**REPORT NUMBER: TR-P32096-12-NC**

**RESEARCH AND DEVELOPMENT**

**80 KM/H 70% OVERLAP REAR IMPACT**

**AUTOALLIANCE INTERNATIONAL, INC.**

**1997 MAZDA 626 4-DOOR SEDAN**

**NHTSA NUMBER: PV5400**

**PREPARED BY:**

**KARCO ENGINEERING, LLC.**

**9270 HOLLY ROAD**

**ADELANTO, CA 92301**

**TEST DATE:**

**SEPTEMBER 12, 2012**

**REPORT DATE:**

**SEPTEMBER 19, 2012**

**FINAL REPORT**

**U.S. DEPARTMENT OF TRANSPORTATION**

**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**

**NATIONAL CENTER FOR STATISTICS AND ANALYSIS**

**OFFICE OF REGULATORY ANALYSIS AND EVALUATION**

**1200 NEW JERSEY AVE, SE**

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**WASHINGTON, DC 20590**

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FINAL REPORT ACCEPTANCE BY ~~NCSA~~ COTR: _____

Date: 9/27/12

## TECHNICAL REPORT DOCUMENTATON PAGE

| | | | |
|---|---|---|---|
| **1. Report No.**<br>TR-P32096-12-NC | **2. Government Accession No.** | **3. Recipient's Catalog No.** | |
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| **7. Authors**<br>Ms. Sweta P. Dedania, Project Engineer, KARCO<br>Mr. Frank Richardson, Program Manager, KARCO | | **8. Performing Organization Report No.**<br>TR-P32096-12-NC | |
| **9. Performing Organization Name and Address**<br>KARCO Engineering, LLC.<br>9270 Holly Rd.<br>Adelanto, CA 92301 | | **10. Work Unit No.**<br>**11. Contract or Grant No.**<br>DTNH22-11-D-00245 | |
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| **15. Supplementary Notes** | | | |
| **16. Abstract**<br>An 80 km/h 70% overlap rear impact test was conducted on the subject 1997 Mazda 626 4-door sedan in accordance with the specifications of the Office of Vehicle Compliance Laboratory Test Procedure for FMVSS 301R. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on September 12, 2012.<br><br>The impact velocity was 79.75 km/h and the outside ambient temperature was 36.0 deg. C. The vehicle's doors remained closed throughout the event.<br><br>There was no Stoddard solvent leakage after the test or during any portion of the static rollover. | | | |
| **17. Key Words**<br>FMVSS 301R<br>Overlap Rear Impact<br>MDB<br>1997 Mazda 626 | | **18. Distribution Statement** | |
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## SUMMARY OF TEST

### SUMMARY

The purpose of this rear impact test series is to measure the performance of the subject vehicle, a 1997 Mazda 626 4-door sedan, for FMVSS 301R *'Fuel System Integrity – Rear Impact'*.

This 80 km/h 70% Overlap Rear Impact is sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number DTNH22-11-D-00245. It was conducted in accordance with the Office of Vehicle Compliance Laboratory Test Procedure for FMVSS 301R *'Fuel System Integrity – Rear Impact'*, dated January, 2007.

A 1997 Mazda 626 4-door sedan was impacted by a moving deformable barrier at a velocity of 79.75 km/h. The test was performed at KARCO Engineering, LLC. on September 12, 2012. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

Two (2) real-time cameras and three (3) high-speed cameras were used to document the rear impact event.

Two Part 572E 50$^{th}$ percentile male anthropomorphic test devices (ATD) were placed in the driver and right front passenger seating positions. Both ATD's were un-instrumented for this test.

Both the driver and passenger side doors remained closed during the impact event and after the impact.

There was no Stoddard solvent leakage after the test or during any portion of the static rollover. FMVSS 301 data is summarized in Data Sheets 6 and 7. Photographs are presented in Appendix A.

## SECTION 2

## DATA SHEETS

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

### CONVERSION FACTORS

| Quantity | Typical Application | Std Units | Metric Unit | Multiply By |
|---|---|---|---|---|
| Mass | Vehicle Weight | lb | kg | 0.4536 |
| Linear Velocity | Impact Velocity | miles/hr | km/hr | 1.609344 |
| Length or Distance | Measurements | in | mm | 25.4 |
| Volume | Fuel Systems | gal | liter | 3.785 |
| Volume | Small Fluids | oz | mL | 29.574 |
| Pressure | Tire Pressures | $lbf/in^2$ | kPa | 6.895 |
| Temperature | General Use | $^oF$ | $^oC$ | =(Tf -32)/1.8 |
| Force | Dynamic Forces | lbf | N | 4.448 |
| Moment | Torque | lbf-ft | N•m | 1.355 |

## DATA SHEET NO. 1

## TEST VEHICLE SPECIFICATIONS

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

## TEST VEHICLE INFORMATION AND OPTIONS

| | |
|---|---|
| NHTSA Number | PV5400 |
| Model Year | 1997 |
| Make | Mazda |
| Model | 626 |
| Body Style | 4-Door Sedan |
| VIN | 1YVGE22C1V56 |
| Date Received | 8/27/2012 |
| Body Color | Green |
| Odometer Reading (km / mi) | 215,443 / 133,870 |
| Engine Displacement (L) | 2.0 |
| Engine Placement | Transverse |
| Transmission Type | Manual |
| Transmission Speeds | 5 |
| Overdrive | No |
| Final Drive | Front |
| Roof Rack | No |
| Sunroof / T-Top | No |
| Tinted Glass | No |
| Traction Control | No |
| Power Brakes | Yes |
| Front Disc Brakes | Yes |
| Rear Disc Brakes | No |
| Anti-Lock Brakes (ABS) | Yes |

| | |
|---|---|
| All Wheel Drive | No |
| Power Steering | Yes |
| Driver Front Airbag | Yes |
| Driver Side Airbag | No |
| Driver Head Airbag | No |
| Driver Curtain Airbag | No |
| Driver Combo Airbag | No |
| Driver Knee Airbag | No |
| Passenger Front Airbag | Yes |
| Passenger Side Airbag | No |
| Passenger Head Airbag | No |
| Passenger Curtain Airbag | No |
| Passenger Combo Airbag | No |
| Passenger Knee Airbag | No |
| Seat Belt Pre-Tensioners | Yes |
| Load Limiters | Yes |
| Bucket Seats | Yes |
| Air Conditioning | Yes |
| AM/FM CD | No |
| Tilt Steering | Yes |
| Automatic Door Locks | No |
| Power Windows | No |
| Power Seats | No |

Does Owner's Manual provide instructions to turn off automatic door locks?

## DATA FROM CERTIFICATION LABEL

| | |
|---|---|
| Manufactured By | Autoalliance International, Inc. |
| Date of Manufacture | Jun-97 |

| | |
|---|---|
| GVWR (kg) | 1724 |
| GAWR Front (kg) | 931 |
| GAWR Rear (kg) | 793 |

## VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

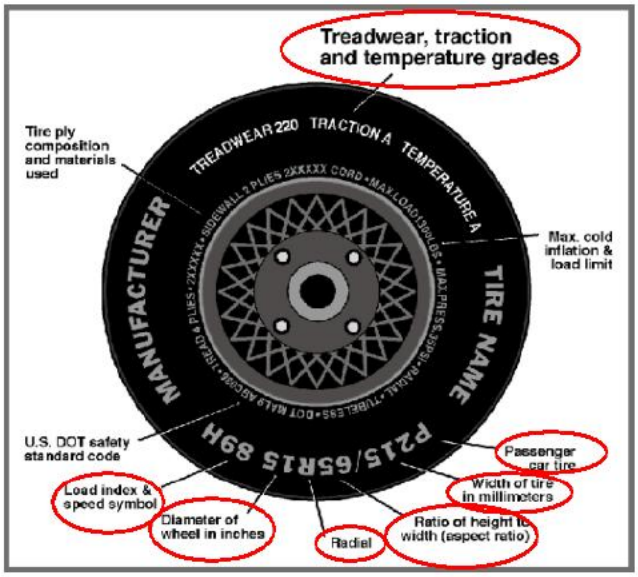
| Measured Parameter | Front | Rear | Third | Total | |
|---|---|---|---|---|---|
| Type of Seats | Bucket | Bench | | | |
| Designated Seating Capacity | 2 | 3 | | 5 | |
| Capacity Weight (VCW) (kg) | | | | 385.0 | *A* |
| DSC x 68.04 (kg) | | | | 340.0 | *B* |
| Cargo Weight (RCLW) (kg) | | | | 45.0 | *A-B* |

## DATA SHEET NO. 1 … (CONTINUED)

## TEST VEHICLE SPECIFICATIONS

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12




### VEHICLE TIRE INFORMATION

| Measured Parameter | Front | Rear |
|---|---|---|
| Max Tire Pressure (kPa) | 300 | 300 |
| Cold Tire Pressure (kPa) | 220 | 220 |
| Max Load Tire Pressure (kPa) | 220 | 220 |
| Recommended Tire Size | P195/65R14 | P195/65R14 |
| Tire Size on Vehicle | P195/65R14 | P195/65R14 |
| Tire Manufacturer | Yokohama | Yokohama |
| Tire Model | Avid H4S | Avid H4S |
| Load Range | 560 | 560 |
| Treadwear Rating | 500 | 500 |
| Traction Rating | AA | AA |
| Temperature Grades | A | A |
| Tire Plies Sidewall | 1 Polyester | 1 Polyester |
| Tire Plies Body | 1 Polyester, 2 Steel | 1 Polyester, 2 Steel |
| Load Index/Speed Symbol | 88H | 88H |
| Tire Material | Polyester, Steel | Polyester, Steel |
| DOT Safety Code Left | CC9K 8ZB 4408 | CC9K 8ZB 4408 |
| DOT Safety Code Right | CC9K 8ZB 4408 | CC9K 8ZB 4408 |
| Type of Spare Tire | N/A | |
| Location of Tire Placard on Vehicle | Trunk | |

**DATA SHEET NO. 2**

**PRE-TEST INSPECTION**

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

| Feature | Yes | No | Comments |
|---|---|---|---|
| Is the vehicle totally complete? | X | | None |
| Does the vehicle run and drive? | X | | None |
| Is there any sign that the vehicle has ever been in a crash? | | X | None |
| Are the bumpers damaged? | | X | None |
| Do the doors open and close properly? | X | | None |
| Are the doors properly aligned so that there are no gaps when closed? | X | | None |
| Does the battery hold a charge so that electrical accessories in the vehicle may be operated without starting the engine? | X | | None |
| Does the vehicle sag or have a raised or lowered suspension? | | X | None |
| Are any of the control arms or other suspension components damaged or distorted? | | X | None |
| Do the tires have some usable tread remaining and hold pressure? | X | | None |
| Are the radiator and/or its supporting cross members damaged? | | X | None |
| Is the cooling system able to retain its coolant and are the proper fluid levels maintained? | X | | None |
| Does the fuel tank leak? | | X | None |
| Does the fuel tank have any damages or dents that would reduce its internal capacity? | | X | None |
| Is the fuel tank located behind the rear axle? | | X | None |
| Is the fuel tank located between the front and rear axle? | X | | None |
| Is the vehicle attitude "as tested" between "as delivered" and "fully loaded" before running the test? | X | | None |

| Equipment | Present | | Proper Place | | Operate Properly | |
|---|---|---|---|---|---|---|
| | Yes | No | Yes | No | Yes | No |
| Engine | X | | X | | X | |
| Transmission | X | | X | | X | |
| Drive Axles | X | | X | | X | |
| Battery | X | | X | | X | |
| Alternator | X | | X | | X | |
| Radiator | X | | X | | X | |

## DATA SHEET NO. 3

## PRE-TEST DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

### TEST VEHICLE AXLE WEIGHTS

| | Units | As Delivered (UVW) | | | As Tested (ATW) | | | Fully Loaded | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Front | Rear | Total | Front | Rear | Total | Front | Rear | Total |
| Left | kg | 372.5 | 233.5 | | 420.0 | 280.5 | | 409.0 | 294.0 | |
| Right | kg | 378.0 | 227.0 | | 424.5 | 274.0 | | 414.5 | 287.0 | |
| Ratio | % | 62.0% | 38.0% | 100.0% | 60.4% | 39.6% | 100.0% | 58.6% | 41.4% | 100.0% |
| Total | kg | 750.5 | 460.5 | 1211.0 | 844.5 | 554.5 | 1399.0 | 823.5 | 581.0 | 1404.5 |

### TARGET TEST WEIGHT CALCULATION

| Measured Parameter | Units | Value | |
|---|---|---|---|
| Total Delivered Weight (UVW) | kg | 1211.0 | A |
| Actual Weight of 2 P572 ATDs Used | kg | 148.0 | B |
| Rated Cargo/Luggage Wt (RCLW) | kg | 45.0 | C |
| Calculated Vehicle Target Wt (TVTW) | kg | 1404.0 | A+B+C |

### TEST VEHICLE ATTITUDES

| Condition | Units | LF | RF | LR | RR | CG Aft of Front Axle |
|---|---|---|---|---|---|---|
| As Delivered | mm | 684 | 681 | 691 | 679 | 992 |
| As Tested | mm | 661 | 658 | 661 | 657 | 1034 |
| Fully Loaded | mm | 660 | 654 | 657 | 645 | 1080 |
| Post-Test | mm | | | | | |

### GENERAL TEST VEHICLE DATA

| Measurement Description | Units | Value |
|---|---|---|
| Total Vehicle Wheel Base | mm | 2610 |
| Total Vehicle Length | mm | 4685 |
| Amount of Stoddard Solvent in Fuel Tank | L | 54.56 |

## DATA SHEET NO. 3 … (CONTINUED)

## PRE-TEST DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

### BALLAST DATA

| Description | Value |
|---|---|
| Type of Ballast | Ballast Dummy |
| Method of Securing Ballast | Seat Belt |
| Weight of Ballast in Cargo Area | 21.0 kg |
| Weight of Vehicle Components Removed | 0.0 kg |

### VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

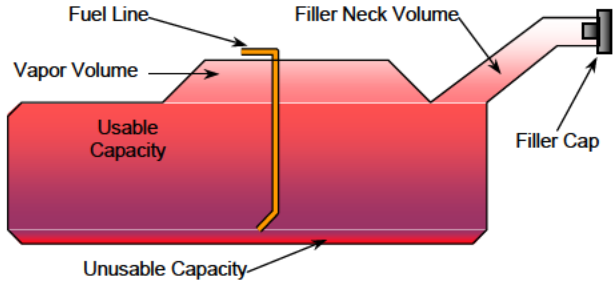
No components were removed from test vehicle

### FUEL TANK CAPACITY

| Description | Liters |
|---|---|
| Fuel System Capacity Listed in Owners Manual | 58.67 |
| Usable Capacity of "Standard Tank" | 58.67 |
| 91 - 94% of Usable Capacity | 53.39 - 55.15 |
| Actual Amount of Stoddard Solvent Used | 54.56 |

### FUEL PUMP

The vehicle is equipped with an electric fuel pump. The fuel pump is activated when the ignition is turned on.




*VEHICLE FUEL TANK ASSEMBLY*

### TEST FLUID

| Description | Value |
|---|---|
| Test Fluid Type | Stoddard Solvent |
| Test Fluid Specific Gravity | 0.97 |
| Test Fluid Kinematic Viscosity | |
| Test Fluid Color | Purple |

## DATA SHEET NO. 3 … (CONTINUED)

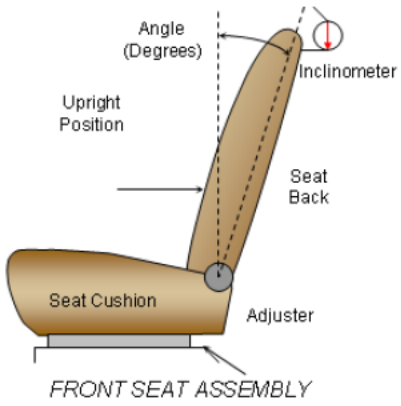
## PRE-TEST DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

### NOMINAL DESIGN RIDING POSITION

Seat back angle is measured at the headrest post using a digital inclinometer.

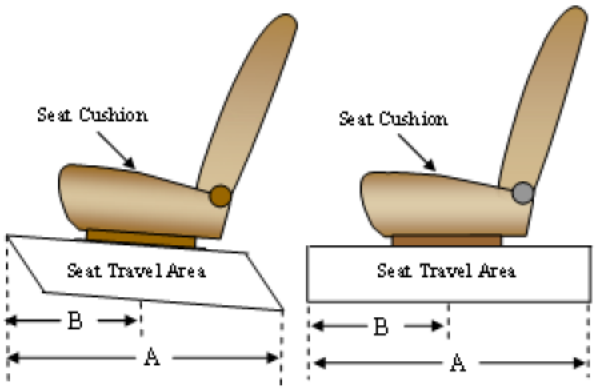



### SEAT BACK ANGLE

| Seating Position | Degrees |
|---|---|
| Driver Seat Back Angle | 15.2 |
| Passenger Seat Back Angle | 15.7 |

### SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rear most possible position. The driver's seat is set to the middle of the fore-aft travel. The passenger's seat is set to the middle of the fore-aft travel.




### SEAT FORE/AFT POSITIONS

| Seating Position | Total Fore-Aft Travel | Placed in Position |
|---|---|---|
| Driver Seat | 240 mm | 120 mm |
| Passenger Seat | 200 mm | 100 mm |

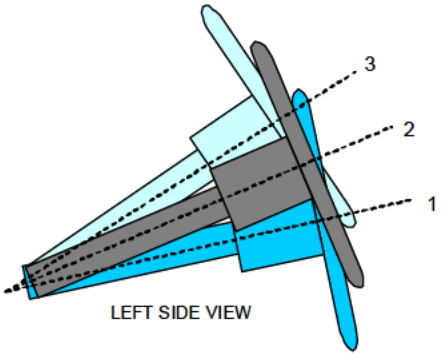
## DATA SHEET NO. 3 … (CONTINUED)

## PRE-TEST DATA

| | | | |
|---|---|---|---|
| Test Vehicle: | 1997 Mazda 626 4-Door Sedan | NHTSA No.: | PV5400 |
| Test Program: | 70% Overlap Rear Impact | Test Date: | 09/12/12 |

### STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements. A tape measure is used to measure telescoping steering wheel travel.




*STEERING COLUMN ASSEMBLY*

### STEERING COLUMN POSITIONING

| | Degrees | Fore-Aft Position (mm) |
|---|---|---|
| Lowermost Position, No. 1 | 19.5 | |
| Geometric Center Position, No. 2 | 21.2 | |
| Uppermost Position, No. 3 | 23.0 | |
| Telescoping Steering Wheel Travel | | |
| Test Position | 21.2 | |

## DATA SHEET NO. 4

## MOVING BARRIER DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

### MOVING BARRIER TEST WEIGHT

| | Units | As Delivered Weights (UVW) | | |
|---|---|---|---|---|
| | | Front Axle | Rear Axle | Total |
| Left | kg | 401.8 | 298.0 | 699.8 |
| Right | kg | 376.9 | 291.6 | 668.5 |
| Ratio | % | 56.9% | 43.1% | 100.0% |
| Total | kg | 778.7 | 589.6 | 1368.3 |

### MOVING BARRIER TIRE INFORMATION

| Measured Parameter | Front | Rear |
|---|---|---|
| Recommended Tire Size | 205/75R15 | 205/75R15 |
| Tire Size on Vehicle | 205/75R15 | 205/75R15 |
| Tire Manufacturer | Pacemark | Pacemark |
| Tire Model | All Weather | All Weather |
| Treadwear | 420 | 420 |
| Traction | A | A |
| Temperature Grades | B | B |
| Tire Pressure - Front | 220 | 220 |
| Tire Pressure - Rear | 220 | 220 |

### MOVING BARRIER DIMENSIONS

| Measurement Description | Length (mm) |
|---|---|
| Overall Width | 1675 |
| Overall Height | 560 |
| Honeycomb Depth | 384 |
| Overall Depth | 485 |
| Bottom Honeycomb to Bottom Bumper | 55 |
| Bumper Height | 205 |
| Ground to Top of MDB | 785 |
| Ground to Bottom of MDB | 229 |
| Ground to Bottom of Bumper | 280 |
| Ground to Top of Bumper | 480 |

## DATA SHEET NO. 5

## POST TEST DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

Temperature at Time of Impact: 36.0°C Test Time: 2:06 PM

VIN: 1YVGE22C1V56

### IMPACT VELOCITY DATA

| Measured Parameter | Units | Value |
|---|---|---|
| Trap No. 1 Velocity (Primary) | km/h | 79.75 |
| Trap No. 2 Velocity (Redundant) | km/h | 79.66 |

### IMPACT POINT LOCATION DATA

| Measured Parameter | Units | Tolerance | Value |
|---|---|---|---|
| Vehicle Width | mm | | 1715 |
| Vertical Impact Reference Line (Right of Vehicle Center Line) | mm | | 343 |
| Actual Impact Point (Right of Vehicle Center Line) | mm | | 354 |
| Horizontal Offset (+ right / - left) | mm | ± 50 of Intended Impact Point | 11 |
| Vertical Offset (+ down / - up) | mm | ± 40 of Intended Impact Point | -13 |

### TARGET VEHICLE PRE- AND POST- TEST STRUCTURAL MEASUREMENTS

| No. | Description | Pre-Test | Post-Test | Difference |
|---|---|---|---|---|
| 1 | Total Length at Centerline | 4685 | 4030 | -655 |
| 2 | Total Length | 4685 | 4230 | -455 |
| 3 | Total Width | 1715 | 1945 | 230 |
| 4 | Left Side Wheelbase | 2610 | 2500 | -110 |
| 5 | Right Side Wheelbase | 2610 | 2640 | 30 |

### MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

| Vertical Location | | | From Centerline | | Max. Crush |
|---|---|---|---|---|---|
| Row | Description | Height (mm) | Distance (mm) | Direction | (mm) |
| A | Center of Bumper | 432 | 800 | Right | 199 |
| B | Top of Bumper | 533 | 800 | Right | 140 |
| C | Mid Level | 686 | 800 | Right | 68 |
| D | Top of Stack | 813 | 800 | Right | 62 |

## DATA SHEET NO. 5 … (CONTINUED)

## POST-TEST DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

### DOOR OPENING AND SEAT TRACK INFORMATION

| Description | Driver | Passenger |
|---|---|---|
| Front Door Opening | Remained closed and latched | Remained closed and latched |
| Rear Door Opening | Jammed Shut | Remained closed and latched |
| Hatch | Jammed Shut | |

**DATA SHEET NO. 6**

**FMVSS 301 DATA**

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12

**FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA**

**Stoddard Solvent Spillage Measurements**

A. From impact until vehicle motion ceases: 0 g
(Maximum allowable = 28 g)

B. For the 5 minute period after motion ceases: 0 g
(Maximum allowable = 28 g)

C. For the following 25 minutes: 0 g
(Maximum allowable = 28 g/minute)

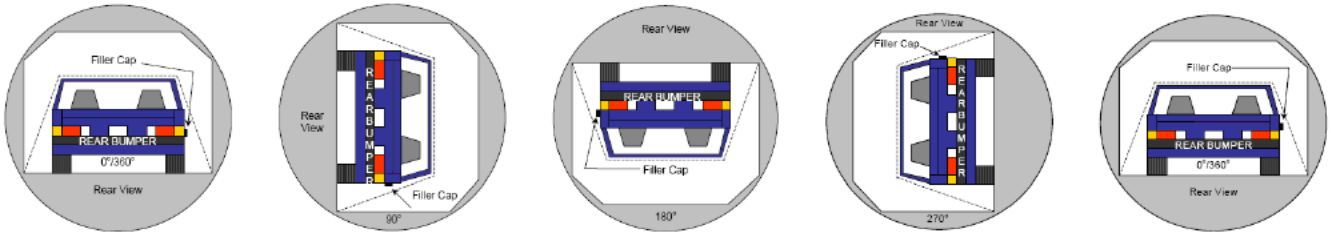
D. Spillage: No Solvent Spillage

## DATA SHEET NO. 7

## STATIC ROLLOVER TEST DATA

Test Vehicle: 1997 Mazda 626 4-Door Sedan NHTSA No.: PV5400

Test Program: 70% Overlap Rear Impact Test Date: 09/12/12




0° TO 90° 90° TO 180° 180° TO 270° 270° TO 360°

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).

Details of Stoddard solvent spillage: No Solvent Spillage

### SOLVENT COLLECTION TIME TABLE IN SECONDS

| Test Phase | Rotation Time | Hold Time | Total Time |
|---|---|---|---|
| 0° To 90° | 81 | 300 | 381 |
| 90° To 180° | 84 | 300 | 384 |
| 180° To 270° | 80 | 300 | 380 |
| 270° To 360° | 81 | 300 | 381 |

### FMVSS 301 SPILLAGE TABLE

| Test Phase | First 5 Minutes | Sixth Minute | Seventh Minute | Eighth Minute |
|---|---|---|---|---|
| 0° To 90° | 0 g | | | |
| 90° To 180° | 0 g | | | |
| 180° To 270° | 0 g | | | |
| 270° To 360° | 0 g | | | |

### SOLVENT SPILLAGE LOCATION TABLE

| Test Phase | Spillage Location |
|---|---|
| 0° To 90° | No Spillage |
| 90° To 180° | No Spillage |
| 180° To 270° | No Spillage |
| 270° To 360° | No Spillage |

**APPENDIX A**

**PHOTOGRAPHS**

## TABLE OF PHOTOGRAPHS


FIGURE 1. Vehicle Certification Label


FIGURE 2. Vehicle Tire Placard


FIGURE 3. Pre-Test Front of Test Vehicle

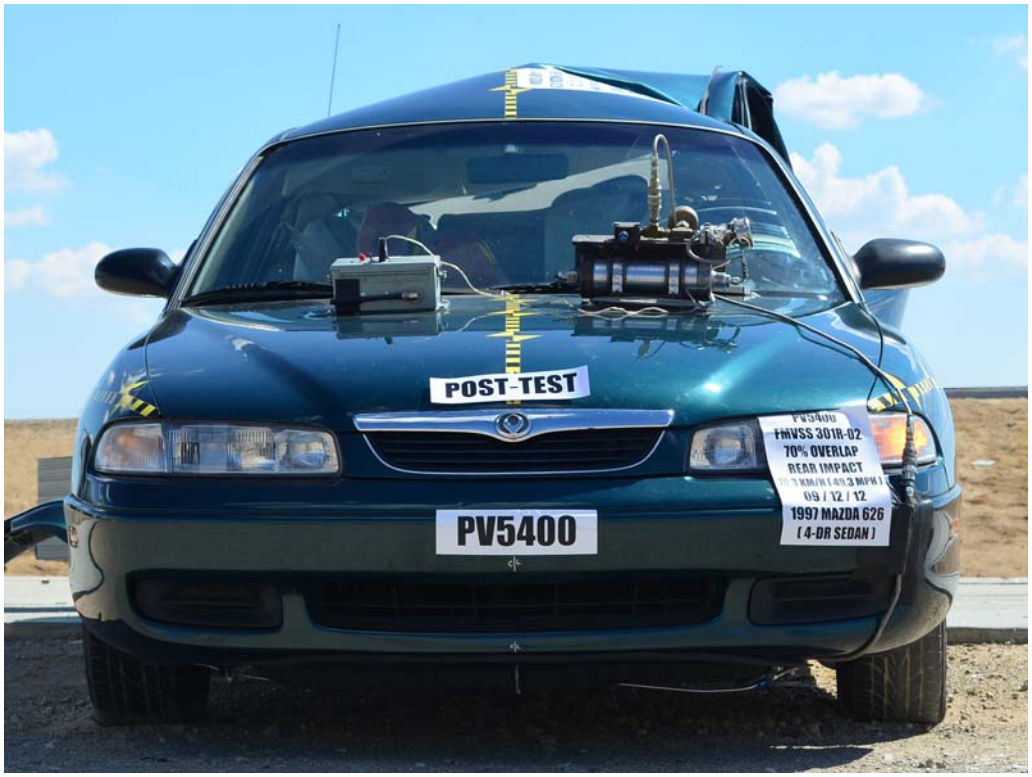



FIGURE 4. Post-Test Front of Test Vehicle


FIGURE 5. Pre-Test Left Front ¾ View of Test Vehicle


FIGURE 6. Post-Test Left Front ¾ View of Test Vehicle


FIGURE 7. Pre-Test Left View of Test Vehicle


FIGURE 8. Post-Test Left View of Test Vehicle


FIGURE 9. Pre-Test Left Rear ¾ View of Test Vehicle


FIGURE 10. Post-Test Left Rear ¾ View of Test Vehicle


FIGURE 11. Pre-Test Rear View of Test Vehicle


FIGURE 12. Post-Test Rear View of Test Vehicle


FIGURE 13. Pre-Test Right Rear ¾ View of Test Vehicle

FIGURE 14. Post-Test Right Rear ¾ View of Test Vehicle


FIGURE 15. Pre-Test Right View of Test Vehicle


FIGURE 16. Post-Test Right View of Test Vehicle


FIGURE 17. Pre-Test Right Front ¾ View of Test Vehicle


FIGURE 18. Post-Test Right Front ¾ View of Test Vehicle

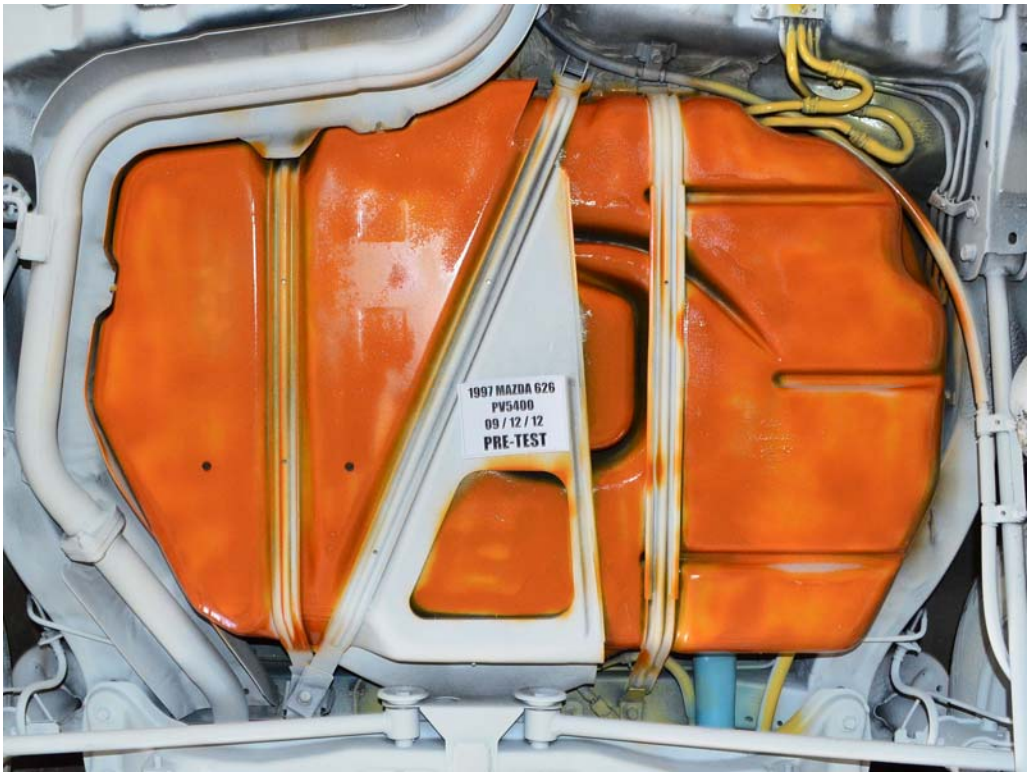



FIGURE 19. Pre-Test Underbody, Fuel Tank Location

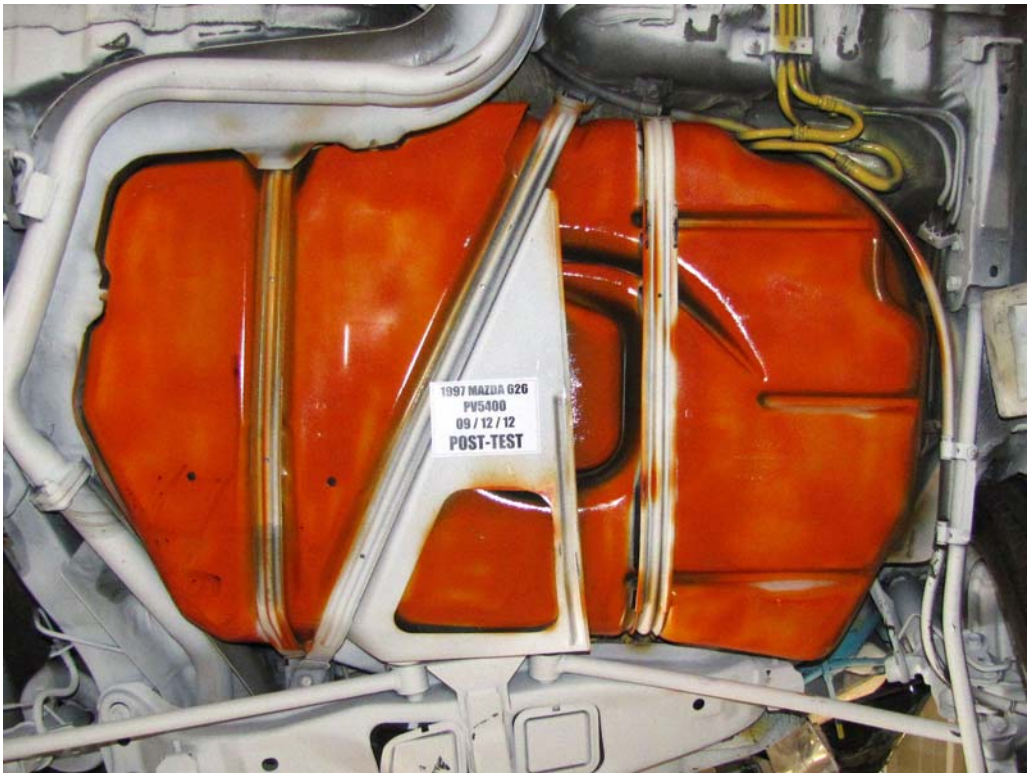



FIGURE 20. Post-Test Underbody, Fuel Tank Location

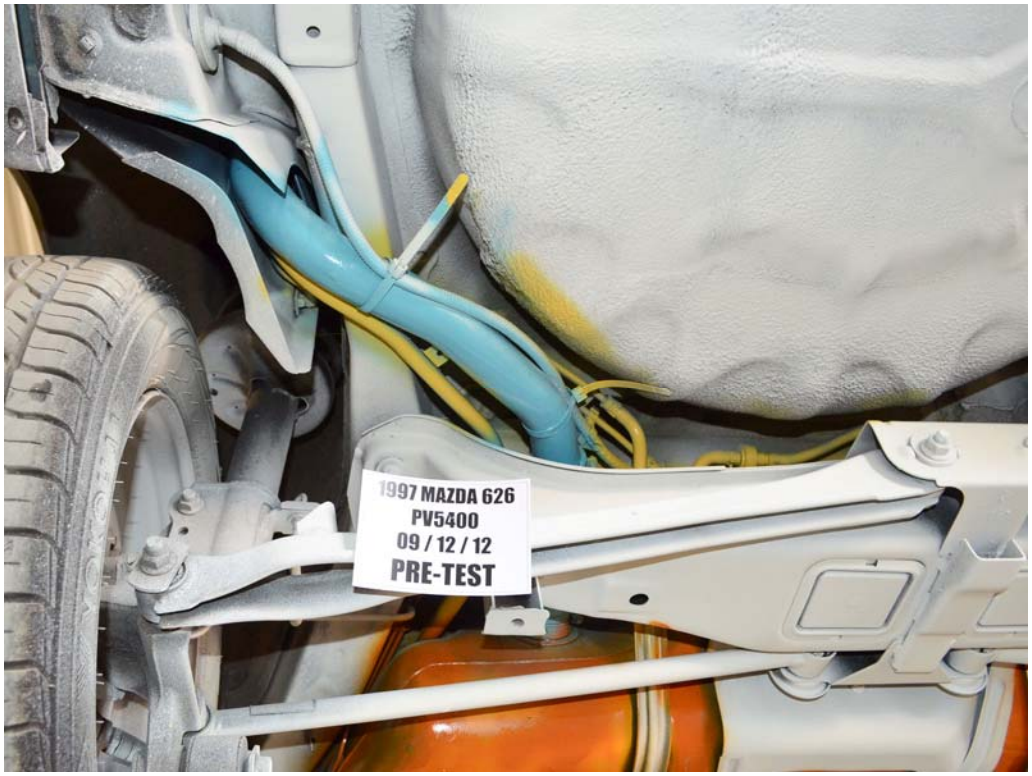


FIGURE 21. Pre-Test Underbody, Fuel Filler Neck Location

FIGURE 22. Post-Test Underbody, Fuel Filler Neck Location


FIGURE 23. Pre-Test Underbody, Fuel Line Location


FIGURE 24. Post-Test Underbody, Fuel Line Location

FIGURE 25. Vehicle at 0° on Static Rollover Device

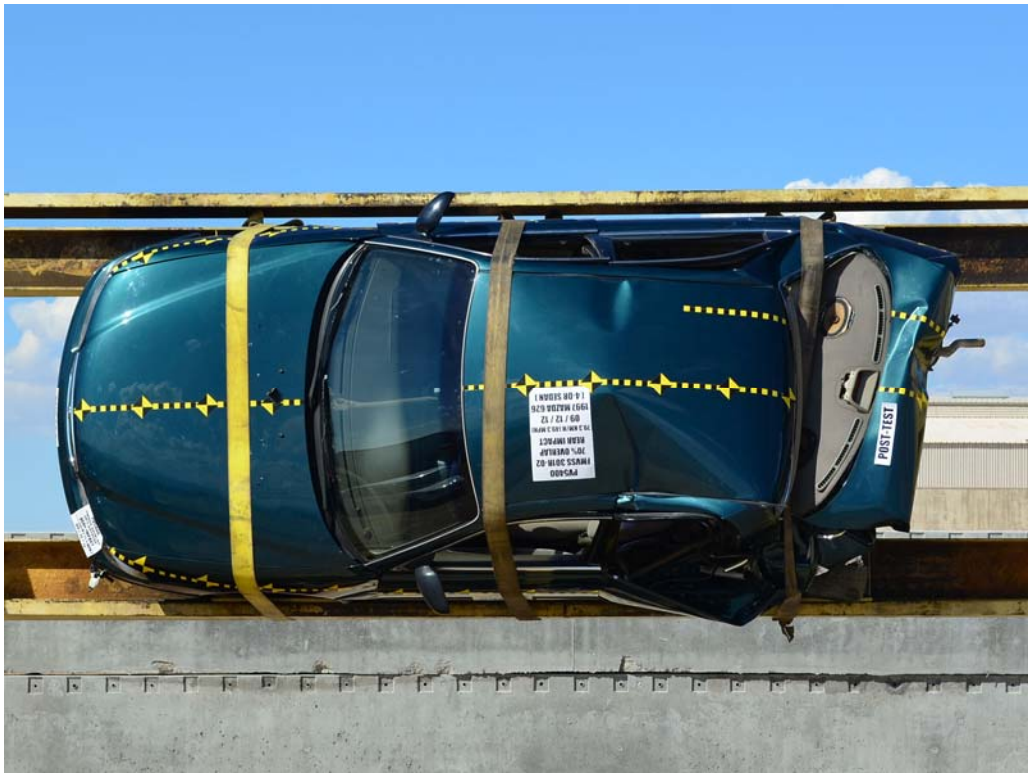



FIGURE 26. Vehicle at 90° on Static Rollover Device

FIGURE 27. Vehicle at 180° on Static Rollover Device

FIGURE 28. Vehicle at 270° on Static Rollover Device

FIGURE 29. Vehicle at 360° on Static Rollover Device

Photograph Not Applicable

No Stoddard Solvent Leakage

FIGURE 30. Post-Test Stoddard Solvent Spillage Location View