FINAL REPORT NUMBER 225-MGA-07-003

SAFETY COMPLIANCE TESTING FOR FMVSS 225
"Child Restraint Anchorage Systems"

TOYOTA MOTOR COMPANY
2007 TOYOTA YARIS 4-DOOR
NHTSA No. C75103

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

Test Date: April 8, 2008
Report Date: May 15, 2008

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590

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Approval Date: 7/3/08

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: Edward E. Chan
Digitally signed by Edward E. Chan
DN: CN = Edward E. Chan, C = US, O = National Highway Traffic Safety Administration, OU = Office of Vehicle Safety Compliance
Date: 2008.07.23 09:18:19 -04'00'

Acceptance Date: _____

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4. Title and Subtitle Final Report of FMVSS 225 Compliance Testing of a 2007 Toyota Yaris, NHTSA No. C75103		5. Report Date May 15, 2008 6. Performing Organization Code MGA	
7. Author(s) Helen A. Kaleto, Laboratory Manager Fern Gatilao, Project Engineer Brad Reaume, Test Personnel		8. Performing Organization Report No. 225-MGA-07-003	
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12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, SW Room 6111 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report 14. Sponsoring Agency Code NVS-220	
15. Supplementary Notes			
16. Abstract A compliance test was conducted on the subject 2007 Toyota Yaris, NHTSA No. C75103, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225-01 for the determination of FMVSS 225 compliance. The tests were conducted at MGA Research Corporation in Troy, Michigan on April 8, 2008. Test failures identified were as follows: NONE The data recorded indicates that the 2007 Toyota YARIS tested appears to meet the requirements of FMVSS 225.			
17. Key Words Compliance Testing Safety Engineering FMVSS 225 2007 Toyota YARIS		18. Distribution Statement Copies of this report are available From: NHTSA Technical Reference Division, Mail Code: NPO-230 400 Seventh Street, SW, Room PL-403 Washington, D.C. 20590 Telephone No. (202) 366-4946	
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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF TABLES

1.0 PURPOSE AND PROCEDURE

PURPOSE

The child restraint anchorage testing results presented in this report are part of the Federal Motor Vehicle Safety Standard (FMVSS) No. 225 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-06-C-00030/0003. The purpose of the testing was to determine if the subject vehicle, a 2007 Toyota YARIS, NHTSA No. C75103 meets the performance requirements of FMVSS No. 225, "Child Restraint Anchorage Systems."

PROCEDURE

This testing was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-225-01 (4/11/05) and MGA's Laboratory Test Procedure, MGATP225GOV (6/23/06).

The rear occupant compartment consisted of a 2nd row three-passenger 60/40 split-bench seat. The 2nd row outboard LH and RH seating positions were equipped with a child restraint anchorage system (one tether and two lower anchorages). The center seating position was equipped with a tether anchorage. The center-to-center spacing between the 2nd row outboard lower anchorages was approximately 652 mm. The 2nd row LH outboard seating position was tested with the SFADII fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The testing was conducted at MGA in Troy, Michigan on April 8, 2008.

Based on the test results, the 2007 Toyota YARIS appears to meet the requirements of FMVSS No. 225 for this testing.

The SFADII at the 2nd row left seating position sustained a maximum force of 4,995 N and held the required load for 3 seconds and total displacement was 53 mm. The SFADII at the 2nd row right seating position sustained a maximum force of 4,984 N and held the required load for 3 seconds and total displacement was 33 mm.

DATA SUMMARY

Strength and displacement summary data are provided below. Data for the configuration and the location of each child restraint anchorage system are provided in Section 5.0. Photographs are found in Section 6.0 and test plots are found in Section 7.0.

Table 1. Summary Data for Strength and Displacement

MGA Test #	Fixture Type	Test Configuration	Seating Position	Max. Load (N)	Displacement (mm)
SB8177	SFADII	Lateral Left	2nd Row Left	4,995	53
			2nd Row Right	4,984	33

N/A indicates that the displacement criteria does not apply to this test.

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2007 Toyota Yaris
VEH. NHTSA NO.	C75103
VIN	JTDBT923471051226
COLOR	Blue
VEH. BUILD DATE	06/2006
TEST DATE	April 8, 2008
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Fern Gatilao , Brad Reaume, Kenney Godfrey

GENERAL INFORMATION:

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Toyota Motor Company

Date of Manufacture: 06/06; VIN: JTDBT923471051226

GVWR: 3300 lbs; GAWR FRONT: 1840 lbs

GAWR REAR: 1820 lbs

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 32 psi REAR: 32psi

Recommended Tire Size: P185/60R15

Recommended Cold Tire Pressure:

FRONT: 32 psi REAR: 32 psi

Size of Tire on Test Vehicle: P185/60R15

Size of Spare Tire: T125/70D15

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ____; Bucket X; Split Bench___

Number of Occupants: Front __2__; Middle__0___; Rear;_3__ TOTAL __5__.

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

MGA Research Corporation 446 Executive Drive Troy, Michigan 48083	
Test Equipment Used for Testing	**Calibration Due Date**
MGA Hydraulic Test Frame	N/A
Two (2) Load Cell 10,000 lb Capability	S/N 662 (6/11/08), 635 (6/11/08)
String Potentiometer	Calibrated at each use
Hydraulic Pump	N/A
MGA CRF Fixture	N/A
MGA SFADI	N/A
MGA SFADII	N/A
MGA 2-Dimensional Template	N/A
Linear Scale	S/N TPM072 (12/3/07)
MGA Data Acquisition System	N/A
Digital Calipers	S/N MGA00676 (1/14/08)
Force Gauge	S/N MGA00100 (1/11/08)
Inclinometer (Digital)	S/N MGA00764 (1/11/08)

5.0 DATA

Table 3. Child Restraint Tether Anchorage Configuration

Seating Position		Permit the attachment of a tether hook	Accessible without the need for any tool other than a screwdriver or coin	Ready for use without the need for any tools	Sealed to prevent the entry of exhaust fumes
Front Row		N/A	N/A	N/A	N/A
Second Row	LH	Yes	Yes	Yes	Yes
	Ctr.	Yes	Yes	Yes	Yes
	RH	Yes	Yes	Yes	Yes
Third Row		N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE.

Table 4. Child Restraint Lower Anchorage Configuration

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Above anchorage, permanently marked with a circle not less than 13 mm in Dia.; and whose color contrasts with its background; and its center is not less than 50 mm and not more than 100 mm above the bar, and in the vertical longitudinal plane that passes through the center of the bar.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Each of the bars is visible, without the compression of the seat cushion or seat back, when the bar is viewed, in a vertical longitudinal plane passing through the center of the bar, along a line marking an upward 30 degree angle with a horizontal plane.	LH	N/A	N/A		N/A
	Ctr		N/A		
	RH		N/A		
Diameter of the bar (mm)	LH	N/A	6	6	N/A
	Ctr		N/A		
	RH		6	6	
Inspect if the bars are straight, horizontal and transverse	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Optional Marking: At least one anchorage bar (when deployed for use, if storable anchorages), one guidance fixture, or one seat marking is visible.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Optional Marking: If guidance fixtures are used, the fixture(s) must be installed.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Measure the distance between Point "Z" of the CRF and the front surface of the anchorage bar (mm)	LH	N/A	53		N/A
	Ctr		N/A		
	RH		55		
Measure the distance between the SRP to the front of the anchorage bar (mm)	LH	N/A	140	140	N/A
	Ctr		N/A		
	RH		140	140	

Table 4. Child Restraint Lower Anchorage Configuration (continued)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION					
			FRONT ROW	SECOND ROW I/B	SECOND ROW O/B	THIRD ROW
Inspect if the centroidal longitudinal axes are collinear within 5 degrees	LH		N/A	Yes		N/A
	Ctr			N/A		
	RH			Yes		
Inspect if the inside surface of the bar that is straight and horizontal section of the bars, and determine they are not less than 25 mm, but not more than 60 mm in length (mm).	LH	Req't>25	N/A	31	31	N/A
		Req't<60		41	41	
	Ctr	Req't>25		N/A		
		Req't<60		N/A		
	RH	Req't>25		31	31	
		Req't<60		41	41	
Inspect if the bars can be connected to, over their entire inside length by the connectors of child restraint system.	LH		N/A	Yes		N/A
	Ctr			N/A		
	RH			Yes		
Inspect if the bars are an integral and permanent part of the vehicle.	LH		N/A	Yes		N/A
	Ctr			N/A		
	RH			Yes		
Inspect if the bars are rigidly attached to the vehicle. If feasible, hold the bar firmly with two fingers and gently pull.	LH		N/A	Yes		N/A
	Ctr			N/A		
	RH			Yes		

PITCH, YAW, & ROLL INFORMATION

SEAT POSITION	PITCH (deg)	YAW (deg)	ROLL (deg)
2nd Row Left	10.0	N/A	0.1
2nd Row Center	N/A	N/A	N/A
2nd Row Right	10.0	N/A	0.2

N/A indicates that there were no lower anchorages in the 2nd row center seating position.

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE

Table 5. Tether Location and Dimensional Measurements

SEAT POSITION FOR TETHER		TETHER ANCHORAGE LOCATION Located in the required zone?
Front Row		N/A
Second Row	LH	Yes
	Ctr.	Yes
	RH	Yes
Third Row		N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE

Table 6. Tether Anchorage Static Loading and Displacement

SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Type of SFAD Used	Angle (deg)	Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Horiz. Displ. (mm)
		Seat	Seat Back	Is There a H/R?								
Front Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Second Row	LH	Fixed	Fixed	Yes	II	0	20	167	5,000	4,995*	73	53
	Ctr.	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	RH	Fixed	Fixed	Yes	II	0	26	167	5,000	4,984*	59	33
Third Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: * Applied force exceeded the force specified in the test procedure.

6.0 PHOTOGRAPHS

6.1 Front view

6.2 Rear view

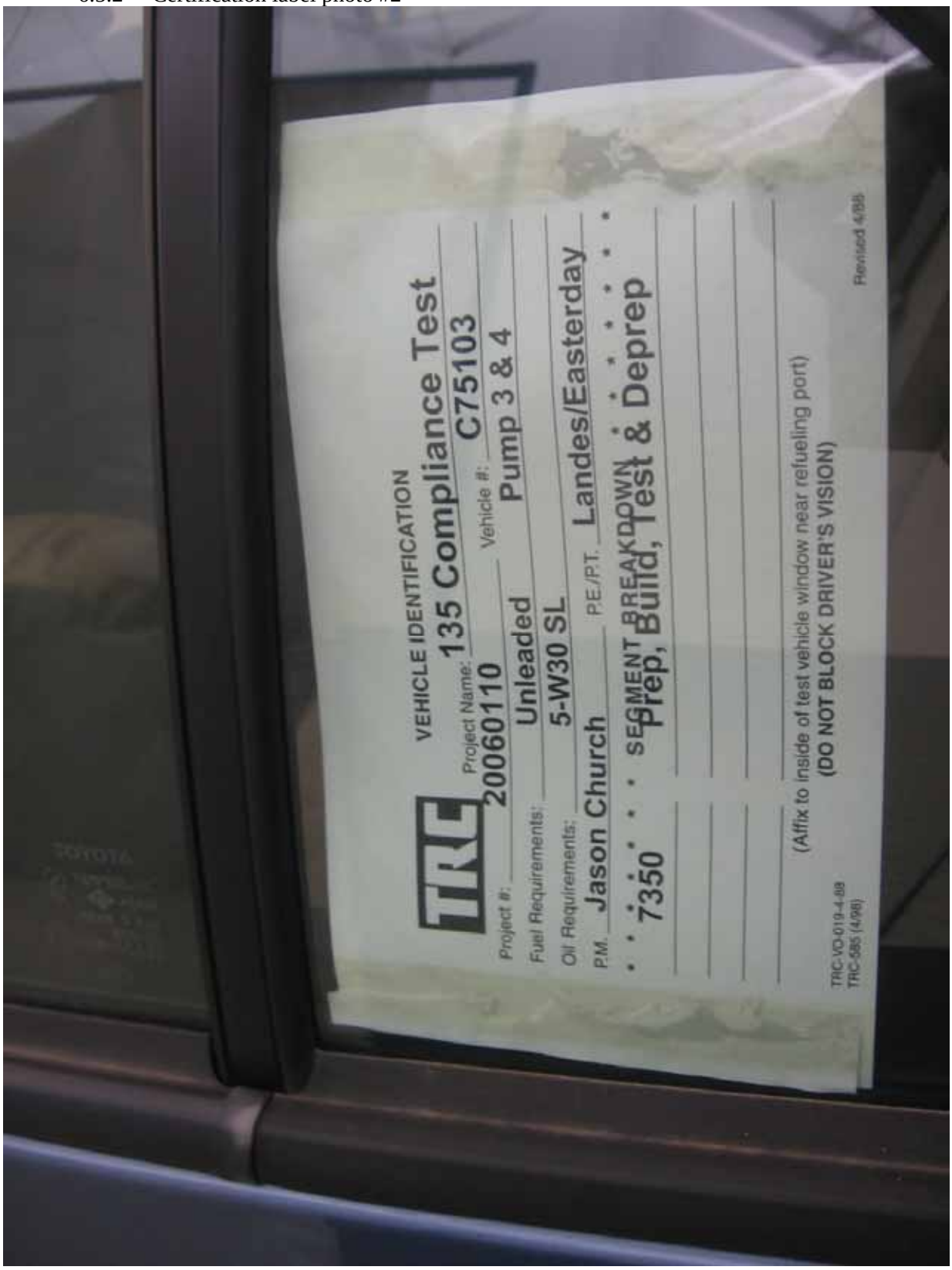
6.3 ¾ Front left view

6.4 ¾ Front right view

6.5 Test vehicle's certification label

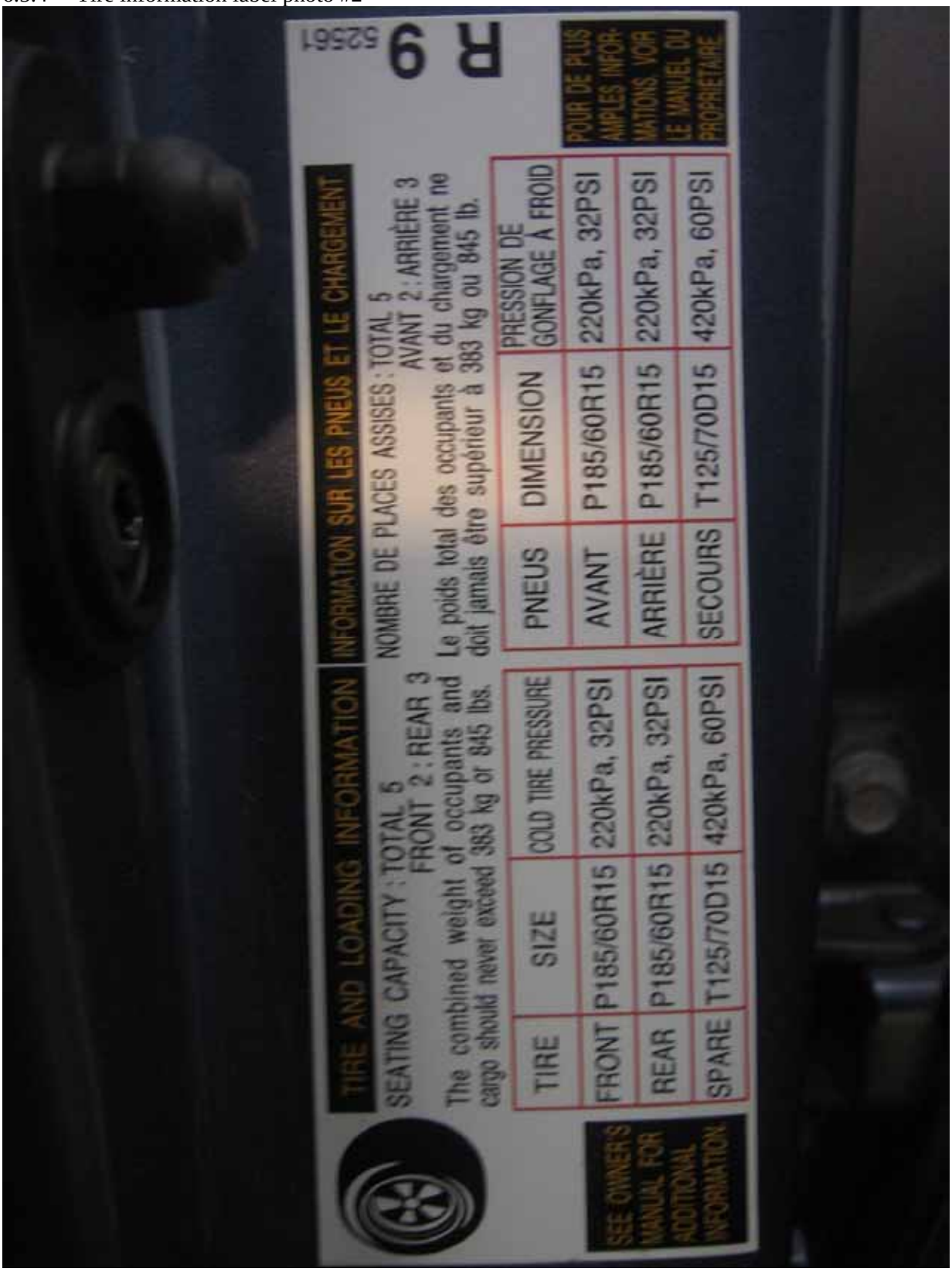
6.5.1 Certification label photo #1

6.5.2 Certification label photo #2



6.5.3 Tire information label photo #1

6.5.4 Tire information label photo #2



6.6 Vehicle tie down at each tie down location

6.6.1 Front under vehicle

6.6.2 Rear under vehicle

6.6.3 Left front

6.6.4 Left rear

6.6.5 Right front

6.6.6 Right rear

6.7 2-dimensional template

6.7.1 LH position photo #1

6.7.2 LH position photo #2

6.7.3 RH position photo #1

6.7.4 RH position photo #2

6.8 CRF verification

6.8.1 LH position photo #1

6.8.2 RH position photo #1

6.9 Front view of test vehicle with test apparatus in place

6.9.1 SFADII Photo #1

6.9.2 SFADII Photo #2

6.10 Pre-test views of each child restraint anchorage system installed in the vehicle

6.10.1 Pre-test photo #1

6.10.2 Pre-test photo #2

6.10.3 Pre-test photo #3

6.11 Post-test condition of each child restraint anchorage system

6.11.1 Post-test photo #1

6.11.2 Post-test photo #2

6.11.3 Post-test photo #3

6.11.4 Post-test photo #4

6.11.5 Post-test photo #5

6.11.6 Post-test photo #6

6.11.7 Post-test photo #7

6.11.8 Post-test photo #8

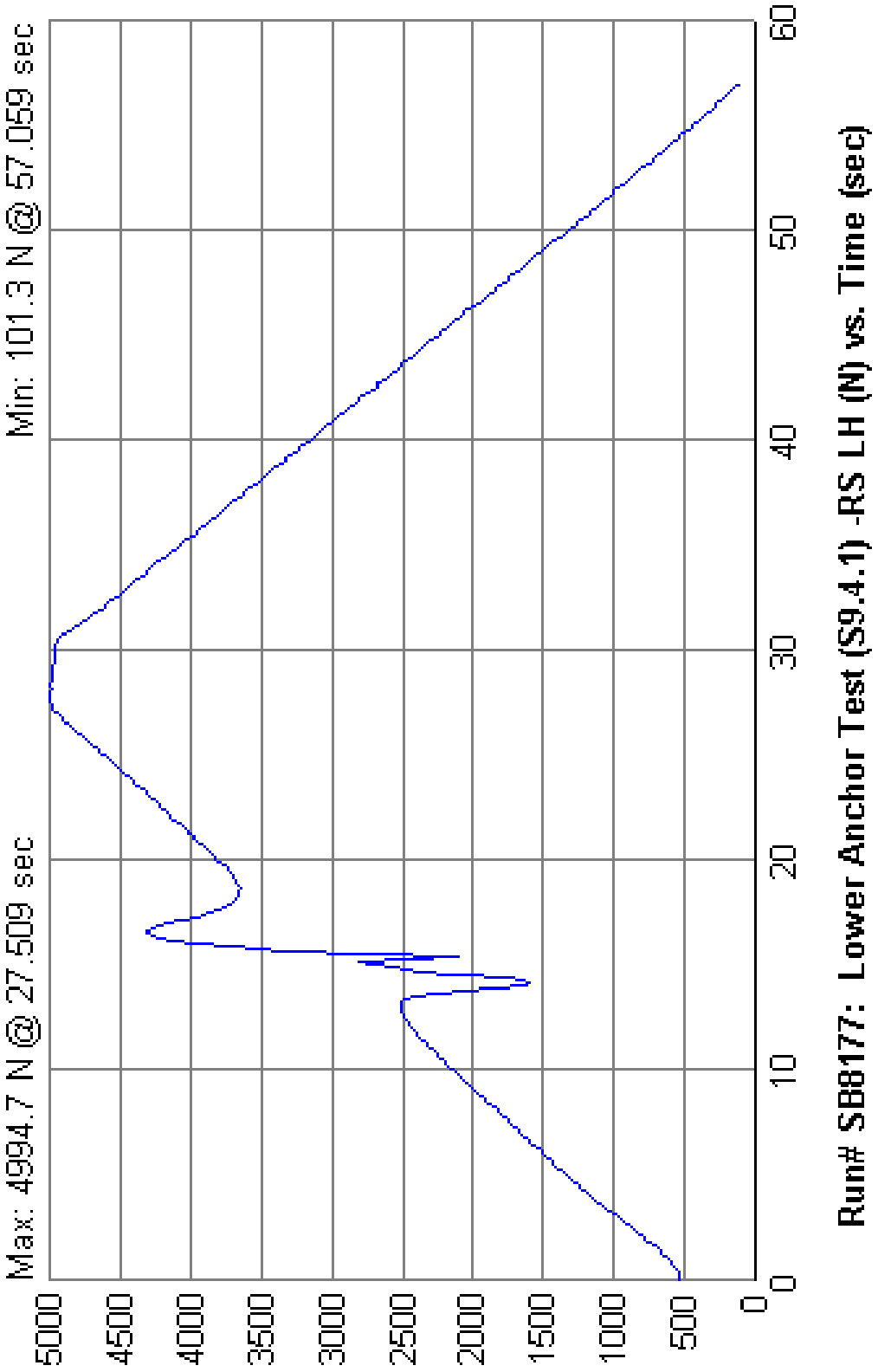
6.11.9 Post-test photo #9

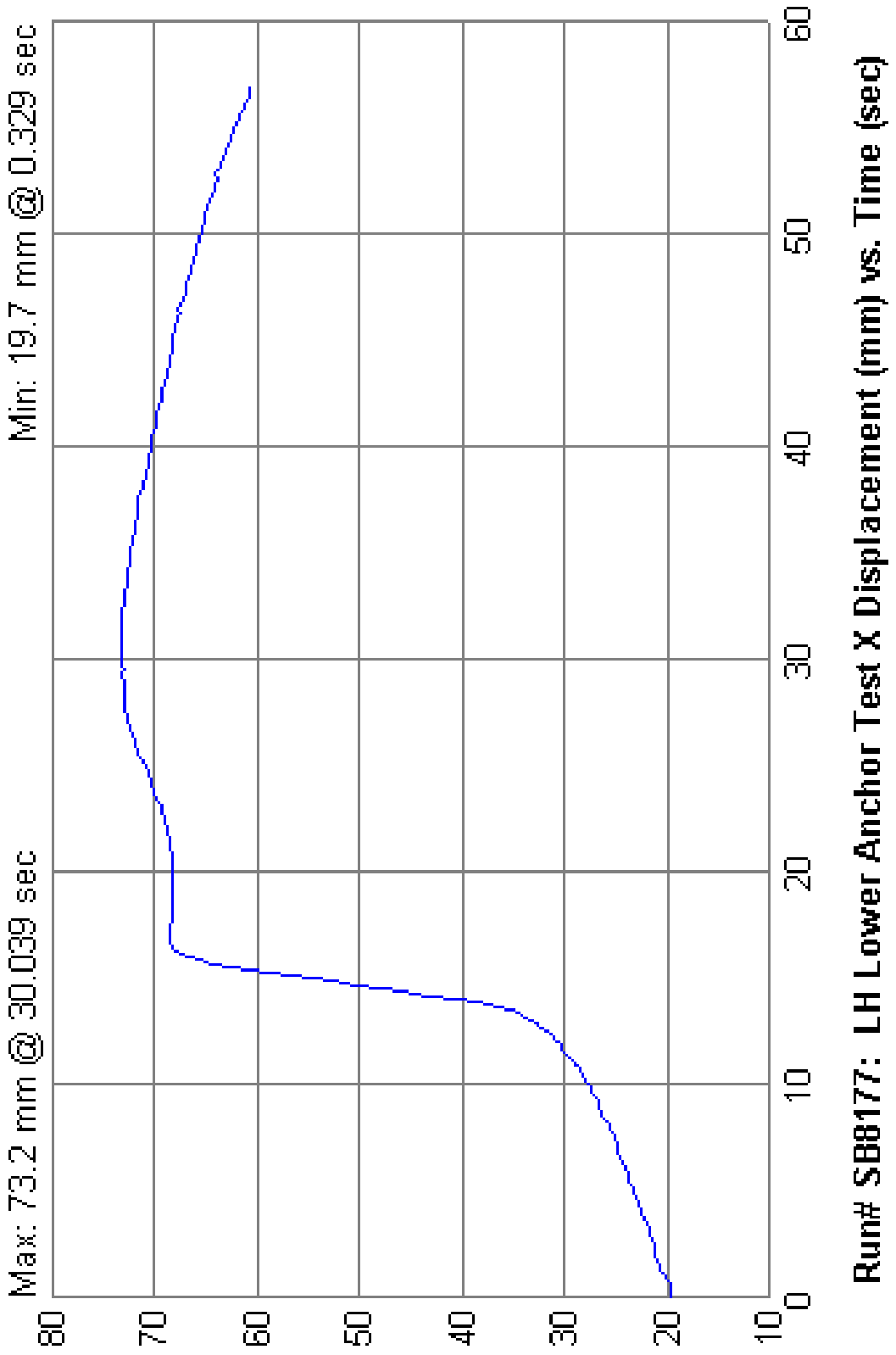
6.11.10 Post-test photo #10

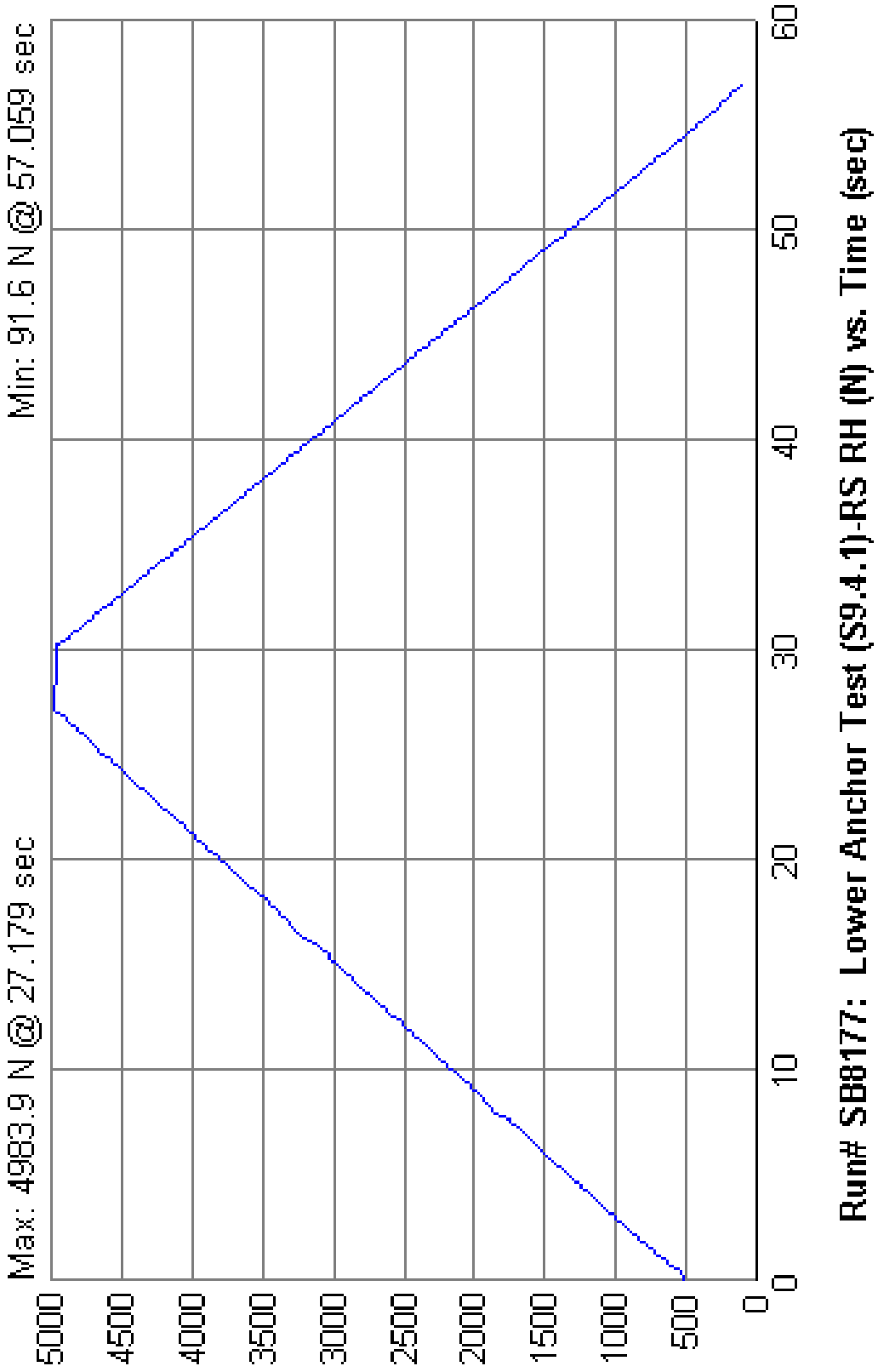
6.11.11 Post-test photo #11

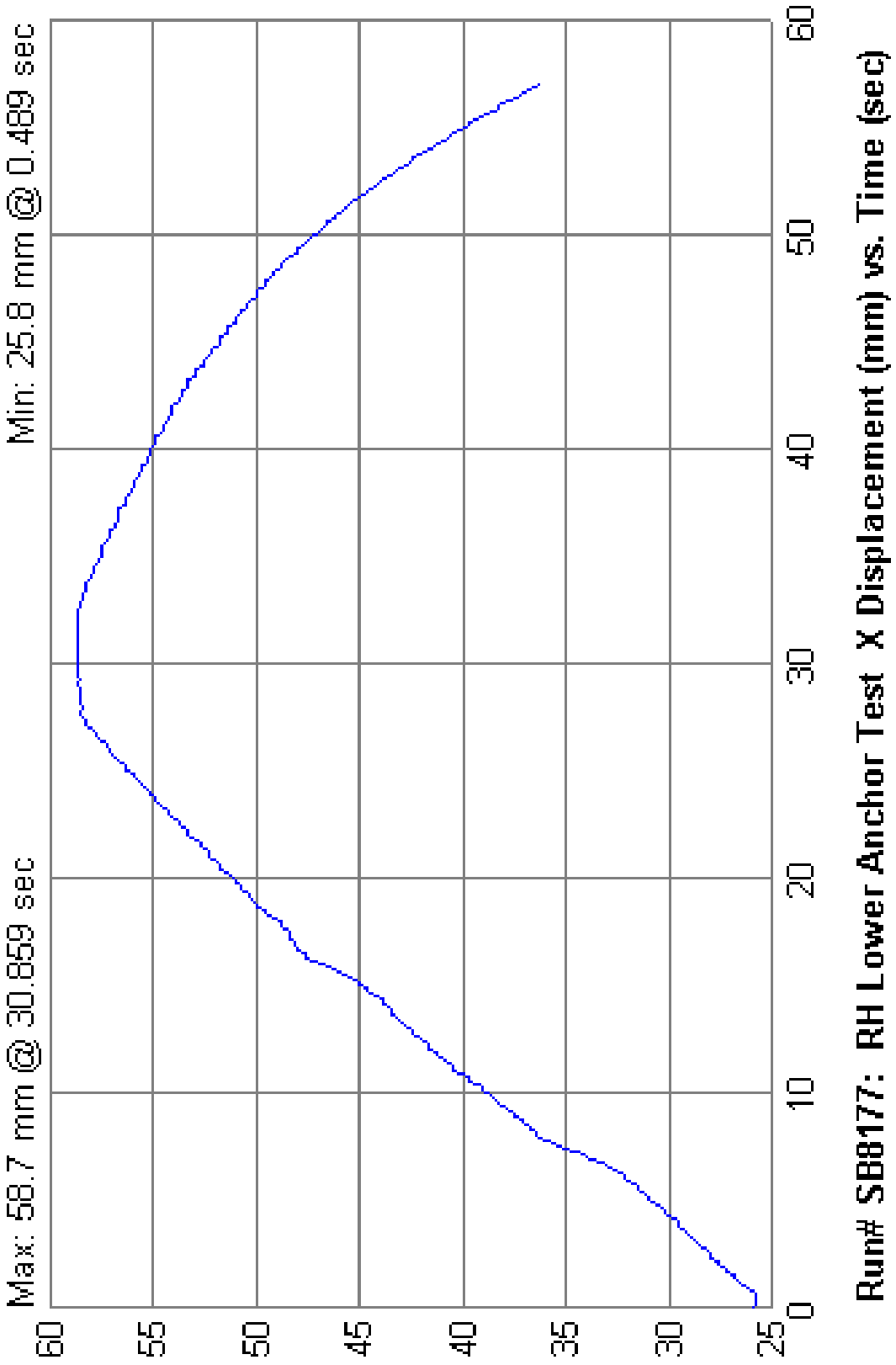
6.11.12 Post-test photo #12

7.0 PLOTS


Run# SB8177: Lower Anchor Test (S9.4.1) -RS LH (N) vs. Time (sec)
Max: 4994.7 N @ 27.509 sec
Min: 101.3 N @ 57.059 sec
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60


Run# SB8177: LH Lower Anchor Test X Displacement (mm) vs. Time (sec)
Max: 73.2 mm @ 30.039 sec
Min: 19.7 mm @ 0.329 sec
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60


Run# SB8177: Lower Anchor Test (S9.4.1)-RS RH (N) vs. Time (sec)
Max: 4983.9 N @ 27.179 sec
Min: 91.6 N @ 57.059 sec
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60


Run# SB8177: RH Lower Anchor Test X Displacement (mm) vs. Time (sec)
Max: 58.7 mm @ 30.859 sec
Min: 25.8 mm @ 0.489 sec
60
55
50
45
40
35
30
25
0
10
20
30
40
50
60

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-06-C-00030/0003 DATE: April 8, 2008

From: MGA Research Corporation, 446 Executive Drive, Troy, MI 48083

To: NHTSA, OVSC, NVS-220

The following vehicle has been subjected to compliance testing for FMVSS No. 201U and 225

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD0-30), with a copy to the OVSC COTR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

VEH. MOD YR/MAKE/MODEL/BODY: 2007 Toyota Yaris 4-Door Sedan

VEH. NHTSA NO.: C75103 VIN: JTDBT923471051226

COLOR: Blue

ODOMETER READINGS: ARRIVAL 514 miles Date: 07/20/07

COMPLETION 514 miles Date: 4/8/08

PURCHASE PRICE: $13,225 DEALER'S NAME: Romey

ENGINE DATA: 4 Cylinders 1.5 Liters 108 Cubic Inches

TRANSMISSION DATA: ___Automatic X Manual No. of Speeds 5

FINAL DRIVE DATA: ____Rear Drive X Front Drive ____4 Wheel Drive

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Fern Gatilao, Brad Reaume, Kenney Godfrey

X	Air Conditioning		Traction Control	X	Clock
	Tinted Glass		All Wheel Drive		Roof Rack
X	Power Steering		Speed Control	X	Console
	Power Windows	X	Rear Window Defroster	X	Driver Air Bag
	Power Door Locks		Sun Roof or T-Top	X	Passenger Air Bag
	Power Seat(s)		Tachometer	X	Front Disc Brakes
X	Power Brakes	X	Tilt Steering Wheel		Rear Disc Brakes
X	Antilock Brake System	X	AM/FM/Compact Disc		Other

REMARKS:

Salvage only.

Equipment that is no longer on the test vehicle as noted on previous pages:

All equipment inventoried and placed in vehicle.

Explanation for equipment removal:

Windshield and front seats were removed before conducting the testing.

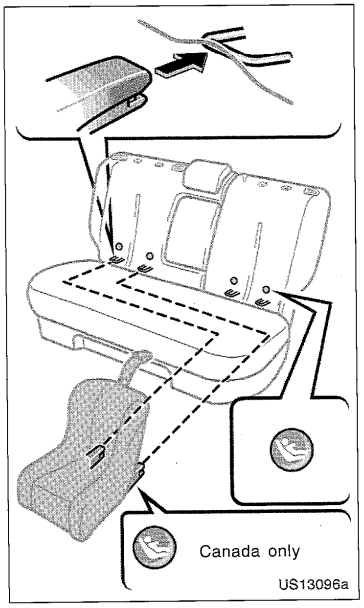
Test Vehicle Condition:

Salvage only.

RECORDED BY: Fern Gatilao, Kenney Godfrey DATE: April 8, 2008

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS



Type B

1. **Widen the gap between the seat cushion and seatback slightly and confirm the position of the lower anchorages below the button on the seatback.**
2. **Type A—Latch the hooks of lower straps onto the anchorages and tighten the lower straps.**

   Type B—Latch the buckles onto the anchorages.

For owners in Canada

The symbol on a child restraint system indicates the presence of a lower connector system.

If your child restraint system has a top strap, it should be anchored. (For the installation of the top strap, see "—Using a top strap" on page 82 in this Section.)

For installation details, refer to the instruction manual equipped with each product.

⚠ CAUTION

- **When using the lower anchorages for the child restraint system, be sure that there are no irregular objects around the anchorages or that the seat belt is not caught.**
- **Push and pull the child restraint system in different directions to be sure it is secure. Follow all the installation instructions provided by its manufacturer.**
- **After securing the child restraint system, never slide or recline the seat.**
- **Do not install a child restraint system on the rear seat if it interferes with the lock mechanism of the front seats. Otherwise, the child or front seat occupant(s) may be killed or seriously injured in case of sudden braking or a collision.**

85

- **Do not let a rear passenger lift the front passenger seat with their feet or press on the seatback with their legs.**
- **Do not put objects under the front passenger seat.**

  Do not attach a commercial seatback table or other heavy item to the back of the front passenger seat.
- **Child restraint systems installed on the rear seat should not contact the front seatbacks.**
- **When it is unavoidable to install the forward-facing child restraint system on the front passenger seat, install the child restraint system on the front passenger seat in the proper order. (As for the installation order, see "—Installation with seat belt" on page 70 in this Section.)**
- **Do not modify or remove the front seats.**

- **Do not kick the front passenger seat or subject it to severe impact. Otherwise, the SRS warning light may come on to indicate a malfunction of the detection system. In this case, contact your Toyota dealer immediately.**

The "AIRBAG ON" indicator light may be illuminated (the front passenger airbag and side airbag on the front passenger seat may deploy) even if observing the above cautions, when a child sits in, or a forward-facing child restraint system is installed on the front passenger seat. Refer to all the cautions in this Section and "Child restraint" on page 67 in this Section.

Child restraint— —Child restraint precautions

Toyota strongly urges the use of appropriate child restraint systems for children.

The laws of all 50 states in the U.S.A. and Canada now require the use of a child restraint system.

Your vehicle conforms to SAE J1819.

If a child is too large for a child restraint system, the child should sit in the rear seat and must be restrained using the vehicle's seat belt. See "Seat belts" on page 38 in this Section for details.

⚠ CAUTION

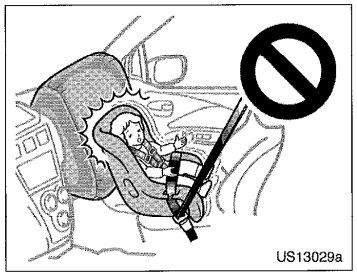
- **For effective protection in automobile accidents and sudden stops, a child must be properly restrained, using a seat belt or child restraint system depending on the age and size of the child. Holding a child in your arms is not a substitute for a child restraint system. In an accident, the child can be crushed against the windshield, or between you and the vehicle's interior.**

67

The "AIRBAG OFF" indicator light should be illuminated. If the "AIRBAG ON" indicator light is illuminated when the ignition key is turned to the "ON" position, then the SRS front passenger airbag and side airbag on the passenger side may deploy in an accident. Do not drive the vehicle in this condition. Remove the child restraint system and contact your Toyota dealer.

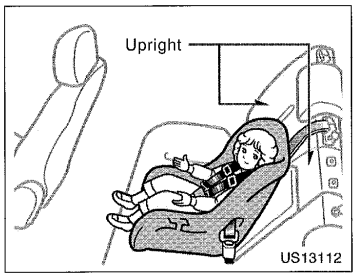
⚠ CAUTION

- **Never install a rear-facing child restraint system on the front passenger seat. A forward-facing child restraint system should only be installed on the front passenger seat when unavoidable. If you must install the child restraint system on the front passenger seat, put the seat in its most rearward position, and install the forward-facing child restraint system in the proper order. Otherwise, the front passenger occupant classification system cannot detect the presence of the child restraint system and the front passenger airbag and side airbag on the front passenger seat could deploy.**



⚠ CAUTION

- **Never install a rear-facing child restraint system on the front passenger seat even if the "AIRBAG OFF" indicator light is illuminated. In the event of an accident, the force of the rapid inflation of the front passenger airbag can cause death or serious injury to the child if the rear-facing child restraint system is installed on the front passenger seat.**



- **Split seat: When installing a child restraint system in the rear seat center position, return both the left and right seatbacks to the upright position. Otherwise, the child restraint system cannot be securely restrained and this may cause death or serious injuries in a collision.**

75

- **Toyota strongly urges use of a proper child restraint system which conforms to the size of the child, installed on the rear seat. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat.**
- **Never install a rear-facing child restraint system on the front passenger seat even if the "AIRBAG OFF" indicator light is illuminated. In the event of an accident, the force of the rapid inflation of the front passenger airbag can cause death or serious injury to the child if the rear-facing child restraint system is installed on the front passenger seat.**

- **A forward-facing child restraint system should be allowed to be Installed on the front passenger seat only when it is unavoidable. Always move the seat as far back as possible even if the "AIRBAG OFF" indicator light is illuminated, because the front passenger airbag could inflate with considerable speed and force. Otherwise, the child may be killed or seriously injured.**
- **On vehicles with side airbags and curtain shield airbags, do not allow the child to lean his/her head or any part of his/her body against the door or the area of the seat, front or rear pillar or roof side rail from which the side airbags or curtain shield airbags deploy even if the child is seated in the child restraint system. It is dangerous if the side airbag and curtain shield airbag inflate, and the impact could cause death or serious injury to the child.**

- **Do not use the seat belt extende when installing a child restraint system on the front or rear passenger seat. If installing a child restraint system with the seat bel extender connected to the seat be the seat belt will not securely hc the child restraint system, wh could cause death or serious inj to the child or other passengers the event of collision.**
- **Make sure you have complied with all installation instructions provided by the child restraint manufacturer and that the system is properly secured. If it is not secured properly, it may cause death or serious injury to the child in the event of a sudden stop or accident.**

68

—Child restraint system

. child restraint system for a small child or baby must itself be properly restrained on the seat with the lap portion of the lap/shoulder belt. You must carefully consult the manufacturer's nstructions which accompany the child straint system.

provide proper restraint, use a child traint system following the manufactur- s instructions about the appropriate age nd size of the child for the child restraint system.

Install the child restraint system correctly following the instructions provided by its manufacturer. General directions are also provided under the following illustrations.

The child restraint system should be installed on the rear seat. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat.

When not using the child restraint system, keep it secured with the seat belt or place it somewhere other than the passenger compartment. This will prevent it from injuring passengers in the event of a sudden stop or accident.

—Types of child restraint system

Child restraint systems are classified into the following 3 types depending on the child's age and size.

(A) Infant seat

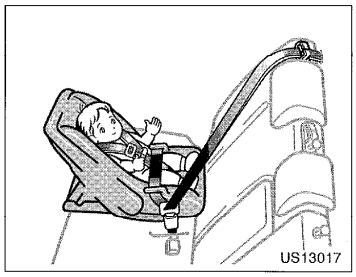
(B) Convertible seat

(C) Booster seat

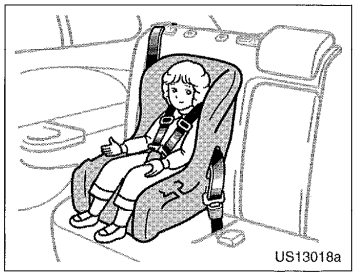
Install the child restraint system following the instructions provided by its manufacturer.

Your vehicle has anchor brackets for securing the top strap of a child restraint system.

For instructions about how to use the anchor bracket, see "—Using a top strap" on page 82 in this Section.

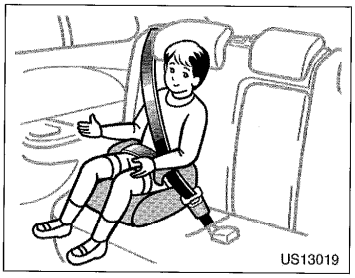


(A) Infant seat

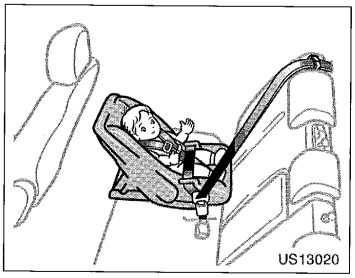


(B) Convertible seat

—Installation with seat belt

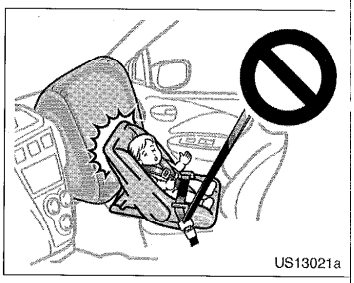


(C) Booster seat



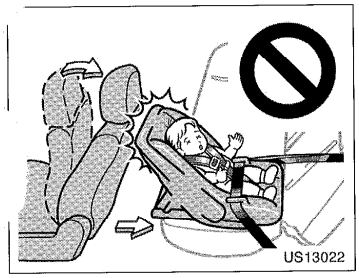
(A) INFANT SEAT INSTALLATION

An infant seat must be used in rear-facing position only.

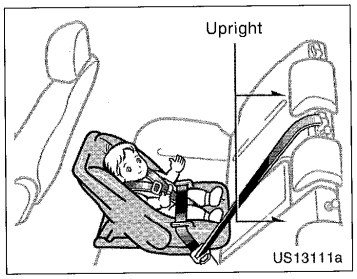


⚠ CAUTION

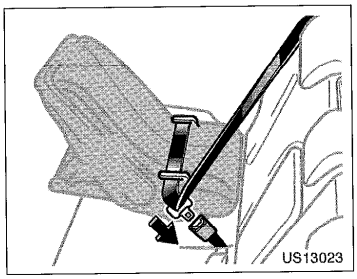
- **Never install a rear-facing child restraint system on the front passenger seat even if the "AIRBAG OFF" indicator light is illuminated. In the event of an accident, the force of the rapid inflation of the front passenger airbag can cause death or serious injury to the child if the rear-facing child restraint system is installed on the front passenger seat.**



- **Do not install a child restraint system on the rear seat if it interferes with the lock mechanism of the front seats. Otherwise, the child or front seat occupant(s) may be killed or seriously injured in case of sudden braking or a collision.**
- **If the driver's seat position does not allow sufficient space for safe installation, install the child restraint system on the rear right seat.**



- **Split seat: When installing a child restraint system in the rear seat center position, return both the left and right seatbacks to the upright position. Otherwise, the child restraint system cannot be securely restrained and this may cause death or serious injuries in a collision.**

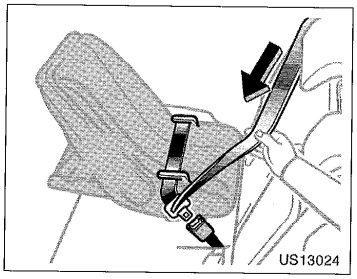


1. Run the lap and shoulder belt through or around the infant seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt. Keep the lap portion of the belt tight.

71

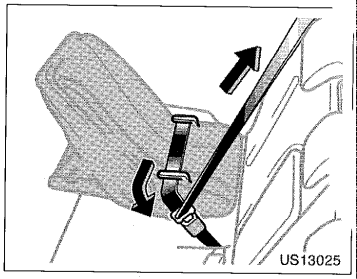
⚠ CAUTION

- **After inserting the tab, make sure the tab and buckle are locked and that the lap and shoulder portions of the belt are not twisted.**
- **Do not insert coins, clips, etc. in the buckle as this may prevent your child from properly latching the tab and buckle.**
- **If the seat belt does not function normally, it cannot protect your child from death or serious injury. Contact your Toyota dealer immediately. Do not install the child restraint system on the seat until the seat belt is fixed.**



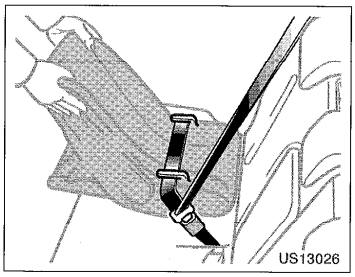
2. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended.

To hold the infant seat securely, make sure the belt is in the lock mode before letting the belt retract.



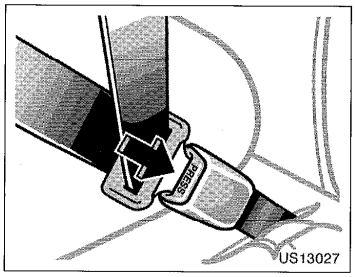
3. While pressing the infant seat firmly against the seat cushion and seatback, let the shoulder belt retract as far as it will go to hold the infant seat securely.

72

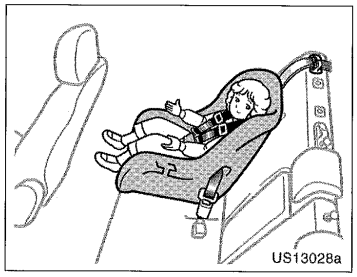


⚠ CAUTION

Push and pull the child restraint system in different directions to be sure it is secure. Follow all the installation instructions provided by its manufacturer.



4. To remove the infant seat, press the buckle release button and allow the belt to retract completely. The belt will move freely again and be ready to work for an adult or older child passenger.



(B) CONVERTIBLE SEAT INSTALLATION

A convertible seat must be used in forward-facing or rear-facing position depending on the age and size of the child. Remove the head restraint before installing the convertible seat in a forward-facing position on the rear seat. When installing, follow the manufacturer's instructions about the applicable age and size of the child as well as directions for installing the child restraint system.

Install the child restraint system on the front passenger seat only when it is unavoidable. Your vehicle is equipped with a front passenger occupant classification system. In order to activate the occupant classification system correctly, install the forward-facing child restraint system on the front passenger seat in the following order:

1. Turn the ignition key to the "ON" position.
2. Move the front passenger seat to the rearward position.
3. If you must install the child restraint system on the front passenger seat, put the child restraint system putting your weight on the front passenger seat.
4. Insert the seat belt tab into the seat belt buckle.
5. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended. To hold the seat securely, make sure the belt is in the lock mode before letting the belt retract.

6. While pressing the convertible seat firmly against the seat cushion and seatback, let the shoulder belt retract as far as it will go to hold the convertible seat securely.

⚠ CAUTION

Push and pull the child restraint system in different directions to be sure it is secure. Follow all the installation instructions provided by its manufacturer.

7. Put a child on the child restraint system and secure the child, complying with the instructions provided by the child restraint system manufacturer.

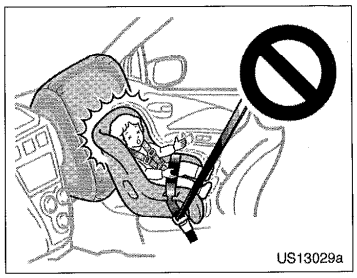
The "AIRBAG OFF" indicator light should be illuminated when the ignition key is in the "ON" position and the child is in the child restraint system after following these procedures. The "AIRBAG OFF" indicator light indicates the SRS front passenger airbag and side airbag on the passenger side will not deploy. If the "AIRBAG ON" indicator light is illuminated, do the following procedure:

1. Turn the ignition off.
2. Remove the child restraint system.
3. When reinstalling a child restraint system, make sure the seatback does not press the child restraint system into the seat cushion. If this occurs, adjust the seatback angle slightly.
4. Then make sure the head restraint is not pressing the child restraint system into the seat cushion. If this occurs, raise the head restraint.
5. Turn the ignition on again.

The "AIRBAG OFF" indicator light should be illuminated. If the "AIRBAG ON" indicator light is illuminated when the ignition key is turned to the "ON" position, then the SRS front passenger airbag and side airbag on the passenger side may deploy in an accident. Do not drive the vehicle in this condition. Remove the child restraint system and contact your Toyota dealer.

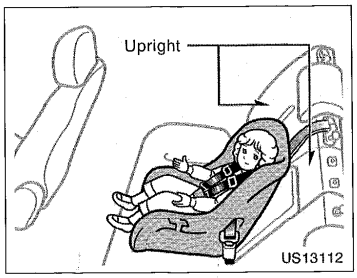
⚠ CAUTION

- **Never install a rear-facing child restraint system on the front passenger seat. A forward-facing child restraint system should only be installed on the front passenger seat when unavoidable. If you must install the child restraint system on the front passenger seat, put the seat in its most rearward position, and install the forward-facing child restraint system in the proper order. Otherwise, the front passenger occupant classification system cannot detect the presence of the child restraint system and the front passenger airbag and side airbag on the front passenger seat could deploy.**



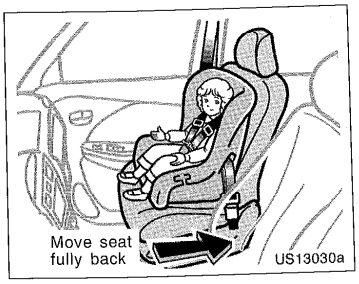
⚠ CAUTION

- **Never install a rear-facing child restraint system on the front passenger seat even if the "AIRBAG OFF" indicator light is illuminated. In the event of an accident, the force of the rear-facing child restraint system is installed on the front passenger seat.**



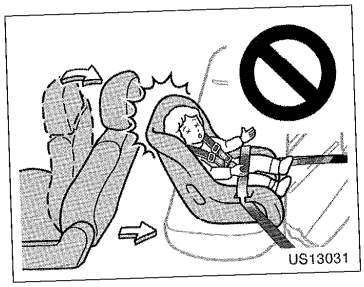
- **Split seat: When installing a child restraint system in the rear seat center position, return both the left and right seatbacks to the upright position. Otherwise, the child restraint system cannot be securely restrained and this may cause death or serious injuries in a collision.**

75



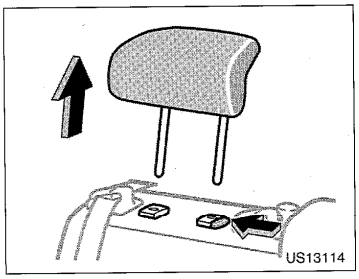
- **A forward-facing child restraint system should be allowed to be installed on the front passenger seat only when it is unavoidable. Always move the seat as far back as possible even if the "AIRBAG OFF" indicator light is illuminated, because the front passenger airbag could inflate with considerable speed and force. Otherwise, the child may be killed or seriously injured.**

- **On vehicles with side airbags and curtain shield airbags, do not allow the child to lean his/her head or any part of his/her body against the door or the area of the seat, front or rear pillar or roof side rail from which the side airbags or curtain shield airbags deploy even if the child is seated in the child restraint system. If is dangerous if the side airbag and curtain shield airbag inflate, and the impact could cause death or serious injury to the child.**



- **Do not install a child restraint system on the rear seat if it interferes with the lock mechanism of the front seats. Otherwise, the child or front seat occupant(s) may be killed or seriously injured in case of sudden braking or a collision.**
- **If the driver's seat position does not allow sufficient space for safe installation, install the child restraint system on the rear right seat.**

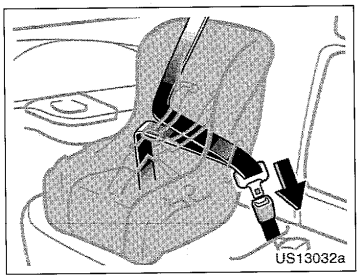
76



1. When the child restraint system is installed in a forward-facing position: Remove the head restraint.

⚠ CAUTION

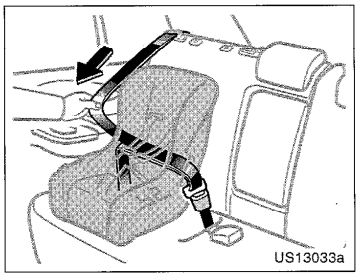
- **Do not replace the head restraint when the child restraint system is installed. The head restraint may interfere with the child restraint system cannot be securely restrained. This may cause death or serious injuries in a collision.**
- **Do not leave the removed head restraint inside the cabin. It may hit a passenger when the brakes are applied, which could cause severe injuries or death.**



2. Run the lap and shoulder belt through or around the convertible seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt. Keep the lap portion of the belt tight.

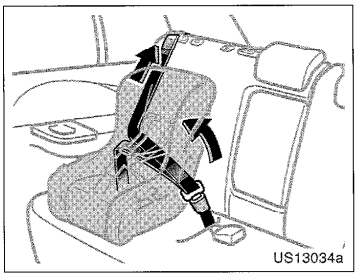
⚠ CAUTION

- **After inserting the tab, make sure the tab and buckle are locked and that the lap and shoulder portions of the belt are not twisted.**
- **Do not insert coins, clips, etc. in the buckle as this may prevent your child from properly latching the tab and buckle.**
- **If the seat belt does not function normally, it cannot protect your child from death or serious injury. Contact your Toyota dealer immediately. Do not install the child restraint system on the seat until the seat belt is fixed.**

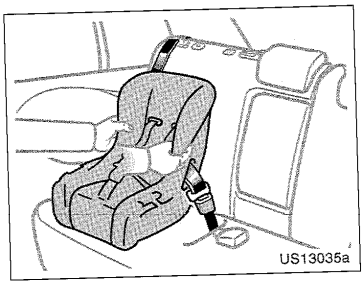


3. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended.

To hold the convertible seat securely, make sure the belt is in the lock mode before letting the belt retract.

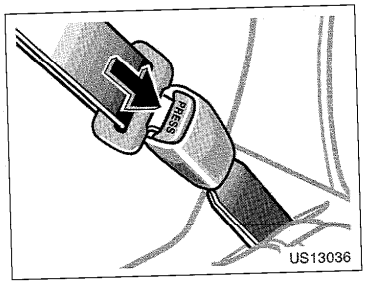


4. While pressing the convertible seat firmly against the seat cushion and seatback, let the shoulder belt retract as far as it will go to hold the convertible seat securely.

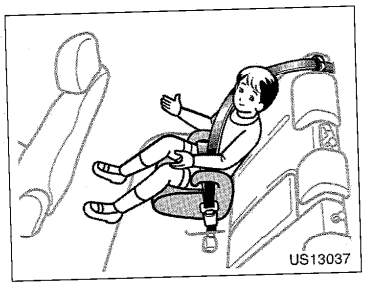


⚠ CAUTION

Push and pull the child restraint system in different directions to be sure it is secure. Follow all the installation instructions provided by its manufacturer.

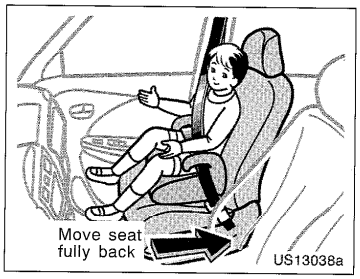


5. To remove the convertible seat, press the buckle release button and allow the belt to retract completely. The belt will move freely again and be ready to work for an adult or older child passenger. After returning the seat to its original position, be certain to replace the head restraint.



(C) BOOSTER SEAT INSTALLATION

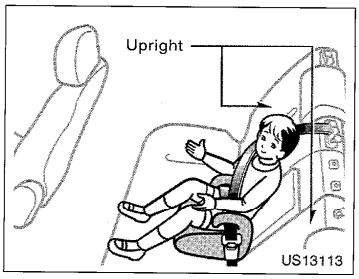
A booster seat must be used in forward-facing position only.



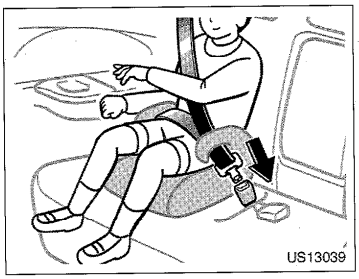
⚠ CAUTION

- **A forward-facing child restraint system should be allowed to be installed on the front passenger seat only when it is unavoidable. Always move the seat as far back as possible even if the "AIRBAG OFF" indicator light is illuminated, because the front passenger airbag could inflate with considerable speed and force. Otherwise, the child may be killed or seriously injured.**

- **On vehicles with side airbags and curtain shield airbags, do not allow the child to lean his/her head or any part of his/her body against the door or the area of the seat, front or rear pillar or roof side rail from which the side airbags or curtain shield airbags deploy even if the child is seated in the child restraint system. It is dangerous if the side airbag and curtain shield airbag inflate, and the impact could cause death or serious injury to the child.**



- **Split seat: When installing a child restraint system in the rear seat center position, return both the left and right seatbacks to the upright position. Otherwise, the child restraint system cannot be securely restrained and this may cause death or serious injuries in a collision.**



1. Sit the child on a booster seat. Run the lap and shoulder belt through or around the booster seat and across the child following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt.

Make sure the shoulder belt is correctly across the child's shoulder and that the lap belt is positioned as low as possible on the child's hips. See "Seat belts" on page 38 in this Section for details.

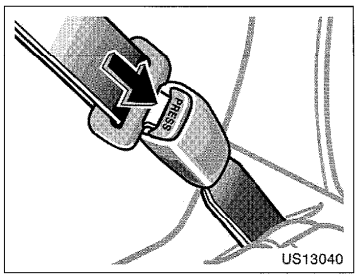
⚠ CAUTION

- **Always make sure the shoulder belt is positioned across the center of child's shoulder. The belt should be kept away from child's neck, but not falling off child's shoulder. Otherwise, the child may be killed or seriously injured in case of sudden braking or a collision.**
- **Both high-positioned lap belts and loose-fitting belts could cause death or serious injuries due to sliding under the lap belt during a collision or other unintended event. Keep the lap belt positioned as low on a child's hips as possible.**
- **For child's safety, do not place the shoulder belt under child's arm.**
- **After inserting the tab, make sure the tab and buckle are locked and that the lap and shoulder portions of the belt are not twisted.**
- **Do not insert coins, clips, etc. in the buckle as this may prevent your child from properly latching the tab and buckle.**

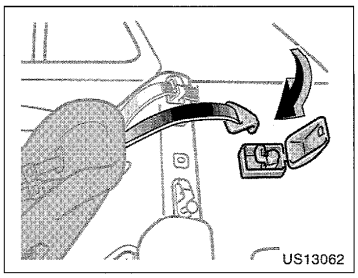
- **If the seat belt does not function normally, it cannot protect your child from death or serious injury. Contact your Toyota dealer immediately. Do not install the child restraint system on the seat until the seat belt is fixed.**

81

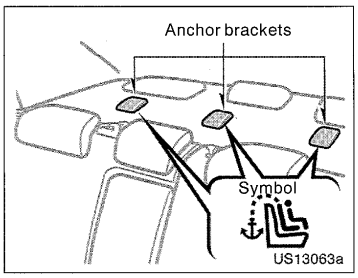
—Using a top strap



2. To remove the booster seat, press the buckle release button and allow the belt to retract.



Follow the procedure below for a child restraint system that requires the use of a top strap.

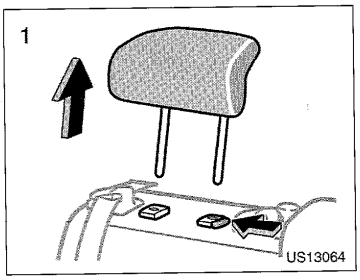


Use the anchor brackets on the luggage compartment to attach the top strap.

Anchor brackets are installed for each rear seating position.

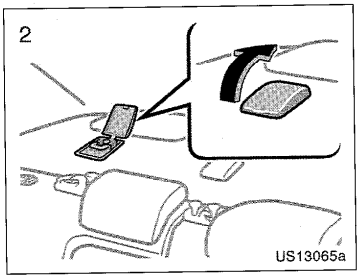
This symbol indicates the locations of the anchor brackets.

82

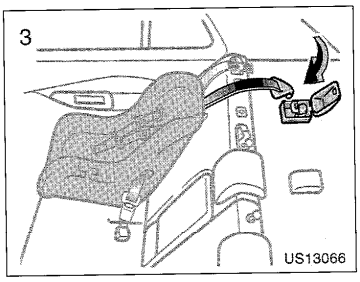


TO USE THE ANCHOR BRACKET:

1. Remove the head restraint.



2. Open the lid of the anchor bracket.



3. Securely fasten the child restraint system with the seat belt.

Latch the hook onto the anchor bracket and tighten the top strap.

For instructions to install the child restraint system, see "Child restraint" on page 67 in this Section.

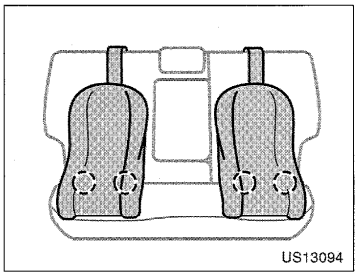
After returning the seat to its original position, be certain to replace the head restraint.

83

⚠ CAUTION

- **Do not replace the head restraint when the child restraint system is installed. The head restraint may interfere with the top strap and the child restraint system can not be securely restrained. This may cause death or serious injuries in a collision.**
- **Make sure the top strap is securely latched, and check that the child restraint system is secure by pushing and pulling it in different directions. Follow all the installation instructions provided by its manufacturer.**

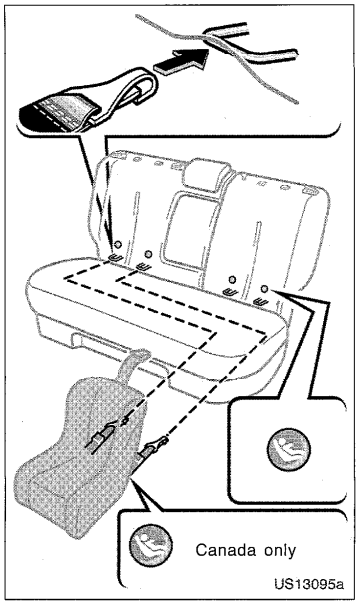
—Installation with child restraint lower anchorages



The lower anchorages for the child restraint system interfaced with the FMVSS225 or CMVSS210.2 specification are installed in the rear seat.

The anchorages are installed in the gap between the seat cushion and seatback of both outside rear seats.

Child restraint system interfaced with the FMVSS213 or CMVSS213 specification can be fixed with these anchorages. In this case, it is not necessary to fix the child restraint system with a seat belt on the vehicle.



Type A

84

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

Attachment 7
FORM – 225
Rev. 03/20/07

SEAT REFERENCE POINT (SgRP) AND TORSO ANGLE DATA

FMVSS No. 225

(All dimensions in mm[1])

MODEL YEAR: 2007 / MAKE: TOYOTA / MODEL: YARIS / BODY STYLE: 4DOOR SEDAN

SEAT STYLE: FRONT ROW: SEPARATE / SECOND ROW: 4:6 SEPARATE or BENCH / THIRD ROW: N/A

LEFT SIDE VIEW OF TEST VEHICLE

Table 1. Seating Positions[1] and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) 223	N/A	(Front Passenger) 223
A2'(*)		248	297	248
A3		N/A	N/A	N/A
B		368	N/A	368
C		1156	Separate 1102 Bench 1131	1156
D		N/A	N/A	N/A
Torso Angle (degree)	Front Row	21	N/A	21
	Second Row	23	Separate 25 Bench 22	23
	Third Row	N/A	N/A	N/A

Note: All dimensions are in mm. If not, provide the unit used.

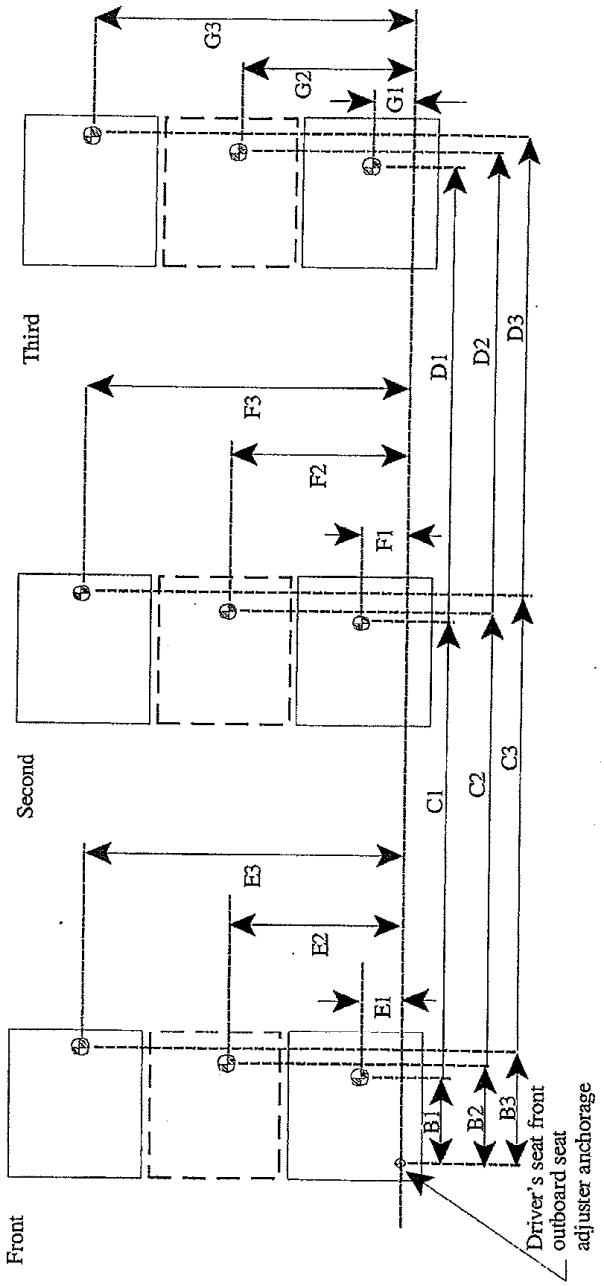
(*) : A2' are the dimensions from the driver's seat front outboard seat adjuster anchorage.

SEATING REFERENCE POINT

FMVSS No. 225
(All dimensions in mm)

MODEL YEAR: 2007 / MAKE: TOYOTA / MODEL: YARIS / BODY STYLE: 4DOOR SEDAN

SEAT STYLE: FRONT ROW: SEPARATE / SECOND ROW: 4:6 SEPARATE or BENCH / THIRD ROW: N/A



4

Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SgRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	368
	E1	264
	B2	N/A
	E2	N/A
	B3	368
	E3	264
Second Row	C1	1156
	F1	264
	C2	Separate 1102 Bench 1131
	F2	594
	C3	1156
	F3	924
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

Note: Use the center of anchorage.

TETHER ANCHORAGE LOCATIONS

FMVSS No. 225

(All dimensions in mm)

MODEL YEAR: 2007 / MAKE: TOYOTA / MODEL: YARIS / BODY STYLE: 4DOOR SEDAN

SEAT STYLE: FRONT ROW: SEPARATE / SECOND ROW: 4:6 SEPARATE or BENCH / THIRD ROW: N/A

⊕: SgRP

Φ: Tether anchorage

The measurement point of the "tether anchorage plate", bolted on the body as tether anchorage, is indicated on the figure left.

Note: The location shall be measured at the center of the bar.

FORM - 225

6

Table 3. Seating Reference Point and Tether Anchorage Locations

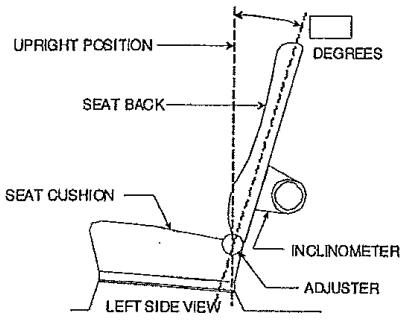
Seating Reference Point (SgRP)	Distance from SRP	
Front Row	H1	N/A
	K1	N/A
	H2	N/A
	K2	N/A
	H3	N/A
	K3	N/A
Second Row	I1	550
	L1	0
	I2	Separate 604 Bench 575
	L2	0
	I3	550
	L3	0
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	N/A
	M3	N/A

Note: Use the center of anchorage.

7

NOMINAL DESIGN RIDING POSITION

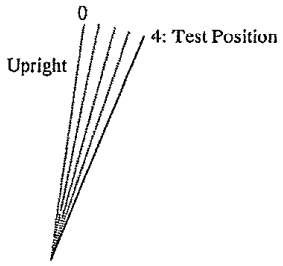
For adjustable driver, passenger, 2nd row and 3rd row seat backs, describe how to position the inclinometer to measure the seat back angle. Include a description of the location of the seat back adjustment latch detent if applicable. Indicate if applicable, how the detents are numbered (Is the first detent "0"or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.

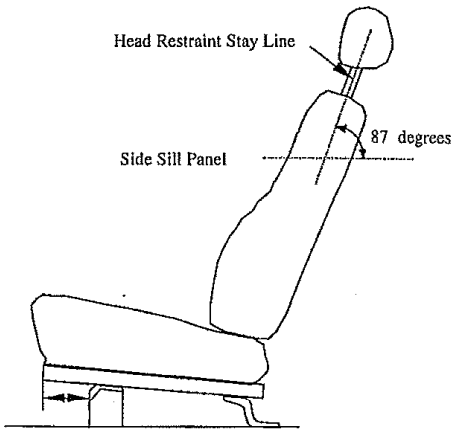


Seat back angle for driver's seat = 87 degrees.

Measurement Instructions:

Recline to the 4th notch rearward from the most upright position ,when seat vertical position adjust to lower most.



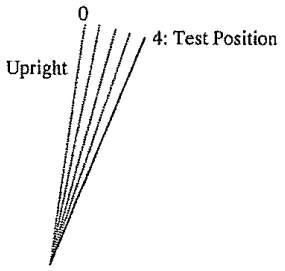


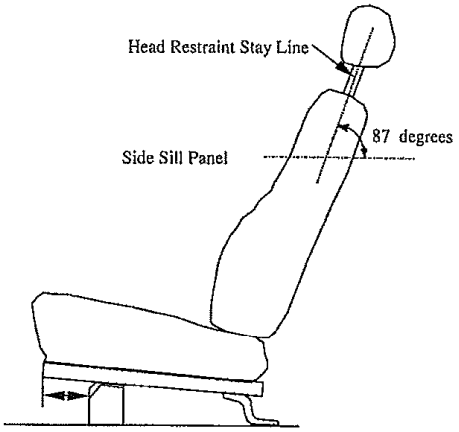
8

Seat back angle for passenger's seat = 87 degrees.

Measurement Instructions:

Recline to the 4th notch rearward from the most upright position.





Seat back angle for 2nd row seat : Non-Adjustable

Seat back angle for 3rd row seat : N/A

TETHER ANCHORAGE LOCATIONS - VERTICAL

FMVSS No. 225

(All dimensions in mm)

MODEL YEAR: 2007 / MAKE: TOYOTA / MODEL: YARIS / BODY STYLE: 4DOOR SEDAN

SEAT STYLE: FRONT ROW: SEPARATE / SECOND ROW: 4:6 SEPARATE or BENCH / THIRD ROW: N/A

LEFT SIDE VIEW OF TEST

FOR FMVSS - 225

Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	N/A
	N2 (Center)	N/A
	N3 (Right)	N/A
Second Row	O1 (Left)	539
	O2 (Center)	Separate 490 Bench 490
	O3 (Right)	539
Third Row	P1 (Left)	N/A
	P2 (Center)	N/A
	P3 (Right)	N/A

Note: All dimensions are in mm. If not, provide the unit used.

FORM - 225

For each vehicle, provide the following information:

1. How many designated seating positions exist in the vehicle?

Response 1:

The 2007 Toyota YARIS Sedan has 5DSP's.

2. How many designated seating positions are equipped with lower anchorages and tether anchorages? Specify which position(s).

Response 2:

The two outboard DSPs in the second row are equipped with lower anchorages and tether anchorages.

3. How many designated seating positions are equipped with tether anchorages? Specify which positions(s).

Response 3:

The three DSPs in the second row are equipped with tether anchorages.

4. Lower Anchorages Marking and Conspicuity: Whether the anchorages are certified to S9.5(a) or S9.5(b) of FMVSS No. 225.

Response 4:

All anchorages installed in the 2007 Toyota YARIS Sedan are certified to S9.5(a) of FMVSS225.