Safety Compliance Testing for FMVSS 208
Occupant Crash Protection

General Motors Corporation
2003 Chevrolet Tahoe
NHTSA Number: C30103
TRC Inc. Test Number: 021119-2

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-220)
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, Project Manager
Transportation Research Center Inc.

Final Report Acceptance By OVSC:

Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance
Compliance tests were conducted on a 2003 Chevrolet Tahoe, NHTSA No. C30103, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208-11 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows:

None
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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 DTHH22-02-D-08062, Task Order VRTC-DCF2525. The purpose of the test was to determine whether the subject vehicle, a 2003 Chevrolet Tahoe, NHTSA No. C30103, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212 indicant, "Windshield Mounting"; indicant FMVSS 219, "Windshield Zone Intrusion"; and FMVSS 301 indicant, "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 5-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))
X 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 indicant test

X 24. FMVSS 219 indicant test

X 25. FMVSS 301 indicant 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

NETSA No.: C30103 Test Date: 11/19/02
VIN: 1GNEK13ZX3R106320

Frontal Crash _X_ Offset Crash ____ Low Risk Deployment ____

Impact Angle: _____ 0 _____

Belted Dummies: _____ Yes _____ X No

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

Test Speed: ___ 39.2 km/h ___

Driver Dummy: _X_ 5th female ____ 50th male

Passenger Dummy: _X_ 5th female ____ 50th male

Test weight: ___ 2713.4 kg ___

5th Percentile Female Frontal Crash Test
Vehicles certified to S16.1(a), S16.1(b), or S18.1

<table>
<thead>
<tr>
<th>Injury Criteria</th>
<th>Max. Allowable Injury Assessment Values</th>
<th>Driver</th>
<th>Passenger</th>
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<tr>
<td>HIC15</td>
<td>700</td>
<td>66</td>
<td>84</td>
</tr>
<tr>
<td>Nfe</td>
<td>1.0</td>
<td>0.14</td>
<td>0.22</td>
</tr>
<tr>
<td>Ng</td>
<td>1.0</td>
<td>0.24</td>
<td>0.40</td>
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<tr>
<td>Nse</td>
<td>1.0</td>
<td>0.03</td>
<td>0.14</td>
</tr>
<tr>
<td>Ncf</td>
<td>1.0</td>
<td>0.07</td>
<td>0.13</td>
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<tr>
<td>Neck tension</td>
<td>2620 N</td>
<td>724</td>
<td>899</td>
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<tr>
<td>Neck compression</td>
<td>2520 N</td>
<td>115</td>
<td>146</td>
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<tr>
<td>Chest g</td>
<td>60 g</td>
<td>29.2</td>
<td>35.9</td>
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<tr>
<td>Chest displacement</td>
<td>52 mm</td>
<td>28</td>
<td>10</td>
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<tr>
<td>Left femur</td>
<td>6805 N</td>
<td>5472</td>
<td>4205</td>
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<tr>
<td>Right femur</td>
<td>6805 N</td>
<td>3705</td>
<td>3681</td>
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Section 4

Discussion of Test
DISCUSSION OF TEST

The driver dummy's pelvis angle was set at 25.9° to maintain the dummy's head level.

The vehicle's left rear and right rear pre-test attitudes did not fall between the measured attitudes for the delivered and fully loaded conditions. Deviation was 7 mm or less.

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

The left side view (barrier to front seat backs), left side view (A-post), left side view (B-post to steering wheel), left side view (front door under camera 5) and pit camera 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 percent capacity with Stoddard solvent.
Section 5

Test Data Sheets
**DATA SHEET 1**
COTR Vehicle Work Order

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

NEHTSA No.: C30103  
Test Date: 11/19/02

COTR signature: Charles R. Case

Tests to be performed for this vehicle are checked below.

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<td>X</td>
<td>1. Rear outboard seating position seat belts (§4.1.4.2(b) &amp; (§4.2.4)</td>
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<tr>
<td>X</td>
<td>2. Air bag labels (§4.5.1)</td>
</tr>
<tr>
<td>X</td>
<td>3. Readiness indicator (§4.5.2)</td>
</tr>
<tr>
<td>X</td>
<td>4. Passenger air bag manual cut-off device (§4.5.4)</td>
</tr>
<tr>
<td>X</td>
<td>5. Lap belt lockability (§7.1.1.5)</td>
</tr>
<tr>
<td>X</td>
<td>6. Seat belt warning system (§7.3)</td>
</tr>
<tr>
<td>X</td>
<td>7. Seat belt contact force (§7.4.3)</td>
</tr>
<tr>
<td>X</td>
<td>8. Seat belt latch plate access (§7.4.4)</td>
</tr>
<tr>
<td>X</td>
<td>9. Seat belt retraction (§7.4.5)</td>
</tr>
<tr>
<td>X</td>
<td>10. Seat belt guides and hardware (§7.4.6)</td>
</tr>
<tr>
<td></td>
<td>11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart R) using the following indicated child restraints.</td>
</tr>
</tbody>
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**Section A**

<p>| | |</p>
<table>
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<tr>
<td></td>
<td>Cosco Dream Ride 02-719</td>
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<tr>
<td>Full rearward</td>
<td>Mid position</td>
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**Section B**

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<tr>
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<td>Britax Handle with Care 191</td>
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<td>Full rearward</td>
<td>Mid position</td>
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<tr>
<td>Century Assura 4559</td>
<td>Full rearward</td>
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<tr>
<td>Century Avanta SE 41530</td>
<td>Full rearward</td>
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<tr>
<td>Century Swift Fit 4543</td>
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<tr>
<td>Cosco Arriva 02727</td>
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<td>Cosco Optus 35 62603</td>
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<td>Eventfo Discovery Adjust Right 212</td>
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<td>Eventfo First Choice 204</td>
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<td>Eventfo On My Way Position Right V 282</td>
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<td>Cosco Infant 8457</td>
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<td>Britax Roundabout 161</td>
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<tr>
<td>Full rearward</td>
<td>Mid position</td>
</tr>
<tr>
<td>Century Encore 4612</td>
<td>Full rearward</td>
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<tr>
<td>Century STE 1000 4416</td>
<td>Full rearward</td>
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<tr>
<td>Cosco Olympian 02803</td>
<td>Full rearward</td>
</tr>
<tr>
<td>Cosco Touriva 02519</td>
<td>Full rearward</td>
</tr>
<tr>
<td>Eventfo Horizon V 425</td>
<td>Full rearward</td>
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<tr>
<td>Eventfo Macallion 254</td>
<td>Full rearward</td>
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12. Suppression tests with 3-year-old dummy (Part 572, Subpart F) using the following indicated child restraints where a child restraint is required.

**Section C**

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<table>
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<tbody>
<tr>
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<td>Britax Roundabout 161</td>
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<td>Full rearward</td>
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<td>Full rearward</td>
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<tr>
<td>Cosco Touriva 02519</td>
<td>Full rearward</td>
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<tr>
<td>Eventfo Horizon V 425</td>
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<td>Eventfo Macallion 254</td>
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<td>Britax Roadster 9004</td>
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<tr>
<td>Century Next Step 4920</td>
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021119-2
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<th>Child Restraint</th>
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<tr>
<td>Cosco High Back Booster 02-442</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
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<tr>
<td>Evenflo Right Fit 245</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
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</tbody>
</table>

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
- Britax Roundabout 161 | Full rearward | Mid position | Full forward |
- Century Encore 4612 | Full rearward | Mid position | Full forward |
- Century STC 1000 4416 | Full rearward | Mid position | Full forward |
- Cosco Olympian 02803 | Full rearward | Mid position | Full forward |
- Cosco Tourive 02519 | Full rearward | Mid position | Full forward |
- Evenflo Horizon V 425 | Full rearward | Mid position | Full forward |
- Evenflo Medallion 254 | Full rearward | Mid position | Full forward |

Section D
- Britax Roadster 9004 | Full rearward | Mid position | Full forward |
- Century Next Step 4920 | Full rearward | Mid position | Full forward |
- Cosco High Back Booster 02-442 | Full rearward | Mid position | Full forward |
- Evenflo Right Fit 245 | Full rearward | Mid position | 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
- Britax Roadster 9004 | Full rearward | Mid position | Full forward |
- Century Next Step 4920 | Full rearward | Mid position | Full forward |
- Cosco High Back Booster 02-442 | Full rearward | Mid position | Full forward |
- Evenflo Right Fit 245 | Full rearward | Mid position | 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
- Britax Roadster 9004 | Full rearward | Mid position | Full forward |
- Century Next Step 4920 | Full rearward | Mid position | Full forward |
- Cosco High Back Booster 02-442 | Full rearward | Mid position | Full forward |
- Evenflo Right Fit 245 | Full rearward | Mid position | 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 5-year-old child in the following positions

<table>
<thead>
<tr>
<th>Sitting on seat with back against seat back (S22.2.2.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting on seat with back against reclined seat back (S22.2.2.2)</td>
</tr>
<tr>
<td>Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)</td>
</tr>
<tr>
<td>Sitting back in the seat and leaning on the right front passenger door (S24.2.3)</td>
</tr>
</tbody>
</table>

20. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints.

**Section B**

<table>
<thead>
<tr>
<th>Britax Handle with Care 191</th>
<th>Full rearward</th>
<th>Mid position</th>
<th>Full forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Century Assure 4.553</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Century Avanta SE 41530</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Century Smart Fit 4543</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Cosco Arriva 02727</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Cosco Opus 35 02603</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Evenflo Discovery Adjust Right 212</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Evenflo First Choice 204</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Evenflo On My Way Position Right V 282</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Graco Infant 8437</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
</tbody>
</table>

**Section C**

<table>
<thead>
<tr>
<th>Britax Roundabout 161</th>
<th>Full rearward</th>
<th>Mid position</th>
<th>Full forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Century Encore 4612</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Century STE 1060 4416</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Cosco Olympian 02803</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Cosco Touriva 02319</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Evenflo Horizon V 425</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
<tr>
<td>Evenflo Medallion 254</td>
<td>Full rearward</td>
<td>Mid position</td>
<td>Full forward</td>
</tr>
</tbody>
</table>

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 Dummy (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

<table>
<thead>
<tr>
<th>Position 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position 2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Position 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position 2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Position 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position 2</td>
</tr>
</tbody>
</table>

26. Impact tests

<table>
<thead>
<tr>
<th>Frontal Oblique</th>
<th>Test Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.1(a))</td>
<td></td>
</tr>
<tr>
<td>Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))</td>
<td></td>
</tr>
<tr>
<td>Unbelted 50th male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X Frontal 0°</th>
<th>Test Speed</th>
<th>40 km/h see test procedure for speed tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belted 50th male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belted 50th male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belted 5th female dummy driver (0 to 48 km/h) (S16.1(a))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belted 5th female dummy passenger (0 to 48 km/h) (S16.1(a))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belted 50th male dummy driver and passenger (0 to 55 km/h) (S5.1.1(b)(2))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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))
X Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
X Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
40% Offset 0º 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 indicator test
X 29. FMVSS 212 indicator test
X 30. FMVSS 219 indicator test
X 31. FMVSS 301 indicator frontal test
DATA SHEET 2

REPORT OF VEHICLE CONDITION

CONTRACT NO.  DTHH22-02-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/Tahoe/SUV
MANUFACTURE DATE: 08/02   NHTSA NO.: C30103   BODY COLOR: Black
VIN: 1GNEK13ZX3R106320   GVWR 3130   GAWR (Fr) 1633   GAWR (Rr) 1814
ODOMETER READINGS: ARRIVAL 63 miles   DATE 11/15/02
            COMPLETION 63 miles   DATE 11/19/02
PURCHASE PRICE: $45,104   DEALER'S NAME: Smedley's Chevrolet Sales Inc.

A. All options listed on “window sticker” are present on the test vehicle.
   (X) Yes    ( ) No
B. Tires and wheel rims are new and the same as listed.
   (X) Yes    ( ) No
C. There are no dents or other interior or exterior flaws.
   ( ) Yes  (X) No
D. The vehicle has been properly prepared and is in running condition.
   (X) Yes    ( ) No
E. Keyless remote is available and working.
   (X) Yes    ( ) No
F. The glove box contains an owner’s manual, warranty document, consumer
   information, and extra set of keys.
   (X) Yes    ( ) No
G. Proper fuel filler cap is supplied on the test vehicle.
   (X) 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.
   (X) Yes    ( ) No
I. Place vehicle in storage area.
   (X) 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.
   (X) Vehicle OK   ( ) Conditions reported below in comment section
   (X) 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 Indicant, 219 Indicant, 301 Indicant

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Tahoe/SUV

NHTSA NO. C30103

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 is 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: 1/15/02

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.: C30103 Test Date: 11/15/02

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

1. Certification Label

Manufacturer: General Motors Corporation

Date of Manufacture: 08/02

VIN: 1GNEK13Z3R106320

Vehicle certified as: ___ Passenger car ___ MPV ___ Truck ___ Bus

Front axle GVWR: 1633 kg/3600 lbs.
Rear axle GVWR: 1814 kg/4000 lbs.
Total GVWR: 3130 kg/6900 lbs.

2. Tire Placard

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

Designated seating capacity front
Designated seating capacity rear
Total Designated seating capacity

Recommended cold tire inflation pressure front 240 kPa/35 psi
Recommended cold tire inflation pressure rear 240 kPa/35 psi
Recommended tire size P265/70R16

1 Label did not contain this information.
DATA SHEET 4
REAR OUTBOARD SEATING POSITION SEAT BELTS

NHTSA No.: C30103

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

Test Date: 11/15/02

Do all rear outboard seating positions have type 2 seat belts? Yes X; 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.

REMARKS:
DATA SHEET 5
AIR BAG LABELS (S4.5.1)

NHTSA No.: C30103
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 survivor?
      ___ 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?
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))

X 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))

X 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))

X 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))

X 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))

X 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))

X Yes-Pass; ___ No-FAIL

2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2?

X 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))

X 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?

X 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))

X 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))

X 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))

X 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))

X 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: X Yes-Pass ___ No-FAIL
Passenger side: X 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: X Yes-Pass ___ No-FAIL
Passenger side: X Yes-Pass ___ No-FAIL
3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S.4.5.1 (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? (S.4.5.1(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? (S.4.5.1(b)(2)(ii))
Driver side: Length 12.6 cm, Width 7.8 cm
Passenger side: Length 12.6 cm, Width 7.8 cm
Driver actual message area: 98.3 cm²
Passenger actual message area: 98.3 cm²
Driver side: Yes-Pass: No-FAIL
Passenger side: Yes-Pass: No-FAIL

3.1.6 Is the pictogram black on a white background? (S.4.5.1(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? (S.4.5.1(b)(2)(iii))
Driver side: Length 31
Passenger side: Length 31
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? (S.4.5.1 (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." (S.4.5.1(b)(2)(v))) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position? (S.4.5.1 (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? (S.4.5.1 (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? (S.4.5.1 (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? (S.4.5.1 (b)(1)(iii))
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? (S.4.5.1(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 ___ X Yes-Pass ___ No-FAIL
Passenger side ___ X 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 ___ X Yes-Pass ___ No-FAIL
Passenger side ___ X 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); ___ X 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; ___ X 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 ___ X Yes ___ No
If yes, for driver and passenger go to 5.
Passenger side ___ No airbag ___ X 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(e)(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 COTRL) (S4.5.1(e)(2))
   X 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))
   X Yes-Pass; ___ No-FAIL

5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(e)(2))
   X 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))
   X Yes-Pass; ___ No-FAIL

5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i))
   X Yes-Pass; ___ No-FAIL

5.1.5 Is the message white with black text? (S4.5.1(e)(2)(ii))
   X Yes-Pass; ___ No-FAIL

5.1.6 Is the message area at least 30 cm²? (S4.5.1(e)(2)(ii))
   Length ______ cm, Width ______ cm
   Actual message area ________ cm²
   X 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))
   X 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 ______ cm, Width ______ cm
   Actual message area ________ cm²
   ___ Yes-Pass; ___ No-FAIL
Figure 4a. Sun Visor Label Visible When Visor is in Down Position.

Figure 4b. Sun Visor Label Visible When Visor is in Down Position.
Figure 6c. Sun Visor Label Visible When Visor is in Up Position.

Figure 7. Removable Label on Dash.
Figure 8. Sun Visor Label Visible when Visor is in Down Position.
This Vehicle is Equipped with Advanced Air Bags

Even with Advanced Air Bags
Children can be killed or seriously injured by the air bag. The back seat is the safest place for children. Always use seat belts and child restraints. See owner's manual for more information about air bags.

Figure 9. Removable Label on Dash.
DATA SHEET 6
FMVSS 208 READINESS INDICATOR (S4.5.2)

NHTSA No.: C30103 Test Date: 11/15/02
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)

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

X 3. Is the readiness indicator clearly visible to the driver?
   X Yes-Pass; ___ No-FAIL
   X 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?
      X Yes-Pass; ___ No-FAIL
   X 5. Does the vehicle have an on-off switch for the passenger air bag?
      ___ Yes (go to 6) X 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.: C30103                              Test Date: 11/15/02

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

X 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
      X  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.

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

7. Telltale light (S4.5.4.3)

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? (S4.5.4.3d)
    ___ 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: 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.: C30103 Test Date: 11/15/02

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

X 1. Record test fore-aft seat position. Mid (S7.1.1.5 (c)(1))
(Any position is acceptable.)

X 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))
X Yes-Pass; ___ No-FAIL

X 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))
X Yes-Pass; ___ No-FAIL

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 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))

X 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?
X Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

X 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))
X Yes-Pass; ___ No-FAIL

X 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))

X 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 49.0 inches

X 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 17.5 __________ 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 18.3 __________ inches (S7.1.1.5(c)(5))

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 = 1.0 __ 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 = 48.0 __ inches;

X Yes-Pass; __ No-FAIL

REMARKS:
Insert Webbing to Rest Against This Surface

1/4 Inch Diameter (Steel)

Dimension A

Dimension B

Direction of Pull

Dimension A - Width of Webbing Plus 1/2 Inch
Dimension B - 1/2 of Dimension A

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.: C39103 ____________________ Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Second Row Left ____________________

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

X 1. Record test fore-aft seat position. Mid (S7.1.1.5 (c)(1)) (Any position is acceptable.)

X 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

X 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

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 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))

X 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.)

X 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

X 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))

X 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 42.5 ______ inches

X 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 29.6 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 30.5 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 = .7 inches; 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 = -12.0 inches; Yes-Pass; No-FAIL

REMARKS:
Figure 5. - Webbing Tension Pull Device

- **Dimension A**: Width of Webbing Plus 1/2 Inch
- **Dimension B**: 1/2 of Dimension A
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.: C30103 Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Second Row Right

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

X 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))
   (Any position is acceptable.)

X 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))
   _X_ Yes-Pass; _X_ No-FAIL

X 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))
   _X_ Yes-Pass; _X_ No-FAIL

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 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))

X 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?
   _X_ Yes; _X_ No (If yes, go to 7.1. If no, go to 8.)

X 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))
   _X_ Yes-Pass; _X_ No-FAIL

X 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))

X 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: 52.0 inches

X 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 34.5 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 restraints 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 35.0 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= 0.5 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= 17.0 inches;

X Yes-Pass; _____ No-FAIL

REMARKS:
Figure 5. - Webbing Tension Pull Device

Dimension A - Width of Webbing Plus 1/2 Inch
Dimension B - 1/2 of Dimension A
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.: C30103 Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third Row Left

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

X 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))
   (Any position is acceptable.)

X 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))
   X Yes-Pass; ___ No-FAIL

X 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))
   X Yes-Pass; ___ No-FAIL

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 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))

X 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?
   X Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

X 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))
   X Yes-Pass; ___ No-FAIL

X 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))

X 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 46.2 inches

X 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 30.0 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 retractor is 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 30.5 inches (S7.1.1.5(c)(5))

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 = 0.5 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 = 15.7 inches;

X Yes-Pass; __ No-FAIL

REMARKS:
Insert Webbing to Rest Against This Surface

1/4 Inch Diameter (Steel)

Dimension A - Width of Webbing Plus 1/2 Inch
Dimension B - 1/2 of Dimension A

Direction of Pull

**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 retractor that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30103 ____________________________ Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third Row Center – Not Type 2 __________________________

. X 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 retractor is 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

Dimension A - Width of Webbing Plus 1/2 Inch
Dimension B - 1/2 of Dimension A
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 retraction devices that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30103 Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third Row Right

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

X 1. Record test fore-aft seat position. (S7.1.1.5 (c)(1))
(Any position is acceptable.)

X 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))
   X Yes-Pass; ___ No-FAIL

X 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))
   X Yes-Pass; ___ No-FAIL

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 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))

X 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?
   X Yes; ___ No (If yes, go to 7.1. If no, go to 5.)

X 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))
   X Yes-Pass; ___ No-FAIL

X 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))

X 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 45.5 inches

X 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 14.5 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 retractor 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 15.0 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 = 0.5 inches;

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 = 30.5 inches;

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.: C30103  Test Date: 11/15/02

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

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

<table>
<thead>
<tr>
<th>S7.3 (a)(1)</th>
<th>Belt latched &amp; Key on or start</th>
<th>Item 16</th>
<th>0 seconds*</th>
<th>Item 12</th>
<th>0 seconds**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belt stowed &amp; Key on or start</td>
<td>Item 8</td>
<td>60 seconds minimum</td>
<td>Item 4</td>
<td>4 to 8 seconds</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S7.3 (a)(2)</th>
<th>Belt latched &amp; Key on or start</th>
<th>Item 16</th>
<th>4 to 8 seconds</th>
<th>Item 12</th>
<th>0 seconds**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belt stowed &amp; Key on or start</td>
<td>Item 8</td>
<td>4 to 8 seconds</td>
<td>Item 4</td>
<td>4 to 8 seconds</td>
<td></td>
</tr>
</tbody>
</table>

* 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 Rahar of Hogan and Hartson.
18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)
   ___ S7.3 (a)(1)
   X  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
   X  Symbol 101
   ___ FAIL - Does not use any of the above wording or symbol
DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30103
Test Date: 11/15/02

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?
   - X Yes (this form is complete)
   - X 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)
   - X 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)
    - X 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 0.59 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.: C30103
Test Date: 11/15/02

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.

X 1. Does the vehicle incorporate a webbing tension-relieving device?
   
   ___ Yes (this form is complete)
   X ___ No (continue with this check sheet)

X 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

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. (S16.2.10.2)
   
   ___ 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. (S16.2.10.3.1)
   
   X ___ 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. (S16.2.10.3.1)
   
   ___ N/A - No independent seat cushion height adjustment.

X 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

X 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

X 8. Draw a horizontal reference line on the side of the seat cushion.

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 full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)

   X ___ 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

X 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. (§4.5.4.1 (b) and §8.1.3)

   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. (§10.8) 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.: C30103  
Test Date: 11/15/02  

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

DESIGNATED SEATING POSITION: Second 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)  
   X 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)  
   X 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)  
   X 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)  
   X 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)  
   X N/A – No independent seat cushion height adjustment.

6. Put the seat in its full rearward position. (S16.2.10.3.1)  
   X 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)  
   X 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.  
   X 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)  
    X 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: Fixed

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)  
    X 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)
   X  N/A – No adjustments
   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 0.60 lb.
   X 0.0 to 0.7 pounds - Pass
   ___ greater than 0.7 pounds - FAIL.
DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30103 .......................... Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Second 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)
   X 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)
   X 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)
   X 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)
   X 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)
   X N/A - No independent seat cushion height adjustment

6. Put the seat in its full rearward position. (S16.2.10.3.1)
   X 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)
   X 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.
   X 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: Fixed

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)
    X 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)

   X  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.
   X  0.0 to 0.7 pounds - Pass
   ______ greater than 0.7 pounds - FAIL
DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30103
Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third 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.

X 1. Does the vehicle incorporate a webbing tension-relieving device?
   Yes (this form is complete)
   X No (continue with this check sheet)

X 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)
   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. (S16.2.10.2)
   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. (S16.2.10.3.1)
   X 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. (S16.2.10.3.1)
   X N/A - No independent seat cushion height adjustment.

X 6. Put the seat in its full rearward position. (S16.2.10.3.1)
   X 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. (S16.2.10.3.1)
   X N/A - No seat height adjustment

X 8. Draw a horizontal reference line on the side of the seat cushion.

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: R 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 F for full rearward.
   X 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 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: Fixed

X 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)
   X 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. (§4.5.4.1 (b) and §8.1.3)

X 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. (§10.8) 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 0.38 lb.

X 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL
DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30103                      Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third 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.

X 1. Does the vehicle incorporate a webbing tension-relieving device?
   Yes (this form is complete)
   X  No (continue with this check sheet)

X 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)
   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. (S16.2.10.2)
   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. (S16.2.10.3.1)
   X  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. (S16.2.10.3.1)
   X  N/A - No independent seat cushion height adjustment.

X 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

X 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
   X  N/A - No seat height adjustment

X 8. Draw a horizontal reference line on the side of the seat cushion.

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.
   X  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 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: Fixed

X 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)
   X  N/A - No adjustments
   Reference line angle as tested 0°
X 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)

X N/A - No adjustments
Manufacturer's design seat back angle
Tested seat back angle

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 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.

X 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 0.58 lb.

X 0.0 to 0.7 pounds - Pass
Greater than 0.7 pounds - FAIL
DATA SHEET 10
BELT CONTACT FORCE (§7.4.3)

NHTSA No.: C30103  Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third 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. (§8.1.3)
   ___ 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. (§15.2.10.2)
   ___ 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. (§16.2.10.3.1)
   ___ 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. (§16.2.10.3.1)
   ___ N/A – No independent seat cushion height adjustment.

6. Put the seat in its full rearward position. (§16.2.10.3.1)
   ___ 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. (§16.2.10.3.1)
   ___ 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. (§8.1.2)
    ___ 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. (§16.2.10.3.2.1)
    ___ 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. (§4.5.4.1 (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. (§10.8) 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

0.0 to 0.7 pounds — Pass

greater than 0.7 pounds — FAIL
DATA SHEET 11
LATCHPLATE ACCESS (§74.4)

NHTSA No.: C30103

Test Date: 11/15/02

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.

X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (§16.2.10.2)
   ___ 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. (§16.2.10.2)
   ___ 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. (§16.2.10.3.1)
   ___ 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. (§16.2.10.3.1)
   ___ N/A – No independent seat cushion height adjustment.

X 5. Put the seat in its full rearward position. (§16.2.10.3.1)
   ___ 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. (§16.2.10.3.1)
   ___ N/A – No seat height adjustment

X 7. Draw a horizontal reference line on the side of the seat cushion

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 full rearward position and then place the seat in the forwardmost fore-aft position for this test. (§10.7)

X 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°
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 \(15.5^\circ\)  
   Tested seat back angle \(15.5^\circ\)

X 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.

X 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.

X 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.

X 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.

X 16. Place the latch plate in the stowed position.

X 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?  
   X Yes-Pass;  ____ No

X 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?  
   X Yes-Pass;  ____ No

X 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?  
   X Yes-Pass;  ____ No-FAIL

X 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?  
   X Yes-Pass;  ____ No-FAIL
Attach the inboard Reach String (3'4'' long) at the base of the head on centerline.

Rear view 300% real dummy, seated in normal seat adjustment position.

30''

18''

Attach the outboard Reach String (26'' long) at this point on the torso, above.

A—Using flexible tape measure 6'' from back centerline 15-1/4'' from front centerline to find anchor point below arm pit on torso sheath.

Best Plane is 90° to the Torso Line

Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device
Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS
DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30103 Test Date: 11/15/02

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.

X 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

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. (S16.2.10.2)
   ___ 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. (S16.2.10.3.1)
   ___ 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. (S16.2.10.3.1)
   ___ N/A - No independent seat cushion height adjustment.

X 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

X 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

X 7. Draw a horizontal reference line on the side of the seat cushion

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 full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)

X 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 Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart K Test Device
Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

(Note corners are rounded off to reduce snagging.)

Typical arm rest
DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30103

Laboratory: TRC Inc.

Test Date: 11/15/02

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

GVWR: 3130 kg/6900 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.

X 1. Is the vehicle a passenger car or walk-in van-type vehicle?
   Yes, this form is complete
   X No

X 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

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. (S16.2.10.2)
   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. (S16.2.10.3.1)
   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. (S16.2.10.3.1)
   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. (S8.1.2)
   N/A - No seat height adjustment

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. (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

X 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. __Fixed__
   Tested anchorage position __Fixed__

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. __584 mm__
   Record the distance from the edge of the seat to Plane B. __292 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 __411 mm__
   Distance from the vehicle centerline to Plane B __411 mm__

15. Stow outboard armrests that are capable of being stowed. (S7.4.5)

16. Remove the arms of a Subpart E dummy and place it in the seat such that the mid sagittal 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 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)
   X horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) __Measurement not recorded__
   X vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) __Measurement not recorded__
   X 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.
   X 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)

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 belt 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. \( \checkmark \) Pass

   - 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. \( \checkmark \) Pass

   - Neither 26.1 nor 26.3 apply. \( \underline{\text{FAIL}} \)

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; \( \underline{\text{FAIL}} \)

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?

   - No/Fail

   - Yes-Pass; \( \underline{\text{FAIL}} \)
DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30103 __________________________  Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Right Front

GVWR: 3130 kg/6900 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.

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

   Yes, this form is complete
   X  No

X 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

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. (S16.2.10.2)

   ___ 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. (S16.2.10.3.1)

   ___ 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. (S16.2.10.3.1)

   ___ 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. (S8.1.2)

   ___ N/A – No seat height adjustment

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. (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

X 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: Fixed
   Tested anchorage position: Fixed

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. 584 mm
   Record the distance from the edge of the seat to Plane B. 292 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 E 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 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°) (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 belt 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. X Pass

26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. X Pass

26.3 Neither 26.1 nor 26.2 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.: C30103 Test Date: 11/15/02

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.

X 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
   X No; go to 2

X 2. Is the seat removable? (S7.4.6.1(b))
   — Yes; this form is complete
   X No; go to 3

X 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
   X No; go to 4

X 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.
   X 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 seat 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

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

NHTSA No.: C30103
Test Date: 11/15/02

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.

X  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
   X  No; go to 2

X  2. Is the seat removable? (S7.4.6.1(b))
   ___ Yes; this form is complete
   X  No; go to 3

X  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
   X  No; go to 4

X  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.
   X  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.: C30103

Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Second Row Left

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.

X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1(b))
   X Yes; this form is complete
   ___ No; go to 2

2. Is the seat removable? (S7.4.6.1(b))
   ___ Yes; this form is complete
   ___ No; go 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; go 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 fail 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 fail 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 fail 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.: C30103 Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Second Row Right

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))
   X Yes; this form is complete
   No; go to 2

2. Is the seat removable? (S7.4.6.1(b))
   Yes; this form is complete
   No; go 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; go 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

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

NHTSA No.: C30103  Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third Row Left

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.

X 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
   X  No; got to 2

X 2. Is the seat removable? (S7.4.6.1(b))
   X  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.: C30103 ____________________________ Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third Row Center

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; get to 2

2. Is the seat removable? (S7.4.6.1(b))
   ___ Yes; this form is complete
   ___ No; get 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; get 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 unatched. (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 (S7.4.6.6)

NHTSA No.: C30103 Test Date: 11/15/02

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

DESIGNATED SEATING POSITION: Third Row Right

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
   X ___ No; got to 2

2. Is the seat removable? (S7.4.6.1(b))
   X ___ 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.: C30103 —— Test Date: 11/19/02 ——

Laboratory: TRC Inc. —— Test Technician(s): R. Benavioes, 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

1. Fill the transmission with transmission fluid to the satisfactory range.

2. Drain fuel from vehicle

3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.

4. Record the usable fuel tank capacity supplied by the COTR. 26.0 gallons (98.4 L)

5. Record the fuel tank capacity supplied in the owner's manual. 31.0 gallons (117.3 L)

6. Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or clearing fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," fill the fuel tank with an amount equal to the usable capacity provided by the COTR.

Amount added

7. Crank the engine to fill the fuel delivery system with Stoddard solvent.

8. Fill the coolant system to capacity.

9. Fill the engine with motor oil to the max. mark on the dip stick.

10. Fill the brake reservoir with brake fluid to its normal level.

11. Fill the windshield washer reservoir to capacity.

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 pressure:
RF N/A; LF N/A; RR N/A; LR N/A

Actual inflated pressure:
RF 35; LF 35; RR 35; LR 35

13. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight.

Right Front = 607.0 kg  Right Rear = 607.5 kg

Left Front = 689.0 kg  Left Rear = 602.0 kg

TOTAL FRONT = 1296.0 kg  TOTAL REAR = 1209.5 kg

% Total Weight = 51.7%  % Total Weight = 48.3%

UVW = TOTAL FRONT PLUS TOTAL REAR = 2505.5 kg

14. UVW Test Vehicle Attitude: (all dimensions in millimeters)

14.1 Mark a point on the vehicle above the center of each wheel.

14.2 Place the vehicle on a level surface.

14.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements.

RF 921; LF 912; RR 940; LR 931
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 = 3130.0 - 2505.5 = 624.5
   X 15.3 VCW = 624.5
   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 = 7
   X 15.6 DSC = 7
   X 15.7 RCLW = VCW - (68 kg x DSC) = 624.5 - (68 kg x 7) = 148.5
   X 15.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?
       ___ 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: X 5th female ___ 50th male
       Passenger: X 5th female ___ 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 = 618.0 kg  Right Rear = 706.0 kg
       Left Front = 692.5 kg  Left Rear = 703.0 kg
       TOTAL FRONT = 1311.5 kg  TOTAL REAR = 1409.0 kg
       % Total Weight = 48.3%  % Total Weight = 51.7%
       % GVW = 42.1%  % GVW = 45.0%

       FULLY LOADED WEIGHT = TOTAL FRONT + TOTAL REAR = 2726.5 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 918;  LF 907;   RR 910;   LR 902

X 18. Calculate the test weight range (94% fuel fill).
   X 18.1 Calculated Test Weight = Fully Loaded Condition (See 16.4 above) - ([0.06 x usable fuel tank capacity] x 0.79 kg/liter)
       Calculated Test Weight = 2726.5 - ([0.06 x 98.4 x 1.079 kg/l] = 2721.8 kg
   X 18.2 Test Weight Range = Calculated Test Weight - (4.5 kg - 9 kg.)
       Max. Weight = Calculated Test Weight - 4.5 kg = 2717.3 kg
       Min. Weight = Calculated Test Weight - 9 kg = 2712.8 kg

X 19. Remove the RCLW from the cargo area.

5-79  021119-2
20. Remove Stoddard solvent from the gas tank in the amount of 6% of the useable capacity as supplied by the COTR. 

\[
\text{Amount removed} = 0.06 \times \text{useable capacity}
\]

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.

22. Vehicle Components Removed For Weight Reduction:

None

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.

24. If necessary, add ballast to achieve the actual test weight.

N/A

Weight of ballast = 87.0 kg

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.

26. Record the vehicle weight at each wheel to determine the actual test weight.

\[
\begin{align*}
\text{Right Front} & = 678.4 \text{ kg} & \text{Right Rear} & = 684.6 \text{ kg} \\
\text{Left Front} & = 662.4 \text{ kg} & \text{Left Rear} & = 662.0 \text{ kg} \\
\text{TOTAL FRONT} & = 1366.8 \text{ kg} & \text{TOTAL REAR} & = 1346.6 \text{ kg} \\
\% \text{ Total Weight} & = 50.4 \% & \% \text{ Total Weight} & = 49.6 \% \\
\% \text{ GVW} & = 43.7 \% & \% \text{ GVW} & = 43.0 \% \\
\end{align*}
\]

\[
\text{TOTAL FRONT PLUS TOTAL REAR} = 2713.4 \text{ kg}
\]

27. Is the test weight between the Max. Weight and the Min. Weight (See 18.2)?

Yes

No, explain why not.

28. Test Weight Vehicle Attitude: (all dimensions in millimeters)

28.1 Place the vehicle on a level surface.

28.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 3 above) and record the measurements:

RF 900 ; LF 890 ; RR 914 ; LR 909

5-80
**Summary of test attitude**

**29.1**

AS DELIVERED: RF 921; LF 912; RR 940; LR 931

AS TESTED: RF 900; LF 890; RR 914; LR 909

FULLY LOADED: RF 918; LF 907; RR 910; LR 902

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

- Yes
- No, explain why not. *Approved by COTR on test day.*

---

1 At this step 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; 0.094 x 117.3 liter. A total of 110.3 liters was added.
DATA SHEET 27
Vehicle Accelerometer Location

NHTSA No.: C30103 Test Date: 11/19/02

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

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

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.

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.

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.

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.

5. Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart.

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.

7. Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart.

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

DISC BRAKE
CALIPER

LEFT SIDE VIEW
## DATA SHEET 27
VEHICLE ACCELEROMETER LOCATION MEASUREMENTS

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>LENGTH (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE-TEST VALUES</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>813</td>
</tr>
<tr>
<td>B</td>
<td>813</td>
</tr>
<tr>
<td>C</td>
<td>4226</td>
</tr>
<tr>
<td>D</td>
<td>3851</td>
</tr>
<tr>
<td>E</td>
<td>3983 left; 3983 right</td>
</tr>
<tr>
<td>F</td>
<td>693 left; 688 right</td>
</tr>
<tr>
<td>G</td>
<td>3299</td>
</tr>
<tr>
<td>H</td>
<td>2039 left; 2685 right</td>
</tr>
<tr>
<td>K</td>
<td>330</td>
</tr>
<tr>
<td><strong>POST-TEST VALUES</strong></td>
<td></td>
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<tr>
<td>A</td>
<td>813</td>
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<td>B</td>
<td>813</td>
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<tr>
<td>C</td>
<td>4121</td>
</tr>
<tr>
<td>D</td>
<td>3850</td>
</tr>
<tr>
<td>E</td>
<td>3910 left; 3900 right</td>
</tr>
<tr>
<td>F</td>
<td>719 left; 720 right</td>
</tr>
<tr>
<td>G</td>
<td>3302</td>
</tr>
<tr>
<td>H</td>
<td>2019</td>
</tr>
<tr>
<td>K</td>
<td>307</td>
</tr>
</tbody>
</table>

**REMARKS:**


DATA SHEET 28
Photographic Targets

NHTSA No.: C30103  Test Date: 11/18/02

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

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: X 5th female  50th male  Passenger Dummy: X 5th female  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 127 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 A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 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 915 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
   X 1.9 Place tape with squares having alternating colors on the top portion of the steering wheel.
   X 1.10 Chalk the bottom portion of the steering wheel.
   X 1.11 Is this an offset test?
     Yes, continue with this section
     X No, go to 2.
     1.12 Measure the width of the vehicle. Vehicle width ______ mm
     1.13 Find the centerline of the vehicle. (½ of the vehicle width)
     1.14 Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.
     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. 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 indicator test ordered on the “COTR Vehicle Work Order?”
       Yes, continue with this form.
       No, the 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.
RESECTION PANEL TARGETING ALIGNMENT

RESECTION CONTROL POINTS PANEL

C A R T O P T A R G E T S  A 1 & A 2

S T E E R I N G W H E E L

S T E E R I N G C O L U M N T A R G E T  B

R E A R V I E W


L E F T S I D E V I E W

F I G U R E 2 8 B
PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW

LEFT SIDE VIEW

FIGURE 28C
VEHICLE CENTERLINE

BARRIER EDGE IMPACT LINE

±50mm TOLERANCE MARKING (USE 25mm BLACK AND YELLOW BLOCK TAPE, MARKING STOPS AT THE WINDSHIELD).

OFFSET DEFORMABLE BARRIER ADDITIONAL VEHICLE TARGETING

FIGURE 28D
**DATA SHEET 29**  
**CAMERA LOCATIONS**

**VEH. NHTSA No.: C30103  ; TEST DATE: 11/19/02 ; TIME: 1605**

**VEH. YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Tahoe/SUV**

<table>
<thead>
<tr>
<th>CAMERA NO.</th>
<th>VIEW</th>
<th>CAMERA POSITIONS (mm)</th>
<th>ANGLE (deg)</th>
<th>FILM PLANE TO HEAD TARGET</th>
<th>LENS (mm)</th>
<th>SPEED (fps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Left Side View</td>
<td>X: 946 Y: -5760 Z: -960</td>
<td>-1.0</td>
<td>5350</td>
<td>25</td>
<td>24</td>
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<tr>
<td>2</td>
<td>Left Side View (barrier face to front seat backs)</td>
<td>X: -1230 Y: -7660 Z: -1380</td>
<td>0</td>
<td>7200</td>
<td>35</td>
<td>443</td>
</tr>
<tr>
<td>4</td>
<td>Left Side View (B-post aimed toward center of steering wheel)</td>
<td>X: -1640 Y: -7220 Z: -1300</td>
<td>-3.5</td>
<td>7200</td>
<td>25</td>
<td>NA²</td>
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<tr>
<td>5</td>
<td>Left Side View (B-post)</td>
<td>X: -1600 Y: -7310 Z: -950</td>
<td>0</td>
<td>6820</td>
<td>25</td>
<td>595</td>
</tr>
<tr>
<td>6</td>
<td>Left Side View (front door under camera 5)</td>
<td>X: -2770 Y: 9060 Z: -1300</td>
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<td>8480</td>
<td>13</td>
<td>1000</td>
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<td>7³</td>
<td>Right Side View (overall)</td>
<td>X: -900 Y: 5830 Z: -1300</td>
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<td>5350</td>
<td>25</td>
<td>997</td>
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<td>Right Side View (A-post)</td>
<td>X: -5210 Y: 5510 Z: -1940</td>
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<td>4670</td>
<td>25</td>
<td>1000</td>
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<tr>
<td>9</td>
<td>Right Side View (B-post)</td>
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<td>7370</td>
<td>25</td>
<td>1007</td>
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<tr>
<td>10</td>
<td>Right Side View (front door)</td>
<td>X: 470 Y: 0 Z: -2500</td>
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<td>2150</td>
<td>8.5</td>
<td>1000</td>
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<td>11³</td>
<td>Front View Windshield</td>
<td>X: 470 Y: -270 Z: -2500</td>
<td>-62</td>
<td>2200</td>
<td>17</td>
<td>1000</td>
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<tr>
<td>12³</td>
<td>Front View Driver</td>
<td>X: 560 Y: 230 Z: -2500</td>
<td>-62</td>
<td>2180</td>
<td>17</td>
<td>1000</td>
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<td>13³</td>
<td>Front View Passenger</td>
<td>X: 0 Y: 0 Z: -5600</td>
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<td>NA²</td>
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<td>1000</td>
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<td>14²</td>
<td>Overhead Barrier Impact View</td>
<td>X: 0 Y: 0 Z: -5600</td>
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<td>NA²</td>
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<td>15</td>
<td>Pit Camera Engine View</td>
<td>X: -900 Y: 0 Z: 830</td>
<td>90</td>
<td>NA²</td>
<td>13</td>
<td>687</td>
</tr>
<tr>
<td>16</td>
<td>Pit Camera Fuel Tank View</td>
<td>X: -2650 Y: 130 Z: 1000</td>
<td>90</td>
<td>NA²</td>
<td>13</td>
<td>NA²</td>
</tr>
</tbody>
</table>

* +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 turn.
³ Digital camera.
CAMERA POSITIONS FOR FRONTAL IMPACTS

TOP VIEW

CONTINUE PAD

CONCRETE BARRIER

COVER PHOTO PIT

10

8

11

12

13

A1

A2

TEST VEHICLE

MONORAIL

TOW ROAD

REAL TIME CAMERA

CAMEIRA FRAME RATES:

#1 = 24 fps

ALL OTHERS = 1,000 fps

LEFT SIDE VIEW

CONCRETE BARRIER

COVER PHOTO PIT

15

16
DATA SHEET 30

DUddy POSITIONING PROCEDURES FOR TEST DUMMY CONFORMING TO
SUBPART O OF PART 572

Seating Procedure 5th Percentile Female Driver Dummy (Part 572, Subpart O)
(S16.2-S16.3)

NHTSA No.: C30104                                                                 Test Date: 11/19/02

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

Test Number: 021119-2

Seat Type: ___ Bench  ___ Bucket  ___ Split Bench
            (Check One)

1.0 Seat Positioning (S16.2.10)

X 1.1 Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest,
        retracted or deflated adjustment position. (S16.2.10.1)
     ___ N/A - No lumbar adjustment

X 1.2 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

X 1.3 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

X 1.4 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

X 1.5 Put the seat in its full rearward position. (S16.2.10.3.1)
     ___ N/A - the seat does not have a fore-aft adjustment

X 1.6 If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
     ___ N/A - No seat height adjustment

X 1.7 Draw a horizontal line on the side of the seat cushion.

X 1.8 Using only the controls which 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
        rearward of the mid-point), and X for full rearward.
     ___ N/A - The seat does not have a fore-aft adjustment.

X 1.9 Using only the controls which change the seat in the fore-aft direction, place the seat in the full
        forward position. (S16.2.10.3.2)
     ___ N/A - The seat does not have a fore-aft adjustment.

X 1.10 If seat adjustments other than fore-aft are present and the line on the side of the seat cushion
        changes from the horizontal, use those adjustment to maintain the line as close as possible to the
        horizontal. (S16.2.10.3.2)
     ___ N/A - No adjustments

Angle of the line on side of the seat cushion in the full forward position: 0.9 degrees

5-93 021119-2
1.11 If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as “S1”. Mark a reference point on the seat. Identify this point as “S2”. Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)

1.12 Record the mid height position. (S16.2.10.3.3)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. height from S1</td>
<td>109 mm</td>
</tr>
<tr>
<td>Min. height from S1</td>
<td>82 mm</td>
</tr>
<tr>
<td>Test height from S1</td>
<td>95 mm</td>
</tr>
<tr>
<td>Angle of line on seat cushion at test height</td>
<td>0.9 degrees</td>
</tr>
</tbody>
</table>

1.13 Record the horizontal longitudinal distance between Point S1 and Point S2. S1, S2 separation 27 mm

2.0 Dummy Positioning

2.1. Is the seat a bucket seat?  Yes  No

2.1.1 Bucket seats:
Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.1.1.10) 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 cushion 510 mm

2.1.2 Bench seats and split bench seats:
Mark a longitudinal vertical plane that coincides with the center of the steering wheel (S16.3.2.1.4)

2.2 If the vehicle has an adjustable accelerator pedal, place it in the full forward position. (S16.3.2.2.1)

2.3 With the seat in the position from step 1.11, move the seat to the full rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.2.1.1)

2.4 Fully recline the seat back. (S16.3.2.1.2)

2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.2.1.2)

2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.2.1.3)

2.7 Hold down the dummy’s thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.2.1.6)

2.8 Set the angle between the legs and the thighs to 120 degrees.

2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm. (6.3 to 6.7 inches) Center the knee separation with respect to the seat centerline. (S16.3.2.1.6)

Record Knee Separation 160 mm

2.10 Push rearward on the dummy’s knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.2.1.6)

Pelvis contacted seat back
Calves contacted seat cushion

2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.2.1.7)

2.12 If needed, extend the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.2.1.8)

2.13 Position the right foot until the foot is in line with a longitudinal vertical plane passing through the center of the accelerator pedal. Maintain the leg and thigh in a vertical plane. (S16.3.2.1.8)

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2.14 Rotate the left leg and thigh laterally to equalize the distance between each knee and the seating position centerline. (S16.3.2.1.8)

2.15 Using only the controls that move the seat fore and aft, attempt to return the seat to the full forward position. The right foot may contact and depress the accelerator and/or change the angle of the foot with respect to the leg. (S16.3.2.1.8)

   X Full forward position achieved. Proceed to step 2.20.
   X Full forward not achieved because of foot interference. Proceed to step 2.17
   X Full forward not achieved because of steering wheel contact.

2.16 If the dummy's legs contact the steering wheel, move the steering wheel up the minimum amount required to avoid contact. If the steering wheel is not adjustable separate the knees the minimum required to avoid contact. (S16.3.2.1.8)

   X N/A- there was no leg contact
   X Steering wheel repositioned
   X Knees separated

2.17 If the left foot interferes with the clutch or brake pedals, rotate the left foot about the leg to provide clearance. If this is not sufficient, rotate the left thigh outboard at the hip the minimum amount required for clearance. (S16.3.2.1.8)

   X N/A No foot interference with pedals.
   X Foot adjusted to provided clearance.
   X Foot and Thigh adjusted to provide clearance.

2.18 Continue to move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.2.1.8)

   X Full Forward reached

   X Dummy contact. Clearance set at maximum of 5mm
   X Measured Clearance

   X Dummy Contact. Seat set at nearest detent position.

   X Seat position ____ detent positions rearward of full forward
   X (full forward is position zero)

2.19 If the steering wheel was repositioned in step 2.16, return the steering wheel to the original position. If the steering wheel contacts the dummy before reaching the original position, position the wheel until a maximum clearance of 5mm (.2 inches) is achieved, or the steering wheel is in the closest detent position that does not cause dummy contact.

   X N/A Steering wheel was not repositioned.
   X Original position achieved.

   X Dummy contact. Clearance set at maximum of 5mm
   X Measured Clearance

   X Dummy Contact. Steering wheel set at nearest detent position.

   Steering wheel position ____ detent positions upward of original position.
     (Original position is position zero)

2.20 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level +/- 0.5 degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle.

   X Head Level Achieved. (Check all that apply)

   X Head leveled using the adjustable seat back
   X Head leveled using the neck bracket.

   Head Angle _____ degrees

   X Head Level NOT Achieved. (Check all that apply)

   X Head leveled using the adjustable seat back
   X Head leveled using the neck bracket.

   Head Angle _____ degrees

2.21 Verify the pelvis is not interfering with the seat bight.
X 2.22 Verify the dummy abdomen is properly installed.

X 2.23 If the dummy torso contacts the steering wheel while performing step 2.20, reposition the steering wheel in the following order to eliminate contact.

X N/A No dummy torso contact with the steering wheel.

___ 2.23.1 Adjust telescoping mechanism.

_____ N/A No telescoping adjustment.

_____ Adjustment performed (fill in appropriate change)

Steering wheel moved _____ detent positions in the forward direction.

Steering wheel moved _____ mm in the forward direction.

___ 2.23.2 Adjust tilt mechanism.

_____ N/A No tilt adjustment.

_____ No adjustment performed.

_____ Adjustment performed.

Steering wheel moved _____ detent positions Upward/Downward.

(circle one)

Steering wheel moved _____ degrees Upward/Downward

___ 2.23.3 Adjust Seat in the aft direction.

_____ No Adjustment performed.

_____ Seat moved aft _____ mm from original position.

_____ Seat moved aft _____ detent positions from the original position.

X 2.24 Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees +/- 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference.

_____ Pelvic angle set to 20.0 degrees +/- 2.5 degrees.

X Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.

X Record the pelvic angle. -- 25.9 _______ degrees

X 2.25 Check the dummy for contact with interior after completing adjustments.

X No contact.

_____ Dummy in contact with interior.

_____ Seat moved Aft _____ mm from the previous position.

_____ Seat moved Aft _____ detent positions from the previous position.

X 2.26 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward.

X N/A Seat already at full forward position.

_____ Clearance unchanged. No adjustments required.

_____ Additional clearance available

_____ Seat moved Forward _____ mm from the previous position.

_____ Seat moved Forward _____ detent positions from the previous position.

X 2.27 Driver's foot positioning, right foot

X 2.27.1 Place the foot perpendicular to the leg and determine if the right heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.28 otherwise, proceed to step 2.29.

X 2.28 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.28.6 shall be completed in all cases.

X 2.28.1 With the rear of the heel contacting the floor pan, move the foot forward until pedal contact occurs or the foot is at the full forward position.

2.28.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position.

2.28.3 Extend the leg, allowing the heel to lose contact with the floor until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
2.28.4 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

2.28.5 Align the center line of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

X 2.28.6 Record foot position

X Pedal Contact achieved. Contact occurred at step 2.28.1.

X Heel contacts floor pan

Heel set _____ mm from floor pan.

Pedal Contact not achieved. Heel set _____ mm from the floor pan.

FIGURE G1

2.29 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.29.5 shall be completed in all cases.

2.29.1 Extend the leg until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

2.29.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
2.29.3 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

2.29.4 Align the centerline of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

2.29.5 Record foot position
   Pedal Contact achieved. Contact occurred at step _________.
   Heel set _____ mm from floor pan.
   Pedal Contact not achieved. Heel set _____ mm from the floor pan.

X 2.30 Driver’s foot positioning, left foot.
   X 2.30.1 Place the foot perpendicular to the leg and determine if the left heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.30.2 otherwise, position the leg as perpendicular to the thigh as possible with the foot parallel to the floor pan.

X 2.30.2 Place the left foot on the toe board with the heel resting on the floor pan as close to the intersection of the floor pan and the toe board as possible. Adjust the angle of the foot if necessary to contact the toe board. If the foot will not contact the toe board, set the foot perpendicular to the leg, and set the heel on the floor pan as far forward as possible. Do not place the foot on the wheel well projection or footrest. If the pedals interfere with the placement of the foot, reposition the foot by rotating the foot about the leg, or rotate the leg outboard about the hip if necessary.
   Foot rotated about the leg
   Foot rotated about the leg, and the leg rotated about the hip.
   X No pedal interference

X 2.30.3 Record foot position.
   Heel does not contact floor pan.
   Foot placed on toe board.
   X Foot placed on floor pan.

X 2.31 Driver arm/hand positioning.
   X 2.31.1 Place the dummy’s upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)

X 2.31.2 Place the palms of the dummy in contact with the outer part of the steering wheel rim at its horizontal centerline with the thumbs over the steering wheel rim. (S16.3.2.3.2)

X 2.31.3 If it is not possible to position the thumbs inside the steering wheel rim at its horizontal centerline, then position them above and as close to the horizontal centerline of the steering wheel rim as possible. (S16.3.2.3.3)

X 2.31.4 Lightly tape the hands to the steering wheel rim so that if the hand of the test dummy is pushed upward by a force of not less than 9 N (2 lb) and not more than 22 N (5 lb), the tape releases the hand from the steering wheel rim. S16.3.2.3.4

X 2.32 Adjustable head restraints
   X 2.32.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)
   X N/A Vehicle does not contain automatic head restraints.

X 2.32.2 Adjust each head restraint to its lowest position. (S16.3.4.2)

X 2.32.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust each head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)

Vertical height of head restraint 200 mm
Mid-point height 100 mm

X 2.32.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)
   X N/A midpoint position attained in previous step
   Heelrest set at nearest detent below the head CG
2.32.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first.  (S16.3.4.4)

2.33 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy).  (S16.3.5)

2.33.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.

Manufacturer's specified position

Actual Position

2.33.2 Place the Type 2 manual belt around the test dummy and fasten the latch.  (S16.3.5.2)

2.33.3 Ensure that the dummy's head remains as level as possible.  (S16.3.5.3)

2.33.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor.  (S16.3.5.4)
Seating Procedure 5th Percentile Female Passenger Dummy
(Part 572, Subpart O) (S16.2- S16.3)

NHTSA No.: C30104

Test Date: 11/19/02

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

Test Number: 021119-2

Seat Type: X Bucket ___ Split Bench

(Check One)

1.0 Seat Positioning (S16.2.10)

X 1.1. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)

___ N/A - No lumbar adjustment

X 1.2. 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

X 1.3. 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

X 1.4. 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

X 1.5. If the seat is a bench seat, use the position determined for the driver's side and proceed to Section 2.0.

___ N/A - Seat is not a bench seat

X 1.6. Put the seat in its full rearward position. (S16.2.10.3.1)

___ N/A - the seat does not have a fore-aft adjustment

X 1.7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)

___ N/A - No seat height adjustment

X 1.8. Draw a horizontal line on the side of the seat cushion.

X 1.9. Using only the controls which 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 rearward of the mid-point), and R for full rearward.

___ N/A - The seat does not have a fore-aft adjustment

X 1.10. Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)

___ N/A - The seat does not have a fore-aft adjustment

X 1.11. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)

___ N/A - No adjustments

Angle of the line on side of the seat cushion in the full forward position. degrees

X 1.12. If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height, and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)
1.13 Record the mid height position of S2. (S16.2.10.3.3)
   X N/A — No seat height adjustment
   Max. height from S1  52 mm
   Min. height from S1  24 mm
   Test height from S1  38 mm
   Angle of line on seat cushion at test height: 0 degrees

1.14 Record the horizontal longitudinal distance between Point S1 and Point S2.
   S1, S2 separation  28 mm

2.0 Dummy Positioning

NOTE: Certain steps may need to be performed simultaneously with the positioning of the driver side dummy.

2.1 Is the seat a bucket seat?  X Yes  X No
   If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.

2.1.1 Bucket seats:
   Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.1.10)
   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 cushion.  510 mm
   Record the distance from the edge of the seat cushion to the vertical plane.  255 mm

2.1.2 Bench seats and split bench seats:
   Mark a longitudinal vertical plane that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel. (S16.3.3.1.4)

2.3 With the seat in the position from step 1.5 or 1.13, move the seat to the full rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.3.1.1)

2.4 Fully recline the seat back. (S16.3.3.1.2)
   X N/A seat back not adjustable.

2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.3.1.2)

2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.3.1.3 or S16.3.3.1.4)

2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.3.1.5)

2.8 Set the angle between the legs and the thighs to 120 degrees. (S16.3.3.1.6)

2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm (6.3 to 6.7 inches). Center the knee separation with respect to the seat centerline. (S16.3.3.1.6)
   Record Knee Separation  160 mm

2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.3.1.6)
   Pelvis contacted seat back,
   X Calves contacted seat cushion.

2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.3.1.7)

2.12 If needed, extend the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.3.1.8)

2.13 If the seat is a bench seat perform the driver dummy setup first and perform only the steps that do not affect the seat position or seat back angle of the driver as indicated. (S16.2.10.3)
2.14 Using only the controls that move the seat fore and aft, move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. [S16.3.3.1.8]

N/A Bench Seat

X Dummy Forward reached

Dummy contact. Clearance set at maximum of 5 mm

Measured Clearance __________ mm

Dummy Contact. Seat set at nearest detent position.

Seat position _______ detent positions rearward of full forward (full forward is position zero)

2.15 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level +/- 0.5 degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. [S16.3.3.1.9 and S16.3.3.1.10] (Check All That Apply)

X Seat back not adjustable

X Seat back not independent of driver side seat back

X Head Level Achieved. (Check all that apply)

X Head leveled using the adjustable seat back

X Head leveled using the neck bracket.

Head Angle __________ degrees

X Head Level NOT Achieved. (Check all that apply)

X Head leveled using the adjustable seat back

X Head leveled using the neck bracket.

Head Angle __________ degrees

2.16 Verify the pelvis is not interfering with the seat belt. [S16.3.3.1.9]

2.17 Verify the dummy abdomen is properly installed. [S16.3.3.1.9]

2.18 Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees +/- 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference. [S16.3.3.1.11]

X Pelvic angle set to 20.0 degrees +/- 2.5 degrees.

X Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.

X Record the pelvic angle. __________ degrees

2.19 Verify the transverse instrument platform of the dummy head is level +/- 0.5 degrees. Use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. [S16.3.3.1.9, S16.3.3.1.10, and S16.3.3.1.11]

X Head Level Achieved

Head Angle __________ Measurement not recorded __________ degrees

Head Angle __________ degrees

2.20 Check the dummy for contact with interior after completing adjustments. [S16.3.3.1.12]

N/A Bench Seat

x No contact.

___ Dummy in contact with interior.

___ Seat moved aft __________ mm from previous position.

___ Seat moved aft __________ detent positions from the previous position.

2.21 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward. [S16.3.3.1.12]

N/A Bench Seat

X N/A Seat already at full forward position.

___ Clearance unchanged. No adjustments required.

___ Additional clearance available

___ Seat moved Forward __________ mm from the previous position.

___ Seat moved Forward __________ detent positions from the previous position.

___ Seat moved Forward, Full Forward position reached.
2.22 Passenger foot positioning. (Indicate final position achieved) (S16.3.3.2)
   2.22.1 Place feet flat on the toe board. OR
   2.22.2 If the feet cannot be placed flat on the toe board, set the feet perpendicular to the lower leg, and rest the heel as far forward on the floor pan as possible. OR
   2.22.3 If the heels do not touch the floor pan, set the legs to vertical and set the feet parallel to the floor pan

2.23 Passenger arm/hand positioning. (S16.3.3.3)
   2.23.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)
   2.23.2 Place the palms of the dummy in contact with the outer part of the thighs (S16.3.3.3.2)
   2.23.3 Place the little fingers in contact with the seat cushion. (S16.3.3.3.3)

2.24 Adjustable head restraints
   2.24.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)
      X N/A Vehicle does not contain automatic head restraints.
   2.24.2 Adjust the head restraint to its lowest position. (S16.3.4.2)
   2.24.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust the head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)
      Vertical height of head restraint 190 mm
      Mid-point height 95 mm
   2.24.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)
      X N/A midpoint position attained in previous step
      Head restraint set at nearest detent below the head CG
   2.24.5 If the head restraint has a fore-and-aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment

2.25 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy) S16.3.5
   2.25.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the DOTR.
      Manufacturer's specified position
      Actual Position
   2.25.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)
   2.25.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)
   2.25.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lb) to 18 N (4 lb) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)
### DATA SHEET 31
### DUMMY POSITIONING MEASUREMENTS

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</tr>
<tr>
<td>RA</td>
<td>98</td>
<td>NA</td>
</tr>
<tr>
<td>KDL</td>
<td>119 ANGLE 57.1°</td>
<td>98</td>
</tr>
<tr>
<td>KDR</td>
<td>112</td>
<td>95 ANGLE 60.3°</td>
</tr>
<tr>
<td>PA°</td>
<td>25.6°</td>
<td>22.1°</td>
</tr>
<tr>
<td>TA°</td>
<td>54.1°</td>
<td>57.0°</td>
</tr>
<tr>
<td>KK</td>
<td>235</td>
<td>160</td>
</tr>
<tr>
<td>ST</td>
<td>611 ANGLE -55.5°</td>
<td>630 ANGLE -54.4°</td>
</tr>
<tr>
<td>SK</td>
<td>794 ANGLE -1.0°</td>
<td>803 ANGLE -0.4°</td>
</tr>
<tr>
<td>SH</td>
<td>480 ANGLE 8.6°</td>
<td>473 ANGLE 5.3°</td>
</tr>
<tr>
<td>SHY</td>
<td>293</td>
<td>295</td>
</tr>
<tr>
<td>HS</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>HD</td>
<td>209</td>
<td>191</td>
</tr>
<tr>
<td>AD</td>
<td>184</td>
<td>213</td>
</tr>
</tbody>
</table>
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.

**HIS**  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
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCA</td>
<td>Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.</td>
</tr>
<tr>
<td>NA</td>
<td>Measure the angle made when taking the measurement NR with respect to the horizontal.</td>
</tr>
<tr>
<td>KDA</td>
<td>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.</td>
</tr>
<tr>
<td>WA</td>
<td>Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).</td>
</tr>
<tr>
<td>TA</td>
<td>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.</td>
</tr>
</tbody>
</table>
DATA SHEET 32
CRASH TEST

NHTSA No.: C30103
Test Date: 11/19/02

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

Impact Angle: 0° Belted Dummies: Yes No

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

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

1. Vehicle underbody painted
2. The speed measuring devices are in place and functioning.
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)
4. Convertible top is in the closed position.
   X N/A – Not a convertible
5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected.
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
7. Time zero markers and switches in-place.
8. Pre test zero and shunt calibration adjustments performed and recorded
9. Dummy temperature meets requirements of section 12.2 of the test procedure.
10. Vehicle hood closed and latched
11. Transmission placed in neutral
12. Parking brake off
13. Ignition in the ON position
14. Doors closed and latched but not locked.
15. Posttest zero and shunt calibration checks performed and recorded
16. Actual test speed 39.2 km/h
17. Vehicle rebound from the barrier 49.5 cm
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 Easy
   Right rear door Easy
19. Describe the contact points of the dummy with the interior of the vehicle.
   Driver dummy Head contacted airbag and seat back at the point where the shoulder belt comes out of the seat. Chest contacted airbag. Abdomen contacted airbag and steering wheel. Both knees contacted knee bolster.
   Passenger dummy Head contacted airbag and head restraint. Chest and abdomen contacted airbag. Both knees contacted the glove box.
DATA SHEET 34

ACCIDENT INVESTIGATION MEASUREMENTS

NHTSA No.: C30103 Test Date: 11/19/02

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

Impact Angle: 0° Belted Dummies: Yes No

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

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

Vehicle Year/Make/Model/Body Style: 2003/Chevrolet/Tahoe/MPV

VIN: 1GNEK13ZX3R106320

Wheelbase: 2945 Build Date: 08/02

Veh. Size Category: SUV Test Weight: 2713.4

Front Overhang: 925 Overall Width: 1990

Veh. Impact Speed: 39.2 Vel. Change 1: 44.7 km/h

Collision Deformation Classification (CDC) Code: 12FDEW2

1 From integration of right rear seat crossmember X-axis accelerometer.
Impact Mode: 0° Front

Crush Depth Dimensions:

C1 = 256 mm
C2 = 379 mm
C3 = 452 mm
C4 = 451 mm
C5 = 400 mm
C6 = 349 mm

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

Length of Damage Region:

L = 1762 mm

REMARKS:

Numbered from left to right of vehicle.
DATA SHEET 35
WINDSHIELD MOUNTING (FMVSS 212)

NHTSA No.: C30103
Test Date: 11/19/02

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

Impact Angle: 0°  Belted Dummies: Yes  No

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

Driver Dummy: X  5th female  50th male  Passenger Dummy: X  5th female  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 D, E, and F 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

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Pre-crash mm</th>
<th>Post-crash mm</th>
<th>Percent Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>700</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>675</td>
<td>675</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>880</td>
<td>880</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2255</td>
<td>2255</td>
<td>100</td>
</tr>
<tr>
<td>Right side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>700</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>675</td>
<td>675</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>880</td>
<td>880</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2255</td>
<td>2255</td>
<td>100</td>
</tr>
<tr>
<td>Width of Molding</td>
<td>G</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Indicate area of mounting failure.

### FRONT VIEW OF WINDSHIELD

**INDICATE WIDTH OF MOLDING**

ZERO POINT (0,0)
DATA SHEET 36
WINDSHIELD ZONE INTRUSION (FMVSS 219)

NHTSA No.: C30103 Test Date: 11/19/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, 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: X 5th female 50th male Passenger Dummy: X 5th female 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

![Diagram of windshield with dimensions and labels]

A. Windshield Dimensions

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>350</td>
<td>1760</td>
<td>675</td>
<td>465</td>
<td>910</td>
</tr>
</tbody>
</table>

5-115
021119-2
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.

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

REMARKS:

No penetration into or beneath the protected zone.
DATA SHEET 37
FUEL SYSTEM INTEGRITY (FMVSS 301)

TEST VEHICLE NHTSA NO.: C30103 ; TEST DATE: 11/19/02

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: J. Jenkins

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 minute, 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 minute, 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 minute, 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
C30183 / 2003 CHEVROLET TAHOE 4WD
DRIVER HEAD Z-AXIS ACCELERATION
FMYS208 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-2

ACCELERATION (G X 10^-1)

-56 -18 19 57 95 133 171

-20 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310

TIME (MS)

CHANNEL: HE02G1 FILTER: CH. CLASS 1000

PEAK DATA: 15.89 G @ 92.24 MS, -5.13 G @ 52.24 MS
C30183 / 2003 CHEVROLET TAHOE 4WD
DRIVER NECK MOMENT ABOUT Z AXIS
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

TORQUE (N·M x 10^-1)

TIME (MS)

CHANNEL: NEKZM1  FILTER: CH. CLASS 600  PEAK DATA: 5.79 N·M @ 94.96 MS; -2.72 N·M @ 185.60 MS
C30183 / 2003 CHEVROLET TAHOE 4WD
DRIVER NIJ COMPRESSION/EXTENSION
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

CHANNEL: NCE1  FILTER: CH. CLASS 600  PEAK DATA: 0.03 NIJ @ 41.28 MS, 0.00 NIJ @ -8.96 MS
C30123 / 2003 CHEVROLET TAHOE 4WD
DRIVER NIJ COMPRESSION/FLEXION
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

CHANNEL: NCF1
FILTER: CH. CLASS 600
PEAK DATA: 0.07 NIJ @ 51.84 MS, 0.00 NIJ @ -20.00 MS
C3013 / 2003 CHEVROLET TAHOE 4WD
RIGHT FRONT PASSENGER NECK Y-AXIS SHEAR FORCE
FMVSS208 FLAT FRONTAL/UNBELTED

FORCE (IN)

CHANNEL: NEKF2    FILTER: CH. CLASS 1000

PEAK DATA: 151.95 N @ 63.04 MS; -16.07 N @ 71.44 MS
C30193 / 2003 CHEVROLET TAHOE 4WD
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

TRC INC.

TORQUE (N·M × 10⁻¹)

TIME (MS)

CHANNEL: NEKZM2  FILTER: CH. CLASS 600
PEAK DATA: 3.37 N·M @ 73.84 MS; -6.89 N·M @ 145.92 MS
C30103 / 2003 CHEVROLET TAHOE 4WD
RIGHT FRONT PASSENGER NIJ COMPRESSION/FLEXION
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

CHANNEL: MCF2
FILTER: CH. CLASS 600
PEAK DATA: 0.13 NIJ @ 154.48 MS; 0.00 NIJ @ -20.00 MS
C30183 / 2003 CHEVROLET TAHOE 4WD
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE
FMYS5200 FLAT FRONTAL/UNBELTED

TEST NUMBER: 021119-2

FORCE (N X 10^3)

-400
-331
-262
-193
-124
-55
14

TIME (MS)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310

CHANNEL: RFMZ2 FILTER: CH. CLASS 600
PEAK DATA: 132.08 N @ 37.29 MS, -3681.09 N @ 54.88 MS
C30183 / 2083 CHEVROLET TAHOE 4WD
RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

ACCELERATION (G X 10^-1)
-227 -20 10 40 70 100 130 160 190 220 250 280 310
021119-2

CHANNEL: RSXGC  FILTER: CH. CLASS 60
PEAK DATA: 1.73 G @ 113.92 MS, -20.93 G @ 26.40 MS
C30103 / 2003 CHEVROLET TAHOE 4WD
RIGHT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED
TEST NUMBER: 021119-2

CHANNEL: RSXVC    FILTER: CH. CLASS 60
PEAK DATA: 5.05 G @ 47.04 MS, -2.19 G @ 57.28 MS
ENGINE BOTTOM X-AXIS ACCELERATION
FMVSS208 FLAT FRONTAL/UNBELTED

CHANNEL: BENXC  FILTER: CH. CLASS 60
PEAK DATA: 5.97 G @ 77.04 MS, -20.30 G @ 32.96 MS
Section 7

Photographs
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<th>Image Title</th>
<th>Page</th>
</tr>
</thead>
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<td>Pre-Test Front View</td>
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</tr>
<tr>
<td>2</td>
<td>Post-Test Front View</td>
<td>7-6</td>
</tr>
<tr>
<td>3</td>
<td>Pre-Test Left Side View</td>
<td>7-7</td>
</tr>
<tr>
<td>4</td>
<td>Post-Test Left Side View</td>
<td>7-8</td>
</tr>
<tr>
<td>5</td>
<td>Pre-Test Right Side View</td>
<td>7-9</td>
</tr>
<tr>
<td>6</td>
<td>Post-Test Right Side View</td>
<td>7-10</td>
</tr>
<tr>
<td>7</td>
<td>Pre-Test Left Front Three-Quarter View</td>
<td>7-11</td>
</tr>
<tr>
<td>8</td>
<td>Post-Test Left Front Three-Quarter View</td>
<td>7-12</td>
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<td>9</td>
<td>Pre-Test Right Rear Three-Quarter View</td>
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<td>10</td>
<td>Post-Test Right Rear Three-Quarter View</td>
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</tr>
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<td>11</td>
<td>Pre-Test Windshield View</td>
<td>7-15</td>
</tr>
<tr>
<td>12</td>
<td>Post-Test Windshield View</td>
<td>7-16</td>
</tr>
<tr>
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# Shunt Measurement after Test

Name of Test: 02119-2  
Date: 2002-12-20 17:32:55

<p>| Name of DA | Name of Sensor | Channel | Reference | Shunt 1 (+) Voltage / V | Value / V | Reference | Out of Range | Value / V | Reference | Out of Range | Value / V | Reference | Out of Range | Value / V | Reference | Out of Range | Value / V | Reference | Out of Range |
|------------|----------------|---------|-----------|------------------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|
| DAUA       | EVENT          | 0001    |           |                        |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | P17337         | 0002    |           | 3.000                  | 3.144     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | P17559         | 0003    |           | 3.000                  | 3.166     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | P15856         | 0004    |           | 3.000                  | 3.150     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-287-FX  | 0005    |           | 3.700                  | 3.706     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-287-FY  | 0006    |           | 3.700                  | 3.718     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-287-EZ  | 0007    |           | 3.700                  | 3.674     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-287-MX  | 0008    |           | 3.700                  | 3.717     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-287-MY  | 0009    |           | 3.700                  | 3.717     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-287-MZ  | 0010    |           | 3.700                  | 3.664     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | P16194         | 0011    |           | 3.000                  | 3.157     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | P16517         | 0012    |           | 3.000                  | 3.145     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | P16428         | 0013    |           | 3.000                  | 3.152     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | 14CB1-2897-13  | 0014    |           | 5.000                  | 3.184     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | 2121-0257      | 0015    |           | 3.700                  | 3.686     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | 2121-0258      | 0016    |           | 3.700                  | 3.698     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | 0210316-A13    | 0017    |           | 3.000                  | 3.169     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | 0210216-A08    | 0018    |           | 3.000                  | 3.164     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | 02H0216-A18    | 0019    |           | 3.000                  | 3.165     | Yes       |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-180-FX  | 0020    |           | 3.700                  | 3.716     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-180-FY  | 0021    |           | 3.700                  | 3.711     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-180-FZ  | 0022    |           | 3.700                  | 3.678     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-180-MX  | 0023    |           | 3.700                  | 3.717     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |
| DAUA       | IF-205-180-MY  | 0024    |           | 3.700                  | 3.708     | No        |             |           |           |             |           |           |             |           |           |             |           |           |             |           |           |             |</p>
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