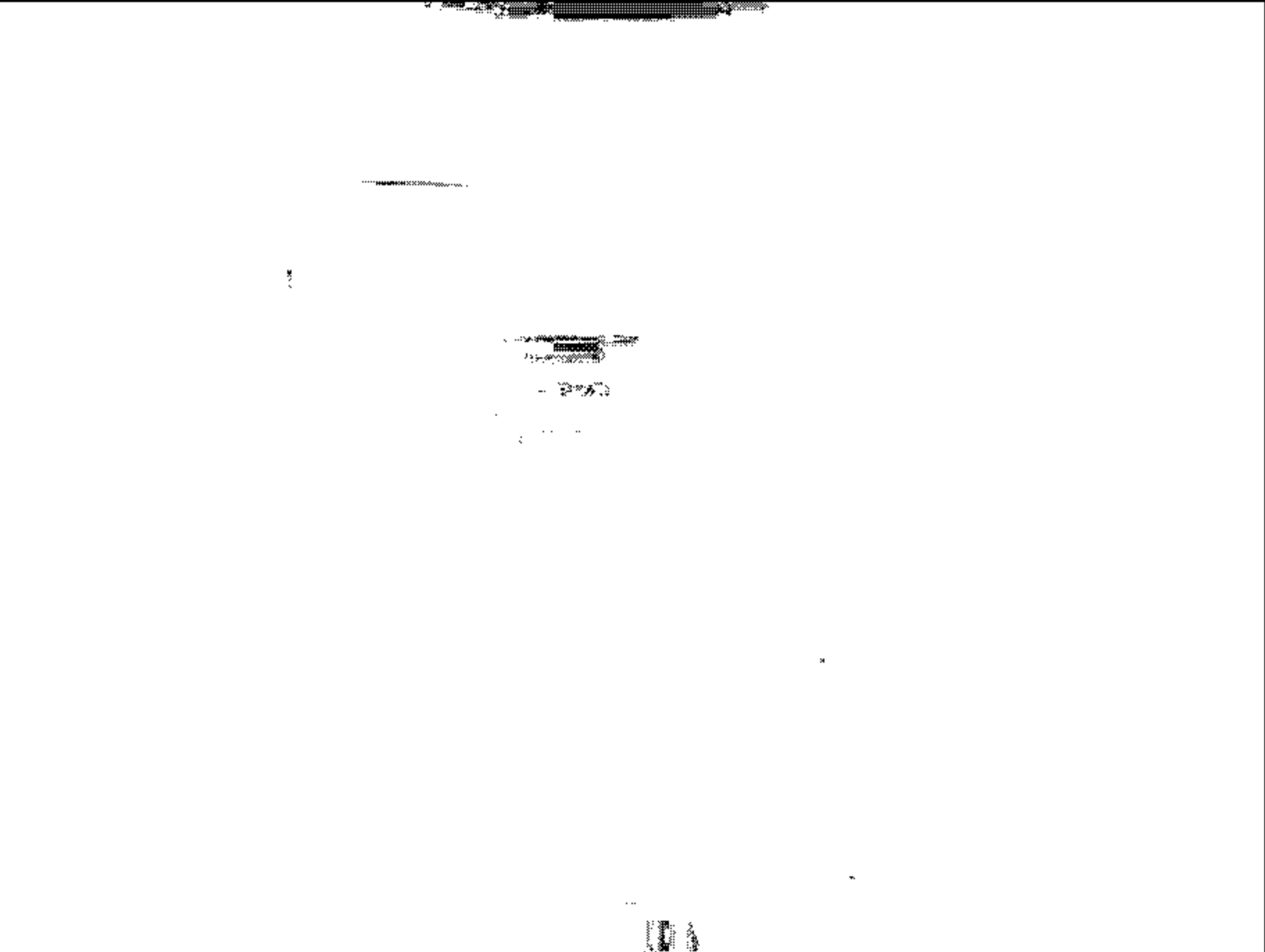


Image 27 Pre-Test Fuel Tank View

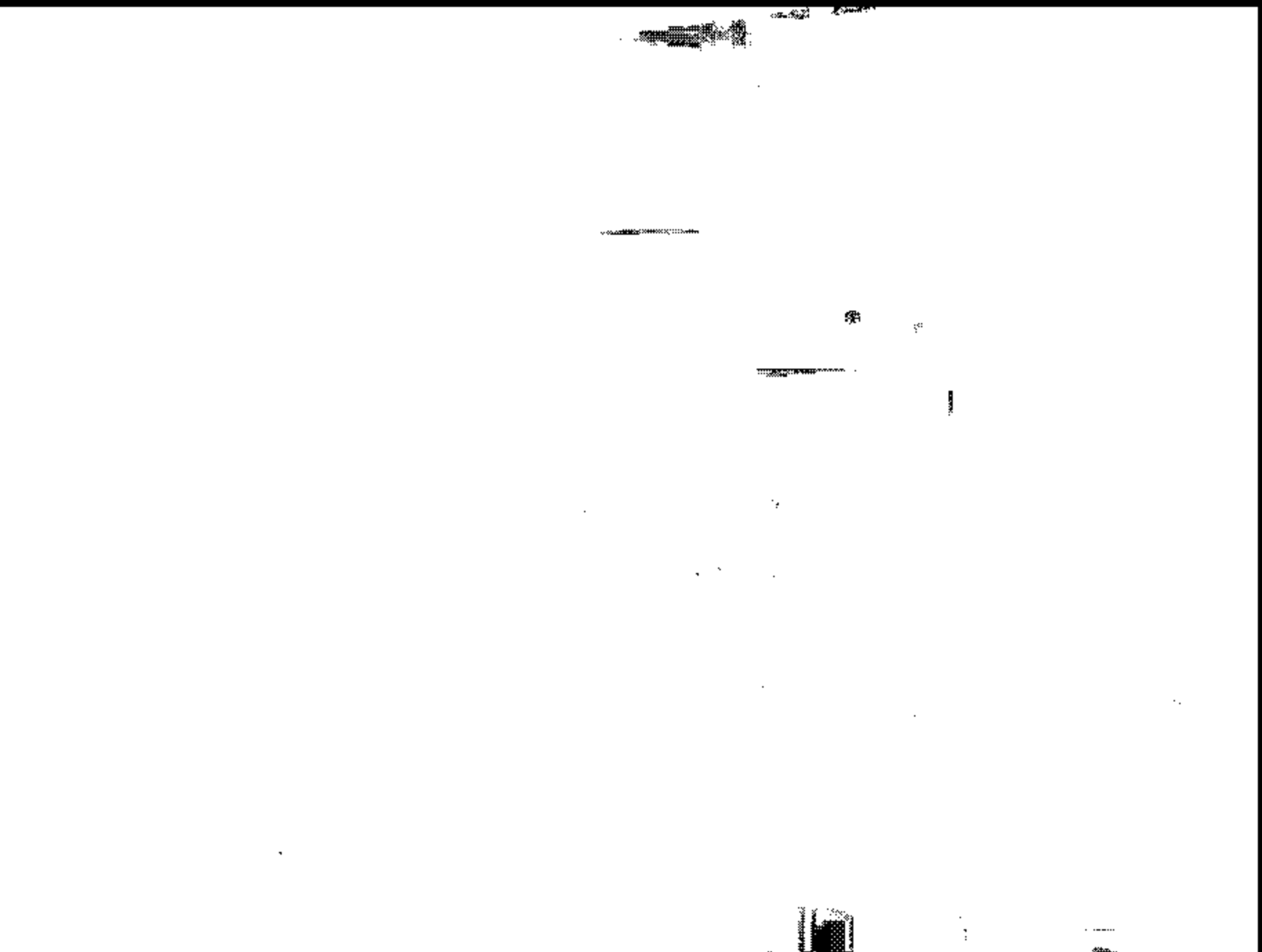


Image 28 Post-Test Fuel Tank View

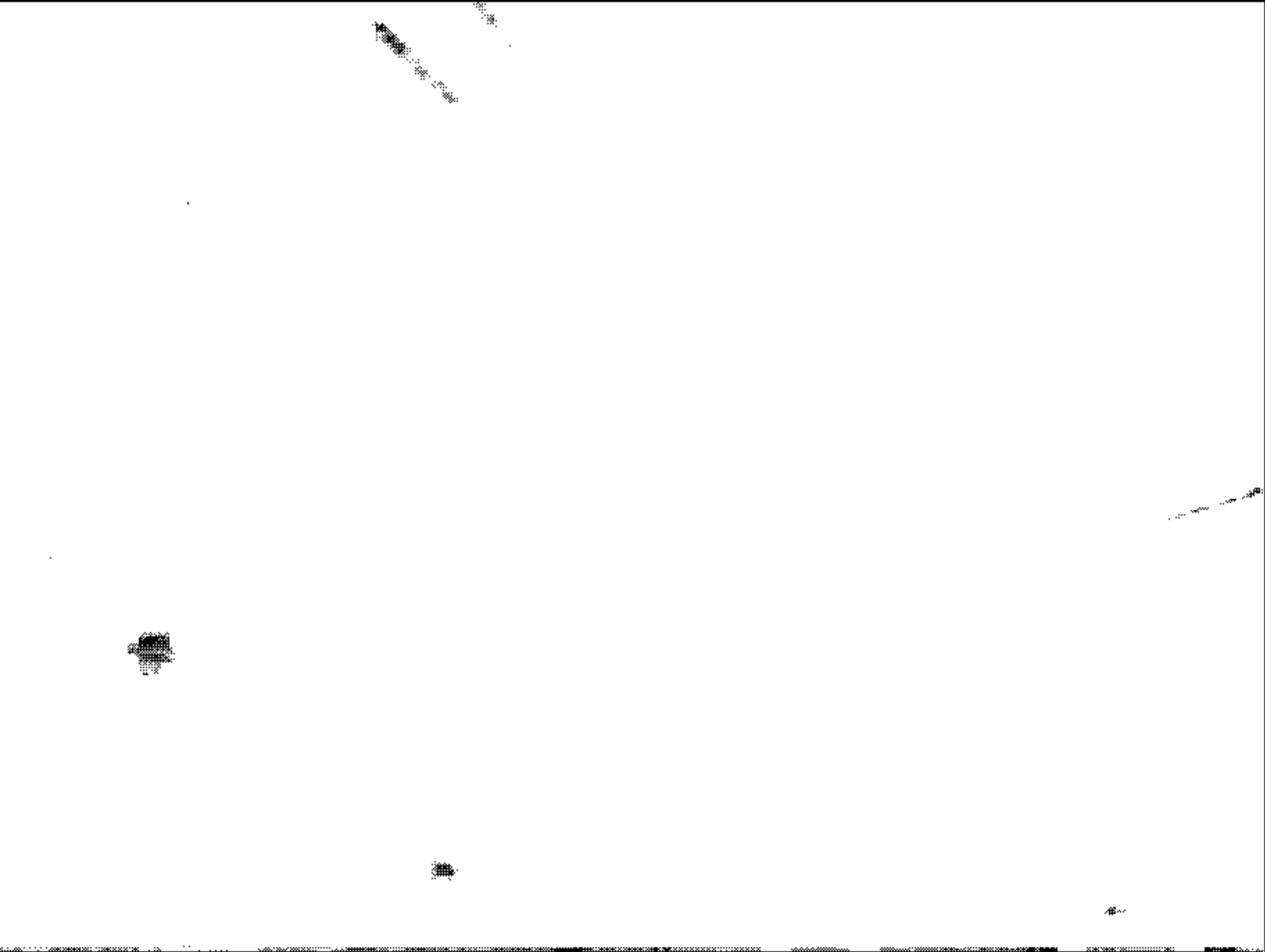


Image 29 Pre-Test Fuel Lines and Filter View



Image 30 Post-Test Fuel Lines and Filter View

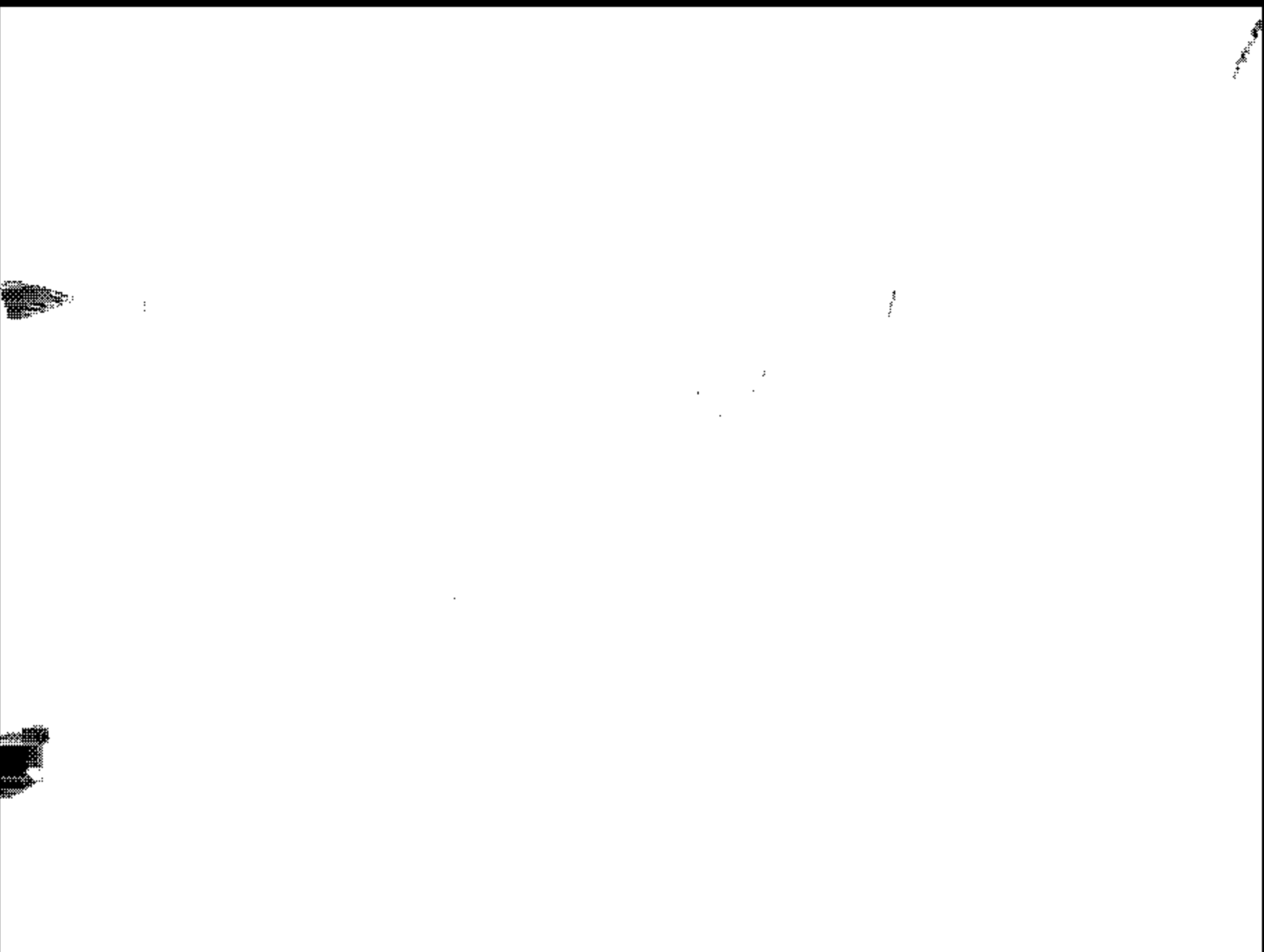


Image 31 Pre-Test Fuel Filler Neck View

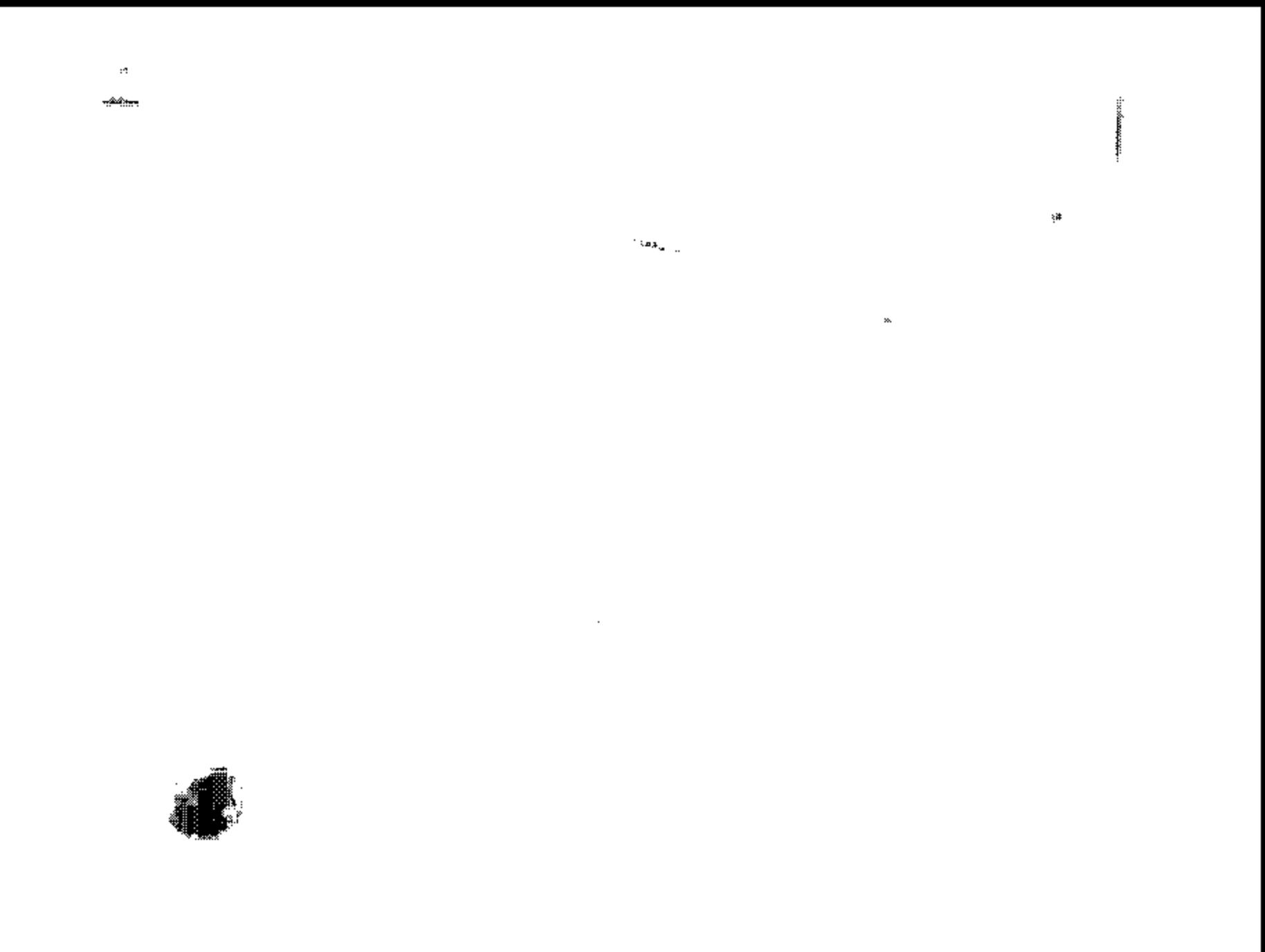


Image 32 Post-Test Fuel Filler Neck View

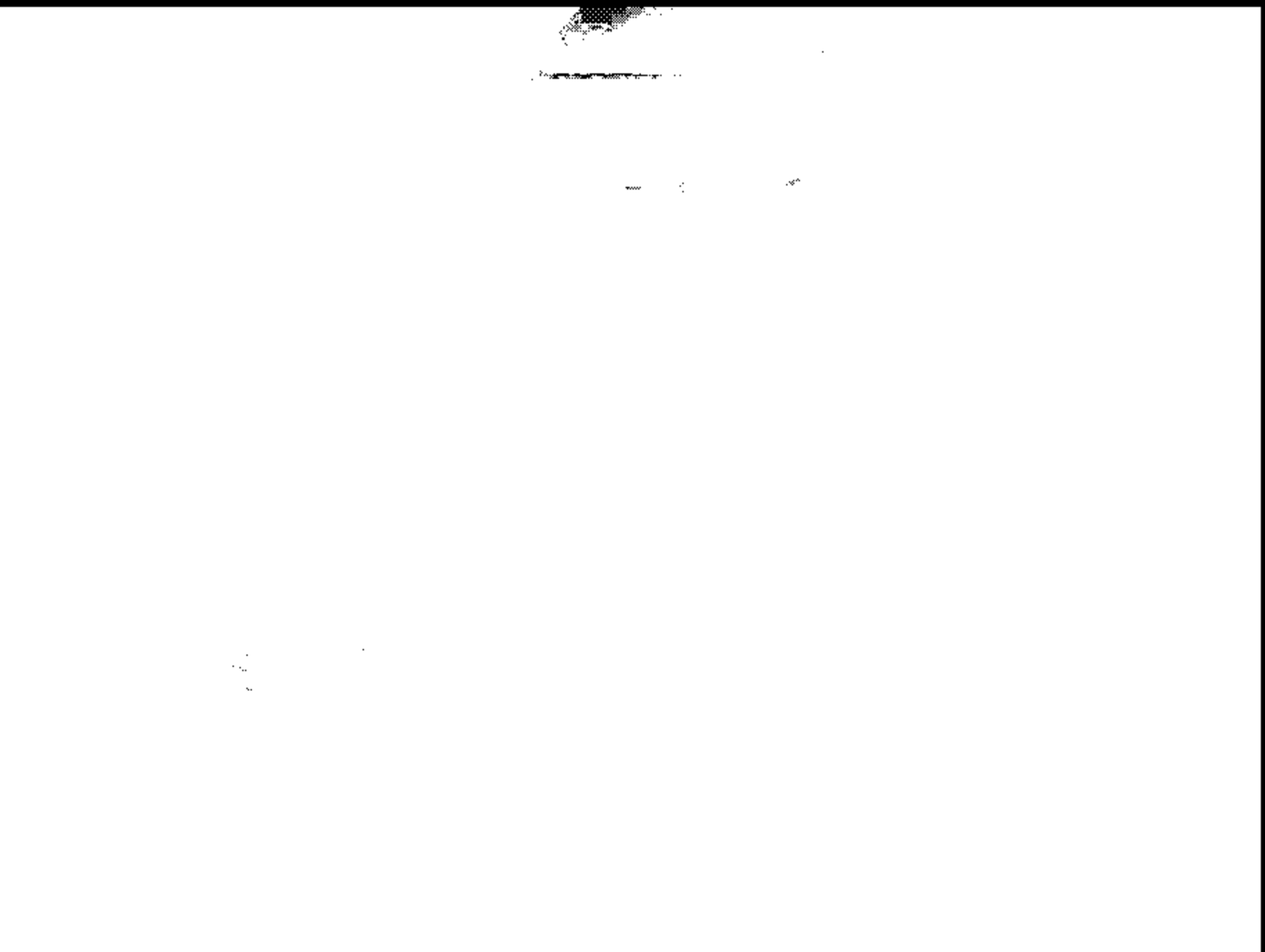


Image 33 Pre-Test Fuel Filler Cap View

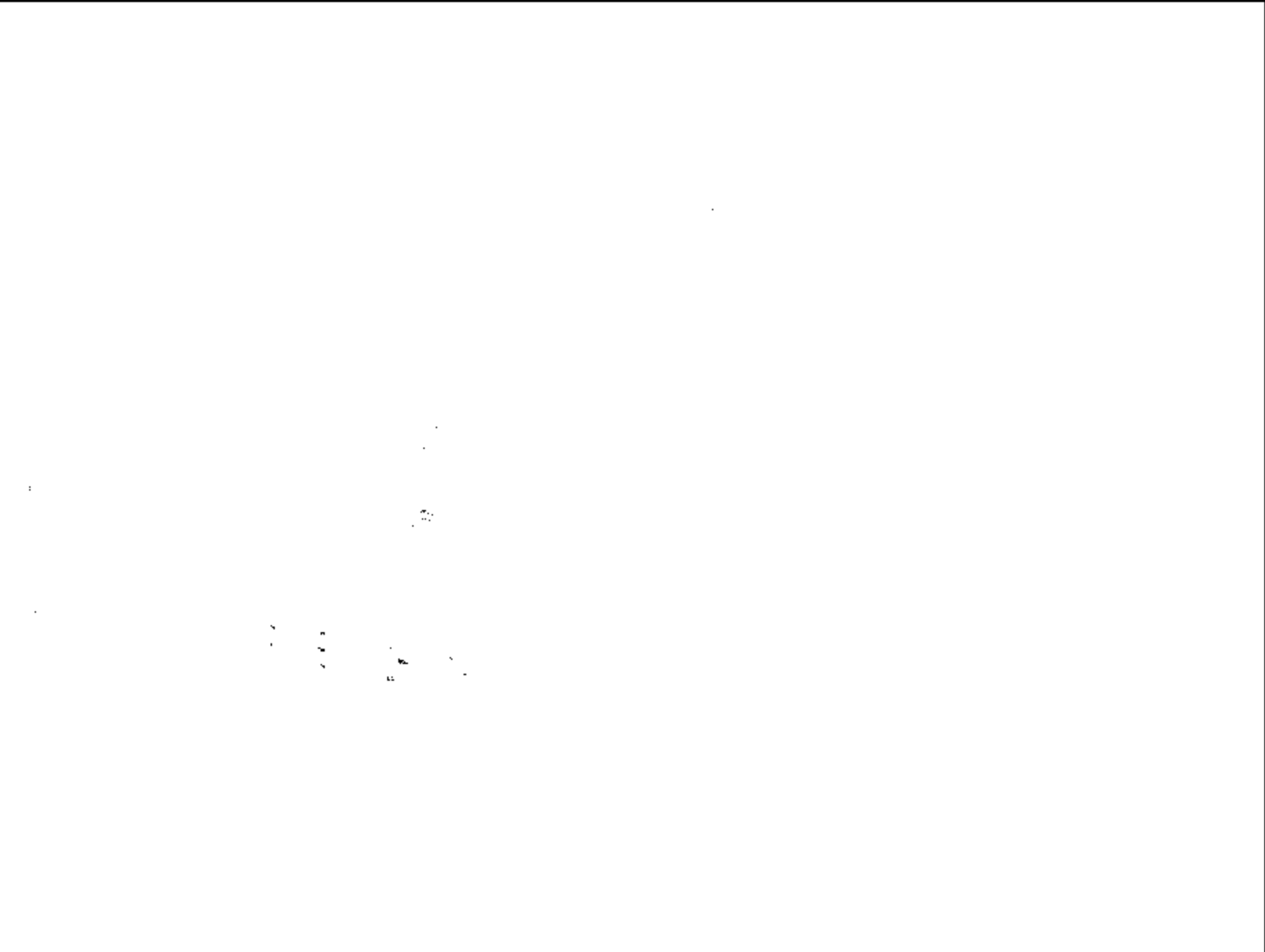


Image 34 Post-Test Fuel Filler Cap View

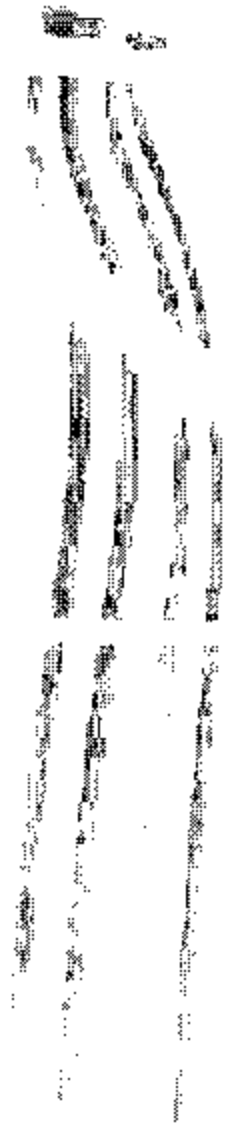


Image 35 Pre-Test Driver Dummy Front View

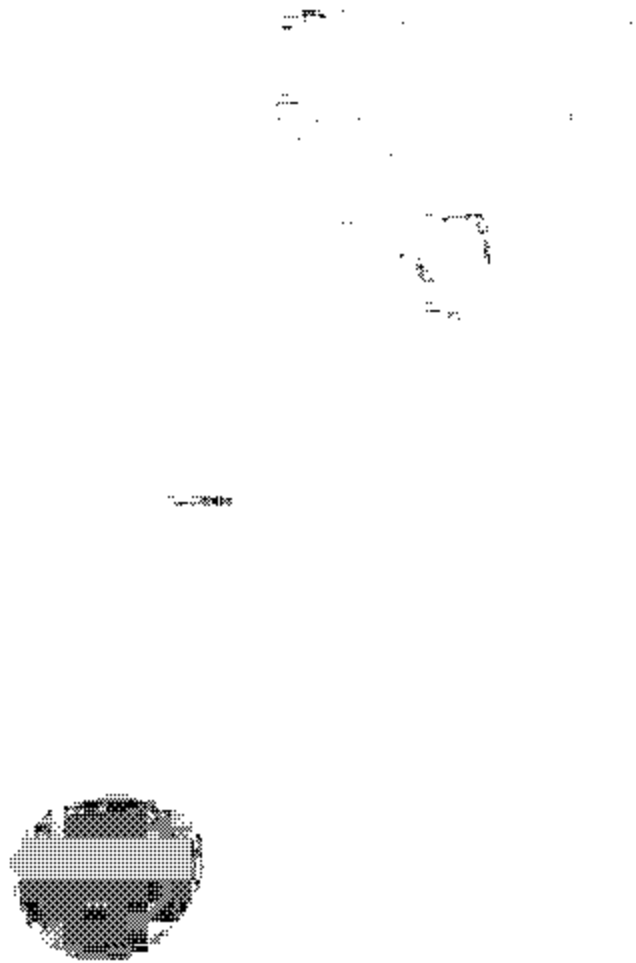


Image 36 Post-Test Driver Dummy Front View

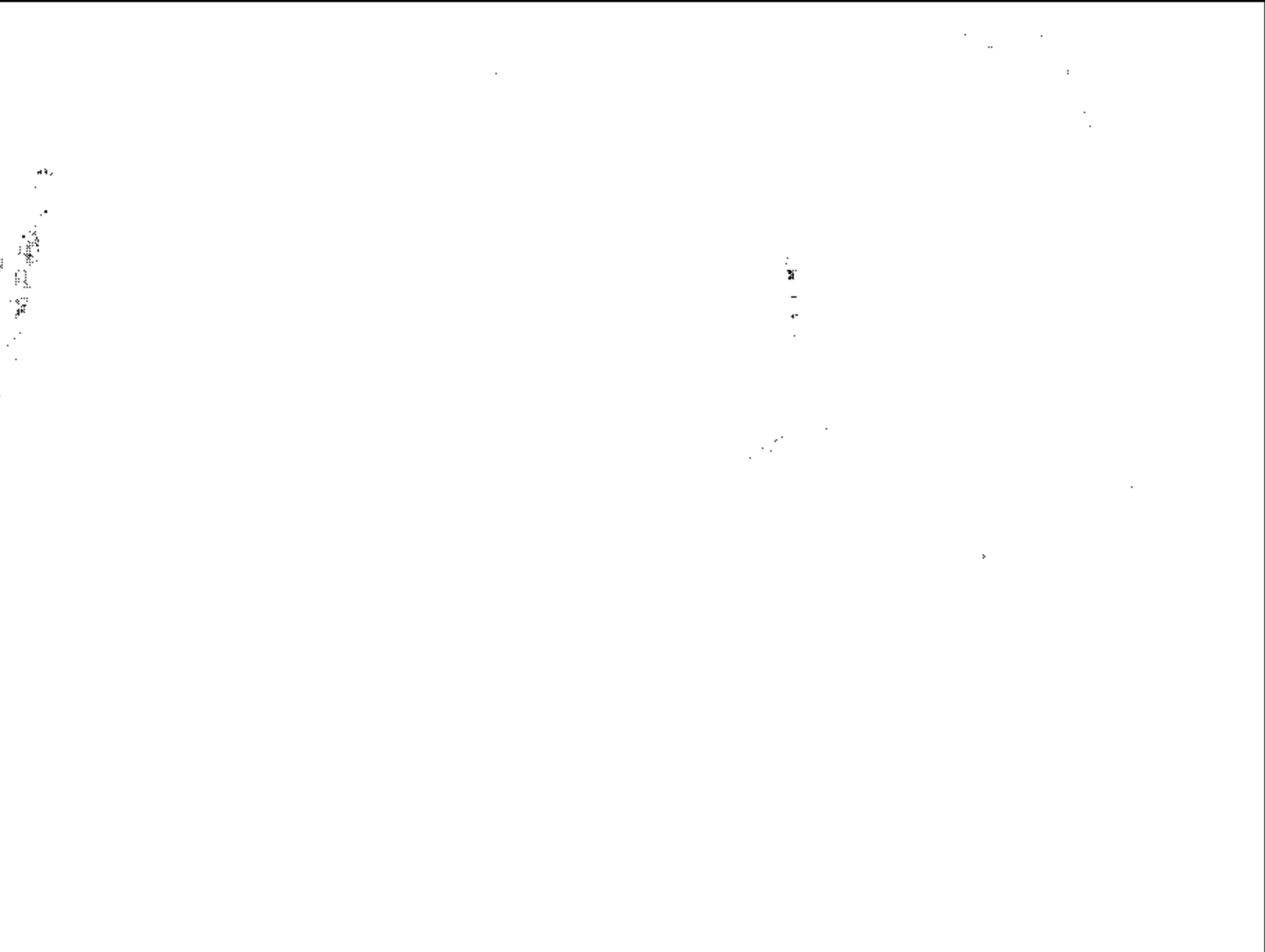


Image 37 Pre-Test Driver Dummy Position View

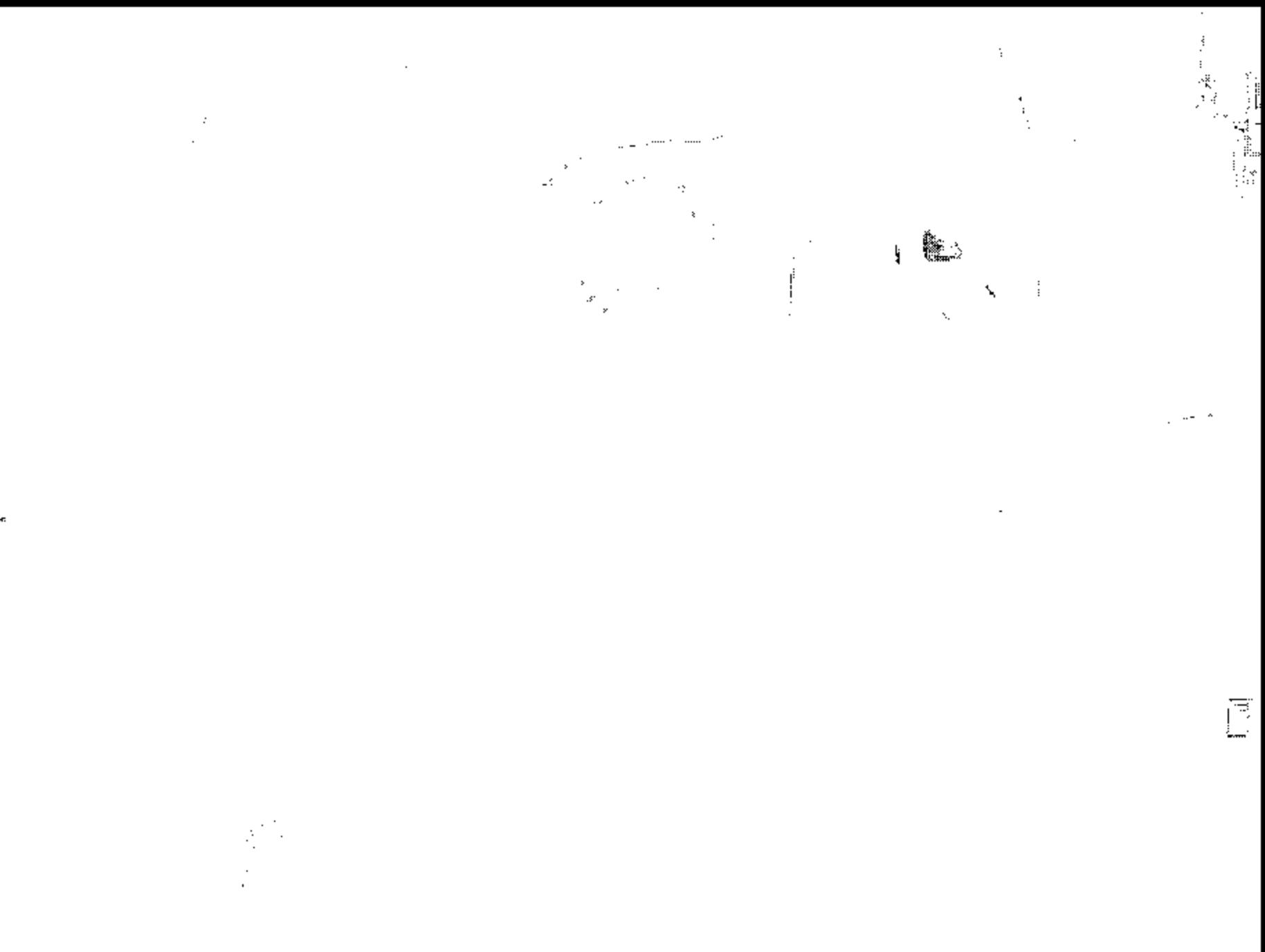


Image 38 Post-Test Driver Dummy Position View

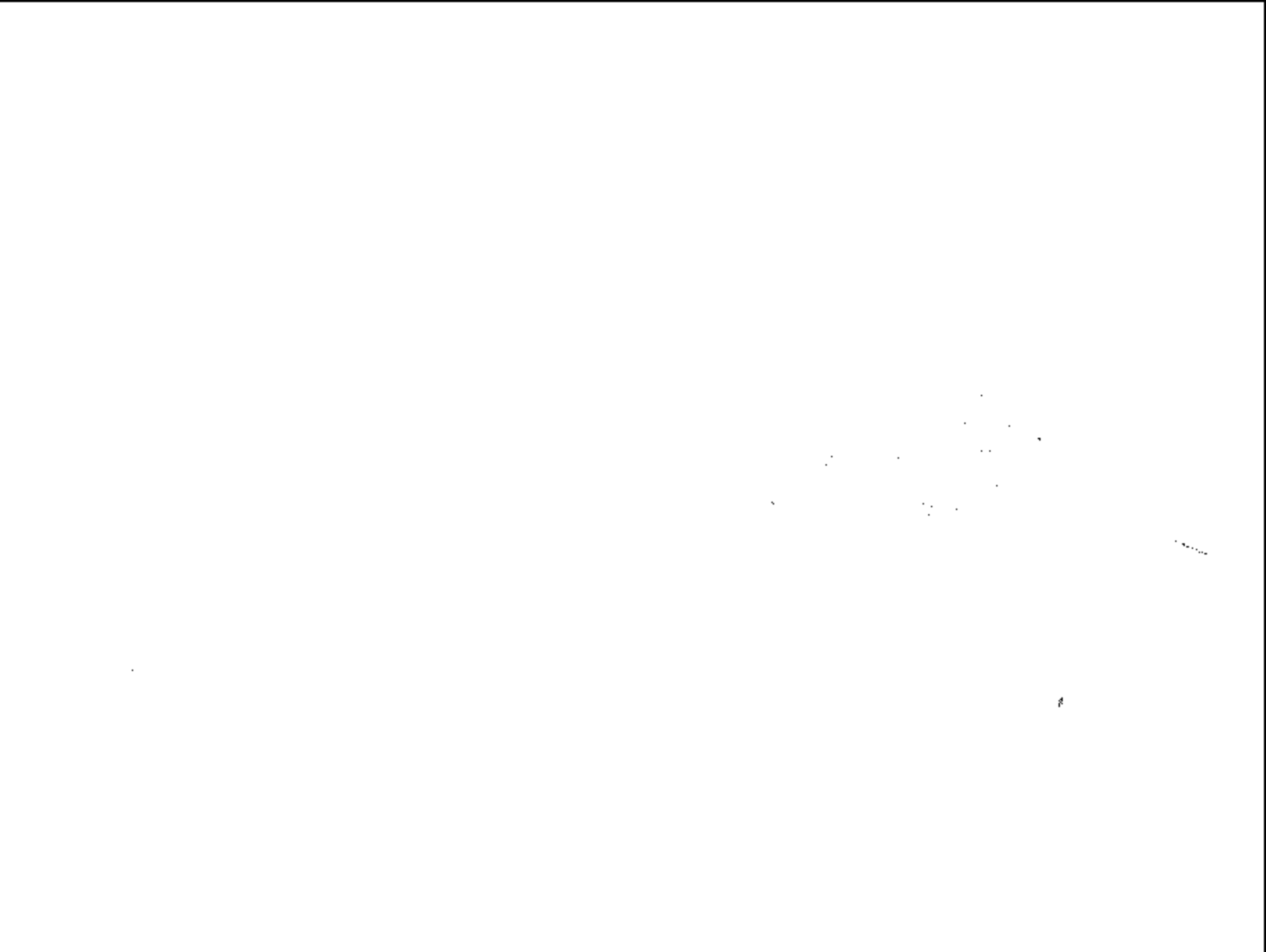


Image 39 Pre-Test Driver Dummy & Vehicle Intrusion View

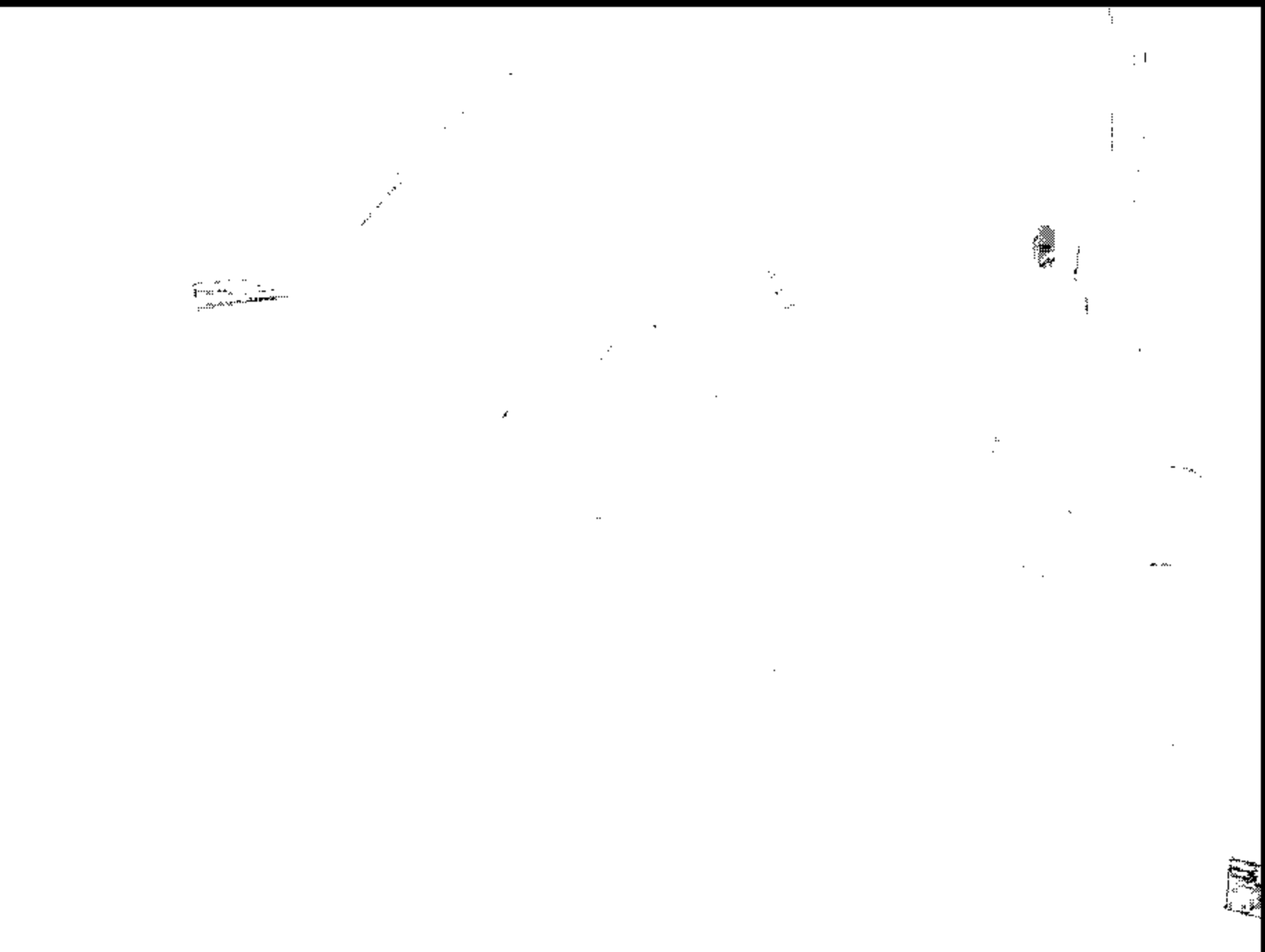


Image 40 Post-Test Driver Dummy & Vehicle Intrusion View

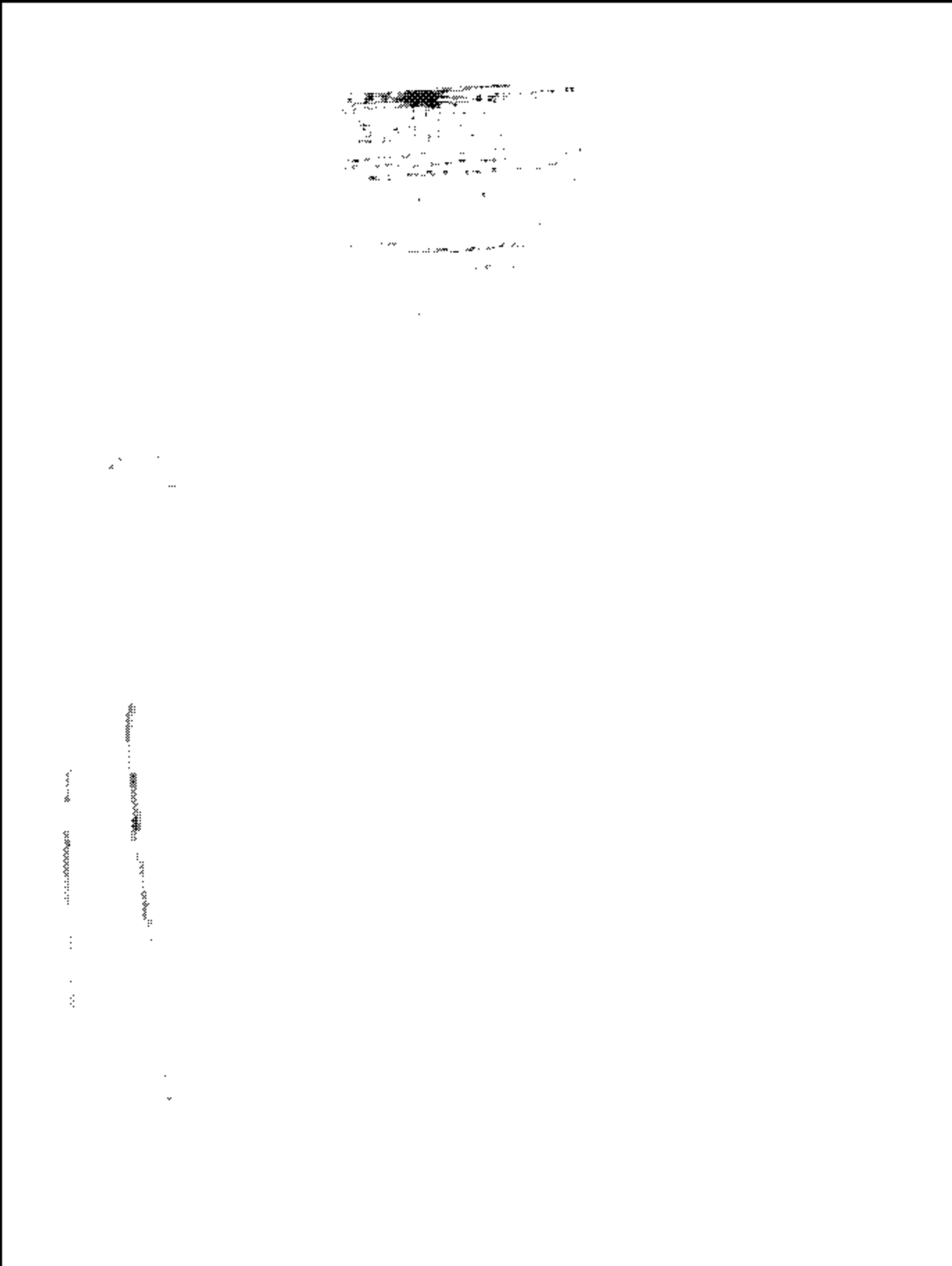


Image 41 Pre-Test Passenger Dummy Front View

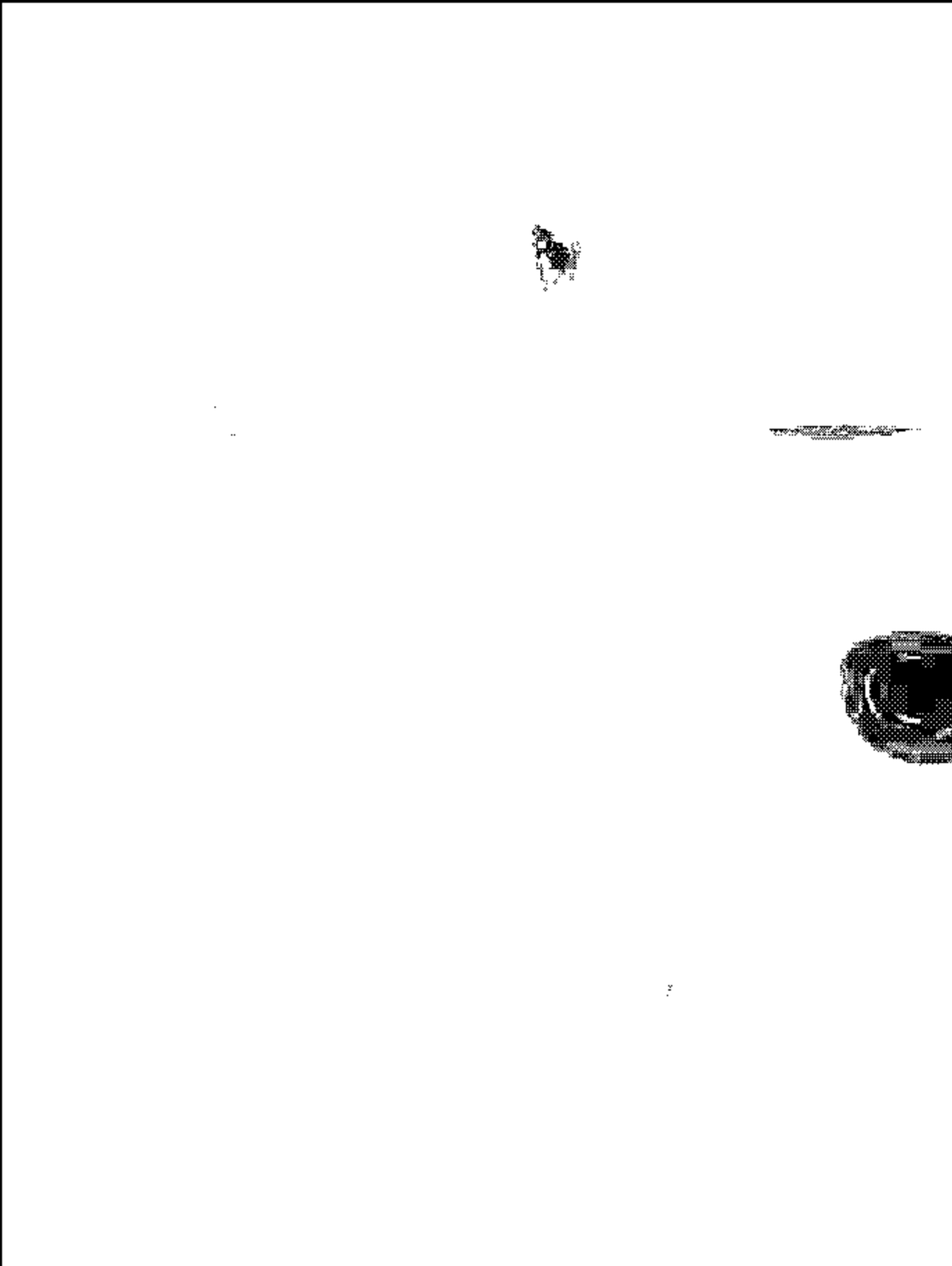


Image 42 Post-Test Passenger Dummy Front View

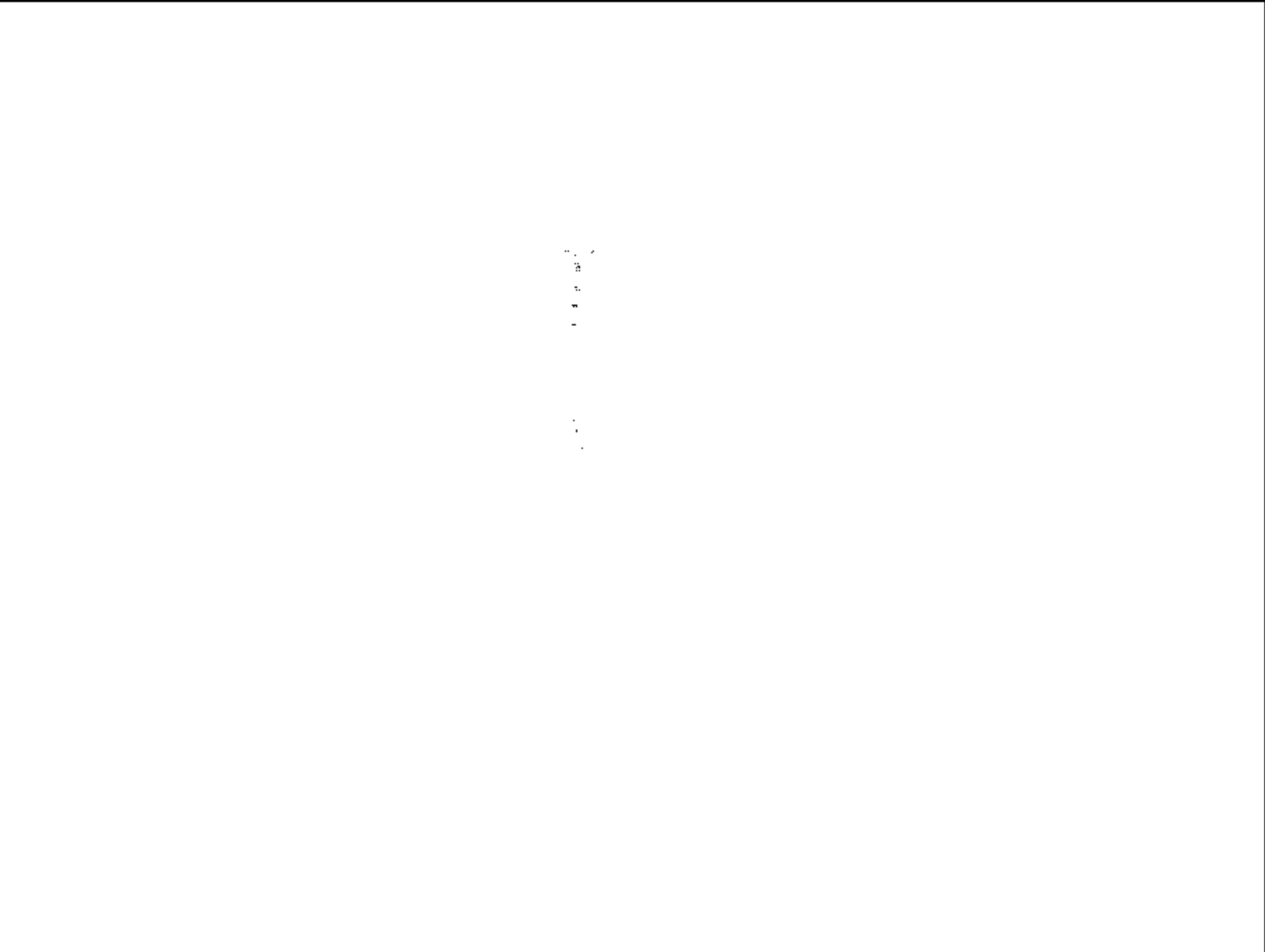


Image 43 Pre-Test Passenger Dummy Position View



Image 44 Post-Test Passenger Dummy Position View

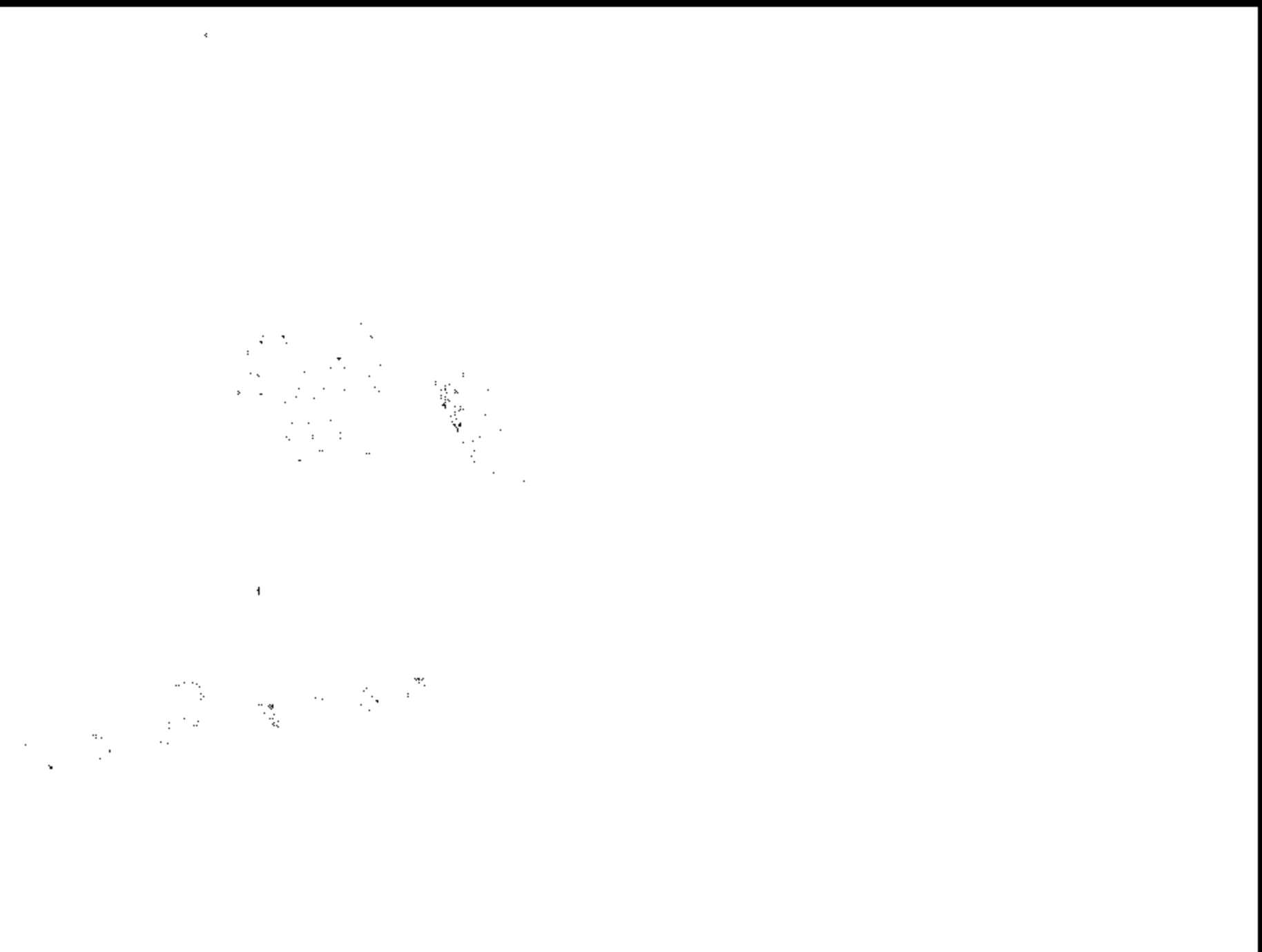


Image 45 Pre-Test Passenger Dummy & Vehicle Intrusion View

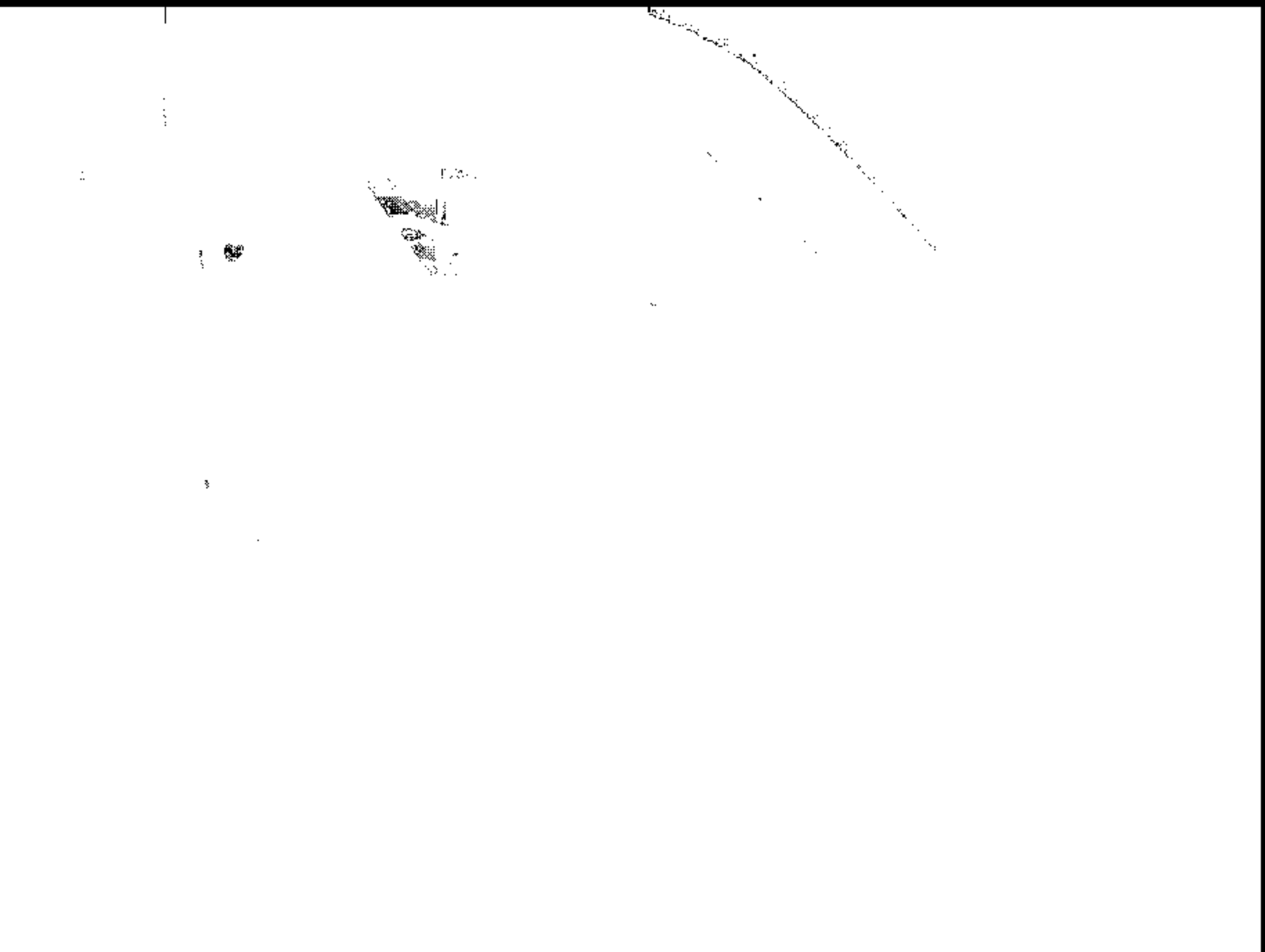


Image 46 Post-Test Passenger Dummy & Vehicle Intrusion View



Image 47 Post-Test Driver Dummy View



Image 48 Post-Test Driver Dummy Head Contact - View 1

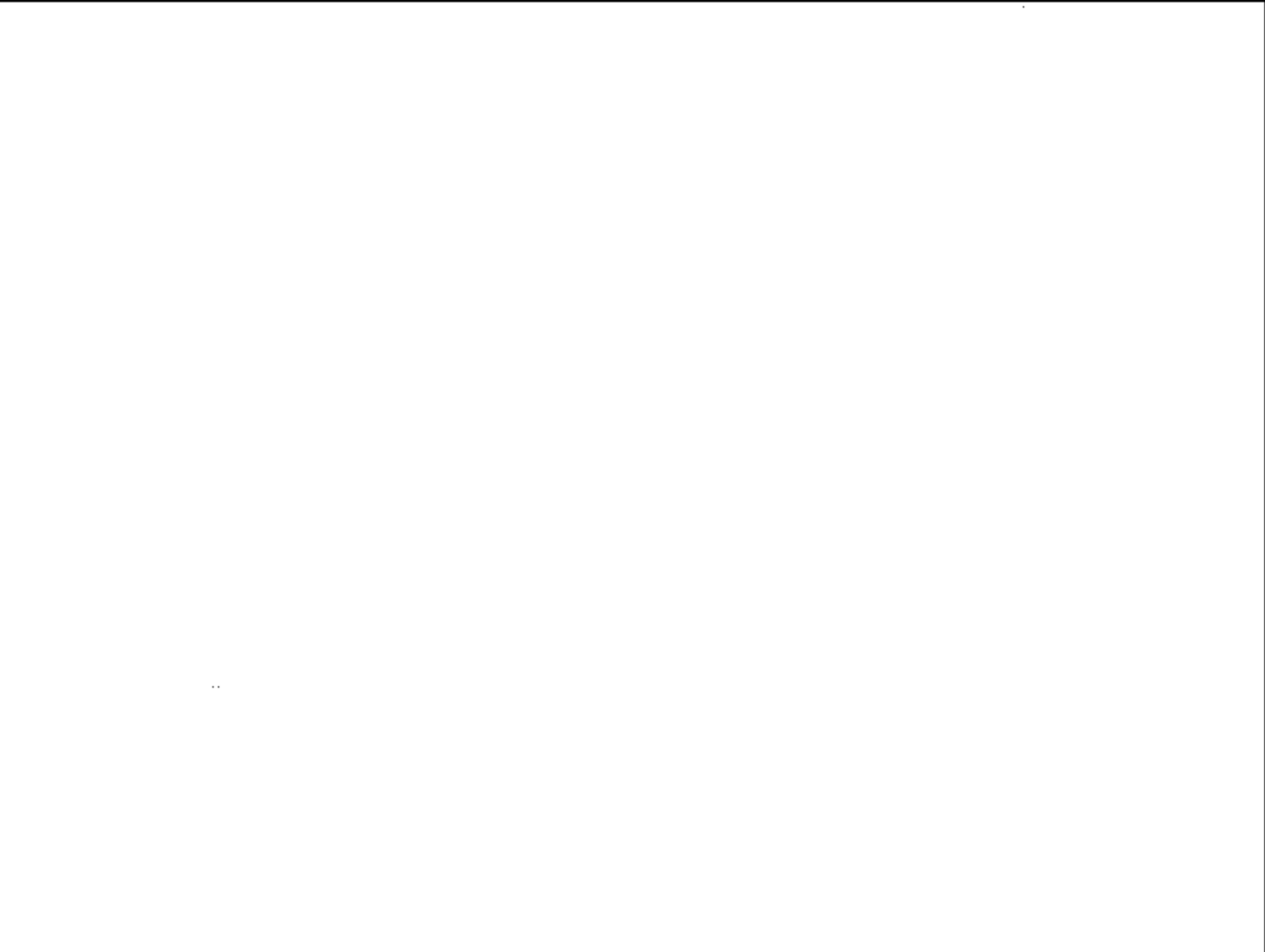


Image 49 Post-Test Driver Dummy Head Contact - View 2

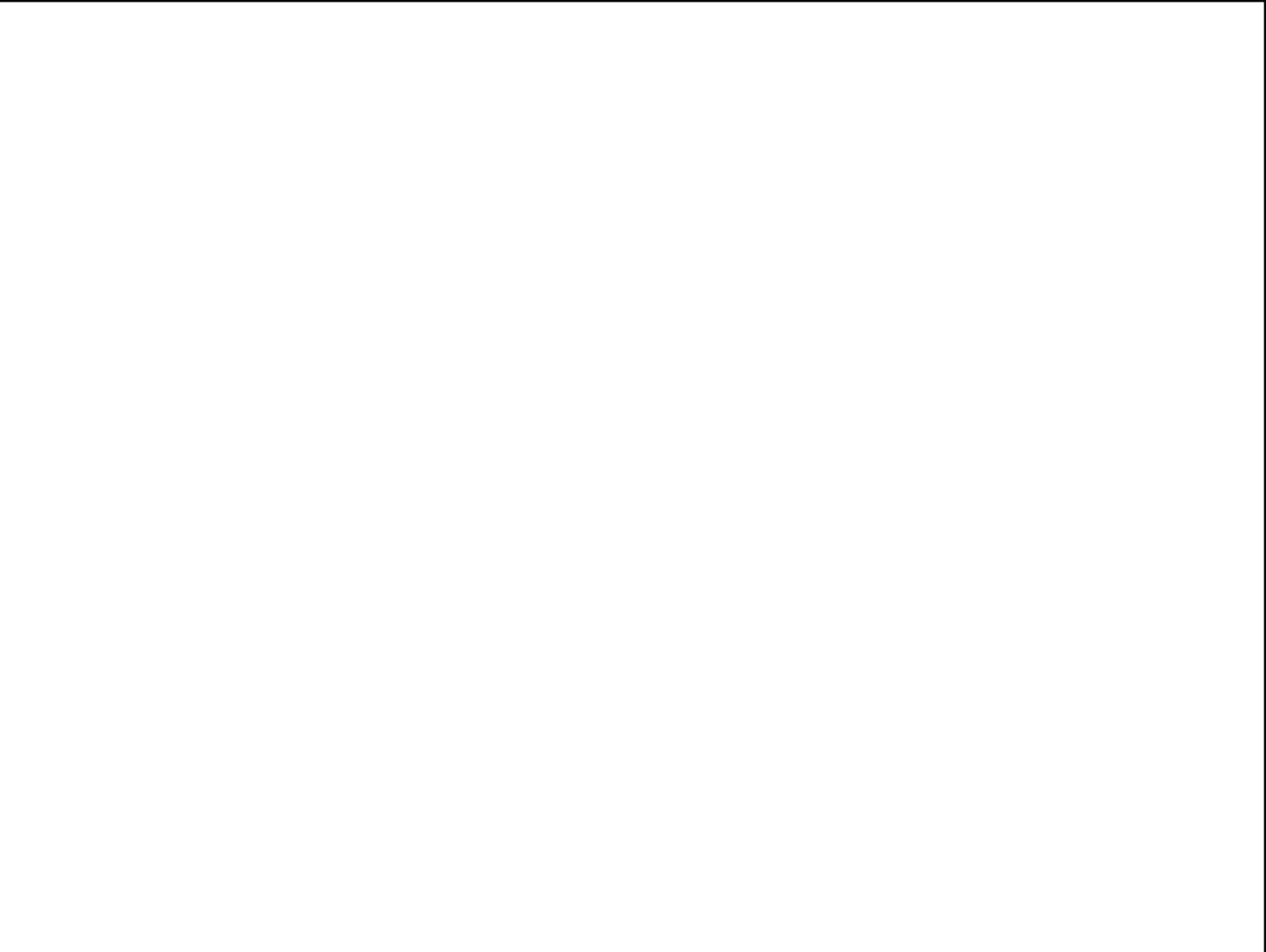


Image 50 Pre-Test Driver Dummy Knee Bolster View



Image 51 Post-Test Driver Dummy Knee Contact - View 1



Image 52 Post-Test Driver Dummy Knee Contact - View 2



Image 53 Post-Test Passenger Dummy View

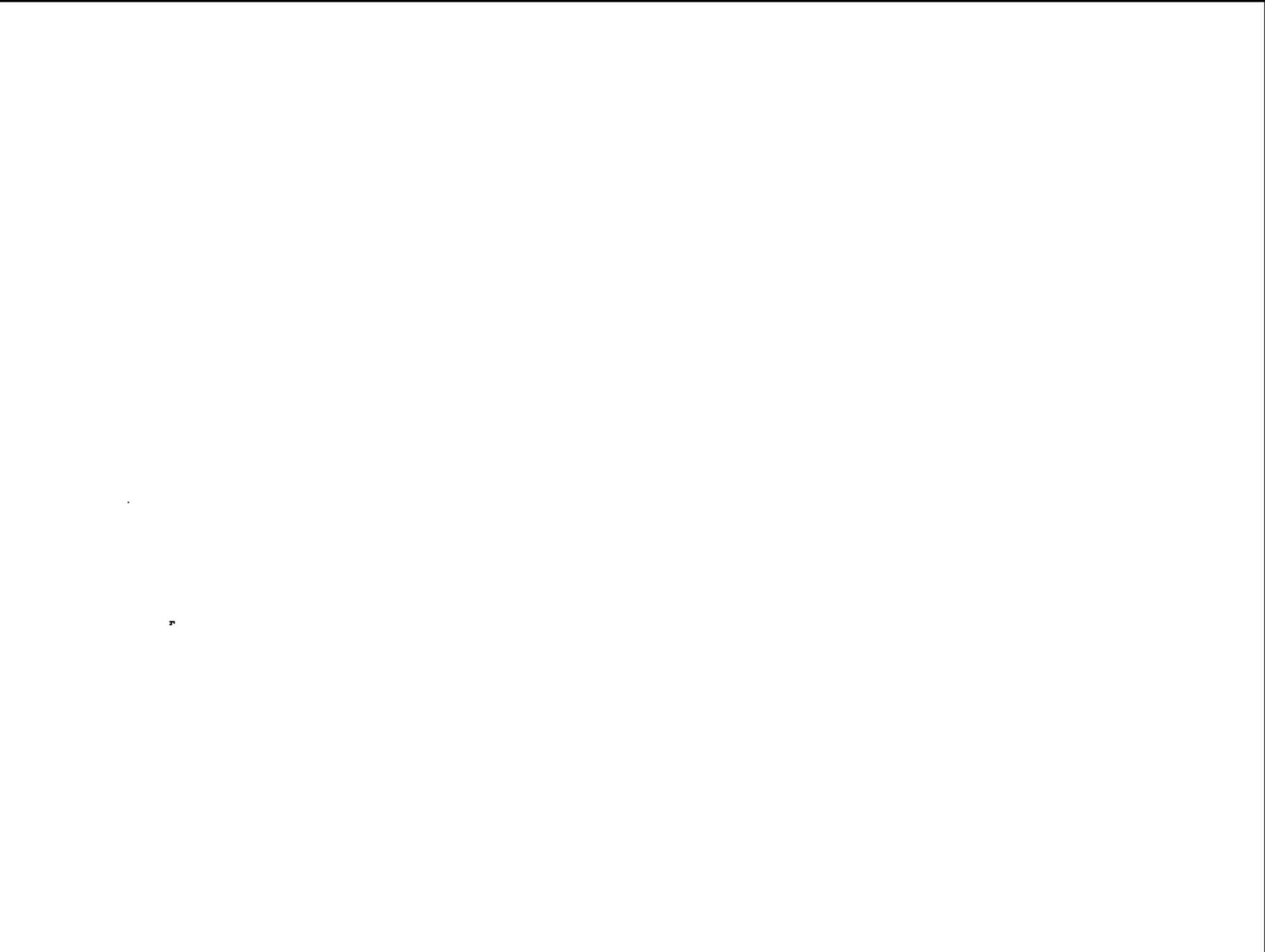


Image 54 Post-Test Passenger Dummy Head Contact - View 1



Image 55 Post-Test Passenger Dummy Head Contact - View 2



Image 56 Pre-Test Passenger Dummy Knee Bolster View



Image 57 Post-Test Passenger Dummy Knee Contact - View 1



Image 58 Post-Test Passenger Dummy Knee Contact - View 2

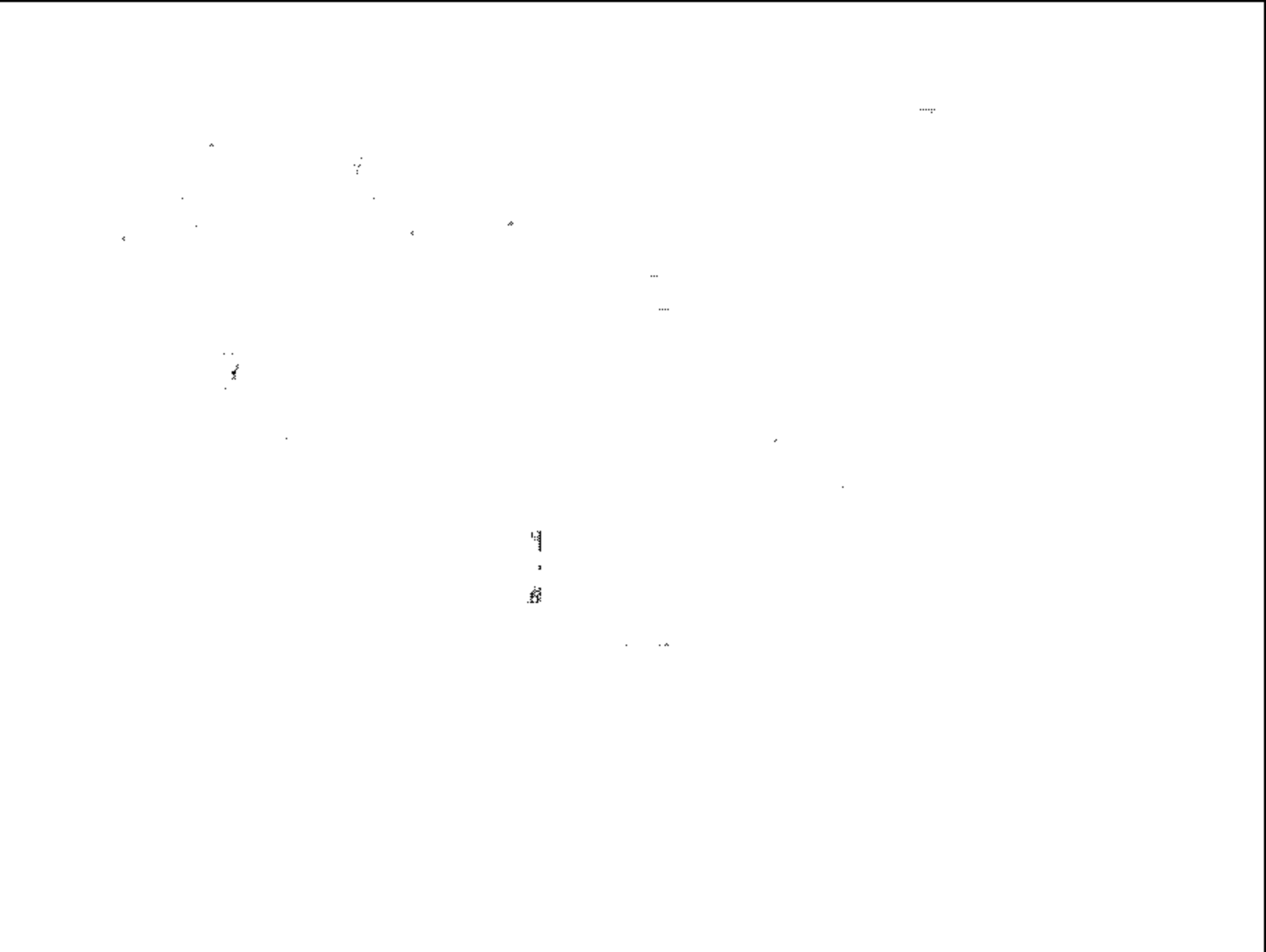


Image 59 Post-Test Vehicle on Static Rollover Device - 90° View

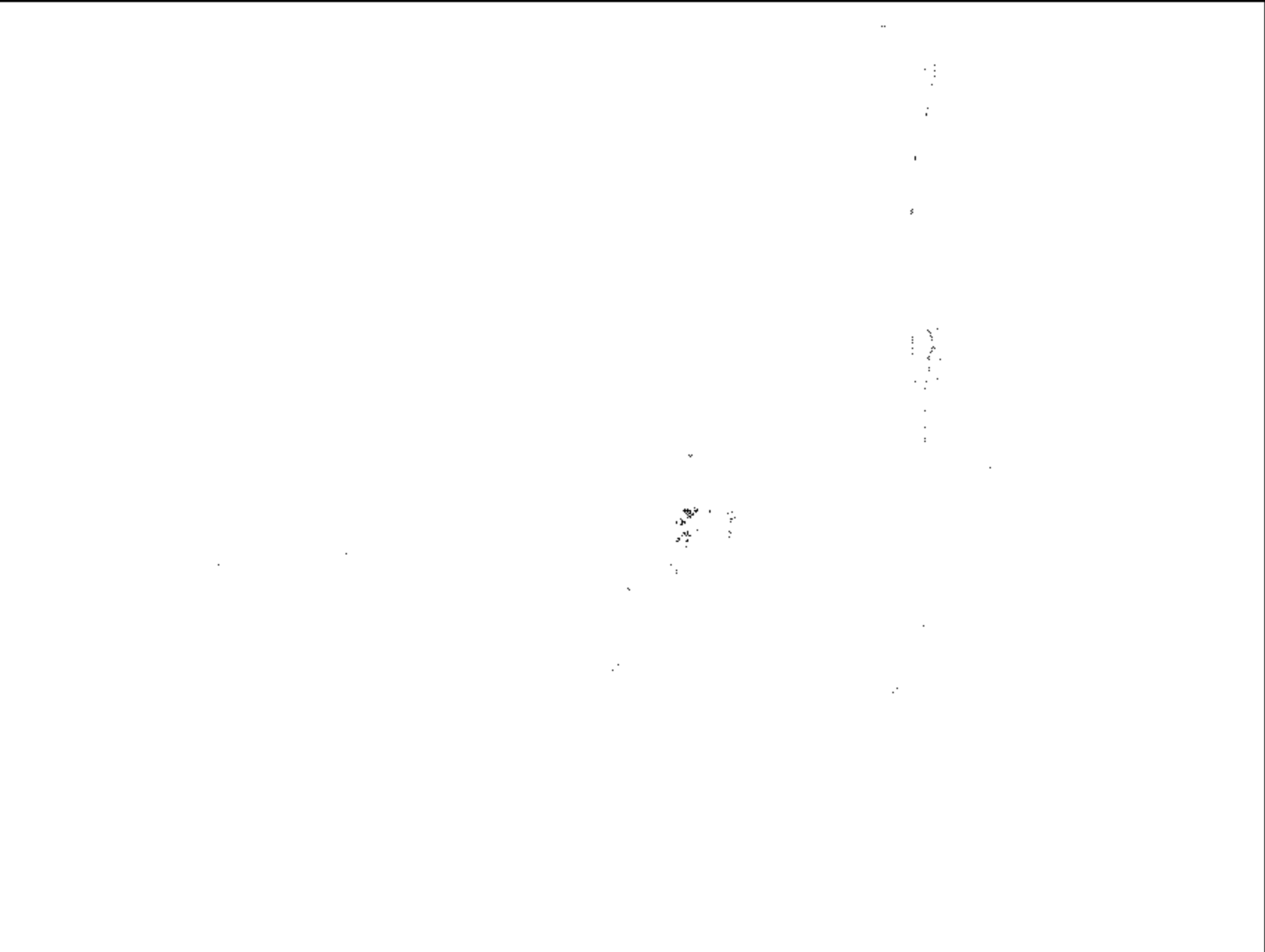
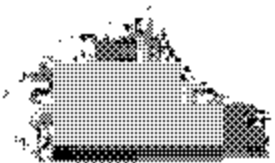


Image 60 Pre-Test Vehicle Ballast View

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1000

1000

1000

1000

1000

Image 61 Pre-Test Vehicle Certification and Recommended Tire Pressure Label View

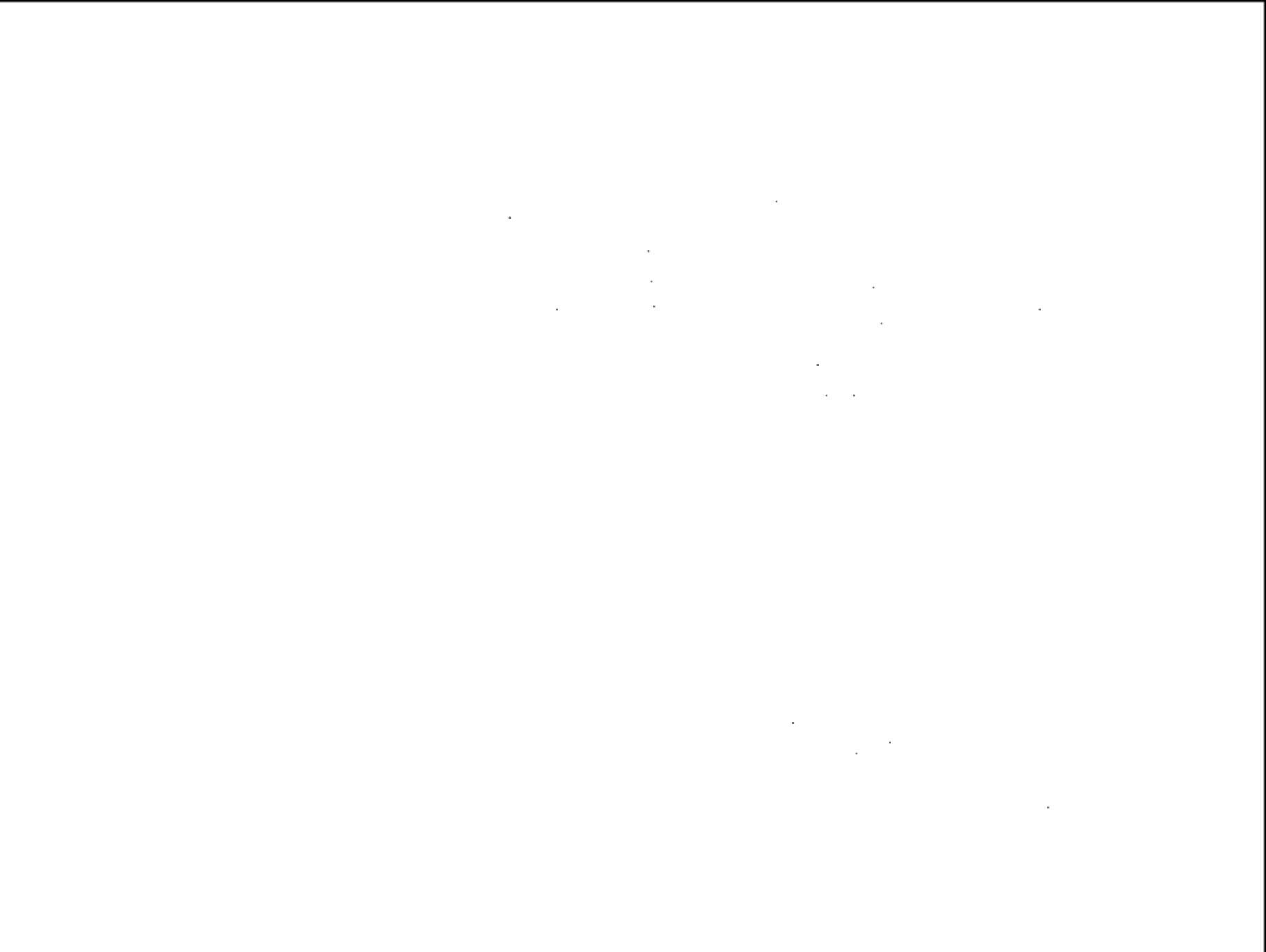


Image 62 Pre-Test Vehicle Window Sticker

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Appendix A

Test Equipment List and Calibration Information

Dummy 229n Type HYBRID III 50TH Description NHTSA - 229n HYBRID III 50TH. CAL DUB 4-14-03 (DKS 11-18-02)J211

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
HBDXG	Head Accel X	7231C	GB86	Endevco	0.01969 g	750	11/14/02	Rwd	1
HBDYG	Head Accel Y	7231C	GB77	Endevco	0.01926 g	750	11/14/02	Lft	1
HBDZG	Head Accel Z	7231C	A54F	Endevco	0.01981 g	750	11/14/02	Up	1
NEKXF	Neck Force X	1716A	1716A-1222-FX	Denton	0.00019427 N	8896.4	11/14/02	Hd Fd,Cat Rr	1
NEKYF	Neck Force Y	1716A	1716A-1222-FY	Denton	0.000189492 N	8896.4	11/14/02	Hd Lt,Cat Rt	0
NEKZF	Neck Force Z	1716A	1716A-1222-FZ	Denton	0.000099943 N	13344.6	11/14/02	Hd Up,Cat Do	0
NEKXM	Neck Moment X	1716A	1716A-1222-MX	Denton	0.005983009 N-m	282.5	11/14/02	Rt Bar to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1222-MY	Denton	0.006140531 N-m	282.5	11/14/02	Chr to Strm	0
NEKZM	Neck Moment Z	1716A	1716A-1222-MZ	Denton	0.008429027 N-m	282.5	11/14/02	Chr to Lt Shld	0
CSTXG	Chest Accel X	7231C	C14135	Endevco	0.02741 g	750	11/14/02	Pwd	0
CSTYG	Chest Accel Y	7231C	C14317	Endevco	0.02739 g	750	11/14/02	Lft	1
CSTZG	Chest Accel Z	7231C	C14341	Endevco	0.0234 g	750	11/14/02	Down	0
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-229	Servo	1.1375 mm	100	11/16/02	Strm Away Frm Spn	0
LFMZF	Left Femur Force Z 603	2430T	2430T-901	GSE	0.000071249 N	13344.7	11/14/02	Knee Fd,Pel Rr	0
RFMZF	Right Femur Force Z 744	2430T	2430T-902	GSE	0.000070313 N	13344.7	11/14/02	Knee Fd,Pel Rr	0

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Dummy 230n Type HYBRID III 50TH Description NHTSA - 230n HYBRID III 50TH, CAL DUE 11-14-02 (DKS 11-18-02)J211

Chname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	FHp
HEDXG	Head Accel X	7231C	AD4H9	Endevco	0.01992 g	750	11/14/02	Rear	1
HEDYG	Head Accel Y	7231C	AD4J7	Endevco	0.01974 g	750	11/14/02	Left	1
HEDZG	Head Accel Z	7231C	AD4J8	Endevco	0.01942 g	750	11/14/02	Up	1
NEKXF	Neck Force X	1716	1716-0235-FX	Denton	0.000191999 N	8896.4	11/14/02	Hd Fd,Cat Rr	1
NEKYP	Neck Force Y	1716	1716-0235-FY	Denton	0.000185468 N	8896.4	11/14/02	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716	1716-0235-FZ	Denton	0.000093686 N	13344.6	11/14/02	Hd Up,Cat Dn	0
NEKXM	Neck Moment X	1716	1716-0235-MX	Denton	0.005842832 N-m	282.5	11/14/02	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716	1716-0235-MY	Denton	0.005910088 N-m	282.5	11/14/02	Chm to Strmm	0
NEKZM	Neck Moment Z	1716	1716-0235-MZ	Denton	0.008362124 N-m	282.5	11/14/02	Chm to Lt Shld	0
CSTXG	Chest Accel X	7231C	ACTR4	Endevco	0.01976 g	750	11/14/02	Fwd	0
CSTYG	Chest Accel Y	7231C	ACTT4	Endevco	0.01922 g	750	11/14/02	Left	1
CSTZG	Chest Accel Z	7231C	ACTW0	Endevco	0.01972 g	750	11/14/02	Down	0
CSTXD	Chest Deflection X	14CB1-2847	85427-1	Servo	1.1347 mm	100	11/18/02	Strmm Away Frm Spn	0
LFMZF	Left Femur Force Z 60	2430T	2430T-984	GSE	0.000071646 N	13344.7	11/14/02	Knee Fd,Pal Rr	0
RPMZF	Right Femur Force Z 28	2430T	2430T-985	GSE	0.000070088 N	13344.7	11/14/02	Knee Fd,Pal Rr	0

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Channel Report

11/19/2002 10:13:30 AM

Name of Test 021119-1

System MINIDAU

Name of DAU DAUC

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	EVENT	SYNCC	SYNCC		5.12	V	+ 10/15/2002	OK -1	TRC	Event
0002	AD4H9	HEDXG1	Driv. Head Accel X	Rear	401.60642	g	- 11/14/2002	OK 230n	Endevco	7231C
0003	AD4J7	HEDYG1	Driv. Head Accel Y	Left	399.03359	g	- 11/14/2002	OK 230n	Endevco	7231C
0004	AD4J8	HEDZG1	Driv. Head Accel Z	Up	399.46322	g	- 11/14/2002	OK 230n	Endevco	7231C
0005	1716-0235-FX	NEKXF1	Driv. Neck Force X	Hd	8888.9351	N	- 11/14/2002	OK 230n	Denton	1716
0006	1716-0235-FY	NEKYF1	Driv. Neck Force Y	Hd	8905.1097	N	+ 11/14/2002	OK 230n	Denton	1716
0007	1716-0235-FZ	NEKZF1	Driv. Neck Force Z	Hd	13329.424	N	+ 11/14/2002	OK 230n	Denton	1716
0008	1716-0235-MX	NEKXM1	Driv. Neck Moment X	Rt Ear	282.67335	N-m	- 11/14/2002	OK 230n	Denton	1716
0009	1716-0235-MY	NEKYM1	Driv. Neck Moment Y	Chn	282.18741	N-m	+ 11/14/2002	OK 230n	Denton	1716
0010	1716-0235-MZ	NEKZM1	Driv. Neck Moment Z	Chn	282.15881	N-m	+ 11/14/2002	OK 230n	Denton	1716
0011	ACTR4	CSTXG1	Driv. Chest Accel X	Fwd	398.62971	g	+ 11/14/2002	OK 230n	Endevco	7231C
0012	ACTT4	CSTYG1	Driv. Chest Accel Y	Left	397.59578	g	- 11/14/2002	OK 230n	Endevco	7231C
0013	ACTW0	CSTZG1	Driv. Chest Accel Z	Down	399.43828	g	+ 11/14/2002	OK 230n	Endevco	7231C
0014	85427-1	CSTXD1	Driv. Chest Deflection X	Strmm	100.27124	mm	+ 11/18/2002	OK 230n	Servo	14CB1-2847
0015	2430T-984	LFMZF1	Driv. Left Femur Force Z 60	Knee	13332.350	N	+ 11/14/2002	OK 230n	GSE	2430T
0016	2430T-985	RFMZF1	Driv. Right Femur Force Z 28	Knee	13354.848	N	+ 11/14/2002	OK 230n	GSE	2430T
0017	GB86	HEDXG2	Pass. Head Accel X	Rwd	400.04688	g	- 11/14/2002	OK 229n	Endevco	7231C
0018	GB77	HEDYG2	Pass. Head Accel Y	Lft	402.78171	g	- 11/14/2002	OK 229n	Endevco	7231C
0019	A54F	HEDZG2	Pass. Head Accel Z	Up	397.62357	g	- 11/14/2002	OK 229n	Endevco	7231C
0020	1716A-1222-FX	NEKXF2	Pass. Neck Force X	Hd	8903.7408	N	- 11/14/2002	OK 229n	Denton	1716A
0021	1716A-1222-FY	NEKYF2	Pass. Neck Force Y	Hd	8888.0297	N	+ 11/14/2002	OK 229n	Denton	1716A
0022	1716A-1222-FZ	NEKZF2	Pass. Neck Force Z	Hd	13340.937	N	+ 11/14/2002	OK 229n	Denton	1716A
0023	1716A-1222-MX	NEKXM2	Pass. Neck Moment X	Rt Ear	282.42795	N-m	- 11/14/2002	OK 229n	Denton	1716A
0024	1716A-1222-MY	NEKYM2	Pass. Neck Moment Y	Chn	282.64546	N-m	+ 11/14/2002	OK 229n	Denton	1716A
0025	1716A-1222-MZ	NEKZM2	Pass. Neck Moment Z	Chn	282.52316	N-m	+ 11/14/2002	OK 229n	Denton	1716A
0026	C14135	CSTXG2	Pass. Chest Accel X	Fwd	397.43221	g	+ 11/14/2002	OK 229n	Endevco	7231C
0027	C14317	CSTYG2	Pass. Chest Accel Y	Lft	397.72241	g	- 11/14/2002	OK 229n	Endevco	7231C
0028	C14341	CSTZG2	Pass. Chest Accel Z	Down	397.82439	g	+ 11/14/2002	OK 229n	Endevco	7231C
0029	14CB1-2847-229	CSTXD2	Pass. Chest Deflection X	Strmm	100.02442	mm	+ 11/18/2002	OK 229n	Servo	14CB1-2847
0030	2430T-901	LFMZF2	Pass. Left Femur Force Z 603	Knee	13332.218	N	+ 11/14/2002	OK 229n	GSE	2430T

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Channel Report

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0031	2430T-902	RFMZP2	Pass. Right Femur Force Z 744	Knee	13336.494	N	+	11/14/2002	OK	229n	GSE	2430T
0032	J41089	LSXXG1	LEFT REAR SEAT	RR	1015.7319	g	-	6/4/2002	OK	-1	Endevco	7264-2000TZ

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Channel Report

11/19/2002 10:13:30 AM

Name of Test 021119-1

System MINIDAU

Name of DAU DAUD

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model
0001	J41087	LSXYG1	LEFT REAR SEAT	LT	1023.2918	g	-	6/6/2002	OK -1	Endevco	7264-2000TZ
0002	P23985	RSXXG1	RIGHT REAR SEAT	FWD	984.57751	g	+	9/4/2002	OK -1	Endevco	7264C-2K-2-180
0003	P23823	RSXYG1	RIGHT REAR SEAT	RT	1004.9264	g	+	9/4/2002	OK -1	Endevco	7264C-2K-2-180
0004	J35701	TENXG1	TOP OF ENGINE X-AXIS	FWD	1520.5511	g	+	10/31/2002	OK -1	Endevco	7264-2000TZ
0005	J36226	BENXG1	BOTTOM OF ENGINE X-AXIS	FWD	1500.3531	g	+	9/10/2002	OK -1	Endevco	7264-2000TZ
0006	J11642	RFCXG1	RIGHT FRONT BRAKE	FWD	1025.0045	g	+	11/5/2002	OK -1	Endevco	7264-2000T
0007	10017	LFCXG1	LEFT FRONT BRAKE	RR	986.51252	g	-	11/5/2002	OK -1	Endevco	7264-2000T
0008	ACC01	DPCXG1	INSTRUMENT PANEL TOP	RR	1019.3923	g	-	11/5/2002	OK -1	Endevco	7264-2000TZ
0009	10084	RDKZG1	REAR DECK Z-AXIS	UP	982.81984	g	-	11/5/2002	OK -1	Endevco	7264-2000TZ

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Shunt Measurement before Test

Name of Test 021119-1

2002-11-19 11:15:11

DAU	Sensor	Channe	Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (+) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
			Referenc Voltage /	Shunt Value /	Out Rang	Referenc Voltage /	Shunt Value /	Out Rang	Referenc Voltage /	Shunt Value / V	Out Rang	Referenc Voltage /	Shunt Value / V	Out Range
DAUC	EVENT	0001												
DAUC	AD4H9	0002	3.100	3.114	No									
DAUC	AD4J7	0003	3.100	3.129	No									
DAUC	AD4J8	0004	3.100	3.120	No									
DAUC	1716-0235-FX	0005	3.700	3.707	No									
DAUC	1716-0235-FY	0006	3.700	3.704	No									
DAUC	1716-0235-FZ	0007	3.700	3.832	Yes									
DAUC	1716-0235-MX	0008	3.700	3.720	No									
DAUC	1716-0235-MY	0009	3.700	3.716	No									
DAUC	1716-0235-MZ	0010	3.700	3.659	No									
DAUC	ACTR4	0011	3.100	3.116	No									
DAUC	ACTI4	0012	3.100	3.126	No									
DAUC	ACTW0	0013	3.100	3.141	No									
DAUC	85427-1	0014	5.000	3.827	Yes									
DAUC	2430T-984	0015	3.700	3.722	No									
DAUC	2430T-985	0016	3.700	3.732	No									
DAUC	GB86	0017	3.100	3.163	Yes									
DAUC	GB77	0018	3.100	3.151	No									
DAUC	A54F	0019	3.100	3.148	No									
DAUC	1716A-1222-F	0020	3.700	3.710	No									
	X													
DAUC	1716A-1222-F	0021	3.700	3.712	No									
	Y													
DAUC	1716A-1222-F	0022	3.700	3.654	No									
	Z													
DAUC	1716A-1222-M	0023	3.700	3.710	No									
	X													
DAUC	1716A-1222-M	0024	3.700	3.713	No									
	Y													

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DAU	Sensor	Channel	Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (+) [K3600 only]			Shunt 4 (-) [K3600 only]		
			Referenc Voltage/	Shunt Value/	Out Rang	Referenc Voltage/	Shunt Value/	Out Rang	Referenc Voltage/	Shunt Value/ V	Out Rang	Referenc Voltage/	Shunt Value/ V	Out Range
DAUC	1716A-1222-M Z	0025	3.700	3.663	No									
DAUC	C14135	0026	3.100	3.134	No									
DAUC	C14317	0027	3.100	3.134	No									
DAUC	C14341	0028	3.100	3.138	No									
DAUC	14CB1-2847-2 29	0029	5.000	3.207	Yes									
DAUC	2430T-901	0030	3.700	3.698	No									
DAUC	2430T-902	0031	3.700	3.693	No									
DAUC	J41089	0032	3.000	2.847	Yes									
DAUD	J41087	0001	3.000	2.700	Yes									
DAUD	P23985	0002	3.000	3.157	Yes									
DAUD	P23823	0003	3.000	3.159	Yes									
DAUD	J35701	0004	3.000	2.785	Yes									
DAUD	J36226	0005	3.000	3.234	Yes									
DAUD	J11642	0006	3.000	2.803	Yes									
DAUD	10017	0007	3.000	2.797	Yes									
DAUD	ACC01	0008	3.000	2.607	Yes									
DAUD	10084	0009	3.000	2.684	Yes									

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Shunt Measurement after Test

Name of Test 021119-1

2002-11-19 11:28:16

DAU	Sensor	Channel	Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (+) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
			Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Range
DAUC	EVENT	0001												
DAUC	AD4H9	0002	3.100	3.114	No									
DAUC	AD4J7	0003	3.100	3.129	No									
DAUC	AD4J8	0004	3.100	3.119	No									
DAUC	1716-0235-FX	0005	3.700	3.707	No									
DAUC	1716-0235-FY	0006	3.700	3.703	No									
DAUC	1716-0235-FZ	0007	3.700	3.832	Yes									
DAUC	1716-0235-MX	0008	3.700	3.720	No									
DAUC	1716-0235-MY	0009	3.700	3.716	No									
DAUC	1716-0235-MZ	0010	3.700	3.659	No									
DAUC	ACTR4	0011	3.100	3.116	No									
DAUC	ACTT4	0012	3.100	3.126	No									
DAUC	ACTW0	0013	3.100	3.140	No									
DAUC	85427-1	0014	5.000	3.869	Yes									
DAUC	2430T-984	0015	3.700	3.724	No									
DAUC	2430T-985	0016	3.700	3.732	No									
DAUC	GB86	0017	3.100	3.162	Yes									
DAUC	GB77	0018	3.100	3.150	No									
DAUC	A54F	0019	3.100	3.148	No									
DAUC	1716A-1222-F	0020	3.700	3.710	No									
	X													
DAUC	1716A-1222-F	0021	3.700	3.712	No									
	Y													
DAUC	1716A-1222-F	0022	3.700	3.654	No									
	Z													
DAUC	1716A-1222-M	0023	3.700	3.709	No									
	X													
DAUC	1716A-1222-M	0024	3.700	3.714	No									
	Y													

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DAU	Sensor	Channel	Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (+) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
			Referenc Voltage /	Shunt Value /	Out Rang	Referenc Voltage /	Shunt Value /	Out Rang	Referenc Voltage /	Shunt Value / V	Out Rang	Referenc Voltage /	Shunt Value / V	Out Range
DAUC	1716A-1222-M Z	0025	3.700	3.663	No									
DAUC	C14135	0026	3.100	3.134	No									
DAUC	C14317	0027	3.100	3.134	No									
DAUC	C14341	0028	3.100	3.137	No									
DAUC	14CB1-2847-2 29	0029	5.000	3.215	Yes									
DAUC	2430T-901	0030	3.700	3.698	No									
DAUC	2430T-902	0031	3.700	3.693	No									
DAUC	J41089	0032	3.000	2.845	Yes									
DAUD	J41087	0001	3.000	2.697	Yes									
DAUD	P23985	0002	3.000	3.157	Yes									
DAUD	P23823	0003	3.000	3.159	Yes									
DAUD	J35701	0004	3.000	99.990	Yes									
DAUD	J36226	0005	3.000	3.237	Yes									
DAUD	J11642	0006	3.000	2.794	Yes									
DAUD	10017	0007	3.000	2.787	Yes									
DAUD	ACC01	0008	3.000	2.603	Yes									
DAUD	10084	0009	3.000	2.662	Yes									